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OFFICIAL GAZETTE UNITED STATES PATENT OFFICE

VOL. 128

MAY - JUNE

1907

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME CXXVIII.

MAY 7 TO JUNE 25, INCLUSIVE.

1907.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1907.

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DIGEST OF DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

INDEX OF PATENTS AND PATENTEES FOR THE MONTHS OF MAY AND JUNE, 1907.

ERRATA.

852,455, page 40, in heading, assignment, name of first-mentioned assignee, for "Slade E. Cragg" read *Slade E. Gragg.*

852,751, page 197, fourth claim, line 7, transpose the words "valve" and "throttle."

852,818, page 232, in heading, assignment, name of assignee, for "Frank M. Asheley" read *Frank M. Ashley.*

852,992, page 325, in heading, assignment, name of fourth-mentioned assignee, for "F. E. Ramey" read *F. E. Ranney:*

853,176, page 404, in heading, assignment, residence of assignee, for "Tazewell, Ill.," read *Pekin, Ill.*"

853,691, page 720, in heading, assignment, after the word "assignor" strike out the words "of two-thirds."

853,704, page 728, in heading, assignment, name of assignee, for "Carl Hanning" read *Carl Hannig.*

854,246, page 1048, in heading, assignment, residence of assignee and State of incorporation, for "Aurora, Ill., a Corporation of Illinois," read *Aurora, Iowa, a Corporation of Iowa.*

854,674, page 1245, fourth claim, line 2, after the compound word "spool-support" insert a comma and the words *a head connected with the shaft.*

856,029, page 1978, second claim, line 6, for the word "live" read *like.*

856,275, page 2137, in heading, assignment, name of assignee, after the word "Company" strike out the comma.

856,537, page 2273, in claim, line 3, for the word "dyeing" read *drying.*

856,607, page 2314, in heading, title of invention, for the word "Combined" read *Combination.*

856,800, page 2403, in heading, assignment, name of assignee, for "Foster, Well & Parkes" read *Foster, Webb & Parkes:*

857,927, page 3019, eighteenth claim, line 5, strike out the word "radical," and same line after the word "sulfate," first occurrence, insert the word *radical.*

858,004, page 3069, in heading, residence of patentee, for "Birmingham, Ohio," read *Birmingham, Ala.*

62,401, (Trade-Mark,) page 449, strike out all after number and insert WITHDRAWN.

Commissioners' Decisions, page 2531, second column, line 5, for the words "Spring Valley" read *Spring Hill.*

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

MAY—JUNE, 1907.

Patents Nos. 852,409 to 853,208.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 128—No. 1. TUESDAY, MAY 7, 1907. PRICE—$5 per year.

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TO CITIZENS OF THE UNITED STATES.

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Alaska, District of			New Jersey	21	10
Arizona Territory	1		New Mexico Ter't'y		
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California	33	2	North Carolina	3	1
Colorado	9	1	North Dakota	1	
Connecticut	24	2	Ohio	48	13
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Florida	2	1	Pennsylvania	84	15
Georgia	5		Philippine Islands	1	
Hawaii Territory			Porto Rico		
Illinois	67	10	Rhode Island	5	1
Indian Territory	3		South Carolina	2	1
Indiana	24	1	South Dakota	4	
Iowa	16	2	Tennessee	7	3
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Kentucky	7		Utah	1	
Louisiana	2		Vermont	2	1
Maine	1		Virginia	4	1
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Montana	1				
Nebraska	9		Total to citizens of the United States	711	131
Nevada	1				

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Natal		
Austria-Hungary	3		Netherlands		
Belgium	1		Newfoundland		
Brazil	1		New South Wales	2	
British West Indies			New Zealand	1	
Canada	13	1	Norway		
Cape Colony	1		Persia		
Chile			Queensland		
China			Roumania		
Costa Rica			Russia	1	
Cuba			Scotland	4	
Denmark			South Australia		
England	21	1	Spain	1	
Ecuador	1		Sweden	2	
France	7	2	Switzerland	4	
Germany	27	1	Transvaal, South Africa		
Haiti			Victoria	1	
Ireland			Western Australia	1	
Italy					
Japan			Total to citizens of foreign countries	92	5
Java					
Mexico					

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 30, 1907.

McConnell, Clancey & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of H. F. Webb Company, of Portland, Me., for registration of a trade-mark and a trade-mark registered to McConnell, Clancey & Company, of Chillicothe, Ohio, and the notice of declaration mailed by the Patent Office in the usual manner to the known address of McConnell, Clancey & Company has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said McConnell, Clancey & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 23, 1907.

Hardgrove & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Robert Harris & Brother, of Reidsville, N. C., for registration of a trade-mark and a trade-mark registered to Hardgrove & Company, of Richmond, Va. It appears from the record of the case that the firm of Hardgrove & Company is no longer in existence, and the attorneys for said firm can also not be found.

Notice is therefore given to the said Hardgrove & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business April 30, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	Apr. 25	Apr. 24	80
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr. 18	Apr. 1	150
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 17	Apr 4	269
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr. 16	Apr. 1	223
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Apr. 16	Mar. 30	226
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 16	Mar. 28	317
327	XVIII. Steam-Engineering, etc ...	Apr. 16	Mar. 25	182
109	XVI. Telegraphy and Telephony..	Apr. 15	Apr. 1	182
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Apr. 15	Apr. 1	294
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr. 12	Mar. 25	225
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Apr. 11	Mar. 25	178
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 11	Mar. 20	330
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Apr. 11	Mar. 12	571
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Apr. 9	Apr. 11	247
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 8	Mar. 21	284
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Apr. 5	Mar. 22	100
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 4	Mar. 4	202
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Apr. 3	Apr. 2	420
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 3	Apr. 1	301
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189	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 1	Apr. 3	212
376	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 1	Mar. 18	402
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 1	Mar. 16	398

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action.		No. of applications awaiting action.
		Amended	New.	
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 1	Mar. 13	621
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Mar. 30	Feb. 14	337
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Mar. 28	Mar. 21	226
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Mar. 28	Mar. 18	408
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379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Mar. 25	Mar. 25	336
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 25	Mar. 12	435
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Mar. 23	Mar. 8	326
332	X. Carriages and Wagons.....	Mar. 22	Mar. 20	545
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Mar. 21	Mar. 8	425
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Mar. 19	Mar. 12	365
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 13	Mar. 13	335
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Mar. 11	Mar. 9	628
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 11	Feb. 11	445

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Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 29, 1907.

Fred W. Smith, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The New Era Milling Company, of Arkansas City, Kans., for registration of a trade-mark and a trade-mark registered to Fred W. Smith, of New York, N. Y. The notice of said declaration mailed by the Patent Office in the usual manner to the said Fred W. Smith at his known address, 4 State street, New York, N. Y., has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Fred W. Smith, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

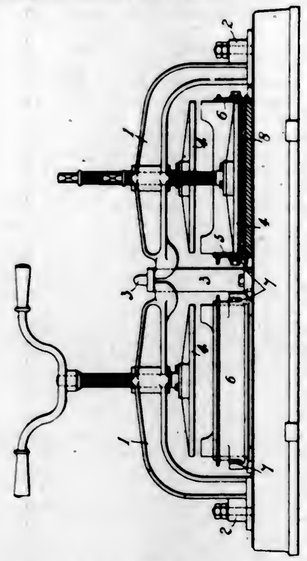
This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner*

PATENTS

GRANTED MAY 7, 1907.

852,409. APPARATUS FOR PRESSING LEAF-TOBACCO. BERNHARD BARON, London, England. Filed June 18, 1906. Serial No. 322,457.



Claim.—1. In apparatus for pressing leaf tobacco, a plurality of fixed mold members, a bed plate common thereto, separate complemental mold members forming with the first named mold members a plurality of molds on one and the same bed, means for detachably securing the complemental mold members in their respective places, a presser plate for each mold, and independent and unconnected means for operating each presser plate.

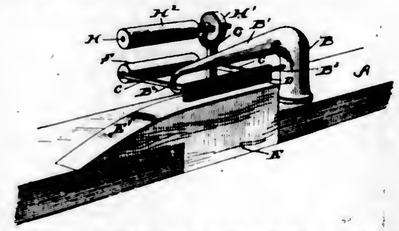
2. In apparatus for pressing leaf tobacco, a plurality of molds one part of each of which is removable, pivoted arms carrying presser plates, and means common to at least two such arms for holding the inner ends of said arms while pressure is being exerted substantially as described.

3. In apparatus for pressing leaf tobacco, a plurality of molds one side of each of which is removable relatively to the other sides, clamps adapted to hold the respective molds in a closed condition or to release one part thereof, a bed common to said molds, arms pivotally mounted on said bed to swing in a horizontal plane, presser plates carried by said arms, and means for enabling any of said presser plates to be independently operated.

4. In apparatus for pressing leaf tobacco, a mold one part of which is removable, clamps adapted to hold the mold in its closed condition or to release one part thereof, pivoted arms carrying presser plates, and means for holding the inner ends of said arms while pressure is being exerted substantially as described.

5. In a press the combination of a plurality of molds, a bed common to same, pivoted arms, a fixed frame in the path of said arms and serving as a common means for engaging the arms, and pressers carried by the several arms.

852,410. MACHINE FOR TREATING MANILA HEMP. EUGENE E. BARTON, Cagayan, Philippine Islands. Filed June 6, 1905. Serial No. 264,029.



Claim.—1. A device of the kind described comprising a block, a shaft above the block, a frame having its side members pivotally mounted upon the shaft, a blade forming the front member of the frame, and a rotatable roller forming the rear member of said frame.

2. A device of the kind described comprising a pivoted frame, having a blade at one end and a roller at the rear end, said frame being pivoted adjacent the blade, a rotatable roller arranged above the roller carried by the frame, and a block arranged below the blade.

3. A device of the kind described comprising a block, having one end portion upwardly inclined, a rectangular frame comprising side members, a blade forming the front end members and a rotatable roller forming the rear member, said frame being pivoted above the block, intermediate the blade and roller, a rotatable roller placed above the frame, and means for rotating the last mentioned roller.

4. A device of the kind described comprising a pivoted frame, having a blade at one end and a rotatable roller at the opposite end, said frame being pivotally mounted between its ends and adjacent the blade, the block arranged below the blade, a bracket arranged adjacent the frame, a shaft carried by said bracket and above and parallel to the roller carried by the frame, the pulley on the shaft, and a roller carried by the shaft, said roller being above and parallel to the roller carried by the frame.

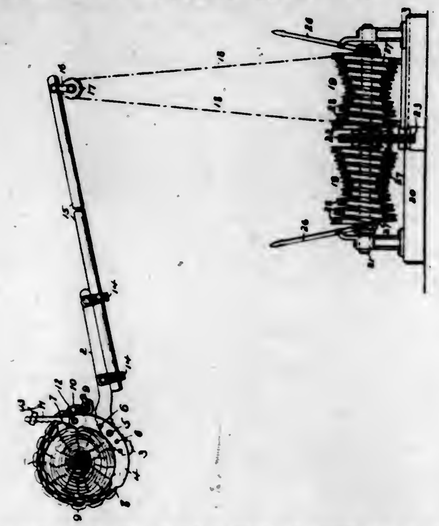
852,411. STUMP-PULLING APPARATUS. RALEIGH L. BEASLEY, Gordon, Ala. Filed May 2, 1906. Serial No. 314,853.

Claim.—1. A drum for stump pullers and the like, consisting of two spirals one of greater diameter than the other and both adapted to wind cable thereon or therefrom.

2. A drum for stump pullers and the like, consisting of two spirals, one larger than the other and of smallest diameter at its center and increasing in diameter to its ends.

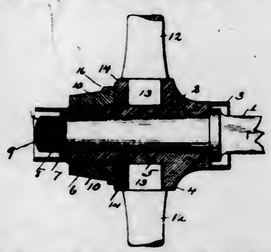
3. A drum for stump pullers and the like, consisting of two spiral cables receiving grooved portions, one larger than the other, a cable secured at its ends to the drum and adapted to wind from one spiral onto the other to shorten or lengthen the loop of the cable.

4. In a stump pulling apparatus, the combination with a shaft, a gear fixed thereto, and means for turning the shaft, of differential or duplex drums loose on the shaft at opposite sides of the gear, clutches to lock either or both



drums to the gear, levers to move the drums into or out of clutched engagement with the gear, and both of said drums constructed to operate stump pulling devices.

852,412. VEHICLE-HUB. OTTO BEITLER, Pittsburg, Pa. Filed Feb. 8, 1906. Serial No. 300,097.



Claim.—A vehicle hub comprising the body-portion having an inner, annular tapering bore for the axle journal, front and rear dust guards formed integral with said body-portion, a reduced portion 5 at the front of the hub a part of which is formed with a screw-thread, a series of radially-arranged pockets 11, each of which is open at the front, for the reception of the inner ends of the spokes of the wheel, a threaded nut 10 to engage with the threaded portion of the hub, an intermediate washer 14, said washer being formed with a series of inwardly projecting parts 15, to register with and enter the pockets 11 and bear against the spokes, the screw-thread of said nut being formed with respect to the forward rotatable movement of the wheel on which it is used and a means whereby said nut may be locked to prevent turning, all arranged and combined, substantially as described.

852,413. REMOVABLE DENTAL BRIDGEWORK. ERNEST C. BENNETT, New York, N. Y. Filed May 18, 1906. Serial No. 317,495.

Claim.—1. A denture comprising two stationary abutments, a bridge removably carried by each abutment and extending to the rear thereof, and reinforcing wires extending around the teeth and connecting said bridges.



2. A denture comprising a stationary abutment having a laterally projecting shoulder, a spring frame carried by said abutment and extending longitudinally of the gum, and a removable bridge member having shoulders at its opposite ends adapted to be engaged by said abutment and said frame.

3. A denture comprising a stationary tooth or crown abutment having a laterally projecting shoulder, an extending member secured to said abutment lying along the gum and having a hook end, and a removable bridge member adapted to be secured between said hook and said shoulder.

4. A denture comprising a stationary tooth or crown abutment, a yielding frame secured thereto and extending along the gum and having a hook end, and a removable bridge adapted to be secured between said hook end and said abutment.

5. A denture comprising a stationary abutment, a frame member secured thereto and extending along the gum and having an upturned hook projection, and a removable bridge member, one of said members having a longitudinally yielding portion independent of the bridge teeth, said bridge being removably secured between said projection and said abutment.

6. A denture comprising a stationary crown or abutment, a double arm frame secured to said abutment and lying along the gum and a removable tooth-carrying bridge carried by said abutment and frame.

7. A denture comprising two stationary abutments, a bridge removably carried by each of said abutments, and a band or wire connecting said bridges and extending along the sides of the intervening teeth for staying said bridges.

8. A denture comprising a stationary abutment, a member carried by said abutment and extending along the line of the gum, a removable bridge member adapted to be engaged by said abutment and said longitudinally extending member.

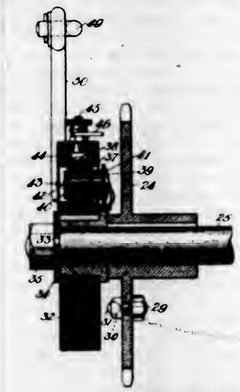
9. A denture comprising a stationary abutment, a frame carried by said abutment and extending longitudinally along the line of the gum and to the side of the ridge thereof, and a removable bridge member adapted to be engaged by said frame and said abutment.

10. A denture comprising a stationary abutment, a frame carried by said abutment, extending longitudinally along the line of the gum and to the side of the ridge thereof, a hook on said frame, a removable bridge adapted to be engaged between said abutment and said hook.

852,414. CIRCUIT MAKING AND BREAKING DEVICE. SAMUEL BOUTON, Lynn, Mass., assignor of one-half to Albert B. Black, Concord, Mass. Filed Feb. 10, 1906. Serial No. 300,377.

Claim.—1. In a circuit making and breaking device a rotary contact carrier, an operating contact stud fast thereto and rotating therewith provided with a hemispherical recess, a ball located in said hemispherical recess, a stationary contact carrier, and a reciprocatory contact stud, insulated from said operating contact stud and arranged to slide upon said stationary contact carrier in a direction parallel to the axial center of said rotary contact carrier, said ball constructed to make, during a portion of the rotation of said rotary contact carrier, mechanical and electrical contact with said reciprocatory contact stud.

2. In a circuit making and breaking device, a rotary contact carrier, an operating contact stud fast thereto and operating therewith, a stationary contact carrier, a reciprocatory contact stud insulated from said operating contact stud and arranged to slide upon said stationary contact carrier in a direction parallel to the axial center of said rotary contact carrier, an operating contact stud fast thereto and operating therewith, a stationary contact carrier, a reciprocatory contact stud insulated from said operating contact stud and arranged to slide upon said stationary contact carrier in a direction parallel to the axial center of said rotary contact carrier, and means to adjust said reciprocatory contact stud about the axis of said rotary contact carrier, said operating stud constructed to make, during a portion of the rotation of said rotary contact carrier, mechanical and electrical contact with said reciprocatory contact stud.



3. In a circuit making and breaking device, a rotary contact carrier, an operating contact stud fast thereto and operating therewith, a stationary contact carrier, a reciprocatory contact stud insulated from said operating contact stud and arranged to slide upon said stationary contact carrier in a direction parallel to the axial center of said rotary contact carrier, and means to adjust said stationary contact carrier about the axis of said rotary contact carrier, said operating stud constructed to make, during a portion of the rotation of said rotary contact carrier, mechanical and electrical contact with said reciprocatory contact stud.

4. In a circuit making and breaking device, a rotary contact carrier, an operating contact stud fast thereto and operating therewith, a stationary contact carrier formed of insulating material, a reciprocatory contact stud arranged to slide upon said stationary contact carrier in a direction parallel to the axial center of said rotary contact carrier, a spring acting to move said reciprocatory contact stud longitudinally of said axial center, a contact spring fast to said stationary contact carrier, and a binding post fast to said contact spring, said reciprocatory contact stud arranged to make mechanical and electrical contact at one end thereof with said operating contact stud during a portion of the rotation of said operating contact stud and at its opposite end with said contact spring.

5. In a circuit making and breaking device, a rotary shaft, a contact carrier fast thereto, an operating contact stud fast to said contact carrier and operating therewith, a stationary contact carrier formed of insulating material mounted upon said shaft, and a reciprocatory contact stud arranged to slide upon said stationary contact carrier, longitudinally of said shaft, and to make mechanical and electrical contact with said operating contact stud during a portion of the rotation of said contact carrier.

6. In a circuit making and breaking device, a rotary shaft, a contact carrier fast thereto, an operating contact stud fast to said contact carrier and operating therewith, a stationary contact carrier formed of insulating material mounted upon said shaft, a reciprocatory contact stud arranged to slide upon said stationary contact carrier, longitudinally of said shaft, and means to adjust said stationary contact carrier about the axis of said shaft, said operating contact stud constructed to make, during a portion of the rotation of said rotary contact carrier, mechanical and electrical contact with said reciprocatory contact stud.

7. In a circuit making and breaking device, a rotary shaft, a contact carrier fast thereto, an operating stud fast to said contact carrier and operating therewith, a stationary contact carrier formed of insulating material mounted upon said shaft, a reciprocatory contact stud arranged to slide upon said stationary contact carrier, longitudinally of said shaft, a spring acting to move said reciprocatory contact stud longitudinally of said shaft, and means to regulate the distance to which said reciprocatory contact stud can be moved by said spring, said operating contact stud constructed to make, during a portion of the rotation of said rotary contact carrier, mechanical and electrical contact with said reciprocatory contact stud.

8. In a circuit making and breaking device, an axle, a contact carrier pivotally mounted upon said axle, means to adjust said contact carrier about said axle, and a contact stud insulated from and arranged to slide upon said carrier longitudinally of said axle.

9. In a circuit making and breaking device, an axle, a contact carrier pivotally mounted upon said axle, means to adjust said contact carrier about said axle, a contact stud insulated from and arranged to slide upon said carrier longitudinally of said axle, and a spring acting to move said contact stud longitudinally of said axle.

10. In a circuit making and breaking device, an axle, a contact carrier formed of insulating material pivotally mounted upon said axle, means to adjust said contact carrier about said axle, a contact stud arranged to slide upon said carrier longitudinally of said axle, a spring acting to move said contact stud longitudinally of said axle, a contact spring fast to said contact carrier arranged to contact with one end of said contact stud, and a binding post fast to said contact spring.

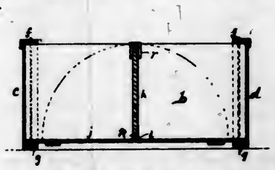
11. A circuit making and breaking device comprising in its construction a contact carrier, a pivot therefor, means to adjust said contact carrier about said pivot, and a contact stud insulated from and arranged to slide upon said carrier longitudinally of said pivot.

852,415. RAIL-JOINT. DRAPER C. BURROUGH, Liverpool, W. Va. Filed Feb. 18, 1907. Serial No. 357,878.



Claim.—A rail-joint comprising a rail having at its end a projecting web and base with a vertically arranged mortise in the end of said web and base, tenons on top of the projecting web; and an abutting rail having a projecting head formed with mortises to receive the first mentioned tenons, and a vertical tenon projecting from the end of the web and base of said abutting rail and entering the vertical mortise of the first mentioned rail.

852,416. FOLDING CRATE OR BOX. JOHN F. BUTCHER, Mount Pleasant, Mich. Filed Nov. 27, 1905. Serial No. 289,291.



Claim.—1. A folding crate or box comprising folding side and end portions, a removable bottom, and a partition jointedly connected with the bottom intermediate its extremities, and means to support the partition in upright position, whereby the partition may be lifted out of engagement with the side portions when the bottom is removed.

2. A folding crate or box comprising side portions and end portions jointedly connected the one with the other, a removable bottom, and a partition jointedly con-

nected with the bottom intermediate its extremities, the side portions being provided at their extremities, respectively, with upright cleats, the end portions provided at the top and bottom thereof respectively with cross-bars, and wires extending lengthwise of said upright cleats from end to end thereof, respectively, the extremities of the wires passed through the ends of the adjacent cross-bars and clenched down thereupon, to form a jointed connection of the side portions with the end portions.

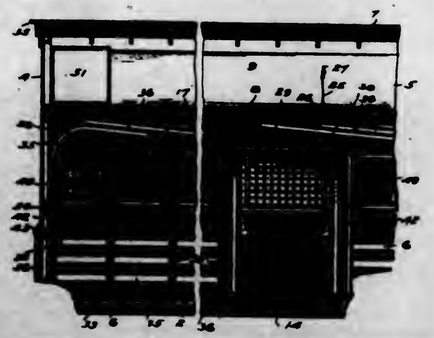
3. A folding crate or box comprising side portions and end portions jointedly connected the one with the other, the side portions being provided at their extremities, respectively, with upright cleats, and the end portions provided at the top and bottom thereof, respectively, with cross-bars, and wires extending lengthwise of said cleats, respectively, the extremities of the wires passed through the ends of the adjacent cross-bars and clenched down thereupon, said cleats grooved on their inner surfaces to receive and conceal said wires to form the jointed connection of the side portions with the end portions.

4. A folding crate or box comprising folding side and end portions, a removable bottom provided intermediate its extremities with wire staples, and a partition kerfed on its lower edge to receive the loops of said staples, pins or nails driven through the edges of the partition and through said staples to form a jointed engagement of the partition with the bottom, the extremities of said staples being clenched underneath said bottom, the partition provided with laterally projecting pins, and the sides of the crate provided with slots open at their upper ends to receive said pins, whereby the partition may be lifted out of the slots when the bottom is removed.

5. A folding crate or box comprising side portions provided with upright cleats and end portions provided with cross bars jointedly connected with the extremities of the adjacent cleats, a removable bottom resting upon the bottom cleats of the end portions, a partition intermediate the extremities of the bottom having a jointed engagement therewith, and a cover constructed with a sliding panel to engage under the upper cross-bars of the end portions.

6. A folding crate or box comprising folding side and end portions, a removable bottom, and a partition jointedly connected with the bottom intermediate its extremities, the partition provided with laterally projecting pins, and the sides of the crate provided with slots open at their upper ends to receive said pins, whereby the partition may be lifted out of said slots when the bottom is removed.

852,417. STOCK-CAR. FRANK CAMPBELL and GEORGE E. WILSON, Stillwater, Minn. Filed May 25, 1906. Serial No. 318,660.



Claim.—1. A stock car having a series of transverse stalls and movable partitions dividing one stall from another, watering troughs hinged at both ends of each stall, whereby the animals can be watered while facing toward either side, the troughs of each stall being movable independently of the other troughs and capable of being tilted to discharge their contents or swung down to a horizontal position for use, a horizontal floor extending above the stalls and spaced from the top of the car and having a series of holes above said troughs, a water tank supported on said floor and a flexible hose attached to said tank and having a nozzle adapted to be thrust down through said holes to fill the troughs.

2. A stock car having a series of transverse stalls and movable partitions dividing one stall from another, watering troughs pivotally supported at both ends of each stall, and hay racks also supported at both ends of each stall whereby the animals can be fed and watered while facing toward either side, each watering trough being movable independently of the other troughs and capable of being tilted to a vertical position to discharge its contents or swung down to a horizontal position for use, a horizontal floor extending from end to end of the car above the stalls and spaced from the top of the car and forming a chamber wherein hay and feed may be stored, said floor having a series of holes above said watering troughs and racks, water tanks provided in said chamber at each end of the car and flexible hose attached to said tanks and having nozzles adapted to be thrust down through said holes to fill said troughs independently of one another, the hose for each tank being of sufficient length to reach all the troughs between that tank and the middle of the car, substantially as described.

3. A stock car having a series of transverse stalls and movable partitions dividing one stall from another, watering troughs hinged at both ends of each stall, whereby the animals can be watered while facing toward either side, the troughs of each stall being movable independently of all the other troughs and capable of being tilted to a vertical position to discharge their contents, or swung down to a horizontal position for use, a horizontal floor supported above said stalls and spaced from the car roof and forming a chamber wherein feed and water may be kept, said floor having a series of holes above said troughs, a water tank mounted on said floor, a flexible hose attached thereto and adapted to be thrust down through said holes to fill said troughs, rods pivotally attached to said troughs and projecting up through holes in said floor, and means whereby said rods may be locked when raised to support the said troughs in their dumping position.

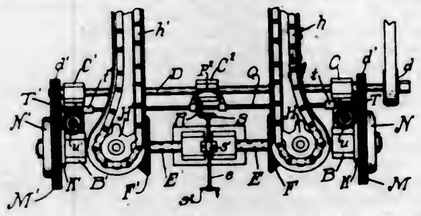
4. A stock car having a series of transverse stalls and movable partitions dividing one stall from another, said partitions consisting of slats or bars, and sprocket chains connecting them one with another at the ends, vertical channel bar guides for said slats mounted on the sides of the car and in which guides said chains move, shafts having bearings in the upper walls of the car, sprocket wheels mounted on said shafts and arranged to engage said chains, a portion of one of the flanges of each bar near the top of the car being bent outwardly to expose the chains and permit the engagement of the sprocket wheels therewith, the ends of said shafts projecting through the car walls on one side and provided with suitable ratchet devices and having squared ends to receive an operating crank for raising or lowering said partitions.

5. A stock car having a series of transverse stalls and movable partitions dividing one stall from another, said partitions consisting of slats or bars and sprocket chains connecting them one with another at the ends, vertical channel bar guides for said slats at the sides of the car and in which guides said chains move, shafts having bearings in the upper walls of the car, sprocket wheels mounted on said shafts and arranged to engage the chains connecting said slats, a portion of one of the flanges of each guide bar being bent outwardly to expose the chain therein and permit the engagement of the sprocket wheels therewith, a series of idle wheels mounted on the outwardly bent portions of said flanges and engaging said slats and means for operating said shafts to raise or lower said partitions.

6. A stock car having a series of transverse stalls and movable partitions dividing one stall from another, watering troughs hinged in said stalls, the troughs of each stall being movable independently of the other troughs and capable of being tilted to discharge their contents or swung down to a horizontal position for use, a horizontal floor extending above the stalls and spaced from the top of the car and having a series of holes above said troughs, a water tank supported on said floor, and a hose attached to said tank and having a nozzle adapted to be thrust down through said holes to fill the troughs.

7. A stock car having a series of transverse stalls and movable partitions dividing one stall from another, watering troughs pivotally supported in said stalls, and hay racks also supported in said stalls, each watering trough being movable independently of the other troughs and capable of being tilted to a vertical position to discharge its contents or swung down to a horizontal position for use, a horizontal floor extending above the stalls and spaced from the top of the car and forming a chamber wherein hay and feed may be stored, said floor having a series of holes above said watering troughs and racks, a water tank supported on said floor, and a hose attached to said tank and having a nozzle adapted to be thrust down through said holes to fill the troughs, and said holes being of sufficient size to permit hay to be thrust therethrough into said racks, whereby each animal in the car can be fed and watered independently of the other animals in the car.

852,418. TENTERING-MACHINE. WILLIAM A. CHURCH, Providence, R. I. Filed Mar. 3, 1906. Serial No. 303,997.



Claim.—1. In a tentering machine the combination with the chain wheels and chains, of eccentric means on the driving shaft of said wheels actuating the chain wheels for imparting any desired alternating speed of the chains relatively to each other.

2. In a tentering machine the combination with the chain wheels and chains, of eccentric means on the driving shaft of said wheels actuating the chain wheels for imparting to the chains simultaneously a positive movement in the same direction with variable speed as they advance.

3. In a tentering machine, the combination with the wheels and chains of a divided driving shaft, and devices on the shaft adjustable with respect thereto for imparting to one of the chains a constant, and to the other chain an intermittent motion.

4. In a tentering machine the combination with stationary side rails, of chain wheels above the side rails, chains on the wheels, and eccentric means independent of the side rails and actuating the chain wheels for varying the speed of the chains.

5. In a tentering machine the combination with a stationary side rail, chain wheels above the side rail, chains on the wheels, a divided driving shaft, and operative connections between the driving shaft and chain wheels, of mechanism eccentric to and upon the driving shaft for imparting irregular rotation to the shaft.

6. In a tentering machine the combination with the chain wheels and chain, of a fixed side rail, a divided driving shaft transversely arranged to said chains, power transmitting connections between said driving shaft and chain, a driving wheel upon the driving shaft, eccentric means on the driving shaft for actuating the chain wheels to impart to the chains any desired alternating speed relatively to each other and suitable means for rotating the driving wheel.

7. In a tentering machine the combination with the driving shaft, a chain wheel, a chain upon the wheel, a driving wheel upon the driving shaft, and suitable eccentric means for imparting to the driving wheel a rotary motion of variable velocity.

8. In a tentering machine, the combination with the stationary side rails, the chain wheels and the chains, of means for actuating said chains to give varying motions thereto, the same comprising a driving shaft, an adjustable arm provided with a segmental slot through which the driving shaft passes, a bearing upon the face of the arm around the slot, a gear loosely mounted upon the bearing, a driving wheel upon the shaft adjacent the gear, a pin connecting the driving wheel and gear, and means for driving the gear.

9. In a tentering machine the combination with the chain wheels, chain, driving shaft, and power transmitting connections between the driving shaft and chain, of an adjustable arm provided with a slot through which the driving shaft passes, a bearing upon the face of the arm around the slot, a gear rotatably mounted upon the bearing, a driving wheel upon the shaft, means for engaging the gear and driving wheel, and means for driving the gear.

10. In a tentering machine, the combination with the stationary side rails, the chain wheels and the chains, of means for actuating said chains to give varying motions thereto, the same comprising a power shaft, a pinion fixed thereon, a driving shaft, an arm loosely pivoted on the power shaft provided with a segmental slot and a bearing upon its face around the slot, a gear loose upon the bearing and meshing with the pinion, a wheel fixed to the driving shaft, and a pin connecting the gear and wheel.

11. In a tentering machine, the combination with the stationary side rails, the chain wheels and the chains, of means for actuating said chains to give varying motions thereto, the same comprising a driving shaft, an adjustable arm provided with an oblong slot through which the driving shaft passes, a bearing upon the arm around the slot, a gear loosely mounted upon the bearing and provided with a radial slot, a driving wheel upon the shaft adjacent the gear provided with a radial slot, a pin adjustably mounted in the slot of the gear and registering in the slot of the wheel, and means for driving the gear.

12. In a tentering machine, the combination with the stationary side rails, the chain wheels and the chains, of means for actuating said chains to give varying motions thereto, the same comprising a power shaft, a pinion fixed thereon, a driving shaft, an adjustable arm loosely pivoted on the power shaft, provided with a vertically disposed segmental slot and a bearing around the slot, a gear loose upon the bearing, and meshing with the pinion, a wheel fixed to the driving shaft, a pin connecting the gear and wheel, and means for vertically adjusting the arm in relation to the driving shaft.

13. In a tentering machine the combination with the chain wheels and chain, of a driving shaft, power transmitting connections between said driving shaft and chain, a power shaft, a pinion fixed on the power shaft, an adjustable arm loosely pivoted on the power shaft provided with an oblong slot and a bearing around the slot, a gear loosely mounted upon the bearing and meshing with the pinion, a wheel fixed to the driving shaft, a pin connecting the gear and wheel, and means for adjusting the arm in relation to the driving shaft.

14. In a tentering machine the combination with two sets of chain wheels and chains, of a divided driving shaft, power transmitting connections between each section of the driving shaft and the respective chains, eccentric devices upon each shaft section for imparting an independent variable rotary motion to each shaft, and means for regulating the relative degree of variance in the rotation of the sections.

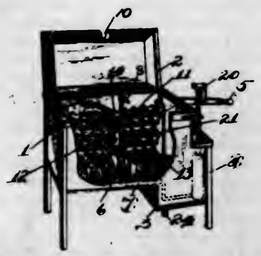
15. In a tentering machine the combination with two sets of chain wheels and chains, of a divided driving shaft for actuating each set of chains, eccentric devices upon each shaft section for imparting an independent variable rotary motion to each shaft, and means for regulating the relative degree of variance in the rotation of the sections.

16. In a tentering machine, the combination with the stationary side rails, the chain wheels and the chains, of means for actuating said chains to give varying motions thereto, the same comprising a power shaft, a pinion fixed thereon, a driving shaft, an arm loosely pivoted to the power shaft provided with a vertically disposed oblong slot and a bearing around the slot, interspaced lugs also upon the arm, a gear loosely mounted upon the bearing

and meshing with the pinion, a wheel fixed to the driving shaft, a pin connecting the gear and wheel, a vertical threaded rod rotatably mounted adjacent the said arm, a threaded block loosely mounted upon the rod and engaging the lugs, a worm wheel fixed to the rod, a worm engaging the worm wheel, a shaft upon which the worm is mounted, and means for rotating the worm shaft.

17. In a tentering machine, the combination with the stationary side rails, the chain wheels and the chains, of means for actuating said chains to give varying motions thereto, the same comprising a power shaft, a pinion fixed thereon, a driving shaft, an arm loosely pivoted to the power shaft provided with a verically disposed oblong slot and a bearing, interspaced lugs also upon the arm, a gear upon the bearing and meshing with the pinion, a pin connecting the gear and wheel, a vertical threaded rod rotatably mounted adjacent the arm, a threaded block mounted upon the rod and engaging the lugs, a worm wheel fixed to the rod, a worm engaging the worm wheel, a transverse shaft in alinement with the worm, a clutch upon the transverse shaft adapted to engage the worm, and means for rotating said transverse shaft.

852,419. DISH-WASHING MACHINE. JOSEPHINE G. COCHRANE, Chicago, Ill. Filed Sept. 8, 1905. Serial No. 277,505.



Claim.—1. In a dish washing machine, the combination of a casing for containing the articles to be washed, a rack situated in said casing comprising sections adjustably mounted with relation to each other, said sections embodying standards and horisontal bars adapted to co-operate with corresponding bars in adjacent section for the purpose of holding cups or the like, and means for directing a sheet of water toward said rack.

2. In a dish washing machine, the combination of a casing for containing the articles to be washed, a rack situated in said casing, comprising standards, horisontal bars mounted in said standards and adapted to hold cups or the like therebetween, and means for adjusting the relation of said bars with each other.

3. In a dish washing machine, the combination of a casing for containing the articles to be washed, a rack situated in said casing comprising standards, two pairs of horisontal bars connecting said standards together and being situated in inclined planes converging downwardly, the bars of one of said pairs being arranged closer together than the bars of the other, for holding a cup or the like with its upper end in a downwardly-presented position, the said standards embodying two upright supports, each of said upright supports carrying one pair of said horisontal bars, means for holding said supports in adjustable relation with each other, and means for directing a sheet of water toward the rack.

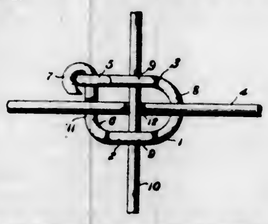
4. In a dish washing machine, the combination of a casing containing the articles to be washed, a stand-pipe arranged in said casing at one side thereof, a rack situated in said casing at the opposite side thereof, a nozzle rotatably mounted on the upper end of the stand-pipe, said nozzle adapted to project a vertical sheet or stream of water onto the said rack, said sheet or stream being of sufficient width in its rotative positions to reach from the lowermost to the uppermost portions of said rack, and means for forcing water into said stand-pipe.

5. In a dish washing machine the combination of a casing for containing the articles to be washed, a lid for closing said casing, provided with an open-sided aperture in the edge thereof, a stand pipe arranged in said casing in a position to coincide with said aperture, a nozzle rotatably mounted on the upper end of the stand pipe and provided with a handle projecting through said aperture when the lid is closed, said nozzle having a discharge protuberance extending in a horizontal direction below the lid, and means for forcing water into said stand pipe.

6. In a dish washing machine the combination of a casing for containing the articles to be washed, a rack situated in said casing and comprising standards, two pairs of horizontal bars connecting said standards together and being situated in inclined planes converging downwardly, the bars of one of said pairs being arranged closer together than the bars of the other, for holding a cup or the like with its upper end in a downwardly presented position, and means for directing a sheet of water toward said rack.

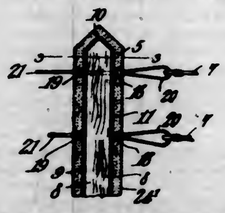
7. In a dish washing machine, the combination of a casing containing the articles to be washed, a rack at one side thereof, a stand-pipe at the opposite side thereof, means rotatively mounted on said stand-pipe for projecting a sheet or film of water in vertical planes onto said rack, said sheet or film being of sufficient width to reach from the bottom to the top of said rack, a compartment formed at one end of said casing, the bottom thereof being below the level of the bottom of said casing, and means within said compartment for forcing water into said stand-pipe.

852,420. TIE FOR WIRE FENCES. CHARLES B. CONANT, Adrian, Mich., assignor of one-half to Frederick A. Grabner, Adrian, Mich. Filed Feb. 25, 1907. Serial No. 359,171.



Claim.—In a fence the combination with a stay and a line wire, said wires being crimped in opposite directions at their point of intersection; of a substantially U-shaped tie wire having its arms substantially parallel and crimped in the same direction, one of said arms terminating in a hook, and a crimped extension projecting at right angles from the other arm and terminating in a hook, the two hooks interlocking, the crimped extension and the crown of the tie extending over one face of the line wire and the crimped arms of the tie extending over the opposite face of the stay wire.

852,421. FENCE-POST. ALEXANDER C. DAVIS, Battle Ground, Ind. Filed Feb. 27, 1907. Serial No. 359,578.



Claim.—1. A fence post including a metal casing, a fiber core disposed within the casing and plastic material surrounding said casing.

2. A fence post including a metal casing, a fiber core disposed within the casing, a concrete jacket surrounding said casing, and wire fastening devices engaging the casing and embedded in the concrete.

3. A fence post including a metal casing, a core disposed within the casing, a plastic jacket surrounding said casing, and wire fastening devices encircling the casing and having their opposite ends extended laterally beyond the plastic jacket.

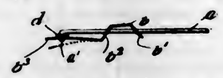
4. A fence post including a metallic casing provided with laterally extending sockets, a solid core disposed within the casing, a plastic jacket surrounding the casing, and lateral braces seated in the sockets.

5. A fence post including a metal casing, a core disposed within the casing, a cement jacket enveloping the casing, and wires embracing the casing and having their terminals extending laterally beyond the plastic jacket and bent to form wire engaging devices.

6. A fence post including a metal casing, a wood core disposed within the casing, a cement jacket surrounding the casing, and wire fastening devices engaging the casing and each extended laterally on one side of the post to form a loop and on the opposite side to form spaced wire engaging arms.

7. A fence post including a metal casing, a wood core disposed within the casing, a plastic jacket surrounding the casing, and fastening devices each formed of a single piece of wire having an intermediate portion thereof embracing the casing and its opposite ends intertwisted and embedded in the cement, one end of the wire being bent to form a loop and the opposite end thereof extended to form spaced wire engaging arms.

852,422. SPRING-CATCH. THOMAS DANQUARD, New York, N. Y., assignor to The Autopiano Co., New York, N. Y., a Corporation of New York. Filed July 2, 1906. Serial No. 324,407.



Claim.—1. A spring catch comprising a resilient strip having two portions located at an angle to each other and each provided with a perforation, and a perforated tongue projecting from one of said portions, the first mentioned perforations being adapted to receive a straight wire, and the third, a projection at an angle from the wire.

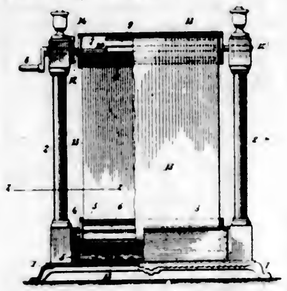
2. A spring catch comprising a resilient strip of metal having two portions located at an angle with respect to each other, each being provided with a perforation, said perforations being normally out of alinement with each other, and a tongue projecting from one of said perforations and having a perforation near its end, the angle between said portions being such that when a straight wire is passed through the perforations therein the two portions will be forced to assume a more acute angle with respect to each other than that which they formerly maintained.

3. In a spring catch, the combination of a straight wire having a hook extending therefrom, and a resilient strip of metal having two perforated portions located at an angle to each other, the perforations being so located with respect to each other that when said strip is threaded on said wire the two portions thereof will assume a more acute angle with respect to each other and a tongue extending from one of said portions and having a perforation adapted to receive the hook on said wire, the ordinary resiliency of said tongue normally forcing the perforation therein toward the body of the wire.

4. The combination of a wire having a hook at the end thereof, a strip of steel of clock-spring temper having two portions provided with perforations threaded on said wire and having tension thereon, a tongue constituting a part of said steel strip and having a perforation for receiving said hook, and a lever having a perforation threaded on said hook between the body of the wire and said tongue, the resiliency of the tongue tending to hold the lever against the body of the wire.

5. The combination of a wire having a hook with a spring having two portions provided with perforations through which the wire extends, said spring having tension on the wire and having a tongue constituting a part of the spring and provided with a perforation for receiving said hook, and a lever having a perforation through which said hook passes, the lever being located between the wire and said tongue, the resiliency of the tongue tending to hold the lever against the body of the wire.

852,423. AIR-PURIFYING DEVICE. CHARLES E. DRESSLER and ROBERT DRESSLER, New York, N. Y. Filed May 14, 1905. Serial No. 250,040.



Claim.—1. In an air purifying device, a tank, an endless belt of fabric, a lower cylinder carried therein, an upper cylinder with many openings, a shaft therefor, means within the upper cylinder for rotating it around its shaft, a fan carried within the upper cylinder upon the same shaft and means within said cylinder to rotate said fan simultaneously with said cylinder at greater speed than the cylinder rotates.

2. In an air purifying device, an endless belt of fabric, a driving cylinder, a shaft therefor, a spring having one end secured to the cylinder and the other to the shaft, a rotating fan within said cylinder carried on said shaft and means within said cylinder whereby the unwinding of said spring rotates said cylinder and also rotates said fan simultaneously at greater speed.

3. In an air purifying device, an endless belt of fabric, a driving cylinder therein provided with openings, a fan within the driving cylinder, means to rotate the driving cylinder, and means to rotate simultaneously the fan.

852,424. SECONDARY BATTERY. THOMAS A. EDISON, Llewellyn Park, Orange, N. J., assignor to Edison Storage Battery Company, Orange, N. J., a Corporation of New Jersey. Filed Nov. 28, 1902. Serial No. 133,112.

Claim.—1. In a storage battery, a rectangular receptacle or can one or more of whose walls are provided with panels of transverse corrugations entirely surrounded by plane metal, substantially as set forth.

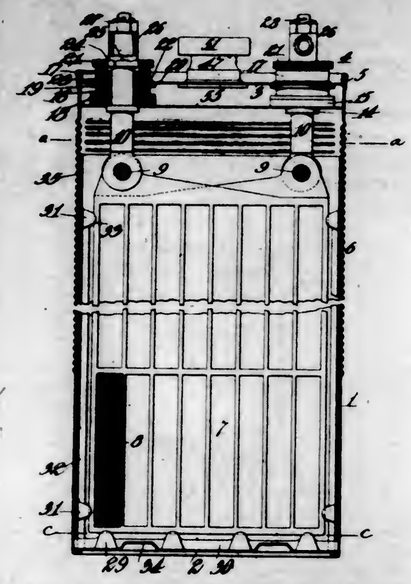
2. In a storage battery, a rectangular receptacle or can one or more of whose walls are provided with panels of transverse corrugations in the form of connected waves, said panels being surrounded by plane metal, substantially as set forth.

3. In a storage battery, the combination of a can, a plurality of plates therein, an insulating support for the bottom edges of said plates and means which exert a compressing stress upon said plates in a vertical direction, substantially as set forth.

4. In a storage battery, the combination of a can, a plurality of plates therein, an insulating support for the bottom edges of said plates and adjustable means for exerting any desired compressing stress upon said plates in a vertical direction, substantially as set forth.

5. In a storage battery, the combination of a can, a plurality of plates therein, an insulating support for the

bottom edges of said plates and adjustable means coöperating with the can for exerting any desired compressing stress upon the plates in a vertical direction, substantially as set forth.



6. In a storage battery, the combination of a can, a plurality of plates therein, an insulating support for the bottom edges of said plates, and adjustable means coöperating with the can and electrically insulated therefrom for applying any desired downward pressure upon said plates, substantially as set forth.

7. In a storage battery, the combination of a can having a threaded opening, a plurality of plates, a conductor connected to said plates and extending through said opening, a washer surrounding the conductor in the opening and a nut threaded into the opening and engaging the washer to expand it diametrically, substantially as set forth.

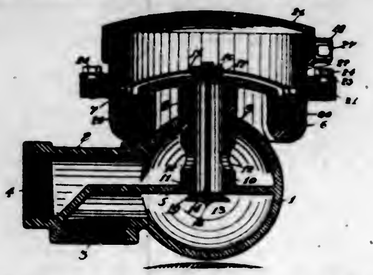
8. In a storage battery, the combination of a can, a plurality of plates therein, a conductor connected to said plates and extending through the top of the can, a packing surrounding said conductor, and means for compressing said packing and simultaneously pressing the plates downward, substantially as set forth.

9. In a storage battery, the combination of a can, a plurality of plates therein, a conductor connected to said plates and extending through the top of the can, a packing surrounding said conductor, a nut for compressing said packing, and a terminal engaging said conductor and interlocking the said nut to prevent rotation of the latter, substantially as set forth.

10. In a storage battery, the combination of a can, a series of plates in said can, a series of insulating bars supporting the plates and extending transversely thereto, and adjustable means for exerting a compressing stress upon said plates in a vertical direction, substantially as set forth.

852,425. GAS-GOVERNOR. FRANKLIN ELLIS, San Francisco, Cal. Filed Mar. 16, 1906. Serial No. 306,380.

Claim.—1. In a gas-governor, a globular, hollow body provided with an opening at one point and an inlet and an outlet at another, and having a flat, perforated partition for separating the inlet and the outlet and dividing the body into two chambers, a perforated tube through the opening in the body and provided with a shoulder and fitting in said partition at its lower end, a packing between the shoulder and the partition, a rod through the tube provided with a valve at its lower end, and means connected with the upper end of the rod for automatically controlling the movements of the rod by the gas pressure.

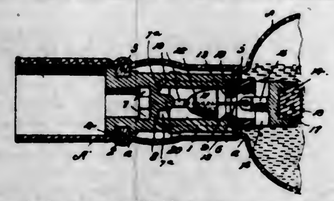


2. In a gas-governor, a hollow body, a vessel detachably secured thereto provided with a perforated bottom having a groove around its edge, and a depending perforated tube, a cover for the vessel, a sealing liquid in the groove, a plurality of cups of different diameters, one within the other and having their edges in said liquid, one of said edges being provided with a corrugation, a rod from said cups through the perforation in the bottom and through the tube, and a valve in the lower end of the rod for controlling the entrance of gas to the tube.

3. In a gas-governor, a hollow body, a vessel having its bottom perforated and raised in the center to form with its side an annular channel depending below said central bottom, and having a tube extending from the perforation of the bottom, and entering said hollow body at a point above the bottom of said channel, a movable member in said vessel, a rod depending therefrom through said perforation and tube, and a valve at the lower end of the rod for controlling the entrance of gas to said tube, substantially as described.

4. In a gas-governor, a hollow body, a vessel having a perforated bottom, a peripheral channel, a tube extending from said perforation of said bottom into said body and a flange, a movable member in said vessel, a rod connected with said member and extending through said tube, a valve connected to the lower end of said rod to control the passage of gas to said tube, and a guard having a flange adapted to register with the flange of the vessel, said flanges meeting in a plane near the top of said tube, whereby said member may be either a float or a diaphragm, substantially as described.

852,426. BOTTLE. HOMER A. EVEREST, Mattapoisett, Mass. Filed Dec. 21, 1906. Serial No. 349,001.

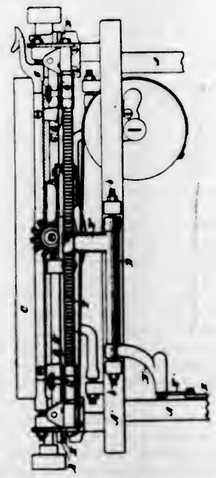


Claim.—1. In a non-refillable bottle, the combination of a case adapted to fit within the neck of a bottle and provided in its lower end with a valve seat, a buoyant valve adapted to rest upon said seat, a flexible suspension member connected to said valve and extending through the valve seat, and a float connected to said suspension member and provided with a central pin and a series of radial ribs adapted to rest upon the outer edge of the valve seat so as to permit the liquid to flow in an outward direction through the valve seat and past the valve, as and for the purpose set forth.

2. In a non-refillable bottle, the combination of a tubular casing within the neck of a bottle, said casing being provided in its lower end with a valve seat, a cork valve adapted to fit on said seat and provided at its outer end with a button, a suspension member connected to said button and extending through the valve and also through the valve seat, a float provided with a central pin secured to the outer end of said suspension member and with a series of radial ribs extending from said pin, the portion of the pin and the length of the suspension member being such that when the valve is on its seat, said float will hang in an oblique position with respect to the plane of the valve seat.

3. In a non-refillable bottle, the combination of a bottle neck provided at its base with a shoulder and having a bead above said shoulder, a tubular case provided near its upper edge with an annular recess and a cork band fitting in said recess and arranged for locking engagement with said bead, the case being provided near its lower end with a downwardly facing shoulder, and a cork band encircling its lower end and resting against said shoulder and adapted to be pressed into engagement with the bottle neck above the shoulder of the latter, a ring-like valve seat having a detachable connection with the lower end of said valve seat, with a tapering cork valve adapted to rest on said seat, a suspension cord secured to said valve and passing through said seat, and a float, the body of which is provided with a central pin secured to the suspension cord and with a series of radial ribs extending outwardly from said pin, and also provided with a socket in its outer face, and a buoyant element held in said socket.

852,427. CARRIAGE-STOP MECHANISM FOR TYPEWRITING MACHINES. WILLIAM R. FOX and GLENN J. BARRETT, Grand Rapids, Mich., assignors to Fox Typewriter Co. Ltd., Grand Rapids, Mich. Filed Dec. 6, 1902. Serial No. 134,109.



Claim.—1. In a typewriting machine, a marginal adjusting device consisting of the combination of the rack F having teeth or notches upon one side and bearing a graduated scale, supported at the rear of the typewriter carriage and parallel with the line of travel thereof; a plurality of slidable stops mounted upon said rack F, consisting of the shells G formed of sheet metal to fit said rack F, pawls or dogs G' pivotally mounted in said shells having a projection or stopping portion G''' at one end, and at the other teeth adapted to fit the teeth or notches in said rack F, springs attached to said pawls G' to hold the same normally in engagement with said rack; finger pieces g the lower extremity of which acts as the pivot for the said dogs G'; the rock shaft D mounted upon the top-plate of the typewriting machine; having an upwardly projecting portion D'' which is normally in the line of travel of the said projection G''', said portion D'' being adapted to swing out of the line of travel of the said dogs G'; and connection between said rock shaft D and a bell crank E carrying the finger button E' and pivoted to the side of the typewriter frame, all coacting for the purpose specified and substantially as specified.

2. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and bearing a graduated scale, supported at the rear of the typewriter carriage parallel with the line of travel thereof; and having a plurality of slidable stops thereon consisting of shells made of sheet metal formed to fit said rack; pawls or dogs pivotally mounted in said shells such pawls having a projection or stopping portion at one end, and at the other, teeth adapted to fit the teeth or notches in said rack and a spring attached to said pawls or dogs to hold same normally in engagement with said rack; a suitable finger piece for said slidable stop the lower extremity of which acts as a pivot for said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top-plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity, said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified and substantially as described.

3. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches, supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon consisting of shells made of sheet metal formed to fit said rack; pawls or dogs pivotally mounted in said shells, such pawls having a projection or stopping portion at one end, and at the other teeth adapted to fit the teeth or notches in said rack and a spring attached to said pawls or dogs to hold the same normally in engagement with said rack; a suitable finger piece for said slidable stops, the lower extremity of which acts as a pivot for the said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top-plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops and adapted to swing back out of the line of travel of said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified, and substantially as described.

4. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon, consisting of shells made of sheet metal formed to fit said rack; pawls or dogs pivotally mounted in said shells, such pawls having a projection or stopping portion at one end, and at the other teeth adapted to fit the teeth or notches in said rack; a suitable finger piece for said slidable stops the lower extremity of which acts as a pivot for the said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top-plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of the said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified and substantially as described.

5. In a typewriting machine a marginal adjusting device consisting of the combination of a rack having teeth or notches, supported at the rear of the typewriter car-

riage parallel with the line of travel thereof and having a plurality of slidable stops thereon, consisting of shells made of sheet metal formed to fit said rack; pawls or dogs pivotally mounted in said shells; a suitable finger piece for said slidable stops, the lower extremity of which acts as a pivot for the said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity said bell crank being pivoted at one side of the typewriter frame, all coacting for the purpose specified and substantially as described.

6. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon; a suitable finger piece for said slidable stops, the lower extremity of which acts as a pivot for the said pawls or dogs, in the said shell; a pivoted stop means mounted upon the top-plate of the typewriting machine, said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of the said slidable stops, and connections between said pivoted stop means and a bell crank carrying a finger button at one extremity said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified, and substantially as described.

7. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches supported at the rear of the typewriter carriage parallel with the line of travel thereof and having a plurality of slidable stops thereon; a suitable finger piece for each of said slidable stops; a pivoted stop means mounted upon the top-plate of the typewriting machine, its axis of rotation being parallel with said rack; said stop means having an upwardly projecting portion which is normally in the line of travel of the said slidable stops, and adapted to swing back out of the line of travel of said slidable stops, and connections between said pivotal stop means and a bell crank carrying a finger button at one extremity, said bell crank being pivoted to the side of the typewriter frame, all coacting for the purpose specified and substantially as described.

8. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack, a suitable finger piece for said slidable stops; a pivoted stop means mounted upon the top-plate of a typewriting machine, its axis of rotation being parallel with said rack; said stop means having an upwardly projecting portion which is normally in the line of travel of said slidable stops, and means for throwing said upwardly projecting portion of said pivoted stop means back out of the line of travel of said slidable stops, substantially as described.

9. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack; a pivoted stop means mounted upon the top-plate of a typewriting machine its axis of rotation being parallel with said rack; said stop means having an upwardly projecting portion which is normally in the line of travel of said slidable stops, and means for throwing said upwardly projecting portion of said pivoted stop means back out of the line of travel of said slidable stops, substantially as described.

10. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack; a stop means mounted upon the top-plate of a typewriting machine its axis of rotation being parallel with said rack; said stop means having an upwardly projecting portion which is normally in the line of travel of said slidable stops, and means for throwing said upwardly projecting portion of said pivoted stop means back out of the line of travel of said slidable stops, substantially as described.

11. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack; a stop means mounted upon the top-plate of a typewriting machine its axis of rotation being parallel with said rack; said stop means having a projecting portion which is normally in the line of travel of said slidable stops, and means for throwing said projecting portion of said pivoted stop means out of the line of travel of said slidable stops, substantially as described.

12. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a plurality of slidable stops mounted upon said rack, a rock shaft D parallel with said rack and supported at the back of the frame of the machine, adjusting pivot screws *b b* at each end of said rock shaft, whereby the same can be adjusted longitudinally, a stop on said rock shaft arranged to project normally into engagement with the said adjustable stops, and connections to a key lever for actuating the rock shaft to release the stop mechanism.

13. In a typewriting machine, a marginal adjusting device consisting of the combination of a rack having teeth or notches and supported at the rear of the typewriter carriage parallel with the line of travel thereof, a slidable stop mounted upon said rack, a rock shaft D parallel with said rack and supported at the back of the frame of the machine by longitudinally adjustable bearings, a stop on said rock shaft arranged to project normally into engagement with the said adjustable stop, and means for actuating the rock shaft to release the stop mechanism.

14. In a typewriting machine, a margin adjusting slide consisting of the combination of a shell G of sheet metal formed in U-shape, the dog or pawl G′ pivotally mounted in said shell, said dog having a stopping portion G‴ at one end and a point, or series of points, at the other, a spring G″ for holding said dog or pawl in normal position, and a finger piece attached to said dog, and projecting beyond the shell, the lower portion of which serves as a pivot for the said dog, or pawl, substantially as described.

15. In a typewriting machine, a margin adjusting slide consisting of the combination of the shell of sheet metal formed in U-shape, a dog or pawl pivotally mounted in said shell said dog or pawl having a stopping portion at one end, and a point or series of points at the other, a spring for holding said dog or pawl normally in position, and a finger piece attached to said dog and projecting beyond said shell substantially as described.

16. In a typewriting machine, a margin adjusting slide consisting of the combination of a shell in U-shape, a dog or pawl pivotally mounted in said shell, said dog or pawl having a stopping portion at one end, and a point or series of points at the other, a spring for holding said dog or pawl normally in position, and a finger piece attached to said dog and projecting beyond said shell substantially as described.

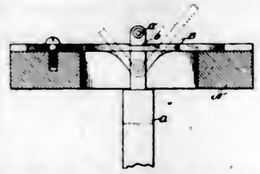
17. In a typewriting machine a margin adjusting slide consisting of the combination of a shell in U-shape, a dog or pawl mounted in said shell, said dog or pawl having a stopping portion at one end, and a point or series of points at the other, a spring for holding said dog or pawl normally in position, and a finger piece attached to said dog and projecting beyond said shell, substantially as described.

18. In a typewriting machine, a margin adjusting slide consisting of the combination of a shell in U-shape, a dog or pawl mounted in said shell, said dog or pawl having a stopping portion at one end, and a point or series of points at the other, a spring for holding said dog or pawl normally in position, substantially as described.

19. In a typewriting machine, the combination of a rack or bar; a slide mounted thereon carrying a stopping dog or pawl for engaging said rack pivotally mounted in said slide at a point out of line with the portion of said dog or pawl which stop the carriage, and the rack engaging portion thereof, substantially as described.

20. In a margin stop for typewriters, the combination with a notched bar or rack, of a stop consisting of a piece of sheet metal folded to conform to the said bar with a projecting portion to form the stop, a portion of the plate being turned at substantially right angles to the said rack and projecting to engage the teeth or notches whereby the stop can be readily attached or detached by crowding it onto the rack, as specified.

852,428. TYPE-BAR AND HANGER AND METHOD OF CONSTRUCTING SAME. WILLIAM R. FOX, Grand Rapids, Mich. Filed June 7, 1906. Serial No. 320,673.



Claim.—1. The combination with a type bar C with laterally extending pivots therefor, of a hanger folded about and conformed to the said pivots and adapted to be adjusted thereon, the same being folded and conformed onto the pivots, with the typebar arranged at the angle of the position of rest, whereby irregularities of the pivot are impressed into the bearing and are utilized for securing a tight joint at the printing point and a free pivoting at other points, as specified.

2. The combination with a type-bar C with laterally extending pivots therefor, of a hanger folded about and conformed to the said pivots with the typebar arranged at the angle of the position of rest, whereby the irregularities of the pivots are impressed into the bearing and are utilized for securing a tight joint at the printing point and a free pivoting at other points, as specified.

3. The combination with a typebar C with laterally extending pivots therefor, of a hanger folded about and conformed to the said pivots, whereby the bearing is accurately conformed to the pivots; as specified.

4. The method of forming a hanger and typebar in conjunction, consisting in forming a flat blank from sheet metal, bifurcated, with recesses to receive a laterally projecting pivot on the typebar, partially folding the said blank by means of a plunger and enlarged pivots by drawing the said pivots against the recessed part, then substituting the typebar with its pivots and connecting a plunger to the short arm of the typebar and drawing the blank into a recess so that it is folded by the pressure of the pivot in the recess, the said typebar being arranged at the angle of rest during the process, as specified.

5. The method of forming a hanger and typebar in conjunction, consisting in forming a flat blank from sheet metal, bifurcated, with recesses to receive a laterally projecting pivot on the typebar; partially folding the said blank by means of a plunger and enlarged pivots by drawing the said pivots against the recessed part, then substituting the typebar with its pivots and connecting a plunger to the short arm of the typebar and drawing the blank into a recess so that it is folded by the pressure of the pivot in the recess, as specified.

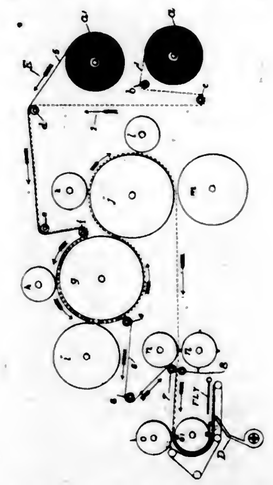
6. The method of forming a typebar and hanger, consisting in stamping a flat blank, bifurcated, with recesses for receiving the opposite ends of the pivot, and engaging the pivot of the said typebar in said recess and compressing the hanger into a suitable forming die by compressing the pivot against the same, the said typebar being arranged at the angle of rest during the process, co-acting as specified.

7. The method of forming a typebar and hanger, consisting in stamping a flat blank, bifurcated, with recesses for receiving the opposite ends of the pivot, and engaging the pivot of the said typebar in said recess and compressing the hanger into a suitable forming die by compressing the pivot against the same, co-acting for the purpose specified.

8. The method of forming a hanger around a pivot in a typebar, consisting in stamping a flat blank bifurcated with recesses for receiving the opposite ends of the pivot and engaging the pivot, the hanger being folded around said pivot, forming a bearing for the same, as specified.

9. The method of forming a hanger consisting in folding the bifurcated hanger around a pivot, whereby the bearing is accurately conformed to the pivot as specified.

852,429. PRESS. ORLANDO S. GAUCH, Shelby, Ohio, assignor to The Shelby Printing Company, Shelby, Ohio, a Corporation. Filed June 2, 1905. Serial No. 263,470.



Claim.—1. In a printing press having means to print, number and perforate a series of leaves for sales books, a drum having a tissue web mounted thereon, idlers arranged to carry and transmit said tissue web in close contact with the ordinary paper web, means to divert the travel of the tissue web to omit perforating, means for again bringing the tissue web in close contact with the paper web, a fly, means for directing a current of air slantingly against the tissue sheet keeping it in contact with the paper sheet and to counter-act the suction or vacuum caused by the upward stroke of the "fly."

2. In a printing press adapted to prepare a series of leaves for use in the manufacture of sales or order books, a drum carrying a tissue web, a drum carrying a paper web idlers so arranged as to transmit said tissue web partially through the press with the paper web and displacing the air between them, perforating rolls, means for diverting the travel of the webs to permit the perforation of the paper web and avoid perforating the tissue web, means to bring the webs together before delivery, means to direct the impact of air currents against the tissue sheet, forcing it in close contact with the paper sheet.

3. In a printing press of the rotary type having means to print, number and perforate leaves for sales or order books, drums having tissue and paper webs mounted thereon, means to feed said tissue and paper webs through the press to prepare said paper for use, idlers arranged to carry and transmit said paper and tissue webs together

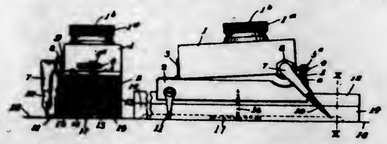
and in divergent paths in such a manner as to omit perforating the tissue sheet, and to bring said sheets together before delivery, means for directing an air current against the tissue sheet to impinge it against the paper sheet substantially as described and set forth.

4. In a printing press of the rotary type having means to print, number and perforate leaves for sales or order books, drums having tissue and paper webs mounted thereon, means to feed said tissue and paper through the press to prepare said paper for use, idlers arranged to carry and transmit said paper and tissue webs together and in divergent paths in such a manner as to omit perforating the tissue sheet, means to deliver said sheets.

5. In a press for preparing sales books printing, numbering and perforating rolls, means for feeding webs of paper together to said printing and numbering rolls, means for diverting one web to the perforating rolls, and means for diverting the other of said webs away from the perforating rolls to avoid perforation thereof, and means for subsequently bringing said webs together for delivery.

6. In a rotary printing press adapted for use in preparing leaves for use in sales books, printing, numbering, and perforating mechanism drums having rolls of paper mounted thereon, means for feeding said webs together to the press, means for diverting one of the said webs from the other in order to avoid perforation of said webs and means to bring the webs together for delivery as described and set forth.

852,430. RULING APPARATUS. WILLIAM L. GOODMAN, St. Joseph, Mo. Filed Dec. 15, 1906. Serial No. 348,068.



Claim.—1. In a ruling apparatus, a piece, having ways of the form described, thereon; a carriage, adapted to travel on said ways and be guided thereby; a reservoir having one of its ends hinged to said carriage and its free end provided with a hollow pen holder adapted to hold a pen and to convey ink from said reservoir to said pen, and means for raising the free end of said reservoir.

2. In a ruling apparatus, a piece having ways of the shape described formed therewith; a carriage adapted to travel on and be guided by said ways; a reservoir, having one of its ends hinged to said carriage, and its free end provided with a lug; a spring for raising said lug, and a guiding screw for guiding said lug and for retaining said spring in place; a hollow pen holder communicatively secured in the free end of said reservoir and adapted to hold a pen and to convey ink from said reservoir to said pen.

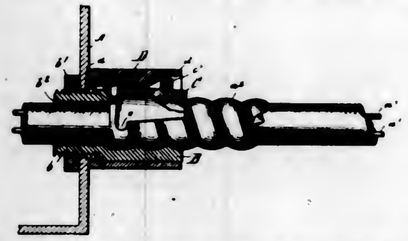
3. In a ruling apparatus, a piece having the described ways formed therewith; a carriage, adapted to travel on said ways and be guided thereby; a reservoir having one of its ends hinged to said carriage and its free end provided with a lug formed therewith a spring for raising said lug, a guiding screw for guiding said lug and retaining said spring in place; an adjusting screw for adjusting the downward travel of said lug; a hollow penholder adjustably secured in the free end of said reservoir and adapted to hold a pen and to convey ink from said reservoir to said pen.

4. In a ruling apparatus, an ink reservoir, movably secured on a slidable carriage; a suitably shaped hollow pen holder, adapted to detachably hold a fountain pen in the lower end thereof; adjustable securing means, for adjustably securing the upper end of said pen holder in said reservoir, and a flexible washer, for preventing leakage of ink through said securing means.

5. In a ruling apparatus, the combination with a piece, having the described ways formed therewith and provided with a slot therethrough, as shown; of the described carriage adapted to travel on said ways and be guided thereby, and carry a reservoir for ink, a hollow penholder communicatively secured in said reservoir and adapted to removably hold a pen and to convey ink from said reservoir to said pen, together with securing means in said slot for slidably securing said carriage on said ways.

6. In a ruling apparatus, the combination with a drawing instrument, of a piece, having ways of the forms shown, formed therewith, and a carriage, adapted to travel on said ways and be guided thereby; a reservoir, having one of its ends hinged to said carriage and its free end provided with a hollow penholder, adjustably secured in said reservoir, and adapted to detachably hold a pen, and to convey ink from said reservoir to said pen.

852,431. JUNCTION-BOX. EDWIN T. GREENFIELD, Kiamesha, N. Y. Filed Dec. 29, 1905. Serial No. 293,783.



Claim.—1. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve having a cam mechanism and means for securing said sleeve to the wall of the box and simultaneously moving one of said parts relatively to the other, substantially as described.

2. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve and means operated from within the box for securing said sleeve to the wall of the box and simultaneously moving the parts thereof relatively to each other, substantially as described.

3. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve, a threaded extension carried by one and insertible into an orifice in the wall of the box, a nut coacting therewith inside the box and means operated by turning said nut upon said extension for moving the parts of said sleeve relatively to each other, substantially as described.

4. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve, a threaded extension carried by one and insertible into an orifice in the wall of the box, a nut coacting therewith inside the box and means for moving the parts of said sleeve relatively to each other simultaneously with the securing of said locking sleeve to said box, substantially as described.

5. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve, a threaded extension carried by one and insertible into an orifice in the wall of a box, a nut coacting therewith inside the box and means outside the box operated by turning said nut upon said sleeve for moving the parts of said sleeve relatively to each other, substantially as described.

6. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve, one having a threaded extension insertible in an orifice in the wall of the box, a nut coacting with said threaded extension within the box and means whereby the coaction of said nut with said threaded extension will move the parts of said locking sleeve relatively to each other, substantially as described.

7. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve the members whereof are connected, said locking sleeve having a threaded portion insertible into an orifice in the wall of the box, a nut coacting with said threaded portion within the box and mechanism operated by the movement of said threaded portion into the box as said nut is screwed thereon for moving said locking members toward each other, substantially as described.

8. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve, a threaded part carried thereby insertible into an orifice in the wall of the box, a cam device and means for actuating the same operated by securing said threaded part to said wall, substantially as described.

9. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve, a screw threaded part insertible into an orifice in the wall of the box, nut coacting with said part within the box, a collar surrounding said two-part locking sleeve and movable relatively thereto and a cam mechanism between said collar and said sleeve, substantially as described.

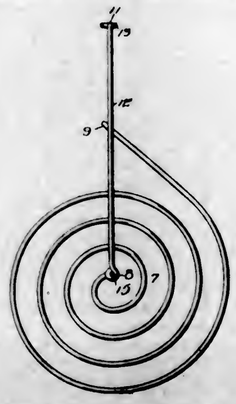
10. The combination with a junction box and conductors passing to the interior thereof, of a two-part locking sleeve, a threaded part carried thereby and insertible into an orifice in the wall of the box, a nut coacting with said threaded part within the box, a loose connection between the parts of said locking sleeve and means, including a cam mechanism, for moving the parts of said sleeve toward each other simultaneously with the securing of the threaded part of said sleeve to the wall of said box, substantially as described.

852,432. CARPENTER'S GAGE. BENJAMIN O. GUDGEN, Pittsburg, Kans. Filed June 28, 1906. Serial No. 323,812.



Claim.—A gage of the character described comprising a shank, cam-shaped in cross section, a head slidably mounted thereon, said head having a cam-shaped opening to engage the cam-surface of said shank, whereby said block is locked into or released from engagement with the shank, a movable marking element pivotally mounted on the outer end of said shank, and having a series of radially disposed arms, said arms having on their outer ends marking or scratching edges, and stop pins projecting from the end of said shank, whereby said marking element is held against rotation with one of said marking arms in an operative position, substantially as described.

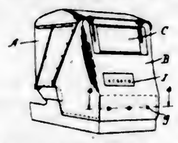
852,433. HAY-RAKE. JOSEPH C. HANKA, Amethyst, Colo. Filed Sept. 27, 1906. Serial No. 336,480.



Claim.—1. In a device of the class described, the combination with a rake head, of a spiral guard member supported at each end of the rake head, and means for preventing bulging of the convolutions of the guard.

2. In a device of the class described the combination with a rake head, of a spiral resilient guard member supported at each end of the rake head, and means for preventing bulging of the convolutions of the spiral.

852,434. CARRIAGE-TOP. HERBERT A. HAWES, Coldwater, Mich. Filed Apr. 30, 1906. Serial No. 314,436.



Claim.—1. The combination with a bow carriage top, of a curtain; a rod consisting of a central tubular section and curved end sections telescopically arranged therein, to which the upper edge of said curtain is secured; clamps consisting of U-shaped clamp members and clamping bolts arranged therethrough, adapted to engage the front bow of the top, secured to the said tubular section of said rod; straps carried by said clamps; and inwardly projecting curved arms carried by said clamps, having openings therein adapted to receive said straps, and rigid buckle tongues thereon, for the purpose specified.

2. The combination with a bow carriage top, of a curtain; a rod consisting of a central tubular section and curved end sections telescopically arranged therein, to which the upper edge of said curtain is secured; and clamps consisting of U-shaped clamp members and clamping bolts arranged therethrough, adapted to engage the front bow of the top, secured to the said tubular section of said rod, for the purpose specified.

3. The combination with a bow carriage top, of a curtain; a rod consisting of a central tubular section and curved end sections telescopically arranged therein, to which the upper edge of said curtain is secured; clamps adapted to engage the front bow of the top, secured to the said tubular section of said rod; straps carried by said clamps; and inwardly projecting curved arms carried by said clamps, having openings therein adapted to receive said straps, and rigid buckle tongues thereon, for the purpose specified.

4. The combination with a bow carriage top, of a curtain; a rod consisting of a central tubular section and curved end sections telescopically arranged therein, to which the upper edge of said curtain is secured; and clamps adapted to engage the front bow of the top, secured to the said tubular section of said rod, for the purpose specified.

5. The combination with a bow carriage top, of a curtain; a rod to which the upper edge of said curtain is secured; clamps consisting of U-shaped clamp members and clamping bolts arranged therethrough, adapted to engage the front bow of the top, secured to said rod; straps carried by said clamps; and inwardly projecting downwardly curved arms carried by said clamps, having openings therein adapted to receive said straps, and rigid buckle tongues thereon, for the purpose specified.

6. The combination with a bow carriage top, of a curtain; a rod made up of telescoping sections to which the upper edge of said curtain is secured; clamps consisting of U-shaped clamping-members secured to the central section of said rod and clamping-bolts arranged therethrough adapted to engage the front bow of the top, for the purpose specified.

7. The combination with a bow carriage top, of a curtain; a rod made up of telescoping sections to which the upper edge of said curtain is secured; and clamps secured to the central section of said rod, adapted to be engaged upon the front bow of the top, for the purpose specified.

8. The combination with a carriage top, of a curtain; a rod to which the upper edge of said curtain is secured; clamps for securing said rod; consisting of U-shaped

clamp members and clamping bolts arranged therethrough, secured to said rod; straps carried by said clamps; and inwardly projecting downwardly curved arms carried by said clamps, having openings therein adapted to receive said straps, and rigid buckle tongues thereon, for the purpose specified.

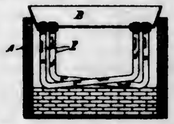
9. The combination with a carriage top, of a curtain; a rod to which the upper edge of said curtain is secured; clamps for securing said rod to the front bow of a carriage top; straps carried by said clamps; inwardly projecting arms carried by said clamps, having openings therein adapted to receive said straps and rigid buckle tongues thereon, for the purpose specified.

10. The combination with a carriage top, of a curtain; a rod to which the upper edge of said curtain is secured; clamps for securing said rod to the carriage top; straps and buckles carried by said clamps for supporting said curtain when furled.

11. A carriage top having a pair of rein-openings formed therein; a reinforcing piece for said openings; a rein rest or supporting rod arranged across said openings, formed of wire turned into eyes at each end; and clips arranged to engage said eyes for securing said rod in position.

12. A carriage top having a rein-opening formed therein; a reinforcing piece for said opening; a rein rest or supporting rod arranged across said opening, formed of wire turned into eyes at each end; and clips arranged to engage said eyes for securing said rod in position.

852,435. EVAPORATOR. FRANK S. HEATH, Corry, Pa. Filed May 29, 1906. Serial No. 319,368.



Claim.—1. In an evaporator the combination of a furnace body, an evaporator pan over said furnace body, and a series of U-shaped circulation pipes, having both ends thereof in communication with the interior of said pan, and their intermediate portions extending downward into the said furnace body, substantially as described.

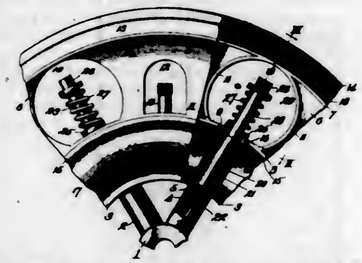
2. In an evaporator, the combination of a furnace body, an evaporator pan over said furnace body, and a series of circulation pipes communicating with the interior of said pan extending downward into the fire-box of said furnace body, the upright portions of each of said circulation pipes being longer on one side than on the opposite side and the portion of said ducts connecting the upright portions being transverse of said fire-box, substantially as described.

3. In an evaporator the combination of a furnace body, a fire-box therein, an evaporator pan over said fire-box, having two rows of alternate openings on the bottom of said pan adjacent to each side thereof, and a series of U-shaped ducts extending downward into said fire-box connecting the outer of each of said openings in the bottom of said pan with each of the inner openings on the opposite side of said pan, substantially as set forth.

4. In an evaporator the combination of a furnace body, a fire-box therein, an evaporator pan over said fire-box, having a series of down-flow openings arranged adjacent to each side thereof and a series of up-flow openings arranged inside of each of said series of down-flow openings, and a series of circulation pipes connecting each of said down-flow openings with the opposite up-flow openings, the down-flow portion of said pipes being longer than the up-flow portion thereof, substantially as set forth.

852,436. PNEUMATIC-CUSHION WHEEL. MAX A. HOLSMARK, Kansas City, Kans. Filed Jan. 8, 1906. Serial No. 295,027.

Claim.—1. A wheel, comprising a rigid inner member having a rim and radiating spoke-extensions projecting beyond the same, a rigid outer member having an inner rim provided with slots through which said spoke-extensions project, a circular pneumatic cushion fitting between said rims and provided with radial tubular cross pieces fitting on said spoke-extensions, guards fitting on said spoke-extensions and bridging the inner sides of said slots and bearing peripherally on said circular cushion, and springs mounted on the outer ends of the spoke-extensions and imposing pressure outwardly thereon and inwardly on the inner rim of the outer member.



2. A wheel, comprising a rigid inner member having a rim and radiating spoke-extensions projecting beyond the same, a rigid outer member having an inner rim provided with slots through which said spoke-extensions project, a circular pneumatic cushion fitting between said rims and provided with radial tubular cross pieces fitting on said spoke-extensions, guards fitting on said spoke-extensions and bridging the inner sides of said slots and bearing peripherally on said circular cushion, collars fitting slidingly on the outer portions of the spoke-extensions and projecting into the slot of the inner rim of the outer member, and springs upon the outer ends of the spoke-extensions and exerting an outward pressure thereon and an inward pressure on said collars.

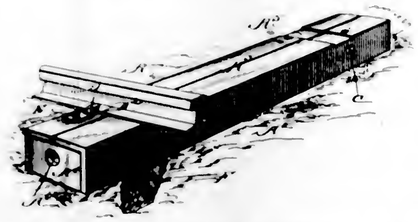
3. A wheel, comprising a rigid inner member having a rim and radiating spoke-extensions projecting beyond the same, a rigid outer member having an inner rim provided with slots through which said spoke-extensions project, a circular pneumatic cushion fitting between said rims and provided with radial tubular cross pieces fitting on said spoke-extensions, guards fitting on said spoke-extensions and bridging the inner ends of said slots and bearing peripherally on said circular cushion, collars fitting slidingly on the outer portions of the spoke-extensions and projecting into the slot of the inner rim of the outer member, enlargements rigid with the outer ends of the spoke-extensions and spiral springs encircling said extensions and bearing at their opposite ends against said enlargements and said collars.

4. A wheel, comprising a rigid inner member having a rim and rigid spoke-extensions projecting beyond the rim, an outer member comprising an inner slotted rim and an outer rim, a tire carried by the latter, a pair of rings having inwardly projecting flanges at their outer margins secured to the outer rim of the outer member and inwardly projecting flanges at their inner margins secured to the inner rim of the outer member and provided with slots registering with the slots of the last-named rim, said rings being also provided with large openings communicating with said slots and receiving the outer ends of the spoke-extensions, collars on the spoke-extensions and bearing on the outer side of said inner flanges and projecting into the slots of the latter, springs encircling the outer ends of the spoke-extensions and pressing outwardly thereon and inwardly on said collars, and a circular pneumatic cushion fitting between the contiguous rims of the inner and outer members and provided with radial cross pieces fitting on the spoke-extensions.

5. A wheel, comprising a rigid inner member having a rim and rigid spoke-extensions projecting beyond the rim, an outer member comprising an inner slotted rim and an outer rim, a tire carried by the latter, a pair of rings having inwardly projecting flanges at their outer margins secured to the outer rim of the outer member and inwardly projecting flanges at their inner margins secured to the inner rim of the outer member and provided with slots registering with the slots of the last-named rim, said rings being also provided with large openings communicating with the slots of the latter, springs encircling the outer ends of the spoke-extensions and pressing outwardly thereon and inwardly on said collars, a circular pneumatic cushion fitting between the contiguous rims of the inner and outer members and provided with radial cross pieces fitting on the spoke-extensions, and sheet-metal guards on the spoke-extensions and interposed between the pneumatic cushion and the inner rim of the outer member and of greater length than the slots of the latter.

6. In a wheel, an outer member, comprising inner and outer rims, the inner rim having slots and the outer rim an encircling tire, and sheet-metal rings connecting said rims and provided with transverse openings and with slots establishing communication between said openings and the slots of said rim.

852,437. STEEL RAILWAY-TIE. VERNON C. HUTCHINS, Falls Creek, Pa. Filed May 19, 1906. Serial No. 317,754.



Claim.—1. A spring metal tie consisting of a hollow casing having bent up end portions of less height than the sides of the tie, the said tie being longitudinally split, along its top face.

2. The combination with a hollow spring metal tie, longitudinally split along its upper face, and supporting frames arranged transversely within the tie, the upper face of said frames being spaced slightly from the top of the tie.

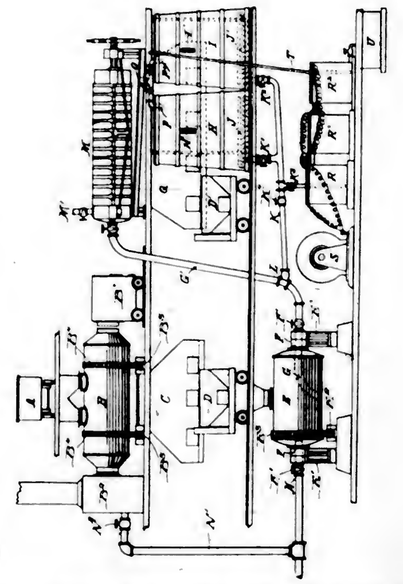
3. A hollow spring metal tie having end portions integral with the bottom of the tie and bent upwardly to partially close the ends of the tie, the top of the tie being longitudinally slotted, the said end portions terminating short of the top of the tie, and frames secured within the tie and spaced from the top.

4. A hollow tie provided with hand holes, in its end portions, rail securing spikes having suitable heads to engage a rail base and threaded for engagement with the tie said spikes having squared end portions projecting within the interior of the tie and within reach of the said hand holes, as and for the purpose set forth.

5. A tie of the kind described formed of a single piece of spring metal and having a bottom portion, side portions, end portions, carried by the ends of the bottom portion top portions, integral respectively, with the side portions, the said top portions being bent over toward each other, and slightly spaced apart, the end portion being bent upwardly and terminating short of the top portions, and frames arranged transversely within the tie and spaced from the said top portions.

852,438. PROCESS FOR THE EXTRACTION OF METALS FROM THEIR ORES. RICHARD LAMB, New York, N. Y. Filed Dec. 22, 1902. Serial No. 136,106.

Claim.—1. The process of extracting copper from its ores, consisting in reducing said ores to granular condition, then placing said ores within a closed leaching vessel, then introducing water and placing liquid SO_2 into said vessel whereby free sulfurous acid will be formed and a solution of the copper thereby effected, then pneumatically separating said solution from the residue, then washing said residue and preserving said washings, then subjecting said solution as an electrolyte to a current of relatively low density between insoluble anodes and cathodes, maintaining an excess of sulfurous acid in said electrolyte whereby the same will be oxidized to form free sulfuric acid, then re-employing said electrolyte depleted from copper for leaching fresh charges of ore.

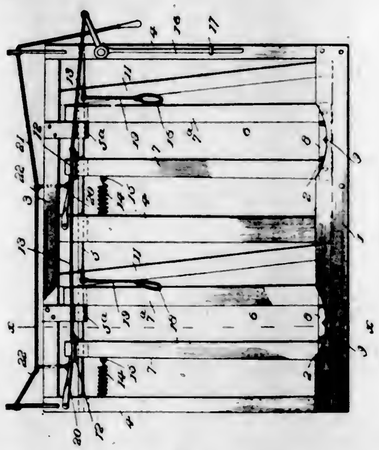


2. The process of extracting copper from its ores, consisting in reducing said ores to a granular condition, then placing said ores within a closed leaching vessel, then introducing a quantity of acidulated solution depleted from copper by electrolysis, then forcing SO_2 into said vessel whereby free sulfurous acid will be formed and a further solution of the copper effected, then separating said solution from the residue, then subjecting said solution as an electrolyte to a current of relatively low density between insoluble anodes and cathodes whereby metallic copper will be deposited and the solution will regain its acidity, and then re-employing said solution for leaching fresh charges of ore.

3. The process of extracting copper from its ores, consisting in reducing the ores to a granular condition, then roasting said ores at a relatively low temperature to convert the iron in said ores into an insoluble oxid and to convert the copper into soluble form, then placing said roasted ore within a closed leaching vessel, then introducing water to dissolve the copper salts soluble therein, then forcing liquid SO_2 into said vessel to produce free sulfurous acid whereby the hitherto undissolved copper will be taken into solution, then pneumatically separating said solution from the residue, then submitting the same as an electrolyte to a current of relatively low density between insoluble anodes and cathodes, maintaining an excess of sulfurous acid whereby the copper will be deposited in metallic form and free sulfuric acid formed, and then re-employing said electrolyte for leaching fresh charges of ore.

4. The process of extracting copper from its ores, consisting in reducing said ores to a granular condition, then placing said ores within a closed leaching vessel, then introducing water and forcing compressed SO_2 into said vessel, whereby sulfurous acid will be formed and a solution of the copper in the said ores effected, then separating said solution from the residue, then subjecting said solution containing an excess of sulfurous acid as an electrolyte to a current of relatively low density between insoluble anodes and cathodes, whereby metallic copper will be deposited and the solution regain acidity and be adapted for leaching fresh charges of ore.

852,439. SWINGING STANCHION FOR CATTLE. MARSHALL LATTIN, Lockwood, Ohio. Filed Aug. 18, 1906. Serial No. 331,205.

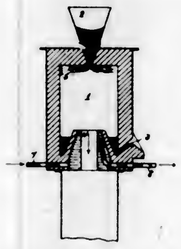


Claim.—1. A cattle stanchion, comprising a framework, a supporting rod in the upper end of said framework, yoke members mounted to swing on said supporting rod, and pivotally connected together at their lower ends, one of said yoke members being mounted to slide on said rod, a spring tending to draw said yoke member away from the other yoke member whereby to open the yoke, a lever fulcrumed on the framework, a ring arranged for detachable engagement with the upper end of the sliding yoke member, and an operating cord connected to said ring and also connected to said lever, for the purpose specified.

2. A cattle stanchion, comprising a framework, a supporting rod in said framework, a plurality of pairs of yoke members mounted to swing on said supporting rod and depending therefrom, the lower ends of said yoke members being pivotally connected together, one of the yoke members of each pair being arranged to slide on said rod, toward and from the other yoke member of the same pair, a spring secured to one of the sliding yoke members and tending to draw the same away from its complemental member, a lever fulcrumed on the framework, a plurality of rings adapted to be placed over the upper ends of the sliding yoke members, and an operating cord connected to said rings and to one arm of said lever.

3. A cattle stanchion, comprising a framework, a supporting rod in said framework, a plurality of pairs of yoke members mounted to swing on said supporting rod and depending therefrom, the lower ends of said yoke members being pivotally connected together, one of the yoke members of each pair being arranged to slide on said rod, toward and from the other yoke member of the same pair, a spring secured to one of the sliding yoke members and tending to draw the same away from its complemental member, a lever fulcrumed to the framework, a plurality of rings adapted to be placed over the upper ends of the sliding yoke members, an operating cord connected to said rings and to one arm of said lever, and a catch with which the other arm of said lever is adapted to engage.

852,440. PROCESS OF REDUCING ZINC ORES. CARL G. P. DE LAVAL, Stockholm, Sweden, assignor to Société Anonyme Métallurgique Procédés de Laval, Frankfort-on-the-Main, Germany, a Corporation of Belgium. Filed July 15, 1905. Serial No. 269,756.



Claim.—1. The process of reducing zinc ores which consists in subjecting a pulverous charge containing the zinc ore mixed with materials necessary for carrying out the chemical reactions in a suitable furnace to a rapid rotating or whirling motion produced by means of a current of gas.

2. The process of reducing zinc ores which consists in subjecting a pulverous charge containing zinc ore mixed with materials necessary for carrying out the chemical reactions to a rapid rotating or whirling motion in a furnace by means of a tangentially introduced current of gas.

3. The herein described process of reducing zinc ores which consists in feeding a pulverized charge of zinc ore mixed with the materials necessary for carrying out the chemical reactions, and subjecting it to a rapid rotary motion produced by a current of gas applied in a plane substantially at right angles to the line of feed, substantially as described.

4. The process of reducing zinc ores, which consists in subjecting a pulverous charge containing zinc ore to a rapid rotating or whirling motion in a furnace, by means of an air current, mixed with carbon so as to form carbon monoxid, substantially as described.

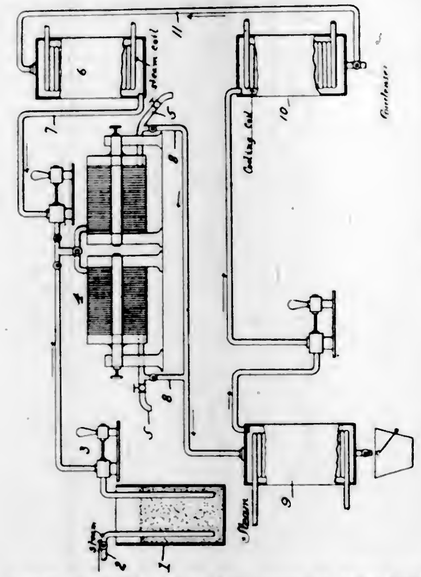
852,441. PROCESS OF REFINING LARD AND RECOVERING WASTE LARD FROM SPENT FULLERS' EARTH. STEPHEN T. LOCKWOOD, Buffalo, N. Y. Filed Jan 8, 1906. Serial No. 294,993.

Claim.—1. The process of refining lard consisting in subjecting lard in combination with fuller's earth to tetrachlorid, and heat to dissolve the lard and separate the tetrachlorid and lard solution from the fuller's earth, distilling the tetrachlorid and lard solution to deposit the lard.

2. The process or refining lard consisting in mixing lard with fuller's earth, heating the same, forcing said heated mixture through a filter press whereby the fuller's earth is retained in cakes in said press, breaking or pulverizing said cakes of fuller's earth, placing said pulverized spent fuller's earth in a tank with carbon tetrachlorid, heating the same to fluidity, delivering the mixture to a filter press, whereby the fuller's earth will be separated from the tetrachlorid and lard solution and will be formed into cakes in the press, distilling the tetrachlorid and lard solution to vaporize the tetrachlorid and deposit the lard.

3. The process of refining lard and recovering waste fuller's earth consisting in mixing lard and fuller's earth, heating the same, running said heated mixture through a filter press whereby the fuller's earth is retained in cakes in said press, placing said cakes of fuller's earth in a tank with tetrachlorid, heating the same and then delivering the mixture of fuller's earth and the tetrachlorid to a filter press, whereby the earth will be separated from the tetrachlorid and lard solution, and then distilling the solvent to deposit the lard.

4. The process of refining lard consisting in mixing lard with fuller's earth, heating the same, forcing said heated mixture through a filter press whereby the fuller's earth is formed into cakes in said press, breaking or pulverizing said cakes of fuller's earth and placing said pulverized spent fuller's earth in a tank with the tetrachlorid, delivering the mixture to a filter press whereby the fuller's earth will be separated from the tetrachlorid and lard solution and will be formed into cakes in the press, and then distilling the tetrachlorid and lard solution to vaporize the tetrachlorid and deposit the lard.



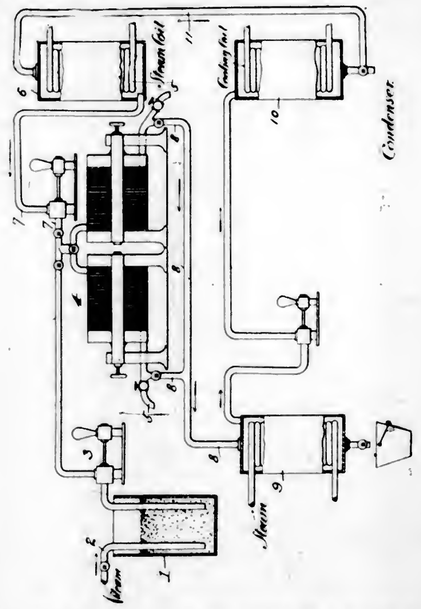
5. The process of refining and recovering waste grease or lard or similar material from spent fuller's earth containing such material, consisting in placing said spent fuller's earth in a tank with tetrachlorid and thoroughly mixing the same, subjecting the mixture to heat, delivering the heated mixture to a filter press, whereby the fuller's earth will be separated from the tetrachlorid and grease or lard solution and will be formed into cakes in the press, and then distilling the tetrachlorid to deposit the recovered grease or lard.

6. The process of refining and recovering waste grease or lard or similar material from spent fuller's earth containing such material, consisting in placing said spent fuller's earth in a tank with tetrachlorid and thoroughly mixing the same, delivering the mixture to a filter press, whereby the fuller's earth will be separated from the tetrachlorid and grease or lard solution and will be formed into cakes in the press, and then distilling the tetrachlorid to deposit the recovered grease or lard.

852,442. PROCESS OF REFINING LARD AND RECOVERING WASTE LARD FROM SPENT FULLERS' EARTH. STEPHEN T. LOCKWOOD, Buffalo, N. Y. Filed July 20, 1906. Serial No. 326,992.

Claim.—1. The process of refining lard consisting of mixing lard with fuller's earth, passing said mixture through a filter-press to separate the lard from the fuller's earth, and then passing carbon tetrachlorid through the cakes of fuller's earth, and then distilling the carbon tetrachlorid solution to vaporize the carbon tetrachlorid and deposit the lard.

2. The process of refining lard consisting of mixing lard with fuller's earth, heating the same to fluidity, passing said fluid mixture through a filter-press to separate the lard from the fuller's earth, and then passing carbon tetrachlorid, under pressure, through said spent fuller's earth, distilling the solution to vaporize the carbon tetrachlorid and deposit the lard, and then condensing the carbon tetrachlorid vapors.



3. The process of refining lard consisting in mixing lard and fuller's earth, heating the same to fluidity, forcing said fluid mixture into a filter-press to recover the fuller's earth in cakes and separate it from the lard, subjecting said cakes of fuller's earth to carbon tetrachlorid, whereby the lard will be dissolved and removed from said cakes of fuller's earth, said fuller's earth being thereby so cleaned and regenerated that it may be again used in the refining process, then distilling the carbon tetrachlorid and lard solution to vaporize the carbon tetrachlorid and deposit the lard, and then condensing the vapors of the carbon tetrachlorid.

4. The process of refining lard consisting of mixing the same with fuller's earth, heating the mixture to fluidity, forcing the mixture through a filter-press to force the lard from the fuller's earth, then forcing the solvent of lard through said filter-press, under pressure, to dissolve the lard from the fuller's earth, then distilling said solution to vaporize the solvent and deposit the lard and then condensing said vaporized solvent.

5. The process of refining lard consisting of mixing the lard with a refining or clarifying medium, heating the mixture to fluidity, forcing said mixture through a filter-press, then forcing the solvent of lard through said press, then distilling the solvent solution to recover the lard contained therein and then condensing the solvent vapors.

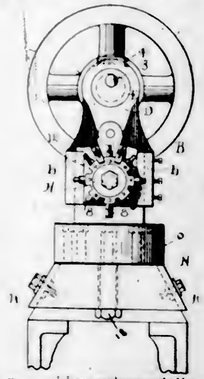
6. The process of refining lard consisting of mixing the lard with a refining or clarifying medium, heating the mixture to fluidity, forcing said fluid through a filter press, then forcing the carbon tetrachlorid through the deposited material in said press, then distilling the car-

bon tetrachlorid to recoveer the lard contained therein, and then condensing the carbon tetrachlorid vapors.

7. The process of refining fatty material consisting of mixing the said material with an earthy refining or clarifying medium, heating the mixture to fluidity, forcing said fluid through a filter-press, then passing a solvent of fatty material through said press, then distilling the solvent solution to recover the fatty material contained therein and then condensing the solvent vapors.

8. The process of refining lard consisting of mixing lard with an insoluble refining or clarifying medium, heating the mixture to fluidity, forcing said fluid through a filter-press, then passing carbon tetrachlorid through the deposited material in said press, then distilling the carbon tetrachlorid to recover the lard contained therein, and then condensing the carbon tetrachlorid vapors.

852,443. PUNCH-PRESS. FRANK G. MARBACH, Medina, Ohio. Filed June 18, 1906. Serial No. 322,187.



Claim.—1. In a ...chine substantially as described, a suitable frame and a rotatable shaft thereon, in combination with a reciprocating head supported in vertical guides, and operatively connected with said shaft, said head having a socket in its face and a hole through said head centrally at the base of said socket, said bearing being adapted to be rotarily adjusted independently of said pin and said connecting member.

2. In a machine substantially as described, a vertically reciprocating head and means to actuate the same, said head provided with a socket in its face and a bolt hole centrally behind said socket, in combination with a rotarily adjustable tool holder having a hub on its rear seated in said socket and a bolt through said hub and said bolt hole securing said holder in place.

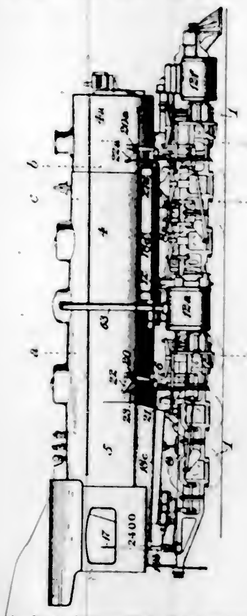
3. In a machine substantially as described, a suitable frame having a base with downwardly and outwardly inclined sides, a front extension for said base constructed at its sides to be adjustably secured to said sides of the frame, and bolts to lock said extension in adjusted position, the top surface of said extension being flush with the top surface of said base.

4. In a machine substantially as described, a suitable frame having a fixed working base, an extension for said base provided with slotted sides and constructed with an extensible portion outside of said base to carry a die-support, in combination with a horizontally rotatable die-support engaged by a pivot bolt through said extensions and adapted to overlap the said working base on said frame.

5. The main frame having a working base with inclined sides, in combination with a solid extension of the base on the same plane therewith and having inclined sides seated over the said inclined sides of the base, and bolts removably securing the said extension in place, a horizontally rotatable die support mounted on said extension and corresponding holes through said support and said working base.

6. In a machine substantially as described, a suitable frame, a vertical reciprocating head therein constructed at both its bottom and front to attach a tool holder in either position, a shaft and a rotarily adjustable bearing block having a bore off its center engaged by an eccentric projection on said shaft and said bearing block having pivotal connection with said reciprocating head.

852,444. LOCOMOTIVE. CARL J. MELLIN, Schenectady, N. Y. Filed Dec. 5, 1906. Serial No. 346,441.



Claim.—1. In a locomotive, the combination of a rear frame, a front frame pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse bearing support fixed to the front frame, a bearing plate having a transversely curved or convex face and resting freely on the bearing support, and a saddle fixed to the boiler and resting on the bearing plate.

2. In a locomotive, the combination of a rear frame, a front frame pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse bearing support fixed to the front frame, a bearing plate having a transversely curved or convex face resting freely on the bearing support and movable laterally therewith relatively to the boiler, and a saddle fixed to the boiler and resting on the bearing plate.

3. In a locomotive, the combination of a rear frame, a front frame, of bar construction, pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse bearing support fixed to the front frame, a saddle fixed to the boiler and supported, with the capacity of independent lateral movement, on the bearing support, and means for preventing vertical displacement of the saddle from its seat on the bearing support.

4. In a locomotive, the combination of a rear frame, a front frame pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse bearing support fixed to the front frame, a saddle fixed to the boiler and supported, with the capacity of independent lateral movement, on the bearing support, a connecting plate passing freely through the saddle, and bolts securing said connecting plate detachably to the bearing support.

5. In a locomotive, the combination of a rear frame, a front frame of bar form pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse abutment support and frame brace fixed to the front frame, a spring casing secured to the boiler with the capacity of independent lateral movement, relatively to the front frame, centering springs extending longitudinally in the spring casing, followers fitting freely in the spring casing and abutting against the centering springs, abutments fixed to the abutment support, and tension members bearing, at the opposite ends, on the followers and on the abutments, respectively.

6. In a locomotive, the combination of a rear frame, a front frame of bar form pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse abutment support and frame brace fixed to the front frame, a spring casing having the capacity of independent lateral movement relatively to the front frame and secured to the boiler, springs extending longitudinally in the spring casing, and means for effecting compression of said springs in and by the lateral movements of the front frame and connected abutment support.

7. In a locomotive, the combination of a rear frame, a front frame pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse abutment support and frame brace fixed to the front frame, a spring casing secured to the boiler with the capacity of independent lateral movement relatively to the front frame, centering springs extending longitudinally in the spring casing, and means for effecting compression of said springs in and by the lateral movements of the front frame and connected abutment support.

8. In a locomotive, the combination of a rear frame, a front frame of bar form pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse bearing support and frame brace fixed to the front frame, a saddle fixed to the boiler and supported, with the capacity of independent lateral movement, on the bearing support, a transverse abutment support and frame brace fixed to the front frame in advance of the bearing support a spring casing secured to the boiler with the capacity of independent lateral movement, relatively to the front frame, springs extending longitudinally in the spring casing, and means for effecting compression of said springs in and by the lateral movements of the front frame and connected abutment support.

9. In a locomotive, the combination of a rear frame, a front frame pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse bearing support fixed to the front frame, a saddle fixed to the boiler and supported, with the capacity of independent lateral movement, on the bearing support, and a floating device or elastic resistance mechanism through which a portion of the weight of the saddle and boiler is transmitted to the front frame.

10. In a locomotive, the combination of a rear frame, a front frame pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse bearing support fixed to the front frame, a bearing plate resting freely on the bearing support and movable laterally therewith relatively to the boiler, a saddle fixed to the boiler and resting on the bearing plate, and a floating device or elastic resistance mechanism through which a portion of the weight of the saddle and boiler is relieved from the bearing plate and transmitted to the front frame.

11. In a locomotive, the combination of a rear frame, a front frame pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame, a transverse bearing support fixed to the front frame, a saddle fixed to the boiler and supported, with the capacity of independent lateral movement, on the bearing support, a yielding or elastic member on the bearing support, bearings on the saddle, and vertical floating rod supports interposed between, and abutting on, the saddle bearings and the yielding resistance member.

12. In a locomotive, the combination of a rear frame, a front frame pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frames, a transverse bearing support fixed to the front frame, a saddle fixed to the boiler and supported, with the capacity of independent lateral movement, on the bearing support, springs abutting on the bearing support, bearings on the saddle, and vertical floating rod supports interposed between and abutting on, the saddle bearings and the springs.

13. In a locomotive, the combination of a rear frame, a front frame, of bar form, pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame and supported, with the capacity of independent lateral movement, on the front frame, and adjustable means for vertically balancing and alining the front and rear frames.

14. In a locomotive, the combination of a rear frame, a front frame, of bar form, pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame and supported, with the capacity of independent lateral movement, on the front frame, and adjustable flexible connections interposed between the side members of the rear frames and the adjacent side members of the front frame.

15. In a locomotive, the combination of a rear frame, a front frame, of bar form, pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame and supported, with the capacity of independent lateral movement, on the front frame, vertically adjustable connecting members coupling the side members of the rear frames to the adjacent side members of the front frames, and flexible joints between said connecting members and the frame members.

16. In a locomotive, the combination of a rear frame, a front frame, of bar form, pivotally connected thereto, wheels journaled in bearings in said frames, a boiler rigidly connected to the rear frame and supported, with the capacity of independent lateral movement, on the front frame, vertical connecting bolts each passing through and fitting freely, at one end, in a rail of the rear frame, and, at the other end, in a rail of the front frame, spherical washers on the connecting bolts fitting corresponding sockets in the frame rails, and adjusting nuts engaging threads on the connection bolts and bearing on the frame rails.

17. In a locomotive, the combination of a reversing shaft journaled in bearings below the foot plate, a reverse lever fixed on said shaft, reversing arms on the ends of said shaft, two lifting levers for valve actuating mechanism, located on opposite sides of the locomotive, and reach rods connecting the reversing arms and lifting levers.

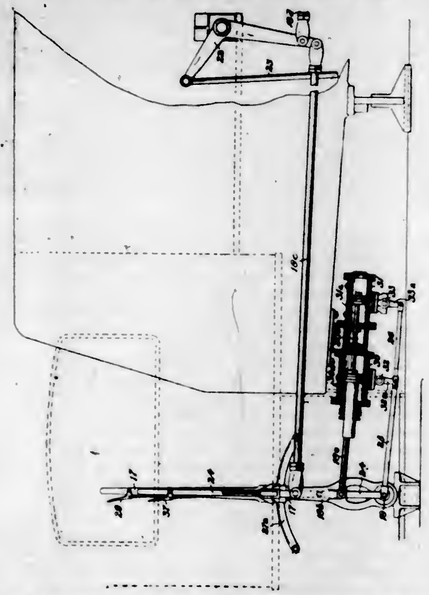
18. In a locomotive the combination of a reversing shaft journaled in bearings below the foot plate, a reverse lever fixed on said shaft, reversing arms on the ends of said shaft, two lift shafts for valve actuating mechanism, fixed on opposite sides of the waist of the boiler, lifting levers journaled on said lift shafts, and reach rods connecting the reversing arms and lifting levers.

19. In a locomotive, the combination of a reversing shaft journaled in bearings below the foot plate, a reverse lever fixed on said shaft, reversing arms on the ends of said shaft, two rear lift shafts for valve actuating mechanism, fixed on opposite sides of the waist of the boiler, two forward lift shafts for valve actuating mechanism, fixed on opposite sides of the waist of the boiler, lifting levers journaled on the rear and forward lift shafts, rear reach rods connecting the reversing arms and the lifting arms of the rear lift shafts, and forward reach rods connecting the lifting levers of the rear lift shafts with those of the forward lift shafts.

852,445. REVERSING MECHANISM FOR LOCOMOTIVES. CARL J. MELLIN, Schenectady, N. Y. Filed Dec. 5, 1906. Serial No. 346,442.

Claim.—1. In a reversing mechanism, the combination of a main reverse lever journaled to move about a pivotal axis, means for connecting said lever to a valve actuating mechanism, a fluid pressure motor adapted to impart movement to the main reverse lever, an operating reverse lever

pivotally connected to the main reverse lever, and means for supplying and exhausting motive fluid to and from the motor in and by the movements of the operating reverse lever about its pivotal axis on the main reverse lever.



2. In a reversing mechanism, the combination of a main reverse lever journaled to move about a pivotal axis, means for connecting said lever to a valve actuating mechanism, a fluid pressure motor adapted to impart movement to the main reverse lever, an operating reverse lever pivotally connected to the main reverse lever, means for supplying and exhausting motive fluid to and from the motor in and by the movements of the operating lever about its pivotal axis on the main reverse lever, and means, controlled by the movement of the operating reverse lever, for permitting or preventing, as desired, the locking of the main reverse lever in adjusted position.

3. In a reversing mechanism, the combination of a main reverse lever journaled to move about a pivotal axis, means for connecting said lever to a valve actuating mechanism, a fluid pressure motor adapted to impart movement to the main reverse lever, an operating reverse lever pivotally connected to the main reverse lever, means for supplying and exhausting motive fluid to and from the motor in and by the movements of the operating lever about its pivotal axis on the main reverse lever, and means, controlled by the movement of the operating reverse lever, for detachably interlocking said lever with the main reverse lever.

4. In a reversing mechanism, the combination of a main reverse lever, an operating reverse lever connected thereto with the capacity of independent movement thereon, a fluid pressure motor adapted to impart movement about a pivotal axis to the main reverse lever, a distribution valve controlling the fluid supply and exhaust of the motor, connections coupling the distribution valve with the operating reverse lever, and means for connecting the main reverse lever to a valve actuating mechanism.

5. In a reversing mechanism, the combination of a main reverse lever, an operating reverse lever connected thereto with the capacity of independent movement thereon, a fluid pressure motor adapted to impart movement about a pivotal axis to the main reverse lever, a hydraulic pressure cylinder having its piston connected to and movable with that of the motor, distribution valves controlling the fluid supply and exhaust of the motor and hydraulic pressure cylinder, connections coupling the distribution valves with the operating reverse lever, and means for connecting the main reverse lever to a valve actuating mechanism.

6. In a reversing mechanism, the combination of a main reverse lever, an operating reverse lever pivotally connected thereto, means for interlocking the main and operating reverse levers, a fluid pressure motor adapted to impart movement about a pivotal axis to the main reverse lever, a distributing valve controlling the fluid supply and exhaust of the motor, connections coupling the distribution valve with the operating reverse lever, and means for connecting the main reverse lever to a valve actuating mechanism.

7. In a reversing mechanism, the combination of a main reverse lever journaled to move about a pivotal axis, an operating reverse lever pivotally connected to the main reverse lever and having an eye on one of its ends substantially concentric with the axis thereof, a fluid pressure motor adapted to impart movement to the main reverse lever, a distribution valve controlling the fluid supply and exhaust of the motor, a link coupled to the eye of the operating reverse lever and to the distribution valve, and means for connecting the main reverse lever to a valve actuating mechanism.

8. In a reversing mechanism, the combination of a main reverse lever journaled to move about a pivotal axis, an operating reverse lever pivotally connected to the main reverse lever, a fixed quadrant provided with a plurality of notches or recesses, spring latches connected to the main and operating reverse levers and carrying teeth adapted to engage the quadrant notches, means for interlocking the main and operating reverse levers to permit the locking of the main reverse lever to the quadrant when the two levers are in alinement and prevent such locking when out of alinement, a fluid pressure motor adapted to impart movement to the main reverse lever, a distribution valve controlling the fluid supply and exhaust of the motor, connections coupling the distribution valve with the operating reverse lever, and means for connecting the main reverse lever to a valve actuating mechanism.

9. In a reversing mechanism, the combination of a main reverse lever journaled to move about a pivotal axis, means for connecting said lever to a valve actuating mechanism, a fluid pressure motor adapted to impart movement to the main reverse lever, an operating reverse lever journaled to move about a pivotal axis, means for mechanically connecting the main and operating reverse levers, and means for supplying and exhausting motive fluid to and from the motor in and by the movements of the operating reverse lever about its pivotal axis.

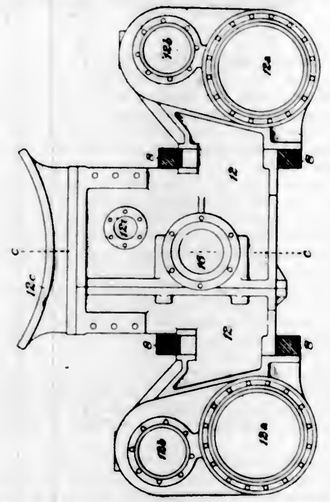
852,446. LOCOMOTIVE-CYLINDER. CARL J. MELLIN, Schenectady, N. Y. Filed Dec. 5, 1906. Serial No. 346,443.

Claim.—1. A locomotive cylinder saddle section having an integral cylinder on its outer side and which is of greater width between the vertical central plane of said cylinder and its inner vertical face than the distance between said vertical central plane and the vertical central plane of the locomotive for which it is designed, said saddle section having an integral receiver pipe located in a plane coinciding with the designed vertical central plane of the locomotive.

2. A locomotive cylinder saddle section having an integral cylinder on its outer side and which is of greater width between the vertical central plane of said cylinder and its inner vertical face than the distance between said vertical central plane and the vertical central plane of the locomotive for which it is designed, said saddle section having an integral receiver pipe located in a plane coinciding with the designed vertical central plane of the locomotive, and an integral intercepting valve chest communicating with the receiver pipe.

3. A locomotive cylinder saddle section having an integral cylinder on its outer side and which is of greater width between the vertical central plane of said cylinder and its inner vertical face than the distance between said vertical plane and the vertical central plane of the locomotive, said saddle section having an integral intercepting valve chest communicating with the cylinder.

4. A locomotive cylinder saddle section having an integral cylinder on its outer side and which is of greater width between the vertical central plane of said cylinder and its inner vertical face than the distance between said vertical central plane and the vertical central plane of the locomotive for which it is designed, said saddle section having an integral receiver pipe located in a plane coinciding with the designed vertical central plane of the locomotive, an integral intercepting valve chest communicating with the receiver pipe, and an integral pipe extending from the intercepting valve chest and adapted for connection to the cylinder of a companion saddle section.



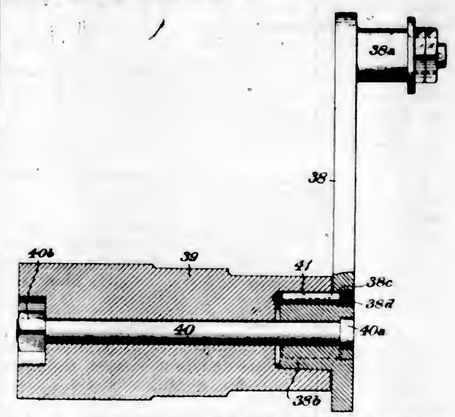
5. The combination of two locomotive cylinder saddle sections, having each an integral cylinder on its outer side, and being of respectively different widths between the vertical central planes of their cylinders and their inner vertical abutting faces, a boiler seat curved on the radius of a locomotive boiler and fixed on the tops of the saddle sections, and a receiver pipe integral with the wider saddle section and located in the vertical plane of the axis of curvature of the boiler seat.

6. The combination of two locomotive cylinder saddle sections, having each an integral cylinder on its outer side, and being of respectively different widths between the vertical central planes of their cylinders and their inner vertical abutting faces, a boiler seat curved on the radius of a locomotive boiler and fixed on the tops of the saddle sections, a receiver pipe integral with the wider saddle section and located in the vertical plane of the axis curvature of the boiler seat, and an intercepting valve chest integral with the wider saddle section and communicating with the receiver pipe.

7. The combination of two locomotive cylinder saddle sections, having each an integral cylinder on its outer side, and being of respectively different widths between the vertical central planes of their cylinders and their inner vertical abutting faces, a boiler seat curved on the radius of a locomotive boiler and fixed on the tops of the saddle sections, a receiver pipe integral with the wider saddle section and located in the vertical plane of the axis of curvature of the boiler seat, and a receiver connected to the receiver pipe in line axially therewith.

852,447. RETURN-CRANK FOR VALVE-GEARS. CARL J. MELLIN, Schenectady, N. Y. Filed Dec. 5, 1906. Serial No. 346,444.

Claim.—1. The combination of a crank pin having a bore or socket at its outer end, a return or eccentric crank having a hub or boss inclosed by said socket, and a clamping member extending through the hub of the return crank and engaging with the crank pin.

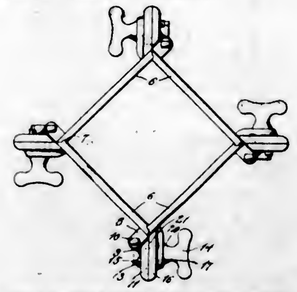


2. The combination of a crank pin having a bore or socket at its outer end, a return or eccentric crank having a hub or boss fitting in said socket, a clamping member extending through the hub of the return crank and engaging with the crank pin, and a dowel fitting longitudinally in the periphery of the hub and in an opposite longitudinal recess in the crank pin.

3. The combination of a crank pin having a longitudinally recessed bore or socket at its outer end, a return or eccentric crank having a hub or boss fitting in said socket, and also having a dowel socket recessed longitudinally in the periphery of its hub and extending through its body, at and near the outer face of which it is internally threaded, a clamping member extending through the hub of the return crank and engaging with the crank pin, and a dowel fitting in the dowel socket and in the adjoining longitudinal recess of the crank pin and thereby engaging with the crank pin and return crank.

4. The combination of a crank pin having a central bore or socket at its outer end, a return or eccentric crank having a hub or boss fitting in said socket, a clamping bolt extending centrally through the hub of the return crank into the crank pin, and having a screw thread for drawing the hub longitudinally to a tight bearing in the socket, and a dowel fitting longitudinally in the periphery of the hub and in an opposite longitudinal recess in the crank pin.

852,448. MOLD. PERRY B. MILES, Jackson, Mich. Filed Aug. 2, 1906. Serial No. 328,919.



Claim.—1. A mold having sides which meet at the corners and are joined by separable clamps to which the sides are hinged, the hinges being located beyond the ends of the sides, at the corners, so that the sides will swing away from the block on the hinge of any clamp, without loosening such clamp.

2. A mold comprising sides and corner clamps connecting the same, each clamp consisting of a pair of plates one of which is hinged to one side and the other of which is rigid with another side, and a locking device engaging both plates to bind the same together, the sides being capable of swinging on the hinges while the clamp is engaged.

3. A clamp for mold sections, comprising a plate rigid with one section and a plate hinged to another section, said plates having registering openings, and a locking device extending through the openings and engaging the plates to bind the same together independently of the mold sections.

4. A clamp for mold sections, comprising a plate rigid with one section and having a boss with an elongated opening therethrough, a plate hinged to another section and having an elongated opening therethrough at an angle to said opening and registering therewith, and having also inclines around said opening, and a locking key extending through the openings and having lugs bearing upon said inclines.

852,449. RAIL-CHAIR. JOHN PARKER, Bay City, Mich., assignor of one-eighth to Edward E. Billings, Bay City, Mich. Filed Dec. 21, 1906. Serial No. 348,924.



Claim.—1. A joint connection for rails comprising a chambered rail chair adapted to receive the abutting ends of two alined rails, the inner wall of the chair being parallel with the webs of the rails, a parallel sided key, one face of which is adapted to engage the inner faces of the webs of the rails, the opposite parallel face of the key adapted to engage the inner wall of the rail chair, the key being longer than the rail chair and provided with apertures at its opposite projecting ends adapted to register with apertures in the webs of the adjoining rails, and fastening means received in the alined apertures, the key serving to connect adjoining rails.

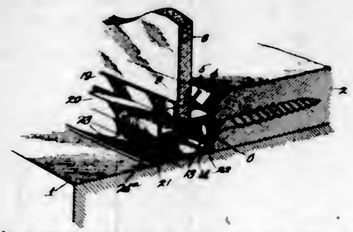
2. The combination with a rail chair suitably chambered out to receive the abutting ends of two alined rails, the webs of the rails being apertured, of a single parallel sided key interposed between the inner faces of the webs of the rails and the inner wall of the rail chair, the ends of the key projecting beyond the opposite ends of the rail chair and being apertured in alinement with the apertures in the webs of the rails, and fastening means passing through the alined apertures to cause the key to serve for connecting the adjoining rails.

3. A joint connection for rails comprising a rail chair suitably chambered to receive the abutting ends of two rails, a single key, the sides of which are parallel, the key interposed between the inner faces of the webs of the rails and the inner parallel wall of the rail chair, the ends of the key projecting beyond the opposite ends of the rail chair and overlapping the adjacent ends of the rails, and means for securing the projecting ends of the key to the respective rails.

852,450. STORE-FRONT CONSTRUCTION. FRANCIS J. PLYM, Kansas City, Mo. Filed Aug. 22, 1906. Serial No. 331,662.

Claim.—1. In a construction of the character described, the combination of a shelf or support, a glass plate resting edgewise thereon, means for pressing said plate yieldingly outward, and a retaining strip adjustable toward or from said support or shelf and disposed at the outer side of and engaging said glass plate.

2. In a construction of the character described, the combination of shelf or support, a glass plate resting edgewise thereon, means for pressing said plate yieldingly outward, and a retaining strip adjustable toward or from said support or shelf and disposed at the outer side of and engaging said glass plate, said retaining strip having a channeled portion to loosely receive the outer edge of the support or shelf.



3. In a construction of the character described, the combination of a shelf or support, a glass plate resting edgewise thereon, means for pressing said plate yieldingly outward, a retaining strip adjustable toward or from said support or shelf and disposed at the outer side of and engaging said glass plate, and a gutter underlying said support or shelf.

4. In a construction of the character described, the combination of a shelf or support, a glass plate resting edgewise thereon, means for pressing said plate yieldingly outward, and a retaining strip adjustable toward or from said support or shelf and disposed at the outer side of and engaging said glass plate and provided with holes in its lower edge.

5. In a construction of the character described, the combination of a shelf or support, a glass plate resting edgewise thereon, means for pressing said plate yieldingly outward, a retaining strip adjustable toward or from said support or shelf and disposed at the outer side of and engaging said glass plate and provided with holes in its lower edge, and a gutter underlying the shelf or support to conduct water to the holes in the lower edge of the retaining strip.

6. In a construction of the character described, the combination of a shelf or support, a glass plate resting edgewise thereon, a resilient gutter exerting an outward pressure on the glass plate, and a retaining strip adjustable toward or from said support or shelf and disposed at the outer side of and engaging said glass plate.

7. In a construction of the character described, the combination of a shelf or support, a glass plate resting edgewise thereon, a resilient gutter exerting an outward pressure on the glass plate and provided with holes, and a retaining strip adjustable toward or from said support or shelf and disposed at the outer side of and engaging said glass plate and provided with holes in its lower edge.

8. In a construction of the character described, the combination of a shelf or support, a plate resting edgewise thereon, a channeled retaining strip having its channel arranged to receive the outer edge of the shelf or support, and means to adjust said strip toward or from said support and secure it against the outer side of said plate.

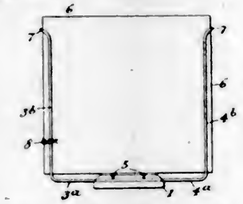
9. In a construction of the character described the combination of a shelf or support, a plate resting edgewise thereon, a gutter at the inner side of the plate, and a retaining strip adjustable toward or from such support or shelf and disposed at the outer side of and engaging said plate.

852,451. DISPLAY-STAND. JOHN J. REQUA, New York, N. Y. Filed May 29, 1906. Serial No. 319,252.

Claim.—1. A card display stand comprising a disk-like card-supporting base and two arms adapted to engage and retain a card, one of the arms being extensibly fitted in such base and arranged to be moved to act in common with the other arm to retain the card in an upright position upon such base.

2. A card display stand comprising a disk-like card-supporting base and two card retaining arms shaped to engage and hold a card, each of the said arms being extensibly fitted in the base and adapted to be moved so as to act jointly with the other arm to retain the card in an upright position upon such base.

3. A card display stand comprising a card-supporting base and two L-shaped arms, the vertical portions of the arms being shaped to receive and hold a card and the horizontal portions of such arms being fitted in such base and movable therein to vary the distance between the vertical portions of the arms.



4. A card display stand comprising a disk like base and two upright arms shaped to engage and hold a card, one of the arms being extensibly fitted in such base and adapted to be moved inwardly to act jointly with the other arm to retain the card.

5. A card display stand comprising a disk-like base and two upright arms shaped to receive and hold a card, each of the arms being slidably fitted in such base and adapted to be moved relatively to the other to engage and hold the card.

6. A card display stand comprising a base and two arms shaped to engage and embrace a card, one of the arms being extensibly fitted in the base and adapted to be moved inward so as to act jointly with the other arm to embrace the card.

7. A card display stand comprising a base and two coacting extensible arms mounted thereon, each of the arms projecting laterally outward therefrom and bent to extend perpendicularly thereto, the perpendicular portion being slotted to receive the card therein.

8. A card display stand comprising a disk-like base, a hole extending transversely through the base and two upright arms having their horizontal portions tightly fitted in such hole and arranged to be moved therein so that the respective vertical portions of such arms will co-act to engage the vertical edges of the card to hold such card in an upright position.

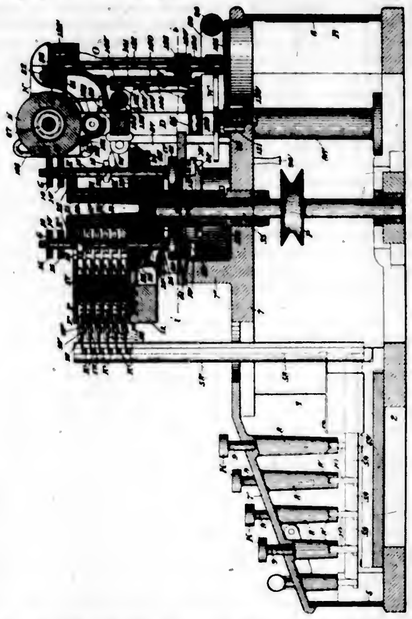
9. A card display stand comprising a base and two coacting arms, and each of the arms being extensibly fitted in the base and projecting laterally outward therefrom and bent to extend perpendicularly thereto, the perpendicular portions of the respective arms being adapted to receive the respective opposite edges of the card.

852,452. MACHINE FOR MAKING IMPRESSIONS. FRANCIS H. RICHARDS, Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation, a Corporation of New Jersey. Filed July 24, 1896. Serial No. 600,377.

Claim.—1. The combination, with a platen, of an impression-device-carrier, and actuating mechanism including instrumentalities for imparting to the impression-device carrier an orbital movement and at will a rotative movement, and for imparting thereto, an advancing movement to cause an impression device thereon to make an impression and a retracting movement to withdraw said impression-device carrier to its normal position.

2. A machine for making impressions, comprehending a series of movably-supported impression-device carriers, and actuating instrumentalities constructed and organized to revolve adapted to rotate at will said impression-device carriers and to advance an impression-device carrier to cause it to make an impression during its rotative movement.

3. The combination, with a movable support and with means for actuating said support, of a series of impression-device carriers mounted on said support, and means for imparting at will to said impression-device carriers combined rotary and advancing impression movements independent of their movement with said support, the advancing impression movement of each carrier taking place during its rotative movement.



4. The combination, with a rotary support and actuating means therefor, of a series of impression-device carriers mounted on said support, and means for imparting at will to each carrier a rotary and an advancing impression movement concurrently with said rotary movement.

5. The combination, with a movable support and with actuating means therefor, of a series of impression-device carriers mounted circumferentially upon said support, and means constructed and operating to impart at will to each impression-device carrier a rotary movement and an advancing impression movement concurrently with said rotary movement, both of said movements being independent of the movement of said carrier with said support.

6. An impression device carrier having two independent and relatively transverse axes of movement, one of rotation and the other of oscillation, combined with means for imparting curvilinear movements to said carrier about both axes concurrently and for rotating the carrier during the act of making an impression.

7. In a machine for making impressions, an impression device carrier, combined with actuating instrumentalities constructed and operated to impart to said impression-device carrier an orbital movement, simultaneous advancing and rotary movements, and a rotary movement during the act of making an impression.

8. In a machine for making impressions, an impression member having three independent axes of movement, two of which are parallel and vertically disposed, and the other of which is horizontally disposed, combined with means for concurrently imparting curvilinear movements to said impression member about its two vertical axes and for concurrently imparting a curvilinear radial movement to said member about its horizontal axis.

9. The combination, with a rotative carrier, of a rotative impression device having an axis of movement independent of the carrier-axis; means for rotating the carrier constantly in one direction; means for concurrently rotating at will the impression device on its own axis in a direction opposite to the direction of rotation of the carrier; and means operative at a predetermined point in the rota-

tion of the impression device for imparting a radial impression movement to said device.

10. A rotatable impression device shaft supported for radial movement and carrying a starting-arm; combined with a key-actuated device which engages the starting-arm to start the rotative movement of the shaft; means for continuing the rotative movement of said shaft; and means for moving the same radially at a predetermined point in and during the rotative movement thereof.

11. The combination of a rotative impression-device carrier supported for orbital and radial movements, means for effective rotative, orbital, and radial movements of said carrier and means for initiating at will the rotative and radial movements.

12. A rotative impression-device carrier supported for orbital and radial movements, combined with means for effecting a continuous orbital movement of the impression-device carrier and for intermittently effecting rotative and radial movements of said carrier during the orbital movement thereof and means for initiating at will the rotative and radial movements.

13. An impression-device carrier supported for orbital, rotative, and radial movements, combined with means for effecting a normally-continuous orbital movement of said carrier and for intermittently rotating said carrier about its own axis simultaneously with the orbital movement thereof and also for moving said carrier radially of said axis at a predetermined point in the orbital and rotative movements thereof and means for initiating at will the rotative and radial movements.

14. An impression device carrier supported for rotative movement about its own axis and for orbital movement about an independent axis and also supported for movement radially of its orbital axis, in combination with carrier-actuating mechanism comprehending means for rotating the impression-device carrier on its own axis in an orbital path and for intermittently moving said carrier radially of its orbital axis at a predetermined point in the orbital movement thereof and means for initiating at will the rotative and radial movements.

15. The combination, with a rotative and orbitally-movable impression device carrier arranged to have a radial movement toward and away from its orbital axis, of means for imparting orbital movement to said carrier; means for imparting at will a rotative movement to the carrier; and means for moving said carrier radially without interrupting its orbital movement.

16. The combination with a turret, of a radially-movable, rotative wheel having impression devices carried by said turret with its axis remote from the turret-axis; turret-rotating mechanism; means for rotating the wheel at will about its own axis during the rotation of the turret; and means for imparting a radial movement to said wheel during the rotation of the turret.

17. The combination with a rotative member supported for orbital and lateral movements and having a starting-arm and a driving-pinion thereon, of means for effecting an orbital movement of said member; a latch shiftable into the orbital path of the starting-arm of said member for starting the rotative movement of said member; means for actuating said latch; a gear meshing with the pinion on said member and effective for continuing the rotation of said member; and means for moving said member laterally at a predetermined point in the orbital movement thereof.

18. A series of rotative impression-device wheels supported for differential movements with their normal axes substantially equidistant from a common center, combined with means for synchronously revolving said wheels about said common center and for intermittently and at will rotating said wheels upon their own axes and also for independently moving said wheels radially of said common center.

19. The combination with a rotative turret and with means for normally continuously rotating said turret, of a series of rotative impression-device carriers having their normal axes of movement substantially equidistant from and at one side of the turret-axis; means for and intermittently at will rotating said carriers on their respective axes during the rotation of the turret; and means for intermittently moving said carriers away from and toward the turret-axis.

20. A rotative turret combined with a series of independently-rotative impression-device wheels movably supported on said turret with their axes of rotative movement normally in parallelism with, and substantially equidistant from, the turret-axis; means for rotating the turret on its own axis and for rotating at will the wheels on their own axes; and means for intermittently and independently moving said wheels radially of the turret-axis during the rotation of said turret and type-wheel.

21. The combination with a turret and with rotating mechanism therefor, of a series of impression-device wheels normally located in the same horizontal plane about the axis of, and carried by, the turret; means for intermittently and at will rotating said wheels; and means for independently moving said wheels radially at predetermined points in the rotation of said wheels and during the rotation of the turret.

22. A movably-supported member combined with means for imparting an orbital movement to said member and for rotating at will said member on its own axis in a direction opposite to the direction of orbital movement thereof, and means for effecting a radial movement of said member at a predetermined point in the orbital and rotative movements thereof.

23. A rotative impression-device carrier having two independent impression-device carrying flanges and each impression-device carrying flange having a series of circumferentially-disposed impression-devices, combined with a shiftable platen; means for imparting orbital, rotative, and radial movements to the impression-device carrier; and means for shifting the platen transversely of the said flanges.

24. The combination, with a rotative impression-device carrier having two independent circuits or sets of impression-devices and with means for imparting hypocycloidal and radial movements to said carrier, of a shiftable platen, and means for shifting the platen transversely of the path of rotation of the impression-devices.

25. A machine for making impressions, it comprehending an impression member supported for radial movements; impression-member-actuating means including two intermeshing gear elements, one of which has an offset tooth portion for imparting an advancing movement to the impression member; and means for rotating one gear element relatively to the other.

26. In a machine for making impressions, the combination, with an impression member supported for orbital and advancing movements, of impression-member-actuating means including two intermeshing gear elements, one of which has an offset tooth portion for imparting an advancing movement to the impression member at a predetermined point in the orbital movement of said member; and means for imparting an orbital movement to the impression member and for rotating one gear element relatively to the other.

27. A wheel supported for orbital and advancing movements, combined with a gear adapted to mesh with said wheel, and having an offset portion for advancing the wheel during the orbital movement thereof.

28. The combination with a wheel arranged to have a rotative movement on its own axis, an orbital movement about a remote axis, and a radial movement with respect to said axes, and with means for moving said wheel in an orbital path; of a gear for imparting a rotative movement to said wheel and comprehending means for imparting a radial movement to said wheel at a predetermined point in the orbital and rotative movements thereof.

29. A rotative impression-device carrier supported for advancing movement and carrying a pinion, combined with an internal gear adapted to mesh with said pinion and having an offset portion for effecting an advancing movement of said carrier and pinion during the rotation thereof.

30. Two gears adapted to intermesh one of which has a fixed axis and the other of which has a movable axis and one of which has an offset tooth portion for effecting an advancing movement of the other, combined with means for actuating one of said gears.

31. A rotative impression-device carrier supported for orbital and radial movements and carrying a pinion; combined with an internal gear adapted to mesh with said pinion and having an offset tooth portion adapted to co-operate with the tooth portion of the pinion at a predetermined point in the orbital movement of said pinion, to move said pinion toward the axis of the internal gear; and means for imparting an orbital movement to said pinion and carrier.

32. The combination with a rotative impression-device carrier; of actuating mechanism therefor, comprising two gears adapted to intermesh, the first of which is concentric to said carrier and is arranged to have an orbital movement about the axis of the second gear, and the second gear of which is fixed and has an offset portion adapted for shifting the first gear with respect to the axis of said second gear; and means for imparting an orbital movement to the first gear and said carrier.

33. The combination of a platen supported for longitudinal movement; an impression member supported for diversified movements; means for imparting an orbital movement to said impression member and for intermittently rotating said member upon its own axis in a direction opposite to the direction of orbital movement thereof; means for effecting a radial movement of said impression member at a point in the orbital and rotative movements thereof; and means for shifting the platen longitudinally subsequent to each successive radial movement of said member.

34. The combination of a longitudinally-shiftable platen; a rotative impression member arranged to have an orbital movement in a plane corresponding to the plane of the longitudinal axis of the platen and to be advanced with respect to said platen; means for imparting an orbital movement to said impression member; means for advancing the impression member and simultaneously rolling the same with respect to the platen; means for retracting the impression member; and means for shifting the platen longitudinally subsequent to each successive retraction of said impression member.

35. The combination with an impression member supported for orbital, rotative, and advancing movements; of actuating mechanism for the impression member, comprehending means for imparting a normally-continuous, orbital movement to said impression member, for starting a rotative movement of the impression member at a predetermined point in the orbital movement thereof, for continuing the rotation of the impression member after the starting of such movement, and for imparting an advancing impression movement thereto at a selected distance from the starting-point of rotation without interrupting the rotative or orbital movement of said impression member.

36. The combination with an impression member supported for rotative movement about its own axis for orbital movement about an independent axis and for radial movement with respect to said independent axis; of actuating mechanism for said impression member, comprehending means for imparting a normally-continuous, orbital movement to said impression member, for normally holding said impression member against rotative movement about its own axis during the orbital movement thereof, for starting the rotary movement of the impression member at a preselected point in the orbital movement thereof, for continuing the rotation of the impression member throughout a predetermined arc distance, for imparting a radial impression movement to said member at a predetermined point in the rotative movement thereof and without interrupting the rotative and orbital movements of said member, and for returning said impression member to its normal position immediately succeeding the impression movement thereof.

37. The combination of a platen; an impression member supported for rotative and radial movements; means for intermittently rotating the impression member a predetermined arc distance and in a direction to effect a rolling action between said member and platen; and means located and organized to effect a radial impression movement of the impression member at a preselected point in, and without interrupting, the rotative movement thereof.

38. The combination of a platen; an impression member supported for rotative and radial movements; means for intermittently rotating the impression member a predetermined arc distance and in a direction to effect a rolling action between said member and platen; means located and organized to effect a radial impression movement of the impression member at a preselected point in, and without interrupting, the rotative movement thereof; and means for shifting the platen longitudinally after each successive impression movement of the impression member.

39. The combination of a shiftable platen; an impression member supported to have differential movements toward and away from the platen; means for imparting hypocycloidal and radial impression movements to said impression member; and feed mechanism embodying a rotative member controlled by the movements of the impression member for shifting the platen longitudinally a predetermined distance subsequent to each successive impression movement of the impression member.

40. An orbitally-movable impression device supported to have a rolling toggle action with respect to a work-carrier; combined with a work-carrier; and actuating mechanism for imparting a radial movement to the impression device at a preselected point in the orbital movement thereof and simultaneously effecting a rolling toggle action between the impression device and work-carrier.

41. In a machine for making impressions, impression mechanism including a supporting member and an impression member, both of which are adapted to concurrently rotate in relatively opposite directions during impression, and the impression member being carried by and movable radially of the support during the rotative movement of said impession member, combined with actuating means for said members.

42. A machine for making impression, including two oppositely-rotative members having different axes of movement, one of the members constituting an impression member rotatable during the act of impression and being carried by and shiftable toward and from the axis of the other member, combined with mechanism for actuating said members.

43. Two oppositely-rotative members having relatively remote axes of rotation in substantially parallel planes, and one member of which is carried by, and is orbitally and radially movable with respect to the axis of, the other member; combined with actuating mechanism organized, timed, and operating to impart a normally-continuous, rotative movement to the carrying member and an incidental, orbital movement to the carried member, and also to intermittently and at will rotate the carried member in a direction opposite to the direction of rotation of the carrying member; and means for intermittently imparting a radial movement to the carried member at a predetermined point in the rotative movement thereof.

44. Two oppositely-rotative members one of which is supported by, and is orbitally and radially movable with respect to the axis of, the other member; combined with actuating mechanism organized, timed, and operating to impart orbital and rotative movements of substantially-coinciding velocities to the radially movable member, and also for imparting a radial movement to said member at a predetermined point in the orbital and rotative movements thereof.

45. An impression member supported for orbital, rotative, and radial movements; combined with actuating mechanism organized, timed, and operating to impart to said impression member orbital and rotative movements of coinciding velocities in opposite directions, and comprehending means for imparting radial movements to said member at preselected points in the orbital and rotative movements thereof.

46. The combination with a rotative carrier, of an impression-wheel journaled on the rim of said carrier and having three independent and controllable movements—to

wit, a rotative movement on its own axis, an orbital movement on the axis of the carrier, and a radial movement with respect to said carrier-axis; and means for actuating said carrier and impression-wheel.

47. The combination with a rotative impression member having an orbital movement and having a starting-arm, of a latch interposable in the path of said starting-arm and adapted for starting the rotative movement of the impression member; means for continuing the rotation of the impression member; means for moving the impression member radially at a predetermined point in the rotative movement thereof to make an impression without interrupting the said rotative movement; means for subsequently interrupting the rotative movement of the impression member; and means for returning said impression member to its normal position.

48. The combination in a machine of the class specified, having an impression-point; of a wheel having a series of impression devices on the periphery thereof and supported for orbital, rolling, and radial movements, and also having a starting-arm; means for imparting a normally-continuous, orbital movement to the wheel; a series of starting devices separately interposable in the orbital path of the starting-arm and located to engage said starting-arm at successive predetermined distances from the impression-point of the machine corresponding to the desired successive rolling distances of the several impression devices on the wheel from said impression-point, whereby each starting device will operate to start the rotative movement of the wheel at the requisite distance from the impression-point to bring a particular impression device into operative position; means for continuing the rotation of the wheel a predetermined arc distance; and means for moving the wheel radially when the same arrives at the impression-point of the machine.

49. The combination with a rotatably-supported member and with supporting and actuating devices therefor, of a self-setting reciprocatory detent located to engage the rotatable member and gradually stop the rotation thereof and adapted to hold said member normally in a predetermined position with respect to its carrier.

50. The combination with a rotatably-supported member and with supporting and actuating devices therefor of a spring-actuated, oscillatory detent located to engage the rotatable member and gradually stop the rotation thereof and organized to normally hold said member in a predetermined, peripheral position with respect to its carrier.

51. The combination with a rotatable member and its support and with actuating mechanism therefor, of a self-setting, oscillatory detent normally engaging said rotatable member.

52. The combination with a rotatable member and its support, of a self-setting, reciprocatory detent normally engaging and holding the rotatable member at rest in a predetermined, peripheral position with respect to its support; and means for intermittently rotating said member and simultaneously unsetting the detent.

53. The combination with a frictionally-mounted, rotatable member; of a spring-actuated, oscillatory detent normally engaging and holding the rotatable member in a predetermined position; and means located to intermittently engage the rotatable member and release the same from the detent and simultaneously rotate said member.

54. The combination with a rotatable impression member supported for orbital movement, of actuating means for imparting a normally-continuous orbital movement to said impression member and for intermittently rotating the same during the orbital movement thereof; a self-acting, reciprocatory detent normally holding the rotatable member at rest in a predetermined operative position with respect to its support and embodying resilient means for effecting a gradual stopping of the rotation of the said rotatable member.

55. The combination of two rotatable members one of which is carried by the other for orbital movement; means for imparting a normally-continuous, rotary movement to the carrying member and an orbital movement to the carried member; means for intermittently rotating the carried member during the orbital movement thereof; and a resilient, reciprocatory detent device carried by the carrying member in position to engage and gradually stop the rotation of the carried member and hold the same at rest in a predetermined peripheral position with respect to the carrying member.

56. The combination of a movable body and with means for moving said body, of an impression device pivotally supported thereon; a resilient, reciprocatory detent device located to intercept and normally hold the impression device against rotation and in an inoperative position; and means for engaging the impression device during the movement of the body, and which on engaging the impression device rotates the same opposite to the direction of movement of said body.

57. The combination with a rotatable body and with means for rotating said body, of a shaft journaled on said body for rotative and orbital movements and having a starting-arm; a shaft-starter interposable in the path of the starting-arm to start the rotative movement of said shaft; means for continuing the rotation of said shaft; and a resilient, reciprocatory detent device located and organized to engage the shaft during the rotation thereof with a gradually-increasing resistance, and thereby gradually bring the shaft to rest at, and normally hold the same in, a predetermined, peripheral position with respect to said body.

58. The combination with two oppositely-rotatable members one of which is carried by, and is orbitally movable with respect to the axis of, the other member and with means for rotating said members in opposite directions, one continuously and the other intermittently; of a self-acting, reciprocatory detent device located and organized to intermittently engage the carried member during the rotation thereof with a gradually-increased resistance and hold the same at rest in a predetermined peripheral position with respect to the carrying member intermediate to intermittent rotations of said carried member.

59. The combination with a movable body and with means for imparting movement to said body, of an intermittently-rotatable member carried on said body; means for intermittently rotating said member; a detent device normally engaging and holding the rotatable member at rest and in an inoperative position and comprising resilient instrumentalities shiftable in the plane of movement of the rotatable member and organized to intermittently engage the rotatable member during the rotation thereof with a gradually-increasing resistance and thereby gradually stop the rotation of said member.

60. The combination with a rotatable member supported for orbital movement and with means for imparting an orbital movement to said member; of two alternately-operable intercepting devices, one of which constitutes a starting device for, and is interposable in the orbital path of movement of, the rotatable member to inaugurate the rotation of said member, and the other of which constitutes a stopping member or detent device and comprises resilient instrumentalities self-shiftable into the path of rotative movement of the rotatable member and is effective for engaging said member with a gradually-increased resistance at a predetermined point in the rotative movement thereof, to thereby bring the same to a state of rest in operative position.

61. The combination with a rotatable member and with an oscillatory detent device in normal effective engagement with said member, of actuating means located and organized to intermittently start the rotative movement of said member and simultaneously release the detent from effective engagement therewith; and resilient means comprised in the detent device, for re-establishing an effective engagement between said device and rotatable member at a predetermined point in the rotative movement of said member.

62. The combination with a movable body and with a rotatable member carried by said body, of a reciprocatory detent carried by the movable body and normally engaging the rotatable member and holding the same in a predetermined, peripheral position with respect to the movable body and comprising resilient instrumentalities for effecting an automatic re-engagement of the detent device of the rotatable member intermediate to intermittent rotations of said member; and means located and organized to intermittently rotate said member and thereby simultaneously release the detent device for effective engagement therewith.

63. The combination with a rotatable member supported for oscillatory movement and means for imparting orbital movement to said rotatable member, of an oscillatory detent device located in position to engage and hold the rotatable member in a predetermined peripheral position with respect to its support and comprising resilient means organized to effect a resetting action of the detent device subsequent to its release from, and intermediate to intermittent rotations of, the rotatable member; and actuating means for intermittently rotating the rotatable member and simultaneously unsetting the detent device.

64. In a machine of the character specified, the combination, with a rotatable turret; a shaft-carrying frame supported on said turret for movement in a plane crosswise of the path of rotation of said turret on said shaft; an impression-device-carrier shaft rotatably mounted on said frame and shiftable back and forth during this rotative movement; and means for actuating said turret and impression-device-carrier shaft independently of the said shifting movement of said shaft.

65. The combination with a rotatable turret and with means for rotating the same, of a shaft-carrying frame pivotally supported on said turret near the periphery thereof for movement in a plane radial to the axis of said turret; an impression-device carrier-shaft rotatably mounted on said frame; and means for rotating said shaft during the act of impression.

66. In a machine of the character specified, the combination, with a rotatable turret and with rotating means therefor, of a frame pivotally supported on, and at one side the axis of, said turret and having its pivot-axis at right angles to the axis of said turret; an impression-device carrier-shaft journaled in bearings on said frame with its axis at right angles to the pivot-axis of said frame; and means for intermittently rotating said shaft.

67. In a machine of the character specified, the combination, with a rotatable turret, of a frame supported on said turret near the periphery thereof; a shaft rotatably mounted on said frame with its axis normally parallel to the axis of the turret; means for rotating the turret; means for intermittently rotating the shaft; and actuating mechanism for intermittently moving the carrying frame in a plane crosswise of the path of movement of the turret.

68. The combination with a rotatable body, of a shaft-carrying frame carried on said body for orbital and radial movements with respect to the axis of said body; means for imparting an orbital movement and at will a simultaneous rotative movement to said body and frame, respectively; means located to intermittently impart to the frame a radial advancing movement with respect to the axis of the body in one direction at a preselected point in the orbit thereof; and means for automatically retracting said frame.

69. The combination with a rotatable body or turret, of a shaft-carrying frame supported on said body for movement in a plane crosswise of the plane of movement thereof; a shaft journaled in said frame with its axis normally parallel to the axis of the rotatable body; means for rotating said body to impart an orbital movement to the frame and shaft; and actuating devices located and organized to advance and retract at will the frame and shaft in a radial direction with respect to the axis of the rotatable body at a preselected point in the orbital movement of the frame and shaft.

70. The combination of a rotatable body; a shaft-carrying frame pivotally connected with said body near the periphery thereof; a retracting device normally holding the frame against movement with respect to the body; actuating mechanism for rotating the body and simultaneously imparting an orbital movement to the frame carried thereon; a shaft journaled on the frame with its axis in normal parallelism with the axis of said body; and means organized to impart to the shaft and its carrying-frame an advancing movement in a plane radial to the axis of said rotatable body.

71. The combination of a rotatable body; a shaft-carrying frame pivotally connected with said body near the periphery thereof; a retracting device normally holding said frame against movement with respect to the body; actuating mechanism for rotating the body and simultaneously imparting an orbital movement to the frame carried thereon; a wheel-carrying shaft journaled on the frame with its axis in normal parallelism with the axis of the body; means located in the orbital path of movement of the shaft and organized to impart to the shaft and its carrying-frame an advancing movement in a plane radial to the axis of said rotatable body; and a wheel or impression member carried on said shaft.

72. The combination with a turret, of a shaft-carrying frame pivoted to the turret at one side of the axis and near the periphery thereof, for oscillatory movement in a plane crosswise of the plane of movement of said turret; means for continuously rotating the turret, to impart an orbital movement to said frame; and actuating means located with relation to the frame, to impart oscillatory movements to said frame at predetermined points in the orbital movement thereof.

73. A carrying-frame supported for orbital and radial movements; combined with an impression wheel carrier supported on said frame for rotative movement in a plane coinciding with the plane of the orbital movement of said frame; a resilient device for normally holding the frame against radial movement; actuating means for imparting an orbital movement to the frame; means located to intermittently rotate the impression-wheel carrier during the orbital movement thereof; and means for oscillating the carrying-frame at a predetermined point in the orbital movement thereof.

74. An impression member supported for rotative and radial movements; combined with actuating means for rotating said member and for moving said member radially at some preselected point in, and without interrupting, the rotation of the impression member; and a reciprocatory detent device located to interrupt the rotation of the impression member intermittently and hold said member in a predetermined, peripheral relation with respect to its support.

75. The combination of an impression member supported for rotative and radial movements; means for intermittently rotating said impression member; an actuating device for imparting a radial movement to the impression member during the rotative movement thereof; and an oscillatory detent device normally holding the impression member at rest in a predetermined, peripheral position with respect to its support, and comprising resilient means organized to stop the rotation of the impression member immediately after the radial movement thereof.

76. The combination with a rotatable carrier supported for orbital movement and having a starting-arm and with means for imparting a normally-continuous orbital movement to said carrier, of a latch or starting device interposable in the orbital path of the starting-arm, to start the rotative movement of said carrier; actuating instrumentalities for continuing the rotative movement of said carrier and for imparting a radial movement to said carrier during the orbital and rotative movements thereof; and a resilient, oscillatory detent device located to engage the carrier immediately succeeding the rotary movement thereof and to stop and hold the same at rest in a predetermined, peripheral position with respect to its support.

77. The combination with a rotatable impression-wheel carrier supported for orbital and radial movements and having a starting-arm and a stop-arm; of an oscillatory detent device in normal, effective engagement with the stop-arm of, and normally holding, said carrier in a predetermined, peripheral position with respect to its support and comprising resilient means for effecting an automatic resetting movement of said device intermediate to intermittent rotations of the carrier; a starting device located at one side, and protrudable into the path of movement of, the starting-arm of the carrier; means for imparting

an orbital movement to the carrier; starting-device-actuating means organized to protrude said starting device in the orbit of said starting-arm, whereby to start the rotative movement of the impression-wheel carrier and simultaneously unset the detent device; actuating mechanism for continuing the rotative movement of said carrier; and means for moving the carrier radially at a predetermined point in, and during the rotation of, the carrier.

78. The combination of a rotative impression-wheel carrier supported for orbital and radial movements and having a starting-arm and a stop-arm; means for imparting an orbital movement to said carrier; alternately-effective starting and stopping instrumentalities shiftable into the paths of movements of the starting-arm and stop-arm, respectively, to start and stop the carrier, and the latter of which instrumentalities embodies self-resetting means organized to be unset by the starting of the rotative movement of the carrier; and means for imparting a radial movement to the carrier during the orbital movement thereof.

79. A rotatable two-part impression-device carrier-shaft pivotally supported for oscillatory movement in a plane crosswise of its axis of rotation, and one of which parts is shiftable longitudinally of the other, combined with a driving-pinion fixed to the end of one part of said shaft at one side its pivotal point; an impression-device carrier fixed to the end of the other part of said shaft at the opposite sides of said pivotal point; and means for rotating said shaft and for intermittently rocking the same on its pivot without interrupting the rotation thereof.

80. An impression-wheel carrier comprising a two-part shaft, one part of which is shiftable longitudinally of the other part and has a driving-pinion fixed thereon in combination, with means for shifting the driving pinion axially to render the same effective for rotating the shaft.

81. A rotatable impression-device carrier support mounted for movement crosswise of its axis of rotation and comprising a two-part shaft, one part of which is shiftable longitudinally of the other and has a driving-pinion fixed thereon, combined with means for shifting the pinion axially to render the same effective for rotating the shaft.

82. An impression-device carrier support comprising a two-part shaft supported for orbital, rotative, and radial movements, and one of which parts is shiftable longitudinally of the other, combined with a driving-pinion fixed to one part of said shaft; means for imparting an orbital movement to the shaft; means for automatically shifting one part of said shaft longitudinally of the other at a predetermined point in the orbital movement thereof; means for engaging and rotating the driving-pinion upon the shifting movement thereof, whereby to effect a rotative movement of said shaft; and means for moving said shaft radially at a predetermined point of the orbital and rotative movements thereof.

83. The combination with a rack; of an impression-wheel carrier supported for orbital, rotative, and radial movements and having a driving-pinion which is shiftable longitudinally of the carrier into and out of engagement with the rack; means for imparting an orbital movement to the carrier; means located to shift the pinion intermittently into and out of engagement with the rack at predetermined points in the orbital movement thereof, whereby to intermittently rotate the carrier; and means located to impart a radial movement to the carrier at a predetermined point in the orbital and rotative movements thereof.

84. A rotatable impression-wheel carrier supported intermediate its ends for movement in a direction crosswise to its axis of rotation and having a driving-pinion shiftably supported thereon at one side of its pivotal point and an impression-wheel mounted thereon at the opposite side of the pivotal point; combined with means for automatically shifting the driving-pinion longitudinally of the carrier; a resilient detent device for holding the driving-pinion in its different positions; means for rotating said pinion; and means located to impart a movement to the impression-wheel carrier in a direction crosswise of its axis of rotation at a predetermined point in the rotative movement thereof.

85. An impression-wheel carrier comprising two telescoping members supported for orbital, rotative, and radial movements, and one of which members is shiftable longitudinally of the other and has a driving-pinion fixed thereon; combined with means for imparting an orbital movement to said carrier; a circular rack located in position to engage the pinion upon a shifting movement thereof; means for automatically shifting the pinion into engagement with the rack at a preselected point in the orbital movement thereof; a detent device located on the carrier and holding the shiftable member in its shifted positions; means for imparting a radial movement to the impression-wheel at a predetermined point in the orbital and rotative movements thereof; and means for shifting the pinion out of engagement with the rack at a predetermined point in the orbital movement thereof.

86. An impression-wheel carrier comprising two members supported for orbital, rotative, and radial movements, and one of which members is shiftable longitudinally of the other and has a driving-pinion fixed thereon; combined with means for imparting an orbital movement to said carrier; a starting-arm on one of said members; a latch protrudable into the orbit of the starting-arm to start the rotative movement of the carrier; a circular rack; a driving-pinion fixed to the shiftable member of the carrier and normally held out of engagement with the rack; means controlled by the carrier as it starts in rotation for automatically shifting the pinion into engagement with the rack; a detent for holding the shiftable member in its different positions longitudinally of the other member; means located to automatically impart a radial movement to the carrier at a predetermined point in the orbital movement thereof; means controlled by the continued rotation of the carrier for shifting the pinion out of engagement with the rack; and a stopping device located to automatically stop the rotation of the carrier.

87. The combination with a suitable frame provided with an internal gear or circular rack, of a rotatable impression-wheel carrier supported for orbital and radial movements with respect to said rack and having a driving-pinion shiftable in the plane of the axis of the carrier into and out of engagement with the rack; means for imparting an orbital movement to said carrier; a starting device located to intermittently engage and start the rotative movement of the impression-wheel carrier; means controlled by the rotative movement of said impression-wheel carrier, for automatically shifting the driving-pinion thereon into operative engagement with the rack, to thereby continue the rotative movement of said carrier; and means for intermittently imparting a radial movement to the carrier during the rotative movement thereof.

88. The combination with a driving-gear or circular rack, of a driven gear; means for carrying the driven gear in an orbital path; means for starting the rotation of the driven gear; means controlled by the rotation of the driven gear and operative for shifting said driven gear into and out of engagement with the driving-gear at a predetermined point in the orbital movement thereof; and means for moving the driven gear in a direction crosswise of its orbital path of movement at a preselected point in the orbital movement thereof.

89. A hypocycloidally and independently outward-movable member, combined with means for automatically imparting an outward movement to said member and a hypocycloidal movement thereto when the member has reached its extreme outward position.

90. An outwardly-movable impression device, combined with means organized to move said device in a hypocycloidal path when in its extreme outward position.

91. An impression member supported for independent hypocycloidal and outward movements, combined with means organized to synchronously impart these movements to said member and a hypocycloidal movement thereto when the member is in its extreme outward position.

92. An impression member supported for diversified movements, combined with member-actuating mechanism comprising instrumentalities organized to impart hypocycloidal movement to said impression member, to also intermittently effect an outward movement of the member at a predetermined point in the hypocycloidal movement thereof, and to continue such hypocycloidal movement during the act of impression.

93. An impression member mounted to have a hypocycloidal movement in its approach to the impression point of the machine, and an independent outward movement to make and a continued hypocycloidal movement during the act of making an impression.

94. The combination with a longitudinally shiftable platen, of an impression device supported to have a hypocycloidal and an outward movement in the plane of longitudinal movement of the platen; actuating mechanism comprising instrumentalities for effecting a hypocycloidal and intermittent outward movement of the impression device; and means for shifting the platen, longitudinally, intermediate to intermittent, outward movements of the impression device.

95. The combination with a fixed internal gear having a vertical axis, of an impression-wheel carrier supported for orbital and radial movements with its axis normally parallel to the internal gear and having a driving-pinion shiftable longitudinally thereof into and out from engagement with the internal gear; means for imparting a normally-continuous, orbital movement to the carrier; automatically-operable means for shifting the pinion into engagement with the internal gear at a predetermined point in the orbital movement of said pinion, to thereby rotate the carrier; a detent for normally holding the pinion in its shifted position; means for changing the angular position of the impression-wheel carrier with respect to the axis of the internal gear at a predetermined point in the rotative movement of the pinion; and means effective on the rotative movement of said pinion for returning the same to its normal inoperative position with respect to the internal gear.

96. The combination with a rotatable body, of an impression-wheel-carrier-supporting frame pivotally supported on said rotatable body, a fixed, internal gear located below the pivotal point of the carrier-frame and having its teeth concentric to the axis of rotation of said body; an impression-wheel carrier rotatably supported in the pivoted frame; an impression-wheel having impression devices mounted on said carrier above the pivotal point of the frame; a driving-pinion located below the pivotal point of the carrier-frame with its axis coincident with the axis of the carrier and shiftable longitudinally of said carrier into and out from engagement with the internal gear; means for rotating the movable body to impart an orbital movement to the frame and impression wheel carrier; means located to shift the pinion of the impression-wheel carrier into operative engagement with the internal gear at a predetermined point in the orbital movement of said carrier; means for effecting a centripetal movement of the pinion with respect to its orbit at a predetermined point in the rotative movement thereof, to thereby effect a centrifugal movement of the upper impression wheel-carrying end of the carrier.

97. A rotative impression-device support pivotally supported intermediate its ends for movement in a direction crosswise of its longitudinal axis, combined with actuating devices connected with said support at one side of its pivot and including two intermeshing gear elements one of which has an offset portion for effecting a lateral movement of the other, whereby to rock the support on its pivot at a predetermined point in the rotation thereof; an impression device mounted on said support at the opposite side of said pivot; and means for imparting an orbital movement to said support.

98. The combination, with a rotatable turret and with means for rotating said turret of a rotary impression-device support pivoted near its middle portion, to the turret, near the periphery thereof for movement in a plane crosswise of the path of rotation of the turret; a driving-pinion carried on the support at one side of said pivot; an impression device mounted on said support at the opposite side of said pivot; and means for intermittently rotating the pinion, said means including a fixed internal gear meshing with the driving-pinion and having an offset portion for shifting said pinion laterally to rock the support on its pivot at a predetermined point in the rotative movement thereof.

99. The combination, with a rotatable turret and with means for rotating said turret of a rotatable impression-device support pivoted intermediate its ends on the periphery of said turret for movement in a plane crosswise the path of movement of said turret; an impression device mounted on the support at one side the pivotal point thereof; a driving-pinion in shiftable connection with said support at the opposite side of said pivotal point; an internal gear fixedly supported with its teeth concentric to the axis of the turret and in position to rotate said pinion when the same is in mesh therewith and embodying an offset tooth portion effective at a predetermined point in the revolution of said pinion about said internal gear for shifting the same laterally; and means for shifting the pinion into and out of mesh with the internal gear at predetermined points in the orbital movement of the support.

100. In a machine for making impressions, the combination, with a horizontally rotative turret and with means for rotating the same, of a shaft-carrying frame pivotally mounted on said turret at one side the axis thereof for radial movements with respect to said axis; a two-part shaft journaled in vertical bearings in the frame and one part of which is shiftable longitudinally of the other part, and the other part of which is held as against longitudinal movement; an impression device fixed to the non-shiftable part; a pinion fixed to the shiftable part; means for shifting the pinion and the part carrying said pinion vertically at predetermined points in the rotation of the turret to throw the pinion into and out of mesh with an internal gear; and means including an internal gear having an offset tooth portion for controlling the rotative movements of the pinion and two-part shaft, and for effecting a radial movement of said pinion at a predetermined point in the orbital and rotative movements of said shaft.

101. A hypocycloidal train of gears comprising two members one of which is rotatably supported and is shiftable in the plane of its axis of rotation and in a direction crosswise to said axis, combined with means for shifting one member into and out of engagement with the other member.

102. In a machine for making impressions, the combination, with a rotatable turret having an impression device mounted thereon for rotative movement independent of said turret and with a reciprocatory carriage, of feed mechanism in operative relation with the turret and carriage and embodying two co-operative devices both of which are supported independent of the turret, and one of which is capable of movement independent of, and constitutes a controlling-actuator for, the other.

103. In a machine for making impressions, the combination, with a rotatable turret having an impression device supported thereon for rotative movements independent of said turret, and with a reciprocatory platen-carriage, of power-driven feed mechanism in operative relation with the turret and carriage and embodying two co-operative devices both of which are supported independent of the turret for rotative movements, and one of which is capable of movement independent of, and constitutes a controlling-actuator for, the other.

104. The combination, with a shiftable carriage, of compound feed mechanism in operative connection with said carriage and comprising two independent feed devices supported in co-operative relation, and one of which devices includes a series of radially-disposed, pivotally-supported actuators shiftable in planes transverse to the path of rotation of said device and into position for engaging and actuating the other feed device.

105. The combination, with a rotatable turret and turret-rotating mechanism and with a rotatable impression device mounted upon said turret, of a shiftable carriage; a compound feed mechanism in operative connection with the carriage and comprising a primary and a secondary rotary feed device, both of which are supported independent of the turret, and the former of which is normally active, and the latter of which is normally inactive, and which primary feed device includes a shiftable actuating

instrumentality controlled by the impression device for intermittently actuating the secondary feed device.

106. The combination, with a shiftable carriage and with a rotatable impression device, of compound feed mechanism in operative connection with the carriage and comprising a primary feed device having a series of settable actuators disposed radially about a common center for orbital movements, and independently shiftable in planes transverse to the orbit into two extreme positions; a secondary rotary feed device in operative connection with the carriage and disposed in position to be engaged and rotated by successive actuators when in one of their extreme positions, whereby to intermittently advance the carriage a space-distance; and means operated by the rotatable impression device for independently setting said actuators into position for operating the secondary feed device.

107. In a machine for making impressions, the combination, with a rotatable turret and actuating means therefor and with a rotatable impression device mounted on said turret for hypocycloidal movements, and means for rotating said impression device, of a carriage having a feed-rack, and carriage-feed mechanism including a feed-wheel in geared connection with the rack of the carriage; a reciprocatory actuator pivotally supported independent of the turret for movement into a position for engaging and rotating the feed-wheel; a rotatable carrier for said actuator said carrier being independent of the turret; and a reciprocatory member normally intersecting the path of movement of, and actuated by, the impression device for setting the feed-wheel actuator in a feed-wheel-actuating position at a predetermined point in the orbital movement of said impression device.

108. In a machine for making impressions, a shiftable carriage; a rotatable turret; a rotatable impression member carried on said turret; and means for actuating the turret and impression member, combined with a primary feed device in operative connection with, and constructed and organized to be continuously rotated by, said turret, and including a feed-wheel actuator supported independent of the turret and operated by the impression member for intermittently actuating a secondary feed device, and a secondary feed device in operative connection with the carriage and including a feed-wheel disposed in position to be intermittently operated by the said actuator.

109. In a machine of the class specified, a compound feed mechanism comprising a continuously-progressive and an intermittently-progressive feed device, the former of which includes a rotary member having a series of radially-disposed, pivotally-supported feed-wheel actuators, each having at the free end thereof a pin settable into position for actuating a feed-wheel, and the latter of which includes a feed-wheel with radial arms disposed in position to be successively engaged and operated by the pins of the actuators.

110. The combination, with an impression-device support and rotating means therefor, of a shiftable carriage, and feed mechanism operatively connecting the carriage and support and comprising a rack on the carriage, an intermittently-progressive feed device including a feed-wheel in geared connection with the carriage-rack, a continuously-progressively feed device including two intermeshing gear-wheels, one of which is mounted on the support and the other of which is supported independent of the turret for rotative movement and has a series of feed-wheel actuators independently shiftable into position for engaging and rotating said feed-wheel.

111. In a machine for making impressions, the combination, with a rotatable turret and actuating means therefor, and with a rotatable impression device mounted on said turret for orbital movement, and rotating means for said impression device, of a shiftable platen-carriage; a feed-wheel in geared connection with said carriage; an indicator-wheel supported at one side the axis of, and in geared connection with, the turret, and having a series of settable feed-wheel actuators independently shiftable into the path of rotation of the feed-wheel; means operable by the impression device, in its orbital movement with the turret, for setting the actuators into position for operating the feed-wheel; and means for retracting the set-actuator at a predetermined point in the rotative movement of the indicator-wheel.

112. In a machine for making impressions, the combination with a turret and with means for rotating said turret, of an impression device rotatably mounted on said turret; means for imparting a rotary movement to said impression device independent of its orbital movement with said turret; a reciprocatory carriage including a rack; a star-wheel in geared connection with said rack; an indicator-wheel supported for rotation at one side of, and in geared connection with, said turret; a series of pins carried by said indicator-wheel and shiftable into position for engaging an arm of, and rotating, the star-wheel; and means disposed in the path of orbital and rotative movements of the impression device, and operated by said impression device prior to its arrival at the impression-point for setting a pin into position for operating the feed-wheel, and said indicator-wheel being so timed in its rotative movements, and the star-wheel being so positioned relatively to said wheel that a movement of the star-wheel will be effected after the arrival of the impression device at the impression-point.

113. In a machine of the class specified, the combination, with a rotatable turret and means for rotating the same, and with a shiftable carriage, of an impression member mounted on the turret for hypocycloidal movement; feed mechanism in operative connection with the carriage and comprising an intermittently-operable carriage-actuating train of gears; a continuously-operable train of gears embodying a series of shiftable indicating-actuators supported by one of said gears for orbital movement independent of said turret and shiftable into and out of operative relation with the actuating member of the intermittently-operable train of gears; and means operable by the impression member at a predetermined point in the hypocycloidal movement thereof for shifting the indicating-actuator into and out of operative relation with the intermittently-operable train of gears.

114. A turret; means for rotating said turret; a series of independent impression devices mounted on said turret for hypocycloidal movements; means for actuating said impression devices, combined with a reciprocatory carriage; carriage-feed mechanism in operative relation with the turret and carriage and comprising a train of gears, one of which includes a feed-wheel and another of which includes a series of independently-operable actuators shiftable into position for operating the feed-wheel, and which actuators are independent of the turret; and means operative by the impression devices at a common point in their respective hypocycloidal movements for shifting the actuators into position for operating the feed-wheel.

115. An impression device supported for hypocycloidal movements, means for imparting these movements to said impression device, combined with a reciprocatory carriage, and a carriage-feed train of gears embodying a feed-wheel, and a series of orbital, movable feed-wheel actuators having their common orbital axis at one side, and independent of, the impression device, and supported, organized, and operating, with respect to said impression device, to effect a feed movement of the train subsequent to an impression movement of said device.

116. The combination, with a shiftable carriage and with an impression device supported for combined orbital and radial impression movements, of a carriage-feed train of gears in operative connection with the carriage, and independent actuating devices relatively organized and timed to effect an impression movement of the impression device, and a movement of the feed train, the former movement in advance of the latter.

117. The combination, with a shiftable carriage and with an impression device supported to have hypocycloidal and advancing movements in making an impression, of a carriage-feed train of gears in operative connection with the carriage and embodying a feed-wheel; and independent actuating devices relatively organized and timed in their movements to effect a combined hypocycloidal and advancing impression movement of the impression device and a carriage-advancing movement of the feed-wheel, the former in advance of the latter.

118. In a machine of the class specified, the combination, with a rotatable turret, of a rotatable impression device carried on said turret; rotating instrumentalities for the turret and impression devices; a shiftable carriage having a rack; carriage-feed mechanism comprising a primary train of intermeshing gears, one gear of which is carried by the turret and another of which is mounted independent of said turret and has a series of shiftable indicating-actuators constructed and organized to be set by the operation of the impression device so as to intermittently actuate a secondary train of gears; and a secondary train of gears in operative connection with the carriage-rack and embodying a star-wheel adapted to be rotated by a set-actuator of the primary train.

119. The combination, with a rotatable turret and means for rotating the same, of an impression device mounted on the turret for hypocycloidal and advancing and retracting movements; a shiftable carriage including a rack; and carriage-feed mechanism embodying a constantly-rotating device and an intermittently-rotatable device, the former of which includes an indicator-wheel mounted independent of the turret and having a series of indicating-actuators shiftable at a predetermined point in the operation of the impression device into and out of the path of movement of the intermittently-rotatable device and constructed and organized to intermittently actuate said device and thereby effect an intermittent feed movement of the carriage.

120. A rotatable turret; an impression device supported for hypocycloidal and advancing and retracting movements on said turret; a shiftable carriage, and means for actuating the turret and impression device, combined with feed mechanism comprising two independent trains of gears, one of which is in operative connection with the turret, and the other of which is in operative connection with the carriage, and the former of which includes an indicator-wheel supported for rotation independent of the turret and has a series of shiftable actuators controlled by the impression device at a predetermined point in the hypocycloidal movement thereof, and the latter of which has a star-wheel located to be intermittently operated by said actuators.

121. The combination, with a rotatable turret, of a pinion fixed to, and rotating with, said turret; an independently-supported gear-wheel meshing with said pinion and carrying a series of settable pins shiftable transversely of the plane of said wheel into and out of the path of movement of a complementary rotatable device; means for independently setting said pins in operative relation with the complementary device; a complementary rotatable device having a member located in operative relation with, and adapted to be operated by, said pins; and means located to return said pins to their normal inoperative positions at predetermined points in the rotative movement of the pin-carrying gear-wheel.

122. The combination, with a rotatable turret and with an impression device supported on said turret to have orbital and radial movements, of actuating mechanism for said turret and impression device; a feed-wheel actuating device supported for rotation at one side of said turret and having a series of circumferentially-disposed pins shiftable between two extreme positions transversely of the path of said device; means for rotating said feed-wheel actuating device; a pin-shifting device located in the path of movement of the impression device and organized to advance the pins to one of their extreme positions independently; a shiftable carriage; gearing in operative engagement with said carriage and embodying an intermittently-rotatable feed-wheel disposed in position to be actuated by the shiftable pins when in one of their extreme positions and means located in the path of, and adapted for retracting, said pins.

123. A key-controlled device comprising a rotatable pin-carrying member having a series of pivotally-supported, radially-disposed actuators, each having a pin at the free end thereof shiftable transversely of the path of movement of said member into two extreme positions, combined with means constructed and organized to shift said pins automatically during the rotation of said member, first into one and then into another extreme position; and complementary mechanism intermittently actuated by said pins while in one of their extreme positions.

124. A key-controlled device comprising a rotatable pin-carrying member having a series of pivotally-supported, radially-disposed actuators, each having a pin at the free end thereof shiftable transversely of the path of movement of said member into two extreme positions, combined with means constructed and organized to automatically shift said pins, during the rotation of said member, first into one and then into another extreme position; complementary mechanism intermittently actuated by said pins while in one of their extreme positions; and means for locking the actuators in their shifted positions.

125. A key-controlled device comprising a rotatable pin-carrying member having a series of pivotally-supported, radially-disposed actuators, each having a pin at the free end thereof shiftable transversely of the path of movement of said member into two extreme positions, combined with means constructed and organized to shift said pins, during the rotation of said member, first into one and then into another extreme position; complementary mechanism intermittently actuated by said pins while in one of their extreme positions; and automatically-operative detent devices for engaging the actuators and for holding them in their advanced and retracted positions alternately.

126. In a machine for making impressions, the combination, with an impression device supported for differential movements and with power-operated key-controlled mechanism for imparting an impression movement to said device, of a shiftable carriage; and power-actuated feed mechanism constructed, organized, timed and operating to have an ineffective or idle movement during the first portion of the impression movement of said device and to have a carriage-actuating movement succeeding the impression movement of said impression device.

127. In a machine for making impressions, the combination, with an impression member supported for differential movements, of power-actuated key-controlled mechanism for imparting to said impression member a hypocycloidal movement to bring the proper character to the impression point, and for imparting a radial impression movement to said device at a predetermined point in the hypocycloidal movement thereof; a shiftable carriage; a power-actuated feed mechanism constructed, organized, timed, and operating to have an ineffective or idle movement during the first portion of the hypocycloidal movement of the impression device and to have a carriage-actuating movement succeeding the impression movement of said impression device.

128. In a machine for making impressions, the combination, with an impression member and means for imparting an impression movement to said member, of a shiftable carriage; and a compound power-actuated feed mechanism comprehending a normally-rotative feed device, the former of which includes a series of settable actuators controlled by the impression member, and which actuators are adapted for controlling the intermittent movement of the secondary feed device, and which feed mechanism is so constructed and organized, and is so timed in its movements relatively to the movement of the impression member as to have an idle or ineffective movement during the first part of the impression movement of said member and to have a carriage-shifting movement immediately succeeding the impression movement of said impression member.

129. The combination, with a shiftable carriage; of a movable impression device; means for imparting an impression movement to said device; power-actuated feed mechanism in normal effective relation with the carriage and controlled in its carriage-feeding operation by the impression device at one point in the movement thereof, and organized to effect a step-by-step advancing movement of said carriage; key-controlled instrumentalities for temporarily disconnecting the feed mechanism and carriage; and means organized to retract the carriage automatically concurrently with the disconnection of the feed mechanism and said carriage.

130. The combination, with a shiftable carriage and

with a rotatable power-operated impression device, of power-driven feed mechanism organized to impart a step-by-step movement to the carriage at predetermined points in the rotative movement of the impression device and embodying a clutch for normally maintaining connection between the feed mechanism and carriage; key-actuated instrumentalities for releasing the clutch; and means organized to retract the carriage on the release of said clutch.

131. The combination, with a rotary turret and rotating means therefor, and with a rotary impression device mounted on said turret for hypocycloidal movements and means for rotating said impression device, of a shiftable carriage; power-operated feed mechanism controlled by the impression device at predetermined points in the hypocycloidal movements thereof for effecting a step-by-step advancing movement of said carriage and embodying a clutch normally connecting the feed mechanism and carriage; and key-actunted devices constructed and organized to release the clutch to disconnect said feed mechanism and carriage and permit a retractive movement of said carriage.

132. The combination, with a shiftable carriage and with a rotatable impression device and means for rotating said impression device, of a compound rotary feed mechanism organized to impart a step-by-step movement to the carriage and comprising a primary feed device embodying settable instrumentalities controlled by the impression device, and a secondary feed device controlled in its movements by the ordinary feed device and embodying a clutch; a power-rotated instrumentality for actuating the primary feed device; key-actuated devices for releasing the clutch whereby temporarily to disconnect the feed mechanism and carriage; and means for automatically retracting the carriage.

133. The combination with a shiftable carriage, of power driven impression devices, power driven rotatable feed mechanism in normal in-operative connection with said carriage and organized to impart a step-by-step advancing movement to the carriage, means for actuating the step-by-step mechanism, means for retracting the carriage, and key controlled instrumentalities constructed, organized and operable for temporarily disconnecting the operative connection between parts of the feed mechanism normally in operative connection and for thereupon automatically permitting the retractive movement of the carriage.

134. The combination with a shiftable carriage of rotatable feed mechanism in normal operative connection with said carriage and organized to impart step-by-step advancing movement to the carriage; key controlled instrumentalities for temporarily disconnecting the operative connection between the parts of the feed mechanism normally in operative connection and thereupon automatically effecting a retractive movement of the carriage; and a turret for rotating said feed mechanism.

135. The combination with a shiftable carriage of a rotatable impression device; means for imparting an impression movement to said impression device; rotary feed mechanism in normal operative connection with said carriage and controlled by the impression device for imparting an advancing movement to said carriage subsequent to each impression movement of said device; and key controlled instrumentalities for temporarily disconnecting the operative connection between the parts of the feed mechanism normally in operative connection and for thereupon automatically effecting a retractive movement of the carriage.

136. The combination with a shiftable carriage of a rotatable impression device, and with power driven means for imparting a step-by-step movement thereto, of clutch-operating and spring-actuated instrumentalities for automatically effecting a retractive movement of the carriage.

137. The combination with a platen, of feed mechanism for imparting a step-by-step feed movement thereto, continuously active driving mechanism normally disconnected from the feed mechanism, means comprising settable pins carried by said continuously active mechanism for connecting the same with said feed mechanism for effecting a single step of the step-by-step feed, means operative at a predetermined point in the path of advance of the platen for automatically effecting a retractive movement of the platen, and means operative at a predetermined point in said retractive movement for imparting a rotative movement to the platen.

138. The combination with a platen, of feed mechanism for imparting a step-by-step advancing movement to said platen, a clutch for normally connecting said platen to said feed mechanism, means adjustable at various points in the path of movement of the platen for releasing the clutch, means effective upon the release of the clutch for retracting the platen, and means operable by the platen at a predetermined point in its retractive movement for effecting a rotative movement thereof.

139. The combination, with an impression device supported for hypocycloidal movement, and with power mechanism for actuating the same, of a shiftable carriage; feed mechanism in operative connection with said carriage and organized to impart a longitudinal advancing movement thereto; key-controlled instrumentalities including a solenoid operable for temporarily disconnecting the feed mechanism and carriage and for effecting a retractive movement of said carriage; and mechanism including a solenoid operable for shifting the carriage in a plane transverse to the path of longitudinal movement thereof.

140. The combination, with a rotatable impression-device carrier supported for orbital movement and having a series of rows or circuits of impression devices, and with a shiftable platen located in operative relation with said impresion-device carrier, of actuating devices organized to impart orbital and rotative movements to the impression-device carrier and a longitudinal feed movement to the platen; and key-controlled instrumentalities, including a solenoid, constructed and operable for shifting the platen in a plane transverse to the path of rotation of the impression-device carrier.

141. The combination, with an impression device supported for hypocycloidal and radial movements, and with means for actuating said device, of a platen-carriage supporting-frame; means organized to shift said frame from one to another extreme position transversely of the hypocycloidal path of the impression device; a platen-carriage shiftably mounted on said frame; feed mechanism organized to impart a feed movement to the platen-carriage in a plane at right angles to the plane of movement of its carrying frame; a platen rotatably supported on said platen-carriage; and actuating devices for said platen.

142. The combination, with an impression device supported for rotative and radial movements, and with means for imparting these movements to said impression device, of a platen-carriage supporting-frame; means organized to shift said frame from one to another extreme position transversely of the path of rotation of the impression device; a platen-carriage shiftably mounted on said frame; power-driven rotary-feed mechanism organized to impart a feed movement to the platen-carriage in a plane at right angles to the plane of movement of its carrying frame; a platen rotatably supported on said platen-carriage; and actuating devices for said platen.

143. The combination, with an impression-device carrier supported for rotative, orbital, and radial movements, and with means for imparting these movements to said carrier, of a platen-carriage supporting-frame shiftable between two extreme positions transversely of the path of rotation of the impression-device carrier; key-controlled actuated devices including a rock-shaft and a solenoid for shifting said frame from one to another extreme position; a platen carriage supported for movement on said frame; feed mechanism for imparting a step-by-step advancing movement to the platen in a plane at right angles to the movement of its supporting-frame; and key-controlled instrumentalities for disconnecting the feed mechanism and carriage and for effecting a retractive movement of said carriage.

144. The combination, with an impression-device carrier supported for rotative, orbital, and radial movements, and with means for imparting these movements to said carrier to make the impression, of a platen-carriage supporting-frame shiftable between two extreme positions

transversely of the path of rotation of said carrier; key-controlled actuating devices including a rock-shaft and a solenoid for shifting said frame from one to another extreme position; a platen-carriage supported for movement on said frame, rotative power-driven feed mechanism controlled by the impression device at a predetermined point in the orbital movement thereof for imparting a step-by-step advancing movement to the carriage in a plane at right angles to the movement of its supporting frame; and key-controlled instrumentalities for disconnecting the feed mechanism and carriage and for effecting a retractive movement of said carriage.

145. The combination, with an impression-device carrier having a plurality of circuits of impression devices, and with means for imparting hypocycloidal and radial impression movements thereto, of a platen carriage supporting-frame shiftable between two extreme positions crosswise of the path of hypocycloidal movement of said carrier and pivotally supported so as to move in the arc of a circle during such shifting movement; key-controlled devices in operative connection with, and effective for shifting, said frame from one end to the other of its extreme positions; a platen-carriage supported on said frame for movement in two directions one movement with, and the other independent of, said frame and having a platen in operative relation with the impression device carrier; and means for actuating the platen-carriage and platen.

146. The combination, with a carrier having a plurality of circuits of impression devices, and with means for imparting hypocycloidal and radial impression movements thereto, of a platen-carriage supporting-frame shiftable between two extreme positions crosswise of the path of hypocycloidal movement of said carrier and pivotally supported so as to move in the arc of a circle during such shifting movement; key-controlled devices in operative connection with, and effective for shifting, said frame from one to the other of its extreme positions, a platen-carriage supported on said frame for movement in two directions one movement with, and the other independent of, said frame, and having a platen in operative relation with the impression-device carrier; power-actuated mechanism in operative connection with, and effective for imparting a step-by-step longitudinal advancing movement to, the platen-carriage and embodying a clutch operable for normally retaining the same in operative relation with said carriage; means controlled by the impression device at a predetermined point in the hypocycloidal movement thereof for effecting a carriage-feed movement of the feed mechanism; means for releasing the clutch to disconnect the feed mechanism and carriage; and means for automatically retracting the carriage on the release of said clutch.

147. The combination, with a rotatable turret and with means for rotating said turret, of an impression device pivotally supported on said turret at one side the axis thereof for orbital, rotative, and radial movements; a reactionary platen-carriage-supporting-frame shiftable in the arc of a circle between two extreme positions transversely of the orbit of the impression-device; a rock-shaft having a crank-arm pivotally connected with said frame; an adjusting device in connection with said rock-shaft; means including a solenoid in operative connection with the crank and effective for shifting the platen-carriage supporting-frame from one to another of its extreme positions; a platen-carriage mounted on said frame and having a longitudinal movement in a direction crosswise the direction of movement of said frame; and power-actuated feed mechanism in operative connection with the carriage and turret and effective at predetermined points in the orbital movements of the impression device for imparting a longitudinal movement to the platen-carriage.

148. The combination of a rotatable impression-wheel carrier; a reactive carriage-supporting frame shiftable between two extreme positions in the plane of the axis of movement of said impression-wheel carrier; means for shifting said frame from one to the other of its extreme positions; an adjustably-supported crank-shaft in operative connection with the frame and effective for rocking or moving the frame laterally during the shifting movement thereof; and means for adjusting said crank-shaft to increase or decrease the range of lateral movement of the frame with respect to a given point.

149. The combination with a suitable support, of a platen-carriage-supporting frame pivotally mounted on said support and shiftable between two extreme positions; a platen-carriage mounted on said frame for longitudinal movement independently thereof; key-controlled instrumentalities including a solenoid and suitable connections for shifting the frame from one to the other of its extreme positions; means in connection with, and adapted for effecting a rocking movement of, the frame during the shifting movement thereof from one to the other of its extreme positions; and means for controlling the movements of the platen-carriage.

150. The combination with framework, of a rotatable impression-wheel carrier; an impression-wheel mounted on said carrier and having two independent circuits of impression devices; means organized and connected to rotate said impression-wheel carrier and impart an impression movement thereto; a platen-carriage-supporting frame shiftable between two extreme positions in a plane crosswise of the plane of movement of the impression-wheel; a platen-carriage shiftably supported on said platen-carriage-supporting frame and having a platen shiftable with said frame into operative relation with one or the other of the circuits of impression devices; a frame-shifting lever in pivotal connection with and effective for shifting the frame from one to the other of its extreme positions to bring the platen into operative relation with one or the other circuits of impression devices; an electromagnet having an electrically-actuated device in operative connection with said frame-shifting lever and effective for actuating said lever to shift the frame; an electrical circuit connected to energize the magnet; and a key-actuated circuit-closer located in said circuit and operative for controlling the energization of said magnet.

151. The combination with framework, of a rotatable impression-wheel carrier; an impression-wheel mounted on said carrier and having two independent circuits of impression devices; means organized and connected to rotate said wheel carrier and impart an impression movement thereto; a platen-carriage-supporting frame shiftable between two extreme positions in a plane crosswise of the plane of movement of the impression-wheel; a platen-carriage shiftably supported on said platen-carriage-supporting frame and having a platen shiftable with said frame into operative relation with one or the other of the circuits of impression devices; a frame-shifting lever in pivotal connection and effective for shifting the frame from one to the other of its extreme positions to bring the platen into operative relation with one or the other of the circuits of impression devices; of an electromagnet having an electrically-actuated device in operative connection with said frame-shifting lever and effective for actuating said lever to shift the frame; an electrical circuit connected to energize the magnet; a key-actuated circuit-closer located in said circuit and operative for controlling the energization of said magnet; a crank-shaft pivotally connected with the frame, remote from and between the opposite ends thereof and effective for moving the frame laterally during the shifting movement thereof to cause the platen to traverse a curvilinear course in its movement from one to the other of its operative positions with relation to the two circuits of impression-devices; and an adjusting device in connection with said crank-shaft.

152. The combination with the main framework; of a rotatable impression-wheel having two independent circuits of impression devices; means organized to rotate said impression-wheel and impart an impression movement thereto; a platen-carriage-supporting frame shiftable between two extreme positions in a plane crosswise of the plane of rotation of the impression-wheel; means organized to normally hold the platen-carriage-supporting frame in one of its extreme positions; a frame-shifting lever in operative connection with the platen-carriage-supporting frame; a solenoid having a shiftable core in operative con-

nection with said lever and operative for actuating said lever to shift the platen-carriage-supporting frame from its normal to its other extreme position; an electrical circuit embodying a key-actuated circuit-closer for energizing the solenoid; a platen-carriage mounted on the carriage-supporting frame for movement in a plane crosswise of the plane of movement of said frame and having a platen in normal operative relation with one of the circuits of impression devices of the impression-wheel and shiftable with the carriage-supporting-frame into operative relation with the other circuit of impression devices; and independent devices for advancing and retracting the carriage.

153. The combination, with a reactionary shiftable carriage, of power-rotated feed mechanism in operative connection with, and effective for imparting step-by-step advancing movements to the carriage and embodying a carriage-releaser; a rock-shaft connected to operate the releaser; and an electromagnet having means connected with, and operable for controlling the operation of, said rock-shaft.

154. The combination, with a shiftable carriage, of power-driven rotary feed mechanism in normal operative connection with, and effective for imparting a step-by-step advancing movement to, the carriage and including a carriage-releaser; a rock-shaft connected to operate the releaser; means including an electromagnet in operative connection with, and effective for controlling the operation of, said rock-shaft; and means effective on the release of the carriage for automatically retracting the same.

155. The combination, with suitable frame, of a carriage mounted on said frame; power-driven rotary feed mechanism in normal effective connection with said carriage and embodying a clutch device operable for disconnecting the feed mechanism and carriage; means including an electromagnet, a rock-shaft and intermediate connections for releasing the clutch device; means for energizing and deënergizing said magnet to control the operation of the clutch device; and means for retracting the carriage on the release of said clutch device.

156. A longitudinally-shiftable carriage and power-driven rotary feed mechanism in normal effective connection with said carriage and adapted for feeding said carriage in one direction and embodying a carriage-releaser; combined with releaser-actuating means comprising a rock-shaft in operative connection with the releaser; an electrical circuit; a solenoid in said circuit and having a shiftable core in operative connection with the rock-shaft; a circuit-closer located in said circuit; a key for actuating said circuit-closer; and means operable upon the release of said carriage for shifting said carriage in a direction opposite to the direction of its feed movement.

157. A rotary turret; means for rotating said turret; an impression device supported in said turret for hypocycloidal and radial movements; and means for actuating the impression device, combined with a longitudinally shiftable carriage; power-driven rotary feed mechanism controlled by the impression device and in normal effective connection with said carriage and embodying a carriage-releaser; a rock-shaft in operative connection with the releaser; rock-shaft-actuating devices controlled by the feed movement of the carriage to actuate said shaft and thereby disconnect the feed mechanism and carriage at a predetermined point in the feed movement of said carriage; and carriage-retracting means operable upon the actuation of said rock-shaft for retracting the carriage.

158. The combination with a rotary power-actuated turret, and with a power-actuated impression device supported thereon for rotative and radial movements, of a shiftable supported carriage; power-driven feed mechanism controlled by the impression device at a predetermined point in its orbital movement, and in normal operative connection with said carrier; a rock-shaft journaled in bearings on said frame in operative relation with the carriage and having a rocker-arm thereon; a rock-shaft actuator located on the carriage in position to engage the rocker-arm and thereby rock the rock-shaft; means intermediate of the feed mechanism and rock-shaft and controlled by the movement of said rock-shaft to release the carriage; and means for effecting a retractive movement of said carriage.

159. The combination, with a reactive carriage having a rotatable platen, and with means for advancing said carriage with a step-by-step movement, of a longitudinally-fixed rock-shaft disposed in parallelism with the platen; a carriage-releaser operable by said rock-shaft; and rock-shaft actuating instrumentalities comprising a cam-faced rocker-arm fixed to said rock-shaft and a rocker-arm actuator located on the carriage in position to co-operate with, and partially rotate, the rocker-arm and the rock-shaft at a predetermined point in the advancing movement of said carriage, whereby to operate the releaser, free the carriage, and permit a retractive movement of said carriage.

160. The combination, with a reactive carriage having a rotatable platen, and with means for advancing said carriage with a step-by-step movement, of a longitudinally-fixed rock-shaft disposed in parallelism with the platen; a carriage-releaser operable by said rock-shaft; rock-shaft actuating instrumentalities comprising a cam-faced rocker-arm fixed to said rock-shaft and a rocker-arm actuator located on the carriage in position to co-operate with, and partially rotate, the rocker-arm and the rock-shaft at a predetermined point in the advancing movement of said carriage, whereby to operate the releaser, free the carriage, and permit a retractive movement of said carriage; and means in connection with said carriage and rocker-arm and effective at a predetermined point in the retractive movement of said carriage for automatically imparting a rotative movement to the platen.

161. The combination, with a suitable frame, of a longitudinally shiftable carriage having a rotatable platen; feed mechanism in normal effective relation with the carriage and organized to impart a step-by-step advancing movement to said carriage and which feed mechanism includes a clutch; carriage-retracting means operative on the release of said clutch for retracting said carriage; a rock-shaft journaled in bearings on the frame with its axis in parallelism with the longitudinal axis of the platen and having a cam-faced rocker-arm in position to be actuated by a fixture on the carriage at a predetermined point in the advancing movement of said rocker; a fixture on said carriage co-operative with the rocker-arm to actuate the rock-shaft; and a clutch-actuating device operable on the movement of the rock-shaft in one direction for disconnecting the feed mechanism and carriage, and operable on the movement of the rock-shaft in the opposite direction for connecting the feed mechanism and carriage.

162. The combination, with a shiftable reactive carriage having a rotatable platen and with a feed mechanism in normal effective connection with said carriage and effective for imparting a step-by-step advancing movement thereto, and embodying a carriage-releaser, of a rock-shaft in operative connection with the carriage-releaser and supported with its axis in parallelism with the longitudinal axis of the platen; means including a cam-faced arm operable at a predetermined point in the advancing movement of the carriage for rocking the rock-shaft in one direction to release the carriage from effective connection with the feed mechanism; means operable at a predetermined point in the retractive movement of the carriage for rocking the carriage in an opposite direction, whereby to reëstablish an effective connection between the feed mechanism and carriage; and means operable at a predetermined point in the retractive movement of said carriage for imparting a rotative movement to the platen.

163. The combination, with a shiftable carriage having a rotatable platen, and with feed mechanism embodying a clutch operable for connecting and disconnecting the carriage and feed mechanism, of a rock-shaft supported with its axis in parallelism with the axis of the platen and including a clutch-actuating device; two independent rock-shaft actuators, one of which includes a cam-faced rocker-arm and is effective at a predetermined point in the advancing movement of the carriage for rocking the rock-shaft in one direction to release the clutch, and the other of which is operative at a predetermined point in the retractive movement of the carriage to rock the shaft in an opposite direction to reëngage the clutch members; and means operable upon the disconnection of the feed mechanism and carriage for automatically retracting said carriage.

164. The combination, with a shiftable reactive carriage having a rotatable platen, and with feed mechanism embodying a clutch operable for connecting and disconnecting the carriage and feed mechanism, of a rock-shaft supported with its axis in parallelism with the axis of the platen and including a clutch actuating device; two independent rock-shaft actuators, one of which includes a cam-faced rocker-arm and is effective at a predetermined point in the advancing movement of the carriage for rocking the rock-shaft in one direction to release the clutch, and the other of which is effective at a predetermined point in the retractive movement of the carriage for rocking the shaft in an opposite direction to reëngage the clutch members, and means for automatically retracting said carriage, when the clutch is disconnected.

165. The combination, with a reactive shiftable carriage, of a platen rotatably mounted on said carriage and having a feed-wheel; a feed-lever in operative connection with the feed-wheel; carriage-feed mechanism embodying a clutch, between said feed mechanism and carriage; a rock-shaft supported with its axis in parallelism with the axis of the platen and including a clutch-actuating device; and two independent rock-shaft actuators, one of which includes a cam-faced rocker-arm and is effective at a predetermined point in the advancing movement of the carriage for rocking the rock-shaft in one direction to release the clutch and facilitate a retractive movement of the carriage, and the other of which is operative at a predetermined point fn the retractive movement of the carriage for rocking the shaft in an opposite direction to re-engage the clutch members, and instrumentalities for imparting a platen-rotating movement to the feed-lever.

166. The combination with a suitable frame, of a rock-shaft journaled on said frame and having an arm at one end thereof; a reactive platen-carriage having a rotatably-supported platen located in parallelism with the rock-shaft; means organized to advance said carriage with a step-by-step movement; an arm located on said carriage in position to co-operate with and actuate the arm on the rock-shaft at a predetermined point in the advancing movement of said carriage; and means organized to rotate the platen.

167. The combination with a suitable frame, of a rock-shaft journaled on said frame and having a cam-faced arm at one end thereof; a reactive platen-carriage having a rotatably-supported platen located in parallelism with the rock-shaft; means organized to advance said carriage with a step-by-step movement; an arm located on said carriage in position to coöperate with and actuate the cam-faced arm on the rock-shaft at a predetermined point in the advancing movement of the carriage; and platen-rotating devices controlled by the retractive movement of the carriage for rotating said platen.

168. The combination with a suitable frame, of a platen-carriage supported on said frame for longitudinal movement and having a rotatable platen; a rocker-arm actuator carried on said carriage; a rock-shaft journaled on said frame and held as against longitudinal movement with its axis in parallelism with the axis of the platen; a rocker-arm adjustably secured to the rock-shaft and having a cam-face intersecting the path of the rocker-arm actuator; independent means for advancing and retracting the carriage; and means controlled by the retractive movement of said carriage for automatically imparting a rotative movement to the platen at a predetermined point in the retractive movement of the carriage.

169. The combination, with a suitable frame, of a rock-shaft journaled on said frame and having a laterally-extending arm fixed to one end thereof; a reactive carriage having a rotatable platen; means organized to advance the carriage and platen in a line substantially parallel to the axis of the shaft; a clutch in connection with, and controlled by, the rock-shaft; a cam-faced arm fixed to said carriage in position to engage the rock-shaft arm and rock the rock-shaft, whereby to release the clutch and facilitate a retractive movement of the carriage; and means operable at a predetermined point in the retractive movement of the carriage for rotating the platen.

170. The combination with a shiftable carriage having a rotatable platen and with means for advancing and retracting said carriage, of a rock-shaft and subsidiary instrumentalities organized to control the retractive and advancing movement of the carriage; rock-shaft-actuating devices controlled by the advancing movement of the carriage to rock the shaft in one direction and thereby permit the retractive movement of the carriage; magneto-electric rock-shaft-actuating instrumentalities having a contact-point located in the path of retractive movement of, and actuated by, the carriage, to effect a movement of the rock-shaft in a reverse direction and thereby permit the advancing movement of said carriage; and platen-feeding devices controlled by the latter movement of the rock-shaft for rotating said platen.

171. The combination with a suitable frame, of a rock-shaft journaled on said frame; a solenoid having a shiftable core in operative connection with, and effective for operating, said rock-shaft; a platen-carriage shiftable on said frame and having a rotatable platen; means organized to shift said carriage; a normally open electrical circuit in connection with the solenoid and having a contact device located in the path of movement of, and operable by, the carriage for closing the circuit to energize the solenoid at a predetermined point in the movement of the carriage and thereby effect a rocking movement of the rock-shaft; and platen devices controlled by the rocking movement of said rock-shaft, for effecting a rotative movement of said platen, substantially simultaneously with the operation of the contact device.

172. The combination with a rotatable platen and fixed turret, a tensioned rod, upon which the platen is mounted, a frame between the ends of which said rod is stretched and thereby put under permanent tension, and means independent of said rod and controlled by the rocking of the shaft for imparting longitudinal relative movement to the platen upon the rod.

173. The combination, with an axially-recessed type-writer platen, of a longitudinally and circumferentially fixed platen-carrier rod extending entirely through said platen; platen-shifting means organized and connected to shift the platen longitudinally of said rod; and means in connection with said rod and the recess of said platen for cushioning said platen at the end of its longitudinal movement.

174. In a type-writer, the combination, with a frame, of a longitudinally and circumferentially fixed platen-carrier rod; a platen supported on said rod for longitudinal and rotative movements relatively to said rod; platen-actuating devices independent of said carrier-rod and organized and connected to effect longitudinal and rotative movements of said platen; and means combined with said platen-carrier rod for cushioning the platen at the end of one longitudinal movement thereof.

175. The combination, with a frame having a longitudinally and circumferentially fixed platen-carrier rod, of a platen-carriage supported on said rod for longitudinal movement and having a feed-rack in substantial parallelism with, and at one side of, said rod; a tubular platen journaled at its opposite ends on said rod for rotative movements relatively thereto independent of the movement of the carriage, a dash-pot device; feed mechanism in operative connection with the carriage-rack and organized to shift said carriage and platen longitudinally of the carrier-rod; and platen-feed devices organized to rotate said platen relatively to said rod.

176. A platen having a central longitudinal opening; combined with a platen-carrier rod extending through said opening; and a dash-pot located within the platen and having one member thereof movable longitudinally of said rod.

177. The combination with a suitable frame, of a longitudinally-shiftable platen; feed mechanism organized to advance said platen; key-controlled devices for effecting a retractive movement of said platen; and a dash-pot sup-

ported within and concentric to the axis of said platen and effective for cushioning said platen on the retractive movement thereof.

178. The combination with a suitable frame having a guide-rod adapted for supporting and guiding the platen, of a platen supported concentric to said rod for longitudinal and rotative movements relatively to said rod and having a central dash-pot-receiving chamber; a dash-pot located within the platen and comprising two telescopic members, one of which is fixed to the carrier-rod and the other of which is fixed to the platen; and platen-shifting devices in operative relation with said platen.

179. The combination with a suitable frame, of a tubular platen having at one end thereof an inwardly-projecting dash-pot cylinder; a platen-carrier rod extending through said platen and cylinder and having a diametrically-enlarged portion adapted to enter said cylinder; and platen-shifting devices for shifting the platen and the dash-pot cylinder longitudinally of said rod.

180. The combination with a tubular platen and with shifting devices therefor, of a dash-pot one member of which is fixed and supports the platen and the other member of which is carried by the platen and is shiftable relatively to, and co-operates with, the fixed member for cushioning said platen upon the retractive movement thereof.

181. The combination with a suitable frame and with a tubular platen, of a platen-carrier rod of differential diameters extending through and shiftably supporting said platen; a dash-pot cylinder carried by said platen in concentric relation with said rod; and feed mechanism for shifting the platen longitudinally of said rod.

182. The combination of a tubular platen; a dash-pot tube, of considerably less external diameter than the internal diameter of the platen, extended in and removably secured to one end of said platen; a platen-carrier rod extending through said platen and dash-pot tube and having an enlarged portion adapted to fit into said tube; bushings substantially hermetically sealing the ends of said platen; and means for shifting the platen longitudinally of the carrier-rod.

183. In a machine of the class specified, a fixed platen-supporting rod and a platen supported on said rod for longitudinal and rotary movements relatively thereto, combined with power-feed mechanism for imparting a step-by-step advancing movement to said platen longitudinally; means automatically operative for effecting a retractive movement of said platen at a predetermined point in the advancing movement thereof; means for automatically imparting a rotative movement to the said platen at a predetermined point in the retractive movement thereof; and a dash-pot for cushioning said platen on the retractive movement thereof, one member of which dash-pot is carried by, the platen and the other member of which constitutes a part of, the platen-supporting rod.

184. The combination, with a frame, of a platen-carriage supporting rod fixed as against rotative and longitudinal movements; a platen-carriage mounted on said rod for movement longitudinally thereof; a platen supported on said rod for rotative movement relatively to said rod and for longitudinal movement with the carriage; a feed-wheel fixed to said platen with its axis coincident with the axis of the rod; a feed-lever pivotally supported on said rod for movements longitudinally thereof and having a pawl in normal engagement with the feed-wheel; a feed-lever actuator disposed in the path of movement of the carriage and effective at a predetermined point in the longitudinal movement of said carriage for imparting a feed-wheel-actuating movement to said lever; and a cushioning device in operative connection with the platen and effective for cushioning the same on the retractive movement of the carriage.

185. In a typewriter, the combination, with a fixed supporting-rod, of a platen supported on said rod for rotative and longitudinal movements relatively thereto; a feed-wheel and a feed-wheel lever having a common axis of movement coincident with the axis of the platen, and the former of which is fixed to said platen, and the latter of which is pivotally supported upon the rod for movement longitudinally thereof; a pawl carried by the feed-lever in operative relation with the feed-lever; means disposed to automatically operate the feed-lever at a predetermined point in the longitudinal movement of the platen; means for imparting longitudinal movements to said platen; and a dash-pot in operative relation with, and effective for cushioning the platen near the end of the longitudinal movement thereof.

186. In combination with a tubular platen having a feed-wheel at one end thereof and with a tensioned rod extending entirely through said platen and upon which said platen is rotatably mounted, of a platen-rotating device pivotally carried upon said rod and in normal operative engagement with the feed-wheel.

187. The combination, with a frame, of a fixed carrier-rod; a platen-carriage shiftably mounted on said rod; a platen rotatably mounted on said rod and held as against longitudinal movement relatively to the carriage and having a ratchet-wheel fixed to one end thereof; a feed-lever pivotally mounted on the carrier-rod to have a movement longitudinally thereof with the platen-carriage, and having a pawl normally in operative engagement with the ratchet-wheel; a rock-shaft journaled on said frame in parallelism with the axis of said platen and having a feed-lever actuating device fixed thereto in the path of movement of, and adapted to engage and actuate, said feed-lever; feed mechanism operable for imparting a step-by-step advancing movement to the carriage and platen longitudinally and embodying a carriage-releaser; a device disposed in the path of movement of the carriage and effective for actuating the rock-shaft to release said carriage and thereby facilitate a retractive movement thereof; means for retracting the carriage; and means for again rocking the rock-shaft at a predetermined point in the retractive movement thereof to re-establish connection between the feed mechanism and carriage.

188. The combination with a rotatable platen; of a feed-wheel fixed to said platen; a platen-carrier rod extending through said feed-wheel and platen upon which said platen is shiftably supported; a feed-lever pivotally supported on said rod and having a spring-pressed pawl in normal operative engagement with the feed-wheel and also having a depending arm; a rock-shaft having an arm located in position to engage the depending arm of and actuate the feed-lever; and means for actuating the rock-shaft.

189. The combination with a platen carriage and a platen having a feed wheel, of a feed lever in normal operative engagement with the feed wheel and having a stop arm; a settable eccentric mounted on the carriage in the plane of rotation of the stop arm for limiting the throw of the feed lever and thereby regulating the rotary movement of the platen; a detent pin for holding the eccentric in a set position; and a spring for urging the parts of such device into engagement.

190. The combination with a rotatably-supported platen having a feed wheel in concentric relation with its axis, of a feed lever pivotally supported with its axis coincident with the axis of the feed wheel; a settable eccentric having its axis parallel to the axis of the feed lever and having a stop face disposed in the path of movement of a fixture on said feed lever; a detent pin for holding the eccentric in a set position, and a spring for urging the parts of such device into engagement.

191. The combination with a platen carriage and a platen having a feed wheel, of a feed lever in normal operative engagement with the feed wheel and having a stop arm; an eccentric mounted on the carriage in the plane of rotation of said stop arm and settable in different positions rotarily to limit the throw of the feed lever and thereby regulate the rotary movement of the platen; a detent pin for holding the eccentric in a set position; and a spring for urging the parts of such device into engagement.

192. The combination with a rotatable impression device carrier, and an actuatable support for imparting an orbital movement to said carrier, of a platen supported for shifting movement tangentially to the orbit of the impression device and for adjustment within the working stroke of said impression device transversely of said orbit; means for imparting a step-by-step longitudinal movement to the platen; and adjusting means organized and constructed to adjust said platen transversely of the orbit of the impression device and to hold the same in adjusted positions within the range of stroke of said impression device.

193. The combination with a rotatable impression device carrier, and an actuatable support for imparting an orbital movement to said carrier, of a platen-carriage supported to have a longitudinal feed movement in the plane of orbital movement of the impression device; power-actuated feed mechanism connected to impart a step-by-step longitudinal movement to said carriage; a rotatably-mounted platen supported for longitudinal movement with said carriage; independent adjusting means for adjusting the carriage in a plane intersecting the orbit of the impression device to bring the impact portion of the platen in different positions within the range of the working stroke of said device and for holding the same in its adjusted position.

194. The combination, with an impression device supported for orbital movement, of a rotatable platen supported for longitudinal and transverse movements; feed mechanism for imparting a step-by-step advancing movement to the platen in a horizontal plane tangential to the orbit of the impression device; means for shifting the platen vertically between two extreme positions transversely of said orbit; and means for effecting a horizontal adjustment of the platen within the working stroke of the impression device and toward and away from the axis of orbital movement of said impression device, whereby the effective pressure of impact of the impression device on the platen may be regulated.

195. The combination, with an impression device supported for orbital movement and having a radial working stroke, of an oscillatory platen-carriage-supporting frame; a platen-carriage and a platen shiftably supported on said frame; means for adjusting the platen-carriage-supporting frame vertically and transversely of the orbital path of the impression device; means for imparting a longitudinal feed movement to the carriage and platen in a plane substantially tangential to the orbit of the impression device; and adjusting means in connection with said frame and effective for setting and holding the platen in selected operative positions within the range of the working stroke of the impression device, whereby to regulate the impact of the impression device on the platen.

196. The combination with an impression device having an orbital movement, of a platen supported for shifting movement in a plane tangential to the orbit of the impression device; and means for adjusting the platen in a plane intersecting the orbit of said impression device for regulating the impact of the impression device.

197. The combination with a rotative impression device; of a platen supported for longitudinal movement in a plane substantially tangential to the path of rotation of the impression device; and independent means for adjusting the platen within the range of the working stroke of the impression device and toward and from the axis of rotation of said impression device.

198. A platen-carriage-supporting frame pivotally supported to have an oscillatory movement in a vertical direction between two extreme positions and to have an adjustment in a horizontal direction, combined with independent means for shifting the same vertically and for adjusting the same horizontally.

199. A vertically-disposed carriage-platen-supporting frame; combined with a rock-shaft having a crank pivotally connected with said frame between the upper and lower ends thereof; adjusting means in connection with said rock-shaft and effective for adjusting said frame transversely; and means for shifting the frame vertically between two extreme positions.

200. The combination with framework; of an eccentric-bearing journaled in said framework; a crank-shaft journaled in said eccentric bearing; a vertically-disposed carriage-platen-supporting frame pivotally connected, substantially midway between its upper and lower ends, to the crank-shaft; a frame-shifting lever fulcrumed upon the main framework and pivoted at one end to the lower end of the platen-carriage-supporting frame and affording means for shifting said frame vertically in one direction; and independent means for shifting the frame vertically in the opposite direction.

201. The combination of a vertically-disposed platen-carriage-supporting frame; a crank-shaft pivotally connected to said frame substantially midway between the upper and lower ends and at one side of the longitudinal axis thereof, and affording means for facilitating a vertical oscillatory movement of said frame; a lever pivoted at one end to the lower end of the platen-carriage-supporting frame at the opposite side of the longitudinal axis thereof; means for actuating said lever to shift the frame vertically in one direction; means connected to shift said frame vertically in the opposite direction; and adjusting means in connection with said crank-shaft and effective for changing the vertical line of movement of said frame.

202. The combination with a platen, of means for feeding the same, mechanism to impart a step-by-step movement to the feeding means and comprising power driven means normally disconnected from the feed, a wheel connected to said power driven means, a series of pins, angle levers carrying the pins and fulcrumed in said wheel, an actuator for rocking said angle levers to set one of such pins, and means controlled by the set pin for connecting such power driven means to the feed mechanism for imparting a feed step to the platen.

203. The combination with a carriage, of mechanism for imparting a step-by-step feed thereto and comprising driving mechanism constituted for continuous movement and normally disconnected from the platen, a carrier connected to said driving mechanism to be continuously driven thereby, a series of normally inactive angle levers fulcrumed on said carrier, pins carried by said angle levers, means actuatable by said pins and effective for connecting the driving mechanism to the carriage for producing a single step, and means for actuating any angle lever to place one of the pins in its active position.

204. The combination with a platen, of impression devices, a compound feed mechanism for one of these comprising two co-operative feed devices one of which devices, the primary, is capable of movement independently of and constitutes the controlling actuator for the other, the secondary, and a secondary feed device normally idle and dependent for its actuation upon actuating instrumentalities or devices comprised in the primary feed device, said actuating instrumentalities being controlled in operation by the movement of the impression devices of the machine, means for returning said actuating instrumentalities from active to idle position, and means for locking the same in their active and in their idle position.

205. The combination with a carriage, of mechanism to impart a step-by-step feed movement thereto in one direction, power driven means normally disconnected from the feed mechanism, means for operatively connecting said power driven means with said feed mechanism and comprising a carrier driven thereby, angle levers fulcrumed thereon, settable pins carried by said levers, means controlled by an actuator for rocking said levers for setting said pins, and a normally idle device for imparting a single step at a time and actuatable from one of said pins when set, means operative upon the carriage at a predetermined point in its advance for automatically retracting the same to its initial position, and means operative at a predetermined point in said retractive movement to impart a transverse movement thereto.

206. A platen having a central longitudinal opening combined with a platen carrier rod extending through said opening, and cooperative shock-compensating members carried by the platen and said rod.

207. The combination with a platen, of an impression device, means for moving said impression device through a major orbital path, and means for concurrently moving the same at will through a minor orbital path, and means for increasing and decreasing the radius of such major orbital path during a portion of the revolution of the impression device through such minor orbit, respectively for bringing the said impression device into operative relation with the platen and for withdrawing the same to the orbit of its normal major orbital path for retracting it from such relation.

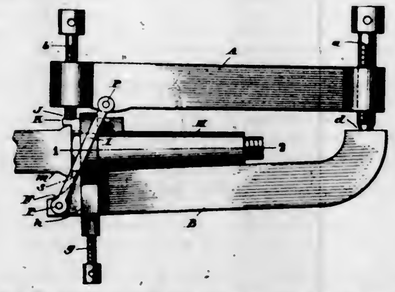
208. The combination with a platen, of an impression device, means for causing said impression device to travel a major orbital path, and means for concurrently causing the

same to travel through a minor orbital path at will, and means for increasing the radius of such major orbital path during a portion of the revolution of the impression device through such major orbital path for bringing the said impression device into operative relation with the platen.

209. The combination with a platen, of an impression device, means for moving said impression device through a major orbital path and at will through a minor orbital path, and means adjacent to the platen for increasing the radius of such major orbital path for bringing the impression device into operative relation with the platen and for retracting the said device to its normal minor orbital path for retracting it into its inoperative position.

210. A device of the character specified embodying mechanism having an established working point in combination with an impression device operative at such working point, means for shifting such impression device in an orbital path, and selector controlled means for concurrently shifting said device through another orbital path, and means for increasing the radius of such former orbital path for advancing said impression device to the working point of the machine.

852,453. AXLE-SETTING MACHINE. JOHN W. ROBERTS, San Angelo, Tex. Filed July 16, 1906. Serial No. 326,472.



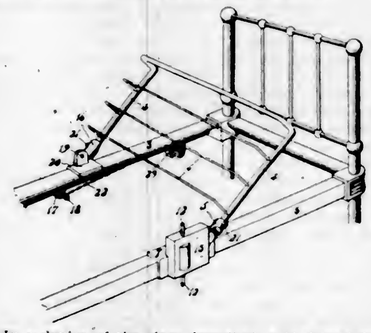
Claim.—An axle setting machine comprising the combination of two horizontal levers practically parallel to each other of a power screw in the outer end of the upper or power lever being adapted to act on the adjacent end of the lower or fixed lever, a fulcrum or adjusting screw in the inner end of said upper or power lever, one end of a pair of twin links being connected to the opposite sides of said upper or power lever close to said fulcrum or adjusting screw and the opposite ends of said twin links being fastened to the extreme inner end of said lower or fixed lever, a clamping collar that clasps said lower or fixed lever and a fulcrum block rigidly to the axle means for tightening said clamping collar, a pocket or recess in the upper surface of said fulcrum block being adapted to receive and retain the end of said fulcrum or adjusting screw.

852,454. HEAD-REST FOR BEDS. JOHN G. RYAN, Montreal, Quebec, Canada. Filed June 23, 1906. Serial No. 322,995.

Claim.—1. A head rest comprising a U-shaped frame, pivoted members supporting the extremities of said frame, a toothed segment integral with one of said pivoted members, a worm engaging said segment, a lever formed integral with the other of said pivoted members, a spring actuated tension drum, means connecting the extremity of the lever and the drum, and a sliding stop adapted to lock said drum in position.

2. A head rest comprising a pivotally supported frame, a toothed segment mounted at one side of said frame, a worm engaging said segment, a lever mounted on the opposite side of said frame, a pin on the extremity of said lever, a spring actuated drum, means connecting said pin and drum, and means for locking said drum in position.

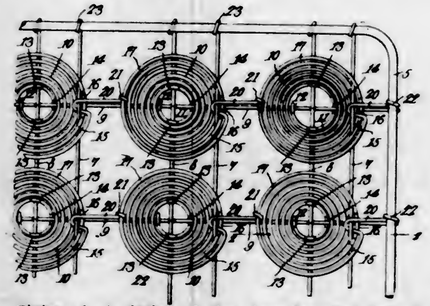
3. A head rest comprising a U-shaped framework, pivoted members supporting the extremities of said framework, a toothed segment mounted on one of said pivoted members, a worm engaging said segment, a lever mounted on the opposite pivoted member, a pin on the extremity of said lever, a spring actuated drum, a chain connecting said pin and drum and locking said drum in position.



4. In a device of the class described, a U-shaped frame, pivoted members supporting the extremities of said frame, a toothed segment integral with one of said pivoted members, a worm engaging with said segment, a lever integral with the opposite pivoted member, a pin on the extremity of said lever, a drum, a fixed post carrying said drum, a spiral spring carried by said drum a chain connecting said pin and drum, and a sliding stop adapted to lock said drum in position.

5. In a device of the class described, a U-shaped framework, a pivoted member supporting the extremities of said framework, a toothed segment mounted on one of said pivoted members, a worm engaging said segment, a lever mounted on the opposite pivoted member, a spring actuated drum, means connecting the extremity of the lever and the drum, toothed flanges mounted on said drum, and means for locking said drum in position.

852,455. BED-SPRING. PAUL SAPPINGTON, Carthage, Mo., assignor of one-third to Slade E. Cragg and one-third to James Webb, Carthage, Mo. Filed Jan. 5, 1907. Serial No. 350,954.



Claim.—1. A device of the class described including spaced supporting frames, coiled springs interposed between said frames and each having one convolution thereof extended laterally within the coil to form a longitudinally disposed loop terminating in an eye for engagement with the adjacent spring, and brace-wires threaded through the loops and secured to one of the supporting frames.

2. A device of the class described including spaced supporting frames, coiled springs interposed between said frames and each having its upper convolution extended laterally within the coil to form a longitudinally disposed loop terminating in an eye for attachment to the upper

convolution of an adjacent spring, and brace-wires threaded through said loops and extending beneath some of the convolutions of the adjacent springs for attachment to one of the supporting frames.

3. A device of the class described including spaced supporting frames, coiled springs interposed between said frames and each having one of its upper convolutions formed with a depression and an adjacent convolution formed with a longitudinally disposed loop seated in said depression and terminating in an eye for engagement with the upper convolution of an adjacent spring, and brace-wires threaded through said loops and attached to one of the supporting frames.

4. A device of the class described including spaced supporting frames, coil springs interposed between said frames and each having one of its upper convolutions formed with a depression and an adjacent convolution bent to form a longitudinal loop engaging the base of said depression and provided with a connecting arm terminating in an eye for connection with one of the convolutions of an adjacent spring, and brace wires extending through the loops and engaging one of the supporting frames for locking said loops in said depressions.

5. A device of the class described including spaced supporting frames, coiled springs interposed between the frames, a loop having one of its upper convolutions formed with a depression and an adjacent convolution bent to form a longitudinal loop, the wire forming the loop being extended in a horizontal plane to form a connecting arm terminating in an eye for engagement with one of the convolutions of an adjacent spring, said loops being each disposed at an angle to the horizontal plane of the spring, and braces threaded through the loops and extended beneath the upper convolutions of the coils for engagement with one of the supporting frames

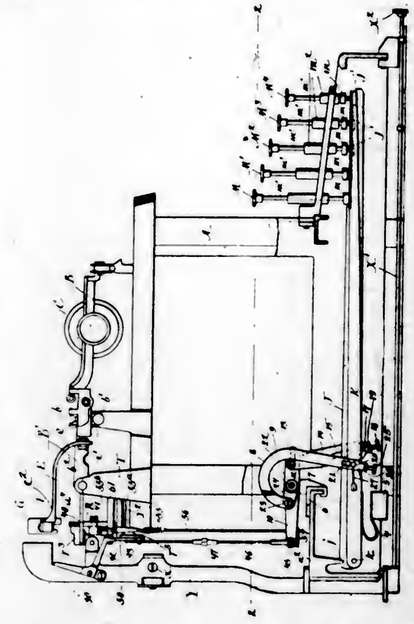
6. A device of the class described including spaced supporting frames, coiled springs interposed between the frames and each having one of its upper convolutions provided with a depression the walls of which converge toward the base of the depression and an adjacent convolution bent to form a longitudinally disposed loop disposed at an angle to the horizontal plane of the spring and extended to form a connecting arm terminating in an eye for attachment to the upper convolution of an adjacent spring, the walls of said loop being supported in engagement with the base of the depression and one inclined wall thereof, and a brace extending through the loop and engaging the closed end thereof and the bottom of the adjacent convolutions of the spring for engagement with one of the supporting frames.

7. A device of the class described including spaced supporting frames, coiled springs interposed between said frames and each having its lower reduced convolution provided with spaced depressions extended in opposite directions, intersecting braces connecting the lower supporting frame and seated in said depressions, one of the upper convolutions of each spring being provided with a depression constituting a seat and an adjacent upper convolution bent to form a longitudinally disposed loop one end of which is extended to form a connecting arm terminating in an eye for attachment to one of the convolutions of an adjacent spring, and braces extended through the loops and beneath some of the upper convolutions of the adjacent spring for attachment to the upper supporting frame for locking the loops in engagement with said depressions.

852,456. SPACING MECHANISM FOR TYPE-WRITING MACHINES. LOUIS SCHLESINGER, Milwaukee, Wis. Filed Mar. 3, 1902. Serial No. 96,553.

Claim.—1. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print, and with columnating mechanism whereby said movable part may be arrested at a predetermined column-field upon the paper, and with denominational stop mechanism whereby the orderly printing of rows of figures or the like may be effected, of means whereby the operation of said denominational stop mechanism shall restore said columnating mechanism to normal position.

2. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print, of means for arresting the travel of said movable part embracing two members, one of said members comprising a plurality of column-field stops mounted upon one of said parts, and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, denominational stop mechanism whereby the orderly printing of rows of figures or the like may be effected and means independent of the denominational stop mechanism and having lost-motion connections for variably actuating said movable member to effect the engagement of said dogging means and any predetermined one of said column-field stops.



3. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print, of means for arresting the travel of said movable part embracing two members, one of said members comprising a plurality of column-field stops mounted upon one of said parts, and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, and key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, said key mechanism comprising a stepped lever connected with the movable part of said column-field stop mechanism and a plurality of individual keys provided with adjustable parts for engaging the stepped portions of said lever.

4. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the

movable one of said parts, of means for arresting the travel of said movable part embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, means whereby said dogging mechanism and said column-field stops may be caused to engage and whereby said escapement release is actuated, and adjusting means whereby the time of the actuation of the escapement release may be accurately determined.

5. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable one of said parts, of means for arresting the travel of said movable part embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, said key mechanism comprising plural levers, one of which is connected with the movable member of the column-field stop mechanism and the other of which is connected with means for operating the release to permit the free travel of the paper-support or movable part, and adjusting means intermediate the escapement release and the lever whereby it is operated.

6. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable one of said parts, of means for arresting the travel of said movable part, embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, said key mechanism comprising plural levers, one of which is connected with the movable member of the column-field stop mechanism and the other of which is connected with means for operating the release to permit the free travel of the paper-support or movable part and adjusting means intermediate the movable member of the column-field stop mechanism and the lever whereby said movable member is actuated.

7. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable one of said parts, of means for arresting the travel of said movable part, embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, said key mechanism comprising plural levers, one of which is connected with the movable member of the column-field stop mechanism and the other of which is connected with means for operating the release to permit the free travel of the paper-support or movable part, and adjusting devices intermediate said levers and the parts actuated thereby, respectively.

8. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable one of said parts, of means for arresting the travel of said movable part embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, said key mechanism comprising means connected to the movable member of the column-field stop mechanism and an adjusting device intermediate the key mechanism and the escapement release whereby the time of the operation of said release may be accurately determined.

9. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable one of said parts, of means for arresting the travel of said movable part embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, said key mechanism comprising means connected to the movable member of the column-field stop mechanism and a lost-motion connection intermediate the key mechanism and the escapement release whereby the escapement is released after the movable member of the column-field stop mechanism is brought to position to engage the fixed member of said mechanism.

10. In a spacing mechanism for typewriting machines, the combination with a paper support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable part embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, a connection between said key-mechanism and the movable member of the column-field stop mechanism, a connection between said key-mechanism and said escapement release and a spring arranged intermediate said escapement release and said key-mechanism, said spring being placed under tension by the actuation of said key-mechanism and serving to operate said escapement release.

11. In a spacing mechanism for typewriting machines, the combination with a paper support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable one of said parts, of means for arresting the travel of said movable part embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, a connection between said key mechanism and the movable member of said column-field stop mechanism, a connection between said key mechanism and said escapement release, a dog or pawl for holding said escapement release against movement and a connection between said key mechanism and said dog or pawl.

12. In a spacing mechanism for typewriting machines, the combination with a paper support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable one of said parts, of means for arresting the travel of said movable part embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, a connection between said key mechanism and the movable member of said column-field stop mechanism, a spring connection between said key mechanism and said escapement release, a dog or pawl for holding said escapement release against movement and a lost-motion connection between said key mechanism and said dog or pawl.

13. In a spacing mechanism for typewriting machines, the combination with a paper support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print and with escapement mechanism intermediate said parts and with an escapement release for permitting the free travel of the movable one of said parts, of means for arresting the travel of said movable part, embracing two members, one of said members having a plurality of column-field stops mounted upon one of said parts and the other of said members comprising means for dogging said stops and being mounted upon the other of said parts, one of said members being movable to engage the other, key mechanism whereby said dogging mechanism and said column-field stops may be caused to engage, said key mechanism comprising lever mechanism extending from back to front of the machine, a rock shaft mounted above said lever mechanism and connected with the movable member of the column-field stop mechanism and with said lever mechanism, and a sleeve mounted upon said rock shaft, said sleeve being connected with the escapement release and with said lever mechanism.

14. In a spacing mechanism for typewriting machines, the combination with a power-propelled paper-carriage and with an escapement mechanism for controlling the step-by-step movement of said carriage, a plurality of column-field stops mounted upon said carriage, a movably supported dog for engaging said column-field stops whereby said carriage may be arrested at any predetermined column-field upon the paper, denominational stop mechanism whereby the orderly printing of rows of figures or the like may be effected, key mechanism for variably shifting said dog to cause it to engage any predetermined one of said column-field stops, locking mechanism for temporarily retaining said dog in any one of its shifted position and means for releasing said locking mechanism operated by the means whereby the escapement mechanism of the typewriter is controlled and operated also by the denominational stop mechanism.

15. In spacing mechanism for typewriting machines, the combination with a carriage, of means for arresting the travel of said carriage comprising a series of stops and means for dogging said stops, a support whereon said series of stops are adjustably mounted and a longitudinally movable locking-bar on said support for temporarily holding said stops against displacement.

16. In spacing mechanism for typewriting machines, the combination with a carriage, of means for arresting its travel comprising a series of stops and means for dogging said stops, a bar having a series of seats whereon said series of stops are adjustably mounted and a locking-bar mounted to slide longitudinally on said stop supporting bar for temporarily holding said stops in adjusted position.

17. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print, of means for arresting the travel of said movable part embracing two members, one of said members comprising a plurality of stops having notches therein, a stop-bar whereon said stops are mounted, and a locking-bar mounted upon said stop-bar and having a series of projections adapted to engage with the notched portions of said stops in order to retain said stops against displacement.

18. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print, of means for arresting the travel of said movable part embracing two members, one of said members comprising bifurcated stops, each having a notch in one of its arms, a notched stop-bar whereon said stops are mounted, and a notched locking-bar or plate and means for shifting said locking-bar or plate to bring its notches co-incident with those of the stop-bar or out of line therewith and into the notches of the stops.

19. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print, of means for arresting the travel of said movable part embracing two members, one of said members comprising a plurality of bifurcated stops each having a notch in one of its arms, a stop-bar provided with notches to receive stops, and a sliding locking-bar formed with notches and projections, and means for shifting said locking-bar to bring either its notches or projections opposite the notches of said stops.

20. In spacing mechanism for typewriting machines, the combination with a carriage, an escapement and a release therefor, of means for arresting the travel of said carriage comprising two members, viz: a series of stops and dogging means normally out of line, key mechanism for shifting one of said members in line with the other of said members, a lock for said shiftable member, means connected with said key-mechanism for actuating said escapement release, a second lock for said escapement release and a common release for both of said locks actuated by the printing mechanism of the machine.

21. In spacing mechanism for typewriting machines, the combination with a carriage and an escapement therefor, of means for arresting the travel of the carriage comprising a series of column-field stops and a dog for engaging said stops, a release-lever, key mechanism for actuating said release lever and for variably actuating said dog to engage a predetermined one of said column-field stops, a locking-pawl for said dog, a second locking-pawl for said release-lever arranged to engage said first mentioned pawl and a trip connected to the printing mechanism for releasing both of said locking pawls.

22. In a spacing mechanism for typewriting machines, the combination with a paper-support and with a printing mechanism, one of said parts being movable with respect to the other in the direction of the line of print, and having means for propelling it in said direction, of variable brake mechanism for arresting the free run of said movable part, key mechanism for actuating said variable stop mechanism, a brake mechanism controlled by said key mechanism for checking the free run of said movable part and a device also controlled by said key mechanism for varying the force exerted by said brake mechanism.

23. In a spacing mechanism for typewriting machines, the combination with a paper-carriage and with variable stop mechanism and keys for controlling said stop mechanism, whereby the free run of said paper-carriage may be arrested at any one of a number of points, of a friction-brake, a lever for actuating said brake to check the free run of the paper-carriage, and means operated by said key mechanism for imparting variable pressure to said brake-lever independently of the variation in the finger pressure of the key mechanism.

24. In a spacing mechanism for typewriting machines, the combination with a power-propelled paper-carriage, of variable stop mechanism whereby the free run of said carriage may be arrested at any one of a number of predetermined points, key mechanism for actuating said variable stop-mechanism, and a variable brake also actuated by said key mechanism and serving independently of any va-

riation of finger pressure to impart different degrees of resistance to the free run of said paper-carriage.

25. In a spacing mechanism for typewriting machines, the combination with a power-propelled paper-carriage, of variable stop-mechanism for arresting the free run of said carriage at any one of a number of predetermined points, key mechanism for actuating said variable stop mechanism, a brake for checking the free run of said paper-carriage, cam mechanism for variably actuating said brake.

26. In a spacing mechanism for typewriting machines, the combination with a power-propelled paper-carriage and with variable stop mechanism for arresting the movement of said carriage, of a brake for checking the free run of said carriage, a lever for applying said brake, a cam for variably actuating said lever, and key mechanism for controlling the movement of said cam.

27. In a spacing mechanism for typewriting machines, the combination with a power-propelled paper-carriage and with an escapement mechanism for imparting a step-by-step movement to said carriage, of stop mechanism for arresting the free run of the paper-carriage, key mechanism for operating said stop mechanism, and means for checking the overthrow of the escapement mechanism, comprising a cam controlled by the key mechanism that operates said stop-mechanism.

28. In a spacing mechanism for typewriting machines, the combination with a power-propelled paper-carriage, an escapement mechanism for imparting a step-by-step movement to said carriage and an escapement release, of brake mechanism for checking the free run of the paper-carriage, comprising an expansible brake-body arranged to contact with a part connected to the carriage and means for expanding said brake-body.

29. In a spacing mechanism for typewriting machines, the combination with a power-propelled paper-carriage, an escapement mechanism for imparting a step-by-step movement to said carriage and an escapement release, of brake mechanism for checking the free run of the paper carriage, comprising a brake wheel of elastic material arranged to contact with a part connected to the carriage and means for radially expanding said wheel to increase its frictional contact with said part.

30. In spacing mechanism for typewriters, the combination with a power-propelled carriage and with an escapement therefor, of a series of column-field stops having their contact faces out of line, a dog for engaging said stops, key mechanism for actuating said dog and releasing said escapement and adjustable lost motion connections between said key mechanism and said escapement release.

31. In spacing mechanism for typewriters, the combination with a carriage, of a series of column-stops having their contact faces out of line, a dog for engaging said stops to arrest the movement of said carriage, devices for variably actuating said dog to engage a predetermined one of said stops, a brake for said carriage and means controlled by said actuating devices for applying said brake with variable pressure.

32. In spacing mechanism for typewriters, a notched stop supporting-bar and a similar notched plate shiftably mounted on said bar for locking the stops in position.

33. In spacing mechanism for typewriters, the combination with a carriage, of means for arresting the travel of said carriage comprising a series of stops and means for dogging said stops, finger-key mechanism for shifting one of said members to engage the dog, an escapement for said carriage, a release for said escapement, an actuating spring for said release arranged to be placed under tension by said key-mechanism and a locking pawl for said release arranged to be tripped by said key mechanism.

34. In a typewriting machine, the combination of a carriage, carriage-feed mechanism, tabulating devices for arresting the travel of the carriage, a release for the carriage feed mechanism, key mechanism controlling said tabulating devices and a lost-motion connection between said key mechanism and said carriage release, whereby said tabulating devices are set in operative position before the carriage is released.

35. In a tabulating machine and tabulating mechanism, the combination of a carriage, selective columnating mechanism to stop the carriage at any one of a plurality of predetermined columnar positions after a single run thereof, means for locking said columnating mechanism in shifted position, denominational-stop mechanism for arresting the travel of the carriage in any one of a series of adjacent letter-space positions, and means controlled by the denominational stop mechanism for releasing said locking means.

36. In a typewriting machine and tabulating mechanism, the combination of a carriage, selective column-stop mechanism for arresting the carriage at any one of a plurality of columnar positions after a single run thereof, selective denominational stop mechanism for arresting the run of the carriage at any one of a series of adjacent letter-space positions, separate independent key mechanisms for controlling said column-stop mechanism and said denominational stop mechanism, means for locking said column stop mechanism in its shifted position and means for releasing said lock controlled by the operation of said denominational-stop mechanism.

37. In a typewriting machine and tabulating mechanism, the combination of a carriage, selective column stop mechanism for arresting the carriage at any one of a plurality of columnar positions after a single run thereof, denominational stop mechanism for arresting the run of the carriage at any one of a series of adjacent letter-space positions, means for locking the column stop mechanism in shifted position and means for releasing said lock controlled either by the operation of said denominational stop mechanism or by the operation of a character key or space bar.

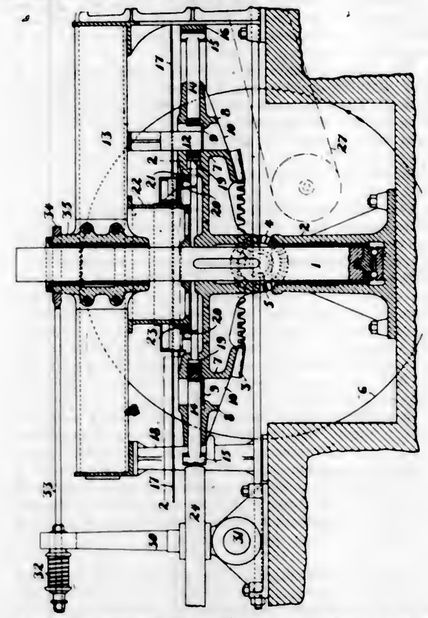
38. In a typewriting machine and tabulating mechanism, the combination of a carriage, carriage feed mechanism, selective column stop mechanism for arresting the carriage at any one of a plurality of columnar positions after a single run thereof, denominational stop mechanism for arresting the run of the carriage at any one of a series of adjacent letter-space positions, a release for said carriage feed mechanism controlled by said column stop mechanism and by said denominational stop mechanism, means for locking said column stop mechanism and said carriage release in shifted position and means controlled either by the operation of said carriage feed mechanism or said denominational stop mechanism for releasing said locking means.

39. In spacing mechanism for typewriters, the combination with a power propelled carriage and with an escapement therefor, of a series of column field stops having their contact faces out of line, dogging means for engaging said stops, a release for said escapement, and a set of finger keys, each connected to said dogging means and to said release to operate both when shifted in one direction, said keys being arranged to impart a variable throw to said dogging means and a uniform throw to said escapement release.

40. In spacing mechanism for typewriters, the combination with a power propelled carriage and with an escapement therefor, of a series of column field stops having their contact faces out of line, dogging means for engaging said stops, a release for said escapement, a set of finger keys, two key levers engaged and operated by said keys, one of said levers being connected to said dogging means and the other to said release, said keys being arranged to impart a uniform throw to the key lever connected to said release and a variable throw to the key lever connected to said dogging means.

852,457. BRIQUETING-MACHINE. ROBERT SCHORR, San Francisco, Cal. Filed July 18, 1906. Serial No. 326,658.

Claim.—1. In a briqueting machine, the combination of a revolving wheel having formed therein an annular channel into which the material to be briqueted is fed, a circular series of radial plungers reciprocating across said channel, a circular series of corresponding ejectors, molds for the respective plungers formed in the wheel on one side of said channel, means for successively moving each plunger across the channel, first, to compress the material in the mold, and then away from said mold and moving the ejector toward said channel to eject the briquet thereinto, and means for closing the bottom of the channel during the first part of the operation, while permitting the briquets to fall from said channel during the latter part thereof, substantially as described.



2. In a briqueting machine, the combination of a revolving wheel having formed therein an annular channel into which the material to be briqueted is fed, a circular series of radial plungers reciprocating across said channel, a circular series of corresponding ejectors, molds for the respective plungers formed in the wheel on one side of said channel, means for successively moving each plunger across the channel, first, to compress the material in the mold, and then away from said mold and moving the ejector toward said channel to eject the briquet thereinto, and an annular plate covering the bottom of that portion of the channel in which the first part of the operation is performed, and cut away in the remaining portion of the channel to permit the briquets to fall therethrough, substantially as described.

3. In a briqueting machine, the combination of a revolving wheel having formed therein an annular channel into which the material to be briqueted is fed, a circular series of radial plungers reciprocating across said channel, a circular series of corresponding ejectors, molds for the respective plungers formed in the wheel on one side of said channel, means for successively moving each plunger across the channel, first, to compress the material in the mold, and then away from said mold and moving the ejector toward said channel to eject the briquet thereinto, an annular plate covering the bottom of that portion of the channel in which the first part of the operation is performed, and cut away in the remaining portion of the channel to permit the briquets to fall therethrough, and a wall forming the side of a narrow channel for moving the surplus material to the point of feed, substantially as described.

4. In a briqueting machine, the combination of a revolving wheel having formed therein an annular channel into which the material to be briqueted is fed, a circular series of radial plungers reciprocating across said channel, a circular series of corresponding ejectors, molds for the respective plungers formed in the wheel on one side of said channel, means for successively moving each plunger across the channel, first, to compress the material in the mold, and then away from said mold and moving the ejector toward said channel to eject the briquet thereinto, said means including a pressure wheel revolving against the ends of the plungers in succession to complete the pressure upon the briquet, and means for closing the bottom of the channel during the first part of the operation, while permitting the briquets to fall from said channel during the latter part thereof, substantially as described.

5. In a briqueting machine, the combination of a revolving wheel having formed therein an annular channel into which the material to be briqueted is fed, a circular series of radial plungers reciprocating across said channel, a circular series of corresponding ejectors, molds for the respective plungers formed in the wheel on one side of said channel, means for successively moving each plunger across the channel, first, to compress the material in the mold, and then away from said mold and moving the ejector toward said channel to eject the briquet thereinto, said means including a yieldably supported pressure wheel revolving against the ends of the plungers in succession to complete the pressure upon the briquet, and means for closing the bottom of the channel during the first part of the operation, while permitting the briquets to fall from said channel during the latter part thereof, substantially as described.

6. A briqueting machine having a channel or groove into which the material to be briqueted is fed, a plunger moving transversely across said channel to compress the material, one side of the channel being provided with a mold to receive the plunger, an ejector closing the other end of the mold, means for moving said plunger and ejector, first, to compress the material in the mold, and then to return the finished briquet to the channel, and means for advancing the briquet to the position of removal from said channel, substantially as described.

7. A briqueting machine having a horizontal revoluble wheel formed with two concentric rings spaced to form an annular groove between them, radial plungers guided in said rings, and ribs connecting the rings below the plungers, and spaced from each other to form openings to permit the briquets to pass therethrough, substantially as described.

8. A briqueting machine having a horizontal revoluble wheel formed with two concentric rings spaced to form a groove between them, ribs connecting the two concentric rings, the openings between the ribs permitting the briquets to pass therethrough, a circular plate covering these openings for almost the entire length of the groove, but leaving the openings exposed at the discharge point of the briquets, and radial plungers guided in said rings, substantially as described.

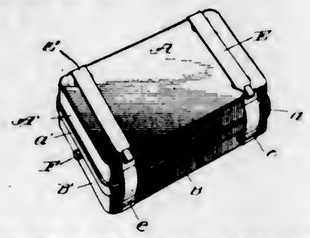
9. A briqueting machine having a horizontal revoluble wheel formed with two concentric rings spaced to form a groove between them, ribs connecting the two concentric rings, the openings between the ribs permitting the briquets to pass therethrough, a circular plate covering these openings for almost the entire length of the groove, but leaving the openings exposed at the discharge point of the briquets, a bracket secured to said plate, means for supporting said bracket against movement, thereby preventing the movement of the plate, and radial plungers guided in said rings, substantially as described.

852,458. BOX. OTTO C. SCHULZ, Chicago, Ill., assignor to Bauer & Black, Chicago, Ill., a Corporation of Illinois. Filed Jan. 11, 1906. Serial No. 295,666.

Claim.—1. A box made of metal in two parts, each of said parts having two substantially parallel flanges, one flange on each part being made wedge shaped, by folding the metal upon itself, and one of said parts having a wedge shaped groove between its flanges to receive the wedge shaped flange on the other part.

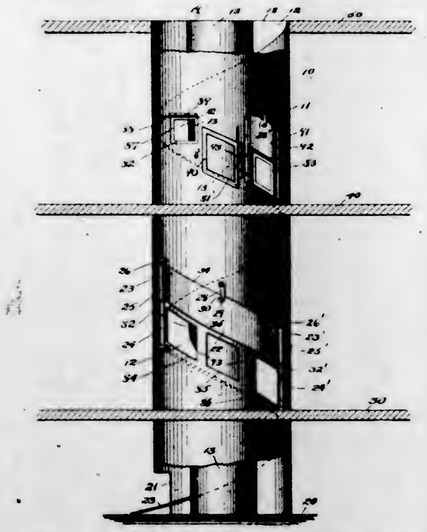
2. A box made of metal in two parts, each of said parts having two substantially parallel flanges around its edge and a groove between said flanges, the outer flange on one

part being adapted to fit in the groove of the other part and the inner flange of said other part being adapted to fit in the groove in the first part so that both sides of one flange and one side of the other flange on one part will contact with a corresponding number of sides of the flanges on the other part.



3. A box made of metal in two parts, each of said parts being offset at its sides and ends and between its top and bottom, each of said parts having two substantially parallel flanges extending beyond the offset and a groove between the flanges on each part, the groove on one part receiving the outer flange of the other part and the groove on the other part receiving the inner flange of said first part.

852,459. DOOR FOR CONVEYERS. MARTIN C. SCHWAB, Baltimore, Md., assignor to Gravity Conveyor Company, a Corporation of New York. Filed May 23, 1905. Serial No. 261,768.



Claim.—1. The combination of a landing, and a conveyer having openings therein to accommodate articles being placed in or taken from the conveyer at different heights from the landing.

2. The combination with a conveyer having openings in close proximity to each other to accommodate articles being placed in or taken from the conveyer at different heights, of means for supporting said conveyer, and doors for said openings.

3. The combination with an outer casing, of an inner core, a spiral blade interposed between said casing and core, said outer casing having a series of openings above said spiral blade, and in close proximity to each other and doors for said openings.

4. The combination with an outer casing, of an inner core, a spiral blade interposed between said casing and core, said outer casing having a series of openings in close proximity to each other and each conforming in shape to the spiral blade, and means for closing said openings.

5. The combination with a landing, of a conveyer having a series of openings therein to accommodate articles being placed in or taken from the conveyer at different heights from the landing, and a door for closing all of said openings.

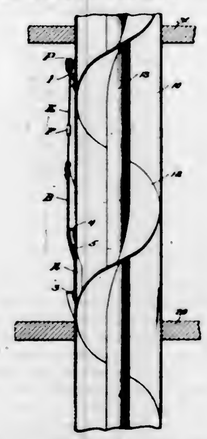
6. The combination with an outer casing, of an inner core, a spiral blade interposed between said casing and core, a landing, said outer casing having a series of openings at or near the spiral blade and conforming in shape thereto, said openings permitting articles being placed on or taken from the spiral blade at different heights from the landing, and a single door for closing all of said openings.

7. The combination with a conveyer having an inclined opening therein, of a sliding door for said opening, upper and lower limit stops for the door, means for opening the door, and means for retaining the door in open position.

8. The combination with floor landings, of an outer casing and an inner core, a spiral blade interposed therebetween, a door for a spiral opening in the outer casing above a landing, rods on which said door is slidably mounted, stops on said rods to limit the upward and downward movements of said door, means for lifting the door, and means comprising a hook for retaining said door in open position.

9. The combination with an outer casing and an inner core, of a spiral blade interposed therebetween, a landing for the conveyer, a sliding door for a spiral-shaped opening above the landing and in the outer casing, rods on which the door is mounted, upper limit stops and lower limit stops for the door, means for opening the door, and fastening mechanism for holding the door in open position.

852,460. COMBINATION DOOR FOR CONVEYERS. MARTIN C. SCHWAB, Baltimore, Md., assignor to Gravity Conveyor Company, a Corporation of New York. Filed Jan. 11, 1906. Serial No. 295,583.



Claim.—1. In a conveyer, the combination of a single door for an opening in said conveyer, and an additional door for said opening.

2. In a conveyer, the combination of a single inwardly movable door for an opening in the conveyer, and a door on the outside of the conveyer for said opening.

3. In a conveyer, the combination of a single inwardly swinging door for an opening in the conveyer, and an additional door for said opening.

4. In a conveyer, the combination with a normally closed door for an opening in the conveyer, of an additional door for said opening normally in open position, and means for automatically releasing said additional door to closed position.

5. In a conveyer, the combination with an inwardly swinging door for an opening in the conveyer, of an additional door on the outside of the conveyer and for said opening, and means for normally holding said additional door in open position, said means comprising a fusible joint or section for permitting the automatic closing of said additional door when said joint is fused.

6. In a conveyer, the combination with an outer shell and an inner core, of an interposed spiral blade, a single door for an opening in the outer shell above the spiral blade, and an additional normally open door for said opening.

7. In a conveyer, the combination with an outer shell and an inner core, of an interposed spiral blade, an inwardly swinging door for an opening in the conveyer at or near the landing, an additional door on the outside of the conveyer, and means for holding said additional door normally in open position, said means comprising a fusible joint or section to effect the automatic release of said additional door when said section is closed.

8. In a spiral gravity conveyer, the combination with an outer shell and an inner core, of an interposed spiral blade, an inwardly swinging door above the spiral and conforming substantially to the inclination thereof, a fire door on the outside of the conveyer, and means for normally holding said fire door in open position, said means comprising a fusible connection to permit the fire door to automatically close any opening into the conveyer when said connection is fused.

9. The combination of a conveyer, and a single vertically pivoted inwardly movable door for an opening in said conveyer.

10. The combination of a gravity conveyer, and a single vertically pivoted inwardly swinging door for an opening in the conveyer.

11. In a spiral gravity conveyer, the combination with an outer shell, of an inner core, an interposed spiral blade, one or more landings, and a single vertically pivoted inwardly swinging door for an opening in the conveyer at or near a landing.

12. In a spiral gravity conveyer, the combination with an outer shell and an inner core, of an interposed spiral blade, and an inwardly swinging door above the spiral and conforming substantially to the inclination thereof.

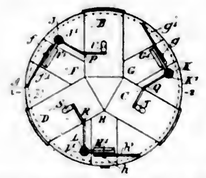
13. In a spiral gravity conveyer, the combination with an outer shell and an inner core, of an interposed spiral blade, and an inwardly swinging door for an opening in the conveyer conforming substantially to the inclination of the spiral blade, said door being hinged to the conveyer at the side of the opening of higher elevation.

14. The combination with a spiral gravity conveyer comprising an outer shell and a spiral blade, of an inwardly swinging door for an opening in the outer shell, said door and opening conforming to the inclination of the blade, and a stop for said door to permit the interior surface of the same to be flush with the interior surface of the conveyer when said door is closed.

15. In a spiral gravity conveyer, the combination with an inner core, an outer shell and an interposed spiral blade, of an inwardly swinging door for an opening in the outer shell, said door being hinged at the side of the opening of higher elevation and conforming to the inclination of the blade, and a stop device to limit the movement of the door toward the outside of the conveyer and cause the inner surface of the door to be substantially flush with the interior surface of the outer shell when said door is closed.

852,461. AUTOMATIC WATER-FEED FOR ACETYLENE-GAS GENERATORS. HERBERT G. SCOTT, Sydney, New South Wales, Australia. Filed Sept. 20, 1905. Serial No. 279,314.

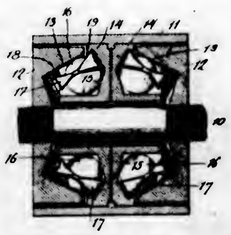
Claim.—1. An acetylene gas generator, comprising a casing, a bell, a number of chambers in said casing having openings communicating with said casing, valves controlling said openings, platforms of different heights, levers connected to the valves and supported on the platforms, said levers being automatically tripped by the descent of the bell, said bell having notches in its bottom edge of different depths at points which lie over the ends of the levers.



2. An acetylene gas generator comprising a well, a bell, a number of chambers in said well having openings communicating with the well, valves for controlling said openings, platforms of different heights in the well, standards on said platforms, a lever pivoted to each standard and having one end connected to a valve, the other end of said lever extending into the path of the bell, said bell having notches in the bottom edge of its walls adapted to engage the levers and trip them and means for extending the points in the bottom edge of the bell, or the notches therein that impinge upon or engage the levers as the bell descends.

3. An acetylene gas generator comprising a well, a bell, a number of chambers in said well having openings communicating with the well, valves for controlling said openings, platforms of different heights in the well, standards on said platforms, a lever pivoted to each standard and having one end connected to a valve, the other end of said lever extending into the path of the bell, said bell having notches in the bottom edge of its walls adapted to engage the levers and trip them and means for extending the points in the bottom edge of the bell, or the notches therein that impinge upon or engage the levers as the bell descends, said means consisting of a number of rods and means for adjusting them longitudinally.

852,462. ANTIFRICTION-BEARING. LOUIS H. SEUBERT, East Orange, N. J. Filed Mar. 19, 1906. Serial No. 306,754.



Claim.—1. In an anti-friction bearing, the combination with concentric relative stationary and rotative elements each provided with tracks or runways, said tracks or runways comprising two sets the resultant lines of force through each of which are oblique, of bearing rollers for each set of tracks, separating rollers between the bearing rollers, and supplementary tracks for the separating rollers.

2. In an anti-friction bearing, the combination with concentric relative stationary and rotative elements, each provided with bearing runways, the bearing runways of one element being nearer together than the bearing runways of the other element, of bearing rollers for each set of bearing runways, separating rollers between the bearing rollers, engaging same, and supplementary tracks for the separating rollers.

3. In an anti-friction bearing, the combination with concentric relative stationary and rotative elements each

provided with tracks or runways, said tracks or runways comprising two sets the resultant lines of force through each of which are oblique, of bearing rollers for each set of tracks, spool-shaped separating rollers between the bearing rollers, and supplementary tracks for the separating rollers.

4. In an anti-friction bearing, the combination with concentric relative stationary and rotative elements, each provided with tracks or runways, of bearing rollers for each set of tracks, an obliquely arranged series of intermediate separating rollers between the bearing rollers, and supplementary tracks for the separating rollers, substantially as described.

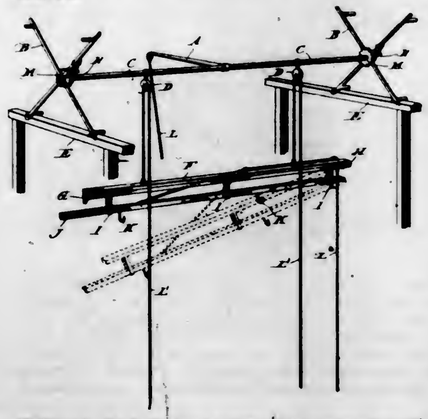
5. An anti-friction bearing comprising a bearing member having tracks, series of main rollers, obliquely arranged series of intermediate spool-shaped separating rollers confined within said tracks, and an opposing bearing member against which said main rollers are arranged to travel, substantially as set forth.

6. An anti-friction bearing comprising a bearing member having tracks, series of main rollers, obliquely arranged series of separating rollers confined by said tracks, and an opposing bearing member arranged with its bearing surface contacting with said main rollers at points farthest removed from the center of rotation, substantially as described.

7. In an anti-friction bearing, the combination with two bearing members, each provided with tracks or runways, and bearing rollers mounted between the said tracks, the tracks of one of said members being substantially coincident with a circle concentric with the center of the bearing, of separating rollers for the bearing rollers, and supplementary tracks for the separating rollers.

8. In an anti-friction bearing, the combination with two bearing members, each provided with tracks or runways, and bearing rollers mounted between the said tracks, the tracks of one of said members being substantially tangent to a circle concentric with the center of the bearing, of separating rollers for the bearing rollers, and supplementary tracks for the separating rollers.

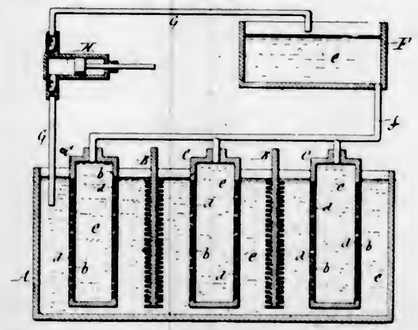
852,463. TOBACCO-HANGER. THOMAS M. SHROCK, Gardnersville, Ky. Filed July 13, 1906. Serial No. 326,154.



Claim.—1. In a tobacco hanger the combination of a horizontal bar "C" with a tilting lever "A" attached to said bar near its center and ratchet wheels "M M" attached near each end, said bar having at each end a revolving crosspiece or jack "B B" provided with small iron pawls "N N" engaging with ratchets "M M", said horizontal bar "C" being also provided with two pulleys "D D" over which ropes "L' L'" pass and are arranged to elevate or lower the hanging device "F" substantially as described.

2. In a tobacco hanger the combination with the bar "C" and revolving jacks "B B" of a hanging device "F" consisting of two slats joined at one end by an iron hinge "H" in such manner as to fold together the opposite end of one of said slats being provided with a spring snap "G" for securing said hanging device "F" when folded together and a slat "J" sliding through iron loops "I I I" on the hanging device F said slat being provided with hooks "K K" substantially as described and for the purpose specified.

852,464. STORAGE BATTERY. EDWARD SOKAL, Binghamton, N. Y., assignor of one-third to Sigmund Bloomfield, Elkhart Lake, Wis., and one-twelfth to Sigmund B. Wolf and one-twelfth to Charles Wolff, Chicago, Ill. Filed May 4, 1906. Serial No. 315,130.



Claim.—1. A storage battery comprising a porous storage battery electrode, and means operating to forcibly circulate or push a storage battery electrolyte through the pores of said electrode from one side to the other side thereof, substantially as set forth.

2. A storage battery comprising a porous storage battery electrode, and means for supplying a storage battery electrolyte so that the same is circulated or pushed by gravity through the pores of said electrode from one side thereof to the other, substantially as set forth.

3. A storage battery comprising a porous storage battery electrode, and means operating to maintain a storage battery electrolyte at different levels on opposite sides of said electrode so that said electrolyte is pushed through the pores of said electrode from that side of the same on which the level of the electrolyte is high to the opposite side of the same on which the level of the electrolyte is low, substantially as set forth.

4. A storage battery comprising a jar, a porous electrode constructed in the form of a hollow or bottle-shaped chamber which is independent of said jar, and means operating to force the electrolyte through the pores of the electrode and maintaining a constant flow of the same from inside of the electrode to the interior of the jar or vice versa.

5. A storage battery comprising a porous storage battery electrode which is arranged and constructed to divide a body of storage battery electrolyte so that the same cannot pass from one side of the electrode to the other except through the pores thereof, and a transferring device operating to convey said electrolyte from that side of the electrode on which the electrolyte leaves its pores to that side of the electrode on which the electrolyte enters its pores, substantially as set forth.

6. A storage battery comprising a hollow porous storage battery electrode, and means for forcing a storage battery electrolyte through the pores of said electrode and maintaining a forcible circulation of the electrolyte through the pores of the electrode from one side of the latter to the other, substantially as set forth.

7. A storage battery comprising a jar, a porous electrode arranged in said jar and constructed to separate the electrolyte on opposite sides of the same so that the electrolyte on one side of the electrode may be higher than on the other side, and means for transferring the electrolyte from the low side of the electrode to the high side thereof, substantially as set forth.

8. A storage battery comprising a jar, a porous electrode arranged in said jar and constructed to separate the electrolyte on opposite sides of the same so that the electrolyte on one side of the electrode may be higher than on the other side, a conduit extending from the jar on the low side of the electrode to the high side thereof, and an electrolyte lifting device arranged in said conduit, substantially as set forth.

9. A storage battery comprising a hollow porous electrode, and means for maintaining the electrolyte on the inner and outer sides of said electrode at different elevations, substantially as set forth.

10. A storage battery comprising a jar, a hollow porous electrode arranged in said jar, an elevated electrolyte supply reservoir, a conduit for delivering the electrolyte from said reservoir to the interior of said electrode, and a conduit for transferring the electrolyte from the jar outside of the electrode to said reservoir, substantially as set forth.

11. A storage battery comprising a jar, a hollow porous electrode arranged in said jar, an elevated electrolyte supply reservoir, a conduit for delivering the electrolyte from said reservoir to the interior of said electrode, a conduit for transferring the electrolyte from the jar outside of the electrode to said reservoir, and an electrolyte lifting device arranged in the last mentioned conduit, substantially as set forth.

12. A storage battery comprising a jar, a hollow porous electrode arranged in said jar, an elevated electrolyte supply reservoir, and a supply conduit tightly connecting the interior of said electrode with said reservoir so that the electrolyte in the electrode, supply conduit and reservoir forms one column or body the level of which is in the reservoir, substantially as set forth.

13. A storage battery comprising a jar, a hollow porous electrode arranged in said jar, an elevated electrolyte supply reservoir, a supply conduit tightly connecting the interior of said electrode with said reservoir so that the electrolyte in the electrode, supply conduit and reservoir forms one column or body the level of which is in the reservoir, and a return conduit for transferring the electrolyte from the jar outside of the electrode to said reservoir, substantially as set forth.

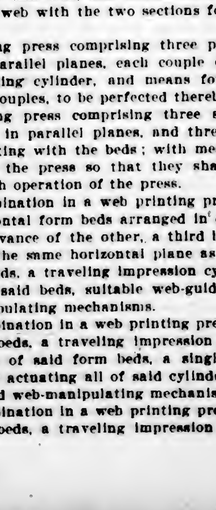
14. A storage battery comprising a jar, a hollow porous electrode arranged in said jar, an elevated electrolyte supply reservoir, a supply conduit tightly connecting the interior of said electrode with said reservoir so that the electrolyte in the electrode, supply conduit and reservoir forms one column or body the level of which is in the reservoir, a return conduit for transferring the electrolyte from the jar outside of the electrode to said reservoir, and an electrolyte lifting or elevating device arranged in said return conduit, substantially as set forth.

15. A storage battery comprising a hollow electrode, a solid electrode, a jar containing said electrodes, and means for maintaining the electrolyte at different levels on the inner and outer sides of said hollow electrode, substantially as set forth.

16. A storage battery comprising a hollow electrode, a solid electrode, a jar containing said electrodes, means for supplying the interior of the hollow electrode with electrolyte and maintaining the level thereof higher than on the outside of the hollow electrode, and means for transferring the electrolyte from the outside of said hollow electrode to the means which supplies the inside thereof, substantially as set forth.

852,465. TRAVELING-CYLINDER WEB-PRINTING MACHINE. LOUIS W. SOUTHGATE, Worcester, Mass., assignor, by mesne assignments, to Detroit Trust Co., trustee, Detroit, Mich. Filed Nov. 30, 1896. Serial No. 613,928.

Claim.—1. The combination in a web printing press of three stationary form beds, a traveling impression cylinder coacting with each bed, web-guides for leading a web so that the same will be perfected, a web-manipulating mechanism for said web, a deflector and web guides arranged so that a narrow width web may be perfected, a manipulating mechanism for this web, and means for associating the products.



2. The combination in a web printing press of three stationary form beds adapted to hold four forms abreast, a traveling impression cylinder coacting with each bed, web-guides for leading a web so that the same will be perfected, a manipulating mechanism for this web, a deflector and web guides arranged so that a web substantially one or two forms wide may be perfected, a manipulating mechanism for this web, and means for associating the products.

3. The combination in a web printing press of three stationary form beds, a traveling impression cylinder coacting with each bed, web guides for leading a web so that the same will be perfected by two of said impression cylinders, a web manipulating mechanism for said web, a slitter arranged to slit said web into two sections, and an associator for associating said sections, a deflector and web-guides arranged so that a narrow width web may be perfected by the third impression cylinder, a manipulating mechanism for this web, and means for associating this narrow width web with the two sections formed from the main web.

4. A printing press comprising three printing couples arranged in parallel planes, each couple consisting of a bed and coacting cylinder, and means for feeding webs through said couples, to be perfected thereby.

5. A printing press comprising three stationary type beds arranged in parallel planes, and three reciprocating cylinders coacting with the beds; with means for feeding webs through the press so that they shall be perfected thereby at each operation of the press.

6. The combination in a web printing press of two stationary, horizontal form beds arranged in different planes and one in advance of the other, a third bed arranged in substantially the same horizontal plane as the uppermost of said two beds, a traveling impression cylinder coacting with each of said beds, suitable web-guides, a deflector, and web-manipulating mechanisms.

7. The combination in a web printing press of three stationary form beds, a traveling impression cylinder coacting with each of said form beds, a single reciprocating mechanism for actuating all of said cylinders, web guides, a deflector, and web-manipulating mechanisms.

8. The combination in a web printing press of three stationary form beds, a traveling impression cylinder coact-

ing with each bed, a reciprocating mechanism for actuating said impression cylinders, connections whereby one of said impression cylinders may be thrown out of operation and the other two kept in operation, web guides and web manipulating mechanisms.

9. The combination in a web printing press of three stationary form beds, a pair of carriers in which two impression cylinders are journaled, a reciprocating mechanism for said carriers, a second set of carriers in which a third impression cylinder is journaled, means for connecting and disconnecting the two sets of carriers, and suitable web guides and manipulating mechanisms.

10. The combination in a web printing press of three stationary form beds, a traveling impression cylinder coacting with each form bed, connections whereby one impression cylinder may be thrown out of operation and the other impression cylinders left in operation, suitable web guides, a web manipulating mechanism, a second web manipulating mechanism arranged to manipulate a narrow width web, gearing for driving the two web manipulating mechanisms, and connections whereby this last web manipulating mechanism can be thrown into or out of operation as the third impression cylinder is or is not used.

11. The combination in a web printing press of the stationary form bed, a traveling impression cylinder coacting therewith, suitable web guides, and a deflector arranged so that a web can be perfected, means for feeding the web continuously in and out, and a single looper around which the web is looped in opposite directions before it passes to and after it passes from said impression cylinder.

12. The combination in a web printing press of a stationary form bed, a traveling impression cylinder coacting therewith, a feeding-in and a feeding-out device for the web, suitable web guides and a deflector, a single looper as L^2 combined with a stationary roller as 30, the whole so arranged that the web can be looped in opposite directions around said looper before it passes to and after it passes from said impression cylinder.

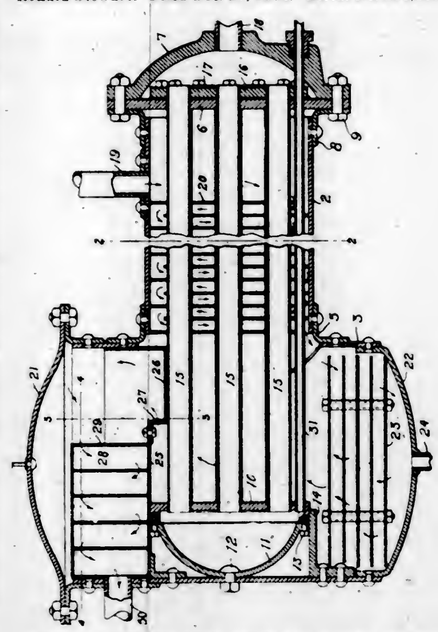
13. The combination in a web printing press, of three stationary form beds, a traveling impression cylinder coacting with each form bed, suitable web guides and manipulating mechanism arranged so that a double width web can be perfected by two of said impression cylinders, suitable guides, and a second web manipulating mechanism arranged so that a narrow width web can be perfected by the third of said impression cylinders, a slitter for slitting the main web into two sections, an associator for associating said sections, web guides for leading the narrow width web so that the same will be associated inside of the main web, and a suitable folding device.

14. The combination in a web printing press of three stationary form beds, a traveling impression cylinder coacting with each of said form-beds, suitable guides, and a web-manipulating mechanism arranged so that a full width or main web can be perfected by two of said impression cylinders, a slitter and associator for cutting the main web into two sections and associating the two sections, suitable web guides, a web-manipulating device, and a deflector arranged under the associating mechanism so that a narrow width web can be perfected by the third impression cylinder, and suitable guides adapted to associate the narrow width web with the two sections of the main web.

15. The combination in a web printing press of three stationary form beds, a traveling impression cylinder coacting with each bed, web-guides for leading a web around two of the impression cylinders, so that the same will be perfected, a web manipulating mechanism for said web, a deflector, and web-guides arranged so that a narrow width web may be twice led around the third impression cylinder in opposite directions, a manipulating mechanism for this web, and means for associating the products.

16. The combination in a web printing press of three stationary form beds, a traveling impression cylinder coacting with each bed, web-guides for leading a main web around two of said impression cylinders so that the same will be perfected thereby, a web manipulating mechanism for said web, a slitter arranged to slit said web into two sections, an associator for associating said sections, a deflector and web-guides arranged to direct a narrow width web twice around the third impression cylinder and in opposite directions, a manipulating mechanism for this web, and means for associating this narrow width web with the two sections formed from the main web.

852,466. FEED-WATER HEATER. THOMAS Y. STEWART, St. Paul, Minn., assignor, by direct and mesne assignments, of five-sixths to said Thomas Y. Stewart and Ronald Stewart. Filed Dec. 27, 1904. Serial No. 238,285.



Claim.—1. In a feed water heater and purifier, the combination, with a separating chamber provided at its ends with suitable tube sheets and headers secured to said tube sheets, of a series of transverse zinc plates arranged in said chamber, alternate plates being provided with spaces between their edges and the wall of the chamber, and a series of copper tubes extending through said chamber and through openings in said plates, substantially as described.

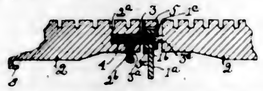
2. In a feed water heater and purifier, the combination, with a separating chamber provided at its ends with suitable tube sheets, and headers inclosing said tube sheets, of a series of copper tubes extending through said chamber and having their ends arranged in said tube sheets, and a series of transverse zinc plates arranged in said chamber and provided with openings for the passage of said tubes, spaces being provided between the edges of alternate plates and the walls of the chamber, for the purpose set forth.

3. In a feed water heater and purifier, the combination, with a separating chamber, of a series of copper tubes extending through said chamber, a series of transverse zinc plates extending across said chamber and surrounding said tubes with spaces arranged at the edges of alternate plates, means for passing water through said chamber, and means for passing steam through said tubes, substantially as described.

4. The combination, with the cylinder 3, of the separating chamber 2 connected therewith, the series of copper tubes 15 arranged in said chamber, the series of transverse zinc plates 20 also arranged in said chamber, the series of zinc plates 23 arranged in said cylinder below said tubes, and suitable baffle plates arranged in the upper part of said cylinder.

5. In a feed water heater and purifier, the combination, with a separating-chamber provided at its ends with suitable headers, of a series of tubes extending through said chamber, one or more tube sheets supporting said tubes, a series of transverse plates arranged in said chamber and provided with openings for the passage of said tubes, with spaces between the edges of alternate plates and the walls of the chamber, said plates being arranged in series throughout the body of said chamber, and a settlings chamber arranged below said separating-chamber and provided with a series of zinc plates.

852,467. SHAKING AND DUMPING GRATE. EDWARD E. STROTHMAN and HERBERT L. STROTHMAN, Superior, Wis. Filed Oct. 10, 1905. Serial No. 282,138.



Claim.—1. In a dumping grate, the combination of a grate bar having a recess formed in one of its ends, a slot extending upwardly through the lower edge of said bar and partly through said bar in a transverse direction, said bar having a slot formed through one of its sides communicating with said recess and with the first said slot, a sliding trunnion in said recess, and a pin engaging said trunnion and adapted to be operated to project or retract said trunnion and to extend through one or the other of said slots according to the position of said trunnion, and a push spring in said recess adapted to normally hold said trunnion in a projected position.

2. In a dumping grate, the combination of a grate bar having a recess formed in one of its ends, a slot communicating upwardly with said recess and opening downwardly through the lower edge of said bar and extending partly through said bar in a transverse direction, said bar having a slot formed through one of its sides communicating with said recess and with the first said slot, a sliding trunnion in said recess, and a pin engaging said trunnion and adapted to be operated to project or retract said trunnion and to extend through one or the other of said slots according to the position of said trunnion.

3. In a dumping grate, the combination of a relatively stationary support, rocking shields mounted on said support, rocking grate bars mounted on said support independently of said shields and provided with means adapted to engage said shields to rock the same.

4. In a dumping grate, the combination of a relatively stationary support, rocking shields mounted on said support and adapted to fulcrum thereon, rocking grate bars mounted on said support independently of said shields and having lugs formed on their ends adapted to engage said shields and rock the same.

5. In a dumping grate, the combination of a relatively fixed support having a boss formed thereon, a shield mounted on said support and provided with a lug adapted to engage on said boss, and means for rocking said shield on its support.

6. In a shaking and dumping grate, the combination with a grate support, a grate bar having a trunnion engaging said support, a trunnion shield comprising a body portion provided with a notch or recess in its side and provided on one side intermediate of its ends with a depending lug.

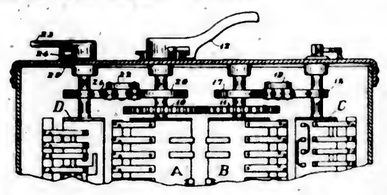
7. In a dumping grate, the combination with a suitable grate support of a rocking shield pivotally mounted thereon and comprising a body portion, legs depending from one end, a lug on one side at the opposite end, and a lug or lip upon the opposite side intermediate of the ends.

8. In a dumping grate, the combination with a suitable relatively stationary support, of a rocking shield pivotally mounted thereon and provided with depending legs at one end adapted to engage said support, a grate bar journaled on said support independently of said shield and adapted to engage said shield to rock the same on its pivot.

9. In a shaking or dumping grate, the combination of supporting bars; grate bars provided with trunnions journaled in said supporting bars; trunnion covers for each of said trunnions, each of said covers comprising a grated trunnion-covering portion, legs adapted to straddle one of the said supporting bars and adapted at their free ends or feet to extend beneath the trunnion over which said cover extends, and to there engage a projecting portion formed on said supporting bar; means for coupling a number of said grate bars together and adapted to rock the same on their bearings, and means for operating said rocking means.

10. In a shaking and dumping grate, the combination of supporting bars; grate bars having trunnions journaled in said supporting bars, said supporting bars each having lugs formed upon one of their side faces; trunnion covers for said trunnions, each comprising a grated trunnion covering portion, and depending portions adapted to straddle one of said supporting bars, the free end of one of said depending portions being adapted to extend under one of said lugs; and means for rocking said grate bars.

852,468. MOTOR-CONTROLLER. EMMETT W. STULL, Norwood, Ohio, assignor to Allis-Chalmers Company, a Corporation of New Jersey, and The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed July 30, 1906. Serial No. 328,336.



Claim.—1. In a controller, a plurality of regulating switches, a motor under the control of each of said switches, and another switch arranged to connect the aforementioned switches and the motors controlled thereby in series and in multiple.

2. In a controller, a plurality of drums, each drum arranged to control one or more motors, and a switch arranged to connect said drums and their associated motors in series and parallel.

3. In a controller, a plurality of regulating switches, a motor under the control of each of said switches, another switch arranged to connect the aforementioned switches and the motors controlled thereby in series and in multiple, and interlocking mechanism for preventing the movement of said last mentioned switch except when the first mentioned switches are in "off" position.

4. In a controller, a plurality of drums, each drum arranged to control one or more motors, a switch arranged to connect said drums and their associated motors in series and in parallel, and interlocking mechanism for preventing the movement of said last mentioned switch save when the drums are in "off" position.

5. In a controller, a plurality of regulating switches connected to operate together, a motor under the independent control of each of said switches, and another switch arranged to cut out any one of said first mentioned switches and the motor controlled thereby.

6. In a controller, a plurality of regulating switches connected to operate together, a motor under the independent control of each of said switches, another switch arranged to cut out any one of said first mentioned switches and the motor controlled thereby, and interlocking mechanism for preventing the movement of said last mentioned switch except when the first mentioned switches are all in "off" position.

7. In a controller, a plurality of drums connected to operate together, each of said drums being connected and arranged to independently control one or more motors, and a switch arranged to cut out any one of said drums and the motor or motors controlled thereby.

8. In a controller, a plurality of drums connected to operate together, each of said drums being connected and

arranged to independently control one or more motors, a switch arranged to cut out any one of said drums and the motor or motors controlled thereby, and interlocking mechanism for preventing movement of said switch except when said drums are in "off" position.

9. In combination, a plurality of regulating switches, one or more motors under the control of each of said switches, and another switch arranged to connect said first mentioned switches and their associated motors in series and in parallel and to cut out any one of said first mentioned switches and the motor or motors controlled thereby.

10. In combination, a plurality of regulating switches, one or more motors under the control of each of said switches, another switch arranged to connect said first mentioned switches and their associated motors in series and in parallel and to cut out any one of said first mentioned switches and the motor or motors controlled thereby, and interlocking mechanism for preventing the movement of said last mentioned switch except when said first mentioned switches are all in "off" position.

11. In combination, a plurality of controlling drums, one or more motors under the control of each of said drums, a switch arranged to connect said drums and the motors controlled thereby in series and in parallel and to cut out any drum and its associated motor or motors.

12. In combination, a plurality of controlling drums, one or more motors under the control of each of said drums, a switch arranged to connect said drums and the motors controlled thereby in series and in parallel and to cut out any drum and its associated motor or motors, and interlocking mechanism for preventing movement of said switch except when the drums are in "off" position.

13. In combination, a plurality of series-parallel regulating switches, a plurality of motors under the control of each of said switches and arranged to be connected in series and in parallel thereby, and another switch arranged to connect said first mentioned switches and their associated motors in series and in parallel.

14. In combination, a plurality of series-parallel regulating switches, a plurality of motors under the control of each of said switches and arranged to be connected in series and in parallel thereby, another switch arranged to connect first mentioned switches and their associated motors in series and in parallel, and interlocking mechanism for preventing movement of said last mentioned switch save when the first mentioned switches are all in "off" position.

15. In combination, a plurality of series-parallel regulating switches, a plurality of motors under the control of each of said switches and arranged to be connected in series and in parallel thereby, and another switch arranged to connect said first mentioned switches and their associated motors in series and in parallel and to cut out any one of said first mentioned switches and its associated motors.

16. In combination, a plurality of series-parallel regulating switches, a plurality of motors under the control of each of said switches and arranged to be connected in series and in parallel thereby, another switch arranged to connect said first mentioned switches and their associated motors in series and in parallel and to cut out any one of said first mentioned switches and its associated motors, and interlocking mechanism for preventing movement of said last mentioned switches save when the first mentioned switches are all in "off" position.

17. In combination, a plurality of series-parallel controlling drums, a plurality of motors under the control of each of said drums and arranged to be connected in series and in parallel thereby, and a switch arranged to connect said drums and their associated motors in series or in parallel.

18. In combination, a plurality of series-parallel controlling drums, a plurality of motors under the control of each of said drums and arranged to be connected in series and in parallel thereby, a switch arranged to connect said drums and their associated motors in series and in parallel, and interlocking mechanism for preventing movement of said switch save when the drums are in "off" position.

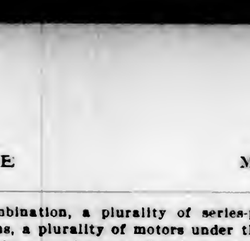
19. In combination, a plurality of series-parallel controlling drums, a plurality of motors under the control of each of said drums and arranged to be connected in series and in parallel thereby, and a switch arranged to connect said drums and their associated motors in series and in parallel and to cut out any one of said drums and its associated motors.

20. In combination, a plurality of series-parallel controlling drums, a plurality of motors under the control of each of said drums and arranged to be connected in series and in parallel thereby, a switch arranged to connect said drums and their associated motors in series and in parallel and to cut out any one of said drums and its associated motors, and interlocking mechanism for preventing movement of said switch save when the drums are in "off" position.

21. In combination, a plurality of regulating switches, one or more motors under the control of each of said switches, another switch arranged to connect said first mentioned switches and their associated motors in series or in parallel, and to cut out any one of said switches and its associated motor or motors, and stops for preventing the movement of said last mentioned switch to any of its cutting-out positions unless the handle thereof is moved out of its normal plane.

22. In combination, a plurality of drums connected to operate together, each drum being arranged to control one or more motors, and a switch arranged to connect said drums and their associated motors in series or in parallel, and to cut out any drum and its associated motor or motors, and means for preventing the movement of said switch into any of its cutting out positions unless the handle thereof is first moved out of its usual plane.

852,469. CLUTCH MECHANISM FOR DUMB-WAITERS AND THE LIKE. ALBIN SVENSON, New York, N. Y. Filed Nov. 19, 1906. Serial No. 344,167.



Claim.—1. In a device of the character herein set forth, the combination with the shaft, of a wheel and drum loosely mounted thereon, a spider located within the drum and keyed upon the shaft, said spider having arms extending oppositely on each side and the wheel having lugs for contacting with the adjacent arms of the spider, a movable clutch plate and a stationary friction ring, the spider being arranged to move the drum and its connected wheel and the clutch plate, and rods extending through the friction ring for connecting the clutch plate and the wheel, substantially as and for the purposes explained.

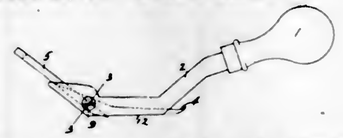
2. In a device of the character herein set forth, the combination of the grooved wheel having lugs thereon, a spider having arms extending on opposite sides thereof, a revoluble shaft, clutch plate, stationary friction ring and connecting rods passing through the plate, ring and wheel, the connecting rods being arranged to be inclined by independent movement of the wheel, substantially as and for the purposes explained.

3. The combination as before set forth, of the grooved wheel having lugs thereon, the spider having arms extending on opposite sides thereof, the clutch plate, the stationary friction ring and the tie rods, said rods being provided with cross heads and with threaded portions and adjusting nuts and the wheel being provided with recesses to receive the cross heads, substantially as and for the purposes explained.

4. In a device of the character herein set forth, the combination with the grooved wheel, the drum, the shaft and the spider keyed on the shaft, of the clutch plate slotted as shown, the spider being located within the drum, having arms extending on opposite sides thereof, one set of said arms projecting through the slots in the clutch plate and the wheel having lugs for contacting with the other arms on the spider, substantially as and for the purposes explained.

5. In a device of the character herein set forth, the combination with the drum and the clutch plate, of the stationary friction ring, said ring being located between the drum and the clutch plate and provided with lugs extending at right angles to the ring and embracing the clutch plate between them for maintaining the ring in operative position, substantially as shown and for the purposes explained.

852,470. WOOD-SHAVING TOOL. CHARLES SWAN, Corry, Pa., assignor to Joseph H. Duke, Corry, Pa. Filed Mar. 22, 1907. Serial No. 363,853.



Claim.—1. In a wood shaving device the combination of a shank 2; a handle extending from the shank in the general direction of the shank; a cross piece extending at right angles from the shank; a guide lug 4 extending forwardly from the cross piece; and a blade secured against the cross piece between the shank and lug, with the cutting edge extending just below the lower surfaces of the shank and lug.

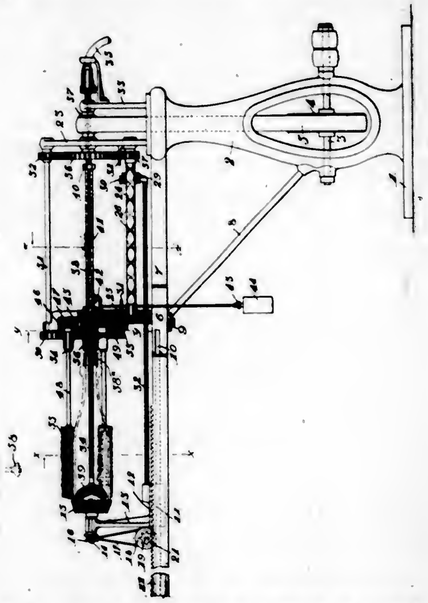
2. In a wood shaving device the combination of a shank 2; a handle extending from the shank in the general direction of the shank; a cross piece extending at right angles from the shank; a guide lug 4 extending forwardly from the cross piece; a blade secured against the cross piece between the shank and lug, with the cutting edge extending just below the lower surfaces of the shank and lug, said shank and lug forming guides for the blade, and one of said guides having an under cut to receive the edge of the blade; and a screw arranged against the opposite edge of the blade.

3. In a wood shaving device the combination of a shank 2; a handle extending from the shank in the general direction of the shank; a cross piece extending at right angles to the shank; a guide lug 4 extending forwardly from the cross piece; a blade arranged against the cross piece between the shank and lug, said blade having beveled edges, said shank and lug forming guides for the blade and one of said guides having an under cut to receive the beveled edges of the blade; and a screw with a conical end arranged against the opposite edge of the blade in a position to force the blade against the cross piece.

852,471. BOTTLE-WASHER. OTTO E. THOMAS, Auburn, Cal. Filed Apr. 17, 1906. Serial No. 312,227.

Claim.—1. In a machine of the character described the combination with a bed; of a standard supported upon the bed, a gear immovably mounted upon the standard, a shaft extending through the standard, a gear rotatably mounted on the shaft, means for transmitting rotary motion from the shaft to said gear, spindles rotatably mounted within the rotatable gear, brushes at one end of the spindles, and gears on the spindles meshing with the stationary gear.

2. In a machine of the character described the combination with a bed having a standard thereon; of a sleeve mounted within the standard, a tubular shaft extending into the sleeve, a brush carried by the shaft, a contracting device upon the sleeve, gravity operated means for holding said device normally projected upon the brush, a gear rotatably mounted on the sleeve, means for transmitting motion thereto from the shaft, brushes movable with said gear, and means for rotating the brushes upon their axes.



3. In a machine of the character described the combination with a bed; of a standard thereon, a rotatable brush carried by the standard, a longitudinally movable brush contracting device carried by the standard, a series of brushes movable around the first mentioned brush, the brushes of said series being rotatable upon their axes, a carriage movable upon the bed, a circular brush carried thereby, means operated by the movement of the carriage for rotating the circular brush, and mechanism for actuating the carriage and brushes.

4. In a machine of the character described the combination with a bed; of a carriage movably mounted thereon, a brush supported by the carriage, means operated by the movement of the carriage for rotating the brush, a shaft rotatably mounted above the bed, a brush mounted thereon, and mechanism operated by said shaft for reciprocating the carriage.

5. In a machine of the character described the combination with a bed; of a carriage slidably mounted thereon, a brush projecting from and rotatably mounted upon the carriage, and mechanism carried by the carriage for rotating the brush, said mechanism engaging the bed and adapted to be actuated by the movement of the carriage.

6. In a machine of the character described the combination with a bed; of a carriage movable longitudinally of the bed, a brush rotatably mounted upon the carriage, a rotatable element carried by the carriage and adapted to travel upon the bed during the movement of the carriage, and mechanism operated by said element for actuating the brush.

7. In a machine of the character described the combination with a bed; of a carriage movable longitudinally of the bed, a brush rotatably mounted upon the carriage, a rotatable element carried by the carriage and adapted to travel upon the bed during the movement of the carriage, and mechanism operated by said element for actuating the brush, a propelling screw adjacent one end of the path of tion between the screw and carriage, said connection engaging and adapted to be actuated by the screw.

8. In a machine of the character described the combination with a bed; of a carriage movable longitudinally of the bed, a brush rotatably mounted upon the carriage, a

rotatable element carried by the carriage and adapted to travel upon the bed during the movement of the carriage, mechanism operated by said element for actuating the brush, a propelling screw adjacent one end of the path of the carriage, means for actuating the screw, a connection between the screw and carriage, means movably mounted within said connection for engaging the screw, and shifting arms in the path of said means for automatically reversing said means to reverse the movement of the connecting device.

9. In a machine of the character described the combination with a tubular rotatable shaft, and an expansible brush at one end thereof; of a longitudinally movable brush contracting device mounted upon said shaft, a rotatable element upon the shaft, a plurality of brushes disposed around and parallel with the tubular shaft, and mechanism for simultaneously revolving said brushes around the shaft and rotating them upon their axes.

10. In a machine of the character described the combination with a bed, and a circular rotatable brush movably supported thereon; of a tubular shaft rotatably mounted above the bed, an expansible brush carried by said shaft, a longitudinally movable brush contracting cup mounted upon the shaft, and means for exerting longitudinal pressure upon the cup to clamp a bottle between the cup and circular brush.

11. In a machine of the character described the combination with a bed; of a tubular rotatable shaft, a brush carried thereby, a circular brush movably supported above the bed for operating upon the bottom of a bottle, a series of brushes disposed around and parallel with the shaft, and mechanism operated by the shaft for simultaneously rotating all of the brushes upon their axes, for revolving the series of brushes around the shaft, and for moving the circular brush longitudinally of the bed.

12. In a machine of the character described the combination with a bed, and cleaning devices supported thereabove; of a carriage, a brush movable therewith, mechanism for actuating the brush, and means for automatically reciprocating the carriage.

13. In a machine of the character described the combination with a bed, and cleaning devices supported thereabove; of a carriage, a brush movable therewith, means for automatically reciprocating the carriage, and mechanism upon the carriage and engaging the bed for actuating the carriage brush during the movement of the carriage.

852,472. DISPENSING APPARATUS. ERNEST C. TRACEY, Newton, Mass., assignor to American Soda Fountain Company, Boston, Mass., a Corporation of New Jersey. Filed July 30, 1906. Serial No. 328,321.

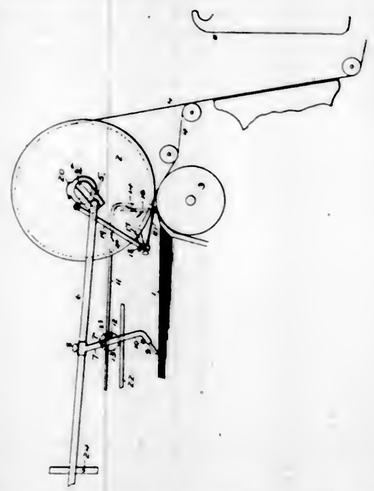


Claim.—A strainer for tumblers and like vessels consisting of a reticulated disk adapted to enter the mouth of a tumbler, and provided with a curved clip, adapted by said curvature to engage a finger of the user between the lower side of the clip and the top of the disk.

852,473. PAPER-SHEET-FEEDING MECHANISM FOR PRINTING-PRESSES. JUNIUS E. TUCKER, Memphis, Tenn., assignor of one-half to William S. Brian, Memphis, Tenn. Filed Dec. 14, 1905. Serial No. 291,747.

Claim.—1. In a feeding mechanism for printing presses, the combination with a rod, means for moving said rod longitudinally and a scraper carried by said rod, of an eccentric actuated to raise the scraper by the longitudinal movement of the rod, means for retaining said eccentric inoperative during a portion of the movement of said rod, and means controlled by the sheet being fed, to move the eccentric in position to be actuated by the rod through another part of the throw of the latter, to raise the scraper.

2. In feeding mechanism for printing presses, the combination with a rod, means for reciprocating said rod, and a depending scraper carried by said rod, of a disk having eccentric connection with said scraper below the rod, a fixed track between said disk and the lower end of the scraper, means for holding the disk out of contact with said track, means for moving said disk into contact with the track, and means controlled by the sheet for releasing said last mentioned means.



3. In feeding mechanism for printing presses, the combination with a rod, means for reciprocating the same, a depending arm carried by said rod and a scraper at the lower end of said arm, of a disk having eccentric connection with said arm, a fixed track below said disk, means tending to retain the disk out of contact with the track, a pin on said disk, a pivoted rod projecting over said pin, and a trip device controlled by a sheet being fed, to release and permit its rear end to descend and move the disk into contact with the fixed track during the movement of the first-mentioned rod.

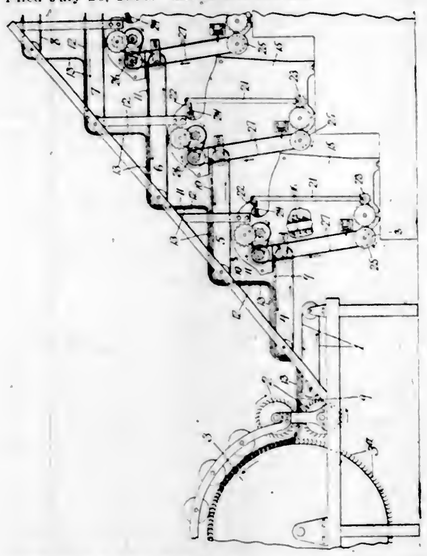
4. In a feeding mechanism for printing presses, the combination with a shaft, a reciprocating rod actuated by said shaft, and a scraper carried by said rod, of a disk having eccentric connection with said scraper, a fixed track below said disk, means for holding said disk out of contact with the track, means actuated by the paper being fed, to move the disk into contact with the track, and means actuated by said shaft to restore the parts.

5. In a feeding mechanism for printing presses, the combination with a reciprocating bar and a scraper carried thereby to move a sheet of paper off the top of a pile, of means for elevating the scrapers from operative position, a trip actuated by the paper for controlling the operation of said elevating means, guard fingers serving to hold the sheet temporarily, a cam or eccentric and means actuated by said cam or eccentric and operating to move said guard fingers and restore the trip.

6. In a feeding mechanism for printing presses, the combination with a reciprocating bar or rod, an arm depending therefrom and a feed scraper at the lower ends of said arm to move a sheet of paper off the top of a pile, of a horizontal track, a cam carried by the depending arm and normally above the track, and means controlled by a moving sheet to permit the cam to engage the track, roll thereon and elevate the scrapers.

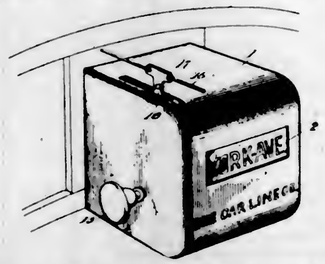
7. In a feeding mechanism for printing presses, the combination with a reciprocating rod, a crank shaft for reciprocating said rod, an arm depending from said rods and a feed scraper at the lower end of said arm to engage and move a sheet of paper off a pile, of a horizontal track, a cam carried by the arm, to run on said track to elevate the scraper from the top sheet, means normally holding the cam out of contact with the track and trip mechanism operated by a moving sheet to move the cam into engagement with the track to elevate the scraper.

852,474. FIBER-MIXER. EMIL TYDEN, Hastings, Mich. Filed July 26, 1906. Serial No. 327,820.



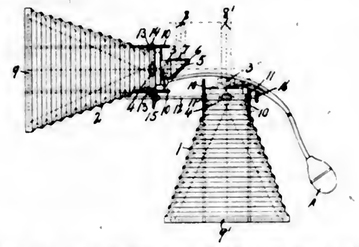
Claim.—In a machine for the purpose stated, in combination with a blending machine comprising a horizontal carrier for feeding material thereto, a plurality of feeders for supplying to such carrier the material to be blended, each comprising an endless carrier for delivering the material from the feeder, such carriers being located one above another, a higher carrier terminating at its delivery side back of the delivery side of a lower carrier for delivering its film onto such lower carrier, the lowest of said carriers being in a position overhanging the receiving carrier of the blending machine.

852,475. STATION-INDICATOR. CHARLES A. UTZ, Rochester, N. Y. Filed Nov. 1, 1906. Serial No. 341,653.



Claim.—In a device of the character described, a casing having a sight opening and a slot, winding rollers within said casing, an indicator apron upon said rollers adapted to travel across said sight opening, meshing gears upon the shafts of said rollers, a ratchet wheel upon the shaft of one of said rollers, a lever pivoted intermediate its ends upon the shaft carrying the ratchet wheel, pawls pivoted upon the opposite ends of said lever and adapted to engage said ratchet wheel, springs for holding said pawls away from said ratchet wheel, means for limiting the swinging movement of said pawls, leaf springs engaging the opposite ends of said lever for returning it to its normal position, a T-shaped bell crank, loose connections between the opposite arms of said bell crank and said pawls, the third arm of said bell crank being adapted to project through the slot in said casing, bell hammers upon the third arm of said bell crank, and a bell arranged in the path of said hammers.

852,476. PHOTOGRAPHIC APPARATUS. WILLIAM VERBECK, Manlius, N. Y. Filed May 3, 1904. Serial No. 206,106.

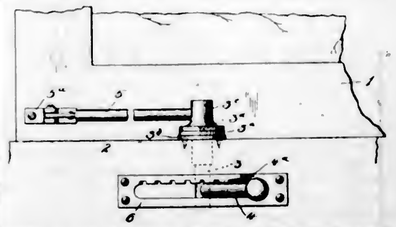


Claim.—1. In a photographic apparatus containing, two sensitized surfaces, separate devices for converging the rays of light from the object onto each surface in the same exposure, one device being movable with reference to the other device to vary the distance between the axes of the pencils of light from the object in combination with means to reverse and project the rays of light onto one of said surfaces.

2. A binocular camera having one of its lenses adjustable to vary the distance between the axes of the pencils of light from the object in combination with means to reverse and project the rays of light passing through one of the lenses.

3. A binocular camera having the optical axes of the lenses disposed at an angle with each other, and means to adjust the distance between the lenses and their sensitized surfaces simultaneously in combination with means to reverse and project the rays of light passing through one of the lenses.

852,477. CASEMENT-ADJUSTER. HENRY G. VOIGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Feb. 14, 1907. Serial No. 357,270.



Claim.—1. In a device of the character described, in combination a casing and a casement therefor, a pivot member carried by the casing, an operating lever secured thereto and a telescopic connection between the said pivot and the said casement.

2. In a device of the character described, in combination, a casing, a pivoted casement therefor, a pivot member carried by said casing, an operating lever secured to said pivot member, and a self adjustable telescopic connection between said pivot and said casement.

3. In a device of the character described, in combination, a casing, a pivoted casement therefor, a pivot member, a bearing therefor in said casing, a lever secured to said pivot extending through said casing horizontally and a self adjustable connection between said pivot and said casement.

4. In a device of the character described, in combination, a casing, a pivoted casement therefor, a pivot member extending into said casing, an operating lever projecting laterally therefrom, and extending through the face of said casing, a guide plate for said lever and a self adjustable connection between said pivot and said casement.

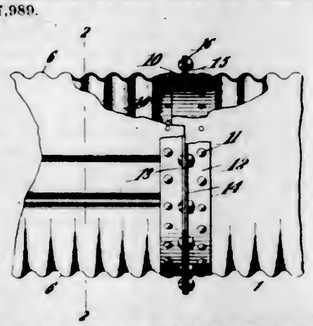
5. In a device of the character described, in combination, a casing, a casement therefor, a pivot member, an operating lever secured thereto, a guide plate therefor provided with a plurality of notches, a latch on said lever adapted to engage in said notches, and a self adjustable connection between said pivot and said casement.

6. In a casement adjuster the combination of the pivot member, an operating lever secured at an angle thereto, a slotted guide plate therefor provided with a series of notches therein, a latch on said lever adapted to engage in said notches, a cap adjustably secured to said pivot, and a self adjusting connection, carried by said cap and arranged to connect said pivot with the casement.

7. In a casement adjuster, a pivot member, an operating lever projecting therefrom, a cap piece carried by said pivot member and means to permit said cap piece to be adjusted axially on said member, a self adjustable connection for the casement, said connection being secured to said cap and projecting laterally thereof.

8. In a casement adjuster, a pivot member, an operating lever projecting therefrom, a cap piece carried by said pivot member and means to permit said cap piece to be adjusted axially on said member, a self adjustable connection for the casement, said connection being secured to said cap and projecting laterally thereof, and means to hold said pivot member at a plurality of angles to secure the desired adjustment of the casement.

852,478. CORRUGATED-METAL CULVERT. CLIFFORD D. VORIS, Crawfordsville, Ind., assignor to Flora M. Voris, Crawfordsville, Ind. Filed Oct. 8, 1906. Serial No. 337,989.

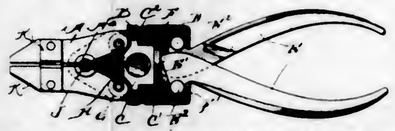


Claim.—1. A culvert comprising a plurality of detachable telescopic sections, each having its opposite longitudinal edges bent to form terminal interengaging hooks constituting a lap-joint, the metal on each side of the lap-joint being pressed laterally to form substantially V shaped longitudinal stop-ribs, flanges permanently secured to and extending laterally from the over-lapping ends of the sections, and means engaging the flanges for clamping the sections in alinement with each other.

2. A culvert comprising a plurality of detachable corrugated telescopic sections with the corrugations terminating short of the opposite ends of the sections to form bearing collars, said sections being each formed of a single piece of metal bent into substantially cylindrical shape and having its adjacent longitudinal edges provided with interengaging hooks constituting a lap-joint the metal on each side of the lap-joint being pressed laterally to form a substantially V shaped longitudinal stop-rib, flanges permanently secured to the terminal collars and having spaced perforations formed therein, and securing bolts passing through the perforations in the flanges for locking the sections in alinement with each other.

3. A culvert formed of a plurality of detachable corrugated telescopic sections with the corrugations terminating short of the opposite ends of the sections to form bearing collars, a plate permanently secured to one of the collars and provided with a laterally perforated flange disposed in alinement with the adjacent end of said collar, a similar plate permanently secured to and spaced inwardly from the end of the opposite collar and having its flange provided with perforations adapted to register with the perforations in the adjacent flange, and securing bolts passing through said perforations for locking the sections in alinement with each other.

852,479. REVOLVING PLIERS. KARL WEISS, Waterbury, Conn. Filed Oct. 3, 1906. Serial No. 337,265.



Claim.—1. A device of the kind described comprising a pair of gripping jaws, and a pair of operating handles adapted to operate said jaws, and means for rotating the jaws independent of movement of the handles.

2. A revolving plier comprising two gripping jaws, two operating handles, and means for rotatably connecting the said jaws to the said handles.

3. A device of the kind described comprising two gripping jaws having rear cam faces, a casing to which said jaws are connected, a cam block slidably held in said casing and adapted to engage the cam faces of the jaws, handles having cam portions adapted to loosely engage the cam block, and a flanged collar loosely connecting said handles to a casing, the jaws, cam block and casing being rotatable relative to the handle.

4. A device of the kind described, a pair of gripping jaws having divergent cam faces, a casing supporting said jaws, a V-shaped cam block slidably held in said casing and adapted to engage the jaws, said cam block being provided with a rear disk portion, a flanged collar carried by the casing and operating handles having their inner ends provided with cams, said handles being loosely held within the collar and the cam ends of the handles loosely engaging the disk of the cam block, as and for the purpose set forth.

5. A plier comprising two jaws working upon a common pivot point and provided with divergent rearwardly extending cam faces, a casing supporting and partially inclosing said jaws, a cam block loosely held in said casing and adapted to be brought into engagement with the cam faces of the jaws, means for preventing rotation of the cam block independent of rotation of the casing, operating handles having inner cam ends in loose engagement with the rear face of the cam block and adapted to force the same forwardly when the handles are brought together, and means for holding the said handles in position and for the purpose set forth.

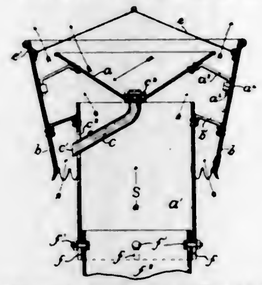
6. A device of the kind described comprising spring opened gripping jaws, a casing to which said jaws are attached, a cam slidably held in said casing, a sleeve rotatably held in the casing and having rearwardly projecting lugs, a flanged retaining collar carried by the rear of the casing and operative handles having cam ends and integral pivot pins loosely held within said retaining collar, the cam ends being loosely held between the lugs of the sleeve and a loose engagement with the rear face of the cam operating upon the jaws, as and for the purpose set forth.

7. Pliers of the kind described, comprising a casing having forwardly extending ears, a bolt fastened through said ears, gripping jaws having oppositely inclined rear cam faces and bearings formed adjacent said cam faces, the bearings engaging said bolt, the rear end portions of said jaws being bifurcated, pins fastened to the bifurcations and extending upon opposite sides of said jaws, rollers mounted upon said pins within the bifurcation, springs connecting the ends of pins of opposite rollers, a cam movably held within the casing and adapted to engage the cam faces of the jaws and the rollers, operating handle levers for forcing said cam forward, and means for loosely holding said handle levers in position, thereby permitting rotation of the jaws, casing, and cam independent of movement of the handle.

8. A device of the kind described comprising movable jaws, rollers carried at the inner ends of said jaws, springs adapted to spread the outer ends of the jaws, a casing supporting said jaws, a cam block comprising a V-shaped cam portion adapted to engage said rollers and a disk portion, said cam block being loosely held in the casing, means for preventing rotation of the cam block within the casing, a sleeve rotatably mounted upon the disk portion of the cam and within the casing and having rearwardly extending lugs, and operating handles having cam portions loosely held between said lugs and loosely in engagement with the disk of the cam block, as and for the purpose set forth.

9. A device of the kind described comprising a pair of operating cam lever handles, a casing, gripping jaws carried by said casing, a cam block loosely held in the casing adapted to force the gripping jaws together, the cam portions of the lever handles actuating said cam block, and means for loosely connecting said handles to the casing, thereby permitting rotation of the casing independent of movement of the handles.

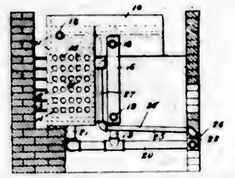
852,480. COMBINED CHIMNEY-COWL AND VENTILATOR. DAVID WHITEHEAD, Perth, Western Australia, Australia, assignor of one-half to Harry Adams, Perth, Australia. Filed Jan. 13, 1906. Serial No. 295,869.



Claim.—The combination with a hollow shaft, of an inverted conical member mounted above the mouth of the shaft, a hood supporting the conical member mounted on the shaft and extending above and below the tops of the shaft and conical member, and forming air passages between it and the shaft and conical member, a drain pipe leading from the bottom of the latter through the side of the shaft above the bottom of the hood, and a conical screen mounted in the top of the hood.

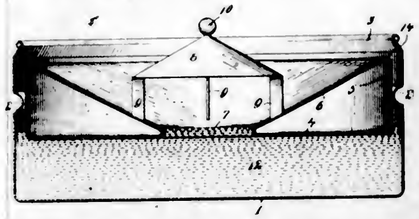
852,481. STEAM-BOILER. DAVID WIGERT, Greenbush, Ill. Filed Oct. 18, 1905. Serial No. 283,315.

Claim.—1. The combination with a boiler having an auxiliary water heater spaced therefrom and in front of the main body of the boiler, of a water box arranged at the front of the fire box, a grate formed of independent tubes, each tube having a short vertical section connected to the water box, an approximately horizontal section extending rearwardly from the vertical section and forming a fuel supporting surface, and an upwardly extending section arranged between the boiler and the auxiliary heater and connected to the upper portion of the latter, and circulating pipes connecting the water box to the lower end of the boiler proper and to the lower end of the auxiliary heater.



2. The combination with a boiler having an auxiliary water heater spaced therefrom in front of the main body of the boiler, of a water box arranged at the front of the fire box and having a circulating connection with the auxiliary heater and the main body of the boiler, and a grate formed of independent tubes, each tube having a short vertical section connected to the top of the water box, an approximately horizontal section extending rearward from the vertical section and forming a fuel supporting surface, and an upwardly extending section between the boiler and the auxiliary heater and connected to the rear face of the upper portion of the latter.

852,482. CUSPIDOR. HARRY WILSON and ROBERT L. GREENWELL, Washington, D. C. Filed Feb. 4, 1907. Serial No. 355,609.



Claim.—1. In a cuspidor, a bowl adapted to contain liquid, a flange formed on the inner face of said bowl intermediate the top and bottom thereof and constituting a combined float guide and a water deflector, a hollow float supported solely by the liquid in said bowl or receptacle having a funnel shaped top terminating in a central opening, a bonnet supported above said opening, the said float being of less thickness than the distance between the flange and the bottom of the bowl or receptacle whereby the float may be depressed below said flange and the liquid as it rises around the float be projected by said flange on to the funnel shaped top of the float.

2. In a cuspidor, a bowl or receptacle adapted to contain liquid, a flange carried by said bowl or receptacle intermediate the top and bottom thereof and constituting a float guide, a float freely movable in the bowl having a funnel-shaped mouth terminating in a central opening, a bonnet supported by the float and disposed above the central opening thereof, and an inwardly projecting water deflector adapted when the float is depressed in the liquid in said bowl, and the liquid rises around the float, to project said liquid over on to the funnel-shaped mouth of the float and flush the same.

852,483. GLASS-FASTENING DEVICE. GEORGE C. WRIGHT, Cleveland, Ohio. Filed May 15, 1903. Serial No. 157,290.

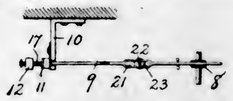
Claim.—1. A clamp for glass plates consisting of an outside fastening plate, a thin flat bar passing through a suitable opening in said outside plate and having a head for engaging the same, said thin flat bar being adapted to

extend between the meeting edges of the plates and being adapted to occupy no more space than the thickness of the packing between said edges, an enlarged screw-threaded portion rigid with said bar, an inside clamping plate, and a nut for engaging said screw-threaded portion, substantially as described.



2. The combination of an outside fastening plate, having a vertical slot and a thin flat fastening bar having a T-shaped head longer than the slot and adapted to be passed through the same,—said bar having an enlarged cylindrical screw threaded inner end, an inside fastening plate having a perforation through which this threaded end passes, and a nut fitting said threaded end, substantially as described.

852,484. TELEGRAPHIC SAFETY DEVICE. SELDEN R. WRIGHT, Morton, N. Y., assignor to Circuit Protecting Relay Company, Rochester, N. Y., a Corporation of New York. Filed Aug. 7, 1903. Serial No. 168,633.



Claim.—1. The combination of an electromagnet, a main line connection therefor, a connection from a normally open circuit, a time mechanism, a circuit closing mechanism for said normally open circuit comprising a part which, when the circuit to the main line connection is broken, is automatically moved into connection with said time mechanism and is moved thereby for a predetermined period of time, and a spring actuated contact device in said normally open circuit connection that is movable upon operation of said automatically moved part.

2. The combination of an electromagnet, a main line connection therefor, a connection from a normally open circuit, a time mechanism, a circuit closing mechanism for said normally open circuit comprising a part which, when the circuit to the main line connection is broken, is automatically moved into connection with said time mechanism and is moved thereby for a predetermined period of time, a spring actuated contact device in said normally open circuit connection, a retainer therefor, and means for releasing said retainer upon operation of said automatically moved part.

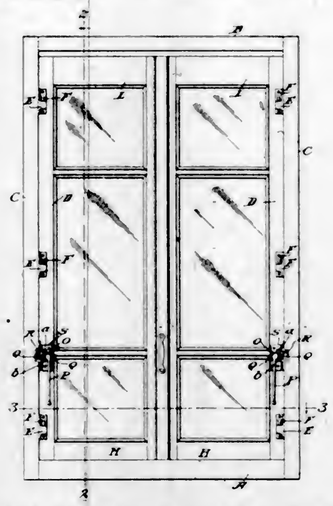
3. The combination of an electromagnet, a main line connection therefor, a connection from a normally open circuit, a time mechanism, a circuit closing mechanism for said normally open circuit comprising a part which, when the circuit to the main line connection is broken, is automatically moved into connection with said time mechanism and is moved thereby for a predetermined period of time, a spring actuated contact device in said normally open circuit connection, a latch therefor, and means for releasing said latch upon operation of said automatically moved part.

4. The combination of an electromagnet, a main line connection therefor, a connection from a normally open circuit and contact apparatus in said circuit, a retainer lever for holding said contact device in one position, a latch lever for said retainer lever, a time mechanism, and means operated by said time mechanism for releasing said retainer lever from said latch lever.

5. The combination of an electromagnet having an armature, a main line connection therefor, a connection from a normally open circuit, a time mechanism, a circuit closing mechanism in said circuit, a latch for holding said circuit closing mechanism open, and means for releasing said latch upon movement of said armature.

6. The combination of an electromagnet having an armature, a main line connection therefor, a connection from a normally open circuit, a time mechanism comprising a ratchet wheel, a ratchet bar adapted to be operated by said ratchet wheel and having a slot, an armature bar attached to said armature and passing through said slot and having a stop thereon, a spring for pulling said armature bar against the magnetic action, means for pulling the ratchet bar into contact with the ratchet wheel, whereby the adjustment of the electromagnet is independent of the ratchet bar, and connections from said ratchet bar for closing said normally open circuit.

852,485. CASEMENT-WINDOW. IGNACY WROBLEWSKI, Krakow, Austria-Hungary. Filed Sept. 6, 1906. Serial No. 333,505.

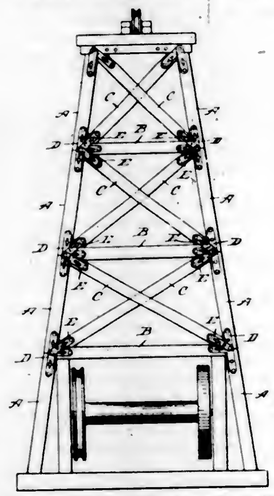


Claim.—1. In a casement window the combination of a window frame provided with a recess in its inner edge, a vertically movable window sash hinged to swing on said frame, and means for lifting and lowering said sash for unlocking and locking it, said means comprising a fork countersunk in said recess and projecting laterally over the inner face of a side rail of the sash, a bearing plate secured to said inner face of the sash rail adjacent to said fork, and a cam shaft journaled in bearings of said plate and provided with an actuating handle and with a cam engaging said fork and extending into the countersunk recess in the window frame when the sash is swung open.

2. In a casement window the combination of a window frame provided with a recess in its inner edge, a vertically movable window sash hinged to swing on said frame, and means for lifting and lowering said sash for unlocking and locking it, said means comprising a fork countersunk in said recess and projecting laterally over the inner face of a side rail of the sash, said fork having attaching flanges projecting in opposite directions from the tines about midway of their length, a bearing plate secured to said inner face of the sash rail adjacent to said fork, and a cam shaft journaled in bearings of said plate and provided with an actuating handle and with a cam engaging said fork and extending into the countersunk recess in the window frame when the sash is swung open.

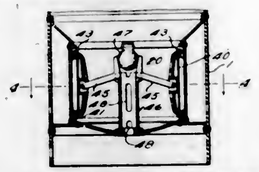
852,486. DERRICK. PATRICK YORKE, Washington, Pa. Filed Nov. 5, 1906. Serial No. 341,995.

Claim.—In a derrick for oil or Artesian wells, the combination of the corner uprights, girths and brace-timbers of T-irons and brace-irons provided with holes and slots, said irons being placed on both sides of the timbers at the intersection of the girths and braces, and clamped in a



rigid position by means of bolts, substantially as shown and described.

852,487. FEED-WATER HEATER AND PURIFIER. GUSTAVUS H. ZSCHECH, Berwyn, Ill. Filed Aug. 16, 1906. Serial No. 330,855.



Claim.—1. In a device of the class described, the combination of a casing having perforated walls, a partition formed of fabric stretched across the perforations in said wall and spaced away from said walls, a supporting ridge interposed between said fabric and walls, and a removable frame for securing said fabric upon said ridge.

2. A filter comprising a casing having an outlet opening in its walls, a screen extending across opening, an inwardly extending ridge surrounding said screen, a sheet of fabric stretched across said ridge and spaced away from the screen, and a frame fitting along said ridge and normally urged toward the same for securing the fabric in position.

3. A filter comprising a casing having a perforated area in one of its walls, an inwardly extending ridge surrounding said perforated area, a fabric stretched across said ridge, and a weighted frame fitting said ridge and normally urged toward the same by gravity for securing the fabric upon said ridge.

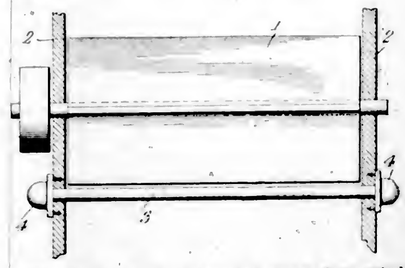
4. A filter comprising a casing having a vertically disposed wall, an outlet opening in said wall, an inwardly extending ridge surrounding said opening, a sheet of filtering material stretched across said ridge, a frame fitting along said ridge and loosely suspended in position for securing the filtering material thereon, and a weighted arm normally urging said frame into contact with said ridge.

5. A filter comprising a casing having vertically disposed walls and having outlet openings at opposite sides of said walls, inwardly extending ridges surrounding said openings, sheets of fabric stretched over said ridges, individual frames fitting each of said ridges for clamping the fabric thereon said frame having inwardly extending parts, and a weight interposed between said parts and adapted to normally urge said frames toward their respective ridges.

6. A filter comprising a casing having vertically disposed walls and having outlet openings at opposite sides of said walls, inwardly extending ridges surrounding said openings, sheets of fabric stretched over said ridges, individual frames fitting each of said ridges for clamping the fabric thereon, said frames having inwardly extending parts, said parts being inclined away from each other, and a wedge interposed between said parts for forcing the frames toward their respective ridges.

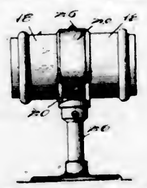
7. A filter comprising a casing having vertically disposed walls and having outlet openings at opposite sides of said walls, inwardly extending ridges surrounding said openings, sheets of fabric stretched over said ridges, individual frames fitting each of said ridges for clamping the fabric thereon, individual arms pivotally connected to each of said frames and extending toward each other, said arms having downwardly converging surfaces at their inner ends, and a weight resting between said converging surfaces and adapted to wedge said arms outwardly for clamping said frames against said ridges.

852,488. DEVICE FOR PREVENTING FLAX-STRAW FROM WINDING ABOUT BEATERS. ERICK ASLESON, Chatfield, Minn. Filed Aug. 16, 1906. Serial No. 330,900.



Claim.—A device for preventing straw from winding upon threshing beaters comprising a flagelliformed member located in parallel relation with the longitudinal axis of the beater and passing through perforations provided in the sides of the thresher and caps located upon the outer surfaces of the sides of the thresher and receiving the ends of said member and retaining the same against rotation.

852,489. CLUSTER LAMP-SOCKET. REUBEN B. BENJAMIN, Chicago, Ill., assignor to Benjamin Electric Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 31, 1903. Serial No. 141,262.



Claim.—1. In an electric lamp cluster, the combination of lamp receiving shells arranged upon opposite sides of a common base, and a ring for supporting said base made in two sections adapted to be separated one from the other, substantially as described.

2. In an electric lamp cluster, the combination of lamp receiving shells arranged upon opposite sides of a common base, a ring for supporting said base made in two sections adapted to be separated one from the other, and means

for clamping said ring to said base, substantially as described.

3. In an electric lamp cluster, the combination with a suitable base, of lamp receiving shells arranged upon opposite sides thereof, a casing surrounding each of said shells and having an unobstructed opening in the end thereof to permit the insertion of a lamp in the shell, and a ring for retaining said casings in their normal position, substantially as described.

4. In an electric lamp cluster, the combination with lamp receiving shells arranged upon opposite sides of a common base, of a casing surrounding each of said shells having an unobstructed opening in the end thereof to permit the insertion of a lamp in the shell, said casings being joined together by a ring to retain them in their normal position, substantially as described.

5. In an electric lamp cluster, the combination with lamp receiving shells arranged upon opposite sides of a common base, of casings for said shells having flared edges, and a ring arranged between said casings also having flared edges which overlap the flared edges of said casings whereby they are retained in their normal position, substantially as described.

6. In an electric lamp cluster, the combination with a suitable base, of lamp receiving shells arranged upon opposite sides thereof, casings for said shells and a ring for securing said shells in their relative positions, said ring being constructed in two parts which may be readily separated, substantially as described.

7. In an electric lamp cluster, the combination with a base having lamp receiving shells arranged on opposite sides thereof, of casings for said shells and a ring for securing said casings in their relative positions, said ring being composed of two parts which may be readily separated or joined together, and means for clamping said ring to said base, substantially as described.

8. In an electric lamp cluster, the combination with a suitable base, of lamp receiving shells arranged upon opposite sides thereof, an inclosing casing for each shell, a ring made in two parts, adapted to retain said casings in their normal positions, means for securing said parts together, and an insulating sheath interposed between said casings and said receiving shells, substantially as described.

9. In a two light electric lamp cluster, the combination with an elongated inclosing portion of minimum transverse dimension having recesses formed in the opposite ends thereof, adapted to receive electric lamp bases and arranged to support the same substantially in axial alinement, of a suitable support for said inclosing portion, and a single pair of binding posts common to the two lamp receptacles, substantially as described.

10. In a two light electric lamp cluster, the combination with an elongated inclosing sheath of minimum transverse dimension, of lamp receiving shells disposed within the opposite ends of said sheath and arranged to support the lamps substantially in axial alinement, a pair of binding posts common to the two lamp receivers and a suitable support for said sheath, substantially as described.

11. In a two light electric lamp cluster, the combination with an elongated inclosing portion of minimum transverse dimension having recesses provided in the opposite ends thereof adapted to receive electric lamp bases and support the lamps substantially in axial alinement, of a tubular support for said inclosing portion, said support constituting a conduit for supply wires and a pair of binding posts common to the two lamp receptacles, substantially as described.

12. In a two light electric lamp socket, the combination with an elongated inclosing portion, of lamp receivers provided in the opposite ends thereof, said inclosing portion being provided with a removable part to permit access to the interior of the socket, substantially as described.

13. In a two light electric lamp socket, the combination with an elongated inclosing portion, of, lamp receivers in the opposite ends thereof, a binding post common to the outer contacts of each lamp receiver, a second binding post common to the center contacts of the two lamp receivers, said inclosing portion being provided with a removable part to permit access to the binding posts, substantially as described.

14. In a two light electric lamp cluster, the combination with an insulating base or support, of lamp receivers and associated contacts mounted upon said base to maintain the lamps substantially in axial alinement and a metal casing surrounding said base and lamp receivers and having a portion thereof removable to permit access to the interior of the socket, substantially as described.

15. In a two light electric lamp cluster, the combination with an insulating base or support, of lamp receivers and associated contacts mounted upon opposite sides thereof, binding posts suitably supported upon said base, a metallic shell inclosing said base and lamp receivers, and suitable insulating means between said shell and said lamp receivers, a portion of said metallic shell being removable to permit access to said binding posts, substantially as described.

16. In a two-light electric lamp cluster, the combination with a centrally disposed insulating base, of lamp receiving shells mounted upon opposite sides of said base and arranged to support the lamps substantially in axial alinement, and a casing surrounding said shells and having unobstructed openings in the ends thereof to permit the insertion of lamps in said shells, substantially as described.

17. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted upon said base and supporting the lamps substantially in axial alinement, a casing for each of said shells having upturned inner edges and a casing for said base having downwardly extending edges, the upturned edges of said first mentioned casing co-acting with the downwardly extending edges of said second mentioned casing to retain said first mentioned casings in position and means for detaching said second mentioned casing to afford access to the interior of said socket, substantially as described.

18. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted upon said base and supporting the lamps substantially in axial alinement, binding posts for supply wires mounted upon said base, a casing for each of said shells having upturned inner edges, a casing for said base composed of two members having downwardly extending edges, means for attaching one of said members to a suitable conduit or support and means for detachably securing another of said members in position, the upturned edges of said first mentioned casings and the downwardly extending edges of said second mentioned casings co-acting with said last mentioned means to retain said casings in position and to afford access to said binding posts through the sides of said socket, substantially as described.

19. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted upon said base and supporting the lamps substantially in axial alinement, a suitable casing for said shells and suitable insulating means between said casing and shells, substantially as described.

20. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted upon said base and supporting the lamps substantially in axial alinement, a suitable casing for said shells and an insulating sheath between said casing and said shells, substantially as described.

21. In a two light electric lamp cluster, the combination with an elongated supporting portion having lamp receiving recesses arranged in opposite ends thereof and supporting the lamps substantially in axial alinement, of a metal casing for said supporting portion composed of three members and an insulating sheath composed of three members disposed between said supporting portion and said casing, substantially as described.

22. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted upon said base and supporting the lamps substantially in axial alinement, a suitable casing for said shells and insulating rings disposed between said shells and the outer edges of said casing, substantially as described.

23. In a two-light electric lamp cluster, the combination with an insulating base composed of two members, of a lamp receiving shell mounted upon each of said members arranged to support the lamps substantially in axial alinement, and a casing surrounding said shells having unobstructed openings in the ends thereof to permit the insertion of lamps in said shells.

24. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted thereon arranged to support the lamps substantially in axial alinement, a binding post common to said shells arranged in a recess in said base, a binding post common to the center contacts of the lamps also arranged in a recess in said base, said base having a groove formed therein communicating with said binding posts and adapted to receive supply wires and a central tubular support for said socket communicating with said groove and adapted to receive supply wires, substantially as described.

25. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted upon said base arranged to support the lamps substantially in axial alinement, and means securing said shells in position on said base said means electrically connecting said shells one with the other, substantially as described.

26. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted upon said base arranged to support the lamps substantially in axial alinement, a U-shaped piece having a turned-up extended portion disposed in the bottom of one of said shells, a binding post carried by said extended portion, and means extending through said base mechanically supporting said U-shaped piece and said shells in position and electrically connecting said shells one with the other, substantially as described.

27. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted thereon arranged to support the lamps substantially in axial alinement, a strip arranged in a recess in said base having the ends thereof bent to extend opposite the faces of said base to form center spring contacts for the lamps and a binding post mounted upon said strip, substantially as described.

28. In a two light electric lamp cluster, the combination with an insulating base, of lamp receiving shells mounted thereon arranged to support the lamps substantially in axial alinement, a strip arranged in a recess in said base and having the ends thereof bent to extend opposite the faces of said base to form center spring contacts for the lamps, a tongue formed in one end of said strip, a bolt or rivet extending through said base and coacting with said tongue to retain said strip in position, one end of said strip having an aperture formed therein to permit access to said bolt, substantially as described.

29. In a two-light electric lamp socket, the combination with a pair of suitably supported lamp receivers arranged end to end and adapted to support the lamps in substantially axial alinement, of lamp contacts associated with said receivers, a suitable support for the socket, and a casing surrounding said lamp receivers having unobstructed openings in the ends thereof to permit the insertion of lamps in said receivers.

30. In a two-light electric lamp socket, the combination with a pair of suitably supported lamp receivers arranged end to end and adapted to support the lamps substantially in axial alinement, of lamp contacts for said receivers, a centrally disposed support for the socket, electrical conductors extending through said support, and a casing or cover surrounding said lamp receivers having unobstructed openings in the ends thereof to permit the ready insertion of lamps in said receivers.

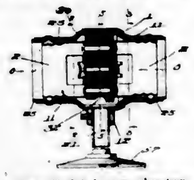
31. In a two-light electric lamp socket, the combination with a pair of suitably supported lamp receivers arranged end to end and adapted to support the lamps in substantially axial alinement, of lamp contacts associated with said receivers, and a casing or cover surrounding said lamp receivers having unobstructed openings in the ends thereof to permit the ready insertion of the lamps in said receivers.

32. In a cluster or plural lamp socket, the combination with a support, of a metallic casing removably connected thereto, an insulating base supported by and within said casing, and a plurality of lamp receivers and their contacts mounted upon said base and within said casing.

33. In a cluster or plural lamp socket, the combination with a support, of a metallic casing removably connected thereto, an insulating base supported by and within said casing, a plurality of lamp receivers and their contacts mounted upon said base and within said casing, and means for insulating said receivers from said casing.

34. In a cluster or plural lamp socket, the combination with a support, of a metallic casing removably connected thereto, an insulating base supported by and within said casing, a plurality of lamp receivers and their contacts mounted upon said base and within said casing, and a pair of binding posts mounted upon said base.

852,490. TWIN LAMP-SOCKET. REUBEN B. BENJAMIN, Chicago, Ill. Filed Feb. 29, 1904. Serial No. 195,830.



Claim.—1. In a two-light lamp cluster, the combination with a two-part inclosing sheath, of an insulating base within said sheath; lamp receiving shells associated therewith and disposed within the opposite ends of said sheath and arranged to support the lamps in axial alinement, said inclosing sheath lying close to the receiving shells and having unobstructed openings in the ends thereof to permit the insertion of lamps in said shells.

2. In a two-light lamp cluster, the combination with an inclosing sheath formed from two separable interlocking members, of lamp receiving shells disposed within the opposite ends of said sheath and arranged to support the lamps in axial alinement.

3. In a two-light lamp cluster, the combination with a two-part inclosing sheath, of a support therefor secured to one of said parts and constituting a conduit for the leading-in wires, and lamp shells disposed within the opposite ends of said sheath and arranged to support the lamps in axial alinement.

4. In a two-light electric lamp cluster, the combination with an inclosing sheath formed of two parts arranged to telescope upon one another, of lamp shells disposed within the opposite ends of said sheath and arranged to support the lamps in axial alinement.

5. In a two-light lamp cluster, the combination with a two-part inclosing sheath, of an insulating base arranged therein, lamp receptacles supported by said base and disposed within the opposite ends of said sheath and arranged to support the lamps in axial alinement, said inclosing sheath lying close to the lamp receptacles and having unobstructed openings in the ends thereof to permit the insertion of lamps in said shells, and a pair of binding posts common to said lamp receptacles and carried by said base.

6. In a two-light electric lamp cluster, the combination with a two-part separable inclosing sheath, of an insulating base arranged therein, lamp receptacles mounted upon said base and disposed within the opposite ends of said sheath and arranged to support the lamps in axial alinement, a pair of binding posts carried by said base and common to said lamp receptacles, and a transverse standard or support for said socket constituting a conduit for the supply wires.

7. In a two-light electric lamp cluster, the combination with an inclosing sheath formed of two sections, having a bayonet joint, of lamp receiving shells disposed within the opposite ends of said sheath and arranged to support the lamps in axial alinement.

8. In a two-light electric lamp cluster, the combination with a two-part inclosing sheath, of an insulating lining for said sheath, and lamp receptacles disposed within the opposite ends of said casing and arranged to support the lamps in axial alinement.

9. A two light electric lamp cluster comprising a cen-

tral portion adapted to support two lamps in an end to end position, an inclosing casing or shell composed of two members, one of said members having an aperture formed therein, said aperture affording access to the interior of the cluster when the other of said members is removed.

10. A two light electric lamp cluster comprising a central portion adapted to support two lamps in an end to end position, an inclosing casing or shell composed of two members, and an insulating lining for said casing composed of two members, the contiguous edges of said members having inwardly and outwardly extending flanges formed therein, said flanges interlocking to form a unitary insulated member.

11. In a two light electric lamp cluster, the combination with an insulating base, of lamp receptacles carried by said base and adapted to support the lamps substantially in axial alinement, a pair of binding posts common to said lamp receptacles, and a removable casing for said socket composed of two members, one of said members having an aperture or apertures formed therein, said aperture or apertures being closed when the other of said members is in position and affording access to the interior of the socket when said last mentioned member is removed.

12. In a two light electric lamp cluster, the combination with an insulating base, of lamp receptacles carried by said base and adapted to support the lamps substantially in axial alinement, a pair of binding posts common to said lamp receptacles, and a casing for said socket, said casing having a depression formed therein adapted to engage said base to retain said base in a fixed position.

13. In a two light electric lamp cluster, the combination with an insulating base, of lamp receptacles carried by said base and adapted to support the lamps substantially in axial alinement, a pair of binding posts common to said lamp receptacles, a removable casing for said socket composed of two members, one of said members having a depression formed therein adapted to engage a projection carried by said base to retain said base in a fixed position therein.

14. In a two light electric lamp cluster, the combination with an insulating base, of lamp receptacles carried by said base and adapted to support the lamps substantially in axial alinement, a pair of binding posts common to said lamp receptacles, a removable casing for said socket, composed of two members, a strip or ring of insulating material for one of said lamp receptacles disposed in one of said members, and a pair of rings or strips of insulating material for said base and the other of said receptacles disposed in the other of said members, the contiguous ends of said pair of rings or strips of insulating material having outwardly and inwardly extending flanges formed thereon, said flanges overlapping and co-acting to retain said pair of insulating rings or strips of material together, said first mentioned ring or strip of insulating material co-operating with said pair of strips or rings of insulating material to form a continuous insulating lining for said socket.

852,491. PLURAL LAMP-SOCKET. REUBEN B. BENJAMIN, Chicago, Ill., assignor to Benjamin Electric Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 1, 1904. Serial No. 226,800.



Claim.—1. In a two-light electric lamp plug socket, the combination with an insulating base, of a pair of lamp receiving shells mounted thereon end to end and in substantial alinement, said insulating base having a transversely extending integral plug portion, suitable terminals carried thereon, and a cylindrical casing inclosing said lamp receiving shells mounted thereon end to end and in substantial alinement with the plug portion, said casing being formed upon one side to accommodate the passage of said transversely extending plug portion.

2. In a two-light electric lamp socket, the combination with an insulating base, of lamp receivers arranged end to end upon said base and adapted to support the lamps substantially in axial alinement, lamp contacts associated with said receivers, an inclosing cover or casing arranged longitudinally of the axis of the receivers, a suitable transversely extending plug formed integrally with said base and carrying terminals in electrical connection with the lamp contacts, and an insulating lining for said cover or casing arranged upon one side to accommodate the transverse passage of said plug.

3. In a two-light electric lamp socket, the combination with an insulating base, of lamp receivers arranged end to end upon said base adapted to support the lamps substantially in axial alinement, lamp contacts associated with said receivers, a separable two-part inclosing cover or casing arranged longitudinally of the axis of the receivers and having an opening on one side, and a suitable transversely extending plug formed integrally with said base extending through said opening and carrying terminals in electrical connection with the lamp contacts.

4. In a two-light electric lamp socket, the combination with an insulating base, of lamp receivers arranged end to end upon said base and adapted to support the lamps substantially in axial alinement, lamp contacts associated with said receivers, an inclosing cover or casing arranged longitudinally of the axis of the said receivers, a suitable plug formed integrally with said base carrying a ring terminal and a center terminal, said center terminal extending through said plug and having a bifurcated inner end forming the center lamp contacts, and means for connecting the ring terminal with the ring contacts of the lamps.

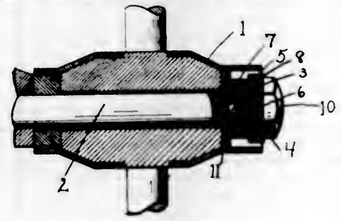
5. In a two-light electric socket, the combination with an insulating base, of lamp receivers arranged end to end upon said base and adapted to support the lamps substantially in axial alinement, lamp contacts associated with said receivers, an inclosing cover or casing arranged longitudinally of the axis of the receivers a suitable transversely extending plug formed integrally with said base and carrying a ring terminal and a yieldingly mounted center terminal to accommodate the partial rotation of said plug in a socket, and means for electrically connecting the said ring and center terminals with the lamp contacts.

6. The combination with a twin or two-light socket, having a pair of lamp receiving shells mounted end to end, of a plug extending transverse thereto and having a ring contact and a center contact, the latter being yieldingly mounted to accommodate the partial rotation of the plug in a socket.

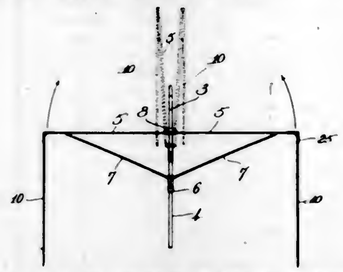
7. In a twin plug socket, the combination with an insulating base, of a pair of lamp receiving shells mounted upon opposite sides thereof, an integrally formed transversely extending plug portion of said base, a ring terminal and a center terminal on said plug portion, center contacts for the lamp receivers connected with the center contact on said plug, said center contacts resting in a transverse recess or slot in said insulating base, and a yoke passing around the periphery of said insulating base for connecting the ring terminal on the plug with said lamp receiving shells.

852,492. HUB-ATTACHING DEVICE. GOTTLIEB BITZER, Turners Falls, Mass. Filed Mar. 22, 1906. Serial No. 307,505.

Claim.—A hub attaching device comprising a spindle, the upper end of which is recessed axially and screw-threaded internally and externally, the upper end of the spindle being reduced and provided with an angular periphery, a nut engaging the external threads and having its outer face extending out to the inner end of said reduced portion, a washer on the reduced portion extending flush with the tip of the spindle, and having an angular opening corresponding with the outline of the reduced portion, and a screw in the recess of the spindle having an enlarged head which engages with the outer end of the spindle and with the outer face of the washer.



852,493. UMBRELLA. HERBERT H. BROWN, Lynn, Mass. Filed Nov. 8, 1905. Serial No. 286,324.



Claim.—1. In an umbrella, a handle or stem, ribs hinged thereto, each rib having an inwardly-folding joint between its ends, a shoe slidable on each rib and adapted in one position to lock the joint, a brace pivoted to each shoe, and means to arrest the movement of each shoe on its rib when the joint is unlocked.

2. In an umbrella, a handle, ribs hinged thereto and adapted to fold backwardly against the tip of the handle, each rib having a knuckle-joint intermediate of its ends and adapted to fold inwardly, a runner on the handle, braces pivoted to the runner, and shoes slidably mounted on the ribs and connected to the braces, said shoes in one position adapted to span the joints on the ribs and hold said ribs stiff.

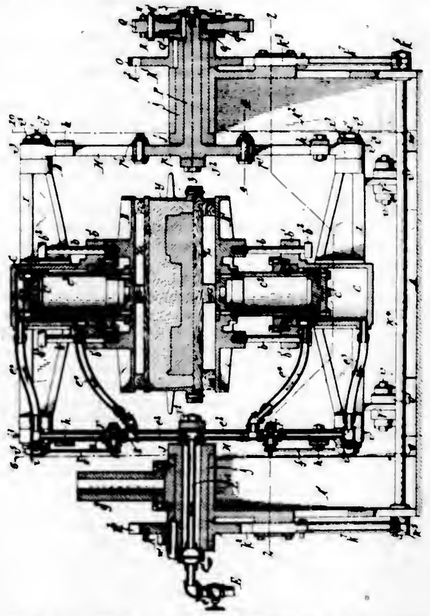
3. In an umbrella, a handle, ribs pivoted thereto to fold backwardly against the tip thereof, said ribs being substantially U-shaped in cross section and each having an inside joint intermediate of its ends, whereby the outer end of each rib may be folded inwardly against the inner side of the upper part thereof, a shoe within each rib, and braces connected to the shoes, each shoe being adapted in one position to span the joint on the corresponding rib and hold said rib stiff in its straightened position.

4. In an umbrella, U-shaped ribs each jointed intermediate of its ends, each rib having tubular portions adjacent the joint, a longitudinally-curved shoe slidable within each rib and adapted to penetrate the tubular portions and span the joint thereof, and braces pivoted to the shoes.

5. In an umbrella, the combination with a handle or stem of ribs hinged thereto, each rib having an inwardly-folding joint between its ends, a shoe on each rib, each shoe having a limited sliding movement sufficient only to lock and unlock the rib, and a brace pivoted to each shoe.

852,494. MOLDING-MACHINE. JOHN H. B. BRYAN, Buffalo, N. Y., assignor to Bryan Vacuum Moulding Machine Company, Lockport, N. Y. Filed Aug. 23, 1902. Serial No. 120,753.

Claim.—1. In a molding machine, the combination of a reversible frame, a platen arranged in said frame, a pressure cylinder mounted on said frame in rear of the platen, a piston arranged in the cylinder and connected with the platen by a neck or reduced extension, and conduits connected with opposite ends of the cylinder for supplying a pressure medium thereto, the conduit connecting with the inner end of the cylinder being valveless and the conduit connecting with the outer end of the cylinder having a valve for admitting or shutting off the pressure medium therefrom, substantially as set forth.



2. In a molding machine, the combination of a reversible frame, a pressure cylinder mounted on the frame, a piston arranged in said cylinder and having its inner side of less area than its outer side, a platen connected with the inner side of the piston, a conduit for supplying a pressure medium consisting of a fixed section, a central movable section arranged concentric with the axis of the reversible frame and connected by a rotary joint with the fixed section, inner and outer branch tubes connecting the central section with opposite ends of the cylinder, and a valve arranged in the outer branch tube, substantially as set forth.

3. In a molding machine, the combination of a reversible frame, a platen mounted thereon, a pressure cylinder and piston for actuating said platen, valve mechanism for controlling the admission and exhaust of the pressure fluid from said cylinder, and means for automatically shifting said valve mechanism by the reversal of said frame, substantially as set forth.

4. In a molding machine, the combination of a reversible frame, a pressure cylinder mounted on the frame, a piston arranged in the cylinder and having one of its sides of less area than the other, conduits connected with opposite ends of the cylinder for supplying a pressure medium thereto, a pressure and vent valve arranged in the conduit leading to the cylinder on the large area-side of the piston, and automatic means for shifting said valve to cut off the pressure medium from that end of the cylinder and to vent the same upon reversing the frame, substantially as set forth.

5. In a molding machine, the combination of a reversible frame, a pressure cylinder mounted on the frame, a piston arranged in the cylinder and having one of its sides of less area than the other, conduits connected with opposite ends of the cylinder for supplying a pressure medium

thereto, a pressure and vent valve arranged in the conduit leading to the cylinder on the large-area side of the piston, a lever arranged on the plug of said valve and having a hand arm for turning the valve to admit the pressure medium to the respective end of the cylinder and close the vent and a tappet arm for shutting off the pressure medium and opening the vent, and a stop which is engaged by the tappet arm for automatically shifting the valve into the last mentioned position, substantially as set forth.

6. In a molding machine, the combination of a reversible frame, a pressure cylinder mounted on the frame, a piston arranged in the cylinder and having one of its sides of less area than the other, conduits connected with opposite ends of the cylinder for supplying a pressure medium thereto, a pressure and vent valve arranged in the conduit leading to the cylinder on the large-area side of the piston, an arm arranged on the plug of said valve for turning the latter to cut off the pressure medium from the respective end of the cylinder and vent the same, a movable stop which forms an abutment for the said arm during its forward movement for shifting the valve into the last mentioned position but which yields when engaged by the said arm during the backward movement of the same, substantially as set forth.

7. In a molding machine, the combination of a main frame, a reversible frame turning in the main frame, pressure cylinders mounted on diametrically opposite sides of the reversible frame, pistons arranged in said cylinder and having their inner sides of less area than their outer sides, platens connected with the inner sides of the pistons, a supply pipe for a pressure medium consisting of a fixed section, a central longitudinal section connected with the fixed section by a rotary joint and arranged concentric with the axis of the reversible frame, inner and outer branch tubes or conduits connecting the central section with opposite ends of each cylinder, a pressure and vent valve arranged in each outer conduit, an elbow lever connected with the plug of each valve and having a straight handle arm and an offset tappet arm, a stop constructed to be engaged by the tappet arms for shifting the valves to cut off the pressure medium from the outer end of the cylinder and to vent the same, and a bar which is adjustably connected with the main frame and upon which said stop is supported so as to be rigid in one direction but movable in the other direction, substantially as set forth.

8. In a molding machine, the combination of a reversible frame, platens mounted on said frame and arranged to receive a molding flask between them, a locking device for holding said frame against turning, a hand operated shifting mechanism for rendering the locking device inoperative, and an automatic shifting device constructed to render the locking device operative, substantially as set forth.

9. In a molding machine, the combination of a reversible frame, platens mounted on said frame and arranged to receive a molding flask between them, a locking disk turning with said frame and provided in opposite sides with recesses, a locking bolt or keeper constructed to enter either of said recesses, a toggle which is connected with said keeper and which upon being straightened withdraws the keeper from the locking disk, and a tappet mechanism which is operated by the locking disk and which is constructed to break said toggle and permit the keeper to engage the disk, substantially as set forth.

10. In a molding machine, the combination of a reversible frame, platens mounted in said frame and arranged to receive a molding flask between them, a locking disk turning with said frame and provided on opposite sides with recesses, a locking bolt or keeper constructed to enter either of said recesses, a rock arm connected by a link with said keeper, a toggle having one of its members connected with said rock arm and constructed to release the keeper from said disk when in its straightened position, a shifting arm arranged to engage said toggle and break the same for permitting the keeper to engage the disk, and a tappet arranged on the disk and constructed to move the shifting arm for breaking the toggle, substantially as set forth.

11. In a molding machine, the combination of a main frame, a reversible frame provided on opposite sides with horizontal trunnions which are journaled in the main frame, locking disks mounted on said trunnions and each provided in opposite sides with recesses, a keeper arranged adjacent to each of said disks and adapted to enter either of its recesses, a horizontal rock shaft journaled lengthwise in the main frame and having rock arms at opposite ends which are connected by links with said keepers, a weighted lever connected with one of said rock arms for turning the parts in the direction for engaging the keepers with said disks, a toggle having its members connected respectively with the other rock arm and the main frame and adapted when straightened to turn the parts for engaging the keepers with said disks, a shifting arm pivoted at its upper end on the main frame and provided at its lower end with a lug which engages with said toggle, and a tappet arranged on the adjacent disk and adapted to move the shifting arm for breaking the toggle, substantially as set forth.

12. In a molding machine, the combination of a reversible frame, a platen and an opposing abutment both mounted on said frame and adapted to receive a molding flask between them, means for moving the platen and abutment one toward and from the other, and means for moving the platen and abutment out of opposition, substantially as set forth.

13. In a molding machine, the combination of a reversible frame, two platens mounted in said frame and adapted to receive a molding flask between them, means for moving said platens toward and from each other, and means for moving said platens out of opposition, substantially as set forth.

14. In a molding machine, the combination of a carrying frame having articulated members, and a platen and an opposing abutment mounted on said frame and adapted to receive a molding flask between them, the members of said frame being arranged to cause said platen and abutment to move out of opposition when the frame is turned to an abnormal position, substantially as set forth.

15. In a molding machine, the combination of a movable frame consisting of an articulated parallelogram, and a platen and an opposing abutment mounted on said frame and adapted to receive a molding flask between them, substantially as set forth.

16. In a molding machine, the combination of a reversible frame consisting of an articulated parallelogram, and a platen and an opposing abutment mounted on said frame and adapted to receive a molding flask between them, substantially as set forth.

17. In a molding machine, the combination of two platens normally arranged to receive a molding flask between them, and an articulated reversible frame carrying said platens and having normally vertical members arranged on opposite sides of the platens and pivoted centrally to turn in a vertical plane, and horizontal members connected centrally with the respective platens and pivoted at opposite ends to the adjacent ends of the vertical members, substantially as set forth.

18. In a molding machine, the combination of two platens normally arranged to receive a molding flask between them, and an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars each horizontal pair being connected centrally with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars, and pivot heads upon which the vertical bars are pivoted at their central portions, substantially as set forth.

19. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars, and two pivot heads upon each of which the central part of a pair of vertical bars is pivoted, means for turning the frame and pivot heads in unison, and means for holding the pivot heads against turning and causing the frame to turn on the pivot heads, substantially as set forth.

20. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each horizontal pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars and two pivot heads upon each of which the central part of a pair of vertical bars is pivoted, and stops for limiting the turning movement of the vertical bars on the pivot heads, substantially as set forth.

21. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens and each bar provided at its ends with eyes and two pairs of horizontal bars supporting the platens and each horizontal bar having a screw stem which turns in an eye of one of the vertical bars and a shoulder bearing against one side of said eye, a friction washer arranged on the stem and bearing against the opposite side of said eye, a screw nut applied to the end of said stem, a locking washer interposed between the friction washer and the screw nut, and cross-bars connecting the locking washers of adjacent screw stems, substantially as set forth.

22. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each horizontal pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars and two pivot heads each of which pivotally supports the central part of one pair of vertical bars and is provided with a trunnion, means for holding said trunnion against turning, and a shaft journaled in the trunnion of one pivot head and a crank or arm arranged on said shaft and connected with one or more of said vertical bars, substantially as set forth.

23. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each horizontal pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars and two pivot heads each of which pivotally supports the central part of one pair of vertical bars and is provided with a trunnion, a locking disk secured to each trunnion, keepers constructed to engage said disks and hold the pivot heads against turning, a shaft journaled in one of said trunnions and provided with crank arms at one end, links connecting said arms with the adjacent vertical bars, and means for turning said shaft, substantially as set forth.

24. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each horizontal pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars and two pivot heads upon each of which the central part of a pair of vertical bars is pivoted, a driving wheel for turning the reversible frame, a positive connection between said driving wheel and the reversible frame for turning the latter in one direction, and a frictional connection between said driving wheel and reversible frame for turning the latter in the opposite direction, substantially as set forth.

25. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each horizontal pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars and two pivot heads upon which the central part of a pair of vertical bars is pivoted and each of which is provided with a trunnion, means for holding said trunnions against turning, a shaft journaled in one of said trunnions and having arms connected with the adjacent vertical bars, an oscillating driving wheel mounted loosely on said shaft, and a ratchet coupling connecting the driving wheel and shaft and constructed to compel the shaft to turn forwardly with the driving wheel but to permit the latter to turn backwardly independently of said shaft, substantially as set forth.

26. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each horizontal pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars and two pivot heads upon which the central part of a pair of vertical bars is pivoted and each of which is provided with a trunnion, means for holding the trunnions against turning, a shaft journaled in one of said trunnions and having arms connected with the adjacent vertical bars, an oscillating driving wheel mounted loosely on said shaft, coupling disks secured on said shaft and bearing frictionally against opposite sides of the driving wheel and each disk having recesses on diametrically opposite sides, and pawls mounted on the driving wheel and each constructed to engage either of the recesses in one of the disks, substantially as set forth.

27. In a molding machine, the combination of two platens arranged to receive a molding flask between them, two pressure cylinders arranged one in rear of each platen, pistons arranged in the cylinder and connected with the platens, and an articulated reversible frame consisting of two pairs of normally vertical bars arranged on opposite sides of the platens and cylinders, two pairs of horizontal bars pivoted at their ends to the corresponding ends of the vertical bars and each pair of horizontal bars connected with one of the pressure cylinders, and rotatable heads upon which the central parts of the vertical bars are pivoted, substantially as set forth.

28. In a molding machine, the combination of two platens arranged to receive a molding flask between them, two pressure cylinders arranged one in rear of each platen, pistons arranged in the cylinders and connected with the platens, an articulated reversible frame consisting of two pairs of normally vertical bars arranged on opposite sides of the platens and cylinders, two pairs of horizontal bars pivoted at their ends to the corresponding ends of the vertical bars and each pair of horizontal bars connected with one of the pressure cylinders, and rotatable heads upon which the central parts of the vertical bars are pivoted, and a conduit for supplying a pressure medium mounted on said frame and having flexible branches which connect with opposite ends of the cylinders, substantially as set forth.

29. In a molding machine, the combination of a reversible frame provided with means for supporting a molding flask, a stop device constructed to permit the frame to turn in one direction but to prevent the same from turning in the other direction, and a cushioning device which is applied to said stop device and which yieldingly holds the stop device in its projected position, substantially as set forth.

30. In a molding machine, the combination of a reversible frame provided with means for supporting a molding flask, a stop dog for arresting the backward movement of said frame having a longitudinal slot, a bracket provided with a pin passing through said slot, and a spring for holding the stop dog yieldingly in its projected position, substantially as set forth.

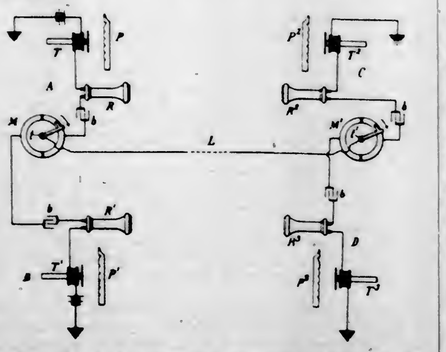
31. In a molding machine, the combination of a reversi-

ble frame provided with means for supporting a molding flask, a stop dog for arresting the backward movement of said frame having a longitudinal slot, a bracket provided with a pin passing through said slot, a cylinder connected with said pin and having a vent in its rear end, a piston arranged in the cylinder and connected with the stop dog, and a spring interposed between said dog and cylinder, substantially as set forth.

32. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each horizontal pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars and two pivot heads upon each of which the central part of a pair of vertical bars is pivoted and each of which is provided with a trunnion, locking disks secured to said trunnions, keepers constructed to engage said locking disks, a brake band applied to one of the locking disks and fastened at one end to a rigid support, and a weight lever connected with the opposite end of said band; substantially as set forth.

33. In a molding machine, the combination of two platens arranged to receive a molding flask between them, an articulated reversible frame for said platens consisting of two pairs of normally vertical bars arranged on opposite sides of the platens, two pairs of horizontal bars, the bars of each horizontal pair being connected with one of the platens and each horizontal bar being pivoted at its ends to the corresponding ends of two vertical bars, and two pivot heads upon each of which the central part of a pair of vertical bars is pivoted and each of which is provided with a trunnion, locking disks secured to said trunnions, keepers constructed to engage said locking disks, a shaft journaled in one of said trunnions and having arms connected with the adjacent vertical bars, a driving gear wheel mounted on said shaft, coupling disks secured to said shaft and bearing against opposite sides of the driving wheel, coupling pawls arranged on the driving wheel and engaging with the coupling disks, a gear rack meshing with the driving wheel, an operating cylinder containing a piston connected with the gear rack, a guide roller bearing against the back of the gear rack, and supporting bars carrying said roller and mounted at one end on the hubs of the coupling disks and at their opposite ends on a supporting rod, substantially as set forth.

852,495. MULTIPLEX TELEGRAPHY. JOHN BURRY, Ridgefield Park, N. J. Filed Jan. 21, 1905. Serial No. 242,089.



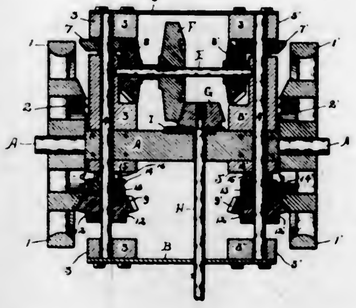
Claim.—1. In a system of multiplex telegraphy, the combination of a plurality of telephone instruments, means at each telephone transmitter for delivering thereto inarticulate tones representing letters or other symbols according to a prearranged code, and means for connecting the telephones in groups at regularly recurring intervals, as set forth.

2. In a system of multiplex telegraphy, the combination of a plurality of telephone instruments, a common transmission circuit therefor, means at each telephone transmitter for delivering thereto inarticulate tones representing letters or other symbols according to a prearranged code, and means for connecting the telephones to the said circuit in groups at regularly recurring intervals, as set forth.

3. In a system of multiplex telegraphy, the combination of a series of insulated contacts, telephone instruments connected with the contacts, a similar series of contacts and telephone instruments connected therewith, electrically connected trailers moving over the series of contacts in unison to connect the telephones in groups, and means at each telephone transmitter for delivering thereto inarticulate tones corresponding to letters or other symbols according to a prearranged code, as set forth.

4. The combination with a plurality of telephone instruments; of means for connecting the instruments in groups, comprising two circular series of insulated contacts to which the instruments are connected, each series being provided with a revolving contact; a line conductor connecting the contact; a generator carrying one of the movable contacts on its rotating element, and connected to deliver its current to the line conductor; a step-by-step motor for actuating the other revolving contact, under the control of the current from the generator, as set forth.

852,496. HARVESTING-MACHINE. ENOS CAREY, Grant county, Ind. Filed Feb. 26, 1906. Serial No. 302,873.



Claim.—1. In a harvesting machine, the combination of traction wheels, a frame carried thereby and having side sills provided with longitudinal channels in their lower sides, shafts rotatably retained in said channels, an operative shaft, driving connections between said wheels and said first-named shafts, and driving connections between these shafts and said operative shaft.

2. In a harvesting machine, the combination of a fixed axle having transverse journal apertures, traction wheels mounted loosely on said axle, side sills provided in their lower sides with transverse notches fitting over said axle and with longitudinal channels in alinement with said journal apertures, shafts mounted in said channels and journaled in said apertures, driving connections between the wheels and said shafts, an operative shaft, and driving connections between the same and said other shafts.

3. In a harvesting machine, the combination of traction wheels, a frame carried thereby and comprising side sills provided with longitudinal channels in their lower sides, said frame comprising also end ties rigidly connecting said sills, shafts rotatably retained in said channels and abutting at their ends against said ties, driving connections between said wheels and said shafts, an operative shaft, and driving connections between the same and said other shafts.

4. In a harvesting machine, the combination of traction wheels, a frame carried thereby and having side sills provided in their under sides with longitudinal channels and with end recesses, shafts rotatably retained in said channels, an operative shaft, and gears mounted on the ends of said first-named shafts within said recesses and constituting driving connections between said shafts and the wheels and between said shafts and said operative shaft respectively.

5. In a harvesting machine, the combination of traction wheels, a frame carried thereby and having side sills provided with longitudinal channels formed in their lower sides, longitudinal shafts rotatably retained in said channels and having driving connection with said wheels, a transverse shaft driven from said other shafts, and an operative shaft disposed longitudinally intermediate said other longitudinal shafts and driven from said transverse shaft.

6. In a harvesting machine, the combination of a fixed axle having transverse journal apertures, traction wheels mounted loosely on said axle, side sills provided in their under sides with transverse notches fitting over said axle and with longitudinal channels in alinement with two of said journal apertures, shafts mounted in said channels and journaled in said two journal apertures, driving connection between said wheels and said shafts, an operative shaft journaled in another of said transverse apertures, and driving connection between said shaft and the first-named shafts.

7. In a harvesting machine, the combination of traction wheels, a frame carried thereby and having side sills provided on their under sides with longitudinal channels, shafts rotatably retained in said channels, a gear carried by each wheel, a gear splined on the front of each shaft and carrying a clutch member, means for shifting the shaft-carried gears into and out of mesh with said wheel-carried gears, a complementary clutch member mounted loosely on each shaft but retained against longitudinal movement, pawl and ratchet connection between the last-named clutch members and the shafts, an operative shaft, and driving connection between the same and said other shafts.

8. In a harvesting machine, the combination of traction wheels, a frame carried thereby and having side sills provided on their under sides with longitudinal channels, shafts rotatably retained in said channels, an operative shaft driven from said shafts, a gear carried by each wheel, a gear splined on each sill-carried shaft, a complementary clutch member mounted loosely on each of said sill-carried shafts but retained against longitudinal movement, pawl and ratchet connection between the last-named clutch members and the shafts, a transverse rock-shaft having crank arms, yokes encircling said splined gears, connection between said yokes and said crank arms, and an operative lever carried by the rock shaft.

852,497. PROCESS OF MIXING DOUGH. CYRUS CHAMBERS, Jr., Overbrook, Pa. Filed Aug. 16, 1906. Serial No. 330,803.

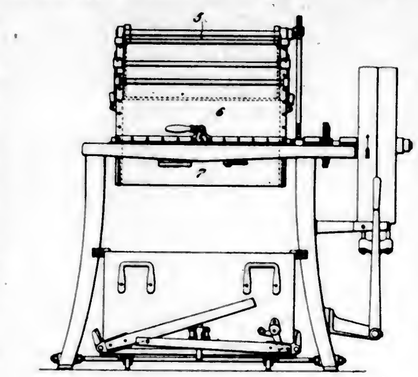
Claim.—1. The process of mixing dough which consists in sifting the flour into the liquid in such a way that the mixing may be completed before the dissolving or the development of the gluten.

2. The process of mixing dough which consists in sifting the flour into the liquid in gradually diminishing quantities and mixing and kneading said sifted flour with the liquid during said operation.

3. The process of mixing dough, which consists in sifting the flour into the liquid and stirring or mixing said flour and liquid as the flour is being sifted, the sifting of the flour being rapid at first and then gradually diminishing.

4. The process of mixing dough, which consists in mixing flour and liquid together, the flour so mixed being sifted into the liquid in gradually decreasing quantities as the mixture becomes stiffer.

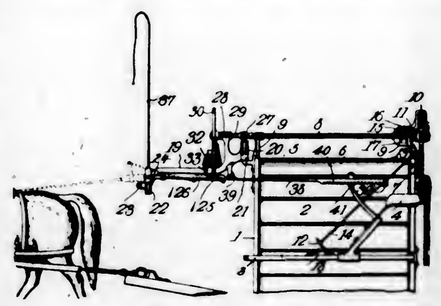
5. The process of mixing dough, which consists in delivering flour into liquid at a gradually decreasing rate of discharge and stirring, agitating or working said flour and liquid as the same are brought together and until after all the flour has been delivered to the liquid.



6. The process of mixing dough, which consists in delivering flour into liquid at a gradually decreasing rate of discharge, and mixing said flour and liquid, the delivery of said flour to said liquid being all accomplished in a space of time insufficient for the development of the gluten.

7. The process of mixing dough, which consists in delivering flour into liquid at a gradually decreasing rate of discharge, and mixing said flour and liquid as the flour is being discharged, the whole operation being accomplished within the space of approximately one minute.

852,498. WHIPPING DEVICE. LA FAYETTE G. DOBBS, Watertown, S. D. Filed Oct. 24, 1906. Serial No. 340,396.



Claim.—1. In a device of the class described, the combination of a whip holder, with a mechanism for actuating the holder, said mechanism comprising a rotating shaft, and a mutilated waved gear and pinion transmission intermediate the shaft and holder actuating the latter periodically.

2. In a device of the class described, the combination of a whip holder, with a mechanism for actuating the same, said mechanism comprising a rotatable member, a gearing between the member and holder for actuating the latter, and means for periodically locking said holder in a given position.

3. In a device of the class described, the combination of a whip holder, with a mechanism for actuating the same, said mechanism comprising a rotating member arranged to move first fast and then slow during each rotation, a connection between the holder and member and means for retaining the whip holder in position to support the whip in vertical position between its operations.

4. In a device of the character described, the combina-

tion with a suitable support, and an operating shaft supported thereon, of a whip socket mounted in pivotal relation to said support and provided with a crank arm, a crank operatively connected to said crank arm for transmitting its movements thereto, and devices arranged between said operating shaft and said crank for turning the latter with a speed gradually increasing and decreasing embodying a pinion mounted eccentrically of the axis of said crank, and a coöperating driving gear on the operating shaft.

5. In a device of the class described, the combination of a whip holder mounted to have a swinging movement, with a mechanism for actuating the same, said mechanism comprising a crank rotated on an axis disposed at an angle to the axis of swing of the holder, an arm of the holder, and a pitman hingedly connected at one end with the crank and at the other end with the arm.

6. In a device of the class described, the combination of a swinging whip holder, a crank for actuating the same, an eccentric pinion on said crank, and a mutilated gear having a waved pitch surface coöperating with said pinion for rotating the crank.

7. In a device of the class described, the combination of a swinging whip holder, a rotating element and an eccentrically mounted pinion coöperating therewith for actuating the whip holder, means arranged to rotate the element periodically, and means for holding the whip holder in vertical position during the intervals between each of its revolutions.

8. In a device of the class described, the combination of a whip holder, a rotating crank connected therewith, a pinion eccentrically mounted with respect to the axis of rotation of the crank, and a gear meshing with the pinion.

9. In a device of the class described, a driving shaft having two sections, a universal joint between the sections, an arm swinging on an axis passing through the universal joint, a whip holder on the arm, and a mechanism for transmitting motion from the shaft to the whip holder.

10. In a device of the class described, a driving shaft having two sections, a universal joint between the sections, an arm swinging on an axis passing through the universal joint, a whip holder on the arm, a mechanism for transmitting motion from the shaft to the whip holder, and a mechanism for adjusting the position of the arm.

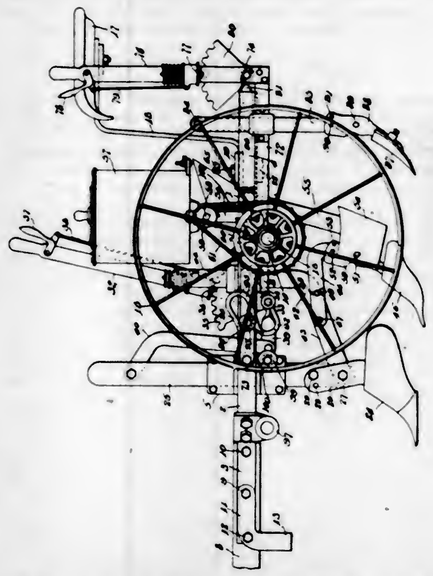
11. In a device of the class described, a driving shaft composed of two sections, a universal joint between the sections, an arm hinged in line with the universal joint, a bearing on the arm for one of the shaft sections, a whip holder on the arm, a crank for actuating the whip holder, means for mounting the crank on the arm, and a gearing between the shafts and crank and supported by the arm for rotating the crank periodically and with an accelerating motion.

12. In a device of the class described, the combination of a rotating element, a driving means for the element, a manually controlled clutch between the driving means and element, a whip holder, a motion transmitting means between the element and whip holder, and a manually controlled means for changing the position of the whip holder and locking it in adjusted position.

13. In a device of the character described, the combination with a suitable support, and an operating shaft thereon, of an arm mounted in pivotal relation to said support, a whip socket mounted on the free end of said arm, operative connections between the operating shaft and the whip socket, and a device for adjusting and locking said arm in different angular positions relatively to said support.

14. A whipping attachment comprising bearing frames, a rotating shaft mounted on the frames, a driving gear, a clutch for connecting and disconnecting the gear with the shaft, means tending to hold the clutch open, a foot actuating device for closing the clutch, a whip holder, a support on which the holder is mounted for a limited swinging movement, an arm on the holder, a crank rotatably mounted on the support and connected with the arm, a mutilated gearing between the crank and said shaft arranged and adapted to rotate the crank periodically during continued revolution of the shaft, and a hand operated means for changing the position of the whip holder.

852,499. PLANTER. THOMAS J. DUDLEY, Abilene, Tex., assignor to Ed. S. Hughes, Abilene, Tex., and H. C. Stahl, Bellevue, Ohio. Filed Oct. 4, 1905. Renewed Mar. 11, 1907. Serial No. 361,832.



Claim.—1. In a planter, a frame provided with a guide, a plow having a stock mounted to slide in said guide, and means for vertically adjusting said plow and stock, in combination with a second guide mounted on the frame, and a brace having a portion fitted to slide in said second guide, said brace being connected to the lower portion of the stock, substantially as described.

2. In a planter, a frame provided with two parallel guides, a plow having a stock mounted to slide in one of said guides, means for vertically adjusting said plow and stock, and a brace having a portion parallel with the stock and fitted to slide in the other guide, and a portion extending to and connected with the lower end of the stock, substantially as described.

3. In a planter, a frame provided with a guide, a plow having a stock mounted to slide in said guide, and means for vertically adjusting said plow and stock, in combination with a second guide mounted on the frame in the rear of the stock-guide and in alinement therewith, and a brace having a portion fitted to slide in said rear guide, said brace being connected to the lower portion of the stock, substantially as described.

4. In a planter, a frame provided with two parallel guides arranged in longitudinal alinement thereon, a plow having a stock mounted to slide in the forward guide, means for vertically adjusting said plow and stock, and a race having a portion fitted to slide in the rear guide and a portion extending forward and connected to the lower end of the stock, substantially as described.

5. In a planter, a frame provided with two guides longitudinally alined thereon, a front plow having a stock mounted to slide in the forward guide, a brace mounted to slide in the rear guide and connected to the lower portion of the stock, means for raising and lowering said front plow, stock and brace, and a seed-furrow plow alined behind the front plow and connected to and moving with said brace, substantially as described.

6. In a planter, a frame provided with two guides longitudinally alined thereon, a front plow having a stock mounted to slide in the forward guide, a brace mounted to slide in the rear guide and connected to the lower portion of the stock, means for raising and lowering said front plow, stock and brace, and a seed-furrow plow alined behind the front plow and provided with a beam connected to the brace and vertically adjustable relative thereto, substantially as described.

7. In a planter, a frame provided with two vertical guides longitudinally alined thereon, a stock mounted to slide in the forward guide, an angular brace having a vertical portion mounted to slide in the rear guide and a forwardly extending portion secured to the lower end of the stock, a rock-shaft mounted in the frame and provided with an arm, a link connecting said arm with the upper portion of the stock, a hand-lever mounted on said rock-shaft and provided with locking means, and a plow mounted on the lower end of the stock, substantially as described.

8. In a planter, a frame provided with two vertical guides longitudinally alined thereon, a stock mounted to slide in the forward guide, an angular brace having a vertical portion mounted to slide in the rear guide and a forwardly extending portion secured to the lower end of the stock, a rock-shaft mounted in the frame and provided with an arm, a link connecting said arm with the upper portion of the stock, a hand-lever mounted on said rock-shaft and provided with locking means, and a plow mounted in the lower end of the stock, said plow being adjustable to different angles of tilt, substantially as described.

9. In a planter, a wheel-supported main frame provided with furrow-opening devices, and means for raising and lowering and adjusting the working position of said furrow-opening devices, in combination with a supplemental frame, covering-devices carried by said supplemental frame, and means for independently raising and lowering said covering-devices relatively to said supplemental frame, the means for raising and lowering the furrow-opening devices serving also to raise and lower the supplemental frame from and to working position, and means for automatically locking the supplemental frame relatively to the main frame when lowered to working position, substantially as described.

10. In a planter, a wheel-supported main frame provided with furrow-opening devices, and a supplemental frame provided with covering-devices and means for raising and lowering said covering-devices relatively to said supplemental frame, in combination with means for simultaneously raising and lowering the furrow-opening devices and supplemental frame relatively to the main frame, said means acting to lock the supplemental frame relatively to the main frame when lowered to working position, said means also serving to vertically adjust the furrow-opening devices when in working position while maintaining the supplemental frame in locked relation to the main frame, substantially as described.

11. In a planter, a wheel-supported main frame provided with furrow-opening devices, rock-shaft connected with said furrow-opening devices to move same vertically, means for operating said rock-shaft, a supplemental frame pivotally connected to the main frame and provided with covering-devices and means for adjusting the same vertically relatively to said supplemental frame, said rock-shaft being provided with cam-arms engaging the supplemental frame and acting to raise and lower the same during a portion of the rock-shaft's movement, and to hold the same stationary relatively to the main frame during the remainder of the rock-shaft's movement, substantially as described.

12. In a planter, a wheel-supported main frame provided with furrow-opening devices, a supplemental frame pivoted to the main frame and provided with covering devices and means for vertically adjusting the same relatively to said supplemental frame, a rock-shaft mounted on the main frame, provided with an operating lever, and operatively connected with the furrow-opening devices to raise, lower and adjust the same, cam-arms secured to said rock-shaft and each comprising a shoulder and two concentric portions adjacent thereto, and projections on the supplemental frame arranged in the path of said shoulders and adapted to engage between said concentric portions, substantially as described.

13. In a planter, a wheel-supported main frame provided with furrow-opening devices and means for raising and lowering the same, a supplemental frame pivoted to the main frame and provided with covering-devices, means for raising and lowering said covering-devices relatively to the supplemental frame, and means for holding said supplemental frame stationary with respect to the main frame when lowered into working position, substantially as described.

14. In a planter, a wheel-supported main frame provided with vertically adjustable furrow-opening devices at its forward end, a rock-shaft connected to said furrow-opening devices to raise and lower the same and provided with an operating lever and with cam-arms, a supplemental frame pivoted at its forward end to the main frame, engaging the cam-arms, and provided at its rear end with vertically adjustable covering-devices, and a rock-shaft mounted on said supplemental frame, connected with the covering-devices to raise and lower the same, and provided with an operating lever, said cam-arms acting to raise and lower the supplemental frame in unison with the furrow-opening devices in moving the parts toward and from working position, and serving to hold the supplemental frame stationary relatively to the main frame while the rock-shaft acts to adjust the furrow-opening devices in working position, substantially as described.

15. In a planter, a main frame provided with supporting-wheels and a rotating axle, furrow-opening and covering devices, means for independently adjusting said furrow-opening device and covering devices when in working position, and for simultaneously raising both sets of devices out of working position, a seed-dropping mechanism mounted on the main frame and comprising a shaft driven from the axle, and means for automatically interrupting the driving connection between said axle and shaft when the furrow-opening and covering devices are so raised, substantially as described.

16. In a planter, a frame provided with furrow-opening devices, seed-dropping mechanism and covering devices, said frame being provided with axle bearings about midway of its length and other axle bearings near its forward end, supporting-wheels and a removable axle adapted to fit either of said bearings, a tongue, means for connecting said tongue to said frame either rigidly or pivotally at will, a driver's seat mounted on said frame, a press-wheel, and means for detachably connecting said press-wheel to the rear of said frame, substantially as described.

852,500. PROCESS FOR MANUFACTURING BRICKS. LAURENCE ELKUS, Indianapolis, Ind. Filed Oct. 29, 1906. Serial No. 341,138.

Claim.—In the process of manufacturing bricks, first introducing the sand into a cylinder and drying it; (2) pulverizing and slaking lime; (3) mingling hydrated lime with dried sand and carbonate of barytes; (4) discharging the said mixture into a revolving pan in which it is thoroughly agitated and moistened; (5) withdrawing the moist material from the said revolving pan and pressing same in into requisite forms; and finally hardening them under a steam pressure in the hardening cylinder, substantially as described.

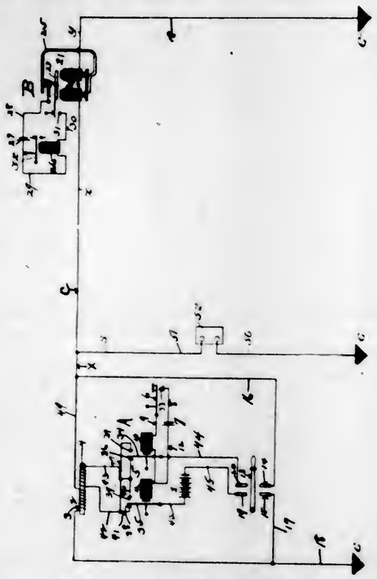
852,501. BATH AND BASIN STOPPER. HENRY C. FRESHOUR, Bridgeport, Conn., assignor to The H. O. Canfield Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Sept. 1, 1905. Serial No. 276,721.



Claim.—A bath or basin stopper of the character described comprising a plated stud and a plastic material body molded on the stud, said stud being provided with a flange lying upon the outer side of the plastic body to completely prevent the passage of plastic material to the outer

end of the stud during the molding operation, the flange being embedded in the material of the plug.

852,502. SIGNALING SYSTEM. EUGENE GARRETSON, Buffalo, N. Y. Filed July 17, 1905. Renewed Oct. 11, 1906. Serial No. 338,514.



Claim.—1. In a signaling system employing inductively derived currents, a signal transmitting apparatus, comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer and means for controlling and operating said pole changer.

2. In a signaling system employing inductively derived currents, a signal receiving apparatus comprising a relay for recording transmitted signals, and a regulable circuit for shunting said relay.

3. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer, and means for controlling and operating said pole changer of a regulable shunt circuit in connection therewith.

4. In a signaling system employing inductively derived currents, the combination with a transmitting apparatus, comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer, and means for controlling and operating said pole changer of a relay for recording the transmitted signals.

5. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus, comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer and means for controlling and operating said pole changer of a signal receiving apparatus comprising a relay for recording the transmitted signals and a regulable shunt circuit in connection with said relay.

6. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus, comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer, means for controlling and operating said pole changer and a regulable shunt in connection therewith of a relay for receiving transmitted signals.

7. In a signaling system employing inductively derived currents, the combination with a transmitting apparatus, comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer, means for controlling and operating said pole changer and a regulable shunt in connection therewith of a signal receiving apparatus comprising a relay for recording the transmitted signals and a regulable shunt in connection with said relay.

8. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer and means for controlling and operating said pole changer of means for shunting the secondary coil of the transformer and disconnecting said source of energy, when the said signal transmitting apparatus is not in use.

9. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer and means for controlling and operating said pole changer of means for operating another signaling system.

10. In a signaling system employing inductively derived currents, the combination with a signal receiving apparatus comprising a relay for recording the transmitted signals and a regulable shunt in connection therewith of means for operating another signaling system.

11. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer and means for controlling and operating said pole changer and a regulable shunt in connection therewith of means for operating another signaling system.

12. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus comprising a source of energy, a transformer, a quick-acting non continuity-preserving pole changer and means for controlling and operating said pole changer of a relay for receiving the transmitted signals and means for operating another signaling system.

13. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus, comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer and means for controlling and operating said pole changer of a signal receiving apparatus comprising a relay for recording the transmitted signals, a regulable shunt in connection therewith and means for operating another signaling system.

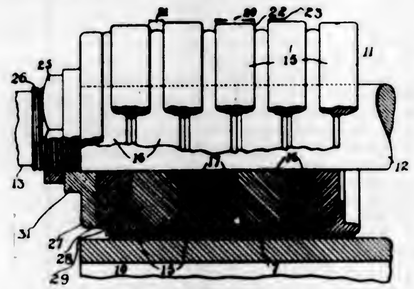
14. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer and means for operating and controlling said pole changer, and a regulable shunt in connection therewith of a relay for receiving the transmitted signals and means for operating another signaling system.

15. In a signaling system employing inductively derived currents, a signal transmitting apparatus comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer, means for controlling and operating said pole changer and a regulable shunt in connection therewith of a signal receiving apparatus comprising a relay for recording the transmitted signals and a regulable shunt in connection therewith and means for operating another signaling system.

16. In a signaling system employing inductively derived currents, the combination with a signal transmitting apparatus comprising a source of energy, a transformer, a quick-acting non-continuity-preserving pole changer and means for controlling and operating said pole changer of means for shunting the secondary coil of the transformer and disconnecting said source of energy when the said signal transmitting apparatus is not in use, and means for operating another signaling system.

17. In a signaling system employing inductively derived currents, the combination with a source of electric energy and a transformer of means for regulating and limiting the voltage of the induced currents.

852,503. FLAX-BREAKING APPARATUS. WILLARD R. GREEN, Muscatine, Iowa, assignor to United States Textile Company, Boston, Mass., a Corporation of Maine. Filed Feb. 23, 1905. Serial No. 246,837.



Claim.—1. In a flax treating machine, the combination with a relatively inelastic drum, of a series of rings normally in surface engagement with said drum, and elastic means for independently supporting said rings and spacing the end faces of the same apart.

2. In a flax treating machine, the combination with a relatively inelastic drum, of a series of relatively inelastic rings normally in surface engagement with said drum, and elastic means for supporting said rings and spacing the end faces of the same apart.

3. In a machine for treating fibrous material the combination with a roll and means for rotating the same, of a roll in surface engagement therewith and having its perimeter divided into short lengths independently elastically yieldable radially of the roll and spaced apart sufficiently widely to prevent the engagement of the fibers by the end faces of contiguous lengths.

4. In a machine for treating fibrous material the combination with a drum and means for rotating the same, of a roll normally in engagement therewith, and a number of rings on the perimeter of said roll independently elastically yieldable radially of the roll and spaced apart to prevent interaction of the edge faces of contiguous rings upon the fibers.

5. In a machine for treating fibrous material the combination with a drum and means for rotating the same, of a roll normally in engagement therewith, and a number of rings on the perimeter of said roll elastically yieldable radially of the roll and independently of each other, and spaced apart to prevent interaction of the edge faces of contiguous rings upon the fibers, and elastic means for holding said rings and drum in engagement.

6. The combination with a drum, of a series of rolls normally in surface engagement with said drum and each roll embodying an elastic body portion, and armor bands upon the said elastic body portion, separated one from the other by an appreciable space, the spaces of the alternate rolls being alined and the spaces of successive rolls being out of alinement.

7. The combination with a drum, of a roll normally in surface engagement with said drum and embodying an elastic body portion and armor bands upon the said elastic body portion, separated one from the other by an appreciable space.

8. The combination with a pair of rotatable rolls, of a series of bands carried upon the perimeter of one of said rolls and spaced apart one from the other, and elastic means for permitting individual yielding of said bands.

9. The combination with a drum, of a number of rolls each having upon its perimeter a number of circumferential bands spaced apart and elastic means for supporting said bands, the spaces between the bands of adjacent rolls being out of alinement.

10. The combination with a drum and means for driving the same, of a number of rolls each having upon its perimeter a number of circumferential bands spaced apart and elastic means for supporting said bands, the spaces between the bands of adjacent rolls being out of alinement, and means for driving said rolls at progressively increasing speed.

11. The combination with a relatively inelastic drum, of a number of rolls each having a number of circumferential bands spaced apart one from the other and normally in surface engagement with said drum, elastic means for severally holding said bands in normal position, and elastic means for severally pressing the rolls toward the said drum.

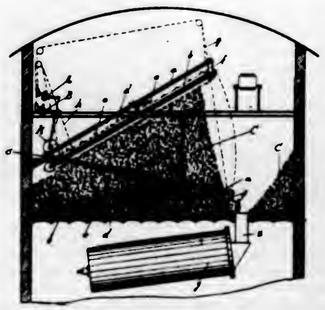
12. The combination with a drum and means for rotating the same, of a roll and means for rotating the same, said roll having a shaft portion provided with journals, a number of rings upon the perimeter of the roll spaced apart one from the other and elastic means for independently holding said rings in normal position, and elastic means, stronger than the elastic means holding the rings, bearing upon each journal for normally holding said rings in engagement with the drum.

13. The combination with a relatively inelastic drum and means to rotate the same, of a number of rolls normally in surface engagement therewith and each embodying a shaft having journals, an elastic drum on said shaft, a number of relatively inelastic rings on said elastic drum, spaced apart and having webs embedded in said elastic drum, relatively strong springs bearing on said journals and pressing the roll toward the said inelastic drum, and means to rotate said rolls at progressively increasing surface speed.

14. The combination with a drum and means to rotate the same, of a number of rolls normally in surface engagement therewith and each embodying a shaft having journals, an elastic drum on said shaft made up of a number of disks, a number of relatively inelastic rings on said elastic drum and each ring having a web held between the end faces of adjacent disks, relatively strong springs bearing on said journals and pressing the roll toward the said drum, and means to rotate said rolls at progressively increasing speed.

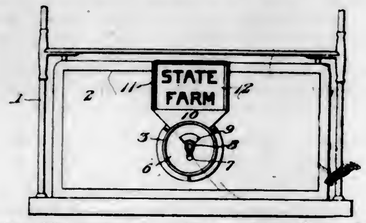
15. The combination with a drum, of a roll having its perimeter composed of a number of circumferential sections spaced apart one from the other and normally in surface engagement with the drum, elastic means bearing upon each end of the roll for pressing the same toward the drum radially thereof, and elastic means pressing upon each of the said sections for individually holding the same at normal position radially of the roll.

852,504. CONVEYING DEVICE. CARL GRUHL, Brühl, Germany. Filed Aug. 6, 1906. Serial No. 329,473.



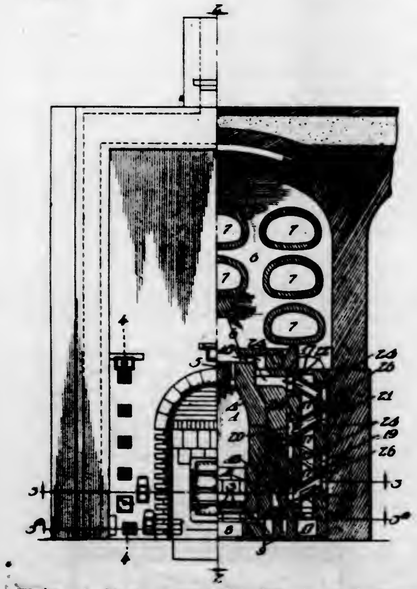
Claim.—In a device for conveying small pieces of material, in combination, two frames *a* and *b*, movably connected at one end, the frame *a* being pivoted to turn on its other end, and the frame *b* carrying a trail chain *d* or the like, which frames can be raised and lowered at their connected ends, so that they can be adjusted to any height of the heap C, substantially as set forth.

852,505. HEADLIGHT. EDWIN S. GUNN, Lincoln, Nebr. Filed July 19, 1904. Serial No. 217,256.



Claim.—The combination with a conical reflector formed with oppositely disposed vertically alined openings, an illuminator extending through one of the openings, and a reflector tube secured in alinement with the other of said openings and extending above the reflector, said closing outlet from the reflector being of gradually increasing width throughout its length, a sign housing supported by and formed integral with the rear wall of said tube, and a sign receiving frame mounted within the housing and arranged at an inclination to the vertical axis of the tube, the lower end of said frame being in contact with the rear wall of the tube.

852,506. RECUPERATIVE MUFFLE-FURNACE. LAZERUY C. HAMLINK, St. Louis, Mo., assignor to Gas Bench Construction Company, St. Louis, Mo., a Corporation of Missouri. Filed Sept. 28, 1906. Serial No. 336,553.



Claim.—1. In a recuperative furnace, a downwardly leading outlet flue for the waste gases, and a plurality of inclined recuperator flues extending in zigzag arrangement up the outlet flue and discharging into the combustion chamber, said recuperative flues being composed of a succession of rows of separate hollow tile, the upper ends of each row of which are arranged to discharge into the lower ends of the next superjacent row, and means for admitting secondary air into the lower row of tile, to be heated by the waste gases of the surrounding outlet flue and discharged into the combusiton chamber, substantially as and for the purpose set forth.

2. In a recuperative furnace, a downwardly leading outlet flue for the waste gases, horizontal passages formed on opposite sides of said outlet flue, and upwardly inclined hollow tile recuperators extending across said flue and communicating with said passages at their opposite ends to form a continuous flue through which secondary air is discharged into the combustion chamber of the furnace, substantially as and for the purpose set forth.

3. In a recuperative furnace, a downwardly leading outlet flue for the waste gases, horizontal passages formed on opposite sides of said outlet flue, upwardly inclined hollow tile recuperators extending across said flue and communicating with said passages at their opposite ends to form a continuous flue for the secondary air, a partition dividing said passages so as to separate the recuperators into two banks, air inlets leading into the lowermost passage from opposite banks of recuperators to the front and back of the bench, substantially as and for the purpose set forth.

4. In a recuperative furnace, a downwardly leading outlet flue for the waste gases, horizontal passages formed on opposite sides of said outlet flue, upwardly inclined hollow tile recuperators extending across said flue and communicating with said passages at their opposite ends to form a continuous flue through which secondary air is discharged into the combustion chamber, and co-operating tile forming the inner walls of said passages and receiving the entering ends of the recuperators, substantially as and for the purpose set forth.

852,507. BEDSTEAD. HORACE E. HENWOOD, New York, N. Y. Filed Oct. 5, 1905. Serial No. 281,425.



Claim.—1. The combination with a bedstead of a clamp comprising two duplicate members, each having a semi-circular depression to serve as a bearing, each member being provided with two surfaces extending from said bearing at an obtuse angle to each other, a jaw at the end of one of said surfaces, a stud passing through the semi-circular depressions and serving as a pivot for the jaws, and means for forcing the jaws together about said pivot.

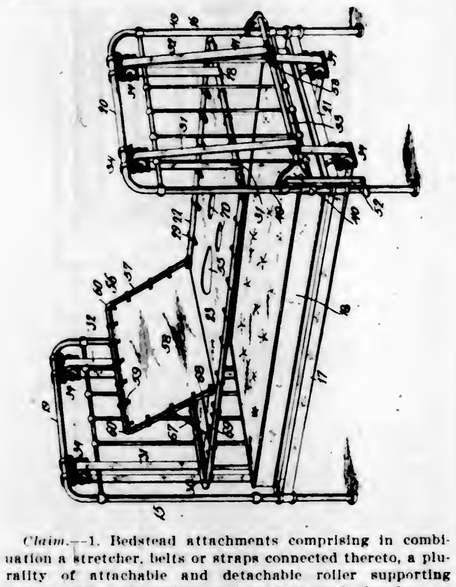
2. A clamp for a bedstead comprising a pair of members each having a semi-circular depression to serve as a bearing, two surfaces extending from said bearing at an obtuse angle to each other, and a jaw at the end of one of said surfaces, a roller having an integral projection entering said depressions and serving as a pivot for said members, and means for forcing said members together.

3. A clamp for a bedstead comprising a pair of members each having a semi-circular depression to serve as a bearing, two surfaces extending from said bearing at an obtuse angle to each other, and a jaw at the end of one of said surfaces, a roller having an integral projection entering said depressions and serving as a pivot for said members, and means for forcing said members together, said members each being provided with a guard located beyond said roller and adapted to keep a belt upon the roller.

4. A clamp comprising a pair of members each having an opening therein, the opposite walls of said opening being provided with semi-circular depressions, the surfaces of said members extending from said depressions on two sides thereof at an obtuse angle to each other, jaws on both members, adjustable means for securing the members together, and a roller mounted in said openings in the two members, said roller having integral studs projecting into said depressions serving as bearings for said studs.

5. A clamp comprising a pair of duplicate members adapted to be pivotally mounted with respect to each other, each member comprising a jaw and a body on which the jaw is mounted, the body being provided with a perforation, and a guard located at the end of said perforation, the two members when connected together providing a bearing for a roller within said perforation.

852,508. BEDSTEAD ATTACHMENT. HORACE E. HENWOOD, New York, N. Y. Filed June 23, 1906. Serial No. 323,002.



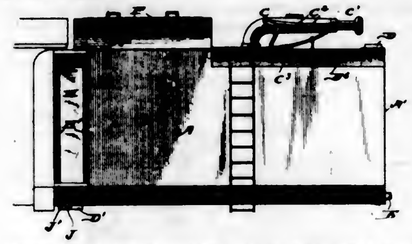
Claim.—1. Bedstead attachments comprising in combination a stretcher, belts or straps connected thereto, a plurality of attachable and detachable roller supporting clamps with independent rollers supported thereby, arranged to be clamped to various parts of a bedstead frame, the said rollers forming direction-pulleys for the said straps, and winding means for the straps, including a clamp composed of two parts adapted to be removably secured together, and having a portion shaped to fit the corner post of a bedstead, gearing comprising a pinion and a spur-gear mounted between the clamp members and journaled therein, said pinion having an axle arranged to receive the turning handle, and the axle of the spur-gear adapted to constitute winding means.

2. A bedstead attachment including a stretcher frame composed of pipe sections and corner pieces having members entering the ends of the said pipe sections, the members of the corner pieces having longitudinal recesses for receiving the shanks of studs or buttons, and studs or buttons fastened to the pipe sections and projecting into the said recesses.

3. A bedstead attachment comprising a clamp composed of two parts adapted to be removably secured together, and having a portion shaped to fit the posts of a bedstead, gearing comprising a pinion and a spur-gear mounted between the clamp members and journaled therein, said pinion having an axle arranged to receive the turning handle, and the axle of the spur-gear adapted to constitute winding means.

4. A bedstead attachment including a stretcher frame, the side members of which are tubular, a back rest comprising side and end pipe sections, terminals for the side end sections comprising shanks arranged to be received within the pipe sections, and trunnion pins projecting at right angles thereto, said trunnion pins having lateral projections, and arranged to be received within openings in the tubular side elements of the stretcher frame, said openings being substantially cylindrical, but having an enlargement to receive the said trunnion pin projection, the said enlargement and projections being so axially related to each other as to be normally out of register.

852,509. LOCOMOTIVE-TENDER. FRANCIS L. HOSPOOL, Cheyenne, Wyo., assignor of one-half to George Johnson Kelly, Ogden, Utah. Filed July 20, 1904. Serial No. 217,432.



Claim.—1. A tender divided into a water tank and a coal bunker, the latter having a forwardly inclined bottom and the water tank extending under the bunker, and a plurality of semi-cylindrical braces arranged vertically in the said tanks, as and for the purpose specified.

2. A tender comprising a coal bunker having a curved downwardly and forwardly extending bottom, a tank compartment to the rear of and extending under the bunker, parallel bars arranged transversely across said tank compartment, semi-cylindrical braces arranged in transverse rows on the bottom of the compartment and held between the bars, the said braces at the rear of the bunker stopping short of the top of the tank and those under the bunker supporting the bottom of the bunker, as and for the purpose set forth.

3. A tender having a false bottom and an arched roof and divided into a coal bunker and a water tank, the bunker having a downwardly and forwardly curved bottom and the tank extending under said bunker, semi-cylindrical braces arranged vertically on said false bottom adapted to check the flow of water from one end of the tank to the other, the false bottom having opening arranged therein to the rear of the said braces, and an injector pipe leading from the front of the tank below the false bottom.

4. A tender of the kind described, coal bunkers, a water tank, said bunker having a curved, downwardly and forwardly inclined bottom, an arched roof over the bunker, hinged doors in said roof, an opening at the front end of the bunker adjacent the bottom, a pivoted slide adapted to close said opening, boxes arranged on either side of said opening, said boxes forming the sides of a gangway, doors hinged to the front of the boxes, and racks arranged in the boxes, all as and for the purpose set forth.

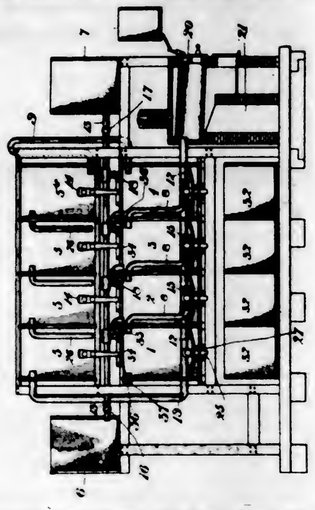
852,510. APPARATUS FOR THE TREATMENT OF SULFIDS AND OTHER ORES. GEORGE E. KINGSLEY, Toronto, Ontario, Canada. Filed Dec. 8, 1904. Renewed Mar. 29, 1907. Serial No. 365,338.

Claim.—1. In reduction apparatus the combination of a series of ore reduction chambers; pipes connecting *seriatim* the tops and bottoms of adjacent chambers; a feed door in the top of each chamber; a dumping door in the bottom of each chamber; a spigot for each chamber to draw off liquid; a liquid chamber; a pipe adapted to lead gases from the last ore chamber into the said liquid chamber; pipes connecting the ore chambers at their upper ends; and stop cocks in said pipes, a suitably closed air inlet being provided in the ore chamber remote from the connecting pipe with the liquid tank, substantially as described.

2. In apparatus of the character described, a tank consisting of a series of compartments, means to connect the top of each compartment to the bottom of the next compartment, means to permit the connection of the tops of adjacent compartments, means for excluding or admitting air to the first compartment of the series, and means for drawing off fluids from the tank.

3. In apparatus of the character described, a tank consisting of a series of connected compartments, each of

said compartments except those at each end of the tank having not more than four outer radiating surfaces, pipes connecting the tops of adjacent compartments, valves in said pipes, means to exclude or admit air to said compartments and means to remove gases therefrom.



4. In apparatus of the character described, adjacent tanks each divided into compartments, means to connect each compartment to the next including a pipe to connect the last compartment of one tank to the first compartment of the other tank, means to exclude or permit access of air to the first tank, additional controllable connecting means between the compartments of the first tank and means for removing gases from the said first tank to the second.

852,511. SKIRT-SUPPORTER. WILLIAM C. LADD, Mendota, Ill. Filed Feb. 10, 1906. Serial No. 300,529.



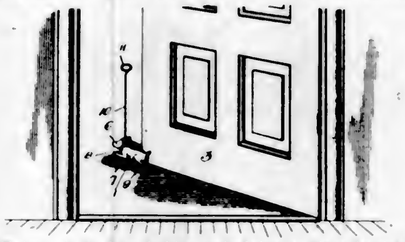
Claim.—A skirt supporter comprising a supporting plate having its upper and lower edges bent around the opposite edges of a belt and deflected or hooked inward toward the body of the belt to form smooth rounded hook engaging edges, and belt clamping strips extending transversely across the plate and held between the edge portions of the supporting plate and the belt, said edge portions of the plate being crimped over the clamping strip to form outwardly projecting stops for the supporter hooks.

852,512. PLUMB-LEVEL. CHRISTIAN LARSEN, Chicago, Ill. Filed Oct. 26, 1906. Serial No. 340,663.



Claim.—An instrument of the kind described, comprising a pair of bars having parallel straight edges, a pivoted sighting tube between the bars and arranged to swing in a plurality of planes at angles thereto, and a spirit level mounted on the tube.

852,513. DOOR-HOLDER. GODFRIED LAUBE, Santa Monica, Cal., assignor of one-half to John C. Miller, Los Angeles, Cal. Filed Aug. 13, 1906. Serial No. 330,356.



Claim.—1. A door holder embodying a plate having a beveled surface, longitudinally disposed ribs mounted upon said surface, a cover secured to the forward end of said plate, ornamental side plates carried by said beveled plate, covers secured to the rear edges of said side plates, a vertically disposed rod detachably mounted in the forward end of said beveled plate and having a loop upon its upper end, substantially as described.

2. A door holder embodying a beveled plate, ribs carried by the beveled surface of said plate, ornamental side plates carried by said beveled plate, a vertically disposed rod mounted in said plate and having a loop upon its upper end, and coverings for portions of said plates, substantially as described.

3. A door holder consisting of a beveled plate adapted to engage under a door, ornamental side plates carried by said beveled plate, and a handle, substantially as described.

4. A combined hat and door holder consisting of a beveled plate, adapted to engage under a door, and a rod carried by said plate and adapted to support a hat, substantially as described.

852,514. COMBINED PEN AND PENCIL HOLDER. GODFRIED LAUBE, Santa Monica, Cal., assignor to Markus D. Feather and Hattie R. Laube, Santa Monica, Cal. Filed Jan. 22, 1907. Serial No. 353,429.



Claim.—1. A combined pen and pencil holder consisting of a slitted tube having reamed ends, closely arranged protuberances carried by the ends of said tube, inwardly projecting lugs carried by said tube, a sleeve soldered to the central portion of said tube, a U-shaped curved spring secured to the edges of said sleeve and engaging the central portion of said tube, a pen detachably mounted in one end of said tube, and a pencil detachably mounted in the opposite end of said tube, substantially as described.

2. A combined pen and pencil holder consisting of a slitted tube, protuberances carried by the ends of said tube, inwardly projecting lugs arranged centrally of said tube, a sleeve secured to said tube, a curved spring secured to said sleeve, a pen detachably mounted in the end of said holder, and a pencil detachably mounted in the opposite end of said holder.

3. A combined pen and pencil holder consisting of a tube having serrated or roughened ends, a sleeve secured to the central portion of said tube, a spring carried by said sleeve, a pen detachably mounted in one end of said tube, and a pencil detachably mounted in the opposite end of said tube.

4. A pen and pencil holder, comprising a tube slitted from end to end, having a roughened exterior surface at the ends and a smooth intermediate or central portion, a

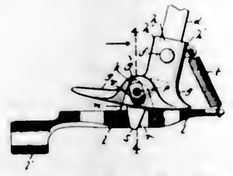
semi-cylindrical sleeve fixed on the tube at said smooth central or intermediate portion, and a clasp carried by said semi-cylindrical sleeve.

5. A holder of the type described embodying a tube, having slitted and roughened ends, a sleeve carried centrally of said tube, and a curved U-shaped spring carried by said sleeve.

6. As a new article of manufacture, a holder embodying a slitted, roughened tube having reamed ends, and a spring attached centrally of said tube.

7. A pen and pencil holder comprising a tube slit at the ends, a semi-circular sleeve secured to the tube approximately at the center thereof, and a U-shaped spring engaging the tube having its ends secured to said sleeve and constituting clasp.

852,515. COMBINED PARALLEL ROCKER AND PICKING-STICK CHECK FOR LOOMS. WILLIAM LEARY, New Bedford, Mass. Filed Jan. 11, 1907. Serial No. 351,788.



Claim.—1. In a combined parallel rocker and picking-stick check, an upper member provided with a slotted central transversely thickened portion said slot being upwardly elongated, a cushion in the lower end of the slot, a lower member provided centrally with a vertical hole, a projection extending downward from the upper member into said hole, ears extending upward from the lower member on opposite sides of said thickened portion of the upper member, a pin extending from the ears through said slot, and a spring connecting the outer edge of the upper member with the corresponding end of the lower member, substantially as set forth.

2. In a combined parallel rocker and picking-stick check, an upper member provided with a slotted central transversely thickened portion said slot being upwardly elongated, a cushion in the lower end of the slot, a lower member provided centrally with a vertical hole, a projection extending downward from the upper member into said hole, ears extending upward from the lower member on opposite sides of said thickened portion of the upper member, a pin extending from the ears through said slot, an upward extension integral with the upper member and adapted to lie against the edges and one side of the stick as it stands on the upper member, and a spring connecting the upper outer edge of said upward extension with the outer end of the lower member, substantially as set forth.

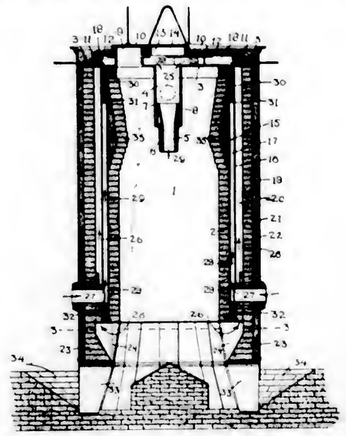
852,516. GAS-PRODUCER. CHARLES H. MORGAN and ALBERT J. GIFFORD, Worcester, Mass.; said Gifford assignor to said Morgan. Filed June 3, 1904. Serial No. 210,938.

Claim.—1. In a gas producer, the combination with a gas producing chamber, of a cover for said chamber, a depending twyer entering the top of said chamber from said cover, an annular air space surrounding said chamber, means for admitting air to the lower end of said air space, means for applying heat to the outer wall of said air space, and means for conducting air from the top of said air space to said twyer.

2. In a gas producer, the combination with a gas producing chamber having a cover, of a twyer depending from said cover and entering said chamber, an annular air space surrounding said chamber, means for admitting air to the lower end of said air space, means for conducting air from the upper end of said air space to said twyer, an annular gas space surrounding said air space and communicating with said gas producing chamber, and an outlet gas pipe communicating with said annular gas space.

3. In a gas producer, the combination with a gas producing chamber, of a twyer at the upper end of said chamber, an annular air space surrounding said chamber, means for admitting air to the lower end of said air space, means for conducting air from said air space to said twyer, and means for spraying water into said air space.

4. In a gas producer, the combination with a gas producing chamber, of an annular air space surrounding said chamber, means for admitting air to the lower end of said air space, means for conducting air from the upper end of said air space to the gas producing chamber, said air space having parallel side walls, means for spraying water against said side walls and a water overflow near the lower end of said air space.



5. In a gas producer, the combination with a gas producing chamber, of an annular air space surrounding said chamber and having vertical side walls, means for admitting air to the lower end of said air space, means for conducting air from the upper end of said air space to the gas producing chamber, means for admitting water to the upper end of said air space and against said side walls, and means for maintaining a body of water at the lower end of said air space.

6. In a gas producer, the combination with a gas producing chamber, of an annular air space, surrounding said gas producing chamber, a double cover for said chamber inclosing an air space communicating with said annular air space, and a twyer depending from said double cover through which air from said annular air space is conducted to said gas producing chamber.

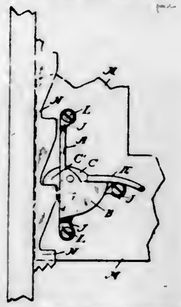
7. In a gas producer, the combination with a gas producing chamber, of an annular air space inclosing said chamber, an annular gas space inclosing said air space, said air and gas spaces having vertical side walls, a metallic partition between said air and said gas space, means for admitting air to said air space at its lower end, means for conducting air from the upper end of said air space to the gas producing chamber, said annular gas space communicating with said gas producing chamber at the lower end of the chamber, and an outlet pipe for gas leading from said annular gas space.

8. In a gas producer, the combination with a gas producing chamber, of a double cover for said chamber inclosing an air space, an opening for the admission of air from said space into said producing chamber, an air space inclosed in the side wall and communicating with the air space in said cover, and an opening into said wall air space for the admission of air thereto.

9. In a gas producer, a gas producing chamber having its side walls vertically parallel at the lower end of said chamber with a contracted section near the upper end of

the chamber, by which the diameter of the chamber is reduced, and having its side walls gradually flaring near the upper end of the chamber, a concentric twyer entering the upper end of the chamber, a double cover for said chamber inclosing an air space communicating with said twyer, an annular air space surrounding the vertical wall of the chamber communicating with the space between said covers, and an opening at the bottom of said annular air space for the admission of air.

852,517. SELF-LOCKING WINDOW-FASTENER. JOHN I. MOSS, Abbotsford, Victoria, Australia, assignor of one-half to William David Beazley, Abbotsford, Australia. Filed Jan. 2, 1907. Serial No. 350,349.



Claim.—An improved window fastener comprising a casing provided with a front opening and rearwardly extended cheek plates, a dog eccentrically pivoted between said cheek plates and provided with a nose adapted to engage a rack, said dog being also provided with a finger piece or extension, said finger piece or extension being provided with lateral flanges and so weighted as to normally tend to hold the nose of said dog projected through the front opening of said casing, the pivotal movement of said dog being limited by said flanges engaging said cheek plates.

852,518. VALVE. ALEXANDER W. MURRAY, Chicago, Ill., assignor of one-half to John A. Salmon, Chicago, Ill. Filed Feb. 20, 1905. Serial No. 246,519.



Claim.—1. A valve comprising a disk of inelastic material and a facing of elastic material completely incasing the inelastic disk, substantially as described.

2. A valve comprising an annular disk of inelastic material and a facing or coating of elastic material completely incasing the inelastic disk and having a central perforation, substantially as described.

852,519. CLOSURE FOR BOTTLES, JARS, AND THE LIKE. JAMES A. NEE, New York, N. Y. Filed Dec. 1, 1905. Serial No. 289,758.



Claim.—1. A closure comprising a cap, with a flange and an inset portion extending most of the way around, in combination with a receptacle having a shoulder with which the inset portion engages, and having grooves on opposite sides whereby a tool may be introduced within the grooves, and the flange thereby ruptured and the cover flexed.

2. A closure comprising a cap, with a flange and an inset portion extending most of the way around, in combination with a receptacle having a shoulder with which the inset portion engages, and having grooves on opposite sides, the inset portion being interrupted adjacent to the grooves.

3. A closure comprising a cap, with a flange and an inset portion extending most of the way around, in combination with a receptacle having a shoulder with which the inset portion engages, and having grooves on opposite sides, the inset portion being interrupted adjacent to the grooves and there being notches within the flange adjacent to the interrupted portions of the inset.

4. A closure comprising a cap, with a flange and an inset portion extending most of the way around, in combination with a receptacle having a shoulder with which the inset portion engages, and having grooves on opposite sides whereby a tool may be introduced within the grooves, and the flange thereby ruptured, and there being a notch on the flange between the grooves to produce a place where a tool for flexing the cover may be introduced.

5. A closure comprising a cap, with a flange and an inset portion extending most of the way around, in combination with a receptacle having a shoulder with which the inset portion engages, and having grooves on opposite sides, the inset portion being interrupted adjacent to the grooves, and there being a notch on the flange between the grooves to produce a place where a tool for flexing the cover may be introduced.

6. A closure comprising a cap, with a flange and an inset portion extending most of the way around, in combination with a receptacle having a shoulder with which the inset portion engages, and having grooves on opposite sides, the inset portion being interrupted adjacent to the grooves, and there being notches within the flange adjacent to the interrupted portions of the insets, and there being a notch on the flange between the grooves to produce a place where a tool for flexing the cover may be introduced.

7. A closure comprising a cap, with a flange, an inset portion on the flange extending most but not all of the way around, in combination with a receptacle having a shoulder with which the inset portion engages, the said flange having lugs which impart elasticity to the flange.

8. A closure comprising a cap, with a flange and an inset portion extending most of the way around, in combination with a receptacle having a shoulder with which the inset portion engages, and having oppositely arranged grooves, the said flange having lugs which enter the grooves and serve as a means for registering the cap, and also impart elasticity to the flange.

9. A cap, which comprises a cover, and an integral flange, with an inset on the bottom, having interrupted portions and vertical lugs above the interrupted portions.

10. A cap, which comprises a cover, and an integral flange, with an inset on the bottom, having interrupted portions and lugs above the interrupted portions, the said lugs being tapered.

11. The combination with a receptacle having a neck, a shoulder adjacent to the mouth of the neck, and grooves on the shoulder, of a cap, having a flange and inset portions on the flange and engaging with the shoulder, the said flange having notches adjacent to the grooves, and lugs between the notches, the said lugs tapering toward the top.

12. A cap, which comprises a cover with an integral flange, a non-continuous inset on the bottom thereof, and means on the flange whereby the flange may be expanded.

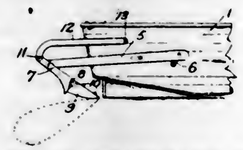
13. A cap, which comprises a cover with an integral flange, a non-continuous inset on the bottom thereof, and means on the flange for imparting elasticity to the flange.

852,520. DEVICE FOR CROSS-WEAVING. HEINRICH T. PESTALOZZI, Zurich, Switzerland. Filed Aug. 23, 1905. Serial No. 275,460.

Claim.—In a device for operating the warp threads in gauze weaving, the combination of two gauze-half-healds b^1 o^2 for the whip warp thread and of two gauze-half-healds a^1 a^2 for the ground warp threads, with two guide healds F^1 F^1, F^2 F^2, in such manner that the gauze-half-heald o^1 embraces the ground warp thread S and the guide heald F^1, and the gauze-half-heald a^1 embraces the whip warp thread D and the guide heald F^1, and that the gauze-half-heald o^2 embraces the ground warp thread S and the guide heald F^2, and the gauze-half-heald a^2 embraces the whip warp thread D and the gauze-half-heald F^2.



852,521. OSCILLATING PROPELLER. PER A. PETERSON, New York, N. Y. Filed June 23, 1905. Serial No. 266,606.



Claim.—1. In a propelling mechanism for boats, the combination of a lever pivotally connected directly to the boat, means for reciprocating said lever on its movable support, a blade pivotally connected to one end of the lever, a paddle carried by said blade, and a pivotal support for the upper end of said blade, said support being connected to the boat.

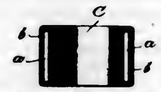
2. In a propelling mechanism for boats, the combination of a lever pivotally connected directly to the boat, means for reciprocating said lever on its movable support, a blade pivotally connected to one end of the lever, a paddle carried by said blade, and a pivotal support for the upper end of said blade, said support being pivotally connected to the boat.

3. In a propelling mechanism for boats, the combination of a lever, a crank support intermediate the forward end of said lever and the boat, an operating crank connected with said lever in rear of its support, a blade pivotally connected to the rear end of the lever, a paddle connected to the lower end of said blade, and a link pivotally connecting the upper end of the blade and the boat, said link being of less length than the lever.

4. In propelling mechanism, the combination of a boat, an operating crank and a lever connected with said operating crank intermediate the ends thereof, a supporting crank pivotally connected with said lever at the forward end thereof, said lever crank being longer than said operating crank, a blade pivotally connected with said lever at the rear end thereof, a paddle connected with the lower end of said blade, and a link pivotally connected with the upper end of said blade and with said boat.

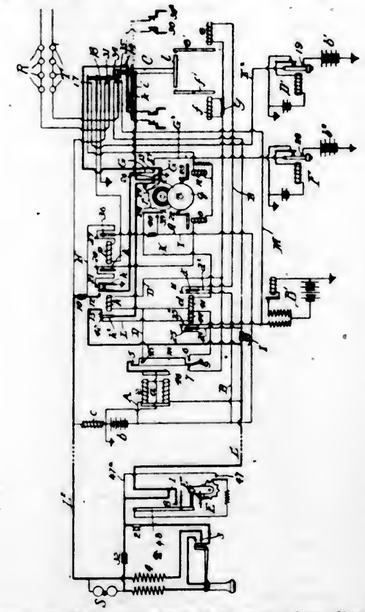
852,522. LUG-STRAP FOR LOOM PICKER-STICKS. LUTHER PILLING, Danielson, Conn. Filed Nov. 5, 1906. Serial No. 341,975.

Claim.—1. A lug-strap for loom picker-sticks, consisting of a relatively thin, flat strip of fibrous material bent to form an elongated U-shaped core having separated ends, and an inclosing body of textile material wrapped around such core and compressed and cemented thereon.



2. A lug-strap for loom picker-sticks, consisting of a central core composed of a broad and relatively thin, flat strip of compressed fiber-board bent to form an elongated U-shaped central core, and a compressed cover therefor composed of textile material wrapped in a plurality of superposed and cemented plies around the core, the core and body being apertured near the separated front ends thereof.

852,523. AUTOMATIC TELEPHONE-EXCHANGE. JOHN G. ROBERTS, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 5, 1906. Serial No. 299,424.



Claim.—1. The combination with a telephone line, of a bridge of the line at the central office including a source of current, a magnet having a winding included in said bridge, an armature for said magnet, a lever engaged by said armature in its attracted position, said lever possessing considerable inertia, whereby it is unresponsive to a momentary impact of the armature but is responsive to a continuous engagement thereof, a circuit closed by the contacts of said armature and lever, a second circuit closed by said armature and lever when the lever is in its responsive position, and switching mechanism at the subscriber's station for either interruptedly or continuously closing the circuit of the line through said magnet.

2. In an automatic telephone exchange, the combination with a telephone line and a selector therefor, of a bridge of the line at the central office including a battery, a magnet having a winding included in said bridge, an armature for said magnet, a lever engaged by said armature in its attracted position, said lever possessing considerable inertia whereby it is unresponsive to a momentary impact of the armature but is responsive to a continuous engagement thereof, a local circuit having contacts controlled by

said armature and lever, said circuit including electromagnetic means for operating the selector and a relay for connecting the subscriber's line to the terminals of said selector, a short circuit for said relay closed when the lever is in its normal position, and switching mechanism and an interrupter at the subscriber's station for closing the circuit and for producing an interrupted current through the magnet, respectively; whereby the selector is actuated to select the terminals of the called subscriber and the calling subscriber's line is extended to said terminals.

3. In an automatic telephone exchange, the combination with a telephone line and a selector therefor, of a bridge of the line at the central office including a magnet and a source of current, switching mechanism at the subscriber's station for producing either continuous or intermittent currents in said magnet, means operated by an intermittent current in the magnet to actuate the selector to select the terminals of a called subscriber, a source of ringing current, and means operated by a continuous current in said magnet for connecting the ringing current to the called subscriber's line and for connecting the calling subscriber's line to the selected terminals.

4. In an automatic telephone exchange, the combination with a telephone line and a selector therefor, of a line relay, switching mechanism controlled by the line relay for selecting the line of a called subscriber and for connecting the line of the calling subscriber thereto, a source of ringing current, automatically operated means for connecting the same to the terminal of the called subscriber, and a relay energized upon the response of the called subscriber to open the circuit of the ringing current.

5. In an automatic telephone exchange, the combination with a telephone line and a selector therefor having terminals for the several subscribers' lines and an arm carrying brushes adapted to engage the terminals, of a relay *h* adapted to connect the circuit of the calling subscriber's line to the terminals of his selector, a line relay *a*, means at the substation for controlling said line relay, a local circuit, controlled by relay *a*, including the relay *h* and electromagnetic means for actuating the selector to select the terminals of the called subscriber, a short circuit of the relay *h* controlled by the line relay, a source of ringing current, and means automatically controlled by the relay *h* for connecting the same with the selector arm after it has reached the selected terminals.

6. In an automatic telephone exchange, the combination with a telephone line and a selector therefor having terminals for the several subscribers' lines and an arm carrying brushes adapted to engage the terminals, of a relay *h* adapted to connect the circuit of the calling subscriber's line to the terminals of his selector, a line relay *a*, means at the substation for controlling said line relay, a local circuit, controlled by relay *a*, including the relay *h* and electromagnetic means for actuating the selector to select the terminals of the called subscriber, a short circuit of the relay *h* controlled by the line relay, a source of ringing current, mechanism for connecting the same with the selector arm, and a local circuit including electromagnetic means for actuating said mechanism, said circuit being controlled by relay *h*.

7. In an automatic telephone exchange, the combination with a telephone line and a selector therefor, of a bridge of the line at the central office including a battery, a line relay *a* having a winding included in said bridge, switching mechanism and an interrupter at the substation for closing the circuit and producing an interrupted current through said relay, respectively, a local circuit controlled by said relay, including electromagnetic means for operating the selector to select the terminals of the called subscriber, and a shunt of said local circuit, including a relay *h*, controlled by the line relay, said relay *h* being adapted to connect the circuit of the line to the selected terminals.

8. In an automatic telephone exchange, the combination with a telephone line and a selector therefor, of a bridge of the line at the central office including a battery, a line relay *a* having a winding included in said bridge, switching mechanism and an interrupter at the substation for closing the circuit and producing an interrupted current through said relay, respectively, a local circuit, controlled by said relay, including electromagnetic means for operating the selector to select the terminals of the called subscriber, a shunt of said local circuit including a relay *h* controlled by the line relay, said relay *h* being adapted to connect the circuit of the line to the selected terminals, a source of ringing current and means controlled by the relay *h* for connecting the same to a selected terminal.

9. In an automatic telephone exchange, the combination with a telephone line and a selector therefor, of a bridge of the line at the central office including a battery, a line relay *a* having a winding included in said bridge, switching mechanism and an interrupter at the substation for closing the circuit and producing an interrupted current through said relay, respectively, a local circuit, controlled by said relay, including electromagnetic means for operating the selector to select the terminals of the called subscriber, a shunt of said local circuit including a relay *h* controlled by the line relay, said relay *h* being adapted to connect the circuit of the line to the selected terminals, a source of ringing current, mechanism for connecting the same to a selected terminal, and a local circuit including electromagnetic means for actuating said mechanism, said circuit being controlled by relay *h*.

10. In an automatic telephone exchange, the combination with a telephone line, of a bridge of the line at the central office including a battery, a line relay *a* having a winding included in said bridge, switching mechanism controlled by the line relay for selecting the line of the called subscriber, a relay *h* controlled by the line relay for connecting the circuit of the calling subscriber to the terminals of the called subscriber, a source of ringing current, ringer mechanism for connecting the same to the selected terminal, a local circuit including electromagnetic means for actuating said ringer mechanism, said circuit being adapted to be closed by the relay *h*, and a relay *p* adapted to be energized to open said local circuit upon the response of the called subscriber.

11. In an automatic telephone exchange, the combination with a telephone line, of a bridge of the line at the central office including a battery one pole of which is grounded, a line relay *a* having a winding included in said bridge, switching mechanism controlled by the line relay for selecting the line of the called subscriber, a relay *h* controlled by the line relay for connecting the circuit of the calling subscriber to the terminals of the called subscriber, a source of ringing current, ringer mechanism for connecting the same to the selected terminal, a local circuit including electromagnetic means for actuating said ringer mechanism, said circuit being adapted to be closed by the relay *h*, a relay *p* adapted to be energized to open said local circuit upon the response of the called subscriber, a test relay *d* having a winding included in a normally open circuit, a contact device upon said ringer mechanism adapted to close the circuit of relay *d* after a predetermined time upon the failure of the called subscriber to respond, and a busy tone apparatus adapted to be connected to the calling subscriber's line by the test relay *d*.

12. In an automatic telephone exchange, a calling subscriber's line and a selector therefor, subscribers' lines having terminals in said selector, means controlled by the calling subscriber to select the line of a desired subscriber and to connect the line of the calling subscriber thereto, a source of ringing current, ringer mechanism at the central station adapted to automatically connect said source of ringing current to the selected line, a busy tone apparatus, and automatic mechanism, operated by said ringer mechanism after a predetermined time, upon the failure of the called subscriber to respond, for connecting said busy tone apparatus to the calling subscriber's line.

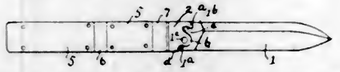
13. In an automatic telephone exchange, the combination with a calling subscriber's line and a selector therefor, of subscribers' lines having terminals in said selector, means controlled by the calling subscriber to actuate the selector to select the terminals of a desired subscriber, a busy tone apparatus, a test relay having two windings, one of which is included in a circuit automatically closed upon the failure of the selected subscriber to respond in a predetermined time, the other winding of the test relay being included in a circuit closed when the called line is engaged, and switching mechanism operated by said test relay for connecting the busy tone apparatus to the calling subscriber's line.

14. In an automatic telephone exchange, the combination with an electric circuit including a source of current, of a magnet having its windings included in said circuit, an armature for said magnet, a pivoted lever engaged by said armature in its attracted position, a spring engaging said lever and increasing its inertia when said lever is at its normal position, whereby the lever is unresponsive to a momentary impact of the armature but is responsive to a continuous engagement thereof, and switching mechanism for either interruptedly or continuously closing the circuit through said magnet.

15. In an automatic telephone exchange, the combination with an electric circuit including a source of current, of a magnet having its winding included in said circuit, an armature for said magnet, a lever engaged by said armature in its attracted position, said lever possessing considerable inertia whereby it is unresponsive to a momentary impact of the armature but is responsive to a continuous engagement thereof, and switching mechanism in said circuit for either interruptedly or continuously closing the circuit through said magnet.

16. In an automatic telephone exchange, the combination with a telephone line and a selector therefor, of a source of current and a magnet in the circuit of the line at the central office, switching mechanism at the substation, adapted to be set by the subscriber, for automatically producing intermittent currents in said magnet, to actuate said selector and select the desired line terminals, and thereafter for producing continuous current in said magnet, a source of ringing current, and mechanism automatically operated by said continuous current in said magnet for connecting the ringing current to the desired line terminals.

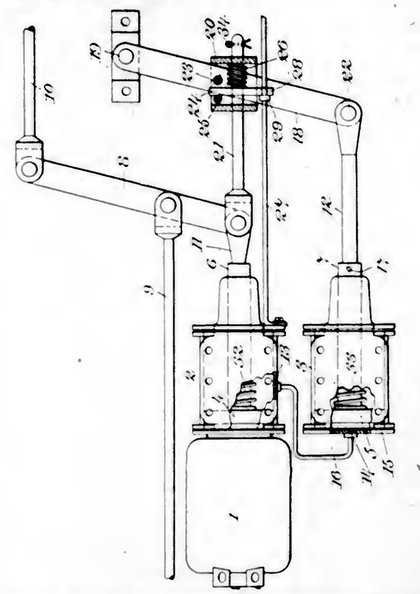
852,524. CLASP-KNIFE. NESTOR SAHLSTEN, Mount Iron, Minn. Filed Feb. 4, 1907. Serial No. 355,610.



Claim.—1. A clasp knife, comprising a pair of cheek pieces each having a finger, a tongue and a shoulder formed at one of its ends; a blade extending at its heel between said tongues and pivoted thereto, said blade being provided with a lug extending from one side of its heel and adapted to bear against the shoulder of one of said cheek pieces, said blade being provided with a lug extending from the other side of its heel and adapted to bear against said finger on the other of said cheek pieces, a spacing rib, a sectional face plate positioned against the outer face of one of said cheek plates, said face plate being channeled in its inner face for a portion of its length, said channeled portion including a transversely sliding key in which the width of the channel is increased, said face plate also including a longitudinally slidable bolt head, an apertured lug or eye extending from the opposite cheek plate across the space between the two cheek plates and into a recess communicating with the channel in said face plate so that the eye in said lug will register with said channel, a bolt extending from said bolt head into said channel and adapted to be projected through the channel in said key and to continue through said eye, so as to lock the cheek plates in parallel position, said bolt having an indent in one edge into which a portion of said key may be drawn to prevent retraction of said bolt, and a face plate positioned against the outer face of the opposite said cheek plate and secured thereto.

2. In a clasp knife, the combination of a pair of cheek plates each having a tongue, a finger and a shoulder formed on one of its ends; a blade extending at its heel between said tongues and pivoted thereto, and provided on one side with a lug adapted to bear against said shoulder on one of said cheek plates, and provided on the opposite side to bear against said finger on the other of said cheek plates; an apertured lug adapted to move with one of said cheek plates and in operation to extend into the opposite cheek plate; a bolt adapted in operation to extend through said eye, and a key adapted in operation to engage said bolt.

852,525. FLUID-PRESSURE BRAKE. WILLIAM H. SAUVAGE, New York, N. Y., assignor to Sauvage Safety Brake Company, a Corporation of New Jersey. Filed Nov. 21, 1906. Serial No. 344,437.



Claim.—1. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, a pipe extending from a port in the side wall of the first cylinder to a port in the pressure head of the second cylinder, a gripping device connecting the second piston with the brake rigging when the said piston is forced outward and means for releasing the gripping device when the second piston completes its return stroke.

2. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, a pipe extending from a port in the side wall of the first cylinder to a port in the pressure head of the second cylinder, a gripping device connecting the second piston with the brake rigging when the said piston is forced outward and means for releasing the gripping device when the second piston completes its return stroke, said gripping device comprising a friction clutch, a lever carrying said clutch pivoted at one end to a fixed fulcrum and at the other end to the second piston, and a rod connected to the brake rigging and grasped by said clutch.

3. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, a pipe extending from a port in the side wall of the first cylinder to a port in the pressure head of the second cylinder, a gripping device connecting the second piston with the brake rigging when the said piston is forced outward and means for releasing the gripping device when the second piston completes its return travel, said releasing means comprising a fixed stop adapted to be struck by a movable member of the gripping device.

4. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, a pipe extending from a port in the side wall of the first cylinder to a port in the pressure head of the second cylinder, a gripping device connecting the second piston with the brake rigging when the said piston is forced outward and means for releasing the gripping device when the second piston completes its return stroke, said gripping device comprising a friction clutch, a lever carrying said clutch pivoted at one end to a fixed fulcrum and at the other end to the second piston, and a rod connected to the brake rigging and grasped by said clutch, said releasing means comprising a fixed stop adapted to be struck by a movable member of the gripping device.

5. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging of a second cylinder and piston, means actuated by the movement of the first piston admitting fluid under pressure to the second cylinder, and a friction clutch connecting the second piston with the brake rigging whenever said piston is advanced from its inmost position.

6. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging of a second cylinder and piston, means actuated by the movement of the first piston admitting fluid under pressure to the second cylinder, and a friction clutch connecting the second piston with the brake rigging whenever said piston is advanced from its inmost position, together with means for tripping said clutch when the second piston reaches the end of its return stroke.

7. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means controlled by the movement of the first piston admitting fluid under pressure to the second cylinder, a lever pivoted at one end to a fixed fulcrum and at the other end to the second piston, a friction clutch carried by said lever, a rod connected to the brake rigging and engaged by said clutch, and means for tripping said clutch when the second piston is at the end of its in stroke.

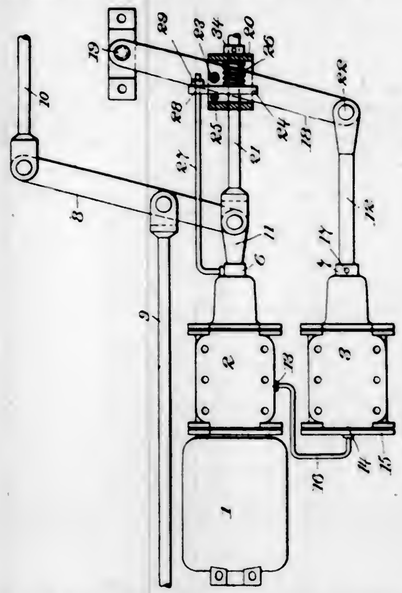
8. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means controlled by the movement of the first piston admitting fluid under pressure to the second cylinder, a lever pivoted at one end to a fixed fulcrum and at the other end to the second piston, a friction clutch carried by said lever, a rod connected to the brake rigging and engaged by said clutch, and means for tripping said clutch when the second piston is at the end of its in stroke, said means comprising a fixed stop engaging the clutch dog.

9. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means controlled by the movement of the first piston admitting fluid under pressure to the second cylinder, a lever pivoted at one end to a fixed fulcrum and at the other end to the second piston, a friction clutch carried by said lever, a rod connected to the brake rigging and engaged by said clutch and means for tripping said clutch when the second piston is at the end of its in stroke, said means comprising a rod fastened on the main cylinder passing through a hole in the clutch dog and provided with a stop for said dog.

852,526. FLUID-PRESSURE BRAKE. WILLIAM H. SAUVAGE, New York, N. Y., assignor to Sauvage Safety Brake Company, a Corporation of New Jersey. Filed Nov. 21, 1906. Serial No. 344,438.

Claim.—1. In a fluid pressure brake apparatus the combination with the usual cylinder, piston, and brake levers, of a second cylinder and piston, a lever having a fixed fulcrum at one end and pivoted to the second piston at the other, a friction clutch carried by said lever and a rod connected to the brake rigging and operatively engaged by said friction clutch.

2. A friction clutch device for use in brake rigging comprising the combination of a rectangular frame perforated at the ends, a rod passing through the perforations, a perforated clutch dog mounted in said frame and on said rod, a fulcrum for said dog mounted in the frame, and a spiral spring surrounding the rod and confined between the clutch dog and one end of the frame.



3. In a fluid pressure brake apparatus the combination with the usual cylinder, piston, and brake levers, of a second cylinder and piston, a lever having a fixed fulcrum at one end and pivoted to the second piston at the other, a friction clutch carried by said lever and a rod connected to the brake rigging and operatively engaged by said friction clutch; said friction clutch comprising a rectangular frame pivoted to the lever and perforated at the ends, a rod passing through the perforations, a perforated clutch dog mounted in said frame and on said rod, a fulcrum pin for said dog mounted in the frame, and a spiral spring surrounding the rod and confined between the clutch dog and one end of the frame.

4. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means for bringing said second piston into action only after the movement of the first piston has begun, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston.

5. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston and brake levers, of a second cylinder and piston, a gripping device connecting said second piston with the brake rigging, and means for tripping said gripping device operated by the first piston, said means comprising a rod connected at one end to the first piston and having at its other end a stop adapted to engage the tail of the gripping device.

6. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, the cylinder having a port in its side wall, of a second cylinder, a pipe extending from its pressure head to the port in the first cylinder, a piston in the second cylinder, and a friction clutch connecting the said second piston with the brake rigging, together with means for tripping said clutch operated by the movement of the first piston.

7. In a fluid pressure brake apparatus the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto and telescoping into the hollow piston, of a second cylinder and piston, means for bringing said piston into action only after the movement of the first piston has begun, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston.

8. In a fluid pressure brake apparatus the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto and telescoping into the hollow piston, of a second cylinder and piston, means for bringing said second piston into action only after the movement of the first piston has begun, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston, the mechanism through which the friction clutch effects the connection of the second piston to the brake rigging comprising a lever carrying the friction clutch pivoted to a fixed fulcrum at one end and to the second piston at the other end, and a rod sliding through said friction clutch and pivoted to one of the brake levers.

9. In a fluid pressure brake apparatus the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, and telescoping into the hollow piston, of a second cylinder and piston, means for bringing said second piston into action only after the movement of the first piston has begun, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston, the mechanism through which the friction clutch effects the connection of the second piston to the brake rigging comprising a lever carrying the friction clutch pivoted to a fixed fulcrum at one end and to the second piston at the other end, and a rod sliding through said friction clutch and pivoted to one of the brake levers and the means for tripping the friction clutch comprising a rod connected to the hollow piston at one end and provided with a stop adapted to engage the tail of the clutch dog.

10. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means operated by the movement of the first piston admitting fluid under pressure to the second cylinder, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston.

11. In a fluid pressure brake apparatus the combination with two cylinders and pistons and brake rigging, of a friction clutch adapted to connect the second piston with the brake rigging at each heavy application of the brakes and means for tripping said friction clutch operated by the return movement of the first piston.

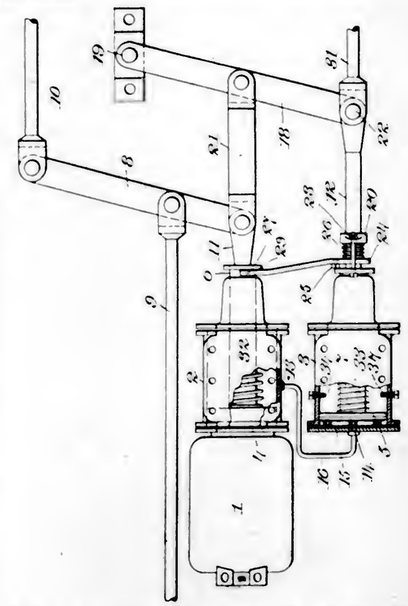
12. In a fluid pressure brake apparatus the combination with two cylinders, their pistons, brake rigging and means actuated by movement of the first piston to admit fluid under pressure into the second cylinder, of a clutch connecting the second piston to the brake rigging on the out stroke of said piston, and means for tripping said clutch operated by the return movement of the first piston.

13. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake levers, of a second cylinder and piston, an adjustable gripping device connecting said second piston with the brake rigging, and means for setting said gripping device operated by the first piston.

852,527. FLUID-PRESSURE BRAKE. WILLIAM H. SAUVAGE, New York, N. Y., assignor to Sauvage Safety Brake Company, a Corporation of New Jersey. Filed Nov. 21, 1906. Serial No. 344,439.

Claim.—1. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, of a second cylinder, piston with hollow piston rod and push rod also connected to the brake rigging, a gripping device mounted on the second piston rod and normally preventing the movement of the second push rod into the hollow piston rod but permitting it to be withdrawn therefrom, and means for tripping said gripping device actuated by the first piston.

2. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, of a second cylinder, piston with hollow piston rod and push rod also connected to the brake rigging, a gripping device mounted on the second piston rod and normally preventing the movement of the second push rod into the hollow piston rod but permitting it to be withdrawn therefrom, and means for tripping said gripping device actuated by the first piston, said gripping device comprising a perforated friction dog encircling the second push rod, fulcrumed on the second piston and having an extension engaged by the first piston.



3. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, of a second cylinder, piston with hollow piston rod and push rod also connected to the brake rigging, a gripping device mounted on the second piston rod and normally preventing the movement of the second push rod into the hollow piston rod but permitting it to be withdrawn therefrom, and means for tripping said gripping device actuated by the first piston, said gripping device comprising a perforated friction dog encircling the second push rod, fulcrumed on the second piston and having an extension engaged by the first piston, together with a yoke carried by said second piston and a spiral spring surrounding the push rod and confined between the yoke and the clutch dog.

4. In a fluid pressure brake apparatus, the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, the push rod telescoping into the hollow piston rod, in combination with a second cylinder, piston with hollow piston rod and push rod telescoping therein and also connected to the brake rigging by a system of levers, means actuated by the movement of the first piston admitting air to the second cylinder, a clutch mounted on the second piston rod, and engaging the second push rod, and means for tripping said clutch operated by the first piston.

5. In a fluid pressure brake apparatus, the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, the push rod telescoping into

4. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, a pipe extending from a port in the side wall of the first cylinder to a port in the pressure head of the second cylinder, a gripping device connecting the second piston with the brake rigging when the said piston is forced outward and means for releasing the gripping device when the second piston completes its return stroke, said gripping device comprising a friction clutch, a lever carrying said clutch pivoted at one end to a fixed fulcrum and at the other end to the second piston, and a rod connected to the brake rigging and grasped by said clutch, said releasing means comprising a fixed stop adapted to be struck by a movable member of the gripping device.

5. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging of a second cylinder and piston, means actuated by the movement of the first piston admitting fluid under pressure to the second cylinder, and a friction clutch connecting the second piston with the brake rigging whenever said piston is advanced from its inmost position.

6. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging of a second cylinder and piston, means actuated by the movement of the first piston admitting fluid under pressure to the second cylinder, and a friction clutch connecting the second piston with the brake rigging whenever said piston is advanced from its inmost position, together with means for tripping said clutch when the second piston reaches the end of its return stroke.

7. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means controlled by the movement of the first piston admitting fluid under pressure to the second cylinder, a lever pivoted at one end to a fixed fulcrum and at the other end to the second piston, a friction clutch carried by said lever, a rod connected to the brake rigging and engaged by said clutch, and means for tripping said clutch when the second piston is at the end of its in stroke.

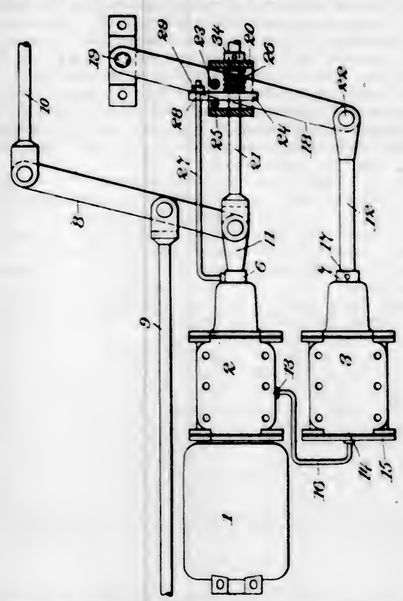
8. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means controlled by the movement of the first piston admitting fluid under pressure to the second cylinder, a lever pivoted at one end to a fixed fulcrum and at the other end to the second piston, a friction clutch carried by said lever, a rod connected to the brake rigging and engaged by said clutch, and means for tripping said clutch when the second piston is at the end of its in stroke, said means comprising a fixed stop engaging the clutch dog.

9. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means controlled by the movement of the first piston admitting fluid under pressure to the second cylinder, a lever pivoted at one end to a fixed fulcrum and at the other end to the second piston, a friction clutch carried by said lever, a rod connected to the brake rigging and engaged by said clutch and means for tripping said clutch when the second piston is at the end of its in stroke, said means comprising a rod fastened on the main cylinder passing through a hole in the clutch dog and provided with a stop for said dog.

852,526. FLUID-PRESSURE BRAKE. WILLIAM H. SAUVAGE, New York, N. Y., assignor to Sauvage Safety Brake Company, a Corporation of New Jersey. Filed Nov. 21, 1906. Serial No. 344,438.

Claim.—1. In a fluid pressure brake apparatus the combination with the usual cylinder, piston, and brake levers, of a second cylinder and piston, a lever having a fixed fulcrum at one end and pivoted to the second piston at the other, a friction clutch carried by said lever and a rod connected to the brake rigging and operatively engaged by said friction clutch.

2. A friction clutch device for use in brake rigging comprising the combination of a rectangular frame perforated at the ends, a rod passing through the perforations, a perforated clutch dog mounted in said frame and on said rod, a fulcrum for said dog mounted in the frame, and a spiral spring surrounding the rod and confined between the clutch dog and one end of the frame.



3. In a fluid pressure brake apparatus the combination with the usual cylinder, piston, and brake levers, of a second cylinder and piston, a lever having a fixed fulcrum at one end and pivoted to the second piston at the other, a friction clutch carried by said lever and a rod connected to the brake rigging and operatively engaged by said friction clutch; said friction clutch comprising a rectangular frame pivoted to the lever and perforated at the ends, a rod passing through the perforations, a perforated clutch dog mounted in said frame and on said rod, a fulcrum pin for said dog mounted in the frame, and a spiral spring surrounding the rod and confined between the clutch dog and one end of the frame.

4. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means for bringing said second piston into action only after the movement of the first piston has begun, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston.

5. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston and brake levers, of a second cylinder and piston, a gripping device connecting said second piston with the brake rigging, and means for tripping said gripping device operated by the first piston, said means comprising a rod connected at one end to the first piston and having at its other end a stop adapted to engage the tail of the gripping device.

6. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, the cylinder having a port in its side wall, of a second cylinder, a pipe extending from its pressure head to the port in the first cylinder, a piston in the second cylinder, and a friction clutch connecting the said second piston with the brake rigging, together with means for tripping said clutch operated by the movement of the first piston.

7. In a fluid pressure brake apparatus the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto and telescoping into the hollow piston, of a second cylinder and piston, means for bringing said piston into action only after the movement of the first piston has begun, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston.

8. In a fluid pressure brake apparatus the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto and telescoping into the hollow piston, of a second cylinder and piston, means for bringing said second piston into action only after the movement of the first piston has begun, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston, the mechanism through which the friction clutch effects the connection of the second piston to the brake rigging comprising a lever carrying the friction clutch pivoted to a fixed fulcrum at one end and to the second piston at the other end, and a rod sliding through said friction clutch and pivoted to one of the brake levers.

9. In a fluid pressure brake apparatus the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, and telescoping into the hollow piston, of a second cylinder and piston, means for bringing said second piston into action only after the movement of the first piston has begun, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston, the mechanism through which the friction clutch effects the connection of the second piston to the brake rigging comprising a lever carrying the friction clutch pivoted to a fixed fulcrum at one end and to the second piston at the other end, and a rod sliding through said friction clutch and pivoted to one of the brake levers and the means for tripping the friction clutch comprising a rod connected to the hollow piston at one end and provided with a stop adapted to engage the tail of the clutch dog.

10. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake rigging, of a second cylinder and piston, means operated by the movement of the first piston admitting fluid under pressure to the second cylinder, a friction clutch connecting said second piston with the brake rigging, and means for tripping said clutch operated by the return movement of the first piston.

11. In a fluid pressure brake apparatus the combination with two cylinders and pistons and brake rigging, of a friction clutch adapted to connect the second piston with the brake rigging at each heavy application of the brakes and means for tripping said friction clutch operated by the return movement of the first piston.

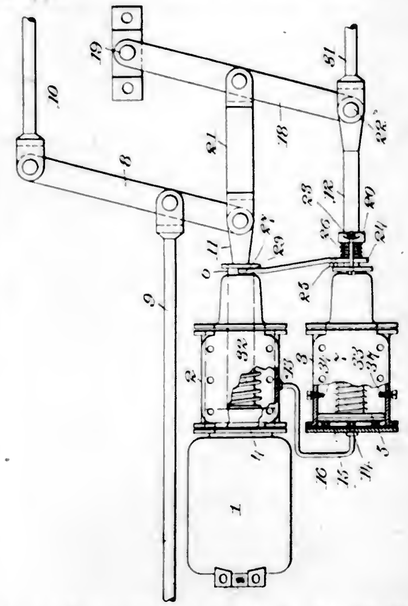
12. In a fluid pressure brake apparatus the combination with two cylindera, their pistons, brake rigging and means actuated by movement of the first piston to admit fluid under pressure into the second cylinder, of a clutch connecting the second piston to the brake rigging on the out stroke of said piston, and means for tripping said clutch operated by the return movement of the first piston.

13. In a fluid pressure brake apparatus the combination with the usual cylinder, piston and brake levers, of a second cylinder and piston, an adjustable gripping device connecting said second piston with the brake rigging, and means for setting said gripping device operated by the first piston.

852,527. FLUID-PRESSURE BRAKE. WILLIAM H. SAUVAGE, New York, N. Y., assignor to Sauvage Safety Brake Company, a Corporation of New Jersey. Filed Nov. 21, 1906. Serial No. 344,439.

Claim.—1. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, of a second cylinder, piston with hollow piston rod and push rod also connected to the brake rigging, a gripping device mounted on the second piston rod and normally preventing the movement of the second push rod into the hollow piston rod but permitting it to be withdrawn therefrom, and means for tripping said gripping device actuated by the first piston, said gripping device comprising a perforated friction dog encircling the second push rod, fulcrumed on the second piston and having an extension engaged by the first piston.

2. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, of a second cylinder, piston with hollow piston rod and push rod also connected to the brake rigging, a gripping device mounted on the second piston rod and normally preventing the movement of the second push rod into the hollow piston rod but permitting it to be withdrawn therefrom, and means for tripping said gripping device actuated by the first piston, said gripping device comprising a perforated friction dog encircling the second push rod, fulcrumed on the second piston and having an extension engaged by the first piston.



3. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, of a second cylinder, piston with hollow piston rod and push rod also connected to the brake rigging, a gripping device mounted on the second piston rod and normally preventing the movement of the second push rod into the hollow piston rod but permitting it to be withdrawn therefrom, and means for tripping said gripping device actuated by the first piston, said gripping device comprising a perforated friction dog encircling the second push rod, fulcrumed on the second piston and having an extension engaged by the first piston, together with a yoke carried by said second piston and a spiral spring surrounding the push rod and confined between the yoke and the clutch dog.

4. In a fluid pressure brake apparatus, the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, the push rod telescoping into the hollow piston rod, in combination with a second cylinder, piston with hollow piston rod and push rod telescoping therein and also connected to the brake rigging by a system of levers, means actuated by the movement of the first piston admitting air to the second cylinder, a clutch mounted on the second piston rod, and engaging the second push rod, and means for tripping said clutch operated by the first piston.

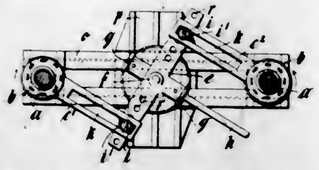
5. In a fluid pressure brake apparatus, the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, the push rod telescoping into

the hollow piston rod, in combination with a second cylinder, piston with hollow piston rod and push rod telescoping therein and also connected to the brake rigging by a system of levers, means actuated by the movement of the first piston admitting air to the second cylinder, a clutch mounted on the second piston rod, and engaging the second push rod, and means for tripping said clutch operated by the first piston, said means comprising an extension of the clutch dog engaged by a projection on the first hollow piston-rod.

6. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, of a second cylinder, piston with hollow piston rod and push rod also connected to the brake rigging, a gripping device mounted on the second piston rod and normally preventing the movement of the second push rod into the hollow piston rod, but permitting it to be withdrawn therefrom, and means for tripping said gripping device actuated by the first piston, together with means for limiting the outward stroke of the second piston at a point beyond which a re-engagement between the gripping and tripping devices might occur.

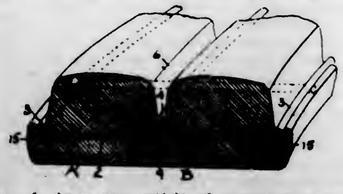
7. In a fluid pressure brake apparatus, the combination with the usual cylinder, piston having a hollow piston rod, brake rigging and push rod connected thereto, of a second cylinder, piston with hollow piston rod and push rod also connected to the brake rigging, a gripping device mounted on the second piston rod and normally preventing the movement of the second push rod into the hollow piston rod but permitting it to be withdrawn therefrom, and means for tripping said gripping device actuated by the first piston, said gripping device comprising a perforated friction dog encircling the second push rod, fulcrumed on the second piston and having an extension engaged by the first piston, together with a stop limiting the movement of the second piston.

852,328. PAWL-PRESS. CARL SCHERF, Saarburg, Germany. Filed Jan. 5, 1907. Serial No. 350,915.



Claim.—A pawl press comprising two screw spindles, having respectively right and left hand threads, a nut on each spindle, a cross head guided by the said spindles, a follower on said cross head, a double-armed lever pivoted at the center of said cross-head, a lever jointed to each arm of said double-armed lever, and pawls at the free ends of said levers adapted to engage the nuts on the screw spindles so as to alternately screw said nuts down.

852,329. WHEEL-TIRE. JAMES A. SWINEHART, Akron, Ohio. Filed Oct. 25, 1905. Serial No. 284,380.



Claim.—1. As a new article of manufacture and sale, a solid rubber tire having separate circumferential tread portions spaced apart and cross wires embedded within the base of said tire, longitudinal wires engaging over the ends of said cross wires, and means engaging said cross wires at the middle of said tire transversely.

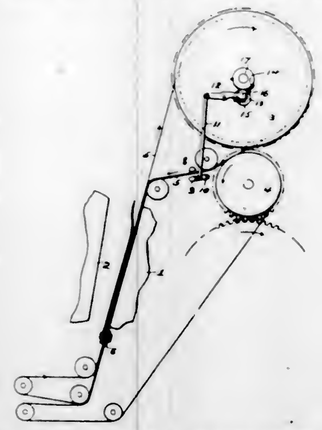
2. As an article of manufacture and sale, a solid rubber tire having separate circumferential tread portions and a groove between said portions, cross wires within the base of said tire, and a circumferential locking wire in the plane of said groove and above said cross wires.

3. A solid rubber tire having a circumferential groove in its periphery and cross wires within its base, in combination with a wheel rim, and a longitudinal locking member adapted to lie within said groove and hold said tire upon said rim.

4. A solid rubber tire having separated tread portions, and cross wires for said tire, in combination with a wheel rim adapted to seat said tire, side locking members for said tire and rim, and a central locking member adapted to lock said tire centrally between the sides of said rim.

5. The combination with a wheel felly and a multiple tread tire mounted thereon, said tire having cross-pins embedded in its base portion, of a fastening wire surrounding said tire and lying between adjacent tread portions thereof.

852,330. PAPER-SHEET-FEEDING MECHANISM FOR PRINTING-PRESSES. JUNIUS E. TUCKER, Memphis, Tenn., assignor of one-half to William S. Brian, Memphis, Tenn. Filed Dec. 14, 1905. Serial No. 291,746.



Claim.—1. Feeding means for printing presses, comprising feeding tapes, operating means for said tapes, and means operated by said operating means for stopping the tapes when the operating means run in the wrong direction.

2. Feeding mechanism for printing presses, comprising feeding tapes, driving means for said tapes, stop mechanism operated by said driving means for arresting the movement of a sheet being fed, during the printing operation, and means coöperating with said stop mechanism and driving means for stopping the movement of the tapes should the driving means run in the wrong direction.

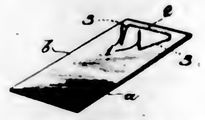
3. In an apparatus of the character described, the combination with tapes for feeding sheets of paper to the platen, of a clamp to engage the tapes and hold them stationary when a sheet of paper is in proper position on the platen, automatic means for operating the clamp at the proper times and means operating the clamp when the machine is run in the wrong direction.

4. In an apparatus of the character described, the combination with a platen, tapes for feeding sheets of paper thereto, and means for stopping the movement of the tapes when a sheet is in proper position on the platen, of adjustable spring clamps above the tapes on the platen having outwardly flared upper ends, and a movable bed plate to engage the spring clamps and hold the sheet while

being printed upon and after printing to prevent blurring of the ink.

5. In an apparatus of the character described, the combination with tapes for feeding sheets of paper to the platen, of a fixed clamping bar at one side of the tapes, a movable clamping bar at the opposite sides of the tapes, a pivoted lever to operate said movable bar, a wheel and a cam on the lever, an operating cam to operate the wheel during the correct running of the machine, and a wheel to operate the cam on the lever and stop the tapes should the machine be run in the wrong direction.

852,531. PIN-TICKET. GUSTAF A. WALLIN, New York, N. Y., assignor to A. Kimball Company, New York, N. Y., a Corporation of New York. Filed Nov. 2, 1906. Serial No. 341,677.



Claim.—1. A pin ticket comprising a two-ply blank, and a staple having its prongs passed through one of the plies, nearer one end thereof, normally at right angles to its face, and having an elongated head held between and extended longitudinally of the plies toward the nearer end of the same, the length of the head enabling the inclosing portion of the blank to be bent transversely adjacent the prongs and turned over the edge and against one face of a fabric to protect the staple prongs passed therethrough from the opposite face and turned down adjacent the edge of the fabric.

2. A pin ticket comprising a blank composed of two united plies, and a staple having its prongs passed through one of the plies nearer one end of the blank and normally substantially at right angles to its face and having an elongated head extended longitudinally toward the nearer end of the blank and held in place between the plies, the length of the head enabling the inclosing portion of the blank to be bent transversely adjacent the prongs and turned over the edge of a fabric to protect the prongs when extended through the fabric adjacent its edge from one face and turned down upon the opposite face.

3. A pin ticket comprising an oblong rectangular blank folded transversely at the center to form two like plies secured together, and a staple having its prongs passed through one of the plies near one end normally at right angles to its face and provided with an elongated head interposed between and held by the plies, the length of the head between the prongs and the nearer end of the blank enabling the inclosing portion of the blank to be bent over the edge of a fabric to conceal the prongs passed therethrough adjacent its edge from the opposite side, and turned down, the head retaining the bend and maintaining the ticket in place on the fabric.

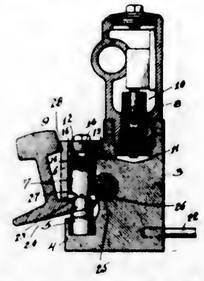
4. A pin ticket comprising a blank having a fastening pin nearer one end and projecting from one of its faces, said pin being adapted to pass through a fabric adjacent its edge and be turned down upon the contiguous face of the fabric, and an elongated head forming a part of the pin extended toward the nearer end of the blank, whereby the blank may be bent over the edge of the fabric between the exposed portion of the pin and the nearer end of the blank and maintained bent, completely overlapping and concealing the turned down pin.

5. A pin ticket comprising a blank composed of two united plies, and a staple having its prongs passed through one of the plies near one end of the blank and having an elongated head held in place between the plies and extended longitudinally from the prongs toward the nearer end of the blank, the length of the head enabling the blank between such end and the prongs to be bent over the edge of a fabric and remain bent thereover to overlap and protect the prongs passed through the fabric from its opposite face and adjacent its edge.

6. As an article of manufacture, a pin-ticket comprising an edge-embracing portion, and a display portion of greater length, an elongated wire loop inclosed wholly within the edge-embracing portion of the ticket and of substantially equal length therewith, whereby when such portion is bent transversely between the ends of the loop, the latter will retain the bend, and fastening prongs integral with the loop and at one end thereof, projecting from the face of the ticket, the prongs when passed through a fabric adjacent its edge and turned down upon its contiguous face being wholly covered by the overlying part of the bent edge-embracing portion of the ticket, the longer display portion presenting a flat, plane surface for printing or stamping.

7. A pin ticket comprising a blank having two attached fastening prongs nearer one end thereof and normally projecting at right angles from one of its faces, said blank being adapted to be bent transversely near the prongs, the prongs being adapted to be passed through a fabric adjacent its edge and turned down upon the opposite face of the fabric, and an elongated head connecting the prongs extended therefrom longitudinally toward the nearer end of the blank across the line on which it is bent and attached to the blank, whereby the portion of the blank traversed by the head and immediately adjacent the prongs is given a permanent bend over the edge of the fabric and against the downturned prongs, to completely conceal and protect the latter.

852,532. HYDRAULIC RAIL-BOND COMPRESSOR. JOHN WEEKS, Brooklyn, N. Y., assignor to William M. Dudgeon, executor of Richard Dudgeon, deceased. Filed Jan. 6, 1905. Serial No. 239,831.



Claim.—1. The combination, with an hydraulic rail-bond compressor having a ram-cylinder, a ram and an anvil, of means for engaging the rail at points above, and supporting the device from points below, said ram-cylinder, ram and anvil.

2. In a device of the class described having upper and lower jaws, the combination, with a ram-cylinder and a ram in said upper jaw and an anvil in said lower jaw, of means for supporting the device upon the material operated upon from points below said material, whereby the device itself becomes a lever fulcrumed in its supports for exerting upward pressure through said anvil.

3. In an hydraulic rail-bond compressor, the combination, with a body portion containing the compressing means, of an arm pivoted to said body portion at points below said compressing means and provided with means for engaging the rail at points above said compressing means.

4. In a device of the class described, the combination, with a body portion containing the compressing means, of an arm pivoted to said body portion at points below, and provided with means for engaging the material operated upon at points above, said compressing means, and means for varying the operative length of said arm.

5. In a device of the class described having an upper and a lower jaw, the combination, with a ram-cylinder and a ram in said upper jaw and an anvil in said lower jaw, and means for engaging the material operated upon,

which at the same time serves as a fulcrum for the use of the whole tool-body as a lever to exert reactive pressure against said material through said anvil.

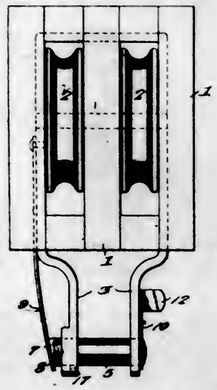
6. In a device of the class described, the combination, with the body portion containing the ram and anvil, of means for engaging the material operated upon, which at the same time serves as a fulcrum for the use of the whole tool-body as a lever to exert reactive pressure against said material through said anvil.

7. In a device of the class described, the combination, with the body portion containing the ram and anvil, of means for engaging the material operated upon, which at the same time serves as a fulcrum for the use of the whole tool-body as a lever to exert reactive pressure against said material through said anvil, and a projecting arm to facilitate such use through the foot or knee of the operator.

8. In an hydraulic rail-bond compressor, the combination, with a body portion containing the anvil, ram-cylinder and a substantially vertically acting ram operating above the base and below the tread of the rail when applied thereto, of a head containing the pump located laterally of and operating parallel to said ram.

9. In an hydraulic rail-bond compressor, the combination, with a body portion containing the compressing means, of a pair of arms pivoted to the lower or bottom portion of said body on opposite sides thereof and adapted to extend over and engage the tread portion of the rail and support the device therefrom.

852,533. AUTOMATIC DAVIT FALL-BLOCK. CHARLES E. WICKS, Norfolk, Va. Filed Jan. 10, 1906. Serial No. 295,495.



Claim.—1. A pulley block provided with a strap having projecting end portions set apart, a coupling pin mounted to slide through openings in said projecting ends of the strap, a latch for holding said coupling pin in coupling position, and a spring engaging said pin for withdrawing the same from coupling position when released by said latch.

2. The combination with a pulley block, of a coupling pin carried thereby, a pin drawing spring on the block connected with the pin and adapted to withdraw the same from coupling position, and a movable latch for holding the coupling pin in coupling position.

3. The combination of a pulley block, a strap surrounding the pulleys and incased in the block and having projecting ends which are deflected toward each other and then extended straight to their extremities which are left separated, a coupling pin slidable through said strap ends, and means for automatically moving said coupling pin out of coupling position.

4. The combination with a pulley block, of a coupling pin carried thereby, and a pin drawing spring on the block connected with the pin and adapted to withdraw the same from coupling position when relieved of weight.

852,534. MOLD FOR HOLLOW-WALL CONSTRUCTION. DWIGHT O. WILSON, Yankton, S. D. Filed Mar. 27, 1907. Serial No. 364,837.



Claim.—1. In a mold for hollow wall construction, the combination of an outer frame, an inner frame jointed at intervals, having projections overlapping the joints, hooks pivotally secured to the inner frames opposite the projections and extending beyond the joints, strips pivotally secured at right angles to the hooks and extending above the frames, spool-shaped devices extending across the frames temporarily supported in said hooks and adapted to permanently reinforce the walls, bolts for adjustment in the ends of the axes of said spools, adjustable supports for the corners of said inner frames, and removable gages at intervals between said inner frames to resist the inward pressure of the walls, substantially as described.

2. In a mold for hollow wall construction, the combination of an outer frame, an inner frame jointed at intervals and means for securing said joints, adjustable supports for the corners of the inner walls, with supports to resist the inward pressure of the permanent walls and consisting of blocks having longitudinal grooves secured to the inner walls of said inner frames, slides for adjustment to said grooves, pivotally secured to a central block, and means for turning said block and removing said slides when the walls are completed, substantially as described.

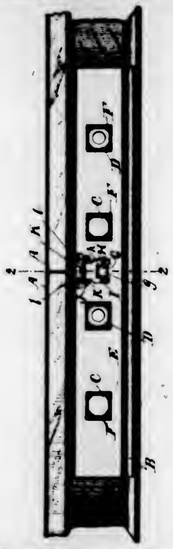
3. In a mold for hollow wall construction, the combination of an outer frame, an inner frame jointed at intervals and means for securing said joints, adjustable supports for the corners of said inner walls and supports at intervals between said inner frames to resist the inward pressure of the permanent walls while in process of construction, with supports for said frames during the process of hardening the walls and consisting of a yoke extending over the top and sides of said outer frames, beams extending vertically through said yoke between said inner frames and means secured to said beams for pressing outwardly against said inner frames, substantially as described.

852,535. NUT-LOCK. AUGUST ANDERSON, Birmingham, Ala. Filed Mar. 5, 1907. Serial No. 360,637.

Claim.—1. In a nut lock, the combination of a fish-plate, a plurality of bolts extending therethrough, nuts mounted on the bolts, a bar engaging the nuts to hold the same against rotation, a bolt extending through the nut-engaging bar and turned into threaded engagement with the fish-plate and having an angular head in which is an aperture, a plate connected in a hinged manner with the nut-engaging bar and bifurcated to receive the angular head of the bolt, and a cotter pin extending through the aperture in the angular head of the bolt and arranged at the outer side of the said plate.

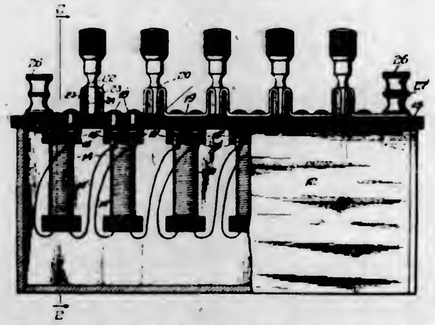
2. In a nut lock, the combination of a fish-plate, a plurality of bolts extending therethrough, nuts mounted on the bolts, a bar engaging the nuts to hold the same against rotation, a bolt extending through the nut-engaging bar and turned into threaded engagement with the fish-plate and having an angular head in which is an aperture, a bracket fixed to and extending laterally from the nut-engaging bar and having ears at its ends in which are apertures, a bolt extending through said apertures and carried by said ears, a plate having an eye receiving the last mentioned bolt and also having a bifurcation to receive the angular head of the second mentioned bolt, and a cotter pin extending through the aperture in said head and arranged at the outer side of said plate.

3. A device for the purpose described, comprising a nut-engaging bar, a bolt arranged to turn in the bar and connect the same to another element and having an angular head and also having an aperture in said head, a plate hinged to the nut-engaging bar and bifurcated to receive



the head of the bolt, and a cotter pin extending through the aperture in the bolt-head and arranged at the outer side of the hinged plate.

852,536. RESISTANCE-BOX FOR ELECTRICAL MEASUREMENTS. FRANK ARONSON, Evanston, Ill. Filed Mar. 11, 1907. Serial No. 361,741.



Claim.—1. In a resistance box for electrical measurements, the combination of an insulating plate, a plurality of coils thereon, a plurality of contact plates on the insulating plate and connected in circuit with the coils, said contact plates being arranged in a row and having their ends separated and bent to form sockets therebetween, and plugs to fit in said sockets.

2. In a resistance box for electrical measurements, the combination of an insulating plate, a plurality of coils thereon, a plurality of contact plates on the insulating plate and connected in circuit with the coils, said contact plates being arranged in a row and having their ends separated and bent to form yielding contacts with sockets therebetween, and plugs to fit in said sockets.

3. In a resistance box for electrical measurements, the combination of an insulating plate, a plurality of coils thereon, a plurality of contact plates on the insulating plate and connected in circuit with the coils, said contact plates being arranged in a row with their ends separated and bent upward and downward to form at each end of the plate a yielding support and a yielding contact, there being a socket between the contacts at the ends of adjacent plates, and plugs to fit in said sockets.

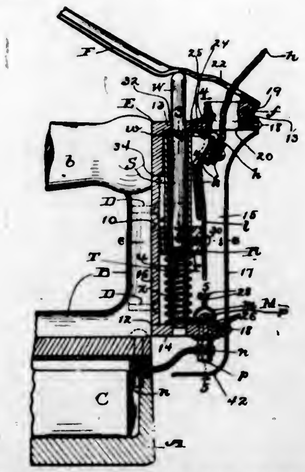
4. In a resistance box for electrical measurements, the combination of an insulating plate, a plurality of coils thereon, a plurality of contact plates on the insulating plate and connected in circuit with the coils, said contact plates being arranged in a row with their ends separated and bent upward to form supports and downward on said supports to form contacts, there being grooves in said contacts forming a socket between the contacts at the adjacent ends of each pair of plates, and plugs to fit in said sockets.

5. In a resistance box for electrical measurements, the combination of an insulating plate, a plurality of coils thereon, a plurality of contact plates on the insulating plate and connected in circuit with the coils, said contact plates being arranged in a row with their ends separated and each formed of a single strip of metal plate having its ends bent upward to form supports and downward on said supports and at an inclination thereto to form contacts, there being grooves in said contacts forming a socket between the contacts at the adjacent ends of each pair of plates, and plugs to fit in said sockets.

6. In a resistance box for electrical measurements, the combination of an insulating plate, a plurality of contact plates thereon, a plurality of suspending plates on the insulating plate, and a plurality of coils suspended from said suspending plates and connected in circuit with said contact plates.

7. In a resistance box for electrical measurements, the combination of an insulating plate, a plurality of contact plates thereon, a plurality of coils connected in circuit with said contact plates, the heads of said coils being provided with peripheral grooves, a plurality of suspending plates on said insulating plate, and means on said suspending plates to enter said grooves and fasten the coils to the suspending plates.

852,537. CIRCUIT-CONTROLLING MECHANISM FOR ELECTRICALLY-HEATED TOOLS. WILLIAM J. BARR, Cleveland, Ohio. Filed Apr. 19, 1906. Serial No. 312,685.



Claim.—1. The combination, with the body of a sad-iron; a handle attached to the body, and electroheating resistance within the body, of an interiorly chambered casing rigid with the handle, with the interior chamber of the casing having a top wall, a bottom, two opposite walls spaced laterally of the sad-iron, an upright wall arranged

between the two laterally spaced walls and overlapping the adjacent portion of the handle, with the said upright walls, bottom and top wall formed of a single casting, said chamber having a sheet metal wall arranged opposite and a suitable distance from the handle-overlapping wall and removably secured to adjacent portions of the casing; suitably supported separated contacts arranged within the aforesaid chamber and adapted to participate in the formation of an electric circuit comprising the aforesaid resistance, and a suitably supported circuit-closer normally arranged in an inoperative position but movable to establish electrical connection between the contacts.

2. The combination, with the body of a sad-iron, and a handle attached to the body, of an interiorly chambered casing arranged at one end of and rigid with the handle, with the interior chamber of the casing having a top wall, a bottom, two opposite upright walls spaced laterally of the sad-iron, an upright wall arranged between the two laterally spaced walls and overlapping and secured to the aforesaid end of the handle, with the said upright walls, bottom and top wall formed of a single piece, said chamber also having a wall arranged opposite and a suitable distance from the handle-overlapping wall and removably secured to adjacent portions of the casing, and means for establishing an electric circuit which comprises an electroheating resistance within the body of the sad-iron, an electric source, suitably supported separated contacts arranged within the aforesaid chamber, and a suitably supported circuit-closer normally arranged in an inoperative position but movable to establish electrical connection between the contacts.

3. The combination, with the body of a sad-iron; a handle attached to the body, and the electroheating resistance of the sad-iron, of a casing forming a chamber and arranged at one end of and rigid with the handle; separated contacts arranged within the chamber of and supported but insulated from the casing, which contacts are adapted to participate in the formation of an electric circuit comprising the aforesaid resistance; a circuit-closer for establishing electrical connection between the contacts, which circuit-closer is normally arranged in an inoperative position but movable into its circuit-closing or operative position, and means within the aforesaid chamber for locking the circuit-closer upon the actuation of the circuit-closer into its operative position.

4. The combination, with the body of a sad-iron; a handle attached to the body, and the electroheating resistance of the sad-iron, of a casing forming a chamber and extending up and down one end of and rigid with the handle; a circuit-closer contained within the chamber and adapted to close an electric circuit comprising the aforesaid resistance, which circuit-closer is normally in an inoperative position but movable into its circuit-closing and operative position; means whereby the circuit-closer is locked upon the actuation of the circuit-closer into an operative position, and means whereby the said locking means is rendered inoperative during the actuating of the circuit-closer from its operative position into its normal position.

5. The combination, with the body of a sad-iron; a handle attached to the body, and an electroheating resistance within the body, of a circuit-closer arranged externally of the handle and adapted to close an electric circuit comprising the aforesaid resistance, which circuit-closer is normally in an inoperative position but movable into its circuit-closing and operative position; means whereby the circuit-closer is locked upon the actuation of the circuit-closer into an operative position, and means whereby the said locking means is rendered inoperative during the actuating of the circuit-closer from its operative position into its normal position.

6. The combination, with the body of a sad-iron, a handle attached to the body, and the electroheating resistance of the sad-iron, of a casing forming a chamber at one end of the handle; a circuit-closer contained and movable vertically within the said chamber and adapted to close an electric circuit comprising the aforesaid resistance, which circuit-closer is normally in its upper and inoperative position; means acting to retain the circuit-closer in its normal position, and means for actuating the circuit-closer downwardly into an operative position.

7. The combination, with the body of a sad-iron; a handle attached to the body, and the electroheating resistance of the sad-iron, of a vertically movable circuit-closer arranged externally of but borne by the handle and adapted to close an electric circuit comprising the aforesaid resistance, which circuit-closer is normally in its upper and inoperative position; means whereby the circuit-closer is locked upon the actuation of the circuit-closer downwardly into an operative position, and means whereby the said locking means is rendered inoperative during the actuating of the circuit-closer from its lower into its upper position.

8. The combination, with the body of a sad-iron, a handle attached to the body, and the electroheating resistance of the sad-iron, of a casing forming a chamber at one end of the handle, which casing is rigid with the sad-iron, a circuit-closer arranged and movable within the said chamber and normally in its inoperative position, which circuit-closer is adapted to close an electric circuit comprising the aforesaid resistance, a lever fulcrumed to the said casing, and means whereby motion is transmitted to the circuit-closer from the lever to actuate the circuit-closer into its circuit-closing and operative position.

9. The combination, with the body of a sad-iron, a handle having a grip and attached to the body, and the electroheating resistance of the sad-iron, of a casing forming a chamber at one end of the handle, which casing is rigid with the sad-iron, a circuit-closer arranged and movable within the said chamber and normally in its inoperative position, which circuit-closer is adapted to close an electric circuit comprising the aforesaid resistance, a lever fulcrumed to the upper end of the said casing and extending from the casing to and longitudinally of the grip of the handle, and means whereby motion is transmitted to the circuit-closer from the lever to actuate the circuit-closer into its circuit-closing and operative position during the swinging of the lever toward the grip of the handle in grasping the lever and grip.

10. In circuit-controlling mechanism, the combination, with separated contacts adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position but movable into a circuit-closing and operative position, of an insulating block bearing the circuit-closing means and provided with a hole extending through the block; a sleeve extending into the said hole and operatively connected with the block to render it capable of actuating the block in the direction required to render the circuit-closing means operative; a plunger extending into and movable endwise of the sleeve; means acting to retain the plunger in its normal position, and means whereby motion is transmitted from the plunger to the sleeve to actuate the circuit-closing means into an operative position.

11. In circuit-controlling mechanism, the combination, with a casing forming a chamber; a suitably supported lever; separated contacts arranged within the chamber and supported but insulated from the casing, which contacts are adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position but movable into a circuit-closing and operative position, of an insulating block bearing the circuit-closing means; a sleeve operatively connected with the block to render it capable of actuating the block in the direction required to render the circuit-closing means operative; a plunger extending into and movable endwise of the sleeve, which plunger is arranged to be actuated by the aforesaid lever in the direction required to actuate the sleeve; means acting to retain the plunger in its normal position; means acting to retain the sleeve and connected circuit-closing means in their normal position, and means for transmitting motion from the plunger to the sleeve to bring the circuit-closing means into an operative position.

12. In circuit-controlling mechanism, the combination, of a casing forming a chamber; a lever fulcrumed to the casing; separated suitably supported contacts arranged within the chamber and adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position but movable into a circuit-closing and operative position; a plunger arranged to be actuated by the lever in one direction; means acting to retain the plunger in its normal position, and means whereby the actuation of the plunger by the aforesaid lever results in the movement of the circuit-closing means into an operative position.

13. In circuit-controlling mechanism, the combination, with a casing forming a chamber; a lever fulcrumed to the upper end of the casing; suitably supported vertically spaced contacts within the chamber and adapted to participate in the formation of an electric circuit, of circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position but movable into a circuit-closing and operative position; an upright plunger arranged to be actuated by the aforesaid lever in one direction; means acting to retain the plunger in its normal position, and means whereby actuation of the plunger by the lever results in the actuation of the circuit-closing means into an operative position.

14. In circuit-controlling mechanism, the combination, with suitably supported separated contacts adapted to participate in the formation of an electric circuit, and circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, of an insulating block bearing the circuit-closing means and provided with a screw-threaded hole extending through the block; an externally screw-threaded sleeve screwed into the block; a plunger extending into and movable endwise of the sleeve; means acting to retain the sleeve and connected block and circuit-closing means in their normal position, and means for transmitting motion from the plunger to the sleeve to actuate the circuit-closing means into an operative position.

15. In circuit-controlling mechanism, the combination, with suitably supported separated contacts adapted to participate in the formation of an electric circuit, and circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, of an insulating block bearing the circuit-closing means; a sleeve operatively connected with the block to render the circuit-closing means capable of being rendered operative; a plunger extending into and movable endwise of the sleeve and provided with means arranged to actuate the sleeve in the direction required to move the circuit-closing means into a circuit-closing and operative position; means acting to retain the sleeve and connected block and circuit-closing means in their normal position, and means acting to retain the plunger into its normal position.

16. In circuit-controlling mechanism, the combination, with suitably supported vertically spaced contacts adapted to participate in the formation of an electric circuit, and circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, of a suitably supported vertically movable insulating block bearing the circuit-closing means; means acting to retain the block in position holding the circuit-closing means in an inoperative position; an upright plunger; means whereby motion is transmitted to the block by the actuation of the plunger vertically in one direction.

17. In circuit-controlling mechanism, the combination, with a casing forming a chamber; vertically spaced insulated contacts arranged within the chamber and adapted to participate in the formation of an electric circuit, and circuit-closing means arranged within the chamber and adapted to establish electrical connection between the contacts and normally in an inoperative position; means acting to retain the circuit-closing means in its normal position; a plunger extending from above the chamber downwardly into the chamber; means acting to retain the plunger in its upper and normal position, and means whereby the downward actuation of the plunger results in the movement of the circuit-closing means into an operative position.

18. In circuit-controlling mechanism, the combination, with vertically spaced contacts adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, and an insulating block bearing the circuit-closing means, of a sleeve secured to the block; a plunger extending into and movable endwise of the sleeve and provided with means arranged to actuate the sleeve in the direction required to move the circuit-closing means into a circuit-closing and operative position; a spiral spring acting to retain the plunger in its normal position, and a spiral spring acting to retain the sleeve and connected block and circuit-closing means in their normal position.

19. In circuit-controlling mechanism, the combination, with suitably spaced contacts adapted to participate in the formation of an electric circuit, and circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, of an insulating block bearing the circuit-closing means and provided with a hole extending vertically through the block; a sleeve extending into the said hole and rigid with the block; a plunger extending into and movable endwise of the sleeve and provided with means arranged to actuate the sleeve endwise in the direction and to the extent required to actuate the circuit-closing means into an operative position; a spiral spring arranged at one end of the plunger and acting to retain the plunger in its normal position; a suitably supported casing extending around the said spring and into the sleeve, and a spring acting to retain the sleeve and connected block and circuit-closing means in their normal position.

20. In circuit-controlling mechanism, the combination, with vertically spaced suitably supported contacts adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, and an insulating block bearing the circuit-closing means, of an upright plunger arranged to be lowered; a spiral spring suitably confined in under the plunger and acting to retain the plunger in its upper position, and means whereby the downward movement of the plunger results in the actuation of the circuit-closing means into an operative position.

21. In circuit-controlling mechanism, the combination with a casing forming a chamber, with the top wall of the chamber provided with a hole 20; suitably supported vertically spaced contacts arranged in the chamber and adapted to participate in the formation of an electric circuit, and circuit-closing means normally in an inoperative position but movable into a circuit-closing position, of a plunger extending into the chamber from above the chamber; means acting to retain the plunger in its upper and normal position; means whereby the downward actuation of the plunger results in the movement of the circuit-closing means into a circuit-closing position, and a lever arranged above and fulcrumed to the aforesaid casing, which lever extends over the upper end of the plunger and has a hole 22 arranged over the hole in the aforesaid wall of the chamber.

22. In circuit-closing mechanism, the combination, with a casing forming a chamber; suitably supported vertically spaced contacts arranged within the chamber and adapted to participate in the formation of an electric circuit, and circuit-closing means adapted to establish electrical connection between but normally disengaged from the contacts, of a suitably supported vertically movable sleeve arranged within the chamber adjacent one of the upright walls of the chamber; means whereby the downward movement of the sleeve results in actuating the circuit-closing means into a circuit-closing position, and means acting to retain the circuit-closing means in its normal position, and the aforesaid wall of the chamber extending around the adjacent portion of the sleeve so as to afford lateral bearing to the sleeve.

23. In circuit-controlling mechanism, the combination, with vertically spaced suitably supported contacts adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative

position, of an insulating block bearing the circuit-closing means and normally arranged to be lowered, of an upright sleeve operatively connected with the block to lower the block, which sleeve is provided in its upper extremity with two recesses arranged at opposite sides respectively of the sleeve; means acting to retain the block and connected sleeve in their upper and normal position; a plunger extending into the sleeve from above and normally arranged to be lowered; means acting to retain the plunger in its upper and normal position, and a pin extending through the plunger and engaging the aforesaid recesses.

24. In circuit-closing mechanism, the combination, with suitably supported separated contacts adapted to participate in the formation of an electric circuit, and circuit-closing means adapted to establish electrical connection between but normally disengaged from the contacts, of a suitably supported vertically movable sleeve operatively connected with the circuit-closing means to actuate the latter into a circuit-closing and operative position, which sleeve is provided in its upper edge with a recess; an endwise movable plunger extending into the sleeve; a pin extending laterally through the plunger and engaging the aforesaid recess, and a stationary member arranged at one side of the pin at both ends of the pin and coöperating with the pin in preventing turning of the sleeve and plunger.

25. In circuit-controlling mechanism, the combination, with vertically spaced suitably supported contacts adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, and an insulating block bearing the circuit-closing means and normally arranged to be lowered, of an upright sleeve operatively connected with the block to lower the block, which sleeve is provided in its upper extremity with two recesses arranged at opposite sides respectively of the sleeve and has a laterally projecting tooth externally and a suitable distance below the upper end of the sleeve; means acting to retain the sleeve in its upper and normal position; a plunger extending into the sleeve from above and arranged to be lowered; means acting to retain the plunger in its upper and normal position; a pin extending through the plunger and through the aforesaid recesses; a pivotally supported latch having a notch and normally overlapping an end surface of the said pin in the normal position of the plunger and arranged to swing toward the sleeve upon being disengaged by the pin during the downward movement of the plunger, and means acting to swing the said latch toward the sleeve, all arranged and operating substantially as and for the purpose set forth.

26. In circuit-controlling mechanism, the combination, with vertically spaced suitably supported contacts adapted to participate in the formation of an electric circuit, of circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position; an insulating block bearing the circuit-closing means and normally arranged to be lowered; means for actuating the block downwardly; means acting to retain the block in its upper and normal position, and means for limiting upward movement of the block.

27. In circuit-controlling mechanism, the combination, with vertically spaced contacts adapted to participate in the formation of an electric circuit; circuit-closing means adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, and an insulating block bearing the circuit-closing means and normally arranged to be lowered, of an upright plunger normally arranged to be lowered; means whereby a downward actuation of the plunger results in the lowering of the block; means acting to retain the plunger in its upper and normal position, and means for limiting upward movement of the plunger.

28. In circuit-controlling mechanism, the combination, with vertically supported contacts adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, and a block bearing the circuit-closing means and normally arranged to be lowered, of an upright sleeve operatively connected with the block to lower the block and having a laterally projecting tooth externally a suitable distance below the upper end of the sleeve; means acting to retain the sleeve and connected block in their upper and normal position; a pivotally supported latch arranged to swing toward and from the sleeve, which latch has a toothed portion arranged to coöperate with the aforesaid sleeve-tooth in locking the sleeve in the operative position of the circuit-closing means; means acting to swing the said latch toward the sleeve; a plunger extending into the sleeve from above and having a laterally projecting member *w* arranged at the upper end of the sleeve in position to lower the sleeve during the downward movement of the plunger and to actuate the latch and render the latter inoperative during the upward movement of the plunger and retain the latch in an inoperative position in the upper and normal position of the plunger and means acting to retain the plunger in its upper and normal position.

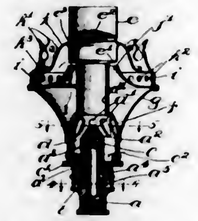
29. In circuit-controlling mechanism, the combination, with separated contacts adapted to participate in the formation of an electric circuit, and circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, of an endwise movable sleeve operatively connected with the circuit-closing means to actuate the latter into an operative position, which sleeve is insulated from the circuit-closing means and has a laterally projecting tooth externally; means acting to retain the sleeve and connected circuit-closing means in their normal position; a pivotally supported latch arranged to swing toward and from the sleeve, which latch has a notch arranged to coöperate with the aforesaid tooth in locking the sleeve in an operative position of the circuit-closing means; means acting to swing the said latch toward the sleeve; a plunger extending into the sleeve and provided with means arranged to render the latch inoperative during the movement of the plunger into its normal position and to retain the latch in an inoperative position in the normal position of the plunger, and means acting to retain the plunger in its normal position.

30. In circuit-controlling means, the combination, with separated contacts adapted to participate in the formation of an electric circuit; circuit-closing means adapted to establish electrical connection between the contacts and normally in an inoperative position, and a movable block bearing the circuit-closing means, of a sleeve operatively connected with the block to actuate the circuit-closing means into an operative position and having a laterally projecting tooth externally; a suitably supported latch arranged to move toward and from the sleeve, which latch has a toothed portion arranged to coöperate with the aforesaid tooth in locking the sleeve in an operative position of the circuit-closing means; means acting to move the latch toward the sleeve, and a plunger extending into the sleeve and operatively connected with the sleeve to actuate the latter to render the circuit-closing means operative and provided with means arranged to render the latch inoperative during the movement of the plunger into its normal position and to retain the latch in an inoperative position in the normal position of the plunger.

31. In circuit-closing mechanism, the combination, of a casing forming a chamber; two laterally spaced contacts arranged within the upper portion and supported but insulated from the casing and adapted to participate in the formation of an electric circuit; two laterally spaced contacts arranged within the lower portion of the aforesaid chamber and insulated from the casing and adapted to participate in the formation of the said electric circuit; a vertically movable insulating block arranged and movable within the chamber between the upper and lower contacts; circuit-closing means borne by the said block and comprising two contact-fingers adapted to electrically connect the different upper contacts respectively with the different lower contacts respectively during the downward movement of the block; block-lowering means, and means for actuating the block from its lower into its upper position.

32. In circuit-controlling mechanism, the combination, of a casing forming a chamber; two suitably supported laterally spaced contacts arranged within the upper portion of the chamber and insulated from the casing and adapted to participate in the formation of an electric circuit; two laterally spaced contacts arranged within the lower portion of the chamber and insulated from the casing and adapted to participate in the formation of the said electric circuit, and circuit-closing means comprising two suitably supported movable contact-fingers insulated from each other and adapted to electrically connect the different upper contacts respectively with the different lower contacts respectively during the downward movement of the said contact-fingers; means for actuating the said contact-fingers simultaneously to close the circuit, and means acting to retain the said contact-fingers in their normal position.

852,538. BURNER FOR GAS-LAMPS. ELMER E. BILLOW, Chicago, Ill. Filed Feb. 25, 1905. Serial No. 247,332.



Claim.—1. In a gas burner, a vertically adjustable cap having an aperture therein for the discharge of gas; a tubular stationary member lying partially within said cap adapted to communicate with the source of gas supply, said stationary member discharging into said cap and having a pin for regulating the flow of gas through the aperture in said cap, and said stationary member having an externally threaded portion for engaging a lock nut; an internally threaded ring upon said stationary member of greater diameter than the externally threaded portion thereof and adapted to receive an externally threaded portion of said cap; and a lock nut adapted to screw upon the externally threaded portion of said cap for locking said cap at a predetermined point on said stationary member, said nut being of smaller diameter than the internally threaded portion of said stationary member for the purpose described.

2. In a gas burner, a burner pipe, a mixing chamber below the same; an imperforate basket extending upward from said mixing chamber; and flaring upwardly and outwardly; and a diaphragm extending from the upper portion of the basket to a point near said burner pipe and above said mixing chamber for preventing air from entering said basket except at a point near said burner pipe.

3. In a gas burner, a burner pipe adapted to receive gas and air at its lower extremity; a basket for preventing air from passing directly to the bottom of said burner pipe; a diaphragm closing the top of said basket except at a point near the burner pipe above the bottom thereof; a second diaphragm far enough above the first to leave a passage between them, said upper diaphragm making close contact with said burner pipe, and there being passages at points remote from the burner pipe for admitting air to the chamber formed between said diaphragms.

4. In a gas burner, a burner pipe, adapted to receive gas and air at its lower extremity; a basket for preventing air from passing directly to the bottom of said pipe; a diaphragm closing the top of said basket except at a point near the burner pipe above the bottom thereof; a second diaphragm far enough above the first to leave a passage between them, said upper diaphragm making close contact with said burner pipe; and a shutter for controlling the admission of air to the passage between said diaphragms.

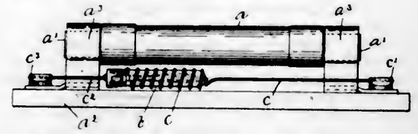
5. In a gas burner, a burner pipe, adapted to receive gas and air at its lower extremity; a basket for preventing air from passing directly to the bottom of said burner pipe; a diaphragm closing the top of said basket except at a point near the burner pipe above the bottom thereof; a second diaphragm far enough above the first to leave a passage between them, said upper diaphragm making close contact with said burner pipe, and said diaphragm being adapted to have air admitted into the passage between them, from a point remote from the burner pipe, and said upper diaphragm being detachable substantially as described.

6. In a gas burner, the combination of a burner pipe adapted to have air and gas introduced at its lower portion, said pipe having its lower portion of reduced diameter whereby an annular shoulder is formed; a basket for preventing air from passing directly to the bottom of said burner pipe; a diaphragm closing the top of the basket except for an opening in said diaphragm adjacent to the shoulder in said burner pipe; a second diaphragm located a short distance above the first whereby an air passage is formed between them; means for regulating the admission of air to said passage; and an annular shoulder upon said burner pipe for detachably supporting said upper diaphragm.

7. In a gas burner, the combination of a stationary member having a tubular extension through which gas is supplied; a cap adapted to inclose said tubular extension and having a portion adapted to controllably stop the aperture in said cap and said cap having an exterior screw thread at its lower extremity; a threaded lock nut screwing upon said tubular extension; and an interiorly threaded ring formed integral with said stationary member and having sufficient diameter to loosely receive said lock nut and engage the lower threaded extremity of said cap, said cap being adapted to be screwed down onto said lock nut for making gas tight connection between the parts.

8. In a gas burner, the combination of a stationary member having a tubular extension through which gas is supplied; a cap adapted to inclose said tubular extension and having an aperture for delivering gas, said tubular extension having a portion adapted to controllably stop the aperture in said cap; and said cap having an exterior screw thread at its lower extremity; a threaded lock nut screwing upon said tubular extension; an interiorly threaded ring formed integral with said stationary member and having sufficient diameter to loosely receive said lock nut and engage the lower threaded extremity of said pipe, said cap being adapted to be screwed down onto said lock nut for making gas tight connection between the parts, and posts integral with said ring and stationary member for supporting said ring and also affording access to said lock nut.

852,539. INDICATING DEVICE FOR ELECTRIC FUSES OR CUT-OUTS. LEONARD B. BUCHANAN, Woburn, Mass. Filed Dec. 17, 1906. Serial No. 348,328.



Claim.—1. The combination with an electric fuse or cut-out, of an electric lamp included in a high resistance shunt circuit around said fuse or cut-out, substantially as described.

2. The combination with an electric fuse or cut-out, of an electric lamp and a resistance-device connected in series, and included in a shunt circuit around the fuse or cut-out, substantially as described.

3. The combination with a base bearing terminals, and an inclosed electric fuse of the cartridge type having its terminals electrically connected with said base terminals, of a high resistance shunt circuit around said fuse which is electrically connected with said base terminals, and is not attached to said fuse terminals, and a permanent indicating-device for said fuse included in said shunt circuit, substantially as described.

4. The combination with a base bearing terminals, an electric fuse or cut-out electrically connected with said terminals, of an electric-lamp and a high resistance shunt circuit for the fuse or cut-out, containing said lamp, which is connected with the terminals on said base, substantially as described.

5. The combination with a base bearing terminals, an electric fuse or cut-out electrically connected with said terminals, of an electric-lamp and a resistance-device, connected in series, in a shunt circuit, which is connected to the terminals on said base, substantially as described.

6. The combination with a base bearing terminals and an inclosed electric fuse of the cartridge type electrically connected with said terminals, of a shunt circuit wire around said fuse, terminals to which the ends of said shunt wire are connected, means for electrically connecting said terminals with the terminals on the base, and a permanent indicating-device for the fuse connected in said shunt circuit wire, substantially as described.

7. The combination with a base bearing terminals, an electric fuse or cut-out electrically connected with said terminals, of an indicating-device for the fuse or cut-out consisting of an electric lamp and a resistance-device, connected in series, and having terminals, and means for connecting said terminals, respectively, with the terminals on said base, substantially as described.

8. The combination with a base bearing terminals and clips adapted to receive and form an electric connection with an inclosed electric fuse of the cartridge type, of an indicating-device for said fuse, entirely separate from said fuse, consisting of a small glass bulb vacuum incandescent lamp and a resistance-device, connected in series, and means for connecting it electrically with the terminals on the base, substantially as described.

9. The combination with a base bearing terminals, and an electric fuse or cut-out electrically connected with said terminals, of an indicating-device for said fuse or cut-out consisting of a small glass bulb vacuum incandescent lamp and a resistance-device, connected in series, and means for connecting them mechanically and electrically with the terminals on the base, substantially as described.

10. The combination with an electric fuse of the cartridge type, of a permanent indicating-device adapted to be repeatedly operated, included in a high resistance shunt circuit around said fuse, substantially as described.

11. The combination with an inclosed electric fuse of the cartridge type, of a permanent indicating-device and a resistance-device, connected in series and included in a shunt circuit around the fuse, substantially as described.

12. The combination with a base bearing terminals and an inclosed electric fuse of the cartridge type, removably supported by and electrically connected with said terminals, of a shunt circuit wire around said fuse, permanently supported independent of said fuse supports, and a permanent indicating-device for the fuse connected in said shunt circuit wire, substantially as described.

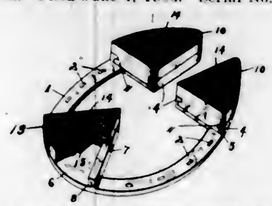
13. The combination with an inclosed electric fuse, fuse supports to which it is removably and electrically connected, of a permanent indicating device for the fuse, and means for electrically connecting said indicating device with said fuse supports, substantially as described.

14. A removable indicator for attachment to electric fuse bases consisting of terminals adapted to be attached to the terminals of the fuse base and a resistance and a permanent indicating-device electrically connected in series to said terminals, the indicating device being adapted to be repeatedly operated by the passage of a current through it, substantially as described.

15. An indicating device for an electric fuse or cut-out consisting of a minature electric lamp and a resistance device, connected in series, and terminals therefor adapted to be connected with the circuit at opposite ends of the fuse or cut-out, substantially as described.

16. An indicating-device for an electric fuse or cut-out consisting of a minature electric lamp and a resistance coil connected in series, having terminal plates at its ends, adapted to be connected with the circuit at opposite ends of the fuse or cut-out, substantially as described.

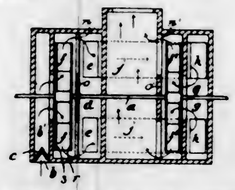
852,540. HORSESHOE. ALBERT A. BUMBAUGH, Fort Wayne, Ind. Filed June 4, 1906. Serial No. 319,989.



Claim.—1. A horse-shoe having inward lateral extensions at the heel and toe portions provided with converging inturned angle-bar flanges upon their opposite sides; detachable calks of rubber or other resilient material adapted for an interlocked engagement with the said flanges, and so arranged upon the said extensions that the said calks will receive all lateral strains thereon at their converging sides and in the direction of their convergence, to prevent displacement thereof in use.

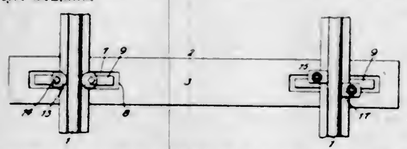
2. In a horse-shoe a shoe plate having inward lateral extensions at the heel and toe portions, provided with angle-bar flanges upon two of their opposite edges; removable calks of rubber or other resilient material adapted for an interlocking engagement with the said flanges; and means for rigidly securing the said calks in position, consisting of a counter sunk screw and a surmounted removable plug of resilient material as described.

852,541. AIR-COMPRESSOR. REGINALD A. COUSANS and LOUIS B. COUSANS, Lincoln, England. Filed Nov. 30, 1903. Serial No. 183,305.



Claim.—An organ blower including in combination a casing, a fan within said casing, and a silencing valve mounted at the inlet to the casing and adapted to prevent the escape of the noise made by the movement of the fan and the air within the casing when the fan is rotating without substantial suction through the inlet.

852,542. RAILWAY-TIE AND FASTENER. FRANCIS M. CROSSLEY, Detroit, Mich. Filed Nov. 7, 1906. Serial No. 342,338.



Claim.—1. A tie consisting of a top rectangular plate portion which is smooth and flat on its upper side and provided with openings near each end, a series of longitudinally and downwardly extending ribs on the lower side of said plate and a series of similar transverse ribs, said longitudinal and transverse ribs together forming pockets on the lower side of the tie to receive the material forming the road bed, and means engaging the openings for securing the rails to the tie.

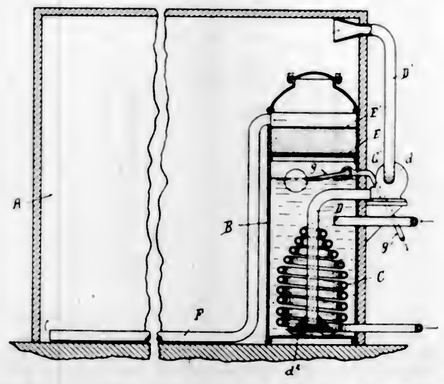
2. A tie consisting of a rectangular plate portion formed with slots near each end extending longitudinally adjacent

to the longitudinal center line of the plate, ribs extending downward from the lower side of the plate and longitudinally thereof adjacent to said slots, transverse ribs on the lower side of the plate forming with the other ribs, pockets on the lower side of the tie, and means extending through the slots and engaging the adjacent ribs to secure the rail to the tie.

3. A tie consisting of a rectangular plate formed with two pairs of oppositely extending longitudinal slots near each end and one end of each pair connected by a transverse slot to form tongues in the plate integral therewith at one end, longitudinal and transverse ribs extending downward from the lower side of said plate and forming pockets, a rib of greater width than the other ribs extending longitudinally along the center of each tongue and forming therewith a T-bar, and means adapted to embrace the T-bars to secure the rails to the tie.

4. A tie consisting of a rectangular plate having a flat upper surface and formed with two pairs of oppositely extending longitudinal slots near each end and one end of each pair connected by a transverse slot to form tongues in the plate integral therewith at the adjacent ends of said tongues, a series of longitudinal ribs extending downward from the lower side of the plate, a series of similar ribs extending transversely of the plate and tapered at each end from the outer longitudinal ribs to the edges of the plate, said ribs together forming rectangular pockets over the lower surface of the tie, hooks adapted to be inserted through the slots and engaged with the ribs, blocks having lips to engage the flange of a rail and provided with openings for the hooks and recesses in their opposite side, and nuts on the hooks within the recesses.

852,543. APPARATUS FOR PURIFYING, COOLING, AND DRYING AIR. HENRY E. DECKEBACH, Cincinnati, Ohio. Filed Jan. 23, 1907. Serial No. 353,607.



Claim.—1. In an air cooling and purifying apparatus the combination of a receptacle holding a solution of a salt which has the property of absorbing moisture from the air, a means for cooling the solution, a perforated shelf located in the receptacle and holding the salt above the solution thereof, a pipe leading into the bottom of the receptacle and connected to the pump, the pump, and a second pipe leading from the top of the room into the pump.

2. In an air cooling and purifying apparatus the combination of a receptacle holding the solution of a salt which has the property of absorbing moisture from the air, a pipe carrying a cooling liquid and coiled so as to leave interstices between the coils and forming a housing situated upon the bottom of the receptacle, an air pipe leading into the housing formed by the coils, a pump connected to the pipe, a perforated shelf located in the receptacle and holding the salt above the solution.

3. In an air-cooling and purifying apparatus the combination of a receptacle holding a solution of calcium chlorid, a means for cooling the solution, a perforated shelf located in the receptacle and holding the salt of calcium chlorid above the solution, an air pump, and a pipe leading from the pump in to the bottom of the receptacle.

4. In an air cooling and purifying apparatus the combination of a receptacle holding a solution of calcium chlorid, a means of cooling the solution, a perforated shelf in the receptacle holding calcium chlorid above the solution thereof, a pump, an air pipe leading from the pump in to the bottom of the receptacle and a drain pipe located in the receptacle below the perforated shelf.

852,544. COMPOUND OF SILVER AND NUCLEINIC ACIDS. OTTO DEGNER, Elberfeld, Germany, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed Apr. 17, 1906. Serial No. 312,175. (Specimens.)

Claim.—1. The herein-described new silver compounds of nucleinic acids containing from 15 to 25 per cent. of silver obtainable by the action of neutral-salt solutions on the insoluble silver compounds of nucleinic acids, which new silver compounds are, when dry and pulverized, yellowish powders soluble in water with a yellowish-brown color, insoluble in ether and benzene, and containing the silver so firmly combined with the nucleinic acid molecule that the aqueous solutions do not give any precipitate on the addition of dilute caustic soda lye or a solution of common salt; and being valuable antiseptics, substantially as described.

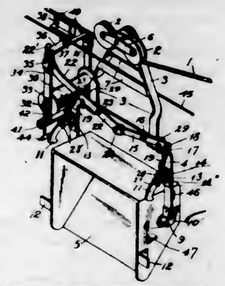
2. The herein described new specific silver compound of nucleinic acid containing about 22 per cent. of silver obtained from yeast, which new silver compound is obtainable by action of a common salt solution on the insoluble silver compound of nucleinic acid from yeast, and is, when dry and pulverized, a yellowish powder, soluble in water with a yellowish-brown color, insoluble in ether and benzene, and containing the silver so firmly combined with the nucleinic acid molecule that the aqueous solution does not give any precipitate on the addition of dilute caustic soda lye or a solution of common salt; and being a valuable antiseptic, substantially as described.

852,545. COMPOUND OF SILVER AND FORMONUCLEINIC ACID. OTTO DEGNER, Elberfeld, Germany, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed Apr. 17, 1906. Serial No. 312,176.

Claim.—1. The herein-described new silver compounds of formonucleinic acids containing from 15 to 25 per cent. of silver obtainable by the action of neutral-salt solutions on the insoluble silver compounds of formonucleinic acids, which new silver compounds are, when dry and pulverized, yellowish powders soluble in water with a yellowish-brown color, insoluble in ether and benzene, and containing the silver so firmly combined with the formonucleinic acid that the aqueous solutions do not give any precipitate on the addition of dilute caustic soda lye or a solution of common salt; and being valuable antiseptics, substantially as described.

2. The herein-described new specific silver compound of formonucleinic acid from yeast containing about 22 per cent. of silver, obtainable by the action of a common salt solution on the insoluble silver compound of formonucleinic acid from yeast, which new silver compound is, when dry and pulverized, a yellowish powder soluble in water with a yellowish-brown color, insoluble in ether and benzene, and containing the silver so firmly combined with the formonucleinic acid molecule that the aqueous solution does not give any precipitate on the addition of dilute caustic soda lye or a solution of common salt; and being a valuable antiseptic, substantially as described.

852,546. AUTOMATIC DUMPING MECHANISM FOR AERIAL-TRAMWAY BUCKETS. HIRAM G. FERRIS, Leavenworth, Kans. Filed Mar. 30, 1906. Serial No. 308,862.



Claim.—1. In automatic dumping mechanism for aerial tramway buckets, the combination with a track, a traveling hanger, a bail, and a dumping bucket suspended therefrom; of a pair of levers fulcrumed on the bail and pivotally connected at their inner ends, dogs carried by the bail and normally holding the bucket in upright position, connecting members between said dogs and said levers, and means, operated by the onward motion of the bucket, to operate said levers and trip the dogs, thereby permitting the bucket to dump.

2. In automatic dumping mechanism for aerial tramway buckets, the combination with a track, a traveling hanger a bail and a dumping bucket, suspended therefrom; of a trip-lever and an operatively connected companion lever fulcrumed on the bail, dogs adapted to hold the bucket in upright position, and connecting members between the dogs and said levers.

3. In automatic dumping mechanism for aerial tramway buckets, the combination with a track, a traveling hanger a bail and a dumping bucket, suspended therefrom; of a compound trip-lever comprising two levers pivotally connected at their inner ends, said levers being fulcrumed on the bail, dogs adapted to hold the bucket in upright position, and connecting members between the dogs and said levers.

4. In automatic dumping mechanism for aerial tramway buckets, the combination with a track-rope, a traveling hanger, a bail and a dumping bicket, suspended therefrom; of a trip-lever and an operatively-connected companion lever fulcrumed on the bail, dogs adapted to hold the bucket in upright position, connecting members between the dogs and said levers, and a trip-roller, suspended from said track-rope and adapted to actuate the trip-lever.

5. In automatic dumping mechanism for aerial tramway buckets, the combination with a track-rope, a traveling hanger, a bail and a dumping bucket, pivotally suspended therefrom; of a trip-lever and an operatively-connected companion lever fulcrumed on the bail, dogs adapted to hold the bucket in upright position, connecting members between the dogs and said levers, and a trip-roller, suspended from said track-rope and adapted to actuate the trip-lever.

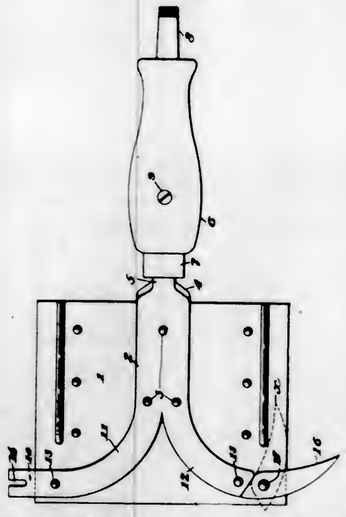
6. In automatic dumping mechanism for aerial tramway buckets, the combination with a track-rope, a traveling hanger, a bail and a dumping bucket, suspended therefrom; of a trip-lever and an operatively-connected companion lever fulcrumed on the bail, dogs adapted to hold the bucket in upright position, connecting members between the dogs and said levers, a yoke rigidly attached to the track-rope, arms supported by said yoke, and a trip-roller supported by said arms.

7. In automatic dumping mechanism for aerial tramway buckets, the combination with a track-rope, a traveling hanger, a bail and a dumping bucket, suspended therefrom; of a trip-lever and an operatively-connected companion lever fulcrumed on the bail, dogs adapted to hold the bucket in upright position, connecting members between the dogs and said levers, and a vertically adjustable trip-roller, suspended from said track-rope and adapted to actuate the trip-lever.

8. In automatic dumping mechanism for aerial tramway buckets, the combination with a track-rope, a traveling hanger, a bail and a dumping bucket pivotally suspended therefrom; of a trip-lever and an operatively-connected companion lever fulcrumed on the bail, dogs adapted to hold the bucket in upright position, connecting members between the dogs and said levers, and a vertically adjustable trip-roller, suspended from said track-rope and adapted to actuate the trip-lever.

9. In automatic dumping mechanism for aerial tramway buckets, the combination with a track-rope, a traveling hanger, a bail and dumping bucket, suspended therefrom; of a trip-lever and an operatively-connected companion lever fulcrumed on the bail, dogs adapted to hold the bucket in upright position, connecting members between the dogs and said levers, a yoke rigidly attached to the track rope, arms supported by said yoke, and a vertically adjustable trip-roller supported by said arms.

852,547. CURRYCOMB. CHRISTOPHER P. FINEGAN, Sheridan, Ill. Filed Aug. 18, 1903. Serial No. 169,858.

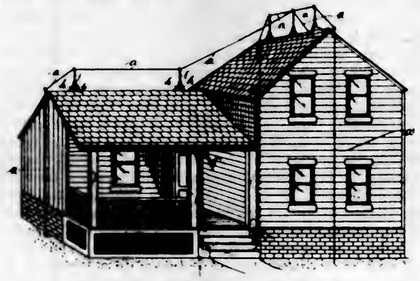


Claim.—1. A curry-comb comprising a body portion and a frame or re-inforce secured to the body portion and having one end provided with a handle and its other end provided with a portion extended beyond an edge of the body portion and provided with a groove or kerf adapted to receive a wire bale-tie or the like.

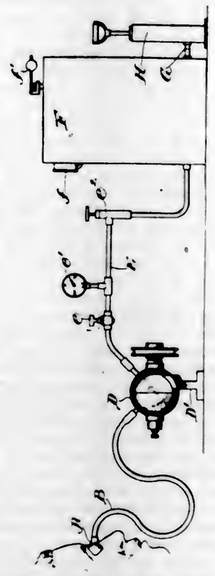
2. A curry-comb comprising a body portion and a frame or re-inforce secured to the body portion and having one end provided with a handle and its opposite end formed with forks extended across the upper surface of the body portion toward opposite ends of the front edge portion thereof, one of the forks being extended beyond an edge of the body portion and being thickened and provided with a kerf or groove to receive a wire bale-tie or the like.

852,548. LIGHTNING-CONDUCTOR. WILLIAM P. FINN, Dansville, N. Y. Filed Oct. 29, 1906. Serial No. 340,985.

Claim.—A system of lightning conductors which extend in the form of loops from earth to earth over the building, free from points and sharp angles; and insulating devices which hold said conductors above all parts of the roof of the building, and which are adjustable to fit different pitches of roof and to keep said conductors free from points and sharp angles.



852,549. MASSAGE APPARATUS. DANIEL C. FISHER, Boston, Mass. Filed July 3, 1905. Serial No. 268,074.



Claim.—1. An apparatus of the character described comprising a source of constant pressure; an instrument for application to the body; a conduit connecting the source of constant pressure and the instrument; and means in said conduit to alternately connect said instrument first with the source of constant pressure and then with an atmosphere of lower pressure.

2. An apparatus of the character described comprising a source of pressure; a three-way valve having the first port thereof connected with the source of pressure, the second port connected with the object to be operated upon, and the third port communicating with the atmosphere; and means to continuously operate the valve to alternately connect the second port with the first and third ports.

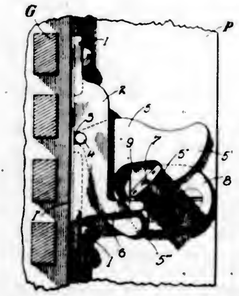
3. An apparatus of the character described comprising a source of pressure; a three-way valve having a port leading to the object to be operated upon, a set of ports communicating with the source of pressure and a set of ports communicating with the atmosphere; and means to continuously rotate the valve to alternately connect the first mentioned port first with one of the ports of the first set and then with one of the ports of the second set.

4. An apparatus of the character described comprising a source of pressure; a rotary three-way valve having a port leading to the object to be operated upon, a set of ports communicating with the source of pressure and a set of ports communicating with the atmosphere, and means to continuously rotate the valve to alternately connect the first mentioned port with the two sets of ports.

5. A three-way valve comprising a receptacle having two chambers; a valve seat separating the chambers and having one set of ports leading from one chamber to the other and having another set of ports leading from one chamber to the atmosphere; a valve to fit the valve seat and having ports to alternately register with the two sets of ports of the valve seat and means to rotate the valve.

6. The combination of a three-way valve; a source of constant pressure; a conduit connecting the source of constant pressure and three-way valve; a pressure gage for that conduit; a stop-cock in the conduit between the three-way valve and gage and a needle valve in the conduit between the gage and source of constant pressure for regulating the capacity of the conduit; substantially as, and for the purposes, described.

852,550. GATE-LATCH. CHARLES H. FOSTER, St. Louis, Mo. Filed Dec. 28, 1905. Serial No. 293,589.



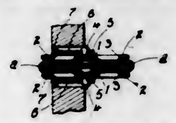
Claim.—1. In a gate latch, a gravity latch, means for pivotally mounting the same, a hook at one end thereof, an arm forming a part of the latch and spaced a permanent distance from the hook and normally located below the same, and a keeper normally depressed below the hinge axis of the latch coöperating with the hook and adapted to arrest the arm for an undue oscillation of the latch in an upward direction, substantially as set forth.

2. A latch comprising a body portion terminating at one end in a head having a curved riding edge, a hook at the lower end of said edge, a keeper normally depressed below the hinge axis of the latch adapted to present a suitable surface for the free play of said edge, and an arm or lower extension spaced a permanent distance from the hook and forming a part of said latch adapted to be arrested by the keeper for an undue upward oscillation of the latch, substantially as set forth.

3. A latch comprising a body portion terminating at one end in a head having a curved riding edge, a hook at the lower end of said edge, a keeper normally depressed below the hinge axis of the latch adapted to present an inclined face to the play of said riding edge, an arm or extension spaced a permanent distance from the hook and; forming a part of said latch adapted to be arrested by the keeper, and a post on the gate in connection with the latch adapted to come under the keeper for arresting an upward movement of the gate, substantially as set forth.

4. A latch having a hook terminating one end thereof, a basal arm or extension carried by the latch and permanently spaced from the hook, thereby forming a passage with said hook for the free play of a keeper, and means for pivoting the latch at a point opposite said passage, substantially as set forth.

852,551. SASH-PULLEY. CHARLES H. FOSTER, St. Louis, Mo. Filed Feb. 26, 1906. Serial No. 303,059.



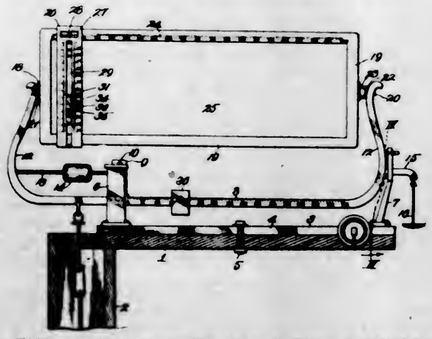
Claim.—1. In combination with a pulley composed of two independently rotatable sections separated or split in the general plane of rotation of the pulley, the contacting faces of the sections being mechanically disconnected, a casing having springing walls for permitting the independent insertion thereinto of each section of the pulley, and means on the casing for rotatably and independently supporting the respective sections in juxtaposed relation, substantially as set forth.

2. In a sash pulley, a pulley formed of two sections split or separated in the plane of rotation of the pulley, a casing for the pulley, the latter having depressions on its outer faces, and marginal rims raised above the bases of said depressions, and teats or projections disposed on the walls of the casing and adapted to enter the depressions aforesaid behind the marginal rims thereof, substantially as set forth.

3. In a sash pulley provided with marginal recesses or depressions on its outer faces, a casing for receiving the pulley, the latter being split in the plane of rotation thereof, a boss or trunnion for each section of the pulley, inclined recesses formed in the casing for the support of the trunnions, and formations on the casing engaging the recesses on the pulley for retaining the latter in position, substantially as set forth.

4. In combination with a pulley having depressions formed on its outer faces, marginal rims projecting beyond the depressions, a casing encompassing the pulley and having yielding walls, and teats or projections on the casing walls adapted to wedge past the rims and enter the depressions behind the rims, and means for rotatably mounting the pulley in the casing, substantially as set forth.

852,552. COMPUTING-SCALE. FREDRICK E. GABBERT, Kelly, Kans. Filed Oct. 3, 1906. Serial No. 337,300.



Claim.—1. In a computing scale, a frame containing a graduated scale, a poise adjustable on the frame with respect to said graduations and provided with a vertical series of figures, comprising primary figures and a series of secondary figures adjacent each of the primary figures, and a chart containing a vertical series of figures, of which some are the products of the primary figures of the poise, multiplied by the number of pounds indicated on the scale by the position of the poise, the other figures of the chart being the products (in round numbers) of the first-named products multiplied by the secondary series of figures of the poise, the figures representative of the products of the first-named products multiplied by the secondary figures of the poise being disposed in horizontal alinement with said last-named figures of the poise.

2. In a computing scale, the combination with a frame containing a graduated scale and a poise adjustable on the frame with respect to said graduations and provided with a vertical series of figures, comprising primary figures and a series of secondary figures adjacent each of the primary figures and provided also with a vertical slot at one side of its vertical series of figures, of a chart containing a vertical series of figures visible through said slot, of which some are the products of the primary figures of the poise multiplied by the number of pounds indicated on the scale by the position of the poise, the other figures of the chart being the products (in round numbers) of the first-named products multiplied by the secondary series of figures on the poise; the figures representative of the products of the first-named products multiplied by the secondary figures of the poise being disposed in horizontal alinement with said last-named figures of the poise.

3. In a computing scale, a frame containing a graduated scale, a poise adjustable on the frame with respect to said graduations and provided with a vertical series of figures, comprising primary figures and a series of secondary figures adjacent each of the primary figures and provided also with a vertical slot at one side of its vertical series of figures, a chart containing a vertical series of figures visible through said slot, of which some are the products of the primary figures of the poise multiplied by the number of pounds indicated on the scale by the position of the poise, the other figures of the chart being the products (in round numbers) of the first-named products multiplied by the secondary series of figures on the poise; the figures representative of the products of the first-named products multiplied by the secondary figures of the poise being disposed in horizontal alinement with the said last-named figures of the poise, and a slide mounted on the poise and bridging its slot and adjustable along the length thereof with reference to any particular figure of the chart exposed through the slot of the poise.

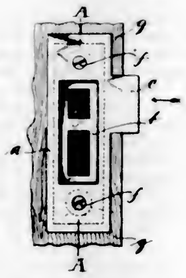
4. In a computing scale, a tare beam suitably fulcrumed and provided with a poise and upwardly projecing arms, a reversible frame carried by said arms and provided with a longitudinal graduated scale, a chart carried by the frame, a sliding poise mounted on the frame and provided with an opening to expose a portion of the graduated scale, and an index finger to point to any graduation of said scale and provided with a vertical slot in line with said index finger, and a slide mounted on the poise and adjustable lengthwise of said slot.

5. In a computing scale, a frame provided with a graduated scale, a chart carried by the frame, a sliding poise mounted on the frame and provided with an opening to expose a portion of the graduated scale and an index finger to point to any graduation of the said scale and provided also with a vertical slot in line with the index finger, and a slide mounted on the poise and adjustable lengthwise of the slot and comprising a plate bridging said slot and provided near its upper and lower ends with openings, a bowed spring having notches in the opposite edges of its ends and its notched portions extending through said openings and said slot and its unnotched extremities fitting against the face of the poise contiguous to the chart, and a screw engaging and adjustable through the spring and bearing against the opposing side of said plate.

852,553. LOCK-STRIKE. MARTIN GEORGENSON and RICHARD W. BURKE, Manitowoc, Wis. Filed Feb. 2, 1906. Serial No. 299,209.

Claim.—In combination in a structure of the class described, a door casing; a striking plate formed with a strike and secured in a fixed position in and relatively to said door casing; and a bolt plate interposed between said door casing and striking plate and held in place by the pressure of the latter upon it; said bolt plate being adjustable in all directions relatively to said striking plate.

852,553.



852,554. GARMENT RECEPTACLE, RACK, AND THE LIKE. JOHN W. GILMORE, New York, N. Y., assignor to Crouch & Fitzgerald, a Corporation of New York. Filed Sept. 11, 1906. Serial No. 334,112.



Claim.—1. In a receptacle for clothing, a garment chamber accessible from the front; an elevated hanger rack for said chamber having a free, swinging, in and out movement between a freely accessible position and a retracted position; sustaining and guiding means for said rack maintaining it substantially horizontal when in either its freely accessible or its retracted position, said means always located entirely within said chamber so that said rack will be freely accessible from the front and sides when in its freely accessible position; a closure for said chamber; and additional sustaining means in combination with said closure for supporting said rack when said closure is in closed position.

2. In a receptacle for clothing, a garment chamber accessible from the front; an elevated hanger rack for said chamber having a free, swinging, in and out movement between a freely accessible position and a retracted position; sustaining and guiding means for said rack maintaining it substantially horizontal when in either its freely accessible or its retracted position, said means always located entirely within said chamber so that said rack will be freely accessible from the front and sides when in its freely accessible position; a closure for said chamber; and wedge-like sustaining means in combination with said closure for supporting said rack when said closure is in closed position.

3. In a receptacle for clothing, a garment chamber accessible from the front; an elevated hanger rack for said chamber having a swinging movement within and without said chamber; two sustaining tilting legs pivoted at their lower ends within said chamber and pivoted at their upper ends respectively to opposite sides of said rack near the rear edge thereof so that said rack has a tendency to rotate; a stop for limiting the outward swing of said rack; and a rotation stop for engaging the rear of said rack to maintain said rack in a horizontal position when swung from within said chamber to the limit of its outward movement.

4. In a receptacle for clothing, a garment chamber accessible from the front; an elevated hanger rack for said chamber having a swinging movement within and without said chamber; two sustaining tilting legs pivoted at their lower ends within said chamber and pivoted at their upper ends respectively to opposite sides of said rack near the rear edge thereof so that said rack has a tendency to rotate; a stop for limiting the outward swing of said rack; and an automatically engaging and disengaging rotation stop for engaging the rear of said rack to maintain said rack in a horizontal position when swung from within said chamber to the limit of its outward movement.

5. In a receptacle for clothing, a garment chamber accessible from the front; an elevated hanger rack for said chamber having a swinging movement within and without said chamber; two sustaining tilting legs pivoted at their lower ends within said chamber and pivoted at their upper ends respectively to opposite sides of said rack near the rear edge thereof so that said rack has a tendency to rotate; a stop for limiting the outward swing of said rack; and an automatically engaging and disengaging hinged rotation stop for engaging the rear of said rack to maintain said rack in a horizontal position when swung from within said chamber to the limit of its outward movement.

6. In a receptacle for clothing, a garment chamber, accessible at the front and comprising a top interior surface provided with one or more recesses; a hinged stop held folded up in said recesses by a hanger rack but having a tendency to tilt downward out of said recesses; said hanger rack being provided with a pair of rearwardly pivoted tilting legs occupying a substantially vertical position when said hanger rack is holding said hinged stop folded in said recesses; said hanger rack having an outward and downward swinging movement on said tilting legs; means for stopping said movement of the hanger rack with the hanger rack in a position partly outside of said garment chamber and in suitable position so that said hinged stop, now released, may engage the rear of said hanger rack to prevent a downward tilting of the front of said hanger rack by operating as a fulcrum.

7. In a receptacle for clothing, a garment chamber accessible at the front and comprising a top interior surface provided with recesses; a hinged stop held folded up in said recesses by a hanger rack but having a tendency to tilt downward out of said recesses; said hanger rack being provided with a pair of rearwardly pivoted tilting legs occupying a substantially vertical position when said hanger rack is holding said hinged stop folded in said recesses; said hanger rack having an outward and downward swinging movement on said tilting legs; means for stopping said movement of the hanger rack with the hanger rack in a position partly outside of said garment chamber and in suitable position so that said hinged stop, now released, may engage the rear of said hanger rack to prevent a downward tilting of the front of said hanger rack by operating as a fulcrum; and a hinged closure for said garment chamber provided with additional sustaining means for said rack.

8. A swinging member adapted to occupy two separate horizontal positions; a pair of tilting legs pivotally secured at their upper ends respectively to said member and back of the middle thereof, said member having a tendency to tilt downward at its outer edge; means limiting the tilting movement of said legs in each of two directions; means engageable and disengageable by the rear edge of said member to maintain the said member horizontal when the said tilting legs are at the extremity of their movement in one direction; and additional means to engage the rear edge of said member to maintain said member horizontal when said tilting legs are at the extremity of their movement in the opposite direction.

9. A swinging member adapted to occupy two separate horizontal positions; a pair of tilting legs pivotally secured at their upper ends respectively to said member and back of the middle thereof, said member having a tendency to tilt downward at its outer edge; means limiting the tilting movement of said legs in each of two directions; a

hinged stop engageable by the rear edge of said member to maintain the said member horizontal when the said tilting legs are at the extremity of their movement in one direction; and additional means to engage the rear edge of said member to maintain said member horizontal when said tilting legs are at the extremity of their movement in the opposite direction.

10. A swinging member adapted to occupy two separate horizontal positions; a pair of tilting legs pivotally secured at their upper ends respectively to said member and near the rear edge thereof, said member having a tendency to tilt downward at its outer edge; means limiting the tilting movement of said legs in each of two directions; a hinged stop provided with rack engaging fingers engageable by the rear edge of said member to maintain the said member horizontal when the said tilting legs are at the extremity of their movement in one direction; and additional means to engage the rear edge of said member to maintain said member horizontal when said tilting legs are at their extremity of their movement in the opposite direction.

852,555. FENCE-POST. ROBERT C. GLASSCO, Anderson, Ind. Filed July 5, 1906. Serial No. 324,724.



Claim.—1. A fence post comprising an upright metal bar substantially rectangular in cross-section; an anchor-plate and two braces which are footed on the anchor-plate at a distance apart and converged to opposite parallel sides of the rectangular bar, and bolted thereto engaging said bar between them.

2. A fence-post base comprising an upright bar, a horizontal anchor plate; a pair of channeled braces footed on the anchor plate and converged to opposite sides of the upright bar, and at their upper ends embracing the bar in their channels and secured to the bar.

3. A fence post comprising an upright bar, a horizontal anchor plate and a pair of channeled bar braces having their webs turned outwardly at the lower end to form lips or feet, the anchor plate being slotted and the lips or feet of the braces being hooked through the slots and engaged on the under side of the plate, the bars being converged from their said engagement to the plate upwardly to the opposite sides of the upright bar and secured thereto.

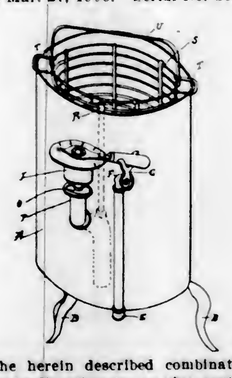
4. A fence-post base comprising an upright bar, a slotted horizontal anchor plate; a pair of channel bar braces having their web at the lower ends bent outward to form lips or feet hooked through the slots of the anchor plate and engaging thereunder, said braces being converged from the anchor plate upwardly and at their upper ends embracing the upright bar in their channels and secured to said bar.

5. A fence-post base comprising an upright bar, an anchor plate and means for rigidly connecting the bar to the plate, and oppositely projecting wings made rigid with the bar at the upper portion below the ground line.

6. A fence post comprising an upright element; an anchor plate; diverging braces rigidly connecting the bar to the plate, and oppositely projecting wings rigid with the bar at the upper portion thereof, below the ground line, extending in the direction in which the braces diverge.

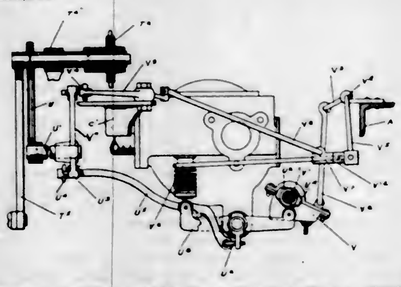
7. A fence post comprising a metal base having an upper terminal bar protruding above the ground, and an upper member secured to said terminal bar, the bar having elongated bolt-holes or slots, the upper slot extending to the upper end of the bar and constituting a notch therein, and bolts taking through said slots and engaging the upper member for securing it to the bar, adapted to be slacked to permit the upper bolt to be disengaged from the notch to allow the fence to be laid flat.

852,556. EGG-BOILER. HARRY F. HALL, Philadelphia, Pa. Filed Mar. 27, 1906. Serial No. 308,222.



Claim.—The herein described combination of a tank, a supply pipe leading thereto, a valve controlling the flow of water through said supply pipe, a forked lever secured to said valve, a timing valve also connected with the tank, a lever for operating said timing valve, said last named lever adapted to engage with the forked end of the first named lever for operating the first named valve with the last named valve, as specified.

852,557. STARTING DEVICE FOR EXPLOSION-ENGINES. NORMAN T. HARRINGTON, Detroit, Mich., assignor to Olds Motor Works, Detroit, Mich., a Corporation of Michigan. Filed Mar. 21, 1904. Serial No. 199,246.



Claim.—1. The combination with a motor, a starting mechanism adapted to receive a detachable crank, and an adjustable controlling device, of a guard for preventing the engagement of said crank with the said starting mechanism, a connection between said guard and said adjustable controlling device whereby the removal of said guard will adjust the controlling device suitably for the initial operation of the motor, and means whereby the guard is automatically returned when the crank is detached from the starting mechanism.

2. The combination with a motor, an adjustable controlling device, and starting mechanism adapted to receive a detachable crank, a guard for preventing the engagement of said crank with the starting mechanism, and connections between said guard and motor controlling device whereby the removal of said guard adjusts said controlling device suitably for the initial operation of the motor, and means whereby the guard is automatically returned independently of the controlling device when the said crank is detached from said starting mechanism.

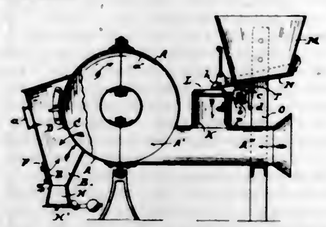
3. The combination with a motor, an adjustable controlling device, a starting mechanism adapted to receive a detachable crank, and a compression relief, of a guard for preventing the engagement of said crank with the starting mechanism, connections between said guard and the motor controlling device, whereby the removal of the guard will adjust the controlling device and compression relief, suitably for the initial operation of the motor, and means automatically returning said guard and re-adjusting said compression relief when the crank is detached from the starting mechanism.

4. The combination with a motor, a starting mechanism adapted to receive a detachable crank, an adjustable controlling device, a compression relief, and a guard for preventing the engagement of said crank with the said starting mechanism, of connections between the guard, the controlling device, and the compression relief, whereby the removal of the guard adjusts the controlling device and the compression relief suitably for the initial operation of the motor, and means whereby the guard is automatically returned and the compression relief is automatically re-adjusted when the crank is detached, and the said connections being such that further adjustment of the controlling device is by the operator and is independent of the compression relief.

5. The combination with a motor, a starting mechanism adapted to receive a detachable crank, an adjustable controlling device, and a guard for preventing the engagement of said crank with the starting mechanism, of the rock shaft V′, the rock arm V″, the rod V¹⁰, the spring V¹², the bell crank lever V⁹, the actuating rod V⁸, the rock arm V³, the rock shaft V⁴, the rock arm V⁵ and the rod V², substantially as described.

6. The combination with a motor, a starting mechanism adapted to receive a detachable crank, an adjustable controlling device, a guard for preventing the engagement of said crank with said starting mechanism, and connections between said guard and said controlling device substantially as described, of a rock shaft U′, the rock arm U⁸, the link U⁴, the lever U⁵, the rod U⁶, the spring U⁷, the exhaust valve operating lever U⁹, and the relief cam U¹⁰, substantially as described.

852,558. CENTRIFUGAL CONCENTRATOR. CHARLES T. HEISEL, Cleveland, Ohio. Filed Sept. 13, 1904. Serial No. 224,288.



Claim.—1. In a concentrator the combination of a helical conduit, a feeder therefor, suitable means forming compartments at the side of the conduit having openings leading from the outer air into the conduit, means to vary the size of conduit openings, means to regulate the size of the outer air openings, means near the terminal of the conduit to induce an air current therethrough, and also through the side compartments into the conduit through the outer air openings and the conduit openings for the purpose of regulating the discharge of the material into said side compartments, as shown and set forth.

2. A concentrator for pulverized ore, comprising a helical conduit, a suitable feeding device, means near the terminal of the conduit to induce an air current therethrough, suitable means forming compartments at the side of the conduit having openings leading from the outer air into the conduit, means to vary the size of the conduit openings, means to regulate the outer air openings, and suction-closed balanced gates at the bottom of the compartments whereby the concentrate is automatically discharged, all constructed and arranged substantially as and for the purpose set forth.

3. In a concentrator for pulverized materials the combination of a helical conduit, a power agitated feed hopper and sieve at one end thereof, means at the opposite end to induce an air current therethrough, suitable means forming compartments at the side of the conduit having suction closed balanced gates at the bottom thereof, and having openings leading from the outer air into the conduit, means to vary the size of the conduit openings, means to regulate the outer air openings whereby a graduated classification of the material is effected in and along said compartments as and for the purpose set forth.

4. In a concentrator for pulverized materials, the combination with its helically winding conduit and suitable means forming side compartments therewith of means at or near the end of the conduit for inducing an air draft therethrough and means to vary the size of the openings in said compartments leading from the outer air and into the said conduit for regulating the discharge of the heavier material into said compartments.

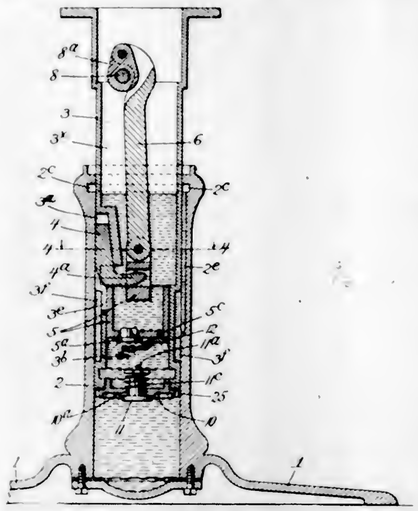
5. In a concentrator for pulverized materials the combination with a helically winding conduit of suitable means forming compartments along one side of said conduit, said compartments having controllable openings leading from the outer air and controllable openings leading into the conduit and means inducing an air draft through said conduit and the said compartments for the purpose as set forth.

852,559. HYDRAULIC CHAIR. ANTON N. HORNUNG, Jr., Chicago, Ill., assignor to Louis Hanson Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 23, 1905. Serial No. 284,088.

Claim.—1. In a hydraulic chair; in combination, the support having a vertical chamber a chair-stem operating piston-wise in such chamber; such stem being itself chambered for a liquid reservoir; a piston operating in the lower part of the chamber of the chair-stem, said piston and the bottom of the piston-wise operating stem having liquid ports and upwardly seating check valves controlling such ports; the piston having a second liquid port and a valve controlling it; said last mentioned valve having an operating arm for opening said valve when the arm is forced upward, and the valve of the chair-stem being in position to collide with such operating arm when the piston is moved down to the lower limit of its stroke.

2. In a hydraulic chair; in combination, the support having a piston chamber, the chair-stem operating piston-wise in such chamber, being itself chambered for a liquid reservoir, said reservoir having an aperture for communication with the outer surface at a point above the path of the lower end of the stem, the inner wall of the chamber and the outer wall of the stem in contact therewith having coöperating passages constituting a channel which extends from the upper part of the standard chamber to a point reached by the communication with the reservoir in the vertical operation of the stem, for draining the oil back into the reservoir from between the stem and the chamber wall.

3. In a hydraulic chair; in combination, the support having a piston chamber; the chair-stem operating pistonwise in such chamber and being itself chambered for a liquid reservoir and having an aperture for communication of said reservoir with its exterior surface, the inner wall of the standard chamber having at its upper part a circumferentially extending channel and the outer surface of the stem having in its lower part a circumferentially extending channel communicating with said aperture and means of communication between said two circumferentially extending channels.



4. In a hydraulic chair; in combination, the support having a piston chamber; the chair stem operating pistonwise in such chamber, and being itself chambered for a liquid reservoir; a piston operating in the lower part of the stem chamber; suitable valves for feeding liquid downward from the reservoir into the chamber of the standard and a tapered dog lodged between the wall of the standard chamber and the stem, one of said parts having a tapered seat for said dog; the stem chamber having an opening through which the dog protrudes into the path of the piston in said stem chamber.

5. In a hydraulic chair; in combination, the support having a piston chamber; the chair-stem operating pistonwise in such chamber, being itself chambered for liquid reservoir; a piston operating in the lower part of the stem chamber; suitable valves for feeding the liquid downward from the reservoir into the chamber of the standard; a tapered dog lodged between the walls of the standard chamber and the stem, the latter having a pocket for the dog provided with a tapered seat for the latter, said pocket opening into the piston chamber, and the dog being protruded through the opening into the path of the piston.

6. In a hydraulic chair; in combination, the support having a piston chamber; the chair-stem operating pistonwise in such chamber, and being itself chambered for liquid reservoir; a piston operating in the lower part of the stem chamber; suitable valves for feeding the liquid downward from the reservoir into the chamber of the standard; a tapered dog lodged between the wall of the standard chamber and the stem one of said parts having a tapered seat for said dog; the dog having a projection, which the piston engages for carrying the dog up and down along its tapered seat for tightening and releasing the dog.

7. In a hydraulic chair; in combination, the support having a piston chamber; the chair-stem operating pistonwise in such chamber and being itself chambered for a liquid reservoir; a piston operating in the lower part of the stem chamber; a dog for frictionally locking the stem to the standard, having an arm which protrudes into the piston chamber of the stem and is engaged by the piston, and means by which such dog locks the stem of the standard when moved in one direction to the limit of the piston's movement in that direction and releases said locked parts when moved in the opposite direction.

8. In a hydraulic chair; in combination, the support having a piston chamber; the chair-stem operating pistonwise in such chamber, and being itself chambered for liquid reservoir; a piston operating in the lower part of the chair stem chamber; said stem and piston having each bottom ports and valves controlling them; a piston having a second bottom port; a lever fulcrumed on the bottom of the piston, and a valve carried thereby, seating upwardly to close said second port; the opposite arm of the lever from that which carries the valve being in position for collision with the stem of the valve which controls the port in the end of the chair stem when the piston is moved to the lower limit of its stroke.

9. In a hydraulic chair, in combination with the means for pumping the liquid to operate the chair comprising a pump-operating lever; means for otherwise adjusting the relatively adjustable parts of the chair, comprising a movable bar and releasable means for locking it, the pump-operating lever being mounted for other movement independent of and in different direction from its pump-operating movement, said releasable locking means being operatively connected with the pumping lever for actuation by said other independent movement.

10. In a hydraulic chair; in combination, with the means for pumping the liquid to lift the chair, comprising the pump-operating lever arm; a bar mounted for sliding transversely of the axis of the pump-operating movement of said lever arm; a clamp for releasably locking the sliding bar, mounted for having its clamping movement in a direction longitudinal of said axis; said lever being mounted for movement independent of its pump-operating movement in a plane transverse to the sliding bar; the clamp being operatively connected with the lever for actuation thereby in said transverse movement.

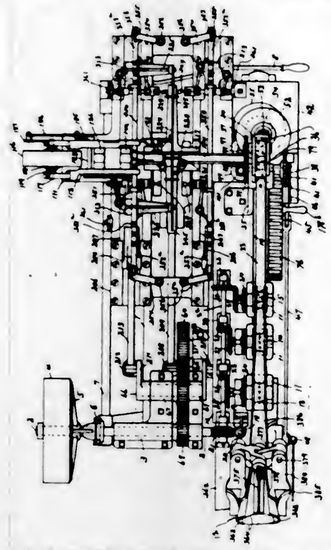
11. In a hydraulic chair, in combination with means for pumping comprising rock-shaft and an operating lever arm thereof; means for otherwise adjusting the relatively adjustable parts of the chair, comprising a bar for sliding transversely of the rock-shaft; a clamp for releasably locking the bar mounted adjacent to the rock-shaft; a spring stopped in one direction on the rock-shaft, and reacting in the opposite direction on the clamp; the lever arm being hinged to the rock-shaft for movement in a plane longitudinal of the latter, and connection from the lever arm to the clamp for operating the clamp by such longitudinal movement of the lever.

12. In a hydraulic chair; in combination with means for pumping comprising a rock-shaft and an operating lever arm thereof; means for otherwise adjusting the relatively adjustable parts of the chair, comprising a bar mounted for sliding transversely of the rock-shaft; a clamp for releasably locking the bar, mounted adjacent to the rock-shaft; a link connected to the clamp and guided longitudinally on the rock-shaft; a spring coiled about the rock shaft stopped in one direction on the same and reacting in the opposite direction on the clamp, the lever arm being hinged to the rock-shaft for movement in a plane longitudinal of the latter, and connection from the lever arm to the link for actuating the latter longitudinally of the shaft by the movement of the lever about its hinge connection.

13. In a hydraulic chair; in combination with means for pumping comprising a rock-shaft and an operating lever arm thereon; means for otherwise adjusting the relatively adjustable parts of the chair, comprising a bar mounted for sliding transversely of the rock-shaft; a clamp for releasably locking the bar, mounted adjacent to the rock shaft; a link connected to the clamp and guided longitudinally on the rock-shaft; a spring coiled about the rock shaft, stopped at one end on the shaft and reacting at the other end on the clamp, the link having an annular flange encompassing the rock-shaft; the lever being hinged to the rock-shaft and having an arm extending along the shaft at the opposite side thereof from the hinge pivot and engaging said flange.

14. In a hydraulic chair; in combination, with a rock-shaft adapted by rocking to operate the pumping devices; means for adjusting the relatively adjustable parts of the chair, comprising a link sliding on the rock-shaft; a collar fast on the end of the rock-shaft; an arm hinged to the collar at one side of the shaft and extending past the end of the latter; said collar and lever arm having mutually engaging parts at the opposite side of the shaft from the hinge pivot, adapted to permit the movement of the lever arm about the hinge and to guide it in such movement, and means by which the part on the lever arm engages the link for operating it longitudinally on the shaft in such movement of the arm.

852,560. MACHINE FOR FORMING AND WRAPPING CONFECTIONS AND OTHER ARTICLES. DENNIS T. IGOU, Springfield, Ohio, assignor to The Standard Candy Machine Company, Columbus, Ohio, a Corporation of Ohio. Filed Jan. 26, 1906. Serial No. 298,023.



Claim.—1. A machine for forming and wrapping confections, comprising a support for a batch of candy, forming rolls for forming the candy into a bar, automatic means for mechanically drawing the candy from the batch and delivering it to the forming rolls, cutting mechanism for severing the confections from the bar formed by the forming rolls, wrapping mechanism for automatically wrapping the confections, and means for automatically conveying the confections from the cutting mechanism to the wrapping mechanism, substantially as described.

2. A machine for forming and wrapping confections, comprising a support for a batch of candy, said support consisting of an automatic batch diminisher which delivers the candy from the batch in the form of a continuous body of diminished size, forming rolls for forming the candy into a bar having the cross sectional area of the finished confection, automatic means for mechanically drawing the candy from the batch diminisher to the forming rolls and progressively reducing its diameter, cutting mechanism for severing the confections from the bar formed by the forming rolls, wrapping mechanism for automatically wrapping the confections, and means for automatically conveying the confections from the cutting mechanism to the wrapping mechanism, substantially as described.

3. A machine for forming and wrapping confections, comprising a support for a batch of candy, forming rolls for forming the candy into a bar, automatic means for mechanically drawing the candy from the batch and delivering it to the forming rolls, cutting mechanism for severing the confections from the bar formed by the forming rolls, wrapping mechanism for automatically wrapping the confections, and means for automatically conveying the confections from the cutting mechanism to the wrapping mechanism, said conveying means comprising a tempering conveyer, substantially as described.

4. A machine for forming and wrapping confections, comprising a support for a batch of candy, forming rolls for forming the candy into a bar, automatic means for mechanically drawing the candy from the batch and delivering it to the forming rolls, cutting mechanism for severing the confections from the bar formed by the forming rolls, wrapping mechanism for automatically wrapping the confections, and means for automatically conveying the confections from the cutting mechanism to the wrapping mechanism, said conveying means comprising a tempering conveyer, and sizing rolls for sizing the tempered confections, substantially as described.

5. In a candy machine, a batch support and diminisher comprising a conical or tapering receptacle arranged at an angle to the horizontal, open at its ends, and having a body composed of longitudinal sections, and means for moving said sections to alternately decrease and increase the size of the receptacle, substantially as described.

6. In a candy machine, a batch support and diminisher comprising a conical or tapering receptacle open at its ends and having a body composed of longitudinal sections, and means for moving said sections toward and from the central line of the receptacle, substantially as described.

7. In a candy machine, a batch support and diminisher comprising a conical or tapering receptacle open at its ends and having a body composed of longitudinal sections, the alternate sections being resilient and bearing against the inner faces of the adjacent sections, and means for simultaneously moving said sections toward and from the central axis of the receptacle, substantially as described.

8. In a candy machine, a batch support and diminisher comprising a conical or tapering receptacle open at its ends and having a body composed of four longitudinal sections, arranged in opposite pairs, one pair of said sections being resilient and bearing at their margins against the inner faces of the other pair, and means for simultaneously moving said sections toward and from the central axis of the receptacle, substantially as described.

9. In a candy machine, a batch support and diminisher comprising a tapering or conical receptacle open at its ends and having a body composed of longitudinal sections arranged in opposite pairs, two of said sections being pivotally supported at their smaller ends, a frame located at the larger end of the receptacle, four shafts arranged in said frame at right angles to each other, geared to operate in unison, and having actuating arms connected to the respective sections, means for oscillating one of said shafts, and toggle links connecting the smaller ends of said sections, substantially as described.

10. In a candy machine, a batch support and diminisher comprising a tapering or conical receptacle open at its ends and having a body composed of longitudinal sections arranged in opposite pairs, two of said sections being pivotally supported at their smaller ends, a frame located at the larger end of the receptacle, four shafts arranged in said frame at right angles to each other, geared to operate in unison, and having actuating arms connected to the respective sections, means for oscillating one of said shafts, and toggle links connecting the smaller ends of said sections, in combination with means for guiding the smaller ends of the sections intermediate the pivotally supported sections, substantially as described.

11. In a candy machine, a batch support and diminisher comprising a conical or tapering receptacle arranged at an angle to the horizontal, having a body composed of longitudinal sections, and provided with means for simultaneously moving said sections in and out to alternately compress and release the batch of candy, substantially as described.

12. In a candy machine, a batch support and diminisher comprising a conical or tapering receptacle arranged at an angle to the horizontal, having a body composed of longitudinal sections, and provided with means for simultaneously moving said sections in and out to alternately compress and release the batch of candy, in combination with a plurality of pairs of feeding and drawing rolls arranged to successively receive the candy as it comes from the diminisher, said pairs of rolls having successively decreasing passes and increasing peripheral velocity, substantially as described.

13. In a candy machine, a batch support and diminisher constructed and arranged to alternately compress and release the batch of candy, intermittently rotating forming rolls, and means for drawing the bar of candy from the diminisher to the forming rolls, in combination with means for simultaneously operating said batch diminisher and forming rolls, substantially as described.

14. In a candy machine, the combination, with means for supporting a bar of candy in horizontal position, of confection forming mechanism comprising a pair of intermittently rotating horizontal feeding rolls located adjacent to the discharge end of the support, side plates located between said rolls, a tube extending downward from the rolls, a housing supporting said forming mechanism and pivoted to swing up to give access to the cutter, and a cutter moving across the lower end of the tube when the rolls are stationary, substantially as described.

15. In a candy machine, the combination, with means for supporting and intermittently feeding forward a bar of candy, of a rotating part mounted adjacent to the path of the bar, a disk cutter eccentrically mounted in said rotating part and projected across the path of the bar by its eccentricity when the bar is stationary, and means for positively rotating said disk cutter relatively to the part in which it is mounted, substantially as described.

16. In a candy machine, the combination, with means for supporting and intermittently feeding forward a bar of candy, of a rotating part mounted adjacent to the path of the bar, a disk cutter eccentrically mounted in said rotating part and projected across the path of the bar by its eccentricity when the bar is stationary, and means for positively rotating said disk cutter in a direction opposite to the direction of rotation of the part in which it is mounted, substantially as described.

17. In a candy machine, means for supporting and intermittently feeding forward a bar of candy, in combination with a hollow shaft arranged parallel with the path of the bar, means for rotating said hollow shaft, a mandrel eccentrically mounted in said hollow shaft and provided with a disk cutter adapted to be projected across the path of the bar when the latter is stationary, and means for rotating said mandrel independently of the shaft in which it is mounted, substantially as described.

18. In a candy machine, means for supporting and intermittently feeding forward a bar of candy, in combination with a hollow shaft arranged parallel with the path of the bar, means for rotating said hollow shaft, a mandrel eccentrically mounted in said hollow shaft and provided with a disk cutter adapted to be projected across the path of the bar when the latter is stationary, and means for rotating said mandrel independently of the shaft in which it is mounted, said means comprising a driving shaft centrally mounted in the hollow shaft, having a geared connection with the mandrel, and extending beyond the hollow shaft, substantially as described.

19. In a candy machine, a cutting mechanism comprising an upright hollow shaft having transverse disks or heads therein, means for rotating said shaft, a driving shaft centrally mounted in said hollow shaft and provided with independent driving means and with a pinion on its upper end, and a mandrel provided with a cutting disk at its upper end and removably fitting in eccentric bearings in the disks or heads, its lower end being grooved to form a pinion to mesh with the pinion of the driving shaft, whereby said cutting disk and mandrel may be readily removed from the hollow shaft, substantially as described.

20. In a machine of the character described, the combination, with mechanism for successively forming the individual confections, of a tempering conveyer interposed between said forming and wrapping mechanisms and acting to uniformly delay the delivery of the newly formed confections to the wrapping mechanism, whereby they are caused to assume a proper condition for wrapping before such delivery, substantially as described.

21. In a machine of the character described, the combination, with confection-forming mechanism and wrapping mechanism, of a tempering conveyer which receives the newly formed confections, and sizing rolls interposed between the tempering conveyer and wrapping mechanism to prevent the delivery to the wrapping mechanism of confections of excessive width, substantially as described.

22. In a candy machine, the combination, with confection-forming mechanism, of a tempering conveyer comprising an endless belt or the like, and pulleys for supporting and driving the same, said belt having laterally projecting fingers between which the confections are received, and supports or runways over which the fingers extend and along which the confections are carried by said fingers, substantially as described.

23. In a candy machine, the combination, with confection-forming mechanism, of a tempering conveyer comprising an endless belt or the like, and pulleys for supporting and driving the same, said belt having laterally projecting fingers between which the confections are received, and supports or runways over which the fingers extend and along which the confections are carried by said fingers, said supports or runways comprising parallel upper and lower members and curved connecting portions overlapping each other, whereby the confections are reversed in passing from one runway to another, substantially as described.

24. In a candy machine, the combination, with forming rolls intermittently rotating to feed forward a bar of candy, and a cutter for severing the part thus fed forward to form a confection, of an intermittently moving tempering conveyer adapted to receive the confections thus formed, and a wrapping mechanism for wrapping said confections after they are delivered thereto by the tempering conveyer, substantially as described.

25. In a candy machine, the combination, with forming rolls geared to rotate in unison, one of said rolls being provided with a ratchet wheel, of a tempering conveyer comprising an endless belt and supporting pulleys therefor, one of which is provided with a ratchet wheel, and a reciprocating slide provided with pawls for engaging and operating said ratchet wheels, substantially as described.

26. In a candy machine, the combination, with forming rolls and a ratchet wheel for actuating the same, of a tempering conveyer and a ratchet wheel for actuating said conveyer, a reciprocating slide having oppositely arranged pawls for alternately engaging said ratchet wheels, a second reciprocating slide having a cam slot engaged by the pawl bearing slide, said cam slot having an inclined actuating portion and a straight dwelling portion, whereby the forming rolls and tempering conveyer remain stationary during a period, and a cutter operating during the said stationary period, substantially as described.

27. In a candy machine, a tempering conveyer comprising an endless belt and means for actuating the same, a support or runway located adjacent to the belt, fingers secured to the belt and extending over the runway, and a hinged plate extending over the runway above said fingers, substantially as described.

28. In a candy machine, a tempering conveyer comprising an endless belt or the like, and means for actuating the same, a support or runway located adjacent to the belt, and fingers secured to the belt and extending over the runway, said fingers having lateral flanges adjacent to the edge of the runway nearest the belt, substantially as described.

29. In a candy machine, a tempering conveyer comprising an endless belt or the like, and means for actuating the same, a support or runway located adjacent to the belt and having a guard along its margin farthest from the belt, and fingers secured to the belt and extending over the runway, said fingers having lateral flanges adjacent to the edge of the runway nearest the belt, substantially as described.

30. In a candy machine, the combination, with a conveyer comprising an endless belt or the like provided with laterally projecting fingers, and a runway over which said fingers travel, of a second endless conveyer arranged at right angles thereto and provided with projections, and a guide above said second conveyer having supporting plates separated for the passage of the projections, and a guard plate above the same, between which plates the fingers pass, substantially as described.

31. In a candy machine, an endless conveyer for feeding forward the confections, in combination with sizing rolls rotating in horizontal planes on opposite sides of said conveyer, substantially as described.

32. In a candy machine, the combination, with two endless conveyers for feeding forward the confections, said conveyers having their adjacent pulleys superposed, and a runway arranged below the upper conveyer, of sizing rolls extending into the space between the two conveyers where they overlap, substantially as described.

33. In a candy machine, the combination, with wrapping mechanism, of conveying mechanism comprising an endless conveyer having projections for positively feeding forward the confections to the wrapper, a runway along which said confections are thus conveyed, and a cut-off acting in unison with the wrapping mechanism to control the passage of the confections along the runway, substantially as described.

34. In a candy machine, the combination, with wrapping mechanism, of conveying mechanism comprising an endless conveyer having projections to positively feed the confections, a runway along which the confections are thus conveyed, a reciprocating slide for actuating the wrapping mechanism, and a cut-off plate traveling across the runway, moving in unison with the slide, and recessed to permit the passage of the confections when stationary, substantially as described.

35. In a candy machine, the combination, with confection-forming and wrapping mechanism, of conveying mechanism for carrying the confections from the forming to the wrapping mechanism, said conveying mechanism being constructed and arranged to positively carry the confections and guide them by inclosing them against displacement throughout their travel, substantially as described.

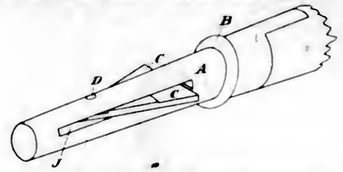
36. In a candy machine, means for drawing, diminishing and feeding forward candy comprising a plurality of pairs of feeding and drawing rolls arranged to successively receive the candy, said pairs of rolls being of successively smaller diameter, width and pass, and of successively increasing peripheral velocity, in combination with a trough connecting said rolls and comprising side plates bearing against the lateral faces of the rolls and contracting or narrowing between the pairs of rolls, substantially as described.

37. In a candy machine, the combination, with a plurality of pairs of feeding and drawing rolls arranged to successively receive the candy, of housings in which said rolls are mounted, a trough connecting the rolls and comprising side plates passing through the housings and rolls, and screws mounted in the housings and bearing against the side plates to hold them against the lateral faces of the rolls, substantially as described.

38. In a candy machine, the combination, with a plurality of pairs of feeding and drawing rolls arranged to successively receive the candy, of housings in which said rolls are mounted, a trough connecting the rolls and comprising side plates passing between the housings and rolls, and screws mounted in the housings and bearing against the side plates to hold them against the lateral faces of the rolls, each of said side plates having one of said screws engaging the same to hold it against displacement, substantially as described.

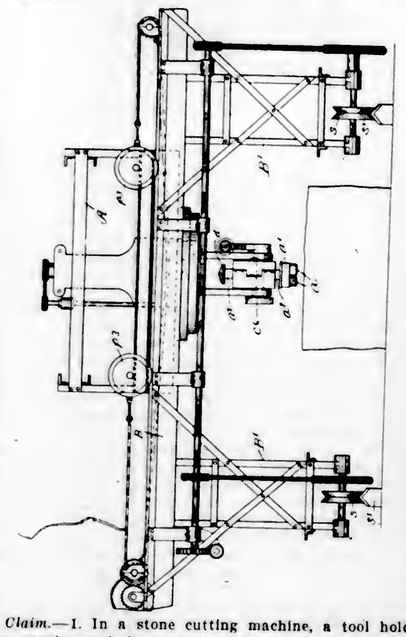
39. In a machine of the character described, the combination, with a wrapping mechanism, of means for forming confections and feeding them to the wrapping mechanism, a paper-feeding and sheet-forming mechanism for feeding forward a web of paper, cutting the same into wrapper sheets and delivering the sheets to the wrapping mechanism, and means for independently starting and stopping said paper-feeding and sheet-forming mechanism, substantially as described.

852,561. POLE-TIP. JACOB T. JACOBSEN, Metropolitan, Cal. Filed Dec. 3, 1906. Serial No. 346,163.



Claim.—A pole-tip comprising blades C C, held in position in slot J by rivet D, spring F and stops E E and H, and designed to be used principally on the ends of carriage and wagon poles.

852,562. STONE-CUTTING MACHINE. ALBERT F. JONES, Salem, Mass. Filed July 27, 1905. Serial No. 271,557.



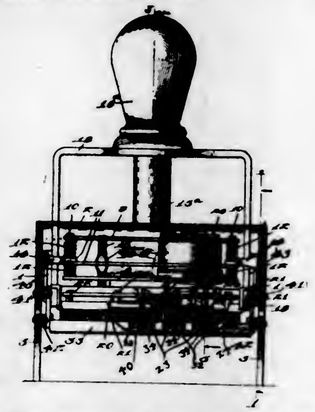
Claim.—1. In a stone cutting machine, a tool holder, two peening tools borne by it which are disposed at right angles to each other, means for moving them over the stone in the same path and means for operating them to cut lines in the stone which cross each other and to chip off the uncut portions between said intersected lines, substantially as described.

2. In a stone cutting machine, a tool holder, two tools borne by it movable in the same path over the stone, one of which is disposed obliquely to said path of movement and the other is disposed at an angle to the aforesaid tool, means for moving said tools over the stone and means for operating said tools to cut lines therein which cross each other and to chip off the uncut portions between said intersected lines, substantially as described.

852,563. TIME-STAMP. WALTER C. JONES and GEORGE E. PERRY, Chicago, Ill.; said Perry assignor to Perry Time Stamp Company, Chicago, Ill., a Corporation of Illinois. Filed June 16, 1904. Serial No. 212,834.

Claim.—1. In a time stamp, the combination with impression mechanism having moving time controlled parts,

of a horologic motor for driving said parts, and a revoluble inking pad for inking said parts disposed between the face of said mechanism and the surface to be impressed and adapted to be carried out of the path of said mechanism when an impression is made.



2. In a time stamp, the combination with impression mechanism having moving time controlled parts, of a horologic motor for driving said parts, and a revoluble inking pad for inking said parts disposed between the face of said mechanism and the surface to be impressed, said pad being adapted to rest normally in engagement with and rotate with said parts, and being adapted to be carried out of the path of said mechanism when an impression is made.

3. In a time stamp, the combination with impression mechanism having moving time controlled parts, of a horologic motor for driving said parts, a revoluble inking pad for inking said parts disposed between the face of said mechanism and the surface to be impressed, said impression mechanism being movable to make an impression, and means for carrying said pad out of the path of the impression mechanism when an impression is made.

4. In a time stamp, the combination with impression mechanism having a plurality of moving time controlled parts, said mechanism being movable to make an impression, of a horologic motor for driving said parts, and a plurality of revoluble inking pads for inking said parts disposed between the face of said mechanism and the surface to be impressed and adapted to be carried out of the path of said impression mechanism when an impression is made.

5. In a time stamp, the combination with revoluble dies having means for varying the character of the impression adapted to be made thereby, a horologic motor for driving said dies, revoluble inking pads for said dies, said pads being disposed between said dies and the surface to be impressed and being adapted to rest normally in engagement with the operative faces of said dies, and means for removing said pads from engagement with said dies when an impression is made.

6. In a time stamp, the combination with impression mechanism having moving time controlled parts, said mechanism being movable to make an impression, of a horologic motor for driving said parts, and a drop pad for inking said parts, said pad being adapted to rest normally in engagement with and rotate with said parts, and being adapted to be carried out of the path of the impression mechanism when an impression is made.

7. In a time stamp, the combination with impression mechanism having stationary impression parts and moving time controlled impression parts, of a horologic motor for driving said moving parts, a drop pad for inking said stationary impression parts, and a revoluble pad carried by said drop pad for inking said moving parts.

8. In a time stamp, the combination with impression mechanism having stationary impression parts and moving time controlled impression parts, of a horologic motor for driving said moving parts, a drop pad for inking said stationary impression parts, a revoluble pad carried by said drop pad for inking said moving parts, said impression mechanism being movable to make an impression, and means for carrying said pads out of the path of the impression mechanism when the stamp is operated to make an impression.

9. In a time stamp, the combination with impression mechanism having stationary impression parts and moving time controlled impression parts, of a horologic motor for driving said moving parts, a pair of drop pads for inking said stationary impression parts, a revoluble pad carried by said drop pads for inking said moving parts, said impression mechanism being movable to make an impression, and means for carrying said pads out of the path of the impression mechanism when the stamp is operated to make an impression.

10. In a time stamp, the combination with an impression mechanism having stationary impression parts and moving time controlled impression parts, of a horologic motor for driving said moving parts, a drop pad for inking said stationary impression parts, a plurality of revoluble inking pads for inking said moving time controlled parts carried by said drop pad, said pads being adapted to rest normally in engagement with said impression mechanism, and means for carrying said pads out of the path of the impression mechanism when an impression is made.

11. In a time stamp, the combination with a stationary frame having gage parts adapted to engage the surface to be impressed, of a second frame, revoluble impression mechanism carried by said second frame, said second frame being movable to make an impression, a horologic motor for operating said impression mechanism, a third frame, and revoluble inking pads carried by said last mentioned frame, said pads being adapted to rest normally in engagement with said revoluble impression mechanism and to move out of the path of said mechanism when an impression is made.

12. In a time stamp, the combination with a stationary frame having gage parts adapted to engage the surface to be impressed, of a second frame, revoluble impression mechanism carried by said second frame, said second frame being movable to make an impression, a horologic motor for operating said impression mechanism, a third frame, revoluble inking pads carried by said last mentioned frame, said pads being adapted to rest normally in engagement with said revoluble impression mechanism, and means adapted to carry said revoluble inking pads out of the path of said impression mechanism when an impression is made.

13. In a time stamp, the combination with a stationary frame having gage parts adapted to engage the surface to be stamped, of a second frame, revoluble impression mechanism carried by said second frame, stationary impression mechanism also carried by said second frame, said second frame being movable to make an impression, a horologic motor for driving said revoluble impression mechanism, a third frame, revoluble inking pads carried by said last mentioned frame, and a stationary inking pad also carried by said last mentioned frame, said pads being adapted to rest normally in engagement with the operative faces of said impression mechanisms and being adapted to be carried out of the path of said mechanisms when an impression is made.

14. In a time stamp, the combination with a stationary frame, said frame having gage parts adapted to engage the surface to be impressed, of a second frame, revoluble impression mechanism carried by said second frame, said second frame being movable to make an impression, a handle for operating said second frame, a third frame, revoluble inking pads carried by said last mentioned frame, and bars or rods pivoted to said stationary frame, to said third frame and to said handle, said pads being adapted to rest normally in engagement with said revoluble impression mechanism, said rods being adapted to carry said pads from engagement with said impression mechanism when the same is operated to make an impression.

15. In a time stamp, the combination with impression mechanism having moving time controlled parts, of a revoluble inking pad for inking said parts, said pad being adapted to rest normally in engagement with said parts, a horologic motor for driving said moving parts, and a resilient mounting for said motor.

16. In a time stamp, the combination with suitable impression mechanism, of means for varying the character of the impression adapted to be made thereby, a horologic motor for operating said means, an automatically operated inking pad adapted to rest normally in engagement with said impression mechanism, and adapted to partake of a right line movement in leaving the face of said impression mechanism when an impression is made.

17. In a time stamp, the combination with a suitable impression mechanism, of means for varying the character of the impression adapted to be made thereby, a horologic motor for operating said means, an inking pad adapted to rest normally in engagement with the face of said impression mechanism, the four corners of said pad being adapted to move simultaneously in a right line movement in leaving the face of the impression mechanism when an impression is made, and means for carrying said pad out of the path of the impression mechanism after said pad has been carried from engagement therewith.

18. In a time stamp, the combination with a support, of an impression mechanism having means for varying the character of the impression adapted to be made thereby, a horologic motor for driving said means, and an inking pad permanently carried by said support and adapted to rest normally in engagement with the face of said impression mechanism, and partake of a right line movement in leaving the face of the impression mechanism when an impression is made.

19. In a time stamp, the combination with impression mechanism having means for varying the character of the impression adapted to be made thereby, of a horologic motor for driving said means, an inking pad adapted to rest normally in engagement with the face of said impression mechanism, said pad being adapted to partake of a right line movement in leaving the face of said impression mechanism, and means actuated by the movement of the stamp in making an impression for carrying said pad out of the path of the impression mechanism after said pad has been disengaged therefrom.

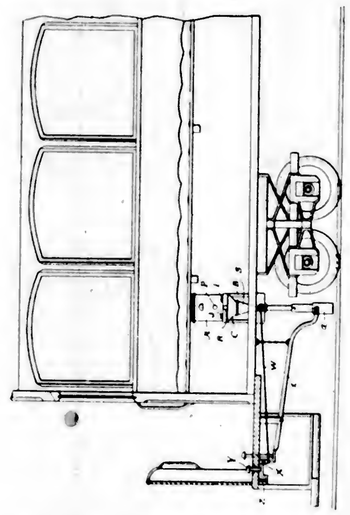
20. In a time stamp, the combination with impression mechanism having means for varying the character of the impression adapted to be made thereby, of a horologic motor for driving said means, an inking pad adapted to rest normally in engagement with the face of said impression mechanism links and rods pivoted to said pad, said rods and said links imparting a right line movement to said pad in leaving the face of the impression mechanism and carrying said pad out of the path of the impression mechanism when the stamp is operated to make an impression.

852,564. SANDER. DAVID B. KEEPORTS, Philadelphia, Pa. Filed Dec. 7, 1905. Serial No. 290,668.

Claim.—1. In combination with a car of the character described, a sand box located within the car, a flexible chute leading from said sand box, means for controlling the outflow of sand through the receiver and means for conveying the sand from the receiver to the tracks, for the purpose set forth.

2. In combination with a car of the character described, a sand box located within the car, a flexible receiver leading from said box, means under control of the motorman for controlling the outflow of sand from the receiver, a telescopic spout leading from the receiver to near the tracks, and means under control of the motorman for raising and lowering said spout, for the purpose set forth.

3. An apparatus for feeding sand to railway tracks consisting of a reservoir, an agitator located within said reservoir, an inclined bottom having outlets at the sides thereof, slides for regulating the flow of sand through said outlets, a funnel shaped receptacle, an agitator located within said receptacle, means for oscillating said agitator, a flexible receiver leading from the receptacle and means for controlling the outflow of sand from the chute for the purpose set forth.



4. In a sanding apparatus, the combination of a reservoir, an agitator consisting of a swinging frame located in said reservoir, an inclined bottom for the reservoir having outlets formed upon the sides thereof, slides located beneath the outlets, means for adjusting the slides from the outside of the reservoir, a receptacle to which the reservoir is hinged, an agitator pivoted on the one side of the bottom and projecting downward into the receptacle, means for actuating the last named agitator from the outside of the receptacle, a flexible receiver secured to the bottom of the receptacle, a swinging rod adapted to open and close the bottom of the receiver, prongs projecting upward from said swinging rod into the receiver, a spout composed of sections adapted to telescope located beneath the receiver, and means under control of the motorman for regulating the flow of sand from the receiver and for raising and lowering the sections of the spout, substantially as and for the purpose set forth.

852,565. DROP-SWITCH RAILWAY-SIDING. WALLACE R. KIRK, Kansas City, Mo. Filed Aug. 22, 1906. Serial No. 331,665.

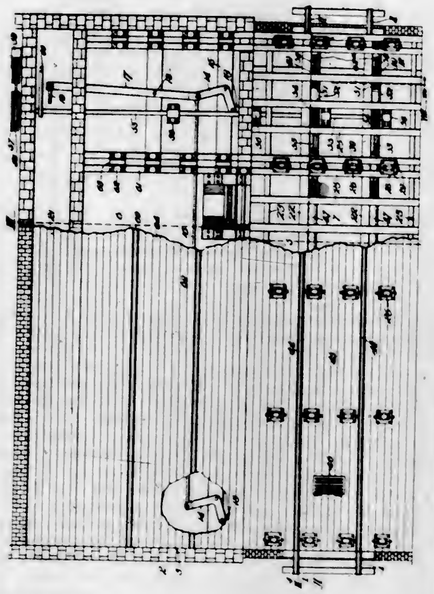
Claim.—1. A drop-switch railway siding, comprising a drop platform provided with track rails which normally form a section of the trackway, and a frame for movement in a substantially horizontal plane and underlying and normally supporting said platform.

2. A drop-switch railway siding, comprising a drop platform provided with track rails which normally form a section of the trackway, a frame for movement in a substantially horizontal plane and underlying and normally supporting said platform, and means for withdrawing said frame from its position as a support for the platform.

3. A drop-switch railway siding, comprising a drop-platform provided with track rails which normally form a section of the trackway, a frame for movement in a substantially horizontal plane and underlying and normally supporting said platform, means for withdrawing said frame from its position as a support for the platform, means for lowering the platform, and a second platform provided with track rails and adapted also for movement laterally

upon the lowered platform, until its track rails register with and form a temporary section of the trackway.

4. A drop-switch railway siding, comprising a drop-platform provided with trackrails which normally form a section of the trackway, a frame for sliding movement in a substantially horizontal plane and underlying and normally supporting said platform, means for withdrawing said frame from its position as a support for the platform, means for lowering the platform, a second platform provided with track rails and adapted also for movement laterally upon the lowered platform, until its track rails register with and form a temporary section of the trackway, means for returning said second platform to its original position, means for reëlevating the drop-platform, and means to restore the slidable frame to its original position as a support for the drop platform.



5. A drop-switch railway siding, comprising grooved rollers suitably supported, a drop platform, a floating bar, flexible connections passing over said rollers and forming links between the floating bar and said drop platform, a shaft provided with a drum, and a flexible connection engaging said drum and secured to it at one end and to the floating bar at the opposite end.

6. A drop switch railway siding, comprising a drop-platform provided with track rails, grooved rollers suitably supported, a floating bar, flexible connections running over the rollers and connecting the floating bar and drop platform, and means for moving the floating bar horizontally to cause it to elevate said platform.

7. A drop switch railway siding, comprising a drop platform provided with track rails, grooved rollers suitably supported, a floating bar, flexible connections running over the rollers and connecting to said platform, and yieldingly connected to the floating bar, a frame normally supporting the platform, and means to withdraw said frame in a substantially horizontal direction from its position as a support for the platform.

8. A drop switch railway siding, comprising a drop platform, provided with track rails, grooved rollers suitably supported, a floating bar, flexible connections running over the rollers and connected to said platform, and yieldingly connected to the floating bar, a frame normally supporting the platform, means to withdraw said frame in a substantially horizontal direction from its position as a support for the platform, a drum, a flexible and yielding connection between the drum and floating bar, and means to operate the former and cause the floating bar to raise the platform.

9. A drop switch railway siding, comprising a drop platform provided with track rails, and with transverse series of rollers projecting slightly above the track rails, a frame normally supporting said platform in its elevated position, means to move said frame in a substantially horizontal plane to effect the depression of said platform, and a second platform provided with longitudinal track rails and with transverse track rails in alinement with and adapted to travel upon the rollers of the drop platform when depressed.

10. A drop-switch railway siding, comprising a drop platform provided with track rails and with transverse series of rollers projecting slightly above the track rails, a frame normally supporting said platform in its elevated position, means to move said frame in a substantially horizontal plane to effect the depression of said platform, transverse series of track rollers at one side of the drop platform, a second platform provided with longitudinal rails and provided also with continuous or unbroken transverse rails resting upon the series of rollers at one side of the first-named platform, and means for moving said second platform laterally until its transverse rails engage and rest wholly upon the rollers of the drop platform when depressed.

11. A drop-switch railway siding, comprising a drop platform provided with track rails, and with transverse series of rollers projecting slightly above the track rails, a frame normally supporting said platform in its elevated position, means to move said frame in a substantially horizontal plane to effect the depression of said platform, transverse series of track rollers at one side of the drop platform, a second platform provided with longitudinal rails and provided also with continuous or unbroken transverse rails resting upon the series of rollers at one side of the first-named platform, means for moving said second platform laterally until its transverse rails engage and rest upon the rollers of the platform when depressed, a transverse rack bar secured to the second platform, a pinion engaging the same, and means for operating said pinion in one direction or the other.

12. A drop platform, embodying cross ties, boxings secured to and between certain of said cross ties, and composed of sections secured together and provided with openings, half boxes in said openings, rollers projecting slightly above the boxings and having shafts or trunnions journaled in said half boxes, and means for lubricating the bearings of the rollers.

13. A drop switch railway siding, comprising a drop platform, a longitudinally movable bar, grooved wheels, flexible connections between the bar and the drop platform and engaging said grooved wheels, and a counter balance for the drop platform connected to said bar.

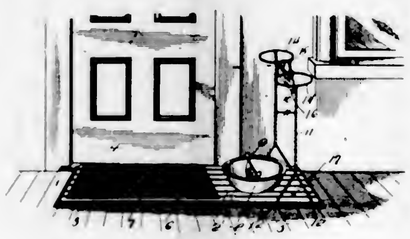
14. A drop switch railway siding, comprising a drop platform, a longitudinally movable bar, grooved wheels, flexible connections between the bar and the drop platform and engaging said grooved wheels, a grooved wheel, a flexible connection between the same and the bar, a shaft carrying said grooved wheel, a drum, a cable secured to said drum, a counter balance weight for the platform secured to said cable, and means to operate said shaft to raise the weight and lower the platform and vice versa.

852,566. PIE-PAN. EDWIN H. LANE, Kansas City, Mo. Filed Feb. 10, 1906. Serial No. 300,421.

Claim.—The combination with a pan having a hollow bead, of a supplemental rim having beads at its upper and lower margins and having a tongue projecting beyond the beads at one end, and stiffening wires for said beads terminating at one end short of the ends of the beads a distance equal to the length of the tongue and leaving said beads unobstructed for the reception of the upper and lower edges of the tongue.



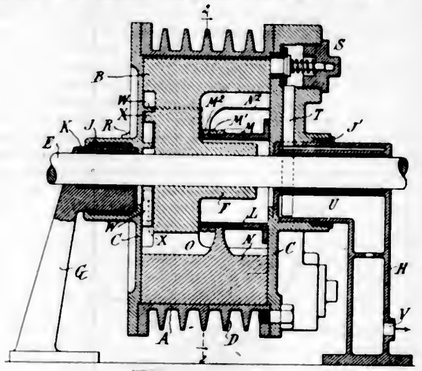
852,567. UMBRELLA-STAND. GODFRIED LAURE, Santa Monica, Cal., assignor of one-half to John C. Miller, Los Angeles, Cal. Filed Aug. 13, 1906. Serial No. 330,357.



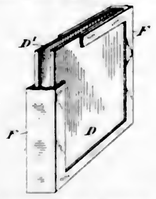
Claim.—In a device of the character described, a supporting platform, and a rack mounted thereon and formed from two strands of wire twisted together to form two vertical standards, the wires forming the standards being separated at their lower ends and secured in the base, and at their upper ends each having a loop, and a bridge connecting the loop of one standard to the loop of the other standard.

852,568. ROTARY PUMP. WILLIAM J. LEDDELL and WILLIAM A. LEDDELL, Summit, N. J. Filed Mar. 8, 1905. Serial No. 248,998.

Claim.—A rotary pump including in combination inner and outer drums B and A eccentrically arranged relatively to each other, vanes N extending across the space between the drums, inlet valves R and outlet valves S in the ends of the outer drum, means for rotating one of said drums, and a driving connection between said drums including a series of rings W upon the outer drum and a series of pins X upon the inner drum and within said rings.



852,569. SECONDARY BATTERY. LAMAR LYNDON, New York, N. Y. Filed June 3, 1905. Serial No. 263,551.



Claim.—1. An envelop for storage battery electrodes comprising two porous diaphragms of vegetable matter, one being laid against either face of the electrode, in contact with the active material thereof, the edges of the diaphragms being so closed up as to exclude the passage of electrolyte to the electrode, except through the pores of the said diaphragm, and an unbroken and impervious flexible elastic acid resisting framework surrounding at least three edges of the said electrode, whereby the diaphragms are held in position and sealed at the surrounded edges.

2. An envelop for storage battery electrodes, comprising two porous diaphragms of vegetable matter, one being laid against each face of the electrode in contact with the active material thereof, the edges of the diaphragms being inclosed in a flexible elastic frame to exclude the passage of electrolyte to the electrode, except through the pores of the said diaphragm.

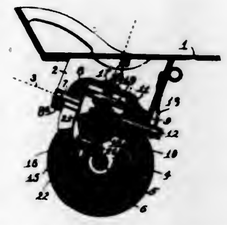
3. An envelop for storage battery electrodes, comprising two porous diaphragms of vegetable matter, one being laid against each face of the electrode in contact with the active material thereof, the four edges of the diaphragms being inclosed in a continuous flexible rubber frame stretched over the diaphragm to exclude the passage of electrolyte to the electrode except through the pores of the said diaphragm.

852,570. ROLLER-SKATE TRUCK. CORNELIUS F. MILLER, Hamilton, Ohio. Filed Sept. 24, 1906. Serial No. 336,001.

Claim.—1. A roller skate truck comprising a bracket, a wheel housing united thereto by an inclined pivot of oscillation, a compression spring-structure, a joint of oscillation between the upper end of the spring and the bracket at a point above and in the vertical plane of the axis of the pivot of oscillation of the general structure, and a joint of oscillation between the lower end of the spring-structure and the housing at a point below and in the

vertical plane of the axis of the pivot of oscillation of the general structure, combined substantially as set forth.

2. A roller skate truck comprising a bracket, a housing united thereto by an inclined pivot of oscillation, a downwardly presenting countersink in the bracket in the vertical plane of the pivot of oscillation, a collar below the pivot of oscillation, a coöperating rib and groove lying in the vertical plane of the pivot of oscillation and at right angles to the axle and forming a bearing of oscillation between said collar and the housing at a point below the pivot of oscillation of the main structure, a compression spring resting on said collar, a block over the upper end of this spring, and a connection between the block and said countersink to form a pivot of oscillation for the upper end of the spring, combined substantially as set forth.



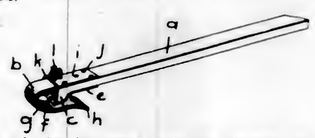
3. A roller skate truck comprising a bracket, a housing united thereto by an inclined pivot of oscillation, a downwardly presenting countersink in the bracket in the vertical plane of the pivot of oscillation, a collar below the pivot of oscillation, a coöperating rib and groove lying in the vertical plane of the pivot of oscillation and at right angles to the main axle and forming a bearing of oscillation between said collar and the housing at a point below the pivot of oscillation of the main structure, a stud passing freely through said collar and having its upper end pointed and in free engagement with said countersink, a block adjustably threaded upon the upper end of said stud and held against rotation by the bracket, and a spring compressed between said collar and block, combined substantially as set forth.

4. A roller skate truck comprising a bracket, a housing united thereto by an inclined pivot of oscillation, a downwardly presenting countersink in the bracket in the vertical plane of the pivot of oscillation a collar below the pivot of oscillation, a coöperating rib and groove lying in the vertical plane of the pivot of oscillation and at right angles to the axle and forming a bearing of oscillation between said collar and the housing at a point below the pivot of oscillation, a compression spring resting on said collar, a block resting on the spring, and a stud engaging the block and having its upper end in pointed engagement with said countersink, combined substantially as set forth.

5. A roller skate truck comprising a bracket having a downwardly presenting horn provided with a bearing having a semi-circular half at its outer lower portion and a semi-circular half at its forward upper portion, and having a second horn provided with a circular bearing at its outer portion and with a semi-circular bearing at its upper inner portion, a housing having a journal engaging over one and under the other bearing of the first-mentioned horn of the housing and having an eye with a segmental upper surface engaging under the semi-circular bearing of the other horn of the housing, a coupling pin engaging said eye and the circular bearing of the second horn, and a spring disposed between the housing and bracket and tending to hold them in normal angular relationship, combined substantially as set forth.

6. A roller skate truck comprising three pivot-points of articulation in a common normal vertical plane, a bracket and wheel housing pivotally united at the intermediate one of said pivot-points, and a compression-spring pivotally united to the bracket at the upper one of said points and to the wheel-housing at the lower one of said points, combined substantially as set forth.

852,571. POLE-TIP. WILLIAM T. MCCAULEY, Osgoode, Ontario, Canada. Filed Nov. 9, 1906. Serial No. 342,804.

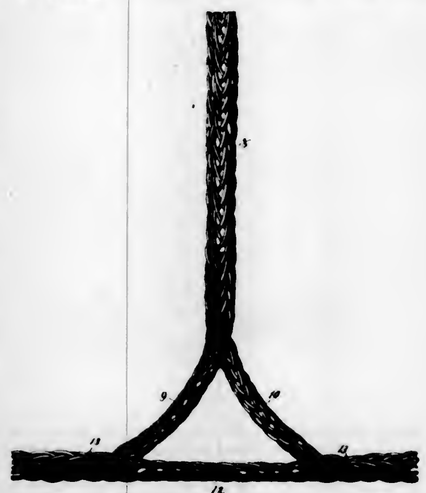


Claim.—1. An improved pole tip formed of a single piece of metal which extends along the bottom, top and across the end of the pole, and is formed with an outwardly projecting hook which extends forwardly, and is then rebent and extends below the pole, as and for the purpose specified.

2. An improved pole tip for vehicles comprising a continuous strap extending first along the under side of the pole; then bent across the end; then bent to form a hook on the under side of the pole and then rebent and secured to the top of the pole as and for the purpose specified.

3. In a device of the class described the combination with the wagon pole having a downwardly extending projection on the end thereof of a tip therefor formed from a continuous metal strap extending first along the under side of the pole; then bent across the end; then bent to form a hook along the under side of the pole and then rebent and secured to the top of the pole as and for the purpose specified.

852,572. LIGHTNING-CONDUCTOR. WILLIAM H. MCCULLOUGH, Chicago, Ill. Filed Nov. 1, 1906. Serial No. 341,524.



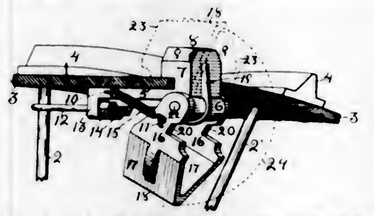
Claim.—1. An electrical conductor consisting of two or more sections each composed of a woven-wire tube, one of said sections having an opening in the side and the other section having its end inserted in said opening.

2. An electrical conductor consisting of two or more sections of woven-wire tubing connected together, the end of one section being inserted through the wall of the other section and the ends of the wires of the inserted section being bent about the wires of the receiving section.

3. An electrical conductor consisting of a line rod formed of wires woven to form a tube, terminals each consisting of wires woven to form a tube, the ends of said terminals connected with said line rod by inserting same through suitable openings formed in the walls of the line rod, and braces or coupling sections joining said terminals with said line rod, said coupling sections formed of wires

woven to form a tube and having their ends inserted through suitable openings formed in the walls of the line rod and the terminal rods.

852,573. MUD-TOE FOR TRACTION-WHEELS. JOHN MCDONALD and FRANK H. MCBRIDE, Blair township, Washington county, Nebr. Filed Apr. 16, 1906. Serial No. 311,942.



Claim.—1. A foldable grouter for traction-wheels having in combination an attaching base, a mud-toe hinged to said base and a spring connected to retain the toe extended or to retain it folded upon said base.

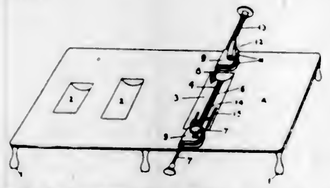
2. An adjustable attaching base for a traction-wheel grouter, having in combination, a hook to engage the edge of the rim of the wheel, a U-shaped yoke to engage a spoke of the wheel, the legs of said yoke disposed through a lug on the body of the hook and nuts threaded on said legs.

3. A foldable grouter attachment for traction-wheels having in combination, an attaching base with a hook to engage the edge of the wheel-rim, a bifurcate grouter part having a V-shaped base fitted to straddle the overlapping point of the hook to form a mud-toe projecting from the tread of the wheel, the grouter part having the ends of its branches pivoted to the base of the hook and adapted to swing the toe from its seat on the point side of the hook to the inside of the wheel-rim.

4. An adjustable and foldable grouter attachment for traction-wheels, having in combination, a hook having a stem with an adjustable spoke-clutch, a mud-toe seated on the point side of said hook and hinged to the base of the hook to fold back against the stem.

5. An adjustable and foldable grouter attachment for traction-wheels, having in combination, a hook, a lug on the stem of said hook, a U-shaped yoke with its legs disposed through said lug, nuts threaded on said legs, a bifurcate grouter having the inside of its base shaped to straddle and fit on the point-side of the hook, and the ends of its branches pivoted to the base of said hook, and a tensional spring connected between the grouter and the stem of said hook.

852,574. COIN-WRAPPING DEVICE. HENRY H. NORRINGTON, Bay City, Mich. Filed Oct. 25, 1906. Serial No. 340,539.



Claim.—1. A coin-wrapping device comprising a stationary table, having a coin-receiving groove formed therein, the wall of the coin-receiving groove being longitudinally slotted along its bottom and a single suitably supported roller arranged parallel with the slot, the periphery of the roller extending into the slot beneath the coin in the groove.

2. In a coin-wrapping device, the combination with a table having a stationary coin-receiving groove adapted to hold a roll of coin, and gages for the roll, of a suitably supported, adjustable crimping finger inclined at such an angle to the longitudinal axis of the roll of coin and engaging the edge of the end coin of the roll, as to fold one edge of the coin-wrapper inward over the end of the coin roll.

3. A coin-wrapping device comprising a table having a coin groove provided with a longitudinal slot and adapted to receive a roll of coins, a roller, the periphery of which lies in the slot and is engaged by the roll of coin, gages for the coin, and a crimping finger inclined at such an angle to the longitudinal axis of the roll of coin and engaging the edge of the end coin of the roll, as to fold one edge of the coin-wrapper inward over the end of the coin roll.

4. A coin wrapping device comprising a table having a coin receiving groove, gages for the coin, a resilient clamping sleeve, in which one of the gages is slidably received, the sleeve provided with lips, a pin passing through the lips and a cam lever pivotally secured to the pin and adapted to bear against one of the lips to move it toward and permit it to move away from the opposing lip.

5. A coin wrapping device comprising a table having a coin groove, adjustable gages for the coin in the groove, and a crimping finger carried by one of the gages at a point intermediate its length, the finger adapted to project into the same vertical plane with the inner end of the gage.

6. A coin wrapping device comprising a table, having a coin groove, an adjustable gage for the coin in the groove, the grooved portion of the table also being apertured, and a crimping finger secured to the gage intermediate its ends and projecting into the same vertical plane with the inner end of the gage, the free end of the finger received in the aperture.

7. A coin wrapping device comprising a table having a coin groove, an adjustable gage for the coin in the groove, the grooved portion of the table also being apertured, and a crimping finger secured to the gage intermediate its ends and projecting into the same vertical plane with the inner end of the gage, and means for preventing the rotation of the gage and finger.

8. A coin wrapping device comprising a table provided with a coin receiving groove, gages for a roll of coin in the groove and a suitably placed crimping finger inclined at such an angle to the longitudinal axis of the roll of coin and engaging the edge of the end coin of the roll as to fold one edge of the coin wrapper inward over the end of the coin roll.

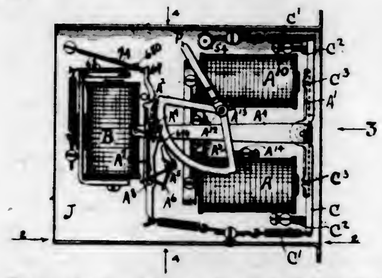
9. A coin-wrapping device comprising a stationary table having a coin-receiving groove formed therein and adapted to receive a roll of coin, the wall of the coin-receiving groove being slotted, a suitably supported roller so arranged relative to the slot that the periphery of the roller extends through the slot, and means engaging the end coins in the groove to retain them in position during the wrapping of the roll.

852,575. TELEPHONE-EXCHANGE. NILS E. NORSTROM, Chicago, Ill., assignor, by direct and mesne assignments, to John Anderson, Salina, Kans., M. E. Richardson, Sterling, Kans., and John H. Martin, and H. Keating. Filed Oct. 4, 1901. Serial No. 77,527.

Claim.—1. The combination with a party line, and a series of local telephone stations, of a switching device and a telephone connecting device at each station, means for operating the switching devices so as to complete electrical connections to the connecting devices in succession, and means by which electrical impulses may be sent through any desired number of the connecting devices at the times when connections are completed thereto by the switching devices.

2. The combination with a party line, and a series of local telephone stations, of switching devices at the different local stations and connected to the party line so that impulses sent over said line will cause the operation of said switching devices, a telephone set at each station having a normally closed connection to the party line, but arranged to have such connection broken upon the first move-

ment of the associated switching mechanism, a telephone connecting device at each local station arranged to re-establish the connection between its associated telephone set and said party line, means by which the operation of said switching mechanisms will make electrical connections to the connecting devices in succession, and means by which selected ones of the connecting devices may be operated when connections are completed thereto by said switching devices.



3. The combination with a party line, and a series of local telephone stations each having a normal telephonic connection with said party line, a telephone connecting device at each station arranged to establish telephonic connection between the station and the party line when the normal connection has been broken, means by which upon sending a series of electrical impulses over said party line, the normal telephonic connection of each station will be broken by the first impulse and succeeding impulses will connect the telephone connecting devices in succession to the party line, and means by which selected ones of the connecting devices may be operated by secondary impulses sent over the party line.

4. The combination with a central office, a party line, and a series of local telephone stations each having a normal telephonic connection with the party line, means controlled from the central office for simultaneously breaking the telephonic connections of all local stations, a connecting magnet at each local station by the single operation of any one of which the station at which it is located will be again placed in telephonic connection with the party line, and automatically operating means controlled from the central office for operating selected ones of the connecting magnets so as to place desired stations in telephonic connection with the party line and with each other.

5. The combination with a central office, a party line, and a series of local stations connected to the party line, of switching mechanism at the local stations adapted to be simultaneously and equally operated by impulses sent from the central office, a contact point in the path of each switching mechanism, said contact points being arranged so that upon simultaneous operation of the switching mechanisms connections will be made to the contact points in succession, a connecting magnet connected to each contact point and arranged upon operation to connect its station telephonically to the party line, and means by which electrical impulses may be sent from the central office through two or more selected ones of the connecting magnets at the times when the switching mechanisms make connections to them.

6. The combination with a central office, a party line, and a series of local stations connected to the party line, of a battery located at the central office, switching mechanisms at the local stations adapted to be operated by electrical impulses sent from the central office, a connecting magnet at each local station, said magnets being arranged so that connections will be completed to them in succession by the movements of the switching mechanisms, and means controlled from the central station by which a branch of the impulse sent through the switching mechanisms may also be sent through two or more selected ones of the connecting magnets at the times when connections are made thereto by the switching mechanisms.

7. The combination with a central office, a party line, and a series of local stations connected to the party line, of simultaneously movable contact devices at the central office, a switching magnet and a connecting magnet at each local station, and means whereby upon a series of contacts being made by said contact making devices, each contact made by one of said contact making devices will operate the switching magnets so as to establish connections in succession to the connecting magnets and each contact made by the other contact making device will operate a selected connecting magnet so as to connect its station telephonically to the party line.

8. The combination with a party line, a series of local stations each of which is normally capable of telephonic connections with the line, and means for sending a series of impulses over the line corresponding in number to the stations thereon, of a switching mechanism at each station operated by the impulses sent over the line, means by which the normal telephonic capabilities of all stations are extinguished by the first movement of the switches thereat, means by which the possibility of restoring the telephonic capability is temporarily provided at the stations one by one in the order of the impulses sent, and automatically operating means by which such possibility is transformed into telephonic capability at selected ones of said stations.

9. The combination with a party line, and a series of local stations, of a switching mechanism at each station arranged to be advanced and released by suitable impulses sent over the line, a magnet at each station for connecting it telephonically to the party line, a catch for holding such connection closed, and means operated by the release of said switching mechanism for releasing said catch.

10. The combination with a selecting magnet and a connecting magnet located at a local station in a party line exchange, of a telephonic connection for its station closed by the operation of the connecting magnet, and means for causing said connection to be broken by an operation of the selecting magnet.

11. The combination with a selecting magnet and a connecting magnet located at a local station in a telephone exchange, of a telephonic connection for the station closed by the operation of the connecting magnet, a hook for holding said connection in a closed condition, and means for releasing said hook by an operation of the connecting magnet so as to break said connection.

12. The combination with a central office, a party line, and a series of local stations, of a telephone set at each station connected by two branches to the party line, one of which branches may be closed by a subscriber at the station and the other of which is closed only by an operation controlled from the central office, a magnet at each station for closing the second branch and itself located in a normally open branch, means controlled from the central office for simultaneously breaking the first branches of all stations and for temporarily closing the connections to the magnets in succession, and means also controlled from the central office for sending an impulse through selected ones of said magnets so as to cause the closure of the second branches at selected stations.

13. The combination with a central office provided with a battery, a party line, and a series of local telephone stations, each of which is provided with a switching mechanism, of a circuit including the party line, the battery and the switching mechanisms of the different stations, a telephone set at each station provided with two branches to the party line, one of which is normally closed and the other of which is normally open, a connecting magnet at each local station located in a normally open branch from the party line, means by which a series of impulses sent over said circuit from said battery will operate to first break the normally closed branches to the telephone sets and then temporarily close the branches to the magnets in succession, means controlled from the central office for sending impulses from said battery through one or more of the temporarily closed branches, and means by which an impulse so sent through a temporarily connected magnet will serve to close the normally open branch to the telephone set.

14. The combination with a party line, a series of local stations, and a switching mechanism at each station for connecting it telephonically to the line, of a telephone connecting magnet at each station, means for operating said switching mechanisms so as to permit the selective operation of any desired number of the connecting magnets, a telephonic connection for each station closed by the operation of the connecting magnet thereat, a hook associated with each connecting magnet for maintaining said connection in a closed condition, and means for releasing said hook by the release action of the associated switching mechanism.

15. The combination with a party line, a series of local stations, and a switching mechanism at each station, of a connecting magnet at each station, means for operating said switching mechanisms so as to permit the selective operation of any desired number of the connecting magnets, a telephonic connection for each station closed by the operation of the connecting magnet thereat, means for holding said telephonic connection closed, and means for causing said telephonic connection to be broken by the return of said switching mechanism to its normal position.

16. The combination with conductors leading from a central office to a series of local stations, of a switching mechanism at each local station, a magnet at each station for controlling its switching mechanism, a normal contact normally closed by said switching mechanism, a telephone set for each station normally bridged between said conductors through a circuit including said normal contact, means at the central office for sending impulses through said magnets to cause said switching mechanisms to advance step-by-step to break the electric connections at the normal contacts and thereby to disconnect the telephone sets from circuit with said conductors, a second contact at each station adapted to be closed by the associated switching mechanism after a number of impulses have been sent, said second contacts being arranged so that each requires a different number of impulses to cause its closure, a second magnet at each station connected with the central office by the closure of the associated second contact, means for sending an impulse through a second magnet when its second contact is closed, and devices actuated by said second magnet to again connect its telephone set with said conductors.

17. The combination with a central office, a party line, and a series of local stations, of a switching mechanism at each local station, a normal telephonic connection for each station closed by its switching mechanism when in normal position, a second magnet at each station, means controlled from the central office for advancing the switching mechanisms so as to first break the normal telephonic connections of said stations and subsequently to connect the second magnets in succession to the central office, means for sending an impulse through a second magnet at the time that it is connected to the central office, and devices actuated by said second magnets for re-establishing the telephonic connections of their respective stations.

18. The combination with a party line, a series of switching mechanisms, a battery, and means for sending impulses from said battery over said line to operate said switching mechanisms, of a condenser bridged between the branches of the circuit for said switching mechanisms and so arranged that the charge it receives when an impulse is sent over the line becomes discharged when the impulse ceases whereby residual magnetism of the magnets for said switching mechanism is neutralized.

19. The combination with the two branches of a circuit, a battery, and means for closing connections between said battery and said branches for the purpose of sending a series of impulses, of an electrically operated switching mechanism and a condenser in separate bridges between said branches.

20. The combination with a battery, an electrically operated switching mechanism, and a circuit by means of which impulses are sent from said battery through said switching mechanism, of a condenser bridged between the branches of said circuit and arranged to discharge through said switching mechanism.

21. A party-line subscriber's station having selecting switching mechanism including a releasing-magnet for restoring the selecting mechanism to its normal condition, and a switching device operated by the releasing-magnet for opening the signal-receiving circuit.

22. A party telephone-line extending from a plurality of subscriber's stations to an exchange, each subscriber's station having thereat a signaling-generator, a signal receiver or bell, switching mechanism serving, when unset, to permit of operative association between the signaling-generator and the line and between the telephone and the line, and, when actuated, to dissociate the generator and telephone from the line, additional switching mechanism for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of the additional switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanisms and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

23. A party telephone-line extending from a plurality of subscribers' stations to an exchange, each subscriber's station having thereat a signaling-generator, a signal receiver or bell, switching mechanism serving, when unset, to permit of operative association between the signaling-generator and the line, and, when actuated, to dissociate the generator from the line, additional switching mechanism for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of the additional switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanisms and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

24. A party telephone-line extending from a plurality of subscribers' stations to an exchange, each subscriber's station having thereat a signaling-generator, a signal receiver or bell, switching mechanism serving, when unset, to permit of operative association between the signaling-generator and the line, and when actuated, to dissociate the generator from the line, additional switching mechanism for establishing operative association between the signal-receiver and the line at a selected station, a detent engaging an actuated portion of the additional switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanisms and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

25. A party telephone-line extending from a plurality of subscribers' stations to an exchange, each subscriber's station having thereat a telephone, switching mechanism serving, when unset, to permit of operative association between the telephone and the line, and, when actuated, to dissociate the telephone from the line, additional switching mechanism for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of the additional switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanisms and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

26. A party telephone-line extending from a plurality of subscribers' stations to an exchange, switching mechanism for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of said switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanism and also operating to break the engagement of the detent at a selected station, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

27. A party telephone-line extending from a plurality of subscribers' stations to an exchange, switching mechanism

for establishing operative association between the telephone and the line at a selected station, a detent engaging an actuated portion of said switching mechanism to hold the same in the position to which it is set, electromagnetic apparatus governing the aforesaid switching mechanism and also operating to break the engagement of the detent at a selected station, and apparatus for governing the operation of the electromagnetic mechanisms at the different stations.

28. Substation apparatus for party telephone-lines, including switching mechanism serving to control the association of the telephone with the line, a detent for holding the switching mechanism in the position to which it has been actuated, and electromagnetic mechanism for operating the said switching mechanism, to permit the detent to engage the same, and for breaking the engagement of the detent from connection with the switching mechanism.

29. Substation apparatus for party telephone-lines, including switching mechanism serving to control the association of the telephone with the line, a detent for holding the switching mechanism in the position to which it has been actuated, and electromagnetic mechanism for operating the said switching mechanism, to permit the detent to engage the same, and for breaking the engagement of the detent from connection with the switching mechanism, in combination with switching apparatus at an exchange for effecting the operation of said electromagnetic mechanism.

30. A party telephone-line extending from a plurality of substations to an exchange, signaling-generators at the substations, switching mechanism for establishing operative association between the signaling-generators and the line at the different stations, electromagnetic apparatus governing the aforesaid switching mechanism, and apparatus at the exchange for governing the operation of the electromagnetic mechanisms at the different stations.

31. A telephone-line extending from a substation to an exchange, a signaling-generator at the substation, switching mechanism for establishing operative association between the generator and the line, electromagnetic mechanism governing the operation of the switching mechanism, and apparatus at the exchange for governing the operation of the electromagnetic mechanism.

852,576. ATTACHMENT FOR HARNESS. WILLIAM A. O'BRYAN, Philpot, Ky. Filed Oct. 15, 1906. Serial No. 339,062.



Claim.—A coupling device for harness, consisting of two parts or castings, one comprising attaching plates and a buckle with an intermediate eye, and the other comprising attaching plates at its ends with a pair of apertured ears interposed between them and with which ears the eye of the other part or casting engages, a pintle slidably engaging the ears, a plate carrying said pintle, and a spring actuated push-bar mounted in one of the parts or castings and connected to the plate for moving the same to disconnect the pintle from the eye, substantially as herein shown and for the purpose set forth.

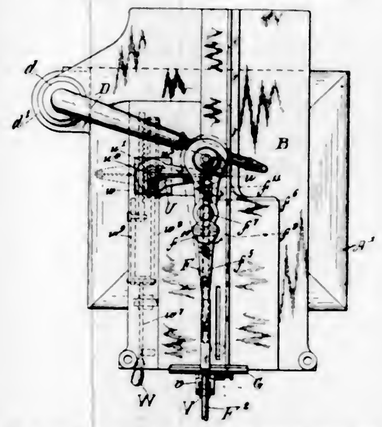
852,577. ROUTING-MACHINE AND THE LIKE. HENRY A. RENKEN, New York, N. Y., assignor to F. Wesel Manufacturing Company, Brooklyn, N. Y., a Corporation of New York. Filed June 30, 1906. Serial No. 324,182.

Claim.—1. In a routing or like machine, an elbow lever one arm of which is jointed, and means to guide one member of said arm.

2. In a routing or like machine, an elbow lever one arm of which is jointed, and a movable bracket to guide one member of said arm.

3. In a routing or like machine, an elbow lever one arm of which is jointed, a swiveling bracket arm, and a roller to guide one member of said arm in a straight line.

4. In a routing or like machine, an elbow lever one arm of which is jointed and one member of which arm has a long guide-way formed upon its under side, a swiveling bracket arm having a guide piece to co-operate with said guide-way, means to move said bracket arm into and out of operative position, and means to co-operate with the guide piece to guide said member in a straight line.



5. In a routing or like machine, an elbow lever one arm of which is jointed, means to secure the two members of said arm together, and means to guide one member of said arm in a straight line.

6. In a routing or like machine, an elbow lever one arm of which is jointed, a screw threaded on one of the members of said arm, the other member of said arm having an arc-shaped slot in which the screw works, and means to guide one of said members in a straight line.

7. In a routing or like machine, an elbow lever one arm of which is jointed and one member of which arm has a long guide-way formed upon its under side, a screw threaded in one of the members of said arm, the other member of said arm having an arc-shaped slot in which the screw works, a swiveling bracket arm having a guide piece to co-operate with the guide-way, means to move the bracket arm into and out of operative position and means co-operating with the guide-piece to guide one of the members in a straight line.

8. In a routing or like machine, the combination of a lever, a swiveling bracket to guide the lever, a detent to hold the bracket in position, and means to turn the bracket and to raise and lower the same upon the detent.

9. In a routing or like machine, the combination of a lever, a swiveling bracket to guide the lever, a detent to hold the bracket in position, means to turn the bracket and to raise and lower the same upon the detent, and a second lever to operate said means.

10. In a routing or like machine, the combination of a lever, a swiveling bracket to guide the lever, a shaft for the bracket, a rack and pinion to turn the shaft, a sliding wedge, means upon the shaft to co-operate with the wedge, and a handle operatively connected with the rack and wedge.

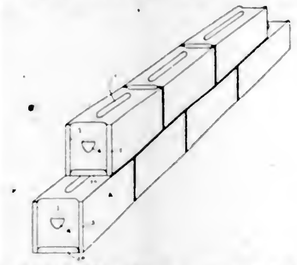
11. In a routing or like machine, an elbow lever one arm of which is jointed and one member of which arm has a long guide-way formed upon its under side, a swiveling bracket arm having a guide piece to co-operate with the guide-way, a shaft for the bracket arm, a rack and pinion to turn the shaft, a sliding wedge, means upon the shaft to co-operate with the wedge, a handle operatively connected with the rack and wedge, and a roller to co-operate with the guide piece to guide said member in a straight line.

12. In a routing or like machine, an elbow lever one arm of which is jointed, and means to guide said arm in a straight line.

13. In a routing or like machine, an elbow lever one arm of which is jointed, and a movable bracket to guide one member of said arm.

14. In a routing or like machine, an elbow lever one arm of which is jointed, a swiveling bracket arm, and a roller to guide one end of said arm in a straight line.

852,578. BUILDING-BLOCK. HERBERT G. ROUNDS, Bay City, Mich. Filed July 11, 1906. Serial No. 325,738.



Claim.—1. A building block comprising a body portion vertically recessed at opposite ends, the bottom walls of the recesses being inclined to the lower face of the block to cause the binding agent to form a feather between the abutting ends of two adjacent blocks, the feather projecting into the pocket formed by the recesses of the two adjacent blocks.

2. A building block comprising a body portion vertically recessed at opposite ends and coöperating with the recesses of adjacent blocks to form pockets, the bottoms of said pockets being convergingly inclined toward the lower faces of the blocks to permit a feather of binding agent to protrude into the pocket and unite with the binding agent received in the pocket.

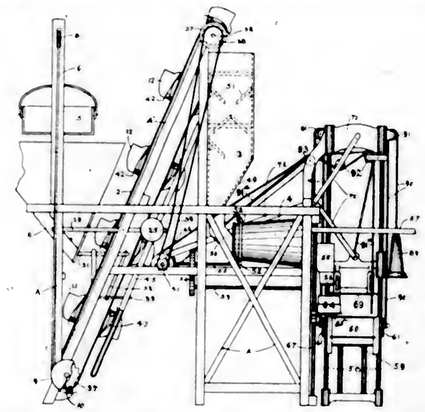
3. A building block comprising a body portion vertically recessed at opposite ends to coöperate with the recesses of adjacent blocks to form pockets, the bottoms of said pockets being convergingly inclined toward the lower faces of the blocks or indented to permit a feather of binding agent to protrude into the pocket and unite with the binding agent received in the pocket, the end walls of the blocks also provided with undercut notches adapted to receive and be completely filled with the binding agent to form keys in the ends of adjacent blocks.

852,579. BLOCK-MAKING PLANT. HERBERT G. ROUNDS, Bay City, Mich. Filed July 11, 1906. Serial No. 325,739.

Claim.—1. A block molding plant comprising a conveyer, a receptacle, a chute leading from the receptacle to a point adjacent the conveyer, gates in the chute controlling the passage of the contents of the receptacle to the conveyer, independent tripping mechanisms connected to the gates, the conveyer adapted to trip the mechanisms successively to receive a measured charge, a stationary mixer to which the material is conveyed and through which it passes in a dry state, a rotary mixer into which the material is discharged from the stationary mixer, a liquid discharging pipe leading into the rotary mixer, a swinging carrier into which the rotary mixer discharges, a suitably supported form into which the carrier discharges its contents and pressing mechanism actuated by the conveyer mechanism for compressing the material in the mold form.

2. A block molding plant comprising a bucket conveyer, a chute leading from a supply of material, gates in the chute, tripping mechanism for the gates, the buckets adapted to successively trip the gates, mixing mechanism into which the buckets discharge, a mold form adapted to receive the material subsequent to its mixing and pressing mechanism actuated by the conveyer mechanism for compressing the material in the form.

3. A block molding plant comprising a bucket conveyer, trips carried by the buckets, a chute terminating adjacent the conveyer, gates in the chute, lever mechanisms connected to the gates, and projecting into the path of movement of the trips on the buckets, springs for maintaining the light weight buckets out of alinement with the lever mechanism, mixing devices into which the material is discharged from the conveyer, a mold form for receiving the material after mixing and pressing mechanism actuated by the conveyer for compressing the material in the mold form.



4. A block molding plant comprising a bucket conveyer, trips carried by each bucket, a chute terminating adjacent the conveyer, gates in the chute, lever mechanisms connected to the gates, one of the gates being adjustable relative to the other, trip levers connected to the respective lever mechanisms and lying in the normal path of movement of the trips on the buckets, springs on the buckets for maintaining the trips out of engagement with the trip levers when the buckets have not received a full charge, mixing devices into which the material is discharged from the conveyer, a mold form for receiving the material after mixing and pressing mechanism actuated by the conveyer for compressing the material in the mold form.

5. A block molding plant comprising a bucket conveyer, trips on the buckets, a chute terminating adjacent the conveyer, gates in the chute for delivering a measured charge, lever mechanism connected to the gates, and lying in the normal path of movement of the trips, mixing devices into which the conveyer buckets discharge, a mold form, pressing mechanism actuated by the conveyer for compressing the material in the mold, and a swinging carrier for receiving the material from the mixers and delivering it to the mold.

6. A block molding plant comprising a bucket conveyer, trips on the buckets, a chute terminating adjacent the conveyer, gates in the chute for delivering a measured charge, lever mechanism connected to the gates, and lying in the normal path of movement of the trips, mixing devices into which the conveyer buckets discharge, a mold form, pressing mechanism actuated by the conveyer for compressing the material in the mold, a swinging plate, and a carrier seated on the plate and adapted to receive the material from the mixers and deliver it to the mold.

7. A block molding plant comprising a bucket conveyer, trips on the buckets, a chute terminating adjacent the conveyer, gates in the chute for delivering a measured charge, lever mechanism connected to the gates, and lying in the normal path of movement of the trips, mixing devices into which the conveyer buckets discharge, a mold form, pressing mechanism actuated by the conveyer for compressing the material in the mold, a swinging plate, a carrier seated on the plate and adapted to receive the material from the mixers and deliver it to the mold, and means for relensably locking the carrier above the mold.

8. A block molding plant comprising a bucket conveyer, trips on the buckets, a chute terminating adjacent the conveyer, gates in the chute for delivering a measured charge, lever mechanism connected to the gates, and lying in the normal path of movement of the trips, mixing devices into which the conveyer buckets discharge, a mold form, a carrier for delivering the material from the mixers to the mold, a plunger, toggle links connected thereto and to a stationary support, a pitman connected to the toggle links, the rear end of the pitman being slotted, teeth in the slot, a drive shaft for imparting movement to the conveyer, a pinion on the shaft inclosed by the toothed slot of the pitman, a rack on the pitman, a dog adapted to engage the rack when the rear end of the pitman is raised, the teeth in the slot adapted to engage the pinion when the rear end of the pitman is lowered, an eccentric engaging the pitman for raising and lowering the same, and means for rotating the eccentric.

9. A block molding plant comprising a bucket conveyer, trips on the buckets, a chute terminating adjacent the conveyer, gates in the chute for delivering a measured charge, lever mechanism connected to the gates and lying in the normal path of movement of the trips, mixing devices into which the conveyer buckets discharge, a mold form, a carrier for delivering the material from the mixers to the mold, a plunger, toggle links connected thereto and to a stationary support, a pitman connected to the toggle links, the rear end of the pitman being slotted, teeth in the slot, a drive shaft for imparting movement to the conveyer, a pinion on the shaft inclosed by the toothed slot of the pitman, a rack on the pitman, a dog adapted to engage the rack when the rear end of the pitman is raised, the teeth in the slot adapted to engage the pinion when the rear end of the pitman is lowered, an eccentric engaging the pitman for raising and lowering the same, a shaft for supporting the eccentric, a gear on the shaft, a pivotally supported rock lever, teeth on the lever adapted to engage the gear and a hand lever for actuating the rock lever to rotate the eccentric.

10. A block molding plant comprising a frame, a bucket conveyer, trips on the conveyer, a chute terminating adjacent the conveyer, gates in the chute for delivering a measured charge therefrom, trip levers projecting into the path of movement of the bucket trips, means connecting the trip levers and gates, mixing devices into which the buckets discharge, a mold form, a carrier for conveying material from the mixers to the mold, a plunger, toggle links connecting the plunger and frame, a pitman connected to the toggle links, the rear end of the pitman being slotted, teeth in the slot, a drive shaft for imparting movement to the conveyer, a pinion on the shaft inclosed by the slot in the pitman, the teeth of the pinion adapted to take into the teeth of the slot when the rear end of the pitman is lowered, a bull wheel on the shaft, a flexible connection, one end of which is secured to the plunger, the opposite end adapted to be controlled by the operator, the connection being wound around the bull wheel, an eccentric engaging the rear end of the pitman and means for rotating the eccentric to raise and lower the teeth of the pitman out of and into engagement with the pinion on the drive shaft.

11. In a block molding plant, the combination with mixing devices, a mold and a mold-pressing mechanism of a chute having a pair of gates located therein, lever mechanism connected to the gates, a bucket conveyer, rods projecting from opposite sides of the buckets, and tripping members connected with the lever mechanisms and lying in the normal path of movement of the rods, the tripping members located on different planes whereby the gates are successively operated.

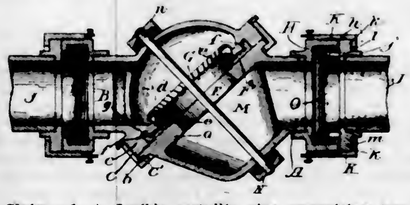
12. In a block molding plant, the combination with mixing devices, a mold and a mold pressing mechanism, of a chute having a pair of gates located therein, lever mechanism connected to the gates, a bucket conveyer, rods projecting from opposite sides of the buckets, and tripping members connected with the lever mechanisms and lying in the normal path of movement of the rods, the tripping members located on different planes whereby the gates are successively operated, and springs on the buckets for maintaining the rods of partially filled buckets out of alinement with the tripping members.

13. In a block molding plant, the combination with mixing devices, a mold and a mold pressing mechanism, of a chute having a pair of gates located therein, lever mechanism connected to the gates, a bucket conveyer, rods projecting from opposite sides of the buckets, tripping members connected with the lever mechanism and lying in the normal path of movement of the rods, the tripping members located on different planes whereby the gates are successively operated, springs on the buckets for maintaining the rods of partially filled buckets out of alinement with the tripping members and guide bars located adjacent the lower edge of the conveyer for supporting the buckets against sagging.

14. The combination, in a block molding machine with a conveyer, mixing devices, and a mold form, of a pressing mechanism therefor, comprising a plunger, toggle links, one end of which is connected to the plunger, the opposite end of which is stationarily supported, a pitman, one end of which is connected to the toggle links, the opposite end being slotted, teeth in the slot, a drive pinion inclosed within the slot and adapted to mesh with the teeth when the pimtan is in one position, a bull wheel, a flexible connection coiled loosely upon the bull wheel, one end of the connection being secured to the plunger to raise the latter, an eccentric engaging the slotted end of the pitman for raising and lowering the teeth out of or into mesh with the pinion, the remaining end of the connection being controlled by the operator to tighten the coils on the bull wheel.

15. The combination, in a block molding machine with a conveyer, mixing devices and a mold form, of a pressing mechanism therefor comprising a plunger, toggle links, one end of which is connected to the plunger, the opposite end of which is stationarily supported, a pitman, one end of which is connected to the toggle links, the opposite end being slotted, teeth in the slot, a drive pinion inclosed within the slot and adapted to mesh with the teeth when the pitman is in one position, a rack on the pitman, a dog adapted to engage the rack when the pitman is in its opposite position, an eccentric for lowering or raising the pitman to bring the teeth in the slot into mesh with the pinion or the rack into engagement with the dog respectively, and means for actuating the eccentric.

852,580. FLEXIBLE METALLIC PIPE. FRANK H. RUTHERFORD, Chicago, Ill. Filed June 13, 1906. Serial No. 321,546.



Claim.—1. A flexible metallic pipe comprising two or more connected sections, one of which is divided mediate its ends in a plane oblique to its axis to form a joint the engaging edges of which are each provided with an inwardly projecting flange the inner edges of each of which are concentric to the axis of the joint, and are of different diameters in respect to each other, a packing suitably secured to the flange the diameter of whose edge is greater, and pressing against the margins of the inner edge of the flange the diameter of whose edge is smaller, and means interposed between said flanges for securing said packing to the first mentioned flange.

2. A flexible metallic pipe comprising two or more connected sections, one of which is divided mediate its ends in a plane oblique to its axis to form a joint the engaging edges of which are each provided with an inwardly projecting flange the inner edges of each of which are concentric to the axis of the joint, and are of different diameters in respect to each other, an inwardly progressing involute curved packing suitably secured in the flange the diameter of whose edges is greater, and pressing against the margins of the inner edge of the flange the diameter of whose edge is smaller.

3. A flexible metallic pipe comprising two or more connected sections, one of which is divided mediate its ends in a plane oblique to its axis to form a joint the engaging edges of which are each provided with an inwardly projecting flange the inner edges of each of which are concentric to the axis of the joint, and are of different diameters in respect to each other, an inwardly progressing involute curved packing suitably secured in the flange the diameter of whose edges is greater, and pressing against the margins of the inner edge of the flange the diameter of whose edges is smaller and a spring engaging and pressing upon said packing.

4. A flexible metallic pipe comprising two or more connected sections, one of which is divided mediate its ends in a plane oblique to its axis to form a joint the engaging edges of which are each provided with an inwardly projecting flange the inner edges of each of which are concentric to the axis of the joint, and are of different diameters in respect to each other, an inwardly progressing involute curved packing suitably secured in the flange the diameter of whose edges is greater, and pressing against the margins of the inner edge of the flange the diameter of whose edges is smaller and an inwardly progressing involute spring engaging and pressing upon said packing.

5. A flexible metallic pipe comprising two or more connected sections, one of which is divided mediate its ends in a plane oblique to its axis to form a joint the engaging edges of which are each provided with an inwardly projecting flange the inner edges of each of which are concentric to the axis of the joint, and are of different diameters in respect to each other, an inwardly progressing involute curved packing suitably secured in the flange the diameter of whose edges is greater, and pressing against the margins of the inner edge of the flange the diameter of whose edges is smaller and an inwardly progressing involute spring having its inner edge slit and engaging and pressing upon said packing.

6. A flexible metallic pipe one section of which has a portion thereof offset and has the other portion jointed to the opposite section of said pipe in a plane oblique to the axis of the same.

7. A flexible metallic pipe consisting of several sections pivotally jointed to each other in transverse planes, one of said sections consisting of two parts, the meeting edges of which are pivotally jointed together in a plane oblique to the axis of the parts where they are jointed, and one of said parts having the end thereof opposite said joint offset.

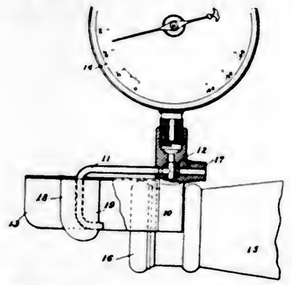
8. A flexible metallic pipe comprising two or more connected sections, one of which is pivotally connected at one end to its companion section in a transverse plane, and mediate its ends is divided in a plane into two parts and the edges resulting from such division pivotally connected together and one of said parts having its longitudinal axis offset.

852,581. NOZZLE-PIEZOMETER. FRANK B. SANBORN, Cambridge, Mass. Filed Sept. 28, 1905. Serial No. 280,543.

Claim.—1. A testing apparatus for use in connection with a fluid-discharge device comprising indicating means, and portions applicable to the discharge device and having passages leading to the indicating means, said passages being maintained in different relations to the discharge device according to which one of the portions of the apparatus is applied to the discharge device whereby fluid pressures of different characters may be measured.

2. A testing apparatus for use in connection with a fluid-discharge device comprising indicating means, a body portion having passages leading to the indicating means, means for holding the body portion with the inlet-opening of one passage within the discharge device, and means for positioning said body portion with the inlet-opening of another passage opposite the open end of the discharge device.

3. A testing apparatus for use in connection with a fluid-discharge device comprising indicating means, a body portion having passages leading to the indicating means, means for confining the fluid at the discharge device to one passage, and means for positioning the body portion with the inlet-opening of a passage opposite the open end of the discharge device.



4. A testing apparatus for use in connection with the discharge-nozzles or the like comprising indicating means to which lead a plurality of passages, means associated with one passage for closing the nozzle to direct fluid pressure into said passage, and means for fixing the relation of the opening of another passage with respect to the nozzle.

5. A testing device for use in connection with discharge nozzles or the like comprising indicating means having a passage leading thereto, means for positioning the inlet-opening of the passage at a point removed from the nozzle, whereby free fluid flow from said nozzle is permitted, and a shield extending over both the extremity of the nozzle and the inlet-opening of the passage.

6. A testing apparatus for use in connection with discharge-nozzles or the like comprising indicating means having a passage leading thereto, means for fixing the relation of the inlet-opening of the passage to the open end of the nozzle, and a shield extending over both the extremity of the nozzle and the inlet-opening of the passage and being curved over the stream issuing from the nozzle.

7. A testing apparatus for use in connection with discharge-nozzles or the like comprising indicating means having a passage leading thereto, means for fixing the relation of the inlet-opening of the passage to the open end of the nozzle, and a divider situated adjacent to the inlet-opening of the passage and having a reduced edge turned toward the nozzle.

8. A testing apparatus comprising a body portion, a tube extending outwardly from, and then back toward said body portion, and a gage connected with the tube through the body portion.

9. A testing apparatus comprising a body portion adapted to engage the exterior of a nozzle, a tube extending outwardly from said body portion, and having an enlargement adapted to be received by and to close the interior of said nozzle and a gage connected with the tube through the body portion.

10. A testing apparatus comprising a body portion, a tube extending outwardly from said body portion, a sectional bushing of yieldable material surrounding the tube, and a gage connected with the tube through the body portion.

11. A testing apparatus comprising a body portion, a tube extending outwardly from said body portion, a sectional bushing of yieldable material surrounding the tube, means for preventing the rotation of the bushing on the tube, and a gage connected with the tube through the body portion.

12. A portable testing apparatus comprising a body provided with an indicator-passage and separate inlet-passages communicating with the indicator-passage, a valve operable in the body for independently connecting either

inlet-passage with the indicator-passage, means for applying static fluid pressure to one of the inlet-passages, and means for applying dynamic fluid pressure to another inlet-passage.

13. A portable testing apparatus comprising a body provided with an indicator-passage and separate inlet-passages communicating with the indicator-passage, means for applying static fluid pressure to one of the inlet-passages, means for applying dynamic fluid pressure to another inlet-passage, and a shield extending from the body over the dynamic-pressure-applying means.

14. A portable testing apparatus comprising a body provided with an indicator-passage and separate inlet-passages communicating with the indicator-passage, means for applying the static fluid pressure to one of the inlet-passages means for applying dynamic fluid pressure to another inlet-passage, and a shield extending from the body over the dynamic pressure applying means and at the side toward the indicator-passage.

15. A portable testing apparatus comprising a body provided with an indicator-passage and an inlet-passage and having a supporting-portion adapted to engage a nozzle, and a conduit leading from the inlet-passage and opening toward the supporting-portion.

16. A testing apparatus for use in connection with a fluid-discharge device comprising portions applicable to the discharge device and having passages maintained in different relations to said device by the contact of the apparatus therewith, and a gage to which the passages lead and which is provided with a plurality of scales including one indicating fluid pressure and one indicating the quantity of fluid discharged.

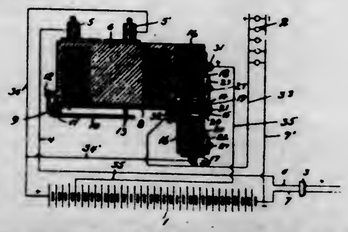
17. A portable testing apparatus comprising a body provided with an indicator-passage and an inlet-passage and having a supporting-portion adapted to engage a nozzle, a conduit leading from the inlet-passage and opening toward the supporting-portion, and a shield extending over the conduit-opening.

18. A portable testing apparatus comprising a body provided with an indicator-passage and an inlet-passage and having a curved supporting-portion, a conduit leading from the inlet-passage and opening toward said supporting-portion, and a shield extending from and generally conforming to the curve of the supporting-portion and projecting over the conduit-opening.

19. A portable testing apparatus comprising a body provided with an indicator-passage and an inlet-passage and having a supporting-portion, a conduit leading from the inlet-passage, and a divider situated adjacent to the conduit and having a reduced edge extending toward the supporting-portion.

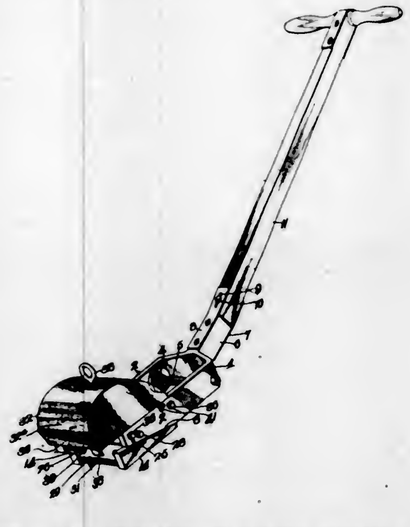
20. A portable testing apparatus comprising a body provided with an indicator-passage and an inlet-passage and having a supporting-portion, a conduit leading from the inlet-passage, and a divider extending upon opposite sides of the conduit and having its outer edges reduced, one of said edges being upon the side toward the supporting-portion.

852,582. ELECTROMAGNETIC SWITCH. WALTER SCRIBNER, Columbus, Ohio. Filed Dec. 1, 1905. Serial No. 289,912.



Claim.—A switch comprising an electro-magnet, an armature arranged to be attracted by said electro-magnet, a contact plate carried upon the outer end of said armature, means for insulating said contact plate from said armature, a carbon strip carried upon the outer face of said contact plate, a fixed contact plate arranged upon one side of the armature, a second fixed contact plate arranged upon the other side of the armature, the contact plate carried by said armature being adapted to contact with one of these fixed contact plates at each limit of its movement, means for connecting an electrical conductor to each of the fixed contact plates and to the contact-plate of the armature, and a carbon strip slidably and yieldingly mounted upon the outer face of each of the fixed contact plates with which the carbon strip carried by the contact plate of the armature is adapted to contact prior to the contacting of the contact plates with each other.

852,583. FLOOR-SCRAPER. NOAH B. SHORT, Kansas City, Mo. Filed Mar. 18, 1907. Serial No. 362,845.



Claim.—1. In a machine of the character described, a frame provided with a handle, a transverse scraping blade carried by the frame, and a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade.

2. In a machine of the character described, a frame provided with a handle, a transverse scraping blade carried by the frame, a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade, and means to secure said weight rigidly in its last-named position.

3. In a machine of the character described, a frame provided with a handle, a transverse scraping blade carried by the frame, a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade, and means to limit the sliding movement of the weight in both directions.

4. In a machine of the character described, a frame provided with a handle, a transverse scraping blade carried by the frame, a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade, means to limit the rearward sliding movement of the weight, and means to limit the forward sliding movement of the weight and also prevent the latter from tilting upward at its rear end when at its said forward limit of movement.

5. In a machine of the character described, a frame provided with a handle at its rear end and with runners forward of the handle and a transverse scraper blade at its front end, and a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade.

6. In a machine of the character described, a frame provided with a handle at its rear end, and with runners forward of the handle and a transverse scraper blade at its front end, a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade, means to limit the rearward movement of the weight, and means to limit its forward sliding movement.

7. In a machine of the character described, a frame provided with a handle at its rear end, runners underlying said frame, springs pressing upwardly against the frame and downwardly on the runners, and a transverse scraping blade carried by the frame at its front end.

8. In a machine of the character described, a frame provided with a handle at its rear end, runners underlying the frame, springs pressing upwardly against the frame and downwardly on the runners a transverse scraping blade carried by the frame at its front end, and a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade.

9. In a machine of the character described, a frame provided with a handle at its rear end, runners underlying said frame and projecting forwardly beyond the same, springs pressing upwardly against the frame and downwardly on the runners, a transverse scraping blade carried by the frame at its front end and arranged between and rearward of the front ends of the runners, and a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade.

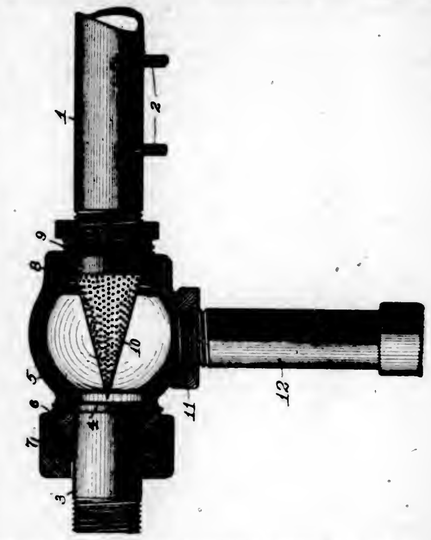
10. In a machine of the character described, a frame provided with a handle at its rear end and a transverse scraper blade at its front end, plates underlying and slidably secured to the frame, runners underlying said plates and capable of a slight up and down movement with respect to said plates, and means for pressing the runners yieldingly down and the plates yieldingly upward.

11. In a machine of the character described, a frame provided with a handle at its rear end and a transverse scraper blade at its front end, plates underlying and slidably secured to the frame, runners underlying said plates and capable of a slight up and down movement with respect to said plates, means for pressing the runners yieldingly down and the plates yieldingly upward, and a longitudinally slidable weight mounted on the frame and adapted as the operator starts to draw the machine over the floor to slide forward and impose most of its weight upon said blade.

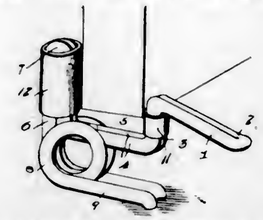
852,584. SPRINKLING-PIPE CONNECTION. CHARLES W. SKINNER, Troy, Ohio. Filed Dec. 28, 1906. Serial No. 349,769.

Claim.—1. A sprinkler pipe connection comprising a rotatory chambered tee having a bored and exteriorly threaded nose at one end and having an interiorly threaded discharge-nose at the other end in line with the first-mentioned nose and having a threaded nose at right angles to the other noses, a sleeve swiveled within the first-mentioned nose, a packing nut engaging the first-mentioned nose and coöperating with the sleeve, a discharge pipe having connection at said discharge-nose, a conoidal strainer disposed within said chamber and having its larger end held at the juncture of the discharge pipe with the chamber, and a handle secured to the third nose of the tee to serve in rotating the tee, combined substantially as set forth.

2. A sprinkler pipe connection comprising a rotatory chambered tee having a bored and exteriorly threaded nose at one end and having an interiorly threaded discharge-nose at the other end in line with the first-mentioned nose and having a threaded nose at right angles to the other noses, a sleeve swiveled within the first-mentioned nose, a packing nut engaging the first-mentioned nose and coöperating with the sleeve, a bushing screwed into the interiorly threaded nose of the tee and adapted to have a pipe screwed into it, a conoidal strainer disposed within the chamber of the tee and having its larger end fitted removably in the bushing, and a handle secured to the third nose of the tee to serve in rotating the tee, combined substantially as set forth.



852,585. DOOR-CHECK. WILLIAM H. TERRY, Fall River, Mass. Filed Oct. 25, 1906. Serial No. 340,527.



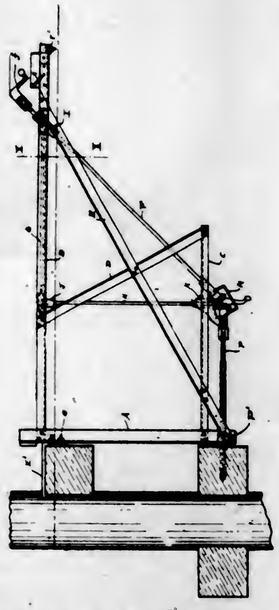
Claim.—1. A device of the class described comprising a continuous piece of resilient material, doubled and bent on itself to form a spikage base member, a seat having front and rear posts and terminating in a downwardly inclined foot pressure member, and an intermediate coil between the base and seat.

2. A door check having a door seat provided with front and rear vertical posts, the front post having downwardly inclined pressure and guide members extending therefrom, and the rear post provided with securing legs, and yielding buffers applied over the posts.

852,586. BORING APPARATUS. JOHN A. B. TOMPKINS, Wauwatosa, and SIDNEY R. HARTWELL, Milwaukee, Wis. Filed Feb. 1, 1906. Serial No. 298,894.

Claim.—1. A device for boring horisontally under water and having means for securing it to a support above the

level of the boring line, comprising the combination of a supporting frame provided with an outwardly extending track; means for suspending the frame at one end from a pier; a working frame depending from said track and adapted to travel thereon; a tool connected to the lower portion of the working frame and extending inwardly therefrom; a downwardly extending driving shaft connected with said tool; a guide for the lower portion of the working frame, and an angular brace extending from the inner end portion of the supporting frame outwardly to the track; said track being adapted to support the operator.



2. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination with supporting attachments having depending hanger bars connected therewith, and having outwardly projecting track arms supported from the hanger bars; a tool holder movably suspended from the outwardly projecting track arms and adapted to receive a tool in an inwardly projecting position; tool driving connections leading downwardly from the track arms to the tool holder; together with guiding arms, also supported and extending outwardly from the hanger bars below the track arms, and arranged to prevent the tool holder from swinging laterally.

3. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination of a hanger bar provided with suspending means adapted to engage the same with a suitable support, and extended downwardly to form a rest against the side of the support below the point of engagement; an outwardly extending track connected with the upper portion of said hanger bar and supported from the bar; a working frame mounted to travel on said track and depending therefrom to a point on a level with the lower end portion of said bar; a tool holder connected with the lower portion of the working frame and arranged to support a tool in a substantially horizontal position; and tool driving connections, extending from said track downwardly to the tool holder.

4. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination of a hanger bar provided with suspending means adapted to engage the same with a suitable support, and extended downwardly to form a rest against the side of the support below the point of engagement; an outwardly extending track, supported from the hanger bar and connected with its upper portion; a brace connected with the hanger bar below the track connection and supporting the outer portion of the track; a working frame mounted to travel on said track, and provided with depending tool holder arranged to hold a tool in an inwardly projecting position; and driving connections arranged to transmit motion from the upper portion of the tool holder to the tool.

5. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination of a set of upright bars provided with supporting hooks; outwardly extending bars at the upper and lower ends of the upright bars; a carriage supported by the upper and guided by the lower outwardly extending bars; an inclined driving shaft comprising a part of said carriage and tool driving gears at the lower end of said driving shaft; said carriage being provided with a housing for said gears.

6. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination of a hanger bar provided with suspending means adapted to engage the same with a suitable support, and extended downwardly to form a rest against the side of the support below the point of engagement; an outwardly extending track, supported from the hanger bar and connected with its upper portion; a brace connected with the hanger bar below the track; a working frame mounted to travel on said track, and provided with a depending tool holder arranged to hold a tool in an inwardly projecting position; and driving connections arranged to transmit motion from the upper portion of the tool holder to the tool, together with guiding devices for the lower portion of the working frame and tool, also supported from said hanger bar.

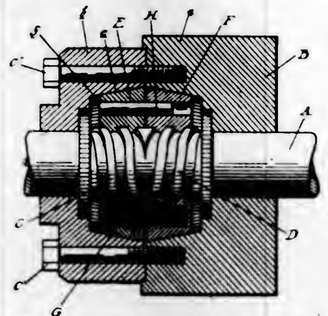
7. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination with a suitable support provided with an attachment to movably connect it with the side of a pier, of a supporting frame hinged thereto at different elevations and provided with outwardly extending track arms; a working frame mounted to travel along said arms and provided with a tool support in its lower portion; driving connections extending from the upper portion of the working frame to the tool support and adapted for the transmission of motion to a tool carried thereby and stays adapted to connect the supporting frame with the pier at one side of the line of said hinge connections.

8. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination with a supporting frame having means for suspending the same at one end from a pier and provided with upper and lower sets of outwardly extending arms; a working frame depending from the upper set of arms and adapted to travel thereon; a tool connected to the lower portion of the working frame and extending inwardly therefrom; and a downwardly extending driving shaft connected with the tool, said working frame being guided by the lower arms of the supporting frame.

9. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination with a supporting frame having adjustable suspension hooks at one end adapted to be removably connected with a pier; said frame being provided with upper and lower sets of outwardly extending arms; a working frame depending from the upper set of arms and adapted to travel thereon; a locking device adapted to engage and hold the working frame at the outer end portion of the supporting frame, a tool connected to the lower portion of the working frame; and extending inwardly therefrom; and a downwardly and inwardly extending driving shaft connected with the tool; said working frame being guided by the lower arms of the supporting frame; together with lateral projections on the working frame adapted to engage underneath the lower arms of the supporting frame when the working frame is lifted.

10. A device for boring horizontally under water and having means for securing it to a support above the level of the boring line, comprising the combination of a set of upright bars provided with supporting hooks; outwardly extending bars at the upper and lower ends of the upright bars; a carriage supported by the upper and guided by the lower outwardly extending bars; an inclined driving shaft comprising a part of said carriage, and tool driving gears at the lower end of said driving shaft; said carriage being provided with a housing for said gears; together with means for vertically adjusting said frame in relation to said hooks.

852,587. AUTOMATIC CLUTCH. MAXIMILIAN J. L. TOWLER, Detroit, Mich. Filed Apr. 2, 1906. Serial No. 309,534.



Claim.—1. The combination of two concentric relatively revoluble members, a member adapted to frictionally engage one of said revoluble members and having a threaded engagement with the other revoluble member, whereby the said frictional engagement is respectively increased or diminished by opposite relative rotations of said revoluble members, and means for holding the frictionally-engaging members constantly in slight frictional contact, for the purpose described.

2. The combination with a revoluble member, of a recessed member sleeved thereon, a pair of members within said recess having opposed frictional bearings upon said recessed member and respectively a right and a left threaded engagement with said revoluble member, and resilient means for yieldably pressing said pair of members toward their respective frictional bearings upon said recessed member.

3. The combination with a revoluble member, a recessed member sleeved thereon, a pair of members within said recess having opposed frictional bearings upon said recessed member and respectively a right and a left threaded engagement with said revoluble member, a slidable longitudinally-extending coupling between said pair of members, and a spring within a recess in said pair of members for yieldably pressing the same in opposite directions toward said opposed frictional bearings.

4. The combination with a revoluble member, of a recessed member sleeved thereon, a pair of members within said recess having oppositely-tapering peripheral frictional bearings upon said recessed member and respectively a right and left threaded engagement with said revoluble member, a pin forming a longitudinally-slidable coupling between said pair of members, and a plurality of springs for yieldably pressing the members of said pair toward their respective frictional bearings.

5. The combination with a revoluble member, of a recessed member sleeved thereon, a pair of members within said recess having a peripheral frictional bearing upon said recessed member and respectively a right and left threaded engagement with said revoluble member, the maximum diameter of one of said threaded portions being no greater than the minimum diameter of the other portion.

6. The combination with two relatively revoluble members, of a member having a friction bearing on one of said revoluble members and a threaded engagement with the other revoluble member by which it is moved toward or from said bearing, and automatic means for holding the friction faces in constant contact, for the purpose described.

7. The combination with two relatively revoluble members, of a member having a friction bearing on one of said revoluble members and a threaded engagement with the other revoluble member, and means for yieldably pressing the friction faces in constant contact, for the purpose described.

8. The combination with two relatively revoluble members, of a member having a threaded engagement with one of said revoluble members and a friction bearing on the other revoluble member, and means pressing upon said friction member and re-acting upon said threaded engagement outside of the angle of friction, by which said friction member is yieldably held in constant contact with said friction bearing.

9. The combination with two relatively revoluble members, of a pair of friction locking members having opposed bearings upon one of said revoluble members and respectively a right and a left threaded engagement with the other revoluble member, and a resilient member for pressing said friction members away from each other, the force thereof re-acting on said threaded portion so as to be outside the angle of friction.

852,588. ADJUSTABLE MEANS FOR ATTACHING LENSES. CHARLES J. TROPPMAN, Marquette, Mich., assignor to F. A. Hardy & Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 11, 1905. Serial No. 286,955.



Claim.—1. A lens attachment consisting of an adjustable lens seat having a centrally located aperture, and straps for engaging the lens and the mounting extending from the inner and outer peripheries of said lens seat.

2. Means for attaching lenses consisting of a member from the central and edge portions of which are produced straps for securing the lens and for attachment of the mounting.

3. Means for attaching lenses consisting of a lens seat, adapted to lie adjacent to the periphery of a lens, and straps, adapted to engage the lens and the mounting for the lens, produced from the central portion and outer edges of said lens seat.

4. Means for attaching lenses consisting of a member having a centrally located aperture, straps, for the engagement of the lens and the mounting for the lens, carried upon the inner and outer edges of said first-mentioned member.

5. An adjustable lens seat having a central aperture and means for its attachment produced from the inner periphery thereof.

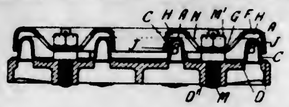
6. A lens attachment consisting of a lozenge shaped structure having a central lozenge shaped aperture and means provided upon the suitable interior and exterior angles of said structure for its engagement.

7. Means for attaching lenses consisting of a central portion adapted to lie adjacent to the edge of a lens, said central portion being provided with a centrally located aperture, and projections carried upon opposite sides of said central portion, one or more of said projections being divided into independently adjustable parts.

852,589. LIFT-VALVE AND ITS GUARD FOR GAS AND LIQUID PUMPS. WILLIAM WEIR, Cathcart, Scotland. Filed June 2, 1906. Serial No. 319,876.

Claim.—1. The combination with two concentric annular valves, said valves each presenting in vertical section

a form comprising two flat seating faces joined together by a groove or arched passage, of a single valve guard formed to provide a central flattened depression for permitting its attachment to the valve seat, and with an inner and outer flange or guiding wall for guiding the valves during their lift with crowned passages between the central depression and the guiding flanges for limiting the lift of the valves.

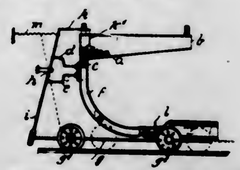


2. The combination with a valve seat having two concentric series of openings, of two concentric annular valves, each adapted to close one of said series of openings, and an annular valve guard having a portion adapted for attachment to said valve seat and a depending annular flange on either side of said portion, said annular flanges being constructed and arranged to guide said valves during the lift of the latter.

3. The combination with a valve seat having two concentric series of openings, of two concentric annular valves each presenting in vertical section a form comprising two flat seating faces joined together by a raised portion and each adapted to close one of said series of openings, and an annular valve guard having a portion adapted for attachment to said valve seat and a depending annular portion on either side of said first-named portion, said depending portions being constructed and arranged to guide said valves during the lift of the latter, said valve guard also having means above said depending portions adapted to engage said raised portions of said valves to limit the lift of the valves.

4. The combination with a valve having a portion raised above the seating portion thereof, of a valve guard having a depending portion arranged to co-operate with the raised portion of said valve to guide the latter during its lift, and means, carried by said depending portion above the lower edge thereof, adapted to engage said raised portion of said valve to limit the lift of the latter prior to the engagement of the seating portion of the valve with the lower edge of the depending portion of said valve guard.

852,590. MACHINE FOR THE AUTOMATIC INSERTION OF GLASS BALLS INTO BOTTLE-NECKS. FREIDRICH WIESEHOMEIER, Rinteln, Germany. Filed Oct. 1, 1906. Serial No. 336,935.

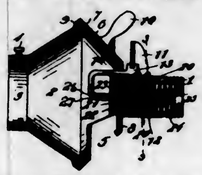


Claim.—1. Apparatus for the purpose set forth comprising a reciprocatable support for the bottle, a receptacle for the balls, means of communication between said receptacle and the neck of the bottle and means whereby the balls are released one by one from said receptacle in to said means of communication.

2. Apparatus for the purpose set forth comprising a reciprocatable support for the bottle, a receptacle for the balls, a conduit in communication with said receptacle and extending therefrom to the neck of the bottle on said support and means operated by said reciprocatable support whereby the balls are released one by one from said receptacle into said conduit.

3. Apparatus for the purpose set forth comprising a reciprocatable support for the bottle, rollers supporting said support, a receptacle for the balls, a conduit in communication with said receptacle and extending therefrom to the neck of the bottle on said support, means operated by said reciprocatable support whereby the balls are released one by one from said receptacle into said conduit and means for agitating the balls in the receptacle aforesaid.

852,591. VALVE. JAMES W. ASHBAUGH, Bremen, Ohio. Filed July 26, 1906. Serial No. 327,868.



Claim.—1. A device of the character described comprising a valve casing or body, and an endwise movable non-rotatable valve therein, a mixer, a rotary air shutter on said mixer, a cam on said air shutter presenting a surface inclined laterally to the plane of revolution of said shutter, and a connection between said cam and the valve to move the latter longitudinally when the air shutter is turned.

2. A device of the character described comprising a valve casing or body, an endwise movable non-rotatable valve therein, a mixer, a rotary air shutter on said mixer, a cam on said air shutter presenting a surface inclined laterally to the plane of revolution of said shutter, means to adjust said cam, and a connection between said cam and the valve to move the latter longitudinally when the air shutter is turned.

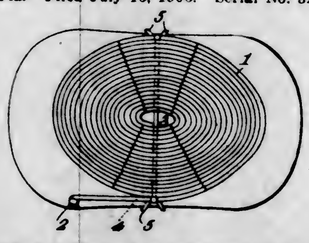
3. A device of the character described comprising a valve casing or body, an endwise movable non-rotatable valve therein, a mixer, a rotary air shutter on said mixer, a spring to normally seat the valve, a cam on said shutter, and a connection between said cam and the valve to open the latter against the tension of its spring when the shutter is turned in one direction.

852,592. WHIFFLETREE-COUPLING. EDWARD L. BAUMAN, Saxonburg, Pa. Filed Jan. 15, 1907. Serial No. 352,434.



Claim.—The combination with the axle and thills of a vehicle, and a cross-bar connecting the thills, of suspension loops depending from the cross-bar, a whiffletree carried by the loops, and an elastic connection between the whiffletree and the axle.

852,593. SADDLE-CUSHION. RICHARD J. BENBOW, Milligan, Fla. Filed July 16, 1906. Serial No. 326,453.



Claim.—1. A saddle cushion consisting of an inflatable tube spirally wound upon itself, a combined reinforcing and air-distributing tube secured to and communicating with each of the convolutions, and attaching members combined with the cushion.

2. A saddle cushion consisting of an inflatable tube spirally wound upon itself and provided with a central air space, a combined reinforcing and air-distributing tube secured to and communicating with each of the convolutions, and attaching members combined with the cushion.

852,594. NAUTICAL SIGNAL. FREDERICK C. BERWICK, New York, N. Y. Filed Feb. 5, 1906. Serial No. 299,657.



Claim.—1. In a nautical signal, the combination of a sound-producing device, a signal light, a normally closed valve, a spring-controlled lever normally holding the sound-producing device inoperative, a pair of shields or shutters concealing the signal light, means adapted to alternately open and close the shields, and connections between the spring-controlled lever and the means for opening and closing the shields, whereby an alarm may be sounded and a light flashed.

2. In a nautical signal, the combination of a sound-producing device, a signal light, a normally closed valve, a spring-controlled lever normally holding the sound-producing device inoperative, a pair of shields or shutters concealing the signal light, a three-arm lever and connections adapted to operate the shields, and a connection between the spring-controlled lever and the three-arm lever, whereby an alarm may be sounded and a light flashed.

3. In a nautical signal, the combination of a whistle, a signal light, a normally closed valve, a spring-controlled lever normally holding the whistle inoperative, a pair of shields or shutters concealing the signal light, a three-arm lever and connections arranged to operate the shields, and a bell-crank lever having one arm attached to the spring-controlled lever and the other arm to the three-arm lever.

852,595. SIDE-DRAFT ATTACHMENT FOR ROAD-GRADERS. THOMAS F. BRYAN, Ponca, Okla. Filed Mar. 20, 1905. Serial No. 251,146.



Claim.—1. In combination with a blade-road-grader, a side-draft attachment consisting of a draft-chain and a brace-bar having an outwardly extending end attached to said chain and a brace-bar support consisting of rods *s s* having an intermediately connected spiral spring *s'* substantially as described.

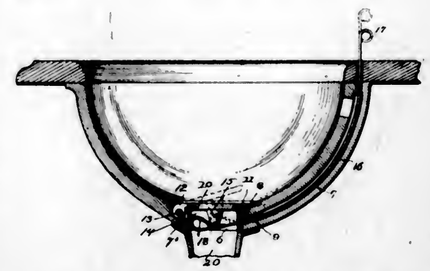
2. In combination with a blade-road-grader, a side draft attachment consisting of a draft-chain and a brace-bar having an outwardly extending end attached to said chain a brace bar support, consisting of rods having an intermediately connected spiral spring and a chain supporting rod and spiral spring *u* and *u'* substantially as described.

3. In combination with a blade-road-grader, a side-draft attachment consisting of a draft-chain and a brace-bar having an outwardly extending end attached to said chain a brace-bar support, consisting of rods having an intermediately connected spiral spring, a chain support consisting of a rod and spiral spring and a staple bolt *e* passing through, laterally, and secured in the brace-bar *c'* near its inner or grader end substantially as described.

4. In combination with a blade-road-grader, a side draft attachment consisting of a draft-chain and a brace-bar having an outwardly extending end attached to said chain a brace-bar support, consisting of rods having an intermediately connected spiral spring, a chain supporting rod and spiral spring, a staple bolt passing through, laterally, and secured in the brace-bar near its inner or grader end and a lock eye-bolt having its upper portion terminating in an inverted U *e''*.

5. In combination with a blade-road-grader, a side-draft attachment consisting of a draft-chain and a brace bar having an outwardly extending end, a brace-bar support a staple bolt passing through, laterally, and secured in the brace-bar near its inner or grader end, a chain support, a lock eye-bolt having its upper portion terminating in an inverted U; and a hook *a'* attached to the rear portion of the grader, all substantially as described and for the purposes set forth.

852,596. BASIN-FITTING. DURELL J. BUTTERFIELD, Marine City, Mich. Filed Dec. 26, 1906. Serial No. 349,476.



Claim.—1. The combination with a wash basin having an over flow duct and provided with a discharge opening, of a pivoted waste plug normally closing the discharge opening, and an operating member slidably mounted within the over-flow duct and provided with a cam adapted to engage the plug for moving the same to open position.

2. The combination with a wash basin having an overflow duct and provided with a discharge opening, of a pivoted waste plug normally closing the discharge opening, and a flexible operating member slidably mounted within the over-flow duct and provided with a terminal cam adapted to engage the plug for moving the latter to open position.

3. The combination with a wash basin having an overflow duct and provided with a discharge opening, of a pivoted waste plug normally closing the discharge opening and provided with a depending projection, and an operating member slidably mounted within the over flow duct and having one end thereof provided with a handle and its opposite end formed with a cam adapted to engage the projection for moving the plug to open position.

4. The combination with a wash basin having an overflow duct and provided with a discharge opening, of a piv-

oted plug normally closing the discharge opening, and an operating lever slidably mounted within the over-flow duct and having one end thereof bent upon itself to form a cam adapted to engage the plug for moving the latter to open position.

5. The combination with a wash basin having an over-flow duct and provided with a discharge opening, of a pivoted waste plug normally closing the discharge opening, and provided with a depending weighted projection, an operating lever slidably mounted within the over-flow duct and bent to conform to the shape of the interior walls thereof, one end of said lever being provided with a terminal finger piece and the opposite end thereof bent to form a cam adapted to engage the projection for moving the valve to open position.

6. The combination with a wash basin having an over-flow duct and provided with a discharge opening, a pivoted waste plug normally closing said opening, and an operating lever disposed within the over-flow duct and formed of a single piece of spring metal having one end thereof bent to form a finger loop and its opposite end bent upon itself to form an operating cam adapted to engage a projection on the plug for moving the latter to open position.

7. The combination with a wash basin having an over-flow duct and provided with a discharge opening, a tubular member seated in the discharge opening and provided with an annular shoulder forming a seat, a pivoted waste plug adapted to engage said seat and provided with a depending projection, and an operating member disposed within the over-flow duct and provided with a terminal cam adapted to engage the projection for unseating the plug, the longitudinal movement of the cam being limited by engagement with the interior walls of the tubular member.

8. The combination with a wash basin having an over-flow duct and provided with a discharge opening, of a tubular member seated in the discharge opening and having its upper end flared laterally and provided with an annular shoulder forming a seat, said member being provided with spaced lateral lugs, a waste plug having a reduced extension pivotally mounted between the lugs and adapted to engage the seat, said plug being provided with a depending weighted projection disposed centrally within the tubular member, and a flexible operating member slidably mounted within the over-flow duct and having one end thereof provided with a finger piece and its opposite end formed with a cam face adapted to engage the depending projection for unseating the plug.

852,597. OIL-BURNER. CORODON S. CANNON, Chicago, Ill. Filed June 12, 1906. Serial No. 321,401.

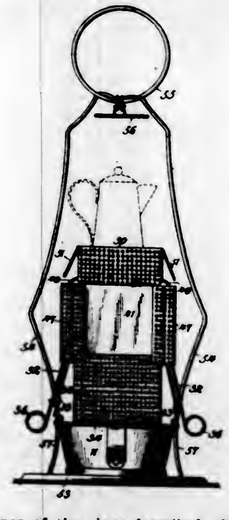
Claim.—1. In a burner of the character described, the combination with a wick tube oblong in cross section, of a wick located in the tube, a combustion chamber movably arranged over the tube, and spaced legs depending from the combustion chamber and located within the tube against the inner faces of the walls thereof and at opposite sides of the wick.

2. In a burner of the character described, the combination with an oil font and wick tube, of a combustion chamber mounted over the wick tube, and spaced depending legs carried by the combustion chamber and slidably extending downwardly inside the wick tube and engaged therein when the combustion chamber is spaced therefrom.

3. In a burner of the character described, the combination with a wick tube, of a wick located therein, a combustion chamber movably located over the tube, and a leg depending from the combustion chamber and slidably located within the tube between the wall thereof and the wick, said leg holding the combustion chamber in place and having means projecting therefrom between its ends that engages the tube to support the combustion chamber in elevated position above the same.

4. In a burner of the character described, the combination with a wick tube, of a combustion-chamber mounted over the wick tube and movable toward and from the same, and slidable connections between the tube and chamber, said connections having shoulders that rest on the top of the tube when the chamber is elevated and support the same in spaced relation to said top.

5. In a burner of the character described, the combination with a wick tube, of a combustion chamber located thereover and comprising a perforate tube, and depending legs carried by the combustion chamber and slidably engaging in the wick tube, said legs having offset shoulders between their ends that rest on the top of the wick tube when the chamber is elevated and support said chamber in spaced relation thereto.



6. In a burner of the class described, the combination with a wick tube, of a combustion chamber located thereover and comprising a perforate tube that is oblong in cross section and has its opposite side walls bent to produce sections that are disposed at an obtuse angle to each other, and spaced legs depending from the sections and engaged in the wick tube.

7. In a burner of the character described, the combination with a wick tube that is oblong in cross section and is transversely bent on an intermediate longitudinal line to produce sections that are disposed at an obtuse angle to each other, of a combustion chamber located over the wick tube and comprising a perforate tube that is oblong in cross section and has its opposite side walls bent to produce sections that are disposed at an obtuse angle to each other, and legs carried by the chamber sections and engaged in the corresponding tube sections.

8. In a burner of the character described, the combination with a wick tube, of a wick located therein, a perforate combustion chamber arranged over the wick tube and having its interior in line with the wick, and deflectors located in opposite portions of the interior of the combustion chamber and comprising spaced upright wings extending toward each other in the chamber.

9. In a burner of the character described, the combination with a wick tube, of a combustion chamber located thereover and having perforate walls, legs depending from the combustion chamber and extending into the wick tube, and deflector wings carried by the legs and located in the combustion chamber.

10. In a burner of the character described, the combination with an oil font, of a wick tube mounted thereon, a combustion chamber located over and supported by the wick tube, spaced legs depending from the combustion chamber and slidably engaged in the wick tube, and detachable connections between the chamber and font for holding the former against movement above the wick tube.

11. A burner of the character described, the combination with an oil font, of a wick tube movably mounted thereon and supported thereby, a combustion chamber mounted in the wick tube, loops carried by opposite portions of the chamber and extending downwardly on opposite sides of the tube, and hooks mounted on opposite portions of the font and detachably engaging in the loops.

12. In a burner of the character described, the combination with a wick tube, of a combustion chamber located thereover, and a regulating sleeve adjustably mounted on the tube and movable with respect to the chamber, said sleeve being movable to different positions over the chamber.

13. In a burner of the character described, the combination with a wick tube, of a combustion chamber comprising a perforate tube mounted on the wick tube, a regulating sleeve slidably mounted on the wick tube and movable upwardly to different positions over the combustion chamber, and means for moving the sleeve.

14. In a burner of the character described, the combination with a wick tube, of a combustion chamber comprising a perforate tube mounted on the wick tube, a regulating sleeve slidably mounted on the wick tube and movable upwardly to different positions over the combustion chamber, and a perforate guard sleeve surrounding the tube and regulating sleeve.

15. In a burner of the character described, the combination with an oil font, of a wick tube projecting above the same, said wick tube being oblong in cross section and being transversely bent, a combustion chamber comprising a perforate tube oblong in cross section and transversely bent, said combustion chamber being located over the wick tube, depending legs carried by the combustion chamber and slidably engaging in the wick tube, said legs having deflector wings arranged within the combustion chamber, a regulating sleeve slidably mounted on the wick tube and movable upwardly to inclose the lower portion of the combustion chamber, means for moving the sleeve, and a perforate guard sleeve surrounding the regulating sleeve and wick tube.

16. In a burner of the character described, the combination with a wick tube, of a combustion chamber located thereover, a frame detachably mounted on the chamber, and a casing detachably supported by the frame and surrounding chamber, said casing comprising a plurality of detachably engaged walls.

17. In a burner of the character described, the combination with a combustion chamber, of a frame comprising side bars located on opposite sides of the chamber, and cross bars connecting the side bars, shanks depending from the cross bars and detachably engaged in the upper portions of the chamber, and casing walls suspended by their upper ends from the side bars and disposed in spaced relation to the combustion chamber.

18. In a burner of the character described, the combination with a combustion chamber, of a frame comprising side bars located on opposite sides of the upper end of the chamber, means for securing the frame in place including a depending shank carried by the side bars and detachably engaging within the upper portion of the chamber, and casing walls suspended by their upper ends from the side bars and disposed in spaced relation to the combustion chamber.

19. In a burner of the character described, the combination with a combustion chamber, of a casing surrounding the same, means engaging the upper portions of the casing and chamber for supporting the former from the latter, and a cap detachably mounted on said means and extending over the combustion chamber.

20. In a burner of the character described, the combination with a combustion chamber, of a frame extending around the upper portion of the same, side walls hung from the frame, and a cap supported on the frame over the combustion chamber.

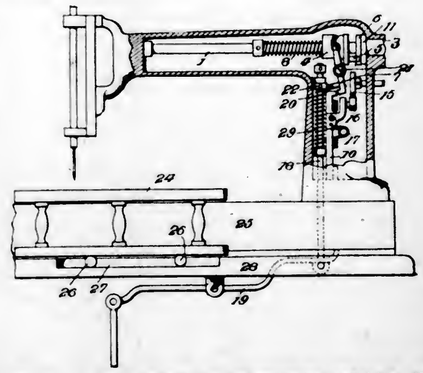
21. In a burner of the character described, the combination with a combustion chamber, of an angular frame surrounding the upper portion of the combustion chamber and having depending shanks that engage in the same, side walls having depending fingers that engage the opposite sides of the frame, said side walls being located on opposite sides of and in spaced relation to the combustion chamber, end walls engaged with the side walls and having hooks that engage the frame, and a cap having depending side walls that engage the frame.

22. In a burner of the character described, the combination with an oil font, of a wick tube supported thereon, said wick tube being oblong in cross section and being transversely bent throughout its length, a combustion chamber mounted on the wick tube and comprising an open ended perforate tube oblong in cross section and transversely bent throughout its length, depending legs carried by the combustion chamber and engaging in the wick tube, deflector wings carried by the legs and located in the opposite portions of the combustion chamber, a regulating sleeve slidably mounted on the wick tube and movable upwardly over the lower portion of the combustion chamber, handles connected to the sleeve for moving the same, a perforate guard sleeve surrounding the wick tube and regulating sleeve, loops secured to the combustion chamber and located on opposite sides of the wick tube, hooks carried by the oil font and detachably engaging the loops, an angular frame located about the upper portion of the combustion chamber and having depending shanks engaged therein, casing walls suspended from the frame and surrounding the combustion chamber, and a cap mounted on the frame and extending over the top of the combustion chamber.

23. In a burner of the character described, the combination with a wick tube, of a combustion chamber located thereover and having perforate walls, legs extending through the combustion chamber and depending into the wick tube, and deflector wings carried by the portions of the legs that are located in the combustion chamber, said deflector wings being spaced apart.

24. In a burner of the character described, the combination with a wick tube, of a combustion chamber comprising a perforate tube mounted on the wick tube, an imperforate regulating sleeve slidably mounted on the wick tube and movable upwardly to different positions over the combustion chamber, and exposed means for moving the sleeve.

852,598. SEWING AND EMBROIDERING MACHINE. ROBERT CORNELY, Paris, France. Filed Oct. 21, 1905. Serial No. 283,866.



Claim.—1. In a sewing or embroidering machine, the combination of stitch-forming mechanism, a driving wheel, and means for automatically stopping said stitching mechanism after each stitch and automatically starting the same after a predetermined number of revolutions of the fly-wheel which latter continuously rotates.

2. In a sewing or embroidering machine, the combination of stitch-forming mechanism, driving mechanism, means for automatically and periodically connecting and disconnecting said stitch-forming mechanism and driving means, and gearing intermediate said driving mechanism and means.

3. In a sewing or embroidering machine, the combina-

tion of stitch-forming mechanism, a driving shaft for said mechanism, driving means for imparting movement to said shaft, means carried by said driving shaft for connecting said shaft and driving means, a counter-shaft, driving connections between said driving means and counter-shaft, and connections between said connecting means and counter-shaft for automatically and periodically connecting and disconnecting said shaft and driving means.

4. In a sewing or embroidering machine, the combination of stitch-forming mechanism, a driving shaft for said mechanism, driving means for imparting movement to said shaft, means carried by said driving shaft for connecting said shaft and driving means, a counter-shaft, driving connections between said driving means and counter-shaft, a cam mounted on said counter-shaft and connections between said cam and connecting means for automatically and periodically connecting and disconnecting said shaft and driving means.

5. In a sewing or embroidering machine, the combination of stitch-forming mechanism, a driving shaft for said mechanism, a driving pulley for imparting movement to said shaft, means carried by said driving shaft for connecting said shaft and pulley, a counter-shaft, driving connections between said pulley and counter-shaft, a cam mounted on said counter-shaft, a pivoted lever engaging said connecting means, and connections between said cam and lever for automatically and periodically connecting and disconnecting said shaft and pulley.

6. In a sewing or embroidering machine, the combination of stitch-forming mechanism, a driving shaft for said mechanism, a driving pulley for imparting movement to said shaft, means carried by said driving shaft for connecting said shaft and pulley, a counter-shaft, driving connections between said pulley and counter-shaft, a cam mounted on said counter-shaft, a pivoted lever engaging said connecting means, and a rod normally in the path of said lever and acted upon by said cam to automatically and periodically connect and disconnect said shaft and pulley.

7. In a sewing or embroidering machine, the combination of stitch-forming mechanism, a driving shaft for said mechanism, a driving pulley for imparting movement to said shaft, means carried by said driving shaft for connecting said shaft and pulley, a counter-shaft, driving connections between said pulley and counter-shaft, connections between said means and counter-shaft for automatically and periodically connecting and disconnecting said shaft and pulley, and manually-operable means for moving said connecting device.

8. In a sewing or embroidering machine, the combination of stitch-forming mechanism, a driving shaft for said mechanism, a driving pulley for imparting movement to said shaft, means carried by said driving shaft for connecting said shaft and pulley, a counter-shaft, driving connections between said pulley and counter-shaft, a cam mounted on said counter-shaft, connections between said cam and means for automatically and periodically connecting and disconnecting said shaft and pulley, and manually-operable means for moving said connecting device.

9. In a sewing or embroidering machine, the combination of stitch-forming mechanism, a driving shaft for said mechanism, a driving pulley for imparting movement to said shaft, means carried by said driving shaft for connecting said shaft and pulley, a counter-shaft, driving connections between said pulley and counter-shaft, a cam mounted on said counter-shaft, a pivoted lever engaging said connecting means, connections between said cam and lever for automatically and periodically connecting and disconnecting said shaft and pulley, and manually-operable means for moving said connecting device.

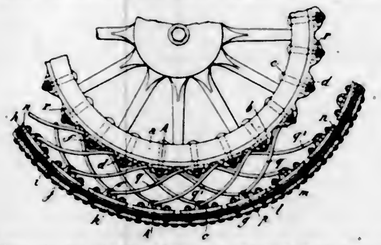
10. In a sewing or embroidering machine, the combination of stitch-forming mechanism, a driving shaft for said mechanism, a driving pulley for imparting movement to said shaft, means carried by said driving shaft for connecting said shaft and pulley, a counter-shaft, driving connections between said pulley and counter-shaft, a cam mounted on said counter-shaft, a pivoted lever engaging said connecting means, a rod normally in the path of said lever and acted upon by said cam to automatically and periodically connect and disconnect said shaft and pulley, and manually-operable means for moving said connecting device.

852,599. EYEGLASS-HOLDER. MARY E. DRIPPS, Washington, D. C. Filed Dec. 27, 1906. Serial No. 349,679.



Claim.—An eye glass holder of the character described, comprising a casing for inclosing the eye glass suspending means, and a spring hook effective for upholding the eye glasses out of a dangling position, having an upward and outward deflected portion and an inward-extending projection conformed to and engaging the lower front portion of said casing, and its free end contacting with the opposite portion of said hook, for the purpose set forth.

852,600. ELASTIC WHEEL. GASTON FLOQUET, Paris, France. Filed Mar. 14, 1905. Serial No. 250,068.



Claim.—1. An elastic wheel for vehicles with two concentric rims the inner one rigidly connected with the nave and having between it and the outer rim which latter is of a supple and strong material several devices interposed side by side formed of curved blade springs, each of which when deflected pivots around one end while its other end slides freely till it meets a fixed stop, said springs being inclined in the same direction in each set but inclined in the opposite direction in the two adjoining sets.

2. An elastic wheel, comprising two concentric rims, a plurality of independent spring blades mounted in parallel series between said rims and inclined in one direction, and a series of oppositely inclined independent blades interposed between the aforesaid series.

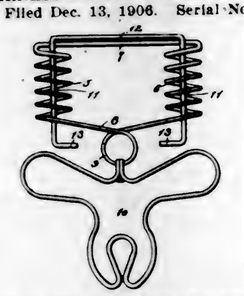
3. An elastic wheel comprising a rigid rim, a flexible concentric rim, a plurality of independent curved spring blades rectangular in cross-section mounted in series between said rims, and bearings on the rims for the ends of the blades.

4. An elastic wheel comprising a rigid rim, a guideway formed on the periphery of said rim, an outer concentric rim, a plurality of bearings mounted on the inner face of the latter, a plurality of curved spring-blades each of which has one of its ends mounted in one of said bearings and its other end mounted in said guide-way.

5. An elastic wheel comprising a rigid rim, a guide-way formed on the periphery of said rim, an outer concentric flexible rim, a plurality of bearings mounted on the inner face of the latter, a plurality of curved spring-blades each of which has one of its ends pivoted in one of said bearings and its other end mounted in the guide-way, and an abutment in the latter for each of said blades.

6. An elastic wheel comprising a rigid rim, a plurality of peripheral guide-ways formed in the rim, a concentric laminated flexible rim surrounding said rigid rim, a plurality of bearing plates mounted on the inner periphery of the flexible rim, laterally mounted spring-blades pivoted on each of said plates inclined in one direction and slidable in said guide-ways, spring blades pivoted on each of said plates between the aforesaid blades and inclined in an opposite direction, and abutments in the guide-ways to engage the springs.

852,601. HARNESS-BUCKLE. EDWARD J. FLOYD, Kirkland, Ga. Filed Dec. 13, 1906. Serial No. 347,628.



Claim.—1. A buckle comprising two members, one of which consists of a pair of coils connected at one end by a cross-bar, and the other member comprising a cross-bar adjacent the aforesaid cross-bar, and having at its ends stems slidably mounted within the coils.

2. A buckle comprising two members, one of which consists of a pair of coils connected at one end by a cross-bar, and having at the other end a suspension device, and the other member comprising a cross-bar adjacent the aforesaid cross-bar and having at its ends stems slidable within the coils.

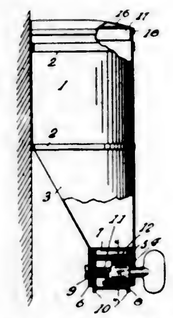
852,602. CLOTHES-LINE PROP AND HOLDER. ADA B. GREER, Wheeling, W. Va. Filed Dec. 1, 1906. Serial No. 345,896.



Claim.—1. A clothes line prop and holder, means at its upper end to hold the clothes line thereto, and a crescent shaped foot at the lower end, pivoted to one face thereof, and stops projecting laterally from the inner face of said foot and between which the lower end of said prop and holder is received, as and for the purpose specified.

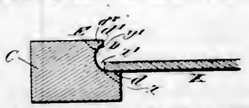
2. A clothes line prop and holder constructed of wood and bifurcated to form integral spring jaws between which the clothes line may be clamped, a bracket secured to said jaws and extending across the bifurcation, said bracket having an opening of circular form opposite one of said jaws, a cam-lever having a hub fitted in said opening, a bolt passed through said lever and its hub and through the jaw, and a nut engaging the screw threaded end of said bolt upon the opposite face of the jaw.

852,603. SOAP-DISPENSING DEVICE. JAMES W. HANLON, Wichita, Kans. Filed Mar. 23, 1906. Serial No. 307,698.



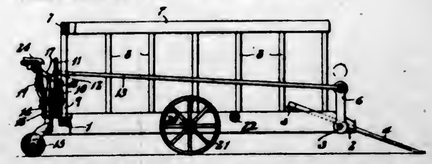
Claim.—In a device of the character described, the combination of a receptacle, a spout leading from the receptacle, a head for the spout provided with a chamber having communication with the receptacle and also with a discharge opening, a rotary dispensing cylinder removably mounted within the chamber, the said dispensing cylinder comprising end disks connected by a transverse partition and provided with sides which in conjunction with the partition and disks form pockets, and removable bearings for the dispensing cylinder which normally hold the same in position.

852,604. WINDOW-SASH. ASBERRY P. HARDEE, Milton, Fla. Filed Mar. 9, 1907. Serial No. 361,609.



Claim.—A window-sash formed with a rabbet, the inner wall of which provides a self-centering seat for the glass and the side wall of which has a groove of greater width than the thickness of the glass, extending outwardly from the centering edge of the seat.

852,605. HAY-LOADER. MARK HARDMAN, Afto, Wyo. Filed May 26, 1906. Serial No. 318,967.



Claim.—1. In a machine of the character described, the combination with a portable platform; of arms fixed in

relation to and extending forward from the platform, a series of fingers hung between the arms and disposed at all times entirely in front of the platform, and means for swinging the fingers in unison.

2. In a machine of the character described, the combination with a portable platform; of arms fixed in relation to and extending rigidly from the front end of the platform, said arms being continuations of the sides of the platform, a series of gathering fingers mounted to swing between the arms, and means for swinging said fingers in unison to the desired angles in relation to the platform.

3. In a machine of the character described, the combination with a portable platform pivotally supported adjacent its center, and means for swinging the platform upon its support; of arms fixed in relation to and extending forward from the sides of the platform, a plurality of gathering fingers hung between the arms and entirely in front of the platform, and means for swinging the fingers in unison to a desired angle in relation to the platform.

4. In a machine of the character described, the combination with a portable platform pivotally supported between its ends, and means for swinging the platform upon its support to adjust its angle to the horizontal; of arms rigidly connected to and extending forward from the platform, a rotatable cross-bar journaled at its ends within the fixed arms, a plurality of gathering fingers rigidly secured to and movable with the cross-bar, said fingers being disposed entirely in front of the platform, an arm extending from the cross-bar, and means for swinging said arm to adjust the fingers to a desired angle to the platform.

852,606. HAY-CAP. FRANK M. HITCH, Juniata, Nebr., assignor of one-half to George B. Wyckoff, Juniata, Nebr. Filed July 20, 1906. Serial No. 327,093.



Claim.—1. A hay cap comprising inclined overlapped side boards, a comb board arranged upon and covering the joint at the inner contiguous edges of the uppermost side boards, and a chain supporting the side boards and provided with a substantially rectangular central link receiving the comb board, and having resilient clamping portions for engaging the same.

2. A hay cap comprising inclined overlapped side boards, a comb board arranged upon and covering the joint at the inner contiguous edges of the uppermost side boards, and a chain composed of a central substantially rectangular link provided with a continuous straight side and having substantially L-shaped terminal portions forming the ends and the opposite side of the central link, said link being also provided with end eyes formed by coiling the material at the end, and side links supporting the side boards and provided with eyes, the eyes of the uppermost side links being linked into the eyes of the central link.

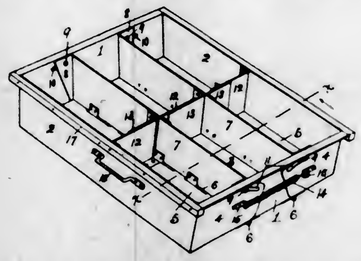
852,607. ADJUSTABLE TONGUE. JAMES T. KETCHUM, Tunkhannock, Pa. Filed Nov. 7, 1906. Serial No. 342,884.

Claim.—1. The combination with a tongue and a cross arm; of a draw bar secured to the tongue and cross arm, said draw bar extending to the end of the cross arm, a guide bar integral with one end of the draw bar and extending inward from the end of the cross arm, said guide bar having a longitudinal groove therein having a concave wall, a stay rod detachably secured to the inner end of the guide bar and to the cross arm, a thill iron, a sleeve at one end thereof and adjustably mounted on the guide bar, and a set screw within the sleeve and having a rounded end adapted to fit snugly within the groove to center the sleeve upon the bar and lock it against movement.



2. The combination with a tongue and a cross arm; of a guide bar angular in cross section and secured to the cross arm, a stay connecting one end of the bar with the cross arm, a thill iron, a sleeve integral therewith and adjustably mounted upon the guide bar, said bar having a longitudinal groove in its rear face provided with a concaved wall, and a set screw within the sleeve and having a rounded end adapted to be seated within the groove and to center the sleeve upon the bar.

852,608. MOLD BOX OR PAN. GEORGE MATTHEWS, Riga, Mich. Filed Aug. 20, 1906. Serial No. 331,228.



Claim.—1. A mold-box or pan having a plurality of compartments hinged at their edges to the edges of a central compartment part the side walls of which are movable and form the inner walls of the hinged compartments, the said hinged compartments and their inner side walls being adapted to have an outward opening movement relative to each other and the central compartment part.

2. A mold-box or pan having a body part and a part hinged to one side of such body part, a partition hinged to the body part and dividing it and the hinged part into a plurality of compartments, said partition being adapted to have an outward movement relative to the body part, and the hinged part being adapted to have an outward movement relative to both the body part and partition.

3. A mold-box or pan having a body, hinged side parts, and partitions separating the body part from the hinged parts and hinged to the former whereby to divide the box or pan into a plurality of compartments, said hinged side parts being adapted to be opened outwardly from the partitions and to effect a relative separating movement of the partitions.

4. A mold-box or pan comprising a body, side parts hinged to the body, partitions hinged to the body and dividing the box or pan transversely in a plurality of compartments, and lapping wings fixed to the walls of the compartment thus formed whereby to divide the box or pan longitudinally into compartments, said hinged side parts being adapted to be opened outwardly from the partitions and to effect a relative spreading movement of the partitions.

5. A mold-box or pan having a portion of its bottom hinged to a relatively fixed portion of the bottom of the box or pan and carrying a side wall of the box or pan, which wall is provided at its ends with wings for lapping the end walls of the box or pan, the said end walls and wings being provided with registering slots, a partition hinged to the fixed portion of the bottom intermediate the side walls of the box or pan, a pin projecting outwardly from each end of the partition and operating in the said registering slots, whereby an outward movement of the hinged part relative to the fixed part of the box or pan will at a predetermined point in its movement effect an outward movement of the partition relative to the fixed part, and means for normally retaining the parts in closed position.

852,609. PEAT-WORKING MACHINE. GEORGE MATTHEWS, Riga, Mich. Filed Aug. 20, 1906. Serial No. 331,229.

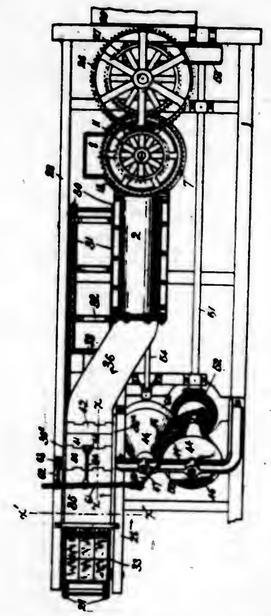
Claim.—1. In a machine of the class described, a pulp reducing part having a grinding-drum, a coöperating incasing wall for the drum, and fixed and rotary cutting-disks having registering openings and disposed to operate on the substance after it has been operated on by the drum and wall, said drum and rotary disk being geared to rotate at different speeds.

2. In a machine of the class described, a pulp reducing part comprising a hopper, a worm and a corrugated grinding-drum disposed in superimposed relation to operate in the hopper, a corrugated incasing wall coöperating with the drum, a fixed and a rotary disk disposed below the drum and having a plurality of registering openings provided with oppositely beveled walls whereby to form coacting shearing surfaces, and mechanism for driving the rotary disk at a greater speed than the drum and worm.

3. In a machine of the class described, a discharge trough, a feed-worm thegein, a hopper disposed above and communicating with the receiving end of the trough, a vertical shaft within said hopper, a loose sleeve on the shaft, a worm and a conical grinding-drum keyed in superimposed relation to the sleeve, a corrugated conical wall coöperating with the drum, a cutting-disk fixed intermediate the drum and trough, a rotary cutting-disk carried at the lower end of the shaft and coacting with the under surface of the fixed disk, said disks having a plurality of registering openings, and means for driving the shaft and sleeve.

4. The combination with a machine of the class described, of an endless conveyer, a shed or housing over a portion of the conveyer and having an opening in its top communicating with the machine discharge, and a mold-box carried by the conveyer, said box being of suitable height to pass under but have sliding contact with the top of the shed or housing.

5. The combination with the discharge-pipe or trough in a machine of the class described, of a member movable by the flow of the substance worked, a conveyer for carrying molds, means for operating the conveyer, and a variable speed mechanism having connection with and controlled by the movement of said member whereby to regulate the speed of the conveyer relative to the quantity of flow of the substance.



6. The combination with the discharge-pipe or trough in a machine of the class described, of a member movable by the flow of the substance worked, a conveyer for carrying molds disposed to receive the discharge of the substance, means for driving the conveyer, and a variable speed device in connection with the driving means and member and operated by movement of said member to effect a change of speed of the conveyer to suit the quantity of flow of the substance.

7. The combination with the discharge-pipe in a machine of the class described, of a valve associated therewith and having an inclined part in the path of flow of the substance worked whereby the valve is raised more or less as the quantity of flow increases or diminishes, a conveyer for carrying mold-members for receiving the discharge of the substance, and means for driving the conveyer having a variable speed device in connection with the valve whereby the movement thereof controls the speed of the conveyer.

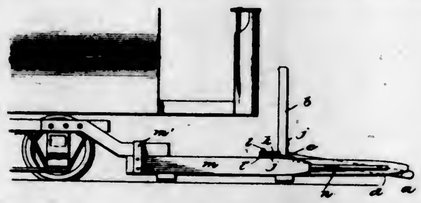
8. The combination with the discharge in a machine of the class described, of a gate-valve associated therewith and movable by the flow of the substance worked, a conveyer for carrying mold members in position to receive the discharge of the substance, means for driving the conveyer having a variable speed device associated therewith, a lever having connection with the variable speed device whereby a movement thereof effects a change of speed of the conveyer, and a rod connecting said valve and lever for communicating a greater or less movement to the lever as the flow of the substance increases or diminishes.

9. The combination with the discharge in a machine of the class described, of a conveyer for carrying mold-members, a shed or housing over a portion of the conveyer having an opening in its top in communication with said discharge and under which the mold-members pass, means for

driving the conveyer having a variable speed device associated therewith, a valve controlling the opening in the shed or housing relative to the discharge, said valve having operative connection with the variable speed device and being automatically operated by the flow of the substance worked to change the speed of the conveyer to suit the quantity of flow.

10. The combination with the discharge in a machine of the class described, of a conveyer for carrying mold-members, a shed or housing over a portion of the conveyer having its top disposed in contiguous position to the tops of the mold-members as they pass thereunder and provided with an opening communicating with the discharge, means for driving the conveyer having an associated variable speed device, which is operative to vary the speed of the conveyer, and means operated by the flow of the substance worked to control the speed of the conveyer relative to the quantity of such flow.

852,610. CAR-FENDER. THEODORE J. F. MUELLER, Portland, Oreg. Filed Mar. 9, 1907. Serial No. 361,499.



Claim.—1. In a car fender, a main frame detachably connected with the car; supporting bars slidingly mounted in said main frame; a scoop portion mounted to have a rocking movement within said supporting bars; a back portion hinged to said supporting bars, and means carried by the scoop portion and the back portion adapted to limit the rocking movement of the said scoop.

2. In a car fender, a main frame detachably connected with the car; supporting bars slidingly mounted in said main frame; a scoop portion mounted to have a rocking movement within said bars; a back portion hinged to said sliding bars and being so located that it may be folded down upon the said scoop portion, and means carried by the said scoop portion and the said back portion whereby the rocking movement of the said scoop may be limited.

3. In a fender, a main frame detachably connected with the vehicle; supporting bars slidingly mounted in said main frame; a scoop portion pivotally mounted within said supporting bars; a back portion hinged to said supporting bars and being so located whereby it may be folded down upon the said scoop; means carried by said back portion for limiting the sliding movement of the bars, and means carried by the said back portion and the scoop portion for limiting the pivotal movement of the said scoop portion.

4. A car fender comprising a main frame detachably connected with the car; supporting bars slidingly mounted in said main frame; a scoop portion; a bar extending across said scoop portion, the ends of said bar extending through the sides of said scoop portion and being journaled within the supporting bars to provide means upon which said scoop portion may be rocked; a vertically arranged back portion the lower edge of which is hinged to the supporting bars adjacent to the rear end of said scoop portion; wings or deflectors carried by said back portion adapted to deflect an object away from the car wheels, and co-operating means carried by the scoop portion and the back portion for limiting the rocking movement of the said scoop portion.

5. A car fender comprising a main frame connected with the car; supporting bars slidingly mounted within said main frame; a scoop portion mounted to have a rocking movement within the supporting bars; a back portion hinged to said supporting bars; side wings or deflectors pivoted to said back portion, and co-operating means carried by the scoop portion and the back portion for limiting the rocking movement of the said scoop portion.

6. A car fender comprising a main frame the inner faces of the sides of which are each longitudinally grooved; supporting bars the outer faces of which are each provided with a longitudinal feather corresponding with the grooves of the main frame; a scoop portion mounted to have a rocking movement within the said supporting bars; a back portion hinged to said supporting bars; side deflectors pivoted to said back portion; means for normally retaining said back portion in a vertical position; a slotted bar pivoted to the scoop portion and extending through the meshes of the back portion; a vertically arranged bolt carried by the back portion and located so as to be in position to be passed through the slotted bar of the scoop portion; a spring coiled upon said bolt, and a nut for the said bolt.

7. A folding car fender comprising a main frame detachably connected with the car; supporting bars slidingly mounted within the said main frame; a scoop portion mounted to have a rocking movement within said supporting bars; a back portion hinged to the supporting bars adjacent to the rear of the scoop portion; side deflectors pivoted to said back portion; co-operating means carried by the scoop portion and the back portion for limiting the rock movement of the scoop portion, and means carried by the main frame for normally retaining the back portion in a vertical position, said means also serving to retain the parts of the fender in their folded position after they have been folded and slid back within the main frame.

8. A folding fender comprising a main frame; supporting bars capable of being moved forwardly and rearwardly within said main frame; a scoop portion mounted to have a rocking movement within said supporting bars; a back portion hinged to said supporting bars adjacent to the rear of said scoop portion; side deflectors pivoted to said back portion; co-operating means carried by the scoop portion and the back portion for limiting the rocking movement of said scoop portion, and detachable means carried by the main frame adapted to normally hold the said back portion in a vertical position and also serving to retain the parts in position when they are folded and slid back within the main structure.

852,611. PROCESS OF AGGLOMERATING MINERALS. WALTER G. PERKINS and THOMAS COX, Jr., San Francisco, Cal. Filed Dec. 29, 1905. Serial No. 293,848.

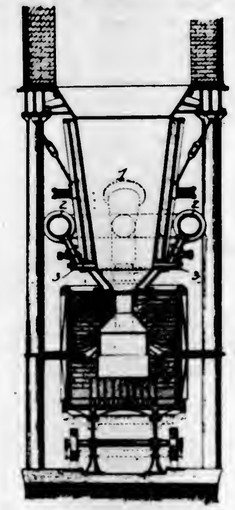
Claim.—1. The process of agglomerating certain metalliferous ores containing a material having fuel properties, which consists in placing the same within a receptacle, then applying heat thereto from an ignited inflammable gaseous material, then introducing air thereto, and then regulating the supply of gas and air until the mass has become agglomerated.

2. The process of agglomerating certain elements in the form of oxids, sulfids, sulfates, carbonates and silicates, which consists in commingling said elements in a receptacle, then applying heat thereto from an ignited inflammable gas, then introducing air, and then regulating the supply of gas and air until the mass has become agglomerated.

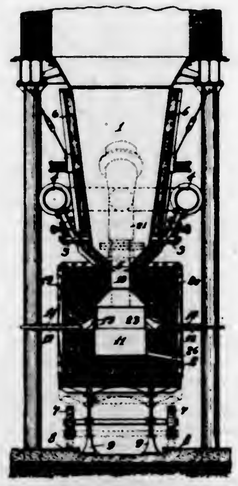
3. The process of agglomerating certain elements in the form of oxids, sulfates, sulfids, carbonates and silicates, which consists in commingling said elements in a receptacle, then applying heat thereto from an ignited inflammable gas until heat is generated from the combustion of a portion of said elements, then decreasing the heat from the gas, and then introducing air to complete the agglomeration of said mass.

852,612. PROCESS OF DESULFURIZING AND SUBSEQUENT SMELTING. WALTER G. PERKINS, San Francisco, Cal. Filed Jan. 22, 1906. Serial No. 297,354.

Claim.—The process of treating ores in a finely divided state which consists in introducing gaseous fuel into a heated space below the smelting zone and then passing said fuel mixed with air up through the smelting zone and at the same time introducing air into the smelting zone.



852,613. SMELTING-FURNACE. WALTER G. PERKINS, San Francisco, Cal. Filed Feb. 5, 1906. Serial No. 299,605.



Claim.—1. In a smelting furnace a hollow structure formed in two sections, the lower end of the upper section being contracted and provided with an opening, and the lower section being provided with a chamber which communicates with said opening, means for introducing a blast of air into the upper section above the contracted portion, means for connecting said air introducing means with the chamber of the lower section and means for introducing an inflammable gas into the chamber of the lower section.

2. In a smelting furnace a hollow structure formed in two sections, the lower end of the upper section being contracted and provided with an opening, and the lower removable section being provided with a chamber and a throat leading therefrom to said opening, means for introducing a blast of air into the upper section above the contracted portion, means for connecting said air introducing means with the chamber of the lower section and means for introducing an inflammable gas into the chamber of the lower section.

3. In a smelting furnace a hollow structure formed in two sections, the lower end of the upper section being contracted and provided with an opening, and the lower section being provided with a chamber and a throat leading therefrom to said opening, means for introducing a blast of air into the upper section above the contracted portion, means for connecting said air introducing means with the chamber of the lower section and means for introducing an inflammable gas and an air-blast into the chamber of the lower section.

4. In a smelting furnace a hollow structure, formed in two sections, the lower section being removable and provided with an arched chamber and a throat leading from the top of the arch and adapted to register with the lower end of the upper section, a discharge outlet and gas pipes projecting into said chamber, the ends of which are contracted and curved.

5. In a smelting furnace a hollow structure, formed in two sections, the lower section being removable and comprising an outer shell and an inner lining, said lining being removable and forming a chamber having an upwardly extending throat adapted to communicate with the lower end of the upper section, and means for introducing inflammable gas into said chamber.

6. In a smelting furnace a hollow structure formed in two sections, the lower section being removable and comprising an outer shell and an inner lining, said lining being removable and forming a chamber having a throat adapted to communicate with the lower end of the upper section and means for introducing gas into said chamber.

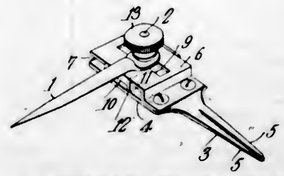
7. In a smelting furnace a hollow receptacle, means for applying heat and introducing air, and means for varying the heat zone within the mass by transferring a portion of the heat from the bottom of the mass to a point above the bottom.

8. In a smelting furnace means for generating heat at or near the bottom of the furnace, means for introducing air to the interior at the side of the furnace, and a conduit from the means at the bottom to the means at the side for conveying heat from the bottom to the interior of the furnace without passing it up through the mass of material.

9. In a smelting furnace means for generating heat at the bottom of a mass of material and means for creating a forced draft upon the exterior of the mass, thereby withdrawing heat units, and introducing them into the mass at a point above the bottom.

10. In a smelting furnace, means at the bottom thereof for generating heat from a gaseous fuel, means for introducing air through the side of the upper receptacles, and a valved conduit leading from the heating means at the bottom to the means for introducing said air for conveying said heat and introducing it into the receptacle above.

852,614. BELT-LACER'S TOOL. CHARLES J. PERSON, St. Joseph, Mo. Filed Mar. 9, 1907. Serial No. 361,512.



Claim.—1. A tool such as described comprising an awl having a stop-block to hold the awl secure in position, a cutter having cutting edges and being concaved along its longitudinal axis, a pin connected with the shank of said cutter and pivotally supporting the awl and a nut screw-threaded upon the pin and adapted to clamp the awl and the cutter together.

2. A tool such as described comprising a cutter, a knife

located upon the shank of the cutter, a block adjustably mounted upon the shank of the cutter with relation to said knife and an awl pivotally mounted upon said block.

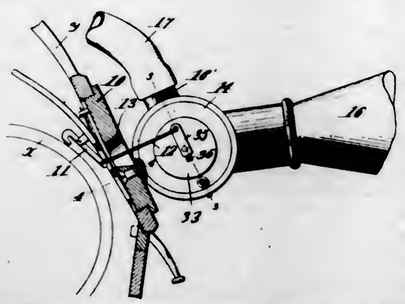
3. A tool such as described comprising a cutter, a plate attached to the shank thereof by means of two screws and having an elongated perforation, a knife connecting the end of said shank and said plate together, a block located between the shank and the plate, a pin carried by said block and passing through the perforation of the plate, an awl mounted upon said pin and a nut screw-threaded upon the pin.

4. A tool such as described comprising an awl, a cutter having cutting edges and being concaved along its longitudinal axis, a pin connected with the shank of said cutter and pivotally supporting the awl and a nut screw-threaded upon the pin and adapted to clamp the awl and the cutter together.

5. A tool such as described comprising a cutter, a knife located upon the shank of the cutter, a block adjustably mounted upon the shank of the cutter with relation to said knife and an awl pivotally mounted upon said block.

6. A tool such as described comprising a cutter, a plate attached to the shank thereof and having an elongated perforation, a knife connecting the end of said shank and said plate together, a block located between the shank and the plate, a pin carried by said block and passing through the perforation of the plate, an awl mounted upon said pin and a nut screw-threaded upon the pin.

852,615. SOUND-WAVE INTENSIFIER. HARLIE O. PUTT, Millbury, Ohio. Filed Oct. 3, 1906. Serial No. 337,272.

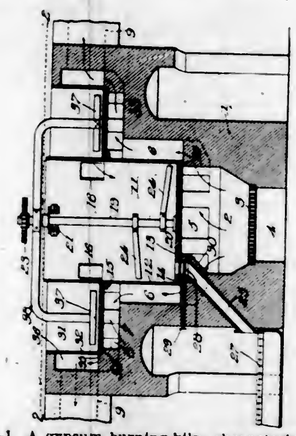


Claim.—1. The combination with the stylus of a sound reproducing machine, of a casing having an inlet and an outlet for a fluid under pressure, a stationary valve disk arranged within the casing and provided with radially arranged passages, a movable valve disk having radially disposed arms for closing said passages, a stem carrying the movable disk, means for connecting the stem to the stylus, and means for resisting movement of the stem by said stylus.

2. The combination with the stylus of a sound reproducing machine, of a casing having an inlet and an outlet, of a fluid under pressure, a ported stationary valve disk within the casing, a movable valve disk, a stem carrying the same, a pair of adjustable bearings for said stem, an adjustable rocker arm carried by the stem, means for connecting the rocker arm to the stylus, a spring arm extending from the stem, and an adjustable cam bearing against said spring arm.

3. The combination with the stylus of a sound reproducing machine, of a casing having an inlet and an outlet for a fluid under pressure, a circumferentially adjustable ported valve disk seated within the casing and provided with an internally threaded hub, a bearing screw mounted in said hub, a movable valve disk, a stem carrying the same and having at one end a conical bearing seated in the screw, the opposite end of said screw being reduced in diameter to form a shoulder, a second bearing screw resting against the shoulder, a rocker arm adjustably secured to the reduced end of the stem, a link connecting the rocker arm to the stylus, a spring arm projecting from the stem, a cam arranged to bear against said arm, an adjustable arbor, or shaft carrying said cam, and a set screw for locking said arbor or shaft in adjusted position.

852,616. GYPSUM-BURNING KILN. FRIEDRICH RAITHEL, Windsheim, Germany. Filed Dec. 15, 1906. Serial No. 347,974.



Claim.—1. A gypsum burning-kiln, characterized by the kiln being constituted by two heaters, of which the main heater arranged directly over the combustion chamber is deeper than the other or auxiliary heater and passes through the latter in such manner that the auxiliary heater with which the escaping combustion gases come into contact, forms an annular chamber round the main heater.

2. A gypsum burning kiln comprising in combination, a furnace having a centrally disposed fire-box, a final heating receptacle disposed above said fire-box, a circular preliminary heating receptacle surrounding said first mentioned receptacle, means for subjecting the preliminary receptacle to the products of combustion of the furnace, and means permitting the contents of said preliminary receptacle to discharge into said final receptacle.

3. A gypsum burning kiln comprising in combination, a furnace having a centrally disposed fire-box, a final heating receptacle disposed above said fire-box, a circular preliminary heating receptacle surrounding said first mentioned receptacle and disposed above the bottom of said first mentioned receptacle, means for subjecting the preliminary receptacle to the products of combustion of the furnace, and means permitting the contents of said preliminary receptacle to discharge into said final receptacle.

4. A gypsum burning kiln comprising in combination, a furnace having a centrally disposed fire-box, a final heating receptacle disposed above said fire-box, a circular preliminary heating receptacle surrounding said first mentioned receptacle and disposed above the bottom of said first mentioned receptacle, and means for subjecting the preliminary receptacle to the products of combustion of the furnace.

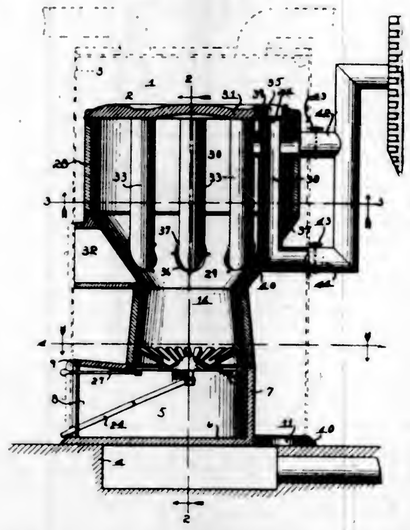
5. A gypsum burning kiln comprising in combination, a furnace, a final heating receptacle disposed above the same, and a preliminary heating receptacle surrounding said final receptacle.

6. A gypsum burning kiln comprising in combination, a furnace, a final heating receptacle disposed above the same, and a preliminary heating receptacle surrounding said final receptacle and elevated with respect to the bottom thereof.

7. A gypsum burning kiln comprising in combination, a furnace, a final heating receptacle disposed above the same, a preliminary heating receptacle surrounding said final receptacle and elevated with respect to the bottom thereof, and means permitting the contents of said preliminary receptacle to discharge into said final receptacle.

8. A gypsum burning kiln comprising in combination, a final heating receptacle, a preliminary receptacle surrounding said final receptacle, and means for heating said receptacles.

852,617. HOT-AIR FURNACE. HARRY F. RASOR, Barberton, Ohio. Filed Feb. 26, 1906. Serial No. 303,046.

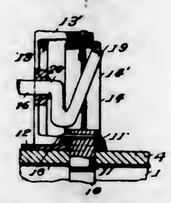


Claim.—1. A hot air furnace comprising a body having a combustion chamber, and smoke and air pipes interchangeably arranged in said chamber.

2. A hot air furnace comprising a body having a combustion chamber, and an annular row of interchangeable smoke and hot air pipes arranged in said chamber.

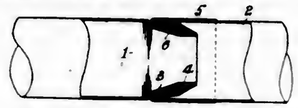
3. A hot air furnace comprising a body having a combustion chamber, the top and bottom of said chamber having vertically alining openings formed therein, seats arranged around said openings, and interchangeable smoke and air pipes in said chamber between said openings and having attaching flanges to engage the said seats, substantially as shown and described.

852,618. OPERATING MECHANISM FOR WASHING-MACHINES. SOLOMON REAM, Millcreek, Ill. Filed Nov. 17, 1904. Serial No. 233,100.



Claim.—An operating mechanism for washing machines comprising a main shaft, a cylinder secured to the upper end thereof and formed with a longitudinally arranged straight slot, a driving shaft 16, having a goose neck carried by one end of the shaft, the free arm of said goose neck being in a plane common also to the driving shaft and said slot and inclined relatively to the driving shaft and adapted to alternately engage the respective walls of the slot in the cylinder to impart a revoluble movement to the main shaft.

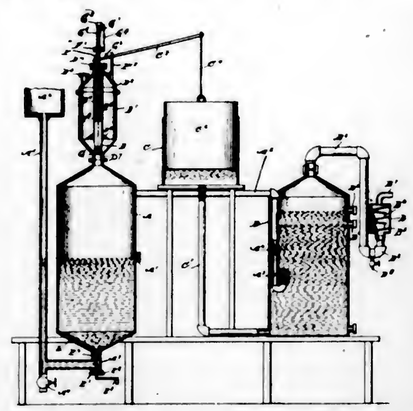
852,619. DETACHABLE INNER TUBE FOR PNEUMATIC TIRES. FRANK RICH, Crawley, England. Filed June 30, 1906. Serial No. 324,194.



Claim.—1. In a pneumatic tire, the combination, with a tube-section provided with a tapering end portion having an externally projecting ring, of a second tube-section having an end portion provided with a ring which projects internally when the said end portion is in its normal position, said end portion being foldable back and forth inside the main portion of its tube-section, and a tubular shield secured to the tapering end portion of the first said tube-section and being foldable back and forth over the main portions of both of the said tube-sections.

2. In a pneumatic tire, the combination, with a tube-section provided with a tapering end portion, of a ring secured outside the said tapering end portion, a second tube-section having an end portion provided with a ring which projects internally when the said end portion is in its normal position, said end portion being foldable back and forth inside the main portion of its tube-section, and a tubular shield having a tapering end portion which is secured between the tapering end portion of the first said tube-section and its said ring, the main portion of the said shield being foldable back and forth over the main portions of both of the said tube-sections.

852,620. ACETYLENE-GAS MACHINE. JAMES R. RICKETTS, Fort Worth, Tex., assignor to H. G. Thomas, Fort Worth, Tex. Filed May 16, 1905. Serial No. 260,688.



Claim.—1. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, and an operating lever connected to said stem.

2. In a gas machine, a feed hopper having a discharge neck at its lower portion, a valve normally held in closed position at the upper end of said neck, a plunger adapted to traverse said neck and disposed within said valve and provided with a stem extending beyond said valve to permit the independent operation of the plunger when the valve is closed.

3. In a gas machine, a feed hopper having a discharge

neck at its lower portion, a valve normally held in closed position, a plunger disposed within said valve and provided with a stem extending beyond said valve to permit the independent operation of the plunger when the valve is closed, a spring for normally retracting said plunger within said valve, and means for retaining said plunger in operative position within said neck.

4. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent to said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, a pivoted operating lever for said stem, and a link pivotally connected to said stem and operating lever.

5. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent to said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, a pivoted operating lever for said stem, a link pivotally connected to said stem and operating lever, a plunger disposed within the recessed lower portion of said valve, a rod from said plunger extending through the tubular stem of said valve, and a tension spring extending between a head upon said rod and the end of said stem.

6. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent to said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, a pivoted operating lever for said stem, a link pivotally connected to said stem and operating lever, a plunger disposed within the recessed lower portion of said valve, a rod from said plunger extending through the tubular stem of said valve, a tension spring extending between a head upon said rod and the end of said stem, and a connection extending from said rod head to a relatively fixed point upon said lever.

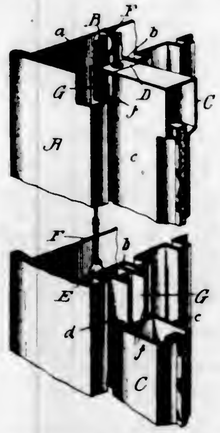
7. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent to said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, a pivoted operating lever for said stem, a link pivotally connected to said stem and operating lever, a plunger disposed within the recessed lower portion of said valve, a rod from said plunger extending through the tubular stem of said valve, a tension spring extending between a head upon said rod and the end of said stem, a connection extending from said rod head to a relatively fixed point upon said lever, and a deflecting sheath carried by said casing at its lower portion.

8. In a gas machine, a feed hopper having a discharge portion, a valve seated upon said portion and provided with a recess at its lower portion, a tension spring for closing said valve, a plunger disposed within the recess at the lower portion of said valve and provided with a stem extending therethrough, and means for operating said plunger independently of the valve.

9. In a gas machine, a feed hopper having a discharge portion, a valve seated at the upper end of said discharge portion, a tension spring for closing said valve, a plunger head adapted to traverse said discharge portion and disposed at the lower portion of said valve and provided with a stem extending therethrough, and a pivoted lever for simultaneously moving said plunger and valve away from their seats.

10. In a gas machine, a feed hopper having a discharge portion, a valve adapted to close said discharge portion, a plunger adapted to traverse said discharge portion after the valve is closed, and means for operating said plunger in one direction independently of said valve.

852,621. SASH-FRAME AND SASH. JESSE G. ROSEBOOM, Cincinnati, Ohio. Filed Sept. 25, 1906. Serial No. 336,094.



Claim.—The combination of the side stile of a sash frame; said stile being hollow and having a vertical groove or guideway at its inner side, a sheave mounted on said stile, a counterbalance weight movable vertically in the stile, a cable passed over the sheave and connected to the weight, a vertically slidable sash having a groove in the outer side of its side bar and also having an arm at its upper end arranged to overhang said groove and provided with an opening receiving the cable, and a vertically movable guard, of I-form in cross-section, arranged in the opposed grooves of the stile or sash and under the overhanging arm of the latter and connected to the opposite end of the cable, with reference to the counterbalance weight.

852,622. WINDOW-SASH. JESSE G. ROSEBOOM, Cincinnati, Ohio. Filed Mar. 6, 1907. Serial No. 360,981.



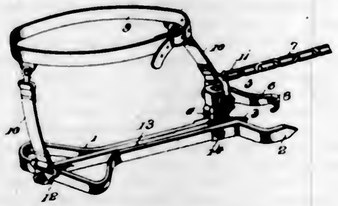
Claim.—1. The combination of a sash bar having a recess in its inner edge, a light or pane of glass of a less thickness than the said recess arranged in the recess, and a metallic clip having a loop-shaped portion straddling the edge of the light or pane of glass and also having an inturned flange on one of the walls of said loop-shaped portion bearing against the light or pane of glass; the

said clip being of a slightly less thickness than the said recess.

2. The combination of a sash frame having recesses in the inner edges of its bars, metallic guards of loop-shape in cross-section arranged in the recesses of the vertical bars of the sash and having beveled portions provided with flat sides opposed to the square edges of the comparatively shallow walls of the recesses, a comparatively thin light or pane of glass, metallic clips having loop-shaped portions of a slightly less thickness than the recesses arranged on and straddling the edges of the light or pane of glass and also having inturned flanges bearing against the light or pane of glass; the clips on the vertical edges of the light being positioned in the guards and the clips on the upper and lower edges of the light being positioned in the recesses in the upper and lower sash bars, and wedges arranged in the guards and interposed between the bights thereof and the adjacent clips.

3. The combination of a sash frame having recesses in the inner edges of its bars; the inner walls of the recesses in the side bars being shallower than the outer walls of said recesses and provided with square edges, sheet-metal guards having loop-shaped portions arranged in the recesses in the side bars and also having a beveled portion on one wall of each loop-shaped portion and provided with a flat side opposed to the adjacent square edge of a recess wall, a light or pane of glass arranged in the guards and also in the recesses in the upper and lower sash bars, and wedges arranged in the recesses of the side bars and the guards and interposed between the vertical edges of the light or pane of glass and the bights of the guards.

852,623. POLE-CLIMBING APPARATUS. JOHN A. ROTH, Hannibal, Ohio. Filed May 10, 1906. Serial No. 316,199.



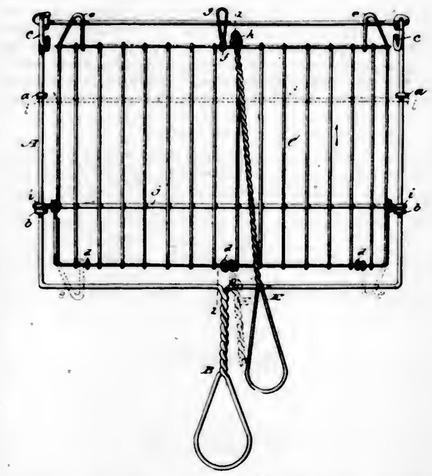
Claim.—1. A tree climbing apparatus comprising a seat frame provided near one end with an upwardly extending arm and with laterally extending diverging pole engaging members in advance of said arm, a fork secured to the upper end of said arm and provided with laterally diverging members, one of which is formed with a hook, and a chain connected to the other member of said fork and arranged for detachable engagement with the said hook.

2. In tree climbing apparatus, a seat frame consisting of a bar bent upon itself and having its end portions spaced apart and formed into spurs to engage a support, a longitudinal bar between the opposite end portions of the frame bar aforesaid and secured thereto, an arm projecting upwardly from the longitudinal bar, a fork attached to the upper end of said arm to engage a pole or support, a chain adapted to embrace a support and connected with the fork aforesaid, and a spur formed at the front extremity of the longitudinal bar and arranged intermediate of the spaced spurs of the seat frame.

3. In tree climbing apparatus, a seat frame consisting of a bar bent upon itself and having its end portions spaced apart and formed into spurs to engage a support, a longitudinal bar between the opposite end portions of the frame bar aforesaid and secured thereto, an arm projecting upwardly from the longitudinal bar, a fork attached to the upper end of said arm to engage a pole or support, a chain adapted to embrace a support and connected with the fork aforesaid, a spur formed at the front extremity of the longitudinal bar and arranged intermediate of the spaced spurs of the seat frame, a loop connected with the upper end of the arm of the longitudinal bar, a second loop projecting upwardly from the outer end of the frame, a belt, and suspending straps detachably connecting the belt with the loops aforesaid.

4. A tree climbing apparatus comprising a seat frame embodying a bar bent upon itself at an intermediate portion and forming spaced apart members that are diverged at their ends and formed with spurs, and a longitudinal bar secured between the spaced apart members of the first named bar and provided with an upwardly extending arm and a spur in advance of said arm and intermediate of the first named spurs, a fork secured to said arm and provided with diverging members, and means for securing a chain to the member of said fork, as and for the purpose set forth.

852,624. BROILING AND TOASTING DEVICE. DE LEONARD RUGG, Catskill, N. Y. Filed Jan. 26, 1906. Serial No. 297,960.



Claim.—1. A device for broiling and toasting articles of food, comprising a frame, a handle therefor, two reversibly mounted pivoted broiler or toaster sections slidably mounted on said frame and held against vertical movement, means on said frame to limit the sliding movement of the sections horizontally on the frame and to aid in the reversal of the sections, the pivot of reversal of the sections being eccentric with relation to the longitudinal center of the latter.

2. A device for broiling or toasting articles of food, comprising a stationary frame, hooks upon the forward end of said frame to engage the fire-box of the stove, and stops upon the side rods or bars of the frame, and broiler or toaster sections between which the food is held, a transverse member on which said sections are pivoted, said member having means engaging said side rods whereby said sections are slidable horizontally upon said frame, said stops upon the frame acting in conjunction with said engaging means to aid in turning the sections, and suitable supports upon one of the sections to engage the frame, substantially as and for the purpose described.

3. A device for broiling or toasting articles of food, comprising a flat stationary frame with a handle, two hinged broiler or toaster sections, a transverse member to which one of said sections is pivotally connected slidably mounted on the end bars of said frame, and having means to prevent vertical movement of said sections on the frame and a handle on one of said sections to move the said sections bodily back and forth on said frame and reverse the said sections.

neck at its lower portion, a valve normally held in closed position, a plunger disposed within said valve and provided with a stem extending beyond said valve to permit the independent operation of the plunger when the valve is closed, a spring for normally retracting said plunger within said valve, and means for retaining said plunger in operative position within said neck.

4. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent to said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, a pivoted operating lever for said stem, and a link pivotally connected to said stem and operating lever.

5. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent to said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, a pivoted operating lever for said stem, a link pivotally connected to said stem and operating lever, a plunger disposed within the recessed lower portion of said valve, a rod from said plunger extending through the tubular stem of said valve, and a tension spring extending between a head upon said rod and the end of said stem.

6. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent to said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, a pivoted operating lever for said stem, a link pivotally connected to said stem and operating lever, a plunger disposed within the recessed lower portion of said valve, a rod from said plunger extending through the tubular stem of said valve, a tension spring extending between a head upon said rod and the end of said stem, and a connection extending from said rod head to a relatively fixed point upon said lever.

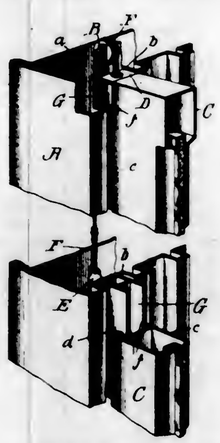
7. In a gas machine, a feed hopper having a discharge opening at its lower portion, a depending casing disposed within said hopper, a valve slidingly mounted in said casing to engage a seat adjacent to said opening, a tension spring disposed between said valve and the body of said casing at its upper portion, a tubular stem extending through said body and beyond said hopper, a pivoted operating lever for said stem, a link pivotally connected to said stem and operating lever, a plunger disposed within the recessed lower portion of said valve, a rod from said plunger extending through the tubular stem of said valve, a tension spring extending between a head upon said rod and the end of said stem, a connection extending from said rod head to a relatively fixed point upon said lever, and a deflecting sheath carried by said casing at its lower portion.

8. In a gas machine, a feed hopper having a discharge portion, a valve seated upon said portion and provided with a recess at its lower portion, a tension spring for closing said valve, a plunger disposed within the recess at the lower portion of said valve and provided with a stem extending therethrough, and means for operating said plunger independently of the valve.

9. In a gas machine, a feed hopper having a discharge portion, a valve seated at the upper end of said discharge portion, a tension spring for closing said valve, a plunger head adapted to traverse said discharge portion and disposed at the lower portion of said valve and provided with a stem extending therethrough, and a pivoted lever for simultaneously moving said plunger and valve away from their seats.

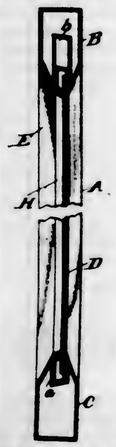
10. In a gas machine, a feed hopper having a discharge portion, a valve adapted to close said discharge portion, a plunger adapted to traverse said discharge portion after the valve is closed, and means for operating said plunger in one direction independently of said valve.

852,621. SASH-FRAME AND SASH. JESSE G. ROSEBOOM, Cincinnati, Ohio. Filed Sept. 25, 1906. Serial No. 336,094.



Claim.—The combination of the side stile of a sash frame; said stile being hollow and having a vertical groove or guideway at its inner side, a sheave mounted on said stile, a counterbalance weight movable vertically in the stile, a cable passed over the sheave and connected to the weight, a vertically slidable sash having a groove in the outer side of its side bar and also having an arm at its upper end arranged to overhang said groove and provided with an opening receiving the cable, and a vertically movable guard, of I-form in cross-section, arranged in the opposed grooves of the stile or sash and under the overhanging arm of the latter and connected to the opposite end of the cable, with reference to the counterbalance weight.

852,622. WINDOW-SASH. JESSE G. ROSEBOOM, Cincinnati, Ohio. Filed Mar. 6, 1907. Serial No. 360,981.



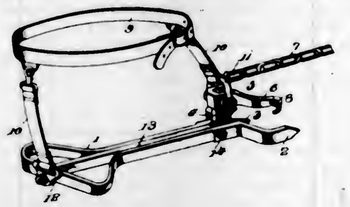
Claim.—1. The combination of a sash bar having a recess in its inner edge, a light or pane of glass of a less thickness than the said recess arranged in the recess, and a metallic clip having a loop-shaped portion straddling the edge of the light or pane of glass and also having an inturned flange on one of the walls of said loop-shaped portion bearing against the light or pane of glass; the

said clip being of a slightly less thickness than the said recess.

2. The combination of a sash frame having recesses in the inner edges of its bars, metallic guards of loop-shape in cross-section arranged in the recesses of the vertical bars of the sash and having beveled portions provided with flat sides opposed to the square edges of the comparatively shallow walls of the recesses, a comparatively thin light or pane of glass, metallic clips having loop-shaped portions of a slightly less thickness than the recesses arranged on and straddling the edges of the light or pane of glass and also having inturned flanges bearing against the light or pane of glass; the clips on the vertical edges of the light being positioned in the guards and the clips on the upper and lower edges of the light being positioned in the recesses in the upper and lower sash bars, and wedges arranged in the guards and interposed between the bights thereof and the adjacent clips.

3. The combination of a sash frame having recesses in the inner edges of its bars; the inner walls of the recesses in the side bars being shallower than the outer walls of said recesses and provided with square edges, sheet-metal guards having loop-shaped portions arranged in the recesses in the side bars and also having a beveled portion on one wall of each loop-shaped portion and provided with a flat side opposed to the adjacent square edge of a recess wall, a light or pane of glass arranged in the guards and also in the recesses in the upper and lower sash bars, and wedges arranged in the recesses of the side bars and the guards and interposed between the vertical edges of the light or pane of glass and the bights of the guards.

852,623. POLE-CLIMBING APPARATUS. JOHN A. ROTH, Hannibal, Ohio. Filed May 10, 1906. Serial No. 316,199.



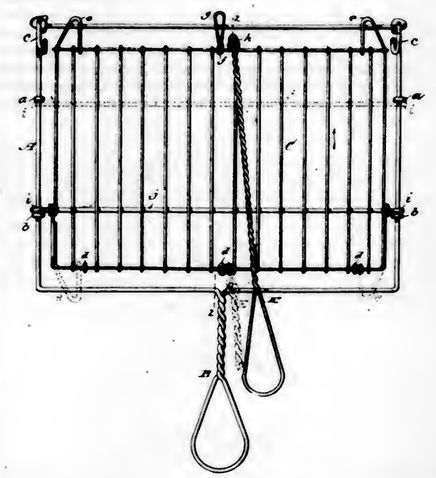
Claim.—1. A tree climbing apparatus comprising a seat frame provided near one end with an upwardly extending arm and with laterally extending diverging pole engaging members in advance of said arm, a fork secured to the upper end of said arm and provided with laterally diverging members, one of which is formed with a hook, and a chain connected to the other member of said fork and arranged for detachable engagement with the said hook.

2. In tree climbing apparatus, a seat frame consisting of a bar bent upon itself and having its end portions spaced apart and formed into spurs to engage a support, a longitudinal bar between the opposite end portions of the frame bar aforesaid and secured thereto, an arm projecting upwardly from the longitudinal bar, a fork attached to the upper end of said arm to engage a pole or support, a chain adapted to embrace a support and connected with the fork aforesaid, and a spur formed at the front extremity of the longitudinal bar and arranged intermediate of the spaced spurs of the seat frame.

3. In tree climbing apparatus, a seat frame consisting of a bar bent upon itself and having its end portions spaced apart and formed into spurs to engage a support, a longitudinal bar between the opposite end portions of the frame bar aforesaid and secured thereto, an arm projecting upwardly from the longitudinal bar, a fork attached to the upper end of said arm to engage a pole or support, a chain adapted to embrace a support and connected with the fork aforesaid, a spur formed at the front extremity of the longitudinal bar and arranged intermediate of the spaced spurs of the seat frame, a loop connected with the upper end of the arm of the longitudinal bar, a second loop projecting upwardly from the outer end of the frame, a belt, and suspending straps detachably connecting the belt with the loops aforesaid.

4. A tree climbing apparatus comprising a seat frame embodying a bar bent upon itself at an intermediate portion and forming spaced apart members that are diverged at their ends and formed with spurs, and a longitudinal bar secured between the spaced apart members of the first named bar and provided with an upwardly extending arm and a spur in advance of said arm and intermediate of the first named spurs, a fork secured to said arm and provided with diverging members, and means for securing a chain to the member of said fork, as and for the purpose set forth.

852,624. BROILING AND TOASTING DEVICE. DE LEONARD RUGG, Catskill, N. Y. Filed Jan. 26, 1906. Serial No. 297,960.

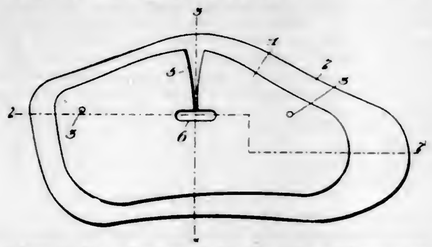


Claim.—1. A device for broiling and toasting articles of food, comprising a frame, a handle therefor, two reversibly mounted pivoted broiler or toaster sections slidably mounted on said frame and held against vertical movement, means on said frame to limit the sliding movement of the sections horizontally on the frame and to aid in the reversal of the sections, the pivot of reversal of the sections being eccentric with relation to the longitudinal center of the latter.

2. A device for broiling or toasting articles of food, comprising a stationary frame, hooks upon the forward end of said frame to engage the fire-box of the stove, and stops upon the side rods or bars of the frame, and broiler or toaster sections between which the food is held, a transverse member on which said sections are pivoted, said member having means engaging said side rods whereby said sections are slidable horizontally upon said frame, said stops upon the frame acting in conjunction with said engaging means to aid in turning the sections, and suitable supports upon one of the sections to engage the frame, substantially as and for the purpose described.

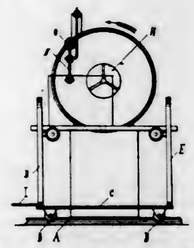
3. A device for broiling or toasting articles of food, comprising a flat stationary frame with a handle, two hinged broiler or toaster sections, a transverse member to which one of said sections is pivotally connected slidably mounted on the end bars of said frame, and having means to prevent vertical movement of said sections on the frame and a handle on one of said sections to move the said sections bodily back and forth on said frame and reverse the said sections.

852,625. INSTEP-SUPPORT OR ARCH-PROP. JACOB SANDLER, Boston, Mass., assignor to Sandler Mfg. Co., Boston, Mass., a Corporation of Massachusetts. Filed Aug. 15, 1906. Serial No. 330,643.



Claim.—An instep support or arch prop comprising a stationary plate of resilient material, a sole piece conforming to an instep arch, means for securing the said stiffening plate to the sole piece, said plate having an upwardly curved projection extending laterally from one side thereof, the said projection having an inwardly tapering slot disposed longitudinally with respect thereto, said projection having a slot communicating with the first-mentioned slot and transverse with respect to the alinement thereof.

852,626. GRINDING-MACHINE FOR GLASS PLATES. CONRAD SCHWARZ and JOHANN BORTZNER, Fürth, Germany, assignors to N. Wiederer & Co., Fürth, Germany. Filed Mar. 2, 1906. Serial No. 303,850.



Claim.—1. A grinding machine for glass comprising in combination, a rotatable grinder, a carriage provided with a base portion having supporting rolls or wheels, rails or tracks for said wheels, two inverted U-shaped uprights for said base portion of the carriage, a bracket adjustably mounted on said uprights and adapted to support the material to be ground, a fixed arm, a support pivotally mounted thereto to swing in a vertical plane, a weighted cord secured to the outer end of said support, a pulley about which said cord is trained, a rod adjustably mounted on said support, and a bell crank retaining arm or lever pivotally mounted to said rod to swing in a vertical plane, a roller for one end of said lever adapted to hold the work against the grinder, and adjustable weights for the other end of said lever.

2. A grinding machine for glass or the like comprising in combination, a grinder, a movably mounted carriage provided with uprights, a bracket adjustably mounted on said uprights and adapted to support the material to be ground, a fixed arm, a support pivotally mounted thereto to swing in a vertical plane, a weighted cord secured to the outer end of said support, a pulley about which said cord is trained, a rod adjustably mounted on said support, and a bell crank retaining arm or lever pivotally mounted to said rod to swing in a vertical plane, a roller for one end of said lever adapted to hold the work against the grinder, and adjustable weights for the other end of said lever.

3. A grinding machine for glass or the like comprising in combination, a grinder, a movably mounted carriage provided with uprights, a bracket adjustably mounted on said uprights, and adapted to support the material to be ground, a fixed arm, a support pivotally mounted thereto to swing in a vertical plane, means for holding the support in its adjusted positions, a rod adjustably mounted on said support, a retaining lever pivotally mounted on said rod to swing in a vertical plane, and a roller for said lever serving to engage the work and hold the same in operative relation to the grinder.

4. A grinding machine for glass or the like comprising in combination, a grinder, a movably mounted carriage for supporting the material to be ground, a fixed arm, a support pivotally mounted thereto to swing in a vertical plane, means holding the support in its adjusted positions, a rod adjustably mounted on said support, a retaining lever pivotally mounted on said rod to swing in a vertical plane, and a roller for said lever serving to engage the work and hold the same in operative relation to the grinder.

5. A grinding machine for glass or the like comprising in combination, a grinder, a support for the work, a pivotally mounted support adapted to swing in a vertical plane, means holding the support in its adjusted positions, a retaining lever pivotally mounted on said support and adapted to swing in a vertical plane, and a roller for said lever serving to hold the work in operative relation to the grinder.

6. A grinding machine for glass or the like comprising in combination, a grinder, a support for the work, a retaining member for holding the work in operative relation to the grinder, and a support for said retaining member articulated therewith, and an adjustable pivotal mounting for said support.

7. A grinding machine for glass or the like comprising in combination, a grinder, means for supporting the work in operative relation to the grinder, and means for holding the work in engagement with the grinder, said means comprising levers articulated at two points, one of said points being above the grinder and permitting said means to be thrown out of proximity to the work and grinder.

8. A grinding machine for glass or the like comprising in combination, a grinder, means for supporting the work in operative relation to the grinder, and means comprising levers articulated at two points for holding the work in engagement with the grinder, said means also comprising an adjusting device whereby the levers may be adjusted with respect to each other.

9. A grinding machine for glass or the like comprising in combination, a grinder, and a support for the work traveling abreast of the grinder, said support consisting of a carriage, U-shaped struts, and a bracket adjustably mounted on said struts.

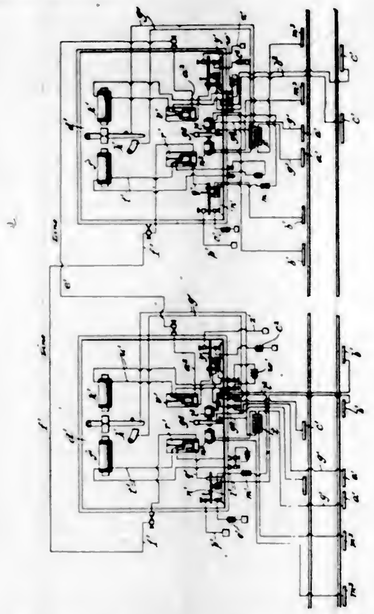
852,627. AUTOMATIC ELECTRICAL TRAIN-STOP. HIRAM G. SEDGWICK, Mill Valley, Cal. Filed Nov. 24, 1905. Serial No. 288,915.

Claim.—1. A locomotive equipped with air-brake apparatus embodying an engineer's controlling-valve and a cut-off means between the same and the train-pipe, and an automatic venting device connected to the brake system at a point between the controlling-valve and the cut-off means, said automatic venting device embodying means adapting it to be operated only by roadbed devices.

2. A locomotive equipped with a brake system embodying duplicate contacts and circuits at opposite sides of the locomotive, a switch device, and axle-operated means for actuating this switch device consisting of a tappet on the axle and a depending shiftable arm carried by the switch and means whereby the tappet may pass the arm freely after it has shifted it.

3. A locomotive equipped with an air-brake apparatus embodying an electrically-controlled vent-valve and duplicate contact-brushes and circuits at the opposite sides of the locomotive, a switch, an axle-operated means for automatically shifting said switch for the purpose set forth, said means embodying an arm depending from the switch and carrying a swinging finger having a limited vibration, and a tappet on the axle.

4. In an electrical train-stopping block system, the combination of electrically-controlled means on the locomotive for applying the brakes, a series of stopping-contacts on the roadbed, means on the roadbed for keeping these contacts normally operative, and means on the roadbed ahead of these contacts whereby these contacts are successively rendered inactive by an approaching train if the block ahead be unoccupied.



5. In combination with a locomotive carrying electrically-operated train-stopping devices, of a roadbed block system each block embodying a pair of stopping-contacts and means for normally keeping these contacts active, a pair of contacts preceding said stopping-contacts to render them inactive, a pair of setting-contacts ahead of the stopping-contacts to set said stopping-contacts behind the locomotive, and a pair of restore-contacts and means connected therewith for restoring the parts to normal position, leaving the safety-contacts alive but subject to the control of the supplemental-contacts.

6. In combination with a locomotive provided with electrically-controlled train-stopping mechanism, a pair of stopping-contacts and means connected therewith for normally keeping them alive, said means embodying a main switch and a supplemental-switch, a pair of preceding supplemental-contacts and means connected therewith for opening said supplemental switch, a pair of setting-contacts and means connected therewith for closing both of said switches, and a pair of restore-contacts and means connected therewith for opening the main switch without affecting the supplemental switch, substantially as set forth.

7. A roadbed train-stopping system, comprising a stopping device normally operative, a device on the roadbed preceding said stopping device and adapted to render the same inoperative, a setting device adapted to return said stopping device to its normally operative condition, and a restore device at the end of the block for restoring the devices to normal condition, substantially as set forth.

8. A train-stopping electrical system, embodying a series of contacts at either side of the roadbed, constituting a block, these devices being arranged reversely so as to control trains going in either direction, and each series embodying a pair of supplemental-contacts, a pair of stopping-contacts, a pair of setting-contacts, a pair of restore-contacts, and electrically-controlled means whereby the stopping-contacts are kept normally active, the supplemental-contacts render the stopping-contacts inactive, the setting-contacts render the stopping-contacts again active, and the restore-contacts restore the parts to normal.

9. A roadbed block system, embodying a pair of stopping-contacts and means connected therewith for keeping them normally alive, these means embodying a main switch and a supplemental switch, means on the roadbed whereby an approaching train opens the supplemental switch, means on the roadbed whereby both switches are closed, and means at the end of the block for opening the main switch without affecting the supplemental switch.

10. In a block system for railways, the combination of a locomotive equipped with automatic brake devices embodying pairs of brushes, and roadbed devices consisting of a pair of contacts normally alive, supplemental devices ahead of these stopping-contacts for rendering them inactive, a pair of setting-contacts beyond the stopping-contacts and a pair of restore-contacts at the end of the block, and electrical connections whereby the passage of a train over the setting-contacts will return the stopping-contacts to normal active condition and prevent them being again rendered inactive by the supplemental devices ahead of the stopping-contacts, and means whereby the passage of a train over the restore-contacts will again render the stopping-contacts subject to the supplemental devices.

11. The combination with a locomotive carrying electrically-operated train-stopping devices, of a roadbed block system, each block embodying stopping devices and electric means for normally keeping these stopping devices active, electric means preceding said stopping devices and adapted to render them inactive if an oncoming train has not already preëmpted the preceding block, electric setting devices beyond said stopping devices to set said stopping devices behind the locomotive, and electric restoring devices and means connected therewith fir restoring the parts to normal position, leaving the stopping devices active and subject to the devices for rendering them inactive.

852,628. AUTOMATIC ELECTRICAL TRAIN-STOP. HIRAM G. SEDGWICK, Mill Valley, Cal. Filed Nov. 24, 1905. Serial No. 288,916.

Claim.—1. In an apparatus of the class set forth, the combination with a main track and another track adjacent the main track, stopping-contacts and setting-contacts and restore-contacts on the main track at each side of the connecting track, a similar series of contacts on the adjacent track, and electrical connections whereby said main and supplemental series of contacts are rendered mutually co-operative, substantially as set forth.

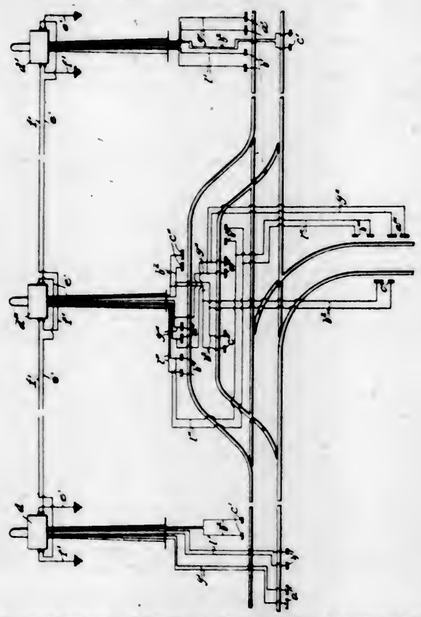
2. In combination with a main track and another track adjacent thereto, of an electrical stopping system therefor consisting of a series of main stopping contacts independent of the rails on the main track at each side of the adjacent track, a series of stopping-contacts on the adjacent track, and electrical means connecting the three series of contacts, for the purposes set forth.

3. In combination with a main track and an adjacent track, a pair of stopping-contacts independent of the rails on the main track at each side of the adjacent track, a supplemental pair of stopping contacts on the adjacent track, and independent of the rails and electrical devices for simultaneously rendering these contacts active, and devices for simultaneously restoring them to normal.

4. In combination with a main track and a connecting track, stopping-contacts on the main track at either side of the connecting track and a pair of supplemental stopping-contacts on the connecting track, a pair of setting-contacts adjacent to each pair of safety-contacts, means whereby all the safety-contacts are rendered active through the medium of the setting-contacts when a train passes over the setting-contacts, and means adapted to be actuated by a passing train for restoring the stopping-contacts to normal.

5. In a train-stopping system for a crossing, the combination of a stopping device on each track at a distance from the intersection of the tracks, train-operated setting-

means on each track nearer the intersection, means whereby a train passing toward the intersection over any setting-means will render all the stopping-contacts active and train-operated means operable by a train after passing the intersection whereby all the stopping-contacts are rendered inactive, for the purpose set forth.



6. In a system of the character set forth, a stopping device on the roadbed, a setting device beyond the same and a restore device beyond the setting device, and a reversed series of stopping and setting and restoring devices on the opposite side of the roadbed, and electrical connections between said two series of devices whereby the operation of either setting device will render both stopping devices active, and a supplemental series of stopping, setting and restoring devices connected with the aforesaid series of devices at a point between the restore devices of the two series of devices and arranged on an intersecting track, whereby the supplemental devices will be mutually co-operative with the main devices, for the purpose set forth.

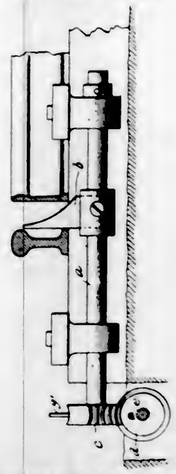
7. In a system of the character set forth, the combination of a stopping device, a setting device and a restore device, arranged in the order set forth on the roadbed, a reversed series of stopping, setting and restore devices on the opposite side of the roadbed, an intersecting track having on its roadbed a similar reversed series of stopping devices, setting devices and restore devices, and means whereby said several series of devices are mutually co-operative, for the purpose set forth.

8. In a train-stopping system for a crossing the combination of stopping devices on each track at a distance from the intersection of the tracks, train-operated setting devices on each track, and electrical means whereby a train passing over any setting device will render all the stopping devices active, and train-operated means whereby all the stopping-contacts will be rendered inactive after the train passes the intersection of the tracks.

9. In a system of the character set forth, the combination of a stopping device a setting device and a restore device, arranged in the order named, on the roadbed, electrical means for the purpose set forth, a stopping device on an intersecting track intermediate the aforesaid setting device and the restore device, a setting device and a restore device on this latter track, and electrical means connecting these latter stopping, setting and restore devices with the electrical means connecting the aforesaid series of devices, for the purpose set forth.

10. In an automatic block system of the character set forth, a series of stopping, setting, and restoring devices located on the main track and electrically connected and embodying means whereby a train passing over them will set the stopping devices behind it and then at the end of the block restore the stopping devices to normal, a series of supplemental stopping, setting, and restoring devices on an adjacent track, and means whereby this supplemental series is electrically connected with the main series between the setting and restoring devices of the main series, whereby the main series and the supplemental series are rendered mutually co-operative.

852,629. ELECTRICAL SWITCH-LOCK FOR RAILWAYS. HIRAM G. SEDGWICK, Mill Valley, Cal. Filed Nov. 24, 1905. Serial No. 288,917.



Claim.—1. In combination with a railway-switch, a device independent of the point throwing devices for locking the switch closed, train-operated means on the roadbed ahead of the switch to bring said locking-device to locking position, and train-operated means also located a distance ahead of the switch for restoring said locking device to unlock position.

2. In combination with a railway switch, of locking means therefor in normally unlocked position and independent of the point throwing devices, and means on the roadbed ahead of the switch for first locking and then unlocking said locking means by a locomotive approaching the switch.

3. In combination with a railway switch, a rock shaft journaled below the point of the switch and provided with an arm which when the shaft is rotated will be first raised to a position between the point and the adjacent rail and then lowered out of the way, electric motor devices for intermittently rotating this shaft, electric devices on the roadbed ahead of the switch for actuating the motor to raise the arm, and additional devices on the roadbed at a distance from the above devices for actuating the motor to lower the arm, for the purpose set forth.

4. In combination with a railway-switch, a normally unlocked locking device adapted to be interposed between the switch rail and the main rail, and roadbed devices for actuating said locking device by an approaching train.

5. In combination with a railway-switch, of a device on the roadbed under the rails and normally in its lowered unlocking position and adapted to be raised to a position between the switch rail and the adjacent main rail, roadbed devices adapted to be actuated by an approaching locomotive and connected to the locking device to raise the same and lock the switch closed, and to lower the locking device and leave the switch-rail normally free.

6. In combination with a railway-switch, of a normally unlocked locking device independent of the point throwing devices and mounted on the roadbed beneath the switch rail, said device being beveled so as to act as a cam, and locomotive-actuated devices on the roadbed ahead of the switch for raising said locking device.

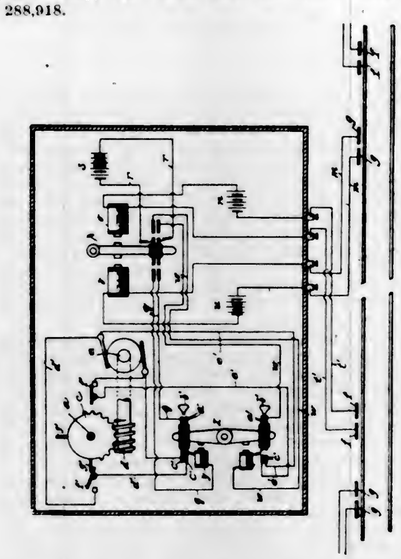
7. In combination with a railway-switch, of a device for locking the same closed, and a series of contacts on the roadbed ahead of the switch and electrical connections whereby an approaching locomotive will first lock the switch closed and then restore the parts to an unlocked position.

8. In combination with a railway-switch, of electrically-actuated locking means therefor, two pairs of roadbed-contacts one pair being located near the switch and the other pair at a distance ahead of the same, electrical connections between these roadbed-contacts and the locking devices, and means whereby an approaching locomotive will successively bridge said contacts.

9. In combination with a railway-switch, the combination of electrically-operated locking devices, a pair of separated contacts a distance ahead of the switch, connections between these contacts and the locking devices, and means carried by a locomotive for bridging the contacts and thus actuating the locking devices.

10. In combination with a railway-switch, a rock-shaft journaled under the switch and provided with a locking-arm adapted to be raised to a locking position and lowered to an unlocking position, electric motor devices for rocking said shaft first one way and then the other, and roadbed devices ahead of the switch whereby an approaching train will first raise the locking-arm and then lower it out of the way.

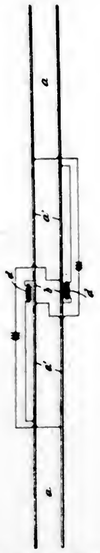
852,630. RAILWAY-SIGNAL. HIRAM G. SEDGWICK, Mill Valley, Cal. Filed Nov. 24, 1905. Serial No. 288,918.



Claim.—1. The combination of a railway signal, electric motor means for alternately shifting the signal to danger and to safety, two branch circuits connected to said motor means, a circuit breaker in each branch adapted to be automatically operated by the signal operating means, a main local circuit including a battery and a switch, electrical means for shifting the switch to alternately throw the battery into circuit with said two branch circuits, and roadbed devices operable by a passing locomotive in circuit with said switch, whereby each train as it passes will first shift the signal to danger and subsequently shift it back to safety.

2. In combination, a signal device and electric motor means for operating it, a main local circuit including a battery and a switch, two branch circuits adapted to be alternately connected to said main circuit, said branch circuits being connected to the motor means, an automatic circuit breaker in each branch circuit, two magnets for shifting the aforesaid switch, a local circuit and battery in circuit with each of these magnets, and roadbed contacts connected to each of these latter local circuits, for the purpose set forth.

852,631. ELECTRICAL TRAIN-STOP. HIRA G. SEDGWICK, Mill Valley, Cal. Filed June 14, 1906. Serial No. 321,761.



Claim.—1. In a train-stopping block system, the combination of the main block rails suitably bonded, an insulated short rail section between the adjacent ends of each main block, a magnet adjacent to each short rail section, and a partial circuit including a battery and said magnet at each short rail section, this circuit being connected at one end to one of the adjacent block sections and at the other end to the short rail section, for the purpose set forth.

2. In combination, a series of main block rails suitably bonded, an insulated short rail section between the ends of each adjacent block rail sections, a magnetic device on the roadbed at each side of each short rail section, and a partial circuit for each magnetic device, said circuit including a battery and having its terminals at one end connected to the adjacent short-rail section and the terminals at the other end connected to the adjacent end of one of the block sections, for the purpose set forth.

3. In a block system of the type set forth, main block rails, short rail sections intermediate the main block rails, a neutral rail section between each short-rail section and the adjacent main block rails, a magnetic device at either side of the roadway adjacent to each short rail section, and a partial circuit for each magnetic device, said circuit including a battery and connected at one end to the short rail section and at its other end to the adjacent end of one of the block sections.

4. In a train-stopping block system, a series of rail blocks

having an insulated short rail section between them, a magnetic stopping device adjacent each of said short rail sections, this magnetic device being included in a partial circuit one branch of which is connected to the adjacent insulated short rail section and the other branch of which is connected to the adjacent right hand rail of the next block ahead, the remainder of said circuit having included in it a battery and having one end connected to the left hand rail of the block ahead and its other end connected to the opposite short rail section, substantially as and for the purpose set forth.

852,632. ELECTRICAL TRAIN-STOP. HIRAM G. SEDGWICK, Mill Valley, Cal. Filed June 14, 1906. Serial No. 321,762.



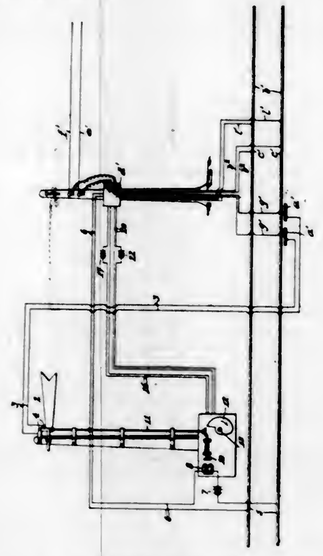
Claim.—1. In a system of the character set forth, a series of block rails suitably bonded, a short rail section between each pair of block rails and insulated from the block rails, a pair of contacts at each side of the track adjacent the short rail sections, and a partial circuit connected to each pair of contacts and to the short rail sections and the main block rails, so that each circuit will be open at three points, the contacts at one side being connected to one pair of block rails and the contacts at the other side being connected to the rails of the next succeeding block.

2. In a train-stopping apparatus for use on a locomotive, a brake magnet, a pair of brushes at each side of the locomotive, two partial circuits including the brushes and the magnet and a battery, a pair of stationary contacts connected to both circuits, and a movable contact carried by the reverse lever of the locomotive, for the purpose set forth.

3. In a system of the type set forth, a series of main block rails suitably bonded, a series of short rail sections interposed between and insulated from said main sections, a pair of contacts adjacent to each short rail section, and a partial circuit for each pair of contacts, said circuit including the contacts, the rails of the short section, and the rails of the adjacent block section whereby the circuit will be open at three points, substantially as and for the purpose set forth.

4. In a system of the character set forth, a series of block rails and intermediate insulated short rail sections, a pair of contacts adjacent to the right hand short rail section, one of these contacts being electrically connected to the adjacent short rail and the other being connected to the adjacent end of the right hand rail of the block just ahead, and a conductor electrically connecting the opposite short rail section to the left hand rail of the block just ahead, for the purpose set forth.

852,633. TRAIN-STOPPING APPARATUS. HIRAM G. SEDGWICK, Mill Valley, Cal. Filed June 14, 1906. Serial No. 321,763.



Claim.—1. In an apparatus of the class set forth, a block having stopping devices at each end thereof and at opposite sides of the track, a pair of insulated setting rail-contacts at each end of the block inside of the stopping devices, a pair of restore rail-contacts between each pair of setting-contacts and the adjacent stopping devices, the stopping devices being arranged to co-operate with stopping means on the locomotive and the rail-contacts being adapted to be bridged by the wheels and axles of the trains, and electrical connections whereby the bridging of either pair of setting-contacts will set both the stopping devices and the bridging of either pair of restore-contacts will restore both the stopping devices to safety, substantially as set forth.

2. In an apparatus of the class set forth, a block having stopping devices at each end thereof and at opposite sides of the track, a pair of insulated setting rail-contacts at each end of the block inside of the stopping devices, a pair of restore rail-contacts between each pair of setting-contacts and the adjacent stopping devices, the stopping devices being arranged to co-operate with stopping means on the locomotive and the rail-contacts being adapted to be bridged by the wheels and axles of the trains, and electrical connections whereby the bridging of either pair of setting-contacts will set both the stopping devices and the bridging of either pair of restore-contacts will restore both the stopping devices to safety, these electrical connections including means whereby the bridging of the restore-contacts at the head of the block will be prevented from setting the stopping devices.

3. In an apparatus of the class set forth, a block having stopping devices at each end thereof and at opposite sides of the track, a pair of insulated setting rail-contacts at each end of the block inside of the stopping devices, a pair of restore rail-contacts between each pair of setting-contacts and the adjacent stopping devices, the stopping devices being arranged to co-operate with stopping means on the locomotive and the rail-contacts being adapted to be bridged by the wheels and axles of the trains, and electrical connections whereby the bridging of either pair of setting-contacts will set both the stopping devices and the bridging of either pair of restore-contacts will restore both the stopping devices to safety, these electrical connections including means whereby the bridging of the restore-contacts at the head of the block will be prevented from setting the stopping devices.

4. In combination with a train-stopping block system embodying stopping, setting and restoring devices on the roadbed, of a signal appliance normally held at danger, and electrical means whereby a train approaching the block will bring said signal to safety if the block be free and then be restored to danger as the train enters the block.

5. In combination with a train-stopping system embodying a block and electrically-controlled means for preëmpting the block by the entrance of a train therein, of a signal appliance at each end of the block and means for maintaining it normally at danger, means outside of each end of the block for bringing said signal to safety if the block be not preëmpted, and means whereby the signal will be restored to danger upon the entrance of the train into the block and be locked at danger while the train is in the block and be left at danger when the train passes ont of the block.

6. In an apparatus of the class set forth, a block having stopping devices at each end thereof, a pair of insulated setting rail-contacts at each end of the block inside of the stopping devices, a pair of restore rail-contacts, the stopping devices being arranged to co-operate with stopping means on the locomotive and the rail-contacts being adapted to be electrically bridged by the wheels and axles of the trains, and electrical connections whereby the bridging of either pair of setting-contacts will set both the stopping devices to danger and the bringing of either pair of restore-contacts will restore both the stopping devices to safety, substantially as set forth.

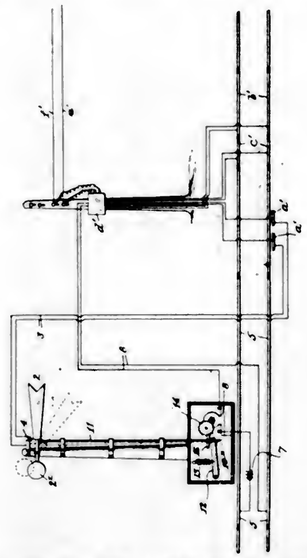
7. In an apparatus of the class set forth, a block having stopping devices at each end thereof, a pair of insulated setting rail-contacts at each end of the block inside of the stopping devices, a pair of restore rail-contacts ahead of or outside each pair of setting-contacts, the stopping devices being arranged to co-operate with stopping means on the locomotive and the rail-contacts being adapted to be bridged by the wheels and axles of the trains, and electrical connections whereby the bridging of either pair of setting-contacts will set both the stopping devices to danger and the bridging of either pair of restore-contacts will restore both the stopping devices to safety, these electrical connections including means whereby the bridging of the restore-contacts at the head of the block will be prevented from setting the stopping devices.

8. In combination with a train-stopping system embodying stopping devices and an electrical circuit therefor which is normally open, and means for rendering the stopping devices active when the block is preëmpted, of a signal appliance normally held at danger and connected to stopping devices to hold them normally at danger, and electrical means whereby a train approaching the block will bring said signal to safety if the block be free and be returned to danger and held there while the block is occupied.

9. In combination with a train-stopping block system embodying stopping devices on the roadbed and means whereby these stopping devices are rendered active when the block is occupied, a signal and electrical means operable by an approaching train and connected to the stopping system whereby the signal is moved to safety as a train enters the block if the block be unoccupied and be restored to danger and held there while the block is occupied.

852,634. ELECTRICAL TRAIN-STOP. HIRAM G. SEDGWICK, Mill Valley, Cal. Filed June 14, 1906. Serial No. 321,764.

Claim.—1. In a train-stopping system, the combination of the stopping devices in the block, a partial circuit connected thereto and adapted to be closed when a block is unoccupied, contacts on the roadbed adapted to be closed by an oncoming train, a motor and battery in said circuit, a semaphore normally at danger, and means operated by the motor when its circuit is completed by an oncoming train to shift the semaphore to safety, substantially as set forth.



2. In combination with a train-stopping block system, train-stopping devices in the block, a partial circuit connected thereto and adapted to be closed thereby when the block is unoccupied, rail sections adapted to be bridged by an oncoming train, a battery and a motor in said circuit, a semaphore normally held at danger, and means operated by the motor for drawing the semaphore down to safety when a train passes over said rail contacts and holding it down while the train is passing over said rail contacts, substantially as set forth.

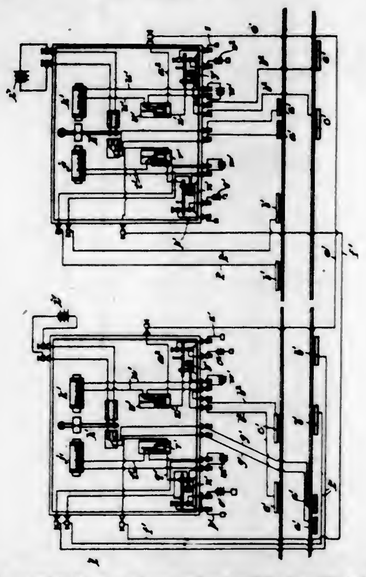
3. In a train-stopping system, the combination of stopping devices in the block, embodying a partial circuit and means for closing this circuit when the block is unoccupied, a signal and train-operated devices for moving said signal to danger, these devices being included in said partial circuit and said circuit being adapted to be closed by the train approaching the block, whereby if the block be not preëmpted the signal will be brought to safety.

4. In combination with train-stopping devices on the roadbed, these devices embodying a partial circuit and means for closing this circuit when the block is not preempted, roadbed means for closing this circuit at another point by a train approaching the block, a signal normally held at danger, and electrical means in said circuit for bringing the signal to safety by the approaching train if said circuit be closed, said means embodying means whereby the signal is returned to safety automatically as soon as said circuit is broken.

852,635. AUTOMATIC ELECTRICAL TRAIN-STOP. HIRAM G. SEDGWICK, Mill Valley, Cal. Filed Nov. 24, 1905. Renewed Jan. 2, 1907. Serial No. 350,431.

Claim.—1. In a train-stopping block system, the combination of a locomotive equipped with a brake apparatus and magnetically controlled means for applying the brakes, said means embodying a pair of brushes, another pair of brushes on the locomotive electrically connected and spaced apart lengthwise a distance differing from the distance

separating the other two brushes, and a series of pairs of contacts on the roadbed, the contacts of one of the pairs being spaced lengthwise to make contact with one pair of brushes and the contacts of the other pair being spaced lengthwise so as to make contact with the other pair of brushes, all the brushes and all the contacts being arranged in tandem, so that all the brushes sweep all the contacts, and electrically-controlled connections and circuits connected to said contacts.



2. In combination, a locomotive equipped with a brake apparatus, electrically-controlled means for applying the brakes, said means embodying a pair of train-stopping brushes electrically connected, another pair of bridging brushes carried by the locomotive and electrically connected, and roadbed appliances embodying a pair of stopping-contacts, a pair of setting-contacts beyond the stopping-contacts, and a set of restoring-contacts beyond the setting-contacts, the setting-contacts and the restoring-contacts being arranged to connect in succession only the setting brushes, and the stopping-contacts being arranged to connect only the stopping-brushes, all the brushes and all the contacts being arranged in tandem, so that all the brushes sweep all the contacts, and electrical devices connecting the contacts for the purpose substantially as herein described.

3. In combination, a locomotive equipped with a brake apparatus, electrically-controlled means for applying the brakes, said means embodying a pair of train-stopping brushes electrically connected, another pair of bridging brushes carried by the locomotive and electrically connected, and roadbed appliances embodying a pair of stopping-contacts, a pair of setting-contacts beyond the stopping-contacts, and a set of restoring-contacts beyond the setting-contacts, the setting contacts and the restoring-contacts being arranged to connect in succession only the setting brushes, and the stopping contacts being arranged to connect only the stopping-brushes, an electrical circuit connected to the stopping-contacts and embodying a switch and a local battery, a circuit including a local battery connected to the setting-contacts and adapted to close the switch when the setting-contacts are bridged, and a circuit including a local battery connected to the restore-contacts and adapted to open said switch when bridged by the brushes, substantially as set forth.

4. In combination, a locomotive equipped with a brake apparatus, electrically-controlled means for applying the brakes, said means embodying a pair of train-stopping brushes electrically connected, another pair of bridging brushes carried by the locomotive and electrically connected, and road bed appliances embodying a pair of stopping-contacts, a pair of setting-contacts beyond the stopping-contacts, and a set of restoring-contacts beyond the setting-contacts, the setting contacts and the restoring-contacts being arranged to connect in succession only the setting brushes, and the stopping contacts being arranged to connect only the stopping brushes, and a duplicate series of contacts arranged in the reverse order on the other side of the roadbed for trains going in the opposite direction, and electrical connections whereby the bridging of either pair of setting-contacts will set both pairs of stopping-contacts, and the bridging of either pair of restore-contacts will restore both pairs of stopping-contacts.

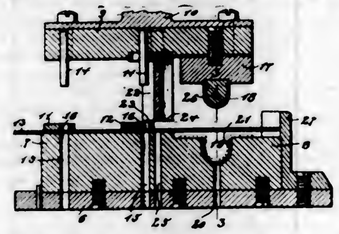
5. In combination, a locomotive equipped with a brake apparatus, electrically-controlled means for applying the brakes, said means embodying a pair of train-stopping brushes electrically connected, another pair of bridging brushes carried by the locomotive and electrically connected, and roadbed appliances embodying a pair of stopping-contacts, a pair of setting-contacts beyond the stopping-contacts, and a set of restoring-contacts beyond the setting-contacts, the setting-contacts and the restoring-contacts being arranged to connect in succession only the setting brushes, and the stopping-contacts being arranged to connect only the stopping-brushes, and a duplicate series of contacts arranged in the reverse order on the other side of the roadbed for trains going in the opposite direction, and electrical connections whereby the bridging of either pair of setting-contacts will set both pairs of stopping-contacts, and the bridging of either pair of restore-contacts will restore both pairs of stopping-contacts, said electrical conections consisting essentially of a local battery in circuit with each pair of contacts and having a double switch in its circuit, an independent local circuit and battery for each magnet of the double switch, and connections whereby the two switches are opened and closed simultaneously.

6. In combination, a locomotive equipped with a brake apparatus and electrically-controlled means for applying the brakes, said means embodying stopping-brushes electrically connected and another pair of bridging brushes, and roadbed appliances embodying a pair of stopping-contacts, a pair of setting-contacts beyond the stopping-contacts, a pair of restoring-contacts beyond the setting-contacts, a duplicate series of pairs of contacts arranged in reverse order on the other side of the roadbed for trains going in the opposite direction, and electrical connections whereby the bridging of either pair of setting-contacts will set both pairs of stopping-contacts and the bridging of either pair of restore-contacts will restore both pairs of stopping-contacts to normal, said electrical connections embodying an independent circuit for each pair of stopping-contacts this circuit including a switch and a local battery, local circuits and batteries connected to each pair of setting-contacts and to said switch and adapted to close both switches when the setting-contacts are bridged, and local circuits and batteries connected to each pair of restore-contacts and to said switches and adapted to open both switches when the restore-contacts are bridged.

7. In combination, a locomotive equipped with a brake apparatus and electrically controlled means for actuating the same, said means embodying two pairs of separated contact-brushes at each side of the locomotive and circuit wires for each pair of brushes, and means connected to the reverse lever of the locomotive so as to be automatically actuated by reversal of the direction of movement of the locomotive for bringing into action the brushes at one side and cutting out the brushes at the other side, and sets of contacts and circuits on the roadbed, for the purposes set forth.

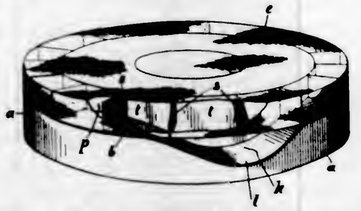
852,636. DIE. ANTHONY R. SIMMERLY, Cleveland, Ohio. Filed Sept. 21, 1906. Serial No. 335,601.

Claim.—The combination of a punch die block having guides thereon, a shaping die block located beside the same in line with the guides and having a stop at the end, the surface of the shaping die block being in a lower plane than that of the punch die block and having a groove extending thereon, and a die head carrying punches opposite



the punch block, a shaping die opposite the shaping block, and a cutter between the punches and the shaping die, the shaping die having a rib opposite said groove.

852,637. INSECT-TRAP. JOHN W. STODDERS, Morden, Manitoba, Canada. Filed Feb. 11, 1907. Serial No. 356,784.



Claim.—1. An insect trap comprising a stationary base, a rotating member suitably journaled on top of said base and forming therewith a partitioned passageway, and means for destroying insects entering said passageway, substantially as described.

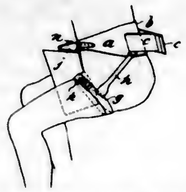
2. An insect trap comprising a base having a jog toward the upper end thereof forming a ledge, a rotating member having a curtain depending from the outer edge thereof meeting the edge of said ledge and partitions from said curtain reaching inwardly to said jog wall, and means for destroying insects passing into the spaces between said partitions, substantially as described.

3. An insect trap comprising a circular base having a jog toward the top thereof forming a ledge and a lip leading to a depressed and inclined way to said ledge and a recess in the circumference thereof, a clock-work mechanism arranged within said base, a circular cover having a curtain depending from the outer edge thereof over the edge of said ledge and partitions extending inwardly from said curtain to said jog wall, and a lamp in said recess in the base having a flame reaching into the partitioned parts under said cover and forming a cremation chamber, substantially as described.

4. An insect trap comprising a circular base having a jog toward the top thereof forming a ledge, a transparent member having a transparent curtain depending from the outer edge thereof meeting the edge of said ledge and transparent partitions from said curtain reaching inwardly to said jog wall, and means for destroying insects entering said rotating member, substantially as described.

5. An insect trap comprising a circular base having a jog toward the top thereof forming a ledge and a lip leading to a depressed and inclined way to said ledge and a recess in the circumference thereof, a clock-work mechanism arranged within said base, a circular cover rotated thereby having a curtain depending from the outer edge thereof over the edge of said ledge and partitions extending inwardly from said curtain to said jog wall, a lamp in said recess in the base having a flame reaching into the partitioned parts under said cover and forming a cremation chamber, and a compartment in said base adapted to receive remains of the insects, substantially as described.

852,638. BELT AND SHIELD. THOMAS THOMAS, Mountain Ash, England. Filed Oct. 2, 1906. Serial No. 337,156.



Claim.—1. A medical appliance comprising a waist strap, a stiff back piece to the waist strap, brackets hinged to the stiff back piece, each of said brackets being provided with a nose and teeth, the nose of one bracket being adapted to engage with the teeth on the other bracket substantially as described.

2. A medical appliance comprising a waist strap, a stiff back piece to the waist strap, brackets hinged to the stiff back piece, each of said brackets being provided with a nose and teeth, the nose of one bracket being adapted to engage with the teeth on the other, straps adapted to go round the thighs of the wearer, substantially as and for the purpose set forth.

3. A medical appliance comprising a waist strap, a stiff back piece to the waist strap, brackets hinged to the stiff back piece, each of said brackets being provided with a nose and teeth, the nose of one bracket being adapted to engage with the teeth on the other, straps adapted to go round the thighs of the wearer, straps from the main belt to the thigh straps, and a shield adapted to lie in front of the base of the abdomen with the lower part between the legs of the wearer, and to be fastened in position by thigh straps and shield straps, substantially as described.

852,639. ELECTRICAL SYSTEM OF DISTRIBUTION. WILLIAM A. TURBAYNE, Lancaster, N. Y., assignor to Gould Storage Battery Company, a Corporation of New York. Filed July 25, 1906. Serial No. 327,595.

Claim.—1. The combination of a generator, a regulating battery therefor, a coil for controlling the battery action, two motors connected in series with each other, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and means for varying the current in said coil in accordance with said relative electro-motive forces.

2. The combination of a generator, a regulating battery therefor, a battery booster, a controlling coil for said booster, two motors connected in series with each other, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and means for varying the current in said coil in accordance with said relative electro-motive forces.

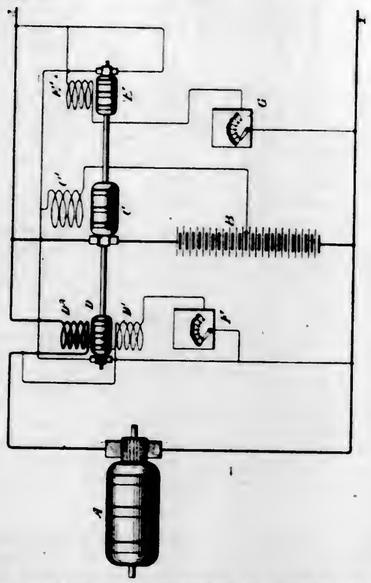
3. The combination of a generator, a regulating battery therefor, a coil for controlling the battery action, two motors connected in series with each other, means for varying the relative electro-motive forces of said motors responsively to changes of current strength of said generator, and means for varying the current in said coil in accordance with said relative electro-motive forces.

4. The combination of a generator, a regulating battery therefor, a battery booster, a controlling coil for said booster, two motors connected in series with each other, means for varying the relative electro-motive forces of said motors responsively to changes of current strength of said generator, and means for varying the current in said coil in accordance with said relative electro-motive forces.

5. The combination of a generator, a regulating battery

therefor, a coil for controlling the battery action, two motors connected in series with each other across the system, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and means for varying the current in said coil in accordance with said relative electro-motive forces.

6. The combination of a generator, a regulating battery therefor, a coil for controlling the battery action, two motors connected in series with each other, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and connections from the terminals of said coil respectively to a point in the circuit between the motors and to the battery.



7. The combination of a generator, a regulating battery therefor, a battery booster, a controlling coil for said booster, two motors connected in series with each other, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and connections from the terminals of said coil respectively to a point in the circuit between the motors and to the battery.

8. The combination of a generator, a regulating battery therefor, a battery booster, a controlling coil for said booster, two motors connected in series with each other across the battery and booster, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and connections from the terminals of said coil respectively to a point in the circuit between the motors and to a point midway the battery terminals.

9. The combination of a generator, a regulating battery therefor, a battery booster, a controlling coil for said booster, two motors connected in series with each other across the battery and booster, means for varying the relative electro-motive forces of said motors responsively to changes of current strength of said generator, and connections from the terminals of said coil respectively to a point in the circuit between the motors and to a point midway the battery terminals.

10. The combination of a generator, a regulating battery therefor, a dynamo to be automatically regulated and acting to control the battery action, two motors electrically in series and mechanically connected to said dynamo, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and means for varying the current in said coil in accordance with said relative electro-motive forces.

11. The combination of a generator, a regulating battery therefor, a dynamo to be automatically regulated and acting to control the battery action, two motors electrically in series and mechanically connected to said dynamo, means for varying the relative electro-motive forces of said motors responsively to changes of current strength of said generator, and means for varying the current in said coil in accordance with said relative electro-motive forces.

12. The combination of a generator, a regulating battery therefor, a dynamo to be automatically regulated and acting to control the battery action, two motors electrically in series across the system and mechanically connected to said dynamo, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and means for varying the current in said coil in accordance with said relative electro-motive forces.

13. The combination of a generator, a regulating battery therefor, a dynamo to be automatically regulated and acting to control the battery action, two motors electrically in series and mechanically connected to said dynamo, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and connections from the terminals of said coil respectively to a point in the circuit between the motors and to the battery.

14. The combination of a generator, a regulating battery therefor, a battery booster, a field winding for controlling said booster, two motors connected in series with each other, means for varying the relative electro-motive forces of said motors responsively to changes of electrical condition of the system, and means for varying the current in said field winding in accordance with said relative electro-motive forces.

15. The combination of a generator, a regulating battery therefor, a battery booster, a field winding for controlling said booster, two motors connected in series with each other, means for varying the relative electro-motive forces of said motors responsively to changes of current strength of said generator, and means for varying the current in said field winding in accordance with said relative electro-motive forces.

16. The combination of a generator, a regulating battery therefor, a dynamo for controlling the battery action, two motors electrically connected together and mechanically connected to said dynamo, a field winding for one of said motors arranged to give a substantially constant magnetism, a field winding for the other motor responsive to current changes of the generator, and a field winding for the said dynamo connected at one end between the motors and at the other end to the battery.

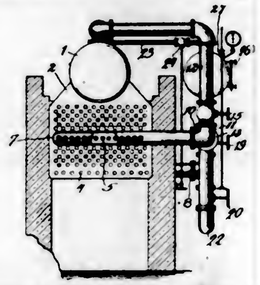
17. The combination of a generator, a regulating battery therefor, a dynamo for controlling the battery action, two motors electrically connected in series with each other and mechanically connected to said dynamo, a field winding for one of said motors arranged to give a substantially constant magnetism, a field winding for the other motor responsive to current changes of the generator, and a field winding for the said dynamo connected at one end between the motors and at the other end to the battery.

852,640. SUPERHEATER. HARRY L. VAN ZILE, New York, N. Y. Filed May 28, 1904. Serial No. 210,159.

Claim.—1. The combination with a boiler and a superheater, of means for maintaining a supply of water out of liquid contact with the water of the boiler, means for flooding said superheater from said supply and returning the water from said superheater to said supply, without permitting it to mingle with the water of the boiler.

2. The combination with a boiler, of a superheater, valved steam connections between the steam space of the boiler and the superheater, a water-reservoir exterior to the boiler and means for flooding said superheater from said reservoir and returning water from said superheater to said reservoir.

3. The combination with a boiler and a superheater, of connections between the steam space of the boiler and the superheater of a reservoir, and means for producing a water circulation in said superheater and reservoir independent of the water circulation in said boiler.



4. The combination with a super-heater and valved inlet and outlet steam connections therefor, of a water reservoir and valved connections between said reservoir and the inlet and outlet ends respectively of said super-heater, the inlet and outlet ends of said super-heater being arranged at different levels whereby the heating of said super-heater when flooded, will produce a water circulation in said super-heater and reservoir.

5. The combination with a boiler and a superheater, of a valved connection between the steam space of the boiler and the inlet end of the super-heater, a valved connection between the outlet end of the super-heater and the steam main, a water reservoir located above the super-heater, valved connections between said reservoir and the inlet and outlet ends respectively of said super-heater, one of said connections being provided with a U-bend to form a water seal.

6. The combination with a boiler and a super-heater, of a valved connection between the steam space of the boiler and the inlet end of the super-heater, a valved connection between the outlet end of the super-heater and the steam main, a water reservoir located above the super-heater, valved connections between said reservoir and the inlet and outlet ends respectively of said super-heater, one of said connections being provided with a U-bend to form a water seal, and a valved steam connection between the steam space of said boiler and said reservoir.

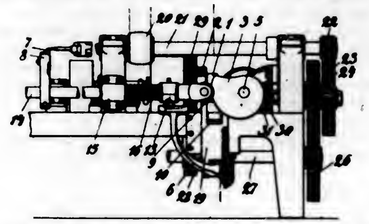
7. In a combined boiler and superheater, the combination with the front and rear water-legs and the water-tubes of a water-tube boiler, of superheater tubes between rows of water-tubes extending through said water-legs and connected to headers outside of said water-legs, a reservoir at an elevation above said superheater tubes, valved connections between said headers and said reservoir and valved steam connections between the steam space of said boiler and said super-heater.

8. In a flooding device for superheaters, the combination with inclined superheater tubes, of headers connected, respectively, to the upper and lower ends of the superheater tubes, a reservoir, valved connections between said reservoir and said headers, and a U tube or water-seal in the connections connecting the lower header with the reservoir.

852,641. SCREW-CUTTING MACHINE. CARL VOGELSANG, Solingen, Germany. Filed June 12, 1906. Serial No. 321,343.

Claim.—1. In a screw cutting machine, a cutting tool, a first cam, means controlled by the first cam for bringing the tool into or out of engagement with the work-piece, a second cam, means controlled by the second cam for gradually advancing the tool toward the axis of the work-piece, and a third cam for advancing the cutting tool along the work-piece, substantially as specified.

2. In a screw cutting machine, a cutter-shaft, a first cam and a slide, combined with a lever fulcrumed to the slide and engaging said first cam, a second cam, means controlled by the second cam for raising and lowering the slide, and means for operatively connecting the cutter-shaft with the lever, substantially as specified.



3. In a screw cutting machine, a cutter-shaft, a first cam and a slide, combined with a lever fulcrumed to the slide and engaging said first cam, a second cam, means controlled by the second cam for raising and lowering the slide, a third cam adapted to reciprocate the cutter-shaft, and means for operatively connecting the lever with the cutter-shaft, substantially as specified.

852,642. APPARATUS FOR MAKING STEREOTYPE-PLATES. HERMAN WINTER, New York, N. Y., assignor to F. Wesel Manufacturing Company, Brooklyn, N. Y., a Corporation of New York. Filed Sept. 9, 1905. Serial No. 277,757.

Claim.—1. In an apparatus for making stereotype plates, the combination of a drag having a longitudinal opening less than its diameter and a cope adapted to be withdrawn through said opening.

2. In an apparatus for making stereotype plates, the combination of a drag having a longitudinal opening less than its diameter, a split cope adapted to be withdrawn through said opening, and means for collapsing said cope.

3. In an apparatus for making stereotype plates, the combination of a drag comprising a cylindrical segment of more than 180° and provided with an opening extending longitudinally thereof, and a split cope adapted to be inserted and withdrawn through said opening, whereby the cope can be inserted and withdrawn from the drag.

4. In an apparatus for making stereotype plates, the combination with a drag having a longitudinal opening less than its diameter, of a two-part cope hinged together, and means arranged between the free edges of said cope to collapse the same.

5. In an apparatus for making stereotype plates, the combination with a drag having a longitudinal opening less than its diameter, of a two-part cope hinged together, means to support the cope in the drag, and means arranged between the free edges of said cope to collapse the same.

6. In an apparatus for making stereotype plates, the combination of a curved drag, a two-part cope, means to sup-

port the cope in the drag, the two parts of the cope being hinged to the supporting means, a shaft rotatable on said supporting means, links interposed between said shaft and the two parts of the cope, and a lever secured to the shaft.

7. In an apparatus for making stereotype plates, the combination with a drag having a longitudinal opening less than its diameter, of a two-part cope hinged together, supporting means to which said cope is pivoted, means for withdrawing said cope from the drag through said opening, and means to collapse said cope.

8. In an apparatus for making stereotype plates, the combination with a drag having a longitudinal opening less than its diameter, of a two-part cope hinged together, means to support the cope in the drag, the two parts of the cope being pivoted to the supporting means, and means arranged between the free edges of the parts of said cope to swing the parts of the cope upon their hinges.

9. In an apparatus for making stereotype plates, the combination of a curved drag, a cope therefor, an adjustable gage adapted to fit between the matrix and the cope and to project from the drag, and means substantially as described to clamp the gage in position.

10. In an apparatus for making stereotype plates, the combination of a curved drag having a shoulder k^3 on the front thereof, a cope, an adjustable strip or split gage adapted to fit between the matrix and the cope and having its ends projecting from the drag, and a clamp on said gage fitting over said shoulder and adapted to hold the gage in adjusted position.

11. In an apparatus for making stereotype plates, the combination of a curved drag, a cope split lengthwise to form two separate sides, the two sides being hinged together, and means arranged between the free edges of said sides to collapse and expand the cope.

12. In an apparatus for making stereotype plates, the combination of a drag comprising a cylindrical segment of more than 180 and less than 360 degrees, whereby a longitudinal opening is provided in said drag, and a cope adapted to be withdrawn through said opening.

13. In an apparatus for making stereotype plates, the combination of a drag comprising a cylindrical segment of more than 180 and less than 360 degrees, whereby a longitudinal opening is provided in said drag, and a cope comprising a cylindrical segment of substantially the same number of degrees and adapted to be inserted and withdrawn through said opening.

14. In an apparatus for making stereotype plates, the combination of a drag comprising a cylindrical segment of more than 180 and less than 360 degrees, whereby a longitudinal opening is provided in said drag, and a two-part cope hinged together and adapted to be inserted and withdrawn through said opening, said cope comprising a cylindrical segment of more than 180 and less than 360 degrees.

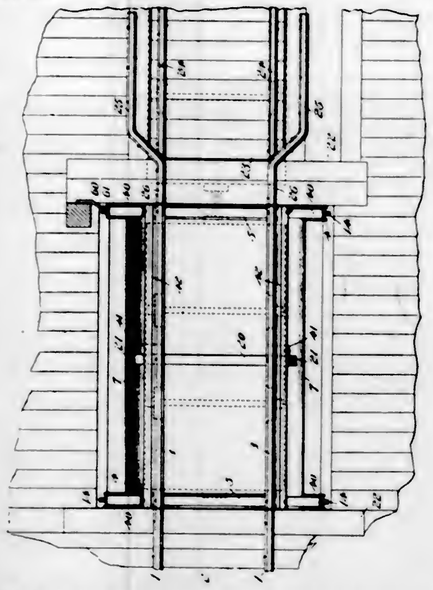
15. In an apparatus for making stereotype plates, the combination of a curved drag, a cope comprising two parts hinged together, and means arranged between the free edges of said parts to collapse and expand the cope.

16. In an apparatus for making stereotype plates, the combination of a curved drag, a cope comprising two parts hinged together, and means arranged between and pivoted to the free edges of said parts to collapse and expand the cope.

852,643. CAR-DUMPING APPARATUS. TRUMAN H. ALDRICH, Jr., Birmingham, Ala. Filed Jan. 16, 1906. Serial No. 296,407.

Claim.—1. A car dumping apparatus, comprising a revoluble structure, supports therefor, a train of cars, means to couple said cars together, a track therefor comprising fixed rails and rails movable with said structure, car holding devices carried by said structure, and means to revolve the structure to dump the contents of the car or cars held therein, in combination with a scale to weigh one or more cars of said train while others are being dumped, said scale being so disposed with relation to said dumping structure that, as one or more cars are moved into the latter, one or more cars are moved onto the scale, both weighing and dumping operations taking place simultaneously upon cars of the same train while coupled together.

2. A car dumping apparatus, comprising a revoluble structure, fixed track rails, rails carried by said structure and adapted to be moved into alinement with said track rails, cars, means to couple said cars so they may be moved in a train through said revoluble structure, means carried by said structure to engage and hold the cars, as they move into said structure, in fixed position therein, means to revolve said structure and the car or cars therein, and means to weigh the cars, so disposed relatively to said structure that as one car of the train is being dumped, another car of the same train is being weighed, the cars remaining coupled during both dumping and weighing operations.



3. In a car dumping apparatus, a revoluble structure, a track comprising a section formed by rails movable with said structure, cars, means to couple said cars in a train, electric haulage means for said train of cars comprising a motor, and an electric conductor from which motor derives current and which passes through said revoluble structure, said structure being adapted to dump the contents of the cars successively and without uncoupling them as they take position therein.

4. In a car dumping apparatus, cars, a track therefor, a movable structure carrying a part of said track, means to hold one or more cars in fixed relation therein, an electric motor for moving said cars, a trolley wire from which said motor derives current, and a conductor, movable with said structure, which is in circuit with and forms a part of said trolley wire when said structure is in position to receive and discharge cars.

5. In a car dumping apparatus, a track, a movable structure carrying a part of said track, dump cars having wheels provided with hub projections, an electric motor car adapted to be coupled to said cars, the wheels of said motor car being of greater diameter than those of the dump cars, angle irons connected to said structure, and longitudinal bars supported by said irons in position to clear the motor car wheels and engage the hubs of the dump car wheels to retain said cars in fixed position on said structure as it is moved to dump their contents.

6. In a car dumping apparatus, a track, dump cars thereon, a revoluble structure comprising metallic rings, movable rails forming a portion of said track and car retaining bars supported above said rails, said rails and bars being connected to said rings and acting to brace them together, insulators connected to said rings, a conductor supported by said insulators above the track section in said structure, electric means for moving cars through said structure, trolley wires on each side of said structure, a contact carried by said conductor, and a contact spring in circuit with said trolley wires and adapted to be engaged by said contact on the conductor, substantially as described.

7. In a car dumping and weighing apparatus, a platform, a track for the cars to be handled comprising fixed and movable sections of rails normally disposed in alinement, a movable dumping structure carrying one of the movable track sections, a scale platform carrying the other movable track section, and a fixed track section between said movable sections formed by bent rails, substantially as described.

8. In a car dumping apparatus, a revoluble structure carrying rails, a fixed track, cars movable thereon and adapted to pass onto the rails in said structure, means to couple said cars together, wheels supporting said structure, means to hold the car or cars in said structure as it revolves without uncoupling it or them from the other cars, and means to control the operation of said structure, which comprise a motor disposed above the structure in a position where it is protected from the dust and material dumped, a counterbalance weight disposed below the structure, and flexible connections from said motor and weight to said structure.

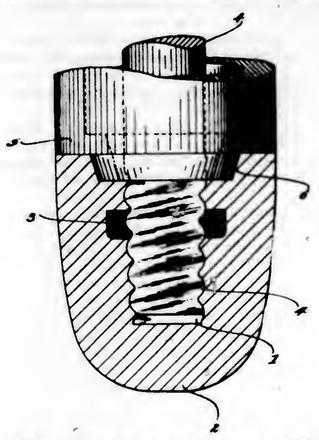
9. In a car dumping apparatus, cars, a track therefor, a movable structure carrying a part of said track, means to hold one or more cars in fixed relation to said structure and means to revolve the structure and dump the contents of the car or cars held therein, said means comprising a fluid motor and a counterbalance weight operatively connected to said structure, said motor comprising a cylinder and piston, a three-way valve, and two passages controlled by said valve and entering the cylinder at one end and at the side adjacent to said end, a check valve to prevent the exhaust of pressure through the passage entering the end of the cylinder, a check valve to prevent the admission of pressure to the cylinder through the passage entering its side, means to control the admission of pressure to said cylinder to revolve said structure, and means to trip said three-way valve so that the structure automatically rights itself upon completing its dumping travel.

10. In a car dumping apparatus, the combination with a revoluble structure adapted to receive a car or cars, of a motor for revolving said structure to dump the car or cars therein, comprising a cylinder, a pressure admission port at one end of the cylinder, a pressure exhaust port at the side of the cylinder, valve means to admit pressure to the cylinder through said admission port in one position and to permit the exhaust of pressure therefrom through said exhaust port in another position, a valve to regulate the exhaust, and a piston, connected to said structure, which automatically moves said valve means to exhaust its operating fluid pressure as it completes the dumping movement of said structure, manually controlled means to admit pressure to this cylinder, a counterbalance weight to restore the revoluble structure to initial position, and a positive stop for said revoluble structure, said exhaust port leading from the cylinder at a point which will cause the piston to cushion and arrest the movement of the revoluble structure just before it rights itself and engages said stop.

852,644. STOPPER. CHARLES C. BACON, Philadelphia, Pa. Filed Feb. 14, 1906. Serial No. 301,055.

Claim.—1. A stopper of refractory material having a threaded nut embedded therein and having a cavity provided with a thread of refractory material which constitutes a continuation of the thread of the nut, substantially as described.

2. A stopper of refractory material having a threaded nut embedded therein and having a cavity provided with a thread of refractory material which constitutes a continuation of the thread of the nut in combination with a rod provided with a threaded end adapted to engage both the



thread of the nut and the thread of the cavity, substantially as described.

852,645. LOCK ATTACHMENT. ABIJAH B. BENNETT, Opelika, Ala. Filed Apr. 13, 1906. Serial No. 311,551.

Claim.—1. In a coin controlled lock, a coin chute, a shutter positioned at one side of said chute and normally obstructing the key hole of said lock, said shutter being positioned so as to be engaged by a descending coin and shifted to permit the introduction of a key into the key hole of the lock, and coin controlled means for normally preventing movement of said shutter.

2. In a coin controlled lock, a coin chute, a shutter movably secured at one side thereof, said shutter serving to normally obstruct the key hole of the lock and having a portion projecting within the path of the coin descending a chute, and a latch for normally preventing movement of said shutter, said latch having a portion adapted to be engaged by a descending coin.

3. In a coin controlled lock, a coin chute, a pivoted shutter positioned at one side thereof, said shutter serving to normally obstruct the key hole of the lock and having a portion projecting within the path of the coin chute, a spring for holding the shutter in its normal position, and a latch normally preventing movement of said shutter, said latch having a portion projecting within the coin chute.

4. In a coin controlled lock, a coin chute, a shutter movably secured at one side thereof and normally serving to obstruct the key hole of the lock, said shutter having a beveled portion adapted to be brought opposite the key hole when the same is deflected by a descending coin.

5. In a coin controlled lock, a coin chute, a shutter pivotally secured at one side thereof and adapted to normally obstruct the key hole of the lock, said shutter having a portion adapted to be engaged by a coin descending said

chute and a beveled recessed portion adapted to be moved adjacent the key hole of the lock when said shutter is so engaged, and a spring for holding said shutter in its normal position.

6 An attachment for locks comprising a casing adapted to be secured thereover, means carried by the casing adapted to normally obstruct the key hole of the lock, and check controlled means within the casing for releasing said first mentioned means.

7. An attachment for locks comprising a casing adapted to be secured thereover a movable shutter within the casing normally obstructing the key hole of the lock, and check controlled means within the casing for releasing said shutter.

8. An attachment for locks comprising a casing adapted to be secured thereover, said casing having a key hole therein in alinement with the key hole of the lock, means within the casing and normally obstructing the key hole thereof and check controlled means housed by said casing for releasing said first mentioned means.

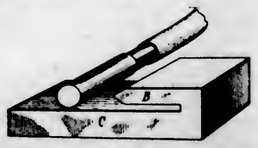
9. An attachment for locks comprising a casing adapted to be secured thereover, said casing having a key hole therein in alinement with the key hole of the lock, a movable shutter within the casing and normally obstructing the key hole thereof, and check controlled means housed by said casing for releasing said shutter.

10. In a coin-controlled lock, a casing divided into two compartments and having a key-hole in the upper compartment, a coin chute in the other compartment communicating at its lower end with the lower compartment, and a shutter pivotally secured at one side of said coin chute and chute and normally obstructing the key hole of the casing and the communication between the upper and lower compartments thereof, said shutter having a portion adapted to be engaged by a coin descending the chute.

11. In a coin-controlled lock, a casing divided into two compartments and having a key hole in the upper compartment, a coin chute in the upper compartment communicating at its lower end with the lower compartment, a shutter pivotally secured at one side of said coin chute and normally obstructing the key hole of the casing and the communication between the upper and lower compartments thereof, said shutter having a portion adapted to be engaged by a coin descending the chute, and a beveled recessed portion adapted to be moved adjacent the key hole when said shutter is deflected by a descending coin.

12. In a coin controlled lock, a coin chute, a shutter positioned at one side thereof, said shutter serving to normally obstruct the key hole of the lock and having a portion projecting within the path of the coin chute, and a latch pivoted to said shutter and co-operating with a fixed stop to normally hold said shutter against movement, said latch having a portion projecting within the coin chute.

852,646. SYSTEM OF SUBMARINE SIGNALING. LUCIEN I. BLAKE, Lawrence, Kans., assignor to Submarine Signal Company, Boston, Mass., a Corporation of Maine. Filed Nov. 11, 1905. Serial No. 286,802.



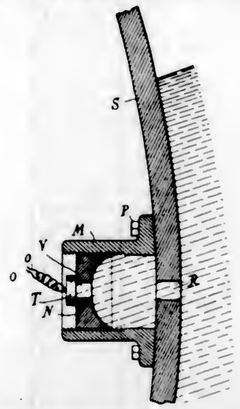
Claim.—1. The system of submarine signaling herein described, comprising in combination a submerged transmitter adapted for producing and imparting vibrations essentially molecular in character, and a submerged receiver sensitive to such vibrations, as set forth.

2. The system of submarine signaling herein described, comprising in combination a submerged body and means for setting up therein vibrations essentially molecular in character, and a submerged receiver sensitive to molecular vibrations, as set forth.

3. The system of submarine signaling herein described comprising in combination a submerged metallic body, means for setting the same in vibration essentially molecular in character, and a submerged receiver sensitive to molecular vibrations, as set forth.

4. A transmitter for submarine signaling systems consisting of a metallic body in combination with means for setting the same in vibration essentially molecular in character as herein set forth.

852,647. SUBMARINE SIGNALING. LUCIEN I. BLAKE, Boston, Mass., assignor to Submarine Signal Company, Boston, Mass., a Corporation of Maine. Filed Jan. 8, 1907. Serial No. 351,361.



Claim.—1. The improvement in the art of submarine signaling by sound, which consists in intensifying the sounds produced or received by the resonance of an isolated mass of liquid, as set forth.

2. The improvement in the art of submarine signaling by sound, which consists in producing regular periodic or harmonic vibrations in an isolated body of liquid, and producing by the resonance of such body intensified sounds, as set forth.

3. A liquid resonator consisting of a receptacle with walls capable of withstanding the variations of hydrostatic pressure accompanying regular periodic or harmonic vibrations set up in a body of liquid contained within the same, and reflecting the said vibrations to produce resonance, as set forth.

4. A liquid resonator comprising in combination a receptacle with walls capable of withstanding the variations of hydrostatic pressure accompanying regular periodic or harmonic vibrations set up in a body of liquid contained within the same, and reflecting the said vibrations to produce resonance, and means for setting up such vibrations in the liquid, as set forth.

5. A sound-producer for submarine signaling, comprising a receptacle with walls capable of withstanding the variations of hydrostatic pressure accompanying regular periodic vibrations in a body of liquid contained therein, and reflecting the same to produce resonance, and means for imparting such vibrations to the liquid, as set forth.

6. A submarine sound producer, comprising in combination, a receptacle forming a resonating cavity for liquids, and a source of liquid under pressure for setting up harmonic vibrations in the column of liquid within the said cavity, as set forth.

7. A submarine sound producer, comprising, in combination, a receptacle forming a resonating cavity for liquids, a source of liquid under pressure and a nozzle adapted to direct a jet of liquid so as to impinge upon the edges of such cavity, as set forth.

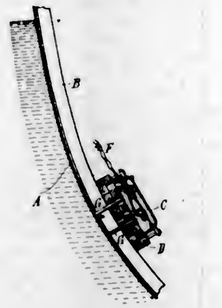
8. A submarine sound producer, comprising, in combination, a receptacle having an orifice with sharp edges and constituting a resonating cavity, and means for causing a jet of liquid to impinge upon the edges for producing a

rhythmic vibration of the liquid contained in the receptacle, as set forth.

9. In a sound producer for submarine signaling, the combination with a source of rhythmic vibrations, of a resonating cavity composed of a hollow cylinder with walls capable of withstanding the variations in hydrostatic pressure accompanying the vibrations imparted to the liquid contained therein, and reflecting the same to produce resonance, as set forth.

10. In a sound producer for submarine signaling, a liquid resonator composed of a cylinder of hardened steel walls of a thickness capable of withstanding the variations in hydrostatic pressure accompanying the harmonic vibrations of a column of water contained within the cylinder, as set forth.

852,648. ART OF SUBMARINE SIGNALING. LUCIEN I. BLAKE, Boston, Mass., assignor to Submarine Signal Company, Boston, Mass., a Corporation of Maine. Filed Jan. 5, 1907. Serial No. 350,983.



Claim.—1. The improvement in the art of submarine signaling, consisting in the combination with a source or receiver of sound vibrations, of a body of consonant material directly associated in acoustic relation therewith, and interposed between the same and the water, and adapted to intensify the vibrations by which it is excited, as set forth.

2. The combination of a receiving device sensitive to sound vibrations transmitted through the water, of a sound intensifier consisting of a body of consonant material directly associated in acoustic relation therewith, and interposed between said receiver and the water so as to be excited to consonance by sound vibrations in the water, and impart the amplified vibrations to the sensitive device, as set forth.

3. The means for receiving sound vibrations transmitted through water, comprising in combination a body of consonant material attached to the side of a vessel so as to be excited to consonance by sound vibrations received through the same from the water, and a sensitive receiving device directly associated in acoustic relation therewith, and acted upon by the consonance of the said body, as set forth.

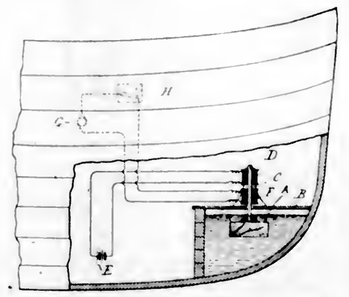
4. The means for receiving sound vibrations transmitted through water, comprising in combination a tank secured to the side of a vessel, a receiving device sensitive to sound vibrations, and a body of consonant material directly associated in acoustic relation therewith, and adapted to be excited to consonance by sound vibrations received from the water through the wall of the vessel, and to impart the same to the sensitive device within the tank, as set forth.

5. The means for receiving sound vibrations transmitted through water, comprising in combination a body of consonant material attached or secured to the side of the vessel, a tank or receptacle secured to such body and formed in part thereby and a sensitive receiving device immersed in said tank, as set forth.

6. The means for receiving sound vibrations transmitted through water comprising, in combination, a vessel, a receiving device sensitive to sound vibrations, a body of consonant material supporting the same and acoustic conductors between the side of the vessel and the consonant material, and constituting paths for the transmission of vibrations from the water to the receiving device, as set forth.

7. The means for receiving sound vibrations transmitted through water, comprising, in combination, a vessel, a tank formed in part by a body of consonant material, a receiving device sensitive to sound vibrations within said tank and acoustic conductors between the submerged skin of the vessel and the said body of consonant material, and constituting paths for the transmission of vibrations from the water to the receiving device, as set forth.

852,649. TRANSMITTER FOR SYSTEMS OF SUBMARINE SIGNALING. LUCIEN I. BLAKE, Boston, Mass., assignor to Submarine Signal Company, Boston, Mass., a Corporation of Maine. Filed Jan. 29, 1907. Serial No. 354,625.



Claim.—1. In submarine signaling by sound, the means herein described for producing and transmitting signals, comprising in combination a source of sound vibrations and a body of consonant material interposed between the same and the water and adapted to be excited to consonance by the vibrations of said source, as set forth.

2. The means for transmitting sound vibrations through water comprising, in combination, a body of consonant material immersed in the water and a vibrator controllable at will for exciting the said body to consonance, as set forth.

3. The means for transmitting sound vibrations through water, comprising, in combination, an electro-magnetic vibrator, a controlling circuit for the same, and a body of consonant material immersed in the water and adapted to be excited to consonance by the action of said vibrator, as set forth.

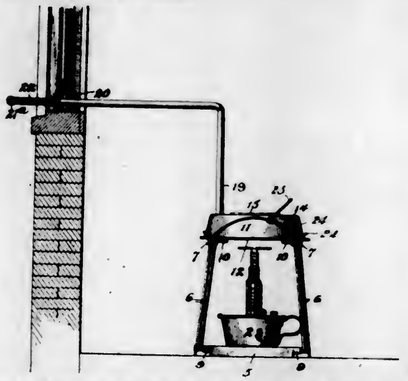
4. A transmitter for submarine signaling by sound, comprising, in combination, a body of consonant material, a bar of magnetic material connected therewith, and an energizing circuit adapted to set up vibrations in said bar, as set forth.

5. A transmitter for submarine signaling by sound, comprising, in combination, a body of consonant material, a bar of magnetic material connected therewith, energizing coils surrounding said bar, a source of direct current including in its circuit one of said coils, and a controllable source of alternating current including in its circuit the other of said coils, as set forth.

6. The means for transmitting sound vibrations through water, comprising, in combination, a vessel, a tank formed in part by the side of the vessel, a body of consonant material immersed in water in said tank and a vibrator adapted to excite said body to consonance, as set forth.

852,650. VENTILATING MECHANISM. CORODON S. CANNON, Chicago, Ill. Filed June 12, 1906. Serial No. 321,402.

Claim.—1. In a ventilator of the character described, the combination with an extensible closure arranged to be placed in a window frame at one side of the sash, of a conducting pipe that passes therethrough, a discharge pipe of substantially the same diameter as the conducting pipe and connected between its ends to the outer end of said conducting pipe, and a receiving chamber connected to the inner end of the conducting pipe and having a bottom provided with an inlet opening.



2. In a ventilator of the character described, the combination with an extensible closure arranged to be placed in a window frame at one side of the sash, of a conducting pipe that passes therethrough, a discharge pipe of substantially the same diameter as the conducting pipe and connected between its ends to the outer end of said conducting pipe, a receiving chamber connected to the inner end of the conducting pipe and having a bottom provided with an inlet opening, and means for controlling the opening.

3. In a ventilator of the character described, the combination with an extensible closure arranged to be placed in a window frame beneath the sash and comprising an intermediate section and end sections slidably associated therewith, of a conducting pipe that passes through the intermediate section and has a cross pipe at its outer end, a receiving chamber connected to the inner end of the conducting pipe, and means for supporting said chamber.

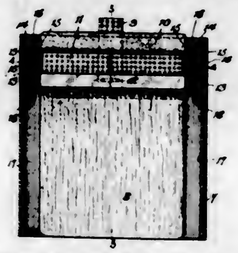
4. In a ventilator of the character described, the combination with a receiving chamber having a bottom wall provided with a plurality of openings, of a shutter loosely located on the bottom wall and movable over the different openings, and a conducting pipe connected to the chamber.

5. In a ventilator of the character described, the combination with a receiving chamber having a substantially circular bottom wall provided with a plurality of slots, of a substantially elliptical shutter loosely located on the bottom wall and movable over the slots, said shutter having a slot movable into alinement with the slots of the bottom wall.

6. In a ventilator of the character described, the combination with a support including standards, of a receiving chamber mounted on the standards and having a bottom opening, chamber-engaging means mounted on the standards, a handle secured to said means, and a conducting pipe leading from the chamber.

7. In a ventilator of the character described, the combination with an extensible closure arranged to be placed beneath a window sash and comprising an intermediate section, and end sections slidably associated therewith, of a conducting pipe passing through the intermediate section, a cross pipe connected between its ends to the outer end of the conducting pipe, braces connecting the cross pipe and conducting pipe, a receiving chamber connected to the inner end of the conducting pipe and having a bottom provided with an opening, means for controlling the opening, and a support for the receiving chamber.

852,651. OIL-BURNER WICK. CORODON S. CANNON, Chicago, Ill. Filed June 12, 1906. Serial No. 321,403.



Claim.—1. In a wick structure, the combination with an absorbent body, of an absorbent incombustible section having its lower portion embedded therein and its upper portion projecting above the body, a metallic shaping strip embedded in the section and terminating short of the top of the body, and securing means passing through the body, the lower portion of the section and the strip.

2. In a wick structure, the combination with an absorbent body comprising sections, of an absorbent incombustible section having its lower portion located between the body sections and its upper portion projecting above the body, and a perforate metallic shaping strip embedded in the incombustible section and terminating short of the top of the body.

3. In a wick structure, the combination with an absorbent body comprising sections, of an absorbent incombustible section comprising a doubled sheet having its end edges projecting above the body and its doubled end located between and in contact with the body sections.

4. In a wick structure, the combination with an absorbent body comprising sections, of an absorbent incombustible section comprising a doubled sheet having its end edges projecting above the body and its doubled end located between and in contact with the body sections, and a perforate metallic shaping strip located in the incombustible section and terminating short of its upper end.

5. In a wick structure, the combination with a wick tube, oblong in cross section and having a single opening therethrough, of a main wick located in the opening and extending across the same but terminating short of one of the walls of said tube, a separate plug wick arranged in the opening and filling the space between the said wall and the main wick, said plug wick terminating short of the lower end of the wick tube, and means connected to the plug wick and depending within the tube for supporting said plug wick in the upper portion of said tube.

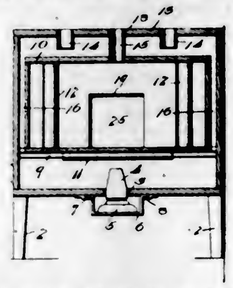
6. In a wick structure, the combination with a wick tube, of a main wick located therein, and a separate plug wick arranged in the tube at one edge of the main wick, said plug wick having a metallic cap.

7. In a wick structure, the combination with a wick tube, of a main wick located therein, a plug wick located along side the main wick, and a depending metallic leg secured to the plug wick and extending downwardly into the tube alongside the main wick.

8. In a wick structure, the combination with a wick tube, of a main wick located therein and terminating short of the opposite edge walls of the tube, plug wicks arranged between the upper portion of the main wick and the edge walls, said plug wick terminating short of the lower end of the main wick, metallic caps covering the plug wicks, and depending metallic legs carried by the plug wicks and depending below the same between the main wick and the edge walls of the tube.

9. In a wick structure, the combination with a wick tube, transversely bent throughout its length, of a main wick located in the tube and terminating short of certain of the edge walls thereof, said main wick comprising absorbent body sections, an incombustible section located between the upper portions of the absorbent sections and projecting above the same, a shaping plate embedded in the incombustible section, plug wicks located at the opposite sides of the main wick and arranged in the wick tube, metallic caps for the plug wicks, and depending legs carried by the plug wicks and extending downwardly alongside the main wick.

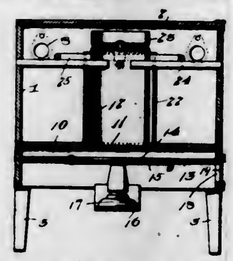
852,652. POULTRY-BROODER. HENRY H. DAMMAN, Kiowa, Kans., assignor of one-half to John H. Kane, Kiowa, Kans. Filed July 3, 1906. Serial No. 324,634.



Claim.—1. A brooder having an inclosing casing with door openings at the front and back, doors movably operating over the said openings, a heating device projecting through the bottom of the casing, a brooding-chamber removably mounted within the casing and of less length than the latter and having pipes extending vertically therethrough, escape pipes in the top of the casing and an escape pipe between the top of the brooding-chamber and said casing top.

2. A brooder having an inclosing casing with heating means applied to the bottom thereof and door openings in the front and rear of the same, platforms secured to the front and rear of the casing adjacent to the door openings, the front and rear of the casing also having vent openings therein, closing devices coöperating with the door and ventilating openings, a brooding-chamber removably mounted within the casing and of less length than the latter, said brooding-chamber having a metal shield or deflector on the bottom thereof over the heating means and also provided with pipes extending vertically therethrough near the ends and terminating at the top and bottom of the same, ventilating pipes in the top of the inclosing casing and an escape pipe between the said top and the top of the brooding-chamber.

852,653. POULTRY-BROODER. HENRY H. DAMMAN, Kiowa, Kans. Filed Aug. 15, 1906. Serial No. 330,642.



Claim.—1. A brooder comprising an inclosing casing with an opening through the bottom thereof, a drum secured on the bottom, a prime heat generating means held below the drum, the latter having an imperforate structure, pipes communicating with the upper part of the drum and the exterior of the brooder, a portion of the pipes being radially disposed and the remaining part circularly arranged, and a water pan held on the top of the drum.

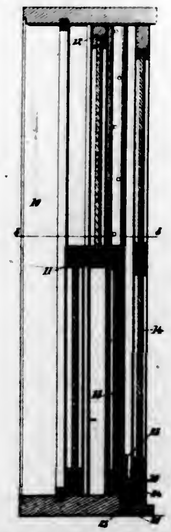
2. A brooder comprising an inclosing casing with an opening in the bottom thereof, a supplemental bottom below the main bottom having an opening therein, a slide movably coöperating with the supplemental bottom, a prime heat generating means below the supplemental bottom and slide, a drum extending upwardly into the brooder and coinciding at its lower extremity with the main bottom, pipes communicating with the upper portion of the drum and also with the exterior of the brooder, and a water pan held on the top of the drum, the inclosing casing of the drum being provided with ventilating means.

3. A brooder comprising an inclosing casing having a heating drum therein, pipes radially extending into the upper part of the drum and communicating with the exterior of the casing, a circular pipe also having one terminal entering the top of the drum and the opposite terminal communicating with the exterior of the casing, and a water pan on the top of the drum.

4. A brooder comprising an inclosing casing having a heating drum therein, pipes radially extending into the upper part of the drum and communicating with the interior of the casing, a circular pipe also having one terminal entering the top of the drum and the opposite terminal communicating with the exterior of the casing, a water pan on the top of the drum, and a shield surrounding the drum.

5. A brooder comprising an inclosing casing having openings in the front and rear sides provided with transparent closing slides, ledges at the front and rear of the casing adjacent to the said openings, the bottom of the casing having an opening through the center thereof, a drum extending upwardly into the casing and communicating with the said opening in the bottom, a heat generating means below the drum, pipes communicating with the interior of the upper part of the drum and the exterior of the casing, a portion of the pipes being radially arranged and the remaining part circularly disposed, and a shield surrounding the drum, the upper part of the casing having ventilating openings.

852,654. WINDOW-BLIND FASTENER. JOHANN J. DANIELS, New Rochelle, N. Y. Filed Nov. 21, 1906. Serial No. 344,408.



Claim.—1. A window-blind fastening comprising a securing arm having a locking-pin at its free end, an apertured bracket secured to the blind and adapted to receive said pin, a bracket secured to the blind near its hinged

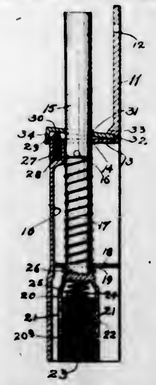
edge and affording a vertical bearing, a vertical post engaging said bearing and adapted to have an axial movement, and means hinging said arm to said post, said locking-pin being adapted to engage sockets to be provided in the window-sill; substantially as set forth.

2. A window-blind fastening comprising a securing arm having at its free end a locking-pin projected above and below the arm, an apertured bracket secured to the blind and adapted to receive said pin, a bracket secured to the blind near its hinged edge and affording a vertical bearing, a vertical post engaging said bearing and adapted to have an axial movement, and means hinging said arm to said post and permitting it to be turned over upside down when required, said locking-pin being adapted to engage sockets to be provided in the window-sill; substantially as set forth.

3. A window-blind fastening comprising a securing arm having a locking-pin at its free end, an apertured bracket secured to the blind and adapted to receive said pin, a bracket secured to the blind near its hinged edge and affording a vertical sleeve bearing, a vertical post mounted to have an axial movement in said bearing and having a bifurcated upper end, and a pin hinging said arm between the members at the upper end of said post, said locking pin being adapted to engage sockets to be provided in the window-sill; substantially as set forth.

4. A window-blind fastening comprising a securing arm having a locking-pin at its free end, an apertured bracket secured to the blind and adapted to receive said pin, a bracket secured to the blind near its hinged edge and affording a vertical sleeve bearing, a vertical post mounted to turn axially in said bearing, a headed screw entering a socket in the lower end of said post for securing the same freely within said bearing, and a pin securing said arm in a hinged manner to the upper end of said post, said locking pin being adapted to engage sockets to be provided in the window-sill; substantially as set forth.

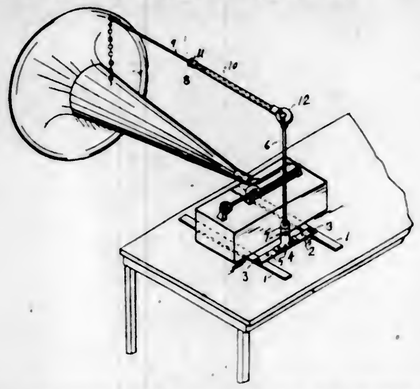
852,655. DOOR-HOLDER. ALBIN DANIELSON, Chicago, Ill. Filed July 23, 1906. Serial No. 327,253.



Claim.—In a door holder, the combination with a casing adapted to be secured to a door and having horizontally disposed apertured parts one above the other and a horizontally disposed rib located at a slight distance above the upper of said parts to form a horizontal recess, a spring actuated bolt loosely located in said apertures, a cushion mounted on the lower portion of said bolt, and a spring actuated holding plate surrounding the upper portion of the bolt and having its edge loosely located in the recess of the casing, substantially as described.

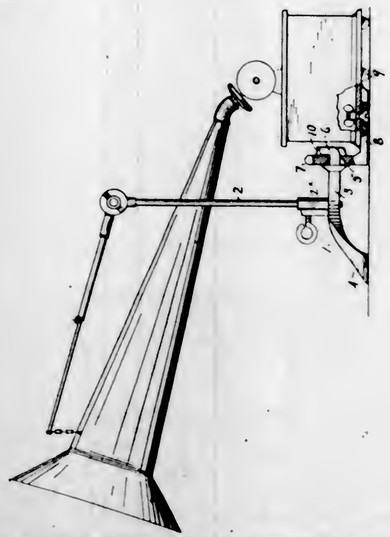
852,656. SUPPORT FOR PHONOGRAPH-HORNS. WILLIAM L. DENIO, Rochester, N. Y., assignor of one-half to H. F. Atkinson, Rochester, N. Y. Filed Mar. 28, 1906. Serial No. 308,575.

Claim.—1. In a support for a phonograph horn, the combination of a base adapted to be arranged beneath the phonograph case, said base comprising two longitudinal members and a transverse member, the transverse member being provided with a socket and pivoted at each end to the longitudinal members intermediate their ends, and a horn-supporting crane loosely mounted in said socket.



2. In a support for a phonograph horn, the combination of a collapsible base adapted to be arranged beneath a case and consisting of three members, each of two members being separately pivoted to a third member, a horn supporting post, and means for connecting said post to one of the members of the base.

852,657. HORN-SUPPORT. WILLIAM L. DENIO, Rochester, N. Y., assignor of one-half to Hobert F. Atkinson, Rochester, N. Y. Filed June 21, 1906. Serial No. 322,762.



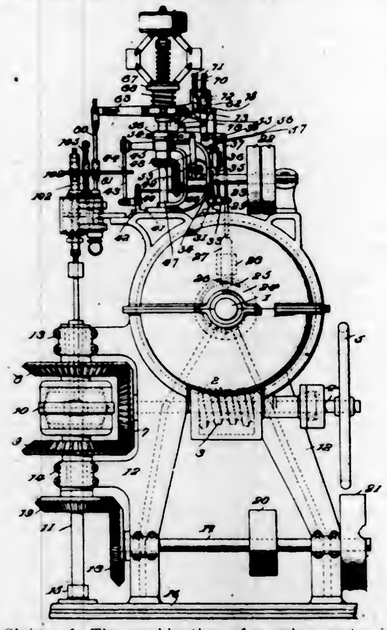
Claim.—1. In a phonograph horn support, a base comprising two members, one member having a tongue, and the other member having an opening to receive said tongue to interlock the members, one of the members being provided with an integral rod socket.

2. In a phonograph horn support, a base comprising two members, one member having a tongue, and the other member having an opening to receive said tongue to interlock the members, one of the members being arched and provided with an integral rod socket of tubular form.

3. In a phonograph horn support, a base comprising two members, one member having a tongue, and the other member having an opening to receive said tongue to interlock the members, one of the members being provided with an integral rod socket and having a lateral extension on one side only to give stability to the base when near an edge and with out projecting, as specified.

4. In a phonograph horn support, the box, the base member fixed to the box bottom, and provided with an aperture, a second member having a part situated above the level of the box bottom and having a tongue engaged with said aperture, and a post adjustably supported in the elevated part of said latter member.

852,658. GOVERNING MECHANISM FOR PRIME MOTORS. FRANCIS ELLICOTT, Baltimore county, Md. Filed Aug. 22, 1906. Serial No. 331,671.



Claim.—1. The combination of a prime motor, a governor therefor, and means for returning the governor to normal constant speed position before the motor has returned to speed.

2. In a device for maintaining constant speed in a prime motor under variable load, the combination of a prime motor, a centrifugal governor therefor, and means for returning the governor to normal constant speed position when displaced therefrom by changes of load before the motor is returned to speed.

3. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a prime motor, a controller for the motor, containing a power element and a valve and an elastic connection between them, so arranged as to tend to move them in opposite directions, and a governor connected to and moving the valve and adapted to be restored to normal constant speed portion by the elasticity of the valve support before the motor has reached speed.

4. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a prime motor, a controller for the motor, a governor, and an elastic means connected to the governor and operating to restore it to normal constant speed position, when displaced therefrom by changes of load, before the motor has reached speed.

5. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a governor adapted to respond to changes of speed, a motor controlled thereby, and an elastic device, which is put under tension by any movement of the governor from speed position and which is adapted to restore the governor to normal constant speed position before the motor has reached speed.

6. In a device for maintaining constant speed in a prime motor, the combination of a governor adapted to respond to changes of speed, a motor controller, and an elastic device connected to the governor and put under tension by its movement from normal constant speed position and adapted to restore the governor to speed position before the motor is restored to speed.

7. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a governor adapted to respond to changes of speed, a motor, and a motor controller, the latter consisting of a piston balanced between active opposing pressures, and a valve controlling the exhaust of pressure from above or below the piston, the piston and valve being connected by a spring so arranged as to tend to move the piston and valve in opposite directions, the centrifugal device being connected to the valve of the controller, and when operating it in response to a change of speed it will put the connecting spring of the valve under a tension which will tend to restore the centrifugal device to speed position before the motor is restored to speed.

8. The combination of a centrifugal governor, a motor controller, the latter containing a piston balanced between opposing pressures, and a valve controlling exhaust from above or below the piston, a spring mounted upon a support and connected at one end to the valve and at the other end to the piston and adapted when either valve or piston is moved out of normal position to move the other in an opposite direction.

9. The combination of a centrifugal governor, a motor controller, the latter including a piston balanced between opposing pressures, and a valve controlling exhaust from above or below the piston, a spring mounted upon an elastic support and connected at one end to the valve and at the other end to the piston and adapted when either valve or piston is moved out of normal position to move the other in an opposite direction.

10. The combination of a centrifugal governor, a motor controller, the latter consisting of a piston balanced between opposing pressures and a valve controlling exhaust from above or below the piston, a straight flat spring mounted upon a double fulcrum, one above and one below it, these fulcrums being elastically supported so as to permit vertical motion, the flat spring being connected at one end to the valve and at the other end to the piston, as and for the purpose specified.

11. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a centrifugal governor, a motor having a gate, a controller moving the gate, the controller comprising a piston balanced between active opposing pressures and a valve exhausting pressure from above or below the piston, and means connected to the gate and the valve by which the motion of the gate will tend to return the valve to normal constant speed position when displaced.

12. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a centrifugal governor, a motor having a gate, a controller for the motor, and elastic means connected to the controller and put into active condition by the motion of the controller which tends to restore the controller to normal constant speed and stop the gate independently of the speed of the motor.

13. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a centrifugal governor, a motor having a gate, a controller for the motor, and elastic means connected to the gate and the controller and put into active condition by the

motion of the gate which tends to restore the controller to normal and stop the gate independently of the speed of the motor.

14. The combination of a centrifugal governor, a motor having a gate, a controller for the motor, means connected to the controller and put into active condition by its motion, and which tends to restore the controller to normal and the centrifugal device to speed position independently of the speed of the motor, and means connected to the gate and to the controller and put into active condition by the motion of the gate and which coöperates with the first means to restore the controller to speed position and stop the motion of the gate independently of the speed of the motor.

15. The combination of a centrifugal governor, a motor having a gate, a controller for the motor, and means connected to the controller and to the gate and capable of storing within itself the motion of the gate and communicating this motion to the controller and independent means for regulating the speed of its transmission.

16. The combination of a centrifugal governor, a motor having a gate, a controller for the motor, and an elastic device connected to the gate and to the controller and put under tension by the motion of the gate, and by the exertion of that tension, tending to restore the controller to normal and independent means for regulating the speed of its transmission.

17. The combination of a centrifugal governor, a motor having a gate, a controller for the motor, and a disk held in a normal position by springs and interposed in the connection between the gate and the controller and adapted to be rotated and having its springs put under abnormal tension by the motion of the gate, and which as it is rotated from its normal position will tend to restore the controller to normal and stop the gate.

18. The combination of a centrifugal governor, a motor having a gate, a controller for the motor, a disk held in normal position by springs and interposed in the connection between the gate and the controller and adapted to be rotated and its springs put under abnormal tension by the motion of the gate, and which when it is rotated from its normal position by the gate will tend to restore the controller to normal and stop the gate, and means controlling the speed of its return.

19. The combination of a centrifugal governor, a motor having a gate, a controller for the motor, a disk held in normal position by springs and interposed in the connection between the gate and the controller and adapted to be rotated and put its springs under abnormal tension by the motion of the gate, and which as it returns to its normal position by the effort of its springs will tend to restore the controller to normal, and means consisting of a dash-pot containing oil interposed in the connection between the gate and the disk and controlling the speed of its return.

20. In a governor for turbines or the like, the combination with a gate moving mechanism, means for operating the gate moving mechanism, including a cylinder and means for supplying pressure to both ends of the cylinder, a piston within the cylinder for controlling the gate moving mechanism and balanced between active opposing pressures, a valve for controlling the exhaust from either end of the cylinder, means for operating the valve controlled by the speed of the turbine and means for causing said valve to close the exhaust as the turbine approaches exact speed.

21. In a governor for turbines or the like, the combination with a gate moving mechanism, of means for operating the gate moving mechanism including a cylinder, means for supplying pressure to both ends of the cylinder, a piston within the cylinder connected to the gate moving mechanism and balanced between active opposing pressures, a valve for controlling the exhaust from each end of the cylinder and a yielding connection between the valve and the piston whereby the movement of the piston is communicated to the valve.

22. In a governor for turbines or the like, the combination with a gate moving mechanism having a shaft which raises and lowers the gate, of a spiral cam mounted on the shaft, a rod connected to the cam whereby said rod will be moved in accordance with the movement of the gate, a cylinder, means for supplying pressure to both ends of the cylinder, a piston within the cylinder connected to the gate moving mechanism and balanced between active opposing pressures and means for controlling the exhaust from one side of the piston or the other, the cam means being connected to said rod whereby the position of the exhaust controlling means will be affected by the position of the gate.

23. In a device for maintaining constant speed in a prime motor under a variable load the combination of a motor, controller and a governor, with means causing the centrifugal weights to operate in a desired path independent of speed.

24. In a device for maintaining constant speed in a prime motor under a variable load the combination of a motor, controller and a governor and a connection between the prime motor and the governor whereby the weights of the centrifugal governor are given a desired path independent of speed.

25. In a device for maintaining constant speed in a prime motor under a variable load the combination of a motor, controller and a governor, and an elastic connection between the prime motor and the governor by which the weights of the governor will have a tendency to be forced into their normal position independent of speed.

26. In a prime motor governor the combination of a centrifugal governor and means for changing the tension working against the force developed in the governor, said means being adjustable to vary the time of its operation.

27. In a device for maintaining constant speed in a prime motor under a variable load the combination of a motor, a controller and a governor, and means controlling the time in which the governor is permitted to approach speed position independent of the speed of the motor.

28. In a device for maintaining constant speed in a prime motor under a variable load the combination of a motor, a controller and a governor, and means for restoring the governor to speed position when displaced therefrom by change of load before the motor is restored to speed, and controlling the time in which the governor is permitted to approach speed position independently of the speed of the motor.

29. In a device for maintaining constant speed in a prime motor under a variable load the combination of a motor, controller and a governor, and means to stop the motion of the controller before it reaches the limit of its throw in either direction.

30. In a device for maintaining constant speed in a prime motor under a variable load the combination of a governor, a controller and a motor having a valve and means connected to the valve of the motor and to the controller whereby the motion of the valve may be limited.

31. The combination of a governor, a controller, and a motor having a valve and means connecting the valve with the controller whereby the motion of the valve will check its own motion, and means for fixing the position of check.

32. The combination of a centrifugal governor, a controller and a motor having a valve and adjustable means whereby the motion of the valve may be stopped at any desired point of its travel and checked at any desired distance from said point of travel.

33. The combination of a centrifugal governor, a controller and a motor having a valve and means connecting the valve with the governor and controller whereby the governor will be returned to speed position and the motion of the valve stopped before the motor has reached speed.

34. In a device for maintaining constant speed in a prime motor under a variable load the combination of a motor, a controller and a governor, and means connecting the motor and the governor and controlling the time in which the governor is permitted to approach speed position.

35. In a device for maintaining constant speed in a prime motor under variable load the combination of a motor, controller and a governor, and means connecting put under tension by the movement of the governor from speed position which tends to restore the governor to speed position independently of speed.

36. In a governor for prime motors the combination of a governor with means brought into active condition by a movement of the governor from speed position and which tends to restore the governor to speed position before speed is restored.

37. In a governor for prime motors the combination of a motor, a controller, and a governor and means connected to the motor and governor whereby the motor controller is prevented from opening or closing beyond a desired extent.

38. The combination of a governor, a motor having a gate, and a controller having a valve, with means operating directly upon the controller valve to vary the speed of the movement of the gate to correspond with the position of the gate.

39. The combination of a governor, a motor having a gate, and a controller having a valve, with means operating through the governor upon the controller valve to vary the speed of the movement of the gate to correspond with the position of the gate, and means interposed between the valve of the controller and the governor and operating to vary the speed of movement of the gate dependent upon the position of the gate.

40. In a device for maintaining constant speed in a prime motor under variable load, a governor, a motor having a gate, and a controller, and means independent of the controller to vary the speed of the movement of the gate dependent upon the position of the gate.

41. In a device for maintaining constant speed in a prime motor under variable load, the combination of a motor having a gate, a controller therefor, and means for causing the velocity of the gate to vary with its position.

42. In a device for maintaining constant speed in a prime motor under variable load, the combination of a centrifugal device, and a motor, and means for checking the throw of the centrifugal device when it has reached a desired variation from normal.

43. In a device for maintaining constant speed in a prime motor under variable load, the combination of a centrifugal device, a motor, and a motor controller, and means actuated by the motor controller to check the throw of the centrifugal device when it has reached a desired variation from normal.

44. In a device for maintaining constant speed in a prime motor under variable load, the combination of a motor having a gate, a controller, and elastic means connected to the controller which will tend to restore the controller to normal constant speed position when displaced, at a predetermined period prior to the motor returning to speed.

45. In a device for maintaining constant speed in a prime motor under variable load, the combination of a governor, a controller having a valve, a motor having a gate, and means actuated by the governor to operate the valve controlled by the combined action of the controller and the gate.

46. In a device for maintaining constant speed in a prime motor under variable load, the combination of a centrifugal device, a controller having a valve, and a motor having a gate, and means connecting the centrifugal device, the gate, and the controller to the valve of the controller.

47. In a device for maintaining constant speed in a prime motor under variable load, the combination of a centrifugal device, a controller having a valve, and a motor having a gate, and separate means connecting the centrifugal device, the gate, and the controller, to the valve of the controller, to impart to it a motion which will be the resultant of the combined action of the three elements.

48. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a governor, a motor having a gate, a controller for the motor, and means connecting the controller and the gate whereby the gate will tend to return the controller to normal constant speed position when displaced.

49. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a governor, a motor having a gate, a controller for the motor, and means connected to the controller and the gate whereby the gate will tend to return the controller to normal constant speed position when displaced prior to the motor returning to speed.

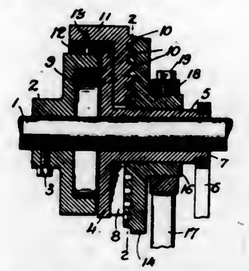
50. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a governor, a motor having a gate, a controller for the motor, an elastic means connected to the controller and the gate whereby the gate will tend to return the controller to normal constant speed position when displaced at a predetermined period prior to the motor returning to speed.

51. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a governor, a motor having a gate, a controller for the motor, and means connected to the controller and the gate whereby the gate will tend to restore the controller to normal and stop its own motion at a predetermined period prior to the motor coming to speed.

52. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a governor, a motor having a gate, a controller for the motor, and means connected to the gate and to the controller whereby the motion of the gate will be reflected upon the controller and cause the controller to tend to return to normal constant speed position and stop the gate before it has reached speed position.

53. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a governor, a motor having a gate, a controller for the motor, and means connected to the gate and to the controller whereby the motion of the gate will be reflected upon the controller and move it and tend to restore it to normal constant speed position and stop the motion of the gate.

852,659. BRAKE. RICHARD FALTER, New York, N. Y. Filed Mar. 20, 1906. Serial No. 307,043.



Claim.—1. In a brake, the combination of a rotatable element having an engaging surface, a disk provided with a guide, a threaded disk, a slidable member controlled by said guide and in engagement with the threaded disk, said member having means adapted to engage the engaging surface of the rotatable element.

2. In a brake, the combination of a rotatable element having an engaging surface, a fixed element having a guide, a brake-shoe movable toward and away from said engaging surface and controlled in its movement by said guide, and a rotatable disk having a thread in engagement with said shoe to move the latter and means to rotate the rotatable disk.

3. In a brake the combination of a friction member, a slotted disk, a threaded disk, and a plurality of slidable members mounted in the slotted disk and being in engagement with the threaded disk, said slidable members having means adapted to engage the friction member.

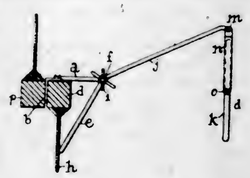
4. In a brake the combination of a disk having radial slots, a plurality of slidable members mounted in the radial slots, a second disk having threads in engagement with the slidable members, and brake shoes connected with the slidable members.

5. In a brake, the combination of a friction member, a

disk having radial slots, a plurality of slidable members mounted in said slots and having angular extensions, brake shoes on the angular extensions, a second disk having a thread in engagement with the slidable members, and means for operating the second disk.

6. In a brake, the combination of a rotary member having a friction member thereon, a stationary disk having radial slots, slidable members mounted in said radial slots and having angular extensions provided with brake shoes adapted to engage the friction member, a rotatable disk having a thread in engagement with the slidable members, and a device for operating the rotatable disk, substantially as described.

852,660. PORTABLE MIRROR-HOLDER. FREDERICK P. FISHER, Boston, Mass. Filed Jan. 7, 1907. Serial No. 351,071.



Claim.—1. In combination, a member provided with a bent finger or hook rigid therewith and capable of engaging the rear surface of a support, a second member pivotally secured to the first-mentioned member and inclined downwardly toward said support to form a brace for the first-mentioned member, a third member pivotally secured to the first-mentioned member, a mirror pivoted to said third member, and means to firmly secure said members in a fixed position with relation to one another, substantially as described.

2. In combination, a substantially horizontal member provided with a bent finger or hook rigid therewith and capable of engaging the rear surface of the cross bar of the lower sash of a window, a second member pivotally secured to the first-mentioned member and downwardly inclined to engage the front surface of the glass of said lower sash, a third member pivotally secured to the first-mentioned member, a mirror secured to said third member and means to secure said members together in a fixed position with relation to each other, substantially as described.

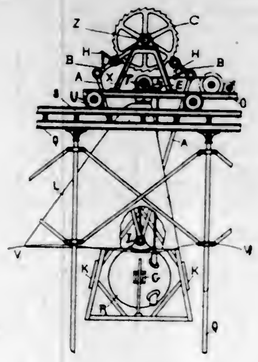
3. In combination, a member provided with a bent finger or hook rigid therewith and capable of engaging the rear surface of a support, a second member pivotally secured to the free end of the first-mentioned member and inclined downwardly toward said support to engage therewith, and a third member pivotally connected with said second member, a device secured to said third member and means to secure said third member in fixed relation to said second member, substantially as described.

852,661. APPARATUS FOR UTILIZING THE MOTION OF SEA-WATER FOR MOTIVE-POWER PURPOSES. JOSÉ FORTUNY Y BANCS, Barcelona, Spain. Filed Aug. 10, 1906. Serial No. 330,011.

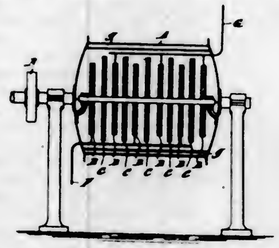
Claim.—1. In a device of the class described, the combination of a frame suspended at its upper end so as to have oscillating movement, a float slidably carried by said frame, an apparatus to be driven and levers connected to said float and adapted to transmit to said apparatus both the oscillating movement of the frame and the vertical movement of the float.

2. A wave motor comprising a frame suspended at its upper end so as to have oscillating movement, blades on said frame submerged in the water, means for transmitting the movement of said frame and a shield on the frame for preventing shocks thereto from the waves.

852,661.



852,662. PROCESS FOR ELIMINATING THE ODORS OF FISH-OILS. ALEXANDRE DE HEMPTINNE, Ghent, Belgium. Filed Mar. 17, 1906. Serial No. 306,517.



Claim.—1. A process for eliminating the odor of fish oil, which consists in subjecting the oil to the action of the silent electric discharge in a gaseous atmosphere.

2. A process for eliminating the odor of fish oil which consists in subjecting the oil to the action of the silent electric discharge in an atmosphere of hydrogen.

852,663. FEEDING AND CUTTING ATTACHMENT FOR WRAPPING-MACHINES. DENNIS T. IGOU, Springfield, Ohio, assignor to The Standard Candy Machine Company, Columbus, Ohio, a Corporation of Ohio. Filed Sept. 20, 1906. Serial No. 335,417.

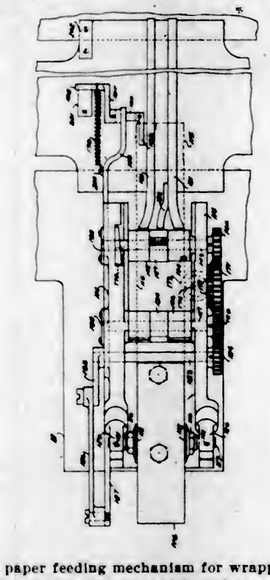
Claim.—1. In a paper feeding mechanism for wrapping machines and the like, a roll support comprising a base having projecting studs, bearings removably fitting said studs, slit through their bearing apertures, and provided with clamping screws for drawing together the slitted parts, and a roll supporting shaft mounted to rotate in said bearings and provided with means for holding a roll of paper thereon, substantially as described.

2. A paper feeding mechanism for wrapping machines and the like, comprising a plurality of pairs of feed rolls, each pair constructed and arranged to alternately grip and release the paper, the gripping and feeding action of the respective pairs being successive, substantially as described.

3. In a paper feeding mechanism for wrapping machines and the like, a plurality of pairs of feed rolls, each pair constructed and arranged to alternately grip and release the paper, the respective pairs of rolls acting successively upon the paper, one pair at a time, to give the same a continuous feed, substantially as described.

4. In a paper feeding mechanism for wrapping machines and the like, a pair of feed rolls, one of which is provided with a gripping and feeding surface restricted to a relatively narrow central portion of the same and a knife extending the full length of said roll, substantially as described.

5. In a paper feeding mechanism for wrapping machines and the like, a pair of feed rolls, one of which is circumferentially grooved at its central portion and provided with a band or covering of gripping material, such as leather, seated therein to form a gripping surface and a knife mounted in one of said rollers and extending the full length thereof, substantially as described.



6. In a paper feeding mechanism for wrapping machines and the like, feed rolls arranged in pairs, one roll of each pair being provided with alternate gripping and release portions, the gripping portions of the respective pairs being arranged to operate successively, one at a time, to give the paper a continuous feed, substantially as described.

7. In a paper feeding mechanism for wrapping machines and the like, feed rolls arranged in pairs, one roll of each pair being circumferentially grooved and longitudinally flattened, a gripping band seated in the circumferential groove, and fastening devices for securing the band to the roll at the flattened places, substantially as described.

8. In a paper feeding mechanism for wrapping machines and the like, a plurality of pairs of feed rolls having alternating gripping and release surfaces and arranged to successively act upon the paper, one of the rolls of the last pair having a knife mounted therein and adapted to be projected from one of the release surfaces thereof, substantially as described.

9. In a paper feeding mechanism for wrapping machines and the like, a plurality of pairs of feed rolls having alternating gripping and release surfaces and arranged to successively act upon the paper, one of the rolls of the last pair having a knife mounted therein and adapted to be projected from one of the release surfaces thereof, said roll and its coöperating roll having grippers arranged to grip the paper along each side of the knife during the cutting operation, substantially as described.

10. In a paper feeding mechanism for wrapping machines and the like, a pair of feed rolls, one of which is provided with a longitudinal radial slot, a knife mounted to move in and out in said slot, and means for projecting the knife beyond said roll when opposite the coöperating roll, said coöperating roll being provided with a longitudinal groove to receive said knife, both of said rolls being provided with longitudinal gripping strips arranged to grip the paper on both sides of the knife during the cutting, substantially as described.

11. In a paper feeding mechanism for wrapping machines and the like, a feed roll having a radial slot and inclined slots arranged transversely thereto, a knife mounted to slide in the radial slot and having projections engaging the inclined slots, a spring acting against the knife axially of the roll to force the same outward, and a fixed cam against which the knife bears to control the movements of the knife relatively to the roll, substantially as described.

12. In a paper feeding mechanism for wrapping machines and the like, a hollow feed roll having a longitudinal radial slot and inclined transverse slots, a shaft on which said roll is mounted, said shaft being transversely slotted and being provided with a spring and thrust collar, a knife mounted to slide in the radial slot of the roll, provided with projections to engage the inclined slots thereof, and having a projection extending through the slot of the shaft and engaged by the thrust collar, said knife extending beyond said roll at one end, and a fixed cam located at said end of the roll, against which cam the projecting end of the knife is held by the spring, substantially as described.

13. A paper feeding mechanism for wrapping machines and the like, comprising feed rolls for feeding forward a web of paper, means for severing said web to form wrapping sheets, a reciprocating gripper acting to grip the severed sheet and carry the same forward to the place of delivery and a fixed part for actuating said gripper, substantially as described.

14. A paper feeding mechanism for wrapping machines and the like, comprising feed rolls for feeding forward a web of paper, guides for supporting the paper beyond said feed rolls, means for severing the web to form wrapper sheets, a gripper acting to seize the severed sheets and carry them forward through the guides to the place of delivery and a fixed part for actuating said gripper, substantially as described.

15. A paper feeding mechanism for wrapping machines and the like comprising a plurality of pairs of feed rolls, one of the rolls of the last pair having mounted therein a knife whereby the web of paper is severed to form wrapper sheets, and a reciprocating gripper acting to grip the severed sheets and carry them forward to the place of delivery, substantially as described.

16. A paper feeding mechanism for wrapping machines and the like comprising a plurality of pairs of feed rolls, one of the rolls of the last pair having mounted therein a knife whereby the web of paper is severed to form wrapper sheets, guides for the paper extending forward from said last pair of rolls, and a reciprocating gripper acting to grip the severed sheets and carry them forward through the guides to the place of delivery, substantially as described.

17. A paper feeding mechanism for wrapping machines and the like, comprising a supporting frame or bracket, a roll support, feeding rolls, means for driving said feeding rolls, a cutter, a crank shaft driven in unison with the feeding rolls, a slide provided with a gripper, a link connecting said slide with the crank of the crank shaft, and fixed means for opening and closing the gripper, substantially as described.

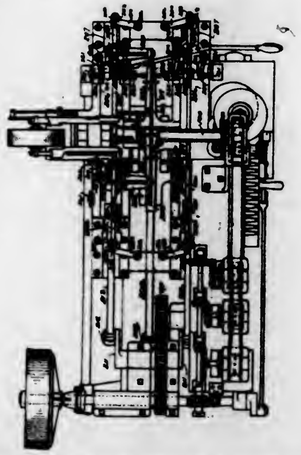
18. In a paper feeding mechanism for wrapping machines and the like, sheet-feeding means comprising a reciprocating slide, gripping jaws having their shafts mounted therein and geared together to move in unison toward and from each other, one of said shafts being provided with an actuating arm, a spring connecting said arm to the slide and acting to hold said jaws in open or closed position, and fixed cams arranged in the path of said arm to swing the same over to cause the spring to act in the appropriate direction, substantially as described.

19. In a paper feeding mechanism for wrapping machines and the like, sheet-feeding mechanism comprising a reciprocating slide, gripping jaws having their shafts mounted therein and geared to move in unison toward and from each other, one of said shafts being provided with an arm having a laterally extending pin, a tension spring connecting said pin and the slide and acting to open or close the jaws when moved to one side or the other of the axis of the arm bearing jaw, and fixed cams arranged in

the path of the pin and acting to move the same to carry the spring to one side of said axis at one end of the stroke of the gripper and to the other side of said axis at the other end of said stroke, substantially as described.

20. In a paper feeding mechanism for wrapping machines and the like, a plurality of pairs of feed rolls acting only upon a relatively narrow central portion of the web of paper, each pair constructed and arranged to alternately grip and release the paper, the gripping and releasing action of the respective pairs being successive to effect a continuous straight feed, substantially as described.

852,664. MACHINE FOR WRAPPING CONFECTIONS AND OTHER ARTICLES. DENNIS T. IGOU, Springfield, Ohio, assignor to The Standard Candy Machine Company, Columbus, Ohio, a Corporation of Ohio. Original application filed Jan. 26, 1906, Serial No. 298,023. Divided and this application filed Sept. 20, 1906. Serial No. 335,418.



Claim.—1. In a wrapping machine, a normally elevated support for the wrapper and article to be wrapped, in combination with a vertically reciprocating plunger having a hollow foot to receive the article, said plunger acting on the support to depress the same without exerting pressure on the article, substantially as described.

2. In a wrapping machine, a normally elevated support for the wrapper and article to be wrapped, in combination with a vertically reciprocating plunger having a hollow foot to receive the article, said plunger acting on the support to depress the same without exerting pressure on the article, and relatively stationary parts between which the support and plunger move to give the wrapper its initial folds by bending the lateral portions thereof upward, substantially as described.

3. In a wrapping machine, a normally elevated support for the wrapper and article to be wrapped, in combination with a vertically reciprocating plunger having a hollow foot comprising lateral folding plates which press the wrapper against the support and simultaneously depress the support and define the first lines of fold of the wrapper, substantially as described.

4. In a wrapping machine, a normally elevated support for the wrapper and article to be wrapped, in combination with a vertically reciprocating plunger having a hollow foot comprising lateral folding plates which press the wrapper against the support and simultaneously depress the support and define the first lines of fold of the wrapper, and relatively fixed members between which said parts move and which serve to form the first folds of the wrapper by bending the marginal portions thereof upward, substantially as described.

5. In a wrapping machine, a vertically movable support for the wrapper and article to be wrapped, in combination with a vertically reciprocating plunger having a hollow foot comprising lateral folding plates and a transverse stop, substantially as described.

6. In a wrapping machine, a vertically movable support for the wrapper and article to be wrapped, in combination with a vertically reciprocating plunger having a hollow foot to receive the article, said foot comprising a stop and lateral folding plates, and a conveyer for bringing the articles to the support and plunger, said folding plates extending to embrace the discharge end of the conveyer and act as guides, substantially as described.

7. In a wrapping machine, a vertically movable support for the wrapper and article to be wrapped, in combination with a vertically reciprocating plunger having lateral folding plates and a detachable foot provided with a stop, substantially as described.

8. In a wrapping machine, the combination, with a vertically movable support for the wrapper and article to be wrapped, of a plunger having lateral folding plates and a grooved lower extremity, a foot portion slidingly fitting said grooved extremity and having a stop and locking extension, and a locking plate mounted to slide on the plunger and to engage said extension to hold the foot in place, substantially as described.

9. In a wrapping machine, the combination, with a normally elevated spring-actuated single support for both the wrapper and article to be wrapped, of a vertically reciprocating plunger acting to press the support downward to form the first folds of the wrapper, and means for holding said support in its depressed position after the plunger reverses its direction and during the completion of the folding, substantially as described.

10. In a wrapping machine, the combination, with a normally elevated spring-actuated support for the wrapper and article to be wrapped, of a vertically reciprocating plunger acting to press the support downward to form the first folds of the wrapper, means for holding said support in its depressed position after the plunger reverses its direction and during the completion of the folding, and gripping fingers for holding the article on the support during the recession of the plunger, substantially as described.

11. In a wrapping machine, the combination, with a normally elevated spring-actuated support for the wrapper and article to be wrapped, of a vertically reciprocating plunger acting to press the support downward to form the first folds of the wrapper, means for holding said support in its depressed position after the plunger reverses its direction and during the completion of the folding, gripping fingers for holding the article on the support during the recession of the plunger, and means for withdrawing said gripping fingers to permit the completion of the folding operation, substantially as described.

12. In a wrapping machine, the combination, with a vertically reciprocating plunger, of a support for the wrapper and article to be wrapped, provided with a stem or shank having a projection, a reciprocating slide provided with a cam opening into which said projection extends, said cam opening having open end portions to permit free vertical movement of the support, and a connecting passage, spring-controlled switches located at the ends of said passage, and a spring acting on said support and its stem to hold them either in raised or depressed position, according as they are moved to one side or the other of their intermediate neutral position, substantially as described.

13. In a wrapping machine, a vertically reciprocating plunger, and a vertically moving support for the wrapper and article to be wrapped, in combination with a vertically movable slide, gripping fingers mounted on said slide, a spring for drawing said fingers toward each other on opposite sides of the support to hold the article during the recession of the plunger, and means for depressing said slide to draw the gripping fingers below the support during a portion of the folding operation, substantially as described.

14. In a wrapping machine, the combination, with a vertically reciprocating plunger, a vertically moving support for the wrapper and article to be wrapped, and means for holding the support in a lowered position after the plunger rises, of separated plates having apertures for the reception of the plunger and support, whereby, when the support is depressed to the lower plate, the lateral margins of the wrapper are given their first fold, and a tucker reciprocating in the space between said plates across said apertures and having a projecting folding flange, whereby, when said tucker reciprocates across the depressed support, said flange first folds down the adjacent margin of the wrapper upon the body of the article, and whereby the continued advance of the tucker pushes the article from the support into the space between the plates, the upper plate thereby folding down the other margin of the wrapper to complete the folding operation, substantially as described.

15. In a wrapping machine, the combination, with two separated apertured plates, of a support for the wrapper and article to be wrapped working in said apertures, a plunger having lateral folding plates acting to depress the support below the space between the plates and serving, in conjunction with the aperture of the upper plate, to give the wrapper its first fold by bringing the lateral portions thereof into upright position, means for holding the support in depressed position while the plunger recedes, and a tucker reciprocating in the space between the plates across the top of the depressed support and having a folding flange, whereby one of the lateral margins of the wrapper is first folded down upon the body as the tucker advances and whereby the other lateral margin of the wrapper is folded down as the tucker pushes the article from the support into the space between the plates, substantially as described.

16. In a wrapping machine, the combination, with a vertically reciprocating plunger, a vertically moving support for the wrapper and article to be wrapped, and means for holding the support in a lowered position after the plunger rises, of separated plates having apertures for the reception of the plunger and support, whereby, when the support is depressed to the lower plate, the lateral margins of the wrapper are given their first fold, a tucker reciprocating in the space between said plates across said apertures and having a projecting folding flange, whereby, when said tucker reciprocates across the depressed support, said flange first folds down the adjacent margin of the wrapper upon the body of the article, and whereby the continued advance of the tucker pushes the article from the support into the space between the plates, the upper plate thereby folding down the other margin of the wrapper to complete the folding operation, gripping fingers for holding the article upon the support as the plunger recedes therefrom, and means for moving said gripping fingers out of the path of the tucker, substantially as described.

17. In a wrapping machine, the combination, with two separated apertured plates, of a support for the wrapper and article to be wrapped working in said apertures, a plunger having lateral folding plates acting to depress the support below the space between the plates and serving, in conjunction with the aperture of the upper plate, to give the wrapper its first fold by bringing the lateral portions thereof into upright position, means for holding the support in depressed position while the plunger recedes, a tucker reciprocating in the space between the plates across the top of the depressed support and having a folding flange, whereby one of the lateral margins of the wrapper is first folded down upon the body as the tucker advances and whereby the other lateral margin of the wrapper is folded down as the tucker pushes the article from the support into the space between the plates, gripping fingers for holding the article upon the support as the plunger recedes therefrom, and means for moving said gripping fingers out of the path of the tucker, substantially as described.

18. In a wrapping machine, the combination, with means for folding around the article to be wrapped the lateral margins of the wrapper, and means for feeding forward the article thus partially wrapped, of means for twisting the projecting ends of the wrapper during such forward movement of the article, substantially as described.

19. In a wrapping machine, the combination, with means for folding around the article to be wrapped the lateral marginal portions of the wrapper, of conveying mechanism for the partially wrapped article comprising two parallel plates between which it travels, a reciprocating support, a rake pivoted to said support and engaging the article from behind to move it forward between the plates while moving in one direction, and means for lifting the rake during its return movement to cause it to pass over the next article to be engaged, substantially as described.

20. In a wrapping machine, the combination, with means for folding around the article to be wrapped the lateral marginal portions of the wrapper, of two parallel plates between which the article is fed forward, the upper plate being slotted, a reciprocating support, a rake pivoted to said support, extending through the slot of the upper plate, and having lateral retaining portions at the sides thereof, and means for lifting said rake at the end of its return stroke to cause it to pass over the article to be engaged by its forward stroke, substantially as described.

21. In a wrapping machine, the combination, with parallel plates between which the partially wrapped article travels, the upper plate being slotted, and a tucker traveling between said plates and acting to push the article within reach of the rake, said tucker being slotted for the passage of the rake teeth, of a reciprocating support, a rake pivoted to said support and having teeth passing through the slot of the upper plate and at the sides thereof, and means for lifting the rake at the end of its return stroke to cause it to pass over and engage back of the article, substantially as described.

22. In a wrapping machine, the combination, with parallel plates between which the article travels, of a reciprocating support, a rake pivoted to said support, and a spring-actuated switch cam pivoted to the upper plate in the path of the rake and provided with a cam incline to lift the rake at the end of its return stroke, and with a second cam incline whereby the switch cam is forced out of the path of the rake during its outward stroke, substantially as described.

23. In a wrapping machine, the combination, with parallel plates between which the article travels, the upper plate being longitudinally slotted, of a reciprocating support, a rake pivoted to said support, extending through the slot of the upper plate and provided with a laterally projecting pin, a switch cam pivoted on the upper plate at one side of the slot therein and having a lifting incline at its forward end, a lateral incline, and a recess for the downward passage of the pin, a spring for holding said switch cam yieldingly in position, and a fixed guide for positively guiding the pin downward into the recess, substantially as described.

24. In a wrapping machine, the combination, with means for feeding forward the partly wrapped article, of means for twisting the projecting ends of the wrapper during said movement, said twisting means comprising twisters located on opposite sides of the path of the article and traveling forward in unison therewith, substantially as described.

25. In a wrapping machine, the combination, with parallel plates between which the article travels, said plates serving to prevent rotation of the article, of twisters traveling along with the article on each side of said plate and acting to twist the projecting ends of the wrapper during the forward movement of the article, substantially as described.

26. In a wrapping machine, a pair of twisters for simultaneously twisting the opposite ends of the wrapper of a moving article, each twister comprising a reciprocating slide, a twister shaft carried by said slide and provided with twisting fingers, means for first causing the twisting fingers of each twister to approach each other to grip the wrapper ends, means for subsequently causing the twisters to approach each other bodily during the twisting operation to compensate for the shortening of the twisting wrapper, means for rotating said twister shafts, and means

for opening the twisting fingers to release the wrapped article at the end of the operative stroke of the slides, substantially as described.

27. In a wrapping machine, a twisting mechanism comprising a reciprocating slide, a shaft mounted thereon and axially movable, a spring acting to move said shaft in one direction, means for rotating said twister shaft, a twister head comprising a part fixed to the shaft and a part movable longitudinally on the shaft, twisting fingers pivoted to one of said parts and slidingly engaged by the other, whereby a relative movement of said parts opens and closes the twisting fingers, a lever engaging the movable part of the twister head, and a fixed cam plate controlling the movements of said lever, whereby the movable part of the head is first moved forward relatively to the fixed part to close the twisting fingers, and the entire twister shaft, head and fingers are then moved forward in unison to compensate for the shortening of the twist, substantially as described.

28. In a wrapping machine, a twisting mechanism comprising a reciprocating slide, a shaft mounted thereon and axially movable, a spring acting to move said shaft in one direction, means for rotating said twister shaft, a twister head comprising a part fixed to the shaft and a part movable longitudinally on the shaft, twisting fingers pivoted to one of said parts and slidingly engaged by the other, whereby a relative movement of said parts opens and closes the twisting fingers, a lever engaging the movable part of the twister head, and a fixed cam plate controlling the movements of said lever, whereby the movable part of the head is first moved forward relatively to the fixed part to close the twisting fingers, and the entire twister shaft, head and fingers are then moved forward in unison to compensate for the shortening of the twist, said first forward movement being relatively rapid to quickly close the fingers, the subsequent forward movement being relatively slow to cause a gradual advance to the twister, substantially as described.

29. In a wrapping machine, a twisting mechanism comprising a reciprocating slide, a shaft mounted thereon and axially movable, a spring acting to move said shaft in one direction, means for rotating said twister shaft, a twister head comprising a part fixed to the shaft and a part movable longitudinally on the shaft, twisting fingers pivoted to one of said parts and slidingly engaged by the other, whereby a relative movement of said parts opens and closes the twisting fingers, a lever engaging the movable part of the twister head, and a fixed cam plate controlling the movements of said lever, whereby the movable part of the head is first moved forward relatively to the fixed part to close the twisting fingers, and the entire twister shaft, head and fingers are then moved forward in unison to compensate for the shortening of the twist, said lever acting to retract the movable part of the head at the end of the twisting operation to open the twisting fingers and release the wrapped article, substantially as described.

30. In a wrapping machine, a twisting mechanism comprising a reciprocating slide, a shaft mounted thereon and axially movable, a spring acting to move said shaft in one direction, means for rotating said twister shaft, a twister head comprising a part fixed to the shaft and a part movable longitudinally on the shaft, twisting fingers pivoted to one of said parts and slidingly engaged by the other, whereby a relative movement of said parts opens and closes the twisting fingers, a lever engaging the movable part of the twister head, a fixed cam plate controlling the movements of said lever, whereby the movable part of the head is first moved forward relatively to the fixed part to close the twisting fingers, and the entire twister shaft, head and fingers are then moved forward in unison to compensate for the shortening of the twist, said lever acting to retract the movable part of the head at the end of the twisting operation to open the twisting fingers and release the wrapped article, and means for preventing the twister shaft from being moved by its spring in unison with the movable part of the head during this opening movement of the twisting fingers, substantially as described.

31. In a wrapping machine, a twisting mechanism comprising a reciprocating slide, a housing thereon provided with separated bearings, a twister shaft axially movable in said bearings, a pinion splined on said shaft between said bearings, a normally stationary rack with which said pinion engages to rotate the twister shaft, a twister head carried by said shaft and comprising parts which are fixed and movable relatively to the shaft, and twisting fingers which are opened and closed by the relative movements of said parts, and means for moving the movable part of the twister head in the direction of the axis of said shaft, substantially as described.

32. In a wrapping machine, a twisting mechanism comprising a reciprocating slide, a longitudinally movable twister shaft mounted thereon and provided with an anti-friction roller, a fixed abutment against which said roller travels to prevent recession of said twister shaft at the end of the stroke, a pinion on the twister shaft, a normally stationary rack bar which said pinion engages to rotate the twister shaft, and means for causing said rack bar and slide to move in unison at the end of the stroke to hold the roller in proper relation with the fixed abutment, substantially as described.

33. In a wrapping machine, a twisting mechanism comprising a reciprocating slide, a longitudinally movable twister shaft mounted thereon and provided with an anti-friction roller, a fixed abutment against which said roller travels to prevent recession of said twister shaft at the end of the stroke, a pinion on the twister shaft, a normally stationary rack bar which said pinion engages to rotate the twister shaft, and means for causing said rack bar and slide to move in unison at the end of the stroke to hold the roller in proper relation with the fixed abutment, said means comprising engaging projections carried by the slide and rack bar, and a tension spring acting to hold said projections in contact, substantially as described.

34. In a wrapping machine, a twisting mechanism comprising a slideway provided with a fixed cam plate, a slide mounted to reciprocate in said slideway, a support mounted on said slide and having bearings, a twister shaft mounted to rotate and move axially in said bearings, a fixed collar on one end of said shaft, a loose collar adjacent thereto, a spring-actuated arm carried by the support and engaging said loose collar, a head mounted on the other end of the twister shaft and comprising fixed and movable portions and twisting fingers carried and movable thereby, a loose collar carried by the movable portion of the head, and a lever pivotally mounted on the support between its ends, and engaging the loose collar of the head at one end and the cam plate at the other end, substantially as described.

35. In a wrapping machine, twisting mechanism comprising twisting fingers movable toward and from each other and provided with gripping jaws which are respectively convex and concave, substantially as described.

36. In a wrapping machine, the combination, with means for folding around the article to be wrapped the lateral marginal portions of the wrapper, of means for feeding in different directions the successive articles thus partly wrapped, and a plurality of twisting mechanisms successively acting to twist the ends of the wrappers of the articles thus delivered to them, substantially as described.

37. In a wrapping machine, the combination, with means for folding around the article to be wrapped the lateral marginal portions of the wrapper, of means for feeding in different directions the alternate articles thus partly wrapped, and two sets of twisting mechanism for twisting the projecting ends of the wrapper, said sets operating respectively upon the alternate articles, one set twisting while the other set is returning to its initial position, substantially as described.

38. In a wrapping machine, the combination, with means for folding around the article to be wrapped the lateral marginal portions of the wrapper, of means for conveying in opposite directions the alternate articles thus partly wrapped, and two sets of twisting mechanism, co-operating and traveling respectively with the conveyers and acting to twist the projecting ends of the wrappers, one of said sets moving outward and twisting while the other set is returning to its initial position, substantially as described.

39. In a wrapping machine, the combination, with a vertically moving plunger and support, and coöperating plates for forming the first folds of the wrapper, of a tucker reciprocating across the path of the plunger and support, and parts coöperating therewith whereby the folding of the lateral marginal portions of the wrapper is completed, said tucker operating to alternately deliver the articles thus partly wrapped on opposite sides of the folding mechanism, substantially as described.

40. In a wrapping machine, parallel separated plates having apertures, a vertically reciprocating plunger and a vertically movable support working in said apertures, means for holding the support depressed when the plunger rises, and a tucker reciprocating between the plates over the depressed support, the plunger and support operating with each passage of the tucker, which latter thus comes to rest alternately on opposite sides of the path of the plunger and support, substantially as described.

41. In a wrapping machine, the combination, with two parallel separated plates having central apertures and lateral extensions, of a vertically movable plunger and support working in said apertures, a tucker reciprocating between said plates across the path of the plunger and support, alternately acting conveyers for moving the articles outward in opposite directions between the extensions of said plates, and two pairs of twisters moving respectively in unison with the conveyers and acting to twist the ends of the wrappers, substantially as described.

42. In a machine of the character described, a central folding mechanism for partly wrapping the articles, in combination with means for delivering the articles to be wrapped to said folding mechanism in one direction, means for delivering wrapper sheets to said folding mechanism in the opposite direction, means for conveying the partly wrapped articles alternately in opposite directions from the folding mechanism at right angles to the direction of delivery of the articles and wrapper sheets, and two sets of twisting mechanism for twisting the ends of the wrappers as the articles are thus conveyed from the folding mechanism, substantially as described.

43. In a wrapping machine, the combination, with a main frame having slideways, and slides moving simultaneously in opposite directions therein and provided with cam plates and supports, of folding mechanism comprising a vertically movable plunger and support controlled by oppositely moving cam plates, and conveyer rakes and twisters carried by the slide which carries the cam plate operating the plunger, substantially as described.

44. In a wrapping machine, two parallel slideways, a slide mounted in each slideway and provided with a twister at each end, a rack bar extending along each slideway and provided with a normally stationary rack at each end to operate the corresponding twister, means for engaging with said rack bar a part moving in unison with the slide toward the end of each stroke to cause the rack bar to move with the twister, and springs connected to each end of each rack bar to maintain the same in such engagement, substantially as described.

45. In a wrapping machine, two parallel slideways, a slide mounted in each slideway and provided with a twister at each end, a rack bar extending along each slideway and provided with a normally stationary rack at each end to operate the corresponding twister, means for engaging with said rack bar a part moving in unison with the slide toward the end of each stroke to cause the rack bar to move with the twister, and springs connected to each end of each rack bar to maintain the same in such engagement, said connection comprising a pivoted arm on which the spring acts, and a link pivoted to the end of the rack bar and having a slot with which the end of the pivoted arm engages, substantially as described.

46. In a wrapping machine, the combination, with a frame having slides moving in opposite directions, of a wrapping mechanism comprising a vertically movable plunger and support, gripping fingers, and a tucker, a cam plate carried by the slide moving in one direction and controlling the plunger, and cam plates carried by the slide moving in the opposite direction and controlling the support, gripping fingers and tucker, substantially as described.

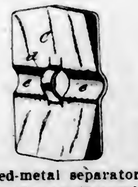
47. In a wrapping machine, a pair of twisters for simultaneously twisting the opposite ends of the wrapper of a moving article, each twister comprising a reciprocating slide, a twister shaft carried by said slide and provided with twisting fingers, means for first causing the twisting fingers of each twister to approach each other to grip the wrapper ends, means for holding the twister shaft against rotation during this initial gripping movement, and means for subsequently rotating said twister shaft to twist the end of the wrapper, substantially as described.

48. In a wrapping machine, a pair of twisters for simultaneously twisting the opposite ends of the wrapper of a moving article, each twister comprising a reciprocating slide, a twister shaft carried by said slide and provided with twisting fingers, means for holding each twister shaft against rotation at the beginning and end of its operative stroke, and for rotating said shaft during the intermediate portion of its stroke, means for causing the twisting fingers of each twister to approach each other during the initial non-rotating period to grip the wrapper, and means for causing the twisting fingers of each twister to recede from each other to release the wrapper during the closing non-rotating period of the stroke, substantially as described.

49. In a wrapping machine, a pair of twisters for simultaneously twisting the opposite ends of the wrapper of a moving article, each twister comprising a reciprocating slide, a twister shaft carried by said slide and provided with twisting fingers, means for holding said twister shaft against rotation at the beginning and end of its operative stroke and for rotating it during the intermediate portion of said stroke, means for causing the twisting fingers of each twister to approach each other to grip the wrapper end during the initial non-rotating period of each stroke, means for causing the twisters to approach each other bodily during the rotation period of said stroke to compensate for the shortening of the twisted wrapper, and means for opening the twisting fingers to release the wrapped article during the closing non-rotating period of the stroke, substantially as described.

50. In a wrapping machine, paper feeding mechanism comprising means for feeding forward a web of paper and severing the same to form wrapper sheets, parallel guides arranged in pairs above and below the sheets inward from the lateral margin thereof, a reciprocating gripper moving parallel with one of said pairs of guides outside of the same and acting to grip the leading edge of the sheet, carry the same forward to the place of delivery, and release the same, and a plunger moving downward between the pairs of guides to depress the sheet, form the first fold of the wrapper, and remove the wrapper from the path of the returning gripper, substantially as described.

852,665. SEPARATOR FOR GIRDERS. CHARLES H. KELLOGG, Buffalo, N. Y. Filed Nov. 12, 1906. Serial No. 342,949.



Claim.—1. A pressed-metal separator for girder-beams, consisting of a plate having an integral attaching member bent up from the side thereof and constructed to embrace a tie-bolt of the beams, substantially as set forth.

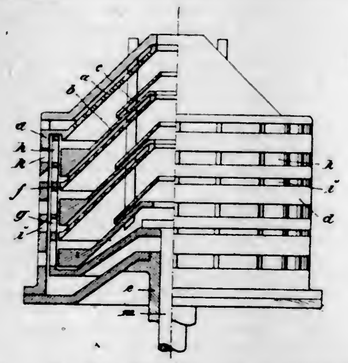
2. A pressed-metal separator for girder-beams, consisting of a plate having integral bolt-embracing seats pressed outward from the side thereof in opposite directions, substantially as set forth.

3. A pressed-metal separator for girder-beams, consist-

ing of a plate provided with integral bolt-embracing seats pressed outward beyond the sides thereof in opposite directions and having the same thickness as the plate, substantially as set forth.

4. A pressed-metal separator for girder-beams, consisting of a plate provided on one side with a bolt-embracing loop and on its other side with bolt-embracing seats arranged on opposite sides of the loop, said loop and seats being integral with the plate and pressed outward therefrom in opposite directions, substantially as set forth.

852,666. CENTRIFUGAL MACHINE. BIRGER LJUNGSTRÖM, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden. Filed July 26, 1906. Serial No. 327,885.



Claim.—1. In a centrifugal machine for separating liquid constituents from a solid mass, in combination, a bowl having separate outlets for the solids and liquids, alternate perforated and unperforated plates in said bowl, a perforated drum having a movement relative to the bowl and scrapers operated by said drum coacting with the discharge of the solid constituents.

2. In a centrifugal machine for separating liquid constituents from a solid mass, in combination, a bowl having separate outlets for the solids and liquids, alternate perforated and unperforated plates in said bowl, means to restrict the flow of the material treated to the outlet, a perforated drum having a movement relative to the bowl, and scrapers operated by said drum.

3. In a centrifugal machine for separating liquid constituents from a solid mass, in combination, a bowl having separate outlets for the solids and liquids, alternate perforated and unperforated plates in said bowl, guide plates to guide the separate constituents to their respective outlets, a perforated drum having a movement relative to the bowl and scrapers operated by said drum coacting with the discharge of the solid constituents.

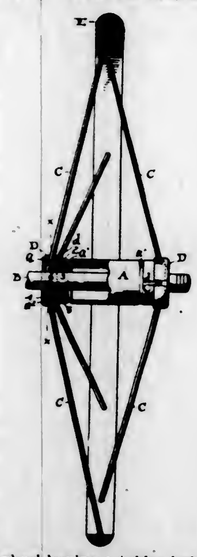
4. In a centrifugal machine for separating liquid constituents from a solid mass, in combination, a bowl having separate outlets for the solids and liquids, alternate perforated and unperforated plates in said bowl, a perforated drum having a movement relative to the bowl and scrapers operated by said drum coacting with the discharge of the solid constituents, the perforations in the drum being of greater extent than the corresponding discharge apertures between the plates.

5. In a centrifugal machine for separating liquid constituents from a solid mass, in combination, a bowl having separate outlets for the solids and liquids, alternate perforated and unperforated plates in said bowl, a perforated drum having a movement relative to the bowl and scrapers operated by said drum coacting with the discharge of the solid constituents, the plates being alternately arranged one above the other and the discharge orifice apertures for liquid and solid constituents being correspondingly arranged.

6. In a centrifugal machine for separating liquid constituents from a solid mass, in combination, a bowl having separate outlets for the solids and liquids, alternate perforated and unperforated plates in said bowl, a perforated drum having a movement relative to the bowl, and scrapers operated by said drum coacting with the discharge of the solid constituents, the arrangement being such that the apertures for the discharge of the solid constituents are out of radial alinement with the discharge apertures between the plates.

7. In a centrifugal machine for separating liquid constituents from a solid mass, in combination, a bowl provided with outlets for the liquid and solid constituents, a plurality of alternate perforated and unperforated plates, scrapers connected to said unperforated plates, scrapers connected to said plates, said scrapers coacting with the discharge of the solid constituents, and means to give a relative movement between said bowl and said drum.

852,667. WHEEL FOR CHILDREN'S CARRIAGES. LOUIS P. MARSAL and RICHARD W. BAKER, Cleveland, Ohio. Filed Jan. 8, 1906. Serial No. 295,011.



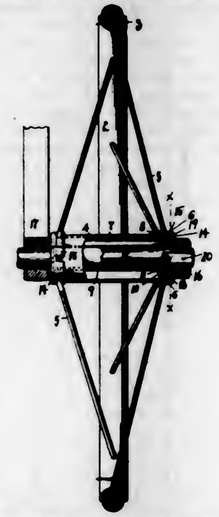
Claim.—1. A wheel having a tubular hub with a series of open slots at regular intervals in its ends, separate rings within the ends of the hub and spokes having bent portions in bearing relation with said rings, and slotted caps sleeved over the ends of the hub confining the spokes in working position.

2. In wheels, a tubular hub having open slots in its ends, opposed ball-bearing rings in the end of said hub, a supporting ring for the spokes next outside of said ball-bearing rings, spokes in bearing relation with said supporting rings and means to confine the spokes thereon.

3. The tubular hub having open slots in its ends and spoke confining caps adapted to sleeve over the ends of the hub and having slots corresponding to the slots in the hub, in combination with rings in the ends of the hub, reversely bent spokes having curved connecting portions in bearing relation with said rings, a spindle through said hub and bearings therefor inward from said rings in which said spindle is adapted to rotate.

852,668. VEHICLE-WHEEL. LOUIS P. MARSAL and RICHARD W. BAKER, Cleveland, Ohio. Filed May 8, 1906. Serial No. 314,966.

Claim.—1. A hub for a vehicle wheel consisting of an outer barrel and an inner tubular bearing, separating rings between said barrel and bearing at their ends, and caps on the ends of the barrel, said caps and ends of the barrel having corresponding notches, in combination with spokes for the wheel confined within said notches by said caps.



2. A vehicle wheel comprising the rim, spokes and hub, said hub consisting of an outer barrel having notches at its ends for said spokes, an inner tubular bearing for the axle having annular beads back from its ends, flanged separating rings sleeved upon the ends of said bearing and abutting against said beads and adapted to fit closely within said barrel, and caps having notched flanges adapted to sleeve over said barrel ends to engage the spokes and close said sides.

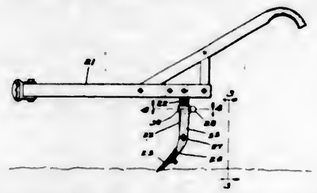
3. A vehicle wheel comprising the rim, spokes and hub, said hub consisting of an outer barrel having notches in its ends, an inner tubular bearing for the axle, and separating rings mounted upon said bearing within said barrel, in combination with the vehicle axle and a locking member adapted to unite said barrel and axle to rotate together said axle constructed to lock rotarily in said locking member.

4. A wheel having a hub comprising an outer barrel with notched ends and an inner tubular bearing of shorter length than said barrel, separating rings sleeved upon the ends of said bearing and engaged with the barrel, spokes for the wheel engaged with the notched ends of said barrel and with said rings, and caps for said barrel ends, in combination with the wheel axle and a toothed member sleeved and locked upon said axle and adapted to lock with the notched end of said barrel.

5. A vehicle wheel having a hub comprising a barrel with open notches at both ends, an inner tubular bearing of less length than said barrel, flanged rings sleeved upon the ends of said barrel and stops to fix the position of said rings in respect to said barrel notches and the ends of said tubular bearing, twin spokes having a cross connection adapted to fit within the confining walls of the barrel and said rings and bearing, notched caps fitted upon the said barrel ends adapted to engage the spokes, and a toothed disk adapted to fit against said tubular bearing and within said barrel and engaged with the notched ends of the latter, in combination with the axle having locking portions for said disk.

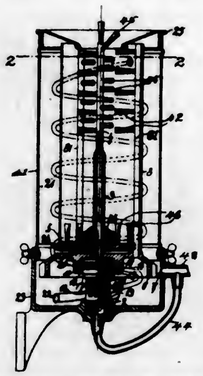
852,669. CULTIVATOR. GEORGE S. MAYN, Tipton, Ind. Filed Aug. 6, 1906. Serial No. 329,346.

Claim.—1. The combination, in a plow or cultivator, of a suitable bar, and a plow-point-carrying member pivotally mounted thereon with spring arms extending up alongside said bar and having latching ears extending to behind and engaging said bar when the plow is in normal operative position but adapted to yield and permit the plow-point to swing backwardly when the latter strikes an obstruction, and also having a stop which prevents said arms from swinging in the opposite direction to the plowing pressure, substantially as shown and described.



2. The combination, in a plow or cultivator, of a suitable bar, and a plow-point-carrying member pivotally mounted thereon with spring arms extending up alongside said bar and having latching ears extending to behind and engaging said bar when the plow is in normal operative position but adapted to yield and permit the plow-point to swing backwardly when the latter strikes an obstruction, the pivot on which said arms are mounted being a bolt whereby the friction between the spring arms and the downwardly extending bar may be adjusted.

852,670. APPARATUS FOR WASHING BOTTLES AND GLASSES. MAX MÜLLER, Remscheid-Hasten, Germany. Filed Mar. 23, 1906. Serial No. 307,585.



Claim.—1. In an apparatus of the character described, the combination of a vertically movable turbine, with an axially movable non-rotatable sleeve, an interposed ball bearing, means for supplying water to the sleeve, an inlet valve controlled by the sleeve, and a brush having a tubular stem which is carried by the turbine and communicates with the sleeve, substantially as specified.

2. In an apparatus of the character described, the combination of a vertically movable turbine, with a vertically movable rotatable plate operatively connected thereto, head brushes carried by the plate, means for adjusting the elevation of the plate above the turbine, an axially movable non-rotatable sleeve, a ball bearing between turbine and sleeve, means for supplying water to the sleeve, an inlet valve controlled by the sleeve, and a tubular, central brush communicating with the sleeve, substantially as specified.

3. In an apparatus of the character described, the combination of a vertically movable turbine, with a vertically movable rotatable plate operatively connected thereto, head brushes carried by the plate means for adjusting the elevation of the plate above the turbine, an axially mov-

able non-rotatable sleeve, means for supplying water to the sleeve, a tubular central brush communicating with the sleeve, a cap above the plate, and a ball bearing interposed between cap and plate, substantially as specified.

852,671. METAL MOLD FOR CASTING IRON AND STEEL. ALONZO W. MCARTHUR, Swampscott, and JESSE M. DARER, Lynn, Mass., assignors to General Electric Company, a Corporation of New York. Filed Dec. 30, 1902. Serial No. 137,145.

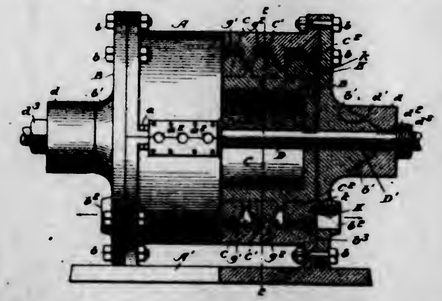


Claim.—1. A metal mold for casting steel provided with a lining consisting of sodium silicate fused in place.

2. A metal mold provided with a permanent adhesive lining of sodium silicate and a wash of a refractory material applied thereto.

3. A metal mold provided with a dry sand gate and a permanent adhesive lining of sodium silicate fused in place.

852,672. TURBINE. DANIEL MCARTHUR, Jersey City, N. J. Filed Jan. 5, 1907. Serial No. 350,943.



Claim.—1. In a rotary-engine or turbine-motor of the class specified, the combination of coacting members, one of which is a rotary member, said members having expansion pockets, the contiguous faces of said members and their pockets being formed on corresponding curves, substantially as and for the purposes specified.

2. In a rotary-engine or turbine-motor of the class specified, the combination of coacting members, one of which is a rotary member, each of said members having a plurality of series of expansion pockets some of which pockets in one of which members entirely overlap two series of pockets in the other of said members, substantially as and for the purposes specified.

3. In a rotary-engine or turbine-motor of the class specified, the combination of coacting members, one of which is a rotary member, each of said members having a plurality of series of expansion pockets, some of the pockets of one of said members arranged to overlap two series of pockets in the other of said members, said last named pockets arranged obliquely to the axis of the rotary member, substantially as and for the purposes specified.

4. In a rotary-engine or turbine-motor of the class specified, the combination of coacting members, one of which is a rotary member, each of said members having a plurality of series of pockets, and one of said members having pockets which overlap two series of pockets of the other member and are arranged obliquely to the axis of the rotary member and extend in a direction contrary to direction of rotation of said member, substantially as and for the purposes specified.

5. In a rotary-engine or turbine-motor of the class specified, the combination of coacting members, one of which is a rotary member, each of said members provided with a plurality of series of pockets, some of the pockets of one of said members arranged to overlap two series of pockets in the other member, the contiguous pocket faces of said members being formed on corresponding curves, substantially as and for the purposes specified.

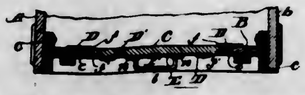
6. In a rotary-engine or turbine-motor of the class specified, the combination of coacting members, one of which is a rotary member, each of said members provided with a plurality of series of pockets, the pockets of one member arranged at an angle to the axis of the rotary member, extending obliquely in a direction contrary to the direction of rotation of said member and overlapping two series of pockets of the other member, the contiguous pocket faces of said members formed on corresponding curves, substantially as and for the purposes specified.

7. In a rotary-engine or turbine-motor of the class specified, the combination of a casing and a rotary member each provided with pockets, the periphery of the rotary member, and the contiguous interior surface of the casing being formed on corresponding curves, substantially as and for the purposes specified.

8. In a rotary-engine or turbine-motor of the class specified, the combination with a casing having its interior surface formed on curved lines, and provided with pockets which intersect said lines, of a rotary member provided with a plurality of series of pockets the periphery of said rotary member being formed on curved lines corresponding with those of the casing, substantially as and for the purposes specified.

9. In a rotary engine or turbine-motor of the class specified, the combination of coacting members, one of which is a rotary member, each of said members having a plurality of series of expansion pockets, the expansion pockets of one of said members being unobstructed throughout and arranged to overlap a plurality of pockets in the other of said members, substantially as and for the purposes specified.

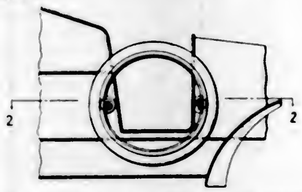
852,673. END-GATE. JOHN F. MCKELLAR, Storden, Minn. Filed Feb. 21, 1907. Serial No. 358,563.



Claim.—1. A wagon end-gate comprising a major section having an opening in its lower portion, a plate connected to the forward or inner side of the major section and extending inward beyond the top and side walls of the said opening and affording flanges at such points, a sub-section hinged to the major section and arranged when closed to snugly occupy the opening and oppose its inner side to the flanges afforded by the plate, and adjustable means for fastening the said sub-section in its closed position.

2. The combination of a wagon body having vertically disposed sockets in its bottom wall, an end-gate arranged in said body and comprising a major section having an opening and a sub-section hinged at its upper edge to the major section and arranged in one position to close the opening thereof; said sub-section being provided on its rear side with vertically disposed, parallel guides, and a vertically movable fastener formed of a single piece of material and comprising a horizontal loop extending rearward at a right angle with respect to the sub-section, vertical legs depending from the arms of the loop and removable through the guides and provided below the guides with lateral offsets or shoulders, and vertical end portions extending downward from the shoulders or offsets and positioned to enter the sockets in the bottom wall of the wagon body when the sub-section is closed.

852,674. MOTOR-DRIVEN VEHICLE. ALDEN L. MCMURRAY, New York, N. Y. Filed Jan. 28, 1907. Serial No. 354,394.



Claim.—1. In combination with a motor driven vehicle, means for carrying reserve wheel rims comprising a plurality of bolts projecting from the body of the vehicle, a wheel rim supporting sleeve enveloping each bolt and having a projection at one end adapted to engage one side of a wheel rim, a clamping device mounted upon the bolt at the other end of the sleeve and adapted to engage the other side of a wheel rim and means whereby a wheel rim may be detachably clamped between said device and the projection at the end of the sleeve.

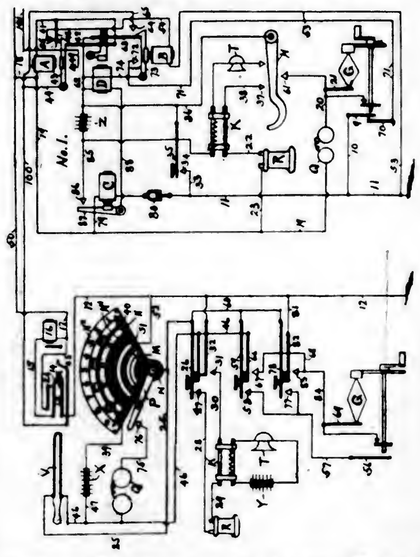
2. In combination with a motor driven vehicle, means for carrying reserve wheel rims comprising a plurality of bolts projecting from the body of the vehicle, a wheel rim supporting sleeve enveloping each bolt and having a projection at one end adapted to engage one side of a wheel rim, a clamping device mounted upon the bolt at the other end of the sleeve and adapted to engage the other side of a wheel rim and means whereby a wheel rim may be detachably clamped between said device and the projection at the end of the sleeve and means for preventing rotation of the sleeve on the bolt.

3. Means for carrying reserve wheel rims comprising a bolt supporting bracket adapted to be attached to the side of the vehicle, a sleeve enveloping the bolt, having interlocking connection with the bracket to prevent rotation of the sleeve and a projection at one end adapted to clamp one side of a wheel rim, a clamping plate at one end of the sleeve adapted to engage the other side of the wheel rim, enveloping the bolt and having interlocking connection with the sleeve to prevent rotation of the plate and a clamp nut engaging a thread on the bolt.

4. In combination with a motor driven vehicle, means for carrying reserve wheel rims comprising a plurality of bolt projecting from the body of the vehicle each bolt having two parts of unequal diameter that of the largest diameter being adjacent the side of the vehicle and two threads one at the outer end of each such part of the bolt, a sleeve enveloping the part of larger diameter adjacent the vehicle body and having a projection adapted to engage one side of a wheel rim, means for preventing rotation of the sleeve, a clamping device enveloping the bolt at the other end of the sleeve, means for preventing the rotation of the clamping device and a clamp nut working on the threaded part of the bolt intermediate its ends, a second rim supporting sleeve mounted upon the outer part of the bolt and having a projection at one end adapted to engage the side of the wheel rim means for preventing rotation of the sleeve, a clamping device at the other end of the second sleeve and enveloping the bolt and adapted to clamp the other side of the wheel rim, means for preventing rotation of the clamping device and a clamp nut applied at the end of the bolt.

5. In combination with a motor driven vehicle, means for carrying reserve wheel rims comprising a plurality of bolt supporting brackets attached to the side of the vehicle, bolts carried thereby and having an inner portion of one diameter threaded at its outer end and an outer portion of less diameter threaded at its outer end, a sleeve enveloping the portion of the bolt of larger diameter having a projection adapted to engage one side of a wheel rim, an interlocking connection between the sleeve and bracket to prevent rotation of the former, a clamping plate at the other end of said sleeve adapted to engage the other side of the wheel rim and having interlocking connection with the sleeve and a clamp nut applied to the thread on such portion of the bolt, a second rim supporting sleeve applied to the part of the bolt of less diameter and having at its inner end a projection adapted to engage one side of a wheel rim, an interlocking connection between the sleeve and bolt to prevent rotation of the former, a clamp plate at the other side of a wheel rim, an interlocking connection between it and the last named sleeve and a clamp nut applied upon the end of the bolt.

852,675. TELEPHONE-EXCHANGE. NILS E. NORSTROM, Chicago, Ill., assignor, by direct and mesne assignments, to John Anderson, Salina, Kans., M. E. Richardson, Sterling, Kans., and John H. Martin and H. Keating. Filed Apr. 6, 1901. Serial No. 54,594.



Claim.—1. The combination with a central office, a series of local stations, and a discontinuous conductor extending from the central office to the first station and thence from station to station, of two contact makers at the central office, means whereby upon making a series of contacts by one of said contact makers the sections of conductors will be united one by one into a continuous conductor, and means whereby upon making a contact with the second contact maker simultaneously with a contact made by the first contact maker the station corresponding to the section then being united will be telephonically connected to the continuous conductor.

2. A telephone selecting switch provided with two contact strips, a movable contact maker, means whereby a movement of said contact maker in one direction will cause it to make a series of contacts with one of said strips, means whereby a pressure upon said contact maker will extend the contact of said contact maker to the other contact strip, and means whereby a movement of said contact maker in the opposite direction will act to prevent said contact maker from making contacts with either strip.

3. The combination with a central telephone station, a series of local stations, electrically operated devices at each local station, and party line wires connecting the devices of the local stations to said central station, of a battery and a contact maker at the central station connected to said wires, means whereby the making of a series of contacts by said contact maker the devices of the local stations will be operated one by one to cut the said local stations out of telephonic connection with the central station, and means whereby upon making a second contact while one of the series of contacts is maintained addi-

tional parts of the devices at the corresponding local station will be operated so as to retain that station in telephonic connection with the central station.

4. The combination with a central station, a series of local stations, and conductors connecting the stations, of devices located at the central station for making either single or double electrical contacts, means whereby upon making a series of single contacts the local stations will be excluded one by one from telephonic connection with said conductors, and means whereby upon making a double contact in the series of contacts the corresponding local station will be placed in telephonic connection with said conductors.

5. The combination with a central office, a party line, and a series of local stations, of means by which upon sending a series of impulses from the central office over the party line, the local stations will be excluded from telephonic connection with the line one by one in the order of the impulses sent, and means by which upon sending a secondary impulse with one of the impulses of said series, the station corresponding to that impulse will be placed in telephonic connection with the line.

6. The combination with a central office, a series of local stations, and a party line, of two contact makers at the central office, means whereby upon making a series of contacts by one of said contact makers the said stations will be selected one by one, and means whereby upon making a contact with the second contact maker simultaneously with a contact made by the first contact maker, the station selected at the time will be telephonically connected to the party line.

7. The combination with a central telephone station, a series of local telephone stations, and a party line connecting the local stations to the central station, of a selecting contact maker located at the central station and capable of making either single or double electrical contacts, means whereby upon making a series of single electrical contacts with said contact maker each such contact will cut out a corresponding local station from telephonic connection with said party line, and means whereby the making of a double electrical contact with said contact maker each such double contact will bring a corresponding local station in telephonic connection with said party line.

8. The combination with a central office, a series of local stations, and normally disconnected sections of conductors extending from station to station, of devices at each station for connecting the ends of conductors terminating thereat, other devices also at the stations for placing them in telephonic connection with the connected conductors, and means under the exclusive control of the central office for causing the operation of one or both devices at each station.

9. The combination with a central office, a series of local stations, and a party line, of a calling device located at the central office and arranged to make either single or double electrical contacts for the stations in succession, means by which each station for which a single electrical contact is made will be excluded from telephonic connection with the party line, and means by which each station for which a double electrical contact is made will be placed in telephonic connection with the party line.

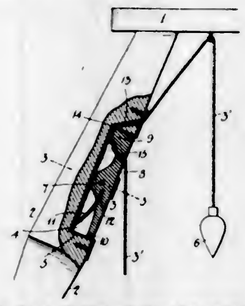
10. The combination with a party line, a series of local stations, means for sending a series of impulses over the line, and means for associating a second impulse with any one impulse of said series, of devices at each station operated by said impulses, means by which upon sending such series of impulses said devices will be operated so as to exclude the stations from telephonic connection with the line one by one in the order of the impulses sent, and means by which upon sending an extra impulse with any one of the series of impulses the devices of the corresponding station will be operated so as to place that station in telephonic connection with the party line.

11. The combination with a party line, and a series of local stations, of means by which upon sending a series of impulses over the party line corresponding in number to the number of stations each impulse in its order will cause the corresponding station to be cut off from telephonic connection with the line, and means by which upon coupling a secondary impulse with any one impulse of the series of impulses the station corresponding to that impulse will be placed in telephonic connection with the line.

12. The combination with a series of stations, and a party line, of a magnet at each station for connecting it telephonically to the party line, a circuit for each magnet arranged so as to exclude all contacts made by the subscribers at their stations, means for connecting said circuits successively and temporarily to said line, and means for sending impulses through a plurality of selected ones of said circuits at the times when they are temporarily connected to said line whereby the magnets in said circuits are operated to connect desired stations telephonically to the party line.

13. The combination with a party line, and a series of local stations each potentially capable of being telephonically connected to the line, and means by which upon sending a series of impulses over the line corresponding to the stations thereon each impulse in its order will cut off the capability of the corresponding station to be telephonically connected to the line, and means by which upon sending a secondary impulse with any impulse of the series of impulses the station corresponding to the selected impulse will be telephonically connected to the line.

852,676. PLUMB-BOB SUPPORT. ALZAMON M. PARSONS, Caney, Kans. Filed July 26, 1906. Serial No. 327,843.



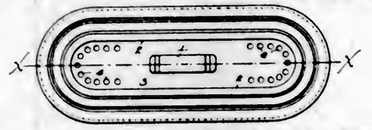
Claim.—1. In a device of the character described, the combination with a plumb bob line and a tripod leg having a recess and a passage, of a casing secured in the recess in said leg and formed with an aperture to aline with said passage, said aperture and passage being adapted to receive said line, and a spring-actuated jaw in said casing to clamp said line.

2. A device of the character described, comprising a casing, a lever pivoted intermediate its ends in said casing and having an inwardly-projecting jaw at one end, and a finger-piece at its opposite end, said casing and said jaw having apertures to receive a plumb bob line, and a spring for forcing said jaw inwardly to clamp said line in said casing.

3. A device of the character described, comprising a casing, a lever pivoted intermediate its ends in said casing and having an inwardly-projecting jaw at one end and a finger-piece at its opposite end, said casing and said jaw having apertures to receive a plumb bob line, a flat spring secured at one end in a kerf in said lever and having its free end bearing against the interior of said casing, and attaching flanges upon said casing, substantially as shown and described.

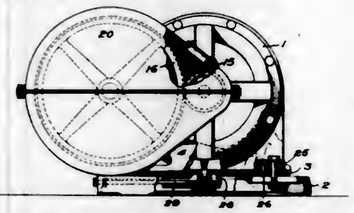
852,677. LID FOR COOKING VESSELS. LEWIS REASER, Reading, Pa. Filed Mar. 28, 1906. Serial No. 308,391.

Claim.—A lid or cover for cooking vessels comprising a flat body having an upstanding wall thereon forming a reservoir of uniform depth, a handle secured upon the bottom of said reservoir and extending above the wall, said reservoir bottom having perforations, an annular, angular rib upon the lower face of the cover and adjacent the periphery thereof, said rib constituting a moisture retainer, there being an annular groove or channel in the upper face of the cover and above the rib, said groove



being disposed outside the wall, and a flange depending from the periphery of the cover.

852,678. BACK-GEARED MOTOR. HENRY G. REIST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 21, 1906. Serial No. 335,603.



Claim.—1. The combination with a standard motor and a standard sub-base, of an interposed frame for carrying a counter-shaft.

2. The combination with a standard motor and a standard sub-base, of a frame interposed between them, and a counter-shaft supported by said frame.

3. The combination with a standard motor and a standard sub-base, of a frame having a base-plate interposed between said motor and sub-base, and counter-shaft bearings on said frame.

4. The combination with a standard motor and a standard sub-base, of a frame for a counter-shaft interposed between them, and means for adjusting said frame relatively to the motor.

5. A frame for a counter-shaft comprising a base-plate, upright arms thereon, and alined bearings on said arms.

6. A frame for a counter-shaft, comprising a base-plate having bolt holes, two upright diverging arms, alined bearings on said arms, and means for supporting a gear-case.

7. A frame for a counter-shaft, comprising a base-plate, upright arms thereon, alined bearings on said arms, and a combined journal box and oil cellar rotatably mounted in said bearings.

8. The combination with a standard motor and a standard sub-base, of an interposed frame, a journal-box and oil cellar rotatably mounted in said frame, and a counter-shaft journaled in said box and geared to said motor.

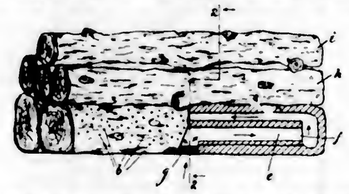
9. The combination with a motor sub-base provided with devices for adjusting the motor, of an interposed counter-shaft frame adapted to be actuated by said adjusting devices.

10. The combination with a standard motor and a standard sub-base, of an interposed frame adjustable with the motor, a counter-shaft mounted in said frame and geared to said motor, and a gear-case supported on said frame.

852,679. GAS-LOG. VICTOR I. RICHARDS, East Orange, N. J. Filed May 4, 1905. Serial No. 258,866.

Claim.—1. A gas log consisting of a unitary structure composed of clay and having a fuel delivery space provided with a separately formed auxiliary gas delivery tube of clay inserted permanently within said space and arranged to discharge the gas adjacent each end of said log, within said space, and burner apertures distributed over the surface of said log, said apertures receiving a substantially uniform supply of fuel respectively from said space, substantially as described.

2. A gas log consisting of a unitary structure composed of clay and hollowed interiorly to form a single fuel delivery space in communication with a large number of burner apertures piercing the walls of said log, and an auxiliary tube of clay formed separately and inserted permanently within said space and open at each end to deliver fuel to said space near each end of the latter, said tube having a medial fuel inlet, substantially as described.



3. A gas log comprising a pile of artificial log members including an upper group of non-burning log members and a lower or burner log member having a fuel space in communication with burner apertures some of which deliver fuel forward through the front of said burner log member, and others deliver fuel upward between said superimposed group of non-burning log members, the flames from said burner log member giving both it and said superimposed log members the appearance of burning, substantially as described.

4. A gas log comprising a group of artificial log members one of said log members being a burner log member projecting forward from beneath another of said log members and having an extension upward between still other of said log members, said burner log member having burner apertures in said lower and upper portions respectively, and said other log members being of non-burning construction, substantially as described.

5. A gas log comprising a group of artificial log members forming a unitary structure composed of clay and including a burner log member, a plurality of non-burning log members, and a log member having a chamber to contain and evaporate water or the like, substantially, as described.

6. As an article of manufacture, a gas log comprising a burner log member, combined with an evaporating chamber formed integrally therewith, and both of said log members being composed of non-porous clay, substantially as described.

852,680. ELECTRIC ROCK-DRILL. JOHN RIDDELL and GEORGE B. PAINTER, Schenectady, N. Y., assignors to General Electric Company, a Corporation of New York. Filed Sept. 19, 1902. Renewed Oct. 29, 1906. Serial No. 341,129.

Claim.—1. An electric rock-drill provided with means for clutching the drill, means for retracting and turning and also advancing it, and means for unclutching it when advanced, so that it will be entirely free when struck.

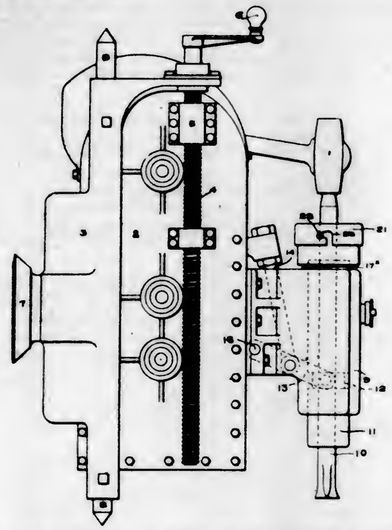
2. In a rock-drill, a reciprocating clutch provided with dogs, and means for causing said dogs to bite the drill when the clutch is retracted, and means for causing said dogs to let go when the drill has been advanced and prior to being struck.

3. In a rock-drill, a reciprocating clutch provided with radially movable dogs, and means for moving said dogs inward when the clutch is retracted and means for moving them outward when the clutch has been advanced and prior to the drill being struck.

4. In a rock-drill, a plurality of radially movable dogs, each having oppositely inclined surfaces, a relatively movable sleeve having an inclined surface adapted to co-operate with the surfaces of the dogs inclined in one direction, and a stationary holder for said sleeve having a beveled portion to engage the opposite inclined surfaces on the dogs.

5. In a rock-drill, a sleeve having a conically countersunk upper end, a cupped enlargement on said sleeve having radial slots, dogs fitted to move radially and longitudi-

nally in said slots and provided with V-shaped notches engaging the end of the sleeve, and means for pressing said dogs into said sleeve.



6. In a rock-drill, a sleeve having a conically countersunk upper end, a cupped enlargement on said sleeve having radial slots, dogs fitted to move radially and longitudinally in said slots and provided with inclined surfaces engaging the sleeve, and one or more rubber blocks resting on said dogs.

7. In a rock-drill, a sleeve having a conically countersunk upper end, a cupped enlargement on said sleeve having radial slots, dogs fitted to move radially and longitudinally in said slots and provided with inclined surfaces engaging the sleeve, one or more rubber blocks resting on said dogs, and a cap secured to said enlargement and confining said blocks.

8. In a rock-drill, a reciprocating sleeve provided with alternate longitudinal and helical grooves intersecting one another at points near their ends, said grooves being deeper at one end than at the other, and a spring-pressed feather engaging with said grooves.

9. In a rock-drill, a reciprocating sleeve provided with alternate longitudinal and helical grooves intersecting one another at points near their ends, said grooves being deeper at one end than at the other, and one deeper than the other at the point of intersection, and a spring-pressed feather engaging said grooves.

10. In a rock-drill, the combination with a holder, of a sleeve-clutch having a circumferential groove, a fork engaging with said groove, a pin on which said fork is pivoted, having grooves at two points, and a spring-arm to enter said grooves and lock the pin both when in place and when withdrawn from the fork.

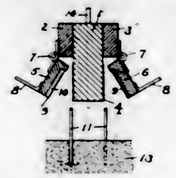
852,681. CLAMP. WILLIAM B. RUDDICK, New York, N. Y. Filed Aug. 1, 1906. Serial No. 328,735.

Claim.—1. A clamp for the purpose set forth, embodying an intermediate fixed jaw, lateral movable jaws and means for holding said jaws normally closed, substantially as described.

2. A clamp for the purpose set forth, embodying an intermediate fixed jaw and lateral movable jaws having sockets, substantially as described.

3. A clamp for the purpose set forth, embodying an intermediate fixed jaw, and lateral movable jaws provided with plates having sockets, substantially as described.

4. A device for the purpose set forth, embodying an intermediate fixed jaw, lateral movable jaws and means for yieldably holding said jaws normally closed, substantially as described.



5. A clamp for the purpose set forth, embodying an intermediate fixed jaw, movable jaws having engaging means and means for holding said jaws normally closed, substantially as described.

6. A clamp for the purpose set forth, embodying an intermediate fixed jaw, movable jaws having engaging means and means for yieldably holding said jaws normally closed, substantially as described.

7. A clamp for the purpose set forth, embodying an intermediate fixed jaw and lateral hinged jaws, substantially as described.

8. A clamp for the purpose set forth, embodying an intermediate fixed jaw, lateral hinged jaws and means for holding said jaws normally closed, substantially as described.

9. A clamp for the purpose set forth, embodying an intermediate fixed jaw, lateral hinged jaws and means for yieldably holding said jaws normally closed, substantially as described.

10. A clamp for the purpose set forth embodying an intermediate fixed jaw, lateral hinged jaws having sockets and means for holding said jaws normally closed, substantially as described.

11. A clamp for the purpose set forth embodying an intermediate fixed jaw having lateral extensions and lateral jaws hinged to said extensions, substantially as described.

12. A clamp for the purpose set forth embodying an intermediate fixed jaw having lateral extensions, lateral jaws hinged to said extensions and means for holding said jaws normally closed, substantially as described.

13. A clamp for the purpose set forth embodying an intermediate fixed jaw having lateral extensions, lateral jaws hinged to said extensions and means for yieldably holding said jaws normally closed, substantially as described.

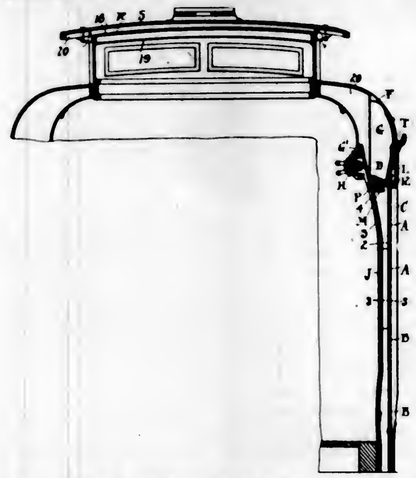
852,682. SOFT-METAL GASKET FOR SERVICE-CLAMPS. ANTON SCHUERMANN, Decatur, Ill., assignor to H. Mueller Manufacturing Company, Decatur, Ill., a Corporation of Illinois. Filed Sept. 9, 1904. Serial No. 223,939.



Claim.—1. A gasket for service clamps, the same consisting of a continuous ring of soft metal which is circular in cross section; and integral, pliable, flat, radial lugs projecting from opposite sides thereof and of lesser thickness than the ring.

2. In a service clamp, the combination with the saddle having a dished face provided with a groove, perforated ears on opposite sides of the saddle, and a strap engaging said ears for attaching the saddle to a pipe; of a gasket comprising a soft ring fitting said groove and thicker than its depth, and thin, pliable lugs projecting oppositely from said ring at the center of its thickness along the dished face of said saddle and engaging the edges of the latter at points quartering to its ears.

852,683. CONVERTIBLE CAR. TERENCE SCULLIN and SOREN R. SKOV, Cleveland, Ohio. Filed Feb. 9, 1907. Serial No. 356,510.



Claim.—1. In convertible cars, a car provided with chambers in its sides and top to store windows and panels therein, an opening in the bottom of each of said chambers and racks inward from said openings to support said windows and panels.

2. A convertible car having storing chambers in its top and sides, posts with channels leading to said chamber, racks at the bottom of said chamber and a device adapted to be moved laterally to close the tops of said channels.

3. A car adapted for open and closed uses having storing chambers at its top and sides for windows and panels, stepped racks in the bottom of said chambers and an opening at the bottom and front of said racks, and a device adapted to be adjusted to open and close said opening.

4. In cars convertible to summer and winter uses, a car body having storing chambers in its top and sides, posts coinciding with said chambers and having channels extending into the bottom of said chambers, stepped supports in said chambers behind said channels and a door adapted to be swung across said channels to close the same.

5. A convertible car having separate windows and panels adapted to be seated one on top of the other, said car provided with chambers in its top to house said windows and panels, a door to close the entry way to said chamber, levers connected with the edges of said door to open and close the same and means to lock said levers in different positions.

6. A convertible car having storing chambers in its top for windows and side panels and provided with stepped supports in its bottom for said parts, and springs in the top of said chambers adapted to bear upon said windows and panels.

7. A convertible car having storing chambers for windows and panels, springs at the top of said chambers adapted to exert a downward pressure, supporting racks at the bottom of said chambers to support said windows and panels, and devices to close the openings to said chambers and thereby confine said parts in said chambers.

8. A convertible car having a storing chamber in its top for side panels and posts with channels leading to said chambers, a device adapted to be swung across said channels, levers to operate said device and a reversible lock for said lever adapted to hold the same in adjusted position.

9. A convertible car having storing chambers in its top and posts with channels leading to the bottom of said chambers, doors adapted to close said channels, levers to control the position of said doors provided with headed projections at one end, locks for said projections slidable thereon and springs on said projections to retract said locks.

10. A convertible car having storing chambers in its top for windows and panels and provided with stepped racks for said parts in its bottom, hand holes in the bottoms of said chambers and covers therefor having lips at their outer edges to confine said windows and panels.

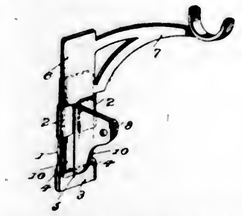
11. A convertible car having posts along its sides at intervals provided with channels for separate windows and panels, and removable plates set into the sides of said posts, said plates having a length equal substantially to the length of said panels and windows, whereby the plates can be removed and said panels and windows taken out.

12. A car provided with a double roof spaced apart for ventilating and water shedding purposes, and the upper roof extending laterally over the edges of the inner roof.

13. A car provided with a double roof spaced apart, and the upper of said roofs projecting over the lower roof and open at its bottom at each side.

14. A convertible car having a side of sliding panels and a storing chamber therefor beneath the roof of the car, said panels having tongued and grooved interlocking edges with a cushioning strip adapted to provide a seat between the same.

852,684. COMBINED CURTAIN AND SHADE HOLDER. DOUGLAS S. SMITH, Casselton, N. D. Filed Jan. 29, 1907. Serial No. 354,682.



Claim.—1. A device of the character described, consisting of a base plate adapted to be secured to a window frame and provided with integral side flanges and a lower bent edge constituting a bottom flange, a curtain bracket provided with a supporting plate adapted to be slid behind said flanges, and a shade bracket formed with laterally extending wings adapted to be slid behind the side flanges and arranged to project forwardly from between the same.

2. A device of the character described, consisting of a base plate provided with two side flanges and having its lower edge bent to form a bottom flange, a shade bracket secured to said base plate, and a curtain bracket provided with a supporting plate adapted to be slid behind the side flanges with its lower end resting in the bottom flange.

3. A device of the character described, comprising a base plate provided with side flanges spaced at their opposing edges and also provided with a bottom flange, a curtain bracket provided with a supporting plate adapted to be slid behind said flanges, and a shade bracket provided with wings adapted to be slid behind said flanges and arranged to project out through the space between the side flanges of the base plate.

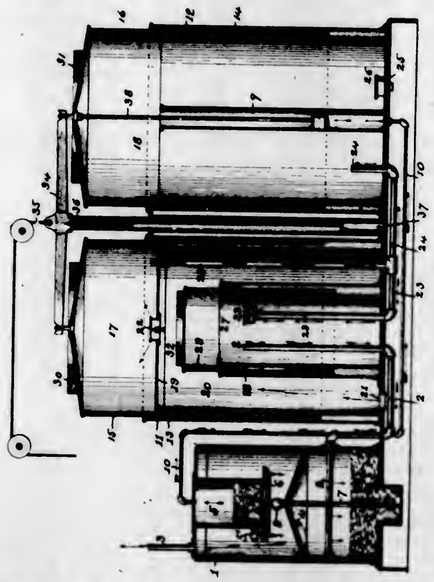
4. A device of the character described, comprising a base plate provided with two spaced side flanges and a bottom flange formed in its upper edge with a recess, a shade bracket adapted to be slid downwardly in the space between the side flanges with its lower edge resting in said recess, said shade bracket being provided with wings adapted to extend back of said flanges to retain the bracket in place, and a curtain bracket provided with a supporting plate adapted to be slid behind the wings of the shade bracket.

5. A device of the character described, consisting of a base plate provided with spaced side flanges and a bottom flange formed in its upper edge with a recess and a shade bracket adapted to project out through the space between

said side flanges with its lower end resting in said recess, said bracket being formed with oppositely disposed wings adapted to extend back of said flanges, whereby to retain the bracket in place.

6. A device of the character described, comprising a base provided with two spaced side flanges and a bottom flange formed with offset side edges and a recess in its upper edge and a shade bracket adapted to project through the space between the said flanges with its lower end resting in said recess, said bracket being formed with oppositely extending wings arranged for location back of said flanges, whereby to retain the bracket in place.

852,685. CARBURETING APPARATUS. ROBERT G. SPEER, St. Louis, Mo., assignor, by direct and mesne assignments, of one-fourth to J. J. Holscher and three-fourths to Sarah B. Speer, St. Louis, Mo. Filed June 15, 1906. Serial No. 321,791.



Claim.—In a carbureting apparatus, the combination of a carbureter, a pair of tank and bell pumps, one of which is formed with an interior chamber open to atmospheric pressure, means for imparting simultaneous reciprocation of said pumps, a storage and pressure regulating tank arranged in said interior chamber, a simple acting pump arranged in the interior of the other tank and bell pump and adapted to circulate the fluid contents of the carbureter, and pipe connections between the tank and bell pumps and the storage tank and between the storage tank and the carbureter.

852,686. BRUSH. GEORGE A. THORNTON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 11, 1906. Serial No. 334,184.

Claim.—1. A carbon brush having a metal strip provided with a plurality of perforations electroplated to one end thereof.

2. A carbon brush having a gauze metal strip electroplated to one end thereof.

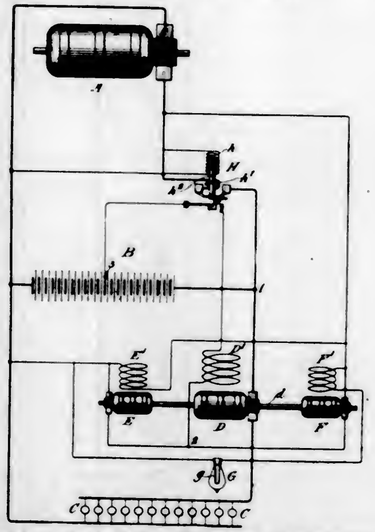
3. A carbon brush having a metal strip provided with perforations secured thereto by electrolytically-deposited metal extending into said perforations.

4. In combination, a carbon brush, a gauze strip over one end of the brush, a pig-tail having one end arranged between the brush and the gauze strip, and means for securing the parts together consisting of electrolytically deposited metal entering between the meshes of the strip and in contact with the end of the brush.



5. The method of securing a pig-tail to a brush which consists in placing the end of the pig-tail between the brush and a gauze strip and securing the whole together by electroplating.

852,687. ELECTRICAL SYSTEM OF DISTRIBUTION. WILLIAM A. TURBAYNE, Lancaster, N. Y., assignor to Gould Coupler Company, a Corporation of New York. Filed July 25, 1906. Serial No. 327,594.



Claim.—1. In an electrical system of distribution, a regulating coil, two electro-motive force generators in series with each other, a circuit containing the regulating coil connected at one end to a point between said electro-motive-force generators, and means for causing variations of electrical condition of the system to affect the relative electro-motive-forces produced by said generators.

2. In an electrical system of distribution, a regulating coil, two electro-motive-force generators in series with each other, a circuit containing the regulating coil connected at one end to a point between said electro-motive-force generators and at the other end to an independently produced potential difference, and means for causing variations of electrical condition of the system to affect the relative electro-motive-forces produced by said generators.

3. In an electrical system of distribution, a regulating coil, two electro-motive-force generators in series with each other, a circuit containing the regulating coil connected at one end to a point between said electro-motive-force generators and at the other end to an independently produced potential difference, and means for causing variations of electrical condition of the system to affect the relative electro-motive-forces produced by said generators

and produce a varying resultant potential difference across said regulating coil.

4. In an electrical system of distribution, two electric motors in series with each other across a varying voltage circuit and differently affected by such varying voltage, and a regulating coil connected to be controlled in accordance with the relative changes of electro-motive-force of the two motors.

5. In an electrical system of distribution, two electric motors in series with each other across a varying voltage circuit and differently affected by such varying voltage, mechanical connections between said motors, and a regulating coil connected to be controlled in accordance with the relative changes of electro-motive-force of the two motors.

6. The combination with a varying voltage circuit of two electric motors in series across said circuit, a branch circuit connected across said varying voltage circuit, a regulating coil connected at one end between said motors and at the other end to a point in the branch circuit having a voltage equal to that at the other end of the regulating coil with a given voltage on the varying voltage circuit, and means for causing variations from said given voltage to differently affect the two motors.

7. The combination with a varying voltage circuit of two electric motors in series across said circuit, mechanical connections between them, a branch circuit connected across said varying voltage circuit, a regulating coil connected at one end between said motors and at the other end to a point in the branch circuit having a voltage equal to that at the other end of the regulating coil with a given voltage on the varying voltage circuit, and means for causing variations from said given voltage to differently affect the two motors.

8. The combination with a varying voltage circuit of a branch circuit connected thereto, two motors producing equal electro-motive forces at a given voltage of the varying voltage circuit, a second branch circuit connected across said varying voltage circuit, a regulating coil connected at one end to a point electrically midway in the second branch circuit and at the other end to a point in the other branch circuit between said motors, and means for causing the said varying voltage to differently affect the two motors.

9. The combination with a varying voltage circuit of a branch circuit connected thereto, two motors producing equal electro-motive-forces at a given voltage of the varying voltage circuit, mechanical connections between said motors, a second branch circuit connected across said varying voltage circuit, a regulating coil connected at one end to a point electrically midway in the second branch circuit and at the other end to a point in the other branch circuit between said motors, and means for causing the said varying voltage to differently affect the two motors.

10. In an electrical system of distribution, two electric motors in series across the system, a regulating coil, means for causing changes of electrical condition of the system to differently affect the two motors, and means for varying the current in the regulating coil in accordance with the difference between the two motors.

11. In an electrical system of distribution, two electric motors mechanically connected together and electrically connected in series across the system, a regulating coil, means for causing changes of electrical condition of the system to differently affect the two motors, and means for varying the current in the regulating coil in accordance with the difference between the two motors.

12. In an electrical system of distribution, a pair of electric motors connected in series, a battery connected to the said motors, a regulating coil connected at one end to a point between the battery terminals and at the other end to a point between the motors, and means for causing changes of electric condition of the system to differently affect the field strengths of said motors.

13. In an electrical system of distribution, a pair of electric motors mechanically connected together and electrically connected in series, a battery connected to the said motors, a regulating coil connected at one end to a point between the battery terminals and at the other end to a point between the motors, and means for causing changes of electric condition of the system to differently affect the field strengths of said motors.

14. In an electrical system of distribution, a pair of electric motors connected in series, a battery connected to the said motors, a dynamo mechanically connected to the two motors, a controlling coil therefor connected at one end between the motors and at the other end to the battery, and means for causing changes of electric condition of the system to differently affect the field strengths of said motors.

15. In an electrical system of distribution, a pair of normally equal electric motors connected in series, a battery connected to the said motors, a regulating coil connected at one end to a point midway the battery terminals and at the other end to a point between the motors, and means for causing changes of electric condition of the system to differently affect the field strengths of said motors.

16. In an electrical system of distribution, a pair of normally equal electric motors mechanically connected together and electrically connected in series, a battery connected to the said motors, a regulating coil connected at one end to a point midway the battery terminals and at the other end to a point between the motors, and means for causing changes of electric condition of the system to differently affect the field strengths of said motors.

17. In an electrical system of distribution, a pair of normally equal motors connected in series across the system, a battery also connected across the system, a dynamo mechanically connected to the two motors, a controlling coil therefor connected at one end between the motors and at the other end midway the battery terminals, and means for causing changes of electric condition of the system to differently affect the field strengths of said motors.

18. The combination of a generator producing a varying voltage, a circuit requiring a constant voltage, a dynamo in series between the generator and said circuit, two electric motors mechanically connected to said dynamo and electrically in series with each other, a controlling coil for said dynamo connected at one end to the circuit between said motors, and means for causing said varying voltage to unequally affect the field strengths of said motors.

19. The combination of a generator producing a varying voltage, a circuit requiring a constant voltage, a dynamo in series between the generator and said circuit, two electric motors mechanically connected to said dynamo and electrically in series with each other, a field magnet coil for said dynamo connected at one end to the circuit between said motors, and means for causing said varying voltage to unequally affect the field strengths of said motors.

20. The combination of a generator, a battery connected thereto, a work circuit, a dynamo whose armature is in series with the work circuit and beyond the battery connection, two electric motors mechanically connected to said dynamo and in series with each other, means for causing voltage variations of said generator to differently affect the field strength of said motors, and a controlling coil for said dynamo so connected that its current is governed by the difference between the potential differences across the two motors.

21. The combination of a generator, a battery connected thereto, a work circuit, a dynamo whose armature is in series with the work circuit and beyond the battery connection, two electric motors mechanically connected to said dynamo and in series with each other, means for causing voltage variations of said generator to differently affect the field strength of said motors, and a controlling coil for dynamo so connected that its current is governed by the difference between the potential differences across the two motors.

22. The combination of a generator, a battery connected thereto, a work circuit, a dynamo whose armature is in series with the work circuit and beyond the battery connection, two electric motors mechanically connected to said dynamo and in series with each other, means for causing voltage variations of said generator to differently affect the field-strength of said motors, and a controlling coil for said dynamo connected at one end between the two

motors and at the other to a point between the battery terminals.

23. The combination of a generator, a battery connected thereto, a work circuit, a dynamo whose armature is in series with the work circuit and beyond the battery connection, two normally equal electric motors mechanically connected to said dynamo and in series with each other, means for causing voltage variations of said generator to differently affect the field-strength of said motors, and a field magnet coil for said dynamo connected at one end between the motors and at the other midway the battery terminals.

24. In a regulating apparatus, two electric motors in series, one having a substantially constant field strength and the other a field varied according to the variations for which regulation is to be provided, a dynamo, and a controlling coil therefor connected at one end to a point between the two motors.

25. In a regulating apparatus, two electric motors in series, one having a substantially constant field strength and the other a field varied according to the variations for which regulation is to be provided, a dynamo mechanically connected to the motors, and a controlling coil therefor connected at one end to a point between the two motors.

26. In a regulating apparatus, twe electric motors in series, one having a substantially constant field strength and the other a field varied according to the variations for which regulation is to be provided, a dynamo, and a field magnet coil therefor connected at one end to a point between the two motors.

27. In a regulating apparatus, two electric motors in series, one having a substantially constant field strength and the other a field varied according to the variations for which regulation is to be provided, a dynamo mechanically connected to the motors, and a field magnet coil therefor connected at one end to a point between the two motors.

28. The combination with a circuit having a varying voltage, a circuit requiring a constant voltage, a dynamo between the two, two electric motors mechanically connected to the dynamo, means for maintaining the field of one of said motors substantially constant and for varying the other responsively to said varying voltage, and a controlling coil for said dynamo, connected at one end to a point between the two motors.

29. In a regulating apparatus, two electric motors in series, one having a substantially constant field strength and the other a field varied according to the variations for which regulation is to be provided, a dynamo, a controlling coil therefor connected at one end to a point between the two motors, a source of potential difference, and a connection from the other end of said controlling coil to said source.

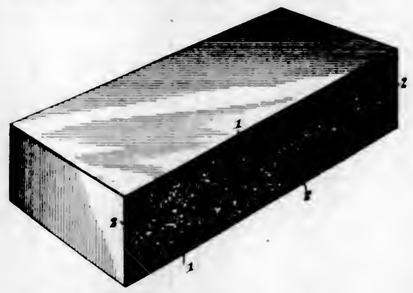
30. In a regulating apparatus, two electric motors in series, one having a substantially constant field strength and the other a field varied according to the variations for which regulation is to be provided, a dynamo mechanically connected to the motors, a controlling coil therefor connected at one end to a point between the two motors, a source of potential difference, and a connection from the other end of said controlling coil to said source.

31. In a regulating apparatus, two electric motors in series, one having a substantially constant field strength and the other a field varied according to the variations for which regulation is to be provided, a dynamo, a field magnet coil therefor connected at one end to a point between the two motors, a source of potential difference, and a connection from the other end of said controlling coil to said source.

32. In a regulating apparatus, two electric motors in series, one having a substantially constant field strength and the other a field varied according to the variations for which regulation is to be provided, a dynamo mechanically connected to the motors, a field magnet coil therefor connected at one end to a point between the two motors, a source of potential difference, and a connection from the other end of said controlling coil to said source.

33. The combination with a circuit having a varying voltage, a circuit requiring a constant voltage, a dynamo between the two, two electric motors mechanically connected to the dynamo, means for maintaining the field of one of said motors substantially constant and for varying the other responsively to said varying voltage, a controlling coil for said dynamo, connected at one end to a point between the two motors, a source of potential difference, and a connection from the other end of said controlling coil to said source.

852,688. METHOD OF MANUFACTURING HEAT-INSULATING BODIES. HENRY J. WADE, Winona, Minn. Filed Mar. 15, 1906. Serial No. 306,187.



Claim.—1. That improvement in the art of manufacturing insulating blocks, bricks, slabs, and the like, which consists in heating the dry porous and fibrous insulating body to expand the air contained in the pores thereof and drive a portion of such air out of the body, applying an air and moisture-proof surface coating to all sides of said body, while the same is heated and the air expanded, and allowing the body to cool and the coat to harden.

2. That improvement in the art of manufacturing insulating blocks, bricks, slabs, and the like, which consists in forming an artificial dry and porous body of matted fiber, heating the said body to expand the air contained in the pores thereof and drive a portion of such air out of the body, applying an air and moisture-proof surface coating in a liquid state to all sides of said body while the same is hot, and allowing the body to cool and the coat to harden, said coat intermingling with the fibers and constituting, when cold, a hard reinforcement to the body.

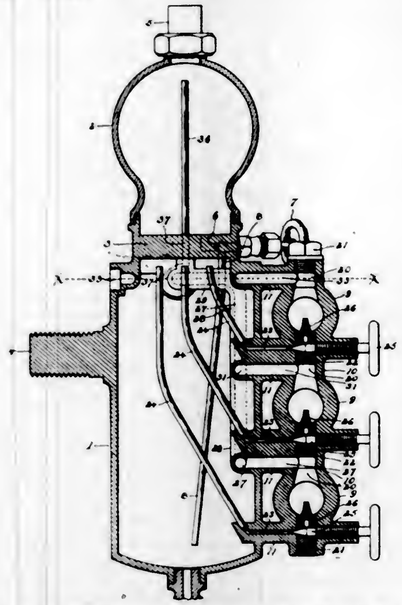
3. That improvement in the art of manufacturing insulating blocks, bricks, tiles, boards, slabs, and the like, which consists in first forming an artificial dry and porous body of heat insulating fiber; second, heating the said body to expand the air contained therein and cause a portion of the air to be driven out of the body, third, applying an air and moisture-proof surface coating in a liquid state to all portions of the body while the latter is hot; fourth allowing the body to cool and the coat to harden, whereby the coat, intermingling with the fibrous body, constitutes, when cold, a reinforcement for the body; and finally applying silicate of sodium to the coating so as to make the body both fire and water-proof.

852,689. LUBRICATOR. GEORGE M. WOLCOTT, Detroit, Mich. Filed Dec. 17, 1906. Serial No. 348,103.

Claim.—1. In a hydrostatic lubricator, the combination with a reservoir forming the body of the lubricator, of means at the rear side of the reservoir for supporting the lubricator, and a series of sight feeds arranged in a vertical row and supported at the forward side of the reservoir and communicating with the interior thereof to receive oil therefrom.

2. In a hydrostatic lubricator, the combination with a reservoir forming the body of the lubricator, of a series of bullseye sight feeds arranged one above the other in a vertical row at the forward side of the reservoir with the axis of their sight openings extending in horizontal planes transversely of the reservoir.

3. In a hydrostatic lubricator, the combination with a reservoir forming the body of the lubricator, of a series of cylindrical casings arranged one above the other in a vertical row with the longitudinal axis of their openings extending in horizontal planes, arms extending from the forward side of the body to support said casings and formed with passages connecting the interior of the body with the casings, and sight glasses secured within the ends of said casings.



4. In a hydrostatic lubricator, the combination with a cylindrical shaped body forming a reservoir, of a series of arms arranged to extend from the side of the body in a vertical row and formed integral with said body with passages extending therethrough, oil tubes opening into certain of said passages and extending upward within the reservoir to near the top thereof, there being ribs on the wall of the reservoir formed with passages connecting with the passages in the arms, discharge arms secured to the side of the body and communicating with said connecting passages, a series of casings having horizontally extending bores and formed integral with said arms in communication with the passages therein, sight glasses in the ends of said casings, valves controlling the inflow of oil to said casings through the passages into which the said tubes open, and a nipple in each of said casings above the valve to direct drops of oil upward to the discharge passage in the arm above.

5. In a hydrostatic lubricator, the combination with a cylindrical shaped body forming a reservoir, of a series of cylindrical bullseye casings arranged in a vertical row with their bores extending horizontally and connected by neck portions bored vertically through the whole series and supported at a distance from the forward side of the body by arms formed integral therewith and with the neck portions, said arms being each provided with an inlet passage and a discharge passage opening into the vertical bore, a plug secured in the said vertical bore between the inlet and discharge passage in each arm, nipples secured in said vertical bore above the inlet passage to direct the oil upward across the casings into the discharge passages of the arms above, and sight glasses secured within the outer ends of the said casings.

6. In a hydrostatic lubricator, the combination of a body forming a reservoir and provided with a plurality of discharge passages opening through the front side of said body in a vertical row and extending upward to near the top of the body and across the same there being inlet passages opening through the front side of the body adjacent to the discharge passages, a series of bullseye sight feeds disposed in a vertical row adjacent to the forward side of the body and with which said passages communicate, discharge arms secured to the rear side of the body in communication with the opposite ends of said discharge passages, a condensing chamber upon the upper end of the body, a horizontal wall separating said chamber from the reservoir of the body, equalizing tubes opening at their upper ends into the upper part of the condensing chamber and communicating at their lower ends through openings in said wall with the said discharge passages, and means for conducting the water of condensation from the said condensing chamber into the bottom of the reservoir.

7. In a hydrostatic lubricator, the combination of a cylindrical oil reservoir and provided with a series of arms projecting in a vertical row from its side and with ribs on its wall extending upward from said arms, said arms and ribs being formed with discharge passages and the arms with inlet passages, oil tubes leading from near the top of said reservoir into the inlet passages, ribs extending across the upper end of said reservoir and provided with passages forming continuations of the discharge passages, discharge arms secured to the wall of the reservoir in communication with the discharge passages, a series of bullseye casings arranged one above the other with their bores extending horizontally and connected by neck portions formed integral with the outer ends of said arms on the reservoir and provided with a vertical bore extending through the series into which bore the said inlet and discharge passages open, plugs secured in the extreme upper and lower ends of said vertical bore to close the same and plugs in the bore between the inlet and the discharge passages of each arm to prevent communication through said bore between the casings, needle valves extending across the bore and into the inlet passages to control the flow of oil therethrough, nipples secured in the bore above the said valves, sight glasses secured in the bore above the said valves, sight glasses secured in the ends of the casings, a condenser chamber on the reservoir, a wall separating said chamber and reservoir and provided with a valve controlled passage extending therethrough and holes therein opening into the said discharge passages, equalizing tubes in said holes extending upward in the chamber, and a tube extending downward in the reservoir from the valve controlled passage to conduct the water of condensation from the chamber into the bottom of the reservoir.

852,690. REMOTE CONTROL DEVICE FOR ELECTRIC SWITCHES. GILBERT WRIGHT, Pittsfield, Mass., assignor to Stanley Electric Manufacturing Company, a Corporation of New Jersey. Filed Apr. 12, 1905. Serial No. 255,172.

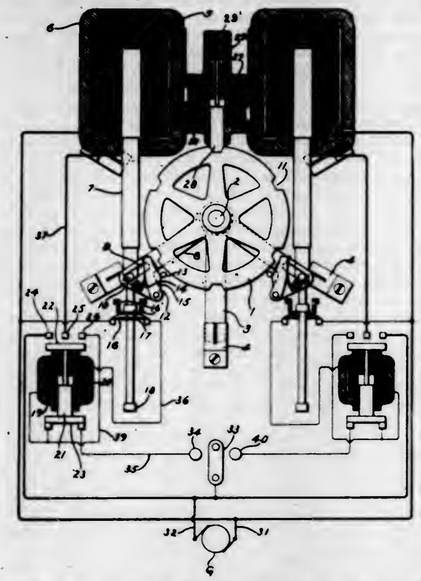
Claim.—1. The combination with a switch arm, of electromagnetic means for advancing the same step-by-step, means for locking said switch at the end of each step, and electromagnetic means energized simultaneously with the energizing of the operating means for unlocking the same.

2. The combination with a rotary switch arm, of electromagnetic means for operating the same step-by-step, means for locking said switch at the end of each step, electromagnetic means for unlocking the same, and electromagnetic means for closing the circuit of said operating and said unlocking means simultaneously and maintaining them closed until the end of the step.

3. The combination with a rotary switch, of means for operating the same step-by-step, comprising an electromagnetic driving means, a control switch therefor, and electromagnetic means controlled by said switch for opening said control circuit and simultaneously closing a circuit through said driving means and maintaining it closed until the end of a step.

4. The combination with a normally locked rotary switch, of means for operating the same step-by-step, comprising electromagnetic unlocking means, driving means

for said switch, a control switch, and electromagnetic means controlled by said switch for opening said control circuit and simultaneously closing a circuit through said unlocking and driving means and maintaining it closed until the end of the step.



5. The combination with a rotary switch, of means for operating the same step-by-step in either direction, comprising a disk, solenoids having cores mounted to move in straight lines on opposite sides of said disk, and ratchet driving connections between said disk and said cores.

6. The combination with a rotary switch, of an operating disk therefor, oppositely disposed solenoids having cores mounted to reciprocate on opposite sides of said disk, and ratchet driving connections between said cores and said disk.

7. The combination with a rotary switch arm and driving wheel therefor, of means for giving the same a step-by-step movement, comprising a solenoid and core therefor mounted to reciprocate adjacent the periphery of said wheel, ratchet driving connections between said core and said wheel, means for closing an electric circuit through said solenoid, and means for breaking said circuit when the core reaches a predetermined limit of movement.

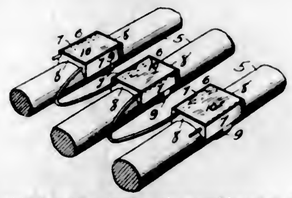
8. The combination with a rotary switch arm and driving wheel therefor, of means for giving the same a step-by-step movement, comprising a solenoid, a core therefor adjacent to said wheel mounted to be drawn into said solenoid when the latter is energized and to descend by gravity when it is de-energized, ratchet driving connections between said core and said wheel, and means for breaking the circuit of said solenoid when the core is drawn upward to a predetermined limit of movement.

852,691. CABLE-BONDING DEVICE. HARRY E. ADAMS, Pittsburg, Pa. Filed Mar. 12, 1906. Serial No. 305,564.

Claim.—1. In a device of the character described, the combination with a receptacle open at the top and at the bottom, the end walls of said receptacle being cut out to fit upon a cable, of a strap carried by said receptacle and adapted to secure said receptacle upon said cable.

2. In a device of the character described, the combination with a receptacle open at the top and at the bottom, the end walls of said receptacle being cut out to fit upon a cable, of a strap carried by said receptacle and adapted to secure said receptacle upon said cable, both the receptacle and the strap being formed of fusible metal.

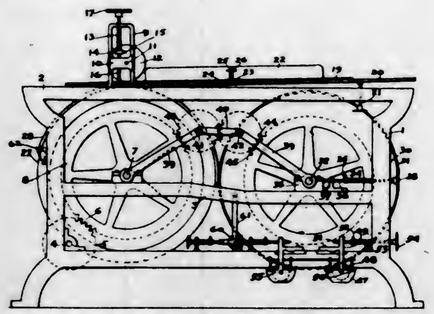
3. In a device of the character described, the combination with a receptacle open at the top and at the bottom, the end walls of said receptacle being cut out to fit upon a cable, of a strap carried by said receptacle and adapted to secure said receptacle upon said cable, both the strap and the receptacle being formed of fusible material and the strap being adapted to pass around the cable and to extend up into the receptacle and lie close to one of the walls thereof.



4. In a cable bonding device, the combination with a plurality of receptacles open both at the top and at the bottom, the end walls of said receptacles being cut out to permit said receptacles to fit snugly upon electric cables, of bowed connecting devices, the free ends of which pass longitudinally through said receptacles.

5. In a cable bonding device, the combination with a plurality of receptacles open both at the top and at the bottom, the end walls of said receptacles being cut out to permit said receptacles to fit snugly upon electric cables, of bowed connecting devices, the free ends of which pass longitudinally through said receptacles, and straps carried by said receptacles and adapted to surround the cables and to extend up between said cables and one of the walls of the receptacles.

852,692. SIGN-PAINTING MACHINE. WALTER A. AUGUSTINE, Alameda, Cal. Filed Mar. 28, 1906. Serial No. 308,380.



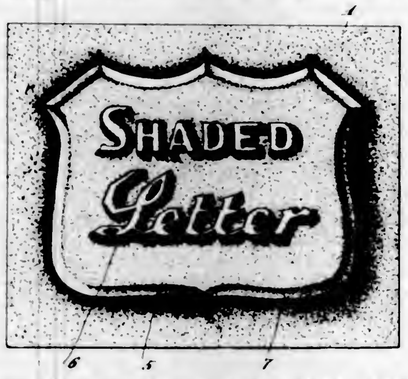
Claim.—1. In a machine for painting signs, the combination of a painting roll, having a yielding surface, a backing of thin but inextensible material secured to said roll having secured thereon a thicker sheet of composition; a part being cut away to form a negative of the sign to be painted, a distributing roll contacting with the painting roll, means for pressing the distributing roll against the painting roll, and means for causing said rolls to revolve in unison comprising gears on the shafts of the rolls, pinions respectively meshing with said gears and also meshing with each other, links between the ends of the shaft of the pinions, and a link between the shaft of each pinion and that of its corresponding gear, substantially as described.

2. In a machine for painting signs, the combination of a painting roll, having a yielding surface, a backing of thin but inextensible material secured to said roll and having secured thereon a thicker sheet of composition; a part being cut away to form a negative of the sign to be painted, means for distributing paint upon said roll, and means for passing a board into close contact with said roll to take the impression therefrom, substantially as described.

3. In a machine for painting signs, the combination of a painting roll, having a yielding surface, a backing of thin but inextensible material secured to said roll and having secured thereon a thicker sheet of composition; a part being cut away to form a negative of the sign to be painted, means for distributing paint upon said roll, comprising a distributing roll and positive means for causing said painting and distributing rolls to revolve in unison, and means for passing a board into close contact with said roll to take the impression therefrom, substantially as described.

4. In a machine for painting signs, the combination of a painting roll, having a yielding surface, a sheet of yielding material secured to said roll and having a part cut away to form a negative of the sign to be painted, means for distributing paint upon said roll, comprising a distributing roll, means for pressing said distributing roll against the painting roll comprising movable bearings for the shaft of the distributing roll, springs pressing against said bearings, and means for adjusting said springs, comprising collars against which the springs abut, threaded rods through collars for said rods and means for turning said rods in said bearings, means for causing said painting and distributing rolls to revolve in unison, and means for passing a board into close contact with said roll to take the impression therefrom, substantially as described.

852,693. PROCESS FOR PRODUCING SIGNS AND LABELS. CORNELIUS H. BARBE and JOSEPH T. HRODY, Chicago, Ill. Filed Oct. 20, 1904. Serial No. 229,342.

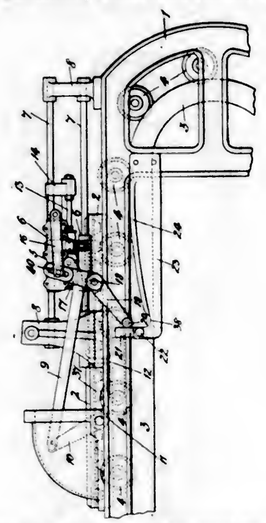


Claim.—A process for forming signs, labels or designs, consisting in forming a mask of the sign or design, or a portion thereof, outlining said mask upon the background by shadow-shading, then removing the mask, and placing shadow-shading upon portions of the surfaces that were covered by said mask, to give said surfaces the appearance of being raised above the background.

852,694. PUMP PARTICULARLY ADAPTED FOR USE WITH WAFER-BISCUIT MACHINES. GEORGE S. BAKER, Hammersmith, London, England. Filed June 8, 1906. Serial No. 320,792.

Claim.—1. In a pump of the character described the combination with a reciprocatable cylinder and piston therein, of a bell-crank-lever in connection with said piston, an abutment with which said lever coacts to produce the suction stroke on movement of said cylinder in one direction and a cam path on which said lever travels on reverse movement of said cylinder to produce the delivery stroke substantially as described.

2. In a pump of the character described the combination with a reciprocatable cylinder and piston therein, of a slidable cross head connected with said piston, a bell-crank-lever, means for adjustably connecting said cross-head and bell crank lever, an abutment with which said lever co-acts to produce the suction stroke on movement of said cylinder in one direction and a cam path on which said lever travels on reverse movement of said cylinder to produce the delivery stroke substantially as described.



3. In a pump of the character described the combination with a reciprocatable cylinder and piston therein, of a bell-crank-lever in operative connection with said piston, an adjustable slide with which said lever co-acts to produce a quick suction stroke on movement of said cylinder in one direction and a curved cam path on which said lever travels on reverse movement of the cylinder to produce a slow delivery stroke substantially as described.

4. In a pump of the character described the combination with a reciprocatable cylinder and piston therein, of a bell-crank-lever in connection with said piston, an abutment with which said lever co-acts to produce the suction stroke on movement of said cylinder in one direction a cam path on which said lever travels on reverse movement of said cylinder to produce the delivery stroke and means for varying the stroke of the piston substantially as described.

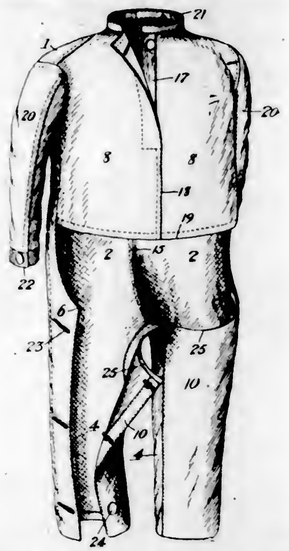
5. In a pump of the character described the combination with a reciprocatable cylinder, and piston therein, of a guide-way on said cylinder, a slidable cross-head connected with said piston and engaging said guide-way, a bell-crank-lever, an adjustable connection between said cross-head and one arm of the bell-crank-lever, an adjustable slide with which the other arm of said lever co-acts to produce the suction stroke on movement of the cylinder in one direction, and a curved cam-path with which said last mentioned arm co-acts on reverse movement of the cylinder to produce the delivery stroke substantially as described.

852,695. COMBINATION-GARMENT. CHARLES W. BARTHUM, Newburgh, N. Y., assignor to Sweet, Orr & Company, Newburgh, N. Y., a Firm. Filed June 26, 1906. Serial No. 323,503.

Claim.—1. A combination garment, having a shirt and trousers in one, wholly closed in front, the shirt open at the neck only in the back and terminating at the waist-line at the back, and the trousers without seat portion and having the legs fitted to the crotch and provided with side openings, and means to fasten the entire edges of said openings and thereby wholly inclose the wearer's legs.

2. A combination garment, having a shirt and trousers

in one, wholly closed in front, the shirt having sleeves, and opened at the neck only, and provided with a placket and terminating at the waist-line at the back, and the trousers without seat portion having the legs provided with fork-points fitted to the crotch and spanning the legs at the rear about the crotch line, and having openings at the outer sides from bottoms to crotch line, and means to separably fasten the entire edges of said openings to thereby wholly inclose the wearer's legs.

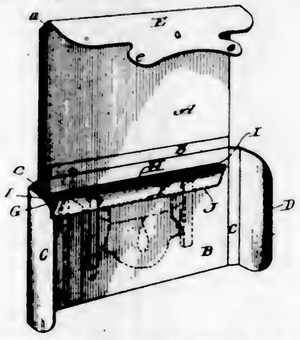


3. A combination garment, having two integral, wide front sections united in front, and provided with fork-points extending rearwardly, two back sections for the shirt open only at the neck and terminating at the waist-line, and two narrow back leg sections without seat portions united to the fork-points of the front sections and to each other in continuation of the fork-point union and sloping upward at the rear of the garment and united to the inner edges of the front sections, the entire outer edges of the front and rear leg sections meeting at the outer sides of the legs and having separable fastening mediums.

4. A combination garment, composed of two like front sections cut to form the neck portion, the body portion, and about two-thirds of the leg portions, and seamed down the front and into the crotch, two body back sections seamed to the front sections and to each other save for a neck opening and terminating at the waist-line, sleeves in the body portion, and two narrow back sections for the legs without seat portions seamed to the front sections in the crotch and in line with the front seam and also seamed to the inner edges of the leg portions of the front sections, said front leg and back leg sections having free edges at the sides of the legs provided with means for temporarily fastening them together throughout their length about and so as to wholly inclose a wearer's legs.

852,696. FOLDING DISPLAY-BOX. PERRY S. BAUER, Chicago, Ill., assignor to Bauer & Black, Chicago, Ill., a Corporation of Illinois. Filed Aug. 19, 1905. Serial No. 274,934.

Claim.—A folding display box for suspensory bandages made out of a single blank and comprising a back, a front, a side connecting the back and front, a tucking flap, a side connecting the tucking flap and front, end flaps, sides connecting the end flaps and back, a support for the bandage near one side edge of the back and extending across the back approximately from end to end thereof, said support being made by cutting the back on a line parallel with and adjacent to the side connecting the front and back and on lines parallel with the ends of the box and bending inward that part of the back within said cutting lines, and a covering on the outer face of the back over the opening therein left by bending inward the support.



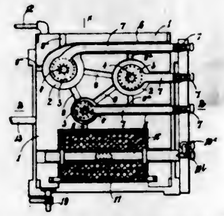
852,697. PIPE-CUTTER. JEROME L. BEARD, Victor, Colo., assignor of one-half to Robert M. Turner, Lost Cabin, Wyo. Filed Apr. 11, 1906. Serial No. 311,151.



Claim.—1. In combination a shank provided with a fixed jaw, a movable jaw mounted upon the shank and adapted to be secured thereon at an adjusted position, said movable jaw having a notch in its inner face, a block snugly fitting the recess of the movable jaw and having grooves in opposite ends to receive portions of the jaw bordering upon the recess, a cutter mounted upon said block and a set screw mounted in a thread opening of the movable jaw and adapted to advance the block and the cutter thereby.

2. In combination a shank provided with a fixed jaw having its inner face concave and toothed, a shoe adapted to snugly fit the concave face and provided with matching teeth and with a collar to receive the shank, and provided with pairs of diverged arms to embrace opposite sides of the fixed jaw, a movable jaw mounted upon the shank and adapted to be secured thereon at an adjusted position, said movable jaw having a recess, a block fitted in said recess, a set screw threaded in the movable jaw and adapted to advance the block, and cutters fitted to the aforesaid shoe and block.

852,698. GAS-HEATED BOILER. ROOKWOOD C. BISHOP, Christchurch, New Zealand. Filed Oct. 9, 1905. Serial No. 282,058.



Claim.—1. Apparatus for the purpose indicated, comprising in combination, a boiler having recesses and provided with openings for admission of air to the recesses and provided with channels leading from the recesses and sloping downwardly to the side of the boiler and provided with a gutter into which the channels discharge and provided with channels for the escape of the waste products of combustion, and burners placed within the recesses, substantially as set forth.

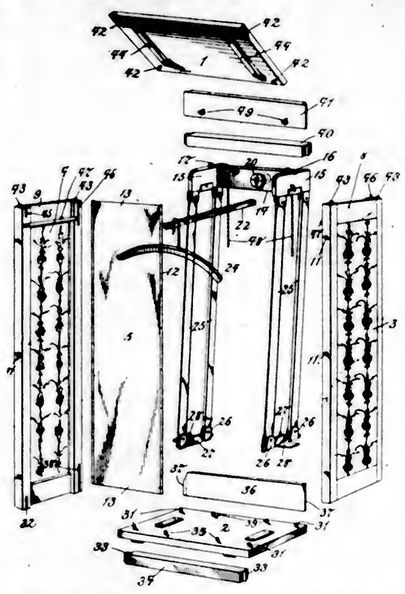
2. Apparatus for the purpose indicated comprising in combination with a gas cooking range, a boiler having recesses and provided with openings for admission of air to the recesses and provided with channels leading from the recesses and sloping downwardly to the side of the boiler and provided with a gutter into which the channels discharge and provided with channels for the escape of waste products of combustion, burners placed within the recesses, lugs upon the upper side of the boiler, ribs upon the top of the range corresponding to the lugs on the boiler, bolts securing the top of the range to the boiler, lugs upon the under side of the boiler, ribs on the top of the oven and adapted to receive the lugs on the under side of the boiler, substantially as set forth.

3. Apparatus for the purpose indicated, comprising in combination a boiler adapted to rest upon the top of a range and having recesses and provided with openings for admission of air to the recesses and provided with channels leading from the recesses and sloping downwardly to the side of the boiler and provided with a gutter into which the channels discharge and provided with channels for the escape of the waste products of combustion, burners placed within the recesses, an extension to the top of the range, brackets supporting the extension, a water cistern resting upon the extension, flanges around the bottom of the cistern, ribs formed upon the extension and fitting within the flanges of the cistern, flow and return pipes connecting the cistern and boiler, substantially as set forth.

4. In apparatus for the purpose indicated, a burner for grilling and heating cooking vessels, comprising a perforated tube a grid fitted to the burner, a horizontal partition dividing the tube longitudinally into two divisions, a gas jet for supplying gas to the upper division, and another gas jet for supplying gas to the lower division substantially as set forth.

852,699. KNOCKDOWN WARDROBE. SEYMOUR W. BONSALL, New York, N. Y. Filed May 16, 1906. Serial No. 317,049.

Claim.—1. A knock down wardrobe comprising a flat roof, a flat floor, side frames carrying a cloth filling, a bottom sill and rear brace both secured by tenons to the side frames, a top sill and a top rear brace both secured by tenons to the side frames and a back piece comprising side strips secured to a cloth filling and to said side frames, substantially as described.



2. A knock down wardrobe comprising two side frames, a top having dowel pins entering said frames, a floor having dowel pins also entering said frames, a bottom sill and rear brace doweled to said floor and mortised to the side frames, a top sill and rear brace mortised into said side frames and a forward swinging suspending device removably secured to said floor, substantially as described.

3. In a knock down wardrobe a floor having securing plates secured flat upon said floor so as to leave a narrow space beneath them, in combination with a suspending device having bottom braces provided with flat projecting bottom plates extending under said securing plates and readily removable therefrom, substantially as described.

4. In a wardrobe a floor having two securing plates secured thereto; in combination with a suspension device comprising an upper frame, pairs of swinging legs pivoted thereto and a bottom brace for each pair of legs, each brace comprising a pair of lugs pivoted to said legs and a flat bottom plate having an extension fitting under said securing plates and readily removable therefrom substantially as described.

5. In a wardrobe, a suspension device comprising two side pieces, a back piece between the same, swinging hooks and catches working horizontally and swinging hooks and catches working vertically for connecting said side pieces to the ends of said back piece and means for movably supporting said suspension device in the wardrobe substantially as described.

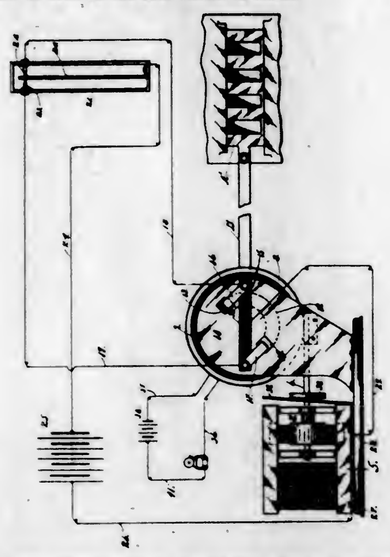
6. A knock down wardrobe comprising an inclosure composed of light flat parts connected by simple interlocking parts and an interior swinging suspending device composed of flat parts interlocking and connected by catches, whereby the entire structure may be separated for packing in flat form with a minimum of weight, substantially as described.

852,700. AUTOMATIC DEVICE FOR PRODUCING INTERMITTENT MOTION. PEABODY A. BROWN, Denver, Colo. Filed July 25, 1905. Serial No. 271,152.

Claim.—1. The combination of an alternating circuit closer, a motor, two circuits in which the motor is located, a movable circuit breaker operated from the motor and controlling both circuits, and an electric alarm or signal

whose circuit is closed by the circuit breaker except when the latter has reached its normal limit of movement.

2. The combination with a device to be actuated, of a movable circuit breaker connected in operative relation with the said device and including a disk revolubly mounted and having a toothed periphery, a motor, a worm spindle actuated by the motor for operating the disk, and a motor brake comprising a spring-actuated armature apertured to receive the spindle and a part mounted on the spindle and adapted to be engaged by the armature as soon as the motor circuit is broken, the brake being released as soon as the said circuit is closed.



3. The combination of an electric motor, a revoluble disk, a spindle actuated by the motor and connected in operative relation with the disk, a part fast on the spindle, and a spring-actuated armature apertured to receive the spindle and adapted to engage the part on the spindle as soon as the motor circuit is broken.

4. The combination of a motor, a rotary circuit breaker comprising a disk having a toothed periphery, and a worm spindle operated from the motor to actuate the circuit breaker, and a spring-actuated armature rendered inactive by the magnet of the motor but released when the circuit through the motor is broken, the armature being arranged to act on the spindle to overcome the momentum of the motor.

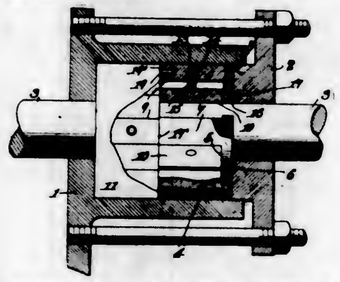
5. The combination of a motor, a rotary circuit breaker connected in operative relation with the motor, and a spring-actuated armature rendered inactive by the motor when the circuit is closed therethrough but connected with the motor to overcome its momentum when the motor circuit is broken.

852,701. METALLIC ROD-PACKING. EUGENE A. BRYANT, Minneapolis, Minn. Filed July 23, 1906. Serial No. 327,455.

Claim.—1. A packing comprising a casing, a pair of members mounted in the casing and provided with a plurality of spaced sockets, the sockets of one member being in staggered relation to those of the other member, a plurality of packing segments extending longitudinally of the pockets, and means for locking the members together to preserve the staggered relation of the packing segments.

2. A packing comprising a casing, a holder snugly fitting in the casing formed of a collar, and a plurality of spaced axially extending separating members, radially movable packing segments disposed between the separating members, and adjustable springs for urging the packing segments inwardly.

3. A packing comprising a casing, a holder mounted in the casing and formed with a collar fitted flush in the casing and having spaced axially extending separating members, and radially adjustable packing segments disposed between the fingers.



4. A packing comprising a holder composed of a collar and integral separating fingers extending axially from one side thereof, a casing in which the holder snugly fits, means carried by the casing for securing the holder therein, packing segments arranged between the said members, and means for urging the segments inwardly.

5. The combination of a plurality of packing sections each comprising a cylindrical casing, a cage fitted in the casing, means carried by the casing for securing the cage therein and preventing relative rotation, packing segments arranged within the cage and held from longitudinal and rotary motion thereby, and adjustable means carried by the casing for each segment; and means engaging two adjacent sections for preventing relative rotation and holding the cage of one section in engagement with the segments of the adjacent section.

6. A packing comprising a casing, a holder mounted in the casing and formed with a collar fitted flush in the casing and having spaced axially extending separating members, radially adjustable packing segments disposed between the fingers, and wearing plates carried by the holder.

7. In a packing, the combination of a cylindrical casing, a holder fitted therein and comprising a collar and integral spacing fingers extending therefrom, and screws for positively holding the cylinder and holder together.

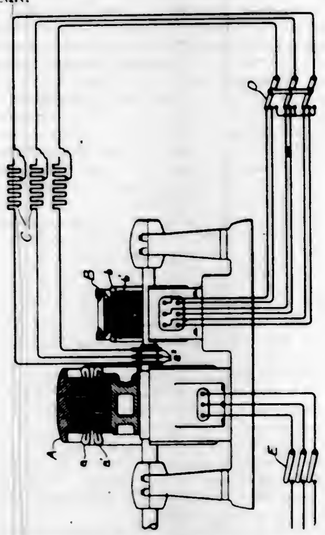
852,702. INDUCTION-MOTOR. PAUL BUNET, Paris, France, assignor to General Electric Company, a Corporation of New York. Filed July 12, 1906. Serial No. 325,845.

Claim.—1. In combination, a main induction motor having a coil-wound secondary member, an auxiliary induction motor mechanically connected thereto and having its primary member adapted for connection for a plurality of pole numbers, and means for connecting the said primary with different pole numbers successively to the secondary of the main motor and for short-circuiting said secondary.

2. In combination, a main induction motor having a high-voltage primary member and a coil-wound low-voltage secondary, an auxiliary induction motor mechanically connected thereto and having a low-voltage primary member adapted for connection for different pole numbers, and means for connecting the primary of the auxiliary motor with different pole numbers in series with the secondary of the main motor.

3. In combination, a main induction motor having a high-voltage primary member and a coil-wound low-voltage secondary, an auxiliary induction motor mechanically connected thereto and having a low-voltage primary member adapted for connection for different pole numbers, and means for connecting the primary of the auxiliary motor with different pole numbers in series with the secondary of the main motor and for short-circuiting said secondary.

4. In combination, a main induction motor having a coil-wound secondary member, an auxiliary induction motor mechanically connected thereto and having its primary member adapted for connection for a plurality of pole numbers, means for connecting the said primary with different pole numbers successively in circuit with the secondary of the main motor, and a variable resistance in said circuit.



5. In combination, a main induction motor having a coil-wound secondary member, an auxiliary induction motor mechanically connected thereto and having its primary member adapted for connection for a plurality of pole numbers, means for connecting the said primary with different pole numbers successively in circuit with the secondary of the main motor and for short-circuiting said secondary, and a variable resistance in circuit with said secondary.

6. In combination, a main induction motor having a high-voltage primary member and a coil-wound secondary, an auxiliary induction motor mechanically connected thereto and having a low-voltage primary member adapted for connection for different pole numbers, means for connecting the primary of the auxiliary motor with different pole numbers in series with the secondary of the main motor and for short-circuiting said secondary, and a variable resistance in circuit with said secondary.

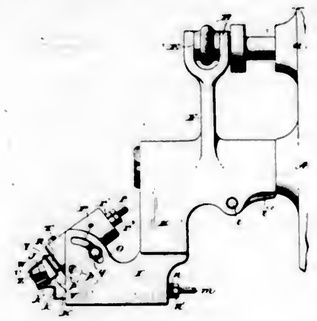
852,703. WHEELING AND EDGE-SETTING MACHINE. GEORGE M. CARNES, Rochester, N. Y. Filed Sept. 6, 1905. Serial No. 277,199.

Claim.—1. In an imitation stitch indenting machine for boots and shoe soles, the combination with an indenting tool and its support, of means for securing the support in different angular positions to vary the position of the tool relative to the face of the stock, a longitudinally adjustable edge setting tool associated with the indenting tool, and means for actuating the tools in unison.

2. In an imitation stitch indenting machine, the combination with an indenting tool, and an edge-setting tool angularly arranged relative to each other, of means for yieldably maintaining the relative positions of the tools while operating on the stock, substantially as described.

3. In a machine of the character described, the combination with a longitudinally movable wheeling tool and a spring for normally forcing the same outward, of a longitudinal movable edge-setting tool, a spring for normally forcing the edge-setting tool outward, and means for positioning the working surfaces of the said tools in juxtaposition.

4. In a machine for finishing the edges of shoe soles, the combination with an indenting tool, of an edge setting tool having an edge setting projection thereon overlapping the indenting tool and arranged obliquely relative thereto.



5. In a machine for finishing the edges of shoe soles, the combination with an indenting tool, of an edge-setting tool having edge-setting projections thereon embracing the opposite sides of the indenting tool and means for actuating the tools.

6. In a machine for finishing the edges of shoe soles, the combination with the freely rotatable indenting wheel, of an edge-setting tool co-operatively positioned in relation to the said wheel and having a part of its edge-setting surface overlapping the said wheel with the line of its working surface crossing the working surface of the wheel and means for actuating the wheel and edge-setting tool.

7. In a machine for finishing the edges of shoe soles, the combination with a frame part, of a pivotally adjustable casing part, means for securing the casing part in different positions of adjustment, a frusto-conical indenting wheel, means for supporting the indenting wheel movable in the casing part and means for positioning the lower working edge of the indenting wheel in a position substantially parallel with the line of movement of the supporting means in the casing.

8. In a machine for finishing the edges of shoe soles, the combination with a pivotally adjustable casing part, a tool carrier slidably secured in said casing part, means for varying the limit of movement of the tool carrier, a wheel shaft arranged at an angle and located on the end of the tool carrier, and an indenting wheel mounted on said shaft whereby the plane of the operating edge or part of the wheel lies substantially parallel with the longitudinal axis of the carrier thereof.

9. In a machine for finishing the edges of shoe soles, the combination with an indenting tool, of an edge iron operatively associated therewith and having an edge setting projection overlapping the indenting tool with the line of its working surface crossing that of the indenting tool and a spring for normally forcing the edge iron out toward the indenting tool.

10. In a machine for finishing the edges of shoe soles, the combination with an indenting tool, of an edge iron having a part adjacent to and overlapping the said tool and the line of its working surface crossing that of the tool, means for slidably supporting the edge iron, a spring for normally tending to move the edge iron outward and means for limiting the outward movement of the edge iron.

11. In a machine for finishing the edges of shoe soles, the combination with an indenting tool, of an edge-setting tool having its edge-setting edge in proximity to and overlapping the indenting tool, and means for adjusting the said tools relative to each other.

12. In a machine for finishing the edges of shoe soles, the combination with an independently spring pressed indenting tool and an independently spring pressed edge setting tool, having an edge setting part arranged adjacent to the indenting tool with the line of its working surface crossing that of the indenting tool.

13. In a machine for finishing the edges of shoe soles, the combination with an edge setting tool and an indenting tool, the former having an edge setting extension overlapping the indenting tool with the line of its working surface crossing that of the indenting tool.

14. In a machine for finishing the edges of shoe soles, the combination with an edge setting tool, of an indenting wheel, the former having an edge setting part overlapping the said wheel with the line of its working surface crossing that of the wheel.

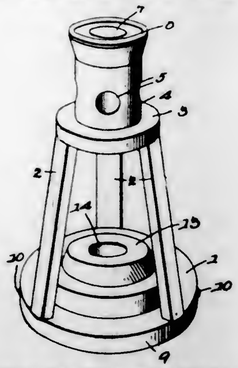
15. In a machine for finishing the edges of shoe soles, the combination with an edge-setting tool and an indenting tool, the former having edge-setting extensions overlapping and arranged respectively on the opposite sides of the latter.

16. In a machine for finishing the edges of shoe soles, in combination with an edge setting tool, of an indenting wheel, the former having edge-setting extensions projecting therefrom and extending beyond the wheel on opposite sides thereof.

17. In a machine for finishing the edges of shoe soles, the combination with an indenting tool, of an edge-setting tool having edge-setting extensions overlapping on opposite sides the indenting tool and instrumentalities for actuating the tools back and forth whereby the operation of the edge-setting tool follows that of the indenting tool in both directions.

18. In a machine for finishing the edges of shoe soles, the combination with an edge-setting tool having separated edge-setting extensions at its end and an indenting tool located between the said extensions and yieldably supported for back and forth movement relative to the said extensions.

852,704. CAR-REPAIRER'S TOOL. DAVE W. COLLINS, Wilson, Ark., assignor of one-half to William M. Roy, Wilson, Ark. Filed Apr. 30, 1906. Serial No. 314,549.



Claim.—A tool of the character described comprising a base, thread cutting dies carried thereby, a cap rigidly connected to the base, means for rotating the cap, and a head rotatably mounted on the cap.

852,705. BRUSH-HOLDER. FREDERICK M. CONLEE, Madison, Wis., assignor to Northern Electrical Manufacturing Company, a Corporation of Wisconsin. Filed Sept. 11, 1906. Serial No. 334,140.



Claim.—1. In a brush-holder, a frame having a guide for a brush, a follower pivoted to said frame, and a spiral spring arranged to hold said follower in the brush-engaging position or in a position to clear the brush.

2. In a brush-holder, a frame having a guide for a brush, a follower pivoted to said frame, and a spiral spring connected at its opposite ends to the follower and to the frame respectively and arranged to hold the follower in the brush-engaging position or in a position to clear the brush.

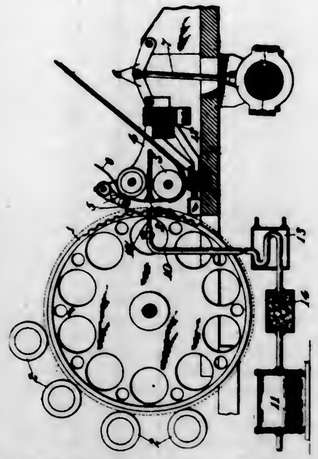
3. In a brush-holder, a frame having a guide for a brush, a follower movably mounted on said frame, and a spiral spring tending to move said follower in one direction when the follower is on one side of a predetermined position and to move the follower in the opposite direction when the follower is on the opposite side of said position.

4. In a brush-holder, a frame having a guide for a brush, a follower pivoted on said frame, and a spiral spring having one or more coils surrounding the pivotal axis of said follower and having its ends secured respectively to the follower and to the frame at such points that the spring serves to hold the follower in the brush-engaging position or in a position to clear the brush.

5. In a brush-holder, a frame having a guide for a brush, a follower pivoted on said frame, a spiral spring having one or more coils surrounding the pivotal axis of said follower and having its ends secured respectively to the follower and to the frame, the parts being so proportioned that the spring normally holds the follower in brush-engaging position but permits the follower to be swung away from the brush to a position wherein the follower is held clear of the brush by the spring.

6. In a brush-holder, a frame having a guide for a brush, a follower pivoted on said frame, and a spiral spring having its ends connected respectively to the follower and to the frame, said spring being so proportioned and arranged that the follower may be moved against the tension thereof from either direction toward and past a position wherein the points of connection of the spring with the follower and the frame are in a straight line including a point on the pivotal axis of the follower.

852,706. PROCESS OF PREPARING TRANSFER-SURFACES FOR RECEIVING PRINTING IMPRESSIONS. GEORGE R. CORNWALL, Rye, N. Y., assignor to American Planograph Company, New York, N. Y., a Corporation of West Virginia. Filed May 28, 1903. Serial No. 159,092.



Claim.—1. The process of preparing a transfer material for receiving printing impressions which comprises applying at and circumjacent to the place of impression an agent for removing moisture from the transfer material.

2. The process of preparing a transfer material for receiving printing impressions which comprises applying immediately prior to the act of making an impression a moisture-removing agent at the place of impression.

3. The process of preparing a transfer material for receiving printing impressions which comprises applying at and circumjacent to the place of impression immediately prior to the act of making an impression a moisture-removing agent.

4. The process of preparing a transfer material for receiving printing impressions which comprises applying moisture-removing air or gas at the place of impression immediately prior to the act of making an impression.

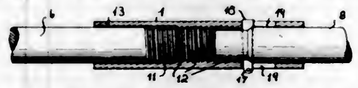
5. The process of preparing a transfer material for receiving printing impressions which comprises desiccating air or other gas and directing a current of said air or gas upon and over the transfer material at the place of impression immediately prior to the act of making an impression.

6. The process of preparing a transfer material for receiving printing impressions which comprises heating air or other gas and directing a current of said air or gas upon and over the transfer material at the place of impression immediately prior to the act of making an impression.

7. The process of preparing a transfer material for receiving printing impressions which comprises maintaining at and adjacent to the place of impression an agent for neutralizing the hygroscopic action of the transfer material.

8. The process of preparing a transfer material for receiving printing impressions which comprises maintaining at and adjacent to the place of impression an atmosphere for neutralizing the hygroscopic action of the transfer material.

852,707. MOTOR-VEHICLE. DAVID M. DEARING, Jackson, Mich. Filed July 16, 1906. Serial No. 326,491.



Claim.—1. The combination with driving and driven shafts arranged in longitudinal alinement, of an element slidably but non-rotatably mounted upon one of said shafts and having a screw-threaded engagement with the other.

2. The combination with driving and driven shafts arranged in longitudinal alinement and one having external screw-threads at its ends, of a sleeve telescoping the ends of said shafts and having internal screw-threads to engage the threads upon one of said shafts, said sleeve being slidably but non-rotatably mounted upon the other of said shafts.

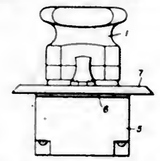
3. The combination with driving and driven shafts arranged in longitudinal alinement and one having external screw-threads at its end, of a sleeve telescoping the ends of said shafts and having internal screw-threads to engage the threads upon one of said shafts and longitudinal slots, and a stud or projection upon the other of said shafts disposed in said slot to cause the sleeve to rotate with said shaft and permit it to slide thereon.

4. The combination with a drive shaft having a screw-threaded end and a driven shaft disposed in longitudinal alinement with the drive shaft and formed with a transverse opening, of a sleeve telescoping the ends of said shafts and formed with internal screw-threads to engage the threads of the drive shaft and with oppositely-disposed, longitudinally-extending slots, and a key extending through said slots and the opening in said driven shaft, substantially as described, and for the purpose set forth.

5. The combination with a drive shaft having screw-threads at its ends and driven shafts disposed in longitudinal alinement with the drive shaft, of elements slidably but non-rotatably mounted upon said driven shafts and engaged with the screw-threads on said drive shaft, for the purpose set forth.

6. The combination with a drive shaft having screw-threaded ends and driven shafts disposed in longitudinal alinement with the drive shaft, of sleeves telescoping the adjacent ends of said shafts and having internal screw-threads to engage the threads upon said drive shaft and longitudinal slots, and projections upon said driven shafts to engage the slots in said sleeves, for the purpose set forth.

852,708. ATTACHING PLUG AND RECEPTACLE. FRANK C. DE REAMER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 31, 1904. Serial No. 230,683.



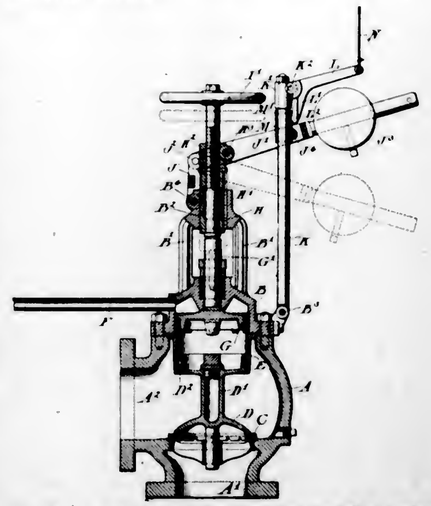
Claim.—1. The combination of an attaching plug, a receptacle therefor, means for locking said plug in engagement with said receptacle, and a switch mounted on said receptacle and provided with a rotary contact adapted to close the circuit and secure said locking means.

2. The combination of an attaching plug, a receptacle therefor provided with terminal contacts, a locking bolt with one end arranged in proximity to one of said terminal contacts, and a switch mounted on said receptacle and provided with a rotary contact adapted to close the circuit and engage the opposite end of said bolt.

3. The combination of an attaching plug provided with independent contacts, a receptacle therefor having stationary contacts secured thereto, a spring pressed bolt arranged in line with one of the stationary contacts, and a rotary switch mounted in said receptacle and adapted to abut against the end of said bolt.

4. The combination of an attaching plug having independent contacts with enlarged ends, a receptacle therefor having cup-shaped stationary contacts, a spring pressed bolt extending at one end through the side of a stationary contact, and a rotary switch adapted to engage the opposite end of said bolt and prevent retrograde movement thereof.

852,709. STOP-VALVE CONSTRUCTION. ADALBERT W. FISCHER and PAUL W. KNAUF, Philadelphia, Pa., assignors to Schutte and Koerting Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Aug 4, 1905. Serial No. 272,646.



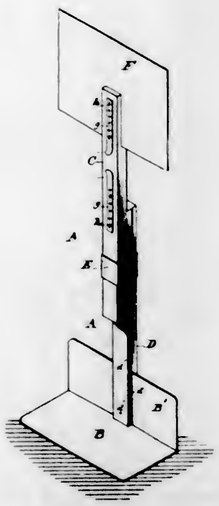
Claim.—1. A stop valve for controlling the flow of fluid under pressure through a conduit, in combination with a

cylinder connected to the same source of fluid pressure as that supplying the conduit, a piston in said cylinder arranged when moved under the influence of the pressure fluid to act on the stop valve in a direction to close it, means for applying additional pressure to the piston, and through it, to the valve, and a releasable latch normally holding said means out of operation.

2. A stop valve for controlling the flow of fluid under pressure through a conduit, in combination with a cylinder connected to the same source of fluid pressure as that supplying the conduit, arranged in line with the valve, a piston directly connected to the valve and working in the cylinder, a second piston working in the cylinder above the first and directly exposed to the action of the pressure fluid means for applying additional pressure to the upper piston and through it to the valve, and a releasable latch normally holding said means out of operation.

3. A stop valve for controlling the flow of fluid under pressure through a conduit, in combination with a cylinder connected to the same source of fluid pressure as that supplying the conduit, arranged in line with the valve, a piston directly connected to the valve and working in the cylinder, a second piston working in the cylinder above the first and directly exposed to the action of the pressure fluid, a stem connected to said second piston and extending through the head of the cylinder, a threaded head slidably supported in line with the piston stem, a rod screwing in said head and normally resting on the end of the piston stem, means tending to depress the head and screw rod and a releasable latch normally holding the head in elevated position.

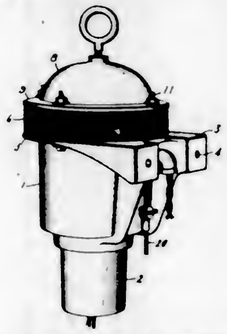
852,710. ADVERTISING-STAND. JAMES H. FLETCHER, Bridport, Vt. Filed Mar. 9, 1905. Serial No. 249,331.



Claim.—1. The combination of a standard made in two parts, the metal base B, having a vertical part B', the lower part D having a slot *d* in its lower end, into which the part B' of the metal base B is inserted, and the collar E, having the set screw *e* for adjusting said parts, with the metal strips *g*, *g*, provided with the set screws *h*, *h*, for adjusting said strips, arranged as specified.

2. The standard made in two parts C and D, the metal base B, having the vertical part B', in combination with the collar E, its set screw *e*, and the metal strips *g*, *g*, and set screws *h*, *h*, for adjusting said strips, all as described.

852,711. TELEPHONE-TRANSFORMER. JOHN J. FRANK, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 14, 1906. Serial No. 330,561.

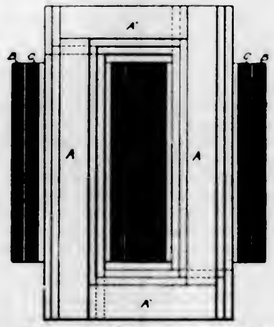


Claim.—1. In a transformer, two cup-shaped members, a magnetic core clamped between said members and forming therewith an inclosing casing, primary and secondary windings on said core within the casing, the lower of said members being extended downwardly below said windings and provided with an opening at its bottom, and an insulating bushing extending through said opening and providing a passage for the primary leads of the transformer.

2. In a transformer, two cup-shaped members, a magnetic core clamped between said members and forming therewith an inclosing casing, primary and secondary windings on said core within the casing, the lower of said members being extended downwardly below said windings and provided with a large opening at its bottom and a smaller downwardly projecting opening on one side, and an insulating bushing extending through the large opening and providing a passage for the primary leads of the transformer, the secondary leads being carried out through the smaller side opening.

3. In a transformer, two cup-shaped members, a magnetic core clamped between said members and forming therewith an inclosing casing, primary and secondary windings on said core within the casing, the lower of said members being extended downwardly below said windings and provided with an opening at its bottom, an insulating bushing extending through said opening and providing a passage for the primary leads of the transformer, and supporting lugs on said lower member.

852,712. TRANSFORMER-CORE. JOHN J. FRANK, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 14, 1906. Serial No. 330,562.



Claim.—1. In a transformer, a laminated closed magnetic core comprising parallel legs and end-pieces joining the ends of said legs the laminations composing said end-pieces being of different widths.

2. In a transformer, a laminated closed magnetic core comprising parallel legs and end-pieces joining the ends of said legs, the inner laminations of said end-pieces being of greater width than the outer laminations.

3. In a transformer, a laminated closed magnetic core comprising parallel legs and end-pieces having their ends inter-leaved with the ends of said legs, the laminations composing said end-pieces being of different widths.

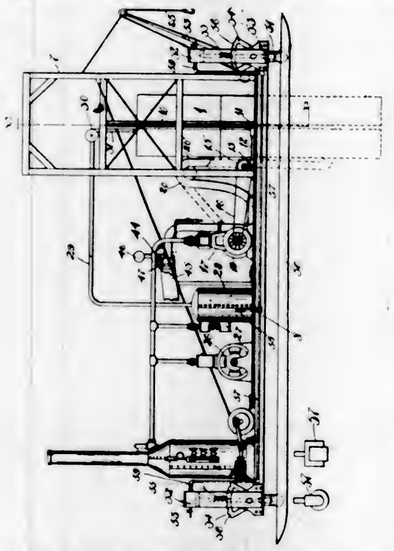
4. In a transformer, a laminated closed magnetic core comprising parallel legs and end-pieces having their ends inter-leaved with the ends of said legs, the inner laminations of said end pieces being of greater width than the outer laminations.

5. In a transformer, a laminated closed magnetic core comprising parallel legs and end-pieces joining the ends of said legs, the laminations composing both said end-pieces and said legs being of different widths.

6. In a transformer, a laminated closed magnetic core comprising parallel legs and end-pieces joining the ends of said legs, the inner laminations of both said end-pieces and said legs being of greater width than the outer laminations.

7. In a transformer, a laminated closed magnetic core comprising parallel legs and end-pieces having their ends inter-leaved with the ends of said legs, the inner laminations of both said end-pieces and said legs being of greater width than the outer laminations.

852,713. CAISSON-DREDGER. RAYMOND A. GARDNER, Los Angeles, Cal. Filed Oct. 1, 1906. Serial No. 337,032.



Claim.—1. A caisson having a flexible apron at its end, and means for suspending said apron within said caisson.

2. Runners, a base on said runners, and a caisson carried by said base.

3. Runners, a base on said runners, a caisson carried by said base, and means for lowering and raising said caisson.

4. Runners, a base on said runners, a caisson carried by said base, and geared means for lowering and raising said caisson.

5. Runners, a base on said runners, a caisson on said base, geared means for operating said caisson, and means for operating said geared means.

6. Runners, a base on said runners, a caisson carried by said base, means in operative relation to said caisson to cause the same to lower and rise, and means for leveling said base.

7. Runners, a base on said runners, a caisson on said base, means in operative relation to said caisson to cause the same to lower and rise, and means for leveling said base independently of said runners.

8. Runners, a base on said runners, a caisson on said base, means in operative relation to said caisson to cause the same to lower and rise, and fluid pressure means for leveling said base.

9. Runners, a base on said runners, a caisson carried by said base, means in operative relation to said caisson to cause the same to lower and rise, and means for leveling each end of said base independently of each other.

10. The combination with a base and runners, of means interposed between said runners and base for leveling said base with respect to uneven earthly formations, a frame carried by said base, a caisson in said frame having racks, supports carried by said frame and bearing against said racks to aline said caisson, means engaging said racks for raising and lowering said caisson, a suction pipe extending through said caisson, and means for preventing the escape of the compressed air from said suction pipe.

11. The combination with a pair of runners, of a base carried by said runners, interposed means for leveling said base with respect to said runners, said means having swiveled connections with said runners, a caisson on said base, means for raising and lowering said caisson, a suction pipe extending through said caisson, and means for preventing the escape of air from said suction pipe.

12. The combination with a pair of runners, of a base carried by said runners, interposed means for leveling said base with respect to said runners, said means having swiveled connections with said runners, a caisson on said base, means for raising and lowering said caisson, a suction pipe extending through said caisson, means for preventing the escape of air from said suction pipe, said means comprising a valve, and weighted means for holding said valve against said suction pipe extremity.

13. The combination with a pair of runners, of a base carried by said runners, interposed means for leveling said base with respect to said runners, a caisson on said base, means for raising and lowering said caisson, a suction pipe extending through said caisson, means for preventing the escape of air from said suction pipe, said means comprising a flexible valve adapted to fit the opening at the extremity, of the pipe, weighted means on said valve arranged to hold said valve flush in said opening, and means for preventing the accidental opening of said valve.

14. The combination with a pair of runners, of a base carried by said runners, interposed means for leveling said base with respect to said runners, a caisson on said base, means for raising and lowering said caisson, a suction pipe extending through said caisson, means for preventing the escape of air from said suction pipe, said means comprising a flexible valve adapted to fit the opening at the extremity, of the pipe weighted means on said valve arranged to hold said valve flush in said opening, and a pawl carried by said weighted means arranged to hold said valve in its normal position against the extreme opening of the suction pipe.

15. The combination with a pair of runners, of a base, pivotal means interposed between said base and runners for supporting said base, a caisson carried by said base, said caisson comprising an inclosure, a water compartment within said inclosure, inlets and outlets for said compartments, an air chamber between said water compartments, means for supplying air to said air chambers, a folding platform in the bottom of said caisson, and means for raising and lowering the caisson.

16. The combination with a pair of runners and a base, of means for pivotally supporting said base on said runners, fluid pressure means for compensating for unevennesses, a frame on said base, a caisson within said frame, said caisson being provided with racks, means for guiding said caisson in said frame, means for raising and lowering said caisson, means for controlling said means, means for supplying air to said caisson, and a source of supply for said means.

17. The combination with a pair of runners and a base,

of fluid pressure means interposed between said runners and base for leveling said base with respect to said runners and forming a support for said base, a caisson carried by said base, means for supplying air to said caisson, means for raising and lowering said caisson, and means for controlling said means for raising and lowering said caisson.

18. The combination with a pair of runners and a base, of fluid pressure means interposed between said runners and base for leveling said base with respect to said runners and forming a support for said base, a caisson carried by said base, means for supplying air to said caisson, means for raising and lowering said caisson, and clutch mechanism for controlling said raising and lowering means.

19. The combination with a pair of runners and a base, of fluid pressure means interposed between said runners and base for leveling said base with respect to said runners and forming a support for said base, a caisson carried by said base, means for supplying air to said caisson, means for raising and lowering said caisson, flexible means extending through said caisson and arranged to carry up by suction gravel and other fragments, and means for controlling the supply of air in said flexible means.

20. The combination with a base having mounted thereon an air compressor, an air tank, connections between said air tank and compressor, an electric generator, means for driving said generator, a caisson, connections between said air compressor and said caisson, of a pair of runners, means for pivotally mounting said base on said runners, and fluid pressure means for leveling said base independently of said runners.

21. The combination with a base having mounted thereon an air compressor, an air tank, connections between said air tank and compressor, an electric generator, means for driving said generator, a caisson, connections between said air compressor and said caisson, of a pair of runners, means for pivotally mounting said base on said runners, fluid pressure means for leveling said base independently of said runners, and take-up means for propelling said base and runners.

22. A caisson having a flexible apron at its end, and a ring for suspending said apron within said caisson.

23. A caisson having a flexible apron at its end, a ring for permanently securing it to one end of said caisson, and means for suspending the free end.

24. Runners, a base on said runners, a caisson carried by said base, means for causing said caisson to lower and rise, and means for leveling said base independently of said runners.

25. The combination with a plurality of runners, of a base carried by said runners, interposed means for raising and lowering said base with respect to said runners and independently thereof, a caisson on said base, and means for raising and lowering said caisson.

26. The combination of a pair of runners and a base, flexible connections between said base and runners, and means for raising and lowering said base independently of said connections.

27. A caisson having an extension at the bottom thereof, said extension being secured within said caisson and adapted to be swung beyond the extremity of the same and means for suspending said extension within the caisson.

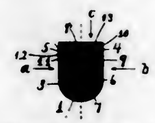
28. The combination with a base and runners, of means interposed between said base and runners for leveling said base, a frame carried by said base, a caisson in said frame, means for raising and lowering said caisson, a suction pipe extending through said caisson, and means for preventing the escape of air from said suction pipe.

852,714. ROD-PACKING. OLIN J. GARLOCK, Palmyra, N. Y. Filed Dec. 24, 1906. Serial No. 349,226.

Claim.—1. A packing for piston rods, consisting of rings formed from a cable having integral strands of different degrees of hardness, two hard strands to meet the piston rod, and two softer strands coacting with the hard strands, and an inclosing wrapper for the strands.

2. A packing for piston rods, consisting of rings formed of a cable made up of continuous strands, a metal strand and a hard fiber strand to meet the piston rod, a soft strand coacting with the hard fiber strand to control the metal strand, and an inclosing case for the strands.

3. A packing for piston rods, consisting of rings formed from a cable comprising a lead strand and a hard cotton strand to meet the rod, a compound strand of cotton and india-rubber in contact with said hard cotton strand to control the lead strand, and means for confining the strands.



4. Rod packing consisting of rings formed from a cable having a main cylindrical strand of firm fiber, and a yielding strand with concave face to meet said cylindrical strand and having an overhanging inclined face forming, with the opposing surface of the cylindrical strand, a V-shaped channel, and a prismatic strand of metal occupying said channel, and means for inclosing the whole.

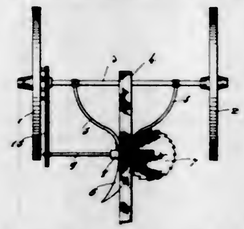
5. A ring for packing piston rods, having a main hollow strand of firm fiber circular in cross section, an indiarubber filling for said hollow strand, and a prismatic strand of soft material having a concave face in contact with the main strand, a plain face in a plane tangent with said main strand, and an inclined face overhanging the main strand, and a metallic strand between said overhanging face and the main strand, and means for inclosing the strands.

6. Rod packing in the form of rings made from a cable consisting of strands and an inclosing wrapper, the cable being rectangular in cross section with semicircular end, the main strand being circular in cross section with diameter common with the width of the cable, a strand having two faces in planes at right angles with each other one being tangent with the main strand, and a strand with face in a plane tangent with the opposite side of the main strand.

7. A packing for piston rods consisting of rings formed from a cable having integral strands of different hardness, two hard strands, one of which is circular in cross section, forming the entire bearing face to meet the piston rod, and two softer strands coacting with the hard strands and out of contact with the piston rod.

8. A packing for piston rods consisting of rings formed from a cable having integral strands of different hardness, two hard strands, one of which is a metal, and the other circular in cross section, forming the entire bearing face to meet the piston rod, and two softer strands coacting with the hard strands and out of contact with the piston rod, one of said softer strands being coaxially confined within one of the harder strands.

852,715. COTTON-TOPPER. THOMAS K. GRIFFITH, Nocona, Tex. Filed Feb. 25, 1907. Serial No. 359,124.



Claim.—1. A cotton topper comprising a wheeled truck provided with a tongue, a yoke mounted on said tongue, a blade attached to said yoke and said tongue, a rotary knife mounted on said yoke and co-operating with said blade, a bevel gear wheel rigid with said rotary knife, a shaft journaled in said yoke and carrying a bevel gear wheel for driving said first-named gear-wheel, and means for transmitting the power of the truck wheels to said shaft.

2. A cotton topper comprising a wheeled truck provided with a tongue, a yoke attached to said tongue and carrying a vertical spindle, a rotary knife mounted on said spindle, a blade attached to said yoke and co-operating with said knife, a bevel gear wheel mounted on said spindle and rigid with said knife, a shaft journaled in said yoke and carrying a bevel gear wheel for driving said first-named gear-wheel, and means for transmitting the power of the truck wheels to said shaft.

3. A cotton topper comprising a wheeled truck provided with a tongue, a vertically adjustable yoke attached to said tongue and having an arm provided with a spindle, a rotary knife having a bevel gear wheel rigid therewith mounted on said spindle, a blade attached to said yoke and co-operating with said knife, a shaft journaled in said yoke and carrying a bevel gear wheel for driving said knife, and means for transmitting the power of the truck wheels to said shaft.

852,716. TIRE-REPAIRING PLUG. MERTON W. HALL, Gloversville, N. Y. Filed Nov. 25, 1905. Serial No. 289,095.



Claim.—1. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, and metallic plates embedded in said head upon opposite sides of the axis of said stem.

2. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, and substantially crescent-shaped reinforcing plates embedded in said head upon opposite sides of the axis of said stem.

3. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, and perforated substantially crescent-shaped reinforcing plates embedded in said head upon opposite sides of the axis of said stem.

4. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, and flanged substantially crescent-shaped reinforcing plates embedded in said head upon opposite sides of the axis of said stem.

5. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, and reinforcing plates embedded in said head upon opposite sides of the axis of said stem and provided with plier-receiving apertures.

6. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, the said head provided with a substantially central transverse groove in its outer face.

7. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, the said head provided with a substantially central transverse V-shaped groove in its outer face.

8. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, the said head provided with a transverse groove in its outer face, and reinforcing plates embedded in said head upon opposite sides of said groove and the axis of said stem and substantially parallel with said groove.

9. A repair plug for pneumatic tires, comprising a stem and a head of elastic material, the said head provided with a diametrically arranged groove in its outer face, and reinforcing plates embedded in said head upon opposite sides of said groove and in substantial parallelism with said groove, and plier-receiving apertures in said plates.

10. A repair plug for pneumatic tires, comprising a head and a stem, reinforcing plates embedded in said head upon opposite sides of the axis of said stem, and means on said stem for indicating the position of said head and its reinforcing plates when placed in a tire.

11. A repair plug for pneumatic tires, comprising a head and a stem, and reinforcing plates embedded in said head upon opposite sides of the axis of said stem, the said stem provided with a notch in its upper end to indicate the position of said head and its reinforcing plates when placed in the tire.

12. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, the said head provided with a diametrically arranged groove in its outer face, and said stem provided with a notch to indicate the position of the groove in said head for positioning said head when placed in a tire.

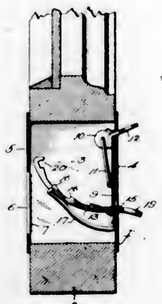
13. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, the said head provided with a diametrically arranged groove in its outer face, reinforcing plates embedded in said head upon opposite sides of said groove and in substantial parallelism with said groove, and a notch in said stem in alinement with said groove and plates, to indicate the position of said groove and plates when the head is inserted in a tire.

14. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, combined with an elastic washer having a reinforcing ring embedded therein, and a central perforation adapted to engage the stem of the plug upon the outside of the tire.

15. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, combined with an elastic washer having a perforated reinforcing ring embedded therein, said washer adapted to engage the stem of the plug upon the outside of the tire.

16. A repair plug for pneumatic tires, comprising a head and a stem of elastic material, the said stem having a tapering enlargement, combined with an elastic washer having a tapering opening adapted to engage the tapering enlargement of the stem upon the outside of the tire.

852,717. SASH-VENTILATOR. HARVEY D. HARRIS, Denver, Colo. Filed Nov. 16, 1906. Serial No. 343,710.



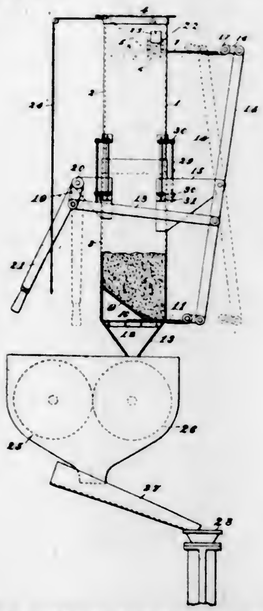
Claim.—1. In a window sash ventilator, the combination with the window sash provided with an aperture, of a screen over the outer side of said aperture, a plate secured over the inside of said aperture, a door pivotally hinged to said plate, a spring-controlled lock-bar provided with ratchet-teeth arranged to resiliently engage the edge of said door, and means for opening said door and for releasing and closing said door when released.

2. In a window sash ventilator, the combination of the window sash containing an aperture, a screen plate provided with a screen secured to the outside of said sash over said aperture, a plate secured to the inside of said sash over said aperture having an air inlet and outlet opening into said aperture and screen, a door pivotally hinged to said frame at the upper side of said aperture and arranged to swing in said aperture toward said screen, having a curved upper edge adapted to bear against said plate and close the joint between said door and frame, a spring arranged to normally hold said door closed over the aperture in said plate, a curved ratchet toothed bar pivotally secured to said door plate below its aperture, curved concentrically to said door's pivotal center and

adapted to engage the lower edge of said door, a spring arranged to hold said ratchet toothed bar normally in engagement with the edge of said door and finger grasping plates on said door and ratchet bar projecting through said door plate on the inside of said sash.

3. In a window sash ventilator, the combination with a sash having a ventilating aperture open to the atmosphere on one side, and to a room on the other, of the screen plate secured on the outside of said sash, the door plate provided with an air inlet and outlet aperture secured to the inside of said sash, the spring-controlled door arranged to be normally held closed, a ratchet toothed rock bar spring-controlled to normally engage said door and lock and hold said door at various predetermined points of its opening movement, and finger grasping plates extending from said lock bar and door through said door plate on the inside of said sash.

852,718. MEASURING APPARATUS. GEORGE P. HEMSTREET, Hastings-upon-Hudson, New York, assignor to The International Pavement Company, Hartford, Conn., a Corporation of Connecticut. Filed Sept. 19, 1904. Serial No. 224,985.



Claim.—1. A measuring apparatus comprising a measuring vessel formed of a plurality of alined sections, means relatively to adjust said sections to vary the capacity of the vessel, inlet and outlet openings near the upper and lower ends, respectively, of said vessel and both disposed adjacent the same side thereof, means to direct the material toward said inlet and outlet openings, respectively, sliding gates controlling the entrance and discharge of material and entering the vessel at that side adjacent which the material is admitted and discharged, whereby sliding gates of limited area may be employed, and lever mechanism for operating said sliding gates.

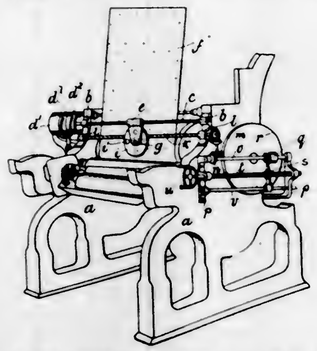
2. A measuring apparatus comprising a measuring vessel formed of a plurality of alined sections, means relatively to adjust said sections to vary the capacity of the vessel, inlet and outlet openings near the upper and lower ends respectively, of said vessel and both disposed adjacent the same side thereof, means to direct the material toward said inlet and outlet openings, respectively, sliding gates controlling the entrance and discharge of material and entering the vessel at that side adjacent which the material is admitted and discharged, whereby sliding gates of limited area may be employed, and lever mechanism for operating said sliding gates, a link connection between the lever and said sliding gates, whereby adjustment of the capacity of the vessel is permitted.

3. A measuring apparatus comprising a measuring vessel having inlet and outlet openings near the upper and lower ends, respectively, of said vessel and both disposed adjacent the same side thereof, means to direct the material toward said inlet and outlet openings, respectively, sliding gates maintained in substantially parallel planes and controlling the entrance and discharge of material and entering the vessel at that side adjacent which the material is admitted and discharged, whereby sliding gates of limited area may be employed, and lever mechanism for operating said sliding gates.

4. A measuring apparatus comprising a measuring vessel formed of a plurality of alined sections, means relatively to adjust said sections to vary the capacity of the vessel, there being inlet and outlet openings near the upper and lower ends, respectively, of said vessel and both disposed adjacent the same side thereof, means to direct the material toward said inlet and outlet openings, respectively, sliding gates controlling the entrance and discharge of material and entering the vessel at the side adjacent which the material is admitted and discharged, whereby sliding gates of limited area may be employed, and lever mechanism for operating said sliding gates, there being a hole in said vessel above the inlet opening to indicate the height of material in said vessel, by permitting the escape of surplus material.

5. A measuring apparatus comprising a measuring vessel formed of a plurality of alined sections, means relatively to adjust said sections to vary the capacity of the vessel, there being inlet and outlet openings near the upper and lower ends, respectively, of said vessel and both disposed adjacent the same side thereof, means to direct the material toward said inlet and outlet openings respectively, sliding gates controlling the entrance and discharge of material and entering the vessel at the side adjacent which the material is admitted and discharged, whereby sliding gates of limited area may be employed, and lever mechanism for operating said sliding gates, there being a hole in said vessel above the inlet opening to indicate the height of material in said vessel, by permitting the escape of surplus material, and manually controlled means for closing said opening when desired.

852,719. MACHINE FOR PRINTING CLOTH, WALL-PAPER, AND OTHER MATERIALS. WILLIAM T. HESKETH, Hayfield, England. Filed Dec. 1, 1906. Serial No. 345,917.

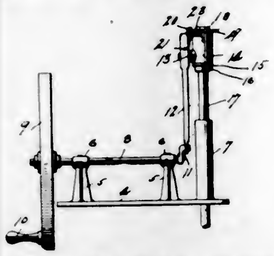


Claim.—1. The combination with a printing machine adapted to print on a traveling web, of a disk rotatably supported from said machine in proximity to the path of said web and having a number of observation slits, substantially as described.

2. In combination, a traveling carriage and means for traversing the same to and fro across the face of the material being printed, a rotating disk mounted on the traveling carriage and having any suitable number of observation apertures, a stationary masking disk with a single aperture mounted on the carriage in front of the rotating disk and means for varying the speed of the rotating disk, all substantially as and for the purposes herein set forth.

3. In combination, the traveling carriage *e*, the traverse screw *c* and means for rotating the same in either direction, the rotating disk *h* having any suitable number of observation apertures *h'* and the normally stationary masking disk *i* with a single aperture *i'* said disk *i* being capable of rotary movement and means for rotating the disk *h* and varying its speed, all substantially as and for the purpose herein described.

852,720. WASHING-MACHINE. JOHN D. HISS, Omaha, Nebr. Filed June 30, 1904. Serial No. 214,720.



Claim.—1. In a washing machine, the combination with a tub having corrugations on its inner walls and a cover hinged thereto, a plate secured to said cover and formed with a vertical guiding sleeve and horizontal bearings, a horizontal driving shaft mounted in said bearings having a driving wheel at one end and a crank at the other end, a lever having its lower end pivoted to said crank and carrying a spring pressed pawl at its upper end, a collar to which said lever is pivoted formed with a guide for said pawl, a ratchet wheel, a pounder rod to the upper end of which said ratchet wheel is connected, said pounder rod fitting in the vertical guiding sleeve and the pounder secured to the lower end of said rod.

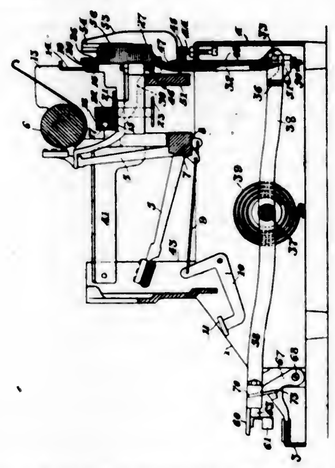
2. A washing machine comprising a tub having corrugated inner walls, a cover hinged to the tub and a plate mounted on the cover, said plate formed with horizontal bearings and a vertical sleeve, a shaft mounted in the bearings and provided with a crank on the inner end thereof, a pounder rod secured in the sleeve and provided with a ratchet wheel on its upper end, a collar loosely mounted on the rod, a lever secured to the crank and pivotally connected to the collar, and a spring pressed pawl on the upper end of the lever adapted to engage the ratchet wheel to rotate the same.

852,721. TYPE-WRITING MACHINE. CHARLES W. HOWELL, Newark, N. J., assignor to Sun Typewriter Company, Newark, N. J., a Corporation of New Jersey. Filed Jan. 28, 1905. Serial No. 243,077.

Claim.—1. In a front-strike writing-machine, the combination with a paper carriage, of a vertically shifting track-frame upon which said carriage runs, links pivoted to said frame at different heights, and also to the frame-work of the machine, and guiding means, including a set of balls, to prevent lateral movement of the shifting frame.

2. In a front-strike writing-machine, the combination with a platen carriage, of a vertically shifting frame supporting said platen carriage, horizontal links pivoted to the said frame at different heights, and means, including a set of balls, to prevent lateral play of said frame.

3. In a front-strike writing-machine, the combination with a traveling paper carriage, of a vertically shifting frame provided with front and rear guide-rails or tracks for the carriage, a vibrating horizontal frame carrying the shifting frame at its lower end, and a pair of adjustable supporting rods extending between the two frames at the sides thereof.



4. In a front-strike writing-machine, the combination with a traveling paper carriage, of a vertically shifting frame provided with front and rear guide rails for the carriage, guide links pivoted at their front ends to the framing of the machine forward of the front guide rail and at their rear ends to the shifting frame behind the front guide rail, said links being offset to clear the guide rail, and means co-operating with said links to guide said shifting frame.

5. In a front-strike writing-machine, the combination with a paper carriage, of a vertically shifting carriage-track frame, said frame being supported at its lower end by a horizontally disposed vibrating frame to which it is pivoted, and at its upper end by pivoted links at its sides, the horizontally disposed frame and links being pivoted at their rear ends to the vertically shifting frame, and at their front ends to the frame of the machine.

6. In a front-strike writing-machine, the combination with a paper carriage, of a vertically shifting carriage-track frame, vibrating supports for the frame, consisting of links pivoted at their rear ends to the upper part of the frame, and a horizontal frame pivoted at its rear end to the lower part of the shifting frame, said horizontal frame being pivoted to the base of the machine, and being provided with a forward extension having a shift-key.

7. In a front-strike writing machine, the combination with a base, of a horizontal frame lying across said base and journaled thereon, so that the rear part of said frame may vibrate up and down, a key connected to said frame, a carriage-track frame movable up and down and having a depending arm pivoted to the rear portion of said vibrating frame, a platen carriage mounted upon said carriage-track frame, and rearwardly striking type-bars.

8. In a front-strike writing-machine, the combination with a base, of a horizontal frame lying across said base and journaled thereon, so that the rear part of said frame may vibrate up and down, a shift key, a carriage-track frame movable up and down and having a depending arm pivoted to the rear portion of said vibrating frame, a partial counterbalance spring for said carriage-track frame, a carriage mounted upon said carriage-track frame, and type-bars mounted to strike rearwardly.

9. In a typewriting machine, the combination with a base, of a vibrating member journaled upon said base and having a key-bearing arm extending forwardly from its journal, and also having a part extending rearwardly from

said journal, a carriage-track frame having a depending arm pivoted to said rearwardly extending part, co-operative means for guiding said carriage-track frame in its upward and downward movements, a platen carriage mounted upon said carriage-track frame, and rearwardly striking type-bars.

10. In a type-writing machine, the combination with a key-controlled rocking member, of a carriage-track frame having a depending arm engaging said rocking member and guided thereby, a pair of guide-links connecting the ends of said carriage-track frame to the framework of the machine, a platen carriage upon said carriage-track frame, and rearwardly striking type-bars.

11. In a type-writing machine, the combination with a base, of a key-operated member pivoted upon said base so as to vibrate up and down, a carriage-track frame having a depending arm pivoted to the rear end of said pivoted member, a pair of guide links connecting said carriage-track frame to the framework of the machine, means, including bearing balls and tracks therefor, for guiding the carriage-track frame in its up and down movements so as to prevent lateral movement of said carriage-track frame, and rearwardly striking type-bars.

12. In a front-strike writing-machine, the combination with a base, of a member journaled in said base to vibrate up and down, a key mounted upon said member, a carriage-track frame having a depending arm pivoted to said member, a pair of links extending forwardly from the sides of said carriage-track frame and pivoting at their forward ends to the framework of the machine, a vertical fixed frame, a platen carriage upon said carriage-track frame, and rearwardly striking type-bars.

13. In a front-strike writing-machine, the combination with a base, of a member pivoted thereon to vibrate up and down, a key for operating said member, a carriage-track frame having an arm pivoted to said pivoted member, fixed vertical guides extending upwardly from said base, balls in said guides, bearings upon said carriage-track frame to engage said balls, whereby the carriage-track frame is prevented from moving laterally, and links extending forwardly and pivoted at their front ends upon the framework.

14. In a front-strike writing-machine, the combination with a base, of a member pivoted upon the base, a shift-key, a carriage-track frame pivoted to said member, upwardly extending vetrical guides fixed upon said base, balls in said guides, bearings upon said carriage-tra..k frame to engage said balls, whereby the carriage-track frame is prevented from moving laterally, links extending forwardly to the front of the machine and pivoted at their front ends upon the framework, a driving spring mounted upon said carriage-track frame and connected to the carriage, an escapement wheel mounted upon the framework of the machine, and means connecting said escapement wheel to the carriage at all shift positions of the latter.

15. In a front-strike writing machine, the combination with a base, of a frame lying horizontally within said base and extending across the same and journaled thereon, a carriage-track frame having an arm pendent from the middle portion thereof and pivoted to said journaled frame, supports extending up from the sides of said journaled frame to the sides of said carriage-track frame, means for guiding the carriage-track frame up and down, a platen carriage upon said carriage-track frame, and rearwardly striking type-bars.

16. In a front-strike writing machine, the combination with a base, of a key-operated frame lying horizontally within said base and extending across the same and journaled thereon, a carriage-track frame having a pendent arm pivoted to the middle portion of said key-operated frame, vertically adjustable links or supports extending up from the sides of said key-operated frame to the sides of said carriage-track frame, a pair of guide-links extending forwardly from said carriage-track frame and pivoted to the framework, fixed vertical guides for said carriage-track frame, a platen carriage upon said carriage-track frame, and rearwardly striking type-bars.

17. In a front-strike writing machine, the combination with a platen-carriage and series of rearwardly striking type-bars, of a vertically shiftable carriage-track frame whereon said carriage runs, a pair of links pivoted to the sides of said carriage-track frame and extending forwardly and connected at their forward ends to the framework, and means co-operating with said links to guide said carriage-track frame in its up and down movements.

18. In a front-strike writing-machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a vertically shiftable carriage-track frame whereon said carriage runs, a pair of links pivoted to the sides of said carriage-track frame and extending forwardly and connected at their forward ends to part of the framework, and means co-operating with said links to guide said carriage-track frame in the up and down movements; said guiding means including an arm depending from said frame, and a guiding member pivoted to the lower end of said arm and also pivoted to the framework.

19. In a front-strike writing-machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a carriage-track frame whereon said carriage runs, said frame being movable up and down, a pair of links pivoted to the sides of said carriage-track frame and extending forwardly and connected at their forward ends to part of the framework, and means co-operating with said links to guide said carriage-track frame in its up and down movements; said guiding means including an arm depending from said carriage-track frame, a device guiding the lower end of said arm, and vertical guiding means which prevent lateral movement of said carriage-track frame; said vertical guiding means including vertical grooves, balls in said grooves, and bearings for said balls.

20. In a front-strike writing-machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a track frame whereon said carriage runs, said frame being vertically movable, a pair of links pivoted to the sides of said carriage-track frame and connected at their ends to a part of the frame-work, and means co-operating with said links to guide said carriage-track frame in its up and down movements; said guiding means including an arm depending from said frame, a device guiding the lower end of said arm and also including a member having a pair of vertical ball grooves and a member having bearing surfaces opposed to said grooves, and balls in said grooves.

21. In a front-strike writing-machine, the combination with a carriage and a series of rearwardly striking type-bars, of a vertically movable carriage-track frame whereon said carriage runs, a pair of horizontal links pivoted to the sides of said carriage-track frame and extending to a part of the framework, and means co-operating with said links to guide said carriage-track frame in its up and down movements; said guiding means including an arm depending from said frame, a device guiding the lower end of said arm; said vertical guiding means also including a member having therein a pair of vertical ball grooves and a member having bearing surfaces opposed to said ball grooves; said bearing surfaces being plane, so that said balls may serve only to take the transverse thrust of the frame due to the movement of the carriage there-along.

22. In a typewriting machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a carriage-track frame movable up and down, guiding means connected to the upper portion of said carriage-track frame for preventing forward or backward movement thereof; means also connected to the lower portion of said carriage-track frame for preventing the same from swinging or tilting forwardly or backwardly, independent means for preventing the said frame from moving transversely, and means also engaging the sides of said carriage-track frame for keeping the same level while shifting up and down.

23. In a type-writing machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a carriage-track frame movable up and down, guiding means for preventing forward and backward movement of said carriage-track frame, means for preventing said frame from moving transversely, and relatively adjustable means also engaging the sides of carriage-track frame for keeping the same level at the shifting operation.

24. In a typewriting machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a carriage-track frame movable up and down; pivoted devices connected to the sides of said frame and also to the lower portion thereof for guiding the same up and down; and a spring partially balancing said frame and carriage.

25. In a front-strike writing-machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a carriage-track frame movable up and down, and guiding links connected to the upper and lower portions of said carriage-track frame and pivoted to the framework.

26. In a front-strike writing-machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a carriage-track frame movable up and down, and guiding links connected to the upper and lower portions of said carriage-track frame and pivoted to the framework; said guiding links extending forwardly from said track frame, and the latter being provided with means to prevent transverse movement thereof, including a member having vertical ball track, a ball running upon said track, and a member having plane vertical bearing surface to bear upon said ball.

27. In a front-strike writing-machine, the combination with a platen carriage and a series of rearwardly striking type-bars, of a carriage-track frame movable up and down, and means, including a link pivoted to said frame and also to the framework of the machine, for guiding said frame in its up and down movements, said guiding means including bearing balls and tracks for preventing transverse movement of said frame.

28. In a front-strike writing-machine, the combination with a platen-carriage, of a track frame for said carriage, said frame being shiftable up and down, a set of forwardly extending links pivoted to said shifting frame at different heights and pivoted at their forward ends to the framework of the machine, and independent means for preventing sidewise movement of the shifting frame.

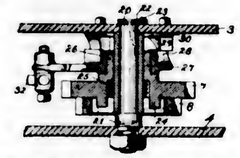
29. In a front-strike writing-machine, the combination with a platen carriage, of a frame shiftable up and down and supporting said carriage, a pair of horizontal links pivoted to said frame and also to the framework of the machine, a third link also pivoted to said shiftable frame at a different height from said pair of links, said third link being pivoted to the framework, and means, including a set of balls and a track therefor, to prevent lateral play of said frame, while permitting the latter to be guided by said links.

30. In a front-strike writing-machine, the combination with a platen carriage, of a carriage-track frame shiftable up and down, means for guiding said frame in its up and down movements, so that it cannot move forwardly or backwardly, said guiding means including a key-controlled rocking frame movable up and down, and a pair of supports extending from the sides of said rocking frame to the sides of said carriage-track frame.

31. In a front-strike writing-machine, the combination with a platen carriage, of a carriage-track frame shiftable up and down, means for guiding said frame, said guiding means including a rocking frame movable up and down, and a pair of independently adjustable supports extending from the sides of said rocking frame to the sides of said carriage-track frame.

32. In a type-writing machine having a base, the combination with a platen carriage and a series of rearwardly striking type-bars, of a carriage-track frame, links pivoted to the sides of said frame and extending forwardly to the front of the machine and pivoted to the framework at their forward ends; means, including a set of bearing balls, for guiding said track frame in its up and down movements, so as to prevent lateral movement thereof, a frame lying in the base of the machine and pivoted thereto so as to rock up and down, said frame being pivoted at its rear end to said carriage-track frame, a key for operating said pivoted frame, and independently adjustable supports between the sides of said pivoted frame and sides of said carriage-track frame.

852,722. DRIVE AND STOP MECHANISM FOR BRAIDING-MACHINES. HENRY JANSSEN, Wyomissing, Pa.; assignor to Textile Machine Works, Wyomissing, Pa., a Corporation of Pennsylvania. Filed Aug. 4, 1906. Serial No. 329,164.

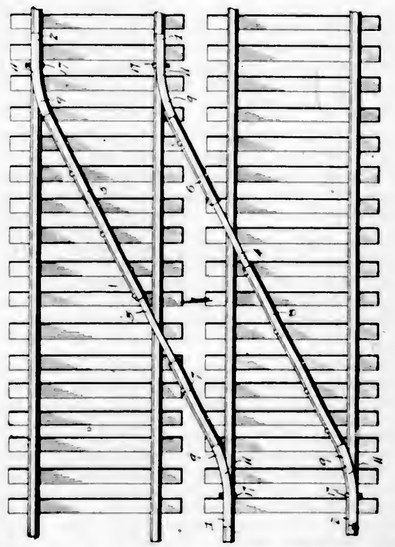


Claim.—1. In a braiding machine a drive and stop mechanism comprising a drive gear, a spring-released clutch gear, a rotary cam mounted upon the gear axis, for engaging said gears, a clutch operating lever connected to said rotary cam, and a stop lever provided with locking means arranged to normally hold said clutch lever in its gear-engaging position, substantially as set forth.

2. In a braiding machine a drive and stop mechanism comprising a drive gear, a spring-released clutch gear, a rotary cam for engaging said gears, a bell-crank clutch-operating lever having one arm linked to said rotary cam, and a stop lever having a locking arm movable therewith and adapted to normally engage the other arm of said bell-crank lever to hold it in gear-engaging position, substantially as set forth.

3. In a braiding machine the combination with the top and bottom plates and the train of carrier drive gears, of a draw-out bolt removably mounted between said plates, an intermediate clutch gear, a spring-released engaging clutch gear and a rotary cam all mounted upon said bolt, and a fixed cam and automatic stop mechanism coöperating with said rotary cam, substantially as set forth.

852,723. RAILROAD-CROSSOVER. ALBERT M. JONES, Hagerstown, Md. Filed Nov. 7, 1906. Serial No. 342,325.



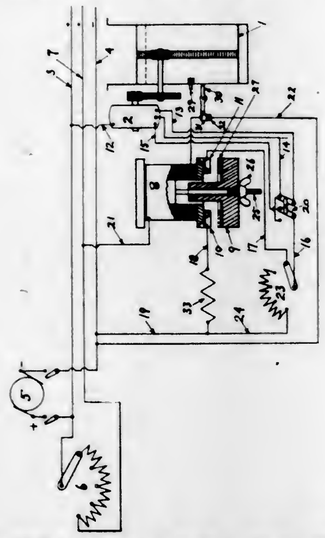
Claim.—1. A railroad crossover comprising end and intermediate sections adapted to fit over and straddle the main rails and having shoulders movable into and out of engagement with the main rails by a horizontal rocking

movement of said sections, and clamping means for securing said sections to the rails.

2. A crossover comprising rail sections adapted to be spiked to the ties, end and intermediate sections adapted to be rocked into holding position and provided with rail-engaging lugs at opposite sides which are brought into holding position by such rocking movement, and means for clamping all of the sections in place upon the main rails.

3. A crossover comprising rail sections adapted to be spiked to the ties, end and intermediate sections cut away underneath to straddle the main rails and provided with holding lugs at opposite sides of the cut away portion adapted to be positioned against opposite sides of the rails by a horizontal rocking movement, and clamping means for said end and intermediate sections.

852,724. DEVICE FOR ELECTRICALLY OPERATING BULKHEAD-DOORS. DAVID R. KNAPP, Philadelphia, Pa. Filed Aug. 27, 1906. Serial No. 332,174.



Claim.—1. In a system of electric current control, in combination, a positive lead transmitting a constant voltage current; and a positive lead transmitting a variable voltage current; and a negative lead, common to said constant and variable voltage leads and completing their respective circuits; and a distribution circuit connected across said constant voltage line, and provided with a magnet the armature of which closes same; and a control circuit connected across said variable voltage line and electrically connected to said magnet for energizing same; all substantially as and for the purposes shown and described.

2. In a system of electric current control, in combination, a positive lead transmitting a constant voltage current; and a positive lead transmitting a variable voltage current; and a negative lead, common to said constant and variable voltage leads and completing their respective circuits; and a distribution circuit connected across said constant voltage line, and provided with a magnet the armature of which closes same; and a control circuit connected across said variable voltage line electrically connected to said magnet for energizing same; and an electric current motor the circuit of which is provided with a resistance coil, a rheostat and a pole-changer, for reversing the polarity of said field and operating said motor; all substantially as and for the purposes shown and described.

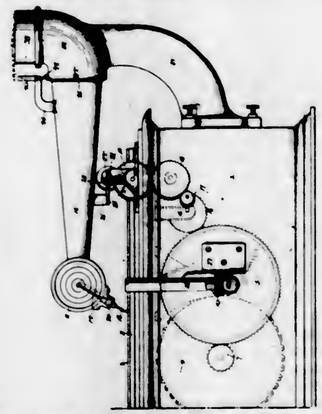
3. A door closing apparatus consisting of an electric current motor, provided with a resistance coil, a rheostat and a pole-changer inserted in the circuit of said motor; in combination with a magnet the armature of which is provided with contacts for closing the operating circuit of said motor, and energized by a variable voltage circuit; and a circuit-breaker operated by the movement of the door being closed; all substantially as and for the purposes shown and described.

4. A door-closing apparatus consisting of the leads of an electric current circuit for supplying the energy for its operation; an electrically driven motor provided with a train of speed-reducing gear-wheels terminating in a pinion engaging with a gear-rack attached to the door to be closed; and a resistance coil, a rheostat and a pole-changer inserted in the supply-circuit and in the motor-circuit for reversing the rotation of said motor; and leads for a constant voltage electric current circuit for transmitting current from said leads of the current-supply to said motor; and an electric magnet inserted in the operating circuit of said motor and provided with an armature and contact points for closing said motor circuit, and energized by a variable voltage circuit; and a variable voltage electric current circuit for transmitting current from the leads of said current-supply to said magnet for energizing same, and provided with a rheostat for obtaining the variation of its voltage; and a circuit-breaker inserted in said energizing circuit of said magnet and operated by the movement of the door being closed; all substantially as and for the purposes shown and described.

5. An electro-mechanical device consisting of a magnet provided with electric contact points, in combination with an armature supported in a movable position by a guide-rod attached to the core of said magnet and having its opposite end threaded and fitted with an adjustable nut for varying the width of the air-gap between said armature and the core of said magnet; and a contact ring attached to but electrically insulated from said armature for electric current circuit closing through its contact with said contact points; all substantially as and for the purposes shown and described.

6. An electro-mechanical device consisting of a magnet provided with electric contact points, in combination with a weighted armature supported in a movable position by a guide-rod attached to the core of said magnet; and a contact ring attached to but electrically insulated from said armature for circuit closing through its contact with said contact points; all substantially as and for the purposes shown and described.

852,725. TALKING-MACHINE. THOMAS KRAEMER and HORACE SHEBLE, Philadelphia, Pa., assignors to Hawthorne and Sheble Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Dec. 19, 1905. Serial No. 292,429.

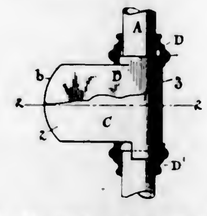


Claim.—1. The combination of the rotating record holder of a disk-record talking machine, a sound-box having a record-engaging stylus, a swinging sound-box-carrying arm and a device for moving the latter having, as elements, a toothed segment and a worm loosely engaging the same, so that the stylus can accommodate itself to any slight departure from a true spiral course presented by the groove of the record.

2. The combination of the rotating record holder of a disk-record talking machine, a sound-box having a record-engaging stylus, a swinging sound-box-carrying arm, and a support for said arm when the stylus is free from engagement with the record, said support consisting of a tubular stud mounted upon the motor box of the machine.

3. The combination of the rotating record holder of a disk-record talking machine, a sound-box having a record-engaging stylus, a sound-box-carrying arm, a support therefor having a projecting vertical pin, a socket pivotally mounted upon said pin and carrying a yoke, and a second yoke carried by the arm and pivotally mounted upon the yoke of the socket.

852,726. CORNER-LOCK FOR METALLIC BEDSTEADS. ALFRED J. KROENKE, Lakewood, Ohio, assignor to The F. Hohlfelder Company, Cleveland, Ohio. Filed Mar. 4, 1907. Serial No. 360,307.



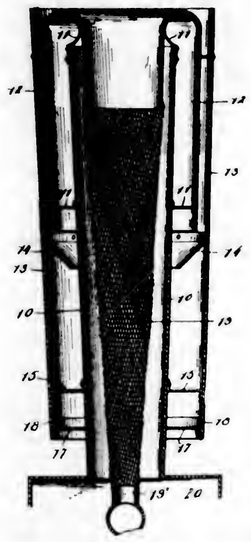
Claim.—1. A cast metal corner lock for brass and like bed-steads, having wings at right angles and a middle transversely rounded portion for the bed post uniting said wings, and a face plate covering said lock conforming to the entire surface and edges thereof and having upward and downward projections at its middle segmental in cross-section and projecting beyond the edges of the lock, whereby a finished facing for the outer side of said lock is provided.

2. A metallic bed-stead comprising a tubular corner post, a corner lock having a circular middle portion engaged about said post and flat wings, a face plate covering the entire outer surface of said lock and having upper and lower projections at its center, and caps sleeved over said corner post from above and below respectively, and overlapping said projections, thereby securing said plate in position.

852,727. SPARK-ARRESTER. HERBERT L. LATHAM, Wilmington township, Houston county, Minn. Filed June 20, 1906. Serial No. 322,582.

Claim.—1. The combination with the exhaust nozzle, the smoke stack, and outside shell having an open top, of the inverted screen cone secured at its lower end to the outside exhaust of the nozzle, the deflecting hood provided with an opening through its center connected with the upper end of the screen cone and curved over the top of the smoke stack and extending down between the latter and the outside shell to substantially the longitudinal center of the smoke stack and permitting of the escape of steam and gases out from the top of the said outside shell.

2. The combination, with the exhaust nozzle, the smoke stack, and the outside shell having an open top, of the inverted screen cone secured at its lower end to the outside of the exhaust nozzle, the cinder fender connected with the outer shell and arranged at substantially the longitudinal center of the smoke stack, the deflecting hood provided with an opening through its center connected with the upper end of the screen cone and curved over the top of the smoke stack and extending down between the latter and the outside shell to the outside of the escape of steam and gases out from the top of the said outside shell.



3. The combination, with the exhaust nozzle, the smoke stack, and outside shell having an open top, of the inverted screen cone secured at its lower end to the outside of the exhaust nozzle, the deflecting hood provided with an opening through its center connected with the upper end of the screen cone and curved over the top of the smoke stack and extending down between the latter and the outside shell to substantially the longitudinal center of the smoke stack, and a removable cinder-catching device arranged substantially at the bottom of the outside shell to receive and remove the extinguished cinders and permitting of the escape of steam and gases out from the top of the said outside shell.

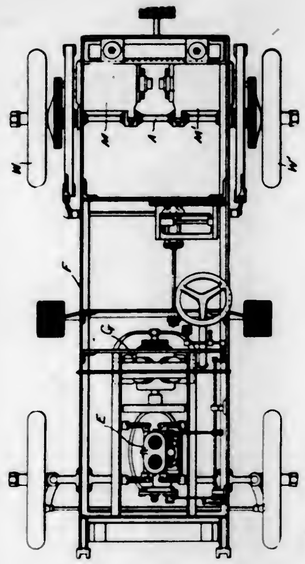
852,728. AUTOMOBILE CONTROL. HERMANN LEMP, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 11, 1905. Serial No. 282,238.

Claim.—1. In an electrically-driven vehicle, independently rotatable driving-wheels on opposite sides of the vehicle, series-wound electric motors mechanically connected to said wheels, a resistance, and a controlling switch adapted to connect the motors in short-circuit through said resistance, and with the motor fields in series and armatures in parallel.

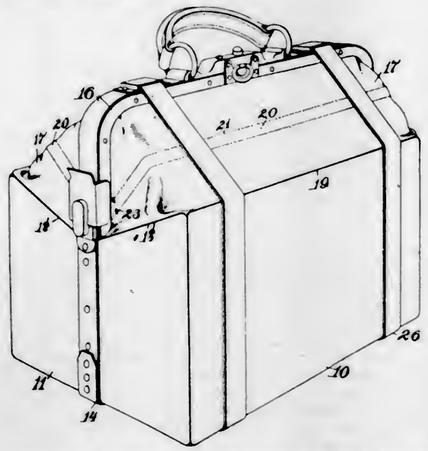
2. In an electrically-driven vehicle, independently rotatable driving-wheels on opposite sides of the vehicle, series-wound electric motors mechanically connected to said wheels, a resistance, and a controlling switch adapted to connect the motors to a source of current in series and in parallel for different speeds and to short-circuit the motors through said resistance for braking with the motor fields in series and armatures in parallel.

3. In an electrically-driven vehicle, independently rotatable driving-wheels on opposite sides of the vehicle, series-wound electric motors mechanically connected to said wheels, a source of current for said motors carried by the vehicle, a resistance, and a controlling switch adapted to connect the motors in series and in parallel to said source and to short-circuit the motors through said resistance with the motor fields in series and armatures in parallel.

852,728.



852,729. BAG. JACOB LIMBACHER, Newark, N. J. Filed July 17, 1906. Serial No. 326,556.



Claim.—1. An improved bag comprising side and end pieces, pivoted frame sections pivoted at the ends of the bag, a flexible top piece secured at its edges to the end and side pieces and to the pivoted sections, and means in the top portion to maintain it at the same distance from the pivots of the pivoted sections.

2. An improved bag comprising hinged sections, end pieces extending on either side from the pivot of the hinged pieces, side pieces, and a top piece on either side secured to the pivoted frame sections and secured on one edge to the side pieces and extending down over the ends, and being joined to the end pieces.

3. In an electrically-driven vehicle, independently rotametallic bracing piece, end pieces secured to the metallic brace and extending from below the pivot outwardly and upwardly on their top edges, side pieces, and a flexible top piece on either side secured on one edge to a pivoted frame section, and on the other end to the side piece and extending down over the ends of the bag and secured to the top edges of the end pieces.

4. An improved bag comprising a metallic brace, pivoted frame sections secured thereto on either side, end pieces secured to the braces, side pieces, and flexible top pieces extending over the top edges of the side and end pieces to the pivoted frame sections, and having clips extending from the pivoted sections to maintain portions of the top pieces intermediate of its sides at always the same distance from the pivot of the pivoted frame sections.

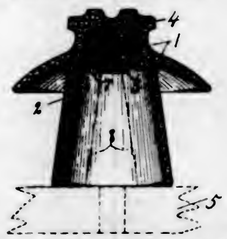
5. An improved bag comprising side and end pieces, hinged sections pivoted above the end pieces, and flexible top pieces extending from the upper edges of the side and end pieces to the pivoted frame sections, and clips arranged in the top portion to maintain portions of the top at the same distance from the pivot of the hinged frame portions when the bag is either open or shut.

6. An improved bag comprising end pieces and side pieces, pivoted frame sections pivoted above the end pieces, and flexible top pieces extending from the top edges of the sides and ends of the pivoted frame sections, and U-shaped clips secured in the top portions intermediate of their edges.

7. An improved bag comprising side pieces and end pieces, the end pieces having upwardly and outwardly inclined edges on the top, pivoted frame sections pivoted above the top edges of the end pieces, a flexible top piece on either side and extending down over the ends of the bag and secured to the top edges of the end pieces, a U-shaped clip arranged in each top piece intermediate of its edges, and a bottom portion comprising two half sections, each half section being adapted to be moved inward at its central portion.

8. An improved bag comprising a U-shaped metallic brace, hinged frame sections pivoted on the ends of the U-shaped brace, side pieces, end pieces having their top edges outwardly and upwardly inclined from the center of the bag, a flexible top portion, U-shaped clips on the top portion, and a bottom portion adapted to be collapsed inward when the bag is compressed.

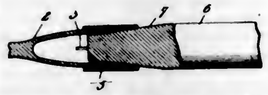
852,730. INSULATOR. FRED M. LOCKE, Victor, N. Y. Filed Nov. 16, 1903. Serial No. 181,361.



Claim.—A porcelain insulator comprising a short cylindrical center piece —3— having a threaded socket extending upwardly from the bottom, a bell-shape skirt fitted upon and secured to the top and sides of the center piece and having portions thereof flaring abruptly from and above the bottom of the center piece, said skirt extending downwardly some distance below the lower end of the center piece, in combination with a cross arm and pin, the latter entering said center piece, and said skirt extending from the center piece to the cross arm around the pin and of greater interior diameter than said pin between the center piece and cross arm to afford considerable air space thereby preventing burning out of the base of the pin.

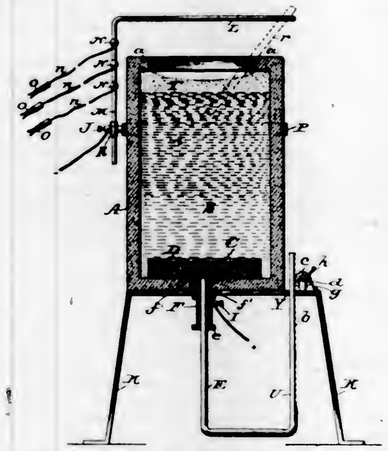
852,731. TOOL-HANDLE FASTENER. OSCAR W. LUNDBERG, Le Mars, Iowa. Filed Oct. 27, 1906. Serial No. 340,868.

Claim.—1. The combination of a split socket having external threads, and a clamping ring having internal threads and movable on the socket toward the receiving end of the socket to produce a clamping action, and beyond the receiving end to engage a handle and hold it in the socket.



2. The combination of a split socket having external threads and tapering from its receiving end, of a clamping ring having internal threads working on the threaded socket and movable beyond the receiving end of the socket to engage a handle in the socket.

852,732. ELECTRIC HEATER FOR METAL-WORKERS. JOSEPH O. LUTHY, Austin, Tex., assignor of one-fourth to Joseph Anton Luthy, one-fourth to William Charles Kreisle, and one-fourth to Arthur Matthew Edward Kreisle, Austin, Tex. Filed Feb. 1, 1906. Serial No. 299,013.



Claim.—1. An electrical heating bath having a superficial layer of pulverulent material.

2. An electrical heating bath having a superficial layer of graphite.

3. An electrical heating bath consisting of a solution of sal ammoniac and a floating superficial layer of graphite.

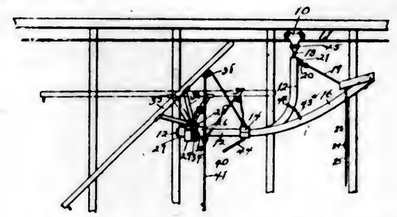
4. An electrical metal heating device consisting of a containing vessel of non-conducting material, a resistance bath, an electrode immersed in the bottom of the vessel and a non-conducting guard covering said electrode.

5. An electrical metal heating device, consisting of a containing vessel of non-conducting material, a resistance bath, an electrode immersed in the bottom of the vessel, means for adjusting the same vertically and an electrode connection at the top of the vessel.

6. An electrical metal heating device, consisting of a containing vessel of non-conducting material having an inwardly projecting lip at its upper edge, a resistance bath in the vessel, an electrode at the bottom thereof, a superficial layer of muffling material on the top of the bath and an electrode connection for the top of the vessel.

7. An electrical metal heating device, consisting of a containing vessel of non-conducting material having a stuffing box in its bottom, a resistance bath in the vessel, an electrode in the bottom of the bath, a supporting stem attached to the electrode and passing through the stuffing box, a rack bar attached to said stem and a shaft with gear wheel meshing with the rack and means for adjusting the same.

852,733. HAY-HANDLING MECHANISM. MADS H. MADSEN, Kimballton, Iowa. Filed May 5, 1906. Serial No. 315,445.



Claim.—1. In a hay-handling mechanism, a supporting arm, a frame mounted for longitudinal and lateral oscillation thereon, and yielding-pressure devices between said arm and frame tending against lateral oscillation of the frame.

2. In a hay-handling mechanism, a supporting arm, a frame mounted for lateral oscillation thereon, a stop-plate on said arm adapted to be engaged by said frame, and a spring on said arm and adapted to cushion lateral oscillation of the frame.

3. In a hay-handling mechanism, a supporting arm, bearing boxes mounted for oscillation thereon, a stop-plate fixed to said arm between said boxes, an arch connecting said boxes, a shaft mounted in said arch, a frame mounted for longitudinal oscillation on said shaft, a spring on said arm and engaging said shaft on opposite sides of said stop-plate, and means for oscillating said frame laterally against the resilience of said spring.

4. In a hay-handling mechanism, a supporting arm, a cross-head thereon, a yoke mounted obliquely on said cross-head, a frame mounted for oscillation laterally and longitudinally on said arm, springs between said frame and arm, and a rope on said frame and cross-head and adapted to be brought into engagement with said yoke.

5. In a hay-handling mechanism, a supporting arm, a frame mounted for oscillation on said arm, braces on said arm, a ring on said arm and flexible connections between said ring and braces.

6. In a hay-handling mechanism, a supporting arm, a frame mounted for oscillation on said arm, a cross-head on said arm, braces on said cross-head, a ring on said arm, chains connecting said ring and braces, and a cross-bar connecting said braces.

852,734. MACHINE FOR GLAZING POTTERY. RICHARD M. MATTHEWS, Metropolis, Ill., assignor of one-half to Robert K. Lowry, Metropolis, Ill. Filed June 28, 1906. Serial No. 323,858.

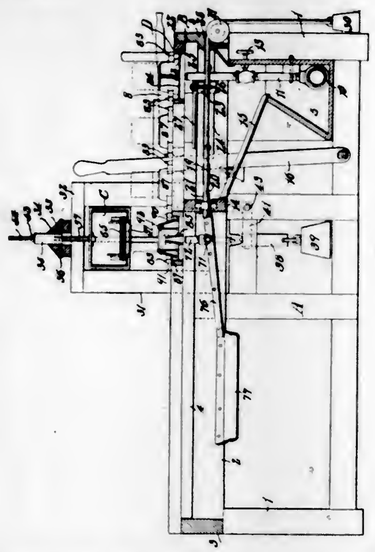
Claim.—1. In a machine of the character described the combination with a holder; of a counterbalanced tank thereabove having a normally closed outlet, and means for relieving the tank of the weight of the counterbalance to cause the tank to lower and its outlet to open by contact with an article on the holder.

2. In a machine of the character described the combination with a counterbalanced tank having an outlet, and means for normally closing the outlet; of a holder movable beneath the tank and adapted to hold an article in position to open the outlet when the tank is lowered, and means for relieving the tank of the weight of its counterbalance to cause said tank to automatically lower.

3. In a machine of the character described, the combination with a movable counterbalanced tank having an outlet, and means for normally closing the outlet; of a holder movable beneath the tank and adapted to support an article below the outlet, and means for releasing the tank from its counterbalance for actuating the tank to bring the closure into contact with said article.

4. In a machine of the character described, the combination with a movable tank having a normally closed outlet and a vertically movable support therefor; of a holder mov-

able beneath the tank and adapted to support an article below the outlet, and means for raising the tank support for moving the tank to project said article into the outlet and open the same.



5. In a machine of the character described, the combination with a movable tank having a normally closed outlet and a gravity operated support therefor; of a holder movable beneath the tank and adapted to support an article under the outlet, and means for successively moving the holder and moving the support to lower the tank to project said article into the outlet to open it.

6. In a machine of the character described, the combination with a movable tank having an outlet, a closure for said outlet and a gravity operated support for said tank; of a holder for supporting an article to be glazed, and means for successively moving the holder into position beneath the tank and for raising the support to depress the tank to bring the closure into contact with the article to open the outlet.

7. In a machine of the character described, the combination with a movable tank having an outlet in the bottom thereof a closure normally seated upon the outlet and a gravity operated support for said tank; of a holder for supporting an article to be glazed, means for moving the holder into position beneath the tank, and mechanism for raising the support to move the tank toward the holder to bring its closure in contact with said article to open the outlet.

8. In a machine of the character described, the combination with a tank having an outlet in the bottom thereof, a closure for the outlet, and gravity operated means for normally supporting the tank; of a holder adapted to support an article to be glazed, means for moving the holder into position beneath the tank, and mechanism for moving the closure into contact with said article to open the outlet.

9. In a machine of the character described, the combination with a normally raised vertically movable tank having an outlet in the bottom thereof, a valve within the tank and normally closing the outlet and a gravity operated support for the tank; of a holder, means for moving the holder into position beneath the tank, and mechanism for raising the support to lower the tank to bring its valve into contact with an article on the holder to open the outlet.

10. In a machine of the character described, the combination with a vertically movable tank having an outlet in the bottom thereof and a valve within the tank and normally closing the outlet, of a supporting frame, a flexible support for the tank mounted on the frame, gravity operated means upon said connection for holding the tank normally raised, and means for raising the connection to lower the tank.

11. In a machine of the character described, the combination with a vertically movable tank having an outlet in the bottom thereof and a valve within the tank and normally closing the outlet; of a support, a weighted flexible device mounted upon the support and connected to the tank, and manually operated means for raising the weight to permit the tank to lower by gravity.

12. In a machine of the character described, the combination with a vertically movable tank having an outlet in the bottom thereof and a valve within the tank and normally closing the outlet; of a support, a weighted flexible device mounted upon the support and connected to the tank, a holder for supporting an article to be glazed, and means for moving said holder into position beneath the tank and for lifting the weight to permit the tank to lower by gravity.

13. In a machine of the character described, the combination with a tank and weighted means for normally supporting the tank in a raised position, said tank having a normally closed outlet in the bottom thereof; of a holder for supporting an article to be glazed, of an actuating lever, means operated thereby for moving the holder to a position below the tank, and mechanism actuated by the lever for lifting the weighted means to lower the tank by gravity.

14. In a machine of the character described, the combination with a vertically movable tank having an outlet in the bottom thereof and a valve in the tank normally closing the tank; of a supporting frame, a weighted flexible device carried by the frame and supporting the tank normally in a raised position, a forked lever engaging the weighted flexible device, a slide for actuating the lever to raise said device, and means for actuating the slide.

15. In a machine of the character described, the combination with a supporting frame, a vertically movable tank therein having an outlet in its bottom, and a valve within the tank and normally closing the outlet; of a weighted flexible support movably mounted on the frame and normally holding a tank in raised position, a hooked slide, a lever normally engaged by the slide and engaging the weighted flexible support, and means for actuating the slide to trip the lever and raise the weighted support.

16. In a machine of the character described, the combination with a supporting frame, a vertically movable tank, and a weighted flexible support movably mounted on the frame and connected to the tank; of a forked lever engaging the flexible support, a tripping slide mounted on the frame and adapted to engage the lever to actuate it and lift the weighted support, and manually operated means for actuating the tripping slide.

17. In a machine of the character described, the combination with a frame, a tank having a normally closed outlet in its bottom and a weighted flexible support connected to the tank and mounted on the frame; of a lifting device engaging the flexible weighted support, a holder slidably mounted on the frame, and manually operated means for actuating the lifting device and moving the holder into position beneath the tank.

18. In a machine of the character desscribed the combination with a frame, and a tank carried thereby; of a holder movably mounted on the frame and adapted to support an article in a stationary inverted position to be glazed, a tube carried by the holder and adapted to project into the mouth of an article to be glazed, and means for spraying glaze into and through the tube.

19. In a machine of the character described, the combination with a frame and a tank carried thereby; of a holder movably mounted on the frame and adapted to support an article to be glazed, and means for directing glaze from the tank into, and upon the outer faces of, said article.

20. In a machine of the character described, the combination with a frame and a tank carried thereby; of a holder movably mounted on the frame and adapted to support an article to be glazed, and means for directing glaze from the tank into and upon the outer surface of said article either simultaneously or separately.

21. In a machine of the character described, the combination with a frame and a tank carried thereby; of a tube movably mounted on the frame, a discharge pipe extending from the tank and adapted to register with the tube, discharge pipes extending from the tank and adapted to extend to opposite portions of the tube, and means for independently controlling passage of liquid through said pipes, said tube constituting a support for an inverted article.

22. In a machine of the character described, the combination with a frame and a tank carried thereby; of a gasket for supporting an article to be glazed, means for directing glaze from the tank and into the gasket and around the said article, and means for directing glaze into the article.

23. In a machine of the character described, the combination with a frame and a tank carried thereby; of a gasket for supporting an article to be glazed, means for directing glaze from the tank and into the gasket and around the said article, means for directing glaze into the article, and independently operated means for controlling the discharge of glaze around and into said article.

24. In a machine of the character described, the combination with a frame; and a tank carried thereby; of a movable tank supported above the frame and having a normally closed outlet in the bottom thereof, manually operated means for directing glaze into the movable tank from the first mentioned tank, and a return pipe for conducting overflow from the movable tank to the first mentioned tank.

25. In a machine of the character described, the combination with a frame and a tank carried thereby; of a movable tank supported above the frame and having a normally closed outlet in the bottom thereof, manually operated means for directing glaze into the movable tank from the first mentioned tank, a return pipe for conducting overflow from the movable tank to the first mentioned tank, and means for returning surplus discharge glaze to said first mentioned tank.

26. In a machine of the character described, the combination with a frame having guides thereon; of a vertically movable tank mounted on the guides and having a normally closed outlet in the bottom thereof, a lever fulcrumed upon the frame, a flexible connection between the lever and tank, and a weight suspended from the lever to hold the frame normally raised.

27. In a machine of the character described, a carriage comprising a slidable frame, and frusto-conical article engaging and supporting tubes supported by the frame and open at their ends.

28. In a machine of the character described, a carriage comprising a slidable frame, a frusto-conical article engaging tube supported by the frame, and a supporting washer carried by the tube said tube being open at its ends.

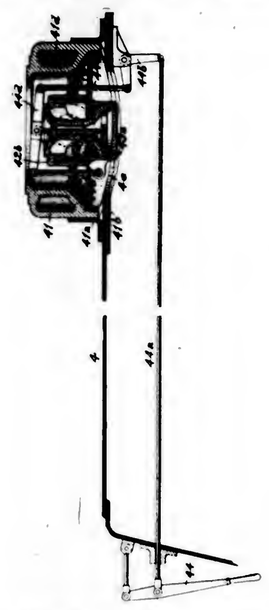
29. In a machine of the character described, the combination with a carriage comprising a frame, and stems upstanding therefrom; of a gasket, a jacket surrounding the same, a supporting washer extending beyond the jacket and gasket, and means for detachably securing the gasket to the stems.

30. In a machine of the character described, the combination with a carriage comprising a frame, stems upstanding therefrom, and a tube carried by the frame and open at its ends; of a holder mounted on the stems, and means carried by the holder for encircling an article to be glazed and centering it upon the tube.

31. In a machine of the character described, the combination with a carriage comprising a frame, stems upstanding therefrom, and a tube mounted on the carriage and open at its ends; of a gasket concentric with and surrounding the tube, a jacket surrounding the gasket, and means for connecting the jacket to the stems.

32. In a machine of the character described, the combination with a carriage comprising a frame, stems upstanding therefrom, and a tube mounted on the carriage and open at its ends; of a gasket concentric with and surrounding the tube, and means for connecting the jacket to the stems.

852,735. STEAM DOME. CARL J. MELLIN, Schenectady, N. Y. Filed Dec. 5, 1906. Serial No. 346,445.



Claim.—1. A dome for steam boilers comprising, in an integral casting, a cylindrical body having lateral steam supply pipe ports in its wall, and a steam passage way extending circumferentially on the body from one of said ports to the other, and having a port for communication with a throttle valve chamber.

2. The combination of a dome having a cylindrical body with lateral steam supply pipe ports in its wall, a throttle valve chamber located within the dome body and communicating with said lateral ports, and a throttle valve in said chamber controlling the flow of steam through said ports.

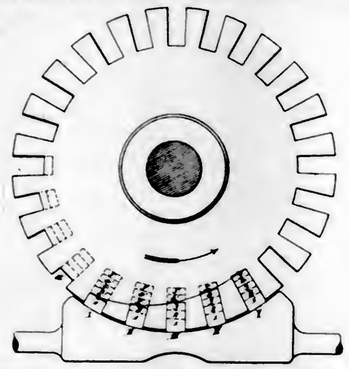
3. The combination of a dome having a cylindrical body with lateral steam supply pipe ports in its wall and an integral steam passage way extending circumferentially on its wall from one of said ports to the other, and a throttle valve chamber located within the dome body and communicating by a lateral port with the steam pasage way.

4. The combination of a dome having a cylindrical body with lateral steam supply pipe ports in its wall and an integral steam passage way extending circumferentially on its wall from one of said ports to the other, a throttle valve chamber located within the dome body and communicating by a lateral port with the steam passage way, and a throttle valve controlling an end port in said throttle valve chamber.

852,736. PRODUCTION OF GLOBOIDAL WORM-WHEELS. GEORG MOTHES, Rüttenscheid, near Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp, Essen-on-the-Ruhr, Germany. Filed Sept. 3, 1901. Serial No. 74,140.

Claim.—1. The process of forming globoidal worm wheels which consists in rotating on axes unadjustable to one another during the formation of a complete wheel having teeth of any depth, a wheel blank, and a plurality of cutters representing a single profile corresponding to an axial section through the globoidal worm, cutting said profile into the whole rim of the wheel blank, then successively causing the said cutters to represent other profiles corresponding to different axial sections through the

globoidal worm, and successively cutting said other profiles into the whole rim of the wheel blank.



2. The process of forming globoidal worm wheels which consists in rotating at the same relative speed a wheel blank about one axis and a plurality of cutters representing a section of a worm about another axis, in a position to operate on the wheel blank, to remove a portion of the material between the teeth portions of the blank; and advancing the cutters radially toward the axis of the blank without advancing the axis around which the cutters rotate, to remove further portions between the teeth portions.

852,737. BOILER-FLUE SCRAPER. ANDREW E. MUIRHEAD, Glasgow, Scotland. Filed Apr. 18, 1905. Serial No. 256,242.



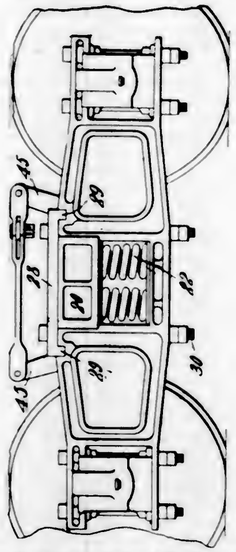
Claim.—In a multitubular steam generator, the combination with the boiler tubes and the smoke box, of a spirally bent stirrer rod arranged in each of said tubes and having one of its ends extending outside of the tube and bent laterally to the tube within the smoke box, a motion plate arranged within the smoke box, and having a plurality of arms engaging the lateral ends of the stirrer rods, and a driving shaft having one end connected to the motion plate and having its other end extending outside of the smoke box.

852,738. TRUCK. JAMES B. MCKIEL, Marshall, Tex. Filed Oct. 1, 1906. Serial No. 336,992.

Claim.—1. In a car truck, a pair of side frames having centrally arranged recesses, a truck bolster having its ends extending into said recesses, transoms extending between the side frames, the transoms and side frames being provided with interfitting lugs, and bolts extending through said frames.

2. In a truck, a pair of side frames having centrally arranged recesses and provided on their inner faces with lug receiving pockets, a pair of transoms extending between the side frames and having lugs extending into said pockets, a bolster disposed between the transoms and having its end portions fitting within the recesses, tie plates for limiting upward movement of the bolsters, and bolts extending through the tie plates and lugs and serving to secure the transoms to the side frames.

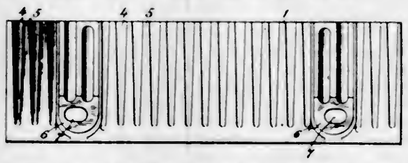
3. The combination in a truck, of side frames having centrally arranged recesses provided with spring receiving pockets, the inner faces of the frames having spaced lug receiving pockets, a pair of transoms having end lugs fitting within the pockets, a truck bolster fitting within the transoms and having its ends arranged within the recesses, the lower face of the bolster having spring pockets, springs for supporting the bolster, tie plates extending over the tops of the recesses and limiting upward movement of the bolster, the opposite ends of the tie plates being provided with downwardly extending lugs fitting in corresponding recesses in the side frames, and securing bolts extending through the tie plates and the transom lugs.



4. A built up truck comprising side frames, a pair of transoms extending between the side frames, a single vertical bolt forming the connection between each end of each transom and the side frames, and a truck bolster arranged between the transoms, said bolster having laterally projecting lugs at or near its outer ends.

5. A built up truck comprising a pair of side frames having central recesses and provided with arms projecting from both ends for the reception of journal boxes, a pair of transoms extending between the side frames and bolted thereto, a truck bolster having its ends arranged within the recesses and provided with lugs that bear against the outer faces of the side frames, tie plates crossing the recesses and limiting upward movement of the bolster, and supporting springs for said bolster.

852,739. GRATE-BAR. JAMES A. O'NEILL, New York, N. Y. Filed Oct. 3, 1906. Serial No. 337,157.



Claim.—1. A grate bar tapered transversely from its rear edge to its forward edge and formed with transverse grooves and ribs on its upper and lower surfaces, said grooves being deepest at the rear edge of the bar and growing shallower toward the forward edge thereof and the ribs being correspondingly higher at the rear edge of the bar and tapering toward the forward edge thereof, the ribs and grooves merging into the upper surface of the bar at the forward edge thereof, so that said forward edge is substantially smooth throughout, the rear ends of the grooves being open, and means whereby said grate bar may be secured to a support.

2. A grate bar tapered transversely from its rear edge to its forward edge and formed with transverse grooves and ribs on its upper and lower surfaces, said grooves being deepest at the rear edge of the bar and growing shallower toward the forward edge thereof, and the ribs being highest at the rear edge of the bar and tapering toward the forward edge thereof, the rear ends of the grooves being open, downward extending enlargements formed on the lower surfaces of the bar at the forward edge thereof, said enlargements extending toward the rear edge of the grate bar and being tapered from the forward edge toward said rear edge, whereby said enlargements form bearings on which the bar may be supported, the forward ends of said enlargements being apertured to receive the attaching bolts.

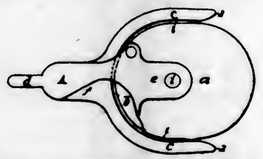
3. A grate bar formed with transverse grooves and ribs on its upper and lower surfaces, said grooves on the upper surface of the bar being deepest at the rear edge of the bar and growing shallower toward the forward edge thereof, and the ribs being correspondingly higher at the rear edge of the bar and tapering toward the forward edge thereof, the ribs and grooves merging into the upper surface of the bar at the forward edge thereof so that the upper surface of the bar at its forward edge is substantially smooth throughout, the rear ends of the grooves on the upper and lower surfaces of the bar being open.

4. A grate bar tapered transversely from its rear edge to its forward edge and formed with transverse grooves and ribs on its upper and lower surfaces, said grooves being deepest at the rear edge of the bar and growing shallower toward the forward edge thereof, the ribs and grooves on the upper and lower surfaces of the bar merging into a substantially flat surface at the forward edge thereof, so that said forward edge is thinner than the rear edge and smooth throughout its length, the rear ends of the grooves being open.

5. An inclined grate consisting of a plurality of pivotally mounted grate bars arranged in stepped and overlapped relation, each of said bars being tapered transversely from its rear edge to its forward edge and formed with transverse grooves and ribs on its upper and lower surfaces, said grooves being deepest at the rear edge of the bar and growing shallower toward the forward edge thereof, the ribs and grooves merging into the upper and lower surfaces of the bar at the forward edge thereof, so that said forward edge is substantially smooth throughout and the rear ends of the grooves are open.

6. A grate bar tapered transversely from its rear edge to its forward edge and formed with transverse grooves and ribs on its upper and lower surfaces, said grooves being deepest at the rear edge of the bar and growing shallower toward the forward edge thereof and the ribs being correspondingly higher at the rear edge of the bar and tapering toward the forward edge thereof, the rear ends of the grooves being open.

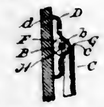
852,740. CLOTHES-LINE PULLEY. FRANK V. POLAKOSKEY, Peekskill, N. Y. Filed Aug. 18, 1906. Serial No. 331,136.



Claim.—1. The combination of a sheave and pulley with a yoke, attached thereto, one arm of the yoke secured to one side of the sheave with the open end of the sheave toward the closed end of the yoke, the other arm of the yoke bifurcated and extended around the free side of the sheave away from the plane of the pulley.

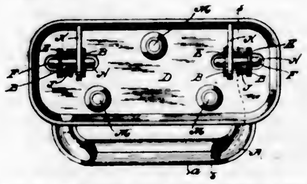
2. The combination of a sheave and pulley with a yoke, the yoke attached to one side of the sheave with the open end of the sheave toward the closed end of the yoke, an eye on the yoke, the free arm of the yoke divided and curved around the free side of the sheave with a radius greater than that of the pulley and sheave and in a plane away from that of the pulley,

852,741. HANDLE. EDWARD R. SARGENT, New Haven, Conn., assignor to Sargent and Company, New Haven, Conn., a Corporation of Connecticut. Filed Sept. 18, 1902. Serial No. 123,885.



Claim.—In a handle each arm of which is provided with a plurality of attaching plates, parallel and separated from each other, and having an abutting shoulder located between said attaching plates; the combination of a socket plate having parallel openings for receiving said attaching plates; a depression on the inner side of said socket plate between said openings for the lateral insertion of the pivot pin of said attaching plates; an abutment above the pivot pin and between said attaching plates for engagement with said abutting shoulder thereby limiting the upward movement of said arm, and a bridge of metal extending from the upper to the lower side of said depression to support said abutment and formed integral therewith, substantially as and for the purpose described.

852,742. HANDLE. EDWARD R. SARGENT, New Haven, Conn., assignor to Sargent & Company, New Haven, Conn., a Corporation of Connecticut. Filed Dec. 13, 1906. Serial No. 347,679.



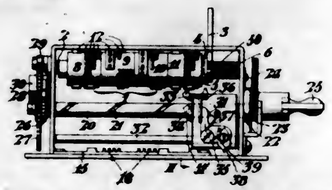
Claim.—1. In a handle, the combination with the arm of the handle having an attaching plate; of a socket plate formed of sheet metal with its edges turned in to form a hollow interior, and having an opening for said attaching plate; a resistance piece adapted to fit within said socket plate between the inner surface of said socket plate and the box or other article; and a pivot pin for said attaching plate adapted to engage said resistance block to hold it in place, substantially as and for the purposes described.

2. In a handle, the combination with the arm of the handle having a plurality of parallel attaching plates and an abutting shoulder between said plates; of a socket plate formed of sheet metal having openings for said attaching plates, said socket plate having a depression on the inner side thereof between said openings for the lateral insertion of the pivot pin of said attaching plates; a bridge of metal extending from the upper to the lower side of said depression; and a portion bent up from the bridge adapted to engage the pivot pin when in said depression to prevent its lateral displacement, substantially as and for the purposes described.

852,743. APPARATUS FOR REGISTERING TELEPHONIC CALLS. DAVID F. STAKES, Philadelphia, Pa., assignor to Keystone Telephone Company, Philadelphia, Pa., a Corporation of New Jersey. Filed June 17, 1905. Serial No. 265,643.

Claim.—1. In a telephone call registering and recording instrument, comprising registering means; the combina-

tion with means arranged to record, at any time, at the central station, the number of calls thus registered; of means arranged to record at said central station the phone number of the instrument; means arranged to shift said recording means; and means arranged in co-operative relation to said recording means whereby the latter upon movement in one direction records the number of the phone, and upon movement in the opposite direction, records the number of calls.



2. In a telephone call registering and recording instrument, comprising means for registering calls, the combination with a traveling carriage provided with relatively movable contacts; of a circuit including said contacts and comprising a recording instrument at the central station; a rotary shaft upon which said carriage is mounted to move longitudinally; means in co-operative relation to said carriage whereby the contacts are engaged and actuated to successively record at the central station the phone number of the instrument and the number of calls registered therein; and means arranged to rotate said shaft to shift said carriage into engagement with the contact actuating means, substantially as set forth.

3. In a telephone call registering and recording instrument, the combination of a registering cylinder with flanges corresponding at all times to the number registered by the instrument; an interrupting plate ridged to indicate the phone number of the instrument; a carriage capable of moving in proximity to both the registering cylinder and said plate; an electrical circuit including a recording instrument at the central station; two sets of contacts mounted upon the carriage in multiple in said circuit; means whereby the carriage may be reciprocated; and means whereby during said reciprocation said contacts are successively operated by the flanges of the registering cylinders and the ridges of the interrupting plate, or vice versa, substantially as set forth.

4. In a telephone call registering and recording instrument, the combination of a registering cylinder; an interrupting plate provided with means for indicating the phone number of the instrument; a carriage capable of moving in proximity to the registering cylinder and said plate, and having contacts; a circuit including said contacts and comprising a recording instrument; means in co-operative relation to said carriage whereby the contacts are actuated to successively record the phone number of the instrument and the number of calls registered therein; and means arranged to shift said carriage into engagement with said contact actuating means.

5. In a telephone call registering and recording instrument, the combination of means for registering calls; a traveling carriage provided with contacts; a circuit including a recording instrument at the central station, and comprising said contacts; means whereby when the carriage is moved in one direction, the contacts are closed in accordance with the registered calls; and an interrupting plate indicating the number of the phone by which, when the carriage is moved in the opposite direction, the contacts are closed so as to indicate the number.

852,744. APPARATUS FOR REGISTERING TELEPHONIC CALLS. DAVID F. STAKES, Philadelphia, Pa., assignor to Keystone Telephone Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Jan. 24, 1906. Serial No. 297,550.

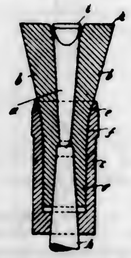
Claim.—1. In apparatus for registering telephonic calls, the combination with a numerical registering device, comprising a series of indicator disks, arranged to rotate on a common axis; of a handle mounted to rotate on said axis and arranged to shift said disks; a countershaft comprising a pinion in parallel relation to said axis; a sector carried by said handle and arranged to engage said pinion; an escapement wheel on said countershaft; and escapement in operative engagement with said wheel; a stationary contact; an electric circuit including said stationary contact and said escapement; and a contact carried by said escapement arranged to oscillate into and out of engagement with said stationary contact to make and break said circuit, and thereby transmit a signal indicating that said handle has been operated, substantially as set forth.



2. In apparatus for registering telephonic calls, the combination with a numerical registering device, comprising a series of disks having numerals on their periphery and arranged to rotate on a common axis; of a handle mounted to rotate on said axis and arranged to shift said disks; a sector carried by said handle; a countershaft in parallel relation to said axis; a pinion mounted on said countershaft and arranged to engage said sector; an escapement operatively related to said handle; a stationary contact; a movable contact carried by said escapement; and an electric circuit including said stationary contact and said escapement, whereby the movement of said escapement causes the movable contact to oscillate into and out of engagement with said stationary contact to make and break said circuit, and thereby transmit a signal indicating that said handle has been operated, substantially as set forth.

3. In apparatus for registering telephonic calls, the combination with a numerical registering device comprising an escapement; of a countershaft having a pinion mounted thereon; a handle mounted to rotate and having a sector arranged to engage said pinion, said handle being operatively connected to said registering device; a stationary contact; a movable contact carried by said escapement; and an electric circuit including said escapement whereby the movement of said handle operates said escapement to make and break said circuit to transmit a signal indicating that said handle has been operated, substantially as set forth.

852,745. BORING-BIT. NICOLAUS STAUB, Schiffweiler, Germany. Filed July 31, 1905. Serial No. 272,131.

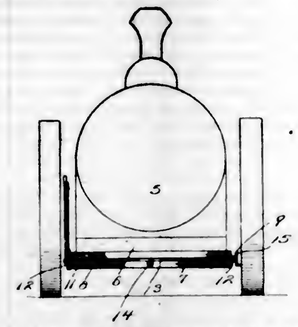


Claim.—1. A composite rose bit comprising a socket member having an opening in its bottom, radial cutters seated in the socket of said member, a central cutter engaging the upper part of said radial cutters, and a cutter bar passing through the opening in the socket member and engaging the lower part of the radial cutters.

2. A composite rose bit comprising a socket member having an opening in its bottom, radial cutters seated in the socket of said member, a central cutter having a shank located between and engaging said radial cutters, and a cutter bar passing through the opening in the socket member and located between and engaging the radial cutters.

3. A composite rose bit comprising a socket member having an opening in its bottom, radial cutters each having curved inner surfaces at their top and bottom and seated in said socket member, a conical central cutter inserted between the radial cutters and engaging their curved top surfaces, and a conical cutter bar passing through the opening in the socket member and located between the radial cutters and engaging their curved bottom surfaces.

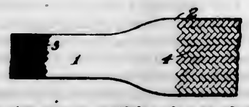
852,746. DRAFT APPLIANCE FOR FARM IMPLEMENTS. WILLIAM T. STEVIC, Pulaski, Iowa. Filed Dec. 28, 1904. Serial No. 238,611.



Claim.—1. A draft appliance comprising a guide member, an attaching block slidably connected with the member, a revolubly mounted shaft, connections between the shaft and block for movement of the latter when the former is revolved, a notched wheel carried by the shaft, a pivoted lever, dogs carried by the lever and lying normally in engagement with the notched wheel, triggers pivoted to the lever and connected with the dogs for movement of the latter out of their normal position through movement of the triggers, and means for holding the triggers with the dogs out of engagement with the wheel.

2. A draft appliance comprising a guide member, an attaching block arranged for sliding movement with respect to the guide member, a revolving shaft connected with the block for movement of the latter when the shaft is revolved, a notched wheel carried by the shaft, a pivoted mounted lever, dogs pivoted to the lever and lying normally in engagement with the notched wheel, triggers pivoted at one end to the lever for movement of their opposite ends toward and away from the lever, connections between the triggers and the dogs for movement of the latter into inoperative position when the triggers are moved in the direction of the lever, and loops pivotally connected with the lever and arranged for engagement of the triggers to hold the latter with the dogs in inoperative position.

852,747. SHOE-LACING. FERDINAND THUN, Wyomissing, Pa., assignor to Textile Machine Works, Incorporated, Wyomissing, Pa. Filed Apr. 29, 1905. Serial No. 258,037.



Claim.—1. As a new article of manufacture an integrally formed braided-fabric lacing having the portion thereof intermediate of the tying-ends compacted crosswise and lengthwise of the fabric.

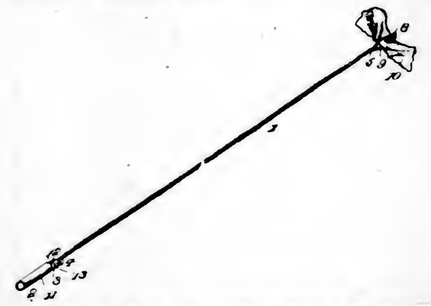
2. As a new article of manufacture an integrally formed braided-fabric lacing having relatively wide tying-end portions provided with terminal tips and narrowed intermediate portion for engaging the shoe eyelets.

3. As a new article of manufacture an integrally formed braided-fabric lacing having relatively wide flat tying-end portions provided with terminal tips and a narrowed tubular intermediate portion for engaging the shoe eyelets.

4. As a new article of manufacture an integrally formed braided-fabric lacing having relatively wide and loosely-braided flat tying-end portions and a tubular tighter-braided intermediate portion for engaging the shoe eyelets.

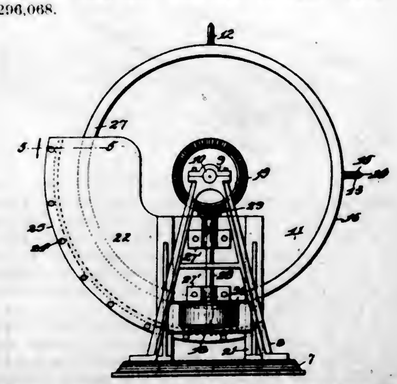
5. As a new article of manufacture an integrally formed braided-fabric the braiding of the intermediate portion of which differs in tightness crosswise and lengthwise from that of the end portions.

852,748. BARREL-CLEANER FOR BREECH-LOADING FIREARMS. JACOB TRUE, Castile, N. Y. Filed Sept. 26, 1906. Serial No. 336,348.



Claim.—As a new article of manufacture, the herein described cleaner for the barrels of guns or revolvers, comprising a flexible body portion, adapted to hold a swab at one end, and a weight secured to the other end of said body portion, said weight consisting of a tubular body, and a shank molded within the body portion and provided at one end with a head, said head being formed with an aperture in which the end of the flexible body portion is secured.

852,749. ROTARY AIR-COMPRESSOR. GUSTAV C. VOLLMER, St. Louis, Mo. Filed Jan. 15, 1906. Serial No. 296,068.



Claim.—1. A rotary air compressor comprising a revolving-member mounted upon a shaft, a casing forming a compression chamber through which the revolving-member operates, said casing covering a portion of the revolving-member, a cut-off located at the bottom of the re-

volving-member and operated by the revolving-member, said cut-off having its upper casing concave and its lower face convex to correspond with the formation of the casing and the periphery of the revolving-member, and provided with a recess for the admission of the revolving-member, substantially as specified.

2. A rotary air compressor comprising a circular disk mounted upon a shaft, a plurality of pistons carried by said disk, the periphery of said disk being beveled and the pistons being also tapered, a casing covering a portion of the disk, and forming a passage through which the pistons travel in which air is compressed, a horizontal circular cut-off located at the bottom of the disk and operating through the casing, said cut-off having its upper surface concave, and its lower surface convex to correspond to the form of the casing and the periphery of the revolving disk, a shaft supported by bearings carried by the casing for operating the cut-off, said cut-off provided with a recess to receive the pistons as they pass out through the passage in the casing, a beveled-gear located on the shaft carrying the disk, and a beveled pinion located on the shaft operating the cut-off, a discharge pipe connected to the casing and communicating with the air passage to receive the compressed air from the air passage; and a housing located around the cut-off, substantially as specified.

3. A rotary air compressor comprising a circular disk mounted upon a shaft, a plurality of pistons carried by said disk, the periphery of said disk being beveled and the pistons being also tapered, a casing covering a portion of the disk, and forming a passage through which the pistons travel in which air is compressed, a horizontal circular cut-off located at the bottom of the disk and operating through the casing, said cut-off having its upper surface concave, and its lower surface convex to correspond to the form of the casing and the periphery of the revolving disk, a shaft supported by bearings carried by the casing for operating the cut-off, said cut-off provided with a recess to receive the pistons as they pass out through the passage in the casing, a beveled-gear located on the shaft carrying the disk, and a beveled pinion located on the shaft operating the cut-off, a discharge pipe connected to the casing and communicating with the air passage to receive the compressed air from the air passage, and a housing located around the cut-off, packing located within each wall of the casing and contacting with the rim of the disk, substantially as specified.

852,750. HOLDER FOR RAZOR-BLADES. EDWARD W. WHEELER, Cedar Springs, Mich. Filed Mar. 28, 1906. Serial No. 308,542.



Claim.—1. A holder for razor blades comprising a pair of oppositely disposed guard plates which fit upon opposite sides of the razor blade, a pair of spaced longitudinal ribs projecting from the outer face of one of the guard plates, and a tubular stem provided with a longitudinal slit, the guard plates fitting within the slit and being held against any lateral movement by means of the before mentioned spaced longitudinal ribs.

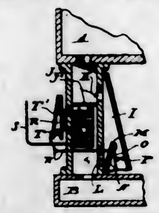
2. A holder for razor blades comprising a pair of oppositely disposed guard plates which fit upon opposite sides of the razor blade, the said guard plates having a spring connection at one end thereof, a pair of spaced longitudinal ribs projecting from the outer face of one of the guard plates, and a tubular stem provided with a longitudinal slit, the said guard plates fitting within the slit and being held against any lateral movement by means of the before mentioned spaced longitudinal ribs.

3. A holder for razor blades, comprising oppositely disposed guard plates, which fit upon opposite sides of the razor blade, a stem which is detachably and slidably connected to the guard members, and a tubular back piece surrounding the stem and detachably connected to the guard members, the said back piece serving both as a guide and as a clamping medium.

4. A holder for razor blades comprising oppositely disposed guard plates which fit upon opposite sides of the razor blade, a tubular stem provided with a longitudinal slot by means of which the guard plates are detachably and slidably connected to the stem, and a tubular back piece surrounding the stem and provided with a longitudinal slit through which the guard plates are passed, the said back piece serving both as a guide and as a clamping medium.

5. A holder for razor blades comprising a pair of oppositely disposed guard plates which fit upon opposite sides of the razor blade, a tubular stem provided with a longitudinal slit, the said guard plates passing through the slit and being provided with a projection which extends within the hollow portion of the stem so as to hold the guard plates against lateral displacement, a handle secured to the stem, and a tubular back piece provided with a longitudinal slit through which the guard plates are passed, the said guard plates being provided with a projection which holds the back piece against the stem.

852,751. AUTOPNEUMATIC MUSICAL INSTRUMENT. FRANK C. WHITE, Meriden, Conn., assignor to Wilcox & White Company, Meriden, Conn., a Corporation of Connecticut. Filed Mar. 13, 1906. Serial No. 305,748.



Claim.—1. In an auto-pneumatic musical instrument, a tension regulator arranged to control the tension of the exhaust in the wind chest and comprising a collapsible bellows or the like, an admission port at one end, an outlet port at the other end, said ports communicating respectively with the wind chest and with the exhaust chamber, a movable throttle for one of said ports, and means for automatically opening the same, a port through said throttle of less cross-sectional area than the area of the port over which said throttle stands, and a valve for said smaller port arranged to be operated by said bellows.

2. A regulator for auto-pneumatic musical instruments, comprising a bellows, means for normally causing said bellows to expand, a wind-way passing through said bellows and leading from the wind chest to the exhaust chamber, a throttle in said wind-way, and means for operating the same, a restricted air passage through said throttle, and a valve for said restricted passage, the latter being operated by said bellows.

3. In an auto-pneumatic musical instrument, a wind-chest, a vacuum chamber, a trunk connecting the same, a fixed partition therein, a normally distended bellows, a communicating passage from one end of said trunk to the other through said bellows, a throttle within said bellows for said passage, a restricted passage therein, a valve carried by said throttle and arranged to control said restricted passage, means for operating the throttle, and independent means for operating the valve.

4. In an auto-pneumatic musical instrument, a wind chest, an exhaust chamber in communication therewith, a regulator to control the tension of the exhaust within the wind chest, said regulator comprising a bellows having an air admission port and an air exhaust port of relatively

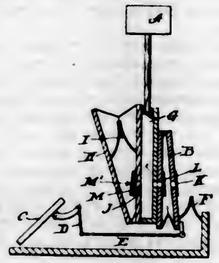
large proportions, a throttle for one of said ports, a restricted air passage in said valve, a throttle for said restricted passage, said valve being controlled by the bellows, and a power pneumatic for controlling the throttle, a valve for controlling said power pneumatic, a tracker, a perforation therein, a duct leading therefrom to said valve for controlling said power pneumatic, whereby when said tracker perforation is open to atmosphere said valve will be operated and the power pneumatic actuated to open said throttle and abruptly produce high tension in said wind chest.

5. In an auto-pneumatic musical instrument, a tracker, a tension regulating and tension changing device comprising a wind-way, a throttle therein, a power pneumatic controllable from the tracker for automatically opening said throttle to change from low tension to high tension, a contracted air passage through said throttle and a valve for said contracted passage, and a bellows in communication with the exhaust chamber of the instrument, said bellows automatically operating said valve to automatically regulate the low tension in the wind chest of said instrument.

6. In an auto-pneumatic musical instrument, a tracker, a tension regulating and tension changing device comprising a wind-way, a throttle therein, a power pneumatic controllable from the tracker for automatically opening said throttle to change from low tension to high tension, a contracted air passage through said throttle and a valve for said contracted passage, a bellows in communication with the exhaust chamber of the instrument, said bellows automatically operating said valve to automatically regulate the low tension in the wind chest of said instrument, and a manually controllable means to vary the freedom of operation of said bellows for manually varying the low tension.

7. In a regulator for auto-pneumatic musical instruments, comprising a bellows, means for normally causing said bellows to expand, a wind-way passing through said bellows and leading through the exhaust chamber, a throttle in said wind-way, and means for operating the same to abruptly open wide said wind-way, a restricted air passage through said throttle, and a valve for said restricted passage, the latter being operated by said bellows.

852,752. AUTOPNEUMATIC MUSIC-PLAYING INSTRUMENT. FRANK C. WHITE, Meriden, Conn., assignor to Wilcox & White Company, Meriden, Conn., a Corporation of Connecticut. Filed Oct. 29, 1906. Serial No. 341,054.



Claim.—1. In an auto-pneumatic music playing instrument, a wind-chest or its equivalent, a feeder bellows for exhausting air therefrom, means for manually operating the latter, an equalizer or its equivalent, comprising a single valve for permitting the operator to instantly secure by the abnormal action of the feeder bellows a higher tension in the wind-chest than in the equalizer.

2. In an auto-pneumatic music playing instrument, a wind-chest, a feeder bellows, a wind-way, an equalizer communicating with the wind-way between said wind-chest and feeder bellows, automatic means comprising a check valve controlled by an abnormal operation of the feeder bellows for practically nullifying the effect of said equalizer, and a bleed-hole tapping into said equalizer.

3. In an auto-pneumatic music playing instrument, a wind-chest, a feeder bellows, a wind-way, an equalizer communicating with the wind-way between the wind-chest and feeder bellows, and means controlled by an abnormal operation of the feeder bellows for practically nullifying the effect of said equalizer, said means comprising a check valve for the passage leading from the wind-way to the equalizer, said valve having a bleed-hole therein registering with said passage.

4. In an auto-pneumatic music playing instrument, an action or wind-chest, a feeder bellows in communication therewith, means for normally equalizing the degree of exhaustion in the wind-chest when the feeder bellows is operating normally, and comprising a single valve controlled by the abnormal action of the feeder bellows for practically nullifying the action of the equalizer.

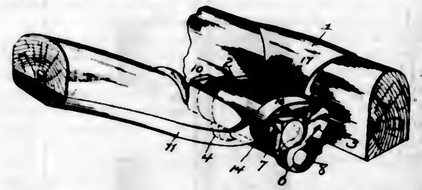
5. In an auto-pneumatic music playing instrument, an action chest or main exhaust chamber, a feeder or exhaust bellows, a passage leading directly from said exhaust bellows to said exhaust chamber, an equalizer bellows for securing a normal tension in said exhaust chamber, said bellows tapping into the passage leading from the exhaust bellows to the main exhaust chamber but not constituting a part thereof, a check valve for said passage, and a bleed hole or vent for said equalizer.

6. In an auto-pneumatic music playing instrument, a wind-chest, a feeder bellows, a wind-way between the wind-chest and the feeder bellows, an equalizer bellows in communication with the wind-way, means to yieldingly distend the equalizer bellows, and a single valve for permitting the operator to secure, by an abnormal operation of the feeder bellows, a higher degree of tension in the wind-chest than in said equalizer, said valve having a vent therein communicating with the passage which said valve is adapted to close and of smaller area than said passage.

7. In an auto-pneumatic music playing instrument, a wind-chest, a feeder bellows, a wind-way, an equalizer in communication with the wind-way, automatic means comprising a check valve controlled by an abnormal operation of the feeder bellows for practically nullifying the effect of the equalizer, and a vent or bleed hole tapping into said equalizer.

8. In an auto-pneumatic music playing instrument, a wind-chest, a feeder bellows, a wind-way, an equalizer communicating with the wind-way, means controlled by the abnormal operation of the feeder bellows for practically nullifying the effect of said equalizer, said means comprising a check valve for the passage leading to the equalizer, and a bleed hole or vent through said valve and registering with said passage.

852,753. THILL-COUPLING. ALFRED H. WORREST, Lancaster, Pa. Filed Feb. 13, 1906. Serial No. 300,895.



Claim.—1. A thill coupling comprising a support, a laterally projecting journal permanently fixed to the support and onto which the shaft or tongue iron must be slid laterally, and means for engaging the free end of the fixed journal to prevent the removal of the shaft or tongue iron.

2. The combination of two thill couplings, laterally projecting journals on said couplings permanently fixed at one end and free at their other ends, two shaft or tongue irons; means rigidly connecting them to compel them to be moved simultaneously when they are moved laterally onto or from the fixed journals, and means engaging the free ends of the fixed journals to lock the irons thereon against lateral movement and requiring the release of both locking means before either or both irons can be moved from the journals.

3. In a thill coupling the combination with a support and an outwardly projecting ear thereon, of a laterally

projecting journal permanently fixed at one end to the ear, a shaft or tongue iron to be moved laterally onto or from the journal, and a locking device to engage the free end of the journal and secure the iron thereon and constituting the bearing for the free end of the journal.

4. In a thill coupling, the combination with a support, and an outwardly projecting ear thereon, of a laterally projecting journal permanently fixed to said ear, a shaft or tongue iron to be moved laterally onto or from the journal, and an arm constituting a bearing for the free end of the fixed journal and having locking engagement therewith.

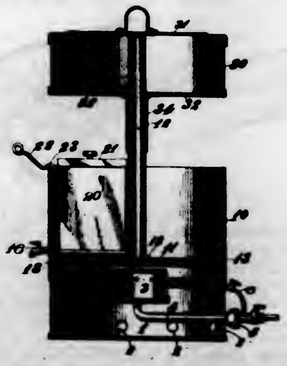
5. In a thill coupling, the combination with a support and an outwardly projecting ear thereon, of a laterally projecting journal fixed at one end to the ear and having an annular groove in its free end, a swinging locking arm, and a hollow enlargement on said arm having internal flanges to engage in the groove in the journal and lock a shaft or tongue iron thereon.

6. In a thill coupling, the combination with a support, of a laterally projecting journal permanently fixed at one end to the support, an eccentric shaft mounted in the support below the journal, a shaft or tongue iron on the journal, a locking arm on the eccentric shaft having a bearing for the free end of the journal and engaging the latter to lock the iron thereon, and an anti-rattler spring, bearing against the iron and holding the eccentric shaft and locking arm against accidental movement.

7. In a thill coupling, the combination with a support, of a laterally projecting journal permanently fixed at one end to the support, an eccentric shaft below the journal, a shaft or tongue iron on the journal, a spring bearing against the iron and bent to partially encompass the eccentric shaft and the shaft having a flat side to permit the easy removal of the spring when the shaft is in an inoperative position, a locking arm on the eccentric shaft having a bearing for the fixed journal and engaging the latter to lock the iron thereon, and said spring put under maximum tension by the eccentric shaft when the locking arm is swung to locked position to hold the arm in this position and also prevent rattling of the coupler.

8. A thill coupling comprising a support, an outwardly projecting ear thereon, a laterally projecting journal integral with the ear, a swinging locking arm to engage the free end of the journal to hold a shaft or tongue iron thereon, and angular enlargements on the locking arm and ear at the ends of the journal.

852,754. HEATER AND COOKER. JOHN L. ADAM, New Orleans, La. Filed Aug. 24, 1903. Renewed Jan. 6, 1905. Serial No. 239,888.



Claim.—1. The combination of a heating chamber, a water chamber mounted thereon, an upright flue within the water chamber, a heat retainer and deflector located upon the upper end of said flue above the water chamber and having a closed top and a perforated bottom, and a pot adjacent the flue and beneath the heat retainer and deflector whereby said pot receives heat from the water chamber, flue, and heat retainer and deflector.

2. The combination of the generator, an upright flue through which heat from the generator is adapted to pass, a water chamber surrounding the flue, pots in said chamber, and a heat retainer and deflector mounted on the flue above the chamber, said retainer and deflector having a perforated bottom whereby the chamber and pots receive heat therefrom.

3. The combination of a heating chamber, a water chamber mounted thereon, an upright flue within the water chamber, means for admitting water comprising a coil located within the heating chamber and having its outlet opening through the bottom of the water chamber and its inlet outside, and a heat retainer and deflector located upon the upper end of the flue and having a perforated bottom disposed above the water chamber.

4. The combination of a heating chamber, a water chamber removably mounted thereon, a central upright flue for the products of combustion, means for admitting and withdrawing water, and a heat retainer and generator having a tubular shank through and opening from its bottom, said bottom being also elsewhere perforated, the shank being removably mounted on said flue.

5. The combination of a water chamber and an upright flue therethrough, both adapted to receive heat from beneath, and a heat retainer and generator mounted on the upper end of the flue and having a perforated bottom whereby the chamber is adapted to receive heat also from above.

6. The combination of a heating chamber, a water chamber removably mounted thereon, a central upright flue for the products of combustion, means for admitting and withdrawing water, a heat retainer and generator having a tubular shank through an opening from its bottom, said bottom being also elsewhere perforated, the shank being removably mounted on said flue, a door in the side of the oven, and a removable cover.

7. The combination of a heating chamber, a water chamber mounted thereon, a central upright flue therein, means for admitting and withdrawing water, a series of pots adapted to be placed in the water chamber, and a heat retainer and generator mounted on the upper end of said flue and having a perforated bottom standing above said pots.

8. The combination with a generator, and an upright flue leading therefrom; of a chamber surrounding the flue, pots in the chamber, and a heat retainer and deflector mounted on and receiving its heat from the flue and having perforations in that portion of its body which is adjacent the chamber.

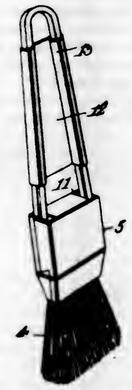
9. The combination with a chamber, and an upright flue therethrough, both adapted to receive heat from beneath; of a heat retainer and deflector mounted on and communicating with said flue, and adjustable thereon for controlling the passage of heat into said retainer and deflector.

10. The combination with a generator, and an upright flue through which products of combustion from the generator are adapted to pass; of a heat retainer and deflector formed in the shape of a drum with a perforation in its bottom larger than said flue, and a sleeve secured to said bottom around the perforation and adjustably fitted upon the flue.

11. The combination with a heating chamber, and an upright flue leading therefrom for the products of combustion; of a heat retainer and deflector formed in the shape of a drum having a perforated bottom, and a sleeve secured to the bottom around one perforation and fitted adjustably on the flue for controlling the passage of heat into said retainer and deflector.

12. The combination of a heating chamber, a water chamber mounted thereon, an upright flue within the water chamber, means for admitting water comprising a coil located within the heating chamber and having its outlet within the water chamber and its inlet outside, and a heat retainer and deflector having a perforated bottom adjustably mounted on the flue for controlling the passage of heat into said retainer and deflector.

852,755. BRUSH. JOHN Q. ADAMS, Pittsford, Vt. Filed Aug. 11, 1906. Serial No. 330,216.



Claim.—1. A brush having its handle and bristle holder made of a continuous piece of wire bent into a plurality of long loops to form the handle and a plurality of short loops to form the bristle holder, bristles clamped between the turns of said short loops, and means for exerting pressure on said loops.

2. A brush comprising a piece of wire bent to form a plurality of handle loops and a plurality of bristle loops, a metallic web having flanges bent to engage said handle loops, bristles extending between said bristle loops, and a brush head composed of two casing members each having a rear flange adapted to extend through the handle loops and to overlap each other, each of said rear flanges being cut away to form an opening for said handle loops, and each of said casing members also having an inclined forward end and forward and rear side flanges adapted to overlap the corresponding flanges of the other casing member and to be soldered thereto.

3. A brush having its handle and bristle holder made of a continuous piece of wire bent into a plurality of long loops to form the handle and a plurality of short loops to form the bristle holder, bristles clamped between the turns of said short loops, a brush head surrounding said short loops and bristles and exerting pressure thereon, and a filling piece for the handle loop.

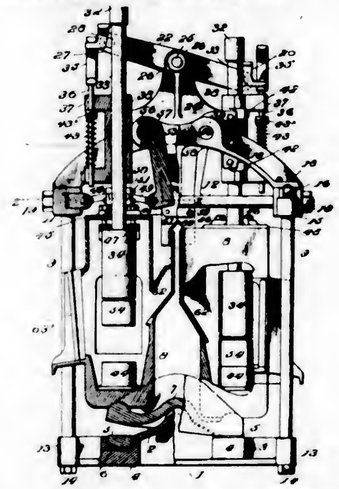
4. A brush having its handle and bristle holder made of a continuous piece of wire bent into a plurality of long loops to form the handle and a plurality of short loops to form the bristle holder, bristles clamped between the turns of said short loops, and a brush head comprising duplicate sections inclosing said short loops and permanently secured together.

852,756. STAMP-MILL MACHINERY. JAMES C. ANDERSON, Highland Park, Ill. Filed May 23, 1904. Serial No. 209,254.

Claim.—1. In a stamp mill, a pair of vertically movable stamps, a pair of vertically movable mortars, each located below and in alinement with the respective stamps; and a power transmitting rocker or lever mounted vibratively upon the base of the machine and supporting at each end thereof one of the vertically movable mortars, whereby the momentum shock produced by the descent of each stamp alternately, will through the medium of the vibrative rocker cause the material in the opposite mortar to be crushed between said mortar and the stamp in alinement therewith, substantially as hereinbefore set forth.

2. In a stamp mill such as described, in combination with a pair of vertically reciprocating stamps and a pair of vertically movable mortars mounted upon the opposite ends of a vibrating rocker or lever, a pair of crusher jaws vibratively mounted in the frame above the mortars and connected at their lower ends by toggle levers to the mortars and frame respectively, substantially as and for the purposes set forth.

3. In a stamp mill such as described, in combination with a pair of stamps adapted to vertical reciprocating movement and provided with collars or shoulders near the upper ends of the stems thereof, a walking beam lever vibratively mounted upon the frame intermediate the stamps and provided at each end with a pivotally connected oscillating latch adapted to contact with and to release the collars or shoulders upon the upper ends of the stamp stems, substantially as hereinbefore set forth.



4. In combination with the vertically reciprocating stamps, vibrating walking beam lever, and oscillating latches pivotally connected to each end of the walking beam lever, means adjustably connected with the frame for positively oscillating the latches, substantially as hereinbefore set forth.

5. In combination with a pair of vertically reciprocating stamps; corresponding mortars and dies mounted upon the opposite ends of a vibrating lever or rocker; and means for alternately lifting said stamps; means for connecting the lifting mechanism with the stamps and releasing the same, said means adapted to alternately release each of said stamps prior to making lifting engagement with the other, substantially as and for the purpose set forth.

6. In a stamp mill, a pair of stamps adapted to be positively lifted and to descend by gravity upon a mass of ore in a mortar beneath the same; and a pair of mortars pivotally mounted one upon each end of a vibrative power transmitting rocker or lever, whereby the momentum shock delivered by each stamp within its respective mortar will cause the rocker or lever to vibrate and deliver a crushing blow to the ore in the opposite mortar and against the stamp in alinement therewith, substantially as hereinbefore set forth.

7. In a stamp mill such as described, in combination with a pair of vertically reciprocating stamps and a pair of mortars mounted upon opposite ends of a rocker or vibrating lever, a crusher located adjacent to the movable mortars and means intermediate the mortars and the crusher for vibratively operating the jaws of the crusher whereby the vibrative movements of the suporting rocker are utilized to apply motive force to the crusher, substantially as hereinbefore set forth.

8. In a stamp mill such as described, a pair of vertically reciprocating stamps; a pair of vertically movable mortars in alinement with the respective stamps; a rocker or lever mounted vibratively intermediate of the mortars and pivotally supporting one of the mortars at each end thereof; and a combined anvil or stop below each end of the rocker or lever for limiting the extent of the vibrative

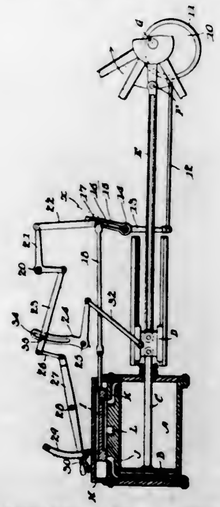
movement of the same, substantially as hereinbefore set forth.

9. In a stamp mill, a pair of reciprocating stamps, a pair of movable or reciprocating mortars; and a vibrative power transmitting rocker or lever pivotally connected at each extremity with one of the mortars, whereby the movement imparted alternately to each of the mortars by the blow of its respective stamp will cause said blow to be transmitted to the other mortar to produce a crushing effect upon the contents and against its respective stamp, substantially as and for the purpose set forth.

10. In a stamp mill such as described, a pair of vertically reciprocating stamps; a pair of vertically movable mortars; a walking beam lever vibratively journaled in the frame; means intermediate each end of the walking beam lever and the vertically reciprocating stamps for lifting and releasing the stamps; a rigid radial arm extending from the walking beam lever to and connected with a reciprocating piston; a reciprocating piston within a horizontally disposed hydraulic cylinder; a horizontally disposed oscillating valve connected by suitable supply and exhaust ports with the hydraulic cylinder and with water supply and exhaust conduits; a vertically disposed cylinder connected with water supply and exhaust conduits and provided with a reciprocating piston; means intermediate the vertically reciprocating piston valve and the horizontally disposed valve, for controlling the movements of the latter; and closed water conduits or pipes connecting with each of the valves, substantially as and for the purpose set forth.

11. In a stamp mill such as described, in combination with a pair of stamps adapted to vertical reciprocating movement and provided with collars or shoulders near the upper ends of the stems thereof; a walking beam lever vibratively mounted upon the frame intermediate of the stamps; oscillating latches pivotally connected with the ends of the walking beam lever and adapted to contact with and release the collars or shoulders on the stamp stems, and means for positively causing the latches to release the collars or shoulders upon the stems of the stamps, substantially as hereinbefore set forth.

852,757. VALVE-GEAR. ALBERT D. AUSTIN, Stilwell, Kans. Filed Mar. 23, 1906. Serial No. 307,702.



Claim.—1. In valve gear, a valve, a rocker arm, a shaft having stationary bearings carrying said rocker arm, means for rocking the shaft and arm, a block mounted on and movable radially of the arm approximately from the axis of the shaft to the outer end of said arm, means for connecting the block to the valve, and means operated by the cross head of the engine for moving said block.

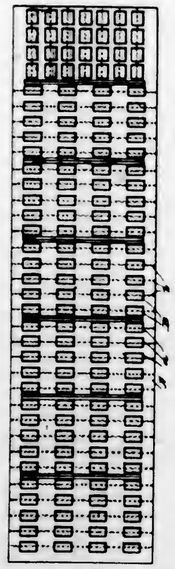
2. In valve gear, a slide valve, a rocker arm, means for moving the same, a block mounted on and movable radially of the rocker arm, means operated from the cross head for actuating said block, and adjustable means for controlling the extent of movement of the block, and means for connecting the block to the valve.

3. In valve gear, a valve, a rocker arm, means for moving the same, a block mounted on and movable radially of the arm, means for connecting the block to the valve, means operated from the cross head for moving said block radially of the arm, and means for adjusting the extent of movement of the block.

4. In a valve gear, a valve, a slotted rocker arm, means for moving the same, a block mounted in the slot and movable radially of the arm, means for connecting the block to the valve, a system of links and levers connecting the cross head of the engine to the block, and means for controlling the range of movement of said block.

5. In a valve gear, a valve, a slotted rocker arm, a block mounted therein and movable radially of the arm, means for operating said arm, means for connecting the block to the valve, a bell crank lever having a slotted arm, a block or pin movable in said slotted arm, means for connecting the bell crank lever to the cross head, a link carrying the block or pin, means for connecting said link to the block of the rocker arm, a cut-off adjusting lever connected to the link, and means for locking said lever in adjusted position.

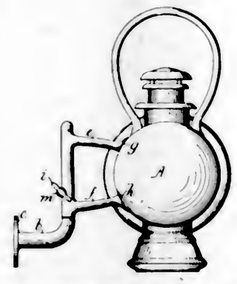
852,758. GAME-COUNTER. GEORGE H. BARKER, Pasadena, Cal. Filed Apr. 30, 1904. Serial No. 205,797.



Claim.—1. A game counter comprising a body provided with a plurality of pockets arranged in a row, each of said pockets being open only at the top, and a plurality of counters pivotally mounted in said pockets on axes parallel with each other and transverse to the line of the row, each of said counters being provided with two counting faces and movable to expose either face through the opening of the pocket, whereby some or all of the counters may be manipulated in the same direction by sweeping the finger longitudinally of and over a part or the whole length of the row, substantially as described.

2. A game counter comprising a body provided with a plurality of pockets arranged in longitudinal and transverse rows, each of said pockets being open only at the top, and a plurality of triangular counters pivotally mounted in said pockets on axes which are in alinement relatively to the transverse rows and parallel relatively to the longitudinal rows, each of said counters being provided with two counting faces and movable to expose either face through the opening of the pocket at the same time concealing the other face, substantially as described.

852,759. LAMP-HOLDER. CHARLES BERGENER, Rochester, N. Y., assignor to C. T. Ham Manufacturing Company, Rochester, N. Y. Filed Sept. 12, 1906. Serial No. 334,209.



Claim.—1. The combination of a supporting post provided with a holding groove, a supporting socket removably mounted on said post, and a fastening screw arranged transversely in said socket in line with said holding groove and comprising a threaded portion, a holding stem of less diameter than said portion and a shoulder at the junction of said stem and threaded portion, the shoulder being adapted to be tightened against the post and the holding stem extending into said groove and preventing the socket from being removed from the post, substantially as set forth.

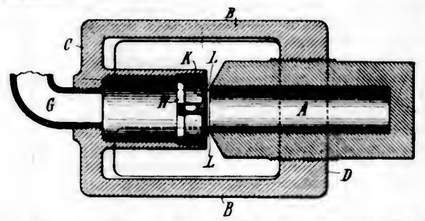
2. The combination of a supporting post provided with an annular holding groove, a supporting socket rotatably mounted on said post and provided with a tangential screw-threaded bore opening at its inner end into the cavity of the socket, and a fastening screw which comprises a threaded portion arranged in said bore, a clamping shoulder arranged at the inner end of said portion and adapted to be tightened against said post, and a reduced holding stem which extends from said shoulder inwardly and tangentially into said groove, substantially as set forth.

3. The combination of a supporting post and a lamp provided with an upright supporting socket adapted to be removably engaged with said post, said socket being arranged on one side of the lamp body and secured thereto by lateral arms extending from the upper and lower ends of the socket of the lamp body, a hand opening being formed between the lamp body, the arms and the socket, substantially as set forth.

852,760. RECEIVER FOR SYSTEMS OF SUBMARINE SIGNALING. LUCIEN I. BLAKE, Boston, Mass., assignor to Submarine Signal Company, Boston, Mass., a Corporation of Maine. Filed Jan. 29, 1907. Serial No. 354,626.

Claim.—1. A sound receiver for submarine signaling systems, comprising in combination a receptacle with walls capable of withstanding the variations of hydrostatic pressure accompanying regular periodic vibrations in a body of liquid contained therein, and reflecting the same to produce resonance, and a sensitive device adapted to be acted upon by such vibrations, as set forth.

2. A sound receiver for submarine signaling systems comprising in combination a receptacle secured to the side of a vessel and having walls capable of withstanding the variations of hydrostatic pressure accompanying regular periodic vibrations in a body of liquid contained therein, and a sensitive device in position to be affected by such vibrations, as set forth.

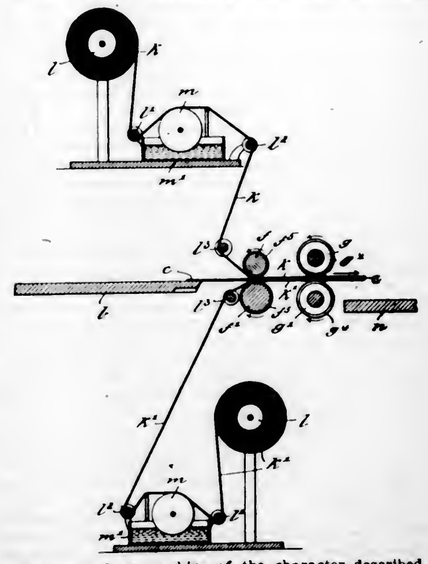


3. The combination of a liquid resonator consisting of a receptacle with rigid walls capable of reflecting regular periodic or harmonic vibrations set up in a body of liquid contained within the same, and a microphonic sensitive device, secured over an orifice in the end of the receptacle through which the vibrations are caused to act upon the sensitive device, as set forth.

4. The combination of a liquid resonator consisting of a receptacle with rigid walls capable of reflecting regular periodic or harmonic vibrations set up in a body of liquid contained within the same, and secured over an opening in the side of a vessel, and a microphonic sensitive device secured over an orifice in the end of the receptacle through which the vibrations are caused to act upon the sensitive device, as set forth.

5. A sound receiver for submarine signaling systems, comprising in combination a hollow cylinder with walls capable of withstanding the variations in hydrostatic pressure accompanying the vibrations imparted to a body of liquid contained therein and reflecting the same to produce resonance, a head adjustable in said cylinder to vary the dimensions of the chamber within the cylinder, and a sensitive device in position to be affected by the vibrations of the body of liquid, as set forth.

852,761. STRIP-APPLYING MACHINE. HARRY E. BODINE, Philadelphia, Pa., assignor to The United States Sample Book Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 27, 1906. Serial No. 298,283.



Claim.—1. In a machine of the character described, a table for receiving and supporting material to be joined,

a plurality of feed and pressure rollers, means for conducting flexible adhesive coated strips to said feed rollers and means for reciprocating said table to conduct the material to said feed rollers and between the strips; said feed rollers adapted to conduct said material and strips to said pressure rollers.

2. In a machine of the character described, a table for receiving and supporting material to be joined, a plurality of feed and pressure rollers, the diameters of said pressure rollers being greater than the diameters of said feed rollers, means for conducting flexible adhesive coated strips to said feed rollers and means for reciprocating said table to conduct said material to said feed rollers and between said strips; said feed rollers adapted to conduct said material and strips to said pressure rollers and said pressure rollers adapted to hold said strips and material under tension during the application of said strips to said material.

3. In a machine of the character described, a table for receiving and supporting material to be joined, a plurality of feed and pressure rollers, the diameters of said pressure rollers being greater than the diameters of said feed rollers, means for conducting flexible adhesive coated strips to said feed rollers, means for rotating the lower feed and pressure rollers at equal speed and means for reciprocating said table to conduct said material to said feed rollers and between said strips; said feed rollers adapted to conduct said material and strips to said pressure rollers and the latter adapted to hold said strips and material under tension during the application of said strips to said material.

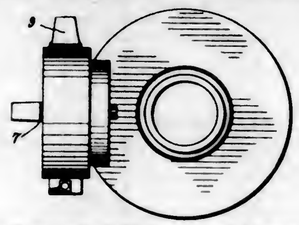
4. In a machine of the character described, a table for receiving and supporting material to be joined, a set of superposed feed rollers and a set of superposed pressure rollers, the diameters of said pressure rollers being greater than the diameters of said feed rollers, means for rotating certain of said feed and pressure rollers, means for conducting flexible adhesive coated strips to said feed rollers and means for reciprocating said table to conduct said material to said feed rollers and between said strips; said feed rollers adapted to apply said strips to said material and to conduct the same to said pressure rollers and the latter adapted to hold said strips and material under tension to assist in uniting said strips to said material and to each other.

5. In a machine of the character described, a table for receiving two sheets of material to be joined, means carried by said table for holding the same a certain distance apart and to aline the sheets with respect to each other, a set of superposed feed rollers and a set of superposed pressure rollers, said pressure rollers provided with yielding coverings, means for rotating certain of said feed and pressure rollers, means for conducting flexible adhesive coated strips to said feed rollers and means for reciprocating said table to conduct said sheets to said feed rollers and between said strips; said feed rollers adapted to apply said strips to said sheets and to conduct the same to said pressure rollers and the latter adapted to hold said strips and sheets under tension and to bring said strips into engagement with each other between said sheets by the yielding of the coverings of said pressure rollers.

6. In a machine of the character described, the combination of a suitable frame, a bed, means to reciprocate said bed lengthwise of the machine, a gage strip located in the center of the bed, a sheet-engaging device adjustably secured to the bed, a series of pressure rolls and means for supplying two flexible strips to said rolls, whereby the strips will be applied to sheets fed to the bed, substantially as described.

852,762. PIPE AND BOLT CUTTING MACHINE. GODFREY E. BOHRER, South Bend, Wash. Filed Oct. 24, 1905. Serial No. 284,213.

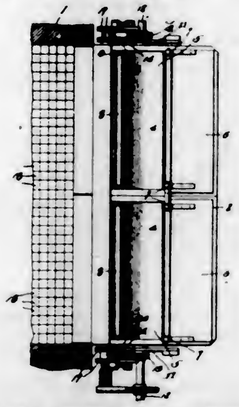
Claim.—1. A thread cutting device, comprising an apertured toothed disk, a sleeve projecting from the apertured portion of said disk and adapted to receive a holding device for a thread cutter, a shaft adapted to an operating handle, a fixed gear on said shaft, intermeshed with the teeth of said disk, a second gear on said shaft, a worm adapted to intermesh with said second gear and having its shaft adapted to an operating handle, and means by which said worm may be disconnected from said second gear.



2. A thread cutting device, comprising a casing having communicating chambers arranged at right angles with each other, said casing also having apertures leading through its walls to one of said chambers, a disk arranged in the latter chamber and having an aperture registered with the apertures thereof, said disk being also provided with a sleeve which projects from its apertured portion into one of said apertures and has a gradually expanded mouth, a chuck keyed in said sleeve and provided with jaws adapted to contract in the inward movement of the chuck, a collar threaded upon said chuck and arranged in the aperture in the other wall of said casing, and means arranged in the other chamber of said casing for rotating said disk.

3. A thread cutting device comprising a casing formed with registering openings in its confronting walls, a gear in said casing, said gear being formed with a central bore and a central integral sleeve projected through one of said registering openings, collapsible chuck jaws mounted in said sleeve, means in said bore and projecting through the other of said registering openings for collapsing and expanding said chuck jaws in said bore, and means for rotating said gear.

852,763. MECHANICAL STOKER. ALFRED BOX, Philadelphia, Pa. Original application filed May 20, 1905, Serial No. 261,379. Divided and this application filed Nov. 4, 1905. Serial No. 285,881.



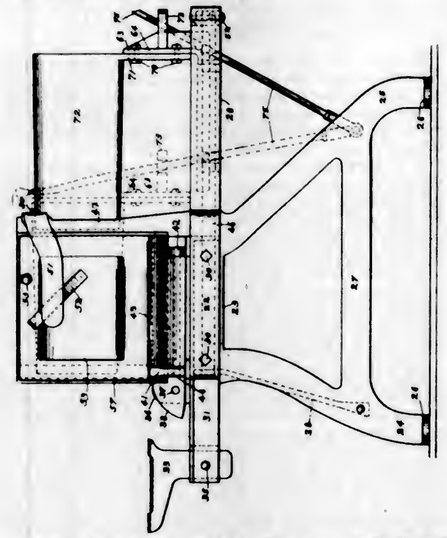
Claim.—1. The combination of a hopper having two compartments leading to the furnace, one of said compartments permitting hand feed, and feeding mechanism located in the other compartment.

2. The combination of a hopper having two compartments leading to the furnace, the lower one of which permits a hand feed, and feeding mechanism located in the upper compartment.

3. The combination of a hopper having two compartments leading to the furnace, the wall separating the compartments being yielding, and a feeding mechanism mounted in one of the compartments.

4. The combination of a hopper having two compartments leading to the furnace, the lower one of which permits hand feed and the upper wall separating the two compartments being yielding, and a feed wheel mounted in the upper compartment.

852,764. MACHINE FOR MAKING CONCRETE BLOCKS. CLAUS O. BRANDELL, Chicago, Ill. Filed Oct. 4, 1906. Serial No. 337,419.



Claim.—1. In a machine for making concrete blocks and the like, the combination with a supporting-frame, of a detachable mold-box mounted thereon and a part of the same pivotally connected thereto at its front portion, said box consisting of a fixed and upright apertured rear plate, a removable pallet, a base-frame provided with a bottom for said box, and a door hinged near one of its edges to each end of the base-frame, and means on the said frame to hold the doors in angular relation thereto in the operation of removing the block.

2. In a machine for making concrete blocks and the like, the combination with a supporting-frame, of a detachable mold-box mounted thereon and a part of the same pivotally connected thereto at its front portion, said box consisting of a fixed and upright apertured rear plate, a removable pallet, a base-frame provided with a bottom for said box, and a door hinged near one of its edges to each end of the base-frame, means on the said frame to hold the doors in angular relation thereto in the operation of removing the block, a core movable horizontally on the frame and adapted to fit in the aperture of said rear plate, and means to move the core back and forth.

3. In a machine for making concrete blocks and the like, the combination with a supporting-frame, of a detachable mold-box mounted thereon and consisting of an upright fixed rear plate having an opening therein for a core, a base-frame provided with a bottom for the box and pivotally connected at its front portion to the supporting-frame, a door pivotally connected near one of its edges to each end of said base-frame, and a pallet removably located between said doors at their front portions, a projection at each end of the base-frame to restrict the movement of said doors, a core movable horizontally on the frame and adapted to fit in the opening of the rear plate, means to move the core back and forth, and brackets on the frame in front of the mold-box to support it in its tilted position.

4. A mold-box consisting of a fixed and upright apertured rear plate, a removable pallet or front plate, a base-frame provided with a bottom for said box, and a door hinged near one of its edges to each end of the base-frame, means at each end of the base-frame to restrict the movement of said doors, and means at each end of the rear plate and on each of the doors to co-act so as to automatically close the doors when the base-frame is returned to its initial position.

5. In a machine for making concrete blocks and the like, the combination with a supporting-frame, of a detachable mold-box mounted thereon and a part of the same pivotally connected thereto at its front portion, said box consisting of a fixed and upright apertured rear plate, a removable pallet or front plate, a base-frame provided with a bottom for said box, and a door hinged near one of its edges to each end of the base-frame, a cam-arm located on each end of the rear plate, a cam-block located on the outer surface of each of said doors to co-act with the said cam-arms so as to automatically close the doors when the base-frame is returned to its initial position.

6. In a machine for making concrete blocks and the like, the combination with a supporting frame, of a detachable mold-box mounted thereon and a part of the same pivotally connected thereto at its front portion, said box consisting of a fixed and upright apertured rear plate, a removable pallet or front plate, a base-frame provided with a bottom for said box, and a door hinged near one of its edges to each end of the base-frame, a cam-arm located on each end of the rear plate, a cam-block located on the outer surface of each of said doors to co-act with the said cam-arms so as to automatically close the doors when the base-frame is returned to its initial position, a carrier or bracket movable horizontally on the supporting-frame and having a transversely elongated opening in its rear portion, a core mounted on said carrier and adapted to fit in the aperture of said rear plate, and a lever fulcrumed on the supporting-frame and extended through the transverse opening in the carrier for the core.

7. In a machine for making concrete blocks and the like, the combination with a supporting frame, of a detachable mold-box mounted thereon and consisting of an upright fixed rear plate having an opening therein for a core, forwardly extending cam-arms secured on said plate at each of its ends, a base-frame provided with a bottom for the box and pivotally connected at its front portion to the supporting frame, a door pivotally connected near one of its edges to each end of said base-frame, a cam-block located on the outer surface of each of said doors to engage the cam-arms on the said rear plate, and a pallet or front plate removably located between said doors at their front portions, a carrier movable horizontally on the supporting frame, a core mounted on said carrier and adapted to fit in said opening of the rear plate, a lever fulcrumed to the supporting frame and in engagement with the carrier, and means on the front portion of the supporting frame to support the mold-box in its tilted position.

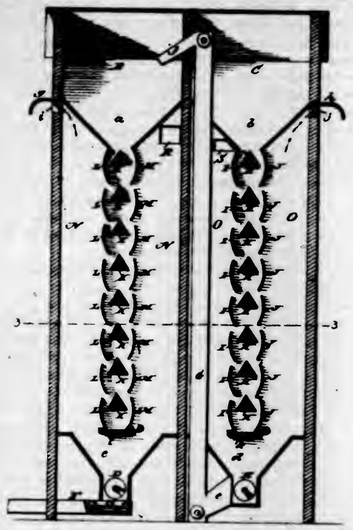
852,765. GRAIN-DRIER. ARTHUR L. BRANNOCK, Neosho, Mo. Filed Oct. 5, 1905. Renewed Apr. 5, 1907. Serial No. 366,623.

Claim.—1. In a grain drier, a plurality of angular deflecting plates extending horizontally in a vertical row one above the other, and curved plates, one arranged upon each side of the angular plates, and an air duct or chimney communicating with the spaces underneath the angular plates, substantially as and for the purpose set forth.

2. In a grain drier, the walls thereof having a plurality of openings therethrough, a plurality of angular deflecting plates extending horizontally in a vertical row one above the other, curved plates, one arranged upon each side of the angular plates, the space upon the under sides of the angular plates communicating with the openings in the walls of the chambers of the drier, and air ducts or chimneys adjacent to the walls of the chambers and communicating with the openings through the walls thereof, substantially as and for the purpose described.

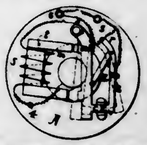
3. A grain drier comprising two chambers with garners

and hoppers at the upper ends, hoppers at the lower ends of the chambers and conveyers located therein, one of said hoppers having a second conveyer and an elevator to take the grain from one chamber and transfer it to the other chamber, a vertical row of angular plates extending horizontally one above the other, curved plates arranged each



side of the angular plates within each chamber, suitable slides upon the lower pair of the curved plates, and air ducts or chimneys adjacent to the walls of the chambers and communicating with the interior thereof, substantially as and for the purpose specified.

852,766. AUTOMATIC ELECTRICAL CUT-OUT DEVICE. RUDOLF BREBACH, Leipzig-Reudnitz, Germany. Filed July 21, 1904. Serial No. 217,582.



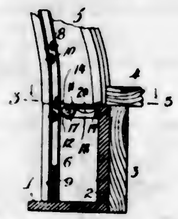
Claim.—In an electric cut-out device, the combination with an electromagnet, an armature forming a one-armed lever, a connecting-wire between the fulcrum of said armature and the coil of said electromagnet, a double-armed lever located about parallelly to said first lever, opposite to the electromagnet, contact-pieces attached one to the free end of the first lever and the other to the free end of the neighboring arm of the other lever, a connecting-link between the other arm of the latter and the said first lever, and a connecting-wire secured to the fulcrum of the said double-armed lever, for the purpose as described.

852,767. CONVERTIBLE CAR. JOHN A. BRILL, Philadelphia, Pa. Filed Nov. 20, 1906. Serial No. 344,190.

Claim.—1. A car having a floor, stanchions, and movable panels beyond the floor limits, and a filler for the space between the panel and floor, carried by the panel.

2. A car having a floor, stanchions, and movable side panels beyond the floor limits, and a filler for the space between the panel and floor, said filler being hinged to said panel.

3. A car having a floor, stanchions and movable panels beyond the floor limits, and a filler for the space between the panel and floor, carried by the panel, and means for engaging the filler when lowered to form a support therefor.



4. A car having a floor, stanchions and movable panels beyond the floor limits, and a filler for the space between the panel and floor, said filler being secured to and carried by the panel and adapted to lie vertically near the panel when the latter is raised, and to be turned horizontally when the panel is lowered.

5. A car having a floor, stanchions and movable panels beyond the floor limits, and a filler for the space between the panel and floor, said filler being secured to and carried by the panel and adapted to lie vertically, and means whereby the lowering of the panel will cause the filler to assume a horizontal position.

6. A car having a floor, stanchions and a movable panel beyond the floor limits, a filler carried by the panel and adapted to lie vertically, and projections on the opposing faces of the stanchions adapted to engage the filler and turn it to a horizontal position.

7. A car having a floor, stanchions and a movable panel, beyond the floor limits, a filler carried by the panel and adapted to lie vertically, and projections on the posts having concave upper surfaces on which the filler engages and by which it is turned to a horizontal position.

8. A convertible car having a floor, stanchions, and side steps extending within the lateral limits of the car as defined by the stanchions, a movable side panel extending below the plane of the floor and a filler carried by the panel and adapted to close the opening between the panel and floor.

9. A convertible car having a floor, stanchions, and side steps extending within the lateral limits of the car as defined by the stanchions, a movable panel between the stanchions, extending below the plane of the floor and a filler hinged to the panel and adapted to be moved horizontally, and means on the stanchions for engaging the filler and causing it to move to a horizontal position as the panel is lowered.

10. A convertible car having a floor, stanchions and side steps extending within the lateral limits of the car, a movable panel between the stanchions, and a filler hinged to the panel and composed of a plate, and an offset projection 24, and means on the stanchion for engaging the projection 24 to cause the plate to move to a horizontal position.

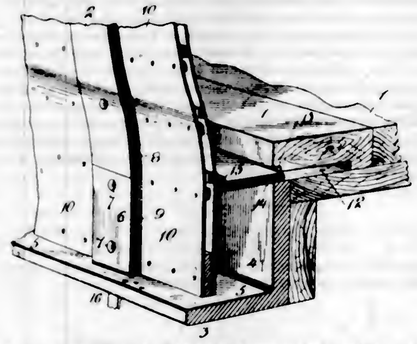
11. A convertible car having a floor, stanchions and side steps within the lateral limits of the car, a movable panel between the stanchions and a filler hinged to the panel and composed of a plate 11, and a web 24, the plane of the web and plate being directed toward a common meeting point, and means on the stanchion for engaging the web 24.

852,768. CONVERTIBLE CAR. JOHN A. BRILL, Philadelphia, Pa. Filed Nov. 20, 1906. Serial No. 344,191.

Claim.—1. A convertible car having a floor and stanchions, movable panels for closing the side openings of the car and a filler for closing the space between the panel and floor, consisting of a movable plate, the car being provided with a recess for the reception of the said filler when the panel is raised.

2. A convertible car having a floor and stanchions, movable panels for closing the side openings of the car and a sliding filler for closing the space between the panel and floor, consisting of a sliding plate, the car being provided

with a recess for the reception of the said filler when the panel is raised and means for supporting the filler in its extended position.

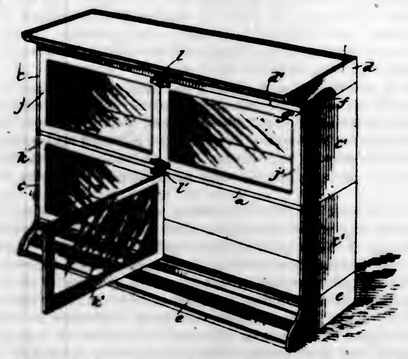


3. A convertible car having a floor, stanchions, and side sill, movable panels for closing the side openings of the car and spaced from the car floor, and a filler for closing the space between the panel and floor, consisting of a sliding plate, and means on the stanchions for supporting the plate.

4. A convertible car having a floor, stanchions and side sill, movable panels for closing the side openings of the car and spaced from the car floor, and a filler for closing the space between the panel and floor, consisting of a sliding plate, and projections on the opposing faces of the stanchions for supporting the plate, the car being provided with a horizontal recess below the surface of the floor for receiving the said filler.

5. A convertible car having a floor, stanchions, and side steps extending within the lateral limits of the car, movable panels between the stanchions adapted to pass below the plane of the floor and a filler between the stanchions consisting of a sliding plate, means for supporting the same between the stanchions, the car being provided with a recess for the reception of the filler.

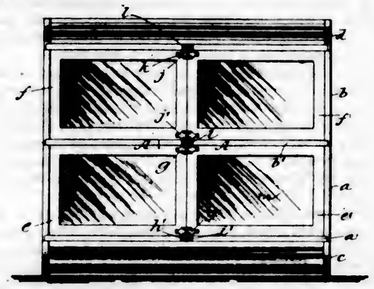
852,769. SECTIONAL BOOKCASE. JAMES W. CAMPBELL, Cheviot, N. Y., assignor, by mesne assignments, to Ferguson Brothers Mfg. Co., Hoboken, N. J., a Corporation of New Jersey. Filed Jan. 20, 1902. Serial No. 90,544.



Claim.—1. A section of a sectional book case having the body portion and the front of its bottom separated whereby the weight upon the body of the bottom will not depress the front of said bottom, and a door having one of its bearings upon the front of said bottom.

2. In a sectional book case, the combination with a series of superposed sections having main bottom portions for the reception of books and supplemental bottom portions independent of said main bottom portions, of doors hinged to said supplemental bottom portions.

852,770. SECTIONAL BOOKCASE. JAMES W. CAMPBELL, Cheviot, N. Y., assignor, by mesne assignments, to Ferguson Brothers Mfg. Co., Hoboken, N. J., a Corporation of New Jersey. Filed Jan. 20, 1902. Serial No. 90,545.



Claim.—1. The combination with a bookcase, of a pair of doors hinged to each other and to the bookcase at their juncture.

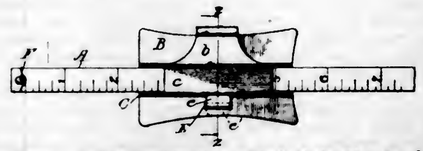
2. The combination with a bookcase, of a pair of doors and a common hinge hinging said doors to each other and to said bookcase.

3. The combination with superposed sections of a sectional bookcase, the bottom of an upper section forming the top of a lower section, of a pair of horizontally swinging doors hinged together and pivotally secured at their hinged edges to the fronts of the bottoms of the superposed sections intermediate the ends of said sections, substantially as set forth.

4. The combination with superposed sections of a sectional bookcase, of a pair of doors for closing the front of a section, hinges for hinging the doors together and to the sections, said hinges each comprising three parts, one secured to one door, another to the other door and a third to a section, and a pintle common to the three parts, substantially as set forth.

5. The combination with a section of a sectional bookcase, of a pair of doors hinged to each other, and a keeper secured to the bottom of said section with which the pintle of one of the hinges of said door engages.

852,771. TAPE-MEASURE. EMIL A. CHRISTOPH, Chicago, Ill., assignor to Chicago Tape & Label Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 1, 1906. Serial No. 336,924.



Claim.—1. The combination with a tape-measure, of a runner consisting of a substantially rectangular plate having a longitudinal channel therein traversed by said tape and between the sides of which said tape is guided, and having integral means for adjustably clamping said tape in said channel.

2. The combination with a tape-measure, of a runner consisting of a substantially rectangular plate having a longitudinal channel therein traversed by said tape and between the sides of which said tape is confined and guided, and having an integral spring member for adjustably clamping said tape in said channel.

3. The combination with a tape-measure, of a runner

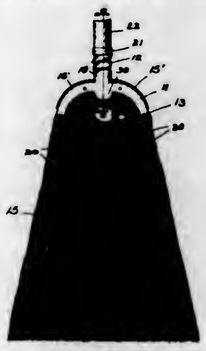
consisting of a substantially rectangular plate having a longitudinal channel therein traversed by said tape and between the sides of which said tape is confined and guided and having an integral spring-member which has a downwardly projecting longitudinal rib for adjustably clamping said tape in said channel.

4. The combination with a tape-measure, of a runner consisting of a substantially rectangular plate bent double transversely, the lower member of which is provided with a longitudinal channel traversed by said tape and between the sides of which said tape is guided and confined, and the upper member of which plate normally presses down upon the said tape.

5. The combination with a tape-measure, of a runner consisting of a substantially rectangular plate bent double transversely, the lower member of which is provided with a longitudinal channel traversed by said tape and between the sides of which said tape is guided and confined, and the upper member of said plate having a longitudinal downwardly projecting rib normally pressing down upon said tape.

6. The combination with a tape-measure, of a runner consisting of a plate bent double transversely to provide an upper member normally pressing downward thereon, the lower member having an opening near the edge thereof opposite the bend, and said upper member having a finger extending transversely and downwardly through said opening.

852,772. BROOM. ANDREW J. COCHRAN, Indianapolis, Ind. Filed June 19, 1906. Serial No. 322,385.



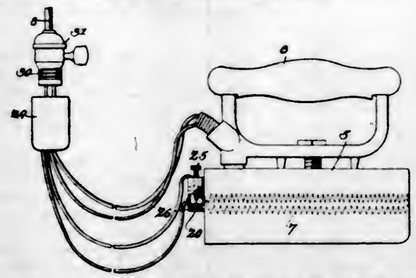
Claim.—1. A broom comprising a pair of half-fittings each comprising a hollow handle-receiving member and a pair of hollow diverging arms, a mass of corn having the butts arranged between the arms of the fittings, fastening members extending through the fittings, and a pair of wisps of corn having their butt ends laid inside of the end fastening members and their soft ends doubled back upon the mass outside of said fastening members, and means other than the fittings for binding the corn together at a point beyond the fittings.

2. A broom comprising a pair of half-fittings each comprising a threaded hollow handle-receiving member, a pair of hollow diverging arms and a lip opposite the handle-receiving member, a mass of corn having the butts arranged between the arms of the fittings, fastening members extending through the fittings, and a pair of wisps of corn having their butt ends laid inside of the end fastening members and their soft ends doubled back upon the mass outside of said fastening members, means other than the fittings for binding the corn together at a point beyond the fittings, and a handle screwed into the fittings and having a tapered end adjacent said lips.

3. A broom comprising a pair of half fittings each comprising a hollow handle-receiving member, a pair of hollow arms diverging from the lower end of said handle-receiving member, and a lip arranged in alinement with the handle-receiving member at its inner end, means for clamping said two members together upon the butts of the broom material, and a handle member projected into the handle-receiving members and between the aforesaid lips whereby the handle-receiving members are clamped upon the handle by longitudinal movement of the handle between the lips.

4. A broom comprising a pair of half-fittings each comprising a threaded hollow handle-receiving member, a pair of hollow diverging arms and a lip opposite the handle-receiving member, a mass of corn having the butts arranged between the arms of the fittings, fastening members extending through the fittings, means other than the fittings for binding the corn together at a point beyond the fittings, and a handle screwed into the fittings and having a tapered end adjacent said lips.

852,773. ELECTROTHERMOSTATIC HEAT-REGULATOR. LLOYD G. COPEMAN, Spokane, Wash., assignor of one-half to Chas. A. Walker, Cœur d'Alene, Idaho. Filed May 21, 1906. Serial No. 318,034.



Claim.—1. A circuit controller including an energized circuit, a solenoid the armature of which constitutes a movable contact, a relatively stationary contact disposed below the solenoid and having a socket formed therein for the reception of the movable contact, and a thermostat for operating the solenoid to make and break the circuit.

2. A circuit controller including an energized circuit, a solenoid the armature of which constitutes a movable contact, a bracket depending from the solenoid and provided with a stationary contact having a socket formed therein for the reception of the movable contact, and a thermostat for operating the solenoid to separate the contacts and thereby make and break the circuit.

3. A circuit controller including an energized circuit, a solenoid, an armature provided with a terminal contact insulated from said armature, a contact disposed below the armature and adapted to engage the armature contact, and a thermostat for operating the solenoid to separate the contacts thereby to make and break the circuit.

4. A circuit controller including an energized circuit, a solenoid, an armature insulated from the solenoid frame, a contact carried by the armature and insulated from the same, a contact disposed beneath the solenoid and adjustable with respect to the armature contact, and a thermostat for operating the solenoid to make and break the circuit.

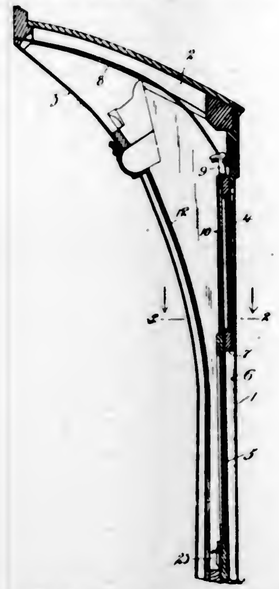
5. A circuit controller including an energized circuit, a solenoid, a bracket depending from the solenoid, a screw threaded in the bracket and provided with a cup shaped contact, a contact carried by the armature of the solenoid and insulated from said armature, and a thermostat adapted to operate the solenoid to make and break the circuit.

6. A circuit controller including an energized circuit, a solenoid the armature of which constitutes a movable contact, and a relatively stationary contact disposed beneath the movable contact and provided with a socket for the reception of said movable contact, a thermostat for operating the solenoid to open and close the circuit, a casing for the switch, and a threaded plug associated with the casing for connection with a socket carried by the terminals of the energized circuit.

7. A circuit controller including an energized circuit, a perforated support carried by the heater and provided with an adjustable contact screw, a thermostatic bar secured to the support and adapted to engage the screw, a dial, a pointer carried by the screw and movable over the face of the dial, said pointer being provided with a depending arm loosely mounted in the perforation of the support, an electro-magnetically operated switch adapted to make and break the circuit, said switch being operated by the thermostat.

8. A circuit controller including an energized circuit, an electro-magnetically operated switch adapted to make and break the circuit, a casing, a support arranged within the casing, a pair of thermostatic bars carried by and insulated from the support, a contact screw secured to one bar and adapted to engage the adjacent bar for operating the switch, a dial, and a pointer carried by the contact screw and movable over the face of the dial.

852,774. CAR. SAMUEL M. CURWEN, Haverford, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Nov. 26, 1906. Serial No. 345,015.



Claim.—1. In a railway car, a plurality of stanchions providing window frames, and having an outer parting strip and flush inner surface, said car being provided with pockets adjacent the roof and above the window openings, a plurality of movable sashes adapted to be stored in said roof pocket, a guide rail in the roof pocket, means on the upper sash for engaging the guide rail, means on the upper sash for guiding the lower sash, the said stanchion being provided with a vertically disposed groove, and a pintle on the lower part of the lower sash adapted to move in said stanchion groove, the lower sash being guided thereby.

2. In a railway car, a plurality of stanchions forming window frames, and having an outer parting strip and flush inner surface, said car being provided with a pocket adjacent the roof and above the window openings, an upper and lower sash adapted to be stored in said roof pocket, a guide rail in said roof pocket, means on the upper sash for engaging the guide rail, means for causing the lower sash to engage the upper sash so as to be guided in relation thereto, the said stanchion being provided with a vertically disposed groove near the outer edge of the stanchion, and a pintle on the lower portion of the lower sash which travels in the vertical groove and guides the lower sash.

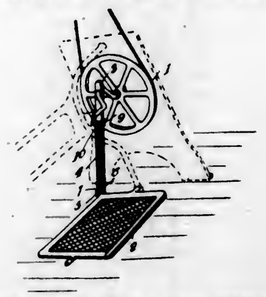
3. In a car, a plurality of stanchions forming window frames, said car being provided with pockets near the roof and above the window openings, a guide rail in the roof pockets, an upper and lower sash, means on the upper sash for guiding and supporting the upper end thereof on said guide rail, flanges on the upper sash which engage and guide the lower sash, said stanchions being provided with a vertical groove adjacent the outer edge and a flush inner surface, said groove running into the said roof pocket, and a pintle on the lower portion of the lower sash which engages in the said groove and guides the lower ends of both the lower and upper sashes.

4. In a railway car, a plurality of stanchions providing a window frame, said car being provided with an upper sash chamber, a guide rail in said chamber, an upper sash provided with means for engaging the guide rail, and provided with flanges, a lower sash adapted to engage and to be guided by the said upper sash flanges, the stanchions being provided with a vertical groove, and a spring actuated and manually operated movable pintle entering said groove and secured to the lower sash, to guide the latter.

5. In a car, stanchions providing window frames and having an outer parting strip and inwardly projecting flush surface and having a vertical groove adjacent the parting strip, said car being provided with an upper sash-storage chamber, a guide rail in said storage chamber, upper and lower sashes adapted to move on the flat opposing surfaces of the said stanchions and to lie against said outer parting strip, a hanger on the upper portion of the upper sash suspended from said guide rail, angular flanges on the sides of the upper sash, the upper portion of the lower sash engaging with said flanges and guided thereby, and pintles secured to the lower portion of the lower sash which movein the said vertical stanchion grooves and guide both sashes.

6. In a car, a plurality of stanchions forming a window frame, said car being provided with pockets under the roof, a guide in said roof pocket, upper and lower sashes, means on the upper sash for guiding the lower sash, means for causing the two sashes to move together when they are moved to an overlapping position, means on the upper part of the upper sash for suspending the sash on said guide rail, the stanchion being provided with vertical grooves, and flush inner surfaces, each groove being co-extensive with the window opening, and pintles on the lower portion of the lower sash which move in the stanchion grooves and guide the sashes.

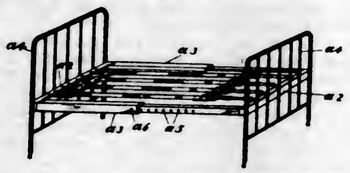
852,775. DEVICE FOR OVERCOMING DEAD-CENTERS. FREDRICK W. DILL and JOHN R. HILL, Lincoln, Kans. Filed Feb. 28, 1906. Serial No. 303,583.



Claim.—The combination of a rotary member, a reciprocating member, a pitman connecting the two and having a stud projecting laterally therefrom, and a spring member extending along the pitman and provided at one end with an enlarged portion having a slot formed therein, whereby it is detachably connected to the reciprocating member and held in a fixed position with relation thereto, while the opposite end of the spring is provided with a laterally elongated slot which fits loosely over the before mentioned stud projecting from the pitman, the sliding movement of

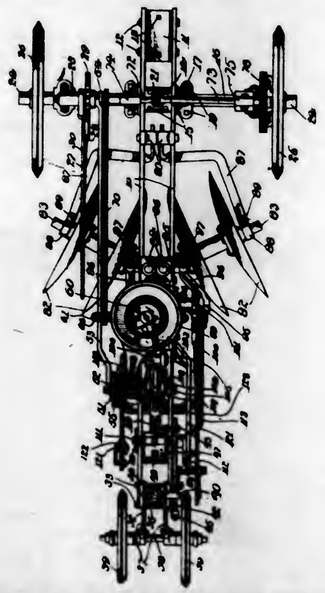
the stud within the slot enabling the rotary member, pitman and reciprocating member to operate freely without being influenced by the action of the spring member except when the stud has reached the limit of its sliding movement within the slot and the members are in the proper position for producing a dead center.

852,776. BED. EDWARD J. DRUDING, New York, N. Y. Filed Dec. 4, 1906. Serial No. 346,206.



Claim.—A bed or mattress frame, the side bars of which are composed of separate parts whereby the length thereof may be adjusted longitudinally, said frame being also provided with longitudinally arranged main straps for supporting a mattress, said main straps being connected with one end of the frame by means of spiral springs and with the other end of the frame by means of supplemental straps provided at one end with buckles through which the main straps are passed and at the other end with hooks which engage said end of the frame.

852,777. COMBINED LISTER PLOW AND PLANTER. THOMAS J. DUDLEY, Abilene, Tex., assignor to Ed. S. Hughes, Abilene, Tex., and H. C. Stahl, Bellevue, Ohio. Filed Dec. 16, 1904. Serial No. 237,099.



Claim.—1. In a lister, the combination, with a frame supported at a fixed distance above the ground, and a seeding mechanism, of oppositely arranged disks, a furrow-opener in the rear of said disks, said disks and furrow-opener being independently mounted on said frame, and means adapted to be operated from the driver's seat for raising and lowering the same relatively to said frame, substantially as described.

2. In a lister, the combination, with the frame supported at a fixed distance from the ground, and a seeding mechanism, of oppositely arranged disks, a furrow-opener in the rear of said disks, said disks and furrow-opener being independently mounted on said frame, and a common shift-lever connected to the said disks and furrow-opener to raise and lower the same relatively to said frame, substantially as described.

3. In a lister, the combination, with a frame supported at a fixed distance from the ground, and a seeding mechanism, of oppositely arranged disks, a furrow-opener in the rear of said disks, independent vertically movable standards whereon said disks and furrow-opener are mounted, and means common to both of said standards for simultaneously raising and lowering the same relatively to said frame, substantially as described.

4. In a lister, the combination, with a frame supported at a fixed distance from the ground, and a seeding mechanism, of oppositely arranged disks, a furrow-opener in the rear of said disks, a common shift lever for raising and lowering the said disks and furrow-opener relatively to said frame, and adjustable connections between said lever and said disks and between said lever and said furrow-opener, substantially as described.

5. In a lister, the combination, with a frame supported at a fixed distance from the ground, and seeding mechanism, of oppositely arranged plowing disks, a middle-bursting furrow-opener in the rear of said disks, a pair of rock-shafts journaled in the frame and connected to said disks and middle-burster for raising and lowering the same relatively to said frame, and means for operating said rock-shafts, substantially as described.

6. In listers, the combination with the frame and seeding mechanism, of the oppositely inclined plowing disks, a middle-bursting furrow-opener in rear of said disks, a pair of rock-shafts journaled on the frame, crank arms on said shafts, links connecting said crank-arms with said disks and said furrow-opener, and means for operating said rock shafts, substantially as described.

7. In listers, the combination with the frame and seeding mechanism, of the oppositely arranged plowing disks, a middle-bursting furrow-opener in rear of said disks, a pair of rock-shafts journaled in the frame and connected to said disks and middle-burster for raising and lowering the same, a common shift-lever mounted upon one of said rock-shafts, a crank arm upon the other of said rock-shafts and a link connecting said lever and said crank-arm, substantially as described.

8. In listers, the combination with the frame and seeding mechanism, of a disk, a disk-shaft having an upright standard, a bearing on the frame through which said standard is vertically movable, a shift-lever mounted on the frame and means adjustably secured to said standard for connecting the same to said lever to raise and lower said shaft and disks, substantially as described.

9. In listers, the combination with the frame and seeding mechanism, of a disk, a disk-shaft having an upright standard at its inner end, a bearing on the frame through which said standard is vertically shiftable, an L-shaped link connecting the outer end of said shaft to the frame and shift-lever mechanism for raising and lowering said shaft and disk, substantially as described.

10. In listers, the combination with the frame and seeding mechanism, of a disk, a disk-shaft arranged to swing to adjust the inclination of the disk and having an upright standard a bearing on the frame, through which said standard is vertically shiftable, an adjustable link pivotally connected to the outer ends of said shaft and to said frame and shift-lever mechanism arranged to raise and lower said shaft and disks, substantially as described.

11. In listers, the combination with the frame and seeding mechanism, of a disk, a disk-shaft arranged to swing to adjust the inclination of the disk and having an upright standard, a bearing on said frame through which said standard is vertically shiftable, a link connected by a vertical pivot bolt to the outer end of said shaft and adjustably connected at its forward end by a horizontal pivot bolt to the frame and shift-lever mechanism for raising and lowering the shaft and disk, substantially as described.

12. In listers, the combination with the frame and seeding mechanism, of a disk, a disk-shaft having an upright standard, a bearing on the frame in which said standard is rotatably and vertically movable, adjustable connections between said shaft and the frame, a shift-lever and connections between said lever and said shaft for raising and lowering the same, substantially as described.

13. In listers, the combination with the frame and seeding mechanism, of a disk, a disk-shaft having an upright standard, a bearing on the frame in which said standard is rotatably and vertically movable, adjustable connections between said shaft and the frame, a sleeve loosely mounted upon said standard, adjustable collars for holding said sleeve against longitudinal movement on said upright standard and lift mechanism connected to said sleeve, substantially as described.

14. In listers, the combination with the frame and seeding mechanism, of the oppositely arranged disks, a pair of disk-shafts having upright standards at their inner ends, bearings on the frame through which said uprights extend, a shift-lever mounted on the frame, connections between said shafts and said lever for raising and lowering the disks, and adjustable link connections between the outer ends of the disk-shafts and the frame, substantially as described.

15. In listers, the combination with the frame and seeding mechanism, of the oppositely arranged disks, a pair of disk-shafts having upright standards at their inner ends, bearings on the frame through which said uprights extend, a horizontal rock-shaft journaled in the frame and operating lever therefor, arms on said shaft, link connections between said arms and the inner ends of the disk-shafts for raising and lowering the disks and link connections between the outer ends of the disk-shaft and the frame, substantially as described.

16. In listers, the combination with the frame and seeding mechanism, of the oppositely arranged disks, a pair of disk-shafts having upright standards at their inner ends, bearings on the frame through which said uprights extend, a shift-lever on the frame, adjustable link connections between said shift-lever and the inner ends of said disk-shafts for raising and lowering the disks, and adjustable link connections between the outer ends of the disk-shafts and the frame for adjusting the inclination of the disks, substantially as described.

17. In listers, the combination with the frame and seeding mechanism, of the oppositely arranged disks, a pair of disk-shafts having upturned inner ends forming vertical standards, bearings on the frame whereon said standards are rotatably and vertically movable, adjustable connections between the outer ends of the disk-shafts and the frame, sleeves loosely mounted on the standards but held against longitudinal movement thereon and shift-mechanism for raising and lowering the disks connected to said sleeves, substantially as described.

18. In listers, the combination with the frame and seeding mechanism, of the oppositely arranged disks, a pair of disk-shafts having upturned inner ends forming vertical standards, bearings on the frame whereon said standards are rotatably and vertically movable, adjustable connections between the outer ends of the disk-shafts and the frame, sleeves loosely mounted on the standards but held against longitudinal movement thereon, a horizontal rock-shaft journaled on the frame, an operating lever therefor, arms on said shaft and links between said arms and said sleeves, substantially as described.

19. In a lister, the combination, with the frame supported at a fixed distance above the ground, of the seeding mechanism and seed chute, oppositely arranged plowing disks in front of said seed chute, covering devices in the rear of said chute, said disks and covering devices being independently mounted on said frame, and means adapted to be operated from the driver's seat for vertically adjusting said disks and said covering devices relatively to said frame, substantially as described.

20. In a lister, the combination, with the frame supported at a fixed distance above the ground, of the seeding mechanism and seed chute, oppositely arranged plowing disks in front of said seed chute, covering devices in the rear of said seed chute, said disks, seed chute and covering devices being independently mounted on said frame, and a shift-lever and connections common to said disks, seed chute and covering devices for simultaneously adjusting the same relatively to said frame.

21. In listers, the combination with the frame, of the seed mechanism and seed chute, the oppositely arranged plowing disks in front of said seed chute, covering devices in rear of said seed chute, a pair of rock-shafts journaled on the frame, a common shift-lever connected to said shafts, connections between one of said shafts and said disks and connections between the other of said shafts and said covering devices, substantially as described.

22. In a lister, the combination, with a frame supported at a fixed distance above the ground, and a seed hopper and distributing mechanism mounted on said frame, of a seed chute, oppositely arranged plowing disks in front of said chute, a middle-burster between said disks and said chute, said disks, and middle-burster being independently mounted on said frame, and means for raising and lowering said disks, middle-burster and chute relatively to said frame, substantially as described.

23. In a lister, the combination, with a frame, of the seeding mechanism and seed chute, of the oppositely arranged plowing disks in front of said chute, a middle-burster between said disks and said chute, covering devices in the rear of said seed chute, said disks, middle-burster and covering devices being independently mounted on said frame, and a common shift-lever in operative connection for raising and lowering the same relatively to said frame.

24. In listers, the combination with the frame, of the seed mechanism, a seed chute having a lower telescoping section, a middle-bursting furrow-opener in front of said chute and connected to said telescopic chute section, drag bars pivoted to the frame, covering devices carried by said drag bars in rear of said seed chute, a cross rock-shaft on the frame, an arm on said shaft, links connecting said arm to said furrow-opener and to said drag bars, and an operating shift-lever for said rock-shaft, substantially as described.

25. In listers, the combination with the frame, of the seed mechanism and seed chute, a furrow-opener in front of said seed chute, an upright, vertically shiftable standard for said furrow-opener, drag bars pivoted to the frame, covering devices carried by said drag bars in rear of said seed chute, a cross rock-shaft on the frame, link connections between said rock-shaft and the drag bars, an adjustable link connection between the rock-shaft and said upright standard and a shift-lever connected to said rock-shaft, substantially as described.

26. In listers, the combination with a frame supported at a fixed distance above the ground, and a seed hopper and distributing mechanism mounted on said frame, of a seed-chute, a plowing device in front of said seed chute, a furrow-opener between said plowing device and chute and independent thereof, separate standards adjustably mounted in said frame whereon said plowing device and furrow-opener are mounted and a common shift-lever for raising and lowering said standards, substantially as described.

27. In listers, the combination with the frame, of the seed mechanism and seed chute thereon, a plowing device in front of said seed chute, a furrow-opener between said plowing device and chute, separate upright vertically shiftable standards whereon said plowing device and furrow-opener are mounted, separate cross rock-shafts connected respectively to said standards and a common shift lever connected to said standards, substantially as described.

28. In listers, the combination with the frame, of the seed mechanism and seed chute thereon, a plowing device in front of said seed chute, a furrow-opener between said plowing device and chute, covering devices arranged in rear of said seed chute, a pair of rock-shafts, links connecting one of said rock-shafts to said plowing device, links connecting the other of said rock-shafts to said furrow-opener and to said covering devices, and a common operating lever connected to said rock-shafts, substantially as described.

29. In listers, the combination with the frame and the seeding mechanism, of a furrow-opener, an upright, vertically shiftable standard whereon said furrow-opener is mounted, a plurality of brackets mounted one above the other on said frame and having openings therethrough to form upper and lower bearing boxes through which said standard extends, a pair of antifriction rollers mounted in each of said bearing boxes and arranged to engage respectively the front and rear faces of said standard and means for shifting said standard, substantially as described.

30. In listers, the combination with the frame comprising parallel adjacent side bars extending from front to rear of the furrow-opener, and the seeding mechanism, of an upright, vertically shiftable standard for said furrow-opener, brackets secured between the side-bars of the frame and having openings therethrough forming upper and lower bearing boxes through which said standard extends secured between the side bars of the frame and rollers carried by said bearing boxes engaging the front and rear faces of said standard, substantially as described.

31. In listers, the combination with the frame comprising parallel adjacent side-bars extending from front to rear and connected at their opposite ends, of a seed mechanism and seed chute thereon, a plowing device and furrow-opener in front of said seed chute, upright, vertically shiftable standards for said plowing device and furrow-opener, bearing boxes for said standards secured between the side bars of the frame, and a common shift-lever connected to said standards, substantially as described.

32. In listers, the combination with the frame comprising parallel adjacent side-bars extending from front to rear and connected at their opposite ends, of a seed mechanism and a seed chute thereon, a plowing device and furrow-opener in front of said seed chute, upright, vertically shiftable standards for said plowing device and furrow-opener, bearing boxes for said standards secured between the side-bars of the frame, drag bars pivoted to the outer faces of said side-bars, covering devices carried by said drag bars in rear of said seed chute, a pair of horizontal rock-shafts journaled on the side bars of the frame on said shafts, links connecting said arms to said standard and connecting one of said arms to said drag bars and a common shift-lever connected to said rock-shafts, substantially as described.

33. In listers, the combination with the frame and with the seeding mechanism carried thereby, of the steering axle swiveled to said frame, a counter-shaft comprising separate sections, one of said sections being connected to said axle and the other to the frame, and gearing connecting said counter-shaft and seed mechanism, substantially as described.

34. In listers, the combination with the frame and with the seeding mechanism carried thereby, of the steering axle swiveled to said frame, a supporting wheel carried by said axle and a counter-shaft comprising separate sections swiveled together in line with the pivot of said axle, one of said sections being mounted on the axle and geared to said wheel and the other of said shaft sections being mounted on the frame and geared to said seeding mechanism, substantially as described.

35. In listers, the combination with the frame and with the plowing and seeding devices carried thereby, of a front steering axle, a center upright pivot connected thereto, a bearing for said pivot mounted on the frame, depending arms on the ends of said axle, one of which is swiveled thereto, stub axles carried by said arms, supporting wheels on said stub axles and shift-levers connected to said steering axle and to said swiveled arm, substantially as described.

36. In a lister, the combination, with the frame, the seeding mechanism and the seed chute on said frame, of front and rear supporting wheels for said frame, oppositely arranged plowing disks in front of said seed chute, a middle-bursting furrow-opener between said disks and seed chute, covering devices in the rear of said seed chute, said disks, furrow-opener and covering devices being independently mounted on said frame, and a common device for raising and lowering the same relatively to said frame, substantially as described.

852,778. ELECTRIC CABLE. ROBERT D'UNGER, Chicago, Ill., assignor, by direct and mesne assignments, to The Electric Loop and Cable Company, a Corporation of New Jersey. Filed Sept. 19, 1904. Renewed Oct. 3, 1906. Serial No. 337,209.



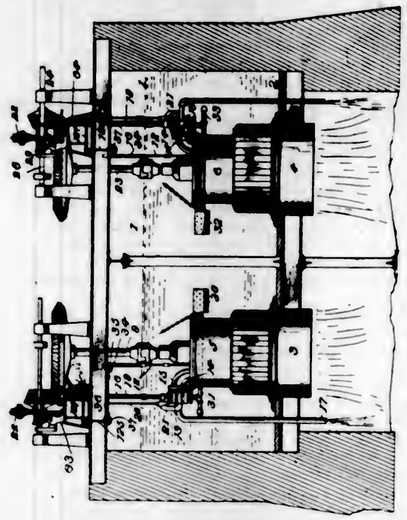
Claim.—1. The combination with a series of electrical conductors formed into continuous adjacent circuits, a part of each two adjacent circuits being wound upon a common core, of a continuous circuit associated therewith having a part wound upon each of said cores.

2. The combination with a transmitting and receiving instrument located at distant points of a connecting conductor made up of a series of disconnected looped circuits, parts of each two adjacent circuits wound upon a metallic core, said cores distributed at intervals along the line between the instruments, and a continuous circuit associated with said disconnected circuits and having a part thereof wound around each of said cores.

3. The combination with two sets of telephone instruments and two sets of telegraph instruments of a connecting conductor made up of a series of disconnected looped circuits placed end to end and electrically insulated from each other, parts of each two adjacent circuits being wound upon a metallic core so as to form coils with the ends abutting, and a continuous conductor associated with said looped circuits, and having a part thereof wound around each of said cores, said cores distributed at intervals along the line between the instruments and embedded in insulating material so as to form a continuous cable, and means for alternately connecting the telephone and telegraph instruments with said conductor.

4. An electric cable made up of a series of disconnected conductors, portions of the adjacent sections of each conductor being wound upon a common core, a continuous conductor extending the length of the cable and having a portion wound around each of said cores, a source of electric supply in said continuous conductor, the said conductors and cores embodied in a continuous cable.

852,779. GOVERNOR FOR PRIME MOTORS. FRANCIS ELLICOTT, Baltimore county, Md. Continuation of application Serial No. 112,058, filed June 17, 1902. This application filed Aug. 22, 1906. Serial No. 331,669.



Claim.—1. The combination of a piston contained in a cylinder balanced between active opposing pressures, a main valve controlling inlet and exhaust from the cylinder, an independent exhaust valve, means connected to and operating the main valve and means connecting the exhaust valve with the piston, including a cam by which the motion of the piston is reduced and communicated to the exhaust valve in a relation corresponding to the curve of efficiency of the prime motor.

2. In a synchronizing device for two or more prime motors, the combination of two independent governors driven from the motors, two motor controllers, each consisting of a piston balanced between active opposing pressure, and moving in a cylinder, a main valve for each cylinder, admitting and exhausting pressure to and from the cylinder, a lever for each governor pivoted at or about its center to the base of the governor, and moved by its pivot by the governor, means connecting the main valve to one end of the lever, and means connecting the piston, to the other end of the lever.

3. In a synchronizing device for turbine water motors operating electric generators which are feeding a common line, two wheels, gate-moving mechanism, a controller for the gate-moving mechanism, two governors driven from the wheels means connecting the governor to the controllers, so that they will respond to the motion of the governor, independent means connecting the controller to the gate and by which it is moved in an opposite direction to the motion communicated to it by the governor, the ultimate motion of the controller being the resultant of the motions of the governor and gate.

4. In a device for causing two motors carrying the same load to divide it in proportion to their capacity, the combination of two motors carrying a common load, a governor for each motor, means connecting each motor to its governor by which the speed of the motor is communicated to the governor, means connecting each motor to its governor by which the proportion of power being developed by the motor is communicated to the governor, a motor controller operated by the governor, the motion of the controller being the resultant of the speed and load, both of which are influencing the governor.

5. In a device for causing two motors carrying the same load to divide it in proportion to their capacity, the combination of two motors, carrying a common load, a governor for each motor, means communicating the speed of each motor to its governor, means communicating the proportion of the load being carried by each motor to its governor, a motor controller for each motor, each controlled by its own governor, the motion of each controller being the resultant of speed and load of each motor.

6. In a synchronizing device for turbine water wheels, a series of wheels, each controlled by a gate and means for giving to the wheels at every position of gate a different normal speed.

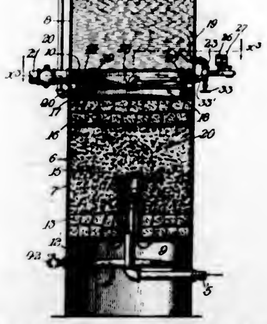
7. In a synchronizing device for prime motors a series of motors each controlled by a controller and means for giving to the motors at every position of the controller a different normal speed.

8. In a device for governing a prime motor, the combination of a governor, a controller, and means for changing the normal speed position of the governor as the power of the motor changes.

9. In a device for governing a prime motor the combination of a governor, a controller, and a motor, and means for changing the normal speed of the governor inversely as the power changes.

10. In a device for governing a prime motor the combination of a centrifugal governor, a controller, and a motor, and means for changing the normal path of the centrifugal device independently of speed.

852,780. AUTOMATIC GASOLENE-GAS MACHINE. AUGUSTUS L. ELLIS, Los Angeles, Cal. Filed Oct. 31, 1906. Serial No. 341,486.



Claim.—1. A gas machine comprising an air supply and a carbureter, said carbureter having diffusing means therein, connections between said air supply and said carbureter, means for admitting air to the bottom of said diffusing means, means for spraying hydrocarbon upon said diffusing means, and means for controlling the hydrocarbon supply, comprising a valve having a stem, weighted means on said stem for seating and unseating said valve, and means for controlling said weighted means.

2. The combination with a pump, an airometer and a carbureter, of a reservoir in the upper portion of said carbureter, a porous body in the lower part, a star located above said porous body, a connection between said star and reservoir, an air inlet at the bottom of said means, automatic means for regulating the supply of hydrocarbon to said star comprising a stem, a plurality of arms mounted on said stem, a series of weights mounted on said arms, and a lever for causing the overbalancing of said weights from one side to the other.

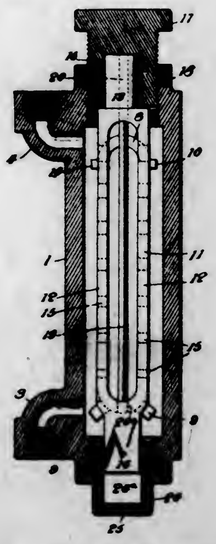
3. The combination with a pump, an airometer and a carbureter, of means operable by the movement of said pump for regulating the supply of hydrocarbon to said carbureter, said means comprising a valve, a stem on said

valve, weights on said stem, a lever for operating said weights, the same having an elongated arm and being mounted on said stem, and a connection between said elongated arm and pump.

4. The combination with a pump, an airometer and a carbureter, of a supply tank in said carbureter, a connection between said tank and carbureter, means for automatically controlling the supply of said hydrocarbon to said carbureter, said means comprising a valve having a seat and stem, a sleeve fixed to the valve stem and having a plurality of fingers, a plurality of weights on said fingers, a bell-crank-lever loosely mounted on said stem, means operated by said lever for engaging said fingers alternately, and means operable by the movement of said pump for controlling the movement of said lever.

5. The combination with a pump, an airometer and a carbureter, of a supply tank in said carbureter, a connection between said tank and carbureter, means for automatically controlling the supply of said hydrocarbon to said carbureter, said means comprising a valve having a stem arranged to open and close the valve, a sleeve adjustable on said stem having a plurality of fingers, two of said fingers being provided with weights, means for adjusting said weights on said fingers, an elongated lever on said stem engaging one of said fingers and arranged to move the weighted members from one position to another, and a connection between said elongated lever and said pump whereby the movement of the former is controlled.

852,781. WATER-GAGE FOR BOILERS. FREDERICK W. FISHER, Collingswood, N. J. Filed Dec. 21, 1906. Serial No. 349,002.



Claim.—1. In a water gage, the combination of a hollow case arranged for connection to a boiler and provided with oppositely alined sight openings and with sockets adapted to receive glasses, glasses fitted within said sockets, tapered blocks adapted to abut against the inner faces of the respective glasses and provided with openings, substantially as described, a hollow wedge provided with an opening designed to register with the openings of said tapered blocks and adapted to be interposed between said blocks, whereby to press the same outwardly against the glasses, one end of said wedge being provided with a round head, and a compression plug adapted to screw in the end of the case and provided with a socket in which the said head snugly fits.

2. A water gage, comprising a hollow case provided with sight openings and sockets adapted to receive glasses at said sight openings, glasses adapted to fit in said sockets, link shaped tapered blocks adapted to fit against the inner faces of said glasses, said blocks being tapered on their opposing faces, only, a hollow wedge consisting of two spaced members connected together and said members tapered on their side edges and the said taper corresponding to the taper of the said blocks, the said wedge being adapted for interposition between the two tapered blocks, and means for moving said wedge downwardly between the blocks.

3. A water gage, comprising a hollow case provided with sight openings and with sockets adapted to receive glasses at said sight openings, the case being also provided at its ends with guide lugs, taper blocks adapted to be guided down within the case between said lugs and to rest at one end upon sundry of said lugs, a wedge to force said tapered blocks apart, the tapered blocks and said wedge being hollow and providing an opening from one glass to another, and means for forcing said wedge down between said blocks.

4. A water gage, comprising a hollow case provided with sight openings and sockets adapted to receive glasses at said sight openings, glasses mounted in said sockets, tapering blocks adapted to abut against the inner faces of said glasses, a wedge adapted to be interposed between said tapered blocks and force the same apart against said glasses, said wedge and the said blocks being hollow and providing a space from glass to glass, a column held centrally within said wedge, and means for forcing said wedge between said blocks.

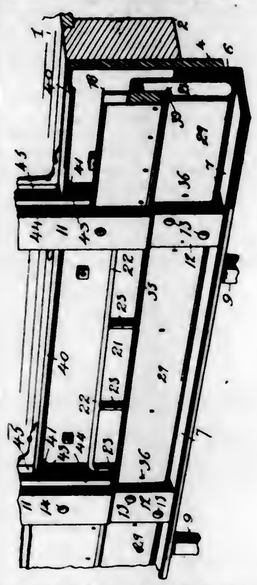
5. A water gage, comprising a case provided with sight openings and sockets adapted to receive glasses at said sight openings, glasses in said sockets, tapered blocks adapted to abut against the inner faces of said glasses, a hollow wedge arranged to be interposed between said tapered blocks and force the same apart, means for holding said wedge between said blocks, and a rod loosely mounted in said wedge, as and for the purpose set forth.

6. A water gage, comprising a case provided with sight openings and sockets adapted to receive glasses at said sight openings, glasses in said sockets, tapered blocks adapted to abut against the inner faces of said glasses, a hollow wedge arranged to be interposed between said tapered blocks and force the same apart, means for holding said wedge between said blocks, the said wedge being provided with an opening extending therethrough at one end and with a socket at its other end, and a rod adapted to be inserted through the said opening and rest with its end in the said socket.

7. In a water gage, the combination of a hollow case provided with oppositely alined sight openings extending longitudinally thereof, plugs secured to each end of said case, and each plug provided with a socket, glasses mounted within the case at said sight openings, tapered blocks adapted to abut against the inner surface of said glasses, and a hollow wedge interposed between said tapered blocks and adapted to force the same outwardly, said wedge being provided at one edge with a head snugly fitting in the socket of one plug, and said wedge also provided at its opposite end with a tongue snugly fitting within the socket of the other plug, whereby to accurately guide the wedge as it is moved downwardly between the tapered blocks.

8. In a water gage, the combination of a hollow case provided with oppositely alined sight openings and with sockets adapted to receive glasses at said sight openings, glasses mounted in said sockets, hollow tapered blocks abutting against the inner faces of said glasses, a hollow wedge arranged to be interposed between said tapered blocks and force the same outwardly, means for moving the wedge downwardly between said blocks, and a column or rod mounted in said wedge, the wedge being composed of integrally connected spaced side members, each of which is formed with a plurality of openings providing passages for the free circulation of water, and the tapered blocks being formed in their lower ends with openings for the circulation of water.

852,782. CONVERTIBLE CAR. HARRY E. HADDOCK, Collinwood, Ohio, assignor to John A. Brill, Philadelphia, Pa. Filed July 7, 1906. Serial No. 325,189.



Claim.—1. A convertible car having stanchions, movable panels for closing the side openings, and a folding member adapted to form a continuation of the panel, for closing the side openings.

2. A convertible car having stanchions, movable panels closing the side openings, and a folding member below the plane of the floor adapted to form a continuation of the panel for closing the side openings.

3. A convertible car having movable panels for closing the side openings, and a folding step adapted to be placed in a vertical position for the purpose of acting as a part closure for the side opening of the car.

4. A convertible car having stanchions, movable panels for closing the side openings, and a side step adapted to be raised to a vertical position and to serve as a continuation of the panel for the purpose of closing the car side opening.

5. A convertible car having stanchions, movable panels for closing the side openings, and a folding step adapted to be raised to a vertical position, and having a bead on its upper edge over which the said panel is adapted to fit for the purpose of closing the sides of the car.

6. A convertible car having stanchions, a side step extending within the lateral limits of the car and adapted to be raised vertically to form a continuation of the panel.

7. A convertible car having stanchions, side steps hinged to said stanchions, near their inner edges, and adapted to be turned vertically and to act as a continuation of the movable side panels.

8. A convertible car having stanchions, side sills, and movable panels for closing the side openings, side steps hinged to the stanchions and adapted to rest on the side sills, and adapted to be raised vertically to form a continuation of the panels when the latter are lowered.

9. A convertible car having stanchions, movable panels therein adapted to close the side openings, side steps extending within the lateral limits of the car as defined by the stanchions and below the car floor, said steps being adapted to be placed vertically to form a continuation of the side panels when the latter are lowered, and to be placed horizontally when the car is opened.

10. A convertible car having a side sill provided with a lower outwardly extending longitudinal web, stanchions secured to the said web, and side steps adapted to rest on the said web and hinged so as to move to a vertical position between the stanchions, movable panels between the stanchions adapted to rest on the said step, which latter form a continuation thereof.

11. A convertible car having stanchions and panels movable therein, pockets for said stanchions secured to the car side sill, the panel being adapted to be lowered below the plane of the car floor and side steps hinged so as to be moved to a vertical position and adapted to form a continuation of the panel when lowered.

12. A convertible car having stanchions, and a sill having an outwardly extending lower web to which the stanchions are secured, panels moving between the stanchions adapted to pass below the plane of the floor, side steps adapted to fold vertically to form a continuation of the panels, and a filler adapted to fill the space between the floor and the panel when the latter is lowered.

13. A convertible car having side sills and stanchions, movable panels sliding between the stanchions, and side steps composed of a plurality of plates, said step being adapted to be moved to a vertical position, the outer plate being adapted to receive the panel when lowered, and the inner plate extending above the joint thus formed.

14. A convertible car having a side step hinged between the stanchions by means of a pin extending through the stanchions, and a socket in the step for the said pin.

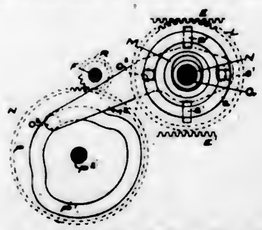
15. A railway car having stanchions, and a step hinged between the stanchions by means of pins which pass through the stanchion and engage sockets on the ends of said step, and means for holding the pins in the said socket.

16. A railway car having stanchions, and a step hinged between the stanchions by means of pins extending therethrough, said step comprising a plate provided with a socket for the reception of the pin, and a second plate secured to the said first plate and having a web that extends over the opening in the said pin socket to prevent longitudinal movement of the said pin.

17. A railway car having stanchions, side steps hinged to the stanchions by means of pins 27, said step comprising a plate 21 having strengthening webs and a socket 26, and a second plate 29 adapted to be secured to the said first plate and having a web 30 and bead 35, and a web 34 adapted to engage the pin in the socket 26 to prevent longitudinal movement thereof.

18. A railway car having a filler secured between the stanchions, said filler comprising a longitudinal plate having depending tongues which are provided with elongated slots and bolts securing said tongues to the stanchions through the elongated slots.

852,783. MECHANICAL MOVEMENT. BICKNELL HALL, Taunton, Mass., assignor to Huber-Hodgman Printing Press Company, Taunton, Mass., a Corporation of Massachusetts. Filed Apr. 1, 1904. Serial No. 201,045.



Claim.—1. A reciprocating bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier for said gear interposed between the same and said shaft and a lever pivoted at one side of said shaft, connected to and supporting said carrier, and means to operate said lever.

2. A reciprocating bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier for said gear interposed between the same and said shaft and a lever stationarily pivoted at one side of said shaft, connected to and supporting said carrier and means to operate said lever.

3. A reciprocating bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier for said gear interposed between the same and said shaft, a lever stationarily pivoted at one side of said shaft and operating means therefor, said lever directly supporting said carrier.

4. A reciprocatory bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier supporting and operating lever pivoted at one side of said shaft, a carrier supported and operated thereby, said carrier being interposed between said shaft and said gear, and operating means for said lever.

5. A reciprocatory bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier supporting and operating lever pivoted at one side of said shaft having a supporting and operating carrier formed therewith and interposed between said gear and said shaft and means to operate said lever.

6. A reciprocatory bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier supporting and operating mechanism mounted at one side of said shaft, a carrier supported and operated thereby, said carrier being interposed between said gear and said shaft and operating means for said operating mechanism.

7. A reciprocatory bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier supporting and operating mechanism mounted at one side of said shaft, a carrier for said gear interposed between the same and said shaft and directly supported by and directly operated by said mechanism, and means to operate said mechanism.

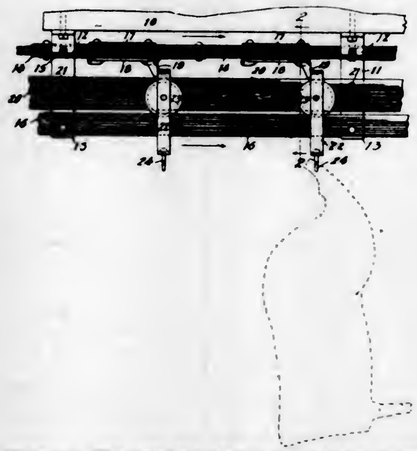
8. A reciprocatory bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier for said gear interposed between the same and said shaft, a lever pivoted to the framework at one side of said shaft and connected to said carrier to support and operate the same, and means engaging said lever to operate the same.

9. A reciprocatory bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely to its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier for said gear interposed between the same and said shaft, a carrier supporting and operating lever stationarily pivoted intermediate its ends and connected to said carrier at one end thereof to operate and support the same, and operating means for said lever.

10. A reciprocatory bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely to its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier for said gear whereby the same may be shifted transversely of its axis, operating and supporting mechanism for said carrier directly connected with said carrier to support and operate the same and mounted at one side of said shaft, and means to operate said supporting mechanism.

11. A reciprocatory bed motion for printing presses comprising two racks, a reversing shaft, a bearing therefor, a gear located between said racks and adapted to be shifted transversely of its axis to bring it into engagement with one or the other of said racks, said gear surrounding said shaft, a carrier for said gear whereby the same may be shifted transversely of its axis an operating and supporting lever for said carrier pivoted at one side of said shaft and directly connected therewith to support and operate the same and means to operate said supporting mechanism.

852,784. OVERHEAD CARRIER. ALFRED HANNAFORD, Chicago, Ill. Filed Feb. 18, 1907. Serial No. 357,827.



Claim.—1. The overhead carrier for packing houses, comprising in combination the hangers supporting in their upper part a chain way track, and in their lower portion beneath said chainway track a load carrier track together with said chain carrier track and said load carrier track, substantially as specified.

2. The overhead carrier for packing houses, comprising in combination the hangers supporting in their upper part a chain way track, and in their lower portion beneath said chainway track a load carrier track together with said chain carrier track and said load carrier track, the carrying chain and the rolling meat hook hanger, and means for engaging the chain with said hanger, substantially as specified.

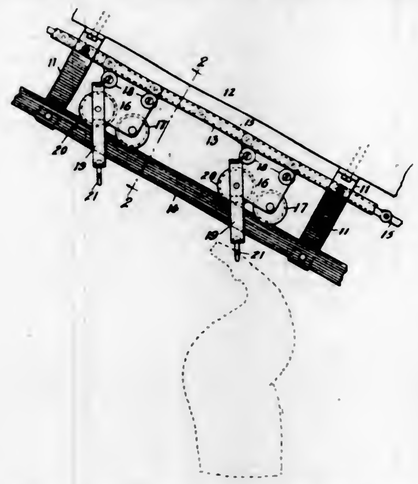
3. The overhead carrier for packing houses, comprising in combination the hangers supporting in their upper part a chain way track, and in their lower portion beneath said chain way track a load carrier track together with said chain carrier track and said load carrier track, the carrying chain and the rolling meat hook hanger, and means for engaging the chain with said hanger, said means consisting of a ratchet acting finger, substantially as specified.

4. The one piece hanger adapted at its upper end to receive and support the chain way track, and at its lower end to receive and support the load carrying track in a line immediately beneath said chain way track, substantially as specified.

5. The combination of the hangers carrying in their upper part the chain way track and in their lower part the load carrying track, both the chain way track and the load carrying track being secured to the hangers, and a bracing bar stretching from hanger to hanger and secured to said hangers at a point between the load carrying track and the chain way track, substantially as specified.

6. The combination with a carrier chain having vertical pivots and a load carrying track placed beneath said carrying chain, a rolling hook hanger inserted on said carrying track, and an engaging means depending downward from the carrier chain toward the load carrying track for engaging and moving the rolling hook hanger.

852,785. CARCASS-ELEVATOR. ALFRED HANNAFORD, Chicago, Ill. Filed Feb. 18, 1907. Serial No. 357,828.



Claim.—1. The overhead packing house chain elevator, wherein is combined the hanger suspended from above, the chain way supported in the upper portion of said hanger, the load track supported in the lower portion of said hanger, the chain traversing said chain way, a vertically depending part carried by the chain for engaging the rolling hanger, and the trolley wheel on said dependent part riding on the load carrying track, together with the hook hanger itself provided with a trolley wheel, said tracks being arranged in an inclined position, substantially as specified.

2. The inclined elevator, comprising in combination a chain way track above and a load carrying track beneath, a carrying chain, a dependent part from said chain, a trolley wheel on said dependent part, and a hook hanger provided with a trolley wheel, substantially as specified.

3. The inclined elevator, comprising in combination a chain way track above and a load carrying track beneath, a carrying chain, a dependent part from said chain, a trolley wheel on said dependent part, a hook provided with a trolley wheel, the dependent part being provided with rollers at its upper end to bear against the under surface of the chain carrying track, substantially as specified.

852,786. PRINTING-PLATE HOLDER. WILLIS K. HODGMAN, Taunton, Mass., assignor to The Huber-Hodgman Printing Press Company, Taunton, Mass. Filed Apr. 12, 1906. Serial No. 311,321.

Claim.—1. A rotary printing press cylinder adapted for use with stereotype, electrotype or other printing plates, a flexible metal printing plate holder adapted to be wrapped about the printing cylinder and to have secured upon its surface after such plate holder has been positioned upon the printing cylinder a stereotype, electrotype or other printing plate of non-predetermined size, means to tighten said plate holder about the cylinder while positioned thereon and provisions upon the upper face of said plate holder whereby such plate may be secured thereto.

2. A rotary printing press cylinder adapted for use with stereotype, electrotype or other printing plates, and means to tighten said plate holder about the cylinder while positioned thereon a flexible metal printing plate holder having a continuous plate receiving upper surface co-extensive with that of the plate to be applied thereto, the same being adapted to be wrapped about the printing cylinder and to have secured upon said surface after such plate holder has been positioned upon the printing cylinder a stereotype, electrotype or other printing plate.



3. A rotary printing press cylinder adapted for use with stereotype, electrotype or other printing plates, a flexible metal printing plate holder having a continuous plate receiving upper surface co-extensive with that of the stereotype, electrotype or other printing plate to be secured thereto, means to tighten the plate holder about the printing cylinder while positioned thereon, and provisions upon the upper face of said plate holder whereby a plate of non-predetermined size may be secured thereto after such plate-holder has been positioned upon the printing cylinder.

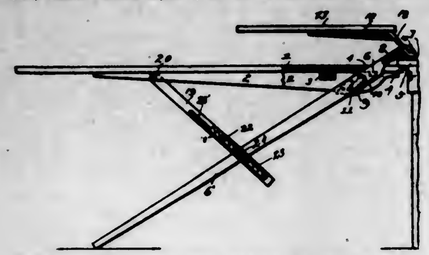
4. A rotary printing press cylinder adapted for use with stereotype, electrotype or other printing plates, a flexible metal printing plate holder having a continuous plate receiving upper surface co-extensive with that of the stereotype, electrotype or other printing plate to be secured thereto, the whole of that part of the plate holder covering the printing surface of the cylinder being provided with securing recesses in the upper face thereof, whereby plates of non-predetermined size may be secured thereto after such plate holder has been positioned upon the printing cylinder, and means to tighten the plate holder about the printing cylinder while positioned thereon.

5. A rotary printing press cylinder adapted for use with stereotype, electrotype or other printing plates, a flexible metal printing plate holder adapted to be wrapped about the printing cylinder, and having the upper face thereof substantially covered with closely spaced securing recesses adapted to receive therein locking means for securing the said plate to the holder at a large number of points whereby such plate may be secured to the surface of the plate holder after the plate holder has been positioned upon the printing cylinder, and means to tighten the plate holder about the cylinder while positioned thereon.

6. A rotary printing press cylinder adapted for use with stereotype, electrotype or other printing plates, a flexible metal printing plate holder adapted to be wrapped about the printing cylinder, and to have applied to the upper surface thereof printing plates of non-predetermined size, the upper surface of the said plate holder being provided with a large number of securing recesses adapted to receive locking means for securing a plate therein at a number of variable points, whereby such plate may be secured to the plate holder after such plate holder has been positioned upon the printing cylinder and means to tighten the plate-holder about the cylinder while positioned thereon.

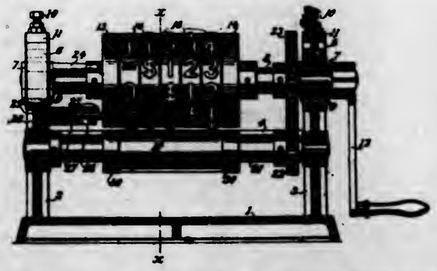
7. A rotary printing press cylinder adapted for use with stereotype, electrotype or other printing plates, a flexible metal printing plate holder adapted to be wrapped about the said cylinder and having a continuous plate receiving upper surface to receive plates of non-predetermined or varying size, and provisions upon the said upper surface of said plate holder for securing a plate thereto at a plurality of points adapted to be varied according to the non-predetermined size of the plate, whereby such plate may be secured to the plate holder after such plate holder has been positioned upon the printing cylinder and means to tighten the plate holder about the cylinder while positioned thereon.

852,787. IRONING-BOARD. ARTHUR G. HOBANEE, Dayton, Ohio. Filed Apr. 2, 1906. Serial No. 309,238.



Claim.—An ironing board having an opening at one end, plates having internal ratchets attached to opposite sides of the longitudinal ribs of said ironing board, a supporting leg having its upper end provided with a semicircular recess adapted to be free from the engaging table at the extreme edge of said table, said supporting leg having a transverse pin adapted to lie within the internal ratchets of the side plates, a swinging frame pivoted to said ironing board and inclosing the supporting leg, said swinging frame having internal ratchets, and a pin on said supporting leg engaging said internal ratchets and whereby the ironing board is supported at a point adjacent to its center.

852,788. MACHINE FOR PRODUCING WATER-MARK EFFECTS ON PAPER. EDWARD ILCH, New York, N. Y. Filed Sept. 16, 1904. Serial No. 224,659.



Claim.—1. In an apparatus for producing water-mark-like effects on paper, the combination of a revoluble shaft, one or more die wheels adjustable to bring selected dies to a given position, a platen having an impression surface, coacting with the die wheels, an index device indicating the position of adjustment of the die wheels relative to the printing position, a yielding stop arranged to hold the shaft in a given position relative to the index and the impression surface on the platen, and means for rotating the shaft against the yielding stop, as set forth.

2. In an apparatus for producing water-mark-like effects on paper, the combination of a shaft, one or more die wheels adjustable thereon in one direction only, to bring selected dies to a given position relative to the impression point, means for rotating the shaft in the opposite direction, a revoluble platen having an impression surface to coact with the dies on the die wheels, and actuating devices connecting the platen and the die wheel shaft whereby the impression surface on the platen and the selected dies on the die wheels will reach the impression position simultaneously, as set forth.

3. In an apparatus for producing water-mark-like effects on paper, the combination of a revoluble shaft, a pair of disks rigidly mounted thereon, one or more die wheels on the shaft between the disks, said die wheels being adjustable to bring selected dies to a given position, a yielding stop engaging one of the disks to hold the shaft stationary during the adjustment of the die wheels, a platen coacting with the die wheels, and means for rotating the shaft against the stop to bring the selected dies on the die wheels to the impression position, as set forth.

4. In an apparatus for producing water-mark-like impressions on paper, the combination of a shaft, a pair of spaced disks rigidly mounted on the shaft, one or more die wheels rotatably mounted on the shaft, means for permitting rotation of the die wheels in only one direction on the shaft, whereby the said die wheels rotate with the shaft in the other direction, a yielding stop engaging one of the disks to hold the shaft yieldingly against rotation, an index or pointer indicating the line of adjustment of the die wheels to bring the desired characters to the impression position, a revoluble platen having an impression surface arranged to reach the impression position simultaneously with the line of characters on the die wheels indicated by the index or pointer, adjustable devices enabling the pressure between the die wheels and the platen to be varied, and means for rotating the die wheel shaft and the platen, as set forth.

5. In a machine for producing water-mark-like effects on paper, the combination of one or more revoluble die wheels bearing dies capable of withstanding heavy pressures repeatedly exerted, and having smooth surfaces; a revoluble platen having a raised impression surface the width of which is less than the circumference of the platen and substantially equal to the height of individual dies on the die wheel or wheels, said surface being smooth and incapable of indentation by the dies; said platen and die wheels being arranged in close proximity so as to exert heavy pressure on paper fed between them, whereby the paper under the dies will be highly compressed and translucent characters formed in the paper without injury to the surface thereof; and means for connecting the die wheel or wheels and the platen whereby the impression surface on the latter and the die or dies from which the impression is to be made will coincide at the impression point, as set forth.

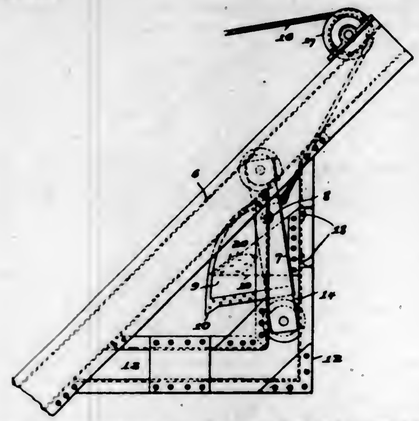
6. In a machine for producing water-mark-like effects on paper, the combination of a shaft; one or more die wheels adjustable thereon to bring a selected die or dies to a given position relative to the impression point, said dies having smooth surfaces capable of withstanding heavy pressures repeatedly exerted; a co-operating platen having a smooth, rigid, unyielding surface incapable of indentation by the dies, said platen and die wheel or wheels being arranged in close proximity so as to exert heavy pressure on paper fed between them, whereby the paper under the dies will be highly compressed and translucent characters formed in the paper without injury to the surface thereof; and means for holding the die wheel or wheels rigidly on the shaft during the coöperation of the wheel or wheels and the platen to produce the impressions; as set forth.

852,789. CLEANER FOR BUCKETS OF EXCAVATING-MACHINES. CHARLES C. JACOBS, Amboy, Ill., assignor to F. C. Austin Drainage Excavator Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 10, 1906. Serial No. 305,294.

Claim.—1. The combination with a bucket guiding and supporting track, a bucket adapted to travel thereon, and a device for effecting the inversion of the loaded bucket at a point on said track, of a stationary cleaner adapted to scrape over the bottom wall of said bucket during the inverting operation, substantially as described.

2. The combination with a bucket guiding and supporting track, a bucket mounted to travel thereon, and a device for effecting the inversion of the loaded bucket at a point on said track, of a cleaner mounted on said bucket-inverting device and adapted to automatically engage and scrape over the bottom wall of the bucket during the inverting operation, substantially as described.

3. The combination with a bucket guiding and supporting track, and a bucket mounted to travel thereon, of a frame suspended from said track and adapted to receive the bucket during its discharging operation and effect its inversion, and a stationary cleaner mounted on said bucket-inverting frame and adapted to automatically engage the rear and bottom wall of the bucket and scrape the contents outwardly through the openforward end of the bucket during the inverting operation, substantially as described.



4. The combination with an inclined bucket guiding and supporting track, a truck mounted to travel thereon, and a bucket carried by said truck, of a frame suspended from said track and having a substantially horizontal track-way communicating with said main guiding and supporting track adapted to receive and guide the forward wheels of the truck, an operating cable connected to the rear end of the bucket, whereby said bucket is inverted at the end of its travel, and a scraper mounted on said suspended frame adapted to automatically engage the rear and bottom wall of the bucket and scrape over the latter toward its front or cutting edge, substantially as described.

5. The combination with an inclined bucket guiding and supporting track, a truck mounted to travel thereon, and a bucket carried by said truck, of a frame suspended from said track, said frame having substantially horizontal and vertical track-ways communicating with said main guiding and supporting track adapted to receive and guide the forward wheels of the truck, an operating cable connected to the rear end of the bucket, whereby said bucket is inverted at the end of its travel, and a scraper mounted on said suspended frame across the vertical track-ways thereof, the operating edge of said scraper being so located as to automatically engage the upper end of the rear wall of the bucket and scrape over the latter toward the front or cutting edge, substantially as described.

852,790. TRENCH-EXCAVATOR. CHARLES C. JACOBS, Chicago, Ill., assignor to The F. C. Austin Drainage Excavator Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 14, 1906. Serial No. 311,772.

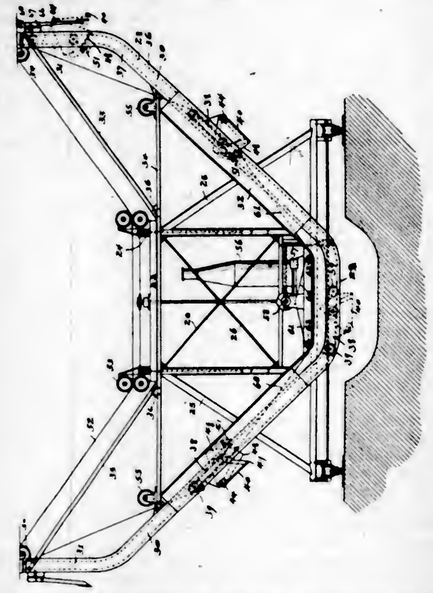
Claim.—1. In a trench excavating machine, the combination of a track, a pair of sharp-edged buckets adapted to travel on said track, means to balance said buckets, and means to operate said buckets so that they will shave off layers of dirt from the trench, substantially as described.

2. In a trench excavating machine, the combination of a track, a pair of sharp-edged buckets adapted to travel on said track, means to balance said buckets, and means to operate said buckets so that they will alternately shave off layers of dirt from the trench, substantially as described.

3. In a trench excavating machine, the combination of a track shaped to conform substantially to the cross sectional profile of the trench to be dug, a pair of buckets each with a sharp edge adapted to travel on said track and shave off and remove layers of dirt from the trench, and means to cause each of said buckets to cut only to the center of the trench, substantially as described.

4. In a trench excavating machine, the combination of a track shaped to conform substantially to the cross sectional profile of the trench to be dug, a pair of sharp-edged buckets adapted to travel on said track and shave off and remove layers of dirt from the trench, and means to cause said buckets to alternately shave off layers of dirt to the center of the trench, substantially as described.

5. In a trench excavating machine, the combination of a track shaped to conform substantially to the cross sectional profile of the trench to be dug, a pair of sharp-edged buckets adapted to travel on said track and shave off and remove layers of dirt from the trench, means to balance said buckets, and means to cause said buckets to alternately shave off layers of dirt to the center of the trench, substantially as described.



6. In a trench excavating machine, the combination of an inclined track, a bucket having a front sharp edge adapted to travel on said track and shave off a layer of dirt from the trench only when moving downwardly on said track, and means to cause said bucket to travel on said track, substantially as described.

7. In a trench excavating machine, the combination of a substantially U-shaped track, a pair of balanced sharp-edged buckets adapted to travel on said track and shave off layers of dirt from the trench when moving downwardly on said track, and means to cause one of said buckets to travel downwardly on said track when its companion bucket travels upwardly and vice versa, substantially as described.

8. In a trench excavating machine, the combination of a substantially U-shaped track, a pair of balanced sharp-edged buckets adapted to travel on said track and shave off layers of dirt from the trench when moving downwardly on said track, and means to cause one of said buckets to travel downwardly on said track when its companion bucket travels upwardly and shave off a layer of dirt to the center of the trench, substantially as described.

9. In a trench excavating machine, the combination of a track, a pair of buckets, a truck for each of said buckets adapted to travel on said track, a balancing cable secured at its opposite ends to said trucks, one or more sheaves over which said balancing cable passes, a drum, a pair of cables secured to said drum adapted to be wound thereon in opposite directions, said pair of cables being also attached to said trucks, and means to rotate said drum in opposite directions, substantially as described.

10. In an excavating machine, the combination of a

track, a bucket adapted to travel on said track, and a hood to open and close the mouth of said bucket, substantially as described.

11. In an excavating machine, the combination of an inclined track, a sharp-edged bucket adapted to travel on said track and shave off a layer of dirt when traveling downwardly, means to reciprocate said bucket on said track, a hood, and means to actuate said hood to close the mouth of said bucket in its upward movement to retain the dirt therein and to leave said mouth open during its downward travel, substantially as described.

12. In an excavating machine, the combination of a track, a bucket having a mouth adapted to travel on said track, means to cause said bucket to travel on said track, a hood to open and close the mouth of said bucket, and a supplemental track controlling the operation of said hood, substantially as described.

13. In an excavating machine, the combination of a track, a bucket having a mouth adapted to travel on said track, a hinged hood movable with said bucket to open and close the mouth thereof, a hood track, and means to co-operate with said hood track to keep said hood away from the mouth of said bucket during its travel in one direction, substantially as described.

14. In an excavating machine, the combination of a track, a bucket having a mouth adapted to travel on said track, a hinged hood movable with said bucket to open and close the mouth thereof, a hood track and means co-operating with said hood track to keep said hood away from the mouth of said bucket during its travel in one direction, and means compelling said hood to close said mouth at a certain point in the bucket's travel, substantially as described.

15. A bucket for an excavator having two open mouths each provided with a sharp cutting edge, substantially as described.

16. A bucket for an excavator having two open mouths each provided with a sharp cutting edge, and means to open and close one of said mouths, substantially as described.

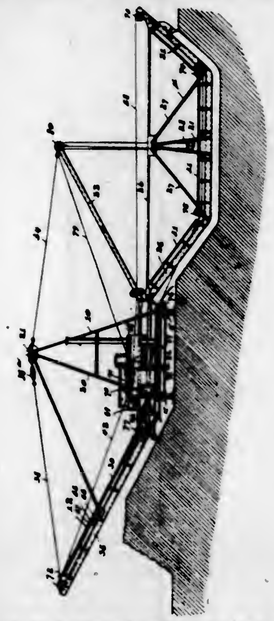
17. A bucket for an excavator having two open mouths each provided with a sharp cutting edge, and a pivoted hood adapted to open and close one of said mouths, substantially as described.

18. In an excavator, the combination of a track shaped to conform substantially to the cross-sectional profile of the trench to be dug, a bucket adapted to reciprocate on said track, said bucket having front and rear mouths each with a sharp cutting edge, and means to reciprocate said bucket on said track whereby one of said sharp edges shaves off a layer of earth on the forward movement of the bucket and the other sharp edge is operative for the same purpose on the rearward movement of the bucket, subatantially as described.

19. In an excavator, the combination of a main support, a track shaped to conform substantially to the cross-sectional profile of the trench to be dug and vertically adjustable upon said support, a bucket adapted to reciprocate on said track, said bucket having front and rear mouths each with a sharp cutting edge, means to open and close one of said mouths, and means to reciprocate said bucket on said track whereby one of said sharp edges shaves off a layer of earth on the forward movement of the bucket and the other sharp edge is operative for the same purpose on the rearward movement of the bucket, substantially as described.

20. In an excavator, the combination of a main frame adapted to be moved longitudinally of the trench to be dug, a track shaped to conform substantially to the cross-sectional profile of the trench, said track being vertically adjustable on said main frame, a bucket adapted to reciprocate on said track, said bucket having front and rear mouths each with a sharp cutting edge, a pivoted hood adapted to open and close one of said mouths, and means to reciprocate said bucket on said track whereby one of said sharp edges shaves off a layer of earth on the forward movement of the bucket and the other sharp edge is operative for the same purpose on the rearward movement of the bucket, substantially as described.

852,791. LEVEE-BUILDING MACHINE. CHARLES C. JACOBS, Chicago, Ill., assignor to F. C. Austin Drainage Excavotor Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 31, 1906. Serial No. 332,831.



Claim.—1. In a machine of the character described, the combination of a main frame provided with a track section, a ditch track section secured to one end of said main frame, a dumping track section secured to the other end of said main frame, said track sections forming a continuous trackway, one or more sharp-edged shovels adapted to travel on said track sections, and means to operate said shovel or shovels, substantially as described.

2. In a machine of the character described, the combination of a main frame provided with a track section, a ditch track section secured to one end of said main frame and adapted to overhang the position to be occupied by the trench to be dug, a dumping track section secured to the other end of said main frame and adapted to overhang the position to be occupied by the levee to be built, said track sections forming a continuous trackway, one or more sharp-edged shovels adapted to travel on said track sections, and means to operate said shovel or shovels, substantially as described.

3. In a machine of the character described, the combination of a main frame provided with a track section, a ditch track section hinged to one end of said main frame, means to adjust the position of said ditch track section, a dumping track section secured to the other end of said main frame, said track sections forming a continuous trackway, one or more sharp-edged shovels adapted to travel on said track sections, and means to operate said shovel or shovels, substantially as described.

4. In a machine of the character described, the combination of a main frame provided with a track section, a ditch track section hinged to one end of said main frame, means to adjust the position of said ditch track section, a dumping track section hinged to the other end of said main frame, means to support the outer end of said dumping track section, said track sections forming a continuous trackway, one or more sharp-edged shovels adapted to travel on said track sections, and means to operate said shovel or shovels, substantially as described.

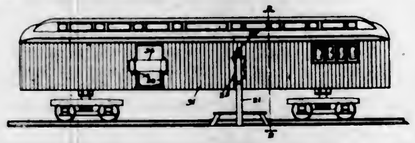
5. In a machine of the character described, the combination of a main frame provided with a track section, a ditch track section hinged to one end of said main frame, said ditch track section being shaped to conform substantially to the cross-sectional profile of the trench to be dug, means to adjust the position of said ditch track section, a dumping track section secured to the other end of said main frame, said track sections forming a continuous trackway, one or more sharp-edged shovels adapted to travel on said track sections, and means to operate said shovel or shovels, substantially as described.

6. In a machine of the character described, the combination of a main frame provided with a track section, a ditch track section hinged to one end of said main frame and shaped to conform substantially to the cross-sectional profile of the trench to be dug, means to vertically adjust the position of said ditch track section, a dumping track section hinged to the other end of said main frame and adapted to overhang the levee to be built, means to support the outer end of said dumping track section, one or more sharp-edged shovels adapted to travel on said track sections, and means to operate said shovel or shovels, substantially as described.

7. In a machine of the character described, the combination of a main frame provided with a track section, a ditch track section hinged to one end of said main frame and shaped to conform substantially to the cross-sectional profile of the trench to be dug, one or more arms hinged to the same end of said main frame, means to support the free end of said arm or arms, a guide pulley mounted on said arm or arms, a cable passing over said pulley and operatively connected to said ditch track section, means to actuate said cable whereby the position of said ditch track section may be adjusted, a dumping track section secured to the opposite end of said main frame and adapted to overhang the position to be occupied by the levee, said track sections forming a continuous trackway, one or more sharp-edged shovels adapted to travel on said track sections, and means to cause said shovel or shovels to travel on said track sections, substantially as described.

8. In a machine of the character described, the combination of a main frame provided with a track section, a ditch track section secured to one end of said main frame and adapted to overhang the position to be occupied by the trench to be dug, a dumping track section secured to the other end of said main frame and adapted to overhang the position to be occupied by the levee to be built, said track sections forming a continuous trackway, one or more sharp-edged shovels adapted to travel on said track sections, means to cause said shovel or shovels to travel on said track sections, and a shield below said main frame track section to prevent dirt spilling from the shovel upon the ground between the levee and trench, substantially as described.

852,792. MAIL CATCHING AND DISCHARGING APPARATUS. ABRAHAM KIMBER, Indianapolis, Ind., assignor of one-fifth to Edward R. Treat, one-fifth to Harry E. Drew, and one-fifth to Frank C. Cory, Indianapolis, Ind. Filed Apr. 23, 1906. Serial No. 313,135.



Claim.—1. The combination, with a postal car, of a mail-catching apparatus arranged at the door opening of said car, comprising a rock-shaft, an arm on said rock-shaft, a pivotally mounted catcher member adapted to be held outwardly by said arm, and a spring arranged to force said catcher member inwardly when said arm is removed from engagement therewith, said arm being arranged in the path of a suitably supported mail sack and adapted to be operated thereby when the same comes in contact therewith.

2. The combination, in a mail catching and delivering apparatus, of a spring mounted catcher member, a spring-mounted delivery member, and a rock-shaft provided with catching arms adapted to engage with both said catching and delivering members and having one member extending into the path of a mail sack when suspended alongside the railway track and adapted to be operated thereby.

3. The combination, with a postal car, of a mail-catching apparatus embodying a main catcher member pivotally mounted, a spring whereby said catcher member is normally forced inwardly, a seat for said spring at each side of the door opening, and bearings for the pivot shaft at each side of the door opening whereby said catcher member may be reversed and thus adapted to operate when the car is moving in either direction.

4. The combination, with a postal car, of a mail handling apparatus embodying a spring mounted delivery platform, a rock-shaft having a catch arm for securing said delivery platform in its primary position, and an arm extending out and adapted to be actuated by a mail sack hung adjacent to the track, whereby said rock-shaft may be moved and the delivering platform released.

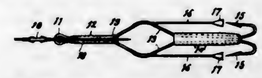
7. The combination, with a railway postal car, of a mail diling apparatus comprising a pivotally mounted and spring-actuated main catcher member, means whereby the same is held out in position to catch a mail sack, and a bar extending across the doorway within and opposite to said catcher member whereby when said catcher member is released the mail sack will be caught and held between said main catcher member and said bar.

6. The combination, with a railway mail car, of mail-catching apparatus comprising a main catcher member, means for actuating the same, a bar opposite to said main catcher member, and a connecting rod connected to said main catcher member and extending over and partially around said rod.

7. The combination, with a railway postal car, of a mail catching and delivering apparatus comprising a main catcher member pivotally supported at the door opening of the car, means whereby said catcher member is forcibly held toward the car, a delivery member normally within the car, means whereby said delivery member is held in operative position, and means adapted to be actuated by a mail sack held adjacent thereto by means of which both the catcher member and the delivery member are released from engagement and enabled to operate upon the mail sacks simultaneously.

8. The combination, with a railway postal car, of a mail catching and delivering apparatus comprising a main catching member supported at the door opening of the car, means for moving said catcher member toward the door opening, means for holding said member extended, a delivery member normally within the car, means for propelling said delivery member toward the door opening, and intermediate connections between the catcher member and delivery member whereby when a mail sack is engaged by the catcher member, the catcher member will be moved toward the door opening and the delivery member will be moved toward the door opening in opposite directions.

852,793. FISH-HOOK. HERMAN C. LADISH, Milwaukee, Wis. Filed Feb. 4, 1907. Serial No. 355,551.



Claim.—1. A fish hook, comprising a pair of divergent hook members, an open frame in advance of and connected with said hook members, guards secured to the outer edges of the open frame and guarding the ends of the hook members, and a needle carried by the open frame.

2. A fish hook, comprising a pair of hook members, a rear weight connected to the hook members, an open frame in advance of the rear weight, guards mounted on the outer edges of the open frame and guarding the ends of the hook members, a front weight in advance of the open frame, and a needle carried by the front weight.

3. A fish hook, comprising a wire bent to form an eye loop at its front end with its members running together for a short distance therefrom and then diverging and converging to form an open frame at the intermediate portion of the hook and then continuing rearwardly together for a distance and finally being bent upwardly and divergently to form a pair of hook members, guards mounted on the open frame for guarding the hook members, and means connected with the wire for securing bait thereto.

4. A fish hook, comprising a wire bent to form an eye loop at its front end with its members running together for a short distance therefrom and then diverging and converging to form an open frame at the intermediate portion of the hook and then continuing rearwardly together for a distance and finally being bent upwardly and divergently to form a pair of hook members, guards mounted on the open frame for guarding the hook members, and a spring wire secured to the portion of said wire where the members come together between the eye loop and the open frame and constituting a spring needle and a retaining hook for engaging bait.

5. A fish hook, comprising a wire bent to form an eye loop at its front end with its members running together for a short distance therefrom and then diverging and converging to form an open frame at the intermediate portion of the hook and then continuing rearwardly together for a distance and finally being bent upwardly and divergently to form a pair of hook members, guards mounted on the open frame for guarding the hook members, a spring wire secured to the portion of said wire where the members run together between the eye loop and the open frame and forming a spring needle bent upwardly and rearwardly for passing through a bait and a hook for engaging said needle, a front weight at said portion of the wire, and a rear weight at the portion of the wire between the open frame and the hook members.

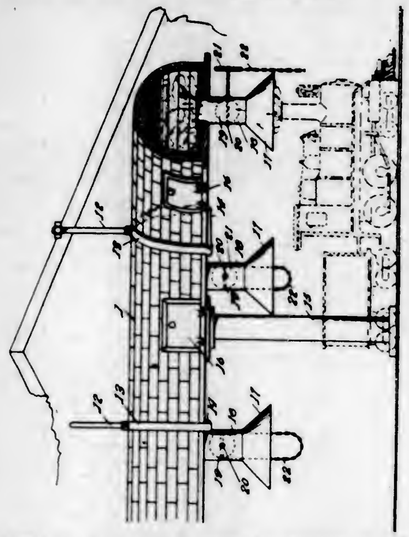
6. A fish hook, comprising a wire bent to form an eye loop at its front end with its members running together for a short distance therefrom and then diverging and converging to form an open frame at the intermediate portion of the hook and then continuing rearwardly together for a distance and finally being bent upwardly and divergently to form a pair of hook members, guards mounted on the open frame guarding the hook members, a depending head weight formed by solder uniting the members of the wire between the eye loop and the open frame, a rear weight formed by solder uniting the wire members between the open frame and the hook members, and a spring wire embedded in the front weight with one end bent rearwardly and forming a needle for passing through the bait and the other end forming a hook for engaging the needle.

852,794. VENTILATING MEANS FOR ROUNDHOUSES, SHOPS, STATIONS, &c., JOSEPH LARIVEE, New Haven, Conn. Filed Apr. 20, 1906. Serial No. 312,879.

Claim.—1. Means for carrying off smoke and the like, the same comprising a stack, a conduit in communication therewith, and a series of smoke and gas collectors in communication with the conduit at different points in its length, the openings between said smoke and gas collectors and the conduit gradually decreasing in size from the stack so as to equalize the draft.

2. In means for carrying off smoke and products of combustion, the combination of a conduit, smoke and gas collectors at intervals in the length of the conduit, two smoke passages for delivering the smoke and products of combustion at a convenient point of discharge, and valved branches connecting the conduit with both of said passages to admit of establishing communication between the conduit and either one or both of said smoke passages.

3. In means for carrying off smoke and products of combustion, the combination of a stack or chimney comprising two passages, a conduit having communication with each passage of the stack, a valved passage connecting the passages of the stack to admit of cutting off or establishing communication between them, valves located in the passages of the stack to act jointly with the valve in the passage connecting the passages of the stack so as to connect the conduit with either one or both passages of the stack, and smoke and gas collectors at intervals in the length of the conduit substantially as specified.



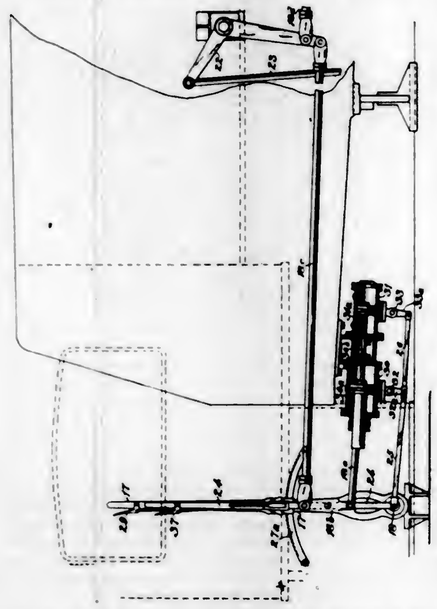
4. The herein described means for carrying off smoke and products of combustion, the same comprising a stack subdivided into two passages, an elevated conduit having opposite ends connected with the respective passages of the stack, a transverse passage subdividing the conduit into two sections, a series of smoke and gas collectors in communication with each section of the conduit, a damper for each smoke and gas collector, a valved passage connecting the passages of the stack, and other valves arranged in the passages of the stack.

852,795. REVERSING MECHANISM FOR LOCOMOTIVE AND OTHER ENGINES. CARL J. MELLIN, Schenectady, N. Y., Original application filed Dec. 5, 1906. Serial No. 346,442. Divided and this application filed Feb. 7, 1907. Serial No. 356,165.

Claim.—1. In a reversing mechanism, the combination of a main reverse lever, an operating reverse lever pivotally connected thereto, spring latches connected to the main and operating reverse levers with the capacity of movement longitudinally thereon, and means for interlocking said levers to permit the locking of the main reverse lever latch when, and only when, the two levers are in alinement, and to engage the operating reverse lever with the main reverse lever when the former is at either extremity of its arc of pivotal traverse on the latter.

2. In a reversing mechanism, the combination of a main reverse lever, an operating reverse lever pivotally connected thereto, spring latches connected to the main and operating reverse levers with the capacity of longitudinal movement thereon, an interlocking plate secured to the spring latch of the main reverse lever and having on its lower end a central interlocking tooth and end stops, and two interlocking stops projecting from the operating reverse lever in the plane of the interlocking plate and spaced at such distance apart as to permit the free vertical movement between them of the central tooth of the interlocking plate and of the latch of the operating reverse lever, one of said interlocking stops abutting against the adjacent end stop of the interlocking plate at each extremity of the arc of traverse of said lever.

3. In a reversing mechanism, the combination of a reverse lever journaled to move about a pivotal axis, a valve actuating mechanism lifting lever coupled thereto, a movable member, as a radius bar, of a valve actuating mechanism, a link coupling said lifting lever and movable member, a flexible joint, movable in two directions, interposed between said lifting lever and link, and a universal joint interposed between said link and said movable member of the valve actuating mechanism.



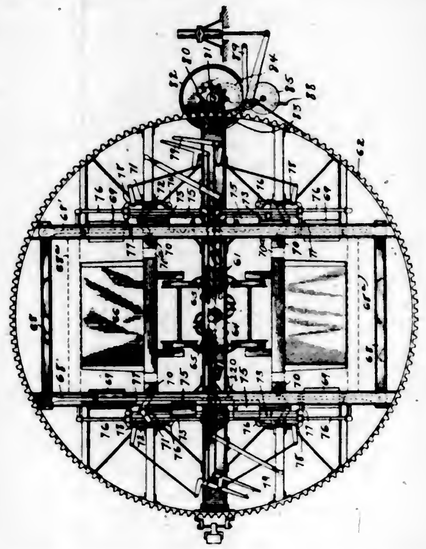
4. In a reversing mechanism, the combination of a reverse lever journaled to move about a pivotal axis, a valve actuating mechanism lifting lever coupled thereto, a movable member, as a radius bar, of a valve actuating mechanism, having a jaw adjoining its end nearer its arc of traverse, a link coupled at its upper end to the lifting lever through a flexible joint which is movable in two directions, a pin passing through the forks of the jaw of the movable member of the valve actuating mechanism, a ball or spherical bearing fitting said pin, a cap fitting said bearing between the forks of the jaw, and connections securing said cap to the lower end of the link.

5. In a reversing mechanism, the combination of a reversing lever journaled to move about a pivotal axis, a valve actuating mechanism lifting lever coupled thereto, a movable member, as a radius bar, of a valve actuating mechanism, a link coupling said lifting lever and movable member, a second valve actuating mechanism lifting lever coupled to the lifting lever first specified, a second movable member, as a radius bar, of a second valve actuating mechanism, a link coupling said second lifting lever and movable member, a flexible joint, movable in two directions, interposed between said lifting lever and link, and a universal joint interposed between said link and said movable member of the second valve actuating mechanism.

852,796. DUMPING APPARATUS. ARTHUR MOORE, War Eagle, W. Va. Filed Feb. 20, 1906. Serial No. 302,109.

Claim.—1. In a dumping apparatus the combination with a rotative dump of compressed air actuated clamping members adapted to clamp a car upon said dump, and compressed air actuated locking members adapted to lock said clamping members in their operative position.

2. The combination with a dump adapted to turn a car entirely over, of compressed air actuated clamping members adapted to clamp a car to said dump, and compressed air actuated locking members adapted to lock said clamping members in their operative position.



3. The combination with a rotative dump of movable beams adapted to clamp a car to said dump, piston rods connected to said beams, teeth formed upon the ends of said piston rods, and a locking pawl or dog adapted to engage said teeth.

4. The combination with a rotative dump of beams adapted to clamp a car upon said dump, piston rods connected to said beams, teeth formed upon said piston rods, and a compressed air actuated locking pawl or dog adapted to engage said teeth and prevent movement of the piston rods in one direction.

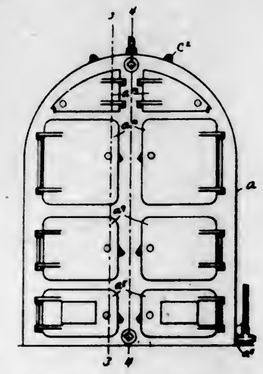
5. The combination with a rotative dump comprising a platform, of vertically movable beams adapted to engage the tops of cars and clamp the same upon each side of said platform, and horizontally movable beams adapted to clamp the sides of said cars, toggle joints located between said side beams and fixed points upon the dump, compressed air actuated piston rods adapted to impart movement to said toggle joints, vertically movable piston rods connected to the vertically movable beams, teeth formed upon said last named piston rods, and a locking pawl or dog adapted to engage said teeth.

6. The combination with a rotative dump comprising a platform, of vertically movable beams adapted to clamp the tops of cars and clamp a car upon each side of said platform, horizontally movable beams adapted to engage the sides of said cars, toggle links adapted to actuate said side beams, fluid pressure actuated piston rods adapted to impart motion to said toggle links, vertically movable fluid pressure actuated piston rods engaging the vertically movable beams, teeth formed upon said piston rods, and a fluid pressure actuated pawl or dog adapted to engage said teeth.

7. In a dumping apparatus, the combination with a movable dump of fluid pressure actuated means for holding a car upon said dump and a positive latching device engaging an element of said means for maintaining the latter in operative position.

8. In a dumping apparatus, the combination with a movable dump of fluid pressure actuated means for holding a car upon said dump and a fluid pressure actuated positive latching device engaging an element of said means for maintaining the latter in operative position.

852,797. HEATING APPARATUS. JAMES H. MCPARTLAND, Houlton, Me. Filed Mar. 29, 1906. Serial No. 308,667.



Claim.—1. In a heating apparatus, a plurality of sections each having water containing portions above and around two fire-pots, substantially as described.

2. In a heating apparatus, a plurality of sections each having water containing portions above and around two fire-pots and two ash-pits, substantially as described.

3. In a heating apparatus, a plurality of sections each having water containing portions above and around two fire-pots and an inlet and an outlet and communicating passages between the sections, substantially as described.

4. In a heating apparatus, a plurality of upright sections having abutting faces, each section having water containing portions above and around two fire-pots and an inlet and an outlet and communicating passages between the sections, substantially as described.

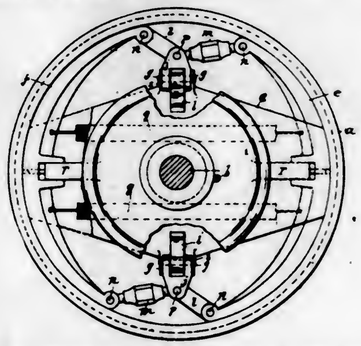
5. In a heating apparatus, a plurality of upright sections having abutting faces, each having water containing portions above and around two fire pots, and each having an inlet and an outlet and communicating passages between the sections at the upper and lower ends thereof, and means for securing said sections together, substantially as described.

6. In a heating apparatus, a plurality of abutting sections, each comprising top and bottom portions, upright side portions, an upright middle portion and a plurality of intermediate horizontal portions between each side portion and the middle portion, all of said portions being hollow and in open communication and disposed to provide two ash-pits, two fire-pots and two sets of communicating passages for the products of combustion in open communication respectively with the two fire-pots, substantially as described.

7. In a heating apparatus, a plurality of abutting sections, each comprising top and bottom portions, upright side portions, an upright middle portion and a plurality of intermediate horizontal portions between each side portion and the middle portion, all of said portions being hollow and in open communication and disposed to provide two ash-pits, two fire-pots and two sets of communicating passages for the products of combustion in open communication respectively with the two fire-pots, inlets and outlets for the sections, and communicating passages between the sections at the upper and lower ends thereof, substantially as described.

852,798. CLUTCH MECHANISM. RALPH E. NORTHWAY, Detroit, Mich., assignor to Northway Motor and Manufacturing Company, Detroit, Mich., a Corporation of Michigan. Filed Dec. 21, 1905. Serial No. 292,763.

Claim.—1. In combination a shaft, a drum loosely mounted thereupon, clutch bands to be outwardly expanded against the inner periphery of the drum, a carrier plate rigidly mounted upon the shaft, levers carried by said plate toward the periphery thereof, a link engaged by said lever, and toggle arms each jointedly connected at its outer end with the adjacent extremity of the adjacent clutch band and at its inner end with the corresponding link, one of said toggle arms provided with a turn buckle, and a movable flanged plate or body to actuate said lever substantially as described.



2. The combination of a shaft, a drum loosely mounted thereupon, a carrier plate rigidly mounted upon the shaft, clutch bands to be outwardly expanded against the inner periphery of the drum, levers fulcrumed to the carrier plate, toggle mechanism at opposite extremities of the clutch bands actuated by the corresponding levers to expand said clutch plates, and a movable flanged plate to actuate said levers, substantially as described.

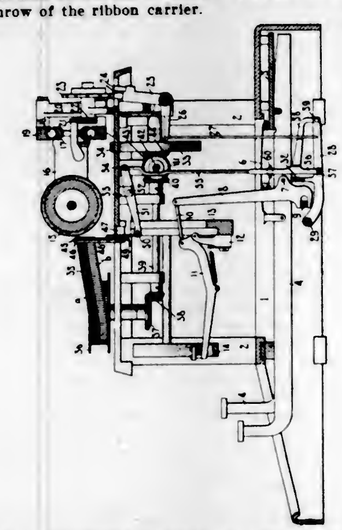
3. The combination with a shaft of a drum loosely mounted upon the shaft, oppositely arranged friction clutch bands to be outwardly expanded against the inner periphery of the drum, a carrier plate rigidly mounted upon the shaft, levers fulcrumed upon the outer edge of said plate, and extending substantially at right angles to the plate, toggle arms jointedly connected at their outer ends with the adjacent extremities of the clutch bands, and a plate or body movable longitudinally upon the shaft to actuate the levers.

4. The combination with a shaft of a drum loosely mounted thereupon, oppositely arranged friction clutch bands to be outwardly expanded against the inner periphery of the drum, a carrier plate rigidly mounted upon the shaft, toggle arms jointedly connected at their outer end with the opposite extremities of the clutch bands, links jointedly connecting the extremities of the corresponding toggle arms, levers fulcrumed intermediate their ends upon the carrier plate engaged at one extremity with the corresponding link, a plate or body movable longitudinally upon the shaft to engage the outer ends of said levers to actuate said levers, said carrier plate provided with means to prevent the oscillation of the clutch bands, one of said toggle arms being longer than the companion arm.

5. The combination of a shaft, a drum loosely mounted thereupon, a carrier plate rigidly mounted upon the shaft, two clutch bands to be outwardly expanded against the inner periphery of the drum, two levers fulcrumed at opposite sides of the shaft upon the carrier plate, links engaged with one of the extremities of the levers respectively, toggle arms jointedly connected with each of said links, and with the outer extremity of the adjacent clutch bands, and a body movable longitudinally upon the shaft to actuate said levers, one of said toggle arms being longer than the companion arm.

852,799. TYPE-WRITING MACHINE. MORRIS W. POOL, Brooklyn, N. Y., assignor to The Monarch Typewriter Company, Syracuse, N. Y., a Corporation of New York. Filed Oct. 8, 1906. Serial No. 338,006.

Claim.—1. In a typewriting machine, the combination of a vibratory ribbon carrier; operating means therefor including a link; a pivoted key-actuated universal bar frame having a central arm; and means for shifting said link at will transversely of said central arm in order to connect the link therewith at different distances from the pivotal axis of the universal bar frame and thereby vary the throw of the ribbon carrier.



2. In a typewriting machine, the combination of a vibratory ribbon carrier; an operating lever therefor; an actuating link connected at one end with said operating lever and bifurcated or forked at its other end; a pivoted key-actuated universal bar frame having a central arm embraced or straddled by the forked end of said link; and means for shifting said link to connect one or another of the arms composing its fork with the central arm of the universal bar frame at different distances from the pivotal axis thereof in order to vary the throw of the ribbon carrier.

3. In a typewriting machine, the combination of a vibratory ribbon carrier; an operating lever therefor; an actuating link connected with and depending from said lever, said link terminating at its lower end in two arms arranged in different planes both fore and aft of the machine and transversely thereof; a pivoted key-actuated universal bar frame having a part arranged between the arms of said link; and means for connecting at will one or another of the arms of said link with said part of the universal bar frame at different distances from the pivotal axis of said frame in order to vary the throw of the ribbon carrier.

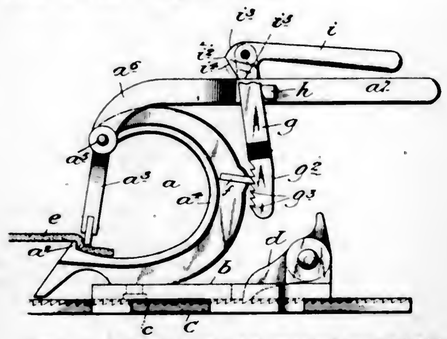
4. In a typewriting machine, the combination of a vibratory ribbon carrier; an operating lever therefor; an actuating link having a forked end, the arms comprising said forked end being provided with engaging openings; a pivoted key-actuated universal bar frame having a central arm embraced by the forked end of said link, said central arm having lateral oppositely disposed engaging pins at different distances from its fulcrum, each engaging pin being co-operative with one of the engaging openings in said link; and a slide bar for guiding and controlling said link, said slide bar being operative to shift said link to effect an engagement of one or another of its arms with the central arm of the universal bar frame.

5. In a typewriting machine, the combination of a vibratory ribbon carrier; an operating lever therefor; a pivoted key-actuated universal bar frame; a link connecting said universal bar frame with said operating lever; means for shifting said link to engage with said universal bar frame at different distances from the pivotal axis of said universal bar frame, said link being also shiftable so as to be disengaged entirely from said universal bar frame.

6. In a typewriting machine, the combination of a vibratory ribbon carrier; an operating lever therefor; a pivoted key-actuated universal bar frame; a link connecting said universal bar frame and said operating lever; and means for varying the point of connection between said link and said universal bar frame and for disconnecting said link entirely from said universal bar frame.

7. In a typewriting machine, the combination of a vibratory-ribbon carrier; an operating lever therefor; a link connected at one end with said operating lever and forked at its other end; a pivoted key-actuated universal bar frame having a part embraced or arranged between the arms composing the fork of said link; and means for shifting said link to engage one or another of its arms with the embraced part of said universal bar frame, said means being also operative to entirely disconnect said link from said universal bar frame.

852,800. CLUTCH FOR LEATHER-STRETCHING MACHINES. EZRA L. POST, Wallingford, Conn. Filed Nov. 19, 1906. Serial No. 343,996.



Claim.—1. A clutch of the class described provided with a bottom stationary jaw and a movable jaw pivoted thereover and provided with a backwardly directed handle, a lever mounted on said handle and movable thereon, an arm pivoted in the top portion of said lever and having a head provided with cam surfaces adapted to bear on said handle, the lower end portion of said lever and the back of the clutch being provided one with ratchet teeth and the other with a tang adapted to operate in connection with said teeth.

2. A clutch of the class described provided with a bottom stationary jaw and a movable jaw pivoted thereover and provided with a backwardly directed handle, a lever mounted on said handle and movable thereon, an arm pivoted in the top portion of said lever and having a head provided with cam surfaces adapted to bear on said handle, the lower end portion of said lever and the back of the clutch being provided one with ratchet teeth and the other with a tang adapted to operate in connection with said teeth, said handle being provided with side lugs or projections in connection with which said lever operates.

3. A clutch of the class described provided with a stationary bottom jaw and a movable top jaw, said movable top jaw being provided with a backwardly directed yoke-shaped arm having an extended handle, a yoke lever mounted on said handle and movable thereon, an arm pivoted in the top portion of said lever and provided with a cam head adapted to bear on said handle, the bottom portion of said lever and the back of the clutch being also provided one with ratchet teeth and the other with a tang which operates in connection with said teeth.

852,801. DRAFT-RIGGING. JAMES R. RENIFF, Chicago, Ill., assignor of one-half to Egbert H. Gold, Chicago, Ill. Filed Oct. 29, 1906. Serial No. 341,059.

Claim.—1. The combination with a draw-bar, of a yoke attached thereto, and a friction rigging arranged within

said yoke and comprising a pair of levers arranged to overlap each other, and means providing fulcrums for said levers, all so arranged that the longitudinal movement of said draw-bar will move the overlapping ends of said levers toward and into closer engagement with each other.



2. The combination with a draw-bar of a yoke attached thereto and a friction rigging arranged within said yoke and comprising a pair of levers arranged to overlap each other and means providing yielding fulcrums for said levers all so arranged that the longitudinal movement of said draw-bar will move the overlapping ends of said levers toward and into closer engagement with each other.

3. The combination with a draw-bar of a yoke attached thereto and a friction rigging arranged within said yoke and comprising a pair of levers having ends arranged to overlap each other and other ends subjected to yielding pressure, and means providing fulcrums for said levers all so arranged that the longitudinal movement of said draw-bar will impart greater pressure to the pressure-receiving ends of said levers and thereby move the overlapping ends of said levers into closer engagement with each other.

4. In a draft-rigging, the combination of a pair of followers, abutments for said followers, a pair of split friction-cases disposed between said followers and adapted to telescope one within the other, and means for causing the friction-cases to frictionally engage each other when the followers are caused to approach each other, said means tending to open the inner friction-case and to close the outer friction-case.

5. In a draft-rigging, the combination of a pair of followers, abutments for said followers, a pair of friction-cases disposed between the followers and adapted to telescope one within the other, a spring within said friction-cases tending to expand the inner of said friction-cases and to cause the outer of said friction-cases to contract, and means whereby said spring may be compressed by the longitudinal movement of the draft-rigging and thereby caused to exert a greater force as the followers are caused to approach each other.

6. In a draft-rigging, the combination with a pair of followers and abutments therefor, of a pair of split friction-cases disposed between said followers and adapted to slide one within the other as the followers approach each other, spring means tending to hold said followers apart and to move said followers toward their abutments, and means adapted to cause the inner of said cases to expand and thereby to frictionally engage the outer of said cases as one of the followers is moved toward the other, and simultaneously to cause the outer of said cases to move inwardly.

7. In a draft-rigging, the combination with a pair of followers and abutments therefor, of a pair of split friction cases disposed between said followers and adapted to slide one within the other as the followers approach each other, spring means tending to hold said followers apart and to move said followers toward their abutments, and means interposed between said spring means and the split friction cases tending to cause the outer of said cases to close upon the inner case as one of the followers is caused to move toward the other.

8. In a draft-rigging, the combination of a pair of followers, abutments for said followers, fulcrumed members disposed between said followers and adapted to slide upon each other as the followers approach each other, and spring means located between said followers and adapted to bear upon said fulcrumed members and thereby to cause the same to swing about their fulcrum each toward the other and to frictionally engage each other.

9. In a draft-rigging, the combination with a pair of followers, of a pair of bent levers disposed between said followers and arranged so that an end of one of said levers overlies an end of the other lever, and spring means adapted to rock said levers on their fulcrums into engagement with each other, said spring means being so arranged as to be compressed by the movement of one of the followers toward the other of said followers.

10. In a draft-rigging, the combination with a draw-bar, of a pair of followers adapted to approach each other when the draw-bar is moved longitudinally, a spring disposed between the followers, a pair of fulcrumed bent levers having each an arm adapted to receive the thrust of the spring and another arm tending to approach the corresponding arm of the other lever, and a second pair of bent levers likewise having each an arm adapted to receive the thrust of the spring, the other arms of said second pair of levers tending to move away from each other and into engagement with the approaching arms of said first pair of levers.

11. In a draft-rigging, the combination with a draw-bar, of a follower adjacent the inner end of said draw-bar, a second follower, a yoke secured to the draw-bar and embracing said followers, abutments for said followers, a spring interposed between said followers and adapted to be compressed by the movement of either of said followers toward the other, a pair of levers having each an arm adapted to receive the thrust of the spring and another arm tending to approach the opposed arm of the other lever, and a pair of levers having each an arm adapted to receive the thrust of the spring and another tending to move away from the corresponding arm of the other lever and into engagement with the second-named arms of the other pair of levers.

12. In a draft-rigging, the combination with a draw-bar, of a pair of followers arranged to approach each other when the draw-bar is moved longitudinally, a spring tending to separate said followers, means adapted to be expanded by said spring and means adapted to be compressed by said spring, said first-named means being arranged to telescope within said last-named means as the followers are caused to approach each other.

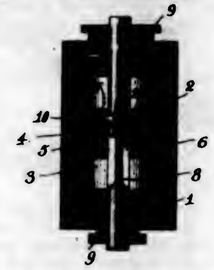
13. In a draft-rigging, the combination with a draw-bar, of an inner friction-case, an outer split friction-case comprising rocking devices having members rigidly connected therewith and engaging with the inner case, a spring tending to rock said rocking devices toward each other and so contract the outer friction-case and cause the same to frictionally engage the inner friction-case, and means whereby longitudinal movement of the draw-bar increases the pressure exerted by said spring, and, at the same time, causes relative movement between said friction-cases.

14. In a draft-rigging, the combination with a draw-bar, of an outer split-friction-case, an inner split friction-case, spring means tending to expand the inner and to contract the outer of said friction-cases, and means whereby longitudinal movement of the draw-bar causes relative movement between said friction-cases and also increases the pressure exerted by said spring.

15. Draft-rigging comprising a draw-bar, a pair of friction cases adapted to telescope one within the other, means for connecting said friction cases with the draw-bar, spring means within said friction cases, and means interposed between said spring means and the friction cases whereby through the action of the spring the outer of said cases is caused to close upon the inner of said cases.

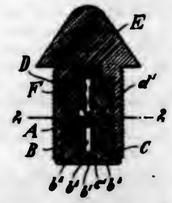
852,802. VALVE. WILLIARD T. SEARS, Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Original application filed Apr. 17, 1905. Serial No. 255,888. Divided and this application filed Apr. 16, 1906. Serial No. 311,856.

Claim.—In a valve, the combination, substantially as set forth, of a valve chamber having an inlet and outlet opening and provided with a partition having a counterbored opening between the inlet and outlet openings, a fluted valve stem fitting the smaller openings in the partition, a piston on said stem fitting said counterbore and adapted to seat upon the floor thereof, and a packing of soft material carried by the periphery of the piston and engaging the wall of the counterbore, whereby when the



piston enters the counterbore any fluid between the piston and the floor of the counterbore may freely leave the counterbore through the flutes in the stem.

852,803. PERCUSSION-FUSE. WILHELM SCHWARTZ, Essen-Rüttenscheid, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed July 7, 1906. Serial No. 325,102.



Claim.—1. A percussion fuse comprising a part movable to produce ignition, and centrifugally operated means having connection with said part to hold it against rotation during flight and to move it upon impact.

2. The combination with the fuse body, of a part movable to produce ignition and having a screw threaded connection with the body, and a centrifugally operated body having connection with said part to hold it against movement during the flight and to move it upon impact.

3. A percussion fuse comprising a part movable to produce ignition and having a screw threaded connection with the fuse body, and centrifugally operated means with which said part has sliding connection causing the said part to be held against movement during the flight and to be moved upon impact.

4. A percussion fuse comprising a part movable to produce ignition and having a screw threaded connection with the fuse body, and means rotating said part upon impact to produce ignition.

5. The combination with the fuse body provided with a hole delivering the fire from the fuse to the charge, of means closing said hole, and means operating upon impact to open said hole.

6. The combination with the fuse body provided with a hole delivering the fire from the fuse to the charge, of means closing said hole, and centrifugally operated means holding the said means to close the opening during flight and moving said means on impact to open the opening.

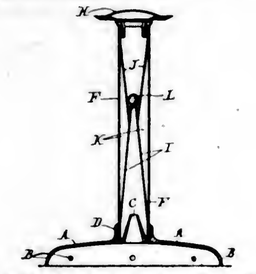
7. The combination with a body provided with a hole delivering the fire from the fuse to the charge, a valve for said hole having a screw threaded connection with the body, and means automatically rotating the valve to open the hole.

8. The combination with a body provided with a hole delivering the fire from the fuse to the charge, a valve for said hole, having a screw threaded connection with the body, and centrifugally operated means holding said valve closed during flight and opening it upon impact.

9. The combination with a body provided with a hole delivering the fire from the fuse to the charge, a valve for said hole, having a screw threaded connection with the body, and centrifugally operated means controlling said valve.

10. In a percussion fuse, the combination with the fuse body, of a centrifugally operated body, and a part having a screw threaded connection with the fuse body and a sliding connection with the centrifugally operated body.

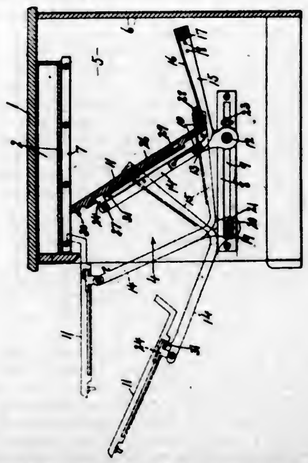
852,804. APPARATUS FOR CLEANSING TEXTILE FABRICS. ALBERT H. SCROXTON, Battersea, London, and WILLIAM H. CANNON, London, England. Filed Nov. 4, 1904. Serial No. 231,435.



Claim.—1. In apparatus for cleansing textile fabrics the combination of a hollow base provided with perforations and a conical orifice, a detachable tube surrounding said conical orifice and provided with a lining consisting of a lower conical member and an upper inverted conical member and a deflector connected to the top of said tube as herein set forth.

2. In apparatus for cleansing textile fabrics the combination of a hollow base provided with perforations and a conical orifice, a detachable tube surrounding said conical orifice, and provided with a lining consisting of a lower conical member and an upper inverted conical member with a hermetically sealed air chamber between said tube and lining, a ball acting at the junction of the conical members and a deflector attached to the top of said tube as set forth.

852,805. TYPE-WRITER CABINET. FRANK J. SITTS, Herkimer, N. Y. Filed May 17, 1906. Serial No. 317,270.

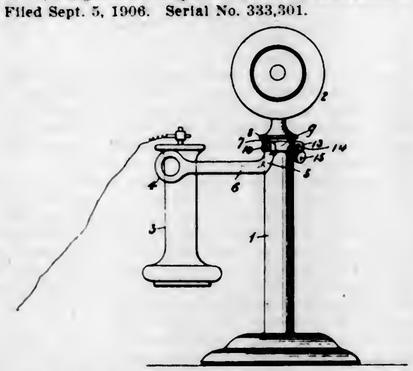


Claim.—1. A typewriter cabinet comprising a desk having a fixed top and fixed sides forming an intervening knee

space below the top, horizontal guides secured to said sides, bearings slidable in the guides, a frame mounted to rock on said bearings and having forwardly and rearwardly extending portions disposed at an angle and in fixed relation to each other, and a tiltable supporting bed for the type-writing machine mounted upon the forwardly extending portion of the rocking frame and having a rocking slidable connection therewith.

2. A typewriter cabinet comprising a desk having a fixed top and fixed sides forming an intervening knee space below the top, horizontal guides secured to said sides and provided with recesses in their front ends, bearings slidable in the guides and adapted to drop into said recesses when drawn to their extreme forward position to temporarily lock said bearings in their forwardly adjustable position, a frame mounted to rock on said bearings and having forwardly and rearwardly extending portions disposed at an angle and in fixed relation to each other, brackets hinged to the front end of the frame to rock forwardly and rearwardly, and a machine supporting bed having a sliding connection with said brackets whereby the bed may be moved forwardly and rearwardly relatively to said frame.

852,806. LOCKING DEVICE FOR TELEPHONES. FRANCIS S. K. SMITH and DAVID C. REINOHL, Washington, D. C., assignors to Ralph E. Walker, Washington, D. C. Filed Sept. 5, 1906. Serial No. 333,301.



Claim.—1. A telephone apparatus comprising a column provided with a slot, a receiver-hook in said slot, a flexible annular band engaging the column and the receiver-hook, and a lock engaging the band.

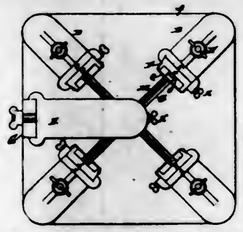
2. A telephone apparatus comprising a column provided with a vertical slot, a receiver-hook in said slot, a detachable metallic band surrounding the column and engaging said hook, and a lock engaging the ends of the band.

3. A telephone apparatus comprising a column provided with a vertical slot, a shoulder on the column, a receiver-hook in said slot, a detachable metallic band surrounding the column and provided with a member engaging the upper edge of the receiver-hook, and a lock engaging the ends of the band.

4. A telephone apparatus comprising a column provided with a vertical slot, a receiver-hook in said slot, a detachable flexible annular band surrounding the column and provided with a notch engaging the receiver-hook, lugs on the ends of the band, and a lock engaging said lugs.

852,807. MOUNTING FOR ANATOMICAL SPECIMENS. OAKLEY G. SMITH, Iowa City, Iowa. Filed Jan. 19, 1906. Serial No. 296,917.

Claim.—1. The herein described mounting for anatomical specimens, which consists in attaching to each bone by more than two points of contact a keeper adapted for easy removal and re-attachment in the same position, mounting said keeper in a frame adapted to register their exact positions, removing and cleaning the bones, replacing the cleaned bones in said frame by means of said keepers, and suitably connecting the bones in permanent position, as by filling interspaces with plastic material.



2. A mounting device for anatomical specimens, comprising a base, movable standards mounted thereon, and adapted to hold in determinate positions removable record blocks, rods adapted to cross and pass through the specimen from block to block, and means for permanently locating the positions of the rod ends with respect to said blocks.

3. In an anatomical mounter, the combination of a base, standards movably mounted thereon, and at divergent angles, removable record block attached to said standards, and rods to pass from block to block in crossing lines, and through holes drilled in the bones, substantially as described.

4. In an anatomical mounter, the combination of a base, oppositely disposed standards mounted at divergent angles thereon, and movable toward and away from their opposites, channeled record blocks mounted on said standards, and adapted to take a mound of plastic material in the channel, rods to cross from standard to standard and through holes divergently drilled in the bones, and metal strips drilled the size of the rods, and adapted for permanent attachment to said record blocks.

5. In an anatomical mounter, and in combination with a holding and registering frame, index rods tapered at each end, and numbered to denote position, as set forth.

6. In an anatomical mounter, the combination of a suitable holding and registering frame, of rods adapted to pass through the bones at divergent angles, whereby each bone may be replaced in its identical original position, as described.

852,808. METALLIC CAR. WARREN M. SMITH, borough of Prospect Park, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Sept. 17, 1906. Serial No. 335,010.

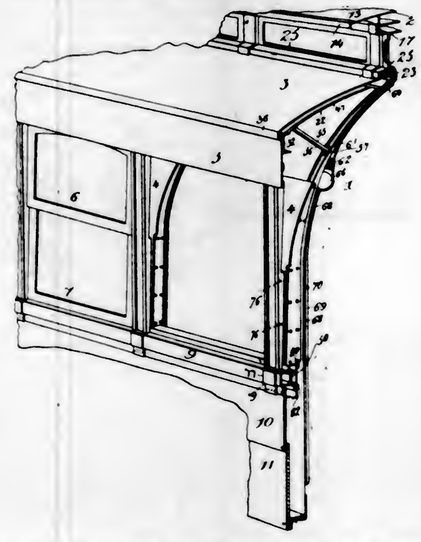
Claim.—1. In a car or similar device, stanchions, eave-beams supported by said stanchions, channel iron carlines extending from one eave-beam to the other, said carlines having their central webs cut away and the extreme webs extended laterally, and means for securing said laterally extending ends to the eave-beam.

2. In a car or similar device, stanchions, eave-beams supported by said stanchions, channel iron carlines extending from one eave-beam to the other, said carlines having their central webs cut away and the extreme webs extended laterally, and means for securing the laterally extending ends to the eave-beam, a deck rail secured to said carlines and an upper and a lower roof supported by said carlines.

3. In a car or similar device, eave-beams, carlines extending from one eave-beam to the other, upper and lower roofs supported by said carlines, a deck rail secured to said carlines, angles fixed to said carlines, channel irons fixed to said angles, and rafters resting on said channel irons whereby said rafters coact with said carlines to support the upper roof.

4. In a car, eave-beams, carlines secured thereto and extending across the roof of the car, deck rail fixed to said carlines, angles fixed to said carlines, sills resting on said angles and secured thereto, rafters supported by said sills, a clear story roof resting on said rafters, and sheet metal plates covering the inner surfaces of said carlines and rafters.

5. In a car, an upwardly arched clear story roof, angles secured to the edges of said roof, angle metal rafters extending under said roof, each of said rafters having its lower web slitted to about midway of its breadth and then having a portion bent laterally of the web, a sill on which said laterally extending portion rests, and means for holding said sill and rafter together.



6. In a car or similar device, an upwardly arched clear story roof and rafters supporting same, a sill on which said rafters rest and to which they are secured, angle metal sheets secured to the lower and outer edges of said sills, a lining secured to said angle metal plates, a strip secured to said lining, and a ventilator window pivotally mounted below said sill and adapted to rest against said strip.

7. In a car or similar device, carlines, an upper and a lower roof supported thereby, a deck rail, ventilators pivotally mounted between the upper and lower roofs, a cam fixed to the outer surface of each of said ventilators and a spring actuated bolt engaging said cam and adapted to hold said ventilator in any of several positions.

8. In a car or similar device, carlines extending from one side of the car to the other, and said carlines being so bent as to support the upper and lower roofs of said car, ventilators, a deck rail secured by suitable angles and rivets to said carlines, and a sheet metal sill secured to said ventilator and extending between said carlines.

9. In a car or similar device, channel irons, carlines, a ventilator rail secured to said carlines by means of angles, a sheet metal window sill for the ventilators extending between the carlines and over the ventilator rail, a conduit secured to said ventilator rail and over the end of said sill sheet and an ornamental molding covering said conduit strip.

10. In a car or similar device, an eave-beam, channel iron carlines extending therefrom and secured thereto, stanchions fixed to said eave-beam immediately under said carlines, each of said stanchions comprising two channel irons, one of which extends vertically to the eave-beam and the other of which bends upward and inwardly and joins said carlines at the deck rail, and means for securing the said parts together.

11. In a car or similar device, a carline formed of channel iron and extending upwardly and inwardly to a deck rail, and eave-beam and a stanchion composed of two channel irons, one of which runs to said eave-beam and rests immediately under said carline, and the other of which runs upwardly and inwardly and joins said carline at the deck rail, and a brace uniting said carline and stanchion.

12. In a car, an eave-beam, carlines formed of channel iron and extending upwardly and inwardly from said beam, a deck rail secured to said carlines, a stanchion below each of said carlines provided with two channel irons, one of which is fixed to said eave-beam below said carline, and the other of which extends upwardly and inwardly to said carline and deck rail, a brace connecting said channel iron and last mentioned carline, and a head-lining supported by said last mentioned channel iron of the stanchion.

13. In a car, an eave-beam, carlines formed of channel iron and extending upwardly and inwardly from said beam, a deck rail secured to said carlines, a stanchion below each of said carlines provided with two channel irons, one of which is fixed to said eave-beam below said carline, and the other of which extends upwardly and inwardly to said carline and deck rail, a brace connecting said channel iron and carline, a head-lining supported by said last mentioned channel iron, and a basket rack rail carried by said channel iron and to which said head-lining is secured.

14. In a car, an eave-beam, carlines formed of channel iron and extending upwardly and inwardly from said beam, a deck rail secured to said carlines, a stanchion below each of said carlines provided with two channel irons, one of which is fixed to said eave-beam below said carline, and the other of which extends upwardly and inwardly to said carline and deck rail, a brace connecting said channel iron and carline, a head-lining supported by said last mentioned channel iron, a basket rack rail carried by said channel iron and to which said head-lining is secured, and a curtain rail concealed by said head-lining and secured to said stanchion.

15. In a car, a stanchion composed of two channel irons having their extreme webs in the same vertical plane and extending toward each other, the outer of said channel irons extending substantially vertical from the eave-beam to the lower sill of the car, and the other of said channel irons running parallel with the outer channel iron to near the eave-beam and then bending inwardly and upwardly to the deck rail, and a brace for securing said channel irons together.

16. In a car, a stanchion composed of two channel irons having extreme webs in the same vertical plane and extending toward each other, the outer of said channel irons extending substantially vertical from the eave-beam to the lower sill of the car, and the other of said channel irons running parallel with the outer channel iron to near the eave-beam and then inwardly and upwardly to the deck rail, a brace for securing said channel irons together, and sheet metal strips covering portions of said channel irons.

17. In a car, a stanchion composed of two channel irons having extreme webs in the same vertical plane and extending toward each other, the outer of said channel irons extending substantially vertical from the eave-beam to the lower sill of the car, and the other of said channel irons running parallel with the outer channel iron to near the eave-beam and then inwardly and upwardly to the deck rail, a brace for securing said channel irons together, sheet metal strips covering portions of said channel irons, and wooden strips covered by said sheet metal strips.

18. In a car or similar device, a number of stanchions, each comprised of inner and outer channel irons, said channel irons running substantially parallel throughout the greater portion of their lengths, and the outer channel iron being vertically disposed to the eave-beam, the inner channel iron curving upwardly and inwardly near the eave-beam and extending to the deck rail, means for holding said channel irons in their relative positions, and lower panels fixed to said channel irons.

19. In a car or similar device, a number of stanchions, each comprised of outer and inner channel irons, said channel irons running substantially parallel throughout the greater portion of their lengths, and the outer channel being vertically disposed to the eave-beam of the inner channel iron curving upwardly and inwardly near the eave-beam and extending to the deck rail, means for holding said channel irons in their relative positions, lower panels

fixed to said channel irons, and lower sills secured to said stanchions and panels.

20. In a car or similar device, a number of stanchions, each composed of outer and inner channel irons, said channel irons running substantially parallel throughout the greater portion of their lengths, the outer channel iron being vertically disposed to the eave-beam of the inner channel iron curving upwardly and inwardly to the eave-beam and extending to the deck rail, means for holding said channel irons in their relative positions, lower panels fixed to said channel irons, and belt rails secured to said stanchions and upper panel.

21. In a car or similar device, a number of stanchions, each comprised of outer and inner channel irons, said channel irons running substantially parallel throughout the greater portion of their lengths, and the outer channel iron being vertically disposed to the eave-beam curving upwardly and inwardly near the eave-beam and extending to the deck rail, means for holding said channel irons in their relative positions, lower panels fixed to said channel irons, lower sills secured to said stanchions and panels, and an I-beam connecting said stanchions.

22. In a car or similar device, a number of stanchions, each comprised of outer and inner channel irons, said channel irons running substantially parallel throughout the greater portion of their lengths, and the outer channel iron being vertically disposed to the eave-beam of the inner channel iron curving upwardly and inwardly near the eave-beam and extending to the deck rail, means for holding said channel irons in their relative positions, lower panels fixed to said channel irons, lower sills secured to said stanchions and panels, and angle plates fixing said stanchions and sills together.

23. In a car or similar device, a stanchion composed of two channel irons, an outer and an inner, an I-beam passing through said stanchion, the inner channel being recessed to permit the beam to pass through and the beam being recessed to permit the outer channel to pass therethrough, and angles secured to said channel irons and I-beam.

24. In a car or similar device, a stanchion composed of two channel irons and means for holding said channel irons in their proper relative positions, an I-beam, a window sill plate fixed to said stanchion and extending over said I-beam, and a side lining adjacent to said stanchion and provided with a depending upper edge to reinforce said window sill.

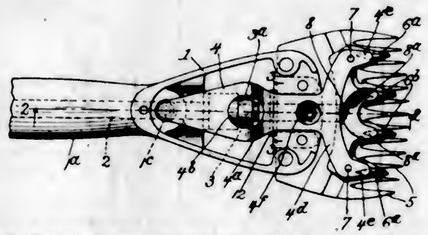
25. In a car or similar device, a stanchion composed of two channel irons and means for holding said channel irons in their proper relative positions, an I-beam, a window still plate fixed to said stanchion and extending over said I-beam, a side lining adjacent to said stanchion and provided with a depending upper edge to reinforce the said window sill, and side supports secured to said side lining.

26. In a car or similar device, a number of stanchions, each of which is composed of channel irons with means of uniting the same and holding them in their proper relative positions, one of said channel irons being provided with a slightly inset lower portion to which a rigid lower panel is secured, and a second panel secured to and overlapping said lower panel and also secured to said channel.

852,809. SHEEP-SHEARING MACHINE. JOHN K. STEWART, Chicago, Ill. Filed Aug. 13, 1906. Serial No. 330,285.

Claim.—1. A shear comprising a comb or fixed cutter and a vibrating cutter; an operating lever having two fingers bearing upon the vibrating cutter; a secondary lever pivoted to the operating lever and having two fingers intermediate those of the operating lever bearing upon the vibrating cutter, both said levers being pivoted for movement relative to the part to which it is pivoted about two axes, one at right angles to the axis of the vibrating movement of the operating lever, and the other transverse to the first, and means for applying pressure to the secondary lever.

2. A shear comprising a comb or fixed cutter and a vibrating cutter mounted thereon; an operating lever for vibrating the vibrating cutter having two points of pressure thereon; a secondary lever pivoted to the operating lever and having two points of pressure on the vibrating cutter; a pressure or tension screw and means by which it communicates pressure to the secondary lever between the pivot of the latter and its points of bearing on the vibrating cutter, the operating lever and the secondary lever being pivoted for two movements relative to the part to which it is pivoted, the first in a vertical plane at right angles to the plane of vibration of the vibrating cutter, and the second about an axis transverse to the axis of the first movement.



3. A shear comprising a comb or fixed cutter and a vibrating cutter operating thereon; an operating lever for actuating the vibrating cutter having two points of bearing thereon and mounted for universal movement about its fulcrum; a secondary lever pivoted to the operating lever and having two points of bearing upon the vibrating cutter; a tension or pressure screw and means by which it transmits pressure to the secondary lever intermediate its fulcrum and its points of bearing on the cutter, said secondary lever being mounted on the operating lever for pivotal movement about an axis parallel to the plane of vibration of the cutter, and also about an axis at right angles to the first.

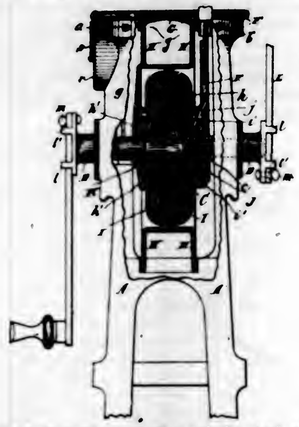
4. A sheep shear comprising a comb or fixed cutter, a vibrating cutter having four equally spaced cutting teeth; an operating lever for actuating the vibrating cutter having fingers bearing upon the two extreme teeth of said lever; a secondary lever pivoted to the operating lever and having fingers bearing upon the intermediate teeth of said lever, both the levers being mounted for rocking movement relative to the part to which it is pivoted about an axis radial to the path of vibration of the cutter and midway between the said fingers of the respective levers.

852,810. NAVIGATIONAL SOUNDING-MACHINE. WILLIAM THOMSON, Largs, and FRANCIS W. CLARK, Glasgow, Scotland. Filed Sept. 11, 1903. Serial No. 172,814.

Claim.—1. In a navigational sounding machine, the combination with the reel having a recess on either side of its central portion, and the reel-spindle having a screw-threaded portion at one side of the reel, of a disk of lignum vitæ loosely mounted on the screw-threaded portion of the spindle and within the reel-recess, a fixed disk of lignum vitæ mounted on the spindle at the other side of the reel and within the recess, and a nut non-rotatably mounted on the screw-threaded portion of the spindle and adapted to force the loose disk against the side of the reel upon rotation of the spindle.

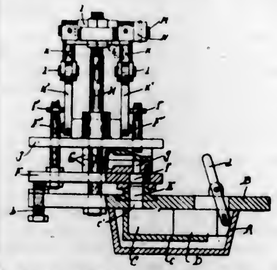
2. In a navigational sounding machine, the combination with the reel having a recess on either side of its central portion, and the reel-spindle having a screw-threaded portion at one side of the reel, of a disk of lignum vitæ loosely mounted on the screw-threaded portion of the spindle and within the reel-recess, a fixed disk of lignum vitæ mounted on the spindle at the other side of the reel and within the recess, a nut non-rotatably mounted on the screw-threaded portion of the spindle and adapted to force the loose disk against the side of the reel upon rotation of the spindle, and springs interposed between said loose disk and said nut.

3. In a navigational sounding machine, the combination with the reel having a recess on either side of its central portion, and the reel-spindle having a screw-threaded portion at one side of the reel, of a disk of lignum vitæ loosely mounted on the screw-threaded portion of the spindle and within the recess, a fixed disk of lignum vitæ mounted on the spindle at the other side of the reel and within the recess, a nut non-rotatably mounted on the



screw-threaded portion of the spindle and adapted to force the loose disk against the side of the reel upon rotation of the spindle, a pair of bridge-pieces on either end of the spindle, a pair of handles inserted in said bridge-pieces, and thumb-screws for rigidly clamping the handles on the bridge-pieces.

852,811. CASTING APPARATUS. HERBERT G. UNDERWOOD, Stamford, Conn., assignor to H. H. Franklin Manufacturing Company, Syracuse, N. Y., a Corporation of New York. Original application filed June 17, 1897. Renewed Jan. 11, 1900, Serial No. 1,145. Divided and this application filed Dec. 8, 1902. Serial No. 134,429.



Claim.—1. In a casting apparatus, a source of supply for the material to be cast, an exit-port for communicating with the source of supply, a sectional mold having an ingate for communicating with the exit-port, means for forcing the material from the exit-port through the ingate into the mold, a supporting member for the mold movable rectilinearly toward and from the exit-port, and a clamping member connected to a section of the mold, said clamping member being movable rectilinearly toward and from the supporting member a limited distance and being movable with the supporting member, and means for moving the clamping member for operating the same into and out of its operative position, substantially as and for the purpose set forth.

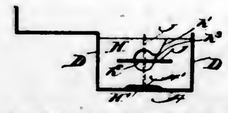
2. In a casting apparatus, a source of supply for the material to be cast, an exit-port for communicating with the source of supply, a sectional mold having an ingate for communicating with the exit-port, means for forcing the material from the exit-port through the ingate into the mold, a supporting member for the mold, a clamping member connected to a section of the mold, means connecting the clamping member to the supporting member for moving the supporting member with the clamping member and permitting a limited movement of the clamping member independently of the supporting member, and means for moving the clamping member into and out of its operative position, substantially as and for the purpose described.

3. In a casting apparatus, a source of supply for the material to be cast, an exit-port for communicating with the source of supply, a sectional mold having an ingate for communicating with the exit-port, means for forcing the material from the exit-port through the ingate into the mold, a supporting member for the mold movable toward and from the exit-port and provided with engaging means, a clamping member connected to one of the sections of the mold and movable into and out of operative engagement with said engaging means, and movable means connected to the clamping member for operating the same, substantially as and for the purpose specified.

4. In a casting apparatus, a source of supply for the material to be cast, an exit-port for communicating with the source of supply, a sectional mold having an ingate for communicating with the exit-port, means for forcing the material from the exit-port through the ingate into the mold, a standard fixed relatively to the exit-port, a supporting member for the mold guided along the standard, a clamping member guided along the standard, means connecting the clamping member to the supporting member for moving the supporting member with the clamping member and permitting a limited movement of one of said members independently of the other, and movable means connected to one of said members for operating the same, substantially as and for the purpose specified.

5. In a casting apparatus, a source of supply for the material to be cast, an exit port for communicating with the source of supply, a sectional mold having an ingate for communicating with the exit-port, means for forcing the material from the exit-port through the ingate into the mold, means for moving one of the sections toward and from the exit port, and means inactive during the initial movement of the first section coacting with the second section during the final part of the movement of the first section to move the second section with said first section, substantially as described.

852,812. KNOCKDOWN BOX. FREDERICK R. VERNON, Freeport, N. Y. Filed July 10, 1905. Serial No. 268,931.



Claim.—1. A folding box having a division piece connected thereto and adapted to be folded parallel to the bottom thereof or to be raised at an angle thereto, and another division piece so connected to the first division piece that it may be turned parallel to the bottom of the box to permit the first mentioned division piece to be folded on the bottom or to be moved at an angle to the bottom to hold the first mentioned division piece in its raised position.

2. A folding box, a partition secured thereto and foldable on the bottom thereof, said partition having an opening therein, and another partition secured in said opening and adapted to be turned parallel to the bottom to permit the partitions to be folded on the bottom or to be turned at an angle to the bottom to lock the partitions in their raised positions.

3. A folding box, a division piece having a circular opening therein secured thereto, said division piece adapted to be raised at an angle to or folded on the bottom of the box, another division piece provided with a neck fitted and

rotatable in said opening so that the said division piece may be turned parallel to the bottom of the box to permit the first division piece to be folded on the bottom or to be turned at an angle to the bottom to hold the division pieces in their raised or locked positions.

4. A folding box having a bottom, said bottom being formed with a locking device, a division piece having a tongue secured to said locking device, said division piece adapted to be raised at right angles to or folded on the bottom of the box, and also having an opening therein, another division piece provided with a neck fitted and rotatable in said opening so that it may be placed parallel to the bottom of the box to permit the first division piece to be folded on the bottom of the box or to be swung at an angle to the bottom to lock the first division piece at right angles to the bottom of the box.

5. A foldable box having a bottom, a transverse division piece connected to and adapted to be folded against the bottom, or to be raised at right angles thereto, said division piece having an opening therein and a slot extending into said opening, another division piece recessed at its edges and provided with a neck which is adapted to be inserted through the slot and into the opening in the first division piece, said neck being adapted to be turned in the said opening to permit the second division piece to be moved parallel to the bottom of the box, so that the division pieces may be folded against the bottom, or to be turned at right angles to the bottom to hold the first division piece at an angle to the bottom.

6. A folding box having a bottom, a transverse partition secured to and foldable on the bottom of the box, said transverse piece having an opening therein, one diameter of said opening being greater than the other, a longitudinal division piece connected to said transverse piece and adapted to be turned parallel to or at an angle to the bottom of the box to permit the transverse piece to be folded on the bottom of the box, or to lock said transverse piece at an angle to the bottom.

7. A folding box having a bottom, a transverse piece secured to and foldable on the bottom of the box, said transverse piece having an opening therein, one of the diameters of the opening being greater than the other, a longitudinal division piece having recesses cut in the edges thereof leaving a connecting piece or neck between said recesses, the length of said neck being about the length of the shorter diameter, and said longitudinal division piece being secured to the transverse division piece by the neck fitting in the said opening, the said longitudinal division piece being adapted to be turned parallel to the bottom to permit the pieces to be folded on the bottom of the box, or to be turned at an angle to the bottom to hold the transverse piece in its raised position.

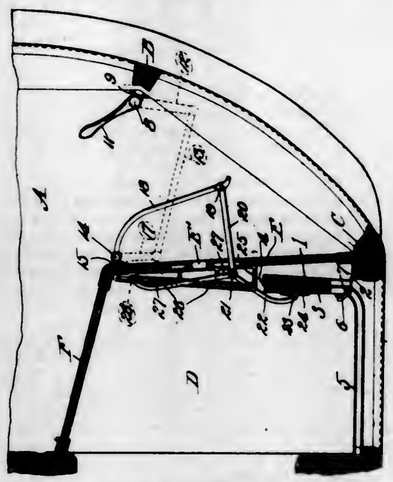
852,813. AUTOPNEUMATIC MUSIC-PLAYING INSTRUMENT. FRANK C. WHITE, Meriden, Conn., assignor to The Wilcox & White Company, Meriden, Conn., a Corporation of Connecticut. Filed Apr. 23, 1906. Serial No. 313,127.



Claim.—1. In an auto-pneumatic musical instrument, or the like, a wind-chest, an exhaust chamber, a single passage affording communication between said exhaust chamber and said wind-chest, a bellows, the course of said passage extending through said bellows, a valve in said passage, said valve comprising two sections, one a tension governing section, the other a high tension section, the position of the tension governing section being controlled by said bellows, and automatically operated means for controlling the high tension section of said valve.

2. In an auto-pneumatic musical instrument, or the like, a wind-chest, an exhaust chamber, a single passage affording communication between said exhaust chamber and said wind-chest, a bellows, the course of said passage extending through said bellows, a valve in said passage, said valve comprising two sections, one a tension governing section, the other a high tension section, the position of the tension governing section being controlled by said bellows, and a power pneumatic for controlling said high tension section, said power pneumatic being controlled from the tracker.

852,814. DOOR OPENING AND CLOSING DEVICE. HUBERT WITTE, St. Louis, Mo., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Oct. 11, 1906. Serial No. 338,391.



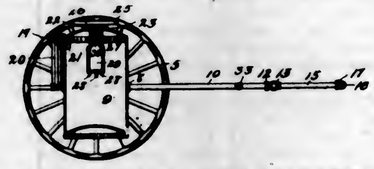
Claim.—1. In a door opening and closing device, the combination with a door, of a swing-arm connected to said door, a rock-shaft, lever connection between said rock shaft and swing-arm, a guide bracket, a guide arm pivoted to said lever connection and slidably fitted to said bracket, and means for operating said rock-shaft, substantially as set forth.

2. In a door opening and closing device, the combination with a door, of a swing-arm connected to said door, a rock shaft, a lever fixed to said rock shaft, a connecting link pivotally connecting said lever and swing-arm, a guide arm pivoted to said connecting link and swing-arm at a point of their connection, a guide in which said guide arm operates, and means for operating said rock shaft, substantially as set forth.

3. In a door opening and closing device, the combination with a sectional door, of a swing-arm connected to one of the sections of said door, a rock shaft, means for operating said rock shaft, a lever fixed to said rock shaft, a connecting link pivoted to said swing arm and having rule-joint connection with said lever, a guide bracket, and a guide arm having pivotal connection with said swing-arm and link and slidably fitted to said guide bracket substantially as set forth.

4. In a door opening and closing device, the combination with a sectional door, of a swing-arm connected to one of the sections of said door, a rock shaft, means for operating said rock shaft, a lever fixed to said rock shaft, a connecting link pivoted to said swing-arm, a guide bracket having a guideway therein, and a guide arm pivoted to said swing-arm connecting link at the point of connection thereof and arranged to operate in the guideway of said guide bracket, substantially as set forth.

852,815. CHEMICAL-ENGINE. SYLVANUS L. WOTTRING, Prospect, and CLARENCE H. SUTPHEN, Columbus, Ohio. Filed May 23, 1906. Serial No. 318,302.



Claim.—1. The combination with a wheeled frame, of a fire extinguisher mounted upon said frame and set in operation by the inversion thereof, said fire extinguisher being adapted to be inverted by swinging said frame from one side of the wheels to the other side thereof and means for supporting said frame in a horizontal position at each of its limits of movement.

2. The combination with a wheeled frame, of a fire extinguisher which is set in operation by the inversion thereof and which is mounted upon said frame, both the top and the bottom of said fire extinguisher lying within the circumference of said wheels and a handle portion pivoted to the outer end of the wheeled frame and adapted to support said frame in a horizontal position at each of its limits of movement.

3. The combination with a wheeled frame, of a fire extinguisher mounted upon said frame and set in operation by the inversion thereof, said fire extinguisher being adapted to be inverted by swinging said frame from one side of the wheels to the other side thereof, and a downwardly extending handle which is pivotally connected to the outer end of said wheeled frame, said handle being adapted to support said frame in a horizontal position at each of its limits of movement.

4. The combination with a wheeled frame, of a fire extinguisher mounted upon said frame and set in operation by the inversion thereof, said fire extinguisher being adapted to be inverted by swinging said frame from one side of the wheels to the other side thereof, the tank of said fire extinguisher being of such dimensions as to lie entirely within the circumference of the wheels, and a downwardly extending handle which is pivotally connected to the outer end of said wheeled frame, said handle being adapted to support said frame in a horizontal position at each of its limits of movement.

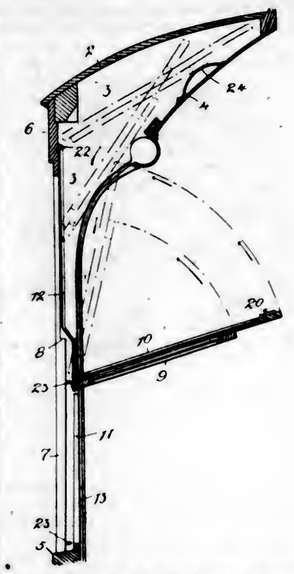
852,816. CAR. CHARLES W. BENJAMIN, New York, N. Y., assignor to J. A. Brill, Philadelphia, Pa. Filed Dec. 31, 1906. Serial No. 350,121.

Claim.—1. In a car, a roof and headlining, stanchions, a pair of sashes and means for permitting one sash to slide abreast of the other and then both swing together so, that one end of each sash is swung into the car and clear of the stanchions and then the sashes may be shifted between said roof and headlining.

2. In a car, a roof, a headlining, stanchions, a pair of sashes, one of which is provided with flanges engaged by the other, parting strips on said stanchions, and means permitting one of said sashes to slide abreast of the other and then both swing together and be free of the stanchions at one end of each sash and be adapted to be shifted into roof pockets.

3. In a car, stanchions, a roof supported thereby, a pair of sashes and flanges on one engaging the other, means for permitting one sash to slide abreast of the other and then both swung together and partly free from the stanchions into an elevated position.

4. In a car, stanchions, a roof, a head lining under said roof, an upper and a lower sash, flanges on said upper sash and means on said lower sash engaging said flanges, a pivot pintle at the upper end of said upper sash and pintle grooves in said stanchions so that the sashes may be swung together above the head lining and below the roof.



5. In a car, stanchions, a roof, a head lining under said roof, an upper and a lower sash, flanges on said upper sash and means for engaging said flanges on said lower sash removably mounted pintles at the upper end of said upper sash and pintle grooves on said stanchions so that said sashes may be swung and moved into the space under the roof and over the head lining.

6. In a car, stanchions, a roof, a head lining under said roof, an upper and a lower sash, means on one sash to cause it to engage the other when the two are moved abreast, pintles on said upper sash near the upper end thereof, outside parting strips on said stanchions, and a pintle groove running parallel with said parting strip both above and below the upper sash when in its closed position so that one end of each of said sashes may be swung clear of said stanchions and into said car and adapted to be shifted between the roof and headlining.

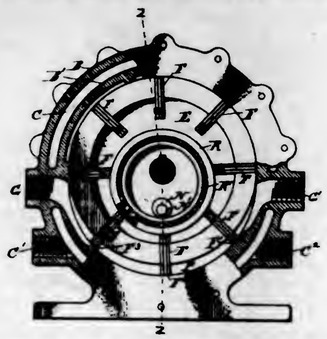
7. In a car, stanchions, a roof, a head lining under said roof, upper and lower sashes, means on one sash to cause it to engage the other when the two are moved abreast, removable pintles on said upper sash near the upper edge and pintle grooves in said stanchions extending a short distance above and below said upper sash when in its closed position so that one end of each of said sashes may be swung clear of said stanchions and into said car and adapted to be shifted between the roof and headlining.

852,817. AIR-COMPRESSOR. REINOLD BERENBERG and ALONZO S. DAISKO, Boston, Mass. Filed Mar. 16, 1905. Serial No. 250,458.

Claim.—1. A rotary air-compressor, comprising a piston-chamber provided with inlet and outlet ports, a rotating piston-carrier having laminated pistons, and having recesses at each end; piston-controlling rings located in said recesses; anti-friction balls upon which the said piston-controlling rings run; inner rings constructed for the said anti-friction balls to run upon; and adjustable eccentric studs constructed to hold said inner rings in their desired position; substantially as and for the purpose set forth.

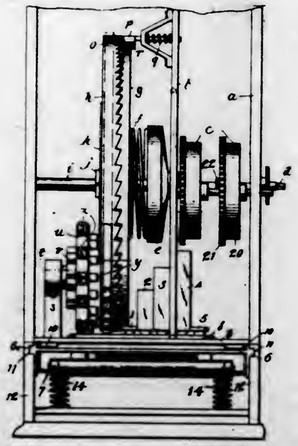
2. A rotary air-compressor, comprising a piston-chamber provided with inlet and outlet ports and having spiral

inwardly projecting ribs on its inner periphery; a rotating piston-carrier and pistons, said rotating piston-carrier having recesses at each end; piston-controlling rings located in said recesses; anti-friction balls upon which said piston-controlling rings run; inner rings constructed for



the said anti-friction balls to run upon; and adjustable eccentric studs constructed to hold said inner rings in their desired position; substantially as and for the purpose set forth.

852,818. TIME-STAMP. AUGUST BOOS, New York, N. Y., assignor of one-tenth to Frank M. Asheley, New York, N. Y. Filed Dec. 22, 1904. Serial No. 237,898.



Claim.—1. In a recording mechanism, the combination of a clock movement which operates a main spindle; said main spindle; a spring-urged crown ratchet-wheel which is slidable axially of and is rotatable by the main spindle; a separable spindle which is mounted in alinement with and is rotatable by the main spindle; a minute ratchet-wheel which is loosely mounted upon the separable spindle and the teeth of which are slidingly engageable by those of the crown ratchet-wheel; minute-type which are fixed upon the minute-wheel; a radially-armed hub which is rigidly mounted upon the separable spindle; at least one resilient member which is mounted upon the radially-armed hub and urges the minute-wheel rotatably; and a detent which is engageable with a tooth of the minute-wheel and is disengageable from said tooth by an axial movement of the crown ratchet-wheel.

2. In a recording mechanism, the combination of a clock movement which operates a main spindle; said main spindle; a spring-urged crown ratchet-wheel which is slidable axially of and is rotatable by the main spindle; a separable spindle which is mounted in alinement with and is rotatable by the main spindle; a minute ratchet-wheel which is loosely mounted upon the separable spindle and the teeth of which are slidingly engageable by those of the crown ratchet-wheel; minute-type which are fixed upon the minute-wheel; a radially-armed hub which is rigidly mounted upon the separable spindle; at least one resilient member which is mounted upon the radially-armed hub and urges the minute-wheel rotatably; a detent which is engageable with a tooth of the minute-wheel and is disengageable from said tooth by an axial movement of the crown ratchet-wheel; and resilient means which are arranged to urge the detent into engagement with a tooth of the minute-wheel.

3. In a recording mechanism, the combination of a separate-spindle; a crown ratchet-wheel; a minute ratchet-wheel which is loosely mounted upon the separable spindle and the teeth of which are slidingly engageable by those of the crown ratchet-wheel; minute-type which are fixed upon the minute-wheel; an hour-wheel; hour-type which are mounted on the hour-wheel; and removable type which are arranged to impress on a plane with impressions of the minute-type and hour-type.

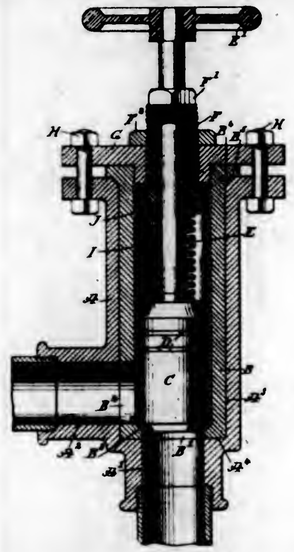
4. In a recording mechanism, the combination of a separate-spindle; a crown ratchet-wheel a minute ratchet-wheel which is loosely mounted upon the separable spindle and the teeth of which are slidingly engageable by those of the crown ratchet-wheel; minute-type which are fixed upon the minute-wheel; an hour-wheel; hour-type which are mounted on the hour-wheel; removable type which are arranged to impress on a plane with impressions of the minute-type and hour-type; and an impression device which is arranged to press impression-receptive material against the minute-type, hour-type and removable type.

5. In a recording mechanism, the combination of a separate spindle; a crown ratchet-wheel; a minute-ratchet-wheel which is loosely mounted upon the separable spindle and the teeth of which are slidingly engageable by those of the crown ratchet-wheel; minute-type which are fixed upon the minute-wheel; an hour-wheel; hour-type which are mounted on the hour-wheel; removable type which are arranged to impress on a plane with impressions of the minute-type and hour-type; an impression device which is arranged to press impression-receptive material against the minute-type, hour-type and removable type; a stand in which the impression device is slidably mounted; and an inking-pad which is reciprocatively mounted in said stand and is contactible with the minute-type, the hour-type and the removable type.

6. In a recording mechanism, the combination of a separate spindle; a crown ratchet-wheel; a minute ratchet-wheel which is loosely mounted upon the separable spindle and the teeth of which are slidingly engageable by those of the crown ratchet-wheel; minute-type which are fixed upon the minute-wheel; an hour-wheel; hour-type which are mounted on the hour-wheel; removable type which are arranged to impress on a plane with impressions of the minute-type and hour-type; an impression device which is arranged to press impression-receptive material against the minute-type, hour-type and removable type; a stand in which the impression device is slidably mounted; an inking-pad which is reciprocatively mounted in said stand and is contactible with the minute-type, the hour-type and the removable type; and means which are attached to the inking-pad and to the impression device by which the inking-pad may be withdrawn from the type.

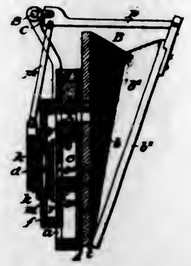
852,819. VALVE. THOMAS BAICK, New York, N. Y. Filed Jan. 18, 1905. Serial No. 241,559.

Claim.—A valve comprising a valve casing having an enlarged bore and provided with an inlet and an outlet for the fluid, a brushing removably fitting the enlarged bore of the valve casing and having openings registering with the inlet and outlet, a flange abutting against the top of the bushing, a flange upon the casing in proximity thereto, and adjustable means for drawing the two flanges together, the bushing being seated at its lower end against the valve casing and having a part projecting between the flanges and seated down upon the top of the casing, and a piston valve in the bushing and fitting fluid tight above



the inlet and outlet openings, the bushing having formed thereon the seat for the valve, substantially as described.

852,820. PNEUMATIC MOTOR. JOSEPH H. CHASE, Buffalo, N. Y., assignor to The Chase and Baker Company, Buffalo, N. Y. Filed June 27, 1902. Serial No. 113,547.



Claim.—1. In a pneumatic motor, the combination of a bellows having a single opening through which the air passes in and out, the body of the motor having an exhaust passage, a tight stationary chambered block covering the bellows opening and the exhaust passage, the chamber of said block being in constant communication with said single opening and thereby affording a passage for the admission and exhaust of air to and from the bellows, an exhaust port for connecting the said chamber with the exhaust passage, an air passage, an air-inlet port for connecting the said chamber with the air passage, a single slide-valve inclosed within said chambered block, adapted to open and close the air-inlet and exhaust ports alternately, and means whereby the bellows operates said valve, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

2. In a pneumatic motor, a bellows having a single opening communicating alternately with an exhaust passage and an air-inlet passage by means of two ports opened alternately and both controlled by a single slide-valve, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face alternately covering and uncovering said ports and thereby directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

3. In a pneumatic motor, the combination of a slide-valve, a suction opening always closed by the valve and holding the latter to its seat, and a valve casing covering the slide-valve and providing a chamber in which the valve works and through which the air passes to and from the motor, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

4. In a pneumatic motor, the combination of a bellows, admission and exhaust ports, a tight chambered block, a slide valve moving therein and connected with an outer slide by means of a pin passing through a slot in the chambered block, the said slide serving to at all times keep the said slot closed, the interior of said block affording a passage for the admission of air to and from the bellows by way of admission and exhaust ports which are alternately covered and uncovered and thereby directly controlled by the face of said valve, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

5. In a pneumatic motor, the combination of a bellows, a tight stationary chambered block provided with and inclosing a slide-valve, the interior of said block affording a passage for the admission and exhaust of air to and from the bellows, the said valve acting to open and close air-inlet and exhaust ports alternately, the said chambered block having its interior in constant communication with a single opening leading to the bellows, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

6. A pneumatic motor comprising the frame or body A, the exhaust passage e, and the air-inlet passage a, the tight chambered block f attached to the said frame, the interior of said block affording a passage for the admission of air to the bellows, the slide-valve m working within the chamber of said block, the outer slide k and the pin d, the air-inlet port o^2 and the exhaust port o, the bellows passage x, the suction opening o^2 located between the air-inlet and exhaust ports and always closed by the valve, the collapsible bellows B having a movable portion b^2, the crank-shaft s, the crank c, and the links p and p^2, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

7. A pneumatic motor comprising the stationary chambered block f providing the chamber c, the interior chamber of said block affording a passage for the admission and exhaust of air to and from the bellows, the bellows open-

ing *s*, always open or uncovered, the exhaust passage *e*, the exhaust port *o*, the air-inlet passage *a*, the air-inlet port a^2, the valve *m*, the suction opening o^2 located between the air-inlet and exhaust ports and always closed by the valve, the slide *k*, and the pin *d* working in the slot *h*, said valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

8. In a pneumatic motor, the combination of a single valve controlling air-inlet and exhaust ports communicating alternately with a single bellows opening, a suction opening located intermediate of said ports and acting to hold said valve to its seat, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

9. A pneumatic motor comprising a valve *m* controlling the air-inlet port and the exhaust port and always covering the intermediate suction opening o^2 by which it is held to its seat, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

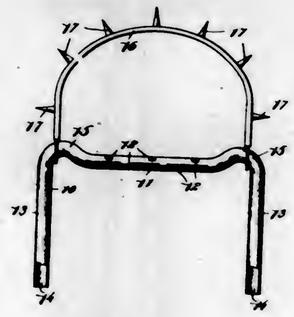
10. A pneumatic motor comprising a motor-body having a plurality of collapsible bellows on one side thereof, tight stationary chambered inclosures on the opposite side thereof, the interior of each inclosure affording a passage for the admission of air to the bellows, a combined admission and exhaust opening leading from each bellows to and communicating constantly with the chamber of the associated inclosure, and a single slide-valve in each chamber, each valve acting to alternately make and break connection between said bellows opening and the open air, and between said bellows opening and an air-exhausting apparatus, said slide-valve having a flat unbroken face or working surface held in sliding contact with the flat ported valve-seat or surface upon which it works, the said slide-valve face directly controlling both the admission and exhaust of air to and from the interior of the valve-chamber, and thereby controlling the admission and exhaust of air to and from the bellows.

11. In a motor, a bellows, a bellows-opening, a valve-chamber, in constant and permanent communication with said opening, admission and exhaust ports leading to and away from said chamber by which air is admitted to and exhausted from the bellows by way of said opening, and a valve in the chamber, said valve having a flat smooth unbroken face directly controlling both the admission port and exhaust port, and thereby controlling the admission and exhaust of air to and from the said valve-chamber.

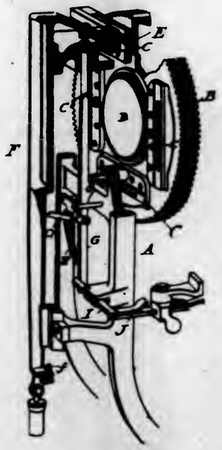
12. In a pneumatic motor, the combination of the stationary chambered inclosure with the single flat smooth-faced slide-valve, there being air-inlet and exhaust ports, and there being also a suction opening intermediate of said openings, said ports being opened and closed alternately by the valve, but the said suction opening being always covered by the smooth flat face of the valve.

852,821. WEANING-BIT. WILLIAM A. COE and JAMES L. COE, Mannsville, Ind. Ter. Filed Oct. 13, 1906. Serial No. 338,746.

Claim.—As an article of manufacture, a weaning-bit comprising an open ended tube, having the end portions bent at substantially right angles to the central portion, the latter forming the mouth-piece or bit proper, extending normally in a horizontal plane, and having holes formed therethrough the said bit, at its ends, being provided with rounded bends arched upwardly and the end portions extending vertically downward.



852,822. LINOTYPE-MACHINE. WALTER S. COE, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Mar. 2, 1907. Serial No. 338,746.



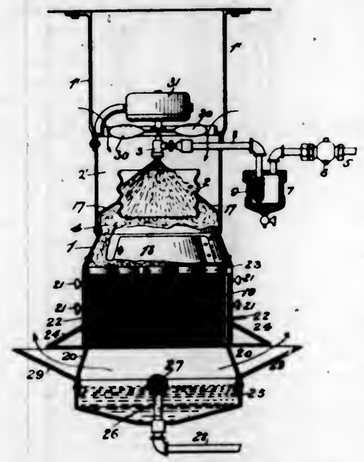
Claim.—1. In a linotype machine, and in combination, a main driving-clutch, a clutch-tripping device, a vertically movable first elevator, and means through which the elevator acts when fully down, and also when fully elevated, to prevent the operation of the tripping device.

2. In a linotype machine, the mold carrying disk movable face-wise, the slide N, and the clutch controlling bar G, in combination with the lifting spring H, the first elevator acting directly to depress bar G, and the lever o, acting to depress the bar when the elevator is raised.

3. In a linotype machine, a main driving clutch normally engaged, a mold movable from the casting to the ejecting position, and an elevator for carrying the matrix-line to the mold, in combination with clutch tripping devices controlled by the elevator and operative only when the matrix-line is away from the casting position.

4. In a linotype machine, a mold disk provided with plural molds and having both rotary and face-wise movements, in combination with a driving clutch, an elevator to present the matrix-line to the operative mold, a clutch-tripping device actuated by the advance of the mold disk, and means to prevent said action of the tripping device when the elevator is near its uppermost position.

852,823. HUMIDIFYING AND AIR-CONDITIONING APPARATUS. STUART W. CRAMER, Charlotte, N. C. Filed Apr. 18, 1906. Serial No. 312,453.



Claim.—1. In a humidifier, a casing comprising a spray-chamber, and a collecting and condensing chamber beyond the spray-chamber, means for supplying air to the casing, means for supplying spray to the air as it passes through the spray-chamber, a plurality of collecting and evaporating bodies for extracting the spray from the air in the condensing and collecting chamber and for the further saturation of the air before it issues from the casing, and means for collecting surplus water from the casing.

2. In a humidifier, a casing comprising a spray-chamber, and a collecting and condensing chamber beyond the spray-chamber, means for supplying air to the casing, means for supplying spray to the air as it passes through the spray-chamber, a plurality of collecting and evaporative surfaces for extracting the spray from the air in the condensing and collecting chamber and for the further saturation of the air before it issues from the casing, means for removably supporting said collecting and evaporative surfaces in the casing, and means for collecting surplus water from the casing.

3. In a humidifier, a casing comprising a spray-chamber, means for supplying air to the casing, a spray-head within the spray-chamber, and means for supplying fluid to the spray-head; a collecting and condensing chamber beyond the spray-chamber and provided with a plurality of bodies arranged for removing the particles of spray from the current of air and for the further saturation of the air before it issues from the casing, and a drip or catch basin provided with means for removing surplus water.

4. In a humidifier, a casing comprising a spray-chamber, and a collecting and condensing chamber beyond the spray-chamber, means for supplying air to the casing, a spray-head within the spray-chamber, and means for supplying fluid to the spray-head; bodies arranged within the collecting and condensing chamber for removing the particles of spray from the air and for the further saturation of the air before it issues from the casing, and a drip or catch basin provided with means for removing surplus water.

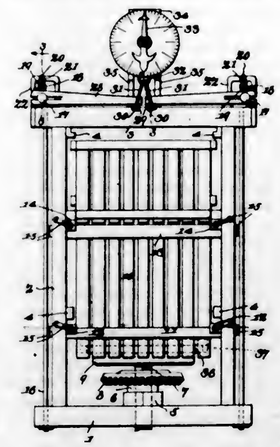
5. In a humidifier, a casing, a spray-head, a concentrically arranged deflector having a circumferentially corrugated wall, an annular chamber around said deflector, a spray-chamber beyond the deflector and means for supplying fluid to the spray-head, a collecting and condensing chamber beyond the spray chamber, bodies arranged within the collecting and condensing chamber for removing the particles of spray from the air and for the further saturation of the air before it issues from the casing, and a drip or catch basin provided with means for removing surplus water.

852,824. NECKTIE. CHARLES W. T. DAVIES, London, England, assignor to Good Form Manufacturing Company, a Corporation of New York. Filed June 7, 1906. Serial No. 320,648.



Claim.—As a new article of manufacture, a necktie having a center piece whose ends are attached to and bridge the side parts of the necktie at the front thereof, leaving the necktie tying ends free, said center bridge piece being composed of parts which have an intervening opening through which a tying end of the necktie may be passed.

852,825. COTTON-PRESS. WILLIAM G. DE RAMUS, Petronia, Ala. Filed May 31, 1906. Serial No. 319,624.

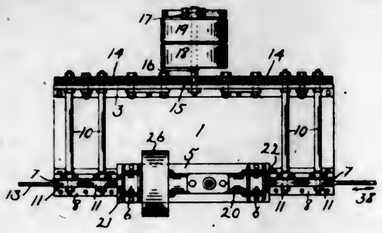


Claim.—1. In a baling press, the combination with the press box, of a scale, a pair of beams operatively connected with the press box, levers carried by the beams, and connections between the levers and the scale.

2. In a baling press, the combination with a frame and a press box supported thereby, of a pair of beams carried by the frame, connections between the beams and the press box, a scale, and levers carried by the beams and operatively connected with the scale.

3. In a baling press, the combination with a frame and a press box supported for limited vertical movements relatively thereto, of knife edge bearings supported by the frame, a pair of beams carrying shackles that engage the knife edge bearings, levers carried by the beams, knife edge bearings carried by the opposed terminals of the levers, a scale and shackles operatively connected with the rack bar of the scale and carrying plates with which the knife edge bearings of the levers engage.

852,826. RATAN-STRAIGHTENING MACHINE. DANIEL F. DOHERTY and HENRY A. PALMER, Westfield, Mass., assignors to New England Whip Company, Westfield, Mass., a Corporation of New Jersey. Filed Jan. 3, 1907. Serial No. 350,681.



Claim.—1. In a ratan straightening machine, a straightener comprising a revoluble body having a longitudinal passage therethrough and provided with exterior offsets having passages therein opening into such longitudinal passage, and grip rolls arranged with their peripheries extending into said longitudinal passage from opposite directions.

2. In a ratan straightening machine, a straightener, comprising a revoluble body having a tortuous passage of unchanging undulations extending longitudinally therethrough and provided with grip rolls arranged with their peripheries extending into the undulating portions of such passage from opposite directions.

3. The combination, in a ratan straightening machine, with a revoluble body having a tortuous passage therethrough of unchanging undulations and provided with grip rolls arranged with their peripheries extending into the undulating portions of such passage from opposite directions, of means to adjust such rolls to position them farther in or farther out of such portions.

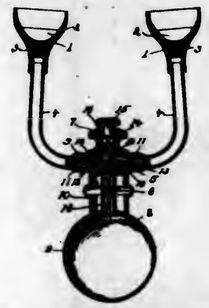
4. The combination, in a ratan straightening machine, with a revoluble body having a longitudinal passage therethrough and provided with lateral offsets having passages therein opening into such longitudinal passage, of carriers slidingly mounted in the passages in said offsets and bearing against the sides of such passages, said carriers being provided with grip rolls the peripheries of which extend into the longitudinal passage, and means to secure said carriers in position.

5. The combination, in a ratan straightening machine, with a revoluble body having a longitudinal passage therethrough and provided with lateral offsets having passages therein opening into said longitudinal passage, of carriers slidingly mounted in the passages in said offsets and bearing against the sides of such passages, said carriers being provided with grip rolls the peripheries of which extend into the longitudinal passage, caps over the outer ends of the lateral passages, and adjustable means for said carriers connected with said caps.

6. The combination, in a ratan straightening machine, of a revoluble member having a longitudinal passage therethrough and lateral passages opening into said longitudinal passage, carriers slidingly mounted in said lateral passages, and grip rolls at the inner ends of said carriers with their peripheries extending into the longitudinal passage, the walls of the lateral passages being grooved to form ways for the carriers and also grooved to form ways for said rolls, and means to secure the carriers in place.

7. The combination, in a ratan straightening machine, with a revoluble member having a longitudinal passage therethrough and a lateral passage opening into said longitudinal passage, of a carrier slidingly mounted in said lateral passage and provided with a grip roll the periphery of which extends into the longitudinal passage, a cap over the outer end of the lateral passage, a bolt passing loosely through said cap into threaded engagement with said carrier, a pin projecting from said bolt inside of the cap, and a nut on the bolt outside of the cap.

852,827. EYE MASSAGE APPARATUS AND MEDICATOR COMBINED. FRANK C. DORMENT, Detroit, Mich. Filed Nov. 17, 1906. Serial No. 343,837.



Claim.—1. The combination with eye-cups and a compressible air bulb, of rigid air tubes connecting the cups and bulb and adapted to be relatively adjusted to vary the relative position of the cups.

2. The combination with eye-cups and a compressible air bulb, of rigid air tubes to one end of which the cups are attached and which tubes are pivotally attached at their opposite end to the bulb to be moved relatively and means for holding the tubes in their adjusted position.

3. The combination with eye-cups and a compressible air bulb, of a tubular member connected to the air bulb, and rigid air tubes pivotally attached to said member and formed with air ducts communicating with the interior of said member.

4. The combination with eye-cups and a compressible air bulb, of a tubular member connected to the air bulb, rigid air tubes to one end of which the cups are attached and the opposite ends of which are pivotally attached to said member to turn thereon to adjust the cups relatively, and means for holding said tubes in their adjusted position upon said member.

5. The combination with eye-cups and a compressible air bulb, of a tubular member attached to and opening into said bulb, rigid air tubes to the outer ends of which the cups are attached and detachably and rotatively mounted at their inner ends upon said tubular member and provided with air ducts communicating with the interior of said member, and means for securing said tubes upon said member and preventing their rotation thereon.

6. The combination with eye-cups and a compressible air bulb, of a tubular member to which the bulb is secured, rigid tubes to which the cups are secured, a head on each of the tubes to receive the tubular member and turn freely thereon and formed with an air duct connecting the tube with the interior of the said member, and means for securing said heads upon the member and preventing the same from turning thereon.

7. The combination with eye-cups and a compressible air bulb, a tubular stem provided with openings in its side and attached to the bulb at one end in communication with the interior of said bulb, rigid air tubes to which the cups are attached, heads on the opposite ends of said tubes having axial openings through which the stem extends and provided with air ducts communicating with said tubes and the openings in the stem, and means on the stem for engaging and preventing the turning of the heads.

8. The combination with eye-cups and a compressible air bulb, of a tubular stem to one end of which the bulb is attached, air tubes to which the cups are attached, a head on each tube having an opening to receive the stem and adapted to rotate thereon and formed with an air duct communicating with the interior of the stem and tube, and a nut on the outer end of the stem to engage the outer head and clamp said heads to prevent them from turning.

9. The combination with eye-cups and a compressible air bulb, of a tubular stem provided with a flange at one end to engage the inner surface of the bulb with the stem projecting outward through an opening in the bulb, air tubes to the outer ends of which the cups are secured, heads on the inner ends of said tubes rotatable upon the stem and formed with air ducts connecting the tubes with the interior of the stem, and a nut on the outer end of the stem operating to clamp the heads and the bulb between said nut and the flange on the stem.

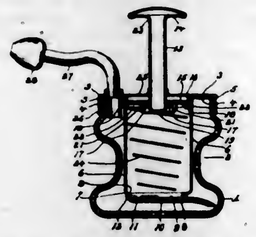
10. The combination with eye-cups and means for forcing air to said cups, of means connecting said cups and said means and forming a passage for the air, and a removable member suspended in said passage for holding a medicament.

11. The combination with eye-cups and means for forcing air to said cups, of means connecting said means and cups and forming a tubular passage for the air, and a member in said passage formed of absorbent material to hold a medicament.

12. The combination with eye-cups and a compressible air bulb, of means connecting said cups and bulb and formed with a tubular passage opening into the bulb at its inner end and ducts opening into said passage and communicating with said cups, a removable plug in the outer end of said passage and means carried by the plug for holding a medicament.

13. The combination with eye-cups and a compressible air bulb, of a tubular stem connected to the bulb at one end and open at its opposite end; air tubes to the outer ends of which the cups are secured, attached to said stem, a plug to close the outer end of the stem, and a rod on the plug extending in the axis of the stem.

852,828. ATOMIZER. FRANK C. DORMENT and GEORGE C. MCVOY, Detroit, Mich. Filed Nov. 26, 1906. Serial No. 345,190.



Claim.—1. In a device of the character described, the combination with a medicament receptacle, of a cylinder supported within the receptacle, a piston in the cylinder, means for actuating the piston, and a tube secured to the cylinder and opening at one end into the receptacle near its bottom and provided with a hole near its opposite end opening into the cylinder and a second hole opposite the first hole opening into the receptacle.

2. In a device of the character described, the combination with a medicament receptacle, of a cylinder having a closed inner end supported upon the top of the receptacle and projecting downward in the axis thereof to a point adjacent to its bottom, a piston in the cylinder having a stem extending outward through the outer end thereof, and a tube secured to and extending across the inner closed end of the cylinder and provided near one side of the cylinder with a hole opening through the end of said cylinder and a second hole of larger diameter opening into the receptacle opposite said first hole and said tube being extended laterally from the cylinder at one end into the angle formed by the meeting of the side and bottom of the receptacle.

3. In a device of the character described, the combination with a medicament receptacle and an air pump connected therewith having a longitudinally movable piston stem projecting therefrom, of a delivery tube revolubly connected with the receptacle and adapted to be turned into engagement with the stem to hold the same within the cylinder of the pump.

4. In a device of the character described, the combination with a medicament receptacle, of a cylinder extending into the receptacle, a piston in said cylinder, a stem on the piston extending outward through the end of the cylinder, a spring to normally hold the piston at the outer end of its stroke with the stem projected, and a delivery tube revolubly attached to the receptacle and adapted to be turned into engagement with the stem to hold the same within the cylinder against the action of said spring.

5. In a device of the character described, the combination with a medicament receptacle, of a cap to close said receptacle and provided with an axial opening, a disk adapted to fit within the cap and be secured thereby between it and the upper end of the receptacle, a cylinder secured to and supported by the disk within the axis of the receptacle, a piston in the cylinder, a stem on the piston extending downward through the opening in the cap, and a delivery tube extending through the cap and disk.

6. In a device of the character described, the combination with a medicament receptacle, of a cylinder having an open outer end supported within the receptacle, and extending downward therein, a cap to close the receptacle and outer end of the cylinder and provided with an axial opening at one side of the cylinder, a piston in the cylinder, a stem on the piston extending outward through the axial opening in the cap, a spring to normally hold the stem projected, and a delivery tube having a tapering end to frictionally engage the side opening in the cap and bent substantially at right angles to the tapered end so that when turned in said opening it will engage the outer end of the stem and hold the same within its cylinder against the action of said spring.

7. In a device of the character described, the combination with a medicament receptacle, of a cylinder supported to extend downward within the axis of said receptacle and having a closed inner end, a cap to close the opposite end of said cylinder and the receptacle, a tube extending across the inner end of the cylinder having a closed and an open end and provided with opposed openings near its closed ends one of which communicates with the interior of the cylinder and the other with the interior of the receptacle, a piston in the cylinder, a tubular stem attached to and extending through the piston and outward through the cap, a valve to close the inner end of the stem, and a delivery tube opening through the cap into the receptacle.

8. In a device of the character described, the combination of a medicament receptacle, and an air pump consisting of a cylinder, a valve disk to close the inner end of the stem and provided with laterally and oppositely extending flexible portions, and means for securing the ends of said flexible portions to hold the disk adjacent to its seat on the end of the stem and permit the free movement thereof.

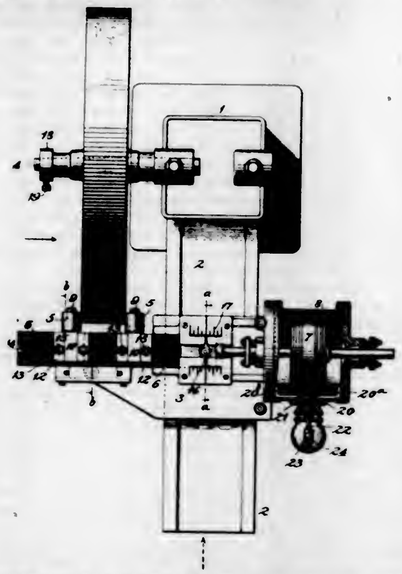
9. In a device of the character described, the combination with a medicament receptacle, of a disk supported upon the upper edge thereof having an opening near one side, a cylinder opening through said disk and extending downward in the axis of the receptacle, a cap adapted to close the receptacle and cover the outer end of the cylinder and having an axial opening and an opening opposite the opening in the disk, a thimble secured in the opening in the disk and extending through the opening in the cap, a bent delivery tube having a tapered end engaging said thimble, a piston in the cylinder, a tubular stem secured to and projecting through the piston and outward through the opening in the cap, a valve to close the inner end of said stem, a spring in the cylinder between its inner end and the piston to actuate the piston in one direction, and a tube extending diametrically across the closed inner end of the cylinder, one end of said tube being closed and provided with opposed openings through which the cylinder communicates with the receptacle and the opposite end being extended laterally into proximity with the angle of the receptacle formed by the meeting of its side and bottom.

10. In a device of the character described, the combination with a receptacle for medicament, of a cylinder, a piston in said cylinder, and a valve carried by the piston for admitting air below the same consisting of a disk to set

over and close the air inlet and having oppositely extending flexible portions, and a washer having radial slits to receive the free ends of said flexible portions and clamp the same between said washer and the bottom of the piston, to hold the disk in place.

11. In a device of the character described, the combination of a medicament receptacle having an open top and a deep depression in its side, a cap to close the receptacle, an air pump supported within the receptacle, and having a stem extending outward through and carried by the cap.

852,829. MECHANISM FOR TRUING METAL WHEELS. EMIL EINFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Feb. 13, 1906. Serial No. 300,938.



Claim.—1. In a machine of the type described, means for supporting a wheel, a pressure abutment, said wheel and abutment being one movable relative to the other in a direction transversely of the wheel rim, power actuated means operatively connected with and for forcibly moving said movable part, and means for controlling at will the operation of said power actuated means.

2. In a machine of the type described, the combination of means for supporting the wheel, a pressure abutment adapted to bear against the edge of the rim and movable in the direction of the hub axis, power-actuated means for moving said abutment, and means for controlling the action of said power-actuated means.

3. In a machine of the type described, the combination of means for supporting the wheel to be trued, a power actuated abutment adapted to subject the edge of the rim to pressure in the direction of the longitudinal axis of the hub, and means for controlling the action of said abutment.

4. In a machine of the type described, the combination of means for rotatably supporting the wheel to be trued, pressure abutments between which the rim is adapted to extend, said abutments being movable in the direction of the longitudinal axis of the hub, power-actuated means for positively moving said abutments to apply pressure, and means for controlling said power-actuated means.

5. In a machine of the type described, the combination of means for rotatably supporting the wheel to be trued, two pressure abutments adapted to bear on the edges of the rim and movable freely in unison in the direction of the axis of the hub, power-actuated mechanism for positively moving said abutments to apply pressure to the edges of the rim, and means for controlling said power-actuated mechanism.

6. In a machine of the type described, the combination of means for rotatably supporting the wheel to be trued, pressure abutments adapted to bear on opposite edges of the rim, a balanced piston operatively connected with said pressure abutments, and means for actuating said piston to move the abutments forcibly against the edges of the rim.

7. In a machine of the type described, the combination of means for rotatably supporting the wheel, two pressure abutments adapted to bear on opposite edges of the rim, a slide carrying said abutments and movable in the direction of the axis of the hub, operating mechanism connected with the slide, and means for controlling the said operating mechanism.

8. In a machine of the type described, the combination of means for rotatably supporting the wheel to be trued, pressure abutments adapted to bear against the edges of the rim, a member connecting said abutments and maintaining them in fixed relations and movable freely in the direction of the hubs axis, and a pointer carried by said connecting member.

9. In a machine of the type described, the combination of a support for the wheel, pressure abutments movable in the direction of the hub axis to apply pressure to the wheel rim, power-actuated means for moving said abutments to apply pressure, means for adjusting said abutments to and from the wheel support subject to their actuating mechanism, and means for controlling the action of said actuating mechanism.

10. In a machine of the type described, the combination of means for supporting the wheel, pressure abutments movable in the direction of the hub axis and adapted to apply pressure to the wheel rim, power-actuated mechanism for controlling the movements of said pressure abutments, means for adjusting said abutments to and from each other subject to the power-actuated mechanism, and means for controlling the action of the power-actuated mechanism.

11. In a machine of the type described, the combination of means for supporting the wheel, pressure abutments adapted to bear against the edges of the rim, power-actuated mechanism for positively moving said abutments in the direction of the hub axis to apply pressure to the rim, means for adjusting said abutments relatively to the wheel support in the direction of the axis of the hub subject to their actuating mechanism, and means for controlling the action of said actuating mechanism.

12. In a machine of the type described, the combination of means for supporting the wheel, pressure abutments adapted to bear against the edges of the rim, power-actuated mechanism for positively moving the said abutments in the direction of the hub axis to apply pressure to the rim, means for adjusting said abutments relatively to the wheel support in the direction of the axis of the hub subject to the action of the power-actuated mechanism, means for adjusting said abutments independently to and from each other subject to the action of the power-actuated mechanism, and means for controlling the action of said power-actuated mechanism.

13. In a machine of the type described, the combination of a wheel support, a slide movable in the direction of the hub axis, pressure abutments mounted on said slide and adjustable thereon in the direction of its movement, said abutments being adapted to bear against the edges of the rim, and means for controlling the movements of said slide.

14. In a machine of the type described, the combination of a wheel support, a platform adjustable to and from the support, pressure abutments sustained by said platform and connected to move in unison relatively to the platform in the direction of the axis of the hub, and actuating mechanism for positively moving said abutments to apply pressure to the wheel rim.

15. In a machine of the type described, the combination of means for supporting the wheel to be trued, a slide movable in the direction of the hub axis, pressure abutments pivoted to said slide and adapted to bear against the edges of the rim and movable on their pivotal axes to disengage the rim.

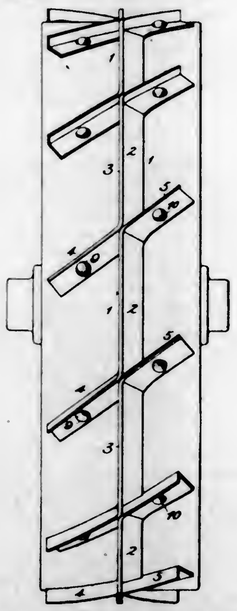
16. In a machine of the type described, the combination of means for supporting the wheel, a slide movable in the direction of the axis of the hub, actuating means therefor, arms pivoted to the slide to swing upward therefrom, and pressure rollers carried by the arms and adapted to bear against the edges of the rim.

17. In a machine of the type described, the combination of means for supporting the wheel to be trued, a platform, a slide mounted thereon and movable relatively in the direction of the hub axis, pressure abutments carried by the slide and adapted to act on the edges of the rim, a pointer carried by the slide, a fixed scale adapted to be read in connection with the pointer, and means for actuating the slide.

18. In a machine of the type described, the combination of the supporting frame, a wheel supporting spindle extending laterally therefrom, a fixed sustaining bracket or support on the frame, a platform mounted on said support and adjustable to and from the wheel supporting spindle, a slide mounted on the platform and movable in the direction of the hub axis, means for actuating the slide, and abutments carried by the slide and adjustable thereon in the direction of its movements and adapted to bear against the edges of the rim.

19. In a machine of the type described, the combination of means for supporting the wheel, a pressure abutment adapted to bear against the edge of the wheel and movable freely in the direction of the hub axis, a pointer movable with said pressure abutment to indicate deviations in the rim, and means for positively moving said abutments to apply pressure to the rim.

852,830. TRACTION-WHEEL. EMIL EINFELDT, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Oct. 9, 1906. Serial No. 338,121.



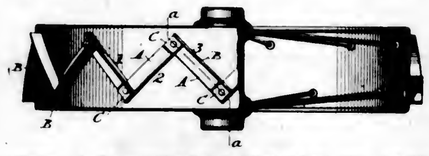
Claim.—1. In combination with a wheel rim, traction cleats applied thereto, and each comprising a longitudinally extending traction rib and two oppositely extending transverse ribs, the longitudinal ribs being adapted to conjointly present a continuous traction surface extending in the direction of travel of the wheel, and the transverse rib of one cleat being adapted to form conjointly with the transverse rib of the next cleat, a lateral traction surface extending on opposite sides of the longitudinal surface.

2. In combination with a wheel rim, a series of complementary traction cleats applied thereto and each comprising a longitudinal rib having at opposite ends oppositely extending transverse ribs, the said longitudinal portions of the cleats being placed end to end, with the lateral rib of one cleat forming a continuation of the lateral rib of the next cleat.

3. The improved traction cleat or element, consisting of a length of angle-steel having the base flange incised, and the vertical flange deflected at the point of incision.

4. The improved traction cleat or element, consisting of a length of angle-steel having the base flange incised near its ends, and the vertical flange deflected at opposite ends in opposite directions at the points of incision.

852,831. TRACTION-WHEEL. EMIL EINFELDT, Davenport, Iowa., assignor to Bettendorf Metal Wheel Company, a Corporation of Iowa. Filed Dec. 6, 1906. Serial No. 346,578.



Claim.—1. In combination with a wheel rim, traction cleats each comprising a base flange and an upright flange, said cleats extending diagonally with their base flanges overlapping at the ends, and fastened to the rim of the wheel.

2. In combination with a wheel rim, traction cleats, each comprising a base flange and an upright flange, said cleats extending diagonally with the end of the base flange of one cleat seated on the base flange of the adjacent cleat, and fastened to the rim of the wheel.

3. In combination with a wheel rim, a series of traction cleats applied thereto and each comprising a base flange and an upright flange, said cleats extending diagonally with the base flange of one seated at one end on the base flange of one of its adjacent cleats, and having the other end of its base flange extended beneath the base flange of its other adjacent cleat.

4. In combination with a wheel rim, a series of traction cleats applied thereto and each comprising a base flange and an upright flange, said cleats extending diagonally and each having its base flange formed in its under side at one end with a socket or bend adapted to receive the base flange of the adjacent cleat.

5. In combination with a wheel rim, a series of traction cleats applied thereto diagonally, and each comprising a base flange and an upright flange, the base flange of one cleat being seated at one end of the base flange of one of its adjacent cleats, and extending at its opposite end beneath the base flange of its other adjacent cleat, and each of said cleats, where it underlies the end of the other, being extended beyond the point of intersection.

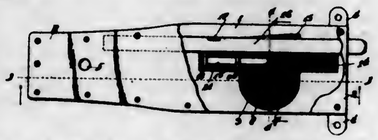
6. In combination with a wheel rim, a series of traction cleats applied thereto diagonally and each comprising a base flange resting on the wheel rim and an upright flange, each cleat being seated at one extremity on the base flange of the next cleat, with its end abutting against the upright flange of said cleat.

7. In combination with the hub, spokes and rim, traction cleats applied diagonally to the rim with their ends overlapping, the said spokes being extended outward through the rim and through the overlapping ends of the cleats and acting to secure the said cleats in place.

8. In a traction wheel, a series of complementary traction cleats or elements, each comprising a base flange adapted to rest on and be secured to the rim of the wheel,

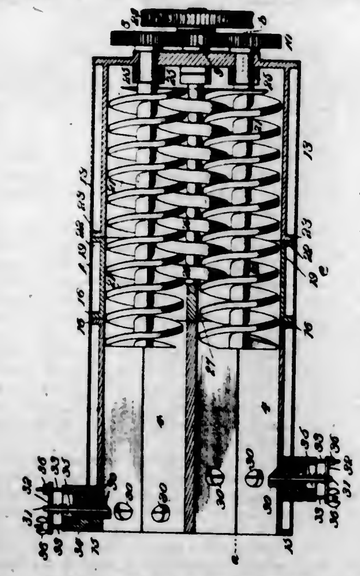
and an upright flange adapted to form a traction rib, a portion of said cleats having a socket or bend formed in the base flange at one end, and the remainder of said cleats having a similar socket or bend formed in their base flange at the opposite end.

852,832. LOCK. ANDREW ENGELQUIST, Hardwood, Mich. Filed Apr. 10, 1906. Serial No. 310,976.



Claim.—In a lock, the combination with a sliding bolt having wards, of a locking mechanism comprising a spring locking arm having a free end adapted to engage and lock the bolt, an independent springy tumbler having a free bowed part engageable with the free part of the spring arm, and means for guiding the key in its movements so that it will engage with the bowed tumbler to cause release of the locking arm from the bolt.

852,833. MEANS FOR COMPRESSING AND REMOVING SNOW. HENRY S. FARQUHAR, Washington, D. C. Filed Aug. 14, 1905. Serial No. 274,163.



Claim.—1. In a snow compressing machine, a compression chamber into which the snow is conveyed and compressed; a compressing screw for conveying and compressing the snow; means for retarding the snow during compression; an idler or stripping screw meshing with the compressing screw, and means for rotating the compressing screw and the idler or stripping screw in reverse directions, whereby the snow conveyed by the compressing screw is prevented from adhering to and rotating with said screw, substantially as hereinbefore set forth.

2. In a snow compressing machine, two or more compression chambers; two or more screws for conveying snow fed from a hopper, into the compression chambers and compressing the same; means for retarding the snow under compression; and idler screw meshing with the compression screws, and means for rotating the compression screws in one direction and the idler screw in an opposite direction, whereby the snow conveyed by the compression screws is prevented from adhering thereto substantially as hereinbefore set forth.

3. In a machine such as described, in combination with means for propelling the machine, and a hopper having conveying screws therein, an inclined scoop at the forward end of the machine having its front end adjacent to the plane of a thoroughfare and its rear elevated end terminating in the hopper above the conveyer screws therein, whereby the forward travel of the machine will cause the snow in front of the scoop to be picked up and forced rearward and into the hopper and to the conveyer screws therein, as hereinbefore set forth.

4. In a snow compressing machine such as described and embodying snow compression chambers and compression screws, resistance lugs located near the rear end of the compression chambers and consisting of a body having a central well with a stem located therein; a coil spring surrounding the stem; a plate located over the stem and screw threaded posts each side of the stem, and wing nuts located upon the threaded posts whereby the resistance offered by the lugs may be adjusted, substantially as and for the purpose set forth.

5. In a machine such as described, spring resistance lugs, adjacent to the rear ends of the compression chambers and projecting into said chambers at an angle to the axis of said chambers substantially as shown and described.

6. In a snow compressing machine such as described a heating jacket surrounding the compression chambers and compression screws and means for supplying heat to said jacket, whereby the screws and chambers are maintained at a temperature above freezing to prevent breakage and the snow is put in condition for ready compression as hereinbefore set forth.

7. In a snow compressing machine such as described and embodying compression chambers; compression screws, and an idler or stripping screw geared together, means for rotating said screws substantially as described.

8. In a snow compressing machine such as described and involving twin compression chambers and twin compression screws, and an idler or stripping screw, the downwardly extended casing beneath the idler or stripping screw to constitute a trough for the reception and exit of water eliminated from the snow, substantially as hereinbefore set forth.

852,834. IDLE-TIRE HOLDER. WILLIAM H. GRANSDEN, Chicago, Ill., assignor to Appliance Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 30, 1907. Serial No. 354,945.



Claim.—1. In combination with a vehicle-body, a tire-holder comprising a socket-member on said body, tire-retaining arms adapted to enter said socket, and mutually interlocking means on said member and arms operating to prevent the withdrawal of said arms from the socket when the arms are in tire-holding position.

2. In combination with a vehicle-body, a tire-holder comprising a socket-member on said body provided with undercut walls, and tire-retaining arms provided with shouldered ends at which they are adapted to enter said socket when the arms are out of the tire-holding position, and to engage at their shoulders said undercut walls to retain the arms against removal from the socket when they are in the tire-holding position.

3. In an idle-tire holder, the combination of a socket-member adapted to be secured to a vehicle-body, tire-retaining arms adapted to enter said socket, and mutually interlocking means on said member and arms adapted to engage with each other to prevent the withdrawal of the arms when in their tire-holding position.

4. In an idle-tire holder, the combination of a socket-member adapted to be secured to a vehicle-body and having undercut walls, and tire-engaging arms provided on corresponding ends with shoulders and adapted to be inserted into said socket when the arms are out of tire-holding position, and to engage at their shoulders with said undercut walls when the arms occupy their tire-holding position.

5. In an idle-tire holder, the combination of a socket-member adapted to be secured to a vehicle-body and provided with undercut socket-walls, and tire-engaging arms, one of which is provided on its outer surface at one end with a shoulder or adapted to fit one undercut wall of said socket, and the other of said arms being formed with a hook-end adapting it to be inserted into and turned in said socket to introduce its hook-shaped end into the other undercut wall of the socket for the purpose set forth.

6. In an idle-tire holder, the combination of a socketed base-member having inclined upper surfaces and provided with undercut socket-walls, and a pair of curved tire-retaining arms, each provided at its lower end with a shoulder adapted to enter the socket and engage an undercut wall, for the purpose set forth.

7. An idle-tire holder comprising, in combination, a socket-member adapted to be secured to a vehicle body, tire-retaining arms forming a tire-seat and adapted to enter said socket, mutually interlocking means on said member and arms adapted to engage with each other to prevent the withdrawal of the arms when in their tire-holding position, a strap engaging with said arms and cooperating with them for holding a tire, and means for locking said strap to said arms.

8. An idle-tire holder comprising, in combination, a socketed base-member having inclined upper surfaces and provided with undercut walls, a pair of curved tire-retaining arms, each provided at its lower end with a shoulder adapted to enter the socket and engage an undercut wall, a strap secured to one of said arms and adapted to be releasably fastened to the other of said arms, and means for locking the strap to the arms, for the purpose set forth.

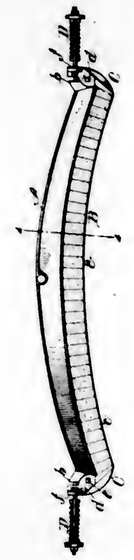
852,835. FURNACE-ROOF. FRANCIS D. HALSTEAD and LEON C. ANDREWS, Lock Haven, Pa. Filed Jan. 31, 1907. Serial No. 355,115.

Claim.—1. In a furnace roof, the combination of a metallic frame, clamps connected at an intermediate point of their length in a hinged manner to the frame and having lower arms arranged to receive and hold refractory material between them, and springs coöperating with the upper arms of the clamps for holding the lower arms thereof under yielding pressure against the refractory material.

2. In a furnace roof the combination of an arched metallic frame, bricks of refractory material arranged in an arched manner against the under side of the frame, clamps connected at an intermediate point of their length in a hinged manner to the frame and having lower arms to hold the bricks, and springs coöperating with the upper arms of the clamps to press the lower arms thereof against the bricks.

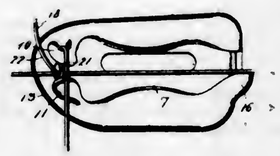
3. In a furnace roof, the combination of a metallic frame, bricks of refractory material arranged against the under side of the frame, clamps connected at an intermediate point of their length in a hinged manner to the frame and having lower arms for exerting pressure against the bricks, abutments carried by the upper arms of the clamps, rods movable through said upper arms of the clamps and arranged to bear against the frame, and springs interposed between the abutments and the said rods.

4. In a furnace roof, the combination of a metallic frame, bricks of refractory material arranged against the under side of the frame, clamps connected at an intermediate point of their length in a hinged manner to the frame and having lower arms for exerting pressure against the bricks, threaded bolts extending outward from the



upper arms of the clamps, abutments movable on said bolts, nuts mounted on the bolts back of the abutments, rods guided in the upper arms of the clamps and arranged to bear against the frame, and springs interposed between the abutments and said rods.

852,836. WIRE-WORKING TOOL. MORRIS HAYS, Monmouth, Ill. Filed Nov. 14, 1906. Serial No. 343,376.



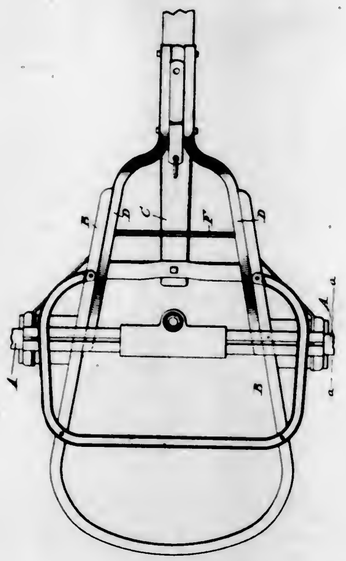
Claim.—1. A wire working tool comprising a hollow body having a slot along one side and openings in the ends of said body and at the ends of the slot, and a projecting hook beside one of said openings, said hook extending endwise with respect to the axis of the body, and curved at its end laterally and outwardly in a direction at an angle to said axis.

2. A wire working tool comprising a hollow body having openings at opposite ends, and a hook beside one of said openings, and also having an inclined projecting edge at the end, extending endwise beyond the hook.

3. A wire working tool comprising a hollow body having an opening at the end and a slot in the side extending to said opening, an indentation in the edge of the slot, and a projection on said edge, between the indentation and the opening.

852,837. TONGUE-SUPPORT. JOSEPH L. HECHT, Davenport, Iowa, assignor to Davenport Wagon Company, a Corporation of Iowa. Filed Dec. 6, 1906. Serial No. 346,576.

Claim.—1. In combination with the front gear provided with the usual axle, a tongue pivotally connected with said gear, and two rigid arms fixed to the tongue and extending rearwardly and adapted, when the tongue is in a horizontal or substantially horizontal position, to bear against the under side of the axle.



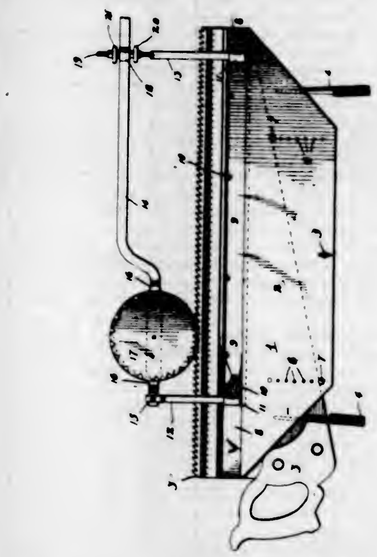
2. In combination with the front gear including an axle, a tongue pivotally connected with said gear, and a pair of rigid tongue hounds carried by the tongue and extending downwardly and rearwardly from the latter and adapted when the tongue is in a horizontal or substantially horizontal position to engage beneath the axle.

3. In combination with the front gear including an axle, gear hounds supported above the axle, a tongue, and a pair of rigid tongue hounds carried thereby and pivoted to the gear hounds, said tongue hounds being extended downwardly and rearwardly for engagement beneath the axle to support the tongue when in a horizontal or substantially horizontal position.

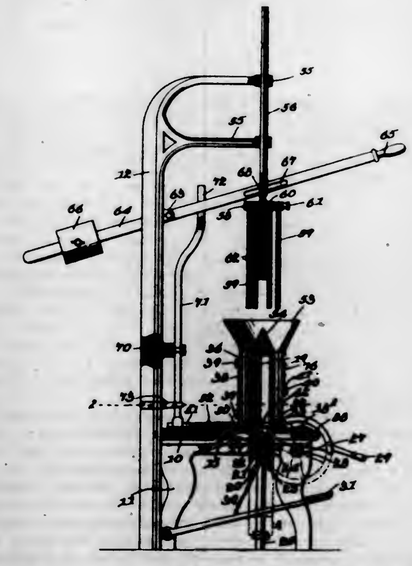
852,838. SAW-SETTING MACHINE. THOMAS C. HOLSCLAW, Etowah, N. C. Filed Dec. 9, 1905. Serial No. 291,086.

Claim.—1. In a device of the character described, a saw supporting means having a guide, a bar slidable in said guide, arms carried by said bar, a lever pivoted upon one of said arms, a screw upon the other of said arms, and projecting through an opening in said lever, nuts upon said screw on opposite faces of said lever, and a saw setting wheel revolubly supported upon said lever.

2. In a device of the character described, a saw clamp comprising jaws or plates having guide grooves in their outer faces, bars slidable longitudinally in said grooves, U-shaped frames connecting said bars, a lever pivoted upon one of said frames, a screw upon the other of said frames and projecting through an opening in said lever, nuts upon said screw on opposite faces of the lever, and a saw setting wheel revolubly mounted upon said lever and having a notched periphery, substantially as described.



852,839. MACHINE FOR MOLDING PLASTIC MATERIAL. HARRY H. HOWELL, Hope, Ark., assignor of one-fifth to William C. Wilson, Brice, Ohio. Filed July 19, 1906. Serial No. 326,900.



Claim.—1. The combination with a mold box, of a reciprocatory tamping member, a manually operable actuating lever therefor, the lever having a variable stroke governed by the quantity of material in the mold box, and the force of the tamping blow, and means actuated by said lever for imparting to the mold box a step by step rotative movement proportioned to the stroke of the lever.

2. In combination, a mold box, a tamping member, a carrying rod to which said tamping member is adjustably connected, an operating lever connected to the rod, a cam lever receiving movement from the rod operating lever, a ratchet wheel secured to the mold box, and a pawl engaging the ratchet wheel and receiving movement from said cam lever.

3. In combination, a mold box having a projecting lug, a flanged supporting ring having a notch or slot for the reception of the lug, ratchet teeth on said ring, a pawl engaging the ratchet teeth, a tamping device, and means for transmitting movement from the tamping device to the pawl.

4. In combination, a mold box having a projecting lug, a flanged supporting ring having a slot for the reception of the lug, ratchet teeth on the ring, a pawl engaging the ratchet teeth, a pawl carrying lever, a tamping member, an operating lever therefor, and a cam lever extending between the tamping lever and the pawl carrying lever.

5. In combination, a mold box having a projecting lug, a flanged supporting ring having a slot for the reception of said lug, ratchet teeth on the ring, a pawl engaging the ratchet teeth, a pawl carrying lever, a reciprocatory tamping member, a counterbalanced operating lever therefor, and a cam lever connected to the pawl carrying lever and having a cam in the path of movement of the tamping member.

6. In a machine of the class described, a revoluble ring, means for rotating the same, a vertically movable core extending through said ring, a mold box carried by the ring, means for locking the core and mold box to the ring.

7. In combination, a flanged ring forming the base of the mold box, means for rotating the ring, a core movable vertically through said ring, means for locking the same to the ring, a sectional mold box seated within the flange and provided with a pair of projecting lugs, and the flange having slots for the reception of said lugs.

8. In combination, a table having an opening for the passage of a core, a mold box supported on the table, a core carrying bar, a core mounted thereon, means for guiding the bar, a pedal connected to the bar, a shaft, means for supporting the same, a pair of lifting segments carried by the shaft, and flexible connections between said segments and the bar.

9. In a machine of the class described, a frame including a table, said table having an opening, a detachable plate for covering the opening, interchangeable mold boxes, a core carrying bar arranged beneath the table, interchangeable cores, means for connecting the same to the bar, a pair of guide rods for said bar, lifting segments, and flexible connections between the segments and the bar.

10. The combination with a mold box, of a vertically guided rod having a plurality of notches, a tamper head, a locking bolt carried thereby, and adapted to said notches, tamping members depending from said head, and means for operating said bar.

852,840. PROTECTING CHECKS AND OTHER PAPERS. EDWARD ILCH, New York, for himself, and EDWARD ILCH and THEODOLINDE BODENSTAB, New York, N. Y., executors of Michael Ilch, deceased. Filed Feb. 25, 1904. Serial No. 195,547.

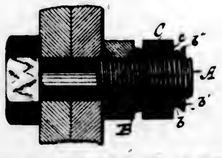
Claim.—1. The method of protecting checks and other papers, consisting in impressing types against the back of the paper with such force that the impressions are translucent, and then in writing upon the face of the paper over such impressions.

2. A check or commercial paper having translucent characters impressed upon the back thereof in such manner that they read naturally upon the face thereof, and bearing upon its face written characters upon said translucent characters.

852,840.

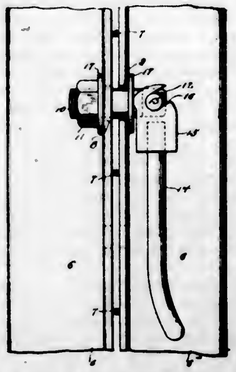


852,841. NUT-LOCK. JOHN J. JENNINGS, Reidville, S. C. Filed Jan. 7, 1907. Serial No. 351,200.



Claim.—A bolt-engaging-nut having a tapered extension which is externally threaded; the nut and its extension both being internally threaded, longitudinal slits through the extension and outward extending flanges on the outer ends of the divisions of the extension, a compression-nut having internal threads for engagement with the external threads of the extension of the bolt-engaging-nut and a circumferential recess in the outer face of the compression-nut, substantially as shown.

852,842. CLAMP FOR STRETCHERS FOR STRETCHING FENCES. ALLAN G. LEFLER, Belleville, Mich. Filed Feb. 27, 1907. Serial No. 359,559.



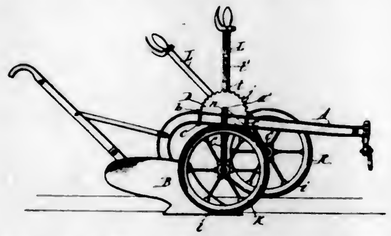
Claim.—1. A fence clamp comprising two angle bars, a bolt connecting said bars, said bolt having a head and lugs

projecting from the sides of the head thereof, and a cam having forks engageable under the lugs, to tighten the bolts.

2. A clamp comprising two angle bars, one of the bars having a hole and the other having a slot registering therewith, a bolt extending through the hole and the slot, and having a head, and means to tighten said bolt comprising a cam engageable under the head thereof.

3. A clamp comprising a pair of angle bars, a bolt connecting the same, said bolt having a nut on one end and a head on the other, the head having laterally-extending lugs on opposite sides, and a cam having a recessed head with opposite cheeks slotted to engage the said lugs.

852,843. PLOW. MARVIN D. MAIN, Cortland, N. Y., assignor of one-half to Lynn R. Lewis, Cortland, N. Y. Filed May 11, 1906. Serial No. 316,291.



Claim.—In a wheel-plow, the combination with the draft-beam and plow attached directly thereto, of crank-axles formed integral with supporting arms extending at obtuse angles from the ends of the main portions, a bracket rigidly attached to the draft-beam and formed with pivotal bearings at its center and side edges and terminating in proximity to the sides of the beam, said bearings receiving the axle-arms and supporting the main portions of the axles inclined from the sides of the beam, and levers formed with collars embracing the axle-arms between their bearings and fastened to said axle-arms as set forth and shown.

852,844. VEGETABLE-CUTTING MACHINE. ZENKICHI ONO, Masury, Ohio. Filed June 11, 1906. Serial No. 321,201.

Claim.—1. In a vegetable cutter the combination of a fixed table bearing at one end a slicing knife lying in the same plane as the top of said table, and forming a continuation thereof, with a tilting table lying, when in its primary position, in the same plane as the fixed table and making a continuation thereof, but which may be depressed a short distance by pressure at the end adjacent to the fixed table, two or more subsidiary knives, whose planes lie parallel to one another and at right angles, or substantially so, to the plane of the slicing knife and to the cutting edge thereof, attached to the tilting table at the end adjacent to the slicing knife, and a spring to return said tilting table to its primary position when the pressure is removed.

2. In a vegetable cutter the combination of a fixed table bearing at one end a slicing knife lying in the same plane as the top of said table and forming a continuation thereof, with a tilting table having its under side plain and bearing on the upper side a series of two or more subsidiary knives set parallel to one another at or near the end of the tilting table adjacent to the slicing knife and having the planes of said subsidiary knives at right angles, or substantially so, to the plane of the slicing knife and to the cutting edge thereof, a frame, slightly flexible laterally, surrounding and supporting both of said tables, pivots passing through the frame and into the tilting table upon which the latter may be turned a half revolution thus reversing the under and upper sides, a longitudinal groove on the inner side of said frame, two blocks whose inner faces lie parallel to each other and are held always at the same distance apart by a light rod bent in the form of a rectangle, passing longitudinally through both of said blocks and running in said groove, one of said blocks lying and sliding upon the fixed table and the other of said blocks lying and sliding upon said tilting table, slots in said tilting table block corresponding with the subsidiary knives, and in which, when said block is pressed against the said subsidiary knives, the latter may be completely housed, a rod or bolt, threaded on one end and having an angular shoulder at the other end passing through the frame and through a transverse hole or slot in the tilting table, a socket corresponding to said angular shoulder and in which the latter sits in one side of the frame, and a compression nut turned on the threaded end of said rod against the other side of said frame, under which compression nut a metal plate or washer may be placed, if desired.

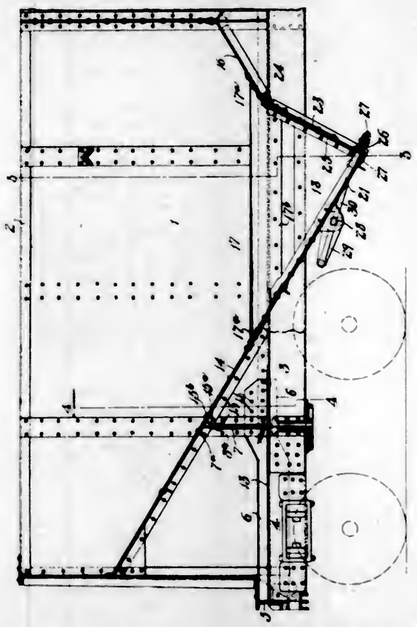


3. In a vegetable cutter the combination of a fixed table, bearing at one end a slicing knife blade lying in the same plane with the top of said table, and forming a continuation thereof, with a tilting table lying when in its primary position, in the same plane with the fixed table and making a continuation thereof, but which may be depressed a short distance by pressure at the end adjacent to the fixed table, two or more subsidiary knife blades, whose planes lie parallel to one another and at right angles, or substantially so, to the plane of the slicing knife blade and to the edge thereof, attached to the tilting table at the end adjacent to the slicing knife blade, a spring to return said tilting table to its primary position, when pressure is removed, two blocks whose inner faces lie parallel to each other and are held always at the same distance apart by suitable connections, one of said blocks lying and sliding upon the fixed table and the other of said blocks lying and sliding on said tilting table, slots in said tilting table block corresponding to said subsidiary knives and in which, when said block is pressed against the subsidiary knives the latter may be completely housed.

852,845. HOPPER-BOTTOM CAR. ALLEN E. OSTRANDER, Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 28, 1906. Serial No. 349,879.

Claim.—1. A car comprising side walls, a body bolster, an end sill, and sub-side sills consisting of flanged members that extend inwardly from the end sill and are secured to the side walls intermediate the bolster and the transverse center of the car, the flanges of said sub-side sills being removed adjacent the bolster to permit the webs of said sills to lie between the ends of the bolster and the side walls of the car; substantially as described.

2. A car comprising side walls, a bolster, an end sill, and Z-shaped sub-side sills connected to the end sill and to the bolster, the sub-side sills being bent upwardly adjacent the bolster and having portions of their flanges removed to permit the webs thereof to be secured to the ends of the bolster; substantially as described.



3. A car comprising a bolster, side walls extending over the ends of said bolster, an end sill, flanged sub-side sills secured to the end sill and to the side walls of the car intermediate the bolster and the transverse center of the car, one flange of each sub-side sill being removed adjacent the bolster to permit the webs of said sills to lie between the side walls and the ends of the bolster, and brackets secured to the bolster and to the webs of said sub-side sills; substantially as described.

4. A car comprising a bolster, side walls extending over the ends of said bolster, an end sill, flanged sub-side sills secured to the end sill and to the side walls of the car intermediate the bolster and the transverse center of the car, one flange of each sub-side sill being removed adjacent the bolster to permit the webs of said sills to lie between the side walls and the ends of the bolster, brackets secured to the bolster and to the webs of said sub-side sills, and diagonally extending braces secured to said brackets and to the end sill; substantially as described.

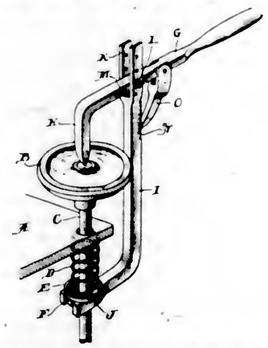
5. A car having inclined floor plates, a bolster consisting of a continuous web plate provided at its upper edge with a flange that supports the floor plates and extends toward the end of the car, and a member secured to the web plate and to the inclined floor plates, said member having a portion which is disposed at right angles to the floor plates; substantially as described.

6. A car comprising center sills, a cross ridge, an inclined floor sloping downwardly from the end wall, and a cover for the center sills between the inclined floor and cross ridge consisting of a single metal plate of inverted V-shape in cross section; substantially as described.

7. A car comprising center sills, a central cross ridge, hoppers on each side of the center sills, doors for said hoppers hinged at their upper edges to the cross ridge, a pair of transversely extending angles secured to the lower edges of the hopper doors and arranged to form a T, said angles being spread apart slightly at one point, a device interposed between the vertical legs of said angles at the point where they are spread apart, and a door-operating mechanism secured to said device; substantially as described.

8. A car comprising side walls, a bolster connected to the side walls, sub-side sills having inwardly projecting flanges which are cut away adjacent the bolster so that the webs of said sub-side sills can lie between the side walls and the ends of said bolster and extend inwardly beyond the bolster and fastening devices connecting the sub-side sills to the side walls at a point intermediate the bolster and the transverse center of the car; substantially as described.

852,846. DEVICE FOR FACILITATING THE REMOVAL OF VALVES. JAMES RABEY, Detroit, Mich. Filed Mar. 25, 1907. Serial No. 364,476.



Claim.—1. In a device of the character described, the combination of a member bent at right angles near its lower end and bifurcated at its lower end, a lever pivoted on said member near its upper end and bent at right angles, a pawl pivoted on said lever and ratchet teeth on said member coöperating with said pawl.

2. In a device of the character described, the combination of a hook shaped member bifurcated at its lower end and formed with ratchet teeth near its upper end, a bent lever pivoted on said member and a pawl pivoted on said lever coöperating with said teeth.

3. In a device of the character described, the combination of a member formed with a right angle bend and bifurcated at its lower end, said member having a slot and ratchet teeth near its upper end, a bent lever extending through said slot, a pawl pivoted on said lever, and adapted to co-operate with said teeth and means for pivotally and adjustably connecting said member and lever.

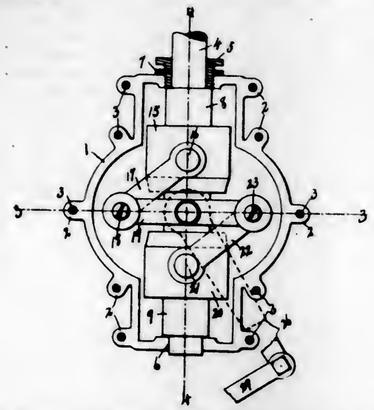
852,847. STEERING-GEAR FOR AUTOMOBILES. ARTHUR E. ROCKWELL, Oswego, N. Y. Filed Mar. 23, 1906. Serial No. 307,616.

Claim.—1. A steering gear for automobiles comprising a steering post, oppositely threaded sleeves secured to the post, oppositely threaded nuts each engaging its respective sleeve, a rock-shaft having a crank-arm thereon, and means for transmitting motion from said nuts to the rock-shaft.

2. A steering gear for automobiles comprising two coaxial oppositely threaded members arranged end to end, and means for simultaneously rotating them a pair of coaxial nuts arranged end to end, each engaging one of the threaded members, whereby the nuts are moved simultaneously in opposite directions, a crank-shaft and links connecting the nuts to said crank-shaft.

3. A steering gear for automobiles comprising two threaded members, one having a right-hand thread and the

other a left-hand thread, said threaded members revolving on the same axis and arranged end to end, means for rotating said members simultaneously, oppositely threaded nuts each engaging one of said members, a rock-arm fulcrumed intermediate its ends and having each end flexibly connected to one of the nuts, and a crank-arm secured to the rock-arm.



4. A steering gear for automobiles comprising two oppositely threaded members arranged end to end on the same axis, means for simultaneously rotating said members, threaded collars each engaging one of the threaded members, a crank-arm and means for transmitting motion from each of said collars to the crank-arm.

5. A steering gear for automobiles comprising two oppositely threaded members arranged end to end upon the same axis, one of them being adjustable endwise, means for effecting such adjustment, additional means for simultaneously rotating said members, threaded collars each fitted upon one of the threaded members, and fixed against rotation, a crank-shaft, and means for transmitting motion from each of the collars to said crank-shaft.

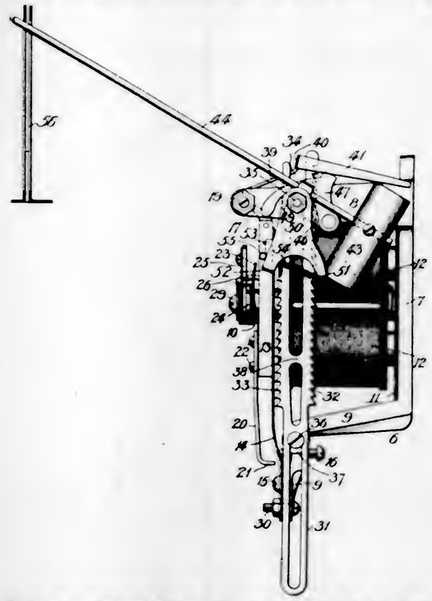
6. A steering-gear for automobiles comprising a steering post and co-axial oppositely threaded screws mounted end to end thereon, co-axial nuts arranged end to end engaging their respective screws, a crank arm and links connecting said nuts to the crank arm.

7. A steering gear for automobiles comprising a steering post, oppositely threaded members keyed to the post, one of them being adjustable endwise, means for effecting such adjustment, a crank-shaft, a rock-arm secured to the crank-shaft and links pivotally attached to the rock-arm at opposite sides of its axis, and each connecting one end of said rock-arm to one of the collars, and oppositely threaded collars each engaging one of said threaded members, and held against rotation by said links.

852,848. COIN-ACTUATED DEVICE FOR CONTROLLING THE OPERATION OF COIN-OPERATED MACHINES. HENRY K. SANDELL, Chicago, Ill., assignor to Mills Novelty Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 17, 1907. Serial No. 352,671.

Claim.—1. In a coin-actuated device for the purpose set forth, the combination with a frame, of a stop-member and coin-tripped means whereby successively inserted coins may move the same by steps from an initial position through a series of different positions, means interposed between said member and the machine to be controlled, constructed and arranged to repeat the operation of said machine while said member is in any but its initial position, and means whereby the operation of the machine shall return said member by steps to its initial position.

2. In a coin-actuated device for the purpose set forth, the combination with a frame, of a stop-bar movably supported thereon, a weighted trip-arm oscillatorily mounted on the frame and adapted to extend across the coin-insertion passage of a coin-operated machine, raising means and supporting means for said bar operatively connected with the trip-arm, a member movably supported on the frame and constructed and arranged to control the starting of said machine, and releasable locking means for said bar operatively engaging with said trip-arm.



3. In a coin-actuated device for the purpose set forth, the combination with a frame, of a ratchet-bar movably supported thereon, a spring-controlled pallet co-operating with said bar, a weighted trip-arm oscillatorily mounted on the frame and adapted to extend across the coin-insertion passage of a coin-operated machine, a pawl for raising said bar operatively connected with the trip-arm, a member movably supported on the frame and constructed and arranged to control the starting of said machine, and releasable locking means for said bar operatively engaging with said trip-arm.

4. In a coin-actuated device for the purpose set forth, the combination with a frame, of a ratchet-bar vertically movable thereon and provided with a recess in its upper end, a spring-controlled pallet co-operating with said bar, a weighted trip-arm oscillatorily mounted on the frame and adapted to extend across the coin-insertion passage of a coin-operated machine, a pawl for raising said bar operatively connected with the trip-arm, a rock-shaft journaled on said frame, a bracket on said shaft having an arm to engage with said bar when raised and hold said shaft in one position and a finger extending into the path of said trip-arm, and a member movably supported on the frame and constructed and arranged to control the starting of said machine and releasably engaging with said shaft.

5. In a coin-actuated device for the purpose set forth, the combination with a frame, of an electro-magnet, a spring-controlled armature, a contact-finger in the path of the armature, a rock-shaft journaled on said frame and forming a releasable stop for said armature, a bracket on said shaft, a ratchet-bar vertically movable on said frame, a weighted trip-arm oscillatorily mounted on the frame and adapted to extend across the coin-insertion passage of a coin-operated machine, a pawl for raising said bar operatively connected with the trip-arm, and a spring-controlled pallet co-operating with said bar and extending into the path of movement of the armature.

6. In a coin-actuated device for the purpose set forth, the combination with a frame, of an electro-magnet, a spring-controlled armature carrying a contact member and provided with a stop-tongue, a contact-finger in the path of said member, a rock-shaft journaled on the frame and containing a recess to register with said tongue, a vertically-movable ratchet-bar, a bracket on said shaft engaging said bar when raised, a weighted trip-arm oscillatorily mounted on said frame, a pawl for raising said bar operatively connected with the trip-arm, and a spring-controlled pallet co-operating with said bar and extending into the path of movement of the armature.

7. In a coin-actuated device for the purpose set forth, the combination with a frame, of an electro-magnet, a spring-controlled armature carrying a contact-member and provided with a stop-tongue, a contact-finger in the path of said member, a rock-shaft journaled on the frame and containing a recess to register with said tongue, a vertically-movable ratchet-bar, a bracket on said shaft engaging said bar when raised, a weighted trip-arm oscillatorily mounted on said frame and into the path of which the free end of said bracket extends, a pawl for raising said bar operatively connected with the trip-arm, and a spring-controlled pallet co-operating with said bar and extending into the path of movement of the armature.

852,849. FARE-REGISTER. ADOLPH O. SCHMOLINSKI, St. Louis, Mo., assignor to Security Register Company, St. Louis, Mo., a Corporation of Missouri. Filed May 31, 1906. Serial No. 319,616.

Claim.—1. In a register, a totalizer for registering the number of operations of the register, a strip for receiving impressions from the totalizer, feeding mechanism for said strip, and a removable identification stamp which is adapted to be inserted in the register to cause said feeding mechanism to be operated and manually forced into engagement with said strip to impress a mark thereon; substantially as described.

2. In a register, a totalizer for registering the number of operations of the register, a strip for receiving impressions from the totalizer, feeding mechanism for said strip, and a removable stamp provided at its end with an identification character which is adapted to engage said strip and impress the same in the act of inserting the stamp in the register, said stamp also causing said feeding mechanism to be actuated as it is inserted in the register; substantially as described.

3. In a register, a totalizer for registering the number of operations of the register, a strip for receiving impressions from the totalizer, feeding mechanism for said strip, a removable stamp provided at its end with an identification character which is adapted to engage said strip and impress the same in the act of inserting the stamp in the register, the movement of said stamp also causing the feeding mechanism to be actuated, and means for preventing said stamp from rotating after its character has engaged said strip; substantially as described.

4. In a register provided with means for recording the operations of the register, a record strip, feeding mechanism for said strip, a member over which said strip travels, said member being provided with an opening, a platen arranged above said strip, and a removable identification stamp which is adapted to be inserted in the register and rotated to cause said feeding mechanism to be actuated and thereafter forced through the opening in said member to engage the record strip and impress a mark thereon; substantially as described.

5. In a register provided with means for recording the operations of the register, a record strip, feeding mechanism for said strip, a platen, an inking ribbon interposed between said strip and platen, and a removable stamp provided with an identification character which is adapted to be forced into engagement with the record strip to make an impression thereon in the act of inserting the stamp in the register, the movement of the stamp as it is inserted in the register also causing the feeding mechanism to be actuated; substantially as described.

6. In a register, a totalizer, means for actuating said totalizer to record the operations of the register, mechanism for locking said means, a record strip for receiving an impression from said totalizer, and a removable operating handle which is adapted to be inserted in the register and thereafter rotated for causing said locking means to become inoperative and also cause the totalizer to make an impression on said strip; substantially as described.

7. In a register, a totalizer, mechanism for actuating same, means for locking said mechanism, a strip for receiving impressions from said totalizer, feeding mechanism for said strip, and a removable operating handle which upon being inserted in the register, releases said locking means, forces the strip into engagement with the totalizer to make an impression on said strip and also cause said strip to be fed; substantially as described.

8. In a register, a totalizer, means for actuating the same, means for rendering said actuating means inoperative, a record strip for receiving impressions from said totalizer, and a removable operating handle adapted to be inserted in the register and rotated for causing the totalizer-actuating mechanism to become operative, and also cause said totalizer to make an impression on the record strip; substantially as described.

9. In a register, a plurality of type-carrying wheels constituting a totalizer, means for actuating said wheels, means for rendering said wheels inoperative, a record strip, a removable identification stamp that is adapted to be inserted in the register and manually forced into engagement with said strip to make an impression thereon and thereafter be withdrawn from the register, and a removable operating handle which upon being inserted in the register causes the totalizer-actuating mechanism to become operative, and also causes the totalizer to make an impression on the strip; substantially as described.

10. In a fare register, a totalizer, mechanism for actuating said totalizer, means for rendering said actuating mechanism inoperative, a record strip for receiving impressions from said totalizer, and a removable operating handle which upon being inserted in the register causes the totalizer-actuating mechanism to become operative and

also causes the totalizer to make an impression on the strip, said operating handle also causing the totalizer to make a second impression on the strip as said handle is removed; substantially as described.

11. In a register, a record strip, a hollow shaft provided with an elongated slot, a plate covering the end of said shaft, a member rotatably mounted on said shaft and provided with means for engaging said plate, said member being provided on its interior with a groove, and a device adapted to be inserted in the hollow shaft and provided with a pin which enters the groove in said member, whereby said member may be rotated; substantially as described.

12. In a register, a record strip, a hollow shaft provided with an elongated slot, a plate covering the end of said shaft, a member rotatably mounted on said shaft and provided with means for engaging said plate to hold it over the end of the shaft, a device adapted to be inserted in the hollow shaft and provided with means for rotating said member, and a spring for moving the plate from over the end of the shaft; substantially as described.

13. In a register, a record strip, a hollow shaft provided with an inclined slot, a plate covering the end of said shaft, a member rotatably mounted on said shaft and provided with means for engaging said plate, said member being provided on its interior with a groove, and a device adapted to be inserted in said shaft and provided with a pin which extends through the slot in the shaft and enters the groove in said member whereby both said device and said member are rotated as said device is forced into the shaft; substantially as described.

14. In a fare register, a hollow printing member, a record strip arranged adjacent said member, rolls for feeding said strip, a rotatable member provided with cams, devices actuated by the cams for causing the strip to be forced into engagement with the printing member and then fed forwardly, and a removable operating handle adapted to be inserted in said hollow member for actuating same; substantially as described.

15. In a fare register, a totalizer, a record strip, a device for printing a number on the strip, rolls for feeding said strip, a rotatable member provided with cams, levers actuated by the cams for actuating the printing device and for causing the strip to be moved into engagement with the totalizer and fed forwardly, means for locking said rotatable member, and a removable operating handle adapted to be inserted in said member to release said locking means and also actuate said member; substantially as described.

16. In a fare register, a plurality of type-carrying wheels constituting a totalizer, a strip, an inking ribbon arranged between said wheels and said strip, a plate on which the strip travels, a hollow shaft arranged under said plate and provided with a continuous slot, a rotatable member mounted on said shaft and provided with cams, said member having an interior groove, a lever carrying a pawl for actuating said feed roll, a lever for elevating the plate on which the strip travels, said lever being actuated by the cams on said rotatable member, and an operating handle adapted to be inserted in said hollow shaft and provided with a pin which engages the groove in said rotatable member whereby the same may be operated; substantially as described.

17. In a fare register, type-carrying wheels constituting a totalizer, a strip arranged adjacent said totalizer, rolls for feeding said strip, a pivoted plate carrying one of said rolls, an arm adjustably connected to said plate, a member provided with a recess which receives the lower end of said arm when the register is inoperative whereby said rolls are held out of engagement with each other, and an operating handle which upon being inserted causes the register to become operative and also moves said member to force the arm out of the recess therein; substantially as described.

18. In a fare register, a totalizer, an oscillating cam shaft, means for actuating said cam shaft to impart movement to the totalizer, a device for locking said cam shaft, a member for causing said device to remain in engagement with said cam shaft, and a removable operating handle for actuating said member to release said device; substantially as described.

19. In a fare register, a totalizer, a shaft, means for actuating said shaft to impart movement to the totalizer, a device for locking said shaft, a rotatable member having a recess for receiving a portion of said locking device, and a removable operating handle for actuating said rotatable member to permit said locking device to enter said recess and thus cause the register to become operative; substantially as described.

20. In a fare register, a totalizer, a shaft, means for actuating said shaft to impart movement to the totalizer, a device for locking said shaft, a member constructed to receive a portion of said locking device when the register is operative, a resetting shaft, means for preventing said resetting shaft from being turned while the locking device is in engagement with said shaft, and a removable operating handle for actuating said member whereby said locking device is permitted to move from engagement with the shaft; substantially as described.

21. In a fare register, totalizers for registering different classes of fares, means for indicating the total number of fares of all classes which are registered on each trip, means for actuating said totalizers comprising a ratchet for each totalizer and co-operating pawls for said ratchets, means for operating said indicating means comprising a ratchet and a co-operating pawl, and a rock shaft provided with cams for imparting movement to said pawls; substantially as described.

22. In a fare register, disks provided with numerals for indicating the number of fares which have been registered, means for rotating said disks forwardly, pinions fixed to said disks, spring-actuated sectors co-operating with said pinions and adapted to be moved thereby against the tensions of their actuating springs, and a dog co-operating with one of said sectors to hold it out of engagement with its pinion when the disk to which said pinion is fastened has been moved a certain distance; substantially as described.

23. In a fare register, disks provided with numerals for indicating the number of fares which have been registered, means for rotating said disks forwardly, pinions fixed to said disks, spring-actuated sectors co-operating with said pinions and adapted to be moved thereby against the tensions of their actuating springs, a dog co-operating with one of said sectors to hold it out of engagement with its pinion when the disk to which said pinion is fastened has been moved a certain distance, and means for moving said dog out of engagement with said sectors; substantially as described.

24. In a fare register, a totalizer for registering fares comprising a bank of wheels provided on their peripheries with printing type and pinions for transmitting movement from one wheel to the one adjacent thereto in combination with fingers that co-operate with flat surfaces on said pinions to cause the printing type on the wheels to be kept in alinement, and means for actuating said fingers; substantially as described.

25. In a register adapted to record different classes of fares, a member carrying means indicating the different classes of fares, a reciprocating bar upon which said member is mounted, a rock arm connected to said bar, and means for actuating said rock arm to cause said member to be moved into position to display the different fare-indicating means carried thereby; substantially as described.

26. In a register adapted to record different classes of fares, a member carrying means indicating the different classes of fares, a reciprocating bar upon which said member is mounted, a rock arm connected to said bar, and a rocking member co-operating with said rock arm and adapted to be moved in opposite directions when fares of different classes are registered whereby said member will be moved into position to display the indicating means thereon which correspond to the fare that is registered; substantially as described.

27. In a register adapted to record different classes of fares, a member carrying means indicating the different classes of fares, a reciprocating bar upon which said member is mounted, a rock arm connected to said bar for reciprocating it to raise and lower said member, and a locking dog for holding said member in an elevated position; substantially as described.

28. In a register of the class described, a plate adjustably mounted on a stationary support, a platen fastened to a rod which is mounted in bearings in said adjustable plate, and a spring interposed between one of said bearings and a cross pin on the rod; substantially as described.

29. In a register, type-carrying wheels arranged at one side of the register and constituting a totalizer, a plate mounted below said totalizer for supporting a record strip, a supply spool and a rewinding spool for carrying an inking ribbon, a platen arranged between said spools and the totalizer, and rollers for guiding said ribbon from the supply spool under the platen and totalizer and thence in the reverse direction under the totalizer and platen back to the rewinding spool; substantially as described.

30. In a fare register, an approximately cylindrical casing inclosing the operating mechanism of the register, a movable arm arranged inside of the casing adjacent an opening therein and being adapted to carry a roll of paper, a movable arm carrying a rewinding roll and being located inside of the casing adjacent an opening therein, and movable members for closing said openings in the casing; substantially as described.

31. In a fare register, an approximately cylindrical casing inclosing the operating mechanism of the register, a pivotally mounted arm arranged inside of the casing adjacent an opening in one side thereof and being adapted to carry a roll of paper, a pivotally mounted arm carrying a rewinding roll and being located inside of the casing adjacent an opening in the opposite side thereof, a door hinged to the casing and closing one of said openings, and a removable section for closing said other opening, said removable section having a lip which extends into a slot in the casing; substantially as described.

32. In a fare register, a casing inclosing the operating mechanism of the register, a pivotally mounted arm carrying a rewinding roll and being located inside of the casing adjacent an opening therein, means for actuating said rewinding roll, a door for covering the opening in the casing, and a yielding member interposed between said arm and door for holding the rewinding roll in engagement with its actuating mechanism; substantially as described.

33. In a fare register, a base plate, posts projecting from said base plate, a casing arranged on the base plate for inclosing the operating mechanism of the register, said casing being provided with an inwardly projecting flange, a protecting glass engaging said flange, and yielding members carried by said posts for engaging the glass to hold it in contact with the flange of the casing; substantially as described.

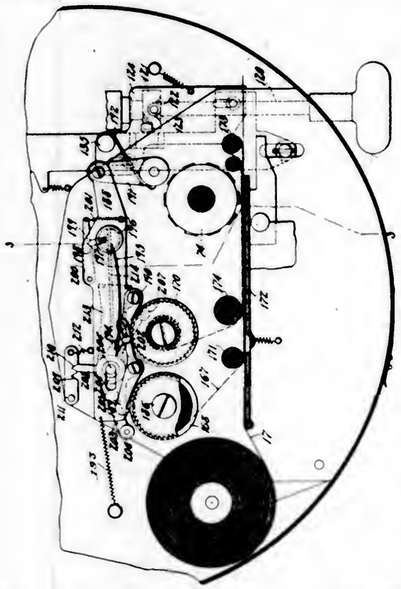
34. In a fare register, a base plate, posts projecting from said base plate, a face plate located adjacent the ends of said posts, and means carried by said posts for holding the face plate in position; substantially as described.

35. In a register, a totalizer for registering the number of operations of the register, a strip for receiving impressions from the totalizer, means for feeding said strip, and a removable identification stamp which is adapted to be inserted in the register to impress a mark on said strip and also cause said strip to be fed; substantially as described.

36. In a register, a totalizer, a strip for receiving impressions from said totalizer, feeding mechanism for said strip, and a removable identification stamp which is adapted to be manually forced into engagement with said strip to impress a mark thereon and also cause the feeding mechanism to be actuated; substantially as described.

37. In a register, a totalizer, a strip for receiving impressions from the totalizer, and a removable identification stamp which causes the strip to be fed and have a mark impressed thereon in the act of inserting the stamp in the register; substantially as described.

852,850. RIBBON-FEEDING MECHANISM. ADOLPH O. SCHMOLINSKI, St. Louis, Mo., assignor to Security Register & Manufacturing Company, St. Louis, Mo., a Corporation of Missouri. Filed Jan. 28, 1907. Serial No. 354,486.



Claim.—1. A ribbon-feeding mechanism comprising a supply spool, a rewinding spool, a reciprocating member carrying pawls co-operating with ratchets on said spools, a rocking member having one of its ends arranged in alinement with the supply spool and its opposite end in alinement with the re-winding spool, which member is adapted to be engaged and actuated by the ribbon that is wound onto the spools, a locking device for said locking member, and means actuated by said rocking member for moving the pawls into and out of operative position; substantially as described.

2. A ribbon-feeding mechanism comprising a supply spool and a rewinding spool, each provided with a ratchet, a reciprocating member provided with a pawl for each of said ratchets, a rocking member carried by said reciprocating member and connected to said pawls, a locking device for said rocking member, a pivotally mounted member having its opposite ends located in alinement with the spools whereby said pivoted member is actuated by the ribbon which is wound thereon, a locking means for said pivotally mounted member, and means for transmitting the movement of said pivotally mounted member to the rocking member which is connected to the pawls; substantially as described.

3. In a machine of the class described, a ribbon-carrying spool, a shaft on which said spool is mounted, a spring mounted in a slot in said shaft for engaging the interior of said spool, and a screw-threaded plug arranged in one end of said shaft and having the end of the spring mounted therein; substantially as described.

4. A ribbon-feeding mechanism comprising a supply spool, a rewinding spool, a reciprocating member provided with pawls for co-operating with ratchets on said spools, a rocking member mounted on the reciprocating member and being in yielding engagement with one of said pawls, a connection between said pawls, and a pivotally mounted device adapted to be actuated by the ribbon wound on said spools for imparting movement to said rocking member; substantially as described.

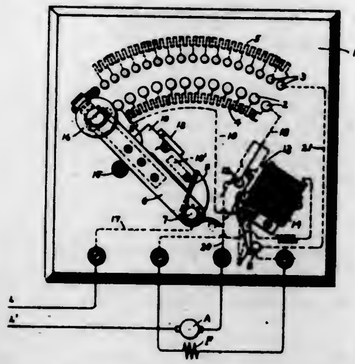
5. A ribbon-feeding mechanism comprising a supply

spool, a rewinding spool, a movable member provided with pawls for actuating said ratchets, a connection between said pawls, a rocking member for moving said pawls into and out of operative position, a locking device for said rocking member, and means actuated by the ribbon wound on said spools for imparting movement to said rocking member; substantially as described.

6. A ribbon feeding mechanism comprising a supply spool, a rewinding spool, a reciprocating member carrying pawls for actuating said ratchets, a device carried by said member for moving both of said pawls to carry them into and out of engagement with their co-operating ratchets, means for locking said device, a member adapted to be actuated by the ribbon wound on said spools for imparting movement to said device, and means for locking the member last referred to; substantially as described.

7. A ribbon-feeding mechanism comprising a supply spool, a rewinding spool, a reciprocating member carrying pawls for actuating said ratchets, a connection between said pawls, a rocking member mounted on the reciprocating member and provided with a yielding arm that is connected to one of said pawls, a yielding locking device for said rocking member, a pivotally mounted member having its opposite ends arranged in alinement with said spools and adapted to be actuated by the ribbon wound thereon, means on said pivotally mounted member for actuating the rocking member, and a yielding locking device for said pivotally mounted member; substantially as described.

852,851. MOTOR-CONTROLLING RHEOSTAT. FRANK J. SEABOLT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 14, 1907. Serial No. 352,115.



Claim.—1. A controlling device for electric circuits comprising a pair of resistances provided with contacts, a controlling member simultaneously engaging said contacts, and connections for rendering said member ineffective in controlling one of said resistances when moved in one direction and the other of said resistances when moved in the opposite direction.

2. A motor starting and controlling rheostat comprising an armature resistance and a field resistance each provided with contacts, a controlling member simultaneously engaging said contacts, and connections for rendering said member ineffective to control one of said resistances when moved in one direction and the other of said resistances when moved in the opposite direction.

3. A motor starting and controlling rheostat comprising an armature resistance and a field resistance each provided with contacts, a controlling member simultaneously engaging said contacts, and connections whereby said member is movable in one direction to control the starting resistance and in the opposite direction to control the field resistance.

4. A motor starting and controlling rheostat comprising an armature resistance and a field resistance each provided with contacts, a controlling member simultaneously engaging said contacts, and connections whereby said member is movable in one direction to cut out starting resistance and in the opposite direction to cut in field resistance.

5. A controlling device for electric circuits comprising a plurality of resistances provided with contacts, a controlling member simultaneously engaging said contacts, means for short-circuiting one of said resistances as the element is moved in one direction, and means for short-circuiting another of said resistances as the element is moved in the opposite direction.

6. A controlling device for electric circuits comprising a pair of resistances, a controlling member therefor, means for short-circuiting one of said resistances as the element is moved in one direction, and means for opening said short-circuit and simultaneously short-circuiting the other resistance when the element reaches a predetermined position.

7. A controlling device for electric circuits comprising an armature resistance and a field resistance, a single controlling arm therefor, connections whereby the armature resistance is short-circuited as the arm is moved in one direction and the field resistance short-circuited as it is moved in the opposite direction, and means for returning the arm to the off position upon failure of voltage.

8. A controlling device for electric motors comprising a pair of resistances, a controlling member therefor, connections for rendering said member ineffective in controlling one of said resistances when moved in one direction and the other of said resistances when moved in the opposite direction, and means for automatically placing the resistances in a protective position with reference to the motor.

9. A motor starting and controlling rheostat comprising an armature resistance and a field resistance, a controlling member therefor, connections whereby said member is movable in one direction to control the starting resistance and in the opposite direction to control the field resistance, and means for automatically moving said member from the control of said resistances upon the occurrence of abnormal circuit conditions.

10. A motor starting and controlling rheostat comprising an armature resistance and a field resistance, a controlling member therefor, connections whereby said member is movable in one direction to cut out starting resistance and in the opposite direction to cut in field resistance, and means for automatically returning said member to the off position upon the occurrence of abnormal circuit conditions.

11. A controlling device for electric circuits comprising a pair of resistances having contacts arranged in parallel rows, a controlling member movable over said contacts and simultaneously engaging the same, and connections whereby said element is ineffective to control one of said resistances as it is moved to a predetermined position in one direction and ineffective to control the other resistance when brought back by a return movement.

12. A controlling device for electric circuits comprising a pair of resistances having contacts arranged in concentric rows, a pivoted controlling member movable over said contacts and simultaneously engaging the same, and connections whereby said element is ineffective to control one of said resistances as it is moved to a predetermined position in one direction and ineffective to control the other resistance when brought back by a return movement.

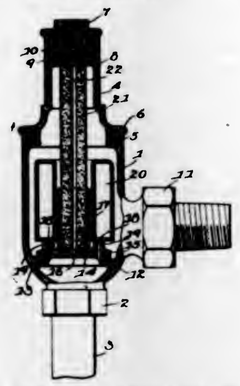
13. A controlling device for electric circuits comprising resistance contacts arranged in concentric rows, a pivoted controlling arm movable over said contacts and simultaneously engaging the same, and connections whereby one of said rows is short circuited when the arm is moved to a predetermined position in one direction and another of said rows short circuited during the return movement.

14. A controlling device for electric circuits comprising resistance contacts arranged in concentric rows, a pivoted controlling arm movable over said contacts and simultaneously engaging the same, connections whereby one of said rows is short circuited when the arm is moved to a predetermined position in one direction and another of said rows short circuited during the return movement, and means for moving said arm out of engagement with said contacts upon the failure of voltage.

15. A motor starting and controlling rheostat comprising an armature resistance and a field resistance, a controlling member therefor, connections whereby said member is movable in one direction to control the starting resistance and in the opposite direction to control the field resistance, means for returning said member to the off position, and means for rendering said returning means inoperative after running conditions have been established until the occurrence of abnormal circuit conditions.

16. A motor starting and controlling rheostat comprising an armature resistance and a field resistance, a pivoted controlling arm therefor, connections whereby said member is movable in one direction to cut out starting resistance and in the opposite direction to cut in field resistance, a spring for returning said arm to the off position, and a no-voltage magnet for rendering said spring ineffective to return the arm when the latter has been moved to running position.

852,852. VENT-VALVE FOR STEAM-HEATING SYSTEMS. JOHN R. SHANKLIN, Charleston, W. Va. Filed Jan. 9, 1906. Serial No. 295,296.



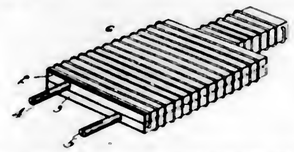
Claim.—1. A vent valve having a seat provided with a central port and an annular series of ports, a tube carried by the seat concentric with the central port, a tubular thermostatic valve member situated in the tube and in communication with the central port, a valve seat adjacent to the upper open end of the thermostatic valve member whereby the latter may be seated when heated, and a tubular float valve slidably embracing the thermostatic member and controlling the annular series of ports.

2. A vent valve comprising a casing having a transverse partition pierced by a central port and an annular series of ports, the casing being provided with an inlet at one side of the partition and an outlet at the other side thereof, a tubular thermostatic valve member communicating with the central port, a fixed closure member carried by the casing at a point above the outer open end of the thermostatic member and forming a valve seat therefor, and a tubular float valve slidably embracing the thermostatic member and controlling the annular series of ports.

3. In a vent valve, the combination of a casing, a vent tube extending upwardly from the bottom thereof, the bottom of the casing being formed with an annular series of ports surrounding the tube, a float surrounding and guided by the tube, the float being adapted to close said ports, a member adapted to coöperate with the upper end of the tube to close the same, one of said last named members being thermostatic.

852,853. ELECTRICAL HEATER. MILTON H. SHOENBERG, San Francisco, Cal., assignor of one-half to Bernard Lowenstein, San Francisco, Cal. Filed Sept. 13, 1906. Serial No. 334,408.

Claim.—1. The combination with a body to be heated of electrical heating elements, said elements comprising a plurality of insulated core plates having integral terminals, insulating means by which said plates are separated, other insulation inclosing the cores and electrically resistant wires wound around said cores and connecting with the terminals.

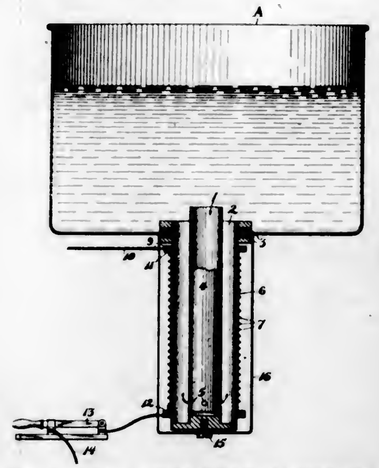


2. In an electric heater, a mechanism consisting of a plurality of core plates insulated from each other, said cores having terminals formed integral with them at one end, insulating material inclosing said cores, an electrically resistant naked wire wound around the exterior of said cores and insulation, with the coils separted from each other and connection between said wire and the terminals and core plates.

3. In an electrical heating apparatus, a plurality of flat core plates insulated from each other and having an inclosing insulating film, an electrically resistant naked wire coiled about the cores and their insulation so as to compress the parts together, the coils of said wire being separted from each other, terminals formed integral with the cores and at one end of the structure, the body to be heated having a cavity within which the heating mechanism is compressed and the parts maintained in close contact.

4. In an electric heater, a plurality of core plates insulated from each other and having independent integral terminals, a single winding of naked wire in separated coils insulated from the core plates and independent connections between said wires and said plates whereby different lengths of wire and resistance may be introduced into the circuit.

852,854. ELECTRICAL FLUID-HEATER. MILTON H. SHOENBERG, San Francisco, Cal., assignor of one-half to Bernard Lowenstein, San Francisco, Cal. Filed Sept. 13, 1906. Serial No. 334,410.



Claim.—1. A fluid heating apparatus consisting of a reservoir, a metallic chamber connected therewith having an insulating casing, a resistance coil inclosing said casing with electrical connections whereby the temperature of the chamber may be raised and a tube centrally disposed within the chamber, said tube having its upper end in open communication with the reservoir and openings

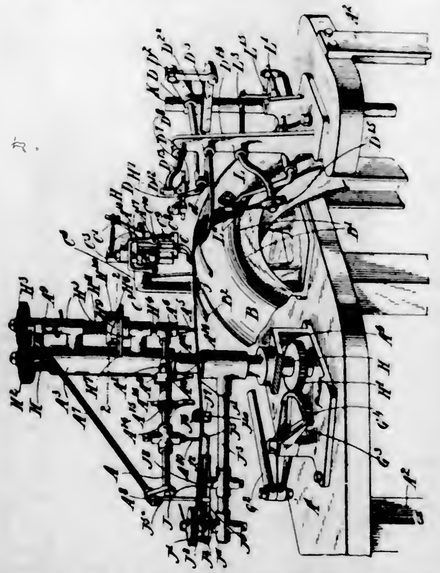
near the bottom whereby a circulation of fluid may be effected.

2. An electrical fluid heater consisting of a metallic open top chamber, having an insulating inclosing material, naked wires coiled upon said insulation out of contact with each other, means for supplying an electrical current whereby the wires and the chamber are heated, a tube fixed centrally within the chamber having an open upper end and openings through the bottom communicating with the interior of the chamber, and a reservoir with the lower part of which the chamber and tube are in open communication.

3. In an electrical water heater, an insulated chamber, an electrical resistance coil inclosing said chamber, means for transmitting an electrical current through the coil, a tube located centrally within the chamber having an open upper end and holes around the bottom, a reservoir having an opening in the bottom into which the upper end of the chamber extends, and washers whereby the chamber is removably clamped in said opening and a tight joint formed.

4. In an electrical fluid heater, an insulated open topped water chamber having a central open topped tube with openings around the bottom connecting with the lower interior part of the chamber, a reservoir having an opening in the bottom to receive the upper end of the chamber, clamping washers by which the chamber is removably secured from the reservoir, an insulating jacket surrounding the chamber, a resistance coil inclosing the insulation, metallic rings with which the upper and lower ends of the coil connect, electrical conducting wires connecting with the rings and a switch whereby an electrical current may be transmitted through the coil or interrupted.

852,855. MACHINERY FOR USE IN THE MANUFACTURE OF PNEUMATIC TIRES. THOMAS SLOPER and ROBERT SLOPER, Devizes, England. Filed Aug. 20, 1906. Serial No. 331,415.



Claim.—1. In a machine for making pneumatic tires, the combination of a "former" having a working face of curved cross-section, and means for laying a cord in zigzag fashion upon the working face in such manner that the folds constituting one layer lie side by side therein without crossing each other and a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

2. In a machine for making pneumatic tires, the combination of a "former" having a working face of curved cross-section, means for making loops of "cord" and means for laying such loops at the required angle across the "former" whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

3. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section, means for maintaining the "cord" under tension, means for selecting predetermined lengths of the "cord" while under tension, and means for laying such selected lengths of cord upon the working face of the "former" in such manner that a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

4. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section, means for maintaining the cord under tension, means for folding the "cord" into loops of predetermined length while under tension, and means for laying such loops upon the working face of the "former" in such manner that a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

5. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section, means for maintaining the "cord" under tension, means for folding the "cord" into double loops of predetermined length while it is under tension and means for laying such loops upon the working face of the "former" in such manner that a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

6. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section, means for making loops of "cord" of predetermined length and laying them on the "former," means for maintaining tension on the "cord" while the loop is being made and laid on the "former," and means for temporarily holding a part of each loop in position on the "former" while the remainder of the loop is being laid thereon, whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

7. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, and means for making loops of "cord" of predetermined length and delivering them on to the pins in such manner that a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

8. In a machine for making pneumatic tires, the combination of a "former" having a working face of curved cross-section, means for making loops of "cord," and means for transferring the loops from the loop-forming device and laying them on the "former" whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

9. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length, and means for transferring the loops from the loop-forming device and delivering them to the pins of the former whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

10. In a machine for making pneumatic tires, the combination of a "former" having a working face of curved cross-section, means for supplying "cord" under tension to the "former" a guide (J^1) from which the "cord" passes to the "former" so that a portion of such "cord" is normally extended between the "former" and guide, two folding-pins (A^5 A^{10}), means for supporting these pins and maintaining them at a distance apart equal to the predetermined length of the folded loops of "cord" to be applied to the "former," means for adjusting the relative positions of the pins and cord so that one pin is brought to one side of the extended portion of the "cord" and the other to the opposite side of the same and then moving one relatively to the other in such manner that a double fold or loop of the "cord" is obtained, and means for delivering the loops so folded to the "former," whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

11. In a machine for making pneumatic tires, the combination of a "former" having a working face of curved cross-section, means for supplying "cord" under tension to the "former" a guide (J^1) from which the "cord" passes to the "former" so that a portion of such "cord" is normally extended between the "former" and guide, two folding-pins (A^5 A^{10}), means for moving one pin (A^{10}) back and forth in a circular path about the other (A^5) for the purpose of folding the "cord" into loops the central pin being situated on that side of the extended portion of the "cord" which faces in the direction of movement of "cord," backwardly and forwardly moving transferring the second pin (A^{10}) which lies on the opposite side of the devices to receive the folded loops from the pins (A^5 A^{10}) one of such devices being situated, when at the limit of its movement in one direction, in proximity to the pin (A^5), a movable guide for the extended cord portion (J^7), means for moving this guide to deflect the extended portion of cord so that it lies clear of the path of the transferring device allotted to the central pin (A^5) as the transferring device approaches the pin, means for returning the guide to such position that the "cord" can pass the transferring device after this has returned, means for moving the pins so that they may not foul the "cord" while the pins and "cord" are being brought into proper relative position, and means for replacing them to engage the cord preparatory to forming a loop, whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

12. In a machine for making pneumatic tires, the combination of a "former" having a working face of curved cross-section, means for supplying "cord" under tension to the "former" a guide (J^1) from which the "cord" passes to the "former" so that a portion of such "cord" is normally extended between the "former" and guide in a plane approximately at right angles to that occupied by the "former," a folding-pin (A^5) vertical to such plane and situated between the extended "cord" and the "former" so that the "cord" may fold round it as it is advanced to the "former," a second folding-pin (A^{10}) parallel to the first, means for maintaining this second pin at a distance from the other equal to the predetermined length of the folded loops of "cord" and for moving it to and from the "former" in a path having the first pin for its center the limit of its travel, in a direction away from the "former," being such that the pin can be brought to that side of the extended "cord" remote from the "former" and not occupied by the first pin, means for moving both pins vertically out of the plane of the "cord" as the second pin travels from the "former" and for returning them to the same plane to engage the "cord" as it reaches the limit of its movement in this direction, and means for delivering the loops, formed on the pins, to the "former," whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

13. In a machine for making pneumatic tires, the combination of a "former" having a working face of curved cross-section, means for supplying "cord" under tension to the "former," a guide (J^1) from which the "cord" passes to the "former" so that a portion of such "cord" is normally extended between the "former" and guide in a plane approximately at right angles to that occupied by the "former," a folding-arm extending in a plane parallel to that occupied by the extended "cord," vertical pins (A^5 A^{10}) carried by the folding arm and set at a distance apart equal to the predetermined length of the folded loops of "cord," means for swinging the arm toward and away from the "former" about a center co-axial with one of the pins so that the pins, at the limit of its movement in one direction, lie each on opposite sides of the extended "cord" and at the limit of its movement in the other direction lie on opposite sides of the "former," means for moving the folding arm vertically out of the plane of the "cord" as it moves from the "former" so that the pins and "cord" can cross each other until the arm reaches the limit of its backward movement when it is again moved into the plane and the pins engage the extended "cord" on opposite sides, and transferring devices to receive the loops from the pins and deliver them on to the "former," in such manner that a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

14. In a machine for making pneumatic tires the combination with a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length, pins (A^5 A^{10}) to support such loops so that they are presented to the "former" at the required angle, transferring devices situated one on each side of the "former" and having a finger adapted to enter the loops and a lug adapted to push the loops off the supporting pins, means for moving the transferring devices backward and forward between the loop-pins and the "former"-pins so that as they move in one direction they carry the ends of the loops with them and deliver them to the former pins, whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides substantially as set forth.

15. In a machine for making pneumatic tires the combination with a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length, pins (A^5 A^{10}) to support such loops so that they are presented to the "former" at the required angle, transferring devices situated one on each side of the "former" and each having a finger adapted to enter the loops and a lug adapted to push the loops off the supporting pins, means for moving the transferring devices backward and forward between the loop-pins and the "former"-pins so that as they move in one direction they carry the ends of the loops with them and present them to the "former"-pins, and means for withdrawing the transferring fingers from the loops as the latter are delivered on to the pins of the "former," whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides substantially as set forth.

16. In a machine for making pneumatic tires, the combination with a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length, pins (A^5 A^{10}) to support such loops so that they are presented to the "former" at the required angle, transferring devices situated one on each side of the "former" and having a pivoted finger adapted to enter the loops and a lug adapted to push the loops off the supporting-pins, the pivoted finger normally extending below the lug to receive the loop, means for moving the transferring devices backward and forward between the loop-pins and the "former"-pins, so that as they move in one direction they carry the ends of the loops with them and present them to the "former"-pins, and means for tripping the pivoted fingers of the transferring devices as the ends of the loops arrive opposite the "former"-pins whereby the fingers are withdrawn behind the lugs as the loops are pushed on to the "former"-pins, so that a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

17. In a machine for making pneumatic tires the combination with a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length, pins (A^5 A^{10}) to support such loops so that they are presented to the "former" at the required angle, transferring devices for the loops situated one on each side of the "former" and having a finger adapted to enter the loops

and a lug adapted to push the loops off the supporting-pins, means for moving the transferring devices backward and forward in paths coincident with those described by the ends of the loops as they are laid on the working face of the "former" so that as the transferring devices move in one direction they carry the ends of the loops with them and maintain them under approximately uniform tension while delivering them to the "former"-pins, whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

18. In a machine for making pneumatic tires the combination with a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length, pins (A^5 A^{10}) to support such loops so that they are presented to the "former" at the required angle, transferring devices situated one on each side of the "former" and having a pivoted and sliding finger adapted to enter the loops and a lug adapted to push the loops off the supporting pins, the pivoted finger normally extending below the lug to receive the loop, a spring controlling each finger and tending always to slide it in a direction away from the "former," means for moving the transferring devices backward and forward in paths coincident with those described by the ends of the loops as they are laid on the working face of the "former" so that with the aid of the springs the loops are maintained under approximately uniform tension while being delivered to the "former"-pins, whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

19. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length and laying them on the "former," means for maintaining tension on the "cord" while the loop is being made and laid on the "former," and means for temporarily holding the central portion of each loop in position on the "former" while the ends are being delivered on to the pins of the "former," whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

20. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length and laying them on the "former," means for maintaining tension on the "cord" while the loop is being made and laid on the "former," and a presser-foot (C) for temporarily holding the central portion of each loop in position on the "former" while the ends are being delivered on to the pins of the "former," whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

21. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" of predetermined length and laying them on the "former" means for maintaining tension on the "cord" while the loop is being made and laid on the "former," a presser-foot (C) for temporarily holding the central portion of each loop in position on the "former" while the ends are being delivered on to the pins of the "former," and means operatively connecting the presser-foot with the mechanism for bringing the loops into position on the "former" so that as each loop is brought into position the presser-foot is moved to grip it, whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

22. In a machine for making pneumatic tires of flattened "cord" the combination with a "former" having a working face of curved cross-section of means for making loops of the "cord" and laying them on the working face of the "former," in such manner that the flattened "cord" constituting the end portions of each loop lies approximately edgewise relatively to the working face of the "former," while that constituting the central portion of each loop lies with the flattened face approximately parallel with the working face of the "former," whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

23. In a machine for making pneumatic tires of flattened "cord," the combination of a "former," two folding-pins (A^5 A^{10}), means for supporting these pins at a given distance apart, means for folding the flattened "cord" in loops upon the folding-pins so that the flattened face of the "cord" lies against the pins both pins being in the same plane, means for presenting the pins to the "former" in such manner that the loop thereon is presented at the required angle across the "former" and with the "cord" edgewise relatively to the working face thereof, a guide above the "former" whereby the central portion of the loop is turned as it is presented so that the flat face of the "cord" at this part lies toward the working face of the "former," and means for transferring the ends of the loops from the pins and securing them to the sides of the "former" without turning them from their edgewise position, whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

24. In a machine for making pneumatic tires of flattened "cord," the combination of a "former," two folding-pins (A^5 A^{10}), means for supporting these pins at a given distance apart, means for folding the flattened "cord" in loops upon the folding-pins so that the flattened face of the "cord" lies against the pins both pins being in the same plane, means for presenting the pins to the "former" in such manner that the loop thereon is presented at the required angle across the "former" and with the "cord" edgewise relatively to the working face thereof, a guide above the "former" whereby the central portion of the loop is turned as it is presented so that the flat face of the "cord" at this part lies toward the working face of the "former," means for securing this central portion of the loop to the "former" while in this position, and means for transferring the ends of the loops from the pins and securing them to the sides of the "former" without turning them from their edgewise position, whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

25. In a machine for making pneumatic tires of flattened "cord," the combination of a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, two folding-pins (A^5 A^{10}), means for supporting these pins at a given distance apart, means for folding the flattened "cord" in loops upon the folding-pins so that the flattened face of the "cord" lies against the pins, both pins being in the same plane, means for presenting the pins to the "former" in such manner that the loop thereon is presented at the required angle across the "former" and with the cord edgewise relatively to the working face thereof, a guide above the "former" whereby the central portion of the loop is turned as it is presented so that the flat face of the "cord" at this part lies toward the working face of the "former," and means for transferring the ends of the loops from the folding-pins on to the pins on the sides of the "former," whereby they are secured to the "former" and maintained in their edgewise position, substantially as set forth.

26. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section, means for making loops of "cord" and laying them at the required angle across the "former" whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, a member for pressing home the loop last laid against those previously laid, and means operatively connecting such member with the means for laying the "cord" on the "former" so that the "cord" is thrust home as it is brought into position, substantially as set forth.

27. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section means for making loops of "cord" and laying them at the required angle across the "former" whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, a member for pressing home the loop last laid against those previously laid, means operatively connecting such member with the means for laying the "cord" on the "former" so that the "cord" is thrust home as it is brought into position and pressed home by the member referred to, substantially as set forth.

28. In a machine for making pneumatic tires, the combination of a "former" having a working face of curved cross-section, two folding-pins (A^5 A^{10}), means for supporting these pins at a given distance apart, means for folding the "cord" in loops upon the folding-pins, means for presenting the loop which is extended between the pins to the "former" and then laying it upon the same, a guide above the "former" and over which the loop passes so that it is raised above the level of the "former" such guide extending to the point where the "cord" is to be laid, a member situated behind the loop, and means for advancing such member as the loop is presented so that it pushes the loop from the guide and over the end thereof and presses it against those already laid on the "former," whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

29. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section, a pivoted arm upon which the "cord" is folded into loops and presented to the "former," a guide between the arm and the "former" which raises the central portion of the loop above the level of the "former" as the loop advances, a presser arm pivoted to the folding arm and depending therefrom to engage the rear of the loop but having an extension on the further side of its pivot, a fixed stop against which such extension is brought when the folding arm approaches the limit of its movement whereby the presser arm is swung forward and pushes the loop from the guide and against those previously laid on the "former," and means for laying the loop thus presented to the "former" upon the working face thereof whereby a fabric is built up corresponding in shape to the finished tire and having loops in the edges on both sides, substantially as set forth.

30. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section, means for laying a "cord" upon the working face in such manner that a fabric is built up corresponding in shape to the finished tire and having a series of "cords" side by side disposed transversely relatively to the tire, and means whereby each transverse portion of "cord" last laid upon the "former" is drawn back while the next is laid thereon, substantially as set forth.

31. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section, means for laying a "cord" upon the working face in such manner that a fabric is built up corresponding in shape to the finished tire and having a series of "cords" side by side disposed transversely relatively to the tire, means whereby each transverse portion of "cord" last laid upon the "former" is drawn back while the next is being laid thereon, and means whereby the "former" is rotated automatically while the "cords" are laid thereon, substantially as set forth.

32. In a machine for making pneumatic tires the combination of a "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of cord and delivering them on to the pins in such manner that a fabric is built up corresponding in shape to the finished tire and having a series of "cords" side by side disposed transversely relatively to the tire, a displacing device (L°) adapted to engage the loop last laid on the "former" at a point near the pins, means for moving the displacing device into proximity to the "former" and in advance of the loops so that movement in a direction toward the loops and parallel with the "former" and engages and pushes back the loop last laid, means for releasing the displacing device from its advancing mechanism, and carrying it out of the plane in which the loops lie so that it is returned by its spring in a different plane, and a guide whereby it is brought again into its normal path as it reaches the limit of its return movement, substantially as set forth.

34. In a machine for making pneumatic tires the combination of a rotatable "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" and delivering them on to the pins in such manner that a fabric is built up corresponding in shape to the finished tire and having a series of cords side by side and disposed transversely relatively to the tire, a displacing device (L°) adapted to engage each loop last laid on the "former" at a point near the pins, means for moving the displacing device into proximity to the "former" and in advance of the loops so that movement in a direction toward the loops and parallel to the "former" will cause the last loop to be pushed back, means for advancing the displacing device to thus push the loop back, means for returning the device to its original position, and means for rotating the "former," substantially as set forth.

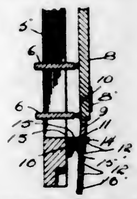
35. In a machine for making pneumatic tires the combination of a rotatable "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of "cord" and delivering them on to the pins, in such manner that a fabric is built up corresponding in shape to the finished tire and having a series of "cords" side by side and disposed transversely relatively to the tire, a displacing device (L°) adapted to engage each loop last laid on the "former" at a point near the pins, means for moving the displacing device into proximity to the "former" and in advance of the loop so that movement in a direction toward the loops and parallel to the "former" will cause the last loop to be pushed back, means for advancing the displacing device to thus push the loop back, means for returning the device to its original position, and means for rotating the "former" step by step, through such an angle as is required to bring one pair of pins thereon into the position formerly occupied by the preceding pair, substantially as set forth.

36. In a machine for making pneumatic tires the combination of a rotatable "former" having a working face of curved cross-section and a series of pins on opposite sides thereof, means for making loops of cord and delivering them on to the pins in such manner that a fabric is built up corresponding in shape to the finished tire and having a series of "cords" side by side and disposed transversely relatively to the tire, a displacing device (L°) adapted to engage each loop last laid on the "former" at a point near the pins, means for moving the displacing device into proximity to the "former" and in advance of the loop so that movement in a direction toward the loops and parallel to the "former" will cause the last loop to be pushed back, means for advancing the displacing device to thus push the loop back, means for returning the device to its original position, and means for controlling the movement

of the "former" so that it is permitted to rotate step by step under the action of the displacing device while the latter is pushing back the "cord" last laid thereon such limited movement of the "former" being equal to that required for the purpose of moving one pair of pins thereon into the position occupied by the previous pair of pins, substantially as set forth.

37. In a machine for making pneumatic tires the combination of a rotatably mounted "former" having a working face of curved cross-section, means for laying a "cord" upon the working face in such manner that a fabric is built up corresponding in shape to the finished tire and having a series of "cords" side by side disposed transversely relatively to the tire, means whereby each transverse portion of "cord" last laid upon the "former" is drawn back while the next is laid thereon, such drawing-back causing the "former" to also rotate, and means for limiting the degree of rotation at each operation, substantially as set forth.

852,856. SLAT-ADJUSTER. JOHN C. SMITH, Norwich, Conn. Filed July 12, 1906. Serial No. 325,885.



Claim.—The combination, with a shutter including a frame and horizontal slats pivoted thereto, of a shift rod pivoted vertically to said slats; a U-shaped plate secured to the forward face of the lower end of said rod, said plate having its arms extending across the opposite side faces of said rod; a yoke having its opposite arms pivotally secured to the corresponding plate arms, the bight portion of said yoke carrying a depending stem provided with notches formed on its forward face; a forwardly projecting block secured to the lower member of the shutter frame and provided with a longitudinal slot through which said yoke end is adapted to pass, said slot having a closed forward end and being enlarged laterally; a spring disposed within the enlarged portion of said slot and adapted to bear against said notched stem to hold the latter normally in engagement with the closed end of said slot; and a finger piece formed on the lower end of said notched stem, to move the latter against the action of said spring out of engagement with the closed end of said slot, to permit the vertical adjustment of said shift-rod.

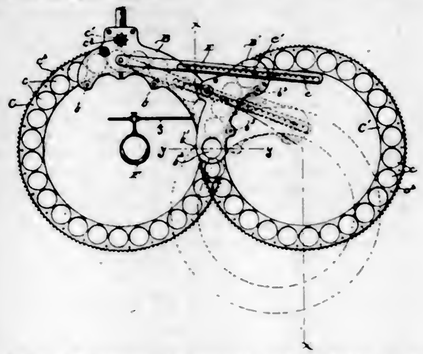
852,857. SKIAMETER. NELSON K. STANDART, Detroit, Mich. Filed Aug. 22, 1906. Serial No. 331,557.

Claim.—1. In a skiameter, an annular ring arranged to support a series of lenses, a supporting frame, and rolls in the frame between which the ring travels to give it an annular movement, substantially as described.

2. In a skiameter, a ring arranged to support a series of lenses, a supporting frame, two or more rolls on one side of the ring, and a pinion on the opposite side of the ring engaging with an annular rack for giving the ring an annular movement through the frame, substantially as described.

3. In a skiameter, a supporting frame, a ring arranged to support a series of lenses having an annular movement through said frame, a second frame pivoted to the first frame, a second ring arranged to support a series of lenses arranged to have an annular movement through said second frame, and means for operating the rings, substantially as described.

4. In a skiameter, a pair of annular rings free of spokes or disk surfaces each arranged to support a series of lenses, supports for the annular rings, and means for moving the rings through the supports and bringing the lenses in one ring over the lenses in the other ring, substantially as described.



5. In a skiameter, an annular ring arranged to support a series of lenses, a supporting frame arranged to allow an annular movement of the ring through the frame, an opening through the frame arranged to register with the lenses, a second frame pivoted around said opening, a second annular ring arranged to move through said second frame by an annular movement, whereby the several lenses in the two rings may be made to successively register with said opening, substantially as described.

6. In a skiameter, an annular ring arranged to support a series of lenses, a supporting frame arranged to allow an annular movement of the ring through the frame, an opening through the frame arranged to register with the lenses, a second frame pivoted around said opening, a second annular ring arranged to move through said second frame by an annular movement, whereby the several lenses in the two rings may be made to successively register with said opening, and means for adjusting said frames, substantially as described.

7. In a device of the class described, a lens support for a fogging glass for the eye not being tested, and a rod with which the support is engaged arranged to swing the lens support from one side of the device to the other, substantially as described.

8. In a skiameter, a pair of annular rings each arranged to support a series of lenses, frames through which the rings travel by an annular movement, said frames pivoted together over an opening with which the lenses of each ring register by which the angle at which the lenses of the two rings come together may be changed, and a connecting rod for holding the frame in adjustment, substantially as described.

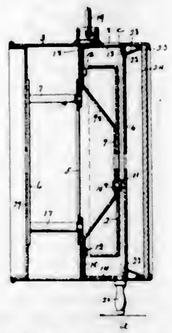
852,858. GARMENT-SUPPORTER. JACOB M. STEINHARDT, Newark, N. J., assignor to Joe L. Dinkelspiel, New York, N. Y. Filed Mar. 3, 1906. Renewed Mar. 5, 1907. Serial No. 360,740.



Claim.—1. The herein described garment supporter, consisting of a single piece of sheet material having in its lower part a U-shaped cut and its peripheral portion outside said cut bent upward and forming a hook with rounded bottom shoulders, the middle portion of said lower part remaining substantially undisturbed and forming a fastening ear adapted to be inserted in a slit in a garment with the said rounded turns of the hook forming at opposite sides of said ear at its base broad bearing surfaces to engage the garment, and an upper ear at the top of the supporter.

2. The combination with a garment having parallel slits, of a supporter consisting of a single piece of sheet material having at its top an ear and in its lower part a U-shaped cut, the peripheral portion of said lower part being bent upward to form a hook which lies opposite the body portion of the supporter, and the central portion of said lower part of the body forming a lower projecting ear in substantially the same plane with the upper ear and adapted to coöperate therewith in entering the said slits in the garment, the body of the supporter lying between said slits and providing a seat of exposed metal.

852,859. ALARM-CLOCK. ELMER E. STOCKTON and ARTHUR H. PORTER, Bristol, Conn., assignors to The E. Ingraham Co., Bristol, Conn., a Corporation. Filed Sept. 4, 1906. Serial No. 333,111.



Claim.—1. In an alarm clock, the combination with a circular case-body formed with perforations, of a movement and a dial, a concentrically arranged bell located between the dial and the front of the movement, and a dust-guard located within the case in front of the movement to isolate the same from the perforations in the case.

2. In an alarm clock, the combination with a circular case-body, of a movement, a dial, a concentrically arranged bell located between the front of the movement and the dial, and a dust-guard located between the bell and the movement and supporting the bell.

3. In an alarm clock, the combination with a circular body, of a movement, feet attached thereto for positioning the same within the case, a dial, a dust-guard applied to the said feet, and a concentrically arranged bell located between the dust-guard and the dial and carried by the said guard.

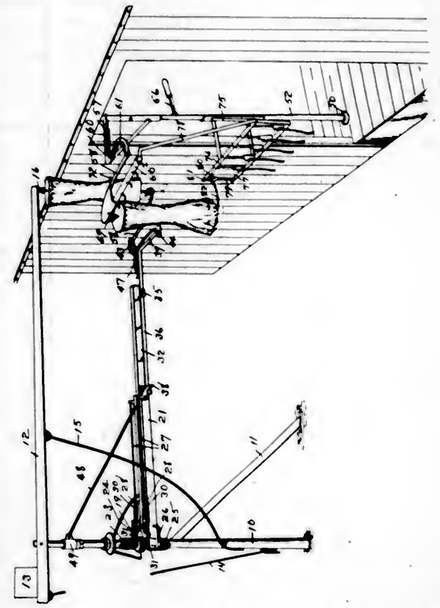
4. In an alarm clock, the combination with a circular case-body, of a movement, a dial, a dust-guard, a concentrically arranged bell located between the dial and the dust-guard, and screw studs mounted in the dust-guard and supporting the said bell and also supporting the central portion of the dial.

5. In an alarm clock, the combination with a sheet-metal case-body formed in its forward portion with perforations, of a movement, a bell located within the case-body adjacent to the said perforations and in front of the said movement, and a dial formed independently of the bell and located in front of the same.

852,860. MAIL-BAG CATCHER AND DELIVERER. DAVID R. WAY, Fairfield, Iowa. Filed Dec. 26, 1906. Serial No. 349,517.

Claim.—1. In a device of the class described, the combination of an arm arranged to swing in a horizontal plane, means for normally holding the arm in one position and for permitting it to swing under yielding pressure in either direction and a ratchet device capable of being set to position for locking the swinging arm against movement in either direction.

2. In a device of the class described, the combination of an arm arranged to swing in a horizontal plane, means for normally holding the arm in one position and for permitting it to swing under yielding pressure in either direction, a stationary ratchet wheel, two spring actuated pawls carried by said arm to engage the ratchet wheel and means for holding either of said pawls out of engagement with the ratchet wheel.



3. In a device of the class described, the combination of an arm mounted to swing in a horizontal plane, a reversible mail bag receiving hook carried by said arm and means automatically actuated upon a reversal of the hook for locking the arm against movement in a direction toward the open end of the hook.

4. In a device of the class described, the combination of a standard, an arm mounted on the standard, and capable of swinging in a horizontal plane, two springs arranged to rotate the arm and opposed to each other, a ratchet wheel fixed to a stationary support, two spring actuated pawls engaging opposite sides of said ratchet wheel, a reversible mail bag receiving hook carried by the arm and means actuated by reversal of the hook for throwing one of the pawls out of engagement with the ratchet wheel.

5. In a device of the class described, the combination of a standard, an arm rotatably mounted thereon, two springs arranged to rotate said arm and opposing each other, a ratchet wheel on the standard, two spring actuated pawls on the arm engaging opposite sides of the ratchet wheel, a bell crank lever connected with each pawl, a reversible mail bag receiving hook mounted on the arm and an arm connected with hook and designed to engage either of said bell crank levers and operated to move its pawl out of engagement with the ratchet wheel.

6. In a device of the class described, the combination of a standard, an arm member pivoted to said standard to swing in a horizontal plane, a second arm member pivoted to the first to swing in a vertical plane and of such length that when its outer end swings downwardly it will strike upon the ground or base to which the standard is attached and a mail bag catcher supported on the outer end of the said second arm member.

7. In a device of the class described, the combination of a standard, a swinging arm rotatably mounted upon the standard and comprising two arm members spaced apart

and a third arm member pivotally mounted between them to swing in a vertical plane, means for limiting the downward movement of the rear end of the latter arm member, an adjustable weight attached to the inner end of the latter arm member, a reversible mail bag receiving hook mounted on the latter arm member, a crank arm connected with said hook, two springs arranged to rotate the swinging arm in opposite directions, a ratchet wheel on the stationary support, two spring actuated pawls carried by the swinging arm and designed to engage opposite sides of said ratchet wheel, a bell crank lever connected with each pawl, said lever designed to be engaged by the crank arm on the mail bag receiving hook.

8. In a device of the class described, the combination of a standard, an arm pivoted to the top of standard to swing in a vertical plane, a weight on the rear end thereof and a mail bag receiving hook on the forward end thereof, a rope attached to the rear end of the arm and to a stationary support and a rope attached to the forward portion of the arm.

9. In a device of the class described, the combination of a mail bag supporting arm, a hook pivotally connected therewith and having points extended in opposite directions said hook formed with a notch on one side of its pivotal point and a spring in said notch normally holding the hook in position.

10. In a device of the class described, the combination of a mail bag receiving hook, a clutching and retaining device, a spring for normally forcing same across the hook and a trip member normally extended across the hook to be engaged by a mail bag in the hook and designed to release the spring when so engaged.

11. In a device of the class described, the combination of a mail bag receiving hook, a rod slidingly mounted adjacent to the hook, a spring normally forcing said rod toward the hook, a trip device normally holding the spring under tension and the mail bag clamping and retaining device attached to said rod and having a part thereof extended across the hook to be engaged by a mail bag and to release the spring when the trip device is so engaged.

12. In a device of the class described, the combination of a mail bag receiving hook, a rod slidingly mounted thereon, a lug on said rod, a lug on the hook, a spring normally holding the rod toward the hook and a mail bag gripping and retaining device encircling the closed portion of the hook and arranged adjacent to one side of the hook and pivoted to the said rod, said parts so arranged that when a mail bag enters the hook and engages the clutching and retaining device it will disengage said lugs from each other and permit the spring to force the mail bag clutching and retaining device across the hook.

13. In a device of the class described, the combination of a base plate having a ball bearing chamber therein and open at its upper portion, a ceiling plate having a downward projection thereon, a tubular standard designed to enter the base plate and engage the bearing balls, an adjustable tube in the top of the standard to receive said projection in the ceiling plate.

14. In a device of the class described, the combination of a base plate having a ball bearing chamber therein and open at its upper portion a ceiling plate having a downward projection thereon, a tubular standard designed to enter the base plate and engage the bearing balls, an adjustable tube in the top of the standard to receive said projection in the ceiling plate and a pivoted handle on the tubular standard.

15. In a device of the class described, the combination of a standard, an arm thereon, a series of hooks arranged in the same horizontal plane and carried by said arm, a bracket connected with the standard below said arm and a corresponding series of mail bag engaging arms on said bracket.

16. In a device of the class described, the combination of a standard, an arm thereon, a series of hooks, arranged in the same horizontal plane and carried by said arm, a bracket connected with the standard below said arm and a corresponding series of mail bag engaging arms on said bracket, and means for vertically adjusting said mail bag engaging arms independently.

17. In a device of the class described, the combination of a standard, an arm thereon, a series of hooks arranged in the same horizontal plane and carried by said arm, a bracket connected with the standard below said arm and a corresponding series of mail bag engaging arms on said bracket and means for automatically tilting said supporting hooks.

18. In a device of the class described, the combination of a standard to be carried by a car, a mail bag receiving hook carried by the standard, a number of pivoted mail bag supporting hooks connected with said receiving hook and a trip device to be actuated by the mail bag on entering the receiving hook for automatically tilting all of said mail bag supporting hooks at the same time.

19. In a device of the class described, the combination of a standard to be carried by a car, an arm thereon, a casing supported by said arm in a horizontal plane and having slots therein, a series of mail bag supporting hooks projected through said slots, a shaft pivoted eccentrically within said casing and having a rib to engage said hooks and support them in position for holding mail bags and means for automatically tilting the shaft to simultaneously release and drop said hooks.

20. In a device of the class described, the combination of a standard to be carried by a car, a mail bag receiving hook carried by the standard, a casing supported by said hook and provided with a series of slots, a number of mail bag supporting hooks projected through said slots and each formed with a ball within the casing and an arm projected inwardly from the ball, a shaft pivoted eccentrically within the casing and having a rib to engage the inwardly projecting arms, a trip arm pivoted to the casing and projected across the mail bag receiving hook and a rod connecting said trip arm with the said shaft for automatically locking the shaft when the trip arm is moved.

21. In a device of the class described, the combination of a standard to be carried by a car, a mail bag receiving hook carried by the standard, a casing supported by said hook and provided with a series of slots, a number of mail bag supporting hooks projected through said slots and each formed with a ball within the casing and an arm projecting inwardly from the ball, a shaft pivoted eccentrically within the casing and having a rib to engage the inwardly projecting arms, a trip arm pivoted to the casing and projected across the mail bag receiving hook and a rod connecting said trip arm with the said shaft for automatically locking the shaft when the trip arm is moved, said trip arm and connecting rod so arranged that the rod will pass the pivotal point of the trip lever when in position projecting across the mail bag receiving hook.

22. In a device of the class described, the combination of a standard to be carried by a car, a bracket thereon, a series of vertical rods carried by the bracket, a sleeve on each rod, a pin in each sleeve and an arm pivoted to each pin and having a cam thereon to engage the rod and clamp the sleeve thereto when the arm is extended in a substantially horizontal position.

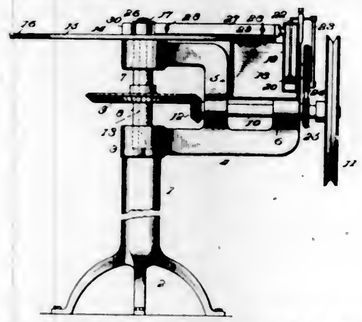
852,861. CEMENTING-MACHINE. OAKMAN A. WEBBER, Manchester, N. H. Filed Dec. 12, 1906. Serial No. 347,538.

Claim.—1. In a machine of the class described, a table having a glass adhesive receiving surface, means for delivering an adhesive directly on said surface and in measured quantity, and means carried by the measuring delivery means for removing the adhesive therefrom.

2. In a machine of the class described, a revolving table having a glass adhesive receiving surface, means for delivering an adhesive directly on said surface and in measured quantity, and means carried by the measuring delivery means for removing the adhesive therefrom.

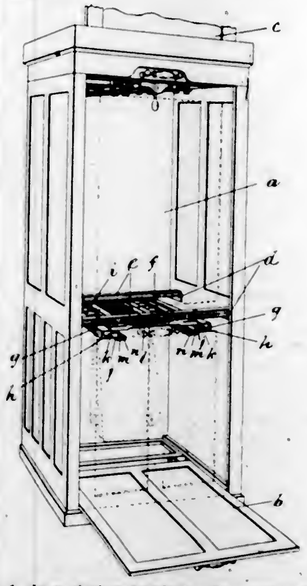
3. In a machine of the class described, a glass adhesive receiving surface, means for delivering adhesive directly on said surface, means carried by the delivery means for removing adhesive from said surface and means for causing a relative movement between said receiving surface and the delivery and removing means.

4. In a machine of the class described, the combination of an adhesive receiving table and means for supplying an adhesive thereto, of means for confining the adhesive within a restricted area of said table when discharged thereon and of permitting its escape from said area and to the remainder of the table surface in a controlled or predetermined quantity.



5. In a machine of the class described, a revolving table, an adhesive containing tank, means for supplying the adhesive to the surface of the table in regulated quantity, and means for removing the adhesive from the surface of the table and restoring the same to the supply tank.

852,862. CLOTHES-WARDROBE. RODERICK WEIR, Winnipeg, Manitoba, Canada. Filed May 16, 1906. Serial No. 317,096.



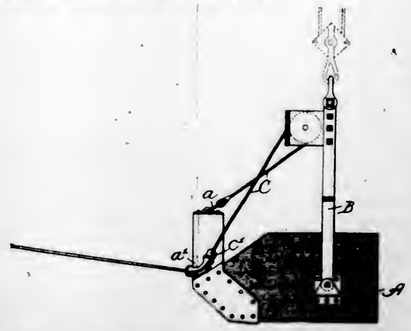
Claim.—1. In a clothes wardrobe, the combination with the interior of a cabinet, of a series of brackets fastened to the sides of said cabinet, a supporting rack having carrying arms engaging with the said brackets, an extension rack slidably engaging with said supporting rack, inwardly extending flanges formed with the sides of said extension rack, ribs formed on the upper faces of said flanges, a series of hangers removably mounted on the said flanges, a groove formed in the under face of the ends of said hangers, said groove adapted to engage with the said rib, inwardly folding bars fastened to the sides of said extension rack, said bars having notched edges adapted to engage with the said hangers, substantially as described.

2. In a clothes wardrobe, the combination with the interior of a cabinet, of a series of brackets fastened to the sides of said cabinet, a supporting rack having carrying arms engaging with said brackets, an extension rack slidably engaging with said supporting rack, flanges formed on the inner sides of said extension rack, ribs formed on the top faces of the said flanges, a series of hangers removably mounted on said flanges, grooves formed in the under faces of said hangers, said grooves adapted to engage with the said ribs, inward folding bars hinged with the sides of said extension rack, said bars having notches formed along their inner edges, said notches adapted to engage with said hangers, a frame hinged to the inner end of said extension rack, and a cross bar fastened across the front ends of said extension rack, substantially as described.

3. In a clothes wardrobe, the combination with the interior of a cabinet, of a series of brackets fastened to the sides of said cabinet, a supporting rack having carrying arms engaging with the said brackets, an extension rack slidably engaging in grooves formed in the side bars of the said supporting rack, flanges formed on the side bars of the said extension rack, a series of hangers removably mounted on the said flanges, a frame hinged to the inner end of said extension rack, said frame adapted to slide in said supporting rack, inwardly folding bars hinged to the sides of said extension rack, said bars having notched edges adapted to engage with the said hangers, an adjusting bar pivotally connected with the said supporting rack, arms formed on the ends of said adjusting bar, said arms adapted to engage in notches formed in the underside of the side bars of said extension rack, substantially as described.

4. In a clothes wardrobe, the combination with the interior of a cabinet, of a suitable supporting rack supported therein, of an extension rack slidably engaging in said supporting rack, a frame hinged to the inner end of said extension rack, a series of hangers removably extending across the said extension rack, pockets formed in the ends of said hangers, marking tickets contained in the said pockets, hinged side bars engaging the top faces of the said hangers, an adjusting bar pivotally connected with the said supporting rack, arms extending from the said adjusting bar, said arms adapted to engage with notches formed in the underside of the side bars of the extension rack, said adjusting bar adapted to support the extension rack in an inclined position with the said supporting rack, substantially as described.

852,863. EXCAVATING-SCOOP. RUSSELL WILES, Chicago, Ill., assignor to John W. Page, Chicago, Ill. Filed Sept. 8, 1906. Serial No. 333,769.



Claim.—1. The combination with a shovel having a cutting edge at its forward end and a supporting bail pivoted

to the shovel behind the center of gravity thereof, of a hauling-rope and stationary device on the front of the shovel through which said rope passes, said rope having a connection with the supporting bail and an engagement device on the rope adapted to coöperate with the portion of the shovel through which the rope passes, to limit the relative movement of the rope therethrough.

2. The combination with a shovel having a cutting edge at its front end and a supporting bail pivoted thereto behind the center of gravity thereof, of eyes secured to the shovel, ropes passing through said eyes and having connection with the hauling-bail, and projections on the ropes adapted to engage the eyes.

3. The combination with a shovel having a cutting edge at its forward end and a supporting bail pivoted thereto behind the center of gravity thereof, of an eye on the shovel, a rope passing therethrough, a sheave secured to the supporting bail, over which sheave the rope passes, said rope being secured to the shovel in front of its pivot, and a suitable engagement device upon the rope to engage the eye.

4. The combination with a shovel having a cutting edge at its forward end and a supporting bail pivoted thereto behind the center of gravity thereof, of eyes at the front of the shovel, sheaves on the supporting bail, ropes passing through the eyes and over the sheave and secured to the shovel in front of its pivot, and projections upon the ropes adapted to engage the eyes.

5. The combination with a shovel having a cutting edge at its forward end and a supporting bail pivoted thereto behind the center of gravity thereof, of sheaves on the supporting bail, curved eyes at the front of the shovel, the upper ends of which point toward the sheaves and the lower ends of which point forward, ropes passing through the eyes and over the sheaves and having connection with the shovel in front of its pivot, and stops on the ropes adapted to engage the eyes.

852,864. COMBINED HAND AND STAND MIRROR. JOHN A. WRIGHT, Irwin, and WILLIAM F. O'NEILL, Wilkinsburg, Pa. Filed June 26, 1906. Serial No. 323,448.



Claim.—1. The combination of a base, a post projecting upwardly therefrom, a handle having its lower end recessed upwardly to form a socket which loosely embraces the post, and a mirror mounted on the handle.

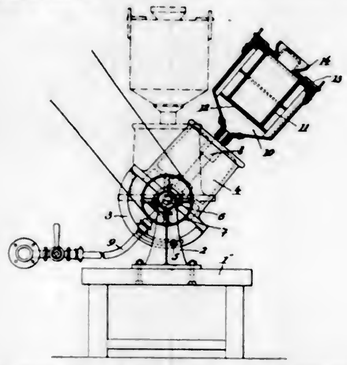
2. The combination of a base, a post projecting upwardly therefrom, a handle having its lower end recessed upwardly to form a socket which loosely embraces the post, a frame secured to the upper end of the handle, and a mirror pivoted within the frame.

3. The combination of a supporting post, a grasping handle recessed at one end to form a socket for detachably embracing the post, and a mirror mounted on the handle.

4. The combination of a supporting post circular in cross-section, a grasping handle having a socket circular in cross-section in one end thereof adapted to loosely fit and rotate on the post, and a mirror mounted on the handle.

852,865. CENTRIFUGAL MACHINE. GUSTAV ADT, Forbach, Germany. Filed Apr. 27, 1906. Serial No. 314,083.

Claim.—1. A centrifugal machine comprising in combination a frame, a revoluble hollow shaft, adjustable means for supporting said shaft on said frame at an angle inclined to the horizontal, means for rotating said shaft, and a centrifugal hollow drum mounted on and coaxially with said shaft and provided with an inner centrifugal vessel having perforated sides and walls, the interior space of said drum communicating with the interior space of said hollow shaft.



2. A centrifugal machine comprising in combination a frame, a revoluble hollow shaft, adjustable means for supporting said shaft on said frame at an angle inclined to the horizontal, means for rotating said shaft, a centrifugal hollow drum mounted on and coaxially with said shaft and provided with an inner centrifugal vessel having perforated sides and walls, the interior space of said drum communicating with the interior space of said hollow shaft, a suction device having a suction pipe, and means connecting said suction pipe with said hollow shaft.

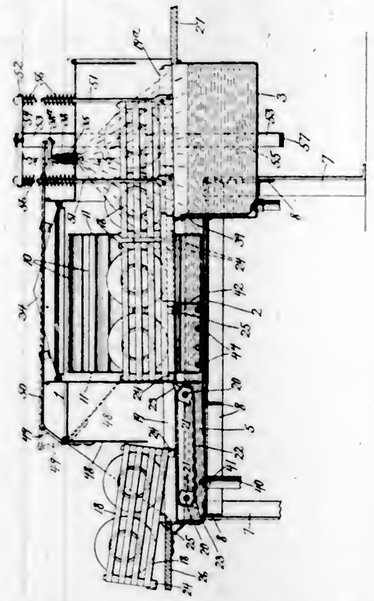
3. A centrifugal machine comprising in combination a frame, a revoluble hollow shaft, adjustable means for supporting said shaft on said frame at an angle inclined to the horizontal, said adjustable means comprising an adjustable member revolubly supporting said shaft and adjustably mounted upon said frame and means adapted to clamp said adjustable member to the frame, means adapted for rotating said shaft, and a centrifugal hollow drum mounted on and coaxially with said shaft and provided with an inner centrifugal vessel having perforated sides and walls, the interior space of said drum communicating with the interior space of said hollow shaft.

852,866. DISH-WASHING MACHINE. ALLEN W. BODELL, Wilmette, Ill. Filed June 20, 1906. Serial No. 322,499.

Claim.—1. A dish-washer comprising an aerial carrier for the dishes; means for moving such carrier; a water lifting and showering wheel located alongside the path of the carrier; a receptacle in which the wheel and the carrier operate, the receptacle and path of the carrier being extended beyond the showering wheel; means for supplying water thereto at or near the exit end of the carrier's path; and means for draining the water from the receptacle near the entering end of said path.

2. A dish-washer comprising an aerial carrier for the dishes; means for moving such carrier; a water lifting and showering wheel located alongside the path of the carrier; a receptacle in which the wheel and the carrier operate, which is extended beyond the showering wheel; means for supplying water to the receptacle by showering the same upon the contents of the carrier at the extended portion beyond the wheel, and means for draining the water from the receptacle near the entering end of the carrier's path.

3. A dish-washer comprising a carrier for the dishes; means for moving such carrier; a water lifting and showering wheel located alongside the path of the carrier; a receptacle in which the wheel and carrier operate extended beyond the showering wheel; means for supplying water to the receptacle from above the carrier by discharging such water on to the contents of the carrier at the extended portion beyond the showering wheel; a trip device near the entering end of the receptacle in position to be operated by the entrance of the carrier; a valve which controls the water supply, and a connection from said trip device to the said valve for opening the valve when the carrier enters past the trip device adapted to close it when the trip device is free from the action of the carrier.



4. A dish-washer comprising a receptacle; a track extended therethrough; a carrier for the dishes adapted to be moved over such track; a water lifting and showering wheel in the receptacle at one side of the track, and means for rotating the wheel to cause it to throw the water over onto the contents of the carrier on the track; a carrier-propelling device located in the entering end portion of the receptacle preceding the part alongside which the showering wheel is located, and means for operating such propeller.

5. A dish-washer comprising an aerial carrier for the dishes; means for moving such carrier; a water lifting and showering wheel located alongside the path of the carrier; a receptacle in which the wheel and the carrier operate, said receptacle having at the exit end a deepened portion, and means for raising and lowering the carrier to submerge the contents thereof at such deepened portion.

6. A dish-washer comprising an aerial carrier for the dishes consisting of a track and trays or baskets movable therealong; a propelling device operating in the track to propel the trays or baskets therealong, the receptacle having at the exit end a deepened portion, the portion of the track at that end being detached from the remainder, and means for raising and lowering it in said deepened portion to submerge the trays or baskets thereon.

7. A dish-washer comprising a receptacle; a track extending longitudinally therein adapted to support dish-carriers movable therealong; a propelling device operating in the track to so propel the trays or baskets, the receptacle having at the exit end a deepened portion, the track overhanging that portion being detached from the remainder; spring-supported rods by which it is suspended adapted to uphold both the track and the trays or baskets which may be lodged thereon, and means for depressing said suspended portion of the track at will against the tension of the spring supports.

8. A dish-washer comprising a receptacle; a track extending longitudinally therein adapted to support dish-carriers movable therealong, the receptacle having at the exit end a deepened portion, the track rails overhanging that portion being detached from the remainder; a frame by which said detached portions of the rails are suspended; springs which uphold the suspended portion in position registering with the remainder of the rails and foot-operated connections from said frame for depressing it at will to submerge the contents of the dish-carriers on the detached portion of the track.

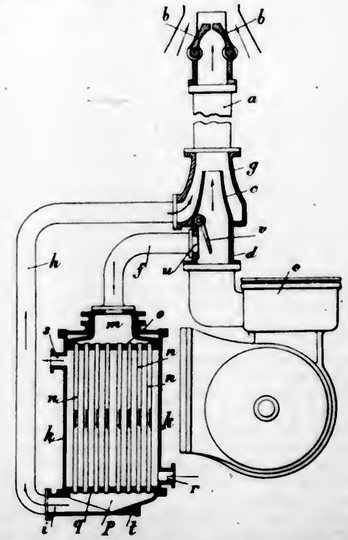
9. A dish-washer comprising an aerial carrier for the dishes; a receptacle through which such carrier may be moved longitudinally; means for so moving the carrier; a water lifting and showering wheel located in the receptacle at one side of the path of the carrier; means for supplying water to the receptacle consisting of a sprinkler for discharging same onto the contents of the carrier over a portion of the receptacle at the exit end beyond the showering wheel, and means for supplying such sprinkler with sterilizing fluid.

852,867. CRUCIBLE-FURNACE. JULIUS BORBECK, Altena, Germany. Filed July 9, 1906. Serial No. 325,350.



Claim.—A tipping crucible furnace having vertical channels and a metal annular blast channel built into the furnace walls, an outwardly directed open side of said annular channel being closed by the casing of the furnace while in the top side are formed slots *e* and in the inner side openings *f* for the passage of the blast into said vertical channels of the furnace walls and into the smelting chamber, and means for supplying the blast to said annular channel.

852,868. APPARATUS FOR THE UTILIZATION IN A REHEATER OF THE EXHAUST-STEAM OF LOCOMOTIVES. CHARLES CAILLE, Le Perreux, France. Filed Oct. 1, 1906. Serial No. 336,958.



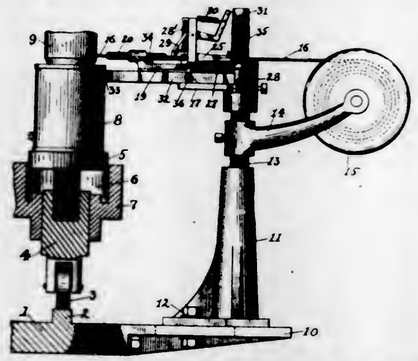
Claim.—1. In combination with the steam cheat and the exhaust passage therefrom having the nozzle therein, of a

re-heater having its inlet connected to the exhaust passage below the nozzle and its outlet connected to that part of the exhaust passage surrounding the outlet end of the nozzle.

2. In combination with the steam chest and the exhaust passage therefrom having an ejector therein of a re-heater having its inlet and outlet ports connected to the interior and exterior parts of the ejector.

3. In combination with the steam chest and the exhaust passage therefrom having an ejector therein of a re-heater having its inlet and outlet ports connected to the interior and exterior parts of the ejector, and a flap in the exhaust passage controlling the inlet of the re-heater.

852,869. SOLDER-FEED FOR CAN-SOLDERING MACHINES. ANTONIO CERRUTI, San Francisco, Cal. Filed Nov. 11, 1905. Serial No. 286,776.



Claim.—1. In a solder feed for can soldering machines, a traveling iron and a moving solder-wire guide adapted to cause the wire to temporarily move in the same direction as the traveling soldering iron.

2. In a solder feed for can soldering machines, the combination of a movable solder-wire guide, adapted to present the wire to the traveling soldering iron, and means operated by the traveling can for moving said guide to cause the wire to accompany the iron, temporarily only.

3. In a solder-feed for can soldering machines, the combination of a swinging solder-wire guide adapted to present the wire to the traveling soldering iron, a swinging lever projecting into the path of the traveling can, whereby it is operated, and a connection between the lever and the solder wire guide, to swing the latter to cause the wire to move along with and accompany the iron, only temporarily when said iron is moving.

4. In a solder-feed for can soldering machines, the combination of a swinging solder-wire guide adapted to present the wire to the traveling soldering iron, a swinging lever projecting into the path of the traveling can, whereby it is operated, a connection between the lever and the solder wire guide, to swing the latter to move along with and cause the wire to temporarily accompany the iron while the latter is moving, and a feed pawl to project the wire, arranged to be operated by the swinging of the wire guide.

5. In a solder-feed for can-soldering machines, a traveling iron a swinging guide for the solder wire, a feed-pawl for advancing said wire through its guide, said pawl being pivotally arranged to cause it to reciprocate relatively to the wire-guide, and in accordance with the swinging of said guide, a pivoted lever projecting into the path of the cans in the soldering machine, whereby it is moved by said cans, a suitable connection between the lever and wire-guide, to effect the movement of said guide.

6. A solder-feed for can-soldering machines, consisting of a swinging guide for the solder wire, a feed-pawl for advancing said wire through its guide, said pawl being pivotally arranged to cause it to reciprocate relatively to the wire-guide, and in accordance with the swinging of said guide, means for varying the stroke of the feed pawl, a pivoted lever projecting into the path of the cans in the soldering machine, whereby it is moved by said cans, and a suitable connection between the lever and wire-guide, to effect the movement of said guide.

7. A solder-feed for can-soldering machines, consisting of a swinging guide for the solder wire, a feed-pawl for advancing said wire through the guide, said pawl being pivotally arranged to cause it to reciprocate relatively to the wire-guide and in accordance with the swinging of said guide, a pivoted lever projecting into the path of the cans in the soldering machine, whereby it is moved by said cans, means for adjusting the lever so as to adapt it to project into the path of cans of different widths, and a suitable connection between the lever and wire-guide, to effect the movement of said guide.

8. A solder-feed for can-soldering machines, consisting of a swinging guide for the solder wire, a feed-pawl for advancing said wire through the guide, said pawl being pivotally arranged to cause it to reciprocate relatively to the wire-guide and in accordance with the swinging of said guide, means for varying the stroke of the feed pawl, a pivoted lever projecting into the path of the cans in the soldering machine, whereby it is moved by said cans, means for adjusting the lever so as to adapt it to project into the path of cans of different widths, and a suitable connection between the lever and wire-guide, to effect the movement of said guide.

9. A solder-feed for can-soldering machines, consisting of a spring controlled pivoted arm, carrying a guide tube for the solder wire, a spring controlled feed-pawl engaging the wire in said tube, and pivoted eccentrically with relation to the pivotal center of the guide arm to cause said pawl to reciprocate relatively to said arm, and in accordance with its movement, a spring controlled retaining pawl, engaging the wire in the guide tube, a pivoted lever projecting into the path of the cans in the soldering machine, whereby it is moved by said cans, a suitable connection between the lever and arm to effect the movement of the latter, and a stop to limit the return of the lever.

10. In a solder feed for can soldering machines, a traveling iron, and a solder wire guide adapted to move along with and accompany the iron only temporarily when said iron is moving.

852,870. COMBINED HAY AND STOCK RACK. ROY B. CHELTZ, Earl Park, Ind. Filed Feb. 10, 1906. Serial No. 300,524.

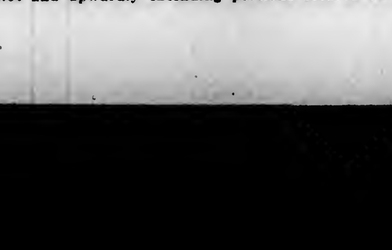


Claim.—1. In a combined hay and stock rack, the combination of a wagon body, rack sides pivoted to the sides of the wagon body, the pivotal connections having a yielding limited movement to adapt the lower edges of the rack sides to be spaced from the sides of the wagon body when said rack sides are turned outwardly, and supporting bars adapted to rest upon the sides of the body and to project at their outer ends beneath the rack sides and to be secured at their inner ends to the wagon body.

2. In a combined hay and stock rack, the combination of a wagon body provided with guides upon the sides thereof, hinge members slidably mounted in said guides, rack sides provided with hinge members engaging said sliding hinge members on the body, spring plates secured to the sides and normally bearing against the outer surfaces of the sliding hinge members and adapted when said sliding hinge members are raised to spring below the same and hold said members from downward movement, and supporting arms adapted to rest upon the sides of the vehicle body and to project at their outer ends beyond the same and beneath the rack sides when the latter are turned outwardly and to be secured at their inner ends to the wagon body.

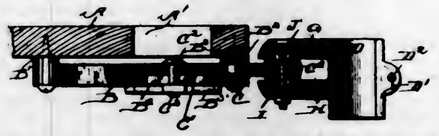
3. In a combined hay and stock rack, the combination of a wagon body, fastening members upon the inner faces of the sides of the wagon body, guide members upon the outer faces of the sides of the wagon body, sliding hinge members engaging said guides, springs adapted to project under the sliding hinge members to hold the same in elevated position, rack sides provided with hinge members engaging said sliding hinge members and adapting them to be turned to a vertical position or downwardly at an inclined position, and supporting bars adapted to rest upon the sides of the wagon body and to project beneath the out-turned rack sides, said bars being provided at their outer ends with means for fastening them to the rack sides and at their inner ends with means for connecting them with the fastening members on the inner faces of the sides of the wagon body.

852,871. LOOSE LEAF FOR TEMPORARY BINDERS. MAX M. COHN, San Francisco, Cal. Filed Aug. 28, 1906. Serial No. 332,378.



Claim.—An improved temporary binder consisting of a binder having posts rigidly secured to it, loose leaves therefor, each of said leaves having inwardly-convergent, curved, open slots devoid of sharp corners or angles, the inner ends of the open slots being separated a distance equal to the distance apart of said posts.

852,872. ADJUSTABLE UMBRELLA-SUPPORT. JOHN S. COLLINS, Custer, Okla. Filed Apr. 18, 1906. Serial No. 312,428.



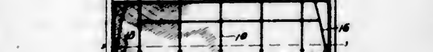
Claim.—1. In a device of the class described, the combination with a seat provided with a slot, of a guide-plate secured under said slot, to said seat, a plate adjustably mounted in said guide-plate provided with a ball and a clamping sleeve provided with sockets adjustably mounted on said ball, for the purpose described.

2. In a device of the kind described, the combination with a guide-plate, of a plate adjustably mounted therein provided with a ball at its end, of sockets arranged on said ball provided with a clamping member and means for adjusting said ball, in said sockets, for the purpose described.

3. In a device of the kind described, the combination with a guide-plate provided with upwardly projecting ends, of a plate slidably mounted in said guide-plate provided with a ball at its end, a clamping sleeve adjustably mounted on said ball, and means for locking said plate in said guide-plate, for the purpose described.

4. In a device of the kind described, the combination with a seat provided with a slot, of a plate provided with a slot and upwardly extending portions secured on said seat, ribs formed on said plate to each side of said slot, a plate provided with a slot mounted in said guide plate having a ball secured to its end, a bolt passing through the slot in said plate and the slot in the guide-plate, carrying a nut arranged between said ribs, and clamping sleeves provided with sockets adjustably mounted on said ball, for the purpose described.

852,873. STEEL FOR SHARPENING KNIVES. JOHN B. DAVIDSON, Derby, Conn. Filed Nov. 6, 1905. Serial No. 286,145.



Claim.—As a new article of manufacture, a steel for sharpening knives, the said steel being cross-sectionally round and its surface being formed with longitudinal ribs having convex outer faces and sharp overhanging cutting edges and separated from each other by longitudinal intaglio grooves having undercut side walls producing the said overhanging cutting edges of the ribs.

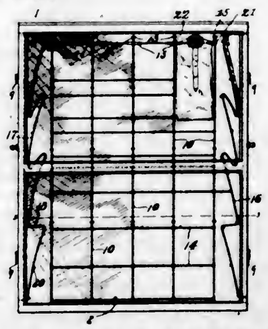
852,874. WRENCH. HENRY W. DE GRAFF, East Syracuse, N. Y. Filed Aug. 30, 1906. Serial No. 332,687.



Claim.—1. The combination with a driving member having an opening and recesses extending radially from the wall of said opening, of a driven member mounted in said opening and having ratchet-teeth, and loose clutch-pins standing in the radial recesses and free to drop at either end between the ratchet-teeth and the walls of the recess, to clutch the driven member.

2. The combination with a driving member having an opening provided with an annular recess extending from said opening, and recesses extending radially from the walls of the annular recess, of a driven member mounted in said opening, and having a peripheral toothed flange extending into the annular recess, and clutch-pins loosely confined in the radial recesses and movable freely therein in all directions, and engageable with the teeth on the flange to clutch the driven member.

852,875. SHOW-CASE. MATTHIAS S. DIETRICK, Six Mile Run, Pa. Filed Dec. 29, 1905. Renewed Mar. 29, 1907. Serial No. 363,450.



Claim.—1. A display cabinet having a series of display frames, each frame including a pair of upright substantially parallel frame members terminating at their upper

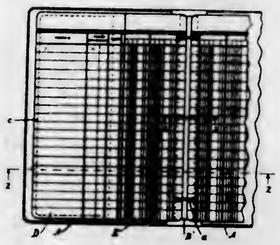
ends in hooks, eyes secured to the cabinet and engaged by the hooks, and substantially horizontal arms engaging the lower ends of the sides of the frame with their other ends supported upon the cabinet.

2. A display device having a vertical series of article-supporting elements inclined to the vertical and successively overlapping one another from the top to the bottom of the series, the overlap decreasing from the top downwardly.

3. A display device having a frame made up of cross bars, spring clips at the points of crossing of the bars, and fastenings piercing the bars and the clips, the free portions of the clips coöperating with adjacent bars to form article-engaging clamps.

4. A display device comprising a back having a pair of transversely alined eyes, a pair of sockets alined below the eyes, and an article-supporting frame having side bars terminating at their upper ends in hooks engaging the eyes and at their lower ends in rearwardly-directed arms engaging the sockets to support the side bars inclined to the vertical.

852,876. ACCOUNT-BOOK. ULYSSES F. DOUBLEDAY, Kalamazoo, Mich. Filed Apr. 9, 1906. Serial No. 310,814.



Claim.—1. In an account book, the combination with the covers; of binding rings carried thereby; and leaves consisting of body portions perforated to receive said binding rings; fixed sheets formed of transparent erasable material secured to said body portions along their outer edges and ends, said fixed sheets being ruled into spaces and columns, having suitably designated name, yearly assessment, and rate columns, the ruling and indexing being on the reverse sides of the sheets; and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and perforated at their inner edges to receive said binding rings, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, and having suitably designated item columns, for the purpose specified.

2. In an account book, the combination with the covers, of binding rings carried thereby; and leaves consisting of body portions perforated to receive said binding rings; fixed sheets secured to said body portions along their outer edges and ends; said fixed sheets being ruled into spaces and columns, having suitably designated name, yearly assessment, and rate columns, and detachable sheets adapted to have their outer edges inserted under the fixed sheets, and perforated at their inner edges to receive said binding rings, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, and having suitably designated item columns, for the purpose specified.

3. In an account book, the combination with the covers, of binding rings carried thereby; and leaves consisting of body portions perforated to receive said binding rings, fixed sheets formed of transparent erasable material secured to said body portions along their outer edges and ends, said fixed sheets being ruled into spaces and columns, having suitably designated name, yearly assessment, and rate columns, the ruling and indexing being on the reverse sides of the sheets, and detachable sheets adapted to have their outer edges inserted under the said fixed sheets, and perforated at their inner edges to receive said binding rings, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

4. In an account book, the combination with the covers; of binding rings carried thereby; and leaves consisting of body portions perforated to receive said binding rings, fixed sheets secured to said body portions along their outer edges and ends, said fixed sheets being ruled into spaces and columns, having a suitably designated name, yearly assessment, and rate columns, and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and perforated at their inner edges to receive said binding rings, said detachable sheets being ruled to correspond with the spacing of said fixed sheets, for the purpose specified.

5. In an account book, the combination with the covers; of binding rings carried thereby; and leaves consisting of body portions perforated to receive said binding rings, fixed sheets secured to said body portions along their outer edges and ends, said fixed sheets being ruled into spaces, and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and perforated at their inner edges to receive said binding rings, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

6. In an account book, the combination with the covers of binding rings carried thereby; and leaves consisting of body portions perforated to receive said binding rings; fixed sheets formed of transparent erasable material secured to the outer ends of said body portions said fixed sheets being ruled into spaces the ruling and indexing being on the reverse side of the sheets, and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and perforated at their inner edges to receive said binding rings, and detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

7. In an account book, the combination with the covers of binding rings carried thereby; and leaves consisting of body portions perforated to receive said binding rings; fixed sheets secured to the outer ends of body portions, said fixed sheets being ruled into spaces; and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and perforated at their inner edges to receive said binding rings, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

8. In an account book, the combination with the covers of a temporary binding mechanism, and leaves consisting of body portions adapted to be secured by said binding means; fixed sheets formed of transparent erasable material secured to said body portions along their outer edges and ends, said fixed sheets being ruled into spaces, the ruling being on the reverse side thereof, and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and their inner edges held by said binding means, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

9. In an account book, the combination with the covers, of a temporary binding mechanism, and leaves consisting of body portions adapted to be secured by said binding means, fixed sheets secured to said body portions along their outer edges and ends, said fixed sheets being ruled into spaces, and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and their inner edges held by said binding means, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

10. In an account book, the combination with the covers, of a temporary binding mechanism, and leaves consisting of body portions adapted to be secured by said binding means, fixed sheets formed of transparent erasable material secured to said body portions said fixed sheets being ruled into spaces, the ruling being on the reverse side thereof, and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and their inner edges held by said binding means, said detachable sheets

being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

11. In an account book, the combination with the covers, of a temporary binding mechanism, and leaves consisting of body portions adapted to be secured by said binding means, fixed sheets formed of transparent erasable material secured to said body portions and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and their inner edges held by said binding means, for the purpose specified.

12. In an account book, the combination with the covers, of a temporary binding mechanism, and leaves consisting of body portions adapted to be secured by said binding means, fixed sheets formed of transparent material secured to said body portions said fixed sheets being ruled into spaces, the ruling being on the reverse side thereof, and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and their inner edges held by said binding means, said detachable sheets being ruled into spaces to correspond with the spacing of the fixed sheets, for the purpose specified.

13. In an account book, the combination with the covers, of a temporary binding mechanism, and leaves consisting of body portions adapted to be secured by said binding means, fixed sheets formed of transparent material secured to said body portions and detachable sheets adapted to have their outer edges held by said binding means, for the purpose specified.

14. In an account book, the combination with the covers, of a temporary binding mechanism, and leaves consisting of body portions adapted to be secured by said binding means, fixed sheets secured to said body portions, said fixed sheets being ruled into spaces and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and their inner edges held by said binding meahs, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

15. In an account book, the combination with the covers, of a temporary binding mechanism, and leaves consisting of body portions adapted to be secured to said binding means; fixed sheets secured to said body portions, and detachable sheets adapted to have their outer edges inserted under said fixed sheets, and their inner edges held by said binding means, for the purpose specified.

16. In an account book wherein the leaves are temporarily held in place, the combination with the covers, of leaves consisting of body portions, fixed sheets of transparent erasable material secured to said body portions, said fixed sheets being ruled into spaces, the ruling being on the under side thereof, and detachable sheets adapted to be inserted under said fixed sheets, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets for the purpose specified.

17. In an account book wherein the leaves are temporarily held in place, the combination with the covers, of leaves consisting of body portions, fixed sheets of erasable material secured to said body portions, said fixed sheets being ruled into spaces, and detachable sheets adapted to be inserted under said fixed sheets, said detachable sheets being ruled into spaces to correspond with the spacing of said fixed sheets, for the purpose specified.

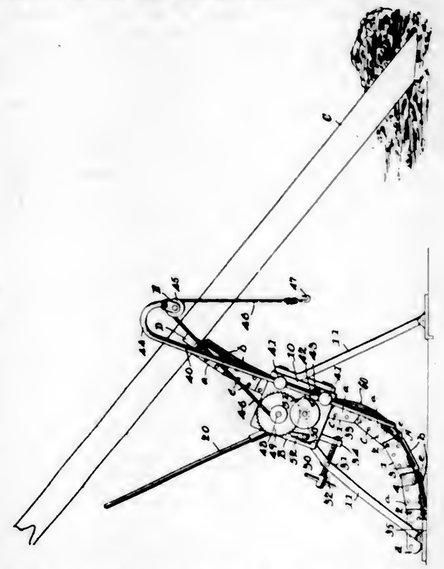
18. In an account book wherein the leaves are temporarily held in place, the combination with the covers, of leaves consisting of body portions, fixed sheets of erasable material secured to said body portions, and detachable sheets adapted to be inserted under said fixed sheets, for the purpose specified.

852,877. HOISTING DEVICE. JAMES H. DOWNEY, Gainesville, Ga. Filed June 15, 1906. Serial No. 321,939.

Claim.—1. A hoisting device having a curved self-supporting flexible pushing member.

2. A hoisting device having a curved self-supporting flexible pushing member comprising a plurality of pivotally connected sections.

3. A hoisting device having a curved self-supporting flexible pushing member comprising a plurality of pivotally connected sections and means for automatically holding said sections in extended position.



4. A hoisting device having a self-supporting flexible pushing member adapted to fold in one direction and to flex slightly in the opposite direction.

5. A hoisting device having a flexible pushing member comprising a plurality of pivotally connected sections provided with resilient catches for locking the same in extended position.

6. A hoisting device having a curved flexible pushing member, operating mechanism for moving said pushing member longitudinally, and means for automatically locking said pushing member in extended position.

7. A hoisting device having a flexible pushing member comprising a plurality of pivotally connected sections, means for automatically locking the said sections together in extended position, means for moving said pushing member longitudinally, and automatic means for unlocking the sections of said pushing member.

8. A hoisting device comprising a support, means for adjusting the position of the support, a flexible pushing member extending through the support, said member being adapted to flex backward when in extended position and operating mechanism carried by the support for moving the pushing member longitudinally.

9. A hoisting device comprising a support having a plurality of rigid legs and a plurality of adjustable legs, a flexible pushing member extending through said support, and operating mechanism for moving said pushing member longitudinally in said support.

10. A hoisting device comprising a support, an auxiliary elevating device mounted upon said support, a flexible pushing member extending through said support, and means for moving said pushing member longitudinally through the support.

11. A pole hoisting device comprising a support, a flexible pushing member extending through said support and having a pole engaging device at its upper end, said pushing member being adapted to flex backward on the segment of a circle having the lower end of the pole for its center, and means carried by the support for moving the pushing member upward.

12. A hoisting device comprising a support, a pushing member comprising a plurality of pivotally connected sections having beveled ends, so as to be adapted to flex back-

ward when in extended position and operating mechanism carried by the support for moving the pushing member.

13. A pole hoisting device comprising a support having a pair of rigid legs, a pair of pivotal legs having shoes on their lower ends, an adjusting screw for changing the position of the pivotal legs, an operating lever mounted on said support and having a hinged member, a pushing member comprising a plurality of pivotally connected sections having beveled ends and transversely extending rack members, said pushing member extending upward through said support, resilient catches carried by the sections of said pushing member for automatically locking the same in extended position, a saddle piece connected with the upper end of said pushing member, a cam member mounted underneath said support and adapted to engage said resilient catches for unlocking the sections of the pushing member, and an auxiliary elevating device carried by said support.

852,878. SHAVING-BRUSH. ALBERT HELMBACH, Saarbrücken, Germany. Filed May 29, 1905. Serial No. 262,934.



Claim.—1. In a shaving brush, the combination of a tuft, and a holder or handle consisting of an inner sectional sleeve engaging the inner end of the tuft, and an outer sleeve surrounding the sectional sleeve and constituting the outer portion of the handle and holding the sections of the sectional sleeve together and in engagement with the tuft said sleeves being adapted to be readily disconnected and engaged.

2. In a shaving brush, the combination of a tuft, a sleeve engaging the inner end of the tuft and consisting of two sections hinged together and having their longitudinal edges abutting, one of said sections being longer than the other, and an outer sleeve adapted to receive said sectional sleeve.

3. In a shaving brush, the combination of a tuft, a sectional sleeve engaging the inner end of the tuft, and an outer sleeve surrounding said inner sleeve and having at one end an inwardly extending rim, against which the end of a section of the inner sleeve opposite the tuft is adapted to bear.

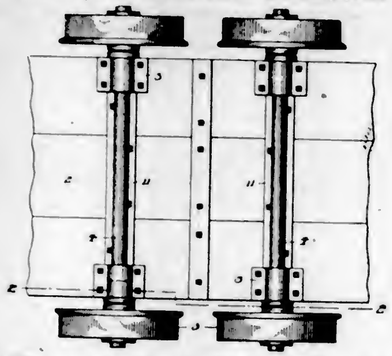
4. In a shaving brush, the combination of a tuft, a sleeve engaging the inner end of the tuft and consisting of two sections hinged together, one of said sections being shorter than the other, and the longer section having at its end opposite the tuft a laterally extending plate or disk, and an outer sleeve surrounding said sectional sleeve and holding the sections thereof in close engagement with the tuft.

852,879. MINE-CAR. FRANKLIN C. HOCKENSMITH, Pittsburg, Pa., assignor to Hockensmith Wheel & Mine Car Company, Penns Station, Pa., a Corporation of Pennsylvania. Filed Feb. 14, 1907. Serial No. 357,315.

Claim.—1. The combination of a car body, an axle-confining member at the under side of the body and formed with a top depression having opposite side walls, and a reinforcing member for the car body having its end entered in the depression between said walls.

2. The combination of a car body, axle-confining members secured at opposite sides of the bottom thereof, said members alining with each other and each formed with a top depression having opposite side walls, and a transverse reinforcement for the car body having its ends entered between the side walls of said depressions.

3. The combination of a car body, an axle-confining member at the under side of the body, and a reinforcing member for the car body, said member and the axle-confining member being formed with interlocking parts.

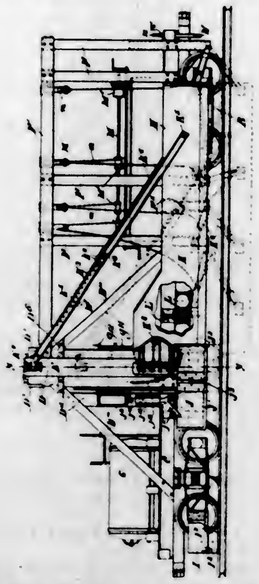


4. The combination of a car body, an axle-confining member at the under side of the body, a reinforcement for the car bottom, and an interlocking connection between the reinforcement and the upper side of the axle-confining member.

5. The combination of a car body, an axle-confining member at the under side thereof, a boss projecting from the upper side of the said member, and a reinforcement for the car bottom formed with an opening to embrace the boss.

6. The combination of a car body, axle-confining members at opposite sides thereof and formed each with a top depression, a boss projecting into each depression, and a transverse reinforcing bar for the car bottom having its ends entered in said depressions and formed to interlock with the bosses.

852,880. RAILROAD-SPREADER. OSWALD F. JORDAN, Chicago, Ill. Filed Nov. 14, 1906. Serial No. 343,421.



Claim.—1. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a spreader wing hinged on said post, means for holding said wing distended, and fluid pressure means for pressing said post and wing downward and for raising the same, substantially as described.

2. The railroad spreader herein described, comprising a car, in combination with a wing normally occupying an angular position with relation to the side of the car, said wing being vertically movable, an adjustable stop for said wing and means for pressing said wing downward against said stop, substantially as described.

3. The railroad spreader herein described, comprising a car, in combination with a spreader wing, normally occupying an angular position with relation to the side of the car and fluid pressure means for pressing said wing downwardly while at work and for raising the same, substantially as described.

4. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, wing struts, an adjustable stop for said post and means for pressing the post against said stop and for raising the same, substantially as described.

5. The railroad spreader herein described, comprising a car, in combination with a post suitably held and vertically movable at the side of the car, a wing having a right angled hinge connecting its inner end with said post, an adjustable strut extending from the outer end of said wing to the said post, for holding said outer end down to its work, fluid pressure means for pressing said post and the inner end of said wing downwardly, to adjust the wing in inclined position, or hold the inner end of the wing down to its work and suitable lateral struts, substantially as described.

6. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, means for holding said wing distended, fluid pressure means for raising and lowering and holding said post and wing, and other means for securing the same when positioned, substantially as described.

7. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, guides or columns for said post, a wing hinged on said post, means for holding said wing distended, fluid actuated means for raising and lowering said post, and suitable parts on said columns for supporting said post and wing when properly positioned, substantially as described.

8. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, means for holding said wing distended, means for raising said post and wing to desired position and a single adjustable strut or link extending between the upper end of said post and the outer end of said wing, for holding the latter down to its work, substantially as described.

9. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged at or near the bottom of said post and adapted to swing both horizontally and vertically, means on the car for holding said wing in any position to which it may be adjusted, a pressure cylinder on the car a piston therein and a piston rod connected to said post for raising and lowering said post and wing, substantially as described.

10. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged at or near the bottom of said post and adapted to swing both horizontally and vertically, means for holding said wing in any position to which it may be adjusted, fluid actuated means for raising and lowering said post and wing, and fluid actuated means for opening and closing said wing, substantially as described.

11. The railroad spreader herein described, comprising a car and its trucks, in combination with depending columns thereon, a wing vertically movable on said columns beneath the car, fluid actuated means for raising and lowering said wing and a stop pin for securing said wing in raised position, substantially as described.

12. The railroad spreader herein described, comprising a car, and its trucks in combination with a vertically movable wing, beneath the car and having a vertically hinged rear section, means for raising and lowering said wing as a whole and for supporting it in raised position, substantially as described.

13. The railroad spreader herein described, comprising a car, in combination with a vertically movable wing, having a vertically hinged rear section, means for raising and lowering said wing and for supporting it in raised position and auxiliary means for supporting the hinged section when lowered, substantially as described.

14. The railroad spreader herein described, comprising a car, in combination with depending columns or bars, a wing J inclined with respect to the car and movable on said columns beneath the car, pivotal braces J^6 connecting said wing with the underframe of the car and means for raising and lowering said wing, substantially as described.

15. The railroad spreader herein described, comprising a car, in combination with a spreader wing, a vertically movable post whereon the same is hinged, pivotal struts also connecting the wing with said car, said struts being pivotally connected with said wing and means for raising said struts independently of the wing, substantially as described.

16. The railroad spreader herein described, comprising a car, in combination with a vertically movable wing hinged thereto, suitable lateral struts for said wing, means for sustaining the rear end of said wing and means upon the car for projecting said wing, substantially as described.

17. The railroad spreader herein described, comprising a car, in combination with a vertically movable wing hinged thereto, suitable lateral struts for said wing, means for sustaining the rear end of said wing, means upon the car for projecting said wing and for retracting the same, substantially as described.

18. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged upon and suspended from said post, suitable means for raising and lowering said post and means upon the car for projecting and retracting said wing, substantially as described.

19. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged upon and suspended from said post, suitable means for raising and lowering said post and fluid actuated means upon the car for projecting and retracting said wing, substantially as described.

20. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a hinge on said post at or near the bottom thereof, a wing pivoted upon said hinge, a telescopically adjustable support connecting the outer end of said wing to the upper end of said post, means for holding said wing distended and means for raising and lowering said post and wing, substantially as described.

21. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a hinge on said post at or near the bottom thereof, a wing pivoted upon said hinge, a telescopically adjustable support connecting the outer end of said wing to the upper end of said post, pivotal lateral struts for said wing and means for raising and lowering said post and wing, substantially as described.

22. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a hinge upon the lower part of said post, said hinge comprising a part attached to said post and a bifurcated swinging member, a wing pivoted therein, an adjustable support for the outer end of said wing, means for holding said wing distended and means for raising and lowering said post and wing, substantially as described.

23. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a main wing hinged on said post, means for holding said wing distended, and a supplemental foldable wing adapted to close the gap between said post and the lower inner end of said main wing, substantially as described.

24. The railroad spreader herein described, comprising

a car, in combination with a vertically movable post on the side thereof, a main wing hinged on said post, means for holding said wing distended, means for raising and lowering said post and wing, a supplemental wing adapted to close the gap between said post and the lower inner end of said main wing, internal braces for said supplemental wing, and means for raising and lowering said supplemental wing, substantially as and for the purpose described.

25. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a main wing hinged on said post, means for swinging said wing inwardly and outwardly, other means for raising and lowering said wing and means for holding said wing in distended position, substantially as described.

26. The railroad spreader herein described, comprising a car, in combination with a wing vertically hinged upon the side of said car, means upon the car for raising and lowering said wing, means for holding the wing distended and means also upon the car for swinging the same in a horizontal plane, when freed from the distending means, substantially as described.

27. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, means for swinging said wing inwardly and outwardly, and adjustable means for holding said wing in distended position, substantially as described.

28. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, means for swinging said wing inwardly and outwardly, and telescopically adjustable struts for holding said wing in distended position, substantially as described.

29. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, means for swinging said wing in a horizontal plane, a plurality of members for holding said wing in distended position and means for raising said members out of engagement with said wing when desired to swing the same inwardly or outwardly, substantially as described.

30. The railroad spreader herein described, comprising a car, in combination with a spreader wing hinged upon the side thereof, means for raising and lowering said wing and for supporting the same in raised and lowered positions, lateral struts of different lengths pivotally connecting the car and wing and means for raising said struts out of engagement with said wing successively, substantially as described.

31. The railroad spreader herein described, comprising a car, in combination with a spreader wing hinged upon the side thereof, means for raising and lowering said wing and for supporting the same in raised and lowered positions, lateral struts of different lengths pivotally connecting the car and wing and means for raising said struts out of engagement with said wing successively and closing the same against the car simultaneously, substantially as described.

32. The railroad spreader herein described, having a spreader wing, in combination with means for raising and lowering said wing, pivotal struts for connecting the car and wing and means for engaging said struts with said wing successively, substantially as described.

33. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, means for swinging said wing inwardly and outwardly, a plurality of struts pivoted to the side of said car and adapted to engage said wing to hold the same in distended position, a windlass and chains for disengaging said struts from said wing when it is desired to swing the latter, substantially as described.

34. The railroad spreader herein described, comprising a car, in combination with a vertically movable and horizontally adjustable spreader wing thereon, a plurality of inclined lateral struts extending between the wing and the car, said struts having socketed connections with said wing adapted to be tightened by the pressure of the wing against the struts, substantially as described.

35. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, means for swinging said wing inwardly and outwardly, a plurality of struts pivoted to the side of said car, sockets upon the inner face of said wing, hooks upon the outer ends of said struts to engage said sockets and to hold the wing in distended position, substantially as described.

36. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof; a wing hinged on said post, a plurality of adjustable members for holding said wing in distended position, means for raising said members successively from engagement with said wing and folding the same simultaneously against the side of the car, substantially as described.

37. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, a plurality of members pivoted to the side of said car, adapted to engage said wing to hold the same in distended position, a windlass upon said car, provided with a plurality of drums of different diameters, a hoisting cable connecting each said drum with one of said members and means for operating said windlass to disengage said members from said wing, substantially as described.

38. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a wing hinged on said post, means for swinging said wing inwardly and outwardly, means for holding said wing in distended position, means for disengaging the distending members from said wing, means for swinging the wing inwardly, and means for locking the same to the side of the car, when folded thereagainst, substantially as described.

39. The railroad spreader herein described, comprising a car, in combination with a vertical post on the side thereof, a main wing hinged on said post, a supplemental wing adapted to close the gap between said post and the lower inner end of said main wing, pivotal braces for said supplementary wing and means for raising and lowering said supplementary wing, substantially as described.

40. The railroad spreader herein described, comprising a car, in combination with a vertically movable post on the side thereof, a main wing hinged on said post, means for swinging said wing inwardly and outwardly, a supplemental wing adapted to close the gap between said post and said main wing, means for operating said wings and means for controlling the vertical movement of both said wings and the horizontal swing of said main wing from substantially the same point on the car, substantially as described.

41. In a railroad spreader, the combination with a car, of a vertical post on the side thereof, a main wing hinged upon said post, means for maintaining said wing in distended position, and a supplementary two part foldable wing arranged to close the gap between said post and the wing hinged thereto, substantially as described.

42. In a railroad spreader, the combination with a car, of a vertical post on the side thereof, a main wing hinged upon said post, means for maintaining said wing in distended position, and a supplementary two-part wing arranged to close the gap between said post and the wing hinged thereto, said supplementary wing comprising a suitably braced portion and a rear portion vertically hinged thereto, substantially as described.

43. In a railroad spreader, the combination with a car, of a vertically movable post on the side thereof, a main wing hinged thereto, means for maintaining said wing in distended position, means for raising and lowering said wing, a supplementary wing arranged to close the gap between said post and the wing hinged thereto, and comprising a suitable braced member and a free member hinged thereto, and means for raising and lowering said supplementary wing independently of said main wing, substantially as described.

44. In a railroad spreader, the combination with a car, of a vertically movable post on the side thereof, a main wing hinged thereto, means for maintaining said wing in distended position, means for raising and lowering said wing, a supplementary wing arranged to close the gap between said post and the wing hinged thereto, and comprising a suitably braced member and a free member hinged thereto, means for raising and lowering said supplementary wing independently of said main wing and a suitable support for said hinged member when lowered into operative position, substantially as described.

45. In a railroad spreader, a car, in combination with a vertically sliding post, a wing hinged thereto, means for holding said wing in distended position, means for raising and lowering said post and wing, a suitable rest for the same when adjusted to the proper height, and means for exerting pressure upon said post; substantially as described.

46. In a railroad spreader, a car, in combination with a wing hinged to the side thereof, an engine for swinging said wing inwardly and outwardly, and suitable levers connecting the piston of the engine with said wings, substantially as described.

47. In a railroad spreader a car, in combination with a vertical sliding post thereon, a wing hinged to said post, means for raising and lowering said post and wing, an engine for swinging said wing inwardly and outwardly, a lever suspended from the underframing of said car, suitable connections between the piston of said engine, said lever and said wing; substantially as described.

48. In a railroad spreader, a car, in combination with a vertically sliding post arranged on the side thereof, a hinge at or near the lower end thereof, said hinge comprising a stationary part attached to said post and a swinging part, having two vertically disposed plate portions, a wing pivoted between said plate portions, the lower inner end of said wing being cut away and an auxiliary wing adapted to close the gap formed by cutting away said part of the wing; substantially as described.

49. In a railroad spreader, a car, in combination with parallel columns thereon, a post slidable between said columns and having flanges extending from top to bottom and engaged with said columns, a wing hinged upon said post, means for maintaining the wing in distended position, means for raising and lowering said post and wing; substantially as described.

50. In a railroad spreader, a car, in combination with a vertically sliding post arranged at the side thereof, columns arranged upon each side of said post, flanges extending from end to end of said post and slidably interlocking said post and columns, a wing hinged upon said post, vertical and lateral struts for maintaining said wing in distended position, and means for raising and lowering said post; substantially as described.

51. The herein described railroad spreader, comprising a car, in combination with parallel vertical columns at the side thereof, a post slidable between said columns, a spreader wing hinged upon and suspended from said post, lateral pivotal struts for said wing and fluid actuating means secured upon said columns for raising and lowering said post; substantially as described.

52. The herein described railroad spreader, comprising a car, in combination with parallel vertical columns at the side thereof, a post slidable between said columns, a spreader wing hinged upon and suspended from said post, lateral pivotal struts for said wing and fluid actuating means for raising and lowering said post, said means including a cylinder secured upon said columns; substantially as described.

53. The railroad spreader, comprising a car, in combination with a spreader wing, a fluid pressure cylinder vertically arranged upon said car, a piston rod connected with said wing, a vertical guide containing key-hole openings and a key pin, substantially as described.

54. A railroad spreader comprising a car, in combination with vertically movable spreader wings hinged thereon, angularly positioned wing actuating engines arranged on said car and compound lever connections between said engines and respective wings, substantially as described.

55. In a railroad spreader, an underframe, in combination with a depending continuous brace, columns whereto the ends of the brace are connected, posts guided by said columns and spreader wings hinged upon and supported by said posts, substantially as described.

56. In a railroad spreader, an underframe, in combination with a vertically movable hinged wing thereon, suitable pivotal struts detachably connected to said wing, a super-structure on said underframe, sheaves thereon, chains extending from said struts over said sheaves and a multiple windlass on said super-structure, substantially as described.

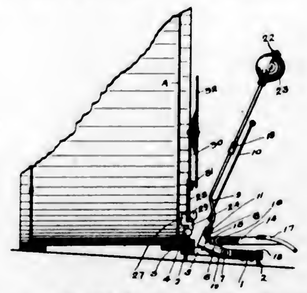
57. In a railroad spreader, a car, in combination with a vertically movable horizontal swingable spreader wing thereon, a cylinder fixed on said car, a piston, and piston rod, a cross head and guides, a depending lever pivoted at its upper end and connected with said cross head and a pivotal link connecting said lever to said wing as and for the purpose specified.

58. A railroad spreader comprising a car, in combination with vertical columns arranged at the side thereof, a post slidable between said columns, a spreader wing attached to said post, a cylinder secured to said columns near their upper ends, a piston in said cylinder, and a rigid connection between said piston and said post, substantially as described.

59. A railroad spreader comprising a car, in combination with columns at the side thereof, a post movably guided thereby, a spreader wing attached to said post and a fluid pressure engine secured upon said columns and connected with said post, substantially as described.

60. A railroad spreader comprising a car, in combination with vertically movable spreader wing posts at the sides thereof, a suitable frame wherein said posts are guided, spreader wings attached to said posts, vertically arranged cylinders secured in the upper part of said frame and pistons therein connected with respective posts, substantially as described.

852,881. BASS-DRUM AND CYMBAL BEATER. MICHAEL B. KENDIS, Omaha, Nebr. Filed Oct. 10, 1905. Renewed Mar. 27, 1907. Serial No. 364,935.

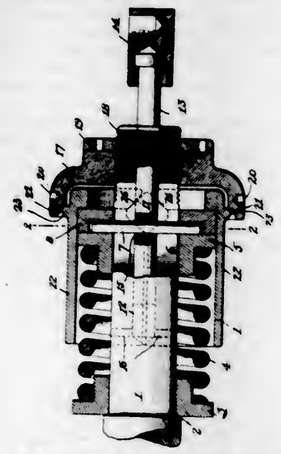


Claim.—1. In a device of the class described, a base block, means for attaching the same to the rim of a drum, a beater lever of which one end is fulcrumed on the base block, there being on the opposite end of the said lever a head having means for the attachment of beater rods thereto, a spring arranged to hold the beater lever normally in raised position, a foot lever having a forked end which passes over the beater lever and is fulcrumed on the base adjacent the head of the beater lever, and a roller carried in the fork of the foot lever adjacent the fulcrum thereof, said roller being in constant engagement with the beater lever adjacent the fulcrumed end thereof.

2. In a device of the class described, a beater ball having a contact segment formed of light fibrous material, and segments of heavier material forming the remainder of the ball.

3. In a device of the class described, a beater ball comprising two spherical segments of rubber, a central segment of hard felt forming the contact portion of the ball, and a covering of soft leather.

852,882. SPEED-GOVERNOR. CHARLES V. KERR, Wellsville, N. Y., assignor to Kerr Turbine Company, Wellsville, N. Y., a Corporation of New York. Filed Apr. 9, 1906. Serial No. 310,730.



Claim.—1. A governor for turbines or the like comprising a rotary shaft, a fixed and a longitudinally movable collar surrounding the shaft, a spring interposed between the fixed and movable collars, an axial socket in the outer end of the shaft, a governor spindle loosely seated in the socket and adapted to receive motion from the movable collar, a governor cup mounted on the end of the shaft, and centrifugal governor weight halves abutting against the cup and transmitting their motion to the movable collar and governor spindle.

2. A governor for turbines or the like comprising a rotary shaft, a longitudinally movable collar surrounding the shaft, a spring reacting against the movable collar, an axial socket in the rotary shaft, a governor spindle loosely seated in the socket and adapted to receive motion from the movable collar, a governor cup mounted on the end of the shaft, and centrifugal governor weight halves abutting against the cup and having a rolling contact bearing with the movable collar for transmitting their motion to the movable collar and governor spindle.

3. A governor for turbines or the like comprising a rotary shaft, a fixed and a longitudinally movable collar surrounding the shaft, a coil spring surrounding the shaft interposed between the fixed and movable collars, an axial socket in the outer end of the shaft, a governor spindle loosely seated in the socket and adapted to receive motion from the movable collar, a governor cup mounted on the end of the shaft, and centrifugal governor weight halves abutting against the cup and transmitting their motion to the movable collar and governor spindle.

4. A governor for turbines or the like comprising a rotary shaft, a fixed and a longitudinally movable collar surrounding the shaft, a coil spring surrounding the shaft reacting against the fixed and movable collars, an axial socket in the rotary shaft, a governor spindle loosely seated in the socket and adapted to receive motion from the movable collar, a governor cup mounted on the end of the shaft, and centrifugal governor weight halves abutting against the cup and having a rolling contact bearing with the movable collar for transmitting their motion to the movable collar and governor spindle.

5. A governor for turbines or the like comprising a rotary shaft having a slot therein, a fixed and a longitudinally movable collar surrounding the shaft, a spring interposed between the fixed and movable collars, an axial socket in the outer end of the shaft, a governor spindle loosely seated in the socket, a spindle pin passing through and sliding in said slot of the shaft and transmitting the movement of the movable collar to the governor spindle, a governor cup mounted on the end of the shaft, and centrifugal governor weight halves abutting against the cup and having a rolling contact bearing with the movable collar for transmitting their motion to the movable collar and governor spindle.

6. A governor for turbines or the like comprising a rotary shaft having a slot therein, a fixed and a movable longitudinal collar surrounding the shaft, a coiled spring surrounding the shaft and reacting against the fixed and movable collars, an axial socket in the rotary shaft, a governor spindle loosely seated in the socket, a spindle pin passing through and sliding in said slot of the shaft and transmitting the movement of the movable collar to the governor spindle, a governor cup mounted on the end of the shaft, and centrifugal governor weight halves abutting against the cup and having a rolling contact bearing with the movable collar for transmitting their motion to the movable collar and governor spindle.

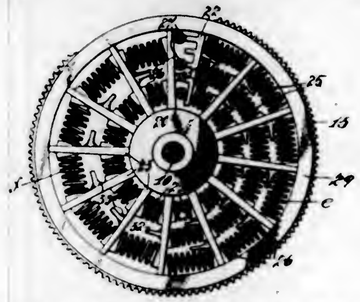
7. A governor for turbines or the like comprising a rotary shaft having an axial socket, a fixed and a longitudinally movable collar surrounding the shaft, a coiled spring surrounding the shaft and interposed between the fixed and movable collars, a governor spindle loosely seated in the axial socket of the shaft and adapted to receive motion from the movable collar, a governor cup mounted on the end of the shaft and provided with an annular shoulder, and centrifugal governor weight halves each having a section of an annular projection thereon abutting against opposite portions of the annular shoulder of the cup and having a rolling contact bearing with the movable collar for transmitting the motion of the governor weight halves to the movable collar and governor spindle.

8. A governor for turbines or the like comprising a rotary shaft having an axial socket, a fixed and a longitudinally movable collar surrounding the shaft, a coil spring surrounding the shaft and acting against the fixed and movable collars, a governor spindle loosely seated in the socket of the shaft, a spindle pin connected with the governor spindle and adapted to receive motion from the movable collar, a governor cup mounted on the end of the shaft and provided with an annular shoulder, and centrifugal governor weight halves each having a section of an annular projection thereon abutting against opposite portions of the annular shoulder of the cup and having a rolling contact bearing with the movable collar for transmitting the motion of the governor weight halves to the movable collar and governor spindle.

9. A governor for turbines or the like comprising a rotary shaft having a slot therein, a fixed and a longitudinally movable collar surrounding the shaft, said movable collar having a V-shaped bearing projection on opposite sides of the shaft, a spring interposed between the fixed and movable collars, an axial socket in the outer end of the shaft, a governor spindle loosely seated in the socket, a spindle pin passing through and sliding in said slot of the shaft and transmitting the movement of the movable collar to the governor spindle, a governor cup mounted on the end of the shaft, and centrifugal governor weight halves each having an outer section abutting against the cup, and also with inner opposite rolling contact surfaces bearing against the V-shaped projections on the movable collar.

10. A governor for turbines or the like comprising a rotary shaft having a slot therein, a fixed and a movable longitudinal collar surrounding the shaft, said movable collar having a V-shaped bearing projection on opposite sides of the shaft, a coiled spring surrounding the shaft and reacting against the fixed and movable collars, an axial socket in the rotary shaft, a governor spindle loosely seated in the socket, a spindle pin passing through and sliding in said slot of the shaft and transmitting the movement of the movable collar to the governor spindle, a governor cup mounted on the end of the shaft, and centrifugal governor weight halves each having an outer section abutting against the cup and also with inner opposite rolling contact surfaces bearing against the V-shaped projections of the movable collar for transmitting their motion to the movable collar and governor spindle.

852,883. TRANSMITTING MECHANISM. FREDERICK S. KEYES, Warren, Mass. Filed Dec. 6, 1905. Serial No. 290,626.



Claim.—1. The combination with a power-applying and a power-receiving element, of an interposed series of yieldable members arranged in independently movable groups, each of said groups offering a resistance differing from the companion groups.

2. The combination with a power-applying and a power-receiving element, of an interposed series of yieldable members arranged in independently movable groups, the members of each group offering different resistances.

3. The combination with a power-applying and a power-receiving element, of an interposed series of yieldable members arranged in independently movable groups, each of said groups offering a resistance different from the companion groups and the members in each group offering different resistances.

4. Mechanism comprising a plurality of transmitting members, a plurality of movable connecting members associated with each transmitting member, and yieldable members situated between the connecting members, said yieldable members in the different transmitting members offering different resistances.

5. Mechanism comprising a plurality of transmitting members, a plurality of movable connecting members associated with each transmitting member, and yieldable members situated between the connecting members, said yieldable members in the different transmitting members offering resistances gradually increasing from transmitting member to transmitting member.

6. Mechanism comprising a plurality of transmitting members, a plurality of movable connecting members associated with each transmitting member, and yieldable members situated between the connecting members, said yieldable members in the different transmitting members offering resistances gradually increasing from transmitting member to transmitting member and also varying in each of the members.

7. Mechanism comprising co-operating transmitting members, intermediate movable connecting members, yieldable members between the connecting members, and means carried by the connecting members for limiting their movement to less than the yieldability of the intermediate members.

8. Transmitting mechanism comprising a rotatable member having abutments, one of which is movable, a spring situated between the abutments, and a stop projecting from one of the abutments toward another.

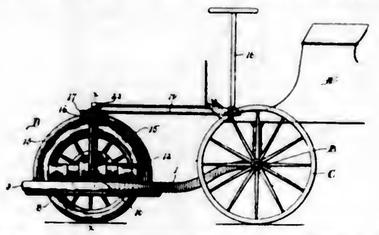
9. Transmitting mechanism comprising a rotatable member having abutments, one of which is movable, a plurality of springs situated between the abutments, and a plurality of projections carried by one of the abutments and extending between the springs toward the adjacent abutment.

10. Mechanism comprising co-operating transmitting members, intermediate movable abutments, yieldable members between the abutments, and separable stop-projections carried by the abutments.

11. Mechanism comprising co-operating transmitting members, intermediate movable connecting members, yieldable members between the connecting members, and stops projecting from the connecting members at each side of the yieldable members.

12. Transmitting mechanism comprising a rotatable member having abutments, one of which is movable, a spring situated between the abutments, and a stop projecting from one of the abutments toward another and being adapted to contact therewith over a considerable portion of its width.

852,884. MOTOR-VEHICLE. JOHN D. R. LAMSON, Toledo, Ohio. Filed Dec. 23, 1905. Serial No. 293,551.



Claim.—1. The combination of a frame adapted to be pivotally attached at one end to a vehicle, a horizontally extending turn table to support the opposite end of said frame having an opening in its center, a traction wheel supporting said turn table and projecting through the opening therein, a motor upon the turn-table at one side of said wheel, power transmitting means secured to the turn-table and adapted to transmit motion at various speeds to the wheel, an arch secured at its ends to the turn-table and extending upward and over the wheel and motor, means for controlling the operation of said transmission means supported by said arch at its center in the vertical axial line of the table and means for turning the table attached to said arch at its center above the wheel to turn upon the same axis as the table.

2. The combination of a frame formed with a ring-shaped portion at one end, means for pivotally attaching the opposite end of said frame to a vehicle axle, a turn-table within said ring and a slot in its axis, bearings on said table, a shaft in said bearings, a traction wheel on said shaft, projecting through the slot in the table, a motor secured to the table and connected to the wheel shaft to actuate the same, an arch secured at its ends to the table and extending upward over the wheel, a wheel secured to said arch in the vertical axial line of the table, and means engaging said wheel for turning the table.

3. The combination of a frame formed with a ring-shaped portion at one end, means for pivotally attaching the opposite end of said frame to a vehicle axle, a turn-table within said ring to support the same and formed with an axial slot, bearings on said table, a shaft in said bearings extending diametrically across the table, a traction wheel on said shaft projecting through the slot in the table, a gasolene engine secured to the table at one side of the wheel and direct connected to the shaft, a gasolene tank on the table at the other side of the wheel to supply gasolene to the engine, a transmission gear supported by the table to transmit variable speeds to the wheel from the motor, controlling means for said motor and transmission, a double arch secured to the table and meeting in a head having a vertical opening in the vertical axial line of the table, means in said opening for operating said controlling means, a sprocket secured to said head on the arch, and a chain engaging said sprocket to turn the turn-table.

852,885. MACHINERY FOR CONVEYING EARTH, &c. SAMUEL LLOYD, Birmingham, and ALFRED R. GROSSMITH, Corby, near Kettering, England. Filed July 9, 1906. Serial No. 325,304.

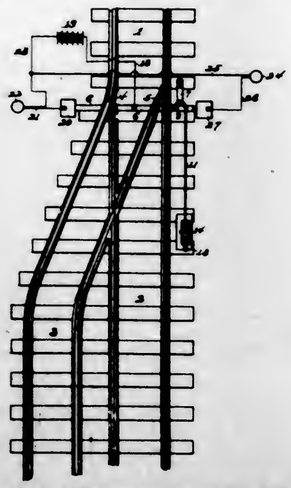
Claim.—1. The combination of a truck, a beam arranged across the truck and supported thereby, a pivot standing up from one end of the beam, a circular platform turning around this pivot, a hopper at the opposite ends of the

beam from which earth or material may be delivered on to the platform and a stationary scraper or plow for discharging the earth or material from the platform.



2. The combination of a truck, a beam arranged crosswise of the truck and pivoted thereto, a circular platform pivoted to one end of the beam, a hopper supported at the opposite end of the beam from which earth or other material may be delivered on to the platform and an adjustable scraper or plow for discharging the material from the platform.

852,886. SWITCH-OPERATING MECHANISM. JACOB LONG and BENJAMIN F. BOYD, Bellaire, Ohio. Filed July 12, 1906. Serial No. 325,915.



Claim.—In a switch operating mechanism and signal system combined, the combination with a main track and a side track, of a movable bridle transversely mounted under the rails of the track, switch points having their pointed ends pivotally mounted on said bridle, a stand mounted beyond the side-track, said stand consisting of a base-plate, two parallel arcuate supports carried by said base-plate, a lever pivotally mounted intermediate its ends in said supports, operative meaus intermediate the point of said lever and the movable bridle whereby the depression of the former shifts the latter, opening the side-track, said lever being curved to substantially correspond with the curvature of the arcuate supports and being adapted to be engaged and depressed to the level of said supports by a motor passing along the track in either direction, and an electric circuit, normally incomplete, having a lamp therein, said bridle constituting a portion of the circuit, and a contact-plate adapted to be contacted by said bridle, completing the electric circuit to the lamp, when the bridle is shifted to a position, opening the side track.

852,887. HORSESHOE. JOHN J. LYNES, Toronto, Ontario, Canada. Filed Nov. 1, 1906. Serial No. 341,628.



Claim.—1. The combination with a horseshoe, of a detachable toe calk, a flange formed integral with said toe calk, said flange adapted to engage in a pocket formed in the front edge of said shoe, fastening lugs formed integral with said calk, said lugs engaging with the under side of said shoe, of detachable heel calks engaging over the heel portions of said shoe, fastening springs adapted to fasten said toe and heel calks to the shoe, substantially as described.

2. In combination with a horseshoe, detachable toe and heel calks, fastening lugs and flanges formed integral with said toe and heel calks, fastening springs for attaching said calks to the shoe, said springs having their ends adapted to pass through the said lugs and flanges into said shoe, a lip formed on the edge of said shoe, said fastening springs adapted to engage under said lips, a toe plate with toe cap formed therewith riveted to the toe portion of said shoe, substantially as described.

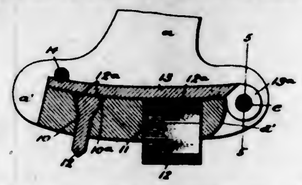
3. In combination with a horseshoe, detachable toe and heel calks, fastening lugs and flanges formed integral with said calks, openings formed through said lugs and flanges, a fastening spring, the ends of said fastening spring adapted to pass through the openings in said lugs and flanges into said shoe, a lip formed on the edge of said shoe, said fastening spring adapted to engage under said lip, substantially as described.

4. In combination with a horseshoe, detachable toe and heel calks, fastening lugs formed integral with said toe calk, fastening flanges formed integral with said heel calks, openings formed through said lugs and flanges, said openings registering with corresponding openings in said shoe, fastening springs, the ends of said springs adapted and passing through said openings, lips formed on the edges of said shoe, said fastening spring engaging under said lip, substantially as described.

5. The combination with a horseshoe, of a detachable toe calk, fastening lugs formed integral with said calk, openings formed through said lugs, of detachable heel calks, flanges formed integral with said heel calks, said heel calks adapted to engage over the heel portions of said shoe, openings formed through said flanges, of fastening springs having their ends adapted to engage in the openings in the said lugs and flanges in the toe and heel calks and openings in the shoe, substantially as described.

852,888. LOCK-SHOE. HENRY A. MEIKRANTZ, Olivers Mills, Pa. Filed Feb. 13, 1907. Serial No. 357,218.

Claim.—1. A lock shoe comprising a main drag plate, a plurality of engaging members separably connected with the plate, and a means common to all the engaging members for securing them in place; in combination with a supplemental drag plate adapted to be fitted over the main drag plate when its engaging members are removed.



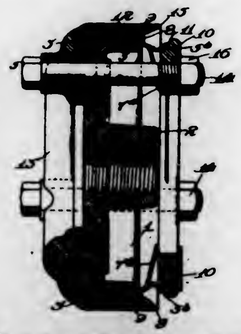
2. A lock shoe comprising a drag frame, and a main drag plate that forms a fixed part of the said drag frame, a supplemental drag plate and means for detachably connecting said supplemental drag plate so it can be fitted over the drag face of the other or main plate, for the purposes described.

3. A lock shoe comprising a drag frame, a main drag plate fixedly connected thereto and engaging members that project from the faces of the said plate, the said members being removably connected to the plate; in combination with a supplemental drag plate and a means for detachably securing the said supplemental drag plate to the drag frame to fit over the faces of the main drag plate when its engaging members are removed.

4. A lock shoe which comprises a goose neck shaped drag frame constructed to straddle the wheel rim, a main drag plate which forms a fixed part of the drag frame, an engaging member projected from the faces of the main drag plate and removably held upon the said plate, means for holding said engaging member in place on the main drag plate, said means engaging the pivot cap plate, a supplemental drag plate and the single means for pivotally sustaining the supplemental drag plate and the cap plate on the drag frame, substantially as shown and described.

5. The combination with the side members *a*—*a*, the main drag plate and the engaging members or calks removably mounted on the main drag plate; of the supplemental drag plate, the calk securing cap plate, the said supplemental drag plate and the cap plate having alined apertured ends, a key pin for detachably engaging said apertured ends and the side members *a'*, and the lock pin detachably engaging said side members and adapted to lock the cap plate down against the main drag plate for holding the calks on the said plate, as set forth.

852,889. PISTON FOR AIR-COMPRESSORS. ROBERT MIEHLE, Chicago, Ill. Filed July 24, 1905. Serial No. 270,917.



Claim.—1. In a device for the purpose described, the combination with a piston head, a packing embracing the same, and an expander movable toward the head, of spreaders interposed at intervals between the head and packing and comprising elastic spreading tongues, and means whereby the expander engages and spreads the spreaders toward the packing.

2. In a device for the purpose described, the combination with a piston head and a packing embracing the same, of a beveled expander movable toward the head, and spreaders embodying elastic tongues interposed between the head and packing and arranged to be engaged by the bevel of said expander.

3. In a device for the purpose described, the combination with a piston head, a packing embracing the same, and an expander movable toward said head, of spreaders interposed between the packing and head and having beveled or flaring ends engaged by the expander said spreaders comprising elastic tongues against which the expander engages.

4. In a device for the purpose described, the combination with a piston head, a packing embracing the same, and an expander movable toward said head, of a spreader for the packing interposed between the packing and the head and comprising elastic tongues against which the expander abuts, and elastic spreading tongues between which the expander engages for expanding the packing.

5. In a device for the purpose described, the combination with a piston head, a packing embracing the same and an expander movable toward the head, of an elastic band encircling the head under the packing and comprising outwardly extending elastic tongues, some of said tongues being bent inwardly and serving as a bearing for the expander, and others of said tongues being arranged to partially embrace the expander, whereby the inward movement of the expander will spread said lateral tongues toward the packing.

6. In a device for the purpose described, the combination with a piston head, a packing embracing the same, and an expander movable toward said head, of an elastic band embracing the head under the packing and comprising outwardly extending elastic tongues, which have their outer extremities bent first inwardly with respect to the center of the head, and then outwardly or flared and engaging with the periphery of the expander.

7. In a device for the purpose described, the combination with a piston head, and a packing engaging the same, of a beveled expander movable toward the head, a plurality of elastic spreader tongues arranged between the head and the packing and having their outer extremities flared outwardly and engaging against the bevel of said expander.

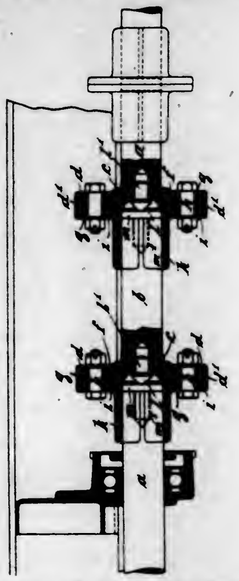
8. In a device for the purpose described, the combination with a piston head, a cup leather surrounding the head, a ring interposed between the cup leather and the head, and an expander movable toward the head, of an elastic band embracing the head under the said ring and comprising radially extending lugs engaging over the edge of said ring for holding the ring in place, and longitudinally extending tongues between which said expander engages for forcing the ring outwardly against the cup leather.

852,890. HINGED SHAFT-COUPLING. ERNST MOEWES, Stuttgart-Cannstatt, Germany, assignor to Daimler-Motoren-Gesellschaft, Untertürkheim-Stuttgart, Germany. Filed Feb. 14, 1907. Serial No. 357,374.

Claim.—1. The hereindescribed hinge-joint between two parts of a shaft, more especially of the elongated shaft of a motor vehicle, which consists of a flange (*f*) having a globular surface, a cover (*d*), a coupling part (*k*), screw bolts (*h*) for connecting the coupling part (*k*), the flange (*f*) and the cover (*d*) which latter bears against the said globular surface, a headed part (l) abutting against the adjacent shaft end.

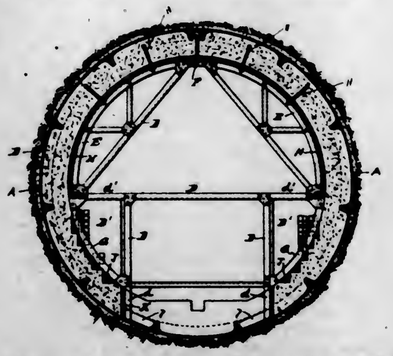
2. The hereindescribed hinge-joint between two parts of a shaft, more especially of the elongated shaft of a motor vehicle, which consists of a flange (*f*) made integral with one end of the motor shaft, and having a globular face, a cover (*d*) having a right-angled edge and bearing against the globular face of the flange (*f*), the coupling part (*k*) bearing against the said edge of the cover (*d*), bodies (*g*) located in recesses of flange (*f*) and having globular circumferential faces, screw bolts (*h*), fitting snugly in recesses of the coupling part (*k*), the cover (*d*)

and the body (*g*) and a headed part (*l*) and a step-plate (*m*) against which said headed part bears.



3. In the hereindescribed hinge-joint for motor shafts, a mean piece having at one end a flange (*f*) with a globular surface (*c*) in combination with a coupling part (*k*) secured to the other end of said mean part and a headed part (*l*) mounted in the recess of said mean part and a step plate (*m*) secured to said mean part and located within the said coupling part.

852,891. MEANS FOR LINING TUNNELS. ERNEST W. MOIR, London, England, assignor to S. Pearson & Son, Inc., Long Island City, N. Y., a Corporation of New York. Filed July 6, 1906. Serial No. 325,008.



Claim.—1. The combination of a tunnel composed of flanged segments with a supporting frame for lagging for use in lining the tunnel and detachable means for hanging the frame from the flanges of the tunnel segments.

2. The combination of a tunnel composed of flanged segments with detachable arch frames to support the lagging for use in lining the tunnel and detachable means for hanging the frames from the flanges of the tunnel segments.

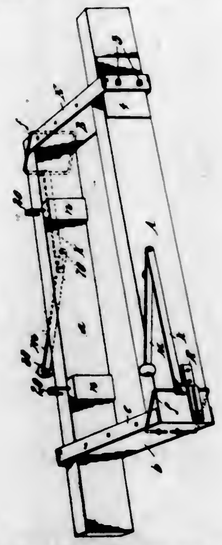
3. The combination of a tunnel with a rectangular underframe having laterally projecting arms and an arched upper frame to support the lagging for use in lining the tunnel and bolts to hang the arched frame from the tunnel segments.

4. The combination of a tunnel with an arched frame to support lagging for use in lining the tunnel with concrete, and bolt and nut connections to hang the arched frame from the tunnel segments, parts of the connections which extend into the concrete being removable and the other parts being adapted to be left embedded in the concrete.

5. The combination of a tunnel built of flanged segments with a rectangular lower frame of angle iron, and a two-part upper arched frame also of angle iron to be bolted to the lower frame to support lagging, and bolt connections to hang the arched frame from the flanges of the tunnel segments.

6. The combination of a tunnel with a frame, arched at its upper part to support lagging, and curved bars at its lower part with lagging of angular cross-section back of the curved bars to form steps in the concrete lining.

852,892. MOLD FOR MAKING BUILDING-BLOCKS. DONALD T. MCCALL, Jackson, Mich. Filed May 31, 1906. Serial No. 319,424.



Claim.—1. In a mold for building blocks, in combination with side members and end members assembled in pairs, the members of each pair being in sliding connection, clasps adapted to engage over the meeting corners of two bars to secure the same together and means for locking and for thereafter releasing said clasps from engagement over said corners, substantially as described.

2. In a mold for forming building blocks, in combination, a plurality of side members and end members, each end member being slidably connected at one end with one of the side members, means attached to the end of one of the members of each pair and adapted to engage over the adjacent free end of a member of a similar pair whereby the adjacent members may be locked together and means whereby said locking means may be opened and closed, substantially as described.

3. In a mold for building blocks, in combination with a side and an end member held together in relation to form two sides of said mold, a clasp adapted to engage over a corner of said mold and secured to one of said members and adapted to fold across the corner and over the face of another of said pieces and means whereby said clasp may be drawn thereover and locked and may be subsequently opened, substantially as described.

4. In a mold for building blocks, in combination with an end member held together in sliding relation and constituting one-half of said mold, a clasp secured to one of said members and adapted to fold diagonally across the end thereof and over an adjacent member, and means secured to said member over the face of which the clasp folds for actuating said link, substantially as described.

5. In a mold for building blocks, in combination, a side member, an end member slidingly attached thereto at one of its ends by an inclosing strap secured to the top and bottom edges of said end member, a complementary pair of members similarly attached the one to the other, clasps adapted to engage across meeting ends of said pairs, and a locking lever on one of each of said pairs of side and end members whereby each clamp is drawn tightly across the end of that one of the members next adjacent, substantially as described.

6. In a mold for building blocks, in combination with side and end members assembled in pairs, each pair having two members slidingly engaged, pins uniting the pairs and passing diagonally across the meeting corners of said pairs, each pin being secured to one member of a pair and engaging slidingly in the adjacent member of another pair, substantially as described.

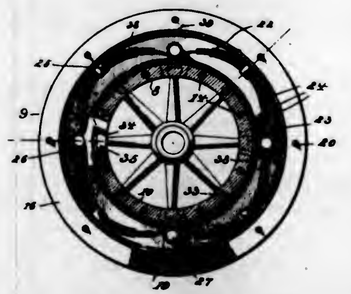
7. In a mold for building blocks, in combination with the members forming the sides and ends thereof, a clasp engaging diagonally across the meeting ends of two members of said mold, the said clasp being pivoted to one member thereof, and engaging between the face of an adjacent member and an overhanging finger, whereby the swinging of the link actuates the members both to contract and expand the mold at the joint, substantially as described.

8. In a mold for building blocks, in combination with a mold of variable length constructed to separate at two of its four corners, tie clasps passing across each of said corners to lock the same in position with respect to one another and means whereby said clasps may be actuated for either the closure or opening of the corners, substantially as described.

9. In a mold for building blocks, in combination with a mold constructed to separate at a corner, a tie clasp passing diagonally across said corner, and means for actuating said clasp, substantially as described.

10. In a mold for building blocks, in combination with a mold constructed to separate at a corner, a guide pin engaging across said corner between the adjacent members, and a tie clasp, substantially as described.

852,893. WHEEL FOR MOTOR-VEHICLES. WILLIAM A. F. MCCALLUM, Philadelphia, Pa. Filed Jan. 3, 1907. Serial No. 350,562.



Claim.—1. A wheel having outer and inner sections arranged so as to provide an annular chamber between the same, a series of springs, each having a long leaf and leaves of decreasing lengths located on both sides of said long leaf, said series of springs mounted in said chamber unconnected with said sections, adapted to respectively expand and contract by pressure exerted thereon.

2. A wheel having outer and inner sections arranged so as to provide an annular chamber between the same, a series of springs, each having a long leaf and leaves of decreasing lengths located on both sides thereof, said springs contacting with each other and with the inner section at their ends, and with the outer section at intermediate portions to maintain said sections in proper position with respect to each other.

3. A wheel having concentric outer and inner sections arranged so as to form an annular chamber, a series of springs, each having a long leaf and leaves of gradually decreasing lengths located on both sides thereof, said springs pivoted to each other at their ends and unconnected with said sections but adapted to maintain said sections in proper position with respect to each other.

4. A wheel having concentrically arranged outer and inner sections, split rings engaging contiguous portions of said sections, springs interposed between the rings of said sections, said rings adapted when respectively expanded and contracted by said springs to prevent rattling of the same between said sections.

5. A wheel having concentrically arranged outer and inner sections, split rings engaging contiguous portions of said sections, springs interposed between said rings, said rings adapted to form bearings for said springs and prevent direct engagement of the sections with said springs.

6. A wheel having sectional casings, the outer of which is adapted to loosely engage the inner of said casings so as to be held in position by the same, a tire carried by the outer casing, a series of springs contacting with each other and the inner casing at their ends and with the outer casing intermediate of the ends to maintain said sections in proper position with respect to each other and a hub section having a tire or felly adapted to be engaged by the inner of said casings.

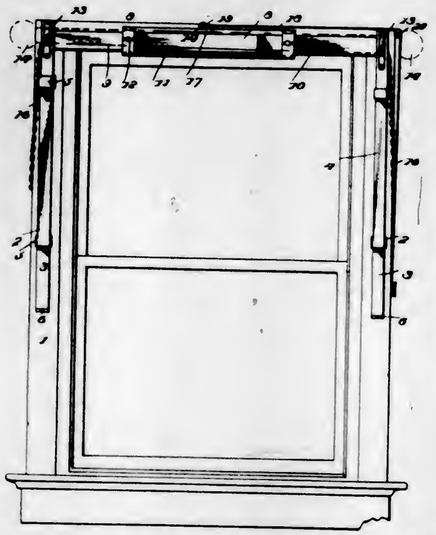
7. A wheel having sectional nested casings, the exterior of said casings forming an outer wheel section having openings and the inner section projections loosely engaging the openings of the outer section to permit of the transmitting of movement from the inner to the outer casing, a series of springs interposed between said casings and unconnected therewith, and each having a long leaf and leaves of decreasing lengths on both sides thereof, a tire carried by the outer of said casings and an inner wheel section having a tire or felly engaged by the inner of said casings.

8. A wheel having sectional nested casings, the exterior of said casings forming an outer wheel section having openings and the inner section projections loosely engaging the openings of the outer section to permit of the transmitting of movement from the inner to the outer casing, a series of springs interposed between said casings, each having a long leaf, and leaves of gradually decreasing lengths located on both sides of the long leaf.

9. A wheel having sectional nested casings, the exterior of said casings forming an outer wheel section having openings and the inner section projections loosely engaging the openings of the outer section to permit of the transmitting of movement from the inner to the outer casing, a series of leaf springs interposed between said casings and bearing at their ends against each other and said inner casing and at another portion intermediate of said ends against said outer casing, and the ends of each of said springs bent so as to form auxiliary springs adapted to prevent displacement of said ends.

10. A wheel having nested casings, the outer and inner of said casings having communicating openings, springs each having a long leaf and leaves of gradually decreasing lengths on both sides thereof mounted between said casings and unconnected therewith, said springs bearing at their ends against each other and one of said casings and at portions intermediate of said ends against the other of said casings and bolts adapted when one or more of the said springs are rendered inoperative to lock the casings together by passing into the openings of said casings.

852,894. CURTAIN HANGER OR SUPPORT. JOHN I. MCCOY, Pittsburg, Pa., assignor of one-half to Harry Hamilton, Pittsburg, Pa. Filed Nov. 19, 1906. Serial No. 344,171.



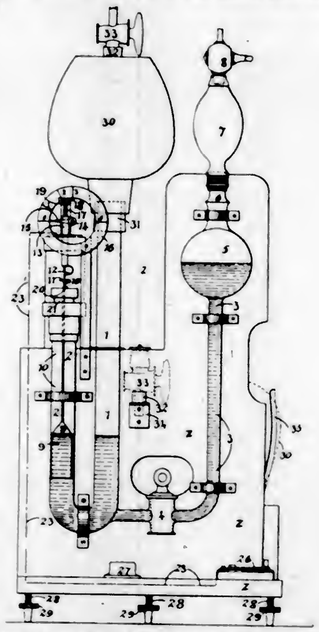
Claim.—An adjustable curtain support, comprising standards each of which is constructed in overlapping extensible sections, means for holding said sections at different extensions, said standards being adapted to be hinged at one end to the side bars of a window frame, curtain brackets secured to the free ends of said standards, a cross bar constructed in extensible sections which are connected to the standards, respectively, a connecting sleeve encircling the inner ends of both sections of the cross bar, set screws mounted in said connecting sleeve and adapted to impinge against the respective sections of the cross bar, said sleeve being provided with an apertured ear, a cord secured at one end of said ear and adapted to pull the cross bar upwardly, and flexible limiting members connected at one end to the free ends of the standards and at their upper ends to the window frame and designed to limit the outwardly and downwardly swinging movement of the standards, as and for the purpose set forth.

852,895. APPARATUS FOR DETECTING THE PRESENCE AND VOLUME OF FIRE-DAMP AND OTHER LIGHT GAS IN MINES, &c. JAMES MCCUTCHEON, Edinburgh, Scotland. Filed Apr. 18, 1906. Serial No. 312,367.

Claim.—1. In apparatus for detecting the presence and volume of fire damp and other light gas, a U tube, a tube opening into the lower portion of said U tube, a mobile liquid in said tubes, means in connection with one of said tubes for controlling the height of the liquid in said tubes, means for producing endosmose action in connection with another of said tubes, a float carrying an electric terminal in the remaining tube, an electric terminal adapted to be contacted with said float terminal by the movement of the float, in combination with an electric alarm circuit connected with said terminals, batteries therefor, an alarm and an indicator adapted to be acted upon by the movement of the float.

2. In combination with apparatus of the U tube type adapted to indicate the presence of gas by means of the movement of a liquid acted upon by the pressure resulting from the endosmose action of the gas, a tube opening into the lower portion of said U tube and means for regulating the height of the liquid in the latter by the creation of a vacuum in the former.

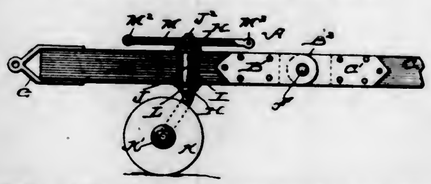
3. In combination with apparatus of the U tube type adapted to indicate the presence of gas by means of the movement of a liquid acted upon by the pressure resulting from the endosmose action of the gas, a tube opening into the lower portion of said U tube, a cock interposed between said parts, a hollow rubber ball connected with the upper end of said tube and a cock above such ball.



4. In apparatus for detecting the presence of gas in the atmosphere, a U tube, a mobile liquid partially filling the same, means for producing endosmose action in connection with one arm of said tube, a float in the other arm of said tube and means for indicating the presence of gas in the atmosphere by the movement of said float, in combination with a tube opening into the U tube and means for regulating the height of the liquid in the latter by a vacuum in the former.

5. In apparatus for detecting the presence of gas in the atmosphere, a U tube, a mobile liquid partially filling the same, means for producing endosmose action in connection with one arm of said tube, a float in the other arm of said tube and means for indicating the presence of gas in the atmosphere by the movement of said float in combination with a reservoir for the mobile liquid and means for controlling by a vacuum the supply of the same therefrom to the U tube.

852,896. POLE-SUPPORT. ALBERT J. NELSON, Waseca, Minn. Filed Mar. 10, 1906. Serial No. 305,347.



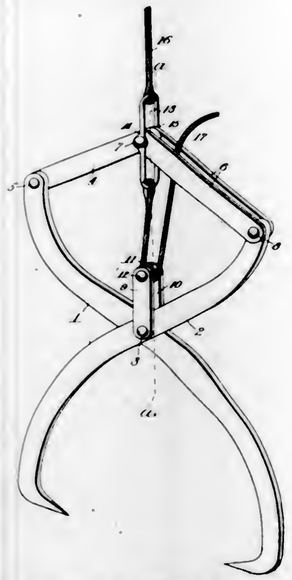
Claim.—1. In a device of the kind described, the combination with a pole, of a shaft mounted on said pole carrying a wheel, an arm mounted on said shaft having a bowed rod secured thereto, and a coil-spring arranged on said rod, for the purpose described.

2. In a device of the kind described, the combination with a pole formed of two sections pivotally connected together, of plates secured to one of said sections provided with openings, a shaft arranged in said openings provided with a collar, a wheel carried by the lower end of said shaft, an arm mounted on the upper end of said shaft, an apertured lug formed on one of said plates, a bowed rod connected to the ends of said arm passing through said apertured lug and a coil-spring surrounding said bowed rod, for the purpose described.

3. A pole comprising two sections pivoted together, plates connected to one of the sections provided with openings, a shaft arranged in said openings, carrying a wheel, an arm secured to the upper end of said shaft carrying a bowed rod, and a spring arranged on said rod as set forth.

4. The combination with a pole, of a shaft carrying a wheel mounted on said pole, an arm secured on the end of said shaft, a lug arranged on said pole, a bowed rod passing through said lug connected to said arm and a coiled spring surrounding said rod between the lug and arm, for the purpose described.

852,897. GRAPPLE. PETER L. NIEDERMIER, Harvey, La. Filed Apr. 5, 1906. Renewed Apr. 12, 1907. Serial No. 367,804.

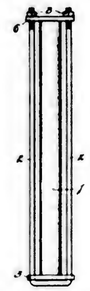


Claim.—1. A grapple comprising arms pivotally connected together intermediate their ends, a pair of links connected to one end of one arm, a single link connected to one end of the other arm, the links of each arm being pivoted together, a loop connected to the pivot of the links, a sheave mounted immediately above the pivot of the arms, a line connected to one end of said loop, and another line connected to the opposite end of the loop and passed around the sheave and between the aforesaid pair of links.

2. A grapple comprising arms pivoted together, a pair of links having connection with one arm, a link having connection with the other arm and pivoted between the pair of links, a loop having connection with the pivot of the links, a sheave, a line having connection with the loop, and a line having connection with the loop and the sheave.

3. A grapple comprising arms pivoted together, link connections between the arms, a sheave, a loop member embracing the link connections, means connected with the loop member to close the grapple, and means connected with the loop member and passed over the sheave to open the grapple.

852,898. TRUSS FOR REINFORCING CONCRETE CONSTRUCTION. WILLIAM E. OWENS and JAMES E. WRIGHT, Omaha, Nebr. Filed June 16, 1906. Serial No. 322,041.



Claim.—1. In combination with a core, plates on the ends thereof, tension rods connecting the plates, and a plate having an opening therein to receive said core and formed with notches to receive said rods.

2. A re-inforcement for concrete construction, composed of a hollow core member, filled with plastic composition, plates on the ends of said member, rods connecting said plates, and a truss surrounding said member and engaging said rods.

3. A re-inforcement for concrete construction, embodying a core member, a plate on one end thereof formed with notches which extend through the sides thereof, a plate on the opposite end of said member formed with apertures, tie rods extending in said notches of said first named plate and having their ends threaded and passing through said apertures of said second named plate, nuts on the ends of said rods, and a truss having an opening which extends through one side thereof to receive said member and formed with notches which extend through its sides to receive said rods.

4. A re-inforcement for concrete construction, embodying a core, plates on the ends thereof, tie rods connecting said plates, and a U-shaped truss for receiving said core having notches in its sides to receive said rods.

5. A re-inforcement for concrete construction, embodying a core, plates on the ends thereof, rods connecting the plates, and a U-shaped member to receive said core between the legs thereof, and to engage said rods.

6. A re-inforcement for concrete construction, embodying a core, plates on the ends thereof, tie rods connecting the plates, and a truss for adjusting the tension of said rods consisting of a member formed to receive said core, and having parts to receive said rods whereby said member may be positioned by first inclining the same and then turning the same to right angular position with respect to said core.

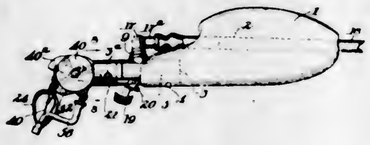
7. A re-inforcement for concrete construction, embodying a core, plates on the ends thereof, rods connecting the plates, and a truss formed at its sides to engage said rods, and formed to receive said core, so that said truss may be inclined with respect to the longitudinal axis of said core.

8. A re-inforcement for concrete construction, embodying a core, plates on the ends thereof, rods arranged in pairs to connect said plates, and means to adjust the tension of said rods, consisting of a plate having opposite sides arranged to receive said pairs, said plate having movement so as to be inclined with respect to the longitudinal axis of said core.

9. A re-inforcement for concrete construction, embodying a core, plates on the ends thereof, rods connecting said plates, and arranged in pairs opposing one another, and a

truss formed to receive said core and to engage each of said pairs so as to adjust the tension thereof.

852,899. AIR-BRUSH. JENS A. PAASCHE, Chicago, Ill. Filed Sept. 8, 1906. Serial No. 333,743.



Claim.—1. In an air brush, in combination, a base plate; a plate having an adjustable connection with said base plate; and a needle guide and a pigment spoon rigidly secured to said second-mentioned plate.

2. In an air brush, in combination, a base plate; operating mechanism mounted on the upper side of said base plate; a plate having an adjustable connection with the under side of said base plate; a needle guide fixed to said second-mentioned plate and extending at a right angle thereto; and a pigment spoon also rigidly secured to said second mentioned plate.

3. In an air brush, in combination, a wind wheel; a shaft carrying said wind wheel; a perforated bearing screw adapted to receive one end of said shaft; a cupped screw adapted to fit against the end of said bearing screw opposite to the end receiving said shaft, the cup of said screw and the perforation of said bearing screw being adapted to receive a lubricant; and a bearing for the other end of said shaft.

4. In an air brush, in combination, a base plate; a bracket fixed thereto; a shaft having bearings in said base plate and said bracket; a wind wheel on said shaft; a wind wheel cover, the shaft-bearing in said bracket being adapted to contain a quantity of lubricant; and a cupped screw seated in said wind wheel cover and adapted to close said last mentioned shaft bearing.

5. In an air brush, in combination, a handle adapted to be grasped in the hand and having a recess in its forward portion; a mechanism-supporting stem fixed in said recess; an air valve in said stem; an air tube extending through said handle from the rear thereof to said air valve; a thumb lever mounted on said stem for operating said air valve; and operating mechanism carried by said stem.

852,900. MINER'S BLAST-CHARGER. WILLIAM G. PEAY and GEORGE W. HAM, Willard, Ky. Filed June 13, 1906. Serial No. 321,568.

Claim.—1. A blast charging device comprising a tubular holder, a piston therein, a flexible member connected with the holder for withdrawing the same during the depositing of a charge, in combination with a device independent of the piston which is adapted to engage the latter during the depositing of the charge.

2. A blast charging device comprising a tubular holder having an opening in one end, a follower movably mounted in the holder, and a flexible member attached to the holder for withdrawing the same from a blast hole to deposit a charge, in combination with a device separate from the holder and follower which is adapted to engage the latter through the opening in the holder during the depositing of the charge.

3. A blast charging device comprising a tubular holder which is open at one end, a head at the opposite end having a depression and an opening, a movable element in the holder for depositing the charge in the blasting hole, a fastening on the head, and a flexible member connected with the fastening and capable of moving the device in only one direction, in combination with a rammer adapted to be engaged in the depression of the head to force the loaded device into the blasting hole and then to be inserted into the opening of the head to engage the said element for holding it stationary while the holder is withdrawn by the said flexible member.



4. A blast charging device comprising a tubular holder, a removable head, means for securing the head to the holder, said head having an opening and a depression adapted to receive a ramming device, and means on the head for attaching a withdrawing member.

5. A blast charging device comprising a tubular holder having an opening at one end, a follower movable longitudinally in the holder, an eye on the holder and follower, and flexible members connected with the eyes.

6. A blast charging device comprising a tubular holder, a hollow follower movably mounted therein which is provided with a longitudinally extending discharge mouth, and means for holding the parts together.

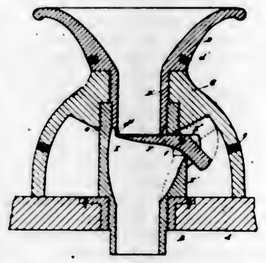
7. A blast charging device comprising a supporting member, a hollow follower for receiving the exploding charge, and means for guiding the follower on the said member.

8. A blast charging device comprising a tubular supporting member having a longitudinal slot and an opening, a tubular follower having a closed end presented to the opening of the member and a longitudinally extending discharge mouth, means for limiting the movement of the follower on the member, a flexible connection attached to the holder, and a flexible connection extending through the opening on the holder and attached to the follower, in combination with a rammer adapted to extend through the opening of the holder and engage the closed end of the follower.

852,901. SANITARY AUTOMATIC CUSPIDOR. ARTHUR PORTER, Galena, Ill. Filed Feb. 19, 1906. Serial No. 301,770.

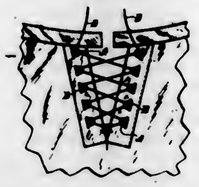
Claim.—1. A sanitary automatic cuspidor having a coupling tube provided with a valve carrying portion, the lower extremity of which tube extends into the floor, a bell-shaped base which fits over the upper extremity of the said tube, a receiving cup having a tubular extension to engage with the upper end of the said base and with the upper end of the said coupling tube, substantially as shown.

2. In a sanitary automatic cuspidor, a coupling tube whose lower extremity passes through the floor and is secured thereto by a threaded collar, said collar being permanently secured to the floor, a base which encompasses the upper extension of the said coupling tube and rests thereon, the lower edge of said base resting upon the floor, said coupling tube having a slot or opening in one side thereof below its point of connection with the base, a valve journaled in said opening and having a weighted end which extends without said tube and has play between said tube and base, and a receiving cup having a tubular portion which extends through the upper portion of the said base and into the said coupling tube a sufficient distance to meet the said gravity valve.



3. A sanitary automatically emptying cuspidor, having a base portion, a receiving cup portion, said receiving cup having a downwardly extending tube portion, an automatically acting gravity valve which closes against the lower edge of said tube, a coupling tube which carries the said valve, said tube having a slot or opening therein through which the closing end of the said valve may pass into the said tube, the weighted portion of the said valve being exterior to the said coupling tube, an enlarged portion below the said opening recessed within the said tube for receiving the closing portion of the said valve when the valve is in an open position, said valve when in said open position being clear of the passage way through which the contents of the cuspidor is discharged, exterior lugs upon the said coupling tube for carrying the pivots of the said valve; the said base, receiving cup extension tube and the coupling tube being adapted to be held together by screw-threaded joints.

852,902. PLACKET-CLOSURE. GEORGE W. PRENTICE, Providence, R. I. Filed July 20, 1905. Serial No. 270,534.



Claim.—1. A placket-closure, comprising two flat flexible strips each provided with a series of closed flat wire loops, arranged to lie flatwise upon said strips and having a lacing cord engaged therewith, in combination with the adjacent edges of a placket or other like opening, substantially as described.

2. A placket-closure, comprising a series of closed wire loops, each having an attaching table and setting prongs, and arranged opposite each other on the adjacent edges of a placket or other like opening whereby the front of each loop may be raised for the insertion of a lacing cord, substantially as described.

3. In a placket closure, and in combination therewith, a flat flexible strip of material provided with a series of closed flat wire loops, each formed of a single piece of wire and arranged to lie flatwise upon said strip, and a pre-determined length of said strip attached to each side of the placket closure, substantially as and for the purpose specified.

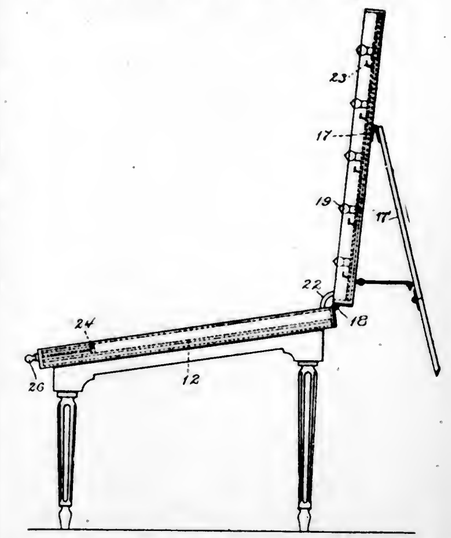
852,903. CLEANING AND POLISHING COMPOUND. HENRY B. RADFORD, Chicago, Ill., assignor to John A. Lyons, Chicago, Ill. Filed Aug. 6, 1906. Serial No. 329,278.

Claim.—1. A compound for cleaning and polishing metal surfaces, consisting of neatsfoot oil, oxalic acid, powdered pumice stone, powdered tripoli and oil of gaultheria, substantially as described.

2. A compound for cleaning and polishing metal surfaces, consisting of neatsfoot oil, oxalic acid, powdered pumice stone, powdered tripoli, oil of gaultheria and water, substantially as described.

3. A compound for cleaning and polishing metal surfaces, consisting of sixteen ounces of neatsfoot oil, four ounces oxalic acid, four ounces powdered pumice stone, four ounces powdered tripoli, one-eighth ounce oil of gaultheria, and sufficient water to make a gallon of the mixture or compound, substantially as described.

852,904. GAME APPARATUS. HARRY E. REED, Salem, Mass. Filed Oct. 9, 1906. Serial No. 338,134.



Claim.—1. A game apparatus comprising a game board provided with pockets, a cover hinged to said board and provided with signals corresponding to said pockets, contacts in said pockets, and conductors extending from said contacts to said signals.

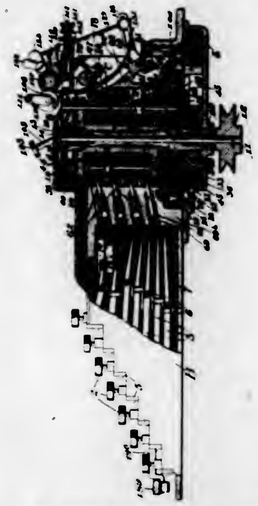
2. A game apparatus comprising a game board provided with pockets, a cover hinged to said board and provided with signals corresponding to said pockets, spaced apart contacts located in said pockets, conductors extending from said contacts to said signals, and circuit closing balls of conducting material adapted to enter said pockets and bridge said contacts.

3. A game apparatus comprising a game board provided with pockets having tapered sides, spaced apart contacts engaging the sides of said pockets, a cover hinged to said board and provided with signals corresponding to said pockets, conductors extending from said contacts to said signals, and circuit closing balls of conducting material adapted to enter said pockets and bridge said contacts.

4. A game apparatus comprising a game board provided with pockets, a cover hinged thereto and provided with signals corresponding to said pockets, contacts in said pockets, conductors extending from said contacts to said signals, and means for supporting said cover in an approximately vertical position.

5. A game apparatus comprising a game board provided with pockets, spaced apart contacts accompanying said pockets, signals corresponding to said pockets, conductors extending from said signals to said contacts, and circuit closing balls of conducting material adapted to enter said pockets and bridge said contacts, each ball, when in a pocket, forming part of the circuit.

852,905. TYPOGRAPHIC MACHINE. FRANCIS H. RICHARDS, Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation, a Corporation of New Jersey. Filed Dec. 29, 1900. Serial No. 41,521.



Claim.—1. The combination with a turret rotatable upon its axis, of an impressor mounted upon the turret upon an independent axis, and means for axially shifting said impressor.

2. The combination with a carrier or turret, of an impressor mounted thereon upon an independent axis, and means comprising a cam face for shifting said impressor axially in one direction.

3. The combination with a rotary carrier or turret, of an impressor rotatably mounted thereon, of means comprising cam faces for shifting said impressor axially in both directions.

4. The combination with a rotary carrier or turret of an impressor rotatably mounted thereon upon an axis parallel with the turret axis, and means comprising an actuating member moving in unison with said impressor for shifting the impressor axially in one direction.

5. The combination with a rotary carrier or turret, of a shaft mounted thereon for axial and rotary movement, an impressor secured to said shaft, and means for shifting said shaft axially.

6. The combination with a rotary carrier or turret, of a shaft mounted thereon for axial rotary movement, an impressor secured to said shaft, means for shifting said shaft axially, and means for rotating the shaft when axially shifted.

7. The combination with a rotary carrier or turret, of a shaft mounted therein, an impressor carried by the shaft, and means comprising a cam face for axially shifting the shaft.

8. The combination with a rotary carrier or turret, of a shaft mounted thereon, an impressor secured to the shaft, means comprising an actuating member moving in unison with said shaft for shifting the same axially in one direction, and means comprising a cam face for axially shifting said shaft in the opposite direction.

9. The combination with a rotary carrier or turret, of a shaft mounted thereon, an impressor secured to the shaft, means for shifting the shaft in one direction, and means comprising a cam face for returning the shaft.

10. The combination with a rotary carrier or turret, of a shaft mounted thereon, an impressor secured to the shaft, means for shifting the shaft in one direction, means comprising a cam face for returning the shaft, and means for rotating the shaft when shifted.

11. The combination, with a rotary carrier or turret, a shaft mounted thereon which is adapted to have an independent rotary movement about its own axis, and an impressor secured to said shaft, of means comprising an actuating member moving in unison with said impressor, and a coacting actuating member mounted upon the turret for shifting said shaft axially in one direction.

12. The combination, with a rotary carrier or turret, a shaft mounted thereon which is adapted to have an independent rotary movement about its own axis, and an impressor secured to said shaft, of means comprising an actuating member moving in unison with said shaft, and a coacting actuating member mounted upon the turret, a rotation of said shaft about its axis causing the coaction of the actuating members and thereby a shifting of the said shaft axially.

13. The combination, with a rotary carrier or turret, a shaft mounted thereon which is adapted to have an independent rotary movement about its own axis, and an impressor secured to said shaft, of means comprising an actuating member moving in unison with said shaft, and a coacting actuating member mounted upon the turret for shifting said shaft axially in one direction; and means comprising a cam face on a fixed actuating member, and a coacting actuating arm moving in unison with said shaft for shifting said shaft axially in the opposite direction.

14. The combination, with a rotary carrier or turret, a shaft mounted thereon which is adapted to have an independent rotary movement about its own axis, and an impressor secured to said shaft, of means comprising an actuating member secured to said shaft, and a coacting actuating member mounted upon the turret for shifting said shaft axially in one direction; and means comprising a cam face on a fixed actuating member, and a coacting actuating arm extending from the shaft for shifting said shaft axially in the opposite direction.

15. The combination, with a rotary carrier or turret, and an impressor mounted thereon which is adapted to have an independent rotary movement about its own axis, of means for shifting said impressor axially; and a yielding impact device for taking the blow of the axially moving impressor.

16. The combination, with a rotary carrier or turret, and an impressor mounted thereon which is adapted to have an independent rotary movement about its own axis, of means for shifting said impressor axially; means for rotating the impressor about its own axis; and a yielding impact device for taking the blow of the axially and rotatively moving impressor as it is brought to rest.

17. The combination, with a rotary carrier or turret, and a shaft mounted thereon which is adapted to have an independent rotary movement about its own axis, and an impressor secured to said shaft, of means for shifting said shaft axially, and means for rotating the shaft about its own axis, comprising a spring-supported actuating member for taking the blow of the moving shaft and impressor as they are brought to rest.

18. The combination, with a rotary carrier or turret, and a shaft mounted thereon which is adapted to have an independent rotary movement about its own axis, and an impressor secured to said shaft, of means for shifting said shaft axially; and means for rotating the shaft about its own axis, comprising a spring-supported actuating member forming a sleeve about the shaft for taking the blow of the moving shaft and impressor as they are brought to rest.

19. The combination, with a rotary carrier or turret and a part mounted thereon which is adapted to have an independent rotary movement about its own axis, of means for shifting said part axially, comprising an actuating member moving in unison with said part; and a coacting member mounted upon the carrier.

20. The combination, with a rotary carrier or turret, and an impressor mounted thereon which is adapted to have an independent rotary movement about its own axis, and is capable of being shifted from one axial position to another, of means for rotating the impressor about its own axis when in one of its axial positions.

21. The combination, with a rotary carrier or turret, and an impressor mounted thereon which is adapted to have an independent rotary movement about its own axis and is capable of being shifted from one axial position to another, of means for rotating the impressor about its own axis when in one of its axial positions, said means operating to commence such rotary movement when the impressor is in one of its axial positions which is continued when the impressor has reached another axial position.

22. The combination, with a rotary carrier or turret, and an impressor mounted thereon which is adapted to have an independent rotary movement about its own axis and is capable of being shifted from one axial position to another, of means for rotating the impressor about its own axis, said means comprising a starting-arm adapted to commence such rotary movement when the impressor is in one of its axial positions, and mechanism continuing the same when the impressor has reached another axial position.

23. The combination, with a rotary carrier or turret, a part mounted thereon to be capable of an independent rotary movement about its own axis, and means for shifting said part axially, comprising an actuating member moving in unison with said part, and a coacting member mounted upon the carrier, of a starting-arm for initiating the said independent rotary movement of said part.

24. The combination, with a rotary carrier or turret, and an impressor mounted thereon which is adapted to have an independent rotary movement about its own axis and is capable of being shifted from one axial position to another, of a detent device comprising a detent-finger and suitable grooves corresponding to the axial positions of the impressor for holding the latter in such positions.

25. The combination, with a rotary carrier or turret, a part mounted thereon to be capable of an independent rotary movement about its own axis, and means for shifting said part axially, comprising an actuating member moving in unison with said part, and a coacting member mounted upon the carrier, of a starting-arm for initiating the said independent rotary movement of said part; and a device for holding said part in its extreme axial positions.

26. The combination, with a rotary carrier or turret, a part mounted thereon to be capable of an independent rotary movement about its own axis, and means for shifting said part axially comprising an actuating member moving in unison with said part, and a coacting member mounted upon the carrier, of a starting-arm for initiating the said independent rotary movement of said part; and a device comprising a spring-pressed detent-finger for holding said part in its extreme axial positions.

27. The combination, with a rotary carrier or turret, a part mounted thereon which is adapted to have an independent rotary movement about its own axis, means for shifting said part axially in one direction, comprising an actuating member moving in unison with said part, and a coacting member mounted upon the carrier, and means for shifting said part in a reverse direction, comprising an actuating member moving in unison with said part, and a fixed coacting cam face, of a starting-arm for initiating the said rotary movement of said part; and a device for holding said part in its extreme axial or longitudinal positions.

28. The combination, with a rotary carrier or turret, a part mounted thereon which is adapted to have an independent rotary movement about its own axis, means for shifting said part axially in one direction, comprising an actuating member moving in unison with said part, and a coacting member mounted upon the carrier, and means for shifting said part in a reverse direction comprising an actuating member moving in unison with said part, and a fixed coacting cam face, of a starting-arm for initiating the said rotary movement of said part; and a device comprising a spring-pressed detent-finger for holding said part in extreme axial or longitudinal positions.

29. The combination, with a rotary carrier or turret, and a part mounted thereon which is adapted to have an independent rotary movement about its own axis, of means for shifting said part axially; a starting-arm for initiating the said independent rotary movement of the said part; and a device for holding the part in its extreme axial positions, comprising a spring-pressed detent-finger, and companion notches or grooves.

30. The combination, with a rotary carrier or turret, a part mounted thereon which is adapted to have an independent rotary movement about its own axis, of means for shifting said part axially; and a yielding impact surface for receiving the blow arising from the axial movement of the part.

31. The combination, with a rotary carrier or turret, and an impressor mounted thereon which is adapted to have an independent rotary movement about its own axis, and is capable of being shifted from one position to another, of means for rotating the said impressor about its own axis when the impressor is in one of its axial positions; means for shifting the impressor to another axial position for stopping said rotary motion of the impressor; and a detent device comprising a detent-finger and suitable grooves corresponding to the axial positions of the impressor for holding the latter in its axial positions, one of said grooves having an inclined side co-operating with said detent-finger to finally position the said impressor in its inoperative angular position.

32. The combination, with a rotary carrier or turret, a toothed or gear wheel mounted thereon to be capable of an independent rotary movement about its own axis and having an inoperative or smooth portion, a starting-arm for initiating the said rotary movement of the gear-wheel, an impressor or type-wheel moving in unison with said gear-wheel, and a driver for continuing the rotary movement of the gear-wheel, of means for shifting said gear-wheel axially to bring an inoperative or smooth portion of said wheel adjacent to the driver, or an operative or toothed portion adjacent thereto, whereby a rotation of said gear-wheel may be effected; a detent device for holding said gear-wheel in its axial positions; and a resilient impact plate for receiving the blow of said shaft when the same is moved axially.

33. The combination, with a rotary carrier or turret, a gear or toothed wheel mounted thereon and which is capable of an independent rotary movement about its own axis, and having an inoperative or smooth portion, a starting-arm for initiating the said rotary movement of the gear-wheel, and a driver for continuing such movement, of means for shifting said part axially to bring an inoperative or smooth portion of said gear-wheel adjacent to the driver, or an operative or toothed portion adjacent thereto, whereby an intermittent rotary movement of said gear-wheel may be effected; and means for positively preventing the return of said parts from an inoperative axial position to an operative axial position until said starting-arm is again actuated.

34. The combination, with a rotary carrier or turret, a toothed or gear wheel mounted thereon to be capable of an independent rotary movement about its own axis and having an inoperative or smooth portion, a starting-arm for initiating the said rotary movement of the toothed wheel, an impressor or type-wheel moving in unison with said gear-wheel, a shaft to which said impressor and gear-wheel are secured, and a driver for continuing the rotary movement of the gear-wheel, of means for shifting said gear-wheel axially to bring an inoperative or smooth portion of said wheel adjacent to the driver, or an operative or toothed portion adjacent thereto, whereby a rotation of said gear-wheel may be effected; and a retaining strip co-operating with said shaft to prevent the return of the parts from an inoperative axial position to an operative axial position until said starting-arm is again actuated.

35. The combination, with a rotary carrier or turret, and a part mounted thereon which is adapted to have an independent rotary movement about its own axis, of

means for shift said part axially; a starting-arm for initiating the said independent rotary movement of the said part; a device for holding the part in its extreme axial positions, comprising a spring-pressed detent-finger, and companion notches or grooves; and means comprising latch mechanisms for initiating the said rotary movement of said part.

36. The combination, with a rotary carrier or turret, and a part mounted thereon which is adapted to have an independent rotary movement about its own axis, of means for shifting said part axially; a starting-arm for initiating the said independent rotary movement of the said part; a device for holding the part in its extreme axial positions, comprising a spring-pressed detent-finger and companion notches or grooves; and a starting-arm and a row of latch mechanisms designed to actuate said starting-arm at different distances from a fixed point.

37. The combination, with a rotary carrier or turret, a plurality of parts mounted thereon which are adapted to have independent rotary movements about their own axes, starting-arms fixed relatively to said parts and arranged in different planes, and latch mechanisms for co-operating with these arms, of means for shifting said parts axially, comprising actuating members moving in unison with said part; and coacting members mounted upon the carrier.

38. The combination, with a rotary carrier or turret, a plurality of parts mounted thereon which are adapted to have independent rotary movements about their own axes, starting-arms fixed relatively to said parts and arranged in different planes, a corresponding number of rows of latch mechanisms, each row designed to co-operate with a particular arm, and the several mechanisms in each row being designed to actuate the arm at different distances from a fixed point, of means for shifting said parts axially, comprising actuating members moving in unison with said part; and coacting members mounted upon the carrier.

39. In a typewriter, the combination, with a rotary carrier or turret, a plurality of parts mounted thereon which are adapted to have independent rotary movements about their own axes, starting-arms fixed relatively to said parts and arranged in different planes, a corresponding number of rows of latch mechanisms, each row designed to co-operate with a particular arm, and the several mechanisms in each row being designed to actuate the arm at different distances from a fixed point, of means for shifting said parts axially, comprising actuating members moving in unison with said part; coacting members mounted upon the carrier; and an inking device located to ink types before impression is made.

40. The combination of a gear block, a plurality of gear teeth mounted in recesses in said block and each provided with a shoulder adapted to contact with a position-determining shoulder on the gear block, a spring encircling the shank of each gear tooth and urging the shoulder on the tooth into contact with the shoulder on the gear block, and threaded plugs engaging with the walls of the recesses in the gear block and constituting abutments for the springs.

41. The combination with a carrier, of a rotatable part mounted thereon and shiftable to and fro in its bearings, means for initiating the rotary movement of said part relatively to the carrier, a cam-faced actuator co-operative with a yieldingly supported co-actor to shift said part longitudinally upon the initiation of the rotary movement of the part, and means brought into action by the longitudinal shifting of said part and operating to continue its rotary movement.

42. The combination with a carrier, of a stud on which the carrier is mounted, a carrier drive shaft, a coupling between the drive shaft and the carrier, a spring interposed between said carrier and said coupling and tending to urge said drive shaft and said carrier in opposite directions, a rotatable part mounted on the carrier and shiftable to and fro in its bearings, means for initiating the rotary movement of said part relatively to the carrier, a cam-faced actuator operative to shift said part longitudinally upon the initiation of the rotary movement of said part, and means brought into action by the longitudinal shifting of said part and operating to continue its rotary movement.

43. The combination with a carrier, of a stud on which the carrier is mounted, a carrier-actuating shaft, a coupling between said shaft and said carrier, a rotatable part mounted on the carrier and shiftable to and fro in its bearings, means for initiating the rotary movement of said part relatively to the carrier, a cam-faced actuator co-operative with a yieldingly supported co-actor to shift said part longitudinally upon the initiation of the rotary movement of the part, and means brought into action by the longitudinal shifting of said part and operating to continue its rotary movement.

44. The combination with a carrier, of a stud on which the carrier is mounted, a carrier-actuating shaft, a coupling between the carrier and the shaft, a spring interposed between said coupling and said carrier and tending to urge the carrier and the shaft in opposite directions, a rotatable part mounted on the carrier and shiftable to and fro in its bearings, means for initiating the rotary movement of said part relatively to the carrier, a cam-faced actuator co-operative with a yieldingly supported co-actor to shift said part longitudinally upon the initiation of the rotary movement of the part, and means brought into action by the longitudinal shifting of said part and operating to continue its rotary movement.

45. The combination with a carrier, of a rotatable part mounted thereon and shiftable to and fro transversely to the plane of its rotation; means for initiating the rotary movement of said part relatively to the carrier; means for shifting said part transversely to its plane of rotation upon the initiation of the rotary movement of the part; and resilient means for receiving the blow of said part when the latter is moved transversely.

46. The combination with a carrier, of a rotatable part mounted thereon and shiftable to and fro transversely to the plane of its rotation; a starting arm for initiating the rotary movement of said part relatively to the carrier; means for shifting said part transversely to its plane of rotation upon the initiation of the rotary movement of the part; resilient means for receiving the blow of said part when the latter is moved transversely; and means co-operative with said part to prevent the return from an inoperative position transversely to its plane of rotation to an operative position until said starting arm is again actuated.

47. The combination with a carrier, of a rotatable part mounted thereon and shiftable to and fro transversely to the plane of its rotation; a starting arm for initiating the rotary movement of said part relatively to the carrier; means for shifting said part transversely to its plane of rotation upon the initiation of the rotary movement of the part; resilient means for receiving the blow of said part when the latter is moved transversely to its plane of rotation; and a device for holding said part in its two extreme positions when shifted transversely.

48. The combination with a carrier, of a rotatable part mounted thereon and shiftable to and fro transversely to the plane of its rotation; a starting arm for initiating the rotary movement of said part, means comprising a cam for shifting said part transversely to its plane of rotation; means actuatable by the transverse shifting of said part and operative to continue its rotary movement; cam means for stopping the rotation of said part; and an elastic buffer associated therewith for preventing overthrow of said cam means.

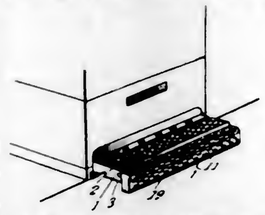
49. The combination with a revoluble shaft adapted for orbital and rotary movement; a starting arm on the shaft; a segmental gear thereon; a latch interposable in the path of the starting arm; a driver gear for engagement with the said segmental gear, co-operative stopping cams, and an elastic buffer associated therewith.

852,906. GRAIN-DOOR FOR CARS. HERBERT W. RICHARDS, Chicago, Ill. Filed Dec. 9, 1905. Serial No. 291,011.

Claim.—A car having a door opening therein, a door therefor comprising two hinged sections, an overlapping batten on the outside of one of the sections abutting against a complementary batten on the other section, an angle iron at the meeting edge of the battens, a plurality of latch bars pivoted to one of the battens overlapping the joint, the ends of said bars engaging the angle iron, a connecting bar pivoted to the opposite ends of the latch bars, a rigid horizontal supporting bar upon which the opposite upper corners only of the sections are slidably connected, said supporting bar capable of vertical adjustment, and brackets to secure the lower edges of the sections.



852,907. TRAP FOR BEEHIVES. FRANK H. SAFFELL, Garfield, Va. Filed Apr. 21, 1906. Serial No. 313,035.



Claim.—1. In a trap device for bee hives, the combination of a box-like structure having cuts extended inwardly from the outer edges of its opposite ends, and a removable trap partition having end extensions freely slidable into and out of said cuts and adapted to secure the trap partition when slipped into place.

2. In a trap device for bee hives, the combination of a box-like structure having inwardly extended cuts in opposite ends, and a trap partition having end extensions to slide into said cuts and retain the trap partition in place, said end extensions having their outer terminal portions bent to provide flanges to embrace outer sides of the end pieces to prevent longitudinal movement of the trap partition.

3. In a trap device for bee hives, the combination of a box-like structure and a removable trap partition arranged therein to provide a confining compartment or to admit of unobstructed passage between the hive and all portions of the box-like structure, said partition comprising angularly disposed wings which, with corresponding sides of the structure, form inclosing walls of the trap compartment.

4. In a trap device for bee hives, the combination of a box-like structure, a removable trap partition provided in its top side with entrance openings, and inner smooth-faced tubes pendent from said openings to admit of the bees dropping therethrough, but preventing their exit therethrough.

5. A trap device for bee hives, the same comprising a box-like structure having its outer side open, a trap partition removably fitted within the structure through the open side thereof and comprising angularly disposed wings, and means for closing the open side of said structure as well as the open side of the trap partition and retaining the latter in place.

6. A trap device for bee hives comprising a box-like structure having its front side open, a supplemental trap slidably fitted to the open side of the main structure and having its front side open, and a slide adapted to close either the open side of the main structure or the open side of the supplemental trap.

7. A trap device for bee hives comprising a main box-like structure and a supplemental box structure removably fitted thereto, an imperforate wall separating the lower portion of the main structure from the supplemental structure, the two structures having unobstructed intercommunication at their upper portions.

8. In a trap device of the character specified, the combination of a main box-like structure having an opening in its front side, a removable trap partition forming a compartment adjacent to said open side, a supplemental box-like structure removably fitted to the main side of the box-like structure and separated from the compartment inclosed by the trap partition by means of an imperforate plate, and a partition subdividing the supplemental structure into upper and lower compartments, the upper compartment having free communication with the upper portion of the main structure, and said partition being provided with guarded openings.

852,908. FIREPROOF MATERIAL. KEIZO SAKURAI, San Francisco, Cal. Filed Apr. 5, 1906. Serial No. 310,023.

Claim.—1. A fire refractory material comprising a refractory vehicle in two forms, one a coarse granular mass and the other a fine powder, suitable proportions of this fine and coarse stuff being mixed with a suitable proportion of an easily fusible binder and water, subjected to high pressure and baked.

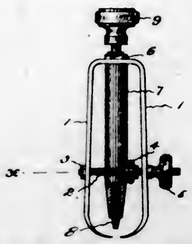
2. A new article of manufacture consisting of baked granulated magnesite, baked powder magnesite, easily fusible clay and water, subjected to a high pressure, and baked.

3. A process of producing a fire refractory material, which comprises heating a suitable refractory medium containing vaporizable ingredients to a point sufficient to remove said ingredients and reducing this heated refractory medium to two forms, one a coarse granular mass and the other a fine powder, taking suitable proportions of the coarse and fine stuff and adding suitable easily fusible binder and water, submitting the mixture to high pressure to weld the particles into a cohesive mass, and baking.

4. A fire-proof material consisting of suitable proportions of suitably granulated, and finely powdered refractory matter, such as described, mixed with a suitable proportion of an easily fusible clay, said mixture submitted to high pressure and then baked to a temperature sufficient only to fuse the clay and bind the particles together.

5. A fire-proof material comprising approximately 40% of a coarse granular fire-proof vehicle, approximately 20 to 30 mesh, approximately 40% of the same in powdered form, approximately 150 to 200 mesh, approximately 20% of an easily fusible binder and sufficient water to make a paste, said paste subjected to a pressure of approximately 5,000 pounds to the square inch, and this pressed product baked to approximately 1,000° C.

852,909. WATCHMAKER'S TOOL. ELMER N. SHELDON, Middletown, Conn. Filed Sept. 7, 1906. Serial No. 333,597.

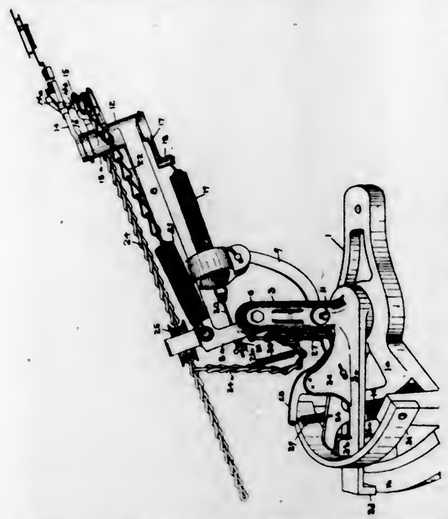


Claim.—1. A watchmaker's tool having a pair of fingers, a threaded pin movable centrally between the fingers toward and from their ends, and a screw and nut at one side of the pin for forcing the ends of the fingers together, substantially as specified.

2. A watchmaker's tool consisting of a pair of spring fingers formed from a single piece of spring metal and curved toward each other at their free ends, a screw and nut for forcing the free ends of the fingers toward each other, a stem secured to the joined ends of the fingers at one side of the plane of the screw, and a threaded pin extending through the stem and movable toward and from the opening between the free ends of the fingers, substantially as specified.

3. A watchmaker's tool having a pair of spring fingers that are joined at one end and have their other ends curved toward each other, a screw and nut for forcing the free ends of the fingers toward each other, a nut for limiting the movement of the fingers, a central stem and a threaded pin movable in the central stem toward and from the opening in the free ends of the spring fingers, substantially as specified.

852,910. TARGET-TRAP. HARRY E. SHERMAN and LOUIE A. SHERMAN, Kansas City, Mo., assignors, by mesne assignments, to Walter S. Dickey, Kansas City, Mo. Filed Mar. 13, 1905. Serial No. 249,680.



Claim.—1. In a target trap, an imperforate base, a revoluble carrying means on said base, a throw arm carried by said means, means for operating said arm, a lever having a lug thereon, mounted on said carrying means, and means for rocking said lever to throw said lug into one of the perforations in said base, for the purpose set forth.

2. In a target trap, a suitable base, a carrying means suitably mounted on said base, a throw arm suitably mounted on said carrying means, a lever mounted on said carrying means and yieldingly held out of engagement with said base, and means for automatically rocking said lever into contact with said base.

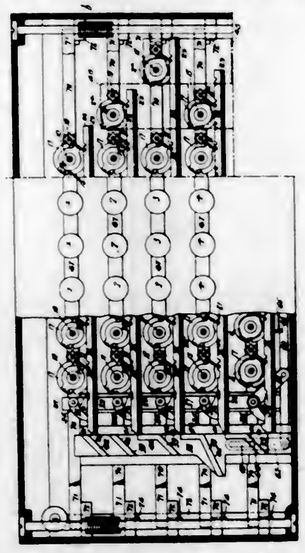
3. In a target trap, a suitable base, a carrying means on said base and a throw arm carried thereby, a lever pivoted on said carrying means, a spring on the free end of said lever yieldingly retaining same out of contact with said base, and means for automatically rocking said lever upon the discharge of said throw arm.

4. A target trap comprising a throw arm frame revolubly mounted on a suitable base, a throw arm carried by said frame, a pull chain adapted for operating said arm, a lever pivoted in an arm of said frame, and a lever chain hung on said frame and connected with said pull chain, and lever substantially as and for the purpose set forth.

5. A target trap comprising a throw arm frame revolubly mounted on a suitable base, a throw arm carried by said frame a pull chain adapted for operating said arm, a lever pivoted in an arm on said frame, a lever chain connecting said lever and pull chain and a spring connecting two non adjacent links in said lever chain, substantially as set forth.

6. A target trap comprising a throw arm frame revolubly mounted on a suitable base, a throw arm carried by said frame a pull chain adapted for operating said arm, a lever pivoted in an arm on said frame, a lever chain hung on said frame and connected with said pull chain and lever, and a spring 30 connecting two non adjacent links in said chain, substantially as set forth.

852,911. VOTING-MACHINE. SAMUEL R. SHOUP, Wilmington, Del. Filed Feb. 8, 1905. Serial No. 244,775.



Claim.—1. The combination, in a voting machine, of a casing, a series of independent counting mechanisms mounted within said casing, means for independently operating each of said counting mechanisms, rotatable members controlling the actuation of said means, a series of sets of slidable members, engaging means carried thereby, and means carried by the rotatable members for moving said slidable members, the arrangement of the engaging means of each rotatable member differing from all the others, and the relation of the parts being such that when one of the rotatable members is operated to move a set of the slidable members the rest of said rotatable members will be locked against operation.

2. The combination, in a voting machine, of a casing, a series of independent counting mechanisms mounted within said casing, means for independently operating each of said counting mechanisms, a series of sets of slidable members, engaging means carried thereby, rotatable members controlling the means for operating the counting mechanisms, said members having means arranged to operate during their actuation of the counting mechanism and move one of said sets of slidable members, the engaging means of the latter coacting therewith, the arrangement of the engaging means of each rotatable member differing from all the others, and the relation of the parts being such that when one of the rotatable members is operated to move a set of the slidable members the rest of said rotatable members will be locked against operation.

3. The combination, in a voting machine, of a plurality of sets of horizontally slidable bars having engaging means, a series of rotatable members, means for coaction therewith, to move any set of said bars, carried by said rotatable members, the arrangement of the engaging means of each rotatable member differing from all the others, and the relation of the parts being such that when one of the rotatable members is operated to actuate a set of the slidable bars the rest of said rotatable members will be thereby locked against operation, vertically moving means for releasing said bars, and means for retracting said bars immediately following their release.

4. The combination, in a voting machine, of a set of slidable bars, a rotatable spindle, a plurality of means one for each bar carried by said spindle for coaction with said bars to move the same, counting or registering mechanisms, and means for actuating the same also carried by said spindle, said counting or registering mechanisms being operated during the movement of said spindle necessary to move the bars.

5. The combination in a voting machine, of a plurality of sets of slidable bars, a series of rotatable spindles, a plurality of means carried by said spindles one for each bar carried by said spindles for coaction with said bars to move the same, sets of independently operable registering or counting mechanisms, and means for actuating the same also carried by said spindles, the arrangement of the engaging parts of each spindle differing from all the others, and the relation of the parts being such that when one of said spindles is operated to actuate a set of the slidable bars the rest of said spindles will be thereby locked against operation, one of the registering or counting mechanisms being operated during the rotation of any one of said spindles necessary to move one of said sets of bars.

6. The combination in a voting machine, of the slidable bars, a spindle, means carried by the spindle for moving said bars, and counting or registering wheels mounted on said spindle.

7. The combination in a voting machine, of a series of slidable bars, a series of spindles, means carried by the spindles for moving said bars, and independent sets of counting or registering wheels mounted on said spindles.

8. The combination in a voting machine, of the slidable bars, a spindle, means carried by the spindle for moving said bars, counting and registering wheels mounted adjacent to said spindle, and pinions actuated from said spindles for moving said counting or registering wheels.

9. The combination in a voting machine, of the slidable bars, a spindle, segmental gears carried by the spindle for moving said bars, counting and registering wheels mounted adjacent to said spindle, pinions for moving said counting or registering wheels, and means actuated from said spindle for operating said pinions.

10. The combination in a voting machine, of a spindle, a segmental gear carried thereby, counting wheels operated from said spindle, a pinion for actuating the unit wheel of said counting mechanism, and means carried by the spindle and brought into operative position at every half turn of the same for actuating said pinion.

11. The combination in a voting machine, of a spindle, a segmental gear carried thereby, counting wheels mounted on said spindle, a pinion for actuating the unit wheel of said counting mechanism, and a wheel recessed at diametrically opposite points and carried by the spindle for actuating said pinion at every half turn of said spindle.

12. The combination in a voting machine, of a spindle, a slidable bar, a slotted bar engaged thereby, means carried by said spindle for actuating said slidable bar, and means for registering the movement of said spindle simultaneously with the movement of the slidable bar.

13. The combination in a voting machine, of a spindle, a slidable bar, a slotted bar engaged thereby, means carried by said spindle for actuating said slidable bar, and a series of counting or registering wheels loose on said spindle and actuated simultaneously with the movement of the slidable bar to register the movement of the spindle.

14. The combination in a voting machine, of a casing, a series of slidable bars mounted therein, segmental pinions arranged to engage said slidable bars, spindles for carrying and turning said pinions, registering and counting mechanism combined therewith, and means operatively connecting said mechanism and the spindles.

15. The combination in a voting machine, of a casing, a series of sliding bars mounted therein, segmental pinions arranged to engage said sliding bars, means for turning said pinions, and registering and counting mechanism combined therewith.

16. The combination in a voting machine, of horizontally slidable bars, a spindle, segmental pinions carried by said spindle and arranged to move said bars, a pile of counting or registering wheels also carried by said spindle, independently mounted pinions for operating said counting or registering wheels, and means for bodily shifting said pinions in a horizontal plane whereby said registering pile may be reset.

17. The combination in a voting machine, of horizontally sliding bars, a spindle, segmental pinions carried by said spindle and arranged to move said bars, a pile of registering wheels also carried by said spindles, pinions for operating said registering wheels, and means for bodily shifting said pinions in a horizontal plane whereby said registering pile may be reset.

18. The combination in a voting machine, of a series of spindles, counting wheels mounted on said spindles, a series of pinions for actuating said counting wheels, shafts or spindles carrying said pinions, and a frame in which said pinion spindles are mounted, said frame being laterally movable in a horizontal plane to withdraw them from engagement with the counting wheels whereby the latter may be reset to the unit position.

19. The combination in a voting machine, of a series of sliding bars, a spindle, pinions carried by said spindles and arranged to move said sliding bars, a registering pile of gears carried by said spindle, an independent spindle, pinions carried thereby for operating the registering pile, and a frame arranged to slide in a horizontal plane in which said pinion spindles are mounted whereby said pinions may be removed from engagement with the registering pile to permit the resetting of the same.

20. The combination in a voting machine, of a series of sets of slidable bars, a series of spindles, pinions carried by said spindles and arranged to move said slidable bars, a registering pile of gears carried by said spindle, an independent spindle, pinions carried thereby for operating the registering pile, a sliding frame in which said pinion spindles are mounted whereby said pinions may be removed from engagement with the registering pile to permit the resetting of the same, the bars of said frame being slotted for such movement.

21. The combination in a voting machine, of a series of spindles, counting wheels mounted on said spindles, a series of pinions for actuating said counting wheels, shafts or spindles carrying said pinions, a frame in which said pinion spindles are mounted, said frame being laterally movable in a horizontal plane to withdraw them from engagement with the counting wheels whereby the latter may be reset to the unit position, and means for locking said frame, said frame embracing the main spindles and being slotted adjacent thereto for lateral movement.

22. The combination in a voting machine, of counting mechanism, actuating pinions for said counting mechanism, a frame mounted to slide in a horizontal plane for supporting said pinions, and a lock for holding said frame against movement.

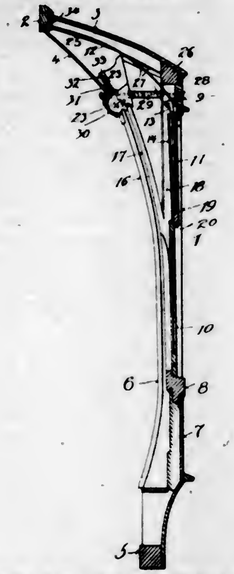
852,912. CAR. WARREN M. SMITH, Prospect Park, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Sept. 15, 1906. Serial No. 334,798.

Claim.—1. In a device of the class described, a bifurcated post having a sash groove below said bifurcated portion, and means uniting its upper ends.

2. In a device of the class described, a bifurcated post with means including a brace uniting its upper ends and a bolt and sleeve also secured to the upper ends.

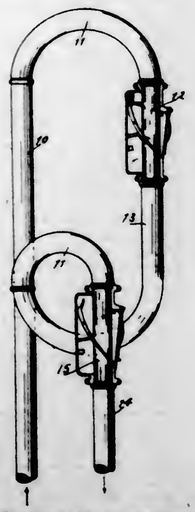
3. In a device of the class described, a post having a block secured to one of its upper ends and an eave beam to the other and a brace uniting said block and eave beam.

4. In a device of the class described, a series of posts, each provided with bifurcated upper ends, means including rods and braces uniting the upper ends of each post and curtain rails uniting said posts.



5. In a device of the class described, a series of posts each provided with bifurcated upper ends, means for uniting the ends of each post, a single sash groove in each face of each post, and upper and lower sashes, the lower of which alone reats in each groove.

852,913. PNEUMATIC-DESPATCH APPARATUS. FRED R. TAISEY, Indianapolis, Ind., assignor to The Lamson Consolidated Store Service Company, Boston, Mass., a Corporation of New Jersey. Filed May 24, 1906. Serial No. 318,474.



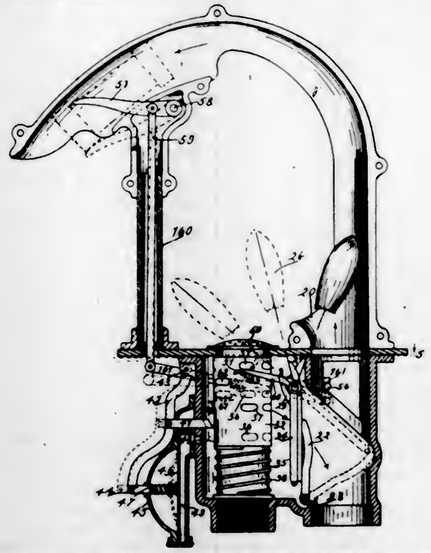
Claim.—1. A terminal in a pneumatic despatch apparatus having a passage-way therethrough and a discharge opening, a director projecting into the passage-way therein in a position when locked to deflect a carrier through the discharge opening, and means pivoted on the deflecting end of said director which projects into the passage-way and operable by a carrier for locking the director.

2. A terminal in pneumatic desptach apparatus having a passage-way therethrough and a discharge opening and a chamber opposite the discharge opening, a director pivoted in said chamber and projecting into said passage-way, a fixed stop, and means on the deflecting end of director in position to be engaged by a carrier and moved so as to engage said fixed stop.

3. A terminal in a pneumatic despatch apparatus having a passage-way for carriers, with a discharge opening, a director projecting incliningly into said passage-way in a position when locked to deflect a carrier through the discharge opening, a locking trip mounted on the deflective portion of said director so as to be normally in an unlocking position, and the carrier with a projection from the head thereof that is adapted to engage said locking-trip and move it to a locking position before the head of the carrier engages the director.

4. A terminal in a pneumatic despatch apparatus having a passage-way therethrough for carriers and a discharge opening, a plurality of carriers the deflecting end of, a director projecting into said passage-way, a fixed stop, and means pivoted on said director in a position to be engaged by a portion of said carriers and moved so as to engage said fixed stop.

852,914. PNEUMATIC-DESPATCH APPARATUS. FRED R. TAISEY, Indianapolis, Ind. Filed June 14, 1906. Serial No. 321,607.



Claim.—1. In a pneumatic despatch apparatus, the combination with a despatch tube, a terminal at each end thereof, and means for supplying compressed air to each terminal, of a single means for controlling the admission of air and the exhaust.

2. In a pneumatic despatch apparatus, the combination with a despatch tube, a terminal in each end thereof, and means for supplying air to each terminal, of an air valve provided with both air admission and exhaust ports, and means for operating said valve.

3. In a pneumatic despatch apparatus, a despatch tube, a terminal at each end thereof, a pipe leading from a compressed air supply and entering each terminal and provided with ports within the terminal, a sliding tubular valve on said pipe with ports adapted to register with the ports in said pipe, and means for sliding said valve into position for said ports to register.

4. In a pneumatic despatch apparatus, a despatch tube, a terminal at each end thereof, a pipe leading from a compressed air supply and entering each terminal and provided with ports within the terminal, a sliding tubular valve on said pipe with ports adapted to register with the ports in said pipe, means for sliding said valve into position so that said ports will register, and a spring for moving said sliding valve so that said ports will not register.

5. In a pneumatic despatch apparatus, the combination with a despatch tube, a terminal at each end thereof, and means for supplying compressed air to each terminal, of an air valve provided with both air admission and exhaust ports, and means controlled by the air pressure in the despatch tube for holding said valve in its exhaust position.

6. In a pneumatic despatch apparatus, the combination with a despatch tube, a terminal at each end thereof, and means for supplying compressed air to each terminal, of an air valve movable into air inlet and exhaust positions, a terminal valve, and means actuated by the terminal valve while closed for holding the air valve in the exhaust position.

7. In a pneumatic despatch apparatus, the combination with a despatch tube, a terminal at each end thereof, and means for supplying compressed air to each terminal, of an air valve movable into air inlet and exhaust positions, a terminal valve adapted to be held closed by air pressure in the despatch tube, and means actuated by said terminal valve while closed for holding the air valve in the exhaust position until the air pressure in the exhaust tube is relieved.

8. In a pneumatic despatch apparatus, a despatch tube, a terminal at each end thereof with an opening for the passage of a carrier, a pipe leading from a compressed air supply and entering said terminal and provided with a port therein, a sliding valve on said pipe for closing and opening said port, a terminal valve for closing the carrier opening in each terminal, a shaft mounted in each terminal, means connected with said shaft for operating both valves to admit air and close the opening in the terminal, and means outside each terminal for actuating said shaft.

9. In a pneumatic despatch apparatus, a despatch tube, a terminal at each end thereof, a compressed air pipe entering a terminal and provided with both air admission and exhaust ports, and a spring return sliding valve on said pipe for closing and opening said ports, a terminal valve adapted to be held closed by compressed air in said tube, a catch for engaging and holding said air valve in its exhaust position, said catch being controlled by said terminal valve when in a closed position.

10. In a pneumatic despatch apparatus, a despatch tube, a terminal at each end thereof, a compressed air pipe entering a terminal with an air admission port and an exhaust port therein, a tubular sliding air valve on said pipe provided with corresponding ports, pins projecting from opposite sides of said sliding air valve, a shaft mounted in the terminal, a yoke pivoted on said shaft partially surrounding said tubular air valve and adapted to engage said pins thereon, a terminal valve mounted on said shaft and held closed by compressed air in said despatch tube, and means connected with said terminal valve for stopping said sliding air valve in its exhaust position.

11. In a pneumatic despatch apparatus, a despatch tube, a terminal at each end thereof, a compressed air pipe entering one terminal with an air admission port and an exhaust port therein, a partition in said pipe between said admission and exhaust ports, a sliding valve on said pipe provided with an air admission port adapted to register with the corresponding port in said air pipe, when the valve is in one position and an exhaust port adapted to register with the exhaust in said pipe when the valve is in another position, the arrangement being such that when said valve is in the normal position both sorts of ports will be closed and means controlled by the air pressure in the despatch tube for holding the air valve in the air-admitting and exhaust positions.

12. In a pneumatic despatch apparatus, the combination with a despatch tube, a terminal at each end thereof, and means for supplying compressed air to such terminal, of an air valve, means for operating said valve, a terminal valve, and means on the air valve for opening the terminal valve.

13. In a pneumatic despatch apparatus, the combination with a despatch tube, a terminal at each end thereof, and means for supplying compressed air to said terminals, of a spring returned air valve in a terminal provided with both air admission and exhaust ports, a terminal valve held closed by the air pressure in the despatch tube, and means on the air valve for opening the terminal valve after the exhaust position of the air valve has been reached.

14. In a pneumatic despatch apparatus, a despatch tube, a terminal connected therewith, a terminal valve for closing the carrier opening therein, and means movable into position across the carrier passage-way as the terminal valve closes for preventing a carrier from lodging behind the carrier valve while it is closed.

852,915. PROCESS OF TREATING CASEIN AND COMPOUND OBTAINED THEREFROM. JULIUS TALBAU, Philadelphia, Pa., assignor of one-half to Charlton H. Royal, Philadelphia, Pa. Filed Nov. 17, 1906. Serial No. 343,850.

Claim.—1. A liquid, non-decomposing size or adhesive, containing casein, a soluble alkali, and a solution of gum camphor.

2. A non-decomposing size or adhesive, containing casein, gum camphor, and alcohol.

3. A non-decomposing size or adhesive, containing casein, gum camphor, and methyl-alcohol.

4. A non-decomposing size or adhesive, containing casein, gum camphor, alcohol, and formaldehyde.

5. A liquid composition of matter for use as an adhesive or size, comprising a solution of casein, a soluble alkali, and a solution of gum camphor.

6. A composition of matter for use as an adhesive or size, comprising a solution of casein, gum camphor, and alcohol.

7. A composition of matter for use as an adhesive or size, comprising a solution of casein, gum camphor, and methyl-alcohol.

8. A composition of matter for use as an adhesive or size, comprising a solution of casein, gum camphor, alcohol, and formaldehyde.

9. The process of preparing an adhesive or size, which consists in reducing casein to fluent form in an alkaline solution, dissolving gum camphor in alcohol, and incorporating the camphor solution with the casein solution.

10. The process of preparing an adhesive or size, which consists in reducing casein to fluent form in an alkaline solution, dissolving gum camphor in methyl-alcohol, and incorporating the camphor solution with the casein solution.

11. The process of preparing an adhesive or size, which consists in reducing casein to fluent form in an alkaline solution, dissolving gum camphor in alcohol, adding a small quantity of formaldehyde thereto, and then incorporating the camphor solution with the casein solution by any suitable means.

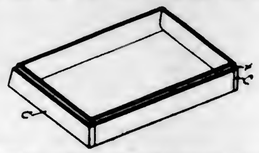
12. The process of preparing a sizing composition, which consists in reducing powdered casein to fluent form in an alkaline solution, dissolving gum camphor in alcohol, and then incorporating the camphor solution with the casein solution by the agency of heat.

13. The process of preparing a sizing composition, which consists in reducing powdered casein to fluent form in an alkaline solution, dissolving gum camphor in methyl-alcohol, and then incorporating the camphor solution with the casein solution by the agency of heat.

14. The process of preparing a sizing composition, which consists in reducing powdered casein to fluent form in an

alkaline solution, dissolving gum camphor in alcohol, adding a small quantity of formaldehyde thereto, and then incorporating the camphor solution with the casein solution by the agency of heat.

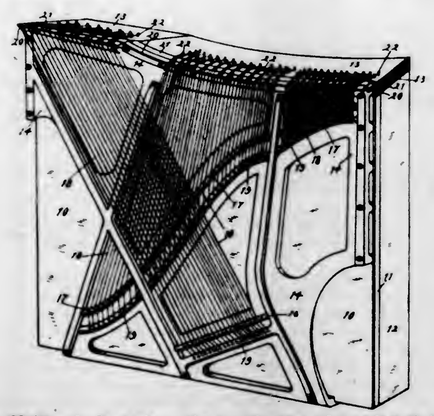
852,916. TUNNEL-SEGMENT. FRANK F. VANDEVORT, Germantown, Pa., assignor of one-fourth to Henry Japp, New York, N. Y., one-fourth to James Forgie, Richmond Hill, N. Y., and one-fourth to Ernest W. Moir, London, England. Filed May 22, 1906. Serial No. 318,242.



Claim.—1. The herein described tunnel segment, consisting of a channel bar with plates welded to the ends of the web and flanges of the channel.

2. The herein described tunnel segment, consisting of a channel bar with the inner faces of the flanges parallel to each other, and the outer faces inclined and with plates welded to the ends of the web and flanges of the channel.

852,917. PIANO. RALPH N. WELLS, Newcastle, Ind., assignor of one-third to William G. Betz and one-third to Daniel J. Ray, Newcastle, Ind. Filed Mar. 15, 1906. Serial No. 306,133.



Claim.—1. In a piano, the combination of a string plate with one edge thereof partly straight and partly curved and extending transversely of the piano, a pin block extending transversely of the piano with a pin surface conforming to the shape of said edge of the string plate and extending back at substantially a right angle thereto, a bearing along said edge of the string plate, strings mounted on said string plate and passing over said bearing, and pins in the pin block to which the strings are secured.

2. In a piano, a string plate with a bearing along one extreme edge, strings secured to said plate with their ends extending over said bearing, a pin block extending along the bearing edge of said plate with one surface at substantially a right angle to said plate, pins in said surface of said block and to which said strings are secured, and a sound board of substantially the same length as said string plate, the bearing end of which string plate engages the extreme end of said sound board.

3. In a piano, the combination of a string plate with a bearing along one extreme edge, strings secured to said plate with their ends extending over said bearing, a sound board of substantially the same length as said string plate and upon the extreme end of which said string plate at said bearing edge is mounted, a pin block extending along the bearing edge of said plate with its pin surface at substantially a right angle to said plate, and pins in said block to which said strings are secured.

4. In a piano, the combination of a string plate with one edge thereof partly straight and partly curved and extending transversely of the piano, a pin block extending transversely of the piano with a pin surface conforming to the shape of said edge of the string plate and extending back at substantially a right-angle thereto, a bearing along the edge of said pin block and adjacent the edge of the string plate, a sound board of substantially the same length as said string plate and upon which said string plate is mounted along the edge of said string plate which has said bearing on it, strings mounted on said string plate and passing over said bearing, and pins in the pin block to which said strings are secured.

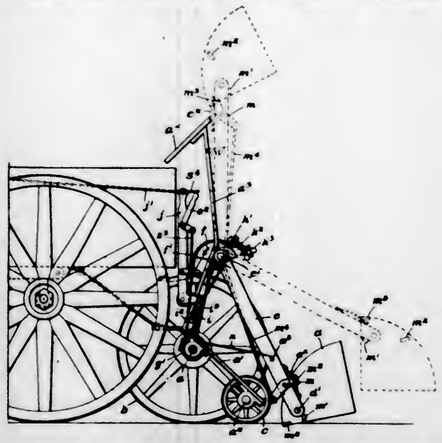
852,918. PAPER. EDWARD L. WHITE, Englewood, N. J. Filed May 1, 1906. Serial No. 314,713.

Claim.—1. A paper composed of a homogeneous mass of fibrous pulp and pulverized mica.

2. A paper composed of a homogeneous mass containing about eighty per cent. of fibrous pulp and about twenty per cent. of mica particles.

3. Paper containing throughout its composition a substantially uniform proportion of pulverized mica.

852,919. SELF-LOADING CART. ZENAS WHITTEMORE, Morton, Pa. Filed Nov. 15, 1905. Serial No. 287,461.



Claim.—1. In a self-loading device, the combination of rocking arms, a collecting device pivotally connected with said rocking arms, stops to limit the rocking of said collecting device on its pivotal connection with said arms, and means to rock said arms to raise and lower the collecting device carried thereby.

2. In a self-loading device, the combination of rocking arms, a collecting device pivotally connected with said rocking arms, stops to limit the rocking of said collecting device on its pivotal connection with said arms, means to rock said arms to raise and lower the collecting device carried thereby, and an automatic locking device to lock said collecting device against movement on its pivotal connection when it is elevated.

3. In a self-loading device, the combination of rocking arms, a collecting device pivotally connected with said rocking arms, stops to limit the rocking of said collecting device on its pivotal connection with said arms, means to rock said arms to raise and lower the collecting device carried thereby, and an automatic locking device to lock said collecting device against movement on its pivotal connection when it is elevated and to unlock it when it is lowered.

4. In a self-loading device, the combination of rocking arms, a collecting device pivotally connected with said rocking arms, stops to limit the rocking of said collecting device on its pivotal connection with said arms, means to rock said arms to raise and lower the collecting device carried thereby, a locking device carried by said arms and adapted to engage the collecting device and lock it against movement on its pivots, and means controlled by the movement of the arms to actuate said locking device when the arms are elevated.

5. In a self-loading device, the combination of rocking arms, a collecting device pivotally connected with said rocking arms, stops to limit the rocking of said collecting device on its pivotal connection with said arms, means to rock said arms to raise and lower the collecting device carried thereby, a pivoted dog m carried by a rocking arm, a lug m^3 carried by the collecting device and adapted to be acted upon by the dog, and a rod m^4 connecting the dog with a support eccentric to the axis of the rocking arms whereby the rocking of said arms will cause said rod to actuate the dog and engage the lug m^3.

6. In a self-loading device, the combination of a rocking frame, a collecting device pivotally connected with said rocking frame, and a stop to limit the movement of said collecting device on its pivots while it is being lifted by the rocking frame.

7. In a self-loading device, the combination of a wheeled vehicle, a rocking frame carried thereby, a collecting device pivotally connected with said rocking frame, and means connected with the vehicle for pulling the collecting device forward with a yielding tension.

8. In a self-loading device, the combination of a wheeled vehicle, a rocking frame carried thereby, a collecting device carried by said rocking frame, and a yielding connection between said rocking frame and the axle of the wheeled vehicle.

9. In a self-loading device, the combination of a wheeled vehicle, a rocking frame carried thereby, a collecting device carried by said rocking frame, a friction clutch on the axle of the wheeled frame, and a connection between said friction clutch and rocking frame.

10. In a self-loading device, the combination of a wheeled vehicle, a rocking frame carried thereby, a collecting device carried by said rocking frame, power transmitting devices between the rocking frame and the axle of the vehicle embracing a clutch, a friction clutch on said axle and a connection between said friction clutch and the rocking frame.

11. In a self-loading device, the combination of a wheeled vehicle, a rocking frame carried thereby, a collecting device carried by said rocking frame, a friction clutch on the axle of the wheeled vehicle, a flexible connection between the rocking frame and loose member of the friction clutch, and means to adjust the tension of the other member of said friction clutch.

12. In a self-loading device, the combination of a wheeled vehicle, a rocking frame carried thereby, a collecting device carried by said rocking frame, a loose clutch member g' on the axle of the wheeled vehicle, a loose friction clutch member o also on the axle of the wheeled vehicle, a flexible connection between the clutch member o and the rocking frame, and a clutch member g arranged to act in conjunction with either clutch member g' or o.

13. In a self-loading device, the combination of a wheeled vehicle, a rocking frame carried thereby, a collecting device carried by said rocking frame, a loose clutch member g' on the axle of the wheled vehicle, a loose friction clutch member o also on the axle of the wheeled vehicle, a flexible connection between the clutch member o and the rocking frame, a clutch member g arranged to act in conjunction with either clutch member g' or o, and means to adjust the tension of said clutch member g' on the friction clutch member o.

14. In a self-loading device, the combination of a wheeled vehicle, a rock shaft carried thereby, power transmitting connections between the rock shaft and the axle of the vehicle, embracing a clutch, manually controlled devices for operating said clutch at will, arms carried by the rock shaft, a collecting device carried by said arms, and clutch actuating devices for operating said clutch, controlled by the rock shaft.

15. In a self-loading device, the combination of a wheeled vehicle, a rocking frame carried by the vehicle, a collecting device pivotally supported by said rocking frame, stops to limit the forward movement of the collecting device on its pivots, and a yielding connection between the rocking frame and the axle of the wheeled vehicle.

16. In a self-loading device, the combination of a wheeled vehicle, a rock shaft carried thereby, a collecting device carried by said rock shaft, power transmitting connections between the rock shaft and the axle of the vehicle, embracing a clutch, and a retarding device acting on the rock shaft to retard its rotation when the collecting device is lowered.

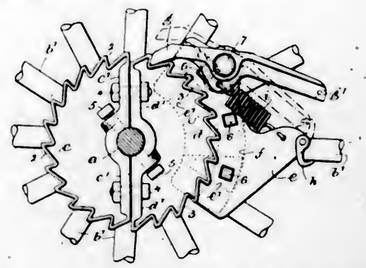
17. In a self-loading device, the combination of a wheeled vehicle, a rock shaft carried thereby, a collecting device carried by said rock shaft, power transmitting connections between the rock shaft and the axle of the vehicle embracing a clutch, a cam on the rock shaft, and a friction device acting on said cam to retard the rotation of the rock shaft when the collecting device is lowered.

18. In a self loading device, the combination of rocking arms, a collecting device pivotally connected with said arms, and means to rock said arms and raise and lower the collecting device carried thereby.

852,920. MANUFACTURE OF FERRO-MOLYBDENUM. HENRY W. C. ANNABLE, London, England, assignor to The Ferro Alloys Syndicate Limited, London, England. Filed Nov. 1, 1906. Serial No. 341,650.

Claim.—The manufacture of ferro-molybdenum from molybdenite by heating the molybdenite with alkali in the presence of oxygen and preparing from the product a solution containing molybdate of the alkali employed, precipitating this by means of a salt of iron, and so obtaining molybdate of iron and then reducing this to ferro-molybdenum, substantially as hereinbefore described.

852,921. CLUTCH DEVICE FOR AGRICULTURAL MACHINES. LEWIS A. ASPINWALL, Jackson, Mich., assignor to Aspinwall Manufacturing Company, Jackson, Mich., a Corporation of Michigan. Filed June 13, 1906. Serial No. 321,440.



Claim.—1. The combination with the main axle and a main wheel of an agricultural implement loose on the axle, of a support device adapted for engagement with spokes of the wheel, a pawl pivotally mounted upon said support device, a spring at one end connected to the pawl and at the other end to the said support device, a two-part or divisible ratchet formed with peripheral teeth adapted to lie in a plane parallel to the aforesaid support device and opposite flanges formed with the two parts of said ratchet coming at opposite sides of the axle and extending in a direction away from the peripheral teeth and said support device near which said teeth lie, and bolts passing through

said flanges for securing the two-part or divisible ratchet to the main axle.

2. The combination with the main axle and a main wheel of an agricultural implement, of a ratchet secured to the axle, a pawl adapted to engage the ratchet, plate devices and means for securing the same in substantially parallel planes to the spokes of the wheel, a pin for pivotally connecting the pawl to one of said plates, a spring for connecting the pawl to a fixed point, a lug formed with the pawl and a catch-hook connected to the same plate with the pawl and adapted to engage its lug so as to hold the pawl against the tension of the spring out of engagement with the teeth of the ratchet.

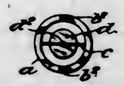
3. The combination with the main axle and a main wheel of an agricultural implement, of a ratchet secured to the axle, a pawl adapted to engage the ratchet, a plate having a lug, a pin for pivotally connecting the pawl to said plate, lugs formed with said plate and adapted to fit between the spokes of the wheel while the plate bears against the sides of the spokes, a second plate coming against the opposite sides of the spokes in a parallel plane with the aforesaid plate, bolts passing through the plates and through the lugs for clamping the plates to the spokes, a helical spring connected at one end to the pawl plate and at the other end to the pawl, a lug formed on the pawl and a hook connected to the pawl plate and adapted to engage the lug so as to hold the pawl out of action.

4. The combination with the main axle and a main wheel of an agricultural implement, of a clutch device for connecting the said parts comprising a two-part or divisible ratchet having peripheral teeth and adjacent flanges coming at opposite sides of the axle and bolts for securing the said two-part or divisible ratchet to the said axle, a pawl adapted to engage the teeth of the ratchet, a plate having a lug, a pin for pivotally connecting the pawl to said plate, lugs formed with said plate and adapted to fit between the spokes of the wheel while the plate bears against the sides of the spokes, a second plate coming against the opposite sides of the spokes in a parallel plane with the aforesaid plate, bolts passing through the plates and through the lugs for clamping the plates to the spokes, a helical spring connected at one end to the pawl plate and at the other end to the pawl, a lug formed on the pawl and a hook connected to the pawl plate and adapted to engage the lug so as to hold the pawl out of action.

5. The combination with the main axle and a main wheel of an agricultural implement, of a ratchet secured to the axle, a pawl adapted to engage the ratchet, a support device adapted for engagement with the spokes of the wheel and to which device the pawl is pivotally connected, a spring at one end connected to the pawl and at the other end to the said support device, and devices forming parts of the said pawl and the said support and adapted for holding the pawl away from the ratchet against the tension of the spring.

6. The combination with the main axle and a main wheel of an agricultural implement, of a ratchet secured to the axle, a pawl adapted to engage the ratchet, a support from the spokes of the wheel to which the pawl is pivotally connected, a spring at one end connected to the pawl and at the other end to the said support, a lug formed with the pawl and a catch-book connected to the support of the pawl and adapted to engage the lug of the pawl so as to hold the same against the tension of the spring out of engagement with the teeth of the ratchet.

852,922. JEWEL-MOUNTING. ALFRED A. BOISMAURE, New York, N. Y., assignor to The Boismaure Oscillating Jewelry Company, of New Jersey. Filed July 23, 1906. Serial No. 327,251.



Claim.—1. A jewel mounting comprising an outer frame member and an inner concentric member, said members being connected by a vibratory spring which extends diametrically across the outer frame member and both ends of which are secured thereto, said spring being also secured centrally to the inner concentric member.

2. A jewel mounting comprising an outer frame member and an inner concentric member, said members being connected by a vibratory spring which extends diametrically across the outer frame member and both ends of which are secured thereto, said spring being also secured centrally to the inner concentric member, and said concentric member and outer frame member being in different planes.

3. A jewel mounting composed of an outer frame member and a central concentric member, a vibratory spring extending diametrically across the outer frame member and the opposite ends of which are secured thereto, said spring being also secured centrally to the inner concentric member, and one of said members being provided with an attaching device.

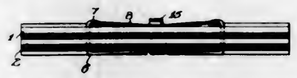
4. A jewel mounting comprising an outer frame member and an inner concentric member, said members being connected by a spring which extends diametrically across the outer frame member and is secured thereto at both ends, the central concentric member being secured centrally to said spring.

5. A jewel mounting consisting of an outer frame member and a central concentric member, both of said members being ring-shaped in form, said members being also connected by a spring arranged diametrically of the outer frame member and the opposite ends of which are secured thereto, said spring being also secured centrally to the inner concentric member.

6. A jewel mounting consisting of an outer frame member and a central concentric member, both of said members being ring-shaped in form, said members being also connected by a spring arranged diametrically of the outer frame member and the opposite ends of which are secured thereto, said spring being also secured centrally to the inner concentric member, and one of said members being also provided with an attaching device.

7. A jewel mounting comprising two concentrically arranged members, and a diametrically arranged spring the opposite ends of which are secured to the outer frame member, said spring being also secured centrally to the inner member.

852,923. CLIP. FRANK A. BROWNELL, Rochester, N. Y., assignor to Eastman Kodak Company, Rochester, N. Y., a Corporation of New York. Filed May 18, 1905. Serial No. 261,083.



Claim.—1. The combination with a clip comprising relatively movable jaws, of a spring-actuating member embodying a strip of elastic material extending along the outer surface of one of said jaws substantially parallel with the axis of movement and bowed to normally contact said jaw at a point intermediate its ends, and connections between said member and the other jaw.

2. The combination with a clip comprising relatively movable jaws provided with apertures, of a spring actuating member embodying a strip of elastic material extending along the outer surface of one of said jaws, a member engaging the other jaw and means connecting the said members and extending through the apertures only.

3. The combination with a clip having the relatively movable jaws, of a spring actuating member embodying a strip of elastic material extending along the outer surface of one of said jaws and having its ends passed through apertures in both to bear against the corresponding surface of the other.

4. The combination with a clip having the relatively movable jaws, of a spring actuating member embodying a strip of elastic material extending along the outer surface of one of said jaws and connected with the ends of a resilient plate on the corresponding surface of the other.

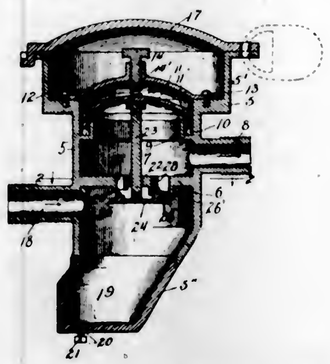
5. The combination with a clip having the relatively movable jaws, of a spring actuating member arranged on the outer side of one of said jaws, a resilient plate on the outer side of the other jaw, connections between said member and said plate and a hook on the latter for hanging the clip on a support.

6. The combination with a clip having the relatively movable jaws provided with recesses at their rear edges, of a spring actuating member arranged on the outer side of one of said jaws, a resilient plate on the outer side of the other jaw, connections between said member and said plate, and a hook on the latter extending opposite the recesses in the jaws for hanging the clip on a support.

7. The combination with a clip having the relatively movable jaws, of a plate arranged thereon carrying a hook and an extension on the hook adapted to support the clip in a plane at an angle to that in which it is supported by said hook.

8. In a clip, the combination with the pivotally connected jaws, of spring actuating devices comprising bowed elastic members arranged one on the outer side of each of said jaws and extending axially thereof, and connections between said members.

852,924. PRESSURE-REGULATING VALVE. RICHARD E. BRUNS, Chicago, Ill. Filed July 10, 1905. Serial No. 268,935.



Claim.—1. In a pressure regulator, a casing, a web dividing said casing, having a port therein, a mercury cup above the web, a float dipping therein, a bridge spanning the casing, an adjustable part in said bridge, a spring interposed between the float and said part, a valve stem extending downward from the float, and a valve on said stem arranged for coaction with the port.

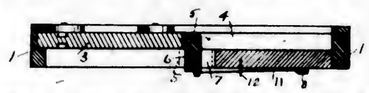
2. In a pressure regulator, a casing, a web dividing said casing, having a port therein, a mercury cup above the web, a float dipping therein, a bridge spanning the casing, an adjustable part in said bridge, a spring interposed between the float and said part, a valve stem extending downward from the float and a valve on said stem provided with an inclined portion arranged for coaction with the port to gradually diminish the passage open for gas flow as the valve is moved to closed position.

3. In a pressure regulator, a casing, a web 6 provided with a port and a guide aperture, a gas chamber above the web, an annular mercury cup above the web, a float dipping therein, and closing the gas chamber at its top, a bridge 12 above the float, an adjusting screw in said bridge, a spring interposed between the float and the screw, a valve stem extending downward from said float through the guide aperture in the web, and a valve carried by said stem for coacting with the port in the web.

4. In combination a casing divided by a web 6, having therein a port, the casing below said web being shaped to constitute a water trap, a drain opening from said trap, a closure for said opening, an inlet opening below the web, an outlet opening above the web, a float above the web, a seal for said float, a bridge above the float, an adjusting screw thereon, a spring interposed between said screw and float, a valve stem depending from the float, and a valve carried by said stem arranged to coöperate with said port.

5. In combination, a casing web therein dividing said casing transversely, said web having therein a central guide aperture and two ports, a pressure responsive float above the web, a stem extending from said float through the guide aperture, a plate 24 secured to said stem and carrying two valves, arranged for coaction with the ports in the web and each constructed to open or close its corresponding port gradually.

852,925. CAR-DOOR. JAMES CARR, Memphis, Tenn. Filed Mar. 31, 1906. Serial No. 309,175.



Claim.—1. The combination of the door frame, the fixed panel, the sliding panel, said panels being situated in different planes, the bar pivoted in the frame intermediate the adjacent edges of the panels, and means to lock the bar to the fixed panel and in the path of the sliding panel and against the same, said bar when thus locked having a thickness in a direction parallel with the panels less than the distance between said edges whereby a ventilating space is left between the fixed panel and the bar.

2. The combination of the door frame, the fixed panel, the sliding panel, said panels being situated in different planes, the bar pivoted in the frame, and means to lock the bar to the fixed panel and in the path of the sliding panel and against the same and constituting the sole lock for said sliding panel, said bar having a width approximately equal to the distance between the proximate edges of the panels when fully separated and a smaller transverse dimension, all substantially as set forth, whereby it can be adjusted to either partially or wholly close said space.

3. The combination of the door frame, the fixed panel, the sliding panel, said panels being situated in different planes, the bar pivoted to the frame, and means to lock the bar to the fixed panel and in the path of the sliding panel and against the same and constituting the sole lock for said sliding panel, said bar having a width approximately equal to the distance between the proximate edges of the panels when fully separated and a smaller transverse dimension, all substantially as set forth, whereby it can be adjusted to either partially or wholly close said space, and means supported on one of the panels for turning the bar on its pivot.

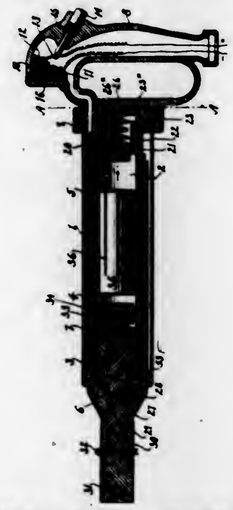
4. The combination of the door frame, the fixed panel, the sliding panel, said panels being situated in different planes, the bar pivoted in the frame, and means to lock the bar to the fixed panel and in the path of the sliding panel and against the same and constituting the sole lock for said sliding panel, said bar having a width approximately equal to the distance between the proximate edges of the panels when fully separated and a smaller transverse dimension, all substantially as set forth, whereby it can be adjusted to either partially or wholly close said space, and means supported on one of the panels for turning the bar on its pivot, said means comprising a crank arm situated on a dead center in either position of the pivoted bar.

852,926. ELECTRIC TOOL-DRIVER. ALLEN F. CARVER and JAMES N. STOUT, New York, N. Y., assignors to American Invention Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 21, 1905. Serial No. 292,829.

Claim.—1. In an electric tool driver, the combination with a series of magnetic coils, a reciprocating hammer within the coils and means for supplying an electric current to energize the coils, of a solenoid switch for making

and breaking the main current to energize the coils, contacts in the handle of the electric tool driver electrically connected with the poles of the solenoid and means for closing the contacts in the said handle to energize the solenoid and hence operate the switch in the main circuit.

2. In an electric tool driver, including electromagnet coils for advancing and retracting the hammer, a dash-pot comprising a spring actuated reciprocating piston in position to receive the impact of the hammer on its return stroke.



3. In an electric tool driver, including electromagnet coils for advancing and retracting the hammer, a dash pot comprising a spring actuated, reciprocating piston in position to receive the impact of the hammer on its return stroke, and ducts for admitting air to the dash pot and for discharging it around the coils.

4. In an electric tool driver, including electromagnet coils for advancing and retracting the hammer, a dash pot comprising a spring actuated, reciprocating piston in position to receive the impact of the hammer on its return stroke and valved ducts for admitting air to the dash pot and for discharging it around the coils.

5. In an electric tool driver including electromagnet coils for advancing and retracting the hammer, a movable tool holder having its inner end within the field of the hammer driving coil.

6. In an electric tool driver, including electromagnet coils for advancing and retracting the hammer, a tool holder having an enlarged head on its inner end within the field of the hammer driving coil.

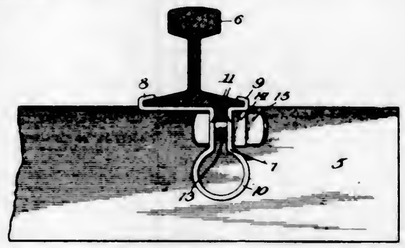
7. In an electric tool driver including electromagnet coils for advancing and retracting the hammer, a tool holder having an enlarged head on its inner end within the field of a coil and a tool receiving socket in its outer end.

8. In an electric tool driver, a block of insulating material carrying contact plates and seated in the handle, a housing plate removably fitted to the side of the handle and a bolt extending through the block and plate and serving to hold both in position.

852,927. RAIL-CLIP. CHARLES F. CLAWSON, Mount Pleasant, Iowa, assignor of one-fourth to Adam Weir and one-fourth to John T. Corcoran, Mount Pleasant, Iowa. Filed Oct. 26, 1906. Serial No. 340,701.

Claim.—1. A rail clip of the class described, comprising an integral bent steel member having apertured sides terminating in jaws adapted to grip the rail base, and a bolt passed through the apertures of said sides and drawing the latter together, substantially as described.

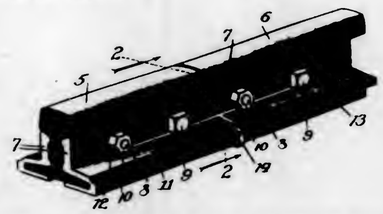
2. A rail clip of the class described, comprising an integral bent steel member having apertured sides, a transversely elastic portion joining the lower ends of said sides, jaws constituting extensions of the upper ends of said sides adapted to grip the rail base, and a bolt passed through said apertured sides and drawing said jaws into gripping engagement with the rail-base, substantially as described.



3. A one-piece rail clip bent to shape from a flat strip of soft steel and comprising jaws adapted to grip the rail-base and a transversely contractible body portion adapted to engage the side of a tie, and a bolt passed through the sides of said body portion and contracting the latter, substantially as described.

4. A resilient rail anchor comprising jaws, shoulders adjacent said jaws between which and the jaws the side edges of a rail base are adapted to be gripped, an intermediate portion uniting the shoulders and adapted to extend beneath the rail base, and means for drawing said jaws into engagement with the rail base against the resiliency of the anchor.

852,928. NUT-LOCK FOR RAIL-JOINT FASTENINGS. CHARLES F. CLAWSON, Mount Pleasant, Iowa, assignor of one-fourth to Adam Weir and one-fourth to John T. Corcoran, Mount Pleasant, Iowa. Filed Dec. 26, 1906. Serial No. 349,373.



Claim.—1. The combination with the meeting ends of a pair of rails, a fish-plate having a grooved base embracing the bases of the rail ends, and fastening-bolts, of a locking-strip underlying the nuts or heads of said bolts and having an elastic laterally projecting clip embracing the base of said fish-plate, and terminating in an upwardly turned end adapted to be sprung into engagement with the inner edge of said fish-plate base, substantially as described.

2. The combination with the meeting ends of a pair of rails, a pair of fish-plates having grooved bases embracing the bases of the rail-ends, and fastening-bolts, of a pair of locking-strips underlying the heads and nuts of said bolts on either side of the rail-joint, respectively, each of said strips having an elastic lateral clip-like projection embracing the base of the fish-plate, the lower member of said projection having a shallow loop or bend and terminating in an upwardly turned end engaging the inner edge of said fish-plate base, substantially as described.

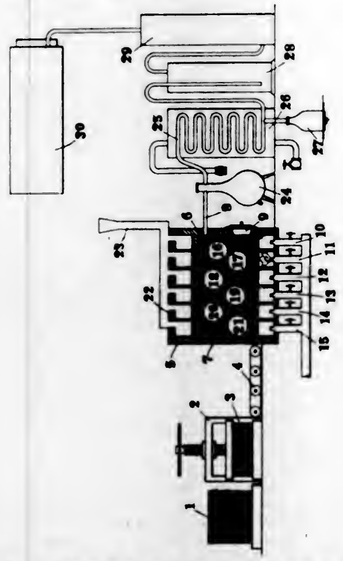
852,929. EYEGLASS-FRAME. WALTER A. COATES, Providence, R. I. Filed Mar. 9, 1906. Serial No. 305,169.

Claim.—1. An eye glass frame constructed with an internal lens engaging groove and having a nose piece connected thereto at one end thereof, and said groove at its portion opposite said nose piece having the contour of its base portion outwardly disposed relatively to the general contour of the lens and thereby free from contact, at such portion of the groove base, with the marginal end portion of the lens.



2. An eye glass frame constructed with an internal lens engaging groove and having an end piece connected thereto at one end thereof, and said groove having the contour of its base portion opposite said end piece outwardly disposed relatively to the general contour of the lens and thereby free from contact, at such portion of the groove base, with the adjacent marginal end portion of the lens.

852,930. PROCESS OF GENERATING GAS. JAMES R. COUTTS, Toronto, Ontario, Canada, assignor of one-half to Charles Aubrey Eaton, Cleveland, Ohio. Filed Jan. 10, 1906. Serial No. 295,368.



Claim.—1. The art of generating a gas from a gramineous mass comprising a carbonized, an uncarbonized and an intermediate partly carbonized portion, which consists in applying heat to the partially carbonized gramineous mass at the portion intermediate the carbonized and uncarbonized portions thereof, whereby gas is generated at such intermediate portion and the uncarbonized portion is gradually heated preparatory to ultimate distillation.

2. The art of generating combustible gas which comprises compressing straw into compact bales and progressively subjecting successive portions of said compacted bales of straw to a source of heat, each portion being thoroughly carbonized prior to the heating of the next succeeding portion.

3. The art of generating a gas which consists in subjecting a mass of compressed straw filling a zone in a retort to a distilling temperature at a point between the feeding and discharge outlets of said retort, and exposing fresh straw to the effect of such distilling temperature at points successively removed from said discharge outlet.

4. The art of generating a gas substantially free from carbon dioxid, which consists in providing a zone of a distilling temperature, subjecting a portion of a mass of straw to the influence of said zone of distilling temperature and causing a relative movement between said zone of distilling temperature and said straw in a direction such that the products of distillation pass on their way to a discharge opening through and have an intimate contact with the mass subjected to prior distilling temperatures.

5. The process of producing a combustible gas of high calorific power substantially free from carbon dioxid, consisting in obtaining a suitable quantity of a gramineous material in native or raw condition and in a relatively compact state, introducing said material into a closed retort, superheating said retort and contents to a distilling temperature meanwhile excluding air from the interior thereof, maintaining such distilling temperature until substantially all the combustible volatile and gaseous products have been driven off from said material, withdrawing said products through a passage or zone maintained at a high temperature and filled with a porous incandescent highly carboniferous mass, whereby said products during said withdrawal will be positively compelled to thoroughly infiltrate through and be brought into intimate contact with said incandescent mass and be improved in quality thereby, and finally suitably storing the resultant gas.

852,931. TOOL-HOLDER. DAVID CRAIG, Canton, Ohio. Filed Jan. 7, 1907. Serial No. 351,106.

Claim.—1. A tool-holder comprising a stock having a head on one side of its end, there being an axial aperture in the head and a counter-sink around the aperture in the face of the head and a lug intruding in the counter-sink; a post with a head adapted to be entered respectively in the aperture and counter-sink, there being notches in the head adapted to engage the lug, and a slot in the post adapted to receive the tool; and a screw in the head adapted to be turned against the tool to bind the parts together.

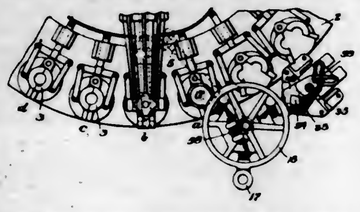
2. In a tool-holder, a stock having a head on one end with a transverse aperture therein, a post in the aperture having a slot adapted to receive a cutter-tool, there being a groove in one side of the slot and diametric grooves in the opposing face of the head adapted to receive the edges of a cutting-off tool, and means for binding the parts together.

3. In a tool holder, a stock having a head on one end, there being an axial aperture in the head with a countersink in one face of the head around the aperture and a lug intruding in the countersink; a post with a head adapted to be entered respectively in the aperture and the countersink, there being notches in the head adapted to engage the lug, and a slot in the post adapted to receive a tool; and means for binding the parts together.

852,932. CHARGING MECHANISM FOR GLASS-MOLDS. JOHN H. CROSKEY, Pittsburg, Pa., assignor to Duquesne Glass Co., Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 31, 1906. Serial No. 319,494.

Claim.—1. The combination with a forming mold, of a measuring cup, opening and closing shear mechanism lo-

cated closely adjacent above the cup, and means for turning and moving the cup into registering position with the mold, substantially as set forth.



2. The combination with opening and closing shear mechanism and a forming mold, of a rotating frame, a rotatable measuring cup carried in the frame, means for intermittently actuating the frame to position the cup with relation to the shear mechanism and mold respectively, and for tipping the cup to empty its contents into the mold.

3. The combination with opening and closing shear mechanism and a forming mold, of a measuring cup arranged to register with the shear mechanism in upright position and to turn over in registering position with a mold to empty thereinto, substantially as set forth.

4. In apparatus for filling the molds, the combination with opening and closing shear mechanism, of a cup-carrying frame provided with a rotatable shaft carrying the cup, means for swinging the frame to bring the cup into registering position with the mold, and means for imparting a semi-rotation to the cup carrying shaft, substantially as set forth.

5. In apparatus for filling the molds, the combination with opening and closing shear mechanism, of a cup-carrying frame provided with a rotatable shaft carrying the cup, means for swinging the frame to bring the cup into registering position with the mold, means for imparting a semi-rotation to the cup carrying shaft, and means for re-rotating the shaft and cup, substantially as set forth.

6. In apparatus for charging the molds, the combination with opening and closing shear mechanism, of a rotatable framework provided with a plurality of rotatable measuring cups, means for bringing each cup into registering position with the shears and then into registering position with the mold, with means for reversing the cups to empty into the molds, substantially as set forth.

7. Mechanism for tipping the cup consisting of a carrying shaft having a toothed wheel, a toothed plate engaging the wheel and having abutments, and stationary abutments located in the path of said abutments, substantially as set forth.

8. Mechanism for tipping the cup consisting of a carrying shaft having a toothed wheel, a toothed plate engaging the wheel and having abutments, and stationary abutments located in the path of said abutments, and spring mechanism for facilitating the operation, substantially as set forth.

9. Tilting mechanism consisting of a shaft, a cup secured thereto, a pinion gear secured on the shaft, a segmental rack adapted to mesh into said pinion and provided with abutments, stationary abutments adapted to engage said abutments, a pivotal stem for the segmental rack provided with a crank arm, and a spring connected with said crank arm, substantially as set forth.

10. The combination with a frame provided with stationary abutments, of a uniformly horizontally swinging frame carrying a tilting cup, a toothed gear for said cup, and a pivoted toothed gear plate adapted to rotate the cup provided with abutments adapted to make contact with said stationary abutments to rotate the cup to deliver its contents downwardly into a mold, substantially as set forth.

11. The combination with a frame provided with stationary abutments, of a uniformly horizontally swinging frame carrying a tilting cup, a toothed gear for said cup, and a pivoted toothed gear plate adapted to rotate the cup provided with abutments adapted to make contact with said stationary abutments to rotate the cup to deliver its contents downwardly into a mold, and spring-controlled mechanism for facilitating the tilting operation, substantially as set forth.

12. The combination with a mold carrying table and molds thereon, of opening and closing shear mechanism, a solid cup adapted to contain a measured quantity of glass, means for rotating and bringing the cup into emptying position over a mold, and means for actuating the mold table and cup manipulating means in harmony.

13. The combination with a mold-carrying table and molds thereon, of opening and closing shear mechanism, a measuring cup, means for rotating and bringing the cup into register with the shear mechanism and into emptying position over a mold respectively, and means for actuating the shear mechanism, the mold table, and the cup manipulating means in harmony, substantially as set forth.

14. The combination with a mold-carrying table and molds thereon, of opening and closing shear mechanism, a cup carrying frame provided with a plurality of tipping cups, means for actuating the frame to bring the cups successively into register with the shear mechanism and molds respectively, means for actuating the shear mechanism, and means for actuating the table, all of said means being operatively connected to operate in harmony, substantially as set forth.

15. The combination with the cup-carrying frame and cups carried thereby, of a vertical supporting shaft provided with a ratchet wheel, a toothed segment having a pawl, a slotted sliding head having a rack meshing into said segment, and an actuating crank engaging said slotted sliding head, substantially as set forth.

16. The combination with a continuously running shaft provided with a crank and pin, of an intermittently actuated vertical shaft provided with a cup-carrying frame and a plurality of cups, a ratchet wheel secured to said shaft, a toothed segment provided with a pawl engaging the ratchet wheel, and a reciprocating sliding head having a rack engaging the segment and provided with a slot engaging the crank pin, substantially as set forth.

17. In mechanism of the class described, the combination with a vertical intermittently actuated bearing shaft provided with a fixedly attached worm wheel, of a cup-carrying frame mounted on the shaft provided with a plurality of cups, and a worm mounted upon said wheel and in engagement with said worm wheel for adjustment of the cup-carrying frame with relation thereto, substantially as set forth.

18. The combination with a series of measuring cups and actuating mechanism therefor, of shears having slotted actuating arms, a lever provided with a sliding pin engaging said arms, a cam, lever mechanism engaging the same and connected with said first named lever, and a retracting spring, substantially as set forth.

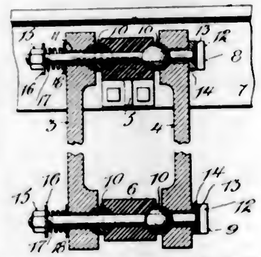
19. The combination with a series of measuring cups and actuating mechanism therefor, of shears having slotted actuating arms, a lever provided with a sliding pin engaging said arms, a cam, a rock shaft provided at one end with a lever, a connecting pitman and a secondary lever engaging the cam and also a retracting spring, and at the other end with a lever connected with the end of the shear operating lever, substantially as set forth.

852,933. AUTOMATIC BRAKE-HANGER. SAMUEL M. CUAWEN, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Mar. 19, 1906. Serial No. 306,701.

Claim.—1. In a hanger of the class described, means for supporting the same, a bolt passing through said means, balls on said bolt and spring controlled means for drawing said parts together.

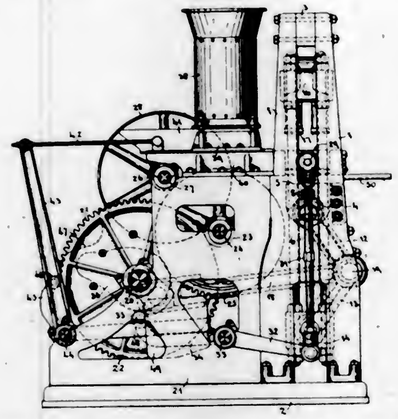
2. In a hanger of the class described, means for supporting the same, a bolt transversely through said means, balls on said bolt and on each side of said means, and filling recesses in the same; arms also threaded on to said bolts and recessed to fit said balls, and spring controlled means for drawing said parts together.

3. In a hanger of the class described, a bolt having a slot near one end, a perforated bracket secured to a part of said hanger and adjacent to said slot, a wedge passing through said slot and perforated bracket, and a spring having one end impinging upon said bracket, and its other end impinging against an attachment to said wedge, whereby the spring causes the wedge to be drawn into said slot.



4. In a hanger of the class described, means for supporting the same, spring controlled means for holding the parts of said hanger together, and means for permitting a universal movement of one part of the hanger with regard to another.

852,934. BRICKMAKING-MACHINE. ORVIS G. DIEFENDORF, Watertown, N. Y. Filed July 14, 1906. Serial No. 326,250.



Claim.—1. A machine of the type described, comprising a mold and bottom and top plungers, in combination with means for operating the mold and plungers relatively to one another, whereby, after the bricks or blocks have been formed in the mold, they will be delivered from the bottom thereof, means whereby a pallet, or other conveying device, may be inserted below the mold after separation is effected between the mold and the bottom plunger, and means for causing the pallet, or other conveyer, to contact with the contents of the mold as they begin to issue therefrom and to maintain said contact while delivery is taking place.

2. A machine of the type described, comprising a bottom plunger, a mold adapted to be raised and lowered with respect thereto, a reciprocating top plunger, means for positioning the mold to enter the bottom plunger therein, means for actuating the top plunger to enter it into the mold when so positioned, means for raising the mold in conjunction with the top plunger and for imparting movement to the mold faster than to said plunger, whereby the contents of the mold will be delivered from the bottom of the mold, means whereby a pallet, or other conveyer, may be inserted below the mold and means for raising the pallet or other conveyer in contact with the bottom of the mold until contact is made between the pallet and the contents of the mold, and for maintaining the contact with said contents while delivery is taking place.

3. A machine of the type described, comprising a stationary bottom plunger, a mold adapted to be raised and lowered with respect thereto, a reciprocating top plunger, means for positioning the mold to enter the bottom plunger therein, means for actuating the top plunger to enter it into the mold when so positioned, means for raising the mold in conjunction with the top plunger to permit the insertion of a pallet or other conveyer below the mold, means for imparting a movement to the mold faster than that of the upward stroke of the reciprocating plunger, whereby the contents of the mold will be delivered from the bottom of the mold, and means for causing the pallet, or other conveyer, to contact with the mold contents and to thereafter follow their upward travel until said contents have been fully delivered from the molds.

4. In a machine of the type described, the combination, with the stationary and reciprocating plungers and the cam actuated mold adapted to have said plungers entered therein from below and above and to operate in conjunction with the reciprocating plunger or plungers to discharge the contents of the mold therefrom, of a pallet-rack, or guide, movably mounted below the mold, means for causing said rack to follow the upward movements of the mold and its contents until said contents have been discharged therefrom, and means for arresting the rack in its upward movement after said discharge.

5. In a machine of the type described, the combination, with the movable mold, of a pallet-rack, or guide, bearing against the bottom of the mold, vertical rods slidably mounted in the machine frame and supporting the rack, weighted levers engaging said rods to cause the rack to follow the upward movement of the mold and its contents, and stops on the rods to limit the upward movement of the rack when the mold has discharged its contents.

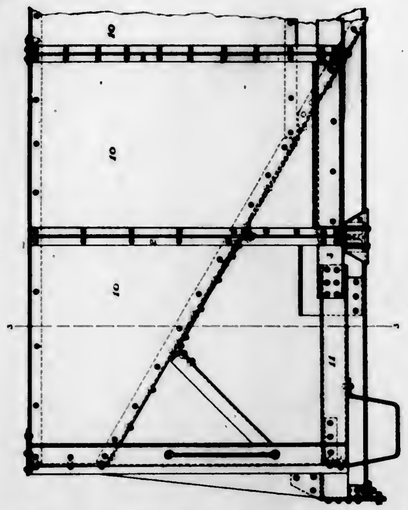
6. A machine of the type described comprising a pair of standards spaced apart and provided with vertical guide-ways, a cross-block carrying a bottom plunger or plungers mounted in a fixed position in said standards, a toggle hung from the under side of said block, toggle blocks mounted to reciprocate in the lower portion of the guide-ways, a cross-head carrying a top plunger or plungers mounted to reciprocate in the upper portion of the guide-ways, tension rods joining the cross-head to the toggle blocks, a mold mounted to reciprocate in the guide-ways above the cross-block, a crank shaft coupled to the toggle to impart motion to the cross-head, a cam on said shaft, a cam lever and connections whereby motion is imparted from said cam to the mold to raise the mold at the same time with the up stroke of the cross-head and to impart a more rapid motion to the mold relatively to the cross-head during a portion of said stroke to cause the top plunger or plungers to discharge the contents of the mold therefrom, and means for imparting motion to the crank shaft.

7. In a machine of the type described, the combination with a movable mold and a reciprocating cross-head carrying one or more top plungers, said mold and cross-head being guided at each end in guide-ways provided therefor in upright standards, of a cross-block carrying one or more stationary bottom plungers positioned below the mold and having its ends slidably mounted in said guide-ways, adjusting screws rising from the standards below the cross-block and engaging the ends thereof, whereby the cross-block may be raised and lowered and rigidly fastened in order to properly position the bottom plunger or plungers with relation to the mold, a toggle hung from the under side of said cross-block, connections between said toggle and the reciprocating cross-head and means for imparting motion to the toggle and to the mold substantially as herein set forth.

8. In a machine of the type described, the combination

with a mold and top and bottom plungers, of a mold filler adapted to slide over the top of the mold when said parts are in position for charging the mold, a cam wheel mounted upon a driving shaft, said cam wheel having a circular periphery provided at one point in its circumference with a recess substantially as described, a feed lever engaging the periphery of said wheel, a feed shaft upon which said lever is mounted, a weighted lever attached to said shaft to hold the feed lever in contact with the cam wheel and to actuate the mold filler in one direction when the feed lever enters the recess in said wheel, and a throw lever, or levers, attached to the feed shaft and coupled to the mold filler.

852,935. METALLIC-CAR CONSTRUCTION. ETHAN I. DODDS, Avalon, Pa., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 25, 1904. Serial No. 234,140.



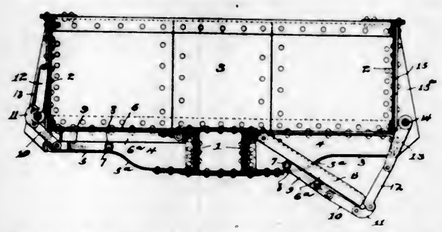
Claim.—1. In a metallic car, a combined end and floor sheet, one portion of which extends from the top of the car downward, and another of which is bent to form a portion of the floor of the car, in combination with a floor plate forming an extension of the said floor sheet, a butt-strap connecting the said extension with the floor portion of the combined end and floor sheet one or more braces or supports secured to said butt-strap, substantially as described.

2. In a railway car having a sloping bottom, the combination of a side sill, corner and side stakes fastened thereto, and side plates extending from stake to stake, the end side plates having inclined lower edges, the next to the end side plates extending from the top of the side to the side sill, and the other side plates extending from the top of the car downward and terminating above the side sill, substantially as described.

852,936. DOOR-OPERATING MECHANISM FOR GONDOLA CARS. ETHAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 3, 1905. Serial No. 253,412.

Claim.—1. A door operating mechanism for drop-bottom cars having a hinged floor section, comprising tracks beneath the car body, a rod, rollers on said rod adapted to travel on said tracks, one or more other rollers on said rod engaging said hinged floor-section, operating means to move said rod and rollers toward and from the hinges of said floor-section whereby to lower and raise said floor-section, substantially as described.

2. A door operating mechanism for drop-bottom cars having a floor-section hinged longitudinally of the car, comprising transverse tracks beneath the car body, a rod, rollers on said rod adapted to travel on said tracks, one or more other rollers on said rod engaging said hinged floor-section, and operating means to move said rod and rollers inwardly and outwardly relative to the sides of the car and thereby lower and raise said hinged floor-section, substantially as described.



3. In a door operating mechanism for drop-bottom cars having a hinged floor-section, comprising inclined transverse tracks beneath the car body, a rod, rollers on said rod adapted to travel on said tracks, other rollers on said rod engaging the hinged floor-section, and means to move said rod and rollers inwardly and outwardly relative to the sides of the car whereby to lower and raise said floor-section, substantially as described.

4. A door operating mechanism for a drop-bottom car having a hinged floor-section, comprising transoms with integral flanges, a rod, rollers on said rod adapted to travel on the flanges of said transoms, other rollers on said rod engaging said hinged floor-section, and operating means to move said rod and rollers inwardly and outwardly relative to the sides of the car thereby lowering and raising said floor-section, substantially as described.

5. A door operating mechanism for a drop-bottom car having a hinged floor-section, comprising transoms with inclined integral flanges, a rod, rollers on said rod adapted to travel on the flanges of said transoms, other rollers on said rod engaging said hinged floor-section, and operating means to move said rod and rollers inwardly and outwardly relative to the sides of the car thereby lowering and raising said floor-section, substantially as described.

6. A door operating mechanism for a drop-bottom car having a hinged floor-section, comprising transoms having flanges, a rod, rollers on said rod adapted to travel on the flanges of said transoms, other rollers on said rod engaging said hinged floor-section, an operating shaft mounted adjacent to the side wall of the car, and means connecting said operating shaft with said rod including an arm on said shaft and one or more links, substantially as described.

7. In a railway dumping car, the combination of a car-body having a hinged floor-section, side posts or stakes provided with projecting flanges or legs, an operating shaft rotatably mounted in said flanges or legs, transoms having inclined flanges, a rod, rollers on said rod adapted to travel on said flanges, other rollers on said rod engaging said hinged floor-section, and means connecting said operating shaft and rod including an arm secured to said shaft and one or more links, substantially as described.

8. In a railway dumping car, the combination of a metallic car-body having a hinged floor-section, side posts or stakes provided with projecting flanges or legs, an operating shaft rotatably mounted in said flanges or legs, transoms having inclined flanges, a rod, rollers on said rod mounted to travel on said transom flanges, other rollers on said rod engaging said hinged floor-section, an arm secured to said operating shaft, and one or more links connecting said arm with said rod, one of said links being curved and adapted to hook over said operating shaft to retain said floor-section in closed position, substantially as described.

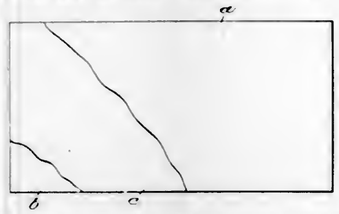
852,937. ELECTRICALLY-ACTUATED SIGNAL-BELL. HAROLD W. EDEN, Detroit, Mich., assignor to P. R. Manufacturing Company, Detroit, Mich., a Corporation of Michigan. Filed July 18, 1906. Serial No. 326,645.



Claim.—1. A bearing for the trunnions of the armatures of electrically actuated bells, consisting of a single strip of metal bent to form the lower bearing, the upper bearing, a support for the upper bearing and a bracing support for the upper bearing, substantially as described.

2. A bearing for the armatures of electrically actuated bells, consisting of a strip of metal bent to form an upper bearing, a support for the upper bearing, a bracing support for the upper bearing, and an arm for the tension adjusting screw, substantially as described.

852,938. CARDBOARD AND METHOD OF MANUFACTURING THE SAME. LOWELL EMERSON, Pawtucket, R. I. Filed May 25, 1906. Serial No. 318,634.



Claim.—1. A novel card board, comprising a face layer of varying translucency, a back, and a layer of cementitious pigment of a different color from the back interposed between the face and back, whereby the face presents gradations of color differing from the color of the back.

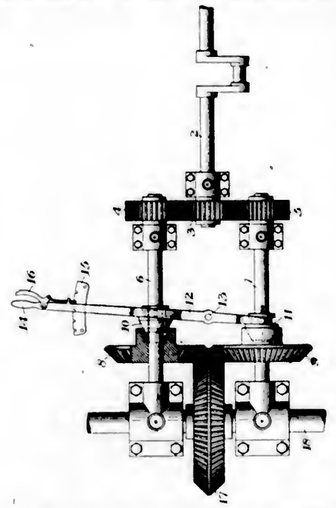
2. A method of obtaining color effect at the face of a card board which consists in coloring the back of a sheet of paper of varying translucency evenly and uniformly with a layer of cementitious pigment of a color different from the color of the back, and then applying said sheet to a back with the colored face next the back, whereby the face of the card board is given a mottled effect, differing in color from the color of the back.

3. A novel card board comprising a back, a layer of cementitious pigment applied to both sides of said back, said layers of pigment being of dissimilar colors, and a face layer of paper of mottled translucency applied to each of said layers of cementitious pigment whereby the respective faces present gradations of color differing from each other.

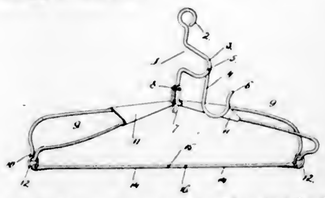
852,939. REVERSING-GEAR. FRANCIS E. FAIRMAN, Allegheny, Pa. Filed May 18, 1906. Serial No. 317,497.

Claim.—1. In a transmission gear, a pair of main shafts, one being a driving shaft and the other a driven shaft, two sets of bevel gear teeth carried on one of said shafts, and a spur gear carried on the other of said shafts, a pair of intermediate shafts, bevel gears loosely mounted on the intermediate shafts and intermeshing with the two sets of bevel gear teeth on one of the main shafts, mechanism for connecting said gears with or disconnecting them from the said intermediate shafts, and spur gears carried on said intermediate shafts and intermeshing with the spur gear on one of the main shafts; substantially as described.

2. In a transmission gear, a driving shaft, a spur wheel secured thereto, a driven shaft extending at right angles to the driving shaft, two sets of bevel gear teeth secured thereto, two intermediate shafts extending parallel with each other and with the driving shaft, bevel gear wheels loosely mounted on the intermediate shafts and intermeshing with the two sets of gear teeth on the driven shaft, clutch mechanism arranged to alternately connect the bevel gear wheels with or disconnect them from the intermediate shafts, and spur gears on the intermediate shafts intermeshing with the spur gear on the driving shaft; substantially as described.



852,940. FOLDING SUIT AND HAT HOLDER. JACOB W. FAUST, Jr., Martins Ferry, Ohio. Filed Feb. 25, 1907. Serial No. 359,055.



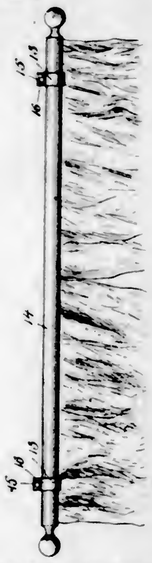
Claim.—In a garment hanger, a head, a hat hook pivotally suspended from said head, supporting arms, each formed from a single piece of wire doubled and having its ends pivoted to the head, the outer ends of said arms bent downwardly and terminating in a loop, rings carried by the loops of said arms, and a supporting rod formed in two sections connected at their outer ends to said rings, and having shouldered ends over-lapping and pivoted together, the inner ends of said rods and the shoulders thereon being beveled, as and for the purpose described.

852,941. BRACKET FOR WINDOWS. PATRICK A. FENIAN, Pittsburg, Pa. Filed Aug. 10, 1906. Serial No. 330,075.

Claim.—1. A window bracket comprising a vertical member adapted to be secured to a window frame, a horizontal member projecting from the vertical member, an arm adjustably secured to said horizontal member and having its outer end curved downward to provide a bearing for a curtain pole, and a bracket adjustably secured to said arm for securing the curtain pole within its bearing.

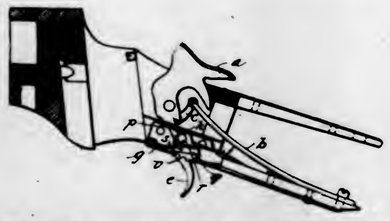
2. A window frame comprising a vertical member having its lower end twisted to a position at right angles to the body of said vertical member and provided with a bearing, a longitudinally slotted horizontal member, and a

brace connecting said members, in combination with a longitudinally adjustable arm having its forward end curved downward to provide a bearing for a curtain pole, and an angle arm adjustably secured to said longitudinally adjustable arm and adapted to co-act with the latter to support the curtain pole.



3. The combination with a bracket comprising a vertical member, an integral longitudinally slotted horizontal member, and a brace connecting said members, of a longitudinally slotted arm having its forward end curved downward, a bolt extending through said arm and through the longitudinal slot of the horizontal member above the bracket, a nut on said bolt, and an angle arm adjustably secured to said longitudinally slotted arm.

852,942. SET-TRIGGER FOR FIREARMS. JAMES N. FISHER, Springfield, Mass., assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass., a Corporation of Massachusetts. Filed Jan. 25, 1907. Serial No. 354,002.



Claim.—The combination with the hammer of a firearm, of a sear and a trigger having a common axis, the trigger having a swinging movement on its axis relative to the sear and normally bearing against the rear end of the latter; a spring secured to the frame, the free end of which is rounded and extends toward the trigger, there being a slot in the trigger to receive the free end of the spring, and a projection extending into the slot against which the rounded end of the spring bears, whereby when the trigger is pressed forward a part thereon is separated from the sear and constitutes a hammer to release the sear upon the release of the trigger, together with means to limit the forward swing of the trigger.

852,943. PROCESS OF FIXING OR SETTING THE COLORS OF DYED FIBERS AND FABRICS. LOUIS B. FORTNER, Philadelphia, Pa. Filed Apr. 11, 1900. Serial No. 12,466.

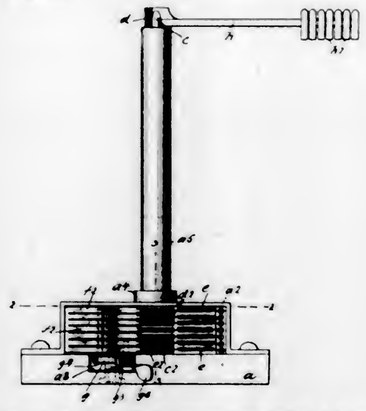
Claim.—1. The herein described process of fixing the colors of dyed fibers and fabrics, which consists in subjecting the dyed fibers or fabrics while in a wet condition to the action of formaldehyde (CH_2O), substantially as herein set forth.

2. The process of fixing the colors of dyed fibers and fabrics, which consists in subjecting while in a wet condition the fibers or fabrics whose colors are to be fixed to the action of formaldehyde (CH_2O) employed in solution, substantially as set forth.

3. The process of fixing the colors of dyed fibers or fabrics, which consists in subjecting while in a wet condition the fibers or fabrics whose colors are to be fixed, to the action of formaldehyde (CH_2O) in solution, in combination with an alkali, substantially as set forth.

4. The process of fixing the colors of dyed fibers and fabrics, which consists in subjecting while in a wet condition the fibers or fabrics whose colors are to be fixed to the action of formaldehyde (CH_2O) in solution, in combination with potash soap, substantially as set forth.

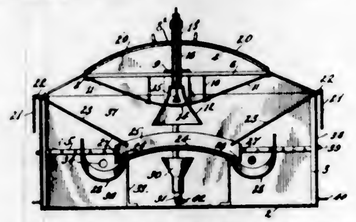
852,944. MUSIC-TURNER. ROBERT H. FOSTER, Union Course, Long Island, N. Y. Filed June 1, 1906. Serial No. 319,664.



Claim.—1. A music sheet turner comprising a base, concentrically placed upright members each of which is provided at its upper end with a music turning arm, said upright members being each provided at its lower end with a wheel, tension springs connected with said wheels and adapted to turn them in one direction, said wheels being also provided each with a notch or recess in the perimeter thereof, spring arms adapted to engage said notches or recesses and hold said wheels against the operation of the tension springs, and means for successively releasing the spring arms from said wheels, consisting of a disk mounted below said spring arms and provided with upwardly directed fingers of varying lengths and on the bottom thereof with teeth, and a spring arm mounted below said disk and adapted to engage said teeth.

2. A music sheet turner comprising a base, upright concentrically arranged rotatable devices connected therewith and provided at their upper ends with arms having clamps, said rotatable devices being also provided at their lower ends with wheels, tension springs connected with said wheels, spring arms adapted to engage the perimeter of said wheels, and means for successively releasing said spring arms from said wheels, consisting of a disk mounted in the base and provided with upwardly directed fingers of varying lengths and on the bottom thereof with a plurality of teeth, and a spring arm mounted below said disk and adapted to engage said teeth.

852,945. SNOW-MELTING APPARATUS. LOUIS T. FRIGON, Montreal, Quebec, Canada, assignor of one-half to Andre A. Rousselle, Montreal, Canada. Filed July 2, 1906. Serial No. 324,302.



Claim.—1. In a snow melting apparatus, the combination comprising a frame, closures hinged on the sides of the frame, hinged closures for a portion of the top of the frame, removable closures for the remainder of the top of the frame, solid closures for a portion of the ends of the frame, hinged closures for the remainder of the ends of the frame, means for subjecting snow within the apparatus to the direct and the indirect action of flame, and means for conducting melted snow from the frame.

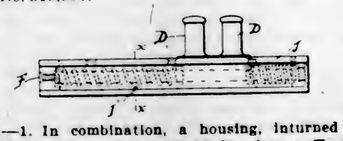
2. In a snow melting apparatus, the combination comprising a receptacle, a segmental grate having a flange and provided with vertical openings and with horizontal openings in the flange, burners disposed above and below the grate, troughs disposed adjacent the edges of the grate and projecting from the receptacle, and means for permitting the insertion of a nozzle adjacent the ends of the troughs.

3. In a snow melting apparatus, the combination comprising a receptacle, a grate in the receptacle, burners above and below the grate, funnel-shaped flame deflectors around the burners, troughs disposed adjacent the edges of the grate and projecting from the receptacle, and means for permitting the insertion of a nozzle adjacent the ends of the troughs.

4. In a snow melting apparatus, the combination comprising a receptacle, a removable grate disposed within the receptacle, snow deflector plates extending to the grate, inclined troughs arranged adjacent the edges of the grate, said receptacle being provided with openings adjacent the upper ends of the troughs, hinged closures for the openings, burners above and below the grate, and a downwardly arched heat deflector plate disposed above the grate.

5. In a snow melting apparatus, the combination comprising a receptacle, a downwardly arched heat deflector plate carried in the receptacle, a segmental grate disposed below the deflector plate and provided with a flange and having drainage openings in the flange and in the grate, a plurality of hydrocarbon burners above the grate, a plurality of hydrocarbon burners below the grate, oil and compressed air supply pipes connected to the burners, and water conducting members disposed adjacent the edges of the grate beneath the openings therein and extending outside of the receptacle.

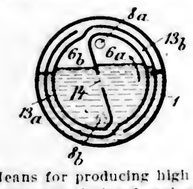
852,946. SPRING-CLEAT FOR BOATS AND THE LIKE. ROLF FROMHOLTZ, Philadelphia, Pa. Filed June 4, 1906. Serial No. 319,987.



Claim.—1. In combination, a housing, inturned overhanging flanges formed upon said housing, a T shaped block adapted to slide within the housing and held in place by said flanges, a rod running lengthwise of said housing and passing through said block, a spring H coiled around the rod and interposed between one end of the housing and block, a spring I also coiled around the rod and interposed between the opposite end of said housing and block, cleat posts formed with the block and outturned overhanging flanges having holes therethrough for the passage of screws to secure the device in place, as specified.

2. In combination, a housing, inwardly projecting flanges formed with said housing, a T shaped block adapted to slide within the housing and held in place by said flanges, a rod running lengthwise of the housing and passing through said block, the ends of said rod passing into the ends of the housing, screws F and G so arranged as to hold the rod against displacement, a spring H coiled around the rod between one end of the housing and the block, a spring I of less tension than the first named spring also coiled around said rod between the opposite end of said housing and block, cleat posts formed with the block and outwardly extending flanges J formed with the housing said flanges having holes therethrough for the passage of screws by which the device may be secured to the deck of a boat, as and for the purpose set forth.

852,947. MEANS FOR PRODUCING HIGH VACUUMS. WOLFGANG GAEDE, Freiburg, Germany. Filed Aug. 17, 1906. Serial No. 331,045.



Claim.—1. Means for producing high vacua, comprising a substantially cylindrical closed casing partly filled with liquid, a drum rotatably mounted in said casing and divided by radial walls into chambers which communicate with each other at the center of said drum by means of an opening between said walls, said chambers also communicating with the interior of the casing at the periphery of the drum, means whereby said drum may be rotated, and means for connecting the interior of the drum with the vessel to be exhausted.

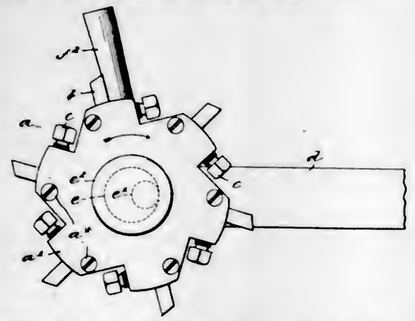
2. Means for producing high vacua which means consist in the combination of a substantially cylindrical casing more than half filled with liquid of a drum rotatably mounted therein which drum is divided into inner chambers communicating with each other at the center of the drum and with the interior of the casing at the periphery, and an outer chamber having a central opening communicating with the interior of the casing and other openings placed near the periphery and communicating with the inner chambers, and of means for rotating the drum.

3. Means for producing high vacua which means consist in the combination of a substantially cylindrical casing connected to an ordinary air pump and more than half filled with liquid, of a drum rotatably mounted therein, said drum being divided into inner chambers communicating with each other at the center of the drum and with the interior of the casing at the periphery of the drum and an outer chamber having a central opening below the surface of the liquid and peripheral openings communicating with the inner chambers, of helical channels interposed between the inner chambers of the drum and the interior of the casing and of a pipe connected to the vessel to be exhausted and passing through the central opening into the outer chamber, its end being bent upward therein to a level above the surface of the liquid.

4. Means for producing high vacua which means consist in the combination with a substantially cylindrical casing more than half filled with liquid, means for partially exhausting said casing, of a drum rotatably mounted within said casing and being more than half immersed in said liquid, said drum being divided by substantially radial partitions into inner chambers communicating with each other at a point continually immersed in the liquid and communicating with the interior of the casing by means of helical channels at the periphery of the drum and an outer chamber hermetically connected to the vessel to be

exhausted and being in communication with the inner chambers by means of holes placed near the periphery of the drum and of means for rotating the drum.

852,948. LATHE-TOOL. WILLIAM P. GEHRIS, Reading, Pa. Filed Mar. 23, 1906. Serial No. 307,561.



Claim.—1. A tool for lathes, comprising a holder consisting of two sections, whereof one section is provided with substantially radial grooves in each of the faces thereof and whereof the second section is provided with ratchet notches, a support, a shaft connecting said sections with said support and having an eccentrically arranged extension passing through said support, means movably arranged in said shaft and engaging the ratchet notches of said second section, means movably arranged in said support and engaging the grooves of said first section contiguous to said support, tools arranged in the grooves of said first section contiguous to said second section, said shaft when rocked in said support adapted by the movable means located therein to rotate said first and by the same said second section in one direction and by the eccentric extension to shift said sections longitudinally to said support to bring the tools carried by one of said sections first into an inoperative and then back into an operative position, and the movable means of said support adapted to prevent turning of said sections in one direction.

2. A tool for lathes, comprising a holder, consisting of two sections, whereof one section is provided with substantially radial grooves in each of the faces thereof, and whereof the second section is provided with ratchet notches, a support, a shaft connecting said sections with said support and having an eccentrically arranged extension passing through said support, means engaging said extension and adapted to connect said shaft with said support, a bolt movably arranged in said shaft and engaging the ratchet notches of said second section, a bolt movably arranged in said support and engaging the grooves of said first section contiguous to said support, said shaft when rocked in said support adapted by the bolt arranged therein to rotate said first and by the same said second section in one direction and by its eccentric extension to shift said sections and working tools arranged in grooves of the first section thereof longitudinally to said support first into an inoperative and then back into an operative position and the bolt of said support adapted to prevent turning of said sections in one direction.

3. A tool for lathes, comprising a holder provided with ratchet notches and two series of radial grooves, one series adapted to receive tools, the other having inclined sides, means for clamping the tools to said holder and for holding the same in position in their respective grooves, a support, a shaft having portions eccentrically arranged with respect to each other and adapted to connect the sections to said support, a head having a recessed flange engaging said shaft and adapted to connect the shaft to said support and rotate the same, means carried by said support and adapted to limit the rotary movement of said head and by the same said shaft, by alternately engaging the end portions of the recessed flange of said head, a spring controlled bolt carried by one portion of said shaft and adapted to engage the ratchet notches of one of said sections to transmit the movement of said shaft to said sections, a spring controlled bolt arranged in said support and adapted to engage the second series of grooves in the first of said sections to lock the same against movement in a direction opposite to that imparted to the said sections by said shaft, and the eccentrically arranged portion of said shaft engaging said support and adapted to impart to said sections a substantially longitudinal movement on said support and the bolt of said support permitting longitudinal movements of said sections.

4. A tool for lathes, comprising a holder, consisting of two sections, whereof one section is provided with substantially radial grooves in each of the faces thereof, and whereof the second section is provided with ratchet notches, a support, a shaft connecting said sections with said support and having an eccentrically arranged extension passing through said support, a head having a recessed flange and adapted to connect the shaft to said support, a spring controlled bolt movably arranged in said shaft and engaging the ratchet notches of said second section, a spring controlled bolt movably arranged in said support and engaging the grooves of said first section contiguous to said support, said shaft when rocked by the head in said support adapted by the bolt arranged therein to rotate said first and by the same said second section in one direction and by the eccentric extension thereof to shift said sections and working tools arranged in grooves of the first section longitudinally to said support first into an inoperative and then back into an operative position, the spring controlled bolt of said support adapted to prevent turning of said sections by a tool, and a rigid bolt carried by said support and adapted to limit the movements of the sections by said shaft by alternately contacting with the end portions of the recessed flange of said head.

852,949. AIR-BRAKE APPARATUS. ALBERT H. GELTZ, Alliance, and LEE L. HOSACK, Youngstown, Ohio, assignors to C. B. McLean, Pittsburg, Pa. Filed Apr. 1, 1905. Serial No. 253,341.

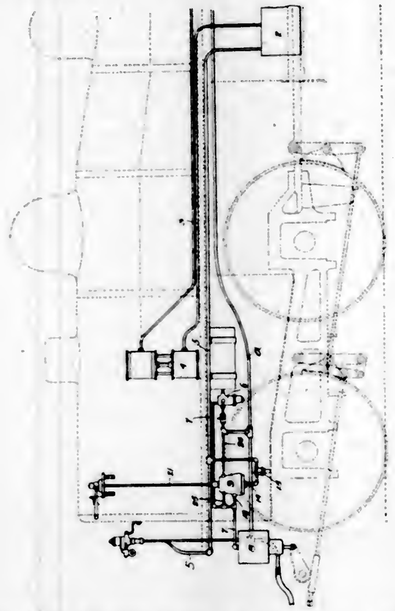
Claim.—1. The combination with a brake cylinder provided with a supply and exhaust pipe communicating with a triple valve; of an independent valve adapted to establish communication between reservoir pressure and the brake cylinder and provided with ports adapted to communicate with the exhaust from the brake cylinder and triple valve respectively and with the atmosphere.

2. The combination with a brake cylinder provided with a supply and exhaust pipe communicating with a triple valve; of an independent valve adapted to establish communication between the main reservoir pressure and the brake cylinder and provided with ports adapted to communicate with the exhaust from the brake cylinder and triple valve respectively and with the atmosphere, substantially as set forth.

3. The combination with a locomotive brake cylinder, a reservoir containing compressed fluid, and a triple valve; of a valve case communicating with the fluid of the reservoir and with the locomotive brake cylinder, a rotatable valve therein in constant communication with said fluid pressure and adapted to establish pressure to the locomotive brake cylinder, and provided with independent exhaust ports adapted to communicate with the exhaust from the brake cylinder, triple valve, and with the atmosphere.

4. The combination with a locomotive brake cylinder, a main reservoir, and a triple valve; of an independent valve having an apertured plug in constant communication with main reservoir pressure and provided with a tapered port adapted to establish communication with the brake cylinder, substantially as set forth.

5. In an air brake system, the combination of a fluid reservoir, an engineer's valve, a driver brake cylinder and its triple valve, piping connecting these parts, and control valve mechanism connected to the driver brake cylinder, to the triple valve exhaust port, and to the fluid reservoir, and arranged to open the triple valve exhaust port to the atmosphere or close the same, to open the brake cylinder to the atmosphere or keep the same closed, and to connect the brake cylinder to the fluid reservoir.



6. In an air brake system, the combination of a fluid reservoir, an engineer's valve, a driver brake cylinder and its triple valve, piping connecting these parts, and control valve mechanism connected to the driver brake cylinder, to the triple valve exhaust port, and to the fluid reservoir, and arranged by the manipulation of a single handle and in different positions to open the triple valve exhaust port to the atmosphere or keep it closed, to open the brake cylinder to the atmosphere or keep the same closed, and to connect the brake cylinder to the fluid reservoir.

7. A valve case communicating with main reservoir pressure and with the locomotive brake cylinder, a rotatable valve therein in constant communication with main reservoir pressure and adapted to establish pressure to the locomotive brake cylinder, and provided with independent exhaust ports adapted to communicate with the exhaust from the brake cylinder, triple valve, and with the atmosphere, substantially as set forth.

8. A valve case communicating with main reservoir pressure and with the locomotive brake cylinder, a rotatable valve therein in constant communication with main reservoir pressure and adapted to establish pressure to the locomotive brake cylinder, and provided with independent exhaust ports adapted to communicate with the exhaust from the brake cylinder, triple valve, and with the atmosphere, with means for setting the valve at various positions, substantially as set forth.

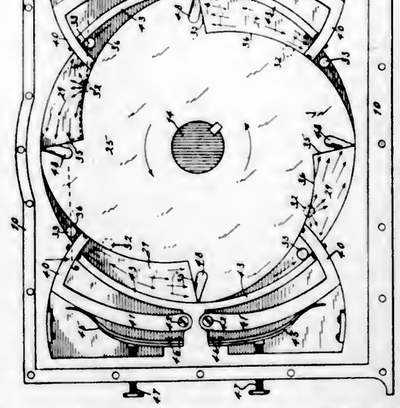
9. In an air brake system, the combination of a main reservoir, an engineer's valve, a driver brake cylinder and its triple valve, piping connecting these parts, and control valve mechanism connected to the driver brake cylinder, to the triple valve exhaust port, and to the main reservoir, and arranged to open the triple valve exhaust port to the atmosphere or close the same, to open the brake cylinder to the atmosphere or keep the same closed, and to connect the brake cylinder to the main reservoir.

10. In an air-brake system, the combination of an engineer's valve, a main reservoir, a driver brake cylinder and its triple valve, piping connecting these parts, and control valve mechanism connected to the driver brake cylinder, to the triple valve exhaust port, and to the main reservoir, and arranged by the manipulation of a single handle and in different positions to open the triple valve exhaust port to the atmosphere or keep it closed, to open the brake cylinder to the atmosphere or keep the same closed, and to connect the brake cylinder to the main reservoir.

11. In air brake apparatus, valve mechanism including a casing having ports adapted to communicate respectively with the main reservoir, the driver brake cylinder, and the release port of a triple valve on a locomotive, and having other ports adapted to communicate with the atmosphere, and a valve arranged to put either the brake cylinder port or the release port of the triple valve into communication with the atmosphere or to keep both of said ports closed, or to connect the main reservoir port with the brake cylinder port.

12. In air brake apparatus, valve mechanism including a casing having ports adapted to communicate respectively with a fluid reservoir, the driver brake cylinder, and the release port of a triple valve on a locomotive, and having other ports adapted to communicate with the atmosphere, and a valve arranged to put either the brake cylinder port or the release port of the triple valve into communication with the atmosphere or to keep both of said ports closed, or to connnect the fluid reservoir port with the brake cylinder port.

852,950. ROTARY ENGINE. WILLIAM M. GENTLE, Southport, Ind. Filed Dec. 13, 1906. Serial No. 347,606.



Claim.—1. A rotary engine including a casing with a chamber, a wheel mounted in the chamber with substantially radial abutments in its periphery, and removable abutments extending into said chamber and into engagement with the periphery of said wheel, said casing having an exhaust port near the peripheral wall of said chamber immediately behind each removable abutment, and a steam inlet port immediately in front of each removable abutment and nearer the center than the exhaust port.

2. A rotary engine including a casing with a chamber, a wheel mounted therein with a plurality of substantially radial abutments on its periphery located equidistant from each other and an eccentric peripheral surface extending from the inner end of one abutment to the outer end of the following abutment, and removable abutments extending into said chamber and spring-pressed against the periphery

of said wheel, said casing having an exhaust port behind each removable abutment and adjacent the peripheral wall of said chamber and a steam inlet port in advance of each removable abutment and located so as to be gradually closed by the eccentric peripheral surface of said wheel, the various steam inlet ports not being located equidistant from each other so that the wheel will always be acted upon by steam either while entering or expanding, while all of the exhaust ports will be open substantially all of the time.

3. A rotary engine including a casing with a chamber, a wheel mounted in said chamber with substantially radial abutments on its periphery and an eccentric peripheral surface extending from the inner end of one abutment to the outer end of the following abutment, removable abutments extending into said chamber and spring-pressed into engagement with the periphery of said wheel, said casing having an exhaust port at the peripheral wall of said chamber immediately behind each removable abutment and a steam inlet port in advance of each removable abutment located far enough from the peripheral wall of said chamber to be gradually closed by the eccentric peripheral surface of said wheel, and the wheel having a passageway in its side near each abutment in the periphery thereof with one end of the passageway adapted at times to register with each inlet port and the other end discharging through said abutment, whereby steam will enter said chamber through a steam inlet port before said port is wholly uncovered by the wheel.

4. A rotary engine including a casing, a wheel mounted therein, a series of steam inlet ports through one side wall of said casing that are equidistant from the center of the wheel, and an annular steam chamber adjacent said wall through which said ports extend and that registers with said ports.

5. A rotary engine including a casing with a chamber, a shaft extending through said casing, a wheel on said shaft and mounted within said chamber, a series of steam inlet ports through one side wall of said chamber and equidistant from the center of said shaft, a disk mounted on said shaft outside said chamber and adjacent the wall through which said ports extend, and an annular steam supply chamber in said disk adjacent the casing wall and registering with all of said ports.

6. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partition having a series of steam inlet ports through it, a wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition that registers with all of said steam inlet ports, and having a port through it leading from said steam supply chamber to said annular chamber.

7. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partition having a series of steam inlet ports through it, a wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition that registers with all of said steam inlet ports, and having a port through it leading from said steam supply chamber to said annular chamber, and a steam inlet port in front of said removable abutment and centrifugally controlled means opening and closing the port in said disk.

8. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partition having a series of steam inlet ports through it, a wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition that registers with all of said steam inlet ports, and having a port through it leading from said steam supply chamber to said annular chamber and centrifugally controlled plates for opening and closing the port in said disk, and externally operated means for regulating said plates.

9. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partition having a series of steam inlet ports through it, a steam turbine wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition and that registers with all of said steam inlet ports, a pair of oppositely located ports extending through said disk into said annular steam chamber, a pair of centrifugally controlled plates for automatically opening and closing said ports, and externally operated means for regulating said plates.

10. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partitions having a series of steam inlet ports through it, a wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition and that registers with all of said steam inlet ports and having a port through it leading from said steam supply chamber to said annular chamber, a governor plate pivotally mounted on said disk between said port and the center of the disk so that said centrifugal ports will cause it to close said port, and a spring that holds said governor plate normally away from said port.

11. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partition having a series of steam inlet ports through it, a wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition and that registers with all of said steam inlet ports and having a port through it leading from said steam supply chamber to said annular chamber, a governor plate pivotally mounted on said disk between said port and the center of the disk so that said centrifugal ports will cause it to close said port, a spring that holds said governor plate normally away from said port, and means externally operative for regulating the tension of said spring.

12. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partition having a series of steam inlet ports through it, a wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition that registers with all of said steam inlet ports having a port through it leading from said steam supply chamber to said annular chamber, a governor plate pivotally mounted on said disk between said port and the center of the disk so that centrifugal force will cause said plate to close said port, a spring that holds said governor plate normally away from said port, and means for limiting the movement of said governor plate.

13. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partition having a series of steam inlet ports through it, a wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition that registers with all of said steam inlet ports, and having a port through it leading from said steam supply chamber to said annular chamber, centrifugally controlled governors for opening and closing the port in said disk, and means extending through said shaft and externally operative for regulating said governor.

14. A rotary engine including a casing, a shaft extending therethrough, a partition radial with said shaft that forms two chambers within said casing, said partition having a series of steam inlet ports through it, a wheel mounted on said shaft in one of said chambers so that it will open and close said ports, means for supplying steam to the other of said chambers, a disk mounted on said shaft in said steam supply chamber that lies adjacent said partition, said disk having an annular chamber in the side thereof adjacent said partition and that registers with all of said steam inlet ports, a pair of oppositely located ports extending through said disk into said annular steam chamber, a pair of centrifugally controlled plates for automatically opening and closing said ports, externally operated means for regulating said plates, a governor plate pivoted to said disk between said shaft and each of said ports for opening and closing said ports, a spring for holding each of said governors in its open position, a bell-crank for each of said springs that is pivotally mounted on said disk with said spring, a pair of rack bars extending parallel through said shaft so as to be movable with one end of each rack bar in engagement with a bell-crank, a rod mounted centrally in said shaft with one end geared in engagement with both of said rack bars and the other end extending beyond said main shaft, and means on the outer end of said rod for turning it in said shaft and locking it in its adjusted position whereby the tension of the governor springs may be externally adjusted.

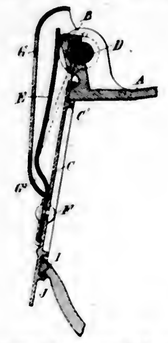
852,951. SUSPENSION-CLAMP FOR BACON. AUGUST A. HARNISCHFEGER, New York, N. Y. Filed Apr. 25, 1906. Serial No. 313,660.



Claim.—A clamp for suspending bacon, comprising a transverse connecting-piece having a jaw made integral therewith, a second jaw hinged to said connecting-piece, the shanks of said jaws being provided with holes and bent up immediately above said holes to form ridges, a spring interposed between said jaws and normally spreading the same, and a link embracing the shanks of said jaws and maintained in position by said ridges.

852,952. JOURNAL-BOX AND LID. CHARLES G. HAWLEY, Chicago, Ill. Filed Sept. 24, 1906. Serial No. 335,890.

Claim.—1. A journal box having a hinge lug upon its top, in combination with a hinge pin in said lug, a lid comprising a flat imperforate plate having integral lugs whereby it is hinged upon said pin, a curved leaf spring, having its upper end engaged with the lug on the box, presenting its concave side to said lid and at its lower end, secured to said lid, and a hood rigidly fixed upon said plate and inclosing said spring and the portion of the plate occupied thereby, substantially as described.



2. A journal box having a hinge lug on its top, in combination with a flat imperforate plate provided with hinge lugs and hinged to said lug, a curved leaf spring having a straight lower end permanently fastened to the outer side of said plate, said spring presenting its concave side to the outer side of said plate and having its upper end engaged with the hinge lug on the box, substantially as described.

3. A journal box lid for journal boxes of the standard Master Car Builders' type, comprising a flat imperforate plate adapted to completely close the opening of such a box, and having integral hinge lugs upon its upper edge, in combination with a curved leaf spring to co-act with the lug of such box and having its lower end fastened to the outer face of said plate while its upper end intersects the projected plane of said plate above the edge of the plate, substantially as described.

4. A journal box lid, comprising a flat imperforate plate, having integral hinge lugs extending from its upper edge, in combination with a curved leaf spring presenting its concaved side to the outer face of said plate and having a straight lower end permanently fastened to the lower part of said outer face, and the greatest distance between said spring and said plate being at a point adjacent to the spring fastening, whereby the free end of the spring is inclined toward the upper edge of the plate, substantially as described.

5. A journal box lid, comprising a flat imperforate plate having integral hinge lugs extending from its upper edge, in combination with a leaf spring having a straight lower end that is riveted upon the outer face of said plate and having a curved upper portion presenting its concave side to said plate and extending above the edge of said plate, intersecting the projected outer face plane thereof, substantially as described.

6. A journal box lid, comprising a flat imperforate plate having integral hinge lugs on its upper edge, in combination with a leaf spring, having its lower end riveted to the outer side of said plate, the upper end of said spring pressing upon the upper edge of said plate, in position to be forced away from the same and thereby placed under greater tension, when the lid is secured upon a journal box, substantially as described.

7. A journal box lid, comprising a flat imperforate plate adapted to wholly close the opening of its box, and having integral hinge lugs on its upper edge, in combination with a leaf spring, a rivet extending through the lower end of said spring and the plate and fastening the spring upon the outer side of said plate, the intermediate portion of said spring being curved away from said plate at a point adjacent to said rivet, and the upper portion of the spring being inclined toward the upper edge of the plate, substantially as described.

8. A journal box lid, comprising an imperforate plate having integral hinge lugs extending from its upper edge, in combination with a leaf spring, a rivet securing the lower end of said spring upon the outer side of said plate,

the intermediate portion of said spring being curved away from said plate, and the upper end of said spring pressing upon the upper edge of said plate, as and for the purpose specified.

9. A journal box lid, comprising a flat rectangular imperforate plate, having integral hinge lugs on its upper edge, in combination with a set-curve leaf spring, presenting its concave side to the outer side of said plate, a rivet passing through said plate, and fixing the lower end of the spring upon the outer side of said plate, the free upper end of the spring extending between said hinge lugs and inclining toward the upper edge of said plate, substantially as described.

10. A journal box lid, comprising an imperforate plate, having integral hinge lugs and adapted to completely close the opening of the journal box, in combination with an initially curved leaf spring presenting its concave side to the outer side of said plate and having its lower end riveted thereto, substantially as described.

11. A journal box lid, comprising an imperforate plate having integral hinge lugs on its upper edge, in combination with a curved spring presenting its concave side to the outer face of said plate, the lower end of said spring being riveted to said outer face of the plate, and the spring being held under tension by the rivet, substantially as described.

12. A journal box lid comprising a flat imperforate plate, of a size and form adapting it to wholly close an opening in a journal box and provided with integral hinge lugs extending from its upper edge, in combination with a curved leaf spring having its lower end and its upper intermediate portion engaged with the outer side or face of said plate, and a rivet extending through the lower end of said spring and through said plate, rigidly fastening the spring to said plate, substantially as described.

13. A journal box lid, comprising a flat imperforate plate, having hinge lugs at its upper edge, in combination with a curved leaf spring presenting its concave side to the outer face of said plate, the lower end of said spring being inset and riveted upon said plate, and the upper end of said spring being inset toward the upper edge of said plate and a spring protecting hood, integral with said plate and lugs, substantially as described.

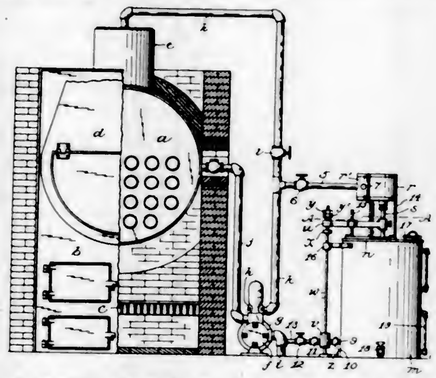
14. A journal box lid, comprising a flat imperforate plate having parallel spring holding lugs upon its lower outer part and hinge lugs upon its upper edge, in combination with a curved leaf spring, presenting its concave side to the outer face of said plate and having its lower end secured between said ribs, substantially as described.

15. A journal box having a hinge lug upon its top and provided with a lid securing projection or lip at the lower margin of its opening, in combination with a lid, comprising an imperforate plate having hinge lugs on its upper edge, pivotally connected with the hinge lug on the box and an underhanging catch lip upon the lower inner side of said plate and a leaf spring having its lower end secured upon the outer face of said plate and its upper end pressing upon the hinge lug of the box, substantially as described.

16. A journal box having a hinge lug upon its top, in combination with a lid comprising a flat imperforate plate adapted to wholly close the opening in said box and provided with hinge lugs upon its upper edge, a hinge pin connecting the lugs of said lid and box, a curved leaf spring having its lower end secured upon the outer side of said plate and its upper end in engagement with the lug on said box, said spring being so tensioned that it is adapted to press upon the upper edge of the plate or lid, when the lid is removed from the box, substantially as described.

852,953. MIXER AND FEEDER FOR BOILER COMPOUNDS. HARRY HIATT, Alexandria, Ind. Filed Nov. 15, 1906. Serial No. 343,494.

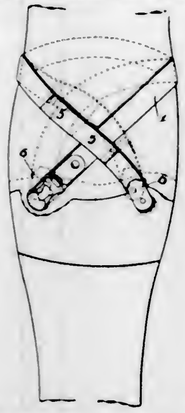
Claim.—1. A mixer and feeder for boiler compounds including a tank, a steam engine cylinder mounted on the tank and having a piston-rod extending into the tank and serving as part of a mixer, the piston-rod having stirring devices attached thereto, and a pump connected with the tank and operated by the piston-rod.



2. A mixer and feeder for boiler compounds including a tank having a guide-bar fixed therein, a steam engine cylinder mounted on the tank and having a piston-rod guided by the guide-bar, a mixing device attached to the piston-rod, a pump connected with the tank and having a plunger, and a pump-arm secured to the piston-rod and having operative connection with the plunger.

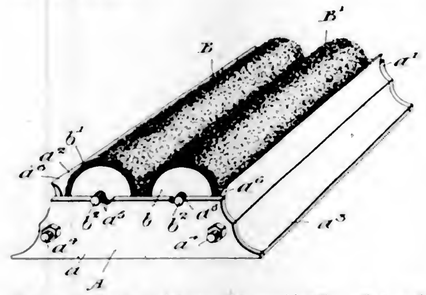
3. The combination of a boiler, a boiler-feeder, a water-supply pipe connected with the boiler-feeder, a discharge-pipe between the boiler-feeder and the boiler, a steam-pipe between the boiler and the boiler-feeder, a tank having mixing devices therein, a pump connected with the tank and also with the water-supply pipe, a steam engine cylinder having a piston-rod connected to the mixing devices, an arm secured to the piston-rod and operatively connected with the pump, a steam-chest attached to the steam-cylinder, and a steam-pipe connected with the steam-chest and also with the steam-pipe that is between the boiler and the boiler-feeder.

852,954. HOSE-SUPPORTER. FRED HIRSH, New York, N. Y. Filed Nov. 1, 1906. Serial No. 341,531.



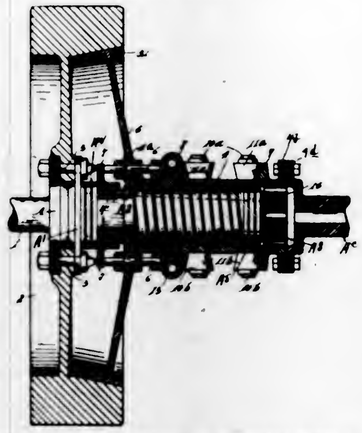
Claim.—A hose supporter consisting of a strap comprising a single piece of elastic webbing adapted to pass around the leg and cross, one or more permanent loops formed on the strap near one end by attaching thereto a separate piece of elastic webbing through which to pass the other end of the strap to fix or adjust the crossing, and a fastening device so attached to each end of the strap that the strap will form a covering for the back of the fastening device.

852,955. BOOT-CLEANER. ANDREW C. HOUGHTON, Winnipeg, Manitoba, Canada. Filed Nov. 1, 1905. Serial No. 285,383.



Claim.—In a boot cleaner, the combination of a casing comprising side and end members, the latter being provided in their upper edges with a plurality of open journal bearings, and of a pair of brushes mounted rotatively in the top of the casing parallel to the side members and having axial shafts resting in said journal bearings, the upper portions of said side members being extended above the end members in close proximity to the outer sides of the brushes and turned outward and upward to constitute at once guards for said brushes and scrapers for removing mud.

852,956. CLUTCH. EMIL HUBER, Detroit, Mich. Filed Oct. 16, 1905. Serial No. 282,920.

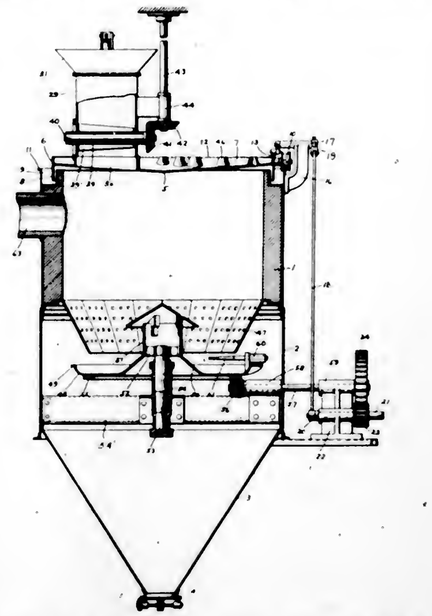


Claim.—1. The combination of a driving shaft 1, A^2, a driven shaft 4, A^c, a clutch member on each of said shafts adapted to engage to bind said shafts together, a spring 13 interposed between said shafts and tending to force them in opposite directions to engage said clutch members, and an actuator upon one of said shafts acting against the other of said shafts to press said shafts apart to disengage the clutches.

2. The combination of a driving shaft 1, A^2, a driven shaft 4, A^c having a sleeve 4 surrounding a part of the driving shaft, a spring surrounding said driving shaft within the sleeve 4, a thrust bearing within said sleeve interposed between said spring and the driving shaft, said spring acting at the other end against the driven shaft, a clutch member 5 on the driven shaft, a corresponding clutch member upon the driving shaft, a thrust bearing inclosed by said clutch member, an actuating member extending through one of said clutch members adapted to act upon said thrust bearing, and means for operating said actuating member, for the purpose described.

3. The combination of a driving shaft 1, A^2, a driven shaft 4, A^c having a sleeve 4 surrounding a part of the driving shaft, a spring surrounding said driving shaft within the sleeve 4, said spring acting at the other end against the driven shaft, a clutch member 5 on the driven shaft, a corresponding clutch member upon the driving shaft, a thrust bearing inclosed by said clutch members, an actuating member extending through one of said clutch members adapted to act upon said thrust bearing, and means for operating said actuating member, for the purpose described.

852,957. GAS-PRODUCER. WILLIAM B. HUGHES, Chestnut Hill, Pa. Filed May 26, 1906. Serial No. 318,875.



Claim.—1. A gas producer having a stationary body, a revolving top, a revoluble ash support beneath said body, and mechanism for connecting and simultaneously revolving said top and support.

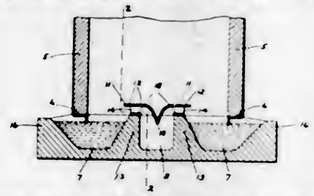
2. A gas producer having a stationary body, a revolving top, a revoluble table beneath said body, a blast pipe fixed to and revoluble with said table, a rack fixed to said table, a rack fixed to said top, and mechanisms whereby said racks are engaged to revolve said table and top.

852,958. GAS-PRODUCER. WILLIAM B. HUGHES, Cleveland, Ohio. Filed Oct. 15, 1906. Serial No. 338,957.

Claim.—1. A gas producer having an artificial stone base with artificial stone walls forming an air channel extending transversely across the producer chamber and a water channel on each side of said air channel, said walls being disposed so as to act as separators for the air and water.

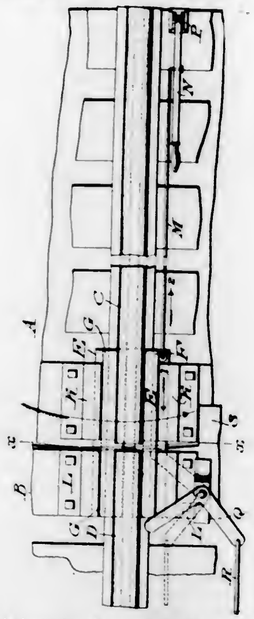
2. A gas producer having an artificial stone base with artificial stone walls forming an air channel extending

transversely across the producer chamber and a water channel on each side of said air channel, said walls being disposed so as to separate the air and water, and a de-



flector supported by said walls, said deflector comprising a depending spreader terminating in wings.

852,959. BRIDGE AND RAILROAD-RAIL LOCK AND SIGNAL. EDWARD H. JOHNSTON, Philadelphia, Pa. Filed Dec. 12, 1906. Serial No. 347,417.

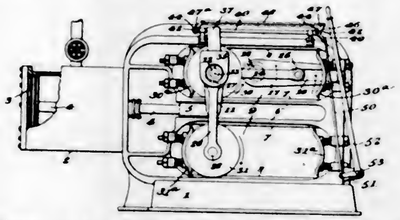


Claim.—1. A lock for a movable railroad bridge, consisting of a slidable cheek piece, having a member adapted to freely engage the bases of the rails on the bridge, and the approach thereto, and a member occupying a position at the sides of said rails, closing the joint between the same in combination with a signal operating lever mounted on said approach, and having a limb adapted to be engaged by said cheek piece.

2. In a lock and signal for a movable railroad bridge, a movable cheek piece adapted to slidingly embrace the opposite ends of rails respectively on a bridge and an approach thereto, and a signal operating lever mounted on said approach and having a limb adapted to be positively operated by contact with said cheek piece.

3. A lock for a movable railroad bridge, consisting of a slidable rail engaging device composed of base, cheek pieces, and a neck, said base being adapted to pass freely under the rails of said bridge and approach thereto, said cheek pieces to freely embrace the bases of said rails, and said neck to occupy a position at the sides of said rails and bridge the joint between the same in combination with a signal member adapted to be engaged and operated positively by said device.

852,960. CRANK MECHANISM FOR STEAM AND OTHER ENGINES. PETER N. JONTE, Cincinnati, Ohio. Filed Apr. 9, 1906. Serial No. 310,845.



Claim.—1. A mechanism of the character described comprising a structure having a guide-way, a part adapted for rolling contact along said guide-way, means to press said part frictionally upon said guide-way means to impart reciprocatory movement to said part along said guide-way, a driving shaft mounted to turn and a connection for transmitting rotary movement from said rotative part to said driving shaft.

2. A mechanism of the character described comprising a structure having a guide-way, a part adapted for rolling contact along said guide-way, means to impart reciprocatory movement to said part along said guide-way, a shaft mounted to turn and a connection for transmitting rotary movement from said rotative part to said shaft and comprising means for compensating for the reciprocatory movement of said part relatively to said shaft.

3. A mechanism of the character described comprising a structure having a guide-way, a part adapted for rolling contact along said guide-way, means to impart reciprocatory movement to said part along said guide-way, a driving shaft mounted to turn and a crank connection for transmitting the rotary movement of said rotative part to said driving shaft and comprising means for compensating for the reciprocatory movement of said part relatively to said shaft.

4. A mechanism of the character described comprising a structure having a guide-way, a part adapted for rolling contact along said guide-way, a crank connected to turn with said part, means to impart reciprocatory movement to said rotative part along the guide-way, a driving shaft provided with a crank and a compensating connection between the cranks of the rolling part and the driving shaft for transmitting movement between the same.

5. A mechanism of the character described comprising a structure having a guide-way, a part adapted for rolling contact along the guide-way, means to impart reciprocatory movement to the rolling part along said guide-way, a driving shaft mounted to turn and cranks connected, respectively with said rolling part and with the driving shaft, one crank having a slot and the other crank having a pin engaged therewith for communicating rotary movement from the rolling part to the driving shaft while affording compensation for the reciprocatory movement of said rolling part with relation to the driving shaft.

6. A mechanism of the character described comprising a structure having a guide-way the opposite sides whereof have parallel track surfaces, a part adapted for rolling contact along said guide-way and movable transversely in the same for engagement of opposite sides of its perimeter with the respective track surfaces, means to impart reciprocatory movement to said part, means for moving said part transversely of the guide-way to press its opposite sides upon the opposite track surfaces, a driving shaft mounted to turn and a connection for transmitting rotary movement from the rolling part to said driving shaft.

7. A mechanism of the character described comprising a structure having a guide-way the opposite sides whereof have parallel track surfaces, a part adapted for rolling contact along said guide-way and movable transversely in the same for engagement of opposite sides of its perimeter with the respective track surfaces, a crank arm connected with said part, means connected with the crank arm for imparting reciprocatory movement to the rolling part along said guide-way, a driving shaft mounted to turn and a connection for transmitting rotary movement from the rolling part to said driving shaft.

8. A mechanism of the character described comprising a structure having a guide-way the opposite sides whereof have parallel track surfaces, a part adapted for rolling contact along said guide-way and movble transversely in the same for engagement of opposite sides of its perimeter with the respective track surfaces, means to impart reciprocatory movement to said rolling part, reversible means for moving said rolling part transversely of the guide-way to alternately press opposite sides of its periphery upon the opposite track surfaces of the guide-way, a driving shaft mounted to turn and a connection for transmitting rotary movement from the rolling part to said driving shaft.

9. A mechanism of the character described comprising a structure having a guide-way the opposite sides whereof have parallel track surfaces, a part adapted for rolling contact along said guide-way and movable transversely in the same for engagement of opposite sides of its perimeter with the respective track surfaces, means to impart reciprocatory movement to said rolling part, reversible means for moving said rolling part transversely of the guide-way, controlling mechanism for controlling the operation of said reversible means, a driving shaft mounted to turn and a connection for transmitting rotary movement from the rolling part to said driving shaft.

10. A mechanism of the character described comprising a structure having a guide-way the opposite sides whereof have parallel track surfaces, a part adapted for rolling contact along said guide-way and movable transversely in the same for engagement of opposite sides of its perimeter with the respective track surfaces, a shaft on which said rolling part is held, means to impart reciprocatory movement to said shaft along said guide-way, mechanism adapted for moving said rolling part transversely of the guide-way and comprising reversely movable devices at opposite ends of said shaft, a driving shaft having a compensating crank connection with said first-named shaft and mechanism for controlling the movement of said rolling part and comprising operating rods extended along opposite sides of the structure for engagement with said reversely movable devices and movable in unison for controlling the movement of said devices.

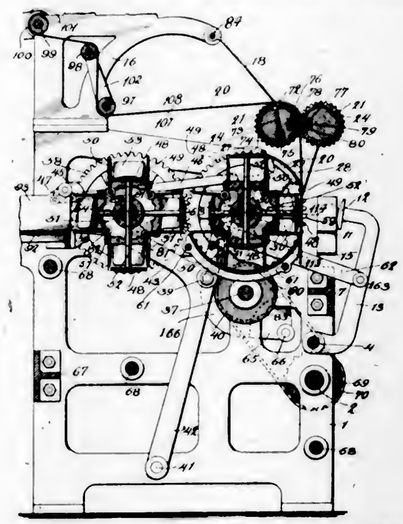
11. A mechanism of the character described comprising a structure having parallel guide-ways each provided with oppositely arranged track surfaces, rollers movable lengthwise along the respective guide-ways and also movable transversely thereof for engagement of opposite sides of said rollers with the track surfaces of the guide-ways, shafts whereon the rollers are held, a driving shaft mounted to turn, a compensating crank connection between the driving shaft and one of said first-named shafts, means for imparting reciprocatory movement to said first-named shafts and mechanism for moving said first-named shafts toward and from each other to press the rollers carried thereon upon the outer and inner track surfaces of the respective guide-ways.

12. A mechanism of the character described comprising a structure having parallel guide-ways each provided with oppositely arranged track surfaces, rollers movable lengthwise along the guide-ways and also movable transversely thereof for engagement of their opposite sides with the track surfaces of the guide-ways shafts whereon the rollers are held, a driving shaft mounted to turn, a compensating connection between the driving shaft and one of the roller-carrying shafts, means to impart reciprocatory movement to said first-named shafts and mechanism, actuated from said reciprocatory means and arranged to move said roller-carrying shafts toward and from each other to press the rollers thereon upon the outer and inner track surfaces of the respective guide-ways.

13. A mechanism of the character described comprising a structure having parallel guide-ways each provided with oppositely arranged track surfaces, rollers movable lengthwise along the guide-ways and also movable transversely thereof for engagement of their opposite sides with the track surfaces of the guide-ways, shafts whereon said rollers are held, a driving shaft mounted to turn, a compensating connection between the driving shaft and one of the roller-carrying shafts, means to impart reciprocatory movement to said roller-carrying shafts and mechanism actuated from said reciprocatory means and arranged to move said roller carrying shafts toward and from each other to press the rollers thereon upon the outer and inner track surfaces of the respective guide-ways and comprising sleeves on the ends of one roller-carrying shaft and having crank connection with said reciprocatory means, links engaged with said sleeves and carrying the ends of the other roller-carrying shaft and clutch mechanism for locking said links to rock in unison with said sleeves.

14. A mechanism of the character described comprising a structure having parallel guide-ways each provided with oppositely arranged track surfaces, rollers movable lengthwise along the respective guide-ways and also movable transversely thereof for engagement of their opposite sides with the track surfaces of the guide-ways, shafts whereon said rollers are held, a driving shaft mounted to turn, a compensating driving connection between the driving shaft and one of the roller-carrying shafts, means to impart reciprocatory movement to said roller carrying shafts, and reversely operative mechanism actuated from said reciprocatory means and arranged to reversely move said roller-carrying shafts toward and from each other to press the rollers thereon upon the outer and inner track surfaces of the respective guide-ways and comprising sleeves on the ends of one roller-carrying shaft and having crank connection with said reciprocatory means, links in pairs with their upper ends held by said sleeves and their lower ends arranged to support the other roller-carrying shaft, the links of each pair having adjacent clutch surfaces, clutch members held to rock with but movable endwise upon the sleeves in and out of engagement with the clutch surfaces of the links and means for reversely moving the clutch members.

852,961. MACHINE FOR WRAPPING ARTICLES. JAMES A. KEYES, New York, N. Y., assignor to United Wrapping Machine Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 12, 1903. Serial No. 180,833.



Claim.—1. In wrapping machines, a mold wheel having molds to receive articles, an auxiliary feeder to feed a wrapper strip, an intermittently gripping feeder for said strip, means to sever the same into separate wrappers, an intermittently operating aliner to aline said strip while the grip of said feeder is released and an intermittently

operating looper between said feeder and said auxiliary feed to furnish slack in said strip while said aliner is operating.

2. In wrapping machines, an intermittently rotating folding wheel provided with molds, a feeder to supply articles to be wrapped, a movable support adjacent said feeder, a movable guide to coöperate with said support, and a feed plate adapted to force articles into said molds while engaged by said support and guide.

3. In wrapping machines, a rotating folding wheel provided with molds, means to supply wrappers adjacent said molds, a feeder to supply articles adjacent said molds, a support located beneath the feeder to support articles, a movable guide located above said feeder, means for moving said support and said guide toward a mold on either side of an article to be wrapped by the folding wheel and a feed plate to engage said article and force the same into said mold.

4. In wrapping machines, a folding wheel having molds therein, a coöperating tucking wheel having molds therein, tucking plates secured to said tucking wheel adjacent the molds therein, plungers having convex working faces operating in the molds in said wheels to transfer articles, a discharge chute adjacent said tucking wheel and means to supply articles and wrappers to said folding wheel.

5. In wrapping machines a folding wheel having molds therein, a coöperating tucking wheel having molds, plunger rods in said wheels, plungers operating in said molds, said plungers being rigidly secured to either end of said plunger rods so that the opposite plungers in a wheel operate in unison, a discharge chute adjacent said tucking wheel and a pivoted ejector and a feed plate operating in unison to simultaneously feed a wrapper and an article into said folding wheel and eject the wrapped and tucked article from the tucking wheel.

6. In wrapping machines, a wrapping wheel having molds, plungers operating in said molds, plunger rods secured to said plungers on either side of said wheel, means to supply articles and wrappers to said wrapping wheel and an ejector and feed plate connected to operate in unison to force an article into said wrapping wheel and adapted to coact with the plunger rod to eject an article therefrom.

7. In wrapping machines, a wrapping wheel provided with molds, plungers having convex working faces operating in said molds, means to force articles and wrappers into said molds and folding means to fold said wrappers around said articles, and a fixed setter in the path of the plungers.

8. In wrapping machines, a wrapping wheel having molds, plungers having convex working faces operating in said molds, means to operate said plungers and means to force articles and wrappers into said molds, and a fixed setter in the path of the plungers.

9. In wrapping machines, a folding wheel having molds therein, a coöperating tucking wheel having molds, tucking plates secured to said tucking wheel adjacent the ends of the molds therein and means to transfer articles and wrappers from said wrapping wheel into said tucking wheel to form folds in said wrappers by said tucking plates.

10. In wrapping machines, a folding wheel having molds therein, a coöperating tucking wheel having molds, tucking plates secured to said tucking wheel adjacent the molds therein and plungers in said molds in said folding wheel to transfer articles and wrappers from said folding wheel into said tucking wheel and to fold said wrappers by said tucking plates.

11. In wrapping machines, a wheel having substantially rectangular molds therein, substantially rectangular tucking plates secured to said molds adjacent the ends of the molds therein and means to force articles and wrappers into said molds to tuck the ends of said wrappers by said tucking plates.

12. In wrapping machines, a wheel having molds therein, tucking plates secured to said wheel adjacent said molds and means to force articles and wrappers into said molds to fold said wrappers by said tucking plates.

13. In wrapping machines, a wheel having a mold therein, a tucking plate secured immovably to said wheel adjacent said mold and means to force articles and wrappers into said mold and to tuck said wrappers by said tucking plate.

14. In wrapping machines, a folding wheel having molds, a coöperating tucking wheel having molds, a discharge chute coöperating with said tucking wheel, a stationary tucker adjacent said discharge chute, a movable tucker adjacent said chute, a movable folder adjacent said folding wheel and adapted to move simultaneously with said movable tucker, a stationary folder coöperating with said folding wheel, means to force articles and wrappers into said folding wheel and to transfer the same into said tucking wheel and said discharge chute and means to rotate said folding and tucking wheels.

15. In folding machines, a wrapping wheel having molds, a coöperating tucking wheel having molds, a discharge chute adjacent said tucking wheel, means to force articles and wrappers into said folding wheel and to transfer the same into said tucking wheel and said discharge chute, stationary tuckers adjacent said discharge chute and movable tuckers adjacent said discharge chute and means for moving said movable tuckers out of the path of said wrappers as said tucking wheel moves said wrappers into engagement with said stationary tuckers and thereafter moving said movable tuckers into engagement with said wrappers.

16. In wrapping machines, a wheel having molds therein, a discharge chute adjacent said wheel, means to feed articles and wrappers into said molds and to transfer them into said chute, stationary tuckers adjacent said discharge chute to engage wrappers as said wheel rotates to bring a mold into alinement with said chute and movable tuckers adjacent said chute to operate upon wrapper ends in a mold in alinement with said chute, the sides of said chute engaging said wrappers as the article is transferred to said chute and forming folds therein.

17. In wrapping machines, a wheel having molds, means to force articles and wrappers into said molds, a discharge chute adjacent said wheel, a movable tucker adjacent said chute, means to withdraw said tucker from the path of wrappers as said molds are rotated into alinement with said chute and to operate said tucker to form a fold in a wrapper contained in a mold held in alinement with said chute.

18. In wrapping machines, an intermittently rotating wrapping wheel provided with molds, a feeder to supply articles to be wrapped adjacent said wrapping wheel, a movable support located below said feeder, a separate movable guide located above the feeder, means to hold said guide in disengaged position when said support is retracted and a feed plate to force articles between said support and said guide into said molds.

19. In wrapping machines, an intermittently rotating wrapping wheel provided with molds, a feeder to supply articles to be wrapped adjacent said mold wheel, a movable support adjacent said feeder, a movable guide to coöperate with said support to hold an article to be wrapped by the wrapping wheel, means to hold said guide in disengaged position until the article is fed into alinement with one of said molds, and means to force said article between said suport and said guide into said mold.

20. In wrapping machines, a movable mold, a feed belt to supply articles to be wrapped adjacent said mold, a movable support beneath said belt, a movable guide above said belt, said support and guide adapted to coöperate to hold an article, means to hold said guide in disengaged position when said support is retracted, means to move said support and guide forward toward said mold, and means to force an article between said guide and support into said molds.

21. In wrapping machines, a folding wheel having molds therein means to fold the wrappers around the articles in said mold, a coöperating tucking wheel having molds therein, tucking plates rigidly secured to said tucking wheel adjacent the ends of the molds therein and projecting into the path of the wrapper ends on articles fed into said molds and means to transfer articles and wrappers from said wrapping wheel into said tucking wheel to form end folds in said wrappers by their engagement with said tucking plates.

22. In wrapping machines, a wheel having a mold therein, a tucking plate rigidly secured to said wheel adjacent said mold and in the path of the wrapper ends of articles fed into said mold and means to force articles and wrappers into said mold to make end fold in the said wrappers by their engagement with said tucking plate.

23. In wrapping machines, a wheel provided with molds, plunger rods in said wheel, plungers having convex working faces secured to either end of said rods and operating in said molds, the said molds having spring-pressed pivoted sides, a cam on the shaft of said wheel and arms extending from the sides of said molds to engage said cams and automatically release said sides when said molds are in receiving or discharge position.

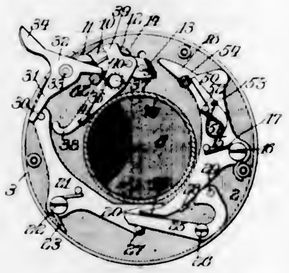
24. In wrapping machines, an intermittently rotating folding wheel provided with molds, a feeder to supply articles to be wrapped, a pivoted arm, a movable support carried by the arm, a movable guide also carried by the arm, and a feed plate to force articles into said molds while engaged by said support and guide.

25. In wrapping machines, a folding wheel having molds therein, plungers operating in said molds, a coöperating tucking wheel having molds, plungers operating in said molds, the working faces of said plungers being convex, a fixed setter carried by the frame and located in the path of the plungers, a discharge chute adjacent said tucking wheel, means to supply articles and wrappers to said wrapping wheel and to transfer them into said tucking wheel and said chute.

26. In wrapping machines, a wrapping wheel having molds, plungers operating in said molds, plunger rods, secured to said plungers on either side of said wheel, means to supply articles and wrappers to said wrapping wheel and a pivoted ejector and feed plate connected to operate in unison to force an article into said wrapping wheel and to eject an article therefrom.

27. In wrapping machines, a folding wheel having molds therein, a coöperating tucking wheel having molds, tucking plates rigidly secured to said tucking wheel adjacent the ends of the molds therein and projecting into the path of the wrapper ends and means to transfer articles and wrappers from said wrapping wheel into said tucking wheel to form folds in said wrappers by said tucking plates.

852,962. PHOTOGRAPHIC SHUTTER. RUDOLPH KLEIN, Rochester, N. Y., assignor to Bausch & Lomb Optical Company, Rochester, N. Y., a Corporation of New York. Filed Dec. 24, 1904. Serial No. 238,196.



Claim.—1. In a photographic shutter, the combination with the blades, the spring actuated blade operating member, and a catch coöperating therewith, of a master member having a latch connection with the blade operating member, and means for operating and releasing the master member.

2. The combination with the spring actuated blade operating member and a catch coöperating therewith of a master member having a latch connection with the blade operating member, means for operating and releasing the master member and a catch for the master member controlled by the operating means.

3. The combination with the blades, the spring actuated blade operating member, and a catch coöperating therewith, to hold the blades open, of a master member having a latch connection with the operating member and means for operating the master member and controlling the catch.

4. The combination with the blades, the spring actuated blade operating member and a catch coöperating therewith, of a master member having latch connection with the blade operating member, a catch coöperating therewith and operating means for actuating the master member in one direction and coöperating with the two catches to control them.

5. The combination with the blades, the spring actuated blade operating member, and a catch coöperating therewith, of a master member having a latch connection with the operating member, a catch coöperating with the master member, and a member having a latch connection with the master member and coöperating with the two catches to actuate them.

6. The combination with the blades, the spring actuated blade operating member and a catch coöperating therewith, of a master member having a latch connection with the operating member, a catch coöperating with the master member, a member having a latch connection with the master member and coöperating with the two catches to actuate them and means for adjusting the two catches relatively to said member.

7. The combination with the blades, the spring actuated blade operating member and the spring operated catch cooperating therewith to hold the blades open, of devices for actuating and releasing the blade operating member, a catch for controlling said devices and holding the operating member with the shutter open, means for operating said catches and means for adjusting either or both of said catches out of coöperative relation with the parts controlled by them.

8. The combination with the blades, the spring actuated blade operating member, and the spring operated catch cooperating therewith, of means for moving and releasing the blade operating member and an operating device therefor coöperating with the before mentioned catch to control its position.

9. The combination with the blades, the spring actuated blade operating member having the projection and the spring operated catch coöperating therewith to hold the blades open, of an operating member controlling the before mentioned catch and mechanism actuated by said member for actuating and releasing the blade operating member and an adjustable catch for said mechanism controlled by the operating member.

10. The combination with the blades, the spring operated blade operating member, and the catch coöperating therewith, of the spring operated master member having a latch connection with the blade operating member, the catch for engaging the master member and an intermediate member having a latch connection with the master member and controlling the two catches to permit their alternate engagement with their coöperating parts.

11. The combination with the blades and the spring operated blade operating member having the projection 14 of the catch 36 having the projections 39 and 40 and an adjustable stop coöperating with the projection 40.

12. The combination with the blades, the spring operated blade operating member and the catch 36 controlling it, of the master member having a latch connection with the blade operating member, the catch 25 coöperating with the master member and means for controlling the catch, the spring operated intermediate member 21, coöperating with the catches 36 and 25 and having a latch connection with the master member.

13. The combination with the blade and the spring operated blade operating member having the beveled end, of the master member 15, having the beveled end, coöperating with that of the blade operating member, the projection 28 and the beveled end 19, the catch 25 and the spring

operated member 21 having the beveled end 20 and the projection 27 coöperating with the catch 25.

14. The combination with the blade, the spring operated blade operating member 10, having the projection 14 and the catch 36 having the projection 39 and the hook 38, of the pivoted master member 15, having the projection 28, the intermediate member 21 having the projections 30 and 27, the spring operated catch 25 for engaging the projection 28 on the master member and engaged by the projection 27 on the intermediate member and the actuating member 32 engaging the projection 30 on the intermediate member and latch connections between one end of the master member and the operating member and between the other end of the master member and the intermediate member 21.

15. The combination with the shutter blade the pivoted spring operated master member controlling it and the pawl pivoted on the master member, of a movable retarding device having a projection coöperating with said pawl and movable thereby and means for adjusting said projection relative to the path of movement of the pawl to vary the point in the movement of the latter when it shall become engaged with and operate the retarding device.

16. The combination with the shutter blade, the pivoted master member for operating it, and the pawl carried thereby, of a pneumatic retarding device embodying a pivoted lever having a projection with which the pawl coöperates and means for adjusting the projection into and out of the path of movement of the pawl to vary the point in its movement at which the pawl engages with the lever projection.

17. The combination with the shutter blade, and a pivoted master member for operating it, and the pawl pivoted on the member, of a pneumatic retarding device embodying a pivoted lever having a projection thereon arranged in the path of movement of the pawl and means for adjusting the lever to carry the projection into and out of the path of the pawl.

18. The combination with the shutter blade and the blade operating member, the catch controlling it, the master member having a pawl thereon, a latch connection between said master member and the operating member and the catch controlling the master member, of a pneumatic retarding device embodying a movable member having a projection thereon with which the pawl on the master member coöperates and a setting device coöperating with the catches and with the projection on the movable member to vary the relations between these parts for causing different exposures.

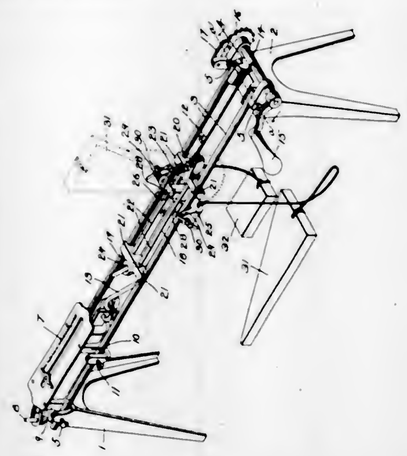
852,963. APPARATUS FOR DETERMINING THE STRENGTH OF CORDS, &c. LOUIE E. KNOTT, Boston, Mass., assignor to L. E. Knott Apparatus Company, Boston, Mass., a Corporation of Massachusetts. Filed Oct. 25, 1906. Serial No. 340,432.

Claim.—1. In a device for testing the tensile strength of cords, wire, etc., the combination of two standards, and a bed comprising two rods detachably connecting said standards, with means at one end of the bed to register the tensile strength of the cord, means at the other end thereof to apply tension to said cord, and a gravity-actuated wedge device to prevent the registering device from returning to zero when the cord breaks.

2. In a device of the class described, the combination with two standards and a bed connecting them, of means at one end of the bed to apply tension to a cord to be tested, a spring balance at the other end thereof to register the tension thus applied, and gravity-actuated wedge device between said means and the spring balance to prevent the registering device from returning to zero position when the cord breaks.

3. In a device of the class described, the combination with two standards and a bed comprising two rods, each detachably secured to the standards, of means at one end of the bed to apply tension to the cord to be tested, a spring balance at the other end of the bed to register the tension thus applied, a stop member supported by the bed and interposed between the cord and spring balance, a fixed abutment, and a wedge to be inserted between the stop member and the abutment.

4. In a device of the class described, the combination with a bed, of means at one end of the bed to apply tension to the cord to be tested, a spring balance at the other end of the bed to register the tension thus applied, a stop member supported by the bed and interposed between the cord and spring balance, a fixed abutment, and a gravity actuated wedge to be inserted between the stop member and the abutment.



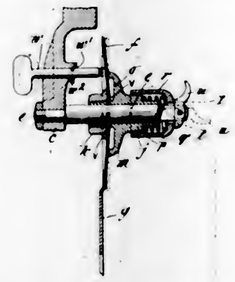
5. In a device of the class described, the combination with two standards having open grooves in their upper faces, two rods supported in said grooves and constituting a bed, and clamping screws having pointed ends screwed through the side walls of the grooves to clamp the rods in place, said clamping screws being situated above the center of the rods, of means supported at one end of the bed to apply tension to a cord, other means situated at the other end of the bed to register the tension, and a stop device between said two means to prevent the registering device from returning to zero position when the cord breaks.

6. In a device of the class described, the combination with two standards and two rods connecting the standards and constituting a bed, of a spring balance supported by the bed at one end thereof, an abutment member adjustably secured on the bed, a stop member comprising two heads resting on the rods of the bed to one of which heads the spring balance is adapted to be secured and to the other of which the cord to be tested is adapted to be secured, a reel supported on one standard on which to wind the cord to be tested, and a wedge-shaped stop block to be inserted between the abutment member and the stop member.

7. In a device of the class described in combination two standards, two rods connecting the standards and constituting a bed, a spring balance supported thereby at one end, a reel at the other end of the bed, a stop member slidably mounted on the rods and comprising two heads connected by bars, and an abutment member adjustably secured to the heads and having an abutment adapted to be inserted between the heads and between the bars.

8. In a device of the class described, the combination with two standards each having two open grooves in its upper face, rods received in said grooves and connecting the standards, means to clamp the rods to the grooves, means resting on the rods at one end to register the tensile strength of a cord, means to apply tension to said cord, and a stop device to prevent the registering device from returning to zero when the cord breaks, said stop device being supported by the rods.

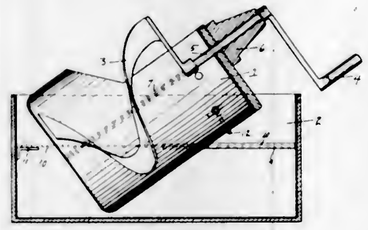
852,964. SLITTING-CUTTER FOR PAPER-MACHINES. CHARLES KOEGEL, Holyoke, Mass. Filed Apr. 19, 1904. Serial No. 203,892.



Claim.—1. A cutter or knife formed as a complete uninterrupted annulus having a single large central opening, and means for clamping said cutter or knife in working position and simultaneously dishing the cutter or knife.

2. A cutter or knife formed as a complete uninterrupted annulus having a single large central opening, a clamping member provided with a projection extending into said single central opening, a second clamping member, and means to move said clamping members toward each other to clamp and dish the said cutter or knife.

852,965. APPARATUS FOR MIXING AND KNEADING DOUGH. JOHN KOELNER, Milwaukee, Wis. Filed Oct. 5, 1906. Serial No. 337,531.



Claim.—1. The combination in a dough kneading apparatus of the class described comprising a mixing receptacle provided with two opposing sides with longitudinal supporting flanges, with a water tank inclosing said receptacle provided with inclined flanges formed for the reception of the flanges on said kneading receptacle, the flanges on said receptacle and inclosing tank being adapted to be interlocked together and hold said mixing receptacle rigidly in place in said water tank.

2. In a dough kneading apparatus of the class described the combination of a dough mixing receptacle provided with an elongated shaft supporting bearing, an operating shaft slidably supported in said bearing, and adapted to move upwardly and downwardly therein as the crank is being turned, a mixing blade secured to the lower end of said shaft, a water tank and means for removably supporting said mixing receptacle in an inclined position in said tank.

3. A dough kneading apparatus comprising a mixing receptacle, a mixing blade, an operating shaft and handle in combination with a water tank provided with means for rigidly holding said mixing receptacle when in place therein, and with inwardly projecting flanges adapted to be used for supporting bread pans above the water in said tank when said mixing receptacle is removed, all substantially as and for the purpose specified.

852,966. SHORTENING COMPOSITION. FREDERICK A. LALLEMAND, Montreal, Quebec, Canada, assignor to Albertina Laurendeau Lallemand, Montreal, Canada. Filed Apr. 28, 1905. Serial No. 257,921.

Claim.—1. A shortening composition consisting of a cooled emulsion formed from a large amount of animal fat saponified in small part by lime and an alkali, and water to at least 40% of the fat to make it into a compound of a semi-solid consistency.

2. A shortening composition consisting of a cooled emulsion formed from a large amount of animal fat saponified in small part by lime and soda and water to at least 40% of the fat to make it into a compound of a semi-solid consistency.

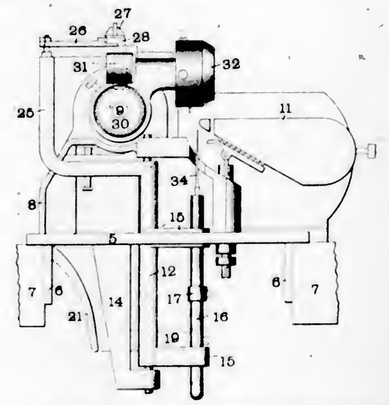
3. A shortening composition consisting of a cooled emulsion formed of animal fat, lime, bicarbonate of sodium and water to at least 40% of the fat producing a compound of a semi-solid consistency.

4. A shortening composition consisting of a cooled emulsion formed from a large amount of animal fat saponified in small part by an alkali, and water to at least 40% of the fat to make it into a compound of a semi-solid consistency.

5. A shortening composition consisting of a cooled emulsion formed of approximately 100 parts of animal fat, 60 parts of water and 2 parts of a saponifying agent, thoroughly mixed and incorporated together, substantially as set forth.

6. A shortening composition consisting of a cooled emulsion formed of approximately 100 parts of animal fat, 60 parts of water and sufficient of a saponifying agent to saponify said fat in small part and emulsify the whole, substantially as set forth.

852,967. SEWING-MACHINE. JOHN G. LEWIS, St. Louis, Mo., assignor to Lewis Blindstitch Machine Company, St. Louis, Mo., a Corporation of Missouri. Original application filed Jan. 27, 1900, Serial No. 2,941. Divided and this application filed May 6, 1903. Serial No. 155,859.



Claim.—1. In a sewing machine, a reciprocating and laterally vibrating needle, a coöperating looper, and means for maintaining the co-operative relation between the eye of the needle and the beak of the looper in the different lateral positions by varying the distance of passage of the eye of the needle beyond the beak of the looper.

2. In a sewing machine, a rotary hook mechanism arranged to remain in the same center of rotation, a laterally reciprocating needle, and means for varying the depth of the thrust of said needle.

3. In a sewing machine, a reciprocating and laterally vibrating needle, a coöperating rotary hook, and means for maintaining the coöperative relation between the eye of the needle and the beak of the hook by varying the dis-

tance of passage of the eye of the needle beyond the beak of the hook.

4. In a sewing machine, a reciprocating and laterally vibrating needle, a coöperating rotary hook, and means for maintaining the coöperative relation between the eye of the needle and the beak of the hook by varying the depth of thrust of the needle.

5. In a sewing machine, a reciprocating and laterally vibrating needle, a coöperative looper moving in a plane parallel to the path of reciprocation of said needle, and means for maintaining the coöperative relation between the eye of the needle and the beak of the looper in the different lateral positions by varying the distance of passage of the eye of the needle beyond the beak of the looper.

6. In a sewing machine, a reciprocating and laterally vibrating needle, a coöperating looper moving in a plane parallel to the path of reciprocation of said needle, and means for maintaining the coöperative relation between the eye of the needle and the beak of the looper in the different lateral positions by varying the depth of thrust of the needle.

7. In a sewing machine, a looper, a laterally vibrating needle, a reciprocating member, and a link connecting said reciprocating member and needle, whereby the depth of thrust of said needle is varied by its lateral vibration to maintain coöperative relation between the eye of the needle and the beak of the looper in the different lateral positions.

8. In a sewing machine, a rotary hook, a laterally vibrating needle, a reciprocating member, and a link connecting said reciprocating member and needle, whereby the depth of thrust of said needle is varied by its lateral vibration to maintain coöperative relation between the eye of the needle and the beak of the hook in the different lateral positions.

9. In a sewing machine, a reciprocating and laterally vibrating needle, a looper moving in a plane substantially parallel to the path of reciprocation of said needle, a reciprocating member, and a link connecting said reciprocating member and needle, whereby the depth of thrust of said needle is varied by its lateral reciprocation to maintain coöperative relation between the eye of the needle and the beak of the looper in the different lateral positions.

10. In a sewing machine, a needle, means for reciprocating said needle longitudinally, a rotary hook mechanism arranged to rotate in a plane substantially parallel with the needle, said needle coöperating with the rear side of said rotary hook mechanism, a bobbin case within said rotary hook mechanism, means for rotating said rotary hook mechanism twice to each stroke of the needle, and means for reciprocating said needle laterally.

11. In a sewing machine having a vertical reciprocating and laterally vibrating needle, and a looper, the eye of the needle and the hook of the looper having a certain relation in one coöperative position; in combination with means whereby the vertical working position of the needle is either raised or lowered accordingly as the lateral position of the needle is changed from one to the other side of the said first named coöperative position.

12. In a sewing machine, a needle, means for vibrating said needle laterally, a rotary hook arranged to remain in the same center of rotation, and means for rotating said hook twice to each thrust of said needle.

13. In a sewing machine, a reciprocating and laterally vibrating needle, a hook, and means for moving said hook at constant speed, said needle and hook coöperating at different points in the path of rotation of said hook.

14. In a sewing machine, a reciprocating and laterally vibrating needle, a hook, means for moving said hook at constant speed, and means for maintaining coöperative relation between the eye of the needle and the beak of the hook in different lateral positions by varying the distance of passage of the eye of the needle beyond the beak of the hook.

15. In a sewing machine, a reciprocating and laterally vibrating needle, a rotary hook arranged to coöperate with said needle at different points in the path of the beak of the hook, and means for rotating said hook a plurality of times to each thrust of the needle.

16. In a sewing machine, a reciprocating and laterally vibrating needle, a rotary hook, means for rotating said hook a plurality of times to each thrust of the needle, and means for varying the distance of passage of the eye of the needle beyond the beak of the hook.

17. In a sewing machine, a reciprocating and laterally vibrating needle, a rotary hook arranged to remain in the same center of rotation and to coöperate with said needle at different points in the path of the beak of said hook, and means for rotating said hook a plurality of times to each thrust of said needle.

18. In a sewing machine, a reciprocating and laterally vibrating needle, a rotary hook arranged to remain in the same center of rotation, means for rotating said hook a plurality of times to each thrust of the needle, and means for varying the distance of passage of the eye of the needle beyond the beak of the hook.

19. In a sewing machine, a reciprocating and laterally vibrating needle, a rotary hook arranged to remain in the same center of rotation, means for rotating said hook a plurality of times to each thrust of said needle, and means for varying the thrust of said needle.

20. In a sewing machine, a reciprocating and laterally vibrating needle, a rotary hook arranged to remain in the same center of rotation, means for rotating said hook a plurality of times to each thrust of said needle, and a link connection for varying the thrust of said needle.

21. In a sewing machine, a reciprocating and laterally vibrating needle, a hook, means for moving said hook at constant speed, and means for maintaining coöperative relation between the eye of the needle and the beak of the hook by varying the depth of thrust of the needle.

22. In a sewing machine, a reciprocating and laterally vibrating needle, a hook, means for moving said hook at constant speed, said needle and hook coöperating at different points in the path of movement of the hook, and means for maintaining coöperative relation between the eye of the needle and the beak of the hook in different lateral positions by varying the distance of passage of the needle beyond the beak of the hook.

23. In a sewing machine, a looper, a reciprocating and laterally vibrating needle, and means automatically controlled by the lateral vibration of said needle for varying the distance of passage of the eye of the needle beyond the beak of the looper.

24. In a sewing machine, a looper, a reciprocating and laterally vibrating needle, and means automatically controlled by the lateral vibration of said needle for varying the depth of thrust of the needle.

25. In a sewing machine, a needle, means for vibrating said needle laterally, a rotary hook arranged to remain in the same center of rotation and coöperating with said needle at each thrust of said needle, and means for rotating the said hook twice to each thrust of said needle.

26. In a sewing machine, a needle having a plurality of paths of reciprocation, and a rotary hook coöperating with said needle at the same speed at a plurality of points in the circumferential path of said hook.

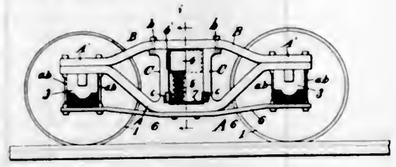
27. In a sewing machine, a needle having a plurality of paths of reciprocation, a rotary hook coöperating with said needle at the same speed at a plurality of points in the path of said hook, and means for rotating said hook a plurality of times to each thrust of said needle.

852,968. SIDE FRAME FOR CAR-TRUCKS. ARTHUR LITSCHUTZ, Chicago, Ill. Filed Nov. 5, 1906. Serial No. 342,052.

Claim.—1. The two-membered side frame herein described, comprising a tension member having ends adapted to rest upon the tops of car truck journal boxes and provided with upwardly extending integral columns, in combination with a compression member having its ends removably secured upon the ends of said tension member and upon the tops of columns; substantially as described.

2. The herein described improvement in car trucks, comprising a two-part side-frame adapted to rest upon the tops

of the journal boxes, the lower part of said frame being provided with bolster-guiding columns integrally joined thereto at their lower ends only and the upper part of said frame being detachably secured to the ends of said lower part and also to the upper ends of said columns; substantially as described.



3. A car truck side-frame comprising two parts, to-wit, an upper and a lower member, said lower member being provided with a spring-seat and also with a pair of upwardly extending bolster guiding columns integral therewith; said upper member being secured to the ends of said lower member and to the otherwise free upper ends of said columns; substantially as described.

4. A car truck side-frame composed of an upper and a lower member, said lower member being provided with two upwardly extending integral bolster-guiding columns, one of said members being provided with integral brake-hanger brackets, and the upper member being bolted to the ends of the lower member and also to the upper ends of said columns; substantially as described.

5. A car truck side frame comprising an upper and a lower member; said lower member being adapted to support the truck springs and having elevated ends to rest upon the journal boxes of the truck and being provided with a pair of upwardly extending columns, integrally joined to said member at their lower ends only; and said upper member being bolted to the ends of said lower member and to the upper ends of said columns and depending between said columns; substantially as described.

6. A car truck side frame comprising an upper and a lower member; said lower member having ends adapted to rest upon the journal boxes of a truck and being, provided with columns, integrally joined to said lower member at their lower ends only; said upper member being secured to the ends of said lower member and to the upper ends of said columns and provided with shoulders engaging said upper ends of said columns; substantially as described.

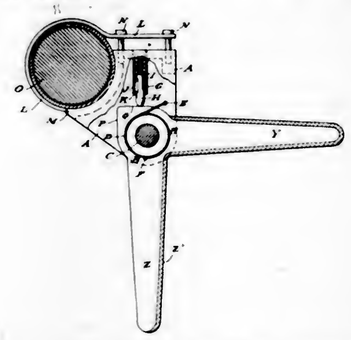
7. A two-part side-frame for car trucks, comprising a tension member provided with an integral spring seat and integral columns, and a compression member detachably secured upon and to the ends of said tension member and to the upper ends of said columns; substantially as described.

8. A car truck side-frame comprising an upper and a lower member, said lower member being provided with integral bolster columns and with inward projections adapted to receive the ends of the upper frame member, and said upper member being of less length than the lower member and secured on said projections and also to the upper ends of said columns; substantially as described.

9. The two-part side-frame comprising a tension member having a depressed middle portion and raised ends and provided with bolster columns integrally joined thereto at their lower ends only, said member having recesses and shoulders near its ends, in combination with a compression member secured to the upper ends of said columns and having its ends secured in abutment with the shoulders on the ends of the tension member; substantially as described.

10. A two-part cast steel side-frame for trucks, said frame comprising a main lower member having ends to rest on the tops of journal boxes, bolster columns integrally joined to said lower member at their lower ends only, an upper member secured to the ends of said lower member and to the upper ends of said columns, and brake-hanger brackets integral with said upper member; substantially as described.

852,969. TROLLEY CIRCUIT-FORMER. GERALD R. LIVERGOOD, St. Joseph, Mo. Filed Jan. 29, 1906. Serial No. 298,508.



Claim.—1. In a trolley circuit former the combination of a containing frame, clamps to hold same in position, a wire attached to containing block and adapted to be connected with a local circuit on a car, a cam having duplicate wiper fingers at right angles one of said fingers insulated on its back face, the other entirely insulated, a shaft adapted to pivotally attach said cam to the containing frame, a twist spring about said shaft one end of which is fastened to said cam, the other end fastened to the containing frame, a tube closed at its outer end fastened rigidly to said frame, a plunger, provided with a slot in one side, adapted to fit in said tube, a pin adapted to pass through said slot in the plunger and to have its ends fastened rigidly in said tube, a thrust spring adapted to fit in said tube and to normally hold said plunger to its fullest extension, cam faces at right angles on said cam to be acted on by said plunger, a terminal provided, with a hole in top, duplicate legs provided with notches and a contact point, said terminal being adapted to be engaged by and clamped into position between the separate parts of a trolley hanger.

2. In a trolley circuit former the combination of a containing frame, clamps to hold the same in position, a wire attached to containing block and adapted to be connected with a local circuit on a car, a cam having duplicate wiper fingers at right angles one of said fingers insulated on its back face, the other entirely insulated, a shaft adapted to pivotally attach said cam to the containing frame, a twist spring about said shaft, one end of which is fastened to said cam, the other end fastened to the containing frame, a tube closed at its outer end, fastened rigidly to said frame, a plunger provided with a slot in one side, adapted to fit in said tube, a pin adapted to pass through said slot in said plunger its ends fastened rigidly in said tube, a thrust spring adapted to fit in said tube and to normally hold said plunger to its fullest extension and the cam faces at right angles on said cam to be acted on by said plunger.

3. In a trolley circuit former, a terminal provided with a hole in its top, duplicate legs provided with notches and a contact point, said terminal being adapted to be engaged by and clamped into position between the separate parts of a trolley hanger.

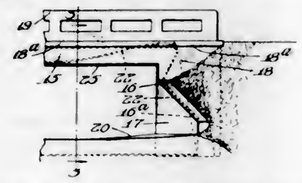
852,970. BRIDGE OF CONCRETE OR OTHER ANALOGOUS MATERIAL. DANIEL B. LUTEN, Indianapolis, Ind. Filed Feb. 13, 1905. Serial No. 245,365.

Claim.—1. A bridge or arch of concrete or other suitable material having a pavement in the bed of the stream, and a sheeting of piling or other suitable material to protect against undermining.

2. A bridge or arch of concrete or other suitable material, having a pavement in the bed of the stream with an apron and a sheeting of piling or other suitable material to protect against undermining.

3. A bridge or arch of concrete or other suitable material having wings, a pavement in the bed of the stream ex-

tending from wing to wing, and a sheeting of piling or other suitable material overlying the margin of said pavement.



4. A bridge or arch of concrete or other suitable material having wings, a pavement in the bed of the stream extending from wing to wing and provided with an apron, and a sheeting of piling or other suitable material overlying the margin of said apron to protect against undermining.

5. A bridge or arch of concrete or other suitable material having a pavement in the bed of the stream, said pavement having an apron with a depressed horizontal end.

6. A bridge or arch of concrete or other suitable material having a pavement in the bed of the stream, said pavement having an apron at its down-stream edge ending in a horizontal projection depressed below the level of the pavement.

7. A bridge or arch of concrete or other suitable material having spandrel walls and a wing or wings reinforced with embedded rods joining the wings to the spandrel walls.

8. A bridge or arch of concrete or other suitable material having a curved wing with exposed convex surface and reinforced with embedded rods.

9. A bridge or arch of concrete or other suitable material having a curved wing or wings reinforced with rods embedded near the convex outer surface of the wings.

10. A bridge or arch of concrete or other suitable material having a wing joined to the arch and spandrel by embedded rods near top and bottom.

11. A bridge or arch of concrete or other suitable material having spandrel walls and a wing or wings reinforced with rods embedded near the convex surface and extending into the adjacent spandrel.

12. A bridge or arch of concrete or other suitable material having wings joined thereto by tie-rods embedded in said wings and passed through the body of the bridge or arch.

13. A bridge or arch of concrete or other suitable material having spandrel walls and wings, with tie-rods embedded in said wings and anchored in said spandrel walls, and other tie-rods embedded in said wings and passed through the body of the bridge or arch.

14. A bridge or arch of concrete or other suitable material having wings joined thereto by rods embedded in said wings and extending into the abutments.

15. A bridge or arch of concrete or other suitable material having wings joined thereto by rods embedded in said wings and extending into and through the abutments.

16. A bridge or arch of concrete or other suitable material having wings joined thereto by rods embedded in one of said wings and extending through the abutment into the opposite wing.

17. A bridge or arch of concrete or other suitable material, having a layer of concrete across the bed of the stream, and ending at its edge in an extension projecting downwardly into the bed of the stream.

18. A bridge or arch of concrete with a layer of concrete crossing the bed of the stream, and faced with sheet piling.

19. A bridge or arch having wings of concrete or similar material reinforced with embedded members and braced by a pavement or apron from wing to wing.

20. A bridge or arch having a wing of concrete or similar material reinforced with embedded tension members and braced by a transverse member near the outer end of the wing.

21. A bridge or arch of concrete or other suitable material having extended spandrels cantilevered on the abutments as supports, and with their ends embedded in the earth fill of the embankments.

22. A bridge or arch of concrete or other suitable material having spandrel walls with extended ends overhanging the abutment, said spandrel walls being curved outwardly at their ends.

23. A bridge or arch of concrete or other suitable material having wings and extended spandrel walls, said wings and walls being curved toward each other at their outer ends.

24. A bridge or arch of concrete or other suitable material having spandrel walls extended at their ends along the roadway beyond the end of the span, said extended spandrel walls being surmounted by outwardly curved railings.

25. A bridge or arch of concrete or other suitable material provided with curved spandrels surmounted by more sharply curved railings.

26. A bridge or arch of concrete or other suitable material provided with spandrel walls surmounted by railings extending near one edge of the spandrel wall and curving across to the other edge of the spandrel wall.

27. A bridge or arch of concrete or other suitable material having wings, and a tie-rod connecting said wings around the end of the body.

28. A bridge or arch of concrete or other suitable material having wings with tie-rods embedded in concrete joining the ends of the wings to the body of the arch.

29. A bridge or arch of concrete or other suitable material having wings and a rod or rods embedded in concrete joining the ends of said wings.

30. A bridge or arch of concrete or other suitable material having wings with their outer ends joined by rods passing through the earth embankment.

31. A bridge or arch of concrete or other suitable material having spandrel walls with a tie-rod extending from one wall to the other said tie rod being embedded in concrete.

32. A bridge or arch of concrete or other suitable material having spandrel walls confining earth filling and tie-rods extending through the filling between said walls, and anchored at their ends in the walls.

33. A bridge or arch of concrete or other suitable material with spandrel walls, tie-rods joining the walls and embedded in a concrete beam covered by the earth filling.

34. A bridge or arch of concrete or other suitable material having a wing below the level of the roadway and a light spandrel projection surmounted by a guard rail extending into an earth filling back of the wings.

35. A bridge or arch of concrete or other suitable material with low wings and spandrel walls extended back of the wings.

36. A bridge or arch of concrete or other suitable material with spandrel walls extended back of the wings, and wings of height sufficient to hold the earth fill that escapes the ends of the spandrels.

37. A bridge or arch of concrete or other suitable material with spandrel walls extended back of the wings, and curved wings at the foot of the slope of earth fill escaping from the ends of the spandrels.

38. A bridge having a wing of concrete or similar material backed by earth filling with tension members embedded in the wing transverse to the earth pressure inducing tension therein.

39. A bridge having a wing supported near its ends against the pressure of earth backing and a tension member embedded near its exposed face and oblique to its base.

40. A bridge having a wing with a tension member embedded extending in a direction from upper end toward diagonally opposite lower end.

41. A bridge having a wing with embedded diagonal tension members bonding the wing to the bridge.

42. A bridge having a wing of concrete or similar material, with tension members embedded in a direction oblique to its base.

43. A bridge having a wing of concrete or similar material, with tension members embedded near one face and in a direction oblique to its base.

44. A bridge or arch of concrete or similar material having a footing upwardly inclined away from the span.

45. A bridge or arch of concrete or similar material having a footing provided with a roughened upper surface upwardly inclined away from the span.

46. A bridge or arch of concrete or similar material having a footing provided with an upper surface upwardly stepped in a direction away from the span.

47. A bridge or arch of concrete or similar material having footings upwardly inclined away from the ends of the span and a pavement extending between and at its ends stepped on said footings.

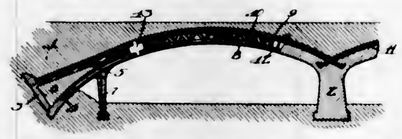
48. A bridge or arch of concrete or other suitable material, having a tie joining spandrel to spandrel, and spandrel to end of wings, and passing through the earth embankment.

49. A bridge having a wing of concrete or similar material, backed by earth filling, with reinforcing members embedded near the exposed face of the wing and oblique to its base.

50. A bridge having a wall of concrete or similar material, backed by earth filling with reinforcing members embedded in the wall in a direction substantially parallel to the slope of earth backing.

51. A bridge or arch of concrete having a wing with an anchor rod extending from near the outer end of the wing into the earth embankment and embedded in concrete.

852,971. MASONRY AND CONCRETE STRUCTURE. DANIEL B. LUTEN, Indianapolis, Ind. Filed June 30, 1906. Serial No. 324,233.



Claim.—1. A concrete arch having embedded steel angles in pairs following intrados and extrados closely, with web lacing riveted between, and spliced at points of calculated change of moment.

2. A concrete arch reinforced with a curved beam made up of angle bars in pairs near intrados and near extrados and web lacing between, embedded in a rib of concrete surrounded by earth filling.

3. A concrete arch reinforced with curved beams spliced near points of minimum bending moment.

4. A concrete arch having heavy angle bars embedded near interior crown and exterior haunch and lighter angle bars near exterior crown and interior haunch, and web lacing between.

5. A concrete arch having metal reinforcement near exterior crown and interior haunch and heavier metal reinforcement near interior crown and exterior haunch.

6. A reinforced concrete arch with splices or welds in the reinforcement at points of minimum moment.

7. A concrete arch with hinges near points of calculated change of moment.

8. A concrete arch with a hinge approximately midway between crown and springing.

9. A concrete arch having reinforcement near both surfaces alternately heavy and light on opposite sides of points of calculated change of moment.

10. An arch reinforced near extrados and intrados, junctions in the reinforcement near the points of change of moment, and alternately lighter and heavier reinforcement on opposite sides of the junctions.

11. A concrete arch reinforced with embedded tension members near each surface in alternately heavy and light sections.

12. A concrete arch with external projecting ribs reinforced near intrados and extrados continuously.

13. An arch consisting of vertical curved ribs of concrete joined by a transverse inner ring of concrete.

14. A ribbed concrete arch with longitudinal reinforcement near intrados and extrados, and transverse reinforcement near intrados only.

15. The combination of curved angle bars in pairs with web lacing between, embedded in ribs of concrete joined near the intrados by a thinner transverse concrete member.

16. A concrete arch reinforced with ribs consisting of a pair of angle bars following closely the intrados and another pair following closely the extrados, diagonals joining the pairs of angles and a thin ring of concrete joining the ribs at intrados.

17. A concrete arch with oval intrados and reinforced near intrados and extrados at crown and near extrados alone at haunches.

18. A concrete arch with oval intrados and light reinforcement near extrados at crown, and heavier reinforcement near intrados at crown and near extrados at haunches.

19. In a series of concrete arches, embedded reinforcement overlapping and embedded in concrete piers.

20. A pier support for two abutting arches with embedded reinforcement passing from the extrados of one arch into the other to secure anchorage.

21. A concrete abutment consisting of three or more members substantially parallel to its axis.

22. A concrete abutment inclosing on all sides longitudinally a mass of earth filling.

23. A concrete abutment with a downwardly tapering projection at end of span.

24. An abutment having a continuous longitudinal vertical member tapering downward.

25. A concrete arch with a transverse wall suspended from the rib.

26. A concrete arch with a curtain wall at end of span suspended from the arch.

27. A concrete arch with suspended integral loading.

28. A concrete arch with load suspended from intrados and a corresponding change of curvature in arch rib.

29. A concrete arch having a pointed Gothic form combined with an oval form.

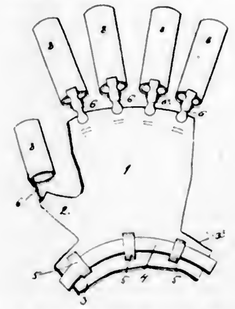
30. A concrete arch with pointed crown at spandrel and oval crown under roadway.

31. An oval concrete arch having stone faced spandrel supported on pointed Gothic arch.

32. An ice breaker for a pier, consisting of a double helicoidal surface of upwardly decreasing wedge shaped section.

33. A pier with cylindrical end and conical cap with an inclined curved surface joining cap of pier to coping of spandrel.

852,972. GLOVE. DANIEL MACKAY, Pittsburg, Pa. Filed Sept. 21, 1906. Serial No. 335,623.



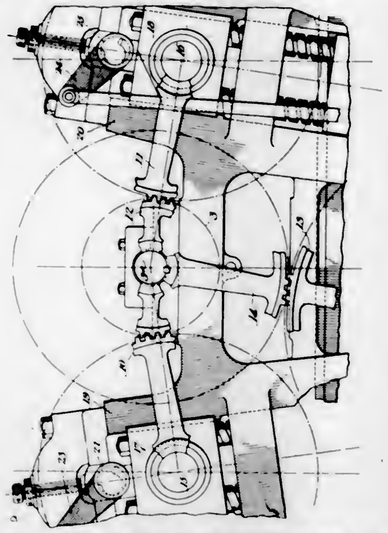
Claim.—1. A glove consisting of a flexible back having a thumb piece and wrist straps, a resilient wrist clamp secured to said back, and straps, clips carried by said back and thumb piece, and tips detachably secured to said clips, substantially as described.

2. A glove consisting of a back having a thumb piece, a resilient wrist clamp carried by said back, clips carried

by said back and thumb piece, tips, and means to detachably secure said tips to said clips, substantially as described.

3. A glove consisting of a back, clips carried by said back, tips detachably secured to said clips, and means carried by said back to hold said glove upon a hand, substantially as described.

852,973. PRINTING-PRESS. ROBERT MIEHLE, Chicago, Ill. Filed Jan. 9, 1905. Serial No. 240,235.



Claim.—1. In a printing press the combination with the bed, two impression cylinders, a transferring cylinder arranged between the impression cylinders, said cylinders being provided with means for transferring the sheet from one to the other, and means for driving said cylinders in unison, of means for raising and lowering the impression cylinders in lines of motion converging downwardly toward the transferring cylinder.

2. In a printing press the combination with the bed and two impression cylinders, of a transferring cylinder arranged between the impression cylinders with its center above the line of the horizontal diameters of the impression cylinders, means for driving said cylinders in unison and means for raising and lowering the impression cylinders in lines converging downwardly toward the transferring cylinder.

3. In a printing press the combination with the bed and two impression cylinders, of a transferring cylinder arranged between the impression cylinders with its center permanently fixed above the line of the horizontal diameters of the impression cylinders, means for driving said cylinders in unison, and means for raising and lowering the impression cylinders in lines of motion converging downwardly toward the transferring cylinder.

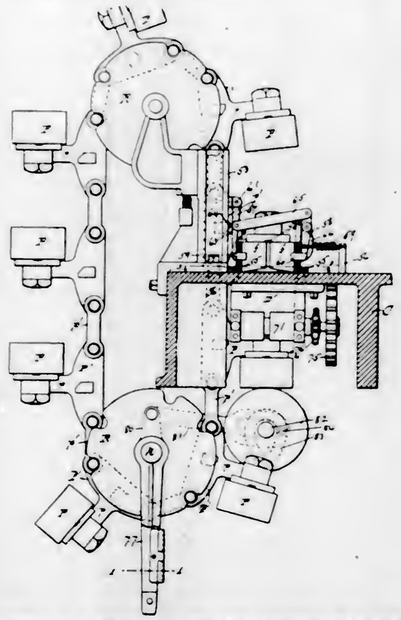
4. In a printing press the combination with the bed two impression cylinders, a transferring cylinder arranged between the impression cylinders, means for transferring the sheet from the transferring cylinder to one of the impression cylinders when the transfer point is in a straight line with the center of that impression cylinder and the center of the transferring cylinder, and means for raising and lowering the said impression cylinder in a line inclining downwardly toward the transferring cylinder, the center of the transferring cylinder being fixed above the center of said impression cylinder and immovable therewith.

5. In a printing press the combination with the bed, two impression cylinders, a transferring cylinder arranged between the impression cylinders, means whereby the sheet is transferred from one cylinder to another, means for driving said cylinders in unison, and boxes in which said impression cylinders are journaled, of upright jaws or guides for said boxes converging downwardly toward said transferring cylinder, and means for raising and lowering said boxes in said jaws.

6. In a printing press the combination with the bed, two impression cylinders, a stationary transferring cylinder arranged between the impression cylinders, and means for driving said cylinders in unison, of means for raising and lowering the impression cylinders in lines of movement converging downwardly toward the transferring cylinder, a gear wheel on the transferring cylinder and a second gear wheel for driving the first said gear wheel, the said gear wheels having their centers relatively and permanently fixed.

7. In a printing press, the combination with the bed, an impression cylinder, means for lifting said cylinder from the bed, a sheet transferring means arranged in operative relation to said cylinder, and means for guiding said impression cylinder at an oblique angle to the bed in a rectilinear movement.

852,974. PAPER-BOX MACHINE. ALBERT W. MITCHELL, New Haven, Conn., assignor, by mesne assignments, to John N. Leonard, trustee, New Haven, Conn. Filed June 6, 1906. Serial No. 320,486.



Claim.—1. A paper box machine provided with means for holding the sides and side flaps of the paper box in combination with a die and a series of plungers adapted to pass through the die and thereby fold the ends over the side flaps in carrying the blank through the die.

2. A paper box machine provided with means for folding the sides and side flaps of the paper box in combination with a die and an endless series of plungers adapted to pass through the die and thereby fold the ends over the side flaps in carrying the blank through the die.

3. A paper box machine provided with means for feeding blanks to the die and for folding the sides and side flaps of the paper box in combination with a die and a series of plungers adapted to pass through the die and thereby fold the ends over the side flaps in carrying the blank through the die.

4. A paper box machine provided with means for folding the sides and side flaps of the paper boxes in combination with a die and an endless chain of plungers adapted to pass through the die and thereby fold the ends over the side flaps in carrying the blanks through the die.

5. A paper box machine provided with a die and means for intermittently feeding blanks to the die, means for folding the sides and side flaps of the paper boxes in combination with an endless chain of plungers and means for imparting continuous motion to the chain to pass the plungers successively through the die and thereby fold the ends over the side flaps in carrying the blanks through the die.

6. A paper box machine, having a die and means for feeding blanks to the die with the sides folded up, means for folding in the end flaps of the sides, with a series of plungers adapted to pass through the die, and thereby fold the ends over the side flaps in carrying the blank through the die.

7. A paper box machine, having a die and means for folding the sides and end flaps in combination with a plunger having projections to true the end flaps.

8. A paper box machine, having a die and a series of plungers and means for passing them through the die in succession, in combination with means for intermittently feeding the web of paper to the die, means for folding the sides of the blanks and cutting devices between the said folding means and the die for severing the blank from the web when presented to the die.

9. A paper box machine, having a die, an endless chain of plungers, means for imparting continuous motion to said endless chain of plungers, in combination with means for intermittently feeding the web of paper to the die, means for folding the sides of the blank, and cutting devices between the said folding means and the die for severing the blank from the web when presented to the die.

10. A paper box machine, having a die and a series of plungers, and means for passing them through the die in succession, in combination with means for intermittently feeding the web of paper to the die, means for scoring and notching the web, and for folding up the sides of the blank and means for severing the blank from the web when presented to the die.

11. A paper box machine, having a die and an endless chain of plungers, and means for causing the plungers to pass through the die successively, in combination with means for stripping the formed boxes from the plungers, said stripping means comprising a vibrating frame having spring claws to engage the edge of the formed box.

12. A paper box machine, having a die with flaring mouth, a series of plungers to pass through the die, means for pasting the blank and feeding the same to the die, and means for folding the sides and flaps of the blank.

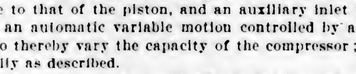
13. A paper box machine, comprising means for pasting and feeding a paper web, scoring means, rotary cutting devices to notch the edges of the web, means for folding the sides of the blank and for severing the latter from the web, flap-folding devices, and a die and plungers to carry the blank through the die.

14. A paper box machine, having pasting and feed mechanisms, and die and means for folding the sides of the box blank and their flaps, with a plunger to pass the blank through the die, positively driven feed rollers to press the ends of the blank against the side flaps, and springs to press the feed rollers to their work.

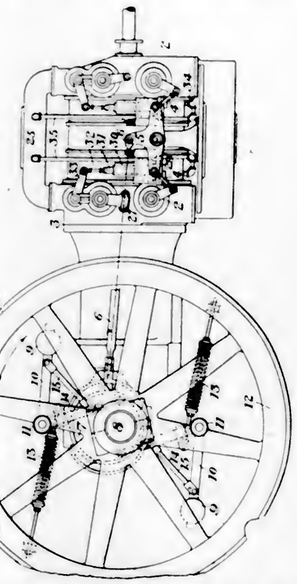
15. A paper box machine having pasting and cutting mechanisms, an intermittent paper feed and means for folding the sides of the blank as it is fed forward, in combination with a die, an endless chain of plungers, devices for folding the side flaps against the plunger and means for imparting motion to the chain to pass the plungers successively through the die and thereby fold the ends over the side flaps in carrying the blanks through the dies.

852,975. SHELF-BRACKET. JOHN H. MORGAN, Harrogate, England, assignor to Leeds Stamping Company, Limited, London, England, a Corporation of England. Filed Mar. 20, 1906. Serial No. 307,028.

Claim.—A sheet metal bracket formed from a single elongated diamond shaped blank of which a tapering strengthening web is first formed by a longitudinal fold of the metal, the tapering portions of the web being arranged to terminate at a transverse slit and a recess formed in one portion of the upper surface of the said web by removing a portion thereof, a flat tapering flange formed out of the blank on each side of the web and made to taper from each of its ends toward the point of meeting at the said slit, and afterward bending a portion of each of the said flanges over at a sharp angle to the other portion for enabling the web connected to the bent over flanges to overlap the top of the web on the other portion and the portions of the web to be afterward closed together, and its ends to impinge upon the outer surfaces of the vertical flanges, and the means comprising two strengthening rivets passing transversely through the widest portions of the web for preventing any movement of the horizontal arm when a plate is placed upon its upper surface as set forth.



852,976. AUTOMATIC REGULATOR FOR AIR AND GAS COMPRESSORS. FRED E. NORTON, Youngstown, Ohio. Filed Apr. 11, 1906. Serial No. 311,033.



Claim.—1. In a compressor, the combination of a combined inlet and outlet valve having a motion which is fixed relative to that of the piston, and an auxiliary inlet valve having an automatic variable motion controlled by a governor to thereby vary the capacity of the compressor; substantially as described.

2. In a compressor, a combined inlet and outlet valve, an auxiliary inlet valve, and a speed governor for controlling the operation of the auxiliary valve; substantially as described.

3. A blowing engine having a main inlet valve, and an auxiliary inlet valve, and a speed governor controlled operating mechanism for said auxiliary valve; substantially as described.

4. In a compressor, the combination with a combined inlet and outlet valve having a fixed motion relative to the movement of the compressor piston, of an auxiliary automatic outlet valve, and a supplementary inlet valve hav-

ing a variable movement controlled by a speed governor; substantially as described.

5. In a compressor, the combination with a combined inlet and outlet valve having a fixed motion relative to that of the compressor piston, of an auxiliary automatic outlet valve, and a supplementary inlet valve having a variable motion controlled by a speed governor, whereby its point of closing is controlled by said governor to thereby vary the amount of air caught and compressed in the cylinder, the main inlet valve having its movement so timed as to determine positively the time of admission during the inlet stroke and to open and close the discharge passage at or near the end of the stroke; substantially as described.

6. In a compressor, the combination with a combined inlet and outlet valve having a fixed motion relative to that of the compressor piston, of an auxiliary automatic valve arranged to control the opening of the cylinder discharge, and means whereby said valve may be opened before the cylinder pressure is sufficient to balance the pressure of the discharge; substantially as described.

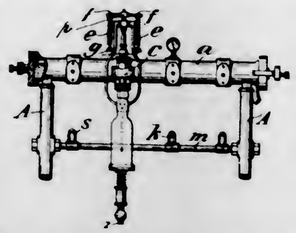
7. In a compressor, the combination with a combined inlet and outlet valve, having a fixed motion relative to that of the compressor piston, an auxiliary outlet valve, means for operating the auxiliary valve controlled by the pressures in the compressor cylinder and discharge pipe, an auxiliary inlet valve, and a speed governor for controlling the operation of said inlet valve whereby said valve is closed at a varying point in the compression stroke of the piston; substantially as described.

8. In a compressor, a combined inlet and outlet valve, connections for operating said valve in definite time relation to the piston motion of the compressor, and an auxiliary inlet valve independent of the first named valve, and connected to the engine governor and controlled thereby, said valve being arranged to leave its inlet port open during any desired part of the compression stroke; substantially as described.

9. In a compressor, a main inlet valve, connections for operating said valve in definite time relation to the piston stroke of the compressor, and a governor-controlled auxiliary inlet valve arranged to leave its inlet port open during any desired part of the compression stroke; substantially as described.

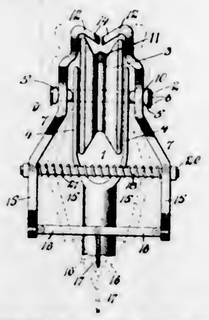
10. In a compressor, a combined main inlet and outlet valve, connections for operating the same in definite relation to the piston motion, an auxiliary outlet valve controlled by the pressure in the cylinder and arranged to open the discharge port before the pressure in the cylinder equals the pressure in the discharge port, an auxiliary inlet valve, a governor, and actuating connections for the auxiliary inlet valve controlled by the governor; substantially as described.

852,977. BOTTLING-MACHINE. RICHARD PFAFF, Zurich, Switzerland. Filed Oct. 5, 1905. Serial No. 281,544.



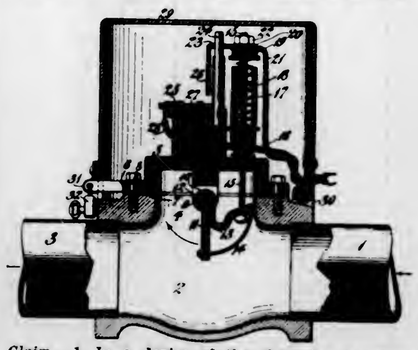
Claim.—In a bottling machine of the character described the combination with a filling cock and a bottle pressing device comprising an oscillating bottle holder having its axis of rotation above that of the cock spigot, of means for facilitating the oscillation of the bottle holder comprising tension springs connected at their lower ends to the bottle holder below its axis of rotation and at their upper ends to fixed points above the axis of rotation of the bottle holder, said springs being so arranged that their points of attachment and the axis of the bottle holder are in the same plane at a position intermediate between the empty and filling positions of the bottle holder substantially as and for the purpose described.

852,978. TROLLEY. ALFRED J. REIF, Allegheny, and ALBERT L. MCCORMICK, Knoxville, Pa. Filed June 2, 1906. Serial No. 319,924.



Claim.—The combination with a trolley harp having spaced side arms, of a pin extending transversely through said arms and projecting beyond the same and provided with threaded ends, nuts on said threaded ends of the pin having rounded inner faces, a trolley wheel journaled upon said pin between said harp arms, lever arms swinging upon said pin between the arms of the harp and the nuts on said pin, and provided on their inner faces with curved lugs bearing against the adjacent sides of the harp arms, with their outer faces bearing upon the rounded faces of said nuts, said lever-arms extending inwardly and downwardly at their upper ends within the channel of the trolley wheel, a tie-rod extending through said lever-arms, a spring on said tie-rod operating to maintain said lever-arms yieldably in distended position at their lower ends, links connecting the lever-arms together adjacent their lower ends, and a rod connected to said links for operating the lever-arms to distend their upper ends.

852,979. INDICATOR. THOMAS B. RICE, Jr., Philadelphia, Pa. Filed Oct. 19, 1905. Serial No. 283,462.



Claim.—1. In a device of the character described, a pipe, a plate pivotally mounted and extending thereinto of less width than the diameter of said pipe and extending less than one-half the distance to the bottom of said pipe, whereby clogging of said pipe is prevented.

2. In a device of the character described, a pipe, a plate pivotally mounted and extending thereinto of less width than the diameter of said pipe and extending less than one-half the distance to the bottom of said pipe, whereby clogging of said pipe is prevented, and contact pieces adapted to be actuated by the movement of said plate.

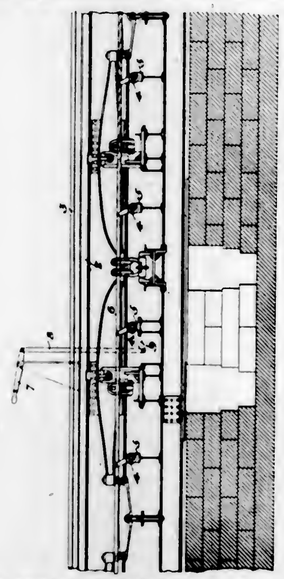
3. In a device of the character described, a pipe, a plate pivotally mounted and extending thereinto of less width than the diameter of said pipe and extending approximately one half the distance to the bottom of said pipe and being adapted to be moved sufficiently to provide for substantially an unobstructed pipe so as to prevent clogging, an indicator, conductors leading therefrom and contact pieces controlled by said plate for actuating said indicator.

4. In a device of the character described, a pipe coupling, a detachable cap therefor, a plate pivotally mounted on said cap and contact pieces also carried by said cap whereby when said cap is removed all said parts are carried with it.

5. In a device of the character described, a pipe coupling, a detachable cap therefor, a plate pivotally mounted on said cap and contact pieces also carried by said cap whereby when said cap is removed all said parts are carried with it, and a cover for said parts carried by said coupling.

6. In a device of the character described, a pipe coupling, a detachable cap therefor, a plate pivotally mounted on said cap, a stationary contact piece on said cap, a movable contact piece of said cap, means for connecting said plate and said movable contact piece and said parts being carried with said cap when it is removed.

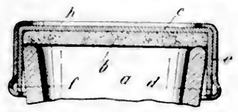
852,980. TRACK-SCALE. JOHN A. RISHEL, Homestead, Pa. Filed Aug. 29, 1903. Serial No. 171,191.



Claim.—A support for track-scale platforms consisting of a series of rotatable eccentrics arranged beneath the platform and adapted to support without raising said platform when the points of greatest throw of said eccentrics are vertically above their centers of rotation, and means for rotating said eccentrics; substantially as described.

852,981. MEANS FOR CLOSING RECEPTACLES. ERNEST SAUTTER, Paris, France. Filed Nov. 28, 1906. Serial No. 345,531.

Claim.—1. An improved closure for receptacles, comprising a capsule arranged to embrace the mouth of the receptacle, in combination with an annular band surrounding the capsule, the band having an inturned lower edge to snap under the lower edge of the capsule.



2. An improved closure for receptacles, comprising in combination, a receptacle having smooth sides a capsule with flaring corrugated walls arranged to embrace the mouth of the receptacle, and an annular band bearing upon the top of and surrounding the capsule and pressing inwardly upon the corrugations.

3. An improved closure for receptacles, comprising a capsule with flaring contractible walls arranged to embrace the mouth of the receptacle and provided with spaced inward extensions, in combination with an annular band surrounding the capsule and bearing inwardly thereon, the band having an inturned lower edge to snap under the lower edge of the capsule.

4. An improved closure for receptacles, comprising a capsule with flaring corrugated walls arranged to embrace the mouth of the receptacle, and a washer resting upon the edge of the receptacle mouth within the capsule, in combination with an annular band surrounding the capsule, the band having an inturned lower edge to snap under the lower edge of the capsule.

5. An improved closure for receptacles, comprising a capsule with expansible walls arranged to embrace the mouth of the receptacle and provided with spaced inward extensions, and an elastic washer resting upon the edge of the receptacle mouth within the capsule, in combination with an annular band surrounding the capsule and bearing inwardly by means of the inward extensions upon the receptacle, the band having an inturned lower edge to snap under the lower edge of the capsule.

6. The combination, with a receptacle having smooth upwardly flaring sides, of a capsule with corrugated walls arranged to embrace the mouth of the receptacle, a washer resting upon the edge of the receptacle mouth within the capsule, and an annular band surrounding the capsule and bearing inwardly upon the corrugations.

7. The combination, with a receptacle having smooth upwardly flaring sides, of a capsule with corrugated walls arranged to embrace the mouth of the receptacle, a washer resting upon the edge of the receptacle mouth within the capsule, and an annular band surrounding the capsule and bearing inwardly upon the corrugations, said band having an inturned lower edge to snap under the lower edge of the capsule.

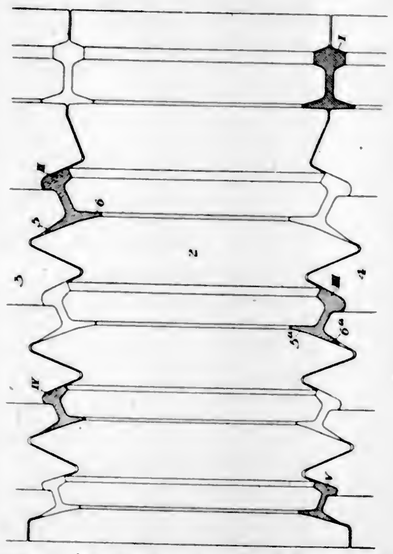
852,982. DISPLAY-CASE. WILLIAM SIMON, McKees Rocks, Pa. Filed Dec. 19, 1906. Serial No. 348,566.



Claim.—A display case consisting of end boards, horizontal partitions connecting said end boards and varying in width, drawers slidably mounted between said partitions, an inclined board arranged between two of said partitions, a transparent frame slidably mounted between the same two partitions and providing a display compartment, a frame work mounted between the uppermost partitions, and having transparent ends, front and top, and providing a display compartment, sliding doors normally

closing the back of said frame work or display compartment, substantially as described.

852,983. METHOD OF REROLLING RAILS. EDWIN E. SLICK, Pittsburg, Pa. Filed Jan. 19, 1904. Serial No. 189,715.



Claim.—1. The method of re-rolling rails, consisting in feeding a rail through a rolling pass, bending one of the base flanges inwardly therein to an acute angle with the web, simultaneously reducing the shape, and finally restoring the flange to its normal position and finishing the section in a later pass or passes; substantially as described.

2. The method of re-rolling rails, consisting in feeding the rail through a rolling pass with its web in an inclined position relative to the axes of the rolls, simultaneously bending one of the base flanges inwardly to an acute angle to the web, and reducing the shape in both directions, and finally restoring the flange to its normal position and finishing the section; substantially as described.

3. The method of re-rolling rails, consisting in feeding the rail through a rolling pass with its web at an angle to the axes of the rolls, bending the base flange in the live groove inwardly to an acute angle with the web, simultaneously reducing the shape in both directions, and finally restoring the flange to its normal position and finishing the section; substantially as described.

4. The method of re-rolling rails, consisting in feeding the rail into a rolling pass, bending the flange in the live groove to an acute angle with the web, and reducing the section, then feeding the section into another pass with the other flange in the live groove, and bending said other flange inwardly, and finally restoring the flanges to normal position and finishing the section in a later pass or passes; substantially as described.

5. The method of re-rolling rails, consisting in feeding the rail through a rolling pass, bending the section therein so that the angle between the web and the flange in the live groove is less than a right angle, simultaneously reducing the shape, and finally restoring the flange to its normal position and finishing the section in a later pass or passes; substantially as described.

6. The method of re-rolling rails, consisting in feeding the same through rolling passes, bending the shape so that the angle between the web and the flange in the live groove is less than a right angle, then feeding the shape through another pass with the other flange in the live groove, and simultaneously bending the shape so that the angle between the web and the other flange is less than a right angle, and finally restoring the flanges to their normal position and finishing the section; substantially as described.

7. The method of re-rolling rails, consisting in feeding the section through rolling passes with the web at an angle to the axes of the rolls, and alternately bending the opposite base flanges to an angle with the web which is less than a right angle in the successive passes; substantially as described.

8. The method of re-rolling rails, consisting in feeding the section through a succession of rolling passes with the plane of the web at an angle to the axes of the rolls, alternately feeding the opposite base flanges in the live groove, and alternately bending said flanges so that the angle between the flange in the live groove and the plane of the web is less than a right angle, and at the same time bending the shape so that the flange in the dead groove is at an obtuse angle to the web; substantially as described.

9. The method of re-rolling rails consisting in reducing the rail in a pass with its axis at an angle to the roll axes and bending the section so that the flange in the live groove is at an acute angle to the web and the flange in the dead groove at an obtuse angle thereto; substantially as described.

10. The method of re-rolling rails consisting in bending the shape so that one flange is at an angle of less than 90 degrees to the web, and the other flange is at an angle of more than 90 degrees to the web, passing the first named flange through the live groove, and the latter obtuse angle flange through the dead groove, then bending in the opposite direction, and passing the metal with the opposite flanges in the respective grooves, and then restoring the flanges to their normal position and finishing the section in a later pass or passes; substantially as described.

11. The method of re-rolling rails, consisting in first rolling the rail with its axis parallel to the roll axes, then bending the shape so that the angle between the web and the flange in the live groove is less than a right angle, simultaneously reducing the shape, and finally restoring the flange to its normal position and finishing the section in a later pass or passes; substantially as described.

12. The method of re-rolling rails, consisting in rolling the rail with its axis parallel to the roll axes, then rolling the rail with its axis at an angle to the roll axes, and simultaneously bending it so that the angle between the web and the flange in the live groove is less than a right angle, and finally restoring the flange to its normal position and finishing the section; substantially as described.

13. The method of rolling flange shapes, consisting in feeding the shape through a rolling pass, bending the section therein so that the angle between the web and the flange in the live groove is less than a right angle, simultaneously reducing the shape, and finally restoring the flange to its normal position and finishing the section in a later pass or passes; substantially as described.

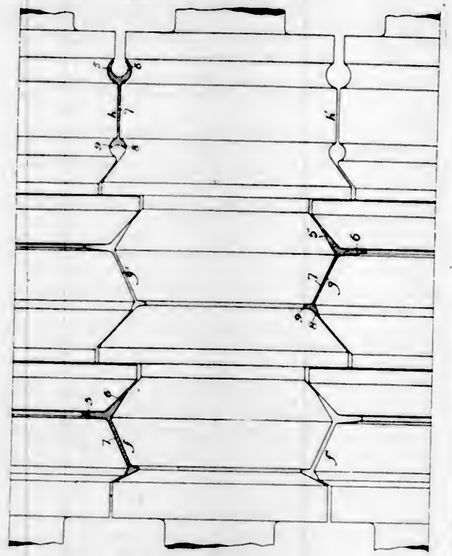
14. The method of rolling flanged shapes, consisting in feeding the shape through a rolling pass with its web at an angle to the axes of the rolls, bending the section therein so that the angle between the web and the flange in the live groove is less than a right angle, simultaneously reducing the shape, and finally restoring the flange to its normal position and finishing the section; substantially as described.

852,984. METHOD OF ROLLING INTERLOCKING SHEET-PILING. EDWIN E. SLICK, Pittsburg, Pa. Filed Feb. 4, 1905. Serial No. 244,125.

Claim.—1. The method of rolling interlocking shapes for sheet piling, consisting in feeding the metal through successive passes in an angular position relative to the roll axes, forming two flanges extending along one edge of the web at an angle to the web which is other than a right angle, and then bending at least one of said flanges into hook shape while feeding the metal through a rolling pass; substantially as described.

2. The method of rolling sheet piling, consisting in reducing metal to form a shape having a web with oppositely directed flanges at one edge, and then bending at least one of the flanges into hook form while feeding the metal through a rolling pass; substantially as described.

3. The method of rolling sheet piling consisting in reducing the metal to form a shape having a web with flanges at one end and then passing the blank between rolls and thereby simultaneously bending both flanges into hook form; substantially as described.



4. The method of rolling shapes for interlocking piling, consisting in reducing metal to a shape having a web with two wide flanges at one edge, and a head at the other edge, and then passing the blanks between rolls and thereby bending at least one of the wide flanges into hook form; substantially as described.

5. The method of rolling shapes for interlocking piling, consisting in reducing metal with the web portion at an angle to the axes of the rolls, and forming opposite flanges at one edge extending at an outwardly obtuse angle to the web, and then bending said flanges into hook form while feeding the metal through a rolling pass; substantially as described.

6. The method of rolling shapes for interlocking piling, consisting in rolling metal with a web at an angle to the roll axes, and opposite flanges along one edge extending at other than a right angle to the web, rolling the flanges alternately in live and dead grooves, and then passing the blanks between rolls and thereby bending the flanges into hook form; substantially as described.

7. The method of forming shapes for interlocking piling, consisting in rolling a shape with a web having a head at one edge and two wide flanges at the other edge, and then passing the blank between rolls and thereby bending the wide flanges into hook shape; substantially as described.

8. The method of forming shapes for interlocking piling, consisting in rolling the metal with flanges, having a web extending at an angle to the axes of the rolls and then passing the blank between rolls and thereby simultaneously bending both flanges into hook shape; substantially as described.

9. The method of rolling shapes for sheet metal piling, consisting in forming a shape with a web and two flanges, and then passing the blank between rolls and thereby bending at least one of said flanges to form with the other flange an inclosure having a mouth narrower than the inclosure; substantially as described.

10. The method of rolling interlocking shapes for sheet piling, consisting in feeding the metal through successive passes in an angular position relative to the roll axes, forming a straight web having two flanges extending along one edge of the web at an angle to the web which is other than a right angle, and then bending at least one of said flanges into hook shape; substantially as described.

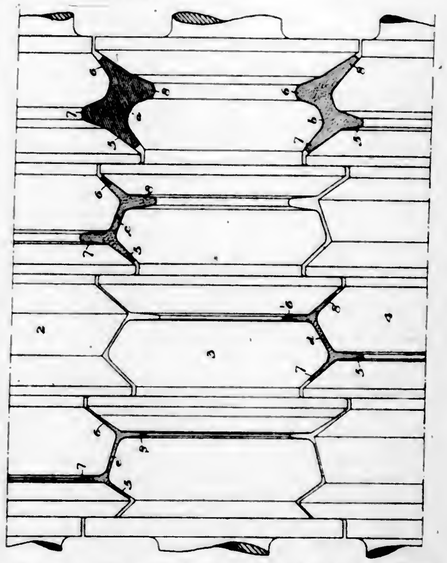
11. The method of rolling sheet piling, consisting in reducing metal to form a shape having a straight web with oppositely directed flanges at one edge, and then bending by rolls at least one of the flanges into hook form; substantially as described.

12. The method of rolling sheet piling, consisting in reducing metal to form a shape having a straight web with flanges at one edge, and then passing the blank between rolls and thereby bending said flanges toward each other into hook form by contact with said rolls; substantially as described.

13. The method of rolling shapes for interlocking piling, consisting in reducing metal to a shape having a straight web with two wide flanges at one edge, and a head at the other edge, and then bending by rolls at least one of the wide flanges into hook form; substantially as described.

14. The method of rolling shapes for interlocking piling, consisting in reducing metal with the straight web portion at an angle to the axes of the rolls, and opposite flanges at one edge extending at an outwardly obtuse angle to the web, and then bending said flanges into hook form by contact with said rolls; substantially as described.

852,985. METHOD OF ROLLING FLANGED SHAPES. EDWIN E. SLICK, Pittsburg, Pa. Filed Mar. 8, 1905. Serial No. 249,094.



Claim.—1. The method of rolling wide flanged shapes, consisting in passing metal through successive separate passes, in which the web is at successively opposite angles to the axes of the rolls, passing the flange portions alternately through an open live groove, and drawing out the flange between tapering substantially flat opposing faces, and then through a dead groove, and then bending the flanges to final position; substantially as described.

2. The method of rolling shapes having wide flanges, consisting in feeding the metal through a series of sepa-

rate passes in which the web is inclined alternately at opposite angles to the axes of the rolls, rolling the flanges alternately within open live grooves and dead grooves, drawing out the flange in the open live groove to any width to which the metal will flow, and then passing such flange through a dead groove; substantially as described.

3. The method of rolling flanged shapes, consisting in passing metal through successive passes, in which the web is at an angle to the axes of the rolls, passing the flange portions alternately through an open live groove, and drawing out the flange therein between tapering opposing faces, and then through a dead groove, and then bending the flanges to final position and finishing the shape; substantially as described.

4. The method of rolling flanged shapes of general I-beam form, consisting in passing metal through successive passes in which the web is at an angle to the axes of the rolls, passing the flange portions alternately through diagonally opposite open live grooves and drawing out the flanges therein between tapering opposing faces, and then passing them through diagonally opposite dead grooves, and then bending the flanges to final position while keeping the same surface of the shape uppermost in all of the passes; substantially as described.

5. The method of rolling flanged shapes, consisting of forming the shape by rolling it with the flanges out of normal angular relation to the web, and then feeding the shape through a rolling pass or passes with at least one of the flanges in a dead groove, and bending the flanges to normal position therein, while supporting the web throughout the bending operation, and keeping the same surface of the shape uppermost in all the passes; substantially as described.

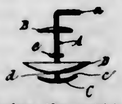
6. The method of rolling a shape having at least two flanges, consisting in passing the flange portions alternately through an open live groove and drawing out the flange between tapering opposing faces, and then through a dead groove, with the web at an angle to the roll axes, and then bending the flanges to final position with the upper surface of the shape in the first pass the upper surface in all of the passes; substantially as described.

7. The method of rolling shapes having wide flanges, consisting in feeding the metal through a series of separate passes in which the web is inclined alternately at opposite angles to the axes of the rolls, rolling the pair of diagonally opposite flanges alternately within open live grooves and dead grooves drawing out the flange in the open live groove to any width to which the metal will flow and then passing such flange through a dead groove; substantially as described.

8. The method of rolling I-beams, consisting in rolling the shape with its diagonally opposite flanges bent out of normal position to the web, and then rolling and bending the flanges to normal position while supporting the web by contact with the rolls in each pass, and keeping the same surface of the shape uppermost in all the passes; substantially as described.

9. The method of rolling flanged shapes, consisting in forming a blank having a web with flanges bent out of proper position relative thereto, rolling said blank with the web at an angle to the horizontal and then passing the blank through at least one bending pass in which the web is parallel with the axes of the rolls while the flanges are being bent, and supporting the web throughout the rolling and bending operations; substantially as described.

852,986. TIRE-PLUG. FRANK N. STEVENS, Rutherford, N. J. Filed Jan. 24, 1907. Serial No. 353,784.



Claim.—1. In a tire-plug, the combination, with a screw-threaded, metallic shank provided with a transversely disposed gripping portion and with an enlarged head rigidly attached thereto, of a screw-threaded retaining cap and a flexible, supplementary, mushroomed head sliding freely upon said shank above the rigidly attached head.

2. In a tire-plug, the combination, with a screw-threaded, metallic shank provided with a transversely disposed gripping and indicating portion and with an enlarged elongated head rigidly attached thereto in a predetermined position relative to said gripping portion, of a screw-threaded retaining cap, and a supplementary head sliding freely upon said shank above the rigidly attached head.

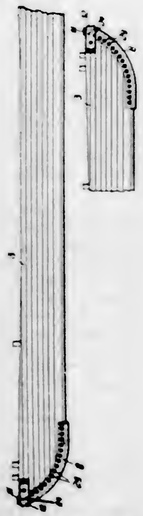
3. In a tire-plug, the combination, with a screw-threaded, metallic shank provided with a transversely disposed gripping portion and with an enlarged head having a smooth inner surface and rigidly attached to said shank, of a screw-threaded retaining cap and a flexible, supplementary, mushroomed head sliding freely upon said shank above the rigidly attached head.

4. In a tire-plug, the combination, with a screw-threaded, metallic shank provided with a transversely disposed gripping portion and with an enlarged head rigidly attached thereto, of a screw threaded retaining cap, a flexible, supplementary head sliding freely upon said shank above said rigidly attached head, and a supplementary nut above said supplementary head.

5. In a tire-plug, the combination, with a screw-threaded, metallic shank, provided with a transversely disposed gripping and indicating portion and with an elongated, dished head having a smooth upper surface and rigidly attached to said shank in a predetermined position relative to said gripping portion, of a screw-threaded retaining cap, a supplementary nut below said retaining cap, a centrally thickened, flexible, supplementary disk forming a head loosely mounted upon said shank and said parts being adapted to be drawn together by the rotation of said shank by means of said gripping portion.

6. In a tire-plug, the combination, with a screw-threaded, metallic shank with an enlarged head rigidly attached thereto, of a screw-threaded retaining cap and a flexible, supplementary, mushroomed head sliding freely upon said shank above and being of greater diameter than the rigidly attached head.

852,987. BARGE, BOAT, AND SIMILAR VESSEL. GEORGE W. THEISS, Pittsburg, Pa. Filed Jan. 23, 1907. Serial No. 353,741.



Claim.—1. In a barge, the combination with a wooden body portion, comprising a floor and sides, of metallic ends, each end consisting of curved plates, curved angle bars carried by said plates, some of said bars being reinforced, a channel-shaped beam or sill connecting with said plates, tie plates connecting with said bars and beam, and means to detachably secure one of said tie plates and said bars to the sides of said barge.

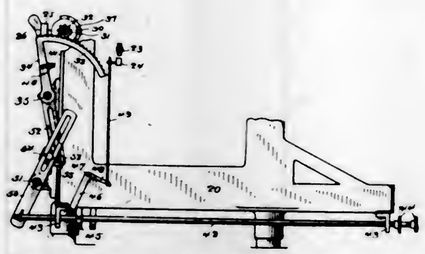
2. In a barge, the combination with a wooden body portion having a floor and sides, of metallic ends detachably connected to said sides and floor, said ends consisting of curved plates, bars carried thereby, some of said bars being reinforced, a channel-shaped sill, and tie plates connecting said sill and said bars together.

3. A metallic end for wooden barges comprising a pair of curved end plates, a splice bar connecting the plates together and carrying a stiffener web, angle bars having one flange secured to the plates at the ends thereof and the other flange adapted to be secured to the plate at the ends of the said angle bars, a channel beam secured to said beam and said end plates having its ends projecting at right angles to engage and be secured to the sides of a barge.

4. A metallic end for barges comprising an end member, angle bars secured thereto at the ends adapted to have one flange thereof secured to a barge, a transverse angle girder secured to the end member adjacent its upper end, a channel beam secured to the upper end of said end member, and a tie plate secured to said channel member, and the end member, and to said angle girder, and having its end projected at right angles to engage and be secured to the sides of a barge.

5. A metallic end for wooden barges, comprising an end member, angle bars having one flange secured to said end member at the ends thereof and the other flange adapted to be secured to the sides of a barge, an angle girder secured to the member adjacent the upper end thereof, a channel beam secured to the upper end of said end member, and a tie plate connected to the channel beam, and the angle girder and to the end member, and having its ends bent at right angles to engage and be secured to the sides of a barge.

852,988. TYPE-WRITER TABULATOR. PHILO B. TINGLEY, Glenridge, N. J. Filed Oct. 13, 1904. Serial No. 228,313.



Claim.—1. A tabulating mechanism for type-writing machines comprising one or more fixed stops, a variable stop to co-act therewith and means for changing the position of the variable stop, said means including levers having overlapping portions provided with adjustable means for transmitting motion from one to the other.

2. A tabulating mechanism for type-writing machines comprising one or more fixed stops, a variable stop to co-act therewith and means for changing the position of the variable stop, said means including levers having overlapping portions, one of said overlapping portions having a pin projecting from it, and the other having a hook to engage said pin and lock the parts against further movement.

3. A tabulating mechanism for type-writing machines comprising one or more fixed stops, a variable stop to co-act therewith and means for changing the position of the variable stop, said means including levers having overlapping portions, said overlapping portions being slotted and having respectively adjustably connected therewith a pin and a hook to engage said pin.

4. A tabulating mechanism for type-writing machines comprising a fixed bar having a series of openings, a stop adapted to project through any one of said openings, a box near each end of said bar and containing a spring, a retainer bar having its ends resting on the springs in the boxes, said bar crossing the openings of the fixed bar to retain the stop in place, a stop connected with the carriage, and means for releasing the carriage.

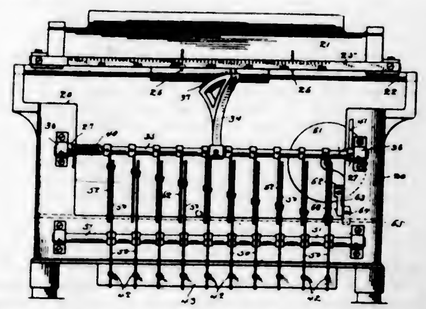
5. A tabulating mechanism for type-writing machines comprising a rock-shaft having a plurality of arms each having a pin, a corresponding plurality of levers each adapted to engage a pin of an arm, the points of engagement varying for different co-acting arms and levers, a variable stop and connections whereby it will be actuated by said rock-shaft, a fixed stop, and independent means for actuating the said levers.

6. A tabulating mechanism for type-writing machines comprising a rock-shaft having a plurality of arms each having a pin, the pins being set at different distances from said shaft, a corresponding plurality of levers adapted to individually engage said pins and each having a hook to contact with such pin, a variable stop and connections whereby it will be actuated by said rock-shaft, a fixed stop, and independent means for actuating the said levers.

7. A tabulating mechanism for type-writing machines comprising a rock-shaft having a plurality of arms each having a pin adjustably connected therewith, a corresponding plurality of levers having hooks adjustably connected therewith, each lever being adapted to act against a pin of an arm to actuate the rock-shaft until the hook of that lever engages the pin of the corresponding arm, a variable stop and connections whereby it will be actuated by said rock-shaft, a fixed stop, and independent means for actuating said levers.

8. A tabulating mechanism for type-writing machines comprising a fixed slotted bar, one or more stops removably mounted in said bar, a shaft, a sleeve splined on the shaft and having a spiral flange and connected with the carriage to travel therewith, independent key-controlled devices having connections for actuating the said shaft, a carriage release dog, a link having connections at one end for actuating said dog, a lever connected with the other end of said link, and means whereby movement of either one of the key-controlled devices will actuate said lever.

852,989. TYPE-WRITER TABULATOR. PHILO B. TINGLEY, Glenridge, N. J. Filed Sept. 22, 1905. Serial No. 279,681.



Claim.—1. A tabulating mechanism for typewriting machines, comprising a rock shaft supported by the frame of the machine and having an arm projecting therefrom, said arm having a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of arms connected to said shaft, a plurality of finger pieces or keys, and an independent lever connecting each of said keys with one of said series of arms for variably rocking said shaft.

2. A tabulating mechanism for typewriting machines, comprising a rock shaft supported by the frame of the machine and having an arm projecting therefrom, said arm having a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of arms connected to said shaft, a plurality of finger pieces or keys, and an independent and adjustable connection between each of said keys and one of said series of arms.

3. A tabulating mechanism for typewriting machines, comprising a rock shaft supported by the frame of the machine and having an arm provided with a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of arms connected to said shaft, a plurality of finger pieces or keys, and an independent and adjustable and disconnectible connection between each of said keys and one of said series of arms.

4. A tabulating mechanism for typewriting machines, comprising a rock shaft supported by the frame of the machine and having an arm projecting therefrom, said arm having a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of arms connected to said shaft, a plurality of finger pieces or keys, an independent lever connecting each of said keys with one of said series of arms for variably rocking said shaft, a brake for checking the travel of the carriage, and connections whereby the actuation of either finger piece or key will apply the brake after actuating the rock shaft.

5. A tabulating mechanism for typewriting machines, comprising a rock shaft supported by the frame of the machine and having an arm projecting therefrom, said arm having a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of arms connected to said shaft, a plurality of finger pieces or keys, a series of levers operated by said finger-pieces or keys and pivotally supported in a line substantially parallel with said rock-shaft, and connections between said rock-shaft arms and levers, said connections varying in distance from the rock-shaft for the purpose described.

6. A tabulating mechanism for typewriting machines, comprising a rock shaft supported by the frame of the machine and having an arm projecting therefrom, said arm having a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of arms connected to said shaft, a plurality of finger pieces or keys located at the front of the machine and extending rearward therefrom, and an independent lever connecting each of said keys with one of said series of arms for variably rocking said shaft.

7. A tabulating mechanism for typewriting machines comprising a bar attached to the carriage and having a longitudinally adjustable stop, a shaft mounted on the frame of the machine and having an arm carrying a plurality of stepped stop pins to co-act with said stops, a series of arms connected to said shaft, a plurality of finger pieces or keys, and an independent lever connecting each of said keys with one of said series of arms for variably rocking said shaft.

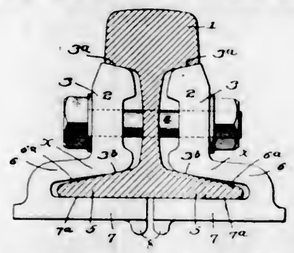
8. A tabulating mechanism for typewriting machines comprising a rock shaft supported by the frame of the machine and having an arm projecting therefrom, said arm having a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of slotted arms connected to said shaft, a plurality of finger pieces or keys, a series of slotted levers operatively connected with said finger pieces or keys, and independent connections between the slotted portions of said levers and arms.

9. A tabulating mechanism for typewriting machines comprising a rock shaft supported by the frame of the machine and having an arm projecting therefrom, said arm having a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of slotted arms connected to said shaft, a series of slotted levers, finger pieces or keys, connected with said levers, and an independent connection between each slotted lever and its adjacent slotted arm, said connection comprising a plate having a hook adjustably connected to one of said slotted members and a pin adjustably connected with the other slotted member to be engaged by said hook.

10. A tabulating mechanism for typewriting machines comprising a rock shaft supported by the frame of the machine and having an arm projecting therefrom, said arm having a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of arms connected to said shaft, and an independent connection between each of said keys and one of said series of arms for variably rocking said shaft, a plurality of finger pieces or keys, each having a collar, a brake for the carriage, a swinging bar or grate to be operated by either of said collars, and means whereby the swinging of the gate will apply the brake.

11. A tabulating mechanism for typewriting machines, comprising a rock shaft supported by the frame of the machine and having an arm provided with a series of stop members in stepped relation to each other, means for adjustably supporting one or more co-operating stops on the carriage, a series of slotted arms connected to said shaft and depending therefrom, a series of slotted levers supported by the frame of the machine, an independent connection between each of said keys and one of said series of arms for variably rocking said shaft, and push rods mounted on the frame of the machine and having finger pieces or keys at the front of the machine, the rear ends of said push rods being connected with said slotted levers.

852,990. RAIL-JOINT. GEORGE W. WHITEMAN, Philadelphia, Pa. Filed Dec. 12, 1906. Serial No. 347,441.

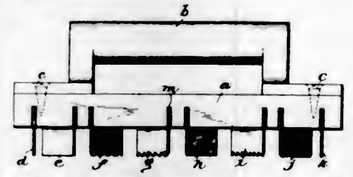


Claim.—1. A rail joint comprising a vertical member having upper and lower surfaces adapted to bear respectively against the under side of the head and the upper side of the foot of a rail, the outwardly extending member whose lower surface extends from the lower surface of said vertical member at a smaller angle to the horizontal than said surface, together with the member extending downwardly and inwardly from said outwardly extending member, and whose upper surface is substantially plane and horizontal; the weakest portion of said joint being in said outwardly extending member, within the plane of the meeting point of said outwardly and inwardly extending members.

2. A rail joint comprising a vertical member having upper and lower surfaces adapted to bear respectively against the under side of the head and the upper side of the foot of a rail, the outwardly extending member whose lower surface extends from the lower surface of said vertical member at a smaller angle to the horizontal than said surface, together with the member extending downwardly and inwardly from said outwardly extending member, and whose upper surface is substantially plane and horizontal; the weakest portion of said joint being in said outwardly extending member, adjacent its junction to said vertical member.

3. A rail joint comprising a vertical member having upper and lower surfaces adapted to bear respectively against the under side of the head and the upper side of the foot of a rail, the outwardly extending member whose lower surface extends from the lower surface of said vertical member at a smaller angle to the horizontal than said surface, together with the member extending downwardly and inwardly from said outwardly extending member, and whose upper surface is substantially plane and horizontal; the thinnest section of said outwardly and inwardly extending members being in the outwardly extending member, adjacent its junction to said vertical member.

852,991. MASON'S IMPLEMENT. ROUBAUD ANTOINE, Jersey City Heights, N. J. Filed Dec. 12, 1906. Serial No. 347,536.



Claim.—1. A masons' implement comprising a back provided with slots on one face, a handle attached thereto, and a series of plates removably held in the slots in said back, said plates having operating edges of different shapes, substantially as described.

2. A masons' implement comprising a back provided with slots on one face, a handle fastened thereto, and a series of rectangular metal plates inserted in the slots in said back at different angles to each other, said plates being provided with working faces of different shapes, substantially as described.

3. A masons' implement comprising a back, a handle fastened thereto, said back being provided with slots on the face opposite the handle arranged at different angles, and a series of rectangular plates adapted to be removably held in said slots, some of said plates being smooth and the others provided with teeth of different shapes, substantially as described.

852,992. ROTARY ENGINE. HUBERT L. BAKER, Greenville, and LEMUEL E. IRISH, Belding, Mich., assignors, by direct and mesne assignments, of one-third to said Baker, one-third to Paul Van Deinse, one-sixth to Rufus F. Sprague, and one-sixth to F. E. Ramey, Greenville, Mich. Filed Nov. 28, 1905. Serial No. 289,537.



Claim.—1. In a rotary engine, a rotary piston with an angular opening for the admission of a shaft, a shaft with an enlargement having a plurality of convex faces representing portions of cylinders whose axes pass through the center line of said shaft, and a corresponding plurality of bearing plates interposed between such convex faces and the sides of such opening, the inner face of each plate being concave, and of a curvature corresponding to that of the abutting convex face of said enlargement, and the outer face of such plate being flat as described.

2. In a rotary engine, a rotary steam valve consisting of an inner steam chest containing ports, a revolving intake ring containing ports and a revolving cut-off ring containing ports, the distance between the ports in such intake and cut-off rings being less than the distance from center to center between the ports in such inner steam chest plus the length of one of such ports in such steam chest.

3. In a rotary engine, a rotary steam valve consisting of an inner steam chest containing ports, a revolving intake ring containing ports, a revolving cut-off ring containing ports, and a stationary ring interposed between such intake and cut-off rings, such stationary ring also containing ports, the distance between such ports in such intake and cut-off rings being less than the distance from center to center between the ports in such stationary ring plus the length of one of such ports in such stationary ring.

4. In a rotary engine, one or more abutment valves having an axial shaft carrying a helical spring wound so as to throw the free end of such abutment valve out of its seat, and means for regulating the tension of such spring.

5. A rotary engine, comprising a case having one or more recesses in its inner periphery in open communication with the steam inlet, one or more abutment valves each having an axis in the case and swinging inwardly, and a hollow rotary double eccentric piston having one side of it made straight at one end and curved at the other and formed with exhaust openings on this curved face and other exhaust openings on the side substantially as and for the purpose described.

6. In a rotary engine, a hollow double eccentric piston having each of its two faces made straight at one end and curved at the other and having exhaust openings in the curved ends.

7. In a rotary engine, a hollow double eccentric piston having one side of its face made straight at one end, and curved at the other and having exhaust openings in the curved face of the piston and also in the side thereof substantially as described.

8. A rotary engine, comprising a case with inlet ports and abutment valves, a double eccentric and hollow piston having exhaust openings in its face and in its side, and a cylinder head having an annular recess arranged in the path of the exhaust openings in the side of the piston and an exhaust opening for said annular recess as described.

9. A rotary engine having a revolving piston with a square hole through it, a shaft having an enlargement with four segmental faces whose circular curve corresponds to a radius extending from the center of the shaft to the circular curve of the segments, and four intermediate bearing plates having flat outer sides abutting against the flat sides of the square perforation in the piston and having on their inner faces cylindrically concaved seats fitting the convex faces of the shaft segment.

10. A rotary engine, comprising a cylindrical case, a central shaft, a piston connected to the shaft to rotate it, abutment valves hinged in recesses of the cylindrical case and provided with means for turning them inwardly, a valve chest, a rotary ring in said chest provided with peripheral intake ports and connected to the piston to be rotated by it, said ring and valve chest being concentrically arranged about the shaft.

11. A rotary engine, comprising a cylindrical case, a central shaft, a piston connected to the shaft to rotate it, abutment valves hinged in recesses of the cylindrical case and provided with means for turning them inwardly, a valve chest arranged concentrically about the shaft and connected to the head of the cylindrical case, a rotary intake ring in said valve chest provided with peripheral intake ports and connected to the piston to be rotated by it and a second rotary cut-off ring with peripheral ports, arranged concentrically to the intake ring, alternating stationary rings and means for changing the position of the cut-off ring relative to the intake ring.

12. A rotary engine, comprising a cylindrical case, a central shaft, a piston connected to the shaft to rotate with it, abutment valves hinged in recesses of the cylindrical case and provided with means for turning them inwardly, a valve chest arranged concentrically about the shaft and connected to the head of the cylinder case, a rotary intake ring in said valve chest provided with peripheral intake ports and connected to the piston to be rotated by it and a second rotary cut-off ring with peripheral ports arranged concentrically to the intake ring, alternating stationary rings, a sleeve arranged about the shaft and connected to the revolving cut-off ring and a centrifugal governor fixed to a revolving member of the main shaft and connected to and adjusting the said sleeve.

13. A rotary engine, comprising a cylindrical case, a central shaft, a double eccentric piston connected to the shaft to rotate with it, three equally spaced abutment valves hinged in recesses in the cylindrical case and provided with means for turning them inwardly, a valve chest arranged concentrically about the shaft and connected to the head of the cylindrical case having three intake pipes and a concentric rotary intake ring arranged within the chest and having two opposite ports and connected to the piston to be directly operated thereby.

14. A rotary engine, comprising a cylindrical case, a central shaft, a rotating piston connected thereto, abutment valves hinged in recesses in the case, a steam chest arranged concentrically about the shaft and connected to one head of the case, a rotary valve also arranged concentrically in said chest and connected to the piston and means for rendering the connection of the rotary valve to its driving parts free to adjust itself to any change of the shaft's axis.

15. A rotary engine, comprising a cylindrical case, a central shaft, a rotating piston connected thereto, abutment valves hinged in recesses in the cylindrical case and provided with means for turning them inwardly, a valve chest arranged concentrically to the shaft and secured to one of the cylinder heads, said valve chest consisting of a cylindrical portion with peripheral steam passages and a head portion formed with a steam inlet, an annular steam space and a surrounding and offset stationary ring; an intake valve ring with peripheral ports and an intake cut-off ring with peripheral ports arranged upon opposite sides of the stationary ring of the valve chest, the intake ring being connected to the piston and the cut-off ring to cut-off adjusting mechanism.

16. A rotary engine, comprising a main shaft, a cylinder with a revolving piston in the same connected to the shaft, a centrifugal governor mounted on the main shaft and having a rotary adjustable sleeve inclosing the main shaft, and a valve chest and valve mechanism comprising one rotary valve connected to and traveling constantly with the piston and another rotary valve connected to the sleeve of the governor, both said rotary valves being arranged in concentric relation to each other and to the main shaft and between the governor and the cylinder.

17. A rotary engine, comprising a main shaft with a revolving piston, a cylindrical case and one or more movable abutments constructed with a rocking center on one side and arranged to bear upon the piston at its free edge, the abutment being formed with an enlarged cylindrical segment described about its rocking center, and the case being formed with a correspondingly shaped chamber receiving the cylindrical segment and provided with a vent hole.

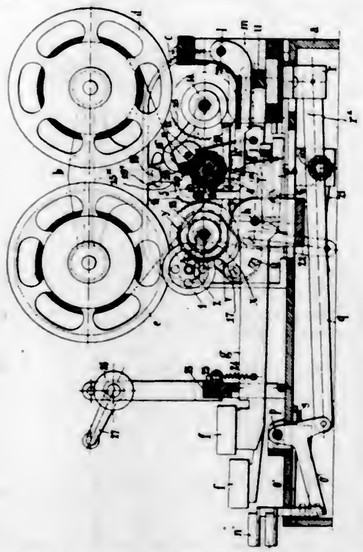
852,993. HEXAMETHYLENETETRAMIN-SODIUM ACETATE DOUBLE SALT. PETER BERGELL, Berlin, Germany, assignor to The Firm of Johann A. Wülfing, Berlin, Germany. Filed Dec. 18, 1906. Serial No. 348,376. (Specimens.)

Claim.—1. The process of producing a new medicinal compound, a double salt of hexamethylenetetramin and acetate of sodium consisting in dissolving in water one molecular proportion of hexamethylenetetramin and two molecular proportions of acetate of sodium and evaporating same.

2. The process of producing a new medicinal compound, a double salt composed of hexamethylenetetramin and acetate of sodium consisting in dissolving in water one molecular proportion of hexamethylenetetramin and two molecular proportions of acetate of sodium and evaporating this solution in a vacuum.

3. As a novel composition of matter a crystalline medicinal compound composed of one molecular proportion of hexamethylenetetramin and two molecular proportions of acetate of sodium melting at 118° C. with loss of water of crystallization, soluble in less than its own weight of water of ordinary temperature and in alcohol, insoluble in ether while benzene and chloroform dissolve only the hexamethylenetetramin.

852,994. STENOGRAPHIC OR REPORTING MACHINE. CHARLES BIVORT, Paris, France. Filed Jan. 25, 1905. Serial No. 242,664.

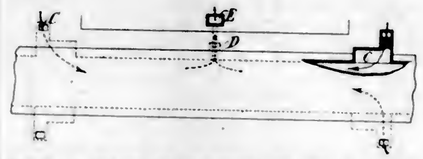


Claim.—1. In a stenographing machine, the combination of a platen having a ratchet-wheel mounted on the shaft thereof, a paper-feeding drum, a paper-receiving drum, a friction-roller for operating the latter, a ratchet-wheel for actuating said friction-roller, ribbon-spools, a pinion mounted on each of said spools, type-levers coacting with said platen, key-levers, a lever actuated by all said key-levers, a pawl mounted on said lever and engaging the ratchet-wheel of said friction-roller, an arm carried by said lever, a pawl carried by said arm and engaging the ratchet-wheel on the platen-shaft, a third pawl mounted on said lever, a ratchet-wheel actuated thereby, and means actuated by said last-named ratchet-wheel for rotating either of the ribbon-spool pinions.

2. In a stenographing machine, the combination, with the base, of a carriage mounted on said base and movable in forward and backward direction, a connecting-rod attached to said carriage and extending forwardly beneath the base, a shift-lever pivoted in the front portion of the base and connected with said connecting-rod, a second shift-lever pivoted in the base at the side of said first-named shift-lever but unconnected with said connecting-rod, a bar pivoted to the lower surface of said base and abutting at one edge against said shift-levers, and shift-keys for operating said shift-levers.

3. In a stenographing machine, the combination, with the front bar of the machine, of a paper-receiving device having bifurcated spring-lugs to seat on said bar and comprising a paper-receiving drum and a crank therefor.

852,995. VENTILATING TUNNELS. HENRY BLACKMAN, Belmar, N. J. Filed Apr. 16, 1906. Serial No. 311,938.



Claim.—1. Means for purifying the atmosphere in a railway tunnel having a number of entrances along its length, comprising means lying entirely outside of the space within the tunnel for withdrawing bad air from the tunnel at points approximately half way between such entrances so as to draw from two adjacent entrances and create two ventilating currents in opposite directions from the two entrances toward the half way point.

2. Means for purifying the atmosphere in a railway tunnel having a number of entrances along its length, comprising means lying entirely outside of the space within the tunnel for withdrawing bad air from the tunnel at points approximately half way between such entrances so as to draw from two adjacent entrances and create two ventilating currents in opposite directions from the two entrances toward the half way point, the tunnel being closed except at the entrances and at said intermediate points, so that the withdrawal of bad air at said intermediate points induces an inflow of fresh air at the entrances only.

3. Means for purifying the atmosphere in a railway tunnel carrying a plurality of tracks for trains moving in opposite directions and constructed without partitions and having a number of entrances along its length, comprising means lying entirely outside of the space within the tunnel for withdrawing bad air from the tunnel at points approximately half way between such entrances so as to draw from two adjacent entrances and create two ventilating currents in opposite directions from the two entrances toward the half way point the tunnel being closed except at said entrances and said intermediate points, so that the withdrawal of the bad air at said intermediate points induces an inflow of fresh air at the entrances only.

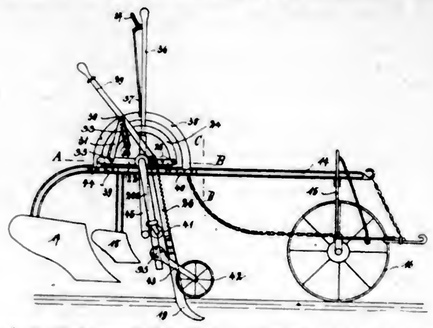
4. Means for purifying the atmosphere in a railway tunnel having a number of entrances along its length, comprising means lying entirely outside of the space within the tunnel for withdrawing bad air from the tunnel at points approximately half way between such entrances so as to draw from two adjacent entrances and create two ventilating currents in opposite directions from the two entrances toward the half way point, in combination with means for forcing air in at the entrances.

852,996. PLOW. CONRAD BOHRSSEN, Gross Munzel, near Wunstorf, Germany. Filed May 26, 1906. Serial No. 318,800.

Claim.—1. In a plow, a beam and a share secured thereto, combined with a bent arm pivoted to the beam, a subsoil share engaging the arm, means for raising the subsoil share along the arm, and means for tilting the arm, substantially as specified.

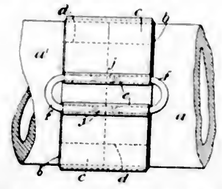
2. In a plow, a beam and a share secured thereto, combined with a bent arm pivoted to the beam, a wheel adjustably secured to the arm, a subsoil share supported by the arm, means operatively connected to the subsoil share for raising and lowering the same, and means operatively connected to the arm for tilting the arm and the subsoil share, substantially as specified.

3. In a plow, a beam and a share secured thereto, combined with a bent arm pivoted to the beam, a wheel adjustably secured to the arm, a rail engaging the arm, a subsoil share carried by the rail, a first hand lever operatively connected to the rail for reciprocating the same along the arm, and a second hand lever operatively connected to the arm for tilting the arm and the rail supported by the arm, substantially as specified.



4. A plow provided with a longitudinal beam, a rotatable transverse spindle having a downwardly bent arm, a U-shaped rail engaging said arm, a subsoil share secured to the rail, means for raising the rail, and means for tilting the arm, substantially as specified.

852,997. JOINT FOR SEWER AND LIKE PIPES. ANDREW G. BRANDRAM, Southsea, England. Filed Dec. 22, 1906. Serial No. 349,103.



Claim.—1. A pipe joint comprising substantially cylindrical abutting pipe ends, a flat metal band having eyes at its ends and extending nearly around said pipe ends, said band being coated with plastic bitumen, a plate also coated with plastic bitumen and extending between and beneath the ends of said band, and staples for uniting the eyes at the ends of the band after the latter has been forcibly compressed around the pipe ends while the bitumen is plastic.

2. A pipe-joint comprising substantially cylindrical abutting pipe-ends, a flat metal band having eyes at its ends and extending nearly around said pipe-ends, a plate extending between and beneath the ends of said band, a coating of bitumen on said band and plate, and staples for uniting the eyes at the ends of said band.

3. A flat metal band having tubular eyes at its ends and cores arranged in the central parts only of said eyes, for the purpose specified.

4. A pipe-joint comprising substantially cylindrical abutting pipe-ends, a flat metal band, extending nearly around said pipe-ends, tubular eyes at the ends of said band, cores in the central parts only of said eyes, a plate extending between and beneath the ends of said bands, a coating of bitumen on said band and plate, and staples for extending into the ends of said eyes.

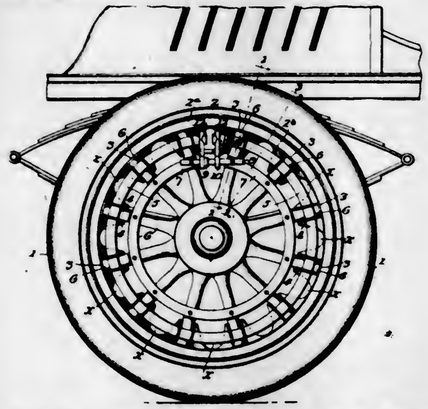
852,998. AUTOMOBILE-WHEEL. BURKE H. BRIDGERS, Wilmington, N. C. Filed Oct. 17, 1906. Serial No. 339,363.

Claim.—1. A wheel comprising a hub and spokes, and a rim which is detachable from the latter, and means for securing said rim to the spokes, the same consisting of sockets adapted for lateral reception of the spoke ends, hooks or lugs projecting laterally from the spoke sockets, a divided retaining ring adapted to engage the lugs, and

a device for engaging and holding the ends of the divided ring, substantially as described.

2. A wheel comprising a hub and spokes, and a detachable rim having inwardly projecting sockets which are cut away on one side, a divided ring extending in front of the spokes and sockets, holding devices with which such ring engages, and means for straining the ring so as to hold it firmly in place, substantially as described.

3. A wheel comprising a hub and spokes, and a rim detachable therefrom, spoke sockets secured to and projecting inward from said rim, and provided with lateral extensions consisting of hooks or lugs, a spoke retaining ring adapted to engage the said hooks or lugs, and a straining device connected with the ends of the divided ring, substantially as described.



4. A wheel comprising a hub and spokes and a detachable rim having inwardly projecting sockets which are open on one side to adapt them to receive the spoke ends, lugs or hooks which are inclined on the inner side, the lower ends of the inclines being nearer the backs of the spoke sockets than the diameter of the spoke ends, a spoke-retaining ring adapted for engagement with the inclined sides of the lugs, and means for straining the ring so that it is crowded inward against the spokes, substantially as described.

5. A wheel comprising a hub and spokes, and a detachable rim having inwardly projecting spoke sockets which are open on one side, the portion of the rim intermediate of the sockets being cut away to a depth greater than the radial extensions of the spoke, to provide space for the latter in the operation of detaching the wheel rim, substantially as described.

6. A wheel rim having a series of sockets for receiving the ends of spokes, said sockets projecting radially inward, and being open on one side, a spoke-retaining ring and devices for engaging said spoke-retaining ring, substantially as described.

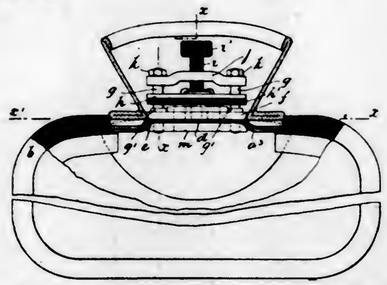
7. In a wheel a rim having an inwardly projecting flange, spoke sockets arranged on said flange and attached thereto, the same projecting radially inward and having one side cut away, and provided with lugs, substantially as described.

8. The combination, with a hub and spokes, of a rim which is detachable from the spoke ends, and provided with spoke-receiving sockets which are open on one side and provided with hooks or lugs, of a divided spoke-retaining ring provided with enlarged heads and adapted for engagement with said lugs, means for straining the ring for tightening it against the spokes, the same consisting of forked plates adapted to engage the heads of the ring, a bar on which the plates are arranged, one of them being adapted to slide thereon, and a straining bolt passing through the middle portion of the plates, substantially as described.

9. The combination with wheel spokes and a rim having spoke sockets provided with lateral projections having notches whose outer sides are inclined as described, of a divided ring adapted to engage said projections and wedge therewith, as shown and described.

10. The combination with wheel spokes and a rim provided with spoke sockets having lateral projections provided with notches, of a divided ring adapted to enter said notches, one of such engaging members having an inclined side whereby a wedging action results, as the ring is tightened, as described.

852,990. WATER-BOTTLE, WATER-CUSHION, WATER-BED, AND LIKE RECEPTACLE. JOHN B. BROOKS, Birmingham, England. Filed Nov. 24, 1906. Serial No. 344,975.



Claim.—1. In india-rubber or like hot-water bottles, water-beds, water-cushions and analogous receptacles; the combination with the body of the receptacle, of a valve fitting which is applied to the mouth end of the said receptacle, and a pair of plates, located respectively on the inside and outside of the body of the receptacle, and adapted to be drawn together for clamping the interposed material of the receptacle by a screw action, substantially as herein described.

2. A hot-water bottle or analogous receptacle in which the body of the receptacle is made from a single piece of material doubled or folded upon itself and formed with mouth opening or perforations in the folded part of the material which constitutes a seamless or solid end to the vessel, in combination with a valve-fitting which is applied to the said folded end and mechanically secured within the mouth, substantially as described.

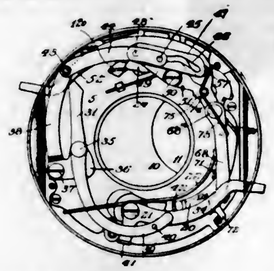
3. A hot-water bottle or receptacle made from a single piece of material, the combination therewith, of a valve fitting provided with a pair of clamping plates arranged so as to come respectively upon the inner and outer sides of the perforated part of the seamless end of the receptacle so that the material adjacent to the said perforations is clamped between the said plates when they are drawn together by a screw, substantially as herein described.

4. In a valve fitting for water bottles and other receptacles; the combination with the body part of the fitting, of a screw-actuated valve-plate, guide pins for said valve-plate adapted to also serve as screws for drawing together the clamping plates and securing the material of the mouth end of the bottle or the like between them, substantially as herein described and set forth.

853,000. PHOTOGRAPHIC SHUTTER. FRANK A. BROWNELL, Rochester, N. Y., assignor to The Eastman Kodak Company, Rochester, N. Y., a Corporation of New York. Filed Oct. 21, 1905. Serial No. 283,718.

Claim.—1. In a photographic shutter, the combination with a casing inclosing a movable shutter blade, of a master member for operating the blade, an operating member for actuating the master member, and a movable stop on the operating member having a setting device for adjusting its position relatively to a coöperating portion of the master member for varying the exposures produced by the shutter blade.

2. In a photographic shutter, the combination with the movable shutter blade, of a master member spring operated in one direction for operating the blade, an operating member for setting and releasing the master member, and a stop on one of the members and having devices for setting it to vary the exposures by controlling the operation of the master member.



3. In a photographic shutter, the combination with the movable shutter blades, of the master and operating members pivoted to move in intersecting paths, and a controlling stop adjustably mounted on one of the members and arranged to coöperate with the other for controlling the operation of the shutter blades.

4. In a photographic shutter, the combination with the movable shutter blade, of a movable master member for operating the blade, an operating member, and a controlling stop carried by the operating member and adjustable thereon in a direction transversely to the path of the master member for controlling the operation of the latter.

5. In a photographic shutter, the combination with the movable shutter blades, of a master member for operating the blades, and having limiting projections arranged thereon, and a shutter operating member having a controlling stop thereon adjustable relatively to the paths of the respective projections.

6. In a photographic shutter, the combination with the shutter casing and the movable shutter blades, of a movable master member for operating the blades having limiting projections thereon, a pivoted operating member, a stop carried by the operating member and adjustable relatively to the paths of the respective stops of the master member, a setting device arranged on the shutter casing, and devices connecting the setting device and movable stop for adjusting the latter.

7. In a photographic shutter, the combination with the shutter casing and the blades, of a movable master member for operating the blades having a projection thereon, an operating member, and a stop thereon for controlling the operation of the master member embodying a pivoted arm on the operating member having a projecting stop to coöperate with the projection of the master member, a cam slot being formed in the arm, and a pin coöperating with the operating member and operating in the cam slot of the arm for adjusting the stop relatively to the path of the projection on the master member.

8. In a photographic shutter, the combination with the shutter blade, of a movable master member for operating the blade having a pair of projections thereon, an operating member operable in a direction transversely to the motion of the master member, a controlling stop on the operating member arranged to coöperate with the projections of the master member to arrest the motion thereof in one direction, and a projection on the operating member arranged to coöperate with the master member while the controlling stop is in engagement with one of the projections thereon, for preventing motion of the operating member in one direction.

9. In a photographic shutter, the combination with a movable shutter blade, of pivoted master member spring-operated in one direction for operating the blade, and having projections thereon, an operating member for setting and releasing the master member, a controlling stop on the operating member adapted to coöperate with the projections of the master member and control the operation thereof, and a projection on the operating member arranged to coöperate with the master member when the controlling stop is in engagement with one of the projections of the master member for controlling the movement of the operating member in one direction.

10. In a photographic shutter, the combination with a movable shutter blade, of a master member for operating the blade, and an operating member for retracting the master member having a latch thereon adapted to cooperate with the master member, and a knock-off projection on the master member for disengaging the latter and the latch.

11. In a photographic shutter, the combination with a movable shutter blade, and a master member for operating the blade having engaging and knock-off projections thereon, of an operating member, and a latch pivoted thereon having a heel to coöperate with the engaging projection for retracting the master member, and a toe adjacent to the heel and serving to insure the coöperative relation of the latter and its corresponding projection, the knock-off projection being arranged to disengage the heel and its projection at a predetermined point to release the master member.

12. In a photographic shutter, the combination with a movable shutter blade having a movable operating projection, of a member movable in a direction transversely to that of said projection and having a pivoted pawl thereon to coöperate with said projection when said member is moved in one direction to operate the blade, and to pass said projection without operating it when moved in the opposite direction.

13. In a photographic shutter, the combination with a movable shutter blade, and a movable operating projection for operating it, of a member for operating the said projection, having a pawl pivoted thereon having an inclined guide to engage the projection and operate it in a direction transverse to the direction of movement of said member to move the blade when said member is operated in one direction, said pawl being pivoted to swing clear of said projection when the said member is moved in the opposite direction.

14. In a photographic shutter, the combination with a movable shutter blade, and a movable operating projection operatively connected thereto, of a pivoted master member, and a pawl pivoted on the master member and arranged to swing in the plane of movement thereof and having an inclined flange projecting laterally of the plane of movement and forming a guide to coöperate with the blade operating projection.

15. In a photographic shutter, the combination with a movable shutter blade, and a movable operating projection operatively connected thereto, of a movable master member, a pivoted pawl on said member arranged to operate in the plane of movement of the master member, a flange on the pawl projecting laterally of the plane of movement of the master member and adapted to serve as a guide to coöperate with the blade operating projection, a spring for operating the pawl in one direction, and a limiting projection on the pawl arranged to coöperate with the master member as a stop for the pawl when in engagement with the blade operating projection.

16. In a photographic shutter, the combination with a movable shutter blade, of a master member for operating the blade, a retarding device, a pivoted arm operatively connected to the retarding device and arranged to be engaged by a portion on the master member for setting the retarding device preparatory to an exposure, and means for adjusting said arm into and out of the path of the master member for controlling the operation of the retarding device relatively to the movements of the master member.

17. In a photographic shutter, the combination with the movable shutter blade, of a pivoted spring actuated master member for operating the blade, a retarding device, an arm operatively connected to the retarding device and arranged to be engaged by a portion of the master member when the latter is moving toward actuated position to

set the retarding device preparatory to the opening of the shutter blade, a lever arranged to be operated by the master member during movement of the latter toward normal position, and coöperating with said arm for returning the retarding device to normal position during the exposure, and means for moving the lever into and out of coöperative relation with the master member.

18. In a photographic shutter, the combination with a movable shutter blade, and a spring-actuated master member for operating the blade having a projection thereon, of a retarding device, an arm coöperating therewith and with the projection of the master member, and an adjustable lever coöperating with said arm having an inclined portion thereon adapted to be engaged by the master member.

19. In a photographic shutter, the combination with a movable shutter blade, and a master member for operating the blade, of a retarding device, an arm operated by the master member for setting the retarding device, a lever coöperating with the said arm and having a portion adapted to coöperate with the master member during the return movement of the retarding device, and means for shifting the said lever transversely relatively to the path of the master member.

20. In a photographic shutter, the combination with a movable shutter blade, and a movable master member for operating it, of a retarding device, an arm for operating it, means for setting the said device preparatory to an exposure a lever for operating the said arm to return the retarding device to normal position having a portion thereon inclined relatively to the direction of movement of the master member, and a device for shifting the inclined portion of the lever across the path of the master member to vary the retarding action on the movement of the master member.

21. In a photographic shutter, the combination with a movable shutter blade, and a pivoted master member for operating it and an exposure controlling stop, of a retarding device, an arm for operating it, a lever arranged to coöperate with the said arm and having a portion adapted to coöperate with the master member, a pivoted bell crank having one arm provided with a pivot for said lever, and an adjusting arm for operating said crank to shift the pivot of the said lever and a setting lever having a link connection with both the stop and said adjusting arm.

22. In a photographic shutter, the combination with the casing, the movable shutter blades, and a master member for operating the blades, of a retarding device, an arm for operating the latter, means for setting said device preparatory to an exposure, a lever coöperating at one end with said arm and having an inclined portion at its opposite end adapted to coöperate with the master member to return the retarding device to normal position, a bell-crank pivoted to a part on the casing having an arm providing a pivot for said lever, and an adjusting arm on the crank for adjusting the latter to shift the inclined portion of the lever relatively to the master member for varying the proportion of the latter's movement during which the retarding device is operated.

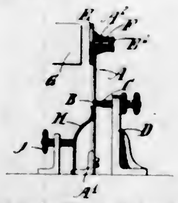
23. In a photographic shutter, the combination with a movable shutter blade, a master member for operating it, having projections thereon, a movable stop adapted to coöperate with said projections for varying the kinds of exposures, and a retarding device having a part movable into and out of coöperative relation with the master member, of an arm for adjusting the retarding device, a device for adjusting the movable stop and a link connecting the stop adjusting device and the adjusting arm for the retarding device for simultaneous operation.

24. In a photographic shutter, the combination with a movable shutter blade, a master member for operating the blade having projections thereon, a movable stop adapted to coöperate with the said projections for varying the kinds of exposures, and a cam for adjusting the movable stop, of a retarding device having a part arranged to move into and out of coöperative relation with the master member, an arm for adjusting the said part, and a link having a part thereon for operating the cam for the movable stop and connected to the adjusting arm for the retarding device.

25. In a photographic shutter, the combination with a movable blade, a master member for operating it having projections thereon, an operating member for setting the master member having a slot therein, a slotted arm movable on the operating member having a stop thereon adapted to coöperate with the projections of the master member to control the movement thereof, and a pin operating in the slots of the operating member and the arm thereon for adjusting the position of the movable stop relatively to the path of the projections on the master member, of a retarding device having a part arranged to move into and out of coöperative relation with the master member, an arm for adjusting the said part, and a link connecting the retard controlling arm and the pin of the said slots for simultaneous operation.

26. In a photographic shutter, the combination with a casing, movable shutter blades therein, a master member for operating the blades having projections thereon, and a movable stop adapted to coöperate with said projections to control the movement of the master member, of a retarding device having a part movable into and out of coöperative relation with the master member, a pivoted arm for adjusting the said part, a link having a part for operating the movable stop and a hollow pivot connecting it to the said arm, a setting lever on a portion of the casing, and a second link connected to the setting lever and having a pin coöperating with said hollow pivot.

853,001. TREMBLER FOR INDUCTION-COILS. CHARLES H. BRYANT, Hammersmith, England. Filed Apr. 23, 1906. Serial No. 313,316.



Claim.—1. In an induction coil trembler the combination of two contacts and a spring to keep such contacts in electrical connection while allowing variation in their resistance substantially as and for the purpose set forth.

2. In an induction coil trembler the combination of a stationary contact, a second contact, a spring bearing said second contact and keeping it always touching the stationary contact and an armature carried by the spring and having a limited movement relatively to it substantially as set forth.

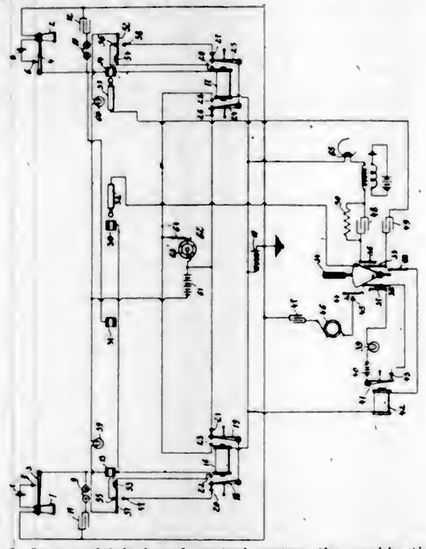
3. In an induction coil trembler the combination of a stationary contact, a second contact, a spring bearing said second contact and keeping it always touching the stationary contact, an armature carried by the spring and having a limited movement relatively to it and a secondary spring between the contact-bearing spring and the armature substantially as set forth.

4. In an induction coil trembler the combination of a stationary contact, a second contact, a spring bearing said second contact, and keeping it always touching the stationary contact, an armature carried by the spring and having a limited movement relatively to it, a secondary spring between the contact-bearing spring and the armature and means for adjusting the pressure on the contact-bearing spring substantially as set forth.

5. In an induction coil trembler the combination of a stiff contact-bearing spring and a light armature carried by said spring, and having a limited movement relatively to it substantially as and for the purpose set forth.

853,002. TELEPHONE SYSTEM. EDWARD J. BURKE, Brooklyn, N. Y. Filed Oct. 14, 1905. Serial No. 282,731.

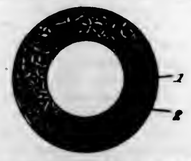
Claim.—1. In a multiple board central system the combination of a plurality of subscribers' stations, a plurality of jacks connected together and to each of the said subscribers' stations by a single line, a pair of plugs connected together by a single strand, a lamp associated with each of the said sets of jacks and means for causing the said lamps to produce lights of different characters to indicate when a connection is desired and when the conversation is completed.



2. In a multiple board central system the combination of a plurality of subscribers' stations, a plurality of jacks connected with each subscriber's station, a lamp at all times controlled by the subscribers' instruments and associated with each set of the said jacks, a pair of plugs for connecting the said jacks together, means for causing the said lamps to produce lights of a different character to indicate when a connection is desired and when the conversation is completed, a switch connected to the said plugs, a second lamp controlled by the said switch.

3. In a multiple board central syatem the combination of a plurality of subscribers' stations, a plurality of jacks connected together and to each station by a single line, a plurality of pairs of plugs for connecting the said stations together, each pair being connected together by a single strand, a lamp associated with each set of jacks, means for causing the said lamp to give lights of different characters to indicate when a connection is desired and when the conversation is completed, a switch connected to the said strand, a second lamp controlled by the said switch.

853,003. PACKING. MICHAEL COLLINS, Philadelphia, Pa., assignor of one-half to James P. McCann, Philadelphia, Pa. Filed Dec. 21, 1906. Serial No. 348,867.



Claim.—1. A packing comprising a mass of shaved or shredded soft metal felted together.

2. A packing ring or gasket comprising shaved or shredded soft metal particles felted together under pressure.

3. A split packing ring comprising a body of shredded or shaved soft metal felted together, and a coating of elastic material.

4. A split packing ring comprising a body of shredded or shaved soft metal felted together, and a coating of elastic material, which coating will melt at a temperature below that at which the metal body of the packing will melt.

853,004. PLOW. WILHELM G. DANIELSEN, Logan, Utah. Filed Jan. 14, 1907. Serial No. 352,250.



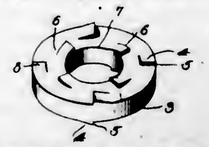
Claim.—1. In a plow of the character described, an axle for supporting a pair of rear wheels comprising a central portion, connections between the same and the plow frame, and two end portions first bent in opposite directions from the central portion and then into two wheel-carrying portions parallel to each other but located in different planes, in combination with wheels having frusto-conical peripheries the bases of which face in the same direction.

2. In a plow of the character described, a wheel axle support comprising a rod movable in a horizontal plane about a vertical axis, means for adjusting and holding the rod, an axle-holder mounted upon said rod and movable in a plane at right angles to the plane of movement of said rod, an axle extending through the axle-holder and rotatably adjustable therein, and connections between said axle and said holder for adjusting and locking the axle in position thereon.

3. In a plow of the character described, a rear axle support moving in a horizontal plane around a vertical axis, means for holding the support in adjusted positions, a rotatable support for the axle mounted upon said horizontally-adjustable support, an axle journaled in said rotatable support and bent at its two ends in opposite directions and terminating at the ends in two parallel parts located in different planes, and means between the axle and the rotatable support for adjusting the axle about a longitudinal axis.

4. In a plow of the character described, a rod having one end bent at right angles and seated in a bearing formed on a fixed portion of the plow frame, a clip passing through an arc-shaped slot in the said fixed portion of the plow frame and supporting the said rod, a rotatable block carried by the outer end of said rod, an axle bearing extending through said rotatable block at right angles to its plane of rotation, an axle carried by said block and having its ends oppositely bent to lie in parallelism but in different planes, means for holding the axle to the block but permitting longitudinal adjustment of the axle, connections between the axle and block for adjusting the axle rotatively therein, and wheels carried by the axle and having frusto-conical peripheries.

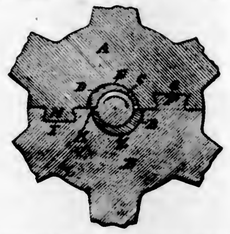
853,005. NUT-LOCK. JAMES DAWKINS, Yager, Cal. Filed May 28, 1906. Serial No. 319,190.



Claim.—A nut lock comprising a washer having upon each of its opposite faces an inner and outer set of spurs,

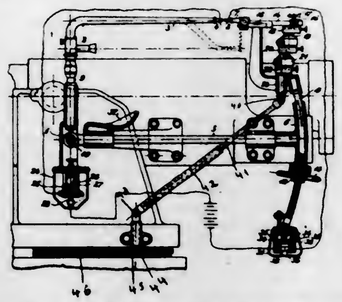
all of said sets being concentrically positioned, the inner spurs extending from the inner edge of the washer and terminating equidistant between the inner and outer edges thereof, the outer spurs extending from the outer edges of the washer and terminating equidistant between the outer and inner edges thereof, each spur having a precipitous side extending at right angles to the face of the washer and an inclined side extending at an acute angle to the face of the washer, the spurs of one set on one face occurring laterally opposite the intervals between the spurs of the set occurring upon the same face, the vertical sides of the spurs on one face of the washer being located in the same transverse planes as the vertical sides of the spurs upon the opposite face of the washer.

853,006. PULLEY. JOSEPH B. DUNLAP, Tulsa, Ind. Ter. Filed Apr. 20, 1906. Serial No. 312,802.



Claim.—In combination, a hub constructed in two interchangeable parts and with a shaft opening therethrough, there being a dove-tail tongue, and a similar shaped groove, in the adjacent sides of the hub parts, the tongue on one part being adapted for interlocking engagement with the groove on the other part, curved keys in the shaft opening, constructed with cam acting outer surfaces, and a shaft provided with a bur adapted to operatively engage the curved keys.

853,007. AIMING DEVICE FOR ORDNANCE. STEFAN KISS v. ECSEGHY, Vienna, Austria-Hungary, assignor of sixty-five one-hundredths to The Firm of Handelsgesellscaft Kleinberg & Co., Vienna, Austria-Hungary. Filed Feb. 24, 1906. Serial No. 302,764.



Claim.—1. In aiming devices for ordnance the combination with the ordnance, a bar, means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance, a frame adapted to turn around the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, a point carried by such frame, means for adjusting such point in accordance with the desired elevation of the ordnance, means for adjusting such point in accordance with any desired lateral corrections, a sighting device adapted to swing freely in all directions around a point of the geometrical axis of the said bar whereby such sighting device may be permanently held directed to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar and an arm rigidly secured to the sighting device the free end of such arm being adapted to coincide with the point on the said frame whereby such coincidence will take place when the gun is trained and elevated in accordance with the position of the target relatively to its distance from such gun, substantially as and for the purpose described.

2. In aiming devices for ordnance, the combination with the ordnance, a bar, means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance, a frame adapted to turn around the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, a point carried by such frame, means for adjusting such point in accordance with the desired elevation of the ordnance, means for adjusting such point in accordance with any desired lateral corrections, a sighting device adapted to turn freely around an axis such axis being at right angles to its optical axis and adapted to turn around two other axes at right angles to each other one of the latter axes being the geometrical axis of the said bar and the other being at right angles to the last named axis and the said axis at right angles to the optical axis of the sighting device whereby such sighting device may be permanently held directed to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar and an arm rigidly secured to the sighting device, the free end of such arm being adapted to coincide with the point on the said frame whereby such coincidence will take place when the gun is trained and elevated in accordance with the position of the target relatively to its distance from such gun, substantially as and for the purpose described.

3. In aiming devices for ordnance, the combination with the ordnance, a bar, means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance, a frame adapted to turn round the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, a point carried by such frame, means for adjusting such point in accordance with the desired elevation of the ordnance, means for adjusting such point in accordance with any desired lateral corrections, a sighting device adapted to swing freely in all directions around a point of the geometrical axis of the said bar, an attendant's saddle connected to the said bar in proximity to the sighting device whereby the attendant is enabled to take hold of the sighting device and whereby such sighting device may be permanently held directed to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar and an arm rigidly secured to the sighting device the free end of such arm being adapted to coincide with the point on the said frame whereby such coincidence will take place when the gun is trained and elevated in accordance with the position of the target, relatively to its distance from such gun, substantially as and for the purpose described.

4. In aiming devices for ordnance, the combination with the ordnance, a bar, means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance, a frame adapted to turn around the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, such frame comprising a bar curved to the arc of a circle and polygonal in transverse section, a correspondingly curved guide for such curved bar such guide being revolubly attached to the bar parallel to the axis of the bore of the ordnance, means for moving such bar along the guide, a point carried by such curved bar, means for adjusting such point in accordance with any desidered lateral corrections a sighting device adapted to turn freely around an axis such axis being at right angles to the optical axis of the sighting device and adapted to turn around two other axes at right angles to each other, one of the latter axes being the geometrical axis of the bar parallel to the bore of the ordnance and the other passing through the center of curvature of the said curved bar and being at right angles to the last named axis and the said axis at right angles to the optical axis of the sighting device whereby such sighting device may be permanently held directed to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar and an arm rigidly secured to the sighting device the free end of such arm being adapted to coincide with the point on the said frame whereby such coincidence will take place when the gun is trained and elevated in accordance with the position of the target relatively to its distance from such gun, substantially as and for the purpose described.

5. In aiming devices for ordnance, the combination with the ordnance, a bar, means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance, a frame adapted to turn around the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, such frame comprising a bar curved to the arc of a circle and polygonal in transverse section, a correspondingly curved guide for such curved bar such guide being revolubly attached to the bar parallel to the axis of the bore of the ordnance, a nut adapted to turn in such guide and to engage screw thread segments cut into the edges of such curved bar, means for preventing such nut from moving longitudinally, a point carried by such curved bar, means for adjusting such point in accordance with any desired lateral corrections, a sighting device adapted to turn freely around an axis such axis being at right angles to the optical axis of the sighting device and adapted to turn around two axes at right angles to each other, one of the latter axes being the geometrical axis of the bar parallel to the bore of the ordnance and the other passing through the center of curvature of the said curved bar and being at right angles to the last named axis and the said axis at right angles to the optical axis of the sighting device whereby such sighting device may be permanently held direct to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar and an arm rigidly secured to the sighting device the free end of such arm being adapted to coincide with the point on the said frame whereby such coincidence will take place when the gun is trained and elevated in accordance with the position of the target relatively to its distance from such gun, substantially as and for the purpose described.

6. In a combined aiming and automatic electric firing device for ordnance the combination with the ordnance of a bar means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance a frame adapted to turn around the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, a point carried by such frame, means for adjusting such point in accordance with the desired elevation of the ordnance, means for adjusting such point in accordance with any desired lateral corrections, a sighting device adapted to swing freely in all directions around a point of the geometrical axis of said bar whereby such sighting device may be permanently held directed to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar and an arm rigidly secured to the sighting device the free end of such arm being adapted to make electric contact with the point on the said frame whereby such contact will be made when the gun is trained and elevated in accordance with the position of the target relatively and its distances from the target and an electric circuit adapted to be closed by such contact and including in series connection a source of electricity and an electric firing device, substantially as and for the purpose described.

7. In a combined aiming and automatic electric firing device for ordnance, the combination with the ordnance of a bar means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance, a frame adapted to turn around the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, a point carried by such frame, means for adjusting such point in accordance with the desired elevation of the ordnance, means for adjusting such point in accordance with any desired lateral corrections, a sighting device adapted to swing freely in all directions around the point of the geometrical axis of said bar whereby such sighting device may be permanently held directed to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar an arm rigidly secured to the sighting device the free end of such arm being adapted to make electric contact with the point on the said frame whereby such contact will be made when the ordnance is trained and elevated in accordance with the position of the target relatively and its distances from the target and an electric circuit adapted to be closed by such contact and including in series connection a source of electricity and an electric firing device, a casing adjustably connected to the point carried by the frame adapted to turn around the geometrical axis of the bar parallel to the axis of the bore of the gun, a plate mounted in such casing, a ball or balls freely resting on such plate, pendulums suspended in such casing and carrying contact pieces and means for connecting such contact pieces in series with the electric firing device, substantially as and for the purpose described.

8. In a combined aiming and automatic electric firing device for ordnance the combination with the ordnance of a bar, means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance, a frame adapted to turn around the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, a point carried by such frame, means for adjusting such point in accordance with the desired elevation of the ordnance, means for adjusting such point in accordance with any desired lateral corrections, a sighting device adapted to swing freely in all directions around the point of the geometrical axis of said bar whereby such sighting device may be permanently held directed to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar an arm rigidly secured to the sighting device the free end of such arm being adapted to make electric contact with the point on the said frame whereby such contact will be made when the ordnance is trained and elevated in accordance with the position of the target relatively and its distances from the target and an electric circuit adapted to be closed by such contact and including in series connection a source of electricity and an electric firing device, a casing adjustably connected to the point carried by the frame adapted to turn around the geometrical axis of the bar parallel to the axis of the bore of the gun, a plate mounted in such casing, a ball or balls freely resting on such plate, pendulums suspended in such casing and carrying contact pieces and means for connecting such contact pieces in series with the electric firing device, substantially as and for the purpose described.

9. In a combined aiming and automatic electric firing device for ordnance, a combination with the ordnance of the bar, means for holding the geometrical axis of such bar permanently parallel to the axis of the bore of the ordnance, means for adjusting such point in accordance with any desired lateral corrections, a sighting device adapted to turn freely around an axis, such axis being at right angles to its optical axis and adapted to turn around two other axes at right angles to each other one of the latter axis being the geometrical axis of the said bar and

the other being at right angles to the last named axis and the said axis at right angles to the optical axis of the sighting device, an arm rigidly secured to the sighting device, the free end of such an arm being adapted to make electric contact with the point on the said frame whereby such contact will be made when the ordnance is trained and elevated in accordance with the position of the target relatively and its distance from the target and an electric circuit adapted to be closed by such contact and including in series connection a source of electricity and an electric firing device, a casing adjustably connected to the axis of the sighting device at right angles to its optical axis, a plate mounted on such casing, a ball or balls freely resting on such plate, pendulums suspended in such casing and carrying contact pieces and means for connecting such contact pieces in series with the electric firing device, a casing adjustably connected to the point carried by the frame adapted to carry around the geometrical axis of the bar parallel to the axis of the bore of the gun, a plate mounted in such last named casing, a ball or balls freely resting at such plate, pendulums suspended in such casing and carrying contact pieces and means for connecting such contact pieces in series with the electric firing device, substantially as and for the purpose described.

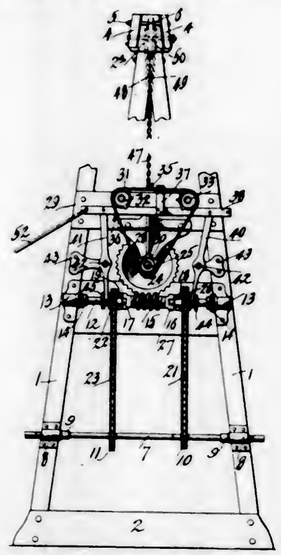
10. In a combined aiming and automatic electric firing device for ordnance, the combination with the ordnance of a bar means for holding the geometrical axis of such bar, permanently parallel to the axis of the bore of the ordnance a frame adapted to turn around the geometrical axis of such bar whereby such frame can be held in a vertical plane passing through the geometrical axis of such bar, a point carried by such frame, means for adjusting such point in accordance with the desired elevation of the ordnance, means for adjusting such point in acordance with any desired lateral corrections, such means comprising a series of cranks, one for each movement for which correction has to be made, the crank pin of one crank constituting the crank axis of the next following crank means for adjusting such cranks according to the speed and to the direction of the corresponding movement, means for coupling the first crank axis of the series with the training gear of the gun, a sighting device adapted to swing freely in all directions around a point of the geometrical axis of the said bar whereby such sighting device may be permanently held directed to the target with the vertical plane passing through the optical axis of such sighting device also passing through the said point in the geometrical axis of the said bar and an arm rigidly secured to the sighting device the free end of such arm being adapted to coincide with the point on the said frame whereby such coincidence will take place when the gun is trained and elevated in acordance with the position of the target relatively to its distance from such gun, substantially as and for the purpose described.

853,008. WAGON-JACK. FERDINAND J. FELDT, Peoria, Ill., assignor to J. A. Engel & Co., Peoria, Ill., a Corporation of Illinois. Filed Aug. 10, 1905. Serial No. 273,536.

Claim.—1. In raising and lowering mechanism, a support, an intermittingly driven worm shaft and worm, a pair of oppositely driven sprocket wheels on said shaft adapted to have a clutch engagement with said worm, and an endless belting provided with means for automatically controlling the sprocket wheels and thereby the direction of rotation of the worm shaft and worm aforesaid.

2. In raising and lowering mechanism, a support, an intermittingly driven worm shaft and worm, a pair of oppositely driven sprocket wheels on said shaft adapted to have a clutch engagement with said worm, a pair of levers connected with the said sprocket wheels, and an endless belting provided with means for controlling the movement of said levers and thereby the direction of rotation of said worm shaft and worm.

3. In raising and lowering mechanism, a worm shaft and worm, a pair of continuously and oppositely driven sprocket wheels on said shaft adapted to have clutch connection with said worm, a lever in connection with each of said sprocket wheels, and means operating at predetermined intervals for actuating said levers to check the movement of said worm shaft and worm.



4. In raising and lowering mechanism, a worm shaft and worm, a pair of continuously and oppositely driven sprocket wheels on said shaft adapted to have clutch connection with said worm, a lever in connection with each of said sprocket wheels, and an endless belting in operative connection with said levers for automatically actuating the same to check the movement of said worm shaft and worm.

5. In raising and lowering mechanism, a worm shaft and worm, a pair of continuously and oppositely driven sprocket wheels on said shaft adapted to have clutch connection with said worm, a lever in connection with each of said sprocket wheels, a drum shaft and drum in operative connection with the worm and its shaft, and an endless belting in operative connection with said levers for automatically actuating the same to check the movement of said worm shaft and worm.

6. In raising and lowering mechanism, a worm shaft and worm, clutch controlled mechanism for operating said worm and its shaft, and carried on said worm shaft a drum shaft and drum, a worm wheel on said drum shaft in operative connection with said worm, mechanism in operative connection with said clutch controlled mechanism for reversing and checking the movement of said worm shaft, and means in operative connection with the drum shaft for automatically and at predetermined intervals actuating said last mentioned mechanism for checking the movement of the worm shaft.

7. In raising and lowering mechanism, a worm shaft and worm, mechanism adapted to have clutch connection with the worm and its shaft, a drum shaft and drum, a worm wheel on said drum shaft in operative connection with said worm, a pair of levers in operative connection with said mechanism for operating the worm, a reciprocal bar for actuating said levers, and means operated by the drum shaft for automatically and at predetermined intervals actuating said reciprocal bar for shifting said levers.

8. In raising and lowering mechanism, a worm shaft and worm, mechanism adapted to have clutch connection with the worm and its shaft, a drum shaft and drum, a worm wheel on said drum shaft in operative connection with said worm, a pair of levers in operative connection with said mechanism for operating the worm, a reciprocal bar connecting said levers, an endless belting and means carried thereby adapted to engage the bar aforesaid for shifting said levers in opposite directions and at predetermined intervals.

9. In raising and lowering mechanism, a worm shaft and worm, mechanism adapted to have clutch connection with the worm and its shaft, a drum shaft and drum, a worm wheel on said drum shaft in operative connection with said worm, a pair of levers in operative connection with said mechanism for operating the worm, a reciprocal bar connecting said levers, an arm extending up from said bar, an endless belting and means carried thereby adapted at predetermined intervals to engage the arm aforesaid for shifting said bar and thereby the levers connected thereto.

10. In raising and lowering mechanism, a worm shaft and worm, mechanism adapted to have clutch connection with the worm and its shaft, a drum shaft and drum, a worm wheel on said drum shaft in operative connection with said worm, a pair of levers in operative connection with said mechanism for operating the worm, a reciprocal bar connecting said levers, an arm formed with a loop attached to said bar, an endless chain operated by said drum shaft movable through the loop of the arm, and a pair of lugs spaced at intervals apart on said chain adapted to alternately engage the arm aforesaid for shifting said bar to shift the said levers.

11. In an apparatus of the class described, the combination of a drum shaft and a drum, a chain operated by the drum having two diverging sections adapted to be looped about the hubs of the opposite wheels of a wagon, an intermittingly revoluble shaft for actuating the drum shaft and drum, driving mechanism adapted to have clutch connection with said revoluble shaft, and means for controlling the drive mechanism to check the movement of the revoluble shaft.

12. In an apparatus of the class described, the combination of a drum shaft and a drum, a chain operated by the drum having two diverging sections adapted to be looped about the hubs of the opposite wheels of a wagon, an intermittingly revoluble shaft for actuating the said drum shaft and drum, driving mechanism adapted to have clutch connection with said revoluble shaft, clutch levers for controlling the connection of such drive mechanism to said shaft, and means operated by the drum shaft for shifting said levers at predetermined intervals.

13. In an apparatus of the character described, the combination of a drum shaft and a drum, a chain operated by the drum having two diverging sections adapted to be looped about the hubs of the opposite wheels of a wagon, an intermittingly revoluble shaft for actuating the said drum, driving mechanism adapted to have clutch connection with said revoluble shaft, clutch levers for controlling the connection of such drive mechanism to said shaft, and an endless belt carrying means for operating said levers at predetermined intervals to disconnect such drive mechanism from its shaft.

14. In an apparatus of the character described, the combination of a drum shaft and a drum, a chain operated by the drum having two diverging sections adapted to be looped about the hubs of the opposite wheels of a wagon, an intermittently revoluble shaft for actuating said drum shaft and drum, driving mechanism adapted to have clutch connection with said revoluble shaft, clutch levers for controlling the connection of such drive mechanism to said shaft, a bar connecting the free ends of said levers, a hand lever for controlling the movement of said bar, also an endless belt carrying means for operating the said bar and thereby the levers.

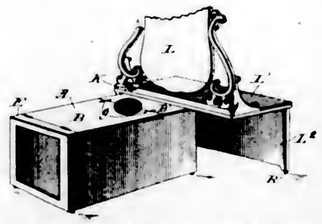
15. In an apparatus of the character described, the combination of a drum shaft and drum, means in connection with the drum and operated thereby adapted to be looped about the hubs of the opposite wheels of a wagon, an intermittingly revoluble shaft in operative connection with the drum shaft, a pair of sprocket wheels loosely carried on said shaft and revoluble in opposite directions, means for driving said wheels, and means for connecting the sprocket wheels to their carrying shaft.

16. In an apparatus of the character described, the combination of a drum shaft and drum, means in connection with the drum and operated thereby adapted to be looped about the hubs of the opposite wheels of a wagon, an intermittingly revoluble shaft in operative connection with the drum shaft, a pair of sprocket wheels loosely carried on said shaft and revoluble in opposite directions, means whereby said wheels may be alternately connected to their carrying shaft, and means for disconnecting the said wheels from their shaft.

17. In an apparatus of the character described, the combination of a drum shaft and a drum, means in connection with the drum and operated thereby adapted to be looped about the hubs of the opposite wheels of a wagon, an intermittingly revoluble shaft in operative connection with the drum shaft, a pair of sprocket wheels loosely carried on said shaft and revoluble in opposite directions, a single drive shaft for both of said wheels, means whereby the wheels may be alternately connected to their carrying shaft, levers in connection with said wheels, and means for operating said levers and thereby connect or disconnect said wheels with their carrying shaft.

18. In an apparatus of the character described, the combination of a support, a divided pulley journaled at or near one end thereof, a drum shaft and a drum, a chain connected to said drum and having diverging sections carried over the pulley aforesaid, and a reversible drive for operating said drum shaft and drum, substantially as described.

853,009. BATH-CABINET. JEANNE E. FRANCOEUR, San Francisco, Cal. Filed Sept. 12, 1905. Serial No. 278,126.



Claim.—1. A bath cabinet comprising a tub having at one end stationary water supply and drain pipes and faucets, and at the other end a pivotal axis, and a piece of furniture having an integral and rigid top and front, the horizontal part of the top fitting close down to the top of the tub, and the vertical part of the front extending down to the bottom of the tub and adapted to rest on the floor, and all being hinged to the pivotal axis of the tub so as to swing over and completely house the tub or be swung away from the same to permit the tub to be used.

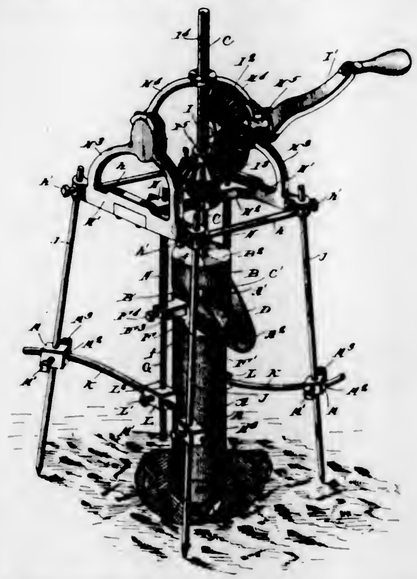
2. A combined bath tub and wash stand consisting of a tub having permanent water supply and drain pipes at one end and having at the same end on one side a stationary wash bowl with stationary drain pipe passing out therefrom through the tub and separate faucets for the wash basin, and having at the same end of the tub hot and cold water inlets to supply the tub proper.

3. A bath cabinet having a shower attachment consisting of a conical shield open at both ends, a flexible hose bearing a conical sprinkler fitting the small end of the conical shield and means for locking the two together.

853,010. POST-HOLE DIGGER. DAVIE A. GRAY, Chattanooga, Tenn. Filed Oct. 27, 1906. Serial No. 340,846.

Claim.—1. The combination substantially as herein described of the top frame having vertical bearings for a main shaft, legs, means for securing the upper ends of the legs adjustably to the top frame, connecting rods extending between the legs at the opposite sides of the machine, means for adjustably connecting the said connecting rods with their respective legs, guide blocks on the connecting rods and having openings for upright guide rods, upright guide rods in said openings and extending between the

blocks and the top frame, springs on said guide rods, a main shaft journaled in and movable vertically within the top frame, gearing in the top frame for driving said shaft, said main shaft being composed of upper and lower sections, a casing encircling the lower end of the main shaft and having a cap provided with a top plate within which the coupling between the upper and lower sections of the main shaft is fitted, a base ring at the lower end of the main shaft and having a crossbar, flights on the lower section of the main shaft bearing above said crossbar, a cutter on the main shaft below the said crossbar, said flights and the cutter operating to prevent independent endwise movement of the main shaft and casing, and a clamping band on the casing and having lateral lugs fitting on the guide rods below the springs thereon, all substantially as and for the purpose set forth.



2. The combination in a machine substantially as described of a top frame, a main shaft journaled therein, gearing within the main top frame for driving the main shaft, said shaft being provided at its lower end with a cutter and above the same with conveyer flights for lifting the cut material, a casing encircling the lower portion of the main shaft and movable longitudinally therewith, guide rods connected with the top frame and along which the casing is movable longitudinally, springs for giving a downward pressure to the casing, legs connected with the top frame and connecting rods between the legs at the opposite side of the machine and having means for limiting the downward movement of the casing, substantially as set forth.

3. A machine substantially as described having a main shaft, a casing encircling the same, a base ring at the lower end of the casing and having a crossbar, a main shaft having conveyer flights above the crossbar, and a cutter on the main shaft below the crossbar and having lateral extensions or wings underlying the base ring, and means for operating the main shaft, substantially as set forth.

4. The combination of a casing, a cap fitting and secured on the upper end thereof and having a top plate provided with an opening for a main shaft, the casing having a lateral spout below the said cap, a main shaft having upper and lower sections coupled within the opening in the top plate of the cap, a cutter at the lower end of the main shaft, and flights on said shaft above the said cutter and within the casing, and means for operating the main shaft, substantially as set forth.

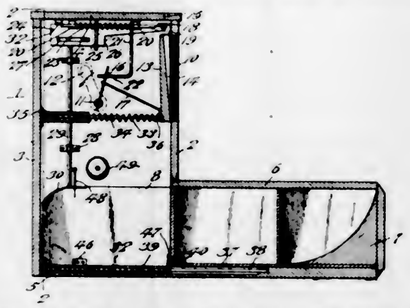
5. The combination of a top frame, legs for supporting said frame and adjustably connected therewith, a main shaft journaled in and movable vertically within the top frame and having at its lower end a cutter, and a conveyer flight above the same, a barrel or casing encircling the lower end of the main shaft and movable vertically therewith, means for operating the main shaft, guide devices for the barrel or casing whereby the same may be moved vertically and be held from turning, and means supported on the legs for limiting the longitudinal movement of the barrel or casing, substantially as described.

6. The combination of a top frame, legs for supporting the same, a main shaft movable vertically within the top frame and having a cutter at its lower end, a barrel or casing encircling the lower portion of the main shaft and movable longitudinally therewith, connecting rods between the legs at the same side of the machine and limiting the longitudinal movement of the barrel or casing, and means for securing the said connecting rods in different positions along their respective legs, substantially as set forth.

7. The combination with the top frame and its legs, of a main shaft, a barrel or casing encircling the main shaft and movable longitudinally therewith, connecting rods between the legs at the same side of the machine, joint blocks adjustable vertically along the legs and having lateral openings within which the connecting rods are secured and clamping screws for securing said blocks to the legs and to the connecting rods, substantially as set forth.

8. The combination with the casing and its base ring having a crossbar, of a main shaft extending through the crossbar, a cutter on the main shaft below the crossbar, and conveyer flights on the main shaft above the crossbar, and means for operating the main shaft, substantially as set forth.

853,011. CASH-REGISTER. ARTHUR H. GREEN, Portsmouth, N. H. Filed Oct. 24, 1906. Serial No. 340,377.



Claim.—1. In a device of the class described, a box or casing having a transparent panel and provided with an inlet slot, a movable check holder arranged beneath the slot in rear of the panel, a movable shield disposed beneath the slot and over the check holder, a drawer mounted in the casing for movement to open position, a locking member for holding the drawer in closed position, an operating shaft journaled in the casing, and operative connections between the shaft, check holder, shield and locking member adapting the shaft for simultaneously operating all of said parts.

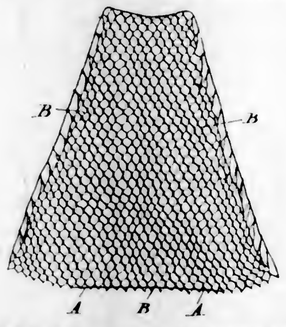
2. In a device of the class described, a box or casing provided with an inlet slot, a movable check holder sustained in the casing beneath said slot, a movable shield arranged between the slot and check holder, an arm connected with the shield and having a slot, a shaft journaled in the casing and having a crank arm extended through said slot, a link connection between the crank arm and check holder, a drawer mounted in the casing for movement to open position, a locking member for holding the drawer in closed position, and operative connections between said locking member and shaft.

3. In a device of the class described, a box or casing provided with an inlet slot, a movable check holder sustained beneath the slot, a slotted hanger fixed in the casing, a movable shield arranged beneath the slot, a locking member attached to the shield and sustained in the hanger, said locking member having a portion to engage the hanger for locking the shield in inactive position, a drawer mounted in the casing for movement to open position, a plunger operatively connected with the locking member and operable by the drawer for moving said member to releasing position, and means for automatically moving the shield to active position when released.

4. A shock compressor comprising a spear having flexible binding members secured at one end to the shaft of the spear and having stops at their free ends, said spear having grooves or slits formed in its opposite sides near its pointed end to receive the free ends of said binding members.

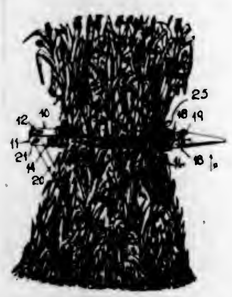
5. A shock compressor comprising a spear having a handle pivoted to one end thereof and a piercing point at its other end, a flexible binding element passed transversely through said spear near its handle end and having stops at the opposite sides of said spear and means near the pointed end of said spear for engaging the free ends of said binder element.

853,012. HAIR-NET. GEORGE GRUMBAR, London, England. Filed Aug. 31, 1906. Serial No. 332,851.



Claim.—A hair net, comprising a V-shaped body formed of mesh material, and a thread connected to the mesh at the enlarged end portion of the V-shaped body, said thread being of less length than the width of the enlarged end portion of the body.

853,013. CORN-SHOCK COMPRESSOR. LEWIS C. GUTTERY, Lebanon, Ohio. Filed Dec. 3, 1906. Serial No. 346,100.

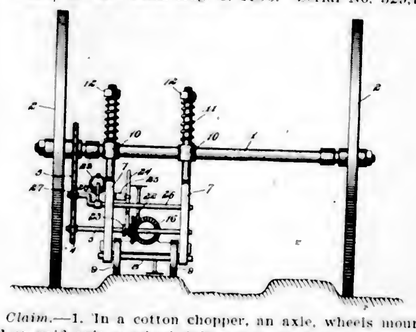


Claim.—1. A shock compressor comprising a spear having flexible binding members secured at one end to the shaft of the spear and means near the point of the spear for engaging the free ends of said binding members.

2. A shock compressor comprising a spear having flexible binding members secured at one end to the shaft of the spear and means near the other end of the spear for engaging the free ends of said binding members and a handle pivoted to the shaft of said spear.

3. A shock compressor comprising a spear having flexible binding members secured at one end to the shaft of the spear and means near the point of the spear for engaging the free ends of said binding members, said spear having spaced apertured lugs at the end of the shaft and a handle pivoted between said lugs.

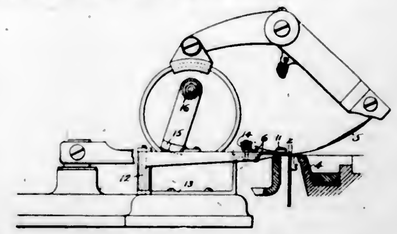
853,014. COTTON-CHOPPER. DAVID H. HAZLETT, Dendron, Va. Filed Aug. 8, 1906. Serial No. 329,759.



Claim.—1. In a cotton chopper, an axle, wheels mounted on said axle, a wheeled frame mounted on springs supported upon collars connected to said axle, a shaft passing through said frame, a sprocket wheel on said shaft, a sprocket wheel on said axle, a chain passing around said sprocket wheels, and a weighted belt tightener for tightening the sprocket chain as the wheeled frame rises in passing over uneven ground, substantially as described.

2. In a cotton chopper, an axle, wheels journaled to said axle, a frame comprising upright bars mounted to slide in keepers secured to the axle, springs surrounding said bars to yieldingly support the same, wheels secured to an axle journaled in said bars, said wheels adapted to bear upon the ground, a beveled gear on a shaft mounted in said frame, a sprocket wheel secured to said shaft, a chain passing around said sprocket wheel, a crank shaft journaled in said bars, a sprocket wheel on said crank shaft, a weight secured to said shaft for automatically tightening the chain to compensate for the yielding action of the frame, a chopper shaft, a beveled gear thereon, means for engaging and disengaging the beveled gears, and a sprocket wheel on the axle over which said chain passes, substantially as described.

853,015. MACHINE FOR SEWING LOOPED FABRICS. JOHN B. HIPWELL, Reading, Pa., assignor to Windsor Machine Co., Reading, Pa., a Corporation. Filed Oct. 16, 1905. Serial No. 282,921.

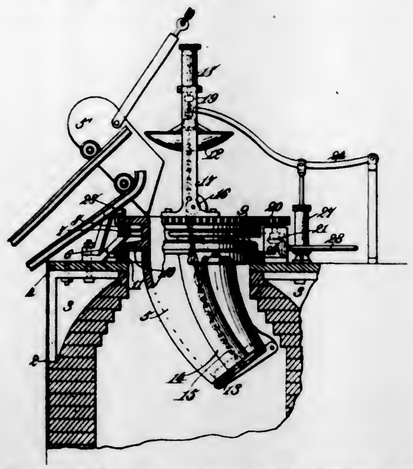


Claim.—1. In a looping machine the combination with the fabric-carrying pins and stitch-forming mechanism

comprising a reciprocating needle and a looper, of a reciprocating slacking finger and operating means whereby said finger is caused to move laterally into each successively formed loop at a point remote from the fabric, to receive the loop directly from the looper and to limit the closing of the same by the tightening movement of the needle to a determined length from the fabric until withdrawn therefrom by the reverse finger movement, said finger constituting the sole holding means for the loop during the tightening thereof substantially as set forth.

2. In a looping machine the combination with the fabric-carrying pins and stitch-forming mechanism comprising a reciprocating needle and a looper, of an adjustable reciprocating finger and adjustable operating means whereby said finger is caused to move laterally into each successively formed loop at a regulated distance from the butts of said pins, to receive the loop directly from the looper, and to hold the same for a regulated time during the tightening movement of the needle, said finger constituting the sole holding means for the loop during the tightening thereof substantially as set forth.

853,016. BLAST-FURNACE-CHARGING APPARATUS. GUY R. JOHNSON, Clarksville, Tenn. Filed Oct. 1, 1906. Serial No. 337,038.



Claim.—1. The combination of a blast furnace, a revoluble spout extending into said blast furnace, a valve hinged to the lower end of the spout, chains connected with the valve, pipes carried by the spout through which said chains extend, means for operating the chains in a direction to close said valve to cause it to support a mass in the spout, said valve when opened serving to release said mass, and a second valve supported independently of the spout and closable against the upper end thereof above the mass therein and to constitute a seal for said spout.

2. The combination of a blast furnace, a revoluble spout extending into said blast furnace, a valve mounted at the lower end of the spout, connecting means extending from the valve to a point exterior of the furnace, and means acting against said connecting means at a place outside of the furnace for holding the valve closed.

3. The combination of a blast furnace, a revoluble spout extending into said blast furnace, a valve mounted at the lower end of the spout, chains connected with the valve, means acting against the chains outside the spout to hold the valve closed, and a second valve operable between the chains to close the spout, a charge of material being contained within the spout between the valves.

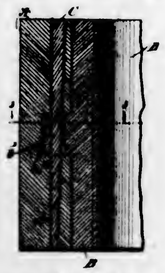
4. The combination of a blast furnace, a revoluble charging spout extending thereinto, a drop-down valve hinged to the spout, means connected with the valve and extending therefrom to a point outside the furnace, and mechanism for acting against said means to hold said valve closed or to release the same.

5. The combination of a blast furnace, a revoluble charging spout extending thereinto, a drop-down valve hinged to the spout in the furnace, chains connected with the valve and extending therefrom to a point outside the furnace, means acting against said chains to hold the valves closed or to release the same, and a dished valve supported between the chains and mounted to move against the outer end of the spout to close the same.

6. The combination of a blast furnace, a revoluble charging spout extending into said furnace, a drop-down valve hinged to said spout, within the furnace, and means disposed exteriorly of the furnace for controlling the operation of said valve.

7. The combination of a blast furnace, a revoluble charging spout extending into the blast furnace and for containing material to charge the same, and means operable at will for retaining the material in the spout or for discharging the same, the revolution of the spout serving to effect the supply of the material at different points.

853,017. CAR-COUPLING. ALBERT M. KNAPP, Portland, Oreg. Filed Feb. 21, 1907. Serial No. 358,539.



Claim.—1. The combination, with a knuckle having a vertical recess whose sides are inclined outward, and a small central recess extending inward from the main recess, and a key-seat in rear of the main recess but alined with the central one, of a filling and wear-piece whose sides are inclined corresponding to the main recess, and provided on its back with an apertured lug which extends rearward a less distance than the depth of the central recess in the knuckle, and a wedge-key adapted for insertion in the key-seat in the knuckle and through the coincident opening in the lug of the wear-piece, as shown and described.

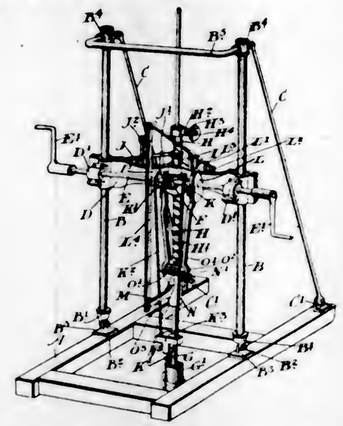
2. The combination, with a knuckle having its nose provided on the inner side with a vertical recess having a flat back and outwardly inclined sides, a central recess extending inward from the main one and having also inclined sides, and a vertical key-seat formed in rear of the main recess and in alinement with the central one, of the wear-piece having a flat back and inclined sides, and a lug provided with a central aperture and having inclined sides, and a key for securing the wear-piece in place, substantially as described.

853,018. DRILLING OR BORING MACHINE. HENRY J. LAMB, London, and ALEXANDER K. KIRKPATRICK, Kingston, Ontario, Canada. Filed July 16, 1906. Serial No. 326,469.

Claim.—1. In a drilling machine, the combination with standards suitably supported and a cross bridge extending between the same, of a sleeve extending through the cross bridge and provided with inwardly extending bosses, a hollow shaft fitting within the sleeve and provided with a spiral groove into which the bosess extend, a drill stock extending through the hollow shaft and provided with a suitable bit and suitably held in the hollow shaft and

means for driving the sleeve as and for the purpose specified.

2. In a drilling machine, the combination with standards suitably supported and a cross bridge extending between the same, of a sleeve extending through the cross bridge and provided with inwardly extending bosses, a hollow shaft fitting within the sleeve and provided with a spiral groove into which the bosses extend, a drill stock extending through the hollow shaft and means for removably securing the stock in the hollow shaft, and means for driving the sleeve.



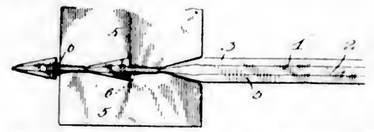
3. In a drilling machine, the combination with standards suitably supported and a cross bridge extending between the same said bridge having a slot therein, of a sleeve extending through the cross bridge and provided with inwardly extending bosses, a hollow shaft fitting within the sleeve and provided with a spiral groove into which the bosses extend, a drill stock extending through the hollow shaft and suitably held therein, a worm wheel secured on the sleeve and located in the slot in the bridge, a cross shaft supported in bearings in the bridge and provided with suitable crank handle and a worm secured on the cross shaft meshing with the worm wheel as and for the purpose specified.

4. The combination with standards and a bridge and a drill stock and a hollow shaft through which the stock extends, of a cross bar, depending hangers connecting the cross bar to the bridge, said bar having depending lugs, a sleeve located on the drill stock and provided at the upper end with friction dogs designed to engage with the stock, said dogs having tails and means for raising the sleeve for bringing the tails of the dogs into engagement with the depending lugs of the cross bar as and for the purpose specified.

5. The combination with standards and a bridge and a drill stock and a hollow shaft through which the stock extends, of a cross bar, depending hangers connecting the cross bar to the bridge, said bar having depending lugs, a sleeve located on the drill stock and provided at the upper end with friction dogs designed to engage with the stock said dogs having tails, a crank shaft journaled in bearings on the bridge a cam secured on the crank shaft, a lever fulcrumed on the bridge and provided with a depending intermediate portion designed to ride on the cam, and a rod connecting the outer end of the lever with the sleeve on the drill stock so as to raise the sleeve whereby the tails on the dogs will engage with the depending lugs of the cross bar and said dogs will be turned to release the stock.

6. The combination with standards and a bridge and a sleeve extending through the bridge and provided with inwardly extending bosses and an upper external annular groove, of a hollow shaft provided with an external spiral groove, with which the bosses engage, a drill stock extending through the hollow shaft, means for securing the stock to the shaft, a bracket on the bridge, a lever pivoted on said bracket and designed to engage with the annular grooves at the upper end of the sleeve to shift said sleeve longitudinally, a worm wheel loose on said sleeve, means for rotating said worm wheel and a key for connecting the said wheel to the sleeve in one position of the sleeve.

853,019. HORSESHOE-CALK AND PROCESS OF MAKING THE SAME. CHRIST LUDVIGSEN and ERIC LUDVIGSEN, Jackson, Minn. Filed Mar. 15, 1906. Serial No. 306,283.

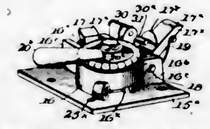


Claim.—1. The process of making a plurality of horse shoe calks in one operation which consists in first forming a bar of a width to correspond with the length of the calks to be formed by welding together a plate of steel between two plates of iron, then passing the so formed bar between the shaping dies to form a connected series of calks with an attaching lug formed on the top edge of each, then shearing said so formed calks from said bar and dressing them for use.

2. A series of horse shoe calks formed in and adapted to be cut from a bar, said bar consisting of outer layers of iron and an inner layer of steel welded together and pressed into shape to form said calks.

3. The process of making horse shoe calks which consists in first forming a bar by welding together a plate of steel between two plates of iron, said plates being of a width to correspond with the length of the calks to be formed, then passing the so-formed bar between shaping dies to form a connected series of calks, and then shearing said so-formed calks from said bar.

853,020. WINDOW-FASTENER. JAMES W. LYON, Evanston, Ill. Filed Aug. 29, 1906. Serial No. 332,479.



Claim.—1. A sash fastener comprising a base plate having upwardly projecting ears and a stud, a catch pivoted between the ears and arranged to swing up and down and having its outer end projecting beyond the plate to engage an adjacent sash or casing, and a cam plate rotatable on the stud, the inner end of the catch projecting under the cam which bears thereon.

2. A sash fastener comprising a base plate having an upwardly projecting stud, a cam rotatable on the stud and having its cam surface on its under side, a catch pivoted on the base plate and having an outer engaging end and an inner end projecting under the cam surface, and a turning plate on the stud under the cam, having a projection which may be turned under the inner end of the catch, to lock it against movement.

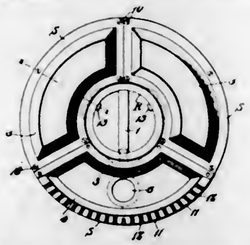
3. A sash fastener comprising a base plate, a pair of pivoted catches thereon extending at a right angle to each other in position to engage at their outer ends an adjacent sash and window casing respectively, and a cam pivoted on the base plate and under which the inner ends of the catches extend.

4. A sash fastener comprising a base plate, a pivoted catch thereon arranged to swing up and down and having an outer end extending beyond the edge of the plate in position to engage an adjacent casing and prevent move-

ment in one direction, means to depress the inner end to release the catch, and another catch pivotally mounted on the plate and extending beside the said catch at a different angle and adapted to engage the casing and prevent movement in the opposite direction and having a projection arranged to be struck by the said catch, to simultaneously release both.

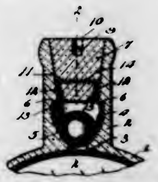
5. A sash fastener comprising a base plate having a circular casing thereon with a stud at the center, the casing having openings at a right angle in its sides, a pivoted catch in each opening, extending at their outer ends beyond the edges of the plate and at their inner ends within the casing, a cam on the stud, having its cam surface on the under side bearing on the inner ends of the catches, and a turning locking plate on the stud under the cam and having a projection which may be moved under the inner end of a catch to prevent depression thereof and a finger piece extending through a slot in said casing.

853,021. GAS-BURNER. JOHN L. MALONEY and EDWARD S. SPRINGER, Leavenworth, Kans. Filed Apr. 5, 1906. Serial No. 310,121.



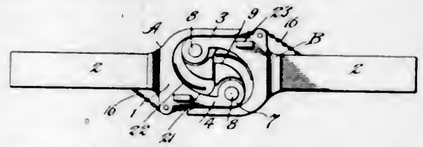
Claim.—In a gas burner, the combination with a ring, a plurality of segmental burner sections arranged around the periphery of the ring and having radially extending abutting ends, and means for detachably connecting each section to the ring and for supporting the ring on the sections, said means comprising a horizontally extending hook on each section at the middle thereof, shoulders on opposite sides of the hook, vertically extending notches in one end of the ring for interlocking with the hook, and outwardly extending lugs on the ring with which the said shoulders engage.

853,022. BOTTLE-CLOSURE. ERNEST J. MERRILL, and JOHN W. DE LONG, Ironton, Ohio. Filed Apr. 24, 1906. Serial No. 313,414.



Claim.—The herein described bottle provided with a valve seat, the passage of the bottle neck above said seat being enlarged to provide a chamber terminating at the upper portion in an undercut shoulder, a valve mounted within the chamber, a guard fitted within the neck of the bottle at a point above the valve, said guard being provided with longitudinally inwardly and upwardly extending passages terminating in a single vertical passage extending through the upper end of said guard, said guard being also provided with a transverse slot and side grooves, which latter taper outwardly and upwardly, and a locking member consisting of a cross piece located in said slot, and side members located in said side grooves, said side members having their lower ends bent outwardly to engage said shoulder.

853,023. CAR-COUPLING. OLIN P. MONCRIEF, Trussville, Ala. Filed Oct. 31, 1906. Serial No. 341,477.



Claim.—1. A car coupler comprising a draw head having opposite slotted arms and a chamber shank, a knuckle pivoted upon the outer end of one of the arms and provided with a tail piece arranged to swing in the slot thereof, a slotted latch device vertically movable upon said arm for coöperation with the tail piece, a spring within the chambered shank for resisting opening movement of the knuckle and returning the same to normal position, and a flexible connection arranged upon one side of the coupler and connecting the spring with the tail piece.

2. A coupler comprising a draw head having opposite slotted arms and a chambered shank provided with an opening in one side thereof, a knuckle pivotally mounted upon one of said arms and having a tail piece movable in the slot thereof, a spring secured at one end within the chamber in the draw head, a connection between said spring and the tail piece, said connection working through said opening in the side of the shank, and a latch device vertically movable on the slotted knuckle supporting arm for coöperation with said tail piece.

3. A coupler comprising a draw head, a knuckle pivoted thereto, spring means for automatically restoring the knuckle to normal position, and a spring upon the face of the draw head to cushion the inward movement of the knuckle.

4. A car coupler comprising a draw head having opposite slotted arms and a shank provided with a chamber therein, a cover closing the chamber and provided with an opening, a knuckle pivotally mounted upon one of said slotted arms and provided with a tail piece movable within the slot therein, a slotted latch bar slidably mounted upon said arm for coöperation with said tail piece, a coiled retractile spring secured at one end within the chamber, a flexible connection between the opposite end of the spring and the tail piece of the knuckle, said connection being movable through said opening in the cover and extending outwardly on one side of the draw head, and anti-friction guides for said connection.

5. A coupler comprising a draw head, a knuckle pivotally mounted thereon, a spring for retracting the knuckle, and an independent spring directly mounted upon the end of the draw head for cushioning the inward movement of the knuckle.

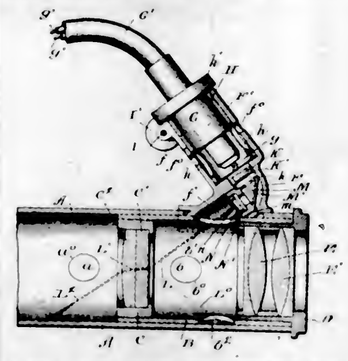
6. In a car coupler, a draw head, a knuckle pivotally mounted thereon, controlling means for the knuckle, and a spring upon the face of the draw head arranged to be engaged by the jaw of the knuckle on the inward swinging movement of the latter for cushioning said knuckle in such movement.

853,024. SIGHT FOR ORDNANCE. HENRY C. MUSTIN, Washington, D. C., and GEORGE N. SAEGMULLER, Rochester, N. Y.; said Mustin assignor to said Saegmuller. Filed Apr. 17, 1906. Serial No. 312,212.

Claim.—1. In a sight for ordnance, the combination with a reticule, of means for throwing a pencil of approximately parallel rays of light on a limited portion of said reticule and at an angle to the line of sight, said means comprising an incandescent lamp and a fixed ground glass plate independent of the lamp substantially as described.

2. In a sight for ordnance, the combination with a telescope tube containing a reticule, of means carried by said tube for illuminating a limited portion of said reticule, said means comprising an incandescent lamp and a fixed ground glass plate independent of the lamp substantially as described.

3. In a sight for ordnance, the combination with a telescope tube, of a reticule mounted in said tube, and means for throwing a pencil of approximately parallel rays of light on a portion only of said reticule, and at an angle to the line of sight, said means comprising an incandescent lamp and a fixed ground glass plate independent of the lamp substantially as described.



4. In a sight for ordnance, the combination with a telescope tube, of a reticule mounted in said tube, means for illuminating a portion only of said reticule, said means comprising an incandescent lamp, and a fixed translucent plate independent of the lamp and means for varying the intensity of said illumination, substantially as described.

5. In a sight for ordnance, the combination with a telescope tube, of a reticule mounted in said tube, and means for throwing an approximately parallel pencil of light on a portion only of said reticule and at an angle to the line of sight, said means comprising an incandescent lamp and a fixed ground glass plate independent of the lamp substantially as described.

6. In a sight for ordnance, the combination with a telescope tube, of a reticule mounted in said tube, and means for throwing an approximately parallel pencil of light on a portion only of said reticule and at an angle to the line of sight, said means comprising an incandescent lamp, and a fixed translucent plate independent of the lamp with means for varying the intensity of this bundle of rays of light, substantially as described.

7. In a sight for ordnance, the combination with a telescope tube containing a reticule, of a socket piece carried by said tube, an incandescent lamp carried by said socket piece, a ground glass plate in front of said lamp and means for transmitting a limited portion of the rays of said lamp to a limited portion of said reticule, substantially as described.

8. In a sight for ordnance, the combination with a telescope tube containing a reticule, of a socket piece carried by said tube, an incandescent lamp carried by said socket piece, a ground glass plate in front of said lamp and means for transmitting a limited portion of the rays of said lamp to a limited portion of said reticule, and at an angle to the line of sight, substantially as described.

9. In a sight for ordnance, the combination with a telescope tube, of a reticule mounted in said tube, and means for throwing an approximately parallel pencil of light on a portion only of said reticule, comprising an incandescent lamp, a ground glass plate in front of said lamp, a series of diaphragms, a reflector, and a lens, substantially as described.

10. In a sight for ordnance, the combination with a telescope tube, of a reticule mounted in said tube, and means for throwing an approximately parallel pencil of light on a portion only of said reticule, comprising an incandescent light, a ground glass plate in front of said light a series of diaphragms, a reflector, and a lens, with means for varying the intensity of the light thrown on said reticule, substantially as described.

11. In a sight for ordnance, the combination with a telescope tube containing a reticule, of a socket piece carried by said tube, an incandescent lamp carried by said socket piece, and means for transmitting a limited portion of the rays of said lamp to a limited portion of said reticule, comprising a series of perforated diaphragms, a reflecting prism, and a lens, substantially as described.

12. In a sight for ordnance, the combination with a telescope tube containing a reticule, of a socket piece carried by said tube, an incandescent lamp adjustably mounted in said socket piece, and means for transmitting a limited portion of the rays of said lamp to a limited portion of said reticule, and at an angle to the line of sight, comprising a series of perforated diaphragms, a reflecting prism, and a lens, substantially as described.

13. In a sight for ordnance, the combination with a telescope tube, of a reticule mounted in said tube, and means for throwing a bundle of parallel rays of light on a portion only of said reticule, comprising an incandescent lamp, a series of diaphragms, a right angle prism, and a plano-convex lens, substantially as described.

14. In a sight for ordnance, the combination with a telescope tube, of a reticule mounted in said tube, and means for throwing an approximately parallel pencil of light on a portion of said reticule, comprising an incandescent lamp, a series of diaphragms, a reflecting prism, and a plano-convex lens, with means for varying the intensity of the light thrown on said reticule, substantially as described.

853,025. SAFETY OR RESTRAINING DEVICE. MABEL E. MCCALMONT, Warren, Pa. Filed Dec. 17, 1906. Serial No. 348,188.



Claim.—1. A restraining device comprising a holder for a terminal member, a fastening device for securing said holder on the terminal member, and a restraining strap connected with said holder and having a loop to pass around the limb of a patient, and a keeper in which the strap slides freely whereby the loop may be tightened by stress upon the restraining strap and will loosen or slacken when such stress is released, substantially as set forth.

2. A restraining device comprising a holder adapted to receive a terminal member, a strap for securing the holder upon the terminal member, and a restraining strap connected with said holder for limiting the movements of a terminal member secured in the holder restraining strap having a loop to pass around the member and adapted to tighten and slack with variations in stress on the strap, substantially as set forth.

3. A restraining device comprising a holder for a terminal member, means for securing the holder upon said member, and a restraining strap connected with the holder and having a looped portion to pass around the limb of a patient, and a keeper in which said restraining strap slides, whereby the loop will tighten under stress on the

restraining strap and may slacken when the stress is released, substantially as set forth.

4. A restraining device comprising a holder for a terminal member, a restraining strap connected with said holder and having a loop and a keeper through which the strap slides freely in both directions whereby the loop may be tightened or slackened by variations in stress on the strap, and means independent of the restraining strap for securing the holder upon the terminal member of a patient, substantially as set forth.

5. A restraining device having a comparatively stiff palm plate and a mitten fitted removably thereon to hold the hand to the palm plate, and means for securing the holder upon a patient's hand, substantially as set forth.

6. In a restraining device, a hand holder comprising a comparatively stiff plate against which the hand may rest flatwise, a mitten slipped over said plate to restrain the hand, and means for securing the holder upon a patient's hand, substantially as set forth.

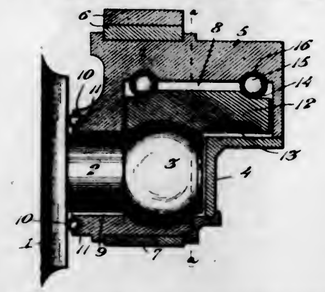
7. In a restraining device, a hand holder comprising a comparatively stiff plate, a mitten for holding a patient's hand to said plate, a strap for securing the holder upon the hand, and a restraining strap connected with the holder, substantially as set forth.

8. In a restraining device, a hand holder comprising a comparatively stiff plate against which the hand may rest flatwise, a mitten slipped over the said plate for retaining the hand, strings for securing the mitten to the plate, a draw string for closing the open end of the mitten, and means for securing the holder upon a patient's hand, substantially as set forth.

9. In a restraining device, a hand holder comprising a comparatively stiff plate, a wrist strap secured to the plate for fastening the same upon a patient's hand, a restraining device also connected with the plate, and a mitten for holding the hand of a patient to the plate, substantially as set forth.

10. In a restraining device, a holder for a terminal member, comprising a body portion, an instep strap, and an ankle strap in connection therewith, and a restraining strap secured to the body portion and having a loop and a keeper through which the strap slides, substantially as set forth.

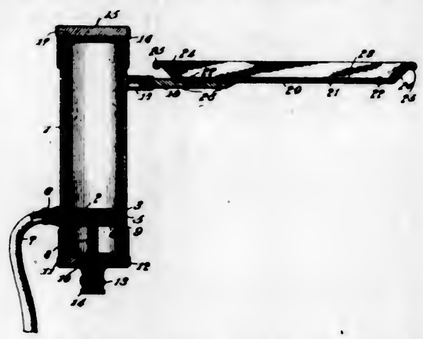
853,026. JOURNAL-BOX. WILLIAM W. NEIGHBOUR, Denison, Tex. Filed June 13, 1906. Serial No. 321,488.



Claim.—1. The combination with a wheel journal having a rounded head, of a box adapted to receive the journal for rotation, a cap plate arranged loosely and for rotation in the box at one side of the journal and having a depression in which the rounded head travels, and antifriction devices arranged between the cap plate and adjacent wall of the box.

2. The combination with a wheel journal having a rounded head, of a box adapted to receive the journal for rotation, a rotary bearing plate arranged loosely in the box at one side of the journal and having a depression in which the head travels, antifriction devices arranged between the bearing plate and adjacent wall of the box, and antifriction devices disposed between the wheel hub and box around the journal.

853,027. FLASH-LIGHT LAMP. HORACE F. NEUMEYER, Macungie, Pa. Filed Sept. 12, 1906. Serial No. 334,302.



Claim.—1. In a flash-light apparatus, the combination with a cylinder having an open end, of a cap adjustably mounted onto the said open end and having an arcuate discharge passage formed in the side wall of the cap and communicating with the interior of the cylinder, and means for expelling the contents through the discharge passage, the said discharge passage being covered by the contiguous wall of the cylinder through the inward adjustment of the cap.

2. In a flash-light apparatus, the combination with a cylinder having an open end, of a cap adjustably mounted onto the said open end and having an upwardly inclined discharge passage formed in the side wall of the cap and communicating with the interior of the cylinder, and means for expelling the contents of the cylinder through the discharge passage, the said discharge passage being covered by the contiguous wall of the cylinder through the inward adjustment of the cap.

3. In a flash-light apparatus, the combination with a cylinder having an open end, of a cap adjustably mounted onto said open end and having a discharge passage formed in its side wall, a pan, means for attaching the pan to the cylinder below the discharge passage, the said discharge passage being covered by the contiguous wall of the cylinder through the inward adjustment of the cap.

4. In a flash-light apparatus, the combination of a magazine having a discharge orifice, of an air supply conduit mounted in the magazine, and a closure cap for the conduit adjustably mounted on the magazine to open and close the discharge end of the conduit.

5. In a flash-light apparatus, the combination with a magazine having a discharge passage, of an air supply conduit mounted in the magazine and provided with an internal discharge opening terminating beyond one end of the magazine, and a closure cap movably mounted on said end and adapted to open and close the discharge opening.

6. In a flash-light apparatus, the combination with a magazine having a discharge passage, of an air supply conduit mounted in the magazine and provided with an internal discharge opening contiguous to one end of the magazine, and a closure cap movably mounted on said end and adapted to open and close the discharge opening.

7. In a flash-light apparatus, the combination with a magazine having a discharge passage, of an air supply tube having a transverse portion and a vertical portion, the latter being open, and a cap movably mounted on one end of the magazine for closing the open end of the vertical portion of the tube.

8. In a flash-light apparatus, the combination with a magazine, of an interiorly arranged air supply conduit having its discharge opening facing outwardly, and a cap mounted on the magazine and provided with a concavity located in alinement with the discharge opening, said cap constituting means for closing said opening.

9. In a flash-light apparatus, the combination with a magazine having an opening at one end, of an air supply conduit having a projecting discharge tube extending toward the opening, and a cap mounted on the magazine for closing the opening and constituting means for closing the end of the discharge tube.

10. In a flash-light apparatus, the combination with a magazine having an open end, of an air supply conduit connected to the magazine, and a cap mounted on the open end of the magazine and constituting means for closing the air supply conduit.

11. In a magazine, an open-ended magazine provided at each end with a movable cap, a discharge passage located in one of the caps, an air conduit rigidly secured to and within the magazine, the other cap being located on the end of the magazine contiguous to the air conduit, said caps being respectively adapted to prevent the egress of the contents of the magazine and the ingress of air into said magazine.

12. In a flash-light apparatus, an open-ended magazine having a closure cap mounted on each end thereof, an air-conduit rigidly mounted in the magazine, said conduit comprising a horizontal portion having one end fitted upon a stud integral with the wall of the magazine, and the other end passing through the wall at a point diametrically opposite the stud, and terminating in a nipple, and a downwardly extending discharge tube disposed in axial relation to the magazine and connected to the horizontal portion.

13. In a flash-light apparatus, an open-ended magazine having a closure cap mounted on each end thereof, an air-conduit rigidly mounted in the magazine, said conduit comprising a horizontal portion having one end fitted upon a stud integral with the wall of the magazine, and the other end passing through the wall at a point diametrically opposite the stud and terminating in a nipple, and a downwardly extending discharge tube disposed in axial relation to the magazine and connected to the horizontal portion, and a cap threaded on the cylinder and having a recess to receive the lower end of the discharge tube.

14. In a magazine, an open-ended cylinder provided at each end with a movable cap, a discharge orifice located in one of the caps, a substantially T-shaped air-conduit rigidly secured to the wall of the magazine, and a cap located on the other end of the magazine and having an axial concavity for receiving the discharge end of the air conduit.

853,028. FENCE-MACHINE. HENRY R. OBERHOLTZER, Nebraska City, Nebr., assignor, by mesne assignments, to Interlocking Fence Company, Morton, Ill., a Corporation of Illinois. Filed Aug. 31, 1903. Serial No. 171,457.

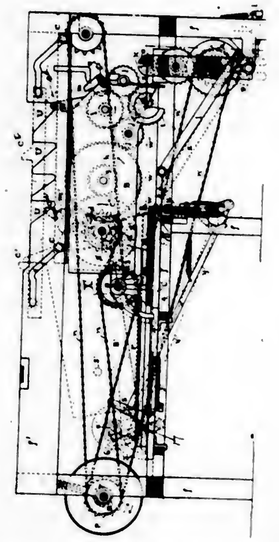
Claim.—1. In a machine of the type set forth, a sliding and oscillating frame, a wire twister mounted therein, means for feeding wire to said twister, means for revolving said twister, and means for simultaneously sliding said frame and elevating one end thereof at predetermined intervals.

2. In combination with a frame, a segmental twister head carried thereby, a detachable spool for feeding wire through said head, means for revolving said head at predetermined intervals, means for sliding and oscillating said frame, the movement of said frame being alternate with the revolving of said head, and cutting means, and means for raising said cutting means for severing the wire fed through said head.

3. In a machine of the type set forth, a segmental twister head, a spool arranged in juxtaposition thereto, said twister head having a slot through which wire is passed from said spool, holders carried by said head, and a spring pressed pin projecting without said twister and co-acting with said holders.

4. In a machine of the type set forth, a frame, means for sliding and raising and lowering said frame, a segmented twister head having spools, an auxiliary twister arranged without and being unconnected to said frame, means for revolving said twisters, divided holders secured to said auxiliary twister, and spring pressed pins bearing against the same, substantially as and for the purpose specified.

5. In a machine of the type set forth, a frame, a plurality of fixed holders, twisters carried by said frame, twisters co-acting with said holders and being immovable with said frame, means for imparting to said twisters an intermittent movement, and means for actuating said frame.



6. In a machine of the type set forth, a movable frame, means for operating the same, a twister carried thereby, means for feeding wire through the twister, a vertically movable holder, means for operating the same, a twister acting in conjunction therewith, shears, and means for operating said shears when the frame reaches one limit of its movement.

7. In a machine of the type set forth, a movable frame carrying a wire twister, means for alternately raising and lowering the frame at predetermined points as it moves in one direction in its course, and means whereby as the frame is brought back to its normal position it travels in an approximately straight plane.

8. In a machine of the type set forth, a notched beam, a movable frame having a yoke adapted for successive engagement with the notches of said beam, means for moving the yoke into said notches in one direction of the travel of the frame, means for moving the frame in the reverse direction, and means whereby the yoke of the frame is prevented from entering the notches of said beam during its travel in the reverse direction.

9. In a machine of the type set forth, a notched beam, a movable frame operating longitudinally of said beam, a yoke secured to said frame and engaging the notches thereof, and means for closing the notches against the introduction of the said yoke, and means for raising and lowering the said means.

10. In a machine of the type set forth, a movable frame, means for operating said frame, a twister mounted in the frame, means for feeding wire through the twister, an auxiliary twister, means for raising and lowering the same, and means for cutting the wire fed through the last named twister, said means being alternately raised and lowered.

11. In a machine of the character described, an oscillating frame, a series of spools on the free end of the frame, the said spools having their axes arranged in line and adapted to feed a series of parallel stay wires simultaneously.

12. In a machine of the character described, a reciprocating platform, an oscillating frame supported upon the platform, a pair of spools revolubly supported on the free end of the frame and having their axes in line, and means for feeding a series of stringer wires in a plane corresponding to the longitudinal axis of said spools.

13. In a machine of the character described, a reciprocating platform, a pair of frames supported on the platform, their forward ends adapted to be intermittently raised and lowered, and a pair of spools revolubly supported on the free end of the frames and having their axes arranged in line.

14. In a machine of the character described, the combination of a plurality of oscillating frames, a pair of spools revolubly mounted in each frame, having their axes arranged in line, power devices for reciprocating the frames, and mechanism carried by one of said frames whereby motion is imparted from suitable power devices to the spools of all the frames.

15. In a machine of the character described, an oscillating frame, a twister head revolubly mounted in said frame, and a pair of wire spools which have their axes arranged in line carried by said twister head.

16. In a machine of the character described, an oscillating frame, a twister head revolubly mounted in said frame, and a pair of wire spools having their axes arranged in line eccentrically supported in said twister head.

17. In a machine of the character described, the combination of a plurality of frames mounted to have their forward ends raised and lowered intermittently, a twister head mounted in each of said frames and a pair of wire spools suitably carried in each of said twister heads, the axes of the spools of each of said twister heads being arranged in line.

18. In a machine of the character described, the combination of a plurality of frames mounted to have their forward ends raised and lowered intermittently, a twister head revolubly carried in each of said frames, and a pair of wire spools eccentrically supported in each of said twister heads, the axes of the spools of each and all of the twister heads being arranged in line.

19. In a machine of the character described, a reciprocating platform, a plurality of frames supported on said platform, and adapted to have their forward ends raised and lowered intermittently, connections between the frames to facilitate their being raised and lowered in unison, and a plurality of spools revolubly mounted in said frames and having their axes arranged in line.

20. In a machine of the character described, a reciprocating platform, a plurality of frames supported on said platform and adapted to have their forward ends raised and lowered at pre-determined intervals, connections between the frames to facilitate their being raised and lowered in unison, a twister head revolubly mounted in each frame, and a plurality of spools carried by said twister heads.

21. In a machine of the character described, a reciprocating platform, a plurality of frames supported on said platform and adapted to have their forward ends raised and lowered at pre-determined intervals, connections between the frames to facilitate their being raised and lowered in unison, a twister head revolubly mounted in each of said frames and having their axes in line, and a plurality of spools eccentrically carried in the said twister head which also have their axes in line.

22. In a machine of the character described, the combination of a sliding and oscillating frame, means for intermittently raising and lowering the forward end of the frame when the same is moving in one direction, means for retaining the forward end of the frame elevated when the same is moving in the opposite direction, and a plurality of spools which have their axes in line suitably supported in said frame.

23. In a machine of the character described, the combination of a sliding and oscillating frame, means for intermittently raising and lowering the said frame, when moving in one direction, means for retaining the forward end of the frame elevated when the same is moving in the opposite direction, a twister head revolubly mounted in said frame, and a plurality of spools which have their axes arranged in line eccentrically supported on said twister head.

24. In a machine of the character described, the combination of a plurality of sliding and oscillating frames, a yoke connecting each pair of frames, means engaged by the yoke for intermittently raising and lowering the yoke and the frames connected therewith when the same are moving in one direction, and means for retaining the yoke and said frames in an elevated position when moving in the opposite direction.

25. In a machine of the character described, the combination of a plurality of sliding and oscillating frames, a yoke connecting each pair of frames, means for elevating and lowering the yoke and the frames connected therewith at pre-determined intervals when the frames are moving in one direction, means for retaining the same elevated when they are moving in the opposite direction, and suitable twister heads revolubly mounted in each of said frames.

26. In a machine of the character described, the combination of a sliding and oscillating frame, a notched bar extending longitudinal with the movement of the said frame, a yoke attached to the frame adapted to intermittently and successively engage the notches of the bar aforesaid when the frame is moving in one direction, a supplemental bar coacting with the notched bar adapted to be elevated by the yoke when the frame reaches the limit of its movement in one direction, the said supplemental bar adapted to retain the yoke and frame elevated when the said frame is moving in the opposite direction, the said supplemental bar being lowered through the action of the yoke when the same reaches its forward limit in the movement thereof.

27. In a machine of the character described, the combination of a reciprocating frame, a twister head revolubly supported therein, a plurality of spools having their axes in line supported by said twister head, an auxiliary twister arranged without and being unconnected to said frame, and means operating at pre-determined intervals for actuating the last mentioned twister.

28. In a machine of the character described, the combination of a reciprocating frame, a twister head revolubly supported therein, a plurality of spools having their axes in line supported by said twister head, an auxiliary twister arranged without and being unconnected to said frame, means for operating the twister-head of the frame, means for operating the supplemental twister, and means carried by the frame actuated at pre-determined intervals for placing stay wires in position to be acted upon by said supplemental twister.

29. In a machine of the character described, the combination of a plurality of reciprocating frames, a twister head revolubly mounted in each frame, spools carried by said twister heads, means for actuating the said twister heads, a plurality of auxiliary twisters arranged without and being unconnected to said frames, the said auxiliary twisters having their axes arranged in line, and means for simultaneously actuating the said auxiliary twisters at pre-determined intervals.

30. In a machine of the character described, the combination of a plurality of reciprocating frames, means for moving said frames in unison, a twister head in each frame, the same having their axes arranged in line, a plurality of spools eccentrically supported in each twister head, a plurality of auxiliary twisters arranged without and being unconnected to said frame, and means for actuating said auxiliary twisters in unison and at pre-determined intervals.

31. In a machine of the character described, the combination of a plurality of reciprocating frames, means for moving said frames in unison, a twister head in each frame, the same having their axes arranged in line, a plurality of spools eccentrically supported in each twister head, a plurality of auxiliary twisters arranged without and being unconnected to said frame, the same having their axes arranged in line, and means for actuating said auxiliary twisters in unison and at pre-determined intervals.

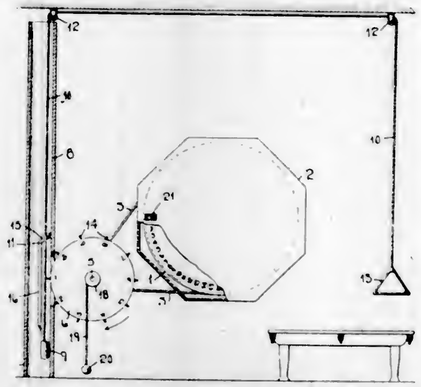
32. In a machine of the character described, the combination of a reciprocating platform, a frame supported thereby adapted to have its forward end raised and lowered at pre-determined intervals, a twister head mounted in the frame, one or more spools mounted in said twister head, an auxiliary twister arranged without and being unconnected to said frame, a cutting mechanism, means engaged by said platform for actuating the cutting mechanism, means for intermittently actuating the twister head of the frame, and mechanism adapted to be set into motion by the said platform for operating the auxiliary twister at pre-determined intervals.

33. In a machine of the character described, the combination with means for feeding a series of stringer wires, one or more twisters having their axes arranged in line through which one of the outside stringer wires is fed, a reciprocating frame, a twister head carried thereby, the same adapted to successively engage all the stringer wires with the exception of the outside wire first mentioned, one or more spools carried by said twister head, means for reciprocating said frame, mechanism for operating the twister thereof, and means for operating the twister or twisters of the outside stringer wire at pre-determined intervals.

34. In a machine of the class described, a frame, twisters, spools revolubly mounted in the frame, the twisters being in alinement with respect to each other and eccentric to the alinement of the spools, and a row of twisters in advance of the aforesaid twisters.

35. In a machine of the class described, an oscillating frame, twisters, spools revolubly mounted in the frame, the twisters being in alinement with respect to each other and eccentric to the alinement of the spools, and a row of twisters in advance of the aforesaid twisters.

853,029. TALLY FOR POOL-TABLES. OLAUS G. PETERSON, Dallas, Wis. Filed Nov. 15, 1906. Serial No. 343,588.



Claim.—1. A tally for pool tables comprising a main registering disk, a supplemental registering disk operatively connected with said main disk, an operating weight adapted to be engaged with said supplemental disk to turn the same one number for each time said disk is raised, and means whereby said disk is drawn up each time the triangle is used in arranging the balls for a new game, and means for preventing the weight from engaging said wheel on its return movement.

2. A tally for pool tables comprising a main registering disk having arranged thereon a series of numbers to provide a permanent record of games, a supplemental registering disk or wheel, a driving pulley having a clutch connection with said supplemental disk, a chain or cable connecting said pulley with said main registering disk, a weight adapted to be drawn upwardly each time the triangle is used to arrange the balls for a new game, means whereby said weight is engaged with said supplemental disk to turn the same each time the weight is raised, and means to prevent the weight from engaging said wheel on its return movement, substantially as described.

3. A tally for pool tables comprising a main registering disk, a supplemental recording wheel or disk having arranged thereon a clutch member, an operating pulley connected to said main recording disk, a clutch member on said pulley to engage the clutch member on said supplemental disks, whereby the pulley is driven when said disk is turned in one direction, a series of radially-projecting pins arranged on said supplemental disk, a suspending weight adapted to be engaged with one of said pins to turn the supplemental disk a predetermined distance each time the weight is raised, a cable to connect said weight with the triangle by which the pool balls are arranged at the beginning of each game, means to prevent the weight from being engaged with the pins on said supplemental wheel or disk when said weight lowers or returns to its normal position, and means to reverse the supplemental disk to its original position or starting point, substantially as described.

4. A tally for pool tables comprising a main registering disk having thereon a series of numbers by which a permanent record of games is kept, a drive pulley connected to said disk to turn the same, a supplemental disk having arranged thereon a series of game recording members, a clutch connection between said disk and said pulley, a series of radially-projecting pins arranged on the periphery of said supplemental disk, an operating weight adapted to be drawn upwardly to engage one of the pins on said supplemental wheel to turn the same a predetermined distance, a cable to support said weight and connect the same with the triangle for arranging the pool balls at the beginning of each game, a hinged deflecting plate arranged in the path of movement of the weight, whereby when said weight is raised the plate will swing upwardly and when said weight is lowered will deflect the same and prevent the engagement thereof with the pins on said supplemental wheel, substantially as described.

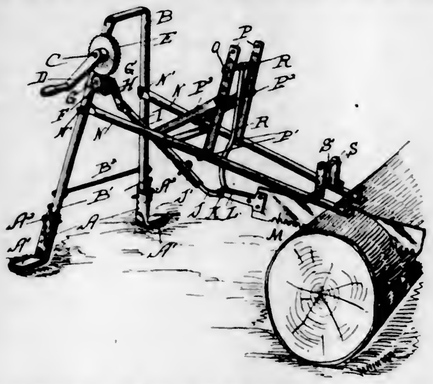
5. A tally for pool tables comprising a revolubly mounted registering disk having thereon a series of numerals, a casing to inclose said disk, a drive pulley connected therewith to turn the same, a revolubly mounted supplemental registering disk, a clutch connection between said disk and said drive pulley, a series of radially-projecting pins on said supplemental disk, a weight adapted to be engaged with the pins on said supplemental wheel, a cable to connect said weight with the triangle for arranging the pool balls, a guideway for said weight, a notched deflecting plate hingedly mounted in said guideway to deflect the weight in its downward movement to prevent the same from engaging the teeth on the supplemental registering wheel, a pulley mounted on said wheel and a weighted operating cord adapted to be wound on and unwound from said pulley, whereby said supplemental registering wheel may be turned backward or restored to its normal position, substantially as described.

853,030. SAWING-MACHINE. WILLIAM POWELL, Hume, Ill. Filed June 9, 1906. Serial No. 320,999.

Claim.—1. In a sawing machine, the combination with tubes provided with feet, of an inverted U-shaped frame adjustably mounted in said tubes, bars pivoted to the vertical members of said frame, provided with apertured ends, arms projecting upwardly from said bars, a guide arm adjustably mounted in said arms, a saw connected to said guide-arm and means carried by the frame for operating said saw.

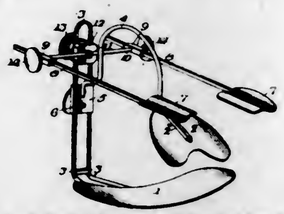
2. In a sawing machine, the combination with perforated tubes provided with feet, of an inverted U-shaped frame mounted in said tube provided with perforated lower ends, pins extending through said perforated tube and ends, a shaft mounted on one of the vertical members of said frame, carrying a crank-handle and a gear, a crank-shaft mounted in a block secured between said gear carrying a gear meshing with said gear, a tube connected to the end of the crank of the shaft, provided with aper-

tures adjacent its free end, a bar having a perforated end adjustably mounted in said tube by a pin, a saw carried by said bar, bars pivotally mounted on the vertical member of said frame, provided with apertured ends adapted



to be secured to the log being sawed, perforated arms projecting upwardly from said bars, a pin mounted in the periphery of said arms, and a guide arm mounted on said pin connected to said saw for the purpose described.

853,031. DENTAL INSTRUMENT. AUGUSTUS B. PRENTIS, Marshfield, Oreg. Filed Oct. 30, 1906. Serial No. 341,294.



Claim.—1. A dental instrument comprising a chin-plate, a plate for bearing directly upon the tongue, and means for connecting such plates which permit their adjustment vertically, a cheek-distending device which is independent of the tongue plate and adapted for adjustment longitudinally and vertically, as shown and described.

2. The combination, with a chin-bearing plate, a tongue-bearing plate, and a frame by which they are connected, of a cheek-bearing member which is independent of the tongue plate, and means for adjustably connecting it with the body or frame of the instrument, such means comprising a laterally slidable rod with whose outer end the shank of the cheek-bearing member is slidably connected, as shown and described.

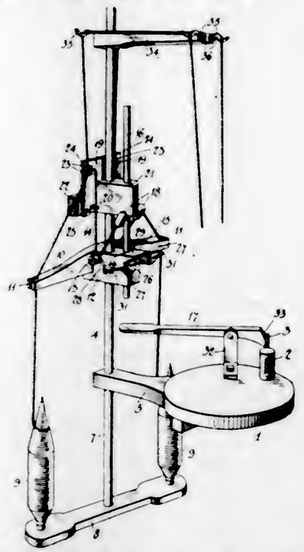
3. The combination, with a chin-bearing member, having a right angular arm, and a tongue-bearing member connected therewith, of a cheek-bearing member having an extended shank or bar, a sleeve in which it is slidable, a transversely adjustable bar to which said sleeve is attached, and means for clamping the transverse rod so that it may be held in any required rotary or vertical adjustment, substantially as described.

4. The combination, with a chin-bearing member, a tongue-bearing member, and arms connecting them, of a cheek-bearing member, a transverse rod to which it is attached, and a screw and clamping devices which permit endwise adjustment of the rod and thereby lateral adjustment of the cheek-bearing member and enable the rod to be clamped in any required adjustment, substantially as described.

5. The combination, with a chin-bearing member, and having an arm attached, a second arm which is adjustably connected with the first-named one, and a tongue plate which is detachably applied to the second arm but held from rotation thereon, substantially as described.

6. The combination, with a chin-bearing member, the tongue-bearing member, and means for connecting them, of a cheek-bearing member comprising a plate which is curved upwardly on its outer side and downwardly on its inner side, and means for operatively and adjustably connecting it with the two first-named members, substantially as described.

853,032. AUTOMATIC STOP-MOTION FOR KNITTING-MACHINES. JOSEPH B. RHODES, Harrisburg, Pa. Filed Sept. 4, 1906. Serial No. 333,118.



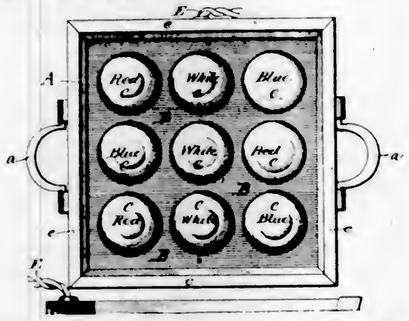
Claim.—1. In a stop motion for a textile machine, the combination of a knot catcher, a yarn guide movable in one direction by the yarn when the latter is under abnormal tension, and a trip device to cause the machine to stop, said trip device being normally held in inoperative position by the yarn, and movable in a plane at an angle to that of the plane of movement of the movable guide, and disengaged from and released by the yarn when abnormal tension on the yarn causes the yarn guide to move.

2. In a stop motion for a textile machine, the combination of a knot catcher, a trip releaser having a yarn guide, said trip releaser being movable in one direction by the yarn when the latter is under abnormal tension, and a trip device to cause the machine to stop, said trip device being normally held in inoperative position by the yarn, and movable in a plane at an angle to that of the plane of movement of the movable guide and disengaged from and released by the yarn when abnormal tension on the yarn causes the yarn guide to move.

3. In a stop motion for a textile machine, the combination of a drop weight to cause the machine to stop, a latch to support said drop weight in a raised position, a movable trip device for the latch, a yarn guide having movement in a plane at an angle to that of the plane of movement of the trip device, and a yarn catcher, said yarn guide being movable in one direction by the yarn when the latter is under abnormal tension, and said trip device being normally held in operative position by the yarn, and being disengaged from and released by the yarn when abnormal tension on the latter causes the yarn guide to move.

4. In a stop motion for a textile machine, the combination of a controller to stop the machine, a lever to actuate said controller, a knot catcher, a drop weight to operate the lever, a latch to normally support the weight in an elevated position, a yarn guide movable in one direction by the yarn when the latter is under abnormal tension, and a trip device for the latch, normally engaged by the yarn and movable when disengaged therefrom in a plane at an angle to that of the plane of movement of the yarn guide.

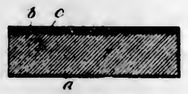
853,033. PORTABLE ELECTRIC-LIGHT CABINET. HARVEY H. ROBERTS, Lexington, Ky. Filed July 11, 1906. Serial No. 325,592.



Claim.—1. A portable electric bath cabinet, consisting of a casing open upon one side and closed upon the other sides, groups of different colored electric lamps projecting into the box in a mixed relation, a duplex cable having one of its wires connected to one terminal of each lamp, a compound switch having one of its members connected to the other wire of the duplex cable, said switch having a plurality of opposite contacts each connected respectively to the other terminal of a lamp and each of said contacts being exclusively connected to lamps of the same color.

2. A portable electric light bath cabinet, consisting of a rectangular box having an open front end and a narrower and shouldered back end, multiple groups of different colored electric lights projecting into the box, a vertical series of switches, plugs arranged in the edge of the narrower back end of the box, plug seats consisting of a single metal bar arranged in the box and extending past all the plugs and individual plates for the other side of the plug seats with separate circuits therefrom to the separate color groups of electric lights and a common return circuit.

853,034. PAVEMENT-BLOCK AND METHOD OF MAKING THE SAME. SOLON Z. RUFF, Atlanta, Ga. Filed Sept. 18, 1905. Serial No. 278,987.



Claim.—1. The method of making pavement blocks, which consists of forcing a layer of broken stone or gravel into the top thereof under a pressure sufficient to compact the upper part of the block, making the whole block of diminished cross section, substantially as described.

2. The method of making pavement blocks, which consists in causing a layer of broken stone or gravel to adhere to the top of a wooden block and forcing said stone into said block under a pressure sufficient to compress the upper part of the block and make it of diminished cross section, substantially as described.

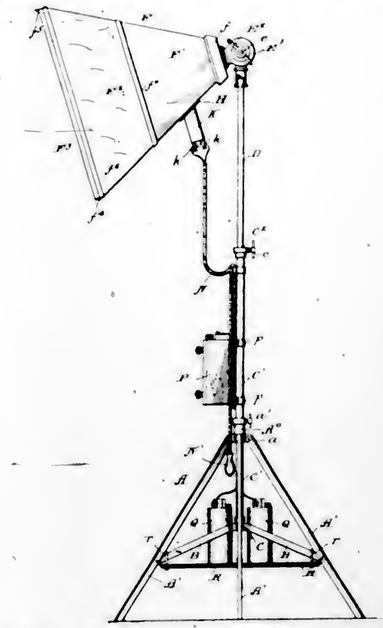
3. The method of making pavement blocks, which consists in treating wooden blocks with a preservative agent and with an adhesive material, dipping said blocks into broken stone or gravel and subjecting the same to a pressure great enough to compact the upper part of said blocks and render them of diminished cross section, substantially as described.

4. The method of making pavement blocks, which consists in creosoting wooden blocks, dipping them into melted asphalt, dipping the tops thereof into broken stone or gravel and then subjecting the whole to a heavy pressure sufficient to compact the upper part of said block and force the broken stone thereinto, making the whole block of diminished cross section, substantially as described.

5. An improved pavement block composed of wood having one or more stone surfaces formed by forcing the stone under pressure into the wood, substantially as described.

6. An improved pavement block, composed of soft creosoted wood, with a layer of broken stone or gravel forced into one or both ends thereof under pressure, substantially as described.

853,035. FLASH-LIGHT PHOTOGRAPHY. EDGAR RUSSEL, U. S. Army. Filed July 25, 1906. Serial No. 327,701.



Claim.—1. A flash light apparatus comprising an adjustable stand, a pyramidal box carried by said stand and having its base and the adjacent portions of its sides composed of a skeleton frame covered with translucent material, a detachable cartridge holder adapted to project into said box and provided with electric terminals for forming an arc, and means for causing an electric spark to jump across said terminals and pierce the cartridge thus igniting the powder, substantially as described.

2. A flash light apparatus comprising a stand, a pyramidal box carried by said stand and having its base and portions of its sides made of translucent material, a detachable cartridge holder adapted to project into said box and provided with a cartridge holding cup, with electric terminals separated by an insulating bridge and embedded in the bottom of said cup, and means for causing an electrict spark to pass over said bridge and pierce the cartridge held in said cup, thus igniting the powder, substantially as described.

3. A flash light apparatus comprising a portable stand, a tapered box adjustably connected to said stand and having a skeleton base covered with translucent material, a

cartridge holder detachably connected to and adapted to project into said box and provided with electric terminals for forming an arc, a cartridge mounted in said holder and provided with a thin perforable bottom, and means for causing an electric spark to jump across said terminals and pierce the bottom of the cartridge thus igniting the powder, substantially as described.

4. A flash light apparatus comprising an adjustable stand, a pyramidal box carried by said stand and having a skeleton base covered with translucent material, a detachable cartridge holder adapted to project into said box and provided with electric terminals separated by an insulating bridge, a cartridge mounted in said holder and provided with a thin perforable bottom, and means for causing an electric spark to pass over said bridge and pierce the cartridge thus igniting the powder, substantially as described.

5. A flash light apparatus comprising an adjustable stand, a pyramidal box carried by said stand and having its base and the adjacent portions of its sides composed of a skeleton frame covered with translucent material, a detachable cartridge holder adapted to project into said box and provided with electric terminals for forming an arc, a cartridge mounted in said holder and provided with a thin perforable bottom, and means for causing an electric spark to jump across said terminals and pierce the cartridge thus igniting the powder, substantially as described.

6. A flash light apparatus comprising a stand, a pyramidal box carried by said stand and having its base and portions of its sides made of translucent material, a detachable cartridge holder adapted to project into said box and provided with a cartridge holding cup, with electric terminals separated by an insulating bridge and embedded in the bottom of said cup, a cartridge mounted in said holder and provided with a thin perforable bottom, and means for causing an electric spark to pass over said bridge and pierce the cartridge held in said cup, thus igniting the powder, substantially as described.

7. A flash light apparatus comprising an adjustable stand, a box carried by said stand and having its base made mainly of translucent material, detachable cartridge holder adapted to project into said box and provided with electric terminals separated by an insulating bridge, a cartridge mounted in said holder and provided with a thin perforable bottom, and means for causing an electric spark to pass over said bridge and to pierce the cartridge igniting the powder, substantially as described.

8. A flash light apparatus comprising a portable and adjustable stand, a pyramidal box adjustably mounted on said stand and having its base and portions of its sides made of translucent material, a detachable cartridge holder adapted to project into said box and provided with a cartridge holding cup, with electric terminals separated by an insulating bridge and embedded in the bottom of said cup, a cartridge mounted in said cup, and means for causing an electric spark to pass over said bridge and pierce the cartridge held in said cup, substantially as described.

9. In a flash light apparatus comprising a stand, a box adjustably connected to the top of said stand, parts of said box being covered with translucent material, a cartridge holder adapted to project into and to be detachably connected to said box, a cartridge mounted in said holder, electric conductors carried by said holder and forming a gap in juxtaposition to said cartridge, a source of electricity and means for completing the circuit through said conductors and thus forming a spark at said gap, substantially as described.

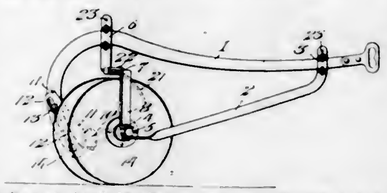
10. A flash light apparatus comprising a stand, a tapered box adjustably connected to the top of said stand, parts of said box being covered with translucent material, a cartridge holder adapted to project into and to be detachably connected to said box, a cartridge mounted in said holder, electric conductors carried by said holder and forming a gap in juxtaposition to said cartridge, an electric battery carried by said stand, an induction coil also carried by said stand and connected to said battery, electric conductors connecting said induction coil and said cartridge holder, and means for completing the circuit through said conductors and thus forming a spark at said gap, substantially as described.

11. A flash light apparatus comprising a portable and vertically adjustable stand, a pyramidal box having its apex adjustably connected to the top of said stand, the base and adjacent parts of said pyramid being covered with translucent material, a cartridge holder adapted to project into and to be detachably connected to the said box, a cartridge mounted in said holder, electric conductors carried by said holder and forming a gap in juxtaposition to said cartridge, an electric battery carried by said stand, an induction coil also carried by said stand and connected to said battery, electric conductors connecting said induction coil and said cartridge holder, and means for completing the circuit through said conductors and thus forming a spark at said gap, substantially as described.

12. A cartridge for use in flash light apparatus comprising a disk of cardboard or other suitable material cut away at its center to form a powder chamber, an upper and lower disk secured to said cardboard disk, and powder held in the chamber thus formed, substantially as described.

13. A cartridge for use in flash light apparatus comprising a body portion made of cardboard or the like, cut away in the center to form a powder chamber, and thin sheets of paper pasted over the top and bottom of said body portion and inclosing the powder, substantially as described.

853,036. LAND LEVELER OR RIDGER. SAMUEL A. SCHAFER, Sterling, Kans. Filed Jan. 19, 1907. Serial No. 353,156.



Claim.—A land leveler or ridger comprising a beam, axles secured at their inner ends to said beam by means of an adjustable plate or bearing, braces secured to the beam and extending rearwardly and outwardly, the rear ends of said braces being connected to said axles at their outer end, vertically disposed braces secured to the beam at one end and to the axles at their opposite ends, said braces having horizontal portions and cleaner blades adjustably secured to said horizontal portions, substantially as described.

853,037. PROCESS FOR PRODUCING SPARKLING WINES FROM GRAPES. LEOPOLD SCHERZER, Vienna, Austria-Hungary. Filed Feb. 25, 1903. Serial No. 145,083.

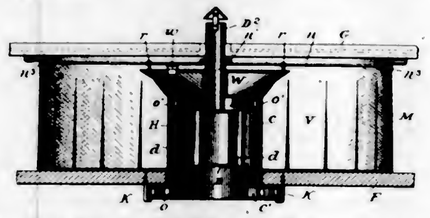
Claim.—The improved process for producing sparkling wine which consists in exposing the grapes to a temperature of 40°—44° C. till decay commences, in pressing the grapes, then fermenting the juice in vessels closed except as to the openings through which the carbonic acid gas is collected, collecting the carbonic acid escaping therefrom, and finally in employing the carbonic acid which has escaped from the juice during the process of fermentation for producing the sparkling wine proper.

853,038. CHICKEN-BROODER. WILLIAM H. SOMERSALL, Boston, Mass. Filed Dec. 8, 1906. Serial No. 346,979.

Claim.—1. A chicken brooder, having a compartment provided with a suitable floor, a transparent ceiling and a hover having an open top-frame and hanging curtains.

2. A chicken brooder, having a compartment provided with a suitable floor, a transparent ceiling, a hover within said compartment and having an open top-frame and curtains hanging from the outer circumference thereof to the floor of said compartment, and a central heater passing through said hover.

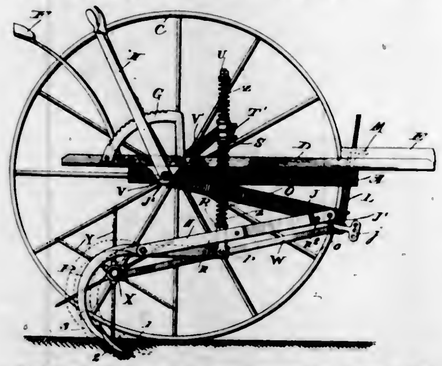
3. The herein described chicken brooder comprising three compartments arranged one above another, a hover having an open top and hanging curtains arranged within the middle compartment, a heating apparatus extending through the floor of said middle compartment into the hover, a lamp within the lower compartment adapted to heat said heating apparatus, a movable roof for the upper compartment, and a transparent body forming the floor for said upper compartment and the ceiling of the middle compartment.



4. A chicken brooder, having a compartment containing a hover, a heater comprising an outer drum extending through the floor of said compartment into the hover and having suitable air inlet and discharge openings, an inner drum consisting of lower and upper chambers and a plurality of flues connecting said chambers, a discharge flue extending from the upper chamber of said inner drum through the top of the hover compartment, a lamp arranged to discharge products of combustion into the lower chamber of the inner drum, and a water vessel supported by said drums.

5. A chicken brooder, having a compartment containing a hover, a heater comprising an outer drum extending through the floor of said compartment into the hover, the lower end of said drum being of greater diameter than the portion thereof within the hover and projecting beneath the floor of the hover compartment, said drum having suitable air inlet apertures formed therein beneath the floor of the hover compartment and air discharge outlets formed in its walls within the hover, an inner drum consisting of lower and upper chambers and a plurality of flues connecting said chambers, a discharge flue extending from the upper chamber of the inner drum through the top of the hover compartment, and a lamp arranged to discharge products of combustion into the inner drum, and supports for said drums depending from the floor of the hover compartment.

853,039. CULTIVATOR. JOHN J. STALDER, Meade, Kans. Filed Sept. 18, 1906. Serial No. 335,062.



Claim.—1. In a cultivator the combination with a wheel supported frame, of a sub-frame pivotally secured at its rear end to the main frame and adjustably suspended at its forward end to said main frame, shovel beams pivotally secured to said sub-frame and shovel standards pivotally secured to said beams.

2. In a cultivator the combination with a wheel supported main frame, of a sub-frame adjustably suspended from the main frame, said sub-frame carrying a series of shovel beams and shovels, and walking wheels between the shovels.

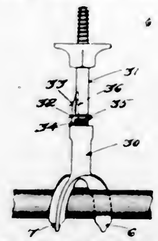
3. In a cultivator the combination with a wheel supported main frame, of a sub-frame pivotally secured at its rear end to the main frame, and adjustably suspended at its forward end to said main frame, shovel beams pivotally secured to said sub-frame, shovel standards pivotally secured to said beams, and cushioning means between the shovel beams and the main frame.

4. In a cultivator the combination with a wheel supported main frame, of a sub-frame pivotally secured at its rear end to the main frame and adjustably suspended at its forward end from said main frame, shovel beams pivotally secured at their forward ends to said sub-frame, shovel standards to which the rear ends of the shovel beams are pivotally secured, a rocker frame secured to the main frame, thimbles secured to said rocker frame, rods passing through said thimbles, and pivotally secured at their lower ends to the forward ends of the shovel standards, and cushioning means interposed between the shovel standards and the rocker frame.

5. In a cultivator the combination with a wheel supported main frame, a sub-frame pivotally secured at its rear end to said main frame, screw threaded shafts secured to the sub-frame at its forward end and passing upwardly through the main frame, hand wheels threaded on said shafts for adjusting the same and shovel beams and shovels carried by the said subframe.

6. In a cultivator the combination with a wheel supported main frame, of a sub-frame pivotally secured at its rear end to the main frame, and adjustably suspended at its forward end from the main frame, shovel beams pivotally secured at their forward ends to the front of the subframe, shovel standards pivotally secured to the rear ends of the shovel beams, vertical rods extending upwardly from the forward end of the shovel standards, a rocker frame mounted in the main frame and provided with thimbles through which the aforesaid vertical rods pass, springs mounted on said rods above and below the thimbles, and means for regulating the tension of the springs, and means for operating the rocker frame.

853,040. PIPE-HANGER. HENRY C. TABER, Ware, Mass. Filed Dec. 20, 1906. Serial No. 348,791.



Claim.—1. A pipe hanger having a shank, one end of which is adapted to be attached to a support, the other end of which is provided with two pipe supporting fingers which extend from the end of said shank in planes which are spaced apart from each other a distance as great as the diameter of the pipe to be held, said fingers being adapted to partially encircle the pipe, the space between the planes in which said fingers lie permitting the rotation of the hanger on its axis a quarter of a revolution, whereby the pipe and hanger may be engaged or disengaged from each other while the axis of the pipe is at right angles with the axis of the hanger and without longitudinal movement of the pipe.

2. A pipe hanger having a shank composed of two members, one of which is formed with a screw thread and the other of which is tapped out to receive said threaded member, whereby the shank may be varied in length, the tapped out member being formed with a grooved key slot and the threaded member being provided with a sliding key adapted to engage with said key slot to lock the two members in adjusted position.

3. A pipe hanger having a shank composed of two members, one of which is formed with a screw thread and the other of which is tapped out to receive said threaded member, whereby the shank may be varied in length, the tapped out member being formed with a key slot and the threaded member being provided with a sliding key which is coiled around said threaded member and has an end portion which extends longitudinally of said threaded member and is adapted to engage with the key slot in said tapped out member.

4. A pipe hanger having a shank composed of two members, one of which is formed with a screw thread and the other of which is tapped out to receive said threaded member, whereby the shank may be varied in length, both the shank members being formed with longitudinal key slots in the periphery and a sliding key adapted to engage with said slots and lock the two shank members in adjusted position.

5. A pipe hanger having pipe supporting fingers which spread in opposite directions outwardly and are then reversely turned and lapped past each other in planes spaced apart from each other a distance as great as the diameter of the pipe to be held, whereby the pipe and the hanger may be disengaged from each other by turning the hanger on its axis one-fourth of a revolution, said shank being composed of two members, one of which telescopes upon the other, one of said shank members being provided with a sliding key and the other with a key slot whereby the two shank members may be locked in adjusted position.

6. A pipe hanger having pipe supporting fingers which spread in opposite directions outwardly and are then reversely turned and lapped past each other in planes spaced apart from each other a distance as great as the diameter of the pipe to be held, whereby the pipe and the hanger may be disengaged from each other by turning the hanger on its axis one-fourth of a revolution, said shank being composed of two members, one of which is formed with a screw thread and the other of which is tapped out to receive said threaded member whereby the shank may be varied in length, the tapped out member being formed with a grooved key slot and the threaded member being provided with a sliding key adapted to engage with said key slot to lock the two members in adjusted position.

7. A pipe hanger having pipe supporting fingers which spread in opposite directions outwardly and are then reversely turned and lapped past each other in planes spaced apart from each other a distance as great as the diameter of the pipe to be held, whereby the pipe and the hanger may be disengaged from each other by turning the hanger on its axis one-fourth of a revolution, said shank being composed of two members, one of which is formed with a screw thread and the other of which is tapped out to receive said threaded member, whereby the shank may be varied in length, the tapped out member being formed with a key slot and the threaded member being provided with a sliding key which is coiled around said threaded member and has an end portion which extends longitudinally of said threaded member and is adapted to engage with the key slot in said tapped out member.

8. A pipe hanger having pipe supporting fingers which spread in opposite directions outwardly and are then reversely turned and lapped past each other in planes spaced apart from each other a distance as great as the diameter of the pipe to be held, whereby the pipe and the hanger may be disengaged from each other by turning the hanger on its axis one-fourth of a revolution, said shank being composed of two members, one of which is formed with a screw thread and the other of which is tapped out to receive said threaded member whereby the shank may be varied in length, both of said shank members being formed with longitudinal key slots in the periphery and a sliding key adapted to engage with said slots and lock the two shank members in adjusted position.

9. A pipe hanger having pipe supporting fingers which spread in opposite directions outwardly and are then reversely turned and lapped past each other in planes spaced apart from each other a distance as great as the diameter of the pipe to be held, whereby the pipe and the hanger may be disengaged from each other by turning the hanger on its axis one-fourth of a revolution, said shank being composed of two members, one of which is formed with a screw thread and the other of which is tapped out to receive said threaded member whereby the shank may be varied in length, the tapped out member being provided with a plurality of key slots in radially different positions on the periphery and the threaded member being provided with a sliding key adapted to engage with any one of said slots to lock the two shank members in adjusted position at varying relations with each other, both longitudinally and radially.

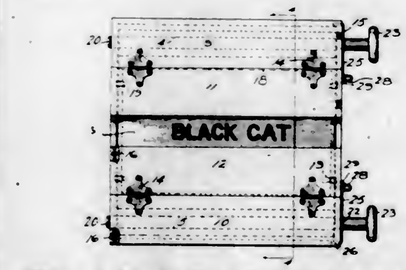
10. A pipe hanger having a shank composed of two members which telescope upon each other and are radially adjustable with relation to each other, one of said members being provided with a plurality of key slots in radially different positions on the periphery and the other member being provided with a sliding key adapted to engage with any one of said slots to lock the two shank members in adjusted position at varying radial relations with each other.

853,041. ANTHRAQUINONE DERIVATIVE. PAUL THOMASCHEWSKI, Elberfeld, Germany, assignor to Farbenfabriken vorm. Fried. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed Feb. 11, 1907. Serial No. 356,811.

Claim.—1. The herein described anthracene compounds which can be obtained by treating acetylized secondary alkylamino- or arylaminoanthraquinones with alkalies; which anthracene compounds are crystalline and practically insoluble in water; and soluble in pyridin and in concentrated sulfuric acid with from a yellow to red color, substantially as hereinbefore described.

2. The herein-described anthracene compound which can be obtained by treating 1-acetylmethylamino-4-paratolylaminoanthraquinone with alkalies, which anthracene-compound forms bronze-like leaflets soluble in pyridin with a violet-red color and in concentrated sulfuric acid with a violet-red color; and which in the shape of its sulfonic acid dissolves in dilute alkali with a crimson-red color, and dyes unmordanted and chromed wool bluish-red shades, substantially as hereinbefore described.

853,042. EDUCATIONAL DEVICE. JOHN THOMSON, Wilkinsburg, Pa. Filed Dec. 3, 1906. Serial No. 346,033.



Claim.—1. An educational device comprising a frame, chart or sheet carrying rollers mounted in said frame, and spring members secured to the frame and having looped portions forming bearings for the roller journals.

2. An educational device comprising a frame, chart or sheet carrying rollers mounted in said frame, and spring members movably secured to the frame and having looped portions forming bearings and brakes for the roller journals.

3. An educational device comprising a frame provided with slots, chart or sheet carrying rollers having journals located in said slots, and spring members pivoted to the frame and each provided with a head bearing against a roll journal and provided with means at the end for securing to the frame.

4. An educational device comprising a frame, chart or sheet carrying rollers mounted in said frame, a printing table in the frame back of the chart or sheet, and catches detachably securing said printing table to said frame.

5. An educational device comprising a frame open at its rear, chart or sheet carrying rollers mounted in said frame, and a printing table detachably secured to the frame and removable through the open back of the frame.

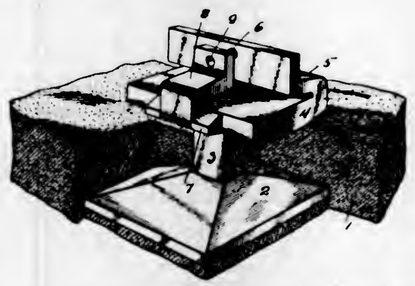
6. An educational device comprising a frame, chart or sheet carrying rollers mounted in said frame, and a shutter or shutters hinged to the frame on pivots parallel to the axes of the rollers and permitting the exposure of a greater or lesser portion of the chart or sheet.

7. An educational device comprising a frame, chart or sheet carrying rollers mounted in said frame, a shutter or shutters hinged on the frame on pivots parallel to the axes of the rollers and permitting the exposure of a greater or lesser portion of the chart or sheet, and means for securing said shutters in both closed and open positions.

8. An educational device comprising a frame, chart or sheet carrying rollers removably mounted in said frame, a movable shutter or shutters on the frame parallel to the axes of the rollers and permitting the exposure of a greater or lesser portion of the chart or sheet, and a printing table in the frame back of the portion of the chart or sheet which is exposed by said shutters.

9. An educational device comprising a frame, chart or sheet carrying rollers mounted in said frame, spring members movably secured to the frame and having looped portions forming bearings for the journals of said rollers, and a movable shutter or shutters on the frame permitting the exposure of a greater or lesser portion of the chart or sheet.

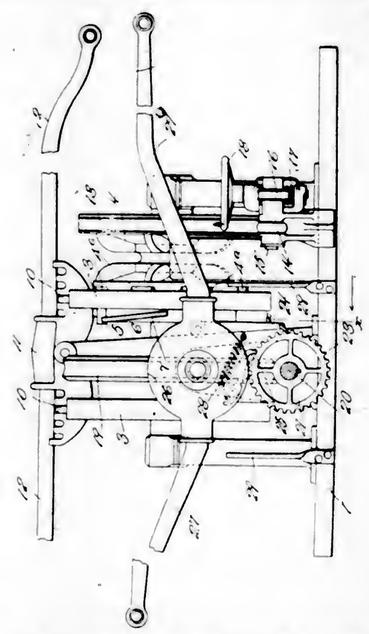
853,043. METALLIC TIE AND RAIL FASTENER. ROBERT M. TOY, Jones Station, Pa. Filed Jan. 9, 1907. Serial No. 351,479.



Claim.—In a rail support, and fastener, the combination with a concrete foundation, of a rectangular pyramidic shape base plate, a standard carried centrally thereof, a chair carried by said standard free from contact with said foundation and having an integral fish bar adapted to embrace one side of a rail, a fish bar pivotally mounted at the opposite side of said chair, and adapted to embrace the opposite side of a rail, and means to secure said fish bars to the web portion of a rail, substantially as described.

853,044. WITHDRAWN.

853,045. HAND-WINDLASS. HENRY D. VAN DOORN, Providence, R. I. Filed Apr. 25, 1906. Serial No. 313,599.



Claim.—1. A hand windlass having a driven shaft carrying a wildcat, a rocking beam, a worm gear mounted on said shaft and operatively connected thereto, a driving shaft arranged transversely to the driven shaft and having connection with said beam whereby a rotary motion is imparted thereto by the actuation of said beam, said driving shaft carrying a worm meshing with said worm gear.

2. A hand windlass having a driven shaft carrying a wildcat, a rocking beam, a driving shaft arranged transversely to the driven shaft and carrying a toothed wheel, a pair of pawls on said rocking beam engaging said toothed wheel and adapted to impart a rotary motion thereto when said beam is actuated and a system of gearing between said driving shaft and driven shaft whereby an increased amount of power is obtained for the windlass.

3. A hand windlass having a driven shaft carrying a wildcat, a rocking beam, a driving shaft arranged transversely to the driven shaft and carrying a toothed wheel, a pair of pawls on said beam engaging said toothed wheel and adapted to impart a rotary motion thereto when said beam is actuated, a coiled spring arranged between said pawls and keeping them in contact with said toothed wheel, and a system of gearing between said driving shaft and driven shaft whereby an increased amount of power is obtained for the windlass.

4. A hand windlass, having a driven shaft carrying a wildcat, a rocking beam, a driving shaft arranged transversely to the driven shaft and carrying a toothed wheel, a pair of pawls on said beam engaging said toothed wheel and adapted to impart a rotary motion thereto when the beam is actuated, a worm on said driving shaft and a worm gear on the driven shaft meshing with said worm.

5. A hand windlass having a driven shaft carrying a wildcat, a rocking beam, a driving shaft arranged transversely to the driven shaft and carrying a toothed wheel, a pair of pawls pivoted on said beam at opposite sides of its pivotal point and extending in the same direction with relation to the periphery of the toothed wheel with which they engage, said pawls adapted to impart a rotary motion to said toothed wheel when said beam is actuated and a

system of gearing between the driving shaft and the driven shaft.

6. A hand windlass having a wildcat operatively mounted, a rocking beam adapted to be connected up with said wildcat whereby it may be actuated to obtain increased speed and a second rocking beam also adapted to be connected up with said wildcat whereby it may be actuated to obtain increased power.

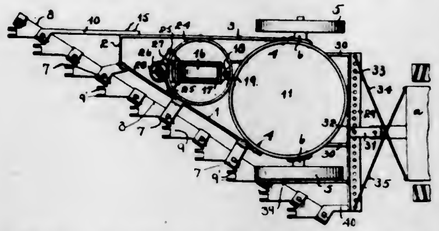
7. A hand windlass having a shaft carrying a wildcat, a pair of driving pump brake wheels on said shaft, a rocking beam for directly actuating said pump brake wheels, a second rocking beam, and a system of gearing between said second beam and the pump brake wheels whereby said wheels and the shaft may be actuated to obtain an increased amount of power when operated by said second beam over that attained when operated by the first mentioned beam.

8. A hand windlass having a driven shaft carrying a wildcat, a pair of driving pump brake wheels on said shaft, a rocking beam for directly actuating said pump brake wheels, a second rocking beam, a second shaft arranged transversely to the driven shaft, means carried by said second beam for imparting a rotary motion to said transverse shaft, a worm gear loosely mounted on said driven shaft but adapted to be keyed up with one of the pump brake wheels, and a worm on said transverse shaft meshing with said worm gear, whereby the wildcat may be actuated by the second beam to obtain increased power and by the first mentioned beam to obtain increased speed.

9. A windlass having a driven shaft carrying a wildcat, said shaft adapted to be connected up with a source of motive power, a hand operated rocking beam for actuating said shaft, and a system of gearing between said beam and shaft for the purpose specified.

10. A windlass having a wildcat operatively mounted and adapted to be connected up with a source of motive power, a hand operated rocking beam adapted to be connected up with said wildcat and a second hand operated rocking beam adapted to be connected up with said wildcat through a series of gears whereby said wildcat may be operated to obtain greater power than when actuated by the first-mentioned rocking beam.

853,046. STEAM-PLOW. JESSE W. VANIMAN, Wichita, Kans. Filed Apr. 17, 1906. Serial No. 312,194.

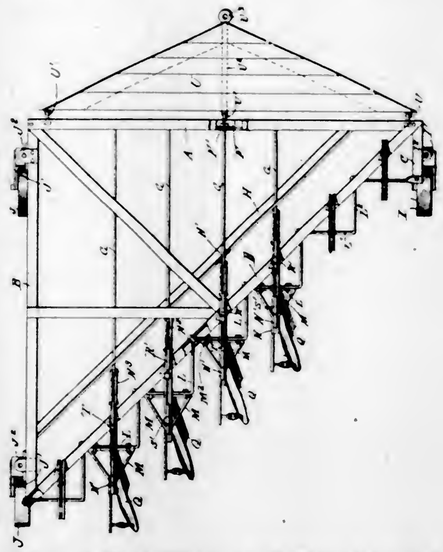


Claim.—1. A steam plow frame provided with a diagonally-disposed bar having lugs extending laterally therefrom with their free ends bifurcated to receive the plows and extended longitudinally of the frame.

2. A steam plow composed of a diagonally-disposed bar having a short arm extending laterally therefrom, a bar extending at right angles from the free end of said arm, an annular member secured to the free end of the last-mentioned bar and to the diagonal bar, a smaller annular member secured between said bars, and a plow-carrying bar attached to said diagonal bar and extending parallel therewith.

3. A steam plow frame comprising an approximately V-shaped member having one arm shorter than the other and inclined, an annular member mounted between the free ends of said V-shaped member and secured thereto, land wheels connected with said annular member, a caster wheel mounted in the reduced end of said V-shaped member, spaced brackets secured to the short inclined arm of said V-shaped member, a diagonally-disposed bar mounted in said brackets and extended at each end beyond said V-shaped member, an arm connecting the long arm of said V-shaped member with said diagonal member and a plurality of plow receiving devices carried by said diagonal bar.

853,047. PLOW. RICHARD J. VICKERY and JOHN J. DINSMORE, Clark, S. D. Filed Feb. 9, 1907. Serial No. 356,536.



Claim.—1. The combination substantially as herein described with the main frame having the opposite side beams, the transverse front beam secured upon the side beams and the diagonal main beam secured upon the opposite side beams, the upper faces of the diagonal main beam and the front beam being in the same plane, the platform secured upon said beams, the wheels journaled to the side beams and adapted to support the main frame, a transverse draft bar at the front of the main frame and below the front beam and provided with perforations for the draft rods, the diagonal spacing bar arranged in rear of the front draft bar and perforated in alinement with the perforations in said front bar to receive draft rods, draft rods in the said perforations of the front draft beam and spacing bar, the plow beams connected at their front ends to the rear ends of the draft rods, the step shaped plate secured to the rear side of the diagonal beam and having the lateral wings and the longitudinal wings extending from the outer ends of the lateral wings to the diagonal beam, the swinging braces pivoted at their upper front ends to the respective lateral wings of the step shaped plate, connections between the rear ends of the swinging braces and the plow beams, hangers in connection with the front and rear ends of the plow beams, bell crank levers connected with said hangers, and operating levers connected with the bell crank levers to operate the same, substantially as set forth.

2. The combination substantially as described of the main frame having the diagonally disposed main beam and provided thereon with lateral plates or bars arranged in step-like form, swinging braces pivoted at their upper forward ends to their respective lateral plates or bars, plow beams connected with the rear swinging ends of the respective swinging braces, means for elevating the plow beams, and draft devices in connection with the said beams, substantially as set forth.

3. The combination of a main frame having a diagonal main beam, and a series of lateral beams or plates arranged in step form, a series of plows corresponding to said lateral plates or beams, swinging braces connecting the said plows with their respective lateral beams or plates, and means supported on the main frame for raising and lowering the several plows independently, substantially as set forth.

4. The combination with the main frame having a diagonal main beam, a transverse draft bar at the front of the main frame, and a diagonal laterally swinging spacing bar in rear of said front bar and provided with perforations for draft rods, a series of plow beams in rear of said diagonal spacing bar, a series of draft rods extending through the spacing bar and connected with the front draft bar, and connections between the rear ends of the several draft rods and their respective plow beams, substantially as set forth.

5. The combination of the main frame having a front draft bar, a diagonal spacing bar in rear thereof and perforated for draft rods, and a diagonal main beam provided with lateral bars or plates in step form, plow beams below the several lateral bars or plates, swinging braces between the plow beams and said lateral bars or plates, means on the main frame for raising and lowering the several plow beams, draft rods extending through the spacing bar and connected with the front draft bar, and connections between the said draft rods and their respective plow beams, substantially as set forth.

853,048. PASTE-APPLYING MACHINE. HARRY WEISKOPF, Chicago, Ill. Filed Aug. 11, 1906. Serial No. 330,226.

Claim.—1. In a machine of the character described, a tray, a tablet hinged thereto, a paste receptacle, a roller, a lever to which the roller is connected, a series of paste blocks upon said tablet, a vertically movable diaphragm for supporting a column of sheets of paper, means whereby said tablet may be swung to a position over the paper sheets, and a treadle for presenting the top sheet to the paste blocks.

2. In a machine of the character described, a tray, a paste receptacle, an absorbent pad leading from the paste receptacle to the tray, a tablet hinged to the tray and provided with a series of paste blocks, a roller for applying paste to the upper surface of said blocks, a vertically movable diaphragm for supporting a series of sheets of paper, for presenting said tablet and paste blocks to the paper sheets, a foot treadle for moving said sheets against the blocks.

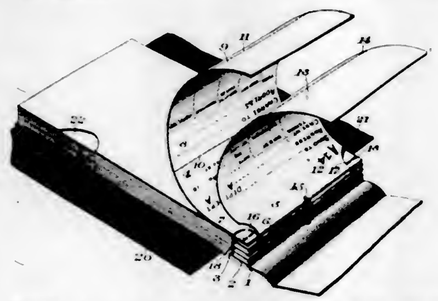
3. In a machine for applying samples to paper, the combination of a tray, a tablet, paste blocks thereon, a paste receptacle, a paste pad, a roller mounted to move over the pad and over the paste blocks, means whereby the tablet may be inverted, a vertically movable diaphragm for supporting a series of paper sheets under the tablet, and a foot treadle for pressing the diaphragm and sheets up against the pasted blocks.

4. In a machine of the character described, a hinged tablet carrying a series of paste blocks, in combination with a paste pad, a roller, a system of pivoted levers connected to said roller, bearing wheels on said roller, a track upon which said wheels are guided, means whereby said tablet may be swung into position to present the blocks to sheets of paper, and means for pressing the paper against the blocks.

853,049. MATTRESS. SARAH H. WESTON, Congaree, S. C. Filed Nov. 24, 1905. Serial No. 288,909.

Claim.—A mattress embodying a substantially rectangular sheath open at one side and having smooth continuous top and bottom walls arranged parallel with each other, and integral end walls of the same width as the sheath a plurality of spaced partitions secured to the interior surfaces of the top and bottom walls and of less width than the width of the mattress to form longitudinal flaps disposed at the open end of the sheath, and continuous with the top and bottom walls of the latter, respectively, one of said flaps being of the same height of the end walls and having its opposite ends rigidly secured to said end walls and the opposite flap being free and adapted to be folded downwardly over the fixed flap, with its lower longitudinal edge in alinement with the bottom of the sheath removable mattress sections fitting between the partitions of the sheath and each divided by transverse partitions into a plurality of compartments for the reception of a removable filling, and strings secured to the longitudinal edges of each flap and adapted to interengage for securing the mattress sections within the sheath, there being a string rigidly secured to the bottom of the sheath at the juncture of the end walls and stationary flap for engagement with the adjacent terminal string on the folding flap.

853,050. TRIPLICATE SALES-CHECK. SAMUEL S. ZELLEY, Philadelphia, Pa. Filed Mar. 17, 1906. Serial No. 306,585.



Claim.—1. In a salesbook, a plurality of leaves, leaves of a different character interspersed between the first-named leaves, means retaining all of said leaves in the book and separate means engaging only the interspersed leaves for retaining them in their position.

2. In a triplicate salesbook a plurality of leaves suitably perforated, a plurality of integral leaves, means for securing all of said leaves together and separate means for securing said integral leaves together independent of said perforated leaves.

3. In a triplicate salesbook a plurality of double leaves, a plurality of single leaves, means for securing the same together and means for securing said single leaves together independent of said double leaves.

4. In a triplicate salesbook a plurality of double leaves suitably perforated, a plurality of single integral leaves, means for securing all of said leaves together and separate means for securing said single integral leaves together independent of said double perforated leaves.

5. In a triplicate sales book, a plurality of leaves, a plurality of other leaves interspersed therebetween, means for securing the first named set of leaves, the last named set of leaves being cut away where the first set is secured and independent means for securing both sets of leaves.

6. In a triplicate salesbook, a plurality of double leaves, the upper of each of which is perforated to form two sections and the lower of which is perforated to form three sections, a plurality of single leaves one of which separates each double sheet from the next, means for securing said leaves together and separate means for securing said single leaves together independently of said double leaves.

7. In a triplicate salesbook, a double leaf having a weakened line at the middle and two weakened lines in one half and one weakened line in the other half, a single leaf, the double and single leaf being in superimposed relation and means for binding the single leaf separately from the double leaf.

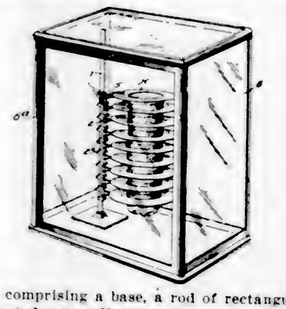
8. In a triplicate sales book, a single leaf, a book cover, a double leaf, weakened at the middle line and superimposed between the single leaf and book cover, and independent means for attaching the double leaves and all of the leaves respectively to said book cover.

9. In a triplicate salesbook, a plurality of leaves, means for binding the leaves together, and means for binding some of the leaves independently of the other leaves.

853,051. DISPLAY-RACK. LOUIS A. ALSON, Water Valley, Miss. Filed Sept. 17, 1906. Serial No. 334,948.

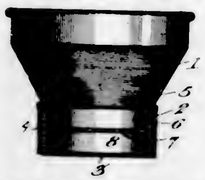
Claim.—1. A rack comprising a base, a rod projecting upwardly therefrom, a plurality of sliding carriages mounted thereon, hat receiving arms carried by said carriages, a plurality of relatively fixed rollers mounted in each carriage at one side of said rod, and a relatively fixed roller mounted in each carriage on the other side of said rod, substantially as shown and described.

2. A rack comprising a base, a rod projecting upwardly therefrom, a plurality of sliding carriages mounted thereon, hat receiving arms carried by said carriages, a plurality of relatively fixed rollers mounted in each carriage at one side of said rod, and a relatively fixed roller mounted in each carriage on the other side of said rod, said rollers lying in different horizontal planes, substantially as shown and described.



3. A rack comprising a base, a rod of rectangular cross section projected upwardly therefrom, a skeleton frame carriage slidably mounted on said rod and embracing the same, said carriage comprising a front portion and side portions, a shaft connecting said side portions together, a friction roller mounted on said shaft, and a second shaft mounted on the front of said carriage, and a friction roller on said second shaft, said friction rollers being relatively fixed and lying in different horizontal planes, substantially as shown and described.

853,052. STRAINER. CHARLES R. ASHMEAD, Nevada, Mo. Filed June 30, 1906. Serial No. 324,257.



Claim.—1. A strainer comprising a vessel having an open, wholly unobstructed tubular throat, a lower straining member composed of pliable, reticulated fabric applied over the lower end of the throat, a removable clamping band fitted on the outside of the throat for detachably securing the fabric in place, an inner clamping band removably fitted within the throat and a sheet of pliable, reticulated fabric applied over the upper end of and clamped in place within the throat by means of the band and constituting an upper straining member serving in conjunction with the lower member as the sole means for straining the liquid.

2. A strainer comprising a vessel having an open, wholly unobstructed tubular throat, a lower straining member composed of a pliable, reticulated fabric applied over the lower end of the throat, a removable clamping band fitted on the outside of the throat for detachably securing the fabric in place, a plurality of inner clamping bands removably fitted one above the other within the throat, and sheets of pliable, reticulated fabric applied respectively over the upper ends of and clamped in place by the inner bands, and constituting upper and intermediate straining members serving in conjunction with the lower straining member as the sole means for straining the liquid.

853,053. SAFETY GAS COCK OR VALVE. EDWIN R. BENNETT and MELVIN I. EKERN, Flandreau, S. D. Filed May 19, 1906. Serial No. 317,802.

Claim.—1. In a safety gas cock or valve, the combination with a rotary gas valve or cock, of an automatically operating latching or locking device adapted for coöperation therewith to effect its release and to secure the valve, and means for holding said latching or locking device partially retracted so that it may be completely released by the valve upon turning of the valve for later engagement with the valve.

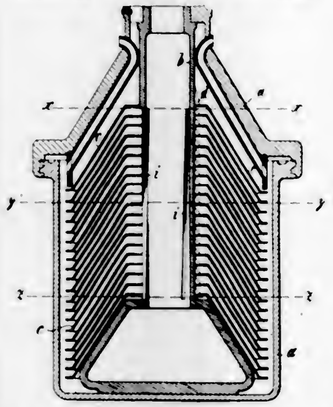


2. In a safety gas cock or valve, the combination with a rotary or turning plug or valve having a locking pin opening, and a cam surface leading to said opening, of a spring-actuated locking pin positioned to snap into the opening aforesaid or to bear on the cam surface aforesaid, and a catch for holding the locking pin raised out of the opening aforesaid in position for engagement by the cam surface, said cam surface being adapted, on turning of the valve, to disengage the locking pin from its catch.

3. In a safety gas cock or valve, the combination with a rotary or turning plug or valve having a locking pin opening, and a cam surface leading to said opening, of a spring-actuated locking pin positioned to snap into the opening aforesaid or to bear on the cam surface aforesaid, a catch for holding the locking pin raised out of the opening aforesaid in position for engagement by the cam surface, said cam surface being adapted, on turning of the valve, to disengage the locking pin from its catch, and another catch for holding the locking pin entirely retracted.

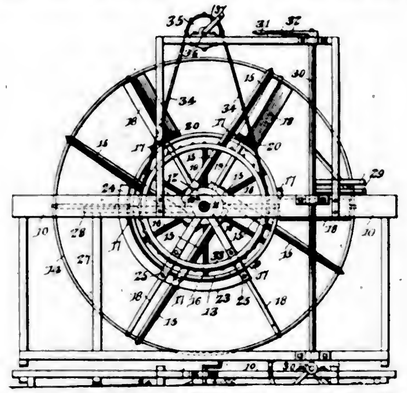
4. In a safety gas cock or valve, the combination with a rotary or turning plug or valve having a locking pin opening, and a cam surface leading to said opening, of a longitudinally movable rotatable locking pin positioned to engage the locking pin opening and the cam surface, a spring co-acting with said pin and adapted to project it for engagement with the valve and also to rotate or turn it, and a catch adapted to hold said pin when turned and retracted out of the pin opening, whereby the pin can be engaged by the cam surface when the valve is turned and thereby disengaged from the catch to enable the spring to turn the pin and project it in position to lock the valve.

853,054. CENTRIFUGAL MILK-SEPARATOR. CARL BERGNER, Sande, near Bergedorf, near Hamburg, Germany. Filed Aug. 7, 1905. Serial No. 273,135.



Claim.—A centrifugal milk separator embodying an inlet tube provided with a plurality of slots arranged in parallelism with respect to the axis of the tube, the walls at the extremities of each of the slots extending in an opposite direction with respect to each other so that the slot throughout its length extends substantially in the form of a spiral.

853,055. PADDLE-WHEEL. LEE P. BIGGERS, Palmersville, Tenn. Filed Feb. 5, 1906. Serial No. 299,548.



Claim.—1. In a paddle wheel, the combination with a rotatable support, of paddles mounted thereon, each paddle comprising sections separately journaled on the support and movable into substantial alinement transversely of the support, and separate devices located exteriorly of and on opposite sides of the support for maintaining the paddle sections in such alinement.

2. In a paddle wheel, the combination with a rotatable support, of paddles mounted thereon, each paddle comprising sections separately journaled on the support and movable into substantial alinement transversely of the support, separate normally stationary guides located exteriorly of and on opposite sides of the support, and holding fingers carried by the paddle sections and disposed in angular relation thereto, said fingers engaging the guides and turning and holding the paddle sections in substantial alinement.

3. In a paddle wheel, the combination with a rotary support, of paddles comprising radially disposed sections separately journaled contiguous to their outer edges upon the support, outstanding fingers fixed to the pivoted edges of the paddles and disposed in angular relation to said paddles, and guides located on opposite sides of the support, the paddles passing between the guides and the fingers engaging the same to turn and hold the paddle sections in transverse relation to the support.

4. In a paddle wheel, the combination with a rotary wheel having spaced rims, of paddle sections journaled in the rims and having angularly disposed fingers that are arranged to project outwardly beyond the outer sides of the wheels, and guides mounted concentrically of the wheels on opposite sides thereof and extending but partially about the same, said fingers engaging the guides and thereby turning and holding the paddle sections in transverse relation to the support.

5. In a paddle wheel, the combination with a rotary support, of feathering paddles journaled thereon, guiding means for holding the paddles against their feathering positions, means connected to the guiding means for moving the same, and means separate from the moving means and movable into and out of the path of movement of the guiding means for locking said means against movement.

6. In a paddle wheel, the combination with a fixed frame, of a rotary support journaled thereon, feathering paddles journaled on the support, movable guiding means for holding the paddles out of their feathering positions, and means mounted on the frame and movable into and out of the path of movement of the guiding means for locking the latter against movement.

7. In a paddle wheel, the combination with a fixed frame, of a rotary wheel frame journaled thereon, feathering paddles mounted on the wheel frame, movable guiding means for maintaining the paddles in a predetermined relation on the wheel frame, a stationary stop carried by the

fixed frame and located in the path of movement of the guiding means for holding said guiding means in one position, and another stop movable into and out of the path of movement of said guiding means to hold the same in a different position.

8. In a paddle wheel, the combination with a fixed frame, of a wheel frame journaled thereon, co-operating feathering paddle sections journaled on the wheel frame and having oppositely disposed fingers that project on opposite sides of the wheel frame, when said sections are in feathering position, and guides located on opposite sides of the wheel frame and in the path of movement of the fingers to turn said paddle sections to and maintain them in their operative position.

9. In a paddle wheel, the combination with a fixed frame, of a wheel frame journaled thereon, co-operating feathering paddle sections journaled on the wheel frame and having oppositely disposed fingers that project on opposite sides of the wheel frame when said sections are in feathering position, guides located on opposite sides of the wheel frame and in the path of movement of the fingers to turn said paddle sections to and maintain them in their operative positions, and means for simultaneously moving the guides.

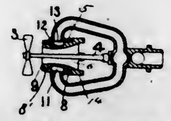
10. In a paddle wheel, the combination with a fixed frame, of a shaft journaled thereon, a wheel frame fixed to the shaft and including a hub, concentric bands surrounding the hub and spaced therefrom and from each other, spokes connecting the bands and hub and disposed tangentially of the latter, paddle sections journaled between the bands and having shafts that are journaled in the hub, angularly disposed fingers carried by the sections, guides journaled on the shaft on opposite sides of the wheel and arranged to be engaged by the fingers to turn the paddle sections of the wheel frame, operating means for the guides including a shaft having a handle crank, stationary stops carried by the frame for holding the guides in a predetermined position and movable into and out of the path of movement of the guides, said other stops including rock shafts, and handle levers carried thereby.

11. The combination with a plurality of paddle wheels having feathering blades, of guides located on opposite sides of each wheel and constituting means for holding the blades in predetermined relations with respect to the wheels, gear wheels carried by the guides, and gearing connected to said wheels for simultaneously moving the same.

853,056. MANUFACTURE OF EXPLOSIVES. HUGH C. L. BLOXAM, Cape Town, Cape Colony, assignor to South African Maganite Explosives Syndicate Limited, Cape Town, Cape Colony. Filed July 12, 1906. Serial No. 325,943.

Claim.—In the process of manufacture of an explosive having for its principal constituents ammonium nitrate and dinitrobenzene, the step which consists in mixing the ammonium nitrate and the dinitrobenzene while they are both in a molten condition.

853,057. BURNER FOR HEATING AND ILLUMINATING PURPOSES. HENRY BRABY, Annandale, near Sydney, New South Wales, Australia. Filed June 5, 1905. Serial No. 263,841.



Claim.—1. In a burner, the combination of a sleeve having an interior annular groove, and a nut fitted in the sleeve and having a complemental annular groove and spiral ways, said spiral ways being surrounded by the sleeve to form at the outer end of said burner an annularly arranged series of gas outlets.

2. In a burner, the combination of a sleeve having an interior annular groove, a nut fitted in the sleeve and having a complemental groove and spiral ways, said spiral ways being surrounded by the sleeve to form at the outer end of said burner an annularly arranged series of gas outlets, and a fan arranged for rotation by jets of gas issuing from the said outlets, the fan serving when rotated to draw air into admixture with such gas.

853,058. WHEEL-RIM. RICHARD S. BRYANT, Columbus, Ohio. Filed Apr. 13, 1905. Serial No. 255,434.



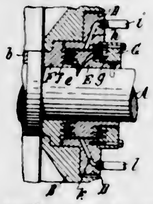
Claim.—1. The combination with the rim having the tire flange at one side, and the shoulder or stop at its edge on the other side and having stops projecting outward from its outer surface to prevent circumferential movement of parts fitted to said surface, of the elastic lock ring adapted to engage with and bear laterally against said edge shoulder or stop on the rim to prevent outward movement of the tire flange, and the movable tire flange inside of said lock ring, and having grooves in its inner face to receive the said outward projecting stops on the rim, whereby the flange is adapted to be slipped inward toward the center of the rim while in engagement with said shoulders or stops to permit the removal or replacing of the lock ring, substantially as set forth.

2. The combination with the rim, of the transversely movable tire flange at one side of the rim, means interposed between the rim and the movable flange preventing rotary movement of one of said parts in relation to the other but permitting the transverse sliding of the flange relative to the rim, and projections on the flange extending laterally inward into the tire and preventing the tire from moving circumferentially, substantially as set forth.

3. The combination with the rim having the fixed tire flange at one side and the shoulder or stop at its edge on the other side and having rib-like stops extending outward beyond the outer face of the rim, and the lock ring detachably seated on the rim against said edge shoulder or stop, of the movable tire flange having passages for the rib-like stops on the rim, said stops being adapted to prevent the creeping of the flange and the flange being arranged to bear outwardly against said lock ring, and means carried by the movable flange for engaging laterally with the tire to prevent its creeping, substantially as set forth.

4. A rim for vehicle wheels comprising a rim ring provided with a removable flange, locking means for the said flange disposed between the flange and the ring, and a wire staple for preventing circumferential movement of a tire extending transversely of the rim ring and having its ends passed through the ring and headed to fasten it rigidly in place.

853,059. STUFFING-BOX. JULIUS H. O. BUNGE, Buffalo, N. Y. Original application filed Feb. 14, 1906, Serial No. 300,972. Divided and this application filed June 14, 1906. Serial No. 321,591.

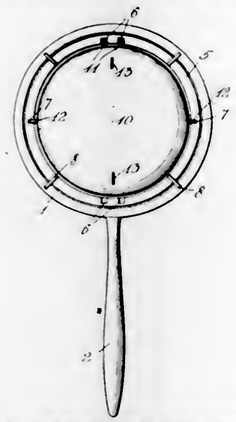


Claim.—1. In a stuffing box, the combination of a stationary and a rotary member, each provided with concentric rings which project lengthwise with reference to the axis of the rotary member, the rings of the two members intermeshing and being separated by a zig-zag passage composed of legs which are arranged concentrically, each outer leg further from said axis than the next inner leg, substantially as set forth.

2. In a stuffing box, the combination of a stationary member and a rotary member, each provided with concentric rings trending lengthwise of the axis of the rotary member, the rings of the two members intermeshing and being separated by a zig-zag passage having enlarged chambers adjacent to the free ends of the rings, substantially as set forth.

3. In a stuffing box, the combination of a stationary member and a rotary member, each provided with concentric, tapering rings, the rings of the two members intermeshing and being separated by a zig-zag passage having enlarged chambers adjacent to the free ends of the rings, substantially as set forth.

853,060. ROTARY WAFFLE-IRON. WILSON L. CARTER, Gulfport, Miss. Filed Feb. 25, 1907. Serial No. 359,090.



Claim.—1. A rotatable waffle iron comprising a supporting base having a round opening therein, an annular band rotatably mounted on said base, and a batter receptacle journaled to swing in said band and adapted to rotate therewith.

2. A rotatable waffle iron comprising a supporting base having a circular opening therein, an annular band fitting in said opening in said base and having spaced lugs resting on the upper face thereof, and a batter receptacle journaled to swing in said band and adapted to rotate therewith.

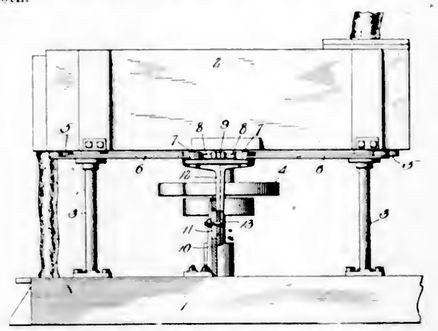
853,061. GYRATORY SIFTER. JOHN M. CASE, Louisville, Ky. Filed Jan. 8, 1906. Serial No. 295,138.

Claim.—1. The combination with the gyratory sieve box, of a pair of parallel horizontal links pivoted to the box, a pair of levers pivotally connected at one end to the free ends of the links, extending toward each other and pivoted near their other ends, and connection between the adjacent or inner ends of the levers causing the outer ends to move simultaneously in the same direction.

2. The combination with the gyratory sieve box, of a pair of horizontal links connected to the box near each end thereof and upon the same side of the box, and extending to the opposite side of the box, a pair of pivoted levers connected to the free ends of the links and extending toward one another, connection between the adjacent ends of the levers, and an extensible support upon which the pivoted levers are mounted.

3. The combination with the frame, of flexible supports secured at their ends to the side bars of the frame, a bolting cloth secured to the frame and resting loosely on the flexible supports, and means engaging the flexible supports to clean the cloth.

4. The combination with the frame and a bolting cloth secured thereto, of transverse bars arranged below the bolting cloth in spaced relation to said cloth, and a flexible bar arranged longitudinally of the bolting cloth and between the transverse bars and the bolting cloth, and capable of moving freely longitudinally and transversely of the cloth.



5. The combination with the frame and a bolting cloth secured thereto, of transverse bars arranged below the bolting cloth in spaced relation to said cloth, and a flexible bar arranged longitudinally of the bolting cloth and between the transverse bars and the bolting cloth, and capable of moving freely longitudinally and transversely of the cloth, said bar having means at its ends for causing it to bend upwardly between its ends.

6. The combination with the frame and a bolting cloth secured thereto, of transverse bars arranged below the bolting cloth in spaced relation to said cloth, a flexible bar arranged longitudinally of the bolting cloth and between the transverse bars and the bolting cloth and capable of moving freely longitudinally and transversely of the cloth, and cushions at the ends of the bar.

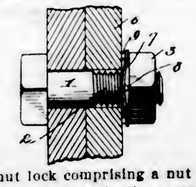
7. The combination with the sieve cloth, of the transverse flexible strips beneath the cloth, and a longitudinal flexible bar mounted to move transversely and longitudinally to engage with the strips during a gyratory motion of the sieve cloth.

8. The combination with the screen frame, a cloth covering the same, a series of transverse flexible strips beneath the cloth, a longitudinal bar beneath the strips, and means supporting the bar and permitting a longitudinal and transverse movement thereof.

9. The combination with the screen frame, a cloth covering the same, a series of transverse flexible strips beneath the cloth, a longitudinal bar beneath the strips, and cross bars on which the bar is freely movable longitudinally and transversely.

10. The combination with the shifting frame and a bolting cloth secured thereto, of a flexible bar freely movable beneath the cloth and having its ends deflected downwardly away from the cloth to engage the frame and cause the bar to bend upwardly between its ends and means for supporting the bar beneath the cloth.

853,062. NUT-LOCK. CORNELIUS S. CLARK, Norfolk, Va. Filed Sept. 11, 1906. Serial No. 334,158.



Claim.—1. A nut lock comprising a nut having one face thereof provided with a boss having a smooth and unin-

terrupted periphery, said boss surrounded by a smooth and uninterrupted marginal portion, and a flat, yieldable and circular washer mounted upon said boss and provided on each face with a pair of piercing barbs, the barbs upon one face arranged at an angle with respect to the barbs upon the other face, said barbs arranged upon the inner marginal portion of said washer and of a length less than the width of the body portion of the washer.

2. A nut lock comprising a nut having one face thereof provided with a boss having a smooth and uninterrupted periphery, said boss surrounded by a smooth and uninterrupted marginal portion, and a flat yieldable and circular washer, mounted upon said boss and provided on each face with a pair of piercing barbs, the barbs upon one face arranged at an angle with respect to the barbs upon the other face, combined with a bolt provided with a screw-threaded portion adapted to receive said nut and further having the head formed with a boss surrounded by a smooth marginal portion, and a yieldable washer mounted upon the boss of the nut, said washer having each of its faces provided with a pair of piercing barbs, the barbs upon one face positioned at an angle with respect to the barbs of the other face, the barbs formed on the washer carried by the bolt arranged upon the inner marginal portion of said washer and of a length less than the width of the body portion of the washer.

853,063. TILE. EDOUARD COFFIN, Grandvilliers, France. Filed Mar. 24, 1906. Serial No. 307,947.



Claim.— 1. A tile of the shape of a lozenge with the corners upon the short axis cut off by lines parallel to the longer axis, provided on the weather side with a groove and a rib along and parallel to the upper edges, and on the inner side with a groove parallel to the lower edges adapted to overlap groove and rib of the tiles of the next lower row.

2. A tile of the shape of a lozenge with the corners upon the short axis cut off by lines parallel to the longer axis, provided on the weather side with a groove and a rib along and parallel to the upper edges, and on the inner side with a groove parallel to the lower edges, adapted to overlap groove and rib of the tiles of the next lower row, having holes 4 and 5 for means to secure it to the roof, substantially as described.

3. A tile of the shape of a lozenge with the corners upon the short axis cut off by lines parallel to the longer axis, provided on the weather side with a groove and a rib along and parallel to the upper edges, and on the inner side with a groove parallel to the lower edges, adapted to overlap groove and rib of the tiles of the next lower row, having projections on the under side to grip over the laths, substantially as described.

853,064. WATER-TUBE BOILER. JOSEPH J. COLE, Patton, Pa., assignor of one-fifth to Michael Cole, one-fifth to William Cole, one-fifth to Henry Cole, and one-fifth to Frank Cole, Patton, Pa. Filed Apr. 14, 1905. Serial No. 255,633.



Claim.—1. In a water tube boiler, a water containing receptacle, a coupling comprising a hollow tapered member with its small end screw threaded and inserted through one of the side walls of the receptacle, a tapered nut inserted through the opposite side wall and engaging the hollow member, and a bent water heating tube having one end engaged within the hollow coupling member, and the opposite end in communication with the receptacle.

2. In a water tube boiler, a water containing receptacle, a coupling comprising a hollow tapered nipple with a transverse opening, and with its small end screw threaded and inserted through one of the side walls of and into the receptacle, a tapered nut inserted through the opposite side wall and engaging the screw threaded end of the nipple, and a bent water heating tube having one end engaged within the hollow nipple, and the opposite end engaged within a header in communication with the receptacle.

3. A water tube boiler, comprising a series of water tubes, and a tubular header connected with the ends of the tubes and having oppositely arranged apertures in its walls and oppositely beveled members engaging said apertures and connected with the tubes for coupling the tubes to the headers.

4. In a water tube boiler, a header and water heating tube, a coupling for securing the water tube to the header, comprising a tapered nipple having lateral passages formed therein, positioned to open within the header, and a tapered nut engaging the inner end of said nipple and operating to draw the nipple tightly to the header.

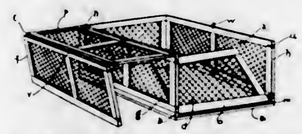
5. A water tube boiler comprising headers, water tubes connected at their ends with said header by means of couplings comprising oppositely beveled members engaging tapered apertures in opposite walls of the headers and having transverse apertures forming communication between the tubes and the interior of the headers.

6. A water tube boiler comprising supply and outlet headers, water tubes connected therewith, couplings for joining the ends of the tubes to the headers, comprising a hollow tapered member engaged upon the end of a tube and having a transverse passage for communicating with the header and a tapered nut engaging the end of said hollow member for drawing it tightly in place in the header.

7. A water tube boiler, comprising an inlet header having oppositely arranged apertures therein, an outlet header, tubes connected with the inlet header at one end and at their upper ends connected with the outlet header and couplings connected with the ends of the tubes, said couplings comprising a tapering tube member, and a cap or plug member, the said cap member also tapering, the two members of the coupling engaging the opposite walls of the inlet header and affording a connection between the tubes and the interior of the said header.

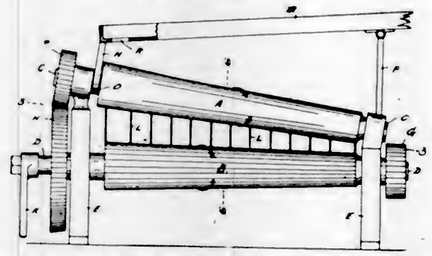
8. A water tube boiler, comprising water tubes, a header connected with the ends of said tubes having parallel walls formed with oppositely arranged apertures or seats, and couplings connected with the ends of the tubes and made up of oppositely tapering members, and means for drawing the tapering members toward each other to tighten the couplings in place in the header.

853,065. CRATE. ABNER S. COOK, Burlington, Iowa. Filed May 17, 1906. Serial No. 317,407.



Claim.—A folding crate consisting of a base, having raised side strips, rectangular ends having an inside hinged connection with said base and adapted when upright to abut at their bottoms against said base to prevent inward movement thereof, rectangular sides having an inside hinged connection with said raised side strips, said rectangular sides having laterally projecting stops adapted to abut against the inner sides of the rectangular ends when upright to prevent inward movement thereof, and a folding rectangular top composed of two equal longitudinal sections having an outside hinged connection with each other, one of the longitudinal top sections having an outside hinged connection with one of the rectangular sides.

853,066. NUT GRADING AND SHELLING MACHINE. JOHN C. CHELLIN, Liverpool, England. Filed July 28, 1905. Serial No. 271,646.



Claim.—In a nut grading and shelling machine, a pair of tapered grading rollers whose axes are parallel and inclined, arranged directly above a pair of correspondingly tapered and grooved cracking rollers, said rollers being so geared with each other that the grading rollers rotate in opposite directions and in directions opposite to the directions of rotation of the cracking rollers, the directions of rotation of the grading rollers tending to expel the nuts fed on to them, while the direction of rotation of the cracking rollers operates to draw such nuts between such cracking rollers, means for rotating such rollers, and means for feeding nuts on to the grading rollers and for guiding them therefrom on to the cracking rollers, as described.

853,067. SOAP-HOLDER. JOHN M. DAVIES, Plattsburg, N. Y. Filed Apr. 12, 1906. Serial No. 311,267.

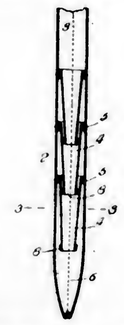


Claim.—1. The combination with the holder, an extensible means on the holder for pendently sustaining a bar or cake of soap, means for securing the holder on the wash stand or basin, said holder including a splash board portion against which the soap bar or cake rests when at its normal position.

2. The combination with a holder having a contracted vertical chamber at its lower end, an outwardly projected front portion above the contracted vertical chamber, and a splash board portion below the said projected front portion against which the soap bar or cake rests when at its normal position, means for supporting the holder on the wash stand or basin, and a means mounted on the holder, comprising a supporting pulley, a flexible member that takes over the pulley and extended down over the splash board portion a means at one end of the flexible member for attaching the soap body and a counter-poise on the other end of the flexible member movable and guided in the contracted vertical chamber of the holder, as set forth.

3. The combination with the holder having vertical alining slots in the opposite ends, a guide pulley in the upper end, a counter-poise movable in the holder having lateral tongues engaging the slots, a supplemental counterpoise removably mounted on the main counterpoise, a flexible member connected to the main counterpoise passing over the guide pulley and means for engaging with the lower end of said flexible member for sustaining a cake or bar of soap thereon.

853,068. APPAREL-POCKET. JOHN DEAN, Racine, Wis. Filed Oct. 26, 1906. Serial No. 340,718.



Claim.—1. An apparel pocket having a strip arranged transversely across the inner faces of the opposite side walls of the pocket and secured thereto along its upper longitudinal edge and transversely across the strip at opposite edges of the pocket, thereby forming opposite reverse retaining pockets closed at the ends and top and open at the bottom.

2. An apparel pocket having an internal flat flexible reverse retaining pocket arranged transversely across the pocket side wall between the pocket mouth and bottom, said reverse pocket being closed at its ends and top and open at its bottom and formed by a flap longitudinally secured at the top and transversely secured at the pocket ends to the apparel pocket wall.

3. An apparel pocket having internal flexible flat reverse retaining pockets arranged transversely across the opposite inner side faces of the apparel pocket, said reverse pockets being closed at the top and depending from the side walls of the apparel pocket and having free lower edges, and at the ends secured throughout their vertical length to the apparel pocket.

4. An apparel pocket having a vertical series of overlapping transversely arranged reverse retaining pockets, each formed by a flap with the free longitudinal lower edge and at its upper end depending from the apparel pocket wall, each reverse pocket being vertically secured at the ends thereof to the apparel pocket.

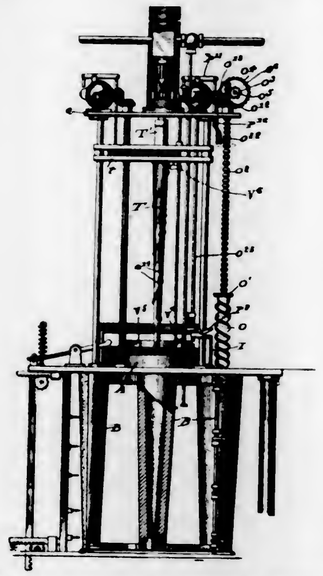
853,069. MACHINE FOR MAKING FENCE-POSTS. ROBERT L. DENNISON, Kansas City, Mo. Filed July 19, 1906. Serial No. 326,906.

Claim.—1. In a machine for molding plastic articles, the combination of a revolvible carrier having mold boxes, a hollow shaft centrally of said carrier and forming a pump cylinder, a supply pipe, a check valve controlling the same, a hollow plunger piston and check valve, a hollow former having discharge openings, and a connection between the hollow former and the hollow plunger, substantially as set forth.

2. In a machine for molding plastic articles, the combination of a mold, a hollow former reciprocating and revolving in said mold, and having oil discharge openings and means for supplying oil to said former.

3. The combination in a machine for molding plastic articles, of a mold box, a former revolving and reciprocating therein, a pump having a plunger reciprocating with the former, and means for conveying the pump material to the former.

4. The combination in a machine for molding plastic articles, of a central hollow shaft forming a pump cylinder, a carrier revolving about the said shaft and having mold boxes, a hollow plunger reciprocating in the pump cylinder, a former, a tube connecting the former with the plunger, and means for turning and reciprocating the former.



5. The combination in a machine for molding plastic articles, of a piston rod having an oil conduit, a hollow former having oil discharge openings and swiveled on the piston rod and communicating with the oil conduit therein, a stuffing-box controlling the joint between the former and the piston rod, a pump cylinder, a hollow plunger operating in said cylinder, and a supply pipe connecting said hollow plunger with the piston rod whereby oil may be conveyed to the conduit of the piston rod and the plunger will be reciprocated by the movements of the piston rod, substantially as set forth.

6. In a machine for molding plastic articles, the combination of a piston rod having an oil conduit and a supply pipe leading thereto, a hollow former swiveled on the piston rod and having oil discharge openings, the said former communicating with the oil conduit in the piston rod, and a stuffing-box controlling the joint between the former and the piston rod.

7. The combination in a machine substantially as described of a revolving carrier having mold boxes arranged to be successively presented to a packer, a packer arranged to reciprocate and revolve in said mold boxes, and provided with an upwardly projecting rack shaft having a key-way and at the base of said rack shaft with a tripping disk, a motor and gearing connecting the same with the rack shaft, including a pinion keyed on the said shaft, and means controlling said motor including devices depending in position for engagement by the disk at the base of the rack shaft, substantially as set forth.

8. The combination of a revolving carrier having mold boxes and provided with cam projections or lugs, a packer adapted to operate in the mold boxes and having an upwardly projecting rack shaft, a motor mechanism for turning the said shaft, a shaft having a pinion meshing with the rack shaft and also provided with a loose gear, a motor driving said loose gear, clutch mechanism between said loose gear and its supporting shaft, a depending rod arranged for operation by the lugs or cam projections on the carrier, intermediate mechanism between said depending rod and the clutch mechanism whereby the said rod may operate the clutch mechanism, and intermediate devices between the packer and the said depending rod whereby the same may be freed from engagement with the cam lugs or projections of the carrier, substantially as set forth.

9. The combination with a revolving carrier, its mold boxes and cam lugs or projections, of a packer arranged to revolve and reciprocate in the mold boxes and provided with an upwardly projecting rack shaft, means for turning the shaft, a pinion meshing with the rack shaft whereby to lift the packer, a motor mechanism, intermediate devices between the motor mechanism and said pinion and including a clutch mechanism, and means whereby the clutch mechanism may be operated from the cam lugs or projections of the carrier, substantially as set forth.

10. In a machine for molding plastic articles, the combination with a revolving carrier having mold boxes, of a packer arranged to descend by gravity into said mold boxes, devices for lifting said packer, and means controlling said lifting devices from the carrier, substantially as set forth.

11. The combination with a revolving carrier having mold boxes and also provided with cam lugs or projections, of a packer adapted to reciprocate and rotate within the said boxes, means for turning the said shaft, devices for raising the shaft and including a motor mechanism and a clutch, a depending rod, intermediate devices between the said rod and the clutch mechanism, the said rod being provided at its lower end with a pivoted foot-piece arranged to operate upon the cam lugs or projections of the carrier, and means for operating said foot-piece from the packer, substantially as set forth.

12. The combination with a revolving carrier having cam lugs or projections and a packer having a disk, and mechanism for lifting the packer, of a depending rod arranged to operate upon the mechanism for lifting the packer, and provided at its lower end with a pivoted foot-piece operating upon the cam lugs or projections of the carrier, a bell crank lever connected with the foot-piece and arranged for operation by the disk of the packer, and a spring for readjusting the foot-piece, substantially as set forth.

13. The combination of the carrier having the mold boxes and the cam lugs or projections, a packer, devices for lifting the packer, means for controlling the lifting devices including a depending rod having a pivoted foot-piece arranged for engagement by the cam lugs or projections, devices for operating said pivoted foot-piece from the packer, a reciprocating former, and devices in connection with said former for operating upon the pivoted foot-piece whereby to actuate the same under unusual circumstances, substantially as set forth.

14. The combination with a revolving carrier having mold boxes, of a packer adapted to reciprocate and revolve within the mold boxes and provided with an upwardly projecting rack shaft, means for rotating the rack shaft and packer, a shaft having fixed thereon a pinion meshing with the rack shaft, a gear loose on said shaft, means for driving said gear, a brake device having a disk fixed on the shaft, means for setting said brake from the packer, a clutch mechanism whereby to connect the gear with the shaft, and means for operating the clutch device from the carrier, substantially as set forth.

15. The combination of the carrier having mold boxes and cam lugs or projections, a reciprocating packer having a rack shaft, means for revolving the packer, a shaft having a tight pinion meshing with the rack shaft and also provided with a loose gear, and with a brake disk and a friction disk keyed on the shaft, a spring tending to set the friction disk into engagement with the loose gear, motor mechanism geared with the loose gear, a brake device operating on the brake disk and arranged to be set from the packer, means for releasing the friction disk from the gear and including a depending rod arranged for operation by the cam lugs or projections of the carrier, and means for releasing the brake when the friction disk is freed from engagement with the loose gear, substantially as set forth.

16. The combination of a revolving gear having mold boxes, a packer reciprocating in said mold boxes and having an upwardly projecting rack, a shaft having a tight pinion meshing with said rack, a driven gear loose on said shaft, brake mechanism operating upon the shaft and having a depending rod arranged to be tripped from the packer and provided with a latch for holding the brake set, a friction disk keyed on the shaft and arranged to engage with the driven gear whereby to key the latter to the shaft, means for operating said disk and including a depending rod arranged for operation from the carrier, and a device connected with the disk operating means for releasing the latch of the brake mechanism, substantially as set forth.

17. The combination with a revolving carrier and its mold boxes, of a packer for operating in said mold boxes and having a rack shaft, a shaft having a tight pinion meshing with said rack shaft, a driven gear loose on said shaft, a brake disk keyed on the shaft, a friction disk keyed on the shaft and moving into and out of engagement with the driven gear, a brake band, means operating upon the brake band for setting the brake and including a depending rod for operation from the packer and a latch for holding the brake set, a shaft approximately at right-angles to the first said shaft and provided with a yoke for operating the friction disk, with a braking crank having means for releasing the latch of the brake mechanism, and with a second crank, and a depending rod connected with said second crank and provided at its lower end with means for operation from the revolving carrier, substantially as set forth.

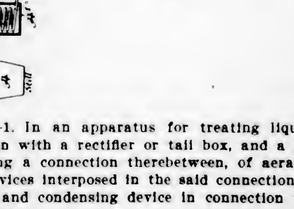
18. The combination with a revolving carrier having mold boxes and cam lugs or projections, of a packer having a downwardly projecting rack shaft and a disk at the base thereof, means operating upon the rack shaft to revolve the packer, a pinion meshing with the rack shaft for lifting the packer, means for driving the said pinion, a clutch mechanism for detaching the pinion from its drive mechanism, means operated from the packer when in its lowermost position for connecting the pinion with its drive mechanism, and means operating from the carrier for connecting the pinion with its drive mechanism, substantially as set forth.

19. The combination in a machine for molding plastic articles with a revolving carrier having mold boxes and cam lugs or projections, of a reciprocating packer, mechanism for raising the said packer, the latter being adapted to descend by gravity, means for driving said raising mechanism, a depending rod, intermediate devices whereby the said rod may connect the driving means with the raising mechanism, means operated from the carrier for actuating the rod to connect the driving means with the raising mechanism, the said rod being arranged for operation by the cam lugs or projections of the carrier to release the driving means from the raising mechanism, substantially as set forth.

20. The combination with a revolving carrier, its mold boxes and its lugs or projections, of a reciprocating packer operating in the mold boxes and provided with a rack shaft and at the base thereof with a projecting disk, gearing for revolving the packer, a pinion meshing with the rack shaft for raising the packer, a brake mechanism for retarding the movement of the pinion, a drive gear for turning the pinion, a clutch for keying the drive gear in connection with the pinion, means for operating the brake by the disk of the packer, a depending rod arranged to operate the friction disk and provided at its lower end with a pivoted foot-piece for engagement with the cam lugs or projections of the carrier, and a bell crank lever having one arm connected with said pivoted foot-piece and its other arm arranged for operation by the disk of the packer, substantially as set forth.

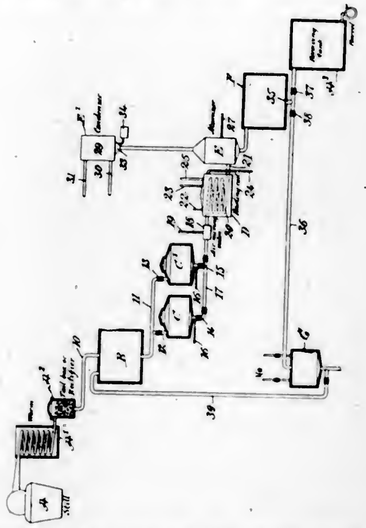
853,070. ENVELOP. JAMES A. DOUGLAS, Yates Landing, Ill. Filed May 5, 1906. Serial No. 315,365.

Claim.—The herein described safety envelop comprising a body, a protective sheet substantially coextensive in size with the body, said sheet being secured at its upper edge to the body so as to be turned down upon the back of the inclosure to confine the same between said sheet and the body, end flaps adapted to be gummed to the rear surface of the turned down protective sheet, said flaps being cut away at their lower edges to provide an intervening space through which a portion of the back of said sheet is exposed, a bottom flap gummed for attachment to the folded end flaps and provided with a central transverse slot adapted to register with the upper portion of said space,



and a top sealing flap adapted to be turned down upon and secured to the end and bottom flaps, said sealing flap being formed with a central tongue for insertion through said slot to lie against the inner surface of the bottom flap and against the exposed rear surface of the protective sheet between the spaced portions of the end flaps, said tongue being gummed on both sides for attachment to the portions of the bottom flaps and protective sheet against which it bears.

853,071. APPARATUS FOR REFINING, AGING, MELLOWING, AND PURIFYING ALCOHOLIC LIQUORS. JAMES F. DUFFY, Chicago, Ill., assignor of one-third to himself, one-third to John Anderson Duffy, and one-third to James Franklin Duffy, Jr., Chicago, Ill. Filed Oct. 25, 1905. Serial No. 284,320.



Claim.—1. In an apparatus for treating liquors, the combination with a rectifier or tail box, and a receiving tank having a connection therebetween, of aerating and heating devices interposed in the said connection, and an atomizing and condensing device in connection with the heating device.

2. In an apparatus for treating liquors, the combination with a rectifier or tail box, and a receiving tank, having connection therewith, of equalizing and aerating tanks and

heating devices interposed in said connection, and an atomizing device in connection with the heating device.

3. In an apparatus for treating liquors, the combination with a rectifier or tail box, and a receiving tank having a connection therewith, of equalizing and aerating tanks, and heating devices interposed in the connection between the receiving tank and the equalizing tank, an atomizing and condensing device in connection with the heating device, a connection between the equalizer and the receiving tank, and an air-lift interposed in the connection for returning the liquors to the equalizing tank from the receiving tank.

4. In apparatus for the treatment of liquors the combination with the rectifier or tail-box and the receiving tank, an equalizing tank connected with the rectifier, aerating tanks connected with the equalizing tank, means for supplying compressed air to the liquor in the aerating tanks, a worm leading from the aerating tanks, means for supplying heat to the worm, and an atomizer connected with the worm, and having a condenser in connection therewith said atomizer being connected with the receiving tank.

853,072. COMBINATION WEED GATHERER AND CUTTER. JOHN N. EAMES, Medford, Mass. Filed Apr. 7, 1906. Serial No. 310,545.

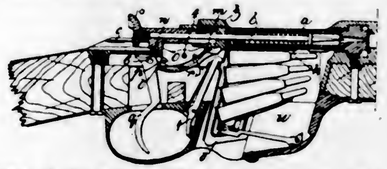


Claim.—1. In a weeder, the combination with a bar, of an adjustable cutter, a rake pivoted at the rear of said cutter, lugs projecting from said rake provided with rounded apertured ends, a bowed rod having its ends inserted in said apertures, and suitable means connected to said bowed rod for adjusting the rake at a desired angle, for the purpose described.

2. In a weeder, the combination with a bar, provided with wheels at one end and a handle at the other, of an adjustable cutter secured to said bar, a rake pivoted to said bar, lugs upwardly projecting from said rake, a bowed rod provided with outwardly bent ends pivoted to said lugs and a rod slidably mounted on the bar, connected at one end to the bowed rod and bent at the other to form a handle for the purpose described.

3. In a device of the kind described, the combination with a bar provided with a handle at its upper end, of an axle provided with wheels secured to the lower end of said bar, an angle plate secured to said bar, a grooved leg adjustably secured on said plate provided with a foot carrying a cutter, a rake pivoted to said bar to the rear of said rake, a rack secured on the upper end of said bar, and a rod mounted on said bar connected to said rake adapted to engage said rack, for the purpose described.

853,073. BREECH-LOADING SMALL-ARMS. JOHN W. ESSER, Gravelly Hill, Birmingham, England. Filed Dec. 2, 1905. Serial No. 290,001.



Claim.—1. In a device of the character described, the combination with the breech mechanism, a firing pin, a trigger, a sear pivotally connected to said trigger, and a cartridge ejector pivotally connected to said sear and provided with a spring tail portion adapted to bear against said trigger for the purpose specified.

2. In a device of the character described, the combination with the breech mechanism of a firing pin, a trigger, a sear pivoted at one end to said trigger and operating to lock said breech machanism when said trigger is unlocked and to lock said trigger when said breech mechanism is unlocked, and a cartridge ejector pivotally connected to the other end of said sear and provided with a spring tail portion adapted to bear against said trigger for the purpose specified.

3. In a device of the character described, the combination with a breech mechanism, of a firing pin adapted to be reset upon the actuation of said mechanism, means for resetting said firing pin independent of said breech mechanism, a trigger, a sear pivotally connected to said trigger, and a cartridge ejector pivotally connected to said sear and provided with a spring tail portion adapted to bear against said trigger, substantially as described.

4. In a device of the character described, the combination with a breech mechanism, of a firing pin adapted to be reset upon the actuation of said mechanism, means for resetting said firing pin independent of said breech mechanism, a trigger, a sear pivotally connected at one end to said trigger and operating to lock said breech mechanism when said trigger is unlocked, and to lock said trigger when said breech mechanism is unlocked, and a cartridge ejector pivotally connected to the other end of said sear and provided with a spring tail portion adapted to bear against said trigger, substantially as described.

5. In a device of the character described, the combination with a two-part telescoping breech bolt normally locked within the gun, means for actuating said breech bolt, means for automatically releasing said breech bolt upon the actuation of the same, a firing pin operating within said breech bolt, a trigger, a sear pivotally connected to said trigger, and a cartridge ejector pivotally connected to said sear and provided with a spring tail portion adapted to bear against said trigger, substantially as described.

6. In a device of the character described, the combination with the breech mechanism, a firing pin, a trigger, a sear pivotally connected to said trigger, and a cartridge ejector pivotally connected to said sear and provided with a spring tail portion extending below said sear and bearing against said trigger, substantially as described.

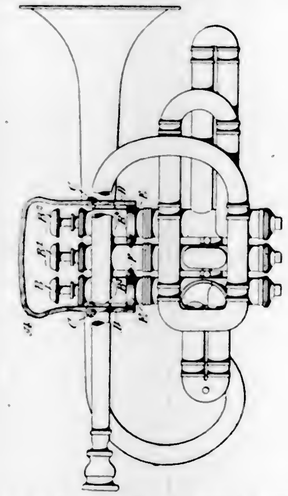
7. In a device of the character described, the combination with a breech mechanism, of a firing pin adapted to be reset upon the actuation of said mechanism, means for resetting said firing pin independent of said breech mechanism, a trigger, a sear pivotally connected to said trigger, and a cartridge ejector provided with a spring tail portion extending below said sear and bearing against said trigger, subatantially as described.

8. In a device of the character described, the combination with a two-part hollow telescoping breech bolt normally locked within the gun, means for actuating said breech bolt, means for automatically releasing said breech bolt upon the actuation of the same, a firing pin operating within said breech bolt, a trigger, a sear pivotally connected to said trigger, and a cartridge ejector pivotally connected to said sear and provided with a spring tail portion extending below said sear and bearing against said trigger, substantially as described.

9. In a device of the character described, the combination with a breech mechanism, of a magazine adapted to automatically feed cartridges to said breech, means for locking said magazine from action, a cartridge ejector arranged adjacent said breech mechanism and said magazine, a trigger, a sear pivotally connected at one end thereof to said sear, said ejector being pivotally connected to the other end of said sear and provided with a spring tail portion bearing against said trigger, substantially as described.

10. In a device of the character described, the combination with a two-part hollow, telescoping breech bolt and means for operating the same, of a magazine adapted to automatically feed cartridges to said breech upon the actuation of the same, means for locking said magazine from action, a cartridge ejector arranged adjacent said breech mechanism and said magazine, a trigger, a sear pivotally connected at one end thereof to said trigger, said ejector being pivotally connected to the other end of said sear and provided with a spring tail portion extending below said sear and bearing against said trigger, substantially as described.

853,074. FINGER-GUIDE. JAMES A. EVANS and JOHN F. WOLFF, Deer Lodge, Mont. Filed Nov. 19, 1906. Serial No. 344,172.



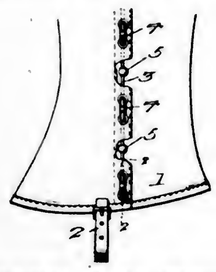
Claim.—1. In a cornet or like musical instrument the combination with the keys of a finger guide arranged above the keys and spaced apart therefrom in the direction of movement of the keys to limit the rising movement of the player's fingers, and means whereby to swing said guide into and out of position.

2. A finger guide for a cornet or like musical instrument comprising a pair of split bands for encircling the valve barrels of the instrument, clamping screws for the ends of the bands, arms extending from the said bands, and a U-shaped finger guide pivotally connected at its ends to the said arms.

3. A finger guide for a cornet or like musical instrument, comprising clamps for attachment to the valve barrels of the instrument, and a guide having its ends pivotally connected with the said clamps.

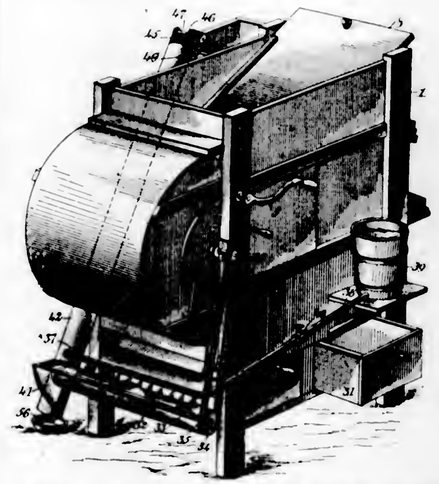
853,075. LACING DEVICE. RICHARD J. EVANS, Van Wert, Ohio. Filed Sept. 30, 1905. Serial No. 280,793.

Claim.—In combination with a legging having overlapping flaps, lace-engaging hooks attached to one of said flaps, a lacing cord attached to the legging and adapted for engagement with said hooks, and lacing devices attached to the other of said flaps, said devices each comprising an elongated body provided adjacent its ends with eyes through which the lace is to be threaded and with an



intermediate elongated tubular lace receiving portion formed to permit the lace to slide freely therethrough, said tubular portion being designed to protect that part of the lace extended between the eyes.

853,076. GRAIN SEPARATING AND VITRIOLIZING MACHINE. ARCHIE R. FERGUSON, Colton, Wash. Filed Apr. 6, 1906. Serial No. 310,313.



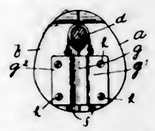
Claim.—1. A machine for the purpose specified, comprising a casing, a hopper in the upper portion of the casing, screens arranged below said hopper, oppositely inclined boards underneath said screens, a vibrating screen below the boards, a trough at the outlet end of said screen, a flexible material arranged over the screen, a board underneath the vibrating screen, another vibrating screen below the first-named vibrating screen, a liquid receiving trough into which grain discharges from the last named screen, a perforated tube above said trough, a liquid receptacle for feeding liquid into said perforated tube, and means for conveying grain through said liquid receiving trough.

2. A machine for the purpose specified, comprising a casing, a rotary fan in the casing, a plurality of screens in the casing, a liquid receiver extending horizontally along the front of the casing at the lower portion, a perforated pipe over said receiver and extending substantially the entire length thereof, a liquid container having pipe connection with the said perforated pipe, a rotating, spiral conveyer in said receiver, a tube extended vertically

along one side of the casing and communicating at its lower end with said receiver, the said tube having a perforation in its lower end, and a spiral conveyer in said tube.

3. A machine for the purpose specified, comprising a casing, a rotary fan in the casing, a plurality of screens in the casing, a liquid receiver extending across the front of the casing, a spiral conveyer in said receiver, a tube with which the receiver communicates, the said tube being extended upward and communicating at its lower end with the receiver, a spiral receiver in said tube, means operated from the fan shaft for imparting motion to the conveyer in the receiver, means operating from the fan shaft for imparting motion to the conveyer in said tube, and means operated from the fan shaft for oscillating certain of said screens.

853,077. SHOE-STRETCHER. DANIEL W. GOODWIN, Lynn, Mass. Filed Feb. 18, 1907. Serial No. 357,885.



Claim.—1. A shoe form composed of two longitudinal sections having a recess formed in contiguous portions, and at the heel end thereof, a spreading device disposed between said sections and means for yieldingly holding said sections together in their normal position comprising a metal strip having an intermediate curved spring portion disposed in said recess, and a pair of ears extending in opposite directions from the ends of said spring portions and respectively secured to the adjacent ends of said sections, substantially as described.

2. A shoe form composed of two longitudinal sections having a recess formed in contiguous portions, and at the heel end thereof, a spreading device disposed between said sections and means for yieldingly holding said sections together in their normal position comprising a metal strip having an intermediate curved spring portion disposed in said recess and reversely curved at the ends of said portion and extended in opposite directions to form ears, and means of securing said ears to the adjacent ends of said sections, substantially as described.

853,078. MINER'S LAMP. RALPH L. GRAVES, Sumpter, Oreg. Filed Aug. 3, 1906. Serial No. 329,069.

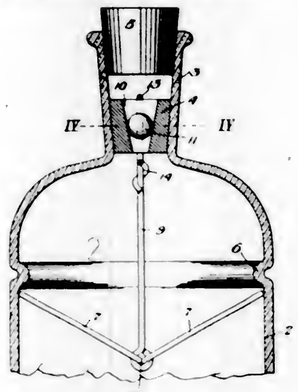


Claim.—1. A wick tube constructed of a series of wires, collars adapted for holding the wires in circular arrangement, and a series of extension wires.

2. The combination with a lamp-body, of a wick tube constructed of a series of wires held in tubular arrangement by suitably attached collars, and a series of finger extensions at one end of the wick tube.

3. In combination with a lamp-body, with means for supporting a wick, of a permeable wick tube adapted for arrangement in the lamp body, and a series of finger extensions at one end of said wick tube, said extensions being adapted to project to the outer side of the lamp-body with circular arrangement around the wick supporting means on the lamp-body.

853,079. BOTTLE-STOPPER. HARRY M. GRAY, Pittsburg, Pa., assignor of one-half to Emil G. Bell, Pittsburg, Pa. Filed Feb. 11, 1907. Serial No. 356,664.



Claim.—1. A bottle stopper consisting of a ported plug provided with a check valve, and a depending stem embracing the plug and extending across the port and provided with terminal locking arms.

2. A bottle stopper consisting of a ported plug provided with longitudinal grooves and a check valve, and a depending embracing stem seated in said grooves and extending across the port and provided with terminal locking arms.

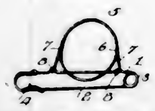
3. A bottle stopper consisting of a plug having a longitudinal tapered port, a freely movable check valve, and a depending stem provided with terminal locking arms, said stem being secured at its other end around the plug so as to extend across the port and retain the check valve against loss.

4. A bottle stopper consisting of a plug having a tapered port provided with an internal spherical check valve, and a depending stem having freely attached locking arms at its lower end, said stem embracing the plug and extending across the top of the port.

5. The combination with a bottle having an interiorly tapered neck, of a tapered plug seated therein provided with an out-flow port, a check valve within said port, and a depending stem embracing the plug to retain the check valve and having terminal locking arms adapted to engage inwardly against the bottle.

6. The combination with a bottle having an interiorly tapered neck and an inner annular shoulder, of a tapered plug seated therein provided with an outflow port, a check valve within said port, and a depending stem embracing the plug to retain the check valve and having terminal locking arms adapted to engage inwardly against the bottle.

853,080. GARMENT-SUPPORTER. HARLAND C. GREEN, South Bend, Ind. Filed Apr. 14, 1906. Serial No. 311,705.



Claim.—1. The combination with a safety pin, of a suspending member secured to the main bar of the safety pin, said suspending member consisting of a loop and attaching arms, the lower portion of the loop extending below the main bar of the safety pin, whereby the opposing portions of the loop, attaching arms and the main bar unite to form a spring clamp.

2. The combination with a safety pin having the main bar thereof provided with depressions, of a suspending member consisting of a loop and attaching arms, the sus-

along one side of the casing and communicating at its lower end with said receiver, the said tube having a perforation in its lower end, and a spiral conveyer in said tube.

3. A machine for the purpose specified, comprising a casing, a rotary fan in the casing, a plurality of screens in the casing, a liquid receiver extending across the front of the casing, a spiral conveyer in said receiver, a tube with which the receiver communicates, the said tube being extended upward and communicating at its lower end with the receiver, a spiral receiver in said tube, means operated from the fan shaft for imparting motion to the conveyer in the receiver, means operating from the fan shaft for imparting motion to the conveyer in said tube, and means operated from the fan shaft for oscillating certain of said screens.

853,077. SHOE-STRETCHER. DANIEL W. GOODWIN, Lynn, Mass. Filed Feb. 18, 1907. Serial No. 357,885.



Claim.—1. A shoe form composed of two longitudinal sections having a recess formed in contiguous portions, and at the heel end thereof, a spreading device disposed between said sections and means for yieldingly holding said sections together in their normal position comprising a metal strip having an intermediate curved spring portion disposed in said recess, and a pair of ears extending in opposite directions from the ends of said spring portions and respectively secured to the adjacent ends of said sections, substantially as described.

2. A shoe form composed of two longitudinal sections having a recess formed in contiguous portions, and at the heel end thereof, a spreading device disposed between said sections and means for yieldingly holding said sections together in their normal position comprising a metal strip having an intermediate curved spring portion disposed in said recess and reversely curved at the ends of said portion and extended in opposite directions to form ears, and means of securing said ears to the adjacent ends of said sections, substantially as described.

853,078. MINER'S LAMP. RALPH L. GRAVES, Sumpter, Oreg. Filed Aug. 3, 1906. Serial No. 329,069.

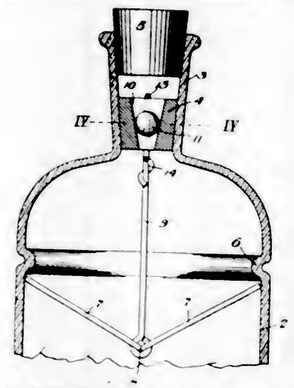


Claim.—1. A wick tube constructed of a series of wires, collars adapted for holding the wires in circular arrangement, and a series of extension wires.

2. The combination with a lamp-body, of a wick tube constructed of a series of wires held in tubular arrangement by suitably attached collars, and a series of finger extensions at one end of the wick tube.

3. In combination with a lamp-body, with means for supporting a wick, of a permeable wick tube adapted for arrangement in the lamp body, and a series of finger extensions at one end of said wick tube, said extensions being adapted to project to the outer side of the lamp-body with circular arrangement around the wick supporting means on the lamp-body.

853,079. BOTTLE-STOPPER. HARRY M. GRAY, Pittsburg, Pa., assignor of one-half to Emil G. Bell, Pittsburg, Pa. Filed Feb. 11, 1907. Serial No. 356,664.



Claim.—1. A bottle stopper consisting of a ported plug provided with a check valve, and a depending stem embracing the plug and extending across the port and provided with terminal locking arms.

2. A bottle stopper consisting of a ported plug provided with longitudinal grooves and a check valve, and a depending embracing stem seated in said grooves and extending across the port and provided with terminal locking arms.

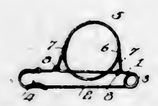
3. A bottle stopper consisting of a plug having a longitudinal tapered port, a freely movable check valve, and a depending stem provided with terminal locking arms, said stem being secured at its other end around the plug so as to extend across the port and retain the check valve against loss.

4. A bottle stopper consisting of a plug having a tapered port provided with an internal spherical check valve, and a depending stem having freely attached locking arms at its lower end, said stem embracing the plug and extending across the top of the port.

5. The combination with a bottle having an interiorly tapered neck, of a tapered plug seated therein provided with an out-flow port, a check valve within said port, and a depending stem embracing the plug to retain the check valve and having terminal locking arms adapted to engage inwardly against the bottle.

6. The combination with a bottle having an interiorly tapered neck and an inner annular shoulder, of a tapered plug seated therein provided with an outflow port, a check valve within said port, and a depending stem embracing the plug to retain the check valve and having terminal locking arms adapted to engage inwardly against the bottle.

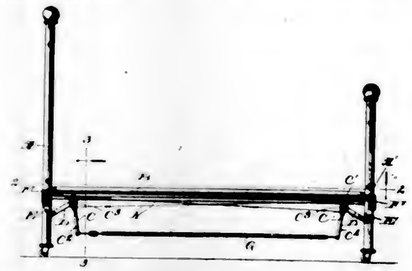
853,080. GARMENT-SUPPORTER. HARLAND C. GREEN, South Bend, Ind. Filed Apr. 14, 1906. Serial No. 311,705.



Claim.—1. The combination with a safety pin, of a suspending member secured to the main bar of the safety pin, said suspending member consisting of a loop and attaching arms, the lower portion of the loop extending below the main bar of the safety pin, whereby the opposing portions of the loop, attaching arms and the main bar unite to form a spring clamp.

2. The combination with a safety pin having the main bar thereof provided with depressions, of a suspending member consisting of a loop and attaching arms, the suspending member being secured to the main bar of the safety pin by having the lower ends of its attaching arms formed for engagement with the depressed portions of the main bar, the loop of the suspending member extending below the main bar, whereby the opposing portions of the loop, attaching arms and main bar unite to form a spring clamp.

853,081. EQUALIZING APPARATUS. CURTIS C. GRIMES, Haskell, Ind. Ter. Filed Sept. 14, 1906. Serial No. 334,636.



Claim.—1. An equalizing apparatus substantially as herein described comprising a main frame, a platform movable relatively thereto, levers pivoted to the platform and having arms projecting on opposite sides of its pivot and cranks and links connecting the same with the main frame, a spring connection between the lower arms of the opposite levers, and connections extending between the upper arms of each of the levers and the lower arms of the respective opposite levers, substantially as set forth.

2. The combination of the main frame, the platform movable relative thereto, levers pivoted to the platform and having upper and lower arms, springs connecting the lower arms of the upper levers, connections between said levers and extending between the upper arm of each lever and the lower arms of the opposite lever, and connections between the levers and the main frame, substantially as set forth.

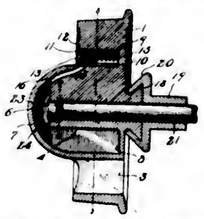
3. The combination of the main frame, the platform movable relatively thereto, levers pivoted to the platform and having arms above and below their pivots and crank arms, links pivoted at one end to the crank arms, brackets to which the other ends of the said links are pivoted, said brackets being connected with the main frame, a spring extending between the lower arms of the opposite levers, and connections extending between the upper arms of each of the levers and the lower arms of the opposite levers, substantially as set forth.

4. The combination of the main frame, the platform, the levers having pivoted shafts extending transversely and journaled at their ends to the platform and forming pivots for the levers, said levers having arms above and below their cross-shafts, crank arms projecting from the cross-shafts, links connecting said crank arms with the main frame, a spring between the lower arms of the opposite levers, and equalizing connections between the opposite levers, substantially as set forth.

5. The combination of the main frame, a platform movable relatively thereto, the opposite levers pivoted to the platform and having projecting crank arms, and means connecting the same with the main frame, and equalizing connections between the opposite levers whereby to enforce a common movement of said levers when the platform is depressed at any point, substantially as set forth.

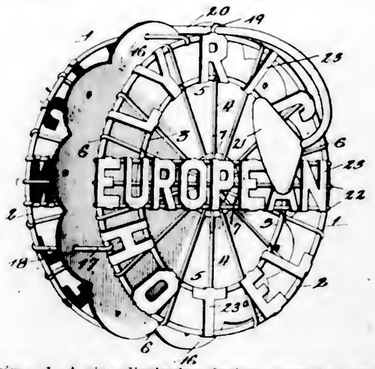
853,082. CAR-WHEEL. ANDREW S. GUSTAFSON, Chattanooga, Tenn. Filed Jan. 12, 1906. Serial No. 295,797.

Claim.—A car wheel formed in a single piece comprising a hub, a rim, spokes connecting the hub and rim, a housing interposed between the spokes and concentric with the hub, said housing extending over and inclosing one end of the hub to form a distributing compartment, there being a plurality of compartments formed between the spokes, hub and housing, all of said compartments communicating at one end with the distributing compartment, one of the spokes being enlarged adjacent the housing and having a recess therein internally screw threaded, there being a passage from said recess and through the hub for discharging lubricant into the distributing compartment;



and an externally screw threaded casing seated within the recess and having a contracted end constituting a valve seat, a tubular valve plug slidably mounted within said casing, and a spring within said plug and bearing thereagainst and against the inner wall of the recess for holding the plug normally upon its seat, there being an opening in the casing registering with the passage and normally closed by the valve plug.

853,083. SIGN-DISPLAYING DEVICE. CHARLES HASTY, La Fayette, Ind. Filed July 31, 1906. Serial No. 328,624.



Claim.—1. A sign displaying device comprising two oppositely disposed concavo-convex skeleton frames rigidly attached together at their centers, an arm attached to the outer edge of each frame and serving as a brace and light holder and having a portion extending downwardly to a point at or near the center of each frame, the lower ends of said downwardly extending parts being provided with means for artificially illuminating the intelligence upon the frames, substantially as described.

2. A sign displaying device comprising two oppositely disposed skeleton frames rigidly clamped together at their centers, a disk or plate of opaque material arranged between the frames and clamped to said frames at its central point, and a centrally located means for firmly clamping the two frames and the disk together.

3. A sign displaying device comprising two oppositely disposed concavo-convex wire frames, two oppositely disposed central clamping plates formed for the reception of the radiating wires of the frame sections, and an auxiliary clamping plate for each of the main clamping plates, a bolt for securing all of the clamping plates together, a disk or plate interposed between the wire frames and held in position by the clamping plates, substantially as described.

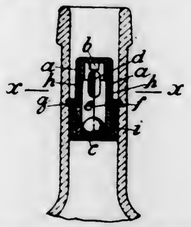
4. A sign displaying device comprising two oppositely disposed concavo-convex frames formed of outer wires presenting rims 2, inner concentric wires 3, radially arranged wires 4, a centrally positioned clamp embracing the inner ends of the radiating wires, a disk or plate of opaque material interposed between the two frames for the purpose set forth, a series of strengthening wires attached to the edges of the outer circular wires, a crossbar connected to the periphery of the frames and having extensions fitted for the reception of illuminating devices, substantially as and for the purpose set forth.

5. A sign displaying device comprising two oppositely disposed concavo-convex frames formed of wires presenting rims 2, and inner circular wires 3, radiating cross wires suitably secured to the wires 2 and 3, a centrally positioned clamp embracing the inner ends of the radiating wires at a central point for the purpose of holding the two frames together, a disk or plate of opaque material interposed between the two frames for the purpose set forth, and held by the central clamps, a transverse bed formed of wires, for the reception of letters in transverse arrangement upon the frames and means for illuminating the signs, substantially as and for the purpose set forth.

6. A sign displaying device comprising two oppositely disposed skeleton frames rigidly clamped together at a central point, a disk of opaque material clamped at the central point of the frames, means for firmly clamping the two frames and disk together, an arm attached to the edge of each frame and serving as a brace and light holder, and having a portion extending downwardly to a point at or near the center of each frame, the lower ends of said downwardly extending parts being provided with means for artificially illuminating the intelligence upon the frames, and a plurality of cross pieces or ties connecting the peripheries of each frame and passing through the disk or plate whereby the frames are braced together and the disk held in central position between the frames, substantially as described.

7. A sign displaying device comprising two oppositely disposed concavo-convex skeleton frames rigidly held together, an arm attached to the outer edge of each frame and serving as a brace and a light holder, and having a portion extending downward to a point at or near the center of each frame, the lower ends of said downwardly extending parts being provided with means for artificially illuminating the intelligence upon the frames.

853,084. DEVICE FOR NON-REFILLABLE BOTTLES. ARNOLD HERZOG, Berne, Switzerland. Filed May 18, 1906. Serial No. 317,486.



Claim.—1. Device for preventing the refilling of bottles which consists of a valve-casing formed of two symmetrical halves molded of a plastic material, having a closed cylindrical chamber, a ball *c* in said chamber, a valve-seat for the ball *c* at the bottom, said casings having two opposite lateral outlet openings *b* near the top perpendicular to the longitudinal axis and having longitudinal lateral depressions *d* on its inner surface and longitudinal depressions *h* in its outer surface, said casing being adapted to be sealed permanently to the neck of a bottle substantially as described.

2. Device for preventing the refilling of bottles which consists of a valve-casing formed of two symmetrical halves molded of a plastic material, having a closed cylindrical chamber, a ball *c* in said chamber, a valve-seat for the ball *c* at the bottom, said casing having two opposite lateral outlet-openings *b* near the top perpendicular to the longitudinal axis, and having the lower part in the shape of a cone for the insertion into a frusto-conical packing and being provided in about the middle with a deep annular groove *a* to reduce the thickness of the glass and to receive a cementing material serving to seal permanently the valve-casing into the bottle-neck, substantially as described.

853,085. PROCESS OF MAKING SMOKELESS POWDER. MANUEL A. G. HIMALAYA, Washington, D. C. Filed Feb. 16, 1906. Serial No. 301,524.



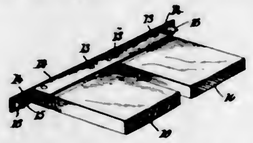
Claim.—1. The process of making explosives, which consists in forming a batter of an oxygen furnishing ingredient mixed with about one third its weight of water, forming a second batter of starch and water in approximately equal parts by weight, thoroughly mixing these batters and raising the temperature to about 80° C., working into the mass a siccative oil, then pressing into ultimate form and drying.

2. The process of making explosives, which consists in forming a batter of chlorate of potash mixed with about one third its weight of water, forming a second batter of starch and water in approximately equal parts by weight, thoroughly mixing these batters and raising the temperature to about 80° C., working into the mass a siccative oil, then pressing into ultimate form and drying.

3. The process of making explosives, which consists in forming a batter of chlorate of potash mixed with about one third its weight of water, forming a second batter of starch and water in approximately equal parts by weight, mixing the two batters and adding thereto a second oxygen furnishing ingredient, raising the temperature to about 80° C., working into the mass a siccative oil, then pressing into ultimate form and drying.

4. The process of making explosives, which consists in forming a batter of chlorate of potash mixed with about one third its weight of water, forming a second batter of starch and water in approximately equal parts by weight, mixing the two batters and adding thereto binoxid of manganese, raising the temperature to about 80° C., working into the mass a siccative oil, then pressing into ultimate form and drying.

853,086. BRICK-SUPPORTING PALLET. BERNARD JACQUART, South River, N. J., assignor to American Enameled Brick & Tile Co., New York, N. Y., a Corporation of New York. Filed June 11, 1906. Serial No. 321,242.



Claim.—1. The combination of wooden boards provided with comparatively thin ends, and channel irons mounted upon said ends and secured thereto, said channel irons being provided with ear pieces, the latter being secured directly to the edges of said boards.

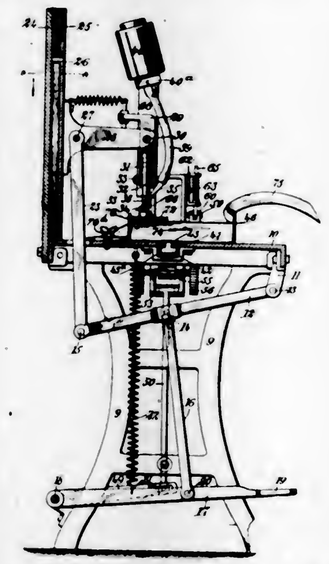
2. A pallet, comprising wooden boards, and channel irons mounted upon the ends thereof and secured thereto, said channel irons being provided with ear pieces integral therewith and made of malleable material so as to be readily bent, and being further provided with portions serving as fastenings and adapted to enter the edges of said boards.

3. A pallet, comprising boards, and channel irons mounted upon the ends thereof and provided with projecting ear pieces, said ear pieces being cut so as to leave V-shaped projections extending laterally therefrom, said projections being adapted to enter the edges of said boards.

4. The combination of boards provided with comparatively thin ends, channel irons mounted upon said ends, rivets connecting said channel irons and said ends together, said channel irons being provided with malleable portions capable of being bent into engagement with the edges of said boards, and means for securing said bent portions against said edges of said board.

5. The combination of boards, and channel irons mounted thereupon and provided with oppositely disposed portions engaging oppositely disposed portions of said board, said channel irons being further provided with ear pieces and with projections extending laterally from the said ear pieces and engaging the edges of said board.

853,087. THUMB-NOTCH INDEXING-MACHINE. EDWARD JOHNSON, Milwaukee, Wis. Filed June 23, 1905. Serial No. 266,560.



Claim.—1. The combination of a gouge, a supporting member connected therewith and disposed at an angle relatively thereto, and mechanism pivotally connected with said gouge for actuating the same so as to cause said gouge to give a glancing stroke.

2. The combination of a movable head, a cutting tool mounted thereupon and carried thereby, a member of absorbent material mounted upon said cutting tool, and means for constantly supplying coloring matter to said member.

3. The combination of a tool holder, means for actuating the same, a gouge connected therewith and adapted to cut leaves of paper or the like, a member of absorbent material partially encircling said gouge, and means for supplying coloring matter to said member.

4. The combination of a table, cutting mechanism mounted thereupon, means for guiding said cutting mechanism, a bar connected with said table and free to slide relatively thereto, ratchet mechanism for moving said bar step by step, and means for automatically throwing said ratchet mechanism out of action in order to allow said bar to be retracted.

5. The combination of a gouge provided with a cutting edge, a cylindrical member connected with said gouge for supporting the same, said cylindrical member being disposed at an angle relatively to said gouge, a movable member upon which said cylindrical member is pivoted, and means for forcing said movable member toward a book so as to cause said gouge to strike the same off the center, thus producing a glancing blow.

6. The combination of a gouge provided with a cutting edge, a member disposed at an angle relatively to said gouge for supporting the same, a pivot connected with said member for allowing the same to swing slightly, and means for forcing said gouge against the leaves of a book.

7. The combination of a movable head, means for actuating the same, a cutting tool mounted upon said movable head, a reservoir of coloring matter mounted upon said movable head, and a pad of absorbent material communicating with said reservoir and connected with said cutting tool for supplying coloring matter from said reservoir.

8. The combination of a treadle, a lever, a sliding head, links connecting said treadle with said lever and said lever with said sliding head so as to give said sliding head a movement of great amplitude as compared with the movement of said treadle, and a cutting tool mounted upon said sliding head and inclined angularly in relation to the general direction of movement of said head in order to strike a glancing blow.

9. The combination of a table, a movable member connected therewith for advancing a book step by step in one direction relatively to said table, means for throwing said member out of action when said member reaches its limit in one direction, means controllable by the position of said member for throwing the same into action when restored by hand to its limit in the other direction, and cutting mechanism coacting with said member for cutting said book after each step of the advance thereof.

10. The combination of a table, guides for locating a book thereupon, a clamping plate for temporarily securing said book, a cutting member for providing said book with thumb notches, and a pad mounted upon said cutting member and carried thereby for applying coloring matter to the thumb notches thus formed.

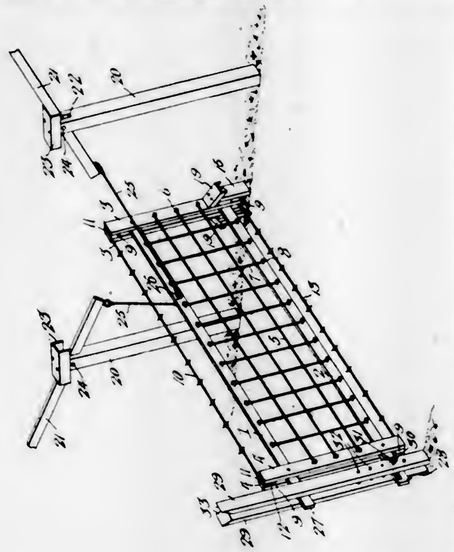
11. The combination of a vertically movable slide, a supporting member pivotally mounted thereupon, a gouge connected with said supporting member and depending therefrom, said gouge being provided with a portion having a cutting edge, said portion being out of alinement with said supporting member for the purpose of enabling said gouge to strike a glancing blow, and means for actuating said slide.

853,088. GATE. HUGH L. JONES, Ione, Ark. Filed Jan. 3, 1907. Serial No. 350,576.

Claim.—1. A gate comprising top and bottom rails, end uprights secured to said rails, longitudinal wire strands extending from one of said uprights to the other, vertical wire strands extending from the top to the bottom rails, said top and bottom rails extending beyond the gate and the lower rail provided with a slot, in combination with parallel posts provided with a series of perforations, and a pin projecting through one of the perforations in said posts, and through the slot in said rail, said gate being pivoted at its opposite lower corner.

2. A gate comprising top and bottom rails, end uprights secured to said rails, wire strands extending from the top to the bottom rail and from one to the other of said uprights, short posts to which the gate is pivoted at one of its lower corners, hoods at the tops of said posts for shedding the water therefrom, the top and bottom rails of said gate projecting beyond the gate, in combination with parallel posts for said extension, the bottom rail being slotted and the posts being provided with a series of per-

forations, and a pin extending through the perforations and slots, substantially as described.



853,089. ILLUSTRATED GUIDE. GUSTAV KAUFMANN, St. Johann-on-the-Saar, Germany. Filed Aug. 31, 1905. Serial No. 276,549.



Claim.—An illustrated guide comprising in combination a booklet, a case within which said booklet is contained and a folded sheet attached to the inside of said case and to said booklet for securing said booklet within said case.

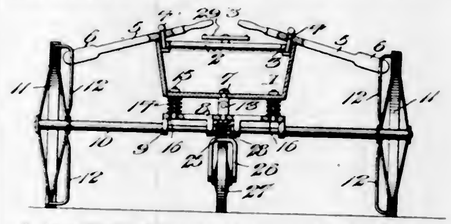
853,090. RAIL-JOINT. EDWARD B. KILLEN, London, Eng. Filed Feb. 17, 1906. Serial No. 301,660.



Claim.—The combination with a rail, of a fish plate comprising a curved base on which the foot of the rail rests, and a pair of arms extending upwardly from the base and having elongated openings therein, and bolts passing through said openings and through openings in the web of the rail; each of said bolts having an elongated head adapted to pass freely through the openings in said arms to lock the arms together when the bolts are turned; each arm having an inclined lower portion resting on the upper surface of the foot of the rail, and a vertical straight upper portion extending parallel to the web of the rail and spaced therefrom throughout its length; said upper portion having an inclined upper surface on which the head of the rail rests and the side of the upper portion being flush with the side of the head of the rail.

853,091. TOY. WILLIAM KLINGE, Washington, D. C. Filed June 6, 1906. Serial No. 320,461.

Claim.—1. In a device of the class described, a body sustained upon transporting wheels having spokes shaped to provide projections on the inner faces of the wheels, and propelling members pivotally connected with the body and adapted in operation for engagement with the projections to drive the wheels.

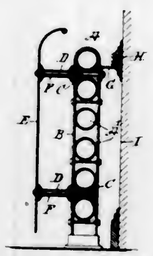


2. In a device of the class described, a body, transporting wheels therefor adapted for independent rotation and provided with projecting engaging portions, and propelling members pivotally connected with the body for vertical and horizontal swinging movement, said members being adapted for engagement with the projections to propel the device.

3. In a device of the class described, a body, transporting wheels therefor provided with projections, propelling members pivotally connected with the body for vertical and horizontal swinging movement, said members being adapted for engagement with and to act on the projections for propelling the device, and a steering wheel sustained at one end of the body and operable for guiding the latter in its movements.

4. In a device of the class described, a body, a bearing yoke connected beneath the body, axles journaled for independent rotation in the yoke and equipped with transporting wheels having projecting engaging portions, cushioning springs disposed between the body and yoke, propelling members pivotally connected with the body and adapted to act upon the projections in the operation of propelling the device, caster wheels connected at opposite ends of the body, one of said wheels being adapted for operation to guide the device in its travel, and cushioning springs arranged for yieldably supporting the body at its ends.

853,092. SHIELD FOR HEATING-COILS. PETER S. KNOTH, New York, N. Y. Filed Mar. 16, 1906. Serial No. 306,339.



Claim.—1. The combination with a heating coil, of a shield for the same, and shield supporting blocks each provided with seats and adapted to be inserted between adjacent tubes of the heating coil, the said blocks being clamped in position between the adjacent tubes by the spring action of said tubes.

2. The combination with a heating coil, of a shield, and shield supporting blocks each adapted to be inserted between adjacent tubes of the heating coil, and provided with seats for engagement by said tubes to clamp the blocks in position by the spring action of said tubes, and bolts held on the said blocks and connected with the shield to hold the same in front of the coil.

3. The combination with a heating coil, of a shield, and a shield supporting block having seats adapted for engagement by the adjacent tubes of the heating coil, the said block having flat sides and the thickness of the block being slightly less than the distance between adjacent tubes of the coil to permit of conveniently passing the block between adjacent tubes, the bottoms of the seats in said block being spaced apart a distance slightly exceeding the distance between adjacent tubes, whereby when the said block is passed between the tubes and turned to engage the seats with the adjacent tubes, the tubes are slightly sprung apart, and the block is clamped in position by the spring action of said tubes.

4. The combination with a heating coil, of a shield for said coil, and a shield supporting block adapted to be inserted between adjacent tubes of the coil and having seats on the top and bottom for engagement by the said tubes, the bottoms of the seats in said block being spaced apart a distance slightly exceeding the distance between the tubes, whereby when the block is seated in position it is clamped between the tubes by their spring action, a bolt connecting said shield with said block, and a spacer held on said bolt between the front face of the supporting block and the rear face of the shield.

5. The combination with a shield for a heating coil, of a shield supporting block having seats on the top and bottom for engagement by the adjacent tubes of the heating coil, a bolt extending through the said block and engaging the shield at its front end, and a bracket held on the rear end of the bolt and adapted to be connected with the wall of the building.

6. The combination with a heating coil, of a shield supporting block having seats for engagement by the adjacent tubes of the heating coil, a shield spaced from the front of the coil, a bolt extending through the shield and the block, and a bracket held on the rear end of the bolt and adapted to be connected with the wall of the building.

7. The combination with a heating coil having horizontally disposed tubes, of shield supporting blocks, each having seats at the top and bottom for engagement by adjacent tubes of the heating coil, a shield located at the front of the heating coil, bolts connecting said shield with the said blocks, spacers held on said bolts between the inner face of the shield and the front faces of said blocks, and brackets adapted to be attached to a suitable support and connected with the rear ends of sundry of said bolts.

8. The combination with a heating coil, of shield supporting blocks each adapted to be inserted between adjacent tubes of the heating coil and provided with half round top and bottom seats adapted to be forced into engagement with said tubes, whereby the blocks are held in position solely by the clamping engagement of said tubes therewith, and bolts held on the said blocks and connected with the shield to hold the same in front of the coil.

9. The combination with a shield for a heating coil, of shield supporting blocks, having seats for engagement by adjacent tubes of the heating coil at the upper and lower part of said coil, bolts extending through the said blocks and engaging the shield at their front ends, and brackets adapted to be attached to a support and connected with the bolts at the rear faces of the upper outmost blocks.

10. The combination with a heating coil, of a shield for said coil, a shield supporting block clamped between adjacent tubes of said coil by the spring action of the tubes, and means for connecting said block with said shield.

853,093. MANUFACTURE OF ARTIFICIAL HEMP FIBER. FRIEDRICH LEHNER, Zurich, Switzerland. Filed May 16, 1906. Serial No. 317,240.

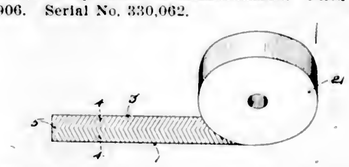
Claim.—1. The process of producing artificial hemp fiber which consists in gluing together a plurality of lustrous filaments with a binder containing a coating material adapted to dull the luster of the product.

2. The process of producing artificial hemp fiber which consists in gluing together a plurality of lustrous filaments and modifying the luster of the same to approximate that of hemp fiber.

3. The process of producing artificial hemp fiber which consists in gluing together a plurality of lustrous filaments by a viscose solution, and subjecting the freshly treated fibers to a mineral acid, whereby the binding material is fixed and the luster of the product is dulled.

4. The process of producing artifical hemp fiber which consists in gluing together a plurality of lustrous filaments by a viscose solution containing a suitable dye, and subjecting the freshly treated filaments to the action of a mineral acid, whereby the binding material is fixed and the amorphous sulfur is separated out to dull the luster of the product.

853,094. STAY-STRIP. SAMUEL G. LEITCH, Somerville, Mass., assignor to Carter, Rice & Company, Incorporated, a Corporation of Massachusetts. Filed Aug. 10, 1906. Serial No. 330,062.



Claim.—1. The improved corner stay strip having in one face thereof two series of diagonal indented lines at an angle to each other whose proximate ends terminate in the intended folding line.

2. A corner stay strip for boxes and the like having upon one face a coating of adhesive substance and having in a face thereof a series of diagonal indented lines on each side of the intended folding line, the lines on opposite sides of the intended folding line being at an angle to each other.

3. A corner stay strip for boxes and the like having upon one face a coating of adhesive substance and having in one face thereof a series of indented diagonal lines on each side of the intended folding line, the indented lines on opposite sides of the intended folding line slanting in opposite directions, the inner ends of those on one side of the intended folding line being connected with the inner ends of those on the other side of the intended folding line, the apexes of the angles formed by the junctions of the lines in the two series being in a straight line which forms the intended folding line.

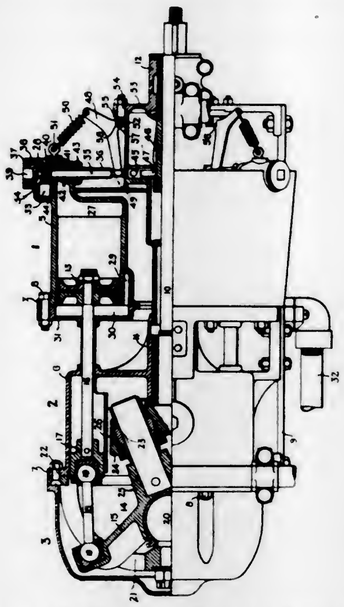
4. A corner stay strip for boxes and the like having upon one face a coating of adhesive substance and having in the gummed face thereof a series of diagonal indented lines on either side of the intended folding line, the diagonal indented lines on opposite sides of the intended folding line being at an angle to each other.

853,095. VALVE MECHANISM FOR ENGINES. HERMANN LEMP, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Nov. 4, 1904. Serial No. 231,381.

Claim.—1. In an engine, the combination of a cylinder, an admission chamber communicating therewith, a valve in said chamber for controlling the admission of motive fluid to the cylinder, a stem for the valve which extends transversely to the axis of the cylinder, means which engage the stem for opening the valve, a lever connected with the stem for closing the valve having a free end extending outwardly from the cylinder, and a spring attached at one end to the free extremity of the lever and supported by a fixed part of the engine structure and the lever.

2. In an engine, the combination of a cylinder, an admission chamber communicating therewith, a valve in said chamber for controlling the admission of motive fluid to the cylinder, a stem for the valve which extends transversely to the axis of the cylinder, a rotating cam which engages the said stem for opening the valve, an inclosure for the cam which is located at the head of the cylinder, a bell-crank lever fulcrumed on the inclosure and arranged with one arm extending substantially parallel to the axis of the cylinder and the other arm extending substantially transverse thereto, a connection between the first arm of

the lever and the stem, and a spring attached to the outer end of the transversely extending arm of the lever and to the cylinder so that its body portion is isolated from the hot parts of the engine to minimize the conduction of heat to it.



3. In an engine, the combination of a cylinder, a valve chamber communicating therewith, a valve therein for controlling the admission of motive fluid to the cylinder, a stem for the valve which is provided with a slot, a lever fulcrumed on the engine and engaging at one end in the said slot, an extension spring attached at one end to the free extremity of the lever and at the other end to the cylinder and having its body isolated from the engine to minimize the conduction of heat thereto, and a means independent of the lever which opens the valve against the tension of said spring.

4. In an engine, the combination of a cylinder, a valve chamber communicating therewith, a valve therein for controlling the admission of motive fluid to the cylinder, a stem for the valve which is provided with a slot at one end and extends transversely to the axis of the cylinder, a removable plug in the wall of said chamber for permitting the valve to be removed, a lever removably engaging at one end in the slot of the valve stem, a spring acting upon said lever which is isolated from the cylinder and valve to minimize the conduction of heat thereto, and means for opening the valve against the tension of said spring.

5. In an engine, the combination of a shaft, a plurality of parallel cylinders, chambers for the cylinders, valves therein for controlling communication between the chambers and cylinders, stems for the valves which are disposed radially to the shaft, a common actuator which engages the stems for opening the valves, bell-crank levers attached to the valve stems, an inclosure for the actuator, pivots for the levers which are arranged around the shaft and in a plane transverse thereto so that the levers move in planes parallel to the shaft, and extension springs which are directly attached to the said levers for closing the valves and are located with an open space between them and the cylinders to minimize the conduction of heat to the latter.

6. In an engine, the combination of a cylinder, a chamber connected therewith, a valve for controlling communication between the chamber and cylinder, a stem attached to the valve which is provided with a slot, a sleeve for the stem which is removably secured in position, means engaging the stem for opening the valve, a spring actuated lever for closing the valve which is removably fulcrumed in such a position that one end projects into the slot of the stem, and a removable cap or plug in the said chamber for permitting the valve and the valve stem sleeve to be removed.

7. In an engine, the combination of a cylinder, a rotary shaft disposed parallel to the axis thereof, an overhanging admission chamber at the head of the cylinder, a valve therein, a stem for the valve which extends transversely to the axis of the cylinder, means on the shaft for controlling the lift of the valve, a bell-crank lever fulcrumed at a point between the shaft and the valve and laterally of the cylinder head, a connection between one arm of the lever and the valve stem, and a spring attached to the other arm of the lever and to the cylinder which acts through the lever to seat the valve.

8. In an engine, the combination of a plurality of parallel cylinders, pistons operating therein, a central shaft extending parallel to the cylinders and receiving rotary motion from the pistons, admission chambers at the heads of the cylinders, a motive fluid supply conduit common to the admission chambers, puppet valves in said chambers radially disposed around the shaft, a cam mounted on the shaft for controlling the lift of the valves, an inclosure of the cam which surrounds the shaft and is arranged at the heads of the cylinders, and spring actuated levers connected with the valve stems for seating the valves which are fulcrumed upon said inclosures.

9. In an engine, the combination of a plurality of parallel cylinders formed of a single casting, admission chambers cast on the head of the cylinders, a supply conduit also cast integral with the cylinders which is common to the said chambers, a rotating shaft located centrally of the cylinders, pistons in the cylinders, means for imparting rotary motion to the shaft from the pistons, valves in the admission chambers, an adjustable cam rotating with the shaft for opening the valves, levers mounted around the shaft and each being pivoted to move in a plane parallel to the axes of the cylinders and shaft and springs attached to the outer ends of the levers and to the cylinder heads.

853,096. DEPILATORY INSTRUMENT. HENRY H. LEWIS, Louisville, Ky. Filed June 16, 1906. Serial No. 322,105.



Claim.—1. An instrument of the character described comprising a handle, forceps carried thereby, an epilating needle supported by the handle and projecting between the jaws of the forceps, and means for supplying an electric current to said needle.

2. An instrument of the character described comprising a handle, forceps carried thereby, a needle arranged in juxtaposed relation to the forceps, and means for supplying an electric current to said needle.

3. An instrument of the character described comprising an insulating handle, forceps carried by the handle, a needle carried by the handle and projecting between the jaws of the forceps, said needle being insulated from the forceps by the handle, and means for supplying an electric current to said needle.

4. An instrument of the character described comprising a handle, a needle mounted upon one end of the handle, current transmitting means extending through the handle and connected with the needle, and forceps mounted upon the handle and having jaws disposed in juxtaposition to and on opposite sides of the needle.

5. A device of the character described comprising a handle, a needle mounted upon one end of the handle, means supported by the handle for transmitting an electric current to the needle, and forceps comprising hand pieces secured at one end to the handle and provided at the opposite end with jaws arranged on opposite sides of the point of the needle, the intermediate portions of the hand pieces being bowed or curved.

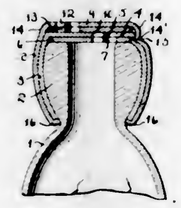
6. An instrument of the character described comprising a handle of insulating material, a chuck supported upon one end of the handle, a needle carried by the chuck, a conductor extending through the handle and electrically connected with the chuck, and forceps supported by the handle and having extracting jaws disposed adjacent the point of the needle.

7. An instrument of the character described comprising a handle of insulating material, a conducting core inserted in the handle, means for connecting a conductor terminal therewith, a chuck mounted upon one end of the handle and electrically connected with the core, a needle carried by said chuck, forceps supported by the handle and having the jaws thereof disposed in juxtaposition to the point of the needle.

8. A device of the character described comprising an insulating handle having a longitudinal bore and transverse passages, a tubular core inserted in said bore and having transverse openings in alinement with said transverse passages, a set screw inserted in one end of the core and adapted to clamp a conductor terminal fitted in the transverse passages, a chuck mounted upon the handle and connected with the other end of the core, a needle held by the chuck, and forceps composed of members disposed upon opposite sides of the chuck and having jaws arranged upon opposite sides of and adjacent to the point of the needle.

9. A tool of the character described comprising a handle, an epilating needle carried thereby, forceps mounted upon the handle and having jaws disposed adjacent the point of the needle, said forceps being insulated from the needle, and means for transmitting an electric current to the needle.

853,097. BOTTLE-STOPPER. MOSES LINKER, New York, N. Y. Filed May 31, 1906. Serial No. 319,619.



Claim.—The combination with a bottle having a laterally enlarged neck, of an inner cap bearing over said neck and provided with an aperture at one side of the center communicating with the interior of the bottle, said inner cap secured to the bottle by compressing the sides of the same around said lateral enlargement of the neck therof, an outer cap rotative over said inner cap and provided with an aperture adapted to register with the aperture of the inner cap when disposed in one position and with its lower edge crimped beneath the lower edge of the inner cap, said inner cap having a relatively long segmental indentation and said outer cap having a relatively short indentation for movably bearing in the long indentation.

853,098. PENCIL. FISHER H. LIPPINCOTT, Philadelphia, Pa., assignor to Lippincott Pencil Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 27, 1906. Serial No. 345,276.



Claim.—1. In a device of the character described, an elongated holder provided with a longitudinal bore, a follower in said bore adapted to be widened or expanded within said bore to bring portions thereof into frictional locking engagement with said holder, and means extending without said holder for effecting and destroying such locking engagement.

2. In a device of the character described, an elongated holder provided with a longitudinal bore, an insert in said bore, a follower disposed rearwardly of said insert, said follower being adapted to be widened or expanded within said bore to bring portions thereof into frictional locking engagement with said holder upon the application of pressure tending to move said follower rearwardly, and means for throwing said follower out of locking engagement with said holder.

3. In a device of the character described, an elongated holder provided with a longitudinal bore, a follower in said bore having coacting parts adapted to be widened or expanded within said bore into frictional locking engagement with said holder upon the application of pressure tending to move the said follower rearwardly, one of said coacting parts having a serrated or toothed portion adapted to be pressed against said holder, and means for throwing said serrated or toothed portion out of engagement with the said holder.

4. In a device of the character described, an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore comprising relatively movable parts adapted to be forced outward against the said holder and means secured to said parts and projecting through said slot for moving said parts relatively to each other.

5. In a device of the character described, an elongated holder provided with a longitudinal bore, a follower in said bore adapted to grasp a lead or other insert, said follower having one or more portions thereof adapted to move outward into frictional locking engagement with said holder upon the application of pressure tending to move said follower rearwardly, and means for destroying the locking engagement between the follower and holder, substantially as described.

6. In a device of the character described, an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore, frictional locking means embodied in said follower adapted to be forced outwardly into frictional contact with the walls of said bore to prevent the rearward movement of said follower upon the application of pressure tending to move the same rearwardly, means extending through said slot for moving said follower longitudinally of said bore, and means associated with said last named means for throwing the frictional locking means out of engagement with the walls of said bore.

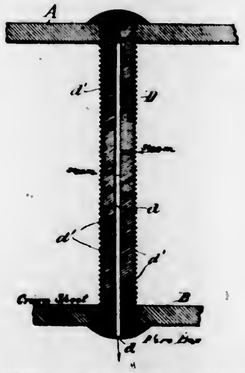
7. In a device of the type set forth, an elongated holder provided with a longitudinal bore, and a slot extending through the side of said holder and communicating with said bore, a follower in said bore, said follower comprising relatively movable parts adapted to be moved outwardly into frictional locking engagement with said holder upon the application of pressure tending to move said follower rearwardly, means for normally holding said relatively movable parts in frictional contact with said holder, means carried by said follower, and extending through said slot for moving the follower longitudinally of said bore, and means for destroying the locking engagement between the follower and said holder.

8. In a device of the character described, an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore provided with friction clutch mechanism adapted to lock said follower in any desired position in said holder, means projecting through said slot adapted upon the application of pressure thereto in one direction longitudinally of the holder to automatically release said clutch mechanism and permit the movement of the follower in the said direction, and means projecting through said slot adapted upon the application of pressure thereto in the opposite direction to automatically release said clutch mechanism and permit of the movement of the follower in the last named direction.

9. In a device of the character described, an elongated holder provided with a longitudinal bore and a slot extending through the side of said holder and communicating with said bore, a follower in said bore provided with a friction clutch mechanism adapted to lock said follower in any desired position in said holder, means projecting through said slot adapted upon the application of pressure in one longitudinal direction or the other to throw said clutch mechanism into and out of operative engagement, and a sleeve surrounding said means and adapted to engage therewith and upon movement in either direction to release said clutch mechanism and permit of the movement of the follower therewith.

10. In a device of the character described, an elongated holder provided with a longitudinal bore, a follower in said bore having a toothed portion, said follower being adapted to be widened or expanded within said bore to bring said toothed portion into locking engagement with said holder and means extending without said holder for effecting and destroying said locking engagement.

853,099. FIRE-BOX FOR STEAM-BOILER FURNACES. JOHN LIVINGSTONE, Montreal, Quebec, Canada. Filed July 21, 1906. Serial No. 327,157.



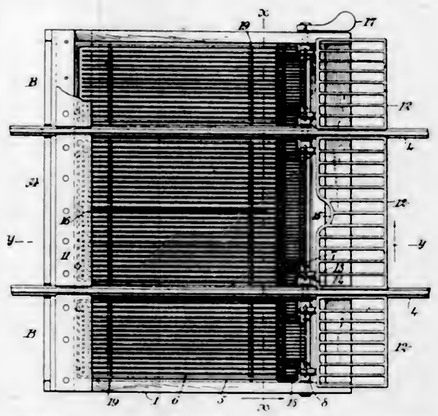
Claim.—1. A steam boiler furnace having the outer and inner walls of the fire box connected by hollow stay bolts having solid outer ends and opening into the furnace at their inner ends and having one or more lateral openings establishing communication between the interior of the boiler and the hollow stay bolt.

2. A steam boiler furnace having crown sheet stay bolts formed with solid outer ends and steam spaces opening into the fire box.

3. A steam boiler furnace having crown sheet stay bolts formed with solid outer ends and steam spaces opening into the fire box and horizontal stay bolts connecting the two walls of the lower part of the fire box and having air channels extending entirely through the same.

4. A hollow stay bolt for a steam boiler having one end made solid and closed, the other end open and one or more lateral inlets to the interior between the ends.

853,100. CATTLE-GUARD. CLARK LONG, Palha, Wash. Filed Oct. 24, 1906. Serial No. 340,313.



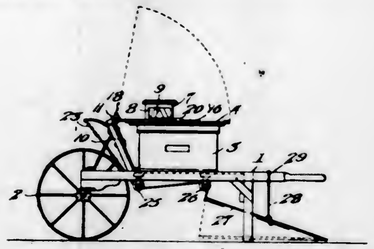
Claim.—1. A cattle guard comprising a guard frame having bars, a main frame, link connections between the main frame and one end of the guard frame, a rock shaft mounted in the main frame, pivotal connection between said rock shaft and the opposite end of the guard frame, and a gate carried by the rock shaft.

2. A cattle guard comprising a main or fixed frame, a guard frame of skeleton form, link connections between one end of the guard frame and the main frame, a rock shaft mounted in the main frame, pivotal connections between the rock shaft and the guard frame, socket members on the rock shaft, and a gate having portions for engaging in said socket members.

3. A cattle guard comprising a main or fixed frame, a guard frame having bars spaced apart, link connections between the guard frame and the main frame, a rock shaft mounted in the main frame, pivotal connection between the guard frame and said rock shaft, a gate carried by the rock shaft, and an apron having swinging connection with the rock-shaft and engaging loosely on the guard.

4. A cattle guard comprising a fixed frame, a guard frame having bars mounted to swing in said fixed frame between railway track rails, a rock-shaft with which said frame has pivotal connection, said rock-shaft being mounted in the fixed frame, socket members on said rock-shaft, a gate having portions for engaging in said socket members, and a bottom rail for said gate curved upward at its center.

853,101. COVER FOR COMB-CARRYING BOXES. WILLIAM LOSSING, Phœnix, Ariz. Filed Jan. 16, 1906. Serial No. 296,437.



Claim.—1. In a device of the character described, a receptacle, a cover therefor, a spring for holding said cover upon the receptacle, a bee trap mounted upon said cover and communicating with said receptacle through an opening therein, and a foot lever for raising said cover, substantially as described.

2. In a device of the character described, a wheeled frame, a receptacle mounted thereon, a cover for said receptacle, said cover provided with an aperture therein communicating with the receptacle, a bee trap mounted over said aperture, a shaft mounted in the wheeled frame, a bar connected to said shaft and to said cover, a spiral spring surrounding said shaft, and exerting its tension to close said cover, a lever for operating said shaft and opening said cover, a foot lever, and connections between said foot lever and said lever, substantially as described.

3. In a device of the character described, a receptacle, a cover therefor, said cover having a felt sealing strip thereon, said cover having an aperture therein communicating with the receptacle, a superposed bee trap, means for normally closing said cover upon the receptacle, and a foot lever for raising said cover, substantially as described.

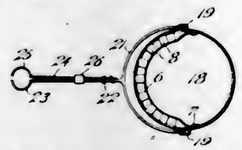
853,102. WRENCH. BAKER MALLETT, Edwards, Miss. Filed May 31, 1906. Serial No. 319,618.



Claim.—1. The herein-described wrench comprising a cylindrical shank having a fixed head at one end thereof, a movable jaw having a sleeve portion, said jaw and sleeve portion having a longitudinal, cylindrical bore through which the shank or stem extends, said sleeve portion being further provided with a longitudinal slot and notches in one side thereof, and a stud extending radially from the shank or stem to operate in said slot and engage any of the notches thereof, for the purpose set forth.

2. A wrench comprising a shank, a stationary jaw thereon, a movable jaw mounted to slide longitudinally upon said shank and to have a limited rotary movement thereon, said movable jaw having formed therein a slot provided with notches or recesses in one of its walls, and a stud upon said shank for engagement with said notches or recesses, substantially as described.

853,103. FEED-BAG. AUGUSTUS G. MAY, Denver, Colo. Filed Feb. 2, 1907. Serial No. 355,492.

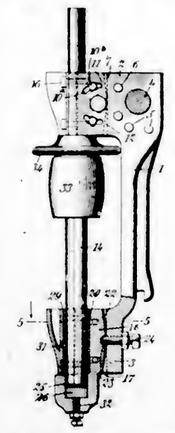


Claim.—1. A feed bag comprising a receptacle, a strap secured to the wall of the receptacle adjacent the upper end, and a series of blocks secured between the receptacle wall and the strap, said blocks being respectively spaced to provide air inlets.

2. A feed bag comprising a receptacle, a strap secured to the wall of the receptacle adjacent the upper end, a series of blocks secured between the receptacle wall and the strap, said blocks being respectively spaced to provide air inlets, and spring means for counterbalancing the weight of the feed carrier.

3. A feed bag comprising a receptacle, a strap secured to the wall of the receptacle adjacent the upper end, a series of blocks secured between the receptacle wall and the strap, said blocks being respectively spaced to provide air inlets, and an adjustable clamping support removably engaging the bag.

853,104. VERTICAL-SPINDLE MOUNTING FOR WOOD-WORKING-MACHINES. ADOLPH MAYER, Winton, Minn. Filed Dec. 11, 1906. Serial No. 347,240.



Claim.—1. In a woodworking machine, a side frame having an upper head and a lower head, an upper box pivotally mounted in said upper head, a lower box mounted in said lower head, means for adjusting said lower box near the middle portion thereof, and means for clamping said lower box in said lower head in adjusted positions, said adjusting means being adapted to permit a tilting of said lower box thereupon.

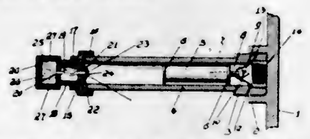
2. In a woodworking machine, a side frame having an upper head and a lower head, a box pivotally mounted in said upper head, a lower box mounted in said lower head, adjusting means mounted in said lower head and engaging said lower box, the arrangement being such that said lower box may tilt upon said adjusting means, and means for clamping said lower box in adjusted tilted positions in said lower head.

3. In a woodworking machine, a side frame having an upper head and a lower head, said upper head having a recess formed therein, a box pivotally mounted upon a transverse bolt in said recess in said upper head, said lower head having a recess therein, a lower box received in said last recess, a set screw mounted in said lower head and engaging said lower box near the middle portion thereof, said lower box being adapted to tilt upon said set screw, and clamping bolts for securing said lower box to said lower head in adjusted positions.

853,105. FUSE. ALFRED M. MAZER, Jeanette, Pa. Filed Nov. 14, 1906. Serial No. 343,367.

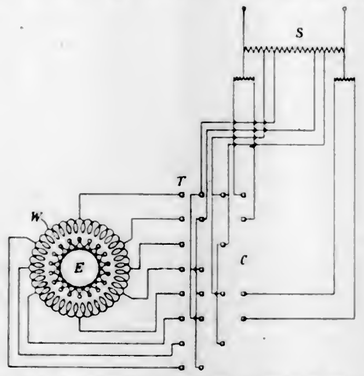
Claim.—1. A fuse comprising a barrel, a cap closing the forward end thereof and having a central opening, a powder chamber secured to said cap, a fulminate arranged over the opening in the cap, a hammer within the barrel, a headed stem projecting from the hammer, a plug closing the rear end of the barrel, and a spring-holder for said hammer held in position by said plug.

2. A fuse comprising a barrel, a cap closing the forward end of the barrel, a chamber secured to said cap, a twisted tube or squib within said chamber, a fulminate for igniting said squib, a perforated powder chamber secured to the squib chamber, a hammer within the barrel, and means for supporting said hammer.



3. The combination with a projectile casing, of a fuse barrel or casing, secured thereto, a screw plug within the rear end of said barrel, a spring holder secured by said plug, a hammer within the barrel, a stem removably secured to said hammer and engaged by said spring holder, a powder chamber at the forward end of said barrel, and a fulminate adapted to be exploded by said hammer to ignite the powder within the powder chamber.

853,106. ALTERNATING-CURRENT APPARATUS. RALPH D. MERSHON, New York, N. Y. Filed Feb. 1, 1904. Renewed Apr. 10, 1907. Serial No. 367,336.



Claim.—1. In alternating current apparatus, the combination with the primary element and means for varying the number of poles therein, of a secondary element having the width of its circuits proportioned, as to the arcs embraced thereby, to produce a predetermined flux wave therein with the magnetic flux distribution in the primary for one of the possible number of poles, as set forth.

2. In alternating current apparatus, the combination with the primary element, means for producing different numbers of poles therein and means for producing a given magnetic flux distribution in the primary for one of the possible numbers of poles, of a secondary element having the width of its circuits proportioned, as to the arcs embraced thereby, to produce a predetermined flux wave therein with the given flux distribution in the primary, as set forth.

3. In alternating current apparatus, in combination, a primary element, means for producing different numbers of poles therein, means for producing a given magnetic flux distribution in the primary with a particular number of poles, a secondary element having the width of its circuits proportioned as to the arcs embraced thereby to produce a predetermined flux wave therein with the given flux distribution, and means for varying the flux wave in the secondary, as set forth.

4. In alternating current apparatus, in combination, a primary element, means for producing different numbers of poles therein, means for producing a given magnetic flux distribution in the primary with a particular number of poles, a secondary element having the width of its circuits proportioned as to the arcs embraced thereby to produce a predetermined flux wave therein with the given flux distribution in the primary for the particular number of poles, means for varying the number of poles in the primary, and means for varying the flux distribution in the primary, as set forth.

5. In alternating current apparatus, in combination, a primary element, means for producing a particular number of magnetic poles therein, means for producing a given magnetic flux distribution in the primary with the particular number of poles, a secondary element having the width of its circuits proportioned as to the arcs embraced thereby to produce a predetermined flux wave therein with the given flux distribution in the primary for the particular number of poles, means for varying the number of poles in the primary, and means for varying the flux distribution in the primary, as set forth.

6. In alternating current apparatus, in combination, a primary element, means for producing a particular number of poles therein, means for producing a given magnetic flux distribution in the primary for the particular number of poles, a secondary element having the width of its circuits proportioned as to the arcs embraced thereby to produce a predetermined flux wave therein with the given flux distribution in the primary for the particular number of poles, means for varying the number of poles in the primary and means for simultaneously varying the flux distribution in the primary, as set forth.

7. In alternating current apparatus, in combination, a primary element, means for producing a particular number of poles therein, means for producing a given flux distribution in the primary with the particular number of poles, a secondary element having the width of its circuits proportioned as to the arcs embraced thereby to produce a predetermined flux wave therein with the given flux distribution in the primary for the particular number of poles, means for varying the number of poles in the primary, and means for restoring the flux wave to that predetermined, or a close approximation thereto, as set forth.

8. In an alternating current motor, in combination, a primary winding or windings, supply leads thereto to produce a particular number of poles therein and a given magnetic flux distribution, a secondary element having the width of its circuits proportioned, as to the arcs embraced thereby, to produce a predetermined flux wave in such circuits with the given flux distribution in the primary for the particular number of poles, and means for varying the number of poles by varying the points of connection of the supply leads, as set forth.

9. In an alternating current motor, in combination, a primary winding or windings, supply leads thereto to produce a particular number of poles therein and a given flux distribution, a secondary element having the width of its circuits proportioned as to the arcs embraced thereby to produce a predetermined flux wave therein with the given flux distribution in the primary, and means for varying the number of poles in the primary by leading in current or currents thereto at a plurality of points per pole, the number of points being chosen to give a flux distribution with the new number or numbers of poles which will maintain the flux wave in the secondary the same or within predetermined limits of departure therefrom, as set forth.

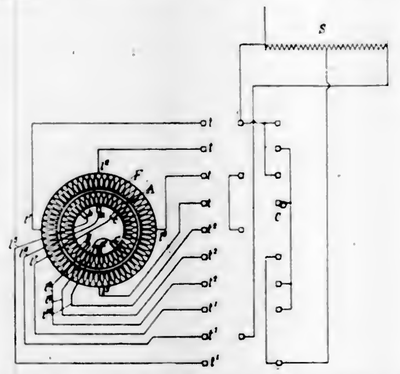
10. In an alternating current motor, in combination, a primary winding or windings, supply leads thereto to produce a particular number of poles therein and a given flux distribution, a secondary element having the width of its circuits proportioned, as to the arcs embraced thereby, to produce a predetermined flux wave therein with the given flux distribution in the primary, and means for varying the number of poles in the primary by leading in current or currents thereto at different points and with different numbers of points per pole, the number of points per pole being chosen to give a flux distribution with the new number or numbers of poles which will produce in the secondary the predetermined flux wave or a desired approximation thereto, as set forth.

11. In an alternating current motor, in combination, a primary winding or windings, supply leads thereto to produce a particular number of poles therein and a given magnetic flux distribution, a secondary element having the width of its circuits proportioned, as to the arcs embraced thereby, to produce a predetermined flux wave therein with the given flux distribution in the primary, and means for varying the number of poles in the primary by leading in current or currents thereto at different points a plurality of points per pole, whereby the flux distribution in the primary will be maintained the same or a close approximation thereto, as set forth.

12. In an alternating current motor, in combination, a primary element, means for producing different numbers of poles therein, a secondary element having the width of its circuits proportioned as to the arcs embraced thereby to produce a flux wave therein for each of the said numbers of poles which shall fall within predetermined limits, means for producing other number or numbers of poles, and means for varying the magnetic flux distribution in the primary with the new number or numbers of poles to vary the flux wave in the secondary, as set forth.

13. In an alternating current motor, in combination, a primary element, means for producing different numbers of poles therein, a secondary element having the width of its circuits proportioned as to the arcs embraced thereby to produce a flux wave therein for each of the said numbers of poles which shall fall within predetermined limits, means for producing other number or numbers of poles, and means for varying the magnetic flux distribution in the primary with the new number or numbers of poles to maintain the flux wave in the secondary within said predetermined limits, as set forth.

853,107. METHOD OF OPERATING ELECTRIC MOTORS. RALPH D. MERSHON, New York, N. Y. Filed Feb. 15, 1904. Renewed Apr. 10, 1907. Serial No. 367,337.



Claim.—1. The method of operating commutating motors adapted for change in the number of poles, to maintain a power factor equal to or above a predetermined limit, which consists in running the motor with one number of poles with a power factor equal to or above the limit, until the speed of the motor has been brought to the desired percentage of synchronous speed for another number of poles, and after such percentage has been reached, changing to the other number of poles, as set forth.

2. The method of operating commutating motors adapted for change in the number of poles, to maintain a power factor equal to or above a predetermined limit, which consists in running the motor with one number of poles with a power factor equal to or above the limit, allowing the motor to change in speed until it has reached the desired percentage of synchronous speed for another number of poles, and changing to the other number of poles, as set forth.

3. The method of operating commutating motors adapted for change in the number of poles, to maintain a power factor equal to or above a predetermined limit, which consists in running the motor with one number of poles with a power factor equal to or above the limit, until the speed has been brought to the desired percentage of synchronous speed for another number of poles, changing to the other number of poles, allowing the speed to change until it has reached the desired percentage of synchronous speed for another number of poles, changing to the other number of poles, and repeating such step or steps until the normal number of poles has been reached, as set forth.

4. The method of operating commutating motors adapted for change in the number of poles, to maintain a power factor equal to or above a predetermined limit, which consists in running the motor with one number of poles with a power factor equal to or above the limit, allowing the motor to change in speed until its speed has reached the desired percentage of synchronous speed for another number of poles, changing to the other number of poles, again allowing the speed to change until it has reached the desired percentage of synchronous speed for another number of poles, changing to the other number of poles, and repeating such step or steps until the normal number of poles has been reached, as set forth.

5. The method of operating commutating motors, to maintain a power factor equal to or above a predetermined limit, which consists in starting the motor with a maximum number of poles, allowing its speed, with a power factor equal to or above a predetermined limit, to increase until the desired percentage of synchronous speed for a lesser number of poles has been reached, and changing to the lesser number of poles, as set forth.

6. The method of operating commutating motors, to maintain a power factor equal to or above a predetermined limit, which consists in starting the motor with a maximum number of poles, allowing its speed, with a power factor equal to or above the limit, to increase until the desired percentage of synchronous speed for a lesser number of poles has been reached, changing to the lesser number of poles, again allowing the speed, to increase with a power factor equal to or above the limit, until the desired percentage of synchronous speed for a lesser number of poles is reached, changing to the lesser number of poles, and repeating such step or steps until the minimum number of poles has been reached, as set forth.

7. The method of operating a motor provided with a commutator, which consists in running the motor, with the commutator, at a maximum number of poles, allowing its speed to approximate synchronism for such number of poles, short-circuiting the armature winding or windings, and thereafter varying the number of poles to increase the speed of the motor, as set forth.

8. The method of operating a motor provided with a commutator, which consists in running the motor, with the commutator, at a maximum number of poles, changing the number of poles when the speed attains the desired percentage of synchronous speed for the new number of poles, and when the speed after the change approximates synchronism for the new number of poles, short-circuiting the windings of the secondary or armature and operating the motor as an induction motor, as set forth.

9. The method of operating a motor provided with a commutator, which consists in running the motor with the commutator, at a maximum number of poles, changing the number of poles when the speed attains the desired percentage of synchronous speed for the new number of poles, short-circuiting the windings of the secondary or armature when the speed after the change in the number of poles approximates synchronism for the new number of poles, and thereafter varying the number of poles to increase or decrease the speed, as set forth.

10. The method of operating commutating motors, which consists in feeding the current or currents thereto at a plurality of points per pole to produce a desired distribution of magnetic flux, running the motor with one number of poles with a power factor equal to or above a predetermined limit, until the speed of the motor has been brought to the desired percentage of synchronous speed for another number of poles, and after such percentage has been reached changing to the other number of poles, as set forth.

11. The method of operating commutating motors, which consists in feeding the current or currents thereto at a plurality of points per pole to produce a desired distribution of magnetic flux, running the motor with one number of poles with a power factor equal to or above a predetermined limit, until the speed has been brought to the desired percentage of synchronous speed for another number of poles, changing to the other number of poles, allowing the speed to change until it has reached the desired percentage of synchronous speed for another number of poles, changing to the other number of poles, and repeating such step or steps until the normal number of poles has been reached, as set forth.

12. The method of operating commutating motors, which consists in feeding the current or currents thereto at a plurality of points per pole to produce a desired distribution of magnetic flux, running the motor, with the commutator, at a maximum number of poles, allowing its speed to approximate synchronism for such number of poles, short-circuiting the armature winding or windings, and thereafter varying the number of poles to increase the speed of the motor, as set forth.

13. The method of operating commutating motors, which consists in feeding the current or currents thereto at a plurality of points per pole to produce a desired distribution of magnetic flux, running the motor, with the commutator, at a maximum number of poles, changing the number of poles when the speed attains the desired percentage of synchronous speed for the new number of poles, and when the speed after the change approximates synchronism for the new number of poles, short-circuiting the windings of the secondary or armature and operating the motor as an induction motor, as set forth.

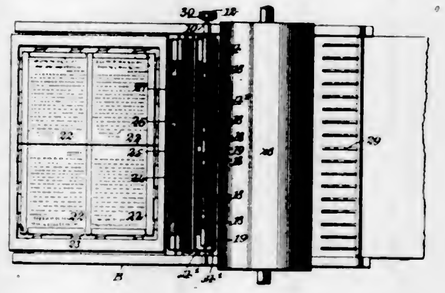
14. The method of operating a commutating motor, which consists in feeding the current or currents thereto at a plurality of points per pole to produce a desired distribution of magnetic flux, running the motor with the commutator, at a maximum number of poles, changing the number of poles when the speed attains the desired percentage of synchronous speed for the new number of poles, short-circuiting the windings of the secondary or armature when the speed after the change in the number of poles approximates synchronism for the new number of poles, and thereafter varying the number of poles to increase or decrease the speed, as set forth.

853,108. ADVERTISING-HOLDER. LE ROY MORAND, Newark, N. J. Filed May 5, 1906. Serial No. 315,388.



Claim.—An advertising holder comprising a plate having marginal flanges spaced from the body of the plate to receive and support the advertising cards, said plate being cut out to provide a series of tongues connected at respectively opposite ends with the body of the plate, the free end of one tongue being alined with the connected end of the adjacent tongue, the tongues being of right angle triangle shape with their relatively remote edges extending directly transverse the plate, and their approximate edges being in parallel relation and inclined relative to the transverse line of the plate.

853,109. VIBRATING ROLLER FOR PRINTING-PRESSES. ELMER NICHOSON, Lansing, Mich. Filed Apr. 27, 1906. Serial No. 313,996.



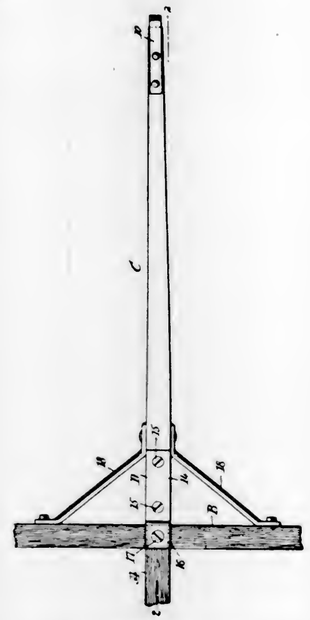
Claim.—In printing presses, the combination with an ink fountain and removable wadded partitions therefor, dividing the fountain into a number of cells for different colors of ink, and a form roller operating in conjunction with the said fountain, of a vibrating inking roller adapted to take ink from said fountain, and consisting of a shaft, a series of removable and adjustable distributing sections and intermediate spacing sections located on said shaft, the spacing sections being of lesser diameter than the diameter of the distributing sections, said distributing sections corresponding in length, in number and arrangement to the length, number and arrangement of the cells in the ink fountain, the vibration of said inking roller and the relation of the distributing section thereof being such that the ink of one color received by the roller will be sharply defined from an adjoining color also received by the roller, one color being absolutely prevented from running into the other, a stop collar for the said section at one end of the shaft, and locking nuts for the sections at the opposite ends of the shaft, the sections being held by the locking devices named, in close end engagement one with the other.

853,110. WAGON-TONGUE. HILRY B. NOLEN, Lamar, Wash. Original application filed June 30, 1905, Serial No. 267,725. Divided and this application filed July 19, 1906. Serial No. 326,851.

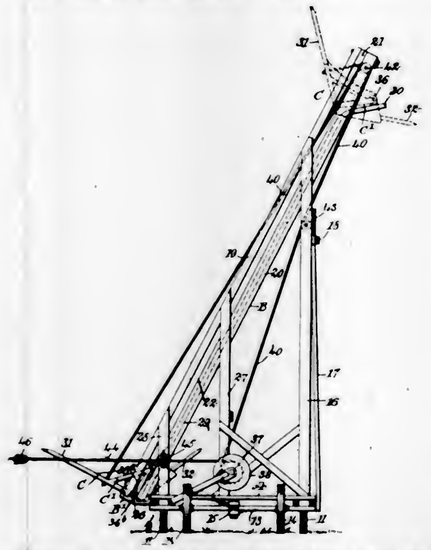
Claim.—1. In a vehicle provided with a longitudinal beam, a tongue having a horizontal centrally located extension at the rear end thereof, a cross bar below the beam having an opening to receive the extension, and a bracket secured to the tongue and to the longitudinal beam.

2. As an improved article of manufacture, a vehicle tongue or pole provided with an attaching tongue forming a horizontal centrally located extension from the rear end of the said vehicle tongue or pole, a bracket secured to the upper face of said vehicle tongue or pole adjacent to its rear end, which bracket is provided with an L-shaped rear member which extends over the attaching tongue of said vehicle tongue or pole, and side braces for said vehicle tongue or pole.

853,110.



853,111. HAY-STACKER. DAVID D. OGILVIE, Lee, Nev. Filed June 13, 1906. Serial No. 321,535.



Claim.—1. In a hay stacker, a base frame, slotted guide bars inclined from the left-hand side portions of the base upward in direction of the right-hand side, rails secured to the inner faces of the guide bars adjacent to the lower edges of the slots therein, the rails at their upper ends being upwardly inclined, extending beyond the right-hand side of the guide bars, a fork conveyer provided with friction rollers which engage with the said rails and with pivot pins which pass through the slots in the bars, and a windlass device for raising and lowering the said fork conveyer, which fork conveyer automatically dumps when its guide rollers reach the inclined extended portions of the rails.

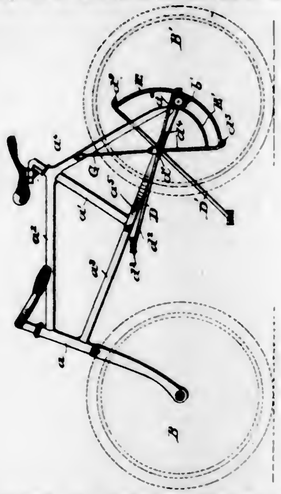
2. In a hay stacker, the combination with a base and parallel guide bars located at the front and at the rear, said guide bars being inclined from the left-hand side upwardly beyond the right-hand side of the base, each guide bar being provided with a longitudinal slot, and rails located on the inner faces of the guide bars adjacent to the lower walls of the said slots, which rails at their upper ends extend beyond the right-hand side of the guide bars and have a slight upward inclination, of a fork conveyer having series of teeth facing in opposite directions, the teeth of one series being at an angle to the teeth of the other series, an angular guide arm secured to the outer teeth of a series where the series of teeth connect, a member of the said guide arm extending upward from the teeth parallel with the said rails when the said conveyer is in receiving position, friction rollers carried by the said upwardly-extending members of the guide arms, pins also carried by the guide arms at the junction of their members, said pins being adapted to pass through the slots in the guide bars, the said friction rollers being adapted to travel along the rails of the guide bars the length thereof, causing the conveyer to automatically dump when the upper inclined portions of the rails are reached, a shaft, drums secured to said shaft, cables attached to the conveyer at its receiving portion, said cables being attached to the said drums, roller guides for the cable carried by the guide bars, and means for rotating the said shaft.

3. In a hay stacker, the combination with a base, guide bars located at the front and rear of said base, extending from its left-hand side upward beyond the right-hand side, the said guide-bars being provided with longitudinal slots closed at the top and open at the bottom, shoes secured to the bottoms of the said guide bars, which shoes are provided with open bearings which enter the slots in the guide bars, a shaft extending in direction of the front and rear of the machine, an outer operating drum, and auxiliary drums secured to the said shaft between its ends, of a fork conveyer consisting of a body portion and series of teeth extending in direction of the left and the right-hand sides of the machine from its body portion, the teeth of the two series being at angles to each other and the teeth of the outer series being receiving teeth and the teeth of the inner series discharging teeth, guide arms secured to the outer faces of the outer teeth of the receiving series, which guide arms consist of a base member parallel with said teeth, and an upright member parallel with the guide bars, rollers at the upper ends of the said upright members of the said arms, pins extending outward from the said guide arms at the junction of their members, said pins being passed through the slots 22 in the guide bars adjacent to the lower edges of the slots therein, which rails are engaged by the said friction rollers, and which rails also have their upper ends inclined and carried beyond the right-hand side of the guide bars, a cable attached to the larger drum, being adapted for attachment also to a draft device, and cables secured one to the outer end of the base member of each guide arm, which cables are connected at their opposite ends with the smaller drums on the said shaft, and friction pulleys engaging the said cables at points between their ends.

853,112. BICYCLE. EDWIN T. PETERS, Lincoln, Nebr. Filed July 18, 1906. Serial No. 326,688.

Claim.—1. In a bicycle, the combination with the frame, of a rear wheel having a hollow hub journaled in the fame, sprocket wheels journaled on the hub on each side of the fraime, clutch connections between the wheels and the hub, whereby to connect the wheels to the hub during the forward rotation of said wheels, treadle levers pivoted to the side of the frame and provided with racks engaging the sprocket wheels, and means for retaining the treadle levers in opposite positions with respect to each other, comprising a shaft rigid with one of the sprocket wheels

and extending through the hollow hub, a sprocket wheel keyed on the free end of the shaft, and the rack on the adjacent treadle lever engaging such sprocket wheel whereby to rotate it in an opposite direction to the adjacent sprocket wheel during the movement of the treadle lever.



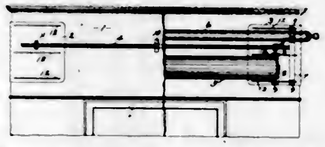
2. In a bicycle, the combination with the frame, of a rear wheel having a hollow hub journaled in the frame, sprocket wheels journaled on the hub on each side of the frame, clutch connections between the wheels and the hub, whereby to connect the wheels to the hub, during the forward rotation of said wheels, treadle levers pivoted to the sides of the frame and provided with racks engaging the sprocket wheels, one of said sprocket wheels having a shaft rigid therewith, and connected and extending through the hollow hub to a point adjacent to the opposite treadle lever, and a connection between said treadle lever and the shaft, whereby to retain the treadle lever in opposite positions with respect to each other.

3. In a bicycle, the combination with the frame, of a rear wheel having a hollow hub journaled in the frame, sprocket wheels journaled on the hub on each side of the frame, clutch connections between the wheels and the hub, whereby to connect the wheels to the hub, during the forward rotation of said wheels, treadle levers pivoted to the side of the frame and provided with racks engaging the sprocket wheels, and a connection between one of the treadle levers and the opposite sprocket wheel and extending through the hub for retaining the treadle levers in opposite positions with respect to each other.

4. In a bicycle, the combination with the frame, of a rear wheel having its hub journaled in the frame, sprocket wheels journaled on the hub on each side of the frame, clutch connections between the wheels and the hub, whereby to connect the wheels to the hub during the forward rotation of said wheel, treadle levers pivoted to the sides of the frame, and provided with racks engaging the sprocket wheels, and a connection between one of the treadle levers and the opposite sprocket wheel for retaining the treadle levers in opposite positions with respect to each other.

853,113. CURTAIN-FIXTURE. JAMES A. PHILBRICK and ALONZO RAY, Anacortes, Wash. Filed Aug. 29, 1905. Serial No. 276,231.

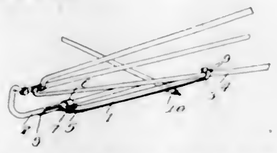
Claim.—1. A fixture for supporting shade and curtain brackets, comprising a rod having reversely threaded ends, two plates adapted to lie against the outer face of the window casing and having one edge flanged over to engage an edge of the window casing, said flanges being at opposite sides of companion plates, said plates being each provided with a threaded member adapted for engagement by said rod from either side, whereby said plates may be applied to either side of the window to engage their flanges with either the inner or outer edges of the window casing without inverting the plates.



2. A fixture for supporting shade and curtain brackets, comprising a rod having reversely threaded ends, two plates adapted to lie against the outer face of the window casing and having one edge flanged over to engage an edge of the window casing, said flanges being at opposite sides of companion plates, said plates being each provided with means located at about the middle of its horizontal extent, for the threaded engagement of said rod from either direction, whereby said plates may be applied to either side of the window casing to engage their flanges with either the inner or outer edges of the casing without inverting the plates.

3. A fixture for supporting shade and curtain brackets comprising a rod having reversely threaded ends, two plates adapted to lie against the outer faces of the window casing and having one edge flanged over to engage one edge of the window casing, said flanges being at opposite sides of companion plates, said plates being provided with a threaded member adapted for engagement by said rod from either side, whereby said plates may be applied to either side of the window to engage their flanges with either the inner or outer edges of the window casing without inverting the plates, said plates also having horizontally extending slots, and shade and curtain brackets provided with means for engaging said plates by said slots and for securing them in adjusted position along said slots.

853,114. SPRING-SUPPORT FOR BUGGY-BOWS. LOUIS A. PIGUET, Chanute, Kans. Filed Feb. 26, 1906. Serial No. 303,085.



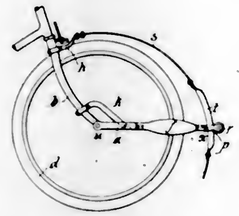
Claim.—1. A spring support for the bows of vehicle tops comprising a bar of spring material which extends along the shifting rail, one end of the bar being provided with a depression to receive the lower portion of the shifting rail, a clip slidably mounted upon the shifting rail and connected to the bar, and a seat at the opposite end of the bar adapted to receive the bows.

2. A spring support for the bows of vehicle tops comprising a bar of spring material which extends along the shifting rail and rests at an intermediate point upon the prop bolt, said bar being provided with an offset portion and the forward end thereof being formed with a depression to receive the lower portion of the shifting rail, a clip secured to the forward portion of the bar and slidably mounted upon the shifting rail, and a seat at the rear end of the bar, said seat having a spring engagement with the bows.

853,115. CYCLE WHEEL-GUARD. THEODOR REUSS, Kötzschenbroda, Germany. Filed Mar. 30, 1905. Renewed Mar. 14, 1907. Serial No. 362,413.

Claim.—1. A cycle wheel protector, comprising a guard located in front of the wheel and carried by the cycle frame, and a flexible arm at each side of the wheel, carried at one end by the axle and secured at the other end to the said guard, substantially as described.

2. A cycle wheel protector, comprising a guard located in front of the wheel, and carried by the cycle frame, and a composite arm at each side of the wheel, presenting an intermediate flexible member, said arms being carried at one end by the axle and secured at the other end to the said guard, substantially as described.



3. A cycle wheel protector, comprising a guard located in front of the wheel and carried by the cycle frame, a flexible arm at each side of the wheel, carried at one end by the axle and secured at the other end to the said guard, and a revolving device mounted at the other extremity of the said arms, substantially as described.

4. A cycle wheel protector, comprising a guard located in front of the wheel and carried by the cycle frame, and a flexible arm at each side of the wheel, one end of which arm is carried by the axle and is secured to the wheel fork, while the other end is secured to the said guard, substantially as described.

853,116. BITUMINOUS PAVING-BLOCK. CLIFFORD RICHARDSON, New York, and CHARLES N. FORREST, Brooklyn, N. Y., assignors to The Barber Asphalt Paving Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Feb. 17, 1906. Serial No. 301,598.

Claim.—1. A paving block composed of bituminous binding material and a mineral aggregate of crushed screenings running from about three-quarters of an inch down to impalpable powder with substantial depletion of the particles which pass a one-eighth mesh screen and are retained on a twenty mesh screen, substantially as specified.

2. A paving block composed of a bituminous binding material, and a mineral aggregate of crushed screenings not larger than three-quarters of an inch in size, and from which the excess of particles which pass a one-eighth mesh screen and are retained on a twenty mesh screen are excluded, substantially as specified.

3. A paving block composed of a bituminous binding material, and a graded mineral aggregate composed of over 50% screened stone definitely graded from about three-quarters of an inch down to particles retained on a one-eighth mesh screen, and the balance of fine said and dust graded, substantially as specified.

4. A paving block composed of a bituminous binding material and a graded mineral aggregate of which approximately 65% lies between three-quarters of an inch and one-eighth of an inch in size, and the balance of which passes a 20 mesh screen, substantially as specified.

5. A paving block composed of a bituminous binding material, and a graded mineral aggregate of which approximately 65% is between three-quarters, and one-eighth of an inch in size, and the balance finer material graded substantially as follows:—

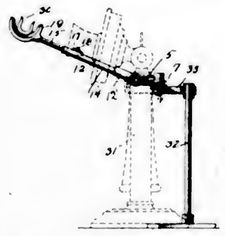
Passing 100 mesh	17%
" 80	17%
" 50	30%
" 40	13%
" 30	10%
" 20	8%
" 10	5%

853,117. BITUMINOUS COMPOSITION. CLIFFORD RICHARDSON, New York, and CHARLES N. FORREST, Brooklyn, N. Y., assignors to The Barber Asphalt Paving Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Feb. 17, 1906. Serial No. 301,599.

Claim.—1. A protective substance which resists the injurious effects of the sun's rays comprising a native bitumen in combination with from 25 to 50% of flaky graphitic carbon.

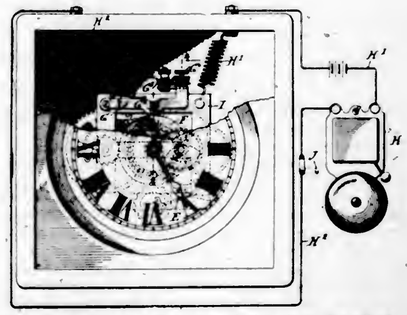
2. The process of rendering a relatively pure native bitumen less susceptible to sunlight, and therefore better adapted for use as an open air protective coating, which consists in intermixing with the bitumen sufficient graphitic carbon to materially intercept actinic rays.

853,118. TELEPHONE RECEIVER-HOLDER. HARRY E. RICHEY, Perrysville, Pa. Filed Jan. 16, 1907. Serial No. 352,496.



Claim.—In a telephone receiver holder or support, a supporting bracket carrying a pin, an arm mounted to swing on said pin, a coil spring having one end connected to the bracket and the other end connected to said arm for normally holding the arm in alinement with the bracket, a receiver supporting arm embodying a socket section pivoted to said swinging arm, a tubular section held in said socket section, a rod telescoping said tubular section having a yoke at its outer end, a laterally-extending arm carried by said yoke and having a fork at its outer end, and a spring carried by said rod section and bearing against said tubular section of the receiver supporting arm to hold said rod section in adjusted position.

853,119. ELECTRIC ALARM-CLOCK. JOHN F. RODGERS, New York, N. Y., assignor of one-half to Harry MacCanlis and Arthur Barman, Brooklyn, N. Y. Filed June 15, 1906. Serial No. 321,843.

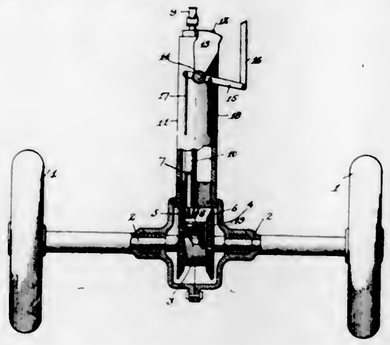


Claim.—1. In an apparatus of the class described, the combination with the clock, of a lever pivotally mounted on the frame thereof, said lever being provided on its upper edge with a contact for engaging the frame, and on its lower edge with oppositely projecting lugs, a cam on the arbor of the minute hand and engaging one of the lugs, such cam having peripheral notches, a cam on the sleeve of the hour hand and engaging the other lug, said

last named cam also having peripheral notches, a spring for holding the lugs in contact with the cams, and an electric circuit including an alarm having its terminals in the frame and the contact of the lever, respectively.

2. In apparatus of the class described, the combination with the clock, of a lever pivotally mounted on the frame thereof, and provided at its upper edge with a contact, a cam on the arbor of the minute hand and a cam on the sleeve of the hour hand, the lower edge of the lever normally resting on the periphery of said cams, and said cams being provided with peripheral notches for the purpose set forth, and an electric circuit including an alarm having its terminals in the frame and in the contact of the lever, respectively.

853,120. REVERSE-GEAR FOR MOTOR-VEHICLES. WILLIAM A. SALTER, Cedar Point, Kans. Filed Jan. 8, 1907. Serial No. 351,372.



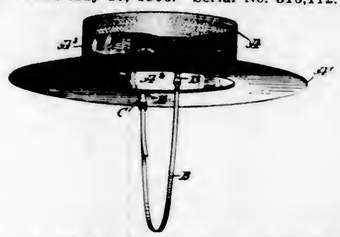
Claim.—1. In a reverse gear, the combination with a divided shaft, of a casing, differential gearing therein connecting the ends of the two portions of said shaft, two bevel gears secured to said casing and facing each other, a driving bevel pinion adapted to mesh with either of said gears, and connected means for shifting said pinion into engagement with either of said gears, and for locking it in such position.

2. In a reverse gear, the combination with a divided shaft, of a casing, differential gearing therein connecting the ends of the two portions of said shaft, two bevel gears secured to said casing and facing each other, an element rotatable on an axis transverse to said shaft, a drive shaft journaled eccentrically in said rotatable element, and a pinion on said drive shaft adapted to be engaged with either of said gears, when said element is rotated, and connected means for rotating and locking said element.

3. In a reverse gear, the combination with a divided shaft, of a casing, differential gearing therein connecting the ends of the two portions of said shaft, two bevel gears secured to said casing and facing each other, a tube extending at right angles to said shaft, a sleeve rotatable in said tube, a drive shaft journaled eccentrically in said sleeve, a pinion on said drive shaft adapted to mesh with either of said gears, means for oscillating said sleeve comprising two gears, one on said sleeve, a hand lever connected with the other, and a locking device actuated by said hand lever.

4. In a reverse gear, the combination with a divided shaft, of a casing, differential gearing therein connecting the ends of the two portions of said shaft, two bevel gears secured to said casing and facing each other, a tube extending at right angles to said shaft, a sleeve rotatable in said tube, a drive shaft journaled eccentrically in said sleeve, a pinion on said drive shaft adapted to mesh with either of said gears, means for oscillating said sleeve, and locking bolts moving with said oscillating means and engaging with said sleeve.

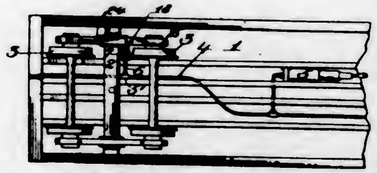
853,121. HAT-GUARD. HENRY SAUNDAY, New York, N. Y. Filed May 10, 1906. Serial No. 316,112.



Claim.—1. A hat guard, consisting of retaining staples adapted as permanent fixtures in a hat, said staples having openings at the pointed portions of their prongs and wires passed through said openings, and a strap having hooks at its ends for engagement with the said staples, one of the said hooks being constructed to take up slack in the said strap and hold the strap in adjusted position.

2. A hat guard consisting of retaining staples having openings at the pointed ends of their prongs, wires passed through the said openings, a strap, a plain hook at one end of the strap and a combined hook and take-up at the opposite end of the strap, the combined hook and take-up having its shank in two members disconnected at their lower portions, each member being provided with two apertures, the apertures in one member being further apart than the apertures in the opposing member but the lower apertures in both members being in registry, the said strap being laced through the said apertures and at the outer sides of the members and between them, as described.

853,122. AUTOMATIC TRUCK BRAKE APPLIANCE. ANDREW L. SAXON, Soso, Miss. Filed Jan. 14, 1907. Serial No. 352,296.



Claim.—1. A truck brake appliance comprising the combination with a train pipe, of a valve mechanism communicating therewith and adapted to establish communication between the train pipe and the atmosphere, said valve mechanism provided with means for slightly reducing the train pipe pressure, and shiftable means detachably connected to said valve mechanism for opening and closing it.

2. A truck brake appliance comprising the combination with a train pipe, of a valve mechanism communicating therewith and adapted to establish communication between the train pipe and the atmosphere, said valve mechanism provided with means for slightly reducing the train pipe pressure, shiftable means detachably connected to said valve mechanism for opening and closing it, and a pair of flexible members connected to said means and with the truck of a railway car for actuating the means when the truck assumes an angle with respect to the bottom of the car.

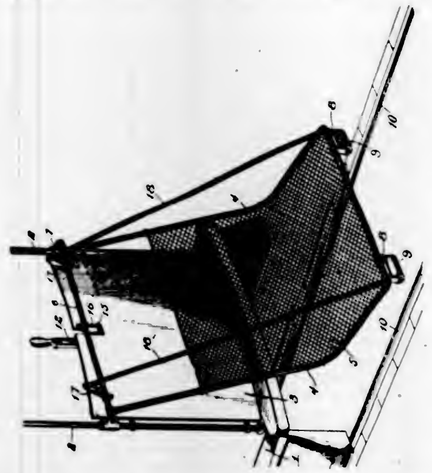
3. A truck brake appliance comprising the combination with a train pipe, of a valve mechanism connected therewith and adapted when operated to establish communication between the train pipe and the atmosphere, shiftable means detachably connected with said mechanism for opening and closing it, and a pair of flexible members connected to said means and with the truck of a car and adapted to actuate the means when the truck assumes an angle with respect to the car body.

4. In a truck brake appliance, the combination with a train pipe and a car truck, of a valve mechanism connected with the train pipe, and connections between the valve mechanism and the car truck for opening said mechanism when the truck assumes an angle with respect to the car body, said connections provided with means for automatically detaching the same from the valve mechanism when the wheels of the truck are derailed thereby causing the valve mechanism to remain open.

5. A truck brake appliance comprising the combination with a train pipe and a car truck, of a branch pipe extending from the train pipe, a valve mechanism secured to the end of the branch pipe and embodying a valve provided with a stem having an opening, a shifting arm extending through the opening in the valve stem and detachably connected thereto, and a pair of flexible members connected to one end of said arm and to the truck for causing the actuation of said arm when the truck assumes an angle with respect to the body of the car.

6. A truck brake appliance comprising the combination with a train pipe and a car truck, of a branch pipe extending from the train pipe, and a valve mechanism secured to the end of the branch pipe and embodying a valve provided with a stem having an opening, said valve further provided with means for slightly reducing the train pipe pressure when the valve is partly shifted.

853,123. CAR-FENDER. THOMAS J. SAYERS, West Philadelphia, Pa. Filed Oct. 13, 1906. Serial No. 338,829.

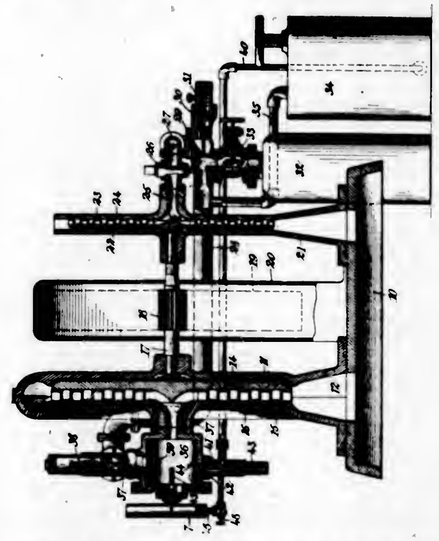


Claim.—1. In a device of the class described and in combination with a car, a rock shaft journaled thereon and provided with crank arms, a fender hung upon said shaft, an operating lever, connections between the lever and shaft for rocking the latter, and connections between the crank arms and forward portion of the fender.

2. In a device of the class described and in combination with a car, a rock shaft journaled thereon, a fender hung upon said shaft and for movement at its lower end in a vertical plane, crank arms fixed upon said shaft, connecting elements extended between said arms and the lower end of the fender, an operating lever and connections between said lever and the shaft for rocking the latter.

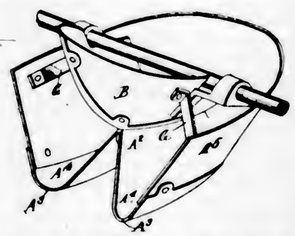
3. In a device of the class described and in combination with a car, of a rock shaft journaled thereon and provided with a pair of upwardly projecting crank arms, a fender hung on said rock shaft for movement at its lower end in a vertical plane, connecting elements extended between the outer ends of the crank arms and lower end of the fender, a depending crank arm fixed on the rock shaft, an operating lever, a link connection between said lever and the last named crank arm, and means for locking the lever against movement.

853,124. TURBINE. EDWARD L. SCHAUN, Baltimore, Md. Filed Apr. 14, 1905. Serial No. 255,492.



Claim.—In a turbine, the combination with a shaft, and a turbine thereon, of a combustion chamber secured to the casing of the turbine at the center thereof and communicating with the interior of the said casing by an unobstructed passage, said chamber having oppositely arranged inlet openings and an outwardly inclined deflector adjacent to each opening, an igniting device in the combustion chamber and to which the air and fuel are directed by said deflectors, a compressed air tank, a valved connection between the said tank and one of the inlet openings of the combustion chamber, a liquid fuel tank, and a valved connection between the said tank and the other inlet opening of the combustion chamber, substantially as shown and described.

853,125. CARBID-FEED FOR ACETYLENE-GAS GENERATORS. NORMAN D. SHAFFER and JOSIAH S. BENTON, Johnstown, Pa. Filed Aug. 8, 1906. Serial No. 329,721.



Claim.—1. The improved carbid feeder herein described, consisting of a pan having a side plate and a bottom plate secured at its outer edges thereto and bent forming separate discharge troughs, and a ridge between the same, an interrupter or cut-off mounted on the said ridge and discharging at one end to the pan at the opposite end thereof from the discharge of its separate troughs, braces between the pan and interrupter, and brackets secured to the interrupter and having collars to receive an operating shaft, all substantially as and for the purposes set forth.

2. A carbid feeder having a main discharge pan divided

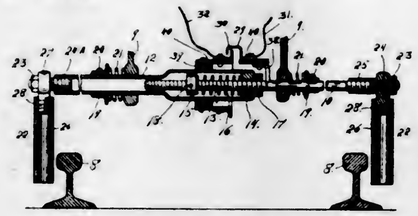
longitudinally into separate independent discharging troughs.

3. A carbid feeder having a main discharge pan whose bottom is divided longitudinally into independently discharging troughs, and an interrupter pan or cut-off above the main pan and discharging to the rear ends of said independent troughs of the main pan.

4. A carbid feeder having a main pan whose bottom is divided by a longitudinal ridge into separate independently discharging troughs opening at one end of said pan, and an interrupter or cut-off pan mounted on the said ridge and discharging to the main pan in a direction the reverse of the discharge from the independent troughs, substantially as set forth.

5. A carbid feeder having a main pan arranged to discharge at one end, a cut-off or interrupter pan above the main pan and discharging in a reverse direction to said pan, said interrupter pan being supported midway between its sides on the main pan, brackets between the interrupter pan and the sides of the main pan, a shaft and collars connected with the interrupter pan and fitting said shaft, substantially as set forth.

853,126. RAIL-SPREAD-INDICATING DEVICE. JOSEPH A. SHIARS, Denver, Colo. Filed Oct. 31, 1906. Serial No. 341,489.



Claim.—1. A rail spread indicating device consisting of an extensible bar suitably mounted on the train and provided with depending hangers normally occupying positions outside of the rails of the track, but in close proximity thereto, an electrical circuit, and normally separated contacts arranged to close the circuit as the indicator bar is elongated due to the spreading of the rails, substantially as described.

2. In a rail spread indicating device, the combination of a car or locomotive, an electrical circuit, a signal therein, an extensible bar mounted on the car and having hangers normally occupying positions on the outside of the rails, the said bar being composed of two telescoping parts, and normally separated contacts respectively mounted on the parts of the bar and adapted to be brought into engagement to close the electrical circuit and operate the signal as the bar is elongated due to the spreading of the rail, substantially as described.

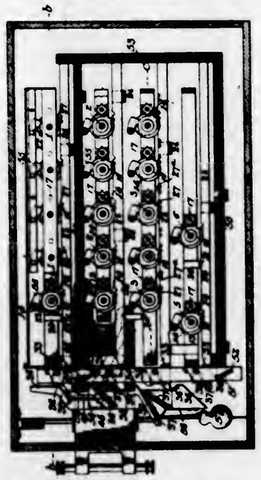
3. A rail spread indicator comprising a bar composed of two telescoping spring-retained members, the opposite extremities of the bar being provided with hangers occupying positions on the outside of the rails, the bar being extensible, and its two members being respectively provided with contacts adapted to be brought into engagement as the bar is extended due to the spreading of the rails, an electrical circuit in which the contacts are located, and a signaling device located in the circuit.

4. A rail spread indicator comprising an extensible bar composed of two spring-retained telescoping members, the outer extremities of the bar being provided with hangers occupying positions on the outside of the rails, the said hangers being mounted to swing freely upon the bar, the two members of the bar being provided with normally separated contacts, and a signaling circuit in which the contacts are located, the said contacts being arranged to be brought into engagement as the bar is elongated due to the spreading of the rails.

5. A rail spread indicating device consisting of a bar composed of two extensible members, normally spring-held in a predetermined position and provided with depending means occupying positions outside of the rails of the track but in such proximity thereto as to be acted on by the spread of the rails to elongate the bar, an electrical circuit, and means mounted on the bar for closing said circuit when the bar is extended, substantially as described.

6. A rail spread indicating device comprising an extensible bar composed of a plurality of members, normally spring-retained in a predetermined position, the said bar being provided with means arranged to be acted on when the rails are spread, to cause the extension of the bar, an electrical circuit, and means mounted on the bar for closing said circuit when the bar is extended, substantially as described.

853,127. VOTING-MACHINE. SAMUEL R. SHOUP, Wilmington, Del. Original application filed Feb. 8, 1902, Serial No. 244,775. Divided and this application filed Feb. 9, 1906. Serial No. 300,322.



Claim.—1. The combination of a plurality of sets of slidable elements each having engaging means, and a series of rotatable elements each having a plurality of engaging elements, each of said rotatable elements being independently capable of coacting with said engaging means to operate the slidable elements, the arrangement of the engaging elements of each rotatable element differing from all the others and the relation of the parts being such that when one of the rotatable elements is operated to actuate a set of the slidable elements the rest of said rotatable elements will be thereby locked against operation.

2. The combination of a plurality of sets of slidable elements each having engaging means, and a series of rotatable elements each having a plurality of engaging elements, each of said rotatable elements being independently capable of coacting with the engaging means on said slidable elements to operate the latter, the engaging means carried by the slidable elements serving to lock the rest of said rotatable elements against operation when one of said rotatable elements has been operated.

3. The combination of a plurality of sets of successively slidable elements each having engaging means, and a series of rotatable elements each having a plurality of engaging elements, each of said rotatable elements being independently capable of coacting with the engaging means on said slidable elements to operate the latter successively, the engaging means carried by the slidable elements serving to lock the rest of said rotatable elements against operation when one of said rotatable elements has been operated.

4. The combination of a plurality of sets of slidable

bars having engaging means, a series of rotatable spindles, and a plurality of engaging means carried by each of said spindles coacting with the engaging means of said bars to move the same, the relation of the parts being such that when one of said spindles is turned to effect the movement of the bars, the engaging means of the latter will lock the other spindles against turning.

5. The combination of two or more rotatable spindles, segmental pinions carried by each of said spindles, the arrangement of each set of pinions differing from all the others, and two or more slidable bars having notches bearing the same relation to each other, the relation of the parts being such that only one spindle may be turned at each operation and after said spindle is turned all the other spindles will be locked out of engagement with the slidable bars.

6. The combination of two or more rotatable spindles, segmental pinions carried by said spindles, and two or more slidable bars having notches, said notches bearing the same relation to each other while the pinions are disposed in different relation to each other, the relation of the coacting parts being such that only one spindle may be turned at each operation and after the turning of said spindle all the other spindles will be locked out of operative engagement with the slidable bars.

7. The combination in a voting machine, of a set of slidable bars, a spindle, and a plurality of means one for each bar carried by said spindle for moving said bars successively.

8. The combination in a voting machine, of a plurality of sets of slidable bars having engaging means, a series of spindles, and a plurality of engaging means for said bars carried by each of said spindles, the engaging means carried by the spindles being so arranged as to move the individual bars of said sets successively.

9. The combination in a voting machine, of a casing, a series of slidable bars mounted therein, segmental pinions arranged to engage said slidable bars, said pinions being arranged to move said bars successively, and means for turning said pinions.

10. The combination in a voting machine, of a plurality of sets of slidable bars having engaging means, and rotatable means for moving said bars, the engaging means carried by said bars serving to lock the rest of the rotatable means therefor after such movement.

11. The combination in a voting machine, of the slidable bars having a series of recesses between which teeth are formed, a spindle, means carried by said spindle and adapted to engage the teeth whereby the latter may be moved, and means for holding said bars after they have been moved.

12. The combination in a voting machine, of the slidable bars having a series of recesses between which teeth are formed, a spindle, segmental pinions carried by said spindle and adapted to engage the teeth whereby the latter may be moved, and pawls for holding said bars after they have been moved.

13. The combination in a voting machine, of a casing, a series of sliding members mounted therein, teeth carried by said members, a spindle, segmental gears thereon adapted to engage said teeth upon turning the spindle whereby the bars may be moved, a vertically movable bar engaged by the sliding bars, and means for preventing the retraction of said sliding bars.

14. The combination in a voting machine, of a series of slidable bars, a series of spindles, segmental gears carried by said spindles for actuating said bars when the former is turned, and a movable bar having slots in line with and arranged to receive said sliding bars.

15. The combination in a voting machine, of a casing, a series of slidable bars mounted within said casing, a spindle, segmental pinions carried by said spindle and adapted to engage and move said bars, and a slotted bar to be engaged by said sliding bars when moved by the spindles.

16. The combination in a voting machine, of a casing, a series of slidable members mounted therein, teeth carried by said members, a spindle, segmental gears secured thereto adapted to engage said teeth upon turning the spindle whereby the bars may be moved, a slotted bar engaged by the sliding bars, and pawls for preventing the retraction of said sliding bars, said slotted bar being held against movement by the engagement of the slidable bars.

17. The combination in a voting machine, of a casing, a series of sets of slidable bars mounted within said casing, a series of spindles, segmental pinions carried by each of said spindles and adapted to engage and move said sets of bars, and a slotted bar to be engaged by said sets of slidable bars when moved by the spindles, one of said sets of sliding bars serving to raise the slotted bar and prevent the movement of the others.

18. The combination in a voting machine, of a series of slidable bars, means for moving said bars, a bar having slots in line with said slidable bars, said slots having upper inclined faces and one of said faces lying in a plane to be engaged by one set of the slidable bars for the purpose of raising said slotted bar.

19. The combination in a voting machine, of a plurality of sets of slidable bars, means for moving said bars, a bar having slots in line with said slidable bars, said slots having upper inclined walls forming cams, the uppermost slot of said bar having its face in a plane to be engaged by the uppermost set of slidable bars when the latter are moved whereby said slotted bar is raised to prevent the movement and engagement therewith of the other slidable bars, and means for depressing said slotted bar to reset the slidable bars.

20. The combination in a voting machine, of a plurality of sets of slidable bars, means for moving the same, a locking bar slotted to receive said slidable bars, one of said sets of bars being movable to raise said bar and thereby prevent the movement of the other bars into engagement with the slotted bar, and means for depressing the latter to reset the slidable bars.

21. The combination in a voting machine, of a plurality of slidable bars, means for moving the same longitudinally, a movable bar having slots in line with said slidable bars, the slots of said bar having upper inclined walls, and means for depressing said slotted bar whereby the slidable bars may be returned to their normal position, the slidable bars having beveled ends.

22. The combination in a voting machine, of a plurality of slidable bars, means for moving the same successively, a slotted and movable bar to receive said slidable bars, said slotted bar when engaged by one set of said slidable bars preventing the movement of the others, means for locking the slidable bars, and means for simultaneously releasing and returning said slidable bars to their original position.

23. The combination in a voting machine, of a casing having a series of slidable members, teeth carried by said members, a spindle, segmental gears carried by said spindle and adapted to engage said teeth whereby the bars may be moved, a slotted bar engaged by the sliding bars, means for preventing the retraction of said slidable bars, and means for releasing the same and moving them out of the slotted bar.

24. In a voting machine, the combination of the slidable bars, means for moving the same, means for holding said bars against retraction movement when once moved forward, a slotted bar for preventing the movement of certain sets of bars after certain other bars have been moved, a bar carrying said slidable bar locking means, and means for raising said bar and the slotted bar to cause the return of the slidable bars in the resetting of the machine.

25. The combination in a voting machine, of a series of sets of slidable bars, means for moving the same, a slotted bar, which, when engaged by one set of said sliding bars raises the same and prevents the movement of the other slidable bars, means for locking the sliding bars, and means for simultaneously releasing said locking means and lowering the slotted bar whereby the slidable bars may be returned to their original position.

26. The combination in a voting machine, of a plurality of slidable bars, means for moving the same longitudinally, a vertically movable bar having slots in line with said slidable bars, said slots having inclined upper walls, and a bell-crank lever for depressing said slotted bar whereby the slidable bars may be returned to their normal position by the engagement of the inclined walls of the slots therewith.

27. The combination in a voting machine, of a plurality of sliding bars, means for moving the same, a locking bar, which, when locked by one set of said sliding bars will prevent the movement of the others, pawls affording a supplemental lock for the slidable bars, and means acting on said locking bar to simultaneously release said pawls and return the slidable bars to their original position.

28. In a voting machine, the combination of a plurality of slidable bars, means for moving the same, pawls for holding said bars against retractive movement when once moved forward, a vertically movable locking bar for preventing the movement of certain sets of said slidable bars after the one set has been moved, a bar carrying said pawls, and means for raising said pawl bar and depressing the locking bar to effect the return of the slidable bars in the resetting of the machine.

29. The combination in a voting machine, of a spindle, segmental gears carried by said spindle and having two sets of two teeth each, and slidable bars arranged to be moved by the engagement of the teeth of said segmental pinions.

30. The combination in a voting machine, of a spindle, segmental pinions carried by said spindle, two sets of two teeth oppositely disposed on said pinions, slidable bars, and racks on said bars to be engaged by said segmental pinions.

31. The combination in a voting machine, of a series of slidable bars, a spindle, segmental pinions mounted on said spindle, said bars having racks to be engaged by the teeth of said segmental pinions, said pinions being capable of disposition on their spindles so as to move said bars in any order desired.

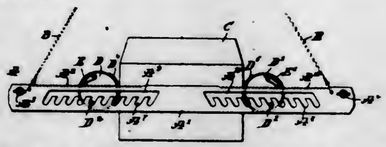
32. The combination in a voting machine, of a spindle, a series of slidable bars, segmental pinions carried by said spindle and serving to actuate said bars, a pawl carrying bar, pawls carried thereby to lock said slidable bars when once moved, a cam bar with which said sliding bars coact, an actuating bar, and links connecting said actuating bar with the pawl carrying bar and the cam bar, whereby said actuating bar may cause the pawl carrying and cam bars to effect the release of and return of the slidable bars.

33. The combination in a voting machine, of a set of slidable bars, a spindle, means carried by said spindle for moving said bars successively, and means for preventing the accidental movement of said bars.

34. The combination in a voting machine, of a series of slidable bars, means for moving the same longitudinally, a bar having slots in line with said slidable bars, the slots of said bar having inclined faces, a pin mounted on said slotted bar, and a cam plate engaging said pin whereby the slidable bars may be returned to their normal position.

35. The combination in a voting machine, of a series of sliding bars, means for moving the same, a locking bar, which, when locked by one of said sliding bars will prevent the movement of the others, pawls for locking the sliding bars, a plate carrying said pawls, a pin mounted on said plate, and a cam plate engaging said pin for simultaneously releasing said pawls and returning the bars to their original position.

853,128. CLAMPING DEVICE. CALVIN L. SIMMONS, Davenport, Wash. Filed Jan. 30, 1907. Serial No. 354,862.



Claim.—1. A clamp for monuments, pillars and like articles comprising a frame, a hoisting device connected with the said frame, and clamping rollers eccentrically mounted on the said frame independent of the said hoisting device, the rollers being adapted to engage opposite sides of the article.

2. A clamp for monuments, pillars and like articles comprising a frame, a hoisting device connected with the said frame, clamping rollers eccentrically mounted on the said frame independent of the said hoisting device, the rollers being adapted to engage opposite sides of the article, and means for holding the said clamping rollers against return movement.

3. A clamp for monuments, pillars and like articles comprising a frame, a hoisting device connected with the said frame, clamping rollers eccentrically mounted on the said frame independent of the said hoisting device, the rollers being adapted to engage opposite sides of the article, a dog on the end of the clamping roller, and teeth on the said frame for engagement by the said dog.

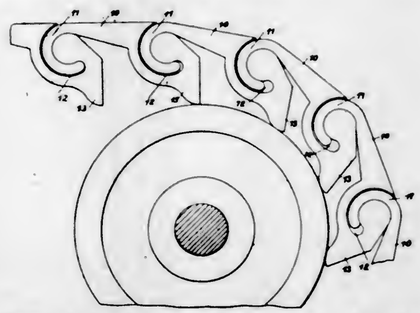
4. A clamp for monuments, pillars and like articles comprising a frame, a hoisting device connected with the said frame, and clamping rollers eccentrically mounted on the said frame independent of the said hoisting device, the rollers being provided with peripheral clamping cushions adapted to engage opposite sides of the article.

5. A clamp for monuments, pillars and like articles comprising a frame having side arms, cross bars for connecting the side arms rigidly with each other, the cross bars forming handles for lifting the clamp by hand, and clamping rollers eccentrically mounted on the said side arms a distance inward of the said cross bars, the said clamping rollers being adapted to engage opposite sides of the article when lifting the frame on raising the said cross bars.

6. A clamp for monuments, pillars and like articles, comprising a frame adapted to be lifted and having side arms, each of said side arms being provided with a longitudinal slot, and one of the sides of the slot being provided with notches, and clamping rollers having eccentric shafts for engaging the said notches.

7. A clamp for monuments, pillars and like articles comprising a frame adapted to be lifted and having side arms provided with notches and teeth, clamping rollers having eccentric shafts for engaging the said notches, and dogs on the ends of the said rollers for engaging the said teeth.

853,129. TRAVELING PLATFORM, GRATE, OR SURFACE. ALFRED L. SIMPSON, New York, N. Y. Filed Mar. 19, 1907. Serial No. 363,273.



Claim.—1. A carrier comprising: a series of over-lapping, flat-topped links each having a front substantially cylindrical coupling hook; and a rear socket, of substantially the shape of said hook.

2. An endless traveling carrier comprising: a series of over-lapping links each having a front substantially cylindrical coupling hook; and a rear socket, of substantially the shape of said hook.

3. A traveling carrier comprising: a series of over-lapping links each having a front substantially cylindrical coupling hook; a rear socket of substantially the shape of said hook; and means adapted to be engaged by a driving mechanism.

4. A built up traveling carrier closing off ingress of air from below and comprising a series of over-lapping, flat-topped links each having a front substantially cylindrical coupling hook, and a rear socket, of substantially the shape of said hook.

5. A link for built up carriers comprising: a flat upper surface; a front substantially cylindrical coupling hook; and a rear socket, of substantially the shape of said hook.

853,130. FIRE-BOX FOR KILNS. JOHN F. SLATER, Avoca, Iowa. Filed Sept. 5, 1906. Serial No. 333,722.



Claim.—1. An improved fire box for kilns, comprising inclosing walls forming a combustion chamber, a flue communicating therewith, said chamber having at its front an upper and a lower opening and having between said openings a solid platform inclined downwardly and rearwardly from the bottom of the upper opening.

2. An improved fire box for kilns, comprising inclosing walls forming a combustion chamber, a flue communicating therewith, said chamber having at its front an upper and a lower opening and having between said openings a solid platform inclined downwardly and rearwardly from the bottom of the upper opening, and an arch extended across the combustion chamber above the inclined platform.

3. An improved fire box for kilns, comprising inclosing walls forming a combustion chamber, a flue communicating therewith, said chamber having at its front an upper and a lower opening and having between said openings a solid platform inclined downwardly and rearwardly from the bottom of the upper opening, and an arch extended transversely across the combustion chamber at the rear of and below the inclined platform.

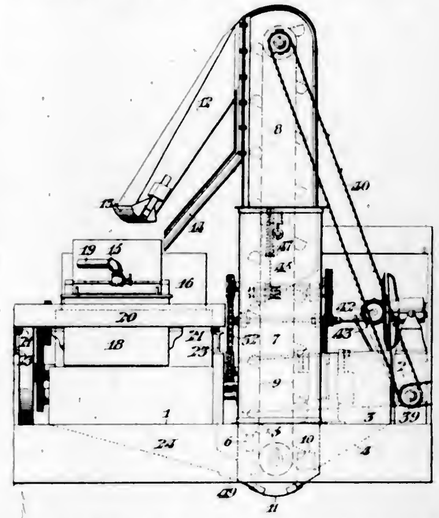
4. An improved fire box for kilns, comprising inclosing walls forming a combustion chamber, a flue communicating therewith, said chamber having at its front an upper and a lower opening and having between said openings a solid platform inclined downwardly and rearwardly from the bottom of the upper opening, and a coking oven above the combustion chamber communicating with the flue and a door for closing the front end thereof.

5. In a fire box for kilns, the combination of inclosing walls forming a combustion chamber having a fuel opening at its front and an ash pit opening at its front below the fuel opening, an arch above the ash pit opening, extending to a point near the center of the combustion chamber, a solid brick platform extending from the bottom of the fuel opening downwardly and rearwardly and supported by said arch, an arch above the fuel opening, extending rearwardly above the combustion chamber further than the said inclined platform, and a supplemental arch projecting below said latter arch with its front edge above the central portion of the inclined platform, and a flue communicating with the combustion chamber.

6. In a fire box for kilns, the combination of inclosing walls forming a combustion chamber having a fuel opening at its front and an ash pit opening at its front below the fuel opening, an arch above the ash pit opening, extending to a point near the center of the combustion chamber, a solid brick platform extending from the bottom of the fuel opening downwardly and rearwardly and supported by said arch, an arch above the fuel opening, extending rearwardly above the combustion chamber further than the said inclined platform, and a supplemental arch projecting below said latter arch with its front edge above the central portion of the inclined platform, a flue communicating with the combustion chamber, and a supplemental arch projecting below the arch above the ash pit opening at the rear end of said latter arch.

7. In a fire box for kilns, the combination of inclosing walls forming a combustion chamber having a fuel opening at its front and an ash pit opening at its front below the fuel opening, an arch above the ash pit opening, extending to a point near the center of the combustion chamber, a solid brick platform extending from the bottom of the fuel opening downwardly and rearwardly and supported by said arch, an arch above the fuel opening, extending rearwardly above the combustion chamber further than the said inclined platform, a supplemental arch projecting below said latter arch with its front edge above the central portion of the inclined platform, a flue communicating with the combustion chamber, and a coking oven formed with a flat bottom, open at its front and also open at its rear, communicating with said flue, said coking oven arranged above the arch of the fuel opening, and a sliding door for the front of the coking oven.

853,131. PAVING MACHINERY. FRANK B. SMITH, Philadelphia, Pa., assignor to The Barber Asphalt Paving Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Jan. 31, 1906. Serial No. 298,761.



Claim.—1. In an asphalt plant, the combination of the elevator, and measuring box, with provision of a charging spout for the elevator discharging into the measuring box; a hot sand reservoir; and an overflow spout for the elevator discharging into the hot sand reservoir, substantially as set forth.

2. In an asphalt plant, the combination of a sand elevator; means for feeding heated sand to the bottom of the elevator; a charging spout at the top of the elevator, of sufficient capacity to contain more than nine cubic feet of sand and provided with a gate at its lower end; and an overflow spout at the top of the elevator opening from near the top of the charging spout so as to receive sand only when the charging spout is filled, substantially as set forth.

3. In an asphalt plant, the combination of a sand elevator with a charging spout at its top; means for supply-

ing heated sand thereto; a sand measuring box into which the charging spout of the elevator empties; an overflow spout leading from the upper end of the charging spout and diverging in direction therefrom; a hot sand reservoir into which the overflow spout discharges; and means for returning the sand from the reservoir to the bottom of the elevator, substantially as set forth.

4. In a portable asphalt plant, the combination of a car, means for continuously heating and feeding sand; a rotary screen cradled independently of the heating apparatus near the floor of the car; a sand elevator running from below the surface of the car to a higher point; and a hopper below the screen discharging continuously into the bottom of the elevator, substantially as set forth.

5. In a portable asphalt plant, the combination of a car, a sand elevator, a sand reservoir, and a measuring box, the measuring box when in use being alongside of the sand reservoir; means for diverting the sand from the top of the elevator either to the measuring box or to the sand reservoir; the sand reservoir being upwardly extensible whereby its capacity may be enlarged when in use, while when the car is being transported it may be collapsed so as to permit the sand measuring box to be carried over it, substantially as set forth.

6. In a portable asphalt plant, the combination of a car, a sand measuring box and mixer mounted upon a laterally moving truck; means whereby when the plant is in operation this truck with its measuring box and mixer may be projected laterally from the car to facilitate the discharge therefrom; an upwardly extensible sand reservoir which when in use is enlarged in capacity by its upward extension, and situated alongside of the sand measuring box and mixer as projected from the car, while when the car is being transported said reservoir may be collapsed to permit the withdrawal of the truck carrying the sand measuring box and mixer from the side of the car to a position over the collapsed reservoir, substantially as set forth.

7. In a portable asphalt plant, the combination of a car, a sand elevator; a sand drum at one side thereof, whereby heated sand is continuously delivered to the bottom of the elevator; a sand screen; an asphalt tank at the other side of the elevator; a sand reservoir into which the elevator discharges; a sand measuring box and mixer which when in use is mounted near the sand reservoir; and, a gasoline engine mounted near the sand reservoir whereby the drum, screen, elevator and mixer are operated, substantially as set forth.

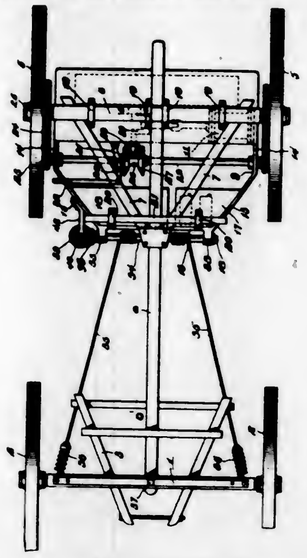
853,132. MOTOR-VEHICLE. LAFAYETTE E. SMITH, Halsey, Oreg. Filed June 16, 1906. Serial No. 322,047.

Claim.—1. In combination with the rear hounds and axle of the running gear of a vehicle, a frame independent of the running gear and arranged below the hounds and axle, hangers supporting the frame from the rear axle, fastenings securing the frame to the hounds, a motor carried by said frame, and driving gearing driven by said motor and in gear with the rear wheels of the vehicle.

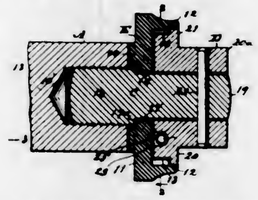
2. In combination with the running gear of a vehicle, a frame independent of and arranged below the rear hounds and rear axle, hangers supporting the rear portion of the frame from the rear axle, means including a clamping bar resting upon the hounds and supporting the front portion of the frame, a motor on said frame, and gearing actuated by said motor for driving the rear wheels.

3. In combination with the running gear of a vehicle, a frame independent of and detachably supported upon the rear axle and hounds thereof, a motor carried by said frame, a power shaft on the frame, gearing between the motor and shaft for driving said shaft in either direction, and gearing between said shaft and the rear wheel of the vehicle.

4. In combination with the running gear of a vehicle, a frame independent of said running gear and arranged below the rear axle and rear hounds thereof, means detachably supporting said frame from said axle and hounds, a motor mounted upon the frame, a power shaft journaled on the frame, reversible gearing for driving the shaft from the motor, and gearing between the ends of the shaft and the respective rear wheels of the vehicle.



853,133. LOCK-BOLT. ULYSSES G. SMITH, Lansford, Pa. Filed Aug. 17, 1906. Serial No. 330,993.

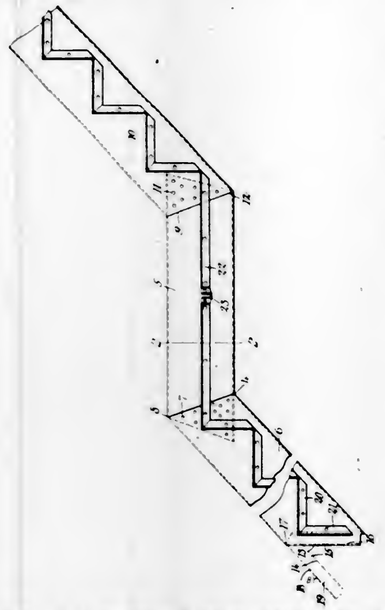


Claim.—1. In locking bolts, a bolt having a threaded and a plain section, a washer loosely mounted upon the plain section of the bolt, means for preventing the washer slipping over the threaded section of the bolt, devices for holding the washer stationary when the bolt is applied to an object, a nut secured to the plain portion of the bolt, having its inner face closely opposed to the outer face of said washer, a pawl and ratchet connection between the nut and the washer, and means for releasing the pawl of said mechanism from the exterior of the nut.

2. In locking bolts, a bolt having a threaded and a plain section, a washer loosely mounted upon the plain section of said bolt, means for preventing the washer sliding over the threaded section of the bolt, means for holding said washer stationary when said bolt is applied to an object, an annular flange formed at the peripheral portion of said washer, ratchet teeth at the interior of said flange, a nut secured to the plain section of the bolt, a portion of said nut entering the space surrounded by the flange of the said washer, and a spring-controlled pawl carried by said nut and adapted for engagement with the teeth on the washer flange, and means for operating said pawl.

3. In locking bolts, the combination with a bolt having a threaded section and a plain section, a washer loosely mounted on the said plain section of the bolt, said washer being provided with an outwardly-extending marginal flange and teeth on the inner face of said flange, devices for holding the washer stationary when the bolt is applied to an object, and means for preventing the washer from accidentally slipping over the threaded section of said bolt, of a nut comprising a body portion secured to the plain section of said bolt, and a head section which enters the space surrounded by the washer flange, and a spring-controlled pawl carried by the said nut, engaging with the teeth of said washer flange, the said pawl being provided with a head that extends out beyond the outer face of the body portion of said nut.

853,134. STRINGER FOR STAIRCASES. CHARLES F. STEIBER, New York, N. Y. Filed Feb. 6, 1907. Serial No. 356,085.



Claim.—1. A stringer for stairs having a web, and a flange at one edge thereof, said stringer having a landing portion inclined to the body of said stringer and having a web and a flange at the edge thereof constituting an uncut and continuous piece with said first flange, said webs being overlapped and fastened together.

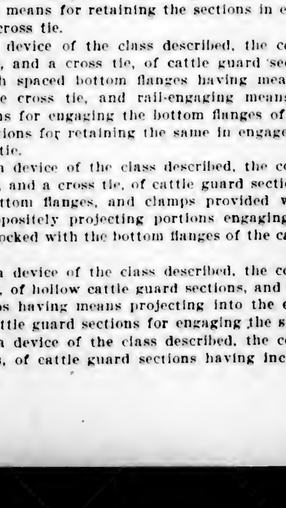
2. A stringer for stairs having a lower portion, an upper portion and an inclined landing portion connecting the same, said lower portion having a web and a flange at the upper edge thereof, said landing portion having an upper flange uncut and forming one continuous piece with said first flange, said upper portion having a web and a flange at the lower edge thereof, said landing portion having a lower flange uncut and forming one continuous piece with said lower flange of said landing portion, the webs of said upper and lower portions overlapping the web of said landing portion and fastened thereto.

853,135. COMBINED RAILWAY CATTLE-GUARD AND METALLIC CROSS-TIE. CHRISTOPHER SWITZER and FREDERICK SUNDMAN, Doe Run, Mo. Filed Feb. 28, 1907. Serial No. 359,802.

Claim.—1. In a device of the class described, the combination of a cross tie, rail-engaging means, and cattle guard sections detachably secured to the cross tie by the rail-engaging means.

2. In a device of the class described, the combination of a cross tie, cattle guard sections, and rail-engaging clamps having projecting portions engaging the cattle guard sections and securing the same to the cross tie.

3. In a device of the class described, the combination with a cross tie, and rails, of cattle guard sections arranged on the cross tie, and clamps located at opposite sides of the rails and having oppositely projecting portions engaging the rails and the cattle guard sections for securing the same to the cross tie.



4. In a device of the class described, the combination with rails, of cattle guard sections fitting against the outer sides of the rails and constituting braces to prevent the rails from spreading.

5. In a device of the class described, the combination with rails, of cattle guard sections fitting against the outer sides of the rails to prevent the same from spreading, and rail-engaging clamps provided with means for also engaging the cattle guard sections.

6. In a device of the class described, the combination with rails, of an intermediate cattle guard section spaced from the inner sides of the rails, an outer cattle guard section fitting against the outer sides of the rails and forming braces to prevent the same from spreading.

7. In a device of the class described, the combination with a cross tie, and rails, of cattle guard sections having inclined sides and provided with bottom flanges fitted on the cross tie, and means for securing the rails and the cattle guard sections to the cross tie.

8. In a device of the class described, the combination with a cross tie, and rails, of cattle guard sections provided at the bottom with depending studs engaging the cross tie for holding the sections against horizontal movement, and means for retaining the sections in engagement with the cross tie.

9. In a device of the class described, the combination with rails, and a cross tie, of cattle guard sections provided with spaced bottom flanges having means for engaging the cross tie, and rail-engaging means provided with means for engaging the bottom flanges of the cattle guard sections for retaining the same in engagement with the cross tie.

10. In a device of the class described, the combination with rails, and a cross tie, of cattle guard sections having spaced bottom flanges, and clamps provided with heads having oppositely projecting portions engaging the rails and interlocked with the bottom flanges of the cattle guard sections.

11. In a device of the class described, the combination with rails, of hollow cattle guard sections, and rail-engaging clamps having means projecting into the ends of the hollow cattle guard sections for engaging the same.

12. In a device of the class described, the combination with rails, of cattle guard sections having inclined sides,

and spaced bottom flanges cut away at the terminals, and rail-engaging clamps having projecting portions extending into the cattle guard sections and engaging the cut away portions of the bottom flanges.

13. In a device of the class described, the combination with rails, of hollow cattle guard sections cut away at the bottom and beveled at the cut away portions, and rail-engaging clamps having projecting portions extending into the cattle guard sections and conforming to the configuration of and engaging the cut away and beveled portions thereof.

14. In a device of the class described, the combination of a hollow cross tie, cattle guard sections, rail-engaging clamps having projecting portions for engaging the cattle guard sections, said rail-engaging clamps being also provided with depending shanks extending through the top of the cross tie, and keys passing-through the shanks.

15. In a device of the class described, the combination of a hollow cross tie, cattle guard sections arranged thereon, rail-engaging clamps provided with means for engaging the cattle guard sections and having depending shanks extending through the top of the cross tie, keys extending through the shanks and having split portions, and means arranged in the path of the keys for spreading the split ends thereof.

16. In a device of the class described, the combination of a hollow cross tie, cattle guard sections arranged thereon, rail-engaging clamps provided with means for engaging the cattle guard sections and having depending shanks extending through the top of the cross tie, keys extending through the shanks and having split portions, and a fixed wedge arranged in the path of the keys for spreading the split ends of the same.

17. In a device of the class described, the combination of a hollow cross tie, cattle guard sections arranged thereon, rail-engaging clamps provided with means for engaging the cattle guard sections and having depending shanks extending through the top of the cross tie, keys extending through the shanks and having split portions, and an oppositely tapered wedge having its terminals arranged in the path of the keys for spreading the split portions thereof.

18. In a device of the class described, the combination of a hollow cross tie provided at the lower face of its top with an integral wedge tapered at each end, rail-engaging clamps extending through the top of the cross tie, and keys piercing the clamps and having split portions arranged to be spread by the wedge.

19. In a device of the class described, the combination of a hollow cross tie having an interiorly arranged wedge, a rail-engaging clamp extending into the cross tie, and a key piercing the clamp and arranged to be spread by the wedge.

20. In a device of the class described, the combination of a hollow cross tie having an interiorly arranged wedge, a clamp extending into the cross tie, and a key piercing the clamp and provided at its inner end with a tapering recess and split at opposite sides of the same, said recess being adapted to receive the wedge, whereby the split end of the key is spread.

21. A device of the class described comprising a cross tie having inclined side faces, and a cattle guard section detachably fitted on the cross tie and having inclined faces arranged in the same plane as and forming continuations of the inclined faces of the cross tie.

22. A device of the class described comprising a hollow cross tie having inclined faces and forming a conduit for water, and an inverted V-shaped cattle guard fitted on the cross tie and having inclined sides forming continuations of the sides of the cross tie.

23. In a device of the class described, the combination of a hollow cross tie having inclined sides, an inverted V-shaped cattle guard section provided at the lower ends of its sides with spaced bottom flanges fitted on the cross tie, and means for engaging the bottom flanges of the cattle guard sections for securing the same to the cross tie.

24. In a device of the class described, the combination of a hollow metallic cross tie forming a conduit or passage for water and comprising a bottom, sides, and a top plate secured to the sides, a cattle guard section detachably interlocked with the top plate, and means for securing the cattle guard section in its interlocked relation.

25. In a device of the class described, the combination of a hollow metallic cross tie comprising a bottom, sides, and a top plate provided with sockets, a cattle guard section having depending studs fitting in the sockets of the top plate, and fastening devices retaining the studs in the sockets and securing the cattle guard section to the top plate.

26. A hollow cattle guard section having spaced sides and inclined flanges.

27. A hollow cattle guard section having spaced sides and inclined flanges, said flanges having depending pointed studs.

28. In a device of the class described, the combination of a hollow cross tie, cattle guard sections, rail-engaging clamps having projecting portions for engaging the cattle guard sections, said rail-engaging clamps serving as connecting means between the cattle guard sections and the tie.

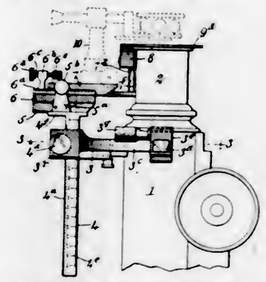
29. In a device of the class described, the combination with cross ties, and rails, of cattle guard sections, and rail-engaging clamps for connecting the adjacent ends of the cattle guard sections and the bottom flanges of the rails, and also for connecting the sections to the cross ties.

30. In a device of the class described, the combination of a hollow cross tie, cattle guard sections arranged thereon, rail-engaging clamps provided with means for engaging the cattle guard sections and having depending shanks extending through the top of the cross tie, and means for connecting the shanks to the cross tie so as to lock the rails, cattle guard sections and the cross tie together.

31. In a device of the class described, the combination of a hollow cross tie composed of a bottom, sides, and a top plate, and a cattle guard section provided with studs piercing the top plate of the cross tie and engaging the sides thereof.

32. In a device of the class described, the combination of a hollow cross tie composed of a bottom, sides, and a top plate, and a cattle guard section provided at opposite sides with depending studs piercing the top plate and projecting below the same and engaging the inner face of each side of the cross tie.

853,136. ADJUSTING DEVICE FOR CAMERA LUCIDAS. ALEXANDRINA TAYLOR, New York, N. Y. Filed Aug. 21, 1906. Serial No. 331,481.



Claim.—1. The combination with an adjustable clamp adapted to be attached to the body tube of microscopes having different diameters, of a standard mounted on said clamp, and a stage mounted on said standard adapted to support a camera lucida and adjustable vertically relatively to said clamp, substantially as shown and described.

2. The combination with a clamp adapted to be adjusted to the body tube of microscopes having different diameters, of a stage mounted on said clamp adjustable vertically relatively thereto and adapted to support a camera lucida, substantially as shown and described.

3. The combination with a clamp adapted to be adjusted and secured to the body tube of microscopes having different diameters, of a standard mounted on said clamp and provided with a measuring gage, and a stage mounted on said standard adapted to support a camera lucida and adjustable vertically relatively to said clamp, substantially as shown and described.

4. The combination with a clamp, provided with oppositely disposed clamping jaws, one of which is adjustable relatively to the other, and with a recess intermediate said jaws having a guideway extending diagonally therein, and provided with a registering gage arranged over said recess, a clamping jaw adapted to move diagonally in said recess and provided with a gage line adapted to register with the gage of said clamp, a standard, and a stage adapted to support a camera-lucida mounted on said standard and adjustable vertically relatively to said clamp, substantially as shown and described.

5. The combination with an adjustable clamp, of a standard mounted on said clamp, a stage mounted on said standard and adjustable transversely thereof, and a second stage adapted to support a camera lucida and adjustable transversely of the first stage, substantially as shown and described.

6. The combination with an adjustable clamp, of a standard mounted on said clamp, a stage mounted on said standard and adjustable transversely thereof, a second stage adapted to support a camera lucida and adjustable transversely of the first stage, and an auxiliary stage mounted upon the second stage and provided with a graduated plate having a central aperture, substantially as shown and described.

7. The combination with an adjustable clamp, of a standard mounted on said clamp and adjustable vertically thereon, a stage mounted on said standard and adapted to support a camera lucida, and an auxiliary stage having a transparent graduated plate provided with a central aperture and hinged to said auxiliary stage, substantially as shown and described.

8. The combination with an adjustable clamp, of a standard mounted on said clamp and adjustable vertically thereon, a stage mounted on said standard adapted to support a camera lucida, and an auxiliary stage mounted upon said camera stage, adjustable vertically thereon and provided with a transparent graduated adjusting plate, provided with a central aperture, substantially as shown and described.

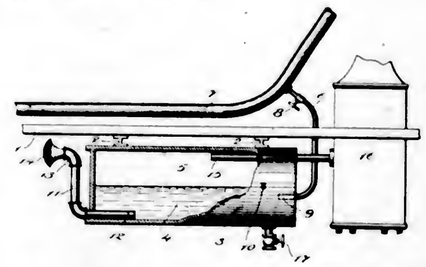
9. The combination with a clamp provided with oppositely disposed clamping jaws, one of which is adjustable relatively to the other, and with a recess intermediate said jaws having a guideway extending diagonally therein, a clamping jaw adapted to move diagonally in said recess, a standard adjustable on said clamp, and a stage adapted to support a camera-lucida mounted on said standard and adjustable vertically relative to said clamp, substantially as shown and described.

10. The combination with a clamp provided with oppositely disposed clamping jaws, one of which is adjustable relatively to the other, and with a recess intermediate said jaws having a slot and a guide extending diagonally across said recess, a clamping jaw adapted to move diagonally in said recess, means for locking said jaw in position on the clamp, a standard mounted on said clamp, and a stage adapted to support a camera-lucida mounted on said standard and adjustable relatively to said clamp, substantially as shown and described.

11. The combination with an adjustable clamp, of a standard mounted on said clamp, a stage mounted on said standard and adapted to support a camera-lucida, an auxiliary stage mounted on said camera stage and provided with a transparent adjusting plate adapted to be arranged over the eye piece of a microscope and provided with gage marks arranged in radial lines adapted to indicate the position of said eye piece relatively to said gage, substantially as shown and described.

12. The combination with a telescope having a body tube, and a draw tube, of a clamp adapted to be adjustably secured to the body tube of microscopes of different diameters, a vertically adjustable standard mounted on said clamp, and means for adjusting a camera lucida relatively to the axis of said microscope, substantially as shown and described.

853,137. AIR-CLEANER FOR AIR-BRAKE SYSTEMS. ROSTON S. WALLACE, Birmingham, Ala. Filed Nov. 8, 1906. Serial No. 341,933.



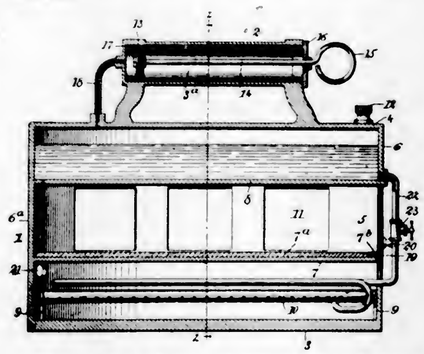
Claim.—1. An air cleaner for air brake systems comprising a cylindrical reservoir containing a body of water, an air chamber above the water line, an intake air pipe terminating at a point below the water line and extending above the water line outside the reservoir, and provided with a screen at its intake end, an outlet air pipe extending into the air chamber and connected to the pump for supplying air to the brake system.

2. In a device of the character described, a combined water and air reservoir, an air intake pipe communicating with the water reservoir and terminating upon the outside thereof on a line above the water line, and an air outlet pipe terminating in the air reservoir and leading to a pump for supplying air to the brake system.

3. An air cleaner for railway brake systems comprising a combined water and air reservoir, an intake pipe terminating below the water line in the water reservoir, and having an intake end extending above the water line and provided with a screen, an air outlet pipe terminating within the air reservoir and leading to a pump for supplying air to the brake system, a water pipe leading from the boiler supply pipe to the water reservoir, and a clean-out valve communicating with the bottom of the water reservoir, substantially as described.

4. In a device of the character described, a combined water and air reservoir, an intake air pipe terminating within the water reservoir and having its inlet at its intake end disposed above the water line and provided with a screen, an air outlet pipe terminating within the air reservoir and leading to a pump, and a gage cock for maintaining a uniform water level in the water reservoir, substantially as described.

853,138. SAD-IRON. JOHN F. WILLEY and ELMER W. WATSON, Versailles, Ill. Filed Mar. 14, 1906. Serial No. 305,988.



Claim.—1. In a sad iron, the combination of a casing, a handle fixed to the top of the casing, a piston in the handle, partitions in the casing dividing it into compartments, a burner in the lower compartment, the upper compart-

ment forming a fuel tank, and the central compartment forming a cooling chamber, a pipe connecting the handle with the tank, and a pipe connecting the tank with the burner.

2. In a sad iron, the combination of a casing, a handle fixed at the top of the casing, partitions in the casing dividing it into compartments, a burner in the lower compartment, the upper compartment forming a fuel tank and the central compartment forming a cooling chamber, a pipe connecting the handle with the tank, and a pipe connecting the tank with the burner.

3. In a sad iron, the combination of a casing, a handle fixed at the top of the casing, partitions in the casing dividing it into compartments, a burner in the lower compartment, the upper compartment forming a fuel tank and the central compartment forming a cooling chamber, a pipe connecting the handle with the tank, a pipe connecting the tank with the burner, and means for forcing air into the tank.

4. A sad iron comprising a hollow body, partitions in said body dividing it into compartments, a burner in the lower compartment, the upper compartment forming a fuel tank and the central compartment forming an air chamber having ventilating holes, and a feed pipe leading from the tank to the burner.

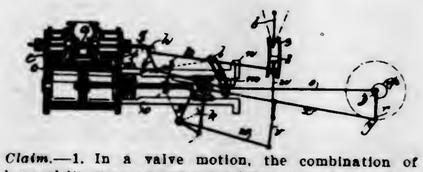
5. A sad iron comprising a hollow body, a hollow handle fixed at the top of said body, partitions in said body dividing it into compartments, a burner in the lower compartment, the upper compartment forming a fuel tank and the central compartment forming an air chamber having ventilating holes, a piston in the handle, adapted to force air into the tank, and a feed pipe leading from the tank to the burner.

6. A sad iron comprising a hollow body, partitions in the body dividing it into compartments, an opening at the back end of said body, a burner in the lower compartment, the upper compartment forming a fuel tank and the central compartment forming a cooling chamber having air holes, and a damper slidable in the opening at the back of the body of the iron, to regulate the admission of air to the burner.

7. A sad iron comprising a hollow body, partitions in said body dividing it into three compartments, forming respectively a burner chamber, an air chamber and a fuel tank, a hollow handle at the top of said body, containing a piston for forcing air into the tank, an opening at the back end of the body, a damper slidable in the opening, and a fuel pipe having a regulating valve connecting the tank and the burner.

8. In a sad iron, the combination of a casing of substantially uniform, horizontal section throughout, a handle fixed to the top of the casing, a piston in the handle, partitions in the casing dividing it into compartments, a burner in the lower compartment, the upper compartment forming a fuel tank and the central compartment forming a cooling chamber, means for connecting the handle with the tank, and means connecting the tank with the burner.

853,139. VALVE-MOTION FOR ENGINES. THOMAS WILSON, Hull, England. Filed July 22, 1905. Serial No. 270,816.

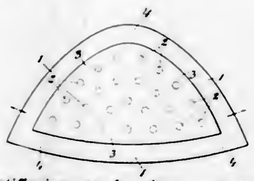


Claim.—1. In a valve motion, the combination of a valve and its stem, an operating lever pivoted to said stem, a main link motion pivoted to said lever, an auxiliary link motion connected to the other end of said lever, and means for reversing said motions separately, substantially as described.

2. In a valve motion, the combination of a valve and its stem, an operating lever connected to said stem, a main link motion pivoted to one end of said lever, an auxiliary link motion pivoted to the other end of said lever, including an eccentric, a rod operated by said eccentric, a link operated by said rod, and connections between said link and one end of said lever, and means for reversing said motions separately, substantially as described.

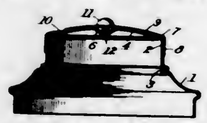
3. In a valve motion, the combination of the valve and its stem, a lever pivotally connected to said stem, a main link motion therefor, including a connecting rod, one end of which is pivoted to one end of said lever, a main connecting rod and connections between said last named rod and said first named connecting rod, an auxiliary link motion, including an eccentric, a rod operated by said eccentric, a link operated by said rod and connections between said link and said lever, and means for reversing each of said link motions separately, substantially as described.

853,140. STIFFENING-CAP FOR SHOES. CARL WILMSHÖFER, Erfurt, Germany. Filed May 21, 1906. Serial No. 318,021.



Claim.—A stiffening cap for shoes comprising a perforated stiffening member and an elastic member having flexible projections extending into said perforations, and a backing secured to said stiffening member and projections.

853,141. POWDER-CAN TOP. ADRIAN F. WOLFF, Waterbury, Conn., assignor to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed Feb. 16, 1906. Serial No. 301,399.



Claim.—1. A powder can top, comprising a perforated fixed shell having a central washer-like portion serving as a spring, an outer movable shell applied externally to and supported directly upon the fixed shell, and a rivet passed through the two shells and the washer-like portion and headed up against the inner side of said portion so as to hold the outer shell in intimate contact with the inner shell and serving as an axis for the outer shell to permit its rotation on the inner shell to cover and uncover the perforation therein.

2. A powder can top, comprising a perforated fixed shell, having a central integral washer-like perforated depression, an outer movable shell applied to the fixed shell, and a rivet passed through the two shells and the depression and clenched or headed up against the inner side of the washer-like depression so as to hold the outer shell in intimate contact with the inner shell.

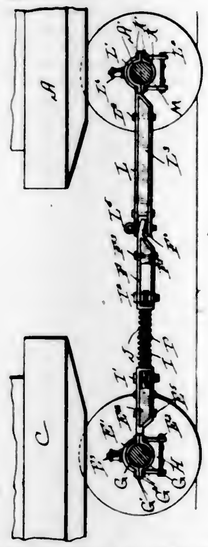
853,142. EMERGENCY-COUPLING. GEORGE T. WOODSON, Huntington, W. Va. Filed Aug. 15, 1906. Serial No. 330,674.

Claim.—1. A coupling bar provided with means for pivotally securing it to the axles of a car.

2. A coupling bar composed of two sections provided with means at one end for pivotally securing it to an axle.

3. A coupling comprising two bars connected together, one of said bars being provided with an apertured tongue and the other with a yoke, adapted to be pivotally connected to an axle of a car.

4. A coupling bar comprising two bars connected together by a rod, coil-springs surrounding said rod, an apertured tongue formed on one of said rods, and a yoke formed on the other rod, adapted to be pivotally connected to an axle of a car.



5. A coupling bar comprising two bifurcated bars having apertured ends, rods extending into said bar through said apertures, keys extending through said bar and rod, apertured tongues formed on one of said bars, and means secured to the other of said bars, for securing it to an axle.

6. A coupling bar comprising two bifurcated bars having wooden blocks arranged therein, a rod connecting said bars surrounded by coil-springs, an apertured tongue formed on one of said bars and a yoke formed on the other bar.

7. A coupling bar comprising a bar with a yoke adapted to be secured over an axle, a bar secured to said bar provided with a tongue, and a bar provided with a yoke adapted to fit over an axle carrying means for securing said tongue thereto.

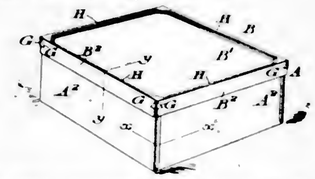
8. A coupling bar comprising bifurcated bars connected together provided with yokes at their ends adapted to be pivotally connected to an axle of a car, for the purpose described.

9. A coupling bar comprising two bifurcated bars having apertured ends, a rod extending into said bars, through said apertures, a key extending through one end of said rods slidably mounted in one of said bars, a key securing the other end of said rod in the other bar, a coil-spring surrounding said rod between said bars and a yoke formed on one end of said bar adapted to be pivotally mounted on an axle of a car, for the purpose described.

10. A coupling bar comprising two bifurcated bars provided with apertured ends and slotted walls, an apertured tongue formed on one of said bars, and a yoke formed on the other bar, a rod extending into said bar through said apertures surrounded by a coil spring, a key locking one end of said rod in one bar and a key carried by the other bar slidably mounted in the slotted walls of the other bar, for the purpose described.

853,143. SHEET-METAL BOX. CHARLES T. WOOTTEN and ARTEMAS P. RICHARDSON, Philadelphia, Pa.; said Wootten assignor to said Richardson. Filed Mar. 13, 1906. Serial No. 305,750.

Claim.—1. In a sheet metal box, a lid formed of a top and depending sides, the latter being separated at the corners of the lid and oppositely projecting folds of double thickness of metal extending from fillets integral with the bases of said walls and overlapping the upper portions of the exterior of said separated walls and resting against the adjacent portions of said sides.



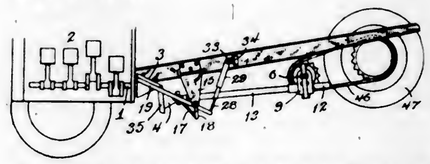
2. In a sheet metal box, a lid comprising a top, depending sides and a fillet at the corner, said fillet forming oppositely disposed folds extended for a portion only of the depth of the sides, widest at their lower ends and compressed about the sides at the upper portions thereof.

3. In a sheet metal box, a lid comprising a top and sides with the corner joints open at their lower ends and at their upper ends hermetically closed by fillets integral with and embracing the sides at the corners.

4. In a sheet metal box, a lid composed of top and sides and having an upwardly extending recess in said top, one wall of which is composed of the metal of the top and the other wall is composed of the adjacent side, said walls being parallel and in close contact throughout their length said recess being adapted to tightly receive the top edge of the body of the box, and close the joint of said parts the side of said lid being separated at the corners and having oppositely disposed integral folds at the upper edges of the junctions of said sides.

5. A blank for a box lid, the same having its corners cut away to form fillets and walls extended outwardly therefrom and beyond said fillets.

853,144. VARIABLE-SPEED-TRANSMISSION DEVICE. GILBERT WRIGHT, Pittsfield, Mass. Filed Feb. 14, 1907. Serial No. 357,340.



Claim.—1. A variable speed transmission device, comprising a positively moved tapered driver having a frictional external surface, and a driven member having an internal tapered surface, said surfaces being adapted to bear frictionally, and one being movable longitudinally relatively to the other, one of said surfaces being longitudinally curved to cause increase and diminution of the bearing area as the speed ratio of the driven member is increased and diminished respectively.

2. A variable speed transmission device, comprising a driving cone, and a hollow conical driven member of which the elements of the internal bearing surface are straight adjacent the apex and curve outwardly toward the rim; said driven member and driver being relatively movable bodily in a longitudinal direction and angularly in a transverse direction, whereby the length of contact between them may be increased in the high-speed position and diminished in the low-speed position.

3. A variable speed transmission mechanism, comprising a driver having an external conical friction surface, a shell having internal and external oppositely tapered friction surfaces, each of which is adapted to be brought into contact with the driver at different points, whereby the shell may be driven at a plurality of speeds, and in either direction; and a shaft to which said shell is rotatively engaged with a sliding connection.

4. A variable speed transmission mechanism, comprising a driver having an external conical friction surface, a shell having an internal tapered surface of which the elements are approximately parallel to the corresponding elements of the driving surface and a lip surrounding the open rim of the shell, formed with a reversely tapered external surface; and a shaft with which said shell is connected rotatably and with provisions for relative movement, whereby the internal surface may be brought into contact with the driver at a plurality of points on one side of the axis thereof and the external surface may be caused to make contact with the driver on the opposite side of its axis.

5. A variable speed transmission mechanism, comprising a driver having an external conical friction surface; a transverse driven shaft; an intermediate shaft section in geared relation with the driven shaft, and movable lengthwise with respect to the connecting gearing; and a shell fixed to said intermediate shaft and having an internal tapered surface adapted to make contact with the external surface of the driver.

6. A variable speed transmission mechanism, comprising a driver having an external conical friction surface, a shell having an internal tapered surface of which the elements are outwardly curved; an intermediate shaft section to which said shell is secured, arranged in the same plane with the axis of the driver; a transverse driven shaft in a different plane; gearing connecting the shafts, with which the intermediate shaft is engaged so as to cause rotation and permit longitudinal sliding motion; and a holder containing said gearing oscillative about the axis of the transverse shaft, whereby the shell may be brought into contact with the driver at points of varying peripheral speed and over areas of different extent.

7. A variable speed transmission mechanism, comprising a driver having an external conical friction surface; a transverse driven shaft; an intermediate shaft section hung so as to be oscillative about the axis of the driven shaft into line with the axis of the driver; gearing connecting said shaft sections; and a hollow cone connected with the intermediate shaft so as to transmit rotation thereto, while being movable in an axial direction with respect to the driver; said hollow cone having an interior bearing surface of the same angular divergence near the apex as the driver, and a constantly increasing divergence toward the rim.

8. A variable speed power transmission mechanism, comprising a driving friction cone, a driven cone having an internal friction surface, a transverse shaft, an intermediate shaft section to the end of which the driven cone is fixed adapted to lie in line with the axis of the driver and to be tilted out of line, intermeshing gears on the transverse and intermediate shafts, the latter having a longitudinal sliding engagement with its gear, and a casing inclosing the gears and the end of the intermediate shaft, adapted to contain oil.

9. A variable speed power transmission mechanism, comprising a driving friction cone, a driven cone having an internal friction surface, a transverse shaft, an intermediate shaft section to the end of which the driven cone is fixed adapted to lie in line with the axis of the driver and to be tilted out of line, intermeshing gears on the transverse and intermediate shafts, the latter having a longitudinal sliding engagement with its gear, a rigid holder hung on the transverse shaft supporting the gear of the intermediate shaft, a bearing for the driven cone, a support therefor, and means for moving said support to bring the internal surface of the driven cone into contact with different portions of the driver.

10. A variable speed power transmission mechanism, comprising a driving friction cone, a driven cone having an internal friction surface, a shaft connected with the driven cone for operation thereby and with respect to which the latter is movable bodily, a bearing for the cone, guides for said bearing, and means for shifting the bearing along said guides to bring the driven cone into contact with different parts of the driver.

11. A variable speed power transmission mechanism, comprising a driving friction cone, a driven cone having an internal friction surface, a shaft connected with the driven cone for operation thereby and with respect to which the latter is movable bodily, a bearing for the cone, pivotally mounted guides for said bearing, links pivoted to said bearing, and cranks connected with said links, rotation of said cranks serving to move the driven cone to bring its friction surface into contact with different portions of the driver.

12. A variable speed power transmission mechanism, comprising a driving friction cone, a driven cone having an internal friction surface, a shaft connected with the driven cone for operation thereby and with respect to which the latter is movable bodily, a bearing for the cone, pivotally mounted guides for said bearing, yielding means acting upon the guides in a direction to press the friction surface at one side of the driven cone toward the adjacent portion of the driver, and means for shifting the bearing along said guides to bring the driven cone into contact with different parts of the driver.

13. A variable speed power transmission mechanism, comprising a driving friction cone, a driven cone having an internal friction surface of which the elements are substantially parallel to the corresponding elements of the driving cone and an outwardly turned lip surrounding its rim or base, formed with an external, reversely tapered conical surface; a shaft to which the driven cone is connected with a rotative driving engagement, which permits motion bodily; a bearing within which the cone rotates, links pivoted to the bearing; rocking cranks pivoted to the links arranged so as to shift the driven cone longitudinally of the driver, pivoted guides along which the bearing is arranged to slide; springs acting on the guides to force the latter and the driven cone laterally toward the driver; and stops for limiting the motion of the guides when the cones are moved out of engagement.

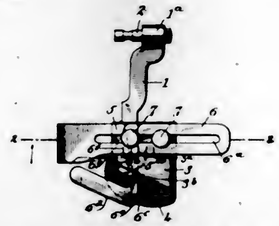
14. A variable speed power transmission mechanism comprising a driving friction cone, a driven cone having an internal friction surface of which the elements are substantially parallel to the corresponding elements of the driving cone and an outwardly turned lip surrounding its rim or base, formed with an external, reversely tapered conical surface; a shaft to which the driven cone is connected with a rotative driving engagement, which permits motion bodily; a bearing within which the cone rotates; links pivoted to the bearing; rocking cranks pivoted to the links arranged so as to shift the driven cone longitudinally of the driver, pivoted guides along which the bearing is arranged to slide; springs acting on the guides to force the latter and the driven cone laterally toward the driver; stops for limiting the motion of the guides when the cones are moved out of engagement, and means on the cranks for engaging the guides and moving them away from said stops in opposition to the pull of the springs.

15. A variable speed power transmission mechanism, comprising rotary driving and driven members of varying diameter having co-operating friction surfaces, the surface of one being longitudinally curved to present a convexity adjacent the other, one of said members being movable axially with respect to the other, and one of the members being arranged to swing transversely of its axis as such axial movement takes place, whereby the longitudinally convex friction surface is maintained in contact with the other surface over a diminishing area as the speed difference increases, and conversely.

853,145. SEWING-MACHINE HEMMER. THERESE S. ZACHAIRA, New York, N. Y. Filed Jan. 31, 1907. Serial No. 355,146.

Claim.—1. A hemmer comprising a base plate, an upper folding plate having a diagonal forward edge, an intermediate guide plate forming by its juncture with the upper plate a guide for the inner edge of a hem, and provided with a tongue extending forward of said diagonal edge, and a notch adjacent thereto, and a gage plate arranged between the base plate and top plate, and provided with a diagonal front edge parallel with the forward edge of the upper folding plate, and a lateral turning edge adjustable in operative relation with said inner edge guide.

2. A hemmer comprising a base plate, an upper folding plate having a diagonal forward edge, an intermediate guide plate forming by its junction with the upper plate a guide for the inner edge of a hem, a tongue formed on said intermediate guide plate and provided with a diagonal forward edge extending beyond the diagonal edge of the upper plate, and a lateral adjustable gage plate provided with a diagonally extending forward edge parallel with the diagonal forward edge of the upper folding plate and a lateral edge adjustable in operative relation with said inner edge guide.



3. A hemmer comprising a base plate, an upper forming plate having a diagonal forward edge, an intermediate guide plate forming by its junction with the upper plate a guide for the inner edge of a hem, and provided with a tongue extending forward of said diagonal edge, and a notch adjacent thereto, and a laterally adjustable gage plate provided with a diagonally extending forward edge parallel with the diagonal forward edge of the upper folding plate, a lateral edge extending in operative relation with said inner edge guide, and a rounded juncture between said lateral and forward edges.

4. A hemmer comprising a base plate, an upper folding plate having a diagonal folding edge and a gage point, an intermediate guide plate forming by its junction with the upper plate a guide for the inner edge of a hem, and provided with a tongue extending forward of said diagonal edge, and a laterally adjustable supporting arm provided with marked divisions, and a gage plate having a diagonal forward edge parallel with the diagonal folding edge of the upper folding plate, and a lateral edge extending in operative relation with said inner edge guide.

853,146. METHOD OF STORING HYDRAULIC POWER. LEO VON GERSTENBERGK-ZECH, Bergsulza, near Stadtsulza, Germany. Filed Aug. 27, 1906. Serial No. 332,302.



Claim.—1. Method of supplying water power from a river to means absorbing the same without disturbing the normal flow at a substantial distance below said means, consisting in intermittently collecting water from the river in a reservoir above said power-absorbing means, in intermittently discharging the water from said reservoir to said means, in temporarily receiving said water in a reservoir below said means, and in discharging the water from said latter reservoir at a rate sufficient to maintain the normal flow of the stream below said reservoir.

2. Method of supplying water power from a river of substantially constant daily flow to means absorbing the same without disturbing the constant flow at a substantial distance below said means, consisting in intermittently collecting water from the river in a reservoir above said power-absorbing means, in intermittently discharging the water from said reservoir to said means, in temporarily receiving said water in a reservoir below said means, and in discharging the water from said latter reservoir at a substantially constant daily rate.

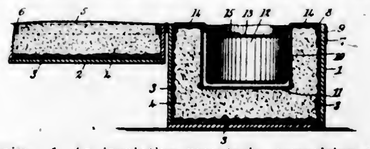
3. Method of supplying water power from a river of substantially constant daily flow to means absorbing the same without disturbing the constant flow at a substantial distance below said means, consisting in collecting water from the river in a reservoir above said power-absorbing means during the time in which said means are inoperative, in discharging the water from said reservoir to said means during the time in which said means are operative, in receiving said water in a reservoir below said means, and in discharging the water from said latter reservoir at a substantially constant daily rate.

4. Method of supplying water power from a river to means absorbing the same without disturbing the normal flow at a substantial distance below said means, consisting in intermittently collecting water from the river in a reservoir above said power-absorbing means, in intermittently discharging the water from said reservoir to a reservoir having a substantially constant water-level, in intermittently discharging water from said constant level reservoir to said power-absorbing means, in temporarily receiving said water in a reservoir below said means, and in discharging the water from said latter reservoir at a rate sufficient to maintain the normal flow of the stream below said reservoir.

5. Method of supplying water power from a river of substantially constant daily flow to means absorbing the same without disturbing the constant flow at a substantial distance below said means, consisting in intermittently collecting water from the river in a reservoir above said power-absorbing means, in intermittently discharging the water from said reservoir to a reservoir having a substantially constant water-level, in intermittently discharging water from said constant level reservoir to said power absorbing means, in temporarily receiving said water in a reservoir below said means, and in discharging the water from said latter reservoir at a substantially constant daily rate.

6. Method of supplying water power from a river of substantially constant daily flow to means absorbing the same without disturbing the constant flow at a substantial distance below said means, consisting in collecting water from the river in a reservoir above said power-absorbing means during the time in which said means are inoperative, in discharging during the time in which said means are operative the water from said reservoir to a reservoir having a substantially constant water-level, in discharging water from said latter reservoir to said power-absorbing means during the time in which said means are operative, in receiving said water in a reservoir below said means and in discharging the water from said latter reservoir at a substantially constant daily rate.

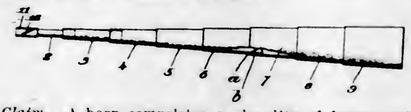
853,147. COOKING APPARATUS. JAMES R. ADAMS, Kenosha, Wis. Filed June 28, 1906. Serial No. 323,795.



Claim.—1. An insulating receptacle, comprising a container, a rigid lining secured therein and having the top portion thereof substantially parallel with the top of the container and having a well depending from said top portion, the walls of said well being spaced from the walls of the container, an insulating material between the walls of said container and the well, an air-tight vessel suspended within said well and spaced from the walls thereof, said vessel having flat rigid handles extending outwardly from each side thereof and adapted to rest upon the top portion of the lining and support said vessel out of contact with the well, and a cover for said container having a lining secured to the walls of the cover and a packing of insulating material between the top of said cover and said lining, the lining adapted to contact with the top portion of the lining to the container and hold the flat handles of the vessel in place.

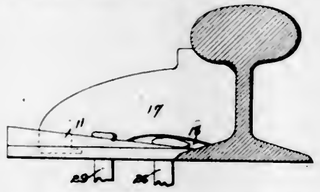
2. An insulating receptacle, comprising a container of non-conducting material, a rigid lining having the top portion thereof level with the top of said container and having a plurality of wells depending from said top portion, an insulating material between the walls of said container and the wells, an air-tight vessel suspended within each of said wells and spaced from the walls thereof, said vessels having flat handles extending outwardly from each side thereof and adapted to rest upon the top portion of the lining, and a cover for said container having a flexible fabric lining secured to the walls of the cover and a packing of insulating material between the top of said cover and said fabric lining, the fabric lining adapted to contact with the flat portion of the lining to the container and hold the flat handles of the air-tight vessels in place.

853,148. HORN. ISIDOR ALTER, Boston, Mass. Filed Sept. 25, 1903. Serial No. 174,562.



Claim.—A horn comprising a plurality of frusto-conical sections of progressively varying size and adapted to telescope one within the other, all of said sections being of the same length and the smallest section having applied thereto a mouth-piece provided with a reed, and the next to the smallest section having a pocket or recess in its smaller end to receive the mouth-piece when the telescope is collapsed whereby when the sections are telescoped together all the sections are entirely received by the largest section.

853,149. RAILWAY-RAIL BRACE. EARL S. BARTON, Newton, Iowa. Filed July 26, 1906. Serial No. 327,966.

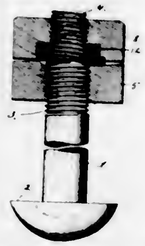


Claim.—1. An improved railway rail brace, comprising a base portion having two spike openings therein and also having an opening to receive a brace portion, a shoulder formed on the plate and a brace portion having a projection to enter the opening in the plate, the inner end of the brace shaped to engage the outer face of a railway rail, one of said spike openings so arranged that a spike therein will engage the brace and hold it against said shoulder.

2. An improved railway rail brace, comprising a base portion having a raised platform at its outer end tapered from its outer toward its inner end, the said platform having near its outer end a round opening with an extension in one side and also having a spike opening therein, a raised shoulder on said platform, said base portion having a spike opening near its inner end, a brace portion having its bottom shaped to fit the inclined platform and provided with a cut away portion to receive a spike in the opening at the inner opening of the base plate, the inner end of the brace shaped to fit the outer face of a railway rail, the outer end of the brace provided with a downwardly projecting extension having an inwardly projecting lug thereon and a spike in the opening in the raised platform to engage the brace.

853,150. NUT-LOCK. FRANK E. BARTZ, Jackson Center, Pa. Filed Feb. 23, 1907. Serial No. 358,889.

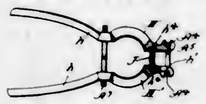
Claim.—1. The combination with a bolt, of an inner and an outer nut thereon, the inner nut provided on its outer face with an inclined surface and being recessed to form shoulders at opposite sides of the bore of the nut, the outer nut provided on its inner face with an annular recess surrounding the bore of the nut and with slots extending tangentially to the axis of said nut, and a rubber washer seated in the annular recess of said outer nut and extending beyond the inner face of said outer nut and adapted to be compressed into the recessed portion of the inner nut and the slots of said outer nut.



2. The combination with a bolt formed with a right hand thread and a left hand thread, of an inner nut engaging the right hand thread of said bolt being recessed on its outer face, and having an inclined surface on said outer face, an outer nut mounted on the left hand thread of said bolt and provided on its inner face with an annular recess surrounding the bore of the nut and also provided on said inner face with slots, and a rubber washer seated in said annular recess and extending beyond the inner face of said outer nut and adapted to be compressed into the recessed outer face of the inner nut and the slots on the inner face of the outer nut.

3. The combination with a bolt formed with a right hand thread and a left hand thread, of an inner nut formed with a right hand thread, and recessed on its outer face to provide an inclined surface and shoulders on opposite sides of the bore of the nut, an outer nut formed with a left hand thread, and recessed on its inner face to provide a washer seat, and having slots extending tangentially to the bore of the nut, and a yielding washer interposed between said nuts and engaging in said slots against the shoulders of the inner nut.

S53,151. BOTTLE-HOLDER. ALBERT BAUMGARTEN, Freeport, Ill. Original application filed June 15, 1903, Serial No. 161,426. Divided and this application filed Aug. 19, 1905. Serial No. 274,956.



Claim.—1. In a bottle-holder the combination of a support, a pair of jaws each having a separable pivotal connection with the support, each connection comprising a pivot, and an open seat, and means for retaining the pivots and seats in connected relation.

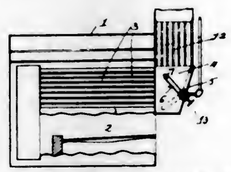
2. In a bottle-holder the combination of a support, a pair of jaws each having a separable pivotal connection with the support, each connection comprising a pivot and an open seat, and means for yieldingly retaining the pivots and seats in connected relation.

3. In a bottle-holder the combination of a supporting frame, a pair of jaws having open seats formed therein, pivot-studs fixedly secured to the frame, and means removably holding said jaws in position to be retained by said pivots.

4. In a bottle-holder the combination of a supporting frame, a pair of jaws having open seats formed therein, pivot-studs fixedly secured to the frame, and a spring pressing said jaws into position to be retained by said pivots.

5. In a bottle-holder the combination of a supporting frame, a pair of jaws having open seats formed therein, pivot-studs integrally formed with the supporting-frame, and a spring between the jaws and holding the jaws seated about said pivots.

S53,152. BOILER-FLUE CLEANER. JAMES BENNETT, Cleveland, Ohio. Filed Feb. 12, 1907. Serial No. 356,978.



Claim.—1. In a marine boiler, provided with horizontal smoke flues and a vertically extended breeching and an increased draft device therein having vertical smoke flues, in combination therewith a tubular steam blower device pivoted at each end in the sides of said breeching, and extending transversely in front of said horizontal flues and underneath said vertical flues, said steam blower device having a row of discharge openings in its rear edge and rotatable through a vertical arc and adapted to register in turn with the said horizontal and vertical flue openings, means for rotating said tubular blower, and means for supplying steam thereto, substantially as described.

2. In combination with a marine boiler provided with return flues and a breeching therefor, a tubular blower frame, transversely pivoted in said breeching in front of said flues and having a free swinging vertical movement thereover through an arc of 90°, an operating lever therefor accessible from outside the breeching, and a steam pipe connected therewith, substantially as described.

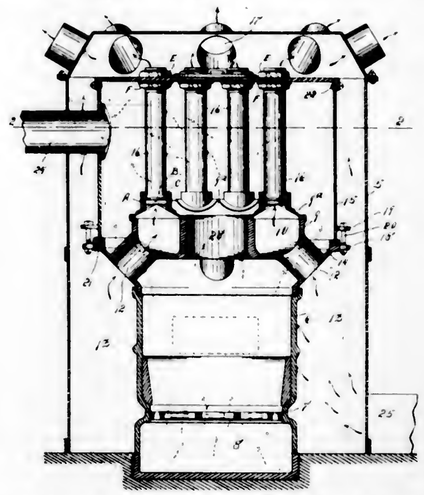
3. In combination with a boiler having return smoke flues therein, and a breeching therefor, a rectangular tubular steam blower frame, pivoted bearings therefor, in the sides of said breeching, a lever attached thereto exterior to said breeching whereby a swinging movement is imparted to said frame over said flue openings through a vertical arc, said steam blower frame being provided with nipples for steam jets upon its inner transverse edge said nipples adapted to register in turn with each transverse row of flue openings, as said blower frame is rotated, substantially as described.

4. In combination with a marine boiler having duplicate sets of horizontal smoke flues, a breeching therefor, & duplicate draft inducers in said breeching having vertical flues, a steam blower transversely pivoted in said breeching in duplicate portions separately rotatable through a vertical arc, whereby steam can be applied in both vertical and horizontal directions, steam nipples in the rear edge of said steam blower, a common steam pipe for said blowers, and a three way valve adapted to admit steam alternately to said blowers, substantially as described.

5. In combination with a marine boiler provided with horizontal boiler flues, a breeching and an induced draft device having vertical flues; a steam blower frame therefor, comprising, a rectilinear steam tube pivoted at each end in the sides of the breeching, a parallel jet pipe having jet orifices in its inner edge, and transversely placed tubular connecting members, and means located exterior to said breeching for imparting a vertical swinging movement to said frame, substantially as described.

853,153. HOT-AIR FURNACE. JOHN L. BERGER, Denver, Colo., assignor of one-fourth to George Anderson, Denver, Colo. Filed June 12, 1905. Serial No. 264,760.

Claim.—1. In a hot air furnace, the combination with a fire box, of a products-of-combustion chamber located above the fire box, an air chamber interposed between the products-of-combustion chamber and the fire box and having a circular apex at its top provided with openings, collars surrounding said openings, tubes whose lower extremities enter the collars, means for forming an air tight joint between the tubes and the collars, the top of the products-of-combustion chamber being provided with openings to receive the upper extremities of the tubes whose ends are threaded, nuts applied to the threaded extremities of the tubes above and below the top of the products-of-combustion chamber, and means for forming an air tight joint between the threaded extremities of the tube and the top of said chamber.



2. In a hot air furnace, the combination with an outer casing and a fire box, of a products-of-combustion chamber located above the fire box, an air chamber interposed between the fire box and the products-of-combustion chamber, the air chamber being formed at the top with an apex whose downwardly sloping sides are considerably inclined, the said apex being provided with openings, tubes whose lower extremities register with said openings, the top of the products-of-combustion chamber having openings to receive the upper extremities of the tubes, and suitable means for forming air tight joints between the tube extremities and the parts with which they are connected.

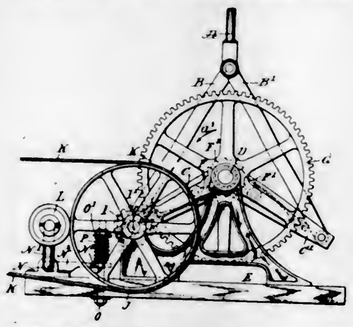
3. In a hot air furnace, the combination with an outer casing and a fire box, of a products of combustion chamber located above the fire box, an air chamber interposed between the fire box and the products of combustion chamber, the air chamber being formed at the top with an apex whose downwardly sloping sides are considerably inclined, the said apex being provided with openings, and tubes whose lower extremities register with said openings.

853,154. POWER TRANSMISSION. GOTTLIEB S. BLUEBAUM, Billings, Mo. Filed Jan. 10, 1907. Serial No. 351,647.

Claim.—1. A power transmission comprising a shaft, a ratchet wheel secured on the said shaft, pawls engaging opposite sides of the said ratchet wheel, arms fulcrumed loosely on the said shaft and carrying the said pawls, a reciprocating member, links connecting the said reciprocating member with the said arms, a gear wheel held loose on the said shaft, a torsion spring coiled on the said shaft and having one end attached to the shaft and the other to the said gear wheel, a pinion in mesh with the said gear wheel, a transmission pulley rotating with the said pinion, and a spring-controlled brake mechanism for the said pulley.

2. A power transmission having a power transmitting pulley, and a brake mechanism for the same comprising a brake roller in peripheral engagement with the said

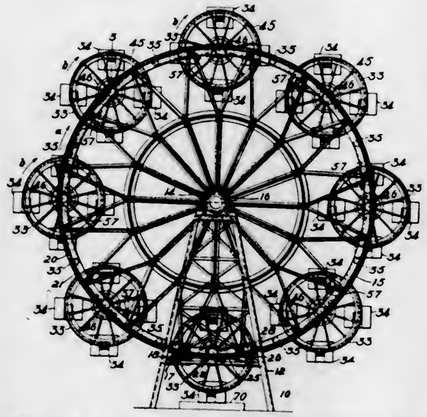
pulley, a crank shaft having two crank arms at angles one to the other, one of the crank arms carrying the said brake roller, and a spring pressing the other crank arm.



3. A power transmission having a power transmitting pulley, and a brake mechanism for the same comprising a brake roller in peripheral engagement with the said pulley, a crank shaft having two crank arms at angles one to roller, a fixed bolt extending through an eye in the other the other, one of the crank arms carrying the said brake crank arm, and a coil spring on the said bolt and pressing the said crank arm eye.

4. A power transmission, comprising a shaft, a reciprocating member, a connection between said member, and the shaft whereby to rotate said shaft, a gear wheel loosely mounted on the shaft, a tension spring coiled on said shaft and having one end attached thereto, and the other end to the gear wheel, a pinion in mesh with the said gear wheel, a transmission pulley rotating with the said pinion, and a spring controlled brake mechanism for the said pulley.

853,155. AMUSEMENT APPARATUS. FREDERICK E. BOARDMAN, West Somerville, Mass., assignor of one-half to John J. Jung, Brooklyn, N. Y. Filed Feb. 15, 1907. Serial No. 357,457.



Claim.—1. An amusement apparatus comprising in its construction a frame, a main wheel rotatably mounted on said frame with its axis horizontally arranged, a plurality of smaller wheels rotatably mounted on said main wheel with their axes parallel to the axis of said main wheel, a plurality of cars pivotally suspended from each of said smaller wheels, and means for rotating all of said wheels.

2. An amusement apparatus comprising in its construction a frame, a main wheel rotatably mounted on said frame with its axis horizontally arranged, a plurality of smaller wheels rotatably mounted on said main wheel with their axes parallel to the axis of said main wheel, a plurality of cars pivotally suspended from each of said smaller wheels, and means for rotating all of said wheels independently.

3. An amusement apparatus comprising in its construction a frame, a main wheel rotatably mounted on said frame with its axis horizontally arranged, a plurality of smaller wheels rotatably mounted on said main wheel with their axes parallel to the axis of said main wheel, a plurality of cars pivotally suspended from each of said smaller wheels, a plurality of electric motors mounted on said main wheel, said motors operatively connected to said smaller wheels, respectively, and a motor operatively connected to said main wheel.

4. An amusement apparatus comprising in its construction a frame, a main wheel rotatably mounted on said frame with its axis horizontally arranged, a smaller wheel rotatably mounted on said main wheel with its axis parallel to the axis of said main wheel a car pivotally suspended from said smaller wheel, gearing operatively connecting said motor to said smaller wheel, a source of electrical current in circuit with said motor, and a controller in circuit with said motor and said source of electrical current.

5. An amusement apparatus comprising in its construction a frame, a main wheel rotatably mounted on said frame with its axis horizontally arranged, a plurality of smaller wheels rotatably mounted on said main wheel with their axes parallel to the axis of said main wheel, a plurality of cars pivotally suspended from each of said smaller wheels, a plurality of electric motors mounted on said main wheel, said motors operatively connected to said smaller wheels, respectively, and a plurality of controllers adapted to control said motors independently.

6. An amusement apparatus comprising in its construction a frame, a main wheel rotatably mounted on said frame with its axis horizontally arranged, a plurality of smaller wheels rotatably mounted on said main wheel with their axes parallel to the axis of said main wheel, a plurality of cars pivotally suspended from each of said smaller wheels, a plurality of electric motors mounted on said main wheel, said motors operatively connected to said smaller wheels, respectively, a plurality of controllers operatively connected to said motors, respectively, said controllers adapted to control said motors independently, a motor operatively connected to said main wheel, and means for controlling said last-named motor.

7. An amusement apparatus comprising in its construction a frame, a main wheel rotatably mounted on said frame, with its axis horizontally arranged, a smaller wheel rotatably mounted on said main wheel with its axis parallel to the axis of said main wheel, a plurality of cars pivotally suspended from said smaller wheel, an electric motor mounted on said main wheel, gearing operatively connecting said motor to said smaller wheel, annular contact plates carried by said main wheel and insulated therefrom and from each other, wires connecting said rings to the poles of said motor, respectively, stationary contact pins arranged in contact with said contact rings, a controller, and wires operatively connecting said controller to said contact pins.

8. An amusement apparatus comprising in its construction a frame, a main wheel rotatably mounted on said frame with its axis horizontally arranged, a plurality of smaller wheels rotatably mounted on said main wheel with their axes parallel to the axis of said main wheel, a plurality of cars pivotally suspended from each of said smaller wheels, means for rotating all of said wheels, and braking means for each of said wheels, respectively.

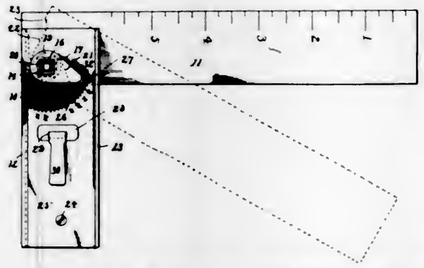
853,156. FOUNTAIN-PEN. FRANK Y. BRENTON, Belleville, Ontario, Canada. Filed Jan. 29, 1906. Serial No. 298,432.

Claim.—A fountain pen having a tubular body constituting a reservoir, a ball within said body and protruding therefrom, a presser-foot pressing said ball outwardly, a stem attached to said presser-foot and extending longitudinally within said body, a bonnet attached to the end of said body, a plug having the form of a cup carried by said stem and fitting in said bonnet, and a spring within said bonnet, the lower portion whereof is surrounded by and seated in said plug whereby said plug protects said spring



from contact with the ink when the pen is full and tilted from an upright position, said spring affording means for forcing said presser-foot downward against said ball.

853,157. TRY-SQUARE. RICHARD A. BREUL, Bridgeport, Conn. Filed Apr. 26, 1906. Serial No. 313,772.



Claim.—1. In a square of the class described, the combination of a back, a blade pivotally connected thereto, a toothed arm connected with said pivotal blade, a spring plate attached to the back and having a series of teeth to engage the teeth of the arm, and means to engage and disengage the plate from such arm.

2. In a square of the class described, the combination of a back, a blade pivotally connected thereto, an arm connected with said pivotal blade, a spring plate attached to the back having a circular series of teeth to engage the end of the arm, and means to engage and disengage the plate from such arm.

3. In a square of the class described, the combination of a back, a blade pivotally connected thereto, a toothed arm connected with said pivotal blade, a plate attached to the back having a circular series of teeth to engage the teeth of the arm, and a lever to engage and operate the plate to disconnect it from the arm to permit of the adjustment of said arm and plate.

4. In a square of the class described, the combination of a back, a stud pivoted in the back, a blade secured to the stud at one side of the back, an arm secured to the stud at the other side of the back, a spring plate attached to the back, having a circular series of teeth to engage the teeth of the arm, and means to engage and disengage the plate from such arm.

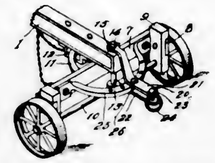
5. In a square, the combination with a blade, of a back connected therewith having its outer edge deflected in one direction and the inner edge deflected in the opposite direction said edges forming flanges along the entire length of the back, the said inner flange arranged to extend both above and below the inner edge of the blade.

6. In a square of the class described, the combination with a back, a blade pivotally connected thereto, an arm connected with said blade bearing a tooth having a beveled top edge, a spring plate attached to the back having a circular series of teeth to engage the beveled tooth of the arm, and means for operating the spring plate to engage and disengage said plate.

7. The combination in a square, of a back, a blade pivotally connected thereto, a spring plate to hold the blade in different positions, a lever pivoted in a pocket of the plate, and adapted to be operated to lock and unlock the blade.

8. In a square of the class described, the combination with a back and blade, of a stud pivotally connecting the two, and comprising a shouldered portion to engage the blade, a circular portion to engage the back, a second reduced shouldered portion, an arm attached to said second reduced portion and bearing a tooth, a plate bearing a circular series of teeth to engage the end of the arm, and means for operating said plate to engage the teeth of said arm.

853,158. PLOW. HERMAN F. BRUSSOW, Whittier, Cal. Filed Aug. 29, 1906. Serial No. 332,545.



Claim.—1. The combination with an axle and a pair of wheels journaled thereon, of a beam having rearwardly and outwardly extending frames, disks mounted on said frames, a plurality of standards and a cross bar for supporting said beam above said axle, said standards being loosely mounted upon said axle, a king-bolt for pivotally connecting said beam with said axle, and means for varying the direction of travel of said disks.

2. The combination with an axle and a pair of wheels journaled thereon, of standards mounted on said axle, a connection between said standards, a yoke carried by said connection, a beam, a king-bolt secured to said axle and extending through said beam, a tongue secured to said king-bolt and extending forwardly of said beam, said tongue being laterally adjustable upon said yoke, and a fifth wheel carried by said connection.

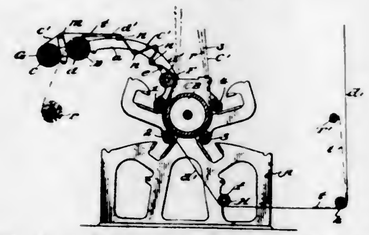
3. The combination with an axle and a pair of wheels journaled thereon, of standards carried by said axle, a connection between said standards, a yoke carried by said connection, a king-bolt mounted on said axle, a beam secured to said king-bolt and resting on said connection, a fifth wheel carried by said connection, and means for movably securing said fifth wheel to said beam, a tongue extending forwardly of said beam and engaging said yoke, said tongue being shiftable with respect to said yoke and said beam, said beam being provided with a plurality of frames extending rearwardly and outwardly beyond the width of said wheels, and disk members adjustably mounted on said frames.

4. The combination with an axle and a pair of wheels journaled thereon, of a beam having frames extending beyond the width of said wheels, means for supporting said

beam above said axle comprising a plurality of standards, and a cross bar, said standards being loosely mounted with respect to the axle, and means for permitting movement of said beam relatively to the axle.

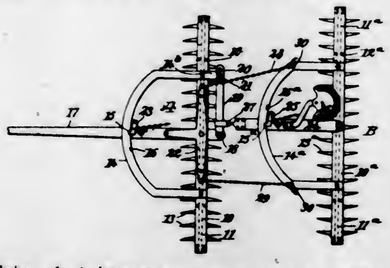
5. The combination with an axle and a pair of wheels journaled thereon, of a plurality of standards carried by said axle, a connection between said standards, an arc on said connection having orifices, a beam supported by said connection, a king-bolt on said axle extending through said beam to pivotally secure it thereto, a two-part tongue on said king-bolt, said tongue being adjustable on said arc, a fifth wheel on said connection, a bracket for supporting said fifth wheel, and means for limiting the movement of said axle.

853,159. PRINTING-MACHINE FOR ALL KINDS OF CLOTHS OR PAPER. JOÃO M. DA CAMARA COUTINHO, Rio de Janeiro, Brazil, assignor to Companhia Manufactora Fluminense, Rio de Janeiro, Brazil, a Corporation. Filed Dec. 7, 1905. Serial No. 290,773.



Claim.—In a cloth printing machine, a frame, supporting arms thereon, revoluble rollers supported by said arms and having continuous bands of material, a guide bar carried by the supporting arms for the material, extensions on said supporting arms adapted to bring the continuous bands into frictional engagement with each other, an impression roller, a series of printing rollers arranged circumferentially with respect to the impression roller, said bands adapted to be fed between the series of printing rollers and impression roller so as to have one series of rollers print one of the bands on its exterior face and the remainder of the rollers to print the other band on its interior face, direction rollers for guiding the respective bands in different directions, independent brake mechanism for the respective band receiving rollers to regulate the movement thereof, and means for regulating the brake mechanism upon the respective bands.

853,160. DISK HARROW. CYRUS N. CASS, Spangle, Wash. Filed Nov. 6, 1906. Serial No. 342,209.



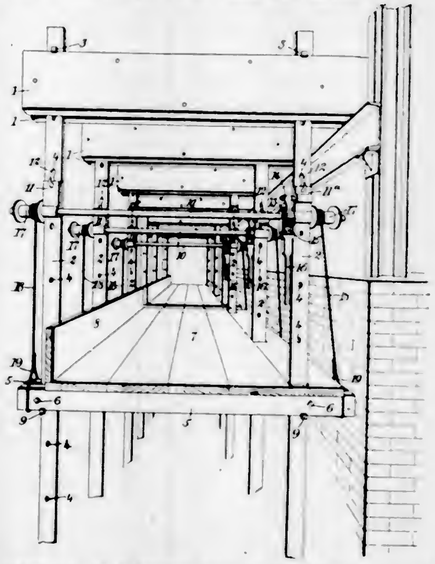
Claim.—1. A harrow constructed with a forward and with a rear section, the forward section being provided with a pivoted pole and the rear section provided with a reach, a sliding connection between the reach and the pole, and locking devices for the pole and forward section and the reach and the rear section.

2. A harrow provided with a forward section and a rear section, a pivotal sliding connection between the central portions of the two sections, adjustable flexible connections between the sections at each side of their centers, and means for locking the sections in parallelism or at angles to each other.

3. A harrow provided with a forward section and a rear section, each section having a forwardly extending arched frame connected with its body portion, the forward section being provided also with a pivoted pole and the rear section with a pivoted reach, a sliding pivotal connection between the reach of the rear section and the pole of the forward section, flexible connections between an extension from the pole and the side members of the arched frame of the rear section, and means for locking the arched frame of the forward section to the pole, and means for locking the arched frame of the rear section to the reach.

4. In harrows, a forward and a rear section, arched bars extending forwardly from the body portions of said sections, a pole pivoted to the central portion of the body of the forward section, which pole extends rearward beyond the section and is provided at its rear end with arms extending beyond its sides, a guide bar connected with the rear end of the pole and the rear end of one of the side members of the arched frame of the forward section, a reach pivoted to the rear section, a pivotal and sliding connection between the reach and the said guide bar, flexible connections between the extension members of the pole and the side portions of the arched frame of the section, a latch carried by the reach, for engagement with the arched frame of the rear section, and a latch carried by the pole, adapted for engagement with the arched frame of the forward section of the implement.

853,161. HANGING STAGING-HOIST. HOBART O. CLARKE, Pittsburg, and ARTHUR G. ROSS, Wilkinsburg, Pa. Filed Oct. 16, 1906. Serial No. 339,168.



Claim.—1. In a staging hoist, in combination, depending bars adapted to be supported from overhanging beams or outriggers, a platform guided on said bars and adapted to be sustained therefrom, means carried by the bars operable to elevate the platform, and means providing for the vertical adjustment of the elevating means.

2. In a staging hoist, in combination, depending bars supported from suitable outriggers, a platform guided on said bars and adapted to be sustained therefrom, and means carried by the bars operable to elevate the platform.

3. In a staging hoist, in combination, outriggers, a platform, bars depending from the outriggers and arranged at opposite sides of the platform, means for guiding the platform on the bars, means for supporting the platform on the bars, and independent means carried by the bars for moving the platform in a vertical direction.

4. In a staging hoist, in combination, a platform, supports, a plurality of bars depending from said supports and arranged at each side of the platform on which the latter is guided, a cross shaft supported from a pair of said bars, a drum fixed to each end of the cross shaft, flexible connections between the drum and platform, and means for revolving the cross shaft for adjusting the vertical height of the platform.

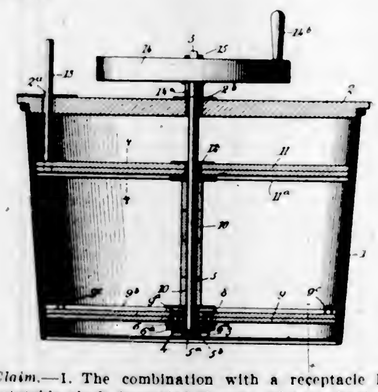
5. In a staging hoist, in combination, outriggers, a plurality of pairs of bars depending from the outriggers, a stage guided on said bars, a shaft journaled in bearings carried by each of said bars, a drum fixed to each shaft, flexible lines connecting the drums with the stage, and means for rotating said shafts to adjust the vertical height of the stage.

6. In a staging hoist, in combination, supports, perforated bars depending from said supports, a stage guided on said bars below the supports, a cross shaft journaled in bearings on each pair of bars, means for adjustably suspending the bearings from the apertures in the bars, drums fixed to said cross-shafts, and means connecting the drums with the stage for adjusting its vertical height on the bars.

7. In a staging hoist, in combination, supports, a plurality of bars depending from said supports, each bar being provided with a series of apertures, a stage guided on said bars, means adapted to engage certain of said apertures for sustaining the stage from the bars, and means in engagement with other of said apertures for vertically adjusting the stage.

8. In a staging hoist, in combination, supports, a pair of bars depending from said supports, a pair of cross-beams embracing and guided on said bars, a platform carried on said cross-beams, a shaft having a drum at each end carried by the bars, and flexible connections attached to the drums and looped about the cross-beams.

853,162. WASHING-MACHINE. ISAAC N. CONNELL, Baileys Mills, Ohio. Filed Nov. 3, 1906. Serial No. 341,846.



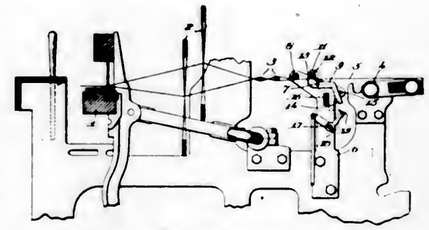
Claim.—1. The combination with a receptacle having a rotatable shaft journaled thereon, of an agitating disk fixedly secured to said shaft and provided with radial ribs, a disk loosely journaled on said shaft and provided with a handle extending out of said receptacle, and detachable supporting sleeves mounted on said shaft between said disks.

2. The combination with a receptacle having a cover provided with an arc slot, of a shaft journaled within said receptacle, a head fixedly secured to said shaft, an agitating disk provided with radial ribs mounted on said shaft and detachably connected with said head, a disk provided with radial ribs journaled loosely on said shaft and provided with a handle adapted to travel in the slot of said cover, and sleeves mounted on said shaft between said disks.

3. The combination with a receptacle having a rotatable shaft journaled therein, of upper and lower disks provided with radial ribs, and spacing sleeves mounted on said shaft between said plates.

4. The combination with a receptacle having a rotatable shaft journaled thereon, of an agitating disk fixedly secured to said shaft and provided with radial ribs, a disk loosely journaled on said shaft, means adapted to reciprocate said last named disk on said shaft, and detachable adjusting members mounted on said shaft between said disks.

853,163. WARP-STOP-MOTION MECHANISM. HENRY CÔTÉ, West Warren, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Jan. 7, 1907. Serial No. 351,070.



Claim.—1. In a warp stop-motion, in combination, a series of detectors each having an upturned portion or head provided with an upright warp-eye having an upwardly inclined entrance slot leading to its upper end at an acute angle to the length of the eye and a depending foot, a transverse support loosely extended through each detector nearer its upturned end and on which support the detectors are angularly movable, normal warp-threads acting upon the lower ends of the warp-eyes and maintaining the detector feet elevated, and a vibratable feeler to engage the foot of a detector released by failure of its warp-thread.

2. A detector for warp stop-motions, having a thin, flat body apertured to receive a transverse support and terminating at one end in a depending foot, and at its other end upturned and provided with an upright, elongated warp-eye having an inclined slot leading to its upper end, and at an acute angle to the length of the warp-eye.

3. A thin, flat metallic detector for warp stop-motion, comprising a straight body portion apertured near one end to receive a transverse support and upturned at said end, the opposite end of the body terminating in a depending, inclined foot, the upturned portion or head having an elongated warp-eye therein provided with an inclined entrance slot leading to its upper end at an acute angle to the length of the eye, the open inlet end of said slot being located below the bottom of the warp-eye.

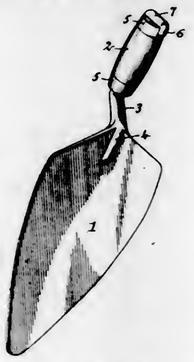
853,164. MASONRY-TOOL. PATRICK J. COURTNEY, Elizabeth, N. J. Filed Feb. 2, 1907. Serial No. 355,353.

Claim.—1. A masonry tool, comprising a blade having a shank rigidly connected at one end thereof, a handle carried by the shank, a bead formed on the bottom face of the blade adjacent to said shank, and a bead formed on the under face of the handle and extended over the end thereof, for the purpose described.

2. A trowel comprising a blade having a shank connected to one end thereof, and a jointing bead formed on the bottom face of the blade at the end adjacent to said shank.

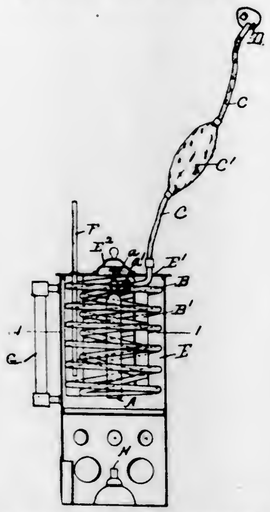
3. A trowel having a handle, and a jointing bead formed at one side of and passing over the end of the handle.

4. A trowel comprising a blade having a shank, a handle carried by the shank, a jointing bead formed on the under



face of the blade at the end adjacent to said shank, and a jointing bead formed at the end of said handle.

853,165. APPARATUS FOR GENERATING AND ADMINISTERING GASES FOR GENERAL ANÆSTHESIA. CLARENCE R. CUMMINS, Erie, Pa., assignor of one-half to F. Fenner Fritz and F. C. Canter, Erie, Pa. Filed Feb. 23, 1904. Serial No. 194,891.



Claim.—1. In an apparatus for generating and administering gases for general anæsthesia, the combination of a generating receptacle; a heating receptacle communicating with the generating receptacle; means for heating both receptacles; and an inhaler connected with the heating receptacle by which the gas is generated, heated and administered.

2. In an apparatus for generating and administering gases for general anæsthesia, the combination of a generating receptacle; a heating receptacle removably connected with the generating receptacle; means for heating said heating receptacle; and an inhaler connected with the heating receptacle by which the gas is generated, heated and administered.

3. In an apparatus for generating and administering gases for general anæsthesia, the combination of a generating receptacle; a heating receptacle communicating with the generating receptacle; a heating chamber in which both of said receptacles are arranged; and an inhaler connected with said heating receptacle by which the gas is generated, heated and administered.

4. In an apparatus for generating and administering gases for general anæsthesia, the combination of a generating tube; a heating coil connected with said tube and arranged around the same; a heating chamber in which said tube and coils are arranged; and an inhaler connected with said heating coils.

5. In an apparatus for generating and administering gases for general anæsthesia, the combination of the tube A having the controlling valve *a* and joint *a'*; the coil B connected with said tube; the tube C connected with the tube B; the inhaler D on said tube C; the chamber E in which the tube A and coil B are arranged; and means for heating the chamber E.

853,166. TREATING HIDES OR SKINS. SAMUEL K. FELTON, Jr., Philadelphia, Pa. Filed July 10, 1906. Serial No. 325,557.

Claim.—1. The within-described improvement in treating skins, which consists in subjecting them, after being limed and unhaired, to the alternate action of sulfid of sodium and washing, and then to a solution of a salt that will evolve sulfur dioxid in the presence of a mineral acid such as specified, substantially as described.

2. The within-described improvement in treating skins, which consists in subjecting them, after being limed and unhaired, to the alternate action of sulfid of sodium and washing, then to a solution of a salt that will evolve sulfur dioxid in the presence of a mineral acid such as specified, and then to a desulfurizing treatment, substantially as described.

3. The within-described improvement in treating skins, which consists in applying to the flesh side of the skin a liming compound, then removing the hair, then subjecting the unhaired skin to the alternate action of sulfid of sodium and washing, and then to a solution of a salt that will evolve sulfur dioxid in the presence of a mineral acid such as specified, substantially as described.

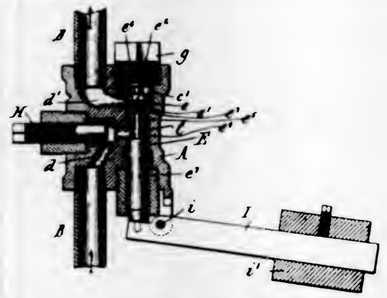
4. The within-described improvement in treating skins, which consists in applying to the flesh side of the skin a liming compound, then removing the hair, then subjecting the unhaired skin to the alternate action of sulfid of sodium and washing, then to a solution of a salt that will evolve sulfur dioxid in the presence of a mineral acid such as specified, and then to a desulfurizing treatment, substantially as described.

5. The within-described improvement in treating skins, which consists in subjecting them to the action of lime and sulfid of sodium, and then after unhairing and washing, to the alternate action of sulfid of sodium and washing, and then to a solution of a salt that will evolve sulfur dioxid in the presence of a mineral acid such as specified, substantially as described.

6. The within-described improvement in treating skins, which consists in first applying to the flesh side of the same a compound of lime and sulfid of sodium, then removing the hair from the skin, then subjecting the unhaired skin to the alternate action of sulfid of sodium and washing, then to a solution of a salt that will evolve sulfur dioxid in the presence of a mineral acid such as specified, and finally to the action of a bath containing lime and arsenic, substantially as described.

853,167. AUTOMATIC CHOKER-VALVE FOR PRESSES. ALFRED W. FRENCH and PAUL G. WEIDNER, Piqua, Ohio, assignors to French Oil Mill Machinery Company, Piqua, Ohio. Filed June 30, 1904. Serial No. 214,760.

Claim.—1. The combination with a passage supplied with liquid under pressure, of a choker valve which controls said passage and is constructed and arranged to open said passage and permit a free flow of liquid past the valve when in one position and to permit a restricted flow of liquid when in another position, said valve having a part upon which the liquid acts directly to move the valve to and hold it in its restricting position when the back pressure of the liquid in said passage between the valve and the press reaches a predetermined value, and means for releasably holding said valve against movement to the restricting position, substantially as set forth.



2. The combination with a passage for the press operating liquid supplied with liquid under pressure, of a one-part choker valve which controls said passage and is constructed and arranged to open said passage and permit a free flow of the liquid past the valve to the press when the valve is in one position, and to permit a restricted flow of the liquid when the valve is in another position, said valve having a part upon which the liquid acts directly to move the valve to and hold it in its restricting position when the back pressure of the liquid in said passage between the valve and the press reaches a predetermined value, and means for releasably holding said valve against movement to the restricting position, substantially as set forth.

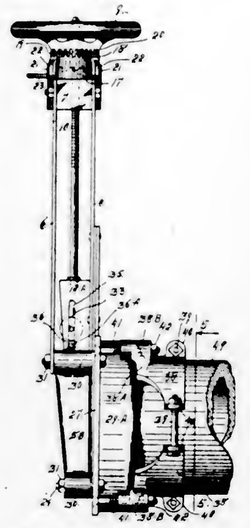
3. The combination with a passage supplied with liquid under pressure, of a valve chamber having inlet and outlet connections with said passage, an automatic choker valve in said chamber, said valve and chamber being constructed to afford a free passage for the liquid when the valve is unseated and a restricted passage for the liquid when the valve is seated, said valve having a part upon which the liquid in said passage on the outlet side of the valve chamber acts directly at all times tending to seat said valve, and means which automatically hold the valve off of its seat until the back pressure of the liquid in said passage at the outlet side of the valve chamber reaches a predetermined value, substantially as set forth.

4. The combination with a passage supplied with liquid under pressure, of a one-part choker valve which controls said passage and is constructed and arranged to open said passage and permit a free flow of liquid past the valve when in one position and to permit a restricted flow of liquid when in another position, said valve having a part upon which the liquid acts directly to move the valve to its restricting position when the back pressure of the liquid in the passage at the outlet side of the valve chamber reaches a predetermined value, and an adjustable device for releasably holding said valve against movement to the restricting position, substantially as set forth.

5. The combination with a passage supplied with liquid under pressure, of a valve chamber having inlet and outlet connections with said passage, an automatic choker valve in said chamber which is constructed to afford a free passage for the liquid when unseated and a restricted passage for the liquid when seated, and which has a part upon which the liquid in said passage on the outlet side of the valve chamber acts directly at all times tending to seat said valve, a lever and adjustable weight which automatically hold the valve off of its seat until the back pressure of the liquid in said passage at the outlet side of the valve chamber reaches a certain value, depending upon the adjustment of said weight, substantially as set forth.

6. The combination with a passage supplied with liquid under pressure, of a valve chamber having inlet and outlet connections with said passage, said valve chamber being in free communication at all times with said passage through said outlet connection, a solid choker valve in said chamber having a reduced waist portion between its ends which in one position of the valve allows a free flow of the liquid from said inlet connection to said outlet connection, and means for automatically holding the valve in said position, said valve having one or more notches which in another position of the valve allows a restricted flow of the liquid, and also having a face which is exposed at all times to the direct pressure of the liquid in said passage on the outlet side of said valve chamber and which is of such area that a predetermined back pressure thereon of the liquid in the passage on the outlet side of the valve will move said valve against the opposing pressure of said holding means to the restricting position, substantially as set forth.

853,168. HEAD-GATE. WILLIAM F. GARBE, Fort Collins, Colo., assignor of one-half to James J. Platt and Vernard A. Babbitt, Fort Collins, Colo. Filed Aug. 16, 1906. Serial No. 330,923.



Claim.—1. In a head gate, the combination with a frame, and a gate provided with a threaded stem, of a manipulating nut engaging the stem of the gate, and two cam members interposed between a shoulder on the nut and the top of the frame, one of the said members being free to rotate and provided with a laterally projecting arm, the other member being vertically movable but locked against rotation, the two members having their engaging surfaces fashioned to cause one member to move vertically as the other member is rotated, the top of the vertically movable member and the shoulder of the nut being fashioned to interlock.

2. In a head gate, the combination with a frame, a gate and a threaded stem connected with the gate, of a shouldered manipulating nut journaled on the frame and engaging the head gate stem, and means interposed between the frame and the shoulder of the nut for locking the latter against movement, substantially as described.

3. In a head gate, the combination with a frame, a gate and a stem connected with the frame, a hand wheel nut engaging the stem of the gate and journaled in the top of the frame, the said nut having a shoulder located above the top of the frame, and adjustable means interposed between the top of the frame and the shoulder of the nut for locking the latter against movement, substantially as described.

4. The combination with a frame, a head gate and a

threaded stem connected with the gate, of a nut journaled in the top of the frame and engaging the stem of the gate, the said nut having a hub and a shoulder at the top of the hub, two cam members surrounding the hub of the nut above the frame, one of them being revoluble on the hub and the other being vertically movable but locked against rotation, the adjacent faces of the said members being so fashioned that when the revoluble member is actuated, vertical movement may be imparted to the other member, the upper surface of the vertically movable member being toothed to interlock with corresponding teeth formed on the shoulder of the nut.

5. In a head gate, the combination with a frame, a gate proper and a threaded stem, of a nut journaled in the top of the frame, and means interposed between the top of the frame and a shoulder on the nut, for locking the latter against movement, substantially as described.

6. A head gate comprising a frame, the gate proper, a stem connected with the gate, a nut journaled in the top of the frame and provided with a hub and a reduced threaded part, the latter passing through the top of the frame, a nut applied to the lower threaded extremity of the screw, and a concealing plate riveted to the top of the frame and concealing the nut for the purpose set forth.

7. The combination with a frame, a vertically movable gate, and a threaded stem connected with the gate, of a nut journaled in the top of the frame and engaging the threaded stem of the gate, two cam members interposed between the top of the frame, and a shoulder on the nut, one of the members being revolubly mounted and the other vertically movable but locked against rotation, the revoluble member being provided with a manipulating arm having an opening, the frame of the gate having an apertured ear adapted to register with the opening of the arm, the adjacent faces of the cam members being fashioned to cause the vertically movable member to move upwardly as the other member is rotated, the vertically movable member being fashioned to interlock with the shoulder on the nut for the purpose set forth.

8. The combination with a frame, of a vertically movable head gate, the frame being provided with angle flanges on opposite sides forming ways for the gate, a portion of each flange projecting inwardly in front of the adjacent parts of the gate, the latter being provided with rollers loosely mounted and engaging the said angle flanges which are inclined to produce a wedging action by virtue of the engagement of the rollers of the gate with the said flange for the purpose set forth.

9. The combination with a suitable frame, of a vertically movable gate, the frame being provided with ways to receive the gate on opposite sides of the opening to be controlled thereby, the said ways having inclined members, and the gate having rollers adapted to engage the inclined members of the frame, the rollers being vertically movable in the gate.

10. The combination with a head gate frame provided with ways, a gate vertically movable in the ways of the frame, one of the said instrumentalities being provided with rollers vertically movable, while the other member is provided with inclined parts which the rollers engage whereby a wedging action is produced as the gate is moved to the closed position.

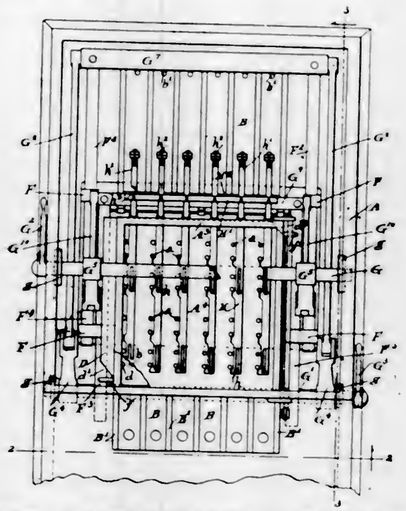
11. The combination with a head gate frame provided with ways on opposite sides, a vertically movable gate engaging the ways of the frame, the said gate being provided with slots intersecting at right angles, rollers having their body portions occupying one set of slots and their axles occupying another set of slots, the axles forming guides for the rollers during their vertical movement, the said rollers protruding from the gate in front and engaging the ways for the purpose set forth.

12. The combination of a gate or valve and a seat therefor, the valve seat having ways adapted to receive the gate or valve, one of the said instrumentalities being provided with rollers mounted to have both a revoluble and vertical movement and arranged to engage the other instrumentality to produce a wedge action during the closing movement of the device.

13. The combination with a conduit having a bell end, of a head gate frame, and means for fastening the frame to the bell end of the gate comprising a band or ring surrounding the conduit adjacent its bell end and composed of a number of clamping members connected by bolts, the said members being shaped to fit the shoulder of the bell and provided with reinforced apertured parts, and bolts connected with the frame and passing through the said apertured parts parallel with the axis of the conduit and suitably secured in place.

14. The combination with a head gate frame and a conduit having a bell end, of means for connecting the frame with the bell end, said means comprising a ring or band surrounding the conduit adjacent its bell extremity and composed of a number of clamping members connected by bolts extending at right angles to the axis of the conduit, said clamping members being shaped to fit the shoulder of the bell, and other bolts connecting the clamping members with the frame and extending parallel with the axis of the conduit.

853,169. SLIDE-MOVING DEVICE FOR VOTING-MACHINES. WILMER C. GILMORE, Bloomington, Ill., assignor to Universal Voting Machine Company, Bloomington, Ill., a Corporation of Maine. Filed Feb. 16, 1906. Serial No. 301,483.



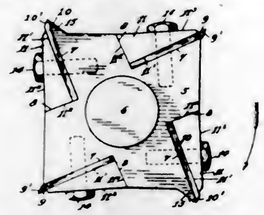
Claim.—1. A slide moving device comprising stationary guide blocks, parallel rods slidable in guides on said blocks, cross-bars connecting said rods in pairs, an upper shaft turning in stationary bearings, a lower shaft turning in stationary bearings, arms secured on said upper shaft, rods connecting said arms with one of said cross bars, arms secured on said lower shaft, rods connecting said last named arms with the other cross bar and slides movable in one direction by one cross bar and movable in the opposite direction by the other cross bar.

2. A slide moving device comprising stationary guides, parallel rods sliding in said guides, cross bars connecting said rods in pairs, an upper shaft and a lower shaft turning in stationary bearings, arms secured on said upper shaft, rods connecting said arms with one of said cross bars, arms secured on said lower shaft, rods connecting said last named arms with the other cross bar, slides slidable under said cross bars and upwardly projecting pins on said slides between said cross bars.

3. The combination of stationary guides, rods slidable in said guides, a cross bar connecting said rods, a notched plate secured on said cross bar, stirrers slidable in the notches of said plate, a cross piece connecting said stirrers, a hopper having a perforated bottom on which said stirrers slide, a dropping plate slidable transversely under said hopper and having inclined edges, also having perforations registrable with the perforations in the bottom of said hopper, and pins on said slidable rods engaging with the inclined edges of said dropping plate; all co-operating to cause longitudinal movement of said stirrers co-incidently with the transverse movement of said dropping plate.

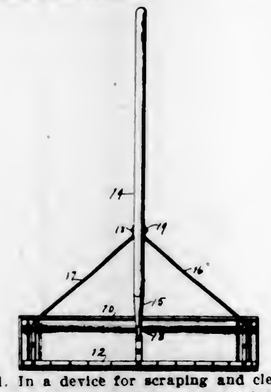
4. In a slide moving device the combination of stationary guides, parallel rods slidable in the guides, a cross bar connecting the rods, slides having pins on which the cross-bar acts, an oscillative shaft, arms secured on the shaft, and rods connecting the arms with the cross bar.

853,170. PLANER-HEAD. JAMES W. GRAY, Tacoma, Wash. Filed July 2, 1906. Serial No. 324,313.



Claim.—A planer-head comprising a body portion substantially square in cross section, said body portion being formed integral with an operating shaft, and provided with recesses on each of its faces near the corners thereof, cutter knives arranged on each of two of its opposite faces and secured within said recesses, that side of said body portion on which said knife bears being provided with truncated tongues, scraper knives arranged on the other two of its opposite faces within the other two of said recesses, and a plate adapted to be received within each of said recesses and securely hold said cutter-knives, and said scraper-knives within said recesses.

853,171. CEMENT-SIDEWALK CLEANER. FRANK V. HEALY and JOHN H. FOX, Sac City, Iowa. Filed Feb. 1, 1907. Serial No. 355,741.



Claim.—1. In a device for scraping and cleaning snow from pavements, a scraper having parallel edges at its top and bottom and the upper edge portion curved forward, its lower edge doubled inward and a metal bar fixed on the under side of its lower edge.

2. In a device for scraping and cleaning snow from pavements, a scraper having parallel edges at its top and bottom and the upper edge portion curved forward and a pointed shank fixed across its back at its center.

3. A device for removing snow from sidewalks and like flat surfaces consisting of a scraper having parallel edges and its upper edge portion curved forward and a shank fixed to its rear face and center to project upward, a wooden handle having a socket at its lower end to admit the shank and two braces detachably fixed to the handle and to the back and end portions of the scraper by means of screw bolts and nuts, substantially as shown and described.

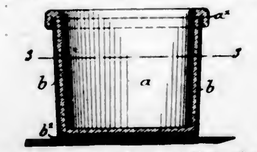
853,172. MACHINIST'S WRENCH-HAMMER. OWEN P. HUGHES, New Castle, Pa. Filed July 17, 1906. Serial No. 326,542.



Claim.—1. The combination of the grip-block G, having the upper and lower sides of the inner end convex, and the outer end, or heel, square, secured in the stationary hammer-head A, in the mortise H, and pivoted therein by the pin *k*, passing through the hammer-head in the oblique slot K, and automatically controlled by the spring J, with the obtusely angled upper face of the movable jaw B, so as to form a machinist's wrench-hammer.

2. The combination of the grip-block G, having the upper and lower sides of the inner end convex, and the outer end or heel square, secured in the stationary hammer-head A in the mortise H by means of the pin *k* passing through the hammer-head in the oblique slot K, and automatically controlled by the spring J fastened on the mortise by a pin through said hammer-head, with the movable jaw B, having the obtusely angled upper face; said movable jaw being held in continuity with said grip-block, preferably, by means of the pawls D D, pivoted in the mortises E E, in the lower end of the movable jaw, the exterior points of the pawls meshing in the teeth *h h*, on the opposite sides of the handle C, and holding the movable jaw firmly in place, thus forming a machinist's wrench-hammer, as substantially set forth in the drawings and specifications.

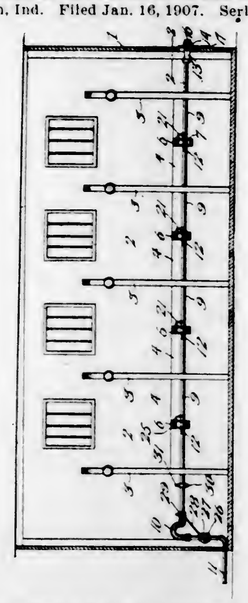
853,173. CULINARY VESSEL. KARL JACOBI, New Rochelle, N. Y., assignor of one-half to Charles Jordan, New Rochelle, N. Y. Filed Sept. 9, 1905. Serial No. 277,648.



Claim.—A culinary vessel consisting of a vitrified receptacle provided at its upper edge with an outwardly and downwardly turned circumferential flange, an exterior

jacket fitting snugly about said receptacle substantially throughout the area of its side-wall and extending at its upper edge into the space between said flange and said receptacle, said jacket being provided at its bottom edge with an inwardly-turned flange, and a separate bottom resting on said flange and fitting closely against the bottom of said receptacle.

853,174. STABLE APPLIANCE. JESSE E. JONES, West Middleton, Ind. Filed Jan. 16, 1907. Serial No. 352,588.



Claim.—In a device of the class described, a plurality of brackets or supporting devices having flanges at the sides thereof provided with bearing openings and apertures, a longitudinal movable pipe supported in said bearing openings and having discharge openings in proximity to the flanged supporting members, L-shaped arms connected with the pipe adjacent to the supporting members and including laterally extending approximately horizontal members adapted to engage the apertures in the side flanges of said supporting members, hitching rings having tubular members fitted between the flanges of the supporting devices and adapted to be engaged by the horizontal members of the L-shaped arms, a water supply pipe adjacent to one end of the longitudinally movable pipe and having a valve the stem of which is provided with a crank arm, a link connecting said crank arm with the longitudinally movable pipe, a flexible duct connecting the latter with the supply pipe, and means for moving the longitudinally movable pipe.

853,175. CEMENT. THOMAS JONES, Acme, Tex. Filed Dec. 26, 1905. Serial No. 293,373.

Claim.—1. The method herein described of preparing cement, which consists in selecting comparatively pure gypsum rock, breaking the same, calcining said rock in an oxidizing atmosphere, crushing the residuum to powder, preparing potassium silicate and di-basic aluminium sulfate, grinding together the two last mentioned substances, and adding said substances to the powder made from said gypsum rock.

2. The method herein described of preparing cement, which consists in calcining gypsum in an oxidizing atmosphere, crushing the residuum to a powder, admixing caustic potash and siliceous sand so as to form a silicate therefrom, admixing said silicate with di-basic aluminium sulfate, grinding said silicate and said sulfate together so as to form an impalpable powder and promote chemical action therebetween, and admixing the resulting substance with said first-mentioned powder obtained from said gypsum.

3. The method herein described of preparing cement, which consists in calcining gypsum, reducing the same to an impalpable powder, calcining di-basic aluminium sulfate and reducing it to a powder, and admixing the two powders thoroughly together in the approximate proportion of fifty (50) pounds of di-basic aluminium sulfate to two thousand (2000) pounds of said calcined gypsum.

4. The method herein described of preparing cement, which consists in burning gypsum in an oxidizing atmosphere, reducing said gypsum to a powder, preparing potassium silicate, vitrifying and crushing the same, adding eighty-seven (87) pounds of di-basic aluminium sulfate to each one hundred and sixty (160) pounds of said potassium silicate, grinding together the two last mentioned components and allowing a chemical action to take place so as to produce thereby anhydrous alumina, potassium sulfate and silica, then adding the admixture of these substances last mentioned to said powder produced from said gypsum in the proportion of sixty (60) pounds of the admixture of alumina, potassium sulfate and silica to every two thousand (2000) pounds of said powder produced from said gypsum.

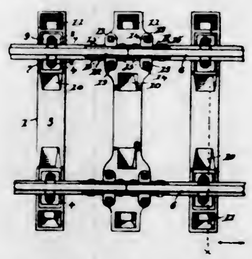
5. The method herein described of preparing cement, which consists in calcining gypsum, reducing the same to a powder, and admixing therewith calcined di-basic aluminium sulfate likewise in the form of a powder.

6. The method herein described of preparing cement, which consists in calcining gypsum, reducing the same to a powder, calcining di-basic aluminium sulfate, reducing the latter to a powder, and admixing said powders together in the proportion of two thousand (2000) pounds of the powder derived from said gypsum to sixty (60) pounds of said powder derived from said calcined di-basic aluminium sulfate.

7. The method herein described of preparing potassium bi-silicate, which consists in dissolving caustic potash in water, boiling the solution thus formed, adding silica to said solution while the latter is boiling, drying off the water so as to leave a solid mass and calcining the same, and admixing sulfuric acid with said mass for the purpose of nullifying the effect of any undesirable reduction of said silica.

8. The method herein described of preparing cement, which consists in reducing a silicate containing free potassium sulfate, in dissolving out said potassium sulfate so as to remove the same, and admixing the residuum with burned di-basic sulfate of alumina in the proportion of thirty (30) to forty (40) pounds of silica to sixty (60) pounds of the burnt di-basic aluminium sulfate.

853,176. METALLIC RAILWAY-TIE. JOHN KAYLOR, Decatur, Ill., assignor to Jacob F. Kaylor, Tazewell, Ill. Filed Oct. 5, 1906. Serial No. 337,622.



Claim.—1. A metallic railway tie having tamping slots leading obliquely from the upper surface of the tie to beneath the rail-sustaining parts thereof.

2. A metallic railway tie comprising upright side plates, rail-sustaining cross plates connecting the side plates, and a horizontal bearing plate having both its ends near said sustaining plates bent obliquely downward.

3. A metallic railway tie having oblique slots leading from its upper surface, inside the rails, to below the rail-sustaining parts of the tie, and also having bottomless pockets outside the rails.

4. A metallic railway tie composed of side bars 1, intermediate plate 3, rail-sustaining plates 2 and end plates 4 inclined inward and having the downward extensions 5; the rail-sustaining plates being separated from the other plates to form the slot 10 and the combined slot and pocket 11.

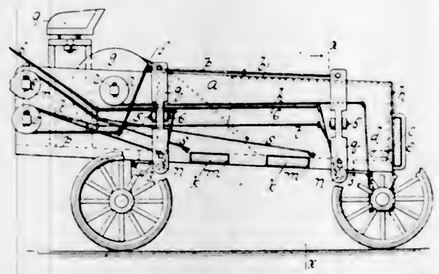
5. A metallic railway tie comprising upright side plates, rail-sustaining cross plates connecting the side plates, a horizontal bearing plate having both its ends near said sustaining plates bent obliquely downward, and end walls connecting said side plates at points remote from the sustaining plates, and inclining inward toward them.

853,177. FLUE-HOLE STOPPER. GEORGE W. KNAPP, Baltimore, Md., assignor to National Enameling and Stamping Company, a Corporation of New Jersey. Filed Dec. 8, 1906. Serial No. 346,834.



Claim.—A flue-stopper comprising an imperforate sheet-metal disk having a central depression closed by a sheet-metal panel, an annular wall around said panel and an undercut recess flush with the outer surface of the panel and extending all around, and an ornamented sheet of fabric in contact with the surface of said panel and the circular edge of said sheet of fabric projecting into the said annular undercut recess, whereby the ornamented sheet of fabric is held at the front of the panel without exposing any part of the back of the fabric material to the interior of the flue.

853,178. SNOW SHOVEL AND WAGON. MATHIAS KOTRASCHEK, New York, N. Y. Filed Aug. 3, 1906. Serial No. 329,115.

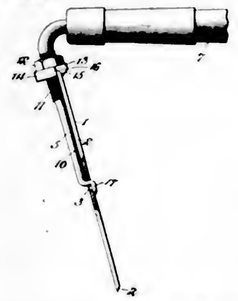


Claim.—1. The combination with a wagon having guides and loops, of a shovel or scoop adapted to slide along the guides and swing and move vertically at the loops, cords or connections for drawing the shovel out of and into the wagon and a shaft with pulleys for actuating the respective cords irrespective of the movements of the wagon.

2. The combination with a wagon having guides and loops fixed directly to the wagon of a shovel having its back portion hinged directly to and vertically movable in said loops, and means for moving the shovel out of the wagon to rest with its free edge on the ground facing away from the wagon, and means for swinging the free end of the shovel up and moving the shovel into the wagon.

853,179. HOE. JAMES S. LESTER, Atlanta, Ga. Filed Feb. 20, 1907. Serial No. 358,340.

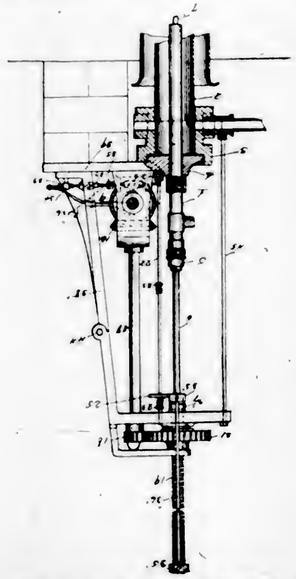
Claim.—1. A hoe comprising a blade, a handle having a shank detachably connected at its outer end with the blade and provided at its inner portion with screw threads, a clamping member having an eye to receive the shank and provided with a groove for the reception of one edge of the blade, and a nut engaging the screw threads of the shank for holding the clamping member in engagement with the blade.



2. A hoe comprising a blade provided with a polygonal opening, a shank having a polygonal lug at its outer end to fit within the said opening, the outer end of the shank being extended beyond the opening to engage the blade, a fastening device engaging the blade and connected with the shank for retaining the lug thereof in the opening of the blade, and means also carried by the shank for engaging the blade at one edge thereof.

3. A hoe comprising a blade, a handle having a shank fitting against the rear face of the blade and detachably connected at its outer end with the center of the blade, said shank being flattened to form a seat for the blade, and clamping means carried by the inner portion of the shank and detachably engaging the edge of the blade.

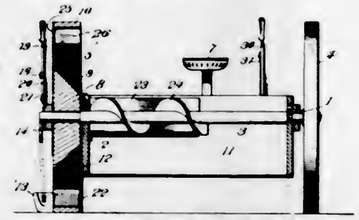
853,180. WELL PUMPING AND PULLING DEVICE. SAMUEL LIPPERT, Cleveland, Ohio. Filed May 15, 1905. Serial No. 260,369.



Claim.—The combination with the casing, tubing and pumping rod of a well of a platform secured to said casing.

a motor and shaft thereon, a hoisting drum on the platform, geared connections with said drum and motor shaft, a frame upon the platform through the upper portion, of which the pumping rod passes, driving mechanism operatively and automatically connecting the movements of the pumping rod, and motor shaft the said frame being hinged for temporary removal from engagement with said pumping rod, substantially as described.

853,181. SELF-LOADING DUMP-CART. ROBERT N. LIVERETT and JOHN D. HOOD, Boaz, Ala.; said Liverett assignor of one-half of his right to said Hood. Filed Oct. 6, 1906. Serial No. 337,780.



Claim.—1. In means of the class described, the combination of a supporting frame, a cart body carried by the frame, a ground wheel supporting the frame, said wheel comprising a hub, a rim, and spokes connecting the hub and rim and forming buckets in connection with the latter, inwardly projecting wings carried by the rim intermediate of the spokes, and means whereby the material elevated by the buckets is discharged into the cart body.

2. In means of the class described, the combination of a supporting frame, a cart body carried thereby, and a wheel supporting the frame, the said wheel comprising a hub formed with flared sides, a rim, and spokes connecting the hub and rim and forming buckets in connection with the latter, the flared sides of the hub serving to deflect the material elevated by the buckets into a cart body.

3. In means of the class described, the combination of a supporting frame, a cart body carried thereby, a wheel supporting the frame, said wheel comprising a hub formed with flared sides, a rim, and spokes connecting the hub and rim and forming buckets in conjunction with the latter, and inwardly projecting wings carried by the rim intermediate of the spokes, the flared formation of the hub serving to deflect the material elevated by the buckets into the cart body.

4. In means of the class described, the combination of a supporting frame, an axle mounted therein, wheels mounted on the axle, a cart body carried by the frame, one of the wheels carrying buckets for elevating dirt, a trough for delivering the dirt into the cart body, and a spiral conveyer located within the trough and operated by the axle.

5. In means of the class described, the combination of a supporting frame, an axle mounted therein, wheels mounted on said axle, one of said wheels being secured to the axle to compel rotation thereof, the other of said wheels constituting a dirt lifting or elevating device, and a conveyer operable by the axle for conveying material discharged from the dirt lifting wheel to the cart body.

6. In means of the class described, the combination of a supporting frame, and axle mounted therein, wheels mounted on said axle, one of said wheels being secured to the axle to compel rotation thereof, the other of said wheels constituting a dirt lifting or elevating device, and a conveyer mounted upon the axle for actuation thereby, for conveying material discharged from the dirt lifting wheel to the cart body.

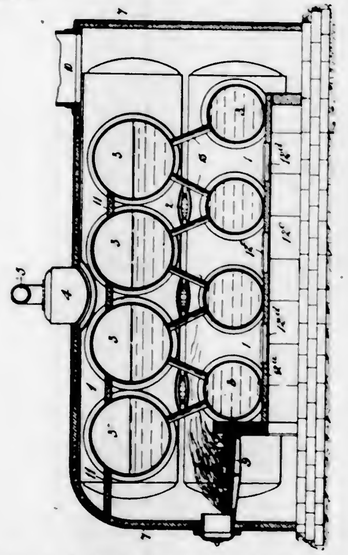
7. In means of the class described, the combination of a supporting frame, a cart body carried by the frame, a wheel for the cart body, said wheel carrying buckets in its periphery, means carried by the frame for throwing dirt into the buckets from one side of the wheel, a guard plate located upon the opposite side of the wheel, said buckets when in an elevated position discharging upon one side into the cart body, and a guard plate fitting against the opposite side of the upper portion of the wheel.

8. In means of the class described, the combination of a cart body, supporting wheels therefor, one of said wheels comprising a series of buckets, a plow for feeding material to the buckets from the outer side of the wheel when the buckets are in lowermost positions, a guard plate for preventing material from passing from the buckets at the inner side of the wheel when the buckets are receiving material, means for discharging material at the inner side of the wheel from the buckets into the cart body at the inner side of the wheel, and a guard plate for preventing the material in the buckets from passing therefrom in an outward direction when the buckets are in uppermost positions.

9. In means of the class described, the combination of a supporting frame, wheels supporting said frame, a cart body mounted on said frame, and tiltable relative thereto, an end gate for said cart body rigid with the frame, and means for tilting the cart body to effect the movement thereof relative to its end gate, whereby to dump the same.

10. In means of the class described, the combination of a supporting frame, ground wheels supporting said frame, one of said wheels comprising means for elevating dirt or like material, means for discharging the dirt or material from the wheel, a cart body mounted on the frame and adapted to receive material from the wheel aforesaid, an end gate for said cart body rigid with the frame, and means for tilting the cart body relative to its end gate to dump the same.

853,182. STEAM-GENERATOR. THOMAS LOWTHER, Ekaterinoslaf, Russia. Filed Oct. 13, 1906. Serial No. 338,743.



Claim.—1. In a steam generator, a plurality of horizontal and transversely arranged drums located in sets one above the other, said sets of drums being in communication with each other at their ends and the transverse drums thereof arranged to form an undulating path between the sets.

2. In a steam generator, a plurality of horizontal and transversely arranged drums located in communicating sets one above the other, a fire box, and an uptake or chimney, said sets of drums being arranged to form an undulating path between them from said fire box to said chimney or uptake.

3. In a steam generator, the combination with longitudinal or main drums, of a plurality of horizontal and transversely arranged drums located in sets one above the other and connected at their ends to said longitudinal or main drums so as to provide an undulating path for the heating gases, as set forth.

4. In a steam generator, the combination with longitudinal or main drums, of a plurality of horizontal and transversely arranged drums located in superposed sets displaced horizontally with respect to each other and connected at their ends to said longitudinal or main drums.

5. In a steam generator, the combination with longitudinal or main drums, of a plurality of horizontal and transversely arranged drums located in superposed sets, the pitch centers of the drums of one set being displaced to the extent of half the pitch dimension with respect to the transverse drums of the set next in order.

6. In a steam generator, the combination with a plurality of longitudinal or main drums arranged in superposed pairs, of a plurality of horizontal and transversely arranged drums connected in sets to said longitudinal or main drums so as to provide an undulating path for the heating gases between them, and means for connecting together the superposed pairs of main drums.

7. In a steam generator, the combination with a plurality of longitudinal or main drums arranged in superposed pairs, of a plurality of horizontal and transversely arranged drums connected to said longitudinal or main drums in sets displaced horizontally with respect to each other, and means for connecting together corresponding main drums of adjacent pairs.

8. In a steam generator, the combination with a plurality of longitudinal or main drums arranged in superposed pairs, of a plurality of horizontal and transversely arranged drums connected to said longitudinal or main drums in sets, the pitch centers of the individual drums of one of which are displaced to the extent of half the pitch dimension with respect to the individual drums of the set next in order, and means for connecting together corresponding drums of adjacent pairs of longitudinal or main drums.

9. In a steam generator, the combination with a plurality of longitudinal or main drums of a plurality of horizontal and transversely arranged drums connected to said longitudinal or main drums in sets displaced horizontally with respect to each other, and tubes connecting drums in one set with drums in an adjacent set.

10. In a steam generator, the combination with a plurality of longitudinal or main drums arranged in superposed pairs, of a plurality of horizontal and transversely arranged drums connected to said longitudinal or main drums in sets displaced horizontally with respect to each other, and tubes extending between drums in the adjacent sets of drums.

11. In a steam generator, the combination with a plurality of longitudinal or main drums arranged in superposed pairs, of a plurality of horizontal and transversely arranged drums connected to said longitudinal or main drums in sets displaced horizontally with respect to each other and tubes extending between corresponding drums of such sets aforesaid as are adjacent.

12. In a steam generator, the combination with a plurality of longitudinal or main drums arranged in superposed pairs, of a plurality of horizontal and transversely arranged drums of smaller cross sectional dimensions than said longitudinal or main drums and connected at opposite ends thereto in sets displaced horizontally with respect to each other, and tubular connections smaller in cross section than either of the longitudinal or transverse drums and connecting directly the longitudinal drums of the pairs which are adjacent.

13. In a steam generator, the combination with a pair of longitudinal or main drums semi-cylindrical in cross section, of a plurality of horizontal and transversely arranged drums having their ends connected to the flat sides of the longitudinal or main drums, as set forth.

14. In a steam generator, the combination with longitudinal or main drums, of a plurality of horizontal and transversely arranged drums located in sets one above the other and connected at their ends to the longitudinal or main drums, and means for providing an undulating and tortuous path for the heating gases through the generator.

15. A steam generator comprising in combination, a plurality of longitudinal or main drums, a plurality of horizontal and transversely arranged drums connected at their ends to the longitudinal or main drums and located in sets displaced horizontally with respect to each other, tubular connections between the several adjacent main drums, a fire grate adjacent to the first of the series of drums of the lowermost transverse set, a casing or generator setting for inclosing the several elements, means for conveying away the steam from the uppermost drums, and a chimney or uptake leading from the interior of said casing.

16. A steam generator comprising in combination, a plurality of longitudinal or main drums, a plurality of horizontal and transversely arranged drums connected at their ends to the longitudinal or main drums and located in sets displaced horizontally with respect to each other, tubes connecting the transverse drums in one set with those in an adjacent set and arranged in the path of the hot gas passing through the space between the adjacent sets of transverse drums, tubular connections between the several adjacent main drums, a fire grate adjacent to the first of the series of drums of the lowermost transverse set, a casing or generator setting for inclosing the several elements, means for conveying away the steam from the uppermost drums, and a chimney or uptake leading from the interior of said casing.

853,183. CONCRETE OR SIMILAR ARCH. DANIEL B. LUTEN, Indianapolis, Ind. Filed June 24, 1905. Serial No. 266,818.



Claim.—1. An arch of concrete or other material having reinforcing members embedded near intrados and extrados alternately, the ends of said members overlapping and extending across the arch rib at the shearing regions.

2. An arch of concrete or other material having reinforcing members passing through the tensional regions, the ends of said members being bent across the arch rib and overlapping at the shearing regions.

3. An arch of concrete or other material having reinforcing members passing through the tensional regions, the ends of said members being bent across the arch rib at the shearing regions and attached to one another.

4. An arch of concrete or other material having reinforcing members embedded near the intrados and extrados alternately, the ends of said members overlapping and crossing the arch rib at the shearing regions, but displaced longitudinally with respect to one another.

5. An arch having reinforcing members embedded near alternate intrados and extrados only, but with ends overlapping and extending across the arch ring at points alternately displaced.

6. A concrete arch having reinforcing tension members along alternately opposite portions only of intrados and extrados, such tension members having transverse members extending transversely of the arch rib.

7. A concrete arch having a reinforcing tension member along a part only of the intrados, said member having attached thereto diverging members arranged at an angle thereto and extending into the arch, and other reinforcing members near the extrados at alternately opposite points.

8. A concrete arch rib having reinforcing tension members along a portion of the intrados, with other diverging members attached to the reinforcing members and extending across the arched rib, and other tension members embedded near alternately opposite portions of extrados only, but with the ends overlapping the ends of the intrados

tension members and crossing the arch rib at points longitudinally displaced with respect to one another.

9. A concrete arch having reinforcing tension members extending along the intrados and the extrados in the tensional regions, the members in the intrados having diverging members attached thereto and extending into the arch rib, the ends of the members in the extrados crossing the rib to join the intrados members.

10. An arch or bridge reinforced with embedded tension members said members each having a plurality of diverging shearing members attached near one end, said tension members being arranged alternately to provide a materially greater reinforcement near one face than near the immediately opposite face.

11. An arch having projecting ribs extending from the arch ring back of the abutments.

12. A concrete bridge with ribs projecting alternately above and below a continuous transverse member.

13. An arch having projecting ribs containing embedded tension members alternately on opposite sides of the arch ribs, said tension members being continuous through the arch from rib to rib.

14. An arch having a barrel or ring constructed of the desired form, said barrel or ring being provided with end flanges or projecting ribs to give the desired appearance to the end of the arch.

15. An arch having its ring or barrel constructed for efficiency without regard to appearance, said ring or barrel being provided with end flanges or projecting ribs to give the structure the desired appearance at the ends.

16. An arch of concrete with the exposed faces of the arch presenting a different curvature from the body of the arch.

17. An arch of concrete having ribs projecting from the intrados near the ends of the barrel and at a different curvature from that of the barrel.

18. A concrete bridge with an arched rib at the end of different form from the main portion of the bridge.

19. A concrete bridge with ribs projecting alternately above and below a continuous transverse member, and reinforcing members embedded in said ribs.

20. A bridge of concrete or similar material with ribs projecting above and below, and with tension members having shearing members attached thereto embedded in the lower ribs.

21. A bridge of concrete or the like with ribs projecting both above and below and with a roadway between the upper ribs and having reinforcing members in the lower ribs.

22. A bridge of concrete or similar material reinforced with tension members extending through the tensional regions with substantially parallel endings in the shearing regions.

23. A concrete bridge with ribbed and reinforced abutments.

24. An arch of concrete with abutments reinforced with vertical ribs.

25. An arch of concrete with ribs projecting from the abutments.

26. A concrete arch having projecting ribs alternating longitudinally on opposite sides and tension members embeded in the ribs.

27. A concrete arch having projecting ribs alternating longitudinally on opposite sides.

28. A concrete bridge with tension members embedded on opposite sides of a region of minimum bending moments with splices between opposite members near regions of minimum bending moment.

29. An arch with embedded reinforcing members on opposite sides of a region of minimum bending moment welded or spliced to one another across the region of minimum bending moment.

30. A concrete arch with tension members embedded crossing the arch rib near the points of minimum bending moment, said tension members being welded, spliced or joined near the points of crossing to form a continuous member following both surfaces of the arch rib.

31. A concrete arch with embedded tension members passing through regions of tension and welded or spliced between the regions of tension to form a member continuous between the regions of tension.

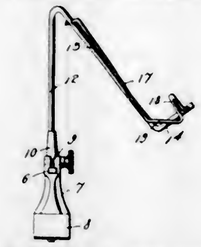
32. An arch of concrete or similar material with a metal tension member embedded near the extrados and spliced or welded near a region of minimum bending moment, to a metal tension member embedded near the intrados.

33. A concrete arch having an external rib projecting above the extrados and back of the abutment and a tension member passing from the arch into the projecting rib.

34. A concrete bridge having a reinforced rib projecting back of the body of the abutment force.

35. An arch of concrete or similar material having a reinforced rib extending back of the abutment, said reinforcement continuing into and through the arch ring.

853,184. BOOK-HOLDER. HIRAM W. MILLER, Detroit, Mich. Filed June 23, 1906. Serial No. 323,083.

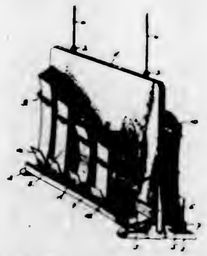


Claim.—1. A book holder for desks, comprising clamping brackets adapted to be secured to the desk, a rod supported at opposite ends by said brackets, and a book rest mounted on the rod and slidable thereon between the brackets.

2. A book holder for desks, comprising a rod adapted to be supported horizontally upon the desk, a socket piece slidable thereon from one end to the other, and a book rest having an upright post fitting in the socket and rotatable therein to turn the rest to various angles.

3. A book rest comprising an upright supporting post, and a frame mounted thereon having a lower bar with upwardly projecting bends forming stops adapted to rest against the leaves of an open book, and having side bars provided with forwardly inclined portions at their lower ends, leading toward said stops.

853,185. PAPER-BAG HOLDER. WILLIAM E. MORROW, Steubenville, Ohio. Filed Nov. 12, 1906. Serial No. 343,018.

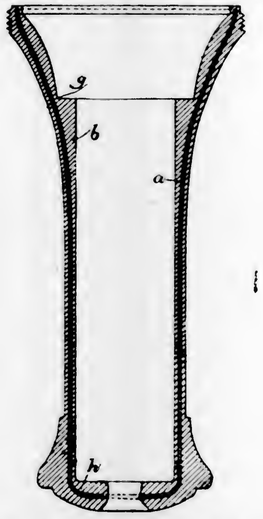


Claim.—1. In a holder for paper bags, the combination of a vertically disposed board, bag supporting shelves arranged at an inclination on each side of the board along the lower end thereof, each shelf comprising a plate flanged upwardly at its inner edge and secured to the board and having a flange on its outer edge constituting a bag guard, a plurality of bag holding bails fixedly secured at their inner ends to the board and arranged at different heights on said board, and slides on said bails between which and the closed outer ends of the bails the paper bags are received.

2. In a holder for paper bags, the combination of a supporting board, two inclined supporting shelves arranged one at each side of the board along the lower edge thereof, each shelf adapted to support a series of packages of paper bags of different heights, and a plurality of bails fixedly secured at their inner ends to the board and arranged at different heights on said board to hold packages of paper bags of various heights, and a slide on each bail between which and the outer ends of the bails the bags are received, substanially as described.

3. A bag holder comprising a vertical support, an inclined shelf secured to said support adjacent its lower edge and extending throughout the width of the support to support a plurality of packages of paper bags, and a plurality of bails fixedly secured at the inner ends to the vertical support at different heights thereof to accommodate paper bags of different lengths, and a slide on each bail, between which and the outer end of the bail the paper bags are received.

853,186. TELEPHONE. WILLIAM J. MURDOCK, Boston, Mass. Filed May 26, 1902. Serial No. 109,085.



Claim.—1. In a composite structure for a telephone, a part made of the ordinary brittle materials used for such purposes, reinforced by tough, fibrous substances incorporated as a core with the said ordinary materials, and a binding agent capable of being rendered pasty to unite the parts, substantially as described.

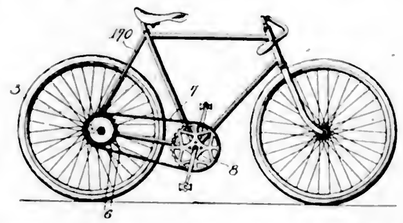
2. In a composite structure for a telephone, a core of tough substances of fibrous textile characteristics impregnated with agents capable of being made pasty, combined with ordinary brittle materials used for telephone parts applied in pasty condition covering the said core, and united therewith in more than surface contact, substantially as described.

3. In a composite structure for a telephone, a part made of ordinary brittle materials used for such purposes, combined with tough fibers, filaments or threads impregnated with thick pasty stiffening agents, the said fibrous substances permeating the said brittle materials in permanent union therewith, substantially as described.

4. In a composite structure for a telephone, a core of fibrous substance for a part, thick pasty liquids capable of hardening permeating and coating the said substance, and material ordinarily used for the part inclosing, covering and uniting with the said fibrous substance, substantially as described.

5. In a composite structure for a telephone, a core of fibrous textile substance impregnated and coated with pasty liquids capable of hardening, combined with materials as the ordinary composition used in this trade to form a part of the instrument, so that the said material and substance intermingle or coalesce at the place of union to form an integral structure, substantially as described.

853,187. DRIVING-GEAR FOR BICYCLES. JOHN MCAULIFF, Boston, Mass. Filed Oct. 6, 1906. Serial No. 337,711.



Claim.—1. In a bicycle, a frame having a rear fork one leg of which is non-bifurcated and provided with an offset portion, a stud detachably secured to the outside of said leg, a driving member mounted on said stud and situated entirely outside of the leg, said driving member comprising a body portion and an annular flange having internal gear teeth, said flange being received by the offset portion of the frame, and a pinion fast on the hub of the rear wheel and meshing with the gear teeth of the driving member.

2. In a driving gear for bicycles, a plate or bar 18 fast to the outer face of the usual sprocket on the rear wheel, a pinion, pins 17 projecting therefrom and passing through said plate or bar into the sprocket wheel, an internal gear mounted on the outside of the frame and meshing with said pinion, and means to drive said gear.

3. In a bicycle, the combination with a frame having a rear fork provided with non-bifurcated leg presenting an offset portion, and a stud detachably secured to the outside of said leg, of a driving member mounted on said stud and situated entirely outside of the leg, said driving member comprising a body portion and an annular flange having internal gear teeth and external sprocket teeth situated non-centrally of the internal gear teeth and a pinion fast to the hub of the rear wheel and meshing with the gear teeth of the driving member.

4. In a bicycle, the combination with a frame having a rear fork one leg of which is non-bifurcated and is provided with an offset portion, of a stud detachably secured to the outside of said leg and adjustable longitudinally thereof, a driving member mounted on said stud and situated entirely outside of the leg, said driving member comprising a body portion and an annular flange having internal gear teeth, said flange being received by the offset portion of the frame, and a pinion fast on the hub of the rear wheel and meshing with the gear teeth of the driving member.

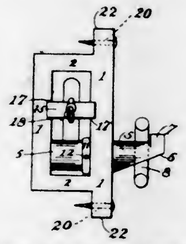
853,188. AUTOMATIC CURTAIN HOOK AND RELEASE FOR VESTIBULE-CARS. CLYDE MCCOY and WILLIAM MORTON, Los Angeles, Cal. Filed Apr. 4, 1906. Serial No. 309,933.

Claim.—1. A vestibule curtain hook and release comprising a bevel-ended hook-shaft carrying a pin thereon, a slotted slide, means for supporting the same, in combination with a curtain fastened to one end of the coupled and abutting cars carrying means adapted to be removably engaged from the said hook-shaft and to be retained thereon.

2. A vestibule curtain hook and release comprising a bracket having bearings in the side thereof, a shaft mounted in said bearings and provided with a bevel near the end and carrying a hook or ring, the shaft pin remov-

ably secured to the shaft adapted to receive a hook or ring upon the end of the curtain attached to the abutting end of a coupled car to that on which the bracket is fastened.

3. An automatic curtain hook and release comprising a bracket having bearings in the sides thereof adapted to be secured to the abutting ends of coupled cars, a shaft carrying a removable pin adapted to engage a slotted slide reciprocating in grooves in the sides of the bracket, the said shaft having a beveled end-portion adapted to engage means fastened to a curtain attached to an abutting or coupled car.

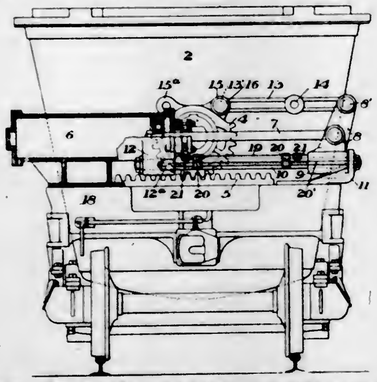


4. A bracket for curtains of vestibule cars having grooves and bearings in the sides thereof, a bevel-ended hook-shaft journaled in said bearings carrying a pin, a slotted slide secured at one end to a curtain having one end thereof fixed to an abutting coupled car, said slide adapted to reciprocate in grooves in the side of the bracket and a bevel-ended hook-shaft adapted to engage a curtain securely fixed at the opposite end of an abutting car from that on which the bracket is fastened.

5. A vestibule car curtain hook and release comprising brackets secured to abutting ends of cars, said brackets carrying bevel-ended hook-shafts in combination with a curtain fixed to the abutting end of a coupled car to that on which the bracket is fastened, said curtain carrying means adapted to engage and disengage the said bevel-ended hook-shafts.

6. An automatic curtain hook and releasing device for coupled vestibule cars comprising a bracket carrying a slotted slide, a bevel-ended hook-shaft and a shaft-pin removably fastened to the shaft, the said slide adapted to reciprocate in grooves of the bracket, in combination with a curtain having a hook or ring secured to the ends thereof for engaging and disengaging the hook beveled end of the shaft.

853,189. LOCK FOR DUMPING-CARS. WILLIAM W. MCKELVEY, Youngstown, Ohio, assignor to The William B. Pollock Company, Youngstown, Ohio, a Corporation of Ohio. Filed Jan. 2, 1907. Serial No. 350,324.



Claim.—1. A ladle car having a movable cross head, with a shiftable link connected to the trunnions and a longitudinally movable hinged locking bar arranged to contact with the cross-head and lock the ladle upright on the car; substantially as described.

2. A ladle car having a movable cross-head with a shiftable link connected to the trunnions, and a hinged locking bar, the opposite ends of said bar engaging with the cross-head, and a stationary element to lock the ladle in its normal position; substantially as described.

3. A ladle car having a movable cross-head, with a shiftable link connected to the trunnions and a longitudinally movable hinged locking bar arranged to engage with the cross-head and lock the ladle upright on the car when arranged for tilting in either direction; substantially as described.

4. A ladle car having a movable cross-head, with a shiftable link connected to the trunnions and a longitudinally movable hinged locking bar arranged to engage with the cross-head and lock the ladle upright on the car when arranged for tilting in either direction and a handle for moving the bar into and out of its operative position; substantially as described.

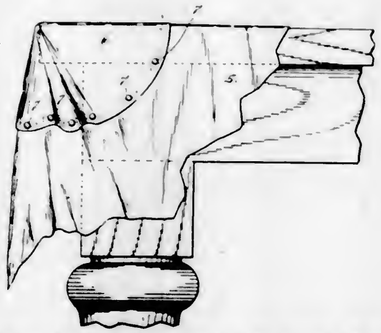
5. A ladle car having a movable cross-head with a shiftable link connected to the trunnions and arranged to tilt the ladle in either direction, and a longitudinally movable locking bar pivoted on the car and arranged to contact with either end of the cross-head and prevent movement of the cross-head on the car; substantially as described.

6. In a tipping ladle car, a ladle, a ladle tipping motor having a movable element connected with the ladle, and a longitudinally movable locking bar arranged to contact with the movable element and lock the ladle upright on the car; substantially as described.

7. In a tipping ladle car, a ladle, a ladle tipping motor having a movable element connected with the ladle, a longitudinally movable locking bar arranged to contact with the movable element and lock the ladle upright on the car and arranged for tipping in either direction; substantially as described.

8. In a tipping ladle car, a ladle, a ladle tipping motor having a movable element connected with the ladle and a hinged locking bar arranged to contact with said movable element and either of two stationary elements located on opposite sides of said movable element and lock the ladle upright on the car; substantially as described.

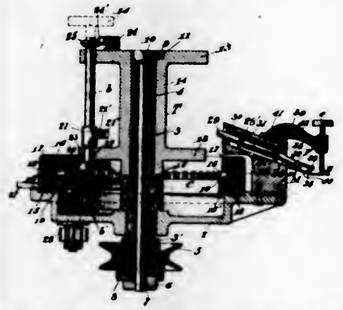
853,190. OIL-CLOTH PROTECTOR. MARGARET I. MCMILLAN, Denver, Colo. Filed Feb. 10, 1905. Serial No. 245,072.



Claim.—1. The combination with an oilcloth table covering, of corner pieces composed of thin flexible metal applied to the covering exteriorly and conforming to the location of the table corners when the covering is in place thereon, the depending portions of the said corner pieces being crimped and the corresponding portions of the table covering folded, the folds of the covering being retained by the crimped portions of the corner pieces.

2. A table cover provided with a number of corner pieces applied thereto exteriorly, the location of the corner pieces conforming to the portions of the cover engaged by the table corners when the cover is in place, the material of the corner pieces being thin and flexible, and of such character as to retain its shape when bent to conform to the shape of the corner portions of the table cover when in position, and suitable means for removably fastening the corner pieces in place.

853,191. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation, a Corporation of New Jersey. Filed Apr. 19, 1901. Renewed May 25, 1904. Serial No. 209,799.



Claim.—1. In a mechanical movement, the combination of a driving member; a rotatable axially shiftable member which by a partial rotation is engaged by the driving member and may be further partially but not completely rotated by said driving member and which by being shifted axially of the driving member may be completely rotated by said driving member; means for rotating the rotatable member into engagement with the driving member; and means for shifting the rotatable member axially of the driving member.

2. In a mechanical movement, the combination of a driving member; a rotatable axially shiftable member which by a partial rotation is engaged with the driving member and may be further partially but not completely rotated by said driving member and which by being shifted axially of the driving member may be completely rotated by said driving member; means for rotating the rotatable member into engagement with the driving member; and means for disengaging the rotatable member from the driving member.

3. In a mechanical movement, the combination of a driving member; a rotatable axially shiftable member which by a partial rotation is engaged by the driving member and may be further partially but not completely rotated by said driving member and which by being shifted axially of the driving member may be completely rotated by said driving member; means for rotating the rotatable member into engagement with the driving member; means for shifting the rotatable member axially of the driving member; and means for disengaging the rotatable member from the driving member.

4. In a mechanical movement, the combination of a driving member; a rotatable axially shiftable member which by a partial rotation is engaged with the driving member and may be further partially but not completely rotated by said driving member and which by being shifted axially of the driving member may be completely rotated by said driving member; means for rotating the rotatable member into engagement with the driving member; and co-active cam members operative to shift the rotatable member axially.

5. In a mechanical movement, the combination of a driving member; a rotatable axially shiftable member which by a partial rotation is engaged with the driving member and may be further partially but not completely rotated by said driving member and which by being shifted axially of the driving member may be completely rotated by said driving member; means for rotating the rotatable member into engagement with the driving member; and co-active cam members operative to shift the rotatable member axially and also to angularly position said rotatable member.

6. In a mechanical movement, the combination of a driving member; a rotatable axially shiftable member which by a partial rotation is engaged with the driving member and may be further partially but not completely rotated by said driving member and which by being shifted axially of the driving member may be completely rotated by said driving member; a peripherally beveled disk carried by the rotatable member; and a resilient member having beveled faces co-active with the periphery of the disk, and effective to axially position the rotatable member.

7. In a mechanical movement, the combination of a driving member; a rotatable axially shiftable member which by a partial rotation is engaged with the driving member and may be further partially but not completely rotated by said driving member and which being shifted axially of the driving member may be completely rotated by said driving member; means for effecting the engagement of the rotatable member to cause its partial rotation by the driving member; co-active cam members operative to shift the rotatable member axially; and a stationary cam member effective to reversely shift the rotatable member axially.

8. In a mechanical movement, the combination of a driving member; a rotatable axially shiftable member which by a partial rotation is engaged by the driving member and may be further partially but not completely rotated by said driving member and which by being shifted axially of the driving member may be completely rotated by said driving member; means for shifting the driving member axially to effect the engagement of the rotatable member with and thereby cause its complete rotation by the driving member; a stationary cam member effective to shift the rotatable member axially and thereby disengage the rotatable member from the driving member; a peripherally beveled disk carried by the rotatable member; and a resilient member having beveled faces co-active with the periphery of the disk and effective to axially position the rotatable member.

9. In a mechanical movement, the combination of two elements having engageable faces; a third element rigidly connected with one of said elements and having a face intermittently engageable with the other one of said elements; means for engaging the engageable face of the third element with the element with which it is engageable; means for engaging the engageable faces of the two first-mentioned elements; and means for disengaging the engageable faces of said elements.

10. In a mechanical movement, the combination of two elements having engageable faces; a third element rigidly connected with one of said elements and having a face intermittently engageable with the other of said elements; means for engaging the engageable faces of the third element with the element with which it is engageable; means for engaging the engageable faces of the first-mentioned elements; means for disengaging the engageable faces of said elements; and means for definitely positioning said disengaged elements.

11. In a mechanical movement, the combination of two members having gear teeth and meshable with each other; a third member rigidly connected with one of said members and having a partial set of teeth meshable with the other one of said members and also having between two of said teeth a toothless portion non-contactible with the member which is meshable with the teeth of said third member; means for meshing the teeth of the third member with the member with which they are meshable; means for meshing the two first-mentioned members; and means for unmeshing the teeth of said members.

12. In a mechanical movement, the combination of two members having gear teeth and meshable with each other; a third member rigidly connected with one of said members and having a partial set of teeth meshable with the other one of said members and also having between two of said teeth a toothless portion non-contactible with the

member which is meshable with the teeth of said third member; means for meshing the teeth of the third member with the member with which they are meshable; means for meshing the two first-mentioned members; means for unmeshing the teeth of such member; and means for definitely positioning the disengaged members.

13. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable member mounted on the turret; an equally-toothed wheel; a spur gear-wheel mounted on the orbitally rotatable member and having a segmental portion on which the teeth are shortened axially of said wheel, the latter being axially shiftable to two positions in one of which positions all the teeth of said wheel are engageable with the teeth of the equally-toothed wheel and in the other of which positions only the axially longer teeth of said spur gear-wheel are engageable with the equally-toothed wheel; and means for shifting one of said toothed wheels axially.

14. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable member mounted on the turret; an equally-toothed wheel; a spur gear-wheel mounted on the orbitally rotatable member and having a segmental portion on which the teeth are shortened axially of said wheel, the latter being axially shiftable to two positions in one of which positions all the teeth of said wheel are engageable with the teeth of the equally-toothed wheel and in the other of which positions only the axially longer teeth of said spur gear-wheel are engageable with the equally-toothed wheel; and co-active cam members mounted on the turret and on the orbitally rotatable member respectively and operative to shift one of said wheels axially.

15. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable member mounted on the turret; an equally-toothed wheel; a spur gear-wheel mounted on the orbitally rotatable member and having a segmental portion on which the teeth are shortened axially of said wheel the latter being axially shiftable to two positions in one of which positions all the teeth of said wheel are engageable with the teeth of the equally-toothed wheel and in the other of which positions only the axially longer teeth of said spur gear-wheel are engageable with the equally-toothed wheel; and a stationary cam member engageable with the orbitally rotatable member and effective to shift one of said wheels axially.

16. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable member mounted on the turret; an equally-toothed wheel; a spur gear-wheel mounted on an orbitally rotatable member and having a segmental portion on which the teeth are shortened axially of said wheel the latter being axially shiftable to two positions in one of which positions all the teeth of said wheel are engageable with the teeth of the equally-toothed wheel and in the other of which positions only the axially longer teeth of said spur gear-wheel are engageable with the equally-toothed wheel; a peripherally beveled disk carried by the orbitally rotatable member; and a resilient member having beveled faces co-active with the periphery of the disk and effective to axially position the orbitally rotatable member.

17. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable member mounted on the turret; an equally-toothed wheel; a spur gear-wheel mounted on the orbitally rotatable member and having a segmental portion on which the teeth are shortened axially of said wheel the latter being axially shiftable to two positions in one of which positions all the teeth of said wheel are engageable with the teeth of the equally-toothed wheel and in the other of which positions only the axially longer teeth of said spur gear-wheel are engageable with the equally-toothed wheel; and co-active cam members operative to shift the rotatable member axially and also to angularly position said rotatable member.

18. In a mechanical movement, the combination of a rotatable turret; an axially shiftable member mounted in the turret and carrying a peripherally beveled disk; a resilient member mounted on the turret and having beveled faces co-active with the periphery of the disk and effective to axially position the orbitally rotatable member.

19. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable and axially shiftable member mounted in said turret and carrying a peripherally beveled disk; a stationary cam engageable with the rotatable and axially shiftable member and effective to axially shift said member; and a resilient member mounted on the turret and having beveled faces coactive with the periphery of the disk and effective to axially position the orbitally rotatable and axially shiftable member.

20. In a mechanical movement, the combination of a rotatable turret; an axially shiftable member mounted in the turret and carrying a peripherally beveled disk; a stationary cam member engageable with the axially shiftable member and effective to axially shift said member; and a resilient member mounted on the turret and having beveled faces co-active with the periphery of the disk and effective to axially position the axially shiftable member.

21. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable and axially shiftable member mounted on said turret; a stationary cam member engageable with the orbitally rotatable and axially shiftable member and effective to axially shift said member; and co-active cam members mounted on said turret and on the orbitally rotatable and axially shiftable member respectively and operative to axially shift said orbitally rotatable and axially shiftable member.

22. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable and axially shiftable member mounted on said turret and carrying a peripherally beveled disk; co-active cam members mounted on said turret and on the orbitally rotatable and axially shiftable member respectively and operative to axially shift said orbitally rotatable and axially shiftable member; a stationary cam member engageable with the orbitally rotatable and axially shiftable member and effective to axially shift said member; and a resilient member mounted on the turret and having beveled faces co-active with the periphery of the disk and effective to axially position the orbitally rotatable and axially shiftable member.

23. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable and axially shiftable member mounted on said turret; driving mechanism engageable with and effective to rotate said member; co-active cam members effective to cause the orbitally rotatable and axially shiftable member to engage with the driving mechanism and to angularly position said orbitally rotatable and axially shiftable member; and a stationary cam member engageable with the orbitally rotatable and axially shiftable member and effective to shift said member.

24. In a mechanical movement, the combination of a rotatable turret; an orbitally rotatable and axially shiftable member mounted on said turret and carrying a peripherally beveled disk; driving mechanism engageable with and effective to rotate said member; co-active cam members effective to cause the orbitally rotatable and axially shiftable member to engage with the driving mechanism; and a resilient member mounted on the turret and having beveled faces co-active with the periphery of the disk and effective to axially position the orbitally rotatable and axially shiftable member.

25. In a mechanical movement, the combination of a driving member; a rotatable member which by an incipient partial rotation is engaged with the driving member and may be further partially rotated by said driving member and which by being shifted axially of the driving member may be completely rotated by said driving member; selective mechanism for rotating the rotatable member into engagement with the driving member; and means for shifting the rotatable member axially of the driving member.

26. In a mechanical movement, the combination of a driving member; a rotatable member engageable therewith and shiftable axially into a position where it is partially rotatable by said driving member and also shiftable axially into another position in which it is completely rotatable by said driving member; and selective mechanism for effecting the engagement of the rotatable member to cause its rotation by the driving member.

27. In a mechanical movement, the combination of two members having gear teeth and meshable with each other; a third member rigidly connected with one of said members and having a partial set of teeth meshable with the other one of said members and also having between two of said teeth a toothless portion non-contactible with the member which is engageable with the teeth of said third member; selective mechanism for meshing the teeth of the third member with the member with which they are meshable; and means for meshing the two first-mentioned members.

28. The combination, with a carrier, of a rotatably-driven member mounted thereon and provided with a recessed portion; a driving member in juxtaposition to which the said recessed portion is located during the movement of the carrier; and means for shifting the driven member axially to engage the same with the driving member.

29. The combination, with a carrier, of a driven member mounted thereon and consisting of a gear-wheel a portion of whose teeth is removed; a driving member in juxtaposition to which this recessed portion of the gear-wheel is located during the movement of the carrier; a gear segment located at the side of said recessed portion; and means for moving the driven member axially for engaging the same with the driving member.

30. The combination, with a carrier, of a driven member consisting of a gear-wheel a portion of whose teeth, measured axially of the gear-wheel, is removed; a driving member in juxtaposition to which this recessed portion of the gear-wheel is located during the movement of the carrier; a gear segment located at the side of the recessed portion; and means for moving the gear-wheel axially to engage with the teeth of said segment.

31. The combination, with a rotary carrier or turret, of a driven member consisting of a gear-wheel a portion of whose teeth, measured axially of the gear-wheel, is removed; a driving member in juxtaposition to which this recessed portion of the gear-wheel is located during the movement of the carrier; a gear segment located at the side of the recessed portion; and means for moving the gear-wheel axially to engage with the teeth of said segment.

32. The combination of a carrier; a gear-wheel mounted thereon and adapted to be shifted axially; a driven member; a gear-wheel shifter moving with the carrier and operating to shift the gear-wheel axially in one direction; and means for moving the gear-wheel axially in the opposite direction.

33. The combination of a carrier; a gear-wheel mounted thereon and adapted to be shifted axially, and a gear-wheel shifter consisting of a cam moving with said gear-wheel and a corresponding cam-shaped portion on the carrier and adapted to co-operate with the former cam to move the gear-wheel axially.

34. The combination of a carrier; a gear-wheel mounted thereon and adapted to be shifted axially; a gear-wheel shifter consisting of a cam moving with said gear-wheel and a corresponding cam-shaped portion on the carrier and adapted to co-operate with the former cam to move the gear-wheel axially; and means for moving the gear-wheel axially in the opposite direction.

35. The combination, of a carrier; a gear-wheel mounted thereon and adapted to be shifted axially; a gear-wheel shifter consisting of a cam moving with said gear-wheel and a corresponding cam-shaped portion on the carrier and adapted to co-operate with the former cam to move the gear wheel axially; and means consisting of a fixed cam-faced member and a cam arm, adapted to coact with said member to shift the gear-wheel axially, for moving the gear-wheel axially in the opposite direction.

36. The combination, of a carrier; a gear-wheel mounted thereon and adapted to be shifted axially; a gear-wheel shifter consisting of a cam moving with said gear-wheel and a corresponding cam-shaped portion on the carrier and adapted to co-operate with the former cam to move the gear-wheel axially; and means consisting of a fixed cam-faced member and a cam arm, adapted to coact with said member to shift the gear-wheel axially, for moving the gear-wheel axially in the opposite direction, and means for holding the gear-wheel in its two axial positions and for positioning the gear-wheels in a definite rotarial position with respect to the carrier.

37. In a mechanical movement, the combination of a carrier; a feed actuator; a member mounted on the carrier and shiftable axially to engage the feed actuator; co-active cam members effective to shift said shiftable member; a peripherally beveled disk carried by the axially shiftable member; and a resilient member having beveled faces co-active with the periphery of the disk and effective to axially position the axially shiftable member.

38. In a mechanical movement, the combination of a carrier; a feed actuator; and a member mounted on the carrier and shiftable axially to engage the feed actuator.

39. In a mechanical movement, the combination of a carrier; a feed actuator; a member mounted on the carrier and shiftable axially to engage the feed actuator; a peripherally beveled disk carried by the axially shiftable member; and a resilient member having beveled faces co-active with the periphery of the disk and effective to axially position the axially shiftable member.

40. A driving element consisting of a gear-block having a continuous peripheral portion with recesses formed therein; teeth provided with stop-shoulders and located in said recesses; and springs inserted in the recesses between the teeth and the gear-block.

41. A driving member consisting of a gear-block having a continuous peripheral portion with recesses formed therein; teeth located in said recesses; and resilient members severally interposed between the respective teeth and the peripheral portion of the gear-block and urging the teeth outward from said recesses.

42. A latch mechanism, comprising in combination, a latch, an escapement provided with two catches, a fulcrum support for the escapement, and a spring for projecting the latch when released and operating to disengage one catch and cause the engagement of the other.

43. The combination, of a latch, provided with two catches one in advance of the other, an escapement provided with corresponding catches, a fulcrum support for the escapement, and a spring operating to change the relative angular position of the fulcrum support.

44. The combination, of a frame provided with an opening, a latch located in the opening and provided with two catches, one in advance of the other; a fulcrum-support for the escapement pivoted in the said opening, and a spring operating to change the relative angular position of the fulcrum support.

45. The combination, of a latch, provided with two catches, one in advance of the other, an escapement provided with corresponding catches, a fulcrum support, and a spring for projecting the latch when released and operating to change the relative angular position of the fulcrum support to hold one of the catches of the escapement in a position to engage with the corresponding catch on the latch.

46. The combination of a rotatable turret; a torsionally resilient member disposed axially in line with said turret and connected therewith at one end; and a driving member connected with the other end of the torsionally resilient member.

47. The combination of a turret; a member carried thereby and engageable with a fixed member; a torsionally resilient member disposed axially in line with said turret and connected therewith at one end; and a driving member connected with the other end of the torsionally resilient member.

48. In a mechanical movement, the combination of a driving member, a rotatable axially shiftable member for engagement with the gear teeth of the driving member when partially rotated for further partial but not complete rotation, and for engagement therewith for complete rotation when shifted axially, means for inaugurating the rotation of said member into engagement with the driving member and means for disengaging the same from the driving member.

49. In a mechanical movement, the combination of a carrier, an actuator embodying a gear and a member having a complete gear shiftable axially to mesh with the gear on said actuator, and a segmental gear on a parallel plane and shiftable angularly to mesh with the said gear on said actuator.

50. The combination of an orbitally movable and rotary gear, of a gear adapted to mesh therewith, resilient means to initially revolve said former gear, means to put said gears into mesh, and resilient means to ease the strain incident to inaccuracies in the initial meshing of the gears.

51. In a mechanical movement, the combination of a driving member, a rotatable axially shiftable member, when partially rotated for engagement with the gear teeth of the driving member, for partial but not complete rotation by said driving member, and when shifted axially and its gear teeth continually meshing with those on the said driving member for complete rotation thereby, means for angularly shifting the rotatably engaged member into engagement with the driving member, means for axially shifting said driving member and effective upon the inauguration of the said rotation, and means for disengaging said member from the driving member.

52. The combination with an axially shiftable shaft, of a gear-wheel fast therewith, means for moving said shaft through an orbital path, a driving gear, means for axially shifting said shaft for bringing the said gear-wheel into mesh with said driving gear, and means for returning said shaft and gear-wheel to idle position.

53. The combination with an axially shiftable gear-wheel and means for revolving the same, of means for axially shifting said gear-wheel comprising a cam fast with said gear-wheel and a corresponding cam-shaped portion fast with said revolving means for co-operation with said cam.

54. In a mechanical movement, the combination of a driving member, a rotatable axially shiftable member, which, by a partial rotation is engaged with the driving member and may be further partially but not completely rotated by said driving member and which, by being shifted axially of the driving member, may be completely rotated by said driving member, means for rotating the rotatable member into engagement with the driving member, and means for rotating the rotatable member for disengaging the same from the driving member.

55. The combination with a carrier, of a driven member mounted thereon and consisting of a gear-wheel, a portion of whose teeth is removed, a driving member in juxtaposition to which this recessed portion of the gear-wheel is located during the movement of the carrier, a gear segment located in an axial plane parallel with the said recessed portion, and means for moving the driven member axially for engaging the gear segment with the driving member.

56. In a mechanical movement, the combination with a carrier, of an actuator embodying a gear, a member mounted on said carrier and having a gear wheel axially shiftable to mesh with said actuator gear, and also having a segmental gear shiftable angularly to mesh with said actuator gear.

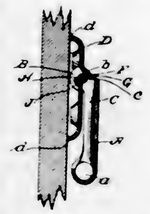
57. In a mechanical movement, the combination with an actuator having a driving wheel, of a member to be actuated thereby and having a driving wheel shiftable axially into and out of driving relation with said actuator driving wheel and a driving arc on a parallel plane, means for angularly shifting said arc for establishing driving relation between the same and said actuator driving wheel, and means for shifting said axially shiftable driving wheel for establishing driving relation between the same and said actuating driving wheel.

58. The combination with a revolvable and axially shiftable driving member and means for revolving the same, of means for axially shifting said members and comprising a shifter fast with said member and a co-operative shifter fast with said revolving means.

59. The combination with a driving wheel, of means for revolving the same, and means for axially shifting said driving wheel and comprising a cam fast with said driving wheel and a co-operative cam fast with said revolving means.

60. The combination with a driving wheel, of means for actuating the same, and means for axially shifting said driving wheel and comprising co-operative cams controlled by the said wheel and its actuator respectively.

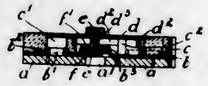
853,192. HANDLE. EDWARD R. SARGENT, New Haven, Conn., assignor to Sargent & Company, New Haven, Conn., a Corporation of Connecticut. Original application filed Sept. 18, 1902, Serial No. 123,885. Divided and this application filed Nov. 26, 1906. Serial No. 345,158.



Claim.—1. In a handle, the combination with the arm of the handle, having an attaching plate; of a socket plate formed of sheet metal, with an opening for said attaching plate, said socket plate having a depression on the inner side thereof extending on both sides of said opening, for the lateral insertion of the pivot pin of said attaching plate, and having a portion bent inwardly to engage said pivot pin when in said depression to prevent its lateral displacement, substantially as described.

2. In a handle, the combination with the arm of the handle, having a plurality of parallel disposed attaching plates; of a socket plate formed of sheet metal having openings for said attaching plates, said socket plate having depressions on the inner side thereof extending on both sides of said openings, for the lateral insertion of the pivot pin of said attaching plates, and a portion bent inwardly to engage the pivot pin when in said depression to prevent its lateral displacement, and a further portion bent downwardly between said openings for said attaching plates to form a cover for the space between the attaching plates of said arm, substantially as described.

853,193. HEEL FOR BOOTS AND SHOES. AUBREY F. SPENCER, Margate, England, assignor of one-half to Adolph Rosenberg, London, England. Filed Oct. 16, 1906. Serial No. 339,209.

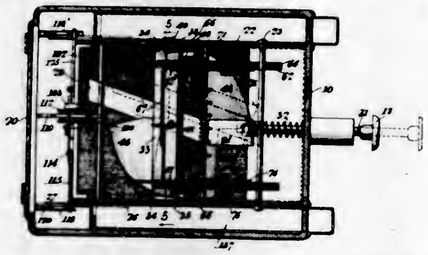


Claim.—1. In a heel for boots and shoes, the combination of an outer leather lift, a metal lift to which the outer leather lift is directly attached, an inner lift having depressions, a metal plate of smaller size than the inner lift inclosed therein fitting the aforesaid depressions and having a screw-threaded socket and a central screw engaging in said threaded socket and securing all the parts together, substantially as set forth.

2. In a heel for boots and shoes, the combination of an outer leather lift, a metal lift, to which the leather lift is fixed, having a number of projecting hollow studs, an inner lift engaged by said projecting hollow studs, so that they help to retain it in position, a metal plate of smaller size than the inner lift and inclosed therein, having a screw-threaded socket, and a fixing screw passing through one of the hollow studs in the metal lift and engaging in the threaded socket in the smaller metal plate, to secure all the parts together, substantially as described.

3. In a heel for boots and shoes, the combination of an outer leather lift, a metal lift to which the leather lift is fixed, a number of hollow studs carried by said metal lift, one of said stubs being adapted to receive the head of the fixing screw, a perforated inner lift adapted to receive said studs and having depressions, a smaller metal plate having extending arms fitting in said depressions, downwardly projecting edges and a screwed socket on said smaller plate, and a fixing screw screwing into said screwed socket, substantially as set forth.

853,194. VENDING-MACHINE. LESLIE A. VANDIVER, Hannibal, Mo., assignor of one-fourth to John W. Vandiver, Hagers Grove, Mo., and one-fourth to Robert H. Visger, Chicago, Ill. Filed Aug. 4, 1905. Serial No. 272,736.



Claim.—1. In a vending machine, the combination with a reservoir, of a pivotally mounted discharging member having an article receiving slot arranged in communication with the reservoir and in position to receive the lowermost article therefrom, and means for turning the discharging member until the slot and the article to be discharged cross the plane of the remaining articles in the reservoir, the article being discharged forming a partial support for the remaining articles in the reservoir.

2. In a vending machine, the combination with a reservoir, of a pivotally mounted discharge plate arranged at the bottom of the reservoir and having an article receiving slot, and means for turning said plate on its pivot to move the slot into a plane oblique to the receiving position, the plate serving during this movement as a supporting means for the remaining articles in the reservoir.

3. The combination in a vending machine, of a reservoir, a discharging member having an elongated article receiving slot, and means for turning said member and moving the article to a discharging position, the article being discharged being turned to cross the plane of the remaining articles in the reservoir, and acting as a partial support for said articles during the discharging movement.

4. In a vending machine, the combination with a reservoir, of a pivotally mounted discharging member comprising a pair of plates, the adjacent edges of which are turned to form flanges, and the flanges being spaced to constitute the walls of an article receiving slot, and an adjustable means connecting said plates and serving to vary the width of the slot.

5. In a vending machine, the combination with a reservoir, of a discharging member comprising a pair of adjustably connected plates, the adjacent walls of which are flanged and spaced to form an article receiving slot, a supporting means for said discharging member, and means for turning said member from receiving to discharging position.

6. In a vending machine, the combination with a reservoir, of a discharging member comprising a pair of plates, the adjacent edges of which are flanged, and spaced to form an article receiving slot, threaded pins and nuts forming adjustable connections between the end portions of the plates, springs tending to separate said plates, and a supporting pivot on which said discharging member is movable from receiving to discharging position.

7. The combination in a vending machine, of a reservoir, a pivotally mounted discharging member having an article receiving slot, a slide arranged below said member, and on which the article is supported while in the slot, means for turning the discharging member, and an article adjustable carrier on which said discharging member is supported to permit adjustment of the distance between the discharging member and slide in accordance with the diameter of the article.

8. The combination in a vending machine, of a reservoir, a pivotally mounted discharging member having a receiving slot, a slotted plate arranged below said discharging member, a cross bar having end flanges, said bar serving as a support for the discharging member, a frame having a plurality of openings, pins carried by the flanges of the bar and adapted to said openings, and means for locking the bar in adjusted position.

9. In a vending machine, the combination with a reservoir, of a pivotally mounted discharging member having spaced flanges forming an article receiving slot, a slotted slide for transmitting movement to the discharging member, and a lug carried by said slide and arranged to engage one of the flanges of the discharging member.

10. In a vending machine, the combination with a reservoir, of a pivotally mounted discharging member, a support to which the discharging member is pivoted, a spring engaging the pivot and tending to restore the discharging member to an initial position after each operation, a slotted slide arranged below the discharging member, means for moving the slide, and means carried by the slide for engaging and moving said discharging member.

11. The combination in a vending machine, of a reservoir holder having a pair of adjustable side walls, each comprising spaced plates arranged for the reception of the walls of the reservoir, and reservoir supporting strips arranged between said plates.

12. In a vending machine, a reservoir support comprising a pair of adjustable side walls, each formed of a pair of plates spaced for the reception of the reservoir wall, said side walls being slotted for the reception of a detachable partition forming the rear wall of the reservoir.

13. In a vending machine, a reservoir having an inclined bottom comprising a plurality of spaced bars pivoted at their lower ends and forming a grating, a discharging means for swinging the grating on its pivot, and a second grating carried by the first and also forming a part of said bottom, the second grating being moved independently of the first on the return movement of the discharging member.

14. In a vending machine, a reservoir having an inclined bottom formed of a pair of pivotally mounted gratings, and means operable on each discharging operation for moving said gratings.

15. The combination in a vending machine, of a reservoir having an inclined bottom formed of a pair of pivoted gratings, one of which is carried by the other, means operable on outward movement of the discharging means for moving both gratings, and means serving on the return movement of the discharging means for moving one of said gratings.

16. In a vending machine, a reservoir having an inclined bottom formed of a pair of gratings, one of which is pivoted to a permanent support while the second grating is pivoted to the first, a discharge slide having a lug for operating both gratings on its outward movement, and for moving the secondary grating on its inward movement.

17. The combination in a vending machine, of a reservoir having an inclined bottom formed of a pair of gratings, one of which is pivoted to a permanent support, the second grating being pivoted to the first, a spring connecting the two gratings and having a pendent portion, and a discharging means having a lug for engaging such pendent portion during its movement to and from discharging positions.

853,195. BOTTLE-STOPPER. WILLIAM D. WHEAT, Jamestown, Ky., assignor of one-half to Elmer Wheat, Jamestown, Ky. Filed Feb. 2, 1907. Serial No. 355,470.

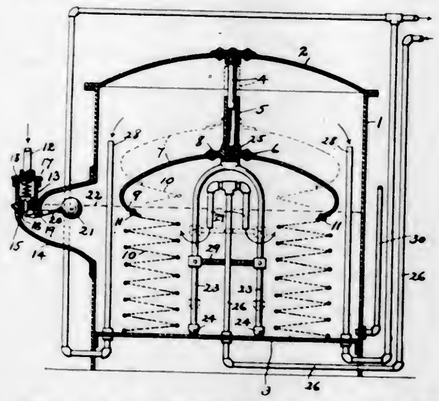
Claim.—1. The combination with a bottle provided in its mouth with overhanging lugs, of a cork inserted in said mouth below said lugs, a cork screw inserted in said cork, and provided with oppositely extending arms adapted to take under said lugs, whereby to lock the cork in the bottle mouth, and a handle embodied in said cork screw whereby said arms may be turned out of engagement with said lugs to withdraw the cork, as and for the purpose set forth.

2. The combination with a bottle provided in its mouth with overhanging lugs, of a cork inserted in said mouth, a cork screw inserted in said cork and consisting of a single piece of wire bent to form a loop handle and thence bent



outwardly therefrom and doubled upon itself whereby to form two oppositely extending arms adapted to extend under said lugs.

853,196. CARBURETER. ANDERS AKESON and VERNER G. ANDERSON, Worcester, Mass. Filed Sept. 17, 1906. Serial No. 334,015.



Claim.—1. In a carbureter, the combination of a vertical closed tank adapted to contain a hydrocarbon liquid; a guide centrally secured to the top of said tank; a tubular head to receive said guide; a gas-dome centrally secured upon said head, and said dome having its outer portion terminating with a downwardly and inwardly directed flange; a carbureting bag of absorbent material formed into accordion folds whose upper layer is secured to the flange of said dome; a yoke secured to said head to support said dome so that its flange may be submerged in said liquid; an air-inlet-pipe extending above the level of the liquid in said dome and beneath the surface of said liquid; a disk secured upon said yoke to close the discharge end of said pipe beneath the level of said liquid; a gas-discharge-pipe extending from above the level of said liquid in the tank; an oil-feed-pipe, and a governing valve constructed to maintain said liquid at substantially a constant level with said tank.

2. In a carbureter, the combination of a closed tank adapted to contain hydrocarbon liquid; an inlet-pipe arranged to discharge air beneath the level of said liquid; a gas-dome above said pipe; a support carried by said dome; a disk secured to said support to close the air discharge from said pipe when the dome has reached its highest limit of travel; a collapsible carbureting bag of absorbent material surrounding said pipe and secured to said dome; a housing secured to said tank and having its chamber in open communication with the interior of the same; a casing mounted on said housing; an oil-feed-pipe communicating with the chamber of said casing; a spring pressed valve within said casing; a float-connection pivotally mounted in said housing to open said valve, and a gas-outlet-pipe extending from above the level of the liquid in said tank.

3. In a carbureter, the combination with a closed tank having an oil feed-pipe and a governing valve to maintain the oil at substantially a constant level within said tank, of a gas-dome whose outer portion enters beneath the level of said liquid; a carbureting bag of absorbent material having its top secured to the outer portion of said dome; a yoke within said bag, carried by said dome to support the latter above the level of said liquid; an inlet-pipe below said dome to discharge air beneath the level of said liquid; a disk carried by said yoke to close off the discharge of air from said pipe and at the same time prevent further upward movement of said dome, and a gas discharge-pipe extending from above the oil level in said tank.

4. In a carbureter, the combination of a closed tank adapted to contain a hydrocarbon liquid; an automatically operated valve constructed to govern the inlet of said liquid to a normal level within said tank; a gas-dome having its open end submerged in said liquid; a tubular head centrally secured upon said dome; a guide secured to the top of said tank and having a sliding fit in said head; a support carried by said dome to prevent further downward movement of the dome in said liquid; a carbureting bag of absorbent material surrounding said support, formed into accordion folds and having its top secured to the open end portion of said dome; a pipe to discharge air beneath the level of said liquid within said bag; a disk secured upon said support to close off the air supply from said pipe when said dome has reached its upward limit of movement, and a gas outlet pipe from above the level of the liquid within said tank.

853,197. TONGUE-SUPPORT. ELMER C. AYERS, Valentine, Nebr., assignor of one-half to Milton V. Nicholson, Valentine, Nebr. Filed May 29, 1906. Serial No. 319,329.

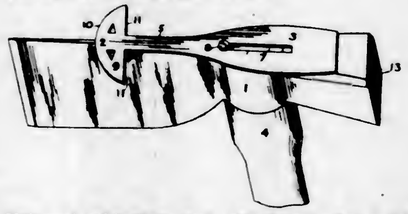


Claim.—1. A vehicle tongue support, comprising a pulley connected to the front side of the axle, a flexible connection passing under the axle and around the pulley and connected to the tongue in rear of its fulcrum and a tension device securing the flexible connection to a stationary point in rear of the axle.

2. A vehicle tongue support, comprising a pulley connected to the front side of the axle, a rearwardly extending bar on the tongue, a flexible connection attached thereto and passing around the pulley, and a tension spring connecting the chain to the hounds.

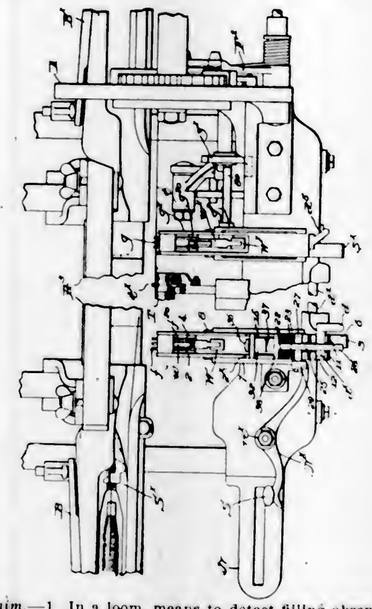
3. A vehicle tongue support, comprising a pulley, a bent metal frame carrying the pulley and having extended ends, clamps securing these ends to the front side of the axle, a flexible connection passing around the pulley and attached to the rear end of the tongue and a spring joining the flexible connection to the rear end of the hounds.

853,198. SHINGLING-GAGE ATTACHMENT FOR HATCHETS. FRANK A. BOGART, San Jose, Cal. Filed Jan. 27, 1905. Serial No. 242,974.



Claim.—A shingling gage attachment for hatchets formed of a piece of sheet metal having an apertured part adapted to rest upon the end of the handle and to be secured thereto, a part extending forwardly therefrom, and a head at the extreme forward end, having a rounded forward side and shoulders at the rear side extending at right angles to said forwardly extending part, all in the same plane, and lips formed out of the mediate part of the head, one on each side of the central line of the attachment, said lips being bent down at right angles to said plane and on lines parallel with said central line and at such suitable distance from each other that the under or opposing sides of said lips may engage the sides of the hatchet to maintain the attachment in place, substantially as described.

853,199. FILLING-REPLENISHING LOOM. CLARE H. DRAPER, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed May 19, 1906. Serial No. 317,662.



Claim.—1. In a loom, means to detect filling absence on each pick, and means adapted to cause stoppage of the loom immediately upon detection of filling absence on one pick and failure to detect such filling absence on the next pick.

2. In a loom, two filling detectors, located at opposite sides of the loom and acting on alternate picks, and means adapted to effect stoppage of the loom immediately upon failure of both detectors to act in the same manner on two successive picks, the actual condition of the filling being the same on each pick.

3. In a loom provided with mechanism to automatically replenish filling, means to effect stoppage of the loom upon the operation of said mechanism when the filling is intact.

4. In a loom, means acting independently of the warp tension to effect stoppage of the loom when the formation of a thick place is initiated and the filling is intact.

5. In a loom provided with automatic filling-replenishing mechanism, means, operative independently of the cloth and including a detector to detect the absence of filling, to effect stoppage of the loom when the formation of a thin place in the cloth is initiated by improper detecting action of the detector, the filling being absent.

6. In a filling-replenishing loom, a detector to detect the absence of filling, and means to effect stoppage of the loom when such detecting action takes place improperly.

7. In a loom, a detector to detect filling absence, and means to indicate improper detecting action of such detector.

8. In a loom, a detector adapted to engage and be moved by intact filling when properly laid, and means to indicate failure of such detector movement when the filling is present.

9. In a loom, a tilting detector to engage and be tilted by intact filling, and means to indicate failure of the detector to tilt notwithstanding presence of filling.

10. In a loom, a detector to detect filling absence, and means to indicate non-detection by such detector when filling is absent.

11. In a loom, filling-replenishing mechanism, two filling detectors, at opposite sides of the loom, means to control the operation of said mechanism by or through one only of the detectors, and means adapted to effect stoppage of the loom immediately upon the occurrence of abnormal operation of the detectors.

12. In a loom, in combination, two filling-detectors normally adapted to indicate presence or absence of filling on alternate picks, filling-replenishing mechanism controlled as to its operation by filling absence indication of one of the detectors, a shipper, and means to release the same when either detector fails to indicate filling absence on the pick following such an indication by the other detector.

13. In a loom, in combination, two filling-detectors normally adapted to indicate presence or absence of filling on alternate picks, filling-replenishing mechanism controlled as to its operation by filling absence indication of one of the detectors, and means adapted to effect stoppage of the loom automatically when the condition of the filling indicated by one detector is immediately followed by indication of a different condition by the other detector, the condition of the filling being unchanged.

14. In a loom, in combination, two filling-detectors each adapted to arrest the operation of a take-up instrumentality upon detection of filling absence, filling-replenishing mechanism controlled as to its operation by one of said detectors, a shipper, a knock-off lever to release it, a latch to actuate the said lever, and means to operate said latch when on successive picks the detectors indicate different conditions of the filling while the filling condition remains unchanged.

15. In a loom, in combination, two filling-forks, a slide for each, an actuator for each slide, filling-replenishing mechanism controlled as to its operation by one of the forks, a shipper, and means to release the same by or through the movement of one of said actuators when on successive picks the forks indicate different conditions of the filling while the filling condition remains unchanged.

16. In a filling-replenishing loom, two filling-detecting devices to detect the condition of the filling on each pick, each device including a filling-fork and its slide, and a weft-hammer, a shipper, means to release it, a latch and a latch-carrier, and means to cause direct and immediate co-operation of one of the weft-hammers and the latch-carrier to actuate the latch when detection of filling absence by one fork is immediately followed by tilting of the other fork.

17. In a loom, in combination, two filling-forks, a slide for each, one of ssid slides having two members capable of unitary and differential movement, filling-replenishing mechanism controlled as to its operation by unitary outward movement of the two-part slide, means to effect differential outward movement of the latter by or through detection of filling absence by the other fork, and means to cause stoppage of the loom when such differential movement of the slide is immediately followed by indication of filling presence by its fork.

18. In a loom, in combination, two filling-forks, a slide for each, one of said slides having two members capable of unitary and differential movement, filling-replenishing mechanism controlled as to its operation by unitary outward movement of the two-part slide, due to detection of filling absence by its fork, means to effect differential outward movement of said slide through detection of filling absence by the other fork, and means to cause stoppage of the loom when unitary outward movement of the slide

is followed immediately by indication of filling presence by the other fork.

19. In a loom, in combination, main and auxiliary filling-forks, at opposite sides of the loom, a slide for each, the main slide comprising two members capable of unitary and differential movement, filling-replenishing mechanism controlled by unitary outward movement of the main slide, means to effect differential movement of the main slide members upon filling absence indication by the auxiliary fork, a latch, a latch-carrier on one of the slide members and movable relatively thereto, a shipper, a knock-off lever therefor, and means to move the latch-carrier to operatively position the latch with relation to said lever and move the latter when filling absence indication of one fork is immediately followed by indication of filling presence by the other fork.

20. In a loom, in combination, main and auxiliary filling-forks, at opposite sides of the loom, a slide for each, the main slide comprising two members capable of unitary and differential movement, filling-replenishing mechanism controlled by unitary outward movement of the main slide, means to effect differential movement of the main slide members upon filling absence indication by the auxiliary fork, a latch, a latch-carrier on one of the slide members and movable relatively thereto, a shipper, a knock-off lever therefor, means to move the latch-carrier to operatively position the latch with relation to the lever when filling absence is indicated by either fork, and means to automatically return said latch-carrier to normal position without acting upon the knock-off lever when filling absence indication by one fork is immediately followed by a like indication by the other fork on the next pick.

21. In a loom, two filling-detectors to detect presence or absence of filling on alternate picks, and means adapted to cause the operation of a loom-stopping instrumentality immediately upon the occurrence of contrary indications of said detectors on successive picks when the filling is present, or after filling absence indication by either detector.

22. In a loom, two filling-detectors to detect presence or absence of filling on alternate picks, and means adapted to cause the operation of a loom-stopping instrumentality immediately upon the occurrence of contrary indications of said detectors on successive picks when the filling is present or after failure thereof.

23. In a loom, two filling-detectors to detect presence or absence of filling on alternate picks, and each adapted to arrest the operation of a take-up instrumentality upon detection thereby of filling absence, filling-replenishing mechanism controlled as to its operation by one of the detectors, a shipper, and means to release it immediately upon the occurrence of contrary indications of said detectors on successive picks when the filling is present or after detection of filling absence by either detector.

24. In a loom, two filling-detectors to detect presence or absence of filling on alternate picks, and means to effect a change in the operation of the loom immediately upon the occurrence of contrary indications of said detectors on successive picks when the filling is present or after filling absence indication by either detector.

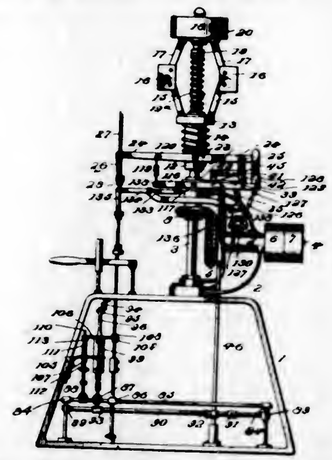
[illegible], 200. METHOD OF AND MEANS FOR GOVERNING PRIME MOTORS. FRANCIS ELLICOTT, Baltimore county, Md. Continuation of application filed Nov. 19, 1902, Serial No. 132,024. Divided and this application filed Aug. 22, 1906. Serial No. 331,670.

Claim.—1. The method of increasing the efficiency of the governor of a prime motor, which consists of imposing upon the motor controller a constant auxiliary vibration.

2. The method of increasing the efficiency of the governor of a prime motor, which consists of imposing upon the said governor and the motor controller a constant auxiliary vibration.

3. The method of increasing the efficiency of the governor of a prime motor which consists of imposing upon said governor a constant auxiliary vibration.

4. The method of governing a prime motor, which consists of imparting to the motor controller a constant, artificial oscillating motion, and then augmenting the amplitude of the oscillation in the direction in which it is desired the parts shall move while still maintaining the same constant period and amplitude of oscillation.



5. The method of governing a prime motor which consists of alternately reducing the pressure on opposite sides of the motor controller an equal amount, producing a constant artificial oscillation of the piston across a median line, and then still further reducing the pressure on the side toward which it is desired the piston shall move, while maintaining the same interval and extent of amplitude or of oscillation, so as to maintain the same period and amplitude of oscillation in the controller, on each side of a new median line.

6. The method of governing a prime motor which consists of moving the motor controller slowly for slight changes, and rapidly for great changes of speed, and then moving the controller slowly as speed is approached.

7. The method of governing a prime motor which consists of moving the governing mechanism by which the power admitted to the motor is increased or decreased, first such a distance as to start the increase of admission or reduction of power to the motor at a minimum velocity, then increasing the admission or reduction of power to the motor to a maximum velocity, depending upon the maximum change of speed, and then reducing the speed with which power is admitted to or cut off from the motor to a minimum velocity.

8. The method of governing a prime motor which consists of admitting increased power to the motor or reducing the power admitted to the motor at a minimum velocity, and then increasing the velocity of admission or reduction of the power to a maximum, corresponding with the maximum change of speed to be compensated for, and then reducing the speed of admission or reduction to a minimum until government is accomplished.

9. The method of governing a water wheel which consists of normally increasing the velocity of the admission or reduction of power to the motor corresponding to the lead as it is increased or decreased, then increasing it decreasing the admission or reduction of power to the motor abnormally when the abnormal change of load occurs.

10. The method of governing a prime motor, which consists in increasing or reducing the power admitted to the motor at a velocity normally corresponding to the increase or decrease of the load, and then abnormally increasing or decreasing the velocity with which power is admitted to or cut off from the motor when the abnormal increase or decrease of load occurs.

11. The method of governing a prime motor which consists of gradually increasing the velocity of government as the power of the motor is increased, and inversely reducing the velocity of government as the load is reduced.

12. The method of governing a prime motor which consists of increasing or decreasing the velocity of government proportionately to the load.

13. The method of governing a prime motor which consists of reducing the velocity of government correspondingly as the load declines, until minimum speed is reached, and then maintaining that speed of government until the motor is shut down.

14. The method of governing a prime motor which consists of operating the governing device at a speed corresponding to the load and to the change of load so that with small change of load the velocity of government will be slight, while with large changes of load the velocity of government will be rapid.

15. The method of governing a prime motor which consists of balancing the controller valve between gravitation and the pressure of fluid escaping past it to exhaust by so moving the valve as to open one of its exhaust ports to exhaust wider than the other, and then unbalancing the valve by moving it until both its exhaust ports are equally open to exhaust, whereby the fluid pressure being equalized on both sides of the valve, it may move under the influence of gravitation, and as it does so, it will again open one of its ports wider to exhaust than the other, and thus unbalance the pressures again, overcome the force of gravitation and relieve the valve, thus producing in the valve and the parts controlled by it, an oscillated motion.

16. The combination of a motor controller, a governor, means actuated by the governor for moving the controller to accelerate or retard the motor, and mechanism to temporarily retard the change of position of the controller after it has moved a certain distance and before it reaches speed position.

17. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, and mechanism operated by the governor when it has moved a predetermined distance either in acceleration or retardation to temporarily retard the motion of the motor controller after it has moved a certain distance independently of the governor.

18. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, and mechanism operated by the governor when is has moved a predetermined distance either in acceleration or retardation to temporarily retard the motion of the motor controller independently of the governor.

19. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, and mechanism operated by the governor when it has moved a predetermined distance either in acceleration or retardation to retard the motion of the motor controller and maintain it at a minimum velocity until it is again accelerated through the further action of the governor.

20. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, a constantly running pinion, a lever connected to the motor controller and moved by the governor as it moves the motor controller, and a rack connected to the lever, the rack being thrown into engagement with the pinion by an excessive motion of the governor, and when such engagement occurs the pinion operating to retard the motion of the motor controller and maintain it at a minimum velocity until it is again accelerated through the further action of the governor, the retarding device being independent of the governor.

21. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, a constantly running pinion, a lever connected to the motor controller and moved by the governor as it moves the motor controller, and two racks connected to the lever and arranged one on each side of the pinion, one or the other of said racks being thrown into engagement with the pinion by an excessive movement of the governor in acceleration or retardation as the case might be, and when such engagement occurs the pinion, rack, and lever operating to retard the motion of the motor controller independently of the governor.

22. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, a constantly running pinion, a lever connected to the motor controller and moved by the governor as it moves the motor controller, two racks connected to the lever and arranged one on each side of the pinion, a plate pivoted in a plane parallel to the plane of the racks and provided with two pins upon its lower corners which stand behind the racks, a rod connected to the plate at one end and to the governor at the other end, the connection to the governor having a certain amount of lost motion permitting some motion of the governor and some of the motor controller until the lost motion has been taken up, when the further motion of the governor will draw or push the rod and as it draws or pushes the rod force one or the other of the racks into contact with the pinion, whereby the motion of the motor controller will be checked independently of the governor.

23. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, a constantly running pinion, a lever connected to the motor controller and moved by the governor as it moves the motor controller, two racks connected to the lever and arranged one on each side of the pinion, a plate pivoted in a plane parallel to the plane of the racks and provided with two pins on its two lower corners which stand behind the racks, a spring latch adapted to engage one of a series of notches in the top of the plate, a rod connected to the plate at one end and to the governor at the other end, the connection to the governor having a certain amount of lost motion permitting some motion of the governor and of the motor controller until the lost motion has been taken up, when further motion of the governor will draw or push the rod and as it draws or pushes the rod force one or the other of the racks into contact with the pinion, whereby motion of the motor controller will be checked independently of the governor.

24. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, a constantly running pinion, a lever connected to the motor controller and moved by the governor as it moves the motor controller, two racks connected to the lever and arranged one on each side of the pinion, a plate pivoted in a plane parallel to the plane of the racks and provided with two pins on its two lower corners which stand behind the racks, a spring latch having a V-shaped point adapted to engage one of a series of V-shaped notches in the top of the plate, a rod connected to the plate at one end and to the governor at the other end, the connection to the governor having a certain amount of lost motion permitting some motion of the governor and of the motor controller until the lost motion has been taken up, when the further motion of the governor will draw or push the rod and as it draws or pushes the rod force one or the other of the racks into contact with the pinion, whereby the motion of the motor controller will be checked independently of the governor.

25. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, a constantly running pinion, a lever connected to the motor controller and moved by the governor as it moves the motor controller, two racks connected to the lever and arranged one on each side of the pinion, each rack being provided with a beveled lug on its outside edge, a plate pivoted in a plane parallel to the plane of the racks and provided with two pins on its two lower corners which stand behind the racks, a rod connected to the plate at one end and to the governor at the other end, the connection to the governor having a certain amount of lost motion permitting some motion of the governor and of the motor controller until

the lost motion has been taken up, when the further motion of the governor will draw or push the rod and as it draws or pushes the rod will force one or the other of the racks into contact with the pinion, whereby the motion of the motor controller will be checked independently of the governor.

26. In a governor for prime motors, the combination of a motor controller, means actuated by the governor for moving the motor controller to accelerate or retard the motor, a constantly running pinion, a lever connected to the motor controller and moved by the governor as it moves the motor controller, two racks connected to the lever and arranged one on each side of the pinion, the uppermost tooth of one rack being on the same level as the lowermost tooth of the opposite rack, a plate pivoted in a plane parallel to the plane of the racks and provided with two pins on its two lower corners which stand behind the racks, a rod connected to the plate at one end and to the governor at the other end, the connection to the governor having a certain amount of lost motion permitting some motion of the governor device and of the motor controller until the lost motion has been taken up, when the further motion of the governor will draw or push the rod and as it draws or pushes the rod force one or the other of the racks into contact with the pinion, whereby the motion of the motor controller will be checked independently of the governor.

27. The combination of a motor controller, a governor, means actuated by the governor for moving the motor controller to accelerate or retard the motor, a constantly running pinion, a lever connected to the motor controller and moved by the governor as it moves the motor controller, two racks connected to the lever and arranged one on each side of the pinion, the uppermost tooth of one rack being on the same level as the lowermost tooth of the opposite rack and each rack having a beveled lug on its outside edge located opposite to one another and one opposite to the uppermost tooth of the lower rack and the other opposite to the lowest tooth of the upper rack, a plate pivoted in a plane parallel to the plane of the racks and provided with two pins on its two lower corners which stand behind the racks, a rod connected to the plate at one end and to the governor at the other end, the connection to the governor having a certain amount of lost motion permitting some motion of the governor and of the motor controller until the lost motion has been taken up, when the motion of the governor will draw or push the rod and as it draws or pushes the rod force one or the other of the racks into contact with the pinion, whereby the motion of the motor controller will be checked independently of the governor.

28. The combination of a governor, a motor controller, and mechanism conecting the governor with the motor controller, and mechanical means for imparting to the governor auxiliary and independent vibrations.

29. The combination of a governor, a motor controller, mechanism connecting the governor with the motor controller, a crank driven from the motor and running constantly, and devices connecting the crank with the governor, whereby a constant, auxiliary, and independent vibration may be imparted to the governor.

30. The combination of a governor, a motor, a motor controller, mechanism connecting the governor with the motor, and mechanical means for imparting to the governor and to the controller a constant artificial and independent vibration.

31. The combination of devices driven from a common center by centrifugal force, mechanism connecting this centrifugal device with the motor controller, and mechanical means for imparting to the centrifugal device a constant, auxiliary, and independent vibration.

32. The combination of devices driven from a common center by centrifugal force, mechanism connecting the centrifugal devices with the motor controller, a crank driven from the prime motor and running constantly, and devices connecting the crank with the centrifugal device, whereby a constant, auxiliary and independent vibrating motion may be imparted to the centrifugal device.

33. The combination of devices driven from a common center by centrifugal force, a motor, and a motor controller, mechanism connecting the centrifugel devices with the prime motor, and mechanical means for imparting to the centrifugal device and to the motor controller a constant, auxiliary, and independent vibration.

34. The combination of a governor, a motor, a motor controller, including a piston maintained within a cylinder in a state of balance between active opposing pressures and moved by reducing the pressure on the side toward which it is desired the piston shall move, and a valve controlling inlet and exhaust to and from said cylinder, mechanism connecting the governor to the motor controller, and a mechanical device for imparting to the valve of the motor controller a constant, auxiliary and independent vibratory motion.

35. The combination of a governor, a motor, a motor controller consisting of a piston maintained within a cylinder in a state of balance between active opposing pressures and moved by reducing the pressure on the side toward which it is desired the piston shall move, a main valve controlling inlet and exhaust to and from the cylinder, and an independent exhaust valve, means connecting the governor with the main valve, and means connecting the exhaust valve with the piston, substantially as described.

36. The combination of a governor, a motor, and a motor controller consisting of a piston maintained within a cylinder in a state of balance between active opposing pressures and moved by reducing the pressure on the side toward which it is desired the piston shall move, a main valve controlling inlet and exhaust to and from the cylinder, an independent exhaust valve and a relief valve, means connecting the governor with the main valve, means connecting the exhaust valve with the piston, and means connecting the relief valve with the main valve stem, the relief valve when opened relieving the pressure on one side of the exhaust valve so as to cause it to move independently of the piston.

37. The combination of a governor, a motor, and a motor controller consisting of a piston maintained within a cylinder in a state of balance between active opposing pressures and moved by reducing the pressure on the side toward which it is desired the piston shall move, a main valve controlling inlet and exhaust to and from the cylinder, an independent exhaust valve and a relief valve, means connecting the governor with the main valve, means connecting the exhaust valve with the piston, a spring dash pot in the connections between the exhaust valve and the piston whereby the exhaust valve may be restored to its normal relation to the piston when the relief valve has been closed after having been opened, and means connecting the relief valve with the main valve stem, the relief valve when opened relieving the pressure on one side of the exhaust valve so as to cause it to move independently of the pistotn.

38. The combination of a governor, a motor, and a motor controller consisting of a piston maintained within a cylinder in a state of balance between active opposing pressures and moved by reducing the pressure on the side toward which it is desired the piston shall move, a main valve controlling inlet and exhaust to and from the cylinder, an independent exhaust valve and a relief valve, means connecting the governor with the main valve, means connecting the exhaust valve with the piston, and means connecting the relief valve with the main valve stem permitting a desired motion of the main valve without affecting the relief valve, and means for adjusting the relation of the two valves.

39. The combination of a governor, a motor, and a motor controller, consisting of a piston maintained within a cylinder in a state of balance between active opposing pressures and moved by reducing the pressure on the side toward which it is desired the piston shall move, a hollow balanced main valve controlling inlet and exhaust to and from the cylinder, and an independent cup-shaped exhaust valve covering and surrounding the main valve and controlling the exhaust independently of the main valve and both contained within a valve chest having a by-pass from the portion of the chest above the cup-shaped exhaust valve to exhaust from the valve chest, a relief valve controlling this by-pass, means connecting the relief valve to the main valve stem permitting the desired motion of the main valve independently of the relief valve.

40. The combination of a motor controller, two valves by which it is actuated, one the normal admission and exhaust valve and a second valve controlling the exhaust of the former and operating independently of the former so that under certain conditions while the former valve may have a large opening to exhaust and admission the second may only have a small opening, and vice versa.

41. The combination of a governor, a motor, and a motor controller consisting of a piston maintained within a cylinder in a state of balance between active opposing pressures and moved by reducing the pressure on the side toward which it is desired the piston shall move, a valve controlling inlet and exhaust to and from said cylinder, and mechanism connecting the governor to the valve, whereby the valve will be moved an amount proportionate to the variation of speed and the piston will be caused to move at a velocity corresponding to change of speed.

42. The combination of a motor, a motor controller comprising an admission valve and an exhaust valve, a governor connected to and operating the admission valve, and connections between the gate and the exhaust valve whereby that valve is caused to follow the motion of the gate, the elements co-operating to produce a speed of government corresponding to the amount of the change of speed.

43. The combination of a motor, a motor controller comprising an admission valve, an exhaust valve, a governor connected to and operating the admission valve, and connections between the gate and the exhaust valve whereby the valve is caused to follow the motion of the gate, and a relief valve for the exhaust valve tripped into action by the governor upon abnormal changes of speed, the elements co-operating to produce a speed of government corresponding to the amount of change of speed.

44. The combination of a motor, a motor controller, and a governor, the governor responding to changes of speed, means connected to the motor controller and operating to increase or decrease the speed of regulation as the power of the motor is increased or decreased, the speed being normally corresponding to the power admitted to the motor.

45. The combination of a motor, a motor controller, and a governor, the governor responding to changes of speed, means connected to the motor controller and operating to increase or decrease the speed of regulation as the power of the motor is increased or decreased, the speed being normally proportionate to the power admitted to the motor, and independent means connected to and operated by the governor whereby the controller is moved abnormally at an abnormal velocity when abnormal changes of speed occur.

46. The combination of a governor, a valve chest having two admission ports and an exhaust port, a balanced valve loose in its chest and having a lead to exhaust over each admission port, the valve being connected to and controlled by and controlling the governor head, and a motor controller operated by pressure controlled by the valve, whereby the valve when moved off its admission ports by the governor head will be driven back by hydraulic pressure in its chest and will correspondingly move the governor head, thereby imparting vibratory motion to the parts, substantially as described.

47. The combination of a motor, a motor controller, and a governor, the governor responding to changes of speed and operating the controller to increase or decrease the power admitted to the motor, the controller operating to admit power to the motor at a velocity corresponding to the load being carried by the motor.

48. The combination of a motor, a controller, a governor, and means for increasing or decreasing the velocity of government corresponding to the load.

49. The combination of a motor, a controller, a governor, and means for reducing the velocity of government corresponding to the load as it declines, until minimum load is reached, and then maintaining that speed of government until the motor is shut down.

50. The combination of a motor and a motor controller, and means imparting to the motor controller a constant auxiliary vibrating motion.

51. The combination of a motor, a motor controller, and means for alternately reducing the pressure on opposite sides of the motor controller an equal amount, producing a constant auxiliary vibration across a median line in all positions of the controller.

52. The combination of a motor, a controller, a governor, and means imparting to the motor controller a slow motion for slight changes of speed and a rapid motion for great changes, but always a slow motion as speed is approached.

53. The combination of a motor, a controller, a governor, and means for moving the controller first such a distance as to start the increase or decrease of admission of power to the motor at a minimum velocity, then increasing the admission or reduction of power to the motor to a maximum velocity, depending upon the maximum change of speed, and then reducing the speed with which power is admitted to, or cut off from the motor to a minimum velocity.

54. The combination of a motor, a controller, and means for normally increasing the velocity of the admission of power to the motor corresponding to the load as it is increased or decreased and increasing or decreasing the admission or reduction of power to the motor abnormally when an abnormal change of load occurs.

55. The combination of a motor, a controller, a governor, and means for gradually increasing the velocity of government as the power of the motor is increased and inversely reducing the velocity of government as the power is reduced.

56. The combination of a motor, a controller having a valve, and means for balancing the controller valve between gravitation and the pressure of fluid escaping past it to exhaust by so moving the valve as to open one of its exhaust ports to exhaust wider than the other, and then unbalancing the valve by moving it until both its exhaust ports are equally open to exhaust, whereby the fluid pressure being equalized on both sides of the valve, it may move under the influence of gravitation, and as it does so, it will again open one of its ports wider to exhaust than the other, and thus unbalance the pressures again, overcome the force of gravitation and relieve the valve, thus producing in the valve and the parts controlled by it, a vibrating motion.

57. In a governor for prime motors or the like, the combination of a gate-moving mechanism and means for causing the gate to move rapidly for great changes of load and independent means for causing it to move slowly for small changes.

58. In a governor for turbines or the like, the combination with a gate-moving mechanism of means for causing the gate to move rapidly for great changes of load and slowly for slight changes and for reducing the speed of the gate as it approaches speed position.

59. In a device for maintaining constant speed in a prime motor under a variable load, the combination of a motor having a gate, a controller, and means to vary the speed of government to correspond to the position of gate.

853,201. FLUID-PRESSURE TOOL. FRANK M. FABER, Pittsburg, Pa., assignor to The Pittsburg Pneumatic Company, Canton, Ohio, a Corporation of New Jersey. Filed July 29, 1905. Serial No. 271,863.

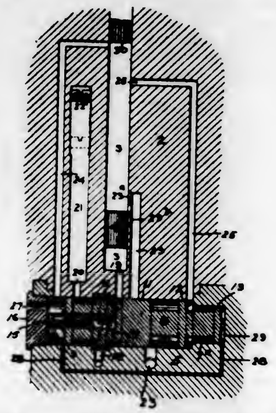
Claim.—1. In a fluid pressure operated tool, a suitable body portion having a cylinder, a piston, a valve controlling the ports to said cylinder, and a reservoir communicating with said cylinder, and means for operating said valve to alternately connect said reservoir with the fluid pressure supply and with said cylinder.

2. In a fluid pressure tool, a suitable body portion having a cylinder, a piston, means for reciprocating said piston, a reservoir communicating with said cylinder, and means for varying the volume of said reservoir.

3. In a fluid pressure tool, a suitable body portion having a cylinder, a piston, a reservoir, a valve controlling ports leading to said cylinder and reservoir, and means for admitting fluid pressure simultaneously to said cylinder and reservoir.

4. In a fluid pressure tool, a suitable body portion hav-

ing a cylinder, a piston, a reservoir, a valve controlling ports leading to said cylinder and reservoir, and means for moving said valve by fluid pressure from said cylinder and said reservoir.



5. In a fluid pressure tool, a suitable body having a cylinder, a piston, a reservoir, a valve controlling ports leading to said cylinder and reservoir, and means for moving said valve by fluid pressure from said reservoir.

6. In a fluid pressure tool, a suitable body portion having a cylinder, a piston, a reservoir, a valve controlling ports leading to said cylinder and reservoir, and a port communicating with said reservoir and carrying fluid pressure to the valve chamber to operate said valve.

7. In a fluid pressure tool, a suitable body portion having a cylinder, a piston, a reservoir, a valve controlling ports leading to said cylinder and reservoir, means for carrying fluid pressure from the forward end of said cylinder to the valve chamber and from said reservoir to move said valve.

8. In a fluid pressure tool, a suitable body portion having a cylinder, a piston, means for reciprocating said piston, a handle, and a reservoir in said handle communicating with said cylinder.

9. In a fluid pressure tool, a suitable body portion having a cylinder, a piston, a valve controlling the movement of said piston, said valve having a chamber therein communicating with the fluid pressure supply, a plunger in said last named chamber, collars of different areas at one end of said valve, means for admitting fluid pressure to the space between said collars, the difference in areas of said collars being greater than the area of said chamber, whereby said valve is moved against the pressure within said chamber.

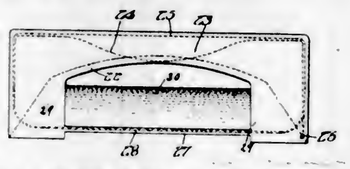
10. In a fluid pressure tool, a suitable body portion having a cylinder, a piston therein, a valve controlling ports leading to opposite ends of said piston, and a port conducting fluid from said cylinder to the valve chamber and thence to the atmosphere and beyond which the entire piston passes when moving in both directions.

11. In a fluid pressure tool, a suitable body portion having a cylinder, a reciprocating piston therein, a valve chamber, a valve within said chamber controlling the motion of said piston and a main exhaust passage controlled by said valve, a main exhaust port connecting the passage with the cylinder at a distance from its rear end and beyond which the entire piston passes when moving in both directions, and a branch port to said passage between the rear end of the cylinder and said main exhaust port.

12. In a fluid pressure tool, a suitable body portion having a cylinder, a piston, a reservoir, a valve for controlling ports leading to said cylinder and reservoir, and means for holding said valve in one position by pressure from said reservoir.

13. In a pneumatic pressure tool, a suitable body having a cylinder, a reciprocating piston within the cylinder, a reservoir supplying fluid pressure to the cylinder to force the piston in one direction, and means for increasing or diminishing the volume of the reservoir to produce a corresponding increase or reduction in length of stroke of the piston.

853,202. ARCH STRUCTURE. DANIEL B. LUTEN, Indianapolis, Ind. Original application filed May 17, 1902, Serial No. 107,812. Divided and this application filed July 25, 1904. Serial No. 217,936.



Claim.—1. An arch having a spandrel wall, and suspension rods passing through said wall, said rods being low at the center and high at the ends and continuing down into the abutments, and anchors therefor, substantially as described.

2. An arch having a spandrel wall, suspension rods in said wall high at the ends and low at the center, and other rods in the said wall extending straight through the same, substantially as described.

3. An arch having a spandrel wall, suspension rods in said wall low at the center and high at the ends and continuing down into the abutments, and other rods in the said wall extending straight through the same, substantially as described.

4. An arch having a spandrel wall, suspension rods in said wall low at the center and high at the ends and passing down through the abutments and across the bed of the stream, a pavement covering said rods across the stream, and other rods in the said wall extending straight through the same, substantially as described.

5. An arch having a spandrel or railing of concrete or similar material reinforced with longitudinal members near both faces.

6. An arch or bridge having a spandrel or railing of concrete or similar material reinforced at top and bottom and at both faces.

7. A bridge spandrel, railing or retaining wall of concrete with rods or bars embedded near the stream and roadway surfaces thereof.

8. A bridge spandrel, railing or retaining wall of concrete or similar material, with longitudinal rods or bars embedded near each surface.

9. An arch having a spandrel wall with rods or bars embedded, said rods or bars being depressed at the center and near the upper surface at the ends of the spandrel.

10. A concrete spandrel wall or railing with tension members embedded and passing near the upper surface at the ends and near the intrados at the middle of the span.

11. A concrete spandrel for a bridge with tension members embedded and other tension members across the bed of the stream.

12. A bridge spandrel of concrete or like material with reinforcements extending across the span both above and below the waterway.

13. A concrete bridge with abutments tied together below the springing and above the waterway by tension members embedded in the spandrel.

14. An arch or bridge having a spandrel wall or railing with reinforcing members embedded high at the ends and low at the center.

15. A bridge spandrel of concrete or similar material with a tension member embedded passing continuously through all the regions of tension.

16. A concrete bridge having a concrete spandrel extended back of the abutments with upright rods or bars embedded near the ends of the spandrel.

17. A bridge of concrete or similar material having a reinforced spandrel or girder extending across the abutment or pier, and cantilivered on the abutment or pier, with tension members extending across the abutment or pier near the upper surface of the spandrel or girder.

18. In a concrete bridge a roadway between girders of concrete reinforced with rods or bars extending continuously through all the regions of tension and of shear.

19. A bridge having a roadway between spandrels or girders of concrete or similar material, with tension members embedded near their lower surfaces, said tension members having a plurality of shear members extending upward and inclined toward the ends of the spandrels or girders.

20. A bridge consisting of a roadway of concrete between concrete girders or railings reinforced with tension members near lower surface and extending upward toward the ends of the girder or railing.

21. A bridge consisting of railings or girders of concrete or similar material projecting above the roadway and reinforced with longitudinal tension members near the lower surface of said railings or girders, said tension members having upward extensions toward the ends of the girders or railings.

22. In a concrete or similar bridge, a roadway between girders reinforced with rods or bars embedded continuously through the regions of tension and of shear, and other rods or bars embedded in the compression regions.

23. A bridge having a roadway between spandrels or girders of concrete or similar material with tension members embedded near their lower surfaces, said tension members having a plurality of shear members extending upwardly and inclined toward the ends of the spandrels or girders, and tension members embedded near the upper surfaces of the spandrels or girders and over the abutment or pier.

853,203. ARCH. DANIEL B. LUTEN, Indianapolis, Ind. Original application filed May 17, 1902, Serial No. 107,812. Divided and this application filed July 25, 1904. Serial No. 217,937.



Claim.—1. An arch supported on abutments or piers having tension members embedded near its concave surface, and other tension members passing back and forth through the material of the arch and between the first mentioned tension members and the adjacent surface, substantially as described.

2. An arch of concrete or similar material with a single series of tension members embedded and passing through all the regions of tension, and other reinforcing members bonding the tension members into the body of the arch, substantially as described.

3. An arch having a spandrel wall and straps embedded in the rib of the arch and extended into said wall to bond the wall to the body of the arch, substantially as described.

4. An arch having spandrel walls and tension-rods embedded in both the body of the arch and the walls, and straps woven back and forth between the extrados and intrados of the body and beneath said tension-rods and at their ends extending into said walls and anchored to the tension-rods of the latter, substantially as described.

5. In a concrete bridge, a spandrel, railing or retaining wall reinforced with a longitudinal member embedded and with upright members embedded near both faces.

6. A concrete bridge having a roadway bordered by a concrete wall, a longitudinal reinforcing member embedded in the wall, and transverse reinforcing members embedded in the wall and extending into the bridge under the roadway.

7. A bridge of concrete or similar material, with reinforcing members transverse to the roadway and extending upward into a wall or spandrel near its back face.

8. A concrete bridge consisting of a floor with walls at each side and reinforcing members embedded transversely of the floor and extending upward into the walls.

9. A bridge of concrete or similar material with reinforcing members embedded transverse to the roadway, in combination with a wall or spandrel with upright reinforcing members embedded.

10. A bridge of concrete or similar material with reinforcing members embedded transverse to the roadway and extending upward into a wall or spandrel.

11. A bridge of concrete or similar material with reinforcing members embedded transverse to the roadway, overlapping other reinforcing members embedded in a wall or railing.

12. A concrete arch with reinforcing members transverse to the axis and passing near intrados and near extrados and other members extending in the direction of the axis of the arch and overlapping upright members embedded in the spandrel, which in turn overlap a longitudinal member embedded in the spandrel.

13. An arch and spandrel with tension members embedded in the arch and extending into the spandrel and attached to longitudinal members in the spandrel, substantially as described.

14. A concrete arch with reinforcing members transverse to the axis and passing near intrados, and near extrados, and other reinforcing members extending in the direction of the axis of the arch and overlapping upright members embedded in the spandrel.

15. A concrete arch and spandrel wall with a longitudinal member and a transverse member embedded in the spandrel and overlapping, and a member embedded in the arch in the general direction of its axis.

16. A concrete arch with embedded tension members passing near the intrados and other transverse reinforcing members passing near the intrados and extending toward the extrados and anchored in the concrete without attachment to other members.

17. A concrete arch with rods or bars embedded crossing the central axis of the arch ring and other rods or bars passing close to the intrados adjacent to the aforesaid rods or bars and extending away from the intrados.

18. A concrete arch with rods or bars embedded transverse to the axis and crossing the central axis of the arch ring, and longitudinal rods or bars passing between the said rods or bars and the intrados.

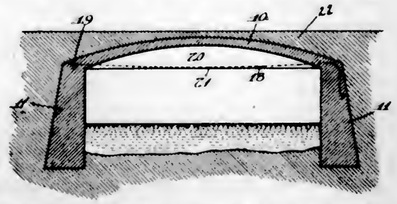
19. A concrete arch having embedded two tension members transverse to each other and each crossing from near the intrados to near the extrados of the arch.

20. A concrete arch with rods or bars embedded crossing the central axis of the arch ring and other similar rods or bars transverse thereto.

21. An arched structure of concrete or similar material with walls transverse to the axis of the arch and bonded to the arch by reinforcing members embedded in the arch in a direction transverse to the walls.

22. A curved structural member with tension members embedded passing from side to side of the structural member in longitudinal and transverse directions.

853,204. ARCH STRUCTURE. DANIEL B. LUTEN, Indianapolis, Ind. Original application filed May 17, 1902, Serial No. 107,812. Divided and application filed July 25, 1904, Serial No. 217,936. Divided and this application filed Oct. 4, 1905. Serial No. 281,336.



Claim.—1. A series of concrete girders joined by a curved floor.

2. A series of concrete girders joined by a floor curved longitudinally with the girders.

3. A curved compression member of concrete or similar material with metal tension chord embedded in a depending rib.

4. A reinforced concrete girder limited above by a curved drum with its axis transverse to the girder.

5. An arch of concrete with ties from abutment to abutment at or above the springing, and embedded in ribs of concrete.

6. An arch of concrete with ties from abutment to abutment near the springing and embedded in ribs of concrete.

7. An arch provided with depending internal ribs and suspension rods sagged at the middle embedded in said ribs, substantially as described.

8. An arch having bench walls and depending internal ribs, and suspension rods embedded in said ribs and anchored in said bench walls, substantially as described.

9. An arch having bench walls and depending internal ribs, and suspension rods sagged at the middle embedded in said ribs, and anchored in said bench walls, substantially as described.

10. A curved concrete slab supported on girders of concrete reinforced with tension members bent upward at their ends.

11. An arch having a curved extrados and with reinforced ribs depending from the intrados and bounded by a substantially straight line below.

12. A bridge floor supported above reinforced concrete girders curved above and straight below.

13. Reinforced concrete girders of decreasing height toward end of span and joined by a concrete slab with inclined upper surface.

14. A bridge of concrete or similar material bounded by a substantially straight line below and having a floor with inclined upper surface.

15. A curved concrete slab supported on reinforced concrete girders.

16. A concrete arch with curved extrados and depending girders.

17. An earth covered arch with depending ribs of reinforced concrete.

18. In a bridge, an earth covered concrete floor supported by reinforced concrete girders.

19. An arch having its thrust resisted by ribs and a reinforced member transverse to the ribs.

20. An arch of concrete or similar material with reinforced ribs resisting the thrust of the arch and a reinforcing member transverse to the ribs.

21. A curved structural member combined with intradosal ribs and a reinforcing member embedded in the end of the member.

22. A concrete arch having its horizontal thrust resisted at intervals by longitudinal members embedded in concrete ribs.

23. A concrete arch having its thrust resisted at intervals by longitudinal members embedded in concrete ribs and a reinforced abutment transverse thereto.

24. A concrete arch having depending girders with embedded ties from abutment to abutment and abutments reinforced transversely to the ties.

25. An arch adapted to transmit horizontal thrusts and stiffened by reinforced concrete girders adapted to transmit vertical forces only to the abutments.

26. A bridge of concrete or similar material, of thickness decreasing toward the ends of the span under an earth filling.

27. A bridge of concrete or similar material of thickness decreasing toward the abutment, and covered with a filling, of depth increasing toward the abutment.

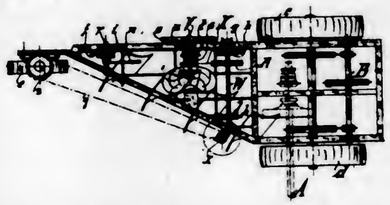
28. A bridge of concrete or similar material with a substantially straight lower edge and supporting an earth filling of depth increasing toward the end of the span.

29. An arch of concrete or similar material having depending girders with embedded ties from abutment to abutment and a metal tension member transverse to the ties.

30. An arch having longitudinal metal ties embedded in concrete ribs below the crown and a transverse metal member from tie to tie.

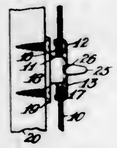
31. An arch of concrete or similar material having its thrust resisted by a plurality of members of concrete or similar material transverse to each other.

853,205. MOTOR-PLOW. ALBERT MIERSCH, Breslau, Germany, assignor to The Firm of Gebrueder Alexander, Breslau, Germany. Filed Nov. 28, 1904. Serial No. 234,665.



Claim.—A motor plow comprising a rectangular main portion, wheels and axles supporting it, a triangular extension frame at the front of the motor frame, a swivel wheel supporting the front of the triangular extension, a body frame vertically guided on the motor frame, independent pulleys carried by the motor frame at front and rear respectively, chains attached to the body frame and secured to said pulleys, means within reach of the driver for independently turning and securing said pulleys, and plow shares supported by and uniformly distributed over said body frame, substantially as described.

853,206. CURTAIN-FASTENER. GEORGE W. J. MURPHY, Merrimac, Mass., assignor to The G. W. J. Murphy Co., a Corporation of Massachusetts. Filed Apr. 2, 1906. Serial No. 309,267.



Claim.—1. As an article of manufacture, a curtain fastener comprising a male and a female member, said male member formed in two parts one rotatable upon the other, one of said parts provided with two grooves separated by sharp radiating ridges formed by said grooves, the other of said parts having a convex portion adapted to engage and fit said grooves.

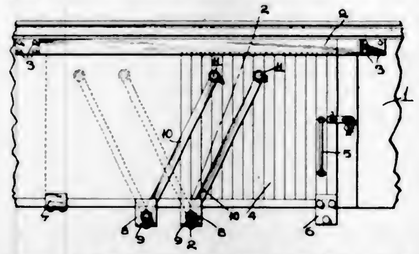
2. As an article of manufacture, a curtain fastener comprising a male and a female member, said male member formed in two parts one rotatable upon the other, one of said parts provided with two grooves separated by sharp radiating ridges formed by said grooves, the other of said parts having a convex portion adapted to engage and fit said grooves, and a spring adapted to hold said convex portions in one of said grooves and lock said parts against rotation relatively to each other.

3. As an article of manufacture, a curtain fastener comprising a male and a female member, said male member consisting of a base provided with two grooves separated by sharp radiating ridges formed by said grooves, a rotatable stud provided with a convex portion adapted to engage one of said grooves, and a spring adapted to hold said stud against said base, said female member provided with an aperture adapted to receive said male member, said rotatable stud adapted to lock said male and female members together.

4. As an article of manufacture, a curtain fastener comprising a male and a female member, said male member consisting of a base provided with two grooves of substantially semicircular cross section separated by sharp radiating ridges formed by said grooves, a rotatable stud provided with a convex portion adapted to engage said grooves, and a spring adapted to hold said stud against said base, said female member provided with an aperture adapted to receive said male member, said rotatable stud adapted to lock said male and female members together.

5. As an article of manufacture, a curtain fastener comprising a male and a female member, said male member consisting of a base provided with two grooves of substantially semicircular cross section separated by sharp radiating ridges formed by said grooves, a rotatable stud provided with a convex portion adapted to engage said grooves, and a spring adapted to hold said stud against said base, said female member provided with an aperture adapted to receive said male member, and two diametrically opposite depressions adapted to receive two corners of said stud.

853,207. CAR-DOOR HANGER. JACOB A. MYERS, Greenville, Ill. Filed Oct. 23, 1906. Serial No. 340,217.



Claim.—1. The combination with a car and a car door, of two parallel bars, the upper ends of which are pivoted to the car door, and the lower ends thereof pivotally connected at fixed points to the car; substantially as specified.

2. The combination with a car and car door, of a pair of parallel bars pivotally secured at their upper ends to the car door, the lower ends of which bars are pivotally secured at fixed points to the car body below the door.

853,208. TYPOGRAPHIC MACHINE. FRANCIS H. RICHARDS, Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation, a Corporation of New Jersey. Original application filed Dec. 29, 1900, Serial No. 41,521. Divided and this application filed Apr. 12, 1902. Serial No. 102,539.

Claim.—1. The combination, with a traversing mechanism embodying a carriage, of a rotary carrier or turret, a part mounted thereon; an axially movable shaft to which said part is secured; and means for moving said carriage actuated by said shaft.

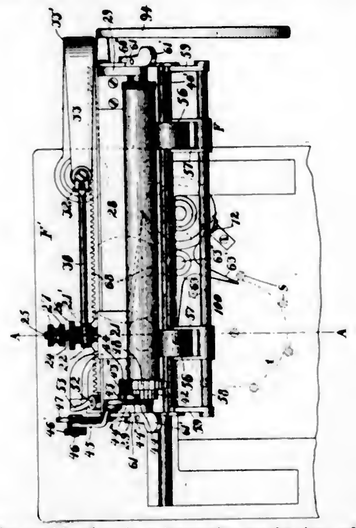
2. The combination, with a traversing mechanism embodying a carriage, of a rotary carrier or turret, a part mounted thereon; an axially movable shaft; and means for moving the carriage actuated by the end of said shaft.

3. The combination, in a traversing mechanism, of a carriage provided with a longitudinal rib; a pin adapted to be located upon one side or the other of the rib according as the carriage travels in one direction or the other, the rib having a transverse groove at one end and a spring for swinging the carriage upon its support.

4. The combination, in a traversing mechanism, of a carriage provided with a longitudinal rib; a depressible pin adapted to be situated upon one side or the other of the rib according as the carriage travels in one direction or in the other; and a spring for swinging the carriage across said rib.

5. The combination, in a traversing mechanism, of a depressible pin, a carriage provided with a rib forming a groove on each side thereof through which the pin slides, each groove being inclined at one end and entering a transverse passage extending across the rib.

6. The combination, in a traversing mechanism, of a depressible pin, a carriage provided with a rib forming a groove on each side thereof through which the pin slides, each groove entering a transverse passage extending across the rib and one of said grooves terminating in an adjustable block.



7. The combination, in a traversing mechanism, of a depressible pin, a carriage provided with a rib forming a groove on each side thereof through which the pin slides, each groove being inclined at one end and entering a transverse passage extending across the rib, one of said grooves terminating in an adjustable block.

8. The combination, in a traversing mechanism, of a depressible pin, a carriage provided with a rib forming a groove on each side thereof through which the pin slides, and a pinion for traversing said carriage normally held by said pin in engagement with a rack upon the carriage when located in one of the grooves but permitting the carriage to be swung away from the pinion by gravity when depressed.

9. The combination, in a traversing mechanism, of a depressible pin, a carriage provided with a rib forming a groove on each side thereof through which the pin slides, each groove terminating in a transverse passage, and a pinion for traversing said carriage normally held by said pin in engagement with a rack upon the carriage when located in one of the grooves but permitting the carriage to be swung away from the pinion by gravity when depressed.

10. The combination, in a traversing mechanism, of a depressible pin, a carriage provided with a rib forming a groove on each side thereof through which the pin slides, each groove terminating in a transverse passage, a pinion for traversing said carriage normally held by said pin in engagement with a rack upon the carriage when located in one of the grooves, and a spring with which the carriage contacts adjacent to one end of its movement to automatically swing the carriage transversely when the pin comes opposite one of said transverse passages, the carriage being moved by gravity in a reverse direction when the pin is opposite the other transverse passage.

11. The combination with a traveling carriage, of a feed roll mounted thereon; means for turning the feed roll immediately preceding an extreme position of the carriage; means for automatically causing the carriage to swing upon its supports at each extreme position thereof; a traversing pinion and rack adapted to engage at one extreme position of the carriage and to disengage at the other extreme position; and a spring for turning the carriage when the pinion and rack are disengaged.

12. A return device for a traveling carriage comprising, in combination, a drum, a band or tape connecting the carriage with the drum, a spring for rotating said drum, and a second spring co-operative therewith for augmenting the tension thereof.

13. A return device for a traveling carriage, comprising, in combination, a stud, a sleeve rotatively mounted upon the stud, a drum rotatively mounted upon the sleeve, a band or tape connecting the carriage with the drum, a spring secured at one end to said drum and at the other to said sleeve, a worm wheel rotatively mounted upon the sleeve, a screw or worm for turning said worm wheel, and a second spring secured at one end to said worm wheel and at the other end to said sleeve.

14. The combination with a longitudinally movable carriage mounted to swing laterally to the direction of its longitudinal movement, of a carriage-actuating mechanism with which the carriage may be swung into and from which the carriage may be swung out of operative engagement, by means of engagement of a switch rib on the carriage with a switch pin on the frame.

15. The combination with a longitudinally movable carriage provided with a longitudinal rib and a switch pin on the frame for engagement with the rib, and a guide rod on which the carriage is mounted to swing laterally to the direction of its longitudinal movement, of an actuating mechanism with which the carriage may be swung into and from which the carriage may be swung out of operative engagement.

16. The combination with a longitudinally movable carriage provided with a longitudinal rib and a switch pin on the frame for engagement with the rib, and a guide rod on which the carriage is mounted to swing laterally to the direction of its longitudinal movement, of an actuating mechanism relatively to which the carriage at one end of its stroke is swung by gravity in one direction and a spring for swinging the carriage at the opposite end of its stroke in the opposite direction.

17. The combination with a longitudinally movable carriage, a guide rod on which the carriage is mounted to swing laterally to the direction of its longitudinal movement, and an adjustable opposed guide, of an actuating mechanism with which the carriage may be swung into and from which the carriage may be swung out of operative engagement, by means of engagement of a switch rib on the carriage with a switch pin on the frame.

18. The combination with a longitudinally movable carriage provided with a longitudinal rib and switch pin on the frame for engagement with the rib, a guide rod on which the carriage is mounted to swing laterally to the direction of its longitudinal movement, and an adjustable opposed guide, of an actuating mechanism relatively to which the carriage at one end of its stroke is swung by gravity in one direction, and a spring for swinging the carriage at the opposite end of its stroke in the opposite direction.

19. The combination with a longitudinally movable carriage provided with a longitudinal rib, of a guide rod on which the carriage is mounted to swing laterally to the direction of its longitudinal movement, an actuating mechanism with which the carriage may be swung into and from which it may be swung out of engagement, a pin along which one side of said rib is adapted to travel when the carriage is engaged with its actuating mechanism and along which the other side of said rib is adapted to travel when the carriage is disengaged from its actuating mechanism, and means for shifting said pin from one side of said rib to the opposite side thereof at each end of the carriage stroke.

20. The combination with a longitudinally movable carriage provided with a longitudinal rib, of a guide rod on which the carriage is mounted to swing laterally to the direction of its longitudinal movement, an actuating mechanism with which the carriage may be swung into and from which it may be swung out of engagement, a pin along which one side of said rib is adapted to travel when the carriage is engaged with its actuating mechanism and along which the other side of said rib is adapted to travel when the carriage is disengaged from its actuating mechanism, means for shifting said pin from one side of said rib to the opposite side thereof at each end of the carriage stroke, and a finger piece for withdrawing said pin from engagement with the rib in any intermediate position of the carriage.

21. The combination with a longitudinally movable carriage provided with a longitudinal rib forming a guide-way on each side thereof, one guide-way terminating in an inclined plane adjacent to one end of the carriage and the other guide way in a similar inclined plane adjacent to the other end of the carriage and which guide-ways are connected with each other at the two ends of the carriage, of a depressible pin adapted to travel in said guide-ways, and means for shifting the pin from one guide-way to the other at each end of the carriage stroke.

22. The combination with a longitudinally movable carriage provided with a longitudinal rib forming a guide-way on each side thereof, one guide-way terminating in an inclined plane adjacent to one end of the carriage and the other guide-way in a similar inclined plane adjacent to the other end of the carriage and which guide-ways are connected with each other at the two ends of the carriage, of a member on which one of said inclined planes is formed and which is adjustable longitudinally of the carriage, a depressible pin adapted to travel in said guide-ways, and means for shifting the pin from one guide-way to the other at each end of the carriage stroke.

23. The combination with a longitudinally movable carriage provided with a longitudinal rib forming a guide-way on each side thereof, one guide-way terminating in an inclined plane adjacent to one end of the carriage and the other guide-way in a similar inclined plane adjacent to the other end of the carriage and which guide-ways are connected with each other at the two ends of the carriage, of a depressible pin adapted to travel in said guide-ways, and means comprising a spring for shifting the pin from one guide-way to the other at each end of the carriage stroke.

24. The combination with a longitudinally movable carriage provided with a longitudinal rib forming a guide-way on each side thereof, one guide-way terminating in an inclined plane adjacent to one end of the carriage and the other guide-way in a similar inclined plane adjacent to the other end of the carriage and which guide-ways are connected with each other at the two ends of the carriage, of a guide-rod upon which the carriage is mounted to swing laterally to the direction of its longitudinal movement, a depressible pin adapted to travel in said guide-ways, and means for shifting the pin from one guide-way to the other at each end of the carriage stroke.

25. The combination with a longitudinally movable carriage provided with a longitudinal rib forming a guide-way on each side thereof, one guide-way terminating in an inclined plane adjacent to one end of the carriage and the other guide-way in a similar inclined plane adjacent to the other end of the carriage and which guide-ways are connected with each other at the two ends of the carriage, of a depressible pin adapted to travel in said guide-ways, means for shifting the pin from one guide-way to the other at each end of the carriage stroke, a rack on the carriage, a pinion engageable with and disengageable from the rack, and feed mechanism for controlling the movement of said pinion.

26. The combination with a longitudinally movable carriage provided with a longitudinal rib forming a guide-way on each side thereof, one guide-way terminating in an inclined plane adjacent to one end of the carriage and the other guide-way in a similar inclined plane adjacent to the other end of the carriage and which guide-ways are connected with each other at the two ends of the carriage, of a depressible pin adapted to travel in said guide-ways, means for shifting the pin from one guide-way to the other at each end of the carriage stroke, a rack on the carriage, a pinion engageable with and disengageable from the rack, feed mechanism for controlling the movement of said pinion, and a finger piece for withdrawing the said pin from the guide-ways.

27. The combination with a longitudinally movable carriage, a rack thereon and a carriage retracting spring, of a pinion engageable with the rack, a star wheel for imparting an intermittent movement to the pinion, and continuously movable crank mechanism for imparting intermittent movement to the star wheel at predetermined intervals.

28. The combination with a longitudinally movable carriage, a rack thereon and a carriage retracting spring, of a pinion engageable with the rack, a star wheel for imparting an intermittent movement to the pinion, crank mechanism for imparting an intermittent movement to the star wheel, at predetermined intervals, and locking devices for locking the star wheel in each of its angular positions.

29. The combination with a longitudinally movable carriage provided with a longitudinal rib, of a longitudinally reciprocating pin mounted in the frame for lateral engagement with said rib, said carriage mounted to swing laterally to the direction of its longitudinal movement, of a carriage actuating mechanism with which the carriage may be swung into and from which the carriage may be swung out of operative engagement.

30. The combination with a longitudinally movable carriage, a rack thereon and a carriage retracting spring, of a pinion engageable with the rack, a star wheel for imparting an intermittent movement to the pinion, crank mechanism for imparting an intermittent movement to the star wheel, and means for automatically moving the rack out of engagement with the pinion.

31. The combination with a longitudinally movable carriage mounted to swing laterally to the direction of its longitudinal movement, and a switch rib on the carriage, of a carriage-actuating frame with which the carriage may be swung into and from which the carriage may be swung out of operative engagement, and a switch pin on the frame for engaging the said switch rib.

32. The combination with a longitudinally movable carriage, a rack thereon, and a carriage retracting spring, a pinion engageable with the rack, means for effecting the engagement of the pinion and rack, a star wheel for imparting an intermittent movement to the pinion, crank mechanism for imparting an intermittent movement to the star wheel, and means for automatically moving the rack out of engagement with the pinion.

33. The combination with a reciprocatory carriage, of an intermittently movable actuator therefor, a locking member carried by the carriage and movable transversely of the line of reciprocation thereof, a contacting member for engaging the locking member and causing the same to reciprocate in either of two parallel paths, and means movable with the locking member for engaging said actuator during its travel along one only of said paths.

34. The combination with a reciprocatory carriage, of a locking member carried by the carriage and movable transversely of the line of reciprocation thereof, a contacting member for engaging the locking member and causing the same to traverse either of two parallel paths, an intermittently movable actuator for advancing the carriage, means movable with the locking member for engaging said actuator during its movement along one only of said paths, means for permitting said locking member to move said engaging means out of engagement with said contacting member at the completion of a predetermined length of travel along said path, means for returning the carriage to initial position, and a spring for moving the locking member and the engaging means into position for the latter to engage the actuator.

REISSUES.

12,645. PNEUMATIC-TIRE PLUG. DAVID APSTEIN, Bridgeport, Conn. Filed Mar. 11, 1907. Serial No. 362,328. Original No. 818,402, dated Apr. 24, 1906.

Claim.—1. A pneumatic-tire plug, comprising a closer having a transverse socket therein, a rocker-pin mounted in the socket, a threaded shank rotatably mounted in said rocker-pin, and a nut mounted upon said shank.

2. A pneumatic-tire plug comprising a closer having a transverse socket therein, a rocker-pin mounted in the socket, a threaded shank pivotally mounted in the pin, a nut mounted on the shank, and a flexible washer secured to the under side of the closer.

3. A pneumatic-tire plug, comprising a closer having a transverse socket therein, a rocker-pin mounted in the socket, an annular bead formed on the under side of said closer, a flexible washer to engage the head, hooks to secure the washer in place, a threaded shank pivotally connected to the rocker-pin, and a nut mounted upon the shank, substantially as described.

4. A pneumatic tire plug, comprising a closer having hooks upon its under side, a flexible washer attached to said hooks, a threaded shank pivoted to the closer, a nut upon the shank and a flexible washer attached to the nut.

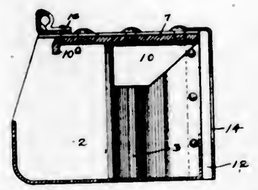
5. A pneumatic-tire plug, comprising a closer having a transverse socket therein, a transverse rocker-pin mounted in the socket, a threaded shank rotatably mounted in said rocker-pin, a nut mounted upon said shank, and flexible material secured beneath the closer and nut.

6. A pneumatic-tire plug, comprising a closer convexed on its under side to conform to the normal shape of a tire, a threaded shank swiveled to said closer, and a concave nut mounted on said threaded shank.

7. A device of the character described comprising a closer, a threaded shank to which the closer is connected, a nut engaging the shank, a head upon the shank for convenience in manipulation and a cutter for forming an opening in a tire for the closer.

8. A device of the character described, comprising a closer, a threaded shank to which the closer is connected, a nut engaging the shank, a head for convenience in manipulation and means for forming an opening in a tire for the closer.

12,646. PRESSED-STEEL JOURNAL-BOX FOR RAILWAY-CARS. CHARLES H. COCHRAN, Avalon, Pa., assignor of twenty-four and one-half one-hundredths to Charles L. Owen, Avalon, Pa., and fifty-one one-hundredths to W. H. Shinn, Carnegie, Pa. Filed Apr. 6, 1907. Serial No. 366,867. Original No. 845,726, dated Feb. 26, 1907.

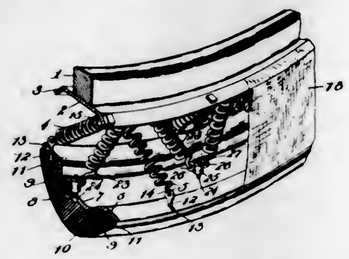


Claim.—1. A pressed-steel journal-box having a body portion formed of a single piece of pressed-steel, the edges of which meet at the top, and a lug-plate overlapping the seam in the body portion and secured thereto, said lug-plate being provided with depending front and side flanges; substantially as described.

2. A pressed-steel journal-box comprising a body portion formed of a single piece of pressed steel, the edges of which meet at the top, a lug-plate overlapping the seam in the body portion and provided with front and side flanges to form rests for the stop-wedge and journal-brass, respec-

tively, and a guide-plate, said parts being secured together; substantially as described.

12,647. VEHICLE-WHEEL. LOUIS A. HILL, Washington, D. C. Filed June 27, 1906. Serial No. 323,739. Original No. 792,897, dated June 20, 1905.



Claim.—1. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate, an outer plate, two series of springs oppositely inclined transversely between said plates, and a medial series of springs consisting of two sets of alternate springs oppositely inclined longitudinally between said plates, substantially as described.

2. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate, an outer plate, two series of springs oppositely inclined transversely between said plates, a medial series of springs consisting of two sets of alternate springs oppositely inclined longitudinally between said plates, and a protecting-shield inclosing said several series of springs, substantially as described.

3. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate, an outer plate, two series of springs oppositely inclined transversely between said plates, a medial series of springs consisting of two sets of alternate springs oppositely inclined longitudinally between said plates and means for varying the tension of said several series of springs, substantially as described.

4. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate, an outer plate, two series of springs oppositely inclined transversely between said plates, a medial series of springs consisting of two sets of alternate springs oppositely inclined longitudinally between said plates and means constructed to simultaneously adjust the tension of the two oppositely-inclined springs of each pair of adjacent springs in said medial series, substantially as described.

5. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate, an outer plate provided with a projection or corrugation extending around its outer periphery, two series of springs oppositely inclined transversely between said plates, a medial series of springs consisting of two sets of alternate springs oppositely inclined longitudinally between said plates, and a resilient tire surrounding said outer plate and provided on its inner periphery with a recess constructed to engage the projection on the periphery of said outer plate, substantially as described.

6. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate, an outer plate provided with a projection or corrugation extending around its outer periphery two series of springs oppositely inclined transversely between said plates, a medial series of springs consisting of two sets of alternate springs oppositely inclined longitudinally between said plates, and a resilient tire provided with an angular tread and with a recess on its inner periphery constructed to engage the projection on the periphery of said outer plate, substantially as described.

7. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate, an outer plate provided with a plurality of slots along each edge, a resilient tire surrounding said outer plate and carrying links in position to extend through said slots, springs connected to said links and extending transversely across said rim to the diagonally opposite edge of said inner plate, and a medial series of springs consisting of two sets of alternate springs oppositely inclined longitudinally between said plates, substantially as described.

8. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate provided with an offset flange at each edge, an outer plate provided with a plurality of slots along each edge, a resilient tire surrounding said outer plate and carrying links in position to extend through said slots, springs connected to said links and extending transversely across said rim to the diagonally opposite offset flange, threaded heads secured to said springs, adjusting screws extending through said offset flanges to engage said threaded heads, and a medial series of springs inclined longitudinally between said plates, substantially as described.

9. In a vehicle-wheel, the combination of a cushioning-rim comprising an inner plate provided with an offset flange at each edge, an outer plate provided with a plurality of slots along each edge, a resilient tire surrounding said outer plate and carrying links in position to extend through said slots, springs connected to said links and extending transversely across said rim to the diagonally opposite offset flange, threaded heads secured to said springs, adjusting-screws extending through said offset flanges to engage said threaded heads, a protecting-shield clamped between the outer plate and tire on each edge and extending to the corresponding offset flange, said shield being provided with openings, or eyelets, to receive said links and adjusting-screws, and a medial series of springs inclined longitudinally between said plates, substantially as described.

10. In a vehicle wheel, the combination of a hub, an inner plate supported by the hub, an outer plate, two series of resilient braces having their ends secured respectively to the inner and outer plates, the braces of one series being arranged at an angle to those of the other series and resilient means interposed between said plates to yieldingly hold the outer plate as against movement in a plane at right angles to the axis of the wheel, said means being operative at and adjacent to the point where the displacing force acts on the outer plate.

11. In a vehicle wheel, the combination of a hub, an inner plate supported by the hub, an outer plate, three series of springs having their ends secured respectively to the inner and outer plates, two of said series of springs being arranged at an angle to a plane at right angles to the axis of the wheel and the springs of one series arranged at an angle to those of the other series, the third series of springs being arranged in a plane at right angles to the axis of the wheel and at an angle to the radii of the wheel.

12. In a vehicle-wheel, the combination of a hub, an inner plate supported by the hub, an outer plate, springs having their ends secured to the outer and inner plates respectively, adjacent springs being arranged at an angle to each other and to the radii of the wheel and two series of transverse springs having their ends secured to the outer and inner plates respectively the springs of one series being arranged at an angle to those of the other series.

13. In a vehicle wheel, the combination of a hub, an inner plate supported by the hub, an outer plate resilient means interposed between said plates and operative at an angle to the radii of the wheel to yieldingly hold the outer plate as against movement relative to the inner plate in the plane of rotation and resilient means independent of that employed for preventing radial displacement for yieldingly holding the outer plate in the plane of rotation.

14. In a vehicle wheel the combination of a hub, an inner plate supported by the hub, an outer plate and resilient means connected to the inner and outer plates for yieldingly holding the outer plate from displacement relative to the inner plate due to forces acting in any direction on the outer plate when the wheel is in use, said means being operative at and adjacent to the point or points where said forces act on the outer plate.

12,648. ASEPTIC DRINKING-CUP. JOHN J. SHEA, Beverly, Mass., assignor to Aseptic Drinking Cup Company, Cambridge, Mass., a Corporation of Maine. Filed July 17, 1905. Serial No. 270,155. Original No. 759,029, dated May 3, 1904.



Claim.—1. A drinking-cup formed of a sheet of collapsible material adapted to be folded flat along predetermined lines and having two of its edges suitably secured together and having one end closed, the other end being open and provided with a flange, and a band of flexible material arranged between said flange and the body of the cup provided with an extension projecting from the cup and adapted to form a handle therefor, said band adapted when the cup is folded to be folded therewith and when the cup is open to be opened therewith and to hold the mouth of the cup substantially rigid when open.

2. A drinking cup formed of collapsible material, having one end closed, the other end being open, and a foldable band provided with an extension projecting from the cup and adapted to form a handle therefor, said band adapted when the cup is folded to be folded therewith, and when the cup is open to be opened therewith and to hold the mouth of the cup substantially rigid when open.

3. A drinking cup formed of a sheet of collapsible material suitably fashioned into cup form and having one end closed, the other end being open and provided with a flange, and a band of flexible material arranged between said flange and the body of the cup provided with an extension projecting from the cup and adapted to form a handle therefor, said band adapted when the cup is folded to be folded therewith and when the cup is open to be opened therewith and to hold the mouth of the cup firm when open.

DESIGNS.

38,550. WATCH-FOB PENDANT. FREDERIC H. BATEMAN, Grenloch, N. J. Filed Mar. 8, 1907. Serial No. 361,408. Term of patent 14 years.



Claim.—The ornamental design for a watch fob pendant, substantially as shown.

38,551. WATCH-BOW. CASPER SCHAEFER, Sag Harbor, N. Y., assignor to Fahys Watch Case Company. Filed Apr. 3, 1907. Serial No. 366,233. Term of patent 14 years.



Claim.—The ornamental design for a watch bow, as shown.

38,552. WATCH-BOW. CASPER SCHAEFER, Sag Harbor, N. Y., assignor to Fahys Watch Case Company. Filed Apr. 3, 1907. Serial No. 366,234. Term of patent 14 years.



Claim.—The ornamental design for a watch bow, as shown.

TRADE-MARKS

PUBLISHED MAY 7, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,884. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) FREIBERG & WORKUM, Cincinnati, Ohio. Filed Apr. 17, 1905.

EAGLE

Particular description of goods.—Gin.

Ser. No. 5,145. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE HOFFHEIMER BROS. CO., Cincinnati, Ohio. Filed May 11, 1905.

GOLDEN CROWN

Particular description of goods.—Whisky.

Ser. No. 5,182. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) E. EISING & Co., New York, N. Y. Filed May 11, 1905.

STAG



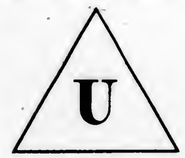
Particular description of goods.—Whisky.

Ser. No. 6,318. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) GEORGE B. HURD & Co., New York, N. Y. Filed May 22, 1905. Used ten years.

Hurd's

Particular description of goods.—Writing-Paper and Envelops.

Ser. No. 7,465. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE HELLER & MERZ CO., Newark, N. J. Filed June 5, 1905. Used ten years.



Particular description of goods.—Aniiin Colors and Blue.

Ser. No. 7,963. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) WINSOR & NEWTON, L'D., London, England. Filed June 12, 1905.



Particular description of goods.—Artists' Colors, (Cake, Moist Tube,) Pigments, Water-Color Liquids in Bottles, and Varnishes.

Ser. No. 8,169. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) WHITMAN GROCERY COMPANY, Orange, Mass. Filed June 15, 1905. Used ten years.

MINUTE

Particular description of goods.—Prepared Gelatin.

Ser. No. 8,718. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) NEW YORK GLUCOSE CO., New York, N. Y. Filed June 21, 1905.

GLOBE

Particular description of goods.—Laundry Starch.

Ser. No. 8,723. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) NEW YORK GLUCOSE CO., New York, N. Y. Filed June 21, 1905.



Particular description of goods.—Laundry Starch.

Ser. No. 9,469. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed June 30, 1905. Used ten years.



Particular description of goods.—Printed and Dyed Textile Fabrics.

Ser. No. 10,215. (CLASS 8. DETERGENTS.) THE N. K. FAIRBANK COMPANY, Chicago, Ill. Filed July 13, 1905. Used ten years.

COPCO

Particular description of goods.—Soap.

Ser. No. 10,293. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) C. MEISEL, New York, N. Y. Filed July 14, 1905.



Particular description of goods.—Reed, String, and Brass Musical Instruments and Parts.

Ser. No. 10,651. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa. Filed July 21, 1905.



FAME

Particular description of goods.—Printed and Dyed Textile Fabrics.

Ser. No. 11,828. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) THE AMERICAN PIN COMPANY, Waterville, Conn. Filed Aug. 19, 1905. Used ten years.



The central field upon which the sign of the pound sterling appears is printed in red.

Particular description of goods.—Safety-Pins.

Ser. No. 11,995. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) JAMES R. CROMPTON & BROTHERS, LIMITED, Elton Paper Mills, near Bury, Lancashire, England. Filed Aug. 25, 1905.



Particular description of goods.—Tissue-Paper.

Ser. No. 11,996. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) JAMES R. CROMPTON & BROTHERS, LIMITED, Elton Paper Mills, near Bury, Lancashire, England. Filed Aug. 25, 1905.



Particular description of goods.—Grass-Bleached Tissue-Paper.

Ser. No. 12,584. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) MARSH BROTHERS CO., Sheffield, England. Filed Sept. 14, 1905. Used ten years.

ROXO

Particular description of goods.—Cutlery in General, and other Hand-Tools Having a Cutting Edge.

Ser. No. 12,604. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) SEEBOHM & DIECKSTAHL, LD., Sheffield, England. Filed Sept. 14, 1905. Used ten years.

Particular description of goods.—Twist and other Drills Having a Cutting Edge, End Mills, Taps, Reamers, Files, Hand-Knives, and Hand-Shear Blades.

Ser. No. 12,644. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) JAEGER BROS. CO., Dubuque, Iowa. Filed Sept. 15, 1905. Used ten years.

DUBUQUE CLUB

Particular description of goods.—Whisky.

Ser. No. 13,672. (CLASS 43. THREAD AND YARN.) THE CLARK THREAD CO., Newark, N. J. Filed Oct. 17, 1905. Used ten years.



The shield and inner and outer of the concentric circles are gold.

Particular description of goods.—Sewing-Cotton or Cotton Thread.

Ser. No. 14,564. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) THE ANTI MAL DE MER BELT COMPANY, Montreal, Quebec, Canada. Filed Nov. 13, 1905.



Particular description of goods.—Abdominal Belts for the Prevention of Seasickness.

Ser. No. 15,957. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ERNST BISCHOFF, New York, N. Y. Filed Jan. 6, 1906.

"NEROSOL"

Particular description of goods.—Para-Amido-Phenol and Para-Phenylene-Diamin and Equivalent Phenol Coal-Tar Derivatives Used in the Manufacture of Dyes, but Not Including Manufactured Dyes.

Ser. No. 17,430. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) ST. LOUIS UNION TRUST COMPANY, St. Louis, Mo. Filed Mar. 1, 1906. Used ten years.

CHARTER OAK

Particular description of goods.—Stoves and Ranges.

Ser. No. 17,863. (CLASS 9. EXPLOSIVES.) THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio. Filed Mar. 15, 1906.

Premier

Particular description of goods.—Cartridges, Loaded Shells, Caps, Primers, and Powder.

Ser. No. 17,864. (CLASS 9. EXPLOSIVES.) THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio. Filed Mar. 15, 1906.

Referee

Particular description of goods.—Cartridges, Loaded Shells, Caps, Primers, and Powder.

Ser. No. 17,866. (CLASS 9. EXPLOSIVES.) THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio. Filed Mar. 15, 1906.

LEAGUE

Particular description of goods.—Cartridges, Loaded Shells, Caps, Primers, and Powder.

Ser No. 17,867. (CLASS 9. EXPLOSIVES.) THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio. Filed Mar. 15, 1906.

IDEAL

Particular description of goods.—Cartridges, Loaded Shells, Caps, Primers, and Powder.

Ser. No. 17,868. (CLASS 9. EXPLOSIVES.) THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio. Filed Mar. 15, 1906.

High-Gun

Particular description of goods.—Cartridges, Loaded Shells, Caps, Primers, and Powder.

Ser. No. 18,066. (CLASS 8. DETERGENTS.) UNION OIL COMPANY, Providence, R. I. Filed Mar. 20, 1906. Used ten years.

Union Oil Company Yorkshire Soap Providence, R.I.

Particular description of goods.—Cotton-Seed-Oil Soap.

Ser. No. 18,388. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) LOUIS C. WEDGEFUTH, New York, N. Y., assignor to himself and Adrian D. Adriance, composing the firm of The Bell Company, New York, N. Y. Filed Mar. 31, 1906.



Particular description of goods.—Dyspepsia Medicine.

Ser. No. 18,494. (CLASS 8. DETERGENTS.) THE REMMERS SOAP CO., Cincinnati, Ohio. Filed Apr. 4, 1906.

SWEET MARIE

Particular description of goods.—Toilet Soap.

Ser. No. 20,140. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) LINDSAY LIGHT COMPANY, Chicago, Ill. Filed June 7, 1906.



The background is light blue, one border of the background is dark blue, and the ornamentation, the lettering, and the base of the lamp are of a golden color.

Particular description of goods.—Incandescent-Gas-Lamp Parts and Incandescent Mantles.

Ser. No. 20,564. (CLASS 68. PUBLICATIONS.) ATLAS SCHOOL SUPPLY CO., Chicago, Ill. Filed June 25, 1906.



Particular description of goods.—Blackboard Outline Maps, Flat Maps, Charts, History Outlines, Outline Maps, and Science Tablets.

Ser. No. 20,925. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) JACOB J. PERES & CO., Memphis, Tenn. Filed July 14, 1906.



Particular description of goods.—Canned Vegetables.

Ser. No. 21,088. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) KALAMAZOO LOOSE LEAF BINDER CO., Kalamazoo, Mich. Filed July 23, 1906.

1000 TO 1

Particular description of goods.—Loose-Sheet Holders or Temporary Binders.

Ser. No. 21,355. (CLASS 8. DETERGENTS.) SULA HUDGENS, New York, N. Y. Filed Aug. 6, 1906.



Particular description of goods.—A Detergent Compound for Making a Silver-Cleaning Solution.

Ser. No. 21,585. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE NUTRIMENT COMPANY, Woodbury, N. J., and Philadelphia, Pa. Filed Aug. 15, 1906. Used ten years.

Rennene

Particular description of goods.—Granular Curdling Agent.

Ser. No. 21,691. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HERMANN STEIN, Berlin, Germany. Filed Aug. 21, 1906.

„Tokayin"

Particular description of goods.—Medicinal Wines.

Ser. No. 21,909. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOSEPH TREFFLE GAUDET, Joliette, Quebec, Canada. Filed Sept. 4, 1906.

ROBSON



Particular description of goods.—A Medicinal Preparation Commonly Known as a Hair-Restorer.

Ser. No. 22,302. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SERUM LABORATORIUM RUETE ENOCH, Hamburg, Germany. Filed Sept. 24, 1906.

Graminol

Particular description of goods.—A Curative Serum for the Prevention of Hay-Fever.

Ser. No. 22,308. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) VICTOR ELECTRIC & MANUFACTURING CO., New York, N. Y. Filed Sept. 24, 1906.

VICTOR

Particular description of goods.—Electrical-Current-Measuring Instruments, Voltmeters, Ammeters, and Multiple-Unit Meters and Their Parts.

Ser. No. 22,455. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) GEORGE W. GALLAWAY, New York, N. Y. Filed Oct. 3, 1906.



Particular description of goods.—Lubricating-Oils for Axles and Journal-Bearings.

Ser. No. 22,630. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) PIERRES OUVRÉES DE LA SALM SOCIÉTÉ ANONYME, Salm-Chateau, Belgium. Filed Oct. 10, 1906.



Particular description of goods.—Hones.

Ser. No. 22,768. (CLASS 17. WOOD MANUFACTURES NOT OTHERWISE CLASSIFIED.) CONSOLIDATED CROSS-TIE COMPANY, Jersey City, N. J. Filed Oct. 13, 1906.



Particular description of goods.—Railroad Cross-Ties.

Ser. No. 23,887. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.). CHARLES A. SIEGEMUND, Boston, Mass. Filed Dec. 8, 1906. Used ten years.

Crystalline

Particular description of goods.—An Alkaline Antiseptic Fluid.

Ser. No. 23,961. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BRUNO H. GOLL CHEMICAL WORKS, Chicago, Ill. Filed Dec. 12, 1906. Used ten years.

American Beauty CREAM

Particular description of goods.—Toilet Cream, a Preparation for Keeping the Skin Soft and Smooth, for Curing Chapped Hands, Roughness of the Skin, Tan, Sunburn, Freckles, and for the Prevention and Cure of Razor-Pimples.

Ser. No. 24,112. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEORGE H. CENTER, Du Quoin, Ill. Filed Dec. 18, 1906.

Liveon.

Particular description of goods.—Medicines for the Cure of Pulmonary Consumption.

Ser. No. 24,185. (CLASS 68. PUBLICATIONS.) MERCK & Co., New York, N. Y. Filed Dec. 21, 1906. Used ten years.

MERCK'S REPORT

Particular description of goods.—A Periodical Devoted to Pharmacy.

Ser. No. 24,219. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) J. ZWACK & Co., Budapest, Hungary. Filed Dec. 22, 1906.



Particular description of goods.—Cordial Prepared from Aniseed and Sugar.

Ser. No. 24,345. (CLASS 54. SEA FOODS.) THLINKET PACKING AND TRADING CO., Portland, Oreg. Filed Dec. 29, 1906.



Particular description of goods.—Canned Salmon.

Ser. No. 24,346. (CLASS 54. SEA FOODS.) THLINKET PACKING AND TRADING CO., Portland, Oreg. Filed Dec. 29, 1906.



Particular description of goods.—Canned Salmon.

Ser. No. 24,347. (CLASS 54. SEA FOODS.) THLINKET PACKING AND TRADING CO., Portland, Oreg. Filed Dec. 29, 1906.



Particular description of goods.—Canned Salmon.

Ser. No. 24,348. (CLASS 54. SEA FOODS.) THLINKET PACKING AND TRADING CO., Portland, Oreg. Filed Dec. 29, 1906.



Particular description of goods.—Canned Salmon.

Ser. No. 24,367. (CLASS 8. DETERGENTS.) JAMES B. FULLER, Boston, Mass. Filed Dec. 31, 1906.

X=RAY'S

Particular description of goods.—A Detergent Cleaning Fluid for Eradicating Oil, Grease, Paint, Pitch, Tar, and Inks.

Ser. No. 24,485. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) ALBERT SAZERAC DE FORGE, Angouleme, France. Filed Jan. 7, 1907. Used ten years.



Particular description of goods.—Cognac.

Ser. No. 24,581. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Jan. 11, 1907.

ANCHOR

Particular description of goods.—Paper and Paper-Boards for Wrapping Purposes.

Ser. No. 24,720. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FREDERICK E. CHAMBERLAIN, Los Angeles, Cal. Filed Jan. 17, 1907.

FOUNTAIN of LIFE

Particular description of goods.—Proprietary Remedies for Stomach, Liver, Throat, Spleen, Kidney, Bowel, Heart, Nerve, Blood, Lung, and Skin Diseases, Inflammation of Any of These Parts, Diseases of the Genitive Organs, Lotions and Liniments, Cold-Creams, Remedies for Tapeworms, Coughs, and Colds, Inflammation of the Bladder and Urethra.

Ser. No. 24,787. (CLASS 25. LOCKS AND SAFES.) THE YALE & TOWNE MFG. CO., Stamford, Conn. Filed Jan. 21, 1907. Used ten years.

YALE

Particular description of goods.—Locks and Keys.

Ser. No. 24,936. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY AND COMPANY, Chicago, Ill. Filed Jan. 28, 1907.

PERITOR

Particular description of goods.—Lenses.

Ser. No. 24,937. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY AND COMPANY, Chicago, Ill. Filed Jan. 28, 1907.

TOROPTIC

Particular description of goods.—Lenses.

Ser. No. 24,938. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY AND COMPANY, Chicago, Ill. Filed Jan. 28, 1907.

TORISCUS

Particular description of goods.—Lenses.

Ser. No. 24,939. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY AND COMPANY, Chicago, Ill. Filed Jan. 28, 1907.

TOROSCOPIC

Particular description of goods.—Lenses.

Ser. No. 24,940. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY AND COMPANY, Chicago, Ill. Filed Jan. 28, 1907.

PERISCUS

Particular description of goods.—Lenses.

Ser. No. 24,941. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY AND COMPANY, Chicago, Ill. Filed Jan. 28, 1907.

PERITORIC

Particular description of goods.—Lenses.

Ser. No. 24,962. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) THE INDEPENDENCE COFFEE AND SPICE COMPANY, Denver, Colo. Filed Jan. 28, 1907.

MANITOU



Particular description of goods.—Coffee.

Ser. No. 25,216. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CALIFORNIA CANNERIES CO., San Francisco, Cal. Filed Feb. 9, 1907.

Silver Crest



Particular description of goods.—Canned Fruits.

Ser. No. 25,355. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE G. J. SCHULTZ COMPANY, New York, N. Y. Filed Feb. 16, 1907.

DIAMOND

Particular description of goods.—Electrical Ignition Devices and Spark-Plugs.

Ser. No. 25,356. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) APPLETON ELECTRIC COMPANY, Chicago, Ill. Filed Feb. 18, 1907.

A

Particular description of goods.—Fuses, Fuse-Links, Fuse-Blocks, Outlet-Bushings for Electrical Purposes, Cable Hangers for Electrical Purposes, Test-Connectors, and Distributing-Boards.

Ser. No. 25,403. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

"Globe"

Particular description of goods.—Document-Files, Shelf-Boxes, File-Boxes, Document-Boxes, Pamphlet-Cases, Legal Wrappers, Envelops, Folders, Memorandum-Cases, Stationery-Racks, Distributers, Desk-Trays, Loose-Sheet Holders, Compressor-Covers, Binding-Cases, Indexes, Portfolios, Pads for Desks and Tables, Index-Tabs, Scrap-Books, Loose-Leaf Books, Loose-Leaf Files and Binders, Transfer-Cases, Memorandum-Cases, Transfer-Covers, Record-Cards, Guide-Cards, Card-Index Cases, Card-Indexes, Office-Ticklers, File-Trays, and Board-Clips.

Ser. No. 25,404. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

GLOBE-WERNICKE

Particular description of goods.—Document-Files, Shelf-Boxes, File-Boxes, Document-Boxes, Pamphlet-Cases, Legal Wrappers, Envelops, Folders, Memorandum-Cases, Stationery-Racks, Distributers, Desk-Trays, Loose-Sheet Holders, Compressor-Covers, Binding-Cases, Indexes, Portfolios, Pads for Desks and Tables, Index-Tabs, Scrap-Books, Loose-Leaf Books, Loose-Leaf Files and Binders, Transfer-Cases, Memorandum-Cases, Transfer-Covers, Record-Cards, Guide-Cards, Card-Index Cases, Card-Indexes, Office-Ticklers, File-Trays, and Board-Clips.

Ser. No. 25,408. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

JUMBO

Particular description of goods.—Document-Files.

Ser. No. 25,410. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907. Used ten years.

COLUMBIA

Particular description of goods.—Board-Clips and Parts Thereof, Document-Files, Compressor-Covers, and Binding-Cases and Parts Thereof.

Ser. No. 25,412. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed Feb. 19, 1907.

S/W

Particular description of goods.—Document-Files, Shelf-Boxes, File-Boxes, Document-Boxes, Pamphlet-Cases, Legal Wrappers, Envelops, Folders, Memorandum-Cases, Stationery-Racks, Distributers, Desk-Trays, Loose-Sheet Holders, Compressor-Covers, Binding-Cases, Indexes, Portfolios, Pads for Desks and Tables, Index-Tabs, Scrap-Books, Loose-Leaf Books, Loose-Leaf Files and Binders, Transfer-Cases, Memorandum-Cases, Transfer-Covers, Record-Cards, Guide-Cards, Card-Index Cases, Card-Indexes, Office-Ticklers, File-Trays, and Board-Clips.

Ser. No. 25,445. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

ADMIRAL DEWEY



Particular description of goods.—Canned Fish.

Ser. No. 25,474. (CLASS 48. DAIRY PRODUCTS.) CHAUTAUQUA REFRIGERATING CO., Jamestown, N. Y. Filed Feb. 20, 1907.



Particular description of goods.—Cheese.

Ser. No. 25,492. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WALTER T. MURPHY, Halifax, Nova Scotia, Canada. Filed Feb. 20, 1907.

KATHOLEKON.

Particular description of goods.—A Remedy for Diseases of the Blood, Liver, and Kidneys.

Ser. No. 25,549. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) EDWIN P. DODGE, Buffalo, N. Y. Filed Feb. 23, 1907.



Particular description of goods.—Whisky.

Ser. No. 25,572. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

SPALDING

Particular description of goods.—Boots, Shoes, and Slippers of Leather, Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golfing, for Running, in Gymnasiums, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,576. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.



Particular description of goods.—Boots, Shoes, and Slippers of Leather, Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golfing, for Running, in Gymnasiums, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,580. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.



Particular description of goods.—Boots, Shoes, and Slippers of Leather, Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golfing, for Running, in Gymnasiums, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,632. (CLASS 8. DETERGENTS.) HENRY W. BENDZICK, Spokane, Wash. Filed Feb. 26, 1907.



Particular description of goods.—A Liquid Clothes-Cleaner.

Ser. No. 25,634. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) FRANK A. HOPPE, Philadelphia, Pa. Filed Feb. 27, 1907.



The figure "9" being printed in red.

Particular description of goods.—A Liquid Chemical Composition Used to Remove the Rust of High-Power Powder from Gun-Barrels and to Preserve the Bore from Rust and Corrosion.

Ser. No. 25,702. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) J. W. BUTLER PAPER CO., Chicago, Ill. Filed Mar. 2, 1907.

BROTHER JONATHAN

BOND

Particular description of goods.—Writing-Paper.

Ser. No. 25,794. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALVIN P. SAWYER, Chicago, Ill. Filed Mar. 6, 1907.

BILE BERRIES

Particular description of goods.—A Liver Medicine.

Ser. No. 25,868. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) THE HUNTOON SPRING WATER CO New York, N. Y. Filed Mar. 8, 1907.

SUN-RAY



Particular description of goods.—Carbonated or Mineral Waters.

Ser. No. 25,876. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) THE HUNTOON SPRING WATER COMPANY, New York, N. Y. Filed Mar. 9, 1907.

PURESTA

Particular description of goods.—Natural Spring-Waters.

Ser. No. 25,921. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) FLEISHMAN, MORRIS & CO., Richmond, Va. Filed Mar. 12, 1907.



The raven being printed in red.
Particular description of goods.—Leather Shoes.

Ser. No. 25,970. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) ADOLPH KASTOR & BROS., New York, N. Y. Filed Mar. 14, 1907.

NOX-ALL

Particular description of goods.—Pocket-Knives.

Ser. No. 25,974. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ARMEN H. THOUMAIAN, Baltimore, Md. Filed Mar. 14, 1907.

LOZAK

Particular description of goods.—Prepared Beverages Made from Milk and Cream.

Ser. No. 25,985. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) HENRY W. ATKINS, Boston, Mass. Filed Mar. 15, 1907. Used ten years.

ATKINS

Particular description of goods.—Silk, Felt, Straw, Fur, Cloth, and Leather Hats and Caps, and Helmets Made of Felt, Cork, and Straw, and Hat-Bodies Covered with Cloth, Tweed, Silk, Cotton, and Like Materials.

Ser. No. 26,000. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) AMERICAN COFFEE CO. OF NEW ORLEANS, LTD., New Orleans, La. Filed Mar. 16, 1907.



Particular description of goods.—Coffee.

Ser. No. 26,060. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ALART & MCGUIRE, New York, N. Y. Filed Mar. 19, 1907. Used ten years.



Particular description of goods.—Sweet, Sour, and Mixed Pickles.

Ser. No. 26,072. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CHARLES GULDEN, New York, N. Y. Filed Mar. 19, 1907. Used ten years.

MOUTARDE Surfine

Particular description of goods.—Prepared Mustard.

Ser. No. 26,083. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) ABNER DOBLE COMPANY, San Francisco, Cal. Filed Mar. 20, 1907. Used ten years.

DOBLE

Particular description of goods.—Water-Wheels and Water-Motors and All Parts Thereof.

Ser. No. 26,105. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) HAROLD H. FRIES, New York, N. Y. Filed Mar. 20, 1907.

KÉLÈNE

Particular description of goods.—Chlorid of Ethyl.

Ser. No. 26,108. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) JOHN LONKE, Brooklyn, N. Y. Filed Mar. 20, 1907.



Particular description of goods.—Piece Goods Composed of Linen or Admixtures of Linen with Cotton, Silk, Wool, Worsted, or Hair.

Ser. No. 26,111. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ADOLPH NEWMAN, Philadelphia, Pa. Filed Mar. 20, 1907.



Particular description of goods.—Women's and Misses' Leather Shoes.

Ser. No. 26,155. (CLASS 68. PUBLICATIONS.) THE SPORTSMAN PUBLISHING CO., Milwaukee, Wis. Filed Mar. 22, 1907.

THE OUTER'S BOOK

Particular description of goods.—A Monthly Magazine Devoted to Hunting, Fishing, and Kindred Sports.

Ser. No. 26,209. (CLASS 54. SEA FOODS.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

A·B·C

Particular description of goods.—Canned Oysters, Canned Sardines, and Canned Salmon.

Ser. No. 26,217. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

BOUQUET

Particular description of goods.—Teas.

Ser. No. 26,218. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.



Particular description of goods.—Coffee.

Ser. No. 26,249. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) WILLIAM HOLLINS AND COMPANY, LIMITED, Mansfield, Radford, Nottingham, Bridgeton, and London, England, and Glasgow, Scotland. Filed Mar. 25, 1907.

VIYELLA

Particular description of goods.—Woolen Piece Goods and Haircloth.

Ser. No. 26,269. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JAMES A. STEPHENSON, Jr., Dayton, N. Y. Filed Mar. 26, 1907.

Dr. Jas. A. Stephenson

Particular description of goods.—A Proprietary Medicine for the Cure of Diseases of the Uterus and Vagina.

Ser. No. 26,311. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE KEENE CO. LTD., New York, N. Y. Filed Mar. 28, 1907.



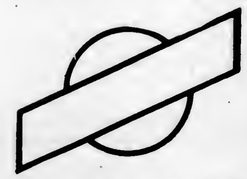
Particular description of goods.—Remedies for the Treatment and Cure of Affections of the Feet and of Excrescences and Indurations of the Skin.

Ser. No. 26,321. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) SUSQUEHANNA SILK MILLS, New York, N. Y. Filed Mar. 29, 1907.

Suskana

Particular description of goods.—Silk Piece Goods and Silk-Mixed Piece Goods.

Ser. No. 26,322. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) SUSQUEHANNA SILK MILLS, New York, N. Y. Filed Mar. 29, 1907.



Particular description of goods.—Silk Piece Goods and Silk-Mixed Piece Goods.

Ser. No. 26,323. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) SUSQUEHANNA SILK MILLS, New York, N. Y. Filed Mar. 29, 1907.

Dilustra

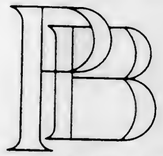
Particular description of goods.—Silk Piece Goods and Silk-Mixed Piece Goods.

Ser. No. 26,326. (CLASS 71. TOBACCO PRODUCTS.) GANS BROS., New York, N. Y. Filed Mar. 29, 1907.



Particular description of goods.—Cigars, Cheroots, and Little Cigars.

Ser. No. 26,330. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN J. HÜBEL & CO., New York, N. Y. Filed Mar. 29, 1907.



Particular description of goods.—A Remedy for Dyspepsia, Liver Complaints, Intestinal Indigestion, Catarrh, Kidney and Bladder Troubles, and Nervous Debility.

Ser. No. 26,333. (CLASS 12. MASONRY MATERIALS.) NORTHAMPTON PORTLAND CEMENT CO., New York, N. Y. Filed Mar. 29, 1907.



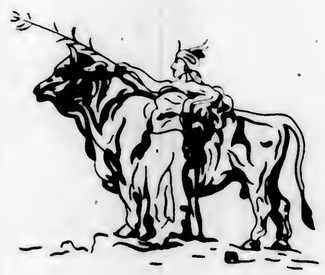
Particular description of goods.—Portland Cement.

Ser. No. 26,361. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) HARRY LYSLE SQUIRES, Morgan City, La. Filed Mar. 30, 1907.

Ant Quarantine

Particular description of goods.—Insect-Poison.

Ser. No. 26,366. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 30, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 26,367. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 30, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 26,368. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 30, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 26,369. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 30, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 26,373. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 30, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 26,387. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) COLUMBIA COFFEE MILLS LTD., New Orleans, La. Filed Apr. 1, 1907.

JAVER BRAND

Particular description of goods.—Coffee and Chicory Compound.

Ser. No. 26,394. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE PEROLIN COMPANY OF AMERICA, Chicago, Ill. Filed Apr. 1, 1907.

PEROLIN

Particular description of goods.—Dust-Laying Antiseptics.

Ser. No. 26,410. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind. Filed Apr. 2, 1907. Used ten years.

LINK BELT

Particular description of goods.—Endless-Chain Conveying Machinery, Endless-Chain Elevating Machinery, Endless-Chain Coal-Handling Machinery, Sheaves, Pulleys, and Bearings.

Ser. No. 26,422. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) WALLACE G. STARRY, Harrisburg, Pa. Filed Apr. 2, 1907.



Particular description of goods.—Waterproof Collars and Cuffs.

Ser. No. 26,423. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) MOORE SMITH CO., Boston, Mass. Filed Apr. 3, 1907.

MAXIMUS

Particular description of goods.—Leather, Silk, Cotton, Woolen, Canvas, and Fur Gloves, also Fur Coats.

Ser. No. 26,424. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) MOORE SMITH CO., Boston, Mass. Filed Apr. 3, 1907. Used ten years.



Particular description of goods.—Silk, Felt, Straw, Fur, Cloth, and Leather Hats and Caps, and Helmets Made of Felt, Cork, and Straw, and Hat-Bodies Covered with Cloth, Tweed, Silk, Cotton, and Like Materials.

Ser. No. 26,433. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) JULIUS R. WATTS & CO., Atlanta, Ga. Filed Apr. 3, 1907.



Particular description of goods.—Souvenir Silver Spoons.

Ser. No. 26,453. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) FRANK D. GLAZIER, South Glastonbury, Conn. Filed Apr. 4, 1907. Used ten years.

ROWENA

Particular description of goods.—Woolen Dress Goods and Cloakings in the Piece.

Ser. No. 26,457. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE STARR PIANO CO., Richmond, Ind. Filed Apr. 4, 1907. Used ten years.

Chase.

Particular description of goods.—Pianos and Organs.

Ser. No. 26,479. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) W. H. HARRISON & CO., Cincinnati, Ohio. Filed Apr. 5, 1907.

ST-NICHOLAS

Particular description of goods.—Coffee.

Ser. No. 26,481. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE MURRAY DRUG CO., Columbia, S. C. Filed Apr. 5, 1907. Used ten years.

MURRAY'S & TAR

Particular description of goods.—A Remedy for Coughs, Colds, Consumption, Influenza, All Diseases of the Throat, and Bronchial Affections.

Ser. No. 26,488. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JOSEPH H. GERNER, Lowville, N. Y. Filed Apr. 5, 1907.

JAVANA

Particular description of goods.—Cereal Substitute for Coffee.

Ser. No. 26,494. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 6, 1907.

DONOMO

Particular description of goods.—A Preparation for the Treatment of Diseases of the Blood and Skin.

Ser. No. 26,495. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 6, 1907.

GOMOZO

Particular description of goods.—A Preparation for the Treatment of Diseases of the Blood and Skin.

Ser. No. 26,496. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 6, 1907.

HOBOKO

Particular description of goods.—A Preparation for the Treatment of Diseases of the Blood and Skin.

Ser. No. 26,497. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 6, 1907.

LOZOGO

Particular description of goods.—A Preparation for the Treatment of Diseases of the Blood and Skin.

Ser. No. 26,500. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 6, 1907.

ZOKORO

Particular description of goods.—A Preparation for the Treatment of Diseases of the Blood and Skin.

Ser. No. 26,503. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 6, 1907.

DIADEM

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 26,504. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 6, 1907.

EYE

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 26,505. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 6, 1907.

PYRAMID

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 26,506. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 6, 1907.



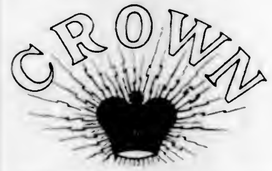
Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 26,516. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo. Filed Apr. 6, 1907. Used ten years.

RELIABLE

Particular description of goods.—Gas-Stoves, Gas-Ranges, Gas-Heaters, Coal-Ranges, Heating-Burners, Water-Heaters, and Ovens.

Ser. No. 26,523. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) CROWN BATTERY COMPANY, New York, N. Y. Filed Apr. 6, 1907.



Particular description of goods.—Dry Batteries.

Ser. No. 26,524. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) DETROIT GAS ENGINE AND MACHINERY CO., Detroit, Mich. Filed Apr. 6, 1907.

"THE MAJOR"

Particular description of goods.—Explosive Engines and Motors.

Ser. No. 26,546. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo. Filed Apr. 8, 1907. Used ten years.



Particular description of goods.—Gas-Stoves, Gas-Ranges, Gas-Heaters, and Coal-Ranges.

Ser. No. 26,547. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo. Filed Apr. 8, 1907. Used ten years.



Particular description of goods.—Gas-Stoves, Gas-Ranges, Gas-Heaters, and Coal-Ranges.

Ser. No. 26,550. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) HOLLINS SONS & CO., Nashville, Tenn. Filed Apr. 8, 1907.



RHINO

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 26,551. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) HOLLINS SONS & CO., Nashville, Tenn. Filed Apr. 8, 1907.

The Lady Lee SHOE

Particular description of goods.—Ladies' and Misses' Leather Boots, Shoes, and Slippers.

Ser. No. 26,555. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) EDWIN W. BREWER, Fullerton, Cal. Filed Apr. 8, 1907.

SHOW ME

Particular description of goods.—Peanuts.

Ser. No. 26,558. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) CORBIN, SONS & CO., Chicago, Ill. Filed Apr. 8, 1907. Used ten years.

THE TYCOON TEA

IC & M

C

Particular description of goods.—Tea.

Ser. No. 26,565. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) PAGE ENGINEERING COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed Apr. 8, 1907.

THE ORIOLE

Particular description of goods.—Gas and Gasolene Engines.

Ser. No. 26,568. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) SARAFINO ROCCA, Chicago, Ill. Filed Apr. 8, 1907.

Particular description of goods.—Macaroni.

Ser. No. 26,580. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) DANIEL H. HOFFMAN, New Orleans, La. Filed Apr. 9, 1907.

GLOBE

Particular description of goods.—Roasted and Ground Coffee.

Ser. No. 26,584. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Apr. 9, 1907.

CHIPAWAY

Particular description of goods.—Squares.

Ser. No. 26,585. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Apr. 9, 1907.

CHIPAWAY

Particular description of goods.—Oilstones, Scythe-Stones, and Razor-Hones.

Ser. No. 26,601. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) TRANCHANT & FINNELL, Osborne, Ohio. Filed Apr. 9, 1907. Used ten years.

OSBORNE MILLS

Particular description of goods.—Wheat-Flour.

Ser. No. 26,613. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) KEYSTONE VARNISH COMPANY, Brooklyn, N. Y. Filed Apr. 10, 1907.

KEYSTONA

Particular description of goods.—Enamels, Both Gloss and Flat.

Ser. No. 26,620. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE STAMFORD MANUFACTURING COMPANY, Stamford, Conn., and New York, N. Y. Filed Apr. 10, 1907.

CULMINAX

Particular description of goods.—A Tanning Extract.

Ser. No. 26,621. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE UNION BAG & PAPER COMPANY, New York, N. Y. Filed Apr. 10, 1907.

YELLOWSTONE

Particular description of goods.—Paper Bags.

Ser. No. 26,646. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 12, 1907.

MERMAID

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 26,647. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 12, 1907.

ELECTRIC

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 26,648. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 12, 1907. Used ten years.

AUNT LYDIA'S

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 26,649. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 12, 1907.

CLOVER

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

TRADE-MARKS

REGISTERED MAY 7, 1907.

62,384. PERFUMED FANCY SOAPS. A. & F. PEARS LIMD., London, England.
Filed January 17, 1906. Serial No. 16,235. PUBLISHED MARCH 12, 1907.

62,385. SPOOL-COTTON AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed February 12, 1907. Serial No. 25,253. PUBLISHED MARCH 12, 1907.

62,386. SPOOL-COTTON AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed February 12, 1907. Serial No. 25,256. PUBLISHED MARCH 12, 1907.

62,387. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed February 12, 1907. Serial No. 25,259. PUBLISHED MARCH 12, 1907.

62,388. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed February 12, 1907. Serial No. 25,260. PUBLISHED MARCH 12, 1907.

62,389. LUBRICATING-OILS. ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa.
Filed May 18, 1905. Serial No. 6,050. PUBLISHED MARCH 12, 1907.

62,390. RIBBONS AND SILK AND VELVET DRESS GOODS. R. BALLERSTEIN & COMPANY, Hartford, Conn.
Filed December 19, 1906. Serial No. 24,137. PUBLISHED MARCH 12, 1907.

62,391. CORSETS. MARGARET BARRY, St. Louis, Mo.
Filed February 8, 1907. Serial No. 25,199. PUBLISHED MARCH 12, 1907.

62,392. CERTAIN LAMPS AND MANTLES. THE BEST LIGHT COMPANY, Canton, Ohio.
Filed December 22, 1906. Serial No. 24,238. PUBLISHED MARCH 12, 1907.

62,393. SALES-BOOKS. THE CARTER-CRUME COMPANY LIMITED, Toronto, Ontario, Canada, and Niagara Falls, N. Y.
Filed December 24, 1906. Serial No. 24,251. PUBLISHED MARCH 12, 1907.

62,394. ILLUMINATING-OILS AND LUBRICATING OILS AND GREASES. THE CLIMAX REFINING COMPANY, Minneapolis, Minn.
Filed December 21, 1906. Serial No. 24,206. PUBLISHED MARCH 12, 1907.

62,395. ILLUMINATING-OILS AND LUBRICATING OILS AND GREASES. THE CLIMAX REFINING COMPANY, Minneapolis, Minn.
Filed December 21, 1906. Serial No. 24,208. PUBLISHED MARCH 12, 1907.

62,396. MASSAGE AND VIBRATION INSTRUMENTS FOR CURATIVE PURPOSES. JOHN EDWIN GARRATT, New York, N. Y.
Filed February 2, 1907. Serial No. 25,074. PUBLISHED MARCH 12, 1907.

62,397. WHISKY. THE GILL-HERMAN CO., Cincinnati, Ohio.
Filed June 25, 1906. Serial No. 20,557. PUBLISHED OCTOBER 9, 1906.

62,398. RUBBER BOOTS AND SHOES. GOODYEAR RUBBER COMPANY, New York, N. Y.
Filed April 4, 1906. Serial No. 18,512. PUBLISHED MARCH 12, 1907.

62,399. SMOKING-TOBACCO AND PLUG AND TWIST CHEWING-TOBACCO. ROBT. HARRIS & BRO., Reidsville, N. C.
Filed July 9, 1906. Serial No. 20,794. PUBLISHED MARCH 12, 1907.

62,400. COTTON PIECE GOODS AND COTTON BLANKETS. INDIAN HEAD MILLS OF ALABAMA, Walker, Ala.
Filed September 21, 1906. Serial No. 22,215. PUBLISHED MARCH 12, 1907.

62,401. CERTAIN PAPER AND PAPER MANUFACTURES. J. E. LINDE PAPER CO., New York, N. Y.
Filed June 28, 1906. Serial No. 20,621. PUBLISHED MARCH 12, 1907.

62,402. SMOKING-TOBACCO. THE J. F. ZAHM TOBACCO CO., Toledo, Ohio.
Filed June 23, 1906. Serial No. 20,510. PUBLISHED OCTOBER 9, 1906.

62,403. RYE AND BOURBON WHISKY. JONAS F. BROWN & CO., Minneapolis, Minn.
Filed February 9, 1907. Serial No. 25,219. PUBLISHED MARCH 12, 1907.

62,404. COAL. THE LUHRIG COAL CO., Cincinnati, Ohio.
Filed January 4, 1907. Serial No. 24,446. PUBLISHED MARCH 12, 1907.

62,405. RAWHIDE PACKING. MABBS HYDRAULIC PACKING CO., Chicago, Ill.
Filed February 15, 1907. Serial No. 25,330. PUBLISHED MARCH 12, 1907.

62,406. HOSE AND BELTING MADE OF RUBBER COMPOSITION AND DUCK. NEW JERSEY CAR SPRING & RUBBER CO., Jersey City, N. J.
Filed February 4, 1907. Serial No. 25,132. PUBLISHED MARCH 12, 1907.

62,407. NON-ALCOHOLIC CARBONATED BEVERAGE. PEPSOL CHEMICAL COMPANY, Nashville, Tenn.
Filed January 25, 1907. Serial No. 24,892. PUBLISHED MARCH 12, 1907.

62,408. SOAP. CARL J. RATH, New York, N. Y.
Filed August 25, 1906. Serial No. 21,740. PUBLISHED MARCH 12, 1907.

62,409. CIDER AND SODA-WATER. THE RED ROCK COMPANY, Jacksonville, Fla.
Filed November 9, 1906. Serial No. 23,201. PUBLISHED MARCH 12, 1907.

62,410. RUBBER BOOTS AND SHOES. ROBERTS JOHNSON & RAND SHOE COMPANY, St. Louis, Mo.
Filed November 5, 1906. Serial No. 23,120. PUBLISHED MARCH 12, 1907.

62,411. FELT AND STRAW HATS AND CLOTH CAPS. ROTHSCHILD BROS. HAT CO., St. Louis, Mo.
Filed January 7, 1907. Serial No. 24,502. PUBLISHED MARCH 12, 1907.

62,412. CIGARS. S. S. PIERCE CO., Boston, Mass.
Filed July 3, 1905. Serial No. 9,680. PUBLISHED MARCH 12, 1907.

62,413. MANUFACTURED FURS MADE UP FOR WEARING-APPAREL. C. C. SHAYNE & CO., New York, N. Y.
Filed January 29, 1907. Serial No. 25,000. PUBLISHED MARCH 12, 1907.

62,414. LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, Incorporated, Lynchburg, Va.
Filed February 5, 1907. Serial No. 25,154. PUBLISHED MARCH 12, 1907.

62,415. FELT HATS, STIFF HATS, AND STRAW HATS. J. H. WELSH & Co., Philadelphia, Pa.
Filed January 28, 1907. Serial No. 24,951. PUBLISHED MARCH 12, 1907.

62,416. CERTAIN HATS AND CAPS. J. H. WELSH & Co., Philadelphia, Pa.
Filed January 28, 1907. Serial No. 24,952. PUBLISHED MARCH 12, 1907.

62,417. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,163. PUBLISHED MARCH 12, 1907.

62,418. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,164. PUBLISHED MARCH 12, 1907.

62,419. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,165. PUBLISHED MARCH 12, 1907.

62,420. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,166. PUBLISHED MARCH 12, 1907.

62,421. WAX CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed June 27, 1905. Serial No. 9,167. PUBLISHED MARCH 12, 1907.

62,422. CANDLES. THE WILL & BAUMER COMPANY, Syracuse, N. Y.
Filed January 15, 1907. Serial No. 24,637. PUBLISHED MARCH 12, 1907.

62,423. CANDLES. THE WILL & BAUMER COMPANY, Syracuse N. Y.
Filed January 15, 1907. Serial No. 24,638. PUBLISHED MARCH 12, 1907.

62,424. GASOLENE, ILLUMINATING-OILS, LUBRICATING OILS, AND GREASES. SAMUEL M. WILLOCK, Pittsburg, Pa.
Filed February 5, 1907. Serial No. 25,142. PUBLISHED MARCH 12, 1907.

62,425. LUBRICATING-OILS. SAMUEL M. WILLOCK, Pittsburg, Pa.
Filed February 5, 1907. Serial No. 25 140. PUBLISHED MARCH 12, 1907.

62,426. ILLUMINATING-OILS. SAMUEL M. WILLOCK, Pittsburg, Pa.
Filed February 5, 1907. Serial No. 25,141. PUBLISHED MARCH 12, 1907.

62,427. BAKING-POWDER. ABRAHAM & STRAUS, Brooklyn, N. Y.
Filed February 12, 1907. Serial No. 25,261. PUBLISHED MARCH 12, 1907.

62,428. SHOVELS, SPADES, HOES, RAKES, AND SCREW-DRIVERS. THE BROWN-HURLEY HARDWARE COMPANY, Des Moines, Iowa.
Filed June 2, 1905. Serial No. 7,295. PUBLISHED MARCH 12, 1907.

62,429. DRILLING-MACHINES. THE CYCLONE DRILLING MACHINE CO., Orrville, Ohio.
Filed November 28, 1905. Serial No. 15,054. PUBLISHED MARCH 12, 1907.

62,430. ANTISEPTIC MOUTH-WASH. GEORGE EVANS, New York, N. Y.
Filed January 29, 1907. Serial No. 24,984. PUBLISHED MARCH 12, 1907.

62,431. BUCHU GIN. J. H. FRIEDENWALD & Co., Baltimore, Md.
Filed April 27, 1905. Serial No. 3,211. PUBLISHED MARCH 12, 1907.

62,432. CERTAIN CHEMICAL PREPARATIONS. FRITZSCHE BROTHERS, New York, N. Y.
Filed December 20, 1906. Serial No. 24,159. PUBLISHED MARCH 12, 1907.

62,433. OINTMENTS. GEDFORMOL MANUFACTURING COMPANY OF BALTIMORE CITY, Baltimore, Md.
Filed February 11, 1907. Serial No. 25,239. PUBLISHED MARCH 12, 1907.

62,434. CERTAIN WATCHMAKERS' HAND-TOOLS. KENDRICK & DAVIS, Lebanon, N. H.
Filed March 14, 1906. Serial No. 17,810. PUBLISHED MARCH 12, 1907.

62,435. CERTAIN TOILET PREPARATIONS. VICTOR FRANÇOIS MERLE, Paris, France.
Filed November 13, 1906. Serial No. 23,316. PUBLISHED MARCH 12, 1907.

62,436. WHISKY. NELSON DISTILLING CO., St. Louis, Mo.
Filed May 24, 1905. Serial No. 6,502. PUBLISHED MARCH 12, 1907.

62,437. INCANDESCENT ELECTRIC LAMPS. PARKER-CLARK ELECTRIC COMPANY, New York, N. Y.
Filed January 30, 1907. Serial No. 25,037. PUBLISHED MARCH 12, 1907.

62,438. MEN'S KNIT UNDERSHIRTS AND KNIT DRAWERS. LOUIS H. SCHAARSCHMIDT, Limbach, Germany.
Filed November 23, 1905. Serial No. 14,924. PUBLISHED MARCH 12, 1907.

62,439. KNIT UNION OR COMBINATION UNDERGARMENTS AND SWEATERS. STERLING KNIT GOODS CO., Boston, Mass.
Filed April 11, 1905. Serial No. 1,150. PUBLISHED MARCH 12, 1907.

62,440. MEDICAL TONIC PREPARATION OF BEEF, WINE, AND IRON. WEAVER'S PHARMACY, Phillipsburg, N. J.
Filed April 10, 1905. Serial No. 9604. PUBLISHED MARCH 12, 1906.

62,441. PLIERS WITHOUT A CUTTING EDGE. WIEBUSCH & HILGER LT'D., New York, N. Y.
Filed February 8, 1907. Serial No. 25,207. PUBLISHED MARCH 12, 1907.

62,442. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,562. PUBLISHED MARCH 12, 1907.

62,443. HAND-CARTS. FRANK J. AUBEUF, Oneida, N. Y.
Filed January 7, 1907. Serial No. 24,477. PUBLISHED MARCH 12, 1907.

62,444. HAND-CARTS. FRANK J. AUBEUF, Oneida, N. Y.
Filed January 7, 1907. Serial No. 24,478. PUBLISHED MARCH 12, 1907.

62,445. SALVES. TADEUS G. BALUCINSKI, Buffalo, N. Y.
Filed August 15, 1906. Serial No. 21,591. PUBLISHED MARCH 12, 1907.

62,446. SALVES. TADEUS G. BALUCINSKI, Buffalo, N. Y.
Filed August 15, 1906. Serial No. 21,592. PUBLISHED MARCH 12, 1907.

62,447. HAIR-TONIC. MARY S. BARKER, New York, N. Y.
Filed April 13, 1906. Serial No. 18,773. PUBLISHED MARCH 12, 1907.

62,448. CHOCOLATE. BISHOP & COMPANY, Los Angeles, Cal.
Filed November 16, 1906. Serial No. 23,409. PUBLISHED MARCH 12, 1907.

62,449. CLARET, BURGUNDY, AND SAUTERNE WINES. J. CALVET & Co., Bordeaux, France.
Filed December 26, 1906. Serial No. 24,273. PUBLISHED MARCH 12, 1907.

62,450. COTTON SHRUNKS. COLLINS & COMPANY, New York, N. Y.
Filed January 8, 1907. Serial No. 24,512. PUBLISHED MARCH 12, 1907.

62,451. COTTON SHRUNKS. COLLINS & COMPANY, New York, N. Y.
Filed January 8, 1907. Serial No. 24,513. PUBLISHED MARCH 12, 1907.

62,452. STAMPED METAL PARTS USED FOR ROOFING AND WALL-COVERING PURPOSES. CORTRIGHT METAL ROOFING COMPANY, Philadelphia, Pa.
Filed December 7, 1906. Serial No. 23,851. PUBLISHED MARCH 12, 1907.

62,453. BUTTER. THE F. JELKE & SON COMPANY, Cincinnati, Ohio.
Filed January 7, 1907. Serial No. 24,497. PUBLISHED FEBRUARY 26, 1907.

62,454. PILE-OINTMENT. KATE MCMAHON, Washington, D. C.
Filed August 10, 1906. Serial No. 21,469. PUBLISHED MARCH 12, 1907.

62,455. PLASTERS AND SALVES. THE MEDICINAL PRODUCTS CO., Denver, Colo.
Filed January 3, 1907. Serial No. 24,428. PUBLISHED MARCH 12, 1907.

62,456. CANDIES. ISAAC SAMUEL MORSE, Nashville, Tenn.
Filed July 11, 1905. Serial No. 10,079. PUBLISHED MARCH 12, 1907.

62,457. STATIONARY AND MARINE INTERNAL-COMBUSTION ENGINES. THE "NEW WAY" MOTOR COMPANY, Lansing, Mich.
Filed September 24, 1906. Serial No. 22,298. PUBLISHED MARCH 12, 1907.

62,458. LEAF-LARD. PARKER, WEBB & Co., Detroit, Mich.
Filed May 22, 1905. Serial No. 6,307. PUBLISHED MARCH 12, 1907.

62,459. CERTAIN MEDICAL COMPOUND. R. SCHIFFMANN COMPANY, St. Paul, Minn.
Filed December 20, 1906. Serial No. 24,172. PUBLISHED MARCH 12, 1907.

62,460. CEREAL BREAKFAST FOOD. RALSTON PURINA COMPANY, St. Louis, Mo.
Filed January 2, 1907. Serial No. 24,393. PUBLISHED MARCH 12, 1907.

62,461. REMEDY FOR DYSPEPSIA. REED & CARNRICK, Jersey City, N. J.
Filed June 23, 1906. Serial No. 20,518. PUBLISHED MARCH 12, 1907.

62,462. CHISELS, GOUGES, AND DRAWING-KNIVES. THE RELIANCE EDGE TOOL COMPANY, Youngstown, Ohio.
Filed January 11, 1907. Serial No. 24,585. PUBLISHED MARCH 12, 1907.

62,463. DIP FOR ANIMALS. O. ROBINSON & Co., Kansas City, Mo.
Filed July 13, 1906. Serial No. 20,921. PUBLISHED MARCH 12, 1907.

62,464. CANDY, CHOCOLATE, COCOA, CHEWING-GUM, AND BONBONS. STOLLWERCK BROS., New York, N. Y.
Filed June 10, 1905. Serial No. 7,808. PUBLISHED MARCH 12, 1907.

62,465. CANNED FRUIT AND VEGETABLES. STONE-ORDEAN-WELLS CO., Duluth, Minn.
Filed March 26, 1906. Serial No. 18,255. PUBLISHED MARCH 12, 1907.

62,466. ROLL-PAPER HOLDERS AND CUTTERS. UNITED STATES PAPER CUTTER CO., St. Louis, Mo.
Filed January 11, 1907. Serial No. 24,582. PUBLISHED MARCH 12, 1907.

62,467. MEDICATED SALT BRICK FOR LIVE STOCK. BLACKMAN STOCK REMEDY CO., Chattanooga, Tenn.
Filed May 16, 1906. Serial No. 19,601. PUBLISHED MARCH 12, 1907.

62,468. STAMPED METAL PARTS USED FOR ROOFING AND WALL-COVERING PURPOSES. CORTRIGHT METAL ROOFING COMPANY, Philadelphia, Pa.
Filed December 7, 1906. Serial No. 23,852. PUBLISHED MARCH 12, 1907.

62,469. STAMPED METAL PARTS USED FOR ROOFING AND WALL-COVERING PURPOSES. CORTRIGHT METAL ROOFING COMPANY, Philadelphia, Pa.
Filed December 7, 1906. Serial No. 23,853. PUBLISHED MARCH 12, 1907.

62,470. ANTISEPTIC POWDER. JAMES S. FALCK, Washington, D. C.
Filed January 22, 1907. Serial No. 24,830. PUBLISHED MARCH 12, 1907.

62,471. CANNED FRUITS AND VEGETABLES. J. F. HUMPHREYS & Co., Bloomington, Ill.
Filed June 26, 1905. Serial No. 9,132. PUBLISHED JUNE 19, 1906.

62,472. OINTMENT OR SALVE. CHARLES A. MERRILL, Nora Springs, Iowa.
Filed January 9, 1907. Serial No. 24,546. PUBLISHED MARCH 12, 1907.

62,473. LIQUID COMPOUNDS OF COD-LIVER OIL. NORWAY PHARMACAL COMPANY, New York, N. Y.
Filed April 15, 1905. Serial No. 1,717. PUBLISHED FEBRUARY 20, 1906.

62,474. SELF-PROPELLED ROAD-VEHICLES. POPE MANUFACTURING COMPANY, Hartford, Conn.
Filed January 21, 1907. Serial No. 24,807. PUBLISHED MARCH 12, 1907.

62,475. SALVE. RITZLIN, LEBSTEIN & NECHTOWITZ, Chicago, Ill.
Filed December 14, 1906. Serial No. 24,035. PUBLISHED MARCH 12, 1907.

62,476. CHOCOLATE. ABRAHAM & STRAUS, Brooklyn, N. Y.
Filed February 12, 1907. Serial No. 25,262. PUBLISHED MARCH 12, 1907.

62,477. CERTAIN LIQUID COATING COMPOSITIONS. CENTURY PRESERVER CO., Chicago, Ill.
Filed January 21, 1907. Serial No. 24,799. PUBLISHED MARCH 12, 1907.

62,478. WITHDRAWN.

62,479. POPCORN AND MIXED POPCORN AND PEANUTS COATED WITH TAFFY. THE EARL MANUFACTURING COMPANY, Pittsburg, Pa.
Filed February 15, 1907. Serial No. 25,319. PUBLISHED MARCH 12, 1907.

62,480. HIGH EXPLOSIVES AND CERTAIN BLASTING SUPPLIES. THE EASTERN DYNAMITE COMPANY, Kenvil, N. J.
Filed May 12, 1906. Serial No. 19,466. PUBLISHED JANUARY 8, 1907.

62,481. CANDY. ENGLEWOOD CANDY COMPANY, Chicago, Ill.
Filed February 4, 1907. Serial No. 25,126. PUBLISHED MARCH 12, 1907.

62,482. FERTILIZERS. GERMOFERT MANUFACTURING COMPANY, Charleston, S. C.
Filed January 14, 1907. Serial No. 24,620. PUBLISHED MARCH 12, 1907.

62,483. VARNISH-REMOVERS. IDEAL MANUFACTURING COMPANY, Chicago, Ill.
Filed February 4, 1907. Serial No. 25,128. PUBLISHED MARCH 12, 1907.

62,484. CANNED FRUITS AND VEGETABLES. J. F. HUMPHREYS & Co., Bloomington, Ill.
Filed June 26, 1905. Serial No. 9,133. PUBLISHED JUNE 26, 1906.

62,485. WHEAT-FLOUR. PORTLAND MILLING COMPANY, Portland, Mich.
Filed February 13, 1907. Serial No. 25,285. PUBLISHED MARCH 12, 1907.

62,486. SOAP. CARL J. RATH, New York, N. Y.
Filed August 25, 1906. Serial No. 21,741. PUBLISHED MARCH 12, 1907.

62,487. POULTRY FOOD. THE SAGINAW MILLING COMPANY, Saginaw, Mich.
Filed February 9, 1907. Serial No. 25,226. PUBLISHED MARCH 12, 1907.

62,488. CERTAIN MEDICINES. ALBERT R. SAYLOR, Allentown, Pa.
Filed December 19, 1906. Serial No. 24,149. PUBLISHED MARCH 12, 1907.

62,489. BRICKS. SHAWMUT MINING COMPANY, St. Marys, Pa.
Filed September 25, 1906. Serial No. 22,316. PUBLISHED DECEMBER 25, 1906.

62,490. PRESS OR MACHINE FOR SETTING AND REMOVING EYELETS. EDWARD L. SIBLEY, Bennington, Vt.
Filed February 23, 1906. Serial No. 17,258. PUBLISHED MARCH 27, 1906.

62,491. INCUBATORS AND BROODERS. THE STAR INCUBATOR AND BROODER CO., Boundbrook, N. J.
Filed February 6, 1907. Serial No. 25,166. PUBLISHED MARCH 12, 1907.

62,492. VARNISH. VALENTINE & COMPANY, New York, N. Y.
Filed February 2, 1907. Serial No. 25,087. PUBLISHED MARCH 12, 1907.

62,493. POLISH FOR BLACK SHOES. ALBION MANUFACTURING COMPANY, New York, N. Y.
Filed October 8, 1906. Serial No. 22,587. PUBLISHED MARCH 12, 1907.

62,494. HYDRAULIC AND OTHER BUILDING CEMENT. THE ATLAS PORTLAND CEMENT COMPANY, Northampton, Pa.
Filed January 25, 1906. Serial No. 16,500. PUBLISHED MARCH 12, 1907.

62,495. STOVE-POLISH. HENRY C. BOMHARD, Milwaukee, Wis.
Filed February 23, 1906. Serial No. 17,271. PUBLISHED JUNE 12, 1906.

62,496. LIQUID WOOD-FILLER. THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio.
Filed November 17, 1905. Serial No. 14,764. PUBLISHED MARCH 12, 1907.

62,497. GUNPOWDER. THE KING POWDER COMPANY, Cincinnati, Ohio.
Filed February 10, 1906. Serial No. 16,896. PUBLISHED MARCH 12, 1907.

62,498. GUNPOWDER AND BLASTING-POWDER. THE SMOKELESS POWDER AND CARTRIDGE COMPANY, Cleveland, Ohio.
Filed January 10, 1906. Serial No. 16,099. PUBLISHED MARCH 12, 1907.

62,499. EXERCISING-MACHINES, DUMB-BELLS, AND HAND-GRIPS. JOHN E. THOMPSON, Worcester, Mass.
Filed December 13, 1906. Serial No. 24,004. PUBLISHED MARCH 12, 1907.

62,500. COPPER AND BRASS HAIR-PINS AND HAIR ORNAMENTS. RICE & HOCHSTER, New York, N. Y.
Filed October 23, 1906. Serial No. 22,866. PUBLISHED MARCH 12, 1907.

LABELS

REGISTERED MAY 7, 1907.

13,521.—*Title:* "NOBLE GRAND." (For Cigars.) JOHN O. ZUCH, Kalamazoo, Mich. Filed April 13, 1907.

13,522.—*Title:* "SILVER SEAL." (For Tea.) DUNN & POWELL INC., Little Rock, Ark. Filed March 2, 1907.

13,523.—*Title:* "OR-PHO-SO ORANGE PHOSPHATE." (For Orange Phosphate.) WALTER H. BARTHOLOMEW, New York, N. Y. Filed April 13, 1907.

13,524.—*Title:* "REINA DE LOS ANGELES." (For Wines and Brandies.) THEODORE GRUMBACH, Los Angeles, Cal. Filed April 4, 1907.

13,525.—*Title:* "WINGED HORSE." (For Wheat-Flour.) EVERETT, AUGHENBAUGH & COMPANY, Waseca, Minn. Filed April 6, 1907.

13,526.—*Title:* "PAN-DANDY." (For Bread.) SAMUEL E. LOVELESS, Chicago, Ill. Filed April 13, 1907.

13,527.—*Title:* "AMERICAN MAID." (For Macaroni.) WILLIAM H. HAHN, Philadelphia, Pa. Filed April 10, 1907.

13,528.—*Title:* "EUPURGO." (For a Laxative Preparation.) THEODORE SELTZER, West Hoboken, N. J. Filed April 10, 1907.

13,529.—*Title:* "MAGIC SALVE." (For a Salve.) DORA MARIA ANDERSON, Everett, Mass. Filed March 28, 1907.

13,530.—*Title:* "DUX SOAP." (For Soap for the Complexion and Bath.) ROBERT HAMILTON & SON INCORPORATED, Philadelphia, Pa. Filed February 12, 1907.

PRINTS

REGISTERED MAY 7, 1907.

1,975.—*Title:* "A GOOD LUNCH." (For Malt Liquors.) THE MEEK COMPANY, Coshocton, Ohio. Filed April 16, 1907.

1,976.—*Title:* "MOOSE." (For Beer.) ALBERT TIEMANN, Milwaukee, Wis. Filed April 15, 1907.

1,977.—*Title:* "WHAT SHALL THE HARVEST BE?" (For a Cereal Food.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed April 12, 1907.

1,978.—*Title:* "THE BEST DISH IN THE COOK BOOK." (For a Cereal Food.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed April 12, 1907.

1,979.—*Title:* "A DAINTY BREAKFAST." (For a Cereal Food.) CREAM OF WHEAT COMPANY, Minneapolis, Minn. Filed April 12, 1907.

1,980.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed April 13, 1907.

1,981.—*Title:* "KUTTERS THAT KUT." (For Razors.) KRAUT & DOHNAL, Chicago, Ill. Filed April 1, 1907.

1,982.—*Title:* "THE 'HANDY STICK' WITH THE 'HOLLOW END' HANDLE." (For Belt-Dressing.) BLACK DIAMOND MANUFACTURING CO., Cincinnati, Ohio. Filed April 11, 1907.

1,983.—*Title:* "THE KARBON KEEPER." (For Carbon-Paper and Portfolios Therefor.) FRANKLIN HARVEY SMITH, Providence, R. I. Filed February 13, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE CROSS.

Decided January 19, 1907.

TRADE-MARKS—"OLIVOINT" ANTICIPATED BY "OLIVEINE."

"Olivoint" used as a trade-mark for ointment for skin affections so closely resembles the mark "Oliveine" registered as a trade-mark for ointments and salves as to be likely to cause confusion or mistake in the mind of the public or to deceive purchasers.

ON APPEAL.

TRADE-MARK FOR OINTMENTS FOR ALL SKIN AFFECTIONS.

Mr. Francis M. Wright and *Messrs. Byrnes & Townsend* for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the word "Olivoint" as a trade-mark for ointments for all skin affections.

The Examiner's action is based on the ground that the mark so closely resembles the trade-mark "Oliveine," registered to Caldwell, No. 14,043, February 1, 1887, for ointments and salves, as to be likely to cause confusion or mistake in the mind of the public or to deceive purchasers.

The decision of the Examiner is believed to be correct. The mark appears to be in the same class as those mentioned in my decisions in *ex parte Holbert*, (115 O. G., 2136,) where the word "Optine" was refused registration by reason of its resemblance to the registered mark "Optal," and in *ex parte The Dr. Parker Medicine Company*, (106 O. G., 1779,) where the word "Liveroid" was refused on the registered marks "Liveraid" and "Liverine."

The decision of the Examiner of Trade-Marks is affirmed.

IN RE WILDER.

Decided March 14, 1907.

REJECTION OF CLAIMS—CANNOT BE BASED UPON EVIDENCE TAKEN IN SECOND INTERFERENCE WHICH HAS BEEN HELD TO BE RES ADJUDICATA.

Where in a second interference the question of priority was held to be *res adjudicata* and a decision rendered in favor of Blackford, Blackford's claims corresponding to the issue of the interference cannot be rejected upon the ground that they are anticipated by an exhibit introduced into the second interference by Wilder. Inasmuch as the second interference should not have been declared, the testimony taken therein is of no force and is to be given no effect for any purpose whatever.

IN the matter of the protest of William H. Wilder against the issue of a patent to A. J. Blackford.

ALLEN, *Commissioner:*

This is a protest by Wilder against the issue of a patent to Blackford upon an invention involved in the interference *Blackford* v. *Wilder*, No. 22,702, which was recently decided in favor of Blackford by the Court of Appeals of the District of Columbia in a decision rendered January 8, 1907, as *res adjudicata*.

Wilder contends that Blackford's claims corresponding to the issue of the interference should be rejected on the ground that they are anticipated by an exhibit introduced into the interference by Wilder.

It does not appear that the Office can find from the testimony taken in the second interference anticipation of the claims of Blackford without finding prior possession of the invention by Wilder; but this is exactly what the Office is prevented from doing by the decision of the court in the second interference. The decision of the court is understood to amount to this: that the second interference should not have been declared and that the testimony taken therein is of no force and is to be given no effect for any purpose whatever.

The question presented by the protest is somewhat analogous to the question which arises in those cases where the first to reduce to practice is held to be estopped from asserting his right to a patent by reason of delay in applying therefor or in disclosing the same to the public. (*Mason* v. *Hepburn*, C. D., 1898, 510; *Mower* v. *Duell, Commissioner of Patents*, C. D., 1899, 395; *Thomson* v. *Weston*, C. D., 1902, 521.) If the contentions of the protestant here were sound, the subsequent inventor in those cases should be denied a patent upon the ground of anticipation by the prior reduction to practice of his opponent. It is not understood, however, that such was the intention of the court in those cases, and such has not been the practice.

Protest dismissed.

HARNISCH *v.* GUENIFFET, BENOIT, AND NICAULT.

Decided March 25, 1907.

1. INTERFERENCE—MOTION TO DISSOLVE—TRANSMISSION OF.

Where on appeal from the decision of the Primary Examiner dissolving an interference the Examiners-in-Chief affirmed the decision of the Examiner as to claims 2, 3, and 4 and reversed it as to claim 1, and thereupon one party filed an amendment to his case, while the other party brought a motion to dissolve, *Held* that the decision of the Examiner of Interferences refusing

to transmit the motion to dissolve to the Primary Examiner is correct, since the motion is based on the proposed amendment and presupposes its entry.

2. SAME—AMENDMENT—ENTRY OF.

Where during the interference proceeding one of the parties filed an amendment canceling the claims rejected under Rule 124 and substituted a substitute specification and drawing, *Held* that the amendment is not of the character permitted under the rules during the interference proceeding and that the special circumstances are not such as to warrant its admission.

APPEAL on motion.

CIGARETTE-TUBE.

Messrs. Philipp, Sawyer, Rice & Kennedy for Harnisch.

Messrs. Fraser & Usina for Gueniffet, Benoit, and Nicault.

ALLEN, *Commissioner:*

This case is before me, first, on an appeal by Harnisch from the refusal of the Examiner of Interferences to transmit his motion to dissolve this interference, and, second, on his petition that the Examiner of Interferences be directed to transmit the case to the Primary Examiner for the consideration of an amendment filed by his opponents, as well as the above-mentioned motion to dissolve.

It appears that upon a prior motion by Harnisch the Primary Examiner dissolved the interference on the ground that the claims forming the issue were not patentable to Gueniffet, Benoit, and Nicault, and he rejected the claims under the provisions of Rule 124. On appeal the Examiners-in-Chief affirmed the decision of the Primary Examiner as to claims 2, 3, and 4 and reversed it as to claim 1. No appeal was taken from their decision; but Gueniffet, Benoit, and Nicault filed an amendment consisting of a substitute specification and drawing and canceled the rejected claims 2, 3, and 4, but made no change in claim 1. Harnisch thereupon filed his present motion to dissolve. The Examiner of Interferences refused to transmit this motion on the ground that it is based on the amendment and presupposes its entry in the case. He held that since said amendment had not been entered and could not be entered under the rules without special order of the Commissioner there is no proper foundation for the motion.

The decision of the Examiner of Interferences is clearly correct and is accordingly affirmed. Rule 109 provides that amendment will not be permitted during an interference proceeding without the consent of the Commissioner except as provided in said Rule 109 and in Rules 106 and 107. The proposed amendment does not come under either of these exceptions.

It remains to consider whether the special circumstances of this case are such as to make it an exception to the above rules and to warrant granting the petition to admit the amendment. The Examiners-in-Chief rejected claims 2, 3, and 4 on the ground that their subject-matter is not disclosed in a prior application of which the application in interference purports to be a division and that they are consequently barred by certain specified patents. The amendment appears to have been filed for the purpose of canceling these claims and of eliminating from the specification the subject-matter held not to be disclosed in the parent case. There appears, however, to be no good reason why this amendment should be entered or considered prior to the termination of the interference. Concerning claim 1, the Examiners-in-Chief held that it is broader than the other claims, that its subject-matter is disclosed in the earlier application, and so far as disclosure is concerned it might have been made in the first case. The Primary Examiner held that Gueniffet, Benoit, and Nicault had a right to make the claim in the present application. The interference stands dissolved as to claims 2, 3, and 4. No additional claims are presented in the proposed amendment, and no amendment is necessary to the proper determination of the question of priority in the interference. It is not the practice to suspend an interference proceeding to permit of the cancelation of the claims where an interference is dissolved as to some of the counts, and no reason appears for departing from the usual practice in this case. After the termination of the interference the application will be held for such revision and restriction as may be necessary. (Rule 96.)

In my decision in *Sanders* v. *Hawthorne* v. *Hoyt* (125 O. G., 1347) reasons are set forth why in amending Rule 124 to provide for the rejection and appeal of such claims involved in an interference as have been made the object of an adverse decision upon their merits without awaiting the termination of the interference it was not deemed advisable to provide for amendment of the case during the interference.

There are additional reasons why the proposed amendment should not be admitted during the interference proceeding. Harnisch has filed a motion to dissolve, referred to above, which he desires transmitted if his petition to have the amendment entered is granted. One of the grounds of the motion is that there has been such irregularity in disclosing the interference as will preclude a proper determination of the question of priority, such irregularity consisting in permitting the entry of the amendment, and thus making a substantially new application for Gueniffet, Benoit, and Nicault during the pendency of the interference. In other words, he petitions to have the amendment entered and then file a motion to have the interference dissolved on account of the entry of said amendment. In any event the entry of the amendment will further delay the interference proceeding. This delay is entirely unnecessary, since the status of claim 1 with respect to the present specification is clearly fixed by the decision of the Examiners-in-Chief. No injury or hardship, so far as appears, can result from continuing the interference with the application in its present condition.

There is no necessity for considering that portion of the petition relating to the transmission of the motion to dissolve based upon the amendment in view of the holding that the amendment is not admissible during the interference proceeding.

The petition is denied.

CUSHMAN *v.* EDWARDS.

Decided April 4, 1907.

INTERFERENCE—MOTION FOR DISSOLUTION—DIFFERENCE IN MEANING OF CLAIMS.

The provision in Rule 122 for dissolution upon the ground of difference in the meaning of claims was placed there to cover a clean-cut class of cases which theoretical considerations show may arise, but which, in fact, are of very rare occurrence. To justify transmission of a motion brought upon this ground, facts must be alleged indicating something more than a possible lack of right upon the part of one or the other of the parties to use the language of the claim in issue.

APPEAL on motion.

DYNAMO-ELECTRIC MACHINE.

Messrs. Roberts & Mitchell and *Messrs. Meyers, Cushman & Rea* for Cushman.

Messrs. Foster & Freeman and *Messrs. Harper & Allen* for Edwards.

ALLEN, *Commissioner:*

This is an appeal by Cushman from the decision of the Examiner of Interferences refusing to transmit a supplemental motion for dissolution of the interference on the ground that the claims corresponding to the counts of the issue have different meanings in the cases of the different parties.

Motions to dissolve the interference have been transmitted alleging non-patentability of the issue and lack of right upon the part of Edwards to make claims corresponding to the counts of the issue. The present motion was denied transmission on the ground that it is not accompanied by a sufficient statement of facts supporting the allegations of differences in the meanings of the claims in the different cases. The provision in Rule 122 for dissolution upon the ground of difference in the meaning of claims was placed there to cover a clean-cut class of cases which theoretical considerations show may arise, but which, in fact, are of very rare occurrence. To justify transmission of a motion brought upon this ground, facts must be alleged indicating something more than a possible lack of right upon the part of one or the other of the parties to use the language of the claim in issue. The lack of right to make claims, so far as this question is properly reviewable on motion, may be raised by a motion entitled in appropriate terms. To permit the same question to be raised in a motion entitled as one upon another ground would result in useless multiplication of records and in confusion of issues. Nothing is alleged in this case in support of the motion which has been denied transmission which may not be fully accounted for by lack of right of one or the other of the parties to make the claims or which indicates that any other reason exists for dissolving the interference. Under these circumstances the refusal to transmit the motion was right.

The decision of the Examiner of Interferences is affirmed.

PYM *v.* HADAWAY.

Decided April 8, 1907.

INTERFERENCE—MOTION—APPEAL.

Where a motion for permission to take testimony in opposition to an opponent's right to make the claims in issue for use at final hearing under the provisions of Rule 130 is denied by the Examiner of Interferences, *Held* that an appeal will be permitted from his adverse decision. (Practice announced in *Lowry and Cowley* v. *Spoon*, 124 O. G., 1846, and *Hanan and Gates* v. *Marshall*, 126 O. G., 3423, modified.)

MOTION to dismiss.

TACK-PULLER AND NAIL-DRIVER.

Messrs. Parker & Burton and *Mr. Geo. H. Maxwell* for Pym.

Mr. Benjamin Phillips and *Messrs. Phillips, Van Everen & Fish* for Hadaway.

ALLEN, *Commissioner:*

This is a motion by Hadaway to dismiss the appeal by Pym taken from the decision of the Examiner of Interferences denying Pym's motion for an order authorizing him to take testimony in opposition to Hadaway's right to make the claims in issue.

The motion to dismiss is based upon statements in the cases of *Lowry and Cowley* v. *Spoon* (124 O. G., 1846) and *Hanan and Gates* v. *Marshall* (126 O. G., 3423) that no appeals will be permitted from decisions of the Examiner of Interferences upon the matter of taking testimony upon an opponent's right to make claims. The statements in these decisions upon this question are, however, broader than was necessitated by the circumstances of the cases. In each of them the Examiner of Interferences authorized the taking of testimony. An error in his decision would not prevent the correct determination of the questions in issue in the interference. When permission to take testimony is denied, however, the decision may operate to control the final decision upon the merits of the controversy between the parties. In such cases it is believed that an appeal should be permitted. The appeal of Pym will be set down for hearing.

The motion to dismiss Pym's appeal is denied.

DECISION OF SECRETARY OF THE INTERIOR.

IN RE BLOCH.

ATTORNEYS—UNITED STATES COMMISSIONERS INELIGIBLE TO ACT AS ATTORNEYS BEFORE THE PATENT OFFICE.

Held that under section 1782 of the Revised Statutes a person holding the office of United States commissioner is ineligible to practice as an attorney representing applicants for patents before the United States Patent Office.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE ASSISTANT ATTORNEY-GENERAL,
Washington, April 23, 1907.

THE SECRETARY OF THE INTERIOR.

SIR: I am in receipt through your reference of the 26th ultimo, with request for an opinion thereon, of a letter from the Commissioner of Patents, dated the 13th ultimo, in which, after referring to the application of one Lester W. Bloch, United States commissioner, of Albany, N. Y., and to section 1782 of the Revised Statutes, he says:

The question presented is: Does the inhibition of the statute referred to apply so as to make this applicant ineligible to practice as an attorney representing applicants for patent before the United States Patent Office?

Section 1782 reads as follows:

No Senator, Representative, or Delegate, after his election and during his continuance in office, and no head of a department, or other officer or clerk in the employ of the Government, shall receive or agree to receive any compensation whatever, directly or indirectly, for any services rendered, or to be rendered, to any person, either by himself or another, in relation to any proceeding, contract, claim, controversy, charge, accusation, arrest, or other matter or thing in which the United States is a party, or directly or indirectly interested, before any department, court-martial, bureau, officer, or any civil, military, or naval commission whatever. Every person offending against this section shall be deemed guilty of a misdemeanor, and shall be imprisoned not more than two years, and fined not more than ten thousand dollars, and shall moreover, by conviction therefor, be rendered forever thereafter incapable of holding any office of honor, trust, or profit under the Government of the United States.

Section 5498 prohibits under like penalty "every officer of the United States, or person holding any place of trust or profit from discharging any official function

under or in connection with any executive department of the Government of the United States or under the Senate or House of Representatives," from acting as an agent or attorney in prosecuting any claim against the United States, etc.

September 15, 1880, this Department considered and rejected the application of one Ewell Dick, a United States commissioner, to be admitted to practice before it, holding that his office brought him within the inhibition of the section last referred to. July 29, 1885, (4 L. D., 55,) the Department adhered to said holding in denying the application of Neil Dumont, a United States commissioner, to practice as agent or attorney before this Department.

Section 5498 is limited in its restriction to the prosecution of a claim against the United States, and while an application for a patent for an invention may not be considered as a claim against the United States these decisions would clearly bring a United States commissioner within the phrase "officer of the United States" as used in said section 5498, and in my opinion he is clearly within the phrase "officer or clerk in the employ of the Government," as used in section 1782. This section prohibits and renders highly penal the reception or agreement to receive by officers or clerks in the employ of the Government, compensation for services to any person, in relation to any matter or thing before any department, court-martial, bureau, officer, or any civil, military, or naval commission whatever. A patent upon an invention guarantees to the patentee protection in the enjoyment of the matters patented for a stated period, and, surely, the granting of such a right or privilege is a matter in which the United States, representing the people, is directly or indirectly interested, and it is my opinion that said section renders a person holding the office of United States commissioner ineligible to practice as an attorney representing applicants for patent before the United States Patent Office.

The papers are herewith.

Very respectfully.

(Signed) GEORGE W. WOODRUFF,
Assistant Attorney-General.

Approved: April 23, 1907.

(Signed)
JAMES RUDOLPH GARFIELD,
Secretary.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

BLISS *v.* MCELROY.

Decided February 5, 1907.

INTERFERENCES—PRIORITY—DELAY AFTER ALLEGED CONCEPTION AND REDUCTION TO PRACTICE.

Where an inventor after an alleged reduction to practice of his invention lays it aside for five years, during which time he files several domestic and foreign applications and develops another system to accomplish the same purpose which he regards as superior, and fails to file an application until after the grant of a patent to another for the same invention who was proceeding in good faith, he is guilty of inexcusable laches.

Mr. W. C. Jones, *Mr. J. R. Edson*, and *Mr. R. L. Ames* for Bliss.

Mr. Charles Neave and *Mr. William Durall* for McElroy.

ROBB, *J.*:

This is an appeal from the decision of the Commissioner of Patents in an interference proceeding awarding priority of invention to the senior party, McElroy.

The counts of the issue relate to a system for lighting railway-vehicles by electricity, and are as follows:

1. In a system of lighting railway-vehicles electrically the combination with an axle, of a dynamo-electric generator of a capacity greater than the normal lamp-load driven thereby having its field-magnet strength independent of the armature-current, electric lamps and a storage battery connected in multiple with each other to the armature of said generator, a potential-magnet also independent of the armature-current connected in multiple to the said armature and a field-magnet regulator for the generator controlled by the said magnet.

2. In a system for lighting railway-vehicles electrically the combination with an axle, of a generator of a capacity greater than the normal lamp-load driven thereby having its field-magnet independent of the armature-current and energized by a shunt-circuit, electric lamps and a storage battery connected in multiple with each other to the armature of the generator, a potential-magnet also independent of the armature-current connected to the armature in multiple with the said lamps and battery, a circuit-closer in the main circuit between the point of said circuit at which the magnet and the field-magnet are connected on the one hand, and the lamps and battery are connected on the other hand, and an operating connection between the said circuit-closer and the said magnet whereby the said magnet and the field-magnet will be permanently in circuit, but the lamps and battery will have their circuit connection closed by the said magnet.

3. In a system for lighting railway-vehicles electrically, the combination with a generator driven by the vehicle, of a group of lamps and a storage battery connected thereto in multiple, a regulator for the dynamo, a second regulator in the lamp-circuit, and a magnet measuring the potential applied to the lamps and controlling the said second regulator.

4. In a system for lighting railway-vehicles electrically, the combination with a generator driven by the vehicle of a storage battery connected thereto, a group of lamps connected thereto in multiple with the battery, a resistance in the lamp branch in series with the lamps, a regulator-magnet between said resistance and the dynamo measuring the storage-battery conditions, a regulator controlled thereby, and supplementary regulating devices controlled by a magnet in the lamp branch measuring the lamp conditions.

5. In a system for lighting railway-vehicles electrically, the combination with a generator of a capacity greater than the normal lamp-load driven by an axle, of lamps and a storage battery, a switch in the main-line circuit between the said lamps and the battery and the generator, three shunt-magnets all independent of the armature-current but connected to the main line between the said switch and the generator, one being the field-magnet, another controlling the field-magnet, and the third controlling the said switch, and two magnets connected to the main line, one being a series magnet controlling the opening of the said switch, and the other being a shunt-magnet for regulating the current delivery to the lamps.

6. In a system for lighting railway-vehicles electrically, the combination with an axle, of a generator of a capacity greater than the normal lamp-load driven thereby at a variable speed, a potential-magnet permanently connected in a shunt-circuit from the armature, lamps and a storage battery having their connection with the said generator controlled by the potential of the system and their disconnection therefrom by the current of the system, a shunt-circuit containing the field-magnet of the generator, a resistance in said circuit, a motor operating the resistance and a director for the said motor controlled by the said potential-magnet so as to be set and maintained for one direction of action of said motor or another as long as the potential of the system is either above or below the point determined by the said magnet.

7. In a system for lighting railway-vehicles electrically, the combination with a generator, of an automatic connection-switch set to connect the generator to the line at a given speed, a storage battery permanently connected to the line while the said switch is closed, electric lamps intermittently connected to the line while the said switch is closed, a magnet measuring the generator potential, a current-changing regulator controlled by the said magnet and adjusting the amount of the battery-current to the counter electromotive force of the battery whenever the lamps are disconnected, and a resistance in the lamp branch determining, together with the said magnet, the potential applied to the lamps whenever both lamps and battery are connected to the generator.

8. In a system for lighting railway-vehicles electrically, the combination with lamps and a storage battery in multiple of a constant-potential dynamo driven by the vehicle at an intermittent and variable speed and having a capacity sufficient to simultaneously operate the lamps and charge the battery and a current-varying regulator for the dynamo adjusting the volume of armature-current to either the lamps along (the battery being charged) to the battery along (the lamps being out of use), or to lamps and battery together.

The senior party, McElroy, filed his application September 9, 1901, upon which a patent issued February 17, 1903. He has taken no testimony and, therefore, must stand upon his filing date. Bliss filed his application September 10, 1904, which is subsequent to the date of the McElroy patent. As to counts 1 and 8 of the issue, however, Bliss contends that the burden of proof is not so heavily upon him because those counts are a continuation of an application filed by him February 26, 1902, while the McElroy application was still pending in the Patent Office. This contention is contested by McElroy, but we incline to accept the view of the Examiner of Interferences, who alone of the Patent Office tribunals passed upon the question, that these counts "appear to be fairly described in the earlier application."

The Examiner of Interferences and the Board of Examiners-in-Chief hold that Bliss has failed to prove reduction to practice prior to McElroy's filing date. The Commissioner, without considering the evidence bearing upon that question, finds that—

> his very long delay in asserting claim to the invention discredits his allegations of a successful test of the invention and makes it necessary to resolve against him any doubt in the matter.

Each of the three tribunals of the Patent Office finds that, regardless of the question of reduction to practice, Bliss has forfeited any right he may have had by inactivity and delay. We proceed to a consideration of this question without expressing any opinion as to whether the experiments and tests of Mr. Bliss in 1897 constituted a reduction to practice.

Mr. Bliss is an electrical engineer. From the spring of 1897 down to the time he testified in this proceeding he devoted all his time to the invention of electric-lighting systems for railway-cars. The system involved in this issue was the first to engage his attention. This, he states, he conceived in the early spring of 1897, and immediately proceeded to construct in the cellar of 128 Front street, New York city, where he assembled it for the first time about the middle of June, 1897; that he then devoted several weeks "to testing it under conditions as nearly like those that would obtain upon a railroad-car" as he could reproduce; that some of these tests were made in the presence of three witnesses, one of whom was his brother and the other two close friends, and who all testified in reference thereto. The result of these tests, according to the testimony of Mr. Bliss, convinced him that he was "in possession of a thoroughly practical system." He was not convinced, however, that this system as he had developed it "was the ultimate solution of the problem of axle-lighting." He thus frankly criticises his own invention:

> I would state that while this apparatus was exceptionally well built and performed its functions under test in a highly satisfactory manner, a knowledge of railroad conditions led me to analyze and criticise my own work with the object in view of being able to offer to the public a far better system of car-lighting. This apparatus, while nothing like as complicated and trappy as systems of a similar nature found to-day having had an advantage of some eight years in which to have had their crudeness reduced and their operativeness enhanced, was to my mind too delicate, too complicated, too subject to derangement, too costly to maintain, and not quick enough, accurate enough, or reliable enough in its operation to warrant its being foisted upon the public.

Thereupon the apparatus comprising this system "was carefully dismantled, cleaned up, and set temporarily to one side," where it remained so far as the evidence discloses until the application herein was filed. Immediately after dismantling this apparatus Mr. Bliss applied himself to the development of another system. That he worked with great industry and success is evidenced by the fact that his next system called the "bucker" was actually constructed during the months of July, August, and September, 1897, and an application for patent thereon filed October 14, 1897, which was granted March 29, 1898. The bucker system was tested without delay, and early in 1898 permission was obtained to install it on a Pullman car, and it was in fact installed on such car in March of that year. Mr. Bliss was asked why he placed the bucker system on the car instead of his original system, and frankly answered that he did so "because the bucker system overcame all of the difficulties encountered in the other apparatus." Subsequently the Bliss Electric Car Lighting Company was organized, and Mr. Bliss was given a salary of $3,000 per year. The bucker system was developed, and exploited, and installed on cars of different railroads, but absolutely nothing was done with the other system so far as the record discloses. Mr. Bliss was asked by his counsel whether he tried to sell "*these* systems" to the Pennsylvania Railroad Company, or to any other company. To this question Mr. Bliss answered:

> I made continual efforts to sell *this* apparatus to other railroads besides the Pennsylvania R. R. Co. and the Pullman Co.

Mr. Bliss further testified that he developed the bucker system in preference to the one in issue because it "appeared to be a structure far less liable to derangement when placed in actual service;" that there was nothing particularly delicate about the bucker system; that "the bucker proposition looked more hopeful from a financial standpoint;" that his father, who had advanced money to the enterprise, "insisted upon driving the bucker invention through to a finish, regardless of anything else."

Mr. Bliss made no attempt to secure a patent on any feature of the invention in issue until after he discovered that a patent involving the invention had issued to one Creveling December 10, 1901, although he had since his conception of this invention obtained several domestic and several foreign patents on other inventions. On February 26, 1902, shortly after his discovery of the Creveling patent and *about five years after he had conceived this invention*, and, as he contends, had reduced the same to practice, he filed the application to which we have heretofore alluded. The application herein was not filed by him until more than a year and a half after a patent had been issued to McElroy, and more than six years and a half after the alleged conception and reduction to practice by Bliss.

Mr. Bliss, in answer to this cumulative and overwhelming evidence of lack of diligence, says his means were so limited that he could patent only such inventions as he made public; that the evidence does not affirmatively show abandonment by him, and that he did not in fact intend to abandon his invention; that as to counts 1 and 8 of the issue McElroy had not given "the invention of these counts to the public, either by patent or by public use," when the earlier Bliss application was filed, and that, therefore, the rule announced in *Mason* v. *Hepburn* (13 App. D. C., 86) is not applicable to these counts.

In *Mason* v. *Hepburn*, Mason delayed the filing of his application about seven years after conception and reduction to practice, while Hepburn's application was filed about nine months, and a patent was issued to him

about four months, *prior* to Mason's filing date. In that case as in the instant case the evidence cast no cloud on the good faith of the senior party, and the court observed that his invention was an independent act. After a very thorough and careful analysis of the leading cases applicable to the question involved, the court said:

Considering, then, this paramount interest of the public in its bearing upon the question as presented here, we think it imperatively demands that a subsequent inventor of a new and useful manufacture or improvement who has diligently pursued his labors to the procurement of a patent in good faith, and without any knowledge of the preceding discoveries of another, shall, as against that other, who has deliberately concealed the knowledge of his invention from the public, be regarded as the real inventor and as such entitled to his reward.

In *Thompson* v. *Weston* (19 App. D. C., 373) there was a delay of about four years by Thompson after conception and reduction to practice in filing his application, and Weston's patent antedated by a few months the Thompson application. After referring to the decision in *Mason* v. *Sargent*, the court said:

It is true that the time of concealment in this case was something less than four years as against seven years in that. The mere difference in time, however, is not sufficient to affect the application of the principle, for it is as certain in one case as in the other that the application for patent was solely stimulated by the publication of the patent granted to another inventor. No substantial or even plausible excuse for Thompson's inaction is disclosed by the testimony. * * * The particular object of the beneficence of the patent law is the individual who first conceives, and with diligence perfects an invention. And where one has completed the act of invention his right to the reward in the form of a patent becomes complete save in two instances that may be satisfactorily shown to exist. First, he loses the right as against the public in general by a public use for the statutory period. Second, by his deliberate concealment or suppression of the knowledge of his invention he subordinates his claim, in accordance with the general policy of the law in the promotion of the general interest, to that of another and *bona fide* inventor who during the period of inaction and concealment shall have given the benefit of the discovery to the public. Viewed in the light of "the true policy and ends of the patent laws," the latter is the first to invent, and therefore entitled to the reward.

There was less delay in *Matthes* v. *Burt* (24 App. D. C., 265) than in the present case, and in that case the Matthes application was filed while Burt's was still pending in the Patent Office. The invention related to a billiard-ball, and the evidence showed that after Matthes had tested his invention to his own satisfaction and to the satisfaction of his employers, "it was laid aside and the manufacture was continued in the old way." Meanwhile Burt working independently conceived the same invention and promptly proceeded to utilize it and sell the product. He applied for a patent without delay, and shortly thereafter Matthes having learned of Burt's success also filed an application. The court ruled that Matthes in concealing his invention for three and a half years forfeited his rights as against Burt. The court also said:

That Burt's application had not ripened into a patent before Matthes filed his does not substantially affect the application of the cases of *Mason* v. *Hepburn*, (13 App. D. C., 86, and others *supra*.) Whilst the possession of a patent makes, ordinarily, a stronger case in favor of the holder, the doctrine in respect of concealment by one earlier to invent does not necessarily depend upon that fact. In *Warner* v. *Smith*, (13 App. D. C., 111, 115,) in which the reasons for that doctrine are explained at length, the later inventor had not received a patent.

In the present case Bliss concealed his invention for a period of five years after his tests convinced him "that it was the best system in existence in June, 1897." He invented and exploited another system, and did nothing with or about this system until he saw the Creveling patent. Having discovered that Creveling's patent encroached upon his invention he filed an application for so much of the invention as the Creveling patent covered. It was not until he saw the McElroy patent a year and a half later that he filed this application covering all his invention. The following reference to his cross-examination is timely:

Q. You are aware, are you not, that Mr. McElroy has a car-lighting system on the Delaware & Hudson R. R.?
A. Only by hearsay.
Q. Were you aware of it at the time you filed your application in issue?
A. I understood that he was carrying on some kinds of experiments in this line.

The conclusion is irresistible that Mr. Bliss set this system to one side because he believed he could invent a better one. It is equally clear that, having invented what in his opinion was a better system, he permitted this one to remain to one side until others after independent and patient efforts had conceived and developed similar systems. Then to clear the field of troublesome competition he sought a patent. The patent laws were not enacted for any such purpose. They were not enacted to discourage but to stimulate invention, and, as was pointed out in *Mason* v. *Hepburn*, *supra*, the object of the Government in fostering inventions is to benefit the public. The public receives no benefit from an invention that is locked up in a cupboard, or exists only in the brain of the inventor. For this reason it is the policy of the law to encourage activity and diligence and discourage delay.

The reasons for the delay in this case are not sufficient as to any of the counts of the issue, and we, therefore, affirm the decision of the Commissioner, and it is so ordered.

The clerk of the court will certify this opinion and the proceedings in this court to the Commissioner of Patents, as required by law. Affirmed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 27, 1907.

Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application for patent filed by Winne Gordon, of Sharon Springs, N. Y., and an application for patent filed by Jeptha J. Lamb and James H. Patton, of Bellevue, Idaho. It appears from the record of the interference that the present whereabouts of said Jeptha J. Lamb and James H. Patton is unknown, and all communications directed to their address above given within the past two years have been returned unclaimed by the Post-Office Department.

Notice is therefore hereby given to the said Jeptha J. Lamb and James H. Patton, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C. April 1, 1907.

Empire Soap Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Magnolia Healing Soap Company, of Muscatine, Iowa, for registration of a trade-mark, an application for registration of a trade-mark filed by The Southern Cotton Oil Company, of Jersey City, N. J., and a trade-mark registered to the Empire Soap Company, of St. Louis, Mo. The notice of said declaration mailed by the Patent Office in the usual manner to the said Empire Soap Company at its address as above given has been returned by the Post-Office Department undelivered, and it has been impossible to locate said company.

Notice is therefore hereby given to the Empire Soap Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Assistant Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Designs	23	No. 38,553 to No. 38,575, inclusive.
Trade-Marks	129	No. 62,501 to No. 62,629, inclusive.
Labels	15	No. 13,531 to No. 13,545, inclusive.
Prints	2	No. 1,984 to No. 1,985, inclusive.
Reissues	4	No. 12,649 to No 12,652, inclusive.
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1		New Hampshire	4	1
Alaska, District of			New Jersey	31	7
Arizona Territory	1		New Mexico Ter't'y	1	
Arkansas			New York	132	37
California	22	2	North Carolina	2	
Colorado	10	1	North Dakota	3	
Connecticut	29	1	Ohio	49	9
Delaware	1		Oklahoma Territ'y	1	
District of Columbia	6		Oregon	10	
Florida	4	1	Pennsylvania	66	15
Georgia	6	2	Philippine Islands		
Hawaii Territory			Porto Rico		
Illinois	67	10	Rhode Island	5	1
Indian Territory			South Carolina	2	1
Indiana	18	2	South Dakota		3
Iowa	14	2	Tennessee	7	1
Kansas	7	1	Texas	5	
Kentucky	6	2	Utah	3	
Louisiana	4	1	Vermont	1	
Maine	4	2	Virginia	5	
Maryland	8	3	Washington	5	
Massachusetts	47	14	West Virginia	2	1
Michigan	26	3	Wisconsin	20	3
Minnesota	14		Wyoming		
Mississippi	2		U. S. Army		
Missouri	21	4	U. S. Navy	1	
Montana	5				
Nebraska	9	1	Total to citizens of the United States	690	131
Nevada	2				

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks, Labels, and Prints.	Countries.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Argentina	1		Natal		
Austria-Hungary	3		Netherlands		
Belgium	1		Newfoundland		
Brazil			New South Wales		
British West Indies			New Zealand	2	
Canada	11	2	Norway		
Cape Colony			Persia		
Chile			Queensland		
China			Roumania		
Costa Rica			Russia	1	
Cuba	2		Scotland	1	
Denmark			South Australia		
Ecuador			Spain		
England	10	3	Sweden	2	
France	12	1	Switzerland	1	
Germany	16	9	Transvaal, South Africa		
Haiti	1		Victoria	3	
Ireland	1		Western Australia		
Italy	1				
Japan					
Java			Total to citizens of foreign countries	70	15
Mexico	1				

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 6, 1907.

The Ohio Chemical Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The Norwich Pharmacal Company, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Ohio Chemical Company, of Columbus, Ohio. The notice of said declaration mailed by the Patent Office in the usual manner to the said Ohio Chemical Company at its known address, 573 North High street, Columbus, Ohio, has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Ohio Chemical Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

Attorneys.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 9, 1907.

This Office has been informed by the Secretary of the Interior that William E. Moses, of Washington, D. C., and Denver, Colo., was disbarred April 17, 1907, from practice before the Department or any Bureau thereof.

C. M. IRELAN,
Chief Clerk.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 7, 1907.

Room No	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
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303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	Apr 24	Apr. 11	134
109	XVI. Telegraphy and Telephony.	Apr. 24	Apr. 10	202
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 24	Apr. 6	276
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Apr. 24	Apr. 1	232
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Apr. 23	Apr. 13	276
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr. 23	Apr. 8	238
327	XVIII. Steam-Engineering, etc.	Apr. 23	Mar. 28	186
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 22	Apr. 6	318
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Apr. 20	Apr. 3	99
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr. 19	Apr. 2	220
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 18	Mar. 22	370
244	XXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Apr. 18	Mar. 20	530
164	XXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Apr. 17	Apr. 19	243
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Apr. 17	Apr. 6	191
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Apr. 17	Apr. 5	228
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Apr. 15	Mar. 20	290
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 11	Apr. 1	290
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Apr. 10	Apr. 8	296
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Apr. 10	Apr. 2	386
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Apr. 9	Apr. 10	397
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 8	Apr. 8	321
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 8	Mar. 16	370
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 6	Mar. 29	406
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Apr. 6	Feb. 26	326

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr. 5	Mar. 21	221
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 4	Mar. 8	200
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 3	Apr. 2	180
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 3	Mar. 8	341
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 1	Apr. 13	658
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Apr. 1	Mar. 29	423
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Mar. 27	Mar. 26	339
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Mar. 27	Mar. 14	428
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 25	Mar. 27	451
332	X. Carriages and Wagons.	Mar. 23	Mar. 26	559
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Mar. 22	Mar. 15	402
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Mar. 16	Mar. 14	626
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 16	Feb. 15	431
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 13	Mar. 15	326
	Total number of applications awaiting action			12,526
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	May 6	Apr. 25	165
	Designs	May 2	Apr. 25	18
	Labels and Prints	.....	.....	....

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., March 29, 1907.

Fred W. Smith, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The New Era Milling Company, of Arkansas City, Kans., for registration of a trade-mark and a trade-mark registered to Fred W. Smith, of New York, N. Y. The notice of said declaration mailed by the Patent Office in the usual manner to the said Fred W. Smith at his known address, 4 State street, New York, N. Y., has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Fred W Smith, his assigns or legal representatives that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

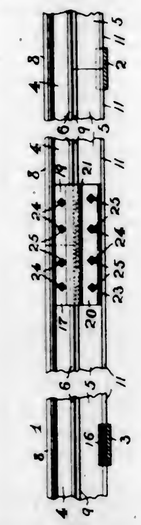
This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

PATENTS.

GRANTED MAY 14, 1907.

853,209. RAILWAY-RAIL. JOHN N. AKARMAN, Newark, N. J., assignor of one-half to Charles F. Underwood, Newark, N. J. Filed June 1, 1906. Serial No. 319,663.



Claim.—1. A railway-rail comprising an upper rail and a lower girder section, oppositely extending tapering flanges and a head on said upper rail-section, oppositely extending upper tapering flanges on said lower girder section which form a support for the flanges of said upper rail-section, and oppositely extending lower flanges on said lower girder-section, said lower flanges forming a support for the entire rail; and means for securing said upper rail-section upon said lower girder-section, consisting of perforated plates arranged against the opposite faces of the said upper rail and lower girder-sections, a tapering channeled and longitudinally extending member on each plate, said tapering channeled and longitudinally extending member embracing the tapering flanges of said upper rail-section and the upper tapering flanges of said lower girder-section, substantially as and for the purposes set forth.

2. The combination, with a pair of railway rails, each rail comprising a lower girder and an upper rail-section, said lower girder-section forming a base and said upper rail-section a head, means for securing said lower girder and upper rail-sections together, each lower girder-section having an upper tapering flanged-portion, said means consisting of perforated plates arranged against the opposite sides of said lower girder and upper rail-sections, said girder and rail-sections and plates being provided with registering bolt-holes, bolts and nuts for securing said plates to said girder and rail-sections, and a metallic tie, said tie comprising a flat body and hook-shaped end-portions extending around and over the lower flanged-portions of said lower girder-sections, substantially as and for the purposes set forth.

3. The combination, with a pair of railway rails, each rail comprising an upper rail and a lower girder-section, oppositely extending tapering flanges and a rail head on said upper rail-section, oppositely extending upper tapering flanges on said lower girder-section which form a support for the flanges of said upper rail-section, oppositely extending outer and inner lower flanges on said lower girder-section, said lower flanges forming a support for the entire rail, means for securing said upper rail-section upon said lower girder-section, consisting of perforated plates arranged against the opposite faces of the said upper rail and lower girder-sections, a tapering channel-shaped and longitudinally extending member on each plate, said tapering channeled and longitudinally extending member embracing the tapering flanges of said upper rail-sections and the upper tapering flanges of said lower girder-sections, and a metallic tie, said tie comprising a flat body and hook-shaped end-portions extending around and over the said outer lower flanges of said lower girder-section, substantially as and for the purposes set forth.

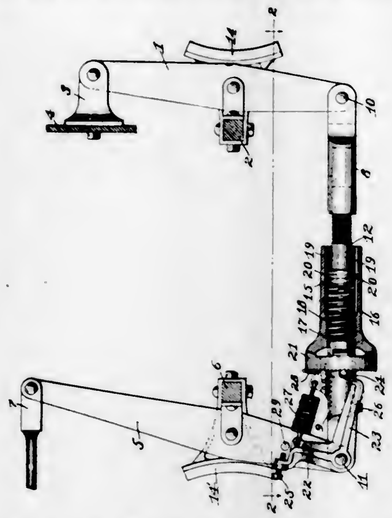
4. The combination, with a pair of railway rails, each rail comprising a lower girder and upper rail-sections, said lower girder-section forming a base and said upper rail-section a head, means for securing said lower girder and upper rail-sections together, each section having an outer and inner tapering flanged portion, said means consisting of perforated plates arranged against the opposite faces of the said lower girder and upper rail-sections, said sections and plates being provided with registering bolt-holes and nuts for securing said plates to said sections, and a metallic strut comprising a flat body and upwardly extending hook-shaped members embracing the inner flanged portions of said lower girder-sections, substantially as and for the purposes set forth.

5. The combination, with a pair of railway rails, each rail comprising a lower girder and an upper rail-section, oppositely extending tapering flanges and a rail head on said upper rail-section, oppositely extending upper tapering flanges on said lower girder-sections which form a support for the flanges of said upper rail-sections, oppositely extending outer and inner lower flanges on said lower girder-sections, said lower flanges forming a support for the entire rail, means for securing said upper rail-section upon said lower girder-sections, consisting of perforated plates arranged against the opposite faces of the said upper and lower sections, a tapering channeled-shaped and longitudinally extending member on each plate, said tapering channeled and longitudinally extending member embracing the tapering flanges of said upper rail-sections, and the upper tapering flanges of said lower girder-sections, and a metallic strut, comprising a flat body and upwardly extending hook-shaped members embracing the inner lower flanges of said lower girder-sections, substantially as and for the purposes set forth.

853,210. SLACK-ADJUSTER. CHARLES O. ANDERSON, Omaha, Nebr., assignor of one-half to A. T. Austin, Omaha, Nebr. Filed June 11, 1906. Serial No. 321,289.

Claim.—1. In a slack adjuster for brake rigging, a pivoted lever, a screw connecting said lever to other parts of the brake rigging, and a sleeve mounted upon, and rotatively engaged with, said screw, in combination with a ratchet connected with said sleeve, an oscillating arm, a part near the end of said arm arranged to engage said ratchet to rotate the same, resilient means adapted to move said arm in one direction, and means upon said pivoted lever for moving said arm in the opposite direction.

2. In a slack adjuster for brake rigging, a pivoted lever, a screw connecting said lever to other parts of the brake rigging, and a sleeve mounted upon and rotatively engaged with said screw, in combination with a ratchet connected with said sleeve, an oscillating arm, a part near the end of said arm arranged to engage said ratchet to rotate the same, resilient means adapted to move said arm in the direction to rotate said ratchet, and means upon said pivoted lever for moving said arm in the opposite direction.



3. In a slack adjuster for brake rigging, a pivoted lever, a screw connecting said lever to other parts of said brake rigging, and a ratchet rotatively connected to said screw, in combination with an oscillating arm, a part near the end of said arm arranged to engage said ratchet to rotate the same in one direction, a pawl to prevent rotation of said ratchet in the opposite direction, resilient means adapted to move said arm in one direction, and means upon said pivoted lever for moving said arm in the opposite direction.

4. In a slack adjuster for brake rigging, a pivoted lever, means for connecting said lever to other parts of the brake rigging comprising two internally threaded members and a right and left hand screw connecting the same, in combination with a ratchet rotatively engaged with said screw, an oscillating arm, a part near the end of said arm arranged to engage said ratchet to rotate the same, resilient means adapted to move said arm in one direction, and means upon said pivoted lever for moving said arm in the opposite direction.

5. In a slack adjuster, two brake rigging members, and a screw engaged in the same, in combination with a sleeve slidably mounted upon said screw and engaged therewith, a ratchet connected with said sleeve, a pawl arranged to coöperate with said ratchet, resilient means arranged to normally maintain said pawl at one limit of its movement, and means actuated by a part of said brake rigging for moving said pawl out of its normal position.

6. In a slack adjuster for brake rigging, a pivoted lever, a screw connecting said lever to other parts of the brake rigging, in combination with means for operating said screw pivotally connected to, and having a part positioned in the path of, said lever and operated only by excessive movement of said lever.

7. In a slack adjuster for brake rigging, a pivoted lever, a screw connecting said lever to other parts of the brake rigging, in combination with mechanism for operating said screw having a part positioned in the path of said lever whereby excessive movement of said lever will move said operating mechanism into operative position, and resilient means for operating said mechanism.

853,211. PIN. EMIL ANDERSON, Chicago, Ill., assignor to F. H. Noble & Co., Chicago, Ill., a Corporation of Illinois. Filed Nov. 5, 1903. Serial No. 179,949.



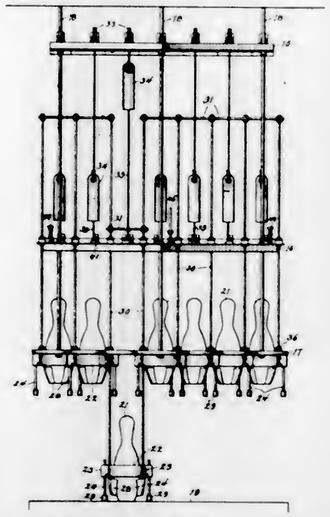
Claim.—1. In an article of the class described, the combination of a one-piece cup the bowl of which is provided with a transverse slot, and an attaching member having a bent portion extending to the inside of the cup, the edges of said slot being turned over upon said bent portion to grasp and rigidly hold the same.

2. In an article of the class described, the combination of a one-piece cup the bowl of which is provided with a transverse slot, and an attaching member having a mediate bent portion longitudinally disposed within said slot and extending to the inside of the cup, the edges of said slot being turned over upon the inside of the bend to grasp and rigidly hold said bent portion of the attaching member.

3. In an article of the class described, the combination of a one-piece cup the bowl of which is provided with a transverse slot, a pin having a bend or kink 2 received by said slot and thereby prevented from rotating, the edges of such slot being turned over to grasp and rigidly hold such bend of the pin.

4. The combination of a button 5 having an opening with an undercut 6, a pin 1 having a bend 2, and a one-piece cup 3 the bowl of which is provided with a transverse slot 4, said bend being received by the slot and rigidly secured therein by the bent edges thereof and said cup being forced into the undercut of the button.

853,212. PIN-SETTER. HANS J. ANDERSON, Lakemills, Wis. Filed Sept. 13, 1906. Serial No. 334,418.



Claim.—1. In a pin setter, a pin lowering pocket comprising a ring, arms pivotally mounted on the ring, a cam on each arm, legs slidable through the ring, lugs on the legs for engaging the cams of the arms and forcing them inwardly when the legs are moved downwardly, said legs being adapted to be moved upwardly on striking the floor to release the lugs from engagement with the cams and permit the arms to swing outwardly, and means in the path of the legs to force them downwardly when the pocket is raised.

2. In a pin setter, a pin lowering means comprising a ring mounted to have vertical movements, rods slidable in the ring to form legs for striking the floor when the ring is lowered, arms carried by the ring for holding a tenpin between them and adapted to be held by the legs when in their lower position, means for engaging the legs and forcing them downwardly when the ring is raised to its upper position, and means for retarding the movements of the legs.

3. In a pin setter, a pin lowering means comprising a ring adapted to have vertical movements, rods slidable through the ring and forming legs adapted to be moved upwardly by engagement with the floor, arms pivotally mounted on the ring and adapted to be forced inwardly by the legs when in their lower position, means to be engaged by the legs when the ring is raised to its upper position for forcing said legs downwardly, and spring retarding means for the legs comprising spring pressed lugs adjustably clamped to the ring and bearing on the legs.

4. In a pin setter, a frame having openings through which the pins may pass, rings forming pin lowering pockets beneath the openings of the frame to receive the pins when placed through said openings, guide rods secured to the rings and passing through openings in the frame, a suspending means for the lowering pockets capable of lifting the empty pockets and of being overcome by the weight of the tenpins in the pockets, means for releasably holding the lowering pockets, said rings having side projections, arms pivotally connected in slots of the rings, curved plates carried by the arms, guide pins in the said slots for limiting the position of the arms, rods slidable through the ring and having lugs for engaging the cam surfaces of the arms and forcing said arms to swing inwardly, said legs being adapted to be moved upwardly by striking the floor and to be moved downwardly by striking the frame, and means for preventing accidental movement of the legs comprising spring lugs adjustably clamped to the side extensions of the rings and projecting through openings into frictional engagement with the legs.

5. In a pin setter, a frame having openings through which the pins may pass, lowering pockets beneath the openings of the frame to receive the pins, guide rods by means of which the lowering pockets are suspended passing through openings of the frame, said frame constituting a table for guiding the pins to the pockets, and another frame located above the first mentioned frame and provided with means for controlling the guide rods for supporting and releasing the lowering pockets.

6. In a pin setter, a frame having openings through which the pins may pass, lowering pockets beneath the openings of the frame to receive the pins, guide rods by means of which the lowering pockets are suspended passing through openings of the frame, said frame constituting a table for guiding the pins to the pockets, guide ribs formed on said table and constituting tracks leading to the foremost openings thereof to guide the pins to said openings, and means for releasably engaging the guide rods.

7. In a pin setter, a frame having openings through which the pins may pass, lowering pockets beneath the openings of the frame to receive the pins, guide rods by means of which the lowering pockets are suspended passing through openings of the frame, said frame constituting a table for guiding the pins to the pockets, rollers mounted on the frame and bearing on the guide rods, another frame located above the first mentioned frame, rollers thereon engaging the guide rods on the opposite side to the engagement of the rollers on the first mentioned frame, and means on said other frame for engaging and releasing the guide rods for holding the lowering pockets in an upper position or allowing them to descend.

8. In a pin setter, a pair of frames one arranged above the other, pulleys mounted on the upper frame, guides on the other frame, pin lowering pockets having guide rods passing through said guides, a cross piece connecting the guide rods of each lowering frame, lines connected with the cross pieces and passing over the pulleys, weights suspended by the lines capable of lifting the empty lowering pockets but being overbalanced by the weight of the pins in said lowering pockets, catch rods extending between the two frames and journaled therein, teeth on the catch rods for engaging the cross pieces of the guide rods, and cranks on the catch rods by means of which said rods may be turned to remove the teeth from engagement with the cross pieces and thereby release the lowering pockets.

9. In a pin setter, a pair of frames one arranged above the other, pulleys mounted on the upper frame, guides on the other frame, pin lowering pockets having guide rods passing through said guides, a cross piece connecting the guide rods of each lowering frame, a line connected with each cross piece and passing over one of the pulleys, a weight suspended by the line capable of lifting the empty lowering pocket but being overbalanced by the weight of the pin in said lowering pocket, catch rods extending between the two frames and journaled therein, teeth on the catch rods for engaging the cross pieces of the guide rods, cranks on the catch rods by means of which said rods may be turned to remove the teeth from engagement with the cross pieces and thereby release the lowering pockets, handles connected with said cranks for independent release of the lowering pockets, and means engaging the handles for moving them together to produce the simultaneous release of several lowering pockets.

10. In a pin setter, a pair of frames one arranged above the other, pulleys mounted on the upper frame, guides on the other frame, pin lowering pockets having guide rods passing through said guides, a cross piece connecting the guide rods of each lowering frame, a line connected with each cross piece and passing from one of the pulleys, a weight suspended by the line capable of lifting the empty lowering pocket but being overbalanced by the weight of the pin in said lowering pocket, catch rods extending between the two frames and journaled therein, teeth on the catch rods for engaging the cross pieces of the guide rods, cranks on the catch rods by means of which said rods may be turned to remove the teeth from engagement with the cross pieces and thereby release the lowering pockets, handles connected with said cranks for independent release of the lowering pockets, a strip hinged to the lower frame and adapted to engage the handles, and a toggle lever for swinging the strip and causing the simultaneous release of all of the lowering pockets.

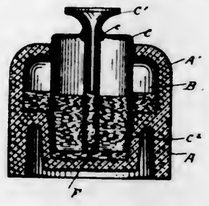
11. In a pin setter, a lower frame and an intermediate frame and an upper frame suspended one above another at a distance apart, the lower frame having openings through which the pins may pass, lowering pockets located beneath each opening of the lower frame and comprising rings, arms pivotally mounted in said rings, rods slidable in the rings and forming legs to be moved upwardly on striking the floor, lugs carried by the legs to engage the arms and force them inwardly when the legs are moved downwardly by striking the lower frame, guide rods connected to the rings and passing through openings in the lower frame, guide rollers on the lower frame bearing on one side of the guide rods, guide rollers on the intermediate frame bearing on the other side of the guide rods, cross pieces connecting the guide rods of each lowering pocket, pulleys mounted on the upper frame, lines connected to the cross pieces and passing over the pulleys, weights connected to the lines capable of holding the lowering pockets in their upper positions against the lower frame but being overbalanced by the weight of the pins in the lowering pockets, catch rods journaled in the top and intermediate frames, teeth on the catch rods for engaging the cross pieces, cranks on the catch rods, handles connected to the cranks, a strip hinged to the intermediate frame and having the handles releasably connected thereto, and a toggle joint lever connected to the strip by means of which the strip may be moved to release all of the lowering pockets.

12. In a pin setter, a pin lowering pocket comprising a ring, arms pivotally mounted on the ring, a cam on each arm, a lever pivoted to the ring and adapted to ride on the cams of the arms, and means controlled by the position of the pin lowering pocket for swinging the lever to cause the arms to move toward or away from each other,

13. In a pin setter, a pin lowering pocket comprising a ring, arms pivotally mounted on the ring, a cam on each arm, a lever pivoted to the ring and bearing on the cams of the arms, a controlling rod connected with the lever, stops on the controlling rod, and means for engaging the stops during the movements of the pin lowering pocket for causing the lever to swing and move the arms with relation to each other.

14. In a pin setter, a frame having openings through which the pins may pass, rings forming pin lowering pockets beneath the openings of the frame to receive the pins when placed through said openings, guide rods secured to the rings and passing through openings in the frame, suspending means for the pin lowering pockets capable of lifting the empty pockets and of being overcome by the weight of the tenpins in the pockets, means for releasably holding the pin lowering pockets, said rings having side projections, arms pivotally connected to the rings and provided with cams, U-shaped levers pivotally connected at their ends to the rings and passing through the side projections of the rings to bear against the cams of the arms, controlling rods connected to the U-shaped levers and passing through openings in the frame, cross pieces connected with the controlling rods and slidably mounted on the guide rods, and jam nuts threaded on the controlling rods to form adjustable stops for engaging the frame to swing the U-shaped levers and cause the arms to move with relation to each other.

853,213. INKSTAND. FRANK M. ASHLEY, New York, N. Y. Filed Apr. 20, 1906. Serial No. 312,752.



Claim.—1. An inkstand having a reservoir with an extended tapering wall, and a float vertically movable therein and co-operative therewith to force ink to the upper end thereof as described.

2. An inkstand having a reservoir with a tapering wall, a float movable therein and forming a passage between said wall and float, thereby gradually restricting said passage by the movement of the float for the purpose set forth.

3. An inkstand having a reservoir with a tapering wall, and a float having a tapering wall, the downward movement of said float serving to lessen the distance between said walls and to upwardly force ink from said reservoir.

4. An inkstand having a reservoir with a tapering wall, a float vertically movable therein and co-operating with said wall to force ink upward therefrom, and means for restricting the upward movement of the float.

5. An inkstand having a reservoir with a tapering wall, a float movable therein, the lower end of which is provided with a tapering wall whereby a passage is formed between said walls, and means for restricting the upward movement of said float.

6. An inkstand having a main reservoir and a lower reservoir of reduced diameter, a float having its lower end tapered and located in said lower reservoir and having its lower end of less diameter than that of said lower reservoir when in their normal position relative to each other, thereby forming a passage between them, the downward movement of said float serving to restrict said passage.

7. An inkstand having a reservoir in its bottom, a float comprising two parts separably connected, the lower end of said float being in proximity to the lateral wall of said reservoir and having its wall tapered as set forth.

8. In an inkstand a reservoir having a tapering wall at its lower end, a float having a tapering wall at its lower end, said tapered part of the reservoir being disposed opposite the tapered part of the float, a cap-piece provided with a guide-way, and means for restricting the upward movement of the float.

9. An inkstand having a reservoir with a tapering wall, a float having a dip tube and a tapering wall, said tapered part of the reservoir being disposed opposite the tapered part of the float, said float having the lower end of the dip tube extending below the remainder of the float.

10. An inkstand having a reservoir with a tapering wall at its lower end, and a float made in two parts and having a tapering wall at its lower end and disposed opposite the tapered wall of said reservoir.

11. An inkstand having a reservoir with a tapering wall at its lower end, a float made in two parts and having a tapering wall at its lower end, and disposed opposite the tapered wall of said reservoir, and means for restricting the upward movement of said float.

12. An inkstand having a reservoir with its lower end tapered, and a float having its lower end disposed in proximity to the tapered wall of said reservoir and operative as described.

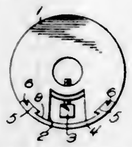
13. An inkstand comprising a body having a reservoir, a float in said reservoir of sufficiently less diameter to form a passage between the wall of said float and reservoir, the lower end of said float or reservoir being tapered so that the lowering of the float will restrict said passage and upwardly force the ink from the reservoir.

14. An inkstand having a main reservoir with a second reservoir in its bottom, a float having its lower end tapered and disposed in proximity to the lateral wall of said reservoir and operative as described.

15. An inkstand having a main reservoir with a second reservoir in its bottom, said second reservoir having its wall tapered, and a float having its lower end disposed in proximity to the tapered wall of said reservoir and operative as described.

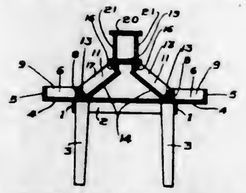
16. An inkstand having a reservoir, and a float having its lower end tapered and disposed in proximity to the lateral wall of said reservoir and operative as described.

853,214. SHAFT AND PULLEY COLLAR. EPAPHRAS L. BEAL, Fredericksburg, Tex. Filed Mar. 10, 1906. Serial No. 305,242.



Claim.—A collar having a radial recess accommodating the head of a fastening screw and provided adjacent to said recess with shallow depressions extending partly across the rim of the collar, the latter being provided with a stop-flange, and said depressions having dovetailed grooves, in combination with a shield provided near the ends thereof with dovetailed ribs engaging the grooves.

853,215. DISPLAY-TABLE. CARL I. BERG, Rushford, Minn. Filed Dec. 26, 1906. Serial No. 349,370.



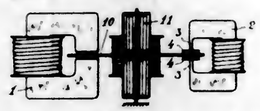
Claim.—1. A display table comprising a table-top, an outer series of horizontal compartments and an inner series of inclined compartments thereon, substantially as set forth.

2. A display table comprising a table-top, an outer series of horizontal compartments and an inner series of inclined compartments thereon, and a shelf over the middle portion, substantially as set forth.

3. A display table comprising a table-top, an outer series of horizontal compartments and an inner series of inclined compartments thereon, composed of upper and lower triangular strips and longitudinal bottom boards and transverse partitions, substantially as set forth.

4. A display table comprising a table-top, an outer series of horizontal compartments and an inner series of inclined compartments thereon, composed of upper and lower triangular strips and longitudinal bottom boards and transverse partitions, and a shelf supported on the triangular strips, substantially as set forth.

853,216. METHOD OF AND APPARATUS FOR MEASURING ELECTRIC CURRENTS. OTTO T. BLÁTHY, Budapest, Austria-Hungary. Filed Aug. 10, 1905. Serial No. 273,546.



Claim.—1. The method of producing a magnetic field substantially proportional to the magneto-motive-force applied to magnetic material through a wide range of variation, which consists in producing different intensities of magnetization in said material for given magneto-motive-forces, thereby varying the permeability of certain parts inversely with the variation of other parts, as the applied magneto-motive-force varies.

2. The method of producing a magnetic field in a core composed of magnetic material substantially proportional to the strength of the magneto-motive-force applied thereto, which consists in working different parts of said core at different intensities of magnetization and thereby causing the permeability of certain parts to vary inversely with the variation of other parts, as the magneto-motive force varies.

3. The method of approximating the effect of constant permeability of the field of a device containing magnetic material which consists of varying the permeability of one portion of the magnetic material inversely to variations of permeability in other portions.

4. The method of approximating the effect of constant permeability of the field of a magnet having a core composed of magnetic material which consists of varying the permeability of one portion of the core inversely to variations of permeability of other portions of said core by working said portions at different magnetic densities.

5. The method of approximating the effect of constant permeability of the field of a magnet having a core composed of magnetic material which consists in magnetizing one portion of the core to a higher degree than another portion and causing the former to approach saturation as the latter approaches the range of density of approximately constant permeability.

6. The method of producing a magnetic field substantially proportioned to a given variable magnetizing force which consists of magnetizing one portion of the magnetic circuit to a higher degree than another portion and causing the former to approach saturation when the latter approaches the condition of constant permeability.

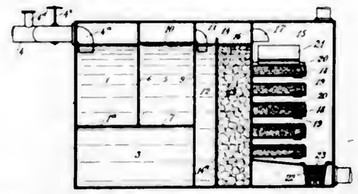
7. In an instrument for measuring electric current, a rotatable portion, a magnetizing portion containing iron, and means for causing the field intensities produced by the latter to be proportional to the current over any desired range.

8. In an electric meter the combination with the rotatable parts thereof of a core of magnetic material having portions of different cross-sections such that saturation is approached in one portion sufficiently earlier than in another portion to cause compensating variations in permeability tending to give the effect of constant permeability.

9. In a measuring apparatus depending upon proportionality of effective magnetic field to current for its accuracy, a magnetic core portion producing a field substantially proportional to current through one range and a core portion arranged to compensate for the lack of proportionality through a lower range, and having its saturation point occurring at about the same current at which the first portion reaches approximate proportionality.

10. In a measuring apparatus utilizing proportionality of field intensity to current and containing iron, a magnetic core portion producing a field substantially proportional to current through one range of current, a portion arranged to have a higher magnetic density for the same current and means for causing said second portion to saturate at about the current at which the intensity of the first portion reaches substantial proportionality.

853,217. APPARATUS FOR THE AUTOMATIC DESTRUCTION OF FECAL MATTER AND PURIFICATION OF RESIDUAL LIQUIDS. VICTOR BORDIGONI, Paris, France. Filed Jan. 30, 1906. Serial No. 298,711.



Claim.—1. An apparatus for the reception and transformation of sewage and for the purification of residual liquids, one part or section of the said apparatus being completely closed against atmospheric oxygen and consisting of two chambers, while another part or section is accessible to the atmospheric air and likewise composed of two chambers which are adapted to receive the partly treated sewage and to pass it through consecutive layers of oxidizing media, the said section containing also a sterilizing receptacle adapted to receive the liquid flowing from the said chambers and to subject it to a final purifying or sterilizing process by means of suitable chemicals.

2. In apparatus for the bacterial treatment of sewage, a closed part or section having two chambers, the first of which is divided into three compartments, viz: two comparatively small upper compartments and a comparatively large lower compartment communicating with the said upper compartments through the perforated bottom of the same; the second chamber being situated above the said lower compartment of the first chamber and communicating with the same through openings formed in the bottom of chamber near its side edges, the said second chamber being moreover provided with a series of zigzag partitions adapted to impart the required movement to the liquid passing through the same.

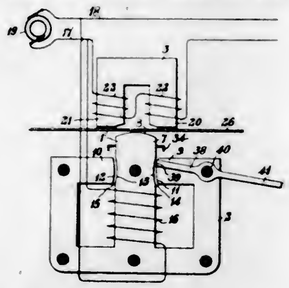
3. In apparatus for the bacterial treatment of sewage, a part or section accesible to the atmospheric air, the said section consisting of two chambers, the first of which contains limestone and is divided into two compartments, while the second contains a series of tanks placed one above the other and containing oxidizing media.

4. In apparatus for the bacterial treatment of sewage, a section or part accessible to the atmospheric air and having an oxidizing chamber a series of tanks therein placed one above another adapted to receive the partly treated and liquefied sewage and to oxidize it, each tank being charged with suitable oxidizing media and divided into parallel compartments which receive the partly treated sewage intermittently and alternately by means of an automatic distributing device, such as a divided bucket with rocking motion, substantially as described.

5. In apparatus for the bacterial treatment of sewage,

the combination of the section or part which is accessible to the atmospheric air with a sterilizing receptacle provided with gratings placed one above the other and charged with suitable chemicals, the said receptacle receiving the partly treated liquid and submitting it to a final sterilizing or purifying process, substantially as described.

853,218. ELECTRIC MOTOR. WILLIAM M. BRADSHAW, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 1, 1905. Serial No. 243,739.



Claim.—1. In an alternating current motor, a magnetizable core comprising two alined polar projections having opposing faces, and a main polar projection which differs in polarity therefrom and extends between and materially beyond said opposing faces, from which it is separated by air gaps of uniform width, and a second magnetizable core having its polar faces respectively opposite the air gaps in the first magnetizable core.

2. In an alternating current motor, a magnetizable core in two parts, the first comprising a pair of alined polar projections having opposing faces and a main polar projection that differs in polarity therefrom and extends between and materially beyond said opposing faces to form air gaps of uniform width, the second part having polar projections symmetrically placed with reference to the main polar projections and the faces of which lie opposite the face of the main projection.

3. In an alternating current motor, a magnetizable core comprising a main polar projection and projections differing in polarity therefrom between the faces of which and the sides of the main projection there are air gaps, a second magnetizable core having its polar faces respectively opposite and symmetrically placed with reference to the face of the main polar projection of the first core, and a closed-circuit conductor adjustable in position longitudinally on the main polar projection.

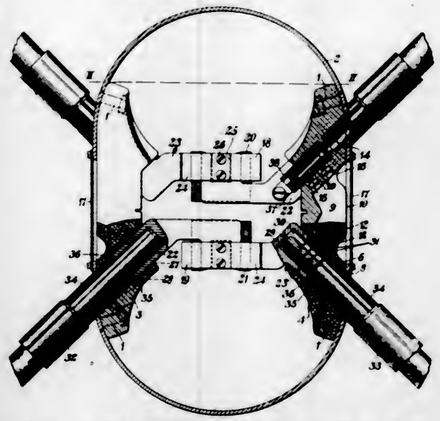
4. In an alternating current motor, the combination with shunt and series windings, of a magnetizable core comprising a main polar projection for the shunt winding, projections at right-angles thereto that differ in polarity therefrom and between the end faces of which and the sides of the main polar projection there are curved air gaps, a friction-compensating device so pivoted to said core that one of its sides is adjustably located in one of said curved air gaps, and a second magnetizable core having polar projections for the series winding symmetrically placed with reference to the main polar projections and the faces of which lie opposite the face of the main projection.

5. In an alternating current motor, the combination with shunt and series windings, of a magnetizable core comprising a main polar projection for the shunt winding, projections differing in polarity therefrom between the faces of which and the sides of the main polar projection there are air gaps, a second magnetizable core having polar projections for the series winding symmetrically placed with reference to the main polar projection and the faces of which lie opposite the face of the main projection, and a closed-circuit conductor adjustable longitudinally on the main polar projection.

6. In an alternating current motor, the combination with shunt and series windings and a rotatable disk, of a magnetizable core comprising two alined polar projections having opposing faces, a main polar projection that extends between and materially beyond the said opposing faces, from which it is separated by air gaps of uniform width, and another magnetizable core having polar projections for the series winding, the faces of which lie adjacent to the disk in symmetrical positions with reference to the face of the main polar projection and on the opposite side of the disk.

7. An alternating current motor having shunt and series field coils, and separate cores for said coils, one of which has two alined polar projections the end faces of which are in opposition, and a third polar projection that extends between and materially beyond the opposed projections, from which it is separated by air gaps, and the other of which has two polar projections that are opposite the gaps in the first named core.

853,219. TERMINAL BLOCK FOR ELECTRICAL APPARATUS. WILLIAM M. BRADSHAW, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 28, 1906. Serial No. 314,211.



Claim.—1. The combination with a pair of blocks having diverging openings, of two members each having diverging projections that extend respectively into the openings in different blocks.

2. The combination with a pair of blocks having diverging openings and recesses between the openings, of two members each having diverging projections that extend respectively into the openings of different blocks.

3. The combination with a pair of blocks having diverging openings and recesses between the openings, of two members each having diverging projections that extend respectively into the openings of different blocks, the diverging projections being provided with clamping means that are accessible in the recesses in the blocks.

4. The combination with a pair of blocks having diverging openings, of two members each having diverging projections that extend respectively into the openings of different blocks, the said members being spaced apart and movable toward each other a sufficient distance to permit removal of the diverging projections of one of the members from the openings in the blocks.

5. The combination with a pair of blocks having diverging openings and recesses between the openings, of two members each having diverging projections that extend respectively into the openings of different blocks, the members being spaced apart and movable toward each other a sufficient distance to permit removal of the diverging projections of one of the members from the openings in the

block, and clamping means for the diverging projections that are accessible in the recesses in the blocks.

6. The combination with a pair of blocks having diverging openings, of two members each having diverging projections that extend respectively into the openings of different blocks, the said members being spaced apart and movable toward each other a sufficient distance to permit separation thereof from the blocks.

7. The combination with a pair of blocks having diverging openings, of two members each having diverging projections that extend respectively into the openings of different blocks, the said members being spaced apart and movable toward each other a sufficient distance to permit separation thereof from the blocks, and clamping screws that are threaded in the diverging projections and are accessible for adjustment in the recesses.

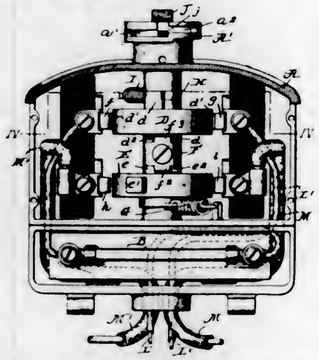
8. The combination with a pair of blocks having diverging openings and recesses between the openings, of two members each having diverging projections that extend respectively into the openings of different blocks, and clamping screws that are threaded in the diverging projections and are accessible for adjustment in the recesses.

9. In an electrical device, the combination with two windings having diverging terminal pieces, of insulating blocks each having diverging openings into which the terminal pieces of different windings project.

10. In an electrical device, the combination with two windings having diverging terminal pieces, of insulating blocks each having diverging openings into which the terminal pieces of different windings project, the windings being spaced apart and movable toward each other a sufficient distance to permit separation of the windings from the blocks

11. In an electrical device, the combination with two windings having diverging terminal pieces, of a pair of insulating blocks each having openings into which the terminal pieces of different windings project and recesses between the openings, and clamping means for the terminal pieces that are accessible in the recesses.

853,220. ELECTRIC SWITCH. WILLIAM M. BROWN, Johnstown, Pa., assignor to The Lorain Steel Company, a Corporation of Pennsylvania. Filed Feb. 20, 1905. Serial No. 246,438.



Claim.—1. In a switch of the character described, the combination of a movable shaft, two independent switch members loosely mounted on said shaft, and clutch means whereby movement of said shaft in one direction will move one of said members, and movement of the shaft in the opposite direction will turn the other of said members.

2. In a switch of the character described, the combination of a movable shaft, two independent switch members loosely mounted on said shaft, contact devices co-operating with the said members whereby the circuit through one member is normally closed and the circuit through the other member is normally open, and co-operating clutch devices carried by said shaft and members, whereby movement of said shaft in one direction from the normal position will close the open circuit without opening the closed circuit, and whereby movement in the opposite direction from said normal position will open the closed circuit without closing the open circuit.

3. In a switch of the character described, the combination of a shaft, a clutch member rigidly secured thereto, two independent switch members loosely mounted on the said shaft and having clutch hubs arranged to co-operate with said clutch member, a spring connected to one of the said members and acting to resist movement thereof and to effect its return movement, and a spring connected to the other member and forming a lock therefor, and also an actuating means.

4. In a switch of the character described, a movable shaft having the switch members D and E loosely mounted thereon, and provided with clutch hubs, a clutch member secured to said shaft between the members D and E and arranged to operatively engage the said members by reverse movements of the said shaft, a returning spring connected to the member E, and the dog H and spring I connected to the member D, substantially as described.

5. In a device of the character described, stationary conducting parts, a plurality of movable conducting parts, independently movable carriers for said parts, and a common means for independently moving said carriers to establish or break the connections of the relatively movable and stationary conductive parts.

6. In a device of the class described, stationary conducting parts, a plurality of movable conducting parts, independently movable carriers for said movable parts, a concealing structure for said conducting parts, and means extending without the concealing structure for independently moving said carriers to establish or break the electrical connection of the relatively movable and stationary conducting parts.

853,221. RAIL-JOINT. WILLIAM M. BROWN, Johnstown, Pa., assignor to The Lorain Steel Company, a Corporation of Pennsylvania. Filed Aug. 6, 1906. Serial No. 329,307.



Claim.—1. In a rail joint, the rails provided with a longitudinal tapered rib, and fish-plates interposed between said rib and the head and foot of the rails.

2. In a rail joint, the rail provided with longitudinal tapered ribs, a set of fish-plates interposed between said ribs and the head of the rails, and a set of fish plates between said ribs, and the foot of the rails.

3. In a rail joint, the rails provided with a longitudinal rib, and fish-plates interposed between said rib and the head and foot of the rails, and a flexible connection between said fish-plates.

4. In a rail joint, the rails provided with longitudinal ribs, and a set of fish-plates interposed between said ribs and the head of the rails, a set of fish-plates between said ribs, and the foot of the rails, and a flexible connection between the fish-plates on each side.

5. In a rail joint, the rails provided with longitudinal tapered ribs, said ribs forming one seat for the fish-plates, the other seat for the fish-plates being formed by the head and foot of the rails.

6. In a rail joint, the rails provided with longitudinal tapered ribs, two series of fish-plates, one series of fish-plates bearing on said ribs and the head of the rails,

while the other series of fish-plates bears on the longitudinal ribs and the foot of the rails.

7. In a rail-joint, the rails provided with longitudinal tapered ribs, and a set of fish-plates interposed between said ribs and the head of the rails, and a set of fish-plates interposed between said ribs and the foot of the rails, the fish-plates of each set being secured by means of bolts.

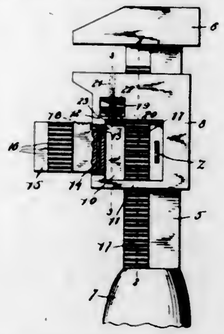
8. In a rail joint, the rails provided with longitudinal tapered ribs, two series of fish-plates, one series of fish-plates bearing on said ribs and the head of the rails, while the other series of fish-plates bears on the longitudinal ribs and the foot of the rails, and bolts securing the fish-plates of each series.

9. A rail joint having its fish-plates provided with a supporting bearing on longitudinal tapered ribs on the webs of the rails.

10. A rail joint having the rail members provided with tapered projections on its web forming bearings for the fish-plates.

11. A rail joint having its fish-plates supported in part by longitudinal tapered ribs on the webs of the rails.

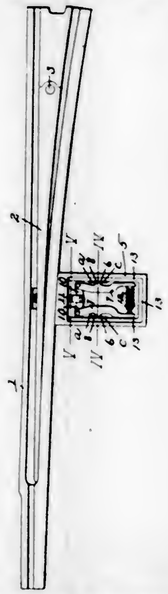
853,222. WRENCH. FINLEY A. BUCEY, Rayland, Ohio. Filed May 9, 1906. Serial No. 315,971.



Claim.—1. A wrench comprising a stock having a stationary jaw at one end, said stock having a longitudinal rack, a jaw having a passage in which the stock is slidably engaged for movement of the jaw toward and away from the stationary jaw, said movable jaw having a recess formed therein to expose the rack, a pivot rod engaged at its ends in the sliding jaw and extending across the recess thereof, a lock member mounted upon the rod for pivotal movement into and out of the recess and for sliding movement longitudinally of the rod, said lock member having teeth arranged to engage the rack when the member is in the opening, said sliding jaw having a chamber formed therein above the recess and having a perforation communicating with the recess and with the chamber, an adjusting screw located in the chamber and having a threaded end engaged in the jaw for movement of the adjusting screw longitudinally of the stock when said screw is rotated, said screw having a stem engaged in the perforation of the jaw and arranged to enter the depression of the lock member and bear against said member when the latter is in locking position to hold the lock member in operative position.

2. A wrench comprising a stock having a stationary jaw, a jaw mounted upon the stock for sliding movement, a lock member arranged for coöperation with the stock to hold the sliding jaw against movement and pivoted to the sliding jaw for movement into and out of coöperative relation to the stock, said sliding jaw being arranged for slight movement upon the stock independently of the lock member, means for holding the lock member yieldably out of operative position, and means for moving the sliding jaw with respect to the lock member and for holding the lock member in operative position.

853,223. SWITCH-TONGUE OPERATING AND RETAINING DEVICE. NICHOLAS BURNS, Johnstown, Pa., assignor to The Lorain Steel Company, a Corporation of Pennsylvania. Filed Dec. 21, 1906. Serial No. 348,878.



Claim.—1. In a switch tongue retaining mechanism, a tongue, a pair of oppositely disposed levers, a spring, and a pair of toggle levers connecting the tongue with the oppositely disposed levers.

2. In a switch tongue retaining mechanism, a tongue, a pair of oppositely disposed levers, a spring interposed between the ends of the levers, and a pair of toggle-levers connecting the other ends of the levers with the tongue.

3. In a switch tongue retaining mechanism, a tongue having a laterally projecting rod, a pair of oppositely disposed levers, a spring, and a pair of toggle-levers connecting the laterally projecting rod of the tongue with the oppositely disposed levers.

4. In a switch tongue retaining mechanism, a tongue having a laterally projecting adjustable rod, a pair of oppositely disposed levers, a spring, and a pair of toggle-levers connecting the adjustable rod with the oppositely disposed levers.

5. In a switch tongue retaining mechanism, a tongue having a laterally projecting rod, a pair of oppositely disposed levers, a spring interposed between the ends of the levers, and a pair of toggle-levers connecting the other ends of the levers with the laterally projecting rod.

6. In a switch tongue retaining mechanism, a tongue, a pair of oppositely disposed levers, means whereby each lever may be fulcrumed in any one of three different positions, a spring, and a pair of toggle levers connecting the tongue with the oppositely disposed levers.

7. In a switch tongue retaining mechanism, a tongue, a pair of oppositely disposed levers, means whereby each lever may be fulcrumed in any one of three different positions, a spring interposed between the ends of the levers, and a pair of toggle-levers connecting the other ends of the levers with the tongue.

8. In a switch tongue retaining mechanism, a tongue having a laterally projecting rod, a pair of oppositely disposed levers, means whereby each lever may be fulcrumed in any one of three different positions, a spring, and a pair of toggle-levers connecting the laterally projecting rod of the tongue with the oppositely disposed levers.

9. In a switch retaining mechanism, a tongue having a laterally projecting adjustable rod, a pair of oppositely disposed levers, means whereby each lever may be fulcrumed in any one of three different positions, a spring, and a pair of toggle levers connecting the adjustable rod with the oppositely disposed levers.

10. In a switch tongue retaining mechanism, a tongue having a laterally projecting rod, a pair of oppositely disposed levers, means whereby each lever may be fulcrumed in any one of three different positions, a spring interposed between the ends of the levers, and a pair of toggle-levers connecting the other ends of the levers with the laterally projecting rod.

11. In a switch tongue retaining mechanism, a tongue, a pair of oppositely disposed levers having three fulcrum positions, two of the fulcrum positions being in alinement with each other but out of alinement with the third fulcrum position, a spring, and a pair of toggle-levers connecting the tongue with the oppositely disposed levers.

12. In a switch tongue retaining mechanism, a tongue, a pair of oppositely disposed levers having three fulcrum positions, two of the fulcrum positions being in alinement with each other, but out of alinement with the third fulcrum position, a spring interposed between the ends of the levers, and a pair of toggle-levers connecting the other ends of the levers with the tongue.

13. In a switch retaining mechanism, a tongue having a laterally projecting rod, a pair of oppositely disposed levers having three fulcrum positions, two of the fulcrum positions being in alinement with each other but out of alinement with the third fulcrum position, a spring, and a pair of toggle-levers connecting the laterally projecting rod of the tongue with the oppositely disposed levers.

14. In a switch tongue retaining mechanism, a tongue having a laterally projecting adjustable rod, a pair of oppositely disposed levers having three fulcrum positions, two of the fulcrum positions being in alinement with each other but out of alinement with the third fulcrum position, a spring, and a pair of toggle-levers connecting the adjustable rod with the oppositely disposed levers.

15. In a switch tongue retaining mechanism, a tongue having a laterally projecting rod, a pair of oppositely disposed levers having three fulcrum positions, two of the fulcrum positions being in alinement with each other but out of alinement with the third fulcrum position, a spring interposed between the ends of the levers, and a pair of toggle-levers connecting the other ends of the levers with the laterally projecting rod.

16. In a switch tongue retaining mechanism, a tongue, a pair of oppositely disposed levers the fulcrum of each lever comprising a lug with an indent therein, a projection on the lever entering the indent, the projection being provided with lips which straddle the lug, a spring, and a pair of toggle-levers connecting the tongue with the oppositely disposed levers.

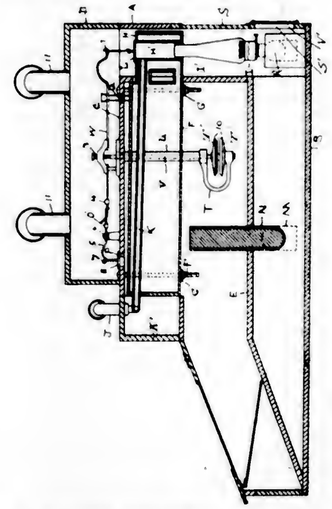
17. In a switch tongue retaining mechanism, a tongue, a pair of oppositely disposed levers, the fulcrum of each lever comprising a lug with an indent therein, a projection on the lever entering the indent, and the projection being provided with lips which straddle the lug, a spring interposed between the ends of the levers, and a pair of toggle-levers connecting the other ends of the levers with the tongue.

18. In a switch tongue retaining mechanism, a tongue having a laterally projecting rod, a pair of oppositely disposed levers, the fulcrum of each lever comprising a lug with an indent therein, a projection on the lever entering the indent, and the projection being provided with lips which straddle the lug, a spring, and a pair of toggle-levers connecting the laterally projecting rod of the tongue with the oppositely disposed levers.

19. In a switch tongue retaining mechanism, a tongue having a laterally projecting adjustable rod, a pair of oppositely disposed levers, the fulcrum of each lever comprising a lug with an indent therein, a projection on the lever entering the indent, and the projection being provided with lips which straddle the lug, a spring, and a pair of toggle-levers connecting the adjustable rod with the oppositely disposed levers.

20. In a switch tongue retaining mechanism, a tongue having a laterally projecting rod, a pair of oppositely disposed levers, the fulcrum of each lever comprising a lug with an indent therein, a projection on the lever entering the indent, and the projection being provided with lips which straddle the lug, a spring interposed between the ends of the levers, and a pair of toggle-levers connecting the other ends of the levers with the laterally projecting rod.

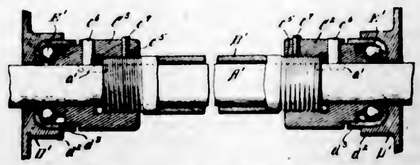
853,224. BROODER. PETER A. CHIPPENDALE, Auburn, Me. Filed May 15, 1905. Serial No. 260,382.



Claim.—1. A brooder consisting of a suitable casing having compartments therein, one of said compartments being a brooder chamber, ventilating pipes extending from the outer air into said brooder chamber, said pipes being divided by a vertical partition so as to prevent cross drafts, a heater, means for regulating the temperature in the brooder chamber and a removable water tank and boiler suspended from the roof of said brooder for supplying heat to said brooder chamber.

2. A brooder consisting of a suitable casing having compartments therein, one of said compartments being a brooder chamber, ventilating pipes extending from the outer air into said brooder chamber, said pipes being provided with a vertical partition so as to prevent cross drafts and to insure the admission of air to the brooder chamber, a heating chamber, a heater therein, a port opening from said heating chamber into the outer air, means for regulating the temperature in said brooder chamber and a removable water tank and boiler suspended from the roof of said brooder for supplying heat to said brooder chamber.

853,225. SHAFT-BEARING. WILLIAM H. COLDWELL, Newburgh, N. Y. Filed Jan. 5, 1906. Serial No. 294,759.



Claim.—1. The combination with stationary bearing cups, of a shaft extending therethrough, separate cone members directly engaging said shaft, a connection between

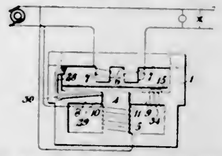
said cones, out of contact with the shaft, for holding them in operative relation to said cups, a connection between said cones and said shaft, for causing them to rotate therewith but permitting the shaft to move longitudinally through said cones, substantially as described.

2. The combination with stationary bearing cups, of a shaft extending therethrough, separate cone members, having portions directly mounted upon said shaft, a sleeve surrounding said shaft out of contact therewith and having its ends connected to other portions of said cones, one of said cones being adjustably secured to said sleeve, and a connection between said cones and said shaft, for causing them to rotate therewith, but permitting the shaft to move endwise through said cones, substantially as described.

3. The combination with bearing cups, of a shaft extending therethrough, a pair of separate cones directly engaging said shaft, said cones having each a threaded portion of larger diameter than the shaft, a sleeve surrounding said shaft out of contact therewith, having its opposite ends threaded to engage the threaded portions of said cones, means for locking each of said cones with respect to said sleeve and a connection between said cones and said shaft, for causing them to rotate therewith but permitting the shaft to move longitudinally therethrough, substantially as described.

4. The combination with bearing cups having ball races, of a shaft extending therethrough, two separate cones, each having a part directly engaging said shaft, and a recessed portion of larger diameter than the shaft provided internally with screw threads, a sleeve surrounding said shaft, out of contact therewith, and having threaded end portions engaging the threaded recesses of said cones, balls interposed between said cones and said cups, devices extending through said cones and engaging said sleeve, to lock the said parts together in adjusted position, one of said cones being provided with a pin engaging a longitudinal recess in said shaft, for causing the cones to rotate therewith but permitting the shaft to move longitudinally through said cones, substantially as described.

853,226. ALTERNATING-CURRENT ELECTRICAL APPARATUS. FRANK CONRAD, Edgewood Park, and WILLIAM M. BRADSHAW, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 27, 1904. Renewed Jan. 26, 1905. Serial No. 242,735.



Claim.—1. In an alternating current motor, a core comprising a main polar projection, projections of different polarity between which and the aforesaid polar projection there are air gaps, and other polar projections having their faces respectively opposite to the said air gaps.

2. In an alternating current motor, the combination with a core comprising a main polar projection, projections of different polarity between which and the aforesaid polar projection there are air gaps, and other polar projections having their faces respectively opposite to the said air gaps, of a closed coil that is partially located in one of said gaps, said coil being adjustable so as to inclose more or less of the flux across the gap.

3. In an alternating current motor, the combination with a core comprising a main polar projection, projections of different polarity between which and the aforesaid polar projection there are air gaps, and other polar projections having their faces respectively opposite to the said air gaps, of a closed coil that is partially located in one of said gaps, means for adjusting said coil so as to inclose more or less of the flux across the gap, and a closed coil on the projection at the opposite side of the main projection.

4. In an alternating current motor, the combination with a core comprising a main polar projection, projections of different polarity between which and the aforesaid polar projection there are air gaps, and other polar projections having their faces respectively opposite to the said air gaps, of a low-resistance, closed coil that is partially located in one of said gaps, means for adjusting said coil so as to inclose more or less of the flux across the gap, and a high-resistance, closed coil on the projection at the opposite side of the main projection.

5. In an alternating current motor, a magnetic circuit comprising a body portion, a main polar projection at one side, projections at the ends between which and the aforesaid projection there are air gaps, and polar projections having their faces respectively opposite to the said air gaps.

6. In an alternating current motor, a magnetic circuit comprising a body portion, a main polar projection at one side, projections at the ends between which and the aforesaid projection there are air gaps, and polar projections having their faces respectively opposite to the said air gaps, in combination with a closed coil that is partially located in one of said air gaps, said coil being adjustable in order that it may inclose more or less of the flux across the gap.

7. In an alternating current motor, a magnetic circuit comprising a body portion, a main polar projection at one side, projections at the ends between which and the aforesaid projection there are air gaps, and polar projections having their faces respectively opposite to the said air gaps, in combination with a closed coil that is partially located in one of said air gaps, said coil being adjustable in order that it may inclose more or less of the flux across the gap, and a closed winding about the projection which is at the opposite side of the main projection.

8. In an alternating current motor, a magnetic circuit comprising a frame or body portion, a main polar projection at one side, projections at the ends between which and the sides of the aforesaid main projection there are comparatively small air gaps, and other polar projections having their ends respectively opposite to said small air gaps and separated from the said parts by a larger air gap.

9. In an alternating current motor, a magnetic circuit comprising a frame or body portion, a main polar projection at one side, projections at the ends between which and the sides of the aforesaid main projection there are comparatively small air gaps, and other polar projections having their ends respectively opposite to said small air gaps and separated from the said parts by a larger air gap, in combination with a closed coil that is partially located in one of said small air gaps, its position being adjustable so as to inclose more or less of the flux across the gap.

10. In an alternating current motor, a magnetic circuit comprising a frame or body portion, a main polar projection at one side, projections at the ends between which and the sides of the aforesaid main projection there are comparatively small air gaps, and other polar projections having their ends respectively opposite the said small air gaps and separated from the said parts by a larger air gap, in combination with a closed coil that is partially located in one of said small air gaps, its position being adjustable so as to inclose more or less of the flux across the gap, and a closed coil around the projection which is at the opposite side of the main projection.

11. In an alternating current motor, the combination with shunt and series windings, of a core comprising a main polar projection for the shunt winding, projections between which and the main projection there are air gaps, and polar projections having their ends respectively opposite the air gaps and upon which the series coils are located so as to produce a flux from one of the last named polar projections to the other.

12. In an alternating current motor, the combination with shunt and series windings, of a core comprising a main polar projection for the shunt winding, projections between which and the main projection there are air gaps, and polar projections for the series windings the ends of which are respectively opposite said air gaps.

13. In an alternating current motor, the combination with shunt and series windings and a rotatable disk, of a core comprising a main polar projection for the shunt winding having its face adjacent to the disk, projections parallel with the disk between which and the main projection there are air gaps, and polar projections for the series winding on the opposite side of the disk the faces of which are adjacent to the disk and are respectively opposite the said air gaps.

14. In an alternating current motor, the combination with shunt and series windings and a rotatable disk, of a core comprising a main polar projection for the shunt winding having its face adjacent to the disk, projections parallel with the disk between which and the main projection there are air gaps, and polar projections on the opposite side of the disk the faces of which are adjacent to the disk and are respectively opposite the said air gaps, the coils of the series winding being located thereon so as to produce a flux from one pole to the other.

15. In an alternating current motor, the combination with shunt and series windings and a rotatable disk, of a core comprising a main polar projection for the shunt winding having its face adjacent to the disk, projections parallel with the disk between which and the main projection there are air gaps, polar projections for the series winding on the opposite side of the disk the faces of which are adjacent to the disk and are respectively opposite the said air gaps, and a sheet of conducting material that is located between the shunt and series pole pieces, adjacent to the disk, and is radially adjustable with reference thereto.

16. In an alternating current motor, the combination with shunt and series windings and a rotatable disk, of a core comprising a main polar projection for the shunt winding having its face adjacent to the disk, projections parallel with the disk between which and the main projection there are air gaps, polar projections for the series winding on the opposite side of the disk the faces of which are adjacent to the disk and are respectively opposite the said air gaps, and a closed coil that is partially located in one of said air gaps and is adjustable in order that it may intercept more or less of the flux across the gap.

17. In an alternating current motor, the combination with shunt and series windings and a rotatable disk, of a core comprising a main polar projection for the shunt winding having its face adjacent to the disk, projections parallel with the disk between which and the main projection there are air gaps, polar projections for the series winding on the opposite side of the disk the faces of which are adjacent to the disk and are respectively opposite the said air gaps, a closed coil that is partially located in one of said air gaps and is adjustable in order that it may intercept more or less of the flux across the gap, and a closed coil that surrounds the projection at the opposite side of the main shunt projection.

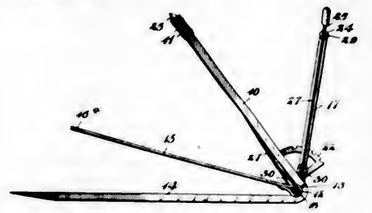
18. In an alternating current motor, the combination of shunt and series windings, a core having polar projections that are magnetized respectively by the shunt and by the series windings, the magnetic circuit for the shunt winding containing two air gaps, and a closed-circuit compensating device that is partially located in one of said air gaps and is adjustable therein.

19. In an alternating current motor, the combination with shunt and series windings, of a core providing an iron circuit for the shunt flux that is interrupted at two points, and a closed-circuit, friction-compensating device that is adjustable in position so as to inclose more or less of the shunt flux at one of the points of interruption.

20. In an alternating current motor, the combination with shunt and series windings, of a magnetic circuit for the shunt winding which is mainly of low reluctance but which has two high reluctance portions, and a closed-circuit member that is adjustable in position to inclose more or less of the shunt flux across one of the high reluctance portions of the magnetic circuit.

21. In an alternating current motor, the combination with shunt and series windings, of a core having a plurality of polar projections at least one of which is magnetized by the shunt winding and two others of which are symmetrically located with reference thereto, and means for varying the amount of shunt flux through one of said symmetrically located polar projections.

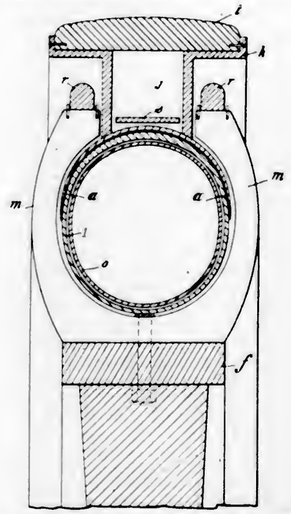
853,227. LOADING AND UNLOADING APPARATUS. JOHN K. CUFF, Spanish, Mont. Filed Aug. 29, 1906. Serial No. 332,461.



Claim.—1. An apparatus for loading and unloading comprising a bail, the two branches of which have bearings, a rod mounted in the bearings and carrying a fork the head of which swings through the bail, releasable means for locking the fork to the bail, a sleeve loose on the rod, a handle secured to the sleeve, a segment rack on the fork, and a latch carried by the handle and engageable with the rack.

2. An apparatus for loading and unloading comprising a bail, the two branches of which have bearings, a rod mounted in the bearings and carrying a fork the head of which swings through the bail, a sleeve loose on the rod, a handle secured to the sleeve, a segment rack on the fork, a latch carried by the handle and engageable with the rack, a latch carried by the fork-head and engageable with the bail, and a lever pivoted to the handle and operatively connected to the last mentioned latch.

853,228. VEHICLE-WHEEL AND PNEUMATIC TIRE FOR SAME. ROBERT DALMER, London, England. Filed Dec. 27, 1905. Serial No. 293,495.



Claim.—1. The combination with a wheel, of a metal box secured to the felly thereof, said box having a circumferential slot and its interior side walls being of arc shape, a tire consisting of a tread portion and a vertical portion extending into the circumferential slot and outwardly and downwardly curved flanges made of springy metal connected to said vertical portion and engaging with the arc shaped sides of the box said flanges forming a semicircle.

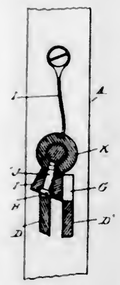
2. The combination with a wheel, of a metal box secured to the felly thereof, said box having a circumferential slot and its interior side walls being of arc shape, an outer tire made up of sections, each section consisting of a tread por-

tion, and a vertical hollow portion extending into the circumferential slot, and outwardly and downwardly curved metal flanges on said vertical portion engaging with the arc shaped side walls of the box and the pneumatic tire in said box said flanges forming a semicircle.

3. The combination with a wheel, of a metal box secured to the felly thereof, said box having a circumferential slot, an outer tire composed of sections, each section comprising a tread portion and a hollow vertical portion extending into the box, a pneumatic tire in the box, a steel band passing through the hollow vertical portions and a spring connecting said band to a part of the box.

4. The combination with a wheel, of a metal box secured to the felly thereof said box having a circumferential slot and its interior side walls being of arc shape an outer tire composed of sections, each section comprising a tread portion and a hollow vertical portion extending into the circumferential slot and downwardly and outwardly curved flanges connected to said vertical portion and engaging with the arc shaped sides of the box, a pneumatic tire in the box, and a steel band passing through the hollow vertical portions.

853,229. TRIGGER MECHANISM. FRANK A. DE LAND, Memphis, Mich., assignor of one-half to Harry H. Coburn, Memphis, Mich. Filed Dec. 26, 1906. Serial No. 349,541.



Claim.—1. A trigger mechanism comprising a plurality of independently operable triggers arranged in transverse alinement, and means for preventing the simultaneous operation of said triggers.

2. A trigger mechanism comprising a plurality of triggers arranged in transverse alinement, parallel plates connected respectively to said triggers, and a laterally movable member arranged in a plane centrally between said plates, and thereabove, said member extending into the path of movement of each plate, for the purpose described.

3. A trigger mechanism comprising complementary triggers arranged in transverse alinement, and a laterally shiftable member, controlled in its operation by the triggers, locking the latter against simultaneous movement.

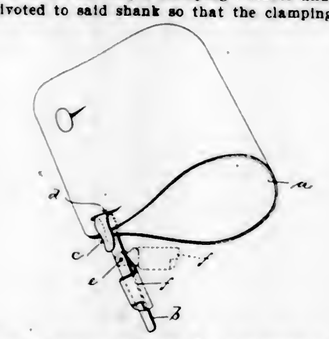
4. A trigger mechanism, comprising a plurality of triggers arranged in transverse alinement, and spring pressed locking means controlled by the triggers acting automatically upon the operation of either trigger to prevent movement of the other.

5. A trigger mechanism, comprising two independently operable triggers arranged in transverse alinement, and a spring pressed oscillating member controlled by the triggers acting upon the operation of either trigger to automatically lock the other against movement.

6. In a trigger mechanism, the combination of two triggers arranged in transverse alinement, sear plates for the triggers, alining shoulders upon the plates, and a spring pressed laterally shiftable roller in operative relation to the shoulders.

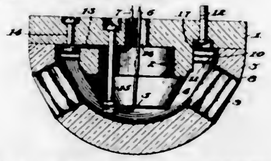
853,230. CUFF-HOLDER. ARTHUR S. DICKINSON, Atlanta, Ga. Filed Aug. 22, 1903. Serial No. 170,466.

Claim.—A cuff holder comprising a shank provided at one end with a hook for engagement with the buttonhole of a cuff, and a clip formed of a single piece of material bent to form opposite members to embrace the shank, one of said members forming a clamping member and the clip being pivoted to said shank so that the clamping face of



said clamping member will swing in the plane of the opposing face of the shank to clamp material between the said clamping face and the shank.

853,231. MULTIPLE SOCKET FOR INCANDESCENT LAMPS. ELIAS L. ELLIOTT, New York, N. Y. Filed May 18, 1906. Serial No. 317,509.



Claim.—1. A multiple socket for incandescent electric lamps comprising an insulating base carrying a contact piece for making electrical connection with each lamp, and an insulating body detachably secured to the base and arranged to support the lamps in position and carrying a metallic contact piece for completing the electrical circuit with each lamp; substantially as described.

2. A multiple socket for incandescent electric lamps comprising an insulating base carrying a contact piece for making electrical connection with each lamp, and an insulating body provided with a plurality of lamp-holding devices, said devices carrying means for detachably securing the base and body together; substantially as described.

3. A multiple socket for incandescent electric lamps comprising an insulating base carrying a contact piece for making electrical connection with each lamp, and an insulating body provided with a plurality of lamp-holding devices, said devices carrying means for detachably securing the base and body together, and for completing the electrical circuit with each lamp; substantially as described.

4. A multiple socket for incandescent electric lamps comprising an insulating base provided with contacts for connection with the supply leads, an insulating body arranged to support the lamps in position, and means detachably securing the base and body together, said means bringing the lamps into electrical connection with the supply leads; substantially as described.

5. A multiple socket for incandescent electric lamps comprising an insulating base provided with contacts for connection with the supply leads, and an insulating body arranged to support the lamps in position, and provided with means for detachably securing the base and body together and for completing the electrical circuit with each lamp; substantially as described.

6. A multiple socket for incandescent electric lamps comprising an insulating base provided with contacts for connection with supply leads, and an insulating body carrying lamp-holding devices and means for simultaneously securing the base and body together and connecting said devices with one of said leads; substantially as described.

7. A multiple holder for electric lamps comprising an insulating base portion provided with means for connecting with supply wires, and an insulating body portion constituting a casing for said holder and adapted to support and insulate a plurality of lamp-receiving shells; substantially as described.

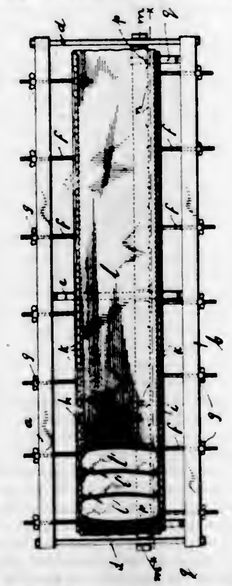
8. A multiple holder for electric lamps comprising an insulating base portion provided with means for connecting with supply wires, and an insulating body portion adapted to support and insulate a plurality of lamp-receiving shells, and means for electrically connecting said shells with one of the supply wires when the parts are assembled; substantially as described.

9. A multiple holder for incandescent lamps comprising an insulating base, a metallic contact piece for connection to one of the supply wires, an insulating body containing metallic shells or thimbles for receiving the lamp bases, said thimbles forming part of the electric circuit, and means for attaching the body to the base and connecting each lamp with the supply wires; substantially as described.

10. In a multiple holder for electric lamps, the combination of an insulating base, a metallic contact piece attached thereto forming one part of the electric circuit, a flanged collar having a depending screw threaded portion and forming a part of the electric circuit, an insulating body having openings, threaded shells adapted to receive the lamp bases in said openings, and a threaded ring secured to said body, electrically connected with said shells and adapted to engage said threaded collar; substantially as described.

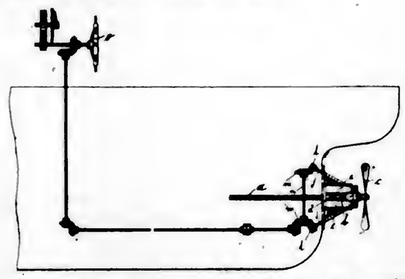
11. In a multiple holder for electric lamps, the combination of an insulating base provided with a central depending flange, a metallic contact piece secured to said flange, a depending threaded metallic collar secured to the base, an insulating body having openings for lamp sockets, and a threaded ring secured to said body and arranged to connect with the sockets and to engage said threaded collar; substantially as described.

853,232. EMBROIDERY-FRAME. ABE FEIL, New York, N. Y. Filed May 3, 1906. Serial No. 314,949.



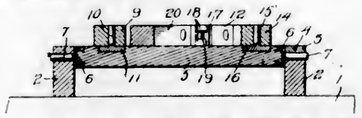
Claim.—The combination with a frame, of flexible plates extending longitudinally of the frame and being transversally adjustable, a canvas spread between said plates and attached thereto and being adapted to carry the goods to be embroidered, means allowing the transversal adjustment of the said plates at different points of their length, a bar having projecting pins and adapted to be temporarily applied to the frame to extend longitudinally thereof, and with the pins projecting through the canvas, to hold the goods before their attachment to the canvas, and means for preventing the displacement of the said bar while in use, substantially as and for the purpose specified.

853,233. PROPELLER. ALOIS FLAD, New York, N. Y. Filed Feb. 11, 1907. Serial No. 356,672.



Claim.—The combination with a boat, of a sectional propeller shaft, a universal joint between the sections thereof, a propeller carried by the outer section, semicircular guides secured to the aft of the boat, a sector slide capable of reciprocating in said guides, said slide being mounted on the outer section of the shaft and having conical teeth on its upper and lower surfaces, cog wheels meshing with said sector and mounted on sloping shafts projecting through and borne in the boat and means for transmitting movement to said cog wheels and sector slide to swing the propeller sideward, substantially as and for the purpose specified.

853,234. ROWING DEVICE. WILLIAM D. GIFT, Vernon, Ind. Filed Jan. 24, 1906. Serial No. 297,637.

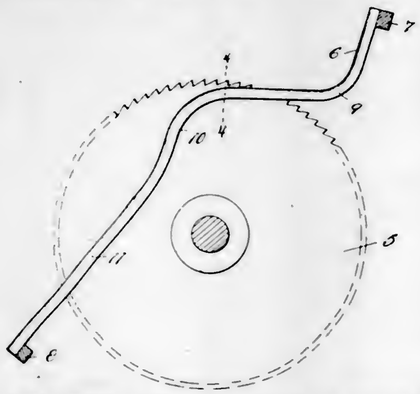


Claim.—A device of the class described comprising spaced bearings, a rock shaft having reduced ends and having one of its ends engaged in a bearing opening formed in one of said members and its other end seated in a bifurcation formed in the other bearing member, the opposing walls of the bifurcation being parallel, and a bearing block engaged in the bifurcation above the said end of the shaft and having its under face concaved to embrace the shaft, the said bearing member being provided adjacent its upper face with a recess and with an opening communicating with the recess, the bearing block being provided with an opening in alinement with the afore said opening, the other member formed by the bifurcation being provided with a threaded bore, and a bolt engaged through the opening and having a threaded end engaged in the bore, the head of the bolt being seated in the recess formed in the first named portion of the bearing member.

853,235. GIN-RIB. JOSEPH GILMER, Aucilla, Fla., assignor of one-half to Americus A. Bishop, Aucilla, Fla. Filed Aug. 16, 1906. Serial No. 330,877.

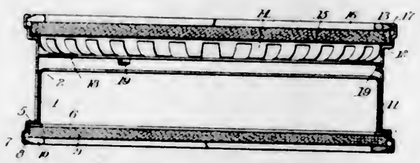
Claim.—1. In a device of the class described, the combination with a gin saw, of a gin rib having a portion extending upwardly and rearwardly from the saw and tan-

gential thereto, the rib beyond this portion being turned to extend substantially vertically.



2. In a device of the class described, the combination with a gin saw, of a gin rib having the bends 6, 9 and 10 formed therein, that portion of the rib lying between the bends 9 and 10 being tangential to the saw.

853,236. BOX FOR WATCH-MOVEMENTS. JOHN H. GOSS and ADRIAN F. WOLFF, Waterbury, Conn., assignors to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed May 31, 1906. Serial No. 319,506.



Claim.—1. A watch movement box, having removable end plates, inner shoulders on the ends of the box to receive and support said plates, outer shoulders beyond the inner shoulders and having overhanging flanges, and spring rings of wedge-shape in cross-section sprung in beneath the flanges and above the plates.

2. In a box for watch movements, a shell having a shoulder, a ring or washer arranged on said shoulder, a plate of glass or other suitable material on said ring, a spring ring of wedge-shape in cross-section placed outside of the plate and upon it, and an inturned flange on the shell engaging the spring ring.

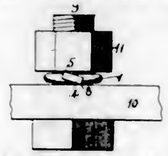
3. In a box for watch movements, a shell having an inner shoulder, a ring arranged on said shoulder, a plate of glass or other suitable material on said ring, a spring ring of wedge-shape in cross-section placed outside of the plate and upon it, an outside shoulder next to the inner shoulder and having an inturned flange for engaging the spring ring, a movement-supporting flange on the other end of said shell, and a cover.

4. In a box for watch movements, a shell having a shouldered outer end, a ring having spring-fingers arranged and supported upon the shouldered portion of the shell, a plate of glass or other suitable material supported upon the spring-finger ring, and a ring engaging the shell to secure the plate in place.

5. In a box for watch movements, a shell on which the movement is supported, and a cover for said shell having a loose ring, projections on the cover to support said ring, a spring bearing upon the opposite side of said ring, and means to hold the spring in place in the cover.

6. A watch movement box, having an opening for the insertion of a transparent plate, a double shoulder seat in said opening for said plate having an inwardly projecting flange near the outer end of the box, and a spring ring of wedge shape in cross-section adapted to be inserted through said opening and sprung in between the plate and flange to engage said flange and to overlap and clamp the plate against said seat.

853,237. NUT-LOCK. GEORGE S. GRAY, Beloit, Wis. Filed Aug. 7, 1906. Serial No. 329,594.



Claim.—1. A nut lock comprising an open ring and a gripping plate located adjacent and diagonal to the ends of the ring.

2. A nut lock comprising an open ring and a gripping plate supported by the ends of the ring in a diagonal manner.

3. A nut lock comprising an open ring and a gripping plate, the ends of the ring located diagonally and the gripping plate having diagonally arranged surfaces receiving the ends of the ring.

4. A nut lock comprising an open ring and a gripping plate, the gripping plate having grooves extending diagonal to its length and within which the ends of the ring are located.

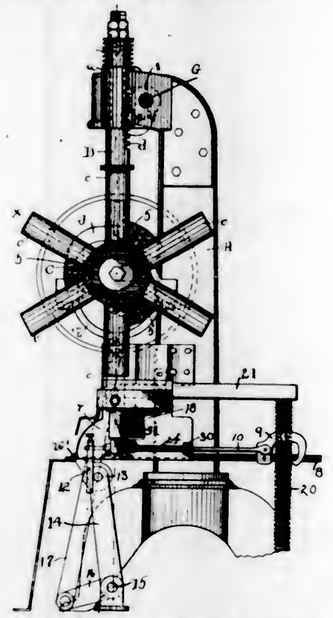
5. A nut lock comprising an open ring, and a gripping plate supported by the ends of the ring, and located diagonally to the ring.

853,238. SLACK-ADJUSTER FOR ELECTRIC LAMPS. HARRISON M. GROASH, St. Louis, Mo.; Harry Troll, public administrator of said Harrison M. Groash, deceased. Filed Oct. 10, 1905. Serial No. 282,193.



Claim.—A device of the class described, comprising a vertically disposed shaft, a hollow drum arranged for rotation thereon, a convolute spring on the interior of the drum, one end of which is fixed to the shaft and the opposite end being fixed to the drum, a guide roller journaled on the upper end of the shaft, a horizontally diaposed arm fixed on the shaft immediately above the drum, a guide roller carried by the outer end of the arm, a horizontally disposed finger fixed to the arm and projecting beyond the edge of the drum, a spring actuated stop arranged for horizontal movement on the bottom of the drum, and one end of which stop is bent into a vertical plane with its upper end adapted to engage against the end of the finger carried by the arm above the drum.

853,239. CAN-BOTTOMING MACHINE. WILLIS E. HARMON, Cleveland, Ohio, assignor to The Nungesser Electric Battery Co., Cleveland, Ohio, a Corporation of Ohio. Filed Sept. 12, 1906. Serial No. 334,263.



Claim.—1. In a machine for fixing bottoms in sheet metal cans, a rotatable arm to receive the can body over the end thereof and having a flattened end to receive the can bottom, and a plunger constructed to force the can down on the arm and to fix the bottom therein over the end of said arm.

2. A machine for putting bottoms in cans comprising a rotatable part having a series of arms with flat ends and adapted to have the bodies of the cans sleeved thereon and to receive the can bottoms over said flat ends, and a plunger beneath which said arms are adapted to stop as the plunger descends, whereby when the bottom of the can is placed in position beneath the plunger it is pressed into place in the can.

3. A machine for placing bottoms in cans comprising a rotatable member having a series of arms, and means to rotate said member in steps equal to the distance between said arms, in combination with a vertically reciprocated plunger adapted to engage the exposed end of the cans on said arms successively and press the same downward and thereby crowd the bottoms into position in the cans.

4. In the machine described, a series of rotatable arms adapted to carry cans and a plunger above said arms, means to actuate the plunger at given intervals, and means to rotate said arms into alinement with the plunger step by step successively, in combination with mechanism to frictionally engage the cans on said arms, and mechanism to release the cans from said arms at a point substantially opposite said plunger.

5. In a machine as described, a rotatable member having a series of arms adapted to receive open cans and means to frictionally lock the bottoms in the cans comprising a plunger, springs on said arms to hold the cans and means to release the grip of said springs to liberate the cans.

6. In a machine for placing bottoms in cans, a rotatable shaft and a member thereon having arms with flat ends, a plunger over said member and actuating mechanism for said plunger, and means to rotate said member to bring said arms beneath said plunger.

7. A machine substantially as described comprising a plunger and a shaft and a cam thereon and a connecting rod from said cam, and mechanism between said shaft and said connecting rod adapted to reciprocally actuate the plunger, in combination with a rotatable member supported on said shaft and having a series of arms in position to pass beneath said plunger, and means on said connecting rod and a shaft respectively to turn said member when the said shaft is raised.

8. The power shaft and a rotatable member with arms loosely mounted thereon and a cam fixed on said shaft, a plunger over said member and means to actuate the same having a bearing on said cam, a ratchet on the hub of said member and catches engaged with said ratchet connected with said plunger actuating mechanism.

853,240. SELF-LOCKING SEAL. WILLIAM F. HARRIS, Detroit, Mich. Filed Nov. 9, 1906. Serial No. 342,643.



Claim.—1. In a seal, the combination with a housing, its interior provided with a hook, a strip of metal of uniform width having each of its ends bent back upon itself to form hooks, one of said hooks provided with a slot, said latter hook adapted to engage the end of the housing, the strip of metal extending around the outside on one side of the housing and bent back upon itself whereby it may project through the housing, a hook struck up in the body of the strip near its end adapted to enter the slot formed in the hooked end of the strip engaging the sleeve, and the hook at the free end of the strip to engage the hook formed in the housing, substantially as described.

2. In a seal, the combination with a housing having overlapping walls, one of said walls provided with a hook struck up from the metal and projecting through an opening provided in the underlying wall, a strip of uniform width provided at one end with a slotted hook adapted to enter the wall of the housing, the body of the strip extending along the outside on one side of the housing and bent back upon itself whereby it may project through the housing, the projecting end of the strip provided with a hooked portion formed by bending it back upon itself, the bill of the hook having a notch c to accommodate the upstanding hook formed in the housing when the parts are being interlocked, a hook C' struck up from the body of the strip adjacent to its end designed to enter the slot formed in the hook in the opposite end of the strip, the hook at the end of the strip adapted for engagement with the hook formed in the housing, substantially as described.

3. In a seal, the combination with a tubular housing having an inwardly projecting hook, a strip of metal provided at one end with a slotted hook adapted to engage the wall of the housing at one end, the body of the strip passing around outside of the housing and bent back upon itself in order that it may project through the housing, nicks or cuts in the edge of the strip to weaken it, the projecting end of the strip provided with hooks, one of which is adapted to enter the slotted hook at the opposite end of the strip while the other hook is designed to engage the hook formed in the housing, substantially as described.

4. In a seal, the combination with a housing provided with an inwardly projecting hook, a strip of metal of uniform width provided at one end with a hook formed with a slot, said hooked portion adapted to enter the end of the housing, the body of the strip lying adjacent to the wall of the housing and bent back upon itself to adapt it to project through the housing, the projecting end of the strip provided with hooks one of which is designed to enter the slot in the bill of the hook at the opposite end of the strip while the other is adapted to engage the inwardly projecting hook formed in the housing, said strip being also provided with an aperture so located that it will serve as a guide to indicate when the ends of the strip are interlocked and to provide means whereby the

strip may be readily broken when desired, substantially as described.

5. In a seal, the combination with a tubular housing formed of sheet material, its ends overlapping, the overlapping portion provided with an inwardly projecting hook extending through an opening provided in the underlying wall of the housing, a strip of uniform width having a hook formed by bending one of its ends back upon itself, the bill of the hook being slotted, said hook designed to engage the wall of the housing, the body of the strip lying adjacent to the outer wall on one side and having a return bend to adapt it to project through the housing, said strip having nicks along its edge to form a breaking point, its projecting end provided with hooks, one of which is adapted to enter the slotted hook at the opposite end of the strip, while the other hook engages the inwardly projecting hook of the housing, substantially as described.

6. In a seal, a tubular housing A having overlapping edges *a*, *a'*, an inwardly projecting hook a^3 struck up from one of the overlapping walls, a strip of uniform width provided with a slotted hook B' and nicks *b'* cut in the edge to form a breaking point, the strip being engaged to the housing by means of the slotted bill entering it at one end, the body of the strip lying adjacent to the outer wall of the housing and having a return bend to adapt it to project through the housing, the projecting end of the strip bent back upon itself to form a hook C, the end of the bill having a notch c, a hook C' struck up out of the body of the strip adjacent to its end designed to enter the slot in the bill B', an aperture *c'* serving as a guide to indicate when the parts are interlocked and as a means to weaken the strip whereby it may be readily broken when desired, substantially as described.

7. In a seal, the combination with a housing having overlapping walls, one of said walls provided with a hook struck up to project through an opening in the underlying wall, a strip of uniform width provided with a slotted hook adapted to engage the overlapping wall of the housing, the body of the strip extending around the outside of the overlapping wall of the housing and bent back upon itself whereby it may project through the same, the projecting end of the strip having hooks, one of which is designed to enter the slotted hook at the opposite end of the strip, while the other engages the hook formed in the housing, substantially as described.

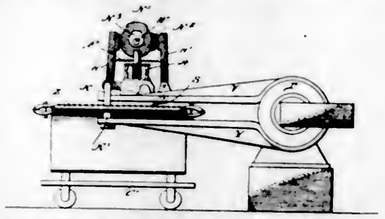
8. In a seal, the combination with a housing, its interior provided with a hook, a strip of uniform width having each of its ends bent back upon itself to form hooks, one of said hooks adapted to engage the housing by projecting into the same the body of the strip extending around the outside of one side of the housing and bent back upon itself whereby it may project through the housing, the hook at the free end adapted for engagement with the hook of the housing, substantially as described.

9. In a seal, the combination with a tubular housing having an inwardly projecting hook, a strip provided at one end with a hook adapted to engage the wall of the housing at one end, the body of the strip passing around one side of the housing and bent back upon itself to adapt it to project through the housing, the projecting end of the strip provided with a notched hook to accommodate the upstanding hook formed in the housing whereby the walls of the hook on either side of the notch may spring by the upstanding hook of the sleeve without forcing the hook beyond the hook of the sleeve, substantially as described.

10. In a seal, a housing formed with overlapping walls, a hook struck up from the outer wall projecting through an aperture provided in the underlying wall whereby the overlapping walls are locked together in combination with a locking strip having its ends interlocked within said walls.

853,241. STEP-BY-STEP ELECTRIC SEAM-WELDING APPARATUS. HUGO HELBERGER, Munich, Germany. Filed Sept. 19, 1906. Serial No. 335,273.

Claim.—1. An apparatus for electrically welding seams to unite edges of sheets of metal, embodying electrodes having contact faces forming positive and negative electrodes respectively in opposition to each other, and, movable toward and from each other to clamp or release the work between said contact faces, means for moving said electrodes toward and from each other periodically and means for establishing the circuit through said electrodes when the work is clamped between them, said means being adapted to break the circuit before the work is released and to only establish the same after the work is clamped between the electrodes.



2. An electric step by step seam welding apparatus embodying electrodes having proximate work contacting faces located opposite to each other and forming positive and negative electrodes respectively movable toward and from each other and between which the work is fed and clamped intermittently and a periodically acting switch timed to interrupt the current while the electrodes are separated.

3. An electric step by step seam welding apparatus embodying electrodes having proximate work contacting faces located opposite to each other and forming positive and negative electrodes respectively, means for moving said electrodes toward and from each other and an intermittent work feeding mechanism timed to feed the work between the electrodes when the electrodes are moved away from each other.

4. An electric step by step seam welding apparatus embodying electrodes having proximate work contacting faces located opposite each other and forming positive and negative electrodes respectively, means for periodically moving said electrodes toward and from each other to clamp the work between said faces, an intermittent work feeding mechanism timed to feed the work between the electrodes when the electrodes are moved away from each other and an intermittently operating switch timed to establish the circuit and permit a welding current to flow only when the electrodes are pressed toward each other.

5. An electric welding apparatus embodying work feeding mechanism, contacts having work contacting faces located opposite to each other and cooperating with opposite sides of the work being fed both during the welding and during the feed movements of the work whereby the electrodes are polished but movable toward and from each other to clamp or release the work and an intermittently operating switch timed to interrupt the current during the feed movements of the work.

853,242. TYPE-WRITING MACHINE. WILLIAM F. HELMOND, Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 28, 1906. Serial No. 349,771.

Claim.—1. In a typewriting machine having a framework and a carriage, the combination of a stop upon the framework, a stop upon the carriage to co-operate with the first stop to arrest the return movement of the carriage to begin a new line of writing, one of said stops being adjustable to regulate the width of the left-hand margin on the page of writing, a stop interposable between said stops to serve as a substitute for one thereof and co-operate with the other thereof to reduce substantially the range of movement of the carriage and cause a substantial increase in the width of the left-hand margin on the page, a key having means to release the carriage from the control of all of said stops, and a stop-restoring spring to oppose the releasing action of said key.

2. In a typewriting machine having a framework and a carriage, the combination of a stop upon the framework, a stop upon the carriage to co-operate with the first stop to arrest the return movement of the carriage to begin a new line of writing, one of said stops being adjustable to regulate the width of the left-hand margin on the page of writing, a stop interposable between said stops to serve as a substitute for one thereof and co-operate with the other thereof to reduce substantially the range of movement of the carriage and cause a substantial increase in the width of the left-hand margin on the page, means for mechanically detaining said interposable stop either in or out of a position of use, at will, a key having means to release the carriage from the control of all of said stops, and a stop-restoring spring to oppose the releasing action of said key.



3. In a typewriting machine having a framework and a carriage, the combination of a stop upon the framework, a stop upon the carriage to co-operate with the first stop to arrest the return movement of the carriage to begin a new line of writing, one of said stops being adjustable to regulate the width of the left-hand margin on the page of writing, a stop interposable between said stops to serve as a substitute for one thereof and co-operate with the other thereof to reduce substantially the range of movement of the carriage cause a substantial increase in the width of the left-hand margin on the page, and means for releasing the carriage from the control of all of said stops, and a stop-restoring spring to oppose the action of said releasing means.

4. In a typewriting machine having a framework and a carriage, the combination of a stop upon the framework, a stop upon the carriage to co-operate with the first stop to arrest the return movement of the carriage to begin a new line of writing, one of said stops being adjustable to regulate the width of the left-hand margin on the page of writing, a stop interposable between said stops to serve as a substitute for one thereof and co-operate with the other thereof to reduce substantially the range of movement of the carriage and cause a substantial increase in the width of the left-hand margin on the page, means for mechanically detaining said interposable stop either in or out of a position of use, at will, means for releasing the carriage from the control of all of said stops, and a stop-restoring spring to oppose the action of said releasing means.

5. In a typewriting machine having a framework and a carriage, the combination with a stop adjustable along one of said parts, of a plurality of stops mounted upon the other of said parts to co-operate with the first stop upon the return of the carriage to begin a new line of writing, to regulate the width of the left-hand margin on the sheet, a key connected to said plurality to move them out of the path of the first stop, and a stop-restoring spring to oppose the action of said key.

6. In a typewriting machine having a framework and a carriage, the combination with a stop adjustable along one of said parts, of a plurality of releasable stops mounted at intervals upon the other of said parts, either member of said plurality to co-operate with the adjustable stop at will upon the return of the carriage to begin a new line of writing, to regulate the width of the left-hand margin on the sheet, a key for releasing both of said releasable stops, a spring to restore both stops upon the release of said key, and means for locking a single member of said plurality out of use.

7. In a typewriting machine having a carriage member and a framework member, the combination of a stop adjustable along one of said members, and two stops pivotally mounted upon the other of said members to co-operate with said stop to arrest the carriage at either one of two points in its return movement to begin a new line; the carriage being releasable from the control of said pivoted stops, and the latter being constructed to turn upon their pivots to ride over the adjustable stop during the movement of the carriage in letter-feeding direction.

8. In a typewriting machine having a carriage member and a framework member, the combination of a single stop upon one end of said members and two stops upon the other of said members to co-operate with said single stop to arrest the carriage at either one of two points in its return movement to begin a new line; the carriage being releasable from the control of all of said stops to permit writing in the left hand margin on the page; and the two stops being yielding relatively to the single stop, to permit free subsequent movement of the carriage in letter-feeding direction.

9. In a typewriting machine having a framework and a carriage and provided with a stop upon the framework, the combination of two stops upon the carriage, to co-operate with the framework stop to arrest the carriage at either one of two points in its return movement to begin a new line, and a key upon the carriage for releasing its stops from the framework stop; the carriage and framework stops being relatively yielding to permit movement of the carriage in letter-feeding direction.

10. In a typewriting machine having a framework and a carriage and provided with a stop upon the framework, the combination of two stops upon the carriage, to co-operate with the framework stop to arrest the carriage at either one of two points in its return movement to begin a new line, and a key upon the carriage for releasing its stops from the framework stop; the stops upon the carriage constructed to yield to ride over the framework stop when the carriage moves in letter feeding direction, and means being provided upon the carriage for detaining one of its stops in either effective of ineffective position at will.

11. In a typewriting machine having a framework and a carriage, the latter provided with a stop to co-operate with a stop upon the framework to arrest the carriage in its return movement to begin a new line, a lever being mounted upon said carriage to release the carriage stop, the combination of an auxiliary stop mounted upon the carriage to arrest the latter at a point in advance of the first-mentioned carriage stop, and means for enabling said lever to release said auxiliary stop; both stops upon the carriage being constructed to ride over the framework stop while the carriage moves in letter feeding direction.

12. In a typewriting machine having a framework, the combination of a carriage, the latter provided with a stop to co-operate with a stop upon the framework to arrest the carriage in its return movement to begin a new line, a lever being mounted upon said carriage to release the carriage stop, an auxiliary stop mounted upon the carriage to arrest the latter at a point in advance of the first-mentioned carriage stop, and means for enabling said lever to release said auxiliary stop; both stops upon the carriage being constructed to ride over the framework stop while

the carriage moves in letter feeding direction, and a finger piece having a cam to lock said auxiliary stop out of effective position.

13. In a typewriting machine having a carriage, the combination of a framework, and a stop upon the framework adjustable in the direction of travel of the carriage for regulating the left hand margin upon the sheet, the range of adjustment of said stop being substantially less than the range of travel of the carriage, a device in the form of a lever being pivoted upon the carriage and having at one end a release key and at the other end a stop to engage said margin stop, an auxiliary stop mounted upon the carriage to engage said margin stop at a point substantially in advance of said carriage stop, and means for enabling the release key to release said auxiliary stop.

14. In a typewriting machine having a carriage, the combination of a stop upon the framework adjustable in the direction of travel of the carriage for regulating the left-hand margin upon the sheet, the range of adjustment of said stop being materially less than the range of travel of the carriage, a device in the form of a lever being pivoted upon the carriage and having at one end a release key and at the other end a stop to engage said adjustable stop, to arrest the carriage during the return thereof to begin a new line, a device in the form of a second lever pivoted upon the first lever between the pivot and stop of the latter, and a stop upon said second lever in position to engage said margin-stop during the return of the carriage, whereby the range of regulation of the left hand margin on the page is increased according to the distance between the stops on the carriage.

15. In a typewriting machine having a carriage, the combination of a stop upon the framework adjustable in the direction of travel of the carriage for regulating the left-hand margin upon the sheet, the range of adjustment of said stop being materially less than the range of travel of the carriage, a device in the form of a lever being pivoted upon the carriage and having at one end a release key and at the other end a stop to engage said adjustable stop, to arrest the carriage during the return thereof to begin a new line, a device in the form of a second lever pivoted upon the first lever between the pivot and stop of the latter, and a stop upon said second lever in position to engage said margin-stop during the return of the carriage, whereby the range of regulation of the left hand margin on the page is increased according to the distance between the stops on the carriage; and a spring upon the second lever bearing upon the carriage to maintain both stops on the carriage in working positions; each of said stops on the carriage being constructed to ride freely over the adjustable stop during movement of the carriage in letter feeding direction.

16. In a typewriting machine having a carriage, the combination of a stop upon the framework adjustable in the direction of travel of the carriage for regulating the left-hand margin upon the sheet, the range of adjustment of said stop being materially less than the range of travel of the carriage, a device in the form of a lever being pivoted upon the carriage and having at one end a release key and at the other end a stop to engage said adjustable stop, to arrest the carriage during the return thereof to begin a new line, a device in the form of a second lever pivoted upon the first lever between the pivot and stop of the latter, and a stop upon said second lever in position to engage said margin-stop during the return of the carriage, whereby the range of regulation of the left hand margin on the page is increased according to the distance between the stops on the carriage; and a spring upon the second lever bearing upon the carriage to maintain both stops on the carriage in working positions; each of said stops on the carriage being constructed to ride freely over the adjustable stop during movement of the carriage in letter feeding direction, and said first lever being operative to lift both of said stops on the carriage free of said margin-stop, to permit writing in the right-hand margin on the sheet.

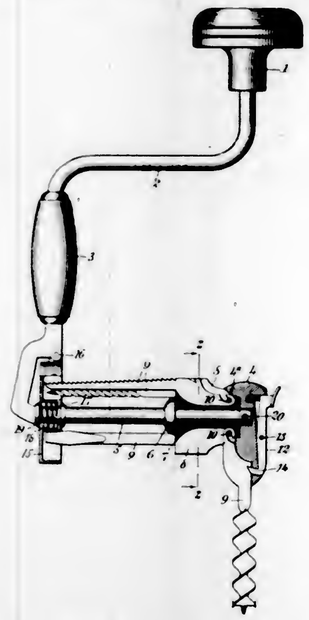
17. In a typewriting machine having a carriage, the combination of a stop upon the framework adjustable in the direction of travel of the carriage for regulating the left-hand margin upon the sheet, the range of adjustment of said stop being materially less than the range of travel of the carriage, a device in the form of a lever being pivoted upon the carriage and having at one end a release key and at the other end a stop to engage said adjustable stop, to arrest the carriage during the return thereof to begin a new line, a device in the form of a second lever pivoted upon the first lever between the pivot and stop of the latter, and a stop upon said second lever in position to engage said margin-stop during the return of the carriage, whereby the range of regulation of the left hand margin on the page is increased according to the distance between the stops on the carriage; and a device for silencing said second stop on the carriage consisting of a cam pivoted on said sceond lever and provided with a friction washer and a handle, and constructed to bear against a part of the carriage to lock said second stop on the carriage out of working position.

18. In a typewriting machine having a carriage, the combination of a stop upon the framework adjustable in the direction of travel of the carriage for regulating the left-hand margin upon the sheet, the range of adjustment of said stop being materially less than the range of travel of the carriage, a device in the form of a lever being pivoted upon the carriage and having at one end a release key and at the other end a stop to engage said adjustable stop, to arrest the carriage during the return thereof to begin a new line, a device in the form of a second lever pivoted upon the first lever between the pivot and stop of the latter, and a stop upon said second lever in position to engage said margin-stop during the return of the carriage, whereby the range of regulation of the left-hand margin on the page is increased according to the distance between the stops on the carriage; and a device for silencing said second stop on the carriage consisting of a cam pivoted on said second lever and provided with a friction washer and a handle, and constructed to bear against a part of the carriage to lock said second stop on the carriage out of working position; a lip being formed on the second stop on the carriage to catch over the margin-stop, to prevent said second stop from being forced down along the margin-stop at the impact of the stops.

19. In a typewriting machine having a carriage, the combination of a stop upon the framework adjustable in the direction of travel of the carriage for regulating the left-hand margin upon the sheet, the range of adjustment of said stop being materially less than the range of travel of the carriage, a device in the form of a lever being pivoted upon the carriage and having at one end a release key and at the other end a stop to engage said adjustable stop, to arrest the carriage during the return thereof to begin a new line, a device in the form of a second lever pivoted upon the first lever between the pivot and stop of the latter, and a stop upon said second lever in position to engage said margin-stop during the return of the carriage, whereby the range of regulation of the left-hand margin on the page is increased according to the distance between the stops on the carriage; and a device for silencing said second stop on the carriage consisting of a cam pivoted on said second lever and provided with a friction washer and a handle, and constructed to bear against a part of the carriage to lock said second stop on the carriage out of working position.

853,243. BRACE. JAMES HOLLEY, West Palmbeach, Fla., assignor to American Cylinder Brace and Tool Manufacturing Company, West Palmbeach, Fla. Filed July 7, 1906. Serial No. 325,092.

Claim.—1. A brace comprising a crank having a crank arm, a head rigidly secured to the crank arm, a tool carrier pivotally mounted on the crank arm, and a plurality of tools adjustably mounted on the carrier and capable of independent movement into engagement with said head.



2. A brace comprising a crank arm and a handle, a head rigidly secured to the crank arm, a tool carrier mounted to rotate on the crank arm, a plurality of tools adjustably mounted on the carrier, and a guard mounted on the crank arm adjacent the handle and adapted to receive the ends of the tools when the same are not in use.

3. A brace comprising a crank arm and a handle, a head rigidly secured on the end of the crank arm, a tool carrier mounted to rotate on the crank arm, and a tool guard pivotally mounted on the crank arm adjacent the handle and adapted to receive the ends of the tools.

4. A brace comprising a crank arm, a handle, a head on the end of the crank arm, a tool carrier mounted to turn on the arm and having a plurality of tools pivotally connected thereto and movable independently into engagement with the head, and a catch on the head adapted to hold the tools in engagement therewith.

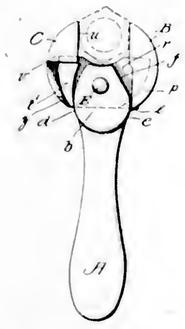
5. A brace comprising a crank arm, a head having a cavity or recess therein and secured on the end of the crank arm, a carrier rotatably mounted on the crank arm and having a portion projecting into said cavity, the carrier being formed with a number of longitudinal slots, a plurality of tools having their shanks pivoted in said slots, the head having a radial slot and with which any one of the tools of the carrier may register, whereby to permit the tools to be thrown outward into the said slot of the head, and a catch for removably holding the tools in said slot.

6. A brace comprising a head having a cavity or recess therein, a crank arm secured to said head at the center of said recess, a carrier mounted to rotate on the crank arm and having a portion thereof extending into the said cavity, the carrier being formed with a number of longitudinal slots, and a plurality of tools having their shanks pivoted in said slots, the head having a radial slot with which any one of the slots of the carrier may register whereby to permit the tool to be thrown outward into the said slot of the head.

7. A brace comprising a crank arm, a head carried thereby, a carrier mounted to turn on the arm, a plurality of tools adjustably mounted on the carrier and capable of being independently moved outward into engagement with the head, a guard pivotally connected to said brace and surrounding the crank arm and the ends of the tools, and a spring normally holding said guard in active position.

8. A brace comprising a crank arm, a head carried thereby, a carrier mounted to rotate on the crank arm and in engagement with the head, a plurality of tools pivoted on the carrier and capable of movement independently into said cavity in the head, and a catch pivoted on the head, each tool having a curved recess therein and the catch having a correspondingly hooked portion capable of entering said recesses for holding the tool in engagement with the head.

853,244. WRENCH. WESLEY E. INGRAM, Tonopah, Nev. Filed Aug. 8, 1906. Serial No. 329,728.



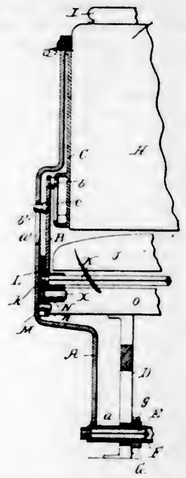
Claim.—1. In a wrench, the combination of a bifurcated handle, and slidable jaws connected with the handle and movable toward and from each other in the bifurcation thereof; each of said jaws having lapped shanks arranged in the bifurcation of the handle, and also having portions arranged to engage opposite edges of one wall of said bifurcation in the handle, whereby when the handle is moved in one direction the jaws will be moved apart and when the handle is moved in the other direction the jaws will be moved toward each other.

2. In a wrench, the combination of a bifurcated handle, slidable jaws connected with the handle and movable toward and from each other in the bifurcation thereof; each of said jaws having lapped shanks arranged in the bifurcation of the handle and also having portions arranged to engage opposite edges of one wall of said bifurcation in the handle, whereby when the handle is moved in one direction the jaws will be moved apart and when the handle is moved in the other direction the jaws will be moved toward each other, and a spring carried by the handle and arranged to engage one jaw and tending to move said jaw toward the other jaw.

3. In a wrench, the combination of a bifurcated handle, slidable jaws having lapped and slotted shanks arranged in the bifurcation of the handle and also having a tongue and a groove arranged one in the other; each of said jaws also having lateral projections disposed at opposite sides of one side wall of the bifurcation in the handle, and a pin extending through the side walls of the bifurcation in the handle and the slots in the jaw shanks.

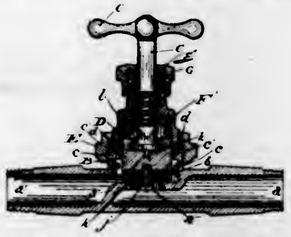
4. In a wrench, the combination of a bifurcated handle, slidable jaws having lapped and slotted shanks arranged in the bifurcation of the handle and also having a tongue and a groove arranged one in the other; each of said jaws also having lateral projections disposed at opposite sides of one side wall of the bifurcation in the handle, a pin extending through the side walls of the bifurcation in the handle and the slots in the jaw shanks, and a spring carried by the handle and having an arm bearing against the inner edge of one jaw shank.

853,245. WALK-OVER CAR-SEAT. PETER M. KLING, Elizabeth, N. J., assignor to John Stephenson Company, Elizabeth, N. J., a Corporation of New Jersey. Filed Mar. 23, 1904. Serial No. 199,567.



Claim.—The combination of a seat-supporting frame having a leg D adjustable endwise of the seat, a tube F supported by the leg D, a back operating lever A pivoted on the end of the tube F and a rock shaft E within said tube to which the lever is rigidly secured, substantially as and for the purpose set forth.

853,246. STOP-COCK. JOHN F. LAMPING, Cincinnati, Ohio. Filed Sept. 11, 1905. Serial No. 277,926.



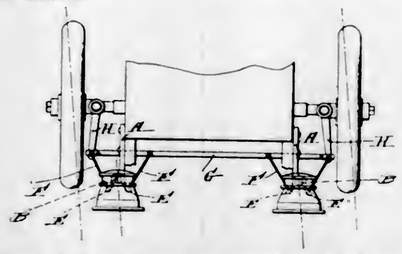
Claim.—1. A stop cock comprising a shell, whose ends are separated from each other by a diaphragm provided with a port whereby communication between both ends of the shell is established, a chamber in said shell, immediately above said diaphragm, and having communication with the outlet end of said shell, a washer seated within said chamber, means within said chamber for retaining said washer against displacement, a cylinder in said chamber adapted to slide through said washer from one end of the chamber to the other to be seated on the port in the diaphragm and provided with a washer on its under surface, said cylinder being provided with a passage-way leading from a point beneath the top to a point at or near its top whereby communication between both ends of the chamber may be established when the cylinder is forced to its seat on the port, and means having a loose connection with said cylinder whereby the latter is moved to the desired position with a movement different from the movement of said means.

2. A stop-cock comprising a shell having its inlet end separated from the outlet end by a diaphragm, said diaphragm being provided with a port to establish communication between the ends of the shell, a chamber above said port and connected with the outlet end of the shell, a cylinder in said chamber adapted to be seated on the port in the diaphragm, a washer seated within said chamber and taking about the cylinder, said cylinder being provided with a groove at a point normally beneath said washer, said groove communicating with the portion of the chamber immediately above said cylinder and so that when the cylinder is seated on the port in the diaphragm, communication is estblished between the upper and lower ends of said chamber, and means whereby said cylinder is operated.

3. A stop-cock comprising a shell having its inlet and outlet ends separated by a diaphragm, said diaphragm being provided with a port whereby communication between the two ends is established, a chamber immediately above said port in the diaphragm, a cylinder within said chamber, a washer seated within said chamber and taking about said cylinder, said cylinder provided with a passage-way normally closed by said washer, means having operative connection with said cylinder whereby the latter may be forced to its seat and a portion of the passage-way brought beneath the washer thereby esetablishing communication between the upper and lower ends of said chamber.

4. A stop-cock comprising a shell having its inlet and outlet ends separated by a diaphragm, said diaphragm provided with a port to establish communication between both ends of the shell, a chamber above said port provided with an annular shoulder, a washer adapted to be seated on the shoulder in said chamber, a cylinder adapted to slide back and forth in said chamber and taking through said washer, said cylinder provided with a port communicating with an inverted T-shaped groove in the upper face of said cylinder, whereby communication between the upper and lower ends of the chamber may be established when the cylinder is forced to its seat on the port in the diaphragm means controllably mounted on said chamber and taking into the groove in said cylinder whereby a loose operative connection between said means and the cylinder is established.

853,247. HEADLIGHT FOR VEHICLES. ARTHUR LE BLANC, Worcester, Mass. Filed June 28, 1906. Serial No. 323,913.

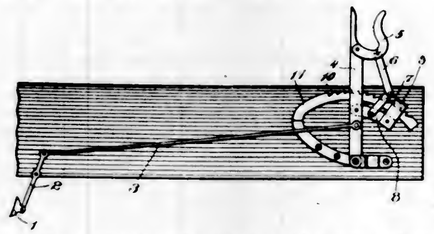


Claim.—1. In a vehicle, the combination of a pair of stub-axles, a bar connecting said axles and adapted to operate parallel with their axes, two pairs of flexible connections secured to said bar, a pair of upright rods oscillatably mounted on the vehicle, each having two arms projecting therefrom, both arms on each rod being secured to said flexible connections of one pair, and means on said rods for supporting head lights, whereby the turning of the wheels will cause the head-lights to turn therewith.

2. In a vehicle, the combination of a pair of stub axles, a longitudinally reciprocable bar connecting said axles and movable therewith, two pairs of flexible connections secured to said bar near opposite ends thereof and at a distance apart, a pair of upright rods oscillatably mounted on the vehicle each having two arms projecting therefrom, both arms on each rod being secured to the flexible connections of one pair, and means on said rods for supporting head-lights.

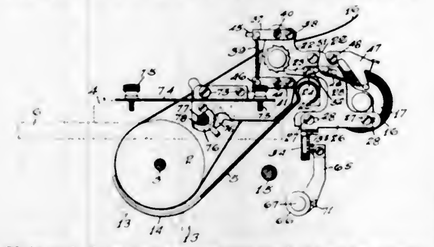
3. In a vehicle having stub axles, the combination of a bar connecting said axles and adapted to reciprocate longitudinally as said axles turn, a pair of flexible connections secured to said bar, an upright rod oscillatably mounted on the vehicle and having two arms projecting therefrom at an angle, the ends of each arm being connected with one of said flexible connections, and means on the rod for supporting a head-light.

853,248. BRAKE-LEVER. JOHN G. LOHNER, Sparks, Okla. Filed Sept. 1, 1906. Serial No. 332,923.



Claim.—A vehicle brake, having a main lever adapted to actuate a brake-shoe, a ratchet bar, a sleeve mounted thereon, and having a bar S, connecting it with said lever, a dog mounted on said bar S, a bell crank lever mounted on the upper part of said lever, and a link connecting said dog with said bell crank lever, substantially as described.

853,249. TYPE-WRITING MACHINE. CARL F. LUNDEBERG, Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 14, 1906. Serial No. 343,379.



Claim.—1. In a typewriting machine having a revoluble platen and line-space mechanism therefor, the combination with a spool-holder, of a feeding roll between said spool holder and the platen, a roll between the spool-holder and the platen to co-operate with said feeding roll independently of the platen to pull the paper ribbon from the spool, and a second roll co-operating with said feeding roll to pull said ribbon from the platen independently of the latter.

2. In a typewriting machine having a revoluble platen and a line-space mechanism therefor, the combination with a spool-holder in rear of the platen, of a feeding roll between the spool-holder and the platen, a roll bearing up against the under side of said feeding roll to co-operate therewith independently of the platen to pull the paper ribbon from the spool, and a roll bearing down upon the top of said feeding roll to co-operate therewith to pull said ribbon from the platen independently of the latter.

3. In a typewriting machine having a revoluble platen and line-spacing mechanism therefor, the combination with a spool for carrying a ribbon of paper, of a milled hard feeding roll, releasable rolls of yielding material pressing against said feeding roll, one to pull the paper from the spool and the other to pull the paper from the platen, and means independent of the platen for rotating said milled roll while the platen is stationary.

4. In a typewriting machine having a revoluble platen and line-space mechanism therefor, the combination with a spool-holder, of a feeding roll between said spool-holder and the platen, a releasable roll co-operating with said feeding roll independently of the platen to pull the paper ribbon from the spool, and a second roll co-operating with said feeding roll to pull said ribbon from the platen while the latter is motionless.

5. In a typewriting machine having a revoluble platen and line-space mechanism therefor, the combination with a spool-holder, of a feeding roll between said spool-holder and the platen, a roll co-operating with said feeding roll independently of the platen to pull the paper ribbon from the spool, and a releasable roll co-operating with said feeding roll to pull said ribbon from the platen independently of the latter.

6. In a typewriting machine having a revoluble platen and line-spacing mechanism therefor, the combination with a spool-holder, of a feeding roll between said spool-holder and the platen, mechanism for intermittently advancing said feeding roll line by line while the platen is motionless, a finger-wheel for turning said feeding roll, and rolls pressing upon said feeding roll and releasable therefrom independently of each other; one releasable roll for pulling the paper ribbon from the spool, and the other for pulling the ribbon from the platen.

7. In a typewriting machine having a revoluble platen, a line-spacing mechanism therefor, and a frame whereon the platen is mounted, the combination of an auxiliary framework mounted upon a platen frame, and comprising a pair of side-plates, a spool-holder, and a feeding roll mounted between said plates and supported thereby, spring-pressed bails hinged upon said plates, the latter being confined between the arms of the bails, and rolls pressing on opposite sides of said feeding-roll to co-operate therewith to pull the strip of paper from the spool and to pull the strip from the platen, said pressing rolls having axles extending through slots and said plates and carried upon said bail arms; and means to rotate said feeding roll to feed the strip while the platen is stationary.

8. In a typewriting machine having a revoluble platen, a line-spacing mechanism therefor, and a frame whereon the platen is mounted, the combination of an auxiliary framework mounted upon a platen frame, and comprising a pair of side-plates, a spool-holder, and a feeding roll mounted between said plates and supported thereby, bails hinged upon said plates, the latter being confined between the arms of the bails, and rolls pressing on opposite sides of said feeding roll to co-operate therewith to pull the strip of paper from the spool and to pull the strips from the platen, said pressing rolls having axles extending through slots and said plates and carried upon said bail arms, one of said bails mounted above and the other below said feeding-roll, the latter being provided with a finger-wheel, and a spring connecting said bails to cause both pressure rolls to bear against the feeding roll to permit the bails to move, to release the feeding rolls singly.

9. In a typewriting machine having a platen frame, a platen revolubly mounted therein, line spacing mechanism for the platen and a rod mounted upon said platen-frame adjacent to the platen and extending along the same, the combination of a framework comprising a pair of connected side-plates, a bracket fixed to one end of the platen frame and extending inwardly from said end and fixed to one of the side-plates, said side-plates connected to said rod, a spool mounted detachably between said side-plates, rolls also mounted between said side-plates and disposed between the spool and the platen and co-operating to pull the paper ribbon from the spool and from the platen, and means to rotate said rolls to feed a paper strip from the spool and around the platen while the latter remains stationary.

10. In a typewriting machine having a revoluble platen and line-spacing mechanism therefor, the combination with a spool-holder, of means between the spool-holder and the platen and operable independently of the latter for pulling the paper ribbon from the spool and from the platen, and a brake for said spool.

11. In a typewriting machine having a revoluble platen and line-space mechanism therefor, the combination with a spool-holder, of a feeding roll between said spool-holder and the platen and operable independently of the latter, a roll co-operating with said feeding roll to pull the paper

ribbon from the spool, a second roll co-operating with said feeding roll to pull said ribbon from the platen, and a brake for the spool.

12. In a typewriting machine having a revoluble platen and line-space mechanism therefor, the combination with a spool-holder, of a feeding roll between said spool-holder and the platen and operable independently of the latter, a roll co-operating with said feeding roll to pull the paper ribbon from the spool, a second roll co-operating with said feeding roll to pull said ribbon from the platen, a brake for the spool, and means for silencing said brake.

13. In a typewriting machine having a revoluble platen and line-spacing mechanism therefor, the combination with a spool-holder and means operable independently of the platen for pulling the paper ribbon from the spool and from the platen, of a pivoted brake for said spool and a spring connected to said brake to hold it either against or away from the spool at will.

14. In a typewriting machine having a revoluble platen and line-spacing mechanism therefor, the combination with a spool-holder and means for pulling the paper ribbon from the spool and from the platen independently of the latter, of a pivoted brake for said spool and a spring connected to said brake to hold it either against or away from the spool at will; said brake being in the form of a bail extending along the spool and said spring being mounted to act on either side of the bail, to either press the bail against the spool or hold it away from the spool at will.

15. In a typewriting machine having a carriage, a platen mounted revolubly thereon, and line-spacing mechanism for the platen, the combination with auxiliary rolls for feeding paper relatively to the platen, and line-spacing mechanism independent of the platen and actuated by the movements of said carriage and co-operating with said auxiliary rolls, of means for silencing said line-spacing mechanism.

16. In a typewriting machine having a carriage, a platen revoluble thereon and a line-spacing mechanism for the platen, the combination with a spool-holder and rolls co-operating to pull a paper ribbon from the spool and from the platen, of an auxiliary line-spacing mechanism for said rolls including a rigid wheel and a pawl, and also including a pawl actuator reciprocated by means of the movements of said carriage, and means for moving said pawl to an ineffective position.

17. In a typewriting machine having a carriage and platen mounted revolubly thereon and line-spacing mechanism for the platen, the combination with a spool and auxiliary rolls for feeding paper from said spool around the stationary platen, of line-spacing mechanism actuated by the movements of said carriage and co-operating with said auxiliary rolls, a brake for said spool, and means for silencing said brake simultaneously with said auxiliary line spacing mechanism.

18. In a typewriting machine having a revoluble platen and line-spacing mechanism therefor, the combination with a spool-holder, of rolls between the spool-holder and the platen and co-operating with one another independently of the platen to pull the paper from the spool and from the platen; said spool detachable from the machine independently of said rolls; and means for rotating said rolls while the platen remains motionless.

19. In a typewriting machine having a platen frame, a platen revoluble thereon, and line-spacing mechanism for the platen, the combination with a spool-holder, of rolls, and means for causing the rolls to unwind a paper ribbon from the spool and pull it from the platen while the latter is motionless; said spool being mounted for detachment from the frame independently of said rolls.

20. In a typewriting machine having a carriage, a platen revoluble thereon, and line-spacing mechanism for the platen, the combination with a spool-holder, and means to unwind the spool and pull the paper from the platen, of a lever, means dependent upon the movement of the carriage for operating said lever, a slide connected to said lever, a pawl mounted upon said slide, and a ratchet wheel operated by said pawl and connected to said unwinding means.

21. In a typewriting machine having a carriage, a platen, and line-feeding mechanism for the platen, the combination with rolls co-operating to unwind a paper strip from a spool and pull a strip from the platen, of a pawl and ratchet upon the said carriage for feeding means for operating the pawl by reason of the movements of the carriage and including a cam mounted upon the framework, and means for adjusting the position of said cam, to regulate the throw of said pawl.

22. In a typewriting machine having a carriage, a platen, and line-feeding mechanism for the platen, the combination with rolls co-operating to unwind a paper strip from a spool and pull a strip from the platen, of a pawl and ratchet upon the said carriage for feeding the rolls, means for operating the pawl by reason of the movements of the carriage and including a cam mounted upon the framework, and means for adjusting the position of said cam, a bar upon the framework extending along the carriage, an arm upon the upper end, on which one end of said bar is carried, said arm being pivotally mounted on its lower end upon the framework of the machine and screws to adjust and fix the position of said arm, thereby to adjust said cam to regulate the throw of said pawl.

23. In a typewriting machine having a carriage, a platen mounted thereon, line-spacing mechanism for the platen, and a rod extending along the platen, the combination of a strip-feeding mechanism mounted in an auxiliary framework which is detachably mounted upon said carriage, said strip-feeding mechanism including a line-feeding pawl and an actuator therefor, and a cam detachably mounted upon the framework of the machine in the path of said actuator, to operate the latter by reason of the movement of the carriage.

24. In a typewriting machine having a carriage, a platen mounted thereon, line-spacing mechanism for the platen, and a rod extending along the platen, the combination of a strip-feeding mechanism mounted in an auxiliary framework which is detachably mounted upon said carriage, said strip-feeding mechanism including a line-feeding pawl and an actuator therefor, and a cam detachably mounted upon the framework of the machine in the path of said actuator, to operate the latter by reason of the movement of the carriage; means being provided for effecting relative adjustment of said actuator, and said cam to regulate the throw of said pawl.

853,250. DOOR-HANGER. HARRY P. MACDONALD, Montclair, N. J., assignor to The Snead & Company Iron Works, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 2, 1907. Serial No. 350,401.



Claim.—1. The combination with a door of a supporting system comprising links pivoted on fixed studs and connected by a link pivotally mounted thereon, and a suspension rod secured to the door, said connecting link being pivotally connected with said suspension rod.

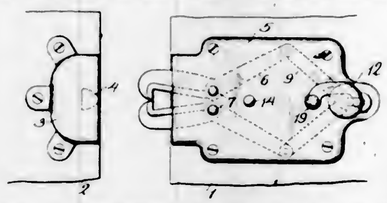
2. The combination with a door of a supporting system comprising links pivoted on fixed studs and connected by a link pivotally mounted thereon, said links being of equal length, and a suspension rod secured to the door, said connecting link being pivotally connected at its center with said suspension rod.

3. The combination with a door of a supporting system comprising links pivoted on fixed studs, an intermediate link pivotally connected to said first-named links, said connecting link being horizontally disposed when the door is either wholly open or closed, and a suspension rod secured to the door and on which said connecting link is pivotally mounted at its center, whereby when the door is opened or closed the extreme pivotal points of the connecting link will describe arcs about the fixed studs as centers, and the intermediate pivotal point will describe a substantially horizontal line.

4. The combination of double sliding doors adapted to move in opposite directions, a system of swinging links upon which each door is supported, a sheave included in each of said systems, said sheave being attached to one of the links so as to rotate therewith, and crossed bands or belts connecting said sheaves, whereby the opening or closing of one door will effect a corresponding movement of the other door.

5. The combination of double sliding doors adapted to move in opposite directions, a supporting system for each of said doors comprising links pivoted on fixed studs and connected by a link pivotally mounted thereon, a suspension rod secured to the door, said connecting link being pivotally connected with said suspension rod, a sheave included in each of said systems, said sheave being attached to one of the links so as to rotate therewith, and crossed bands or belts connecting said sheaves, whereby the opening or closing of one door will effect a corresponding movement of the other door.

853,251. SLIDING-DOOR FASTENER. HARRY P. MACDONALD, Montclair, N. J., assignor to The Snead & Company Iron Works, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 2, 1907. Serial No. 350,402.



Claim.—1. In a fastener of the character described the combination of pivoted catches adapted to engage a keeper, links connected to the inner arms of said catches, a movable spindle to which the other ends of said links are connected, said parts being secured to the door in such relation that the movement of the spindle in a given direction will release the catches from the keeper and effect the opening of the door.

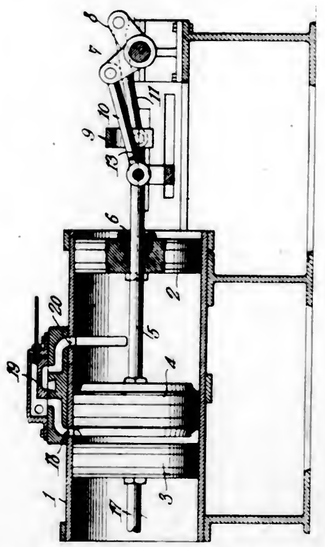
2. In a fastener of the character described the combination of pivoted catches adapted to engage a keeper, links connected to the inner arms of said catches a movable spindle to which the other ends of said links are connected, and means to hold the outer arms of said catches in normally closed position.

3. In a fastener of the character described the combination of pivoted catches adapted to engage a keeper, links connected to the inner arms of said catches a movable spindle to which the other ends of said links are connected, and a spring attached to a fixed point at one end and at the other end to said spindle to thereby hold the outer arms of the catches in normally closed position.

4. In a fastener of the character described the combination of pivoted catches adapted to engage a keeper, said catches being bent so that the inner arms thereof diverge from each other, a movable spindle, links connected at one end to said divergent arms and at their other ends to said spindle, means for holding the outer arms of said catches in normally closed position, and means to permit the movement of said spindle in a given direction to release the catches from the keeper and to open the door.

5. In a fastener of the character described the combination of a casing or plate adapted to be secured to a door, catches pivotally mounted on said casing and adapted to engage a keeper, a movable spindle, said casing having a slot through which said spindle projects, links connecting said spindle and catches, whereby when the spindle is moved in a given direction against one wall of said slot the catches will be released from the keeper and the door opened.

853,252. ENGINE. LEVI MALUGEN, Centerville, Tenn., assignor of one-half to Allison H. Leathers, Dickson, Tenn. Filed Jan. 22, 1907. Serial No. 353,497.

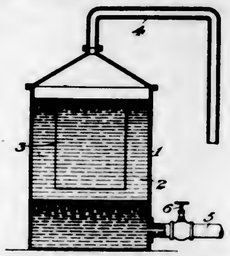


Claim.—1. In an engine, a crank shaft having a pair of cranks, a ported cylinder, a pair of cylinder head pistons connected to each other and to one of the cranks, and an intermediate piston connected to the other crank, the distance between the cylinder ports being less than the stroke of the intermediate piston, and the crank connections being arranged to permit movement of the pistons alternately in the same and in opposite directions.

2. The combination in an engine, of a crank shaft having a pair of cranks, a ported cylinder, a pair of cylinder head pistons rigidly connected to each other and to one of the cranks, and an intermediate piston connected to the other crank, the inner ends of the cylinder ports being under the control of the intermediate piston and being arranged at a distance from each other less than the stroke of such intermediate piston, a steam chest provided with an exhaust port, the cylinder ports also communicating with the steam chest, and a valve arranged in said steam chest for controlling said ports.

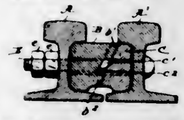
3. An engine having a crank shaft, and a pair of cranks, a cylinder provided with intermediate cylinder ports, a pair of cylinder head pistons connected to each other and to one of the cranks, an intermediate piston connected to the other crank, the stroke of the intermediate piston being greater than the distance between said cylinder ports, the crank connections of the pistons being arranged to transmit movement to the crank shaft alternately from the intermediate piston, and one of the cylinder head pistons.

853,253. MEANS FOR EXTINGUISHING FIRES IN OIL-FILLED RECEPTACLES. RALPH D. MEARSHON, New York, N. Y., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 20, 1904. Serial No. 194,464.



Claim.—The combination with an oil containing receptacle, and an electrical apparatus submerged in the oil and subject under the conditions of its operation to the danger of igniting the oil, of a free outlet for the oil above the normal height thereof, a discharge pipe extending from said outlet to a point beyond the limit of exposure to fire, a water inlet pipe connected with the lower end of the receptacle, and means whereby water from the inlet pipe may be caused to replace the oil and cause its discharge through the said discharge pipe.

853,254. ADJUSTABLE GUARD-RAIL CHOCK. HOWARD E. MILLER, Johnstown, Pa., assignor to The Lorain Steel Company, a Corporation of Pennsylvania. Filed Apr. 11, 1906. Serial No. 311,043.



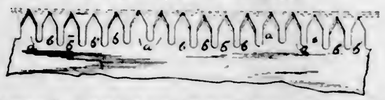
Claim.—1. In an adjustable chock, having wedge members, the adjacent face of each member being at an angle with relation to both the vertical and horizontal plane, and also having interlocking teeth.

2. In an adjustable chock having wedge members, the adjacent face of each member being at an angle with relation to both the vertical and horizontal plane, and also having interlocking teeth and flanges at an angle with each other.

3. In an adjustable chock, a main rail, a guard rail, and two spacing blocks tapered both ways, in combination with interlocking teeth and flanges at an angle to each other.

4. An adjustable chock having two wedge members, the bearing faces of which are oblique planes with relation to the vertical and provided with interlocking teeth and projections.

853,255. SAW. WILLIAM A. MILLER, Wapinitia, Oreg. Filed July 26, 1904. Serial No. 218,235.

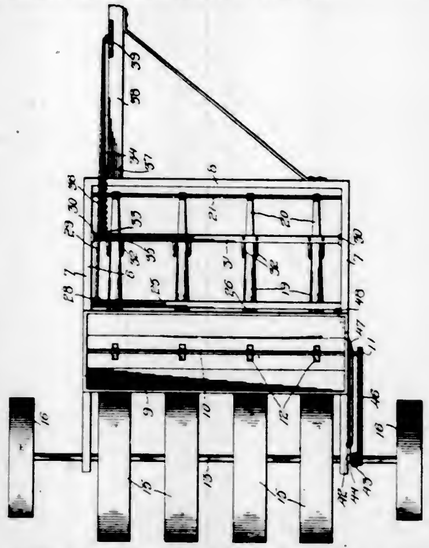


Claim.—1. A saw having pairs of alternately set salient or main cutting teeth and separate single cutting teeth being set laterally to the same planes as said pairs of cutting teeth, and alternating with said pairs of cutting teeth.

2. A saw having pairs of alternately set salient or main cutting teeth, and other cutting teeth of different lengths alternating with said salient cutting teeth, all of the cutting teeth being set laterally to the same planes.

3. A saw having pairs of alternately set salient or main cutting teeth, other cutting teeth and clearing teeth alternating with said salient cutting teeth, all of the cutting teeth being set laterally to the same planes.

853,256. PLANTER. HENRY T. MONSON, Mayville, N. D. Filed June 4, 1906. Serial No. 320,116.

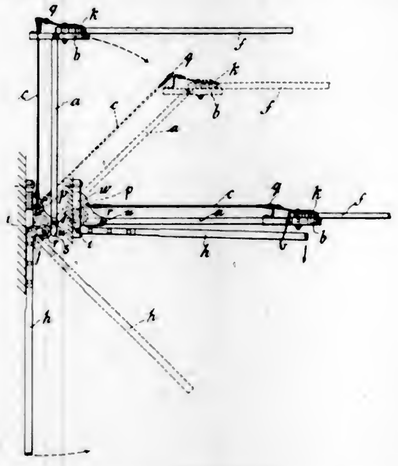


Claim.—1. In a planter, the combination with a frame, of depending ground-treating teeth connected with the frame for movement into and out of operative position, means for moving the teeth, said teeth being arranged for movement independently of the moving means, a spring arranged to hold the teeth yieldably against independent movement, furrow-opening shoes pivotally connected with the frame for vertical movement, means for moving the shoes upwardly, said shoes being arranged for movement independently of said moving means, springs arranged to hold the shoes against independent movement, seed-discharging mechanism, ground wheels for the frame, operative connections between the ground wheels and the seed-discharging mechanism, a throw out in said connections, and means for simultaneously operating the throw out and for moving the shoes and ground-treating teeth out of operative position.

2. In a mechanism of the class described, the combination with a frame, of vertically movable shoes mounted therein, a hopper, discharge mechanism for the hopper, a rock shaft, connections between the shoes and rock shaft for upward movement of the shoes when the shaft is moved in one direction, a wheeled shaft, a gear carried by said wheeled shaft, a casting pivoted to the frame, a gear journaled upon the casting and meshing with the gear of the shaft, said casting being movable upon its pivot to bring its gear out of engagement with that of the shaft, operative connections between the gear of the casting and the discharge mechanism of the hopper, and connections between the rock shaft and the casting for movement of the latter to bring the gears out of mesh when the rock shaft is moved to raise the shoes.

853,257. CLOTHES-DRIER. FRITZ MÜLLER, Neunkirchen, Germany. Filed Sept. 15, 1906. Serial No. 334,818.

Claim.—A clothes drier comprising a bracket, an arm having one end pivoted therein with a part projecting beyond the pivot, a spider pivoted to the other end of the arm, a connection above and parallel with the said arm and connecting the spider to the bracket, and a two arm lever pivoted in the bracket and having one arm engaging with the projecting end of the arm to raise and lower the outer end thereof.



853,258. PIN. FRANK H. NOBLE, Chicago, Ill. Filed Feb. 23, 1904. Serial No. 194,926.



Claim.—1. In combination with a button having an undercut recess, a one-piece cup the margin of which is beveled and also provided with a series of substantially radial slits and thereby adapted to be spread by pressure to engage said undercut recess, and an attaching member connected to the bowl of said cup; substantially as described.

2. In combination with a button having an undercut recess, a one-piece cup the margin of which is beveled and also provided with a series of radial slits and thereby adapted to be spread by pressure to engage said recess, the bowl of said cup being also provided with a transverse slot, and an attaching member received within and clamped by the infolded edges of such transverse slot; substantially as described.

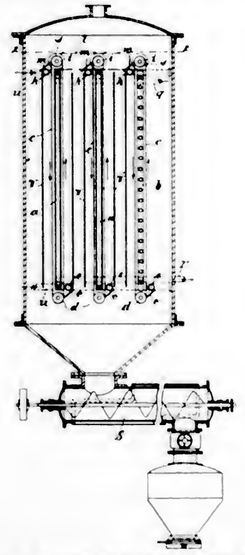
853,259. HORSE-BOOT. HARRY O'BRIEN, Mount Carroll, Ill. Filed May 22, 1906. Serial No. 318,275.



Claim.—1. A device of the class described comprising a body consisting of parallel strips, a casing for said body, means to secure said casing to the body, straps integral with said casing, a buckle on one of said straps adapted to engage openings in the opposite strap, a pad secured to one of said straps, a pair of angular blocks adjacent the inner end of the body and a reinforcing strip secured to said blocks and body said blocks and strip disposing said straps in a circular form.

2. A device of the class described comprising a body portion, a casing surrounding said body portion, means to secure said casing to the body portion, straps integral with said casing, means to adjustably secure the ends of said straps together, blocks interposed between the end of said body and the casing, a reinforcing strap secured to said straps and across the ends of said blocks and body and a pad secured to said reinforcing strip and an additional pad secured to one of said straps.

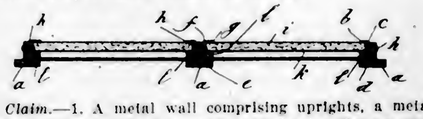
853,260. VACUUM DRYING APPARATUS. EMIL PASSBURG, Berlin, Germany. Filed July 27, 1905. Serial No. 271,418.



Claim.—1. In a vacuum drying apparatus the combination of heating devices located side by side, rollers at the ends of these heating devices, an endless transporting band passing over each pair of rollers, and two feed tubes for the liquid to be dried on the transporting band, the feed tubes being located at opposite ends of and on opposite sides of the corresponding heating device, substantially as described.

2. In a vacuum drying apparatus, the combination of heating devices side by side, rollers at the ends of these heating devices, an endless transporting band passing over each pair of rollers, two feed tubes for the liquid to be dried on the transporting band, the feed tubes being located at opposite ends of and on opposite sides of the corresponding heating device, and a pair of scrapers for the removal of the dried material from each band substantially as described.

853,261. METAL WALL FOR BUILDINGS, MASONRY-WORK, AND THE LIKE. JOHN PETERS, Milan, Italy. Filed July 2, 1906. Serial No. 324,483.

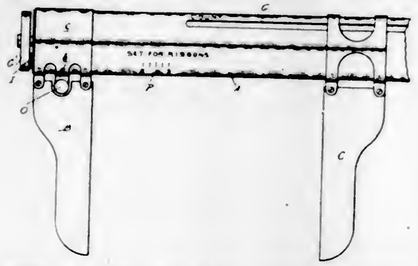


Claim.—1. A metal wall comprising uprights, a metal sheet secured to said uprights and having flanges provided with an inturned end, a plate of nonconducting material seated within the flanges of the sheet, and posts inserted between the plate and the main portion of the sheet and holding the sheet against the inturned ends of the plate to provide an air chamber between the plate and the sheet.

2. A metal wall adapted to prevent the transmission of heat, consisting of uprights of tee iron, a metal sheet bent in] form at its edges and secured to the uprights, a plate of non conducting material seated within the edges of the

sheet, and posts inserted between the plate and sheet to provide an air chamber between the plate and the sheet.

853,262. COMPUTING-CALIPERS. ALFRED E. PUTNAM, Milan, Mich. Filed July 10, 1905. Serial No. 269,039.



Claim.—1. A computing caliper comprising a shank, a coiled chart extending longitudinally thereof, means for simultaneously uncoiling and recoiling said chart, and a jaw adjustable on said shank, a portion of said jaw being operatively located in relation to said chart for indicating on said chart the reading to be taken therefrom.

2. A computing caliper comprising a shank relatively adjustable jaws thereon, a double coiled chart extending longitudinally of said shank, a portion of one of said jaws being arranged in relation to said chart to form an indicator therefor, and means for simultaneously unreeling one coil and reeling the other coil to move said chart laterally past said indicator.

3. In a computing caliper, the combination with a shank, of a fixed and an adjustable jaw thereon, a pair of parallel rolls rotatably secured to said shank, a chart mounted on said rolls adapted to be reeled from one to the other, means for positively operating one of said rolls, and a compensating connection between the rolls.

4. In a computing caliper, the combination with a shank, of a fixed and an adjustable jaw mounted thereon, of a pair of rolls rotatably secured to said shank and extending longitudinally thereof, a chart coiled upon said rolls and secured respectively thereto at its opposite ends, means for positively operating one of said rolls, and a yielding connection between the rolls.

5. In a computing caliper, the combination with a shank and a fixed and an adjustable jaw mounted thereon, of a pair of rolls rotatably secured to said shank and extending longitudinally thereof, a chart secured to and coiled upon said rolls, a rotary member for actuating said rolls in opposite directions and a compensating connection permitting a differential movement of said rolls in their rotation.

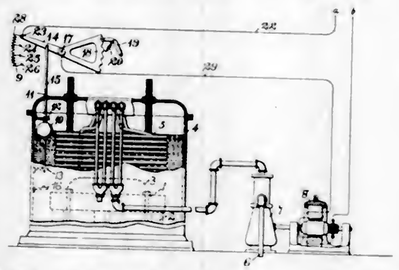
6. A computing caliper comprising a hollow shank having a fixed and an adjustable jaw mounted thereon, a pair of parallel rolls journaled within said shank and extending longitudinally thereof, a chart secured to and coiled upon said rolls, a rotary member at one end of said shank having a positive drive connection with one of said rolls, and a yielding drive connection between said rotary member and the opposite roll, whereby the latter may be driven in the opposite direction.

7. In a computing caliper, the combination with a hollow shank and a chart mounted therein, of a jaw adjustable upon said shank, a second jaw normally fixed upon said shank, and means whereby the latter jaw may be set at predetermined points upon said shank.

853,263. COOLING SYSTEM. KARL C. RANDALL, Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 2, 1906. Serial No. 314,874.

Claim.—1. In a cooling system, the combination with a propeller for forcing a cooling fluid through said system, of means for controlling the operation of said propeller, said means being governed by the temperature of the apparatus or material to which the system is applied.

2. The combination with a transformer, and a tank containing an insulating liquid in which the transformer is submerged, of a coil of pipe in said liquid, a propeller for forcing a cooling liquid through said coil, and a controller for said propeller the operation of which is governed by the temperature of said insulating liquid.



3. The combination with a transformer, and a tank containing an insulating liquid in which the transformer is submerged, of a coil of pipe in said tank, a pump for forcing a cooling fluid through said coil, a motor for driving said pump and a controlling means for said motor the operation of which is governed by the expansion and contraction of the insulating liquid as it is heated and cooled.

4. The combination with a transformer, and a tank containing an insulating liquid in which the transformer is submerged, of a coil of pipe in said tank, a pump for forcing a cooling liquid through the coil, an electric motor for driving the pump, and a controller for the electric motor the operation of which is governed by the rise and fall of the insulating liquid under changes in its temperature.

5. In a cooling system, the combination with a fluid-propeller, of means for automatically varying the speed of the propeller as the temperature in the apparatus to which the system is applied varies.

6. The combination with a fluid-propelling system for cooling purposes and an electric driving motor therefor, of means for varying the voltage applied to the motor in accordance with the variations in the temperature of the system.

7. In a fluid-propelling system for cooling purposes, the combination with an electric driving motor and resistance therefor, of a temperature indicator and means for varying the resistance included in circuit with the motor in accordance with the rise and fall of the indicator.

8. In a cooling system, the combination with a temperature indicator, pairs of contact terminals arranged to be electrically connected as predetermined temperatures are indicated, of a fluid-propeller, an electric driving motor therefor and means for controlling the speed of the motor.

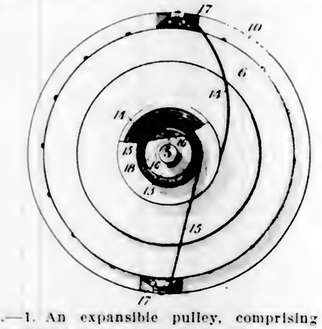
9. In a cooling system, the combination with a temperature indicator, a fluid-propeller and an electric driving motor therefor, of pairs of contact terminals that are successively connected as the temperature increases, and means for automatically controlling the speed of the motor as the temperature rises.

10. In a cooling system, the combination with a temperature indicator, pairs of contact terminals arranged to be electrically connected as predetermined temperatures are indicated, of a fluid-propeller, an electric driving motor therefor, a voltage regulator for the motor, and a plurality of electro-responsive devices that determine the voltage applied to the motor and are energized as the indicating terminals are connected.

11. In a cooling system, the combination with a temperature indicator, pairs of contact terminals arranged to be electrically connected as predetermined temperatures are indicated, of a fluid-propeller, an electric driving motor therefor, a regulating transformer for the motor, electrically operated switches which determine the voltage applied to the motor, operating magnets therefor which are successively energized to close the switches and increase the motor speed as the temperature increases.

12. The combination with an electric motor and a temperature indicator, of means for automatically increasing or decreasing the motor speed as the indicator registers a higher or a lower temperature.

853,264. EXPANSIBLE PULLEY. CHARLES J. REED, Philadelphia, Pa., assignor to Reed Morrill Electric Co., a Corporation of Pennsylvania. Filed May 25, 1904. Serial No. 209,723.



Claim.—1. An expansible pulley, comprising rim-sections, a guide-plate, an adjusting-disk, means for effecting relative rotation of said plate and disk, and a stop, independent of said rotating-means, for arresting the relative rotation at a predetermined point, as set forth.

2. An expansible pulley, comprising rim-sections, a guide-plate, an adjusting-disk, means for effecting relative rotation of said plate and disk, and stops, independent of said rotating-means, for arresting the relative rotation in both directions and at predetermined points, as set forth.

3. An expansible pulley, comprising rim-sections, a guide-plate, an adjusting-disk, said plate and disk being relatively revoluble, and a stop consisting of a flexible strip having its ends attached to said plate and disk, as set forth.

4. An expansible pulley, comprising rim-sections, a guide-plate, an adjusting-disk, said plate and disk being relatively revoluble, and stops consisting of two flexible strips having their ends attached to said plate and disk, as set forth.

5. An expansible pulley, comprising rim-sections, a guide-plate, an adjusting-disk, said plate and disk being relatively revoluble, and a stop consisting of a flexible coiled strip having its ends attached to said plate and disk, as set forth.

6. An expansible pulley, comprising rim-sections, a guide-plate, an adjusting-disk, said plate and disk being relatively revoluble, and stops consisting of two flexible coiled strips having their ends attached to said plate and disk, as set forth.

7. An expansible pulley, comprising rim-sections having toothed ends, radially-slotted guide-plates and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, and a pair of oppositely-coiled flexible strips having their ends attached to a guide-plate and adjusting-disk, as set forth.

8. An expansible pulley, comprising rim-sections having toothed ends, radially-slotted guide-disks and spirally-grooved adjusting-disks receiving the ends of said rim-sections, said plates and disks being relatively revoluble, a hub extending from an adjusting-disk, and a pair of oppositely-coiled flexible strips having their ends attached to a guide-plate and said hub, as set forth.

853,265. METHOD OF PREVENTING OXIDATION OF FORMALDEHYDE AND PRODUCT THEREOF. LUDWIG H. REUTER, New York, N. Y. Filed July 19, 1906. Serial No. 326,857.

Claim.—1. A method of preventing the oxidation of formaldehyde in soap solution which consists in adding to the solution a neutral sulfite of an alkali metal.

2. A method of preventing the oxidation of formaldehyde in a liquid formaldehyde soap solution which consists in adding sodium sulfite to the solution.

3. A method of preventing oxidation of formaldehyde in a liquid formaldehyde soap solution which consists in adding substantially .07 parts by weight of sodium sulfite previously dissolved in water to each part of formaldehyde contained in the soap.

4. A solution comprising soap formaldehyde, and a neutral sulfite of an alkali metal.

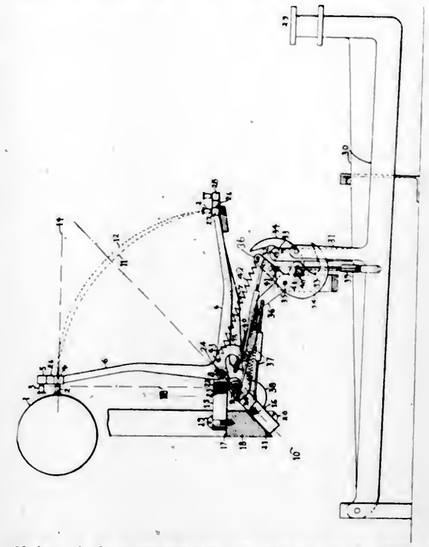
5. A solution comprising soap formaldehyde and neutral sodium sulfite, such solution being free from formic acid.

6. A solution containing soap, formaldehyde and sodium sulfite.

7. A solution containing soap formaldehyde and substantially .07 parts by weight of sodium sulfite to each part of formaldehyde in the solution.

8. A solution comprising soap free formaldehyde, and a free neutral sulfite of an alkali metal.

853,266. TYPE-WRITING MACHINE. LYMAN R. ROBERTS, Detroit, Mich., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 29, 1905. Serial No. 280,667.



Claim.—1. In a typewriting machine having a platen, a system of type bars pivoted to swing against the front side of the platen and each carrying a pair of types; the type bars pivoted in two arcs one immediately above the other, the type bars pivoted in the lower arc being longer than the type bars pivoted in the upper arc, and the upper type-bar pivots lying in the sides and the lower type-bar pivots at the junction of the sides and base of a cone whose axis substantially coincides with the printing point on the platen; the type bars pivoted in the lower arc being mounted upon individual hangers which are mounted upon a conical segment of such form that the hangers may be adjusted thereon so as to carry their type-bar pivots directly toward the pivotal axes of the type bars pivoted in the upper arc.

2. In a typewriting machine having a platen, a system of type bars pivoted to swing against the front side of the platen and each carrying a pair of types, the type bars pivoted in two arcs one immediately above the other, the type bars in the lower arc being longer than the type bars in the upper arc, the upper type-bar pivots lying in the sides and the lower type-bar pivots at the junction of the

sides and base of a cone whose axis substantially coincides with the printing point on the platen; the type bars pivoted in the lower arc being mounted upon individual hangers which are mounted upon a conical segment of form to permit the adjustment thereon of the lower hangers directly toward the pivotal axes of the upper type bars; and the hangers of the upper arc being adjustable forwardly and backwardly upon said segment.

3. In a typewriting machine, a system of alternating long and short pivoted type bars, the type ends of the long bars lying in substantial alinement with the type ends of the short type bars when in normal positions, and each type-bar carrying a plurality of types, the types lying at various angles to the type bars, individual overlapping hangers for said type bars, and a segment having a conical surface whereon the hangers for the long type bars are mounted for adjustment toward and from the apex of the cone.

4. In a front strike writing machine having a platen, the combination of a system of rearwardly striking alternating short and long pivoted type bars, the long type bars pivoted below and a little in rear of the short type bars, the type ends of the long bars substantially alining with the type ends of the short type bars when in normal positions, each type bar carrying a plurality of types, all of said type bars provided with hangers, and a segment whereon said hangers are individually adjustable, the hangers for the short type bars mounted upon the upper side of said segment, and the lower side of said segment having a conical form and bearing the hangers for said long type bars; the last-mentioned hangers lying below and in overlapping relation to the hangers for the short type bars.

5. In a typewriting machine, the combination of a system of pivoted type-bars, those in the middle of the system being substantially straight from end to end, and the remaining bars having crooks at their free ends, the crooks lying at progressively increasing angles to the bodies of the bars from the middle to the sides of the system, and a plurality of types mounted independently of one another upon each bar, one type mounted upon the tip of the crook, and the other at the junction of the crook with the body of the bar.

6. In a typewriting machine, the combination of a system of pivoted type-bars, those in the middle of the system being substantially straight from end to end, and the remaining bars having crooks at their free ends, the crooks lying at progressively increasing angles to the bodies of the bars from the middle to the sides of the system, and a plurality of types adjustable and detachable independently of one another upon each bar, one type mounted upon the tip of the crook, and the other at the junction of the crook with the body of the bar.

7. In a typewriting machine, a system of pivoted type-bars, those in the middle of the system being substantially straight from end to end, and the remaining bars having crooks at their free ends, the crooks lying at progressively increasing angles to the bodies of the bars from the middle to the sides of the system, each of said bars formed with a type socket at the tip of the crook, and a separate type socket at the junction of the crook with the body of the bar.

8. In a typewriting machine, the combination with a system of type bars and a system of keys, of intervening bell cranks and key-bearing levers, the latter directly engaging said bell cranks at a relatively greater leverage, and links extending from said key levers to said bell cranks and attached to the latter at such points as to transmit motion from the key levers to the bell cranks at a relatively small leverage; said links having lost-motion connections to the type-bars so as to be ineffective during the initial portions of the type-bar strokes.

9. In a typewriting machine, the combination with a system of type bars and a system of keys, or levers operated by the keys, sub-levers between said levers and the type bars, each lever directly engaging its sub-lever at a relatively greater leverage, and links extending from the key-levers to the sub-levers to act on the latter at a relatively small leverage, said links having lost-motion connections so as to be ineffective during the initial portions of the type bar strokes.

10. In a typewriting machine, the combination with a system of type bars and a system of keys, of levers operated by the keys, sub-levers between said levers and the type bars, each lever directly engaging its sub-lever, and links extending from the key-levers to the sub-levers; said links engaging said sub-levers at points between the fulcrums of the latter and said bearings, and having lost-motion connections such that they are ineffective at the initial portions of the type bar strokes.

11. In a front strike writing machine, the combination with a system of rearwardly striking type bars, of levers extending rearwardly beneath the type bars and bearing keys at their forward ends, bell cranks mounted above the key levers, arms rigid with and extending up from said key levers and directly engaging said bell-cranks, links extending up from said key levers and having lost-motion connections to said bell-cranks between the fulcrums of the latter and said bearings, and means connecting said bell-cranks to said type bars.

12. In a typewriting machine, the combination with type bars of key-levers bell cranks connected to the key levers, links extending from the bell cranks to the type bars, and springs also extending from the bell-cranks and connected to the type bars nearer the pivots of the latter than said links.

13. In a front strike writing machine, the combination with a system of rearwardly striking type bars, of key-bearing levers of the second order extending rearwardly beneath the type-bars, bell-cranks mounted above the key-levers, arms rigid with said key-levers and extending to said bell-cranks and having bearings on the latter forwardly of their fulcrums, links extending up from said key-levers in rear of said arms and having lost-motion connections to said cranks between said bearings and fulcrums, and links extending rearwardly from said bell-cranks to the type bars.

14. In a typewriting machine, the combination with rearwardly striking type bars, of key-bearing levers of the second order beneath said type bars, and bell-cranks having upstanding arms connected to said type-bars; said key-levers having arms rigid therewith and extending upwardly and engaging said forwardly projecting arms of said bell-cranks.

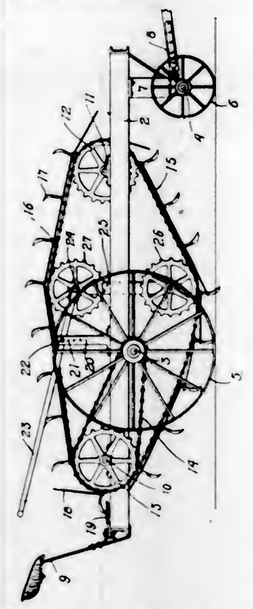
15. In a typewriting machine, the combination with rearwardly striking type bars having pendent short arms, of links extending forwardly from said short arms, bell-cranks having upwardly extending arms connected to said links, and key-bearing levers of the second order having upwardly extending rigid arms which engage forwardly extending arms of said bell-cranks.

853,267. WEED-EXTERMINATOR. MATHIES SCHMITT, Austin, Minn. Filed Oct. 6, 1905. Serial No. 281,638.

Claim.—1. The combination, with a frame, having carrying wheels and a draft connection, of a belt supported in said frame, a series of knives arranged in transverse rows on said belt and having cutting edges adapted to dig into the soil as the machine is drawn along, said knives traveling backward at a slower speed because of their engagement with the soil than the forward travel of the machine, and means for regulating the speed of travel of said belt, substantially as described.

2. The combination, with a frame, having carrying wheels and a draft connection, of a belt supported by said frame, a series of knives arranged in transverse rows at intervals on said belt and having cutting edges adapted to dig into the soil as the machine is drawn over the field, said knives moving backward, through their engagement with the soil, at a slower speed than the forward travel of the machine, and a friction clutch device for regulating the speed of said belt, substantially as described.

3. The combination with a frame having carrying wheels, and a draft connection, of a belt supported in said frame, a series of knives arranged in transverse rows on said belt, and having cutting edges adapted to dig into the soil as the machine is drawn along, said knives traveling backward at a slower speed because of their engagement with the soil than the forward travel of the machine, and one row of knives being on the point of leaving the soil as the row ahead enters the same, and there being only one row in working engagement with the soil at one time, whereby dragging of the cut and uprooted grass is prevented, substantially as described.



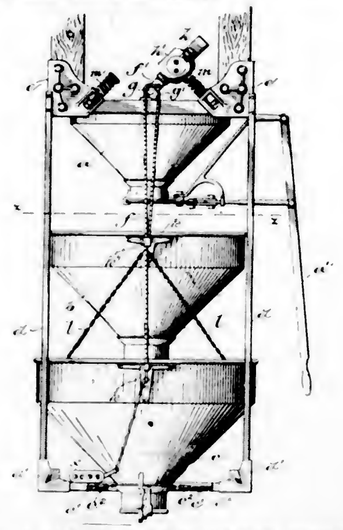
4. The combination with a frame having carrying wheels, and a draft connection, of a belt supported by said frame, a series of knives arranged in transverse rows at intervals on said belt and having cutting edges adapted to dig into the soil as the machine is drawn over the field, standards mounted on said frame, bars 23 pivoted at a point intermediate to their ends on said standards, a shaft 24 carried by said bars, a frame mounted on said shaft, and sprocket wheels carried by said frame and adapted to engage the upper and lower sections of said belt for the purpose specified.

5. The combination, with a frame having carrying wheels, and a draft connection, of a belt supported in said frame, a series of knives arranged in transverse rows on said belt and having cutting edges adapted to dig into the soil as the machine is drawn along, standards mounted on said frame, bars pivoted on said standards and vertically adjustable thereon, and a frame carried by said bars and having means adapted to engage said belt for raising the upper section thereof or forcing the teeth of the lower section into the soil, substantially as described.

6. The combination, with a frame having carrying wheels and a draft connection, of a belt supported in said frame having a series of transverse slats, and knives mounted thereon, said slats being arranged parallel with one another at intervals, and arms 18 secured on said slats and having free ends adapted to bear on the contiguous slats, substantially as described.

7. The combination, with a frame having carrying wheels and a draft connection, of a belt carried by said frame, a series of knives carried by said belt and having cutting edges adapted to dig into the soil as the machine is drawn along, said knives traveling slowly backward as their points contact with the soil, and means for retarding the backward movement of said knives the travel of said knives toward the rear of the machine being slower than their forward travel with the machine whereby the forward movement of the machine will have the effect of forcing the knives into the soil to cut and dig out the grass roots, substantially as described.

853,268. GRAIN-METER. ANDREW SONANDER, Springfield, Ohio, assignor to The American Grain Meter Company, Springfield, Ohio, a Corporation of Ohio. Filed June 7, 1906. Serial No. 320,511.



Claim.—1. In a machine of the character described, the combination of an uncased stationary frame, a rock shaft supported on said frame, a plurality of movable hoppers, flexible connecting devices located on opposite ends of said rock shaft, each flexible connecting device extending from one hopper over said shaft to one of the other hoppers, gates for said movable hoppers, and means for automatically operating said gates during the movements of said hoppers.

2. In a machine of the character described, the combination of an open stationary frame, a plurality of hoppers, the lowermost being flexibly connected at its lower part to said frame, a rock shaft supported on said frame and extending across the same, a single flexible connecting device extending from one of said hoppers over said rock shaft and connected at its opposite end to one of the other hoppers, there being a flexible connecting device at each side of the machine, substantially as specified.

3. In a machine of the character described, an uncased stationary frame, a rock shaft supported by said frame, a cam at each end of the shaft having enlarged faces thereon, a plurality of movable hoppers, and a single flexible connecting device extending over said cam connected at one end to the lowermost hopper and at the other end to one of the other hoppers, for the purpose specified.

4. The combination with a rock shaft having an offset at the end thereof, a bearing seat in said offset on a line with the center of said shaft, and a knife-edged bearing fitting to said bearing seat, a cam connected to said rock shaft, and a flexible connection from said cam to movable hoppers, whereby the weight of said hoppers is supported directly on said knife-edged bearings and the movement thereof caused to oscillate said shaft, substantially as specified.

5. The combination with a rock shaft having a weighted arm, an offset bearing on said rock shaft, a knife-edged bearing fitting in said bearing on a line with the center of said shaft, and a connection from the opposite sides of said shaft to two movable hoppers, one arranged above

the other, whereby the raising and lowering of said hoppers will oscillate said shaft, and the weight of said hoppers be supported on said knife-edged bearings, substantially as specified.

6. The combination with a rock shaft having a weighted arm thereon, a cam at each end of said rock shaft, and two movable hoppers arranged below said rock shaft and supported from said cams by a flexible connection, one end of which is connected to one of said hoppers and the other end to the other of said hoppers, whereby said hoppers are suspended flexibly from said shaft, substantially as and for the purpose specified.

7. In a machine of the character described, a rock shaft having a weighted arm, said rock shaft being offset at each end and provided with bearing seats in said offset portions on a line with the center of said shaft, and knife-edged bearings on which said bearing seat is adapted to rest, cams on each end of said shaft beyond said offset bearings, and flexible connections on said cams, the opposite ends of which are attached to movable hoppers, one arranged above the other, substantially as and for the purpose specified.

8. The combination with a rock shaft of an upper and lower hopper, a flexible connection extending from one of said hoppers over said shaft and down to the other hopper, and a guide on said upper hopper through which the flexible connection extends, substantially as specified.

9. The combination with a stationary hopper, of a plurality of movable hoppers comprising a measuring hopper, and an intermediate power-developing hopper located above the same, said intermediate hopper being of less capacity than the lower measuring hopper, a rock shaft having cam faces thereon, and a flexible connection extending from one of said movable hoppers over said cam faces to the other movable hopper, and a guide for said flexible connection, substantially as specified.

10. In a measuring machine, the combination with suspended upper and lower hoppers, an outer uncased frame in which said hoppers are suspended, and a yielding attachment from one of said hoppers to said frame to prevent vibration of said hopper, substantially as specified.

11. The combination with an open stationary frame and a rock shaft, having cams, of movable hoppers, one arranged above the other, having extending arms, a flexible connection, one end of which is attached to the arms of one of said hoppers extending over said cams and connected to the arm of the other hopper, the arms on the lower hopper being provided with guides to guide said flexible connection, substantially as specified.

12. In a device as described, the combination of a hopper with a door closure device for said hopper, means for operating said door closure device, and a member having a cam engaged by said operating means, said cam being formed with guide-ways, said guide-ways being arranged so that the door operating means is out of frictional engagement intermediate its limits of movement.

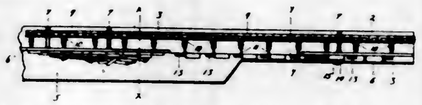
13. In a device as described, a hopper, a closure device therefor, a plurality of projections on said closure, a cam having vertical and lateral guide-ways, and projections extending from said closure device, said projections extending within said guide-ways for moving the closure device, substantially as specified.

14. In a device as described, a hopper, a closure device, a member having a cam, means for giving the said member a limited movement independent of the closure device, a projection extending from said closure device and operated by said cam for the purpose of operating the closure device, substantially as specified.

853,269. CONVEYER. CLARENCE F. STEWART, Vassar, Mich. Filed Aug. 31, 1906. Serial No. 332,880.

Claim.—1. A conveyer comprising a suitable trough shaped support to receive the work and having a groove formed on the bottom thereof into which individual pieces of work fall, a traveling means and means carried thereby such last named means projecting partially across the trough and then downward into the groove to engage the work therein and move it toward the discharge end of the conveyer.

2. A dowel pin conveyer comprising a suitable trough-shaped support adapted to receive the work, a traveling means moving over the support and work-engaging members carried by the traveling means to engage and move the work, each two adjacent members located apart from each other a sufficient distance to receive only a single pin therebetween.



3. In a pin conveyer, the combination of a frame consisting of an inclined portion and a horizontal portion, an inclined wall projecting from the inclined portion of the frame, a second wall located opposite to the inclined wall and co-operating therewith to form a trough for receiving the work, and a conveyer engaging single pieces of the work in the trough and moving them up the inclined portion and along the horizontal portion of the way.

4. A conveyer comprising a suitable base, the upper face of which is cut away, and is also provided with a groove, opposing walls forming a trough in communication with the groove to receive the work, and means supported upon the cut-away portion of the base and projecting beneath one of the walls for engaging and moving the work.

5. A conveyer comprising an inclined trough having a groove formed therein, traveling means located outside the trough and means carried by the traveling means and projecting into the groove in the trough for engaging the material therein.

6. A conveyer comprising an inclined trough having a groove formed therein, traveling means located outside the trough and means carried by the traveling means and projecting into the groove through a slot near the bottom of the trough for engaging the material therein.

7. A conveyer comprising an inclined receiving means having a groove formed therein and a traveling means adapted to extend into the groove to engage the material therein.

8. A conveyer comprising a suitable means for receiving and supporting material to be conveyed, a traveling element, and fingers carried by the traveling element and projecting into the receiving means, said fingers being longitudinally and rotatably adjustable to project more or less into the receiving means.

9. A conveyer comprising a suitable means for receiving and supporting material to be conveyed, a traveling element, and fingers projecting into the receiving means, said fingers comprising a stock secured to the traveling element and a reduced blade extending at an angle to the stock.

10. A conveyer comprising a suitable means for receiving and supporting material to be conveyed, a traveling element, and fingers projecting into the receiving means, said fingers comprising a stock connected with the traveling element and a reduced inclined blade adapted to engage the material.

11. A conveyer comprising a suitable means for receiving and supporting material to be conveyed, a traveling element, and fingers projecting into the receiving means, laterally extending sleeves carried by the traveling element, a portion of the fingers received in the sleeves and means for removably and adjustably connecting the fingers and sleeves.

12. A conveyer comprising a suitable base having a groove formed therein and provided with an aperture, of a traveling element located apart from the conveyer, means carried by the element and projecting into the conveyer and a guard located in advance of the opening to wipe off superfluous material riding upon the aforesaid means.

13. A conveyer comprising a grooved support adapted to receive dowel pins, an endless chain traveling parallel with the support, stocks carried by the chain and spaced apart from each other, inclined blades on the free ends of the stocks, the heels of the blades adapted to lie in the grooves, the grooved support provided with a discharge opening in alinement with the groove, through which opening the pins are discharged one at a time and means for displacing superposed pins.

14. A conveyer comprising a grooved support adapted to receive dowel pins, an endless chain traveling parallel with the support, stocks carried by the chain and spaced apart from each other, inclined blades adapted to lie in the grooves, the grooved support provided with a discharge opening in alinement with the groove, through which opening the pins are discharged one at a time, the outer wall of the groove being reduced rearwardly of the opening to permit superposed pins to automatically roll off before arriving at the opening.

15. A conveyer comprising a grooved support adapted to receive dowel pins, an endless chain traveling parallel with the support, stocks carried by the chain and spaced apart from each other, inclined blades on the free ends of the stocks, the heels of the blades adapted to lie in the grooves, the grooved support provided with a discharge opening in alinement with the groove, through which opening the pins are discharged one at a time, the outer wall of the groove being reduced rearwardly of the opening to permit superposed pins automatically to roll off before arriving at the opening, and an inclined sweep located just behind the opening to insure the displacement of the superposed pins from the blades and groove, before reaching the opening.

16. An inclined conveyer for feeding dowel pins singly and in succession, comprising a trough for receiving a bulk of pins, the trough having a longitudinally extending groove therein of a width to receive a single pin and traveling members engaging the rear ends of the pins.

17. An inclined conveyer for feeding dowel pins singly and in succession, comprising a trough for receiving a bulk of pins and traveling fingers projecting into the trough and taking against the rear ends of the pins, the fingers being inclined to prevent the pins from riding thereon.

18. A conveyer for feeding dowel pins singly and successively comprising a suitable support having an opening therein through which the pins drop, a conveyer for moving the pins toward the opening and a wiper located in advance of the opening for removing superfluous pins.

19. A conveyer for feeding dowel pins singly and successively comprising a suitable support having an opening therein through which the pins drop, a conveyer for moving the pins toward the opening and means for removing superfluous pins.

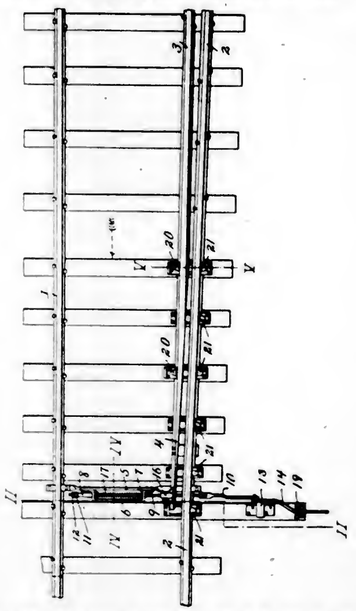
20. A conveyer for feeding dowel pins singly and successively, comprising a grooved support, in which the pins are guided, the support provided with an opening in alinement with the groove, through which opening the pins drop, traveling fingers taking against the rear ends of the pins for moving them along the groove, one wall of the groove being reduced in advance of the opening to permit superfluous pins to roll off.

853,270. DERAILING-SWITCH. HENRY C. STIFF, Johnstown, Pa., assignor to The Lorain Steel Company, a Corporation of Pennsylvania. Filed Aug. 6, 1906. Serial No. 329,274.

Claim.—1. In a derailing switch, a continuous rail, a second rail, a portion of its length being parallel to the continuous rail and a portion at an angle thereto, a third rail a portion of its length being parallel to the first mentioned rail, and a switch point secured thereto to close the gap between the second and third rail when manually held in the closed position.

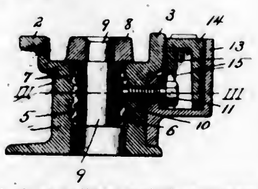
2. In a derailing switch, a continuous rail, a second rail, a portion of its length being parallel to the continuous rail, and a portion at an angle thereto, a third rail a portion of its length being parallel to the first mentioned rail and a switch point secured thereto, to close the gap between the second and third rail when manually held in the closed position, and mechanical means to open said switch when the switch lever is released.

3. In a derailing switch, a continuous rail, a second rail having a parallel and an angular portion with relation to the first mentioned rail, and a movable switch point connected to a mechanically operated rod to hold said switch open, in combination with a switch lever and a slotted link connection between said rod and switch lever.



4. A derailing switch having three rails, one of which is movable, and normally held in derailing position, the movable rail being connected to a rod to hold said switch open, in combination with a switch lever and a slotted link connection between said rod and switch lever.

853,271. SWITCH STRUCTURE. HENRY C. STIFF, Johnstown, Pa., assignor to The Lorain Steel Company, a Corporation of Pennsylvania. Filed Aug. 6, 1906. Serial No. 329,275.



Claim.—1. In a railway switch, a tongue having a depending pintle, a plate seated in a recess in the pintle bearing, and a screw to hold the plate against the pintle, for the purpose specified.

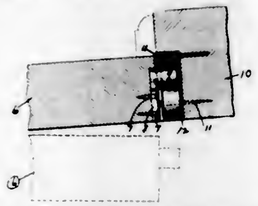
2. In a railway switch, a tongue having a depending pintle, a bushing surrounding and forming the bearing for said pintle, a plate seated in an orifice in the bushing, and means to hold the plate against the pintle.

3. In a railway switch, a tongue having a depending pintle, a bushing surrounding and forming the bearing for said pintle, a plate seated in an orifice in the bushing, and a screw to hold the plate against said pintle.

4. In a railway switch, a tongue having a depending pintle, a bushing secured in the main structure surrounding and forming the bearing for said pintle, a plate seated in an orifice in the bushing, and means to hold the plate against the pintle.

5. In a railway switch, a tongue having a depending pintle, a bushing secured in the main structure by means of spelter surrounding and forming the bearing for said pintle, a plate seated in an orifice in the bushing, and a screw to hold the plate against said pintle.

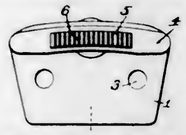
853,272. DOOR-CATCH. THOMAS W. STODDEN, Hancock, Mich. Filed Dec. 13, 1906. Serial No. 347,692.



Claim.—1. In a door catch, a metal frame for connection with a door frame, a metal spring arranged in said frame and having portions of its opposite sides curved inwardly, means for holding the spring in position, and a plate for connection with the edge of a door and having a portion for engagement with the curved portions of the spring.

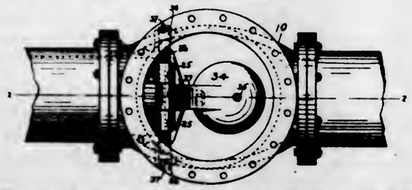
2. In a door catch, a metal frame adapted to be secured to a door frame and having one end and side open, a U-shaped metal spring arranged in said frame and having portions of its opposite sides curved inwardly, a U-shaped face plate secured to the open side of the frame for holding the spring in place, and a plate adapted to be secured to the edge of the door and having a stud adapted to enter the open end of the metal frame and pass between and frictionally engage the curved portions of the spring.

853,273. LATHE-DRIVER. DANIEL H. TEAS, New Haven, Conn., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Oct. 8, 1906. Serial No. 337,874.



Claim.—A lathe driver comprising a plate adapted for attachment to a face plate and provided with an outwardly extending arm having a port through it and having a socket extending from the port to the outer end of the arm, a block fitted to slide in said socket and having a serrated outer face, a screw carried by the arm to the rear of the port and having its forward end engaging the rear of the serrated block, and an interiorly threaded bushing engaging the screw and fitting a rearwardly open socket in the arm to the rear of the port, combined substantially as set forth.

853,274. VALVE. JAMES A. TILDEN, Hyde Park, Mass. Filed Dec. 6, 1905. Serial No. 290,647.



Claim.—1. A valve comprising a casing, a separable seat portion provided with a passage opening into the casing, and a member extending through the casing into engagement with the seat portion and being adapted to retain it in place, said member having a passage communicating with that in the seat portion.

2. A valve comprising a casing, a separable portion provided with a seat-surface in which is an opening, and a tubular member extending through the casing into the separable portion and communicating with the opening in the seat-surface.

3. In a valve, the combination with a casing, of a separable sleeve therein provided with a seat-surface in which is a depression, said sleeve also having a passage leading from the depression to the outside of the sleeve and being threaded at the latter point, and a tube extending through the casing and being threaded to coöperate with the sleeve-passage.

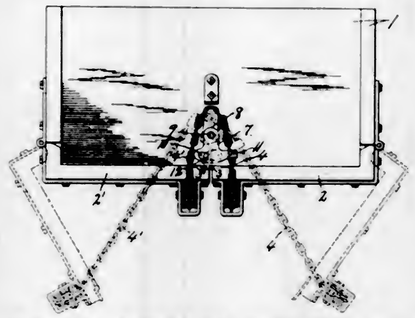
4. A valve comprising a casing, a separable seat portion provided with a depression, and means for retaining the seat portion within the casing, said retaining means being provided with a passage communicating with the depression.

5. A valve comprising a casing, a separable seat portion provided with a depression, a gate portion mounted to move upon the seat portion, and means for retaining the seat portion within the casing, said retaining means being provided with a passage communicating with the depression.

6. A valve comprising a casing having a differential seat portion, a gate portion coöperating with the seat and being provided with a chamber, said chamber having an opening, and a closure for the opening.

7. A valve comprising a casing provided with an opening, seat and gate portions separable from the casing, a pivot connecting the seat and gate and terminating within the casing in alinement with its opening, and a removable closure for the opening.

853,275. DUMP-WAGON. WALTER A. UNDERHILL, Auburn, N. Y. Filed Oct. 11, 1906. Serial No. 338,506.



Claim.—1. An adjusting and equalizing mechanism for the laterally swinging bottom doors of a dump wagon comprising opposite chains passed under the doors and winding mechanism therefor, and two oscillatory elements pivoted between the rear ends of the chains, one of said elements being attached to both chains and the other element being attached to one chain only.

2. In combination with the laterally swinging bottom doors of a dump wagon and their operating chains extending under the meeting edges of the doors, a rock member pivoted between the rear ends of the chains and engaged with one of the chains below its pivot, and a second rocking member pivoted between the chains and engaging both chains above its pivot.

3. In combination with the laterally swinging bottom doors of a dump wagon and their operating chains passing under the meeting edges of the doors, a rocking member pivoted between the chains and provided with a laterally extending arm engaging one of the chains below the pivot, a second rock arm pivoted between the chains and engaging both chains above its pivot.

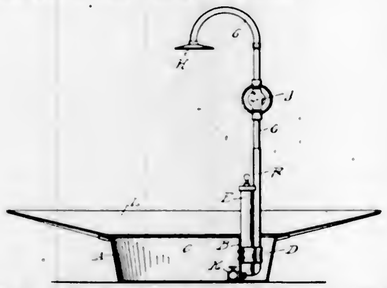
4. In combination with the swing bottom doors of a dump wagon and chains passing under the doors, means for winding the chains, a rocking member pivoted between the rear ends of the chains and provided with a laterally extending arm engaging one of the chains at one side of the pivot whereby when the chains are spread during the opening of the door, said member is rocked laterally by the chain engaged therewith, and means engaged with both chains and brought into action by the rocking movement of said rocking member to hold the latter in its adjusted position while the doors are opened.

5. In a dump wagon the combination of a box having laterally swinging bottom doors, a winding drum and chains connected thereto and passed under the meeting edges of the doors, a rocking member pivoted to the box and provided with an opening at one side of its pivot through which one of the chains is passed, and a second rocking member pivoted on the first named rocking member and to which both chains are connected.

6. In a dump wagon the combination of a box having laterally swinging bottom doors and cables passed under the meeting edges of the doors, a winding drum connected to the front end of the cables, a rocking member pivoted to the rear end of the box and provided with a laterally projecting arm engaged by one of the cables, a second rocking member pivoted to the first named rocking member and connected to the rear ends of both cables, and a limiting stop for the first named rocking member.

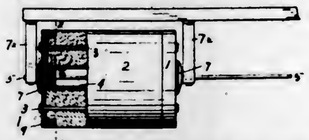
7. In a dump wagon, the combination of a box having laterally swinging bottom doors, a drum mounted on the front end of the box, a rocking member pivoted to the rear end of the box, a second rocking member mounted on the first named rocking member, and provided with a chain engaging face above the pivot of said first named rocking member, cables passed under the meeting edges of the doors and having their front ends engaging the upper face of the second rocking member, one of the chains being engaged with the first named rocking member at one side of its pivot.

853,276. BATH-TUB. ARTHUR H. VIEL, Fenton, Mich. Filed Apr. 9, 1906. Serial No. 310,817.



Claim.—In a portable shower bath, the combination with a tub, of a partition forming two compartments therein and having an opening connecting therebetween, a valve in said opening, a pump mounted in one of said compartments, and a shower nozzle connected to said pump.

853,277. ROLLER. HARRISON A. VOISARD, Sidney, Ohio. Filed Dec. 4, 1906. Serial No. 346,252.



Claim.—1. In a lawn or other roller, the combination of the simple hollow cement body, metallic heads having peripheral flanges embedded in the ends of the cement body, the exterior surface of said flanges being co-incident with a like surface of the cement, with a tube connecting the heads centrally and fitted to bosses on the interior of said heads.

2. In a lawn or other roller, the combination of the simple hollow cement body, metallic heads having peripheral flanges embedded in the ends of the cement body, the exterior surface of said flanges being co-incident with a like surface of the cement, with a tube connecting the heads centrally and fitted to bosses on the interior of said heads, and means to positively fix the tube and bosses together.

3. In a lawn or other roller, the combination of the simple hollow cement body, metallic heads having peripheral flanges embedded in the ends of the cement body, the exterior surface of said flanges being co-incident with a like surface of the cement, with a tube connecting the heads centrally and fitted to bosses on the interior of said heads, and means to positively fix the tube and bosses together, said tube and bosses being angular in cross section.

4. In a lawn or other roller, the combination of the simple hollow cement body, metallic heads having peripheral flanges embedded in the ends of the cement body, the exterior surface of said flanges being co-incident with a like surface of the cement, with a tube connecting the heads centrally and fitted to bosses on the interior of said heads, said heads having interior projections 9.

5. In a lawn or other roller the combination of a hollow cement body, heads having each a hollow central projection into the interior of the body, an operating shaft, and shaft-bearing-bushings loosely held in said projections.

6. In a lawn or other roller the combination of a hollow cement body, heads having each a central hollow projection into the interior of the body, an operating shaft, shaft-bearing-bushings in said projections, and frame brackets loosely holding said bushings in the projections.

7. In a lawn or other roller the combination of a hollow cement body, heads embedded in the ends of the roller, with a tube connecting the heads centrally and fitted to hollow bosses on said heads, and interior projections on the heads and seated in the body cement.

853,278. GAME APPARATUS. WILLIAM E. VINING, West Haven, Conn. Filed May 16, 1906. Serial No. 317,128.

Claim.—1. A game apparatus comprising a tray containing a series of balls, means for successively discharging said balls from the tray, an inclined track to receive the balls, a dial and an indicator therefor, and means actuated by the balls for operating the indicator.

2. A game apparatus comprising a tray containing a series of balls, an inclined track, means for successively discharging said balls from the tray onto the track, an indicator and a dial therefor, and a tilting cup at the end of the track to receive the balls, and operatively connected to the indicator to actuate the same.

3. A game apparatus comprising an alley, a tray containing a series of balls and having a gate, means actuated by a ball on the alley for opening the gate to successively release the balls in the tray, an inclined track on which said balls roll when they leave the tray, a series of pockets beyond the end of the track to receive the ball and deflectors in front of the pockets.

4. A game apparatus comprising a tray containing a series of balls, a gate for said tray, a catch for holding the gate closed, an alley, a series of tilting paddles at the end of the alley and operatively connected to the catch for releasing the same, a track to receive the balls when they are discharged from the tray, a series of pockets beyond the end of the track, and deflectors in front of the pockets.

5. A game apparatus comprising a tray containing a series of balls, an inclined track, means for successively discharging the balls from the tray onto the track, an indicator and a dial therefor, a tilting cup at the end of the track to receive the balls and operatively connected to the indicator to actuate the same, a second track to receive

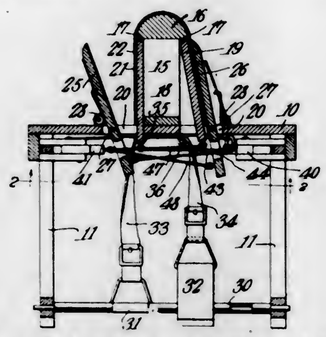
the balls from the cup, a series of pockets beyond the end of said track, and deflectors in front of the pockets.



6. A game apparatus comprising a tray containing a series of balls, an inclined track having a loop, means for successively discharging said balls from the tray onto the track, a series of pockets beyond the end of the track, and deflectors in front of said pockets.

7. In a game apparatus, a casing, and a folding alley hinged to said casing and extensible thereinto.

853,279. TOBACCO-BOOKING MACHINE. WILLIAM WADSWORTH, Wichita, Kans. Filed Mar. 1, 1907. Serial No. 360,019.



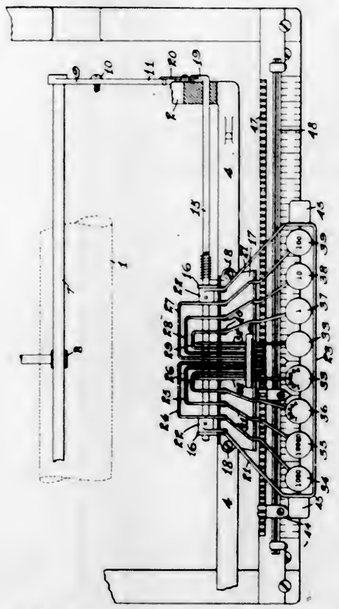
Claim.—1. In a tobacco booking machine, a standard having recessed sides, the top of the standards being rounded to form a leaf smoothing arch, clamping jaws arranged in the recesses and having their clamping faces forming continuations of the smoothing surface, auxiliary jaws coacting with said clamping jaws, and means for actuating the jaws.

2. In a tobacco booking machine, a standard having recessed sides and a rounded top forming a smoothing arch, clamping jaws disposed within the recesses and having their clamping surfaces forming continuations of the smoothing arch, a metal lining, and an absorbent pad covering the smoothing surface, and auxiliary jaws coacting with the clamping jaws in securing the leaves in place.

3. In a tobacco booking machine, a smoothing arch, a pair of pivoted clamping jaws at each side of the arch, pedal actuated levers arranged below the arch, and means for connecting one pair of jaws to one lever, and a second pair of jaws to the opposite lever.

4. In a tobacco booking machine, a frame including a table having openings, a standard supported by the table and having its upper portion curved to form a smoothing arch, the opposite sides of such standard being recessed, clamping jaws arranged in the recesses, a metallic cover extending around the arch and secured to the clamping jaws to form a hinge therefor, an absorbent pad covering the metal, a pair of pivoted clamping jaws, the lower end of which extend through the openings in the table, springs tending to move the jaws to clamping position, a pair of levers pivoted beneath the table, one pair being connected to the lower portion of one jaw, and the opposite lever to the lower portion of the opposite jaw, a pair of jaw actuating levers, and flexible connections between the pedals and the levers.

853,280. TYPE-WRITING MACHINE. HERMAN L. WAGNER, Mount Vernon, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed June 27, 1906. Serial No. 323,588.



Claim.—1. In a tabulating mechanism for type-writing machines, the combination of a series of bails of graduated sizes and having a common pivot rod, and each comprising a cross-bar and arms extending forwardly therefrom, said bails nested together so that at one side of the nest, the bail arms lie side by side and form denomination stops; and denomination keys connected to the free forward ends of the bail arms on the other side of the nest.

2. In a tabulating mechanism for type-writing machines, the combination of a series of bails of graduated sizes and having a common pivot rod, and each comprising a cross-bar and arms extending forwardly therefrom, said bails nested together so that at one side of the nest, the bail arms lie side by side and form denomination stops; and denomination keys connected to the free forward ends of the bail arms on the other side of the nest, the last-mentioned arms being divergent, and the system of keys being materially wider than the system of bails.

3. In a tabulating mechanism for type-writing machines, the combination of two sets of bails, each bail comprising a cross-bar and arms extending forwardly therefrom, said sets placed side by side and the bails in each set being of graduated sizes, and all of the bails having a common axis of motion; the bails in each set being nested together so that at the adjoining sides of the nest, the bail arms lie side by side and all parallel, forming denomination stops; the remaining arms diverging forwardly upon both sides of the denomination stops and bearing denomination keys at their forward ends.

4. In a tabulating mechanism for type-writing machines, the combination of two sets of bails, said sets placed side by side and the bails in each set being of graduated sizes, and all of the bails having a common pivotal axis of motion; the bails in each set being nested together so that at the adjoining sides of the nests the bail arms lie side by side and all parallel, forming denomination stops; the remaining arms diverging upon both sides of the denomination stops and bearing denomination keys at their forward ends, and additional denomination stops in the form of single-arms within the innermost bails and mounted upon said pivot or axis, and having keys at their forward ends between the first-mentioned sets of keys.

5. In a tabulating mechanism for type-writing machines, the combination of two sets of bails, said sets arranged side by side, and all the bails having a common axis or pivot rod; the bails in both sets being formed with stops, and said stops being arranged at letter-space intervals and forming denomination stops; keys mounted upon said bails; and additional denomination stops in the form of single arms having keys at their forward ends; all of said keys forming a single row, and all of said stops forming a single system.

6. In a typewriting machine, the combination with a power-driven carriage, of a set of denomination keys mounted upon the front of said carriage and movable independently of one another, denomination stops connected to said keys, a bar extending along the series of keys and close thereto, so as to be engageable directly by the same finger that depresses any key, carriage-releasing mechanism operated by said bar, and a release key provided upon said bar at the end of said row of keys.

7. In a tabulating mechanism for type-writing machines, the combination of a power-driven carriage, a carriage-releasing rock-shaft thereon, a system of independently operable denomination stops pivoted upon said rock-shaft and extending forwardly therefrom, keys rigidly connected each with its associated denomination stop and mounted directly in front of the stops, and a bail fixed upon said rock-shaft and including a bar extending along said keys.

8. In a tabulating mechanism for type-writing machines, the combination of two sets of bails, said sets placed side by side and the bails in each set being of graduated sizes, and all of the bails having a common pivotal axis of motion: the bails in each set being nested together so that at the adjoining sides of the nests the bail arms lie side by side and all parallel, forming denomination stops; the remaining arms diverging upon both sides of the denomination stops and bearing denomination keys at their forward ends; additional denomination stops in the form of single arms within the innermost bails in the nests and mounted upon said pivot or axis, and having keys at their forward ends between the first-mentioned sets of keys; guides for the rear portions of the bail arms, and guides for the forward portions of all the bail arms.

9. In a tabulating mechanism for type-writing machines, the combination of a power-driven carriage, a rack mounted upon the framework in front of the carriage, column stops adjustable along said rack, a set of independently operable denomination stops mounted at their rear ends upon the front of the carriage and overlying said rack or said column stops and provided with guiding means, and levers bearing keys at their forward ends and connected to said stops and fanning out at each side of the latter and extending forwardly of said rack; a carriage-releasing device being also provided upon said carriage in juxtaposition to each of said keys, to enable a single finger to engage simultaneously said releasing device and any of said keys.

10. In a tabulating mechanism for front strike writing machines, the combination of two sets of bails, said sets placed side by side and the bails in each set being of graduated sizes, and all of the bails having a common pivotal axis of motion; the bails in each set being nested together so that at the adjoining sides of the nests the bail arms lie side by side and all parallel, forming denomination stops; the remaining arms diverging upon both sides of the denomination stops and bearing denomination keys at their forward ends; additional denomination stops in the form of single arms within the innermost bails in the nests and mounted upon said pivot or axis, and having keys at their forward ends between the first-mentioned sets of keys; guides for the rear portions of the bail arms, and guides for the forward portions of all the bail arms, said guides being provided upon a bracket which is detachably secured to the front of a power-driven carriage; a carriage releasing mechanism including a rock shaft mounted upon said bracket and constituting said pivot or axis; said keys being in front of a platen upon said carriage and below the line of vision.

853,281. TYPE-WRITING MACHINE. HERMAN L. WAGNER, Mount Vernon, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Oct. 2, 1906. Serial No. 337,076.

Claim.—1. A tabulating mechanism including a system of bails nested together and hinged upon a common axis, each bail consisting of a cross-bar and a pair of arms extending from said cross-bar and both hinged upon said axis, one arm of each pair extending forwardly from said axis and forming a denomination stop, said stops ranging side by side at letter space intervals, a system of finger keys materially wider than the system of stops, and forwardly diverging extensions provided upon certain of said bail-arms and bearing said keys, the latter being arranged in regular denominational order.

2. A tabulating mechanism including a system of bails nested together and hinged upon a common axis, each bail consisting of a cross-bar and a pair of arms extending over said cross-bar and both hinged upon said axis, one arm of each pair extending forwardly from said axis and forming a denomination stop, said steps ranging side by side at

letter space intervals, a system of finger keys in a single row, and forwardly diverging extensions provided upon certain of said bail-arms and bearing said keys, the stops and keys being arranged in the same regular denominational order with the highest denomination at the left of the system.

3. A tabulating mechanism including a system of bails nested together and hinged upon a common axis, each consisting of a cross-bar and a pair of arms extending from said cross-bar and both hinged upon said axis, one arm of each pair extending forwardly from said axis and forming a denomination stop, said stops ranging side by side at letter space intervals, a system of finger keys, and forwardly diverging extensions provided upon certain of said bail-arms and bearing said keys, the latter being arranged in regular denominational order, said system of bails comprising two oppositely disposed sets, the largest in each set carrying a key upon its stop-arm, and the remaining bails in each set being nested within said largest bail.

4. A tabulating mechanism including a system of bails nested together and hinged upon a common axis, each bail consisting of a cross-bar and a pair of arms extending from said cross-bar and both hinged upon said axis, one arm of each pair extending forwardly from said axis and forming a denomination stop, said stops ranging side by side at letter space intervals, a system of finger keys, and forwardly directed extensions provided upon certain of said bail-arms and bearing said keys, said system of bails comprising two oppositely disposed sets, the largest bail in each set carrying a key upon its stop arm, the second bail in each set nested within said largest bail and also carrying a key upon its stop arm, and the remaining bails in each set being nested within said second bail and carrying keys upon their outer arms.

5. A tabulating mechanism including a system of bails nested together and hinged upon a common axis, each bail having a pair of arms both hinged upon said axis, the inner arm of each pair extending forwardly from said axis and provided with a denomination stop, said stops ranging side by side at letter space intervals, a system of finger keys, and forwardly directed extensions provided upon the bail-arms and bearing said keys, the latter being arranged in regular denominational order, said system of bails comprising two oppositely disposed sets, the largest bail in each set carrying a key upon its stop arm, the second bail in each set nested within said largest bail and also carrying a key upon its stop arm, the third bail in each set being nested within said second bail and also carrying a key-bearing extension diverging from its outer arm, and the fourth bail in each set being also nested within the second bail and crossing the third bail and also having a key-bearing extension diverging from its outer arm.

6. A tabulating mechanism including a system of bails nested together and hinged upon a common axis, each bail having a pair of arms both hinged upon said axis, one arm of each pair extending forwardly from said axis and formed at its forward end into a denomination stop, said stops ranging side by side at letter space intervals, a system of finger keys, and forwardly directed extensions provided upon the bail-arms and bearing said keys, the latter being arranged in regular denominational order; certain of said extensions branching from the tops of their stop-arms at points between the ends of the latter.

7. In a typewriting machine having a column stop and a power-driven carriage, the combination of a denomination-stop mechanism mounted on the carriage and including a set of independently movable keys and a set of stops controlled by said keys, a depressible cover plate mounted over said denomination-stop mechanism and having openings to receive the keys, and a carriage-releasing device operable by said cover plate.

8. In a typewriting machine having a column stop and a power-driven carriage, the combination of a denomination-stop mechanism mounted on the carriage and including a set of independently movable keys and a set of stops controlled by said keys, a depressible cover plate mounted over said denomination-stop mechanism, said plate open immediately in rear of its front edge to receive said keys, and a carriage-releasing device operable by said cover plate.

9. In a typewriting machine having a power-driven carriage, a tabulating mechanism including a system of independently operable denomination stops pivoted upon a rock shaft which is mounted upon said carriage, keys rigidly connected each with one of said denomination stops, a cover plate over said stops and fixed upon said rock shaft and depressible by the finger when operating any of said keys, and a carriage-releasing device operated by said rock shaft.

10. A tabulating mechanism including bails nested together and hinged upon a common axis, each bail consisting of a cross-bar and a pair of arms extending forwardly from said cross-bar and both hinged upon said axis, one arm of each pair extending forwardly from said axis and forming a denomination stop, said stops ranging side by side at letter space intervals, and keys mounted directly upon certain of said bail arms; the largest bail carrying a key upon its stop-arm, and the remaining bails nested within said largest bail.

11. A tabulating mechanism including bails nested together and hinged upon a common axis, each bail consisting of a cross-bar and a pair of arms extending forwardly from said cross-bar and both hinged upon said axis, one arm of each pair extending forwardly from said axis and forming a denomination stop, said stops ranging side by side at letter-space intervals, and keys mounted directly upon divergent extensions provided upon certain of said bail arms; the largest bail carrying a key upon its stop arm, the second bail nested within said largest bail and also carrying a key upon its stop arm, and the remaining bails being nested within the second bail.

12. In a typewriting machine, the combination with a power-driven carriage, of a set of denomination keys mounted upon the front of said carriage and movable independently of one another, denomination stops connected to said keys, a plate or bar extending along the series of keys and close thereto, so as to be operable by the same finger that depresses any key, carriage releasing mechanism operated by said bar, and a latch for locking said bar against accidental operation.

13. In a typewriting machine having a power-driven carriage, a tabulating mechanism comprising a system of independently operable denomination stops, keys connected each with one of said denomination stops, springs for returning said stops to normal position, a bar forming a rest against which said stops are pressed by said springs, a release bar or plate arranged in proximity to said keys to be operated by the finger when depressing said keys, and a latch formed upon said rest, the latter being movable to enable said latch to lock the release bar against depression.

14. In a typewriting machine having a column stop and a power-driven carriage, the combination of a denomination-stop mechanism mounted on the carriage and including a set of independently movable keys, and a set of stops controlled by said keys, a depressible cover plate mounted over said denomination-stop mechanism, said plate open immediately in rear of its front edge to receive said keys, a carriage-releasing device operable by said cover-plate, and a latch for locking said cover-plate against accidental depression.

15. A tabulating mechanism including a system of bails nested together and hinged upon a common axis, each bail having a pair of arms both hinged upon said axis, the inner arm of each pair extending forwardly from said axis and provided with a denomination stop, said stops ranging side by side at letter space intervals, a system of finger keys, and forwardly directed extensions provided upon the bail-arms and bearing said keys, the latter being arranged in regular denominational order, said system of bails comprising two oppositely disposed sets, the largest bail in each set carrying a key upon its stop arm, the second bail in each set nested within said largest bail and also carrying a key upon its stop arm, the third bail in each set being nested within said second bail and having a key-bearing extension diverging from its outer arm, and the fourth bail in each set being also nested within the second bail and crossing the third bail and also having a key-bearing extension diverging from its outer arm; and a fifth bail in each set; the above mentioned stop arms being located between the stop arms of said fifth bails, and each of the latter crossing the four first-mentioned bails in each set and having a forwardly extending and divergent key-bearing arm mounted at the outer side of said four bails.

16. A tabulating mechanism including bails, one arm of each bail having a stop thereon; said bails divided into two sets, certain of the bails in each set crossing one another, and keys mounted upon certain of the bail arms and having the same order as the stops.

17. A tabulating mechanism including a system of ten bails nested together and hinged upon a common axis, each bail having a pair of arms both hinged upon said axis, one arm of each pair extending forwardly from said axis and provided with a denomination stop, said stops ranging side by side at letter space intervals, a system of finger keys, and forwardly diverging extensions provided upon the bail-arms and bearing said keys, the latter being arranged in regular denominational order, said system of bails comprising two oppositely disposed sets, the largest bail in each set carrying a key upon its stop arm, the second bail in each set nested within said largest bail and also carrying a key upon its stop arm, and the remaining bails in each set crossing one another and having key-bearing extensions on their outer arms.

18. A tabulating mechanism including a set of bails of graduated sizes nested together and hinged upon a common axis, each bail consisting of a cross bar and a pair of arms connected thereby and both hinged upon said axis, the inner arm of each pair extending forwardly from said axis and provided with a denomination-stop, and key-bearing members diverging forwardly from the bails, certain of said key-bearing members being in the form of extensions provided upon certain of the stop-arms.

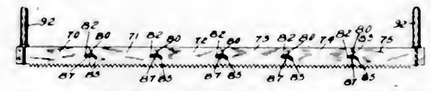
19. A tabulating mechanism including two set of bails hinged upon a common axis, each bail consisting of a cross bar and a pair of arms connected thereby and both hinged upon said axis, the bails in each set being of graduated sizes and nested together, the inner arm of each pair extending forwardly from said axis and provided with a denomination-stop, all of said stops being mounted at letter space intervals, the bails in one set being disposed oppositely from those in the other set, key-bearing members diverging forwardly to the left in one set of bails, and key-bearing members diverging forwardly to the right in the other set of bails, certain of said key-bearing members being in the form of extensions provided upon certain of the stop-arms.

20. A tabulating mechanism including a plurality of bails of graduated sizes nested together and hinged upon a common axis, each bail consisting of a cross bar and a pair of arms connected by said cross bar and both hinged upon said axis, the inner arm of each pair extending forwardly from said axis and provided with a denomination-stop, and key-bearing members upon all of said bails; certain of said key-bearing members being in the form of extensions provided upon certain of the stop-arms.

21. A tabulating mechanism including two sets of bails hinged upon a common axis, each bail consisting of a cross bar and a pair of arms connected by said cross bar and both hinged upon said axis, certain of the bails in each set being of graduated sizes and nested together, the inner arm of each pair extending forwardly from said axis and provided with a denomination-stop, all of said stops being mounted at letter space intervals, the bails in one set being disposed oppositely from those in the other set, and key-bearing extensions upon certain of the stop-arms.

22. A tabulating mechanism including two sets of bails hinged upon a common axis, each bail having a pair of arms both hinged upon said axis, certain of the bails in each set being of graduated sizes and nested together, the inner arm of each pair extending forwardly from said axis and provided with a denomination-stop, all of said stops being mounted at letter space intervals, the bails in one set being disposed oppositely from those in the other set, key-bearing extensions diverging forwardly to the left from certain of the stop-arms in one set of bails, and key-bearing extensions diverging forwardly to the right from certain of the stop-arms in the other set of bails; said extensions branching from the tops of the stop-arms at points between the ends of the latter.

853,282. SAW. THOMAS L. WALLACE, Indianapolis, Ind., assignor to E. C. Atkins & Company, Indianapolis, Ind., a Corporation of Indiana. Filed May 23, 1906. Serial No. 318,284.



Claim.—1. As an article of manufacture, a saw composed of a plurality of sections to be connected successively end to end, said sections having at adjacent ends interengaging portions, and an independent member carried by one of said sections and projectable endwise into the main body of the adjacent section.

2. As a new article of manufacture, a saw composed of a plurality of sections adapted to be connected successively end to end, said sections having at their adjacent ends a finger curved transversely of the saw carried by one member and a slot carried by the other member and adapted to receive said finger, and a pair of independent registering slots extending into the bodies of the sections and arranged at an angle to said finger, and a key mounted in one of said slots and adapted to be partially projected into the other of said slots.

3. As a new article of manufacture, a saw composed of a plurality of sections adapted to be connected successively end to end, said sections having at their adjacent ends a finger carried by one member and a slot formed in the other member and adapted to receive said finger, each of said slots also having registering slots extending into the main bodies of the sections and arranged at an angle to the aforesaid meshing finger and slot, and a key mounted in one of said slots and adapted to be partially projected endwise into the other of said slots.

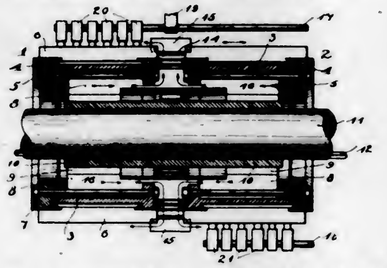
4. As an article of manufacture, a saw composed of a plurality of sections adapted to be connected successively end to end, said sections having at their adjacent ends a finger curved transversely of the saw carried by one member and a slot carried by the other member and adapted to receive said finger, and a pair of independent registering slots curved opposite to the curvature of said finger and extending into the adjacent edges of said sections, and a key mounted in one of said slots and adapted to be partially projected into the other of said slots.

5. As an article of manufacture, a saw composed of a plurality of sections to be connected successively end to end, said sections having at adjacent ends interengaging portions, one of said sections having an independent open-ended slot and a key slidable therein and having interengagement therewith to prevent displacement transversely of the saw plane, while the mating section has an independent open ended slot adapted to receive the projected end of the slidable key.

6. As an article of manufacture, a saw composed of a plurality of sections to be connected successively end to end, one of said sections having a projecting curved finger while the mating section has a registering open-ended slot, the edges of the finger and slot interengaging by means preventing displacement transversely of the saw-plane, and the two sections having independent registering open ended slots extending into the bodies of the sections and curved oppositely to the curvature of the projecting finger with a key slidably mounted in one of said slots for projection into the other and interengaging therewith by means preventing displacement transversely of the saw-plane.

7. As an article of manufacture, a saw composed of a plurality of sections to be connected successively end to end, one of said sections having a projecting finger while the mating section has a registering open-ended slot, the edges of the finger and slot interengaging by means preventing displacement transversely of the saw-plane, and the two sections having independent registering open ended slots extending into the bodies of the sections and arranged at an angle to said finger with a key slidably mounted in one of said slots for projection into the other and interengaging therewith by means preventing displacement transversely of the saw-plane.

853,283. COMMUTATOR. WILLIAM L. WATERS, Milwaukee, Wis., assignor to National Brake & Electric Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Mar. 10, 1904. Serial No. 197,490.

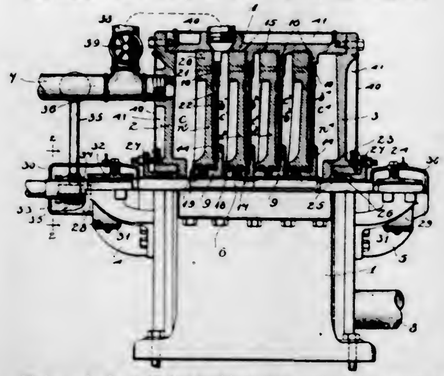


Claim.—1. A commutator consisting of two halves disposed side by side but separated from each other by an air space, plates electrically uniting opposite bars of the halves, said plates extending radially from the axis of the commutator halves and beyond the outer surface of the commutator bars, and longitudinal air passages extending entirely through said halves and communicating with the space between said halves and between the connecting plates, the fan-like action of said plates upon rotation of the commutator causing air to be drawn into the ends of said halves and directed outwardly between said plates and over the commutator surface.

2. A commutator consisting of like halves, each consisting of a supporting shell and a clamping ring, commutator bars secured between said shell and ring, said halves being disposed side by side but separated by an air space, spokes extending from said shells, means for uniting said shells, longitudinal air passages extending entirely through said halves between said spokes and communicating with the space between the halves, and thin radial conductor plates uniting opposite commutator bars and extending beyond the commutator surface.

3. A commutator consisting of like halves mounted side by side but separated from each other, commutator bars for each half, an integral shell for supporting each set of bars, thin plates of conductive material bridging the space between opposite bars and extending beyond the commutator surface, and longitudinal air passages through said shell communicating with the space between the bars.

853,284. ELASTIC-FLUID TURBINE. WILLIAM L. WATERS, Milwaukee, Wis., assignor to National Brake & Electric Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed July 18, 1904. Serial No. 216,927.



Claim.—1. In a steam turbine, the combination with an inclosing cylinder, of a shaft extending therethrough, spiders secured to said shaft, each spider consisting of a hub and a flange portion, a nozzle plate encircling each hub portion, said plates dividing said cylinder into a plurality of compartments into which said flange portions extend, a bucket wheel in each compartment secured to the corresponding flange, said bucket wheels being in the form of integral plane disks of sheet material, and buckets clamped symmetrically over the entire edge of said disks, said buckets being also formed from sheet material.

2. In a turbine, the combination with an inclosing cylinder, of a nozzle plate, a bucket wheel, buckets disposed about the periphery of said bucket wheel, and a guard ridge extending from said nozzle plate toward said bucket wheel, the clearance between said guard ridge and said bucket wheel being less than the clearance between said buckets and the nozzle plate.

3. In a steam turbine, the combination with an inclosing cylinder, of a shaft extending therethrough, nozzle plates dividing said cylinder into a plurality of compartments, bucket wheels in the form of plane disks of sheet material secured to said shaft and adapted to rotate therewith in said compartments, buckets for said bucket wheels, the blades of said buckets being symmetrical and their angles of entrance and exit being equal, arms extending from the blades of said buckets adapted to clamp over the edge of the bucket disks, and rivets passing through said arms and disks to secure said buckets in place.

4. In a steam turbine, the combination with an inclosing cylinder, of a shaft extending therethrough, nozzle plates dividing said cylinder into a plurality of compartments, spiders secured to said shaft, a bucket disk in the form of a plane disk of sheet material in each compartment secured to one of said spiders, bucket blades extending from and at right angles across and about the periphery of each bucket disk, said bucket blades being symmetrical and the angles of entrance and exit thereof being equal, two arms extending downwardly from each bucket blade adapted to saddle over the edge of the bucket disk, and rivets passing through said arms and disks, the bucket disks and buckets being entirely symmetrical.

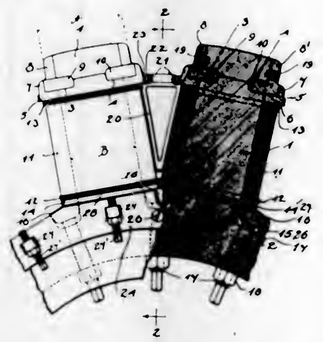
5. In a steam turbine, the combination with an inclosing cylinder, of a shaft extending therethrough, nozzle plates dividing said cylinder into a plurality of compartments, bucket wheels in the form of sheet metal plane disks secured to said shaft and adapted to rotate in said compartments, and semi-circular symmetrical buckets secured over the entire peripheral edge of said disks, the center of gravity of each disk lying in a radial plane.

6. In a steam turbine, the combination with an inclosing cylinder, of a shaft extending therethrough, annular pockets extending about the interior of said cylinder, nozzle plates secured at their periphery in said pockets, passageways through the rims of said nozzle plates, said nozzle plates dividing said cylinder into a plurality of compartments, similar bucket wheels, one in each compartment, said bucket wheels having a disk portion and a hub portion secured to said shaft, and buckets secured about the peripheral edge of each bucket wheel, the hub of each bucket wheel being encircled by the hub of the corresponding nozzle plate.

7. In a steam turbine, the combination with a cylindrical inclosing shell, of a shaft extending axially therethrough, nozzle plates arranged within said cylindrical shell to divide said shell into a plurality of compartments, passageways through the rims of said nozzle plates, bucket wheels secured to said shaft, buckets disposed about the periphery of said bucket wheels to travel by the outlets of said passageways, and annular shoulders extending from said cylindrical shell about one edge of the nozzle plates to support said nozzle plates, said shoulders also forming an inclosing wall about these peripheries of said buckets.

853,285. DYNAMO-ELECTRIC MACHINE. WILLIAM L. WATERS, Milwaukee, Wis., assignor to National Brake & Electric Company, Milwaukee, Wis., a Corporation of Wisconsin. Filed Sept. 5, 1905. Serial No. 277,121.

Claim.—1. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, separable abutments at the ends of the pole cores, said abutments being rigid after application to the pole cores, movable abutments at the bases of the pole cores, coils surrounding the cores between the rigid and movable abutments, and clamping mechanism supported from the frame for clamping the coils securely between the movable and rigid abutments.



2. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, separable abutment members adapted to be rigidly secured to the ends of the pole cores, movable clamping members applied at the bases of the cores, coils on the pole cores between the rigid and movable abutment members, and clamping screws extending through the frame for engagement with the movable abutment members, actuation of said screws serving to clamp the coils securely between the rigid and movable abutment members.

3. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and integral therewith, separable abutment members adapted to be rigidly secured to the ends of the pole cores, movable clamping members applied at the bases of the cores, coils on the pole cores between the rigid and movable abutment members, and clamping screws extending through the frame for engagement with the movable abutment members, actuation of said screws serving to clamp the coils securely between the rigid and movable abutment members.

4. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, lateral grooves at the end of the pole cores, flanged locking or abutment members adapted to engage at the pole core ends and within said grooves to form rigid abutments, a movable abutment or washer engaging at the bases of the pole cores, coils disposed between said rigid and movable abutment members, and clamping mechanism supported from the rotating frame for engaging the movable abutment members to clamp the coils firmly against the rigid abutments.

5. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, lateral grooves at the end of the pole cores, flanged locking or abutment members adapted to engage at the pole core ends and within said grooves to form rigid abutments, movable abutments or washers engaging at the bases of the pole cores, coils disposed between said rigid and movable abutment members, and clamping screws extending through the rotating frame into engagement with the movable abutments whereby the coils may be securely clamped against the rigid abutments.

6. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, a retaining ring or band surrounding each pole core at the end thereof, a locking member for each pole core adapted to be secured to the end thereof to offer a rigid abutment for the retaining ring, a movable retaining ring engaging about the base of each pole core, a coil on each core between the retaining rings, and clamping mechanism supported from the frame for engaging the movable retaining ring to clamp the coils securely between said rings.

7. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, a retaining ring or band surrounding each pole core at the end thereof, locking members for each pole core adapted to be secured to the end thereof to offer a rigid abutment for the retaining ring, a movable retaining ring engaging about the base of each pole core, a coil on each core between the retaining rings, and clamping screws supported from the frame for engaging the movable retaining ring to clamp the coil securely against the rigid retaining ring.

8. The combination with the movable frame of a dynamo electric machine, of pole cores extending therefrom, lateral grooves at the end of each pole core, a retaining ring surrounding each pole core below said grooves, locking members for engaging the end of the pole core and within said grooves to offer a rigid abutment for the retaining ring, a clamping washer surrounding each pole core at the base thereof, a coil on each core between the retaining ring and the clamping washer, and clamping screw mechanism supported from the frame for engaging the clamping washer and for securely clamping the core against the rigid retaining member.

9. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and integral therewith, grooves at the ends of said pole cores, locking members engaging in said grooves to form a rigid abutment at the ends of the pole cores, a coil surrounding each pole core, and clamping mechanism for clamping said coils in firm engagement against the abutment members.

10. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, grooves at the end of each pole core in the side faces thereof, locking members for engaging the sides of each pole core and in said grooves to form a rigid abutment, a clamping washer surrounding each pole core at the base thereof, a coil disposed between said clamping washer and the abutment member, and clamping screws extending from the frame and adapted for engagement with said clamping washers to clamp the coils securely against the abutment member.

11. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, grooves at the end of each pole core in the side faces thereof, a retaining ring surrounding the end of the core, locking members for each pole core disposed at the end thereof and engaging in said grooves to form a rigid abutment for the retaining member, a clamping washer at the base of each pole core, a coil on each core between said washer and retaining member, clamping keys between the frame and the clamping washers, and clamping screws engaging said clamping keys, actuation of said screws causing the coils to be clamped securely between said washers and said retaining members.

12. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and having parallel opposite grooves at their ends, separable locking or abutment members adapted to be slid into grooves to form a rigid abutment, a coil on each pole core, clamping mechanism supported from the frame for clamping the coil firmly against the abutment, and retaining wedges disposed between adjacent coils to prevent radial displacement of the windings thereof.

13. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and having opposite parallel grooves at the ends thereof, a retaining member or band encircling each pole core, locking members for each pole core adapted to slide in said grooves to form a rigid abutment for the retaining member, a coil for each core, clamping screws extending through the frame for clamping said coil securely against the retaining member and abutment, and retaining wedges secured to the retaining members and extending between adjacent coils to prevent lateral displacement of the windings thereof.

14. The combination with the rotating frame of a dyna-

mo electric machine, of pole cores extending therefrom and integral therewith, said pole cores having opposite parallel grooves at the end thereof, flange shaped locking keys adapted to be slid into said grooves to form a rigid abutment, a clamping washer encircling each pole core at the base thereof, clamping screws extending through the frame for engaging said washers to clamp the coils between said washers and the abutments, and retaining members disposed between adjacent coils to prevent lateral displacement of the windings of said coils.

15. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and being of the same width as the frame, there being opposite parallel grooves at the end of each pole core, a retainer washer at the end of each pole core, locking keys for engaging the end of the pole cores and in said grooves to offer rigid abutments for the retaining washers, a clamping washer at the base of each core, clamping keys for engaging the clamping washers with adjacent cores, coils on said cores disposed between the clamping and the retaining washers, clamping screws passing through the frame into engagement with said clamping keys and adapted upon actuation to cause the coils to be securely clamped between the retaining and clamping washers, and retaining wedges secured to the retaining washers and disposed between adjacent coils to prevent lateral displacement of the windings thereof.

16. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and being of the same width as the frame, there being opposite parallel grooves at the end of each pole core, a retainer washer at the end of each pole core, locking keys for engaging the end of the pole cores and in said grooves to offer rigid abutments for the retaining washers, a clamping washer at the base of each core, clamping keys for engaging the clamping washers of adjacent cores, coils on said cores disposed between the clamping and the retaining washers, clamping screws passing through the frame into engagement with said clamping keys and adapted upon actuation to cause the coils to be securely clamped between the retaining and clamping washers, and annular end plates secured to the frame for retaining said clamping keys in position.

17. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and being of the same width as the frame, there being opposite parallel grooves at the end of each pole core, a retaining washer at the end of each pole core, locking keys for engaging the end of the pole cores and in said grooves to offer rigid abutments for the retaining washers, a clamping washer at the base of each core, clamping keys for engaging the clamping washers of adjacent cores, coils on said cores disposed between the clamping and the retaining washers, clamping screws passing through the frame into engagement with said clamping keys and adapted upon actuation to cause the coils to be securely clamped between the retaining and clamping washers, annular end plates secured to the frame for retaining the clamping keys in position, and brackets extending from said end plates and engaging the clamping washers for supporting the overhanging ends of the coils.

18. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and integral therewith, a rigid abutment at the end of each pole core, a movable abutment at the base of each pole core, clamping mechanism supported from the frame for clamping a coil on said core firmly against the rigid abutment, and retaining wedges between adjacent coils for preventing bulging and displacement of the windings thereof.

19. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and integral therewith, grooves at the end of each pole core in the sides thereof, a retaining ring for each core consisting of a horizontal part engaging at its inner edge about the pole core periphery and having a vertical extension at its other end, locking keys for each pole core, each key consisting of a vertical part for engagement with the side of the pole end beyond the corresponding groove, a horizontal part extending from the vertical part for engagement with the corresponding groove, the corner of said keys engaging within the retaining ring and having an abutment for the retaining ring, a washer surrounding the base of each core, a coil for each core disposed between the retaining ring and the washer, clamping keys engaging the washers of adjacent coils, and clamping screws extending through the frame into engagement with said clamping keys and adapted upon actuation to cause the coils to be securely clamped between the retaining rings and washers, the end faces of the vertical parts of the locking keys being continuous with the corresponding pole face, said locking keys being of magnetic material.

20. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom having the same width as the frame, an abutment at the end of each pole core, a coil on each core, clamping means for clamping each coil against the corresponding abutment, annular end plates secured to the frame, lugs extending from said frame below the overhanging ends of the coils, and set screws passing through said abutments for engagement with the overhanging ends of the coils.

21. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom, each surrounded by a coil having overhanging ends, means for clamping said coils to said pole cores, end plates on the frame at the bases of the coils, lugs extending from said end plates, and adjustable screws through said lugs for supporting and adjusting the overhanging ends of the coils.

22. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and having ends overhanging the sides of the frame, stationary abutment means at the end of each core, coils on the cores, clamping means for engaging under the overhanging and adjacent sides of the coils for clamping said coils against the abutments, end plates at the sides of the frame below the overhanging ends of coils, lugs extending from said plates, and adjusting screws extending through said lugs into engagement with the overhanging ends of the coils.

23. The combination with the rotating frame of a dynamo electric machine, of pole cores extending therefrom and integral therewith, a coil surrounding each pole core, and keys engaging at the end of said pole cores for resisting the centrifugal force of the coils, said keys being so shaped and arranged as to form an effective magnetic part of the pole faces and to make the effective width of the pole face greater than that part of the pole core which is surrounded by the coil.

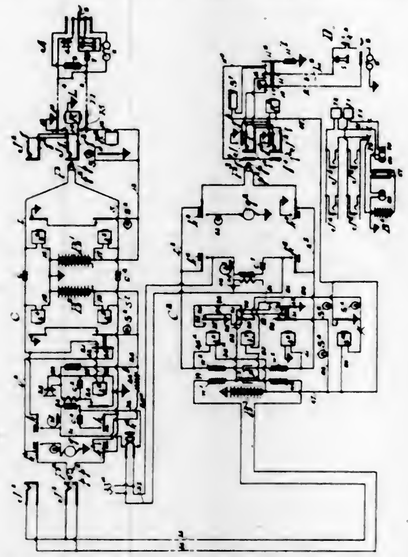
24. The combination with the rotatable frame of a dynamo electric machine, of pole cores extending therefrom and integral therewith, a coil surrounding each pole core, parallel slots at the sides of the pole cores, keys in said slots arranged to take up the centrifugal force of the magnet coils as the frame revolves, and side members extending from said keys for increasing the effective width of the pole face, said keys forming an effective magnetic part of the pole end.

25. The combination with the rotatable part of a dynamo electric machine, of pole cores extending therefrom and integral therewith, said pole cores being of substantially uniform width, a coil on each pole core, keys engaging at the ends of each pole core for retaining the coil in position thereon and for resisting the centrifugal force of the coil as the frame rotates, said keys being shaped and arranged to form an effective magnetic part of the pole end and to increase the effective width of the pole face.

26. The combination with the rotatable frame of a dynamo electric machine, of pole cores extending therefrom and integral therewith, said pole cores being substantially of uniform width throughout their length, a coil on each pole core adapted to be slipped thereover, parallel grooves in the sides of the pole cores, keys for each pole core extending into the grooves to retain the coil in position on the core and to take up the centrifugal force thereof as the frame rotates, extensions from said keys engaging the sides of the pole ends to increase the width thereof, said keys being of magnetic material and thus causing the effective width of the pole face to be greater than that of the pole core.

27. The combination with the rotatable frame of a dynamo electric machine, of pole cores extending therefrom and integral therewith, a coil surrounding each pole core adapted to be slipped thereover, parallel grooves in the sides of the pole cores near the end thereof, keys for engaging in said grooves to retain said coils in position and to take up the centrifugal strains thereof as the frame rotates, extensions from said keys engaging the sides of the pole core at the end thereof to increase the width of the pole ends beyond the width of the parts surrounded by the coil, said keys being of magnetic material.

853,286. TELEPHONE TRUNKING SYSTEM. HARRY G. WEBSTER, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 1, 1902. Serial No. 117,919.



Claim.—1. The combination with a trunk circuit extending between different switchboard sections and adapted to connect telephone lines together for conversation, of a disconnect signal for the incoming end of the trunk, a source of current and a relay associated with the incoming end of the trunk, said relay being operated from said source over one side of the subscriber's line and ground at the substation when the connection is established with the line, to place the signal in condition to operate, and a second relay at said end responsive to current in the metallic circuit when the called subscriber responds for rendering said signal inoperative, substantially as described.

2. The combination with a trunk circuit extending between different switchboard sections and adapted to connect telephone lines together for conversation, of a ringing signal for the incoming end of the trunk, a relay actuated over the tip side of the talking circuit and ground adapted to direct current through said signal to operate the same when the subscriber has been called but before his response, and a second relay operated by current flowing over a portion of the talking circuit but having its coil out of the path of the voice currents, said relay being adapted to deprive said signal of operating current when the subscriber responds, substantially as described.

3. The combination with a trunk circuit extending between different switchboard sections and adapted to connect telephones line together for conversation, of a ringing signal for the incoming end of the trunk, a relay actuated over one side of the telephone line and through the grounded signaling bell to direct current through said signal to operate the same when the subscriber has been called, and a second relay at said end adapted to deprive said signal of operating current when the called subscriber responds, substantially as described.

4. The combination with a trunk circuit extending between different switchboard sections and adapted to connect lines together for conversation, of a ringing signal for the incoming end of the trunk, a relay and a source of current connected with the tip side of the trunk cord, a grounded signaling bell from the tip side of the subscriber's line, said relay being actuated by current from said source over the tip side of a cord and line and through the said grounded bell to cause the operation of said signal when the connection is established with the called line, and a second relay connected with sleeve strand of the trunk cord and responsive to current in the metallic line when the called subscriber answers, said latter relay serving to render said ringing signal inoperative, substantially as described.

5. The combination with a trunk circuit extending between different switch-board sections and adapted to connect telephone lines together for conversation, of a signal associated with the incoming end of the trunk, a relay also at the incoming end adapted to be operated by current sent over the trunk from the outgoing end, a second relay at said incoming end adapted to be operated by current flowing over one side of the called telephone line to the substation and ground when the connection is established with the said called line, said relays jointly controlling said signal so as to operate the seam to give a guard indication when the connection is established at the outgoing end of the trunk and the trunk is disconnected from the called line, or to place said signal in condition to operate so as to give a disconnect indication when the connection is severed at the outgoing end and is completed at the incoming end, substantially as described.

6. The combination with a trunk circuit extending between different swithchboard sections and adapted to connect telephone lines together for conversation, of a signal associated with the incoming end of the trunk, a relay also at the incoming end operated by current over a portion of the tip side of the talking circuit when the connection is established with the called line, a second relay at the incoming end actuated when the connection exists at the outgoing end, said relays jointly controlling said signal so as to operate the same to give a guard indication when the connection is established at the outgoing end of the trunk and severed at the incoming end, or to place said signal in condition to operate to give a disconnect indication when the connection is severed at the outgoing end and is completed at the incoming end, substantially as described.

7. The combination with a trunk circuit extending between different switchboard sections and adapted to connect telephone lines together for conversation, of a guard signal for the incoming end of the trunk, means to actuate said signal by current sent over the trunk when the connection is established at the outgoing end of the trunk, and further means actuated by current sent over a portion of the talking circuit including one side of the telephone line to ground at the sub-station for rendering said signal inert, substantially as described.

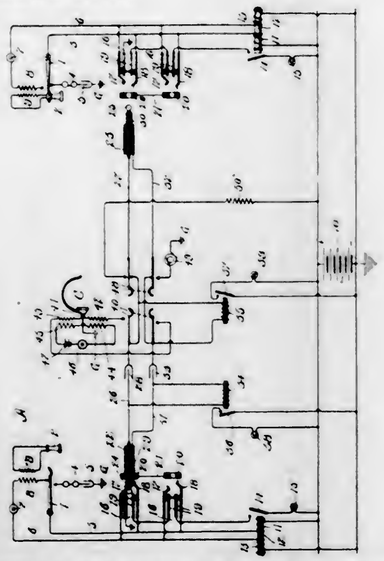
8. The combination with a trunk circuit extending between different switchboard sections and adapted to connect telephone lines together for conversation, of a guard signal for the incoming end of the trunk, a relay to place said signal in condition to operate and actuated by current sent over the trunk, and a relay actuated by current over a portion of the tip side of the talking circuit when connection is made with the called line for rendering said signal inoperative, substantially as described.

9. The combination with a trunk line extending between different switchboard sections and adapted to connect telephone lines together for conversation, of a supervisory signal associated with the outgoing end of the trunk, a relay associated with the incoming end and connected with

the sleeve strand of the trunk cord and responsive to current in the metallic talking circuit when the trunk is connected with the called line, a source of distinctive signaling current with which the incoming end of the trunk is connected when a subscriber is busy or fails to respond, means for intermittently operating said relay when the trunk is connected with said source, and means operated by said relay to correspondingly operate said supervisory signal, the waiting subscriber being also notified of the condition of the line by the distinctive tone in his receiver, substantially as described.

10. The combination with a trunk line extending between different switchboard sections and adapted to connect telephone lines together for conversation, of a supervisory signal associated with the outgoing end of the trunk, the outgoing end of the trunk being open to steady current and one side thereof connected to ground, said signal being placed in operative condition by current flowing over said side of the trunk circuit to ground, and a relay at the incoming end connected with the sleeve strand of the trunk cord actuated when the called subscriber responds for disconnecting said ground and connecting the two sides of the trunk together to permit current to flow over both sides thereof to render the said supervisory signal inoperative, substantially as described.

853,287. SUPERVISORY SIGNALING SYSTEM. HARRY G. WEBSTER, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Sept. 19, 1903. Serial No. 173,772.



Claim.—1. In a telephone exchange system, the combination with a telephone line extending by its limbs from a substation to an exchange, of a source of current at the exchange permanently connected with both limbs of said line and adapted to supply talking and signaling currents to said line, a line relay included in said line circuit, spring jacks connected with said line, a line signal circuit controlled by said line relay, contacts in said spring jacks normally serially included in said line signal circuit, actuation of substation apparatus causing completion of the line signal circuit, a cord circuit at the central exchange for connecting lines together for conversation, a supervisory relay connected in bridge of the cord strands, and a supervisory signal circuit controlled by said supervisory relay, connection of the cord circuit plug with any spring jack causing connection of said supervisory relay with the source of current, connection of said cord circuit with a spring jack also mechanically causing interruption of said line signal circuit.

2. In a telephone exchange system, the combination of a telephone line extending from a central exchange to a substation, of a source of current at the central exchange connected with the line limbs of the telephone line, a line relay in said line circuit, a spring jack having line contacts connected with the limbs of said line, normally closed auxiliary contacts for said spring jack, a line signal circuit controlled by said line relay and normally including said closed auxiliary contacts, actuation of substation apparatus causing energization of said line relay to cause closure of the line signal circuit, a cord circuit at the central exchange, a supervisory relay connected in bridge of the cord strands, and a supervisory signal circuit controlled by said supervisory relay, connection of the cord circuit plug with any spring jack causing connection of said supervisory relay with the source of current, connection of the cord circuit plug with said spring jack also causing said auxiliary contacts to be opened whereby said line signal circuit is opened.

3. In a telephone exchange system, the combination with a telephone line extending from a substation to a central exchange, of a source of current at the exchange permanently connected with both limbs of said line, a line relay included in said line circuit, a line signal circuit controlled by said line relay, spring jacks having line contacts connected with the line limbs, auxiliary normally closed contacts for said spring jacks normally serially included in said line signal circuits, a cord circuit at the central exchange, and a supervisory relay connected in bridge of the cord strands, actuation of substation apparatus causing energization of said line relay to close the line signal circuit, a connection of the cord circuit plug with any spring jack causing said supervisory relay to be connected in bridge of the line limbs and said source of current, connection of said plug with said spring jack also causing separation of the corresponding auxiliary contacts whereby the line signal circuit is opened.

4. In a telephone exchange system, the combination with a telephone line extending by its limbs from a substation to an exchange, of a source of current at the exchange connected in bridge of the line limbs, a line relay included in said line limbs, a line signal local circuit partially controlled by said line relay, spring jacks having line contacts permanently connected with said line limbs, auxiliary normally closed contacts for each spring jack, said contacts being normally serially included in the line signal circuit, a cord circuit at the central exchange, a supervisory relay connected in bridge of the cord strands and normally disconnected from any source of current, and a supervisory signal circuit controlled by said supervisory relay, connection of the cord circuit plug with any spring jack causing said supervisory relay to be connected in bridge of the line limbs and of the source of current, connection of said plug with said spring jack also causing separation of the associated auxiliary contacts whereby the line signal circuit is opened.

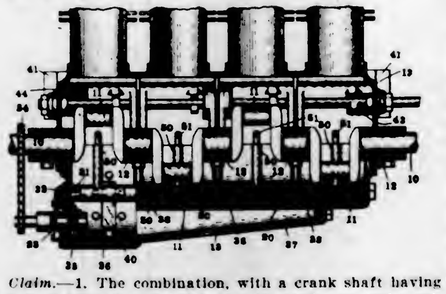
5. In a telephone exchange system, the combination with a telephone line extending from a substation to an exchange, of a source of current at the exchange for supplying talking and signaling currents to the line, a line relay controlled by the line circuit, a local circuit at the central exchange controlled by said line relay, a signal in said local circuit, main spring jack contacts at the central exchange connected with the telephone line, auxiliary spring jack contacts entirely insulated from the main jack contacts and from the telephone line and adapted normally to complete the local circuit upon actuation of the line relay, a cord circuit at the exchange, a supervisory relay controlling a supervisory signal circuit connected in bridge of the cord strands, and means upon connection of the cord apparatus with the spring jacks for causing said supervisory relay to be connected with the source of current and for causing actuation of the auxiliary contacts to open the line signal circuit.

6. In a telephone exchange system, the combination with a telephone line extending from a substation to an exchange, of a source of current at the exchange for supplying talking and signaling currents to the line, a line relay controlled by the line circuit, a local circuit partly controlled by the line relay, a signal in said circuit, spring jacks having main contacts connected with the line, auxiliary contacts independent of the line, said auxiliary contacts completing the control of the local circuit, a cord circuit at the central exchange, a supervisory relay connected in bridge of the cord strands, and means whereby said supervisory relay may be energized and said auxiliary contacts may be actuated to interrupt the line signal circuit upon the connection of said cord circuit with any spring jack.

7. In a telephone exchange system, the combination with a telephone line extending from a central exchange to a substation, of a source of current at the exchange for supplying talking and signaling currents to the line, a line relay controlled by the line circuit, a line signal controlled by the line relay, spring jacks at the exchange, contacts for said spring-jacks normally included serially in the line signal circuit, actuation of substation apparatus causing actuation of the line relay to complete the local circuit to cause actuation of the line signal, a cord circuit at the central exchange, a supervisory relay connected in bridge of the cord strands, and means whereby said supervisory relay may be energized and said auxiliary spring jack contacts may be actuated to open the local circuit upon connection of said cord circuit with any spring jack.

8. In a telephone exchange system, the combination with a telephone line extending from a central exchange to a substation, of a source of current at the exchange for supplying talking and signaling currents to the line, a line relay controlled by the line circuit, a local signal circuit including a signal controlled by said line relay, spring jacks at the exchange having main contacts connected with the telephone line, auxiliary contacts for the spring jacks having only mechanical association with the main jack contacts and normally disposed to complete the local signal circuit when the line relay is actuated, a cord circuit at the central exchange, and a supervisory relay controlling a supervisory signal circuit connected in bridge of the cord strands, connection of a plug of the cord circuit with the spring jack mechanically causing actuation of the auxiliary contacts to open the local signal circuit to destroy the signal connection of said plug also causing the energization of said supervisory relay.

853,288. LUBRICATING AND COOLING SYSTEM FOR ENGINES. GEORGE A. WEIDELY, Indianapolis, Ind., assignor to Premier Motor Mfg. Co., Indianapolis, Ind., a Corporation of Indiana. Filed Dec. 24, 1904. Serial No. 238,214.

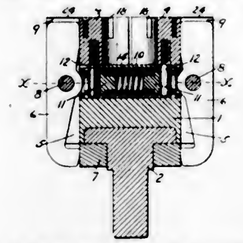


Claim.—1. The combination, with a crank shaft having a pair of journals one adjacent each crank arm and a cylinder and piston arranged in alinement with the plane of rotation of each crank, of suitable bearings for said journals, an open oil basin arranged adjacent each journal and having oil passages leading therefrom to the journal and to points adjacent the crank arms, a reservoir to receive surplus oil, and a pump adapted to carry the oil from said reservoir to the oil basins, whereby a sufficient quantity of oil is delivered to the arms of the crank to flow outward along said crank arms and be thrown therefrom upon the rotation of the crank shaft.

2. The combination, with an automobile and an engine carried thereby and consisting in part of a suitable inclosing casing having journal bearings in its interior, and having an air inlet opening at one end and an air outlet opening at the other, together with means for directing air therethrough, of a crank shaft having journals journaled in said bearings, means for supplying a stream of oil to the arms of the crank in such quantity that the oil will be caused by the rotation of the shaft to flow outwardly along the crank arms and be thrown therefrom, the arrangement of the casing and air openings being such as to permit a cooling current of air through the casing during transportation of the structure.

3. In an automobile, the combination with a carriage, of an engine carried thereby and consisting in part of a main hollow body carrying in its interior suitable crank shaft journal bearings, an open oil basin arranged adjacent the ends of the bearing, and a reservoir to receive surplus oil, and said main casing being provided with an air inlet at one end and an air outlet at the other, whereby a current of air will be forced through the casing during transportation of the structure, a pump adapted to carry oil from the reservoir to the oil basins, and a crank shaft journaled in the bearings, all substantially as and for the purpose set forth.

853,289. OPENING DIE. HARVEY H. WELSH, Jr., Wilmerding, Pa., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed May 18, 1901. Serial No. 60,837.



Claim.—1. In an opening-die, the combination with a die-body having levers pivoted thereto, of movable slides engaged by the levers and mounted to reciprocate on said die-body, a spring located in an opening in the die-body, studs secured to the slides and engaging opposite ends of said spring, and means for operating the levers to close the die.

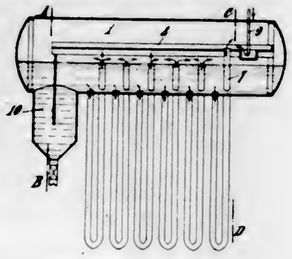
2. In an opening die, the combination with a die-body having guides and reciprocating slides mounted therein, of levers pivoted to said die-body with one of their ends bearing against the slides, studs secured to said slides, a spring located between said studs, and a cam ring rotatably mounted on the die-body and engaging the other ends of said levers.

853,290. STEAM-GENERATOR. EUGENE L. J. WEBA, Liege, Belgium. Filed Feb. 5, 1907. Serial No. 355,857.

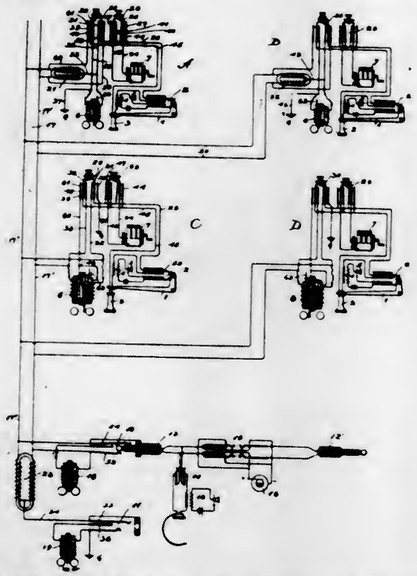
Claim.—1. A steam generator comprising a boiler, U shaped tubes having their ends connected with said boiler, the arms of said U shaped tubes being of unequal length, a deflecting decanter and means for carrying feed water and the water issuing from the longer arms of the tubes to said decanter.

2. A steam generator comprising a boiler, U shaped tubes connected with the boiler and having their arms of unequal length and unequally heated, a deflecting decanter from which the water passes to the shorter arms of the tubes, a trough in the steam chamber connected with the longer arms of the tubes for receiving the water issuing

therefrom and delivering it to the decanter and means for delivering feed water to said trough.



853,291. TELEPHONE SYSTEM. GARRISON BABCOCK, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed July 17, 1903. Serial No. 166,026.



Claim.—1. In a telephone system, the combination with a central exchange, of a permanently continuous telephone line extending therefrom, a plurality of subscribers connected with said line, means whereby the exchange operator may selectively signal any one of said subscribers, means whereby any subscriber may independently signal the exchange operator, and means whereby any subscriber may selectively signal any other of the party subscribers independently of the exchange operator, substantially as described.

2. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of subscribers connected with said line, a common conductor for said subscribers and the central exchange, some of the substations being normally adapted for connection in a circuit serially including the sides of the metallic circuit and disconnected from the common conductor, the other substations being normally adapted for connection in a circuit including said common conductor and the sides of the metallic telephone line in parallel, a springjack at the central exchange connected with said metallic line, whereby the central operator may connect herself with the metallically connected subscribers, and an additional springjack at the central exchange connected with the common conductor and the metallic sides of the line, whereby the operator may connect herself with the subscribers normally connected in circuit with the common conductor, substantially as described.

3. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of party subscribers connected with said line, two sets of circuits for connecting said subscribers with each other and with the central exchange, one set of circuits serially including the sides of the telephone line and free from ground connections, the other set of circuits including the ground and the sides of the metallic line in parallel, means at the central exchange, whereby the exchange operator may connect with the metallically connected substations or with the grounded substations, and further means at each of the substations, whereby substations provided with one set of connections may selectively signal each other, substantially as described.

4. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of party subscribers connected with said line, two sets of circuits for connecting said subscribers with each other and with the central exchange, one set of circuits serially including the sides of the telephone line and free from ground connections, the other set of circuits including the ground and the sides of the metallic line in parallel, means at the central exchange, whereby the exchange operator may connect with the metallically connected substations or with the grounded substations, means at each of the substations, whereby substations provided with one set of connections may selectively signal each other, and further means, whereby substations provided with one set of connections may selectively signal subscribers provided with the other set of connections, substantially as described.

5. In a telephone system, the combination with a central exchange, of a permanently continuous telephone line extending therefrom, a plurality of party subscribers connected with said line, and switching means at each substation, whereby any subscriber may selectively connect himself with any other subscriber on the line independently of a central exchange operator, substantially as described.

6. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of subscribers connected with said telephone line, two sets of circuits for selectively connecting said subscribers with each other and with the central exchange, one set of circuits normally serially including the sides of the metallic line, the other set of circuits normally including the sides of the line in parallel and including the ground, and means at each substation, whereby any subscriber may change the substation circuit connections from the metallic to the grounded condition, substantially as described.

7. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of subscribers connected with said telephone line, two sets of circuits for selectively connecting said subscribers with each other and with the central exchange, one set of circuits normally serially including the sides of the metallic line, the other set of circuits normally including the sides of the line in parallel and including the ground, and switching mechanism at each substation, whereby any subscriber may change the substation circuit connections from the metallic to the grounded condition, substantially as described.

8. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of subscribers connected with said line, some of the substations being normally adapted for connection in a circuit serially including the sides of the metallic circuit and free from ground connection, the other substations being normally adapted for connection in circuit connected with ground and including the sides of the metallic line in parallel, polarized signal bells at each of the substations, a generator at each of the substations, and a reversing switch at each substation for reversing the direction of current flow sent from the substation generator into the line, substantially as described.

9. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of subscribers connected with said line, some of the substations being normally adapted for connection in a circuit serially including the sides of the metallic line and free from ground connection, the other substations being normally adapted for connection in circuit connected with ground and including the sides of the metallic line in parallel, polarized signal bells at each of the substations, a generator at each of the substations, a reversing switch at each substation for reversing the direction of current flow sent from the substation generator into the line, and means at each substation, whereby the subscriber may adapt the substation circuit conditions for the metallic or the grounded condition, substantially as described.

10. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of substations connected with said line, some of the substations being normally adapted for connection in a circuit serially including the sides of the metallic line and free from ground connection, the other substations being normally adapted for connection in circuit connected with ground and including the sides of the metallic line in parallel, polarized signal bells at each of the substations, a generator at each of the substations, a reversing switch at each substation for reversing the direction of current flow sent from the substation generator into the line, and a circuit changing switch at each substation, whereby the subscriber may adapt the substation circuit conditions for the metallic or the grounded condition, substantially as described.

11. In a telephone system, the combination with a telephone line, of party subscribers connected thereto, signaling apparatus at each substation including a polarized spring adjusted bell and a generator, the signal bells being oppositely adjusted, whereby to respond to currents flowing in but one direction, and a reversing switch at each substation, whereby the current sent into the line from the generator may have its direction of flow changed to actuate the adjustable signal bell at the other substation, substantially as described.

12. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of substations connected with said line, some of the substations being normally adapted to signal the central exchange through a circuit serially including the sides of the metallic line and free from ground connection, the other substations being normally adapted to signal the central exchange through a circuit parallelly including the sides of the metallic line and the ground, and impedance coils at the normally grounded substations and at the central exchange whereby short-circuiting of currents is prevented when the metallic line is serially included in circuit, substantially as described.

13. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, two substations connected with said line, the circuits through said substations being normally free from ground and serially including the sides of the metallic line, means at each of said substations for changing the circuit conditions so that the circuits through the substations include the ground as one conductor and the sides of the metallic line in parallel, and means at the central exchange whereby the operator may independently connect with either the metallic circuit or the grounded circuit, whereby both substations may converse with or through the central exchange independently of each other, substantially as described.

14. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, two substations connected with said line, the circuits through said substations being normally free from ground and serially including the sides of the metallic line, means at each of said substations for changing the circuit conditions so that the circuits through the substations include the ground as one conductor and the sides of the metallic line in parallel, means at the central exchange whereby the operator may independently connect with either the metallic circuit or the grounded circuit, whereby both substations may converse with or through the central exchange independently of each other, impedance windings at each of said substations normally serially included in a circuit connected across the metallic line, said windings, upon change at the substations from the metallic to the grounded circuit condition, being included parallelly and differentially in circuit, substantially as described.

15. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, two substations connected with said line, the circuits through said substations being normally free from ground and serially including the sides of the metallic line, means at each of said substations for changing the circuit conditions so that the circuits through the substations include the ground as one conductor and the sides of the metallic line in parallel, means at the central exchange whereby the operator may independently connect with either the metallic circuit or the grounded circuit, whereby both substations may converse with or through the central exchange independently of each other, and a polarized adjustable bell at each substation, the windings of said bell being normally serially included in a circuit bridging across the sides of the telephone line and included parallelly and differentially in circuit upon change at the substation from the metallic to the grounded circuit condition, the windings being of high impedance, whereby to prevent short circuiting of currents passing serially through the sides of the telephone line, substantially as described.

16. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, two substations connected with said line, the circuits through said substations being normally free from ground and serially including the sides of the metallic line, means at each of said substations for changing the circuit conditions so that the circuits through the substations include the ground as one conductor and the sides of the metallic line in parallel, springjacks at the central exchange, means at the central exchange whereby the operator may independently connect with either the metallic circuit or the grounded circuit, whereby both substations may converse with or through the central exchange independently of each other, a polarized adjustable bell at each substation, each bell adapted to respond to a current flow in only one direction, an operator's cord circuit at the central exchange, a reversing key included in said circuit, and a source of ringing current connected with said key, substantially as described.

17. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, two substations connected with said line, the circuits through said substations being normally free from ground and serially including the sides of the metallic line, means at each of said substations for changing the circuit conditions so that the circuits through the substations include the ground as one conductor and the sides of the metallic line in parallel, a springjack at the central exchange, a signal associated with said springjack adapted to respond to signaling current flowing serially through the metallic line, an additional springjack, a signal associated therewith to respond to signaling current flowing through ground and parallelly through the sides of the metallic line, an operator's plug for engaging said springjacks, a cord circuit uniting said plugs, a reversing key included in said cord circuit, a source of ringing current adapted for connection with said cord circuit by means of said key, and a polarized signal bell at each substation adjusted to respond to currents flowing in but one direction, the operator, upon insertion of the plug into the proper jack, being enabled to selectively signal the substations whether they be included in the metallic circuit or in the grounded circuit, substantially as described.

18. In a telephone system, the combination with a cen-

tral exchange, of a bimetallic telephone line extending therefrom, two substations connected with said line, the circuits through said substations being normally free from ground and serially including the sides of the metallic line, means at each of said substations for changing the circuit conditions so that the circuits through the substations include the ground as one conductor and the sides of the metallic line in parallel, a springjack at the central exchange, a signal associated with said springjack adapted to respond to signaling current flowing serially through the metallic line, an additional springjack, a signal associated therewith to respond to signaling current flowing through ground and parallelly through the sides of the metallic line, an operator's plug for engaging said springjacks, a cord circuit uniting said plugs, a reversing key included in said cord circuit, a source of ringing current adapted for connection with said cord circuit by means of said key, a polarized signal bell at each substation adjusted to respond to currents flowing in but one direction, the operator, upon insertion of the plug into the proper jack, being enabled to selectively signal the substations whether they be included in the metallic circuit or in the grounded circuit, a ringing generator at each substation normally adapted upon actuation to cause only the central exchange signal to respond, and a reversing key at each substation associated with the substation generator, whereby the current flowing into the line from the generator may have its direction of flow reversed so as to actuate the signal bell at the other substation on the line, substantially as described.

19. In a telephone system, the combination with a central exchange, of a telephone line extending therefrom, a plurality of subscribers connected with said telephone line and adapted for selective intercounection, signal receiving means at the central exchange, a source of signaling current at each substation, and means whereby current emanating from one of said sources may be allowed to actuate only the corresponding substation signal receiving means and the signal receiving means at the central exchange, substantially as described.

20. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of party subscribers connected with said line, two sets of circuits for connecting said subscribers with each other and with the central exchange, one set of circuits normally serially including the sides of the telephone line and free from ground connections, the other set of circuits normally including the ground and the sides of the metallic line in parallel, means at the central exchange whereby the exchange operator may connect with the metallicaly connected substations or with the grounded substations, and means whereby two of said subscribers may converse with or through the central exchange independently of each other, substantially as described.

21. In a telephone system, the combination with a bimetallic telephone line, two sets of party subscribers connected with said line, two sets of circuits for connecting said party subscribers with each other, a set of circuits for one set of subscribers normally serially including the sides of the telephone line and free from ground connections, another set of circuits for the other set of subscribers normally including the ground as one conductor and the sides of the metallic line in parallel, and means at each substation for changing the circuit conditions whereby conversation may be carried on between two subscribers in one set independently of conversation carried on at the same time between two subscribers in the other set, substantially as described.

22. In a telephone system, the combination with a bimetallic telephone line, two sets of party subscribers connected with said line, two sets of circuits for connecting said party subscribers with each other, a set of circuits for one set of subscribers normally serially including the sides of the telephone line and free from ground connections, another set of circuits for the other set of subscribers normally including the ground as one conductor and the sides of the metallic line in parallel, and means at each substation for adapting the substation connections for either the metallic or the grounded condition, whereby subscribers of one set may converse with subscribers of the other set at the same time and independently of each other, substantially as described.

23. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a plurality of party subscribers connected with said line, two sets of circuits for connecting said subscribers, both for signaling and conversation with each other and with the central exchange, one set of circuits serially including the sides of the telephone line and free from ground connections, the other set of circuits including the ground and the sides of the metallic line in parallel, means at the central exchange whereby the exchange operator may connect with the metallically connected substations or with the grounded substations, and means at each of the substations whereby substations provided with one set of connections may selectively signal each other.

24. In a telephone system, the combination with a bimetallic telephone line, of a plurality of subscribers connected therewith, two sets of circuits for selectively connecting said subscribers with each other, one set of circuits normally serially including the sides of the metallic line, the other set of circuits normally including the sides of the line in parallel and including the ground, and means at each substation whereby any subscriber may change the substation circuit connections from the metallic to the grounded condition.

25. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a substation connected with said line, said substation being normally adapted for connection in a circuit serially including the sides of the metallic line, means at the substation for disconnecting the substation from the metallic line and for connecting said substation in a circuit including the ground and the metallic sides of the line in parallel, and means at the central exchange whereby the operator may independently connect with either the metallic circuit or the grounded circuit.

26. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, a substation connected with said line, said substation being normally adapted for connection in a circuit serially including the sides of the metallic line, means at the substation for disconnecting the substation from the metallic line and for connecting said substation in a circuit including the ground and the metallic sides of the line in parallel, means at the central exchange whereby the operator may independently connect with either the metallic circuit or the grounded circuit, and an impedance coil at the substation for preventing short circuiting of the currents passing serially through the sides of the line.

27. In a telephone system, the combination with a central exchange, of a metallic telephone line extending therefrom, a substation connected with said line, the circuits through said substation being normally free from ground and serially including the sides of the metallic line, means at the substation for changing the circuit conditions so that the circuit through the substation includes the ground as one conductor and the sides of the metallic line in parallel, means at the central exchange whereby the operator may independently connect with either the metallic circuit or the grounded circuit, and a signal bell at the substation, the windings of said bell being normally serially included in a circuit across the sides of the telephone line and included parallelly and differentially in circuit upon change at the substation from the metallic to the grounded condition, said windings being of high impedance whereby to prevent short circuiting of currents passing serially through the sides of the telephone line.

28. In a telephone system, the combination with a central exchange, of a bimetallic telephone line extending therefrom, two substations connected with said line, said substations being normally adapted for connection in a circuit serially including the sides of the metallic line and free from ground, means at each substation for disconnecting the substation from the metallic connection and connecting said substation in a circuit including the ground and the metallic sides of the line in parallel, a spring jack at the central exchange connected only with the metallic sides of the line, and an additional spring jack at the central exchange connected to ground and to both metallic limbs of the line whereby the exchange operator may independently connect with either the metallic circuit or the grounded circuit and whereby both the subscribers may converse with or through central independently of each other.

853,292. CIRCUIT-CHANGING APPARATUS. JULES A. BIRSFIELD, Rochester, N. Y., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Mar. 22, 1905. Serial No. 251,390.



Claim.—1. In a relay, the combination with a core, of a coil thereon, a rear yoke piece secured to the core and extending along the top of the coil, a front yoke piece secured to the other end of the core and extending rearwardly a distance toward the rear yoke piece to leave an air gap between the pieces, a plate pivoted over the end of the front yoke piece, the rear part of said plate forming an armature and overlapping the end of the rear yoke piece, and switch springs secured to the rear yoke piece and extending forwardly over said plate and having engagement with the front part of said plate, current flow through said coil causing attraction of the armature part of the plate to cause actuation of said springs.

2. In a relay, the combination with a core, of a coil thereon, a rear yoke piece secured to the core and extending along the top of the coil, a front yoke piece secured to the other end of the core and extending rearwardly a distance toward the rear yoke piece to leave an air gap between the pieces, a plate pivoted over the end of the front yoke piece, the rear part of said plate forming an armature and overlapping the end of the rear yoke piece, and switch springs secured to the rear yoke piece and extending forwardly over said plate and having engagement with the front part of said plate, current flow through said coil causing attraction of the armature part of the plate to cause actuation of said springs, said switch springs serving to hold said plate on its pivot.

3. In a relay, the combination with a core, of a coil thereon, a rear L-shaped yoke piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, an L-shaped front yoke piece secured to the front end of the core and extending rearwardly a distance to leave a non-magnetic gap between the yoke pieces, a pivot edge at the end of the front yoke piece, a plate of magnetic material pivoted on said edge along an intermediary line, the part of said plate to the rear of said pivot forming an armature, the part of said plate in front of said pivot forming an actuating lever, and circuit changing springs mounted at their rear ends on the rear yoke piece and being connected at their front ends with the actuating lever, said springs normally causing pressure against said lever to hold the armature part away from the rear yoke piece, current flow through said coil causing attraction of the armature part, whereby said circuit changing springs are actuated.

4. In a relay, the combination with a core, of a coil thereon, a rear L-shaped yoke piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front L-shaped yoke piece secured to the front end of the core and extending rearwardly a distance along the top of the coil to leave a non-magnetic gap between the ends of the yoke pieces, the end of the front yoke piece offering a pivot edge, a magnetic plate pivoted on said edge at an intermediary line, the rear part of said plate forming an armature, the front part of said plate forming an actuating lever, and switching mechanism mounted on the rear yoke piece and having connection with the actuating lever, said switching mechanism serving normally to depress said actuating lever to retain the armature out of contact with the rear yoke piece, current flow through said coil causing said armature to be attracted to complete the magnetic circuit through the yoke and causing said switching mechanism to be actuated, said switching mechanism serving also to retain said plate in position on said pivot edge.

5. In a relay, the combination with a core, of a coil thereon, an L-shaped rear pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front L-shaped pole piece secured to the front end of the core and extending rearwardly a distance along the top of the coil, a non-magnetic gap between the ends of the pole pieces, the end of the front pole piece being shaped to form a pivot edge, a plate of magnetic material pivoted at an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating lever, and actuating and contact switch springs mounted at their rear ends on the rear pole piece and extending forwardly therefrom, the front end of the actuating springs having connection with said actuating lever and tending normally to depress said lever to retain the armature away from the rear pole piece and out of engagement with the contact springs, current flow through said coil causing energization of the relay, whereby the armature is attracted toward the rear pole piece, said actuating lever being raised to carry the actuating springs into engagement with the contact springs.

6. In a relay, the combination with a core, of a coil thereon, an L-shaped rear pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front L-shaped pole piece secured to the front end of the core and extending rearwardly a distance along the top of the coil, a non-magnetic gap between the ends of the pole pieces, the end of the front pole piece being shaped to form a pivot edge, a plate of magnetic material pivoted at an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating lever, and actuating and contact switch springs mounted at their rear ends on the rear pole piece and extending forwardly therefrom, the front end of the actuating springs having connection with said actuating lever and tending normally to depress said lever to retain the armature away from the rear pole piece and out of engagement with the contact springs, current flow through said coil causing energization of the relay, whereby the armature is attracted toward the rear pole piece, said actuating lever being raised to carry the actuating springs into engagement with the contact springs, said contact springs serving also to retain said plate in position on said pivot edge.

7. In a relay, the combination with a core, of a coil thereon, a rear L-shaped pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front L-shaped pole piece secured to the front end of the coil and extending rearwardly a distance along the top of the coil, the end of said front pole piece being turned upwardly to offer a pivot edge, a plate of magnetic material pivoted at an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating lever, and switching mechanism mounted on the rear pole piece and extending forwardly and having connection with said actuating lever, current flow through said coil causing attraction of said armature, whereby said lever and switching mechanism are actuated.

8. In a relay, the combination with a core, of a coil thereon, a rear L-shaped pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front L-shaped pole piece secured to the front end of the core and extending rearwardly a distance along the top of the core, there being a non-magnetic gap between the ends of said pole pieces, the end of said front pole piece being turned upwardly to an angle to offer a pivot edge, a plate of magnetic material pivoted at an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating lever, and switching mechanism consisting of actuating and contact springs mounted on the rear pole piece, the front end of the actuating springs having con-

nection with said actuating lever and tending to normally depress said lever to hold the armature away from the rear pole piece, current flow through said coil causing energization of the relay, whereby the armature is attracted toward the rear pole piece, whereby said actuating lever is raised to carry the actuating springs into engagement with the contact springs, said contact springs serving also to retain said plate in position on its pivot edge.

9. In a relay, the combination with a core, of a coil thereon, a rear L-shaped pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front pole piece secured to the front end of the core, there being a non-magnetic gap between the end of the pole pieces, the end of the front pole piece forming a pivot edge, a plate of magnetic material pivoted at an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating lever, and switching mechanism mounted on the rear pole piece and having connection at its forward end with said actuating lever and tending normally to depress the actuating lever to hold the armature away from the rear pole piece, current flow through said coil causing attraction of the armature toward the rear pole piece, whereby said actuating lever is raised and the switching mechanism actuated.

10. In a relay, the combination with a core, of a coil thereon, a rear L-shaped pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, an L-shaped front pole piece secured to the front end of the core and extending rearwardly a distance along the top of the coil, there being a non-magnetic gap between the ends of the pole pieces, the end of said front pole piece being shaped to offer a pivot edge, a plate of magnetic material pivoted along an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating plate, switching mechanism consisting of actuating and contact springs mounted on the rear pole piece, and insulating studs between the front ends of said actuating springs and said actuating lever, said actuating springs serving normally to depress said actuating lever to retain the armature away from the rear pole piece, current flow through said coil causing attraction of said armature toward the rear pole piece, whereby said actuating lever is raised and the relation between the actuating springs and contact springs changed.

11. In a relay, the combination with a core, of a coil thereon, a rear L-shaped pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, an L-shaped front pole piece secured to the front end of the core and extending rearwardly a distance along the top of the coil, there being a non-magnetic gap between the ends of the pole pieces, the end of said front pole piece being shaped to offer a pivot edge, a plate of magnetic material pivoted along an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating plate, switching mechanism consisting of actuating and contact springs mounted on the rear pole piece, insulating studs between the front ends of said actuating springs and said actuating lever, said actuating springs serving normally to depress said actuating lever to retain the armature away from the rear pole piece, current flow through said coil causing attraction of said armature toward the rear pole piece, whereby said actuating lever is raised and the relation between the actuating springs and contact springs changed, and insulating studs between said contact springs and said plate for holding said plate in position on its pivot.

12. In a relay, the combination with a core, of a coil thereon, a rear L-shaped pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, an L-shaped front pole piece secured to the front end of the core and extending rearwardly a distance along the top of the coil, there being a non-magnetic gap between the ends of the pole pieces, the end of said front pole piece being shaped to offer a pivot edge, a plate of magnetic material pivoted along an intermediary line on said edge, the rear part of said plate forming an armature and the front part thereof forming an actuating plate, switching mechanism consisting of actuating and contact springs mounted on the rear pole piece, insulating studs between the front ends of said actuating springs and said actuating lever, said actuating springs serving normally to depress said actuating lever to retain the armature away from the rear pole piece, current flow through said coil causing attraction of said armature toward the rear pole piece, whereby said actuating lever is raised and the relation between the actuating springs and contact springs changed, and insulating studs engaging said plate over the pivot edge and engaged at their top by said contact springs, whereby said plate is retained on its pivot edge.

13. In a relay, the combination with a core, of a coil thereon, a rear pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front pole piece secured to the front end of the core and extending rearwardly a distance along the top of the coil to leave an air gap between the ends of the pole pieces, the end of said front pole piece being bent upwardly at an angle to offer a pivot edge, a plate of magnetic material having a transverse notch along an intermediary line or engaging said pivot edge, the rear part of said plate forming an armature and the front part thereof forming an actuating lever, switching mechanism mounted on the rear pole piece and consisting of actuating and contact springs, studs of insulating material disposed between the front ends of the actuating springs and said actuating lever tending to normally depress said lever to retain the armature away from the rear pole piece, and additional studs of insulating material engaging said plate over the pivot edge, said contact springs pressing on said additional studs, whereby to retain said plate on said pivot edge, current flow through said coil causing attraction of the armature part toward the rear pole piece whereby said actuating lever is raised and the circuit relations between said actuating springs and the contact springs changed.

14. In a relay, the combination with a core, of a coil thereon, a rear pole piece secured to the rear end of the core and extending forwardly a distance along the top of the coil, a front pole piece secured to the front end of the core and extending rearwardly a distance along the top of the coil, there being a non-magnetic gap between the ends of said pole pieces, the end of the front pole piece being shaped to offer a pivot edge, an armature plate pivoted on said edge, and switching mechanism for the relay serving to normally retain the armature away from the rear pole piece, current flow through said coil causing attraction of the armature to actuate said switching mechanism.

15. In a relay, the combination with a core, of a coil thereon, a pole piece secured to the rear end of the coil and extending forwardly a distance along the top of the coil, a front pole piece secured to the front end of the core and extending rearwardly a distance along the top of the coil, there being a non-magnetic gap between the ends of the pole pieces, the ends of one of said pole pieces being shaped to form a pivot edge, an armature plate pivoted on said edge and bridging said gap, and switching mechanism for the relay serving normally to maintain a gap between the armature and one of the pole pieces, current flow through said coil causing attraction of the armature to cause actuation of the switching mechanism.

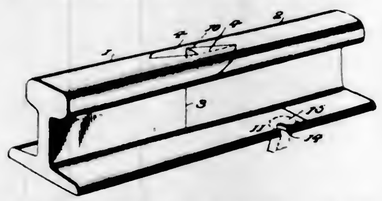
16. In a relay, the combination with a core, of a coil thereon, a pole piece secured to one end of the core and extending a distance along the top of the coil, another pole piece secured to the other end of the core and extending a distance along the top of the coil, there being a non-magnetic gap between the ends of the pole pieces, the end of one of said pole pieces being bent at an angle to offer a pivot edge, an armature plate pivoted on said edge and bridging said non-magnetic gap, and switching mechanism mounted on one pole piece and engaging the armature to normally maintain an air gap between the armature and one pole piece, current flow through the coil causing actuation of the armature and of the switching mechanism.

17. In a relay, the combination with a core, of a coil thereon, a pole piece secured to one end of the coil and extending a distance along the top of the coil, a pole piece secured to the other end of the core and extending a distance along the top of the coil, there being a non-magnetic gap between the ends of the pole pieces, the end of one of said pole pieces being shaped to form a pivot edge, a plate of magnetic material pivoted on said edge and overlapping the other pole piece a short distance, switching mechanism mounted on one pole piece and normally having connection with the armature to maintain an air gap between the armature and the overlapped pole piece, current flow through the coil causing attraction of the armature and actuation of the switching mechanism, and a band of non-magnetic material encircling the end of the pole piece overlapped by said armature.

18. In a relay, the combination with a core, of a coil thereon, a rear pole piece secured to the core and extending along the top of the coil, a front pole piece secured to the other end of the core and extending rearwardly a distance toward the rear pole piece to leave an air gap between the pieces, means for removably securing the core to said pole pieces, a plate pivoted over the end of the front pole piece, the rear part of said plate forming an armature and overlapping the end of the rear pole piece, and switch springs secured to the rear pole piece and extending forwardly over said plate and having engagement with the front part of said plate, current flow through said coil causing attraction of the armature part of the plate to cause actuation of said springs.

19. In a relay, the combination with a core, of a coil thereon, a rear pole piece secured to the core and extending along the top of the coil, a front pole piece secured to the other end of the core and extending rearwardly a distance toward the rear pole piece to leave an air gap between the pieces, means for removably securing the core to said pole pieces, a plate pivoted over the end of the front pole piece, the rear part of said plate forming an armature and overlapping the end of the rear pole piece, and switch springs secured to the rear pole piece and extending forwardly over said plate and having engagement with the front part of said plate, current flow through said coil causing attraction of the armature part of the plate to cause actuation of said springs, said switch springs serving to hold said plate on its pivot.

853,293. RAIL-JOINT. JONAS O. BRIDGES, Mooresboro, N. C. Filed Jan. 24, 1907. Serial No. 353,859.



Claim.—1. The combination of abutting rail ends, and interlocking beveled tenons carried by the rail ends and designed to be disconnected by turning one of the rails about its longitudinal axis.

2. The combination of abutting rail ends and beveled tenons projecting from the rail ends, the said beveled tenons having a hooked relation and having an interlocking connection which can be made or broken by turning one of the rails about its longitudinal axis.

3. The combination of abutting rail ends and approximately V-shaped tenons projecting therefrom, the said V-shaped tenons having a hooked relation and an interlocking connection which can be made or broken by turning one of the rails about its longitudinal axis.

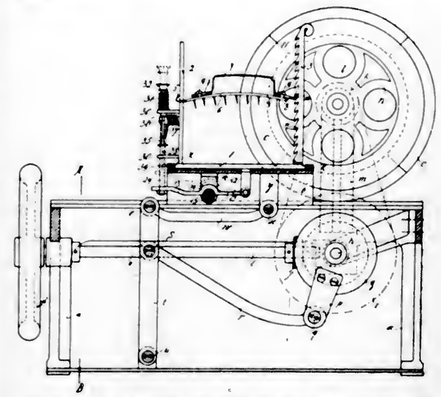
4. The combination of abutting rail ends and approximately V-shaped tenons projecting therefrom, the said tenons having the sides thereof beveled and having a hooked relation whereby an interlocking connection is produced.

5. The combination of the abutting ends of rails, and a tenon projecting from one side of each of the rails, the opposite side of each of the rails being formed with a recess corresponding to the tenon and the base of the tenon extending over the mouth of the recess whereby a shoulder is formed, the said shoulders upon the two rail ends engaging each other to produce an interlocking connection between the tenons.

6. The combination of abutting rail ends, each of said rail ends being formed upon one side with an approximately V-shaped tenon and upon the opposite side with a corresponding recess, the base of the tenon extending over the mouth of the recess whereby a shoulder is formed, the said shoulders upon the two rail ends engaging with each other to produce an interlocking connection between the tenons.

7. The combination of abutting rail ends, the head portions thereof being provided with approximately V-shaped interlocking tenons designed to be disconnected by turning one of the rails about its longitudinal axis, while the base portions are provided with interlocking extensions.

853,294. MACHINE FOR SLICING MEAT, SAUSAGES, AND OTHER EDIBLES. ALBRECHT BRINNHÄUSER, Nuremberg, Germany. Filed May 16, 1904. Serial No. 208,321.



Claim.—1. In a meat cutting machine the combination with a revoluble knife of a supporting table, means effecting reciprocation of said table and rotation of said knife, a meat plate slidably mounted on said table, mechanism effecting movement of said plate toward said knife, said mechanism including a ratchet wheel and spring mounted rack teeth coöperating therewith, means whereby the said rack teeth may be adjusted with respect to said ratchet wheel thereby varying the travel of said meat plate, and means whereby said rack teeth may be locked in their adjusted position.

2. In a meat cutting machine the combination with a revoluble knife, of a supporting table, means effecting reciprocation of said table and rotation of said knife, a meat plate slidably mounted on said table, mechanism effecting movement of said plate toward said knife, said mechanism including a ratchet wheel and rack teeth, springs for each of said teeth whereby one tooth may be depressed independent of the remaining teeth.

3. In a meat cutting machine the combination with a revoluble knife, of a sprocket wheel therefor, a countershaft provided with a sprocket wheel on one end, a chain coöperating with said sprocket wheels, a gear mounted on the opposite end of said countershaft, a main driving shaft provided with a gear adapted to mesh with the gear of said countershaft, a radial arm mounted on the gear of said countershaft, a link pivotally connected with said radial arm, a rocking lever pivotally mounted to a stationary part and connected with said link, a supporting table reciprocating in the plane of operation of said knife, a link connected with said rocking lever and said supporting table, a meat plate slidably mounted on said supporting

table and operating in a plane angularly to the plane of operation of said supporting table and knife, a threaded shaft carried by said supporting table, a lever pivotally secured at one end to said meat plate, said lever having an intermediate threaded portion engaging said threaded shaft, means whereby said lever may be automatically disengaged from said shaft, a ratchet wheel mounted on said shaft, a stationary pawl engaging said ratchet wheel, a rack adjustably mounted, said rack having yieldingly mounted teeth adapted to be engaged by said ratchet wheel, and means whereby said rack may be anchored in its adjusted position.

4. In a meat cutting machine the combination with a revoluble knife of a sprocket wheel therefor, a countershaft provided with a sprocket wheel on one end, a chain coöperating with said sprocket wheels, a gear mounted on the opposite end of said countershaft, a main driving shaft provided with a gear of said countershaft, a radial arm mounted on the gear of said countershaft, a link pivotally connected with said radial arm, a rocking lever pivotally connected with a stationary part and with said link, a supporting table reciprocating in the plane of operation of said knife, a link connected with said rocking lever and said supporting table, a meat plate slidably mounted on said supporting table and operating in a plane angularly to the plane of operation of said supporting table and knife, a threaded shaft carried by said supporting table, a lever pivotally secured at one end to said meat plate, said lever having an intermediate threaded portion engaging said threaded shaft, a spring actuated plunger connected with said threaded lever to normally hold the same out of engagement with said threaded shaft, said plunger having a notch located between its ends, a spring actuated lever carried by said meat plate and having a portion adapted to engage the notch of said plunger, a stationary stop adapted to engage said spring actuated lever to throw the same out of engagement with said plunger, and means effecting rotation of said threaded shaft.

5. In a meat cutting machine the combination with a revoluble knife, of a sprocket wheel therefor, a countershaft provided with a sprocket wheel on one end, a chain coöperating with said sprocket wheels, a gear mounted on the opposite end of said countershaft and provided with a radial arm, a main driving shaft provided with a gear adapted to mesh with the gear of said countershaft, a link pivotally connected with said radial arm, a rocking lever pivotally mounted upon a stationary part and connected with said link, a supporting table reciprocating in the plane of operation of said knife, a link connected with said rocking lever and said supporting table, a meat plate slidably mounted on said supporting table, and operating in a plane angularly to the plane of operation of said supporting table and knife, a threaded shaft carried by said supporting table, a lever pivotally secured at one end to said meat plate, said lever having an intermediate threaded portion engaging said threaded shaft, a spring actuated plunger connected with said threaded lever normally holding the same out of engagement with said threaded shaft, said plunger having a notch located between its ends, a spring actuated lever carried by said meat plate and having a portion adapted to engage the notch of said plunger, a stationary stop adapted to engage said spring actuated lever and throw the same out of engagement with said plunger, a ratchet wheel mounted on said threaded shaft, a stationary pawl engaging said ratchet wheel, a rack adjustably mounted on and having yieldingly mounted teeth adapted to be engaged by said ratchet wheel, and means whereby said rack may be anchored in its adjusted position.

6. In a meat cutting machine the combination with a revoluble knife, of a supporting table reciprocating in the plane of operation of said knife, a main driving shaft, gearing mechanism connecting said driving shaft and said revoluble knife, pivotally mounted links connected with said gearing mechanism and supporting table, a threaded shaft carried by said supporting table, a meat plate slidably mounted on said table, a threaded lever connected with said meat plate and coöperating with said threaded shaft thereby serving to reciprocate said meat plate, a spring actuated plunger connected with said threaded lever normally holding the same out of engagement with said threaded shaft, said plunger having a notch located between its ends, a spring actuated lever carried by said meat plate and having a portion adapted to engage the notch of said plunger, a stationary stop adapted to engage said spring actuated lever to throw the same out of engagement with said plunger, and means effecting rotation of said threaded shaft.

7. In a meat cutting machine the combination with a revoluble knife, of a supporting table reciprocating in the plane of operation of said knife, a main driving shaft, gearing mechanism connecting said driving shaft and said revoluble knife, pivotally mounted links connected with said gearing mechanism and supporting table, a threaded shaft carried by said supporting table, a meat plate slidably mounted on said table, a threaded lever connected with said meat plate and coöperating with said threaded shaft thereby serving to reciprocate said meat plate, a spring actuated plunger connected with said threaded lever normally holding the same out of engagement with said threaded shaft, a plunger having a notch located between its ends, a spring actuated lever carried by said meat plate and having a portion adapted to engage the notch of said plunger, a stationary stop adapted to engage said spring actuated lever to throw the same out of engagement with said plunger, a ratchet wheel mounted on said shaft, a stationary pawl engaging said ratchet wheel, and a rack adjustably mounted and having yieldingly mounted teeth adapted to be engaged by said ratchet wheel thereby effecting rotation of said threaded shaft.

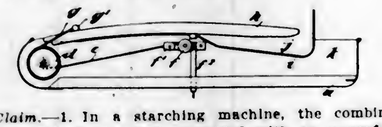
8. In a meat cutting machine the combination with a revoluble knife, of a meat plate slidably mounted on said table and having a meat holder comprising a rigidly mounted member having downwardly projecting teeth and located on one side of said meat plate, a rigidly mounted member located on the opposite side of said meat plate and provided with apertures arranged in vertical alinement, a prong bar adapted to engage the apertures of said last mentioned member, said bar having a movable tooth member adapted to engage the downwardly projecting teeth of said first mentioned member.

9. In a meat cutting machine the combination with a revoluble knife, of a supporting table, means effecting reciprocation of said table and rotation of said knife, a meat plate slidably mounted on said table, mechanism effecting reciprocation of said plate, a spring actuated plunger carried by said plate having an engaging notch, a spring actuated lever adapted to engage the notch of said plunger, and a atop adapted to engage said spring actuated lever to trip the same and release said plunger thereby interrupting movement of said meat plate.

10. In a meat cutting machine the combination with a revoluble knife, of a supporting table, means effecting reciprocation of said table and rotation of said knife, a meat plate slidably mounted on said supporting table, means effecting reciprocation of said meat plate said means including a threaded shaft revolubly mounted on said supporting table, a ratchet wheel secured on said shaft, a spring pawl or detent engaging said ratchet wheel, a rack adapted to be engaged by said ratchet wheel during the reciprocation of said supporting table thereby serving to rotate said threaded shaft, and means connecting said meat plate with said threaded shaft.

11. In a meat cutting machine the combination with a revoluble knife, of a supporting table, means effecting reciprocation of said table and rotation of said knife, a meat plate slidably mounted on said supporting table, means effecting reciprocation of said meat plate including a threaded shaft revolubly mounted on said supporting table, a lever connected with said meat plate and engaging said threaded shaft, a ratchet wheel secured on said shaft, a spring pawl or detent engaging said ratchet wheel, a rack adapted to be engaged by said ratchet wheel during the reciprocation of said supporting table thereby serving to rotate said shaft, said rack having spring mounted teeth displaceable in the direction of their length, and means whereby said rack may be adjusted to different positions and anchored in its adjusted positions.

853,295. SHIRT-STARCHING MACHINE. JOHN W. BRITTAIN, Kilmainham, Dublin, Ireland, assignor to Aublet Harry & Co., Ltd., London, England. Filed Nov. 29, 1904. Serial No. 234,817.



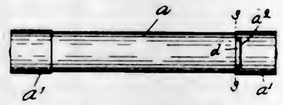
Claim.—1. In a starching machine, the combination with a starch receptacle provided with an unperforated cover, an apron, means for normally holding the apron within the receptacle and means by which the apron may be drawn over the cover during the starching operation.

2. In a starching machine, the combination with a starch receptacle provided with an unperforated cover, an apron, means for normally holding the apron within the receptacle, means by which the apron may be drawn over the cover during the starching operation and means for returning the apron into the starch receptacle after the starching operation has been completed.

3. In a starching machine, the combination with a starch receptacle of an unperforated cover adapted to form a surface upon which the starching operation is effected, a roller mounted within the receptacle, an apron adapted to be wound upon the roller and means whereby the apron can be drawn over the cover during the starching operation.

4. In a starching machine, the combination with a starch receptacle, of an unperforated cover adapted to form a surface upon which the starching operation is effected, a roller mounted within the receptacle, an apron adapted to be wound upon the roller, means whereby the apron can be drawn over the cover during the starching operation and means for operating the roller to rewind the apron thereon after the starching operation is completed.

853,296. ELECTRIC FUSE OR CUT-OUT. LEONARD B. BUCHANAN, Woburn, Mass. Filed Aug. 22, 1904. Serial No. 221,629.

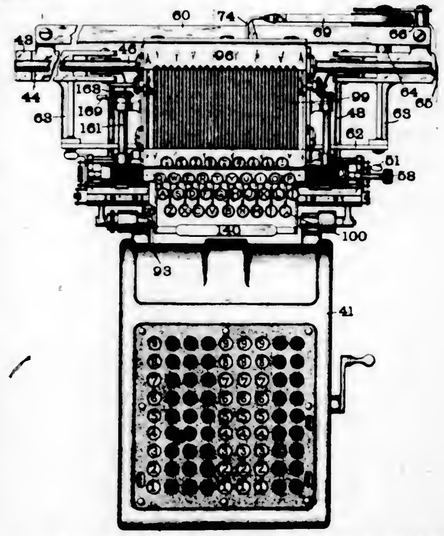


Claim.—1. In an inclosed fuse or cut-out, a cylindrical casing having an aperture through the side thereof, a pair of terminal caps closing the ends of said casing, one of said caps having a notch in its edge, a fuse wire connected at its ends to said caps, an indicating spring having one end held between said casing and the notched cap, and a holding wire connected to the other end of said spring which passes through said aperture and encircles said fuse wire and acts to hold said spring under tension in said notch, substantially as described.

2. In an inclosed fuse, a casing having end caps, one of which is notched, a fuse-wire contained in said casing, a spring actuated indicator on the outside of the casing which is contained in the notch of the end cap, and means extending through a hole in the casing for connecting said indicator with the fuse-wire, substantially as described.

853,297. TYPE-WRITING ATTACHMENT FOR ADDING-MACHINES. EDWIN B. CRAM, St. Louis, Mo., assignor to Cram Writing Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Apr. 19, 1906. Serial No. 312,674.

Claim.—1. The combination with an adding machine provided with a carriage, of a platen for said carriage, typewriting mechanism comprising key bars and type bars, connection between said typewriting mechanism and adding machine carriage, whereby said parts may be moved in unison, means for moving said typewriting mechanism laterally independently of said adding machine carriage, and means for pivotally moving said platen into one position to co-operate with said adding machine and into another to co-operate with said typewriting mechanism.



2. The combination with an adding machine provided with a carriage, of a platen for said carriage, typewriting and actuating mechanism, connections between said tpyewriting and actuating mechanism and said adding machine carriage, whereby said parts may be moved in unison, means for independently moving said typewriting and actuating mechanism laterally along said carriage, and means for moving said typewriting mechanism transversely to said carriage.

3. The combination with an adding machine provided with a carriage, of a platen for said carriage, typewriting mechanism, connections between said typewriting mechanism and said adding machine carriage, whereby said parts may be moved in unison, means for independently moving said typewriting mechanism laterally along said carriage, and means for pivotally moving said typewriting mechanism transversely to said carriage.

4. The combination with an adding machine provided with a carriage, of a platen for said carriage, typewriting mechanism comprising key bars and type bars, means for moving said typewriting mechanism laterally along said carriage, and means for moving said typewriting mechanism transversely to said carriage.

5. The combination with an adding machine provided with a carriage, of a platen for said carriage, typewriting mechanism comprising key bars and type bars, means for moving said typewriting mechanism laterally along said carriage, and means for pivotally moving said typewriting mechanism transversely to said carriage.

6. The combination with an adding machine provided with a carriage, of a platen for said carriage, typewriting mechanism comprising key bars and type bars, connections between said typewriting mechanism and said adding machine carriage, whereby said parts may be moved in unison, means for independently moving said typewriting mechanism laterally along said carriage, and means for moving said typewriting mechanism transversely to said carriage.

7. The combination with an adding machine provided

with a carriage, of a platen for said carriage, typewriting mechanism comprising key bars and type bars, connections between said typewriting mechanism and said adding machine carriage, whereby said parts may be moved in unison, means for independently moving said typewriting mechanism laterally along said carriage, and means for pivotally moving said typewriting mechanism transversely to said carriage.

8. The combination with an adding machine provided with a carriage, of a platen for said carriage, typewriting mechanism comprising key bars and type bars, means for moving said typewriting mechanism laterally along said carriage, means for pivotally moving said typewriting mechanism transversely to said carriage, and means for slidingly moving a portion of said typewriting mechanism transversely to said carriage independently of the remaining portion.

9. The combination with an adding machine provided with a carriage, of a platen for said carriage, typewriting mechanism comprising key bars and type bars, connections between said typewriting mechanism and adding machine carriage, whereby said parts may be moved in unison, means for moving said typewriting mechanism laterally along said carriage, means for pivotally moving said typewriting mechanism transversely to said carriage, and means for slidingly moving a portion of said typewriting mechanism transversely to said carriage independently of the remaining portion.

10. The combination with an adding machine, of a carriage for said adding machine, typewriting mechanism connected with said carriage to move in unison therewith, means for independently moving said typewriting mechanism laterally along said carriage, and means for moving said typewriting mechanism upwardly and rearwardly away from said carriage.

11. The combination with an adding machine, of a carriage for said adding machine, typewriting mechanism connected with said carriage to move in unison therewith, means for independently moving said typewriting mechanism laterally along said carriage, and pivotal means for moving said typewriting mechanism upwardly and rearwardly away from said carriage.

12. The combination with an adding machine, of a carriage for said adding machine, typewriting mechanism connected with said carriage to move in unison therewith, means for independently moving said typewriting mechanism laterally along said carriage, pivotal means for moving said typewriting mechanism upwardly and rearwardly away from said carriage, and means for slidingly moving a portion of said typewriting mechanism rearwardly independently of the remaining portion.

13. The combination with an adding machine provided with a carriage, of typewriting mechanism comprising type bars and key bars, connections between said carriage and typewriting mechanism, whereby said parts may be moved in unison, means for moving said typewriting mechanism laterally along said carriage, and means for moving said typewriting mechanism upwardly and rearwardly away from said carriage.

14. The combination with an adding machine provided with a carriage, of typewriting mechanism comprising type bars and key bars, connections between said carriage and typewriting mechanism, whereby said parts may be moved in unison, means for moving said typewriting mechanism laterally along said carriage, and pivotal means for moving said typewriting mechanism upwardly and rearwardly away from said carriage.

15. The combination with an adding machine provided with a carriage, of typewriting mechanism comprising key bars and type bars, connections between said carriage and typewriting mechanism, whereby said parts may be moved in unison, means for moving said typewriting mechanism laterally along said carriage, pivotal means for moving said typewriting mechanism upwardly and rearwardly away from said carriage, and means for slidingly moving a portion of said typewriting mechanism rearward independently of the remaining portion.

16. The combination with a base, of an adding machine secured to said base, a support carried by said base at the rear of the adding machine a typewriting mechanism carried by said support and movable thereon, and means for securing said typewriting mechanism in different positions relative to said adding machine.

17. The combination with a base, of an adding machine secured to said base, a support carried by said base at the rear of the adding machine, typewriting mechanism carried by said support and movable laterally thereof, and a platen adapted to cooperate with said adding machine and with said typewriting mechanism.

18. The combination with a base, of an adding machine carried by said base and provided with a carriage, a support carried by said base at the rear of the adding machine, and typewriting mechanism movably mounted on said support and connected with said adding machine carriage.

19. The combination with a base, of an adding machine secured to said base and provided with a carriage, a support carried by said base at the rear of the adding machine, a typewriter carriage carried by said support and connected with said adding machine carriage to move thereon, and typewriting mechanism carried by said typewriter carriage.

20. The combination with a base, of an adding machine secured to said base and provided with a carriage, a support carried by said base at the rear of the adding machine, a typewriter carriage carried by said support and connected with said adding machine carriage to move thereon, and typewriting mechanism movably carried by said typewriter carriage.

21. The combination with a base, of an adding machine secured to said base and provided with a carriage, a support carried by said base at the rear of the adding machine, a typewriter carriage carried by said support and connected with said adding machine carriage, and typewriting mechanism carried by said base and movable laterally thereof.

22. The combination with a base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said base and connected with said adding machine carriage, and a typewriting mechanism carried by said typewriter carriage and laterally movable thereon, said typewriting mechanism being also pivotally movable upwardly and rearwardly.

23. The combination with a base, of an adding machine secured to said base, a support carried by said base at the rear of the adding machine, typewriting mechanism comprising key bars and type bars and movably mounted on said support, and means for securing said typewriting mechanism in different positions relative to said adding machine.

24. The combination with a base, of an adding machine carried by said base, a support carried by said base at the rear of the adding machine, typewriting mechanism comprising key bars and type bars, and movably mounted on said support, and a platen adapted to co-operate with said adding machine and with said typewriting mechanism.

25. The combination with a base, of an adding machine secured to said base, a carriage for said adding machine, a typewriter carriage carried by said base and connected with said adding machine carriage, and a typewriting mechanism carried by said typewriter carriage and comprising type bars and key bars, said typewriting mechanism being movable laterally of said typewriter carriage and also pivotally movable upwardly and rearwardly.

26. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, and typewriting mechanism mounted on said typewriter base.

27. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, and typewriting mechanism movably mounted on said typewriter base.

28. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, and typewriting mechanism pivotally mounted on said typewriter base.

29. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, and typewriting mechanism comprising type bars and key bars and mounted on said typewriter base.

30. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, and typewriting mechanism comprising type bars and key bars and movably mounted on said typewriter base.

31. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base movably carried by said typewriter carriage, and typewriting mechanism comprising type bars and key bars and pivotally mounted on said typewriter base.

32. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base, a typewriter base carried by said typewriter carriage, typewriting mechanism movably mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and said typewriting machine.

33. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base, a typewriter base carried by said typewriter carriage, typewriting mechanism pivotally mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and said typewriting machine.

34. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base, a typewriter base longitudinally movable on said typewriter carriage, typewriting mechanism comprising key bars and type bars and mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and typewriting mechanism.

35. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base, a typewriter base longitudinally movable on said typewriter carriage, typewriting mechanism comprising key bars and type bars and movably mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and typewriting mechanism.

36. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base, a typewriter base movably carried by said typewriter carriage, typewriting mechanism comprising key bars and type bars and pivotally mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and typewriting mechanism.

37. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, typewriting mechanism mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and said typewriting mechanism.

38. The combination with a main base, of an adding machine, carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, typewriting mechanism movably mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and said typewriting mechanism.

39. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base movably carried by said typewriter carriage, typewriting mechanism pivotally mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and said typewriting mechanism.

40. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, typewriting mechanism comprising type bars and key bars and mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and said typewriting mechanism.

41. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, typewriting mechanism comprising type bars and key bars and movably mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and said typewriting mechanism.

42. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base movably carried by said typewriter carriage, typewriting mechanism comprising type bars and key bars and pivotally mounted on said typewriter base, and a platen pivoted to said adding machine carriage and co-operating with said adding machine and said typewriting mechanism.

43. The combination with a main base, of an adding machine carried by said base, a typewriter base movably carried on said main base, a typewriter main frame longitudinally movable on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and impression devices.

44. The combination with a main base, of an adding machine carried by said base, a typewriter base movably carried on said main base, a typewriter main frame longitudinally movable on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and impression devices.

45. The combination with a main base, of an adding machine carried by said base, a typewriter base movably carried on said main base, a typewriter main frame pivotally carried by said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and impression devices.

46. The combination with a main base, of an adding machine carried by said base, a typewriter main frame mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame, type bars car-

ried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

47. The combination with a main base, of an adding machine carried by said base, a typewriter base movably carried on said main base, a typewriter main frame movably mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame, type bars carried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

48. The combination with a main base, of an adding machine carried by said base, a typewriter base movably carried on said main base, a typewriter main frame pivotally mounted on said typewriter base, a typewriter auxiliary frame movably carried, by said typewriter main frame, type bars carried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

49. The combination with a main base, of an adding machine carried by said base, a typewriter carriage movably mounted on said main base, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and said impression devices.

50. The combination with a main base, of an adding machine carried by said base, a typewriter carriage movably mounted on said main base, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and said impression devices.

51. The combination with a main base, of an adding machine carried by said base, a typewriter carriage movably mounted on said main base, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and said impression devices.

52. The combination with a main base, of an adding machine, a typewriter carriage movably mounted on said mounted on said main base, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame, type bars carried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

53. The combination with a main base, of an adding machine carried by said base, a typewriter carriage movably mounted on said main base, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame, type bars carried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

54. The combination with a main base, of an adding machine carried by said base, a typewriter carriage movably mounted on said main base, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame, type bars carried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

55. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, a typewriter main frame mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and said type bars.

56. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and impression devices.

57. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and impression devices.

58. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame mounted on said typewriter base, a typewriter auxiliary frame movably mounted on said typewriter main frame, type bars carried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

59. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, a typewriter auxiliary frame movably mounted on said typewriter main frame, type bars carried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

60. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, a typewriter auxiliary frame movably mounted on said typewriter main frame, type bars carried by said auxiliary frame, and a platen co-operating with said adding machine and said type bars.

61. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, a typewriter main frame mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen pivotally mounted on said adding machine carriage and co-operating with said adding machine and said impression devices.

62. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen pivotally mounted on said adding machine carriage and co-operating with said adding machine and said impression devices.

63. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen co-operating with said adding machine and said impression devices.

64. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame, type bars carried by said auxiliary frame, and a platen pivotally mounted on said adding machine carriage and co-operating with said adding machine and said type bars.

65. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame, type bars carried by said auxiliary frame, and a platen pivotally mounted on said adding machine carriage and co-operating with said adding machine and said type bars.

66. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movably mounted on said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, a typewriter auxiliary frame movably carried by said typewriter main frame, type bars carried by said auxiliary frame, and a platen pivotally mounted on said adding machine carriage and co-operating with said adding machine and said type bars.

67. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame carried by said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

68. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame movably carried by said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

69. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame pivotally carried by said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

70. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter frame movably mounted on said typewriter base, ribbon feeding and impression devices carried by said typewriter frame, means governed by the movement of said typewriter frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

71. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter frame pivotally mounted on said typewriter base, ribbon feeding devices carried by said typewriter frame, means governed by the movement of said typewriter frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

72. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame movably carried by said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, means governed by the movement of said typewriter main frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine and co-operating with said adding machine and said impression devices.

73. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame pivotally carried by said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, means governed by the movement of said typewriter main frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine and co-operating with said adding machine and said impression devices.

74. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame pivotally mounted on said typewriter base, spacing mechanism carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

75. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame mounted on said typewriter base, ribbon feeding devices and spacing mechanism carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

76. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame movably mounted on said typewriter base, ribbon feeding devices and spacing mechanism carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

77. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame pivotally mounted on said typewriter base, ribbon feeding devices and spacing mechanism carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

78. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame movably mounted on said typewriter base, ribbon feeding devices and spacing mechanism carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, means governed by the movement of said typewriter main frame on said typewriter base for throwing said ribbon

feeding devices out of operation, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

79. The combination with a main base, of an adding machine carried by said base, a typewriter base movable on said main base, a typewriter main frame pivotally mounted on said typewriter base, ribbon feeding devices and spacing mechanism carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, means governed by the movement of said typewriter main frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine and co-operating with said adding machine and impression devices.

80. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage mounted on said main base and connected with said adding machine carriage, a typewriter base movable on said typewriter carriage, a typewriter main frame mounted on said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and said impression devices.

81. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage mounted on said main base and connected with said adding machine carriage, a typewriter base movable on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and said impression devices.

82. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage mounted on said main base and connected with said adding machine carriage, a typewriter base movable on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably carried by said typewriter main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and said impression devices.

83. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage mounted on said main base and connected with said adding machine carriage, a typewriter base movable on said typewriter carriage, a typewriter frame movably mounted on said typewriter base, ribbon feeding and impression devices carried by said frame, means governed by the movement of said frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine carriage and co-operating with said adding machine and said impression devices.

84. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage mounted on said main base and connected with said adding machine carriage, a typewriter base movable on said typewriter carriage, a typewriter frame pivotally mounted on said typewriter base, ribbon feeding and impression devices carried by said frame, means governed by the movement of said frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine carriage and co-operating with said adding machine and said impression devices.

85. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base mounted on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, means governed by the movement of said main frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine carriage and co-operating with said adding machine and impression devices.

86. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base mounted on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, ribbon feeding devices carried by said typewriter main frame, a typewriter auxiliary frame movably mounted on said typewriter main frame and provided with impression devices, means governed by the movement of said main frame on said typewriter base for throwing said ribbon feeding devices out of operation, and a platen carried by said adding machine carriage and co-operating with said adding machine and impression devices.

87. The combination with a main base, of an adding machine carried thereby, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, a typewriter main frame mounted on said typewriter base, spacing mechanism carried by said main frame, a typewriter auxiliary frame movably mounted on said main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and impression devices.

88. The combination with a main base, of an adding machine carried thereby, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base longitudinally movable on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, spacing mechanism carried by said main frame, a typewriter auxiliary frame movably mounted on said main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and impression devices.

89. The combination with a main base, of an adding machine carried thereby, a carriage for said adding machine, a typewriter carriage carried by said main base and connected with said adding machine carriage, a typewriter base movably mounted on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, spacing mechanism carried by said main frame, a typewriter auxiliary frame movably mounted on said main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and impression devices.

90. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movable on said main base and connected with said adding machine carriage, a typewriter base movable on said typewriter carriage, a typewriter main frame mounted on said typewriter base, ribbon feeding devices and spacing mechanism carried by said main frame, a typewriter auxiliary frame movably mounted on said main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and impression devices.

91. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movable on said main base and connected with said adding machine carriage, a typewriter base movable on said typewriter carriage, a typewriter main frame movably mounted on said typewriter base, ribbon feeding devices and spacing mechanism carried by said main frame, a typewriter auxiliary frame movably mounted on said main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and impression devices.

92. The combination with a main base, of an adding machine carried by said base, a carriage for said adding machine, a typewriter carriage movable on said main base and connected with said adding machine carriage, a typewriter base movable on said typewriter carriage, a typewriter main frame pivotally mounted on said typewriter base, ribbon feeding devices and spacing mechanism carried by said main frame, a typewriter auxiliary frame movably mounted on said main frame and provided with impression devices, and a platen carried by said adding machine carriage and co-operating with said adding machine and impression devices.

93. The combination with an adding machine, of typewriting mechanism, a paper roll adapted to be moved in one position to co-operate with said adding machine and in another to co-operate with said typewriting mechanism, and means controlled by the movement of said roll for locking it against rotation.

94. The combination with an adding machine, of typewriting mechanism, a paper roll adapted to be moved in one position to co-operate with said adding machine and in another to co-operate with said typewriting mechanism, and means controlled by the movement of said roll for yieldingly locking it against rotation.

95. The combination with an adding machine, of typewriting mechanism, a paper roll adapted to be moved in one position to co-operate with said adding machine and in another to co-operate with said typewriting mechanism, a toothed wheel secured to said roll, a pawl for said wheel, and means for automatically throwing said pawl into and out of engagement with said wheel.

96. The combination with an adding machine, of typewriting mechanism, a paper roll adapted to be moved in one position to co-operate with said adding machine and in another to co-operate with said typewriting mechanism, a toothed wheel secured to said roll, a pawl for said wheel, and a cam for automatically throwing said pawl into and out of engagement with said wheel.

97. The combination with an adding machine, of typewriting mechanism, a carriage for said adding machine provided with a paper roll, means for pivotally moving said paper roll into position to co-operate with said typewriting mechanism, and means controlled by the pivotal movement of said roll for locking it against rotation.

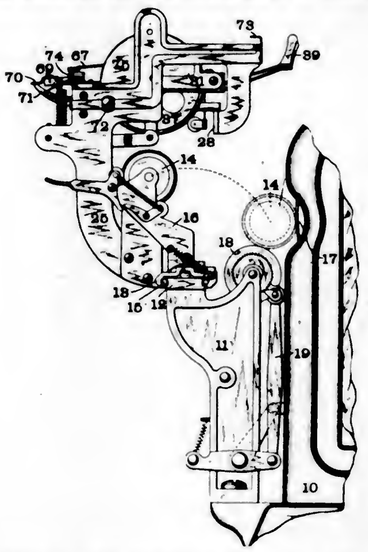
98. The combination with an adding machine, of typewriting mechanism, a carriage for said adding machine provided with a paper roll, means for pivotally moving said paper roll into position to co-operate with said typewriting mechanism, and means controlled by the pivotal movement of said roll for yieldingly locking it against rotation.

853,298. TYPE-WRITING ATTACHMENT FOR ADDING-MACHINES. EDWIN B. CRAM, St. Louis, Mo., assignor to Cram Writing Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed June 8, 1906. Serial No. 320,703.

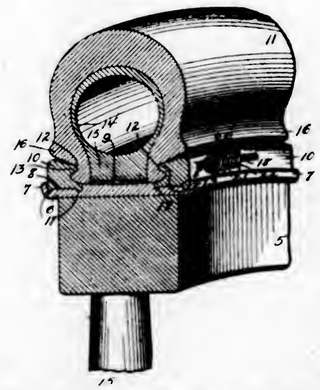
Claim.—1. The combination with an adding machine, of longitudinally movable typewriting mechanism, a platen movable into one position to co-operate with said adding machine and into another position to co-operate with said typewriting mechanism, and a tabulating device for controlling the position of said typewriting mechanism relative to the printing mechanism of said adding machine.

2. The combination with an adding machine, of typewriting mechanism including a laterally movable type-wheel, a platen movable into one position to co-operate with said adding machine and into another position to co-operate with said type wheel, and a tabulating device for controlling the position of said type wheel relative to the printing mechanism of said adding machine.

3. The combination with an adding machine, of longitudinally movable type-writing mechanism, a longitudinally movable platen, said platen being also movable laterally into one position to co-operate with said adding machine and into another position to co-operate with said type-writing mechanism, and a tabulating device for controlling the position of said type-writing mechanism relative to the printing mechanism of said adding machine.



853,299. WHEEL RIM AND TIRE. PETER EBNER, Columbus, Ohio. Filed June 6, 1906. Serial No. 320,379.



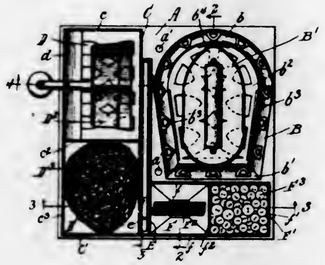
Claim.—1. In a device of the character described, the combination with a clencher body, of a turn-buckle adapted to draw the ends of said clencher body together, oppositely disposed ratchet teeth formed upon said turn-buckle, and ratchet nuts having oppositely disposed teeth adapted to engage the teeth of the turn-buckle to actuate the same in either direction.

2. In a device of the character described, the combination with an annular rim, of a removable annular bead adapted to engage said rim, a tire having an overhanging shoulder adapted to rest upon said bead, the upper face of said bead being inclined, and the upper face of the bead and the lower face of the shoulder, being flat and presenting plane surfaces to each other.

3. In a device of the character described, the combina-

tion with an annular rim, of a removable annular bead adapted to engage said rim, a tire having an overhanging shoulder adapted to rest upon said bead, the upper face of said bead being inclined and sloping downwardly toward the center of the tire, both the upper face of the bead and the lower face of the shoulder, being flat and presenting plane surfaces to each other.

853,300. LAUNDRY-STAND. CHRISTINA ERICKSON, Chicago, Ill. Filed Nov. 8, 1905. Serial No. 286,344.



Claim.—1. The combination with a base of a raised, concave seat thereon, upwardly directed flanges on said seat adapted to engage an iron therein, an iron compartment adjacent thereto having its marginal edge raised and a moisture containing compartment.

2. The combination with a base of legs thereon, a raised perforated concave seat on said base, side and end flanges on said seat, an iron compartment adjacent the concave seat, compartments adjacent said seat having bottoms concave on their upper sides and a moisture containing compartment.

3. The combination with a base of a plurality of iron compartments thereon and one of the same having a raised seat, means for securing the irons in said compartments, compartments adjacent the iron compartments having bottoms concave on their inner sides, a plait lifter compartment and a projection in said compartment.

4. The combination with an apertured base of legs thereon, a concave raised seat on said base adapted to contain a polishing iron, a compartment adjacent said seat opening on the side opposite therefrom and adapted to contain a sad-iron and a raised ledge along the outer margin of said compartment.

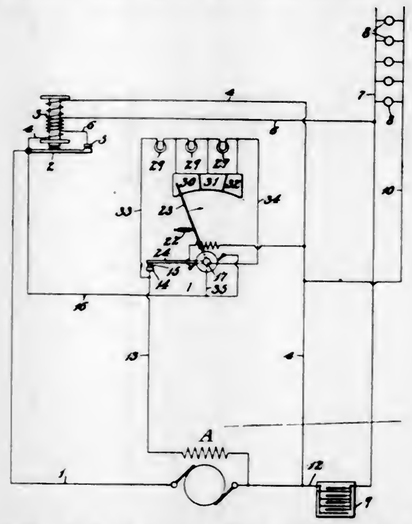
5. In a device of the class described the combination with a base of a raised seat thereon provided with a concave upper surface and adapted to support a polishing iron by its margins only, a compartment adapted to contain a sad-iron, a moisture carrying pad and a plurality of compartments provided with bottoms slanting downwardly from all of their walls toward their center.

6. In a device of the class described the combination with a base of upwardly directed walls thereon affording a plurality of compartments, centrally slanting bottoms in part of said compartments, a ledge on the outer margin of one of said compartments and a raised seat provided with a concave upper surface.

7. In a device of the class described the combination with a base of a concave perforated seat thereon adapted to support an iron at its edges, an iron compartment on said base having a raised margin, a plait lifter compartment on said base, and compartments adjacent said compartments adapted to receive necessary laundry articles.

8. In a device of the class described the combination with a base of compartments thereon and one of the same adapted to seat an iron in upright position, and the other to hold an iron on its side, compartments on said base adapted to receive moisture, and a plait lifter and compartments adjacent thereto.

853,301. DEVICE FOR CONTROLLING THE OUTPUT OF A GENERATOR. ETHELBERT T. FORD and WILLIAM F. BAUER, St. Louis, Mo., assignors to St. Louis Car Lighting Company, St. Louis, Mo., a Corporation of Missouri. Filed Aug. 9, 1906. Serial No. 329,879.



Claim.—1. Means for controlling the output of a generator, comprising a plurality of contacts arranged in the field circuit of the generator, means operated by the passage of current through the supply circuit of the generator for automatically varying the position of one of said contacts relatively to the other to change the strength of the field of the generator, a resistance in said field circuit, and independent means for automatically cutting said resistance into and out of commission as the relative positions of said contacts vary; substantially as described.

2. Means for controlling the output of a generator, comprising a plurality of contacts arranged in the field circuit of the generator, an automatically operated device actuated by the passage of current through the supply circuit of the generator for changing the positions of said contacts relatively to each other, a resistance arranged in said field circuit and connected in multiple with said contacts, and means for automatically cutting more or less of said resistance into and out of commission as the position of said contacts relatively to each other varies; substantially as described.

3. A device for the purpose described, comprising a resistance in the field circuit of a generator, automatic means for varying said resistance as the current through the supply circuit of the generator varies, a carbon resistance in shunt with the resistance first referred to, and automatic means for cutting more or less of said carbon resistance into said field circuit in proportion to the variations of the resistance first referred to; substantially as described.

4. A device for the purpose specified, comprising a generator, a plurality of contacts arranged in the field circuit of the generator, an electric machine which is supplied with current from the supply circuit of the generator, a device governed by said electric machine for varying the positions of said contacts relatively to each other, a carbon resistance, and means actuated by said electric machine for cutting more or less of said carbon resistance into the field circuit of the generator; substantially as described.

5. A device for the purpose specified, comprising a generator, a plurality of contacts arranged in the field circuit of the generator, an electric machine connected to the supply circuit of the generator and being so constructed that its armature shaft moves longitudinally when current of a predetermined strength passes through said machine and rotates the armature, and a member bearing against the end of the armature shaft of said machine and controlled thereby for changing the positions of said contacts relatively to each other; substantially as described.

6. A device for the purpose specified, comprising a generator, a plurality of contacts arranged in the field circuit of the generator, an electric machine connected to the supply circuit of the generator and being so constructed that its armature shaft moves longitudinally when current of a predetermined strength passes through said machine and rotates an armature which is fixed to said shaft, a member which is engaged by the end of the armature shaft of said machine for changing the positions of said contacts relatively to each other, a carbon resistance connected in multiple with said contacts, and means actuated by the armature shaft of said electric machine for cutting said resistance into the field circuit of the generator; substantially as described.

7. A device for the purpose specified, comprising a generator, a plurality of contacts arranged in the field circuit of the generator, an electric machine connected to the supply circuit of the generator and having an armature shaft which is provided with a screw-threaded portion, a fixed bearing in which the screw-threaded portion of said armature shaft is mounted, whereby rotary movement of said shaft will cause it to move longitudinally, and a yielding member bearing against the end of said armature shaft and carrying one of said contacts; substantially as described.

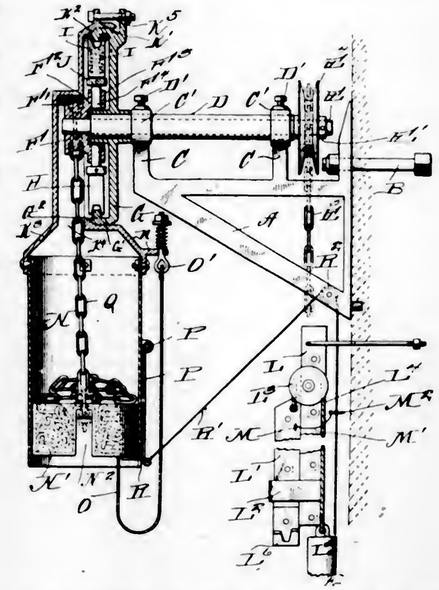
8. A device for the purpose specified, comprising a generator, a plurality of contacts arranged in the field circuit of the generator, an electric machine connected to the supply circuit of the generator and having an armature shaft which is provided with a screw-threaded portion, an armature fixed to said shaft a fixed bearing in which the screw-threaded portion of said armature shaft is mounted, whereby rotary movement of said shaft will cause it to move longitudinally, a spring-actuated member bearing against the end of said armature shaft and carrying one of said contacts, a carbon resistance, and a device connected to said armature shaft which is adapted to cut more or less of said resistance into the field circuit of the generator as the armature shaft of said electric machine rotates; substantially as described.

9. A device for the purpose described, comprising a plurality of contacts arranged in the field circuit of a generator, an electric machine connected to the supply circuit of the generator and being so constructed that its armature shaft rotates through an arc of approximately 90° when current of a predetermined strength passes through said machine, a pivoted member carrying one of said contacts and yieldingly engaging one end of said armature shaft, means for causing the armature shaft to move longitudinally as the armature is rotated, a carbon resistance connected in multiple to said contacts, a member fastened to the armature shaft of said machine for cutting said resistance into commission, a spring-actuated slide carrying the other contact, and a stop co-operating with said slide; substantially as described.

10. An axle light device comprising a generator, translating devices, a storage battery, means for causing current to be supplied to said translating devices and storage battery when the armature attains a certain speed, a plurality of contacts arranged in the line which connects the armature and the field of the generator together, an electric machine adapted to be energized by the current passing through the supply circuit of the generator for changing the position of said contacts relatively to each other, a carbon resistance, and a member actuated by said electric machine for cutting said resistance into and out of the field circuit; substantially as described.

853,302. FIRE-ESCAPE. EDWARD F. G. GIBBS, Washington, D. C. Filed Apr. 25, 1906. Serial No. 313,608.

Claim.—1. In a fire-escape machine, the combination of a fixed member, as G, having an annular surface adapted to frictional engagement, a sprocket wheel, an endless chain or cable passing over the said wheel, an arm projecting from the said wheel, a friction brake shoe carried by the said arm and having at its periphery a bearing surface adapted to frictional engagement with the said fixed member and a spring external to the said arm and internal to the said brake shoe, which holds the said shoe out of engagement with the said fixed member until overcome by the centrifugal force due to the rapid rotation of the said sprocket wheel, substantially as set forth.



2. In a fire-escape machine, the combination of a fixed member, as G, having an annular bearing surface adapted to frictional engagement, which projects radially therefrom and serves to expel particles of dust, rust and cuttings, a sprocket wheel, an endless chain or cable passing over the said wheel, an arm projecting from the said wheel, a friction brake shoe carried by the said arm and having at its periphery a bearing surface adapted to frictional engagement with the said fixed member and a spring external to the said arm and internal to the said brake shoe which holds the said shoe out of engagement with the said fixed member until overcome by the centrifugal force due to the rapid rotation of the said sprocket wheel, substantially as set forth.

3. In a fire-escape machine, the combination of a fixed member, as G, having a projecting annular vertically disposed friction rib, as G^2, with angular bearing surfaces, a sprocket wheel, an endless chain or cable passing over the said wheel, an arm projecting from the said wheel, a friction brake shoe carried by the said arm, having at its periphery a groove with bearing surfaces adapted to frictional engagement with the said friction rib and a spring which holds the said shoe out of engagement with the said rib until overcome by the centrifugal force due to the rapid rotation of the said sprocket wheel, substantially as set forth.

4. In a fire escape, the combination with a hollow shaft, a housing supported upon said hollow shaft, a solid shaft journaled in said hollow shaft, a sprocket wheel fixed to the inner end of said solid shaft, an endless chain passing about said wheel, means for rotating said sprocket wheel whereby said chain may be raised, a chain box connected to said housing, a removable bottom to said box and adapted to support the chain, a support for the bottom, and means for releasing said bottom, as set forth.

5. As an article of manufacture, a male member of a housing arrangement having an internal horizontally disposed flange from which flange projects an annular radially disposed rib, whose faces are angular to each other and adapted to frictional engagement, substantially as set forth.

6. As an article of manufacture a chain box, a movable chain box bottom therefor, having the means of engaging and holding one strand of an endless chain or cable and an opening through which the other strand of the said chain may pass up freely when the said bottom is in its normal position at the lower part of a chain box to which it is adapted, substantially as set forth.

7. In an endless cable machine, the combination of a fixed male member of the housing arrangement having an internal horizontally disposed flange, a female housing member having an external horizontally disposed flange which is adapted to telescope or incase the said male member and an internal opening through the lower portion of its periphery through which opening a chain is adapted to pass, a chain box attached to the lower portion of the said female housing member whose axial center is at or near a right angle to that of the said female member, and a movable chain box bottom having the means for engaging and holding one strand of an endless chain and a cavity through which the said endless chain may be drawn up into the said chain box when the said bottom is in its normal position at the lower end of the said chain box, substantially as set forth.

8. In an endless chain machine, the combination of a sprocket wheel, an endless cable or chain, a housing arrangement having a movable bottom which bottom is provided with means for engaging and holding one strand of the said cable or chain and an open cavity through which the other strand may pass freely up over the said wheel and be deposited in the said housing arrangement, substantially as set forth.

9. In an endless chain machine, the combination of an endless chain, a housing arrangement having a movable bottom provided with means for engaging and holding one strand of the said endless chain, an open cavity through which the other strand may pass freely and a channel across its bottom into which the short externally remaining portion of the chain may be drawn up and housed when the greater part of it is housed within the said housing arrangement, substantially as set forth.

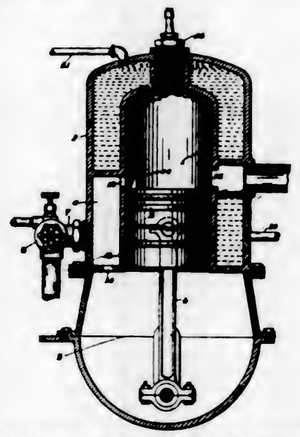
10. In an endless chain machine the combination of an endless chain, a housing arrangement having a movable bottom provided with means for engaging and holding one strand of the said endless chain and a cavity through which the other strand may pass freely and a tripping mechanism, the displacing of which allows the said chain to fall into a suspended position, substantially as set forth.

11. In a fire-escape system, the combination of a building, a chain housing arrangement attached thereto, a revoluble support inclosed in the said housing arrangement, an endless chain passing over the said support, a movable bottom attached to the said housing arrangement, the displacing of which allows the said chain to fall into a suspended working position, a movable ladder attached to the said building and means attached to the said ladder for engaging and holding the said chain by which the said ladder may be raised and lowered, substantially as set forth.

12. In a fire-escape system, the combination of a building, a chain housing arrangement attached thereto, a sprocket wheel inclosed in the said housing arrangement, an endless chain passing over the said wheel, a detachable chain box bottom attached to the said housing arrangement, a tripping mechanism, the operation of which causes the chain to fall, an extensible ladder attached to the said building and means of attaching the said ladder to the said tripping mechanism to the end that the said chain will fall automatically with hauling down of the ladder for the purpose of sounding an alarm, substantially as set forth.

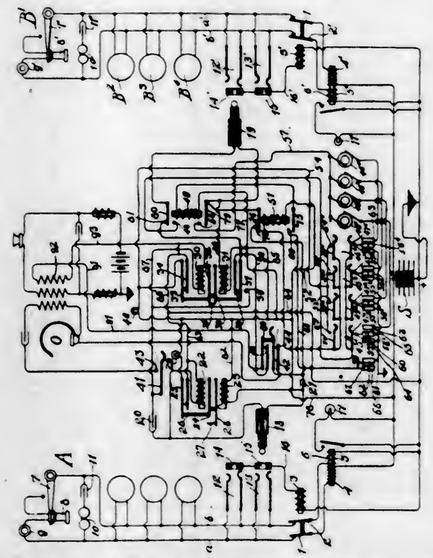
853,303. GAS-ENGINE. HARVEY J. HENRY, Massillon, Ohio. Filed Mar. 9, 1907. Serial No. 361,470.

Claim.—1. In a gas engine, a piston cylinder, a piston located therein, a pitman and a power shaft, an intake chamber located at one side of the piston cylinder, said intake chamber provided with vertical and horizontal passages, a port located in the upper portion of the intake chamber and a deflecting plate secured to the piston, and a crank and compression chamber, substantially as and for the purpose specified.



2. In a gas engine, the combination of a piston cylinder, a piston located therein, a crank chamber, a power shaft located through said crank chamber, said power shaft provided with rings and the rings seated in the boxings of the power shaft and an intake chamber provided with horizontal and vertical passages and a port located in the upper portion of said intake chamber, substantially as and for the purpose specified.

853,304. TELEPHONE-EXCHANGE SYSTEM. ARTHUR R. KAHL, Rochester, N. Y., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Jan. 31, 1906. Serial No. 298,741.



Claim.—1. In a telephone exchange system, the combination with a central exchange, of substations connected

therewith through telephone lines, a cord circuit at the central exchange, a source of ringing current at the central exchange normally disconnected from the cord circuit, a relay controlling the connection of said source with the cord circuit, a second relay controlling the circuit for said first relay, and interrupter means in said circuit for periodically causing closure of said circuit to periodically cause action of the first relay to connect the source with the cord circuit and with a line connected therewith.

2. In a telephone exchange system, the combination with a central exchange, of a plurality of substations for connection therewith through telephone lines, a cord circuit at the central exchange, a source of ringing current at the central exchange, a key primarily controlling the current flow from said source, a relay controlling the application of ringing current to the cord strands, a second relay controlling the circuit through said first relay, actuation of the key causing closure of a circuit through said second relay, and interrupter means for the first relay circuit for causing interrupted application of ringing current to the cord strands by the first relay.

3. In a telephone exchange system, the combination with a central exchange, of a plurality of substations for connection therewith through telephone lines, a cord circuit at the central exchange, a source of ringing current at the central exchange, a key primarily controlling the current flow from said source, a relay controlling the application of ringing current to the cord strands, a second relay controlling the circuit through said first relay, actuation of the key causing closure of a circuit through said second relay, interrupter means for the first relay circuit for causing interrupted application of ringing current to the cord strands by the first relay, and means for causing the cord circuit and connected line to be grounded during a short interval before the application thereto of ringing current.

4. In a telephone exchange system, the combination with a central exchange, of a plurality of substations for connection therewith through telephone lines, a cord circuit at the central exchange, a source of ringing current at the central exchange, a key primarily controlling the current flow from said source, a relay controlling the application of ringing current to the cord strands, a second relay controlling the circuit through said first relay, actuation of the key causing closure of a circuit through said second relay, interrupter means for the first relay circuit for causing interrupted application of ringing current to the cord strands by the first relay, and means for causing the cord circuit and connected line to be grounded during a short interval before and after the application of ringing current thereto.

5. In a telephone exchange system, the combination with a central exchange, of substations connected therewith through telephone lines, a cord circuit at the central exchange for connecting substations together for conversation, a source of ringing current at the central exchange, a key for primarily controlling the flow of current from said source, a relay directly controlling the application of the ringing current to the cord circuit strands, a second relay connected in circuit upon actuation of the key, a circuit for the first relay controlled by said second relay, and interrupter means for interrupting the circuit through the first relay whereby pulsations of ringing current will be applied to the cord circuit and line connected therewith, said second relay being associated with said key to lock said key in its actuated position.

6. In a telephone exchange system, the combination with a central exchange, of substations connected therewith through telephone lines, a cord circuit at the central exchange for connecting substations together for conversation, a source of ringing current at the central exchange, a key for primarily controlling the flow of current from said source, a relay directly controlling the application of the ringing current to the cord circuit strands, a second relay connected in circuit upon actuation of the key, a circuit for the first relay controlled by said second relay, interrupter means for interrupting the circuit through the first relay whereby pulsations of ringing current will be applied to the cord circuit and line connected therewith, said second relay being associated with said key to lock said key in its actuated position, and means upon actuation of substation apparatus in answer to signaling current for causing the circuit through said second relay to be opened whereby said first relay is deënergized to disconnect the ringing current from the cord circuit, deënergization of the second relay causing also release of the actuated key.

7. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange for connecting telephone lines together, a source of signaling current at the exchange, a key primarily controlling the circuit from said source, a relay directly controlling the application of ringing current to the cord circuit and line connected therewith, a second relay controlling the circuit through said first relay, the circuit through said second relay being normally controlled by said key, said second relay being associated with said key to lock said key in its actuated position, and means upon actuation of substation apparatus in answer to the signaling current for causing the circuit through said second relay to be broken whereby said key is released and the circuit through said first relay broken.

8. In a telephone system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange for connecting subscribers for conversation, a source of ringing current at the central exchange, a relay for controlling the connection of said source with the cord circuit, and a second relay for controlling the circuit through said first relay, each of said relays directly controlling the continuity of the cord circuit.

9. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange, a source of ringing current at the exchange, a relay controlling the connection of the source with the cord circuit, and a second relay controlling the circuit through said first relay and adapted upon energization to close circuit through the first relay whereby said source will be connected with the cord circuit each of said relays directly controlling the continuity of the cord circuit.

10. In a telephone exchange system, the combination with a central exchange, of substations connected therewith through telephone lines, a cord circuit at the central exchange, a source of ringing current at the central exchange normally disconnected from the cord circuit, a relay controlling the connection of said source with the cord circuit, a second relay controlling the circuit for said first relay, and interrupter means in said circuit for periodically causing closure of said circuit to periodically cause action of the first relay to connect the source with the cord circuit and with a line connected therewith, said relay controlling the continuity of the cord circuit.

11. In a telephone exchange system, the combination with a central exchange, of substations connected therewith through telephone lines, a cord circuit and a source of ringing current at the exchange, a source of direct current at the exchange for supplying talking and signaling currents, a relay for controlling the application of ringing current from said source to the cord circuit strands, a second relay controlling the circuit through said first relay, interrupter means for said first relay circuit for periodically interrupting the current flow therethrough, and interrupter means included in the ringing current circuit adapted to alternately connect with ground and with the source of signaling current, said interrupters acting in harmony whereby the second interrupter will be connected with the source of signaling current during the time that the first interrupter closes circuit through the first relay, and means upon actuation of substation apparatus in response to the ringing current for causing opening of the second relay circuit whereby said first relay becomes inert.

12. In a telephone exchange system, the combination with a central exchange, of substations connected therewith through telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange, a source of signaling current at the cen-

tral exchange, a relay for controlling the connection of the ringing circuit with the cord strands, interrupter mechanism for periodically closing circuit through said relay whereby signaling current is periodically applied to the cord circuit strands, and means for grounding the line and cord circuit during a short interval before and after each application of ringing current thereto.

13. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange, a source of signaling current at the central exchange, a relay for controlling the connection of the ringing circuit with the cord strands, interrupter mechanism for periodically closing circuit through said relay whereby signaling current is periodically applied to the cord circuit strands, and interrupter means associated with the ringing circuit, said first and second interrupter means acting in harmony and so adjusted that the cord circuit and line connected therewith will be grounded during a short interval immediately before and after the application of ringing current thereto.

14. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit and a source of ringing current at the exchange, a relay controlling the connection of the ringing current circuit with the ringing cord strands, an interrupter controlling the circuit through said relay and adapted during one interval to close circuit through the relay and at another interval to open the circuit therethrough, and an interrupter for the ringing current circuit adapted during one interval to connect with ground and during another interval to connect with the source of ringing current, the length of the interval for applying ringing current by the one interrupter being less than the length of the interval of closure of the relay circuit by the other interrupter, whereby the cord strands and line connected therewith will be grounded during a short interval directly before and after the application of ringing current thereto.

15. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit and a source of ringing current at the exchange, a relay controlling the application of the ringing circuit to the line to be called, an interrupter for controlling the circuit through said relay, said circuit being closed during part of the revolution of the interrupter and opened during the remaining part of the revolution, and an interrupter for the ringing circuit adapted during part of its revolution to connect with ground and during the other part of its revolution to connect with the source of ringing current, the interval of connection with the source of ringing current being slightly less than the interval of closure of the relay circuit, whereby the ground connection will be maintained a slight interval before and after application of ringing current and the connected line therefor grounded before and after receiving charges of ringing current.

16. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit and a source of ringing current at the exchange, a source of direct current at the exchange for supplying talking and signaling currents, a relay controlling the application of ringing circuit to the line to be signaled, a second relay controlling the circuit through said first relay, the circuit through said first relay being closed upon closure of the circuit through said second relay whereby the ringing circuit will be connected with the line, a supervisory relay, and switching means controlled by the supervisory relay and actuated upon actuation of substation apparatus in response to signaling current to open the circuit through said second relay whereby said first relay becomes inert and the ringing current circuit disconnected.

17. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit and a source of ringing current at the exchange, a source of direct current at the exchange for supplying talking and signaling currents, a relay controlling the application of ringing current to the line to be signaled, a second relay controlling the circuit through said first relay, a cut-off relay for the cord circuit closure, the circuit through said second relay causing closure of the circuit through the first relay whereby said first relay will be energized to connect the ringing circuit with the line, a supervisory relay, and switching means controlled by the supervisory relay and actuated upon actuation of substation apparatus in response to signaling current to open the circuit through said second relay whereby said first relay becomes inert and the ringing current circuit disconnected, said relays jointly controlling the continuity of the cord circuit.

18. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit and a source of ringing current at the central exchange, a source of direct current at the exchange for providing talking and signaling current, a key primarily controlling the ringing circuit, a relay for directly controlling the application of the ringing circuit to the ringing cord circuit strands, a second relay controlling the circuit through said first relay, said second relay being associated with said key to lock said key in its actuated position after actuation thereof, a supervisory relay, said second relay becoming energized upon application of the key whereby the first relay is energized to connect the ringing circuit with the cord strands and line to be called, and switching mechanism controlled by the supervisory relay to open the circuit through the second relay upon actuation of substation apparatus in response to signaling current, deënergization of said second relay causing deënergization of the first relay and causing also release of the locked key.

19. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit and a source of ringing current at the central exchange, a source of direct current at the exchange for providing talking and signaling current, a relay for directly controlling the application of the ringing circuit to the ringing cord circuit strands, a second relay controlling the circuit through said first relay, a key primarily controlling the circuit through said second relay, said second relay being associated with said key to lock said key in its actuated position after actuation thereof, a supervisory relay, said second relay becoming energized upon actuation of said key to closed circuit through the first relay whereby the first relay is energized to connect the ringing circuit with the cord strands and line to be called, and switching mechanism controlled by the supervisory relay to open the circuit through the second relay upon actuation of substation apparatus in response to signaling current, deënergization of said second relay causing deënergization of the first relay and causing also release of the locked key, said relays jointly controlling the continuity of the cord circuit.

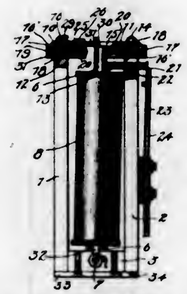
20. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange, a source of signaling current at the central exchange, a relay for controlling the connection of the ringing circuit with the cord strands, interrupter mechanism for periodically closing a circuit through said relay whereby signaling current is periodically applied to the cord strands, and means for causing the line and circuits to be relieved from charges before and after each application of ringing current.

21. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange, supervisory apparatus for the cord circuit, a source of signaling current at the exchange, a calling plug for the cord circuit, a relay for disconnecting the calling plug from the supervisory apparatus and for connecting said plug with the source of signaling current, means for interrupting the circuit from said source whereby pulsations of ringing current are applied to the line connected with the calling plug, and means for relieving the line from static charges after each pulsation before said relay is restored to its normal position to connect the calling plug with the supervisory apparatus.

22. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange, a source of signaling current, indicating apparatus associated with the cord circuit, a calling side of said cord circuit normally connected with the indicating apparatus, a relay adapted upon actuation to disconnect the calling side of the cord circuit from the indicating apparatus and to connect said calling side with the source of signaling current, interrupter mechanism for causing alternate effective and ineffective periods for the relay whereby the flow of signaling current is caused to be intermittent, and means for connecting the calling side of the cord circuit with ground after each application of ringing current before said relay becomes ineffective whereby the line and calling side of the cord circuit are relieved of static charges before the connection of the calling side with the indicating apparatus.

23. In a telephone exchange system, the combination with a central exchange, of telephone lines leading therefrom and terminating in substations, a cord circuit at the central exchange, a source of signaling current at the exchange, a calling side for the cord circuit normally connected with the remainder of the cord circuit, a relay adapted normally to cause connection of the calling side with the remainder of the cord circuit and adapted when actuated to connect said calling side with a source of signaling current, interrupting means adapted when active to close circuit through said relay to cause actuation thereof, additional interrupting mechanism for causing interruptions in the flow of current from said signaling source, said interrupting means being adjusted so that current will flow from said source during the time that the first interrupting means is active, the active period of the first interruping means being slightly prolonged for an interval beyond the period of current flow from said source, and means during such interval for connecting the calling side of the cord circuit with ground, whereby the connected lines are relieved of static charges before said relay becomes inactive to allow reconnection of the calling side of the cord circuit with the remainder thereof.

853,305. CIRCUIT-CHANGING APPARATUS. WILLIAM KAISLING, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Nov. 23, 1903. Serial No. 182,390.



Claim.—1. In a device of the class described, the combination with a magnet, of an armature adapted to swing between the poles thereof, means for polarizing said armature, and braking means for retarding the actuation of said armature when it is polarized in one direction, and for releasing said armature when polarized in reverse direction.

2. In a device of the class described, the combination with a magnet, of an armature adapted to swing between the poles thereof, an energizing core for polarizing said armature, and braking means mechanically associated with said armature for normally retarding actuation thereof and for retarding actuation thereof when said armature is polarized in one direction and for releasing said armature when polarized in the reverse direction.

3. In a device of the class described, the combination with a magnet, of an armature adapted to swing between the poles thereof, an energizing coil for polarizing said armature in either direction, and a brake mechanically engaging said armature and included in and controlled by the magnetic circuit through said armature and magnet, said brake being adapted to retard the actuation of said armature when said armature is polarized in one direction and to release said armature when it is polarized in the reverse direction.

4. In a device of the class described, the combination with a U-shaped permanent magnet, of an armature adapted to swing between the poles thereof, a winding for polarizing said armature whereby said armature may be attracted in either direction by said permanent magnet, a brake lever disposed in the path of the magnetic circuit through said core and said magnet, current flow in one direction through said polarizing winding causing attraction of said brake lever against the armature end, whereby the actuation of the armature upon attraction is retarded, and current flow in the opposite direction through said winding causing said brake to be released from the armature end to allow unimpeded actuation thereof.

5. In a device of the class described, the combination with a U-shaped permanent magnet, of an armature pivoted at the bend thereof and adapted to swing between the poles thereof, and a mechanical brake adapted for frictional engagement with the armature end to retard the actuation thereof, upon current flow through the energizing winding in one direction said mechanical brake being magnetically controlled by the magnetic circuit through said magnet and armature.

6. In a device of the class described, the combination with a permanent U-shaped magnet, of an armature pivoted in the bend thereof and adapted to swing between the poles thereof, energizing coils surrounding said armature for causing polarization thereof, a magnetic brake normally having frictional engagement with the end of the core to retard the actuation thereof, current flow through the energizing winding in one direction causing increased frictional engagement of the brake with the armature, and current flow in the opposite direction through said winding causing release of said braking mechanism from said armature.

7. In a device of the class described, the combination with a permanent U-shaped magnet, of an armature adapted to swing between the poles thereof, means for polarizing said armature to cause its attraction by either of the magnet poles, and magnetic means for resisting the actuation of said armature.

8. In a device of the class described, the combination with a permanent U-shaped magnet, of an armature adapted to swing between the poles thereof, means for polarizing said armature to cause its attraction by either of the magnet poles, and magnetic means for resisting the actuation of said armature in one direction.

9. In a device of the class described, the combination with a U-shaped permanent magnet, of an armature in the shape of a core pivoted in the yoke of said magnet and adapted to swing between the magnet poles, means for polarizing said core to cause attraction thereof by either magnet pole, and a keeper disposed above one of said magnet poles and extending over the path of the swinging core, said keeper being adapted to mechanically affect said core to resist its actuation.

10. In a device of the class described, the combination with a U-shaped permanent magnet, of an armature in the shape of a core pivoted in the yoke of said magnet and adapted to swing between the magnet poles, means for polarizing said core to cause attraction thereof by either magnet pole, and a pivoted keeper disposed above one of said magnet poles and extending over the path of the swinging core, said keeper being adapted to mechanically affect said core to resist its actuation.

11. In a device of the class described, the combination with a permanent U-shaped magnet, of a core pivoted in the yoke of the magnet and adapted to swing between the

magnet poles, an energizing coil for polarizing said core to cause its attraction by either of the magnet poles, and a keeper pivoted so that one end is disposed over one of the magnet poles and the other end thereof extends over the path of the core and in contact with said core.

12. In a device of the class described, the combination with a permanent U-shaped magnet, of an armature core pivoted in the yoke of the magnet and adapted to swing between the magnet poles, an energizing coil for polarizing said core to cause attraction thereof by either of the magnet poles, and a pivoted keeper, one end of said keeper being disposed over one of the magnet poles, the other end thereof being in contact with said core, whereby said core is held in any actuated position.

13. In a device of the class described, the combination with a U-shaped permanent magnet, of a core pivoted in the bend thereof and extending upwardly to swing between the magnet poles, an energizing coil for said core, a keeper disposed over one of the magnet cores and extending over the path of the core and normally in contact therewith, current through said energizing coil in one direction causing attraction between the other magnet pole and the core and repulsion between the keeper and the core, while current in the opposite direction through said energizing coil causes attraction between said core and the keeper and attraction between the core and the pole over which said keeper is disposed, said keeper when attracted being adapted to come into contact with the swinging core to resist its actuation.

14. In a device of the class described, the combination with a permanent U-shaped magnet, of an electromagnet core pivoted at the yoke of the magnet and extending upwardly to swing between the poles of the magnet, a keeper pivoted between one of the poles of the magnet and the core to extend over said pole and part-ways between the poles over the path of the core and normally in contact with the core, an energizing winding for said core, current through said winding in one direction causing polarization of said core to cause attraction between the core and the other pole and repulsion between the core and the keeper, current through said winding in an opposite direction polarizing said core to cause attraction between the core and the keeper, and attraction between the core and the pole over which the keeper is disposed, whereby the actuation of the core is resisted.

15. In a device of the class described, the combination with a permanent U-shaped magnet having inwardly extending pole pieces, a core pivoted at the yoke of the magnet and extending upwardly to swing between the pole faces, adjusting means for said pole pieces for regulating the air gap between the core and the pole faces, a keeper pivoted over the inner end of one of the pole pieces, one end of the keeper extending over said pole piece, and the other end extending over the core and normally in contact therewith, and an energizing winding for polarizing said core, current in one direction through said winding causing attraction between said core and the keeper and attraction between the core and the pole over which the keeper is disposed, thus bringing said keeper into mechanical connection with said core to retard its actuation, current through said core in an opposite direction causing repulsion between said keeper and attraction between the core and the other pole piece.

16. In a device of the class described, the combination with a permanent U-shaped magnet having inwardly extending pole pieces, of a core pivoted in the magnet bend and extending upwardly to swing between the pole faces, adjusting means for regulating the air gap between the core and the pole faces, a keeper pivoted over the inner end of one of the pole pieces, one end of the keeper being disposed over said pole piece and the other end thereof extending over the core normally in contact therewith, an energizing winding for polarizing said core, current through said coil in one direction causing attraction between said keeper and its associated pole piece, whereby the actuation of the core in this direction is braked, current through the coil in the opposite direction causing repulsion between said core, the keeper and the associated pole piece, and attraction between the core and the other pole piece, adjusting screws for adjusting the air gap between said keeper and the associated pole piece and core, an actuating stud on said core, and switch springs adapted to be actuated by said stud upon attraction of the core.

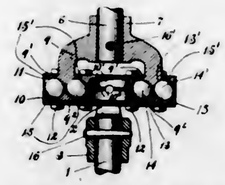
853,306. POTATO-EYE REMOVER. ARTHUR C. KENT, Janesville, Wis., assignor to H. M. Kent, Janesville, Wis. Filed Nov. 23, 1904. Serial No. 234,048.



Claim.—1. A device for removing eyes from potatoes, comprising a handle, a dished cutter partially embracing said handle and projecting from one end thereof, the protruding end of said cutter having such shape that it will, together with the end of the handle mark approximately one-fourth of an ellipse, said end of the handle constituting a limiting abutment behind the protruding portion of the dished cutter.

2. A device for removing eyes from potatoes, comprising a handle and a curved cutter plate partially embracing the handle and projecting from one end thereof, the projecting portion of the cutter plate having such shape that it will, together with the end of the handle, mark approximating one-fourth of an ellipse, and the end of the handle over the cutter beveled.

853,307. SHAFT-COUPLING. GEORGE B. KINSLER, Hartford, Conn., assignor of one-half to Joseph A. Bennett, Hartford, Conn. Filed Dec. 6, 1906. Serial No. 346,528.



Claim.—1. A universal coupling comprising a pair of shafts, each having a fork provided with ball-recesses in its arms, plates in which said forks are inserted, each plate having ball-recesses, balls and means for uniting said plates.

2. The combination, with a pair of shafts, each having a fork at its end, and each fork provided with opposing ball-recesses, of balls fitting the recesses of the forks; and plates having ball-recesses.

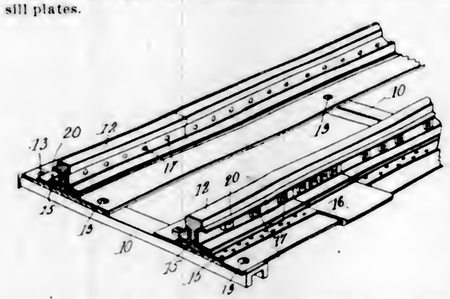
3. The combination, with a pair of forked shafts, each fork having ball-recesses in its arms, of plates slotted to receive the arms of the forks; means for uniting said plates; and balls located in the recesses of the arms and plates.

4. The combination, with a pair of forked shafts, each fork having ball recesses in its arms, of plates slotted to receive the arms of the forks; means for uniting said plates; balls located in the recesses of the arms and plates; and a sectional casing surrounding the forks and plates.

853,308. RAILROAD-TRACK CONSTRUCTION. WILLIAM LEE, Griffith, Tenn. Filed Feb. 25, 1907. Serial No. 359,118.

Claim.—1. In a railroad track construction, a plurality of cross ties, metallic sill plates secured to said ties, traffic rails resting on the sill plates, and angle bars extending the full length of the rails and secured at intervals to both the rails and the sill plates.

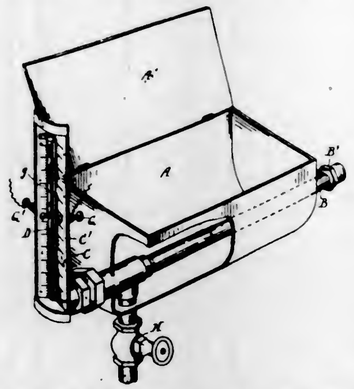
2. In railroad track construction, a plurality of cross ties, sill plates secured to the cross ties and extending the full length of the road, traffic rails mounted on the sill plates and arranged to break joint therewith, angle bars extending the full length of the rails and having their vertical webs bolted thereto at intervals, the horizontal flanges of the angle bars being permanently secured to the sill plates.



3. In railroad track construction, metallic cross ties, sill plates secured thereto, traffic rails resting on the sill plates, angle bars arranged outside the rails and having their vertical flanges secured to the vertical webs of the rails, the lower horizontal flanges of the angle bars being riveted to the sill plates, and auxiliary angle bars arranged at the meeting ends of the sill plates, said angle bars being arranged to embrace portions of the sill plates, and being permanently secured to the rails.

4. In railroad track construction, cross ties, sill plates mounted thereon, traffic rails resting on the sill plates, and angle bars serving to secure the rails to the sill plates, the upper edges of the angle bars being turned outward to form guard flanges.

853,309. LOW-WATER ALARM. CLARENCE A. LEMEN, Detroit, Mich. Filed July 22, 1905. Serial No. 270,805.



Claim.—1. In an electric low water alarm, the combination with a steam pipe, of a support for a mercurial thermometer forming a casing for the bulb of same, wires blown in the glass of the thermometer connected with an electrical circuit so that the expansion of the mercury closes the circuit, a signal device in said circuit operated thereby, and a water jacket surrounding said steam pipe.

2. In an electric low water alarm, the combination with a steam pipe surrounded by a water jacket, of a support for a mercurial thermometer forming a casing for the bulb of same capable of being inserted into the said steam pipe, wires blown in the glass of the said thermometer connected with an electrical circuit, a signal device in said circuit said circuit being closed, and a signal device operated by means of the expansion of the mercury contained in said bulb.

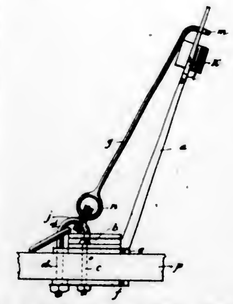
3. In an electric low water alarm, the combination with a steam pipe adapted to be connected to a boiler, of a contact device for closing the said circuit by expansion of the metal connected to the said steam pipe, a water jacket surrounding the said steam pipe, and a signal device contained in the said circuit and operated thereby.

4. In an electric low water alarm, the combination with a steam pipe adapted to be connected to the boiler, of a device for operating a signal device by expansion of the metal consisting of or connected to the said steam pipe, a water jacket surrounding the said steam pipe, and a valve or means of drawing off the contents of the said steam pipe.

5. In an electric low water alarm the combination with a water jacketed steam pipe, of a bulb of a mercurial thermometer contained therein, wires blown in the glass of the thermometer connected with the electric circuit so that the expansion of the mercury closes the circuit and operates a signal device thereby, and compressible material contained in the casing fitting into the said steam pipe and surrounding the bulb of the said thermometer.

6. In an electric low water alarm the combination with a heater adapted to contain steam, of a steam pipe extending from the interior of the heater to the exterior, a water jacket surrounding the said steam pipe exterior to the said heater, a bulb of a mercurial thermometer contained in the steam pipe, wires blown in the glass of the thermometer connected with the electric circuit so that the expansion of the mercury closes the circuit and operates a signal device thereby and a casing surrounding the bulb of the said thermometer adapted to enter the steam pipe sufficiently to allow of surrounding of the said casing by steam from the boiler as and for the purposes specified.

853,310. COMBINED LANTERN OR LAMP POST FOR USE ON SMALL WATER-CRAFT. GEORGE S. LOCKWOOD, Saginaw, Mich. Filed Sept. 19, 1906. Serial No. 335,231.



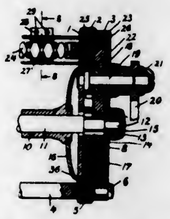
Claim.—1. A lockable lamp holder, comprising a fixed base plate, an upright post detachably connected to said base plate, a lamp support near the upper end of said post and a slotted opening above said support, a U bolt secured to said base plate; a connecting bar having a hooked end adapted to securely hook into said slotted opening and the other end terminating in an eye; a shackle connecting said eye and U-bolt and any means for locking said shackle for the purpose set forth.

2. In a lockable lantern holder the combination with an upright post detachably connected to a rigid base, of a connecting bar removably connected to the top of said post and extending diagonally downward to the said base and terminating in an eye; a U bolt secured to the said base and a shackle for securing said U bolt to the eye of the connecting bar, and means for locking said shackle for the purpose of preventing the removal of said post from the base.

3. In a lockable lantern holder the combination with an upright post detachably connected to a fixed base of a U

bolt secured to said base; a lantern support near the upper end of said post, a connecting bar removably secured to said post above said lantern support and extending diagonally down and connecting with said U bolt by means of a padlock substantially as shown and for the purpose specified.

853,311. FISHING-REEL. WALTER E. MARHOFF, Kalamazoo, Mich., assignor to Marhoff Reel Co., Kalamazoo, Mich., a Corporation. Filed Oct. 22, 1906. Serial No. 340,015.



Claim.—1. In a fishing reel, the combination with pillars having shouldered ends, of an inner head plate of metal having an outwardly projecting peripheral flange mounted on the shouldered ends of said pillars; an outer head plate of hard rubber fitted into the said flange of the said inner head plate and bored to receive the ends of the said pillars, said outer head plate being also chambered to receive the reel gear; screws for securing said plates upon said pillars tapped into the ends thereof, said screws being arranged through said outer head plate; a disk-like metal face plate countersunk into said outer plate; screws for securing the face plate arranged through said outer head plate from the inside thereof; and bearings for the reel spool and gear carried by the said inner face plate.

2. In a fishing reel, the combination with pillars having shouldered ends, of an inner head plate of metal having an outwardly projecting peripheral flange mounted on the shouldered ends of said pillars; an outer head plate of hard rubber fitted into the said flange of the said inner head plate and bored to receive the ends of the said pillars, said outer head plate being also chambered to receive the reel gear; screws for securing said plates upon said pillars tapped into the ends thereof, said screws being arranged through said outer head plate; and a disk-like face plate countersunk into said outer plate; screws for securing the face plate arranged through said outer head plate from the inside thereof.

3. In a fishing reel, the combination with pillars having shouldered ends, of an inner head plate of metal having an outwardly projecting peripheral flange mounted on the shouldered ends of said pillars; an outer head plate of hard rubber fitted into the said flange of the said inner head plate and bored to receive the ends of the said pillars, said outer head plate being also chambered to receive the reel gear; a disk-like metal face plate countersunk into said outer plate and secured thereto; and bearings for the reel spool and gear carried by the said inner face plate.

4. In a fishing reel, the combination with pillars having shouldered ends, of an inner head plate of metal having an outwardly projecting peripheral flange mounted on the shouldered ends of said pillars; an outer head plate of hard rubber fitted into the said flange of the said inner head plate and bored to receive the ends of the said pillars, said outer head plate being also chambered to receive the reel gears; and a disk-like metal face plate countersunk into said outer plate and secured thereto.

5. In a fishing reel, the combination with pillars, of an inner head plate of metal having an outwardly projecting peripheral flange mounted on said pillars; an outer head plate of hard rubber fitted into the said flange of the said inner head plate, said outer head plate being chambered to receive the reel gear; a disk-like face plate countersunk into said outer plate and secured thereto; and bearings for the reel spool and gear carried by the said inner face plate.

6. In a fishing reel, the combination with pillars of an inner head plate of metal having an outwardly projecting peripheral flange mounted on said pillars; an outer head plate of hard rubber fitted into the said flange of the said inner head plate, said outer head plate being chambered to receive the reel gear; and a disk-like metal face plate countersunk into said outer plate and secured thereto.

7. In a fishing reel, the combination with pillars, of an inner head plate of metal having an outwardly projecting peripheral flange mounted on said pillars; an outer head plate of hard rubber fitted into the said flange of the said inner head plate, said outer head plate being chambered to receive the reel gear; and bearings for the reel spool and gear carried by the said inner face plate.

8. In a fishing reel, the combination with pillars, of an inner head plate of metal mounted on said pillars; an outer head plate of hard rubber chambered to receive the reel gear; a disk-like metal face plate countersunk into said outer plate and secured thereto; screws for securing the face plate arranged through said outer head plate from the inside thereof; and bearings for the reel spool and gear carried by the said inner face plate.

9. In a fishing reel, the combination with pillars, of an inner head plate of metal mounted on said pillars; an outer head plate of hard rubber chambered to receive the reel gear; a disk-like metal face plate countersunk into said outer plate and secured thereto; and bearings for the reel spool and gear carried by the said inner face plate.

10. In a fishing reel, the combination with pillars, of an inner head plate of metal mounted on said pillars; an outer head plate of hard rubber chambered to receive the reel gear; and a disk-like metal face plate countersunk into said outer plate; screws for securing the face plate arranged through said outer head plate from the inside thereof.

11. In a fishing reel, the combination with pillars, of an inner head plate of metal mounted on said pillars; an outer head plate of hard rubber chambered to receive the reel gear; and a disk-like metal face plate countersunk into said outer plate and secured thereto.

12. In a fishing reel, the combination with frame heads, of a spool; a reversely threaded shaft; driving connections therefor; a line guide carriage mounted on said shaft; a shield or housing arranged over said shaft having projecting lugs at each end adapted to be engaged by said frame heads whereby it is supported; an arm on said carriage projecting from under said housing; an upwardly projecting loop-like line guide eye carried by said arm; and a pillar having a longitudinal groove therein adapted to receive the upper end of said line guide eye, for the purpose specified.

13. In a fishing reel, the combination with frame heads, of a spool; a reversely threaded shaft; driving connections therefor; a line guide carriage mounted on said shaft; a shield or housing arranged over said shaft having projecting lugs at each end adapted to be engaged by said frame heads whereby it is supported; an arm on said carriage projecting from under said housing; and a line guide eye carried by said arm, for the purpose specified.

14. In a fishing reel, the combination with frame heads, of a spool; a reversely threaded shaft; driving connections therefor; a line guide carriage mounted on said shaft; a shield or housing arranged over said shaft; an arm on said carriage projecting from under said housing; an upwardly projecting loop-like line guide eye carried by said arm; and a pillar having a longitudinal groove therein adapted to receive the upper end of said line guide eye, for the purpose specified.

15. In a fishing reel, the combination with frame heads; of a spool; a reversely threaded shaft; driving connections therefor; a line guide carriage mounted on said shaft; a shield or housing arranged over said shaft; and an arm on said carriage projecting from under said housing, for the purpose specified.

16. In a fishing reel, the combination with frame heads, of a spool; a reversely threaded shaft; driving connections therefor; a line guide carriage mounted on said shaft; a shield or housing arranged over said shaft; a line guide eye arranged at the side of said housing and projecting above the same; and a pillar having a longitudinal groove therein adapted to receive the upper end of said line guide eye, for the purpose specified.

17. In a fishing reel, the combination with frame heads, of a spool; a reversely threaded shaft; driving connections therefor; a line guide carriage mounted on said shaft; a line guide eye; and a pillar having a longitudinal groove therein adapted to receive the upper end of said line guide eye, for the purpose specified.

18. In a fish line reel, the combination with the frame, heads, of a spool; a reversely threaded shaft; driving connections therefor; a line guide carriage mounted on said shaft; a shield or housing arranged over and covering said shaft and line guide carriage; an arm on said carriage projecting from under said housing; and a line guide eye carried by said arm, for the purpose specified.

19. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a flange at its periphery and a toothed cam thereon; a detent lever arranged to engage said flange on said finger piece; a pivot for said lever; a spring mounted on the said pivot for said lever, one end of said spring being arranged to engage said lever and the other to engage the said toothed cam on said finger piece; and a projection on said finger piece adapted to engage said lever for locking it out of its operative position.

20. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a toothed cam thereon; a detent lever; a pivot for said lever; a spring mounted on the said pivot for said lever, one end of said spring being arranged to engage said lever and the other to engage the said toothed cam on said finger piece; and a projection on said finger piece adapted to engage said lever for locking it out of its operative position, for the purpose specified.

21. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a flange at its periphery and a cam thereon; a detent lever arranged to engage said flange on said finger piece; a pivot for said lever; a spring mounted on the said pivot for said lever, one end of said spring being arranged to engage said lever and the other to engage the said cam on said finger piece; and a projection on said finger piece adapted to engage said lever for locking it out of its operative position.

22. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a cam thereon; a detent lever; a pivot for said lever; a spring mounted on said pivot for said lever, one end of said spring being arranged to engage the said cam on said finger piece; and a projection on said finger piece adapted to engage said lever for locking it out of its operative position.

23. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a flange at its periphery and a toothed cam thereon; a detent lever arranged to engage said flange on said finger piece; a pivot for said lever; a spring mounted on the said pivot for said lever, one end of said spring being arranged to engage said lever and the other to engage the said toothed cam on said finger piece.

24. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a toothed cam thereon; a detent lever; a pivot for said lever; and a spring mounted on the said pivot for said lever, one end of said spring being arranged to engage said lever and the other to engage the said toothed cam on said finger piece.

25. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a flange at its periphery and a cam thereon; a detent lever arranged to engage said flange on said finger piece; a pivot for said lever; and a spring mounted on the said pivot for said lever, one end of said spring being arranged to engage said lever and the other to engage said cam on said finger piece.

26. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a cam thereon; a detent lever; a pivot for said lever; and a spring mounted on the said pivot for said lever, one end of said spring being arranged to engage the said cam on said finger piece.

27. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a flange at its periphery and a toothed cam thereon; a detent lever arranged to engage said flange on said finger piece; a spring for applying tension to said lever arranged to engage the said toothed cam on said finger piece; and a projection on said finger piece adapted to engage said lever for locking it out of its operative position.

28. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a toothed cam thereon; a detent lever; a spring for applying tension to said lever arranged to engage the said toothed cam on said finger piece; and a projection on said finger piece adapted to engage said lever for locking it out of its operative position.

29. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a flange at its periphery and a cam thereon; a detent lever arranged to engage said flange on said finger piece; a spring for applying tension to said lever arranged to engage the said cam on said finger piece; and a projection on said finger piece adapted to engage said lever for locking it out of its operative position.

30. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame having a cam thereon; a detent lever; a spring for applying tension to said lever arranged to engage the said cam on said finger piece; and a projection on said finger piece adapted to engage said lever for locking it out of its operative position.

31. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame; a detent; a tension spring for said detent; a cam on said finger piece for adjusting the tension of said spring; and connections for said detent to said finger piece whereby the detent may be locked out of its operative position by the manipulation of the said finger piece.

32. In a fishing reel, the combination with a frame, of a spool; a finger piece mounted on a suitable journal in said frame; a detent; a tension spring for said detent arranged to be adjusted by said finger piece; and connections for said detent to said finger piece whereby the detent may be locked out of its operative position by the manipulation of the said finger piece.

33. In a fishing reel, the combination with the reel head, of a spool; a disk-like finger piece mounted on a suitable journal in said reel head with its periphery arranged through the periphery of said reel head, said finger piece having a cam on one side thereof; a detent; a spring for applying tension to said detent arranged to engage said cam whereby the tension of said spring is regulated; and means for locking said detent out of its operative position adapted to be actuated by the said finger piece.

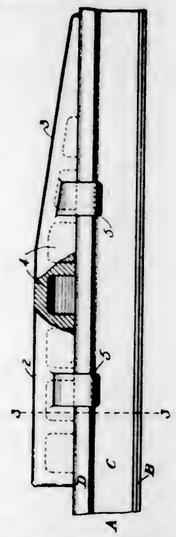
34. In a fishing reel, the combination with the reel head, of a spool; a disk-like finger piece mounted on a suitable journal in said reel head with its periphery arranged through the periphery of said reel head, said finger piece having a cam on one side thereof; a detent; and a spring for applying tension to said detent arranged to engage said cam whereby the tension of said spring is regulated.

853,312. DEVICE AND METHOD FOR REPAIRING LOCOMOTIVES. JOHN B. MICHAEL, Knoxville, Tenn. Filed Oct. 1, 1906. Serial No. 336,884.

Claim.—1. A raising block having a lower face conforming approximately to the upper face of a railroad rail and having an upper sloping face and an upper horizontal face, and having at one side means for engaging the bottom of the head of a rail, substantially as described.

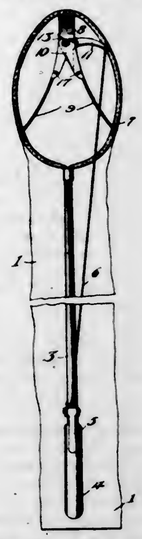
2. A raising block having a lower face conforming approximately to the upper face of a railroad rail and hav-

ing an upper sloping face and an upper horizontal face, and having at one side a downward extension adapted to bear against the side and bottom of the head of a rail, substantially as described.



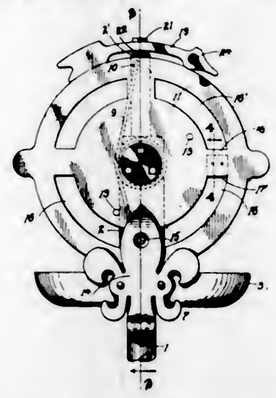
3. The herein described method of repairing the springs, spring hangers, and equalizers of a locomotive, which method consists in raising the frame by raising a wheel adjacent the wheel nearest the damaged part, then restoring the parts so as to equalize the load upon the wheels (after the raised wheel has been lowered), substantially as described.

853,313. FRUIT-CLIPPER. WILLIAM C. MYERS, Springfield, Oreg. Filed Mar. 3, 1906. Serial No. 304,010.



Claim.—The herein described fruit clipper comprising a pole, a stretcher frame connected to one end thereof, a flexible bag or sack having one end connected with the stretched frame, an overhanging hollow arcuate crotch extending from the upper portion of the stretcher frame downward, downwardly diverging stays or arms connecting the branches of said crotch with the lower portion of the stretcher frame, and a cutter mounted and operating between the front and back plates of the hollow crotch, the cutting edges of said cutter being disposed downwardly, and one of the crotch plates being of sectional construction, the sections thereof being detachably connected, substantially as and for the purpose described.

853,314. COMBINED CIGAR CUTTER AND LIGHTER. PHIL J. NAWN, St. Louis, Mo. Filed Mar. 12, 1906. Serial No. 305,606.



Claim.—1. In a combined cigar cutter and lighter, a stationary support for the cigar, an oscillating cutter therefor, a lighter, a pipe for conveying gas to the lighter, a gas-valve disposed about the axis of oscillation of the cutter and controlled by the movement of the cutter in one direction, and means for igniting the gas upon its release by the valve, substantially as set forth.

2. In a combined cigar cutter and lighter, a stationary support for the cigar, an oscillating cutter therefor, a lighter, a pipe for conveying gas to the lighter, a gas-valve disposed about the axis of the cutter and actuated to an open position by the movement of the cutter in one direction, and an igniter for the gas operated by the same movement of the cutter, substantially as set forth.

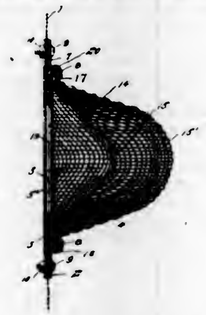
3. In a combined cigar cutter and lighter, a stationary cigar supporting plate having a socket for the insertion of the cigar tip, a spring-controlled cutter-disk oscillating in proximity to the plate, a blade on the disk for severing the cigar tip, a gas burner tube contiguous to the disk, a hollow gas-valve in said tube coupled to the cutter-disk opposite the axis of oscillation of the latter, a burner-tip having a terminal jet orifice, forming an extension of the burner-tube, an insulated arm having a contact head forming a terminal electrode of an electric circuit located in the path of the gas escaping through said orifice, and a wiper or contact arm carried by the cutter-disk and forming the opposite electrode, the parts operating, substantially as, and for the purpose set forth.

4. In a combined cigar cutter and lighter, a gas supply pipe and burner therefor, an oscillating gas-valve, a cutter connected to and oscillating about the axis of the valve and operating the same to an open position with the cutting movement of the cutter and thereby permitting the gas to flow to the burner, and an igniter for lighting the gas in connection with the aforesaid movement of the cutter, substantially as set forth.

853,315. INSECT-TRAP. FRANK NEVILLE, Mina, Nev. Filed Dec. 15, 1906. Serial No. 348,007.

Claim.—1. In an insect trap, the combination of a plate, longitudinally extending brackets formed upon opposite portions of said plate, and a removable, sectional cage supported between said brackets and plate.

2. In an insect trap, the combination of a plate, cut away portions formed upon said plate, said cut away portions bent over and extending toward each other, the cut away portions constituting brackets, and a slidable cage supported between said plate and brackets.



3. In an insect trap, the combination of a plate, longitudinally extending brackets formed upon said plate, and a longitudinally movable cage supported between said brackets and plate.

4. In an insect trap, the combination with a support, of parallel brackets carried by said support, a sectional trap positioned between said brackets, and said brackets constituting fastening means for holding the sections of said trap together.

5. In an insect trap, the combination with a support, of a sectional trap positioned contiguous to said support, and brackets carried by and supporting said cage upon said support and holding the sections together.

6. In an insect trap, the combination with a support, of a sectional cage positioned contiguous to said support, and brackets positioned at opposite sides of and supporting said cage upon the support and securing the sections thereof together.

7. In an insect trap, the combination with a support, of a primary plate positioned upon one side of said support, an auxiliary plate positioned upon the opposite side of said support, a series of fastening means positioned contiguous to the corners of said plates and securing the same upon said support, and a cage in engagement with one of said plates.

8. In an insect trap, the combination with a support, of plates positioned upon opposite sides of said support and in engagement therewith, transverse fastening means positioned near each corner of said plates and securing the same upon said support, and a cage carried by said plates.

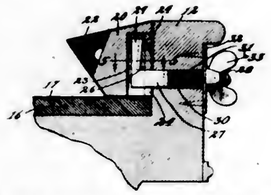
9. In an insect trap, the combination with a support, of a cage carried by said support, said cage comprising a primary and an auxiliary section, the primary section comprising a base, said base comprising a primary and an auxiliary flange, the primary flange of greater width than the auxiliary flange, a wire-screen secured between said flanges, said primary flange overhanging the lower end of the wire-screen, and constituting a guard.

10. In an insect trap, the combination with a support, of a sectional cage carried by said support, one of said sections of said cage provided with a base, said base comprising a primary and an auxiliary flange, the primary flange of greater width than the auxiliary flange, said primary flange constituting a guard for the lower end of the section, for obstructing the path of an insect, in engagement with the outside of said section.

11. In an insect trap, the combination with a support, of a primary and an auxiliary plate positioned upon opposite sides of said support, fastening means extending through said plates and positioned contiguous to their corners, a sectional cage in engagement with one of said plates, and fastening means positioned at opposite sides of the cage and between each two fastening means for securing the cage upon said plates and securing its sections together.

12. In an insect trap, the combination with a support, of a sectional cage slidably mounted upon said support, and brackets supporting said cage upon said support and securing its sections together, the cage adapted to be moved longitudinally off of one end of said brackets.

853,316. COMBINED BILLIARD AND POOL TABLE. MARTIN NIX, Chicago, Ill., assignor to The Merle & Heaney Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 9, 1906. Serial No. 342,672.



Claim.—1. In a billiard table, the combination with a cushion rail adapted to rest against the inner face of a table rail, said cushion rail being provided with a recess in that face that comes against the table rail, such recess also extending through the lower face of the cushion rail to permit the cushion rail to be moved vertically into and out of position, of a locking bolt passing transversely through the table rail and provided with means on its inner end adapted to enter such recess and engage the cushion rail, and means for tightening such bolt.

2. In a billiard table, the combination with a cushion rail adapted to rest against the inner face of a table rail, said cushion rail being provided with a recess in that face that comes against the table rail, such recess also extending through the lower face of said cushion rail to permit said cushion rail to be moved vertically into and out of position, of a plate in said recess, and a locking bolt passing transversely through said table rail and having means on its inner end for engaging said plate to prevent the cushion rail being moved vertically or horizontally.

3. In a billiard table, the combination with a cushion rail adapted to rest against the inner face of a table rail, said cushion rail being provided with a recess in its face, of a plate in said recess having an inclined face, and a locking bolt passing transversely through said table rail and having on its inner end a projection with a face inclined in a reverse direction to the inclination of said plate, whereby the cushion rail can be locked against vertical and horizontal movement.

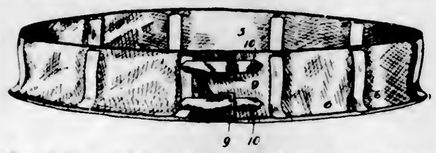
4. In a billiard table, the combination with a cushion rail adapted to rest against the inner face of the table rail, of a locking bolt extending transversely through the table rail and provided with an engaging head adapted to engage said cushion rail, means for normally holding said engaging head away from the table rail so as to be in position to engage the cushion rail when said cushion rail is being placed in position, and means for moving said bolt.

5. In a billiard table, the combination with a cushion rail adapted to rest against the inner face of the table rail, of a locking bolt extending transversely through the table rail and provided with an engaging head adapted to engage said cushion rail, a coiled spring carried by said locking bolt and acting to normally hold said engaging head away from the table rail so that said head will be in position to engage the cushion rail when said cushion rail is being placed in position, and means for moving said bolt.

853,317. BELT. WILLIAM L. OFFENBACHER, Zanesville, Ohio. Filed Sept. 24, 1906. Serial No. 336,848.

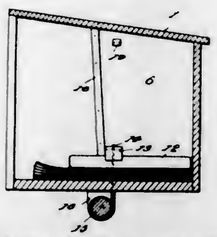
Claim.—1. A belt of yielding material having a series of stiffening strips carried thereby, the lower ends of said stiffening strips being outturned.

2. The combination with a belt of flexible material, of a plurality of stiffening strips located at intervals about said belt, the lower ends of said stiffening strips being outturned and the fabric of the belt extending from the outturned ends of one of said strips to the outturned ends of adjacent strips to thereby form an outturned annular portion around the belt.



3. A belt comprising an inner thickness of cloth and an outer thickness of cloth, and a plurality of stiffening strips located between said thicknesses of cloth and spaced apart, the lower ends of said stiffening strips being outturned as and for the purpose set forth.

853,318. RURAL MAIL-DELIVERY CABINET. ELECK PAULSON, Osage, Iowa. Filed Sept. 4, 1906. Serial No. 333,134.



Claim.—1. In a mail cabinet for rural free delivery systems and embodying a compartment to receive mail matter, a follower arranged in said compartment to bear against the mail matter received thereby, tension means connected with said follower to cause the same to exert a pressure upon the mail matter, stop strips for directing the movement of the follower and preventing displacement thereof, and supporting means for coöperation with the follower to hold the same in inoperative position.

2. In a mail cabinet for rural free delivery systems and embodying a compartment to receive mail matter, a follower arranged in said compartment to bear against the mail matter received thereby, tension means connected with said follower to cause the same to exert a pressure upon the mail matter, stop strips for directing the movement of the follower and preventing displacement thereof, a bar attached to the follower, and supporting members applied to opposite sides of the casing of the compartment aforesaid to engage the bar of the follower and hold the follower in inoperative position.

853,319. GARMENT-FASTENER. ARTHUR B. REID, Chicago, Ill. Filed June 20, 1900. Serial No. 20,972.



Claim.—1. A hook provided with a bill, and a depressible tongue, said tongue having guards upon opposite sides of the end of the bill to prevent extraneous objects from engaging the bill and a part engaged by the eye, when attached, to prevent the same from passing beneath the tongue and to depress the tongue as the eye is detached from the bill.

2. A hook formed from a continuous piece of material and provided with a bill and a depressible tongue, said tongue having guards upon opposite sides of the end of the bill to prevent extraneous objects from engaging the bill and a part engaged by the eye, when attached, to prevent the same from passing beneath the tongue and to depress the tongue as the eye is detached from the bill.

3. A hook formed from a continuous piece of wire and provided with a suitable part for securing the same in position, a bill and a depressible tongue, said tongue having guards upon opposite sides of the end of the bill to prevent extraneous objects from engaging the bill and a part engaged by the eye, when attached, to prevent the same from passing beneath the tongue and to depress the tongue as the eye is detached from the bill.

4. A hook formed from a continuous piece of material and provided with a suitable part for securing the same in position, a bill and a depressible tongue, said tongue having guards arranged in each side of the end of the bill to prevent extraneous objects from engaging the same, and a part engaged by the eye, when attached, to prevent the same from passing beneath the tongue and to depress the tongue as the eye is detached from the bill.

5. A hook formed from a continuous piece of material and provided with suitable parts for securing the same in position, a bill and a depressible tongue, said tongue having guards upon opposite sides of the end of the bill to prevent extraneous objects from engaging the bill and a part to engage the eye, when attached, and to retain the same under the bill and to depress the tongue as the eye is detached from the bill.

6. A hook provided with a bill and a depressible tongue, said tongue having guards upon opposite sides of the end of the bill to prevent extraneous objects from engaging the bill, a part to engage the eye, when attached, and to retain the same under the bill and to depress the tongue as the eye is detached from the bill.

7. A hook formed from a continuous piece of material and provided with suitable parts for securing the same in position, a bill and a tongue, said tongue having guards upon opposite sides of the bill to prevent extraneous objects from engaging the bill and a part to engage the eye, when attached, and to prevent the eye from passing beneath the tongue.

8. A hook provided with a bill, and a depressible tongue comprising upwardly inclined resilient members arranged upon each side of the bill to prevent extraneous objects from engaging the same, said members at their forward end being downwardly inclined to prevent the passage of the eye beneath the tongue.

9. A hook provided with a bill, and upwardly inclined resilient members arranged upon each side of the bill to prevent extraneous objects from engaging the same, the said members having downwardly inclined front ends engaged by the eye, when attached, to permit the eye to depress the members as the eye is disengaged from the bill and to prevent the eye from passing beneath said members.

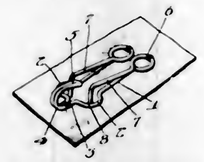
10. A hook formed from a continuous piece of material and provided with loops a a' at the rear end and with loops or laterally extending parts b b' at the forward end and with a bill c, and said hook having a resilient or flexible tongue consisting of the members d' d^2 and the transverse portion d^3 resting beneath the bill and extending forward sufficiently to prevent the eye from passing beneath the tongue, the members d' d^2 being laterally deflected to shield and protect the end of the bill, substantially as described.

11. A hook made from a continuous piece of wire having a flat base formed from two lengths of wire lying in a common plane and having suitable parts at the front and rear for attachment to the fabric, said wire being bent into a bill and provided with a tongue comprising two parallel longitudinal members passing on opposite sides of the end of the bill at a height to guide all extraneous matter over and away from the bill and thereby shield and protect the same and having a transverse portion passing beneath the bill to limit the upward movement of the tongue, substantially as described.

12. A hook provided with a bill and a tongue consisting of two longitudinal members passing upon opposite sides of the end of the bill to shield and protect the same, a transverse portion passing beneath the bill to limit the upward movement of the tongue, the forward end of the tongue being formed to be engaged by the eye and prevent the passage of the same beneath the tongue and to enable the eye to be hooked by a pull and unhooked by a push.

13. A hook formed from a continuous length of wire bent intermediately to form a bill, and a tongue consisting of two longitudinal lengths of the wire passing upon opposite sides of the bill to guide all extraneous matter over and away from the bill, the said two lengths of wire serving to laterally brace and prevent displacement of the tongue, and a transverse portion joining the ends of said members, the forward end of said tongue passing beneath the bill and being formed to prevent the passage of the eye beneath the tongue, whereby the said eye may be engaged with and disengaged from the hook by a simple pull and a push, substantially as described.

853,320. HOOK AND EYE. ARTHUR B. REID, Chicago, Ill. Filed Oct. 27, 1905. Serial No. 284,672.



Claim.—1. In a hook, the combination with a bill, of resilient members separable to permit an eye to engage the hook and to be disengaged therefrom and arranged to prevent extraneous objects from engaging the bill, and means for limiting the outward displacement of said members.

2. In a hook, the combination with a bill, of resilient members disposed upon opposite sides of said bill, separable to permit an eye to engage the bill and to be disengaged therefrom and arranged to prevent extraneous objects from engaging said bill, and means for limiting the outward displacement of said members.

3. In a hook, the combination with a bill, of a pair of upwardly inclined resilient members separable to permit an eye to engage the bill and to be disengaged therefrom, and arranged to prevent extraneous objects from engaging the bill, and means for guiding said members.

4. In a hook, the combination with a bill, of a pair of upwardly inclined resilient members disposed upon opposite sides of the bill, separable to permit an eye to engage the bill, and to be disengaged therefrom, and arranged to prevent extraneous objects from engaging the bill, and means for guiding said members.

5. In a hook, the combination with a bill, of a pair of upwardly inclined resilient members having downwardly turned front parts to prevent an eye from passing beneath the said members, and from being readily disengaged from the hook, said members being separable to permit the eye to engage the bill and to be disengaged therefrom, and arranged to prevent extraneous objects from engaging said bill and means for guiding said members.

6. In a hook, the combination with a bill, having the shank provided with loops at its forward ends, of members arranged to prevent extraneous objects from engaging the bill and provided with downwardly inclined portions having the ends thereof arranged in said loops, said members being separable to permit an eye to engage said bill, and to be disengaged therefrom.

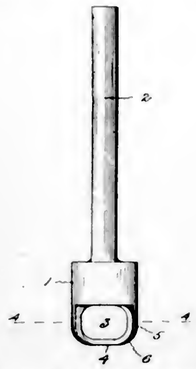
7. In a hook, the combination with a bill, having the shank thereof provided at its forward ends with loops and having the rear end of said shank bent to form loops for securing the hook to the garment, of resilient members extending forward from the rear of said shank, provided with downwardly extending portions having the ends thereof arranged in said forward loops, said resilient members being separable to permit an eye to engage the bill and to be disengaged therefrom.

8. A hook formed from a single piece of wire comprising a bill, a shank having loops formed at its forward end, and loops formed at its rear end, a pair of resilient members extending forwardly from the rear end of said shank and arranged to prevent extraneous objects from engaging with said bill and provided with downwardly extending portions having the ends thereof arranged in said forward loops, said members being separable to permit an eye to engage the bill and to be disengaged therefrom.

9. In a hook, the combination with a bill, of resilient members separable to permit an eye to engage the hook and to be disengaged therefrom and arranged to prevent extraneous objects from engaging the bill, and means for limiting the downward movement of said members, whereby the same will prevent the bill from being bent.

10. In a hook, the combination with a bill having the shank thereof formed from a pair of parallel members, of a pair of guards arranged to prevent extraneous objects from engaging the point of said bill, said guards being arranged above and in line with the parallel members of the shank whereby the downward movement of said guards is limited to prevent the bending of the bill.

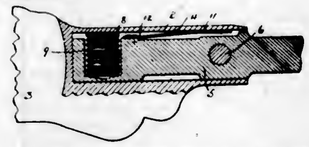
853,321. PATTERN-MAKER'S TOOL. GEORGE G. RICHMOND, Norwalk, Conn. Filed Jan. 2, 1907. Serial No. 350,512.



Claim.—1. A pattern maker's tool having a cylindrical guiding head and a solid yoke-shaped cutter extending from the end of the head, said cutter having blades that co-incide with the peripheral surface of the head, integral blades extending at right-angles thereto and co-inciding with the outer end surface of the yoke, and curved blades that join and merge into both the side and end blades, substantially as specified.

2. A pattern maker's tool having a cylindrical guiding head and a yoke-shaped cutter with continuous, longitudinal, transverse and curvel blades, the outer end of said yoke being solid and without projections from the outer surface, substantially as specified.

853,322. TROLLEY-HARP. EDWARD D. ROCKWELL, Bristol, Conn., assignor, by mesne assignments, to The New Departure Manufacturing Company, Bristol, Conn., a Corporation of Connecticut. Filed May 7, 1906. Serial No. 315,582.



Claim.—1. The combination with a trolley-harp having its stem formed with a chamber, of a shank entered into

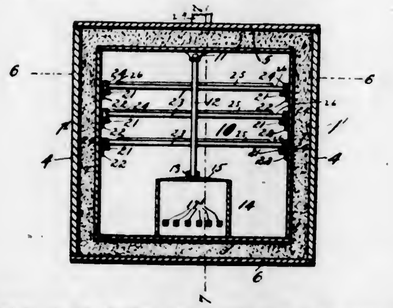
the said chamber in which it has a slight rocking movement on a pivot, the said shank being formed with a transversely arranged recess located at a right angle to the longitudinal axis of the shank, and a buffer located within the said recess and forming a yielding connection between the stem and the shank.

2. The combination with a trolley-harp having its stem formed with a chamber, of a shank entered into the said chamber, a pivot passing through the lower end of the stem and the shank the inner end of which has limited rocking movement within the said chamber, a buffer housed within the said chamber and forming a yielding connection between the stem and the shank at a point above the said pivot.

3. The combination with a trolley-harp having a stem provided with a longitudinal chamber, of a shank entered into the said chamber, a pivot passing through the lower end of the stem and through the said shank which has limited rocking movement in the chamber, a buffer spring set into the extreme upper end of the shank and housed within the said chamber and forming a yielding connection between the shank and the stem, and a contact spring also housed within the said chamber and electrically connecting the shank and the stem.

4. The combination with a trolley-harp having a chambered stem, of a trolley pole shank entered into the said stem in which it is pivotally mounted, and formed with a spring recess, and a spring located in the said recess and coacting with the chambered stem.

853,323. BAKE-OVEN. JAMES E. SCOTT, Rugby, N. D. Filed Apr. 30, 1906. Serial No. 314,500.

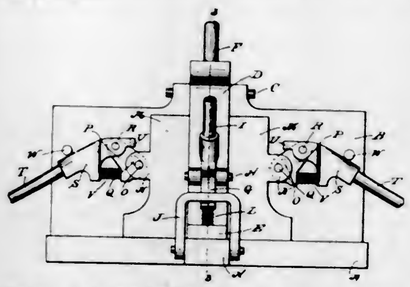


Claim.—1. In an oven, the combination of an outer casing 1^1, having a front wall 2, rear wall 3, side walls 4, top 5 and bottom 6; vertical circular wall 7, having top 8 and a bottom 9, centrally located in said outer casing 1^1, and providing a baking chamber 10; circular horizontal tracks 21, having downwardly extending vertical flanges 22, secured to the inner periphery of said wall 7; a support 11, secured to the under face of the top 8 of said wall 7; central vertical shaft 12, rotatably supported from said support, and journaled in bearing 13; horizontal shafts 23, secured at their longitudinal centers to said shaft 12, and extending across the baking chamber 10; wheels 24, journaled on the ends of said shafts 23; horizontal circular shelves 25, secured to said shafts 23, their peripheries being some horizontal distance from said tracks 21, leaving a space 26 for the heat to circulate; fire box 14, located in said baking chamber 10, and extending diametrically across the oven; grate 17, located in said fire box; folding cover 15, covering said fire box 14, said box provided in its rear end with a vertical perforation 16; bearing 13, secured to the center of the top of said cover 15, and adapted to receive the free end of said shaft 12; link shaped flue 27, terminating at its ends in vertical parts, located between the rear wall of said outer casing 1^1 and the circular wall 7, the lower vertical part of said heat flue 27 fitting in the said perforation 16 of said cover 15, with means for gaining access to said oven, substantially as shown and described and for the purposes set forth.

2. A bake oven, consisting of an outer casing; a central, vertical, circular chamber inside of said casing; circular horizontal tracks, secured against the inner face of the wall of said chamber; a support, centrally secured to the under face of the top of said casing; a fire box, located in said casing, and extending across the oven; a grate, located in said fire box; folding covers, covering said fire box, said box provided at its rear end with a vertical perforation, and at its center with a bearing; a vertical shaft, journaled in said support and said bearing; horizontal shafts, secured at their longitudinal centers to said vertical shaft, and extending to said tracks; wheels, journaled on the ends of said shafts, and running on said tracks; circular shelves, secured to said horizontal shafts, their peripheries not reaching quite to said tracks; a link shaped flue, terminating at its ends in vertical pipes, located between the outer casing and said chamber, the lower pipe fitting in the perforation in said box, and the upper pipe passing up through said outer casing; sand, filling in the space between said outer casing and central chamber, and doors in the lower part of said outer casing to permit the removal of said sand, said oven having proper doors providing ingress to said baking chamber, substantially as shown and described and for the purposes set forth.

3. A bake oven, consisting of an outer casing; a central vertical circular chamber inside of said casing; circular horizontal tracks secured against the inner face of the wall of the said chamber; a support, centrally secured to the under face of the top of said casing; a fire box, located in said casing, and extending across the oven; a grate, located in said fire box; folding covers, covering said fire box, said box provided at its rear end with a vertical perforation, and at its center with a bearing; a vertical shaft, journaled in said support and said bearing; horizontal shafts, secured at their longitudinal centers to said vertical shaft, and extending to said tracks; wheels, journaled on the ends of said shafts, and running on said tracks; circular shelves, secured to said horizontal shafts, their peripheries not reaching quite to said tracks; a link shaped flue; terminating at its ends in vertical pipes, located between the outer casing and said chamber, the lower pipe fitting in the perforation in said box, and the upper pipe passing up through said outer casing, and sand, filling in the space between said outer casing and central chamber, said oven provided with doors for the removal of the sand and for ingress to said oven, substantially as shown and described and for the purposes set forth.

853,324. MOLD FOR CASTING METALS. JOHN H. SHAW, New Haven, Conn. Filed May 18, 1906. Serial No. 317,610.



Claim.—1. A metal mold for casting articles, having a base; removable mold sections adapted to rest thereon; mechanism for locking said mold sections in place on said base; and yielding means for permitting a slight movement of the mold sections in different directions at various angles while in their locked positions, substantially as described.

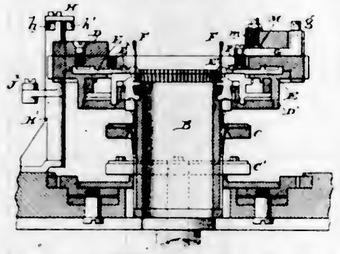
2. In a metal mold for casting articles, the combination with a base; of a mold section pivotally connected with said base; mechanism for locking the free end of said section on said base; and yielding means for permitting a slight movement of the mold section while in its locked position, substantially as described.

3. In a metal mold for casting articles, the combination with a base; of a mold section; a lever pivoted to said section; and a device on said base adapted to be yieldingly engaged by said lever to hold said mold in its locked position, substantially as described.

4. In a metal mold for casting articles, the combination with a base; of a mold section pivoted to swing to and from its operative position; a lever pivoted thereon; and a device on said base adapted to be yieldingly engaged by said lever, substantially as described.

5. In a metal mold for casting articles, the combination with a base; of a mold section rigidly secured thereto; a further section pivoted thereto; movable sections; mechanism for locking said movable sections to said rigid section and said pivoted section to said base; and yielding means for permitting said movable and pivoted sections a slight movement when in their locked positions, substantially as described.

853,325. KNITTING-MACHINE. JOHN P. SHEPPARD, Salem, N. J. Filed Jan. 31, 1906. Serial No. 298,740.



Claim.—1. In a knitting machine the combination of front and rear sets of reciprocating beard needles, pads for part of the front needles, pads for part of the rear needles, and pattern controlled devices comprising means to operate at one time only the pads of the front needles and at another time the pads of both the front and rear sets of needles.

2. In a knitting machine the combination of front and rear sets of reciprocating beard needles, pads for part of the front needles, pads for part of the rear needles, cam devices comprising means to operate at one time only the pads of the front needles and at another time the pads of both the front and rear set of needles, and pattern mechanism for controlling said cam devices to cause the open work to be produced only by the front set of needles or by both the front and rear sets of needles at will.

3. In a knitting machine the combination of front and rear sets of reciprocating beard needles, pads for part of the front needles, pads for part of the rear needles, devices constructed to operate at one time only the pads of the front needles and at another time the pads of both the front and rear sets of needles consisting of a movable cam having two operating portions respectively adapted to operate only one or both of the sets of pads, shifting devices for the movable cam to bring either of its operating portions into operating position alternately, and pattern mechanism for controlling the shifting devices, whereby one or both sets of pads are caused to be shifted.

4. In a knitting machine, the combination of reciprocating beard needles, two sets of pads for a portion of said needles to cause them to make open or miss-stitch work in different portions of the knitted fabric, means whereby only one set of pads may be moved into operative position, pattern mechanism to cause said means to move both sets of said pads into operative position at will, whereby open work may be made by one set of needles only at one place in the fabric and by both sets of needles at another place in the fabric.

5. In a knitting machine, the combination of reciprocating beard needles, two sets of pads for a portion only of said needles to cause them to make open or miss-stitch work, means whereby only one set of pads may be moved into operative position, means whereby both sets of pads may be moved into operative position, and pattern mechanism to control the operation of said means whereby either one set or both sets of pads are moved into operative position and definite patterns of open or lace work thus produced at specific places on the stocking.

6. In a knitting machine, the combination of reciprocating beard needles, sinkers for said needles, two sets of sinker pads for said needles one set having high shoulders for one-half of the needles and the other set having low shoulders for the other half or set of the needles, and cam mechanism for operating upon the sinker pads for operating one or both sets as desired.

7. In a knitting machine, the combination of reciprocating beard needles, sinkers for said needles, two sets of sinker pads for said needles one set having high shoulders for one-half of the needles and the other set having low shoulders for the other half of the needles, and pattern controlled cam mechanism for operating upon the sinker pads for operating one or both sets as desired.

8. In a knitting machine, the combination of reciprocating beard needles, sinkers for said needles, two sets of sinker pads for said needles one set having high shoulders for one-half of the needles and the other set having low shoulders for the other half of the needles, and cam mechanism for operating upon the sinker pads for operating one or both sets as desired consisting of the pivoted cam P having operating face P^1 to operate upon all of the sinker pads and face P^2 to operate only on the high shouldered pads, and pattern controlled mechanism for shifting the pivoted cam.

9. In a knitting machine of the class described, a needle cylinder, two sets of beard needles for said cylinder, means for reciprocating said sets of needles alternately, means for feeding a thread to the needles, and means for producing tuck stitches upon a portion of the needles of each set, combined with pattern controlled devices for automatically causing the open work to be produced upon a portion of the needles of one or both sets of needles, whereby lace effects may be produced part way or wholly around the stocking.

10. In a machine of the class described, a needle cylinder, two sets of beard needles, means for reciprocating the said sets of needles alternately, means for knitting a heel and toe upon one set of the needles, means for producing plain or tuck stitches upon a portion of the needles of each set, combined with pads for a portion of the needles of each set for rendering said needles inoperative so as to make open work, cam devices for operating the pads of one set of the needles, cam devices for operating the pads of both sets of needles, and pattern mechanism for putting either of the cam devices into operative position at will whereby lace work may be made upon one set or upon both sets of the needles as dictated by the pattern mechanism.

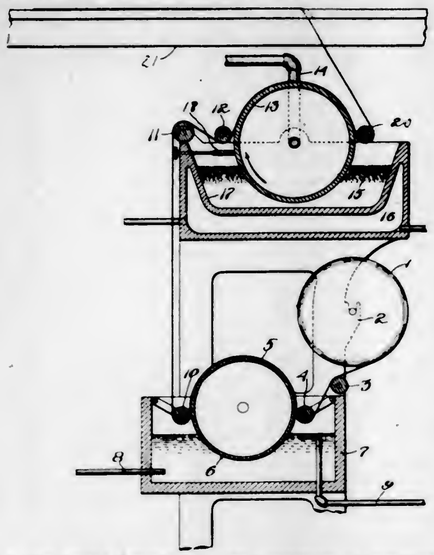
853,326. ART OF APPLYING REINFORCING FABRIC TO INNERSOLES AND THE LIKE. ANDREW THOMA, Cambridge, Mass., assignor to Clifton Manufacturing Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 2, 1905. Serial No. 280,930.

Claim.—1. The herein described process, consisting of providing the fabric with a permanent coating impervious to cement but capable of uniting with it, providing a strongly adherent, sticky cement in liquid form, uniting a thin layer of said liquid cement as a top dressing to said coating, and then applying the cemented fabric under pressure to the leather or surface to be covered.

2. The herein described process, consisting of providing the fabric with a normally non-sticky coating, capable of being rendered sticky by heat, heating said coating, applying thereto a dressing of strongly adherent sticky cement, and then applying the cemented fabric under pressure to the surface to be covered.

3. The herein described process, consisting of providing

the fabric with a normally non-sticky coating, capable of being rendered sticky by heat, applying on said coating a hot dressing of strongly adherent, sticky cement.



4. The herein described process, consisting of providing the fabric with a normally dry, oxidizable coating, capable of becoming superficially sticky under heat, heating the same, applying thereto a layer of sticky non-oxidizing cement, and pressing the fabric, then cemented upon the leather or other surface.

5. The herein described process, consisting of providing the fabric with a normally dry, oxidizable coating, capable of becoming superficially sticky under heat, applying thereto a layer of hot non-oxidizable sticky cement, and then pressing the cemented fabric upon the leather or other surface.

6. The herein described process, consisting of providing the fabric with a gutta percha coating, heating the outer surface of said coating, applying thereto a hot cement containing sticky residuum of petroleum, and then pressing the cemented fabric upon the surface to be covered.

853,327. TOE-SPREADING RETAINER. PATRICK WALL, Ithaca, N. Y. Filed May 7, 1906. Serial No. 315,485.



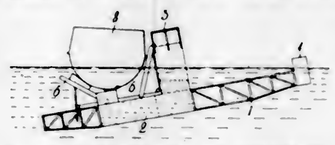
Claim.—1. The herein described article, comprising a perforated flexible base-pad, and a flexible tube mounted on the pad and encircling the perforation at right angles to the face of the base-pad.

2. The herein described article, comprising a perforated base-pad, and one or more upwardly-projecting flexible tubes encircling the perforation or perforations of said pad.

3. The herein described article, comprising a flexible base-pad, and a flexible tube integral therewith and projecting upwardly therefrom at right angles to the face of the pad.

4. The herein described article, comprising a flexible base-pad, one or more flexible tubes integral therewith and projecting upwardly at right angles to the face of the pad, and a top or cover pad for said tube or tubes, the top or cover pad being parallel with the base-pad.

853,328. FLOATING DOCK. ANDERS F. WIKING, Stockholm, Sweden. Filed Mar. 12, 1906. Serial No. 306,039.



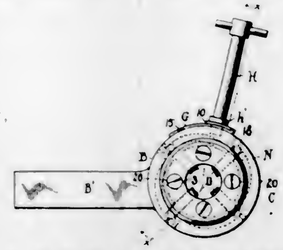
Claim.—1. In a floating dock, the combination with a pontoon having a wall at one side, of an extension rigidly connected to and projecting from said wall in a direction opposite to the pontoon and having at its outer end a low, box-shaped floating wall.

2. In a floating dock, the combination of pontoons having a central wall and two box-shaped floating walls rigidly connected to the two sides of the pontoon.

3. In a floating dock, the combination of a pair of pontoons rigidly connected to a centrally located wall and each having at its one end a floating wall of less height than said centrally located wall.

4. In a floating dock, the combination of a pontoon having a wall at one side, of an extension rigidly connected to and projecting from said wall in a direction opposite to the pontoon and provided at its outer end with a wall of less height than said first wall.

853,329. DIE-STOCK. WILLIAM H. WILSON, Norwalk, Ohio. Filed Nov. 24, 1905. Serial No. 288,897.

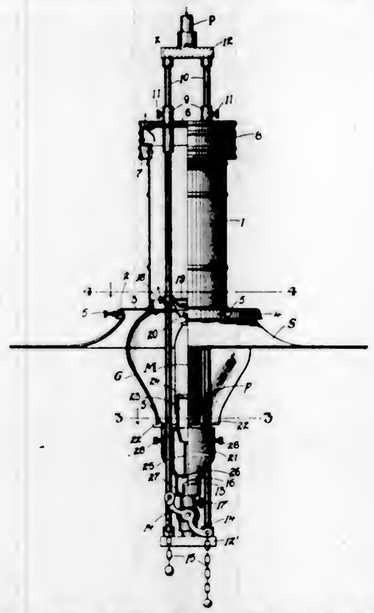


Claim.—In die-stocks, a base and dies radially slidable therein, and a cam ring having open slots corresponding in size and number to said dies, in combination with means to limit the rotation of the said ring comprising a slotted guide fixed on said base and a ring controlling lever removably engaged in the ring and projecting through the slot in said guide, between the ends thereof, and a check plate engaged between said guide and lever.

853,330. VAPOR-BURNING LAMP. RICHARD W. ZIERLEIN, St. Louis, Mo., assignor of forty-five one-hundredths to William Riechmann. Filed Nov. 12, 1906. Serial No. 343,086.

Claim.—1. A lamp having one or more gas-supply pipes, a gas-valve at the lower ends of the pipes, a rarefied-air chamber coupled to the pipes above the valve, a mixing chamber formed at the bottom of said air-chamber, a burner leading from the top of the air-chamber, and a tube establishing communication between the mixing chamber and the base of the burner.

2. A lamp having a series of gas-supply pipes, a gas-valve at the lower ends thereof, a valve-casing for said valve; a rarefied-air chamber coupled to and adjustable along said pipes, a mixing chamber depending from the bottom wall of the air-chamber, and loosely receiving the adjacent end of the gas valve-casing, a burner leading from the top of the air chamber, a tube establishing communication between the mixing chamber and the base of the burner, and a filtering screen at the lower edge of the mixing chamber and encompassing the valve-casing.



3. In a lamp, a series of gas-supply pipes, a valve for controlling the supply, a rarefied-air chamber adjustable along the pipes and movable to and from the valve, a mixing chamber at the base of the air chamber for receiving the flow of gas and air adapted to mix therewith, a centrally disposed burner tube projecting upwardly from the air-chamber, and a series of globe-fastening latches distributed on top of the air-chamber around the burner tube.

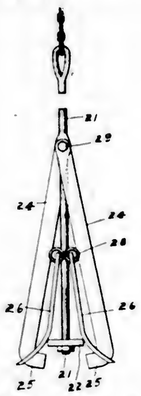
853,331. ANCHOR. CHARLES B. ALYEA, Indianapolis, Ind. Filed Feb. 2, 1907. Serial No. 355,370.

Claim.—1. The combination, in an anchor, of a main anchor rod, stay bars pivotally connected thereto, and anchor plates connected at their outer ends to said stay bars and at their inner ends longitudinally slidable on said main anchor rod with their inner ends initially above the outer ends.

2. The combination, in an anchor, of a main anchor rod provided with a stationary head or plate on its lower end, stay bars pivotally connected to said rod, and anchor plates connected at their outer ends to said stay bars and at their inner ends mounted on said main anchor rod above said stationary head or plate.

3. The combination, in an anchor, of a main anchor rod, stay bars pivotally connected thereto and provided with hooked lower ends, and anchor plates having slots in their outer ends through which the stay bars extend and whereby they are connected to said stay bars, said anchor plates being also suitably connected at their inner ends to the anchor rod.

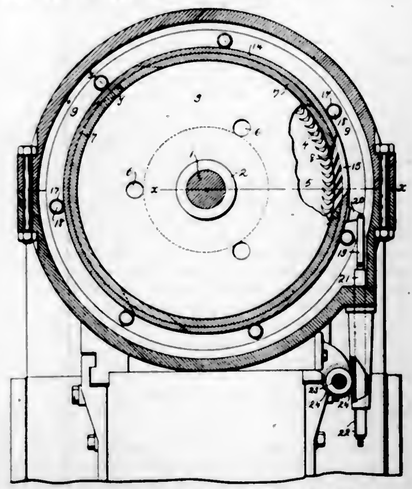
4. The combination, in an anchor, of a main anchor rod, anchor plates having their inner ends slidable relative to the main rod and initially higher than their outer ends and having slots in their outer ends, and stay bars connected to said rod and passing through the slots in said plates and provided with supporting ends for said plates, said main anchor rod being provided with a support for the inner ends of said plates.



5. The combination, in an anchor, of a main anchor-rod, stay-bars connected thereto, and anchor-plates hingedly-connected at their inner ends and supported by said stay-rods at their outer ends, the connected inner ends of said plates being initially higher than the outer ends and longitudinally slidable relative to the main rod.

6. The combination, in an anchor, of a main anchor-rod, stay-bars connected thereto, a fixed support at the bottom of said main anchor-rod, anchor-plates hingedly connected at their inner ends and adapted to slide longitudinally of the main rod from a position initially above the outer ends to rest upon said fixed support when in operative position, and supports carrying the outer ends of said anchor-plates.

853,332. TURBINE-NOZZLE VALVE. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Original application filed Jan. 21, 1904, Serial No. 190,043. Divided and this application filed Feb. 6, 1904. Serial No. 192,319.



Claim.—1. In a turbine, a nozzle ring having grouped nozzle apertures; and a valve ring concentric with the nos-

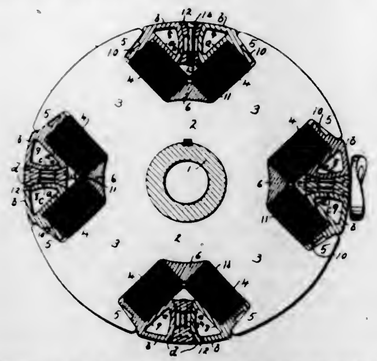
zle ring, and provided with an aperture for each group of nozzles, equal in capacity to the combined capacity of the nozzles in said group; together with anti-friction devices supporting the valve ring out of binding frictional contact with the nozzle ring.

2. In a turbine, a nozzle ring having nozzle apertures; a valve ring concentric with the nozzle ring and provided with ports for the delivery of motive fluid to the nozzles; and a deflecting flange on the valve ring arranged to prevent an annular flow of motive fluid to the valve ports over the edge of the valve ring.

3. In a turbine; a nozzle ring having a cylindrical outer surface and provided with grouped nozzles arranged for an inward delivery of the motive fluid; a valve ring encircling the nozzle ring and provided with ports, adapted to be brought into and out of registry with the nozzle apertures; a rod connected tangentially with the valve ring and extending to an exterior point; and connections for oscillating said rod.

4. In a turbine, a valve ring apertured for the delivery of motive fluid; and a set of rollers disposed annularly about the valve ring, and arranged to support such ring; said rollers having a central portion fitting a groove in the valve ring.

853,333. COIL-CLAMP FOR ROTARY MAGNETS. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Mar. 28, 1904. Serial No. 200,356.



Claim.—1. In a rotary field magnet having pole pieces projecting over the coils; a set of clamping members formed to bear against the sides of the coils and to fit angular spaces between such coils and the pole piece projections; the opposing faces of the clamping members being formed to diverge inwardly and outwardly from an intermediate point; wedges inserted between the diverging faces of the pole pieces; and means for actuating said wedges.

2. In a rotary field magnet having polar projections partially covering the coils and arranged with angular spaces between them and the coils,—a set of clamping members having wedge shaped portions fitting said spaces and other portions projecting inwardly at the side of the coils; and means for pressing said clamping members in the direction of the coils and said angular spaces.

3. In a rotary field magnet, a set of clamping members each formed to bear against two sides of a magnet coil; a set of wedges between clamping members; and means for actuating the wedges to press the clamping members against the respective coils.

4. In a rotary field magnet having polar projections partially covering the coils, a set of clamping members between adjacent coils, each having a wedge shaped projection between a coil and the corresponding polar projection; wedges movably located between the clamping members, and means for actuating the wedges to separate the clamping members and press them in the direction of the coils.

5. In a rotary field magnet having polar projections partially covering the coils; a set of clamping members between adjacent coils, each having a wedge shaped projection between a coil and the corresponding polar projection; wedges movably located between the clamping members; and means for actuating the wedges to separate the clamping members and press them in the direction of the coils; said clamping members and wedges being arranged to substantially fill the spaces between adjacent coils and pole pieces.

6. In a rotary field magnet having polar projections partially covering the coils; a set of clamping members between adjacent coils, each having a wedge shaped projection between a coil and the corresponding polar projection; wedges movably located between the clamping members and means for actuating the wedges to separate the clamping members; and press them in the direction of the coils; said clamping members and wedges being arranged to substantially fill the spaces between adjacent coils and pole pieces; and said polar projections and clamping members being formed with outer surfaces curved substantially in conformity with the outer circle of revolution.

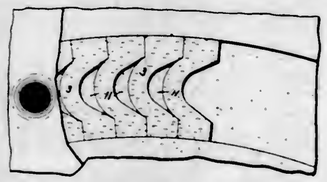
7. In a rotary field magnet having polar projections partially covering the coils; a set of clamping members between adjacent coils, each having a wedge shaped projection between a coil and the corresponding polar projection; wedges movable in opposite directions between the opposing surfaces of adjacent clamping members; and draw bolts connecting said wedges and adapted to draw them each toward the other, whereby said clamping members are separated and pressed into forcible engagement with the coils and pole pieces.

8. In a rotary field magnet having polar projections provided with suitable windings; the combination of a set of clamping members covering the outer exposed portions of said windings; wedging members interposed between adjacent clamping members; and means for actuating said wedging members.

9. In combination, a rotating core provided with radially extending portions, windings surrounding said portions, and expansible braces between adjacent sides of adjacent windings, each brace comprising a member for engaging one winding, a second member for engaging the other winding, and means for spreading said members apart, said means comprising a wedge shaped block located between said members.

10. In combination, a core having portions to be surrounded by windings, windings surrounding said portions, and braces for forcibly holding said windings against said portions, said braces comprising a member engaging one winding, a second member engaging the other winding, and wedging means for spreading said members.

853,334. TURBINE-VANE. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Oct. 24, 1904. Serial No. 229,722.



Claim.—1. A turbine vane having a stamped exterior surface of relatively hard material and a filling of cast metal between the surface walls.

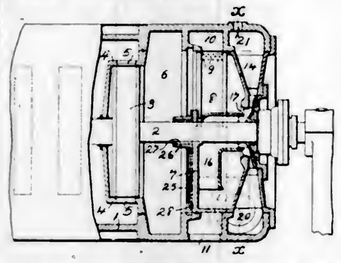
2. A cast metal turbine vane provided with a surface of stamped metal fused to the cast metal interior.

3. A series of turbine vanes integrally united by a cast metal bar, and a smooth metallic covering for each vane of different character than the interior portion, but integrally united therewith by fusion.

4. A series of turbine vanes integrally united with each other by a metallic connecting bar, each vane being surfaced with metal of a different character from that composing the bar, and connected with the bar through projections on the latter extending between the surface walls.

5. A series of turbine vanes having body portions of cast metal formed integrally with a curved metallic connecting bar and having surfaces of different material from that composing the body portions.

853,335. CONDENSER. CHARLES A. BACKSTROM and PAUL G. ROESTI, Milwaukee, Wis.; said Backstrom assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Feb. 2, 1905. Serial No. 243,802.

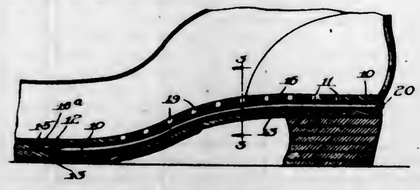


Claim.—1. The combination with a turbine; of a chamber formed at one end thereof and inclosing a portion of the turbine shaft; a partition partially subdividing said chamber into a receiving and a condensing compartment and adapted to separate the lower portion of the compartments; a centrifugal pump mounted upon the turbine shaft in the condensing chamber and having a suction pipe leading to the lower portion of said chamber; together with an exhaust passage leading outwardly from said pump.

2. The combination with a turbine; of a chamber formed at one end thereof and inclosing a portion of the turbine shaft; a partition partially subdividing said chamber into a receiving and a condensing compartment, and adapted to separate the lower portion of the compartments; a centrifugal pump mounted upon the turbine shaft in the condensing chamber and having a suction pipe leading to the lower portion of said chamber; together with an exhaust passage leading outwardly from said pump; and means for completely separating the receiving and condensing compartments.

3. In a condenser, a condensing chamber provided with inlets for vapor and for condensed liquid respectively; a partition partially sub-dividing said chamber between the vapor and liquid inlets; a movable partition adapted to be adjusted in position to co-operate with the first mentioned partition in completely subdividing said chamber; and a centrifugal pump arranged to discharge fluid from the chamber having a condensing liquid inlet.

853,336. COMBINED SHOE SHANK AND VENTILATOR. JAMES BALL, Chicago, Ill. Filed May 16, 1906. Serial No. 317,118.

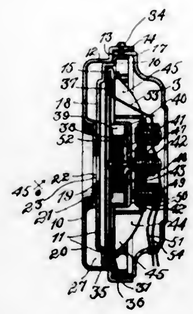


Claim.—1. In a device of the class described, the combination of a plate provided with a longitudinal depressed portion or groove, a perforated tube seated within the groove or depressed portion and projecting above the face of the plate, means for securing the plate and tube together, said plate and tube being embedded in the sole of a shoe, said tube having communication with the outside air, and an insole provided with perforations registering with the perforations in the tube.

2. In a device of the class described the combination of a plate provided with a longitudinal groove, a tube seated within the groove and projecting above the top of the plate, and provided with perforations above the plate, an insole, provided with a groove in its under face adapted to receive the portion of the tube above the plate to permit the plate to engage the face of the insole, said insole being provided with perforations registering with the perforations in the tube, and means for securing the parts together.

3. In a device of the class described the combination of a plate provided with a longitudinal groove or depressed portion terminating short of one end thereof to form an end wall, a tube having an open end seated within the groove and with its open end adjacent the wall, said tube projecting above the top of the plate and provided with perforations in the projecting portion, an insole, provided with a longitudinal groove to receive the projecting portion of the tube and having perforations adapted to register with the perforations in the tube and means for securing said parts together, said tube having communication with the outside air.

853,337. BREAST-TRANSMITTER. JULES A. BIESFIELD, Rochester, N. Y., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Feb. 13, 1905. Serial No. 245,527.



Claim.—1. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall consisting of two stampings, flanges extending from said stampings and separated to form an annular groove, and a flange extending from the rear wall for engagement in said annular groove.

2. In a telephone transmitter, the combination with a rear supporting wall, of a front supporting wall formed of two stampings, an air chamber between said stampings, a flange extending from each stamping, said flanges being disposed to form an annular groove, and a flange extending from the rear wall for engagement in said groove.

3. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall consisting of two stampings, an air chamber between said stampings, flanges extending from said stampings and disposed to form an annular groove, a flange extending from said rear inclosing wall for engaging in said groove, lugs extending from said rear wall flange, and indentations in one of said other flanges for receiving said lugs, whereby said front and rear inclosing walls are secured together.

4. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall formed of two

stampings, said stampings being in contact at their centers and at their edges to leave an air chamber between them, flanges extending from said stampings and disposed to form an annular groove, a flange extending from the rear inclosing wall for engaging in said groove, lugs extending from said rear wall flange, and a plurality of grooves in one of said other flanges for receiving said lugs, said grooves extending longitudinally and then circumferentially.

5. In a telephone transmitter, the combination with a rear supporting wall, of a front wall composed of an outer and inner stamping, the front walls of said stampings being separated to leave an air chamber, a flange extending rearwardly from each stamping, said flanges being disposed to form an annular groove, a flange extending from the rear wall for engaging in said groove, lugs pressed from the rear wall flange, and indentations pressed in the flange of the inner stamping for receiving said lugs, said indentations being longitudinal and then circumferential.

6. In a telephone transmitter, the combination with a cup shaped rear inclosing wall, of a front inclosing wall consisting of cup shaped outer and inner walls, the flange of each stamping being shaped to form a ledge and an end flange, only the center portion of the stampings and the ledges thereof being in engagement to leave an annular air chamber between the stampings, the end flanges of the stampings being disposed to form an annular groove, a flange extending from the rear inclosing wall for engaging in said groove, lugs pressed inwardly from the rear wall flange, and indentations pressed in the end flange of the inner stamping to form grooves for the reception of said lugs, said grooves extending longitudinally and then circumferentially for short distances.

7. In a telephone transmitter, the combination with a rear inclosing wall stamped integrally from sheet material, of a front inclosing wall formed of outer and inner cup shaped stampings, the cylindrical sides of said stampings being pressed to form annular ledges and end flanges, said stampings being adapted for engagement only at their central portions and at said annular ledges, whereby an annular air chamber is formed between the stampings, means for securing the stampings together at the central part thereof, said stampings when brought into engagement at their ledges being separated a distance at their central parts, whereby upon securing said central parts together said stampings will be sprung together, an annular groove formed between the end flanges of said stamping, a flange extending from the rear inclosing wall for engaging in said groove, lugs pressed from said rear wall flange, and indentations pressed in the inner stamping end flange to form grooves for receiving said lugs, said grooves extending longitudinally a distance and then circumferentially a distance, said lugs when disposed in said circumferential part of the grooves serving to lock the inclosing walls of the transmitter securely together.

8. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall, a flange extending rearwardly from the front inclosing wall, provided with indentations to form grooves in the outer surface of the flange, a flange extending from the rear inclosing wall provided with lugs for engaging in said grooves, an annular ledge formed in said front inclosing wall, a sheet metal supporting arch engaging said annular ledge, notches formed between said ledges and the indentations in the flange of the front wall, and feet extending from said supporting arch for engaging in said notches, whereby said arch is secured to said front inclosing wall.

9. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall, said walls being stamped integrally from sheet material, a flange extending from the front supporting wall, indentations pressed in said flange to leave grooves in the outer surface thereof, said grooves running longitudinally and then circumferentially short distances, a flange extending from the rear inclosing wall provided with lugs for engaging in said grooves to secure the front and rear inclosing walls securely together, an annular ledge extending inwardly from the foot of the front inclosing wall flange, said ledge forming notches with the indentations in the front wall flange, and a supporting frame for transmitter parts, said supporting frame having feet for engaging in said slots, whereby said supporting frame is secured to the front inclosing wall.

10. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall, said walls being stamped integrally from sheet material, a flange extending rearwardly from the front wall, provided with indentations for forming grooves in the outer surface of the front wall flange, a flange extending from the rear wall provided with lugs for engaging in said grooves, whereby the inclosing walls are secured together, an annular ledge extending inwardly from the foot of the front wall flange, said ledge with the indentations in the front wall flange forming slots, an arch stamped integrally from sheet material for supporting transmitter parts, and four feet extending from said arch frame for engaging in said slots upon a slight turning motion of the arch frame, whereby said arch frame is securely locked to the front inclosing wall.

11. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall, said walls being stamped integrally from sheet material, a flange extending rearwardly from the front inclosing wall, indentations pressed in said flange for forming grooves in the outer side of the flange, said grooves being longitudinal and then circumferential, a flange extending forwardly from the rear inclosing wall, lugs pressed in said flange for engaging said grooves to lock the inclosing walls together, an annular ledge extending inwardly from the base of the front wall flange, said ledge with the indentations in said front wall flange forming detent slots, an arch frame 44 for supporting transmitter parts, and arms for said arch, the ends of said arms being adapted for insertion in said slots to lock the arch to the front inclosing wall.

12. In a telephone transmitter, the combination with a front inclosing wall, of a flange extending rearwardly from said wall, indentations pressed in said flange to form lugs at the interior thereof, an annular ledge extending inwardly from the base of said flange, said ledge with said indentations forming slots, a frame for supporting transmitter parts, and feet extending from said frame for engagement in said slots.

13. In a telephone transmitter, the combination with a front supporting wall stamped integrally from sheet material, of a flange extending rearwardly from said wall, indentations pressed in said flange to form detent lugs at the interior thereof, an annular ledge extending inwardly from the base of said flange and forming slots in conjunction with said detent lugs, a supporting arch stamped integrally from sheet material for supporting transmitter parts, said arch consisting of a body portion, and arms extending from said body portion for engagement at their ends in said slots, whereby said arch may be securely locked to the front inclosing wall.

14. In a telephone transmitter, the combination with a front inclosing wall stamped integrally from sheet material, a flange extending rearwardly from said wall, indentations pressed in said flange for forming detent lugs at the interior thereof, an annular ledge extending inwardly from the base of said flange and forming slots with said detent lugs, a supporting frame in the shape of an arch stamped integrally from sheet material, arms extending from said supporting frame and adapted for engagement at their ends in said slots, whereby said frame is securely locked to the supporting wall, a diaphragm secured to said front wall in front of the supporting frame, an electrode chamber supported from said supporting frame and associated with the diaphragm, and damping springs associated with the diaphragm, said damping springs terminating in a body portion and being stamped integrally therewith, said body portion being clamped to said supporting frame.

15. In a telephone transmitter, the combination with a front supporting wall, of a hollow spherical head secured thereto, a spherical shell for receiving said head, a pivot pin extending through the axes of said shell and said head, and a transmitter mouth piece secured to said shell.

16. In a telephone transmitter, the combination with a front supporting wall, of a hollow spherical head secured thereto, a spherical shell for receiving said head, a pivot pin passing through the axes of said shell and said head and secured in said shell, friction spring means engaging said pin and said head, a hollow extension from said cylindrical head, a transmitter mouth piece secured to said extension, and a locking ring for locking said mouth piece to said extension.

17. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall consisting of an outer and an inner stamping, central openings in said stampings, a spherical head extending into said openings, a mouth piece supported by said spherical head, said stampings being secured together and to said head, and means for locking said rear inclosing wall to said front inclosing wall.

18. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall consisting of an outer and an inner sheet metal stamping, a central opening through both stampings, a depression in the outer stamping for causing an air chamber to exist between said stampings upon assembly thereof, a transmitter supporting arm extending through said openings, screws for securing said stampings together and to said arm, flanges extending rearwardly from said stampings disposed to form an annular groove for receiving the edge of the rear inclosing wall, and means for locking said rear wall within said groove.

19. In a telephone transmitter, the combination with a rear inclosing wall, of a front inclosing wall consisting of an outer and an inner stamping of sheet metal, an annular flange and an annular shoulder for each stamping, a central depression in said outer stamping, the walls of said depression extending rearwardly for engagement with the rear stamping, a central opening through said stampings, a transmitter supporting arm extending into said openings, means upon assembly of said stampings for causing the annular shoulders thereof to engage before engagement of the walls of the depression with the rear stamping, and screws passing through said stampings and engaging said transmitter arm tightening of said screws causing said stampings to be sprung together and to be secured to said transmitter arm.

20. In a telephone transmitter, the combination with a front inclosing wall composed of two plates separated about their edges to form an annular groove, of a rear inclosing wall having its edge engaging in said groove.

21. In a telephone transmitter, the combination with a front inclosing wall composed of two plates separated about their edges to form an annular groove, of a rear inclosing wall having its edge engaging in said groove, and locking means formed of the material of the walls for locking the rear inclosing wall in said groove.

22. In a telephone transmitter, the combination with a cup-shaped supporting frame, an annular interior ledge about the edge of said frame, inwardly extending lugs punched from the material of the frame above said ledge to form grooves, and a sheet metal supporting frame locked at its edge in said grooves.

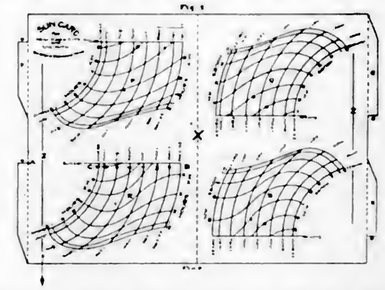
23. In a telephone transmitter, the combination with a cup-shaped supporting frame, an annular interior ledge about the edge of said frame, inwardly extending lugs punched from the material of the frame above said ledge to form grooves, and a cross shaped sheet metal supporting frame, the ends of the arms of said frame engaging in said grooves to be locked to the supporting frame.

24. In a transmitter, the combination with a front cup-shaped inclosing casing, an annular ledge at the interior of said casing a distance from the edge thereof, said casing being punched about the edge at various places to leave indentations at the outside thereof, lugs at the interior thereof above the ledge, an arched sheet metal frame engaging at its edge between said ledge and said lugs to be locked to the inclosing casing, and a cup-shaped rear inclosing casing engaging at its edge about the edge of the front inclosing casing, said rear inclosing casing being punched along its edge to form lugs at the interior thereof to register with the indentations about the edge of the front inclosing casing.

25. In a transmitter, the combination with a front cup-shaped inclosing casing, an annular ledge at the interior of said casing a distance from the edge thereof, said casing being punched about the edge at various places to leave indentations at the outside thereof, lugs at the interior thereof above the ledge, an arched sheet metal frame engaging at its edge between said ledge and said lugs to be locked to the inclosing casing, and a cup-shaped rear inclosing casing engaging at its edge about the edge of the front inclosing casing, said rear inclosing casing being punched along its edge to form lugs at the interior thereof to register with the indentations about the edge of the front inclosing casing, said indentations about the edge of the front inclosing casing extending longitudinally and circumferentially, the lugs of the rear inclosing casing passing through the longitudinal part and finally engaging in the circumferential part of the indentations to lock the casings together.

26. In a telephone transmitter, the combination with an inclosing casing containing the transmitter and operative parts, of a mouth piece for conveying voice waves to the interior of the casing, a ball and socket joint having the ball member secured to the casing and the socket member secured to the mouth piece and a pivot member passing through the ball and socket joint whereby said mouth piece may be moved to assume various angles with respect to the casing, and means for locking the joint to hold the mouth piece in any adjusted position.

853,338. SUN TIME-CARD. CLINTON S. BISSELL, Flushing, N. Y. Filed Oct. 4, 1905. Serial No. 281,259.



Claim.—1. A sun dial comprising a card and a gnomon, said card having hour measuring lines and intersecting date lines, so mapped that for a given place correct time may be directly read from the position of the shadow of the gnomon on the card at any hour of the day by arranging the card vertically and with its surface substantially in the plane of the sun's rays while being so read.

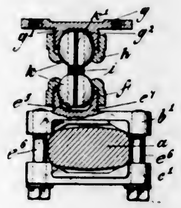
2. A sun dial comprising a card having a portion of its surface mapped with date lines and intersecting hour measuring lines, and another portion of said card bent at an angle to the map portion to form a gnomon.

3. A portable sun time-card readable when in a vertical plane, comprising a fiducial edge, a mapped surface upon which a shadow from said edge may be cast, said mapped surface comprising date lines and intersecting hour measuring lines represented as determined from the altitude of the sun at any given hour, said fiducial edge being formed of a wing bent up from the body of the card.

4. A portable time card comprising a plurality of mapped surfaces, a plurality of fiducial edges adapted each to cast a shadow upon its adjacent mapped surface, each map surface comprised of date lines and intersecting hour measuring lines represented as determined from the altitude of the sun at any given hour, a line of fold between said mapped surfaces whereby the surfaces may be

turned at an angle to each other bookwise to make the surfaces self-supporting.

853,339. SUPPORTING-BRACKET FOR ODOMETERS, &c. HORACE J. BOON, Hartford, Conn., assignor to Veeder Manufacturing Company, a Corporation of Connecticut. Filed July 12, 1906. Serial No. 325,785.



Claim.—1. A supporting bracket for odometers etc. comprising a bolt having a socketed head and an annular cap, a nut for said bolt, jaws carried by said bolt and adapted to be clamped upon the supporting arm or bar, the supporting plate or base having a socket and an annular cap, and a connecting stem or bar having balls at its ends to engage said sockets and be held therein by said caps.

2. A supporting bracket for odometers etc. comprising a bolt having a socketed head and an annular cap, a nut for said bolt, jaws carried by said bolt and adapted to be clamped upon the supporting arm or bar, the supporting plate or base having a socket and an annular cap, and a connecting stem or bar having split balls at its ends to engage said sockets and be held therein by said caps.

3. A supporting bracket for odometers, etc., comprising a pair of jaws adapted to engage a portion of a vehicle, a bolt for securing said jaws in place, a socket in the head of said bolt, a supporting arm having a ball adapted to rest in said socket, and a clamping member for securing said ball in place in said socket.

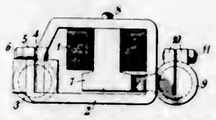
4. A supporting bracket for odometers, etc., comprising a pair of jaws adapted to engage a portion of a vehicle, a bolt for securing said jaws in place, a socket in the head of said bolt, a supporting arm having a ball adapted to rest in said socket, and an annular cap in threaded engagement with the head of said bolt and adapted to engage said ball to clamp it in place in said socket.

5. A supporting bracket for odometers, etc., comprising a pair of jaws adapted to engage a portion of a vehicle, a bolt extending through openings in said jaws and by which they are secured in place, a socket in the head of said bolt, a supporting arm, a split ball upon the end of said arm and separable therefrom and adapted to rest in said socket, and an annular cap in threaded engagement with the head of said bolt and adapted to engage said ball to clamp it in place in said socket and to clamp said ball and arm together.

6. A supporting bracket for odometers, etc., comprising a clamp adapted to engage a portion of a vehicle, a socket carried by said clamp, a supporting arm, a split ball upon the end of said arm and separable therefrom and adapted to rest in said socket, and an annular cap in engagement with said socket and adapted to engage said ball to clamp it in place and to clamp said ball and arm together.

7. A supporting bracket for odometers, etc., comprising a clamp adapted to engage a portion of a vehicle, a socket carried by said clamp, a supporting plate, a socket carried by said plate, a supporting arm extending between said clamp and plate, a split ball upon each end of said arm, and separable therefrom and adapted to rest in said sockets, and an annular cap in threaded engagement with each of said sockets and adapted to engage said balls to clamp them in place in their respective sockets and to clamp said balls to the ends of said arm.

853,340. WINDING FOR ELECTROMAGNETS. WILLIAM M. BRADSHAW, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 28, 1906. Serial No. 314,210.



Claim.—1. A winding for electro-magnets comprising a loop and a bar that extends from one side of the loop partially across the area included thereby.

2. A winding for electro-magnets comprising a loop, a bar that extends from one side of the loop partially across the area included thereby, and terminal pieces that are attached respectively to the loop and to the free end of the bar.

3. A winding for electro-magnets comprising a loop, and a bar that extends from one side of the loop partially across the area included thereby and thence outwardly from the plane of the loop.

4. A winding for electro-magnets comprising a loop, a bar that extends from one side of the loop partially across the area included thereby and thence outwardly from the plane of the loop, and terminal pieces for the loop and the free end of the bar.

5. A winding for electro-magnets comprising a loop and a T-shaped piece one extremity of the body of which is joined to one side of the loop.

6. A winding for electro-magnets comprising a loop, a T-shaped piece one extremity of the body of which is joined to one side of the loop, and terminal pieces for the loop and the head of the T-shaped piece.

7. A winding for electro-magnets comprising a loop, a T-shaped piece one extremity of the body of which is joined to one side of the loop and the head of which is extended outwardly from the plane of and beyond the limit of the loop, and terminal pieces for the loop and the extension of the cross bar of the T-shaped piece.

8. The combination with an U-shaped magnetizable core, of a winding therefor comprising a loop that surrounds both legs thereof and a bar that extends from one side of the loop partially across the area included thereby and between the legs of the core.

9. The combination with an U-shaped magnetizable core, of a winding therefor comprising a loop that surrounds both legs thereof, a bar that extends from one side of the loop partially across the area included thereby and between the legs of the core, and terminal pieces for the loop and the free end of the said bar.

10. The combination with an U-shaped magnetizable core, of a winding therefor comprising a loop that surrounds both legs thereof, and a T-shaped piece the body of which is joined to one side of the loop and is located between the legs of the core and the head of which occupies a space between the core and the other side of the loop.

11. The combination with an U-shaped magnetizable core, of a winding therefor comprising a loop that surrounds both legs thereof, and a T-shaped piece the body of which is joined to one side of the loop and the head of which occupies the space between the core and the other side of the loop, and an extension of the head of the T-shaped piece that extends outwardly from the plane of and beyond the limits of the loop.

12. The combination with an U-shaped magnetizable core, of a winding therefor comprising a loop that surrounds both legs thereof, and a T-shaped piece the body of which is joined to one side of the loop and is located between the legs of the core and the head of which occupies the space between the core and the other side of the loop, an extension of the head of the T-shaped piece that extends outwardly from the plane of and beyond the limits of the loop, and terminal pieces for the loop and the extension of the T-shaped piece.

13. An electro-magnet coil comprising a loop and a detachable bar one end of which is attached to one side of the loop and the other end of which is adjacent to the opposite side of the loop.

14. An electro-magnet coil comprising a loop having a terminal clamp, and a bar that extends from one side of the loop nearly to its opposite side and is provided with a terminal clamp.

15. An electro-magnet coil comprising a loop having a terminal connector at one end and a bar that extends from one side nearly to the opposite side and the free end of which is provided with a terminal connector.

853,341. MANUFACTURE OF CERAMIC PRODUCTS. MAX BUCHNER, Mannheim, Germany. Filed April 4, 1906. Serial No. 309,904.

Claim.—1. The process of making ceramic ware which consists in fusing together alumina and an oxid in proportions to form an aluminate, converting the fused aluminate into a shaped plastic mass and firing said mass.

2. As a new ceramic composition, a fused aluminate of a metallic oxid.

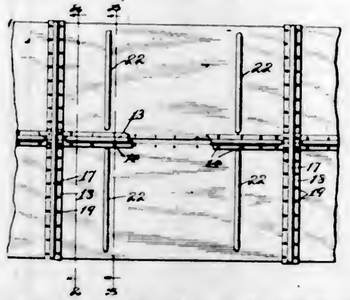
3. The process of making ceramic articles which consists in mixing a fused aluminate with a plastic material and firing the mixture.

4. The process of making ceramic articles which consists in mixing a fused aluminate with a clay and firing the mixture.

5. As a new article of manufacture, a ceramic article comprising a fused aluminate and a plastic material, fired together.

6. As a new article of manufacture, a ceramic article comprising a fused aluminate and a clay, fired together.

853,342. METALLIC CAR-ROOF. ARGYLE CAMPBELL, Chicago, Ill., assignor to Enterprise Railway & Equipment Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 30, 1905. Serial No. 285,083.

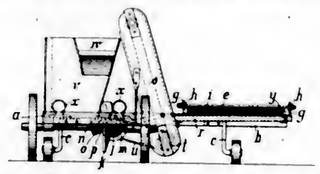


Claim.—1. In a metallic car roof the combination with a ridge pole, of continuous metal roof plates secured to said pole and extending from end to end of the car, said plates having their edges supported directly upon the sides of the car, and a plurality of exterior carlines supported upon and secured to said roof plates.

2. In a metallic car roof the combination with a ridge-pole, of continuous metal roof plates secured to said pole and extending from end to end of the car, said plates having their edges supported directly upon the sides of the car, and a plurality of exterior carlines supported upon and secured to said roof plates, said carlines extending across said ridge pole from one side of the car to the other.

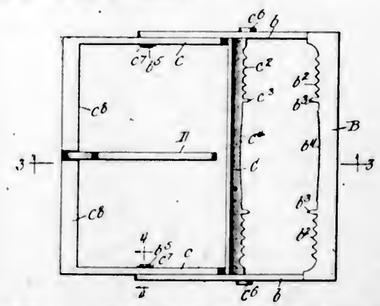
853,343. HARVESTING-MACHINE. LUDWIG CHRIST and ALOIS MEGNER, Merchingen, near Osterburken, Germany. Filed Oct. 9, 1905. Serial No. 282,075.

Claim.—1. A machine for cutting the heads of corn, provided with a rake e arranged at a certain distance above the ground and extending laterally in a horizontal plane and having slots in its prongs, a saw-like knife f which moves to and fro in said slots in a direction transversely to that in which the machine is driven and a bar i arranged at a certain distance transversely above the rake e and in front of the knife f, which bar bends the stalks of corn which pass between the prongs of the rake and prevents them from coming in contact with the knife until they are released by it and again assuming their normal position are thrown against the knife, which thereupon cuts them directly below the heads.



2. A machine for cutting the heads of corn, provided with a rake e arranged at a certain distance above the ground and extending laterally in a horizontal plane and having slots in its prongs, a saw-like knife f which moves to and fro in said slots in a direction transversely to that in which the machine is driven, and a bar i arranged at a certain distance transversely above the rake e and in front of the knife f, which bar bends the stalks of corn which pass between the prongs of the rake and prevents them from coming in contact with the knife until they are released by it and again assuming their normal position are thrown against the knife, which thereupon cuts them directly below the heads, and a trough lying behind the said rake and inclined downward away from the rake, which latter is also inclined downward toward the rear, and an elevator arranged in proximity to said trough and a funnel provided adjacent to said elevator, substantially as described.

853,344. ADJUSTABLE SCAFFOLD-BRACKET. JOHN J. DENNIS, Chicago, Ill., assignor of one-half to F. W. Fullmer and F. E. Ball, Chicago, Ill. Filed Oct. 26, 1905. Serial No. 284,432.



Claim.—1. A bracket of the class described comprising relatively adjustable jaws having inwardly facing engaging edges thereon and integral slidably engaged arms on said jaws extending in the same direction and adapted to afford a support.

2. A device of the class described comprising relatively adjustable jaws having inwardly directed sharp edges adapted to engage a suitable support, a horizontal arm engaged on each end of one of said jaws and provided with a plurality of notches in the under side thereof, means for slidably engaging the other jaws longitudinally of said horizontal arms and laterally directed projections thereon adapted to engage in said notches and hold said jaw in adjusted position.

3. A device of the class described comprising mutually adjustable jaws, similarly directed arms on each jaw, those on one jaw being slidably engaged with those on the other

and means on the last named jaw adapted to interlock with the arm of the other jaw.

4. A scaffold bracket of the class described comprising relatively adjustable jaws having inwardly directed toothed edges adapted to engage a supporting member therebetween, arms on the ends of said jaws extending in the same direction, the ends of those of one jaw engaging in slots in the others, said arms affording a support for a staging.

5. A bracket comprising adjustable jaws adapted to grip an inclined support therebetween, means rigidly engaging the jaws in adjusted relation and a rigid arm on each end of each jaw together affording a substantially horizontal staging support those on one jaw being slidably and pivotally engaged with those on the other.

6. The combination with an outer jaw having inwardly directed notched arms, of an inner jaw adjustable relatively to the outer jaw, slotted arms thereon slidably engaged on those of the outer jaw, lugs integrally connected therewith and engaging in the notches of the outer arm and means on the inner arms adapted to prevent the outer arms from spreading, the arms of one or both of said jaws being rigidly connected at the rear end.

7. In a device of the class described the combination with a jaw of parallel arms thereon provided with notches in their under sides, a coacting jaw, arms thereon extending in the same direction as the aforesaid arms and lying within the same, laterally directed extensions on the ends of said last named jaw adapted to engage in said notches and devices on the first named arms slidably connected in the last named arms.

8. In a device of the class described the combination with a jaw having inward directed teeth for the entire length thereof, rearwardly extending arms engaged thereto and extending in a different plane from the plane of said jaw, a jaw having inward directed teeth corresponding with the teeth on the aforesaid jaw, rearward extending, slotted arms connected with the last named jaw, an extension on one end of each of said arms and a plate on each extension adapted to prevent the first named arms from spreading laterally.

9. In a device of the class described the combination with a jaw having inward directed teeth of different sizes, an arm on each end of said jaw, a lug on each end of said jaw a jaw having inward directed teeth, arms rigidly engaged to said last named jaw and notched to engage said lugs and means on said last named arms adapted to engage in the slots of the first named arms thereby permitting different adjustments.

10. As an article of manufacture an extensible bracket of the class described having relatively adjustable gripping jaws adapted clampingly to engage a support, one of said jaws being arranged at an angle with the plane of the other and pivotally and slidably connected therewith.

11. As an article of manufacture a bracket of the class described embracing relatively adjustable gripping jaws having toothed edges and adapted to clampingly engage a supporting element, one of said jaws being arranged obliquely with the plane of the other, slotted arms on one jaw provided with a lateral projection on the inner end of each arm, a plate rigidly engaged to said projection, notched arms on the other jaw adapted to engage on said projections for rigidly holding said jaws in adjusted position and provided with pins at their outer ends slidably and pivotally connected in said slots.

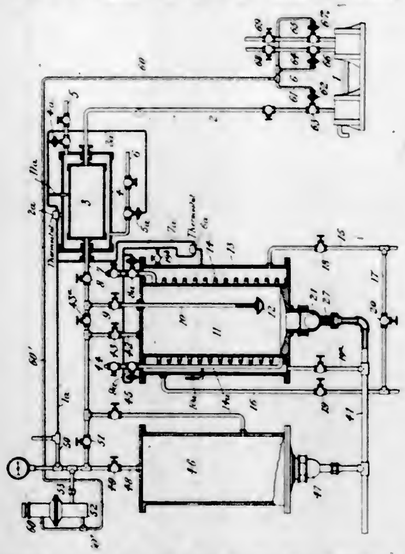
12. The combination with an outer jaw having the engaging edge horizontally directed, of an inner jaw having an obliquely and outwardly directed engaging edge, slotted and notched arms on said jaws slidingly engaged together and affording a scaffold support and laterally directed projections on said arms adapted to engage in said slots and notches.

13. In a device of the class described a scaffold bracket or clamp having complemental engaging jaws arranged at an angle with each other, integral arms engaged to the ends of said jaws affording a scaffold support and the arms of one jaw slidable longitudinally of the other, the arms on one jaw being notched and those on the other slotted, means on said arms adapted to engage in said slots and notches and hold the jaws in adjusted position, an extensible arm pivoted on the rear end of said arms on one jaw and a segment thereon affording adjustment of the same relatively of said arm.

14. In a device of the class described the combination with a plurality of jaws, slotted arms rigidly engaged on the ends of one jaw, notched arms integral with the ends of the other jaw, a rod connecting the extremities of said slotted arms, an extension arm pivoted centrally on said rod and having a plurality of apertures arranged on the pivoted end and means for engaging any one of said apertures and adapting said arm to be adjusted at any angle.

15. In a device of the class described the combination with a jaw having parallel, slotted arms thereon integrally connected at their outer ends, a coacting jaw having parallel, notched arms thereon slidably engaged on the outer side of the aforesaid arms, studs on said notched arms slidably engaged in the slots of the first named arms and means on the first named jaw adapted to engage in the notches of the last named arms.

853,345. APPARATUS FOR EXTRACTING MOISTURE FROM COMPRESSED AIR. JAMES R. DUNCAN, New York, N. Y. Filed Oct. 13, 1904. Serial No. 228,296.



Claim.—1. In an apparatus of the kind described, the combination with a source of compressed air or other gas, of a heating chamber, means for delivering the compressed air or other gas thereto, means for heating said chamber, a cooling chamber receiving the heated air or other gas from the heating chamber, and means for delivering the cooled air or other gas to the point of utilization, as set forth.

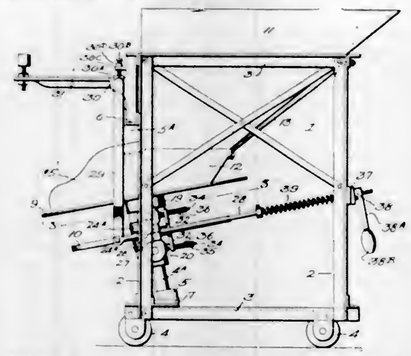
2. In an apparatus of the kind described, the combination with a source of compressed air or other gas, of a heating chamber, means for delivering the compressed air or other gas thereto, a steam jacket for the chamber to heat the same, a cooling chamber receiving the compressed air or other gas from the heating chamber, and means for delivering the cooled air or other gas to the point of utilization, as set forth.

3. In an apparatus of the kind described, the combination with a source of compressed air or other gas, of a heating chamber, a source of heat therefor, a cooling chamber, means for delivering the compressed gas from the heating chamber to the cooling chamber, automatic means for controlling the source of compressed gas and the source of heat when the pressure of the compressed gas varies from a predetermined limit, and means for delivering the compressed gas to the point of utilization, as set forth.

4. In an apparatus of the kind described, the combination with a source of compressed air or other gas, of a heating chamber, a source of heat therefor, a cooling chamber, means for delivering the compressed gas from the heating chamber to the cooling chamber, means for controlling the source of heat, means for controlling the source of compressed gas, both said controlling means being operated by the compressed gas in the system, automatic means for putting both said controlling means into operation when the pressure in the system varies from a predetermined limit, and means for delivering the compressed gas to the point of utilization, as set forth.

5. In an apparatus of the kind described, the combination with a source of compressed air or other gas, of a heating chamber, a source of heat therefor, a cooling chamber, means for delivering the compressed gas from the heating chamber to the cooling chamber, means for controlling the source of heat, means for controlling the source of compressed gas, both said controlling means being operated by the compressed gas in the system, a governor, actuated by the compressed gas in the system when the pressure therein varies from a predetermined limit, for putting both said controlling means into operation, and means for delivering the compressed gas to the point of utilization, as set forth.

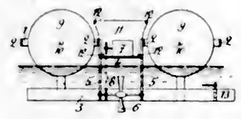
853,346. ORE-FEEDER. HENRY EGGERS, Denver, Colo. Filed Apr. 10, 1906. Serial No. 310,956.



Claim.—1. In an ore feeder, the combination of the frame, provided with floor rollers and an inclined vertical shaft at one end, with an ore feeding disk secured to said shaft, an ore hopper in said frame, having its discharge aperture resting close onto said disk and arranged to discharge thereon, ore guards arranged to guide the ore from said discharge aperture to the discharge edge of said ore feeding disk, a frictional disk secured to said shaft, a pair of roller supporting arms pivotally mounted on said shaft on opposite sides of said disk, a wedge between each roller and said frictional disk, and arranged to have a slight reciprocal movement of said rollers, resilient means for normally holding said rollers in engagement with said wedges, a reciprocating rod spring controlled in one direction of its movement, connected to said roller supporting arms, and means for moving said rod in the opposite direction of its reciprocal movement, as specified.

2. In an ore feeder, the combination with the frame, the inclined shaft journaled in said frame, the ore feeding disk secured on said shaft, the hopper arranged in said frame to discharge on said ore feeding disk, and the guide plates arranged to guide ore from said hopper to the discharge edge of said disk, of the frictional disk secured to said shaft, a pair of boxes pivotally secured to said shaft, on opposite sides of said frictional disk, rollers pivotally mounted in said boxes to project from the same, a guideway in each box adjacent to its roller, a wedge in each of said guideways, a rod secured to said boxes and extending loosely through said wedges, a spring pressure between the end of said rod and said wedges, a reciprocating rod spring controlled in one direction of its movement, connected to said boxes, and means for imparting an operative movement to said rod in the opposite direction of its movement, as specified.

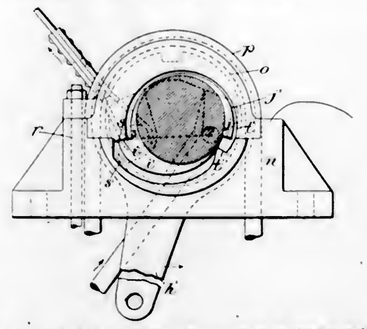
853,347. BOAT. AMEDÉE FAYOL, Bordeaux, France. Filed Feb. 5, 1907. Serial No. 355,852.



Claim.—1. A ship comprising the combination of a frame having parallel keels of floats mounted in the said frame both in front and at the rear, a screw propeller carried by the frame between the keels and at a lower level than that of the floats, a platform on the frame, a motor or engine secured on the said platform, and a supporting body for passengers and goods loosely located on the platform.

2. A ship comprising a frame having parallel keels, floats mounted in the said frame, a platform on the frame, a cage or well suspended underneath the said platform, a screw propeller mounted in the cage or well, a motor or engine in the middle of the platform adapted to actuate the screw propeller, and a supporting body for passengers and goods comprising two casings loosely located on the platform alongside the motor or engine, and cross-pieces or braces connecting the said casings rigidly the one with the other.

853,348. MACHINE-BRAKE. WALTER FERRIS, South Milwaukee, Wis., assignor to The Bucyrus Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed July 11, 1906. Serial No. 325,605.



Claim.—1. A band brake comprising a brake wheel, brake band, a brake lever which is used to tighten the brake band upon the brake wheel, and means for automatically shifting the fulcrum of the brake lever when the direction of rotation of the brake wheel is reversed, whereby the heavy pulling end and the light pulling end shall have the same relation to the fulcrum and to each other in either direction of rotation.

2. A differential band brake comprising a brake wheel, brake band, a brake lever which is used to tighten the brake band upon the brake wheel, and means for automatically shifting the fulcrum of the brake lever when the direction of rotation of the brake wheel is reversed, whereby the heavy pulling end and the light pulling end shall have the same relation to the fulcrum and to each other in either direction of rotation.

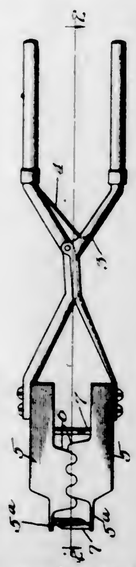
3. A differential band brake, comprising a brake band, a shaft to which the ends of the band are connected to apply the brake, and a bearing in which said shaft is

mounted to permit transverse movement of the shaft, the shaft and bearing having co-operating means for automatically shifting the fulcrum of the shaft when the direction of rotation of the brake wheel is reversed, whereby the heavy pulling end and the light pulling end shall have the same relation to the fulcrum and to each other in either direction of rotation.

4. A differential band brake, comprising a brake band, a shaft to which the ends of the band are connected to apply the brake, and a bearing in which said shaft is mounted to permit transverse movement of the shaft, the shaft having oppositely disposed lugs and the bearing having coöperating lugs constituting alternate points of engagement or fulcrum, whereby the heavy pulling end and the light pulling end shall have the same relation to the fulcrum and to each other in either direction of rotation.

5. A differential band brake, comprising a brake band, a shaft to which the ends of the band are connected to apply the brake in either direction, and a bearing in which the shaft is mounted to permit a limited transverse movement of said shaft, the shaft having oppositely disposed eccentric lugs and the bearing having coöperating shoulders adapted to be alternately engaged by the corresponding lugs on the shaft to automatically shift the fulcrum around which said shaft rotates when the direction of rotation of the band wheel is reversed.

853,349. HAIR-STRAIGHTENING DEVICE. GEORGE W. FIELDS, Chicago, Ill. Filed Oct. 8, 1906. Serial No. 337,969.



Claim.—A hair straightening instrument comprising pivoted handles each provided at its forward end with a fluted or ridged plate or section, and teeth projecting from the adjacent faces of said sections substantially as set forth.

853,350. PNEUMATIC LOG-SAW. ROBERT FULLERTON, Des Moines, Iowa. Filed Jan. 10, 1905. Serial No. 240,395.

Claim.—1. In a pneumatic saw the combination of a triple set of links designed to be operated, by means of sprocket wheels, over a track constructed on a frame work, the links on one side of the chain being provided with teeth on the forward portions of their upper surfaces and the links on the other side being provided with teeth on the rear portion of their upper surfaces, all of said links being curved downwardly on their under surfaces; a series of links provided with teeth on their upper surfaces mounted between the links on each side of the chain substantially as and for the purposes stated.



2. In a pneumatic saw a combination of a frame work composed of two lateral plates 10 and 11 secured to tracks 13 and 15; a support frame 16 having a gear wheel 17 driven by an engine 19 mounted thereon, secured in an adjustable manner to one end of the frame work, a handle 20 secured to said support frame 16; a second support frame 21 in which is mounted a gear wheel 22 secured in an adjustable manner to the other end of the frame work, a handle secured to said support frame 21; a chain composed of links 23 and 24 provided with teeth 26 and 29 respectively on their upper surfaces, their under surfaces being projected downwardly; links 25 provided with teeth 30 on their upper surfaces arranged between the links 23 and 24, all arranged and combined substantially as and for the purposes stated.

853,351. ELECTRIC BRAZING-MACHINE. WESTON M. FULTON, Knoxville, Tenn., assignor to The Fulton Company, Knoxville, Tenn., a Corporation of Maine. Filed Aug. 11, 1905. Serial No. 273,766.

Claim.—1. In an electric brazing machine, the combination of a heating bar and a self-adjusting support for one end of the same, to respond to expansion and contraction of said heating bar.

2. In an electric brazing machine, the combination of heating bars, yieldingly pressed clamping means for said bars, insulating means opposite the faces of said bars, and self-adjusting end supports for said bars.

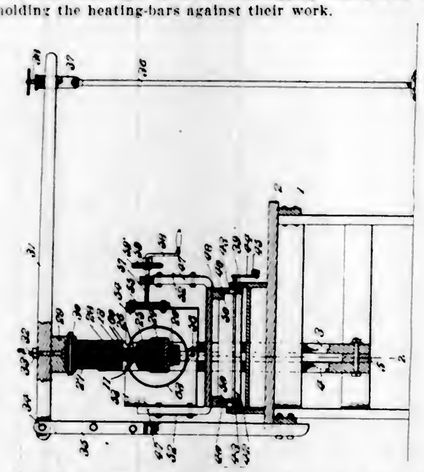
3. In an electric brazing machine, the combination of heating bars, heat lagging clamp-bars retaining said heating bars, and means applying a yielding pressure to one of said bars.

4. In an electric brazing machine, the combination of heating-bars, heat-lagging clamp-bars having retaining grooves for said heating bars, and self-adjusting end supports for said latter bars.

5. In an electric brazing machine, the combination of heating bars, heat-lagging clamp-bars resting against and retaining said heating-bars to hold the latter against the seam to be welded, and work-clamping means for rigidly holding the work.

6. In an electric brazing machine, the combination of heating bars, one of which is stationary, a work-carrier movable in line with and under said stationary bar, a supporting frame for said carrier provided with raising and lowering means for the same, and a work-clamping device on said carrier.

7. In an electric brazing machine, the combination of a pair of heating bars, a movable support fast to the end of one bar and pivotally connected to one end of the other bar, and yieldingly pressed heat-lagging clamp-bars for holding the heating-bars against their work.



8. In an electric brazing machine, the combination of a pair of heating bars, one movable and one fixed, heat-lagging clamp-bars on one of which said fixed heating bar rests and a horn for supporting said clamp-bar, a carriage movable in line with and under said heating-bar, work-clamping jaws on said carriage, and operating means for said clamping jaws.

9. In an electric brazing machine, the combination of oppositely disposed heating-bars, heat-lagging clamping-bars each having a groove for receiving a heating-bar, a horn for supporting one of said clamping-bars, means for raising and lowering the other of said clamping-bars, and means for applying a yielding pressure to said movable bar.

10. In an electric brazing machine, the combination of heating-bars, a carriage movable in line with and under said bars, and tube clamping jaws on said carriage, and opening and closing means for the jaws.

11. In an electric brazing machine, the combination of two seam heating bars, a self-adjusting supporting member for said bars, one of said bars being fast to said member and the other having a spring-pressed pivotal connection therewith, and yieldingly pressed heat-lagging clamp-bars for holding the said heating bars against their work.

12. In an electric brazing machine, the combination of two seam heating bars, a self-adjusting supporting member for said bars, one of said bars being fast to said member and the other having a pivotal connection therewith, two heat-lagging clamp-bars each having a groove for receiving a heating bar, an adjustable horn for supporting one of said heating bars, and a yieldingly pressed pivotal supporting means for the other of said clamp bars, and circuit closing means for the free ends of said heating bars.

13. In an electric brazing machine, the combination of two seam heating bars, one of which is movable and the other stationary, a work-holding carriage movable in line with and beneath said stationary bar, carriage ways provided with means for raising and lowering the same, tube clamping jaws on said carriage, and opening and closing means for said jaws.

14. In an electric brazing machine, the combination of two seam heating bars, one of which is movable relatively to the other, two heat-lagging clamp-bars one of which is stationary and the other movable for pressing said heating bars against the work to be welded, and a horn having a saddle for receiving said stationary clamp-bar.

15. In an electric brazing machine, the combination of a heating-bar and means for maintaining said bar in alinement during the passage therethrough of an electric current.

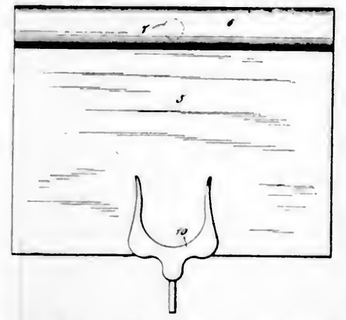
16. In an electric brazing machine, the combination of a heating-bar and heat-lagging means for maintaining said bar in alinement during the passage therethrough of an electric current.

17. In an electric brazing machine, the combination of a heating bar, a heat-lagging clamp bar retaining said bar in alinement under the action of the heating current, and self-adjusting means connecting said bar with a source of current.

18. In an electric brazing machine, the combination of a heating-bar and self-adjusting means responding to the expansion and contraction of said bar and connecting said bar with a source of electric current.

19. In an electric brazing machine, a seam heating-bar having both ends free to move when the bar is subjected to a heating current.

853,352. PORTABLE BATTERY-LAMP. STEPHEN W. GIBBS, Jr., Frankfort, Ky. Filed June 5, 1906. Serial No. 320,278.



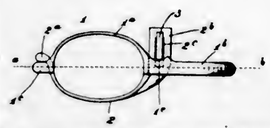
Claim.—1. The combination with a portable music support, of an electric lamp thereon, and a battery for said lamp carried by the support.

2. The combination with a portable music support, of a reflector thereon, an electric lamp in front of the reflector, and a battery for the lamp carried by the support.

3. The combination with a supporting plate having a reflector thereon, of an electric lamp in front of the reflector, and a battery secured to the plate, and connected to the lamp.

4. The combination with a supporting plate having a reflecting hood at the top, of an electric lamp inside the hood, and a battery secured to the back of the plate, and connected to the lamp.

853,353. CLIP FOR WHIFFLETREES. HENRY F. GRAY, Columbus, Ohio. Filed Feb. 2, 1906. Serial No. 299,203.



Claim.—1. A clip comprising two wood-embracing members, one of said members having integral therewith at one end a draft loop and the other having at the corresponding end a perforated tongue integral therewith, the said tongue adapted to pass through said looped end of the first mentioned member and receive a key wedge lying on one side of the loop, and means integral with the members for latching them together at the opposite ends of the members.

2. A clip comprising, in combination, two wood-embracing members with means for securing them together at one end, and means for locking them together at the opposite end, one of said members having a draft loop formed integral therewith and said member at its wood-embracing portion extending more than half way around the circumference of the wood and beyond both terminals of a plane bisecting axially the wood.

3. A clip comprising, in combination, two wood-embracing members with means for securing them together at one end, and means for locking them together at the opposite end, one of said members having a loop or device to which the harness of a draft animal can be attached and said member at its wood-embracing portion extending more than half way around the circumference of the wood and beyond both terminals of a plane bisecting axially the wood.

4. A clip comprising two wood-embracing members, one of said members having integral therewith at one end a draft loop and a transverse groove at the outer side of the member at the base of the loop and the other member having at the corresponding end a perforated tongue integral therewith, the said tongue adapted to pass through said looped end of the first mentioned member and receive a key wedge lying on one side of the loop and in said groove, and means integral with the members for latching them together at the opposite ends of the members.

853,354. WATERPROOFING COMPOUND. AUGUST GROSS and AARON C. HORN, New York, N. Y.; said Gross assignor to said Horn. Filed Nov. 23, 1903. Serial No. 182,402.

Claim.—1. A waterproofing fluid comprising asphalt, cement, pine oil for keeping the mixture in a fluid condition and an oil which serves as a flux for said oil.

2. A waterproofing fluid comprising asphalt, cement and pine oil.

3. A waterproofing compound comprising asphalt, cement, pine oil and a flux.

4. A waterproofing compound comprising asphalt, cement, pine oil and linseed oil.

5. A waterproofing compound comprising asphalt and cement in about equal proportions, mixed with pine oil and linseed oil, the pine oil and linseed oil being in about equal proportions and forming about one-fourth by weight of the compound.

6. A waterproofing compound comprising asphalt and cement mixed with sufficient pine oil to render the mixture plastic, and with sufficient linseed oil to form a flux for the pine oil.

7. A waterproofing compound comprising asphalt, Portland cement, pine oil and linseed oil in the following proportions by weight: about 120 pounds of pine oil, about 120 pounds of linseed oil, about 500 pounds of asphalt, and about 475 pounds of Portland cement.

8. A waterproofing compound of asphalt, Portland cement and pine oil.

9. A waterproofing compound of asphalt, Portland cement, pine oil and linseed oil.

10. A waterproofing compound of asphalt, Portland cement, pine oil and linseed oil, the linseed oil and pine oil being in about equal proportions, and forming less than half by weight of the compound.

11. A waterproofing fluid comprising asphalt and sufficient pine oil to render the compound permanently plastic after application to a surface.

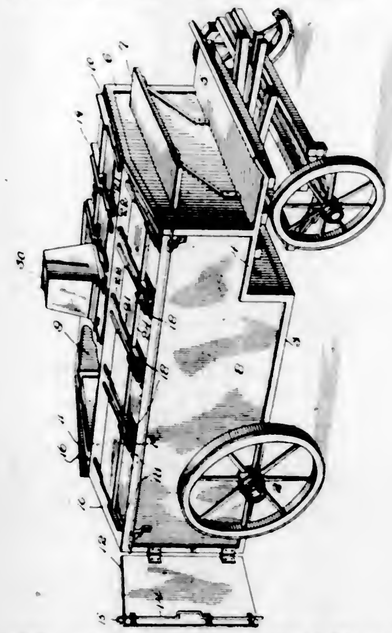
12. A waterproofing compound comprising asphalt, sufficient pine oil to render the compound permanently plastic after application to a surface, and a flux.

13. A waterproofing compound comprising asphalt, sufficient pine oil to render the compound permanently plastic after application to a surface, and linseed oil to serve as a flux.

14. A waterproofing compound comprising asphalt mixed with pine oil and linseed oil, said oils being in about equal quantities, and there being sufficient pine oil to render the compound permanently plastic after application of the compound to a surface to be waterproofed.

15. A waterproofing compound comprising asphalt, pine oil and linseed oil in the following proportions by weight: about 120 pounds of pine oil, about 120 pounds of linseed oil, and about 500 pounds of asphalt.

853,355. GARBAGE-WAGON. ALBERT GULL, Swissvale, Pa. Filed Feb. 19, 1906. Serial No. 301,895.



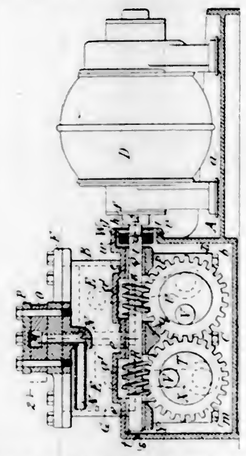
Claim.—The combination with a running gear, of a body conforming to the shape thereof and detachably mounted thereon, said body having over-lapping doors on one end thereof, means carried by one of said doors for locking said doors in closed position, openings arranged in the top of said body, guide ways having slots, said guide ways being mounted on each side of said openings, a lid slidable in said guide ways and adapted to engage in said slots in their closed position, and means for operating said sliding lid, said means comprising a bucket having flanged side walls, a lid slidable in said flanges, cleats carried by said lid, a side rail carried by said body, said cleats adapted to engage with said side rail, said bucket adapted to operate said sliding lids through the medium of a flange on that side of said bucket which abuts said lids, said bucket being slidable on its own lid.

853,356. AIR-COMPRESSOR AND SIMILAR DEVICE. MILAN W. HALL, New York, N. Y., assignor, by mesne assignments, to Noiseless Compressor and Air Brake Company, New York, N. Y., a Corporation of New York. Filed Mar. 2, 1903. Serial No. 145,696.

Claim.—1. The combination with right-hand and left-hand worms, of worm gears meshing therewith and with each other, and each having cranks, cylinders corresponding to said cranks respectively, valves for said cylinders, a piston in each of said cylinders, and means connecting each piston with its corresponding crank, substantially as and for the purpose set forth.

2. The combination with right-hand and left-hand worms, of worm gears meshing with said worms respectively, and having means for transmitting the thrust of each to the other, cranks driven by said worm gears respectively, pistons connected to and driven by said cranks,

cylinders in which said pistons work respectively, and valves for said cylinders, substantially as and for the purpose set forth.



3. The combination with right-hand and left-hand worms, of worm gears each meshing with and driven by one of said worms, and having means for transmitting the thrust of each worm to the other, reciprocating pistons, cylinders in which said pistons work respectively, valves for said cylinders, and means operated by one of said gears for transmitting reciprocating motion to one of said pistons, and means operated by the other of said gears for transmitting reciprocating motion to the other of said pistons, substantially as and for the purpose set forth.

4. The combination with right-hand and left-hand worms, of worm gears meshing therewith, each of said gears having cranks at its opposite sides, cylinders corresponding to said cranks respectively, valves for said cylinders, a piston in each of said cylinders, means each connecting one of said pistons with its corresponding crank, and said gears each having means mechanically connecting said gears together to transmit the load from one to the other thereof, substantially as and for the purpose set forth.

5. The combination with a plurality of cylinders, a piston in each of said cylinders, valves therefor, and means for transmitting reciprocatory motion to said pistons, of right-hand and left-hand worm gears disposed between said means and each mechanically connected to one of said pistons for driving the latter, and right-hand and left-hand worms for driving said gears, said worm gears meshing respectively with said worms, substantially as and for the purpose set forth.

6. The combination with four cylinders, of a piston in each of said cylinders, and each independent of those in the other cylinders, valves and valve chambers for said cylinders, a crank opposite each of said cylinders for reciprocating the piston therein, means connecting said several cranks together for driving them in predetermined relation to each other, and for transmitting the thrust of each crank to the others consisting of worm gears having means mechanically connecting them together, and worms connected rigidly together and meshing with said worm gears for driving them, substantially as and for the purpose set forth.

7. The combination with four pistons and means for reciprocating them, of a casing having four cylinders, receiving said pistons respectively, a valve chamber for said cylinders, and having a port connecting with each, and having a discharge outlet between said cylinders, a worm, and a worm gear below said cylinders and beneath and meshing with said worm, and driving said means, substantially as and for the purpose set forth.

8. The combination with a cylinder casing B, having a plurality of cylinders, of a top F closing said cylinders at one end, and having ports K communicating therewith respectively, and a suction port L and a valve seat c for each of said cylinders, a cover O having a valve chamber H, and valve seat *d* for each of said cylinders, ball valves I and J for said seats respectively, a cap P for said cover, pistons in said cylinders, and means for reciprocating said pistons, substantially as and for the purpose set forth.

9. The combination with a casing having a plurality of upright cylinders, valves for said cylinders, pistons in said cylinders respectively, and cranks below said cylinders for reciprocating said pistons, said cranks connected together for transmitting the thrust of each to the other, of a worm gear between and connected to said cranks for driving them, a worm above and meshing with said worm gear for driving it, means attaching said cranks and worm and worm gear to said casing below said cylinders, and a supporting base carrying said parts, substantially as and for the purpose set forth.

10. The combination with a casing having a plurality of cylinders, valves for said cylinders, and pistons in said cylinders, of cranks secured to the lower part of said casing for reciprocating said pistons, a worm gear below said casing for driving said cranks, a worm shaft above and meshing with said gear for driving the latter, and a base having an oil chamber inclosing such cranks and connected to such casing independently of said worm gears and worm shaft, substantially as and for the purpose set forth.

11. The combination with a casing having a cylinder open at its lower end, valves for said cylinder, a piston in said cylinder, a crank below said cylinder for operating said piston, of a worm gear below said cylinder for driving said crank, a worm above and meshing with said gear for driving it, and a base supporting said parts and having an oil box below said cylinder and inclosing said crank, worm gear and worm, substantially as and for the purpose set forth.

12. The combination with a casing having a plurality of vertical cylinders, pistons therein respectively, valves for said cylinders, and cranks below and connected to said pistons for reciprocating them, of a base beneath said cylinders, supporting said casing, and having an oil box beneath the latter having an opening through the upper part of said base for receiving and inclosing said cranks, and having a bed portion adjacent to said box, an electric motor mounted on such bed portion, a worm shaft having a worm within said box, a worm gear mounted in said box driving said cranks and meshing with said worm, and means for compensating for variations in alinement between said worm shaft and motor shaft, substantially as and for the purpose set forth.

13. A fluid compressor comprising a plurality of pumping cylinders, reciprocating plungers therein and pitmen respectively connected to said plungers, a pair of crank shafts disposed side by side transversely to the axis of said cylinders with crank arm connections with said pitmen, intermeshing worm gears respectively on each of said shafts and a common worm shaft for driving said gears.

14. In a fluid compressor, a pumping apparatus comprising a plurality of cylinders symmetrically disposed with respect to the central axis of the said compressor, crank shafts transversely disposed one adjacent the ends of each pair of cylinders, plungers within the cylinders and pitmen connecting them respectively with their adjacent crank shafts, intermeshing worm gears one on each of said crank shafts and a common power shaft for said worm gears having worms engaging therewith.

15. In a fluid compressor, a pumping apparatus comprising four cylinders symmetrically disposed with respect to the central axis of the said compressor, crank shafts transversely disposed one adjacent the ends of each pair of cylinders, plungers within the cylinders and pitmen connecting them respectively with their adjacent crank shafts, intermeshing worm gears one on each of said crank shafts and a common power shaft for said worm gears having worms engaging therewith.

16. In a fluid compressor, a pumping apparatus comprising four cylinders symmetrically disposed with respect to the central axis of the said compressor, crank shafts trans-

versely disposed one adjacent the ends of each pair of cylinders, plungers within the cylinders and pitmen connecting them respectively with their adjacent crank shafts, a pair of intermeshing worm gears one on each of said crank shafts and a common power shaft for said worm gears having reversely pitched worms engaging therewith.

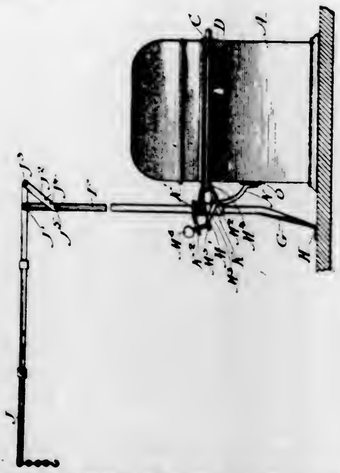
17. In a fluid compressor, a set of four pumping cylinders symmetrically disposed with respect to the central axis of the said compressor, plungers and connected pitmen therefor, in combination with a pair of intermeshing gears centrally disposed between the axes of each pair of cylinders and having crank connections with said pitmen, and a power shaft common to said worm gears having reversely pitched worms in engagement therewith, whereby the strains of said gearing are rendered substantially uniform regardless of the relative positions of the plungers within their cylinders.

18. In a fluid compressor, a plurality of cylinders having reciprocating plungers therein, a shaft common to each pair of plungers and provided with crank connections with each of them, worm gears positively geared together and to said shaft, in combination with a power shaft engaging said worm gears and disposed between the plane of their axes and the ends of the cylinders.

19. In a fluid compressor, a cylinder casting, a reciprocating plunger therein, a journal bracket secured thereto comprising a pillow block and cap plate therefor, said block and plate forming a journal seat, gearing journaled in said seat for reciprocating said plunger, in combination with a power shaft for driving said gearing and a journal seat for said power shaft comprised of complementary recesses in the meeting faces of said casting and pillow block and bolts extending through said cap, pillow block and casting for fastening them securely together and confining the shaft and gearing in the respective journal seats.

20. In a fluid compressor, a cylinder having a plunger provided with a pitman, a crank shaft and gear wheel for driving said pitman, in combination with a support for said shaft and wheel secured directly to the end face of the cylinder, said support comprising a bracket with a central recess for receiving a gear wheel and forked members constituting journal seats for the crank shaft and being also provided with a recess comprising a portion of the journal seat for the power shaft.

853,357. PHONOGRAPHIC-HORN SUPPORT. LEWIS P. HALLADAY, Streator, Ill. Filed Jan. 10, 1907. Serial No. 351,589.



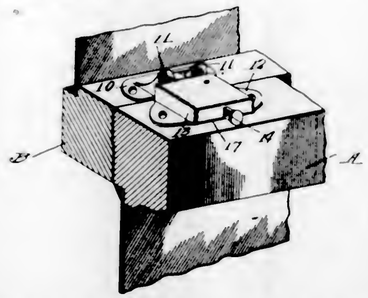
Claim.—1. A phonograph horn support comprising a standard having a forwardly bent lower portion, a clamp to grip a projecting portion of the phonograph box, and a brace downwardly and backwardly projecting from the standard to engage the box.

2. A phonograph horn support comprising a standard having a forwardly bent lower portion and a slidable sleeve adjustable on the standard and carrying a clamp to grip a projecting portion of the phonograph box, and a brace downwardly and backwardly projecting to engage the box.

3. A phonograph horn support comprising a standard having a forwardly bent lower portion and a slidable sleeve adjustable on the standard and carrying a clamp to grip a projecting portion of the phonograph box, and a brace downwardly and backwardly projecting to engage the box, said clamp composed of a fixed jaw and a movable jaw and a clamping screw on the opposite side of the standard from the jaws.

4. A phonograph horn support comprising a standard having a forwardly bent lower portion and a slidable sleeve adjustable on the standard and carrying a clamp to grip a projecting portion of the phonograph box, and a brace downwardly and backwardly projecting to engage the box, said clamp composed of a fixed jaw and a movable jaw and a clamping screw on the opposite side of the standard from the jaws, said clamping screw inclined to the standard.

853,358. WINDOW-CATCH. CARL A. HAMMAR and ALRIK BRICKMAN, Worcester, Mass. Filed July 27, 1905. Serial No. 271,541.

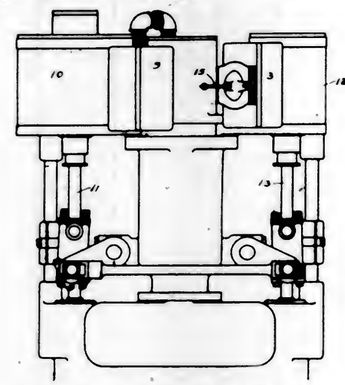


Claim.—1. As an article of manufacture, a window catch comprising a socket fixture having upwardly tapering lugs which are undercut and spaced apart to receive a T-shaped head, a housing, a bolt mounted in the housing, and having a T-shaped head for co-operating with the socket-fixture, two flat springs arranged on opposite sides of the bolt, the bolt having two sets of notches for receiving the ends of the springs, and the housing having a set of notches for receiving the other ends of the springs, a cover-plate at the bottom of the housing having lugs for setting the same in position, and a screw fastening the cover-plate in place.

2. As an article of manufacture, a window catch comprising a socket fixture, having upwardly tapering lugs which are undercut and spaced apart to receive a T-shaped head, a housing, a bolt mounted in the housing and having a T-shaped head for co-operating with the socket fixture, and a pair of springs arranged on opposite sides of the bolt both operating to urge the bolt in the same direction.

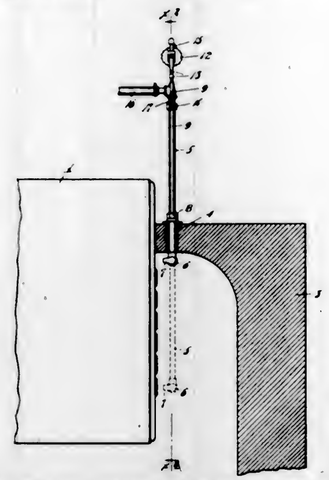
853,359. PUMPING-ENGINE. CHARLES L. HEISLER, Erie, Pa. Filed Apr. 4, 1902. Serial No. 101,334.

Claim.—1. In a direct acting pumping engine, the combination of compound steam cylinders connected to a duplex pump end, a compensating lever system connecting the pair of reciprocating plunger or piston rods, and an automatic steam valve intercepting a steam passage between a steam chest or receiver on one side, and a steam chest or receiver on the other side, having a lower steam pressure, the said valves having a pair of diaphragms or pistons of different area, a valve actuated by said pistons or diaphragms conjointly, and an adjustable valve opening arranged upon said diaphragms.



2. In a direct acting pumping engine, the combination of compound steam cylinders connected to a duplex pump end, a compensating lever system connecting the pair of reciprocating plunger or piston rods, and an automatic steam valve intercepting a steam passage between a steam chest or receiver on one side, and a steam chest or receiver on the other side, having a lower steam pressure, the said valve having a pair of diaphragms or pistons of different areas, a valve actuated by said pistons or diaphragms conjointly, an auxiliary stop valve interposed between the said automatic valve and one of the steam cylinders.

853,360. FLUE-BLOW-OUT DEVICE FOR BOILERS. JAMES E. HENRY, Ashland, Wis. Filed May 18, 1906. Serial No. 317,569.



Claim.—The combination with a boiler 1 having flues 2, and a wall 3 joining one end of said boiler, of a steam pipe 5 working vertically through said wall 3 and provided, at its lower end, with a nozzle pipe 6 having nozzles 7 adapted to aline with any of the horizontal rows of said flues, a relatively fixed rectangular frame 9, through a portion of which said pipe 5 is mounted to slide, a windlass on the upper portion of said frame, a cable connecting said windlass to said pipe 5 for moving the same vertically, and means for locking said windlass against rotation to support said pipe 5 and nozzle pipe 6 in different vertical positions, substantially as described.

853,361. COMBINATION TOILET-BOX. ADAM D. HERMAN, Hemet, Cal. Filed Oct. 17, 1906. Serial No. 339,375.

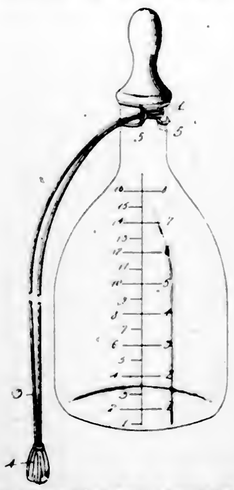


Claim.—1. A combination toilet box comprising a main receptacle, an independent perforated receptacle constituting a closure for said main receptacle, a perforated cap adjustably mounted on said independent receptacle for controlling the perforations therein, and means adjustably engaging the bottom of said independent receptacle for securing said perforated cap in position, substantially as described.

2. A combination toilet box comprising a main receptacle, a perforated closure therefor, a partition removably positioned in said closure to provide an auxiliary receptacle therein, a perforated cap adjustably mounted on said closure for controlling the perforations of the latter, and a common means for securing said partition and cap in position, substantially as described.

3. A combination toilet box comprising a main receptacle, a perforated closure therefor, a resilient partition in said closure to provide an auxiliary receptacle therein, a perforated cap adjustably mounted on said closure for controlling the perforations of the latter, and means carried by said cap in engagement with said resilient partition for yieldingly securing said cap in position, substantially as described.

853,362. BOTTLE-HOLDER. CLARA M. HODSON, Baltimore, Md. Filed July 26, 1906. Serial No. 327,862.

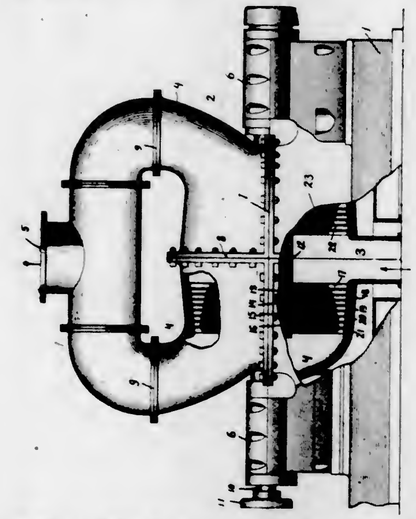


Claim.—1. In combination with a bottle having a flanged mouth, a tether comprising an elongated spring loop mem-

ber, said member fitting around the neck of the bottle with one of its sides in contact with the flange at the mouth thereof, and the ends spaced apart, and a cord having a slip knot which receives the ends of the clip and tends to draw them together to hold the clip laterally in close contact with the bottle neck.

2. In combination with a bottle having a flanged mouth, a tether comprising an elongated spring loop member, having semi-circular ends, said member fitting around the neck of the bottle with one of its sides in contact with the flange at the mouth thereof, and the semi-circular ends spaced apart, and a cord having a slip knot which receives the semi-circular ends of the clip and tends to draw them together to hold the clip laterally in close contact with the bottle neck.

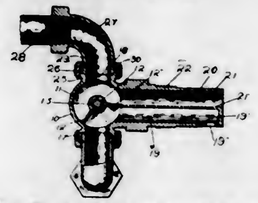
853,363. TURBO-BLOWER. HANS HOLZWARTH, Hamilton, Ohio, assignor to The Hooven, Owen, Rentschler Company, Hamilton, Ohio. Filed May 26, 1905. Serial No. 262,341.



Claim.—A turbo blower comprising a casing provided with an air inlet and an air outlet, a shaft mounted therein, a series of disks mounted in the casing concentric with the shaft and provided with curved blades, a series of runners fast on the shaft and alternating with the disks and provided with curved blades, the joint series of disks and runners beginning with and ending with a disk, the advance face of each runner-blade being convex and progressively retreating from a line perpendicular to the plane of revolution to such extent that the angle of the face to such line will be greater at the efflux edge than at the influx edge, the area of the continuous passages formed between the blades of the system lessening from the disk nearest the inlet to and through the runner nearest the outlet, combined substantially as set forth.

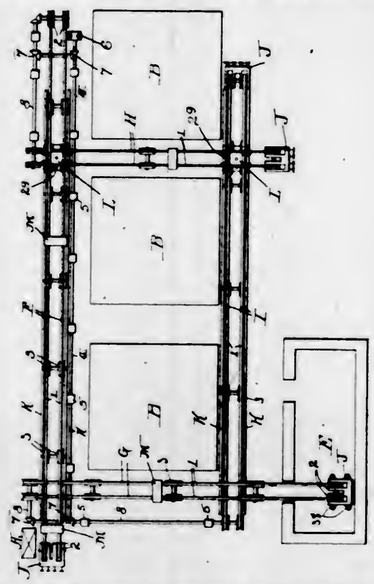
863,364. VALVE. MARK C. HONEYWELL, Wabash, Ind. Filed Oct. 31, 1906. Serial No. 341,457.

Claim.—1. The combination, with a valve casing comprising a main cylindrical body having an induction opening leading into one side, an eduction opening leading from the opposite side and a spud intermediate said openings, of a longitudinal partition arranged within said spud and dividing the interior thereof into a pair of circulation passages, and a valve rotatably mounted within the main cylindrical body and adapted to connect the induction and eduction passages, or to connect the induction passage with one of the circulation passages and the eduction passage with the other circulation passage.



2. The combination, with a valve casing comprising a main cylindrical body having an induction opening leading into one side, an eduction opening leading from the opposite side and a spud intermediate said openings, of a longitudinal partition arranged within said spud and dividing the interior thereof into a pair of circulation passages, and a valve rotatably mounted in said main cylindrical portion and comprising a central hub and a pair of divergent wings, one of which is adapted to be brought into registry with a partition in the spud whereby the induction opening may be connected with one of the circulation passages and the eduction opening connected with the other of said circulating passages, or, by shifting the said wing out of registry with the aforesaid partition, the induction and eduction openings may be connected.

853,365. BRICK-CONVEYER. CHARLES H. KLEIN, Chaska, Minn. Filed Mar. 15, 1906. Serial No. 306,178.



Claim.—1. A conveyer, comprising, in combination, longitudinal cables spaced apart, on which pallets are adapted to be placed, transverse cables also spaced apart, means for driving said cables at the same surface speed to advance said pallets and means for lifting said pallets from one set onto the other set of cables.

2. Apparatus of the class set forth, comprising, in combination, pairs of transverse endless cables in parallel relation and spaced apart to support pallets, pulleys over which said cables are adapted to travel, means for driving said cables at the same speed, means for taking up the slack of said cables and means for lifting said pallets from one set of cables onto a transverse set.

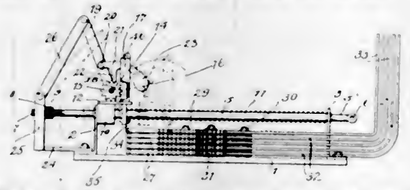
3. A brick conveyer, comprising, in combination, pairs of longitudinal cables which are spaced apart, said pairs being arranged to operate in transverse directions, means for driving the cables of each pair at substantially the same speed, and transfer devices between the transverse pairs of cables to shift the articles being conveyed from one pair to another pair.

4. Apparatus of the class set forth, comprising, in combination, a main conveyer and a branch conveyer, provided with endless pairs of cables substantially equally spaced apart, pulleys over which said cables are adapted to travel, means for driving said cables at substantially the same surface speed, and means for transferring the articles being conveyed from the main conveyer to the transverse conveyer.

5. A conveyer for pallets of brick, comprising, in combination, a main conveyer for pallets or similar articles, a transverse conveyer, means for driving said conveyers, and means for automatically lifting said pallets from said main conveyer to said transverse conveyer; each of said conveyers comprising endless cables spaced apart and traveling at substantially the same surface speed.

6. A conveyer for pallets of brick, comprising, in combination with a kiln, a conveyer comprising endless cables in parallel relation and separated, means for driving said cables at substantially equal surface speed, and means for removably fastening said conveyer in said kiln.

853,366. MUSIC-LEAF TURNER. TONY LO CASTO, Chicago, Ill. Filed Mar. 3, 1906. Serial No. 303,948.



Claim.—1. In a music leaf turner, the combination of a tier of pinions, a frame connected with each pinion and associated with one of the sheets to be turned, a tier of rack bars, each adapted to mesh with one of said pinions, an actuating member normally in position to engage with the first of said rack bars, means for causing horizontal movement of the actuating member to move the engaged rack bar and thereby to cause the engaged frame to be turned, and gearing mechanism engaging said actuating member and automatically actuated to move the member vertically into position to engage the next rack bar after actuation of the preceding rack bar whereby said rack bars are successively engaged and actuated to turn the sheet engaging frames.

2. In a music leaf turner, the combination of a tier of pinions, a frame connected with each pinion and associated with one of the sheets to be turned, a tier of rack bars, each adapted to mesh with one of said pinions, an actuating bar normally in position to engage with the first of said rack bars, means for causing horizontal movement of the actuating bar to move the engaged rack bar and thereby to cause the engaged frame to be turned, a pinion engaging said actuating bar, and means for automatically causing rotation of said pinion to lower the bar into position to engage the next rack bar after actuation thereby of the preceding rack bar.

3. In a music leaf turner, the combination of a tier of pinions, a frame connected with each pinion and associated with one of the leaves to be turned, a tier of rack bars, each adapted to mesh with one of said pinions, an actuating bar normally in position to engage one of the rack bars, a pinion engaging said bar, means for causing bodily movement of the bar and pinion whereby the engaged rack bar is actuated to turn the corresponding frame, and means upon return movement for causing relative motion between the pinion and bar whereby the bar is lowered to be in position to engage the next rack bar, said rack bars being thereby successively engaged and actuated by the bar to turn the frames and sheets.

4. In a music leaf turner, the combination of a tier of pinions, a frame connected with each pinion and associated with one of the leaves to be turned, a tier of rack bars, each adapted to mesh with one of said pinions, an actuating gear rack normally in position to engage one of the rack bars, a pinion engaging said rack frame, a support for said gear rack and pinion, means for causing movement of said support whereby the engaged rack is moved to cause turning of the associated frame, and means upon each return movement of the supporting frame for causing the pinion to be automatically moved to lower the gear rack into position to engage the next rack bar whereby said rack bars are successively engaged and moved to cause the frames to be successively turned.

5. In a music leaf turner, the combination of a main supporting frame, of a tier of pinions mounted thereon, a frame connected with each pinion and for engagement with the leaves to be turned, a tier of rack bars mounted on said main supporting frame, each adapted to mesh with one of said pinions, an actuating bar normally in position to engage one of said rack bars, a pinion meshing with teeth on said bar, a supporting frame for said pinion and bar, means for causing movement of said pinion supporting frame whereby the engaged rack bar is moved to cause the corresponding frame to be turned, and pawl and ratchet mechanism associated with said pinion and adapted to cause rotation thereof during each return movement of the pinion supporting frame to cause said actuating bar to be moved to a position for engaging the next rack bar whereby said rack bars are successively engaged and actuated to cause successive turning of the frames.

6. In a music leaf turner, the combination of a main supporting frame, of a tier of pinions, a frame extending from each pinion and connected with a leaf to be turned, a tier of rack bars, each adapted to mesh with one of said pinions, an actuating bar normally disposed for engagement with one of said rack bars, a pinion meshing with teeth on said bar, a shaft for said pinion, a support for said pinion shaft and actuating bar, a link pivoted at one end to the main supporting frame, a second link pivoted at one end to the pinion shaft, the other ends of said links being pivoted together, a pawl pivoted to said second link and associated with said pinion, means for causing said supporting frame to move to cause the rack bar engaged by the actuating bar to be moved to turn the engaged pinion and corresponding leaf frame, and means operable upon each return of the supporting frame for causing said link and pawl mechanism to rotate the pinion whereby the actuating bar engaged thereby is moved into another position to engage the succeeding rack bar whereby said rack bars are successively engaged and moved by the actuating bar to operate the sheet turning frames.

7. In a music leaf turner, the combination of a tier of pinions, a frame connected with each pinion and associated with a leaf to be turned, a tier of rack bars, each adapted to mesh with one of said pinions, a main supporting frame on which said pinions and rack bars are mounted, a supporting table, a shaft supported in bearings on said table, a pinion secured to said shaft, a ratchet wheel secured to said shaft, an actuating rack bar engaged by said pinion and normally disposed to engage only one of said rack bars, a pawl engaging said ratchet wheel, lever mechanism connected with said pawl and with the main supporting frame, means for causing said supporting table to be moved whereby the engaged actuating bar is moved to turn the engaged sheet turning frame, said lever mechanism upon movement of the supporting table being caused to engage between other teeth of the ratchet wheel, means for restoring the supporting table to its normal position, said pawl being moved upon such restoring motion to turn the pinion whereby the actuating rack is lowered to be in position for engaging the next actuating bar upon subsequent lateral forward movement of the supporting table.

8. In a music leaf turner, the combination of a vertical tier of pinions, a frame connected with each pinion and

associated with one of the leaves to be turned, a vertical tier of rack bars, each adapted to mesh with one of the pinions, a supporting table, a shaft mounted in bearings on said supporting table, a vertical guide-way on said table, an actuating rack bar in said guideway in mesh with said pinion, the end of said actuating rack bar being normally disposed to engage the first of said rack bars, means for moving said table to cause the engaged rack bar to be moved to rotate the corresponding leaf engaging frame, said actuating rack bar and pinion being prevented from relative movement upon movement of the table, and means for automatically causing relative movement between said actuating rack bar and pinion upon each return of the table after actuation thereof whereby said actuating rack bar is lowered after each movement of the table to engage the next rack bar whereby the rack bars are successively engaged and actuated by the actuating rack bar to cause the turning frames to be successively operated.

9. In a music leaf turner, the combination with a tier of rack bars, of a plurality of sheet turning frames, each frame having teeth for being engaged by one of said rack bars, an actuating bar adapted for vertical movement and horizontal reciprocation, said actuating bar during the operating movement of its reciprocation engaging one of said rack bars to turn the engaged frame, said actuating bar moving vertically during the return movement thereof to move into position for engagement with the next rack bar whereby said rack bars are successively engaged and actuated by the actuating bar to cause the successive leaves to be turned by the frame.

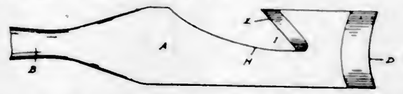
10. In a music leaf turner, the combination with a tier of rack bars, of a plurality of sheet turning frames, each frame having teeth for being engaged by one of said rack bars, a supporting table, means for causing movement of the supporting table in a direction parallel to the rack bars, a pinion pivoted on said table, a vertical gear rack meshing with said pinion ahd normally disposed with its lower end before the end of one of the rack bars, whereupon movement of the table will cause lateral movement of the rack bar and turning of the music leaf frame engaged thereby, and means for causing rotation of the pinion during the return movement of the table during which time the gear rack is moved downwardly to carry its end into position before the end of the next gear rack.

11. In a music leaf turner, the combination with a tier of rack bars, of a plurality of sheet turning frames, each frame having teeth for being engaged by one of said rack bars to be turned upon movement of said rack bar, an actuating member normally in engagement with the end of the upper rack bar, means for moving said actuating member in a direction parallel to the rack bars to cause the engaged rack bar to be moved to the right to thereby cause turning of the frame engaged thereby, means for returning the actuating bar toward its normal position, and means operative during this returning period for causing the actuating bar to also move downwardly to assume a position at the end of the next rack bar.

12. In a music leaf turner, the combination with a suitable supporting frame, of a tier of rack bars supporting thereon, a tier of pinions each meshing with one of said rack bars, a frame extending from each pinion for engaging one of the leaves to be turned, guide rods mounted over the rack bars and parallel thereto, a table mounted on said guide rods and normally disposed at one end thereof, a gear rack mounted on said table adapted to move vertically, a pinion pivoted on said table and meshing with said gear rack, the lower end of the gear rack being normally in position before the end of the upper rack bar, means for causing the table to be moved toward the other end of the guide bars during which movement the upper rack bar is moved with the gear rack to turn the corresponding pinion and leaf turning frame, means for causing rotation of the pinion on said table during the return movement thereof whereupon the gear rack is lowered so that its lower end becomes disposed before the end of the next gear rack.

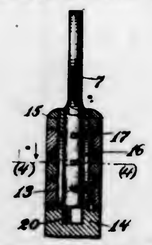
13. In a music leaf turner, the combination with a plurality of rack bars arranged in a tier, of a plurality of pinions each meshing with one of the rack bars, a frame extending from each pinion for engagement with a leaf to be turned, a supporting table, a gear rack supported on said table and adapted for vertical movement, the lower end of said gear rack being normally disposed before the end of the upper rack bar, a pinion pivoted on said table and meshing with said gear rack, pawl and ratchet mechanism associated with said pinion, means for moving said table over and parallel to the rack bars whereby the rack bar engaged by the gear rack is moved to cause rotation of the corresponding pinion and leaf engaging frame, means for returning said table to its normal position, and means for causing said pawl and ratchet mechanism to cause rotation of the pinion during the return movement of the table whereby said gear rack is lowered and its end disposed before the end of the next rack bar.

853,367. COMBINED BRIER-CANE PRUNER AND GRAPNEL. JAMES A. MALORY, Halls, Mo. Filed Mar. 16, 1907. Serial No. 362,779.



Claim.—In a brier cane pruner and grapnel a flat metal body, a handle, an incurved blade at the opposite end, an oppositely turned blade bearing rearwardly from its inner to its outer end, a blunt edge bearing rearwardly and outwardly, said blade and blunt edge forming a recess for dragging out the dissevered cane, substantially as shown and described.

853,368. COMBINATION-LOCK. JAMES N. MILLS, Oak Station, Pa. Filed Mar. 30, 1906. Serial No. 308,918.

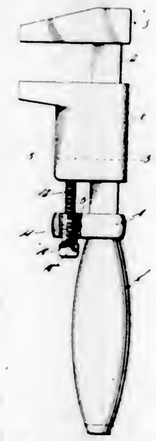


Claim.—1. In combination, a pair of locking blocks, a set of independently rotatable locking disks interposed between the blocks and provided with circumferential and longitudinal slots, a longitudinally movable locking member having a loop adapted to be engaged by one of the locking blocks and provided with a plurality of rows of holding openings and a plurality of removable pins for the openings engaging the slots in the collars.

2. In combination, a sleeve having a plurality of longitudinal slots, locking blocks secured to the ends thereof, a set of independently rotatable locking disks interposed between the blocks and provided with circumferential and longitudinal slots, a locking member longitudinally slidable in the sleeve and provided with a set of pins for extending through the slots in the sleeve and engaging the circumferential slots in the locking disks, and means whereby the pins may be secured to the locking member in position to engage any one of the slots in the sleeve.

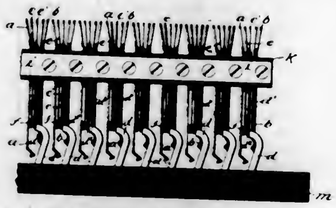
853,369. SLIDING-JAW WRENCH. JOSEPH MORTON, Lindon, Utah. Filed Sept. 12, 1906. Serial No. 334,259.

Claim.—1. In a wrench, the combination with a guidebar, of a sliding jaw having a socket provided with interrupted screw-threads and with an open side extending lengthwise of the sliding jaw and guidebar, and an adjusting screw received in the socket and provided with interrupted screw-threads adapted to be brought into alinement with the aforesaid open side or engaged with the screw-threads of the sliding jaw.



2. In a wrench, the combination with a guide-bar and an arm or lug having a screw-threaded opening, of a sliding jaw movable on the guide-bar and provided with a socket which has interrupted screw-threads and is provided with an open side communicating therewith and extending lengthwise thereof, an adjusting screw having a screw-threaded part engaged with the screw-threaded opening in the lug and provided with a shank or stem received in the socket of the sliding jaw and provided with interrupted screw-threads of less width than the open side and adapted to be brought into alinement with the open side or made to engage the interrupted screw-threads of the sliding jaw.

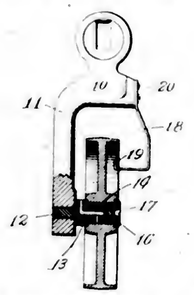
853,370. SPRING-JACK FOR TELEPHONE-SWITCHBOARDS. FRANK R. MCBERTY, Evanston, and EDWARD B. CRAFT, Chicago, Ill., assignors to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 10, 1904. Serial No. 236,278.



Claim.—1. In a springjack, the combination with a pair of line springs and a test piece, said test piece comprising a tube, rearwardly extending tongue and arms uniting them, said parts being stamped from a single piece of metal, the line springs being located on opposite sides of said tongue and insulated therefrom, of a pair of contact springs lying next to each other between the tongue and one of said line springs, said springs being insulated from said tongue and line spring and arranged to be operated when the line spring is flexed, and an insulating block at the rear of the jack, in which said springs and tongue are mounted.

2. A sheet metal blank for a springjack test thimble and connecting strip, consisting of a front portion adapted to be rolled to form the tube, a rear portion adapted to serve as a connector, and two arms joining said front and rear portions, said arms branching from said front portion at a diverging angle and recurving to join said rear portion.

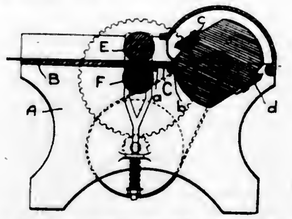
853,371. TAPE-PULLEY FOR SPINNING OR TWISTING MACHINES. FRANCIS W. NIMS, Worcester, Mass., assignor to himself, Alfred Thomas, and William Richardson, Worcester, Mass. Filed Mar. 11, 1904. Serial No. 197,704.



Claim.—1. In a spinning or twisting frame, the combination of a pulley and its fork, said pulley being supported entirely in one arm of the fork, while the other arm of the fork forms a guard for preventing a tape from being displaced.

2. In a spinning or twisting frame, the combination of a pulley, a fork therefor, one arm of the fork having a stud or pivot-pin on which the pulley is journaled, and the other arm of the fork extending in past the edge of the pulley rim to form a guard for preventing a band or tape from being displaced.

853,372. MACHINE FOR MAKING WOODEN TOOTHPICKS. JOHN H. NUTE, Portland, Me. Filed July 2, 1906. Serial No. 324,331.

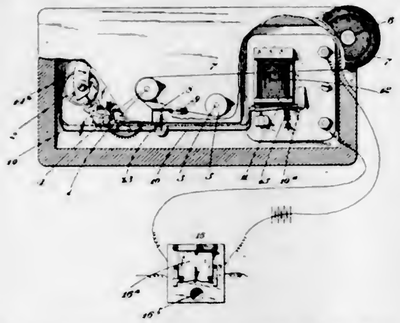


Claim.—In a machine for cutting tooth picks from veneer, the combination with an oscillating plate, having rollers operating above the same, of a shear blade secured to the edge of the plate, a cylindrical cutter head, a shaft supporting the same, bearings for the shaft, shear blades longitudinally extending on the cutter head adapted to coact with the shear blade on the oscillating plate, a crank secured to the oscillating plate, an eccentric secured to the cutter head shaft, a strip encircling the eccentric, a rod connecting the strip with the crank on the plate as and for the purpose specified.

853,373. REGISTERING SYSTEM FOR TELEPHONE-EXCHANGES. ARTHUR R. POLLOCK, Piqua, Ohio. Filed Aug. 29, 1906. Serial No. 332,414.

Claim.—1. In a telephone system, the combination with a telephone circuit and exchange station devices including a drop annunciator and a switching device, said annunciator being operated by the telephone circuit and said switching device, of apparatus comprising a motor for moving a record-receiving device, a time mechanism for controlling the movement of said device, and means for controlling the operation of said time mechanism including an electro-magnet circuit, electro-magnet and armature, the circuit of said electro-magnet being opened and closed by the operation of said annunciator, said motor being rendered operative by the closing of the electro-magnet circuit.

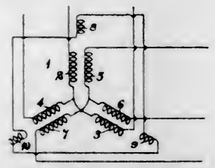
2. In a telephone system, apparatus of the kind described, comprising in combination, a motor for moving a record-receiving device, a time mechanism for controlling the movement of said record-receiving device by said motor, means for controlling the operation of said time mechanism, said means being operative by the use of a subscriber's telephone to put the time mechanism into operation and by the operator at the exchange to put said time mechanism out of operation.



3. In a telephone system, apparatus of the kind described, comprising in combination, a motor for moving a record-receiving device, a time mechanism for controlling the movement of the record-receiving device by said motor, means for controlling the operation of said time mechanism, said means operative by the use of a subscriber's telephone to put the time mechanism into operation and by the operator at the exchange to put said time mechanism out of operation, and a marker for said record receiving device operative when the time mechanism is put into operation.

4. In a telephone system, apparatus of the kind described, comprising in combination, a motor for moving a record-receiving device, a time mechanism for controlling the movement of the tape by said motor, said time mechanism including a balance-wheel, means for controlling the operation of said balance-wheel comprising a device adapted to be moved into and out of position to interfere with the operation of said balance-wheel, and an electromagnet adapted to be included in a circuit of a telephone of the system when said telephone is used to control the operation of said device, and means for making a record on said record-receiving device.

853,374. SYSTEM OF DISTRIBUTION. KARL C. RANDALL, Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 2, 1906. Serial No. 314,872.



Claim.—1. A transformer having star-connected primary coils, star-connected secondary coils, and a group of delta-connected auxiliary coils.

2. In a transformer, the combination with star-connected primary coils and star-connected secondary coils, of delta-connected coils that are magnetically interlinked therewith.

3. In a system of alternating current distribution, the combination with star-connected transformer primary coils and star-connected transformer secondary coils, of means for maintaining a substantially balanced voltage between the outgoing circuits.

4. In a system of alternating current distribution, the combination with star-connected transformer primary coils, and star-connected transformer secondary coils, of means for maintaining a substantially balanced voltage between the outgoing circuits that comprises auxiliary delta-connected coils.

5. The combination with a three-phase source of alternating current electrical energy, star-connected transformer primary coils supplied therefrom and secondary star-connected coils magnetically interlinked with the primary coils, of delta-connected auxiliary coils which are respectively linked by the same magnetic circuits as the primary and secondary coils.

6. The combination with a three-phase source of alternating current electrical energy, star-connected transformer primary coils supplied therefrom, secondary star-connected coils magnetically interlinked with the primary coils and a circuit interrupter for the secondary circuits, of delta-connected auxiliary coils which are respectively linked by the magnetic circuits of the primary and secondary coils, and a tripping coil for said circuit interrupter which is connected in circuit therewith.

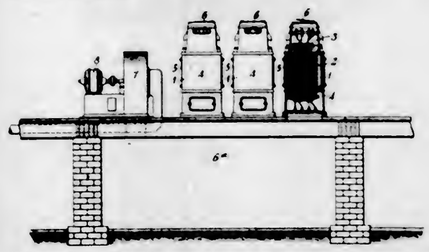
7. The combination with a three-phase source of alternating current electrical energy, star-connected primary transformer coils supplied therefrom, star-connected secondary transformer coils, translating devices that are supplied from the secondary circuits, and a circuit interrupter for said circuits, of a tripping coil for said interrupter, delta-connected auxiliary coils which are connected in series with the tripping coil and are respectively included in the several magnetic circuits of the primary and secondary coils.

8. In a transformer, the combination with three groups of three-phase coils, two of which are star-connected and one of which is delta-connected.

9. The combination with two groups of star-connected transformer coils and a circuit interrupter for one group, of a tripping coil for said interrupter, and delta-connected auxiliary coils which are connected in series with the tripping coil and are respectively included in the several magnetic circuits of the star-connected coils.

10. The combination with a three-phase source of alternating current electrical energy, star-connected groups of primary and secondary coils, and a circuit interrupter for one of said groups, of delta-connected auxiliary coils which are respectively linked by the magnetic circuits of the primary and secondary coils, and a tripping coil for said circuit interrupter which is connected in circuit with the auxiliary coils.

853,375. COOLING AND VENTILATING SYSTEM. KARL C. RANDALL, Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 2, 1906. Serial No. 314,873.



Claim.—1. The combination with electrical apparatus from which energy is delivered, and cooling means therefor, of means for automatically regulating the amount of cooling in accordance with the amount of energy delivered.

2. The combination with apparatus from which electrical energy is delivered and cooling means therefor, of means for automatically regulating the amount of cooling in accordance with the amount of current delivered.

3. The combination with transformers for electric energy and a ventilating fluid circulator for cooling the transformers, of means for regulating the energy supplied to the circulator for ventilating purposes in accordance with the value of electric current delivered.

4. The combination with transformers for electric energy and a motor-driven fluid circulator for cooling the transformers, of means for automatically regulating the speed of the motor in accordance with the amount of energy delivered from the transformers.

5. The combination with transformers for electric energy and an electric motor-driven fluid circulator for cooling the transformer, of means for automatically regulating the speed of the electric motor in accordance with the amount of energy delivered from the transformers.

6. The combination with air cooled electric apparatus, an air propeller and an electric driving motor therefor, of means for automatically regulating the speed of the motor in accordance with the amount of current delivered from the apparatus.

7. The combination with air cooled transformers for electric energy and an air propeller therefor, a driving motor for the propeller, of means for supplying energy to the motor in accordance with the amount of energy delivered from the transformers.

8. The combination with air cooled transformers, air propellers therefor and electric driving motors for the propellers, of means for automatically regulating the speed of the motors in accordance with the amount of energy delivered from the transformers.

9. The combination with transformers for electric energy and a motor-driven fluid circulator for cooling the transformers, of means for automatically regulating the speed of the motor that is dependent upon the energy delivered from the transformers and comprises a regulating transformer, a plurality of relay switches which determine the voltage applied to the motor and are severally controlled by dissimilar electro-magnet coils energized by the current traversing the transformer windings.

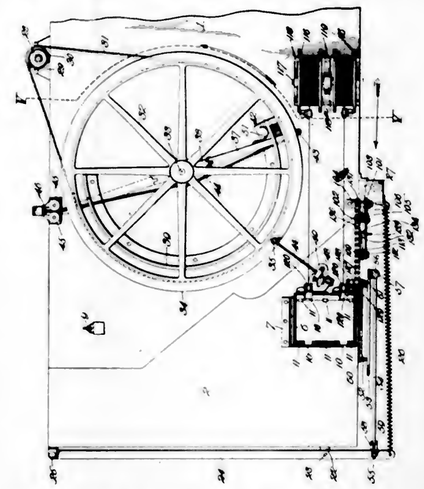
10. The combination with transformers for electric energy and an electric motor-driven fluid circulator for cooling the transformers, of means for automatically regulating the speed of the electric motor that is dependent upon the energy delivered from the transformers and comprises a regulating transformer, a plurality of relay switches which determine the voltage applied to the motor and are severally controlled by dissimilar electro-magnet coils energized by the current traversing the transformer windings.

11. The combination with air cooled electric apparatus, an air propeller and an electric driving motor therefor, of means for automatically regulating the speed of the motor that is dependent upon the current delivered from the apparatus and comprises a regulating transformer, a plurality of relay switches which determine the voltage applied to the motor and are severally controlled by dissimilar electro-magnet coils energized by the current traversing the transformer windings.

12. The combination with air cooled transformers for electric energy and an air propeller therefor, a driving motor for the propeller, of means for supplying energy to the motor that is dependent upon the energy delivered from the transformers and comprises a regulating transformer, a plurality of relay switches which determine the voltage applied to the motor and are severally controlled by dissimilar electro-magnet coils energized by the current traversing the transformer windings.

13. The combination with air cooled transformers, air propellers therefor and electric driving motors for the propellers, of means for automatically regulating the speed of the motors that is dependent upon the energy delivered from the transformers and comprises a regulating transformer, a plurality of relay switches which determine the voltage applied to the motor and are severally controlled by dissimilar electro-magnet coils energized by the current traversing the transformer windings.

853,376. BALING ATTACHMENT FOR THRESHING-MACHINES. ROBERT C. REDPATH, Johnson county, Kans. Filed May 11, 1904. Serial No. 207,487.



Claim.—1. The combination of a casing, a baling case therein and provided with a feed opening, a feed plunger opposite said feed opening, yielding means for causing the feed plunger to force material through the feed opening into the case, a baling plunger in the latter, means to operate the same while the feed plunger is advanced, and means for causing the return stroke of the baling plunger to withdraw the feed plunger.

2. The combination of a casing, a baling case therein and provided with a feed opening, a feed plunger opposite said feed opening, yielding means for causing the feed plunger to force material through the feed opening into the case, a baling plunger in the latter, means to operate the same while the feed plunger is advanced, and means for causing the return stroke of the baling plunger to withdraw the feed plunger, in combination with an apron in the plane of the upper edge of the feed opening and the feed plunger, and means for yieldingly pressing the apron against said feed plunger when the latter is withdrawn from the feed opening.

3. The combination of a casing, a baling case therein and provided with a feed opening, a feed plunger opposite said feed opening, yielding means for causing the feed plunger to force material through the feed opening into the case, a baling plunger in the latter, means to operate the same while the feed plunger is advanced, and means for causing the return stroke of the baling plunger to withdraw the feed plunger, in combination with an apron in the plane of the upper edge of the feed opening and the feed plunger, means for yieldingly pressing the apron against said feed plunger when the latter is withdrawn from the feed opening, and means for locking the apron forward of the feed plunger as advance movement of the latter ceases.

4. The combination of a casing, a baling case therein and provided with a feed opening, a feed plunger opposite said feed opening, yielding means for causing the feed plunger to force material through the feed opening into the case, a baling plunger in the latter, means to operate the same while the feed plunger is advanced, and means for causing the return stroke of the baling plunger to withdraw the feed plunger, in combination with an apron in the plane of the upper edge of the feed opening and the feed plunger, means for yieldingly pressing the apron against said feed plunger when the latter is withdrawn from the feed opening, means for locking the apron forward of the feed plunger as advance movement of the lat-

ter ceases, and means operated by the withdrawal stroke of the baling plunger for unlocking said apron.

5. The combination of a casing, a baling case within and at the bottom of the same and provided with a feed opening in its rear wall, a feed plunger rearward of the case, yielding means for causing the feed plunger to force material through said feed opening into the case and form a temporary rear wall for said opening, a baling plunger in the case, means to operate the same while the feed plunger is advanced, means for causing the return stroke of the baling plunger to withdraw the feed plunger, and means to free the feed plunger before the return stroke of the baling plunger is completed to permit the former to be yieldingly readvanced to force another charge of material into the baling case in advance of its plunger.

6. The combination of a casing having a baling case open at its rear side, an apron within and fitting against the upper wall of the baling case and projecting rearwardly therefrom, a feed plunger rearward of the case, means to yieldingly advance the same and force a charge of material into the case and the apron forwardly, means to lock the apron in its advanced position, a baling plunger, means to reciprocate said plunger means for causing the return stroke of said plunger to withdraw the feed plunger, means to release the apron and the feed plunger before the return stroke of the baling plunger is completed, and means to reproject the apron at approximately the same time as the feed plunger is released.

7. The combination of a casing having a baling case, open at its rear side, an apron within and fitting against the upper wall of the baling case and projecting rearwardly therefrom, a feed plunger rearward of the case, means to yieldingly advance the same and force a charge of material into the case, and the apron forwardly, means to lock the apron in its advanced position, a baling plunger, means to reciprocate said plunger, a spring roller suitably carried, a curtain thereon and attached at its outer end to the rear portion of the baling plunger, means for causing the return stroke of said last-named plunger to withdraw the feed plunger, means to release the apron and feed plunger before the return stroke of the baling plunger is completed, and means to reproject the apron at approximately the same time the feed plunger is released.

8. The combination with a machine having a rack, of a casing secured to said machine, a baling case within and extending across the bottom of said casing and below said rack and having its rear end open, a reciprocating plunger in the baling case, a feed plunger, means for advancing said feed plunger and forcing material in its path into the baling case in advance of the baling plunger, and holding said feed plunger advanced and forming the rear wall of the baling case while the power stroke of the baling plunger takes place, and means whereby the return stroke of the baling plunger effects the withdrawal of the feed plunger to permit a second charge of material to fall in front of it.

9. The combination with a machine having a rack, of a casing secured to said machine, a baling case within and extending across the bottom of said casing and below said rack and having its rear end open, a reciprocating plunger in the baling case, a feed plunger, means for advancing said feed plunger and forcing material in its path into the baling case in advance of the baling plunger and holding said feed plunger advanced and forming the rear wall of the baling case while the power stroke of the baling plunger takes place, means whereby the return stroke of the baling plunger effects the withdrawal of the feed plunger to permit a second charge of material to fall in front of it, and means to release the feed plunger from the baling plunger before the latter completes its return movement.

10. The combination with a machine having a rack, of a casing secured to said machine, a baling case within and extending transversely of and at the bottom of said casing and below said rack and provided with a feed opening at its rear side, a feed plunger, means for yieldingly advancing the same and forcing material in front of it upon the bottom of the casing into the baling case, an arm pivoted to the separator and extending through a longitudinal slot in the front wall of the baling case and equipped within the latter with a plunger, a cable extending through the casing and rigidly connected to said arm, means for alternately pulling on said cable in opposite directions so as to effect the power and return stroke of the baling plunger, means whereby said arm on its return stroke withdraws the feed plunger, and means for tripping the last-named means to release the feed plunger before the ensuing power stroke of the baling plunger.

11. The combination of a machine having a rack, of a casing secured to said machine, a baling case within and extending transversely of and at the bottom of said casing and below said rack and provided with a feed opening at its rear side, a feed plunger means for yieldingly advancing the same and forcing material in front of it upon the bottom of the casing into the baling case, an arm pivoted to the separator and extending through a longitudinal slot in the front wall of the baling case and equipped within the latter with a plunger, a cable extending through said casing and rigidly connected to said arm, rotary means attached to the cable to effect alternately the power and return stroke of the baling plunger, means whereby said arm on its return stroke withdraws the feed plunger, and means for tripping the last-named means to release the feed plunger before the ensuing power stroke of the baling plunger.

12. The combination of a machine having a rack, of a casing secured to said machine, a substantially horizontal baling case extending across the casing and below said rack and of curved form, a baling plunger therein, an arm secured rigidly to said plunger and pivoted to the separator at its opposite end, a cable attached to said arm, and rotary means for alternately pulling on said cable in opposite directions.

13. The combination of a machine having a rack, of a casing secured to said machine, a substantially horizontal baling case extending across the casing and below said rack and of curved form, a baling plunger therein, an arm secured rigidly to said plunger and pivoted to the separator at its opposite end, a cable attached to said arm, rotary means for alternately pulling on said cable in opposite directions, a swinging frame provided with a feed plunger, means for yieldingly operating said frame to cause said plunger to force material into the baling case, a pair of disks journaled to and below the casing, links uniting said disks to said frame, grooved wheels rotatable with said disks, a cable connecting said wheels and secured to one of them and provided with a pin at its opposite end, a frame having a slot engaging said pin and terminating in sloping ends, a spring bridging one of said sloping ends of the slot and holding said pin in the plane of the body of the slot when the feed plunger is advanced, and an arm projecting from the pivoted arm on the power stroke of the baling plunger to force said pin out of its path into the registering sloping portion and on the return stroke of said plunger to move said pin through the body portion of the slot to withdraw the feed plunger and into the other sloping portion of the slot to release the feed plunger.

14. The combination of a machine having a rack, of a casing secured to said machine, a substantially horizontal baling case extending across the casing and below said rack and of curved form, a baling plunger therein, an arm secured rigidly to said plunger and pivoted to the separator at its opposite end, a cable attached to said arm, rotary means for alternately pulling on said cable in opposite directions, a swinging frame provided with a feed plunger, means for yieldingly operating said frame to cause said plunger to force material into the baling case, a pair of disks journaled to and below the casing, links uniting said disks to said frame, grooved wheels rotatable with said disks, a cable connecting said wheels and secured to one of them and provided with a pin at its opposite end, a frame having a slot engaging said pin and terminating in sloping ends, a spring bridging one of said sloping ends of the slot and holding said pin in the plane of the body of the slot when the feed plunger is advanced, an arm projecting from the pivoted arm and adapted on the power stroke of the baling plunger to force said pin out of its path into the registering sloping portion and on the return stroke of said plunger to move said pin through the body portion of the slot to withdraw the feed plunger and into the other sloping portion of the slot to release the feed plunger, a slidable apron within and against the upper wall of the baling case and thrown into the vertical plane of the latter by the advance of the feed plunger, means whereby said apron is unlocked through the instrumentality of the pivoted arm on the return stroke of the baling plunger, and means for yieldingly projecting said apron beyond the rear side of the baling case when unlocked.

15. The combination of a machine having a rack, of a casing secured to said machine, a baling case within and extending transversely of and at the bottom of the casing, an extension for the baling case having spring retainers and horizontal slots in its side walls, a yieldingly retracted frame at the rear side of the baling case extension and provided with needles to swing through said slots between the retainers and the baling case, and provided with barbed ends, reels suitably mounted and having their wires extending transversely through the baling case extension slots into the path of said needles, a plunger, and means for causing the same on its power stroke to force baling material from the baling case into the extension beyond said retainers against said intersecting wires.

16. The combination of a machine having a rack, of a casing secured to said machine, a baling case within and extending transversely of and at the bottom of the casing and below said rack, an extension for the baling case having spring retainers and horizontal slots in its side walls, a yieldingly retracted frame at the rear side of the baling case extension and provided with needles to swing through said slots between the retainers and the baling case and provided with barbed ends, reels suitably mounted and having their wires extending transversely through the baling case extension slots into the path of said needles, a plunger, means for causing the same on its power stroke to force baling material from the baling case into the extension beyond said retainers against said transverse wires, a friction wheel suitably journaled on the baling case extension and projecting therein to be turned by the engagement therewith of the bale in process of formation, a lever suitably mounted, a connection between said lever and said swinging frame, and means actuated through the instrumentality of said wheel to cause the baling plunger arm to operate said lever and release it at the end of such operation, said operation causing the needles to swing across through the baling case extension between the retainers and the baling case and snap into engagement with the wires contiguous to the rear end of the bale.

17. The combination with a suitable support, of a casing, a baling case extending transversely through said casing, means to introduce material to be baled within said baling case, a baling plunger to force such material through said case, a baling case extension at one side of the casing and having one end registering with the discharge end of the baling case, and means whereby said extension may be folded up against the casing and out of alinement with the baling case.

18. The combination with a suitable support, of a casing, a baling case extending transversely through said casing, means to introduce material to be baled within said baling case, a baling plunger to force such material through said case, a baling case extension at one side of the casing and having one end registering with the discharge end of the baling case, means whereby said extension may be folded up against the casing and out of alinement with the baling case, and means for securing said extension in its folded position.

19. The combination of a suitable support; a baling case carried thereby provided with a slotted extension; wire-carrying reels suitably supported and needles at opposite sides of the extension, said needles having bevel-ended hooks to engage the baling wires; wire guides between the reels and needles to hold the wires engaging the baling material in the extension transversely and in the plane of movement of the hook ends of the needles, and means to cause said needles to move transversely through the slotted extension behind the baling material therein and engage the wires between the guides and the baling material and withdraw with said wires to their original positions so as to dispose the portions of the wires extending from the baling material to the needles across the rear end of the former.

20. The combination of a suitable support; a baling case carried thereby provided with a slotted extension; wire-carrying reels suitably supported and needles at opposite sides of the extension, said needles having bevel-ended hooks to engage the baling wires; wire guides between the reels and needles to hold the wires engaging the baling material in the extension transversely and in the plane of movement of the hook ends of the needles; a wheel rotated by the movement of the bale; and means controlled by the movement of said wheel, to permit of the operation of the needles.

21. The combination of a baling case, a slotted extension therefor, a yieldingly-retracted swing frame provided with needles to pass through the slots of the extension, a lever suitably supported, a connection between the lever and needle frame to insure synchronous movement, a plunger to force baling material in to the extension, a swing arm for the plunger, and means whereby the back stroke of said arm shall operate said lever and swing the needles through the slotted extension.

22. The combination of a baling case, a slotted extension therefor, a yieldingly-retracted swing frame provided with needles to pass through the slots of the extension, a lever suitably supported, a connection between the lever and needle frame to insure synchronous movement, a plunger to force baling material into the extension, a swing arm for the plunger, means whereby the back stroke of said arm shall operate said lever and swing the needles through the slotted extension, and means to trip said lever from engagement with the plunger arm to permit the needles and said lever to be returned to their original position.

23. The combination of a baling case, a plunger therein having an arm, a slotted extension for the case, a swing frame having needles to pass through the extension, a lever having vertical and lateral movement, a friction disk to be rotated by the movement of the baling material in the extension, a second lever, means actuated by said friction disk for causing the second lever to vertically move the first lever into the path of the plunger arm when the latter is at the end of one of its compression strokes, and means for tripping said second lever out of the path of the plunger arm on but before its return movement or stroke is completed.

24. The combination of a baling case, a plunger therein having an arm, a slotted extension for the case, a swing frame having needles to pass through the extension, a lever having vertical and lateral movement, a friction disk to be rotated by the movement of the baling material in the extension, a second lever, means actuated by said friction disk for causing the second lever to vertically move the first lever into the path of the plunger arm when the latter is at the end of one of its compression strokes, means for tripping said second lever out of the path of the plunger arm on but before its return movement or stroke is completed, and means for returning the needle frame and first-named lever to their original positions after the latter is tripped.

25. The combination of a suitable support, a baling case carried thereby provided with a slotted extension, a plunger to travel in the baling case and part way in the extension thereof, wire carrying reels suitably supported at one side and needles at the opposite side of the extension said needles having bevel-ended hooks to engage the baling wires, wire guides between the reels and extension to hold the wires engaging the baling material in the baling extension transversely and in the plane of movement of the hook ends of the needles, movable means connected to cause the needles to move transversely through the slotted extension behind the baling material therein, a wheel rotated by the movement of the bale, to cause said movable means connected to the needles to be actuated by the return stroke of the plunger, means to trip said movable means from such relation with the plunger after the hook

ends of the needles are engaged with that portion of the wires extending from the guides to the material in the baling extension, and means to withdraw said needles with said portions of the wires, to their original positions after such tripping action occurs.

853,377. HOOK AND EYE. ARTHUR B. REID, Chicago, Ill. Filed Sept. 6, 1900. Serial No. 29,119.



Claim.—1. In a hook, the combination with a shank, having a bill and provided with suitable parts for securing the same to the fabric or other material, of a depressible tongue adapted to engage the bill at an intermediate point and having a part normally resting in front of the tip of the bill to guide extraneous objects over and away from said bill, one end of said tongue being suitably guided to prevent lateral displacement thereof and normally located above said shank.

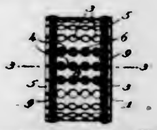
2. In a hook, the combination with a shank having a bill and provided with suitable parts for securing the same to the fabric or other material, of a depressible tongue having a part normally resting immediately in front of the tip of the bill to guide extraneous objects over and away from said bill, said tongue having the end extended forward and guided by the portions of the hook constituting the bill to prevent the lateral displacement thereof and normally located above the shank of the hook.

3. In a hook, the combination with a shank, having suitable parts for securing the same to the fabric and a bill comprising two upwardly extending parallel portions and a rearwardly extending portion, of a depressible tongue having a part normaly resting immediately in front of the tip of the bill to guide extraneous objects over and away from the bill and having the end extended forward to lie between the upright parallel portions constituting the bill to thereby prevent lateral displacement of the tongue, the end of said tongue being normally located above the shank of the hook.

4. In a hook, the combination with a shank having suitable parts for securing the same to the fabric or other material and a bill, of a depressible tongue having a part normally resting immediately in front of the tip of the bill to guide extraneous objects over and away from the bill and having a portion thereof arranged to lie beneath the eye when the same is in engagement with the bill, said tongue having at its end engaging means for preventing lateral displacement thereof the end portion of said tongue being normally located above the shank of the hook.

5. In a hook, the combination with a shank provided with means for securing the same to the fabric and a bill, of a depressible tongue having a part normally extending in front of the point of the bill to guide extraneous objects away from and over said bill, said tongue being normally located above the shank of the hook and having a portion arranged to engage guiding means to prevent lateral displacement of the tongue.

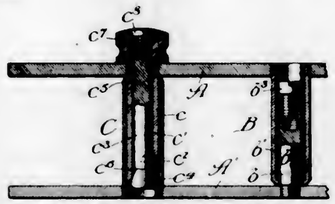
853,378. ROTARY BRUSH. EDWARD E. RICE, New Durham, N. H., assignor to The Osborn Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 21, 1906. Serial No. 307,141.



Claim.—1. In a rotary brush, a cylindrical hub having a peripheral flange at each side of its face, radial sockets in the face and transverse slots intersecting groups of sockets and lying in radial planes, bunches of filaments bent to enter the sockets, flat retaining members inserted in the slots and passing through the bunches of filaments within their bends, to retain the bunches seated in the sockets, and means embracing the face of the hub within the flanges to lock the retainers from displacement by centrifugal action.

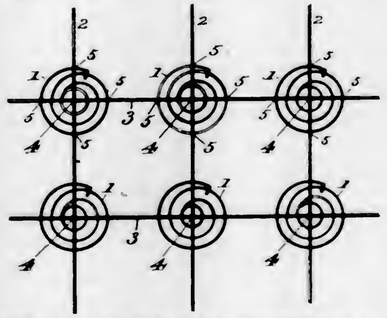
2. In a rotary cleaning and polishing brush, a cylindrical wooden hub having radial sockets in its face arranged in transverse rows, and provided with slots in radial planes intersecting the sockets in each row, a bunch of metallic wires bent between its ends and inserted in each socket, flat retaining members inserted in the slots and passing through the bunches of wires in the sockets within the bends, to maintain said bunches seated in the sockets, and wire wrapped around the ends of and to lock all of the retainers in the slots.

853,379. BINDER-LOCK. GEORGE A. SHOEMAKER, Chicago, Ill., assignor to Baker-Vawter Company, Portland, Me., a Corporation. Filed Dec. 21, 1903. Serial No. 186,050.



Claim.—In a binder, the combination with binding bars, and binding posts, of a locking post consisting of telescoping sections attached respectively to said binding bars, a shaft extending through the length of the smaller of said sections, and projecting with a threaded end beyond the outer face of the binding bar to which said smaller section is attached, a thumb nut fitted to said threaded end, a head fitted to the inner end of said shaft and lying within the said larger section and in contact with the inner end of said smaller section at which point of contact, the said smaller section and shaft head are beveled correspondingly, substantially as described, and for the purposes herein set forth.

853,380. SPRING STRUCTURE. ARTHUR STEDMAN, Cincinnati, Ohio, assignor to M. A. Hunt & Co., Cincinnati, Ohio, a Firm. Filed Oct. 1, 1906. Serial No. 336,879.

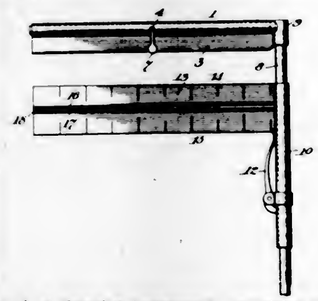


Claim.—1. A spring-structure comprising one or more coils and one or more tie-wires or the like intersecting said coils, the intersections between said coils and ties being electrically-welded together.

2. A spring-structure comprising one or more series or rows of coil-springs and intersecting tie-wires, such tie-wires intersecting each other concentric to said coil-springs and the intersecting points between the tie-wires and the coil-springs being electrically-welded together.

3. A spring-structure comprising one or more coils and one or more tie-wires, the latter intersecting the outer ends of said coils and intersecting each other concentric to said coils, and electrically-welded joints at each of said intersections.

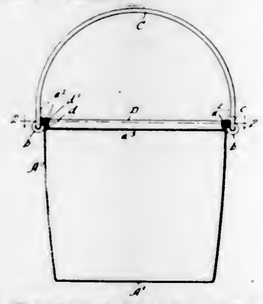
853,381. DRAWING INSTRUMENT. SAMUEL G. STODDARD, Waterbury, Conn. Filed May 14, 1906. Serial No. 316,591.



Claim.—1. A drawing instrument comprising means for clamping the edge of a sheet of paper, a shaft extending approximately at right angle with said clamping means, a rule slidingly mounted on said shaft and extending therefrom approximately parallel with said clamping means, said rule being provided with two longitudinal grooves separated by a vertical rib, and an independent auxiliary tool, as a square or the like, having a laterally extending flange at each side of its blade adapted to engage in either of said grooves.

2. A drawing instrument comprising means for clamping the edge of a sheet of paper, said means consisting of a cam-shaped clamp and a portion on which the paper is positively secured by said clamp, a shaft extending approximately at a right angle with said clamping means, and a rule slidingly mounted on said shaft and extending therefrom approximately parallel with said clamping means.

853,382. BAILED SHEET-METAL KEG FOR WHITE LEAD OR OTHER HEAVY MATERIALS. CHARLES STOLLBERG, Toledo, Ohio, assignor to American Can Company, a Corporation of New Jersey. Filed Apr. 7, 1906. Serial No. 310,575.



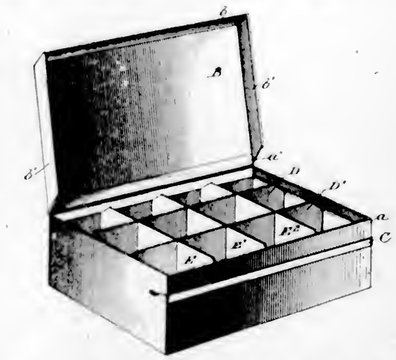
Claim.—1. The sheet steel keg for white lead or other materials, comprising a seamless body, an integral bottom, the body having an integral roll at its upper end, a strengthening wire surrounding the body and embraced within said roll and provided with diametrically opposite integral bail ear coils, a tight friction fit cover fitting within the mouth of the body, said body having integral cover holding lips bent down over the rim of the cover to lock the cover in place, and a bail, substantially as specified.

2. The sheet steel keg for white lead or other materials, comprising a seamless body, an integral bottom, the body having an integral roll at its upper end, a strengthening wire surrounding the body and embraced within said roll and provided with diametrically opposite integral bail ear coils, a tight friction fit cover fitting within the mouth of the body, said body having integral cover holding lips bent down over the rim of the cover to lock the cover in place, said cover having a projecting marginal flange fitting against the said roll on the upper end of the body, substantially as specified.

3. A sheet metal vessel having a body furnished with an integral roll at its upper edge, a strengthening wire embraced thereby and provided with integral bail ear coils or loops and a cover fitting within the mouth of said body and said body having integral cover holding lips at said bail ear coils or loops, said cover holding lips forming slots or openings in said roll to receive said bail ear coils or loops, substantially as specified.

4. In a sheet metal vessel, the combination with a body having a strengthening wire at its upper end and a flange embracing said wire, said wire being provided with integral bail ears or loops, a cover fitting within the mouth of said body and cover holding lips on the body, adjacent to said bail ears or loops, said cover holding lips being integral with said wire embracing flange of the body and forming slots or openings therein to receive said bail ears or loops, substantially as specified.

853,383. EGG-CARRIER. CHARLES F. THOMS, Chicago, Ill. Filed Apr. 28, 1902. Serial No. 104,973.

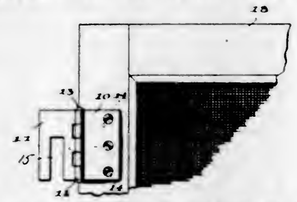


Claim.—1. In a device of the class described the combination with a receptacle, a flexible flanged cover engaged to the same, longitudinal and transverse partitions in said receptacle each partition adjacent the corners bent inwardly toward each other and affording braces for each corner, strengthening fabric engaged to said receptacle and fastened over each corner firmly engaging the ends of said partitions and corners of the receptacle in rigid relation, said fabric engaging the outer side of said cover and a strip of fabric engaging the inner side of said cover to said receptacle and engaging over the strengthening ends of said partitions.

2. In a device of the class described the combination with a box of a flanged cover therefor, longitudinal partitions therein each partition at each end directed inwardly toward the corner of the box, transverse partitions in said box, those adjacent each end of the box having each end directed inwardly toward the corners, forming braces for the same, strengthening fabric engaged to the outer sides and ends of said box, the fabric along the sides and front being engaged over the top of the box and rigidly binding the strengthening ends of the partitions and corners in unyielding relation, strengthening fabric engaged to the back of said box and cover and a strengthening fabric engaged to the inner side of said cover and

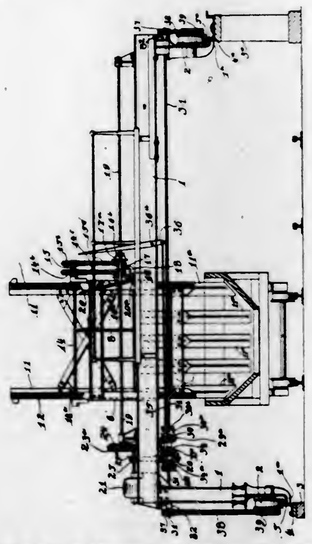
fastened over the rear partition and corners thereby affording a double strengthening layer around said box.

853,384. DETACHABLE HINGE. CARL J. TOLNES, Maplehay, Minn. Filed Dec. 18, 1906. Serial No. 348,463.



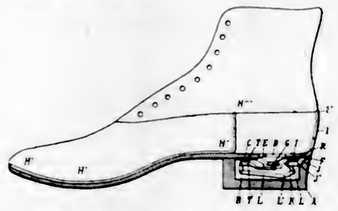
Claim.—A removable hinge comprising two leaves and their pivot connection, one of the leaves being provided with a slot extending upward from its bottom edge, and a member adapted to be fixedly connected with an object, the latter member being composed of doubled leaves, a bar, adapted to fit in the said slot being secured between the doubled leaves to receive the slotted leaf between them with the bar engaging the slot.

853,385. CAR SWEEPER OR SCRAPER. GEORGE TREVIRANUS, Duluth, Minn. Filed Dec. 9, 1904. Serial No. 236,134.



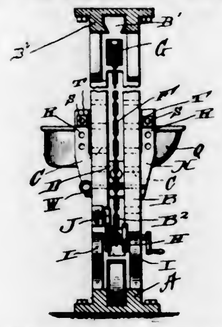
Claim.—In a car sweeper or scraper, the combination of a bridge adapted to span a railway track and to move in a parallel direction thereto, a carriage mounted on said bridge above said track and adapted to move transversely of said track, a vertically movable frame mounted on guides on said carriage and provided with oppositely directed vertical racks, pinions engaging said racks, a drive shaft journaled in bearings on said bridge, a motor, belt and belt wheel connections between said motor and said drive shaft, a sleeve carried by a bracket on said carriage and loosely engaging said drive shaft, belt wheels mounted on said sleeve and belted to respectively corresponding belt wheels mounted on the shafts of the respectively corresponding said pinions, clutches slidably keyed to said drive shaft at opposite sides of the belt wheels on said sleeve, means for operating said clutches alternately, a set of scraping or sweeping blades carried by and depending from said vertically movable frame, a second drive shaft journaled in bearings on said bridge, power transmitting means connecting said motor and said second drive shaft, means including said motor and said second drive shaft for moving said bridge parallel with said track, and means for moving said carriage transversely of said track, substantially as described.

853,386. VENTILATING-SHOE. MIGUEL VILLACAMPA Y VILLACAMPA, Buenos Ayres, Argentina. Filed Aug. 24, 1905. Serial No. 275,655.



Claim.—In an apparatus for the interior ventilation of foot-wear the combination of an air suction and compressing device arranged in the interior of the heel, a foot operated stud, multiplying system of levers between said stud and air suction and compressing device for increasing the mechanical effect of the natural action of the foot in walking, and tubes for the circulation of air.

853,387. HOISTING APPARATUS. JOHN S. WALKER, Trenton, N. J. Filed July 14, 1906. Serial No. 326,280.



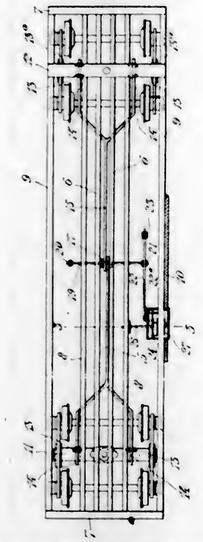
Claim.—1. A hoisting apparatus comprising standards, wheels journaled at the bottoms of said standards, vertically movable bearing blocks mounted one upon each standard, a shaft journaled in said blocks, plates held upon said shaft, and means for clamping the object to be hoisted intermediate said plates, as set forth.

2. A hoisting apparatus comprising standards, wheels journaled at the bottoms of said standards, vertically movable bearing blocks mounted one upon each standard, a shaft journaled in said blocks, plates having angular-outlined apertures adapted to receive said shaft and turn therewith, threaded rods passing through registering apertures in said plates, and nuts mounted upon the threaded portions of said rods and adapted to bear against the outer faces of the plates, whereby the latter may be held against the sides of the object being hoisted, said rods at one end of the plates serving to support the object being raised, as set forth.

3. A hoisting apparatus comprising standards, wheels journaled at the bottoms of said standards, vertically movable bearing blocks mounted one upon each standard, a shaft journaled in said blocks, plates having angular-outlined apertures to receive said shaft upon which they are mounted, pins passing through the shaft and adapted to hold the plates adjacent to an object intermediate the same to be hoisted, threaded rods passing through arms of the plates and upon which the object being raised is adapted to rest, nuts upon said rods, means for holding the bearing blocks elevated, hoisting chains connected to said blocks and passing over suitable sheaves, and drums upon which the chains are adapted to wind, as set forth.

4. In combination with the standards, wheels journaled at the lower ends thereof, a grooved track in which said wheels travel, an inverted grooved track at the upper ends of the standards, flaring blocks at the upper ends of said standards and adapted to travel in said inverted track, bearing blocks carried in grooved ways in said standards, a shaft journaled in said blocks, plates mounted upon said shaft and adapted to be clamped against the object to be raised, and means for raising and lowering said blocks, as set forth.

853,388. WEIGHING APPARATUS. ASA O. WATTS, Windsor Mills, Quebec, Canada. Filed Sept. 29, 1904. Serial No. 226,571.

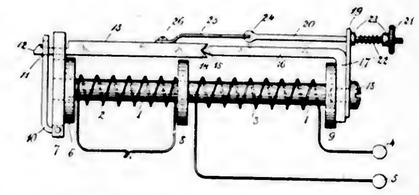


Claim.—1. In a railway car, the combination of a car body, a truck, bearings on said body and truck, levers supported between said bearings, a pivotally supported rod connected to said levers, a balance beam pivotally supported on the car body and connected to said rod, a spring connected to said balance beam, a pointer actuated by said spring, and a graduated dial coöperating with said pointer, substantially as described.

2. In a railway car, a truck bolster, a body bolster, angular bearings on said members, levers supported between said bearings and extending thence toward the middle portion of the car, a pivotally supported transversely extending rod connected with said levers, a balance beam pivotally connected with the car body and connected intermediate its length with said rod, a spring connected with said balance beam, a pointer actuated by said spring, and a graduated dial over which said pointer is adapted to travel.

853,389. TELEPHONE CALLING OR SIGNALING DEVICE. KLAS WEMAN, Buffalo, N. Y. Filed Dec. 20, 1905. Serial No. 292,595.

Claim.—1. In a device of the character described, the combination of a core carrying a collar substantially intermediate its length, a helix arranged upon said core at each side of the collar, one of said helices having its terminals joined and the other helix having terminals adapted for connection with a source of electric current, a soft iron bar firmly secured to said core, a permanent magnet armature loosely contacting with said bar and a jointed rod connected to said armature and adapted to hold the same in contact with said soft iron bar.



2. In a device of the character described, the combination of a core, two helices wound thereabout and spaced from each other, one helix having its terminals joined and the other helix having ends adapted for connection with a source of electricity, a shutter associated with one end of said core, a permanent magnet armature adapted to engage said shutter, a soft iron bar mounted upon said core and reaching into engagement with said armature, and a jointed rod secured to said armature and adapted to hold the same in contact with said soft iron bar.

3. In a device of the character described, the combination of a core, two helices wound thereabout, a collar upon the core for separating the helices, an angular soft iron bar secured to the core and having an arm extending longitudinally over one said helix, a permanent magnet armature lying over the other helix and being adapted to engage said arm, a bracket projecting from said core, and a jointed rod secured to said armature and being supported by said bracket, said jointed rod being adapted to hold the armature in contact with the arm of said soft iron bar.

4. In a device of the character described, the combination of a core carrying two helices, a soft iron bar having an arm extending parallel over one helix, and a permanent magnet armature lying over the other helix and engaging said arm and means for regulating the intimacy of contact between said armature and arm, said means comprising a bracket supporting a jointed rod secured to said armature, and a helical spring surrounding a portion of said rod.

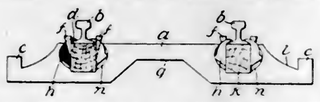
5. In a telephone signaling device responsive only to direct electric current, the combination of a core having a shutter pivoted near one end thereof, a single permanent magnet armature associated with said core and normally engaging said shutter, an angular soft iron bar mounted upon said core, and being in engagement with said armature, means for regulating the intimacy of contact between said armature and bar, thereby regulating the tension of said armature, a helix, whose ends are joined, wound about said core and being adapted to attract said armature under the influence of direct electric current, and a second helix upon said core, having terminals adapted for connection with a source of electricity.

6. In a telephone signaling device responsive only to direct electric current, a core having a shutter pivoted near one end thereof, a single permanent magnet armature arranged over said core and normally reaching into engagement with said shutter, a helix whose ends are joined, wound about said core and lying under said armature, an angular soft iron bar extending upwardly from the core and having a horizontal arm engaging said armature, means for regulating the intimacy of contact between the armature and arm thereby regulating the tension of said armature, and a second helix wound about said core, having terminals adapted for connection with a source of electricity.

7. In a device of the character described, the combination of a soft iron core provided with an enlarged head at one end, a collar intermediate its length and a second collar at its opposite end, two helices arranged successively upon said core and being separated by said intermediate collar, one of said helices having its ends joined together,

a yoke associated with said head, a shutter pivoted at the lower part of said yoke, a two part armature arranged over said core, the forward part of said armature having a latch adapted to engage said shutter and means for regulating the degree of contact between the parts of said armature, said means comprising a jointed rod held in a bracket projecting upwardly from the core.

853,390. RAILWAY-TIE. CHARLES E. WILL, Waterloo, Iowa, assignor of one-fourth to Frank J. Eighmey, Waterloo, Iowa. Filed July 24, 1906. Serial No. 327,482.



Claim.—1. A railway tie, composed of a body having recessed seats, a removable base-block in each seat, and clutch-members removably secured between said bases and said seats.

2. A railway tie, composed of a body having recessed seats, an elastic base-block in each seat, and clutch-members removably secured between said bases and said seats.

3. A railway tie, composed of a body having recessed seats, a removable elastic base-block in each seat, and clutch-members removably secured between said bases and said seats.

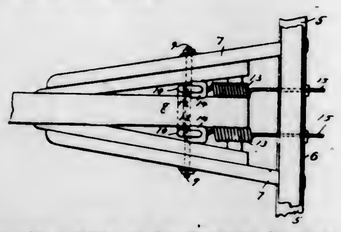
4. A railway tie, composed of a body having recessed seats, an elastic base in each seat, clutch-members having slotted jaws removably secured between said bases and said seats, and wedges inserted in the slots of the jaws of said clutch-members between said members and said elastic bases.

5. A railway-tie, composed of a body having recessed seats, an elastic base in each seat, clutch-members having slotted jaws removably secured between said bases and said seats, and wedges toothed on one side and inserted in the slots of the jaws of said clutch-members between said members and said elastic bases, the teeth of said wedges engaging the inner faces of said slots.

6. A railway-tie, composed of a body having recessed seats, a removable base-block in each seat, clutch-members removably secured between said base-blocks and said seats, said tie-body being provided with suitable anchoring means.

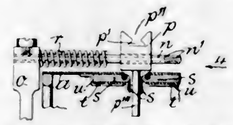
7. A railway-tie, composed of a body having recessed seats, an elastic base in each seat, clutch-members having slotted jaws removably secured between said bases and said seats, the inner faces of said slots having downwardly directed transverse teeth, and wedges having upwardly directed transverse teeth on one side, said wedges being inserted in the jaws of said clutch-members between said clutch-members and said bases, the teeth of said wedges engaging and interlocking with the teeth on said clutch-members.

853,391. WAGON-TONGUE SUPPORTER. FRED ABRAMS and WILLIAM A. DOYLE, Minden, Nebr. Filed Mar. 27, 1906. Serial No. 308,306.



Claim.—In a device of the character described, a stationarily supported transverse rod, a U shaped tongue-supporting member having the upper portions of its legs offset and resting upon said rod as a pivot, the upper ends of said member being hooked, and retractile coil springs having one of their ends stationarily secured and their free ends engaged with said respective hooked ends.

853,392. WINDING-MACHINE FOR YARN OR THREAD. JOHN S. AINLEY and EDWIN SYKES, Huddersfield, England. Filed Oct. 30, 1905. Serial No. 285,054.

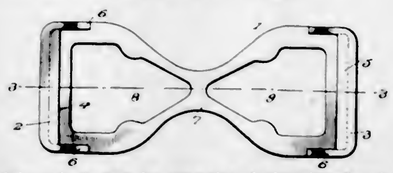


Claim.—1. The combination, with a driving shaft, and a split winding drum having its sections secured on the said shaft and forming a cam groove; of linings of soft material secured against the inside surface of the said drum and forming lateral projections at the edges of its said cam groove, a guide bar, and a guide for the yarn slidable on the said guide bar and provided with a projection which engages with the laterally projecting edges of the said linings.

2. The combination, with a driving shaft, and a split winding drum having its sections secured to the said shaft and forming a cam groove; of linings of soft material arranged inside the said drum and forming lateral projections at the edges of its said cam groove, binding strips bearing against the main portions of the said linings, clips secured to the said strips and the drum sections and holding the said linings in place, a guide bar, and a guide for the yarn slidable on the said guide bar and provided with a projection which engages with the laterally projecting edges of the said linings.

3. The combination, with a driving shaft, and a split winding drum having its sections secured to the said shaft and forming a cam groove; of linings of soft material secured to the drum sections and forming lateral projections at the edges of its said cam groove, a guide bar, and a guide for the yarn slidable on the said guide bar and provided with an arm which projects between the laterally projecting portions of the said linings and engages slidably with the said driving shaft.

853,393. MAT FOR TICKET OR OTHER STAMPING DEVICES. WILLIAM A. ALBAUGH, Baltimore, Md. Filed Nov. 13, 1906. Serial No. 343,298.

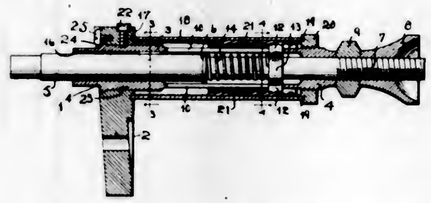


Claim.—1. A mat for stamping devices broadened and interiorly cut away at the ends, and intermediately reduced, having an upward extension at each end undercut to receive the base of the stamping device.

2. A mat for stamping devices of substantial thickness and composed of resilient material, having an upward extension at each end undercut to receive the base of the stamping device, the mat being intermediately reduced so that it may be easily bent to bring the edges of the base of the stamping device within the undercut portion, substantially as described.

853,394. BUR-WHEEL SUPPORT FOR KNITTING-MACHINES. ALBERT A. BAILLEY, Cohoes, N. Y. Filed June 21, 1906. Serial No. 322,748.

Claim.—1. A bur holder for knitting machines comprising a spindle barrel having integrally-formed bearings arranged in the opposite ends thereof and slots in the side walls thereof, a spindle mounted in said bearings, a tension-spring on said spindle, a collar slidable on said spindle to adjust the tension of said spring and having lugs projecting through the slots in said barrel, and an internally-screw-threaded sleeve mounted on said barrel and adapted to engage said threaded lugs to regulate the tension of the spring.



2. A bur holder for knitting machines comprising a spindle barrel, integrally formed alined bearings arranged in the opposite end of said barrel, a spindle mounted in said bearings, said spindle having a reduced threaded outer end forming a shoulder, a tension spring arranged on the reduced end of said spindle, one end of said spring engaging said shoulder, a tension collar slidably mounted on said reduced end of the spindle to engage the outer end of said spring, threaded lugs formed on said collar, said lugs projecting in opposite directions through alined slots formed in the wall of said barrel, a tension sleeve mounted on said barrel, said sleeve having arranged therein screw threads to engage the threaded lugs on said tension collar, whereby when said sleeve is turned in one direction or the other, the collar will be adjusted to regulate the tension of said spring, and means to adjust said spindle in said barrel, substantially as described.

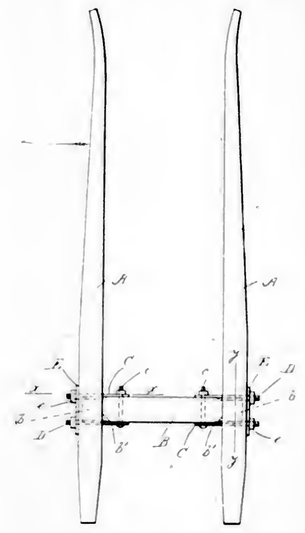
3. A bur holder for knitting-machines comprising a supporting plate, a spindle barrel arranged in said plate, a set screw to hold said barrel in place, means to prevent an inward movement of the barrel when said set screw is loosened, a spindle mounted in the bearings in said barrel, a key to hold said spindle against revolving in said bearings, an annular shoulder formed on said spindle, a spring to engage said shoulder, a tension collar to engage the opposite end of said spring, oppositely projecting threaded lugs formed on said collar and adapted to slide in longitudinally-disposed slots formed in said barrel, a tension sleeve having one end revolubly mounted in the outer side of said supporting plate, a nut screwed onto the outer end of the barrel and into engagement with the opposite end of said sleeve to revolubly support said end, a threaded sleeve arranged in said barrel to engage the threaded lugs on said tension collar, an adjusting nut adapted to be screwed onto the threaded projecting outer end of said spindle and a jam nut adapted to be screwed into engagement with said adjusting nut, substantially as described.

853,395. VEHICLE-SHAFT. JOHN BUCHHEIT, Fair Grove, Mo. Filed Dec. 5, 1906. Serial No. 346,514.

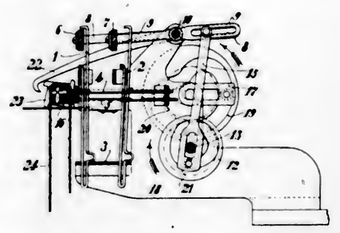
Claim.—1. The combination, with a vehicle shaft, and a crossbar, one of the said parts having a hole and grooves at the ends of the hole, and the other said part having a projection which engages with the said hole and having also grooves in the side portions of the said projection, of strap-bolts secured to the said parts and arranged in the said grooves and preventing the said projection from sliding out of the said hole.

2. The combination, with a pair of shafts provided with holes and grooves at the ends of the said holes, of a crossbar provided with projections which engage with the said holes and having grooves in the side portions of the said projections, strap-bolts secured to the side portions of the said crossbar and provided with screwthreaded end portions which are arranged in the said grooves, and nuts on the projecting end portions of the said bolts.

853,395.



853,396. JACQUARD MECHANISM FOR LACE BOBBIN-MACHINES. HERMANN BUSCHER, Langerfeld, near Barmen, Germany. Filed July 9, 1906. Serial No. 325,344.



Claim.—1. In jacquard mechanism, two lifter systems, in combination with two lifter-blades, operating respectively thereon in succession, with an interval of inaction, a card-chain and cylinder arranged to set both systems, means for actuating said blades, means for actuating said card chain and cylinder and means for regulating said cylinder, each card being provided with two sets of holes cooperating respectively with the needles of the said two systems, and the regulation of the cylinder keeping the card against the needle board till the lifting blade last to lift has begun this motion substantially as set forth.

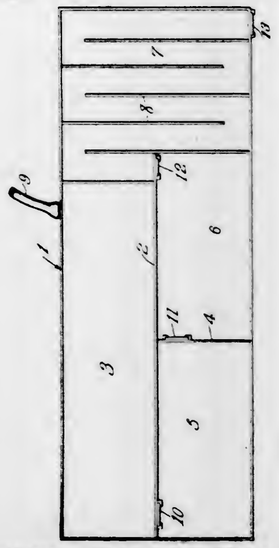
2. In jacquard mechanism two lifter systems, in combination with two lifter blades, operating respectively thereon in succession, with an interval of inaction, a card chain and cylinder arranged to set both systems, a shaft carrying cam disks arranged for acting successively on said blades, rods interposed between said cam-disks and blades, cam-disks and coöperating mechanism for driving said cylinder and means for driving said shaft and all of said disks, each card being provided with two sets of holes cooperating respectively with the needles of the two lifter systems, one of the sets of needles being arranged lower than the other and said cylinder being regulated to keep the pattern card pressed up against the needle board until the lifting blade last rising has begun to lift substantially as set forth.

853,397. UMBRELLA-SUPPORT. JACOB W. BUTLER, Blaney, S. C. Filed Aug. 13, 1906. Serial No. 330,317.



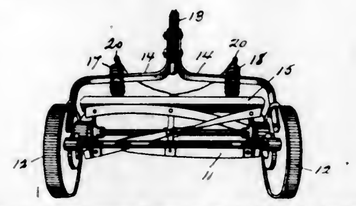
Claim.—An umbrella support comprising a waist belt; a pad carried by said belt for supporting the lower end of the umbrella staff; a vertically inclined strap connected at its lower end with said belt, and provided with a tube for the reception of the umbrella staff; shoulder straps adapted to pass under the arms and over the shoulders; a pair of breast straps disposed upon opposite sides of said inclined strap, each breast strap being connected at one end with said inclined strap at the upper end thereof, and at the other end with the corresponding shoulder strap; and a buckler strap connecting said shoulder straps.

853,398. EVAPORATING-PAN. WILSON G. CHAMBLEE, Van Zandt county, Tex. Filed Jan. 31, 1907. Serial No. 355,119.



Claim.—An evaporating pan comprising a body of oblong configuration, a partition extending from one end of the pan and being located along the central longitudinal axis thereof, a means for admitting juice to the pan, said partition having at its opposite ends gates, a partition extending transversely of the pan and joining with the edges of the pan and the first said partition at an intermediate point thereof and having a gate adjacent the longitudinally disposed partition, said pan having at its end opposite that end provided with the longitudinally extending partition, a compartment provided with transversely disposed baffle plates and an exit gate.

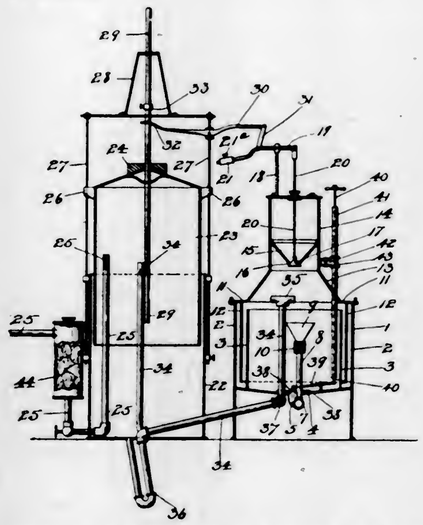
853,399. LAWN-MOWER SHARPENER. SAMUEL A. CHENEY, Keene, N. H. Filed Oct. 31, 1906. Serial No. 341,424.



Claim.—1. A sharpening device for the rotary knives of a lawn mower, the same comprising an abrading bar, and springs rotatably mounted on said bar for attachment to the handle bars of a lawn mower.

2. A sharpening device for the rotary knives of a lawn mower, the same comprising an abrading bar, springs rotatably mounted on said bar for attachment to the handle bars of a lawn mower, said springs being formed of right and left hand coils, and pins inserted in said abrading bar between the coils of the springs and said handle bars.

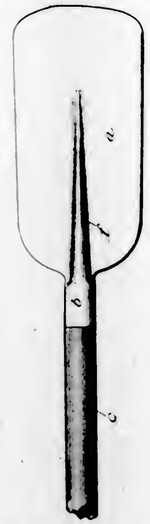
853,400. ACETYLENE-GAS GENERATOR. GEORGE W. DAYTON, King City, Cal. Filed Apr. 20, 1905. Serial No. 256,556.



Claim.—1. In an acetylene gas generating and storing machine, a hopper for holding the carbid, a valve to control the flow of carbid from said hopper, a lever fulcrumed on top of the generator, a rod connecting one arm of said lever with the valve, a weight adjustably mounted on the other arm of the lever, another lever suitably fulcrumed having one arm connected with the weighted arm of the first-mentioned lever and the other arm forked, the storage tank having a weighted adjustable bell, a rod secured to said bell and adapted to reciprocate between the tines of the forked end of the lever, and a collar adjustably secured to said rod and adapted to engage said tines, substantially as shown and described.

2. In an acetylene gas generator and storing machine, a generating tank, a hopper for holding the carbid connected with said tank, a valve to control the flow of carbid from said hopper into the generating tank, a lever fulcrumed on the top of the generator, a rod connecting one arm of said lever with the valve, another lever suitably fulcrumed and having one arm connected with the first named lever to actuate it and the other arm forked, the storage tank having a weighted, vertically-adjustable bell, a rod secured to said bell and adapted to reciprocate between the tines of the forked end of the lever, and a collar adjustably secured to said rod and adapted to engage the tines when the adjustable bell lowers, substantially as shown and described.

853,401. OAR-BLADE. GEORGE W. DOXSIE, Cadillac, Mich. Filed Feb. 6, 1907. Serial No. 356,063.

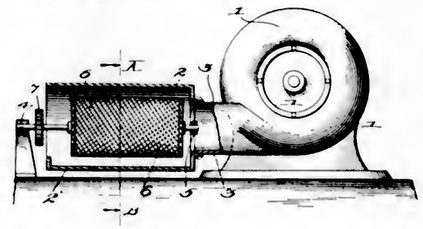


Claim.—As a new article of manufacture, an oar-blade made integrally of aluminium, having a short socketed stock interiorly threaded to screw on a handle and provided with a lateral hole to admit a set-screw to hold the blade from turning on the handle, the blade being thickest at the stock and gradually diminishing in thickness toward its opposite end, and the back face of the blade having a medial strengthening rib formed thereon extending from said stock along the length of the blade and gradually merging in the surface of the blade, substantially as described.

853,402. PROCESS OF REGENERATING AND PURIFYING AIR. RICHARD V. FOREGGER, New York, N. Y., and GEORGE F. BRINDLEY, Niagara Falls, Ontario, Canada, assignors to The Roessler & Hasslacher Chemical Company, New York, N. Y., a Corporation of New York. Filed Mar. 9, 1906. Serial No. 305,143.

Claim.—1. A process of regenerating and purifying the air of a chamber consisting in passing said air in a continuous stream under pressure over an alkaline peroxid in a solid state whereby the humidity of the air may react with the peroxid to free oxygen and absorb carbon dioxid.

2. A process of regenerating and purifying the air of a chamber, said air containing moisture, consisting in passing said air in a continuous stream under pressure over fused sodium peroxid in a solid state.

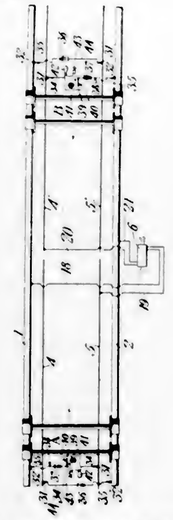


3. A process of regenerating and purifying the air of a chamber, said air containing moisture, consisting in passing said air in a continuous stream under pressure over an alkaline peroxid in a solid state while agitating the peroxid.

4. A process of regenerating and purifying air consisting in the generating of oxygen gas and the absorbing of carbon dioxid by the reaction of the humidity contained in the air alone on sodium peroxid in a solid state while agitating the peroxid.

5. A process of regenerating and purifying air, said air containing moisture, consisting in passing said air in a continuous stream under pressure over an alkaline peroxid in a solid state while agitating the peroxid and regulating the generation of oxygen by the relative agitation of the peroxid.

853,403. ELECTRIC BLOCK SYSTEM FOR RAILWAYS. WALTER R. FULLER, Atlanta, Ga. Filed Jan. 19, 1907. Serial No. 353,125.



Claim.—1. In a block system for railways, sectional conductors extending throughout the length of a block, a source of current upon each train for energizing said conductors, and signal indicating devices at the junction of the blocks in circuit with said conductors and indicating danger to the next block and safety to the occupied block.

2. In a block system for railways, sectional line conductors arranged along said railway and continuous for the length of a block and constituting, together with the traffic rails two normally open circuits, each independently charged, and two independent sources of current

upon each locomotive for the said circuits, and a signal indicating device at the intersection of the blocks independently coupled to each circuit, and operating to display a danger signal to the blocks immediately succeeding and immediately preceding, and to display a safety signal to the occupied block at each end.

3. In a block system for railways, a signal device comprising a visual signal located at the junction of blocks, targets in the line of vision, electro-magnets operating said targets, a line of conductors extending along the railway and connected to one of the signal operating magnets at one end of the block, another line of conductors extending along the railway and connected to the correspondingly other signal operating magnet at the other end of the block, and independent sources of current carried upon the trains and charging said conductors.

4. In a block system for railways, a signal device comprising an electric lamp, pivoted targets carrying red screens and arranged on each side of the lamp in the line of vision, extensions of said targets constituting switch arms, magnets in operative relation to armatures therefor carried by said switch arms, and contacts in the path of said switch arms and connected to said magnets and lamp and to an external circuit, and arranged to light the lamp only when one of the targets is moved into the line of vision.

5. In a block system for railways, a system of block circuits, other circuits coacting therewith and carried upon the trains and including a source of current, and electrically actuated signal devices at the junction of the blocks including a magnet in the block circuit, a switch-arm carrying a normally inactive signal device and included in the magnet circuit, and a normally open circuit branched from the magnet circuit and having a terminal in the path of the switch-arm.

6. In a block system for railways, a system of block circuits, other circuits coacting therewith and carried upon the trains and including a source of current, and electrically actuated signal devices at the junction of the blocks including a magnet in the block circuit, a switch-arm carrying a signal device and biased to hold said device normally inactive, said switch-arm being included in the magnet circuit, and a normally open circuit branched from the magnet circuit and having a terminal in the path of the switch-arm.

7. In a block system for railways, electric circuits for each block, signal indicating devices at the junctions of the blocks, and independent sources of current upon each train arranged to coact when trains approach to increase the current in the circuit including the trains and to neutralize the current in the circuit including two trains moving in the same direction upon the same block.

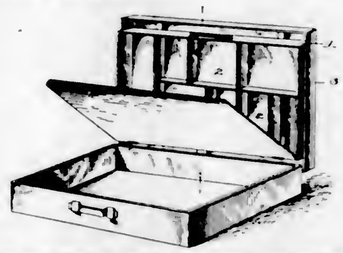
8. In a block system for railways, the combination with a conducting traffic rail and a conductor carried thereby but insulated therefrom, of a trolley arm or collector comprising two hinged sections in alinement one with the other and movable in planes at right angles to each other, springs holding these sections normally in alinement but yieldable to permit movement of the sections in their individual planes, and collectors carried by one of the sections and insulated from each other.

9. In a block system for railways, a trolley arm or collector having two hinged sections in alinement one with the other and movable in planes at right angles to each other, springs holding these sections normally in alinement but yielding to permit movement of the sections in their individual planes, and means carried by one of the sections for collecting current.

853,404. COMPARTMENT-CASE. FRANK N. GILBERT, Binghamton, N. Y. Filed Apr. 16, 1906. Serial No. 311,997.

Claim.—1. The combination with a suit case, of straps secured to said suit case, a compartment case, means secured to said compartment case for securing said compartment case to said suit case, an adjustable member positioned at the lower side of said compartment case for holding the same in position and clamping means for holding said adjustable member in position.

2. The combination with a suit case, of straps secured thereto and a compartment slidingly secured to said straps, said compartment case comprising a body portion, means for securing said body portion to said suit case, a reciprocating member secured to one side of said compartment case, a clamp for holding said reciprocating member in position and means secured to said reciprocating member for operating the same.



3. The combination with a traveling receptacle, of a compartment case comprising a body portion, straps secured to the cover of said traveling receptacle and means for holding said compartment case in the traveling receptacle, said means comprising a series of loops adapted to engage said straps and a supporting leg fitted to one side of said compartment case for holding the same out of contact with the body portion of the traveling receptacle when in an opened position.

4. The combination with a suit case, of a compartment case, comprising a closure, straps secured to the cover of said suit case means secured to the closure for engaging said straps, said means comprising longitudinally arranged loops secured to the rear wall of the compartment case, removable means attached to the lower side of the compartment case for holding the said compartment case in position, and means for securing the said removable means to said compartment case.

5. The combination with a suit case having straps secured thereon, of a compartment case removably secured therein, means secured to said compartment case for engaging the straps of said suit case, and means for sustaining the compartment case above the top of the suit case.

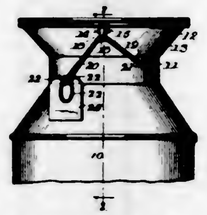
853,405. TOOTH-POWDER RETAINER. ERNEST R. GODWARD, Invercargill, New Zealand. Filed Dec. 22, 1906. Serial No. 349,118.



Claim.—1. A distributer for powder comprising a container and a rotating cage forming the closure for the container and located in the discharge opening thereof and having a portion of its periphery exposed, said cage having a perforated periphery whereby the powder, when the container is inverted, discharges first into the interior of the cage and from thence through the perforations to the brush, substantially as described.

2. A distributer for powder comprising a container having a discharge orifice, a rotating cage located within said discharge orifice, said cage being hollow, with a perforated periphery and having flanged side walls to serve as a guide for the tooth brush, substantially as described.

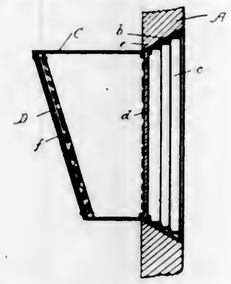
853,406. LOCK FOR MILK-CAN LIDS. WILLIAM HALL, Marion, Oreg. Filed Aug. 4, 1906. Serial No. 329,210.



Claim.—1. The combination with a can and its lid, said lid and the neck of the can having registering openings, of a bolt extending through the openings, and having at one end a transverse opening, and a locking device comprising a piece of wire which is doubled to form two substantially parallel members, one of which extends through the opening in the bolt and on opposite sides thereof, and is extensible into axial alinement with the bolt to permit its withdrawal.

2. The combination with a can and its lid, said lid and the neck of the can having registering openings, of a bolt extending through the openings, and having at one end a transverse opening, and a locking device comprising a piece of wire which is doubled to form two substantially parallel members, one of which extends through the opening in the bolt, and is extensible into axial alinement therewith to permit its withdrawal, and a retaining member on the free ends of the aforesaid members.

853,407. MONUMENT. HANS H. HANSEN, Pittsburg, Kans. Filed Feb. 15, 1907. Serial No. 357,531.

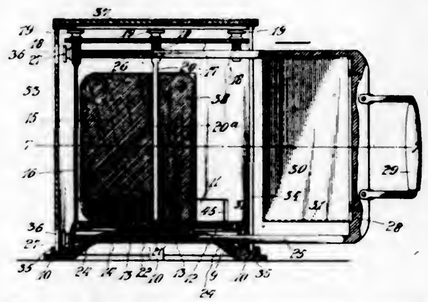


Claim.—1. The combination, with a tombstone or monument, of a box for holding a memento of the deceased secured to the said monument and provided with a downwardly and forwardly inclined back for the memento to rest against at an angle to the vertical face of the monument, and a pane of transparent material closing the front of the said box.

2. The combination, with a tombstone having a hole formed through it, of a box for holding a memento of the deceased secured in the said hole and projecting therefrom at the back of the tombstone, said box being provided with a downwardly and forwardly inclined back for the memento to rest against at an angle to the face of the tombstone, and a pane of transparent material closing the front of the said box.

3. The combination, with a tombstone or memorial stone having a hole formed through it, of a box secured in the said hole and projecting therefrom at the back of the said stone, a pane of transparent material closing the front of the said box, and means for supporting a memento of the deceased in an inclined position in the rear part of the said box and rearward of the plane of the back of the said stone.

853,408. CHEESE-CUTTER. THOMAS HILL, Joggin Mines, Nova Scotia, Canada. Filed July 20, 1905. Serial No. 270,439.



Claim.—1. In a cheese cutter, the combination comprising a base, a table revolubly mounted on the base, a cutting member adapted to be actuated parallel to the table, and a casing disposed over the base.

2. In a cheese cutter, the combination comprising a base provided with a vertical rim, a table revolubly mounted on the base, a cutting member adapted to be actuated horizontally and parallel to the table, and a casing disposed over the base.

3. In a cheese cutter, the combination comprising a base provided with a horizontal flange, a table revolubly mounted on the base, the outer edge of which is adapted to be supported by said horizontal flange, a cutting member adapted to be actuated parallel to the table, and a casing disposed over the base.

4. In a cheese cutter, the combination comprising a base, a table revolubly mounted on the base, a ball bearing intermediate of the base and the table, a cutting member adapted to be actuated parallel to the table, and a casing disposed over the base.

5. In a cheese cutter, the combination comprising a base provided with openings therein and standards thereon provided with guide openings, a horizontal member connecting the standards, a table revolubly mounted on the base, a cutting member adapted to be actuated in a direction parallel to the table and comprising parallel members disposed in the openings in the base and the standards, a cutting blade carried by the parallel members, a shelf cutting member adjacent the cutting blade, and a handle, and a casing disposed over the base.

6. In a cheese cutter, the combination comprising a base, a table revolubly mounted on the base and provided with a central opening therein, a rod disposed in said opening, a cutting member adapted to be actuated transversely of and parallel to the table, and a casing disposed over the base.

7. In a cheese cutter, the combination comprising a base, a table revolubly mounted on the base and provided with a central opening therein, a rod disposed in said opening and provided with a longitudinal slot therein and a guide opening adjacent its upper end adapted to receive a blade carrying member, a cutting member adapted to be actuated horizontally transversely of the table so that its inner edge is adapted to enter said slot in said rod, said cutting member being provided with a horizontally projecting member adapted to contact with the wall of the slot and to limit the movement of the cutting member, and a casing disposed over the base.

8. In a cheese cutter, the combination comprising a base, a table revolubly mounted on the base, a cutting member adapted to be actuated horizontally and transversely of the table, means for limiting in one direction the movement of said cutting member, and a casing disposed on the base.

9. In a cheese cutter, the combination comprising a base, a table revolubly mounted on the base, parallel arms above and below said table, means connecting said arms, a cutting member carried by said arms and connecting means, guides supported from the base for said arms, and

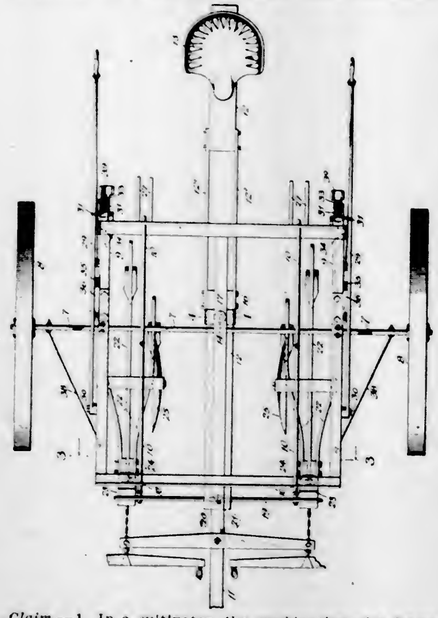
a thumb-nut secured on the end of each of said arms, and adapted to limit the movement thereof, and a casing disposed over the base.

10. In a cheese cutter, the combination comprising means for revolubly supporting a cake of cheese, parallel arms disposed respectively above and below the cake, an upright member connecting the outer ends of the parallel members, a cutting blade provided with a shelf cutting member secured to the upright member, means for guiding said parallel arms, and a casing disposed over said cake of cheese.

11. In a cheese cutter, the combination comprising a supporting base having a vertical rim thereon, a revoluble table disposed on the base, a reciprocatory cutting blade adapted to be actuated horizontally transversely of the supporting table, a scale disposed on said rim, and a casing having its lower edge disposed in a channel in said base.

12. In a cheese cutter, the combination comprising a base, a revoluble supporting table disposed on the base, parallel supporting members disposed above and below the revoluble table, a cutting blade carried by said parallel members whose length is one-half of the distance between said members, means for guiding said parallel members and a casing disposed over said revoluble supporting member and provided with openings adapted to permit the passage of said parallel members.

853,409. RIDING-CULTIVATOR. GEORGE D. HOUSTON, Rushville, Ill. Filed Dec. 31, 1906. Serial No. 350,136.



Claim.—1. In a cultivator, the combination of a frame, a pair of parallel arch-shaped hangers supported to swing on the frame, the ends of said hangers being arranged in operative relation to the gangs, and means connected to the hangers for swinging the hangers simultaneously to move the gangs relative to the frame and in parallel relation.

2. In a cultivator, the combination of a frame, a pair of gangs, a movable arch connected to said gangs, hangers supported to swing on the frame and connected to the arch, and means for shifting the arch to move the hangers and gangs relative to the frame and in parallel relation.

3. In a cultivator, the combination of a frame, a pair of gangs, a movable arch connected to said gangs, hangers supported to swing on the frame and connected to the arch, and a lever movable vertically and laterally to shift the arch and thereby move the hangers and gangs relative to the frame and in parallel relation.

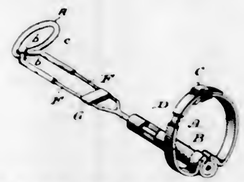
4. In a cultivator, the combination of a frame, a pair of gangs, an arch connected to said gangs, hangers supported to swing on the frame and connected to the arch, and a seat lever pivotally mounted to swing vertically and laterally for shifting the arch to thereby move the hangers and gangs in parallel relation.

5. In a cultivator, the combination of a frame, a pair of gangs, a movable arch connected at its ends to said gangs, arch-shaped hangers supported to swing on the frame, the forward ends of said hangers being connected to the ends of the arch and the rear ends of said hangers being arranged in operative relation to the rear ends of the gangs, and means for shifting the arch to move the hangers and gangs relative to the frame and in parallel relation.

6. In a cultivator, the combination of a frame, a pair of gangs, an arch connected at its ends to said gangs, parallel arch-shaped hangers supported to swing on the frame, said hangers being connected at their forward ends to the ends of the arch and having their rear ends arranged in operative relation to the rear part of the gangs, and a seat lever supported to swing vertically and laterally and connected to the arch, substantially as described.

7. In a cultivator, the combination of a frame, a pair of gangs, a movable arch connected to said gangs, a pair of parallel arch-shaped hangers supported to swing on the frame and connected at their forward ends to the ends of the arch, and guides on the gangs to receive the rear ends of the hangers for adjusting the hangers laterally.

853,410. SURGICAL APPLIANCE. ERNEST D. HUEBNER, Milwaukee, Wis. Filed Jan. 21, 1907. Serial No. 353,188.



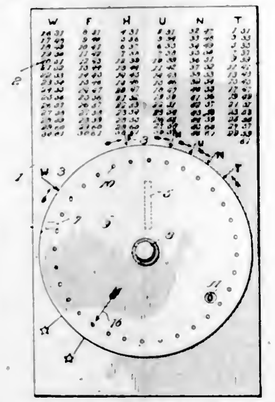
Claim.—1. A surgical appliance comprising an annular compressor adjustable to various diameters, a support extending from the compressor and having normally divergent branches provided with forward inwardly extending depending bends and which are upwardly extended, laterally curved and rearwardly inclined adjacent to these bends; a flexible elastic jacket adjustable on said branches of the support to therewith form an extensible forward arch, and a contracting slide for the aforesaid branches of said support.

2. A surgical appliance comprising an annular compressor adjustable to various diameters, a longitudinally extensible support in connection with the compressor, and having normally divergent branches provided with forward inwardly extending depending bends and which are upwardly extended, laterally curved and rearwardly inclined adjacent to these bends; a flexible elastic jacket adjustable on said branches of the support to therewith form an extensible forward arch, and a contracting slide for the aforesaid branches of said support.

3. A surgical appliance comprising a flexible split-band, means for holding the ends of the band adjustably lapped one upon the other, a support extending from said band and having normally divergent branches provided with forward inwardly extending depending bends and which are upwardly extended, laterally curved and rearwardly inclined adjacent to these bends; a flexible elastic jacket adjustable on said branches of the support to therewith form an extensible forward arch, and a contracting slide for the aforesaid branches of said support.

4. A surgical appliance comprising a flexible split-band, means for holding the ends of the band adjustably lapped one upon the other, a flexible elastic sleeve extending from said band, a fork having its shank in longitudinally adjustable engagement with the sleeve, the fork-branches being normally divergent and provided with forward inwardly extending depending bends, from which bends they are upwardly extended, laterally curved and rearwardly inclined; a flexible elastic jacket adjustable on said fork-branches to therewith form an extensible forward arch, and a contracting slide for the aforesaid fork-branches.

853,411. CALCULATOR. WILLIAM F. HUNT, Lincoln, Nebr. Filed Dec. 13, 1906. Serial No. 347,707.



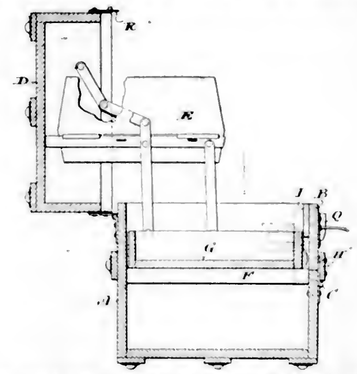
Claim.—1. In a mechanical calculator the combination with a fixed supporting member having a series of columns of figures arranged thereon and designated by indicating characters, a series of figures arranged adjacent said first named series, a perforation through said member, a slot therethrough and a series of tens numerals adjacent to said slot, of a movable member pivotally mounted on said first member, and provided with a slot through which the series of figures over which it is rotatably mounted may be read, and provided on its back with a series of figures which successively appear as it is moved through the opening on the back of said first named member, as set forth.

2. In a mechanical calculator, the combination with a fixed supporting member having a series of figures arranged upon its face and rear side, a movable member pivoted thereon and having a series of figures on its side adjacent to the fixed member on which it is mounted, openings through the fixed member through which the numbers on the rear side of the movable member are exposed, and slots in the rotating member through which the figures on the front of the fixed member are exposed, as set forth.

3. In a mechanical calculator, the combination with a fixed member having a series of figures thereon designated by indicating characters, a second series of figures arranged relatively adjacent to said indicating characters, a member movably mounted on said fixed member and having a series of perforations therein arranged to aline with the figure column indicating characters on the fixed member, a plurality of figures on the rear of said movable member, and openings in both of said members through which figures desired to be ascertained will appear according to the direction in which the movable member is moved and the extent of such movement.

853,412. TRUNK. WILLIAM HUTTON, Milwaukee, Wis. Filed May 14, 1906. Serial No. 316,596.

Claim.—1. A trunk-body having the lower portion of its front rigid with its ends and the remainder free of said ends, hinges connecting said portions of the body-front to provide for outer downward swing of the upper portion out of normal position, and a lower outer cleat on the drop-portion of said front partly clear of same but which covers the upper leaves of the hinges and normally laps the parting between both portions of the aforesaid front.



2. A trunk-body having the lower portion of its front rigid with its ends and the remainder free of said ends, hinges connecting said portions of the body-front to provide for outer downward swing of the upper portion out of normal position, a lower outer cleat on the drop-portion of said front partly clear of same but which covers the upper leaves of the hinges and normally laps the parting between both portions of the aforesaid front, and an inner upper cleat lengthwise of said drop portion of the body-front, the latter cleat serving normally as a brace for said ends.

3. A trunk-body having the lower portion of its front rigid with its ends and the remainder free of said ends, hinges connecting said portions of the body-front to provide for outer downward swing of the upper portion out of normal position, and right-angle end-lapping shields attached to said drop-portion of the body-front.

4. A trunk-body having the lower portion of its front rigid with its ends and the remainder free of said ends, hinges connecting said portions of the body-front to provide for outer downward swing of the upper portion out of normal position, a lower outer cleat on the drop-portion of said front partly clear of same but which covers the upper leaves of the hinges and normally laps the parting between both portions of the aforesaid front, and means in connection with said ends and drop-portion of the front to fasten the latter in normal position.

5. A trunk having a front upper body-portion hinged to the remainder thereof to swing downward out of normal position and provided with a lower outer cleat partly clear of same, this cleat serving to cover the upper leaves of the hinges of the drop-section and to normally lap the parting between said drop-section and remainder of the trunk-front, cleat-sections on the ends of the front drop-section matching the ends of the cleat aforesaid, and other cleat-sections on the ends of the trunk-body bevel-lapped by the former cleat-sections when said front drop-section is in normal position.

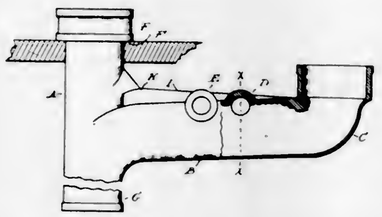
6. A trunk having a front upper body-portion hinged to the remainder thereof to swing downward out of normal position and provided with a lower outer cleat partly clear of same, this cleat serving to cover the upper leaves of the hinges of the drop-section and to normally lap the parting between said drop-section and remainder of the trunk front, bumper protected cleat-sections on the ends of the front drop-section matching the ends of the cleat aforesaid, and other cleat-sections on the ends of the trunk-body bevel-lapped by the former cleat-sections when said front drop-section is in normal position.

853,413. PIPE-FITTING. FISEL KIMCHE, Detroit, Mich. Filed Nov. 10, 1906. Serial No. 342,895.

Claim.—1. A pipe fitting comprising a vertical pipe section, an integral laterally extending pipe arm terminating

in an upturned elbow, and one or more connections to said arm intermediate said elbow and the vertical section, said arm having a vent channel therein communicating with said connections.

2. A pipe fitting comprising a vertical section, an integral laterally extending pipe arm terminating in an upturned elbow and oppositely laterally extending nipples or pipe connections on said arm intermediate said elbow and the vertical pipe section, said arm having a vent channel communicating with said nipples.



3. A pipe fitting comprising a vertical pipe section, an integral laterally extending pipe arm terminating in an upturned elbow, a laterally extending nipple or pipe connection on said arm, said arm having a vent channel opening from said nipple and a nipple or pipe connection for the connection of said channel with a vent pipe.

4. A pipe fitting comprising a vertical pipe section, oppositely laterally extending pipe arms integral with said vertical section, one of said arms terminating in an upturned elbow, one or more laterally extending nipples or pipe connections on one of said arms and a vent connection leading from said nipples, for the purpose described.

5. A pipe fitting comprising a vertical pipe section, an integral laterally extending pipe arm terminating in an upturned elbow, one or more pipe connections to said arm intermediate said elbow and the vertical section, a vent connection communicating with said pipe connections and a socket coupling formed at the upper end of the vertical section having a shoulder forming a support for the fitting.

6. A pipe fitting comprising a vertical pipe section, an integral laterally extending pipe arm terminating in an upturned elbow and inclined downwardly from said elbow to said vertical section, the upper position of said arm being provided with a channeled portion forming a vent inclined upwardly from the elbow to the vertical section.

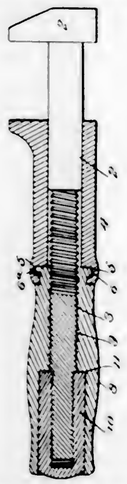
7. A pipe fitting comprising a vertical pipe section, an integral laterally extending pipe arm terminating in an upturned elbow, said arm being inclined downwardly from said elbow to said vertical section, a channeled extension of said arm forming a vent inclined upwardly from said elbow to said vertical section, and a connection extending laterally from said arm intersecting the same in direct communication with said channel.

8. The combination with a vertical pipe, of a laterally-extending pipe connected therewith, and terminating in an up-turned elbow, a pipe connected with said laterally-extending portion intermediate said elbow and vertical pipe, and a channel forming a constant air communication between the last mentioned pipe and said vertical pipe, said channel being formed within the upper portion of said laterally-extending pipe.

9. The combination with a vertical pipe, of a laterally-extending pipe connected therewith, and terminating in an up-turned elbow, a channel within said laterally-extending pipe above the level of the elbow and communicating with said vertical pipe, and a nipple on said laterally-extending pipe forming a connection in constant communication with said air channel.

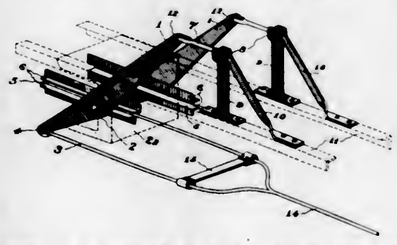
10. A pipe fitting comprising an elbow having a laterally-extending arm, a channel formed in and extending longitudinally of said lateral arm above the level of its communication with the vertical portion of the elbow, and a pipe connecting with said lateral arm in direct communication with said channel.

853,414. WRENCH. JOSEPH KNOWLES, Edmonds, Wash., assignor of one-half to S. Fourtner, Edmonds, Wash. Filed Feb. 13, 1907. Serial No. 357,123.



Claim.—A wrench, comprising a stationary jaw, a shank secured to said jaw and provided with a threaded portion, a movable jaw slidable upon said shank and provided at its handle end with an interior annular groove, a hollow threaded handle adapted to work on the threaded portion of said shank and provided at one end with a tubular extension, said extension formed with a segmental lip and an opposite longitudinally beveled edge, the lip being adapted to enter the groove with the handle at an angle to the movable jaw and then secured in said groove by rocking the handle so as to slide the beveled portion of said extension into the movable jaw, the said shank extending through the movable jaw and handle, whereby to hold said parts in longitudinal alinement and prevent their disconnection, and means for limiting the movement of the handle and movable jaw on the shank.

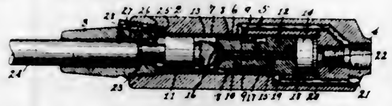
853,415. HAY-BALING DEVICE. MARVIN MEAD, Pueblo, Colo. Filed Apr. 24, 1906. Serial No. 313,366.



Claim.—1. In combination, a bale chamber having slots in its sides, guide plates arranged adjacent the slots, a plunger within the chamber, trunnions on the plunger extending through the slots between the guides, levers mounted on the trunnions of the plunger, links pivoted to the upper ends of the levers, said links being carried by the chamber, and pull rods connected to the opposite ends of the levers.

2. In combination, a bale chamber having slots in its sides, guide plates arranged adjacent the slots, a plunger within the chamber, trunnions on the plunger extending through the slots between the guides, levers mounted on the trunnions of the plunger, links pivoted to the upper ends of the levers, said links being carried by the chamber, pull rods connected to the opposite ends of the lever, and a spreader engaging the pull rods.

853,416. PNEUMATIC TOOL. CHARLES W. MEADOWCROFT, Sr., Philadelphia, Pa. Filed Dec. 26, 1906. Serial No. 349,421.



Claim.—1. A device of the class herein described comprising a main cylinder, a subsidiary cylinder therein and forming circumferentially therewith a power-medium distribution-chamber, said main cylinder having a supply-passage communicating with said distribution-chamber, and primary and secondary exhaust ports, primary and secondary inlet-ports, whereby communication is established between said distribution-chamber and the interior of said main cylinder, and a compound, striking-piston, the latter reciprocating within said main cylinder, and controlling the inlet-ports alternately, the exhaust ports alternately, and the inlet-ports inversely to the exhaust ports, substantially as herein specified.

2. A device of the class herein described comprising a main cylinder; a subsidiary cylinder therein and forming circumferentially therewith a distribution-chamber, said main cylinder having a supply-passage communicating with said distribution-chamber; a striking-piston, the same reciprocating within the main cylinder and having a medial valve-shoulder, working within said subsidiary cylinder, and working-heads at opposite sides of said valve-shoulder, said heads operating respectively within the bore of the main cylinder and forming expansion chambers, one at the rear of each of said heads, said chambers being at all times in communication each with the other; an inlet-port whereby communication is established between said distribution-chamber and said communicating expansion chambers, said inlet-port being controlled by said valve-shoulder; and an exhaust port, whereby said communicating expansion chambers are exhausted, said exhaust port being controlled by one of the heads of said piston, alternately with the control of said inlet-port by said valve-shoulder, substantially as herein specified.

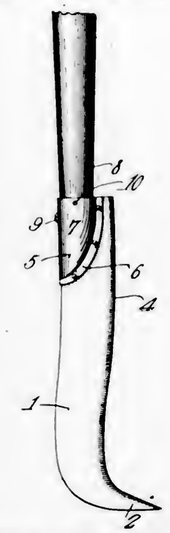
3. A device of the class herein described comprising a main cylinder; a subsidiary cylinder therein and forming circumferentially therewith a distribution-chamber, said main cylinder having a supply-passage communicating with said distribution-chamber; a striking-piston, the same having a medial valve-shoulder, working within said subsidiary cylinder, and a head, the latter working within the bore of the main cylinder and forming at the front face thereof a secondary expansion chamber; an inlet-port, whereby communication between said distribution-chamber and said secondary expansion chamber is established, said inlet-port being controlled by said valve-shoulder; and an exhaust port, whereby said secondary expansion chamber is exhausted, said exhaust port being controlled by said piston-head alternately with the control of said inlet-port by said valve-shoulder, substantially as herein specified.

4. A device of the class herein described comprising a main cylinder; a segmental, subsidiary cylinder therein and forming circumferentially therewith a distribution-chamber, said main cylinder being provided with a supply-passage communicating with said distribution-chamber, and provided with one or more inlet-ports, whereby communication is established between said distribution-chamber and the interior of said main cylinder, the latter being provided with suitable exhaust ports; and a compound, striking-piston, the latter reciprocating within said main cylinder and said subsidiary cylinder, and being self-acting in controlling said inlet-ports, substantially as herein specified.

5. A device of the class herein described comprising a main cylinder; a subsidiary cylinder therein, said subsidiary cylinder being cut away circumferentially to form with the adjacent interior wall of said main cylinder, a power-medium distribution chamber, and being provided with primary and secondary inlet-ports whereby communication is established between said distribution chamber and the interior of said main cylinder, the latter being provided with a power-medium passage communicating with said distribution chamber; and a compound striking-piston, the latter reciprocating within said main cylinder and the subsidiary cylinder, and being self-acting in controlling said primary and said secondary inlet-ports, substantially as herein specified.

6. A device of the class herein described comprising a main cylinder having its bore threaded at the forward end thereof; a nose-piece, threaded and engaging the threads in the bore of said cylinder, the latter being provided with an opening intersecting the plane of the threads of said nose-piece; a key, inserted in said opening and firmly engaging the threaded portion of said nose-piece; and an elastic connection, the same engaging said key and said nose-piece and thereby preventing reverse action of the latter on its threads, substantially as herein specified.

853,417. BRIER-HOOK. MEDERIC C. MOLLERE, Larose, La., assignor of one-half to Francis Ducos, Larose, La. Filed Mar. 8, 1907. Serial No. 361,388.



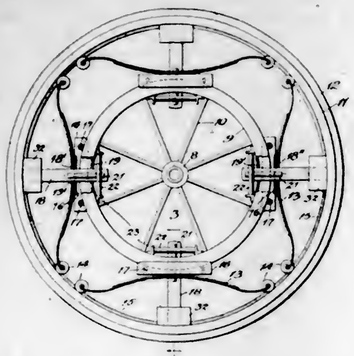
Claim.—A brier-hook comprising a blade having a cutting edge extending along its entire length and being cut-away at the back of its butt end, a socket formed from sheet metal and having edge flanges which are attached to the opposite sides of the blade at the cut-away portion thereof, said socket lying over said cut-away portion and forming a handle-end receptacle.

853,418. SPRING-WHEEL. HENRY NEUBERT, Chicago, Ill. Filed Feb. 4, 1907. Serial No. 355,631.

Claim.—1. A spring wheel comprising a rim having a longitudinal rib on its inner side, a central structure, a plurality of semi-elliptical springs located between the rim and central structure, and rollers on the ends of said springs, said rollers being grooved to fit said rib.

2. A spring wheel comprising a central structure including a hub and a felly, the latter having elongated longitu-

dinal slots therein, a rim, a plurality of semi-elliptical springs located between the felly and rim and provided with slots, and guide bars secured to the rim and extending radially to the wheel through said slots in the springs and felly.



3. A spring wheel comprising a central structure including a hub and a slotted felly, a rim, a plurality of semi-elliptical springs located between the felly and rim and provided with slots, and radial guide bars secured at their outer ends to the rim and extending through the slots in the springs and felly, the slots in the felly being elongated to permit lateral movement of the felly on the guide bars and the slots in the springs being made to permit free movement of the springs longitudinally on the guide bars.

4. A spring wheel comprising a central structure including a hub and a slotted felly, a rim, a plurality of springs between the felly and rim having slots, rollers on the felly at the side edges of the slots, and radial guide bars secured at their outer ends to the rim and extending through the slots in the springs and felly and between said rollers.

5. A spring wheel comprising a central structure including a hub and a slotted felly, a rim, a plurality of springs between the felly and rim and having slots, radial guide bars secured at their outer ends to the rim and extending through the slots in the springs and felly, and longitudinal rollers carried by the guide bars to operate in said slots.

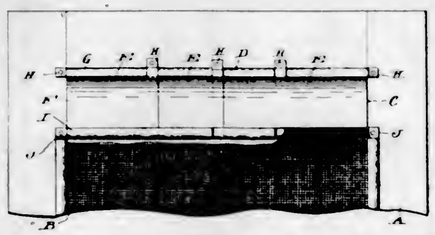
6. A spring wheel comprising a central structure including a hub and a slotted felly, a rim, a plurality of springs between the felly and rim and having slots, rollers on the felly at the side edges of the slots, radial guide bars secured at their outer ends to the rim and extending through the slots in the springs and felly and between said rollers, and a longitudinal roller carried by each guide bar in said slots.

7. A spring wheel comprising a central structure including a hub and a slotted felly, a rim, a plurality of slotted semi-elliptical springs located between the felly and rim, radial guide bars secured to the rim and extending through the slots in the springs and felly, and a shoe interposed between the felly and each spring.

8. A spring wheel comprising a central structure including a hub and a slotted felly, a rim, a plurality of slotted semi-elliptical springs located between the felly and rim, radial guide bars secured to the rim and extending through the slots in the springs and felly, a shoe interposed between the felly and each spring, and rollers carried by said shoe and operating against the felly.

9. A spring wheel comprising a central structure including a hub and a slotted felly, a rim, a plurality of slotted semi-elliptical springs located between the felly and rim, rollers on the felly at the side edges of the slots therein, slotted shoes interposed between the springs and the felly, rollers carried by said shoes and operating against the felly, and radial guide bars secured at their outer ends to the rim and extending through the slots in the springs, shoes and felly and between said rollers.

853,419. FLY-EXIT FOR WINDOW AND DOOR SCREENS. WILLIAM H. PHILLIPS and ORA G. WILLIAMS, Sacramento, Cal. Filed July 27, 1906. Serial No. 328,113.



Claim.—1. In combination with a frame, and a screen fabric secured thereto with an opening between its top edge and the top rail of the frame, a plurality of plates secured in said opening having their edges bent back on themselves to form slideways, a part of said bent back portion on the plates cut away to fit the slideway on an adjacent plate, the central longitudinal portion of the plates bent inwardly leaving the upper and lower edges flat, angular ears projecting from the upper edge of the plates to space them away from the top rail of the frame, and ears projecting from the lower edges of the end plates to secure them to the side rails of the frame, substantially as shown and described.

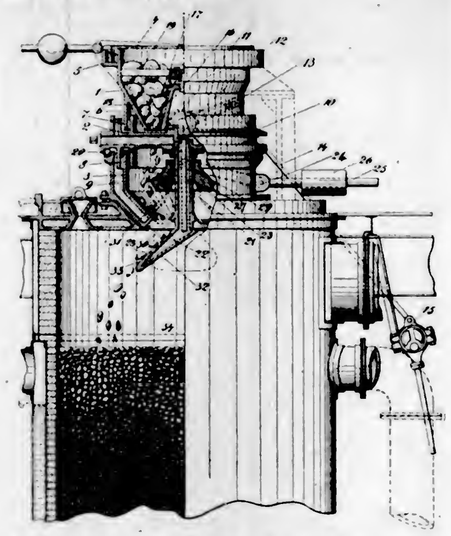
2. In combination with a frame, and a screen fabric secured thereto with an opening between its top edge and the top rail of the frame, a plurality of plates secured in said opening having their edges bent on themselves to form slideways, a part of said bent back portion on the plates cut away to fit the slideway on an adjacent plate, the central longitudinal portion of the plates bent inwardly leaving the upper and lower edges flat, angular ears projecting from the upper edge of the plates to space them away from the top rail of the frame, ears projecting from the lower edges of the end plates to secure them to the side rails of the frame, and a strip of fabric secured over said plates and forming a chamber therewith, substantially as shown and described.

3. In combination with a frame, and a screen fabric secured thereto with an opening between its top edge and the top rail of the frame, a plurality of plates secured in said opening having their central longitudinal portions bent inwardly leaving their upper and lower edges flat, one of said plates having its flat surfaces bent back on themselves for its entire length to form slideways, the others of said plates having a portion of the upper and lower flat surfaces bent back on themselves to form slideways and the other part cut away to fit in the slideways in the adjacent plate, angular ears extending from the upper edges of the plates to space them away from the top rail of the frame, and ears extending from the lower edges of the end plates to secure them to the side rails of the frame, substantially as shown and described.

853,420. DEVICE FOR CHARGING FURNACES, GAS-GENERATORS, &c. HUGO REHMANN, Mülheim-on-the-Ruhr, Germany. Filed Aug. 24, 1906. Serial No. 331,943.

Claim.—1. In a device for charging furnaces, gas generators and the like, the combination of a hopper with a closable top, means for crushing the coal in this hopper, a device for periodically closing the lower part of the hopper, and a device for distributing the coal at the outlet, substantially as described and for the purpose specified.

2. In a device for charging furnaces, gas generators and the like the combination of a hopper divided into three parts, and closable at the top, projections on the surface of the upper fixed part of the hopper, a crusher fixed on the rotatable middle part of the said hopper, projections on the surface of the crusher, means for moving the middle part of the hopper, means for periodically closing the lower fixed part of the hopper, and means for distributing the crushed coal at the outlet, substantially as described, and for the purpose specified.



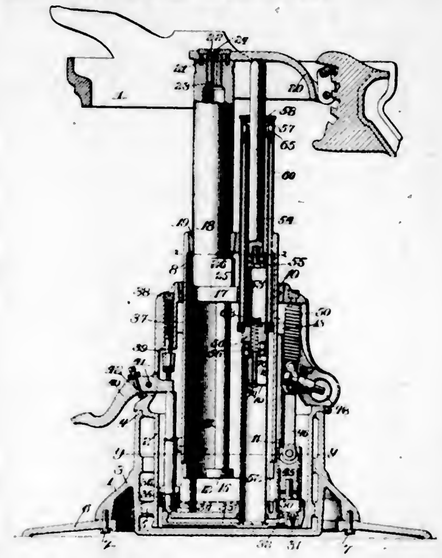
3. In a device for charging furnaces, gas generators, and the like, the combination of a hopper divided into three parts with a closable top, projections on the inner surface of the upper fixed part of the hopper, means for moving the rotatable middle part of the hopper, a rotatable crusher of eccentric form in the upper part of the hopper, projections on the surface of the crusher, means for periodically closing the lower part of the hopper, and means for distributing the crushed coal at the outlet, substantially as described, and for the purpose specified.

4. In a device for charging furnaces, gas generators and the like, the combination of a hopper divided into three parts, and closable at the top, a device for crushing the coal in this hopper, an axle fixed to the rotatable middle part of the hopper, a distributing device on the lower end of this axle, a closing device in the lower part of the hopper moving vertically on the said axle, means for moving the closing device, and means for attaining a gas-tight seal between the closing device in the lowered position, the outlet of the hopper, and the said axle, substantially as described, and for the purpose specified.

5. In a device for charging furnaces, gas generators and the like, the combination of a hopper divided into three parts and closable at the top, a device for crushing the coal in the hopper, a device for periodically closing the lower part of the hopper, an axle on the rotatable middle part of the hopper for guiding the said closing device and for bearing and moving the distributing device, means for moving the middle part of the hopper with the crushing mechanism and the distributing device, a closing surface at the lower end of the bore of the closing device, a distributer in the form of a cone truncated obliquely to its vertical axis fixed on the lower end of the said rotatable axle, and slanting surfaces of different lengths on said distributer having the same angle of inclination, substantially as described, and for the purpose specified.

853,421. DENTAL CHAIR. FRANK RITTER, Rochester, N. Y. Filed Sept. 16, 1901. Serial No. 75,569.

Claim.—1. The combination with a base, a telescoping standard therefor embodying the lower, intermediate and upper standard sections revolubly mounted on the base and a chair mounted on the upper section, of a telescoping lifting mechanism embodying a lower stationary cylinder, an intermediate movable cylinder and a movable plunger all located within the intermediate standard section and arranged exteriorly of the upper section and a tubular guard connected to the upper end of the intermediate cylinder and extending over the lower cylinder in the intermediate section when the chair is raised.



2. The combination with a base, a standard therefor embodying a plurality of telescoping sections and a chair connected to the upper one of said sections, of a hydraulic lifting mechanism, arranged exteriorly of the section connected to the chair, embodying the stationary and intermediate and upper movable sections, collapsing within the other standard sections, a tubular sleeve attached to the intermediate lifting section and extending over the latter and the lower lifting sections.

3. The combination with a chair and an extensible standard therefor, of a hydraulic lifting mechanism for the chair embodying a cylinder and a piston head operating therein, a fluid escape passage leading from the cylinder beneath the piston head, and a valve for controlling the flow of liquid through the escape passage closed by the descent of said head, and a contracted fluid escape passage or by-pass connecting the cylinder, between the piston head and valve, with the fluid escape passage.

4. The combination with extensible telescopic standard sections and a chair mounted on one of them, of a hydraulic lifting mechanism arranged exteriorly of the section connected to the chair, embodying a stationary cylinder, an intermediate movable cylinder fitting the former and an upper movable piston in the intermediate cylinder engaging the chair, a tubular cover or casing connected to the upper end of the intermediate cylinder and extending over the lower stationary cylinder into its inclosing portion of the standard and fluid escape passages between the cover and its cylinder.

5. The combination with telescoping standard sections and a chair mounted on one of them, of a hydraulic lifting mechanism arranged exterior of the section on which the chair is mounted, embodying a lower stationary cylinder, an intermediate movable cylinder and an upper movable piston engaging the chair, a tubular cover connected to the upper end of the intermediate cylinder and extending into the other sections of the standard and surrounding the lower stationary cylinder and a stop coöperating with the cover to limit the upward movement of the intermediate cylinder.

6. The combination with the chair and an extensible

standard therefor, of a hydraulic lifting mechanism embodying a lower stationary cylinder, an intermediate movable cylinder and a movable piston operating in the cylinder and coöperating with the chair, the cap piece connected to the end of the intermediate cylinder having apertures connecting with the interior thereof, the outer tubular cover carried on the movable cylinder and extending over the lower cylinder and a wiper arranged in the cap above the apertures.

7. The combination with a chair, and an extensible standard, therefor, of a hydraulic lifting mechanism embodying the lower stationary cylinder, the intermediate movable cylinder and the inner piston operating upon the chair, the tubular cover connected to the upper portion of the intermediate cylinder and extending over the lower cylinder into one of the sections of the standard and having the projection at the bottom and the rod with which said projection coöperates to limit the upward movement of the intermediate cylinder.

8. The combination with a chair and an extensible standard therefor, of hydraulic lifting and lowering mechanism embodying a cylinder, a piston movable therein and operating upon the chair, a fluid discharge passage from the cylinder, a valve mounted on the piston adapted to close the fluid discharge passage and a by pass leading from the cylinder between the valve and piston and connecting with the discharge passage.

9. The combination with a chair and an extensible standard therefor, of a hydraulic lifting and lowering mechanism embodying a cylinder, a piston movable therein, operating upon the chair, a fluid discharge passage from the cylinder, a valve having a passage connecting the cylinder with the discharge passage which is of gradually decreasing area and means for operating said valve relatively to the movement of the piston.

10. The combination with the chair and an extensible standard therefor, of a hydraulic raising and lowering mechanism embodying a cylinder, a piston movable therein and operating upon the chair, a fluid discharge passage from the cylinder, a valve carried by and movable relatively to the piston coöperating with and closing said passage and having an escape passage through it the area of said escape passage being controlled by the relative movements of the valve and piston.

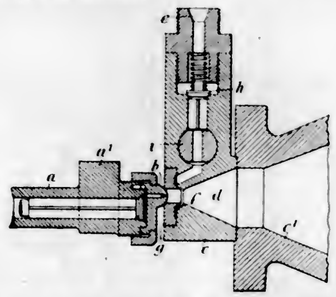
11. The combination with the chair, and an extensible standard therefor, of a hydraulic raising and lowering mechanism embodying a cylinder having a valve seat therein at its discharge end, a piston operating in the cylinder, the valve at the end of the piston coöperating with the seat, and provided with the hollow stem having an aperture therein.

12. The combination with a chair and an extensible standard therefor, of a hydraulic elevating and lowering mechanism for the chair embodying a cylinder having a valve seat at its end, the piston operating in the cylinder, the movable valve on the piston adapted to coöperate with the seat in the cylinder and provided with the tubular perforated stem.

853,422. INTERNAL-COMBUSTION ENGINE. DAVID ROBERTS, Grantham, England. Filed Aug. 28, 1905. Serial No. 276,155.

Claim.—1. In an internal combustion engine, the combination with a combustion chamber having an opening therein, of a box having a flaring passage therein, said passage in said box having one end directly in line with and in communication with the opening in said combustion chamber, an oil jet directly in line with and in communication with the other end of said passage, said box being provided with a port opening into said flaring passage for admitting compressed air and directing the same across the path of the oil ejected from said jet, substantially as described.

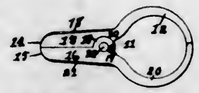
2. In an internal combustion engine, the combination with a combustion chamber having an opening therein, of a box having a flaring passage therein, said passage in said box having one end directly in line with and in communication with the opening in said combustion chamber, an oil jet directly in line with and in communication with the other end of said passage, said box being provided with an annular slit around said flaring passage adjacent to said oil jet and means for forcing compressed air through said slit into said passage whereby the compressed air is directed across the path of the oil ejected from said jet, substantially as described.



3. In an internal combustion engine, the combination with a combustion chamber having an opening therein, of a box having a flaring passage therein, said passage in said box having one end directly in line with and in communication with the opening in said combustion chamber, an oil jet directly in line with and in communication with the other end of said passage, said box being provided with an annular slit around said flaring passage adjacent to said oil jet, the walls of said slit being inclined and means for forcing compressed air through said slit into said flaring passage, whereby the compressed air is directed across the path of the oil ejected from said jet and toward the combustion chamber, substantially as described.

4. In an internal combustion engine, the combination with a combustion chamber having an opening therein, of a box having a flaring passage therein, said passage in said box having one end directly in line with and in communication with the opening in said combustion chamber, an oil jet directly in line with and in communication with the other end of said passage, said box being provided with a compressed air passage communicating with the interior of said flaring passage and adapted to direct the compressed air across the path of the oil ejected from said oil jet, a valve seated in said compressed air passage, said valve normally closing said passage and means for automatically opening said valve, substantially as described.

853,423. PIPE-CLEANER. LEWIS W. ROE and LEWIS J. BONAR, Mansfield, Ohio. Filed Mar. 16, 1907. Serial No. 362,648.

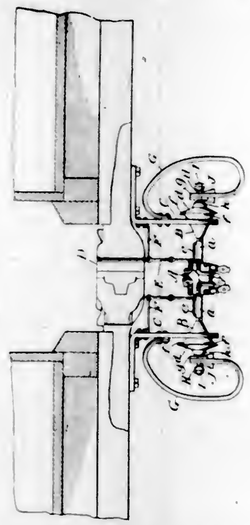


Claim.—A pipe cleaner comprising in combination two portions movably secured to each other in such a manner as to cause the jaws to move outwardly when pressure is applied to the handles; a raised portion, provided with a cutting edge, mounted on each jaw; jaws curved at their outer extremities to conform to the curve in the base of the pipe bowl; handles overlapping each other and designed to form a ring, all arranged and combined substantially as shown and described.

853,424. AUTOMATIC AIR-BRAKE COUPLING FOR RAILWAY-CARS. FRANK H. RUTHERFORD, Chicago, Ill. Filed Sept. 17, 1906. Serial No. 334,903.

Claim.—1. The combination with a car-coupler of an automatic air-brake coupler comprising a longitudinally yielding body supported by and movable with said car-coupler, and a spring of flat material engaging and normally keeping the same at the limit of its forward movement.

2. The combination with a car-coupler of an automatic air-brake coupler comprising a longitudinally yielding body supported by and movable with said car-coupler, and a spring of flat material engaging the rear end of said air-brake coupler and normally keeping the same at the limit of its forward movement.



3. The combination with a car-coupler of an automatic air-brake coupler comprising a longitudinally yielding body supported by and movable with said car-coupler, and a spring of flat material one end of which is permanently secured and the other end of which engages and normally keeps said air-brake coupler at the limit of its forward movement.

4. The combination with a car-coupler of an automatic air-brake coupler comprising a longitudinally yielding body supported by and movable with said car-coupler, and a spring of flat material one end of which is permanently secured above the air-brake coupler and the other end of which engages and normally keeps said coupler at the limit of its forward movement.

5. An automatic coupler for the train-pipes of cars comprising a longitudinally yielding body, and a substantially C-shaped spring, one end of which is permanently secured independent of said coupler and the other end of which engages and normally keeps said coupler at the limit of its forward movement.

6. An automatic coupler for train-pipes of cars comprising a longitudinally yielding body, and having a guide-bar extending from its rear end, and a spring of flat material one end of which is permanently secured independently of said coupler, and the other end of which presses forward against said coupler and is provided with an opening through which said guide-bar extends.

7. An automatic coupler for the train-pipes of cars comprising a longitudinally yielding body having a guide-bar extending rearwardly therefrom, and a substantially C-shaped spring one end of which is permanently secured independent of said coupler, and the other end of which engages and normally keeps said coupler at the limit of its forward movement, and is provided with an opening through which said guide-bar extends.

8. An automatic coupler for the train-pipes of cars comprising a longitudinally yielding body, and having a guide-bar extending from its rear end which is provided with a fin, and a spring of flat material one end of which is permanently secured independently of said coupler, and the other end of which presses forward against said coupler and is provided with an opening through which said guide-bar and its fin extends.

9. An automatic coupler for the train-pipes of cars comprising a longitudinally yielding body having a guide-bar extending rearwardly therefrom which is provided with a fin, and a substantially C-shaped spring one end of which is permanently secured independent of said coupler, and the other end of which engages and normally keeps said coupler at the limit of its forward movement, and is provided with an opening through which said guide-bar and its fin extends.

10. An automatic coupler for the train-pipes of cars comprising a longitudinally yielding body, and a flat spring adapted to guide the movements and normally keep said coupler at the limit of its forward movement.

11. An automatic coupler for train-pipes of cars comprising a longitudinally yielding body, and a flat spring adapted to guide the longitudinal movement of said coupler, limit its rotative movement and normally keep the same at the limit of its forward movement.

12. An automatic coupler for train-pipes for cars comprising a longitudinally yielding body, and a flat spring having one end permanently secured independently of said coupler and adapted to guide the longitudinal movement of said coupler, limit its rotative movement, and normally keep the same at the limit of its forward movement.

13. The combination with a car, a hanger depending from the end thereof having a suitable opening therein, and a bracket projecting from said hanger, of an automatic coupler extending through said opening, means suspended from said bracket for independently supporting the forward end of said coupler, and a spring engaging the rear of said coupler and normally keeping the same at the limit of its forward movement.

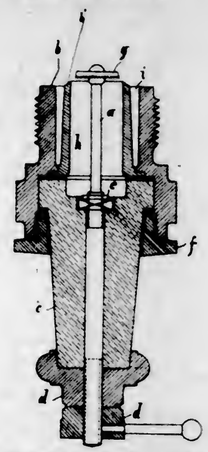
14. The combination with a car, a hanger depending from the end thereof having a suitable opening therein, and a bracket projecting from said hanger, of an automatic coupler extending through said opening, means suspended from said bracket for independently supporting the forward end of said coupler, and a substantially C-shaped spring the upper end of which is permanently secured independently of said coupler and engages the rear end of said coupler and normally keeps the same at the limit of its forward movement.

15. The combination with a car, a hanger depending from the free end thereof having a suitable opening therein, and a bracket projecting from said hanger, of an automatic coupler extending through said opening, means suspended from said bracket for independently supporting the forward end of said coupler, and a substantially C-shaped spring the upper end of which is permanently secured independently of said coupler and engages the rear end of said coupler, guides its longitudinal movement, and normally keeps the same at the limit of its forward movement.

16. The combination with a car, a hanger depending from the end thereof having a suitable opening therein, and a bracket projecting from said hanger, of an automatic coupler extending through said opening, means suspended from said bracket for independently supporting the forward end of said coupler, and a substantially C-shaped spring the upper end of which is permanently secured independently of said coupler and engages the rear end of said coupler, limits the rotative movement thereof, and normally keeps the same at the limit of its forward movement.

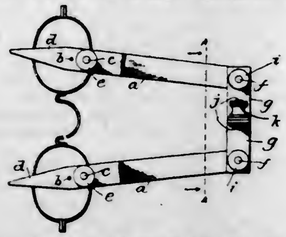
17. The combination with a car and a hanger depending therefrom having an opening in its lower end, of an automatic coupler consisting of an engaging-head, a rear conical-shaped portion or body which passes through said opening, and a narrower central portion or waist connecting the two, and a flat spring adapted to engage the rear end of and normally keep said coupler at the limit of its forward movement.

853,425. ELECTRIC IGNITER FOR EXPLOSION-MOTORS. WILHELM SANDER, Zurich, Switzerland. Filed July 2, 1904. Serial No. 215,072.



Claim.—An electric-igniter for explosion-motors comprising a metallic-plug, a concentric-annular-electrode surrounded by said plug and separated therefrom by a concentric-annular-space, a central-electrode disposed within said concentric-annular-electrode and out of contact therewith, and a terminal-disk for said central-electrode.

853,426. HOLDING-PLIERS. OLAF N. STEENSTRUP, Mabel, Minn. Filed July 17, 1906. Serial No. 326,553.



Claim.—1. The combination with a pair of coöperating holding fingers and clamping devices mounted thereon, of a pair of L-shaped brackets in the base of each of which is pivotally mounted the shank end of one of said fingers and the legs of which are pivotally secured directly together.

2. The combination with a pair of coöperating holding fingers and clamping devices mounted thereon, of a pair of L-shaped brackets in the base of each of which is pivotally mounted the shank end of one of said fingers and the leg of one of which is formed with a slot; and a securing device mounted in said slot for holding said legs in adjusted position; said legs being capable of lengthwise adjustment and of being rotated about said device to raise and lower the working ends of said fingers with respect to each other.

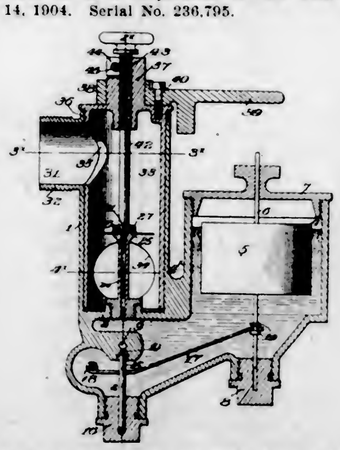
853,427. COMBINED FUNNEL AND MEASURING-RECEPTACLE. ROBERT C. STOMSAND, Chicago, Ill. Filed Feb. 20, 1906. Serial No. 302,127.

Claim.—A combined measuring cup and funnel comprising a generally-cylindric cup-like receptacle provided with a downwardly-converging bottom having at its middle portion an outlet formed through it, a stopper or plug-valve fitting said outlet, an operating rod rigidly connected with said stopper, bent to extend thence to, and arranged to slide and bear against, the vertical side wall of the cup intermediate the depth of the latter and extended thence up to the top of the cup, a thumb-lever pivoted between its ends to the upper margin of the cup and having one end pivotally connected to the end of said operating rod, a handle attached to the side of said receptacle, a spring interposed between the upper part of said handle and the



thumb-piece of said thumb-lever, a funnel connected to the bottom of the cup and surrounding said outlet, a supporting rim or flange formed in continuation of the side-body of the cup and extending below the lower end of the funnel, and a peephole formed through said flange and exposing the delivery end of the funnel to view.

853,428. CARBURETER. HENRY L. F. TREBERT, Rochester, N. Y., assignor to Brownell-Trebert Company, Rochester, N. Y., a Corporation of New York. Filed Dec. 14, 1904. Serial No. 236,795.



Claim.—1. In a carbureter, the combination with a casing having air inlet and outlet passages and a hydro-carbon inlet having a valve seat, of an oscillatory member for adjusting the air inlet passage, a valve head carried thereon and coöperating with the valve seat and means for causing a longitudinal movement of the member relatively to the casing during its oscillatory movement to control the discharge area of the hydro-carbon passage.

2. In a carbureter, the combination with a casing comprising a mixing chamber and a hydro-carbon reservoir located beneath and at one side of the chamber and having a passage leading into the reservoir beneath the chamber and a valve seat in said passage, of an arm located at the bottom of the reservoir and pivoted to the casing beneath the chamber, a float connected to the one end of the arm, and a valve head supported on the latter and coöperating with the seat in the inlet passage.

3. In a carbureter, the combination with a casing comprising a mixing chamber and a hydro-carbon reservoir located beneath and at one side of the chamber and having an inwardly extending projection arranged beneath the chamber provided with a transversely extending hydro-carbon inlet, a valve seat in said passage and means at the ends of the passage for attaching a supply pipe, of an arm located at the bottom of the reservoir and pivoted to the casing beneath the chamber, a float connected to the one end of the arm, and a valve head supported on the latter and coöperating with the seat in the inlet passage.

4. In a carbureter, the combination with a casing comprising a mixing chamber and a hydro-carbon reservoir located beneath and at one side of the chamber and having a passage leading into the reservoir beneath the chamber and a valve seat in said passage, of an arm at the bottom of the reservoir pivoted at one end beneath the chamber, a float connected to the other end of the arm, a valve stem carried on the arm and coöperating with the inlet passage seat and a removable plug at the bottom of the reservoir forming a guide for the valve stem.

5. In a carbureter, the combination with a casing having air inlet and outlet passages and a hydro-carbon inlet, having a valve seat, of a rotary longitudinally movable member for adjusting the air passages and a valve head carried on said member and operated by the longitudinal movement thereof relatively to said valve seat.

6. In a carbureter, the combination with a casing having air inlet and outlet passages and a hydro-carbon inlet, having a valve seat, of a sleeve threaded in the casing and revoluble therein to adjust the air passages, and a valve head on the sleeve coöperating with said seat and carried relatively thereto by the longitudinal movement of the sleeve.

7. In a carbureter, the combination with a casing having air inlet and outlet passages and a hydro-carbon inlet extending into the casing and having a valve-seat, of a rotary sleeve in the casing, and a valve head adjustable on the sleeve relatively to the valve seat, means for causing a relative longitudinal movement of the sleeve during its rotary movement.

853,429. METHOD OF MAKING A SOLUTION FOR HARD-RUBBER COATING. EDMUND F. UPTON and MARTIN E. FISHER, Mineral City, Ohio, assignors of one-fourth to Daniel O. Vankirk and one-fourth to Eben Vankirk, Mineral City, Ohio. Filed Oct. 10, 1906. Serial No. 338,230.

Claim.—1. The process of making a solution for hard-rubber coating consisting in masticating two parts india rubber in a steam or hot-water bath, then hot-milling therewith one part sulfur flour, two parts cotton-seed oil and one-third part raw linseed oil and then dissolving this substance in eight parts naphtha.

2. The process of making a solution for hard-rubber coating consisting in masticating india-rubber and milling therewith sulfur flour and cotton-seed and raw linseed oils and then dissolving this substance in a light petroleum.

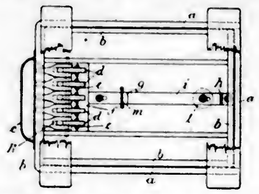
3. The process of making a solution for hard-rubber coating consisting in masticating india-rubber and milling therewith sulfur flour and a vegetable oil and then dissolving this substance in a light petroleum.

4. The process of making a solution for hard-rubber coating consisting in milling india-rubber with sulfur flour and cotton-seed and raw linseed oils and then dissolving this substance in light petroleum.

5. The process of making a solution for hard-rubber coating consisting in milling india-rubber with sulfur flour and vegetable oils and then dissolving this substance in light petroleum.

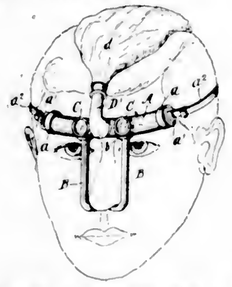
853,430. TILL. CARL WEISSE, Altenburg, Germany. Filed Jan. 24, 1907. Serial No. 353,894.

Claim.—A till, comprising in combination, keys (*d*) and adjustable pawls (*e*) in which the attaching plate for the pawls is provided with a slide bar, or the base of the drawer in connection with the attaching plate, or any other part of said drawer, or the whole drawer can be displaced upon the attempt of opening the drawer by any unauthorized person, thus locking the drawer and simul-



taneously operating a bell, substantially as described and shown and for the purpose set forth.

853,431. INHALER. ALBERT B. ALLEN, Chicago, Ill., assignor to Albert C. Clark, Chicago, Ill. Filed Oct. 12, 1903. Serial No. 176,657.



Claim.—1. A nasal inhaler comprising a flexible casing and a pair of rigid inhaling tubes having swiveling connection therewith and adapted to be inserted in the patient's nostrils.

2. A nasal inhaler comprising a flexible casing, and a pair of inhaling tubes which have at one end adjustable connections with the casing and whose other ends are adapted to be inserted in the patient's nostrils.

3. A nasal inhaler comprising a flexible casing and a pair of inhaling tubes, whose inner ends are swiveled to the casing.

4. A nasal inhaler comprising a casing, a pair of inhaling tubes swiveled thereto at their inner ends, and an exhalation valve arranged in the casing adjacent the inner ends of the tubes.

5. A nasal inhaler comprising a casing formed of flexible material, a pair of rigid inhaling tubes having swiveling connection therewith at their inner ends, and an exhalation valve arranged in the casing adjacent the inner ends of the tubes.

6. An anesthetic inhaler comprising a tubular receptacle shaped to rest on the forehead, a supply pipe opening thereinto an inwardly opening valve in the connection, inhaler pipes adjustably engaged in said receptacle and adapted to lie close on each side the nose and shaped at their end to extend into and fit the nares, means adapted to secure the device to the head and an outwardly opening valve in the receptacle.

7. A nasal inhaler comprising inhaler pipes adapted to extend into and fit the nares and extending inwardly along the nose, a valved receptacle supported on the forehead and to which said pipes are swivelly connected and with which they communicate, and a valved supply pipe connected to the receptacle and extending over the head.

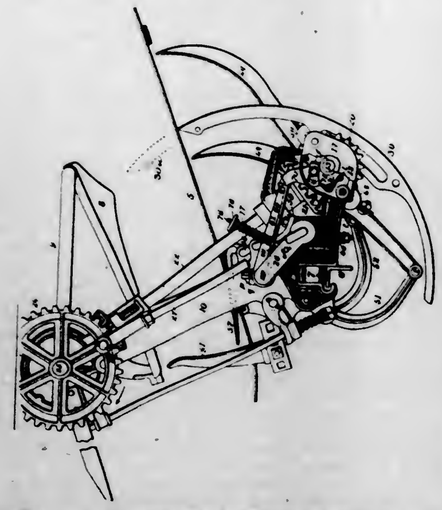
8. A nasal inhaler comprising a reservoir, rigid inhaler pipes connected thereto and adapted to lie on each side of the nose and bent to extend beneath and upwardly therein, a nozzle on each of said pipes adapted to loosely fit the nares and a resilient flange at the base of each affording a valve to close the nasal orifices during inspiration while permitting free expiration therefrom.

9. A nasal inhaler comprising a reservoir or receptacle, means adapted to secure the same upon the forehead, pipes flexibly connected in said receptacle and adapted to lie on each side of the nose and shaped to extend into the nares, nozzles on the pipes acting to exclude atmospheric air during inspiration, a source of inhalent supply connected in said receptacle, an inwardly opening valve in said connections, an outwardly opening valve in said receptacle adjacent the ends of the inhaler pipes whereby free expiration is permitted without dilution or contamination of the inhalent fluid.

10. A nasal inhaler comprising a relatively large pipe bent to fit across the forehead, straps secured thereon adapted to secure the same to the head, inhaler pipes flexibly connected in said pipe and extending downwardly on each side of and in close relation with the nose and beneath the wings thereof and into the nares, means thereon adapted to close the nares to the admission of atmospheric air, outwardly opening valves in said pipe adapted to permit free expiration, a supply pipe connected in said pipe, a valve opening therefrom to admit the inhalent fluid to the inhaler, and a gas bag supported on said supply pipe and positioned to be out of the way of an operator.

11. An inhaler comprising a closed receptacle of soft rubber shaped to fit the forehead, attaching bands thereon adapted to bind the same to the head, inhaler pipes flexibly connected in said receptacle and positioned to extend closely beneath and into the nares, means thereon preventing inspiration of atmospheric air, outwardly opening valves in said receptacle, a supply pipe extending over the head of the wearer and connected to a gas bag, a valve opening into said inhaler from said supply pipe and acting to prevent contamination of the inhalent during expiration, the connection between said receptacle and inhaler pipes being such as to afford relative freedom of movement for purposes of adjustment.

853,432. AUTOMATIC GRAIN-BINDER. JAMES A. BECKETT, Hoosick Falls, N. Y., assignor to Walter A. Wood Mowing and Reaping Machine Company, Hoosick Falls, New York, a Corporation of New York. Filed Feb. 25, 1907. Serial No. 359,173.



Claim.—1. In a machine of the class described, the combination with a driving shaft, of a packer shaft co-axially arranged with relation to said driving shaft, and means intermediate said shafts for coupling and uncoupling them, substantially as specified.

2. In a machine of the class described, the combination with a driving shaft, of a plurally cranked shaft co-axially arranged in relation to said driving shaft, packing devices operated by said cranks, and means connected with said shafts for coupling and uncoupling them, substantially as specified.

3. In a machine of the class described, the combination with a driving shaft, of a packer shaft, means for coupling and uncoupling said shafts, and means connected with and controlled by said packer shaft for gathering and compressing a bundle on the binding deck, substantially as specified.

4. In a machine of the class described, the combination with the binding mechanism, of a driving shaft and a packer shaft co-axially arranged in relation to each other, a clutch mechanism between said shafts consisting of a driving member on the driving shaft and a driven member on the packer shaft, and means controlled by the binding mechanism for putting said clutch members into and out of engagement, substantially as specified.

5. In a machine of the class described, the combination of a driving shaft and a packer shaft concentrically arranged in relation to each other, an intermediate clutch mechanism and means for operating said clutch to effect or dissolve a driving engagement between said shafts, substantially as specified.

6. In a machine of the class described, the combination of a driving shaft and a packer shaft, the end of one of which is hollow and carries and supports one end of the other as a bearing, clutch mechanism between said shafts, and means connected with said clutch for effecting or dissolving driving connection between its members, substantially as specified.

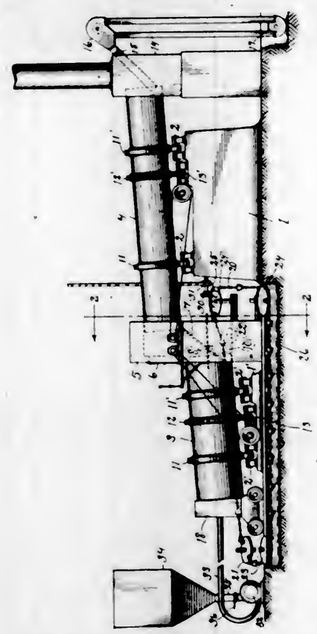
7. In a machine of the class described, the combination of a binding deck, a packer shaft, packer cranks connected with said shaft, packing arms actuated by said cranks and hinged to the frame by movable pivots, a driving shaft co-axially disposed in relation to said packer shaft, clutch mechanism for coupling and uncoupling said shafts, and means connected with said packer shaft for positively bringing said packing arms at rest in a predetermined position beneath the binding deck, substantially as specified.

8. In a machine of the character described, the combination with the binding deck, binding mechanism, driving mechanism, and packing mechanism, of arresting devices controlled by the binding mechanism for positively bringing the packing arms at rest in a predetermined position beneath the binding deck, whereby the packers are withheld from interference with the inflowing grain on the binder deck, substantially as specified.

9. In a machine of the class described, the combination of two co-axial shafts, an eccentric driving projection at the end of one of said shafts, a support and two dogs oppositely pivoted thereon on the end of the other of said shafts, a spring borne on said support adapted to swing one of said dogs, a link connecting said dogs, two contact faces on each of said dogs, one of which is adapted to be swung by the force of said spring into the path of said driving lug, a movable blocking abutment adapted to be moved into the path of rotation of the other of said contact faces of said dogs, engagement with which by either of said dogs will effect a turning thereof on its pivot and thereby break the clutch connection between said shafts, substantially as specified.

853,433. APPARATUS FOR SINTERING FINE ORE. JOHN G. BERGQUIST, Chicago, Ill., assignor to American Sintering Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 21, 1905. Renewed Oct. 19, 1906. Serial No. 339,701.

Claim.—1. In a sintering furnace apparatus, the combination of an upper tubular furnace body section movably supported to rotate upon its longitudinal axis and inclined from the horizontal, a lower furnace body section having its receiving end arranged in proximity to, but offset below, the delivery end of the upper section and also movably mounted to rotate about its longitudinal axis and inclined from the horizontal, an upright housing within the upper part of which the delivery end of the upper section extends and within the lower part of which the receiving end of the lower section extends, a removable closure in the wall of said housing opposite the delivery end of the upper section and through which access to the latter may be had, and an inclined movable chute board extending across the interior of said housing from a point below the delivery end of the upper section to the lower side of the receiving section, and an opening in said housing opposite the receiving end of the lower section, through which access to the latter may be had when the chute board is moved.



2. In a sintering furnace apparatus, the combination with a tubular furnace body section, movably supported to rotate upon its longitudinal axis, of a traveling scraper mechanism arranged to traverse the interior of the furnace in bearing with the inner surface thereof.

3. In an apparatus for treating minerals, the combination with a movable furnace body, the interior of which is subject to adhesion thereto of the material treated, of a traveling scraper mechanism arranged to traverse the interior of the furnace and moving at an angle to the direction of movement of the furnace body whereby the combined movement of said parts effects a progressive scraping of the furnace interior.

4. In an apparatus for treating minerals, the combination with a rotatable furnace body, the interior of which is subject to adhesion thereto of the material treated, of a traveling scraper mechanism arranged to traverse the interior of the furnace and moving at an angle to the direction of movement of the furnace body whereby the combined movement of said parts effects a progressive scraping of the furnace interior.

5. In an apparatus for treating minerals, the combination of a tubular rotatable furnace body, means for effecting the progressive travel therethrough of mineral to be treated, and a traveling scraper mechanism arranged to act upon the interior of said furnace and the scraper members of which move alternately into and out of the furnace, and means for actuating the same.

6. In an apparatus for treating minerals, the combination with a movable furnace body provided at opposite ends with openings, of an endless scraper mechanism arranged to travel through said furnace body as to one of its laps and to travel around the outside of the furnace as to its other lap, whereby it is continuously cooled as to its outer part and heated by passing through the furnace.

7. In an apparatus for treating minerals, the combination with a tubular rotatable furnace body, of an endless traveling scraper arranged to extend through said furnace body in bearing with the interior of the latter, and means for actuating the scraper mechanism and for rotating the furnace body.

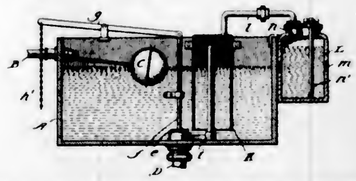
8. In an apparatus for treating minerals, the combination with a tubular internally circular furnace body mounted to rotate upon its longitudinal axis, of an endless scraper chain or cable mounted to travel through said furnace body and carrying a series of scrapers acting upon the interior of the furnace body, and mechanism for simultaneously rotating the furnace and continuously moving said scraper mechanism.

9. In combination with a rotatable furnace body of tubular form, an endless scraper mechanism arranged to travel through said furnace body as to one of its laps and outside of the furnace as to its other lap, and means for subjecting the outer lap of the scraper mechanism to the action of a liquid cooling medium.

10. In combination with a rotatable furnace body of tubular form, an endless scraper mechanism arranged to travel through said furnace body as to one of its laps and outside of the furnace as to its other lap, and a liquid receptacle through which said outer lap is arranged to travel.

11. In an apparatus for treating minerals, the combination with a tubular rotatable furnace body, of an endless scraper mechanism arranged to travel through said furnace body consisting of a chain or cable and circular scrapers provided with peripheral scraping edges mounted at intervals apart upon said chain or cable and acting upon the interior of said furnace body, and means for simultaneously actuating the scraper mechanism and furnace body, whereby the interior of the furnace is progressively scraped and the scraper chain or cable is rotated upon its own axis by the engagement of the scrapers with the furnace wall.

853,434. AUTOMATIC DISINFECTING OR ODORIZING APPARATUS. HENRY S. BLACKMORE, Mount Vernon, N. Y., assignor to American Automatic Disinfectant Company, Washington, D. C. Filed Jan. 24, 1905. Serial No. 242,566.



Claim.—1. An automatic disinfector or odorizer, comprising a liquid sealed chamber, a reservoir communicating with said liquid sealed chamber, means for impregnating air with disinfectant or odorizing ingredients, means communicating with interior of the chamber and the means for impregnating the air as aforesaid, means actuated by the movement of a liquid into and from said chamber by varying the level of the liquid in the communicating reservoir for introducing and discharging the aerated disinfectant or odorizing agent into and from said chamber, and means for varying the level of the liquid in the said communicating reservoir.

2. An automatic disinfector or odorizer comprising a liquid sealed chamber, means for impregnating air with disinfectant or odorizing ingredients, means communicating with the interior of the chamber above the water seal and the means for impregnating the air as aforesaid, a reservoir communicating with said liquid sealed chamber and means actuated automatically by changing liquid

equilibrium in the reservoir communicating with the said chamber for filling the chamber with disinfected or odorized air and discharging the same therefrom into rooms or apartments.

3. An automatic disinfector or odorizer comprising a liquid sealed chamber, means for impregnating air with disinfectant or odorizing ingredients, means communicating with the interior of the chamber above the water seal and the means for impregnating the air as aforesaid, a reservoir communicating with said liquid sealed chamber, means actuated automatically by changing liquid equilibrium in the reservoir communicating with the said chamber for filling the chamber and discharging the disinfectant or odorized air into rooms or apartments, and means for regulating and controlling the same.

4. An automatic disinfector or odorizer comprising a liquid sealed chamber, means for impregnating air with disinfectant or odorizing ingredients, means communicating with the interior of the chamber above the water seal and the means for impregnating the air as aforesaid provided with an outward checking device for preventing the return of disinfected air to the disinfecting reservoir, and means for filling the chamber and discharging the disinfectant or odorized air therefrom provided with a device for regulating and controlling the same, a reservoir communicating with said liquid sealed chamber and means actuated automatically by changing liquid equilibrium in the reservoir communicating with the said chamber for filling the chamber and discharging the disinfectant or odorized air into rooms or apartments.

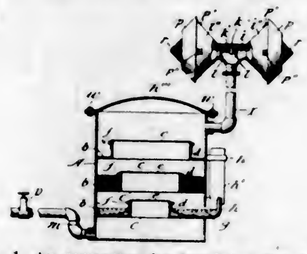
5. An automatic disinfector or odorizer comprising a liquid sealed chamber, means for impregnating air with disinfectant or odorizing ingredients, means communicating with the interior of the chamber above the water seal and the means for impregnating the air as aforesaid provided with an outward checking device for preventing the return of disinfected air to the disinfecting reservoir, and means for filling the chamber and discharging the disinfectant or odorized air therefrom provided with an inward checking device, a reservoir communicating with said liquid sealed chamber and means actuated automatically by changing liquid equilibrium in the reservoir communicating with the said chamber for filling the chamber and discharging disinfectant or odorized air into rooms or apartments.

6. An automatic disinfector or odorizer comprising a liquid sealed air chamber, means for impregnating air with disinfectant or odorizing ingredients by drawing said air over or through the same, means communicating with the interior of the chamber above the water seal and the means for impregnating the air as aforesaid provided with an outward checking device for preventing the return of disinfected air to the disinfecting reservoir, and means for filling the chamber and discharging the disinfectant or odorized air therefrom provided with an inward checking device, a reservoir communicating with said liquid sealed chamber and means actuated automatically by changing liquid equilibrium in the reservoir communicating with the said chamber for filling the chamber and discharging disinfectant or odorized air into rooms or apartments.

7. An automatic disinfector or odorizer comprising a reservoir for containing disinfecting or odorizing substances, an air-inlet tube or duct communicating with the reservoir below the surface of the disinfectant or odorizing substance therein, a discharge tube or duct communicating with the reservoir above the disinfectant or odorizing substance therein and a liquid sealed air chamber, a liquid sealed chamber provided with a means actuated automatically by changing liquid equilibrium in a reservoir communicating with the said chamber for filling the same with aerated disinfectant from the disinfectant reservoir and discharging it from the said chamber, and a reservoir communicating with the liquid sealed chamber.

8. In a disinfectant or odorizing apparatus, the means for impregnating air with disinfectant or odorizing substances, which consists in filling a water sealed chamber with aerated disinfectant or odorizing substance and discharging the same therefrom by the action of automatically changing liquid equilibrium in a liquid-containing reservoir communicating therewith.

853,435. AUTOMATIC APPARATUS FOR STERILIZING, DISINFECTING, OR ODORIZING VEHICLES. HENRY S. BLACKMORE, Mount Vernon, N. Y., assignor to American Automatic Disinfectant Company, Washington, D. C. Filed Mar. 25, 1905. Serial No. 252,047.



Claim.—1. An apparatus for supplying disinfected and purified air to vehicles, comprising the combination with a vehicle of an air purifying, disinfecting, or odorizing device, provided with a duct through which air is introduced, an air intake, vibrating means for diverting solids in the air from the path of the air intake, and means actuated by the motion of the vehicle for discharging the purified air into the said vehicle.

2. An apparatus for supplying disinfected and purified air to vehicles, comprising the combination with a vehicle of an air purifying, disinfecting, or odorizing device, provided with a duct through which air is introduced, an air intake, means for imparting a motion to solids in the air in an angular direction to and out of the path of the air intake, and means actuated by the motion of the vehicle for discharging the purified air into the said vehicle.

3. An apparatus for supplying disinfected and purified air to vehicles, comprising the combination with a vehicle of an air purifying, disinfecting, or odorizing device, provided with a duct through which air is introduced, an air intake, an air filter, means actuated by the motion of the vehicle for removing solid matter separated thereby therefrom, and means actuated by the motion of the vehicle for discharging the purified air into the said vehicle.

4. An apparatus for supplying disinfected and purified air to vehicles, comprising the combination with a vehicle of an air purifying, disinfecting, or odorizing device, provided with a duct through which air is introduced, an air intake, a movable air filter, means for moving the filter when subjected to air pressure, and means actuated by the motion of the vehicle for discharging the purified air into the said vehicle.

5. An apparatus for supplying disinfected and purified air to vehicles, comprising the combination with a vehicle of an air purifying, disinfecting, or odorizing device, provided with a duct through which air is introduced, an automatically operated valve actuated by air pressure due to motion communicating with said duct, an air intake, a movable air filter communicating with said intake, means for moving said filter, and means actuated by the motion of said vehicle for discharging the purified air into the vehicle.

6. In an apparatus for disinfecting air supplied to vehicles, the combination with an air-purifying and disinfecting or odorizing receptacle and a duct through which the air is introduced, of a funnel-shaped inlet provided with an automatically operated valve actuated by the air pressure due to motion, the said funnel-shaped inlet being provided with a flexible air filter and with a means for imparting a vibratory motion to the filter when subjected to air pressure.

7. In an apparatus for disinfecting air supplied to vehicles, the combination with an air-purifying and disinfecting or odorizing receptacle and a duct through which the air is introduced, of a funnel-shaped inlet provided with an automatically operated valve actuated by the air pressure due to motion, the said funnel-shaped inlet being provided with a conical flexible air filter and with means for imparting vibratory motion to the filter when forced into a body of air.

8. In an apparatus for disinfecting air supplied to vehicles, the combination with an air-purifying and disinfecting or odorizing receptacle, of a duct through which the air is introduced, a funnel-shaped inlet provided with an automatically operated valve actuated by the air pressure due to motion, the said funnel-shaped inlet being provided with a conical flexible air filter and with means for imparting vibratory motion to the filter when forced into a body of air, and means for diverting and removing dust or other accumulations from the air-filtering medium.

9. In an apparatus for disinfecting air supplied to vehicles, the combination with an air-purifying and disinfecting or odorizing receptacle, of a duct through which the air is introduced, a funnel-shaped inlet provided with an automatically-operating valve actuated by the air pressure due to motion, the said funnel-shaped inlet being provided with a conical flexible air filter and at its interior surface with a conical spiral spring for imparting a vibratory motion to the filter when forced into a body of air.

10. The combination with a device for purifying air supplied to vehicles having a means actuated by the motion of the vehicle for purifying and discharging purified air into said vehicle, of a means for supplying oxygen to said air in transit.

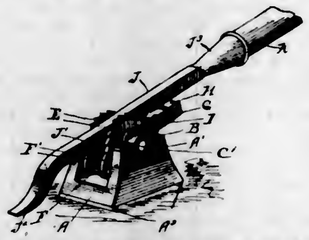
11. The combination with a device for purifying air supplied to vehicles having a means actuated by the motion of the vehicle for discharging purified air into said vehicle, of a means for automatically supplying oxygen to said air.

853,436. TOILET CREAM. MARY S. BORDEN, New York, N. Y. Filed Sept. 28, 1906. Serial No. 336,557.

Claim.—1. The herein described composition of matter for use as a soap-paste or cream, comprising soap, water, extract of bladder-wrack, chlorid of sodium, carbonate of potassium, carbonate of sodium, thyroid and iodin, combined substantially in the proportions stated.

2. The herein described process for the manufacture of a composition of matter, which consists in bringing together soap, water, extract of bladder-wrack, chlorid of sodium, carbonate of potassium, carbonate of sodium, thyroid and iodin in substantially the proportions stated, heating the same and beating the resulting mass into a paste or cream.

853,437. LIFTING-JACK. JOHN J. BRADSHAW, Jersey City, N. J. Filed June 23, 1906. Serial No. 323,063.



Claim.—1. In a lifting jack, the combination with a shaft carrying a gear wheel, of arms mounted on said shaft a toothed lever bar mounted on said gear wheel adapted to engage said arms and means carried by said arms for rotating said shaft for the purpose described.

2. In a lifting jack, the combination with a shaft mounted in journals carrying a gear wheel, of arms pivotally mounted on said shaft, a toothed lever bar mounted on said gear wheel adapted to engage said arms, the teeth of the bar meshing with said gear, and means carried by the arms for rotating said gear for the purpose described.

3. In a lifting jack, the combination with a block having a shaft mounted therein, carrying a gear wheel or ratchet wheel, a tooth bar mounted on said gear wheel and arms mounted on said shaft provided with pawls adapted to engage said ratchet wheel and rotate said gear-wheel when engaged by said bar, for the purpose described.

4. In a lifting jack, the combination with a block, of a shaft mounted in said block provided with a gear and ratchet wheels, arms mounted on said shaft connected together by a cross bar, pawls carried by said arms and a toothed bar mounted on said gear wheel, adapted to engage the cross bar of the arms, for the purpose described.

5. In a lifting jack, the combination with a block carrying a gear and ratchet wheel, arms provided with pawls adapted to engage said ratchet wheel, and a toothed bar mounted on said gear wheel adapted to engage said arms, for the purpose described.

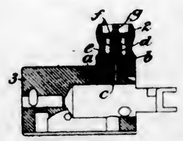
6. In a lifting jack, the combination with a block provided with upwardly projecting sides, of a shaft mounted between said sides, a gear wheel secured on said shaft, ratchet wheels fixed on said shaft, arms provided with pawls, mounted on said shaft, connected together by a cross bar, a toothed bar mounted on said gear wheel adapted to engage said cross bar, and pawls carried by said bar adapted to engage said ratchet wheels, for the purpose described.

7. In a lifting jack, the combination with a block, a gear and ratchet wheels mounted in said block, arms pivotally mounted in said block carrying pawls and a toothed lever bar mounted on said gear adapted to engage said arm, for the purpose described.

8. In a lifting jack, the combination with a block, of a shaft mounted on said block carrying gear and ratchet-wheels, arms mounted on said shaft carrying pawls adapted to engage said ratchet-wheels and a toothed lever bar mounted on said gear wheel, adapted to engage said arms, for the purpose described.

9. In a lifting jack, the combination with a block, provided with upwardly projecting sides, of a shaft mounted between said sides, a gear wheel secured on said shaft, ratchet wheels fixed on said shaft to each side of said gear wheel, arms mounted on said shaft connected together at their ends by a cross-bar, pawls carried by said arms, a shaft mounted between the side of the block, carrying pawls adapted to engage said ratchet-wheels and a toothed lever bar mounted on said gear adapted to engage the cross-bar of the arms, for the purpose described.

853,438. AUTOMATIC FIREARM. JOHN M. BROWNING, Ogden, Utah. Filed Aug. 18, 1905. Serial No. 274,689.



Claim.—1. In a fire arm, the combination with the receiver and breech mechanism, of a handle detachably secured to the said mechanism and working in a slot in the receiver, and means in the handle whereby the handle may be secured to and detached from the bolt mechanism.

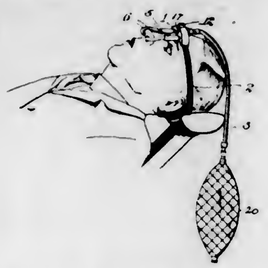
2. In a fire arm, the combination with the receiver and breech bolt mechanism, of a handle detachably secured to said mechanism and working in a slot in the receiver and a pin extending through the handle whereby the handle may be secured to and detached from the bolt mechanism.

3. In a fire arm, the combination with the receiver and breech bolt mechanism, of a handle for moving said mechanism, said handle working in a slot in the receiver and having a sliding connection with the bolt mechanism, and a spring actuated pin adapted to fasten the handle to the bolt mechanism and accessible from the exterior of the handle whereby the handle may be secured to and detached from the bolt mechanism.

4. In a fire arm, the combination with the receiver, breech bolt and breech bolt carrier, of a handle having a

sliding connection with the carrier and working in a slot in the receiver, a pin extending through the handle and adapted to engage a recess in the carrier to lock the handle thereto, and a spring to hold the pin normally in the recess.

853,439. INHALER. ALBERT C. CLARK, Chicago, Ill. Filed Oct. 14, 1903. Serial No. 176,952.



Claim.—1. An inhaler comprising a casing adapted to be connected with a source of anesthetic or the like and arranged to be supported on the patient's forehead, and a pair of inhaling tubes communicating with the casing and arranged to be adjusted as to their tips with respect to the casing whereby such tips may be adjusted to and inserted in the nasal passages of the patient.

2. An inhaler comprising a casing adapted to be connected with a source of anesthetic or the like and arranged to fit and be supported upon the patient's forehead, an elastic head-band connected to the casing for holding the same in position, and a pair of tubes communicating with the casing for inhalation and exhalation, said tubes having a movement independent of the casing whereby the same may be adjusted to and inserted in the nasal passages of the patient.

3. An inhaler comprising a casing adapted to communicate with a source of anesthetic or the like, and a pair of inhaling tubes depending from and communicating with the casing and terminating in hook-shaped nozzles or tips adapted to be inserted in the nasal passages of the patient, said tubes being flexible and having a movement at their tips independent of the casing whereby such tips may be readily adjusted to and inserted in the nasal passages.

4. An inhaler comprising a casing adapted to communicate with a source of anesthetic or the like, and a pair of inhaling tubes depending from and communicating with the casing and terminating in hook-shaped nozzles or tips adapted to be inserted in the nasal passages of the patient, said tubes being flexible and having a movement at their tips independent of the casing whereby such tips may be readily adjusted to and inserted in the nasal passages, the tips being enlarged with respect to the body of the tubes.

5. An inhaler comprising a casing adapted to communicate with a source of anesthetic or the like and arranged to be supported on the patient's forehead, and a pair of separate inhaling tubes communicating independently with the casing and terminating in removable tips for insertion in the nasal passages of the patient.

6. An inhaler comprising a casing adapted to be connected with a source of anesthetic or the like, and a pair of inhaling tubes communicating with the casing and arranged to be adjusted as to their tips with respect to the casing whereby such tips may be adjusted to and inserted in the nasal passages of the patient, said tips having flexible flanges at their inner ends to seal the nostrils and prevent entrance of air.

7. An inhaler comprising a casing adapted to be connected with a source of anesthetic or the like, and a pair of inhaling tubes communicating with the casing and having enlarged removable tips provided with integral flexible flanges to seal the nostrils and prevent the entrance of air, said tubes being arranged to be adjusted as to their tips with respect to the casing whereby such tips may be adjusted to and inserted in the nasal passages of the patient.

8. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like, a pair of inhaling tubes communicating with the casing and arranged to be inserted in the nasal passages of the patient, and flexible coiled springs coöperating with the tubes.

9. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like, said casing having a valve-governed exhalation outlet, and a pair of flexible inhaling tubes communicating with and depending from the casing and arranged to be inserted in the patient's nose.

10. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like, an exhalation valve in said casing, means for admitting pure air into the casing at the will of the operator, and a pair of inhaling tubes depending from the casing.

11. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like, said casing having an air opening, a manually operated valve to govern such opening, and a pair of inhaling tubes depending from the casing.

12. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like and arranged to be supported on the patient's forehead, two removable nozzles secured to the casing, and a pair of flexible inhaling tubes connected with the nozzles.

13. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like, two nozzles secured to the casing, and a pair of inhaling tubes, each tube comprising a flexible section or tube proper, a sleeve fitting in the inner end and secured to the nozzle, and an inflexible tube fitting in the outer end of the flexible tube or section and upwardly turned at its outer end.

14. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like, two nozzles secured to the casing, and a pair of inhaling tubes, each tube comprising a flexible section or tube proper, a sleeve fitting in the inner end and secured to the nozzle, a coiled spring within the flexible tube, and an inflexible tube fitting in the outer end of the flexible tube or section and upwardly turned at its outer end.

15. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like, said casing being curved on its inner side to fit upon the forehead of the patient, and a pair of inhaling tubes communicating with and depending from the casing and having hook-shaped ends for insertion in the patient's nostrils.

16. An inhaler comprising a casing adapted to communicate with a source of supply of anesthetic or the like, said casing being substantially crescent shaped, and adapted to fit upon the patient's forehead, a head band secured to the tips of the casing, and a pair of flexible inhaling tubes communicating with and depending from the casing.

17. An inhaler comprising a casing adapted to communicate with a source of anesthetic or the like and arranged to be supported on the patient's forehead, and a pair of independently adjustable inhaling tubes communicating with the casing and adapted to be inserted in the nasal passages of the patient.

18. An inhaler comprising a casing adapted to communicate with a source of anesthetic or the like and arranged to be supported on the patient's forehead, and a pair of flexible inhaling tubes communicating with the casing and adjustable with respect thereto and adapted to be inserted in the nasal passages of the patient.

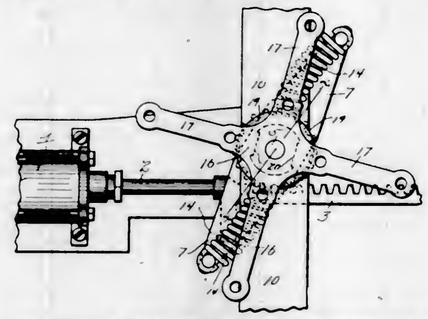
19. An inhaler comprising a casing adapted to communicate with a source of anesthetic or the like, a check valve in said casing to provide for exhalation through such casing, and flexible inhaling tubes adapted to communicate between the casing and patient's nose.

20. An inhaler comprising a casing adapted to communicate with a source of anesthetic or the like, a check valve in said casing opening to supply the anesthetic to the casing, a second check valve in said casing opening to exhaust exhalation from the casing, and inhaling tubes capable of adjustment with respect to the casing and adapted to be inserted in the patient's nostrils.

21. An inhaler comprising a rigid casing, and a pair of flexible inhaling tubes connected therewith and depending therefrom said tubes having up-turned ends arranged to be inserted in the patient's nostrils.

22. An inhaler comprising a casing, and a pair of inhaling tubes connected therewith, each tube comprising a hook-shaped rigid portion and a flexible portion.

853,440. MEANS FOR IMPARTING ROTARY RECIPROCATING MOTION. PETER T. COFFIELD, Dayton, Ohio. Filed Sept. 26, 1906. Serial No. 336,366.



Claim.—1. In means for imparting rotary-reciprocating motion to a receptacle such as a washing machine, the combination, of a spider attached to the bottom of said receptacle, a bearing for the hub of said spider, a clutch engaging said hub, a driving gear, a bracket extending from said driving gear, and resilient connections between said bracket and said clutch, whereby movement is imparted to said receptacle, and means for rotating said gear wheel in opposite directions.

2. In means for imparting rotary-reciprocating motion to a receptacle such as a washing machine, the combination, of a driving gear, means for imparting rotary-reciprocating movement to said gear, a bracket fixed to and extending from said gear, and connections between said bracket and said receptacle comprising a hub upon which the receptacle is supported, a clutch engaging said hub, and spiral springs engaging said clutch and the bracket extending from the driving gear.

3. In means for imparting rotary-reciprocating motion to a receptacle such as a washing machine, the combination, of a driving gear, means for imparting rotary-reciprocating motion to said gear, a hub upon which said receptacle is mounted, and resilient connections, a bracket extending from the driving gear and said hub, said resilient connections being between said bracket and said hub, whereby means are provided for imparting to the receptacle movement similar to those of the driving gear, and for permitting further movement of the receptacle due to the momentum thereof.

4. In means for imparting rotary-reciprocating motion to a receptacle such as a washing machine, the combination, of a hub attached to the bottom of said receptacle, an anti-friction bearing for said hub, a clutch ring interlocked with said hub, a driving gear, means for imparting rotary-reciprocating movement to said gear, bracket arms extending from said gear, and resilient connections between said bracket arms and the clutch ring, whereby means are provided for imparting to the receptacle movement similar to that of the driving gear, and for permitting the additional movement of said receptacle due to the momentum thereof.

5. In means for imparting rotary-reciprocating movement to a receptacle such as a washing machine, the combination, of an anti-friction bearing for said hub, a clutch ring interlocked with said hub, a shaft pinned to said hub, a driving gear, a bracket attached to said driving gear and into which said shaft is loosely projected, means for imparting to said gear rotary-reciprocating movement, and spiral springs connecting the clutch ring at opposite sides to said bracket, whereby movement is imparted to said receptacle similar to that of the driving gear, and means are provided for allowing further movement of the receptacle due to the momentum thereof.

853,441. PICTURE APPARATUS. ARTHUR E. COLGATE, New York, N. Y. Filed Feb. 27, 1907. Serial No. 359,554.



Claim.—1. In a picture apparatus a plurality of connected superposed leaves the free edges thereof being non-registering, an illustration extending over the exposed surfaces of two or more of said leaves, and a relatively enlarged view of a detail of such illustration located on such a part of one of said leaves as is normally covered by another.

2. In a picture apparatus a plurality of connected superposed leaves the free edges thereof being non-registering, an illustration extending over the exposed surfaces of two or more of said leaves, and a relatively enlarged view of a detail of such illustration located on such a part of one of said leaves as is normally covered by another, the free edge of the over-lying leaf being located adjacent to the detail, the enlargement of which is to be exposed by turning back said leaf.

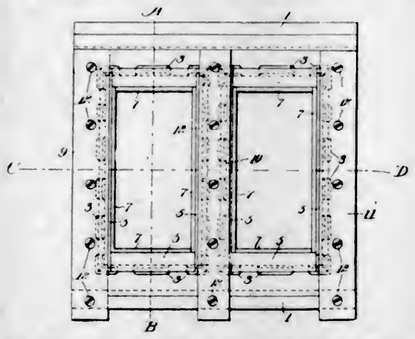
3. In a picture apparatus, a plurality of connected superposed leaves, the free edges thereof being non-registering, an illustration extending over the exposed surfaces of two or more of said leaves, and a relatively enlarged view of a detail of such illustration carried by one of said leaves and covered when the leaves are in position to expose the main illustration.

853,442. INTERCHANGEABLE MOLD-BOX. WILLIAM R. CUNNINGHAM, Bucyrus, Ohio, assignor to The American Clay Machinery Co., Bucyrus, Ohio, a Corporation. Filed Dec. 29, 1906. Serial No. 349,968.

Claim.—1. A mold box comprising inner and outer frames, said inner frame being interchangeable and removably fitting the outer frame, said frames having their adjacent sides tapering downwardly, and parallel and substantially fitting each other, said inner frame having its interior fashioned to conform to the article to be molded, and retaining plates fixed to one of said frames and having a long side extending horizontally over in contact with

the top or thicker end of the other frame to removably hold the inner frame in place.

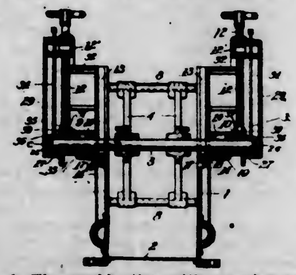
2. A mold box comprising an outer frame having sides and ends, the outer walls of said sides being parallel and the outer walls of the ends being parallel, said frame having inner side and end walls converging downwardly, and a removable frame within said outer frame, having the walls of its sides and ends converging conformably to the inner walls of the outer frame and having its inner walls fashioned to conform to the article to be molded, liners fixedly secured to the inner walls of said inner frame and removable retaining plates secured to the top of the outer frame and having their long sides extending over in contact with the top surface of the inner frame and removably securing said inner frame in position.



3. A mold box having an outer frame, and an interchangeable inner frame removably fitting within the same, said frames having their adjacent sides tapering downwardly, and the upper ends of the frames being recessed, and retaining plates fitting said recesses and extending across and to each side of the joint between the frames whereby the inner frame is held in position, said plates being secured to one of said frames and having its top surface substantially flush with the upper surfaces of the frame.

4. A duplex mold box comprising an outer frame having side and ends and a partition dividing said box into two compartments, the side walls of the partition and the inner walls of said sides and ends being tapered, an inner frame for each of said compartments, said inner frames having outer walls tapered conformably to the inner walls of the outer frame, the upper surfaces of the outer frame and of the partition being machined or recessed, retaining plates fitting said recesses and extending over in contact with the upper surfaces of the inner frames, and removable fastening means for said plates.

853,443. ELEVATOR-BOOT BEARING. WILLIAM R. CUNNINGHAM, Bucyrus, Ohio, assignor to The American Clay Machinery Company, Bucyrus, Ohio, a Corporation. Filed Feb. 16, 1907. Serial No. 357,739.



Claim.—1. The combination with a casing and a shaft passing therethrough, said casing having vertical slots or openings in which the shaft may be vertically adjusted, of housings exterior to the outer sides of the casing, journal-boxes or bearings in which the ends of said shaft are mounted, said boxes having closed outer ends and said housings being closed on their outer sides to form inclosed chambers in which the outer ends of the boxes are contained, said chambers forming vertical guides for the boxes, plates fixed to the boxes and extending parallel with the outer sides of the casing, and adapted to serve substantially as cover-plates for the slots of said casing to prevent material escaping therethrough entering said boxes, and means connecting with the boxes for adjusting them and the shaft relative to said casing.

2. The combination with a casing and a shaft passing therethrough, said casing having vertical slots or openings in which the shaft is adjustable, of journal-boxes in which the ends of the shaft are turnable, said boxes having vertical plates fixed to their inner ends and arranged parallel with the sides of the casing and extending above and below said shaft, and adapted to form movable cover-plates between said slots and the boxes, housings having closed outer sides exterior to the ends of the boxes and substantially inclosing said ends and vertically guiding said boxes, and adjusting screws journaled in the housings and connected to the boxes.

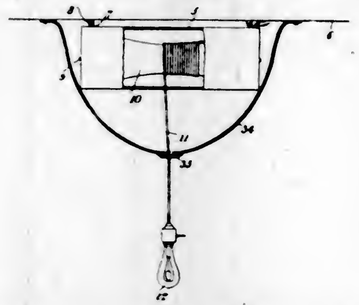
3. The combination with a casing and a shaft passing therethrough, said casing having vertical slots in which the shaft is vertically adjustable, of distance-pieces secured to and projecting from the outer sides of the casing, journal-boxes for the ends of said shaft, said boxes being vertically movable in the chambers of the distance-pieces, recessed cover-plates secured to the distance-pieces and receiving and inclosing the outer ends of the journal-boxes, adjusting screws carried by the cover-plates and rotatively connected with the boxes, whereby said boxes may be raised and lowered, and plates secured to the inner ends of the boxes and lying parallel with the sides of the casing, and serving as slidable cover-plates between the slots or openings in said casing and the inner ends of the boxes, said last-named plates receiving said shaft and extending above and below the same.

4. The combination with a casing having parallel sides with vertical slots or openings made therein, a shaft extending across the casing with its ends projecting through said slots or openings, housings on the outer sides of the casing, journal-boxes in which the ends of the shaft are turnable, said housings forming inclosures and vertical guides for the boxes, means for raising and lowering the boxes and thereby adjusting the shaft in said slots or openings, plates fixed to the boxes and arranged parallel with the sides of the casing and adapted to serve as slidable cover-plates between the inner ends of the boxes and said slots or openings, said boxes each having a packed chamber with a plate guarding the entrance thereto, and having an opening in its lower side just outside of the slidable plates, to permit the escape of material which may leak through said slots or openings.

5. The combination with a casing having vertical slots or openings in its sides, and a shaft extending across the casing with its ends passing through the slots thereof, journal-boxes in which the ends of said shaft are turnable, said boxes having enlarged inner ends provided with chambers and having reduced and inclosed bearing portions beyond said chambers, packing material in said chambers and plates fixed in the open inner ends of the boxes and covering the packing, said plates receiving said shaft and said boxes having openings in their bottom, for the escape of material outside the casing, distance-pieces fixed to the casing and forming inclosures in which the boxes are slidable, said distance-pieces being closed at the top and open below, cap-plates secured to the distance-pieces and having recesses for the closed outer ends of the boxes, vertical screws journaled in the cap-pieces and having their lower ends turnably connected to the boxes, fixed nuts in the cap-pieces through which the screws operate to raise and lower the boxes and shaft, and plates secured to the inner ends of the boxes and arranged parallel with the outer sides of the casing and receiving said shaft, said last-named plates being movable with the boxes and adapted as movable covers between the inner ends of the boxes and the slots or openings in the casing.

6. The combination with a casing having vertical slots or openings in its sides, and a shaft passing across the casing and through said slots or openings, of journal-boxes in which the ends of the shaft are turnably mounted, housings in which the boxes are vertically movable, a protected packing at the inner ends of the boxes, plates fixed to the boxes and receiving said shaft, and adapted to form movable cover-plates between the slots or openings in the casing and the inner ends of the boxes, and means for raising and lowering said boxes and shaft.

853,444. HANGER FOR INCANDESCENT LAMPS. MAXIMILLIAN J. DIEMMER, Augusta, Ga. Filed Feb. 26, 1906. Serial No. 303,027.



Claim.—1. In a device of the class described, a supporting frame, a spring actuated drum journaled in the frame, a movable contact secured to and mounted for rotation with the drum, a stationary contact adapted to engage the movable contact, a flexible conductor carried by the drum and having its terminals connected with the movable contact, and means independent of the contacts for yieldably supporting the stationary contact in engagement with the movable contact.

2. In a device of the class described, a supporting frame, a spring actuated drum journaled in the frame and provided at one end thereof with a plurality of contacts mounted for rotation with the drum, a plate provided with contact rollers adapted to engage removable contacts, a spring for yieldably supporting the rollers in engagement with the movable contacts, and a flexible conductor carried by the drum and having its terminals connected to the movable contacts.

3. In a device of the class described, a supporting frame, a spring actuated drum journaled in the frame and having a plurality of concentric plates secured thereto and forming contacts, a stationary plate spaced from the adjacent end of the drum and provided with contact rollers adapted to engage concentric plates, means for yieldably supporting the rollers in engagement with the contact plates, and a flexible conductor, the terminals of which are connected to concentric contact plates.

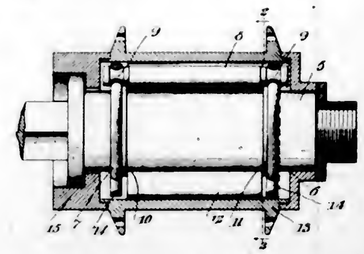
4. In a device of the class described, a supporting frame, a spring actuated drum journaled in the frame and having a plurality of concentric plates secured to one end thereof and forming contacts, a disk spaced from the adjacent end of the drum, rollers journaled on disk for engagement with the contact plates and provided with threaded shanks, screws engaging the threads on said shanks, a spring interposed between the disk and the adjacent end of the frame, and a flexible conductor the terminals of which are connected to the contact plates.

5. In a device of the class described, a supporting frame, a spring actuated drum journaled in the frame and having a plurality of concentric plates secured to one end thereof and forming contacts, a disk spaced from the adjacent end of the drum and provided with guide openings, rollers journaled on the disk and adapted to bear against the contacts, pins secured to the frame and engaging the guide openings, a spring interposed between the disk and the adjacent end of the frame for yieldably supporting the roller in engagement with contacts, and a flexible conductor the terminals of which are connected to the contact plates.

6. In a device of the class described, a supporting frame, a shaft mounted for rotation on the frame, a drum secured to the shaft, a diaphragm extended across one end of the frame and having a ratchet wheel secured thereto, pawls pivoted to the adjacent end of the drum and adapted to engage the ratchet wheel, a spring interposed between the diaphragm and the adjacent end of the frame, and having one end thereof secured to the shaft and the opposite end thereof secured to the frame, a plurality of concentric plates secured to the opposite end of the drum and forming contacts, a disk spaced from one end of the frame and provided with contact rollers adapted to bear against the concentric plates, a spring yieldably supporting the rollers in engagement with the contact plates, and a flexible conductor the terminals of which are connected to said contacts.

7. In a device of the class described, a supporting frame, a shaft journaled in the frame, a spring actuated drum carried by the shaft and having one end thereof provided with concentric contact plates movable with the drum, a disk spaced from one end of the frame and provided with contact rollers for engagement with the contact plates, and a spring interposed between the disk and the adjacent end of the frame, and provided with a central perforated enlargement for the reception of the shaft, said spring being adapted to yieldably support the rollers in engagement with the contact plates.

853,445. ROLLER-BEARING. WILLIAM T. FLEMING, Los Angeles, Cal. Filed Sept. 5, 1906. Serial No. 333,955.



Claim.—1. In combination, a shaft structure having two annular flanges one at each opposite end of its bearing portion, an outer cylindrical member, load-sustaining rollers extending the full length of the distance between said annular flanges and having contact throughout their length with the shaft structure between said annular flanges, spacing rollers arranged intermediate the load-sustaining rollers and each having longitudinal contact with the two adjacent load-sustaining rollers, these spacing rollers being of less diameter than the load-sustaining rollers whereby they will be supported or suspended out of contact with the bearing portion of the axle and also the outer member, these spacing rollers being of greater length than the load-sustaining rollers and each having an annular groove near each of its ends which engages the adjacent one of the flanges on the axle, and two rings loosely hung in the annular grooves in the spacing rollers, each of said grooves being concave and the adjacent faces of the flanges and rings being convex.

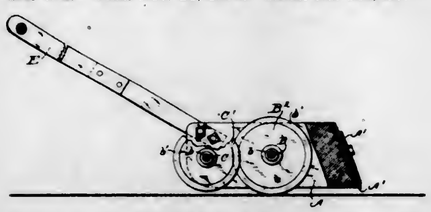
2. In combination, a shaft structure having secured thereto two rigid annular flanges, one at each end of its bearing-portion, an outer cylindrical member, load-sustaining rollers having contact with the shaft between said annular flanges, spacing-rollers intermediate the load-sustaining rollers and each having longitudinal contact with the two adjacent load-sustaining rollers, these spacing-

rollers being of less diameter than the load-sustaining rollers whereby they will be suspended out of contact with the bearing-portion of the axle and the outer member, these spacing-rollers being of greater length than the load-sustaining rollers and each having an annular groove near each of its ends which engages the adjacent one of the flanges on the axle, and two rings loosely hung in the annular grooves in the spacing rollers beyond the ends of the load-sustaining rollers.

3. In combination, a shaft structure having secured thereto two rigid annular flanges, one at each end of its bearing portion, an outer cylindrical member, load-sustaining rollers bearing on the shaft structure between said annular flanges, spacing rollers intermediate the load-sustaining rollers and each having longitudinal contact with the two adjacent load-sustaining rollers, these spacing rollers being of less diameter than the load-sustaining rollers and having grooves in their ends which engage over the annular flanges on the shaft structure, whereby they are freely supported between the shaft structure and the outer member, and two rings loosely hung in the annular grooves in the spacing rollers.

4. In combination, a shaft structure having secured thereto two rigid annular flanges, one at each end of its bearing portion, an outer cylindrical member, load-sustaining rollers bearing on the shaft structure, spacing rollers intermediate the load-sustaining rollers and each having longitudinal contact with the two adjacent load-sustaining rollers, these spacing-rollers having grooves in their ends which engage over the annular flanges on the shaft structure, whereby they are freely supported between the shaft structure and the outer member, and two rings loosely hung in the annular grooves in the spacing rollers.

853,446. FLOOR-SCRAPER. BENJAMIN O. FOX, Milwaukee, Wis. Filed Nov. 21, 1906. Serial No. 344,407.



Claim.—1. In a floor scraper, a frame having bifurcated parts, two axles permanently connecting said bifurcated parts, two rollers for one of said axles, another roller for the other said axle, the latter roller arranged centrally of and a predetermined distance in the rear of said former rollers, the combined weight of said rollers being less than that of said frame, a knife adjustably secured to the front end of said frame and a handle pivotally secured to the back end of said frame substantially as set forth.

2. In a floor scraper, a bifurcated frame, two axles supported by and connecting the bifurcated parts of said frame, two rollers for one of said axles arranged in close proximity to each other, another roller for said other axle arranged centrally of and in the rear of said two rollers, a round cornered knife adapted to be adjustably secured to the front end of said frame, a spring clamp, plate adapted to exert a constant pressure on said knife near its cutting edge and a handle substantially as set forth.

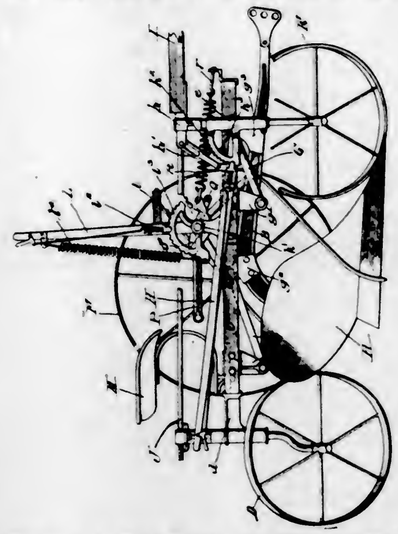
853,447. WHEEL FOR ROLLER-SKATES. WALTER W. FRENCH, Duluth, Minn., assignor of one-half to C. A. Nye, Cornucopia, Wis. Filed Mar. 20, 1905. Serial No. 250,905.

Claim.—A wheel, for roller skates, comprising a radially divided peripherally concaved felly, disk face plates secured to the opposite halves of the felly and each centrally apertured and having the edges of said apertures turned inward and concentrically, with the axis to form raceways for the balls of ball bearings, a threaded axle projected through said disks, cones threaded onto the opposite ends of said axle and projecting into the disk apertures, series of balls surrounding said cones and held



thereby in said raceways, and a tire clamped between the halves of said felly and extending radially beyond the same.

853,448. WHEELED PLOW. ALBERT B. FRENIER, Davenport, Iowa. Filed Dec. 17, 1903. Serial No. 185,470.



Claim.—1. A wheeled plow comprising a body-frame, supporting wheels, a movably supported plow and beam, a pair of separately mounted foot-levers, one for lifting and the other for depressing the plow, each lever being adapted for some movement independently of and without moving the other, and a jointed connection between one of said levers and said plow beam, the two foot-levers being associated and axially alined, whereby a portion rigid with one of said levers constitutes medium of connection through which motion is communicated from the other lever to the plow.

2. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, a pair of separately mounted foot-levers, one for lifting and the other for depressing the plow, a jointed connection between one of said levers and the plow-beam, and a lost-motion connection between the mounted portions of said levers, whereby one of said levers is adapted for some movement without communicating pressure or motion to the said jointed connection, the two foot-levers being associated together and axially alined, whereby a portion rigid with one of said levers constitutes medium of connection through which motion is communicated from the other lever to the plow.

3. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, a pair of separately mounted foot-levers, one for lifting and the other for depressing

the plow, each lever being adapted for some movement independently of and without moving the other, a jointed connection between one of said levers and the plow beam, and a combined lifting and depressing spring connected to exert its tension on a portion rigid with one of said levers, said spring being adapted to be shifted to pull either above or below the axis of the levers by the adjustment of one lever independently of the other, said levers being axially alined and having portions constituting medium of lost-motion connection through which the power of said spring is communicated to the plow.

4. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, a pair of foot-levers, one for lifting and the other for depressing the plow, each lever mounted for some movement independently of the other, and a toggle connection between one of said levers and the plow beam, the two foot-levers being associated together and axially alined, whereby a portion rigid with one of said levers constitutes medium of connection through which motion is communicated from the other lever to the plow.

5. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, a pair of foot-levers, one for lifting and the other for depressing the plow, each lever mounted for some movement independently of the other, a jointed connection between one of said levers and the plow beam, and a locking device adapted to lock the plow in an elevated position, said locking device being adapted to be unlocked by the adjustment of one lever independently of the other, whereby said device is unlocked without communicating pressure or power to the plow through said jointed connection, the two foot-levers being associated together and axially alined, whereby a portion rigid with one of said levers constitutes medium of connection through which motion is communicated from the other lever to the plow.

6. A wheeled plow comprising a plow and beam, supporting wheels, a pair of suitably mounted foot-levers, one for lifting and the other for depressing the plow, each lever adapted for some movement independently of the other, a connection between one of said levers and the plow beam, and a combined lifting and depressing spring connected and arranged to be adjusted from its lifting to a depressing position, and vice versa, by an adjustment of one lever independently of the other, said levers being axially alined and having portions constituting medium of lost-motion connection through which the power of said spring is communicated to the plow.

7. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, bails connecting the body-frame with the plow beam, a lifting foot-lever and a depressing foot-lever, each lever being mounted for some movement independently of the other, a toggle connection between the lifting foot-lever and the plow beam, a locking device adapted to lock the plow in elevated position, said locking device being adapted to be unlocked by foot-pressure on the depressing lever, and a combined lifting and depressing spring connected between the body-frame and an arm rigid with the depressing lever, said spring being adapted to be shifted from lifting to depressing position, and vice versa, by movement of the depressing lever independently of the lifting lever, the two foot-levers being associated together and axially alined, whereby a portion rigid with the lifting foot-lever constitutes medium of connection through which motion is communicated from the depressing foot-lever to the plow, and said portion and another portion rigid with the depressing lever constitute lost-motion connection through which the power of said spring is communicated to the plow.

8. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, a lifting and a depressing lever, each lever mounted for some movement independently of the other, a jointed connection between the lifting lever and the plow beam, and a locking device for locking the plow in an elevated position, said device comprising a pair of mutually engaging elements rigid respectively with the plow beam and the depressing lever, the lifting lever being rigid with a portion through which motion is communicated from the depressing lever to the plow.

9. A wheeled plow comprising a plow and beam, supporting wheels, a body-frame, a toggle connection between the body-frame and the plow beam, a depressing lever and a lifting lever, a lost-motion connection between the mounted portions of the two levers, a combined lifting and depressing spring connected between the body-frame and an arm rigid with the depressing lever, and a stop device adapted to prevent the joint of the said toggle connection from moving below the center when the plow is lowered, whereby said spring yieldingly holds the plow in the ground, and the latter is capable of rising over obstructions, the lifting lever being rigid with a portion constituting medium of connection through which motion is communicated from the depressing lever to the plow, and mutually engaging portions rigid with the two levers and constituting lost-motion connection through which the power of said spring is communicated to the plow.

10. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, a lifting foot-lever and a depressing foot-lever, a toggle connection between the lifting lever and the plow-beam, said toggle connection being connected with the plow beam through the medium of a plate adjustable longitudinally of the plow beam, and a locking device adapted for locking the plow in an elevated position, said locking device being adapted to be unlocked by foot-pressure on the depressing lever.

11. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, bails connecting the plow beam with the body-frame, and a toggle connection between the body-frame and the plow beam, said toggle connection being attached to the plow beam through the medium of a plate adjustable longitudinally of the plow beam.

12. A wheeled plow comprising a plow and beam, supporting wheels, a land-side axle, a pair of sleeves mounted on said axle, each adapted for some movement independently of the other, a lifting foot-lever rigid with one of said sleeves, a depressing foot-lever rigid with the other of said sleeves, a toggle connection between the plow beam and the sleeve rigid with the lifting lever, and a locking device for locking the plow in an elevated position, said locking device comprising mutually engaging elements rigid respectively with the plow beam and the sleeve which is rigid with the depressing lever.

13. A wheeled plow comprising a plow and beam, supporting wheels, a land-side axle, a pair of sleeves mounted on said axle and adapted for some movement independently of each other, a lifting foot-lever rigid with one of said sleeves, a depressing foot-lever rigid with the other of said sleeves, a toggle connection between the plow beam and the sleeve rigid with the lifting lever, and a combined lifting and depressing spring adapted to be shifted from lifting to depressing position, and vice versa, by movement of the depressing lever independently of the other lever.

14. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam, a land-side axle for one of said wheels, two sleeves mounted on said axle, a lifting foot-lever on one sleeve and a depressing foot-lever on the other sleeve, a lost-motion connection between the two foot-levers thus separately mounted, a locking device for locking the plow in an elevated position, said locking device including a locking element rigid with the depressing lever, a combined lifting and depressing spring connected between the body-frame and a portion rigid with said depressing lever, and a hand-lever secured to said axle, the foot-levers being mounted between the land-side wheel and said hand-lever, and said hand-lever being adapted for rocking said land-side axle.

15. A wheeled plow comprising a body-frame, a plow and beam, supporting wheels, a pair of separately mounted foot-levers suitably connected for lifting and depressing said plow, a land-side axle upon which said foot-levers are supported, and a hand-lever secured to said axle, the foot-levers being mounted between the land-side wheel and said hand-lever, and said hand-lever being adapted for rocking said land-side axle.

16. The improved wheeled plow comprising separately mounted lifting and depressing foot-levers, each mounted for some movement independently of the other, and the

fulcrumed portion of one lever being rigid with a portion constituting medium of connection through which motion is communicated from the other lever to the plow.

17. A wheeled plow comprising a plow and beam, supporting wheels, means for raising and lowering the plow relatively to the wheels, said means including a spring, including also pivotal connection whereby said spring yieldingly holds the plow in the ground, but whereby a slight upward movement on the part of the plow is sufficient to enable said spring to exert its tension in lifting the plow, and a manually operated toggle connection through which both spring and manual power are communicated to said beam for lifting and lowering the plow.

18. A wheeled plow comprising a plow and beam, supporting wheels, means for raising and lowering the plow relatively to the wheels, said means including a lifting spring, and including also means whereby the spring yieldingly holds the plow in the ground, and a manually operated toggle connection through which both spring and manual power are communicated to said beam for lifting and lowering the plow.

19. A wheeled plow comprising a plow and beam, supporting wheels, means for raising and lowering the plow relatively to the wheels, said means including a lifting spring, and including also a lifting and a depressing foot-lever with a lost-motion connection between them, the spring being connected with and operated by the depressing lever, whereby said spring is adapted also to act through said lost motion connection to yieldingly hold the plow in the ground.

20. A wheeled plow comprising a plow and beam, supporting wheels, means for raising and lowering the plow relatively to the wheels, said means including a spring, and including also a lifting and a depressing foot-lever with a lost-motion connection between them, the spring being connected with the depressing foot-lever, and there being connection between the lifting lever and the beam, whereby said spring yieldingly holds the plow in the ground, but whereby a slight upward movement on the part of the plow is sufficient to enable said spring to exert its tension through said lost-motion connection to lift the plow.

21. A wheeled plow comprising a plow and beam, supporting wheels, means for raising and lowering the plow relatively to the wheels, said means including a lifting spring, and including also a lifting and a depressing foot-lever with a lost-motion connection between them, the spring being connected with and operated by the depressing lever, whereby the spring is adapted also to act through said lost motion connection to yieldingly hold the plow in the ground, and whereby a portion rigid with the lifting lever constitutes medium of connection through which motion is communicated from the depressing lever to the plow.

22. A wheeled plow comprising a plow and beam, suitable supporting wheels, a depressing foot-lever and a lifting foot-lever with a lost-motion connection between them, suitable connection between the lifting lever and the beam, and a combined lifting and depressing spring suitably connected with the depressing lever, the said lost-motion connection between the two levers also constituting medium of lost-motion connection between the depressing lever and the plow, between the lifting lever and the spring, and between the spring and the plow.

23. A wheeled plow comprising a plow and beam, suitable supporting wheels, a pair of separately mounted and axially alined levers, a lost-motion connection between the two levers, and a portion rigid with one lever and constituting medium of connection through which either lever may act on the beam.

24. A wheeled plow comprising a plow and beam, a wheeled body-frame, a pair of separately mounted and axially alined foot levers, one for lifting and the other for depressing the plow, a lost-motion connection between the two levers, and a portion rigid with the lifting lever and constituting medium of connection through which either lever may act on the beam.

25. A wheeled plow comprising a plow and beam, a wheeled body-frame, a pair of separately mounted and axially alined levers, one for lifting and the other for depressing the plow, a lost-motion connection between the two levers, and an arm rigid with the lifting lever and suitably connected with the beam, whereby said arm constitutes medium of connection through which either lever may act on the beam.

26. A wheeled plow comprising a plow and a beam, suitable supporting wheels, and means for raising and lowering the plow relatively to the wheels, said means including a combined lifting and depressing spring having a lost-motion connection with the beam, together with means for operating said lost-motion connection and shifting the spring from lifting to depressing position, and vice versa, for the purposes set forth.

27. A wheeled plow comprising a plow and beam, a wheeled body-frame, and means for raising and lowering the plow relatively to the wheels and body-frame, said means including a combined lifting and depressing spring, together with axially alined and mutually engaging members constituting medium of lost-motion connection between the spring and the beam.

28. In a wheeled plow, the combination of a supporting frame and wheels, a plow beam and means for hanging it to the frame, a toggle comprising a pair of links pivoted together and inclining downwardly and forwardly, the lower end of the toggle being pivotally attached to the beam and the upper end being pivotally attached to the frame and the toggle being provided with means for preventing it from locking, a lever for depressing or opening the toggle and a lever for breaking it upwardly to assist in raising the plow, and spring-actuated means acting directly through the medium of the toggle to both depress and to raise the plow.

29. A wheeled plow comprising land-side and furrow wheels, and a toggle device through which both spring and manual power are communicated to the said plow for the purpose of raising and lowering the same relative to the said wheels, substantially as described.

30. A wheeled plow comprising a toggle device constituting a medium of both spring and manual power transmission, for the purposes specified, substantially as described.

31. In a wheeled plow, the combination of a plow, a toggle-joint connection, means for communicating manual lifting power through said toggle-joint to said plow, and means for communicating spring lifting power through said connection to said plow.

32. In a wheeled plow, the combination of a plow, swinging bails for supporting the plow, a toggle-joint connection, and means for communicating spring lifting power through said toggle-joint to said plow.

33. In a wheeled plow, the combination of a plow, a lost-motion connection, and means for communicating spring lifting power through said connection to said plow.

34. In a wheeled plow, the combination of a plow, a lost-motion connection, means for communicating spring lifting power through said connection to the plow, and means for communicating manual lowering power through said connection to the plow.

35. In a wheeled plow, the combination of wheels, a plow, a toggle-joint connection, a plurality of levers, a spring, means for communicating manual power from said levers through said toggle-joint to said plow, and means for communicating the power of said spring through said toggle-joint to said plow, for the purposes set forth.

36. In a wheeled plow, the combination of wheels, a plow, a lost-motion connection, a plurality of levers, a spring, means for communicating manual power from one of said levers through said lost-motion connection to said plow, and means for communicating the power of said spring through the said lost-motion connection to said plow, for the purposes set forth.

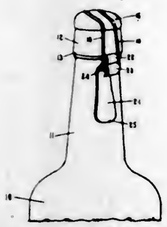
37. In a wheeled plow, the combination of an implement, wheels supporting said implement, means for controlling the forward wheels, a toggle-joint connection, means for communicating manual lifting power through said toggle-joint to said implement, and means for communicating spring lifting power through said toggle-joint to said implement.

38. A wheeled plow comprising a frame, a plow and beam, bracket portions rigidly secured to the frame, a cylindric member mounted in said bracket portions, a pair of foot-levers axially alined on said cylindric member, one for depressing and the other for lifting the plow, means for movably supporting the plow and beam on the frame, wheels for said frame, and a toggle connection between said levers and the plow beam.

39. A wheeled plow comprising a frame, a plow and beam, supporting wheels, means for movably supporting the plow and beam on the frame, a pair of axially alined foot-levers, one for lifting and the other for depressing the plow, and a toggle connection between said levers and the plow beam, the common axis of said levers being stationary relatively to the said frame.

40. A wheeled plow comprising a frame, wheels for said frame, a plow and beam, means for movably supporting the plow and beam on the frame, bracket portions rigidly mounted on the frame, a cylindric member mounted in said bracket portions, a pair of foot-levers, one for lifting and the other for depressing the plow, each foot-lever having a portion encircling or bearing on said cylindric member, and a toggle connection between said levers and the plow beam.

853,449. BOTTLE-CLOSURE. VILHELM J. G. FREUND, Brooklyn, N. Y. Filed Nov. 4, 1904. Serial No. 231,384.



Claim.—1. A tie-clamp for bottle stoppers which consists of a single piece of wire formed into a circular loop and a strap loop, the former arranged around the neck of a bottle and the latter passing over the stopper, and a lever having two hooks thereon pivoted, respectively, to said circular loop and strap loop.

2. A tie-clamp for bottle stoppers consisting of a wire twisted into both a circular and an elongated loop, and a lever pivoted to the free ends of both of said loops.

3. A tie-clamp for bottle stoppers comprising a single wire formed into a substantially circular loop adapted to embrace the neck of a bottle and a binding strap projecting therefrom and a lever pivoted to said loop and strap.

4. The combination of a tie-clamp comprising a single wire formed into a substantially circular loop and a binding strap, said circular loop adapted to embrace the neck of a bottle, and a lever pivoted to and connecting said loop and strap.

5. The combination, with the neck of a bottle, of a wire formed into a circular and an elongated loop, the former arranged around said neck and the latter bent over the bottle stopper, and a lever fulcrumed upon said circular loop which engages said elongated loop.

6. In a device of the class described, the combination of a tie-clamp comprising a single wire formed into a substantially circular loop adapted to embrace the neck of the bottle and a binding strap projecting therefrom, and a clamping lever pivoted upon said loop and having means for engaging the extremity of said strap.

7. In a device of the class described, the combination, with a bottle and a cap therefor, of a wire loop twisted to embrace said neck and having the other extremity thereof bent over said cap, and a clamping lever pivoted to the embracing portion of said loop and adapted to engage the extremity of the bent portion thereof and stretch said embracing and bent portions relatively to each other.

8. A tie-clamp for bottle stoppers which consists of a single piece of wire formed into a circular loop and a strap loop, the former adapted to encircle the neck of a bottle and the latter adapted to pass over the bottle-stopper, and a lever having two hooks thereon which engage said loops and serve to stretch same, said lever and hooks consisting of a single piece of metal.

9. In a device of the class described, the combination, with a bottle, a yielding stopper and a cap, of a single wire formed into a substantially circular loop embracing the neck of said bottle and a binding strap bent over said cap, and a clamping lever pivoted to said loop and strap.

853,450. HAIR-CURLING IRON OR TONGS. ADA E. GILBERT, Brooklyn, and VIRGINIA A. PHOEBUS, New York, N. Y. Filed May 16, 1906. Serial No. 317,202.



Claim.—Tongs for producing waves in hair, the same comprising a pair of pivotal members, one member being bifurcated and the other or intermediate member being straddled thereby, together with parallel, separated, cylindrical fingers extending respectively from the bifurcate portions of said first named member, and a flat blade extending from said intermediate member, said flat blade having a V-shaped edge adapted to enter between said parallel fingers, and non-conducting handles for said members.

853,451. FIRE-EXTINGUISHER. JESSE I. HARDY, St. Louis, Mo., assignor of one-half to Paul A. Glanville, St. Louis, Mo. Filed July 20, 1906. Serial No. 327,013.

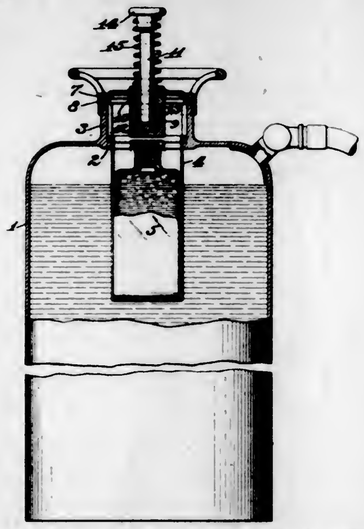
Claim.—1. A tank, a closure cap therefor having an opening therethrough and an exteriorly beveled valve seat surrounding said opening, and a plunger fitting in said opening and having its lower end enlarged and provided with an annular flange interiorly beveled to fit against said valve seat.

2. A fire extinguisher comprising a tank, a closure cap therefor having an opening therethrough and an exteriorly beveled valve seat surrounding said opening, and a plunger fitting in said opening and having its lower end enlarged and provided with an annular flange interiorly beveled to fit against said valve seat and a spring tending to keep said plunger in its outermost position.

3. A fire extinguisher comprising a tank, a closure cap therefor having an opening therethrough and an exteriorly beveled valve seat surrounding said opening, and a plunger fitting in said opening and having its lower end enlarged and provided with an annular flange interiorly threaded to fit against said valve seat, and a spring tending to keep said plunger in its outermost position, said plunger comprising a stem adapted to slide in said opening and having at its lower end an enlargement whose upper shoulder is formed to fit against said valve seat.

4. A fire extinguisher comprising a tank, a closure cap therefor having an opening therethrough and an exteriorly beveled valve seat surrounding said opening, and a spring-actuated plunger fitting in said opening and having

enlargements at its ends, the lower enlargement having an annular flange which is interiorly beveled to constitute a valve for said valve seat and the upper enlargement constituting a knob and serving as an abutment for said spring.



5. A fire extinguisher comprising a tank, a closure cap therefor having an opening therethrough and an exteriorly beveled valve seat surrounding said opening, a plunger fitting in said opening and having an enlargement at its lower end, which enlargement is provided with an annular flange interiorly beveled to fit against said valve seat, and a coiled spring surrounding the projecting portion of the plunger and bearing against a shoulder thereon and against said cap.

6. A fire extinguisher comprising a tank, a closure cap therefor having a tubular projection on its inner face, the upper portion of said projection being enlarged and beveled to form a valve seat, a plunger having a stem extending through said tubular portion and having an annular enlargement whose inner edge is beveled to fit against said valve seat.

853,452. SHEET-METAL RIM OR FELLY. CHARLES HEART, Alexandria, Ind., assignor to Keefer-Heart Iron and Steel Company, Alexandria, Ind., a Corporation. Filed Feb. 20, 1906. Serial No. 302,070.



Claim.—1. The combination in a wheel and with the spokes thereof of a hollow metallic felly having openings therein to receive the spokes, annular channels in the periphery of the felly and rings semi-circular in cross section seated in said channels; and a tire surrounding said felly and adapted to be engaged by the edges of said rings.

2. The combination in a wheel and with the spokes thereof, of a felly, tubular in cross section and provided with openings to receive said spokes, an inner tube within the felly tube, said inner tube comprising means for bracing the ends of the spokes, substantially as described.

3. A felly comprising a tubular metallic annular shell, an inner shell, and annular webs formed in said inner shell.

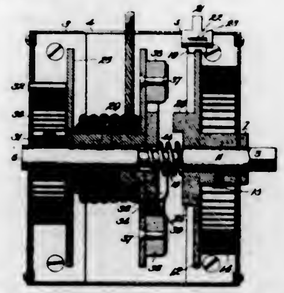
4. A felly comprising a tubular metallic annular shell having a continuous opening in its periphery, an inner shell having a projecting ring located in said opening, rings semi-circular in cross section seated on the inner shell, and a tire surrounding the tire and bearing on said felly, projecting ring and rings semi-circular in cross section, for the purpose set forth.

5. A felly comprising a tubular metallic annular shell, an inner shell having annular webs formed integral therewith, means for forming a joint on the outer shell, and a filler block located between the adjoining ends of the walls of the inner shell and the webs thereof.

6. The combination in a wheel and with the spokes thereof, of an outer tubular metallic shell having a continuous opening in its periphery, an inner shell having a ring projecting through said opening but leaving a space at each side thereof, a ring, semi-circular in cross section located in each said space, and a tire surrounding the felly and adapted to be engaged by said rings; the adjoining ends of said outer tube or shell being turned back upon themselves and inclosed by a flanged joint piece, substantially as described.

7. The combination in a wheel and with the spokes thereof, of an outer metallic tubular felly shell, having openings therein to receive the spokes, an inner tubular shell provided with annular webs forming braces for the ends of the spokes, and a tire surrounding said felly, substantially as described.

853,453. TROLLEY-RETRIEVER. MADISON F. HODGE, Leavenworth, Kans., assignor of one-half to Herbert W. Wolcott, Leavenworth, Kans. Filed Dec. 18, 1905. Serial No. 292,366.



Claim.—1. A trolley retriever, comprising a housing, a shaft journaled in the housing and provided with a screw-thread, a wheel rigid on the shaft, a reel journaled on the shaft and engaging said wheel, a trolley rope upon and secured to the reel and extending through the housing, means for yieldingly resisting rotative movement of the wheel imparted by a pull on said rope, means to lock the wheel against back rotation when the pull on the rope ceases, means to then revolve the reel in the opposite direction, and a dog rotatable with the reel and adapted during the back rotation of the latter to engage said screw-thread.

2. A trolley retriever, comprising a housing, a shaft journaled in the housing, a wheel rigid on the shaft, a reel journaled on the shaft and engaging said wheel, a trolley rope upon and secured to the reel and extending through the housing, means for yieldingly resisting rotative movement of the wheel imparted by a pull on said rope, means to lock the wheel against back rotation when the pull on the rope ceases, means to then revolve the reel in the opposite direction, a screw-thread, a dog in engagement with said thread when the reel is revolving; one of said last-named elements revolving with the reel to cause it to move away from the wheel during such back revolution, and means to effect disengagement between the dog and screw thread when the rotation of the reel ceases.

3. A trolley retriever, comprising a housing, a shaft journaled therein and provided with a screw-thread, a wheel rigid on the shaft and provided with a clutch member, a reel journaled on the shaft and provided with a companion clutch member, and a dog carried by the reel and adapted to engage the screw thread when the reel is rotating and cause it to move toward the wheel until the clutch members engage or from the wheel until the clutch members are disengaged.

4. A trolley retriever, comprising a housing, a shaft journaled therein and provided with a screw-thread, a wheel rigid on the shaft and provided with a clutch member, a reel journaled on the shaft and provided with a companion clutch member, a dog rotatable with the reel, and means carried by the latter and adapted to move outward under centrifugal force when the reel is rotating, and force the dog into engagement with the thread.

5. The combination of a housing having an opening, a shaft carried by the housing and provided with a screw-thread, a reel journaled on the shaft and provided with a clutch member, a dog rotatably movable with the reel and adapted to engage the screw thread when the reel is rotated and move the latter longitudinally on the shaft, and a second clutch member to be engaged by and arrest the movement of the first-named clutch member and the reel carrying the same.

6. The combination of a housing having an opening, a shaft carried by the housing, and provided with a screw-thread, a reel journaled on the shaft and provided with a clutch member, a swing arm pivoted to the reel, a dog connected to said swing arm and held yieldingly out of engagement with the screw-thread when the reel is at rest and adapted when the reel is rotating to be moved by the swing arm into engagement with the screw thread and effect longitudinal movement of the reel on the shaft, and a second clutch member to be engaged by and arrest the movement of the first-named clutch member and the reel carrying the same.

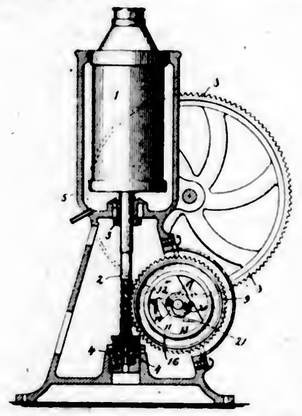
7. A trolley retriever, comprising a housing, a shaft journaled therein and provided with a screw thread, a wheel rigid on the shaft and provided with a clutch member, a reel journaled on the shaft and provided with a companion clutch member, a swing arm pivoted to the reel, and a dog connected to said swing arm and held yieldingly out of engagement with the screw thread while the reel is at rest and adapted when the reel is rotating to be moved by the outward movement of said swing arm into engagement with the screw thread to cause the reel to move toward the wheel until the clutch members engage or from the wheel until the clutch members are disengaged.

8. A trolley retriever, comprising a housing, a shaft journaled therein and provided with a screw thread, a wheel rigid on the shaft and provided with a clutch member, a reel journaled on the shaft and provided with a companion clutch member, a swing arm pivoted to the reel, a disk rigid with the reel and provided with an opening extending from its periphery to the shaft, a dog occupying said opening and pivotally connected to the swing arm, and a spring bearing against said dog and secured to the swing arm and adapted to hold the dog normally out of engagement with the screw thread.

853,454. CLUTCH FOR CENTRIFUGAL MACHINES. GUSTAF HOLMGREN, Newark, N. J., assignor to United States Butter Extractor Company, a Corporation of New Jersey. Filed July 23, 1901. Serial No. 69,397.

Claim.—1. The combination of a shaft mounted in bearings, a wheel mounted loosely upon said shaft and provided with an annular flange, a plate or member interposed between said shaft and flange and capable of a circumferential movement with relation to the shaft and flange and a lateral projection on said shaft arranged to move into or out of contact with the inner end of said plate or member when the shaft turns in one direction or the other with relation to said plate or member..

2. The combination of a shaft mounted in bearings, a wheel mounted loosely upon said shaft and provided with an annular flange, a plurality of plates or members interposed between said shaft and flange and each capable of circumferential movement with relation to the shaft and flange and lateral projections on said shaft corresponding in number to said plates and arranged to move into or out of contact with the inner ends of said plates or members when the shaft turns in one direction or the other with relation to said plates or members.



3. The combination of a shaft mounted in bearings and provided with a lateral integral projection, a wheel mounted loosely upon said shaft and provided with an annular flange, a plate or member interposed between said shaft and flange and concentrically mounted on said shaft so as to be capable of a circumferential movement on the shaft and arranged to be actuated by the projection bearing upon its edge nearest to the shaft so as to engage the flange when so actuated, and means on the shaft for preventing the projection from operating the plate when the shaft or wheel is turned relatively to the other in one direction.

4. The combination of a shaft mounted in bearings and provided with a plurality of lateral integral projections, a wheel mounted loosely upon said shaft and provided with an annular flange, a plurality of plates or members interposed between said shaft and flange and concentrically mounted on said shaft so as to be capable of a circumferential movement on the shaft, and arranged to be actuated by the projections bearing upon the edges of the plates nearest the shaft so as to engage the flange when so actuated, and means on the shaft for preventing the projections from operating the plates when the shaft or wheel is turned relatively to the other in one direction.

5. The combination of a shaft mounted in bearings and provided with a lateral integral projection, a wheel mounted loosely upon said shaft and provided with an annular flange, a plate or member interposed between said shaft and flange and concentrically mounted on said shaft so as to be capable of a circumferential movement on the shaft and arranged to be actuated by the projection bearing upon its edge nearest to the shaft so as to engage the flange when so actuated, a projection on the plate or member, and a second lateral projection on the shaft for engaging the plate projection when the shaft or wheel is turned relatively to the other in one direction for preventing the plates from being operated to engage with the flange.

6. The combination of a shaft mounted in bearings and provided with a plurality of lateral integral projections, a wheel mounted loosely upon said shaft and provided with an annular flange, a plurality of plates or members interposed between said shaft and flange and concentrically

mounted on said shaft so as to be capable of a circumferential movement on the shaft, and arranged to be actuated by the projections bearing upon the edges of the plates nearest the shaft so as to engage the flange when so actuated, a projection on each plate, and projections on the shaft for engaging with the plate projections when the shaft or wheel is turned relatively to the other in one direction for preventing the plate from being operated to engage with the flange.

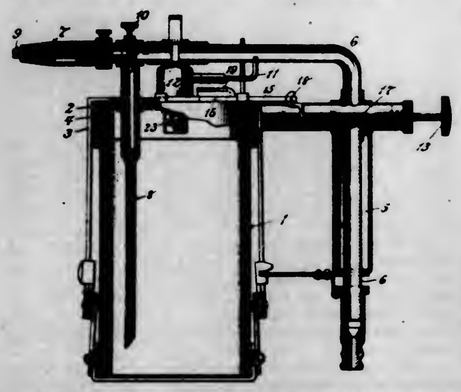
7. The combination of a shaft mounted in bearings, a wheel mounted loosely upon said shaft and provided with an annular flange, two diametrically placed plates or members interposed between said shaft and flange and capable of circumferential movement with relation to the shaft and flange and two oppositely placed lateral projections on said shaft arranged to move into or out of contact with the inner end of said plates or members when the shaft turns in one direction or the other with relation to said plates or members.

8. The combination of a shaft mounted in bearings, a wheel mounted loosely upon said shaft and provided with an annular flange, two diametrically placed plates or members interposed between said shaft and flange and capable of circumferential movement with relation to said shaft and flange, guides for said plates or members and two oppositely placed lateral projections on said shaft for causing radial movement of said plates respectively.

9. The combination of a shaft mounted in bearings and provided with lateral integral projections on opposite sides of the shaft, a wheel mounted loosely upon said shaft and provided with an annular flange, plates or members interposed between said shaft and flange and on opposite sides of the shaft and capable of a circumferential movement on the shaft and arranged to be actuated by the projections on the shaft bearing upon the edges of the plates nearest the shaft, so as to engage the flange when so actuated, and pins extending in lines transverse to the shaft and entering recesses in one or both plates for guiding the plates toward and away from said flange.

10. The combination of a shaft mounted in bearings, and provided with two oppositely placed lateral projections, a wheel mounted loosely on said shaft and provided with an annular flange, two clutching members within said annular flange placed so as to be movable radially approximately at right angles to the line joining the extremities of said projections, when the shaft is at rest, one half collars on said plates bearing on said shaft and a second pair of projections on the shaft arranged to make contact with said half collars when the first named pair of projections is inoperative.

853,455. ATOMIZER. GUSTAF HOLMGREN, Bloomfield, N. J. Filed Sept. 26, 1906. Serial No. 336,263.



Claim.—1. An atomizing apparatus comprising a reservoir, means for forcing material in a spray therefrom and a relief valve on said reservoir.

2. An atomizing apparatus, comprising a reservoir, means for forcing material in a spray therefrom, a cut off valve controlling said means and a relief valve on said reservoir adapted to operate simultaneously with said cut off valve.

3. An atomizing apparatus, comprising a reservoir, means for forcing material in a spray therefrom, a cut off valve controlling said means, a relief valve on said reservoir and a mechanical connection between said cut off valve and said relief valve, whereby they are made to operate simultaneously.

4. In atomizing apparatus comprising a reservoir, means for forcing material in a spray therefrom, a cut off valve and a relief valve adapted to close automatically when the cut off valve opens and vice versa.

5. An atomizing apparatus comprising a reservoir, means for forcing material in a spray therefrom, and a relief valve on said reservoir having an adjustable opening.

6. An atomizing apparatus comprising a reservoir, a relief opening in its top, a revoluble plate placed against said top and having an opening adapted to register with said relief opening and means for securing said plate in various positions at will.

7. An atomizing apparatus comprising a reservoir having a relief opening in its top, a revoluble ring having a perforated cross plate and fitting against said top and a thumb screw passing through said cross plate for securing it in any desired position.

8. An atomizing apparatus comprising a reservoir having a relief opening in its top, a slide valve over said opening and a means for operating said slide valve.

9. An atomizing apparatus comprising a reservoir having a relief opening in its top, a slide valve over said opening and a thumb piece for operating said valve.

10. An atomizing apparatus comprising a reservoir having a relief opening, means for forcing material out of said reservoir, a cut off valve for said means, a slide valve over said relief opening and a mechanical connection between said slide valve and said cut off.

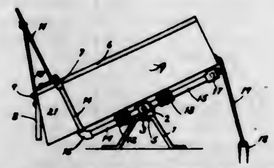
11. An atomizing apparatus comprising a reservoir having a relief opening, means for forcing material out of said reservoir, a cut off valve for said means, a thumb piece for operating said cut off, a slide valve over said relief opening and a rod connecting said slide valve with said thumb piece.

12. An atomizing apparatus comprising a reservoir having a relief opening and a slide valve over said opening provided with a hood.

13. An atomizing apparatus comprising a reservoir, a cut-off valve for the pressure agent, and a relief valve for the release of said agent from the reservoir, when the cut off valve is closed.

14. An atomizing apparatus comprising a reservoir, a cut-off valve for the pressure agent, and a relief valve for the release of said agent from the reservoir, the relief valve being open when the cut off valve is closed, and closed when the cut off valve is open.

853,456. CONCRETE-HEATING MACHINE. ROBERT C. HUFFMAN, Baltimore, Md. Filed Feb. 19, 1907. Serial No. 358,161.

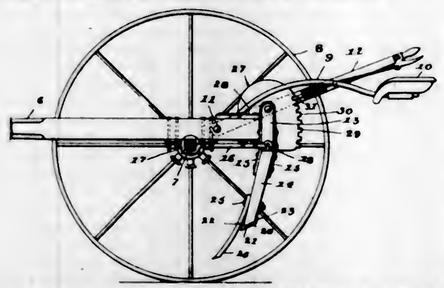


Claim.—1. A concrete heating machine, comprising a longitudinal body part, of a base, a trunnion pivotally secured to the base, means for securing the body part to the trunnion, a supply pipe, an additional pipe leading from the said supply pipe, longitudinal extended pipes provided with slots cut therein and secured within the said body part on the bottom thereof, means for connecting the said longitudinal extended pipes with the said pipe leading from the said supply pipe and a valve on the said pipe for controlling the discharge of steam therethrough, substantially as described.

2. A concrete heating machine, comprising a longitudinal body part, of a base, a trunnion pivotally secured to the base, means for securing the body part to the trunnion, a supply pipe, an additional pipe leading from the said supply pipe, pipes longitudinally extended and provided with slots cut therein in the bottom part of the said body part, similar pipes extending transversely across the end portion of the said body part, means for connecting the said pipe longitudinally extended in the bottom part with those transversely extended across the end portion, similar pipes longitudinally extended and secured to the inner side walls of the said body part, means for connecting the said pipes with those transversely extended across the end portion, means for connecting the said pipe leading from the said supply pipe with those transversely extended across the end portion and means on the said pipe leading from the said supply pipe for regulating the discharge of steam therethrough, substantially as described.

3. A concrete heating machine, comprising a longitudinal body part and provided with a cover hinged thereto, a base, a trunnion pivotally secured to the base, means for securing the body part to the trunnion, a supply pipe, slotted pipes longitudinally extended and secured to the inner side of the said cover, a pipe extended longitudinally along the lower side of the body part and connected with the said supply pipe, means on the free end of the said pipe for continuing the same vertically, a hinge joint on the free end of the said vertical extension for extending the said pipe transversely across the top of the said body part near the end portion thereof and means for connecting the said transverse extension with the longitudinal slotted pipes secured to the inner side of the cover, a steam valve secured on the said longitudinal pipe leading from the supply pipe for regulating the discharge of steam therethrough, substantially as described.

853,457. LAND-LEVELER. JOEL W. HUTTON, Tony, Mont. Filed July 7, 1906. Serial No. 325,165.

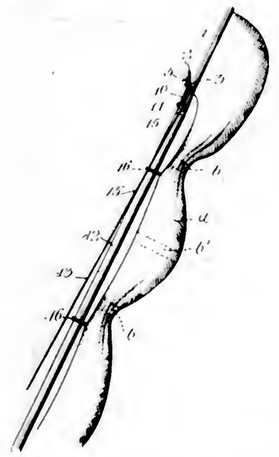


Claim.—1. An implement of the class described comprising a frame, a lever mounted in the frame, a blade standard connected with the lever and depending therefrom, a blade carried by the standard, means for holding the lever in adjusted position, and brace-rods connected with said blade and said frame and arranged to brace the blade in its various adjusted positions.

2. An implement of the class described comprising a tongue, a lever pivoted to the tongue, a blade standard pivoted to the lever and depending therefrom, a blade carried by the standard, a rack plate mounted upon the tongue and arranged for the reception of the blade standard therebetween and the tongue, and a pawl mechanism carried by the lever for co-operation with the rack-plate.

853,458. FRUIT-PICKER. CORNELIUS B. HYSOM, Everett, Wash. Filed Dec. 21, 1905. Serial No. 292,822.

Claim.—1. A fruit picker having a tubular flexible chute, an endless cord having a portion disposed longitudinally of the chute and other portions forming open loops separated by said longitudinal portion and disposed transversely with reference and slidably connected to the chute, so that when one of said open loops is enlarged by the passage of an object therethrough, the other will be automatically contracted and caused to correspondingly contract the portion of the chute to which it is slidably connected, for the purpose set forth.



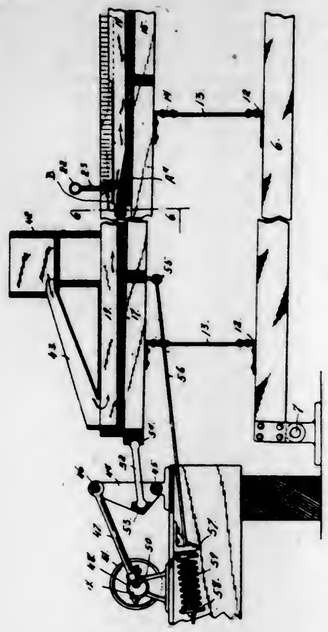
2. A fruit picker having a mouth ring having a portion thereof bent reversely to form gathering fingers, a fixed cutter plate partially covering said fingers, a movable cutter plate mounted to reciprocate on said fixed cutter plate, a spring to move said movable cutter plate in one direction, a cord to move it in the reverse direction, and a direction element for said cord, substantially as described.

853,459. CONCENTRATOR. JOHN F. ISBELL, Denver, Colo. Filed Oct. 17, 1904. Serial No. 228,683.

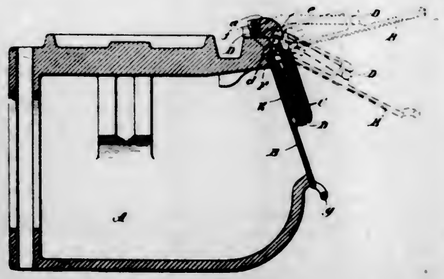
Claim.—1. A riffled concentrating table having a vibratory movement in the direction of its length, the riffles also extending longitudinally of the table, the vibratory action of the table being adapted to cause the material to travel from the head toward the tail of the table, the latter consisting of sections arranged at different elevations and in stepped order, the head section of the table being highest and so on toward the tail of the table, each table section being provided with a cut off adapted to remove a suitable depth from the top of the material under treatment, the various table sections diminishing in width from the head toward the tail of the table to compensate for the gangue removed at the cut offs in order to maintain an approximately uniform depth of material on the various table sections, and means for introducing water beneath each cut off to compensate for that removed with the gangue above the cut offs.

2. A concentrating table having a movement whose tendency is to cause the material to travel thereon from the head toward the tail of the table, the said table being composed of a number of sections diminishing in width from the head toward the tail of the table, each section having a distinct series of longitudinally disposed riffles, a cut off located at the rear extremity of each table section and arranged to remove the upper portion of the material under treatment as the latter leaves the said section, and means for introducing water underneath each cut off to compensate for that passing above the cut off, there being passages beneath the cut offs whereby the table sections communicate with each other.

853,459.



853,460. COVER FOR JOURNAL-BOXES. ERIC G. KINBERG, New York, N. Y. Filed July 27, 1906. Serial No. 328,021.



Claim.—1. The combination with a journal box, of a cover therefor, a removable yoke for connecting the cover and box, said cover being engaged with the yoke at about the middle part of the cover and arranged to swing upon and with the yoke, and a spring and coöperating plunger for automatically holding the cover both in closed position and in opened position, substantially as and for the purposes set forth.

2. In combination with a journal box, a cover therefor, a spring parallel with the plane of the cover, a plunger operating in connection with the spring, and a removable swinging yoke for connecting the cover with the box, substantially as and for the purposes set forth.

3. The combination, of a journal box, a cover therefor having a socket thereon parallel with the face thereof, a spring located in the socket, a plunger, and a removable yoke connecting the cover at about its middle part with the journal box, said yoke being supplied with a projecting lug at its upper part, for the purposes set forth.

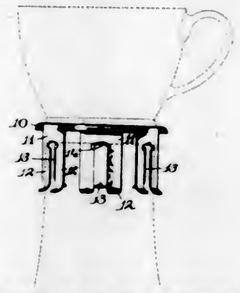
853,461. DETINNING. FRANZ VON KÜGELGEN and GEORGE O. SEWARD, Holcombs Rock, Va., assignors, by mesne assignments, to Tin Products Company, a Corporation of New York. Filed Aug. 3, 1905. Serial No. 272,453.

Claim.—1. The process which consists in detinning by passing dry chlorin over tin scrap and after the detinning is complete removing the residual anhydrous stannic chlorid from the detinning vessel by passing chlorin therethrough, and finally expelling the chlorin from the vessel.

2. The process which consists in detinning by subjecting tin scrap to the action of dry chlorin at a temperature below that at which stannic chlorid volatilizes, and subsequently removing the residual stannic chlorid from the detinning vessel by passing chlorin therethrough.

3. The process of removing anhydrous stannic chlorid from a detinning tank, which consists in passing chlorin through the detinned scrap and replacing the chlorin in turn by air from which the oxygen has been removed.

853,462. FIXTURE FOR LAMP-CHIMNEYS. FREDERICK H. LÖHRS, Elizabeth, N. J. Filed Jan. 11, 1907. Serial No. 351,748.



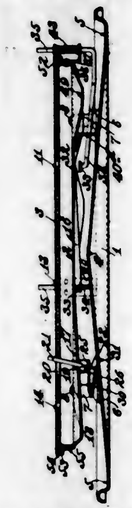
Claim.—A device of the kind described, comprising a perforated plate having ribs bent down from its edges, spring arms formed on the ends of the ribs, some of the spring arms being adapted to engage the outside of a lamp chimney, the remaining spring arms being arranged to engage the inside of the lamp chimney, the spring arms on one side of the lamp chimney being provided with a shoulder to rest on the top edge of the lamp chimney.

853,463. GAME APPARATUS. JOSEPH S. MATHER, St. Louis, Mo., assignor to Mather Game Company, St. Louis, Mo., a Corporation of Missouri. Filed May 7, 1906. Serial No. 315,517.

Claim.—1. A game apparatus comprising a raised playing surface provided with a series of openings and with downwardly inclined grooves extending from opening to opening, respectively, and movable base-plates resiliently mounted and normally located in alinement with said openings on a plane below said playing surface and in cooperative relation to the lowermost terminal point of the grooves and adapted to be moved upwardly to a plane in coöperative relation to the uppermost starting point of the adjacent grooves.

2. A game apparatus comprising a raised playing surface provided with downwardly inclined grooves terminating and starting, respectively, at an opening in said surface, and a movable base-plate yieldingly mounted in normal coöperative relation to the lowermost terminal point of one groove and adapted to be moved upwardly into cooperative relation to the uppermost starting point of the adjacent groove, and also adapted to be depressed below said normal position.

3. A game apparatus comprising a raised playing surface provided with downwardly inclined grooves terminating and starting, respectively, at an opening in said surface, a base-plate normally located below said opening, in coöperative relation to the lowermost terminal point of one groove, and a yielding support for said base-plate, comprising a shank formed with an upturned portion slidingly mounted in fixed bearings, washers loosely mounted on said upturned shank portion adjacent to said bearings, a spring surrounding said upturned shank portion and interposed between said washers, and projections on said upturned shank portion adapted to engage said washers, whereby said base-plate can be raised into coöperative relation to the uppermost starting point of the adjacent groove, or depressed below said normal position.



4. A game apparatus comprising a raised playing surface provided with downwardly inclined grooves terminating and starting, respectively, at an opening in said surface, a base-plate normally located below said opening, in coöperative relation to the lowermost terminal point of one groove, and a yielding support for said base-plate, comprising a shank formed with an upturned portion, a bracket fixedly mounted with relation to said playing surface and formed with angular extensions having bearings therein for said upturned shank portion, a guide-way for said shank, washers loosely mounted on said upturned shank portion adjacent to said bearings, a spring surrounding said upturned shank portion and interposed between said washers, and projections on said upturned shank portion adapted to engage said washers, whereby said base-plate can be raised into coöperative relation to the uppermost starting point of the adjacent groove, or depressed below said normal position.

5. A game apparatus comprising a raised playing surface having a slot therein, a bracket secured beneath said playing surface, said bracket having a notched seat therein, a bat pivotally and detachably mounted in said seat and projecting upwardly through said slot, and a spring for yieldingly holding said bat to its seat with its upper portion in a normal forward position.

6. A game apparatus comprising a raised playing surface having a slot therein, a bracket mounted beneath said playing surface, said bracket having a body portion formed with a notched seat and a rearward extension, a bat formed with notches in its lower portion adapted to engage said notched seat with its upper portion projecting through said slot, and a spring secured to said bracket extension and the lower end of said bat, whereby said bat is yieldingly held to its seat with its upper portion in a normally forward position.

7. A game apparatus comprising a raised false-bottom having side and end walls, and formed with a hole in its end wall, and with holes arranged in depressions in its upper face, in proximity to said end wall, and with downwardly inclined grooves, in the form of a diamond, in its upper face, said false-bottom also having holes at the corners of said diamond, vertically movable bases below said holes, means for manipulating said bases, a transparent cover having holes above said bases and a hole corresponding to the home-base, a resiliently mounted bat, means whereby a ball may be moved to the bat, and a bottom board having inclined faces and a gutter at its border.

8. A game apparatus comprising a bottom-board, a raised false-bottom forming a playing surface and having holes therein, said false bottom also having side and end walls, the side and one end wall being formed with elongated grooves, a transparent cover slidably engaging said grooves and having a slot and base-locating openings therein, and a removably mounted bat having its upper end portion projected above said cover through the slot therein.

9. A game apparatus comprising a bottom-board provided with inclined surfaces and a gutter at its border, a false-bottom supported above said bottom-board, said false-bottom being formed with surrounding walls and having its upper surface grooved and formed with holes arranged in inclined depressions and with a hole in its end wall, a bat, and means whereby a ball may be moved toward said bat.

10. A game apparatus comprising a bottom-board provided with inclined surfaces and a gutter at its border, a false-bottom supported above said bottom-board, said false bottom being formed with surrounding walls and having its upper surface grooved and formed with holes arranged in inclined depressions and with a hole in its end wall, a bat, and means whereby a ball may be moved toward said bat, said means comprising a downwardly inclined groove gradually widening from its starting point to a point in proximity to said bat.

11. A game-apparatus comprising a bottom-board provided with an inclined surface and a gutter at its border, a false-bottom supported above said bottom-board, said false-bottom forming a playing surface and having a hole therein, and a catcher adjacent to said hole.

12. A game-apparatus comprising a bottom-board provided with an inclined surface and a gutter at its border, a false-bottom supported above said bottom-board, said false bottom forming a playing surface and having a hole therein, a catcher adjacent to said hole, and means for manipulating said catcher.

13. A ball game apparatus comprising a playing surface, means for manipulating and forcibly moving a ball upon said playing surface and a catcher adapted to receive said ball, said catcher comprising a resilient clip having a gap between its free ends of a width less than the diameter of the ball.

14. A ball game apparatus comprising a playing surface, means for manipulating and forcibly moving a ball upon said playing surface, a catcher adapted to receive said ball, said catcher comprising a resilient clip, and means for manipulating said clip to release the ball.

15. A ball game apparatus comprising a playing surface having a hole therein, means for manipulating and forcibly moving a ball upon said playing surface, and a vertically movable catcher mounted above said playing surface near said hole and adapted to receive said ball.

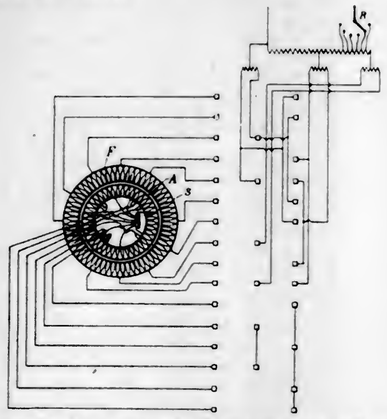
16. A ball game apparatus comprising a playing surface having a hole therein, means for manipulating and forcibly moving a ball upon said playing surface, a vertically movable catcher mounted above said playing surface near said hole and adapted to receive said ball, and means for manipulating said catcher to release said ball.

17. A ball game-apparatus comprising a playing surface having a hole therein, means for manipulating and forcibly moving a ball upon said playing surface, a vertically movable catcher yieldingly held in normal position above said playing surface near said hole and adapted to receive said ball, and means for moving said catcher from normal position to release said ball.

18. A ball game apparatus comprising a playing surface, means for manipulating and forcibly moving a ball upon said playing surface, a vertically movable catcher adapted to receive said ball, said catcher comprising a resilient clip mounted upon a vertically movable stem, an

operating lever connected to said stem, and a spring for holding said parts in normal position.

853,464. COMMUTATING ELECTRIC MOTOR. RALPH D. MERSHON, New York, N. Y. Filed Feb. 15, 1904. Serial No. 193,548.



Claim.—1. In a commutating electric motor, the combination with the stationary and moving elements thereof, and a source of current, of means for producing a desired distribution of magnetic flux in one of the elements by feeding the current or currents thereto at a plurality of points per pole, and means for varying the number of poles, as set forth.

2. In a commutating electric motor, the combination with the stationary and moving elements thereof, and a source of current, of means for varying the number of poles in both elements, and means for short-circuiting the winding or windings in one of the elements, as set forth.

3. In a commutating electric motor, the combination with the stationary and moving elements thereof, and a source of current, of means for producing a desired distribution of magnetic flux in one of the elements by feeding the current or currents thereto at a plurality of points per pole, means for varying the number of poles in both elements, and means for short-circuiting the winding or windings of one of the elements, as set forth.

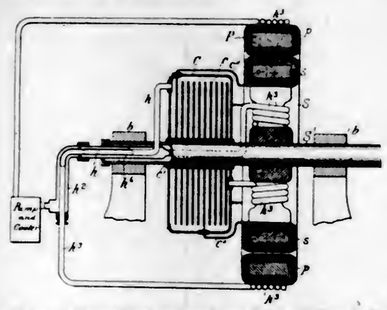
4. In a commutating electric motor, the combination with the stationary and moving elements thereof, and a source of current, of means for producing a desired distribution of magnetic flux in one of the elements by feeding the current or currents thereto at a plurality of points per pole, means for short-circuiting the winding or windings of the other element, and means for varying the number of poles in the primary element, as set forth.

853,465. INDUCTION-MOTOR AND GENERATOR. RALPH D. MERSHON, New York, N. Y. Filed May 28, 1906. Serial No. 319,096.

Claim.—1. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, and a rotating electrolytic condenser or condensers connected with the secondary winding or windings, as set forth.

2. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, a shaft therefor, an electrolytic condenser or condensers mounted on the same shaft and rotating with the secondary element, and connections from the condenser or condensers to the secondary winding or windings, as set forth.

3. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, a plurality of condenser plates or electrodes rotating with the shaft, a casing inclosing the plates and adapted to contain an electrolyte, and connections from the said plates or electrodes to the secondary winding or windings, as set forth.



4. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, a shaft therefor, a casing mounted on the same shaft and rotating therewith and adapted to contain an electrolyte, a plurality of condenser plates or electrodes in the casing, and connections from the condenser plates or electrodes to the secondary winding or windings, as set forth.

5. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, a shaft therefor, a cylindrical casing mounted concentrically on the same shaft alongside of the secondary element, and adapted to contain an electrolyte, a plurality of condenser plates or electrodes in the casing, arranged concentrically about the shaft, and connections from the plates or electrodes to the secondary winding or windings, as set forth.

6. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, a rotating electrolytic condenser or condensers connected with the secondary winding or windings, and means for cooling the condenser or condensers, as set forth.

7. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, a shaft therefor, a plurality of condenser plates or electrodes rotating with the shaft and connected with the secondary winding or windings, a casing inclosing the plates and adapted to contain an electrolyte, and means for circulating the electrolyte through the said casing, as set forth.

8. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, a hollow shaft therefor, a casing through which the shaft extends, adapted to contain an electrolyte, plates or electrodes inside the casing, rotating with shaft and connected with the secondary winding or windings, pipes extending from the casing through the hollow shaft, a rotating coupling on said pipes, and circulating means connected with said pipes through said rotating coupling whereby the electrolyte may be circulated through the casing, as set forth.

9. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, an electrolytic condenser or condensers rotating with the secondary element, and connected with the secondary winding or windings, and means for cooling the condenser or condensers and the primary element, as set forth.

10. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, an electrolytic condenser or condensers rotating with the secondary element and connected with the winding or windings thereof, and means for cooling the condenser or condensers, the primary element and the secondary element, as set forth.

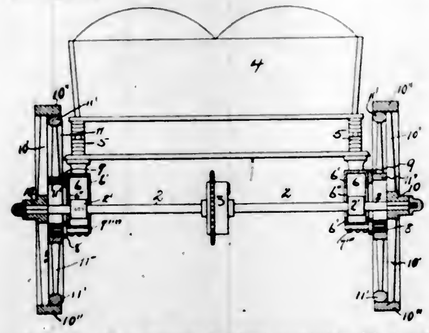
11. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, an electrolytic condenser or condensers rotating with the secondary element and connected with the winding or windings thereof, and means for circulating the electrolyte through the condenser or condensers, the primary and the secondary elements, as set forth.

12. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, an electrolytic condenser or condensers rotating with the secondary element and connected with the winding or windings thereof, and means for varying the number of poles in the primary element, as set forth.

13. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, an electrolytic condenser or condensers rotating with the secondary element, and having connections direct from the condenser or condensers to the secondary winding or windings, and means for varying the number of poles in the primary element, as set forth.

14. In an alternating current machine of the induction type, the combination of a primary element, a rotating secondary element, an electrolytic condenser or condensers rotating with the secondary element on the same shaft and provided with a cylindrical casing, connections from the condenser elements to the secondary winding or windings, and means for varying the number of poles in the primary element, as set forth.

853,466. PROTECTED CUSHIONED WHEEL. HENRY J. NAGLE, Abbottstown, Pa. Filed Apr. 21, 1906. Serial No. 313,032.



Claim.—1. In a vehicle, a wheel provided with a cushioned tire, in combination with a wheel having a protective tire extending over the tread surface of the cushioned tire, said last named wheel being movable independent of the said cushion tired wheel, and means for driving said wheels together while allowing the protecting wheel to have movement independent of the cushion tired wheel in a vertical plane, substantially as described.

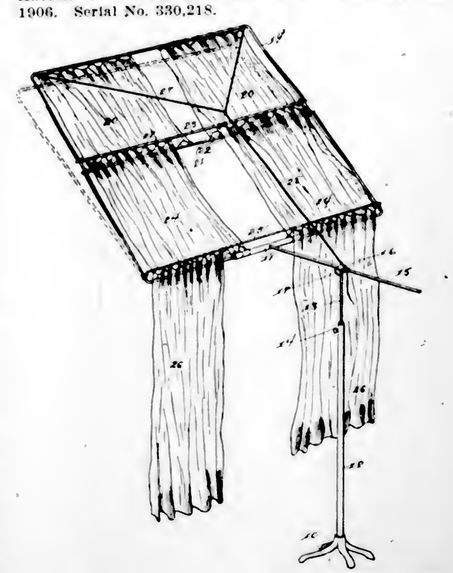
2. In a vehicle, an axle, a boxing through which said axle extends and in which it is free to move vertically, a projecting bearing shaft supported on said boxing, a cushioned wheel surrounding said axle and said bearing shaft and having an enlarged hub surrounding the shaft and axle and eccentric to the said shaft, the inner surface of said hub having rotative engagement with said shaft, a wheel mounted on the said axle independent of the cushioned wheel and having a protective tire extending over the tread surface of the cushioned wheel, substantially as described.

3. In a vehicle, an axle, a vertically slotted box through which the axle passes, a shaft projecting from the lower end of said box, a wheel having an enlarged hub, whose center is eccentric to said shaft surrounding both the axle and the shaft, but having rotative bearing engagement with the latter, a cushioned tire on said wheel, and a protective wheel on the said axle having a tire projecting over the tread surface of the said cushioned wheel, substantially as described.

4. In a vehicle, an axle, a vertically slotted box through which the axle passes and in which it is free to move vertically, a collar on the said axle inclosed within said box, an outer protective wheel on the end of said axle and having an inwardly projecting tire and an inner wheel independent of the said outer wheel located within the same, having a tire of resilient material inclosed within the protective tire, said inner wheel having an enlarged hub surrounding the axle at a distance therefrom, and an outwardly projecting shaft supporting the anti-friction bearing and engaging with the inner surface of said hub, substantially as described.

5. In a vehicle, an axle, slotted boxings through which the ends of the axle pass and in the slots of which it has vertical movement, springs on the said boxings supporting the vehicle body, an outwardly projecting bearing shaft on each box having an anti-friction bearing thereon, outer wheels on the extremities of the axle having inwardly projecting protective tires, inner wheels located within the tires of the outer wheels having resilient tires, said inner wheels inclosing the axle and the bearing shafts, the hubs of said wheels having rotative engagement with the anti-friction bearings on the said shafts, substantially as described.

853,467. PHOTOGRAPHER'S LIGHT-REGULATOR. ALONZO C. NOYESS, Rochester, N. Y. Filed Aug. 11, 1906. Serial No. 330,218.



Claim.—1. In a photographers light regulator, a standard having an adjustable extension at its top, a rod adjustably connected with the extension, a tubular cross head fixed to the end of the rod, an adjustable coupling device to fasten the rod to the extension and a frame for supporting curtains pivotally connected with the cross head by extending the ends of the frame into the ends of the cross head, to operate as set forth.

2. In a photographers light regulator, a standard having an adjustable extension at its top, a rod adjustably connected with the extension, a coupling device for adjustably connecting the rod with the standard, a tubular cross head fixed to the end of the rod, a frame composed of a single wire for supporting curtains pivotally connected with the cross head by inserting its ends in the ends of the cross head and a plurality of curtains adjustably connected with the frame.

3. In a photographers light regulator, a standard hav-

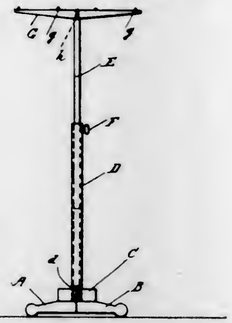
ing an adjustable extension at its top, a rod having a tubular cross head at its end a coupling device for adjustably fastening the rod to the extension, a frame composed of a single length of wire for supporting curtains pivotally connected with the cross head and a plurality of curtains adjustably connected with the frame and cords to adjust the pivoted frame relative to the cross head and standard, as set forth.

4. A photographers light regulator, comprising a portable standard, an adjustable upward extension at the top of the standard, a rod adjustably connected with the said extension, a cross head at the end of the rod, a quadrangular frame pivotally connected with said rod, cross wires fixed to the frame and curtains adjustably connected with the frame and the cross wires.

5. A photographers light regulator comprising a portable standard, a rod adjustably connected with the standard, a cross head at the end of the rod, a quadrangular frame pivotally connected with said rod, cross wires fixed to the frame, curtains adjustably connected with the frame and the cross wires and means for adjusting the inclination of the frame, arranged and combined to operate as set forth.

6. A photographers light regulator comprising a portable standard having an adjustable extension at its top, a rod adjustably connected with the extension, a cross head fixed to the end of the rod, a frame pivotally connected with the cross head, cross wires fixed to the frame, two curtains connected with the top of the frame and a cross wire, two curtains connected with the upper cross wire and the lower end of the frame, two curtains connected with the lower cross wire and cords connected with the upper corners of the frame, all arranged and combined to operate as set forth.

853,468. MAP-HOLDER. OROPH NYGREN, Weston, Nebr. Filed Dec. 5, 1906. Serial No. 346,505.

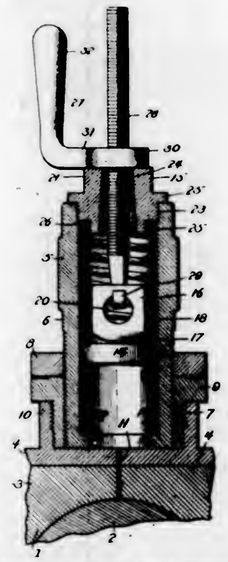


Claim.—In a knock-down map-holder, the combination, with a base comprising two crosspieces provided with notches, a base-block provided with a screwthreaded hole, and screws for securing the said base-block to one crosspiece so that it clamps the other crosspiece; of a tube provided with a screwthreaded end portion which engages with the said hole, a rod slidable in the said tube and having a screwthreaded projection at its outer end, and a crossbar provided with projections for engaging the maps and having a screwthreaded hole which engages with the said projection.

853,469. AUTOMATIC LUBRICATING DEVICE. PHILIP L. PASSAVANT, Connellsville, Pa., assignor of one-half to Francis M. Cockrell and Thomas W. Baxter, Connellsville, Pa. Filed Sept. 21, 1906. Serial No. 335,545.

Claim.—1. An automatic lubricating device comprising a lubricant containing case, a spring actuated plunger within the case having a head on its upper side, and a detachable stem for the plunger, there being a non-threaded connection between said head and the stem, substantially as described.

2. An automatic lubricating device comprising a cylindrical case adapted to contain a lubricant cartridge, a perforated cap for said case, a spring-actuated plunger within the case provided with a transversely perforated head and a detachable stem fitting therein, substantially as described.



3. An automatic lubricating device comprising a cylindrical case, a removable perforated cap therefor, a spring-actuated plunger within the case provided with a transversely perforated head and a detachable screw-threaded stem adapted to engage the perforated head, substantially as described.

4. An automatic lubricating device comprising a lubricant-containing case, a perforated cap therefor, a spring-actuated plunger within the case provided with a transversely perforated head, a detachable screw-threaded stem adapted to engage the perforated head, and a nut carried on said stem, substantially as described.

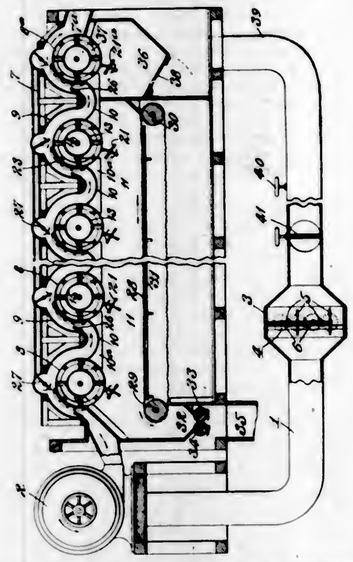
5. In an automatic lubricating device, the combination with a lubricant-containing case, and a perforated cap therefor, of a spring-actuated plunger within the case provided with a transversely perforated head, a detachable screw-threaded stem having a hook at one end adapted to engage the perforated head of the plunger, and a crank-nut upon the opposite end, substantially as described.

853,470. COTTON-SEPARATOR. WARREN A. PATTERSON, St. Louis, Mo., assignor to American Cotton Separator Company, St. Louis, Mo., a Corporation of Oklahoma. Filed Sept. 8, 1905. Serial No. 277,622.

Claim.—1. A cotton separator cylinder comprising a cylindrical core, longitudinal spacing pieces arranged about the periphery of the core, and bands encircling the core and connected to said spacing pieces, said bands being spaced apart and having lint-receiving projections; substantially as described.

2. In a cotton separator, the combination with a casing having a tortuous passage for the passage of the cotton, cylinders in said casing and in the path of the tortuous passage, spaced bands forming parts of the cylinders, said cylinders terminating short of the sides of the casing, and baffles connected to the sides of the casing and overlapping the ends of the cylinders; substantially as described.

3. In a cotton separating machine, a casing, cylinders in said casing mounted in fixed bearings and having spaced bands around their peripheries provided with edge projections, partitions between the cylinders to provide a separating chamber and a receiving chamber, the cylinders being movable in both chambers so that the cotton which is deposited on the cylinders in the separating chamber will be carried to the receiving chamber, and means for removing the cotton from the cylinders in the receiving chamber; substantially as described.



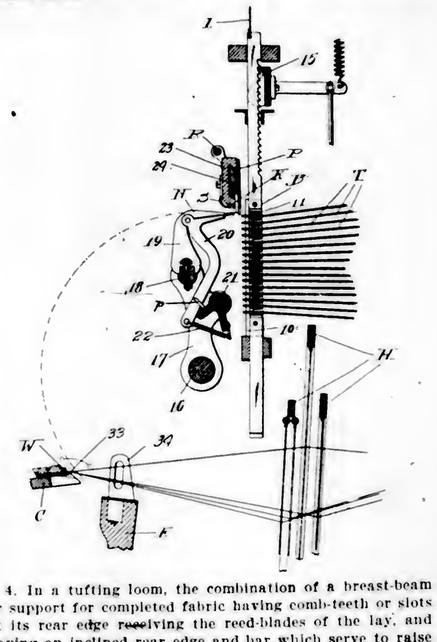
4. A cotton separator comprising a casing divided into a separating chamber and a receiving chamber, separating cylinders in said casing having their peripheries movable within the separating chamber and receiving chamber, said cylinders having slots in their peripheries, the edges of the slots being provided with projections, means for introducing an air blast through the slots within the cylinders, said cylinders having their ends spaced away from the sides of the casing, and baffles connected to the sides of the casing and overlapping the ends of the cylinders; substantially as described.

853,471. TUFTING MECHANISM FOR LOOMS. WILLIAM PEARSALL, Worcester, Mass., assignor to Matthew J. Whittall, Worcester, Mass. Filed Feb. 23, 1904. Serial No. 194,707.

Claim.—1. In a tufting mechanism for looms, the combination of a rack adapted to hold the ends of yarns projecting therefrom, and means for severing the projecting ends of the yarn, comprising a guide-plate having comb-teeth on the lower edge thereof, means for moving the guide plate downwardly in an inclined direction toward the face of the rack, a knife mounted on the guide-frame, and means for moving the guide laterally along the guide-frame.

2. In a tufting mechanism for looms, the combination of a rack having the ends of yarns projecting therefrom, means for severing the projecting ends of the yarn consisting of a guide plate with comb-teeth on the lower edge thereof, said guide plate being mounted so that the same can be moved down and toward the face of the rack, with a knife mounted on the guide frame, and movable thereon, a cord for moving said knife, and means for inserting the cut off pieces of yarn to form the pile of a fabric.

3. In a tufting loom, the combination of a breast beam or support for completed fabric having comb teeth or slots at its rear edge for receiving the reed blades, and having an inclined rear edge and bar serving to raise the pile when the fabric is beaten up, a retaining wire, and means for operating the same to engage behind successively formed tufts.



4. In a tufting loom, the combination of a breast-beam or support for completed fabric having comb-teeth or slots at its rear edge receiving the reed-blades of the lay, and having an inclined rear edge and bar which serve to raise the piles, a retaining wire, with two cams connected to operate the retaining wire to engage behind successively formed tufts, and move the same forward out of the way.

853,472. COMBINED MAIL-BAG CATCHER AND DELIVERER. GEORGE E. PERKINS, Atkinson, Ill., assignor of one-fourth to Oscar D. Maloney and one-fourth to Paul D. Ransom, Atkinson, Ill., and one-fourth to Arthur Burrall, Rock Island, Ill. Filed July 30, 1906. Serial No. 328,488.

Claim.—1. In a mail bag catcher and deliverer, an arm carrying a catcher-fork, a rod extending across a car doorway for carrying said arm, keepers for said rod to fit in, and pivoted catches attached to the ends of said rod and adapted to extend at an angle to the rod to prevent its displacement from the keepers and to be moved parallel with the rod when the rod is to be withdrawn, substantially as described.

2. In a mail bag catcher and deliverer, a supporting rod extending across a car doorway, and an arm carrying a catcher-fork and formed with a sleeve slidable on said rod, said sleeve having anti-friction rolls adjacent to its ends and located to bear on opposite sides of the supporting rod, substantially as described.

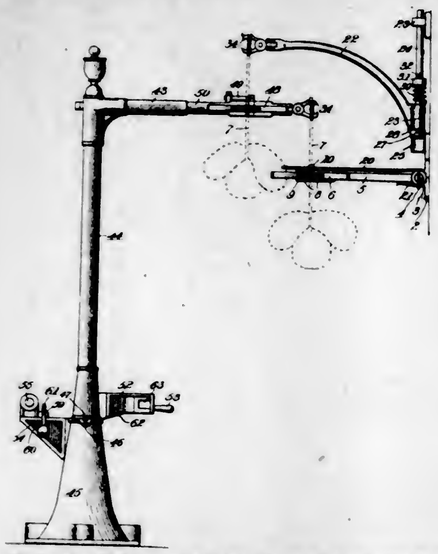
3. In a mail bag catcher and deliverer, a catcher-fork arm sustained from a support on a car, and a slidable wind-guard carried by said fork and adapted to be projected and retracted, substantially as described.

4. In a mail bag catcher and deliverer, a delivery-arm post attached to a car, and a delivery arm formed with a sleeve rotatably mounted on said post, said sleeve and post being formed with interlocking devices for securing the arm in position and adapted to be disengaged as the bag is snatched from the arm so that the arm may swing to its inactive position, substantially as described.

5. In a mail bag catcher and deliverer, a laterally swing-

ing delivery arm supported on a car, and means for regulating resistance offered by said arm against lateral movement, substantially as described.

6. In a mail bag catcher and deliverer, a delivery arm post attached to a car, a laterally swinging delivery arm rotatably mounted on said post, and means for regulating resistance to be offered by said arm against lateral movement, substantially as described.



7. In a mail bag catcher and deliverer, a delivery-arm post attached to a car, a laterally swinging delivery arm rotatably mounted on said post, a spring acting on a part of said arm to offer resistance to lateral movement of the arm, and means for regulating the tension of said spring, substantially as described.

8. In a mail bag catcher and deliverer, a delivery-arm post formed with an angular portion fitting in a correspondingly shaped socket attached to a car, a portion of said post being threaded, a delivery-arm having a sleeve rotatably mounted on said post, a spring encircling the post at one end of said sleeve, and a threaded nut or collar fitting to the threaded portion of the post to regulate the tension of said spring, substantially as described.

9. In a mail bag catcher and deliverer, a delivery arm provided with a cable suspension-hook connected to the arm to have a limited lateral movement relatively thereto, said hook having a slotted end fitting within said arm, a bolt passing through said slot and supported by the arm, and a spring bearing against opposite sides of the hook for holding said hook in its normal position, substantially as described.

10. In a mail bag catcher and deliverer, a delivery arm provided with a cable suspension-hook having jaws one movable relatively to the other, and a spring to hold the jaws normally spread apart, substantially as described.

11. In a mail bag catcher and deliverer, a delivery arm provided with a cable suspension-hook having jaws one movable relatively to the other, one of said jaws being formed with a depression on its outer face and the other with a shoulder, and a spring to hold the jaws normally spread apart, substantially as described.

12. In a mail bag catcher and deliverer, a crane comprising a base, a rotatable post thereon having an overhanging arm provided with mail bag catching and delivering devices, and an elastic bumper, against which a part of the rotatable post strikes for cushioning the post in its rotation, substantially as described.

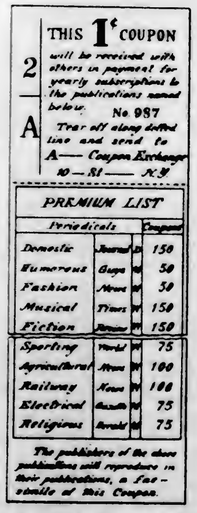
13. In a mail bag catcher and deliverer, a crane comprising a base, a rotatable post thereon having an overhanging arm carrying mail bag catching and delivering devices, and an automatically acting lock for holding the post and its arm in position with the arm removed from its receiving and delivering position in either direction of rotation of the post, substantially as described.

14. In a mail bag catcher and deliverer, a crane comprising a base, a rotatable post having an overhanging arm carrying mail bag catching and delivering devices, an arm extending from the lower portion of the post, and a gravity catch to engage a part of said arm to hold the post with its overhanging arm in its withdrawn position, substantially as described.

15. In a mail bag catcher and deliverer, a crane comprising a base, a rotatable post having an overhanging arm carrying mail bag removing and delivering devices, an arm extending from the lower portion of the post, a cushioned bumper for said extended arm to strike against, and a catch for engaging said arm to hold the post and its overhanging arm in their withdrawn position, substantially as described.

16. In a mail bag catcher and deliverer, a crane comprising a base, a rotatable post having an overhanging arm carrying mail bag receiving and delivering devices, an arm extending from the lower portion of the post, a bracket supported by the base, a spring bumper supported by said bracket, and a gravity catch for engaging the arm extending from the post when it strikes the bumper and holding said post and its overhanging arm in their withdrawn position, substantially as described.

853,473. MEANS FOR COÖPERATIVE ADVERTISING. JOHN H. REOHR, Yonkers, N. Y., assignor, by mesne assignments, to The Magazine and Book Company of New York, a Corporation. Filed Jan. 23, 1905. Serial No. 242,256.



Claim.—1. Means for co-operative advertising comprising a leaflet, consisting of a list of periodicals, a list of commodities, a list of producers of said commodities, and a coupon, said coupon containing a notice that it is redeemable in payment for subscriptions to the periodicals contained in said list.

2. Means for co-operative advertising comprising the combination of a printed leaflet and an attached coupon; said leaflet comprising a classified list of periodicals or similar publications, a list of commodities of different kinds and their respective producers, said coupon containing a promise of the issuing party to redeem said coupon and directions to the holder for securing such redemption.

3. Means for co-operative advertising comprising the combination with a printed leaflet containing a classified list of periodicals or similar publications, a list of commodities of different kinds and their respective non-competing producers, of an attached coupon containing the redemption agreement of a third party of issue.

4. Means for co-operative advertising and means for ascertaining the results therefrom, comprising a leaflet containing a premium list of periodicals, a purchasing list of producers and a coupon, each producer in the list being provided with an identification number and each coupon being provided with the number of the producer with whose goods it is inclosed and with an individual checking number by which it can be traced.

5. Means for co-operative advertising comprising a leaflet having thereon a list of commodities and their respective producers, a list of periodicals and a coupon containing a notice that it is redeemable in payment for subscriptions to the periodicals comprised in the list, said coupon containing means for identifying the producer with whose goods it was inclosed.

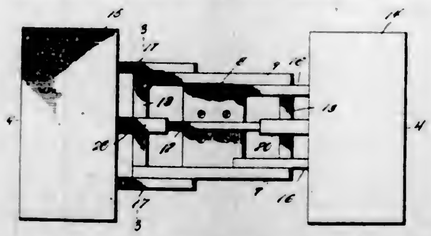
6. Means for co-operative advertising consisting of a coupon leaflet comprising a list of commodities and their respective producers, a list of periodicals, an attached coupon and identification numbers upon the list of producers and coupon providing means for identifying the producer with whose goods it was inclosed when the said coupon has been detached.

7. The hereinbefore described means for co-operative advertising comprising in a leaflet a coupon, a list of publications, a list of commodities and their respective producers, a notice that the coupons are found only in the commodities named, a notice that the coupon is redeemable in payment for subscriptions to the periodicals named, and numbers and letters for checking and identification, substantially as set forth.

8. Means for co-operative advertising consisting of a leaflet, comprising a list of commodities and their respective producers, a list of periodicals, and a coupon, said coupon containing a statement that it will be redeemed in payment for subscriptions to the periodicals named in the list, an identification number corresponding to the list number of the producer with whose goods it is inclosed, and a checking number constituting means for tracing the package within which it was inclosed.

9. Means for co-operative advertising consisting of a leaflet comprising a list of periodicals and the number of coupons needed to purchase a subscription to each, a list of commodities and their respective producers, an identification number opposite the name of each producer and a coupon, said coupon containing a statement of its cash value, a statement that it is redeemable in payment for subscriptions for the periodicals comprised in the list, the name and address of the redeeming agent, an identification number corresponding to that of the producer with whose goods it is inclosed, and a checking number constituting means for tracing the package from which the coupon was obtained.

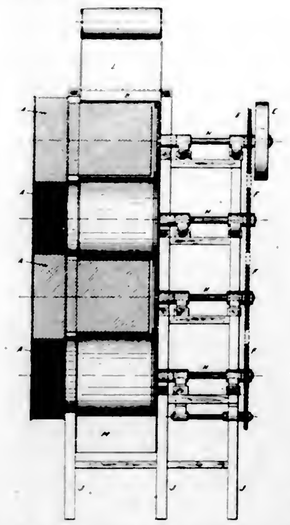
853,474. EXTENSION-TABLE. DAVID P. ROCKEFELLER, Sunbury, Pa. Filed Apr. 13, 1906. Serial No. 311,605.



Claim.—1. In an extension table, the combination of a pedestal; a cross beam mounted thereon; braces attached to the upper face of said cross beam, and extending transversely thereof; a rail attached to said cross beam intermediate said braces; tops; strips secured to the under face of each top; the strips of one top being slidable along the inner sides of said braces and the strips of the other top being slidable along the outer sides of said braces; a floating brace slidable upon each end of said rail; and means upon the under face of each top to limit the movement of the corresponding floating brace.

2. In an extension table, the combination of a pedestal; a cross beam mounted thereon; braces attached to the upper face of said cross beam, and extending transversely of said cross beam; guide grooves formed on the opposite sides of said braces; a rail attached to the upper face of said cross beam between said braces, and extending parallel therewith; tops; a pair of strips secured to the under face of each top; the strips of one top being slidable along the inner sides of said braces, and the strips of the other top being slidable along the outer sides of said braces, and each pair of strips being provided on its sides adjacent the braces with guide grooves alining with the grooves in the braces; a key slidable in each pair of alining grooves; a grooved floating brace slidable upon the upper face of said rail; and means secured to the under face of each top for limiting the movement of the corresponding floating brace.

853,475. ELECTROMAGNETIC MACHINE OR CONCENTRATOR. JOHN H. RYAN, Portland, Oreg., assignor of one-third to O. B. Stubbs and one-third to Charles N. Ryan, Portland, Oreg. Filed July 14, 1904. Serial No. 216,606.



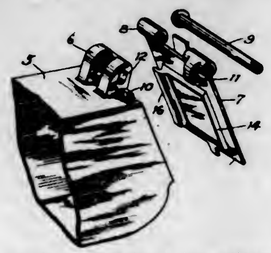
Claim.—1. In a magnetic separator, a revolving shell having a smooth outer surface and an open end, a fixed magnet extending through the open end of said shell and arranged to produce a magnetic field substantially concentric thereto, and a scraper bearing on said shell, as set forth.

2. In a magnetic separator, a revolving shell having a smooth outer surface, a fixed magnet comprising a winding exterior to the shell and a cylindrical pole-piece within the shell and arranged to produce a magnetic field substantially concentric thereto, and a scraper bearing on said shell, as set forth.

3. In a magnetic separator, a smooth-surfaced revolving shell one end of which is open and the other end of which carries a journal, a fixed magnet comprising a winding and a cylindrical pole piece extending into the open end of said shell and arranged to produce a magnetic field sub-

stantially concentric thereto, and a scraper bearing on said shell, as set forth.

853,476. JOURNAL-BOX. PIERCE D. SCHENCK, Dayton, Ohio. Filed Feb. 6, 1905. Serial No. 244,513.



Claim.—1. In combination a journal box, a lid opening upward on a hinge in its own plane and having a tongue-and-groove joint with the side of the box opening and means to automatically move the lid laterally to provide for the engagement of the tongue and groove as the lid closes, substantially as described.

2. A journal box having an inturned flange on the side in combination with a lid hinged in its own plane and having a hooked rib to engage said flange and lock the lid in place upon the journal box, and means for automatically moving the lid laterally to provide for the engagement of the said hooked rib and flange as the lid is closed, substantially as described.

3. In combination a box, a lid hinged thereto by means allowing an upward swinging movement and a sidewise movement, said box and lid being provided with a tongue and groove joint along the side, and automatic means to swing the lid sidewise as it closes and cause an interlocking at the tongue and groove joint.

4. In combination a box having an opening provided with a groove along the side of such opening, a lid provided with a tongue along its side and hinged at the end of the opening by means permitting an upward swinging movement of the lid and a lateral movement thereof, and automatic means to swing the lid sidewise as it closes and cause the engagement of the said tongue and groove.

5. The combination of a journal box having an upwardly extended lug, a lid hinged to the box so as to allow a movement lateral to the plane of rotation of the lid, said lid having a depending hook to ride over said lug, said box and lid having co-operating locking means operated by said lateral movement to lock the lid in place as it moves to place.

6. A journal box having a sloping bearing surface on one side and an inturned flange on the other, in combination with a lid having a corresponding sloping bearing surface and a hooked rib to make a tongue-and-groove joint with said flange, on the other side, said lid being hinged so as to allow an upward swinging movement and a sidewise movement to cause an interlocking with the said flange.

853,477. FAN. OTTO SELG, New York, N. Y. Filed Jan. 31, 1907. Serial No. 354,979.

Claim.—1. A fan provided with a corrugated air distributing screen, substantially as specified.

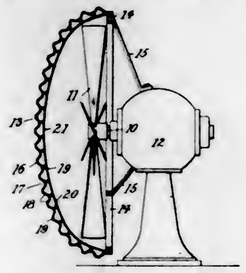
2. A fan provided with a corrugated air distributing screen having openings in its furrows, substantially as specified.

3. A fan provided with a corrugated air distributing screen having openings in its ridges, substantially as specified.

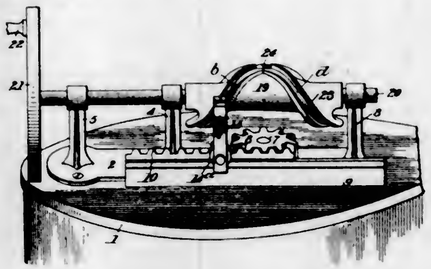
4. A fan provided with a corrugated air distributing screen having openings in its furrows and ridges, substantially as specified.

5. A fan provided with an air distributing screen having openings, and projections at the sides of such openings, substantially as specified.

6. A fan provided with a corrugated air distributing screen having openings, and projections at the sides of such openings, substantially as specified.



853,478. MECHANICAL MOVEMENT. HANS H. A. SIEVERS, Davenport, Iowa. Filed Sept. 20, 1904. Serial No. 225,270.



Claim.—1. A mechanical movement embodying a continuously rotated driving member, a reciprocatory rack bar having a slide swiveled therein adapted to engage the driving member, an alternately rotated driven member having a pinion engaged by the rack bar, and means formed on the driving member to impart a variable speed to the rack bar and driven member.

2. A mechanical movement embodying a continuously rotated driving member having a duplex peripheral cam groove, a reciprocatory rack bar provided with a slide block adapted to engage the cam groove, and an alternately rotated driven member having a pinion with which the rack-bar engages.

3. A mechanical movement comprising a continuously rotated driving drum having a duplex peripheral cam groove that describes two parabolic curves each of which terminates and joins at the center on one side of the drum, a rack bar a slide block swiveled therein adapted to engage with the cam groove, and an alternately rotated driven shaft a pinion which engages with the rack bar.

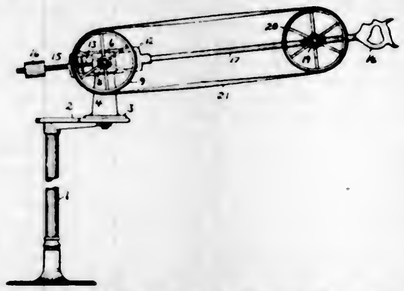
4. A mechanical movement for washing machines embodying a driven shaft a pinion thereon, a grooved guide secured to the machine, a rack bar slidably mounted in said guide and having a rack in engagement with the pinion and also having a vertical standard extending above the pinion, a slide block swiveled in the standard and projecting laterally therefrom, and the continuously rotated grooved cam engaged with the slide block, substantially as specified.

5. A mechanical movement for washing machines, embodying a driven shaft, a pinion thereon, a rack bar engaging the pinion, a slide carried by the rack bar, and a driving member having a cam groove engaged by the slide and constructed and arranged to impart a variable speed to the rack and the driven shaft.

6. A mechanical movement for washing machines, embodying a driven shaft, a pinion thereon, a rack bar engaging the pinion, a slide carried by the rack bar, and a driving member having a slide-engaging-surface of such shape as to reciprocate the rack with a gradually diminishing and increasing speed at the end and beginning of each stroke respectively.

7. A mechanical movement for washing machines, embodying a driven shaft, a pinion thereon, a rack bar engaging the pinion, an oblong slide block swiveled in the rack bar and having convex sides, and a driving member having a duplex peripheral cam groove engaged by the slide block.

853,479. MEAT-SAW. JOSEPH E. SMITH, Fort Wayne, Ind., assignor of one-half to Sebastian C. Kiser, Huntington, Ind. Filed Mar. 28, 1906. Serial No. 308,407.



Claim.—In a device of the class described a supporting base having thereon a swinging bracket; a secondary base in pivotal connection with the bracket at the outer end thereof; an oscillating block in connection with the latter base; a vertically swinging arm having a handle at its outer end, and having adjustable relation with the block; a band wheel having supported relation with the block and having in connection therewith a suitable motor to actuate the same; another band wheel in line with the former band wheel, and having supported connection with the swinging arm; and a band saw trained upon said wheels.

853,480. MACHINE FOR GLUING BLANKS. PHILIP S. SMITH, Philadelphia, Pa., assignor to Stokes & Smith Company, Philadelphia, Pa., a Corporation of New Jersey. Filed June 12, 1905. Serial No. 264,956.



Claim.—1. In a machine of the character described, a glue applying roller of elastic or compressible material, means for applying glue to said roller, a plurality of strippers of fine gage arranged above and transverse to the axis of said glue applying roller, and a pressure roll located above and normally out of contact with said strippers, the construction and arrangement of parts being such that the strippers will be caused to be embedded in the glue applying roller when pressure is exerted thereon by the passage of blanks through the machine.

2. In a machine of the character described, a glue tank, a glue applying roller of elastic or compressible material rotatably mounted in said tank, a pressure roll located above and normally out of contact with the glue applying roller, and a plurality of tensioned stripper wires of fine gage arranged between and extending transverse to the axis of said roller and roll, said stripper wires being adapted to be embedded in the glue applying roller at the point where they cross the latter when pressure is applied thereto by the action of the pressure roll upon the blanks as they are passed through the machine.

3. In a machine of the character described, a glue tank, a glue roll rotatably mounted therein, a glue applying roller in surface contact with said roll, a presser roller located above and out of contact with the glue applying roller, a plurality of stripper wires or strands arranged above and transversely to the axis of said glue applying roller, and means for tensioning the said stripper wires or strands.

4. In a machine of the character described, a glue applying roller having a plurality of circumferentially arranged peripheral grooves, and strippers arranged transversely to the axis of the roller, said strippers being arranged in line with and substantially filling the grooves of the roller at the point where they cross the latter.

5. In a machine of the character described, a glue applying roller having a plurality of circumferentially arranged peripheral grooves, and strippers arranged transversely to the axis of the roller and extending on opposite sides thereof, said strippers being arranged within and substantially filling the grooves of the roller.

6. In a machine of the character described, a glue applying roller of elastic material having a plurality of circumferentially arranged peripheral grooves, and a plurality of relatively fine stripper wires or strands arranged transversely to the axis of said roller and extending on opposite sides thereof, said wires or strands lying in the plane of the grooves and substantially filling the latter at the point where they cross the roller.

7. In a machine of the character described, a glue tank, a glue distributing roll rotatably mounted therein, a glue applying roller of elastic material arranged above and in surface contact with the said distributing roll, said roller being provided with a plurality of circumferentially arranged peripheral grooves, a plurality of relatively narrow strippers arranged transversely to the axis of the said roller and extending on opposite sides thereof, said strippers being embedded in and filling the grooves at the point where they cross the roller, and a presser roller located above and out of contact with the said glue applying roller.

8. In a machine of the character described, a glue tank, a glue distributing roll rotatably mounted therein, a glue applying roller of elastic material arranged above and in surface contact with the said distributing roll, said roller being provided with a plurality of circumferentially arranged peripheral grooves, a plurality of relatively narrow strippers arranged transversely to the axis of the said roller and extending on opposite sides thereof, said strippers being embedded in and filling the grooves at the point where they cross the roller, means for adjusting the tension of the strippers, and a presser roller located above and out of contact with the said glue applying roller.

9. In a machine for applying glue to blanks, a glue tank, a glue distributing roll rotatably mounted in said tank, a glue applying roller in surface contact with said roll, a presser roller located above and out of contact with the glue applying roller, a plurality of stripper wires or strands arranged above and transversely to the axis of the said glue applying roller, fixed supports on opposite sides of the last-named roller, and adjustable means carried by said suports for retaining and individually adjusting the said strippers.

10. In a machine for coating one surface of sheet material or a blank made therefrom with an adhesive comprising means for applying an unbroken film of the adhesive to one surface of a moving sheet or blank during its movement in one direction, and means embedded in the adhesive-applying means for supporting the sheet or blank while moving and separating or stripping it from the adhesive-applying means after it has received the adhesive coating.

11. A machine for coating one surface of sheet material or a blank made therefrom, comprising an adhesive-applying roll having parallel circumferential ways therein, a feed roll, and transversely-arranged wires passed between

the rolls from front to rear and through the ways and flush with the surface of the adhesive-applying roll.

12. A machine for coating one surface of sheet material or a blank made therefrom, comprising an elastic adhesive applying roll having parallel circumferential ways therein, a feed roll, and supports for the sheet or blank extending from front to rear between the rolls, through the ways and below the bite of the adhesive-applying and feed rolls.

13. A machine for coating one surface of sheet material or a blank made therefrom, comprising an adhesive applying roll having parallel circumferential ways therein, a feed roll, and transversely arranged wires passed between the rolls from front to rear through the ways in the adhesive applying roll to form a support for the blank moving from between the rolls after the adhesive is applied and to support or strip the sheet or blank from the adhesive applying roll.

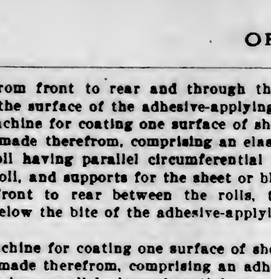
14. A machine for coating one surface of sheet material or a blank made therefrom with an adhesive, comprising a single elastic adhesive-applying roll having peripheral ways therein, horizontal wire supports for the sheet or blank embedded in the ways the sides of which close tightly about the wire supports, and bars on opposite sides of the adhesive-applying roll to which the ends of the wires are fastened.

15. A machine for coating one surface of a blank of sheet material with an adhesive, comprising a single elastic adhesive-applying roll having peripheral ways therein, and horizontal wire supports for the blank embedded in the ways, the sides of which close tightly about the wire supports.

16. In a machine for applying an unbroken pellicle of adhesive material to one surface of a sheet or blank, comprising a single adhesive-applying roll of elastic or compressible material, and stationary means embedded in and closely embraced by the material of the roll, for stripping the coated blank therefrom.

17. In a machine for applying an unbroken pellicle of adhesive material to one surface of a sheet or blank, comprising a single adhesive-applying roll of elastic or compressible material, and stationary wires of fine gage embedded in and closely embraced by the material of the roll, for stripping the coated blank therefrom.

853,481. CRUSHING-ROLLS. FRANK P. SNOW, Los Angeles, Cal. Filed May 9, 1906. Serial No. 315,931.



Claim.—1. In a device of the character described, a pair of crushing rolls, a housing therefor, a screen above the rolls within the housing, and horizontally disposed means independent of the screen interposed between said screen and rolls, said rolls being constructed to throw the crushed material, by centrifugal force, up past said interposed means and against said screen, said means being constructed to automatically return to the action of the rolls material not passed through said screen.

2. In a device of the character described, a housing, a pair of crushing rolls, paddles on the shaft thereof, a screen above the rolls, and means interposed between said screens and rolls, said rolls and paddles being constructed to throw the crushed material, by centrifugal force, up past said interposed means and against said screen, said means being constructed to automatically return to the latter material not passed through the former.

3. In a device of the character described, a housing, a pair of crushing rolls, a screen above said rolls, a horizontally disposed apron interposed between the screen and rolls and independent of the screen, a discharge chute upon which the screen is mounted and a feed chute passed through said discharge chute.

4. In a device of the character described, a housing, a pair of rolls, inclined screens above the rolls, said rolls being constructed to throw the crushed material, by centrifugal force, up against said screens a discharge chute upon which said screens are mounted, and a horizontally disposed apron interposed between said chute and rolls.

5. In a device of the character described, a housing, a pair of rolls, inclined screens above the rolls, said rolls being constructed to throw the crushed material, by centrifugal force, up against said screens a discharge chute upon which said screens are mounted, a horizontally disposed apron interposed between said chute and rolls and having an opening above and between said rolls, and a delivery chute emptying into said apron.

6. In a device of the character described, a housing, a pair of rolls, inclined screens above the rolls, a discharge chute upon which said screens are mounted, a horizontally disposed apron interposed between said chute and rolls, and a feed chute passed through said discharge chute in line with an opening in the apron centrally over said rolls.

7. In a device of the character described, a housing, a pair of crushing rolls therein, paddles on the shafts of said rolls, a screen above the rolls, and a horizontally disposed apron above the rolls and extended laterally beyond the lower end of the screen with its opposite sides upturned and having a discharge opening over said rolls, said rolls constructed to throw the crushed material by centrifugal force, up against said screens.

8. In a device of the character described, a housing, a pair of crushing rolls therein, paddles on the shafts of said rolls, a screen above the rolls, and a horizontal apron above the rolls and extended laterally beyond the lower end of the screen and having a discharge opening over said rolls, said rolls constructed to throw the crushed material by centrifugal force, up against said screens, a discharge chute above said apron and forming a support at the bottom of the screens.

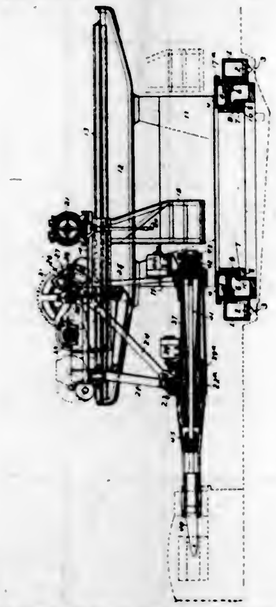
9. In a device of the character described, a housing, a pair of crushing rolls therein, paddles on the shafts of said rolls, a screen above the rolls, and a horizontal apron above the rolls and extended laterally beyond the lower end of the screen and having a discharge opening over said rolls, said rolls constructed to throw the crushed material, by centrifugal force, up against said screens, a discharge chute above said apron, and a feed chute passed through said discharge chute with a tight joint and terminating above the opening in the apron.

853,482. INGOT-CHARGING CRANE. CLARENCE L. TAYLOR, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed Dec. 22, 1905. Serial No. 293,031.

Claim.—1. In an ingot charging apparatus, the combination with a trolley, a support depending from same and a charging bar carrying frame pivotally secured to said depending support, of a charging bar journaled in said frame, tongs carried by said bar motor and gearing carried by the carrying frame for rotating the charging bar, a motor and gearing carried by the carrying frame for opening and closing the tongs, means carried by the trolley and engaging the carrying frame for rocking the latter and an operators cage independent of the carrying frame and suspended from the trolley.

2. In an ingot charging apparatus, the combination with a charging bar carrying frame, and a pivotal support for the latter, of a charging bar journaled in said frame, tongs carried by said bar, a two part tongs actuating rod connected with said tongs, the two parts of said rod having a swiveled connection, a motor and gearing for moving said tongs actuating rod to open and close the tongs, and a motor and gearing for rotating the charging bar in its carrying frame.

3. In an ingot charging apparatus, the combination with a truck adapted to travel on a track, a turn table on said truck, and an upright frame on said turntable, of a trolley mounted to travel on tracks carried by said upright frame and provided with a depending part, a charging bar frame pivoted to said depending part, a charging bar mounted to rotate in said carrying frame, motors and gearing for propelling the truck, for turning the turn table, for propelling the trolley for rotating the charging bar and for rocking the charging bar carrying frame, and an operators cage depending from the trolley and disconnected from the charging bar frame.

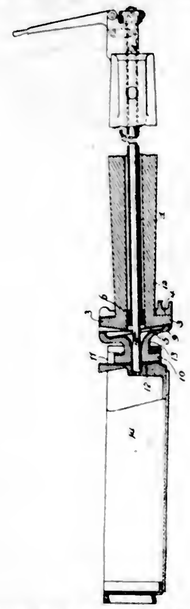


4. In an ingot charging apparatus, the combination with a truck, a turn table thereon, upright frames on said turn table, horizontal parallel girders carried by said frames, a trolley mounted to travel on said girders, a carrying frame depending from the trolley, a charging bar carried by said depending frame and ingot tongs at the end of the charging bar, of a motor and gearing for propelling the truck, a motor and gearing for rotating the turn table, a motor and gearing for propelling the trolley, a motor and gearing for rocking the depending carrying frame, a motor and gearing for rotating the charging bar, and a motor and gearing for opening and closing the tongs.

5. In a charging apparatus for furnaces, the combination of a truck mounted to travel on a track, a turn table carried on the truck, an upright frame secured to said turn table, a trolley mounted to travel on a horizontal track on said frame, a charging bar pivotally suspended from the trolley and mounted to rotate, motors and gearing for imparting the various movements to the several parts, and an operator's cage suspended from the trolley in the rear and independent of the charging bar.

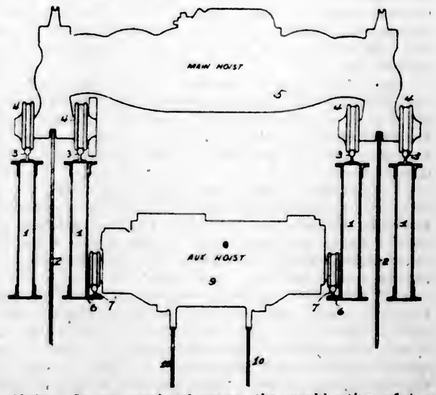
853,483. CHARGING-BAR FOR OPEN-HEARTH CHARGING-MACHINES. CLARENCE L. TAYLOR, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed Aug. 20, 1906. Serial No. 331,379.

Claim.—1. The combination with a charging bar having a head adapted to enter a pocket in a charging box of one type, of a detachable coupling having a pocket to receive the head on the bar and provided with a head to engage the pocket in a charging box of a different type, and means for locking said coupling to the head.



2. The combination with a charging bar having a head adapted to conform to the pocket in one type of charging box, of a detachable coupling having a pocket to receive the head on the bar and provided with a head to engage the pocket in a charging box of a different type, means for locking the coupling to the charging bar and means for locking the box to the coupling.

853,484. OVERHEAD TRAVELING CRANE. CLARENCE L. TAYLOR, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed Aug. 27, 1906. Serial No. 332,264.



Claim.—In an overhead crane, the combination of two girders each made up of two parallel separated sections, the latter being disconnected from end to end, a trolley having a bearing on the four girder sections, rails carried by the inner sections of the girder near their lower edges and an auxiliary trolley mounted on said rails.

853,485. LOCK. HARRY P. TOWNSEND, New Britain, Conn., assignor to Corbin Cabinet Lock Company, New Britain, Conn., a Corporation of Connecticut. Filed Dec. 21, 1906. Serial No. 348,844.



Claim.—1. In a lock of the character described, a bolt, a key-controlled rotatable hub for operating the same, and a second key-controlled rotatable locking hub to lock and unlock the first hub, said locking hub being operable independently of the bolt operating hub and operable from the locked position, when its key is inserted, by the bolt operating hub.

2. In a device of the character described, a bolt actuating device, a cylinder lock for operating the same, a stop for said cylinder lock, and a key-controlled means to operate said stop independently of said cylinder lock to check or free the latter, said stop being operable in one direction by the cylinder lock when the key is inserted in said key controlled means.

3. In a device of the character described, a bolt, means for advancing and retracting the same, two key-controlled devices, both of which must be operated to operate said bolt, and means of connection to permit one of said devices to be moved in advance of the other if desired and means carried by the bolt operating device to operate the other device.

4. In a device of the character described, a bolt operating device, a cylinder lock for operating the same, and a second cylinder lock operable independently of the first for locking or freeing the first mentioned cylinder lock and operable in one direction by the first cylinder lock to free the same when the key is inserted in the second cylinder lock.

5. In a device of the character described, a case having two key-ways and two key-controlled devices arranged to be operated by two separate keys, one of said key-controlled devices coöperating with said bolt, the other of said key-controlled devices coöperating with the first mentioned key-controlled device to lock or release the same, said second key controlled device, upon the insertion of its key in its locked position, being operated by the second key controlled device.

6. In a device of the character described, a bolt, two independent key-controlled hubs arranged to be operated by two separate keys, means carried by one of said hubs for engaging said bolt, and means carried by the other hub for engaging the first mentioned hub, said latter means including a pawl.

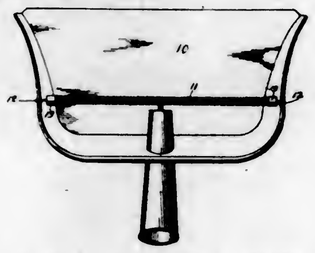
7. In a lock, two independent tumbler locked hubs arranged to be released and operated by two differently bitted keys, means carried by one of said hubs for engaging a locking bolt, and means carried by the other hub for locking the first mentioned hub against operation in one direction only.

8. In a device of the character described, a bolt, two independent key-controlled hubs arranged to be operated by two separate keys, means carried by one of said hubs for engaging said bolt, and means carried by the other hub for engaging the first mentioned hub, said latter means including a pawl and a stop shoulder.

9. In a lock, two independent pin-tumbler locked hubs, a bolt operable by one hub, a locking device carried by the second hub and adapted to lock the first in its locked position when the second is in its normal position and the key therefor is withdrawn, said second hub being operable independently of the first and by the first when the second is in normal position and its key inserted.

10. In a lock, two key-controlled hubs, a bolt operable by one hub, a locking device between the hubs to interlock the bolt-operating hub against rotation in a direction to retract the bolt unless the other hub is released, said locking device permitting free movement of the bolt-operating hub in a direction to project the bolt irrespective of whether the second hub is released.

853,486. ATTACHMENT FOR DUST-PANS. SAMUEL D. TUNGATE, Des Moines, Iowa. Filed May 14, 1906. Serial No. 316,883.

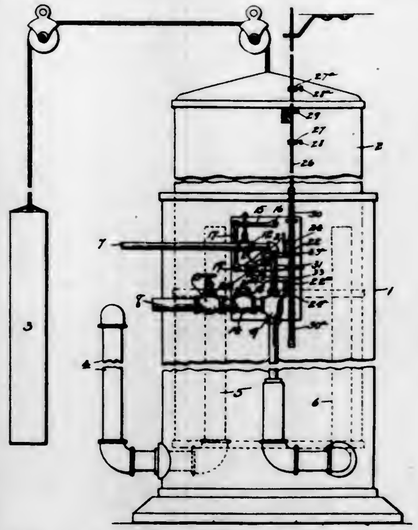


Claim.—1. The combination with a dust-pan, of a coil spring extended transversely across the pan above its bottom and detachably connected with the sides of the pan.

2. The combination with a dust-pan, of a coil spring formed with hooks at its ends, said hooks detachably connected with the sides of the dust pan.

3. The combination with a dust-pan, of a coil spring having hooks formed on its ends, a collar at each end of the spring, each collar having a closed end and having said hook extended through the closed end, said hooks detachably connected with the sides of the dust-pan.

853,487. VALVE-OPERATING MECHANISM FOR AUTOMATIC AIR AND GAS MIXERS. WILLIAM L. TUTTLE, Marengo, Iowa. Filed Nov. 7, 1905. Serial No. 286,290.



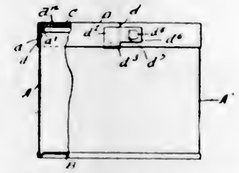
Claim.—1. A valve operating device comprising a lever, a notched disk secured to said lever, pawls to engage the notches in said disk, a bar slidably mounted and having lugs to engage said pawls to release them from engagement with said notches, and means secured to said bar to actuate said lever, substantially as shown and described.

2. A valve operating device comprising a lever, a notched disk secured to said lever, pawls to engage the notches in said disk, a bar slidably mounted and having lugs to engage said pawls to release them from engagement with said notches, and springs secured to said bar and bearing against said lever to actuate it, substantially as shown and described.

3. A valve operating device comprising a lever, a notched disk secured to said lever, pawls to engage said notches, a bar slidably mounted and having lugs thereon to engage said pawls to release them from engagement with said notches, a rod secured to said bar, the end of the lever slidably mounted on said rod, and a spring bearing against each side of the lever and surrounding the rod and secured thereto, substantially as shown and described.

4. A valve operating device comprising a lever, a notched disk secured to said lever, pawls to engage said notches, a bar slidably mounted and having lugs thereon to engage said pawls to release them from engagement with said notches, a rod secured to said bar, the end of the lever slidably mounted on said rod, a spring bearing against each side of the lever and surrounding the rod and secured thereto, collars adjustably secured to said rod, and a reciprocating mechanism to engage said collars to actuate the rod, substantially as shown and described.

853,488. OPEN-MOUTH FRICTION-COVER CAN OR VESSEL. GEORGE W. WEBER, New York, N. Y., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 2, 1906. Serial No. 309,254.



Claim.—1. In an open mouth friction cover can or vessel, the combination with an open mouth body, of a sealing disk or gasket and a friction cover having an integral flange surrounding and embracing the upper portion of the body, and furnished with a severance extending across the same, and with a bridge piece extending across said severance and detachably secured at one end to said cover flange, substantially as specified.

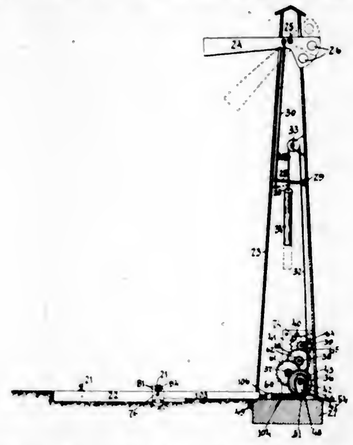
2. In an open mouth friction cover can or vessel, the combination with an open mouth body, of a sealing disk or gasket and a friction cover having a flange surrounding the body and provided with a severance across said flange, and with an integral bridge piece projecting from the lower edge of the cover flange and folded up against the cover and extending across said severance, and having its free end detachably secured to the cover flange, substantially as specified.

3. In an open mouth friction cover can or vessel, the combination with an open mouth body, of a sealing disk or gasket and a friction cover having a flange surrounding the body and provided with a severance across said flange, and with an integral bridge piece projecting from the lower edge of the cover flange and folded up against the cover and extending across said severance, and having its free end detachably secured to the cover flange, the cover flange having an integral lip for detachably securing the free end of said bridge piece thereto, substantially as specified.

4. The combination with an open mouth body, of a friction cover therefor having an integral flange furnished with a severance across the same, and provided with an integral bridge piece projecting from the lower edge of the cover flange at one side of said severance and extending across said severance, and having its free end detachably secured to the cover flange substantially as specified.

5. A friction cover for open mouth cans or vessels, having an integral flange, a severance across the flange and a detachable bridge piece extending across the severance in the flange, said bridge piece being integral with the cover flange and projecting from the lower edge of the cover flange and folded up against the same, substantially as specified.

853,489. RAILWAY-SIGNAL. FRED H. WENDT, Marshfield, Wis. Filed Oct. 19, 1906. Serial No. 339,613.



Claim.—1. In a signal device, the combination of a semaphore assuming a raised position when not otherwise acted on, a winding sheave or drum, an operating cord adapted to be wound on said sheave, means operated by the passage of wheels over a track for winding said sheave, said means being arranged to release said sheave after the passage of said wheels, mechanism regulating the rate of unwinding of said sheave, and a connection between said cord and semaphore whereby the latter is lowered when said cord is unwound.

2. A signal mechanism comprising, in combination, a semaphore, a winding sheave, an operating cord adapted to be wound on said sheave and having a weight suspended therefrom, means connecting said cord with said semaphore to move the latter into clearing position when said weight is lowered, means operated by the passage of wheels over a track to wind the cord on said sheave and raise the weight, said means being arranged to release said sheave after the passage of the train, and mechanism for regulating the time of unwinding said cord from said sheave.

3. A railway-signal comprising a semaphore naturally assuming the danger position, a depressible member in position to be depressed by the wheels passing over said track, a winding-sheave, means actuated by said depressible member for rotating said sheave and releasing it after the train has passed, means acting to rotate said sheave in the opposite direction when released, means for regulating the rate of said last-named motion, and a connection between said sheave and said semaphore whereby the latter is moved into clearing position when said sheave is rotated in the first-named direction and moved into the opposite position when said sheave is turned in the opposite direction.

4. In a railway signal, the combination with a signal device, a winding sheave or drum operating the same, and a self-starting escapement-mechanism comprising a wheel having radial pins or teeth, an oscillating balance-shaft, a balance-weight mounted thereon, a pallet comprising a cylinder cut away concavely on one side in a manner to permit the passage of a pin of said wheel when said pallet is oscillated the necessary distance, and means on said wheel acting on the pallet to swing said balance upwardly against gravity on the advance stroke of the pallet and releasing the pallet on its return stroke whereby said pallet

is free to return and is returned by the weight of the balance.

5. In a railway signal, the combination of a signal device, a winding-drum connected therewith, means actuated by the passage of a train for winding said drum, means acting to unwind said drum when released, and means for regulating the rate of unwinding said drum comprising an escapement-wheel having radial pins on its periphery and axially directed pins on one face thereof, a balance-shaft adjacent thereto, a pallet mounted on said balance-shaft and comprising a cylindrical member cut away concavely at one side in a manner to permit the passage of one of said pins across said pallet only when the pallet is oscillated in a forward direction, a balance-weight adjustably mounted on said balance-shaft in position to be raised against the action of gravity on the advance-movement of said pallet, and a radially projecting pin carried by said balance-shaft and engaging with one of said axially directed pins at the beginning of each advance-stroke of the pallet and disengaged therefrom during the return stroke.

6. In a railway signal, the combination of a tower, a semaphore mounted therein and normally maintained in danger position, an operating cord having a weight suspended therefrom, a connection between said operating cord and semaphore adapted to move said semaphore suddenly into clearing position at a certain point in the movement of said weight, means actuated by the passage of a train over the track for drawing on said cord to raise the said weight, said means being released after the passage of the train, and means for regulating the rate of return movement of said weight after being released.

7. In a railway signal, the combination of a semaphore, a reciprocating member, means for maintaining said reciprocating member normally at one end of its travel, means actuated by the passage of a train for moving and then releasing it, means for regulating the rate of movement of said member, and means actuated by said member to move said semaphore into clearing position when it reaches the end of its return movement.

8. In a railway signal, the combination of a semaphore biased to the danger position, a vertically reciprocating weight, a connection between said semaphore and weight to move the former into clearing position when the latter is at the end of its travel, means actuated by the passage of a train over a track for raising and then releasing said weight, and means regulating the rate of return movement of said weight.

9. In a railway signal, the combination of a semaphore biased to the danger position, a lever pivotally mounted below said semaphore, a link connecting said lever and semaphore whereby the downward movement of the former causes the latter to move into clearing position, a vertically reciprocating member having a stop or dog adapted to strike said lever at the lower end of its travel and move said semaphore into clearing position, means acting to draw said member into its lower position, means actuated by a passing train to raise and then release said member, and means regulating the descent of said member.

10. In a railway-signal, the combination of a semaphore biased to the danger position, a lever pivotally mounted below said semaphore, a link connecting said lever and semaphore whereby the downward movement of the former causes the latter to move into clearing position, a vertically reciprocating member having a stop or dog adapted to strike said lever at the lower end of its travel and move said semaphore into clearing position, means acting to draw said member into its lowered position, means actuated by a passing train to raise and then release said member, and a self-starting escapement-mechanism adapted to regulate the descent of said member.

11. In a railway-signal, the combination of a sheave, a flexible member arranged to wind thereon, means acting on said flexible member to rotate said sheave so as to unwind said member therefrom, a ratchet-wheel mounted on the axis of said sheave and connected therewith, a pawl arranged to engage the teeth of said wheel, means actuated by the passage of a train over the track to reciprocate said pawl and thereby rotate said ratchet-wheel and sheave, means acting to withdraw the pawl from the teeth of said wheel after the passage of the train, and mechanism connected with said sheave adapted to regulate the rate of unwinding thereof.

12. In a railway-signal, the combination of a sheave, a flexible member adapted to be wound thereon, means pulling on said flexible member to unwind the same, a ratchet-wheel connected with said sheave, a pawl arranged to engage the teeth of said ratchet-wheel, means normally holding said pawl in engagement with said ratchet-wheel, a member adapted to disengage said pawl from the ratchet-wheel on the backward movement of said pawl, means normally holding said pawl at the end of its backward movement, and a piece mounted adjacent to the track and adapted to be acted on by each wheel passing over the track, said piece being connected with said pawl in such manner as to move it forward when so acted on, and means for regulating the unwinding movement of said sheave.

13. In a railway-signal, the combination of a semaphore, a winding sheave, a flexible member connected with said sheave and having means connected therewith for pulling it so as to tend to unwind said member, a connection between said semaphore and said member whereby said semaphore is moved into clearing position when said flexible member is at the end of its unwinding movement, a ratchet-wheel fixed to the axis of said sheave, a ratchet-arm mounted loosely on the axis of said sheave, a pawl carried by said ratchet-arm and arranged to engage normally the teeth of said ratchet-wheel, a fixed member adapted to strike against said pawl on its backward movement and cause it to disengage the teeth of said wheel, a spring acting to move said ratchet-arm into the retracted position of said pawl, a track-dog adjacent to one rail of the railway-track in position to be acted on by each wheel passing over the track, a link-connection between said dog and said ratchet-arm whereby the latter is advanced each time said dog is acted on by the wheel, and regulating mechanism connected with said sheave adapted to regulate the time of unwinding said flexible member.

14. In a railway-signal, the combination of a semaphore, a winding-sheave, a flexible member connected with said sheave and having means connected therewith for pulling it so as to tend to unwind said member, a connection between said semaphore and said member whereby said semaphore is moved into clearing position when said flexible member is at the end of its unwinding movement, a ratchet-wheel fixed to the axis of said sheave, a ratchet-arm mounted loosely on the axis of said sheave, a pawl carried by said ratchet-arm and arranged to engage normally the teeth of said ratchet-wheel, a fixed member adapted to strike against said pawl on its backward movement and cause it to disengage the teeth of said wheel, a spring acting to move said ratchet-arm into the retracted position of said pawl, a track-dog adjacent to one rail of the railway-track in position to be acted on by each wheel passing over the track, a link-connection between said dog and said ratchet-arm whereby the latter is advanced each time said dog is acted on by a wheel, a gear train having a ratchet-connection with said sheave whereby the sheave may be freely wound but engages said train on its unwinding movement, and a self-starting escapement connected with and limiting the rate of movement of said gear-train.

15. In a railway-signal, the combination of a semaphore, a winding-sheave, a flexible member connected with said sheave and having means connected therewith for pulling it so as to tend to unwind said member, a connection between said semaphore and said member whereby said semaphore is moved into clearing position when said flexible member is at the end of its unwinding movement, a ratchet-wheel fixed to the axis of said sheave, a ratchet-arm mounted loosely on the axis of said sheave, a pawl carried by said ratchet-arm and arranged to engage normally the teeth of said ratchet-wheel, a fixed member adapted to strike against said pawl on its backward movement and cause it to disengage the teeth of said wheel, a spring acting to move said ratchet-arm into the retracted position of said pawl, a track-dog adjacent to one rail of the railway-track in position to be acted on by each wheel passing over the track, a link-connection between said dog and said ratchet-arm whereby the latter is advanced each time said dog is acted on by a wheel, a gear train having a ratchet-connection with said sheave whereby the sheave may be freely wound but engages said train on its unwinding movement, and a self-starting escapement connected with and limiting the rate of movement of said gear-train; said escapement-mechanism comprising a wheel having a plurality of radially set pins or teeth on its periphery and a plurality of axial projections on the face thereof, an oscillating balance-shaft, a pallet mounted on said balance-shaft and comprising a cylindrical collar having one side cut away concavely so as to permit the passage of one of said pins on each forward oscillation of the pallet, a pin projecting radially from said balance-shaft in position to be engaged by one of said projections on each forward oscillation of the pallet, and a swinging balance-weight mounted on said balance-shaft in position to be raised at each forward oscillation of the pallet.

16. In a railway-signal, in combination with a signal tower having one or more slots in the wall thereof, a semaphore mounted thereon and naturally maintaining itself in danger position, a vertically reciprocating member carrying a marker or markers opposite said slot or slots, means acting to draw said reciprocating member into its lowest position, a connection between said member and said semaphore to suddenly move said semaphore into clearing position when said member reaches the lower end of its travel, a track-dog, mechanism operated by said track-dog to raise and then release said reciprocating member, and means for regulating the rate of descent of said member.

17. A railway-signal comprising, in combination, a tower, a semaphore mounted at the upper end thereof and balanced so as naturally to maintain itself in danger position, a lever pivoted on said tower below said semaphore, a link connecting said lever with said semaphore whereby the depression of said lever moves the semaphore into clearing position, a winding-sheave, a flexible connection arranged to be wound on said sheave and having a weight suspended therefrom, said flexible connection passing in juxtaposition to said lever, a projecting member carried by said flexible connection and adapted to strike and depress said lever when said weight reaches its lowermost position, a regulating gear-train having a ratchet-connection with said sheave to regulate the unwinding movement thereof, a ratchet-wheel mounted on the axis of said sheave, a reciprocating pawl engaging said ratchet-wheel, a spring acting on said pawl to move it into its backward position, a fixed member acting on said pawl to disengage it from said ratchet-wheel when in said backward position, a reciprocating member adjacent to the rail of the track in position to be acted on by the wheels of a car or train, and a link-connection between said reciprocating member and said pawl whereby the latter is drawn forward when said member is moved by a car-wheel.

18. The combination of an inclosed track-box having its upper end arranged to receive the flange of a rail and to be closed thereby, said box having an upwardly projecting tubular extension which engages over the edge of the rail-flange, a wheel-block reciprocating vertically in said extension, means for securing the opposite side of the box to the opposite edge of the flange, and mechanism within said box transmitting the vertical movement of said wheel-block in a horizontal direction.

19. The combination of an inclosed track-box having its upper edge arranged to receive the flange of a rail and to be closed thereby, said box having an upwardly projecting tubular extension which engages over the edge of the rail-flange, a wheel-block reciprocating vertically in said extension, means for securing the opposite side of the box to the opposite edge of the flange, and a bell-crank lever mounted in said box and having a horizontal arm pivoted to the lower end of said wheel-block and a vertical arm, and a link-rod connected with said vertical arm.

20. The combination of an inclosed track-box having its upper edge arranged to receive the flange of a rail and to be closed thereby, said box having an upwardly projecting tubular extension which engages over the edge of the rail-flange, a wheel-block reciprocating vertically in said extension, means for securing the opposite side of the box to the opposite edge of the flange, and a bell-crank lever mounted in said box and having a horizontal arm pivoted to the lower end of said wheel-block and a vertical arm, a link-rod connected to said vertical arm, and a cushion or spring inserted between said vertical arm and link-rod whereby to cushion the movement of said link-rod.

21. The combination of a railway-rail, a vertically reciprocating wheel-block mounted adjacent to the inner edge of the tread thereof, means for transmitting the vertical movement of said block in a horizontal direction, and a flange set against the opposite side of the rail-tread and projecting above the latter so as to act as a derailment-guard.

22. The combination of a track-box adapted to grip over the flange of the rail and the latter being arranged to close the top thereof, said box having further an upwardly projecting tubular extension on one side which grips over the edge of the flange, and a wheel-block reciprocating vertically in said tubular extension and having its upper edge adjacent to the inner side of the rail-tread.

23. The combination of a track-box adapted to grip over the flange of the rail and the latter being arranged to close the top thereof, said box having further an upwardly projecting tubular extension on one side which grips over the edge of the flange, a wheel-block reciprocating vertically in said tubular extension and having its upper edge adjacent to the inner side of the rail-tread, a bell-crank lever pivoted in said box below the rail and having a horizontal arm pivoted to the lower end of said wheel-block and a vertical arm, a horizontal link-rod reciprocating through the wall of said box and connected with said vertical arm, and a clamping-plate secured to the outer edge of said box and gripping the outer edge of the rail-flange.

24. The combination of a track-box adapted to grip over the flange of the rail and the latter being arranged to close the top thereof, said box having further an upwardly projecting tubular extension on one side which grips over the edge of the flange, a wheel-block reciprocating vertically in said tubular extension and having its upper edge adjacent to the inner side of the rail-tread, a bell-crank lever pivoted in said box below the rail and having a horizontal arm pivoted to the lower end of said wheel-block and a vertical arm, a horizontal link-rod reciprocating through the wall of said box and connected with said vertical arm, a clamping-plate secured to the outer edge of said box and gripping the outer edge of the rail-flange, a bell-crank lever pivoted in said box below the rail and having a horizontal arm pivoted to the lower end of said wheel-block and a vertical arm, a horizontal link-rod reciprocating through the wall of said box and connected with said vertical arm, and a clamping-plate secured to the outer edge of said box and gripping the outer edge of the rail-flange, said clamping-plate having a vertical flange projecting upwardly against the outer side of the rail-tread and above the latter whereby to act as a wheel-guard.

25. The combination of a completely inclosed track-box having means for clamping it firmly below the flange of a T-rail whereby said flange acts as a closure for its upper side, a member projecting outside said box adjacent to said rail in position to be acted on by a car-wheel passing over the rail, and mechanism inside said box for transmitting the motion of said member.

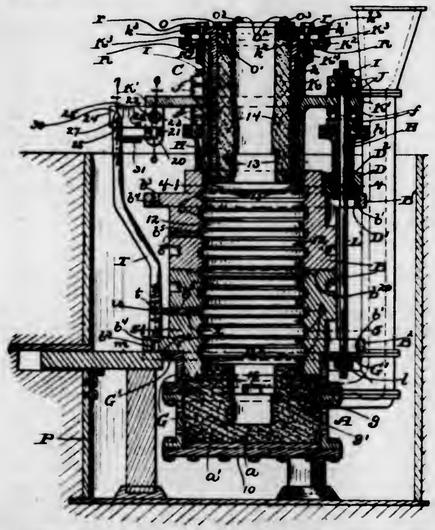
26. The combination of a track-box divided in a median plane into two halves, means for securing said halves together, means for securing said box firmly to the flange of a rail and below the latter, said box having a tubular extension gripping over the flange on one side, a depressible wheel-block vertically reciprocating in said tubular extension, a bell-crank lever pivoted in said box below the rail and having a horizontal arm pivoted to said wheel-block and a vertical arm, a member connected with said vertical arm and extending outside the box, and a dust chamber below said lever.

27. The combination of a track-box divided in a median plane into two halves, means for securing said halves together, means for securing said box firmly to the flange of a rail and below the latter, said box having a tubular extension gripping over the flange on one side, a depressible wheel-block vertically reciprocating in said tubular exten-

sion, a bell-crank lever pivoted in said box below the rail and having a horizontal arm pivoted to said wheel-block, a dust chamber below said lever, said box having a hand-hole on one side of said chamber, and a cover-plate covering said hand-hole.

28. The combination of a track-box divided in a median plane into two halves, means for securing said halves together, means for securing said box firmly to the flange of a rail and below the latter, said box having a tubular extension gripping over the flange on one side, a depressible wheel-block vertically reciprocating in said tubular extension, a bell-crank lever pivoted in said box below the rail and having a horizontal arm pivoted to said wheel-block, said box having a drain-hole at the lower end thereof.

853,490. MOLD FOR CASTING CHILLED ROLLS. RALPH H. WEST, Cleveland, Ohio. Filed Oct. 29, 1906. Serial No. 341,065.



Claim.—1. In a roll-casting mold, a stationary vertically arranged chill provided interiorly with a chamber which extends from end to end of the chill and is enlarged diametrically at suitable intervals between the ends of the chill, with the diametrical enlargements of the chamber extending circumferentially of the chill; a suitably supported vertically movable lower mold-part or drag extending into the chill and provided with a cavity which has an inlet and is arranged centrally of and in communication with the aforesaid chill-chamber; a suitably supported vertically movable upper mold-part or cope extending into the chill and having a chamber which is arranged centrally of and communicates with the chill-chamber, and means whereby the drag and cope are shiftable vertically simultaneously while the chill remains stationary.

2. In a roll-casting mold, a stationary upright chill provided interiorly with a chamber which extends from end to end of the chill and is enlarged diametrically at suitable intervals between the ends of the chill, with the diametrical enlargements of the chamber extending circumferentially of the chill; a suitably supported lower mold-part or drag projecting into the chill and adapted to be lowered and provided with a cavity which has an inlet and is arranged centrally of and in communication with the aforesaid chill-chamber; a suitably supported upper mold-part or cope depending into the chill and adapted to be lowered and having a chamber which is arranged centrally of and communicates with the chill-chamber, and means whereby the drag and cope may be simultaneously lowered while the chill remains stationary.

3. In a roll-casting-mold, a stationary upright annular chill having its interior chamber enlarged diametrically at suitable intervals between the ends of the chill, with the diametrical enlargements of the chamber extending circumferentially of the chill and having suitably sloping bottom walls; a suitably supported upper mold-part or cope arranged to engage and be lowered into the upper end of the chill-chamber; a lower mold-part or drag, and such an operative connection between the drag and the cope as to render the cope and drag vertically shiftable simultaneously and independently of the chill.

4. In a roll-casting mold, a stationary vertically arranged chill provided interiorly with a chamber which extends from end to end of the chill; a suitably supported vertically movable mold-part or cope arranged to engage and be lowered within the upper end and independently of the chill, and a lower mold-part or drag suspended from the cope so that the drag is shiftable simultaneously with the cope.

5. In a roll-casting mold, a stationary vertically arranged chill provided interiorly with a chamber which extends from end to end of the chill; a suitably supported vertically shiftable upper mold-part or cope arranged to engage and be bodily lowered within the upper end and independently of the chill, said cope comprising a casing provided externally with a laterally and outwardly projecting flange extending circumferentially of the cope, and a lower mold-part or drag suspended from the said flange.

6. In a roll-casting mold, a stationary vertically arranged chill provided interiorly with a chamber which extends from end to end of the chill; suitably supported blocks spaced circumferentially of the chill and provided with screw-threaded holes extending vertically through the blocks; correspondingly externally threaded screws engaging the said holes; a lower mold-part or drag provided with a cavity which has an inlet and is arranged centrally of the lower end of and in communication with the chamber in the chill; an upper mold-part or cope arranged and adapted to be lowered and provided with a chamber which is arranged centrally of the upper end of and in communication with the chill-chamber, said cope comprising a casing which is supported from the aforesaid screws, and rods supported from the cope-casing and connected at their lower ends with and supporting the drag.

7. In a roll-casting mold, a stationary vertically arranged chill having an interior chamber which extends from end to end of the chill; blocks borne by and spaced circumferentially of the chill and provided with screw-threaded holes extending vertically through the blocks; correspondingly threaded screws engaging the said holes and provided centrally with holes extending vertically through the screws; a lower mold-part or drag provided with a cavity which has an inlet and is arranged in communication with the chill-chamber; an upper mold-part or cope arranged and adapted to be lowered and provided with a chamber which is arranged at the upper end of and in communication with the chill-chamber, said cope being borne by the aforesaid screws, and rods extending through the holes in the said screws and supporting the drag, which rods are supported at their upper ends from the cope.

8. In a roll-casting mold, a stationary vertically arranged chill provided interiorly with a chamber which extends from end to end of the chill; blocks borne by and arranged externally of the chill, said blocks being spaced circumferentially of the chill and provided with screw-threaded holes extending vertically through the blocks; correspondingly externally threaded screws engaging the said holes and provided centrally with holes extending vertically therethrough; a lower mold-part or drag; an upper mold-part or cope arranged and adapted to be lowered and comprising a casing which is provided externally and above the aforesaid screws with a laterally projecting flange which overhangs and is supported from the screws, and rods supported from the cope-casing and connected at their lower ends with and supporting the drag.

9. In a roll-casting mold, a stationary vertically arranged chill provided interiorly with a chamber which extends from end to end of the chill; suitably supported

blocks spaced circumferentially of the chill, and provided with screw-threaded holes extending vertically through the blocks; correspondingly externally threaded screws engaging the said holes and provided centrally with holes extending vertically through the screws; a lower mold-part or drag; a vertically movable upper mold-part or cope depending into the chill-chamber and comprising a casing which is provided externally and above the screws with a laterally projecting annular flange which overhangs the screws; rods having screw-threaded upper ends and extending loosely through the flange and loosely through the holes in the screws, which rods are connected at their lower ends with and support the drag; nuts mounted on the rods above the flange; washers interposed between the nuts and the flange, and washers interposed between the flange and the screws.

10. In a roll-casting mold, a stationary vertically arranged chill provided interiorly with a chamber which extends from end to end of the chill; blocks supported from and arranged externally of the chill and having surfaces engaging and conforming to the exterior of the adjacent portions of the chill, which blocks are provided with screw-threaded holes extending vertically therethrough; correspondingly externally threaded screws engaging the said holes; a lower mold-part or drag comprising a casing provided externally with a laterally projecting annular flange; a vertically movable upper mold-part or cope depending into the chill-chamber and comprising a casing which is supported from the aforesaid screws; rods having screw-threaded lower ends and supported from the cope-casing, which rods extend loosely through the aforesaid flange, and nuts mounted on the rods under the said flange and supporting the drag-casing.

11. In a roll-casting mold, a stationary vertically arranged chill having an interior chamber which extends from end to end of the chill, said chill being provided at its upper end and externally with seats spaced circumferentially of the chill; blocks mounted on and removable from the seats, which blocks are provided with screw-threaded holes extending vertically through the blocks; correspondingly externally threaded screws engaging the said holes; a lower mold-part or drag; an upper mold-part or cope borne by the aforesaid screws, and means whereby the drag is suspended from and movable with the cope.

12. In a roll-casting mold, a stationary vertically arranged chill having an interior chamber which extends from end to end of the chill, said chill being provided externally with seats spaced circumferentially of the chill, which blocks are removably mounted on the said seats and provided with screw-threaded holes extending vertically through the blocks; correspondingly externally threaded screws engaging the said holes; means whereby lateral displacement of the blocks is prevented; an upper mold-part or cope borne by the aforesaid screws, and a lower mold-part or drag operatively connected with the cope.

13. In a roll-casting mold, a stationary vertically arranged chill having an interior chamber which extends from end to end of the chill; a lower mold-part or drag; an upper mold-part or cope; vertically adjustable bearings spaced circumferentially of the mold and supporting the cope, and means whereby the drag is suspended from and movable with the cope.

14. In a roll-casting mold, a stationary vertically arranged chill having an interior chamber which extends from end to end of the chill; a suitably supported lower mold-part or cope having a cavity which is arranged centrally of the lower end of and in communication with the chamber in the chill; an upper mold-part or cope provided with a chamber which is arranged centrally of the upper end of and in communication with the chill-chamber, said cope comprising a casing consisting of a suitably supported outer section and an inner section having lateral bearings within and slidable endwise of the outer section, with the outer cope-casing-section provided at its upper end and externally with an annular flange, with the inner cope-casing-section interiorly lined with material forming the surrounding wall or walls of the cope-chamber and provided at its upper end and externally with an annular flange overlapping the aforesaid flange of the outer cope-casing-section; screws screwed from below through the flange of the outer cope-casing-section into engagement with the under side of the flange on the inner cope-casing-section, and screws extending through the flange of the inner cope-casing-section and screwed into the outer cope-casing-section and arranged with their heads in position to bear downwardly upon the upper end of the inner cope-casing-section.

15. In a roll-casting mold, a stationary vertically arranged chill having an interior chamber which extends from end to end of the chill; a suitably supported lower mold-part or drag having a cavity which is arranged centrally of the lower end of and in communication with the chamber in the chill; an upper mold-part or cope provided with a chamber which is arranged centrally of the upper end of and in communication with the chill-chamber, said cope comprising a casing consisting of a suitably supported outer section and an inner section having lateral bearing within and adapted to be lowered independently of the outer section, with the inner cope-casing-section lined interiorly with material forming the surrounding wall or walls of the cope-chamber and supported at its upper end from the outer cope-casing-section.

16. In a roll-casting mold, a stationary vertically arranged chill having an interior chamber which extends from end to end of the chill; an upper mold-part or cope provided with a chamber which is arranged centrally of the upper end of and in communication with the chill-chamber, said cope comprising a casing consisting of an outer section and an inner section having lateral bearing within and adapted to be lowered independently of the outer section, with the outer cope-casing-section supported as required to render it capable of being lowered, with the inner cope-casing-section lined interiorly with material forming the surrounding wall or walls of the cope-chamber and supported at its upper end from the outer cope-casing-section, and a lower mold-part or drag supported from and movable with the outer cope-casing-section and provided with a cavity which has an inlet and is arranged centrally of the lower end of and in communication with the chill-chamber.

17. In a roll-casting mold, a stationary vertically arranged chill having an interior chamber which extends from end to end of the chill; an upper mold-part or cope provided with a chamber which is arranged centrally of the upper end of and in communication with the chill-chamber, said cope comprising a casing consisting of an outer section and an inner section having lateral bearing within and adapted to be lowered independently of the outer section, with the outer cope-casing-section supported as required to render it capable of being lowered, with the inner cope-casing-section lined interiorly with material forming the surrounding wall or walls of the cope-chamber and supported at its upper end from the outer cope-casing-section; a lower mold-part or drag having a cavity arranged centrally of the lower end of and in communication with the chill-chamber, and upright rods arranged externally and spaced circumferentially of the chill, which rods support the drag and depend and are supported from the outer cope-casing-section.

18. In a roll-casting mold, a vertically arranged chill which has an interior chamber extending from end to end of the chill and is provided at its lower end and externally with an annular flange; stationary supports extending under and affording bearing to the said flange and spaced circumferentially of the lower end of the chill; a suitably supported vertically movable upper mold-part or cope; and a lower mold-part or drag adapted to be lowered and supported from and movable with the cope.

19. In a roll-casting mold, a vertically arranged chill which has an interior chamber extending from end to end of the chill; stationary supports which bear the chill and are spaced circumferentially of the lower end of the chill; a suitably supported vertically shiftable upper mold-part or cope, and a lower mold-part or drag adapted to be lowered and being supported from and movable with the cope, said drag projecting upwardly into the chill-chamber and comprising a casing which is provided at its upper end and

externally with an annular flange which has recesses engaged by the aforesaid chill-supports.

20. In a roll-casting mold, a stationary vertically arranged chill which has an interior chamber extending from end to end of the chill; a suitably supported vertically shiftable upper mold-part or cope, and a lower mold-part or drag suspended from the cope and comprising a casing which is provided interiorly with an annular flange which terminates in an annular member which projects upwardly into the chill and is instrumental in the maintenance of a suitable joint between the drag and the chill during the lowering of the cope and drag.

21. In a roll-casting mold, a suitably supported vertically arranged chill having an interior chamber which extends from end to end of the chill; an upper mold-part or cope provided with a chamber which is arranged centrally of the upper end of and in communication with the chill-chamber, said cope comprising a casing consisting of a suitably supported outer section and an inner section which is arranged within and supported as required to render it capable of being lowered independently of the outer section, with the said inner cope-casing-section lined interiorly with material forming the surrounding wall or walls of the cope-chamber, and a suitably supported lower mold-part or drag provided with a cavity which has an inlet and is arranged centrally of the lower end of and in communication with the chill-chamber.

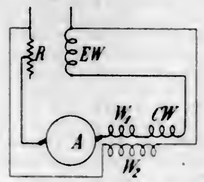
22. In a roll-casting mold, a suitably supported vertically arranged chill having an interior chamber which extends from end to end of the chill; an upper mold-part or cope provided with a chamber which is arranged centrally of the upper end of and in communication with the chill-chamber, said cope comprising a casing consisting of an outer section supported as required to render it capable of being lowered, and an inner section which is arranged within and supported as required to render it capable of being lowered independently of the outer section, with the said inner cope-casing-section lined interiorly with material forming the surrounding wall or walls of the cope-chamber, and a suitably supported lower mold-part or drag provided with a cavity which has an inlet and is arranged centrally of the lower end of and in communication with the chill-chamber.

23. In a roll-casting mold, a suitably supported vertically arranged chill having an interior chamber which extends from end to end of the chill; an upper mold-part or cope provided with a chamber which is arranged centrally of the upper end of and in communication with the chill-chamber, said cope comprising a casing consisting of an outer section and an inner section which is arranged within and supported as required to render it capable of being lowered independently of the outer section, with the said inner cope-casing-section lined interiorly with material forming the surrounding wall or walls of the cope-chamber, and with the outer cope-casing-section supported as required to render it capable of being lowered, and a lower mold-part or drag provided with a cavity which has an inlet and is arranged centrally of the lower end of and in communication with the chill-chamber, said drag being supported as required to render it capable of being lowered.

24. In a roll-casting mold, a suitably supported upright chill which has an interior chamber extending from end to end of the chill; an upper mold-part or cope arranged and supported as required to render it capable of being bodily lowered within the upper end and independently of the chill, and a lower mold-part or drag arranged at the lower end of the chill and supported as required to render it capable of being bodily lowered independently of the chill.

25. In a roll-casting mold, a suitably supported upright chill which has an interior chamber extending from end to end of the chill; an upper mold-part or cope arranged and supported as required to render it capable of being lowered within the upper end of the chill, and a downwardly movable lower mold-part or drag arranged at the lower end of the chill, and means whereby the drag is suspended externally of the chill-chamber from the cope so as to render the drag movable vertically with the cope while the chill is held stationary.

853,491. SINGLE-PHASE ALTERNATING-CURRENT MOTOR WITH COMMUTATING-POLES. ENGELBERT ARNOLD, Karlsruhe, Germany, and JENS LASSEN LA COUR, Edinburgh, Scotland. Filed Oct. 9, 1905. Serial No. 282,014.



Claim.—1. A single phase alternating current motor with a compensation winding lying in slots in the main poles and having the same ampere-turns as the portion of the armature winding under these poles and with commutating poles carrying two windings one of which in series and the other shunt excited, substantially as described.

2. A single phase alternating current motor with a compensation winding lying in slots in the main poles and having the same ampere-turns as the portion of the armature winding under these poles and with commutating poles carrying two windings one of which in series and the other shunt excited, the series excited windings of the commutating poles having somewhat more ampere-turns than the portion of the armature winding between the main poles.

3. A single phase alternating current motor with a compensating winding lying in slots in the main poles and having the same ampere-turns as the portion of the armature winding under these poles and with commutating poles carrying two windings one of which in series and the other shunt excited being connected to the mains.

4. A single phase alternating current motor with a starting resistance and with a compensating winding lying in slots in the main poles and having the same ampere-turns as the portion of the armature winding under these poles and with commutating poles carrying two windings one of which in series and the other shunt excited being connected in parallel to the armature and starting resistance.

853,492. PROCESS AND DEVICE FOR CONTROLLING ELECTRIC CIRCUITS. HEINRICH BECK, Meiningen, Germany. Filed Jan. 27, 1906. Serial No. 298,131.



Claim.—1. An electric regulating resistance for apparatus circuits, a resistance wire, consisting of material with a high coefficient of temperature and kept stretched-out in a tube, the tube being evacuated or filled with indifferent gases, means for maintaining the wire in a stretched condition, substantially as described and for the purpose set forth.

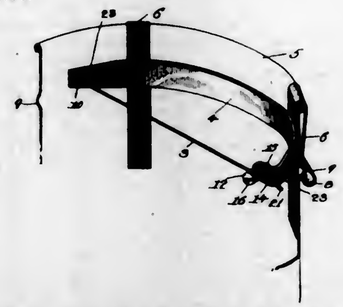
2. An electric regulating resistance for apparatus circuits, a resistance wire of material with a high coefficient of temperature, being stretched out in a tube, the tube being thin-walled and being of metal and being evacuated or filled with indifferent gases, means for keeping the wire in a stretched condition, substantially as described and for the purpose set forth.

3. An electric regulating resistance for apparatus circuits, a resistance wire of material with a high coefficient of temperature, being stretched out in a tube, the said tube being of metal and being thin-walled, means for keeping the wire in a stretched condition, a connecting screw, projecting from the tube and insulated therefrom, substantially as described and for the purpose set forth.

4. An electric regulating resistance for apparatus circuits, a resistance wire of material with a high coefficient of temperature, being stretched out in a tube, the said tube being of metal and being thin-walled, means for keeping the wire in a stretched condition, a connecting screw, projecting from the tube and insulated therefrom, a disk fitting snugly in the said tube and insulated from the above mentioned connecting screw and arranged in the interior of the tube, a closely fitting cover at the lower end of the tube, means in the space between the cover and the closely fitting disk in the interior of the tube for the purpose of tightening the tube, substantially as described and for the purpose set forth.

5. An electric regulating resistance for apparatus circuits, a resistance wire of material with a high coefficient of temperature, being stretched out in a tube, the tube being thin-walled and being of metal and being blackened at the inside and at the outside and being evacuated or filled with indifferent gases, means for keeping the wire in a stretched condition, substantially as described and for the purpose set forth.

853,493. ICE-CREAM SCRAPER. CHARLES H. BRADBURY, Boston, Mass. Filed May 8, 1906. Serial No. 315,790.



Claim.—1. An ice-cream scraper, a scraping member made of wire, and means to hold said member under tension and to support said member across the open end of a can.

2. An ice-cream scraper, a curved resilient body, and a wire scraping member supported thereby and held under tension by the resiliency thereof.

3. An ice-cream scraper, a curved resilient body, and a wire scraping member connecting the ends thereof and held taut by the resiliency of said body.

4. An ice-cream scraper, a curved resilient body, means to support the same on a can, and a wire scraping member connecting the ends of said body and held taut by the resiliency thereof.

5. An ice-cream scraper, a curved resilient body, a wire scraping member connecting the ends thereof and held taut by the resiliency of said body, and means to adjust the tension of said scraping member.

6. An ice-cream scraper, a curved body of resilient material, a wire scraping member secured at one end to one end of the body, and adjustable means to connect said scraping member to the other end of the body.

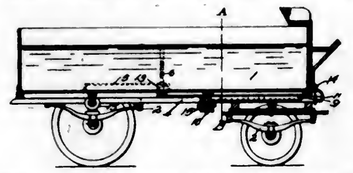
7. In an ice cream scraper, a scraping member, a body to support said scraping member, and spring clips secured to the body and adapted to embrace the edge of the can, said clips being shaped to fit over the bead or rib formed on the can.

8. In an ice cream scraper, a scraping member, a body to support said member, and spring clips secured to the body and adapted to embrace the edge of the can; said clips having a construction to permit the cover to be placed on the can without removing the ice cream scraper.

9. In an ice cream scraper, a curved body of resilient material, a wire scraping member secured at one end to one end of the body, and a drum at the other end of said body to which the other end of the wire is secured.

10. In an ice cream scraper, a body of resilient material curved centrally to fit the shape of a can and having its ends bent inwardly, and a wire scraping member connecting the ends of the body and held taut by the resiliency thereof.

853,494. DUMPING-WAGON. JOHN BRENNAN, Louisville, Ky. Filed Feb. 28, 1906. Serial No. 303,334.



Claim.—1. In a dumping wagon, the combination of a wagon bed, a running-gear, said wagon bed mounted on said running-gear to move longitudinally for dumping, a rack fixed to said wagon bed consisting of side pieces joined by rungs, and a pinion provided with long pyramidal teeth mounted on said running-gear in operative mesh with said rack, substantially as specified.

2. In a dumping wagon, the combination of a bed, a running-gear, a rack fixed on the bottom of said bed and comprising side bars joined by rungs provided with rollers, and a pinion mounted in said running-gear to mesh with said rack.

3. In a dumping wagon, the combination of a wagon bed, a running-gear, a rack comprising side bars and rungs fixed on said bed, a pinion having pyramidal teeth mounted on said running-gear to mesh with said rack, antifriction rollers mounted on said running-gear for rolling said bed on, and inclined planes on said running-gear to relieve said rollers of the load when said bed is in hauling position, substantially as specified.

853,495. COMBINATION-TOOL. HARRY BROWN, Buffalo, N. Y. Filed Dec. 7, 1906. Serial No. 346,734.



Claim.—1. A combination tool, comprising a pair of tweezer-jaws, one of which is graduated to form a rule, an extension pivoted to the rear ends of said jaws to fold between the same and having graduations forming a continuation of those on said jaw and a retaining device carried by the free end of the extension and adapted to engage with the tweezers, substantially as set forth.

2. A combination tool, comprising a pair of elastic tweezer-jaws, one of which is graduated to form a rule, a foldable extension pivoted to the rear ends of said jaws to fold between them and graduated to form a continuation of the graduated jaw, and a protector carried by said extension and arranged to cover the front ends of the twee-

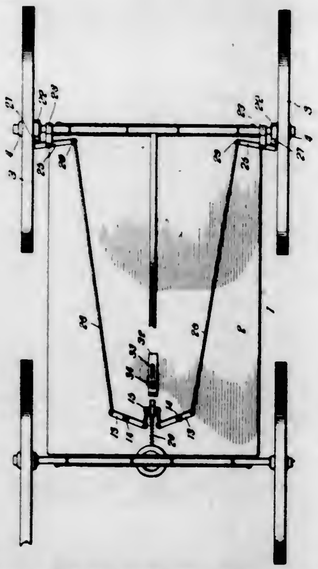
ser-jaws when the extension is folded, substantially as set forth.

3. A combination tool, comprising a pair of tweezer-jaws, one of which is graduated to form a rule, a graduated extension pivoted to the rear ends of said jaws to fold between the same, and a cap carried by said extension and extending laterally beyond the sides thereof to receive the front ends of the jaws located on opposite sides of the extension when the latter is folded, substantially as set forth.

4. A combination tool, comprising a pair of tweezer-jaws, one of which is graduated to form a rule, a graduated extension pivoted to the rear ends of said jaws to fold between the same, and a cap carried by said extension and adapted to inclose the front ends of the tweezer-jaws, the body of the cap being wider than the thickness of the extension and its contracted inner portion being provided with notches which receive said jaws, substantially as set forth.

5. A combination tool, comprising a pair of tweezer-jaws, one of which is graduated to form a rule, a graduated extension pivoted to the rear ends of said jaws to fold between the same, and a cap carried by said extension and provided on its inner sides with locking projections behind which the tweezer-jaws are adapted to engage, substantially as set forth.

853,496. VEHICLE-BRAKE. ALFRED B. CALDWELL, Evansville, Ind. Filed Jan. 17, 1907. Serial No. 352,668.



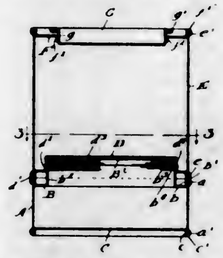
Claim.—1. A vehicle brake comprising a foot lever pivoted to the vehicle body, a pair of levers pivoted to the vehicle body one on each side of the foot lever, links connecting one end of each of said pair of levers to the foot lever, a second pair of levers one pivoted adjacent to the hub of each rear wheel and each provided at one end with a brake shoe adapted to contact with each hub, and rods connecting the other end of said last mentioned levers with said first mentioned levers.

2. A vehicle brake comprising a foot lever pivoted to the vehicle body, a pair of levers pivoted to the vehicle body one on each side of the foot lever, links connecting one end of each of said pair of levers to the foot lever, a pair of yokes surrounding the rear axle one adjacent to each wheel, a lever pivoted in each yoke, a brake shoe adapted to contact with the hub mounted on one end of each lever and rods connecting the other end of each lever to the first mentioned pair of levers.

3. A vehicle brake comprising a foot lever pivoted to the vehicle body, a pair of levers pivoted on each side of the foot lever, links connecting one end of each of said pair of levers to the foot lever, a second pair of levers one pivoted adjacent to the hub of each rear wheel and each provided at one end with a brake shoe, a flat band mounted on each hub with which said shoe is adapted to contact, and rods connecting the other end of said last mentioned levers with said first mentioned levers.

4. In a vehicle brake the combination with a brake shoe, of a foot lever adapted to operate the shoe, a detent formed of spring metal adapted to catch over the end of the lever when the brake is substantially fully applied to hold the same, said detent having one end provided with means by which it is fixedly secured to the bottom of the vehicle and the other end of the detent being provided with a projection adapted to be engaged by the foot of the operator to release the brake.

853,497. SECTIONAL OR COMPARTMENT CAN. EDWARD W. CARNES, Chicago, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed July 1, 1905. Serial No. 267,908.



Claim.—1. A sectional or compartment can, comprising in combination a lower section having a body and an annular top provided with an upwardly projecting annular neck furnished with an inwardly and horizontally projecting flange at its upper edge, and an upper section having a body and a bottom head provided with a circular recess surrounded and formed by an annular upwardly projecting wall or flange, receiving, fitting and engaging the upwardly projecting annular neck on the annular top of the lower section and connecting the two sections together and closing the opening in the annular top of the lower section, said upper section having an annular top provided with an opening therein, and a friction cap fitting in and closing the same, substantially as specified.

2. A sectional or compartment can, comprising in combination a lower section having a body and an annular top provided with an upwardly projecting neck, and an upper section having a body and a bottom head furnished with a circular recess, and an integral upwardly projecting annular wall or flange fitting the neck of the annular top of the lower section, said recessed bottom head of the lower section constituting a closure for the opening in the annular top of the lower section, and a means for connecting the two sections of the can together, substantially as specified.

3. A sectional or compartment can, comprising in combination a lower section having a body and an annular top provided with an upwardly projecting neck, and an upper section having a body and a bottom head furnished with a circular recess and an integral upwardly projecting annular wall or flange fitting the neck of the annular top of the lower section, said recessed bottom head of the lower section constituting a closure for the opening in the annular top of the lower section and a means for connecting the two sections of the can together, the annular walls of said bottom head of the upper section and of said annular top of the lower section having interengaging screw threads, substantially as specified.

4. A sectional or compartment can, comprising in combination a lower section having a body and an annular top provided with an upwardly projecting annular neck furnished with an inwardly and horizontally projecting flange at its upper edge, and an upper section having a body and a bottom head provided with a circular recess surrounded and formed by an annular upwardly projecting wall or flange, receiving, fitting and engaging the upwardly projecting annular neck on the annular top of the lower section and connecting the two sections together and closing the opening in the annular top of the lower section, said upper section having an annular top provided with an opening therein, and a friction cap fitting in and closing the same, said upwardly projecting neck of the annular top of the lower section being furnished with screw threads and said upwardly projecting annular wall of the circular recess in the bottom head of the upper section being furnished with screw threads, substantially as specified.

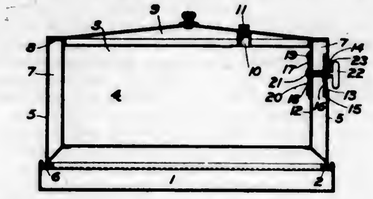
5. A sectional or compartment can, comprising in combination a lower section having a body and an annular top provided with an upwardly projecting neck, and an upper section having a body and a bottom head furnished with a circular recess, and an integral upwardly projecting annular wall or flange fitting the neck of the annular top of the lower section, said recessed bottom head of the lower section constituting a closure for the opening in the annular top of the lower section and a means for connecting the two sections of the can together, said upper section of the can having an annular top with an opening therein and a cap for closing the same, substantially as specified.

6. A compartment can comprising an upper or main section having a can body and a bottom head, said bottom head being provided with an imperforate walled axially disposed recess with a screw threaded cylindric wall, the annular or peripheral portion of said bottom head between the cylindric wall of said recess and the cylindric or side wall of said can body being resilient and yieldable, and a detachable lower or compartment section having a body and an annular top head secured to said body and provided with an upwardly extending axially disposed screw threaded necklike extension adapted to said threaded recess in the bottom head of the upper section, one or both of said sections being provided at their meeting ends with an annular projection concentric with and remote from the interthreaded parts; whereby the proximate heads of said sections are spaced apart at their peripheral portions and are free to yield under the drawing together action of the screw threads inside of said peripheral portions, substantially as specified.

7. A compartment can comprising an upper or main section having a body and a bottom head, said bottom head being provided with an axially disposed recess, said bottom head between said recess and the side wall of the can body being disk-like resilient and yieldable in the direction of the axis of the can, a detachable lower or compartment section having a body and a top head secured to the body and provided with an axially disposed reduced extension adapted to said recess in the bottom head of said main or upper section, interfitting and interlocking parts formed upon said reduced extension and upon the interior of said recess portion, respectively, and a flange-like extension on one of said sections extending around the perimeter of its end which meets the other section whereby the proximate heads of the sections are spaced and held positively apart at their peripheral portions and are free to yield under drawing action of the interlocking parts, substantially as specified.

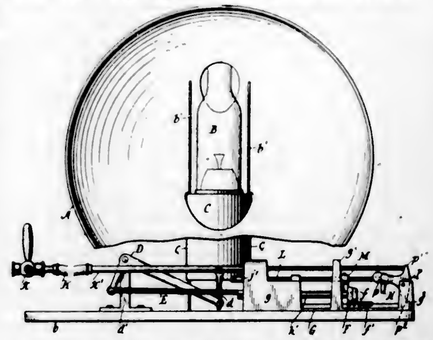
853,498. STERILIZER. WILMOT CASTLE, Rochester, N. Y., assignor to Wilmot Castle Company, Rochester, N. Y., a Corporation of New York. Filed Mar. 16, 1905. Serial No. 250,435.

Claim.—A sterilizer comprising a boiler having openings in one of its walls, an inner vessel within the boiler having openings in one of its walls and out of line with those in the boiler, and a revoluble valve having disks spaced apart and respectively seated against the said walls of the boiler and inner vessel, and having openings to register with those of said walls, so that when the valve is turned to cause the openings of one of its disks to register with those of the contiguous wall against which it is seated, those of the other disk will be out of register with



those of the contiguous wall against which said other disk is seated, and so that the valve may be turned to put the openings of both of its disks out of register with those of both of said walls, said valve hence enabling steam to be discharged from the boiler either into the inner vessel or the outer air and also enabling steam to be confined in the steam space of the boiler, for the purpose set forth.

853,499. SIGNAL-LIGHT. ARTHUR W. COLLOM, Meadville, Pa. Filed Sept. 27, 1906. Serial No. 336,455.



Claim.—1. In a signal light, the combination with the lamp, of a screen adapted to be raised and lowered in the path of the light, fluid-operated mechanism constructed and arranged to raise the screen, a catch device for holding the screen and mechanism in the raised position, and means for releasing the said catch device.

2. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, fluid-operated mechanism constructed and arranged to raise the screen, an operating valve adapted to admit fluid to said mechanism and to discharge it, a catch device for holding the screen and mechanism in the raised position, and means for releasing the said catch device.

3. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, a catch device, fluid-operated mechanism constructed and arranged to raise the screen and to engage the catch device whereby the screen is held in its raised position, an operating valve, a valve operated by said mechanism whereby the fluid is cut off from the mechanism, said mechanism having an exhaust passage, and means for releasing the said catch device.

4. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, fluid-operated mechanism constructed and arranged to raise the screen and provided with a passage normally open to the atmosphere, a catch device operated by the

said mechanism whereby the screen is held raised, and means for releasing the catch device.

5. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, a catch device, fluid-operated mechanism provided with an exhaust passage and constructed and arranged to raise the screen and the said catch device whereby the screen is held raised, means for shutting the fluid off from said mechanism, and means for releasing the said catch device.

6. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, a catch device, fluid-operated mechanism constructed and arranged to raise the screen and the said catch device whereby the screen is held raised, and fluid-operated means for releasing the catch device.

7. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, a catch device, fluid-operated mechanism constructed and arranged to raise the screen, the said catch device being arranged in the path of the said mechanism and adapted to be actuated thereby during a portion of the operation of the said mechanism whereby the screen is held raised, and fluid-operated means for releasing the catch device.

8. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, a catch device, fluid-operated mechanism constructed and arranged to operate the screen and the said catch device whereby the screen is held raised, means whereby the said mechanism may be discharged, fluid-operated contrivances for releasing the catch device, and means for discharging the said contrivances.

9. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, a catch device, fluid-operated mechanism constructed and arranged to operate the screen and the said catch device whereby the said screen is held raised, fluid-operated contrivances for releasing the catch device, means for discharging the said contrivances, and the said fluid-operated mechanism and contrivances being provided with means of communication whereby the fluid discharged from the said mechanism as the screen descends passes through the said contrivances.

10. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, fluid-operated screen-actuating mechanism, a catch device arranged to be actuated by the mechanism whereby the screen is held raised, means for releasing the said catch device, the said mechanism and the said releasing-means being arranged to be simultaneously operated, the said mechanism being constructed to overpower the releasing-means through said catch device thereby preventing the catch from becoming released, and means for discharging said mechanism.

11. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, fluid-operated screen-actuating mechanism, a catch device arranged to be actuated by the mechanism whereby the screen is held raised, fluid-operated catch-releasing means, the said mechanism and catch-releasing means being arranged to be simultaneously operated, the said mechanism being constructed to overpower the said releasing means through said catch device thereby preventing the catch from becoming released, and means for discharging said mechanism.

12. In a signal light, the combination with a lamp, of a screen adapted to be raised and lowered in the path of the light, fluid-operated screen-actuating mechanism, a catch device arranged to be actuated by the mechanism whereby the screen is held raised, fluid-operated catch-releasing means, the said mechanism and catch-releasing means being arranged to be simultaneously operated, the said mechanism being constructed to overpower the catch-releasing means through the said catch device thereby preventing the catch from becoming released, and the said mechanism having a permanently open exhaust passage.

13. In a signal light, the combination with a reciprocating element, of fluid-operated mechanism adapted to operate the said element, a catch device whereby the said element is held in a predetermined position, and means for releasing the said catch device, the said mechanism being arranged to overpower the catch-releasing means temporarily and prevent the releasing of the said element, and means for discharging the said mechanism.

14. In a signal light, the combination with a reciprocating element, of fluid-operated mechanism adapted to operate the said element, a catch device whereby the said element is held in a predetermined position, fluid-operated catch-releasing means, and means for admitting fluid to and discharging it from the said mechanism and catch-releasing means, said catch-releasing means being arranged to be actuated first.

15. In a signal light, the combination with an operating rod, of a screen-operating cylinder and fluid-operated mechanism adapted to operate the rod, a catch device whereby the rod may be held in a predetermined position, a catch-operating cylinder and fluid-operated catch-releasing means, the said mechanism being arranged to overpower the catch-releasing means and prevent the releasing of the rod, and means for discharging the screen-operating cylinder.

16. In a signal light, the combination with the operating rod, of a cylinder having a permanently open exhaust passage and fluid-operated mechanism adapted to operate the rod, a catch device whereby the rod may be held in a predetermined position, a cylinder and fluid-operated catch-releasing means, and an operating valve adapted to charge and to discharge the cylinder last mentioned.

17. In a signal light, the combination with the operating rod, of a cylinder having an exhaust passage and fluid-operated mechanism adapted to operate the rod, an operating valve a valve moved by the said mechanism and arranged to shut the fluid off said mechanism, a catch device whereby the rod may be held in a predetermined position, a cylinder and fluid-operated catch-releasing means, and means for discharging the last-mentioned cylinder.

18. In a signal light, the combination with the operating rod, of a cylinder having an exhaust passage and fluid-operating mechanism adapted to operate the rod, a catch device arranged to be operated by the said mechanism whereby the rod may be held in a predetermined position, a cylinder and fluid-operating catch-releasing means, the said catch device being constructed and arranged whereby the said mechanism overpowers the said catch-releasing means and prevents the release of the catch.

19. In a signal light, the combination with the operating rod, of a relatively larger cylinder having an exhaust passage and fluid-operating mechanism adapted to operate the rod, a catch device arranged to be operated by the said mechanism whereby the rod may be held in a predetermined position, a smaller cylinder and fluid-operated catch-releasing means, the said catch device being constructed and arranged whereby the said mechanism overpowers the said catch-releasing means and prevents the release of the catch, and means for discharging the smaller cylinder.

20. In a signal light, the combination with the operating rod, of a cylinder having an exhaust passage and fluid-operated mechanism adapted to operate the rod, an operating valve a valve moved by the said mechanism and arranged to shut the fluid off said mechanism, a catch device arranged to be operated by said mechanism whereby the rod may be held in a predetermined position, a cylinder and fluid-operated catch-releasing means, the said catch device being constructed and arranged whereby said mechanism overpowers the said catch-releasing means and prevents the release of the catch, and means for discharging the last-mentioned cylinder.

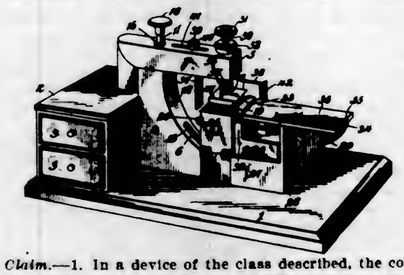
21. In a signal light, the combination with the operating rod, of a catch device, a rod-operating cylinder having an exhaust passage and rod-operating means, a catch-releasing cylinder, the two cylinders being connected by a communicating duct, means for admitting fluid to and for discharging the catch-releasing cylinder, said catch-releasing cylinder having a piston rod and a piston adapted by its movements to cover and uncover the mouth of said duct, the said piston rod and rod-operating means being adapted to move the catch device in opposite directions, and the said device being constructed and arranged whereby the rod-operating means overpowers the piston pressure in the said catch-releasing cylinder and shuts off the fluid from the rod-operating cylinder.

22. In a signal light, the combination with the operating rod, of a catch device, a rod-operating cylinder having an exhaust passage and rod-operating means, a catch-releasing cylinder, the two cylinders being connected by a communicating duct, one mouth of said duct opening near the head of said rod-operating cylinder and the other mouth opening at a distance from the corresponding head of the catch-releasing cylinder, means for admitting fluid to and for discharging the catch-releasing cylinder, said catch-releasing cylinder having a piston rod and a piston adapted by its movements to cover and uncover the mouth of said duct, the said piston rod and rod-operating means being adapted to move the catch device in opposite directions, and the said device being constructed and arranged whereby the rod-operating means overpowers the piston pressure in the said catch-releasing cylinder and shuts off the fluid from the rod-operating cylinder.

23. In a signal light, catch-operating mechanism comprising the combination with a catch, of a first cylinder having a piston and piston rod arranged to move the catch into its disengaged position, a second cylinder having a discharge passage and a passage in communication with the first cylinder, said second cylinder having also a piston and piston rod arranged to move the catch into its engaged position, and means for admitting compressed air to and for discharging it from the first cylinder.

24. In a signal light, catch-operating mechanism comprising the combination with a catch, of a first cylinder having a piston and piston rod arranged to move the catch into its disengaged position, means for admitting compressed air to and for discharging it from the said cylinder, a second cylinder having a discharge passage and a piston and piston rod arranged to move the catch into its engaged position, the said second cylinder being provided with a passage arranged to admit compressed air to the cylinder, and a valve adapted to open and close the said passage.

853,500. STAMP-AFFIXER. CLIFTON A. CRAWFORD, Zion City, Ill. Filed Jan. 13, 1906. Serial No. 295,910.



Claim.—1. In a device of the class described, the combination with a base, a casing open at the top and provided at one of its walls with a door to enable stamps or labels to be placed within the casing, a standard rising from the base and having a horizontally projecting arm extending to a point above the casing and provided with an abutment, a plunger operating within the casing and located beneath the said abutment, means mounted on the standard for operating the plunger, and a gage located between the standard and the casing and adjustably mounted on the arm of the former.

2. In a device of the class described, the combination of a base, a standard rising from the base and having an arm, a table also mounted on the base, a casing arranged between the standard and the table and having an open top located beneath the said arm, a plunger operating within the casing, operating mechanism mounted on the standard for actuating the plunger, an abutment located above the casing, and adjusting means mounted on the arm and connected with the abutment for raising and lowering the same.

3. In a device of the class described, the combination of the plunger, an abutment located above and spaced from the plunger, means for supporting a letter over the plunger rotary adjusting means for varying the distance between the abutment and the letter supporting means, and guiding means connected with the abutment for holding the same against rotary movement.

4. In a device of the class described, the combination of a plunger, means for supporting a letter over the plunger an abutment located above and spaced from the letter supporting means, an adjusting screw connected with the abutment for varying the space between the same and the letter supporting means, and one or more guide rods connected with the abutment for holding the same against rotary movement.

5. In a device of the class described, the combination of a casing open at the top and adapted to support a letter over the plunger, a vertically reciprocatable plunger operating within the casing, a support located above and spaced from the casing, an abutment also located above the casing and spaced from the letter supporting means, an adjusting screw mounted on the support and connected with the abutment, and one or more guide rods affixed to the abutment and slidable on the support.

6. In a device of the class described, the combination of a plunger, an adjustable abutment located above the plunger, a table spaced from the plunger, and moistening means located in the space between the table and the plunger.

7. The combination of a casing open at the top and adapted to receive stamps or labels, a plunger operating within the casing, a standard having an arm extending over the open top of the casing and provided with an abutment, means for operating the plunger, a table, and a combined guide and gage adjustably mounted on the casing and spaced from and arranged in parallelism with the side edge of the table and adjustable toward and from the same.

8. The combination of a casing open at the top and adapted to receive stamps or labels, a plunger operating within the casing, a standard having an arm extending over the open top of the casing and provided with an abutment, means for operating the plunger, a table, a combined guide and gage adjustably mounted on the casing and spaced from and arranged in parallelism with the side edge of the table and adjustable toward and from the same, and a gage adjustably mounted thereon and depending from the standard.

9. In a device of the class described, the combination with a base, of stamp or label affixing means, a table spaced from the said means, a closed receptacle removably mounted on the base and provided with a wick tube arranged in the space between the affixing means and the table, the latter having its inner portion arranged over the said receptacle and being movable outwardly to permit the receptacle to be removed.

10. In a device of the class described, the combination with stamp or label affixing means, of a holder or casing open at the top, a receptacle arranged within the holder or casing and having a projecting wick, and a table extending over the holder or casing and movable therefrom to permit the receptacle to be placed in and removed from the holder or casing.

11. In a device of the class described, the combination with stamp or label affixing means, of a holder or casing open at the top, a receptacle arranged within the holder or casing and having a projecting wick, a bracket extending from the casing or holder, and a table slidably interlocked with the bracket and extending inward over the open part of the casing or holder.

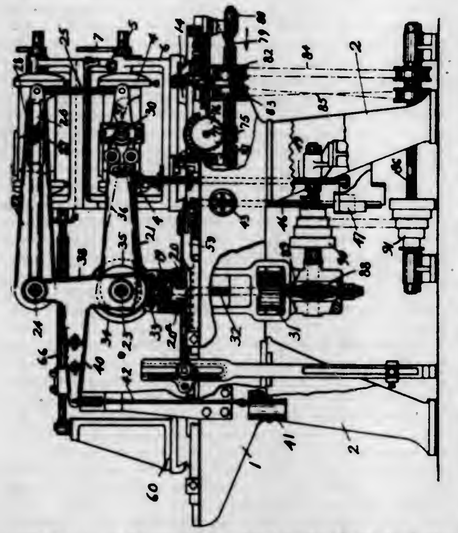
12. In a device of the class described, the combination with a plunger, of a supporting arm located above the plunger, an abutment depending from the supporting arm, and a depending gage adjustably connected with the supporting arm.

13. A device of the class described, comprising a base, a cabinet mounted on the base, a casing spaced from the cabinet, a standard located in the space between the case and the cabinet and having an arm projecting over the casing, a plunger operating within the casing, an abut-

ment supported by the arm and located above the plunger, a table spaced from the casing, and a moistening device extending into the space between the table and the casing.

14. In a device of the class described, the combination of a vertically reciprocatable plunger having a tapered opening, a lever fulcrumed at an intermediate point and provided at one of its arms with an anti-friction wheel located within the tapered opening of the plunger for engaging the upper and lower wall of the opening to positively move the plunger in each direction, and an operating rod connected with the other arm of the lever.

853,501. DIE-CUTTING MACHINE. HENRY J. DOUGHTY, Providence, R. I., assignor to Atlantic Rubber Shoe Company, Providence, R. I., a Corporation. Filed July 8, 1905. Serial No. 268,804.



Claim.—1. A die cutting machine comprising a feed carriage, a work holder mounted thereon, a pattern holder mounted upon said work holder, a cutter, a tracer, means for reciprocating said feed carriage, means operated by said carriage for reciprocating said pattern holder relative to the work holder, means for varying the relative throw of the work and pattern holders, and means for feeding the cutter and tracer transversely with relation to the pattern and work holders.

2. A die cutting machine comprising a feed carriage, a work holder mounted thereon, a pattern holder mounted upon said work holder, a pair of pivoted arms, a cutter mounted in one of said arms, a tracer mounted in the other arm, means for reciprocating said feed carriage, means operated by said carriage for reciprocating said pattern holder relative to the work holder, means for varying the relative throw of the work and pattern holders, means for feeding the cutter and tracer transversely with relation to the pattern and work holders, and means for varying the relative throw of said cutter and tracer.

3. A die cutting machine comprising a feed carriage, a work holder mounted thereon, a pattern holder mounted on said work holder, a cutter, a tracer, means for reciprocating said feed carriage, means operated by said carriage for reciprocating said pattern holder relative to the work holder, means for varying the relative throw of the work and pattern holders, means for feeding the cutter and tracer transversely with relation to the pattern and work holders, and means for varying the relative throw of the cutter and the tracer.

4. A die cutting machine comprising a single carriage, means for reciprocating the same, a work holder mounted to move with said carriage, a pattern holder resting on said work holder and free to reciprocate thereon, means operated by said carriage to reciprocate said pattern holder independently of said work holder, and means for varying the relative throw of said holders.

5. A machine of the character described comprising a swiveled yoke, parallel arms pivoted between the members of said yoke, means for automatically moving said arms in unison, a cutter mounted in one of said arms; a tracer mounted in the other arm, means for adjusting said tracer longitudinally with relation to said pattern holder, and means for holding said arms normally to the work.

6. A machine of the character described comprising a yoke, parallel arms pivoted between the members of said yoke, said arms being connected at their free ends, a cutter mounted in one of said arms, a tracer mounted in the other arm, means for adjusting said tracer longitudinally with relation to said pattern holder, means for automatically moving said tracer and cutter in unison, and connections between said arms, whereby they are moved in unison.

7. A machine of the character described comprising a yoke, parallel arms pivoted between the members of said yoke, one of said arms being provided with a slot, means for automatically moving said arms in unison, a tracer adjustably mounted in said slot, and a cutter carried by the other arm.

8. A machine of the character described comprising a yoke provided with parallel pivoted arms, a cutter mounted in one of said arms, a tracer mounted in the other arm, a feed screw, connections between said screw and one of said arms, automatic means for intermittently operating said screw, and a rod connecting the free ends of said arms.

9. A machine of the character described comprising a yoke provided with parallel pivoted arms, a cutter mounted in one of said arms, a tracer mounted in the other arm, means for adjusting said tracer laterally with relation to said cutter, a feed screw, connections between said screw and one of said arms, automatic means for intermittently operating said screw, and a rod connecting the free ends of said arms.

10. A machine of the character described comprising a yoke provided with parallel pivoted arms connected at their free ends, a cutter mounted in one of said arms, a tracer mounted in the other arm, a feed screw, connections between said screw and one of said arms, a reciprocating carriage, and means for rotating said feed screw at the end of each stroke of said carriage.

11. A machine of the character described comprising a yoke provided with parallel pivoted arms connected at their free ends, a cutter mounted in one of said arms, a tracer mounted in the other arm, a feed screw, a ratchet keyed to said feed screw, a reversing bar provided with oppositely arranged pawls engaging said ratchet, and means for automatically operating said reversing bar.

12. A machine of the character described comprising a yoke provided with parallel pivoted arms connected at their free ends, a cutter mounted in one of said arms, a tracer mounted in the other arm, a feed screw, connections between said feed screw and one of said arms, a reciprocating carriage, means for automatically rotating said feed screw at the end of each stroke of said carriage, and means for reversing the movement of said carriage.

13. A die cutting machine comprising a single carriage, a work holder and a pattern holder supported on said carriage, means for securing said work holder to prevent relative movement with said carriage, said pattern holder being free to reciprocate, means for automatically reciprocating said carriage, means connected to the carriage to reciprocate said pattern holder, and means for varying the relative throw of said holders.

14. A machine of the character described comprising a feed carriage, a work holder, a slidable carriage operated by said feed carriage, a pattern holder reciprocated by said slidable carriage, and means for varying the movement of said holders relatively to each other.

15. A machine of the character described comprising a feed carriage, a work holder, a slidable carriage operated by said feed carriage, a pattern holder reciprocated by said slidable carriage, and means interposed between the two carriages for regulating the throw of said holders.

16. A machine of the character described comprising a feed carriage, a work holder mounted thereon, a pattern holder mounted on said work holder, means for reciprocating said carriage, means connected to said carriage for reciprocating said holders in unison, and means for varying the relative throw of said holders.

17. A machine of the character described comprising a feed carriage, a work holder mounted thereon, means for reciprocating said feed carriage, a slidable carriage, a stroke regulating arm connecting said carriages, and a pattern holder operated by said slidable carriage.

18. A machine of the character described comprising a feed carriage, a work holder mounted thereon, means for reciprocating said feed carriage, a slidable carriage, a slotted regulating arm connected to said slidable carriage, a pitman having one end connected to said work holder and the other end adjustably secured in the slot of said regulating arm, and a pattern holder operated by said slidable carriage.

19. A machine of the character described comprising a feed carriage, a work holder mounted thereon, means for reciprocating said feed carriage, a slidable carriage, a pitman connected at one end to said work holder, means for adjustably connecting the other end of said pitman to said slidable carriage, and a pattern holder operated by said slidable carriage.

20. A machine of the character described comprising a feed carriage, a work holder mounted thereon, means for reciprocating said feed carriage, a slidable carriage, a pattern holder, connections between said pattern and work holders and said slidable carriage, and means for varying the positions of said carriage and work holder relative to each other.

21. A machine of the character described comprising reciprocating carriers mounted one upon the other, a work holder and a pattern holder having their ends respectively mounted to swing in said carriers, and means for securing an axial adjustment of said holders.

22. A machine of the character described comprising reciprocating carriers mounted one upon the other, a work holder and a pattern holder having their ends respectively mounted to swing in said carriers, means for effecting an axial adjustment of said holders, means for reciprocating said carriers in unison, and means for varying the relative throw of said carriers.

23. A machine of the character described comprising a tracer, a cutter, a yoke provided with parallel supporting arms for said cutter and tracer respectively, connections between said arms, a reciprocating carriage, a pattern holder and a work holder supported by said carriage, a feed screw connected to one of said arms, and means operated by said carriage for intermittently rotating said feed screw.

24. A machine of the character described comprising a tracer, a cutter, a yoke provided with parallel supporting arms for said cutter and tracer respectively, connections between said arms, a reciprocating carriage, a pattern holder and a work holder supported by said carriage, a feed screw connected to one of said arms, means for reversing said carriage, and means operated by said carriage for imparting movement to said feed screw at the end of each stroke of said carriage.

25. A machine of the character described comprising a tracer, a cutter, a yoke provided with parallel supporting arms for said cutter and tracer respectively, connections between said arms, a reciprocating carriage, a pattern holder and a work holder supported by said carriage, a feed screw connected to one of said arms, means for reversing said carriage, a ratchet on said feed screw, and a reverse bar operated by said carriage and provided with oppositely arranged pawls alternately engaging said ratchet.

26. A machine of the character described comprising a carriage, a work holder mounted thereon, a pattern holder mounted on said work holder, means for adjusting said pattern holder transversely on said carriage, a cutter and a tracer respectively mounted adjacent said holders, means for reciprocating said carriage, said means including a shaft, a clutch for controlling the direction of rotation of said shaft, and means operated by said carriage for automatically throwing said clutch.

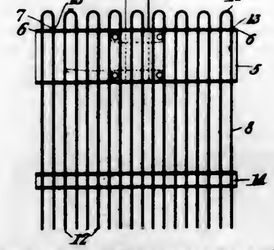
27. A machine of the character described comprising a work holder, a pattern holder, a carriage, a stroke-regulating arm pivoted at one end and interposed between said carriage and said work holder, the free end of said arm being pivotally connected to said carriage, means for adjustably connecting said work-holder with the free end of said regulating arm, and connections between said carriage and said pattern holder.

28. A machine of the character described comprising a work holder, a pattern holder, a carriage, a stroke regulating arm pivoted at its lower end, the upper end of said arm being slotted and interposed between said work holder and said carriage, said carriage being pivotally connected to said arm adjacent the slotted portion of the latter, and a pitman having one end pivoted to said work holder, the other end thereof being adjustably mounted in the slot of said regulating arm.

29. A machine of the character described comprising carriers mounted one upon the other, a work holder and a pattern holder, respectively mounted in said carriers, means for effecting an axial adjustment of said holders, means for adjusting said carriers relatively to each other, and means for moving said carriers in unison.

30. A machine of the character described comprising carriers mounted one upon the other, means for adjusting said carriers relatively to each other, a work holder and a pattern holder each provided with trunnions mounted in said carriers, a notched segment carried by each of said holders, a spring locking pin for engaging each segment, and means for reciprocating said carriers.

853,502. RAKE. ELMER W. DOWD, Ottawa, Kans. Filed Aug. 31, 1906. Serial No. 332,850.



Claim.—1. A rake comprising a handle, a plate secured to the handle and provided with spaced perforated flanges, and a plurality of vertically adjustable tines passing through the perforations in the flanges and provided with laterally extending loops engaging the walls of said perforations for locking the tines in lowered position.

2. A rake comprising a plate provided with oppositely disposed perforated flanges, a loop secured to one side of the plate, a plurality of tines each formed of a single piece of metal bent upon itself to form parallel arms the ends of which pass through the perforations in the flanges, a laterally extending loop formed in one of the arms of each tine and adapted to bear against the walls of the perforations, a transverse connecting bar provided with longitudinal flanges having alined perforations formed therein for the reception of the tines, said bar being adjustable longitudinally of the rake, and an operating handle engaging said loop and extending in the same longitudinal plane with the tines.

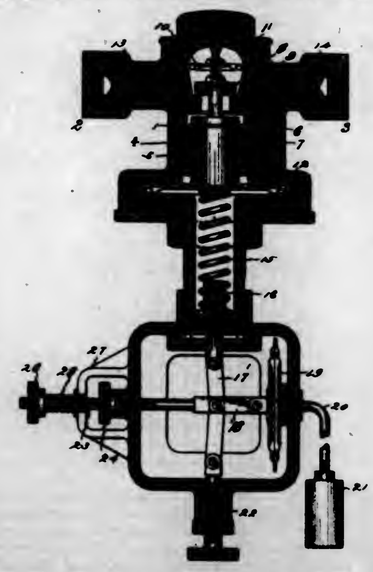
3. A rake comprising a handle, a plate secured to the handle and provided with spaced perforated flanges, a plurality of vertically adjustable tines passing through the

perforations in the flanges and provided with laterally extending loops engaging the walls of the perforations for locking the tines in lowered position, and an operating handle secured to the plate and extending in the same longitudinal plane with the tines.

4. A rake head comprising a handle, a plate secured to and extended transversely of the handle and provided with spaced perforated flanges, a plurality of vertically adjustable tines passing through the perforations in the flanges and provided with laterally extending loops engaging the walls of said perforations for locking the tines in lowered position, a transverse bar slidably mounted on the tines and spaced from the plate, said handle being extended in the same longitudinal plane with the tines.

5. A rake comprising a handle, a plate secured to the handle and having perforations formed therein, a plurality of vertically adjustable tines passing through the perforations in the plate and provided with laterally extending loops engaging the walls of said perforations for locking the tines in lowered position, a transverse bar slidably mounted on the tines and provided with spaced perforated flanges adapted to receive the tines, said handle being secured to the plate and extended in the same longitudinal plane with the tines.

853,503. EXPANSION-VALVE. ARTHUR H. EDDY, Windsor, Conn., assignor of one-half to Charles E. Shepard, Hartford, Conn. Filed Jan. 6, 1906. Serial No. 294,875.



Claim.—1. A regulating device having a body with an inlet, an outlet and a valve seat, a valve adapted to open and close against the seat, a diaphragm connected with and adapted to close the valve, a spring arranged to open the valve, and a hollow thermostatic diaphragm connected with and arranged to control the tension of the spring according to the thermostatic condition of the diaphragm, substantially as specified.

2. A regulating device having a body with an inlet, an outlet, and a valve seat, a plunger located on the outlet side of the valve seat, a valve located on the inlet side of the valve seat and connected with the plunger, a diaphragm connected with the plunger on the outlet side of the valve seat, a spring thrusting against the diaphragm, and a diaphragm connected with the spring whereby the tension of the spring is regulated by the condition of the latter diaphragm, substantially as specified.

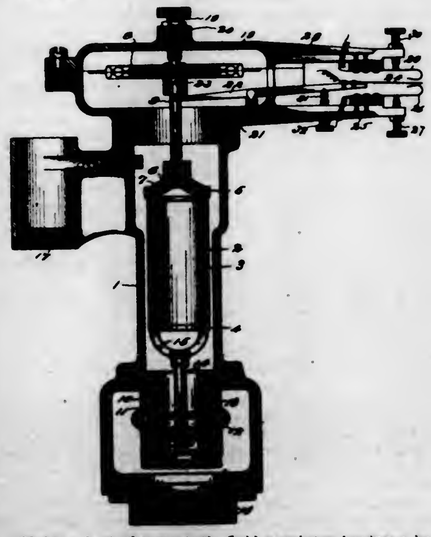
3. A regulating device having a body with an inlet, an outlet and a valve seat, a plunger located on the outlet side of the valve seat, a valve located on the inlet side of the valve seat and connected with the plunger, a diaphragm on the inlet side of the valve seat and connected with the valve, a diaphragm on the outlet side of the valve seat and connected with the plunger, a spring thrusting against the diaphragm on the outlet side of the valve seat, and an expansible diaphragm arranged to control the tension of said spring substantially as specified.

4. A regulating device having a body with an inlet and outlet and a valve seat, a valve movable toward and from the valve seat, a hollow thermostatic diaphragm, and a spring thrusting between the valve and the thermostatic diaphragm and tending to lift the valve from its seat and having its tension varied according to the state of the said diaphragm, substantially as specified.

5. A regulating device having a body with an inlet, an outlet and a valve seat, a valve movable toward and from the valve seat, a spring arranged to thrust the valve from the valve seat, a toggle supporting the spring, and a thermostatic diaphragm adapted to actuate the toggle, substantially as specified.

6. In combination with a valve, a diaphragm arranged to move the valve in one direction, a spring arranged to move the valve in the opposite direction, and a hollow thermostatic diaphragm connected with and arranged to control the tension of the spring, substantially as specified.

853,504. REGULATING-VALVE. ARTHUR H. EDDY, Windsor, Conn., assignor of one-half to Charles E. Shepard, Hartford, Conn. Filed Jan. 6, 1906. Serial No. 294,876.



Claim.—1. A thermostatic fluid regulator having a body with a fluid-way through the body, a valve for regulating the area of the opening to the fluid-way, a drum containing an expansion fluid located in said fluid-way and exposed to the fluid immediately it passes the valve, a stem connecting the drum and valve, and a hollow diaphragm located above and out of the fluid way attached to and having its interior communicating with the drum, substantially as specified.

2. A thermostatic fluid regulator having a body with a fluid way through the body, a valve for regulating the area of the opening to the fluid-way, a drum containing an expansion fluid located in said fluid way and exposed to the fluid immediately it passes the valve, a stem connecting

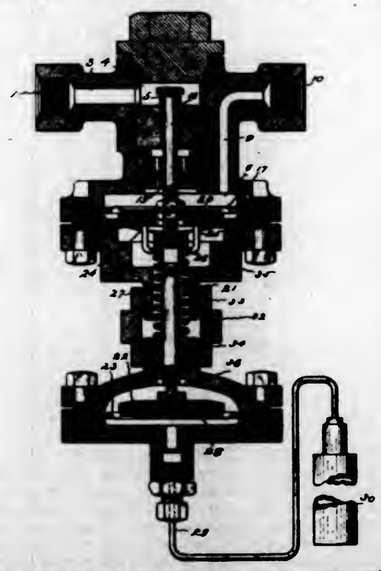
the drum and valve, a hollow diaphragm, adjustable means supporting said diaphragm above and out of the fluid-way, and means connecting the interior of the diaphragm with the interior of the drum, substantially as specified.

3. A thermostatic fluid regulator having a body with a fluid-way through the body, a valve for regulating the area ports at the lower end of the body, a piston valve in the valve casing and having ports arranged to co-act with the ports through the casing, a drum containing an expansion fluid located in said fluid way and exposed to the fluid immediately it passes the valve, a stem connecting the drum and piston valve, and a hollow diaphragm located above and out of the fluid-way attached to and having its interior communicating with the drum, substantially as specified.

4. A thermostatic fluid regulator having a body with a fluid-way through the body, a valve for regulating the area of the opening to the fluid-way, a drum containing an expansion fluid located in said fluid-way and exposed to the fluid immediately it passes the valve, a stem connecting the drum and valve, a hollow diaphragm located above and out of the fluid-way attached to and having its interior communicating with the interior of the drum, electrical contacts and means adapted to engage the contacts at a predetermined degree of expansion of the diaphragm, substantially as specified.

5. A thermostatic fluid regulator having a body with a fluid-way through the body, a valve for regulating the area of the opening to the fluid-way, a drum containing an expansion fluid located in said fluid-way and exposed to the fluid immediately it passes the valve, a stem connecting the drum and valve, a hollow diaphragm located above and out of the fluid-way attached to and having its interior communicating with the interior of the drum, a lever adapted to be moved by the expansion of the diaphragm, an electrical contact carried by the lever, and electrical contacts adapted to be engaged by the lever contact at predetermined degrees of expansion of the diaphragm, substantially as specified.

853,505. AUTOMATIC EXPANSION-VALVE FOR REFRIGERATING APPARATUS. ARTHUR H. EDDY, Windsor, Conn., assignor of one-half to Charles E. Shepard, Hartford, Conn. Filed Jan. 26, 1906. Serial No. 297,978.



Claim.—1. In a refrigerating apparatus, the combination of a valve for controlling the flow of refrigerating fluid, a diaphragm located on the outlet side of the valve adjacent to the fluid port and exposed to the pressure of the refrigerating fluid that passes the valve, a stem extending through the port and joining said valve and diaphragm, a spring thrust against the diaphragm in opposition to the pressure of the refrigerating fluid, a diaphragm parallel with the first-mentioned diaphragm, a stem extending between the two diaphragms, and a thermal regulator subject to the temperature of the refrigerating fluid on the expansion side of the valve communicating with and adapted to affect the last-mentioned diaphragm oppositely to the refrigerating fluid, substantially as specified.

2. In a refrigerating apparatus, in combination, an expansion coil, a valve for controlling the flow of refrigerating fluid to the coil, a diaphragm located on the outlet side of the valve adjacent to the fluid port, and exposed to the pressure of the refrigerating fluid that passes the valve, a stem extending through the port and joining said valve and diaphragm, a spring thrusting against the diaphragm in opposition to the pressure of the refrigerating fluid, a diaphragm parallel with the first-mentioned diaphragm, a stem extending between the two diaphragms, and a thermal regulator located adjacent to and affected by the temperature of the expansion coil, and communicating with and adapted to affect the last-mentioned diaphragm oppositely to the refrigerating fluid, substantially as specified.

3. In a refrigerating apparatus in combination, a valve for controlling the flow of refrigerating fluid, a diaphragm located on the expansion side of the valve and subject to the pressure of the refrigerating fluid that passes the valve, a stem connecting the valve and said diaphragm, a spring thrusting against the diaphragm in opposition to the pressure of the refrigerating fluid, a diaphragm having an upwardly extending stem, a spring between said stem and the under side of the first-mentioned diaphragm, and a thermal regulator subject to the temperature of the refrigerating fluid on the expansion side of the valve connected with and adapted to act upon the last-mentioned diaphragm in opposition to the pressure of the refrigerating fluid, substantially as specified.

4. In a refrigerating apparatus in combination, an expansion coil, a brine tank containing the expansion coil, a regulating device connected with the expansion coil, said device comprising a valve for controlling the flow of refrigerating fluid to the coil, a diaphragm on the expansion side of the valve and subject to the pressure of the refrigerating fluid for closing the valve, a spring arranged to open the valve against the fluid pressure, a diaphragm having a stem arranged to thrust against the first-mentioned diaphragm, a thermal regulator located in the brine tank and connected with the last-mentioned diaphragm, and a thermal regulator located in the compartment cooled by the expansion coil and connected with the last mentioned diaphragm in such manner that variations of the mean temperature of the brine and the atmosphere in the compartment will cause fluctuations of the last-mentioned diaphragm, substantially as specified.

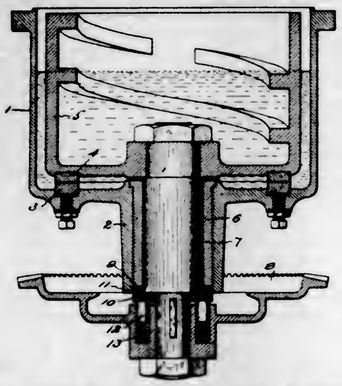
5. In a refrigerating apparatus in combination, a valve for controlling the flow of refrigerating fluid, a diaphragm arranged on the expansion side of the valve and subject to the pressure of the refrigerating fluid for closing the valve, a flat spring and a spiral spring arranged under the diaphragm in opposition to the pressure of the refrigerating fluid, for opening the valve, a diaphragm arranged to determine the tension of one of the springs, and a thermo regulator adapted to be acted upon by the temperature produced by the refrigerating fluid on the expansion side of the valve, for actuating the spring regulating diaphragm, substantially as specified.

853,506. SHAFT-PACKING. ARTHUR H. EDDY, Windsor, Conn., assignor of one-half to Charles E. Shepard, Hartford, Conn. Filed July 3, 1906. Serial No. 324,589.

Claim.—1. The combination of a case, a shaft extending from the interior to the exterior of the case, a packing covering the outer end of the joint between and thrusting against both the shaft and its bearing in the case, and springs thrusting the packing longitudinally of the shaft

against the shaft and its bearing each side of the joint between them, substantially as specified.

2. The combination of a case, a shaft extending from the interior to the exterior of the case, a ring on the shaft at the outer end of the joint between the shaft and its bearing in the case, a cushioning packing covering the joint between and thrusting against both the ring and the shaft, and springs thrusting the packing longitudinally of the shaft and against the shaft and the ring each side of the joint between them, substantially as specified.



3. The combination of a case, a shaft extending from the interior to the exterior of the case, a ring on the shaft at the outer end of the joint between the shaft and its bearing in the case, a cushioning packing covering the joint between and thrusting against both the ring and the shaft, a case supporting the packing, and springs thrusting the case and packing longitudinally of the shaft and against the shaft and the ring each side of the joint between them, substantially as specified.

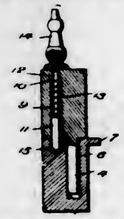
4. The combination of a case, a bushing extending through the case, a shaft extending through the bushing, a ring on the shaft at the outer end of the bushing, a cushioning packing covering the joint between and thrusting against both the ring and the shaft, and springs thrusting the packing longitudinally of the shaft and against both the shaft and the ring each side of the joint between them, substantially as specified.

5. The combination of a case, a bushing extending through the case, a shaft extending through the bushing, a ring on the shaft and occupying a recess in the case at the outer end of the bushing, a cushioning packing covering the joint between and thrusting against both the ring and the shaft, and springs thrusting the packing longitudinally of the shaft and against both the shaft and the ring each side of the joint between them, substantially as specified.

6. The combination of a case, a shaft extending from the interior to the exterior of the case, a packing covering the outer end of the joint between and thrusting against both the shaft and its bearing in the case, a cam-cylinder attached to the shaft in the case, a gear attached to the shaft outside of the case, and springs carried by the gear and thrusting the packing longitudinally of the shaft and against the shaft and its bearing, substantially as specified.

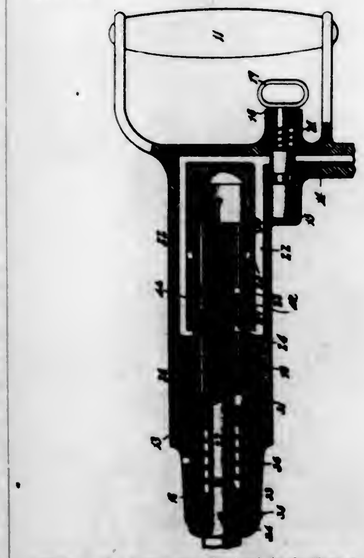
853,507. HINGE. CHRISTOPHER FIELDING, South Bethlehem, Pa. Filed Mar. 30, 1906. Serial No. 308,968.

Claim.—1. A hinge comprising a pair of leaves, oval heads secured to said leaves each head being substantially one-half the length of its respective leaf, a pivot pin integral with the upper head and at one side of the center thereof and adapted to enter a socket in the lower head, a locking pin disposed through a bore in the upper head and adapted to extend beyond each end thereof and having a reduced upper end, a handle secured to the upper projecting end of said pin, a spring disposed around the reduced end of said pin and in said bore whereby the pin will be directed into a bore in the lower head when the hinge is open and means to hold said pin in its elevated position when the hinge is being opened or closed.



2. A hinge of the class described comprising a pair of leaves, an oblong head on each of said leaves, one head being on the upper half of one of said leaves, and the other head on the lower half of the opposite leaf and adapted to register one above the other, a pivot pin integral with the upper head and at one side of the center thereof adapted to enter a socket in the lower head, a locking pin disposed in a bore in the upper head and at the opposite side of the center from the pivot pin, said locking pin being longer than the head and having a reduced upper end, a spring disposed around the reduced end of the locking pin and in the bore, adapted to direct said pin into a bore in the opposite head when the hinge is opened, a handle secured to the upper end of the locking pin and a ledge at the upper edge of the lower head adapted to hold the locking pin in its elevated position when the hinge is being opened or closed.

853,508. PNEUMATIC HAMMER. JOSEPH FREDERICK, Stroudsburg, Pa. Filed Apr. 14, 1906. Serial No. 311,752.



Claim.—1. A pneumatic tool including a cylinder having a piston controlled exhaust port in its wall, said port being extended in the length of the cylinder, and a piston working within the cylinder and controlling said exhaust port, the effective area of the port being variable to control the period and volume of the exhaust from the rear of the piston to effect corresponding variation in the length and force of the working stroke.

2. In a pneumatic tool, a cylinder having in its wall an exhaust port that is extended in the direction of the length of the cylinder, a tool socket arranged at one end of the cylinder, a tool receiving bushing within a socket, a spring tending to thrust the bushing outward, and a piston arranged within the cylinder and controlling the exhaust therefrom at the completion of the working stroke, the strength of the piston blow and the degree of exhaust being controlled by the pressure exerted in holding the tool against the work.

3. In a pneumatic tool, a cylinder having an exhaust port in its wall, said exhaust port being extended in the direction of the length of the cylinder, a tool socket arranged at one end of the cylinder, a longitudinally movable bushing disposed within the socket and adapted for the reception of a tool, a spring tending to force the bushing outward, and a piston arranged within the cylinder and controlling the exhaust port, said piston being provided with a reduced forward end for engaging the shank of the tool.

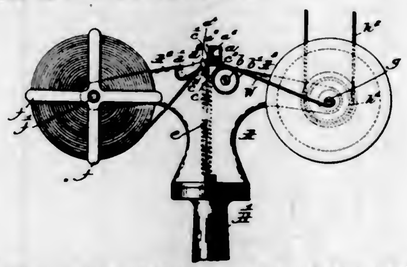
4. In a pneumatic tool, a ported cylinder, and a single piece piston provided with a pair of circumferential grooves forming ports that are movable into alinement with the cylinder ports, channels or ports leading from the ends of the piston to such grooves, and minor ports for placing the grooves in communication with each other.

5. In a pneumatic tool, a piston provided with inlet and exhaust ports, and a single piece piston having circumferential grooves forming ports that are movable into alinement with the inlet and exhaust ports, there being a plurality of ports or channels extending from each end of the piston to the nearest circumferential groove, and minor ports for placing the grooves in communication with each other.

6. In a pneumatic tool, a cylinder having inlet and exhaust ports, and a piston provided with a small port or passage placing the opposite ends of the cylinder in communication with each other.

7. In a pneumatic tool, a cylinder having inlet and exhaust ports, a piston having three annular grooves, ports leading from one of the end grooves to the adjacent end of the piston, a port leading from the opposite end groove to the opposite end of the piston, and small ports connecting the end grooves to said central groove.

853,509. WELT-SHAPING MACHINE. LOUIS GODDU, Winchester, Mass., assignor to Goddu Sewing Machine Company, Portland, Me., a Corporation of Maine. Filed Jan. 11, 1899. Serial No. 701,834.



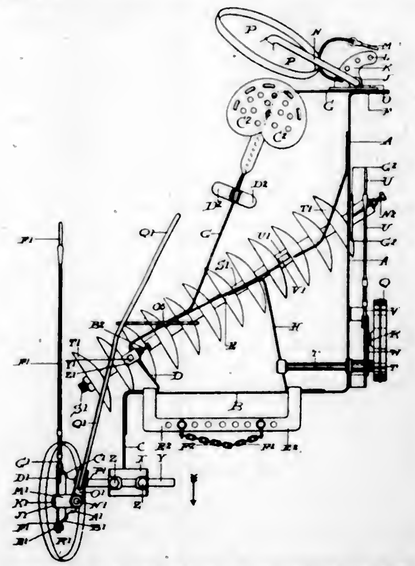
Claim.—1. In a machine for grooving and skiving welts, the combination with a welt support having a curved face over which the welt passes, of means for bending a welt over the welt support and grooving and skiving knives arranged to act on the stretched upper surface and edge of a welt respectively, substantially as described.

2. In a machine for grooving and skiving welts, the combination with a main welt support having a curved face, of means for bending a welt over the welt support an auxiliary rotary support located adjacent to the main welt support and grooving and skiving knives arranged to act on the upper surface and edge of the welt respectively, substantially as described.

3. In a machine for grooving and skiving welts, the combination with the grooving and skiving knives, a welt support provided with a guide flange, a spring pressed tension bar provided with a complementary guide flange, and means for adjusting the tension bar so as to adjust the guide flange carried thereby toward and from the guide flange on the work support, substantially as described.

4. In a machine for grooving and skiving welts, the combination with the over-hanging knife carrier, and grooving and skiving knives adjustably supported therein, a welt support adjustably mounted beneath the over-hanging knife carrier, and a swinging spring pressed arm carrying a tension bar to act on the welt to maintain the tension thereon during the operation of the machine, substantially as described.

853,510. DISK CULTIVATOR. JAMES GRANT, Cobram, Victoria, Australia. Filed Aug. 8, 1906. Serial No. 329,796.



Claim.—1. In a disk cultivator the combination with a frame having a backward extension frame piece, a left hand frame piece, and a diagonal frame piece; of a disk shaft below said frame, bearing holding rods supporting the shaft, clamps engaging the backward extension piece and the diagonal frame piece, said clamps adjustably engaging the rods, a thrust bearing bracket connected to the left hand frame piece and adjustable thereon, and a thrust block adjustably mounted within said bracket and constituting an end bearing for the shaft.

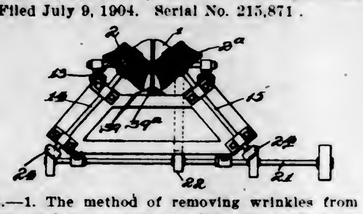
2. In a disk cultivator the combination with a portable frame, and means for adjusting said frame vertically; of a diagonally arranged shaft within the frame, adjustable means for supporting said shaft from the frame, means for adjusting said shaft longitudinally, and disks carried by the shaft.

3. In a disk cultivator the combination with a portable frame; of a diagonally arranged shaft, vertically and laterally adjustable means for supporting the shaft from the frame, a bracket secured to the frame, a thrust block constituting an end bearing for the shaft, means for adjusting said block to shift the shaft longitudinally, and disks upon the shaft.

4. In a disk cultivator the combination with a portable frame; of a diagonally-disposed shaft extending throughout the width of the frame, disks upon the shaft, adjustable means for supporting the shaft at points between its ends, and means for imparting longitudinal movement to said shaft.

5. In a disk cultivator the combination with a portable frame; of a diagonally-arranged shaft extending throughout the width of the frame, disks upon the shaft, longitudinally and vertically adjustable supports for the shaft and mounted on the frame, and means for imparting longitudinal movement to the shaft.

853,511. ART OF STRIPPING TOBACCO. CHARLES F. HALL, Chicago, Ill., assignor to Louis M. Cahn, Chicago, Ill. Filed July 9, 1904. Serial No. 215,871.



Claim.—1. The method of removing wrinkles from tobacco leaves which consists of holding the leaf in a form concave on one side and convex on the other and stroking the same crosswise of the wrinkles while thus held.

2. The method of removing wrinkles from tobacco leaves which consists in holding the leaf in the form it assumes in growing and stroking the same crosswise of the wrinkles.

3. The method of removing wrinkles from tobacco leaves which consists in holding the leaf in a form concave on one side and convex on the other and stroking the same crosswise of the wrinkles in converging lines.

4. The method of removing wrinkles from tobacco leaves which consists in holding the leaf in an ovate form and stroking the same crosswise of the wrinkles while thus held.

5. The method of removing wrinkles from tobacco leaves which consists in holding the leaf in a form concave on one side and convex on the other and stroking the same crosswise of the wrinkles with motion increasing in speed from the stem of the leaf outward toward its perimeter.

6. The method of removing wrinkles from tobacco leaves which consists in holding the leaf in a form concave on one side and convex on the other and stroking the same crosswise of the wrinkles on both sides of the stem simultaneously and in outward directions from the stem.

7. In a machine for the purpose described the combination of a member having a curved periphery in cross-section and having a curved periphery also in longitudinal section, and a rotary brush contacting therewith and being of a form complementary thereto along said line of contact, the axis of the brush being oblique to the longitudinal axis of said member.

8. In a machine for the purpose described, the combination of a member curved in cross-section and of varying degree of curvature from end to end and a rotary brush of complementary form arranged contiguous to the periphery of said member.

9. In a machine for the purpose described, the combination of a member circular in cross-section and of varying length of diameter from end to end, a rotary brush of complementary shape arranged contiguous to the periphery of said member with its smaller end contiguous to the larger end of said member and means for rotating said brush and member in the same general direction at their line of contact.

10. In a machine for the purpose described, the combination of a member of ovate form and a rotary brush contacting therewith and being of a form complementary thereto along a single line of contact.

11. In a machine for the purpose described, the combination of a member curved in cross-section and of varying degree of curvature from end to end with attenuated ends, two rotary brushes of tapering form contacting with said member and having their axes arranged at an angle to each other and also at an angle to the longitudinal axis of said member, and means for rotating said brushes toward the smaller ends of said member respectively.

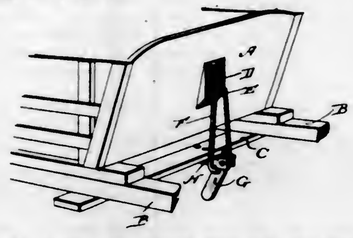
12. In a machine for the purpose described, the combination of a member curved in cross-section and of varying degree of curvature from end to end and a rotary brush of complementary form having its axis of rotation arranged at an angle to the longitudinal axis about which said curved member is generated.

13. In a machine for the purpose described, the combination of a member curved in cross-section and a longitudinal section having the form of an ogee curve, and a rotary brush arranged contiguous to the periphery of said member with its axis of rotation at an angle to the longitudinal axis of said member.

14. In a machine for the purpose described, the combination of a forming member over which to spread the leaf, means contacting with said member for brushing the wrinkles from the leaf, a guide for directing the leaf between said member and means, and means carried by said member for gripping the leaf.

15. In a machine for the purpose described, the combination of a rotary forming member over which to spread or form the leaf, a rotary brush arranged contiguous to the periphery of said forming member and means for rotating said member and brush at different rates of speed.

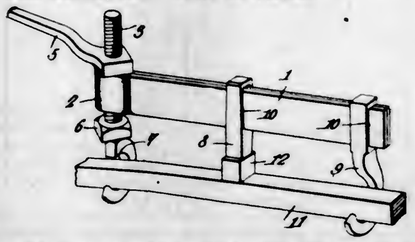
853,512. ATTACHMENT FOR DUMP-CARTS. FULLER R. HENDERSHOT, Plymouth, Pa. Filed Apr. 14, 1906. Serial No. 311,712.



Claim.—1. The combination with the cart thills and cross beam, of a hook arranged at the end of the cart, a ball adapted to engage said hook, a lever to which the ball is attached, and means for pivotally supporting said lever, as set forth.

2. The combination with a cart having a block arranged upon the front end thereof, of a hook attached to the block, a ball adapted to engage the hook, a lever to which the lower end of the ball is pivoted, a cross-beam, a pair of ears connected to said cross beam and the lever pivoted between the ears, all arranged and adapted to operate, substantially as described.

853,513. COLD-IRON STRAIGHTENER. JOHN D. KEITH and WALTER E. FAULKNER, Santa Anna, Tex. Filed Jan. 23, 1907. Serial No. 353,708.

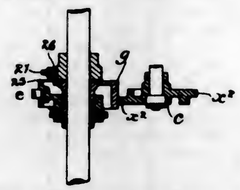


Claim.—1. In a metal straightener, the combination with a beam or body portion composed of a strip of flat metal bent centrally on itself to form an eye at one end of the beam and having its arms doubled and engagaing one another throughout their length to form a guiding portion having an angular cross section of uniform dimensions, of a screw extending through said eye and having a hook

thereon to engage the work, and means coöperating therewith and engaging the opposite edges of the beam for operating the screw axially in both directions, and a fulcrum arm and a resistance hook having angular openings therein of equal dimensions to interchangeably receive the beveled arm of the beam and to permit disengagement and interchanging of the fulcrum arm and hook by a relatively longitudinal movement thereof.

2. In a device of the character described, the combination with a beam or body portion having an angular cross section toward one end and an eye formed at the other end, of a screw fitted to operate in said eye and provided with suitable actuating means for moving it axially in two directions, a hook rigidly fixed to said screw having a transverse abutment thereon adapted to coöperate with the work when the screw is being actuated in one direction, and having a curved portion opposite to said abutment to coöperate with the work when the screw is being operated in the opposite direction, and interchangeable fulcrum and resistance devices guided on the beam and adapted to be arranged in reversed order when said screw is operated in opposite directions.

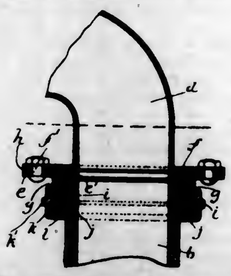
853,514. MECHANICAL MOVEMENT. FRANK LEEMING, Bradford, and CHARLES HUDSON, Ingrow, near Keighley, England, assignors to George Hattersley and Sons Limited, Keighley, England. Filed Aug. 28, 1905. Serial No. 276,011.



Claim.—1. In a mechanical movement, a segment drum, a segment wheel mounted to slide on said drum and having a hollowed portion, a partly toothed wheel formed to engage with the segment wheel and the segment drum, a portion of the latter being arranged to come into contact with the hollowed portion of the former substantially as herein specified.

2. In a mechanical movement, a segment drum, a segment wheel mounted to slide thereon said wheel having an elongated tooth as described, a partly toothed wheel for engaging with said segment wheel said partly toothed wheel having teeth and parts to engage with the teeth and periphery of the segment wheel and drum substantially as herein specified.

853,515. FLEXIBLE CONNECTION FOR WATER-CLOSETS, &c. PETER F. LYONS, Boston, Mass. Filed Nov. 29, 1904. Serial No. 234,739.



Claim.—1. The combination with a closet bowl having an integral tubular outlet stem above the base of the bowl and below the normal level of water therein, and a metallic outlet pipe, of a connection having a flange for rigid attachment with a similar flange on the pipe and provisions for making a flexible water-tight connection with the outlet stem; said provisions consisting of a tubular member or flange surrounding the stem, an internal shoulder within said tubular flange, an elastic packing between said flange, shoulder and stem, and a gland threaded on the flange outside of the stem adapted to compress the elastic packing against the flange and shoulder and thereby cause it to press tightly and yieldingly against the outlet stem.

2. The combination of a closet bowl having an integral tubular outlet stem free from external projections; a metallic pipe abutting said outlet stem; and a yielding water-tight connection uniting said pipe and stem located above the base of the bowl and below the normal level of water in the bowl, comprising a member having a flat annular flange connected to the metallic pipe, a tubular extension surrounding the end of the stem, an internal annular shoulder projecting across the end of the stem and separated therefrom; an elastic packing contained between said tubular member, the stem and the shoulder; a nut threaded on the exterior of said tubular member and formed with a flange projecting over the end of said tubular member and loosely surrounding said stem; and a rigid compression ring located between the stem, packing and nut and wholly inclosed thereby.

3. The combination of a closet bowl having an integral laterally and upwardly projecting tubular outlet stem free from external projections; a metallic pipe forming a continuation of said stem and extending laterally away therefrom; a lateral flange formed on the end of the metallic pipe; and a yielding water-tight connection between said pipe and said stem located above the base of the bowl and below the normal level of water in said bowl, comprising a tubular member provided with a lateral flange connected to the flange of the pipe and surrounding the end of the stem, having an internal annular shoulder projecting across the end of the stem and separated therefrom; an elastic packing contained between said tubular member, the stem and the shoulder; a nut threaded on the exterior of said tubular member and formed with a flange projecting over the end of said tubular member and loosely surrounding said stem; and a rigid compression ring located between the stem, packing and nut and wholly inclosed thereby.

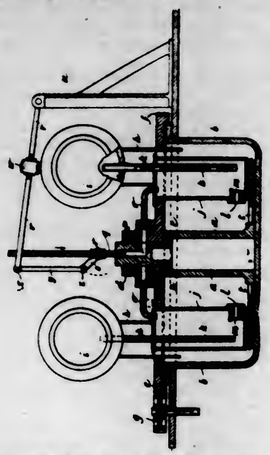
4. An attachment for closet bowls and the like comprising a flat annular plate or ring having extending from one side intermediate its external and internal diameters an externally-threaded annular rib or tubular member, the portion of the plate external to said rib or member constituting a flange having provisions for attachment to a complemental abutment, and the internal portion constituting a packing shoulder, a nut or ring mounted externally on the tubular member in screw-threaded engagement therewith and formed with an internal flange forming a shoulder in line with the said packing shoulder, and an elastic annular packing ring contained within the tubular member and said shoulders and arranged to be compressed and distorted by adjustment toward each other of said shoulders.

853,516. APPARATUS FOR PITCHING KEGS OR BARRELS. GEORGE E. O'NEILL, Brooklyn, N. Y., assignor of one-half to John T. Willoughby, Brooklyn, N. Y. Filed Dec. 17, 1904. Serial No. 237,302.

Claim.—1. In a pitching machine, the combination of a rotary table, a series of keg supports, pitching means coöperating with the keg supports, means for operating the pitching means, and an automatic safety device in the path of the keg in its movement for controlling the admission of fluid pressure to the respective pitching devices.

2. In a pitching machine, the combination of a movable table, a series of keg supports, pitching means co-operating with the keg supports, a source of fluid pressure, means whereby the source of fluid pressure is brought successively into communication with the respective pitching means, and an automatic safety device in the path of the keg in its movement for controlling the admission of fluid pressure to the respective pitching devices.

3. In a pitching machine, the combination of a movable table, keg supports carried thereby, pitching means traveling with the keg supports substantially as described, and an automatic safety device in the path of the keg in its movement for controlling the admission of fluid pressure to the respective pitching devices.



4. In a pitching machine, the combination of a rotary table, a series of keg supports, a series of pitching devices moving with the said keg supports, and an automatic safety device in the path of the keg in its movement for controlling the admission of fluid pressure to the respective pitching devices.

5. In a pitching machine, the combination of a series of keg supports, a table supporting the said keg supports, pitching means traveling with the table, and an automatic safety device in the path of the keg in its movement for controlling the admission of fluid pressure to the respective pitching devices.

6. In a pitching machine, the combination of a rotating table, a series of keg supports carried thereby, pitching means also carried by the said table, and an automatic safety device in the path of the keg in its movement for controlling the admission of fluid pressure to the respective pitching devices.

7. In a pitching machine, the combination of a rotary table, a series of keg supports, pitching means and an automatic safety device in the path of the keg in its movement for controlling the admission of fluid pressure to the respective pitching devices.

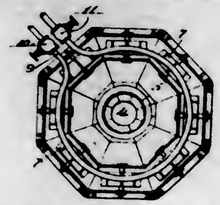
8. In a pitching machine, the combination of a rotary table having keg supports, pitching means, a source of fluid pressure for effecting the operation of the pitching means and an automatic safety device in the path of the keg in its movement for controlling the admission of fluid pressure to the respective pitching devices.

853,517. DUST-COLLECTOR. WILLIAM S. OSBORNE, Hyde Park, Mass., assignor of one-half to B. F. Sturtevant Company, Boston, Mass., a Corporation of Massachusetts. Filed Dec. 28, 1905. Serial No. 293,571.

Claim.—1. A dust collector having, in combination, a casing provided with a tangential air inlet, a central air outlet, and a dust outlet, rotating means for beating and moistening the air in its passage through the collector, and means for supplying moisture to said rotating means, substantially as described.

2. A dust collector having, in combination, an inlet portion with a tangential air inlet, a dust separating portion, a contracted passage-way leading from one portion to the other, and rotating air beating means located in such passage-way, substantially as described.

3. A dust collector having, in combination, an inlet portion, a tangential air inlet, a dust separating portion, a contracted passage-way leading from one portion to the other, rotating air beating and moistening means in such passage, and means for supplying moisture to said beating and moistening means, substantially as described.



4. A dust collector having, in combination, a casing provided with a tangential air inlet, an air outlet, and a dust outlet, and a plurality of rotary beaters mounted about the periphery of the casing of axes perpendicular to the axis of the casing, substantially as described.

5. A dust collector having, in combination, an inlet portion provided with a tangential air inlet, a centrifugal dust separating portion connected with the inlet portion by a contracted passage-way, and rotating beaters located in the passage-way and actuated by the air passage therethrough, substantially as described.

6. A dust collector having, in combination, a casing provided with a tangential air inlet, a central air outlet, and a dust outlet, a rotating beater located in the casing and actuated by the air, and means for applying moisture to the beater to moisten the air, substantially as described.

7. A dust collector having, in combination, a casing provided with a tangential air inlet, a plurality of rotary beaters mounted about the periphery of the casing below the air inlet and in the path of the air as it circles about the casing, and a central air outlet below the beaters, substantially as described.

8. A dust collector having, in combination, a casing provided with a tangential air inlet, an air outlet, and a dust outlet, a plurality of rotary beaters mounted about the periphery of the casing of axes perpendicular to the axis of the casing, and means for applying moisture to the beaters, substantially as described.

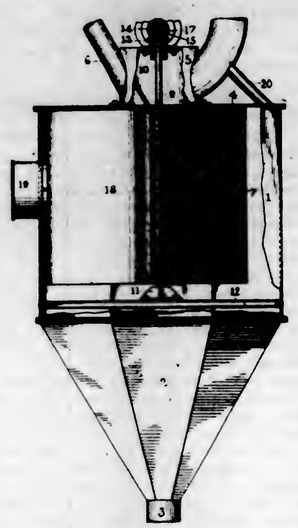
853,518. SEPARATOR FOR FIBROUS MATERIALS. WILLIAM S. OSBORNE, Hyde Park, Mass., assignor of one-half to B. F. Sturtevant Company, Boston, Mass., a Corporation of Massachusetts. Filed Feb. 1, 1906. Serial No. 298,899.

Claim.—1. A separator for fibrous material having, in combination, a vertical cylindrical screen, means for rotating the screen, a casing surrounding the screen and provided with an air outlet embracing a portion only of the screen, means for delivering material and a current of air to the upper end of the screen, and a receptacle for material falling to the bottom of the screen, substantially as described.

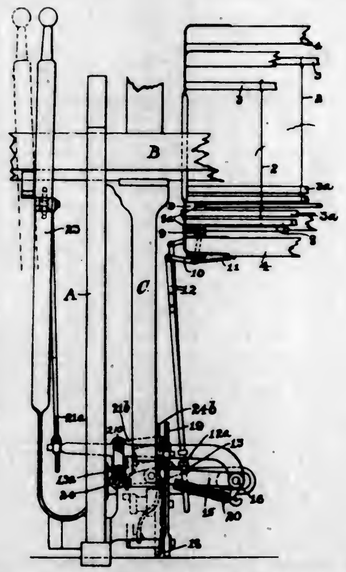
2. A separator for fibrous materials having, in combination, a vertical cylindrical screen, means for rotating the screen, a casing surrounding the screen and provided with a lateral air outlet embracing a portion only of the screen, and means for introducing air and material into the screen, substantially as described.

3. A separator for fibrous materials, having in combination, a vertical cylindrical screen provided with meshes elongated horizontally, means for rotating the screen, a casing surrounding the screen and provided with an air outlet embracing a portion only of the screen, and means for delivering material and a current of air to the interior of the screen, substantially as described.

4. A separator for fibrous materials, having in combination, a rotary screen provided with a mesh elongated in its direction of rotation, means for causing a current of air to flow through a portion of the screen, means for introducing material to the air current, and means for rotating the screen at variable speeds, substantially as described.



853,519. WARP STOP MECHANISM. THOMAS PERKS, Keighley, England, assignor to George Hattersley and Sons Limited, Keighley, England. Filed Nov. 22, 1905. Serial No. 288,509.



Claim.—1. In warp stop mechanism for looms, detector heddles, oscillatory grooved bars for receiving the ends of said heddles, spirally grooved parts on said oscillatory bars, sliding pieces for moving over said spirally grooved parts on the bars to cause said bars to oscillate, means for operating said sliding pieces, and means whereby on the arresting of the motion of the bars, other parts are brought into position for the arresting of the loom's driving mechanism substantially as set forth.

2. In warp stop mechanism for looms, detector heddles, a member mounted to move about a center to contact with said heddles when the detector heddle falls on the breaking of a warp thread, said member having volute or spiral ridges formed upon it, means for operating said member by acting through or by said volute ridges and means whereby the force acting through or against said volute ridges may be on being rebutted, utilized for arresting the motion of a loom substantially as herein specified.

3. In warp stop mechanism for looms, detector heddles, an oscillatory member mounted to contact with said heddles when the detector heddle falls on the breaking of a warp thread, a sliding piece having volute or spirally formed surfaces arranged to transmit motion to said oscillatory member means for transmitting motion to said sliding piece, and means for arresting the motion of the loom when said sliding piece is held from traversing the full length of its path substantially as set forth.

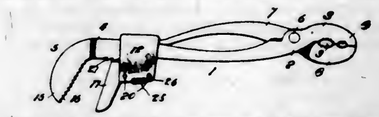
4. In warp stop mechanism for looms, detector heddles means for arresting the threads of warp carried by said detector heddles on arriving at a certain part of their paths of motion so that each set of heddles is moved clear of the warp threads carried by the other heddles, a member mounted to contact with said heddles when the detector heddle falls on the breaking of a warp thread, means for operating said member and means whereby the inaction of said member brings about a stoppage of the loom substantially as herein specified.

5. In warp stop mechanism for looms, the combination with the loom harness having lingoes, of cross bars for arresting the descent of said lingoes when their respective warp threads are intact, a member for contacting with said lingoes when the detector heddle falls on the breaking of a warp thread, said member having a spiral or volute surface through which motion is transmitted to it, and means whereby on the arresting or preventing of the motion of such member, the motions of the loom are arrested substantially as herein specified.

6. In warp stop mechanism for looms, detector heddles means for arresting the threads of warp carried by said heddles, a member mounted to contact with said heddles said member deriving its motion through or by volute or spiral ridges, moving pieces for operating said members by pressing upon their spiral or volute ridges and means whereby the inaction of said moving pieces bring about a stoppage of the loom, substantially as herein specified.

7. In warp stop mechanism for looms, detector heddles, oscillatory grooved bars for receiving the ends of said heddles, levers for operating said bars, springs for retracting said levers, means whereby said levers are enabled to bring about a stoppage of the loom when said levers are held to overcome the force of their retracting springs and means whereby the several parts are readjusted in position after the stoppage of the loom has been effected substantially as herein specified.

853,520. COMPOUND TOOL. JOHN N. PETERSON, Hazelton, N. D. Filed July 23, 1906. Serial No. 327,388.

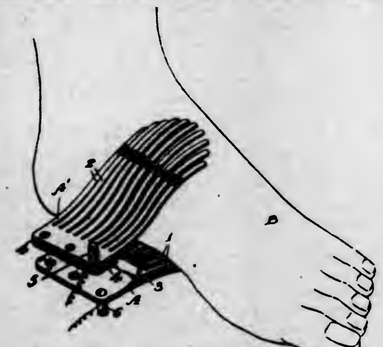


Claim.—1. A wrench comprising a hand lever having a stationary jaw at one end, a ratchet upon the inner edge of said lever, a U-shaped plate surrounding said lever and slidable thereon, a movable jaw having a reduced shank secured in the open end of said plate between its two members, said shank having a recess in its inner edge, a transverse opening and a seat concentric with said opening and in communication with said recess, said shank and the members of said plate having alining recesses in their outer edges, a pawl block slidably mounted in the recess in the inner edge of said shank, a stem carried by said

pawl block and projecting through said opening, a cross-piece upon the outer end of said stem to seat in said alining recesses in the outer edges of the shank and plate, and a coil spring upon said stem confined between said seat and said pawl for holding the latter normally engaged with said ratchet, substantially as described.

2. A tool of the character described comprising a handle having a plier jaw at one end and a stationary wrench jaw at its other end, a lever pivoted upon said handle and having at one end a plier jaw to co-act with the one upon said handle, the other end of said lever being formed with a bent, flattened portion to engage one edge of said handle when the plier jaws are in their closed position, a loop slidably mounted upon said handle and adapted to fit over the bent flattened end of said lever to retain said plier jaws in their closed position and a movable wrench jaw carried by said slidable loop and adapted to co-act with the stationary wrench jaw upon said handle, substantially as set forth.

853,521. ELECTRODE. JAMES H. ROBERTSON, Arlington, N. J., assignor of one-half to John C. Klatzl, New York, N. Y. Filed July 24, 1906. Serial No. 327,477.

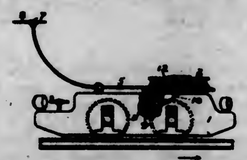


Claim.—1. An electrode for medical or other purposes, having a pair of flexible contact strips provided with a series of independent flexible fingers and a spring adapted to control the relative position of the two contact strips, substantially as set forth.

2. An electrode for medical batteries, composed of a pair of flexible contacts divided longitudinally into narrow separate fingers and means for automatically adjusting said contacts, substantially as set forth.

3. An electrode for applying electricity to irregularly shaped bodies, consisting of a pair of flexible contacts divided longitudinally into a series of narrow flexible fingers of varying lengths, and means for automatically adapting the fingers to the surface irregularities, substantially as set forth.

853,522. CABLE-REEL APPARATUS FOR MINING-LOCOMOTIVES. HARRY W. SHAVER, Pocahontas, Va., assignor to General Electric Company, a Corporation of New York. Filed June 7, 1906. Serial No. 320,565.



Claim.—1. In combination, a vehicle adapted to move in forward and reverse directions, a winding device carried by said vehicle, and an electric motor having a driving connection with said winding device, said motor being connected and arranged to exert a winding torque upon said winding device during the movement of the vehicle in either direction.

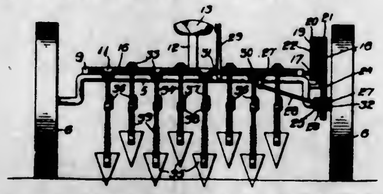
2. In combination, a vehicle adapted to move in forward and reverse directions, a winding device carried by said vehicle, a series motor having a driving connection with said winding device, and means for energizing said motor so as to produce a winding torque upon said winding device during the movement of the vehicle in either direction.

3. In combination, a movable vehicle, a winding device for a flexible conductor carried by said vehicle, an electric motor having a driving connection with said winding device, a motor for driving said vehicle, and switch mechanism arranged to connect the motor for propelling the vehicle to the said conductor for rotation in either direction and to connect the other motor to the said conductor for rotation only in a direction to exert a winding torque upon said winding device.

4. In combination, a movable vehicle, a winding device carried thereby, a flexible conductor on said winding device, means for securing the free end of said conductor to a fixed conductor, an electric motor having a driving connection with said winding device, and means for connecting said motor to said flexible conductor for operation in a direction to exert a winding torque upon said winding device during the movement of the vehicle in either direction.

5. In combination, a movable vehicle, a winding device carried thereby, a flexible conductor on said winding device, means for securing the free end of said conductor to a fixed conductor, an electric motor having a driving connection with said winding device, and means for connecting said motor to said flexible conductor for operation in a direction to exert a winding torque upon said winding device during the movement of the vehicle in either direction, the arrangement being such that the motor tends to wind up the flexible conductor at a greater rate than the rate of movement of the vehicle.

853,523. HARROW. SUMMERFIELD B. STARK, Newsite, Ala. Filed Mar. 22, 1906. Serial No. 307,547.



Claim.—1. An implement of the class described comprising a frame arranged for travel, a crank shaft journaled in the frame, means for rotating the crank shaft, rods pivotally connected with the crank shaft, blades carried by the rods, a fixed shaft mounted in the frame and forwardly of the rock shaft, arms secured at their rear ends to the fixed shaft, said arms being extended rearwardly and being offset adjacent the rods carrying the blades, guide sleeves engaged upon the rods and connected with the rear ends of the arms for oscillatory movement with respect thereto, and a spring disposed upon the rods intermediate the said sleeve and the said blades.

2. An implement of the class described comprising a frame arranged for travel, a crank shaft journaled in the frame, means for rotating the crank shaft, rods pivotally connected with the crank shaft, blades carried by the rods, fixed arms carried by the frame, guide sleeves carried by the arms for oscillatory movement, said sleeves being arranged to slidably receive the first named rods, and springs disposed upon the rods and intermediate the said sleeves and the said blades.

853,524. STOVE-TOP MEMBER. HILLYARD A. STARR, East Chattanooga, Tenn. Filed May 21, 1906. Serial No. 318,018.

Claim.—1. A stove member comprising a body having spaced depending integral ribs on its under side and between its edges, said ribs forming a channel between them that has a closed top and an open bottom throughout its length, and an open ended lifter-receiving socket formed through the body, the inner end of the socket communicating with the channel between the ribs.



2. A stove member comprising a body having spaced depending integral ribs on its under side and between its edges, said ribs forming a channel between them that has a closed top and an open bottom throughout its length, and a lifter-receiving socket extending through the body, said socket having inclosing side walls located in line with the ribs at one end, and having open outer and inner ends, the inner open end communicating with the channel at one end of the same.

3. A stove member comprising a body, and a lifter-receiving socket member comprising a sheet metal core holding casing embedded in the body.

4. A stove member comprising a body, and a lifter-receiving socket member comprising an open ended core holding casing distinct from and embedded in the body, the ends of said casing opening through the opposite sides of the body.

5. A stove member comprising a body, and a lifter-receiving socket member comprising an open ended core-holding casing embedded in the body and of different material from the same, said casing having its upper and lower side walls substantially parallel to the face of the body.

6. A stove member, comprising a body, and a socket member embedded in the body and comprising an inner casing or lining section, and an outer casing section spaced therefrom and connected thereto, the material of the body filling the space between the sections.

7. A stove member comprising a body, and a socket member embedded in the body, said socket member comprising an inner open ended casing or lining section, an outer casing section partially surrounding the inner section and spaced therefrom, and an end wall connecting the corresponding ends of the inner and outer sections, the material of the body filling the space between the sections.

8. A stove member comprising a body having spaced depending ribs on its under side forming a channel having a continuous open bottom, a depression formed in the upper side of the body at one end of and in substantial alinement with the channel, and a lifter receiving socket disposed between the end of the channel and the depression, said socket having open ends communicating with both.

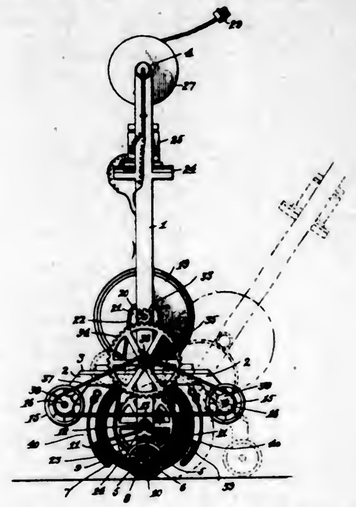
9. A stove member, comprising a body having spaced depending ribs in its under side forming a channel, a depression formed in the upper side of the body at one end of and in substantial alinement with the channel, and a lifter-receiving socket member comprising a casing distinct from the material of and embedded in the body between the channel and depression, said casing having open ends communicating with both.

10. A stove member comprising a body having spaced depending ribs in its under side, forming a channel having an open bottom, a depression formed in the upper side of the body at one end of and in substantial alinement with the channel, and a socket member embedded in the body between the channel and depression, said member comprising an inner casing or lining section provided with open ends that communicate respectively with the channel and depression, an outer casing section surrounding the inner section in spaced relation thereto, and a connection between the sections, the material of the body filling the space between said sections.

853,525. SWEEPING AND SCRUBBING MACHINE. EMMOR J. STEWART, New York, N. Y. Filed July 6, 1906. Serial No. 324,987.

Claim.—1. The combination of the supporting levers, a brush mounted therein above the fulcrum point of each lever and means to operatively support the levers in oppositely inclined positions.

2. The combination of the swinging supporting levers, a brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush and means on each side thereof adapted to serve as a fulcrum for the levers.



3. The combination of the supporting levers, a cylindrical brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush, cross-pieces mounted on the levers and wheels on each end of the cross pieces adapted to serve as fulcrums between the brush and power ends of the levers.

4. The combination of the supporting levers a cylindrical brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush, cross pieces mounted on the levers to limit the swing thereof, wheels on both ends of the cross pieces, and means to adjust the first mentioned wheels, for the purpose specified.

5. The combination of the supporting levers, a cylindrical brush journaled therein above the fulcrum point of each lever, means connected with the levers to form a fulcrum on each side thereof between the brush and power ends of the levers, wheels on said means, and means to drive said wheels.

6. The combination of the supporting levers, a bearing fixed on each lever, a cylindrical brush journaled in said bearings, wheels mounted on the lower end of the levers, means to adjust said wheels on the levers, a cross piece mounted on each lever extending beyond the periphery of the brush, wheels on the ends of the cross pieces and means to drive the wheels.

7. The combination of the supporting levers, a cylindrical brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush, wheels carried by the levers adapted to serve as fulcrums between the brush and power ends of the levers, a motor, means connecting the motor and brush, and means connecting the motor and wheels.

8. The combination of the supporting levers, a cylindrical brush journaled therein, wheels on the lower ends of the levers forming a fulcrum for raising and lowering the brush, wheels carried by the levers extending beyond the sides of the brush and adapted to serve as fulcrums between the brush and power ends of the levers, a support between the levers, an electric motor mounted on the support a sprocket carried by the motor shaft, a sprocket carried by the brush, and a chain connecting the sprockets.

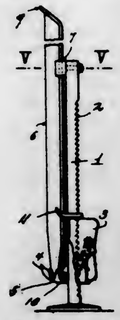
9. The combination of two supporting levers, a brush an axle fixed therein, bearings fixed on the levers in which the axle is journaled, wheels adjustably mounted in the lower ends of the levers serving as fulcrums for raising and lowering the brush, wheels on each side of the levers adapted to serve as fulcrums between the brush and power ends of the levers, a support mounted between the latter, a motor mounted on the support, means connecting the motor and brush for operating the latter, and means connecting the last mentioned wheels with the motor.

10. The combination of two supporting levers, wheels mounted on the lower ends thereof, a cleaning device mounted between the levers, and means on each side of the levers adapted to serve as a fulcrum between the wheel ends and power ends of the levers.

11. The combination of the supporting levers, a brush journaled therein, wheels mounted on the lower ends of the levers forming a fulcrum for raising and lowering the brush, means to adjust the wheels on the levers to compensate for wear of the brush, and means on each side adapted to serve as a fulcrum between the wheel ends and power ends of the levers.

12. The combination of the supporting levers, wheels on the lower ends thereof, bearings fixed on the levers, a cleaner supported by the bearings, a support between the levers above the cleaner, a motor mounted on the support, means connecting the motor and cleaner for operating the latter and means on each side thereof adapted to serve as a fulcrum between the wheel ends and power ends of the levers.

853,526. LEVER-JACK. WILLIAM TREWHELLA, Trentham, Victoria, Australia, assignor to himself and Benjamin Trewhella, Trentham, Australia. Filed Aug. 7, 1905. Serial No. 273,145.



Claim.—1. A lever jack comprising a standard, a casing, means movable with the casing to raise and lower the latter on the standard, and an extension rod on the casing adapted to move parallel to the standard.

2. A lever jack comprising a standard, a casing, means to raise and lower the latter on the standard, a removable extension rod mounted on a foot on the casing, and a guide on the standard to guide the rod in parallel relation to the standard.

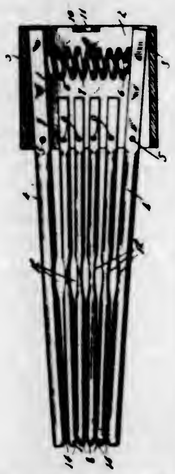
3. A lever jack comprising a standard, a casing, mechanism in the latter to raise and lower it on the standard, a foot formed on the casing having a socket therein, an extension rod removably mounted in the socket, and a guide mounted near the top of the standard through which the rod is adapted to slide.

4. A lever jack comprising a standard, a casing, means to raise and lower the latter on the standard, a foot on the casing, an extension rod removably mounted on the foot, a guide for said rod, and laterally projecting horns arranged on either side of the upper end of said casing and extending forward on each side of said rod.

5. A lever jack comprising a standard, a casing movably mounted thereon, an anti-friction roller mounted in the casing adapted to roll on the standard, a foot on the base of the casing having a socket formed therein, an extension rod removably mounted in the socket, a guide for said rod mounted on the standard, and a pair of lateral horns on the upper end of the casing.

6. A lever jack comprising a standard, a casing movably mounted thereon provided with horns at its upper end, and an anti-friction roller at its lower end.

853,527. TROUSERS-HANGER. REGINALD H. TYE, Goderich, Ontario, Canada. Filed Nov. 17, 1906. Serial No. 343,897.



Claim.—1. In a trousers hanger, the combination comprising a casing, fingers pivoted to the casing and having their rear ends projecting therein, a plurality of other fingers pivoted to the casing between said first-named fingers, and means for actuating the inner ends of the first-named fingers away from each other and into engagement with the end walls of the casing.

2. In a trousers hanger, the combination comprising a casing, fingers pivoted to the casing and provided with lugs thereon, a spiral spring disposed between the fingers within the casing and seated around said lugs, and a plurality of fingers pivoted intermediate of said first-named fingers.

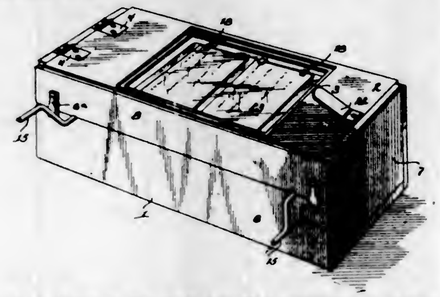
3. In a trousers hanger, the combination comprising a casing, a plurality of fingers pivoted to the casing and projecting outside thereof, and means for actuating some of the fingers so that the other fingers are compressed thereby.

4. In a trousers hanger, the combination comprising a casing, fingers pivoted adjacent the ends of the casing, means for actuating the fingers toward each other, a plurality of pivoted fingers disposed between said first-named fingers, and a brace secured to the casing and provided with a key hole slot.

5. In a trousers hanger, the combination comprising a casing, a plurality of fingers pivoted to the casing, projecting outside thereof, and provided with recesses intermediate of their ends, and means for actuating some of the fingers so that the other fingers are compressed thereby.

853,528. PRESCRIPTION-CABINET. EDWARD F. WALLACE, Burgess, Miss. Filed July 21, 1906. Serial No. 327,230.

Claim.—1. A device of the class described comprising a case or cabinet composed of a body having side and end walls, the side walls being provided with open bearings, and a cover hinged to the body and resting upon the upper edges of the side and end walls when closed, spools having shafts fitted in the bearings and confined therein by the hinged cover when the latter is closed, said cover being adapted to swing upward to open the case or cabinet and also to release the spools, and a carrying strip or ribbon arranged on the spools and having an intermediate exposed portion.

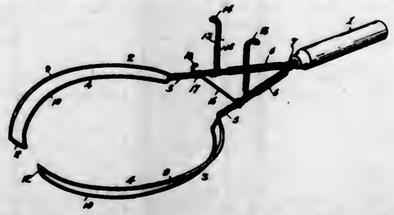


2. A device of the class described comprising a case or cabinet composed of a body having side and end walls, the side walls being provided with open bearings, and a cover having a transparent portion and hinged to the body and resting upon the upper edges of the side and end walls when closed, spools having shafts fitted in the bearings and confined therein by the hinged cover when the latter is closed, said cover being adapted to swing upward to open the case or cabinet and also to release the spools, a horizontal support arranged close to and spaced from the transparent portion of the cover and mounted on the body, and a carrying strip arranged on the spools and passing over the horizontal support.

3. A device of the class described comprising a case or cabinet consisting of a body provided at its upper edges with open bearings, a cover hinged to the body and arranged to close the bearings, spools having journals arranged in the said bearings and provided with friction disks, springs having free ends engaging the disks at the lower edges thereof and automatically placed under tension when the journals are moved to the bottom of the bearings, and a carrying strip arranged on the spools.

4. A device of the class described comprising a case or cabinet consisting of a body provided near its end portions with open bearings, an intermediate support located between and above the bearings, spools having journals arranged in the bearings, said spools being also provided with friction disks, inclined springs secured to the intermediate support and extending downwardly therefrom and having their free ends engaging the friction disks at the lower edges thereof and automatically placed under tension when the journals of the spools are moved to the bottoms of the bearings, and a strip or ribbon arranged on the spools and passing over the intermediate support.

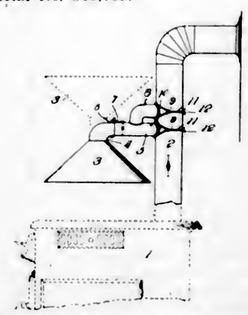
853,529. PLATE-LIFTER. EDMUND F. WELCH, Termo Station, Cal. Filed Nov. 20, 1906. Serial No. 344,290.



Claim.—1. A plate lifter comprising a handle, resilient jaw members projecting therefrom and each being formed of wire and having the curved jaw 4 composed of spaced strands 9, 10, the twisted portion 5 at the inner end of the jaw, the twisted portion 7 embedded in said handle and the straight portion 6 between the twisted portions 5 and 7, the twisted portion 5 of one of the members having an opening or eye 17, the cross piece 16 fixed at one of its ends in the twisted portion 5 of the other member and projecting through said eye or opening 17, the free end of said cross piece having a stop 18, and the handles 13 carried by said members, substantially as shown and described.

2. A plate lifter comprising a handle, resilient jaw members projecting therefrom and each being formed of wire and having the curved jaw 4 composed of spaced strands 9, 10, the twisted portion 5 at the inner end of the jaw, the twisted portion 7 embedded in said handle and the straight portion 6 between the twisted portions 5 and 7, the twisted portion 5 of one of the members having an opening or eye 17, the cross piece 16 fixed at one of its ends in the twisted portion 5 of the other member and projecting through said eye or opening 17, the free end of said cross piece having the stop 18, and the handles 13 projecting upwardly from the twisted portions 5 of said members and having their upper portions curved outwardly to form hooks, each of said handles 13 being formed from a single piece of wire bent upon itself at its center and curved to form the upper portion of the handle and having its ends twisted together at 15 and interwoven in the twisted portion 5, of one of said members, substantially as shown and described.

853,530. MEANS FOR COLLECTING AND CARRYING OFF SMOKE AND ODORS FROM STOVES. CHARLES B. WHIPPLE, Springfield Center, N. Y. Filed Nov. 2, 1906. Serial No. 341,789.



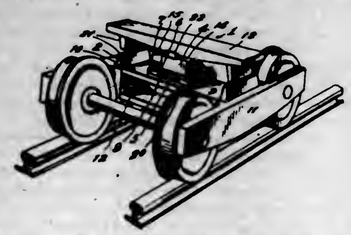
Claim.—1. A device of the character described, comprising a hood, a suspending pipe for said hood, said pipe being provided with a branch and the pipe and its branch being adapted to be inserted through apertures in the stove, and means for securing the suspending pipe and its branch to the smoke pipe.

2. A device of the character described, comprising a bell, a suspending pipe from which the bell is suspended, the suspending pipe being adapted for insertion in an aperture in the smoke pipe of a stove and provided with a collar adapted to surround such an aperture, and a clamp consisting of an intermediate portion composed of an upper and a lower member adapted to engage the collar at the top and bottom, and two hinged end portions connected to the intermediate portion and arranged for interlocking engagement around the said smoke pipe.

3. A device of the character described, consisting of a main suspending pipe provided with an upwardly facing inner end and arranged for insertion through an opening in the smoke pipe of the stove, said main suspending pipe being provided with a damper and with a branch suspending pipe leading upwardly therefrom between said damper and the inner end of the main pipe, said branch suspending pipe being arranged for insertion in another aperture in the smoke pipe of the stove and also having its inner end facing upwardly, a latch secured to the outer end of the main suspending pipe, and a hood provided with an angularly disposed stem adapted to telescope in the outer

end of said branch suspending pipe and provided with diametrically disposed keepers any one of which is arranged for interlocking engagement with said latch.

853,531. CAR-TRUCK. ROBERT H. BROWN, Los Angeles, Cal., assignor of one-fourth to Daniel P. McMahon, Los Angeles, Cal. Filed Aug. 27, 1906. Serial No. 332,297.



Claim.—1. A car truck comprising a car beam, a truck beam, a sectional king bolt between said beams, and peripheral means for holding the sections of the king bolt together.

2. A car truck comprising a car beam, a truck beam, a sectional king bolt between said beams, and peripheral means for detachably holding the sections of the king bolt together.

3. Two beams, a sectional pivot between said beams, one section being fixed to one beam and the other section fixed to the other beam, and peripheral means for holding the sections of the king bolt together.

4. A pivot comprising a center pin and a collar, and peripheral interlocking means holding said pin and collar together.

5. Two beams, a collar fastened to one of the beams and provided with lugs, a center pin in said collar fastened to the other beam, and guards on the last-named beam to engage said lugs to hold the parts together.

6. A car truck comprising a frame forming a vertical guide-way, springs on the frame, a beam on the springs in the guide-way, another beam, a pin and a collar,—one within the other,—one being fastened to one beam and the other to the other beam, and means for holding the pin and collar loosely together.

7. A sectional pivot comprising a pin and a hollow seat therefor, two beams, one fastened to the pin and the other to said seat, and peripheral means loosely connecting the pin and seat together.

8. A pivotal member provided with a pin and two ways one on each side of the pin, a pivotal member provided with a hollow seat forming a collar around the pin and having lugs to fit in said ways.

9. A truck comprising two beams, a sectional pivot comprising a pin and a collar therefor fastened to the beams respectively, said collar being provided with shoulders; and bars detachably connected with the pin to engage the shoulders to form ways therefor to allow partial rotation.

10. A sectional king bolt comprising a base plate, a pin thereon, ways at front and rear of said pin, a collar on the plate and surrounding the pin and provided with lugs in said ways.

11. A sectional king bolt comprising a base plate, a pin thereon, ways at front and rear of said pin, a collar on the plate and surrounding the pin and provided with lugs in said ways, the lower end of the collar being convex.

12. A pivotal member comprising a collar forming a seat for a pin, and provided at the upper end with oil-ways leading to the interior of the collar to engage the seat, and means loosely holding the pin and collar together.

13. A plate provided with a pin, such pin having a rounded end, and a concave seat around the pin, a collar around the pin provided with a rounded end in said concave seat and also provided with a seat for the rounded end of the pin.

14. A plate provided with a pin and a concave seat around the pin, said pin having a rounded end, a collar around the pin provided with a rounded end in said concave seat and also provided with a seat for the rounded end of the pin, and means for detachably fastening the plate and collar loosely together.

15. Two superposed beams, a sectional pivot between the beams, stops between the beams, said pivot and stops being constructed to allow rotary and rocking motion of said beams relative to each other, a truck frame provided with a vertical way for the lowermost of said beams, and springs supporting said lower beam in said way.

16. A car truck comprising two superposed beams, a solid pin fastened to the upper side of the lower beam, and a collar fastened to the under side of the upper beam and surrounding the pin and forming a seat thereon.

17. A car truck comprising two superposed beams, a solid pin fastened to the upper side of the lower beam, a collar fastened to the under side of the upper beam and surrounding the pin and forming a seat thereon, and means loosely fastening the pin and collar together.

18. A car truck comprising two superposed pivotal members, a pin fastened to and projecting up from the lower member, and a seat for said pin fastened to the upper member and resting on the lower member in front of said pin.

19. Two superposed pivotal members, a pin extending up from the lower member, a seat for said pin down from the upper member and engaging the lower member in front of said pin, and means detachably fastening the seat and the pin loosely together.

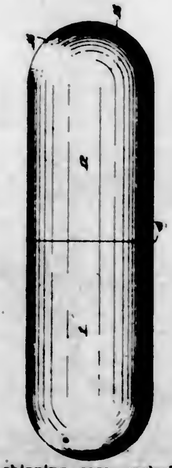
20. Two pivotal members, one comprising a center pin and the other a collar, and peripheral interlocking means loosely connecting said members together.

21. A truck beam, a car beam, a solid center pin connected with one of said beams, a collar connected with the other beam, and means loosely connecting said collar and pin.

22. Two pivotal members, one comprising a center pin with shim extension, and the other a collar surrounding the pin, and peripheral interlocking means to hold the pivotal members together.

23. Two pivotal members, a pin extending from one and provided with a shim extension, and a seat for said pin engaging the lower member at front and back of the pin.

853,532. SHIPPING-CASE. NAHUM J. BUSBY, Boston, Mass., assignor to E. A. G. Busby, Chelsea, Mass. Filed Jan. 5, 1906. Serial No. 294,774.



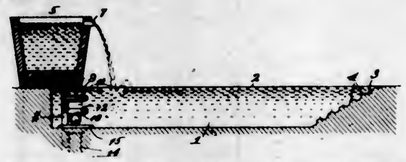
Claim.—1. A shipping case, embodying a cylindrical body portion having substantially one half of reduced exterior diameter, and a closure therefor, said closure slidably telescoping for substantially its full length on said reduced half of said body portion and in screw-threaded engagement therewith when in its closed position.

2. A shipping case, embodying a cylindrical body portion having substantially one half of reduced exterior diameter, and a closure therefor, said closure slidably telescoping for substantially its full length on said reduced half of said body portion and in screw-threaded engagement therewith when in its closed position, the two being of even exterior diameter and merging into rounded top and bottom portions.

3. A shipping case embodying a cylindrical body portion having substantially its upper half of reduced exterior diameter and exteriorly screw threaded at its upper end, and a cylindrical closure slidably telescoping on the reduced upper half of said body portion and interiorly screw threaded near its upper end to engage the screw threads on the body portion, the two, when assembled, being of even exterior diameter.

4. A shipping case embodying a cylindrical body portion having substantially its upper half of reduced exterior diameter, exteriorly screw threaded at its upper end, and interiorly recessed and screw threaded at its upper end, an interior screw plug engaging said interior recess, and an exterior cap slidably telescoping on the reduced upper half of said body portion and interiorly screw threaded near its upper end to engage the exterior screw threads on said body portion, said body portion and cap, when assembled, being of even exterior diameter.

853,533. FOOT-BATH FOR HORSES AND MULES. ATVILL BYRD, Kansas City, Mo. Filed Sept. 14, 1905. Serial No. 278,520.



Claim.—1. A shallow tub permanently countersunk into a stable floor and having an inclined corrugated wall, means for supplying the tub with water, an overflow pipe leading therefrom, and means for admitting water to said overflow at different levels.

2. A shallow permanent tub, means for supplying it with running water, an overflow pipe leading therefrom, branches in said pipe at different levels, means for controlling the inlets of said branches, and a waste pipe leading from the tub to the sewer and normally closed with a plug.

3. A countersunk tub, an overflow pipe leading from said tub and extending almost to the top of the latter, a branch-pipe communicating with said overflow pipe, and means for controlling the inlet end of said branch pipe.

4. A countersunk tub, an overflow pipe leading therefrom, branch pipes communicating at different heights with said overflow pipe, and plugs for controlling the inlet ends of said branch pipes.

5. In a foot bath for stock, a foot tub, combined with a watering trough so near the tub that an animal using the trough must stand in the tub, and means for maintaining water in both tub and trough.

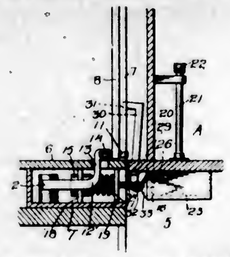
6. In a foot bath for stock, a foot tub, combined with a watering trough located above the forward end of the tub so that an animal using the trough must stand in the tub, means for supplying water to both trough and tub, an exhaust for the former, and an exhaust for the latter located beneath the trough.

7. In a foot bath for stock, a foot tub, combined with a watering trough so near the tub that an animal using the trough must stand in the tub, means for supplying water to the trough, an overflow spout for the latter delivering into the tub, and an overflow for the tub.

8. In a foot bath for stock, a foot tub, combined with a watering trough so near the tub that an animal using the trough must stand in the tub, means for supplying water to the trough, an overflow spout for the latter delivering into the tub, and an overflow for the tub located in the part thereof which is beneath the trough.

9. In a foot bath for stock, a tub countersunk in the floor, combined with a watering trough so near the tub that an animal using the trough must stand in the tub, means for supplying water to the trough, an overflow spout for the latter delivering into the tub, an overflow for the tub located in that part thereof which is beneath the trough, and means for regulating the height at which this overflow shall act.

853,534. ELEVATOR. MILTON DASHIELL, Baltimore, Md., assignor of two-thirds to John W. Woodland, Baltimore, Md. Filed Dec. 18, 1905. Serial No. 292,320.



Claim.—The combination in an elevator including a shaft and a car movable in the shaft, of a door for the shaft movable into and out of operative position, a movable controller in the car, a disk carried by the controller for movement therewith and having a notch therein, a finger mounted independently of the car for movement into and out of position to engage in the notch, a plunger connected with the finger for movement therewith, a spring arranged to hold the finger yieldably out of position for engagement with the notch, a pivoted lever engaging the plunger and movable to move the plunger against the action of the spring, means for moving the lever, said means including a roller disposed for engagement by the door when the latter is moved into open position, to bring the finger into notch-engaging position, a latch pivoted independently of the car and having a nose movable into and out of position to hold the door in closed position, and a spring arranged to hold the latch yieldably with its nose in operative position, said latch being arranged for engagement by the car, to hold the latch against the action of the spring when the car is in position to receive the finger in the notch of its disk.

853,535. BOILER COMPOUND. TOMMASO DI TULLIO, Quincy, Mass., assignor to Orlando Pace, trustee, Quincy, Mass. Filed Sept. 27, 1906. Serial No. 336,424.

Claim.—1. A boiler-cleaning composition, consisting of extract quebracha, bicarbonate of soda, sal ammoniac, and pulvis eucalyptus.

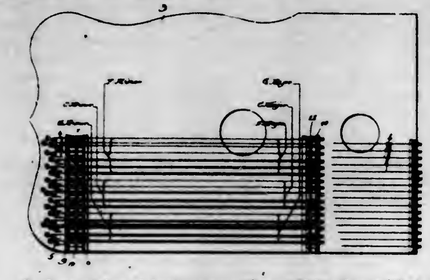
2. A boiler-cleaning composition consisting of extract quebracha, bicarbonate of soda, sal ammoniac, pulvis eucalpytus, crystallized soda and Chinese soda.

853,536. MUSICAL INSTRUMENT. CHARLES F. DOUGHTON, Lebanon, Oreg. Filed May 18, 1906. Serial No. 317,494.

Claim.—1. In a stringed instrument, a plurality of strings and bridges over which said strings pass, certain of said strings being in playing position at both ends thereof and others of the strings being in playing position at one end only, part of said other strings being in playing position at one end, and part in playing position at the other end.

2. In a stringed instrument, a plurality of strings tuned to sound a chord all of said strings being in playing posi-

tion at one end, and all but one of said strings being in playing position at the other end, and an auxiliary string associated with said other strings, said auxiliary string being in playing position at said latter end but out of playing position at the other end.

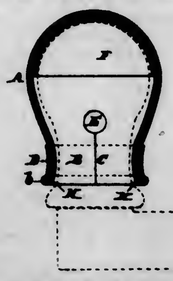


3. In a stringed instrument, the combination with a plurality of strings tuned to sound a major chord, said strings all being in playing position at one end and all of said strings but that adapted to sound the third of the chord being in playing position at the other end, of a minor-third string in playing position at said latter end but out of playing position at the other end.

4. A stringed instrument having at each end two bridges located in different planes, a group of strings constituting a major-chord, all of said strings passing over the upper bridge at one end and all the strings except the one sounding the third of the chord passing over the upper bridge at the other end, said latter string passing over the lower bridge at said end, and a minor-third string passing over the upper bridge at said latter end and over the lower bridge at the other end.

5. In a stringed instrument, a bridge having three parallel bridge wires located in different planes, a series of melody strings passing over the lower bridge wire, and a plurality of chord strings passing over the other wires, those strings which pass over the upper wire being arranged to constitute a chord.

853,537. HANDLÆ-THIMBLE. JOSEPH DUBISEE, Philadelphia, Pa. Filed Jan. 3, 1907. Serial No. 350,628.

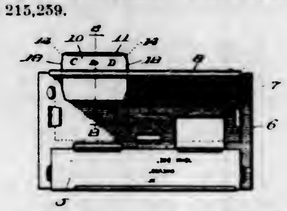


Claim.—1. A handle thimble composed of flexible material molded in one piece and having a hollow head portion and a neck portion without seams the latter being slit from its lower edge to the head portion, combined with an elastic band encircling the outside of the neck portion.

2. A handle thimble composed of flexible material molded in one piece and having a hollow head portion without seams and a neck portion the latter being slit from its lower edge to and terminating with the head portion, combined with an inverted metallic cup in the interior of the head portion, presenting a smooth inner surface and an elastic band encircling the neck portion.

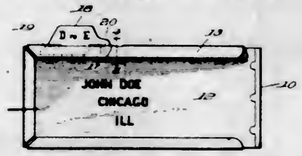
3. A handle thimble composed of rubber, having a large head portion and a neck portion the latter divided vertically by three or more slits, terminating at their upper ends in large holes adjacent to the head portion and having its outer body smooth except the lower edge which is provided with a bead, combined with an elastic band encircling the outside of the neck portion above the bead and holding the slit portions thereof together.

853,538. PRINTING DEVICE. JOSEPH S. DUNCAN, Chicago, Ill., assignor to Addressograph Company, Chicago, Ill., a Corporation of Illinois. Filed July 5, 1904. Serial No. 215,259.



Claim.—A device of the character described comprising a holder, means on the holder for removably securing a printing device and a card thereon, one above the other, an index card support stamped from the holder and extending above its upper edge, said edge of the device being beaded to form a channel between itself and said support, and flanges at the top and ends of said support to hold a card in place thereon and in said channel.

853,539. FRAME FOR STENCILS OR OTHER ARTICLES. JOSEPH S. DUNCAN, Chicago, Ill., assignor to Addressograph Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 2, 1904. Serial No. 223,099.



Claim.—1. A stencil frame open between its sides and ends to permit the stencil to be used for printing while in the frame and provided with a slot, in its edge, in combination with a detachable tab adapted to engage the slot, and means on the tab for holding it in the slot.

2. A stencil frame open between its sides and ends to permit the stencil to be used for printing while in the frame and provided with a channel to receive the stencil and a slot, in its edge, in combination with a tab adapted to be inserted through said slot into said channel alongside the stencil, and means on the tab for holding it in the slot.

3. A stencil frame open between its sides and ends to permit the stencil to be used for printing while in the frame and provided with two slots in its edge, in combination with a detachable tab having separate parts adapted to engage said slots.

4. A frame for stencils or other articles provided with a channel and two slots, in combination with a tab adapted to be inserted through said slots into said channel and detachably connected to the frame.

5. A frame for stencils or other articles provided with two slots, in combination with a tab having a toe to engage one slot and a heel to engage the other slot.

6. A frame for stencils or other articles provided with a slot, in combination with a tab having a toe adapted to enter said slot, said toe being bent sidewise to frictionally engage the frame.

7. A frame for stencils or other articles provided with a slot, in combination with a tab having a heel adapted to enter said slot, said heel being bent sidewise to frictionally engage the frame.

8. A frame for stencils or other articles provided with slots, in combination with a tab having a toe and heel to enter said slots, said toe and heel being bent sidewise to frictionally engage the frame.

9. A frame for stencils or other articles provided with two slots, in combination with a tab having a toe to enter one slot and a heel to enter the other slot, and means for locking the tab in said slots.

10. A frame for stencils or other articles provided with a channel and two slots, in combination with a tab provided with a toe and a heel arranged to enter said channel through said slots, said tab having slits to engage end walls of said frame, and said toe and heel, or one of them, being bent sidewise to frictionally engage the wall of the channel.

11. A frame for stencils or other articles provided with a slot, in combination with a detachable tab adapted to enter said slot and be moved longitudinally therein, said tab being constructed to make locking engagement with the frame.

12. A frame for stencils or other articles provided with a slot, in combination with a detachable tab adapted to enter said slot and moved longitudinally therein, said tab having a horizontal slit to receive an end wall of said slot.

13. A frame for stencils or other articles provided with two slots, in combination with a detachable tab provided with a toe and a heel adapted to enter said slots, said toe and heel having slits to receive end walls of said slots.

14. A frame for stencils or other articles provided with two slots, in combination with a detachable tab having separate parts adapted to enter said slots, said parts having slits to receive end walls of said slot, and means for locking the tab in said slots.

15. A frame for stencils or other articles provided with a channel and two slots, in combination with a detachable tab having a toe and heel adapted to enter said slots and to be moved longitudinally therein, said toe and heel having slits to receive end walls of said slots, and one or both thereof being bent sidewise to frictionally engage the wall of the channel.

853,540. METAL TYPE. JOSEPH S. DUNCAN, Chicago, Ill., assignor to Addressograph Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 12, 1905. Serial No. 291,442.



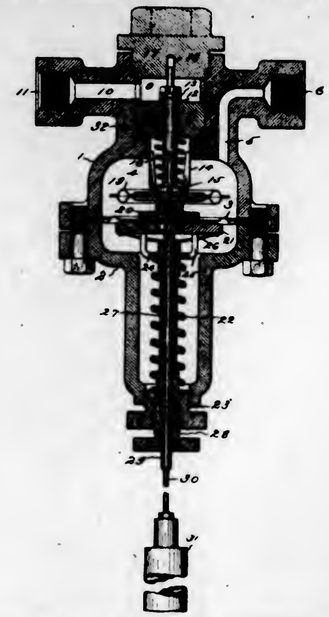
Claim.—A type having its body formed of two legs, a connecting web and a top, the shoulders formed at the joint of said web with the top being slanted or rounded, and said top being recessed between said legs to form an opening between each pair of type.

853,541. AUTOMATIC EXPANISON-VALVE. ARTHUR H. EDDY, Windsor, Conn., assignor of one-half to Charles E. Shepard, Hartford, Conn. Filed Jan. 26, 1906. Serial No. 297,979.

Claim.—1. A refrigerating apparatus having a valve for controlling the flow of refrigerating fluid, an expansion diaphragm controlling the opening and closing of the valve, a diaphragm mounted to control the position of the expansion diaphragm and subject to the pressure of the refrigerating fluid on the expansion side of the valve, and a thermostatic regulator connected with the expansion diaphragm for contracting and expanding the expansion diaphragm, substantially as specified.

2. A refrigerating apparatus having a valve for controlling the flow of refrigerating fluid, a pressure diaphragm subject to the pressure of the refrigerating fluid on the expansion side of the valve, an expansion diaphragm located between and connected with both the pressure diaphragm and the valve, and a thermal regulator connected with the expansion diaphragm for causing its expansion and contraction, substantially as specified.

3. A refrigerating apparatus having a valve for controlling the flow of refrigerating fluid, a pressure diaphragm subject to the pressure of the refrigerating fluid on the expansion side of the valve, a spring arranged to thrust the pressure diaphragm against the pressure of the refrigerating fluid, an expansion diaphragm located between and



connected with both the valve and the pressure diaphragm, and a thermal regulator connected with and adapted to cause the expansion and contraction of the expansion diaphragm, substantially as specified.

853,542. AIR-SHIP. HERMANN FAEHRMANN, New York, N. Y. Filed Apr. 2, 1903. Serial No. 150,741.

Claim.—1. In an air-ship, a body provided near the bow and stern respectively with normally stationary propellers mounted to turn about vertical axes, means controlled by a deviation of the ship from a horizontal position, for simultaneously rotating said propellers to produce opposite effects at the bow and stern to restore the ship to a horizontal position, and a governing device, under the control of the operator, for causing all of said propellers to rotate with similar effects to bodily raise or lower the ship.

2. In an air-ship, a body provided near the bow and stern with propellers mounted to turn about vertical axes, a reversing mechanism for the bow propeller, another reversing mechanism for the stern propeller, each reversing mechanism comprising a piston and means operated by the movement thereof to cause the respective propeller to rotate in one direction or the other, according to the position of said piston, and a cylinder containing said piston and divided thereby into two chambers, means for connecting similar chambers of the cylinders of the bow and stern propellers with a source of compressed fluid to cause all the propellers to rotate with the same effect, and means for connecting unlike chambers of the cylinders of the bow and stern propellers with a source of compressed fluid, to produce opposite effects at the bow and stern.

3. In an airship, a body provided near the bow and stern with propellers mounted to turn about permanently vertical axes, means for operating the said propellers so that they will produce similar effects to raise or lower the ship bodily, and means controlled by a deviation of the ship from a horizontal position, for simultaneously turning the

said propellers to produce opposite effects at the bow and stern.

4. In an airship, a body provided near the bow and stern with propellers mounted to turn about vertical axes, mechanism controlling the motion and the direction of rotation of the said propellers, compressed air pipes leading to said mechanism, a controller governing the admission of compressed air to said pipes, and a balance device arranged to actuate said controller.



5. In an airship, a body provided near the bow and stern with propellers mounted to turn about vertical axes, mechanism for controlling the motion and direction of rotation of said propellers, compressed air pipes leading to said mechanism, a controller operated by a deviation of the ship from a horizontal position, for admitting air to said pipes in such a manner as to cause the propellers to produce opposite effects at the bow and stern, and another device under the control of the operator for rendering the said first named controller inactive and so admitting compressed air to the said mechanism that the propellers will produce like effects at the bow and stern.

6. In an airship, a body provided with bow and stern propellers mounted to turn about vertical axes, mechanism operated automatically upon a deviation of the ship from a horisontal position, for causing the said propellers to rotate with opposite effects at the bow and stern, and a governing device under the control of the operator, which in one position allows the said mechanism to act, and in other positions renders the said mechanism inactive and causes the propellers to rotate with like effect at the bow and stern.

7. In an airship, a propeller comprising a framework having a central hub, a central rim and two lateral rims of smaller diameter than said central rim connected with said hub, and vanes or blades connected with said framework.

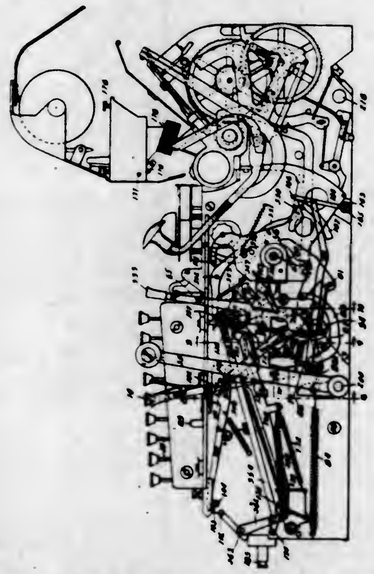
8. In an airship, a propeller comprising a central hub, rims surrounding said hub, braces or stays connecting the hub with the rims and converging some toward one rim, and some toward another, and vanes or blades carried by said rims.

9. In an airship, a propeller comprising a framework having connected rims, one of said rims being of larger diameter than the adjacent ones, and blades fitted over said large rim and between the smaller rims.

10. In an airship, a propeller comprising a framework having connected rims, one of said rims being of larger diameter than the adjacent ones, blades fitted over said large rim and between the smaller rims, and connections extending from one small rim to the other and secured to the said blades.

11. In an airship, a propeller comprising a framework having connected rims, one of said rims being of larger diameter than the adjacent ones, blades fitted over said large rim and between the smaller rims, and braces extending in opposite directions from the large rim and secured to the said blades.

853,543. TABULATING-MACHINE. DORR E. FELT and CHARLES P. WETMORE, Chicago, Ill., assignors to Comptograph Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 27, 1904. Serial No. 238,316.



Claim.—1. The combination with the main power device, and the registering and printing mechanism, of a spring cushioning mechanism and a governor, said cushioning mechanism consisting of a series of springs connected at their ends to the power device and the actuating devices of said registering and printing mechanism, and adapted to be strained by the power device, and the abutting rods 202 and 207 and the sleeve mounted on one of said rods and extending over the other.

2. The combination with the main power device, and the registering and printing mechanism, of a spring cushioning mechanism and a governor, said cushioning mechanism consisting of a series of springs connected at their ends to the power device and the actuating devices of said registering and printing mechanism, and adapted to be strained by the power device and the abutting rods 202 and 207 encircled by one of the springs.

3. The combination with the main power device, and the registering and printing mechanism, of a spring cushioning mechanism and a governor, said cushioning mechanism consisting of a series of springs arranged in a vertical plane one over the other and connected at their ends to the power device and the actuating devices of said registering and printing mechanism and adapted to be strained by the lever, and the abutting rods 202 and 207 encircled by one of the springs.

4. The combination with the main power shaft 200, of cranks 201 and 210, the cushioning springs joined to said cranks, the main actuator, devices connecting crank 210 to the main actuator and a governor also connected to crank 210.

5. The combination with the main actuator and the cushioning springs, of the segment 213, a crank 214 meshing with the segment and a link connecting crank 214 with a crank on the main actuator shaft.

6. The combination with the main actuator and the cushioning springs, of the segment 213, a crank 214 meshing with the segment, a link connecting crank 214 with the crank on the actuator shaft, and means for starting the segment on its return stroke.

7. The combination with the main actuator and the cushioning springs, of the segment 213, a crank 214 meshing with the segment, a link connecting crank 214 with the crank on the actuator shaft, and a spring pressed lever 233 for starting the segment on its return stroke.

8. The combination with the main actuator and the cushioning springs, of the segment 213, a crank 214 meshing with the segment and a link connecting crank 214 with a crank on the main actuator shaft and normally moving beyond the dead center, and a spring pressed device for starting the parts in their return movement.

9. The combination in a tabulating machine of a power shaft, a crank on said shaft, a rod 202 pivotally joined to the crank, a second rod 207 abutting said rod 202, a sleeve attached to one of said rods and extending over the other, springs attached at their ends to said rods, a shaft 211, and a crank 210 mounted on shaft 211 and having a pivotal attachment to rod 207.

10. The combination in a tabulating machine, of the power shaft 200, the shaft 211, cranks on both shafts, and a yielding connection between the cranks consisting of springs and abutting rods joined to said cranks, one of the rods carrying a sleeve extending loosely over the other rod.

11. The combination with the numeral wheels, and their accompanying disks 115, the spring pawls 117 and ratchets 118, of the spring stops 120 having pivots let into the ratchets, spring clips for confining the stop pivots in the ratchets, and the answer rings.

12. The combination with the numeral wheels, and their accompanying disks 115, the spring pawls 117 and ratchets 118, of the spring stops 120 having pivots let into the ratchets, clips bearing on the pivots of the stops, and riveted between their ends to the ratchets, and having their heels entered in recesses in the ratchet, and the answer rings.

13. The combination with the disks 115, and their pawls 117 and pins 119, with the answer rings, the ratchets 118, and the spring stops 120 on the ratchets, said stops acting to engage with said pins when the rotation is in one direction only.

14. The combination with the disks 115 having pins 119, and the ratchets having spring stops 120 engaging the pins, said stops having pivots projecting into the ratchet and confined therein by movable clips permitting ready removal of the stops.

15. The combination with the numeral wheels, their ratchets 118, and the locking levers 105 thereof, of the column actuators, the disks adapted to rotate independently of the wheels, and to be actuated by the column actuators, means for arresting the disks when they have been turned to the position occupied by the numeral wheels, such means consisting of the pins 119 on the disks and the springs stops 120 carried by the ratchets, and means for temporarily disengaging the disks from the numeral wheels.

16. The combination with the numeral wheels, their ratchets 118, and the locking levers 105 thereof, of the column actuators, the disks adapted to rotate independently of the wheels, and to be actuated by the column actuators, means for arresting the disks when they have been turned to the position occupied by the numeral wheels, such means consisting of the pins 119 on the disks and the spring stops 120 carried by the ratchets, the pawls on the disks engaging the ratchets, and the answer rings for preventing action by the pawls.

17. The combination with the numeral wheels, the column actuators, the locking levers 105 provided with overhanging horns and the shaft 104 having projections acting on said horns, of means for setting the mechanism for totalizing, and means for giving power to the actuators.

18. The combination with the numeral wheels, the column actuators, the locking levers 105 provided with overhanging horns and the shaft 104 having projections acting on said horns, of totalizing lever 70, the bar connecting said lever to shaft 104 and means for giving power to the actuators.

19. The combination with the numeral wheels, the column actuators, the locking levers 105 provided with overhanging horns and the shaft 104 having projections acting on said horns, totalizing lever 70 having a pin 102, the bar rocking the shaft 104 and having a slot to receive said pin, means for lifting the bar, and means for actuating said lifting means and giving power to the actuators.

20. The combination of totalizing lever 70 having the pin 102 in combination with the numeral wheels, the locking levers 105, the rock shaft 104, the bar 100 having slot 101, the lower portion of which is elongated, and means for lifting said bar so as to bring it into the long portion of the slot.

21. The combination with the totalizing lever having a pin 102, of the locking levers 105 and their controlling shaft 104, and the slotted bar 100 connecting the shaft with the lever, said bar acting to rock the shaft and put the levers 105 into service when the lever is set, and also allowing the shaft to rock back and release levers 105 without moving the lever from its set position.

22. The combination with the totalizing lever 70, the numeral wheels, and the levers 105 for locking the wheels, of connecting mechanism between the lever 70 and said levers 105 whereby the former may set the latter, such connecting mechanism embodying a horizontal bar having two positions in one of which it sets the levers 105 and in the other of which it permits said levers to release the wheels.

23. In canceling mechanism, the combination with the units wheel having arm 346 and the other numeral wheels having arms 347 relatively arranged as specified, the answer rings having devices engaging said arms, in combination with means for rotating the wheels after they have been released from their locking devices and said locking devices.

24. In combination with the totalizing lever, the numeral wheels and their locking devices controlled by said lever, arms projecting from the numeral wheels, the one from the units wheel being positioned at 0 and those from the other wheels being positioned at 9, means of releasing the lock upon the wheels, column actuators embodying springs which are strained by reason of the locking of the wheels and which act to rotate the wheels as soon as the lock thereon is released, and means engaging said arms and thereby arresting the wheels.

25. In total printing and canceling mechanism, the combination of the numeral wheels having projecting arms whereby they may be arrested at the 0 and 9 positions, and means for rotating them, with devices for arresting the wheels by engaging said arms, said devices being moved into acting position when the mechanism is set for total printing.

26. The combination with the totalizing levers 70, the numeral wheels, and the levers 105 for locking the wheels, of connecting mechanism between the lever 70 and said levers 105 whereby the former may set the latter, such connecting mechanism being adapted to permit the release of the wheels by levers 105 without any change of position by lever 70.

27. The combination with the sub-total lever, of the main cam and guard 153, the latter engaging the lever when moved backward.

28. The combination with lever 70, of swinging lever 160 having an overhanging portion 166, the main cam and the sector on the cam.

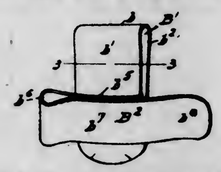
29. In printing mechanism, the combination with the hammers and their heads 173 made separate from the hammers, of springs 181 attached at one end to the heads and at the other to the hammers.

30. In a registering and recording machine, means for temporarily locking the registering wheels to position the types for printing the total, in combination with automatic means for releasing the registering wheels after printing the total so as to permit of their turning to zero.

31. In a registering and recording machine, means for temporarily locking the registering wheels to position the types for printing the total, in combination with automatic means for releasing the registering wheels after printing the total so as to permit of their turning to zero, and means for turning them to zero.

32. In a registering and recording machine, means for temporarily locking the registering wheels to position the types for printing the total, in combination with automatic means for releasing the registering wheels after printing the total so as to permit of their turning to zero, means for turning the wheels to zero and means for preventing the operation of the returning means when it is desired to print the answer without canceling.

853,544. REIN-HOLDER. GEORGE H. FERNALD, North East, Pa. Filed Jan. 8, 1906. Serial No. 295,050.



Claim.—A rein holder, comprising a dash clamp adapted to extend over the top of the dash, one side of which is concave on its dash engaging surface to conform to an intermediate rib of a dash; and a rein clamp carried by the dash clamp.

853,545. BOLSTER. ARTHUR H. FETTERS, Omaha, Nebr. Filed Jan. 6, 1906. Serial No. 294,834.



Claim.—1. In a bolster, in combination, central spacing means, a pair of members at each side of said means, the members of each pair being secured respectively to the upper and lower portions thereof and extending laterally therefrom, means connecting the ends of said members in pairs and the pairs one to another at each end of the bolster, and a plate or sheet extending over said bolster and secured thereto.

2. In a bolster, in combination, a plurality of laterally-disposed angle members, means holding the ends of said members in fixed relation one to another at each end of the bolster, means adjacent the center of the bolster secured to each of said angle members, and a plate or sheet extending over the bolster and secured thereto.

3. In a truck, in combination, a plurality of laterally-disposed angle members, and integral end members provided with flanges between which the ends of said first-mentioned members rest and adapted to support the side bearings of the truck.

4. In a bolster, in combination, a king-post comprising an upper portion and a lower portion, front and rear webs connecting said upper and said lower portions, a tubular portion connecting said upper and lower portions and adapted to inclose a kingpin, and a web extending from said tubular portion to each of said front and rear portions.

5. In a bolster, in combination, central spacing means, a pair of angle members at each side of said means, the members of each pair being positioned adjacent to the upper and lower portions thereof and extending laterally therefrom, means connecting the ends of said members in pairs, and the pairs one to another at each end of the bolster, and additional spacing means stretched between said members at each side of said central spacing means.

6. In a bolster, in combination, central spacing means, a pair of angle members at each side of said means, the members of each pair being positioned adjacent to the upper and lower portions thereof and extending laterally therefrom, means connecting the ends of said members in pairs and the pairs one to another at each end of the bolster, and additional spacing means stretched between said members at each side of said central spacing means, said members projecting from said central spacing means toward said second-mentioned means.

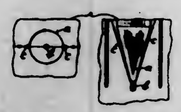
7. In a bolster, in combination, central spacing means, a pair of angle members at each side of said means, the members of each pair resting respectively against the upper and lower portions thereof and extending laterally therefrom, and an end member at each end of the bolster provided with flanges between which the ends of said members are secured.

8. In a bolster, in combination, a kingpost comprising an upper portion and a lower portion, front and rear webs connecting said upper and said lower portions, and a tubular portion connecting said upper and lower portions and adapted to inclose a kingpin, a pair of members at each side of said kingpost, the members of each pair resting respectively against the upper and lower portions thereof and extending laterally therefrom, and means connecting the ends of said members in pairs and the pairs one to another at each end of the bolster.

9. In a bolster, in combination, a kingpost comprising an upper portion and a lower portion, front and rear webs connecting said upper and said lower portions, and a tubular portion connecting said upper and lower portions and adapted to inclose a kingpin, a pair of angle members at each side of said kingpost, the members of each pair resting respectively against the upper and lower portions thereof and extending laterally therefrom, means connecting the ends of said members in pairs and the pairs one to another at each end of the bolster.

10. In a bolster, in combination, a kingpost comprising an upper portion and a lower portion, front and rear webs connecting said upper and said lower portions, and a tubular portion connecting said upper and lower portions and adapted to inclose a kingpin, a pair of angle members at each side of said kingpost, the members of each pair resting respectively against the upper and lower portions thereof and extending laterally therefrom, means connecting the ends of said members in pairs and the pairs one to another at each end of the bolster, and a sheet or cover-plate extending over and secured to the bolster.

853,546. METHOD OF FRACTURING ROCK. GEORGE S. GITHENS, Boston, Mass. Filed June 14, 1906. Serial No. 321,745.

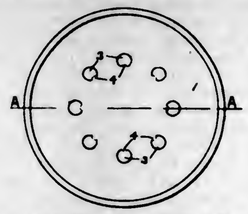


Claim.—1. The method of fracturing rock which consists in forming in the rock a frusto conical hole, enlarging said hole at opposite sides, and exerting pressure on the walls of said hole in directions at right angles with said enlargements.

2. The method of fracturing rock which consists in forming in the rock a frusto conical hole, forming V shaped tapering grooves extending from said hole approximately in the line of proposed cleavage, and exerting pressure on the walls of said hole at right angles to said proposed line of cleavage, as and for the purpose described.

3. The method of fracturing rock which consists in forming in the rock a frusto conical hole, forming a clearance pocket at the bottom of the hole, enlarging said hole at opposite sides, and exerting pressure on the walls of said hole between said enlargements.

853,547. CONTAINER-TOP. JERVIS R. HARBECK, Detroit, Mich., assignor to Kemiweld Can Company, Detroit, Mich., a Corporation of Michigan. Filed Dec. 3, 1906. Serial No. 345,988.



Claim.—1. A container closure comprising a sheet to which tapering plugs are attached by means of narrow tongues, the taper of the plugs serving to permit them to be easily swung inward but preventing them from being swung outward.

2. A container closure comprising a body portion, integral tapering plugs connected thereto and adapted to be easily swung out from one side but prevented by the taper from swinging out at the other side.

853,548. ANTIVIBRATION DEVICE. GUSTAVE L. HERZ, New York, N. Y. Filed Jan. 15, 1907. Serial No. 352,369.

Claim.—1. The combination with a vehicle spring, of means for retarding the compression and expansion of the spring comprising two parts arranged to be clutched to and released from each other and band brakes engaging said parts.

2. The combination with a vehicle spring, of means for retarding the compression and expansion of the spring comprising two parts arranged to be clutched to and released from each other, band brakes engaging said parts and means for adjusting the frictional engagement of said brakes with said parts.

3. The combination with a vehicle spring, of means for retarding the compression of the spring with one degree of friction and the expansion of the spring with another degree of friction comprising two parts arranged to be clutched to and released from each other and band brakes engaging said parts.

4. The combination with a vehicle spring, of means for retarding the compression of the spring with one degree of friction and the expansion of the spring with another degree of friction comprising two parts arranged to be clutched to and released from each other, band brakes engaging said parts and means for adjusting the frictional engagement of said brakes with said parts.

5. The combination with a vehicle spring, of means for retarding the compression and expansion of the spring comprising a support, two parts concentrically mounted thereon, a roller clutch interposed between the parts and band brakes engaging said parts.

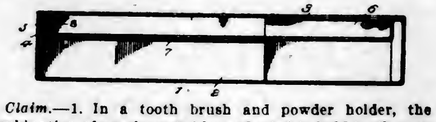
6. An anti-vibration device comprising a casing, two wheels rotatably mounted therein, a roller clutch interposed between said wheels and band brakes carried by said casing arranged to frictionally engage the peripheries of said wheels.

7. An anti-vibration device comprising a casing, two wheels rotatably mounted therein, a roller clutch interposed between said wheels, band brakes carried by the casing for frictionally engaging the peripheries of said wheels and means for adjusting the frictional engagement of said brakes with said wheels.

8. An anti-vibration device comprising a hollow casing, its axle, a wheel mounted on said axle, a second wheel mounted concentric with the first named wheel, a roller clutch interposed between the two wheels and band brakes carried by the casing for engaging the peripheries of said wheels.

9. An anti-vibration device comprising a hollow casing, its axle, a wheel mounted thereon, a second wheel mounted concentrically with the first-named wheel, a roller clutch interposed between the two wheels, band brakes carried by the casing in position to frictionally engage the peripheries of said wheels and means for adjusting the frictional engagement of said brakes with said wheels.

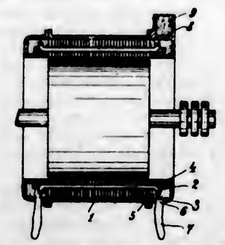
853,549. TOOTH BRUSH AND POWDER RECEPTACLE. JOHN P. HILL, Baltimore, Md. Filed Aug. 27, 1906. Serial No. 332,193.



Claim.—1. In a tooth brush and powder holder, the combination of an elongated box adapted to hold tooth powder, having an opening in one side near the end, a longitudinal partition parallel to the side in which is the opening and extending to near the edge of the opening, thus leaving two registering openings opposite each other, with a toothbrush holder consisting of an elongated box having a closed pocket at one end adapted to hold a toothbrush and to be inserted within the toothpowder box above the partition and when so inserted will close both the outer and inner apertures of the box.

2. In a tooth brush holder, the combination of a powder receptacle having an aperture in one end for insertion of a brush, a brush holder consisting of a drawer as long as the powder receptacle and having a pocket in one end, means in the receptacle for holding the drawer in place, the pocket portion of said drawer being adapted to close the aperture to the powder receptacle when in place.

853,550. ELECTRIC MACHINE. COLOMAN DE KANDO, Budapest, Austria-Hungary. Filed Dec. 13, 1906. Serial No. 347,572.



Claim.—1. In electric machines, with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means to prevent said mass when melted from entering the space between the stator and the rotor.

2. In electric machines, with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means allowing free escape of the mass when melted from said circular casings.

3. In electric machines, with windings arranged in the grooves of the stator, portions of the windings projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable opening in said circular casings allowing free escape of the mass when melted.

4. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings at the lowest part of said circular casing allowing free escape of the mass when melted.

5. In electric machines with windings arranged in the grooves of the stator portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said casing embedding the projecting parts of the windings, means to prevent said mass when melted from entering the space between the stator and the rotor and means to allow a supply for the insulating mass into said circular casings.

6. In electric machines, with windings arranged in the grooves of the stator portions of the winding projecting at the faces of the stator, means forming circular casing including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means allowing free escape of the mass when melted from said circular casings and means to allow a supply for the insulating mass into said circular casings.

7. In electric machines, with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings in said circular casing allowing free escape of the mass when melted and means to allow a supply for the insulating mass into said circular casings.

8. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings at the lowest part of said circular casings allowing free escape of the mass when melted and means to allow a supply of the insulating mass into said circular casings.

9. In electric machines with windings arranged in the grooves of the stator portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means to prevent said mass when melted from entering the space between the stator and the rotor, suitable charging openings in said circular chambers allowing a supply of the insulating mass.

10. In electric machines, with windings arranged in the grooves of the stator portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means allowing free escape of the mass when melted from said circular casings, suitable charging openings in said circular chambers allowing a supply of the insulating mass.

11. In electric machines, with windings arranged in the grooves of the stator portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings in said circular casings allowing free escape of the mass when melted, suitable charging opening in said circular chambers allowing a supply of the insulating mass.

12. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings at the lowest part of said circular casings allowing free escape of the mass when melted, suitable charging openings in said circular chambers allowing a supply of the insulating mass.

13. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means to prevent said mass when melted from entering the space between the stator and the rotor, suitable charging openings at the highest part of said circular casings.

14. In electric machines, with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means allowing free escape of the mass when melted from said circular casings, suitable charging openings at the highest part of said circular casings.

15. In electric machines, with windings arranged in the grooves of the stator portions of the winding projecting at the faces of the stator, means forming circular cases including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings in said circular casings allowing free escape of the mass when melted, suitable charging openings at the highest part of said circular casings.

16. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings at the lowest part of said circular casings allowing free escape of the mass when melted, suitable charging openings at the highest part of said circular casings.

17. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means to prevent said mass when melted from entering the space between the stator and the rotor, suitable charging openings in said circular chambers allowing a supply of the insulating mass and supply tanks communicating with said charging openings.

18. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means allowing free escape of the mass when melted from said circular casings, suitable charging openings in said circular chambers allowing a supply of the insulating mass and supply tanks communicating with said charging openings.

19. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings in said circular casing allowing free escape of the mass when melted, suitable charging openings in said circular chambers allowing a supply of the insulating mass, and supply tanks communicating with said charging openings.

20. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings at the lowest part of said circular casings allowing free escape of the mass when melted, suitable charging openings in said circular chambers allowing a supply of the insulating mass and supply tanks communicating with said charging openings.

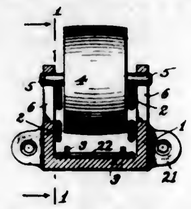
21. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casings embedding the projecting parts of the windings, means to prevent said mass when melted from entering the space between the stator and the rotor, suitable charging openings at the highest part of said circular casings, and supply tanks communicating with said charging openings.

22. In electric machines, with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, means allowing free escape of the mass when melted from said circular casings, suitable charging openings at the highest part of said circular casings and supply tanks communicating with said charging openings.

23. In electric machines, with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular cases including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casings embedding the projecting parts of the windings, suitable openings in said circular casings allowing free escape of the mass when melted, suitable charging openings at the highest part of said circular casings and supply tanks communicating with said charging openings.

24. In electric machines with windings arranged in the grooves of the stator, portions of the winding projecting at the faces of the stator, means forming circular casings including said projecting parts of the windings, a solid insulating mass adapted to melt when the winding is heated above the normal point in said circular casing embedding the projecting parts of the windings, suitable openings at the lowest part of said circular casings allowing free escape of the mass when melted, suitable charging openings at the highest part of said circular casings and supply tanks communicating with said charging openings.

853,551. STAY-ROLLER FOR CAR-DOORS AND FOR OTHER PURPOSES. HERBERT E. KEELER, New York, N. Y. Filed Feb. 7, 1907. Serial No. 356,193.



Claim.—1. In stay rollers for car doors, a casing provided with retaining means and guiding slots, a roll having a pivot operating in said slots, and a duplex reflexed spring engaged by said retaining means and held within said casing and having its reflexed portions on both sides of said roll and engaging the pivot thereof.

2. In stay rollers for car doors, a casing provided with guiding means, a roll, substantially inclosed by said casing and provided with means coöperating with said guiding means, to have bodily and rotary movement with respect to said casing and a reflexed spring located in said casing and resisting such bodily movement of said roll.

3. In spring controlled rollers, a casing provided with guiding slots, a roll having a pivot operating in said slots, and a spring located in said casing and acting between said casing and roll pivot.

4. In spring controlled rollers, a casing provided with guiding slots, a roll having a pivot located in said slots, and a spring on both sides of said roll between the same and the adjacent sides of said casing to yieldingly engage said pivot.

5. In spring controlled rollers, a casing provided with guiding slots, a roll having a pivot operating in said slots to allow said roll to have bodily and rotary movement with respect to said casing and a reflexed spring located in said casing and acting between said casing and said roll pivot.

853,552. ELECTRIC TOOL. OTIS A. KENYON, New York, N. Y. Filed Oct. 23, 1906. Serial No. 340,138.

Claim.—1. In an appliance of the class described, a tool, electric means for impelling said tool against the work, and a switch for breaking the circuit of said means simultaneously with the blow or impact of the tool against the work.

2. In an appliance of the class described, a tool, electric means for impelling said tool, a switch for breaking the circuit of said means simultaneously with the blow or impact of the tool against the work, and an additional switch for immediately afterward breaking such circuit at another point.

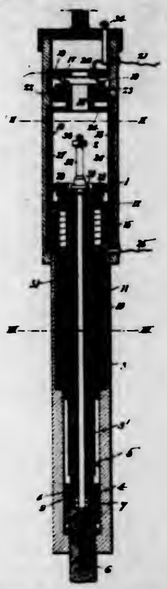
3. In an appliance of the class described, a tool, electric means for impelling said tool to make a working stroke, a main switch, a supplemental switch, and means actuated by the impact of the tool with the work for breaking the circuit of said electric means first at the supplemental switch and then at the main switch.

4. In an appliance of the class described, a tool, electric means for impelling said tool to make a working stroke, a switch for interrupting the circuit of said means actuated by the impact of the tool against the work with a predetermined force, and means for adjusting the amount of said force.

5. In an appliance of the class described, a tool, electric means for impelling said tool against the work, a magnet operated switch for maintaining a closed circuit in said electric means, and a supplemental switch actuated by the impact of the tool with the work, for interrupting the circuit at said magnet operated switch.

6. In an appliance of the class described, a tool, electric means for impelling said tool against the work, and a switch movable with the tool and arranged to break the circuit of said means simultaneously with the impact of the tool against the work.

7. In an appliance of the class described, a tool, electric means for impelling said tool against the work, a switch carried by said tool for interrupting the circuit of said means, and means carried by the tool for opening said switch when the tool strikes the work with a predetermined blow or impact.



8. In an appliance of the class described, a solenoid, a tool reciprocated thereby, and means actuated by the impact of the tool against the work for breaking the circuit of said solenoid.

9. In an appliance of the class described, a solenoid, a tool adapted to be moved thereby, and means for breaking the circuit of the solenoid simultaneously with the impact of the tool against the work.

10. In an appliance of the class described, a solenoid, a tool adapted to be moved thereby, a main switch, a supplemental switch, and means for breaking the circuit of said solenoid at such supplemental switch simultaneously with the impact of the tool against the work, and immediately afterward breaking said circuit at said main switch.

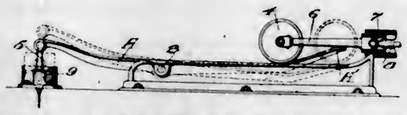
11. In an appliance of the class described, a reciprocating part, a solenoid for moving said part, a switch for controlling said solenoid, and means carried by said part but having a relative movement with respect thereto for opening said switch.

12. In an appliance of the class described, a reciprocating part, a solenoid, means carried by said part for momentarily breaking the circuit of said solenoid, and additional means for breaking the circuit of the solenoid during the entire period of the return stroke of said reciprocating part.

13. In an appliance of the class described, a frame or casing, a solenoid fixed thereto, a reciprocating part having a tool, a plunger, and a core within said solenoid, a stem secured to the tool and passing through said plunger and core and having a movement relative to said core, a supplemental switch carried by said core and opened by the movement of the stem with respect thereto, means for completing the circuit of said solenoid through said switch, a main switch adapted to be closed by the upward movement of said core, and magnetic means for maintaining said main switch closed during the downward movement of the core and while the circuit is closed at said supplemental switch, all as and for the purpose set forth.

14. In an appliance of the class described, a frame or casing having a central longitudinal chamber, a solenoid fixed within said chamber, a reciprocating part having a tool, a plunger and a core within said solenoid and an enlargement on said core, a pair of spring blades carried by said enlargement, a switch for normally making an electric connection between said blades, strips longitudinally supported within said chamber and insulated therefrom and in the path of said spring blades, a main switch at the upper end of the casing, magnetic means for maintaining said main switch closed, and a circuit including said main switch, said strips, said supplemental switch and said solenoid for energizing the latter.

853,553. DEVICE FOR TRANSMITTING POWER. JAMES I. KINKEAD, Redding, Cal. Filed Nov. 28, 1906. Serial No. 345,549.



Claim.—1. An apparatus including horizontal parallel tracks, a roller adapted to travel upon said tracks, means for imparting reciprocal movement to the roller, and a lever fulcrumed with relation to the tracks having an upturned end over which the roller is movable whereby the opposite end of the lever is raised by the forward movement of the roller.

2. In an apparatus for the application of power, a fulcrumed lever having an upwardly inclined end, tracks disposed horizontally upon each side of the lever, a roller having its outer ends resting upon the tracks and the central portion movable above the lever, means for imparting a continuous reciprocal movement to the roller whereby said roller is moved back and forth over the tracks, and over the inclined portion of the lever, and connections by which the movement of the lever may be transmitted.

3. In an apparatus for the application and transmission of power, a weighted roller, horizontal tracks upon which it is movable, a reciprocating cross head and means connecting the cross head with the roller whereby said roller is reciprocated over said track, a lever fulcrumed between the tracks having its central portion substantially upon the same level therewith, and the forward end upturned at an incline whereby the movement of the roller acts to depress the inclined end, means by which said lever is connected with parts to be moved, and a weight by which the lever is returned to its normal position when released from the roller pressure.

4. In an apparatus for the application and transmission of power, horizontally disposed tracks, a cylindrical shell resting upon said tracks, a roller of smaller diameter resting upon the lower side of the shell, connections between the shell and a motor by which the parts are caused to travel backward and forward along the track, a lever fulcrumed between the tracks having one end upturned at an inclination so that the roller shall act upon this inclined end to depress it and raise the opposite end, means connecting the lever with parts to which power is to be transmitted, and a weight by which said parts and lever are returned to the normal position when the roller is retracted.

853,554. RAIL-TIE AND FASTENING. MARY B. KOST, Evansville, Ind., administratrix of William J. Kost, deceased. Filed Feb. 20, 1906. Serial No. 302,078.

Claim.—1. A tie provided with seat supports and slots at opposite sides thereof, tie plates provided with flanges adapted to rest upon the tie above said slots and having fastening members projecting downwardly through said slots, and a fastening element extending through the seat support and fastening members of the tie plates to hold said plates connected to the tie.

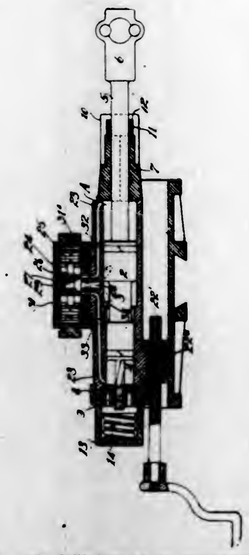


2. A tie provided adjacent each end with a seat support provided with a bolt passage and formed on opposite sides of said seat support with slots, tie plates having bracing flanges to rest upon the tie and overlying said slots, said flanges being provided with lugs projecting downwardly through said slots, and a bolt extending through said lugs and the passage in the seat support and securing the parts in applied position.

3. A tie provided adjacent each end with a seat support having a bolt passage and formed with slots on opposite sides of said seat supports, tie plates provided with laterally extending flanges resting on the tie and overlying said slots, said slots being provided with bracing enlargements and with lugs projecting downwardly through said slots, and a bolt passing through the tie, the seat support and lugs and holding the tie plates in applied position.

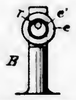
4. A hollow metallic rail tie provided in its top with a seat support and slots on opposite sides thereof, tie plates adapted to bear on opposite sides of a rail and having flanges resting on the top of the tie and provided with projections extending downwardly into the body of the tie through said slots, and a fastening device securing both projections to the tie within the latter and holding the tie plates in assembled position.

853,555. ROCK-DRILL. EDWARD LEICHTER, Nevada City, Cal., assignor of one-half to James C. Campbell, Nevada City, Cal. Filed June 20, 1906. Serial No. 322,562.



Claim.—A rock drill having in combination a cylinder with tapered seats at the ends, a piston, front and rear heads having corresponding conical portions to fit said seats, the rear end of said cylinder having an extension beyond the adjacent seat, a chambered bonnet inclosing the rear end of the cylinder and receiving said extension and having a limited sliding movement relative thereto, a spring within the chamber of said bonnet and abutting against the rear head, a bonnet fitting the front end of the cylinder fitting over the drill rod and the end of the front head, and tie rods connecting the two bonnets to hold the heads to their seats on the cylinder, said seats and the conical ends of the heads forming loose joints and permitting the heads to give in case they are struck by the piston, and to reseat themselves.

853,556. TELEGRAPH-TRANSMITTER. CHARLES W. LEISER, Salt Lake City, Utah. Filed Feb. 15, 1906. Serial No. 301,165.



Claim.—1. The combination with an electric battery of a flexible lever, an armature on said lever, sliding spring contacts, electro-magnets to operate said lever, a vibration arrester comprising a support having a vertical recess therein, a cross pin in said recess and a ring hung loosely on said pin, a circuit break, a pair of operating keys and suitable connections between the parts, as herein set forth.

2. In a telegraph transmitter having an electric battery, a flexible lever operated by electro-magnets, an armature on said lever and sliding spring contacts, a vibration arrester formed of a support having a vertical recess, a cross pin in said recess and a ring loosely hung on said cross pin, a circuit break, a pair of operating keys and suitable connections as herein described.

3. The herein described vibration arrester comprising a support having a vertical recess in its upper end, a cross pin in said recess and a ring suspended loosely on said pin and adapted to receive the impact of the vibrating object.

4. In an electric machine a post having a recess in its upper end, a ring having an inner elastic surface, a cross pin in said recess on which said ring is movably supported so as to yieldingly receive the impact of a vibrating lever, as herein set forth.

853,557. COMBINED HAY BUCK AND STACKER. JACOB E. LIEBHART, Toluca, Cal. Filed Oct. 15, 1906. Serial No. 338,940.



Claim.—1. In a device of the character described, the combination of an oscillatory fork-carrying frame, hoist-

ing mechanism, and means for fulcruming the fork-carrying frame at an intermediate point during a portion of its oscillation and for changing the fulcrum or pivotal point to a point on the ground to increase the throw or movement thereof.

2. In a device of the character described, the combination with a vehicle, of a fork carrying frame having sliding pivotal connection with the vehicle, and means for throwing it upwardly into a position so that one end rests upon the ground upon which end it is swung by the said lifting means.

3. In a device of the character herein described, the combination with a vehicle frame, of a fork carrying frame having elongated slots, a fork, a revoluble shaft having cranks, said cranks having wrist pins which enter said slots, a winding drum, a yoke connected to the fork carrying frame, means connecting the winding drum and yoke whereby the fork carrying frame is tilted, the wrist pins forming a pivot upon which the fork carrying frame swings, and means for elevating the fork carrying frame on said wrist pins until one end of the frame rests upon the ground, after which the frame is further swung upon the ground to an approximately vertical position, whereby the hay is automatically thrown from the fork when raised to said vertical position.

4. In a device of the character herein described, a vehicle, a fork carrying frame pivotally connected therewith, means to elevate or lower the front end of the fork carrying frame, said means comprising a revoluble shaft mounted on the vehicle, this shaft having a crank by which it has sliding pivotal connection with the fork carrying frame, and an adjustable lever secured to the shaft for regulating the same.

5. The combination with a vehicle frame, of a fork carrying frame supported by the vehicle frame, a yoke pivotally connected to the fork carrying frame, a connection extending from the yoke to the fork carrying frame, means carried by the vehicle for tilting the fork carrying frame in one operative position, and independent means for swinging the fork carrying frame on the first mentioned means whereby to throw it into an approximately vertical position.

6. The combination of a self propelled vehicle, steering mechanism, a fork carrying frame carried by the vehicle, a revoluble shaft having cranks thereon, to which cranks the fork carrying frame is pivotally connected, means on the shaft for turning it whereby to tilt the fork carrying frame into one operative position, a pivotally mounted yoke, rods extending from the yoke to the fork carrying frame, a sheave carried by the vehicle, a flexible device extending from the yoke around the sheave, and a drum operating by the propelling means of the vehicle to which one end of the flexible connection is secured, and means for causing the drum to wind the flexible connection thereon, whereby to raise the fork carrying frame to an approximately vertical position.

853,558. COMBINATION-TOOL. RASMUS MADSEN, Hartford, Conn. Filed Feb. 23, 1907. Serial No. 358,808.



Claim.—1. A combination-tool comprising a handle terminating at one end in a stationary jaw and at the other end in a cylindrically bored sleeve having an L shaped lock-slot cut therein; a movable jaw having a threaded shank, terminating in a tongue, telescoped within said handle; a thumb nut on said threaded shank; and a cylindrical tool holder slidably fitted within the bore of said handle, the inner end of which is slotted to receive said tongue of the movable jaw and thereby lock the holder against revolution, and the outer end of which is slotted to form two forks between which are revolubly fastened, by means of a transverse pin which projects into said L shaped lock-slot and locks the holder within said handle, a set of tools having flat shanks turned on their thin edges to exactly fit said bore of the handle, whereby each tool when in use is rigidly held in alinement with the handle.

2. A combination tool comprising a handle terminating at one end in a stationary jaw and at the other end in a cylindrically bored sleeve having an L shaped lock-slot cut therein; a movable jaw having a threaded shank, terminating in a tongue, telescoped within said handle; a thumb nut on said threaded shank; a cylindrical tool holder slidably fitted within the bore of said handle, the inner end of which is slotted to receive said tongue of the movable jaw and thereby lock the holder against revolution, and the outer end of which is slotted to form two forks between which are revolubly fastened, by means of a transverse pin which projects into said L shaped lock-slot and locks the holder within said handle, a set of tools having flat shanks turned on their thin edges to exactly fit said bore of the handle, whereby each tool when in use is rigidly held in alinement with the handle; and an ejectment spring between said holder and the bottom of the bore of said handle.

3. In a telescopic wrench of the class shown the combination with a bore *o* and slot *f* in the handle of the stationary jaw, and a tongue *i* on the shank of the movable jaw, of a cylindrical tool holder slidably fitted within said bore and having a slot *h* at one end adapted to receive said tongue *i* and two tongues *t t'* at the other end between which are revolubly attached, by means of a transverse pin *e* which projects into said lock-slot *f*, a set of tools having flat shanks turned on their thin edges to exactly fit said bore *o*.

4. In a telescopic wrench of the class shown the combination with a bore *o* and a slot *f* in the handle of the stationary jaw, and a tongue *i* on the shank of the movable jaw, of a cylindrical tool holder slidably fitted within said bore and having a slot *h* at one end adapted to receive said tongue *i* and two tongues *t t'* at the other end between which are revolubly attached, by means of a transverse pin *e* which projects into said lock-slot *f*, a set of tools having flat shanks turned on their thin edges to exactly fit said bore, and a coiled spring *z* between the bottom of said bore of the handle and said holder.

853,559. METHOD OF DESICCATING AIR. PROSPER A. MAIGNEN and THERON I. CRANE, Philadelphia, Pa. Filed July 9, 1906. Serial No. 325,429.

Claim.—1. The method of purifying air and other gas which consists in floating therein a finely divided absorbent substance in the quantity and for the time required to absorb the bulk of the impurity.

2. The method of desiccating air which consists in floating sufficient powdered lime therein to absorb the bulk of the moisture.

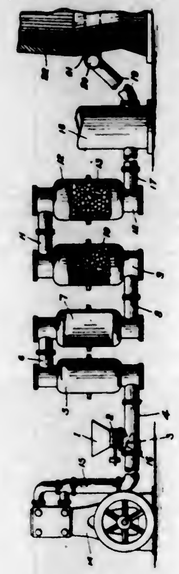
3. The method of desiccating air which consists in floating a finely divided hygroscopic material therein to remove the bulk of the moisture therefrom, and then filtering to separate the hygroscopic matter.

4. The method which consists in sifting a finely divided hygroscopic agent into a current of atmospheric air and circulating the air with its burden of hygroscopic material until such material has absorbed the bulk of the moisture from the air.

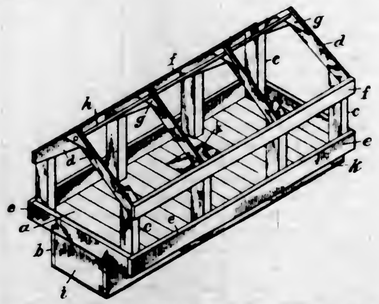
5. The method which consists of feeding powdered lime into a current of air containing moisture, circulating said air with its burden of lime in a suitable chamber or chambers until the lime has absorbed the bulk of the moisture from the air, and then passing the air through a suitable filter or filters to separate therefrom the lime with its absorbed moisture.

6. The method which consists in floating finely divided lime in a current of air and circulating the air with its burden of lime until such lime has absorbed the bulk of the moisture from the air.

853,559.



853,560. PORTABLE TENT-FRAME. ROBERT P. ORR, Pleasantville, N. Y. Filed July 25, 1906. Serial No. 327,685.



Claim.—1. A portable tent frame provided with a board floor, posts and rafters secured together and supported wholly upon the edges of the floor, and longitudinal sills secured edgewise to the floor beneath the same, intermediate to the edges, at a suitable distance apart to fit the bolsters of a wagon running-gear, the space between the sills being inclosed beneath to form a store closet.

2. A portable tent frame provided with a board floor, posts and rafters secured together and supported wholly upon the edges of the floor, and longitudinal sills secured edgewise to the floor beneath the same intermediate to the edges, at a suitable distance apart to fit the bolsters of a wagon running-gear, the space between the sills being inclosed beneath to form a store closet, and the floor having a trap-door leading into such closet, and the space between the ends of the sills being provided with a door *i* for external access to such space.

3. A portable tent frame provided with a board floor, posts and rafters secured detachably together to hold the tent cover and supported wholly upon the edges of the floor, skirt-boards held detachably to the posts for keeping them erect, longitudinal sills permanently secured edgewise to the floor beneath the same intermediate to the edges, at a suitable distance apart to fit the bolsters of a running-gear, bolsters *n* fitted transversely to the sills with stakes *o* embracing the outer sides of the sills, and wheels with running-gear fitted to the bolsters, to render the tent frame movable from space to space at pleasure.

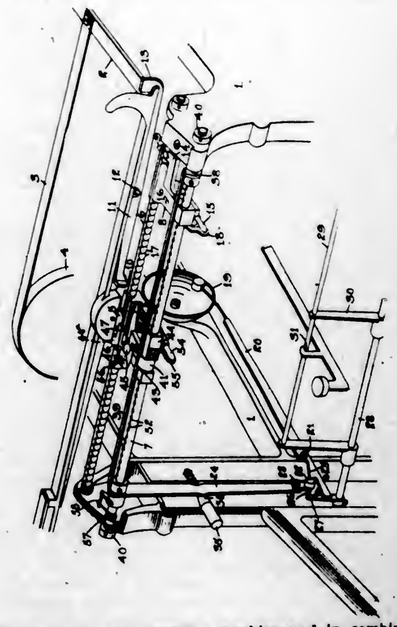
853,561. GARMENT-FASTENER. WALTER F. PEET, Philadelphia, Pa., assignor of one-half to Edward B. Peet, Philadelphia, Pa. Filed Mar. 12, 1906. Serial No. 305,650.



Claim.—1. A garment fastener consisting of a hook-engaging bar, with thread-receiving eyes at its ends, each of said eyes being of substantially triangular form, but having indented sides forming internal shoulders which contract the outlet from the thread receiving loop at the apex of the eye, substantially as specified.

2. A garment-fastener consisting of a hook-engaging bar, with thread-receiving eyes at its ends, each of said eyes being of substantially triangular form, but having indented sides forming internal shoulders which contract the outlet from the thread-receiving loop at the apex of the triangle, and reduce to semi-circular form the loops at the other angles, substantially as specified.

853,562. TYPE-WRITING MACHINE. EMIL L. PFUNDER and FRANK A. COOK, Hartford, Conn., assignors to Underwood Typewriter Company, New York, N. Y. Filed Feb. 18, 1907. Serial No. 358,025.



Claim.—1. In a typewriting machine and in combination, a carriage, a supporting rail therefor, a rod parallel with said rail, a slide mounted upon said rod and rail, means for locking said slide to said rail, a second slide mounted upon said rod and rail, means for locking said second slide to said rod, means controlled by one of said slides for arresting the movement of the carriage at the

margin on one side, and means controlled by the other of said slides for sounding the alarm and locking the carriage at the margin on the other side.

2. In a typewriting machine and in combination, a carriage, margin-regulating mechanism comprising a slide support, a slide movable on said support, means for locking said slide to said support, a rocking bar carried by said support, a member on said slide operable by said carriage to oscillate said rocking bar, and margin controlling devices in operative relation to said bar.

3. In a typewriting machine having a carriage and a rail therefor, the combination of a rod or shaft parallel with said rail, a slide mounted upon said rod and rail and having a pawl, to engage teeth formed upon the rail, a second slide mounted upon said rod and rail and having a pawl to engage teeth formed upon the rod, means controlled by one of said slides for arresting the return movement of the carriage to begin a new line and means controlled by the other of said slides for ringing a bell and locking the line.

4. In a typewriting machine having a carriage, the combination of parallel racks, the teeth on one rack directed opposite from those on the other rack, slides mounted upon said racks, one slide having a pawl to engage one rack and the other slide having a pawl to engage the other rack, devices controlled by one slide for regulating one side margin, and devices controlled by the other slide for regulating the other side margin on the written page.

5. In a typewriting machine having a carriage, the combination of parallel racks, the teeth on one rack directed opposite from those on the other rack, slides mounted upon said racks, one slide having a pawl to engage one rack, and the other slide having a pawl to engage the other rack, a rocker bar extending along one of said racks and clearing said slides, end-of-the-line devices operable by said rocker-bar, and means upon one of said slides movable by the carriage for operating said rocker bar.

6. In a typewriting machine having a carriage, a margin regulating mechanism comprising a rack, a slide movable along said rack and having a pawl to engage the same, a movable bar extending along the rack, a part upon the slide operable by the carriage to actuate said bar and margin-controlling devices operated by said bar.

7. In a typewriting machine having a carriage, the combination of a rack, a slide adjustable along said rack and having a tooth to engage the rack, a pivot-arm moving with said slide and operable by a part upon the carriage, a bar extending along said rack moved by said arm, and margin-controlling devices operated by said bar.

8. In a typewriting machine having a carriage, the combination of a rod having teeth formed thereon, a slide mounted upon said rod and having a pawl to engage said teeth, an arm pivoted upon said rod and moving with said slide, a cam device upon the free end of said arm to be engaged by the carriage to rock the arm, a bail hinged upon the ends of said rod engaged by said arm, and bell-ringing and line-locking devices operated by said bail.

9. In a typewriting machine having a carriage, the combination of a rod or bar extending along the carriage, a bail hinged upon the ends of said rod or bar, slides mounted upon said rod or bar between the ends of said bail, means upon one slide operable by the carriage to actuate said bail, margin-regulating devices controlled by said bail, and a margin-regulating device controlled by the other slide.

10. In a typewriting machine having a carriage, the combination of a rod or bar extending along the carriage, a bail hinged upon the ends of said rod or bar, a slide mounted upon said rod or bar between the ends of said bail, means upon the slide operable by the carriage to actuate said bail, and margin-regulating devices controlled by said bail.

11. In a typewriting machine having a power-driven carriage provided with a front roll and a rail upon which said roll runs, the combination of a rod parallel therewith, a margin-stop slide mounted upon said rail and rod and having a stop to engage a stop which is provided upon said carriage and also having a pawl to engage a series of ratchet teeth upon the front side of said rail, said series extending nearly the entire length of the rail, a second slide mounted upon said rail and rod, a pawl upon said second slide provided with a handle and having a tooth to engage a series of ratchet teeth formed on the rear side of said rod and directed oppositely from the teeth upon said rail, an arm journaled upon said rod and confined in a recess in said second slide, a bail journaled loosely upon the ends of said shaft and extending along the latter and engaged by a projection upon said arm, bell-ringing and line-locking mechanism operated by said bail, and a cam device upon the free end of said arm to be engaged by a part upon the carriage to rock said bail.

12. In a typewriting machine having a carriage, the combination of a rod, a slide mounted upon said rod, a pawl upon said slide provided with a handle and having a tooth to engage a series of teeth formed on said rod, an arm journaled upon said rod and confined by said slide, a bail journaled loosely upon the ends of said rod and extending along the latter and engaged by a projection upon said arm, bell-ringing and line-locking mechanism operated by said bail, and a cam device upon the free end of said arm to be engaged by a part upon the carriage to rock said bail.

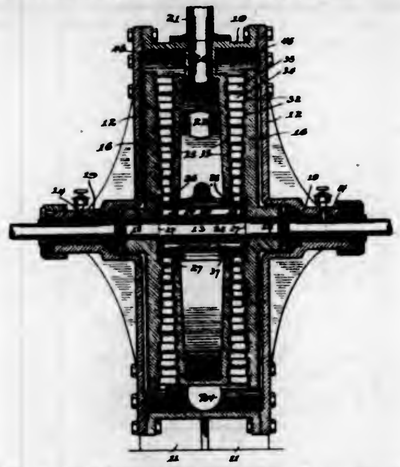
13. In a typewriting machine having a power driven carriage provided with a front roll and a rail upon which said roll runs, the combination of a rod parallel therewith, slide mounted upon said rail and rod and having a stop to engage a stop which is provided upon said carriage and also having a pawl to engage a series of ratchet teeth upon said rail, a second slide mounted upon said rail and rod, a pawl upon said second slide with a handle and having a tooth to engage a series of ratchet teeth formed on said rod and directed oppositely from the teeth upon said rail and bell-ringing and line-locking mechanism controlled by said second slide.

14. In a typewriting machine having a power-driven carriage provided with a front roll and a rail upon which said roll runs, the rail being supported by its ends upon the framework, the combination of a rod in front of said rail and parallel therewith, a margin-stop slide mounted upon said rail and rod and having a stop to engage a stop which is provided upon said carriage and also having a pawl to engage a series of ratchet teeth upon the front side of said rail, said series extending nearly the entire length of the rail, a second slide mounted upon said rail and rod, a pawl upon said second slide provided with a handle and having a tooth to engage a series of ratchet teeth formed on the rear side of said rod and directed oppositely from the teeth upon said rail, a spring for the last-mentioned pawl, an arm journaled upon said rod and confined in a recess in said second slide, a bail journaled loosely upon the ends of said shaft and extending along the latter and engaged by a projection upon said arm, bell-ringing and line-locking mechanism operated by said bail, a returning spring for said bail, and a cam device upon the free end of said arm to be engaged by a part upon the carriage to rock said bail to ring a bell and lock the keys; the second slide having fixed thereon a stop to engage said projection on the carriage to arrest the letter-feeding movement of the latter.

853,563. TURBINE. PETER PHILLIP, Rogers Park, Ill. Filed June 22, 1906. Serial No. 322,899.

Claim.—1. In a radial flow elastic fluid turbine, the combination with a driven shaft, of a stationary casing comprising a cylindrical wall, side walls or covers, and an internal chambered disk having an inlet port and outlet ports constituting discharge nozzles, the direction of which is in a plane perpendicular to the shaft and tangential to the curve of the rotor vanes at the point of admission, of a rotor fast on said shaft within said casing, and alternate rows of vanes on said rotor and chambered disk, respectively, the inner row of vanes on said rotor closely surrounding said discharge nozzles and receiving the impact of the motive fluid directly therefrom, substantially as described.

2. In a radial flow elastic fluid turbine, the combination with a driven shaft, of a stationary casing comprising a cylindrical wall, side walls or covers, and an internal chambered disk having an inlet port and two annular rows of outlet ports constituting discharge nozzles, the direction of which is in a plane perpendicular to the shaft and tangential to the curve of the rotor vanes at the point of admission, of a pair of rotors fast on said shaft within said casing and on either side of said chambered disk, respectively, and alternate rows of vanes on said rotors and the opposed sides of said chambered disk, respectively, the inner rows of vanes on said rotors closely surrounding said discharge nozzles and receiving the impact of the motive fluid directly therefrom, substantially as described.



3. In a radial flow elastic fluid turbine, the combination with a driven shaft, of a stationary casing having an inlet port and an outlet port for the motive fluid and bearings for said shaft, a stationary annular motive fluid chest within said casing and surrounding said shaft, said chest having a plurality of inlet ports communicating with the inlet port of said casing, and an annular row of outlet ports constituting discharge nozzles, a rotor fast on said shaft within said casing, and alternate rows of vanes on said casing and rotor, respectively, the inner row of vanes on said rotor closely surrounding said discharge nozzles and receiving the impact of the motive fluid directly therefrom, substantially as described.

4. In a radial flow elastic fluid turbine, the combination with a driven shaft, of a stationary casing having an inlet port and an outlet port for the motive fluid, and bearings for said shaft, a stationary annular motive fluid chest within said casing and surrounding said shaft, said chest having an annular row of inlet ports communicating with the inlet port of said casing and an annular row of outlet ports constituting discharge nozzles an annular valve surrounding said chest opposite and controlling the inlet ports thereof, a rotor fast on said shaft within said casing, and alternate rows of vanes on said casing and rotor, respectively, the inner row of vanes on said rotor closely surrounding said discharge nozzles and receiving the impact of the motive fluid directly therefrom, substantially as described.

5. In a radial flow elastic fluid turbine, the combination with a driven shaft, of a stationary casing having an inlet and an outlet for the motive fluid and comprising a cylindrical wall, side walls or covers, and an internal chambered disk having an inlet port communicating with the inlet port of said casing, a stationary annular motive fluid chest within and axially coincident with said internal chambered disk, said chest having an intermediate annular row of inlet ports communicating with the interior of said chambered disk and two annular rows of outlet ports constituting discharge nozzles disposed in planes outside of said chambered disk, respectively, a pair of rotors fast on said shaft within said casing and on either side of said chambered disk, respectively, and alternate rows of vanes on said rotors and the opposed sides of said chambered disk, respectively, the inner rows of vanes on said rotors closely surrounding said discharge nozzles and receiving the impact of the motive fluid directly therefrom, substantially as described.

6. In a radial flow elastic fluid turbine, the combination with a driven shaft, of a stationary casing having an inlet and an outlet for the motive fluid and comprising a cylindrical wall, side walls or covers, and an internal chambered disk having an inlet port communicating with the inlet port of said casing, a stationary annular motive fluid chest within and axially coincident with said internal chambered disk, said chest having an intermediate annular row of inlet ports communicating with the interior of said chambered disk and two annular rows of outlet ports constituting discharge nozzles disposed in planes outside of said chambered disk, respectively, an annular valve surrounding said chest opposite and controlling the inlet ports thereof, a pair of rotors fast on said shaft within said casing and on either side of said chambered disk, respectively, and alternate rows of vanes on said rotors and the opposed sides of said chambered disk, respectively, the inner rows of vanes on said rotors closely surrounding said discharge nozzles and receiving the impact of the motive fluid directly therefrom, substantially as described.

7. In a radial flow elastic fluid turbine, the combination with a stationary casing having an inlet port and an outlet port for the motive fluid, and a driven shaft suitably journaled therein, of a rotor mounted on said shaft within said casing, co-operating vanes on said rotor and casing, respectively, an annular distributing chest within said casing surrounding the shaft, said chest having an annular row of inlet ports and an annular row of outlet ports constituting discharge nozzles, and an annular valve surrounding said chest and provided with ports co-operating with the inlet ports of the latter, said valve ports being so formed and distributed as to successively cut off the inlet ports of the distributing chest when turned continuously in one direction, substantially as described.

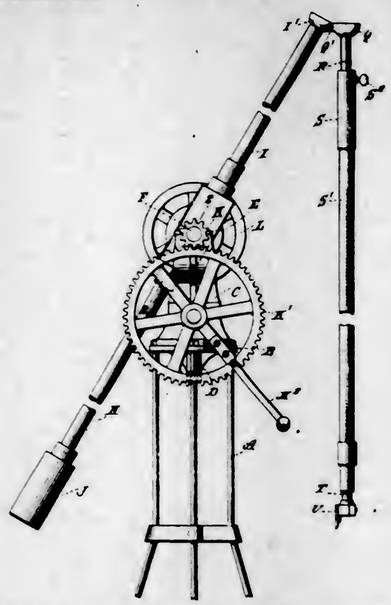
8. In a radial flow elastic fluid turbine, the combination with a stationary casing having an inlet port and an outlet port for the motive fluid, and a driven shaft suitably journaled therein, of a rotor mounted on said shaft within said casing, co-operating vanes on said rotor and casing, respectively, an annular distributing chest within said casing surrounding the shaft, said chest having an annular row of inlet ports of uniform cross-sectional area and an annular row of outlet ports constituting discharge nozzles, and an annular valve surrounding said chest and provided with ports co-operating with the inlet ports of the latter, said valve ports being of successively increased cross-sectional area whereby they successively cut off the inlet ports of the distributing chest when said annular valve is turned continuously in one direction, substantially as described.

9. In a radial flow elastic fluid turbine, the combination with a stationary casing having an inlet port, an exhaust passage, and a discharge port, of a driving shaft suitably journaled in said casing, a rotor fast on said shaft, co-operating vanes on said rotor and casing, respectively, means for directing and distributing motive fluid to said vanes from the center of the casing outwardly or radially, a pivoted floating vane in the exhaust passage, and a handle or pointer on the pivot of said floating vane outside the casing serving to both hold said floating vane in a normally radial position and to indicate the position of the vane when the velocity of the steam relatively to the velocity of the vane deflects it, substantially as described.

853,564. TOOL-OPERATING MECHANISM. FRED K. PRIEST, Hillsboro, N. H. Filed Sept. 29, 1905. Serial No. 280,599.

Claim.—1. The combination of the stand, the support pivoted to the stand to swing in a horizontal plane, the casing pivoted to the upper portion of the support to swing in a vertical plane, the shaft co-axial with said casing, the drive wheel journaled on the support below the

first named shaft and having a driving connection therewith, the balance arm rigidly connected with the casing, another shaft journaled in the balance arm and extending lengthwise thereof, meshing gears on the said shafts, and a flexible shaft operatively connected with the shaft in the balance arm.



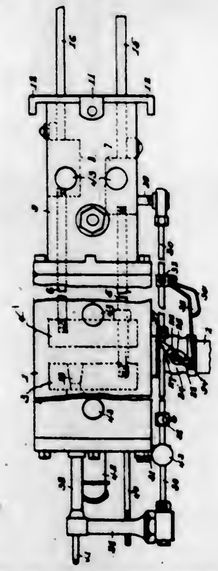
2. The combination of the stand, the support pivoted to the stand to swing in a horizontal plane, the casing pivoted to the upper portion of the support to swing in a vertical plane, the shaft co-axial with said casing, the drive wheel journaled on the support below the first named shaft and having a driving connection therewith, the balance arm rigidly connected with the casing, another shaft journaled in the balance arm and extending lengthwise thereof, and meshing gears on the said shafts.

3. The combination of the stand, the support pivoted to the stand to swing in a horizontal plane, the casing pivoted to the support to swing in a vertical plane, the shaft co-axial with said casing, means for turning said shaft, the balance arm rigidly connected with the casing, another shaft journaled in the balance arm and extending lengthwise thereof, and a driving connection between said shafts.

853,565. STEAM-ENGINE. CHARLES L. SCHULTZ, Wheeling, W. Va. Filed July 11, 1906. Serial No. 325,648.

Claim.—1. In a steam engine, the combination with a driving shaft having oppositely-disposed cranks, of a cylinder, oppositely reciprocating pistons in said cylinder, operative means connecting said pistons with said cranks, a steam-supply pipe opening into said cylinder midway between the ends thereof, a valve in said supply pipe, means operated by one of said pistons whereby said valve is automatically manipulated to open and close communication between said supply pipe and said cylinder and also to regulate the admission of steam to said cylinder, a valve in the foremost of said pistons, and means whereby the last-mentioned valve is automatically opened and closed respectively at predetermined points in the line of travel of said piston.

2. In a steam engine, the combination with a driving shaft having oppositely-disposed cranks, of a cylinder, oppositely reciprocating pistons in said cylinder, operative means connecting said pistons with said cranks, a steam-supply pipe opening into said cylinder midway between the ends thereof, a valve in said supply pipe, means operated by one of said pistons whereby said valve is automatically manipulated to open and close communication between said supply pipe and said cylinder and also to regulate the admission of steam to said cylinder, a valve in the foremost of said pistons, and means whereby the last-mentioned valve is automatically opened at a predetermined point in the travel of said piston to allow the steam behind said piston to exhaust to the opposite side thereof.

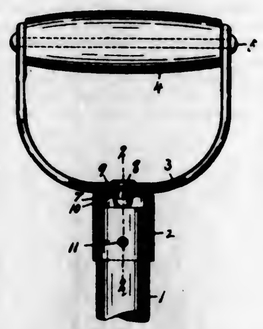


3. In a steam engine, the combination with a driving shaft having oppositely disposed cranks, of a cylinder, oppositely reciprocating pistons in said cylinder, operative means connecting said pistons with said cranks, a steam-supply pipe opening into said cylinder midway between the ends thereof, a valve in said supply pipe, means operated by one of said pistons whereby said valve is automatically manipulated to open and close communication between said supply pipe and said cylinder and also to regulate the admission of steam to said cylinder, a valve in the foremost of said pistons, and means whereby the last-mentioned valve is automatically opened at or near the end of the outward stroke of said piston to allow the steam behind said piston to exhaust to the opposite side thereof, and also whereby said valve is held open until said piston approaches the end of its inward stroke.

4. In a steam engine, the combination with a driving shaft having oppositely disposed cranks, of a cylinder, oppositely reciprocating pistons in said cylinder, operative means connecting said pistons with said cranks, a steam-supply pipe opening into said cylinder midway between the ends thereof, a valve in said supply pipe, means operated by one of said pistons whereby said valve is automatically manipulated to open and close communication between said supply pipe and said cylinder and also to regulate the admission of steam to said cylinder, and means for exhausting the steam which has been utilized between said pistons in producing the outward stroke thereof to the end of the cylinder in front of the foremost piston to be again utilized to assist in producing the return stroke thereof.

5. In a steam engine, the combination with a driving shaft having oppositely disposed cranks, of a cylinder, oppositely reciprocating pistons in said cylinder, operative connections between said pistons and said cranks, said connections consisting of piston rods attached to said pistons, one of said rods projecting through and operating in the piston attached to the other rod, slides attached to said piston rods outside said cylinder, and pitmen pivotally attached at one end to said slides and at the other to said cranks, a steam-supply pipe leading into said cylinder midway between the ends thereof to discharge steam between said pistons, a valve in said supply pipe, a lever fixed upon the stem of said valve, a rod connected at one end to the slide which is operated by the foremost of said pistons, said rod extending forward parallel to said cylinder and contiguous to said lever and being slidably mounted at its front end, adjustable collars carried by said rod for engaging the point of said lever at predetermined points in the travel of said rod to manipulate said valve, a second rod adjustably mounted upon the first-mentioned rod, said second rod adapted for engaging the rear end of said lever at predetermined points in its travel to manipulate said lever, a valve in the foremost of said pistons, said valve adapted to be closed by the incoming steam from said supply pipe and to remain closed to or near to the end of the outward stroke of said foremost piston, means for unseating said valve at or near the end of said stroke to allow steam behind said piston to exhaust to the end of the cylinder in front of said piston, and means for holding said valve unseated to or near to the end of the inward stroke of said piston.

853,566. FERRULE ATTACHMENT FOR HANDLES. WILLIAM SPARKS, Jackson, Mich., assignor to George A. McKeel & Company, Limited, Jackson, Mich., a Corporation of Michigan. Filed Jan. 2, 1907. Serial No. 350,455.



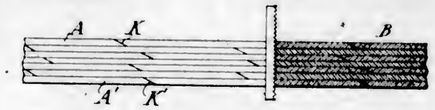
Claim.—1. In combination with a handle bar, a ferrule having a portion of its top depressed within the ferrule forming a transverse groove, the top of the ferrule and bar being provided with alined apertures, and a bolt passed through said apertures and riveted on the under side of the top of the bar whereby the ferrule and bar are locked to each other.

2. A one-piece sheet metal ferrule having a closed top, the central portion of which is depressed within the ferrule forming a transverse groove, and a handle seated in the groove and secured to the ferrule.

3. As a new article of manufacture, a U-shaped handle bar, and a band piece secured to and between the ends of the bar, and a ferrule having a closed top, a portion of which is depressed within the ferrule forming a groove in which the base of the U-shaped bar is seated, and a rivet passed through the top of the ferrule and bar for riveting the parts together.

4. A one-piece sheet metal ferrule having a closed top, the central portion of which is depressed within the ferrule forming a transverse groove.

853,567. MANUFACTURE OF BELTING. EDMUND A. USINA, Newtonville, Mass. Filed Nov. 29, 1905. Serial No. 289,699.



Claim.—1. The process of manufacturing leather belting which consists in laying a number of hides and cementing them one upon another over substantially their entire area to form a pile of hides cemented together and cutting therefrom portions of a width corresponding to the depth of the pile and of a thickness corresponding to the distance between successive cuts and suitable to produce a substantial flexibility whereby a flexible belt is produced composed of adjacent longitudinal strips already cemented together.

2. The process of manufacturing leather belting which consists in laying a number of sheets of the fleshy portion of hides and cementing them one upon another over substantially their entire area to form a pile of hides cemented together and cutting therefrom portions of a width corresponding to the depth of the pile and of a thickness corresponding to the distance between successive cuts and suitable to produce a substantial flexibility whereby a flexible belt is produced composed of adjacent longitudinal strips already cemented together.

3. The process of manufacturing belting which consists in uniting a plurality of sheets end to end in a layer, superposing a number of such layers upon each other to form a pile, and cutting the belting therefrom with its width corresponding to the depth of the pile, whereby a belt of any desired length may be made with one straight cut.

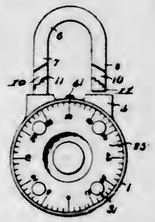
4. The process of manufacturing belting which consists in uniting a plurality of sheets end to end in a layer, superposing a number of such layers upon each other to form a pile, the successive sheets in a layer overlapping end to end, and the joints in the successive layers being staggered, and cutting the belting therefrom with its width corresponding to the depth of the pile, whereby a belt of any desired length may be made with one straight cut and with the adjacent strips staggered and each strip having lapped end joints.

853,568. MEANS FOR ATTACHING HARNESS-TRIMMINGS. GEORGE WALKER, Newark, N. J., assignor to Rubber and Celluloid Harness Trimming Co., a Corporation of New Jersey. Filed Oct. 30, 1905. Serial No. 284,967.



Claim.—In a harness trimming or fixture, the combination, with a leather-strap and its inner layer of a harness, of a harness fixture, such as a terret, comprising a metal base provided with an eye in which may be arranged a terret-ring, a pair of headed rivets having their heads embedded in said metal base, and the shanks of said rivets extending from the lower face of said base and through said leather-strap, a plate arranged between the said leather-strap and said inner layer, said plate being provided with a pair of perforations, and prongs on the shank of each rivet, said prongs extending through the perforations in said plate and being bent over and upon the face of said plate, so as to lie between said face of the plate and the inner face of said layer, substantially as and for the purposes set forth.

853,569. PERMUTATION-PADLOCK. IRVIN WILLIAMS, Nelson, and WILLIAM H. GARLAND, Kansas City, Mo.; said Garland assignor to said Williams. Filed Nov. 30, 1906. Serial No. 345,739.



Claim.—1. A permutation padlock comprising a casing, rotatable tumblers mounted therein, a projection upon one of said tumblers, a lug carrying element intermediate the tumblers, a dial, means for frictionally holding the lug carrying element and one of the tumblers normally against independent rotation and for causing them to normally rotate with the dial, and a shackle movably mounted within the casing for engagement by the tumblers, the lug and projection being disposed in the same path.

2. A permutation lock comprising a casing, oppositely disposed rotatable tumblers therein, a shackle movable between the tumblers for engagement thereby, a lug upon one of the tumblers, a rotatable dial frictionally engaging the other tumbler, a slip washer clamped between the tumblers and normally rotatable with the dial, and a projection upon the washer extending into the path of the lug to engage the same and actuate the tumbler.

3. A permutation lock comprising a casing having a passage therein, a shackle slidably mounted within said passage and having a recess, a rotatable tumbler mounted within the casing, a flange upon the tumbler normally extending into the recess in the shackle, said flange having a recess adapted to register with the passage, and a dial frictionally engaging and normally rotatable with the tumbler.

4. A permutation lock comprising a casing having a passage therein, a shackle slidably mounted within said passage and having a recess and teeth within the recess, a rotatable tumbler mounted within the casing and having a flange normally extending into the recess in the shackle, said flange having a recess adapted to register with the passage, and a dial frictionally engaging and normally rotatable with the tumbler, said flange having teeth for engaging the teeth in the recess.

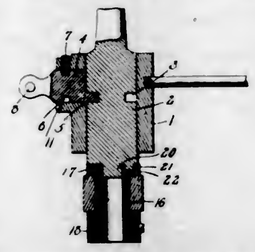
5. A permutation lock comprising a casing having a passage therein, a shackle longitudinally movable within the passage and having a recess and teeth within the recess, a tumbler rotatably mounted within the casing and having an annular flange thereon normally seated within the recess in the shackle, said flange having a recess adapted to register with the passage, there being teeth upon the flange for engaging the teeth in the recess, a graduated dial, a rotatable tumbler loosely mounted within the casing and normally projecting into the recess in the shackle, a lug upon said tumbler, frictionally held means in the path of the lug and normally rotatable with the dial for engaging the lug to actuate the tumbler, and means for holding the dial in frictional engagement with the tumbler.

6. In a permutation lock the combination with a casing and a recessed shackle movably connected thereto; of a plurality of rotatable tumblers mounted therein for engaging the recessed portion of the shackle, said tumblers having recesses for registering with the shackle, a dial frictionally engaging one of the tumblers, a lug upon the other tumbler, said latter tumbler being loosely mounted, and frictionally held means interposed between the tumblers for engaging the lug to actuate the tumbler, said means being normally rotatable with the dial.

7. A permutation lock comprising a casing; of a recessed shackle projecting into and movably mounted within the casing, a rotatable tumbler loosely mounted within the casing and having a recessed flange, a lug upon said tumbler, a dial rotatably mounted upon the casing, a rotatable tumbler frictionally engaged by and normally movable with the dial, said tumbler having a recessed flange, said flanges adapted to normally engage the recessed portions of the shackle, and frictionally held means between the tumblers and normally rotatable with the dial for engaging the lug to actuate the tumbler.

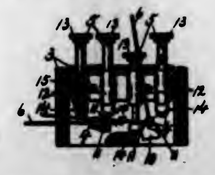
8. A permutation lock comprising a casing, a shackle movably mounted within and extending from the casing, a rotatable tumbler loosely mounted within the casing and normally engaging the shackle, a rotatable dial, a rotatable tumbler within the casing and held in frictional engagement with the dial, and frictionally held means interposed between the tumblers and normally rotatable with the dial for actuating the loosely mounted tumbler.

853,570. TURRET-HEAD. HARRY H. WOGAMAN, Greenville, Ohio. Filed Oct. 27, 1906. Serial No. 340,869.



Claim.—The combination of a driving spindle having a central boss with a cylindrical portion, and an eccentric projection of less length than the cylindrical portion of the boss, a rotatable head, a plurality of rotatable spindles journaled in the head and each provided with a central opening and an arcuate slot concentric with the opening, and means for shifting the head to cause a rotatable spindle to be connected with or disconnected from the driving spindle.

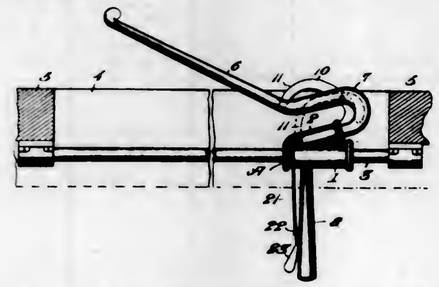
853,571. MUSIC-LEAF TURNER. AUGUSTUS E. BEH and ESTELLA BEH, West Solvay, N. Y. Filed Aug. 29, 1906. Serial No. 332,495.



Claim.—1. In a leaf turner a casing having a supporting rack extending therefrom, a rock shaft mounted for rotation in said casing and with a leaf supporting device extending laterally from one end and adapted to rest against said rack, said shaft having a laterally extending crank arm within said casing and provided with processes on its opposite faces, and spring actuated members having rounded terminals adapted to alternately engage with the processes on said crank arm, to cause the alternate operation of said shaft and the leaf support carried thereby.

2. In a leaf turner, a casing, a rock-shaft mounted for movement through said casing with a turning knob at one end and a leaf supporting device at the other end, a laterally extending crank arm connected to said shaft within the casing, and spring actuated manuals carried by said casing and adapted to alternately engage said laterally extending crank arm to cause the action of said leaf turning device.

853,572. MAIL-BAG CATCHER. GLENN BENNER and BURR S. ROGERS, Lindsey, Ohio. Filed Aug. 1, 1906. Serial No. 328,779.



Claim.—1. A mail bag catcher comprising a rock shaft, a sleeve mounted upon the rock shaft and provided with a handle, a sleeve extending at an angle to the first mentioned sleeve, a hook mounted in the last mentioned sleeve and said hook provided with a slot, a lever pivoted in said slot and having terminal arms, one of which may be moved into an obstructing position across the mouth of the receiving hook, a spring latch seated in a recess in the sleeve and a terminal hook upon the obstruction arm for engaging said latch, substantially as described.

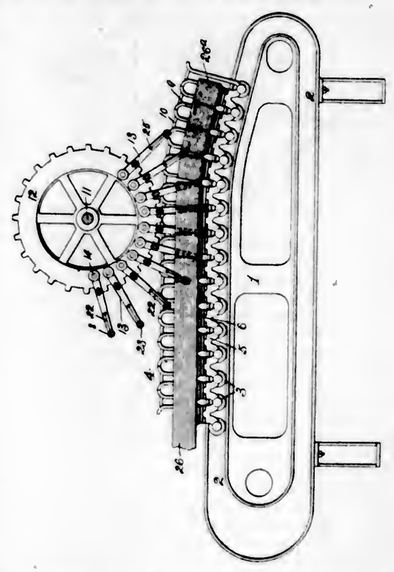
2. In a mail bag catcher, a body casting, a catcher-arm having a receiving hook connected with said casting and provided with a slot, a lever pivoted in said slot and having at one end an obstructing arm adapted to lie across the mouth of the hook and at the other end a bag-engaging arm that is confined within the slot when the former arm occupies an obstructing position, springs actuating the lever to swing the bag-engaging arm within the recess of the hook and the obstructing arm to a non-obstructing position, a spring catch within a recess in the body casting, a terminal hook upon the obstructing arm adapted to engage the spring catch, and means for moving the latter to a non-engaging position.

3. In a mail bag catcher, a body casting having a handle, a catcher-arm having a receiving hook connected with the body casting and provided with a slot, a spring-actuated lever pivoted in said slot and having an obstructing arm and a bag-engaging arm, a spring catch secured in a recess in the body casting and adapted for engagement with a terminal hook upon the obstructing arm, a trip lever pivoted in the body casting and having a spring catch engaging member at its inner end, and an arm at its outer end, a bell-crank pivoted upon the handle of the body member, and a link connecting one arm of said bell-crank with the arm at the outer end of the trip lever.

853,573. BRICK AND TILE CUTTING MACHINE. JACOB BENSING, Malinta, Ohio. Filed Aug. 23, 1906. Serial No. 331,705.

Claim.—1. In combination, a revoluble cutter-frame having guide-members at its extremities, a cutter-wire carried by the cutter-frame and off-set outwardly from the axes of the guiding-members, and an endless carrier comprising a plurality of pivotally connected sections each having a U-shaped guide standard inclined slightly from a perpendicular and adapted to effect a positive guiding of the cutter-wire both in its descending and ascending movements through a column.

2. In combination, a revoluble cutter-frame having guide-rollers at its ends, a cutter-wire carried by the cutter-frame and disposed at a greater radius from the axis of the cutter-frame than the axes of the guide-rollers, and an endless carrier comprising a plurality of flexibly connected sections each having a U-shaped guide standard at either end for coöperating with the guide-rollers, the upper terminals of which standards curve outwardly to abut the terminal of the standard of the contiguous section, said standards being slightly inclined from a perpendicular to cause the cutter-wire to follow a perpendicular course in its cutting movement and to move out of contact with the column end in its ascending movement.



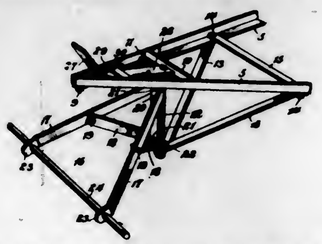
3. In combination a revoluble cutter-frame, guide-rollers carried at its extremities, a carrier having guide-standards associated therewith to coöperate with the guide-rollers of the frames to guide the frame extremities during a cutting and subsequent ascending movement, a cutting element carried at the extremities of the cutter-frame and having a greater radius than that of the axes of the guide-rollers relative to the axis of the cutter-frame whereby the cutting-element will have different planes of movement when making a cut and ascending therefrom.

4. In combination a revoluble cutter-frame, guide-rollers carried thereby, a cutter-wire carried by the cutter-frame and having a greater radius than that of the axes of the guide-rollers relative to the axis of the cutter-frame, and a carrier having members for coöperating with the guide-rollers of the frame to guide their cutting and subsequent ascending movements, said members being slightly inclined from a perpendicular relative to the carrier whereby to cause the cutter-wire to have a perpendicular cutting movement and an angled ascending movement after a cut.

5. The combination with a carrier having guide-standards inclined from a perpendicular relative to the attached carrier-section, of a revoluble cutter having a plurality of attached cutter-frames each carrying a cutter-wire and guide-rollers for coöperating with the guide-standards of the carrier, said cutter-wires having different radii than the axes of the guide-rollers relative to the axes of the cutter, whereby the cutter-wires have angular descending and ascending movements when making a cut.

6. The combination with a carrier having guide-standards provided with spaced parallel guide-arms, of a revoluble cutter carrying a plurality of U-shaped cutter-frames, a spindle fixed at the end of each frame arm and having its inner end formed with a flange provided with an outwardly disposed notch the depth of which is less than the radius of the flange, a guide-roller carried by each spindle to coöperate with the guide-standards of the carrier, and a cutter-wire spanning each cutter-frame and engaging the notches in the associated spindles whereby it is offset from the axes of the guide-rollers, substantially as described.

853,574. RIDING ATTACHMENT FOR AGRICULTURAL IMPLEMENTS. NICKLAS H. BLOOM, Nashua, Iowa. Filed June 29, 1905. Serial No. 267,572.



Claim.—1. In a riding attachment of the class described, the combination with convergently disposed reach bars, of a cross bar connecting the rear portions of the reach bars, an upright pivot bolt having its upper end connected to the cross bar, between the reach bars, braces connected to the lower end of the pivot bolt and to the reach bars, and a wheel frame mounted on the pivot bolt and having a free swinging movement with said bolt as an axis.

2. In a riding attachment of the class described, the combination with reach bars, of a pivot bolt disposed centrally between the reach bars and having its upper end connected thereto, divergent braces connected to the lower end of the pivot bolt and to the reach bars, and a freely swinging trailing wheel frame connected at its front end to the pivot bolt.

3. In a riding attachment of the class described, the combination with convergently disposed reach bars, of a cross bar connecting the rear portions of the reach bars, an upright pivot bolt having its upper end connected to the cross bar between the reach bars, divergent braces connected to the lower end of the pivot bolt and to the reach bars, a frame mounted on the pivot bolt and having a free swinging movement with said bolt as an axis, an axle carried by the frame, and spaced wheels journaled on the axle.

4. In a riding attachment of the class described, the combination with reach bars, of an upright pivot bolt connected thereto, a tapering frame having its tapered front end mounted on the pivot bolt, an axle carried by the wider rear end of the frame, and spaced wheels carried by the axle.

5. In a riding attachment of the class described, the combination with reach bars, of an upright pivot bolt connected thereto, a tapering frame having its tapered front end mounted on the pivot bolt, said frame including side arms, the rear ends of which are spaced apart, an axle connected to said rear ends and projecting outside the same, and wheels journaled on the projecting ends of the axle and being located outside the frame.

6. In a riding attachment of the class described, the combination with spaced reach bars, of a substantially upright pivot bolt located in an upright plane which lies between said bars, and a wheel frame including arms, an upright connected to the arms and having offset ears that are journaled on the pivot bolt, an axle carried by the frame, and spaced wheels journaled on the axle.

7. In a riding attachment of the class described, the combination with spaced reach bars, of a substantially upright pivot bolt disposed between the reach bars, and a wheel frame comprising angularly disposed arms formed of doubled straps, an upright strap located within and secured to the doubled straps, said upright strap having offset terminal ears journaled on the pivot bolt, an axle carried by the rear terminals of one of the straps and having its ends projecting beyond the outer sides thereof, and wheels journaled on said projecting ends.

8. In a riding attachment of the class described, the combination with convergently disposed reach bars having their rear ends connected, of a cross bar connecting the reach bars in advance of their connected ends, an upright pivot bolt having its upper end connected to the cross bar between the reach bars, divergently disposed braces connected at their lower ends to the pivot bolt and having their upper ends connected to the reach bars, a brace between the reach bars at the juncture of the pivot bolt braces therewith, a tapering wheel frame having its front end journaled on the pivot bolt, an axle carried by the wider rear end of the frame, spaced wheels journaled on the axle, and a seat supported on the reach bars.

9. In a riding attachment of the class described, the combination with reach bars having their rear ends connected, of a freely swinging trailing wheel frame pivoted to and between the reach bars, an axle carried by the rear portion of the frame and projecting on opposite sides of the reach bars, wheels journaled on said projecting portions, and a seat having a standard mounted on and secured to the reach bars.

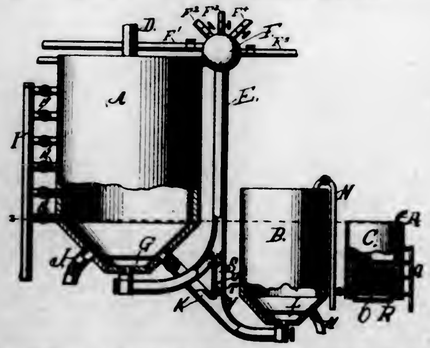
10. In a riding attachment of the class described, the combination with reach bars having their rear ends connected, of a cross bar connecting the reach bars in advance of their connected rear ends, a wheel frame supporting the rear ends of the reach bars, a seat having a standard that bears upon the rear ends of the reach bars and against the cross bar, and means for fastening the standard to said connected ends and to the cross bar.

11. In a riding attachment of the class described, the combination with reach bars, of a freely swinging trailing wheel frame pivotally connected to the reach bars in advance of their rear ends, an axle carried by the frame and projecting beyond opposite sides of the reach bars, wheels mounted on the projecting portions of the axle, and a seat supported on the reach bars in rear of said pivotal connection.

12. In a riding attachment of the class described, the combination with convergently disposed reach bars having their rear ends connected, of a cross bar connecting the reach bars in advance of their connected ends, a freely swinging wheel frame pivoted to the cross bar between the reach bars, a seat having a standard mounted on the connected rear ends of the bars in rear of said cross bar and a clip connected to the reach bars and engaging over the standard.

13. In a riding attachment of the class described, the combination with convergently disposed reach bars, of a wheel frame tapering in an opposite direction to the reach bars, and a pivot bolt connecting the convergently disposed portions of the reach bars and the tapered end of the frame.

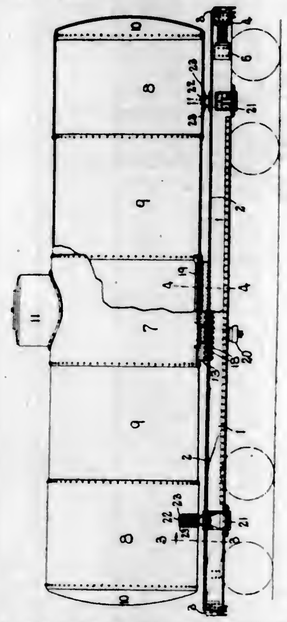
853,575. METHOD OF TREATING ORES. JAMES W. BOTLEAU, Denver, Colo., assignor of one-half to James B. Knoblock, Denver, Colo. Original application filed Feb. 25, 1902, Serial No. 95,626. Divided and this application filed Nov. 7, 1902. Serial No. 130,394.



Claim.—1. The method of treating ores which consists in putting the copper in solution by subjecting the ore in a pulverized condition to the action of a solution of an acid, salt and water in the presence of air under pressure.

2. The method of treating ores which consists in putting the copper in solution by subjecting the ore in a finely pulverized condition to the action of sulfuric acid, salt and water and to hot air under pressure.

853,576. TANK-CAR. THOMAS R. BROWN, New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Nov. 15, 1906. Serial No. 343,576.



Claim.—1. In a tank car, the combination with a tank, of a frame, and flexible connections between said tank and frame which allow the tank to expand or contract longitudinally; substantially as described.

2. In a tank car, the combination with a tank, of bolsters, and connections between said tank and bolsters which allow the tank to expand or contract longitudinally; substantially as described.

3. In a tank car, the combination with a tank, of a frame, and connections between said tank and frame, only one of which connections is rigid and another of which is flexible; substantially as described.

4. In a tank car, the combination with a tank, of a frame, and connections between said tank and frame, one of which connections is flexible; substantially as described.

5. In a tank car, the combination with a tank, of a frame, and rigid and flexible connections between said tank and frame; substantially as described.

6. In a tank car, the combination with a tank, of a frame including bolsters, and flexible connections between said tank and frame at the bolster points; substantially as described.

7. In a tank car, the combination with a tank, of a frame including bolsters, rigid connections between the tank and frame between the bolsters, and flexible connections between said tank and frame at the bolster points; substantially as described.

8. In a tank car, the combination with a tank, of a bolster, a saddle secured to said tank, and tank-supporting members which allow the tank to expand or contract longitudinally, said members being interposed between said saddle and bolsters; substantially as described.

9. In a tank car, the combination with a frame including bolsters, of a tank rigidly secured to a part of said frame, saddles secured to said tank, and tank-supporting members which allow the tank to expand or contract longitudinally, said members being interposed between said saddles and bolsters; substantially as described.

10. In a tank car, the combination with a tank, of a frame, and a hinge connection between said tank and frame; substantially as described.

11. In a tank car, the combination with a tank, of a frame, and rigid and hinge connections between said tank and frame; substantially as described.

12. In a railway car, the combination with underframing, of a tank rigidly secured at the center to said underframing and held at the ends by flexible means which permit the tank to expand or contract longitudinally; substantially as described.

13. In a railway car, a tank, and bolsters hinged to said tank; substantially as described.

14. In a tank car, the combination with a tank, of a frame including bolsters hinged to the tank, and a rigid connection between said tank and frame between the bolsters; substantially as described.

15. In a railway car, the combination with a car body, of body bolsters, and flexible connections between said car body and body bolsters; substantially as described.

16. In a railway car, the combination with a car body, of body bolsters, and hinge connections between said car body and body bolsters; substantially as described.

17. In a railway car, the combination with a tank, of body bolsters, and depending plates connected to the tank, the lower edges of said plates resting on the body bolsters; substantially as described.

18. In a railway car, the combination with a tank, of body bolsters, and depending plates connected to the tank, the lower edges of said plates resting on and secured to the body bolsters; substantially as described.

19. In a railway car, the combination with a tank, of body bolsters, saddles secured to the tank, and connections between said saddles and body bolsters which allow the tank to expand or contract longitudinally; substantially as described.

20. In a railway car, the combination with a tank, of body bolsters, saddles secured to the tank, and hinge connections between said body bolsters and saddles; substantially as described.

21. In a railway car, the combination with a tank, of body bolsters, saddles secured to the tank, and flexible connections between said body bolsters and saddles; substantially as described.

22. In a railway car, the combination with a tank, of body bolsters, saddles secured to the tank, and connections interposed between said body bolsters and saddles which allow the tank to expand or contract longitudinally; substantially as described.

23. In a railway car, the combination with underframing, of a tank rigidly connected to said underframing at the center in such a manner that its weight does not place a shearing stress on the securing means, and held at the ends by flexible means which allow the tank to expand or contract longitudinally; substantially as described.

24. In a railway car, the combination with underframing, of a tank rigidly connected at one place to said underframing in such a manner that its weight does not place a shearing stress on the securing means, and held at other places by flexible means which allow the tank to expand or contract longitudinally; substantially as described.

25. In a tank car, the combination with a tank, of longitudinal sills, a tank-support rigidly secured to the tank and to said longitudinal sills, said tank-support being held against vertical displacement by said sills without placing a shearing stress on the securing means, and flexible tank-supports for permitting the tank to expand or contract longitudinally; substantially as described.

26. In a tank car, the combination with a tank, of longitudinal sills, a tank-support rigidly secured to the center of the tank and to said longitudinal sills, said tank-support being held against vertical displacement by said sills without placing a shearing stress on the securing means,

and other tank-supports arranged adjacent the ends of the tank, for permitting the tank to expand or contract longitudinally; substantially as described.

27. In a tank car, the combination with a tank, of an underframe including a tank support extending longitudinally the tank, said tank support comprising a curved top portion, depending webs, and lower flanges; substantially as described.

28. In a tank car, the combination with a tank, of an underframe including a tank support extending longitudinally the tank, said pressed metal tank support comprising a curved top portion, depending webs, and lower flanges; substantially as described.

29. In a railway car, the combination with longitudinal sills, of a tank, and a tank-supporting member extending parallel to the longitudinal sills and having a curved top portion with depending webs and bottom flanges, said flanges being disposed outwardly and secured to the sills; substantially as described.

30. In a railway car, the combination with longitudinal sills, of a tank, and a tank-supporting member extending parallel to the longitudinal sills and having a curved top portion with depending webs and bottom flanges, said flanges resting on and secured to the longitudinal sills; substantially as described.

31. A telescopically constructed sectional tank, in combination with means for supporting the exteriorly arranged sections only; substantially as described.

32. A telescopically constructed sectional tank, the interiorly arranged sections of which have no extraneous supports; substantially as described.

33. In a railway car, the combination with longitudinal sills, of a tank comprising center, end and intermediate sections, and supports for said tank arranged under the last mentioned sections only; substantially as described.

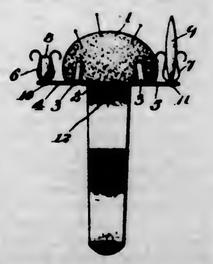
34. In a railway car, the combination with longitudinal sills, of a tank comprising center, end and intermediate sections, and supports connected to the end and intermediate sections that will permit the tank to expand or contract; substantially as described.

35. In a railway car, the combination with a frame, of a tank riveted to a part of said frame, tight cover plates secured over the area of riveting, and connections between said tank and frame which allow the tank to expand or contract longitudinally; substantially as described.

36. In a railway car, the combination with a frame, of a tank riveted to a part of said frame, tight cover plates secured over the area of riveting, and flexible connections between said tank and frame which allow the tank to expand or contract longitudinally; substantially as described.

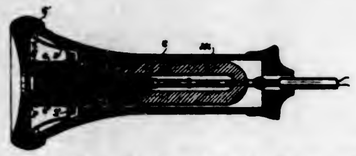
37. In a railway car, the combination with a frame, of a tank riveted to a part of said frame, tight cover plates secured over the area of riveting, and hinge connections between said tank and frame which allow the tank to expand or contract longitudinally; substantially as described.

853,577. IMPLEMENT-HOLDER. JOHN J. CONNELL, Lexington, Ky. Filed Mar. 12, 1906. Serial No. 305,686.



Claim.—The combination with a pin cushion, of a stamped metal plate upon which said cushion is mounted, said plate having a plurality of integral wings bent to engage and retain said cushion and having side extensions to project beyond the cushion, spring clips secured to the top of said side extensions to hold utensils, and a spring clip secured to the bottom of said plate, the latter clip comprising two oppositely curved resilient arms adapted to be sprung around the arm of an individual.

853,578. TELEPHONE-RECEIVER. ABNER F. H. DAVIS, Oakland, Cal., assignor to The National Telegraphone Company, Rochester, N. Y., a Corporation of the District of Columbia. Filed Nov. 23, 1905. Serial No. 288,671.



Claim.—1. The combination with an electro-magnetic telephone receiver, of a diaphragm therefor comprising solely a plate or disk of non-magnetic material, of relatively high electrical conductivity, substantially as set forth.

2. The combination with an electro-magnetic telephone receiver, of a diaphragm therefor comprising a plate or disk of non-magnetic material, of relatively high electrical conductivity, and means for closing the lines of magnetic force within the non-magnetic body of the diaphragm, substantially as set forth.

3. In a telephone receiver, a diaphragm formed solely of non-magnetic material, such as aluminium or brass, and an exciting electro-magnet positioned adjacent thereto, substantially as set forth.

4. In a telephone receiver, the combination with the electro-magnet thereof, of a diaphragm positioned before the magnet-poles comprising a non-magnetic conductive plate or member unassociated with any vibrating magnetic member, substantially as set forth.

5. In a non-inductively-affected telephone receiver, the combination with the exciting electro-magnet having windings thereon of relatively coarse wire to present a low resistance path for the telephonic currents, of a non-magnetic diaphragm positioned immediately before the poles of said electro-magnet, formed of brass or aluminium, and a shell or casing for securely positioning the parts in proper association with each other, substantially as set forth.

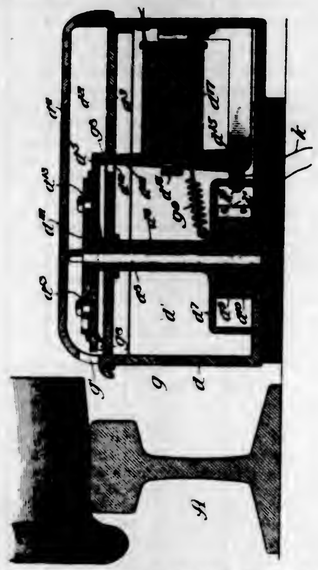
6. In a telephone receiver, a diaphragm formed of suitable non-magnetic material, an electro-magnet with its poles positioned adjacent thereto, and a detached magnetic body positioned to close the magnetic lines of force through the non-magnetic diaphragm, substantially as set forth.

7. In a telephone receiver, a diaphragm formed of suitable non-magnetic material, an exciting electro-magnet with its poles positioned adjacent thereto, and a magnetic bridge-piece disposed beyond one side of the diaphragm opposite the poles of the electro-magnet, and in position to close the lines of magnetic force therefrom, substantially as set forth.

8. In a telephone receiver, the combination with the permanent and electro-magnets thereof, of a diaphragm positioned immediately before the magnet poles comprising a non-magnetic plate of conducting material unassociated with any vibrating magnetic member, through which diaphragm the lines of magnetic force are adapted to be closed for producing sound waves, substantially as set forth.

853,579. ALARM-SIGNAL. ELLSWORTH E. FLORA, Chicago, Ill., assignor to Zorge Safety Railway Equipment Company, Chicago, Ill. Filed Mar. 8, 1906. Serial No. 304,919.

Claim.—1. The combination with a track-rail, of a torpedo-carrier operating to place a torpedo immediately above the rail, a spring serving to operate said torpedo-carrier, stops on the torpedo-carrier, a vibrating stop coacting with both of said first-named stops, a spring serving to move said vibrating stop in one direction, and an electro-magnet serving normally to hold said vibrating stop against the action of its spring.



2. The combination with a railway track, of a device for the purpose set forth, comprising a rotary torpedo-carrier, a spring tending to rotate said torpedo-carrier, stops arranged on different radii and moving with the torpedo-carrier, and a suitably controlled vibratory stop located to oscillate between and coact with said first-named stops.

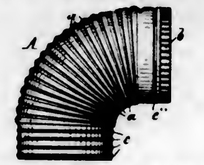
3. A device for the purpose set forth, comprising a casing having an upper chamber and a lower chamber, a torpedo-carrier housed in the upper chamber, a shaft extending through the torpedo-carrier and equipped at its lower end with an actuating spring, ratchet-wheel and pawl connection between the upper end of the shaft and the torpedo-carrier, stops carried by the torpedo-carrier, a substantially vertical vibratory stop, a spring tending to move said vibratory stop in one direction, a magnet tending to move said vibratory stop in the other direction, and a circuit for said magnet controlled with relation to the condition of a railway track.

4. The combination with a railway track having a movable switch-point, of a torpedo-carrier, potential means for actuating said carrier, an electro-magnet controlling the movement of the torpedo-carrier, and an electric circuit, or circuits, for said magnet having a make and break device controlled with relation to the movement of the switch-point and having also a train-controlled electric switch, for the purpose set forth.

5. The combination with a railway track having a movable switch-point, of a torpedo-carrier, a magnet controlling said torpedo-carrier, a branch circuit for said magnet connected with the switch-point, and a second branch circuit for said magnet having a train-actuated normally closed switch located on the opposite side of the detonating device to which the switch-point of the railway track is located, for the purpose set forth.

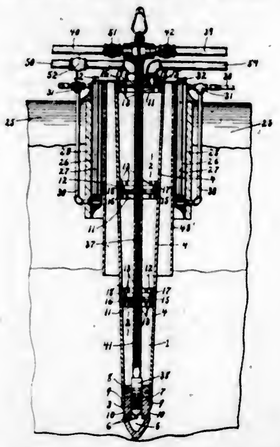
853,580. STOVEPIPE-ELBOW. JAMES F. FOSTER, Buffalo, N. Y. Filed July 26, 1904. Serial No. 218,227.

Claim.—A sheet metal elbow having a curved body portion and straight end portions, said end portions having beads formed therein which extend around the same and are of uniform size throughout the circumference thereof,



said beads projecting inwardly in one of said end portions and outwardly in the other, substantially as set forth.

853,581. APPARATUS FOR INSERTING PILES. GEORGE G. FRYER, Syracuse, N. Y. Filed Nov. 30, 1903. Renewed Oct. 18, 1906. Serial No. 339,575.



Claim.—1. In combination, a removable pile for entering the soil to provide a cavity for a permanent pile, said removable pile having an internal cavity, and means for supplying a refrigerating agent to the latter cavity to solidify the soil surrounding the removable pile and thereby preserve the wall of the permanent pile cavity after the withdrawal of the removable pile, substantially as and for the purpose described.

2. In combination, a removable pile for entering the soil to form a permanent pile-cavity, means for solidifying the soil adjacent to the pile and thereby forming a shell around the pile, and means associated with said pile for loosening the pile from said shell to permit withdrawal of the same, substantially as and for the purpose set forth.

3. In combination, a removable pile for entering the soil to provide a cavity for a permanent pile, means for decreasing the temperature of the removable pile and thereby solidifying the soil surrounding the pile and forming a shell around the same, and means for increasing the temperature of the removable pile and thereby melting the surface of said shell around the pile to permit withdrawal of said pile, substantially as and for the purpose specified.

4. In combination, a pile for entering the soil, said pile having an internal cavity and having its point formed with a passage communicating with the cavity and leading through the exterior surface of the point, means for supplying a fluid to the cavity, and means associated with the pile for preventing the escape of said fluid through the passage, substantially as and for the purpose specified.

5. In combination, a pile for entering the soil, said pile having its point formed with a passage leading through the exterior surface of the point, a conduit associated with the pile and communicating with the passage, and means

associated with the pile for preventing the communication of the conduit with the passage, substantially as and for the purpose described.

6. In combination, a pile for entering the soil, said pile having its point formed with a chamber and a passage leading from the chamber through the exterior surface of the point, a conduit associated with the pile and communicating with the chamber, and means associated with the pile for preventing the communication of the conduit with the chamber, substantially as and for the purpose set forth.

7. In combination, a pile for entering the soil, said pile having an internal cavity and having its point formed with a passage leading through the exterior surface of the point, a conduit arranged in the internal cavity and having means for communicating with the cavity and with said passage, means for supplying a fluid to the cavity and the conduit, and means for preventing the communication of the conduit with the passage, substantially as and for the purpose specified.

8. In combination, a removable pile for entering the soil to provide a cavity for a permanent pile, means for decreasing the temperature of the removable pile and thereby solidifying the soil surrounding the pile and forming a shell around the same, means for increasing the temperature of the removable pile and thereby melting the surface of said shell around the pile to permit withdrawal of said pile, and means supported by the pile for controlling the means for increasing and decreasing the temperature thereof, substantially as and for the purpose specified.

9. In combination, a pile for entering the soil, said pile having an internal cavity, means for supplying a refrigerating agent to the internal cavity, and means within the cavity for controlling the passage of said refrigerating agent, substantially as and for the purpose set forth.

10. In combination, a pile for entering the soil, said pile having an internal cavity and having its point formed with passages communicating with the cavity and leading through the exterior surface of the point, means for forcing a fluid under pressure through the passages and thereby facilitating the entrance of the pile into the soil, and means for supplying a refrigerating agent to the internal cavity, substantially as and for the purpose described.

11. In combination, a pile for entering the soil, said pile having an internal cavity and having its point formed with a chamber and passages leading from the chamber through the exterior surface of the point, means for forcing a fluid under pressure into the chamber and through the passages and thereby facilitating the entrance of the pile into the soil, and means for supplying a refrigerating agent to the internal cavity, substantially as and for the purpose specified.

12. In combination, a pile for entering the soil, said pile having an internal cavity and having its point formed with passages leading through the exterior surface of the point, means for forcing a fluid under pressure through the passages and thereby facilitating the entrance of the pile into the soil, means for supplying a refrigerating agent to the internal cavity, and means for preventing the passage of the refrigerating agent from the internal cavity to the passages of the point, substantially as and for the purpose set forth.

13. In combination, a pile for entering the soil, said pile having an internal cavity, a conduit extending lengthwise of the pile and having an opening for communicating with the cavity, and means for opening and closing communication between the cavity and the conduit, substantially as and for the purpose described.

14. In combination, a pile for entering the soil, said pile having an internal cavity and having its point formed with passages leading through the exterior surface of the point, a conduit extending lengthwise of the pile within the cavity and having an opening for communicating with the passages, means for forcing a fluid under pressure through the conduit and the passages and thereby facilitating the entrance of the pile into the soil, means for supplying a refrigerating agent to the internal cavity, and means for preventing communication between the internal cavity and the passages and for preventing the flow of the fluid under pressure from the passages, substantially as and for the purpose described.

15. In combination, a pile for entering the soil, said pile being provided with a removable point, and means for solidifying the soil surrounding the pile above the point, substantially as and for the purpose specified.

16. In combination, a pile for entering the soil, said pile being provided with a removable point formed with a chamber and an opening extending from the chamber through an upper face of the point, and means for solidifying the soil surrounding the pile above the point, substantially as and for the purpose set forth.

17. In combination, a pile for entering the soil, said pile being provided with an internal cavity and with a removable point formed with a chamber, passages leading from the chamber through the exterior surface of the point, and an opening extending from the chamber through an upper face of the point and communicating with the cavity, a conduit for communicating with the chamber, means within said opening for controlling the communication between the conduit and the chamber, means for supplying a fluid under pressure through the conduit, the chamber and the passages and thereby facilitating the entrance of the pile into the soil, and means for supplying a refrigerating agent to the cavity for freezing the soil around the pile above the removable point, substantially as and for the purpose described.

18. In an apparatus for making openings in submerged soil and the overlying liquid, the combination of a pile, a shell surrounding the portion of the pile within the liquid and having its inner face separated from the pile for forming a space to receive a solidifiable material, and means for solidifying the surface of the soil and said material surrounding the pile and forming a shell around the pile, substantially as and for the purpose specified.

19. In an apparatus for making openings in submerged soil and the overlying liquid, the combination of a pile having an internal cavity, a shell surrounding the portion of the pile within the liquid and having its inner face separated from the pile for forming a space to receive a material solidifiable by freezing, and means for supplying a refrigerating agent to the cavity and thereby freezing the soil adjacent to the pile and also said solidifiable material and forming a shell around the pile, substantially as and for the purpose set forth.

20. In an apparatus for making openings in submerged soil and the overlying liquid, the combination of a pile having an internal cavity, a shell surrounding the portion of the pile within the liquid and having its inner face separated from the pile for forming a space to receive a material solidifiable by freezing, means for supplying a refrigerating agent to the cavity and thereby freezing the soil adjacent to the pile and also said solidifiable material and forming a shell around the pile, and means for supplying a heating agent to the cavity of the pile for melting the surface of said shell contiguous to the pile and thereby permitting withdrawal of the pile, substantially as and for the purpose described.

21. In an apparatus for forcing piles into submerged soil, the combination of a pile, a float, and means associated with the float for causing movement of the pile in reference to the float whereby the weight of the float acts to force the pile into the soil, substantially as and for the purpose specified.

22. In an apparatus for forcing piles into submerged soil, the combination with two members, one comprising a pile and the other a float; of a cylinder connected to one of said members, a piston movable in the cylinder and connected to the other member, and means for supplying a fluid under pressure to the cylinder, substantially as and for the purpose set forth.

23. In an apparatus for forcing piles into submerged soil, the combination with two members, one comprising a pile and the other a float; of a cylinder connected to the float, a piston movable in the cylinder, an engaging member connected to the piston and movable into engagement with the pile, and means for supplying a fluid under pressure to the cylinder, substantially as and for the purpose described.

24. In an apparatus for forming piles in moist soil, the combination of a pile for entering the soil, means for forcing the pile into the soil, means for solidifying a shell around the pile, means for withdrawing the pile from said shell, and means for filling cement into said shell, substantially as and for the purpose described.

25. The herein described process of making openings in unstable soil, the same consisting in forcing a pile into the soil, solidifying the surface of the soil adjacent to the pile and thereby forming a shell around the pile, and finally withdrawing the pile from said shell, substantially as and for the purpose specified.

26. The herein described process of making openings in unstable soil, the same consisting in forcing a pile into the soil, freezing the surface of the soil adjacent to the pile and thereby forming a shell around the pile, and finally withdrawing the pile from said shell, substantially as and for the purpose set forth.

27. The herein described process of making openings in unstable soil, the same consisting in forcing a hollow pile into the soil, subjecting the surface of the soil adjacent to the pile to the influence of a refrigerating agent within the interior of the pile and thereby forming a shell around the pile, and finally withdrawing the pile from said shell, substantially as and for the purpose set forth.

28. The herein described process of making openings in unstable submerged soil and the superimposed liquid, the same consisting in forcing a pile into the soil, surrounding the portion of the pile within the liquid with a solidifiable material, solidifying the surface of the soil and of said material adjacent to the pile and thereby forming a shell around the pile, and finally withdrawing the pile from said shell, substantially as and for the purpose described.

29. The herein described process of making openings in unstable soil, the same consisting in forcing the soil from the lower end of the pile and thereby facilitating the entrance of said end into the soil, solidifying the surface of the soil adjacent to the pile and thereby forming a shell around the pile, and finally withdrawing the pile from said shell, substantially as and for the purpose specified.

30. The herein described process of making openings in unstable soil, the same consisting in forcing a pile into the soil, solidifying the surface of the soil adjacent to the pile and thereby forming a shell around the pile, decreasing the solidity of the surface of said shell contiguous to the pile, and finally withdrawing the pile from said shell, substantially as and for the purpose described.

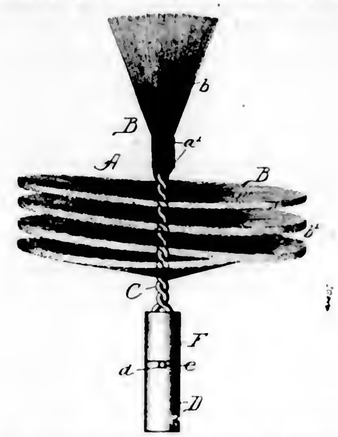
31. The herein described process of making openings in unstable soil, the same consisting in forcing a hollow pile into the soil, subjecting the surface of the soil adjacent to the pile to the influence of a refrigerating agent within the interior of the pile and thereby forming a shell around the pile, subjecting the surface of said shell contiguous to the pile to the influence of a heating agent within the interior of the pile, and finally withdrawing the pile from said shell, substantially as and for the purpose specified.

32. The herein described process of making piles in unstable soil, the same consisting in forcing a pile into the soil, solidifying the surface of the soil adjacent to the pile and thereby forming a shell around the pile, withdrawing the pile from said shell, and inserting a filler into said shell, substantially as and for the purpose set forth.

853,582. BOTTLE-WASHER BRUSH. BERNARD GOHRBAND, Chicago, Ill., assignor to E. Goldman & Co., Inc., Chicago, Ill., a Corporation of Illinois. Filed Jan. 25, 1906. Serial No. 297,811.

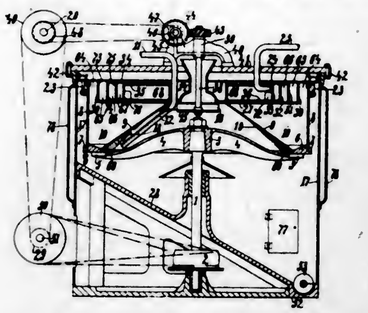
Claim.—1. In combination, a stem provided on one end with brush-fiber and on its opposite end with an eye, a spindle-end provided in its top with a recess and having a slotted neck extending from it, a yoke having its ends bent outwardly to present feet adapted to be inserted through said slotted neck and seat in said recess, and a collar on said neck clamping said feet in said recess, said yoke being loosely connected with the brush-stem at its eye to adapt the brush to swing freely, in rotating it, about the axis of the spindle.

2 In combination, a stem provided on one end with brush-fiber and on its opposite end with an eye, a spindle-end provided in its top with a recess and having a slotted externally-threaded neck extending from it, a yoke having its ends bent outwardly to present feet adapted to be inserted through said slotted neck and seat in said recess,



and a nut of greater length than said neck screwed upon the neck and clamping said feet in said recess, said yoke being loosely connected with said stem at its eye to adapt the brush to swing freely, in rotating it, about the axis of the spindle.

853,583. CENTRIFUGAL MACHINE. MAX GÜTTNER, Chemnitz, and RICHARD BAEGER, Ehrenberg, near Altenburg, Germany. Filed July 6, 1905. Serial No. 268,296.



Claim.—1. In a centrifugal apparatus the combination of a rotatable annular perforated wall, a rotatable distributer arranged centrally in the space inclosed by said wall adjacent the upper part thereof, said wall forming with the plane of said distributer the angle of friction of the returns thrown against the same.

2. In a centrifugal apparatus the combination of a rotatable annular perforated wall, a rotatable distributer arranged centrally in the space inclosed by said wall and adjacent the upper part of the same, said wall forming with the plane of said distributer the angle of friction of the returns thrown against the same, and an inwardly projecting annular flange joined to said wall at the lower end thereof.

3. In a centrifugal apparatus, the combination of an annular perforated wall adapted to to be rotated by means of a vertical shaft, a rotatable distributer arranged centrally in the space inclosed by said wall adjacent the upper part of the same, said wall forming with the plane of said distributer the angle of friction of the returns thrown

against the same, and independent means for revolving said distributer at a speed differing from that of the said perforated wall.

4. In a centrifugal apparatus the combination of an annular perforated wall adapted to be rotated by means of a vertical shaft, a rotatable distributer arranged centrally in the space inclosed by said wall adjacent the upper part of the same, said wall forming with the plane of said distributer the angle of friction of the returns thrown against the same, a closed jacket tightly inclosing the apparatus and means for regulating the circulation of air through the apparatus.

5. In a centrifugal apparatus, the combination of an annular perforated wall adapted to be rotated by means of a vertical shaft, a rotatable distributer arranged centrally in the space inclosed by said wall adjacent the upper part of the same, said wall forming with the plane of said distributer the angle of friction of the returns thrown against the same, a closed jacket tightly inclosing the apparatus and means for heating said jacket.

6. In a centrifugal apparatus, the combination of a revoluble cylinder, a perforated annular wall arranged therein in spaced concentric relation and revoluble therewith, means for throwing returns against the inner surface of said wall in its revoluble movement, a plurality of angular concentric walls arranged between said first named wall and affording concentric chambers, said last named walls communicating with one another alternately adjacent to their upper and lower edges and a conductor leading from the innermost of said chambers thus formed.

7. In a centrifugal apparatus, the combination of a rotatable cone shaped downwardly flaring perforated wall, a rotatable distributer arranged centrally in the space inclosed by said wall adjacent the upper part thereof, said wall forming with the horizontal plane the angle of friction of the returns thrown against the same.

853,584. METALLIC BOLSTER. GUSTAV A. HASSEL, McKeesport, Pa., assignor to Pittsburgh Equipment Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Mar. 2, 1907. Serial No. 360,140.



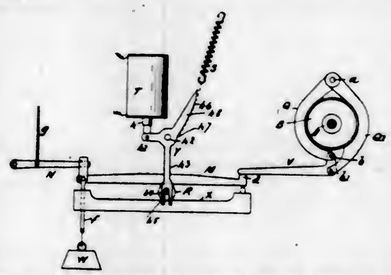
Claim.—1. A metallic-bolster comprising a compression-member provided with a plurality of openings near each end, a tension-member provided with a plurality of openings corresponding to the openings of the compression-member and arranged to register therewith, and an end-member formed with a side-bearing-member cast on the ends of the compression and tension-members having its metal entering the registered openings of the compression and tension-members.

2. A metallic-bolster comprising a compression-member of channel-form having openings located near each end and between its flanges, a tension-member having openings corresponding to the openings of the compression-member and arranged to register therewith, and an end-member formed with a side-bearing-member cast on the ends of the compression and tension-members having its metal entering the registered openings of the compression and tension-members.

3. A metallic-bolster comprising a compression-member, a tension-member, and an end-member casting formed with a side-bearing-member cast on the ends of the compression and tension-members.

4. A metallic-bolster comprising a compression-member, provided with an opening near each end, a tension-member provided with an opening near each end corresponding to the openings of the compression-member and arranged to register therewith, and an end-member casting formed with a side-bearing-member cast on the ends of the compression and tension-members and having its metal entering the registered openings thereof.

853,585. CONTROLLING DEVICE FOR ELECTRICALLY-DRIVEN MACHINERY. FREDERIC O. HUNT, Darlington, England. Filed Feb. 28, 1906. Serial No. 303,340.

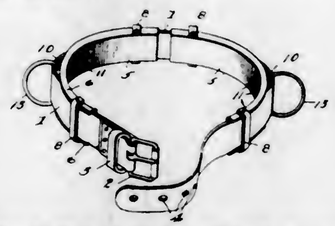


Claim.—1. An ammeter type of brake regulator connected in the armature circuit of electrically driven machinery and comprising means of controlling resistances depending upon the value of the current required to move the load.

2. In an electric device for regulating a brake and connected in the circuit supplying the current to the electric motor, the contact maker of a rheostat magneto-electrically controlled by the amount of current required to move the load and designed to include a requisite resistance in the armature circuit during the period of applying the brake for the purpose of making the dynamic action of the motor, when stopping, a minimum or a maximum to suit requirements.

3. In an electric elevator system in which the hoisting device is operated by an electric motor, the combination with the electric motor of an operative electric circuit, a brake and a brake regulating device, the latter being placed in the armature circuit of the motor and designed to act as a current controller to the latter.

853,586. HORSE-GUIDING BELT. ALBIN JOHNSON and CARL A. GUSTAFSON, Moline, Ill. Filed Nov. 9, 1906. Serial No. 342,762.

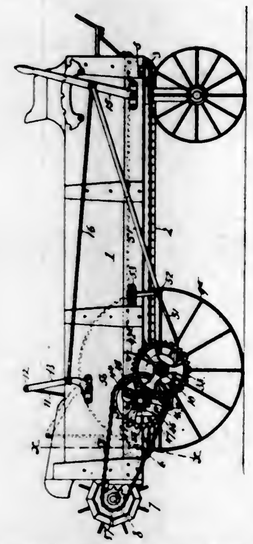


Claim.—A device of the type set forth comprising disconnected rigid curved sections, having outwardly extending confronting flanged upper and lower edges, a belt loosely held between said flanged edges and fastening rings carried by each of said sections and loosely surrounding said belt.

853,587. MANURE-SPREADER. CHARLES JOHNSON, Auburn, N. Y. Filed Aug. 6, 1906. Serial No. 329,328.

Claim.—1. A beater-actuating mechanism comprising a gear-wheel receiving motion from the traction-wheel, an elongated plate pivotally supported at one end and shiftable longitudinally on its support, a pinion pivoted on said plate, means for swinging and shifting the plate to carry the pinion to and from engagement with the aforesaid gear-wheel, and means for transmitting motion from the pinion to the beater as set forth.

2. A beater-actuating mechanism comprising a gear-wheel receiving motion from the traction-wheel, an elongated plate pivotally supported at one end and shiftable longitudinally on its support, a pinion pivoted on said plate, an eccentric imparting a swinging and longitudinal movement to the plate to carry the pinion to and from engagement with the aforesaid gear-wheel, and means for transmitting motion from the pinion to the beater as set forth.



3. The combination, with the body, of arms pivoted at one end to the sides of said body and formed at their free ends with inwardly projecting bearings disposed to contact with the top of the body and thereby limit the descent of the arms, the end-board suspended from said arms, a hand-lever pivoted to the body and a rod connecting said hand-lever to the central portion of one of the aforesaid arms.

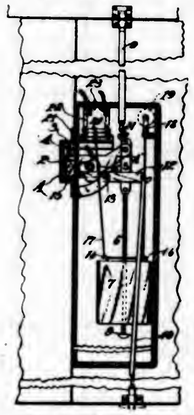
4. A beater-actuating mechanism comprising a gear-wheel receiving motion from the traction-wheel, a stationary bracket, an elongated plate pivoted at one end on said bracket and movable longitudinally on its pivot, an eccentric pivoted to the bracket and imparting lateral and longitudinal movement to the plate, a pinion pivoted to the plate and carried thereby to and from engagement with the aforesaid gear-wheel, an arm extending from the eccentric, a rod connected to said arm, and a hand-lever connected to said rod as set forth.

853,588. DOOR-RELEASING MECHANISM. EDWARD KAUNTZE, Hanford, Cal. Filed July 11, 1906. Serial No. 325,652.

Claim.—1. A door releasing device, said device consisting of a pivoted latch turnable upon one member of a door structure, a vertically slotted keeper upon the other member, bolts by which the door leaves are independently secured, and connections between the pivoted latch and said bolts whereby the latch and bolts are movable in unison, a destructible cord associated with said connections, and a means contiguous to said cord adapted to be heated sufficiently to destroy the cord and release said connections.

2. In a door releasing device, a pivoted vertically turnable latch carried upon one leaf of the door, a keeper upon the other leaf in which the latch engages, bolts by which the leaves of the door are independently locked when closed, connections between said bolts and the latch whereby the unlocking movement of the latch is transmitted to simultaneously disengage the bolts, a destructible cord associated with said connections, and a heating medium contiguous to said cord adapted to destroy the same and release the connections.

3. In a door-releasing device, a pivoted latch carried upon one leaf of the door, and a vertically slotted keeper upon the other leaf, said latch having a rearward extension, a link pivoted to said extension having a rod with a stop upon the lower end, a weight slidable upon the rod acting when released to disengage the latch, a vertically movable locking bolt carried upon the door and adapted to engage the door casing, a flexible connection by which the weight is normally suspended, and a heating medium proximate to said flexible connection adapted to destroy the latter and release the weight.



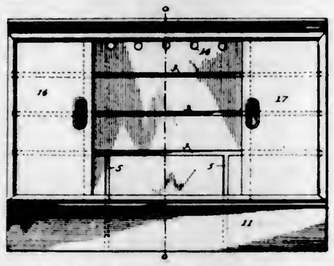
4. In a door locking and releasing device, a pivoted latch upon one leaf of the door and a keeper therefor upon the other leaf, a link with which the inner end of the latch connects, a rod connected with the link having a stop at its lower end, a normally suspended weight slidable upon the rod, and arrested by the stop at the lower end whereby the link may be pulled down and the latch turned and disengaged, bolts extending upwardly and downward upon the door leaf to engage with the top and bottom of the casing connections between the said bolts and the link and latch, whereby the bolts are disengaged in unison with the latch, a cord by which the weight is suspended, and a heating medium proximate to the cord adapted to destroy the same and release the weight.

5. In a door releasing device, a pivoted latch and keeper located respectively upon the contiguous edges of the door leaves, a slidable weight-actuated link, an upwardly extending bolt connected therewith and normally locking one leaf of the door, an inwardly extending pivoted arm in engagement with the latch, a bolt connected with the inner end of said arm and normally engaging the bottom of the door casing, a cam connected with the latch and adapted to engage with the pivoted arm when the latch is turned to disengage it, whereby the locking bolts are withdrawn, a cord by which the weight is normally suspended, and a heating medium proximate to the cord and adapted to destroy the same and release the weight.

6. A door locking and releasing device including a latch pivoted to one leaf, and a keeper upon the other leaf, bolts slidable upwardly and downwardly upon the first leaf to engage with the top and bottom of the door casing respectively, connections by which the latch and bolts are simultaneously disengaged, said connections including a slidable link connected with the rear of the latch, a rod having a stop at its lower end, a weight slidable upon said rod and acting to move the rod and link downward when it contacts with the stop, a flexible connection between the link and the upwardly extending bolt, an arm pivoted contiguous to the latch having its inner end connected with the downwardly extending bolt, a cam carried by the latch acting to tilt said arm and withdraw the bolt in unison with the disengaging of the latch and the upper bolt, and a heating medium proximate to the cord and adapted to destroy the same and release the weight.

7. In a door releasing device, a pivoted latch carried upon one leaf of the door, and a keeper upon the other leaf, a link with which the inner end of the latch is connected, a rod connected with the link having a stop upon its lower end, a weight slidable upon the rod, vertically movable bolts by which the top and bottom of the door are locked, connections between said bolts and the latch whereby they are disengaged in unison therewith, a destructible cord by which the weight is normally suspended an electrically heated part with which the cord is maintained in contact, and means for completing an electric circuit whereby the heating of said part destroys the cord and releases the weight.

853,589. WINDOW-REFRIGERATOR. BERTHOLD MEYER, New York, N. Y. Filed July 5, 1906. Serial No. 324,740.



Claim.—In a window refrigerator, a box embodying a back, sides, a top, and a front, said front comprising end sections and sliding doors, the said back, the sides and the end sections of the front being provided with registering horizontal grooves, shelves slidably mounted in said grooves, and a depending extension projecting below the bottom of the box at the rear portion thereof, the front and rear walls of said extension having vertical grooves separating the extension into a plurality of compartments, substantially as described.

853,590. PRINTING-PRESS. BENJAMIN W. MORGAN, Tampa, Fla., assignor to Simplex Press Company, Atlanta, Ga., a Corporation of Georgia. Filed Apr. 15, 1903. Renewed June 7, 1906. Serial No. 320,606.

Claim.—1. In a printing press, the combination with a hanger, of a cylinder suspended from and located beneath the hanger, separate devices, each engaged with one end of the hanger above the cylinder for effecting the raising and lowering of the cylinder, and a bed coacting with the cylinder.

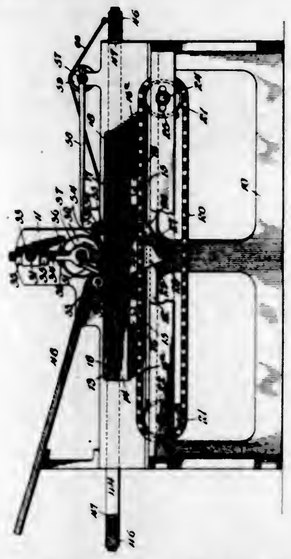
2. In a press, the combination with a frame, of a transversely disposed vertically movable hanger bar mounted on the frame, hanger arms suspended from and beneath the bar, a cylinder journaled on the arms, means for elevating the bar and a bed coacting with the cylinder.

3. In a press, the combination with a frame, of a vertically movable hanger bar mounted thereon, hanger arms adjustably mounted on the bar, a cylinder journaled on the arms and a bed coacting with the cylinder.

4. In a press, the combination with a frame, of a hanger bar mounted thereon having openings therethrough, hanger arms having their upper ends passed through the openings, nuts threaded on said ends, a cylinder journaled in the lower ends of the arms and a bed coacting with the cylinder.

5. In a press, the combination with a bed, of swinging levers located on opposite sides of the bed and having cam surfaces at their upper ends, said surfaces being disposed above the horizontal plane of the bed, a hanger frame having at its upper portion devices which engage the cam surfaces, a cylinder suspended in the frame and coacting with the bed, and means actuated by the bed for effecting the movement of the levers.

6. In a press, the combination with a bed, of a cylinder, means for elevating the cylinder, said means including a swinging lever having a connection with the cylinder, an actuating bar located longitudinally of the bed, and a connection between the bar and lever.



7. In a press, the combination with a bed, of a cylinder, means for elevating the cylinder, said means including a swinging lever having a cam connection at its upper end, and actuating means having a connection with the lower end of the lever and located in the path of movement of the bed.

8. In a press, the combination with a vertically movable cylinder, of a reciprocatory bed, and means for elevating the cylinder, said means including a movable yoke having its ends located in the path of movement of the bed.

9. In a press, the combination with a frame, of a vertically movable cylinder mounted on the frame, a reciprocatory bed, and means for elevating the cylinder, said means including a movable yoke mounted on the frame and movable longitudinally of the bed, said yoke having its ends extending across the ends of the bed and operated in opposite directions by the movement of said ends.

10. In a press, the combination with a supporting frame, of swinging levers mounted on the frame and having cam slots in their upper ends, a hanger frame having ends engaged in the slots, a cylinder journaled on the hanger frame, a reciprocatory bed mounted on the supporting-frame, and a yoke slidably mounted on the supporting frame and surrounding the bed, said yoke having link connections with the levers.

11. In a press, the combination with a vertically movable cylinder, of a gage vertically movable therewith, means for effecting the simultaneous movement of the cylinder and gage, and a bed coacting with the cylinder.

12. In a press, the combination with a feed table, of a cylinder located at one end thereof and movable in an upright direction, a gage movable with the cylinder, said gage being exposed when the cylinder is elevated and depressed when it is lowered and a bed coacting with the cylinder.

13. In a press, the combination with a cylinder-suspending frame movable in an upright direction, of a gage having a connection with the frame and elevated thereby, a cylinder journaled in the frame, and a bed coacting with the cylinder.

14. In a press, the combination with a cylinder-suspending frame movable in an upright direction, of a gage, a link connection between the gage and frame, a cylinder carried by the frame, and a bed coacting with the cylinder.

15. In a press, the combination with a feed table, of a vertically movable cylinder-suspending frame located at the end of the table, a carrier bar also arranged at the end of the table and having gage stops thereon, links connecting the ends of the carrier bar and the frame, a cylinder journaled in the frame, and a bed coacting with the cylinder.

16. In a press, the combination with a cylinder, of a bed coacting therewith, a feed table having its upper end disposed contiguous to the coacting portions of the bed and cylinder, and a guide strip extending from the table between the said bed and cylinder.

17. In a press, the combination with a cylinder, of a bed coacting therewith, a feed table having its delivery end disposed contiguous to the cylinder and at one side of the latter, a support located over the bed at the opposite side of the cylinder, and guide strips connecting the table and support and passing between said bed and cylinder.

18. In a press, the combination with a feed table, of a cylinder located at one end thereof, a bar arranged on the side of the cylinder opposite the feed table, a guide-strip extending from the table beneath the cylinder to the bar and a bed coacting with the cylinder.

19. In a press, the combination with a coacting bed and cylinder, of a guide strip extending between the same, and an endless tape passing between the bed and cylinder and coacting with the strip.

20. In a press, the combination with a coacting bed and cylinder, of a guide strip extending between the same, and a movable endless tape passing between the bed and cylinder and having an upper stretch located upon the strip and beneath the cylinder.

21. In a press, the combination with a coacting bed and cylinder, of supporting devices located on the opposite sides of the cylinder, a guide strip secured to the supporting devices and extending between the bed and cylinder, pulleys journaled on opposite sides of the cylinder contiguous to the strip, and an endless tape passing about the pulleys, one stretch of said tape being located beneath the strip, the other being located thereupon.

22. In a press, the combination with a cylinder, of supporting rods located on opposite sides of the cylinder, a strip secured to the rods and extending beneath the cylinder, an endless tape passing beneath the cylinder and on opposite sides of the strip and a bed coacting with the cylinder.

23. In a printing press, the combination with a cylinder, of a reciprocatory bed coacting with and movable beneath the cylinder, means for moving the bed, an oscillatory fly-frame having a pulley, an actuating device moved in opposite directions by the bed, and a cable wrapped upon the pulley of the fly-frame and having its ends connected to said device to rotate the pulley in reverse directions.

24. In a printing press, the combination with a cylinder, of a reciprocatory bed coacting with the cylinder, means for reciprocating the bed, a yoke surrounding the bed and having its ends located in the path of movement of the same, said yoke being moved in opposite directions by the bed, an oscillatory fly-frame, and a connection between the yoke and fly-frame whereby the latter is operated upon the movement of the former.

25. In a printing press, the combination with a feed table, of a reciprocatory bed operating beneath the same, a vertically movable revoluble cylinder, continuous guide strips extending from the table between the bed and cylinder and directing the paper from the table between said bed and cylinder, and means for automatically raising and lowering the cylinder to carry the same toward and from the guide strips.

26. In a press, the combination with a feed table, of a vertically movable revoluble cylinder arranged at one end thereof, a bed movable beneath the cylinder, guides extending from the table and interposed between the bed and cylinder, said guides being held against vertical movement with the latter, and means for automatically raising the cylinder away from and lowering it toward the guides at predetermined intervals.

27. In a printing press, the combination with a frame having spaced longitudinally disposed tracks, of a reciprocatory bed having on its under face, sets of spaced tracks, located respectively contiguous to its opposite sides, said tracks being disposed above and on opposite sides of the frame tracks, and a plurality of bearing wheels having their peripheries running on each frame track and journals running on the under sides of the spaced bed tracks, the upper portions of said wheels being located between said spaced tracks.

28. In a press, the combination with a reciprocatory bed, of a revoluble cylinder, and a cushion located on the bed and arranged to bear against the cylinder in advance of a form located on the bed.

29. In a press, the combination with a reciprocatory bed, of a revoluble cylinder, and a cushion adjustably mounted on the bed and arranged to bear against the cylinder in advance of a form located on the bed.

30. In a press, the combination with a reciprocatory bed, of a revoluble cylinder coacting therewith, guides interposed between the bed and cylinder, and a cushion arranged on the bed and adapted to bear against the cylinder in advance of a form located on the bed.

31. In a printing press, the combination with a bed, of a cylinder coacting therewith and movable toward and from the bed, means for thus moving the cylinder, guides interposed between the bed and cylinder, and paper gages movable into and out of coaction with the cylinder, said gages coacting with said cylinder when the same is elevated.

853,591. CRAVAT-HOLDER. VALFRID NILSSON, Stockholm, Sweden, assignor to The Firm of C. O. Rydholm & Co., Stockholm, Sweden. Filed Dec. 11, 1905. Serial No. 291,271.

Claim.—1. A cravat holder comprising a main body portion provided with a button gripping device and split into two parts to permit of yielding action in gripping the button, and a resilient member associated with said split body portion.

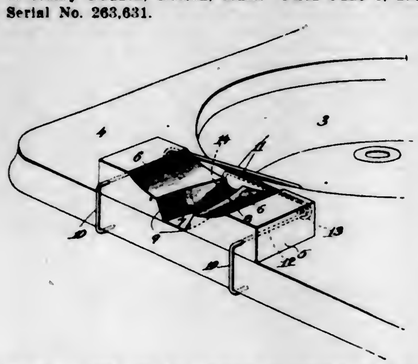
2. A cravat holder comprising a main body portion provided with an open button gripping slot having a relatively contracted entrance and an enlarged base portion, the holder being split from the slot outwardly into two parts, and a spring connecting said split portions.

3. A cravat holder comprising a main body portion provided with an open button gripping slot, the holder being split from the slot outwardly into two parts, and a spring uniting said split portions.

4. A cravat holder comprising a main body portion provided with an open button gripping slot, the holder being split from the slot outwardly and having a portion of its periphery of circular formation recessed with respect to the body portion of the holder, and a resilient wire fixed in said recess and uniting the split portions of said holder.

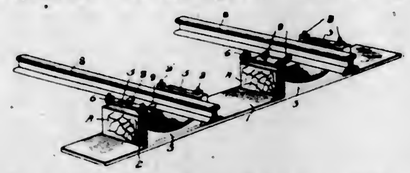
5. A cravat holder comprising a main body portion provided with an open button gripping slot, said portion being split from the slot outwardly and having a portion of its periphery of circular formation recessed with respect to the body portion of the holder, and a resilient wire fixed in said recess and uniting the split portions of said holder, the slotted portion of said holder being depressed to receive the head of the button.

853,592. HEAD-REST FOR USE IN SHAMPOOING. RUFUS C. NOURSE, Boston, Mass., assignor of one-half to Henry Budden, Boston, Mass. Filed June 3, 1905. Serial No. 263,631.



Claim.—A head-rest for shampooing, comprising a block to rest on the marble-slab of a set-bowl, said block being provided on its upper face with a nose-receiving recess, clips projecting from one edge of the block and adapted to hook over the edge of the marble-slab, and yielding fingers projecting from the opposite edge of said block and adapted to engage the edge of the opening in said marble-slab.

853,593. RAILWAY-TIE. JAMES G. PARKERSON, Jr., La Fayette, La. Filed Mar. 13, 1907. Serial No. 362,200.



Claim.—1. A railway tie, comprising a base member, pairs of vertical bolts upon each side and integral with said base member, reinforcing webs integral with said base member and the lower portion of the bolts of the pairs, removable blocks carried by said base member and positioned between the pairs of bolts, removable bars engaging the upper ends of said bolts and resting upon said blocks, and means for holding said bars against said blocks and upon said bolts.

2. A railway tie, comprising a base member, a plurality of pairs of bolts integral with said base member near each end, reinforcing means connecting the bolts of each pair, a block positioned between the pairs of bolts near each end, removable bars provided with apertured ends, positioned upon the upper ends of said bolts and resting upon said blocks, and nuts threaded upon the upper end of said bolts and engaging said bars and clamping the same against said blocks.

3. A railway tie, comprising a flat base member, a pair of bolts positioned upon each side and contiguous to each end of said base member, blocks positioned between the pairs of bolts near each end, removable bars carried by said bolts and extending across said blocks, and means clamping said bars against said blocks.

4. A railway tie, comprising a base member provided upon each side near each end with a pair of integral bolts, a web integral with the base member and the bolts of each pair, blocks positioned between the pairs of bolts near each end, means engaging said blocks and connecting the bolts of the pairs upon opposite sides of said base member, and means for securing said connecting means securely against said blocks.

5. A railway tie, comprising a base member provided with integral bolts, reinforcing means connecting said base member and some of said bolts, blocks positioned between some of said bolts, and means connecting some of said bolts and engaging said blocks.

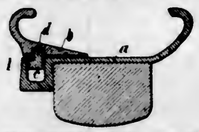
6. A railway tie, comprising a base member, bolts carried by said base member and provided with upper threaded ends, blocks positioned between some of said bolts, removable bars positioned upon and connecting the upper ends of some of said bolts, and nuts threaded upon the ends of said bolts and adapted to secure said bars upon the bolts and in engagement with said blocks.

7. A railway tie, comprising a flat base member, blocks carried by said base member, fastening means securing said blocks upon said base member, one of said fastening means provided with a tooth engaging a block for preventing movement of said block upon said base member.

8. A railway tie, comprising a base member, blocks carried by said base member, a plurality of fastening means securing said blocks to said base member, all of said fastening means provided with depending teeth or biting edges gripping the blocks for securing said blocks against movement upon said base member.

9. A railway tie, comprising a flat base member, removable blocks carried by said base member, a plurality of fastening means engaging the tops and sides of said blocks and securing said blocks to said base member, each fastening means provided at its top with a depending tooth biting a block, whereby longitudinal sliding movement of said block is prevented upon said base member.

853,594. WHEEL RIM OR FELLY. HENRI PATAUD, Paris, France. Filed Jan. 2, 1907. Serial No. 350,374.

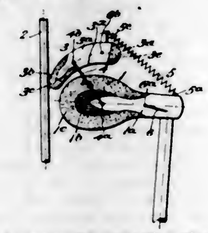


Claim.—1. A dismountable felly comprising in combination a stationary ring *a*, a movable ring *b*, grooves provided in each of said rings and adapted to form by their superposition an annular housing *c*, an elastic steel collar *d*, an india rubber ring *l*, a recess *m* formed in the elastic collar *d* adapted to receive the india rubber ring, a recess *n* formed in the movable ring *b* against which is adapted to be compressed the india rubber ring, and operative means for expanding and closing the collar *d* in its housing, substantially as described and for the purpose set forth.

2. A dismountable felly comprising in combination a stationary ring *a*, a movable ring *b*, grooves provided in each of said rings and adapted to form by their superposition an annular housing *c*, an elastic steel collar *d*, connecting links *f* and *g* pivoted respectively by one of their ends to the free ends of the collar, a winged nut shaped member *s* to which are pivoted the free ends of the connecting links *f g*, a screw *t* the end of which is adapted to turn freely in the member *s*, and a casing *u* secured in a tight manner on the stationary member *a* and through which is adapted to be screwed the screw *t*, substantially as described and for the purpose set forth.

3. A dismountable felly comprising in combination a stationary ring *a*, a movable ring *b*, grooves provided in each of said rings and adapted to form by their superposition an annular housing *c*, an elastic steel collar *d*, an india rubber ring *l*, a recess *m* formed in the elastic collar *d* adapted to receive the india rubber ring, a recess *n* formed in the movable ring *b* against which is adapted to be compressed the india rubber ring, connecting links *f* and *g* pivoted respectively by one of their ends to the free ends of the collar, recesses formed in said links and adapted to register with the recess *m* of the collar *d*, a winged nut shaped member *s* to which are pivoted the free ends of the connecting links *f g*, a screw *t* the end of which is adapted to turn freely in the member *s*, and a casing *u* secured in a tight manner on the stationary member *a* and through which is adapted to be screwed the screw *t*, substantially as described and for the purpose set forth.

853,595. MEANS FOR REPEATING PIANO-NOTES. FÉNELON PÉLISSIER, Gonaives, Haiti. Filed Feb. 4, 1907. Serial No. 355,729.



Claim.—1. A means for repeating the notes of a piano comprising a supplemental hammer combined with a main hammer and actuated by the movements thereof.

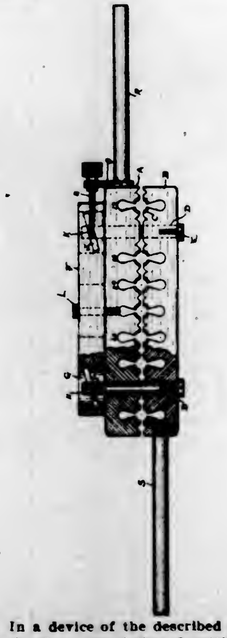
2. A device of the class described, comprising a main and a supplemental hammer, and means for supporting the supplemental hammer on the main hammer.

3. A device of the class described, comprising a main and a supplemental hammer, means for supporting the supplemental hammer on the main hammer, and means for normally holding the supplemental hammer seated against the main hammer.

4. A device of the class described, comprising a main and a supplemental hammer, means for supporting the supplemental hammer on the main hammer, and means for normally holding the supplemental hammer seated against the main hammer, and for returning it to said seated position after its action.

5. A device of the class described, comprising a supplemental hammer combined with the main hammer, and means for actuating the supplemental hammer by the movements of the main hammer.

853,596. DIE FOR CUTTING SCREW-THREADS. FRANK D. RANDALL, Waupaca, Wis., assignor of one-third to E. E. Browne, Waupaca, Wis. Filed Feb. 26, 1906. Serial No. 303,141.



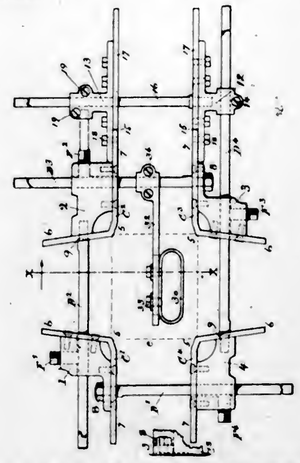
Claim.—1. In a device of the described class the combination of a pair of apertured thread cutting die members, headed rods slidingly mounted in and fitting the apertures in the die members, an adjustable gage member having diagonal bearing surfaces movably engaging said rods, and means for adjusting the gage member at an angle to the axis of said rods to separate the die members or cause them to approach each other.

2. In a device of the described class, the combination of a pair of thread cutting die members provided with rod receiving apertures; connecting guide rods slidingly mounted in and fitting said apertures; and means, common to both rods, for simultaneously adjusting the die members at both ends with reference to each other.

3. In a device of the described class, the combination of a pair of thread cutting die members; headed rods extending through the members and provided with lateral projections near their unheaded ends; a gage member movably mounted on one of the die members and provided with slots receiving said rods; and diagonal guide ways receiving said lateral projections.

4. In a device of the described class, the combination of a set of thread cutting dies; headed rods extending through the members and provided with lateral projections near their unheaded ends; a gage member movably mounted on one of the die members and provided with slots receiving said bolts; and diagonal guide ways receiving said lateral projections; together with an adjusting screw having swiveled connection with one of the die members and threaded connection with the gage member.

853,597. ENVELOP-CUTTING MECHANISM. ABRAM A. RHEUTAN, Worcester, Mass. Filed Feb. 9, 1907. Serial No. 356,590.



Claim.—1. A mechanism of the character specified, comprising a series of four cutter-supporting corner blocks having blade-seating faces in approximate conformity to the respective angle planes, a series of horizontally disposed guide-rods arranged in rectangular order extending through and adjustably connecting adjacent blocks, an angle-cutting blade attached to the seating faces on each of said corner blocks, and means for securing the respective corner-blocks and guide-rods at positions of adjustment in relation to each other.

2. An adjustable die for the purpose specified, comprising four corner sections with angle cutting blades, each section having a rod rigidly fixed therein and extending adjustably through the opposite section in rectangular series, and means at each section for clamping the rod that is adjustable therein.

3. An adjustable die for cutting the internal angles in envelop blanks, comprising a series of corner blocks having openings formed at right angle therein, angle-cutting blades secured to said corner blocks and longitudinal and

transversely disposed rods arranged in said openings to permit adjustment of the blocks and cutters toward and from each other while maintaining rectangular relation of the rods and without changing the relative angularity of the several cutting blades in respect to the longitudinal, and transverse axes of the die.

4. The combination, of the four corner section-blocks, angle-cutting blades respectively attached to and extending beyond said section-blocks, section-connecting rods disposed in rectangular form, said rods severally secured at one end to the section block and cutter and extending through an opening in the next section block and cutter with a sliding fit, and a set-screw or clamping means for securing the rod, in each section-block, substantially as set forth.

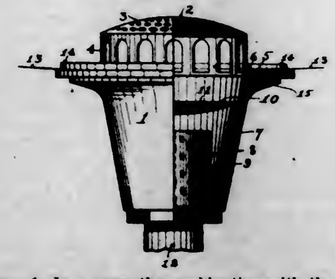
5. In an envelop cutting die of the character described, the combination with the expandible and contractible main die, comprising the corner-section blades and rectangularly disposed connecting rods; of the detachable supplementary extension appliance comprising blade-extension members, a carrier for one of said members adjustably mountable on one of said connecting rods and having a transverse rod fixed therein, a carrier for the other blade-extension member mounted adjustable on said transverse rod, and means for securing the parts at adjusted positions.

6. The combination in an envelop-cutting die mechanism, of four corner-section blocks having corner cutters for cutting out internal angles on envelop blanks, four corner-connecting rods disposed in rectangular form extending through and supporting said corner-section blocks in the same plane, an interset cutter comprising a cutting member for forming an opening or slit in the area of the blank, and a carrier arm on which said cutting-member is secured; said arm provided with an attaching portion that embraces the corner-connecting rod, and means for its adjustable affixment on said rod.

7. In a mechanism of the class described, the combination, with a main adjustable corner-cutting die having the corner-cutting sections and section-connecting rods; of an interset cutter provided with a carrier arm adapted for attachment to one of the section-connecting rods, for the purpose set forth.

8. In a mechanism of the character described, the combination with the abutting ends of the main cutter-blade, and a cutter-blade employed as an extension thereof, each having a half circular grooved recess in its face; of an edge-locking device comprising an inwardly flanged disk having a screw-threaded stud at the center thereof, said device threaded into an opening at the junction of the blades with the flanged disk fitting a corresponding recess in the face of the blades, substantially as set forth.

853,598. SUMP. FRANK H. RILE, Buffalo, N. Y. Filed Sept. 4, 1906. Serial No. 333,199.



Claim.—1. In a sump the combination with the body of a movable catch-basin and stand pipe strainer connected one with the other to form a single removable part, said strainer being suspended within said basin to form a settling space.

2. In a sump the combination with a body of a movable catch-basin and stand pipe strainer connected one with the other to form a single removable part, said strainer being centrally elevated within said basin to form an annular settling space.

3. In a sump the combination with the body of a movable catch-basin and stand pipe strainer connected one with the other to form a single removable part, said catch-basin fitting to the walls of the body and said strainer being centrally elevated with said basin to form an annular settling space.

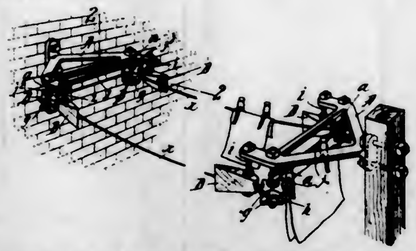
4. In a sump, the combination with the body, of a removable strainer cap, a removable catch basin and stand pipe strainer, and a removable strainer over said catch basin and stand pipe having radial perforations increasing outwardly in cross section to throw the foreign matter outside of the stand pipe into the catch basin.

5. In a sump, in combination with the body in the form of a cone-frustum, a removable strainer cap, a removable catch-basin and stand-pipe strainer, said basin and strainer connected one with the other to form a single removable part, said catch-basin cone-frustum shaped and fitting to the inner walls of said body and its periphery forming a seat for a removable strainer, a removable strainer seated over said basin and centrally elevated within said basin to form an annular settling space.

6. In a sump, in combination with the body, a flange at the top of said body, a removable strainer cap fitting over said body and an annular groove in the upper face of said flange to receive the flanged edge of sheet metal flashing, and to receive a filling to secure said flange to said flashing.

7. In a sump, in combination with the body, a flange at the top of said body, a removable strainer cap removably fitting over said body, a catch basin and stand pipe strainer removably placed within said body, an annular groove in said flange at the top of said body, to receive the flanged edge of flashing and a filling material, such as lead, for securing said flange to said flashing.

853,599. CLOTHES-LINE SUPPORT. FRANCIS X. ROCH and ALFRED O. BONNIN, Holyoke, Mass.; said Bonnin assignor to said Roch. Filed Nov. 20, 1905. Serial No. 288,123.



Claim.—1. A clothes line support comprising a bracket member, a stud depending therefrom, a wheel journaled on said stud, and a fixed guard located in advance of and closely adjacent said wheel, said guard comprising a substantially wedge-shaped block having a convex wall.

2. In an apparatus of the character described, a forked bracket, a pair of depending studs supported from each arm of the bracket, a toothed wheel journaled on one of the studs of each arm, and a substantially wedge-shaped guard-block fixed to each of the other studs, each block having a convex side wall facing the corresponding wall of the opposite block.

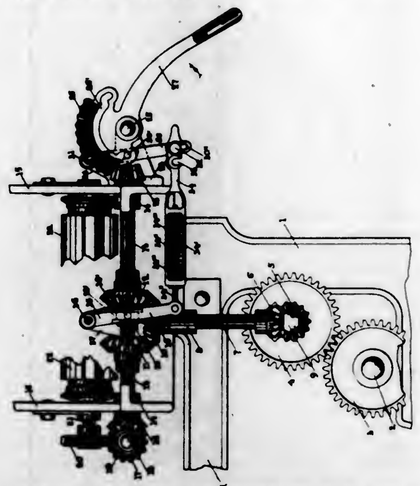
3. In an apparatus of the character described, a bracket member, two pairs of oppositely disposed studs secured to and depending from said bracket, one stud of each pair being located adjacent to and directly in advance of the other, a toothed wheel journaled on one of the studs of each pair, and a substantially wedge-shaped guard-block fixed to each of the other studs, said blocks being vertically disposed and having their narrower ends directed outwardly away from the toothed wheel.

4. In an apparatus of the character described, in combination a horizontal bracket having opposite and separated depending posts or studs, a pair of wheels supported by and rotatable on said depending studs in a common horizontal plane, each of said wheels having circumferentially separated edgewise projecting teeth in pairs, one of the teeth of each pair being vertically above and separated from its companion tooth, and a horizontal clothespin guard comprising a vertically disposed metallic strip supported at its opposite ends by and extending from one of said studs to the other in a horizontal line above the plane of rotation of said wheels.

5. In an apparatus of the character described, in combination a horizontal bracket having opposite and separated depending posts or studs, a pair of wheels supported by and rotatable on said depending studs in a common horizontal plane, each of said wheels having circumferentially, separated, edgewise projecting teeth, in pairs, and another pair of depending studs or supports having substantially wedge-shaped fixed guards located adjacent and in the plane of the edges of said wheels for constraining the clothesline for its proper and running engagement around said wheels.

6. In an apparatus of the character described, in combination a horizontal bracket having opposite and separated depending posts or studs, a pair of wheels supported by and rotatable on said depending studs in a common horizontal plane, each of said wheels having circumferentially, separated, edgewise projecting teeth, in pairs, and another pair of depending studs or supports having fixed wedge-shaped guards adjacent and in the plane of the edges of said wheels for constraining the clothesline for its proper running engagement around said wheels, and a horizontal clothespin guard consisting of a metallic strip supported at its opposite ends by and extending from one of said studs to the other in a horizontal line above the plane of rotation of said wheels.

853,600. LOOM PICK-FINDER. EPPA H. RYON, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed June 20, 1906. Serial No. 322,589.



Claim.—1. In a pick finder mechanism of a loom, the combination with a pattern chain cylinder, connections intermediate said cylinder and a rotary shaft, and said shaft, two bevel gears loose thereon and meshing with and driven by a third bevel gear, and said third bevel gear, and a clutch splined on said shaft, and a clutch lever for moving said clutch to cause the rotation of said shaft in one direction or the other, of manually operated means for moving said clutch, first into its inoperative and then into its operative position, and for revolving said shaft in one direction or the other while the clutch is in its inoperative position, said means consisting of a gear manually operated and adapted to engage a gear on said shaft to rotate said shaft, and connections from said manually operated gear to said clutch lever to move the same.

2. In a pick finder mechanism of a loom, the combination with a pattern chain cylinder, connections intermediate said cylinder and a rotary shaft, and said shaft, two bevel gears loose thereon and meshing with and driven by a third bevel gear, and said third bevel gear, and a clutch splined on said shaft, and a clutch lever for moving said clutch to cause the rotation of said shaft in one direction or the other, of manually operated means for moving said clutch first into its inoperative and then into its operative position, and for revolving said shaft in one direction or the other while the clutch is in its inoperative position, said means consisting of a segmental gear manually operated, and adapted to engage a gear on said shaft, and said gear on said shaft, said segmental gear having a slot therein, a portion of which is concentric with the axis of the gear, and the two ends of which are offset and non-concentric with the axis of the gear, a pin extending in said slot and carried on a lever, and said lever, and a connection from said lever to the clutch lever.

3. In a pick finder mechanism of a loom, the combination with a pattern chain cylinder, connections intermediate said cylinder and a rotary shaft, and said shaft, two bevel gears loose thereon and meshing with and driven by a third bevel gear, and said third bevel gear, and a clutch splined on said shaft, and a clutch lever for moving said clutch, to cause the rotation of said shaft in one direction or the other, of manually operated means for moving said clutch, first into its inoperative and then into its operative position, and for revolving said shaft in one direction or the other while the clutch is in its inoperative position, said means consisting of a segmental gear manually operated, and adapted to engage a gear on said shaft, and said gear on said shaft, said segmental gear having a slot therein, a portion of which is concentric with the axis of the gear, and the two ends of which are offset and non-concentric with the axis of the gear, a pin extending in said slot and carried on a lever, and said lever, and an adjustable connection from said lever to the clutch lever.

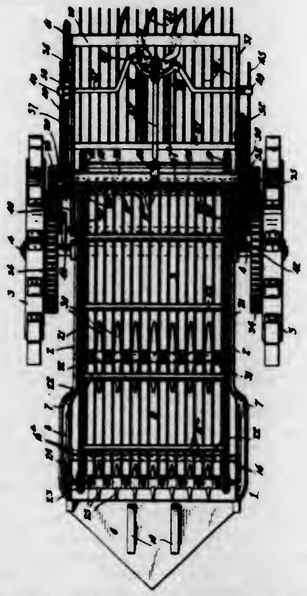
4. In a pick finder mechanism, a rotating shaft, a sliding clutch, oppositely moving gears loose on said shaft, either one adapted to be engaged by said clutch, manually operated means for moving said clutch and turning said shaft at one operation.

853,601. POTATO-DIGGING MACHINE. ERNST G. SCHREIBER, Hammond, Ind. Filed Dec. 11, 1906. Serial No. 347,325.

Claim.—1. In a machine of the character described, a wheel supported frame inclined downwardly and forwardly and having side plates, a shovel at the front end of said frame, a series of flat slats arranged in parallel relation to form a rack between said side plates, said slats being formed at both of their ends with transverse alining apertures, a pivot rod passed through the apertures in the lower ends of said slats and having its ends secured in said side plates, sleeves arranged upon said rod for spacing said slats apart, a connecting rod passed through the apertures in the upper ends of said slats for uniting them for simultaneous swinging movement upon said pivot rod, spacing sleeves upon said connecting rod between said slats, means for supporting and agitating the free upper ends of said slats and an elevator to travel over the rack formed by said slats.

2. In a machine of the character described, a wheel supported frame inclined downwardly and forwardly and having side plates, a shovel at the front end of said frame, a series of flat slats arranged in parallel relation to form a rack between said side plates, said slats being formed at their upper and lower ends with transverse alining apertures, a pivot rod passed through the apertures in the lower ends of said slats and having its ends secured in

said side plates, sleeves arranged upon said rod for spacing said slats apart, a connecting rod passed through the apertures in the upper ends of said slats for uniting them for simultaneous swinging movement upon said pivot rod, spacing sleeves upon said connecting rod between said slats, a transverse shaft in the upper rear portion of the frame, sprocket wheels upon said shaft, rods connecting said sprocket wheels for supporting and agitating the connected rear ends of said slats, a second transverse shaft arranged in the lower end of the frame in advance of the front ends of said slats, sprocket wheels upon said second transverse shaft, elevator chains passed over the sprocket wheels on the two shafts and arranged at opposite sides of the frame, and cross bars uniting said chains and adapted to slidably engage the upper edges of said slats, substantially as shown and described.



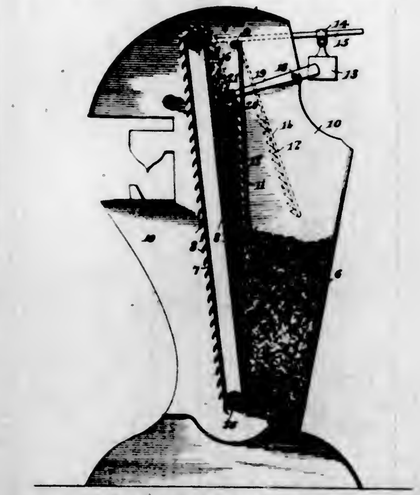
3. In a machine of the character described, a wheel supported frame inclined downwardly and forwardly and having side plates, a shovel at the front end of said frame, a series of flat slats arranged in parallel relation to form a rack between said side plates, said slats being formed at their upper and lower ends with transverse alining apertures, a pivot rod passed through the apertures in the lower ends of said slats and having its ends secured in said side plates, sleeves arranged upon said rod for spacing said slats apart, a connecting rod passed through the apertures in the upper ends of said slats for uniting them for simultaneous swinging movement upon said pivot rod, spacing sleeves upon said connecting rod between said slats, a transverse shaft in the upper rear portion of the frame, sprocket wheels upon said shaft, rods connecting said sprocket wheels for supporting and agitating the connected rear ends of said slats, a second transverse shaft arranged in the lower end of the frame in advance of the front ends of said slats, sprocket wheels upon said second transverse shaft, elevator chains passed over the sprocket wheels on the two shafts and arranged at opposite sides of the frame, cross bars connecting said chains and adapted to slidably engage the upper edges of said slats, a third transverse shaft arranged in said frame intermediate the first and second, sprocket wheels upon said third shaft and engaged with said chains, and agitator arms mounted upon said second and third shafts and adapted to rotate between said slats and between the bars connecting said elevator chains, said agitator arms being adapted to project above the upper edges of said slats and having curved outer ends, substantially as shown and described.

4. In a machine of the character described, a wheel supported frame inclined downwardly and forwardly, and having side plates, a shovel at the front end of said frame, a rack consisting of parallel slats arranged in said frame between said side bars, an endless elevator to travel over said rack and consisting of sprocket chains arranged adjacent to said side plates of the frame and connected by cross bars, a transverse shaft in said frame, sprocket wheels upon said shaft and engaged with said elevator chains, hubs upon the intermediate portion of said shaft having radial arms to rotate between said slats and the cross bars of said elevator, said hubs being arranged upon said shaft with their ends in contact with each other and means upon the contacting ends of said hubs for preventing them from turning with respect to each other.

5. In a machine of the character described, a wheel supported frame inclined downwardly and forwardly, and having side plates, a shovel at the front end of said frame, a rack consisting of parallel slats arranged in said frame between said side bars, an endless elevator to travel over said rack and consisting of sprocket chains arranged adjacent to said side plates of the frame and connected by cross bars, a transverse shaft in said frame, sprocket wheels upon said shaft and engaged with said elevator chains, hubs upon the intermediate portion of said shaft having radial arms to rotate between said slats and the cross bars of said elevator, said hubs being arranged upon said shaft with their ends in contact with each other and a projection upon one end of each of said hubs to enter a seat or recess in the opposing end of the next adjacent hub for the purpose specified.

6. In a machine of the character described, a wheel supported frame inclined forwardly and downwardly and comprising side plates having laterally offset lower ends to enlarge the forward end of said frame, said offset portions being flared outwardly and having longitudinally extending openings, substantially as shown and for the purposes set forth.

853,602. CARD-FEEDER. JAMES W. SCOTT, Oswego, N. Y. Filed Feb. 20, 1906. Serial No. 302,068.



Claim.—1. In a feeder of the class described, the combination with a hopper, of an upwardly extending conveyer constituting a wall of the hopper, a presser plate pivotally hung from its upper end in the upper portion of the hopper and swinging toward and from the upper portion of the conveyer, said plate having a pintle projecting from the hopper, an arm connected between its ends to the projecting pintle and disposed outside the hopper, a weight mounted on the arm on one side of the pintle, a stop located in the path of movement of the portion of the arm that is on the opposite side of said pintle to the weight, and an oscillatory comb operating in the space between the conveyer and presser plate, said comb being disposed below the upper portion of said plate.

2. In a feeder of the class described, the combination with a conveyer, of a movable presser coacting therewith, and a comb projecting through the presser and co-operating with the conveyer.

3. In a feeder of the class described, the combination with a conveyer, of a movable presser coacting therewith and spaced therefrom, a movable comb operating in the space between the conveyer and presser, and supporting means for the comb located outside of said space.

4. In a feeder of the class described, the combination with a conveyer, of a movable presser coacting therewith and spaced therefrom, a supporting device located in rear of the presser, and a comb carried by said device and located in the space between the conveyer and presser.

5. In a feeder of the class described, the combination with end walls, of a conveyer operating between the same, a movable presser also disposed between the end walls and coacting with the conveyer, being spaced from the latter, a rock shaft journaled in rear of the presser, means for operating the rock shaft, and a comb carried by said rock shaft and located in the space between the conveyer and presser.

6. In a feeder of the class described, the combination with a conveyer, of a comb co-operating with the upper portion of the conveyer, and a presser that swings toward and from the conveyer, and is disposed in rear of the comb, said presser extending above and below the comb and thus maintaining the material against the conveyer both above and below the said comb.

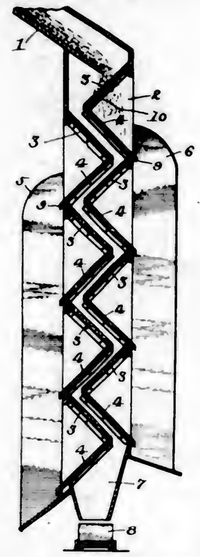
7. In a feeder of the class described, the combination with a conveyer, of a swinging presser plate disposed adjacent thereto and having slots, and an operating comb having arms projecting through the slots, said comb operating between the presser plate and the conveyer.

8. In a feeder of the class described, the combination with a receptacle, of an upwardly extending conveyer constituting one wall of the receptacle, a presser plate hung within the receptacle and swinging toward and from the conveyer, means for yieldingly urging the presser plate toward the conveyer, rock-shaft journaled outside the plate, arms carried by the rock-shaft and projecting through the presser plate, and a comb carried by the inner ends of the arms and disposed between the conveyer and the presser plate.

9. In a feeder of the class described, the combination with a hopper, of an upwardly extending conveyer constituting the rear wall of the hopper and having forwardly extending teeth, a rock-shaft journaled in the hopper, a presser plate suspended from the rock shaft and having a swinging movement toward and from the conveyer, said plate having rearwardly extending teeth on its lower portion, and upright slots, an arm mounted on the rock-shaft, a weight adjustable on the arm for swinging the presser plate toward the conveyer, a stop for limiting said swinging movement, another rock shaft journaled on the hopper outside the presser plate, arms carried by the rock-shaft and projecting through the slots of the presser plate, and a comb mounted on the inner ends of the arms between the presser plate and conveyer.

853,603. MINERAL-SEPARATOR. CHARLES U. SHEPARD, Summerville, S. C. Filed Aug. 22, 1906. Serial No. 331,556.

Claim.—1. In a separator for granular material, means for supplying granular material to be treated, two series of screens located parallel to each other and forming between said series of zig-zag path from the upper end to the lower end of the separator, the screens of each series being alternately of coarse and fine mesh, and a coarse screen of one series being located beneath a fine screen of the other series, so that the larger particles of the material are retained between the series of screens and the finer material is discharged from the fine screens.



2. In a separator for granular material, means for supplying a current of a mixture of liquid and said granular material, two series of screens located parallel to each other and forming between the same a zig-zag space from the top to the bottom of the separator, said screens being alternately of coarse and fine mesh and a screen of coarse mesh of one series being located immediately below a screen of fine mesh of the other series, so that the larger materials are confined to the space between the screens, while the finer material is discharged from the fine screens and so that liquid may pass successively through all of the screens.

853,604. BARBED-WIRE MACHINE. DATUS C. SMITH, New York, N. Y. Filed Feb. 18, 1904. Renewed Apr. 15, 1907. Serial No. 368,377.

Claim.—1. A barbed-wire machine having, in combination, means for flattening a strand-wire at intervals, and means for coiling barbs fixedly around the flattened portions.

2. A barbed-wire machine having, in combination, mechanism for feeding a strand-wire, flattening devices which engage said wire at intervals and produce flats therein, barb-feeding mechanism, and barb-coiling mechanism through which said strand-wire is threaded, said barb-coiling mechanism operating to coil the barbs fixedly around the said flats in the strand-wire.

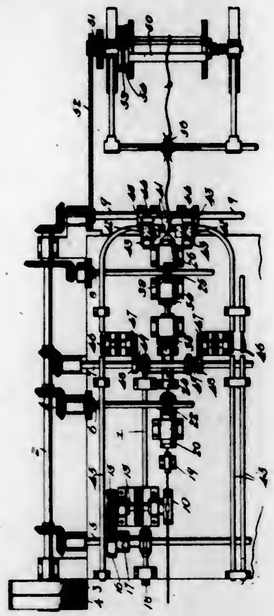
3. A barbed-wire machine having, in combination, means for compressing a strand-wire at intervals into flats of general oval character, and means for coiling barbs around such flats.

4. A barbed-wire machine having, in combination, means for feeding a strand-wire, dies adapted to engage and flatten such wire at intervals, and mechanism for coiling barbs around the flats of the strand-wire.

5. A barbed-wire machine having, in combination, means for feeding a strand-wire, dies adapted to engage such wire at intervals and condense the same into flats of general oval character, and mechanism for coiling barbs around such flats.

6. A barbed-wire machine having, in combination, coacting feed-rollers for a strand-wire, dies in said feed-rollers adapted to engage and compress the wire at intervals, and means for coiling barbs around such compressed points.

7. A barbed-wire machine having, in combination, coacting feed-rollers for feeding a strand-wire, means for coiling or waving the wire during the feed thereof, and mechanism for applying barbs at intervals to the coiled or waved wire.



8. A barbed-wire machine having, in combination, means for feeding a strand-wire, periodically-acting mechanism for applying barbs thereto at intervals, and means for coiling or waving the wire to give it elasticity.

9. A barbed-wire machine having, in combination, means for feeding a strand-wire, means for flattening the wire at intervals, mechanism for coiling barbs around the strand-wire at such flattened intervals, and means for coiling or waving the wire to give it elasticity.

10. A barbed-wire machine having, in combination, means for feeding a strand-wire, barbing mechanism, and means located between the barbing and feeding mechanisms for coiling the wire to impart elasticity thereto.

11. A barbed-wire machine having, in combination, means for forming the wire into such shape as to give it elasticity, means for flattening it at intervals, and means for coiling barbs around its flats.

12. A barbed-wire machine having, in combination, means for coiling a strand-wire throughout its length, and mechanism for applying barbs at intervals to such wire.

13. A barbed-wire machine having, in combination, means for forming a strand-wire throughout its length into a continuous bent or other shape than straight, and mechanism for applying barbs to the wire at intervals in rigid fixed position.

14. A barbed-wire machine having, in combination, means for coiling or waving a strand-wire, means for condensing the wire at intervals into flats of general oval character, and mechanism for coiling barbs around such flats of the wire.

15. A barbed-wire machine having, in combination, means for forming a wire into such shape as to give it elasticity, means for condensing the wire at intervals into flats of general oval character, and means for coiling barbs around such flats.

16. A barbed-wire machine having, in combination, means for feeding a strand-wire, dies adapted to engage and flatten such wire at intervals, mechanism for coiling barbs rigidly around the flats of the wire, and means for forming the wire intermediate its barbs into such shape as to give it elasticity.

17. A barbed-wire machine having, in combination, means for feeding a strand-wire, means for forming seats for attachment of barbs at intervals on the wire, mechanism for coiling barbs rigidly around said seats, and means for forming the wire intermediate its barbs into such shape as to give it elasticity.

18. A barbed-wire machine having, in combination, means for coiling or waving a strand-wire, means for flattening it at intervals, and means for coiling barbs around its flats with the points of successive barbs at different angles.

19. A barbed-wire machine having, in combination, means for forming flats at intervals in a strand-wire, mechanism for coiling barbs around said flats, and means for applying the successive barbs with their points at different angles.

20. A barbed-wire machine having, in combination, means for feeding a strand-wire, mechanism for applying barbs at intervals thereto in rigid fixed position, and means for applying the alternate barbs with their points at different angles.

21. A barbed-wire machine having, in combination, means for coiling or waving a strand-wire, mechanism for applying barbs rigidly thereto, and means for applying the successive barbs at different angles.

22. A barbed-wire machine having, in combination, means for feeding a coiled or waved strand-wire, a fixed guide having an opening through which the wire is passed and mechanism operating on said wire at the point of emergence from said guide-opening for applying barbs at intervals thereto in fixed position.

23. A barbed-wire machine having, in combination, means for feeding a coiled or waved strand-wire, and mechanism for applying barbs at intervals thereto in fixed position, and with their points at different angles.

24. A barbed-wire machine having, in combination, means for feeding a strand-wire, mechanism for coiling barbs around said wire at intervals, and means for applying alternate barbs at alternately different angles.

25. A barbed-wire machine having, in combination, coacting feed-rollers for feeding a strand-wire, a strand-wire coiler behind said rollers, and mechanism behind said coiler for affixing barbs to the coiled strand-wire.

26. A barbed-wire machine having, in combination, means for feeding a strand-wire intermittently, means for flattening the wire at intervals corresponding to the lengths of feed, a rotary barb-coiling-head through which the wire is threaded, a coiling-pin carried thereby in proximity to which the flats in the wire are successively brought to rest, means for successively feeding a barbing-wire across the strand-wire, means for operating said coiling-pin to engage and coil said barbing-wire around a flat during rest of the strand-wire, and a cutter successively actuated to sever the successively formed barbs from the barbing-wire.

27. A barbed-wire machine having, in combination, means for feeding a strand-wire intermittently, means for flattening the wire at intervals corresponding to the lengths of feed, means for coiling or waving the wire, a rotary barb-coiling-head having an axial opening for emergence of the wire of substantially the diameter of the wire and a bore in advance of said opening larger than the diameter of the coils of the wire, a coiling-pin carried by the head in proximity to which the flats in the wire are successively brought to rest, means for successively feeding a barbing-wire across the strand-wire, means for operating said coiling-pin to engage and coil said barbing-wire around a flat during rest of the strand-wire, and a cutter successively actuated to sever the successively formed barbs from the barbing-wire.

28. A barbed-wire machine having, in combination, means for intermittently feeding a strand-wire, means for feeding a plurality of barbing-wires successively across the same at different angles with respect to the cross-section of the wire, and means for successively coiling and severing barbs from each barbing-wire with their points in different directions.

29. A barbed-wire machine having, in combination, means for feeding a strand-wire intermittently, means for flattening the same at intervals, and means for coiling barbs thereon at such flattened intervals and alternately with their points in different directions.

30. A barbed-wire machine having, in combination, means for feeding a strand-wire, means for feeding a plurality of barbing-wires in succession across said strand-wire, and mechanism for coiling and severing barbs from such barbing-wires in the order of their feed.

31. A barbed-wire machine having, in combination, means for feeding a strand-wire, means for feeding in alternation a plurality of barbing-wires across the strand-wire, and mechanism for coiling and severing barbs from such barbing-wires.

32. A barbed-wire machine having, in combination, means for feeding a strand-wire, means for feeding a plurality of barbing-wires in succession across such strand-wire and at different angles thereto, and mechanism for coiling and severing barbs from such barbing-wires in the order of their feed, whereby the points of the respective barbs project at different angles from the body of the wire.

33. A barbed-wire machine having, in combination, means for feeding a strand-wire, means for feeding in alternation a plurality of barbing-wires across the strand-wire substantially at the same fixed point with relation to movement of the strand-wire, and mechanism for coiling and severing barbs from such barbing-wires.

34. A barbed-wire machine having, in combination, means for feeding a strand-wire, means for feeding in alternation a plurality of barbing-wires across the strand-wire and at different angles thereto, and mechanism for coiling and severing barbs from such barbing-wires.

35. A barbed-wire machine having, in combination, means for feeding a plurality of barbing-wires across a strand-wire and at different angles thereto considered from a view-point along the length of the strand, and mechanism for coiling and severing barbs from such barbing-wires.

36. A barbed-wire machine having, in combination, means for feeding in alternation a plurality of barbing-wires across a strand-wire at intervals on the latter, and alternately acting devices for coiling and severing barbs from such barbing-wires.

37. A barbed-wire machine having mechanism for applying two-point barbs to a single strand-wire and means for applying the successive barbs at different angles to the body of the wire.

38. A barbed-wire machine having, in combination, means for intermittently feeding a strand-wire, means for alternately feeding across the strand-wire a plurality of barbing-wires, and mechanism for alternately coiling and severing barbs from such wires during the intermittent dwells of the strand-wire.

39. A barbed-wire machine having, in combination, means for intermittently feeding a strand-wire, means for alternately feeding across the strand-wire a plurality of barbing-wires at different angles thereto, and periodically-acting mechanism for coiling and severing barbs from such wires during the intermittent dwells of the strand-wire.

40. A rotary coiling-head having an axial opening for a strand-wire, means carried by said head for coiling transversely presented cross-wire around said strand-wire, and means for presenting such cross-wire alternately at different angles across the strand-wire.

41. A rotary coiling-head having an axial opening for a strand-wire, a pair of alternately acting coiling-pins carried by said head, and means for presenting barbing-wire across the strand-wire alternately from opposite sides thereof.

42. A rotary coiling-head having an axial opening for a strand-wire, means carried by said head for coiling transversely presented cross-wire around said strand-wire, and means for presenting such cross-wire from opposite sides and alternately at different angles across the strand-wire.

43. A rotary coiling-head having an axial opening for a strand-wire, a pair of alternately acting coiling-pins carried by said head not diametrically opposite, and means for presenting barbing-wire across the strand-wire alternately from opposite sides thereof and at different angles.

44. A rotary coiling-head having an axial opening for a strand-wire, a pair of alternately acting coiling-pins carried by said head not diametrically opposite, and means for advancing barbing-wire across the strand-wire alternately from opposite sides thereof and alternately above and below the strand-wire.

45. In a barbed-wire machine, means for feeding a strand-wire intermittently, a rotary coiling-head having an axial opening for said strand-wire, alternately acting coiling-pins carried by said head, and means for feeding alternately barbing-wires across the strand-wire from opposite sides thereof.

46. In a barbed-wire machine, means for feeding a strand-wire intermittently, a rotary coiling-head having an axial opening for said strand-wire, alternately acting coiling-pins carried by said head not diametrically opposite, and means for feeding alternately barbing-wires across the strand-wire from opposite sides thereof and at different angles.

47. A rotary coiling-head having an opening for a strand-wire, a pair of coiling-pins carried by said head alternately acting in unbalanced time, and means for alternately advancing across the wire the extremities of different barbing-wires for alternate engagement by said coiling-pins.

48. A rotary coiling-head having an opening for a strand-wire, a pair of alternately acting coiling-pins carried by said head occupying unbalanced positions, and means for alternately advancing across the wire the extremities of different barbing-wires for alternate engagement by said coiling-pins.

49. A rotary coiling-head having an axial opening for a strand-wire, a pair of coiling-pins carried by said head alternately acting in unbalanced time, and means for presenting barbing-wire across the strand-wire alternately at different angles thereto for alternate engagement by said coiling-pins.

50. A rotary coiling-head having an axial opening for a strand-wire, a pair of coiling-pins carried by said head alternately acting in unbalanced time, and means for presenting barbing-wire across the strand-wire alternately from opposite sides thereof for alternate engagement by said coiling-pins.

51. A rotary coiling-head having an axial opening for a strand-wire, a coiling-pin carried thereby adapted to project and coil a cross-wire and retract, a reciprocatory bar connected to said coiling-pin, and a rotary cam for reciprocating said bar, said cam being actuated by the coiling-head.

52. A rotary coiling-head having an axial opening for a strand-wire, a coiling-pin carried thereby adapted in a given number of revolutions to project and coil a cross-wire and retract, a reciprocatory bar for actuating said coiling-pin, and a cam for reciprocating said bar adapted to rotate once less than the coiling-head in every number of such revolutions of the coiling-pin.

53. A rotary coiling-head having an axial opening for a strand-wire, a reciprocatory coiling-pin carried by said head adapted to engage and coil a barb or cross-wire around the strand, and a rotary cam actuated by the coiler maintaining said coiling-pin projected at intervals in position to coil and periodically withdrawing or releasing the same to escape the finished coils.

54. A rotary coiling-head having its shaft axially bored for a strand-wire, a reciprocatory bar revolving with the head, a coiling-pin carried thereby, a rotary cam actuated by the coiler for reciprocating said bar, and suitable gearing between the coiler-shaft and cam for properly timing the latter with respect to the rotations of the coiling-head.

55. A rotary coiling-head having its shaft axially bored for a strand-wire, a reciprocatory bar revolving with the head, a coiling-pin carried thereby, a rotary cam for reciprocating said bar, an idle-shaft, equal intermeshing gears on said idle-shaft and the shaft of one of such rotary elements, and unequal intermeshing gears on said idle-shaft and the shaft of the other rotary element.

56. A rotary coiling-head having an axial opening for a strand-wire, a spring-projected sliding bar embedded in the coiler spindle and a coiling-pin carried thereby, and an alined axially-bored cam connected to said bar adapted to hold such coiling-pin retracted at intervals.

57. A rotary coiling-head having an axial opening for a strand-wire, a spring-projected coiling-pin carried thereby, a reciprocatory bar revolving with the coiler-shaft and connected with said coiling-pin, and a cam for holding said bar retracted at intervals, said cam being circumferentially grooved, and said bar having a roller traveling in said groove.

58. A rotary-coiling-head having an axial opening for a strand-wire, a spring-projected coiling-pin carried thereby, and a coaxial rotary cam adapted to hold such coiling-pin retracted at intervals, said cam being axially-bored and alined with the coiler.

59. In a barbed-wire machine, the combination with means for feeding a strand-wire, of coacting dies adapted to engage and compress said wire at intervals to provide seats for attachment of barbs, and mechanism for coiling barbs around said seats.

60. In a barbed-wire machine, the combination with means for feeding a strand-wire, of coacting dies adapted to engage and compress said wire at intervals into flats of general oval character, and mechanism for coiling barbs around said flats.

61. In a barbed-wire machine, coacting grooved feed-rollers between which a strand-wire is gripped and fed, and peripheral dies in said rollers having oval molds for flattening said wire at intervals.

62. In combination with means for feeding coiled or waved strand-wire, a guide for such wire having an opening for passage of the wire therethrough, said opening being of approximately the diameter of the wire, provision for allowing a sway of such wire in advance of said guide-opening, and barbing mechanism for coiling a barb around said wire in close proximity to the point of emergence of said wire from said guide-opening.

63. In combination with means for feeding a coiled or waved strand-wire, a guide-tube therefor having a contracted exit-opening and a bore in advance of said opening of about twice the ordinary diameter of the coils, and barbing mechanism arranged for applying barbs on the wire in close proximity to the point of emergence from said exit-opening.

64. A barbed-wire machine for producing a plurality of finished barbed-wires, said machine having, in combination, means for feeding a series of strand-wires, means for feeding a series of barbing-wires longitudinally of said strand-wires, means for directing the extremities of said barbing-wires across the strand-wires, a series of barbing-mechanisms for coiling barbs from such barbing-wires around the several strand-wires, and a series of cutters for severing the barbs.

65. A barbed-wire machine having, in combination, means for feeding a series of strand-wires, means for feeding a series of barbing-wires longitudinally of said strand-wires, means for directing the extremities of said barbing-wires across the strand-wires, a series of barbing-mechanisms for coiling barbs from such barbing-wires around the several strand-wires, a series of cutters for severing the barbs, and a series of independently acting reels for winding the separate finished barbed-wires.

66. A barbed-wire machine having, in combination, a series of mechanisms operated together for barbing a series of strand-wires, and a series of independently acting reeling-devices for the several finished barbed-wires.

67. A barbed-wire machine having a series of mechanisms for barbing a series of strand-wires, said mechanisms operating progressively as series and periodically as individuals.

68. A barbed-wire machine having a series of mechanisms for barbing a series of strand-wires, said mechanisms operating progressively as series and periodically as individuals, together with a series of independently acting reeling-devices for the several finished barbed-wires.

69. A barbed-wire machine having a series of mechanisms for barbing a series of strand-wires, said mechanisms operating as a series continuously and progressively across the series.

70. A barbed-wire machine having, in combination, a series of strand-wire-feeding mechanisms each acting intermittently, a series of barbing-mechanisms each acting periodically, said series each operating together as series, and a series of independently acting reeling-devices.

71. A barbed-wire machine having, in combination, a series of strand-wire-feed mechanisms each acting intermittently, and a series of barbing-mechanisms each acting periodically, each series acting progressively as series.

72. A barbed-wire machine having, in combination, a plurality of sets of mechanisms for operating on a series of strand-wires and comprising transverse series of instrumentalities, each of such series operating progressively as series and intermittently as individuals.

73. A barbed-wire machine having, in combination, a driving-shaft, and a series of mechanisms for barbing a series of strand-wires, said mechanisms acting intermittently as individuals but progressively as series and timed so that all operate within the same period of rotation of the driving-shaft.

74. A barbed-wire machine having, in combination, means for feeding a series of strand-wires, a series of barbing-mechanisms all operating together, and means for stopping or starting at will operation on any one strand-wire of the series independently of the remaining ones.

75. A barbed-wire machine having, in combination, means for feeding a series of strand-wires, means for feeding a series of barbing-wires, a series of mechanisms operated together for barbing said strand-wires from said barbing-wires, and means for discontinuing or continuing at will the feed of any one strand-wire and its barbing-wire.

76. A barbed-wire machine having, in combination, means for feeding a series of strand-wires, a series of barbing mechanisms, and a series of independently acting winding-reels arranged side by side alternately one above another at the delivery end of the machine.

77. A barbed-wire machine having, in combination, mechanism for intermittently feeding a strand-wire, mechanism for flattening or compressing said wire at intervals, and barbing-mechanism at which the flats or compressed portions are successively brought to rest; said barbing-mechanism adapted for coiling wire-barbs around the flats during the intermittent dwells of the strand-wire.

78. A barbed-wire machine having, in combination, mechanism for feeding a strand-wire, mechanism for coiling or waving said wire, a rotary barb-coiler having an axial opening for emergence of the wire of substantially the diameter of the wire and a bore in advance of said opening larger than the diameter of the coils or undulations of the wire, means for feeding a barbing-wire across the strand-wire in proximity to said emergence-opening of the coiler, means on said coiler for engaging and coiling the successively presented ends of said barbing-wire around the strand-wire, and a cutter adapted to sever the successively formed barbs from the barbing-wire.

79. A barbed-wire machine having, in combination, mechanism for feeding a strand-wire, mechanism for coiling or waving said wire, a barb-applying device, and a guide for the strand-wire comprising a tube having an internal bore of larger diameter than the coils or waves of the strand-wire and an opening of substantially the diameter of the wire for emergence of the wire at the barb-applying device.

80. In a fence-machine, means for flattening or compressing a wire comprising flat-forming dies which condense the wire inward from more than two opposite directions.

81. In a fence-machine, a rotary coiler having a central bore adapted for passage of a coiled or waved wire therethrough and having an axial opening of substantially the diameter of the wire for emergence of the wire at a fixed point from the coiler.

82. A rotary coiling-head having an opening for a strand-wire, a pair of coiling-pins carried by said head adapted for alternately coiling barbs from barbing-wire fed across the strand, and means for feeding barbing-wire for alternate engagement by said coiling-pins.

83. A barbed-wire machine having, in combination, means for feeding a strand-wire, mechanism for coiling barbs around said wire at intervals, and means for effecting different angular positions of the different barbs on the finished wire.

84. A barbed-wire machine adapted for producing concurrently a plurality of finished barbed-wires, said machine having, in combination, means for feeding a plurality of strand-wires, a plurality of barbing mechanisms for applying barbs to such wires, and independent reels for winding the separate finished barbed-wires.

85. A barbed-wire machine adapted for producing a plurality of finished barbed-wires, said machine having, in combination, means for feeding a plurality of strand-wires, a plurality of barbing mechanisms operating together, and means for stopping or starting at will operation on any one strand-wire of the number.

86. A barbed-wire machine having, in combination, means for feeding a strand-wire having an elastic form other than straight, means for compressing or flattening said wire and thereby providing barb-seats, and mechanism arranged for fixedly coiling wire-barbs around the same.

87. A barbed-wire machine having, in combination, means for feeding a strand-wire flattened to provide barb-seats, means for forming said strand into such other shape than straight as to render it elastic, and mechanism arranged for fixedly coiling wire-barbs around the same.

88. A barbed-wire machine having, in combination, means for feeding a strand having an elastic form and flattened to provide barb-seats, and barb-coiling mechanism arranged for fixedly coiling wire barbs around the same with the axial centers of the coiled portions of the barbs substantially coincident with the axial center of the strand itself.

89. A barbed-wire machine having, in combination, means for fixedly-attaching wire barbs to the strand by coiling said barbs around the strand with the axial center of the coiled portions of the barbs substantially in one line approximately coincident with the axial center of the strand, and means for forming the strand into such other shape than straight, intermediate its barbs, as to render the same elastic.

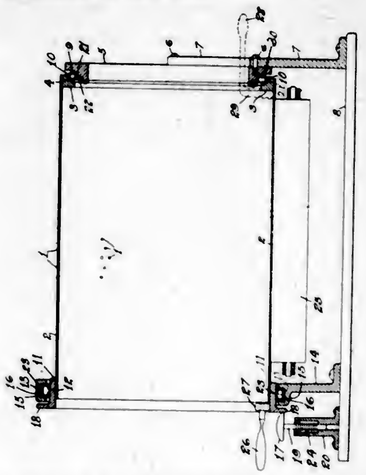
90. The combination of mechanism for forming a strand-wire into such other shape than straight as to render the same elastic, and means operating on said wire to flatten the same to provide barb-seats for attachment of coiled barbs around the same.

853,605. STENCILING-MACHINE. BURNHAM C. STICKNEY, Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed June 14, 1906. Serial No. 321,610.

Claim.—1. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends and having at one end an annular head provided with a ball track, a fixed supporting ring provided with a corresponding ball track, a set of balls running upon said tracks, an annular head upon the opposite end of the cylinder, and means cooperating with said head to revolubly support the same and prevent endwise displacement of the cylinder.

2. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends, an annular head at one end of the cylinder, a supporting ring, said head and ring formed with coned tracks, balls running upon said tracks, a head upon the opposite end of the cylinder and provided with means including a set of balls, whereby it is revolubly supported and means for preventing endwise displacement of the cylinder.

3. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends, an annular head at one end of the cylinder, a supporting ring, said head and ring formed with coned tracks, balls running upon said tracks, a head upon the opposite end of the cylinder and having a cylindrical annular track, a fixed supporting ring having a corresponding track, a set of balls running upon the last mentioned track, and means for preventing endwise displacement of the cylinder.



4. A stenciling machine comprising an ink screen in the form of a cylinder, and means supporting said cylinder by its ends, including an exterior annular head upon one end of the cylinder, and a bracket having an annular portion surrounding said head, the bracket and head having tracks co-operating to form a ball race, and a set of balls in said race; said tracks being cylindrical, and means being provided for preventing endwise displacement of the cylinder.

5. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends, and means engaging the cylinder near its periphery at its ends for revolubly supporting the same, said supporting means including a set of balls for each end of the cylinder, and means being provided for releasably securing the cylinder upon its supports.

6. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends and having annular heads at its ends, each head having a ball track, fixed supporting rings having ball tracks, and sets of balls running upon said tracks, and a latch for preventing endwise displacement of the cylinder.

7. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends and having annular heads at its ends, each head having a ball track, fixed supporting rings having ball tracks, and sets of balls running upon said tracks, and a latch for preventing endwise displacement of the cylinder, said latch being in the form of a roll which engages one head of the cylinder and is movable away from said head, a spring being provided to retain said roll in normal position.

8. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends, an annular head at one end of the cylinder, a supporting ring, said head and ring formed with coned tracks, balls running upon said tracks, a head upon the opposite end of the cylinder and provided with means including a set of balls, whereby it is revolubly supported; the last-mentioned head having a flange, and a latch for preventing endwise displacement of the cylinder, said latch having a roll to bear upon said flange.

9. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends, an annular head at one end of the cylinder, a supporting ring, said head and ring formed with coned tracks, balls running upon said tracks, a head upon the opposite end of the cylinder and having a cylindrical annular track, a fixed supporting ring having a corresponding track, a set of balls running upon the last-mentioned track, and a releasable roll running

upon the last-mentioned head to prevent endwise displacement of the cylinder.

10. A stenciling machine comprising an ink screen in the form of a cylinder open at both ends, two sets of balls upon which said cylinder turns, fixed annular tracks in which said balls run, and releasable means for preventing endwise displacement of the cylinder.

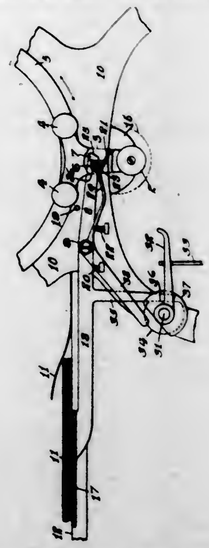
11. A stenciling machine comprising a cylindrical ink screen, two sets of balls whereon said screen turns, one set at each end of the cylinder, rings in which said balls run, means releasably holding the cylinder, and means for retaining said balls upon said rings when the cylinder is withdrawn from the machine.

12. A stenciling machine comprising a cylindrical ink screen having at one end an interior head formed with a ball track, a supporting ring having a corresponding track, balls confined between said tracks, and a handle secured upon said head and projecting through said ring.

13. A stenciling machine comprising a cylindrical ink screen having means upon which it is releasably and revolubly supported, said supporting means including a head provided upon the cylinder and formed with a ball track, a ring having a corresponding ball track, and balls confined within said tracks.

14. A stenciling machine comprising a cylindrical ink screen having means upon which it is releasably and revolubly supported, said supporting means including a head provided upon the cylinder and formed with a ball track, a ring having a corresponding ball track, balls confined within said tracks, and releasable means for holding said tracks in the proper relation to each other.

853,606. STENCILING-MACHINE. BURNHAM C. STICKNEY, Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed July 11, 1906. Serial No. 325,565.



Claim.—1. In a stenciling machine, the combination with a rotatable stencil cylinder having a handle, of a stop for arresting the cylinder to terminate its advance rotation, a finger piece for releasing said stop, and a yielding device tending to force the cylinder against said stop.

2. In a stenciling machine, the combination with a rotatable stencil cylinder, of a stop for arresting the advance movement of the cylinder at the completion of its revolution, and a yielding pivoted arm to press said cylinder against said stop.

3. In a stenciling machine, the combination with a rotatable stencil cylinder, of a stop for arresting the advance of the cylinder at the completion of its revolution, and a spring detent forced to yield by said cylinder just before the latter is arrested by said stop, said detent being constructed to hold the cylinder against the stop.

4. In a stenciling machine, the combination with a rotatable stencil cylinder, of a stop for arresting the advance of the cylinder at the completion of its revolution, a spring detent forced to yield by said cylinder just before the latter is arrested by said stop, said detent being constructed to hold the cylinder against the stop, and means to release the cylinder from the control of the stop.

5. In a stenciling machine, the combination with a rotatable stencil cylinder, of a stop for arresting the advance of the cylinder at the completion of its revolution, a spring detent forced to yield by said cylinder just before the latter is arrested by said stop, said detent being constructed to hold the cylinder against the stop, and means to release the cylinder from the control of the stop, both said stop and said detent being constructed to be forced aside by the cylinder during the retraction thereof.

6. In a stenciling machine, the combination with a rotatable stencil cylinder, of an arm adjustably mounted thereon and having a lug, a pivoted arm on the framework having a stop to be engaged by said lug to arrest the advance of the cylinder at the completion of its revolution, and a spring and stop for said pivoted stop arm.

7. In a stenciling machine, the combination with a rotatable stencil cylinder, of a device for arresting the advance of the cylinder at the completion of its revolution, and yielding means for preventing recoil of the cylinder from said arresting device, and means for releasing the cylinder.

8. In a stenciling machine having a feed-board, the combination with a rotatable stencil cylinder, and a pressure roll constructed to co-operate to gage the leading edges of the paper sheets, a lever pivoted upon the framework, and having a depressible arm extending to the feed-board, a stop provided upon the end of said lever, an arm provided upon the stencil cylinder and having a lug or part to engage said stop to arrest the advance of the cylinder at the completion of its revolution, said stop and lug being beveled to enable the lug to force the stop aside during the retraction of the cylinder, and a spring for said stop.

9. In a stenciling machine, the combination with a rotatable stencil cylinder, of a stop for arresting the advance of the cylinder at the completion of its revolution, a yielding detent for holding said cylinder against said stop, and means for silencing both said stop and said detent.

10. In a stenciling machine, the combination with a rotatable stencil cylinder and a pressure roll, of a device for arresting the advance of the cylinder at the completion of its revolution, means for releasing said pressure roll, and means controlled by said roll-releasing means, for silencing said cylinder arresting device.

11. In a stenciling machine, the combination with a rotatable stencil cylinder, of a device for arresting the advance of the cylinder at the completion of its revolution, a manually operable device for releasing said cylinder from said arresting device to permit the cylinder to make another revolution, and to be again arrested at the completion thereof, and independently operable means for silencing said arresting device.

12. In a stenciling machine, the combination with a rotatable stencil cylinder, of a device for arresting the advance of the cylinder at the completion of its revolution, a manually operable device for releasing said cylinder from said arresting device to permit the cylinder to make another revolution, and to be again arrested at the completion thereof, independently operable means for silencing said arresting device, a pressure roll for said cylinder, and means connected with said silencing means for releasing said pressure roll.

13. In a stenciling machine, the combination with a rotatable stencil cylinder, of a device for arresting the advance of the cylinder at the completion of its revolution, a manually operable device for releasing said cylinder from said arresting device to permit the cylinder to make another revolution, and to be again arrested at the completion thereof, independently operable means for silencing said arresting device, a pressure roll for said cylinder, means connected with said silencing means for releasing said pressure roll, a yielding detent for holding said cylinder against said arresting device, and means connected with said silencing means for simultaneously silencing said detent.

14. In a stenciling machine, the combination with a stencil cylinder and a pressure roll, of a rock shaft having means for pressing said roll against the cylinder, a latch for holding said rock shaft in effective position, a lever having a stop for arresting the cylinder, and also having an arm extending to said rock shaft, and a cam upon the rock shaft to throw said stop out of effective position when said rock shaft is released from said latch, to permit the cylinder to be rotated independently of said stop.

15. In a stenciling machine, the combination with a stencil cylinder and a pressure roll, of a rock shaft having means for pressing said roll against the cylinder, a latch for holding said rock shaft in effective position, a lever having a stop for arresting the cylinder, and also having an arm extending to said rock shaft, a cam upon the rock shaft to throw said stop out of effective position when said rock shaft is released from said latch, to permit the cylinder to be rotated independently of said stop, a pivoted lever having a spring and caused by said spring to hold the cylinder yieldingly against said stop, and also having an arm extending to said rock shaft, and a cam upon the rock shaft to engage said arm and swing it to ineffective position when the pressure roll is released.

16. In a stenciling machine, the combination of a stencil cylinder, a stop therefor, a yielding detent, and means for simultaneously silencing said stop and detent.

853,607. BUTTON. EDWIN M. STRAUSS, Chicago, Ill. Filed Jan. 20, 1906. Serial No. 296,928.



Claim.—The combination with a substantially flat circular base, of a spiral springing from a point on the periphery thereof, and extending upward and terminating above the center of the base, and a head of smaller diameter than the base supported by the upper end of said spiral.

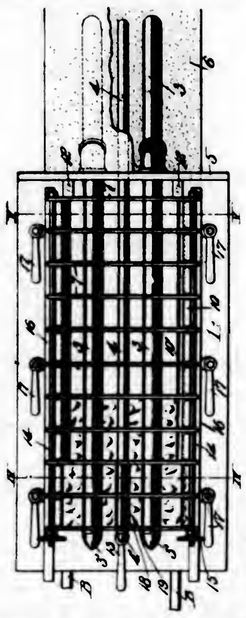
853,608. APPARATUS FOR MOLDING CEMENT BLOCKS. JAMES B. TALBOT, Edwardsville, Ill. Filed Apr. 6, 1906. Serial No. 310,251.

Claim.—1. In a cement block molding apparatus, the combination of a platform, apertured mold boards seated on said platform, side mold sections loosely interposed between pairs of said mold boards, means for retaining said mold boards in vertical positions with said side mold sections between them, and core rods independent of said platform and onto which said mold boards are threaded, substantially as set forth.

2. In a cement block molding apparatus, the combination of a platform, mold boards seated on said platform, side mold sections loosely interposed between pairs of said mold boards, means for retaining said mold boards in vertical position with said side mold sections between them, and removable bottom mold members inclosed between pairs of said mold boards and pairs of said side mold sections, substantially as set forth.

3. In a cement block molding apparatus, the combination of a platform, mold boards seated on said platform, a plurality of side mold sections loosely interposed between pairs of said mold boards at each side of the apparatus, and means for retaining said mold boards in vertical positions with said side mold sections between them; said side mold sections being provided with detachable bead strips, substantially as set forth.

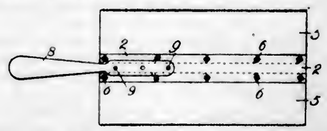
4. In a cement block molding apparatus, the combination of a platform, mold boards supported by said platform, side mold sections interposed between said mold boards, a core rod to which said mold boards are fitted, and partitions fitted to said core rod and arranged in the compartments provided between said mold boards and said side mold sections, substantially as set forth.



5. In a cement block molding apparatus, the combination of a platform, mold boards supported by said platform, side mold sections interposed between said mold boards, a core rod to which said mold boards are fitted, and partitions fitted to said core rod and arranged in the compartments provided between said mold boards and said side mold sections; said partitions being provided with sleeves fitted to said core rod, substantially as set forth.

6. In a cement block molding apparatus, the combination of a platform, mold members seated on said platform and a portion of which are apertured, and core rods onto which said apertured mold members are threaded; said core rods having tapering heads at free ends thereof, substantially as set forth.

853,609. SAW. WALTER VARTMANN, St. Paul, Minn. Filed Mar. 27, 1907. Serial No. 364,801.



Claim.—1. A saw of the class described comprising a longitudinal rib, a pair of saw blades independently and detachably secured to the rib, one on each side thereof, and an upwardly offset handle carried by the rib.

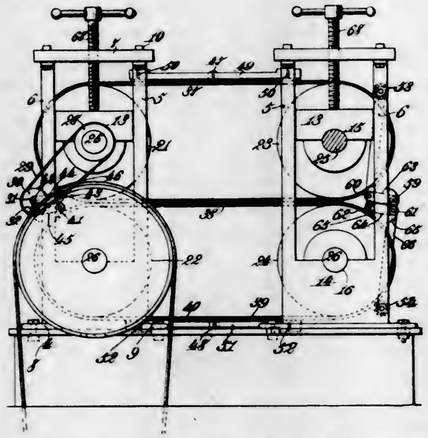
2. A saw of the class described comprising a longitudinal rib, a pair of saw blades independently and detachably secured to the rib, one on each side thereof, the secured edge of each saw blade being upwardly offset whereby the bottom of the rib will lie above the plane of the saw blades, and a handle carried by the rib.

3. A saw of the class described comprising a longitudi-

nal rib having in each side a lengthwise slot, a pair of saw blades having upwardly offset back edges detachably secured within the slots, and an upwardly offset handle carried by the rib.

4. A saw of the class described comprising a rib, a pair of saw blades detachably secured to the rib, one on each side thereof, and an upwardly offset trowel-like handle carried by the rib.

853,610. PAPER-FINISHING MACHINE. SAMUEL C. WARNER and ROBERT B. WARNER, Holyoke, Mass.; said Robert B. Warner assignor to said Samuel C. Warner. Filed July 17, 1906. Renewed Apr. 20, 1907. Serial No. 369,405.



Claim.—1. A machine for cloth finishing the surface of paper comprising a pair of endless belts opposing one another and between which the material to be treated is inserted, and an upper and a lower pair of rotatable presser rolls each having a smooth periphery associating with said belts and adapted to exert pressure through the belts upon the material.

2. A machine for cloth finishing the surface of paper comprising a pair of imperforate and smooth endless belts between which the material to be treated is inserted, each of said belts having an inner resilient section, and an upper and a lower pair of rotatable presser rolls each having a smooth periphery associating with said belts for exerting pressure upon the material through the belts.

3. A machine for cloth finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts consisting of an imperforate and smooth resilient inner section and an imperforate and smooth textile outer section, the textile section of one belt opposing the textile section of the other belt, and two pairs of presser rolls each having a smooth periphery, associating with said belts and adapted to exert pressure through the belts upon the material.

4. A machine for finishing the surface of paper comprising a pair of endless belts opposing one another and between which the material to be treated is inserted, an upper and a lower pair of rotatable presser rolls associating with said belts and adapted to exert pressure through the belts upon the material, means for feeding the material to the belts at an inclination, and means for conveying the finished material from the belts at an inclination.

5. A machine for finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts having an inner resilient section, an upper and a lower pair of rotatable presser rolls associating with said belts for exerting pressure upon the material through the belts, means for feeding the material to the belts at an inclination, and means for conveying the finished material from the belts at an inclination.

6. A machine for finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts consisting of a resilient inner section and a textile outer section, the textile section of one belt opposing the textile section of the other belt, two pairs of presser rolls associating with said belts and adapted to exert pressure through the belts upon the material, means for feeding the material to the belts at an inclination, and means for conveying the finished material from the belts at an inclination.

7. A machine for cloth finishing the surface of paper comprising a pair of endless belts opposing one another and between which the material to be treated is inserted, an upper and a lower pair of rotatable presser rolls each having a smooth periphery, associating with said belts and adapted to exert pressure through the belts upon the material, and a stretcher roll associating with each of said belts.

8. A machine for cloth finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts having an inner resilient section, an upper and a lower pair of rotatable presser rolls each having a smooth periphery associating with said belts for exerting pressure upon the material through the belts, and a stretcher roll associating with each of said belts.

9. A machine for cloth finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts consisting of an imperforate and smooth resilient inner section and an imperforate and smooth textile outer section fixedly secured to the other section, the textile section of one belt opposing the textile section of the other belt, two pairs of presser rolls each having a smooth periphery, associating with said belts and adapted to exert pressure through the belts upon the material, and a stretcher roll associating with each of said belts.

10. A machine for finishing the surface of paper comprising a pair of endless belts opposing one another and between which the material to be treated is inserted, an upper and a lower pair of rotatable presser rolls associating with said belts and adapted to exert pressure through the belts upon the material, and a wiper roll associating with each of said belts.

11. A machine for finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts having an inner resilient section, an upper and a lower pair of rotatable presser rolls associating with said belts for exerting pressure upon the material through the belts, and a wiper roll associating with each of said belts.

12. A machine for finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts consisting of a resilient inner section and a textile outer section, the textile section of one belt opposing the textile section of the other belt, two pairs of presser rolls associating with said belts and adapted to exert pressure through the belts upon the material, and a wiper roll associating with each of said belts.

13. A machine for cloth finishing the surface of paper comprising a pair of endless belts opposing one another and between which the material to be treated is inserted, an upper and a lower pair of rotatable presser rolls each having a smooth periphery, associating with said belts and adapted to exert pressure through the belts upon the material, and adjusting screws for one pair of presser rolls.

14. A machine for cloth finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts having an inner resilient section, an upper and a lower pair of rotatable presser rolls each having a smooth periphery, associating with said belts for exerting pressure upon the material through the belts, and adjusting screws for one pair of presser rolls.

15. A machine for cloth finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts consisting of a resilient inner section and a textile outer section fixedly secured to the other section, the textile section of one belt opposing the textile section of the other belt, two pairs of presser rolls associating with said belts and adapted to exert pressure through the belts upon the material, and adjusting screws for one pair of presser rolls.

16. A machine for cloth finishing the surface of paper comprising a pair of endless belts opposing one another and between which the material to be treated is inserted, an upper and a lower pair of rotatable and smooth presser rolls associating with said belts and adapted to exert pressure through the belts upon the material, and adjustable means for keeping the belts taut.

17. A machine for cloth finishing the surface of paper comprising a pair of imperforate and smooth endless belts between which the material to be treated is inserted, each of said belts having an inner resilient section, an upper and a lower pair of rotatable presser rolls each having a smooth periphery, associating with said belts for exerting pressure upon the material through the belts, and adjustable means for keeping the belts taut.

18. A machine for finishing the surface of paper comprising a pair of endless belts between which the material to be treated is inserted, each of said belts consisting of a resilient inner section and a textile outer section, the textile section of one belt opposing the textile section of the other belt, two pairs of presser rolls associating with said belts and adapted to exert pressure through the belts upon the material, and adjustable means for keeping the belts taut.

19. A machine for cloth finishing the surface of paper comprising a pair of smooth and endless conveying elements between which the paper to be treated is inserted, a plurality of smooth pressure exerting devices for said elements, means for retaining said elements taut, material feeding devices arranged in operative relation with respect to such elements, and material discharging devices arranged in operative relation with respect to said elements.

20. A machine for cloth finishing the surface of paper comprising a pair of conveying elements between which the material to be treated is inserted and each of which comprises a textile outer section and a yielding inner section fixedly secured to the outer section, and a pressure exerting means for said elements.

21. A machine for cloth finishing the surface of paper comprising a pair of conveying elements between which the material to be treated is inserted and each of which comprises a textile outer section and a yielding inner section fixedly secured to the outer section, a pressure exerting means for said elements, and means for retaining said elements taut.

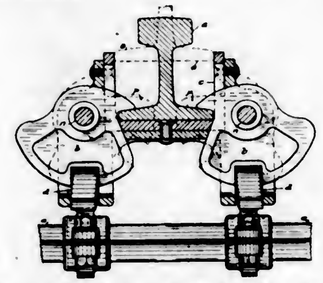
22. A paper finishing machine comprising a pair of conveying elements between which the material to be treated is inserted and each of which comprises a textile outer section and a yielding inner section, a pressure exerting means for said elements, and wiping devices for the outer section of each of said elements.

23. A machine for cloth finishing the surface of paper comprising a pair of smooth feeding elements between which the paper to be treated is inserted and each of which comprises a textile outer section and a yielding inner section fixedly secured to the other section, and means for successively exerting pressure against such elements.

24. A machine for cloth finishing the surface of paper comprising a pair of smooth feeding elements between which the paper to be treated is inserted and each of which comprises a textile outer section and a yielding inner section fixedly secured to the other section, means for successively exerting pressure against such elements, and means for retaining said elements taut.

25. A paper finishing machine comprising a pair of feeding elements between which the paper to be treated is inserted and each of which comprises a textile outer section and a yielding inner section, means for successively exerting pressure against such elements, and wiping devices for the outer section of each of said elements.

853,611. DRAWBRIDGE RAIL-LOCK. EUGENE M. WEAVER, New York, N. Y. Filed Feb. 21, 1907. Serial No. 358,581.



Claim.—1. In track end adjustments for drawbridges with pivotal end drawbridge rail sections, the combination with a drawbridge and cast steel dogs and rotary locks which lock said cast steel dogs and mechanism for operating said cast steel dogs and locks, whereby the pivotal end drawbridge rail sections may be fastened securely to the said drawbridge.

2. In track end adjustments for drawbridges with pivotal end drawbridge rail sections, the combination with a drawbridge and cast steel dogs and rotary locks which lock said cast steel dogs and mechanism for operating said cast steel dogs, whereby every portion of all of the rails of the pivotal end drawbridge rail sections must be present and in absolutely safe position fastened securely to said drawbridge before the signal protecting the said drawbridge can be cleared for the train to pass over said drawbridge.

3. In track end adjustments for drawbridges with pivotal end drawbridge rail sections, the combination with a drawbridge and cast steel dogs and rotary locks which lock said cast steel dogs and mechanism for operating the said cast steel dogs whereby the rails of the said pivotal end drawbridge rail sections are fastened equally as rigid as the rails upon the solid road bed, said cast steel dogs being placed substantially two feet apart.

4. In track end adjustments for drawbridges with pivotal end drawbridge rail sections, the combination with a drawbridge and cast steel dogs and rotary locks which lock said cast steel dogs, and mechanism for operating the said cast steel dogs and rotary locks, whereby all of the rotary locks which lock said cast steel dogs are operated by one lever.

853,612. INDICATOR. HARRY WILSON, Washington, D. C., assignor of one-half to W. B. Lindsey, Washington, D. C. Filed Oct. 3, 1906. Serial No. 337,216.

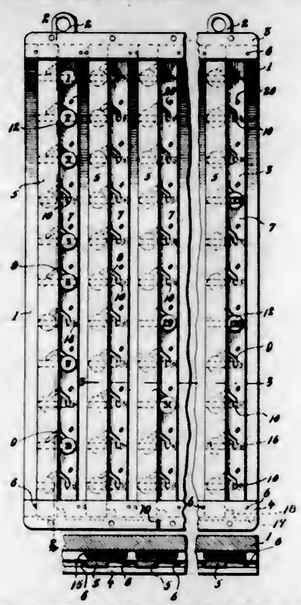
Claim.—1. An indicator comprising an indicator-element carrying-member having a substantially segmental-shaped slot, an indicator-element comprising a disk having a shank engaging in the slot and shiftable freely therein, and means shiftable laterally in front of the carrying-member for hiding said indicator-element when the latter is shifted to extreme position at either end of the slot.

2. An indicator comprising a plurality of indicator-elements, supporting means for shiftably suspending said elements, and means to prevent engagement of one element while being shifted with a stationary element, said means being located out of the normal shifting path of the elements.

3. An indicator comprising a plate having a plurality of substantially segmental-shaped slots, and a corresponding number of indicator-elements having shanks adapted to enter said slots and movable freely therein from end to end of the slots, and lugs carried by the plate adjacent each slot to prevent engagement of one indicator-element while being shifted with a stationary indicator-element.

4. An indicator comprising a plurality of shiftable indicator-elements, means for suspending the elements, means located out of the normal shifting paths of the elements

to prevent the engagement of one element while being shifted with a stationary element, and separate means for concealing the elements when shifted.



5. In an indicator, a base provided adjacent the upper and lower edges with grooved guide-rails, a plurality of carrying-plates carried by said base, a plurality of shiftable markers or indicator-elements carried by each of said plates, and shiftable hiding strips, one for each carrying-plate and set of markers or indicator-elements.

6. In an indicator, a carrying-plate, a plurality of shiftable indicator-elements or markers carried by said plate, a shiftable hiding strip for said indicator-elements or markers, and means for locking said strip when shifted to either of its extreme positions.

7. An indicator comprising a plate having a plurality of substantially segmental-shaped slots arranged one above the other in the plate, a plurality of indicator elements, one for each slot, each indicator-element having a shank adapted to move freely in the slots, means for retaining said shanks in the slots of said plate, and means carried by the plate adjacent each slot to prevent engagement of one indicator-element while being shifted from one end of the slot to the other with a stationary element.

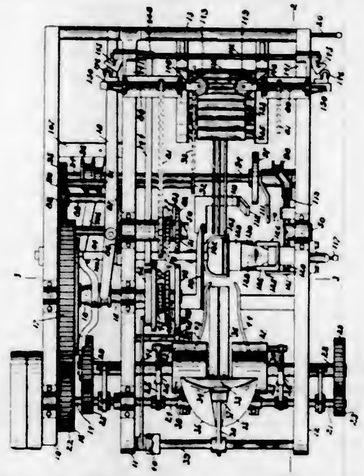
8. In an indicator, a plate provided with a plurality of slots terminating at one end in an enlarged opening, and a plurality of indicator-elements, one for each slot, each indicator-element comprising a disk having a shank received in the slot, a head on the shank for maintaining the same in the slot, and spring arms carried on the rear face of the plate and normally closing said enlarged openings to prevent the shanks of said indicator-elements dropping into the same.

9. In an indicator, a plate provided with a plurality of substantially segmental-shaped slots, a plurality of consecutively-numbered indicator-elements, one for each slot, and shiftable to two rest positions in the respective ends of said slots, and means carried by the plate and located out of the normal shifting path of the elements to prevent the engagement of one indicator-element while being shifted in its slot with an adjacent stationary element.

10. In an indicator, a manually-operated indicator-element, a shifting-path for said element, a hiding-strip shiftable over said path, said strip when in position at either of its extremes of movement concealing a portion of said path, said strip being of sufficient width to conceal said element, whereby said element may be moved from an exposed to an unexposed position, the latter position becoming the exposed position when the strip is shifted.

11. In an indicator, an indicator element shiftable between two positions, and a shiftable hiding-strip for rendering said element unexposed, the movement of said strip from one extreme of its position to the other rendering the unexposed element to an exposed position.

853,613. PAPER-BOX MACHINE. GEORGE R. WYMAN, East Walpole, Mass., assignor to F. W. Bird & Son, East Walpole, Mass., a Firm. Filed Jan. 30, 1905. Serial No. 243,179.



Claim.—1. A paper box machine comprising a revoluble carrier upon which a tubular blank may be placed with flaps extending beyond the end of the carrier, means over which the end of the blank is carried to spread the side flaps, glue applying means, and side flap folding means movable toward and from the path of said carrier.

2. A paper box machine comprising a revoluble carrier having a radial arm upon which a tubular blank may be placed with side flaps extending beyond the end of the carrier, means for supplying glue to said flaps, and flap folding means movable across the path in which said flaps are carried forward.

3. A paper box machine comprising a revoluble carrier upon which a tubular blank may be placed with its flaps extending beyond the end of said carrier, fixed means for turning inward one of the end flaps of said blank and for spreading the side flaps thereof, glue applying means, means for turning the side flaps approximately in line with the sides of the blank, and side flap folding devices adapted to work across the path in which said side flaps are carried forward.

4. A paper box machine comprising a movable carrier, means for periodically moving said carrier, flap turning and flap spreading means past which said carrier is moved during one of said periods of movements, glue applying means past which said carrier is moved in a succeeding period of movement, and flap folding devices between which the carrier is brought to a rest at the completion of the movement past the glue applying means.

5. A paper box machine comprising a movable carrier for tubular blanks, means for periodically moving the same, mechanical elements operating to fold inward the end flaps of said blank during one of said periods of movement, and means for subsequently folding inward one of the side flaps of said blank when the carrier is at rest.

6. A paper box machine comprising a movable carrier for tubular blanks, means for periodically moving the same, end flap folding mechanism adapted to operate on said flaps during one period of movement, glue applying means and flap straightening means adapted to act on the side flaps during a subsequent period of movement, and a side flap holding means for engaging one of said side flaps as the movement from the gluing mechanism is completed.

7. A paper box machine comprising a movable carrier for tubular blanks, means for periodically moving the carrier, mechanical elements acting to fold inward the end flaps of said blank during its forward movement and for spreading the side flaps, glue applying means, located beyond the limit of said movement, past which the carrier is moved during a subsequent period, and side flap folding means located adjacent to the limit of movement from the glue applying means.

8. A paper box machine comprising a movable carrier for tubular blanks, means for periodically moving the same, end flap folding elements, and glue applying mechanism past which said carrier is adapted to move in successive periods and side flap folding devices adapted to be actuated while the carrier is at rest.

9. A paper box machine comprising end flap closing means, glue applying means, side flap folding means, and means for feeding forward a box, having flaps to be closed, by a series of periodical movements past the end flap closing means and the glue applying means and supporting the same at rest opposite the side flap closing means.

10. A paper box machine comprising a rotatable base, a series of radially extending carriers mounted thereon and adapted to receive tubular box blanks having flaps extending beyond the ends of said carriers, means for periodically moving said base, and independent means for locking the same against movement at times.

11. A paper box machine comprising a rotatable box blank carrier, a driven member mounted to rotate therewith, a drive shaft, a drive member mounted thereon and adapted to engage and disengage the driven member, and means independent of the drive member for locking the driven member from movement during the disengagement of the driving member.

12. A paper box machine comprising a rotatable box blank carrier provided with a member adapted to be periodically driven, a drive shaft, means on said shaft for periodically engaging and driving the driven member, and independent means controlled by the engaging member for locking the driven member from movement at times.

13. A paper box machine comprising means for turning inward the end flaps of a box blank, means for partially turning inward one of the side flaps to hold said end flaps in position, a holder, independent of said side flap turning means, for holding said side flap in said position, and a flap holder independent of said holding means.

14. A paper box machine comprising means for turning inward the end flaps of a carton, means for partially turning inward one of the side flaps to hold the end flaps in position, a holder for holding said side flap in position, means for moving the holder, and a flap folder movable in a path at an angle with the path in which said holder moves.

15. A paper box machine comprising means for feeding forward a box blank having flaps to be closed, mechanical elements acting to turn inward the end flaps thereof, means for applying glue to the side flaps, means for turning inward one of said side flaps to hold the end flaps in position, means mounted to move at the side of the path of the box for holding said side flap in position, and a flap folder mounted to move across said path.

16. A paper box machine comprising a rotatable carrier having radially extending arms on which tubular blanks may be placed with their flaps extending beyond the ends of said arms, means for rotating the carrier, means for folding inward the end flaps of the box blank, means for applying glue to the side flaps, and means for rolling one of the side flaps down onto the end flaps.

17. A paper box machine comprising a rotatable carrier having radially extending arms on which tubular blanks may be placed with their flaps extending beyond the ends of the arms, means for periodically rotating said carrier, mechanical elements acting to fold inward the end flaps, means for applying glue to the side flaps, and a roller yieldingly mounted to work across the path of the box to roll one of the side flaps down on to the end flaps.

18. A paper box machine comprising a rotatable carrier having radially extending arms on which tubular box blanks may be placed with their flaps extending beyond the ends of the arms, means for rotating the carrier, means for turning inward the end flaps, means for applying glue to the side flaps and means for turning inward one of the side flaps and subjecting the same to an impact pressure.

19. A paper box machine comprising a form on which a tubular box blank may be placed with its flaps extending beyond the end of the arm, means for turning inward the end flaps, means for applying glue to the side flaps, means for folding inward one of the side flaps, and means for folding inward the last flap and compressing all of the flaps against the end of the form.

20. A paper box machine comprising a form having a rigid end on which a box blank may be placed with its flaps extending beyond the end of the form, and a folder plate movable toward said form and mounted to rock over the edge of said form, or the blank mounted thereon, and means adapted to move said plate toward the end of said form with an impact pressure.

21. Flap folding means for a paper box machine comprising a pivoted lever, means for suddenly actuating said lever, a folding plate pivoted at a point intermediate its ends to said lever, and a spring secured to said plate and to the lever.

22. Flap folding means for paper box machines comprising a guide, a block movable in the guide, adjustable means for limiting the movement of the block, a lever pivoted to the block, a folder plate pivotally mounted on said lever, a second lever pivotally mounted and pivoted to said lever, and means for exerting a pressure against said second lever to swing the same.

23. Flap folding means for paper box machines comprising a member movably mounted, a lever pivoted to said member, a folder plate pivoted intermediate its ends to said lever and having one end connected therewith by a spring, a second lever pivotally mounted and pivoted to the first mentioned lever a spring carried between a portion of the second member and a compression member, such compression member, and means for moving the compression member to compress the spring.

24. A paper box machine comprising a carrier rotatably mounted, means for periodically rotating said carrier, side flap folders, a shaft, connections between the shaft and said folders, for operating them, and connections between said shaft and the carrier whereby the shaft is periodically actuated by the rotation of the carrier.

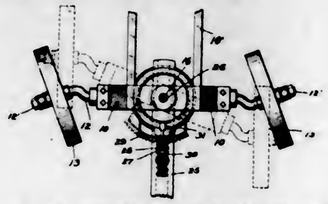
25. A paper box machine comprising a carrier having a series of radial arms adapted to receive tubular blanks, rolls, rotatably mounted in said arms, against which the sides of said blanks may bear, rolls mounted in frames movable toward and from the path of said radial arms between which and the rolls on said arms the sides of the blank may be frictionally engaged, and means for driving said frame rolls.

26. In a paper box machine, the combination with a rotatable base, of an arm carried thereby, a form removably secured to said arm and having a series of gage devices, rods pivotally mounted on the arm and having free ends adapted to be engaged by said gaging devices to limit the outward swing of said rods and a roll rotatably mounted between said rods.

27. In a paper box machine, the combination with a base having a pedestal, and anti friction devices movably mounted thereon, of a form removably secured to said pedestal and having means for limiting the outward movement of the anti friction devices.

28. In a paper box machine, the combination with a carrier having a base, arms pivotally mounted thereon, an anti friction roll carried by the arms, and means for securing said arms from movement, of a form removably secured to the pedestal, to the lateral dimensions of which the arms are designed to be adjusted as and for the purpose described.

853,614. VEHICLE. ROY E. ADAMS, Indianapolis, Ind. Filed July 6, 1906. Serial No. 324,939.



Claim.—1. The combination, in a vehicle, of a main frame, an axle carrying the same, said axle having a pair of diametrically oppositely-inclined wheel spindles, carrying wheels journaled thereon, and means for holding said shaft in different positions of rotative adjustment.

2. In a vehicle, the combination, of a main frame, a shaft journaled thereon and provided with a wheel spindle inclined from the axis thereof, a carrying wheel journaled on the spindle, and means for holding said shaft in different positions of rotative adjustment.

3. The combination, in a vehicle, of the main frame, an axle provided at opposite ends with diametrically oppositely-inclined wheel spindles, the axes of which intersect the extended axis of the middle portion of the shaft substantially in the wheel planes, and carrying wheels journaled thereon.

4. The combination, in a vehicle, of a main frame, an axle journaled therein and provided at its opposite ends with diametrically oppositely-inclined wheel spindles, the axes of which intersect the extended axis of the middle portion of the shaft substantially in the wheel planes, and means for holding said axle in different positions of rotative adjustment.

5. The combination, in a vehicle, of a main frame, an axle carrying the same, said axle having a pair of diametrically oppositely-inclined wheel spindles, carrying wheels journaled thereon, and means for rotating said axle and holding the same in different positions of rotative adjustment.

6. In a vehicle, the combination, of a main frame, a shaft journaled thereon and provided with a wheel spindle inclined from the axis thereof, a carrying wheel journaled on the spindle, and means for rotating said axle and holding the same in different positions of rotative adjustment.

7. The combination, in a vehicle, of a main frame, an axle journaled therein and provided at its opposite ends with diametrically oppositely-inclined wheel spindles, the axes of which intersect the extended axis of the middle portion of the shaft substantially in the wheel planes, and means for rotating said axle and holding the same in different positions of rotative adjustment.

8. In a vehicle, the combination, of a main frame, a shaft journaled thereon and provided with a wheel spindle inclined from the axis thereof, a carrying wheel journaled on the spindle, means for holding said shaft in different positions of rotative adjustment, and means for shifting the axle in its own plane to bring the wheel into alinement with the line of travel.

9. The combination, in a vehicle, of the main frame, an axle journaled thereon and provided at opposite ends with diametrically oppositely-inclined wheel spindles, carrying wheels jounaled thereon, means for holding said axle in different positions of rotative adjustment, and means for shifting the axle in its own plane to bring the wheels into alinement with the line of travel.

10. The combination, in a vehicle, of a main frame, an axle journaled therein and provided at its opposite ends with diametrically oppositely-inclined wheel spindles, the axes of which intersect the extended axis of the middle portion of the shaft substantially in the wheel planes, means for holding said axle in different positions of rotative adjustment, and means for shifting the axle in its own plane to bring the wheels into alinement with the line of travel.

11. In a vehicle, the combination, of a main frame, a shaft journaled thereon and provided with a wheel spindle inclined from the axis thereof, a carrying wheel journaled on the spindle, means for rotating said axle and holding the same in different positions of rotative adjustment, and means for shifting the axle in its own plane to bring the wheels into alinement with the line of travel.

12. The combination, in a vehicle, of the main frame, an axle journaled thereon and provided at opposite ends with diametrically oppositely-inclined wheel spindles, carrying wheels journaled thereon, means for rotating said axle and holding the same in different positions of rotative adjustment, and means for shifting the axle in its own plane to bring the wheels into alinement with the line of travel.

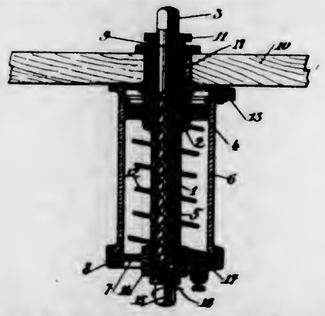
13. The combination, in a vehicle, of a main frame, an axle journaled therein and provided at its opposite ends with diametrically oppositely-inclined wheel spindles, the axes of which intersect the extended axis of the middle portion of the shaft substantially in the wheel planes, means for rotating said axle and holding the same in different positions of rotative adjustment, and means for shifting the axle in its own plane to bring the wheels into alinement with the line of travel.

14. The combination, in a vehicle, of a main frame, a wheel-carrying structure pivotally connected therewith on a substantially vertical axis, a tongue also pivotally connected to the main frame, means for holding said tongue in various positions of angular adjustment relative to said pivoted frame, a shaft journaled in said pivoted frame and provided at its opposite ends with diametrically oppositely-inclined wheel spindles, the axes of which intersect the extended axis of the middle portion of the shaft substantially in the wheel planes, wheels journaled on said spindles, and means for rotating said shaft and holding the same in different positions of angular adjustment.

15. The combination, in a vehicle, of a main frame, a wheel-carrying structure pivotally connected therewith on a substantially vertical axis, a tongue, means for holding said tongue in various positions of angular adjustment relative to said pivoted frame, a shaft journaled in said pivoted frame and provided at its opposite ends with diametrically oppositely-inclined wheel spindles, the axes of which intersect the extended axis of the middle portion of the shaft substantially in the wheel planes, wheels journaled on said spindles, and means for rotating said shaft and holding the same in different positions of angular adjustment.

16. The combination, in a vehicle, of a main frame, a wheel-carrying structure pivotally connected therewith on a substantially vertical axis, a tongue, means for holding said tongue in various positions of angular adjustment relative to said pivoted frame, a shaft journaled in said pivoted frame and provided at its opposite ends with diametrically oppositely-inclined wheel spindles, wheels journaled on said spindles, and means for rotating said shaft and holding the same in different positions of angular adjustment.

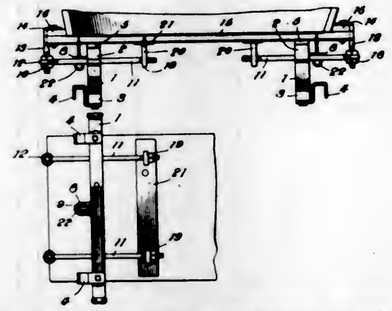
853,615. EXPLOSION-MOTOR-STARTING MECHANISM. JULES A. AGERON and BLAISE J. M. REMY, Lyon, France. Filed July 23, 1906. Serial No. 327,381.



Claim.—1. In a motor starting device the combination with a motor starting shaft, of a steep pitch screw threaded spindle, connections between said shaft and spindle, a nut engaging the spindle and a piston pressure device operative to propel the nut longitudinally of the spindle together with detachable means for preventing said nut from revolving.

2. In a motor starting device the combination with a motor starting shaft, of a steep pitch screw threaded spindle, connections between said shaft and spindle, a nut engaging the spindle and a piston pressure device operative to propel the nut longitudinally of the spindle together with detachable means for preventing said nut from revolving and a spring operative to return said nut to its normal resting position.

853,616. SPRING-SEAT ATTACHMENT. ELMER ANDERSON, Tustin, Mich. Filed Feb. 8, 1907. Serial No. 356,453.



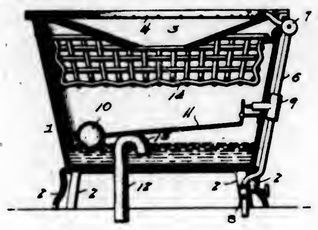
Claim.—1. A vehicle seat construction, comprising a seat, rods connected to the seat and extending underneath the ends thereof, springs provided with upper and lower supporting bars, a plate secured to the upper supporting bar of each spring and slidingly mounted on said rods, each plate being provided with a lateral extension, and a fastening device working through said extension and adapted to be secured to the seat, as and for the purpose set fortn.

2. A vehicle seat construction comprising a seat, shackle plates secured to the ends of the seat and extending below the same, rods secured at one end to said shackle plates, a strap to which the other ends of said rods are secured, springs provided with upper and lower supporting bars, the upper bars extending between the rods and the lower face of the seat, a plate provided at its ends with sleeves encircling said rods and slidingly mounted thereon, said plate being formed with a lateral extension, and a screw working through said extension and into the seat.

3. A vehicle seat construction, comprising a seat, a pair of shackle plates secured to each end of the seat, a pair of rods for each pair of shackle plates at one end, straps secured to the seat and provided with eye-bolts into which the other ends of the rods extend, springs provided with upper and lower supporting bars, plates interposed between said springs and the upper bars and provided at their outer ends with sleeves slidingly mounted on said rods, each plate being provided with a lateral extension, and screws working through said extensions and into the seat.

853,617. CUSPIDOR. VICTOR ARDITO, Hoboken, N. J. Filed July 16, 1906. Serial No. 326,417.

Claim.—A cuspidor of the character described comprising a body or casing having a recess in the upper edge thereof, a funnel plate mounted on the top of said casing and provided with a recess in its periphery, said recess adapted to register with the recess in the upper edge of said casing, a water supply pipe, an annular perforated distributing ring mounted over said funnel plate, and a pivotal cut-off valve connecting said ring and pipe, said connection sitting and resting in the recesses in said funnel plate and casing when in normal position, and a suitable drain pipe in the bottom of said casing.



853,618. CIRCUIT-CLOSING DEVICE. ROLLIN A. BALDWIN, New Haven, Conn., assignor to Baldwin & Rowland Switch & Signal Company, a Corporation of Connecticut. Filed July 19, 1906. Serial No. 326,815.



Claim.—1. A circuit closing device for use with a trolley conductor, comprising a series of depending blades in overlapped relation to one another, and a metallic strip fastened thereto and located in the path of the trolley wheel of a car.

2. In a circuit closing device, a series of spring blades depending in overlapping relation on either side of the trolley conductor, and a pair of resilient strips attached to said blades.

3. In a circuit closing device, a pair of resilient strips, and two series of overlapping blades for supporting said strips throughout their length.

4. In a circuit closing device, a pair of thin flexible highly resilient strips, and two series of blades for supporting said strips at a multiplicity of closely adjacent yielding areas along their length.

5. In a circuit closing device, a pair of thin flexible highly resilient strips depending adjacent to the trolley wire and in the path of the trolley wheel, and spring blades fastened to said strips at points above the path of the trolley wheel and supporting the strips at a multiplicity of closely adjacent yielding areas along their length.

6. In a circuit closing device, a series of resilient blades supported in overlapping relation, and a pair of resilient strips fastened to said blades so as to lie approximately

parallel to one another at their central portions but to diverge at the respective ends, as and for the purpose set forth.

7. In a circuit closing device, a baseboard having a series of blades depending from both sides, and resilient strips fastened to said blades, said baseboard being formed of varying width tapering inward toward its central portion, whereby said strips diverge from one another at their respective ends.

8. In a circuit closing device, a baseboard having a series of spring blades on both sides depending in overlapping relation to one another, and a pair of resilient strips fastened to said blades and lying in the path of the trolley wheel of a car, the points of fastening lying above the path of said wheel.

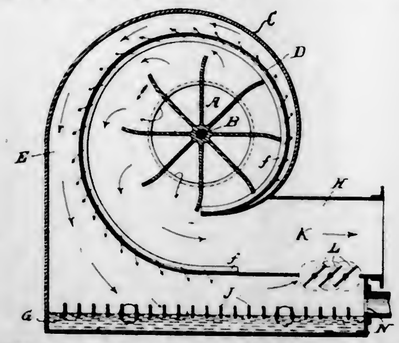
9. In a circuit closing device, a baseboard having depending spring blades thereon, strips supported by said blades, and a housing or cover having side edges depending over said blades to protect the same from the weather.

10. In a circuit closing device, a baseboard having a series of spring blades in overlapping relation on both side edges, resilient strips supported by said blades, and a housing or cover having edges depending over said blades, said strips being riveted to said cover at both ends, as and for the purpose set forth.

11. In a circuit closing device, a baseboard having a hanger at each end whereby it is connected to a trolley conductor, a double series of spring blades depending from both sides of said baseboard, resilient strips supported by said spring blades and lying in the path of the trolley wheel of a car, and a cover or housing overlying said blades.

12. In a circuit closing device, a series of spring blades supported to depend adjacent to the trolley wheel, a resilient strip fastened to said blades and lying in the path of the trolley wheel of a car, a magnet and means operated thereby, and a circuit to ground including said magnet and leading from said strip.

853,619. PROCESS OF SEPARATING FINE SUSPENDED PARTICLES FROM AIR AND OTHER GASES. WILLIAM J. BALDWIN, New York, N. Y. Filed June 3, 1903. Serial No. 159,917.

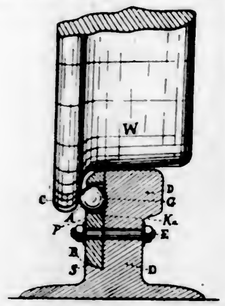


Claim.—1. The process of separating suspended particles from gases, which consists in impelling a gas at a high velocity against a permeable diaphragm arranged in closed chamber and having orifices sufficiently large to permit of the passage of the suspended particles, and thereby forcing the said particles and a part of the gas through said diaphragm, and removing the remaining portion of the gas from the immediate vicinity of said diaphragm and particles.

2. The process of separating suspended particles from gases, which consists in impelling the gas at relatively high velocity against a permeable diaphragm arranged in closed chamber and which is provided with orifices sufficiently large to permit said particles to pass through, and thereby forcing said particles and a part of the gas through said diaphragm, arresting said particles after they have passed through the said diaphragm, whereby their remixing with the gas which did not pass through is prevented, and removing the remaining part of the gas from the vicinity of the said diaphragm and arrested particles, substantially as described.

3. The process of separating suspended particles from gases, which consists in impelling the gas at relatively high velocity against a permeable diaphragm arranged in closed chamber and which is provided with orifices sufficiently large to permit said particles to pass through, and thereby forcing said particles and a part of the gas through said diaphragm, arresting said particles by a body of liquid after they have passed through said diaphragm, whereby they are prevented from returning into the gas, and mixing gas which passed through the diaphragm and from which the said particles have been separated with the remaining part of the gas which did not pass through the said diaphragm, substantially as described.

853,620. BALL-BEARING RAIL. GEORGE I. BARNES, Highlands, Cal., assignor of one-third to James H. Yerkes and one-third to Alexis E. Frye, Highlands, Cal. Filed Mar. 19, 1906. Serial No. 306,930.



Claim.—1. A rail having a plate fixed to the web thereof provided with a plurality of spaced openings arranged to receive a plurality of balls.

2. A rail having a plate fitting one side thereof provided with a plurality of spaced openings arranged to receive a plurality of balls, and means for securing said plate to said rail.

3. A rail having a plate provided with a plurality of openings, a plurality of balls arranged to fit said openings, a seat for said plate, and means for securing said plate to the web of said rail.

4. A rail having a plate provided with a plurality of openings, a plurality of balls arranged to fit and project beyond said openings, a seat in said rail for said plate, and means for securing said plate to the web of said rail.

5. A rail having a seat in the web thereof and a plate fitting said seat, said plate being provided with a plurality of openings arranged to receive a plurality of balls.

6. A rail provided with a plurality of spaced balls, and retaining means for said balls, fastened to the web thereof.

7. A rail having a seat in the web thereof, and a plate fitting said seat, said plate being provided with a plurality of spaced openings arranged to receive a plurality of balls, and means for securing said plate to said rail.

8. A rail having an inclined seat in the web thereof, and a plate fitting said seat, said plate being provided with a plurality of spaced openings, a plurality of balls arranged to fit and project beyond said openings, an oil groove extending in the path of said balls, and a passage for supplying oil thereto.

9. A rail comprising the head, web and flange, having a seat provided in the web and a plate arranged to fit said seat, said plate being provided with a plurality of openings, a plurality of balls arranged to fit said openings, and project beyond the side of the plate, said plate having a longitudinal groove, and a lateral passage-way having communication with said groove for supplying oil thereto.

10. The combination with a rail having a head, web and flange, said web being provided with an inwardly-extending inclined seat, of a plate fitting said seat and provided with a plurality of spaced openings, a series of balls fitting said openings and arranged to project beyond the face of said plate, said plate being provided with a longitudinal groove extending in line with the projecting balls and a lateral groove extending entirely through said plate having communication with said groove, and means for securing said plate to said rail.

11. A rail having a plate provided with a plurality of internally-curved openings which are spaced, a plurality of balls fitting said openings and arranged to project beyond the side thereof, means for supplying oil to said balls, and a seat for said plate.

12. A rail having a plurality of balls, means for spacing said balls, means for securing said means in the web of said rail.

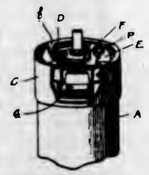
13. A rail having a plurality of balls, means for spacing said balls, a seat in the web thereof for said means and means for securing said means to said rail.

853,621. VALVE. BERRY A. BAXTER, Mansfield, Ohio. Filed May 27, 1905. Serial No. 262,688.



Claim.—The combination of a gas regulator and valve, comprising a body portion with an inlet aperture and a longitudinal portion made integral therewith forming a valve chamber, an inclined passage leading from the inlet aperture in the body portion into the valve chamber, a regulator adjustably fitted to said longitudinal portion, a screw-threaded plug with a reduced aperture formed therein fitted to the open end of said chamber, a tubular portion forming a valve chamber made integral with the body of the valve projecting downwardly at an angle with the body corresponding to the inclined passage, a needle valve having a reduced extremity adjustably fitted to said tubular portion and adapted to close or vary the size of the inclined passage.

853,622. CURTAIN-ROLLER CAP. JAMES M. BERRY, Detroit, Mich. Filed Feb. 23, 1906. Serial No. 302,608.

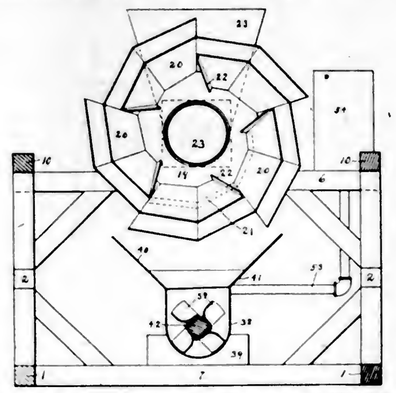


Claim.—1. In a curtain roller cap, the combination with the end plate, pawls pivoted thereon, an auxiliary plate rigidly secured to said end plate, and fingers or lugs formed of integral portions of said latter plate, adapted to be extended into engagement with the pawls.

2. A curtain roller cap, comprising an end plate, pawls pivoted thereon, and an auxiliary plate rigidly secured to said end plate and slit to form pliable tongues normally in the plane of said auxiliary plate and arranged to be bent into engagement with said pawls, for the purpose described.

3. In a curtain roller cap, the combination with the cap proper and the pivoted pawls therefor, of pliable tongues having their bases rigidly connected to the cap proper and their ends arranged to be bent into operative relation to the pawls, for the purpose described.

853,623. CONCRETE-MIXER. FRANK A. BORST, South Bend, Ind., assignor to Ideal Concrete Machinery Company, South Bend, Ind., a Corporation of Indiana. Filed Dec. 28, 1906. Serial No. 349,798.

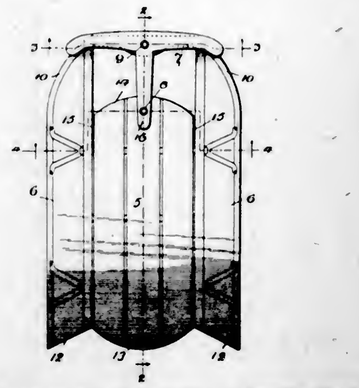


Claim.—1. In a mixing machine, the combination of heads, means to revolubly support the same, spiral buckets connecting said heads and provided with interior flanges at their inner ends, the buckets being formed of pairs of flat plates and joined at the central plane of the mixing machine so as to form pyramidal parts united at their bases, and means to support the mixer.

2. In a mixing machine, the combination of heads, means to revolve the same, spiral buckets connecting said heads and provided with interior flanges at their inner ends, the buckets being in halves joined at the central plane of the mixing machine so as to form pyramidal parts united at their bases, and means to support the mixer.

3. In a mixing machine, the combination of heads, means to revolve the same, spiral buckets connecting said heads, said buckets being in the form of pyramidal halves united at their bases, and means to support the mixer.

853,624. CARDBOARD SLED. EDWARD W. BURT, Philadelphia, Pa., and HENRY S. CHAPIN, Hempstead, N. Y., assignors to S. L. Allen and Company, Philadelphia, Pa., a Copartnership. Filed Jan. 24, 1906. Serial No. 297,571.



Claim.—1. As an advertising device, a resilient blank for a sled, comprising a platform portion embraced be-

tween a pair of runner portions, the said runner portions projecting beyond the forward end of said platform portion, and the said blank having its shortest longitudinal dimensions along the junction between the runner and platform portions and also being split longitudinally to separate the runner portions from the forward end of said platform portion to permit the runners to swing laterally when the blank is bent up to form a sled.

2. As an advertising device, a resilient blank for a sled, comprising a platform portion embraced between a pair of runner portions, the said runner portions projecting beyond the forward end of said platform portion, and the said blank having its shortest longitudinal dimensions along the junction between the runner and platform portions and also being split longitudinally to separate the runner portions from the forward end of said platform portion to permit the runners to swing laterally when the blank is bent up to form a sled, and a cross bar connecting the forward ends of said runner portions.

3. As an advertising device, a blank consisting of a middle portion, two side portions projecting beyond one end of said middle portion, the said portions having their outer edges curved inwardly toward their projected ends, and a cross bar connecting said ends, in combination with a flat piece pivoted to said middle portion and to said cross bar.

4. As an advertising device, a blank consisting of a middle portion, two side portions projecting beyond one end of said middle portion, the said side portions having their outer edges curved inwardly toward their projected ends, and a cross bar connecting said ends, in combination with a flat T-shaped lever pivoted at its foot to said middle portion and at its head to said cross bar.

5. As an advertising device, a blank for a sled consisting of a middle portion, two side portions and a cross bar, the two side portions having their outer edges parallel but curved inwardly toward each other at their forward ends, the said ends being connected by said cross bar, in combination with means engaging said middle portion and said cross bar and adapted to swing laterally the side portions when the same are turned at an angle with the middle portion.

6. As an advertising device, a blank consisting of a middle portion, two side portions projecting beyond one end of the said middle portions, the said side portions having their outer edges curved inwardly toward their projected ends, and a cross bar connecting said ends, in combination with means engaging said middle portion and said cross bar, and adapted to swing laterally the side portions when the same are turned at an angle with the middle portion.

7. As an advertising device, a blank for a sled consisting of a middle portion, side portions and cross bar, the side portions extending beyond the forward end of the middle portion, and having their outer ends connected by a cross bar, in combination with means engaging said middle portion and said cross bar, and adapted to swing laterally the side portions when the same are turned at an angle with the middle portion.

8. As an advertising device, a sled bent up out of sheet material and consisting of a platform and two runners bent downwardly at each side respectively of said platform, the end portions of said runners being resilient and connected by a cross bar beyond the end of said middle portion, the forward portions of said runners being adapted to yield laterally.

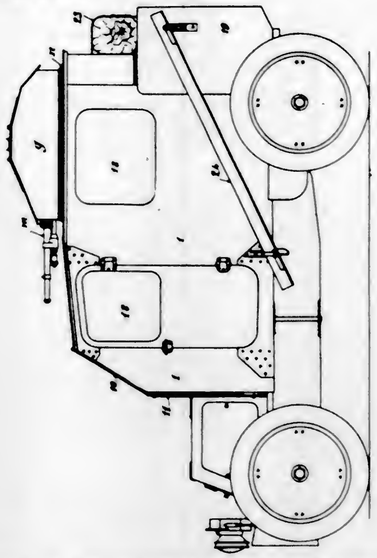
9. As an advertising device, a sled bent up out of sheet material consisting of a platform and two runners bent downwardly at each side respectively of the platform, the said runners being separated from and projecting beyond the forward end of said platform and adapted to yield laterally, said separated portions being resilient.

10. As an advertising device, a sled bent up out of sheet material and consisting of a platform and two runners bent downwardly at each side respectively of said platform, the end portions of said runners being resilient and connected by a cross bar beyond the end of said middle portion, the forward portions of said runners being adapted to yield laterally in combination with means for swinging said runners laterally.

11. As an advertising device, a sled bent up out of sheet material and consisting of a platform and two runners bent downwardly at each side respectively of said platform, the end portions of said runners being resilient and connected by a cross bar beyond the end of said middle portion, the forward portions of said runners being adapted to yield laterally in combination with means pivoted to the platform for swinging the runners laterally.

12. As an advertising device, a sled bent up out of resilient sheet material and consisting of a platform and two runners bent downwardly at each side respectively of said platform, the end portions of said runners being resilient and connected by a cross bar beyond the end of said middle portion, the forward portions of said runners being adapted to yield laterally in combination with means for swinging the runners laterally, the said means consisting of a T-shaped lever pivoted at its foot to the platform and at its head to the cross bar.

853,625. AUTOMOBILE VEHICLE FOR MILITARY PURPOSES. FERDINAND CHARBON, Puteaux, France. Filed Feb. 5 1907. Serial No. 355,936.

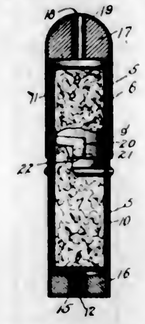


Claim.—1. An automobile vehicle for military purposes comprising an automobile under frame with its driving parts, a hood or cover of armor plating, a turret of sheet metal placed above said hood or cover and free to turn on a central pivot, an extensible pivot fixed to said turret and carried by the under frame, a compressible ring carried by the top of the hood or cover, and a circular flange carried by the turret and free to rest on said compressible ring, substantially as described and for the purpose set forth.

2. An automobile vehicle for military purposes comprising an automobile under frame with its driving parts, a hood or cover of armor plating, a turret of sheet metal placed above said hood or cover and free to turn on a central pivot, an extensible pivot fixed to said turret and carried by the under frame, a compressible ring carried by the top of the hood or cover, a circular flange carried by the turret and free to rest on said compressible ring, a front shutter hinged to the roof of the vehicle, two arms supporting said shutter, sleeves on which are pivoted said arms, vertical rods on which the sleeves are free to slide, apertures provided in said sleeves, two vertical pivots placed inside the hood or cover, levers fulcrumed on said pivots, and projections carried by said levers adapted to enter the apertures of the sleeves, substantially as described and for the purpose set forth.

3. An automobile vehicle for military purposes comprising an automobile under frame with its driving parts, a hood or cover of armor plating, a turret of sheet metal placed above said hood or cover and free to turn on a central pivot, an extensible pivot fixed to said turret and carried by the under frame, a compressible ring carried by the top of the hood or cover, a circular flange carried by the turret and free to rest on said compressible ring, a front shutter hinged to the roof of the vehicle, means for closing instantaneously said shutter, a radiator placed in front of the vehicle, armor-plates protecting said radiator though letting air pass through, a lamp placed in front, a metal shutter adapted to darken the lamp, and guides in which the shutter is free to slide, substantially as described and for the purpose set forth.

853,626. INHALER. CHARLES H. COLES, Sandwich, Ill. Filed May 16, 1906. Serial No. 317,193.



Claim.—1. In a device of the character described, an inner casing having perforations through each end, an outer casing composed of two members arranged for limited relative movement, having perforations in each end out of register with the perforations in the inner casing, a closure, in the end of each member, to close the perforation in both casings, and a means for holding said members in closed or locked position.

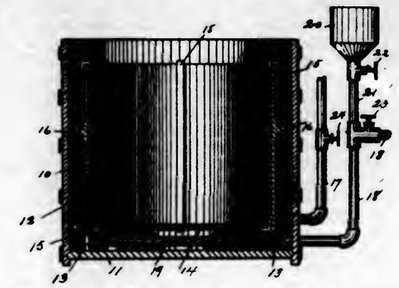
2. In an inhaler, an inner containing casing provided with perforations, an outer casing composed of two parts inseparably connected together, capable of limited, relative rotary and longitudinal movement, and having perforations out of register with the perforations in the inner casing, and a locking means, comprising a bayonet joint, by the operation of which the two parts of said outer casing are longitudinally contracted and held and said perforations are closed.

3. In an inhaler, an outer perforate casing, 9', an inner perforate casing 5, a yielding closure 17 having an opening 18 lined with a tube of strengthening material to retain said opening clear.

4. In an inhaler, an exterior perforate casing composed of two members, a yielding closure 17 having a perforation 18 in one end thereof, an inner perforate containing casing, a spring 12 and a yielding closure 10, and a means for securing the two members of the exterior casing in associate relation.

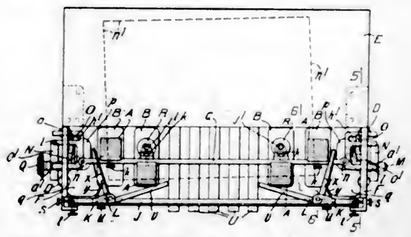
5. In an inhaler, an inner containing casing provided with perforations in each end, an outer casing composed of two parts, and having perforations in its ends, out of register with the perforations in the inner casing, a closure of yielding material in each end of the outer casing, having perforations registering with perforations in the outer casing, a spring for raising the inner casing when the two parts of the outer casing are longitudinally extended, and a means for securing the two parts of the outer casing when said casing is longitudinally contracted to close the perforations.

853,627. DYER'S VAT. MATTHEW C. TUTTLE, Norwich, Conn. Filed Feb. 19, 1907. Serial No. 358,240.



Claim.—In combination in a dyer's vat, an outer vat with a fixed bottom, an inner cage having a perforate bottom, means for supporting said perforate bottom consisting of rods hooked over the upper edge of the cage, a perforate steam pipe between the perforate bottom and the bottom of the outer vat, and a perforate steam pipe surrounding the said cage.

853,628. SHEET-REGISTERING DEVICE. EDWARD DUMMER, Newton, Mass. Filed Aug. 15, 1904. Serial No. 220,882.



Claim.—1. In paper-registering mechanism a form having pins and means for maintaining the pins in position laterally parallel to each other and permitting each pin to move independently endwise, substantially as and for the purpose set forth.

2. A form having pins and means for maintaining the pins in position laterally and permitting each pin to move independently endwise, in combination with a sheet-support and means for bringing said device onto the edge of a sheet of paper on the sheet-support, substantially as set forth.

3. In combination with an abutment located in position corresponding to the required line of register of the edge of a sheet of paper, a form embodying means for defining said edge, and means for causing said form and abutment to meet, substantially as and for the purpose set forth.

4. The combination of an abutment, a form embodying means for defining the edge of a sheet of paper, means for clamping the sheet, means for adjusting said abutment to the required line of register and means for causing said abutment to meet said form, substantially as and for the purpose set forth.

5. A device consisting of pins and a pin holder which maintains the pins in position laterally and allows free movement of the pins endwise, said device being in combination with an abutment an element in a sheet-registering mechanism to meet the abutment rather than the edge of the sheet itself, substantially as set forth.

6. Mechanism for registering sheets of paper, embodying in combination with the abutment and devices for clamping and moving the sheet, a form defining the edge of the sheet and means for moving said form correspondingly with the sheet, the abutment being in position to meet

said form, and not to butt against said edge, substantially as set forth.

7. The combination of a support for a sheet, a clamp for the sheet, forms for the front and side edges of the sheet, mechanism for dropping said forms onto the edges of the sheet, abutments located to correspond to the required line of register of said edges, and mechanism for causing said abutment and forms to meet, substantially as set forth.

8. The combination of a form, consisting of pins and a holder which maintains the pins laterally in position and permits each pin to move up and down freely and independently of the other pins, each pin being provided with a shoulder or stop to limit its downward movement, with a sheet-support under said form having openings or perforations corresponding to said pins, a presser-foot above the sheet support, a piece or carrier movable in a plane parallel to that of the sheet and to which said form is secured, a piece or carrier movable in a plane parallel to that of the sheet and to which the sheet-support is secured, a support movable up and down for the form carrier, an abutment movable up and own with the form-carrier, and a cam located, shaped and connected to cause on its rotation said movements of pin-carrier, said support, carriers and abutment, substantially as specified.

9. The combination of several forms, sheet-supports under said forms having openings or perforations therethrough, presser-feet above the sheet-supports, a carrier to which said forms are secured and presser-feet attached, a sliding carrier to which the sheet-supports are secured, abutments, a transverse bar to which the abutments are attached, supports movable up and down, on which said form-carrier slides and to which said transverse bar is secured, and a cam so shaped, located and connected with said supports and sheet-support holders as to cause said movements thereof, substantially as set forth.

10. In combination with forms, for two edges of a sheet to be registered, a bar an abutment having two arms and pivoted to the bar, and means for causing said forms to meet said abutments, substantially as specified.

11. The combination, of forms, for two edges of a sheet to be registered, a bar an abutment having two arms and pivoted to the bar, and means for causing said forms and said bar to rise and fall simultaneously, and the forms and abutments to meet, substantially as set forth.

12. The combination of forms, abutments, a bar to which the abutments are attached, sheet-supports, presser-feet above the sheet-supports, and means for causing said forms and abutments to rise and fall simultaneously, said forms and abutments to meet and said forms, presser-feet and sheet-supports to maintain their relative position, substantially as set forth.

13. In combination a form embodying members movable therein for defining the edge of a sheet substantially as herein described, a sheet-support under the form, a presser-foot secured to said form, and means for dropping the form and presser-foot onto said sheet-support, and sheet therebetween, substantially as set forth.

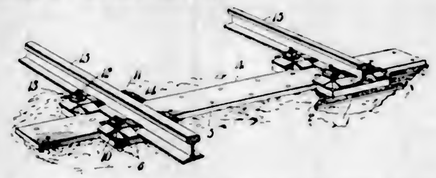
14. In combination, the form as hereindescribed, a sheet-support under the form, a presser-foot secured to said form, an abutment for the form, and means for causing the form and said presser-foot to move to and from the sheet-support, and for causing said form to meet said abutment, substantially as set forth.

15. In combination, two forms as hereindescribed, one for a front edge and the other for a side edge of a sheet, a presser-foot secured to said forms, sheet-supports under said forms, abutments at the front and side, means for causing the forms and presser-foot to move to and from said sheet-supports, and means for causing said forms to meet said abutments, substantially as set forth.

853,629. RAILWAY-TIE. ELI T. FORRESTER, Washington, D. C. Filed Mar. 21, 1907. Serial No. 363,593.

Claim.—1. A railway tie made up of a series of alternating metallic and fibrous layers, a top plate, side extensions integral with said plate and lapping one of the fibrous layers, and binding elements piercing the top plate and the layers of the tie.

2. A railway tie comprising a top plate having integral side extensions, and alternating metallic and fibrous layers disposed below the top plate, one of said layers being lapped by the side extensions.



3. A railway tie comprising cushioning means, a top plate secured thereon and having integral side extensions, and fastening means mounted upon the extensions.

4. A railway tie comprising cushioning means, a top plate secured thereon and having side extensions, said extensions constituting retainers for the cushioning means, rail fasteners upon each of said extensions, and means insertible through the extensions from the bottoms thereof for securing the fasteners upon the extensions.

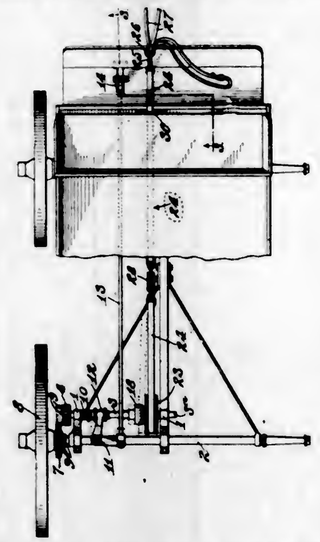
853,630. COMBINATION FURNITURE. DAVID FROEHLICH, New York, N. Y. Filed Jan. 17, 1907. Serial No. 352,674.



Claim.—1. A combination article of furniture adapted to be used both as a bed and as a couch, comprising a main frame provided centrally and horizontally with supports, a supplemental frame detachably pivoted in the front top portion of the main frame by means of vertically arranged slotted keepers secured to the front corner posts of the main frame, and headed lugs or projections secured to the corresponding parts of the supplemental frame and adapted to enter said vertically slotted keepers, said supplemental frame being also adapted to be folded into the main frame and to be extended in front thereof and provided with mattress springs and between its ends with folding legs, the main frame being also provided with an auxiliary frame which is hinged to the tops of the rear corner posts thereof and which is adapted to be folded over said main frame and rest on the front corner posts thereof, said auxiliary frame being also provided with mattress springs.

2. A combination article of furniture adapted to be used both as a bed and a couch, comprising a main frame provided centrally and longitudinally with springs or supports, a supplemental frame detachably pivoted in the front top portion of the main frame and provided with mattress springs and between the ends thereof with foldable legs and adapted to be folded into the main frame and to be extended in front thereof, the main frame being also provided with an auxiliary frame which is hinged to the tops of the corner posts thereof and which is adapted to be folded over and rest on the corner posts thereof, said auxiliary frame being also provided with mattress springs.

853,631. HITCHING DEVICE. DAVID P. GOFF, De Soto, Mo. Filed May 21, 1906. Serial No. 318,097.

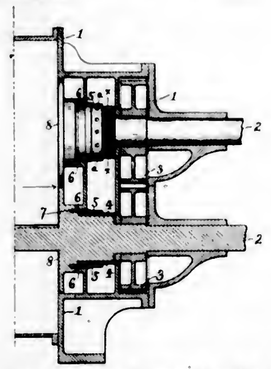


Claim.—1. In a hitching device, a rotatable and longitudinally movable sectional shaft comprising a tubular main section and a secondary section having a bearing in one end of said tubular section, a pawl and ratchet connection between said main and secondary shaft sections, whereby said sections are caused to move longitudinally and to rotate in one direction simultaneously, and whereby one of said sections is free to rotate independently in the other direction, a drum on said secondary shaft section, a hitching strap secured to said drum and adapted to be wound thereon, said strap being divided and joined by a spring, and having a connecting device at its free end, a pinion on said main shaft section adapted to engage a gear wheel on a vehicle wheel, and means for moving said pinion into mesh with said gear wheel.

2. In a hitching device, a rotatable and longitudinally movable sectional shaft comprising a tubular main section and an independently rotatable auxiliary section having a bearing in one end of said main section, a pawl and ratchet connection between said sections comprising a ratchet wheel secured on said auxiliary section, and a casing secured on said main section inclosing said ratchet wheel and having a pawl mounted therein and adapted to engage said ratchet wheel, a drum on said auxiliary section, a hitching strap secured to said drum and adapted to be wound thereon, a pinion on said main section, a gear wheel mounted on a vehicle wheel in coöperative relation to said pinion, and means for moving said shaft longitudinally to move the pinion into mesh with said gear wheel.

3. A hitching device comprising a gear wheel mounted on a vehicle wheel, a rotatable and longitudinally movable shaft mounted in bearings on a fixed portion of said vehicle, said shaft comprising a tubular main section and an independently rotatable auxiliary section having a bearing in one end of said main section, a pawl and ratchet connection between said sections comprising a ratchet wheel on said auxiliary section and a casing on said main section inclosing said ratchet wheel and having a pawl mounted therein in engagement with said ratchet wheel, a drum on said auxiliary section, a hitching strap secured to said drum and adapted to be wound thereon, a pinion on said main section in coöperative relation to said gear wheel, means for yieldingly holding said shaft in normal longitudinal position, means for moving said shaft longitudinally to move said pinion and gear wheel into mesh, and means for holding said moving means in its operative position.

853,632. PACKING FOR ROTARY BLOWER-SHAFTS. THOMAS W. GREEN, Philadelphia, Pa., assignor to Wilbraham-Green Blower Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 1, 1907. Serial No. 360,035.



Claim.—1. In a pump or blower, a rotary shaft having in the part inside of the journal a circular groove or channel adapted to receive a packing material, a stationary collar fitting around said shaft and having its outer end externally screw threaded and an internally screw threaded gland fitting around said collar and adapted to force the packing material in the circular groove and tightly between the end of said collar and the adjacent portion of the casing, whereby the packing will be held in a stationary position and the leakage from the pump or blower prevented, substantially as shown.

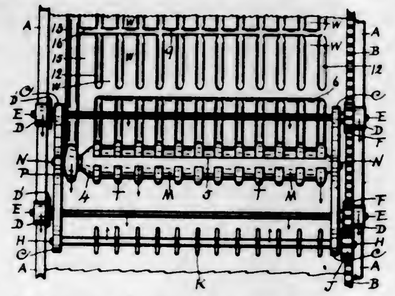
2. In a rotary blower, the combination of the shaft 2 having the annular packing groove 7, the externally screw threaded stationary collar 4, fitting around the said shaft and the internally screw threaded gland 5, fitting over said collar and the packing 6, fitting around the forward end of the collar 4, and into the annular groove 7, and held stationary between said collar and the adjacent portion of the casing, substantially as shown and for the purpose described.

3. In a rotary pump or blower, the combination with a rotary shaft having in the part to the inner side of the journal a circular groove, of an externally screw-threaded stationary collar on said shaft, a packing material carried by said collar and projecting into said groove, and held against rotation by said collar and the adjacent portion of the casing, and an internally screw-threaded gland on said collar, adapted to force said packing tightly into said groove and between the end of said collar and the adjacent portion of the casing, whereby leakage from the pump or blower will be prevented.

853,633. MACHINE FOR FORMING PIG-IRON MOLDS. EDWARD GURRY, Hamilton, Ontario, Canada. Filed June 28, 1906. Serial No. 323,765.

Claim.—1. In a machine for forming pig-iron molds, an incline track, a carriage adapted to run on the track, a

transverse shaft journaled in the carriage, a spiral formed roller on the shaft and adapted to roll level floors of sand by the travel of the carriage, a channel former near to one end of the shaft, means on the roller to form a transverse bank of sand, means on the roller to form a transverse feed passage and means on the roller to form molds for pig-iron on the sides of the feed-passages and communicating therewith.



2. In a machine for forming pig-iron molds, an incline track, a carriage adapted to run on the track, a roller journaled in the carriage and adapted to roll the sand floor to a level plane by the travel of the carriage, and means on the roller to form level pig-iron molds.

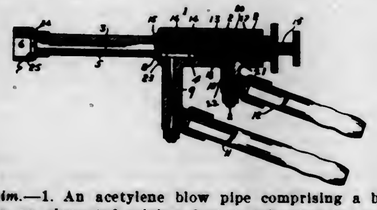
3. In a machine for forming pig-iron molds, a track with downward grade, a carriage adapted to travel on the track, a roller journaled in the carriage to roll a sand floor on a level plane by the travel of the carriage, and means on the roller to produce pig-iron molds.

4. In a machine for forming pig-iron molds, a track of downward grade, a carriage adapted to travel on the track, a roller journaled in the carriage and adapted to roll a sand floor on a level plane by the travel of the carriage, means on the roller to form pig-iron molds in the same plane, and means on the roller to form feed passages to the ends of the molds.

5. In a machine for forming pig-iron molds, an incline track, a carriage adapted to run on the track, a roller journaled in the carriage and adapted to roll the sand on a level plane by the movement of the carriage, means on the roller to form pig-iron molds in the sand and in the same plane, means on the roller to form a transverse feed passage to the molds, means on the roller to form a bank of sand at the opposite ends of the molds, and means on the carriage in advance of the roller to prepare the sand floor.

6. In a machine for forming pig-iron molds, a spiral formed rotary roller adapted to roll and travel on an incline, to roll sand on a level plane, a number of spiral molds, or flanges, extending from the roller and following the same spiral contour, and means extending on the roller and between the molds thereof to form a feed passage or sow, in the sand, to communicate with said molds.

853,634. ACETYLENE-BLOWPIPE. JOHN HARRIS, Cleveland, Ohio, assignor to The Harris Calorific Company, Cleveland, Ohio, a Corporation of Ohio. Filed Oct. 27, 1905. Serial No. 284,596.



Claim.—1. An acetylene blow pipe comprising a body having an elongated mixing duct terminating in an enlarged outlet chamber, means for supplying acetylene to said duct, and means for supplying air under pressure to said duct, substantially as specified.

2. An acetylene blow pipe comprising an elongated mixing duct terminating in an enlarged outlet chamber, means for supplying acetylene to the inlet end of said duct, means for supplying air under pressure to said duct, and valves for controlling the supply of such fluids to the duct, substantially as specified.

3. An acetylene blow pipe comprising an elongated unobstructed mixing duct terminating in an enlarged outlet chamber, and means for supplying acetylene and air to said duct, substantially as specified.

4. An acetylene blow pipe comprising an elongated unobstructed mixing duct terminating in an enlarged outlet chamber, means for supplying acetylene and air to said duct, and means for admitting air to said chamber, substantially as specified.

5. An acetylene blow pipe comprising an elongated mixing duct terminating in an enlarged outlet chamber, means for supplying acetylene and air to said duct, one or more passage-ways for air being provided in said chamber at a point adjacent the junction of said duct and chamber, substantially as described.

6. An acetylene blow pipe comprising an elongated mixing duct terminating in an enlarged outlet chamber, means for supplying acetylene and air to said duct, one or more passage-ways being provided in said chamber for an additional supply of air, said passage ways being inclined toward the axis of said chamber, substantially as specified.

7. An acetylene blow pipe comprising an elongated mixing duct terminating in an enlarged outlet chamber, and means for supplying air under pressure and acetylene to said duct, substantially as specified.

8. The combination in a burner tube with an inner air inlet tube, and an outer commingling burner tube into which said air inlet tube is adapted to discharge, of an enlarged integral tubular extremity for said burner tube, and a shoulder connecting said enlarged extremity and tube, and air inlet perforations in the said shoulder.

9. A blowpipe for acetylene or similar gases rich in carbon comprising in combination a mixing duct, means for supplying gas to said duct, means for supplying air under pressure to said duct, and means for retaining in juxtaposition to the outlet end of the blowpipe the base of the flame produced by the ignition of the mixture of gas and air issuing from said duct, substantially as specified.

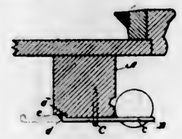
10. A blowpipe for acetylene or similar gases rich in carbon comprising in combination an elongated mixing duct, means for supplying gas to said duct, means for supplying air under pressure to said duct, valves for controlling the flow of gas and air to said duct, and means for retaining in juxtaposition to the outlet end of the blowpipe the base of the flame produced by the ignition of the mixture of gas and air issuing from said duct, substantially as specified.

11. A blowpipe for acetylene or similar gases rich in carbon comprising in combination an elongated, unobstructed mixing duct, means for supplying gas to said duct, means for supplying air under pressure to said duct, and means for shielding the portion of the mixture adjacent to the outlet end of said duct from impingement by currents of air entrained by the issuing mixture and flowing generally longitudinally of said blowpipe, substantially as specified.

853,635. BILLIARD OR POOL TABLE. HENRY L. HASKELL, Ludington, Mich., assignor to Carrom-Archarena Company, Ludington, Mich. Filed Mar. 9, 1903. Serial No. 148,969.

Claim.—1. The combination with a table bed of a downwardly projecting frame beneath the same; a bail-like rod B slidably secured to the under side of said frame by staples C; notches *d'* on the under side of said frame toward the rear edge; upturned lugs *d* on said rod B adapted to engage said notches, when said rod is in its operative position; and notches *c* in the under side of said rod, adapted to engage said staples when said rod is in its inner position, for the purpose specified.

2. The combination with a table bed of a downwardly projecting frame beneath the same; a bail-like rod B slidably secured to the under side of said frame by staples C; notches *d'* on the under side of said frame toward the rear edge; upturned lugs *d* on said rod B adapted to engage said notches, when said rod is in its operative position, for the purpose specified.

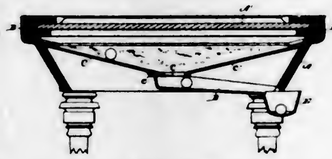


3. The combination with a suitable bed of a supporting frame therefor; a ball-like rod slidably secured to the under side of said frame, coacting when in its operative position with the side of said frame to form a ball support; and a suitable stop for said rod, for the purpose specified.

4. The combination with a suitable bed of a supporting frame therefor; and a ball-like rod slidably secured to the under side of said frame, coacting when in its operative position with the side of said frame to form a ball support, for the purpose specified.

5. In a billiard table, the combination of a suitable bed; a supporting frame therefor; a ball-like rod arranged to be collapsed beneath said frame, coacting when in its operative position with the side of said frame to form a ball support, for the purpose specified.

853,636. POOL-TABLE. HENRY L. HASKELL, Ludington, Mich., assignor to Carrom-Archarena Company, Ludington, Mich. Filed Dec. 18, 1903. Serial No. 185,706.



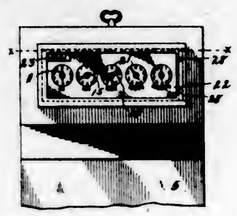
Claim.—1. In a pool table, the combination of a suitable frame and bed having pocket openings; a sheet-like ball conveyer common to all of said pocket openings and consisting of suitable fabric, having a suitable delivery opening, supported beneath said bed; a ring about said delivery opening; cords attached to said fabric and secured to said frame near said pocket openings and to said ring; a delivery chute secured to said ball conveyer in position to receive the balls from said delivery opening; and a ball receptacle, for the purpose specified.

2. In a pool table, the combination with a frame and a bed having pocket openings therein, a sheet-like ball conveyer of suitable fabric arranged under said bed so as to embrace all of said pocket openings, said conveyer having a suitable delivery opening therein; cords secured to said fabric extending from points adjacent from said pockets to said delivery opening, for applying tension to said fabric, for the purpose specified.

3. In a pool table, the combination of a suitable frame and bed having pocket openings; a ball conveyer common to all of said pocket openings and consisting of suitable fabric, having a suitable delivery opening, supported beneath said bed; a ring about said delivery opening; cords attached to said fabric and secured to said frame near said pocket openings and to said ring; and a ball receptacle, for the purpose specified.

4. In a pool table, the combination with a frame of a bed having pocket openings therein; a ball conveyer comprising a sheet of suitable fabric arranged under said bed so as to embrace all of said pocket openings, said conveyer having a suitable delivery opening therein.

853,637. DEVICE FOR RECORDING THE READING OF METERS. GEORGE E. HAWKINS, Columbus, Ohio. Filed May 4, 1906. Serial No. 315,188.



Claim.—1. In a device of the character described, the combination with a meter registering mechanism, of a casing in which said meter registering mechanism is mounted, a transparent platen mounted to move in said casing toward the hands of the meter registering mechanism, said hands being normally visible through said platen and a removable key journaled in portions of the casing in front of said platen and adapted to force said platen inwardly.

2. In a device of the character described, the combination with a meter registering mechanism, comprising a plurality of rotatable hands fixed against longitudinal movement, of a casing in which said meter registering mechanism is mounted, said casing having an extension which lies in front of said hands, a transparent platen slidably disposed in said extension and movable toward said hands through which said hands are normally visible, and a manually operable member journaled in said extension in front of said platen and adapted to force said platen toward said hands.

3. In a device of the character described, the combination with a meter registering mechanism, comprising a plurality of rotatable hands fixed against longitudinal movement, of a casing in which said meter registering mechanism is mounted, said casing having an extension which lies in front of said mechanism, a transparent platen movably mounted in said extension and through which said hands are normally visible, and a removable key journaled in a portion of said extension and having a ward which is adapted to bear directly against said platen and force said platen toward said hands.

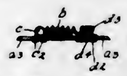
4. In a device of the character described, the combination with a meter registering mechanism and the case in which said meter registering mechanism is mounted, of an extension carried by said casing and lying in front of said meter registering mechanism, a transparent platen mounted for movement toward and from the meter hands, said platen being supported for such movement in and by the extension of the casing, and a key journaled in said casing extension and adapted to force said platen toward said hands, said hands being normally visible through said platen.

5. In a device of the character described, the combination with a meter registering mechanism and the case in which said meter registering mechanism is mounted, of an extension carried by said casing and lying in front of said meter registering mechanism, a transparent platen mounted for movement toward and from the meter hands, said platen being supported for such movement in and by the extension of the casing, and a key journaled in said casing extension and adapted to force said platen toward said hands, said casing extension having an opening formed therein for the insertion of a record slip between the platen and the hands, and said hands being normally visible through the platen.

6. In a device of the character described, the combination with a meter registering mechanism and the case in which said meter registering mechanism is mounted, of an extension carried by said casing and located in front of said meter registering mechanism, a transparent platen which forms the front of said extension of the casing, and a manually operable member controllable from the exterior of the casing which is adapted to bring the hands of the

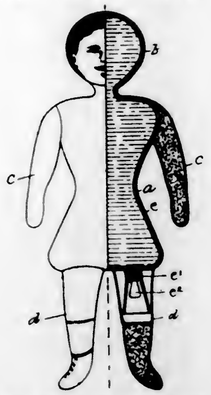
registering mechanism and said plate into engagement with each other.

853,638. FASTENING DEVICE. FRANCIS HEISDORF, Irvington, N. Y. Filed Feb. 4, 1907. Serial No. 355,531.



Claim.—A fastening device for shoes and other articles, comprising a spiral spring provided at both ends with an eye or ring, a knob provided with securing prongs or barbs adapted to be passed through one of said eyes or rings and through one part of the shoe or other article and another knob provided with a spring head adapted to be passed through the eye or ring at the opposite end of the spiral spring, and a socket member secured to another part of the shoe or other article and adapted to receive said spring head.

853,639. DOLL. ELIZABETH T. HINCKS, Andover, Mass. Filed Feb. 28, 1907. Serial No. 359,731.



Claim.—1. A doll consisting of a hollow body having a head, and arms and legs, a flexible water-proof bag contained in said hollow body having an open neck and a stopper for the opening thereof, substantially as described.

2. A doll consisting of a hollow body and a hollow head in open communication, and having arms and legs, a flexible water-proof bag contained in said hollow body and head having an open neck and a stopper for the opening thereof, substantially as described.

3. A doll consisting of a hollow body having a head, and arms and legs, a flexible water-proof bag contained in said hollow body having a flexible neck extended through an opening in said body and provided with an orifice and a stopper for said orifice, substantially as described.

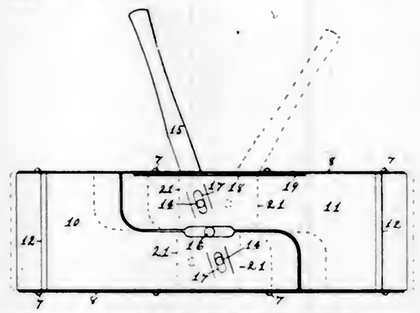
4. A doll consisting of a flexible hollow body having a head, and arms and legs, and a flexible water-proof bag contained in said hollow body having an orifice provided with a stopper, substantially as described.

5. A doll consisting of a flexible hollow body having a flexible hollow head and having arms and legs, and a flexible water-proof bag contained in said hollow body having an open neck provided with a stopper, substantially as described.

6. A doll consisting of a hollow body having an opening and having a head, and arms and legs, a flexible water-proof bag contained in said hollow body adapted to be withdrawn through said opening, which is provided with an open neck having a stopper, substantially as described.

7. A doll consisting of a hollow body having an opening and having a head, and arms and legs, and a flexible water-proof bag contained in said hollow body adapted to be withdrawn through said opening and having a neck which extends through said opening which is provided with an orifice and a stopper therefor, substantially as described.

853,640. CORE FOR CONCRETE WALLS. JOSEPH H. LANDRY, Appleton, Wis. Filed Apr. 6, 1907. Serial No. 366,704.



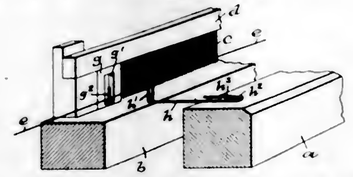
Claim.—1. A collapsible core for the purpose described, consisting of two similar side pieces arranged parallel with each other and having beveled ends, straight outer sides and the principal portion of their inner sides also straight but being provided with thickened ends, a plate of thin material having transversely arranged slots near its longitudinal side edges, secured loosely with bolts or screws through said slots to the top and bottom edges of each side piece for holding them spaced apart, two center pieces corresponding in width with said side pieces arranged for a reciprocating movement longitudinally, between said side pieces, their ends when in their expanded position forming a continuation of the beveled ends of the side pieces and terminating in a blunt point centrally thereof, a lever handle fulcrumed in the two side pieces and engaging the center pieces for throwing the ends of the center pieces outward, and also, retracting the same so that their outer ends are inside of the thickened ends of said side pieces for allowing the two side pieces to move toward each other, and thereby to contract the area of said core upon six sides of it, substantially as described.

2. A collapsible core for the purpose described, consisting of two similar side pieces arranged parallel with each other and having beveled ends, straight outer sides and the principal portion of their inner sides also straight but being provided with thickened ends, a plate of thin material having transversely arranged slots near its longitudinal side edges secured loosely with bolts or screws through said slots to the top and bottom edges of each side piece for holding them spaced apart, two center pieces corresponding in width with said side pieces arranged for a reciprocating movement longitudinally, between said side pieces, their ends when in their expanded position forming a continuation of the beveled ends of the side pieces and terminating in a blunt point centrally thereof, a lever handle fulcrumed in the two side pieces and engaging the center pieces for throwing the ends of the center pieces outward, and also, retracting the same so that their outer ends are inside of the thickened ends of said side pieces for allowing the two side pieces to move toward each other, and thereby to contract the area of said core upon six sides of it, and a thin plate fitting around said handle and being arranged to slide with it as the handle is oscillated, for preventing the admission around the handle and under the upper thin side securing plate of plastic, or other material, substantially as set forth.

3. A collapsible core for the purpose described, consisting of two similar side pieces arranged parallel with each other and spaced apart, having greater inside than outside longitudinal dimensions, the ends of the side pieces having a straight bevel from the outer to the inner side thereof, a recess having an outward flare at each end extending from near one end to near the other along the inside of each

side piece, a plate of thin material having transversely arranged slots near its longitudinal side edges, secured loosely with bolts or screws through said slots to the top and bottom side edges of each side piece, for holding them apart, two center pieces corresponding in width with said side pieces, arranged between them, one at each end, for a reciprocating movement longitudinally thereof, the outer end of each when in its expanded position forming a continuation of the bevel of the end of each side piece and terminating in a blunt point at their transverse center, a lever handle fulcrumed in the two side pieces and engaging a pin in each center piece for throwing the beveled ends of the center pieces outward flush with the bevel upon the ends of the side pieces, and inward beyond the aforesaid flare of the recess of each side piece for allowing the two side pieces to move inward, and thereby contract the area of said core upon six sides of it, substantially as set forth.

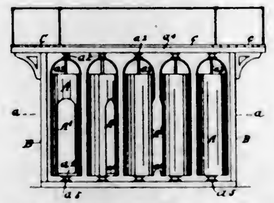
853,641. LOOM. JOHN LAPALME, Central Falls, R. I. Filed Sept. 11, 1905. Serial No. 277,925.



Clami.—1. In a loom, a weft thread tension mechanism comprising a frame having an opening and secured to the lay, a vertical pin secured centrally in the opening in the frame, an arm having an end adapted to enter the opening in the frame on each side of the pin, and means for adjustably securing the arm to the breast beam in a position for the end of the arm to engage with the weft thread and the opening in the frame, as described.

2. The combination with the breast beam *a*, the lay *b*, the reed *c*, and the reed cap *d* of a loom, of a vertical frame *g* secured to the lay *b* between the lay and the reed cap *d* and having the opening *g'* and the vertical pin g^2 secured centrally in the opening *g'*, and an arm *h* constructed preferably of wire bent to form the open L-shaped end *h'* and the looped end h^2, and means for adjustably securing the end h^2 of the arm *h* to the breast beam *a* in a position for the end *h'* of the arm to engage with the weft thread *e* and the opening *g'* in the frame *g*, as described.

853,642. REVOLVING OR ROTARY-ACTION MAZE. RICHARD LOWE, Brunswick, Victoria, Australia, assignor of one-half to Reginald Varley, South Melbourne, Australia. Filed July 21, 1906. Serial No. 327,199.



Claim.—1. In a maze a series or cluster of vertical cylindrical casings each having an opening or doorway in its side and a closed bottom or floor and each mounted so as to be independently rotated.

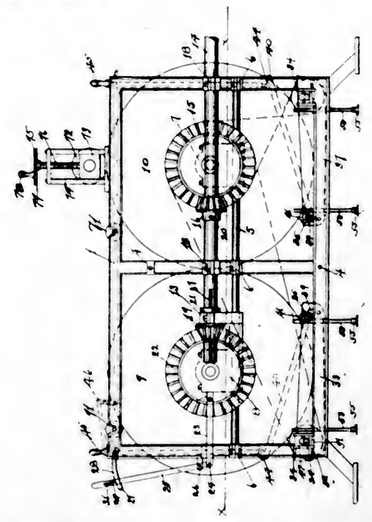
2. In a maze, a casing having a door-way therein and an open top, a floor in said casing, a lower bearing for said casing, a journal frame secured to the top of the casing and an upper journal on said frame.

3. A revolving or rotary action maze composed of a series or cluster of vertical cylindrical casings rotatably supported in a suitable inclosure said casings having openings therein substantially as described and shown.

853,643. PHOTOGRAPHIC PAPER. AUGUSTE LUMIÈRE and LOUIS LUMÈRE, Lyon-Monplaisir, France. Filed May 15, 1906. Serial No. 317,028.

Claim.—The herein described article consisting of an emulsion containing an excess of soluble silver salt, a developer and sulfurous acid.

853,644. GRAINING-MACHINE. BENNETT D. MARKS, Chicago, Ill., assignor to Marks Automatic Wood Reproducing Company, Chicago, Ill. Filed Jan. 30, 1905. Serial No. 243,203.



Claim.—1. In a graining machine, the combination of two side frames, rods extending along said frames, journal bearings mounted on said rods, a veneer and a printing roller mounted upon shafts journaled in said journal bearings, bevel gears fixedly attached to one end of said shafts, a bevel gear mounted upon a shaft and meshing with the bevel gear on the printing roller, a bevel gear splined upon said shaft and meshing with the bevel gear on the veneer roller, said gear being constructed with a hub, said hub terminating in a collar, an arm extending at right angles from said arm, said box furnishing a bearing for the hub of said gear, a lug extending from each of the journal bearings of the veneer roller, links attached to said lugs, whose opposite ends are attached by pins or pivots to levers, a rod connecting said levers, a spring-actuated pawl mounted upon said rod, said pawl being adapted to engage the ratchet teeth cut on segments mounted upon the side frames of the machine, for the purpose set forth substantially as described.

2. In a graining machine, the combination of a graining and printing roller, with pans arranged underneath said rollers, legs for supporting the pans, said pans being adjustable longitudinally of the supporting legs.

3. In a graining machine, the combination of a graining and printing roller, with pans arranged underneath said rollers, the legs for supporting the pans, and spring pressed plates carried by the pans engaging the legs to adjust the pans on the legs.

4. In a graining machine the combination of a graining and printing roller, with pans arranged underneath said roller, legs for supporting the pans, said pans being adjustable on the legs and expanding means carried by the

pans for engaging the legs to hold the pans in their various adjustments on the legs.

5. In combination, side frames, rods carried by said frames, bearings immovably carried by the rods, a roller mounted in the immovable bearings, bearings slidable on the rods, a roller mounted in the sliding bearings, gear wheels on both of the rollers, a shaft, a gear-wheel immovably mounted on the shaft meshing with the gear on the immovable roller, a gear wheel slidable on the shaft and meshing with the gearing on the slidable roller, means for moving the slidable roller on the rods, and means whereby the sliding gear is caused to move in unison with the sliding roller.

6. In combination, side frames, rods carried by said frames, bearings immovably carried by the rods, a roller mounted in the immovable bearings, bearings slidable on the rods, a roller mounted in the sliding bearings, an arm on one of the sliding bearings, a box carried by the arm, gear wheels on both the rollers, a shaft extending through the box of the arm, a gear wheel immovably mounted on the shaft meshing with the gearing on the immovable roller, a gear wheel slidable on the shaft and meshing with the gear of the movable roller, said gear being held by the box, and means for moving the slidable roller on the rods.

7. In combination, side frames, rods carried by said frames, bearings immovably carried by the rods, a roller mounted in the immovable bearings, bearings slidable on the rods, a roller mounted in the sliding bearings, an arm on one of the sliding bearings, a box carried by the arm, gear wheels on both rollers, a shaft extending through the box of the arm, a gear wheel immovably mounted on the shaft meshing with the gearing on the immovable roller, a gear wheel slidable on the shaft and meshing with the gear of the movable roller, a hub on the gear wheel extending through the box, a collar on the hub to hold said gear wheel against displacement, and means for moving the slidable roller on the rods.

8. In combination, side frames, rods carried by the said arms, bearings immovably carried by the rods, a roller mounted in the immovable bearings, bearings slidable on the rods, lugs on the slidable bearings, a roller mounted in the sliding bearings, gear wheel on both of the rollers, a shaft, a gear wheel mounted on the shaft meshing with the gear on the immovable roller, a gear wheel slidable on the shaft and meshing with the gearing on the slidable roller, means whereby the sliding gear is caused to move in unison with the sliding roller, links pivoted to the lugs of the sliding bearings, lugs on the side frames, and levers pivoted to the lugs, said levers having the links pivotally secured thereto.

9. In a graining machine, the combination of a graining and printing roller, scrapers therefor movable with relation thereto and means for causing the scrapers of the graining and printing rollers to move simultaneously.

10. In a graining machine, the combination of a graining and printing roller, scrapers for said rollers movable with relation thereto, levers for imparting the desired movement to the scrapers, and a connection between the levers whereby said scrapers are moved simultaneously.

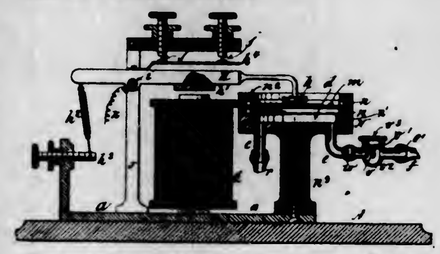
11. In a graining machine, the combination of graining and printing rollers, scrapers for the rollers, each scraper comprising a rod extending across the frame and mounted therein, an angular extension on the rod terminating in a crank, a lever carried by the frame engaging the crank of the extension, and a scraper proper secured to the rod, and connections between the levers of the scrapers for moving said scrapers simultaneously.

12. In a graining machine, the combination of graining and printing rollers with pans arranged therebeneath, legs for supporting the pans, said pans being adjustable longitudinally of the supporting legs, small rollers yieldably held within the pans contacting with the rollers, and means for regulating the tension of the yieldable rollers.

13. In a graining machine, the combination of a graining and printing roller with pans arranged underneath said rollers, legs for supporting the pans, said pans being adjustable longitudinally of the supporting legs and small rollers within the pans contacting with the rollers.

14. In a graining machine, the combination of graining and printing rollers with pans arranged underneath said rollers, legs for supporting the pans, said pans being adjustable longitudinally of the supporting legs and small rollers yieldably held within the pans contacting with the rollers.

853,645. VIBRATORY APPARATUS FOR EAR TREATMENT. EUGENE MEYER, New York, N. Y. Filed Dec. 24, 1906. Serial No. 349,312.



Claim.—1. In apparatus of the character designated, the combination of an air chamber, a diaphragm therein, means for forcing air under pressure into said air chamber, means for vibrating said diaphragm consisting of a vibratory hammer lever provided with an armature actuated by electro magnetism, and means for transmitting the resultant vibrations of air to a patient, substantially in the manner and for the purpose described.

2. In apparatus of the character designated, the combination of an air chamber, a diaphragm therein, means for withdrawing air from said air chamber for the purpose of reducing the tension in said chamber below atmospheric pressure, means for vibrating said diaphragm consisting of a vibratory hammer lever provided with an armature actuated by electro magnetism, and means for transmitting the resultant vibrations of rarefied air to a patient, substantially as set forth.

3. In apparatus of the character designated, the combination of an air chamber, a collapsible bulb connected with said air chamber, a relief and check valve interposed between said air chamber and said bulb, a diaphragm in said air chamber means for vibrating said diaphragm consisting of a vibratory hammer lever provided with an armature actuated by electro-magnetism, and means for transmitting the resultant vibrations of air to a patient, substantially in the manner and for the purpose described.

4. In apparatus of the character designated, the combination of an air chamber, means for exhausting air therefrom, a relief and check valve interposed between said air chamber and said means of exhaust, a diaphragm in said air-chamber, means for vibrating said diaphragm consisting of a vibratory hammer lever provided with an armature actuated by electro-magnetism, and means for transmitting the resultant vibrations of air to a patient, substantially in the manner and for the purpose described.

5. In apparatus of the character designated, the combination of an air chamber, a diaphragm therein, means for vibrating said diaphragm consisting of a vibratory hammer lever provided with an armature actuated by electro-magnetism, and means for transmitting resultant vibrations of air to a patient, substantially in the manner and for the purpose described.

6. In apparatus of the character designated, the combination of an air chamber, a collapsible bulb connected with said air chamber, a check valve interposed between said air chamber and said bulb, a stop cock interposed between said air chamber and said check valve, means for vibrating said diaphragm and means for transmitting the resultant vibrations of air to a patient, substantially in the manner and for the purpose described.

7. In apparatus of the character designated, the combination of an air chamber, means for exhausing air therefrom, a relief valve interposed between said air chamber and said means of exhaust, a stop cock interposed between said air chamber and said relief valve, a diaphragm in said air chamber, means for vibrating said diaphragm, and means for transmitting the resultant vibrations of air to a patient, substantially in the manner and for the purpose described.

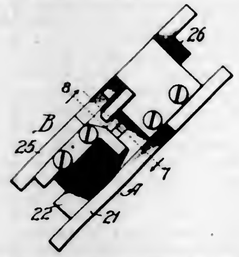
8. In apparatus of the character designated, the combination of an air chamber, means for exhausting air therefrom, a check valve interposed between said air chamber and said means of exhaust, a stop cock interposed between said air chamber and said check valve, a diaphragm in said air chamber, means for vibrating said diaphragm, and means for transmitting the resultant vibrations of air to a patient, substantially in the manner and for the purpose described.

853,646. WAIST AND SKIRT SUPPORTER. EVA J. MCKINNEY, Hallsville, Ill. Filed Oct. 6, 1906. Serial No. 337,757.



Claim.—In combination with material provided with a buttonhole, a reinforcing piece attached to the material by means of the stitching finishing said buttonhole and having its end portions loose to provide tabs or pull pieces.

853,647. TYPE-CASTING MOLD. PHILIP G. NUERNBERGER and GEORGE RETTIG, Jr., Chicago, Ill. Filed Apr. 22, 1905. Serial No. 256,930.



Claim.—1. In a mold for casting type, an outwardly movable gate separate from and independent of the metal supplying device, having an aperture leading to the mold cavity and a jet-forming recess communicating with said aperture.

2. In a mold for casting type, an outwardly movable gate separate from and independent of the metal supplying device having an aperture surrounded at its inner terminal by a jet-breaking projection extending inwardly beyond the surface of the foot of the type and having a jet-forming recess communicating with said aperture.

3. In a mold for casting type, an outwardly movable gate separate from the metal supplying device, having an aperture leading to the mold cavity and a jet forming recess communicating with said aperture and serving in its outward movement to break off the jet.

4. In a mold an outwardly moving part having a jet-forming recess discharging into the mold cavity and also provided with a lateral recess for excess metal communicating with such jet-forming recess, the outward movement of said part serving to break off the jet substantially as set forth.

5. In a mold, an outwardly moving part consisting of two sections, independent of the means of supply, having an aperture discharging into the mold cavity and also provided with a recess communicating with said aperture, for excess metal, to be subsequently removed.

6. In a mold, an outwardly moving part consisting of two sections, having an aperture discharging into the mold cavity, a rearward part surrounding said apertuie and projecting into said cavity and a recess for excess metal communicating with such aperture.

7. In a mold, an outwardly moving part consisting of two sections, independent of the means of supply, having an aperture discharging into the mold cavity, a rearward part surrounding said aperture and projecting into said cavity and a recess for excess metal, in combination with means engaging the body of the casting for breaking off such excess metal as the said movable part recedes from the mold cavity.

8. A mold provided with an outwardly movable gate containing a jet-forming recess, in combination with means for moving said gate outward in a straight line to break off said jet the said gate being provided with a part surrounding the outlet of said recess and projecting into the mold cavity for the purpose set forth.

9. In a type-casting mold, the combination of an outwardly movable gate with means for moving it straight outward by force applied in its line of motion, a relatively fixed shoulder attached to the body of the mold and engaging the base of the type to prevent its withdrawal and means for forming a recess in the said base making the point of junction of the jet and the type at the inner end of the said recess substantially as set forth.

10. In a type-casting mold, a movable part containing a jet-forming passage, the inner end of which is prolonged as a metal discharging projection into the mold cavity, in combination with means for moving said part outward, base-forming devices fitting on said projection and permitting the latter to form a recess in the base and means for moving the said part and projection to break off the jet at the inner end of said recess.

11. A type casting mold adapted to retain the type and provided with means independent of the opening of the mold and operating outwardly in the axial line of the type for automatically breaking off the jet and leaving the type with a smooth base.

12. A type casting mold provided with means, contained within itself and independent of the metal supplying devices, for forming a recess in its base with the line of junction between the type and jet at the inner end of said recess and means for automatically breaking off the jet at this point, leaving the base of the type unaffected thereby substantially as set forth.

13. A type casting mold adapted to retain the type and provided with resilient means for breaking off the jet by direct outward movement in the axial line of the type before the mold opens.

14. In combination with mold opening devices a type-casting mold provided with automatic means independent of the mold opening devices and operating in line with the type, for breaking off the jet at a point above the base of the type.

15. A type-casting mold provided with jet-forming parts, which are outwardly movable from the mold body independently of the metal-supplying devices and of any movement of a mold section, and means for retaining the type in the mold during such movement, to break off the jet.

16. A mold provided with jet forming parts exclusively attached thereto, which are automatically movable away from the mold cavity independently of the opening movement of the mold, to break the jet, and means for limiting the movement of said parts.

17. A type casting mold adapted to retain the type and provided with a movable gate admitting molten material to the mold cavity, resilient means for automatically moving said gate outward in the axial line of the type to break the jet and means for limiting such movement of the gate.

18. A mold provided with a movable gate admitting molten material to the mold cavity and springs interposed between the body of said mold and said gate to force the latter outward, breaking the jet independently of the opening movement of the mold.

19. A type casting mold adapted to retain the type and provided with means for retaining the cast article in the mold cavity, means independent of the movement of any

part except said gate and operating to force the latter outward in the axial line of the type, breaking off the jet.

20. A type-casting mold provided with a type-retaining device, an outwardly movable gate provided with a metal-discharging part extending inwardly through said device and coöperating therewith to cast a type with a recessed base, and springs interposed between the body of the mold and the gate, to force the latter outward, breaking the jet.

21. A type-casting mold provided with a gate which normally extends forward beyond the mold body and yielding means for holding the said gate in this normal position and restoring it thereto when pressure is withdrawn.

22. A type-casting mold provided with a gate consisting of two coöperating members, two sliding plates on which these members are respectively fastened, to move therewith toward and from the mold-cavity, means for limiting this movement of the said plates and means for automatically moving said plates and gate-members outward from the casting position to the normal position.

23. A type-casting mold provided with a gate consisting of two coöperating members, two sliding plates on which these members are respectively fastened to move therewith toward and from the mold cavity, means for limiting this movement of the said plates and resilient means for automatically moving said plates and gate-members simultaneously outward from the casting position to the normal position on the removal of opposing pressure and holding them there until such pressure is again applied.

24. A type-casting mold provided with a gate consisting of two coöperating members, two slotted sliding plates on which these members are respectively fastened to move back and forward therewith, means for automatically moving said gate outward from the jet cavity, and relatively fixed parts entering said slots to limit the said movement substantially as set forth.

25. A type-casting machine provided with a movable gate and means for automatically moving this gate outward into its normal position, in combination with a device for forcing said gate back from its normal position into its casting position when said gate and device are brought into contact.

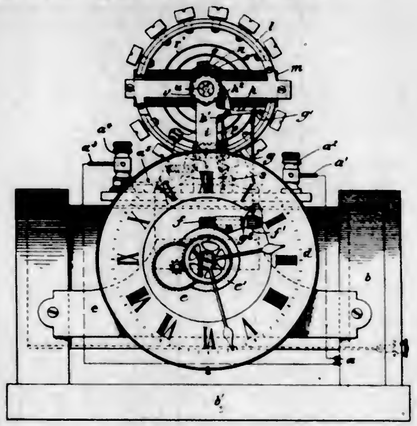
26. A type-casting mold having movable jet-forming parts whose normal position is away from the carriage part of the mold and a stationary object arranged for contact with the said parts and to force the latter back into the casting position, said mold being further provided with means for returning the said jet-forming parts to their normal position before the mold opens to discharge the type.

27. In a type casting mold, the combination of movable jet-forming parts with springs located in the mold and exerting an outward pressure on the jet-forming parts in returning the same to their normal position and means located in the path of the mold to receive the contact of the said jet-forming parts and force the latter back to their casting position substantially as set forth.

853,648. ELECTRIC CLOCK. TIMOTHY B. POWERS, New York, N. Y., assignor to Kutnow Bros., New York, N. Y. Filed May 12, 1906. Serial No. 316,435.

Claim.—1. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, a stationary armature located in proximity to the path of a pole of the magnet, and circuit connections and contacts whereby the magnet is momentarily energized to add an impulse to the oscillation of the wheel as a pole of the magnet approaches the armature.

2. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, a stationary armature located in proximity to the path of a pole of the magnet, and circuit connections and contacts whereby the magnet is momentarily energized to add an impulse to the oscillation of the wheel as a pole of the magnet approaches the armature, one of the contacts being carried by the wheel and another co-operating contact being mounted on a fixed support in the path of the first contact.



3. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, a stationary armature located in proximity to the path of a pole of the magnet, circuit connections and contacts whereby the magnet is momentarily energized to add an impulse to the oscillation of the wheel as a pole of the magnet approaches the armature, and means for varying the number of oscillations of the wheel in a given period of time.

4. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, means for transmitting forward motion from the oscillating balance wheel to the clock train, a stationary armature located in proximity to the path of a pole of the magnet, and circuit connections and contacts whereby the magnet is momentarily energized to add an impulse to the oscillation of the wheel as a pole of the magnet approaches the armature.

5. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, means for transmitting forward motion from the oscillating balance wheel to the clock train, a stationary armature located in proximity to the path of a pole of the magnet, and circuit connections and contacts whereby the magnet is momentarily energized to add an impulse to the oscillation of the wheel as a pole of the magnet approaches the armature, one of the contacts being carried by the wheel and another co-operating contact being mounted on a fixed support in the path of the first contact.

6. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, means for transmitting forward motion from the oscillating balance wheel to the clock train, a stationary armature located in proximity to the path of a pole of the magnet, a contact pin carried by the balance wheel and insulated on one side, a contact spring having a broad L-shaped head located in the path of movement of the pin whereby the pin passes on one side of said head in one direction and on the other side of said head in the other direction, and circuit connections.

7. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, means for transmitting forward motion from the oscillating balance wheel to the clock train, a stationary armature located in proximity to the path of movement of a pole of the magnet, a contact carried by the balance wheel, a contact spring located in the path of the first named contact, transmission devices having a portion located in proximity to the spring to be actuated thereby, and circuit connections.

8. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, means for transmitting forward motion from the oscillating balance wheel to the clock train, a stationary armature located in proximity to the path of movement of a pole of the magnet, a contact carried by the balance wheel, a contact spring located in the path of the first named contact, a lever mounted in proximity to the contact spring to be actuated thereby, means whereby the movement of the lever is made to actuate the clock train, and circuit connections.

9. The combination of a single-core electro-magnet mounted to oscillate upon an adverse axis between its poles and forming a part of a rotary balance wheel with its core radial and its poles at the periphery of such wheel, a coiled spring having one end secured to said wheel and the other secured to a fixed point, means for transmitting forward motion from the oscillating balance wheel to the clock train, a stationary armature located in proximity to the path of movement of a pole of the magnet, a contact carried by the balance wheel, a yielding contact located in the path of the first named contact, a power transmitting device in proximity to the yielding contact to be operated thereby and in turn to actuate the clock train, and circuit connections.

853,649. HAY-STACKER. EDMUND SCHULZE, Lyons, Nebr. Filed Jan. 30, 1907. Serial No. 354,893.



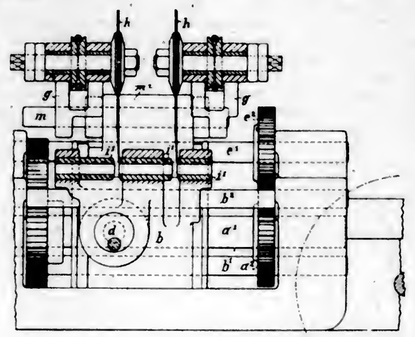
Claim.—1. A retaining device for hay stackers consisting of a rod supported upon a tooth of a stacker head in an upwardly and rearwardly inclined position and having a terminal downturned point and a forwardly curved foot or supporting member set forwardly beneath the body of the retaining member.

2. A load retaining device for hay stackers consisting of a rod supported upon a tooth of a stacker head in an upwardly and rearwardly inclined position and having a flattened apertured base member at its front end, said rod having a terminal downturned point at its rear end and a forwardly-curved foot set forwardly beneath the body of the retaining device and having a flattened apertured base plate.

3. A load retaining device for hay stackers comprising a body and a foot member converging in a rearward extending terminal point, and having apertured base plates.

853,650. CIGARETTE-MAKING MACHINE. EDUARD SCHUMANN, Kötzschenbroda, near Dresden, Germany. Filed Feb. 8, 1906. Serial No. 300,031.

Claim.—1. In a cutting mechanism for cigarette making machines, the combination with a reciprocating slide and a cutter carried thereby, of a plurality of rollers mounted on the said reciprocating slide, a shaft and a ring fixed on said shaft and provided with a plurality of projections on one face thereof corresponding in number with the said rollers which are engaged simultaneously by the said projections, substantially as and for the purposes specified.



2. In a cutting mechanism for cigarette making machines, the combination with a drive shaft, of a slide thereon, means for imparting a reciprocating movement to said slide and means for varying the travel of said slide while the machine is in operation, substantially as and for the purposes specified.

3. In a cutting mechanism for cigarette making machines, the combination with a reciprocating slide and a cutter carried thereby, of a plurality of rollers mounted on said reciprocating slide, a shaft, a ring fixed on said shaft and provided with a plurality of projections on one face corresponding to the number of said rollers which are engaged simultaneously by the said projections and means for adjusting the positions of the said rollers to vary the travel of the said reciprocating slide, substantially as and for the purposes specified.

4. In a cutting mechanism for cigarette making machines, the combination with a reciprocating slide and a cutter carried thereby, of a drive shaft, a cam ring fixed on said drive shaft and placed within the said reciprocating slide, rollers mounted interiorly of the said reciprocating slide and adapted to be engaged by the said cam ring and means operated exteriorly of the slide for adjusting the positions of the said rollers to determine the travel of the said reciprocating slide, substantially as and for the purposes specified.

5. In a cutting mechanism for cigarette making machines, the combination with a drive shaft, a reciprocating slide and a cutter carried thereby, of a cam ring fixed on the said drive shaft and within the said reciprocating slide, supports journaled in the said reciprocating slide, rollers mounted on the said supports and adapted to be engaged by said cam ring and means for shifting the positions of the said supports to adjust the positions of the said rollers, in order to determine the travel of the said reciprocating slide, substantially as and for the purposes specified.

6. In a cutting mechanism for cigarette making machines, the combination with a drive shaft, a reciprocating slide and a cutter carried thereby, of a cam ring fixed on the said drive shaft and within the said reciprocating slide, supports journaled in the said reciprocating slide, rollers eccentrically mounted on the said supports and adapted to be engaged by said cam ring, means for shifting the positions of the said supports to adjust the positions of the said rollers, in order to determine the travel of the said reciprocating slide, and means for maintaining the said cam ring in contact with the said rollers, substantially as and for the purposes specified.

7. In a cutting mechanism for cigarette making machines, the combination with a slide and oscillating cutter, of means for imparting a reciprocating movement to said slide, means for varying the travel of the said slide while the machine is in operation, means for oscillating the cutter and means for adjusting the normal position of the said cutter to take up the wear on the same, substantially as and for the purposes specified.

8. In a cutting mechanism for cigarette making machines, the combination with a reciprocating slide and a cutter carried thereby, of a drive shaft, a cam ring fixed on said drive shaft and placed within the said reciprocating slide, rollers mounted interiorly of the said reciprocating slide and adapted to be engaged by the said cam ring, means operated exteriorly of the slide for adjusting the positions of the said rollers to determine the travel of the said reciprocating slide, an auxiliary shaft and means operated by the said auxiliary shaft for oscillating the said cutter, substantially as and for the purposes specified.

9. In a cutting mechanism for cigarette making machines, the combination with a drive shaft, a reciprocating slide and a cutter carried thereby, of a cam ring fixed on the said drive shaft and within the said reciprocating slide, supports journaled in the said reciprocating slide, rollers mounted on the said supports and adapted to be engaged by said cam ring, means for shifting the positions of the said supports to adjust the positions of the said rollers in order to determine the travel of the said reciprocating slide, an auxiliary shaft driven by said main shaft, a cam thereon, means operated by the said cam for lowering the said cutter and means for returning the said cutter to its normal position, substantially as and for the purposes specified.

10. In a cutting mechanism for cigarette making machines, the combination with a drive shaft, a reciprocating slide and a cutter carried thereby, of a cam ring fixed on the said drive shaft and within the reciprocating slide, supports journaled in the said reciprocating slide, rollers eccentrically mounted on the said supports and adapted to be engaged by said cam ring, means for shifting the positions of the said supports to adjust the positions of the said rollers in order to determine the travel of the said reciprocating slide, means for maintaining the said cam ring in contact with the said rollers, an auxiliary shaft driven by said main shaft, a cam thereon, means operated by the said cam for lowering the said cutter and means for returning the said cutter to its normal position, substantially as and for the purposes specified.

853,651. ACCOUNT-REGISTER. ALBERT F. STAPLES, Brockton, and CHARLES W. POTTER, Waltham, Mass., assignors to The McCaskey Register Company, Alliance, Ohio, a Corporation of Ohio. Filed Feb. 26, 1906. Serial No. 302,879.

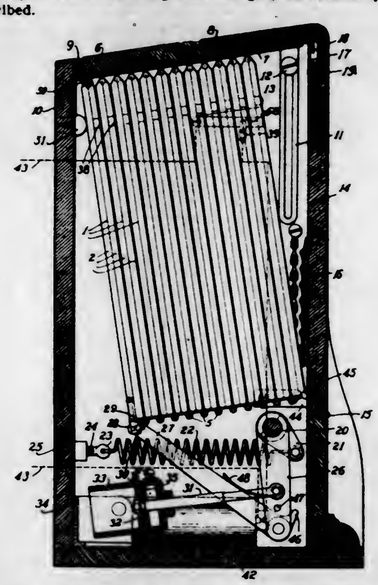
Claim.—1. An account register, having, in combination, a plurality of pivotally mounted frames, means for supporting the frames normally in upright position, and means acting, when one or more frames are drawn down, to move the remaining frames forward to a position substantially in the plane normally occupied by the first frame, substantially as described.

2. An account register, having, in combination, a plurality of frames hinged together at the bottom, means for holding the frames normally in upright position, and means acting, when one or more of the frames are drawn down, to move the tops of the remaining frames forward substantially the same distance that the bottoms are moved forward, substantially as described.

3. An account register, having, in combination, a plurality of frames pivotally connected together at the bottom, means for supporting the frames normally in upright position, and inclined guides co-operating with the last frame so as to cause the top of said frame to be moved forward as it is raised, substantially as described.

4. An account register, having, in combination, a plurality of frames hinged together at the bottom and provided with abutments holding the frames normally in substantially parallel position, pivotal supports for the first frame, means for holding the frames normally in upright position, and means for moving the tops of the frames forward as the bottoms are moved forward in turning down the frames, substantially as described.

5. An account register, having, in combination, a plurality of frames hinged together at the bottom in series, pivotal supports for the first frame, means for normally supporting the frames in upright position, and yielding means opposing the upward movement of the frames for partially counter-balancing their weight, substantially as described.



6. An account register, having, in combination, a plurality of frames hinged together at the bottom, means for normally supporting the frames in upright position, pivotal supports for the first frame, and a counter-balancing device connecting with the last frame and subjecting the frames to a counter-balancing force diminishing substantially in proportion to the number of frames turned down, substantially as described.

7. An account register having, in combination, a plurality of pivotally mounted frames, and a casing, in which the frames are normally supported in upright position, provided with a cover pivoted at the rear and having means for limiting its upward motion so as to act as a guide for the tops of the frames by engagement with the last frame when one or more of the frames are turned down, substantially as described.

8. An account register having, in combination, a plurality of frames hinged together, a casing provided with loose pivotal supports for the front frame arranged to permit the frames to be readily inserted therein and removed therefrom, and a motion-controlling device located in the casing and detachably connected with the frames, substantially as described.

9. An account register having, in combination, a plurality of frames hinged together in series, a support for the frames, and a single counter-balancing means for the frames connected with one of the terminal frames, substantially as described.

10. An account register having, in combination, a plurality of frames hinged together in series, a pivotal support for one terminal frame, and counter-balancing means connected with the other terminal frame at its hinged edge, substantially as described.

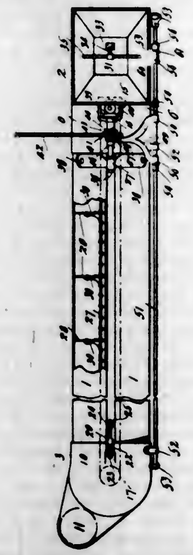
11. An account register having, in combination, a plurality of frames hinged together in series, a support for the hinged edges of the frames and means for moving the remaining frames, as one or more of the frames is swung about its hinges to cause them to remain substantially parallel to their original positions, substantially as described.

12. An account register including a case having a back, a pair of pivotal supports in the case, and a plurality of bill holding frames hinged to each other, the foremost one of said frames being pivotally mounted in said pivotal supports and supporting the other frames, all of the frames when upright being inclined to lean by gravity toward the back of the case.

13. An account register including a case having a back, a pair of pivotal supports in the case, a plurality of bill-holding frames hinged to each other, the foremost one of said frames being pivotally mounted in said pivotal supports and supporting the other frames, all of the frames when upright being inclined to lean by gravity toward the back of the case, and compensating paralleling apparatus in the case acting, when one or more of the frames are drawn down, to assist in moving the remaining frames forward to positions approximately parallel to the plane normally occupied by the foremost frame.

14. In account registers, the combination with a cabinet case, and a plurality of bill-holding frames hinged one to another and collectively forming a connected portable group of frames, of a pair of pivotal supports mounted in the case and pivotally supporting the forward part of the forward one of the frames and thereby supporting the group of frames, the frames being movable separately in succession to either upright or reclining positions, and means in the case to be engaged by the rearmost frame for holding it upright when bodily elevated and a forward frame reclines.

853,652. CONVEYER. BENJAMIN M. STEELE, Peoria, Ill., assignor to Ben Steele Weigher Manufacturing Company, Peoria, Ill., a Corporation of Illinois. Filed Nov. 14, 1903. Serial No. 181,119.



Claim.—1. In a conveyer, the combination of parallel tubes, head and end sections in which the ends of the tubes have a common union, exits in the head and end sections, a valve in the head section, and a conveyer traversing the tubes, capable of being intermittingly actuated as the valve is shifted in opposite directions.

2. In a conveyer, the combination of a pair of parallel tubes, head and end sections in which the ends of the tubes have a common union, exits in the head and end sections, a valve in the head section, a conveyer traversing the tubes, means in operative connection with the valve and conveyer, capable of stopping the movement of the conveyer when shifting the valve in one direction and starting the conveyer with the simultaneous shifting of the valve in an opposite direction.

3. In a conveyer, the combination of a pair of parallel tubes, head and end sections in which the ends of the tubes have a common union, exits in the head and end sections, a conveyer traversing the tubes, a valve in one of said sections, a series of substantially semi-circular flights attached to the conveyer, means in operative connection with the conveyer and valve, capable of stopping the conveyer when shifting the valve in one direction and starting the conveyer with the simultaneous shifting of the valve in an opposite direction.

4. In a conveyer, the combination of a pair of parallel tubes, a head section and an end section in which the ends of the tubes have a common union, an obliquely disposed discharge spout from the end section, a valve in the head section controlling an exit in the head to the tubes and an exit through the head, a conveyer traversing the tubes, and means for shifting the valve and controlling the movement of the conveyer.

5. In a conveyer, the combination of a conveyer tubing having an end outlet, a feed hopper at the opposite end having an exit, a swinging valve adapted to alternately close said hopper exit, a suitable conveyer, gearing for actuating the conveyer, clutch mechanism in such gearing, a trip-rod having connection with the clutch mechanism and valve, when actuated adapted to simultaneously stop the conveyer when the valve is shifted to open the hopper exit and started when the valve is shifted in an opposite direction.

6. In a conveyer, the combination of parallel tubes connected at one end by a head section having a common exit, and at the opposite end by a hopper having a partitioned exit, a valve controlling such exit, a conveyer adapted to travel through said tubes, comprising a sprocket drive and substantially semi-circular flights, gearing for actuating such conveyer, clutch mechanism in such gearing, and a trip-rod having connection with the valve and clutch parts, for the purposes specified.

7. In a conveyer, the combination of parallel tubes connected at one end by a head section having a common exit, and at the opposite end by a hopper having a partitioned exit, a valve controlling such exit, a conveyer adapted to traverse said tubes, a continuously driven sprocket wheel, clutch mechanism, gearing interposed between the clutch mechanism and conveyer, and a trip-rod having connection with the valve and operatively connected with the clutch mechanism to intermittingly clutch the continuously driven sprocket for imparting power to the conveyer.

8. In a conveyer, the combination of conveying tubing, a head and end section connecting said tubing, the head section having a partitioned exit, a valve controlling such exit, a conveyer within the tubing, a continuously driven sprocket, clutch mechanism, gearing interposed between the clutch mechanism and conveyer, and a trip-rod operatively connected with the valve and clutch mechanism for simultaneously starting the conveyer when shifting the valve in one direction, and for stopping the conveyer when shifting the valve in an opposite direction.

9. In a conveyer, the combination of a pair of tubes joined in end sections having exits, and one of such sections having a hopper, a valve controlling the exit in the hopper, a chain conveyer movable through the tubes, gearing for actuating the conveyer, a chain tightener extending through one of said end sections and disposed between the walls of the matching tubes, clutch mechanism for controlling the movements of the conveyer, and means for alternately shifting the valve while at the same time controlling the movements of the clutch parts.

10. In a conveyer, the combination of two tubes joined to head sections, each of which have an exit and one provided with a hopper and a valve controlling its exit, a sprocket wheel mounted for rotation at the head of the

tubes and within the head sections, a conveyer traveling around said sprockets and through the tubes having flights of plates substantially semi-circular in outline, gearing for actuating such conveyer, clutch mechanism in such gearing, a trip-rod having connection with means attached to the valve and clutch devices and controlled from opposite terminals for simultaneously stopping the conveyer when shifting the valve to open the hopper exit, and for starting the conveyer when closing said exit.

11. In a conveyer, the combination of a conveyer tubing, head and end sections connecting such tubing, the head section having a partitioned exit, a valve controlling said exit, a conveyer, gearing for actuating said conveyer, clutch mechanism in said gearing, a trip-rod in operative connection with the valve and clutch mechanism, adapted when shifting the valve in one direction to release the clutch parts and stop the movement of the conveyer and when shifting the valve in an opposite direction to unite the clutch parts to impart movement to the conveyer, and means for locking the trip-rod when shifted.

12. In a conveyer, the combination therewith, of a continuously rotating sprocket wheel, gearing interposed between the conveyer and sprocket, clutch parts in such gearing, a trip-rod for intermittingly connecting the clutch parts to stop or start the conveyer, and means controlled by the movement of the trip-rod for locking the movement of such rod after being shifted.

13. In a conveyer, the driving mechanism, comprising a shaft, a continuously driven sprocket on said shaft, gearing, clutch mechanism interposed between said gearing and sprocket, a shifter connected with the clutch parts, a trip-rod operatively connected with the shifter, capable when moved in one direction to cause the clutch parts to engage for simultaneously starting the conveyer through the aforesaid gearing, and when moved in an opposite direction to disengage the clutch parts and thereby stop the movement of the conveyer.

14. In a device of the class described, the combination of a conveying body, gearing for actuating said conveyer, clutch mechanism in said gearing, a swinging valve, a spindle forming a pivot for said valve, an operator's rod, a shifter connected to the rod and clutch mechanism and an arm attached at one end to the valve spindle and its opposite end directly connected to the operator's rod, substantially as specified.

15. In a conveyer, a body having at one end a partitioned exit, conveying means in the body, gearing for actuating said conveyer, clutch mechanism in said gearing, a shifter arm attached to said clutch mechanism, a swinging valve plate adapted to alternately close the partitioned exit, a spindle forming a pivot for said valve plate, an arm of the spindle, an operator's rod having longitudinal movement through the free end of the spindle arm and the shifter, and means on the rod for engaging said arm and shifter, substantially as specified.

16. In a conveyer, a body having at one end a partitioned exit, conveying means in the body, gearing for actuating said conveyer, clutch mechanism in said gearing, a shifter arm connected to said clutch mechanism, a swinging valve having its pivot removed some distance above the aforesaid partition and a plate adapted to alternately close the exits upon opposite sides of said partition, an arm connected to the valve pivot, an operator's rod having longitudinal movement through the free ends of the spindle and the shifter, and adjustable collars on the rod upon opposite sides of the ends of the arm and shifter having a predetermined engagement with said arm and shifter, for the purposes set forth.

17. In a device of the class described, a cross-conveyer formed of a pair of horizontal and parallel tubes connected by head and end sections, the end section thereof provided with an outlet section extending radially in a line oblique with the longitudinal axis of the tubing and projecting downwardly, substantially as specified.

18. In a device of the class described, a cross-conveyer, formed with horizontally arranged and parallel tubes connected by head and end sections, the head section provided with an outlet and a valve adapted to control the inlet to the tubes and the outlet through the head section, and the end sections provided with an outlet section extending radially in a line oblique with the longitudinal axis of the tubing and projecting downwardly, substantially as specified.

19. In a conveyer, the combination of a pair of parallel tubes, an end section to which the ends of the tubes are secured, the same being provided with an integral depressed body portion intermediate the tubes, a conveying apparatus traversing the tubes and through the end section, a slidable member disposed between the tubes and extending into the end section through the depressed portion thereof, a wheel supported by the inner end of the member over which the conveying apparatus is directed, means for actuating said conveyer, and means for adjusting and fixing the position of the said member, substantially as specified.

20. In a conveyer, the combination of a pair of parallel tubes, an end section to which the ends of the tube are secured, the same being provided with a depressed body portion intermediate the tubes, a conveying apparatus traversing the tubes and through the end section, an arm disposed longitudinally between and parallel with the tubes, one end passing through the depressed portion of the end section and provided with a yoke portion carried within said section, a wheel revolubly supported within the end section by the yoke of the arm over which the conveyer is directed, means disposed at or near the opposite end of the arm whereby the same may be adjusted, and means for actuating the said conveyer, substantially as specified.

21. In a conveyer, the combination of a pair of parallel tubes, an end section in which the ends of the tubes are secured, the same being provided with a depressed body portion intermediate the tubes, a conveying apparatus traversing the tubes and through the end section, means for taking up the slack in the conveying apparatus, comprising a rod disposed longitudinally between the tubes and one end thereof passing into the end section through the depressed portion thereof, a wheel carried within the end section by said arm over which the conveying apparatus is directed, a member secured to one of the tubes, a threaded portion of the arm passing through the said member, and adjusting and locking nuts engaging the threaded portion of the arm, substantially as and for the purpose specified.

22. In a conveyer, the combination of an end section provided with substantially tubular parallel extensions 10 and intermediate depressed portions between which is an opening, a pair of parallel tubes their ends joined in the extensions of the end section, a conveyer comprising a chain with flights traversing the tubes and passing through the end section, a chain tightener consisting of a slotted arm disposed between the tubes having one end carried through the opening in the depressed portions of the end section, a wheel carried by the inner end of said arm over which is directed the conveyer chain, a guide supported by the depressed portion of the end section and passing through the slot of said arm, and means for adjusting and locking the position of the said arm, substantially as specified.

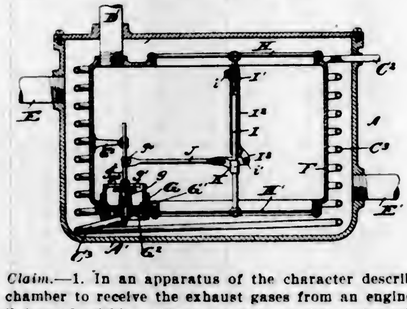
23. In a conveyer, the combination of a head or receiving section having a hopper portion and provided with substantially parallel tubular portions 6, a pair of parallel tubes having their ends secured in the tubular portions of the head section, a conveyer comprising a chain and flights traversing the tubes and adapted to pass through the head section, the said head being provided with a transverse depressed body of substantially the same contour as the lower edge of the flights and serving as a passageway for the said flights, means for operating the said conveyer chain, and a valve suitably disposed in the head section, all substantially as and for the purposes set forth.

24. In a conveyer, the combination of conveying tubing, head and end sections in which the tubing is suitably secured, exits in the head and end sections, a valve in the head section and a conveying device operating in the tubing, the same capable of being intermittingly actuated as the valve is shifted in opposite directions, substantially as specified.

25. In a conveyer, the combination of a head section and an end section, a pair of cylindrical conveying tubes arranged parallel with each other with their ends joined in the said head and end sections, driving and driven sprocket wheels located at the terminals of the said tubes, and within the said sections, a sprocket chain traversing the tubes and around the wheels aforesaid, and a series of semi-circular flights attached to said chain at intervals, substantially as and for the purposes specified.

26. In a conveyer, the combination of a pair of cylindrical tubes having their opposite ends connected in end sections, driving and driven sprockets located in said end sections, a sprocket chain traversing the tube and around said sprockets, flights consisting of flat plates spaced at suitable intervals on said chains and connected at one corner thereto, the lower portions of the flights being circular to conform to the contour of the tubes, and the upper sections of the flights cut away to leave a free space, the full width of the flights between the axial center of the tubes and the upper semi-circular portions thereof, and mechanism for controlling the movements of the conveyer chain.

853,653. GASIFIER. MORSE STEWART, Detroit, Mich. Filed Feb. 27, 1907. Serial No. 359,632.



Claim.—1. In an apparatus of the character described, a chamber to receive the exhaust gases from an engine, a coil housed within said chamber to receive and conduct liquid hydro-carbon, an auxiliary chamber communicating with the coil and also with the chamber receiving the exhaust gases from the engine, and suitable valves for controlling the admission of the exhaust gases and the liquid hydro-carbon to said auxiliary chamber, substantially as described.

2. In an apparatus of the character described, a chamber to receive the exhaust gases from an engine, a coil housed within said chamber to receive and conduct liquid gasolene, an auxiliary chamber communicating with the coil and also with the chamber receiving the exhaust gases from the engine, valves for controlling the admission of the exhaust gases and gasolene to said auxiliary chamber, suitable piping connecting said auxiliary chamber with a mixer or carbureter, and the carbureter, substantially as described.

3. In an apparatus of the character described, a chamber to receive the exhaust gases from an engine, a coil housed within said chamber adapted to receive a liquid hydro-carbon, an auxiliary chamber communicating with said first named chamber and also with the coils for conveying the liquid hydro-carbon, valves to control the admission of the exhaust gases and the liquid hydro-carbon to said chamber, and means for operating the valves, whereby the liquid hydro-carbon may be admitted to said auxiliary chamber and also the exhaust gases for gasifying said liquid hydro-carbon, substantially as described.

4. In an apparatus of the character described, a chamber designed to receive the exhaust gases from an engine, a coil housed within said chamber, means for conducting liquid hydro-carbon to said coil from a suitable source of supply, an auxiliary receptacle housed within the first named chamber communicating with the outside chamber and with the coil, said means of communication being under the control of suitable valves, the valves, and means for operating said valves to admit the exhaust gases and the liquid hyro-carbon to the auxiliary receptacle, whereby the liquid hydro-carbon and exhaust gases may commingle for producing a superheated gas, substantially as described.

5. In an apparatus of the character described, a chamber adapted to receive the exhaust gases from an engine, a coil housed within said chamber designed to receive and conduct a liquid hydro-carbon, an auxiliary receptacle housed within the chamber, valves controlling the admission of the liquid hydro-carbon and the exhaust gases to said auxiliary receptacle, said latter receptacle provided with diaphragms, means connected with said diaphragms for operating said valves when the diaphragms are depressed, the construction being such that pressure exerted on the outside of said diaphragms will open the valves admitting the liquid hydro-carbon and exhaust gases to the inner receptacle, substantially as described.

6. In an apparatus of the class described, an outer and an inner receptacle, a coil to conduct a liquid hydro-carbon housed between the outer and inner receptacle, means for conducting the exhaust gases from an engine to the outer receptacle, means for delivering the liquid hydro-carbon to the coil under pressure, valves controlling the admission of the liquid hydro-carbon and the exhaust gases to the inner receptacle, means for deflecting the liquid hydro-carbon as it is projected into the inner chamber over the incoming exhaust gases, and means for opening the valves operated by the pressure of the exhaust gases in the outer receptacle, substantially as described.

7. In an apparatus of the character described, an outer chamber, an inner chamber, diaphragms forming a portion of the wall of the inner chamber, a coil to conduct liquid hydro-carbon from a source of supply located between the inner and outer chambers, valves to control the admission of the exhaust gases from the outer to the inner chamber and the liquid hydro-carbon from the coil, means for spraying and deflecting the incoming hydro-carbon over the incoming exhaust gases, and means connected with the diaphragms of the inner chamber for operating said valves, substantially as described.

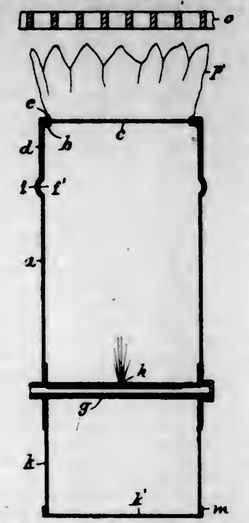
8. In an apparatus of the character described, a chamber to receive the exhaust gases from an engine, a coil housed within said chamber to receive and conduct gasolene to an auxiliary chamber, the auxiliary chamber also having communication with the main chamber, a valve to control the admission of the exhaust gases from the main chamber to the auxiliary chamber, a valve to control the admission of gasolene from the coil to the auxiliary chamber, the construction being such that on raising the valve controlling the admission of gasolene the valve admitting the exhaust gases to the auxiliary chamber will also be lifted, diaphragms forming a portion of the wall of the auxiliary chamber, inwardly projecting stems secured to said diaphragms arranged in alinement, a sleeve secured to one of said stems and free to travel over the opposite stem, and a valve-operating lever fulcrumed to one of the stems and pivoted to the sleeve engaging the stem of the valve controlling the admission of gasolene to the auxiliary chamber, substantially as described.

853,654. GAS-BURNER. SAMUEL STEWART, Newark, N. J. Filed Mar. 24, 1905. Renewed Mar. 22, 1907. Serial No. 363,955.

Claim.—1. In a gas burner for heating purposes, the combination, with a horizontal gas pipe having a jet aperture in its upper side, of a burner shell supported thereon, and projected above the gas pipe and provided with flame-screen o upon the top, and a cylindrical strainer telescoping with the shell and projected below the gas pipe, and closing the bottom of the shell to exclude wind and lint from the interior.

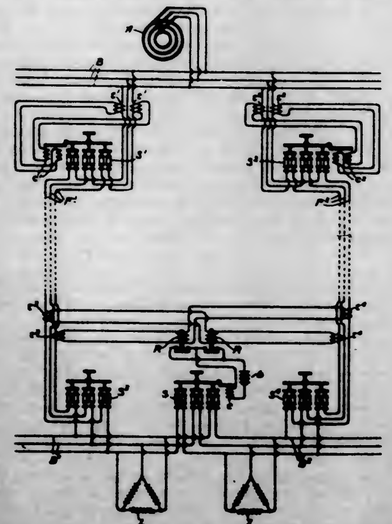
2. In a gas burner for heating purposes, the combination, with an imperforate burner shell *a* having flame-screen *o* at the top, and a perforated strainer *k* extended below the bottom of such shell, of the gas pipe *g* inserted transversely through the shell and strainer at their junc-

tion and having the jet aperture h upon its upper side, whereby the air supply enters wholly below the gas supply and the air is mingled with the gas in the shell.



3. In a gas burner for heating purposes, the combination, with the gas pipe *g* having perforation *h* upon its upper side, of the cylindrical perforated strainer *k* having the holes *l* fitted to the gas pipe, the cylindrical shell *a* having the flame-screen *c* upon the top and fitted telescopically at its lower end upon the strainer *k*, and provided with the slots *n* at opposite sides fitted removably over the gas pipe, as and for the purpose set forth.

853,655. PROTECTIVE MEANS FOR PARALLEL FEEDERS. CHARLES W. STONE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 12, 1904. Serial No. 228,162.



Claim.—1. In combination with parallel feeders, bus-bars at the receiving station to which said feeders are connected, means for disconnecting each set of feeders from said bus-bars, and automatic means for opening the circuit of said bus-bars between the points of connection to said feeders upon a relative reversal of current in said feeders.

2. In combination with parallel feeders, bus-bars at the receiving station, switches for connecting each set of feeders to said bus-bars, a switch for opening the circuit of said bus-bars between the first switches, and a tripping device for the last switch operative upon a relative reversal of current in said feeders.

3. In combination with parallel feeders, bus-bars at the receiving station, switches for connecting each set of feeders to said bus-bars, a switch for opening the circuit of said bus-bars between the first switches, a device having two normally-opposed magnet windings energized respectively from said feeders, and means controlled by said device for opening said switch.

4. In combination with parallel feeders, bus-bars at the receiving station, switches for connecting each set of feeders to said bus-bars, a switch for opening the circuit of said bus-bars between the first switches, a trip coil for the last switch, and a differential relay energized from said feeders and controlling the circuit of said trip coil.

5. In combination with parallel feeders, bus-bars at the receiving station to which said feeders are connected, automatic means for opening the circuit of said bus-bars between the feeders upon a relative reversal of current in the feeders, and manually controlled means for disconnecting said feeders independently of said automatic means.

6. In combination with parallel feeders, a switch at the receiving end adapted to disconnect said feeders, series transformers having their primaries in circuit with said feeders, a device having two normally-opposed magnet windings energized from the secondaries of said transformers, means controlled by said device for opening said switch, and manually-controlled switches adapted to disconnect said feeders independently of the first switch.

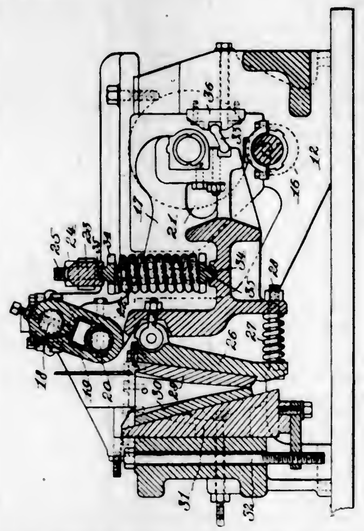
7. In combination with parallel feeders, bus-bars at the receiving station, switches for connecting each set of feeders to said bus-bars, a switch for opening the circuit of said bus-bars between the first switches, a trip coil for the last switch, series transformers having their primaries in circuit with said feeders, and a differential relay energized from the secondaries of said transformers and controlling the circuit of said trip coil.

853,656. CRUSHING-MACHINE. THOMAS L. STURTEVANT, Quincy, and THOMAS J. STURTEVANT, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed June 13, 1905. Renewed Jan. 30, 1907. Serial No. 354,909.

Claim.—1. In a crushing machine, the combination with a stationary jaw and a movable jaw co-operating therewith, of a horizontally extending rocking jaw frame or lever carrying said movable jaw, a rotating cam or eccentric for imparting crushing movements to the said rocking jaw frame or lever in one direction, and a spring or springs, compressed by said cam or eccentric, for effecting crushing movements of the said rocking jaw frame or lever in the opposite direction.

2. In a crushing machine, the combination with a stationary jaw and a movable jaw co-operating therewith, of a rocking jaw frame or lever on which said movable jaw is yieldingly mounted and which rocking jaw frame is loosely hung to the frame of the machine at its forward end and is loosely backed by toggles against the machine frame at its rear end, a rotating cam or eccentric for imparting movements to the said rocking jaw frame or lever in one direction, and a spring or springs for effecting the movements of said jaw frame or lever in the opposite direction.

3. In a crushing machine, the combination with a stationary jaw and a movable jaw co-operating therewith, of a horizontally extending rocking jaw frame or lever carrying said movable jaw, said rocking jaw frame being loosely hung to the frame of the machine at its forward end by a link and being backed by toggles against said frame at its rear end, a roller mounted in the rear end of the said rocking jaw frame or lever, a rotating cam or eccentric against which said roller bears, and spring mechanism for effecting movements of said rocking jaw and rocking jaw frame in opposition to the movements imparted by said cam or eccentric.



4. In a crushing machine, the combination with a stationary jaw and a movable jaw co-operating therewith, of a rocking jaw frame or lever on which said movable jaw is yieldingly mounted, and which is loosely hung to the frame of the machine at its forward end and is loosely backed by toggles against the machine frame at its rear end, a roller mounted in the rear end of the said rocking jaw frame or lever, a rotating cam or eccentric against which said roller bears, and spring mechanism for effecting movements of said rocking jaw and rocking jaw frame in opposition to the movements imparted by said cam or eccentric.

5. In a crushing machine, the combination with the frame thereof, of a stationary jaw mounted on said frame, a horizontally extending rocking jaw frame or lever loosely suspended from said machine frame at its forward end and provided with a roller at its rear end, a movable jaw carried by said rocking jaw frame or lever, a rotating cam or eccentric against which said roller bears, toggles loosely backing the rear end of said jaw frame or lever against the machine frame, and spring mechanism for effecting movements of said rocking jaw frame or lever in opposition to the movements effected by said cam or eccentric.

6. In a crushing machine, the combination with the frame thereof, of a stationary jaw mounted on said frame, a rocking jaw frame or lever loosely suspended from said machine frame at its forward end and provided with a roller at its rear end, a movable jaw yieldingly mounted on said jaw frame or lever, a rotating cam or eccentric against which said roller bears, toggles loosely backing the rear end of said rocking jaw frame against the machine frame, and spring mechanism for effecting movements of said jaw or lever in opposition to the movements effected by said cam or eccentric.

7. In a crushing machine, the combination of a front jaw and a rocking lever jaw opposite the same and co-operating therewith, of a relief spring or springs for said rocking lever jaw, a rotating cam or eccentric for imparting movements to said rocking jaw in one direction, and a spring or springs for effecting movements of said rocking lever jaw in the opposite direction, and which last-named spring or springs co-operate with the first-named spring or springs for effecting jaw relief.

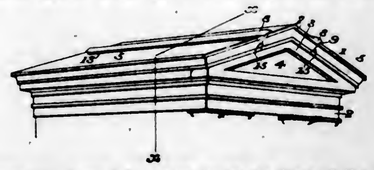
8. In a crushing machine, the combination with a stationary jaw, of a movable jaw, a horizontally disposed rocking jaw frame on which said movable jaw is mounted, a cam or eccentric, a spring or springs opposing the action of the said cam or eccentric and serving to impart alternate movements to said movable jaw by being previously compressed by the operation of said cam or eccentric.

9. In a crushing machine, the combination of a front jaw, a rocking jaw opposite the same and co-operating therewith, and a horizontally extending rocking jaw frame or lever which is pivotally supported from the machine frame near its front end and which is backed at its rear end by a toggle or toggles, of a cam or eccentric and co-operating springs for imparting vibrating movements to the rear end of said rocking jaw frame or lever and rocking crushing movements to said rocking jaw.

10. In a crushing machine, the combination of a normally stationary front jaw and an opposing rocking jaw, a rocking frame or lever, a swinging link by which said rocking frame or lever is supported on the machine frame near its front end, means for movably backing the rear end of said rocking frame or lever against the machine frame, and a cam or eccentric and opposing springs for imparting vibrating movements to said rocking frame or lever carrying said rocking jaw.

11. In a crushing machine, the combination with a stationary jaw and a movable jaw co-operating therewith, of a horizontally extending and bodily movable rocking jaw frame or lever at the forward end of which the said movable jaw is mounted so as to be entirely supported thereby and the rear end of which reciprocates vertically, said rocking jaw frame or lever being provided with a bearing-roller at its rear end, a rotating cam or eccentric for imparting vertical movements to the said rear end of the said rocking jaw frame or lever in one direction, and against which cam or eccentric said roller bears, and a spring or springs, compressed by said cam or eccentric, for effecting movements of the said rocking jaw frame or lever in the opposite direction.

853,657. ROOF FOR MAUSOLEUMS, VAULTS, &c. CHARLES E. TAYNTOR, New York, N. Y., assignor to C. E. Tayntor Granite Company, Hallowell, Me., a Corporation of Maine. Filed Nov. 1, 1905. Serial No. 285,489.



Claim.—1. A roof for mausoleums, vaults and the like comprising pediments, side roof stones, each having a gutter extending below the top surface and longitudinally thereof near its outer top portion, and a central roof stone having lips along its opposite side edges, said lips being adapted to partially overhang and direct moisture into said gutters.

2. A roof for mausoleums, vaults and the like comprising pediments, side roof stones, each having a gutter extending longitudinally thereof near its outer top portion and a central roof stone having lips along its opposite side edges, said lips being extended so as to overhang said gutters and thereby deflect moisture thereinto.

3. A roof for mausoleums, vaults and the like comprising pediments, side roof stones, each having a gutter extending longitudinally thereof near its outer top portion and terminating a short distance from the ends of the roof stone and a central roof stone having lips along its opposite side edges, said lips being extended so as to overhang said gutters and thereby deflect all moisture thereinto and away from the seams formed by the contact of said side roof stones and central roof stone.

4. A roof for mausoleums, vaults and the like, compris-

ing pediments, side roof stones each having a longitudinally extending gutter 13 in the upper, outer portion thereof and a central roof stone 7 having lips 8 projecting along its opposite side edges, said lips having the under wall 9 adapted to overhang the contiguous edge 10 of the adjacent side roof stone and to project over said gutter 13 thereby deflecting moisture from the seams 15 of said roof stones.

5. As an improved article of manufacture, a side roof stone having a gutter 13 in the outer, upper portion thereof, said gutter terminating a short distance from the ends of said roof stone and the latter having an inner top edge 10 and a face 11 adapted to co-act with the contiguous roof stone.

6. A roof for mausoleums, vaults and the like comprising pediments, side roof stones, a ridge stone and lips on said ridge stone disappearing at the vision line.

7. A roof for mausoleums, vaults and the like comprising pediments, side roof stones, a gutter in each, extending longitudinally thereof near its outer top portions, a ridge stone and lips adapted to direct moisture into said gutters and disappearing at the vision line.

8. A roof for mausoleums, vaults and the like comprising pediments, side roof stones, a central roof stone and a gutter in each of said side roof stones extending longitudinally thereof and terminating a short distance from the edge of said stones, said gutters being adapted to receive moisture and the like from said central roof stone.

853,658. POWDER-DISPENSING RECEPTACLE. EUGENE TERRY, Ithaca, N. Y., assignor to Edward Meany, Ithaca, N. Y. Filed July 21, 1906. Serial No. 327,235.



Claim.—1. A powder dispensing receptacle comprising a powder containing can with a wheel mounted on the top thereof, a recessed periphery of said wheel contacting with the powder through a slot in the top, and the head of a depression screw forming the bottom of said recess, the wheel being capable of partial rotation and a spring tensioned to return the wheel to its normal position as fully set forth.

2. A powder dispensing receptacle comprising a holder for powder, a detachable cover, a partially rotatable wheel, a recess in the periphery of the wheel and a slot in the cover registering with said recess, and the head of a depression screw forming the bottom of said recess, a knob on the periphery of said wheel to limit said rotation and a spring acting after each rotation to return the wheel to its normal position.

3. A powder dispensing receptacle comprising a holder for powder having a cover with a slotted opening in the top thereof, a partly rotatable wheel mounted on the cover and a portion of the periphery of said wheel entering said slot and normally contacting with the powder, a recess in that portion of the wheel entering the slot, an internally threaded socket through the bottom of said recess and the the body of the wheel and a counter-sunk screw carried in the socket and forming the bottom of said recess, said screw being capable of longitudinal movement for changing the position and relation of the bottom of the recess, as fully set forth.

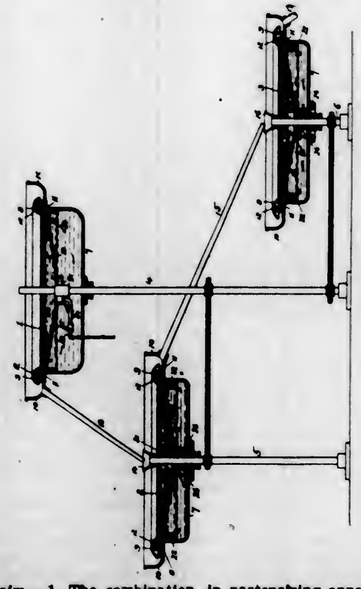
4. A powder dispensing receptacle comprising a holder with an opening in the top thereof, a partly rotatable wheel with a recess in its periphery, said recess registering with the opening and a depression screw forming the bottom of said recess, a knob and series of ridges on a portion of the periphery of the wheel limiting the rotation thereof, and a spring to return the wheel to its normal position after use as fully set forth.

5. A powder dispensing receptacle comprising a holder having an opening therein, covered by a partially rotatable wheel with a recess in its periphery, the size of said recess being regulated by means of a threaded screw, the head of which screw forms the bottom of said recess, corrugations carried by the periphery of said wheel for rotating the wheel and a knob for limiting such rotation, a helical spring carried by the shaft of the wheel for returning the latter to its normally closed position after dispensing powder as fully set forth and described.

6. A powder dispensing receptacle comprising a holder for powder, having a slotted opening in its top, a wheel member mounted on a shaft journaled in suitable brackets integral with said top, said wheel so disposed above the opening that a portion of the periphery of the wheel will at all times be within the slotted opening, a recess in the wheel normally contacting with the powder through said slotted opening, said recess having a changeable capacity, said wheel being capable of partial rotation on said shaft and projections for limiting such rotation and a coil spring around said shaft for normally retaining the wheel in one position as fully set forth.

7. A powder dispensing receptacle comprising a holder for powder, having a slotted opening in its removable top, a solid wheel member mounted on a shaft journaled in suitable opposite brackets integral with said top, a comparatively small recess in the periphery of the wheel normally contacting with the powder through said slotted opening, a portion of the periphery of said wheel member being at all times within said opening, said wheel member being capable of partial rotation on said shaft, corrugations carried by the periphery of said wheel for rotating the wheel and a knob for limiting such rotation and a helical spring around said shaft for returning the wheel to its normally closed position after dispensing powder.

853,659. PASTEURIZING APPARATUS. FRANK TYSON, Canton, Ohio. Filed June 16, 1906. Serial No. 322,010.



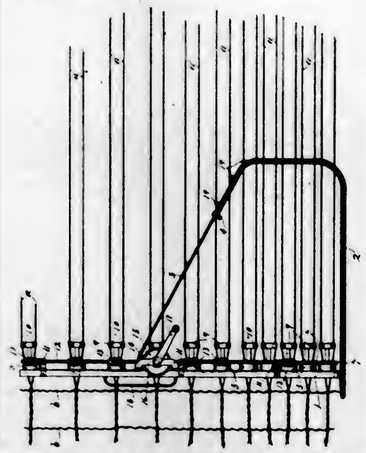
Claim.—1. The combination, in pasteurizing apparatus, of a rotating heating or cooling plate, a vessel containing water or other liquid, means whereby flow of said water in contact with the heating or cooling plate is caused by centrifugal force, and means for aiding such centrifugal force in causing such flow.

2. The combination, in pasteurizing apparatus, of a rotating heating plate, a vessel containing water or other heating liquid, means for causing flow of such liquid in contact with the treating plate by centrifugal force, and a fluid-actuated injector for aiding such flow.

3. The combination, in pasteurizing apparatus, of a rotating heating plate, a vessel containing water or other heating liquid, means for causing flow of such liquid in contact with the treating plate by centrifugal force, and a steam-actuated injector for aiding such flow.

4. Pasteurizing apparatus in which are combined a rotating plate having a backing plate with hollow hub, said plates inclosing a circulating chamber having discharge outlet near the periphery of the plates, a liquid-containing vessel operating in conjunction with such plate, and means other than centrifugal force for causing the liquid to pass from said vessel into the circulating chamber through the hollow hub.

853,660. FENCE-MAKING MACHINE. WILLIAM F. VOLKENANT, Lester Prairie, Minn. Filed Feb. 12, 1907. Serial No. 356,974.



Claim.—1. In a machine of the kind described, the combination with an extended body support, of a plurality of twisters rotatively mounted thereon, each of said twisters comprising a gear, a detachably connected flanged bearing sleeve and a spreader bracket, which parts of said twisters are provided with guides and passages for the wire to be twisted, and a crank driven shaft mounted on said body support and provided with worms meshing with the gears of said twisters, substantially as described.

2. In a device of the kind described, the combination with a body support 1 having a plurality of vertically spaced sleeves 5 rigidly secured thereto, flanged sleeves 6 journaled in the said sleeves 5, gears 7 detachably secured to said sleeves 6, spreader brackets 9 secured to said gears and provided with a head made up of laterally spaced metal straps and interposed sheaves 10, a shaft 12 journaled in bearings on said support 1 and provided with worms meshing with said gears 7, and a crank mounted in the bearing on said bar 1 and geared to said shaft 12, substantially as described.

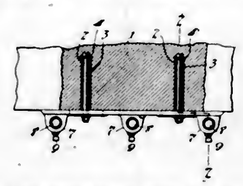
3. In a device of the kind described, the combination with an upright body support and a plurality of twisters mounted thereon, of a shoe 2 attached to the lower end of said upright body support and provided with an up-turned arm 2^a, and an adjustable brace rod 3 attached to the intermediate portion of said upright body support and telescoping with and adapted to be secured in different positions with respect to the said arm 2^a, substantially as described.

853,661. LOCKING-NUT. ALBERT WALBRECKER, Elberfeld, Germany, assignor to Carl Wilfing, Jr., Elberfeld, Germany. Filed Jan. 5, 1907. Serial No. 350,901.



Claim.—A locking nut and bolt consisting of a nut having a deep recess tangential to the thread of said nut, a threaded bolt, and a locking pin of uniform diameter and dimensions throughout its entire length and wedge shaped in cross section adapted to be inserted so that its flat back bears against the surface of said recess in the nut and the sharp edge of the wedge rests between the threads of the bolt whereby the locking effect of the device is increased by the strain thereon during use.

853,662. SUPPORT FOR SHAFT-HANGERS. PETER WEBER, Orange, N. J. Filed Mar. 1, 1907. Serial No. 360,081.



Claim.—1. The combination with a concrete beam, of supporting bolts molded therein and extending beneath the same, a plate carried by said bolts at the bottom of the beam, a series of longitudinal supports carried by said plates and a shaft hanger carried by the longitudinal supports, substantially as set forth.

2. The combination with a concrete beam, of tubes molded therein, supporting bolts carried by said tubes and extending beneath the beam, a plate carried by said bolts at the bottom of the beam, a series of longitudinal supports carried by said plates and a shaft hanger carried by the longitudinal supports, substantially as set forth.

3. The combination with a concrete beam, of tubes molded therein, supporting bolts carried by said tubes and extending beneath the beam, a washer arranged between the upper end of each tube and the head of the bolt within the same, a plate carried by said bolts at the bottom of the beam, a series of longitudinal supports carried by said plates and a shaft hanger carried by the longitudinal supports, substantially as set forth.

4. The combination with a concrete beam, of supporting bolts molded therein and extending beneath the same, a plate adjustably carried by the said bolts at the bottom of the beam, a series of longitudinal supports carried by said plates and a shaft hanger carried by the longitudinal supports, substantially as set forth.

5. The combination with a concrete beam, of supporting bolts molded therein and extending beneath the same, a plate carried by said bolts at the bottom of the beam, a series of longitudinal supports carried by said plates, a hanger support carried by the longitudinal supports, and a shaft hanger carried by the hanger support, substantially as set forth.

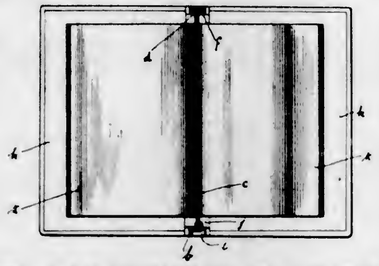
6. The combination with a concrete beam, of supporting bolts molded therein and extending beneath the same, a plate carried by said bolts at the bottom of the beam, a

series of longitudinal supports carried by said plates, a hanger support carried by the longitudinal supports, and a shaft hanger carried by the hanger support and adjustable thereon, substantially as set forth.

7. The combination with a concrete beam, of supporting bolts molded therein and extending beneath the same, a plate carried by said bolts at the bottom of the beam, a series of longitudinal supports carried by said plates, a hanger support hooked at one end over one of the longitudinal supports and threaded at the other end of an adjacent longitudinal support, and a shaft hanger carried by the hanger support, substantially as set forth.

8. The combination with a concrete beam, of supporting bolts molded therein and extending beneath the same, a plate carried by said bolts at the bottom of the beam, three parallel lines of longitudinal supports carried by said plates, a hanger support carried by the middle longitudinal support and one of the outside longitudinal supports, and a second hanger support carried by the middle longitudinal support and the other outside longitudinal support, and hanger supports offering support for shaft hangers, substantially as set forth.

853,663. TEMPORARY BINDER. JOHN WEISBROD, New York, N. Y. Filed Apr. 5, 1906. Renewed Feb. 23, 1907. Serial No. 358,977.



Claim.—1. In a temporary binder, the combination with a cover, of a bar adapted to be attached to the inside of the back thereof, a strip extending longitudinally of the bar and fulcrumed at one end thereto, a U shaped piece embracing the opposite end of the bar, a nose attached to the free end of the strip and adapted to engage into the free space formed between the U shaped piece and the bar and means for temporarily locking the strip in closed position, substantially as and for the purpose specified.

2. In a temporary binder, the combination with a cover, of a bar adapted to be attached to the inside of the back thereof, a strip extending longitudinally of the bar and fulcrumed at one end thereto, a U shaped piece embracing the opposite end of the bar, a nose attached to the free end of the strip and adapted to engage into the free space formed between the U shaped piece and the bar and a set screw working in the said U shaped piece, said set screw allowing the temporary locking of the strip in closed position, substantially as and for the purpose specified.

853,664. FOLDING HANDLE FOR STEREOSCOPES. HAWLEY C. WHITE, North Bennington, and CHARLES S. BEACH, Bennington, Vt., assignors to H. C. White Co., North Bennington, Vt., a Corporation of Vermont. Filed Nov. 28, 1905. Serial No. 289,432.



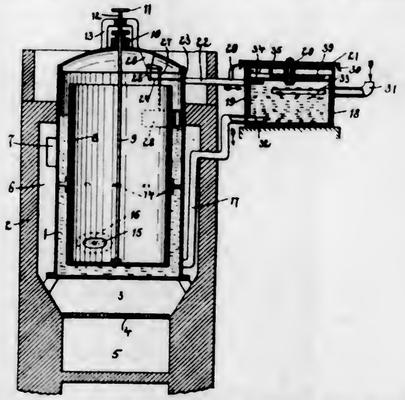
Claim.—1. A hinge fitting for attaching a folding handle to a stereoscope, consisting of a base plate having lateral wings bent up at right angles with the base thus forming a spring receptacle between them, each wing terminating in a hinge cheek, a disk pivoted between said cheeks provided with means for its attachment to a handle and having a peripheral detent with square contact terminals, in combination with a leaf spring held within said receptacle provided with a mortise having square heads to receive said detent with which the terminals of the detent contact for effecting a locked engagement between them, substantially as specified.

2. The combination with the base plate having the wings *j*, *j*, of the leaf spring having a recessed edge *g*, for the reception of one of said wings, substantially as specified.

3. The combination with the base plate having the wings *j*, *j*, of the dentated disk B, and the mortised leaf spring having the shoulders *i*, *i*, substantially as specified.

4. A hinge fitting for attaching a folding handle to a stereoscope, consisting of a base plate having lateral wings bent down at right angles with the base, thus forming a receptacle between them having parallel side walls, each wing terminating in a hinge cheek, a disk pivoted between said cheeks provided with means for its attachment to a handle, and a U-shaped leaf spring held within said receptacle having means to co-operate with said disk to lock the handle in a definite position, substantially as specified.

853,665. STEAM-BOILER. CHARLES G. WIELAND, Hoboken, N. J. Filed Dec. 31, 1906. Serial No. 350,231.



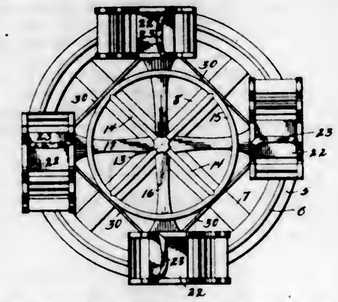
Claim.—1. In a steam boiler, the combination with a water-space, of rotatable means capable of interruptedly feeding water to said space, means adapted to operate said water-feeding means, and automatic means for controlling said operating means.

2. The combination with a steam boiler, of a receptacle, a connection between said receptacle and the water-space of said boiler, a connection between said receptacle and the steam-space of said boiler, a valve controlling said steam connection, a float controlling said valve, a cylinder within said receptacle and adapted to be rotated by opening said valve, a supply-pipe connected to said receptacle, ports in said cylinder and adapted to alternately coincide with said water connection, steam connection and supply pipe, and a valve in said receptacle and adapted to be operated by said cylinder.

853,666. AMUSEMENT DEVICE. FILLMORE WILLIAMS, Columbus, Ohio. Filed Aug. 22, 1906. Serial No. 331,561.

Claim.—1. In a device of the character described the combination with a plurality of carriages of a fixed annular hand rail about which said carriages are adapted to travel.

2. In a device of the character described the combination with an annular track of a fixed annular hand rail concentric with said track and a plurality of carriages adapted to travel upon said track.

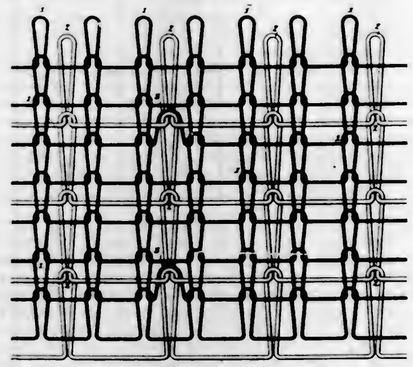


3. In a device of the character described the combination with an annular track of an annular hand rail which is concentric with said track and a plurality of reversible carriages adapted to travel upon said track and around said hand rail.

4. In a device of the character described the combination with an annular track of a annular hand rail concentric with said track, a plurality of carriages, wheels upon which said carriages are mounted and which run upon said track and pedals carried by said wheels.

5. The combination with an annular track of a fixed annular hand rail a plurality of carriages, wheels upon which said carriages are mounted and which travel upon said track and a plurality of rotating bars upon the outer ends of which said carriages are pivotally mounted.

853,667. KNITTED FABRIC. LOUIS N. D. WILLIAMS, Ogontz, Pa., assignor of one-half to Robert W. Scott, Philadelphia, Pa. Filed Apr. 21, 1903. Serial No. 153,709.

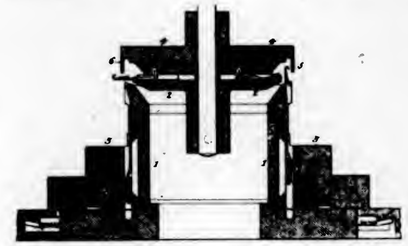


Claim.—1. A knitted fabric comprising two webs one overlying the other and united at intervals by yarn of one web engaging the other web, one web being composed of a coarser yarn than the other web and having a less number of courses of stitches than said other web, substantially as specified.

2. A knitted fabric comprising two webs one overlying the other and united at intervals by yarn of one web engaging the other web, one web being composed of a coarser yarn than the other web and having a less number of wales of stitches than said other web, substantially as specified.

3. A knitted fabric comprising two webs one overlying the other and united at intervals by yarn of one web engaging the other web, one web being composed of a coarser yarn than the other web and having a less number of wales and courses of stitches than said other web, substantially as specified.

853,668. KNITTING-MACHINE. LOUIS N. D. WILLIAMS, Ogontz, Pa., assignor of one-half to Robert W. Scott, Philadelphia, Pa. Filed Apr. 21, 1903. Serial No. 153,710.



Claim.—1. A knitting machine in which are combined two sets of needles, carriers therefor, a series of yarn guides and cams operating in conjunction with the needles of one carrier, a lesser number of yarn guides and cams operating in conjunction with the needles of the other carrier, and means whereby certain of the needles of one set may, at intervals, be caused to engage with yarn normally fed to the needles of the other set, substantially as specified.

2. A knitting machine in which are combined two sets of needles, one set comprising a lesser number of needles than the other, carriers for said two sets of needles, cams operating upon each set of needles, guides feeding yarn to each set of needles independently, and means whereby certain of the needles of one set may, at intervals, be caused to engage with yarn normally fed to the needles of the other set, substantially as specified.

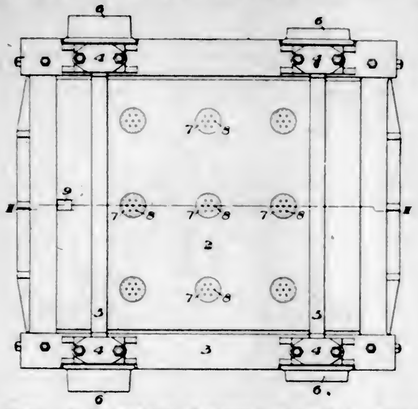
3. A knitting machine in which are combined two sets of needles, one set comprising a lesser number of needles than the other, carriers for said sets of needles, a series of yarn guides and cams co-operating with the set of needles comprising the greater number, a lesser number of yarn guides and cams co-operating with the set of needles comprising the lesser number, and means whereby certain of the needles of one set may, at intervals, be caused to engage with yarn normally fed to the needles of the other set, substantially as specified.

4. A knitting machine in which are combined two sets of needles, carriers therefor, a series of yarn guides and cams operating in conjunction with the needles of one carrier, a lesser number of yarn guides and cams operating in conjunction with the needles of the other carrier, and means whereby certain of the needles of the set having the lesser number of yarn guides and cams may, at intervals, be caused to engage with yarn normally fed to the needles of the other set, substantially as specified.

5. A knitting machine in which are combined two sets of needles, one set comprising a lesser number of needles than the other, carriers for said two sets of needles, yarn guides and cams co-operating with each set of needles, and means whereby certain of the needles of the set having the lesser number may, at intervals, be caused to engage with yarn normally fed to the needles of the other set, substantially as specified.

6. A knitting machine in which are combined two sets of needles, one set comprising a lesser number of needles than the other, carriers for said sets of needles, a series of yarn guides and cams co-operating with the set of needles comprising the greater number, a lesser number of yarn guides and cams co-operating with the set of needles comprising the lesser number, and means whereby certain of the needles of the set having the lesser number may, at intervals, be caused to engage with yarn normally fed to the needles of the other set, substantially as specified.

853,669. PIT-FURNACE COVER AND METHOD OF MAKING SAME. GEORGE E. WISSNER, Munhall, Pa. Filed Dec. 1, 1906. Serial No. 345,921.



Claim.—1. The method of forming pit furnace covers or similar articles which consists in ramming plastic, refractory material within a suitable frame, providing a multiplicity of small drying passages through the plastic material and drying the material.

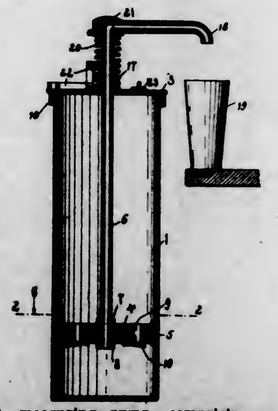
2. The method of forming pit furnace covers or similar articles which consists in ramming plastic, refractory material within a suitable frame, providing a multiplicity of small drying passages through the plastic material, drying the material and finally closing the drying passages.

3. The method of forming pit furnace covers or similar articles, which consists in placing bricks having perforations therethrough within a suitable frame, ramming plastic refractory materials around said bricks within the frame, drying the materials, and finally filling the perforations in said bricks.

4. A pit furnace cover or similar article comprising a frame, a refractory body molded in place within said frame, and a plurality of drying passages extending through said refractory body.

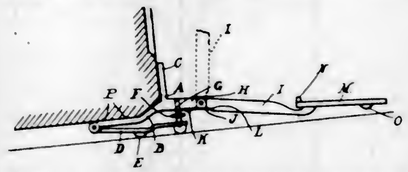
5. A pit furnace cover or similar article comprising a frame and a refractory body molded in place within said frame, holes through said lining and a filling in said holes.

853,670. LIQUID-MEASURING PUMP. GEORGE YANACOPOULO, New York, N. Y. Filed Sept. 8, 1906. Serial No. 333,838.



Claim.—A measuring pump, comprising a container forming a storing chamber and a measuring chamber, a piston adapted to slide in said container and separating the storing chamber from the measuring chamber, a hollow piston rod rigidly connected to said piston, a faucet communicating with said hollow piston rod and, in turn, with said measuring chamber, one or more valves in said piston adapted to be closed on the downward stroke of the piston in the direction of the measuring chamber and to be opened on the stroke in the direction of the storing chamber, a cover on said container through which said piston rod extends, an inlet in said cover, a series of exchangeable stops on said cover to determine the extent of the operating stroke of the piston, and means for causing the piston to return to its normal position.

853,671. FOOT-REST FOR PIANOS. WILLIAM E. BAILEY and WILLIAM D. REED, Chicago, Ill. Filed Nov. 22, 1905. Serial No. 288,520.



Claim.—1. A device of the kind specified comprising two parallel bars adapted to be inserted beneath a piano, arms pivotally secured at one end to the inserted ends of said bars and resting on the floor beneath the latter, means carried by said bars, and engaging the free ends of said arms to force the same away from said bars, and a swinging platform pivotally engaged with the other ends of said bars.

2. A device of the kind specified comprising two parallel bars adapted to be inserted beneath a piano, arms pivotally secured at one end to the inserted ends of said bars, and resting on the floor beneath the latter, means carried by said bars and engaging the free ends of said arms to force the same away from said bars, and a swinging platform pivotally engaged with the other ends of said bars, and projections on said bars between their ends adapted to engage the piano front to limit the insertion of said bars beneath the same.

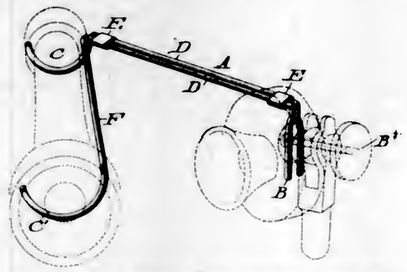
3. A device of the kind specified comprising two parallel bars adapted to be inserted beneath a piano, arms pivotally secured at one end to the inserted ends of said bars and resting on the floor beneath the latter, means carried by said bars and engaging the free ends of said arms to force the same away from said bars, and a swinging platform pivotally engaged with the other ends of said bars, and means for limiting the pivotal movement of said platform in one direction.

4. A device of the kind specified comprising two parallel bars adapted to be inserted beneath a piano, arms pivotally secured at one end to the inserted ends of said bars and resting on the floor beneath the latter, means carried by said bars and engaging the free ends of said arms to force the same away from said bars, and a swinging platform pivotally engaged with the other ends of said bars, and means for limiting the pivotal movement of said platform in one direction, and projections on said bars between their ends adapted to engage the piano front to limit the insertion of said bars beneath the same.

5. A device of the kind specified comprising two expansible wedges each consisting of two pivotally connected arms, and means for forcibly expanding the same, said wedges being adapted to be inserted partially beneath a piano and then expanded to hold the same frictionally in place, and a foot-rest pivotally engaged with the ends of two of the arms one arm of each wedge respectively.

6. A device of the kind specified, comprising two expansible wedges each consisting of two pivotally connected arms, and means for forcibly expanding the same, said wedges being adapted to be inserted partially beneath a piano and there expanded to hold the same frictionally in place, and a foot-rest pivotally engaged with the ends of two arms, one arm of each wedge respectively, and a stop disposed in said pivotal engagement.

853,672. HOLDER FOR THE RECEIVER OF A TELEPHONE. WILLIAM A. BEAVAN, Philadelphia, Pa. Filed Dec. 28, 1906. Serial No. 349,774.



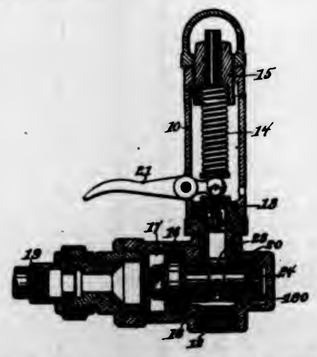
Claim.—1. In a device of the character described, longitudinally extending arms, means for securing said arms together, a member deflected for an end of each arm forming a bifurcation, and a seat on each of said arms forming means for supporting a telephone receiver.

2. In a device of the character described, longitudinally extending arms, means for securing said arms together, a member deflected for an end of each arm forming a bifurcation between which is adapted to be seated the screw of a telephone, a seat on the other end of one arm, a limb extending at an angle from the other end of the other arm and a seat on said limb.

3. A support for a telephonic receiver composed of an arm formed of a plurality of longitudinally extending pieces, a plurality of members, each deflected from an end of one of said pieces, forming a bifurcation, a seat on the other end of one of said pieces, a limb extending laterally from the end of the other piece, and a seat on the terminal of the latter, said seats being spaced apart.

4. In a device of the character described, longitudinally extending arms, means for securing said arms together, a member deflected for an end of each arm forming a bifurcation, a seat on each of said arms forming means for supporting a telephone receiver and a protector carried by the bifurcation and by the seats.

853,673. AIR-BRAKE APPARATUS. HENRY F. BICKEL, Plainfield, N. J., assignor to New York Air Brake Company, a Corporation of New Jersey. Filed May 28, 1906. Serial No. 319,082.



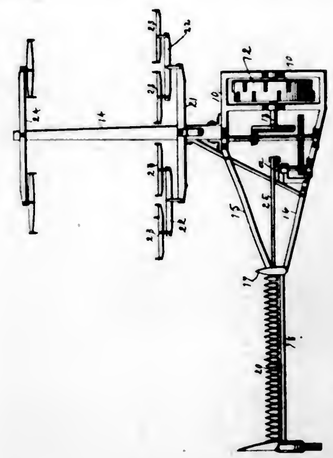
Claim.—1. The combination of a brake cylinder provided with a relief passage and a relief valve adapted to be opened at predetermined pressure with an independently operated automatic controller for varying the effective capacity of said relief passage, substantially as and for the purpose described.

2. The combination with a relief valve adapted to be opened at predetermined pressure, with an automatic controller and actuator therefor acted upon by brake cylinder pressure and train pipe pressure, whereby the effective capacity of the discharge passage from the brake cylinder is diminished when brake cylinder pressure exceeds train pipe pressure, substantially as described.

3. The combination of a brake cylinder provided with a relief passage and a relief valve adapted to be opened at predetermined pressure; with an automatic controller movable independently of said relief valve and operated in response to an emergency application of the brakes to render the relief passage of relatively small effective capacity, substantially as and for the purpose described.

4. The combination of the brake cylinder relief valve with an automatic controller having provision for varying the effective capacity of the brake cylinder discharge passage, and a movable abutment for actuating said controller acted upon in one direction by the pressure in the brake cylinder, and in the other direction by the pressure in the train pipe, substantially as described.

853,674. CARRIAGE FOR HARVESTERS. WILLIAM BONUS, Orient, Iowa. Filed Sept. 17, 1906. Serial No. 335,025.

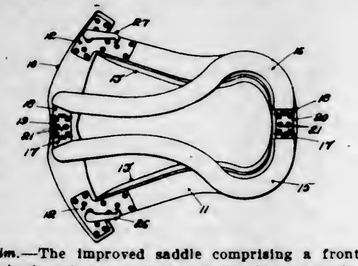


Claim.—1. A carriage frame for harvesters comprising a main frame, an auxiliary frame at the grainward end of the main frame composed of bars inclined downward and outward and converging toward each other and a cutter bar support attached to the ends of said bars, for the purposes stated.

2. A carriage frame for harvesters comprising a main frame, an auxiliary frame at the grainward end of the main frame composed of bars inclined downward and outward and converging toward each other, a cutter bar support fixed to the ends of said bars and a pole fixed to the main frame, to operate as set forth for the purpose stated.

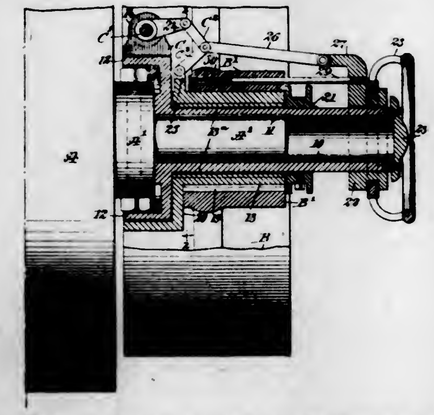
3. A carriage for harvesters comprising a main frame, an axle, a wheel fixed to the axle, a pole fixed to the front of the main frame, an auxiliary frame fixed to the main frame to project laterally and downward therefrom, and a cutter bar support fixed to the lower end of the auxiliary frame, and means for hitching two horses abreast on each side of the pole, to operate as set forth, for the purposes stated.

853,675. SADDLE. PATRICK S. BRODIE, Boston, Mass., assignor of one-half to Francis W. Martin, Boston, Mass. Filed July 16, 1906. Serial No. 326,400.



Claim.—The improved saddle comprising a front pad and a back pad, a seat in two halves hinged to the said front and back pads and cushions in the angle of the hinges between the said halves of the seat and the front and back pads respectively.

853,676. FRICTION-CLUTCH MECHANISM. GEORGE L. BROWN, Elyria, Ohio, assignor to The Brown Clutch Company, Elyria, Ohio. Filed Feb. 25, 1905. Serial No. 247,262.



Claim.—1. In clutch pulleys, a hub, an extension from the hub, a clutch member comprising a divided ring which encircles the hub, a sleeve connected to the clutch member and mounted on the hub extension, a pulley secured to the said sleeve, a device for contracting and expanding the divided ring, and means for operating the said device, which means are carried by the hub extension.

2. In clutch pulleys, a sleeve, a hub forming a portion of the sleeve, a divided ring mounted on the hub, ears extending from the ends of the ring, a screw having right and left-hand threads, mounted to turn in the said ears, pins carried by the ears, engaging the threads of the screw, a sleeve loosely mounted on the hub sleeve, a connection between the said sleeve and the said ring, a collar mounted to slide on the hub sleeve, and a toggle connection between the said collar, the said threaded rod and the ring sleeve.

3. In clutch pulleys, a main sleeve, a hub at one end of the said main sleeve, a collar mounted to slide on the opposite end of the hub, a divided ring mounted on the hub of the main sleeve, said divided ring being provided with ears at its ends, a rod having right and left-hand threads, the threaded portion of the rods being adapted to turn in said ears, pins carried by the ears, engaging the threads of the rod, a sleeve connected with said ring, which sleeve is mounted on the main sleeve, an extension from the ring sleeve, a crank arm extending from the threaded rod, and a toggle connection between the extension from the ring sleeve, the said crank arm and the sliding collar.

4. In clutch pulleys, a main sleeve having a hub at one end, a collar mounted to slide on the main sleeve, which collar is provided with a finger extending in direction of the hub, a divided ring encircling the said hub, a rod having right-and left-hand threads, the threaded portion of the rod being in engagement with the end portions of the ring, a crank arm extending from the said threaded rod, a sleeve mounted on the main sleeve and connected with said ring, a pulley connected with the ring sleeve, an extension from the ring sleeve, toggle levers connected with the said extension and with the crank arm on the threaded rod, and a link connection between the toggle levers and the finger of said sliding collar.

5. In friction clutches, a shaft and a band-wheel mounted thereon having an extension on said shaft, a brake-band about said wheel having a hub at one side thereof rotatably mounted on said extension and a pulley having a hub fastened upon the hub of the brake-band, in combination with means to tighten and loosen the brake-band comprising a right and left hand screw engaged in the ends of said band, a set of links and a connecting link, and a collar mounted on the said extension of the band-wheel.

6. In friction clutches, a fly wheel and a shaft having its end projecting through to one side of said wheel, in combination with a band-wheel mounted on said end of the shaft and having a tubular extension sleeved on said end and projecting outward beyond the same, a brake-band about said band-wheel and having a hub loosely mounted on said extension, a pulley fixed upon said hub and means to tighten and loosen said brake-band slidably mounted in part upon the outer end of said extension in part upon the hub of the brake-band.

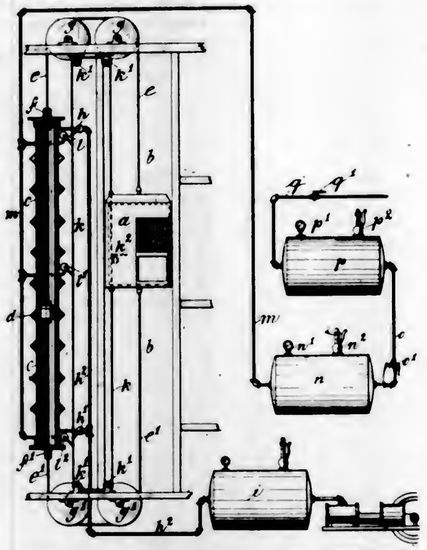
7. In a friction-clutch device, the combination with a rotatable shaft, of a band-wheel mounted thereon and provided with a lateral extension or sleeve, an encircling clutch-member positioned about said wheel provided with a sleeve-part rotatably mounted upon said extension, a pulley or wheel secured to the clutch-member, means for tightening and loosening said clutch-member, comprising a right and left hand screw mounted to open and close the encircling clutch-member, an actuating collar slidably mounted beyond the clutch mechanism, and connecting links uniting the same with the screw, substantially as set forth.

8. In a friction-clutch device, the combination with a rotatable shaft, of a hand-wheel mounted thereon and provided with a lateral extension or sleeve, an encircling clutch-member positioned about said wheel provided with a sleeve-part rotatably mounted upon said extension, a pulley or wheel secured to the clutch-member, means for tightening and loosening said clutch-member, comprising a right and left hand screw mounted to open and close the encircling clutch-member, an actuating collar slidably mounted beyond the clutch mechanism, and two links forming a toggle-joint associated with the screw and connected with the actuating collar; the joint between said links being adapted to be forced past a vertical position to lock the clutch-member into engagement with the band-wheel, substantially as set forth.

9. In a friction-clutch device, the combination with a driven shaft, of a band-wheel mounted thereon and provided with a lateral extension or sleeve, an encircling clutch-member associated with said wheel and rotatably mounted upon said extension, a pulley or wheel operatively connected with said clutch-member, means for engaging the clutch-member with its associated band-wheel, and a rotatably mounted hand-wheel positioned beyond the clutch-mechanism, associated with said means and slidably mounted to move longitudinally with respect to the shaft, for actuating said clutch-mechanism, substantially as set forth.

10. In a clutch mechanism of the class described, the combination with a friction drum and sleeve adapted to be mounted beyond the fly-wheel or driven part, of a second sleeve mounted upon but rotatable with respect to the former, a pulley wheel and a friction member for engaging the drum, both carried by the latter sleeve, and means for causing the friction member to engage and disengage the drum, substantially as set forth.

853,677. PNEUMATIC ELEVATOR. KARL BRÜCHLE, New York, N. Y. Filed July 25, 1906. Serial No. 327,620.



Claim.—1. In a pneumatic elevator, the combination of a shaft, a car, a cylinder adjacent to the shaft, a piston in said cylinder connected to the top and the bottom of the car, and means to admit air under pressure to the cylinder on opposite sides of the piston.

2. In a pneumatic elevator, the combination of a shaft, a car, a cylinder adjacent to the shaft, a piston in said cylinder, a cable connecting the piston with the top of the car, a cable connecting the piston with the bottom of the car, guides for said cables, and means to admit air under pressure to said cylinder on opposite sides of the piston.

3. In a pneumatic elevator, the combination of a shaft, a car, a cylinder adjacent to the shaft, a piston in said cylinder connected to the car, exhaust valves connecting to said cylinder at points corresponding to the stations, means to admit air under pressure to said cylinder, and means under the control of the operator to open any of said exhaust valves.

4. In a pneumatic elevator, the combination of a shaft, a car, a cylinder adjacent to the shaft, a piston in said cylinder connected to the top and to the bottom of the car, exhaust valves for said cylinder at points corresponding to the several stations, means to admit air under pressure to said cylinder on both sides of the piston, and means under the control of the operator of the car to open any of said exhaust valves.

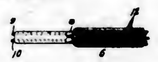
5. In a pneumatic elevator, the combination of a shaft, a car, a cylinder adjacent to the shaft, a piston in said cylinder connected to the car, means to supply air under pressure to said cylinder, exhaust valves for said cylinder, and a common low pressure receiving tank, independent of the air supply means, connected to said exhaust valves to receive the air therefrom.

6. In a pneumatic elevator, the combination of a shaft, a car, a cylinder adjacent to the shaft, a piston in said cylinder, a cable connecting said piston with the top of the car, a cable connecting said piston with the bottom of the car, guides for said cables, means to supply air under pressure to said cylinder, an exhaust valve for said cylinder and a low pressure storage tank, independent of the air supply means, connected to said exhaust valve to receive the air therefrom.

7. In a pneumatic elevator, the combination of a shaft, a car, a cylinder of relatively soft metal, a piston in said cylinder connected to the car, means to admit air under pressure to the cylinder and split supporting and protecting rings applied to said cylinder.

8. In a pneumatic elevator, the combination of a shaft a car, a cylinder adjacent to the shaft composed of several sections, a piston in said cylinder connected to the car, means to admit air to said cylinder, flanged rings applied to the ends of each section of the cylinder, and means to secure the flanged rings together, the end of one section being extended beyond its ring to enter the adjacent ring of the next section.

853,678. VAPOR ELECTRIC APPARATUS. WILLIAM R. BURROWS, Newark, N. J., assignor to General Electric Company, a Corporation of New York. Filed July 7, 1905. Serial No. 268,707.



Claim.—1. An anode for vapor electric apparatus having a grooved exterior to provide a large superficial area and to facilitate the removal of gas from the interior.

2. An anode for vapor electric apparatus having a hollow center and a grooved exterior to provide a large superficial area and to facilitate the removal of gas from the interior.

3. A graphite anode for vapor electric apparatus having a hollow center and a grooved surface.

4. The combination with an evacuated chamber, of an electrode therein having a hollow center and a longitudinally grooved exterior.

5. The combination with an evacuated chamber, of a lead-wire sealed in the wall thereof, and an electrode mounted on said lead-wire, said electrode completely inclosing the end of said lead-wire and provided with grooves to increase its superficial area.

6. The combination with an evacuated chamber, of a lead-wire sealed in the wall thereof, and an electrode mounted on said lead-wire, said electrode having a hollow center and having certain portions cut away to increase its superficial area and to facilitate the removal of occluded gases.

7. The combination with an evacuated chamber, of a lead-wire in the wall thereof, and an electrode mounted on said lead-wire, said electrode having a plurality of radial webs.

8. The combination with an evacuated chamber, of a lead-wire in the wall thereof, and an electrode mounted on said lead wire and completely covering the end thereof, said electrode having a plurality of radial webs.

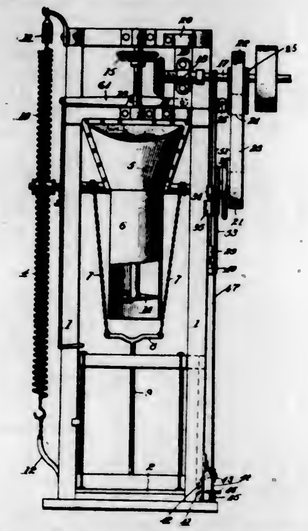
853,679. SACK-PACKER. GEORGE M. BUSKEY, Cumberland, Md. Filed July 19, 1906. Serial No. 326,912.

Claim.—1. An attachment for sack-packers embodying mechanism which is thrown into operation automatically by the packing mechanism and which operates to depress the sack supporting platform to a greater degree than it is depressed by the sack-packing mechanism.

2. In a sack-packer, the combination with a movable platform, means for moving said platform, and sack-packing mechanism, of mechanism arranged to be thrown automatically into action when the packing operation ceases, operating to depress the platform to a greater degree than it is depressed by the packing mechanism.

3. The combination with a sack-packer embodying a vertically movable sack-carrying platform, and packing mechanism, of means automatically thrown into action by a shifting movement of a portion of the packing mechanism and operating to depress the platform to a point further than it is depressed by the packing operation, and means for holding said platform when so depressed.

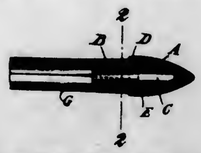
4. The combination with a sack-packer embodying a vertically movable sack-supporting platform, and packing mechanism, of means for automatically driving the platform downward after the packing operation ceases, said means being tripped automatically by a portion of the packing mechanism, means for holding said platform depressed, and means for tripping and releasing the platform, substantially as described.



5. The combination with a sack-packer embodying a vertically moveable platform, and packing mechanism embodying a drop gear, of means for driving the platform downward beyond the point where it is left by the packing mechanism, said means being automatically thrown into operation by the movement of the drop gear, and means for holding said platform depressed until tripped and released.

6. The combination with a sack-packer embodying a vertically movable platform, and packing mechanism embodying a platform elevating shaft and connections, of means for driving the platform downward beyond the point to which it is carried by the packing mechanism, said means embodying a loose driving belt connecting the main driving shaft and the platform elevating shaft, and a tightener pulley for said belt having connections whereby it is automatically shifted to tighten the belt at the moment of cessation of the packing operation.

853,680. CURTAIN-ROD POINT. JOHN CARROLL, Chicago, Ill. Filed Mar. 8, 1906. Serial No. 304,953.

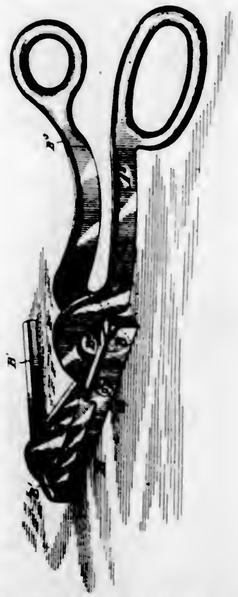


Claim.—1. A curtain rod point comprising a relatively conical body portion having a concentric shank of smaller diameter provided with a central recess, and an annular flange concentric with and overhanging said shank disposed at the rear end of said body portion at its point of juncture with said shank.

2. A curtain rod point comprising a relatively conical body portion, a shank on the larger end of the same concentric therewith and of smaller diameter than the largest diameter of said body portion, and an annular flange disposed upon the rear end of said body portion concentric with and overhanging said shank, there being an annular space between said flange and said shank.

3. A curtain rod point comprising a relatively conical body portion, a shank on the larger end of the same concentric therewith, and of smaller diameter than the largest diameter of said body portion, and an annular flange disposed upon the rear end of said body portion concentric with and overhanging said shank, there being an annular space between said flange and said shank, and said shank being provided with a central recess terminating at its inner end in said body portion adjacent the smaller end thereof.

853,681. SHEARS. JOHN COOK and JOHN F. BRADY, New Paynesville, Minn. Filed Feb. 25, 1907. Serial No. 359,317.



Claim.—1. A pair of shears having a lower blade formed with a rigidly attached and laterally projecting supporting arm and a straight upper blade playing inside of said arm.

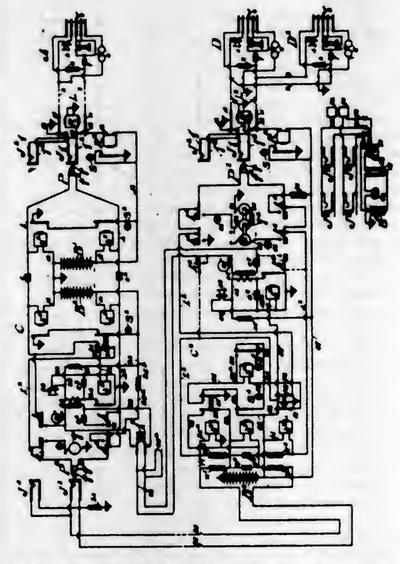
2. A pair of shears having one of its blades provided at its front end with an integral arm extending laterally and rearwardly.

3. A pair of shears having two pivoted blades and two handles formed integrally with the blades and both handles lying above the plane of the cutting edge of the lower blade, the lower blade also having at its front end a laterally and rearwardly extended arm.

4. A pair of shears, comprising an upper blade having the shank of its handle bent first up and then down to form a goose-neck, and a lower blade pivoted to the upper blade in front of the goose-neck bend and having its heel portion extended rearwardly of the pivot and then off-set and bent up to lie flat against the goose-neck and thence extended to form an upper handle.

853,682. TELEPHONE TRUNKING SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed June 28, 1902. Serial No. 113,581.

Claim.—1. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord with the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through the said retardation coil, and means actuated by the response of the called subscriber for lowering the resistance between the two limbs of the trunk line and rendering said signal inoperative, substantially as described.



2. The combination with a trunk line, of a cord circuit to connect with its outgoing end, and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord with the trunk, and a supervisory signal associated with the cord circuit and placed in operative condition by current flowing over one side of the cord circuit and through the retardation coil, said signal being adapted to be placed in an inoperative condition by current flowing over the other side of the cord circuit when the called subscriber responds, substantially as described.

3. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord with the trunk, a supervisory signal associated with the cord and placed in operative condition by current flowing over one side of the cord circuit and through the said retardation coil, and a relay actuated by current flowing over the other side of the cord circuit upon the response of the called subscriber to render said signal inoperative, substantially as described.

4. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord with the trunk, a relay actuated by current flowing over one side of the cord and through said retardation coil, a supervisory signal associated with said cord circuit placed in operative condition by said relay when actuated, a second relay actuated by current flowing over the other side of the talking circuit upon the response of the called subscriber to render said signal inoperative, substantially as described.

5. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the trunk circuit during conversation, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through the said retardation coil, and means actuated upon the response of the called subscriber for rendering said signal inoperative, substantially as described.

6. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil permanently legged to ground from one side of the trunk circuit, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through the said retardation coil, and means actuated by the response of the called subscriber for rendering said signal inoperative, substantially as described.

7. The combination with a trunk line, of a cord circuit to connect with the outgoing end thereof, and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit, a supervisory signal associated with the cord circuit and placed in condition to operate by current flowing through said retardation coil when the cord is connected with the trunk, a high resistance device at the opposite end of the trunk in the path of current thereover, and means actuated by the response of the called subscriber for removing said resistance from the trunk circuit to thereby permit an increased flow of current over the same to render said signal inoperative, substantially as described.

8. The combination with a trunk line, of a cord circuit to connect with the outgoing end thereof, and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit when the cord is connected with the trunk, the testing strand of the cord circuit being normally connected with a high resistance testing device, a relay adapted to be actuated by current flowing over the other strand of the cord circuit and through said retardation coil to disconnect said testing device and establish the regular talking circuit when the cord is connected with the trunk, substantially as described.

9. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord with the trunk, two relays one associated with one conductor of the cord circuit and one with the other conductor, a supervisory signal mutually controlled by said relays, a source of current associated with said cord circuit, one strand of the cord circuit being normally disconnected from its relay, and the other relay being actuated by current flowing over the other strand of the cord circuit and through said retardation coil when connection is made with the trunk, said latter relay serving to connect the other side of the cord circuit with its associated relay, the latter relay being controlled by the called subscriber, substantially as described.

10. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord with the trunk, two relays one associated with one conductor of the cord circuit and the other with the other conductor, a supervisory signal mutually controlled by said relays, a source of current associated with said cord circuit, one strand of the cord circuit being normally disconnected from its relay and connected with the high resistance testing device, and the other relay being actuated by current flowing over the other strand of the cord circuit and through said retardation coil when the cord

is connected with the trunk, said latter relay serving to disconnect the testing device and to connect the other side of the cord with its associated relay, the said latter relay being thereafter controlled by the called subscriber, substantially as described.

11. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit when the cord circuit is connected with one end of the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through the said retardation coil when the cord circuit is connected with the trunk, a trunk relay connected with the opposite end of the trunk and actuated by current flowing over the same when the cord is connected with the trunk, a signal at said second end of the trunk controlled by said relay, and means for placing said supervisory signal in inoperative condition by a current flowing over both sides of the trunk when the called for subscriber's telephone is in use, substantially as described.

12. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil permanently legged to ground from one side of the trunk circuit when the cord circuit is connected with one end of the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through said retardation coil when the cord is connected with the trunk, a trunk relay connected with the other end of the trunk and actuated by current flowing over the same when the cord is connected with the trunk, a signal at said second end of the trunk controlled by said relay, and means for placing the said supervisory signal in inoperative condition by current flowing over both sides of the trunk when the called subscriber's telephone is in use, substantially as described.

13. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit when the cord circuit is connected with one end of the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through the said retardation coil when the cord is connected with the trunk, a trunk relay connected with the other end of the trunk and actuated by current flowing over the same side of the trunk circuit with which the retardation coil is connected when the cord is connected with the trunk, a signal at said second end of the trunk controlled by said relay, and means for placing said supervisory signal in inoperative condition by current flowing over both sides of the trunk when the called subscriber's telephone is in use, substantially as described.

14. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit when the cord circuit is connected to one end of the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through said retardation coil when the cord circuit is connected with the trunk, a high resistance trunk relay connected between the trunk conductors and adapted to be actuated by current flowing over the metallic trunk line when the cord is connected with the trunk, a signal adapted to be actuated by said relay, and means for placing said supervisory signal in inoperative condition by the increased flow of current in said trunk when the high resistance of the said relay is removed therefrom, substantially as described.

15. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit when the cord circuit is connected with one end of the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through the retardation coil when the cord is connected with the trunk, a high resistance trunk relay connected at the other end of the trunk between the trunk conductors and adapted to be actuated by current flowing over the metallic trunk line when the cord is connected with the trunk and the called subscriber's telephone is not in use, a signal controlled by said relay, and means actuated when the called subscriber's telephone is in use for removing the high resistance of said relay from the circuit to permit an increased flow of current in the trunk to render said supervisory signal inoperative, substantially as described.

16. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit when the cord circuit is connected with the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through said retardation coil when the cord is connected with the trunk, a high resistance trunk relay connected with the trunk at its opposite end and actuated by current flowing over the trunk when a cord is connected therewith and the called subscriber's telephone is not in use, a signal rendered inert by said trunk relay when energized, and means to shunt said high resistance relay upon the response of the called subscriber whereby an increased flow of current in the trunk renders said supervisory signal inoperative, substantially as described.

17. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit, a supervisory signal associated with the cord circuit, and adapted to be placed in operative condition by current flowing through the retardation coil when the cord is connected with the trunk, a trunk relay connected with the opposite end of the trunk and actuated by current flowing thereover before the response of the called subscriber, a signal controlled thereby, a supervisory relay associated with the cord circuit and signal and adapted when actuated to render the latter inoperative, said supervisory relay being opened by current flowing over the metallic circuit of the trunk when a called subscriber responds, substantially as described.

18. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to the sleeve side of the trunk, a supervisory relay associated with the sleeve strand of the cord circuit, a high resistance trunk relay at the opposite end of the trunk connected between the limbs thereof, a supervisory relay connected with the tip strand of the cord circuit, an additional relay connected with the tip side of the incoming end of the trunk and adapted to be controlled by the called subscriber when the trunk is connected with the called subscriber's line, whereby when the cord circuit is connected with the trunk the said supervisory sleeve relay is actuated to operate the supervisory signal and the trunk relay is also actuated, but the tip relay does not respond by reason of the high resistance of the trunk relay and when the called subscriber responds the high resistance relay is shunted to permit the operation of the said tip supervisory relay to thereby render the supervisory signal inoperative, substantially as described.

19. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit when the cord circuit is connected with the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through said retardation coil when the cord is connected with the trunk, a trunk relay connected at the incoming end of the trunk and actuated by current flowing over the trunk when the cord is connected therewith, a second relay connected with the trunk and actuated by the response of the called subscriber, and means controlled by said second relay for causing current to flow over the metallic trunk line to render said supervisory signal associated with the cord circuit at the outgoing end of the trunk inoperative, substantially as described.

20. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit when the cord circuit is connected with the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through said retardation coil when the cord is connected with the trunk, a high resistance trunk relay connected at the incoming end of the trunk and actuated by current flowing over the trunk when a cord is connected therewith and before the subscriber has responded, and a second relay at said incoming end actuated upon the response of the called subscriber to shunt the high resistance trunk relay to permit an increased flow of current in the trunk and thereby render said supervisory signal at the outgoing end inoperative, substantially as described.

21. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a supervisory signal associated with the cord circuit and placed in operative condition when the cord is connected with the trunk, a trunk relay at the other end of the trunk actuated when the cord is first connected with the trunk by current over one side of the same with suitable return, a trunk signal operated by the actuation of said relay alone, a second relay associated with the incoming end of the trunk actuated by current flowing over a part of the talking circuit when connection is made with the called line, said relay when thus operated being adapted to prevent the actuation of said trunk signal, and means under the control of the called subscriber for extinguishing said supervisory signal associated with the cord circuit at the outgoing end of the trunk, substantially as described.

22. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a supervisory signal associated with the cord circuit and placed in operative condition when the cord circuit is connected with the trunk, a high resistance trunk relay at the other end of the trunk actuated when the cord is first connected with the trunk by current flowing thereover, a relay actuated by current flowing over a part of the talking circuit when connection is made with the called line, and means operated upon the response of the called subscriber to shunt said high resistance trunk relay and thus permit an increased flow of current over the trunk to render said supervisory signal inoperative, substantially as described.

23. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk, a relay actuated by current flowing over a part of the talking circuit including one of the jacks of the called subscriber's line to direct current through said signal to operate the same when the subscriber has been called but before his response, a second relay adapted to deprive said signal of operating current when the subscriber responds, and means for locking out said signal during the remainder of the connection, substantially as described.

24. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk, a relay actuated by current flowing over a part of the talking circuit including one of the jacks of the called subscriber's line to direct current through said signal to operate the same when the subscriber has been called but before his response, a second relay adapted to deprive said signal of operating current when the subscriber responds, and means actuated by said second relay for locking out said signal during the remainder of the connection, substantially as described.

25. The combination with a trunk line; of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk, a relay actuated by current flowing over a part of the talking circuit including one of the jacks of the called subscriber's line to direct current through said signal to operate the same when the subscriber has been called but before his response, a second relay adapted to deprive said signal of operating current when the subscriber responds, and means first actuated by said second relay and thereafter controlled by said first relay for locking out said signal, substantially as described.

26. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk, a relay adapted to direct current through said signal to operate the same when the subscriber has been called but before his response, a second relay responsive to current in the called subscriber's line when the subscriber responds, the windings of said relay being out of the path of the voice currents, a locking relay to render said signal inoperative having its circuit initially completed by both said relays and thereafter controlled by the first named relay, substantially as described.

27. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk, a relay actuated by current flowing over a part of the talking circuit including one of the jacks of the called subscriber's line to direct current through said signal to operate the same when the subscriber has been called but before his response, a second relay responsive to current in the called subscriber's line when the subscriber responds and having its coil out of the path of the voice currents, a locking relay to render said signal inoperative having its circuit initially completed by both said relays and thereafter controlled by the first named relay, substantially as described.

28. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk, a relay connected with one side of the trunk and actuated upon the connection of the trunk with the called subscriber's line, said relay serving to direct current through the ringing signal, a second relay connected with the other side of the trunk and adapted to respond to current in the metallic line when the subscriber responds, a locking relay to render and maintain the said signal inoperative, the circuit of said locking relay being initially completed at one point through contacts of the second relay and thereafter through contacts of the first named relay, substantially as described.

29. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk, a relay connected with one side of the trunk and actuated over a part of the talking circuit upon the connection of the trunk with the called subscriber's line, said relay serving to direct current through the ringing signal, a second relay connected with the other side of the trunk and adapted to respond to current in the metallic line when a subscriber is called, a locking relay to render and maintain the said signal inoperative, the circuit of said locking relay being initially completed at one point through contacts of the second relay and thereafter through contacts of the first named relay, substantially as described.

30. The combination with a trunk line, of a cord circuit to connect with the outgoing end thereof and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk adapted to be operated when the trunk is connected with the called subscriber's line, means for rendering the signal inoperative upon the response of the called subscriber and for locking ont the same during the remainder of the connection, and further means under the control of the operator

for unlocking said signal after it has been locked without disconnecting the trunk from the called line, substantially as described.

31. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk adapted to be operated when the trunk is connected with the called subscriber's line, means for rendering the signal inoperative upon the response of the called subscriber and for locking out the same during the remainder of the connection, and further means whereby should the signal become accidentally locked out when making a connection the same is unlocked during ringing, substantially as described.

32. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk adapted to be operated when the trunk is connected with the called subscriber's line, a relay for rendering said signal inoperative upon the response of the called subscriber, a second relay for maintaining the first named relay in operative condition during the connection, a locking out circuit for said signal closed initially at one point by the first relay and thereafter maintained closed by the second relay, a ringing key adapted to connect the ringing generator with the called subscriber's line, means for opening the circuit of said second relay by means of the ringing key when the subscriber is being called, whereby should it become necessary for the operator to again ring the subscriber, the signal will be unlocked, substantially as described.

33. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a ringing signal for the incoming end of the trunk, a relay actuated over a part of the talking circuit and adapted to direct current through said signal to operate the same when the subscriber has been called but before his response, a second relay adapted to deprive said signal of operating current when the subscriber responds, and means first actuated by said second relay and thereafter controlled by said first relay for locking out said signal, and a ringing key adapted to open said portion of the talking circuit and to connect the ringing generator with the called subscriber's line whereby the signal will be unlocked during ringing, substantially as described.

34. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line having only two wires extending throughout the multiple switchboard with which its incoming end is connected, a disconnect signal for said incoming end, means operated by current flowing over a portion of the talking circuit when connection is made with the called line for placing said signal in condition to operate and further means operated by and during the connection of said cord circuit with the trunk for rendering said signal inoperative, substantially as described.

35. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line having only two wires extending throughout the multiple switchboard with which its incoming end is connected, a disconnect signal for said incoming end, means operated by current flowing over a portion of the talking circuit when connection is made with the called line for placing said signal in condition to operate, and further means controlled by current sent over the trunk circuit when the cord is connected therewith for preventing the actuation of said signal, whereby said signal can only be operated when the cord circuit is disconnected from the trunk, substantially as described.

36. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a signal associated with said incoming end, a single coil relay normally bridged across the incoming end adapted to be operated by current sent over the trunk circuit, a second relay at said incoming end adapted to be operated by current flowing over a portion of the talking circuit and having its coil out of the path of the voice currents, said relays jointly controlling said signal so as to operate the same to give a guard indication when the cord circuit is connected with the trunk circuit and the trunk circuit is disconnected from the said line or to place said signal in condition to operate so as to give a disconnect indication when the cord circuit is disconnected from the trunk and the trunk is connected with said line, substantially as described.

37. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line having only two wires extending throughout the multiple switchboard with which its incoming end is connected, a disconnect signal for said incoming end, means actuated by current flowing over a part of the talking circuit when connection is established with the called line for controlling the circuit of said signal at one point to place it in condition to operate, and further means operated by the connection of said cord circuit with the trunk for controlling the circuit of said signal at another point rendering the same inoperative, substantially as described.

38. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line having only two wires extending throughout the multiple switchboard with which its incoming end is connected, a disconnect signal for said incoming end, a relay actuated by current flowing over a portion of the talking circuit for placing said signal in condition to operate, and a trunk relay at the incoming end of the trunk to be actuated by the connection of the cord circuit with the trunk, the energization of said trunk relay serving to control the circuit of said signal at a second point rendering the same inoperative, substantially as described.

39. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line having only two wires extending throughout the multiple switchboard with which its incoming end is connected, a disconnect signal for said incoming end, a relay actuated over a portion of the talking circuit when connection is made with a called line for closing the circuit of said signal at one point, and a trunk relay at the incoming end of the trunk actuated by current from the cord circuit when the cord is connected with the trunk, said trunk relay serving when energized to open the circuit of the said signal, substantially as described.

40. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line having only two wires extending throughout the multiple switchboard with which its incoming end is connected, a disconnect signal for said incoming end placed in condition to operate by current flowing over a portion of the talking circuit when the trunk is connected with the called line, and means depending upon the connection of the cord with the trunk to prevent the actuation of said signal during such latter connection, substantially as described.

41. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line having only two wires extending throughout the multiple switchboard with which its incoming end is connected, a disconnect signal for said incoming end placed in condition to operate by current flowing over a portion of the talking circuit when connection is established with the called line, and means to prevent the actuation of said signal during such connection either when the cord is connected with the trunk or when the called subscriber's telephone is in use, substantially as described.

42. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line having only two wires extending throughout the multiple switchboard with which its incoming end is connected, a disconnect signal for the incoming end of the trunk, means operated over one side of the talking circuit to direct current through said signal when the trunk is connected with the called line, a trunk relay also at the incoming end of the trunk and actuated when the cord circuit is connected with the trunk, the said trunk relay serving to render the signal inert when the cord is connected with the trunk and to operate the same when the cord circuit is disconnected, substantially as described.

43. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a disconnect signal for said incoming end placed in condition to operate by current flowing over a portion of the talking circuit when connection is made with the called line, a relay at the incoming end of the trunk actuated by current thereover when the cord circuit is connected with the outgoing end, a second relay at the incoming end of the trunk responsive to current in the line when the called subscriber answers, said signal being rendered inert during such connection by the energization of either of said relays, substantially as described.

44. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a disconnect signal for the incoming end of the trunk, a relay actuated by current flowing over a part of the talking circuit when the incoming end of the trunk is connected with the called subscriber's line said relay controlling the circuit of said signal at one point, a second relay connected with the incoming end and controlling said circuit at another point and adapted to be actuated when the called subscriber responds, a trunk relay connected with the outgoing end of the trunk and actuated by current over and between the two limbs of the trunk line, and means whereby said signal is actuated when the first named relay is actuated and the other two relays are de-energized, substantially as described.

45. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a disconnect signal at the incoming end of the trunk, a relay actuated when the incoming end of the trunk is connected with the called subscriber's line to direct current through said disconnect signal, a trunk relay at said incoming end connected with the outgoing end of the trunk and actuated by current thereover when the cord circuit is connected with the trunk, a third relay connected with the incoming end of the trunk and actuated when the subscriber responds, said signal being rendered inoperative by the operation of either of the trunk relays or the third relay and rendered operative during the connection by the de-energization of said two relays, substantially as described.

46. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is connected, a disconnect signal at the incoming end of the trunk, a relay actuated over a portion of the talking circuit when connection is made with a line to direct current through said signal, a trunk relay connected with the outgoing end of the trunk and actuated by current thereover when the cord circuit is connected with the trunk and the called subscriber's telephone is not in use, a third relay connected with the incoming end of the trunk and actuated when the subscriber responds, said signal being rendered inoperative by the operation of either the trunk relay or the third relay and operative by the de-energization of said two relays, substantially as described.

47. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a guard signal for the incoming end of the trunk, means to actuate said signal by current sent over the two limbs of the trunk line in series when the cord circuit is connected with the trunk and further means actuated by current sent over a portion of the talking circuit when the trunk is connected with a called line for rendering said signal inert, substantially as described.

48. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a guard signal for the incoming end of the trunk, a relay controlling the circuit of said signal at one point and adapted to be actuated over a portion of the talking circuit when the incoming end of the trunk is connected with the called subscriber's line and having its coil out of the path of the voice currents, a trunk relay connected with the outgoing end of the trunk and adapted to be actuated by current flowing over and between the two limbs thereof when the cord circuit is connected with the trunk and controlling the circuit of said signal at a second point, and means for actuating said signal when the first named relay is de-energized and the trunk relay is energized, substantially as described.

49. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a signal for the incoming end of the trunk, a relay connected at the incoming end of the trunk with the outgoing end and actuated by current thereover from the cord circuit, a second relay connected with the incoming end of the trunk and actuated when the trunk is connected with the called subscriber's line, a third relay at the incoming end of the trunk responsive to current in the line when the subscriber answers his call, the said signal being actuated at different times by current over two different paths, one of said paths being closed when the second relay is energized and the first and third relays de-energized and the other path being closed when the first relay is energized and the second relay is de-energized, whereby in the first instance it serves as a disconnecting signal and in the second as a guard signal, substantially as described.

50. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a signal for the incoming end of the trunk, a relay connected with the outgoing end of the trunk and actuated by current thereover when the incoming end is connected with the called subscriber's line and when the subscriber's telephone is not in use, a second relay connected with the incoming end of the trunk and actuated when the trunk is connected with the called subscriber's line, a third relay at the incoming end of the trunk responsive to current in the line when the subscriber responds, said signal being adapted to be actuated over two different paths, one of said paths including forward contacts of the second relay when it is energized and normal contacts of the other two relays, and the other path including the forward contacts of the first relay when it is energized and normal contacts of the second relay, substantially as described.

51. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a supervisory signal associated with the cord circuit, a relay at the incoming end of the trunk actuated over a part of the talking circuit when connection is made with the line, a testing circuit completed through the normal contacts of said relay, a second relay normally not in condition to operate by current flowing over the line, said first named relay serving when actuated to sever the test circuit and place said second relay in condition to respond when the subscriber answers, and means for controlling the supervisory signal at the other end of the trunk by said second relay, substantially as described.

52. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a supervisory signal associated with the cord circuit, a relay at the incoming end of the trunk actuated over a part of one side of the talking circuit, a testing circuit from the tip of the trunk plug completed through the normal contacts of said relay, a second relay associated with the talking circuit and normally disconnected from the tip, and means for severing the testing circuit and connecting the second relay with the tip and talking circuit when the first named relay is actuated whereby said second relay is placed in condition to operate by current in the line when the subscriber responds, and means actuated by said latter relay for controlling said supervisory signal, substantially as described.

53. In a telephone system, a calling subscriber's line and a called subscriber's line, a cord circuit and trunk to connect said lines together for conversation, a relay associated with said trunk and adapted to operate over a talk-

ing strand, a source of distinctive signaling current with which the incoming end of the trunk may be connected when the called subscriber is busy or fails to answer, means for operating said relay when the trunk is connected with said source to place the trunk in condition to respond to the signaling current, whereby the calling subscriber is duly notified of the condition of the called line, substantially as described.

54. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a supervisory signal placed in operative condition by current flowing over a part of the talking circuit when the cord is connected with the trunk, a source of distinctive signaling current with which the incoming end of the trunk is connected when the called subscriber is busy or fails to respond, a device associated with the incoming end of the trunk responsive to said signaling current to cause a flow of current over both sides of the trunk to render said supervisory signal inoperative in accordance with the variations of said current, substantially as described.

55. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a supervisory signal associated with the cord circuit and actuated by current flowing over the trunk when the cord is connected with the trunk, a high resistance device in the path of said current to prevent rendering the supervisory signal inoperative, a source of distinctive signaling current with which the incoming end of the trunk is connected when the called subscriber is busy or fails to answer, an electro-magnetic device responsive to said signaling current to remove the resistance of said device from the trunk circuit and thereby permit an increased flow of current over the same to render said signal inoperative, substantially as described.

56. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the trunk, a supervisory signal associated with the cord circuit and placed in operative condition by current flowing through said retardation coil when the cord is connected with the trunk, a source of distinctive signaling current with which the incoming end of the trunk is connected when the called subscriber is busy or fails to respond, and means responsive to said signaling current for permitting a flow of current over the metallic circuit of the trunk to render said supervisory signal inoperative, substantially as described.

57. In a telephone system, a calling subscriber's line and a called subscriber's line, a cord circuit and trunk to connect said lines together for conversation, a supervisory signaling apparatus associated with the cord circuit and responsive to current in the trunk, a source of distinctive signaling current with which the incoming end of the trunk is connected when the called subscriber is busy or fails to respond, a relay adapted to be actuated over a part of the talking strand of the trunk, and means to actuate said relay when connection is made with said source, a second relay placed in operative condition by the actuation of said first named relay and responsive to said signaling current, and means controlled by said relay to actuate the supervisory signal in the cord circuit whereby both the calling subscriber and the A operator are notified of the condition of the wanted line, substantially as described.

58. The combination with a trunk line, of a called subscriber's line with which the same is adapted to be connected, a relay adapted to be actuated over a talking strand when the trunk is connected with the called line, a source of distinctive signaling current with which the incoming end of the trunk is connected when the subscriber is busy or fails to answer, means for operating said relay when the trunk is connected with said source, a ringing signal for said incoming end and further means for locking out said signal upon the connection of the trunk with said source, substantially as described.

59. The combination with a trunk circuit, of a cord circuit to connect with its outgoing end and a called subscriber's line with which its incoming end is adapted to be connected, a relay adapted to be actuated over a talking strand when the trunk is connected with the called line, a source of distinctive signaling current with which the incoming end of the trunk is connected when the subscriber is busy or fails to answer, means for operating said relay when the trunk is connected with said source, further means for causing an interrupted flow of current therefrom over a trunk conductor, a relay in the path of said interrupted current, a disconnect signal for the incoming end of the trunk, said relay serving to control the operation of said disconnect signal so as to operate the same in accordance with said current interruptions when the cord circuit is disconnected from the trunk, substantially as described.

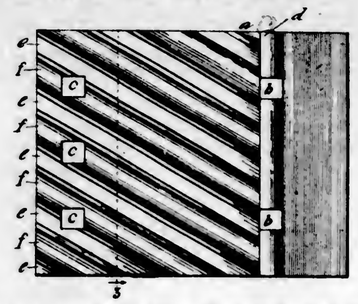
60. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a subscriber's line with which its incoming end is adapted to be connected, a supervisory signal associated with the cord circuit and placed in condition to operate by current flowing over a portion of the talking circuit when the cord is connected with the trunk, a relay associated with the incoming end of the trunk and adapted to be operated over a portion of the talking circuit when the trunk is connected with the called line, a testing circuit for said incoming end of the trunk normally completed over one strand thereof and through normal contacts of said relay, said testing circuit being severed and the trunk circuit being placed in condition for talking by the actuation of said relay, a ringing signal for the incoming end of the trunk placed in condition to operate by the actuation of said relay, means for rendering inert and for locking out said ringing signal during the remainder of the connection, a trunk relay at the incoming end of the trunk actuated by current over the trunk and from the cord circuit when the cord circuit is connected with the trunk, means operated by the said second relay to permit a flow of current over the metallic trunk line to render said supervisory signal inert when the called subscriber responds, a second signal at said incoming end of the trunk placed in condition to operate by the actuation of the said first named relay, means for actuating said signal when the cord circuit is disconnected from the trunk and the trunk is connected with the called subscriber's line, whereby a disconnect indication is given, and further means for actuating said signal when the cord is connected with the trunk and the trunk is disconnected from the called line whereby a guard indication is given, a source of current at the incoming end of the trunk to furnish current for the operation of said relays and signals and for the operation of the transmitters for talking purposes, substantially as described.

61. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord circuit with the trunk, a supervisory signal associated with the cord circuit and placed in condition to operate by current flowing over a portion of the talking circuit and through said retardation coil when the cord is connected with the trunk, a source of current at the incoming end, a relay also associated with the incoming end of the trunk and adapted to be operated by current from said source over one strand of the trunk when connected with the called line, said relay serving when actuated to place the trunk in condition for conversation, a ringing signal for the incoming end of the trunk placed in condition to operate by the actuation of said relay, a second relay responsive to current in the trunk from said source when the subscriber answers his call, said relay serving to render said ringing signal inert, means for locking out said ringing signal during the remainder of the connection, a trunk relay at the incoming end of the trunk and actuated by current thereover when the cord circuit is connected with its outgoing end, means operated by said second relay to permit a flow of current over the metallic trunk line to render said supervisory signal inert when the called subscriber responds, a second signal at said incoming end of the trunk placed in condition to operate by the actuation of said first named relay, said signal being actuated when the cord circuit is disconnected from the trunk and the trunk is connected with the called subscriber's line and the called subscriber's line is not in use, whereby a disconnect indication is given, said signal being also actuated when the cord circuit is connected with the trunk and the trunk is disconnected from the called line whereby a guard indication is given, said source serving to charge the transmitters for talking as well as for the operation of said relays and signals, substantially as described.

62. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord circuit with the trunk, a supervisory signal associated with the cord circuit and placed in condition to operate by current flowing over a portion of the talking circuit and through the retardation coil when the cord is connected with the trunk, a source of current at the incoming end of the trunk, a relay also associated with the incoming end of the trunk and adapted to be operated by current from said source over a portion of the talking circuit when the trunk is connected with the called line, said relay serving when actuated to place the trunk in condition for talking, a trunk relay at the incoming end of the trunk actuated by current thereover when the cord circuit is connected with its outgoing end, a third relay at the incoming end of the trunk adapted to respond to current therein from said source when the subscriber answers his call, a signal at said incoming end having its circuit completed through normal contacts of said trunk relay and said third relay, said signal being placed in condition to operate by the actuation of said first named relay whereby when the cord circuit is disconnected from the trunk and the trunk is connected with the line, a disconnect indication will be given, a second path for current through said signal including the forward contacts of said trunk relay and normal contacts of said first named relay whereby when the cord circuit is connected with the trunk and the trunk is disconnected from the line a guard indication will be given, said source serving to furnish current to the transmitters for talking as well as for the operation of said relays, substantially as described.

63. The combination with a trunk line, of a cord circuit to connect with its outgoing end and a subscriber's line with which its incoming end is adapted to be connected, a retardation coil legged to ground from one side of the talking circuit established by the connection of the cord with the trunk, a supervisory signal placed in condition to operate by current flowing over a portion of the talking circuit and through the retardation coil when the cord is connected with the trunk, a source of current associated with the incoming end of the trunk a relay also associated with the incoming end of the trunk and adapted to be actuated by current from said source over a talking strand of the trunk cord when the same is connected with the called subscriber's line, said relay serving to place the trunk circuit in condition for talking, a trunk relay at the incoming end of the trunk and connected with the outgoing end and adapted to be operated by current thereover when the cord is connected with the trunk, a second relay connected with the incoming end of the trunk and responsive to current from said source in the line when the subscriber answers his call, said relay serving when actuated to permit a flow of current over the metallic trunk line to render the supervisory signal inert and thereby indicate the response of the called subscriber, a disconnect signal for the incoming end of the trunk, said signal being placed in condition to operate by the actuation of said first named relay, and means for preventing the actuation of said signal by means of said trunk relay when the called subscriber's telephone is not in use and the cord circuit is disconnected from the trunk, said current source serving to furnish current to the transmitters for talking purposes as well as for the operation of said relays, substantially as described.

853,683. TIE-PLATE. WILLIAM L. DE REMER, Chicago, Ill. Filed Aug. 25, 1906. Serial No. 332,053.



Claim.—1. A tie-plate having on its upper side a transverse shoulder and ribs extending obliquely with the relation to such shoulder.

2. A tie-plate having on its upper side a transverse shoulder and a series of ribs extending obliquely and at an acute angle with relation to the longitudinal center of the plate.

3. A tie-plate having on its upper side a series of substantially flat topped ribs extending at an acute angle with relation to its longitudinal center.

4. A tie-plate having on its upper side a transversely extending shoulder and alternate flat and round topped ribs extending obliquely with relation to the longitudinal center of the plate.

5. A tie-plate having a main body portion provided with alternate flat and round topped ribs on its upper side.

6. A tie-plate formed of rolled metal having alternate flat and round topped ribs extending obliquely with relation to the longitudinal center of the plate.

7. A tie-plate having a main body portion provided with a series of ribs on its under side and having ribs on its upper side arranged directly over such bottom ribs and connected by intermediate arched portions of the plate.

8. A tie-plate having a main body portion provided on its upper side walls a series of rail supporting ribs, and having on its under side a series of ribs each having a bottom surface of greater area than the top surface of the upper rib beneath which such lower rib extends.

9. A tie-plate having on its upper side a series of ribs extending obliquely with relation to its longitudinal center, and having on its under side a series of bottom ribs each directly beneath one of such upper ribs and having a surface of greater area than the upper rib beneath which such lower rib extends.

10. A tie-plate having a main body portion provided with a series of ribs on its under side, and having on its upper side alternate relatively flat and rounded ribs, the relatively flat upper ribs being directly over the bottom ribs and connected by the rounded rib portions of the plate.

11. A tie-plate having a main body portion provided with ribs forming substantially flat top and bottom surface portions, and having relatively thin arched portions integral with and forming connection between such rib portions of the plate.

12. A tie-plate having on its upper side a transversely extending shoulder and ribs extending at an acute angle with relation to the longitudinal center of the plate and transversely with relation to the rail to be supported thereby, and having on its under side a series of depending ribs each forming a load bearing bottom surface portion of greater area than the top surface of the ribs directly over such bottom ribs.

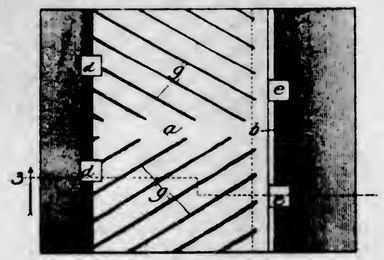
13. A tie-plate having a main body portion provided on its upper side with ribs having concave side faces and with ribs having rounded upper surface portions intermediate such concave sided ribs.

14. A tie-plate having a main body portion provided with ribs in oblique relation to its longitudinal center and

having round topped arch portions between and connecting such oblique rib portions.

15. A tie-plate having a main body portion provided with ribs having substantially flat surface portions, and having relatively thin arched connecting portions between such ribs, the tops of the arched portions being on the same plane with the top surfaces of the flat ribs.

853,684. TIE-PLATE. WILLIAM L. DE REMER, Chicago, Ill. Filed Aug. 25, 1906. Serial No. 332,054.



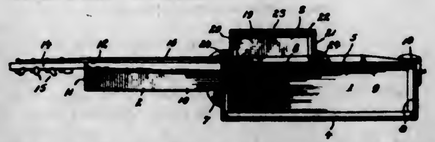
Claim.—1. A tie-plate provided with inner and outer spike-holes and a ribbed upper face portion, and having a retaining rib on its under side forming lower reinforcing wall portions below the plane of the main bottom face portion of the plate on all sides of the outer spike-holes.

2. A tie-plate provided with ribs on its upper side extending at an angle to each other and obliquely with relation to the longitudinal center of the plate, and having a reinforced retaining rib on the under side of such plate adapted to extend transversely of a tie when the plate is in position.

853,685. PAINT AND VARNISH REMOVER. JOHN F. DICKSON, Binghamton, N. Y. Filed Jan. 16, 1907. Serial No. 352,652.

Claim.—A paint and varnish remover containing the following ingredients and in the proportions specified, to-wit:—acetone—8 gls. Benzol—2 gls. Com'l. toluol—2 gls. Acetic acid—1 gal. Paraffin wax—2 lbs. Spermaceti—2 lbs. Benzin—1 gal.

853,686. STRINGED MUSICAL INSTRUMENT. DANIEL FEATHER and ALVA CULP, Marion, Ind. Filed Feb. 28, 1906. Serial No. 303,515.



Claim.—1. A stringed musical instrument of the character described comprising a rectangular body having an apertured sounding board and sides formed with horizontally extended portions at their forward ends and vertical extensions at their upper edges, a neck projecting centrally from the forward end of said body, a transverse piece connecting said neck and the extended forward end portions of said sides, slotted ends connecting the vertically-extended portions of the sides of the body, an apertured plate connecting said ends and the vertically-extending portions of the upper edges of said sides, and strings extending through the slots and across the apertures in said sounding board and connected at the other end with the neck, substantially as shown and described.

2. A stringed musical instrument of the character described comprising a body portion, a resonator box composed of extensions formed integral with the body portion, an apertured plate connecting the tops of the extensions, slotted plates connecting the edges of said extensions, said body portion comprising an apertured sounding board beneath the resonator, a neck carried by the body portion, a tail piece carried by the body portion, strings stretched across the aperture in the sounding board and through the slots, said strings being connected at one end with said tail piece and at the other with the neck, a frame comprising parallel arms formed integral with the sides of the body, and a cross-piece connecting the ends of said arms and forming a rest or support for the outer portion of the neck, substantially as shown and described.

853,687. WHEEL. ISAAC W. GILES, New Bedford, and CHARLES W. TOBEY, Fairhaven, Mass. Filed Nov. 8, 1906. Serial No. 342,557.



Claim.—1. The combination of an elastic tire provided in its inner side with a series of cavities at intervals, reinforcing rings of rod or stout wire extending along the opposite sides of the elastic tire, studs connected with the said side rings at points opposite the cavities in the elastic tire and extending thence into said cavities, connecting means between the inner ends of said studs, plates arranged within the inner circumference of the elastic tire and provided with lugs projecting into the cavities therein and engaging with the connecting means between the opposite studs, and a supporting tire consisting of independent rings extending between the elastic tire and the said plates, substantially as set forth.

2. The combination of an elastic tire, a supporting tire within the inner circumference of the elastic tire and consisting of a plurality of independent rings in the form of rods spaced apart laterally whereby they may individually yield to pressure upon the elastic tire, and supporting plates arranged at intervals within the supporting tire and each having grooves extending in the direction of the circumference of the wheel to receive the independent rings of the supporting tire, substantially as set forth.

3. The combination of an elastic tire and a tire within the inner circumference of and supporting said elastic tire, said supporting tire consisting of a plurality of annular rods independent of each other whereby they may yield individually to pressure upon the elastic tire, and means for supporting these annular rods at intervals throughout their circumference, substantially as set forth.

4. A wheel comprising an elastic tire, a supporting tire within the elastic tire and bearing against the inner circumference thereof and composed of a plurality of concentric independent rods whereby they may individually yield to pressure of the elastic tire, and supporting plates at intervals within the circumference of said supporting tire and each having grooves receiving the independent rings thereof, substantially as set forth.

5. A wheel comprising an elastic tire, a supporting tire bearing against the inner circumference of the elastic tire, and consisting of a plurality of independent rods in the form of rings, adapted to yield independently to pressure upon the elastic tire, plates supporting said rings at intervals, devices projecting outwardly from said plates between the rings of the supporting tire into the elastic tire, and intermediate devices between said outwardly projecting devices and the elastic tire, substantially as set forth.

6. A wheel comprising an outer tire, a supporting tire within the outer tire, and consisting of a plurality of independent rods in the form of rings, and plates supporting said rings and arranged at intervals within the circumference thereof and spaced apart to permit the rings to operate elastically between the said supporting plates, and means for supporting the said plates.

7. The combination of an elastic tire provided in its inner circumference with cavities arranged at intervals, supporting rings extending along the opposite sides thereof, studs connected at their outer ends with the said rings opposite the cavities in the tire and extending thence inwardly into the said cavities and provided at their inner ends with hooks within said cavities, and links connecting the inner ends of the opposite studs, substantially as set forth.

8. The combination in a wheel, substantially as described, of an elastic tire, a supporting tire within the inner circumference of the elastic tire and consisting of a plurality of independent rings and supporting plates arranged at intervals within the said supporting tire and provided with grooves receiving the rings thereof and having at their outer edges flanges lapping along the outer sides of the elastic tire, substantially as set forth.

9. An elastic tire extended from its inner circumference by a plurality of hoops or rings partially embedded in the inner circumference of the elastic tire whereby to prevent lateral displacement, plates supporting said rings or hoops, an inner rim, and cushions between the inner rim and the said plates to press the latter outwardly, substantially as set forth.

10. A wheel comprising an elastic tire, a supporting tire bearing against the inner circumference of the elastic tire and consisting of a plurality of independent rods in the form of rings adapted to yield independently to pressure upon the elastic tire and cushioning supporting devices within said supporting tire whereby to permit the independent yielding of the rings thereof, substantially as set forth.

11. A wheel comprising an elastic tire, a fastening therefor having rings bearing against the opposite sides of the elastic tire and studs extending inwardly from said rings, links connecting the inner adjacent ends of the opposite studs, a supporting tire consisting of a plurality of independent rods in the form of rings adapted to yield independently to pressure upon the elastic tire and supporting plates bearing against the inner circumference of the supporting tire and having lugs extending into the connecting links of the tire fastening device, substantially as set forth.

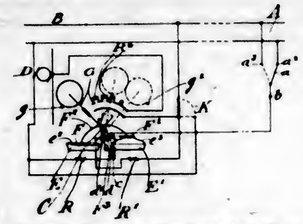
12. A wheel comprising an elastic tire, rings extending along the opposite sides thereof, studs connected at their outer ends with said rings and extending thence inwardly within the tire and provided at their inner adjacent ends with hooks, links engaged by the hooks of the opposite studs, and lugs extending within the links and locking the hooks in engagement therewith, substantially as set forth.

13. A wheel having an elastic tire provided in its inner circumference with cavities arranged at intervals, rings extending along the opposite sides of said tire, studs connected with said rings opposite the cavities in the tire and extending inwardly into said cavities and provided at their ends with hooks, links connecting the hooks of the opposite studs, a supporting tire within the elastic tire and consisting of a plurality of rings or hooks, and supporting plates within the supporting tire and having grooves receiving the rings thereof and provided with outwardly projecting studs entering the links connecting the opposite hook studs, substantially as set forth.

14. A wheel having an outer tire, a supporting tire within the outer tire, and consisting of a plurality of independent rings arranged laterally to each other, and adapted to yield individually to pressure upon the outer tire, supporting plates at intervals within the supporting tire, and spaced apart in the direction of the circumference of the wheel, and independent cushioning devices supporting said plates, substantially as set forth.

15. A wheel having an outer tire, a supporting tire within the outer tire and consisting of a plurality of independent rings arranged laterally to each other and adapted to yield individually to pressure upon the outer tire, supporting plates at intervals within the supporting tire and cushioning devices for said supporting plates, substantially as set forth.

853,688. ELECTRIC CONTROLLING SWITCH. WILHELM GMINDER, New York, N. Y. Filed Aug. 26, 1905. Serial No. 275,860.



Claim.—1. An electric controlling switch, comprising air-boxes each having expansible diaphragms, thermo-electric means in proximity to said boxes, for expanding the air therein, a lever mechanism adapted to be actuated by the diaphragms, a switch-device actuated by said lever mechanism and adapted to actuate a motor or other device, a source of electricity, conductors connected therewith, with the thermo-electric means, a switch interposed in the conductors at a point distant from the aforenamed thermo-electric means for connecting the same with the source of electricity and a signal lamp in proximity to said switch.

2. An electric switch controller, consisting of a fulcrumed and weighted switch controlling lever, hermetically closed heating boxes provided with expansible diaphragms, resistance coils for heating air in said boxes, an oscillating lever-arm provided with pivot-plates at each end and actuated by said diaphragms, means between the oscillating lever-arm and the weighted lever for moving the same from one side to the other, a source of electricity, conductors connected therewith, contact-devices interposed in said conductors for switching in one of the resistance coils, and contact-devices actuated by the weighted lever for switching the main current into the device to be operated.

853,689. GUARD FOR EYEGLASSES. DALLAS F. GREEN, Fort Wayne, Ind. Filed Oct. 25, 1906. Serial No. 340,455.



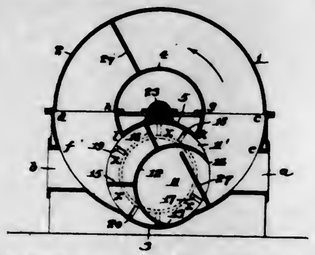
Claim.—1. In a guard for eyeglasses a pair of curved spring plates in vertical arrangement relative to their mountings, and having integral shanks in such relation thereto that the lower ends thereof will functionate as nose guards, and the upper ends thereof will bear against the respective orbital arches; mountings for carrying the guards; and means for rigidly securing the guards in position.

2. A guard for eyeglasses consisting of a pair of coöperating spring-metal plates having scalloped edges and a series of spaced perforations, the lower ends of the said plates being adapted to functionate as nose guards and their upper ends to bear upwardly against the orbital arch to brace the eyeglasses against an accidental displacing upward movement thereof.

853,690. ROTARY BLOWER. THOMAS W. GREEN, Philadelphia, Pa., assignor to Wilbraham-Green Blower Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Sept. 18, 1906. Serial No. 335,053.

Claim.—1. In a device of the character described, the combination with a stationary locking member, and a pair

of oppositely disposed impeller blades, of a rotary spider-like locking member comprising a curved wall formed on the arc of a circle of less diameter than that of the rotary member, and wings extending from the convex surface of said wall to the circumference of said rotary member, the ends of said curved wall and wings being adapted during the rotation of said rotary member to maintain a continuous lock between the inlet and outlet openings of the device and at the same time permit the passage therethrough of the impeller blades.



2. In a device of the character described, the combination with a stationary locking member, and a pair of oppositely disposed impeller blades, of a rotary spider-like locking member comprising a curved wall formed on the arc of a circle of less diameter than that of the rotary member and having its ends terminating in the circumference of said rotary member, and wings extending from the convex surfaces of said wall to the circumference of said rotary member, the ends of said curved wall and wings being adapted during the rotation of said rotary member to maintain a continuous lock between the inlet and outlet openings of the device and at the same time permit the passage therethrough of the impeller blades.

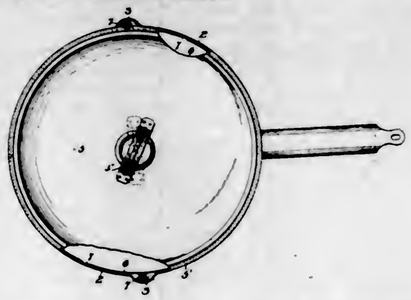
3. In a device of the character described, the combination with a stationary locking member, and a pair of rotary impeller blades, of a rotary spider-like locking member, comprising a plurality of contact making walls providing spaces therebetween, each of said spaces being provided with a port, a ported channel adapted to register with the ports in said spaces, whereby the air under pressure entrapped by a space leaving the outlet side of the blower will be conveyed through said channel to the opposite space about to be opened to the outlet side of said blower, thus all air entrapped under pressure is returned to the outlet side of the blower.

4. In a device of the character described, the combination with a crescent shaped stationary locking member, and a pair of rotary impeller blades, of a rotary spider-like locking member, comprising a plurality of contact making walls, providing spaces therebetween, each of said spaces being provided with a port, a ported channel adapted to register with the ports in said spaces to establish connection between the oppositely disposed spaces of said rotary locking member, whereby the air under pressure entrapped by a space leaving the outlet side of the blower will be conveyed through said channel to the opposite space of said rotary member about to be opened to the outlet side of the blower, thus all air entrapped under pressure is returned to the outlet side of the blower.

5. In a device of the character described, the combination with a stationary locking member, a pair of rotary impeller blades, of a rotary locking member having spaces or recesses therein, ports in each of said spaces or recesses, a ported channel adapted to register with said ports to connect the oppositely disposed spaces or recesses in said rotary member, whereby the air under pressure entrapped by the space or recess leaving the outlet side of the blower will be conveyed to the oppositely disposed space or recess about to open to the outlet side of said blower to return said air to the outlet side of said blower.

6. In a device of the character described, the combination with a rotary locking member having a plurality of spaces or recesses therein, and a suitable port in each of said spaces or recesses, of a ported channel adapted to establish communication between the oppositely disposed spaces or recesses of said rotary member, whereby air entrapped in said spaces or recesses from the outlet side of the blower is returned thereto.

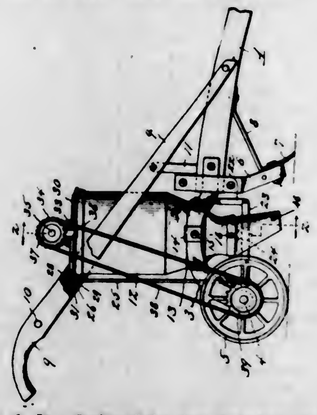
853,691. LOCKING-COVER FOR COOKING UTENSILS, &c. AMELIA GURNEY, Pittsburg, Pa., assignor of two-thirds to William Sylvester, Pittsburg, Pa. Filed Mar. 28, 1906. Serial No. 308,597.



Claim.—1. A circular cooking vessel having its upper portion and upper edge interrupted by two outwardly bulged spouts, the side wall of the vessel having lateral bulges or grooves intersecting the spouts above their lower ends a cover having a vessel-entering flange of less depth than the spouts, whereby the spouts are not closed by the flange when the cover is in place, and outward projections on the cover-flange adapted to enter the spouts and pass into the lateral bulges or grooves when the cover is turned.

2. A circular cooking vessel formed at its top edge with outwardly bulged pouring spouts and a circumferential groove or outward bulge above the lower ends of the spouts and continuous around the vessel excepting where interrupted by the spouts, a cover for the vessel having a flange of less depth than the spouts, and outward projections on the cover-flange adapted to enter the spouts and move into the said groove when the cover is turned, the cover being thus freely movable and secured at all times excepting when the flange projections intersect the spouts.

853,692. FERTILIZER-DISTRIBUTER. NEWTON F. HANCOCK, Fayetteville, Tenn. Filed Oct. 1, 1904. Renewed Oct. 25, 1906. Serial No. 340,602.



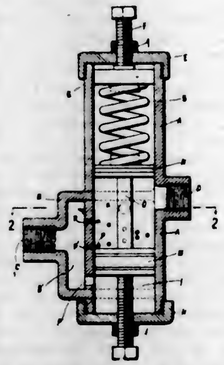
Claim.—1. In a device of the class described, the combination with a plow beam having rearwardly extending, bulging arms, of a hopper casing mounted between said arms, said hopper casing being provided at its lower end with a vertical bore terminating in a housing, serrated upon its inner side, a vertically adjustable shaft within the hopper, and a grinding member upon said shaft having serrations disposed reversely to those upon the housing.

2. In a device of the class described, a plow beam having rearwardly extending, bulging brackets, a hopper casing having lugs engaging said brackets and provided with an interiorly serrated housing, a vertically adjustable shaft within the hopper casing carrying a grinding member within the housing, radially extending agitators upon said shaft, and a paddle adjustably connected with said shaft and adapted to be secured at various degrees of obliquity.

3. A plow beam having rearwardly extending, bulging arms or brackets, a hopper casing including a lower cast metal portion having lugs engaging said brackets and bored vertically to form a passage terminating in an expanded, interiorly serrated housing at its lower end and an upwardly extending cylindrical casing, a lid hinged to the forward end of said casing and forming a bearing for the upper end of a shaft carrying a rotary grinding member at its lower end, a driven shaft supported upon said lid, and bevel gearing for transmitting motion from said driven shaft to the shaft carrying the grinding member.

4. A plow beam having rearwardly extending, bulging brackets terminating in downwardly extending hangers, an axle journaled in said hangers, ground-engaging wheels upon said axle, a hopper having lugs supported between and upon the bulging brackets, a housing at the lower end of the hopper forming a grinder casing, a shaft extending vertically through the hopper and carrying a grinding member within said casing, a lid connected hingedly with the upper end of the hopper and having a bearing for the upper end of the vertical shaft, a driven shaft supported upon the lid, means for transmitting motion from said driven shaft to the vertical shaft, means for effecting vertical adjustment of the latter, and means for securing the lid in a closed position.

853,693. PRESSURE-REGULATING VALVE. FRANK F. HEALEY, New York, N. Y. Filed June 22, 1906. Serial No. 322,872.



Claim.—1. A pressure regulating valve comprising an outer higher pressure chamber connected with the inlet port, an inner lower pressure chamber within said outer chamber connected with the outlet port, a plurality of restricted ports cut in the walls of said inner chamber, and means actuated by variations in pressures between that of the higher pressure chamber and a constant force, for successively opening and closing said restricted ports.

2. A pressure regulating valve comprising an outer higher pressure chamber connected with the inlet port, an inner lower pressure chamber within said outer chamber connected with the outlet port, a plurality of narrow slots spirally disposed cut in the walls of said inner chamber, and means actuated by variations in pressures between that of the higher pressure chamber and a constant force, for successively lengthening and shortening the openings of said slots.

3. A pressure regulating valve comprising higher and lower pressure chambers having inlet and outlet ports respectively, a plurality of restricted ports cut in the partition walls between said higher and lower pressure chambers, and a piston within said lower pressure chamber, automatically operated by variations in pressures between that of the higher pressure chamber and a constant force, whereby said restricted ports may be opened and closed by the said piston successively under said variations in pressures, substantially as described.

4. A pressure regulating valve comprising higher and lower pressure chambers having inlet and outlet ports respectively, a plurality of narrow slots spirally disposed cut in the partition walls between said higher and lower pressure chambers, and a piston within said lower pressure chamber, automatically operated by variations in pressures between that of the higher pressure chamber and a constant force, for successively lengthening and shortening the openings of said slots, substantially as described.

5. A pressure regulating valve comprising an outer higher pressure chamber connected with the inlet port, an inner lower pressure chamber within said outer chamber connected with the outlet port, a plurality of restricted ports cut in the walls of said inner chamber, and a piston within said inner chamber, automatically operated by variations in pressures between that of the higher pressure chamber and a constant force, whereby said restricted ports may be opened and closed by said piston successively under said variations in pressures, substantially as described.

6. A pressure regulating valve comprising an outer higher pressure chamber connected with the inlet port, an inner lower pressure chamber within said outer chamber connected with the outlet port, a plurality of narrow slots spirally disposed cut in the walls of said inner chamber, and a piston within said inner chamber, automatically operated by variations in pressures between that of the higher pressure chamber and a constant force, for successively lengthening and shortening the openings of said slots.

7. A pressure regulating valve comprising higher and lower pressure chambers having inlet and outlet ports respectively, a plurality of restricted ports cut in the partition walls between said higher and lower pressure chambers, a piston within said inner chamber, automatically operated by variations in pressures between that of the higher pressure chamber and a spring so adjusted as to oppose the force of the higher pressure, whereby said restricted ports may be opened and closed by said piston successively under said variations in pressures, substantially as described.

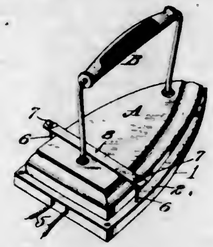
8. A pressure regulating valve comprising higher and lower pressure chambers having inlet and outlet ports respectively, a plurality of narrow slots spirally disposed cut in the partition walls between said higher and lower pressure chambers, a piston within said inner chamber, automatically operated by variations in pressures between that of the higher pressure chamber and a spring so adjusted as to oppose the force of the higher pressure, for successively lengthening and shortening the openings of said slots, substantially as described.

9. A pressure regulating valve comprising an outer higher pressure chamber connected with the inlet port, an inner lower pressure chamber within said outer chamber connected with the outlet port, a plurality of restricted ports cut in the walls of said inner chamber, a piston within said inner chamber, automatically operated by variations in pressures between that of the higher pressure chamber and a spring so adjusted as to oppose the force of the higher pressure, whereby said restricted ports may be opened and closed by said piston successively under said variations in pressures, substantially as described.

10. A pressure regulating valve comprising an outer higher pressure chamber connected with the inlet port, an

inner lower pressure chamber within said outer chamber connected with the outlet port, a plurality of narrow slots spirally disposed cut in the walls of said inner chamber, a piston within said inner chamber, automatically operated by variations in pressures between that of the higher pressure chamber and a spring so adjusted as to oppose the force of the higher pressure, for successively lengthening and shortening the openings of said slots, substantially as described.

853,694. ELECTRICAL SAD-IRON HEATER. CHARLES VAN DYKE HILL, St. Louis, Mo. Filed Sept. 15, 1906. Serial No. 334,700.

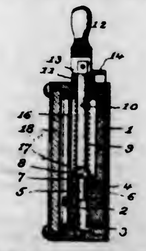


Claim.—1. An electrical heater provided with means for the attachment thereto of an ordinary sad-iron.

2. An electrical heater adapted to have an ordinary sad-iron mounted thereon, and clamping means for securing an ordinary sad-iron to said heater, substantially as set forth.

3. The combination with an electrical heater, of binding rods surmounting said heater, a clamping bar fitted to said rods, and nuts on said binding rods for holding said clamping bar; said binding rods and clamping bar being adapted to confine a sad-iron on said heater, substantially as set forth.

853,695. SIGHT-FEED. JOHN C. HILL, Chicago, Ill. Filed July 16, 1906. Serial No. 326,327.



Claim.—1. A visible indicating appliance for lubricators and the like, comprising a housing formed with a main passage, inlet and outlet passages communicating with said main passage at different points in its length, a piston valve moving in said passage and provided with lateral ports adapted to control the direction of the flow of fluid from the main passage, means for imparting a sliding movement to said piston valve, and a transparent wall connected to the housing and forming a part of the inclosing wall of a collecting chamber formed in said housing.

2. A visible indicating appliance for lubricators and the like, comprising a housing formed with a main passage, inlet and outlet passages communicating with said main passage at different points in its length, a piston valve moving in said passage and provided with lateral ports adapted to control the direction of the flow of fluid from the main passage, a spring tending to maintain said piston valve in one position, means for moving said valve into its other position, and a transparent wall connected to the housing and forming a part of the inclosing wall of a collecting chamber formed in said housing.

3. A visible indicating appliance for lubricators and the like, comprising a housing formed with a main passage, inlet and outlet passages communicating with said main passage at different points in its length, a piston valve moving in said passage and provided with lateral ports adapted to control the direction of the flow of fluid from the main passage, a spring tending to maintain said piston valve in one position, means for moving said valve into its other position the same comprising a handle having pivotal connection to an operating stem on the valve and provided with a lateral lifting toe, and a transparent wall connected to the housing and forming a part of the inclosing wall of a collection chamber formed in said housing.

4. A visible indicating appliance for lubricators and the like, comprising a housing formed with a main passage, inlet and outlet passages communicating with said main passage at different points in its length, a piston valve moving in said passage and provided with lateral ports adapted to control the direction of the flow of fluid from the main passage, a handle having pivotal connection to an operating stem on the valve and provided with a lateral lifting toe, a plate provided with a rectangular recess adapted for engagement with the lower end of the operating handle, and a transparent wall connected to the housing and forming a part of the inclosing wall of a collection chamber formed in said housing.

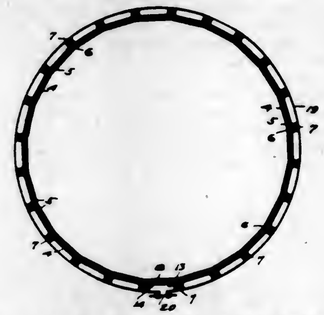
5. A visible indicating appliance for lubricators and the like comprising, a housing formed with a series of main passages arranged in parallel relation, individual inlet and outlet passages communicating with said main passages at different points in their length, a series of individual piston valves moving in said main passages and provided with lateral ports adapted to control the direction of the flow of fluid from said main passages, means for imparting sliding movement to said valves, and a transparent wall connected to the housing and forming a part of the inclosing wall of a collecting chamber common to the indicating discharge from the lateral ports of the series of valves.

6. A visible indicating appliance for lubricators and the like comprising, a housing formed with a series of main passages arranged in parallel relation, individual inlet and outlet passages communicating with said main passages at different points in their length, a series of individual piston valves moving in said main passages and provided with lateral ports adapted to control the direction of the flow of fluid from said main passages, a series of springs tending to maintain said piston valves in one position, means for moving said valves into their other position, and a transparent wall connected to the housing and forming a part of the inclosing wall of a collecting chamber common to the indicating discharge from the lateral ports of the series of valves.

7. A visible indicating appliance for lubricators and the like comprising, a housing formed with a series of main passages arranged in parallel relation, individual inlet and outlet passages communicating with said main passages at different points in their length, a series of individual piston valves moving in said main passages and provided with lateral ports adapted to control the direction of the flow of fluid from said main passages, a series of springs tending to maintain said piston valves in one position, means for moving said valves into their other position the same comprising a series of handles having pivotal connection to a series of stems on said valves and provided with individual lifting toes, and a transparent wall connected to the housing and forming a part of the inclosing wall of a collecting chamber common to the indicating discharge from the lateral ports of the series of valves.

8. A visible indicating appliance for lubricators and the like comprising, a housing formed with a series of main passages arranged in parallel relation, individual inlet and outlet passages communicating with said main passages at different points in their length, a series of individual piston valves moving in said main passages and provided with lateral ports adapted to control the direction of the flow of fluid from said main passages, a series of handles having pivotal connection to a series of stems on said valves and provided with individual lifting toes, a plate provided with a series of rectangular recesses corresponding in number with the handles and adapted for engagement with the lower ends thereof, and a transparent wall connected to the housing and forming a part of the inclosing wall of a connecting chamber common to the indicating discharge from the lateral ports of the series of valves.

853,696. SILO. ARTHUR O. HUBBARD, Minneapolis, Minn. Filed Jan. 8, 1906. Serial No. 295,024.



Claim.—1. A silo composed of vertical panels having inner and outer walls with a space between them, and vertical tongues provided in the joints between the abutting panels, substantially as described.

2. A silo having walls composed of vertically arranged panels having beveled abutting edges fitting snugly together and composed of inner and outer walls with a space between them, and removable tongues fitting into said space and uniting the abutting edges of the panels.

3. A silo composed of a series of vertical panels each consisting of short horizontally arranged pieces of lumber having matched contiguous edges, and vertical strips separating an inner and outer wall and forming an air space between them, and means for uniting the vertical edges of said panels and forming an air tight joint between them, substantially as described.

4. A circular silo composed of panels with vertical joints between them, vertical tongues connecting said panels in said joints and locking them securely together, and said tongues being curved in cross section to conform to the curve of the silo substantially as described.

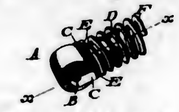
5. A silo composed of panels having vertical joints between them, and tongues fitting between the edges of said panels and forming a tortuous joint through the same from one side of the wall to the other, and studding arranged outside of said joints and concealing the same, and hoops arranged to bind said studding and joints securely together.

6. A silo composed of vertical panels having inner and outer walls with a space between them, vertical tongues provided in the joint between said panels and holding them in alinement with one another and preventing the direct passage of air through the joint, vertical studding provided outside said joint and concealing the same, and hoops binding said studding and joints together.

7. A silo composed of vertical panels having inner and outer walls with spaces between them, vertical studding 10 having tongues 11 fitting into said spaces, the inner surfaces of said studding being rabbeted, a horizontal door sill and top rail also having tongues and rabbeted inner surfaces and a door fitting into said panel between said studding 10 and said sill and rail.

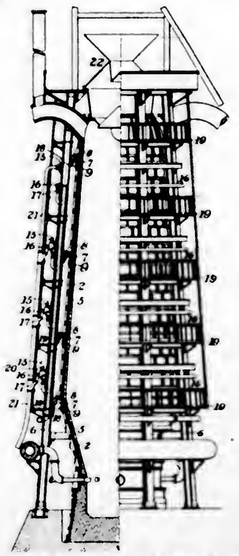
853,697. WINDOW HOLDING AND ANTIRATTLING DEVICE. JOHN B. HUNT, Trenton, N. J. Filed Apr. 5, 1906. Serial No. 310,000.

Claim.—In a window holding and anti-rattling device, a coiled spring, a roller, ears, an axle secured to the latter and carrying said roller, a stub connected with said ears and extending rearwardly therefrom, and a shoulder intermediate of said ears and stub, only one portion of said spring being fitted on said stub, the other portion projecting freely therefrom, the device being adapted to freely oc-



cupy a recess directly in a sash frame, the free portion of said spring being adapted to be removed from controlling contact with the side wall of said recess.

853,698. STACK-FURNACE CONSTRUCTION. JOSEPH L. HUNTER, Roanoke, Va. Filed Nov. 12, 1906. Serial No. 342,944.



Claim.—1. A stack furnace of varying cross-sectional areas at different levels having above the mantle a metallic jacket composed of annular sections, and exterior structural frame-work around the furnace supporting some of said sections; substantially as described.

2. A stack furnace of varying cross-sectional areas at different levels, and having a metallic jacket composed of annular sections with internal projections, a plastic lining molded in contact with said projections above the mantle level, and exterior structural frame-work independent of the furnace proper and having supports for sections of the jackets above the mantle; substantially as described.

3. A stack furnace of varying cross-sectional areas at different levels having above the mantle a metallic jacket composed of annular sections, some of said sections being supported upon exterior structural frame-work; substantially as described.

4. A stack furnace of varying cross-sectional areas at different levels having a metallic jacket formed in circular sections and columns arranged around the furnace and extending above the mantle, said columns having above said level brackets to support the sections; substantially as described.

5. A stack furnace of varying cross-sectional areas at different levels having above the mantle level a metallic jacket formed in circular sections with expansion joints between said sections; substantially as described.

6. A stack furnace of varying cross-sectional areas at

different levels having above the mantle level a metallic jacket formed in circular sections with expansion joints between said sections, and exterior structural frame-work extending above the mantle level and arranged to support the sections; substantially as described.

7. A stack furnace of varying cross-sectional areas at different levels having a metallic jacket extending upwardly from the mantle level and formed of circular sections, each section composed of separate plates secured together, means for cooling said plates, and an exterior structural frame-work extending above the mantle level and arranged to support the sections at different levels; substantially as described.

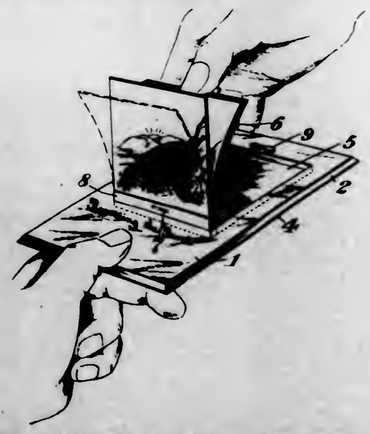
8. A stack furnace of varying cross-sectional areas at different levels having a metallic jacket extending upwardly from the mantle level and composed of circular sections supported on exterior frame-work extending above the mantle level and separate water cooling sections for each circular section; substantially as described.

9. A stack furnace of varying cross-sectional areas at different levels having a metallic jacket extending upwardly from the mantle level and formed in circular sections and arranged to allow expansion and contraction between the sections, a hopper and an exterior structural frame-work arranged to support the hopper and top work; substantially as described.

10. A stack furnace of varying cross-sectional areas at different levels having a complete inclosing metallic jacket formed of separate water-cooled circular sections, said sections having internal projections arranged to support the lining, and exterior structural frame-work arranged to support the sections at their different levels; substantially as described.

11. A stack furnace of varying cross-sectional areas at different levels having a complete inclosing metallic jacket formed of separate water-cooled circular sections, said sections having internal projections arranged to support the lining, exterior structural frame-work arranged to support the sections at their different levels; and surrounding bands for the sections; substantially as described.

853,699. DEVICE FOR PRODUCING MOVING-PICTURE EFFECTS. ELIOT KEEN, New York, N. Y. Filed June 22, 1906. Serial No. 322,827.



Claim.—1. In a device of the character set forth, a card having a compartment opening through one face of the card and a thumb book hinged therein, substantially as described.

2. In a device of the character set forth, a card having a compartment opening through one face of the card and a thumb book hinged therein and means binding the pages thereof together at one end, substantially as described.

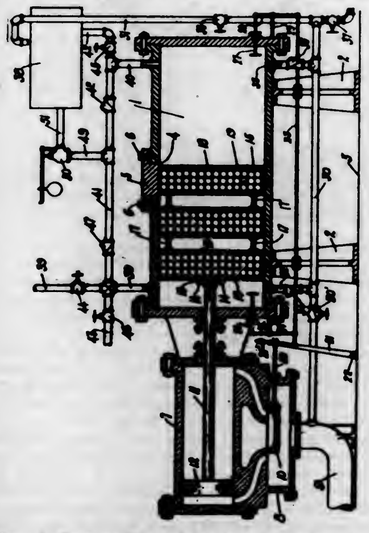
3. In a device of the character set forth, a card having a compartment opening through one face of the card and a thumb book therein, means binding the pages thereof together at one end and a strip hinging said book to said card one end secured to the outer page thereof and the other end to the under face of said card, substantially as described.

4. In a device of the character set forth, a card having a compartment opening through one face of the card, a thumb book hinged therein and means for securing said book within said compartment, substantially as described.

5. In a device of the character set forth, a card having an opening, a card secured to one face of the first mentioned card and covering said opening through that face, and a thumb book hinged in said opening, substantially as described.

6. In a device of the character set forth, a card having an opening, a card secured to one face of the first mentioned card and covering said opening through that face, a thumb book hinged therein and means binding the pages thereof together, substantially as described.

853,700. DYEING-MACHINE. NAPOLEON LABONTY, Pawtucket, R. I. Filed July 10, 1906. Serial No. 325,455.



Claim.—1. In a machine of the type set forth, the combination with a closed tank for holding dye liquids and the materials to be dyed, of a movable receptacle in the closed tank for holding the articles to be dyed, a steam pipe entering the roof of the dyeing tank and means for moving the receptacle and means actuated by the reciprocation of said receptacle for automatically reversing its direction of motion and conduits through which the liquid may be returned from the bottom of the dyeing tank.

2. In a machine of the type set forth, the combination with a closed tank for holding dye liquids and the materials to be dyed, of a movable perforated receptacle in the closed tank for holding the articles to be dyed, a steam pipe entering the roof of the dyeing tank and means for moving the receptacle and means actuated by the reciprocation of said receptacle for automatically reversing its direction of motion and conduits through which the liquid may be returned from the bottom of the dyeing tank.

3. In a machine of the type set forth, the combination with a closed tank for holding dye liquids and the materials to be dyed, of a receptacle for holding the articles to be dyed slidably mounted in the closed tank, a steam pipe entering the roof of the dyeing tank and means for reciprocating the receptacle and means actuated by the reciprocation of said receptacle for automatically reversing its direction of motion and conduits through which the liquid may be returned from the bottom of the dyeing tank.

4. In a machine of the type set forth, the combination with a closed tank for holding dye liquids and the materials to be dyed, of a perforated receptacle for holding the articles to be dyed slidably mounted in the closed tank, a steam pipe entering the roof of the dyeing tank and means for reciprocating the receptacle and means actuated by the reciprocation of said receptacle for automatically reversing its direction of motion and conduits through which the liquid may be returned from the bottom of the dyeing tank.

5. In a machine of the type set forth, the combination with a closed dyeing tank, of a carrier frame slidably mounted in the tank, a steam pipe entering the roof of the dyeing tank a receptacle for holding the articles to be dyed provided with openings in its walls mounted in the frame, and means for reciprocating the frame and for automatically reversing the same and conduits through which the liquid may be returned from the bottom of the dyeing tank.

6. In a machine of the type set forth, the combination with an engine cylinder, piston, and piston rod, of a closed dyeing tank adjacent the cylinder, a steam pipe entering the roof of the dyeing tank a carrier frame slidably mounted in the tank and fixed to the piston rod, and a receptacle for holding the articles to be dyed provided with openings in its walls mounted in the frame and means for automatically reversing the direction of motion of said frame and conduits through which the liquid may be returned from the bottom of the dyeing tank.

7. In a machine of the type set forth, the combination with an engine cylinder, valve, valve rod, piston, and piston rod, of a closed dyeing tank adjacent and in axial alinement with the cylinder, a carrier frame slidably mounted in the tank and fixed to the piston rod, a steam pipe entering the roof of the dyeing tank a perforated receptacle for holding the articles to be dyed mounted in the frame, a slidable pin in each end of the tank in the path of the carrier and pivotal connections between the pins and the valve rod and conduits through which the liquid may be returned from the bottom of the dyeing tank.

8. In a machine of the type set forth, the combination with a closed dyeing tank, of a perforated receptacle for holding the articles to be dyed slidably mounted in the tank, means for reciprocating the receptacle, a storage tank, pipes connecting the dyeing and storage tanks, and a relief valve in said pipes.

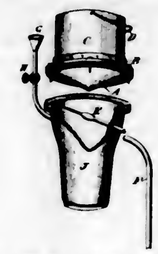
9. In a machine of the type set forth, the combination with a closed dyeing tank, of a receptacle for holding the articles to be dyed slidably mounted in the tank, a steam pipe entering the roof of the dyeing tank means for reciprocating the receptacle, and means for maintaining the contents of the dyeing tank at the proper degree of temperature and conduits through which the liquid may be returned from the bottom of the dyeing tank.

10. In a machine of the type set forth, the combination with a steam engine cylinder, piston, piston rod, and steam supply pipe therefor, of a closed dyeing tank adjacent the cylinder, a steam pipe entering the roof of the dyeing tank sliding means in the dyeing tank fixed to the piston rod for holding the articles to be dyed, openings in the floor of the tank, pipes connecting the openings with the steam supply pipes, and means in the connecting pipes for admitting and cutting off the steam from the tank, and conduits through which the liquid may be returned from the bottom of the dyeing tank.

11. In a machine of the type set forth, the combination with a closed dyeing tank, receptacles in the tank for holding the articles to be dyed, and means for reciprocating the receptacles, of a storage tank adjacent the dyeing tank, a steam pipe entering the roof of the dyeing tank, and a discharge pipe leading from the floor of the dyeing tank to the storage tank.

12. In a machine of the type set forth, the combination with a closed dyeing tank, receptacles in the tank for holding the articles to be dyed, and means for reciprocating the receptacles, of a valved supply pipe entering the roof of the tank, and a discharge pipe in the floor of the tank.

853,701. MERCURY OR QUICKSILVER STILL. RAYMOND A. LACKMANN, Portland, Oreg. Filed Nov. 14, 1906. Serial No. 343,460.



Claim.—1. In a still for refining mercury a pot adapted to be heated for containing the mercury to be refined, means for admitting mercury to the pot, an outlet in said pot, a channel within the pot communicating with and inclined toward the outlet, a cover for the pot provided with means for condensing the mercury vapor and for collecting the condensed mercury and directing it to the channel whereby it is discharged from the still.

2. In a still for refining mercury, a pot adapted to be heated, means for charging impure mercury into the pot, an outlet in the upper part of the pot, a channel communicating with and inclined toward the outlet a cover having a lower surface sloping downwardly toward the channel and adapted to condense and collect the mercury and to direct it into the channel whereby it is discharged from the still.

3. In a still for refining mercury, a receptacle adapted to be heated, means for charging the receptacle with mercury, an outlet to said receptacle, a channel adapted to direct collected mercury to the outlet, a cover on the receptacle having a silver plated lower surface adapted to condense and collect the mercury vaporized during heating and to direct it to the channel.

4. In a still for use in purifying mercury, a receptacle adapted to be heated, means for charging said receptacle with mercury, an outlet in the upper portion of the receptacle, a mercury collecting channel within the receptacle connected with and sloping toward said outlet, a cone shaped cover on said receptacle having a silver plated lower surface sloping downwardly toward the collecting channel, whereby the mercury condensed on the lower surface of the cover drains off into the collecting channel.

5. In a still for purifying mercury, a pot adapted to be heated, means for introducing impure mercury into the pot, a cover on said pot having a downwardly pointed cone shaped lower surface adapted to condense and collect vaporized mercury, an outlet in the upper portion of the pot a spout leading to said outlet and extending within the pot beneath the cone of the cover, an enlargement on the spout directly below the apex or point of the cone, adapted to catch mercury as it drips from the cover.

6. In a still for purifying mercury, a pot adapted to be heated, a valved pipe connected with the pot for introducing impure mercury into the pot, a cover tightly secured to said pot, said cover consisting of a receptacle adapted to contain a cooling fluid and having a downwardly pointed conical bottom projecting within the pot, a silver plating on the lower surface of said cover, an outlet in the upper portion of the pot, a pipe connected exteriorly of the pot with said outlet, a mercury receiving receptacle adapted to contain water into which said pipe projects and an inclined spout within the pot connected with said outlet and extending beneath the point or apex of the conical bottom of the cover, said spout being provided with a spoon shaped enlargement directly beneath the point of the cover, whereby the mercury which condenses and collects on the conical surface drains off the point

thereof into the spout and is directed out of the pot into the receiving vessel.

853,702. WALL STRUCTURE. JOHN LALLY, Waltham, Mass. Filed Oct. 6, 1905. Serial No. 281,635.



Claim.—1. An integral foundation or cellar wall structure embodying inner and outer sides leaving an intervening air chamber between said sides, septums crossing the air chamber and connecting the sides, a supporting base for the sides a superstructure resting on the sides, and upright braces at the inner side of the wall structure having means at opposite ends thereof to engage the base and superstructure.

2. An integral foundation or cellar wall structure embodying outer and inner sides leaving an intervening air chamber, septums connecting the sides, a supporting base for said sides, a beam resting upon both of said sides, anchor rods extending from the base upward in line with the septums and connected to said beam, and stays extending across and beyond the planes of the septums and anchor rods and located within one of the sides and upon the outer sides of the anchor rods.

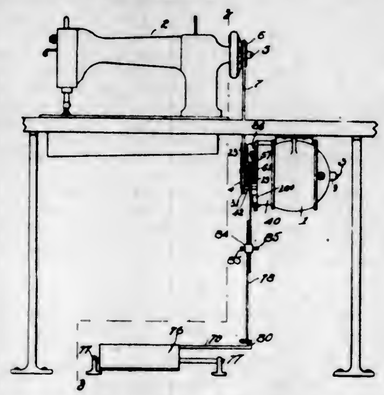
3. An integral foundation or cellar wall structure embodying outer and inner sides leaving an intervening air chamber, septums connecting the sides, a supporting base for said sides, a beam resting upon both of the sides, anchor rods extending from the base upward in line with the septums and connected to said beam, stays extending across and beyond the planes of the septums and anchor rods and located within one of the sides and upon the outer side of the anchor rods, and other stays parallel to the first named stays embedded in the other side of the wall.

853,703. MOTOR-DRIVE. WILLIAM F. LAUTENSCHLAGER, Cincinnati, Ohio. Filed Mar. 2, 1907. Serial No. 360,224.

Claim.—1. In a motor drive, the combination, with a motor-shaft, a bearing therefor, and a pulley for said shaft, of a brake and tightener-pulley oscillating about said bearing and movable in planes transverse to the longitudinal axis of said shaft.

2. In a motor drive, the combination with a drive-pulley, of an operating lever, a tightener-pulley therefor, a brake, a movable-contact arm, and means for moving said operating lever, tightener-pulley, brake and movable-contact arm in planes transverse to the rotary axis of said pulley.

3. In a motor drive, the combination, of a motor-shaft, a bearing therefor, an operating lever supported about said bearing, and a brake and a movable-contact lever moved by said operating lever in directions transverse to the longitudinal axis of said shaft.



4. In a motor drive, the combination, with a drive-pulley, of an operating lever, a brake operated thereby, said brake having a contact-face thereon, and a contact-part engaged by the latter for resisting the movement of said brake and causing its release with a snap movement.

5. In a motor drive, the combination, with a drive-pulley, of an operating lever, a brake operated thereby, said brake having a contact-face thereon, a contact-part engaged by the latter, a movable electric-contact operated by said operating lever constructed and arranged for first resisting release of said brake, and then making electric contact for the motor with a snap movement.

6. In a motor drive, the combination, with a drive-pulley, of an operating lever and a tightener-pulley arm having adjustable connection therebetween, a tightener-pulley on said arm, and a brake on said lever, substantially as described.

7. In a motor drive, the combination, with a driving shaft and pulley therefor, a tightener-pulley, an operating lever for the same, a pivot for said operating lever independent of said shaft, an electric-contact arm, a brake pivoted to said operating lever, and means for moving said operating lever, brake and electric-contact arm in directions laterally of the vertical plane of the longitudinal axis of said shaft.

8. In a motor drive, the combination with a driving shaft and pulley therefor, of a tightener-pulley, an operating lever for the same, and electric-contact lever, a brake pivoted to said operating lever, a bearing for said shaft about which said operating lever is pivoted, and means for moving said operating lever, brake and electric-contact lever in directions laterally of the vertical plane of the longitudinal axis of said shaft, said brake having a contact-face thereon, and a contact-part for the latter arranged for resisting the disengagement of said brake and moving said electric-contact lever with a snap movement, substantially as described.

9. In a motor drive, the combination with a driving shaft and pulley therefor, of a tightener-pulley, an operating lever for the same, a spring-urged electric-contact lever, a spring-urged brake pivoted to said operating lever, a bearing for said shaft about which said operating lever is pivoted, and means for moving said spring-urged lever and spring-urged brake in directions laterally of the longitudinal axis of said shaft, substantially as described.

10. In a motor drive, the combination with a motor-pulley and a driven pulley, said pulleys arranged for having a belt travel thereabout, of a tightener-pulley, an operating arm and a brake having a contact-face, and a contact part for said contact-face, constructed and arranged for initially resisting release of said brake and then permitting movement of said arm with an accelerated movement.

11. In a motor drive, the combination with a motor-pulley and a driven pulley, said pulleys arranged for having a belt take thereabout, of a tightener pulley, an operating arm and a brake having a contact-face, a contact-part for said contact-face, and electric contacts, the said operating arm causing the making and breaking of contact of said electric contacts, and constructed and arranged for first resisting release of said brake and then permitting relative movement between said electric contacts with a snap movement, said tightener-pulley being operated by said arm.

12. In a motor drive, the combination, with a motor-pulley and a driven pulley adapted for having a belt travel thereabout, of a tightener-pulley, an arm therefor, a brake on said arm having a contact-face thereon, a contact part for said brake and an electric contact adapted to be moved by said tightener-pulley arm, the relation of said contact-face and contact-part being such as to resist the release of said brake and permit the continuing movement of said arm with an accelerated motion for moving said electric contact with a snap movement, substantially as described.

13. In a motor drive, the combination, with a motor-shaft and pulley and a driven pulley adapted for having a belt travel thereabout, of a tightener-pulley, an arm therefor, a brake on said arm having a contact-face thereon, a contact-part for said brake, an electric contact adapted to be moved by said tightener-pulley arm, the relation of said contact-face and contact-part being such as to resist the release of said brake and permit the continuing movement of said arm with an accelerated motion for moving said electric contact with a snap movement, and a bearing for said shaft, said arm being pivoted about said bearing, substantially as described.

14. In a motor drive, the combination with a motor-pulley and a driven pulley adapted for having a belt travel thereabout, of a tightener-pulley, an arm therefor, a brake on said arm having a contact-face thereon, a contact-part for said brake, and an electric contact adapted to be engaged by said tightener-pulley arm, the relation of said contact-face and contact-part being such as to resist the release of said brake and permit the continuing movement of said arm with an accelerated motion for moving said electric contact with a snap movement, said operating lever being articulated for adjusting its operating end relatively to its pulley end, substantially as described.

15. In a motor drive, the combination, with a motor-pulley and a driven pulley, the said pulleys adapted to have a belt travel thereabout, of an operating arm, a tightener-pulley therefor, a brake, means for urging said brake toward said first-named pulley for normally clamping said belt between said brake and pulley, a contact-face on said brake and a contact-part engaging therewith so arranged as to initially resist release of said brake, the said operating lever and brake swinging at substantially right angles to the rotary axis of said first-named pulley, substantially as described.

16. In a motor drive, the combination, with a motor-pulley and a driven pulley, the said pulleys adapted to have a belt travel thereabout, of an operating arm, a tightener-pulley therefor, a brake, means for urging said brake toward said first-named pulley for normally clamping said belt between said brake and pulley, a contact-face on said brake and a contact-part engaging therewith so arranged as to initially resist release of said brake and then permit accelerated movement of said operating arm, the said operating arm and brake swinging at substantially right angles to the rotary axis of said first-named pulley, and an electric-contact lever adapted to be engaged by said operating arm and positioned for being relieved therefrom at the beginning of said accelerated movement thereof substantially as described.

17. In a motor drive, the combination with a motor-pulley and a driven pulley, the said pulleys adapted to have a belt travel thereabout, of an operating arm, a tightener-pulley thereon, a brake, means for urging said brake toward said first-named pulley for normally clamping said belt between said brake and pulley, a contact-face on said brake and a contact-part engaging therewith so arranged as to resist release of said brake and permit further movement of said arm with an accelerated movement, the said operating lever and brake swinging at substantially right angles to the rotary axis of said first-named pulley, an electric-contact lever adapted to be engaged by said operating arm and positioned for being relieved therefrom at the beginning of said accelerated movement thereof and arranged for braking electric contact with an accelerated movement at the end of the return movement of said operating lever, substantially as described.

18. In a motor drive, the combination of a rocker-arm, a tightener-pulley therefor, a brake pivoted to said rocker-arm and having a contact-face, a contact-part for said contact-face, and an electric-contact lever, said rocker-arm and lever having insulated moving agency therebetween, constructed and operating, substantially as described.

19. In a motor-drive, the combination of a rocker-arm, a tightener-pulley therefor, a brake pivoted to said rocker-arm and having a contact-face, a contact-part for said contact-face, an electric contact-lever, said rocker-arm and lever having insulated moving agency therebetween, and a stop for said rocker-arm, constructed and operating, substantially as described.

20. In a motor-drive, the combination of a rocker-arm, a tightener-pulley therefor, a brake pivoted to said rocker-arm and having a contact-face, a spring between said rocker-arm and brake, a contact-part for said contact-face, and an electric contact-lever, said rocker-arm and lever having insulated moving agency therebetween, constructed and operating, substantially as described.

21. In a motor drive for an electric motor, the combination with a plate, of an operating lever, a brake operated by said lever, electric contacts, electric terminals and electric connections at the rear of said plate connecting one of said electric contacts and one of said terminals with the motor-terminals and connecting the other of said electric contacts and the other of said terminals with each other.

22. In a motor drive for an electric motor, the combination, with a plate, of an operating lever, a tightener-pulley therefor, electric contacts the making and breaking of the contact whereof being effected by said lever, terminals for a source of electric energy, and electric connections between said terminals and the motor-terminals and electric-contacts arranged in rear of said plate.

23. In a motor drive for an electric motor, the combination, of an operating lever, a tightener-pulley therefor, electric contacts the making and breaking of the contact whereof being effected by said lever, terminals for a source of electric energy terminating in a plug-socket and having electric connection with the motor-terminals and said electric contacts.

24. In a motor drive for an electric motor having a pulley-end comprising a supporting-plate and a plug-socket, of an operating lever, a tightener-pulley therefor, electric contacts the making and breaking of the contact whereof being effected by said lever, and terminals for a source of electric energy terminating in said socket and having electric connection with the motor-terminals and said electric contacts.

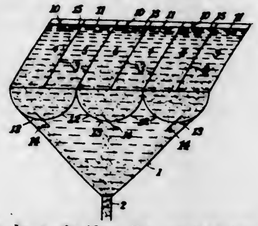
25. In a motor drive for an electric motor, the combination with a plate of an operating lever, a brake operated by said lever, a pair of electric contacts, a pair of electric terminals and electric connections at the rear of said plate connecting one of said contact-parts and one of said terminals with the motor-terminals and connecting the other of said contact-parts and the other of said terminals with each other, said terminals being received in a plug-socket for electrically connecting the same with a source of electric energy by means of an electric plug received by said socket.

26. In a motor drive, the combination with a motor, and a pulley therefor, of an electric contact located above the rotary axis of said pulley, a movable-contact arm extending laterally from said first-named contact, an operating arm therefor, of a tightener-pulley for said operating arm, a supporting plate for said electric contacts, said sup-

porting plate having securing means thereon for said movable-contact arm equidistant from said first-named contact and the rotary axis of said pulley at the respective sides of said first-named contact and said rotary axis.

27. In a motor drive, the combination with a motor and a pulley therefor, of an electric contact located above the rotary axis of said pulley, a pivoted contact arm extending laterally from said first-named contact, an operating arm therefor, a tightener-pulley for said arm, a supporting plate for said electric contact, a brake for said operating arm, a contact-part for the latter, a stop-pin for said operating arm, and positioning means on said supporting plate equidistant from said first-named contact and the rotary axis of said pulley for the pivot of said contact-arm, contact-part and stop-pin at the respective sides of said first-named contact and the rotary axis of said shaft, substantially as described.

853,704. CLARIFIER. TADDÄUS LEWICKI, Warsaw, Russia, assignor to Carl Hanning, Frankenstein, Silesia, Germany. Filed Aug. 5, 1905. Serial No. 272,884.



Claim.—1. In a clarifier, the combination with a plurality of inlet and outlet troughs about on the level of the liquid and alternating with each other in compartments and leading to without on opposite sides, every two adjoining compartments forming a portion of the clarifier.

2. In a clarifier, the combination, with an open vessel divided laterally into a number of portions or sections, an inlet and an outlet for each section arranged at the level of the liquid, and a single partition in each section dividing the ingoing from the outgoing fluid, said partition being spaced upwardly from the bottom of said vessel.

3. In a clarifier, the combination with an open vessel, of a plurality of inlet and outlet troughs about on the level of the liquid and alternating with each other and leading to without on opposite sides, and a plurality of partitions dividing said inlet and outlet troughs from each other, every two adjoining compartments forming a portion of the clarifier.

4. In a clarifier, a vessel, an inlet trough in said vessel having one side-edge higher than the other, an outlet trough at approximately the same level as said inlet trough and having its side-edges horizontally alined, and a partition between said troughs and spaced upwardly from the bottom of said vessel.

5. In a clarifier, the combination, with an open vessel, of partitions in said vessel spaced upwardly from its bottom, downwardly curved plates 12 extending between opposite walls of the vessel and connecting alternate partitions at the bottom edges of the latter, said plates forming a means of communication between adjacent compartments, and valves 14 arranged in said plates and extending throughout the length of the vessel.

6. In a clarifier, the combination with an open vessel, of an odd number of partitions in said open vessel above its bottom, an even number of downwardly bent plates each adapted to form a lower communication between two adjoining compartments and provided in its middle with an opening, a plurality of throttle valves adapted to open and to close the openings of said downwardly bent plates, and a plurality of inlet and outlet troughs about on the level of the liquid and alternating with each other in the several compartments and leading to without on opposite sides.

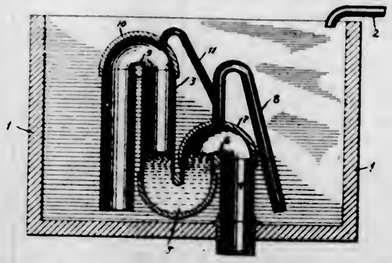
7. In a clarifier, the combination, with an open vessel divided laterally into inlet and outlet compartments, of troughs extending across the upper portion of said vessel, about on the level of the liquid, for collecting suspended matters of small specific weight.

8. In a clarifier, the combination with an open vessel, of an odd number of inclined partitions in said open vessel above its bottom, an even number of downwardly bent plates each adapted to form a lower communication between two adjoining compartments and provided in its middle with an opening, a plurality of throttle valves adapted to open and to close the openings of said downwardly bent plates, a plurality of inlet and outlet troughs about on the level of the liquid and alternating with each other in the several compartments and leading to without on opposite sides, and special troughs about on the level of the liquid in the inlet compartments for collecting suspended matters of a smaller specific weight.

9. In a clarifier, the combination with an open vessel provided with an odd number of partitions above the bottom, of inlet and outlet troughs about on the level of the liquid and alternating with each other in the several compartments of said open vessel and leading to without on opposite sides.

10. In a clarifier, the combination with a rectangular open vessel provided with two opposite inclined walls, of an odd number of inclined partitions in said rectangular vessel above the bottom and parallel to the inclined walls, and inlet and outlet troughs paralleled to said inclined partitions about on the level of the liquid and alternating with each other in the several compartments and leading to without on opposite sides.

853,705. FLUSH-TANK. FRANK H. LINDENBERG and CHARLES B. DELANY, Columbus, Ohio, assignors to The Columbus Brass Company, Columbus, Ohio, a Corporation of Ohio. Filed Aug. 28, 1905. Serial No. 275,993.



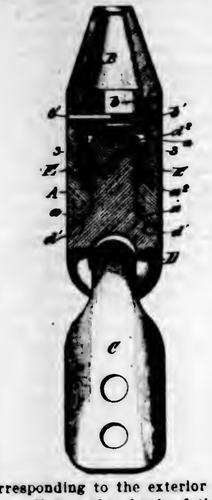
Claim.—1. In a device of the character described, the combination with a tank, of a main siphon, a pocket adapted to form a water seal located at the base of one of the legs of said siphon, an outlet pipe leading from said pocket, and an auxiliary siphon, one of the legs of which is in communication with the tank and the other leg of which is arranged to discharge partly into said pocket and partly into the discharge pipe and an air tube connecting the outlet leg of the auxiliary siphon with the top of the main siphon.

2. The combination with a tank, of a high siphon and a low siphon which are in communication with each other, a water seal located at the juncture of said siphons, an auxiliary siphon, one of the legs of which is in communication with the tank and the other leg of which discharges partly into said water seal and partly into the leg of the low siphon, and a pipe which is in communication with the high siphon and with the discharge leg of the auxiliary siphon.

853,706. SWIVEL ROPE-SOCKET FOR WELL-DRILLS. OSCAR E. LINDHOLM, Roy, Territory of New Mexico. Filed June 27, 1906. Serial No. 323,586.

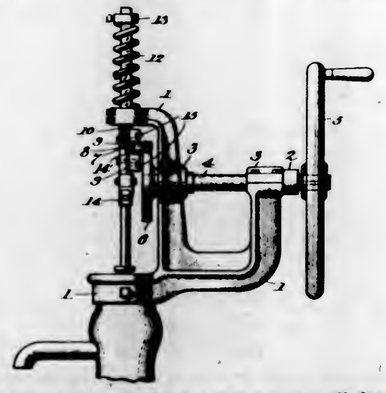
Claim.—The improved swivel rope-socket comprising the wire-rope socket which is tapered exteriorly and interiorly,

a chambered body section A, with which the said socket is detachably connected, said body having a beveled shoulder at the bottom of its chamber and a corresponding beveled shoulder *a* in its lower end; the manila rope-socket C, and the screw-eye D with which it is loosely jointed, said screw-eye having a reduced and threaded shank that projects into the chamber of the body, and a beveled



shoulder *d'* corresponding to the exterior shoulder of the body; a nut E applied to the shank of the screw-eye and having its lower end tapered corresponding to the adjacent shoulder of the body, the sides of the nut being inclined inward from the bottom upward; and a locking device applied to the nut for preventing its accidental rotation, substantially as described.

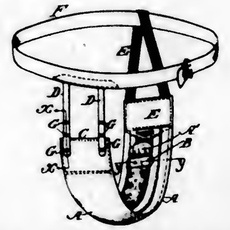
853,707. PUMP-CRANK. ABRAM MARGADANT, Minneapolis, Minn. Filed May 31, 1905. Serial No. 263,106.



Claim.—1. The combination with a pump cylinder and its piston rod, of a frame mounted on said cylinder, a shaft journaled in said frame and provided with a wheel having a counterbalance integrally formed thereon, a crank disk secured on said shaft, a crank pin mounted in said disk, a plunger rod connected with the upper end of said piston rod, a guide therefor, a block secured on said plunger rod and having a transverse slot to receive said crank pin, pins mounted in the face of said block and adapted to contact with the face of said disk in the rotation of the latter, a spring mounted on said plunger rod and put under tension by the depression of said pump rod to aid said counterbalance in raising the rod on the up stroke of the pump, and an adjustable collar on said plunger rod for regulating the tension of said spring, the weight on the wheel being so located thereon as to be raised as the spring is compressed and to coact with the spring in raising the pump rod substantially as described.

2. The combination with a pump cylinder and its piston rod, of a frame mounted on said cylinder, a shaft journaled in said frame and provided with a wheel, a crank disk mounted on said shaft, a crank pin carried by said disk, a plunger rod connected with the upper end of said piston rod, a guide therefor, a block secured to said plunger rod and having a horizontal slot to receive said crank pin, pins mounted in the face of said block and adapted to contact with the face of said disk during the operation of the pump, and a spring mounted on said plunger rod and put under tension by the depression of said rod to aid in raising it on the up stroke of the pump, substantially as described.

853,708. CATAMENIAL SACK. FRANK X. MATHIS, Jr., and LEWIS SIMON, Philadelphia, Pa. Filed July 27, 1906. Serial No. 328,087.



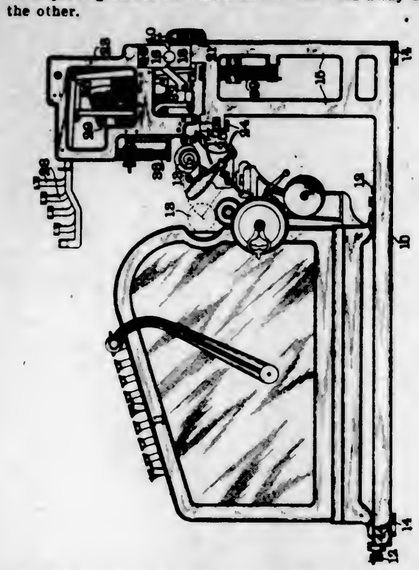
Claim.—1. In a device of the character described, a body of waterproof material having upwardly and inwardly turned sides, a pad therein, transversely extending strips connected to the adjacent edges of said inturned sides, pliable inelastic tabs connected to the end terminals of the body receptacle, suspension straps detachably and adjustably attached to one of said tabs, a waist belt to which the other ends of said straps are attached, and a single elastic suspension strap having its ends fixed to the other tab, said strap being doubled upon itself and loosely looped over the waist belt, said members diverging from said belt and its looped portion supported directly over the belt and free for movement horizontally thereupon and for bodily movement of either end vertically.

2. A catamenial sack composed of a receptacle body of water proof and resilient material having inturned sides, tabs on the ends thereof, transversely extending straps connected with said sides to retain them in closed position, a waist belt, a plurality of straps pendent therefrom and extending respectively to the opposite sides of the adjacent tab, fastenings on said straps and tab, and a single strap of elastic material which is doubled on itself, slidingly looped on said waist belt, with the members of the loop disconnected and free to move vertically and radiating from the latter to the opposite sides of the adjacent tab with which its ends are permanently connected the said loop being free for horizontal movement on said belt.

853,709. TYPE-WRITING ATTACHMENT FOR ADDING-MACHINES. ADOLPHUS G. MEIER, St. Louis, Mo., assignor to Cram Writing Machine Company, St. Louis, Mo., a Corporation of Missouri. Filed Dec. 3, 1906. Serial No. 346,011.

Claim.—1. The combination with a typewriting machine, of an adding machine, said adding machine being provided with printing mechanism independent of said typewriting machine, a platen common to the printing mechanism of said adding machine and said typewriting

machine, a frame supporting both said adding machine and typewriting machine, and means carried by said frame for adjusting one of said machines toward and away from the other.



2. The combination with a typewriting machine, of an adding machine, said adding machine being provided with printing mechanism independent of said typewriting machine, a platen common to the printing mechanism of said adding machine and said typewriting machine, a frame supporting both said adding machine and typewriting machine, and means carried by said frame for adjusting said adding machine toward and away from said typewriting machine.

3. The combination with a typewriting machine, of an adding machine, said adding machine being provided with printing mechanism independent of said typewriting machine, a platen common to the printing mechanism of said adding machine and said typewriting machine, a frame supporting both said adding machine and typewriting machine, and a set of screws carried by said frame for adjusting said adding machine toward and away from said typewriting machine.

4. The combination with a typewriting machine, of an adding machine, said adding machine being provided with printing mechanism independent of said typewriting machine, a platen common to the printing mechanism of said adding machine and said typewriting machine, a frame supporting said adding machine, a pair of rails carried by said base, a typewriting machine supported upon said rails, and means for adjusting one of said rails toward and away from said adding machine.

5. The combination with an adding machine, of a base secured to said adding machine, a pair of rails carried by said base, a typewriting machine supported on said rails, and means for independently adjusting the two ends of one of said rails toward and away from said adding machine.

6. The combination with an adding machine, of a base secured to said adding machine, a pair of rails carried by said base, a typewriting machine supported on said rails and means for vertically adjusting one of said rails.

7. The combination with an adding machine, of a base secured to said adding machine, a pair of rails carried by said base, a typewriting machine supported on said rails, and means for independently adjusting the two ends of one of said rails vertically.

8. The combination with an adding machine, of a base secured to said adding machine, a pair of rails carried by said base, a typewriting machine supported on said rails, means for adjusting one of said rails toward and away from said adding machine, and means for adjusting the other of said rails vertically.

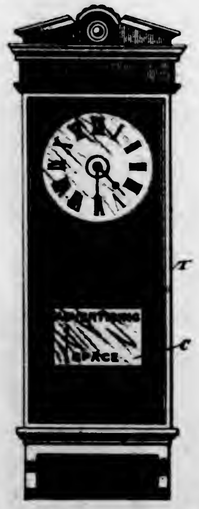
9. The combination with an adding machine, of a base secured to said adding machine, a pair of rails carried by said base, a typewriting machine supported on said rails, means for independently adjusting the two ends of one of said rails toward and away from said adding machine, and means for independently adjusting the two ends of the other of said rails vertically.

10. The combination with a base, of an adding machine removably carried by said base, a support extending up from said base at the rear of said adding machine and immovable longitudinally with respect to said base, and a typewriting machine running directly on said support.

11. The combination with a typewriting machine, of an adding machine, said adding machine being provided with printing mechanism independent of said typewriting machine, a platen common to the printing mechanism of said adding machine and said typewriting machine, a frame supporting both said adding machine and said typewriting machine, and means carried by said frame for vertically adjusting said adding machine.

12. The combination with a typewriting machine, of an adding machine, said adding machine being provided with printing mechanism independent of said typewriting machine, a platen common to the printing mechanism of said adding machine and said typewriting machine, a frame supporting both said adding machine and typewriting machine, and a plurality of threaded members carried in said base for vertically adjusting said adding machine.

853,710. ELECTRICAL ADVERTISING-CLOCK. JOHN H. MELCHERS, Decatur, Ill. Filed June 28, 1906. Serial No. 323,777.

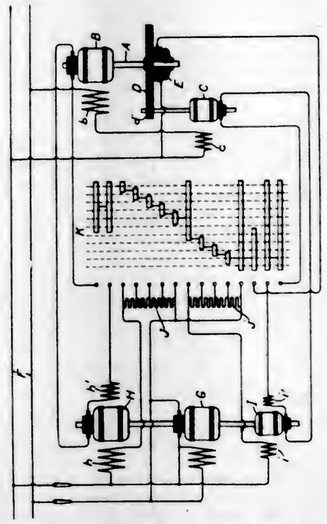


Claim.—1. A clock having a flexible strip for receiving advertisements, two rolls secured to opposite ends of said strip and having recesses covered by the convolutions of said strip, clutch mechanisms for alternately connecting and disconnecting the clutches and tripping mechanism for operating the clutches arranged to drop into the uncovered recesses of the rolls when the strip is unwound therefrom for the purpose of shifting the clutches.

2. A clock having a flexible strip, for receiving advertisements, two rolls secured to opposite ends of said strip and having locking projections on their ends, a laterally adjustable clutch wheel for each roll with openings to receive the locking projection, belts for driving said clutch wheels and a trip mechanism arranged to connect one clutch wheel and disconnect the other when the strip has reached the end of one of its movements.

3. In an advertising device, the combination of a flexible strip for advertisements, two rolls each having a peripheral recess arranged inside the borders of the strip when wound on the rolls, a tripping device for each roll arranged to fall into the recesses when the strip is unwound from a roll, a driving mechanism for the rolls and clutches for the rolls arranged to be operated by the trip devices.

853,711. MOTOR CONTROL. WILBUR L. MERRILL, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 15, 1906. Serial No. 338,896.



Claim.—1. In combination with a load to be driven, two electric motors of different capacities, mechanical connections between the load and both motors whereby the load may be driven by either motor but at different speeds, and a separate source of variable voltage for each motor.

2. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, and a separate source of variable voltage for each motor.

3. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, and a separate source of variable voltage for each motor, said gearing being arranged to give approximately the same load-speed with the larger motor operating at its minimum voltage and with the smaller motor operating at its maximum voltage.

4. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a separate source of variable voltage for each motor, and a single switch controlling the voltage supplied to both motors.

5. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a separate source of variable voltage for each motor, and a controlling switch arranged to control the voltage supplied to each motor and to transfer the load from the smaller motor operating at maximum voltage to the larger motor operating at minimum voltage, the gearing being arranged to give approximately the same load-speed before and after the transfer.

6. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a separate source of variable voltage for each motor, and means for operating said motors alternately to drive the load.

7. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a separate source of variable voltage for each motor, and means for alternately breaking the circuit of the larger motor and mechanically disconnecting the smaller motor from the load.

8. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, and a separate source of variable voltage for each motor, a magnetic clutch in the gearing between the smaller motor and the load, and a controlling switch for alternately breaking the circuit of the larger motor and of the clutch.

9. In combination with a load to be driven, two electric motors of different capacities, mechanical connections between the load and both motors, whereby the load may be driven by either motor but at different speeds, a constant potential supply circuit, and means for deriving from said circuit two independent variable voltages for the respective motors.

10. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, and means for deriving from said circuit two independent variable voltages for the respective motors.

11. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, and means for deriving from said circuit two independent variable voltages for the respective motors, the gearing between the load and the motors being arranged to give approximately the same load-speed with the larger motor operating at its minimum voltage and with the smaller motor operating at its maximum voltage.

12. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, means for deriving from said circuit two independent variable voltages for the respective motors, and a single switch controlling the voltage supply to both motors.

13. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, means for deriving from said circuit two independent variable voltages for the respective motors, and means for operating said motors alternately to drive the load.

14. In combination with a load to be driven, two electric motors of different capacities, mechanical connections between the load and both motors, whereby the load may be driven by either motor but at different speeds, a constant potential supply circuit, an electric motor connected thereto, two generators of different capacities driven thereby, means for connecting the two generators to the two load-driving motors respectively, and means for controlling the voltage delivered by each of said generators.

15. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing be-

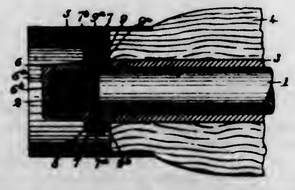
tween the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, an electric motor connected thereto, two generators of different capacities driven by said motor, and a switch arranged to connect the two generators to the two motors respectively and to vary the voltage delivered by said generators, said gearing between the load and the motors being arranged to give approximately the same load-speed with the larger motor operating at minimum voltage and with the smaller motor operating at maximum voltage.

16. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, an electric motor connected thereto, two generators of different capacities driven by said motor, a switch arranged to connect the two generators to the two load-driving motors respectively and successively and to vary the voltage delivered by said generators, and means for mechanically disconnecting the smaller motor from the load when the larger motor is electrically connected to its generator.

17. In combination with a load to be driven, two electric motors of different capacities, mechanical connections between the load and both motors, whereby the load may be driven by either motor but at different speeds, a constant potential supply circuit, an electric motor connected thereto, two generators of different capacities driven thereby for supplying the two load-driving motors respectively, means for controlling the voltage delivered by said generators, and controlling means for the two motors arranged to operate said motors alternately for driving the load.

18. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, an electric motor connected thereto, two generators of different capacities driven by said motor for supplying the two load-driving motors respectively, means for controlling the voltage delivered by said generators, and controlling means for the two motors arranged to operate said motors alternately for driving the load, said gearing being arranged to give approximately the same load-speed with the smaller motor operating at maximum voltage and with the larger motor operating at minimum voltage.

853,712. AXLE-NUT. THOMAS MILLIGAN, Fortuna, Cal., assignor of one-half to Edgar McLoughlin, Fortuna, Cal. Filed Nov. 1, 1906. Serial No. 341,564.



Claim.—The combination with a spindle having a reduced screw threaded end, of a sleeve encircling the spindle, a nut having an exteriorly threaded bore for engaging the reduced end of the spindle, said nut having an annular collar offset from the bore and provided with screw threads, the screw threads of the collar running in the opposite direction from the screw threads on the reduced ends of the spindle, an extension collar or ring having one of its faces adapted to abut against the sleeve, and provided with spaced openings for receiving a spanner, said ring having a flange for overlapping the outer surface of the sleeve near the end thereof, said ring being screw threaded upon its outer face whereby to engage the threads of the annular collar.

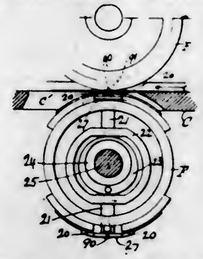
853,713. WOVEN PILE FABRIC. WILLIAM A. MINIFIE, Little Falls, N. J., assignor to William H. Beattie, Little Falls, N. J. Filed Jan. 12, 1907. Serial No. 351,974.



Claim.—1. A woven pile fabric comprising a stuffer chain, upper and lower wefts extending over and under the said stuffer chain, pile tufts held on alternate upper wefts, and binding warps, one for engaging each lower weft and each upper weft carrying the pile tufts, and the other binding warp engaging each lower weft and each upper non-pile tuft carrying weft.

2. A woven pile fabric comprising a stuffer chain upper and lower wefts extending over and under the said stuffer chain, pile tufts held on alternate upper wefts, and binding warps, one for engaging each lower weft and each upper weft carrying the pile tufts, and the other binding warp engaging each lower weft and each upper non-pile tuft carrying weft, the said binding warps being arranged on opposite sides of the pile tufts.

853,714. CUTTING MECHANISM FOR PAPER-BOX MACHINES. ALBERT W. MITCHELL, New Haven, Conn., assignor to John N. Leonard, trustee, New Haven, Conn. Filed Mar. 14, 1907. Serial No. 362,318.



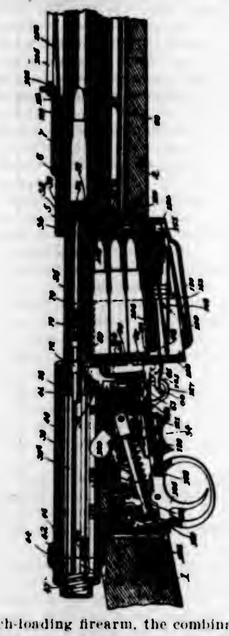
Claim.—1. The combination of two coöperating rollers, one having means for cutting pieces out of a web fed between them, with pins on one of the rollers to pierce said pieces, and means for stripping the caught pieces from the pins at another point in the rotation of the rollers.

2. The combination of two coöperating rollers, one having means for cutting pieces out of a web fed between them, with barbed pins on one of the rollers to pierce said pieces, and means for stripping the caught pieces from the pins at another point in the rotation of the rollers.

853,715. FIREARM. MANUEL MONDRAGON, Tacubaya, Mexico. Filed Aug. 8, 1904. Serial No. 219,989.

Claim.—1. In a breech-loading firearm, the combination of a barrel; a gas-receiving chamber located adjacent thereto and communicating therewith; a rotary valve mounted in the forward end of said chamber and controlling the passage between said chamber and the barrel; a collar screwed into the forward end of the gas-chamber and holding the valve in place, said collar having outwardly-extending lugs; a sleeve secured about the forward end of the gas-chamber, said sleeve having outwardly-projecting arms which abut against the lugs on the collar and thus prevent the collar from turning; and means for properly positioning the valve.

2. In a breech-loading firearm, the combination of a barrel; a gas-receiving chamber underlying and communicating with the same; a rotary valve mounted in the forward end of the gas-chamber and having two ports, one opening communication between the barrel and gas-chamber, and the other venting the barrel to the atmosphere; a collar or bushing mounted in the forward end of the gas-chamber and holding the valve in place, said collar having outwardly-extending lugs at its forward end; a sleeve embracing the barrel and the forward end of the gas-chamber, said sleeve having outwardly-projecting arms, the ends of which overlie the end of the collar and abut against the lugs thereon; and an actuating handle for the valve.



3. In a breech-loading firearm, the combination of a barrel, a gas-receiving chamber in communication therewith; a valve for controlling the passage of gas from the barrel to said chamber; a lever for operating said valve; and means for holding the lever in its adjusted position.

4. In a breech-loading firearm, the combination of a barrel; a gas-receiving chamber in communication therewith; a valve for controlling the passage of gas from the barrel to said chamber; a stem or post extending outwardly from said valve, and having inclined faces upon its outer end; a lever pivoted on the post and provided with a lug 30 at its outer end; and a spring carried by the lever, the free end of said spring coacting with the inclined faces upon the post, substantially as described.

5. In a breech-loading firearm, the combination of a barrel; a forestock; a gas-chamber underlying the barrel and extending through the forestock; a sleeve embracing said parts; a pin extending through the sleeve, said pin being formed with a locking projection; and means for holding said pin against accidental movement.

6. In a breech-loading firearm, the combination of a barrel; a forestock; a gas-chamber underlying the barrel and extending through the forestock; a sleeve 10 embracing said parts; a pin extending through the sleeve and forestock, said pin having a locking lug 14 and a nose 17 upon its outer end; and a cam surface 19 formed on the sleeve in line with nose 17, substantially as described.

7. In a breech-loading firearm, a clip-holding chamber, having a bottom plate, said plate being formed with a rearwardly-extending narrow section spaced away from the end and adjacent side walls of the chamber, whereby a space for the passage of an empty clip is formed, said plate being likewise provided with laterally-extending lugs which pass into openings in the side walls of the chamber and also with a tongue which interlocks with the forward wall of the chamber.

8. In a breech-loading firearm, a clip-holding chamber, having a bottom plate free of contact with the rear wall of the chamber and provided with lugs which pass into corresponding openings formed in the inner side faces of the chamber, and likewise provided with a tongue 154 which interlocks with the forward wall of the chamber; combined with a spring-pressed bolt to engage and hold the tongue.

9. In a breech-loading firearm, the combination of a clip-holding chamber; a bottom plate therefor having a reduced rear end forming a U-shaped opening for the passage of the clip; a presser-plate also provided with a similarly shaped reduced rear end and having laterally-extending lugs 151 which work in guides or ways formed in the side walls of the chamber, and likewise provided with lugs 152 which bear against the inner side walls of said chamber all of said lugs being located forward of the reduced end; and a spring interposed between the bottom plate and presser-plate.

10. In a breech-loading firearm, the combination of a clip-holding chamber; a latch pivoted adjacent to said chamber; an ejector mounted in the frame above the latch; and a single spring acting upon said members.

11. In a breech-loading firearm, the combination of a clip-holding chamber; a latch pivoted adjacent thereto and adapted to hold a clip in position in the chamber; an ejector having a downwardly-projecting stem 61; a pin bearing at its lower end upon the latch; and a spring interposed between the head of said pin and the lower end of stem 61.

12. In combination with a trigger plate; a hammer pivoted thereon; a rod pivoted on said hammer and extending rearwardly therefrom, said rod being provided with a notch; a post extending upwardly from the trigger-plate; a sear pivoted to the post above the rod; a spring serving to throw the sear into engagement with the rod; a dog pivoted on the sear; a trigger acting in conjunction with said dog; and a spring serving to throw the hammer forward.

13. In combination with a pivoted hammer; a rod pivoted on and extending rearwardly therefrom, said rod having a notch formed in its upper side; a post through which the rear end of the rod extends; a spring interposed between said post and a collar on the rod; a sear pivoted to the post; a spring bearing on the post and the sear and tending to rock the sear into engagement with the rod; a spring-pressed dog pivoted to the sear; and a trigger working in line with the dog.

14. In combination with a pivoted hammer; a rod pivoted on and extending rearwardly therefrom, said rod having a notch formed in its upper side; a post through which the rod extends; a spring encircling the rod intermediate the post and a collar on the rod; a sear 131 pivoted on the upper end of the post in line with the rod; a spring seated in a recess formed in the upper end of the sear and bearing at its outer extremity upon the post; a dog 133 pivoted on the sear; a spring 136 interposed between the upper end of the dog and the sear; a stop carried by the dog; and a trigger working in line with the lower end of the dog.

15. In a breech-loading firearm, the combination of a frame provided with a bolt-housing having lugs or shoulders formed thereon adjacent to its rear end; a cap provided with an internal groove and a series of lugs, the parts interlocking when the cap is placed in position; and a spring-pressed bolt carried by one of said members and coacting with a seat or recess formed in the opposite member, to hold the cap against rotation and accidental removal.

16. In a breech-loading firearm, the combination of a sliding bolt; an actuating member for said bolt; a gas-operated mechanism provided with a rearward extension; means carried by the actuating member normally engaging said rearward extension; and means for throwing said gas-operated mechanism into or out of action, substantially as described.

17. In a breech-loading firearm, the combination of a bolt; an actuating or handle-block, in operative connection with said bolt; a pivoted latch carried by said block; a gas-operated mechanism provided with a rearwardly-ex-

tending member which stands in alinement with the latch; and means for throwing the gas-operated mechanism into or out of action, substantially as described.

18. In a breech-loading firearm, the combination of a bolt; an actuating or handle-block in operative relation therewith; a hook pivotally mounted upon said handle-block; a barrel; a gas-chamber; means for throwing said chamber into or out of communication with the barrel; a piston mounted in the gas-chamber; a runner-bar extending rearwardly from said piston and provided with a hook to engage the hook upon the actuating or handle-block; and means for opening and closing communication between the barrel and the gas-chamber.

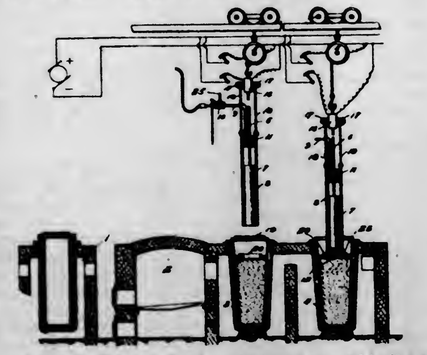
19. In a breech-loading firearm, the combination of a breech-bolt having a longitudinal and reciprocatory movement; an actuating or handle-block; connections intermediate said block and bolt for moving the latter forwardly and rotating the same to lock it in position; a hook pivoted upon the block; a barrel; a gas-chamber in communication with said barrel; a piston mounted in the gas-chamber; a runner-bar connected to said piston and extending rearwardly in line with the actuating or handle-block; and a hook formed on said runner-bar in line with the hook upon the handle-block.

20. In a breech-loading firearm, the combination of a gas-operated automatic mechanism; a bolt; a handle-block therefor; a runner-bar extending from the gas-operated mechanism to the handle-block; and a releasable connection between the runner-bar and handle-block.

21. In a breech-loading firearm, the combination of the frame of the arm provided with rearwardly-extending hooks; a clip-holding chamber; a latch pivoted to the frame adjacent to the chamber, the lower end of the latch extending down between the hooks; a trigger-plate having forwardly-projecting arms engaging and interlocking with the hooks; and a guard for the lower end of the latch carried by the trigger-plate.

22. In a breech-loading firearm, the combination of the frame of the arm provided with rearwardly-extending hooks; a clip-holding chamber; a latch pivoted to the frame adjacent to the chamber, the lower end of the latch extending down between the hooks; a trigger-plate having forwardly-projecting arms engaging and interlocking with the hooks; and a pair of guards extending downwardly from the trigger-plate, said guards being arranged upon opposite sides of the lower end of the latch.

853,716. PROCESS OF PRODUCING COMPOUND METAL BODIES. JOHN F. MONNOT, New York, Filed Sept. 6, 1906. Serial No. 333,570.



Claim.—1. The process of producing compound bodies of unlike metals welded together which consists in contacting a surface of one such metal with a supermolten mass of an unlike metal and confining a body of molten metal of substantial thickness in contact with such surface and causing it to solidify thereon.

2. The process of producing compound bodies of unlike metals welded together which consists in weld-filming a surface of one such metal by contacting therewith a supermolten mass of an unlike metal and then confining a second body of molten metal of substantial thickness in contact with such film-coated surface and causing it to solidify thereagainst and combine therewith.

3. The process of producing compound bodies of ferrous and non-ferrous metals welded together which consists in weld-filming the surface of a metal of one such group by contacting therewith momentarily a molten mass of a metal of another such group having a melting point above 900° F., such second metal maintained at a temperature much above its melting temperature, and thereafter welding a substantial coating of metal of such second group on such film.

4. The process of producing compound bodies of ferrous and non-ferrous metals welded together which consists in weld-filming the surface of a ferrous metal by contacting therewith momentarily a molten mass of a non-ferrous metal having a melting point above 900° F., such second metal maintained at a temperature much above its melting temperature, and thereafter welding a substantial coating of non-ferrous metal on such film.

5. The process of producing compound bodies of unlike metals welded together autogenously, which consists in weld-filming a surface of one such metal by contacting therewith a supermolten mass of an unlike metal and thereby coating the surface so coated with a welded-on film of metal derived from the molten mass.

6. The process of producing a film-coating of non-ferrous metal on a surface of a ferrous metal which consists in exposing such surface momentarily to contact with a body of supermolten non-ferrous metal having a melting temperature above 900° F., and then withdrawing from such contact.

7. The process of producing a film-coating of non-ferrous metal on a surface of a ferrous metal which consists in exposing such surface momentarily to contact with a body of supermolten copper and then withdrawing from such contact.

8. The process of producing compound bodies of unlike metals welded together which consists in contacting a surface of a steel base with a supermolten mass of a non-ferrous metal having a melting point above 900° F. and confining a body of molten metal of substantial thickness in contact with such surface and causing it to solidify thereon.

9. The process of producing compound bodies of unlike metals welded together which consists in contacting a surface of a steel base with a supermolten mass of copper, and confining a body of molten metal of substantial thickness in contact with such surface and causing it to solidify thereon.

10. The process of producing compound bodies of unlike metals welded together which consists in contacting a surface of a steel base with a supermolten mass of copper, and confining a body of molten copper in contact with such surface and causing it to solidify thereon.

11. The process of producing compound bodies of unlike metals welded together which consists in weld-filming the surface of one such metal by contacting therewith another unlike metal at a temperature much above its melting temperature and thereafter welding a substantial coating of unlike metal on the film coating so formed.

12. The process of producing compound bodies of unlike metals welded together which consists in weld-filming a surface of a steel base by contacting therewith an unlike metal having a melting point above 900° F. and which is at a temperature much above its melting point and thereafter welding to such surface a substantial coating of metal having a melting point above 900° F. and of a nature unlike steel.

13. The process of producing compound bodies of metals welded together which consists in weld-coating a surface of a ferrous-metal base by contacting momentarily a molten mass of a non-ferrous metal having a melting point above 900° F., such second metal maintained at a temperature much above its melting temperature, and thereafter welding to such surface a substantial coating of a cupriferous metal.

14. The process of producing compound bodies of metal welded together which consists in weld-coating a surface of a ferrous-metal base by contacting therewith momentarily a molten mass of a non-ferrous metal having a melting point above 900° F., such second metal maintained at a temperature much above its melting temperature, and thereafter welding to such surface a substantial coating of copper.

15. The process of producing compound bodies of metals welded together which consists in weld-coating a surface of a ferrous-metal base by contacting therewith momentarily a molten mass of copper maintained at a temperature much above its melting temperature and thereafter welding to such surface a substantial coating of copper.

16. The process of producing compound bodies of metals welded together which consists in weld-coating a surface of a ferrous-metal base by contacting therewith momentarily out of contact with the air a molten mass of copper maintained at a temperature much above its melting temperature, excluding air from contact with such filmed surface, and thereafter welding to such surface a substantial coating of copper.

17. The process of producing compound bodies of unlike metals welded together which consists in weld-filming the surface of a body of one metal by contacting with such surface a supermolten mass of an unlike coating metal, and causing a body of coating metal to solidify against such film coating under conditions affording pressure between it and said coating.

18. The process of producing compound bodies of ferrous and non-ferrous metals welded together which consists in exposing a body of metal of one such class first and momentarily to a bath of molten metal of the other class having a melting point above 900° F., such second metal maintained at a temperature much above its melting temperature, and then to a lower-temperature bath of molten metal of such other class.

19. The process of producing compound bodies of ferrous and non-ferrous metals welded together which consists in exposing a body of ferrous metal first and momentarily to a bath of non-ferrous metal having a melting point above 900° F., such second metal maintained at a temperature much above its melting temperature, and then to a lower-temperature bath of molten non-ferrous metal.

20. The process of producing compound bodies of ferrous and non-ferrous metals welded together which consists in exposing a body of ferrous metal first and momentarily to a bath of non-ferrous metal having a melting point above 900° F., such second metal maintained at a temperature much above its melting temperature, and then to a lower-temperature bath of molten copper.

21. The process of producing compound bodies of ferrous and non-ferrous metals welded together which consists in exposing a body of ferrous metal first and momentarily to a bath of molten copper maintained at a temperature much above its melting temperature, and then to a lower-temperature bath of molten copper.

22. The process of producing compound bodies of unlike metals welded together which consists in weld-filming the surface of a steel base by contacting therewith a supermolten mass of an unlike metal, and causing a body of coating metal to solidify against such film coating under conditions affording pressure between it and said coating.

23. The process of producing compound bodies of unlike metals welded together which consists in producing an absolute metallic surface on a body of one metal, weld-filming such surface by contacting therewith a supermolten mass of an unlike coating metal and causing a body of coating metal to solidify on such film coating under conditions affording pressure between it and said coating.

24. The process of producing compound bodies of unlike metals welded together which consists in producing an absolute metallic surface on a steel base, weld-filming such surface by contacting therewith a supermolten mass of an unlike metal, and causing a body of coating metal to solidify on such film coating under conditions affording pressure between it and said coating.

25. The process of producing compound metal bodies comprising steel and a cupriferous metal welded together, which consists in producing an absolute metallic surface on a steel base, weld-filming said surface by contacting therewith a supermolten mass of another metal, and causing a body of cupriferous metal to solidify on such film coating, under conditions affording pressure between it and said coating.

26. The process of producing compound metal bodies comprising steel and copper welded together, which consists in producing an absolute metallic surface on a steel base, weld-filming such surface by contacting therewith a supermolten mass of copper, and causing a body of copper to solidify on such film coating, under conditions affording pressure between it and said coating.

27. The process of producing compound bodies of unlike metals welded together which consists in film-coating a surface of a body of one metal by contacting therewith a body of molten metal of unlike nature at a temperature much above its melting temperature, and then contacting a second body of molten metal likewise unlike said first metal with said film coating and causing a substantial layer of said second body of molten metal to solidify against and combine with said film-coating.

28. The process of producing compound bodies of unlike metals welded together which consists in film-coating a surface of a body of steel by contacting therewith a body of molten metal of unlike nature at a temperature much above its melting temperature, and then contacting a second body of molten metal likewise unlike steel with said film coating and causing a substantial layer of said second body of molten metal to solidify against and combine with said film-coating.

29. The process of producing compound bodies of unlike metals welded together which consists in film-coating a surface of a body of steel by contacting therewith a body of molten copper at a temperature much above its melting temperature, and then contacting a second body of molten copper with said film-coating and causing a substantial layer of it to combine with and solidify against said film-coating.

30. The process of producing compound bodies of unlike metals welded together, which consists in exposing a surface of a body of one metal to the action, first of a bath of molten metal of unlike nature at a temperature much above its melting temperature and then to a lower-temperature bath of coating metal, likewise unlike said first metal, and by pressure completing the weld, thereby forming on said surface a coating of an unlike metal.

31. The process of producing compound bodies comprising steel and an unlike metal welded together, which consists in exposing a surface of a steel base to the action, first of a bath of molten metal of unlike nature at a temperature much above its melting temperature and then to a lower-temperature bath of metal, likewise unlike said steel, and by pressure completing the weld, thereby forming on said steel surface a coating of an unlike metal.

32. The process of producing compound bodies comprising steel and an unlike metal welded together, which consists in exposing a surface of a steel base to the action, first of a bath of molten metal of unlike nature at a temperature much above its melting temperature and then to a lower-temperature bath of copper, and by pressure completing the weld, thereby forming on said steel surface a coating of copper.

33. The process of producing compound bodies comprising steel and an unlike metal autogenously welded together, which consists in exposing a surface of a steel base to the action, first of a bath of molten metal of unlike nature at a temperature much above its melting temperature and then to a lower-temperature bath of said metal, and by pressure completing the weld, thereby forming on said steel surface a coating of an unlike metal.

34. The process of producing compound bodies comprising steel and copper autogenously welded together, which consists in exposing a surface of a steel base to the action, first of a bath of molten copper at a temperature much above its melting temperature and then to a lower-temperature bath of copper, and by pressure completing a weld, thereby forming on said steel surface a coating of copper.

35. The process of producing compound bodies of metal welded together which consists in contacting a metallic surface with a body of molten metal at a temperature much above its melting point, withdrawing said surface from such contact into a protective atmosphere, and contacting said surface with a further body of molten metal and causing a substantial layer thereof to combine with and solidify on such surface.

36. The process of producing compound bodies of metal welded together which consists in contacting a metallic surface with a body of molten metal of unlike nature maintained at a uniting temperature much above its melting point, withdrawing said surface from such contact into a protective atmosphere, and contacting said surface with a further body of molten metal and causing a substantial layer thereof to combine with and solidify on such surface.

37. The process of producing compound bodies of metal welded together which consists in immersing a metallic object in a bath of supermolten metal of unlike nature, withdrawing said object therefrom into a protective atmosphere, and then contacting with said object a further body of molten metal of unlike nature and causing a layer thereof to solidify upon such object.

38. The process of producing compound bodies of metal welded together which consists in film-coating a metallic object by contacting with it a body of supermolten metal of unlike nature, protecting the film coating from oxidation by enveloping the same with a non-oxidizing atmosphere, and contacting with said film coating a body of molten metal and causing a layer thereof to combine with and solidify against said film coating.

39. The process of producing compound bodies of metal welded together which consists in forming a chlorid coating on a surface of a metal object, exposing said surface to a supermolten body of unlike metal and thereby volatilizing said coating and filming over the surface of the metal, and causing a substantial coating of molten metal to solidify on such filmed surface.

40. The process of producing compound bodies of metal welded together which consists in forming a volatilizable coating on a surface of a metal object, exposing said surface to a supermolten body of unlike metal and thereby volatilizing said coating and filming over the surface of the metal, and causing a substantial coating of molten metal to solidify on such filmed surface.

41. The process of producing compound bodies of metal welded together which consists in forming a volatilizable coating on a surface of a metal object, exposing said surface to a body of unlike molten metal at a temperature much above its melting point and thereby volatilizing said coating and film-coating the surface of the metal object, withdrawing the film-coated object from contact with said molten metal into a protective atmosphere to prevent impairment of the film-coating, and causing a substantial coating of molten metal to solidify on such filmed surface.

42. The process of producing compound bodies of metal welded together which consists in forming a volatilizable coating on a surface of a metal object by chemical attack of such surface, exposing said surface to a body of unlike molten metal at a temperature much above its melting point and thereby volatilizing said coating and film-coating the surface of the metal object, withdrawing the film-coated object from contact with said molten metal into a protective atmosphere to prevent impairment of the film-coating, and causing a substantial coating of molten metal to solidify on such filmed surface.

43. The process of producing compound bodies of metal welded together which consists in pickling a surface of a metal object and thereby forming on such surface a volatilizable coating, exposing such surface to a body of unlike molten metal at a temperature much above its melting point and thereby volatilizing said coating and film-coating the surface of the metal object, withdrawing the film-coated object from contact with said molten metal into a protective atmosphere to prevent impairment of the film-coating, and causing a substantial coating of molten metal to solidify on such filmed surface.

44. The process of applying cast-on coatings which consists in inclosing a heated object to be coated in a closed casing containing a protective atmosphere, introducing molten metal into such casing and exhausting therefrom such protective atmosphere, and applying pressure to the interior of the casing and causing the molten metal therein to solidify on the surface of said object.

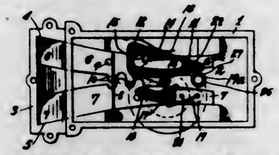
45. The process of producing compound bodies of ferrous and non-ferrous metals inseparably united, which consists in contacting a surface of one such metal with a supermolten mass of the other metal, limiting the uniting layer thereby formed by limiting the time of contact between the two metals while one of them remains in the supermolten condition, and causing a layer of molten metal to solidify on such surface.

46. The process of producing compound bodies of ferrous and non-ferrous metals inseparably united, which consists in contacting a surface of one such metal with a supermolten mass of the other such metal, limiting to infinitesimal thickness the uniting layer thereby formed by limiting to a brief period the time of contact between the two metals while one of them remains in the supermolten condition, and causing a layer of molten metal to solidify on such surface.

47. The process of producing compound bodies of ferrous and non-ferrous metals inseparably united, which consists in thoroughly cleansing and protecting the surface of a ferrous metal body of suitable shape and thickness, heating such a body to a temperature between a red heat and a yellow heat, melting an adequate mass of non-ferrous metal and superheating such mass to the described supermolten condition, and bringing the cleansed, heated and protected surface of the ferrous-metal object into momentary contact with the supermolten metal, maintaining the contact for substantially only that time which is required for union of the two metals, and then causing cooling below the supermolten temperature of the metal immediately surrounding said ferrous object and causing a layer of molten metal to solidify thereon.

48. The process of producing compound bodies of steel and copper inseparably united, which consists in thoroughly cleansing and protecting the surface of a steel body of suitable shape and thickness and heating such body to a temperature between a red heat and a yellow heat, melting an adequate mass of copper and superheating such mass to the desired supermolten condition, and bringing the cleansed, heated and protected surface of the steel body into momentary contact with the supermolten metal, maintaining the contact for substantially only that time which is required for union of the two metals, and then causing cooling below the supermolten temperature of the metal immediately surrounding said steel object and causing a layer of the molten metal to solidify thereon.

853,717. LOCK. SAMUEL T. MONTROSE, New York, N. Y., assignor of one-half to Curtis R. Burnett and one-fourth to Alfred Montrose, Newark, N. J. Filed Apr. 6, 1906. Serial No. 310,212.



Claim.—1. In a lock, two latches moving in curvilinear paths, and intermeshing teeth on the said latches whereby they move in unison.

2. In a lock, a door jamb having curvilinear slots, two latches moving in curvilinear paths into and out of engagement with the slots aforesaid, intermeshing teeth on the said latches, means for preventing the retraction of the latches, and means which when operated act progressively to release the locking means and to retract the latches.

3. In a lock, a door jamb having curvilinear slots, two latches moving in curvilinear paths into and out of engagement with the slots aforesaid, intermeshing teeth on the said latches, a member on the latch mechanism, a locking device adapted to engage the said member when the latch mechanism is in its closed position, and means for releasing the locking device and for retracting the latch mechanism from both sides of the door.

4. In a lock, a door jamb having two curvilinear slots, two latches moving in curvilinear paths into and out of engagement with the slots, intermeshing teeth on the latches, a locking device for the latch mechanism preventing its retraction, and means for releasing the locking device and retracting the latch mechanism from either side of the door.

5. In a lock, two latches adapted to move in curvilinear paths, intermeshing teeth on the said latches, means for operating one of the latches from side of the door, and means for operating the other of said latches from the other side of the door, whereby both latches can be moved in unison from either side of the door.

6. In a lock, a door jamb having two curvilinear slots, two latches adapted to move in curvilinear paths into and out of engagement with the slots, intermeshing teeth on the said latches a member on the latch mechanism, a locking device adapted to engage with the member on the latch mechanism when the latter is in its closed position, a dog capable of a rotary movement independent of the latch mechanism and a sidewise movement with the latch mechanism, which acts, when rotated to lift the locking device thereby releasing the latch mechanism from the locking device and when moved sidewise to retract the latches.

7. In a lock, the combination of two latches moving in curvilinear and divergent paths, intermeshing teeth on the said latches whereby they move in unison, a locking member stationarily supported having a slot with a recessed portion, a member on one of the latches normally in engagement with the recessed portion of the slot aforesaid when the latches are in their closed position, means for normally keeping the latches in their closed position, a rotatable spindle extending from the outside of the lock through one of the latches and slidably movable therewith, and a dog mounted on the said spindle, whereby the rotation of the said spindle causes the dog to engage with the locking member thereby releasing the member carried by one of the latches from the recess in the slot, and whereby a subsequent sidewise movement of the spindle causes the withdrawal of the latches.

8. In a lock, the combination of a door jamb having two oblique slots, two latches moving in unison in oblique paths into engagement with the slots aforesaid, a member on the latch mechanism, a locking device adapted to engage with the member on the latch mechanism when the latter is in its closed position, a dog capable of a rotary movement independent of the latch mechanism and a sidewise movement with the latch mechanism, which acts, when rotated to lift the locking device thereby releasing the latch mechanism from the locking device, and when moved sidewise to retract the latches, and a shoulder on the locking device adapted to engage with the dog to hold the latch mechanism in its retracted position.

853,718. PROCESS FOR THE TREATMENT OF THE MILKS OR LACTIFEROUS JUICES OF CAOUTCHOUC, GUTTA-PERCHA, AND BALATA AND THE LIKE. LUCIEN MORISSE, Paris, France. Filed Dec. 20, 1905. Serial No. 292,659.

Claim.—1. A process for the treatment of the lactiferous juices giving caoutchouc, gutta-percha and balata, which consists in applying to the surfaces of the trees over which the juices flow an alkaline solution.

2. A process for treating the lactiferous juices giving caoutchouc, gutta-percha and balata, which consists in applying to the surfaces of the trees over which such juices flow an alkaline solution, and in receiving such juices from the trees in vessels containing such a solution.

3. A process for the treatment of the lactiferous juices giving caoutchouc, gutta-percha and balata, which consists in applying to the surfaces of the trees with which such juices will come in contact an aqueous alkaline solution, in placing such a solution in the vessels into which the juices flow and the vessels in which they are transported, and also adding boiled water containing an antiseptic.

853,719. STEERING AND CONTROLLING DEVICE. ROBERT M. A. B. MUNRO, Paris, France. Filed Mar. 8, 1905. Serial No. 249,147.



Claim.—1. In steering and controlling mechanism for automobiles, the combination of a spindle, a sleeve mounted on said spindle, non-rotatable nuts threaded on said spindle and sleeve, and transmitting devices operated by said nuts.

2. In steering and controlling mechanism for automobiles, the combination of a threaded spindle, a threaded sleeve mounted thereon, means for rotating said spindle and sleeve, nuts threaded on said spindle and sleeve and held against rotation thereon, and transmitting devices connected to said nuts.

3. In steering and controlling mechanism for automobiles, in combination, a spindle, a sleeve mounted thereon, means whereby said spindle may be manually rotated in either direction, means whereby said sleeve may be similarly rotated, nuts threaded on said spindle and sleeve and held against rotation thereon, and transmitting devices connected to said nuts.

4. In steering and controlling mechanism, in combination, a tubular member having a longitudinal slot, a threaded spindle within said member, a threaded sleeve mounted to rotate on said spindle, means for rotating said spindle and sleeve, nuts threaded on said spindle and sleeve and having lugs projecting through said slot, and flexible transmitting devices connected to said nuts.

5. In steering and controlling mechanism, in combination, a spindle, a sleeve inclosing the same at one end, nuts threaded on said spindle and sleeve, means for preventing the rotation of said nuts on said spindle and sleeve, transmitting wires connected to said nuts, coils inclosing said wires, and a stop for said coils.

6. The combination of a threaded spindle, a threaded sleeve inclosing the same, nuts threaded on said spindle and sleeve and held against rotation thereon, and flexible transmitting members connected to both nuts, one of said members passing through one nut to the other nut.

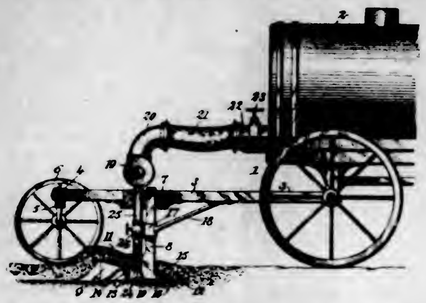
7. The combination of a spindle having oppositely threaded portions, a sleeve mounted on said spindle and also having oppositely threaded portions, and non-rotatable nuts threaded on such threaded portions of said spindle and sleeve.

8. The combination of a spindle having oppositely threaded portions, a sleeve inclosing said spindle at one end and also having oppositely threaded portions, nuts threaded on such threaded portions of said spindle, other nuts threaded on the threaded portions of said sleeve, means for preventing the rotation of said nuts, transmitting wires connected to certain nuts on said spindle and sleeve, and transmitting coils inclosing said wires and abutting against the other nuts on said spindle and sleeve.

9. In steering and controlling mechanism for automobiles, in combination, a tubular member, a perforated ring mounted thereon, a spindle within said member, a sleeve rotatable on said spindle, transmitting mechanism operated by said spindle and sleeve, and levers connected to

said spindle and sleeve above and below said ring and having studs to take into the perforations thereof.

853,720. OIL-SPREADER. WILLIAM M. MURRAY, Sawtelle, Cal., assignor to himself and J. Herbert Knapp, Sawtelle, Cal. Filed Aug. 1, 1906. Serial No. 328,760.



Claim.—1. In an oil spreader, a wheeled frame, an oil tank on the frame, a plow depending from the frame, said plow comprising upper and lower plates secured together at their front edges to form a cutting edge and arranged transversely of the frame substantially the full width thereof, said upper plate being of greater width than the lower plate, and overhanging the said lower plate at the rear thereof, said lower plate being provided at its rear edge with an upturned flange spaced apart from the lower face of the upper plate, plates secured to the ends of the upper and lower plates and forming with the upturned flange and the lower plate a receptacle, a transverse cylinder above the plow and connected with the oil tank, and a plurality of passages between the cylinder and the plow.

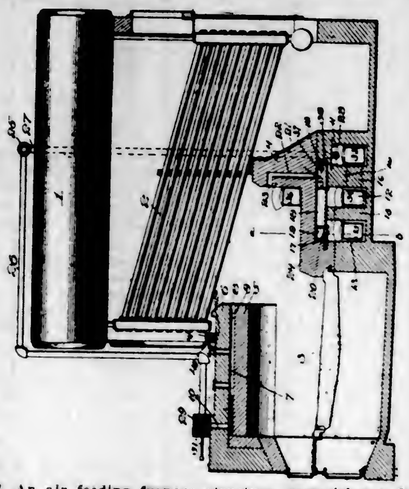
2. In an oil spreader, a frame, a plow depending from the frame, said plow comprising upper and lower plates secured together at their front edges to form a cutting edge and arranged transversely of the frame substantially the full width thereof, said upper plate being of greater width than the lower plate, and overhanging said lower plate at the rear thereof, said lower plate being provided at its rear edge with an upturned flange spaced apart from the lower face of the upper plate, plates secured to the ends of the upper and lower plates and forming with the upturned flange and the lower plate a receptacle, and means for supplying oil to the receptacle.

3. In an oil spreader, a frame, a plow depending from the frame, said plow comprising upper and lower plates secured together at their front edges to form a cutting edge and arranged transversely of the frame substantially the full width thereof, said upper plate being of greater width than the lower plate and overhanging said lower plate at the rear thereof, said lower plate being formed into a receptacle for oil, and means for supplying oil to the receptacle.

853,721. FURNACE. WILLIAM MCCLAVE, Scranton, Pa., assignor to McClave-Brooks Company, a Corporation of Pennsylvania. Filed Mar. 16, 1905. Serial No. 250,470.

Claim.—1. A furnace air feeding structure, comprising a furnace inclosing wall, a bridge wall mounted to the rear of the fire-box of said furnace and having a lower air heating portion and an upper air heating portion, air spaces being arranged in the lower portion of the bridge wall, air heating duct beams supporting a portion of the structure and aiding in raising the temperature of the air, and means for directing the air from said beams for aiding combustion in the furnace.

2. An air feeding furnace structure, comprising inclosing walls, an interiorly arranged bridge wall provided with a plurality of air spaces and interconnecting passages, hollow supporting beams carrying the upper portion of the bridge wall and directing the flow of air through the upper portion of said bridge wall, means for forcing the air through the said bridge wall mechanism, and means for directing the air from the bridge wall.



3. An air feeding furnace structure, comprising a fire box inclosing walls and a bridge wall located at the rear of the fire-box and having a principal and an auxiliary flame directing portion, the base of said bridge wall being provided with a plurality of air spaces, some of said spaces being connected by passages near their lower ends while others are connected by passages near their upper ends, hollow supporting beams mounted in the bridge wall and arranged to communicate heat to the air as it passes outside and inside of said beams, and means for delivering the air thus heated to the stream of flame passing from the fire-box to facilitate the combustion of the flying particles of carbon.

4. A furnace air heating and feeding structure, comprising inclosing walls, a fire-box arranged therein, a bridge wall for directing flames issuing from the fire-box and formed with broad heating surfaces, laterally arranged air chambers formed in said bridge wall, the walls of said chambers having connecting passages formed therein, openings being also formed at the ends of said passages through which they may be cleaned, an opening also being formed above the bridge wall in the side wall of the furnace through which the bridge wall may be reached for cleaning, closures for all of said openings, means for guiding air which passes through the said air chambers, back and forth in the bridge wall in contact with heated surfaces, and means for directing air from the bridge wall into the furnace.

5. An air feeding furnace structure, comprising furnace walls, a fire-box formed therein, a bridge wall projecting upwardly from the floor of the furnace and provided with interconnected air spaces, supporting hollow beam ducts carrying the upper structure of the bridge wall and extending over the upper portion of the air spaces, the said beam ducts being formed with side inlet apertures at one end and top outlet passages at the other end, means for forcing air along the sides and through the said beam ducts for heating it, and means for directing the air from said outlet passages into the furnace closure.

6. A furnace air feeding structure, comprising inclosing walls, a fire-box arranged therein, a hollow bridge wall formed within the furnace walls, transversely arranged partitions in said bridge wall forming air chambers, the lower portion of one of said walls being provided with apertures forming connecting passages between the air chambers, another of said partitions being formed with upwardly projecting portions, longitudinally arranged air ducts supported upon the upper ends of said projections, in position for having their sides exposed to the air passing through the air spaces, the said ducts having apertures in their walls for permitting the air to pass into the interior thereof, and outlet passage-ways formed in the upper portion of the bridge wall and communicating with said hollow ducts for delivering the heated air therefrom into the furnace.

7. In a furnace air feeding structure, the combination with a furnace inclosure, of a bridge wall arranged therein, and formed with a baffled passage extending from the rear toward the front of the bridge wall, a return passage communicating with the front end of the baffled passage and extending rearwardly therefrom, means of communication between the rear end of the return passage and the furnace inclosure, and means for supplying air to the rear end of the baffled passage.

8. In a furnace air feeding structure, the combination with a furnace inclosure, of a bridge wall arranged therein in the rear of the fire box and formed with means for supplying heated air to the furnace inclosure, comprising an air intake, a horizontally tortuous passage leading therefrom and air return means communicating with the discharge end of the horizontally tortuous passage and with the said horizontally tortuous passage producing a vertically tortuous passage, said return means directing the air in an opposite direction to the general direction of travel of air through the horizontally tortuous passage, the said return means being arranged in communication with the furnace inclosure.

9. In a furnace air feeding structure, the combination with a furnace inclosing wall, of a bridge wall mounted in the rear of the fire box and having a lower air heating portion, air spaces being arranged in the lower portion of the bridge wall, air heating duct beams supporting a portion of the structure and arranged for aiding in raising the temperature of the air, means for delivering the air from said beams through the front of the bridge wall and an air feeding arch arranged above the fire box and having its discharge directed across the discharge from the bridge wall.

10. A furnace structure comprising a fire-box, a bridge wall mounted at the rear thereof and having a series of air heating recesses therein, hollow beams extending above said recesses for supporting the upper portion of the bridge wall, said beams communicating with said recesses, means for directing air through the hollow beams, means for directing air from the hollow beams to the fire-box, means arranged opposite the ends of each of the hollow beams for blowing out the sediment therefrom, and clean-out doors for said recesses.

11. A furnace structure, comprising walls forming an inclosure, a bridge wall mounted therein and provided with air chambers, in its lower portion, hollow beams arranged for supporting the upper portion of the bridge wall, said beams communicating with said air chambers, means of communication between said beams and the furnace inclosure, a steam pipe extending through the ends of hollow beams and having perforations opposite thereto, means for delivering steam to said steam pipe, and clean-out doors for said air chambers.

12. A furnace structure comprising inclosing walls, a bridge wall mounted therein having air chambers in its lower portion, hollow supporting beams extending across the said air chambers and supporting the upper portion of the bridge wall and communicating with the air chambers, clean-out doors for said air chambers, a pipe extending through the ends of said hollow beams and formed with a return lap also extending through said ends, the first-mentioned lap of the piping being provided with apertures arranged opposite the hollow beams, the end of the return lap being provided with a stop-cock adapted to be normally closed, and to be opened for permitting blowing out of the collections of scales formed within the pipe and means for directing air from said hollow beams to the furnace inclosure.

13. A furnace structure comprising furnace walls, a fire-box formed therein, the top wall arranged above the fire-box, a boiler extending at one end over the top wall, a sealing bar interposed between the furnace front and the said top wall, and a bearing plate mounted upon the top wall of the fire-box and supporting the sealing bar.

14. An air feeding and retaining means for furnace structures comprising furnace walls, a fire-box formed therein, an air feeding top wall over the fire-box, a boiler mounted in the walls of the furnace and resting at one end upon the top wall of the fire-box, limiting bars arranged upon the boiler front, and a seaming bar movably mounted between the limiting bars and resting upon the top wall of the fire-box for preventing the escape of air and the products of combustion above the said top wall.

15. An air feeding and retaining means for furnaces, comprising furnace walls, a fire-box formed therein, a boiler mounted within the furnace walls, a top wall extending over the fire-box and provided with air heating and introducing passages, means for sealing the spaces above said wall and preventing the escape of air or the products of combustion at that point comprising a sectional sealing bar resting upon the top wall of the fire-box, and bars carried by the head of the boiler, and engaging the said sectional bar for holding the same with respect to the boiler, the expansion or contraction of the fire-box wall being thus permitted by the loose contact of the bar therewith.

16. An air feeding and retaining mechanism for furnace structures comprising in combination with a fire-box and a boiler, a top air feeding wall or cover for said fire-box, a sealing bar for preventing air from escaping above said top wall, said bar being interposed between the top wall of the fire-box and the head of the boiler, the bar being made up of a series of rabbeted sectional bars arranged upon said top wall, a bearing plate on the top wall for holding said rabbeted sectional bars movably in place, and means carried by the end of the boiler for loosely inclosing said rabbeted sectional bars and holding them in position upon the top wall of the fire-box.

17. An air feeding mechanism for furnaces comprising a fire-box, a cover or top wall extending over the same, means for preventing the escape of the air above the said cover or top wall, comprising a gravity actuated sealing means loosely resting upon said top wall, a bearing plate on said wall making a close joint with said sealing means, and yet permitting of movement between the parts, and means for holding the said sealing means against the furnace front.

853,722. HOT-BLAST VALVE. JACOB B. MCKENNAN, Pueblo, Colo. Filed Apr. 27, 1906. Serial No. 313,911.

Claim.—1. A water-sealed furnace valve having a supplemental flue-sealing hood.



2. A reciprocating water-sealed furnace valve having a supplemental flue-sealing hood.

3. A water-sealed and water-colored valve having a supplemental flue-sealing hood.

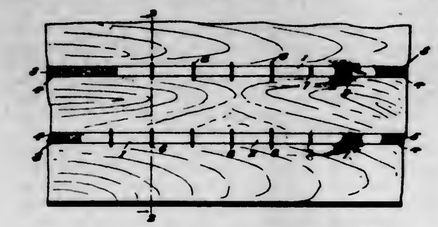
4. A reciprocating, water-sealed furnace valve having a supplemental, vented hood.

5. A three-way, reversing furnace valve having water sealing means for the inactive flue.

6. A reciprocating furnace valve having means for moving one end of said valve in a single plane and the other end thereof in a plurality of planes.

7. In a furnace-valve, in combination, a water-pan arranged to surround a plurality of parallel flue-extremities, a water-sealed valve constructed and arranged to connect pairs of said flues and having a supplemental hood adapted to seal any desired flue or flues, and means for reciprocating said valve.

853,723. MEANS FOR CALKING VESSELS. VINCEN P. McVOY and ROSWELL B. KING, Pensacola, Fla. Filed Jan. 15, 1907. Serial No. 352,385.



Claim.—1. A device for protecting the calking in the seams of vessels, comprising a metallic strip having an outer flat face and an inner convexed face, said outer face having indentations therein, and fasteners fitted in said indentations.

2. A device for protecting the calking in the seams of vessels, comprising a metallic strip having an outer flat face and an inner convexed face, said outer face having indentations therein, and staples for fastening said strip fitting in said indentations.

853,724. AUTOMATIC SLIDE-VALVE LUBRICATOR. WILLIAM L. NEWBAKER, Wilkinsburg, Pa., assignor of one-half to Harry Erichson, Wilkinsburg, Pa. Filed June 20, 1906. Serial No. 322,591.



Claim.—1. The combination of a steam chest, an oil conduit, and a slide-way intersecting the conduit, a slide movable in the slide-way and having an opening adapted in one position to register with the oil conduit and in an other position open to the steam chest, and means for moving the slide.

2. The combination of a steam chest having an oil inlet passage and transverse slideway intersecting the passage, and a slide movable in the slide-way and having an opening adapted in one position to register with the oil passage and in another position open to the steam chest, and means for reciprocating the slide.

3. The combination of a steam chest having an oil inlet passage and a transverse slideway intersecting the passage, a slide movable in the slideway and having an opening adapted in one position to register with the oil passage and in another position open to the steam chest, means for exhausting steam from the slide opening before it registers with said oil passage, and means for reciprocating the slide.

4. The combination of a steam chest having an oil inlet passage and a transverse slideway intersecting the passage, a slide movable in the slideway having an opening adapted in one position to communicate with the steam chest and in another position to register with the oil inlet passage, means for exhausting steam from the slide opening before it registers with the oil passage, and a slide valve adapted to operate the slide.

5. The combination of a steam chest, a head extending thereinto through the chest top, the head having an oil inlet passage terminating in a transverse slideway, a slide movable in the slideway and having an opening which in one position is open to the steam cheat and in another position registers with the oil passage, and a slide valve having top projections for engaging opposite ends of the slide for reciprocating the same.

6. The combination of a steam chest having an oil inlet passage terminating in a transverse slideway, exhaust ports leading from the slideway at either side of said passage, a slide movable in the slideway and having an opening adapted to register with the chest interior and said ports and oil passage, and means for reciprocating the slide.

7. The combination of a steam chest, a head projecting thereinto having an oil passage terminating in a transverse slideway, the head having exhaust ports leading from the slideway at either side of the oil passage, a slide movable in the slideway and having an opening adapted to register with the chest interior and said ports and oil passage, a slide valve, and an operative connection between the valve and slide for reciprocating the latter.

8. The combination of a steam chest having an oil inlet passage terminating in a transverse slideway, a slide movable in the slideway and having an opening adapted to register with the chest interior and with said oil passage, means for exhausting steam from the slide opening before it registers with the oil passage, means for holding the slide pressed to its seat in the slideway, and means for reciprocating the slide.

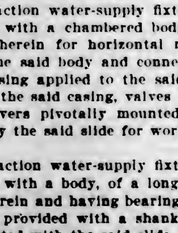
9. The combination of a steam chest, a head projecting thereinto having an oil inlet passage and an exhaust port at either side of the inlet passage, a transverse slideway intersecting said ports and passage, a slide movable in the slideway and having an opening adapted to communicate with the chest interior and register with said ports and passage, a tension device at the inner end of the head bearing against the slide, and means for reciprocating the slide.

10. The combination of a steam chest, a head projecting thereinto formed with a central oil inlet passage and with exhaust ports at either side of the passage, a transverse slideway in which said ports and passage terminate, the inner end of the head being recessed to expose the bottom of the slideway, a slide movable in the slideway and adapted to open into the chest and also register with said ports and passage, a cap fitting the recessed end of the head and bearing against the slide, means for yieldingly securing the cap, and slide reciprocating means.

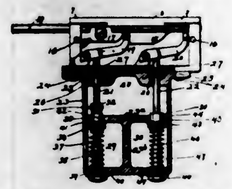
11. The combination of a steam chest, a head adapted to be secured within the steam chest and formed with an oil inlet passage and exhaust ports at opposite sides of the passage, a transverse slideway formed through the head and intersecting the ports and passage, a slide movable in the slideway and having an opening adapted to communicate with the steam chest and with said ports and oil passage, the lower end of the head being recessed to expose the bottom of the slideway, a cap fitting the recess and bearing against the slide, spring sockets projecting from the cap and entering recesses in the head, springs within the sockets, headed screws engaging the springs and extending through the sockets and uniting with the head thereby yieldingly holding the cap, and slide reciprocating means.

853,725. NUTMEG CONTAINER AND GRATER. CHARLES L. NEWTON, Cincinnati, Ohio. Filed Nov. 17, 1906. Serial No. 343,874.

Claim.—As an article of manufacture, a combined nutmeg container and grater comprising a cylindrical can provided with a perforated grating surface upon the convex side of said can at the lower portion thereof, and provided with a bottom and a lateral discharge opening near said bottom, a lid thereon, an inwardly extending annular bead thereon near the middle thereof and above the grating surface, and a partition supported by said bead and forming a cylindrical shaped nutmeg container thereabove.



853,726. KNEE-ACTION SUPPLY-FIXTURE FOR LAVATORIES. WILLIAM G. NEWTON, New Haven, Conn., assignor to The Peck Bros. & Co., New Haven, Conn., a Corporation. Filed Feb. 25, 1907. Serial No. 359,299.



Claim.—1. In a knee-action water-supply fixture for lavatories, the combination with an operating slide, of a knee-lever for the operation thereof, valves provided with valve spindles, and levers for coaction with the said spindles arranged to be operated by the said slide.

2. In a knee-action water-supply fixture for lavatories, the combination with an operating-slide, of a knee-lever for operating the said slide, hot and cold water valves, spindles for the said valves, levers for operating the said spindles, and cams located upon the said slide for coaction with the said levers.

3. In a knee-action water-supply fixture for lavatories, the combination with an operating-slide, a knee-lever for the operation thereof, hot and cold water valves, spindles therefor, a cut-off plug mounted upon the spindle of the cold water valve, levers operated by the slide and coacting with the said spindles, and cams carried by the slide for coaction with the said levers, including a supplemental cold water cam.

4. In a knee-action water-supply fixture for lavatories, the combination with an operating-slide, of a knee-lever connected therewith for operating the same, an antifriction roller for the slide, hot and cold water valves, spindles for the said valves, and connection between the said spindles and slide for the operation of the former.

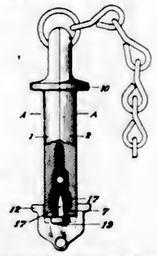
5. In a knee-action water-supply fixture for lavatories, the combination with a chambered body, of an operating slide mounted therein for horizontal movement, a knee-lever entering the said body and connected with the said slide, a valve-casing applied to the said body, valve-spindles mounted in the said casing, valves carried by the said spindles, and levers pivotally mounted in the body and operated upon by the said slide for working the said spindles.

6. In a knee-action water-supply fixture for lavatories, the combination with a body, of a longitudinally movable slide located therein and having bearing in the ends thereof, a knee-lever provided with a shank entering the said body and connected with the said slide and furnished with an anti-friction roller, bearings in the said body for the said roller, a valve-casing, hot and cold water valves located therein, spindles for the said valves, levers pivotally mounted in the body in position to engage with the said spindles, and cams located upon the said slide for the operation of the said levers.

7. In a knee-action water-supply fixture for lavatories, the combination with a fixture-body, of a longitudinally movable slide located therein, a knee-lever connected with the said slide for operating the same, a valve-casing adapted to be removably attached to the said fixture, valves located in the said casing, and means interposed between the slide and the valves for operating the latter by the former.

8. In a knee-action water-supply fixture, the combination with the fixture-body, of a longitudinally movable slide located therein, a knee-lever connected with the said slide for operating the same, cams located upon the slide, levers mounted in the said body for operation by the cams, a valve-casing adapted to be removably attached to the said body, valve spindles mounted in the said casing in position to be operated by the said levers, and valves carried by the said spindles.

853,727. SEAL-BOLT. JAMES B. ORRISON, FREDERICK C. KINGSBURY, and ALVAH J. PRAY, Columbus, Ohio. Filed June 4, 1906. Serial No. 320,014.



Claim.—1. A seal bolt composed of two members adapted to be positioned together with their inner faces in contact, matching grooves and ridges on said faces to prevent a sliding movement of the members on each other, means securing the members at one end thereof, a longitudinal opening between said members at the opposite end thereof, and a frangible key adapted to be inserted longitudinally into said opening to lock said members against separation.

2. A seal bolt composed of two members adapted to be positioned with their inner faces in contact, matching grooves and ridges on said faces to prevent a sliding movement of the members on each other, means for securing said members at one end thereof, a depression in each of said faces adjacent the opposite ends of said members, shoulders on said faces adjacent said opposite ends, and a key adapted to be inserted between said shoulders and engaging therewith to prevent longitudinal withdrawal thereof, and adapted to lock said members against separation.

3. A seal bolt composed of corresponding members adapted to be positioned upon each other with their inner faces in contact, means on said faces to prevent a sliding movement of said parts, a longitudinal opening between said parts at one end thereof, shoulders on said parts projecting into said opening, and a key adapted to be longitudinally positioned between said parts in said opening, and having means to engage said shoulders to prevent withdrawal of said key, and having other means to engage said members externally to lock the same together.

4. A seal bolt composed of identically formed members adapted to be positioned upon each other with their inner faces in contact, means on said faces to prevent a sliding movement thereof, means securing said members at the upper ends thereof, shoulders on the inner faces of said members adjacent the lower ends thereof, a key constructed to be positioned longitudinally between said lower ends and having spring means to engage said shoulders to prevent the withdrawal of said key, and having means to engage the lower ends of said members externally to lock the same together.

5. A seal bolt composed of corresponding members, matching projections and depressions on the inner faces thereof adapted to engage when the members are oper-

atively positioned together, internal shoulders adjacent the lower ends of said members, and a frangible key adapted to be inserted longitudinally between the lower ends of said members, said key having a stem provided with spring means to engage said shoulders to prevent withdrawal thereof, and said key having extensions adapted to engage said members externally to lock the same.

6. A seal bolt composed of members adapted to be positioned together with their inner faces in contact, means securing said members together at their upper ends, a shoulder thereon adjacent the upper ends, a key adapted to be inserted longitudinally between the lower ends of said members, spring means carried by said key engaging said members internally to lock said key to said members and extensions on said key engaging said members externally and locking the same together.

853,728. FENDER. JOHN E. PALMER, Wayne, Me. Filed Mar. 4, 1907. Serial No. 360,519.



Claim.—1. The combination with a vehicle, of depending side pieces having slots therein curving upwardly and downwardly from front to rear, studs movable in said slots, and a fender attached to said studs.

2. The combination with a vehicle, of depending side pieces having slots therein curving upwardly and downwardly from front to rear, studs carrying rollers movable in said slots, and a fender attached to said studs.

3. The combination with a vehicle, a wheel-guard thereon, and means whereby said wheel-guard is tripped, of side pieces on said vehicle and having slots therein curving upwardly and downwardly from front to rear, a fender, studs on said fender and movable in said slots, and means on said fender whereby said tripping means is operated.

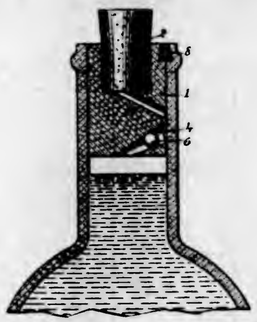
4. The combination with a vehicle, a retractive fender, and a wheel-guard thereon, of a crank-shaft on said vehicle and arranged to be engaged by said fender upon its retractive movement, a latch normally holding said wheel-guard in raised position, and a link connecting said crank-shaft and said wheel-guard.

5. A vehicle-fender comprising forwardly-extending slotted beams, uprights having their lower ends movably disposed in the slots, and means whereby said uprights are connected with the vehicle.

6. The combination with a vehicle, of a fender retractively mounted thereon comprising forwardly-extending beams having slots therein, uprights having reduced ends movably disposed in the slots, and spring connections between said uprights and said vehicle.

7. The combination with a vehicle, of depending side pieces each having a forward slot therein curving upwardly and downwardly from front to rear and a rear slot therein curving upwardly to a point higher that the course of the forward slot and then downwardly, studs movable in said slots, and a fender attached to said studs.

853,729. NON-REFILLABLE BOTTLE. ADOLPH PAROUTAUD, New York, N. Y. Filed Oct. 24, 1906. Serial No. 340,296.



Claim.—1. A stopper for non-refillable bottles having straight inclined passages therein communicating at one side of the stopper, and a valve in one of said passages for normally closing the same.

2. A stopper for non-refillable bottles having straight reversely inclined passages therein communicating at one side of the stopper, one of said passages being conical, and a ball-valve in said conical passage for normally closing the same.

3. A stopper for non-refillable bottles having a cavity in its upper end for receiving a cork, said stopper being provided with an inclined passage leading from the bottom of said cavity to one side of the stopper and with a reversely-inclined conical passage passing through the bottom of the stopper and communicating with the first passage, and a ball-valve in the conical passage for normally closing the same.

4. A non-refillable bottle comprising a stopper secured in the neck of the bottle and having a cavity in its upper end for receiving a cork, said stopper having two reversely-inclined passages communicating with each other at one side of the stopper forming communication between the bottom of the cavity and the bottle, and a valve in one of said passages for normally closing the same.

853,730. TOY. WILLIAM H. PEARSON, Passaic, and ROBERT A. WERNAU, Clifton, N. J. Filed June 30, 1906. Serial No. 324,118.

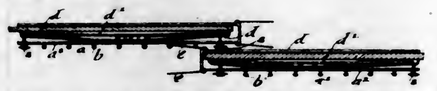
Claim.—1. As an article of manufacture, a toy in the form of a suitable figure having bristles arranged vertically therein, their lower ends free and projecting below the base of the figure, substantially as described.

2. As an article of manufacture, a toy in the form of a suitable figure having a bunch of bristles arranged vertically therein and secured together and to the figure at their upper ends and their lower ends loose and projecting below the base of the figure, substantially as described.

3. In combination, with a frame and a diaphragm arranged in said frame, a figure having bristles arranged vertically therein, their lower ends free and projecting below the base of the figure, substantially as described.

4. In combination, with a frame, a diaphragm arranged therein and means for agitating the diaphragm, of a figure having bristles arranged vertically therein, their lower ends free and projecting below the base of the figure, substantially as described.

853,731. DEVICE FOR FITTING GARMENTS. SAUL W. POSTEL, New York, N. Y. Filed Mar. 4, 1907. Serial No. 360,614.



Claim.—1. A device for fitting garments, consisting of two clamps, each provided with means for being clamped to the garment, and with headed studs on the face-plate thereof and with hinged loops for connecting one clamp with the headed studs of the other clamp.

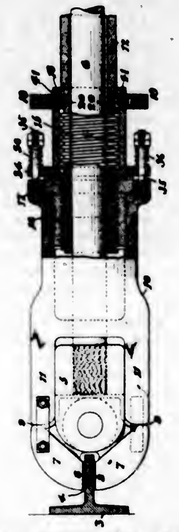
2. A device for fitting garments, consisting of two clamps, each formed of a U-shaped metal piece provided on its face with graduations and studs, a clamping-plate serrated at the ends, means for setting said serrated ends so as to clamp the garment, and hinged loops at the closed end of the hook for engaging the headed studs of the opposite clamp.

853,732. BUCKLE. JACOB W. W. POWELL, Akron, Ohio. Filed Jan. 9, 1907. Serial No. 351,494.



Claim.—A buckle comprising a main body portion provided with an opening therein approximately conforming in shape to the outline of said body portion, an integrally-formed loop extending outwardly from one end of said body portion, a bar extending across the opening in said body portion, a tongue mounted on said bar arranged to engage one face of said buckle, a pair of L-shaped legs depending from the end of said body portion opposite that containing the loop and from the opposite side to that engaged by said tongue, and a bar uniting the outer ends of said L-shaped legs.

853,733. ELEVATOR SAFETY DEVICE. CHARLES R. PRATT, Montclair, N. J. Filed Apr. 3, 1905. Serial No. 253,437.



Claim.—1. In an elevator safety device, the combination with hoistway rails, of sets of friction members adapted to engage one each of said rails, a shaft having upon different longitudinal portions of itself exterior threads of the same kind or direction but of different pitch, means engaging one of said threaded portions and being non-rotatably connected to the adjacent set of friction members, similar means engaging the other threaded portion of the shaft and rotatably engaging its adjacent set of friction members, and means for automatically turning said shaft upon falling of the car.

2. In a safety device for elevators, the combination with hoistway rails, of friction members adapted to engage said rails, a shaft having upon different longitudinal portions of itself exterior threads of the same kind or direction but of different pitch, nuts upon said threaded portions of the shaft, means adapted to non-rotatably transmit motion from one of said nuts to its adjacent friction member and means for rotatably transmitting motion from the other nut to its friction member, and means automatically operated by the falling of the car to turn said shaft.

3. In a safety device for elevators, the combination with hoistway rails, of friction members adapted to engage said rails, a shaft having differentially threaded portions, nuts upon said shaft, means adapted to transmit motion from said nuts to the friction members, and means adapted to be automatically operated by falling of the car to rotate said shaft.

4. In a safety device for elevators, the combination with fixed hoistway rails, of brackets adapted to depend from a car, a rod extending between said brackets, a hollow differential screw shaft upon said rod, nuts upon said shaft, friction members adapted to be operated by said nuts to engage the hoistway rails, and means adapted to be automatically operated by falling of the car to rotate said shaft.

5. In an elevator safety device, the combination with hoistway rails, of sets of friction members adapted to engage one each of said rails, a shaft having upon opposite end portions of itself threads of the same kind or direction but of different pitch, non-rotatable means engaging one of said threaded portions and transmitting its longitudinal motion to one set of friction members, and other rotatable means having a frictional engagement with the shaft to

turn therewith and with the adjacent friction members to impart longitudinal movement thereto.

6. In an elevator safety-device, hoistway rails, friction members adapted to grip said rails, a shaft having upon different longitudinal portions of itself exterior threads of the same kind or direction but of different pitch, means for transmitting motion from said threaded shaft portions to the friction members, and a governor rope drum mounted directly on the shaft and having rope grooves of substantially the same pitch as one of the said threaded portions of the shaft.

7. In an elevator safety device, the combination with hoistway rails, of sets of friction members adapted to engage one each of said rails, a shaft having upon different longitudinal portions of itself exterior threads of the same kind or direction but of different pitch, means engaging one of said threaded portions and being non-rotatably connected to the adjacent set of friction members, similar means engaging the other threaded portion of the shaft and rotatably engaging its adjacent set of friction members, and a governor-rope drum mounted directly on the shaft and having rope grooves of substantially the same pitch as the threaded shaft-portion whose said engaging means are non-rotatable.

8. In an elevator safety device, hoistway rails, gripping jaws adapted to engage said rails, a differential screw for operating said jaws, and a governor-rope drum mounted directly upon said screw shaft.

9. In an elevator safety device, hoistway rails, gripping jaws adapted to engage said rails, a differential screw for operating said jaws, and a governor-rope drum mounted upon said shaft and having peripheral rope grooves of substantially the same pitch as one of the threaded portions of the screw.

10. In an elevator safety device, hoistway rails, gripping jaws adapted to engage said rails, a differential screw, nuts upon said screw one of which is made fast to its adjacent gripping jaws and the other of which has a frictional connection to its adjacent gripping jaws, and a governor-rope drum on said shaft having rope grooves of substantially the same pitch as the threaded screw portion which has the said nut made fast to the gripping jaws.

11. In an elevator safety device, hoistway rails, gripping jaws adapted to be mounted on a car and engage said rails, a differential screw and nuts for operating said jaws, and means for causing one of said nuts to either turn with the screw or be stationary with respect thereto as desired.

12. In an elevator safety device, hoistway rails, gripping jaws adapted to engage said rails, a differential screw and nuts for operating said jaws, means for imparting motion to the screw with respect to one of the nuts, and other means adapted to be operated as a result of such motion to cause the other nut to either turn with the screw or be stationary with respect thereto as desired.

13. In an elevator safety device, the combination with rails for the opposite sides of the hoistway, of opposite gripping jaws adapted to be mounted on a car and engage said rails, an intermediate differential screw, a nut on one end of said screw fixed against rotation with the screw and adapted to transmit its longitudinal motion to the adjacent jaws, and a second nut on the other end which may either turn with the screw or remain as to rotation independent of such turning.

14. In an elevator safety device, the combination with rails for the opposite sides of the hoistway, of opposite gripping jaws adapted to be mounted on a car and engage said rails, an intermediate differential screw, a nut on one end of said screw fixed against rotation with the screw and adapted to transmit its longitudinal motion to the adjacent jaws, and a second nut on the other end adapted to frictionally transmit its longitudinal motion to its adjacent gripping jaws.

15. In an elevator safety device, hoistway rails, friction members adapted to engage said rails, a shaft having differentially threaded portions adapted to operate said friction members, detent pawls projecting from a non-rotary support and adapted to engage the said shaft to normally prevent its turning, a governor-rope drum fast on said shaft, and a governor.

16. In an elevator safety device, the combination with hoistway rails, of members adapted to engage said rails, a shaft having upon different longitudinal portions of itself exterior threads of the same kind or direction but of different pitch, and means upon each of said threaded portions connecting the same with its adjacent gripping member, one of said means engaging its gripping member frictionally and being adapted to remain stationary with respect thereto or to turn with the shaft according to the relative friction of said parts.

17. In an elevator safety device, the combination with hoistway rails, of gripping members adapted to engage said rails, a shaft having upon different longitudinal portions of itself exterior threads of the same kind or direction but of different pitch, and nuts upon said threaded portions adapted to engage the gripping members, respectively, one of said nuts engaging its adjacent gripping member frictionally and being adapted to remain stationary with respect thereto or to turn with the shaft according to the relative friction of said parts.

18. In an elevator safety device, the combination with hoistway rails, of gripping members adapted to engage said rails, a shaft having upon different longitudinal portions of itself exterior threads of the same kind or direction but of different pitch, means engaging one of said threaded portions and being held against rotation with the shaft, and other means engaging the other threaded portion and being free to either turn with the shaft or remain independent of it as to rotation, both said means transmitting longitudinal motion to the gripping members.

19. In a safety device for elevators, the combination with hoistway rails, of gripping jaws adapted to be mounted on the car and engage said rails, a differential screw adapted to act by one threaded portion alone to rapidly advance the gripping jaws toward the said rails and by the joint effect of both threaded portions to force the gripping jaws into engagement with the rails, and means for operating said screw.

20. In an elevator safety device, hoistway rails, gripping jaws adapted to engage said rails, an intermediate threaded shaft to operate said jaws, two nuts mounted on said shaft, means adapted to secure relative rotation of the shaft whereby longitudinal motion is transmitted to the jaws, and means for causing one of the nuts to turn with the shaft and to remain stationary as to rotation at different stages of action.

21. In a safety device for elevators, the combination with hoistway rails and jaws adapted to grip said rails, of a differential screw between said jaws, a nut on one end of said screw fixed against rotation and adapted to transmit longitudinal motion to the adjacent jaws, and a second nut on the other end rotatable with the screw and adapted to transmit its longitudinal motion to the adjacent jaws through a frictional thrust bearing.

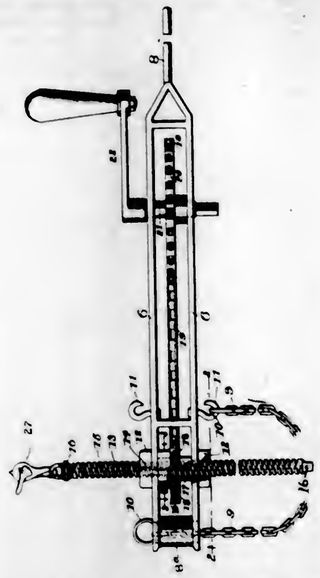
22. In a safety device for elevators, the combination with hoistway rails and jaws adapted to grip said rails, of a differential screw between said jaws, a nut on one end of said screw fixed against rotation, and a second nut on the other end adapted either to turn with the screw or remain independent of it as to rotation, both said nuts transmitting their longitudinal motion to the gripping jaws.

23. In a safety device for elevators, the combination of a car, hoistway rails, gripping jaws mounted on the car and adapted to engage said rails, a differential screw to operate said gripping jaws, a winding rope drum mounted on said screw, and idler sheaves on the car, whereby the longitudinal axial motion of said screw and drum pays the rope on said drum to and from said idler sheaves without angular deflection in the lead of the rope.

24. In an elevator safety device, hoistway rails, gripping jaws adapted to engage said rails, an intermediate threaded shaft to operate said jaws, two nuts mounted on said shaft, means adapted to secure relative rotation of the shaft whereby longitudinal motion is transmitted to the jaws, and frictional means for causing one of the nuts to turn with the shaft and to remain stationary as to rotation at different stages of the action.

25. In an elevator safety device, hoistway rails, gripping jaws adapted to engage said rails, an intermediate differential screw to operate said jaws, means for rotating said screw, and two nuts on said screw adapted to engage said jaws, respectively, one of said nuts engaging its adjacent jaw frictionally and being adapted to remain stationary therewith or to turn with the screw according to the relative friction of said parts.

853,734. WIRE-STRETCHER. FERDINAND W. REICHERT, Granton, Wis. Filed Feb. 5, 1907. Serial No. 355,810.



Claim.—1. In a wire stretcher, in combination, a frame, a non-rotatable screw extending across the same and slidable in boxes therein and having a wire grip at the end, a bur on the screw between the boxes, and means to turn the bur.

2. In a wire stretcher, in combination, a frame extending laterally with respect to the line of the wire, a non-rotatable traveling screw extending across the frame and in line with the wire and having means to grip the same, a bur on the screw and held by the frame against endwise movement and means to turn the bur.

3. In a wire stretcher, in combination, a frame, a chain connected thereto, the frame having attaching devices for the chain on both sides thereof, so that the chain may be attached on either side, a member movable across the frame in either direction and having means at opposite ends to connect a wire, and means to so move said member.

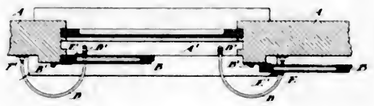
4. In a wire stretcher, in combination, a frame having an eye at the end and hooks on both sides, a chain passing loosely through the eye and engageable with either hook and having means at each end to prevent it pulling out of the eye, a member movable across the frame in either direction, between the eye and the hooks, and having means at each end to connect a wire, and means to so move said member.

5. In a wire stretcher, in combination, a frame having a pair of side bars and a box in each side bar having a key therein, a screw extending across the frame and through the boxes and having a longitudinal keyway receiving the keys to prevent rotation of the screw, a bur mounted on the screw between the boxes, and means to turn the bur, the screw having means to connect a wire thereto.

6. In a wire stretcher, in combination, a frame having a pair of side bars and boxes therein, a screw extending across the frame and slidable lengthwise in the boxes, means to prevent rotation of the screw, a bur on the screw between the boxes, a crank mounted on the frame, gearing between the crank and the bur, and means to connect a wire to the end of the screw.

7. In a wire stretcher, in combination, a frame having spaced side bars and boxes therein at one end thereof, a screw extending across said bars and slidable lengthwise in the boxes, means to prevent rotation of the screw, a bur provided with a sprocket wheel on the screw between the boxes, a crank shaft mounted on the bars at the other end thereof and provided with a sprocket wheel, and a chain belt between the sprocket wheels.

853,735. BLIND-FASTENER. PAUL REVERE, New York, N. Y. Filed May 1, 1906. Serial No. 314,716.



Claim.—1. In a blind-fastener, a segmental rod constructed to be fixed to a building concentrically to the hinge of the blind, a notch in the latter receiving said rod, and a cam carried by said blind and arranged to directly engage frictionally with said rod.

2. In a blind-fastener, a segmental rod constructed to be fixed to a building concentrically to the hinge of the blind, a notch in the latter receiving said rod, a plate secured to said blind and having a portion extending across said notch to inclose said rod, and a cam mounted on said plate and constructed to directly engage frictionally with said rod when turned in one direction and to release said rod by a movement in the opposite direction.

3. In a blind-fastener, a segmental rod one end of which is constructed to be secured to a window-sill, and the other end screw-threaded, a plate constructed to be fastened to a wall of a building and having an open-ended screw-threaded opening therein matching said screw-threaded end of said rod, whereby the latter may be adjusted concentrically to the hinge of a blind constructed to serve with said rod, and an engaging means for said rod carried by said blind.

853,736. CIRCUIT-CLOSING DEVICE FOR BURGLAR-ALARM SYSTEMS. WILLIAM H. ROBINS, Minneapolis, Minn., assignor to American Bank Protection Co., Minneapolis, Minn. Filed Dec. 6, 1905. Serial No. 290,569.

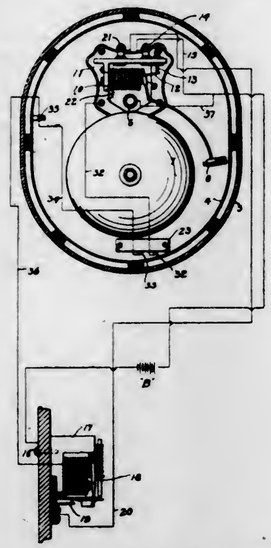
Claim.—1. The combination with an alarm circuit having a gong, of a shield inclosing said gong, a circuit closer arranged in the lower part of said shield and having a suitable receptacle, said circuit closer being connected with said alarm circuit and arranged when actuated, to close the same, and the inner walls of said shield being curved and adapted to direct sand or foreign material deposited in the shield into said receptacle, substantially as described.

2. The combination, with an alarm circuit having a gong, of a shield inclosing said gong, a circuit closer arranged in the lower part of said shield and having a suitable receptacle, said circuit closer being connected with said alarm circuit and arranged when actuated to close the same, and the inner walls of said shield being arranged to direct sand or foreign material deposited in the shield into said receptacle.

3. The combination, with an alarm circuit having a gong, of a shield inclosing said gong, a circuit closer pivoted at a point intermediate to its ends and having a bowl or depression in one end and a counter balance on its other end, and connected with said alarm circuit, the bowl of said circuit closing device being adapted to re-

ceive sand or any foreign material deposited in the shield, and a contact point arranged beneath the said bowl to be engaged thereby to close said alarm circuit.

4. The combination, with an alarm circuit having a gong, of a shield inclosing said gong, a tilting circuit closing device centrally pivoted in said shield and connected with said alarm circuit and having a bowl or receptacle adapted to receive sand and foreign material deposited in said shield, a counter balance mounted on the handle portion of said circuit closing device and normally balancing the weight of said bowl, and a contact point connected with said alarm circuit and located beneath said bowl and engaged thereby when said bowl is depressed by the weight of the material therein.



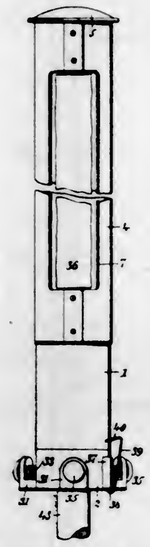
5. The combination, with an alarm circuit having a gong, of a shield inclosing said gong, a circuit closing device centrally pivoted in said shield and connected with said alarm circuit, one end of said circuit closing device having a receptacle adapted to receive sand and foreign material deposited in said shield, and the other end of said circuit closing device having a slot and a counter balance weight mounted therein and adapted to be adjusted to balance the weight of said receptacle, and a contact point connected with said alarm circuit and located in the path of said receptacle, whereby depression of the same under the weight of the foreign material will close the said alarm circuit.

6. The combination, with an alarm circuit having a gong, of a shield inclosing said gong, a box arranged in the lower part of said shield and having a chamber or recess, and a plate arranged over said chamber and provided with an opening leading to said recess, a tilting circuit closing device arranged in said chamber and having a bowl adapted to receive sand or foreign material deposited in said shield, and a contact point connected with said alarm circuit and located in the path of said bowl, whereby the alarm circuit will be closed when the bowl has tilted a predetermined distance.

853,737. SIGNAL. CLIFTON P. RUGGLES, Osawatomie, Kans. Filed Nov. 28, 1906. Serial No. 345,441.

Claim.—1. In a signal, in combination, a tubular case, a removable head received in the lower end thereof, a spindle attached in said head and extending upwardly in the interior of said case, a plug carried by the upper end of said spindle and flag staffs removably mounted in said head and said plug, said case having an opening through which flags rolled on said staffs may be extended.

2. In a signal, in combination, a tubular inner case, a head removably mounted in the lower end thereof, a spindle attached in said head, a plug carried by said spindle and held in the upper portion of said case, flag staffs removably attached in said plug and said head, a tubular outer case covering said inner case and protecting the upper end thereof, said cases having openings adapted to aline to enable flags on said staffs to be extended therethrough.



3. In a signal, in combination, a tubular inner case, a head removably mounted in the lower end thereof, a spindle attached in said head, a plug carried by said spindle and held in the upper portion of said case, flag staffs removably attached in said plug and said head, a tubular outer case covering said inner case and protecting the upper end thereof, said cases having openings adapted to aline to enable flags on said staffs to be extended therethrough, said outer case having means for locking the same with the opening of said outer case in different positions.

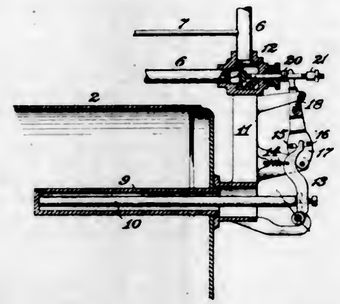
4. In a signal, in combination, an inner case, a head removably mounted in the lower end thereof, a spindle attached in said head and extending upwardly in said inner case, a plug attached to said spindle and having openings formed with slots extending to the edge of said plug, flag staffs having their lower ends mounted in said head, heads slidably received on the upper ends of said staffs and adapted to drop into said openings to hold said staffs in said plug.

5. In a signal, in combination, an inner case, a head removably mounted in the lower end thereof, a spindle attached in said head and extending upwardly in said inner case, a plug attached to said spindle and having openings formed with slots extending to the edge of said plug, flag staffs having their lower ends mounted in said head, heads slidably received on the upper ends of said staffs and adapted to drop into said openings to hold said staffs in said plug, said spindle projecting above said plug, and a collar carried by said spindle above said plug and adapted to lock said collars against rising from said openings.

853,738. STORAGE WATER-HEATER. EDWIN RUUD, Pittsburg, Pa. Filed June 26, 1905. Serial No. 266,909.

Claim.—1. In a storage water heater system, the combination of a water-heater, a reservoir, connections between the same, a valve to control the supply of fuel to said heater, a thermostat in said reservoir, a lost-motion connection between said thermostat and valve and means to cause said valve to remain either entirely closed or completely open.

2. In a storage water heater system, the combination of a water-heating receptacle, a heater therefor, a valve to control the supply of fuel to said heater, a hot-water-storage-reservoir, pipes connecting said receptacle and reservoir, a thermostat in said reservoir and connections between said thermostat and valve, whereby a certain amount of movement of said thermostat causes said valve to either entirely close or completely open.



3. In a storage water heater system, the combination of a water-heating receptacle, a heater therefor, a hot-water-storage reservoir located above said receptacle, pipes connecting the same, a valve to admit fuel to said heater, a thermostat in said reservoir, a lever arranged to be actuated by said thermostat, a second lever having a lost-motion connection with said first lever and a lost-motion connection with said valve and a spring tending to hold said second lever in either one of its extreme positions.

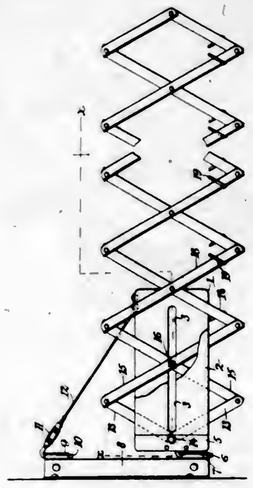
4. In a storage water heater system, the combination with a heater, a reservoir and pipes connecting the same, of a valve to control the supply of fuel to said heater, a thermostat arranged in position to be affected by changes in temperature of the water in said reservoir, a lever mounted in position to be moved by said thermostat, a second lever adapted and arranged to be engaged and moved by said first lever in certain points in the path of movement of the latter, a spring tending to hold said second lever in either of its extreme positions and a lost-motion connection between said second lever and said valve.

5. In a storage water heater system, the combination of a heater, a reservoir located above said heater and connected thereto by pipes, a valve to control the supply of fuel to said heater, a thermostat in said reservoir, a lever having a lost motion connection with said valve, a spring tending to hold said lever in either of its extreme positions and means including a lost-motion connection whereby said lever is actuated by said thermostat when the water in said reservoir reaches predetermined limits of temperature.

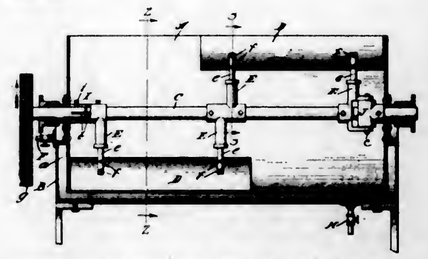
853,739. DRYING-HANGER. CHARLES F. SCHILD, Cambridge, Ohio. Filed Dec. 1, 1905. Serial No. 289,824.

Claim.—A drying hanger, comprising spaced plates longitudinally slotted and mounted to swing, and also having inwardly extended portions at the inner end provided with flanges, a plurality of toggle links, the inner end links being pivoted between the said flanges, and a pivot for the pair of links next to the inner end links, the said pivot being extended into said slots.

853,739.



853,740. CANDY-WORKING MACHINE. AUGUST SCHOBER, Chicago, Ill. Filed Dec. 20, 1906. Serial No. 348,753.



Claim.—1. In a mixing or kneading machine, the combination with the tank or vat, of a central shaft mounted therein and formed in sections, a knuckle joint connecting the central section of the shaft with one end section, and a coupling sleeve connecting the central section of the shaft with the opposite end section.

2. In a mixing and kneading machine, the combination with the tank or vat, of a longitudinal shaft mounted centrally therein, radial arms carried by said shaft, and radially adjustable concave scrapers or blades secured to and extending between said arms parallel with the shaft.

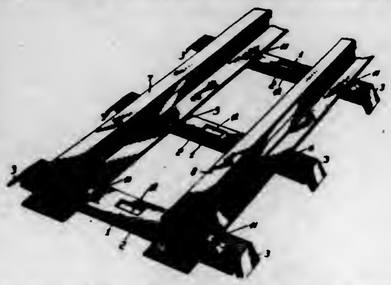
3. In a mixing or kneading machine, the combination with the tank or vat, of a central shaft therein, radial arms carried by said shaft and having longitudinally curved ends, and concave scrapers seated in and secured to said curved ends of the arms.

4. In a mixing or kneading machine, the combination of a vat or tank, a central longitudinal shaft therein, hollow radial arms on said shaft, pins fitted in said arms, springs coiled around said pins within the arms and holding the pins normally outward, and scrapers carried by the said pins.

853,741. METALLIC TIE AND RAIL-FASTENER. LA VERNE SIMPSON and JACOB STEIN, Pittsburg, Pa. Filed Feb. 11, 1907. Serial No. 356,752.

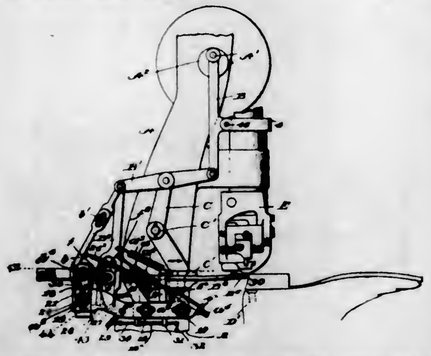
Claim.—The combination with rails, of a series of metallic ties having body portions, depending side flanges, an-

gularly disposed ends, lugs or protuberances carried by said ties for gaging the rails, fasteners punched from the body portions of said ties and holding said rails, said ties



being arranged whereby said fasteners and said protuberances alternately hold said rails substantially as described.

853,742. MACHINE FOR INSERTING METALLIC FASTENINGS. CHARLES H. SMITH, New Bedford, Mass., assignor to United Shoe Machinery Company, Boston, Mass., a Corporation of New Jersey. Filed Aug. 13, 1900. Serial 26,692.



Claim.—1. A machine to drive fastenings, comprising a stock support, means to insert fastenings, a feeding device, means to actuate the feeding device to feed the stock laterally, said feeding device being movable backwardly and forwardly, means to determine the rearmost position of said feeding device, and means acting intermittently to move the feeding device forwardly whereby the stock may be put in position to receive fastenings alternately in different rows.

2. In a machine for inserting fastenings, a feeding device, mechanism to move the feeding device forward to engage the stock, and independent means normally inoperative and arranged to co-operate with said mechanism to permit the stock to be so placed that the initial insertion of a fastening shall occur, at the will of the operator, in any one of a plurality of predetermined positions relative to the edge of the stock.

3. In a machine of the class described, fastening inserting mechanism, a device to contact with the edge of the stock and feed it, yielding means to force said feeding device toward the operator, stops to determine the position of said device as the operator presses it back with the stock, and means controlling the operation of said stops whereby the shoe may be positioned to receive the fastenings alternately in different rows.

4. In a machine of the class described, a feeding device, a pattern cam, means to operate it, a cam leg, a follower engaged by said leg and co-acting with said cam to change the position of said leg and feeding device and provide for the insertion into the stock of fastenings at different distances from the edge thereof.

5. In a machine of the class described, a feeding device, a pattern cam, means to operate it, a cam leg, a follower engaged by said leg and co-acting with said cam to change the position of said leg and feeding device and provide for the insertion into the stock of fastenings at different distances from the edge thereof, and means to actuate said feeding device to move the stock and space the fastenings at the proper distances apart along the edge of the stock.

6. In a machine of the class described, a feeding device, a pattern cam, means to move it, a cam leg acting upon the inner end of said feeding device, and means to control the position of said cam leg with relation to the center of said pattern cam to thereby place the acting end of the feeding device alternately in different operative positions.

7. In a machine of the class described, a feeding device, a pattern cam, a follower actuated by said pattern cam, and a cam device interposed between the feeding device and the follower.

8. In a machine of the class described, a feeding device, a pattern cam, a follower actuated by said pattern cam, and a cam device interposed between the feeding device and the follower, combined with a spring acting normally to move the feeding device toward the center of the pattern cam.

9. In a machine of the class described, a feeding device, a pattern cam, a follower actuated by said pattern cam, and a cam device interposed between the inner end of the feeding device and the follower, combined with a spring acting normally to move the feeding device toward the center of the pattern cam, and a stop to control the extent of such movement of the feeding device.

10. In a machine of the class described, a pattern cam, a feeding device, a leg having a member provided with a cam, and adapted in its movements to permit the feeding device to retire from contact with the shoe heel preparatory to the return of said feeding device into its starting position, means intermediate said leg and said pattern cam to insure two operative positions for said leg to thereby insure two operative positions for the acting end of said feeding device.

11. In a machine of the class described, a feeding device, in combination with a pattern cam for determining the operative positions of said feeding device, means for actuating the pattern cam, and a spring for moving the feeding device away from the pattern cam while the latter is being actuated, said spring permitting the feeding device to be forced toward the pattern cam by the pressure of the work against it.

12. In a machine of the class described, a feeding device, means determining the operative positions of the acting end of said feeding device, said means comprising among its parts a cam leg, a spring connected with said leg for yieldingly holding it in one operative position, combined with a second spring connecting said feeding device with said leg.

13. In a machine of the class described, a feeding device, a pattern cam, means to move it to put the acting end of the feeding device in any one of a plurality of operative positions, and means to adjustably support said pattern cam.

14. In a machine of the class described, a feeding device, a pattern cam, a follower, a spring acting normally to put said follower out of the range of movement of the said pattern cam and thereby place the end of the feeding device in its normal position to insure the insertion of a fastening in a row nearest the edge of the stock, a device interposed between said follower and the inner end of the feeding device, and a stop to limit the extent of backward movement of the feeding device by the operator pressing the stock against the acting end of said feeding device.

15. In a machine of the class described, a feeding device, a pattern cam, actuating means to operate it intermittingly to change the operative position of the acting end of the feeding device, and a device under the control of the operator to turn said pattern cam independently of its actuating means.

16. In a machine for inserting fastenings, the combination with means for inserting fastenings alternately in different rows, of means co-operating with said first-named means for determining the row in which the initial insertion shall be made.

17. In a machine for inserting fastenings, the combination with means for inserting fastenings, of means for causing the fastenings to be inserted alternately in different rows, and means for controlling the last-named means whereby the initial insertion of a fastening may occur, at the will of the operator, in either row.

18. In a machine for inserting fastenings, fastening inserting mechanism, a feeding device yieldingly held against rearward movement, said feeding device serving also as a gage to determine the position of the fastening upon the stock and automatic means for alternately interposing positive interference to the rearward movement of the feeding device whereby the fastenings may be inserted alternately in different rows.

853,743. INSULATING DEVICE. LOUIS STEINBERGER, New York, N. Y. Filed Mar. 29, 1906. Serial No. 308,668.



Claim.—1. An insulating device, comprising a pin body provided with a stem for entering a cross arm and with a shoulder for forming a water-tight joint with said cross arm, said pin body being further provided with a weather shield integral therewith and having a space intermediate of said shoulder and said weather shield.

2. An insulating device, comprising a pin body provided with a weather shield integral therewith, said weather shield being provided with a trough, means for mounting said pin body on a cross arm and for sustaining said weather shield out of contact with said cross arm, and means for supporting an insulator.

3. An insulating device, comprising a pin body of insulating material provided with a weather shield integral therewith and having two opposite sides extended in the form of downwardly-projecting members.

4. An insulating device, comprising a core of insulating material, and a body portion of insulating material encircling the same, said body portion being provided with means for supporting an insulator and with means for mounting said body portion.

5. An insulating device, comprising a supporting pin provided with a weather shield having a restricted water course, and means for mounting said pin to a cross arm, said weather shield being disposed above said cross arm and out of contact therewith.

6. An insulating device, comprising a body portion of insulating material, a strengthening core also of insulating material, the said core being enveloped by the body portion, and means for mounting an insulator upon said body portion of insulating material.

7. An insulating pin, comprising a body portion of insulating material provided with a portion for engaging a cross arm or other support, a strengthening member embedded within said pin body, and a fastening member carried by and anchored in the portion for engaging the cross arm.

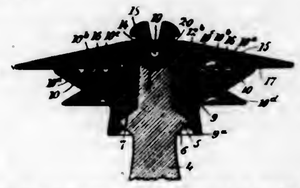
8. An insulating device, comprising a pin body of insulating material having completely enveloped thereby a strengthening member built up of a plurality of members arranged one within the other.

9. An insulating device, comprising a solid rod of insulating material, a plurality of tubes of insulating material encircling the rod, and a mass of insulating material surrounding said tubes, said mass of insulating material being provided with means for supporting an insulator.

10. An insulating device, comprising a pin body of insulating material having a tube-like member which is surrounded at its sides and ends by the said insulating material.

11. An insulating device, comprising a body portion of insulating material, and a strengthening core also of insulating material, the said core being enveloped by the body portion, the body portion having its lower end in the form of a member for engaging a support, and the said core extending in the said supporting member a portion of the length of the latter.

853,744. HIGH-TENSION INSULATOR. LOUIS STEINBERGER, New York, N. Y. Filed Mar. 28, 1906. Serial No. 308,485.



Claim.—1. An insulator, comprising a body portion of insulating material provided with supporting ribs projecting radially therefrom, and a hood of insulating material provided with an annular surface for engaging said supporting ribs.

2. An insulator, comprising a body portion of insulating material provided with outwardly extending supporting ribs integral therewith, and also provided with a central boss, and a hood of insulating material provided with a portion engaging said boss and also with portions engaging said supporting ribs.

3. An insulator, comprising a body portion of insulating material provided with supporting ribs, and further provided with a central boss having a thread, and a hood provided with a thread mating said thread of said boss, and further provided with portions for resting upon said supporting ribs.

4. An insulator, comprising a body portion of insulating material provided with ribs integral therewith and extending radially therefrom, said body portion being further provided with a central boss threaded externally, and a hood provided with a threaded aperture for receiving said threaded boss, said hood being further provided with an annular surface for engaging the outer ends of said supporting ribs.

5. An insulator, comprising a body portion of insulating material provided with a plurality of supporting ribs integral therewith, said ribs being level at the top, and a hood of insulating material secured centrally to said body portion of insulating material and provided with a surface engaging the upper surfaces of said supporting ribs.

6. An insulator, comprising a body portion of insulating material provided with ribs integral therewith and radiating outwardly therefrom, said ribs having surfaces inclined obliquely in relation to said body portion, and a hood resting upon said supporting ribs and connected centrally to said body portion, said hood being provided with means for supporting a conductor.

7. An insulator, comprising a body portion of insulating material provided with a central boss, means for supporting said body portion of insulating material, a hood en-

circling said boss and provided with projecting portions, and means for bracing said projecting portions.

8. The combination of a body portion of insulating material provided with ribs integral therewith and extending radially therefrom, said ribs being provided with surfaces for supporting conductors, and a hood resting upon said body portion and engaging said ribs.

9. An insulator comprising a body portion of insulating material provided with ribs extending radially therefrom, a skirt mounted upon said ribs and integral therewith, and a hood superposed over said body portion and provided with a surface engaging said supporting ribs.

10. An insulator, comprising a body portion of insulating material provided with a hood, a plurality of supporting portions extending from the upper surface of said hood, means for supporting a plurality of conductors, and means for mounting said body portion.

11. An insulator, comprising a body portion provided with a threaded boss having a slot for receiving a conducting member, and a hood provided with a portion for engaging said threaded boss and also provided with means for supporting a conducting member, out of engagement with said threaded boss.

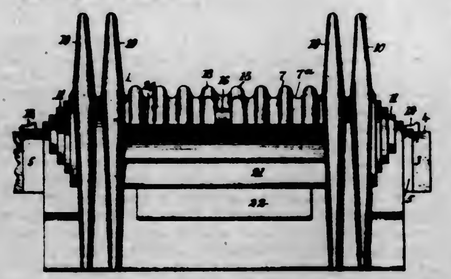
12. As an article of manufacture, a member of insulating material provided with means whereby it may be supported, said member of insulating material being further provided with supporting ribs extending radially therefrom for engaging a hood, and also provided with a skirt mounted directly upon said supporting ribs and depending therefrom.

13. An insulator, comprising a body portion of insulating material, and a separate hood supported by and covering the said body portion and forming a conductor support, the body portion having auxiliary conductor supports over which the hood extends as a cover.

14. An insulator, comprising a body portion of insulating material, and a separate hood supported directly on and covering the body portion and forming a conductor support, the body portion having auxiliary conductor supports at its outer portion over which the hood extends as a cover, and also a central conductor support beneath and covered by the hood.

15. As an article of manufacture, a body portion of insulating material provided with a threaded boss and with a plurality of rib portions radiating outwardly from said threaded boss, said body portion being further provided with an annular skirt integral with said rib portions and projecting downwardly and outwardly from the same.

853,745. HORIZONTAL SUPPORT FOR CONDUCTORS. LOUIS STEINBERGER, New York, N. Y. Filed Dec. 10, 1906. Serial No. 347,007.



Claim.—1. An insulator, comprising a body of insulating material provided with a plurality of disks, and with sheds between said disks.

2. An insulator, comprising a body of insulating material provided with disks, and further provided with corrugations disposed intermediate of said disks, and with sheds extending from one of said disks to another.

3. An insulator, comprising a supporting arm, and a longitudinal member of insulating material partially encircling said arm but open upon one side thereof, and provided with a plurality of petticoats disposed opposite to each other and located below said supporting arm.

4. An insulator, comprising a body of insulating material, said body of insulating material being provided with longitudinal sheds extending parallel with the general direction of said insulator.

5. An insulator, comprising a body of insulating material, a wearing plate mounted thereupon and provided with a channel for supporting a conductor, and means connecting with said wearing plate for drawing a conductor in the general direction of its length relatively to said wearing plate.

6. An insulator, comprising a member of insulating material, a conductor adjustable relatively thereto, a clamp for gripping said conductor, and means for, moving the general position of said clamp relatively to said body of insulating material.

7. An insulator, comprising a body of insulating material, a wearing plate supported thereby, a conductor adjustable relatively to said wearing plate, clamps for gripping said conductor, and means for moving one of the clamps relatively to said conductor.

8. An insulator, comprising a member of insulating material, a wearing plate mounted thereupon, a conductor engaging said wearing plate, a clamp for gripping said conductor and a turn buckle disposed intermediate said clamp and said wearing plate for the purpose of adjusting said conductor.

9. The combination of a body of insulating material, a wearing plate mounted thereupon and provided with edges embedded thereinto, a clamp mounted upon one end of said wearing plate, a turn buckle engaging the other end thereof, and a second clamp connected with said turn buckle and adapted to engage a conductor.

10. The combination of an insulator body, a metallic member mounted thereupon, pivotal connections for said metallic member, and means for securing said pivotal connections to a cable.

11. An insulator, comprising a saddle-shaped body of insulating material, and a saddle-shaped member of stronger material than the insulating body and on which the insulating body is mounted.

12. An insulator, comprising a longitudinal body portion of insulating material having a general saddle-like form and provided with a plurality of disks integral therewith and having their planes disposed vertically in relation thereto, said disks being disposed adjacent to each other so as to permit a conductor to be mounted therebetween, and means for mounting said body member.

13. An insulator, comprising a longitudinal body member of insulating material having a general saddle-like form, said body member being provided with a plurality of disks extending vertically in relation to the general length of said body member, and means for mounting said body member.

14. An insulator, comprising a longitudinal saddle-like metallic member, and a longitudinal saddle-like member of insulating material mounted upon said first-mentioned member, means for supporting a conductor upon said member of insulating material, and means for securing said metallic member upon a support.

15. An insulator, comprising a longitudinal saddle-like metallic member, and a body of insulating material disposed exteriorly of said metallic member, the metallic member having portions for engagement with a fastening.

16. An insulator, comprising a saddle-like body of insulating material, the sides of which project downwardly, forming between them a seat extending lengthwise of the insulator for engagement with a support, the said sides also ranging longitudinally of the body of insulating material.

17. An insulator, consisting of an elongated body of insulating material of saddle-like form, the back thereof forming a support for a conductor.

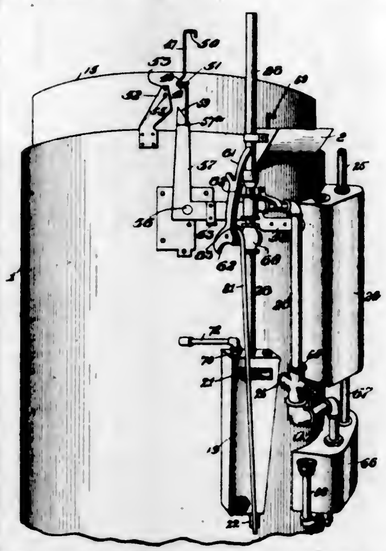
18. An insulator, consisting of an elongated body of insulating material of saddle-like form, the back thereof forming a support for a conductor, the said insulator having members rising at each end above the conductor-supporting portion, to impede surface leakage.

19. The combination with a supporting arm, of a saddle-like insulator disposed in direction of its length along said arm, the sides of the saddle-like insulator projecting downwardly below said arm.

20. An insulator, consisting of an elongated saddle-like body of insulating material having a support for a conductor disposed transversely of the said elongated body.

21. The combination with a support, of an insulator mounted thereon and having sides extending at the bottom below said support, the said insulator affording support for a conductor.

853,746. ACETYLENE-GAS GENERATOR. FRANK E. STOVER, Chattanooga, Tenn., assignor to The G. R. Lynch Manufacturing Company, Chattanooga, Tenn., a Corporation of Tennessee. Filed Oct. 27, 1906. Serial No. 340,855.



Claim.—1. In a generator, the combination with a generating chamber, a gas chamber lying above said generating chamber, a carbid chamber communicating with the generating chamber, and a valve for controlling the feed of carbid from said carbid chamber, of operating mechanism for said valve leading upward from said valve, thence downward and water sealed in the gas chamber, and thence to the exterior of said gas chamber.

2. In a generator, the combination with a gas chamber, a carbid chamber, and a feed valve in the lower end thereof, of a valve rod therefor leading upwardly therefrom, a rod connected to the upper end of said valve rod and leading downward exterior to said carbid chamber in said gas chamber, a lever pivoted in said gas chamber below the water level thereof and connected at one end to said rod, and an operating rod connected to the other end of said lever and extending out of said gas chamber.

3. In a generator, a carbid chamber, a cover for said chamber removable independent of the movement of the other parts, a valve controlling the discharge of carbid from said carbid chamber, and means for automatically locking said valve in its closed position as said cover is removed from said carbid chamber.

4. In a generator, a carbid chamber, a removable cover for said chamber, a feed valve, and means released by the removal of said cover for automatically locking said valve in its closed position.

5. In a generator, a carbid chamber, a removable cover for said chamber, a valve controlling the discharge of carbid from said carbid chamber, operating mechanism for said valve extending upwardly within said carbid chamber, and a latch pivoted in said carbid chamber for engaging said valve operating mechanism to retain said valve closed, said latch being forced out of its engaging position by the carbid chamber cover when the latter is placed in position on said carbid chamber.

6. In a generator, a removable carbid chamber, a valve removable with said carbid chamber for controlling the discharge of carbid from said carbid chamber, a valve rod extending upwardly from said valve, and connections exterior to said carbid chamber for operating said rod and valve, said connections being detachably connected with said valve rod, but being locked against detachment by the location of said carbid chamber in its operative position in said generator.

7. In a generator, a generating chamber, a neck leading into said generating chamber and slotted at its upper end at one side, a carbid chamber removably fitting within and supported by said neck, a lug on said carbid chamber adapted to fit within said slot in said neck and to prevent lateral movement of said carbid chamber in said neck when the former is in its lowermost position, and also adapted, when said carbid chamber is raised slightly and rotated to one side, to support said carbid chamber in said raised position, a valve for said carbid chamber, a valve rod extending upwardly therefrom and projected through the slot in the neck, operative connections detachably engaged with the projecting upper end of said valve rod, and a stop on said neck adapted to retain said valve rod and its connections in engagement except when said carbid chamber is lifted and supported by said lug.

8. In a generator, a carbid chamber, a feed valve therefor, a valve rod extending upwardly therefrom outside of said carbid chamber, and a groove in said chamber within which said valve rod extends.

9. In a generator, a carbid chamber, a cover therefor, a valve therefor, a valve rod extending upwardly therefrom within said cover, a latch for engaging said valve rod when said cover is removed, and a shield for said latch within the carbid chamber.

10. In a generator, a carbid chamber, a contracted tubular discharge for the same, a disk fixed in said chamber a little below said tubular discharge, a sleeve valve encircling and movable vertically on said tubular discharge and, when in closed position, filling the space between the latter and the underlying disk, an extension from said valve to one side, a valve rod connected to said extension and extending upwardly exterior to said carbid chamber, and operative connections for said valve rod exterior to said carbid chamber.

11. In a generator, a generating chamber, a gas chamber at a higher level than said generating chamber, a gas bell water sealed in said gas chamber, a pipe leading from said generating chamber into said gas bell, and a vertically movable valve for said pipe within said gas bell embodying a down-turned leg normally water sealed, and an upward extension around said leg.

12. In a generator, a generator chamber, a gas chamber at a higher level than said generating chamber, a gas bell water sealed in said gas chamber, a pipe leading from said generating chamber into said gas bell, a vertically movable cup valve for said pipe within said gas bell normally water sealed therein, and an operating rod for said valve extending from within the same downwardly in the gas chamber and thence through a water seal to the exterior, said rod adapted to be operated independently of the other parts of the apparatus.

13. In a generator, a vent valve, a lever for operating the same, a flush out, a rod for controlling said flush out having its upper end bent to engage said vent valve lever when said flush out is closed, and means on said vent valve lever for retaining said rod against motion while the vent valve is closed.

14. In a generator, a vent valve, a lever for operating the same, a flush out, a rod for controlling said flush out having its upper end bent to engage said vent valve lever when said flush out is closed, and means on said vent valve lever co-operating with said rod for retaining said rod

against motion while the vent valve is closed and for retaining said vent valve open while said flush out is open.

15. In a generator, a vent valve, a lever for operating the same, a flush out, a rod for controlling said flush out having its upper end bent to engage said vent valve lever when said flush out is closed, and a lug on said vent valve lever co-operating with said rod for retaining said rod against motion while the vent valve is closed and for retaining said vent valve open while said flush out is open.

16. In a generator, a gas bell, a carbid chamber, a valve for controlling the feed from said chamber, mechanism for operating said valve through the movement of said gas bell, means for throwing said valve operating mechanism out of operative relation with respect to said gas bell, and means for locking said mechanism against a feeding movement when so thrown out of operative relation.

17. In a generator, a carbid chamber, a valve controlling the feed from the same, an operating rod for said valve, a gas bell, a lug on said gas bell for operating said rod, means for controlling the position of said rod with respect to said lug, and means for locking said rod against feeding movement when disengaged from said lug.

18. In a generator, a carbid chamber, a valve controlling the feed from the same, an operating rod for said valve having a shoulder thereon, a gas bell, a lug on said gas bell for operating said rod, means for controlling the position of said rod with respect to said lug, and a hook for engaging the shoulder on said rod when disengaged from said lug to retain said rod against feeding movement.

19. In a generator, a carbid chamber, a valve controlling the feed from the same, an operating rod for said valve having a shoulder thereon, a gas bell, a lug on said gas bell for operating said rod, means for controlling the position of said rod with respect to said lug, and a pivoted hook for engaging the shoulder on said rod when disengaged from said lug to retain said rod against feeding movement.

20. In a generator, a carbid chamber, a valve controlling the feed from the same, an operating rod for said valve formed with a notch having a horizontal bottom portion, and an incline above said bottom portion, a gas bell, and a lug on said gas bell for engaging said notch to depress said rod and to aid in raising the same.

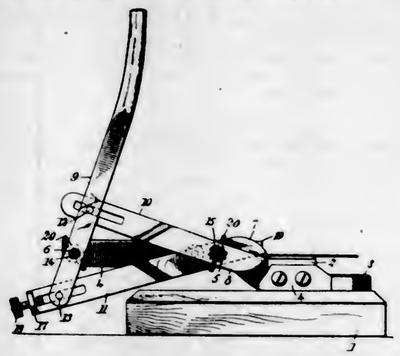
21. In a generator, a carbid chamber, a valve controlling the feed from the same, an operating rod for said valve having a shoulder thereon, a gas bell, a lug on said gas bell for engaging said shoulder to operate said rod, and means for automatically disengaging said lug and rod upon an abnormal drop of said gas bell.

22. In a generator, a carbid chamber, a valve controlling the feed from the same an operating rod for said valve having a shoulder thereon, a gas bell, a lug on said gas bell for engaging said shoulder to operate said rod, a pivoted lever loosely engaging said rod to control its position laterally and having an inclined upper end lying in the path of movement of said lug with which the latter contacts on an abnormal downward movement of the gas bell, whereby said lever and operating rod are moved laterally to disengage said rod and lug.

23. In a generator, a carbid chamber, a valve controlling the feed from the same, an operating rod for said valve, a gas bell, a lug on said gas bell for engaging said rod to operate the same, a vent valve, a lever operating said vent valve, and a bell-crank lever loosely engaging said operating rod at its upper end and normally forcing said rod into operative relation with said gas bell lug, said vent valve lever, when turned to vent the apparatus, engaging and tilting said bell-crank lever so as to carry said valve operating rod away from its engagement with the gas bell lug.

853,747. SAW-SET. JOHN V. STROMBOM, New York, N. Y. Filed Oct. 5, 1906. Serial No. 337,639.

Claim.—1. A machine for setting saws, comprising a suitable support, two arms pivoted adjacent thereto, each of said arms terminating in a jaw, said jaws adapted for engagement with opposite sides of successive teeth, each of said arms having a slot adjacent one end thereof, a pivoted lever having pins in engagement with said slots, whereby when said lever is moved the jaws are simultaneously moved toward or from each other, and means carried by one of said arms adjacent the slot therein for controlling the movement of the pin in said slot.



2. In combination, means for supporting a saw, a plurality of brackets mounted adjacent thereto, two pivot bolts carried by said brackets, two arms mounted upon one of said pivot bolts and having coacting jaws adjacent said saw-supporting means, an operating lever mounted upon the other pivot bolt, and means carried thereby and in sliding engagement with each of said arms, whereby the jaws may be operated by the movement of said lever.

3. In combination, means for supporting a saw, a pivot bolt mounted adjacent thereto, two arms mounted upon said pivot bolt and having coacting jaws adjacent said saw-supporting means, a second pivot bolt mounted substantially parallel to said first mentioned pivot bolt, and an operating lever mounted upon the second pivot bolt and having sliding engagement with each of said arms, whereby the jaws may be operated by the movement of said lever.

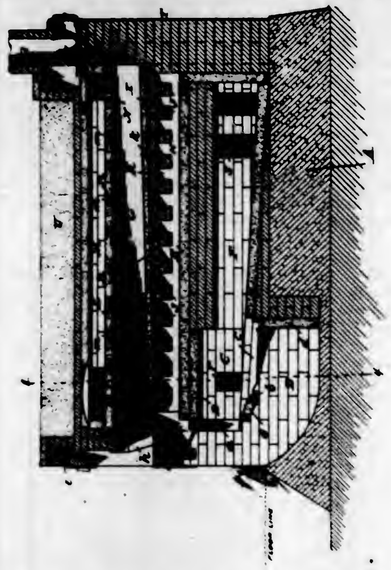
4. In combination, means for supporting a saw, two parallel brackets mounted adjacent thereto, two arms pivotally mounted upon said brackets and having coacting jaws adjacent said saw-supporting means, and an operating lever also pivotally mounted upon said brackets and having sliding engagement with each of said arms, whereby the jaws may be operated by the movement of said lever.

853,748. BAKER'S OVEN. WILLIAM TANK, New Orleans, La. Filed Nov. 28, 1906. Serial No. 345,425.

Claim.—1. A baker's oven comprising a baking chamber, a furnace or fire-box arranged under the baking chamber, and a combustion chamber extending rearward from the furnace or fire-box and also arranged under the baking chamber; the said furnace or fire-box being provided with an outer fire-resisting lining and an inner fire-resisting lining which inner lining is independent of the outer lining and is arranged to be removed without detriment to the latter and without affecting the operation of the oven.

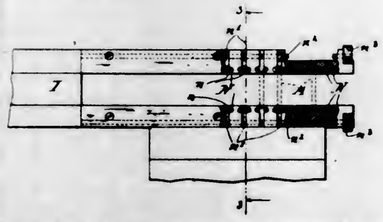
2. A baker's oven comprising a furnace or fire-box, an ash-pit disposed below said furnace or fire-box, a combustion chamber extending rearward from the furnace or fire-box, an outer lining of fire-resisting material extending over, under and at the sides of the combustion chamber and also extending above and down at the sides of the furnace or fire-box and the ash-pit and having shoulders at opposite sides of the furnace or fire-box, and an independent inner lining of fire-resisting material resting on the shoulders of the outer lining and independent of said outer lining.

3. The combination in a baker's oven, of a furnace or fire-box, a combustion chamber extending rearward from said furnace or fire-box, a baking chamber disposed above the furnace and combustion chamber, a closed or dead-air chamber intermediate the furnace and combustion chamber and the baking chamber, and transverse portions de-



pending from the upper wall of the closed or dead-air chamber at intervals in the length of said wall, and serving to form heat traps.

853,749. LINOTYPE-MACHINE. BYRON VAN WIE, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 1, 1906. Serial No. 337,036.



Claim.—1. In a linotype machine, a composed line of matrices including matrices for forming column rules, in combination with means for locking the rule matrices in predetermined positions against lateral movement; whereby one or more rules may be formed in predetermined positions on each slug or linotype.

2. In a linotype machine, means for supporting a composed line of matrices in the casting position, and movable devices for locking certain of the matrices separately against lateral movement during the casting action.

3. In a linotype machine, an elevator or line-support I, provided with movable means for locking certain matrices individually therein in predetermined positions.

4. In a linotype machine, the first elevator adapted for the horizontal introduction and removal of the matrix line, in combination with devices movable transversely in relation to the line, and adapted to lock individual matrices in predetermined positions.

5. In a linotype machine, an elevator or support adapted to sustain a composed line of matrices and present the same in the casting position, in combination with devices therein for engaging individual matrices and locking them in predetermined positions, and means for automatically effecting the engagement and disengagement of said devices.

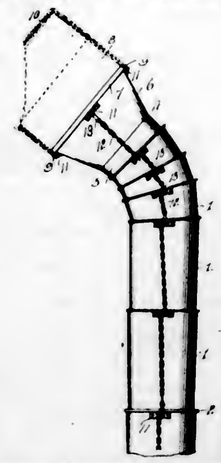
6. In a linotype machine, an elevator or support for the matrix line, in combination with movable stops or locking devices adapted to engage and hold the edges of individual matrices; whereby the position of such matrices in the line may be determined and maintained.

7. In a linotype machine, a support for the composed line of matrices, in combination with the ordinary matrices, the intermediate spacer matrices M, and means for locking the matrix members of the latter in definite positions.

8. The rule-forming matrix for a linotype machine consisting of the positively tapered co-operating wedges, one of said wedges containing the vertical matrix groove m^3; whereby it is adapted to serve the two-fold purpose of justifying the line and forming a rule on the slug or linotype in given relation to the adjoining matrix.

9. In a linotype machine for producing tabular matter, the combination of a line of matrices, including matrices for column rules and wedges for elongating the line, means for sustaining said line in the casting position, and movable means for locking the rule matrices temporarily and individually in predetermined positions.

853,750. GRAIN-CONVEYER. EDWIN WHORRALL, Loda, Ill. Filed Feb. 26, 1907. Serial No. 359,355.

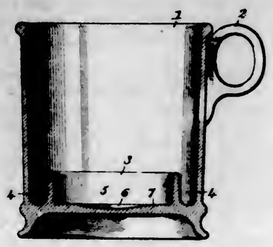


Claim.—A device of the class described, comprising a plurality of slightly tapering cylindrical sections each provided adjacent to its upper edge with diametrically opposite loops, and chains connected with said loops and having terminal snap hooks; the uppermost section being provided with a rectangular hopper shaped extension having chains connected with the four sides thereof, two of said chains being connected with the loops of the subjacent cylindrical section, and one of the remaining chains being provided with means whereby it may be adjustably connected with the opposite chain for the purpose of suspending or supporting the conveyer in position for operation.

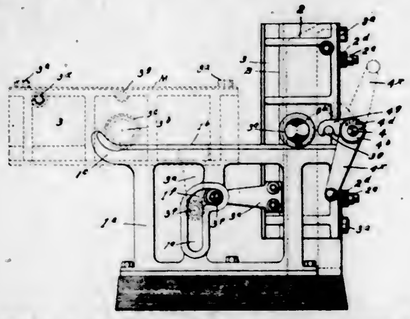
853,751. SHAVING-CUP. SYLVIE ATTANASIO, New York, N. Y. Filed Feb. 9, 1907. Serial No. 356,548.

Claim.—A shaving cup having a cylindrical body, a closed bottom formed integrally therewith and provided

with a flange spaced from said body forming a central soap chamber, and a surrounding recess, substantially as shown and described.



853,752. MACHINE OR CASTING-BOX FOR MAKING STEREOTYPE-PLATES. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich. Filed July 18, 1906. Serial No. 326,764.



Claim.—1. In a stereotype casting-box, the combination of a fixed cope, side frames beside the cope having horizontal ways on their upper ends, L-shaped guide-slots having their horizontal portions substantially parallel with the ways and extending toward the cope, a swinging drag provided with wheeled trunnions whereby it is supported on said guide-ways, and arms attached to the drag and engaging said slots whereby the drag is turned as it is moved on the ways, substantially as described.

2. In combination, a cope, and a drag movable to and from the cope; with an eccentrically mounted rock-shaft beside the cope, hook-arms loosely hung on said rock-shaft and adapted to engage the drag to lock the latter to the cope; collars on said shaft beside the hooks, and pin-and-slot-connections between the collars and hooks whereby the shaft is permitted a certain extent of movement without turning the hooks, substantially as described.

3. In a stereotype casting-box, the combination of a cope, a drag, a rock-shaft, hooks hung on said shaft adapted to engage and lock the drag to the cope, and eccentrics on said shaft adapted to force the drag away from the cope after the locking devices have released the drag, substantially as described.

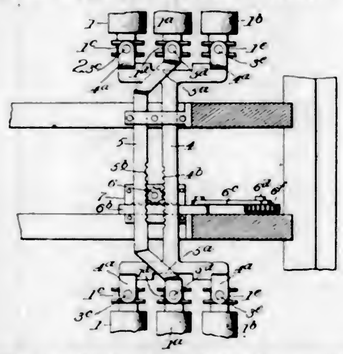
4. In a stereotype casting-box, the combination of a cope, a drag, an eccentrically mounted rock-shaft attached to the cope, hooks hung on said shaft adapted to engage studs on the drag to lock the drag to the cope, and eccentric on said shaft adapted to move the drag away from the cope after the locking devices have disengaged the drag, substantially as described.

5. In a stereotype casting-box, the combination of a cope, a frame having horizontal ways and inverted L-shaped guide-slots below the ways having their horizontal portions substantially parallel with the ways and extending toward the cope, a drag having wheeled trunnions supporting it upon said ways, and arms provided with rollers connected to the drag, and engaging the guide-slots.

6. In a stereotype casting-box, the combination of a base, a cope fixed thereon, side frames provided with guide-ways and L-shaped guide-slots having their horizontal portions substantially parallel with the ways and extending toward the cope, a tiltable drag having trunnions whereby it is tiltably and movably mounted on and between said ways, and rearwardly projecting arms on said drag, and rollers on the rear ends of said arms engaging said guide-slots.

7. In combination, a cope, and a drag movable to and from the cope; with an eccentrically mounted rock-shaft, hooks loosely hung on said rock-shaft and adapted to engage studs on the drag to lock the latter to the cope, and connections between the hooks and shaft whereby the shaft is permitted a certain extent of movement without affecting the hooks, substantially as described.

853,753. INKING MECHANISM. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich., a Corporation of Michigan. Filed Sept. 18, 1906. Serial No. 335,052.



Claim.—1. In an inking mechanism, the combination of vibrator rollers, a pair of vibrator bars respectively engaging different rollers, a gear meshing with both bars, and means for imparting movements to said gear.

2. In an inking mechanism, the combination of oppositely reciprocating vibrator rollers, a pair of oppositely reciprocating bars engaging the oppositely reciprocating vibrators, a rotatory gear meshing with both bars and means for operating said gear.

3. In an inking mechanism, the combination of oppositely reciprocating vibrator rollers, a pair of oppositely reciprocating vibrator bars respectively actuating the oppositely reciprocating vibrator rollers, a gear meshing with both bars and means for operating said gear.

4. In an inking apparatus, the combination of an ink drum, vibrator rollers co-acting with the drum, a rotatory gear, a slidable reciprocatory bar engaging said gear, connections between the inner end of said bar and the vibrator rollers, and means for operating the gear.

5. In an inking apparatus, the combination of an ink-drum, adjacent vibrator rollers co-acting with the drum, a gear, parallel bars provided with teeth meshing with opposite sides of said gear, connections between the inner ends of said bars and separate vibrator rollers, and means for operating the gear.

6. In an inking apparatus, the combination of an ink-drum, vibrator rollers co-acting with the drum, a rotatory gear, a reciprocatory slide bar engaging said gear, connections between the inner end of said bar and the vibrator rollers, and means for operating the gear; said means comprising a rack bar meshing with the gear, and a pitman and crank connections for operating said rack-bar.

7. In an inking apparatus, the combination of an ink-drum, adjacent vibrator rollers co-acting with the drum, a rotatory gear, parallel bars provided with teeth meshing with opposite sides of said gear connections between the inner ends of said bars and separate vibrator rollers, and means for operating the gear; said means comprising a rack-bar meshing with the pinion, a pitman connected to the rack-bar and a crank for operating said pitman.

8. In an inking mechanism, the combination of a bracket, a rotatory gear journaled thereon, a vibratory bar meshing with said gear, an oppositely arranged vibrator bar also meshing with said gear; with an ink-drum, vibrator rollers co-acting therewith, and connections between said rollers and the vibrator bars, substantially as described.

9. In combination, an ink-drum, vibrator rollers adapted to co-act therewith, a pair of vibrator bars adapted to engage different vibrator rollers, a gear interposed between and meshing with racks on both the said bars, and means for operating said gear.

10. In combination, an ink-drum, vibrator rollers provided with grooved collars, a pair of vibrator bars provided with pins to engage the grooved collars on different vibrators, a rotatory gear interposed between and meshing with both the said bars, and means for operating said gear.

11. In combination, an ink-drum, vibrator rollers adapted to co-act therewith, a pair of vibrator bars adapted to engage different vibrator rollers, a gear interposed between and meshing with racks on both the said bars, and means for operating said gear; said means comprising a rack-bar meshing with said gear below the vibrator bars, a rotating crank and gear, a pitman pivotally connected to said crank, gear and rack-bar, substantially as described.

12. In combination, an ink-drum, vibrator rollers provided with grooved collars, a pair of vibrator bars provided with pins to engage the grooved collars on different vibrators, a rotatory gear interposed between and meshing with both the said bars, and means for operating said gear; said means comprising a rack-bar arranged at right angles to the vibrator-bars and meshing with said gear below the latter, a rotating gear, and a pitman pivotally connected to said gear and rack-bar, substantially as described.

13. In an inking apparatus, the combination of adjacent inking mechanisms, a pair of vibrator parallel bars extending between said mechanisms, and connections between the ends of said bars and the adjacent vibrator rollers in said inking mechanisms; with means for operating said bars whereby both sets of vibrator rollers in the adjacent inking mechanisms can be operated simultaneously, and vibrator rollers in each set reciprocated oppositely.

14. In an inking apparatus, the combination of adjacent inking mechanisms, a pair of parallel bars extending between said mechanisms, and connections between the ends of said bars and the adjacent vibrator rollers in said inking mechanisms, a rotatory pinion interposed between and meshing with both of said bars, a rack-bar meshing with said pinion, a rotating crank gear, and a pitman pivotally connected to said crank gear and to said rack-bar, substantially as described.

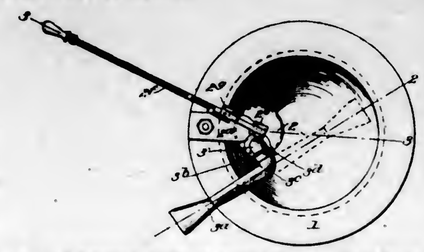
853,754. STEREOTYPING AND TYPE-METAL-FOUNDING APPARATUS. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich. Filed Dec. 8, 1906. Serial No. 346,946.

Claim.—1. In combination, a melting-pot, a metal pump therein, and a discharge nozzle connected with the pump, and adapted to be turned into the hot metal in the pot to be heated thereby, substantially as described.

2. In combination, a metal melting-pot, a metal pump therein, and a discharge pipe, comprising a section fixedly attached to the outlet of the pump, and a nozzle section connected to the fixed section and adapted to be turned into the hot metal in the pot to be heated, or over the edge of the pot to discharge the metal.

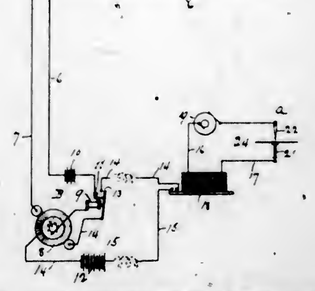
3. In a stereotype casting apparatus, the combination of a metal melting-pot, a metal pump therein, and a discharge pipe, comprising a section attached to the outlet of the pump, and a nozzle section rotatably connected to the first section and adapted to be turned into the hot metal in the pot or over the edge of the pot, substantially as described.

4. In a casting apparatus, the combination of a melting pot, a metal pump suspended therein, a pipe elbow connected to the outlet of the pump at one end and having its other end threaded, a nozzle having its inner end threaded to engage the threaded end of the elbow whereby said nozzle can be turned either into the metal in the pot to be heated, or outwardly to project over the edge of the pot, substantially as described.



5. In a stereotype casting apparatus, the combination of a melting-pot, a metal pump suspended therein, a pipe elbow connected to the outlet of the pump at one end and having its other end threaded, and a nozzle having a bend on its inner end provided with an internally threaded flange screwed onto the threaded end of the elbow whereby said nozzle can be turned either into the metal in the pot to be heated, or outwardly over the edge of the pot to deliver the metal, substantially as described.

853,755. APPARATUS FOR TRANSMITTING TO A DISTANCE REAL OPTICAL IMAGES. EDOUARD BELIN, Paris, France. Filed July 10, 1905. Serial No. 269,134.



Claim.—1. An improved system of transmitting to a distance real optical images, comprising a receiving station with recording apparatus and a transmitting station having a dark chamber with selenium elements therein and a transmitting collector or multiple communicator, the receiving station being in the same electric circuit with the transmitting station, said receiving station having a relay adapted to cause a local current to undergo variations of intensity proportional to the variations of intensity of the line current, in combination with a receiving collector through which the said local current passes for the purpose of operating the recording apparatus, said collector or multiple commutator moving synchronously with the commutator of the transmitting station.

2. In a system of transmitting to a distance real optical images, comprising a receiving station having a recording apparatus, comprising a band and means for forming perforations of variable diameter in the recording band by means of electric sparks, the diameter of the perforations

being proportional to the current impulses arriving at the receiving station.

3. In a system of transmitting to a distance real optical images, comprising a receiving station having a recording apparatus, comprising a band and means for forming perforations of variable diameter in the recording band by means of electric sparks, a secondary circuit having an induction coil excited by the current serving the receiving station for producing the sparks, and a collector or multiple commutator in said station being arranged in the secondary circuit.

4. In a system for transmitting to a distance real optical images, an electric circuit connecting a transmitter and a receiver, a transmitter by which currents automatically varying in intensity in proportion to differences in intensity of the light rays from the image are transmitted to the receiver, a receiver comprising a band and means actuated by said variable current for forming perforations therein of varying diameter proportioned to the variations in intensity of the current impulses received from the transmitter, substantially as described.

853,736. EDUCATIONAL APPLIANCE. VICTOR BÉTIS, West Ealing, England. Filed Sept. 24, 1906. Serial No. 336,019.



Claim.—1. An educational appliance, comprising a frame with parallel axial shafts, a plurality of axially suspended units having faces bearing different designations, said units having a central bushing of elastic material embracing the shafts with a frictional resistance.

2. In an educational appliance having a plurality of rotary adjustable units, the unit having its surface equally divided around its axis into alternating faces and turning projections, the turning projections extending outwardly beyond the faces.

3. In an educational appliance having a plurality of rotary adjustable units, the unit having its surface equally divided around its axis into alternating faces and projecting flanges.

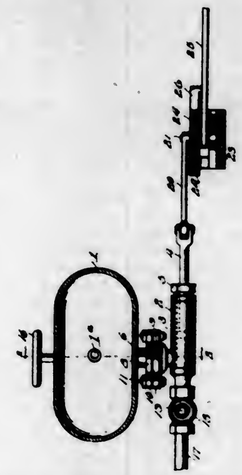
4. An educational appliance, comprising a frame with parallel axes and a plurality of rotary adjustable units mounted thereon, means by which they are frictionally held to their adjustment, and a hand tool for operating upon and turning said units.

5. An educational appliance, comprising a frame with parallel axes and side bars and a plurality of rotary adjustable units mounted on the parallel axes, means by which they are frictionally held to their rotary adjustment, and a hand tool riding on the side bars of said frame and operating upon and simultaneously turning all the units of a row.

6. An educational appliance, comprising a frame with parallel axes and a plurality of rotary adjustable units mounted on said axes, means by which they are frictionally held to their rotary adjustment, a hand tool for simultaneously turning a row of said units, the sides of the frame being fashioned to guide said hand tool through the proper course for turning said units.

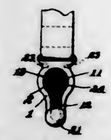
853,757. ENGINE-LUBRICATOR. OMER A. BEYDLER, Rossville, Ind. Filed Oct. 27, 1906. Serial No. 340,874.

Claim.—The herein-described automatic lubricator for engines comprising a reservoir having an outlet in the bottom thereof, a cylinder arranged at one side of and below the bottom of the reservoir, a conducting pipe connecting with the forward end of the cylinder, a cross connection between the reservoir and the cylinder comprising coupled sections respectively fixed to the reservoir and cylinder, the reservoir section being provided with a valve chamber communicating with the outlet and with a feed passage, and the cylinder with a coinciding feed passage, a regulating valve adjustably mounted upon the reservoir section and operating in the valve chamber to control the inner end of the feed passage therein, a spring actuated check valve in the cylinder section adapted to normally



close the outer end of the feed passage in the reservoir section, said valve being removable when the sections are uncoupled a piston operating in the cylinder, and means for imparting an intermittent back and forth motion to said piston.

853,758. HOSE-SUPPORTER CLASP. HAROLD BINNEY, New York, N. Y., assignor to Nealon Company, a Corporation of New York. Filed Jan. 3, 1905. Serial No. 239,377.



Claim.—1. A garment supporter clasp comprising a loop, a button having a shank attached to its rear face, and a flexible back to which said button shank is connected, the lower end of said back extending downward only to the lower side of the button shank and being substantially wider than said shank.

2. A garment supported clasp comprising a loop and an integral button and flexible back, said button comprising a head and a shank attached to the rear face of said head and connecting said head with said back at the extreme lower end of the latter.

3. A garment supporter clasp comprising a loop and an integral button and flexible back, the shank of said button being connected with said back at the extreme lower end of the latter, said lower end of the back being substantially wider than said shank.

4. A garment supporter clasp comprising a loop, a button, and a back to which said button is attached, said back having transverse lines of decreased resistance to flexion.

5. A garment supporter clasp comprising a loop, a button, and a transversely corrugated flexible back, to which said button is connected.

6. A garment supporter clasp comprising a loop, and an integral button and transversely corrugated flexible back.

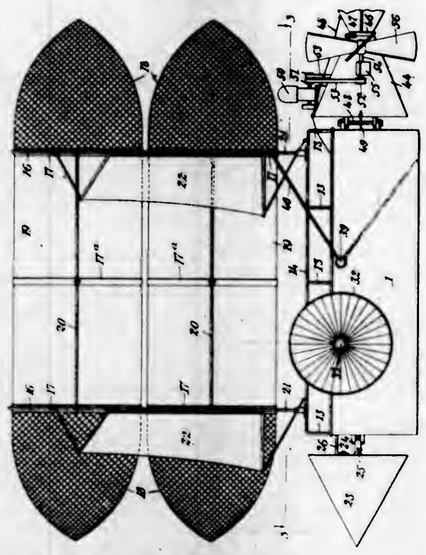
853,759. PROCESS OF EXTRACTING COTTON-SEED OIL. MAURICE BIRD, Sugar Land, Tex. Filed Dec. 31, 1904. Serial No. 239,128.

Claim.—1. The herein described process which consists in extracting cotton-seed oil from the cotton-seed product by the use of kerosene, and subjecting the solution of hydrocarbon and cotton-seed oil to the action of a soap making alkali to separate the cotton-seed oil from the hydrocarbon in the form of soap.

2. The herein described process which consists in extracting cotton-seed oil from cotton-seed meal by the use of kerosene, and subjecting the solution of kerosene and cotton-seed oil to the action of a soap making alkali and heat to separate the cotton-seed oil from the kerosene in the form of soap.

3. The herein described process which consists in extracting cotton-seed oil from cotton-seed meal by the use of kerosene and subjecting the solution of hydrocarbon and cotton-seed oil to the action of a soap making alkali and heat to separate the cotton-seed oil from the hydrocarbon in the form of soap.

853,760. AIR-SHIP. GEORGE BOLD, Plainfield, N. J. Filed Nov. 27, 1906. Serial No. 345,280.



Claim.—1. In an air-ship, a hull having a main deck, a series of partitions crosswise arranged between the hull and deck directly connecting them together and forming a series of ballast compartments, and means for discharging ballast from each compartment.

2. In an air-ship, a hull having a main deck, a series of partitions crosswise arranged between the hull and deck directly connecting them together and forming a series of ballast compartments, a valve for discharging ballast from each compartment, and means for independently operating the valves.

3. In an air-ship, a hull having a main deck, a series of partitions crosswise arranged between the hull and deck directly connecting them together and forming a series of compartments, a valve seated over an opening in the bottom of each compartment, and means independently operable above the deck to withdraw each of said valves from their seats.

4. In an air-ship, a hull having a main deck, a series of partitions crosswise arranged between the hull and deck directly connecting them together and forming a series of compartments, a valve seated over an opening in the bottom of each compartment, a spring normally forcing each valve to its seat, and devices connected to said valves and independently operable from said deck to withdraw any one of said valves from its seat.

5. An air-ship having a hull substantially semi-elliptical in cross section with a concave portion in the bottom thereof, for the purpose described.

6. An air-ship having a hull substantially semi-elliptical in cross section and converging toward each end, and a concave portion longitudinally arranged in the bottom of the ship, for the purpose described.

7. An air-ship having a hull with a concave portion running longitudinally in the bottom thereof, for the purpose described.

8. An air-ship having a frame near each end thereof, bands alining with each other secured to the frames, and a gas-bag held in and completely encircled by said bands.

9. An air-ship having a frame at each end thereof, alining bands secured in the frames, means connecting the frames together and supporting an intermediate band, and a gas-bag held in and completely encircled by said bands.

10. An air-ship having a frame at each end thereof, alining bands secured to each frame, an independent net-work at the outer side of each band attached thereto, and a gas-bag carried in the bands and held from longitudinal movement by said net-work.

11. An air-ship having a frame at each end thereof, a series of sets of bands arranged one above the other with the bands of each set alining with each other and carried by the frames, and a gas-bag carried in each set of bands.

12. An air-ship having a series of gas-bags arranged longitudinally thereof and fixedly supported one above the other, and a sail at each side of the gas-bags.

13. An air-ship having a sail near each end and on both sides thereof, and a gas-bag fixed intermediate said sails.

14. In an air-ship, a rectangular frame supported at each end thereof, masts arranged at the outside and supported by each frame, a sail carried by each mast, and a gas-bag supported between the frames.

15. In an air-ship, a rectangular, tubular frame at each end thereof, a tubular mast connected to and at the outside of each frame, a sail carried by each mast, and a series of gas-bags arranged longitudinally of the ship one above the other and supported by said frames.

16. In an air-ship, a rectangular, tubular frame near each end thereof, a tubular mast connected to and at the outside of each frame, a sail carried by each mast, a series of sets of bands supported between the frames, a gas-bag carried by each set of bands, and a net-work attached to the bands inclosing the outer ends of the gas-bags.

17. An air-ship comprising a hull, a pointed hollow body at the forward end of the hull, and a universal joint connecting the hull and body together, for the purpose described.

18. An air-ship comprising a hull, a hollow pyramid at the forward end of the hull, a universal joint connecting the pyramid and hull together, and means operable within the ship to shift the direction of said pyramid.

19. An air-ship comprising a hull having a main deck, a pointed hollow body arranged at the forward end of the hull, a universal joint connecting the body and hull together, and a lever rigidly attached to said body and operable from said deck for shifting the direction of said body.

20. An air-ship having a wind-wheel journaled at the side thereof, a wing for driving the ship, and means for driving said wing from said wheel.

21. An air-ship having a wind-wheel journaled at the side thereof, a wing for driving the ship, means for driving said wing from said wheel, and means for throwing said wheel out of action.

22. An air-ship having a wind-wheel journaled at the side thereof, a wing journaled at the side of the ship, and means connecting the wheel and wing together adapted to oscillate the wing when the wheel is driven.

23. An air-ship having a wind-wheel journaled at the side thereof, a wing journaled at the side of the ship, a crank-arm adapted to be driven by the wheel, a crank-arm fixed to the wing, and an adjustable link connecting the crank-arms together.

24. An air-ship having a wind-wheel journaled at the side thereof, a wing for driving the ship, counterbalancing means for the wing, and means for driving said wing from said wheel.

25. An air-ship having a wind-wheel journaled at each side thereof, a wing journaled at each side of the ship adapted to oscillate in a vertical plane, and means connecting the wheels with the wings whereby as the wheels are driven the wings may be oscillated.

26. An air-ship having a bearing-box arranged in each side thereof, a hollow spindle journaled in each bearing-box, a wind-wheel journaled on each spindle, means for connecting the wheels with the spindles, a wing journaled at each side of the ship, and means intermediate the wings and spindles whereby they are adapted to be driven therefrom.

27. An air-ship having a bearing-box arranged in each side thereof, a hollow spindle journaled in each bearing-box, a wind-wheel journaled on each spindle, a wing journaled at each side of the ship, means intermediate the wings and spindles whereby they are adapted to be driven therefrom, means for clamping the spindles in their boxes, and a rod passing through each spindle adapted to frictionally connect it with said wheels.

28. In an air-ship, a hull, a member pivoted at the stern end of the hull, a propeller carried by said member for driving the ship and a rudder pivoted to said member.

29. In an air-ship, a hull, a hollow body pivoted to move sidewise at the stern end of the hull, propellers carried by said body, a motor carried by said body for driving the propellers, and means for swinging said body on its pivot from the hull of the ship.

30. In an air-ship, a hull, a hollow body pivotally connected thereto, propellers carried by the hollow body journaled at opposite sides thereof, a rudder hinged to the rear end of said body, means for moving the hollow body on its pivot, and means for turning the rudder on its hinge adapted to be controlled from the interior of the ship.

31. In an air-ship, a hull, a body pivoted at the stern end of the hull to swing in a horizontal plane, and a rudder hinged at the rear end of the body to swing in a vertical plane.

32. In an air-ship, a hull, a body pivotally connected to the hull to swing in a horizontal plane, and a rudder consisting of two blades intersecting each other at right angles and hingedly connected to the rear end of said body.

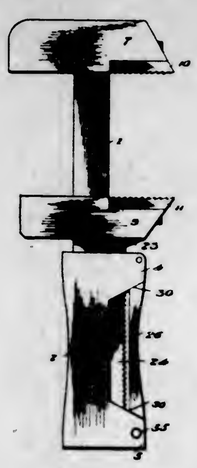
33. In an air-ship, a hull, a body pivoted to swing sidewise at the rear end of the hull, a right hand and a left hand propeller journaled at opposite sides of said body, and means for driving said propellers in opposite directions, for the purpose described.

34. In an air-ship, a hull, a hollow body pivoted to swing sidewise at the stern end of the hull, a right hand and a left hand propeller journaled at opposite sides of the body, and a motor carried by said body for driving the propellers in opposite directions.

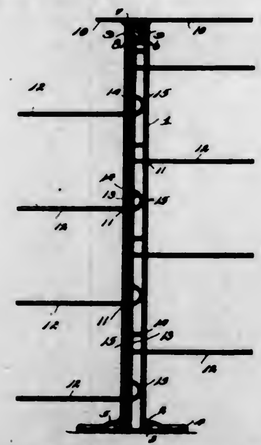
35. In an air-ship, a hull, a pointed hollow body pivoted to swing sidewise at the stern end of the hull, and a rudder consisting of two intersecting blades hinged at the outer end of said body and adapted to swing in a vertical plane.

853,761. COMBINED WRENCH, THREADING-DIE, AND PIPE-CUTTER. BERNHARD I. BORSEN, Garneill, Mont. Filed June 7, 1906. Serial No. 320,655.

Claim.—In a combined wrench and die stock, the combination with a shank, of a jaw connected thereto, a jaw movable on the shank, means for locking the movable jaw, said jaws being provided with elongated sockets or cut-out portions which are closed at their outer ends, said shank having a recess, and an attachment provided with flanges adapted to be received in the sockets aforesaid and also having a flange adapted for reception in the recess of the shank.



853,762. DISPLAY-STAND. CHARLES S. BOTSFORD, Peterboro, Ontario, Canada. Filed Feb. 24, 1906. Serial No. 302,708.



Claim.—1. A display stand comprising a tubular stand having openings along the side thereof, and a plurality of supporting arms having semi-circular crooks at one end insertible through the openings in the side of the standard and adapted to bear against the inner wall of said standard to support the arms horizontally or substantially so.

2. A display stand comprising a tubular standard provided with holes in the side thereof, and a plurality of supporting arms each consisting of a rod provided at one end with a crook removably inserted through one of the holes in the side of the standard, said crook forming two bearing points within and against the opposite inner side walls of the standard to support the arm in a substantially horizontal position.

3. A display stand comprising a tubular stand and a supporting base therefor, a cap fitted into the upper end of the tubular standard and provided with holes extending vertically therethrough, and supporting arms arranged to extend in a substantially horizontal plane and having angular extremities inserted in the holes of the cap.

4. In a display stand or rack comprising a tubular post or standard provided with holes along the side thereof, a supporting base to which said post is detachably connected, a series of supporting arms each having a crook at one end insertible through one of the openings in the side of the post, said crook being adapted to bear against the inner surface of the post to support the arm in a substantially horizontal position, and a cap removably fitted to the end of the post, the supporting arms being adapted to be detached from the post and stored within the same, substantially as described.

853,763. FRUIT SACK OR TRAY. CHARLES W. BREWSTER, Sierra Madre, Cal. Filed May 17, 1906. Serial No. 317,412.



Claim.—1. A fruit pickers' receptacle of curved form having an open top, and an end wall of movable character adapted to form a discharge extension in line with the receptacle.

2. A fruit pickers' receptacle of curved form, having an open top, and an end wall of hinged collapsible character adapted to be unfolded to form a spout extension in line with the receptacle.

3. A fruit pickers' receptacle of curved form to conform to one side and the back of the person, having an open top and an end wall of movable character, a front strap connecting the movable end wall with the opposite end of the receptacle and adapted to keep said movable wall closed, and a supporting shoulder strap.

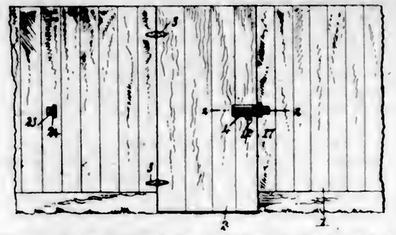
4. A fruit pickers' receptacle of curved form to conform to one side and the back of the person of the picker, having an open top and an end wall of hinged collapsible nature adapted to be converted into a spout extension, a front strap connecting the hinged end wall with the opposite end of the receptacle and adapted to keep said hinged wall closed, and a supporting shoulder strap connecting the two ends of the receptacle.

5. A fruit pickers' receptacle of curved form to conform to the person, having a light metal frame-work of skeleton form, a flexible receptacle hung from said frame work, angular bent hinged frame bars at the front provided with a flexible covering at the sides and bottom, and supporting means.

6. A fruit pickers' receptacle of curved form to conform to the person, having a discharge opening at one end, a spout formed of two angular hinged frames covered at the sides and bottom and adapted to close said opening when swung to one side, a shoulder strap connecting the two ends of the receptacle, and a strap connecting the spout frame at the front with the rear end of the receptacle.

7. A fruit pickers' receptacle of curved form to conform to the person, having a discharge opening at one end, a hinged spout adapted to close said opening when swung to one side, a shoulder strap connecting the two ends of the receptacle, and having a snap hook connection at one end, and a strap connecting said hinged spout with the opposite end of the receptacle and having a snap hook connection at one end.

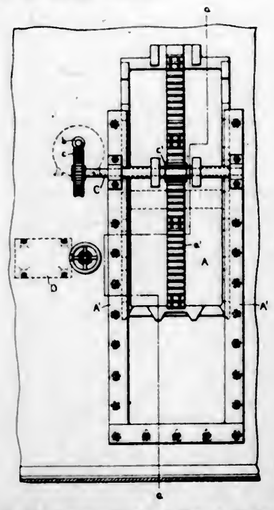
853,764. GATE OR DOOR LATCH. JOHN S. BROWN, Ohiowa, Nebr. Filed Oct. 27, 1906. Serial No. 340,848.



Claim.—1. In combination, a sliding bolt adapted to be attached to a gate or door, a keeper adapted to be attached to the jamb and having an inclined face, a second keeper attached to the fence or wall near the edge of said gate or door when swung open, and also having an inclined face, said inclined faces being adapted to engage the nose of said bolt to force the same inwardly to lock said gate in an open or closed position, the nose of said bolt being substantially square and unbeveled whereby it may co-operate with either of said keepers.

2. In combination, a gate having a slot formed therein, a latch body attached to said gate and comprising a case, a bolt mounted in said case and having a dog projecting through said slot to the opposite side of said case, said case having a slot therein, a second dog projecting through said slot, a pendant handle carried by said second dog, a keeper adapted to be attached to the jamb of the gate and having an inclined face adapted to force the same inwardly when the gate swings shut to engage the bolt and a second keeper adapted to be attached to the fence in which said gate is hung and having an inclined face engaging said bolt when said gate is in its extreme open position to force the same inwardly, said second keeper having an opening to retain said bolt.

853,765. OPERATING BULKHEAD-DOORS. ARTHUR A. BUCK, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 20, 1904. Serial No. 208,892.



Claim.—1. In combination, a device to be moved, an electric motor for operating said device, a controlling switch for said motor, electro-responsive means controllable from a distance and adapted to operate said switch,

elastic connections between said switch and said means, and manually operated means near said device for moving said switch independently of said electro-responsive means.

2. In combination, a device to be moved, a motor for operating said device, a controller for said motor, means for operating said controller from a distance, elastic connections between said controller and said operating means, and manually controlled means near said device adapted to move said controller independently of said operating means.

3. In combination, a device to be moved, an electric motor adapted to operate said device, a controlling switch for said motor, a solenoid having its core operatively connected to said switch and adapted when energized to move said switch to one of its running positions, and means for moving said switch to another position without disturbing the circuit of said solenoid or moving its core.

4. In combination, a device to be moved, an electric motor adapted to operate said device, a controlling switch for said motor, a solenoid adapted when energized to move said switch to one of its running positions, elastic connections between said switch and said solenoid, and means for manually straining said elastic connections so as to move said switch to another position without disturbing said solenoid.

5. In combination, a device to be moved, a motor for operating said device, a controller for said motor, means for operating said controller from a distance, elastic connections between said controller and said operating means, and means near said device for straining said elastic connections so as to move said controller without disturbing said operating means.

6. In combination, a system of doors, a motor for operating each door, a controller for each motor, a control system comprising a distant station and operating means for the several controllers controlled from the distant station, and an elastic connection between each controller and its operating means, whereby each controller may be moved by straining said elastic connection without moving the operating means.

7. In combination, a system of doors, an electric motor for operating each door, a controlling switch for each motor, a control system comprising electro-responsive operating means for the several controlling switches, control wires extending to a distant station and switches at said distant station, and an elastic connection between each controlling switch and its operating means, whereby each controlling switch may be moved by straining the said elastic connection without moving the operating means or disturbing the connections of the control system.

8. In combination with an electric motor, a manually-operated reversing switch for said motor, means for maintaining said switch normally in its off position, and means controllable from a distant point for moving said maintaining means into a position to bring the said switch into one of its operative positions.

9. In combination with an electric motor, a manually-operated reversing switch for said motor, means for maintaining said switch normally in its off position, an electromagnet for moving said maintaining means into a position to close said switch, and means located at a distant point for controlling the circuit of said electromagnet.

10. In combination with an electric motor, a manually-operated reversing switch for said motor, maintaining means constructed and arranged to maintain said switch normally in its off position but to permit a free movement of the said switch through its manually-operated means, means for moving said maintaining means into a position to close the switch, and means located at a distant point for controlling the operation of the latter means.

11. In combination, a reversible motor, a manually-operated controlling device for causing said motor to operate in either direction, means for maintaining said controlling device normally in its off position, the said means being constructed and arranged to oppose the free movement of the said controlling device when it is manually operated and to return the said controlling device to a certain definite position when the manually-operated means is released, and means controllable from a distant point for moving said maintaining means into a position to cause the said controlling device to assume one of its operative positions.

12. In combination, an electric motor, a reversing switch for said motor, an operating handle for said switch, a switch moving member adapted to be actuated from a distant point to move said switch from its off position to one of its operative positions, and yielding means normally maintaining said reversing switch in a fixed position with reference to said switch moving member.

13. In combination, an electric motor, a reversing switch for said motor, an operating handle for said switch, a switch moving member arranged to maintain said switch normally in its off position and adapted to be actuated from a distant point to move said switch from its off position into one of its operative positions, and yielding means normally maintaining said reversing switch in a fixed position with reference to said switch moving member.

14. In combination, a manually-operated switch having a plurality of operative positions, means for maintaining said switch normally in its off position, and means controllable from a distance and adapted to shift the position to which said switch is returned when manually released.

15. In combination, a manually-operated switch having a plurality of operative positions, means for maintaining said switch normally in its off position, and means controllable from a distance and acting upon said maintaining means to shift the position to which said switch is returned by said maintaining means when manually released.

16. In combination, a manually-operated switch having a plurality of operative positions, means for maintaining said switch normally in its off position, and means controllable from a distance and acting upon said maintaining means to shift said switch to an operative position.

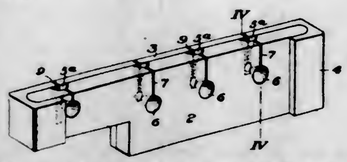
17. In combination, a manually-operated switch having a plurality of operative positions, means for maintaining said switch normally in its off position, an electromagnet acting upon said maintaining means to shift said switch to an operative position, and a switch at a distant station controlling the circuit of said electromagnet.

18. In combination, a switch, an operating handle therefor, yielding means for maintaining said switch normally in its off position, and a distant control system comprising means for shifting the point to which the switch tends to return when the operating handle is released.

19. In combination, a switch, an operating handle therefor, yielding means for maintaining said switch normally in its off position, and a distant control system comprising electrically-operated means for shifting the point to which the switch tends to return when the operating handle is released.

20. In combination, a switch, an operating handle therefor, yielding means for maintaining said switch normally in its off position, a distant control system comprising electromagnetically-actuated means for shifting the point to which the switch tends to return when the operating handle is released, and a switch at a distant point for controlling the circuit of said electromagnet.

853,766. NEEDLE-THREADING DEVICE. KARL B. BUERGER, Beaver, Pa. Filed May 4, 1906. Serial No. 315,166.



Claim.—1. A needle threader comprising a body provided in its top with a needle-receiving socket having a closed bottom within the body, a thread-receiving passage intersecting the front and back of the body and the socket above the bottom of the latter for alinement with the eye of a standard needle, and a thread escape slot longitudinally intersecting the socket, the top, front and back of the body and thread passage, substantially as described.

2. A needle threader comprising a body made up of front and back rigidly connected members having a needle-receiving socket formed between them and intersecting the top of the body, the bottom of the socket being closed within the body, a thread passage intersecting the front and back members and the socket above the bottom of the latter for alinement with the eye of a standard needle, and a thread escape slot longitudinally intersecting the socket, the front, back and top of the body and the thread passage, substantially as described.

3. A needle threader comprising a body having a supporting portion to rest upon the top of a sewing machine and provided with a portion capable of overhanging the presser foot of a sewing machine, the latter portion being provided with a needle-receiving socket having a closed bottom within the body, a thread passage intersecting the front and back of the body and the socket, and a thread-escape slot longitudinally intersecting the socket, the top, front and back of the body and the thread passage, substantially as described.

4. A needle threader comprising a body capable of resting at its base upon a sewing machine and provided in its top with a needle-receiving socket having a closed bottom within the body, that portion of the body beneath the socket being cut away to permit of the socketed portion overhanging the presser foot of a sewing machine, a thread passage intersecting the front and back of the body and the socket above its bottom, and a thread-escape slot longitudinally intersecting the socket, the top, front and rear of the body and the thread passage, substantially as described.

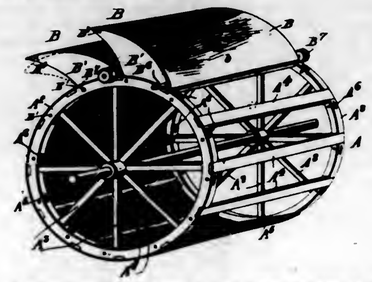
5. A needle threader comprising a body capable of resting at its base upon a sewing machine and provided in its top with a pair of needle-receiving sockets closed at their bottoms, each socket being pierced by a thread passage intersecting the front and back of the body, and a thread-escape slot longitudinally intersecting the socket, the top, front and rear of the body and the thread passage, the body being cut away beneath one of the sockets to permit of the latter overhanging a presser foot, the thread passage of the latter socket being disposed above the bottom of the socket for alinement with the eye of a sewing machine needle, and the thread passage of the other socket being disposed above the bottom of said socket for alinement with the eye of a hand-needle, substantially as described.

6. A needle-threading device having one end portion cut away at its under side to fit over the presser foot of a sewing machine, a needle-receiving passage therein above the cut-away portion, a thread-receiving passage intersecting the lower end portion of the needle-receiving seat, and a thread releasing slot extending outwardly from each thread-receiving passage; substantially as described.

7. A needle-threading device consisting of a back-member formed with lips at its ends, a front member having its end portions engaging and held by said lips, and a plurality of needle seats and thread passages formed in said members; substantially as described.

853,767. WHEEL. WILLIAM R. CALDWELL, Keyser, W. Va. Filed Feb. 20, 1907. Serial No. 358,362.

Claim.—1. A power wheel comprising a main frame, a body journaled thereto and made in the form of a drum, having end portions provided with rims having in their outer faces openings midway between the inner and outer sides of said rims, slats connecting the opposite end rims and flush at their outer faces with the peripheral surfaces of said rims, said body portion having a covering, buckets disposed around the drum and having end plates provided with curved inner edges coinciding with the curvature of the drum, a cross bar connecting the rear ends of said end plates, and provided with end extensions and rollers thereon, said end bars being arranged in the closed position of the buckets to overlie the slats of the drum, a covering for the buckets extending along the outer edges of the end plates thereof, hinge bars secured at their outer ends to the end plates of the buckets and projecting and pivoted at their inner ends within the openings in the end rims of the drum, rails for engagement by the rollers of the buckets, and means for supporting said rails from the main frame, substantially as set forth.



2. A power wheel consisting of a drum having a covering upon its peripheral surface, buckets consisting of end plates having curved inner edges coinciding with the curvature of the drum, means hinging the said end plates midway between their ends to the drum, a covering extending between the end plates at the outer edges thereof, a cross bar connecting the said end plates at their rear ends, rails extending along the wheel for a portion of its circumference, and means on the buckets for engagement with said rails, substantially as set forth.

3. A power wheel comprising a body or drum, having a covering for its peripheral surface, buckets having end plates provided with curved edges coinciding with the peripheral curvature of the drum, and a covering extending between the said end plates at the outer edges thereof, and means hinging the said buckets to the drum at a point midway between the ends of the end plates, substantially as set forth.

4. A power wheel comprising a drum having end rims, slats extending between the same, and a covering, and buckets having end plates hinged between their ends to the drum, cross bars connecting the opposite end plates of the buckets, and arranged in the closed position of the buckets to overlie the respective slats of the drum, and a covering for the buckets, substantially as set forth.

5. The combination in a power wheel, with the main frame, the body or drum journaled thereto, and the buckets having a hinged connection with the drum and provided with laterally extending portions for engagement with rails, of rails in position for engagement by said laterally extending portions of the buckets, bolts extending from the rails, laterally extending bolts having eyes receiving the rail bolts, nuts on the rail bolts and securing the same in connection with the lateral bolts, and means securing said lateral bolts in connection with the main frame, substantially as and for the purposes set forth.

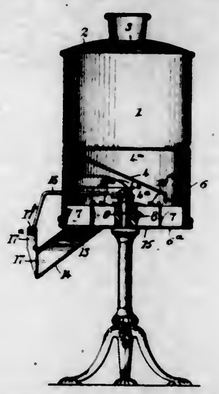
853,768. MEASURING DEVICE. OCTAVIO CAVIGLIA, Habana, Cuba. Filed July 30, 1906. Serial No. 328,335.

Claim.—1. The combination with a receiving chamber having an inclined bottom provided with a segmental opening at its outer portion, of an outlet chamber provided with a discharge opening spaced apart from the opening of the receiving chamber, and a rotary measure having a series of compartments adapted to register with the openings of the receiving and discharge chambers, substantially as shown and described.

2. The combination with a receiving chamber having an inclined bottom provided with a segmental opening at its outer portion and secured to a cylindrical band adapted to engage the end of the receiving chamber and to be detached therefrom, of an outlet chamber detachably secured to the receiving chamber and provided with a discharge opening spaced apart from the opening of the receiving chamber, and a rotary measure having a series of compartments

adapted to register with the openings of the receiving and discharge chambers, substantially as shown and described.

3. The combination with a receiving chamber having an inclined bottom provided with a segmental opening at its onter portion and secured to a cylindrical band detachably secured to the receiving chamber and cut away circumferentially on one side, of an outlet chamber provided with a discharge opening spaced apart from the opening of the receiving chamber, a rotary measure having a series of compartments adapted to register with the openings of the receiving and discharge chambers, and a series of ratchet teeth corresponding with said compartments and a reciprocating lever adapted to engage said teeth and rotate said measure in step-like manner, substantially as shown and described.

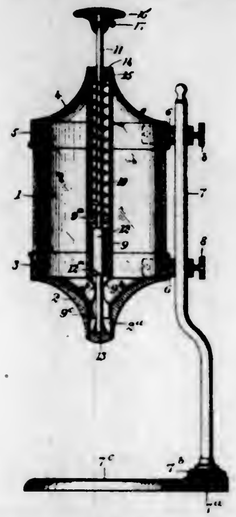


4. The combination with a receiving chamber and a measuring chamber, each provided with a discharge aperture, of a spout connected with the discharge aperture of the measuring chamber, a lid hinged to said spout, a reciprocating lever a rod connecting the end of said lever and lid of said spout, a rotary measure having a series of compartments adapted to register with the aperture of said measuring chamber, and means for imparting a rotary motion to said measure, substantially as shown and described.

5. The combination with a receiving chamber having an inclined bottom provided with a segmental opening at its outer portion and secured to a cylindrical band adapted to detachably engage the end of said receiving chamber and cut away circumferentially on one side, of an outlet chamber detachably secured to said receiving chamber and provided with a discharge opening spaced apart from the opening of the receiving chamber, a rotary measure having a series of compartments adapted to register with the openings of the receiving and discharge chambers, and a series of ratchet teeth corresponding with the compartments of said measure, a reciprocating lever adapted to engage said teeth progressively, a discharge spout secured to the outlet chamber, and a lid adapted to close said spout and connected with said lever, substantially as shown and described.

853,760. DISTRIBUTING DEVICE. OCTAVIO CAVIGLIA, Habana, Cuba. Filed Aug. 30, 1906. Serial No. 332,627.

Claim.—1. The combination with a receptacle having a bottom provided with a central aperture and curved vertically and horizontally, and a top detachably secured to the body of said receptacle, of a tube having an open end secured to the bottom of the receptacle and provided with lateral apertures and an interior shoulder, a reciprocating rod having a bearing on said shoulder and provided on its end with a head adapted to close the aperture of said bottom, a plunger secured to said rod on one side of said shoulder, and a spring secured to said rod on the opposite side of said shoulder, substantially as shown and described.



2. The combination with a receptacle having a bottom curved or inclined vertically toward its center, and provided with a central hub and an aperture extending through said hub, of a tube having an open end secured to the hub of said bottom and provided with lateral apertures convergent at their lower edge with the bottom of said receptacle, and an interior shoulder, a reciprocating rod having a bearing on said shoulder and provided with a head adapted to close the aperture in the bottom of said receptacle, a plunger secured to said rod on one side of said shoulder, and a spring secured to said rod on the opposite side of said shoulder, substantially as shown and described.

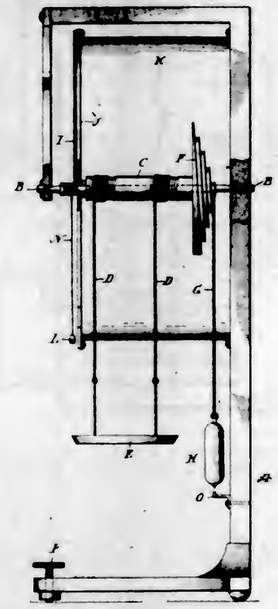
853,770. WEIGHING-SCALE. AUGUST CHRONIK, New York, N. Y. Filed Oct. 18, 1906. Serial No. 339,486.

Claim.—1. A weighing scale comprising a drum, a flexible pan suspension adapted to wind up and unwind on the said drum, a spiral pulley turning with the said drum, a rope carrying a weight and winding up and unwinding on the said spiral pulley, a pointer turning with the said drum, a dial on which indicates the said pointer and means for indicating the number of turns made by the said pointer.

2. A weighing scale comprising a drum, a flexible pan suspension adapted to wind up and unwind on the said drum, a spiral pulley turning with the said drum, a rope carrying a weight and winding up and unwinding on the said spiral pulley, a pointer turning with the said drum, a dial on which indicates the said pointer, and means for indicating the number of turns made by the said pointer.

3. A weighing scale comprising a drum, a flexible pan suspension adapted to wind up and unwind on the said drum, a spiral pulley turning with the said drum, a rope carrying a weight and winding up and unwinding on the said spiral pulley, a pointer turning with the said drum, a dial on which indicates the said pointer, the said dial having a plurality of annular graduations, an auxiliary pointer indicating on the said annular graduations, and a rope carrying the said auxiliary pointer and winding and unwinding on the said drum.

4. A weighing scale comprising a stand provided with centers, a drum hung on the said centers, a weighing pan and a flexible suspension for the same and winding up and unwinding on the said drum, a spiral pulley attached to the said drum, a rope winding up and unwinding on the said drum, a weight carried by the said rope, a pointer attached to the said drum, and a dial on which indicates the said pointer and means for indicating the number of turns made by the said pointer.



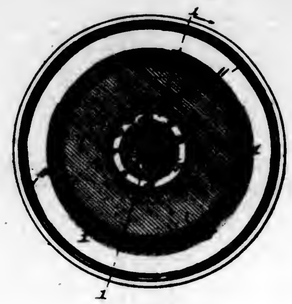
5. A weighing scale comprising a stand provided with centers, a drum hung on the said centers, a weighing pan, and a flexible suspension for the same and winding up and unwinding on the said drum, a spiral pulley attached to the said drum, a rope winding up and unwinding on the said pulley, a weight carried by the said rope, a pointer attached to the said drum, a dial on which indicates the said pointer, the said dial having a plurality of annular graduations, a rope winding up and unwinding on the said drum and an indicator on the rope, the indicator indicating on the said graduations.

6. A weighing scale comprising a stand provided with centers, a drum hung on the said centers, a weighing pan and a flexible suspension for the same and winding up and unwinding on the said drum, a spiral pulley attached to the said drum, a rope winding up and unwinding on the said pulley, a weight carried by the said rope, a pointer attached to the said drum, a dial on which indicates the said pointer, means for leveling the said stand, and an arm on the frame operating in conjunction with the said weight to indicate the level position of the scale.

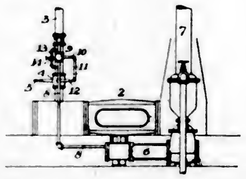
855,771. LUBRICATOR FOR TROLLEY-WHEELS. JAMES F. COTTRELL, Rochester, N. Y. Filed Dec. 20, 1905. Serial No. 292,646.

Claim.—The herein described trolley wheel provided with an integral hollow hub having openings at opposite ends thereof, a cylindrical bushing inserted endwise through and fitted tightly within said hub to close the opposite ends thereof and form an oil chamber within the hub, said bushing having interior segmental pockets filled with graphite to bear against the shaft, there being a stop wall extending entirely across the oil chamber and formed integral with the hub, said wall extending lengthwise of the hub and forming an imperforate interrupting closure wall for said oil chamber, and said wall bearing against the bushing, and the latter being provided with oil ports located one at each side of and adjacent to said stop wall.

853,771.



853,772. STEAM-ENGINE CONDENSER SYSTEM. FRED H. DANIELS, Worcester, Mass. Filed Apr. 27, 1906. Serial No. 313,971.



Claim.—1. A steam engine having a condenser engine, and means for governing the speed of the condenser engine in proportion to the speed of the engine, substantially as described.

2. A steam engine having a condenser engine, and means for governing the supply of live steam to the condenser engine in proportion to the supply of live steam to the main engine, substantially as described.

3. A steam engine having a condenser engine, and means for governing the speed of the condenser engine by and in proportion to the speed of the engine, substantially as described.

4. A steam engine having a condenser engine, steam supply pipes for the main engine and the condenser engine, and means common to the two steam pipes for simultaneously and proportionately controlling the supply of live steam to the main engine and the condenser engine, substantially as described.

5. The combination of a steam engine, a condenser therefor, a supply-pump for the condenser, and means for automatically controlling the speed of the pump simultaneously with that of the engine; substantially as described.

6. The combination of a steam engine, a condenser therefor, a pump for supplying the condenser, an engine for operating the pump, valves for controlling the supply of live steam to the engines, and means for synchronizing the operations of said valves; substantially as described.

7. The combination of a steam engine, a condenser, a pump for supplying the condenser, and connected valve mechanism for simultaneously controlling the live steam supply of the engine and pump; substantially as described.

8. In a steam engine, a main throttle or governing valve for controlling the steam supply thereto, a steam pump for operating the engine condenser, a valve for controlling the supply of steam to said pump, and means for simultaneously operating the said valves; substantially as described.

9. A steam engine having a main throttle valve, a condenser for the engine, a steam pump for supplying water to the condenser, a controlling valve for the steam supply of said pump, means for operating said valves in unison,

and means for regulating the steam supply to the pump independently of the said valves; substantially as described.

10. A steam engine having a main throttle valve, a condenser for the engine, a steam pump for supplying the condenser, a main valve for controlling the steam supply to the pump, means for operating said valves in unison, and a valved by-pass around the last named valve and affording independent means for controlling the steam supply of the pump; substantially as described.

853,773. RAILWAY-TIE. CLINTON C. DANIELS, Grants Pass, Oreg. Filed Dec. 12, 1906. Serial No. 347,408.



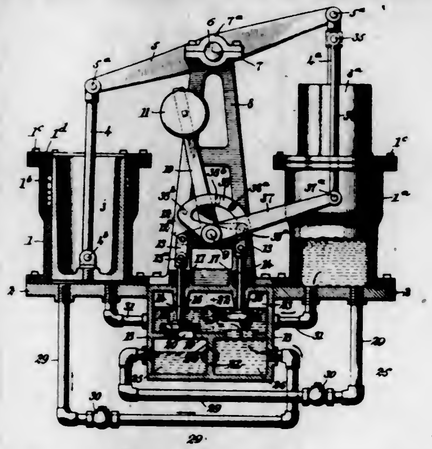
Claim.—1. A metal railway tie having openings near its ends for receiving rails, a king bolt at the center of the tie, bars extending from said king bolt, through the tie and engaging at their ends with the under sides of the rail, and jaw members on said bars for engaging with the inner flanges of the rails.

2. A metal railway tie transversely arched and having openings near its ends, cross plates secured to the tie underneath said openings, a king bolt at the center of the tie, bars extended from said king bolt through the tie and engaging at their ends with the under sides of said cross plates, and jaw members on said bars for engaging with the inner flanges of the rails.

3. A railway tie consisting of metal and transversely arched, the said tie having openings near its ends, cross plates attached to the tie underneath said openings, a king bolt at the center of the tie, a plate secured to the under side of the tie upon which said king bolt may engage, bars extended from the king bolt through the tie and engaging at their ends with the under sides of said cross plates, and jaw members on said bars for engaging with the inner flanges of the rails.

853,774. HYDRAULIC MOTOR. GEORGE W. DAVIES, New York, N. Y., assignor of one-half to Frank Assenbeck, New York, N. Y. Filed Sept. 20, 1906. Serial No. 335,404.

Claim.—1. The combination with twin cylinders provided on one end with inlet and outlet ports, of a water tank provided with a receiving chamber, and feed chambers communicating therewith by means of valve ports, a discharge chamber provided with valve ports having outlet chambers connected therewith, pipe connections between the feed chambers and the inlet ports of the cylinders, pipe connection between the outlet chambers and the outlet ports of the cylinders, rock arms mounted upon a shaft and connected with a weighted lever, valves pivoted to said arms and adapted to open and close the ports of the feed and outlet chambers, and means for operating said valves and lever, substantially as shown and described.



2. The combination with twin cylinders provided on one end with inlet and outlet ports, of a water tank provided with a receiving chamber, and feed chambers provided with valve ports connected therewith, a discharge chamber having outlet chambers connected therewith by means of valve ports, pipe connections between the feed chambers and the inlet ports of the cylinders, pipe connections between the outlet chambers and the outlet ports of the cylinders, rock arms mounted upon a shaft having a weighted lever connected therewith, valves pivoted to said rock arms and adapted to open and close said ports, pistons movable lengthwise of said cylinders, a rocking beam connected with said pistons, and mechanism connected with said pistons and shaft, adapted to operate said valves, substantially as shown and described.

3. The combination with two cylinders provided on one end with inlet and outlet ports, of a receiving chamber and feed chambers connected therewith, a discharge chamber having outlet chambers connected therewith, pipe connections between the feed chambers and the inlet ports of the cylinders, pipe connections between the outlet chambers and the outlet ports of the cylinders, a rock shaft, valves connected with said rock shaft and adapted to open and close the valve ports between the receiving chamber and feed chambers, and a discharge chamber and outlet chambers respectively, pistons movable lengthwise of said cylinders, a rocking beam connected with said pistons, and mechanism connected with said rocking shaft adapted to operate said valve at the end of the stroke of said pistons, substantially as shown and described.

4. The combination with two cylinders provided on one end with inlet and outlet ports, of a receiving chamber and feed chambers connected therewith by means of valve ports, a discharge chamber having outlet chambers connected therewith by means of valve ports, pipe connections between the feed chambers and the inlet ports of the cylinders, pipe connections between the outlet chambers and outlet ports of the cylinders, a rock shaft having a weighted lever mounted thereon, valves connected with said rock shaft adapted to control said valve ports, pistons movable lengthwise of said cylinders and connected together, and an arm freely mounted on said rock shaft connected with one of said pistons and adapted to operate said valves at the ends of the piston strokes, substantially as shown and described.

5. The combination with a rocking beam, of pistons connected to said beam, cylinders adapted to receive said pistons and provided with inlet and outlet ports, a receptacle having independent feed chambers communicating with said inlet ports and provided with valve ports, and independent outlet chambers communicating with said outlet ports and provided with valve ports, valves controlling said valve ports, and mechanism connected with said pistons adapted to operate said valves at the end of each piston stroke, and to permit said valves to remain at rest between said interval, substantially as shown and described.

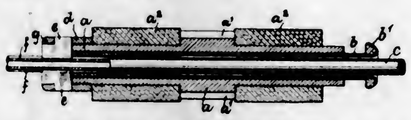
6. The combination with a rocking beam, of pistons pivotally mounted thereon, cylinders adapted to receive said pistons and provided with independent inlet and outlet ports, a rock shaft, valves connected with said rock shaft, a weighted lever fixedly secured to said shaft, a trip lever loosely mounted on said shaft and connected with said pistons, and means freely mounted on said shaft adapted to connect said levers, substantially as shown and described.

853,775. BOTTLE-CLOSURE. FRANK DINGMAN, Berwyn, Md. Filed Sept. 22, 1906. Serial No. 335,787.



Claim.—A bottle closure formed from a single blank of bendable material having a series of radial incisions producing lips or flanges designed to be bent into engagement with a bead formed at the mouth of the bottle, said closure being made in the form of a cap and the flanges being curved inwardly at an intermediate point to produce an engaging portion of restricted diameter to be snapped under pressure over the bead, the incisions being of substantially V-shape to allow for displacement of the material in the formation of the cap.

853,776 BOTTLE-WASHING MACHINERY. EDWARD T. DIXON, Southampton, England. Filed May 25, 1906. Serial No. 318,766.



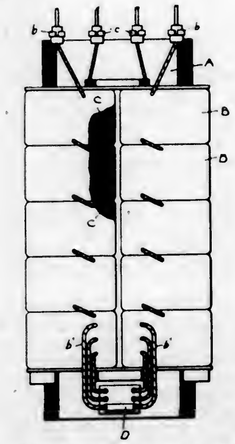
Claim.—For use in bottle washing machines of the type described, a contrivance for transmitting a rotary motion to a brush, while permitting it to undergo longitudinal movement, comprising a brush-spindle having an elongated key-way formed therein, a power driven shaft, within which the brush-spindle is adapted to slide and fit one end thereof, and a feather-key secured to one end of the hollow shaft, a sleeve adapted to slide and turn freely relatively to the brush-spindle and house the bristles of the brush when the latter is withdrawn from the bottle, the hollow shaft having an annular space therein extending from one end throughout the greater part of its length which space is adapted to receive the bristle housing sleeve and permit its free rotation and longitudinal movement therein said sleeve having one end extending beyond the hollow shaft.

853,777. RAILWAY SIGNAL-FUSE. FRANK DUTCHER, Versailles, Pa., assignor to American Fog Signal Company, Pittsburg, Pa. Filed June 17, 1905. Serial No. 265,798.

Claim.—An improved cover for fuses comprising a tubular member, a plug closing one end thereof and having its outer end provided with a complementary igniting material and with a lateral shoulder, and a quick removable cup-shaped metal cap having downwardly-projecting members loosely and frictionally engaging the said shoulder, whereby it can be removed with the fingers by an endwise pull thereon, substantially as described.



853,778. TRANSFORMER. JOHN J. FRANK, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 10, 1906. Serial No. 333,915.



Claim.—1. A transformer having a winding provided with regulating leads near its center, whereby a central portion of the winding may be cut out of circuit.

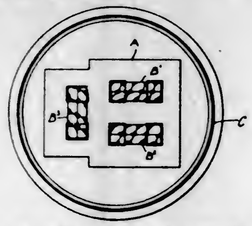
2. A transformer winding provided with means for cutting out of circuit a portion of the turns near the center of the winding.

3. A transformer having a winding comprising a plurality of independent coils connected in series, the central coil or coils being provided with regulating leads whereby a portion of said central coils may be cut out of circuit.

4. In a transformer, a rectangular core, two sets of coils on opposite sides of said core, each set comprising a plurality of coils arranged side by side and connected in

series and the end coil of one set being connected to the end coil of the other set to place the two sets in series, and regulating leads connected to intermediate points on the end coils which are connected to each other.

853,779. THREE-PHASE TRANSFORMER. JOHN J. FRANK, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 19, 1906. Serial No. 335,213.



Claim.—1. A three-phase transformer of the "shell" type comprising a magnetic core, and three windings arranged in apertures in said core, one winding having its axis perpendicular to the line joining the centers of the other two windings.

2. A three-phase transformer of the "shell" type comprising a magnetic core, three windings arranged in apertures in said core, one winding having its axis perpendicular to the line joining the centers of the other windings, and a casing of circular cross-section adapted to contain said core.

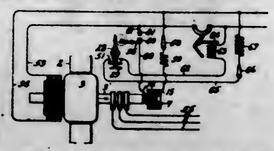
3. A three-phase transformer of the "shell" type comprising a magnetic core, and three windings arranged in apertures in said core, two of said windings being axially-alined and the third having its axis perpendicular to the axis of the other two.

4. A three-phase transformer of the "shell" type comprising a magnetic core, three windings arranged in apertures in said core, two of said windings being axially-alined and the third having its axis perpendicular to the axis of the other two, and a casing of circular cross-section adapted to contain said core.

5. A three-phase transformer of the "shell" type comprising a magnetic core, and three windings arranged in apertures in said core, one winding having its axis perpendicular to the line joining the centers of the other two windings and midway between them.

6. A three-phase transformer of the "shell" type comprising a magnetic core, and three windings arranged in apertures in said core, two of said windings being axially-alined and the third having its axis perpendicular to the axis of the other two and midway between the other two windings.

853,780. SWITCH-CONTROLLING MECHANISM. HENRY GEISENHÖNER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Feb. 27, 1906. Serial No. 303,310.



Claim.—1. In a dynamo electric machine, a rotating member, a switch, and means operated by the windage of said member for operating said switch.

2. In a dynamo electric machine, a rotating member, a fan operated by the windage of said rotating member, and means for securing the fan in different positions in proximity to said movable member.

3. In a dynamo electric machine, a field ring having internally projecting poles, an armature turning within said poles, a fan secured to the field ring by means permitting its adjustment toward and away from the armature.

4. In a dynamo electric machine, a field ring having internally projecting polar portions, an armature rotating within said polar portions, a fan, and means for adjusting the fan to vary the motion given to it by the windage of the armature.

5. In combination, a moving member, a switch, and means operated by the windage of said member for operating said switch.

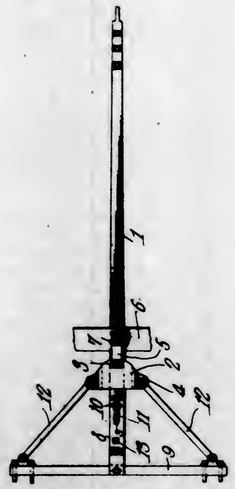
6. In combination, a dynamo electric machine, an end play device therefor, conductors for connecting said machine in circuit, and means operated by the windage of the machine for causing energy to be supplied to said device from said conductors.

7. In combination, a dynamo electric machine comprising an external field ring with internally projecting poles, an armature rotating in proximity to said poles, a device for giving end play to the armature shaft, a fan secured in proximity to the armature and operated by the windage of the latter, a pair of switch contact members controlling the energization of the end play device, and means operated by the fan for periodically causing said contact members to engage and disengage.

8. In combination, a dynamo electric machine comprising a rotating shaft member, a fan operated by the windage of the shaft member, a switch controlling the energization of an end-play device, and means operated by the fan for periodically operating said switch.

9. In a dynamo electric machine, a rotating member, a device actuated by the windage thereof, and a speed limiting switch, and an end-play mechanism operated by said device.

853,781. VEHICLE-TONGUE. GEORGE I. HAISE, Birmingham, Ohio. Filed Mar. 14, 1907. Serial No. 362,379.



Claim.—1. In combination with a wheel supported axle a tongue, a cuff pivotally mounted thereon, links connecting opposite sides of the cuff with end portions of the axle, a link attached to the tongue behind the cuff and being pivotally connected with the middle of the axle.

2. In combination with a wheel supported axle a tongue, a cuff pivotally mounted thereon, links connecting the opposite sides of the cuff with the opposite end portions of the axle, a link pivoted to the middle of the axle and a bolt passing through said link and through an elongated opening provided in the tongue.

3. In combination with a wheel supported axle a tongue, a cuff pivotally mounted upon the tongue, links connecting the opposite sides of said cuff with the opposite end portions of the axle, links pivoted to the middle of the axle and bolts fixing the forward portions of said links with relation to the tongue.

853,782. ORE-SEPARATOR. LON D. HALL and SAMUEL P. HALL, Prescott, Ariz. Filed Aug. 20, 1904. Serial No. 221,537.



Claim.—An ore separator comprising a main frame, an endless movable apron mounted in the frame and composed of reticulated material, the relatively lower portion of the apron traveling in a plane below the upper edge of the frame, a receptacle frame supported at one side of the main frame and disposed between the upper and lower portions of the apron, a receptacle supported by said frame and arranged transversely of the path of travel of and between the upper and lower portions of the apron, a discharge pipe leading from the receptacle and supported in one side of the main frame, a second receptacle supported from and lying wholly beneath the main frame, said receptacle extending in the plane parallel to the path of travel of the apron and projecting at the ends beyond the operative plane of the apron, a discharge pipe communicating with the second receptacle, and a spraying device overlying the lower portion of the apron and extending transversely thereof in parallel relation to the first mentioned receptacle.

853,783. WINDOW-CLEANER. MARTIN S. HEABLER, McComb, Ohio. Filed Aug. 22, 1906. Serial No. 331,655.



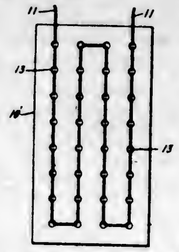
Claim.—The herein described window cleaner made from a single sheet metal blank and comprising integral radially extending flanges, each composed of a double thickness of the material of which the cleaner is formed, a strip of porous material secured between two of said flanges by means of clamping bolts, and a strip of flexible material secured between the other pair of flanges by means of burs formed in one of the flanges, and a tapering tube secured diametrically in the cylindrical body of the cleaner for the reception of the handle.

853,784. RESISTANCE UNIT. HARRY E. HEATH, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Sept. 22, 1906. Serial No. 335,696.

Claim.—1. A resistance unit comprising a sheet of insulating material having a resistance conductor mounted thereon and secured at intervals by projecting loops into the sheet.

2. A resistance unit comprising a sheet of insulating material and a resistance conductor mounted thereon and secured to the sheet by projecting loops therethrough at intervals.

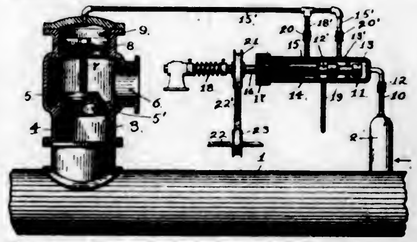
3. A resistance unit comprising a sheet of insulating material and a resistance conductor mounted thereon and having loops projecting through the sheet, and means for securing the loops in place.



4. A resistance unit comprising a sheet of insulating material having a resistance conductor mounted thereon and secured thereto by projecting loops through the sheet and bending them back onto the same.

5. A resistance unit comprising a sheet of insulating material having a resistance conductor mounted thereon and secured thereto by projecting loops through the sheet and bending the conductor to prevent its return.

853,785. SAFETY MEANS FOR FLUID-PRESSURE LINES. GEORGE J. HENRY, Jr., San Francisco, Cal. Filed Aug. 29, 1905. Serial No. 276,252.



Claim.—1. The combination with a main line supply pipe or conduit, of a relief valve casing connected therewith, a pressure actuated relief valve held therein, an overflow outlet controlled by said valve, a settling reservoir or chamber connected with the main line pipe or conduit, of connections between said reservoir and the relief valve casing for establishing a pipe line pressure to hold the relief valve seated against normal pressure, and a pilot valve interposed within said connections, which valve is actuated in accordance with pressure variations in the pipe line or conduit to control the movement of the relief valve.

2. The combination with a main line pipe or conduit, for water, of a relief valve associated therewith for controlling a water discharge when the pressure within the said line pipe or conduit rises above normal, of a pilot valve, a settling chamber or reservoir, of connection between the reservoir and the pilot valve, and connection between said valve and the relief valve, said pilot valve being actuated by a variance in the pressure exerted in the line pipe or conduit.

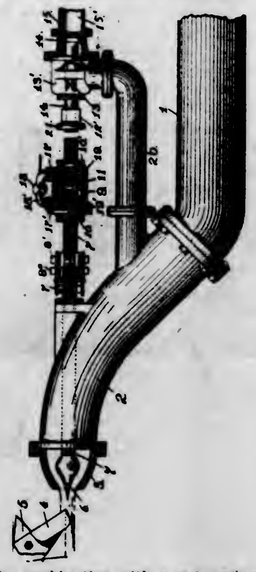
3. The combination with a main line pipe or conduit, of a relief valve connected therewith to open upon a pressure above normal in the pipe line or conduit to permit of an outlet of water, of connection between the said pipe line or conduit to hold the relief valve firmly seated against normal pressure of the water flowing through the pipe line or conduit, and of a rotatable pilot valve interposed within said connection for regulating the pressure of the relief valve in accordance with varying pressures in the main line or pipe line or conduit.

4. The combination with a main line pipe or conduit, of a relief valve connected therewith to open upon a pressure above normal in the pipe line or conduit to permit of an

outlet of water, of connection between the said pipe line or conduit to hold the relief valve firmly seated against normal pressure of the water flowing through the pipe line or conduit, of a pilot valve interposed within said connection for regulating the pressure of the relief valve in accordance with varying pressures in the main line or pipe line or conduit, and means for imparting rotation to the pilot valve.

5. The combination with a main line pipe or conduit, of a relief valve connected therewith to open on the pressure in the pipe line or conduit rising above normal, of connection between the said pipe line or conduit and relief valve to hold the relief valve firmly seated against the normal pressure of the fluid flowing therethrough, and means interposed within said connection for relieving the relief valve of a closing pressure, when the pressure in the pipe line or conduit rises above normal and maintaining the closing pressure for the relief valve released until the pressure in the pipe line or conduit falls to normal.

853,786. REGULATING MEANS FOR HYDRAULIC NOZZLES. GEORGE J. HENAY, Jr., San Francisco, Cal. Filed Aug. 29, 1905. Serial No. 276,253.

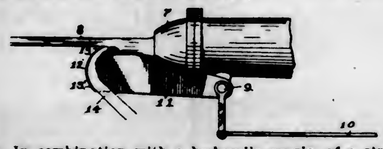


Claim.—The combination with a water wheel, of a fixed nozzle for directing an impact stream thereon, a needle valve for controlling the outlet area thereof, a stem extending therefrom outside of the nozzle, an overflow outlet for a portion of the water flowing toward the nozzle when its outlet area is reduced, of connection between said outlet and the fixed nozzle, a dash pot cylinder slidable on the stem of the needle valve, a piston head on said stem within the cylinder, communication between each end of the cylinder for the flow of fluid toward and from the respective ends, means for moving the stem of the needle valve a valve for the overflow outlet, connection between the cylinder and valve for opening the valve of the overflow outlet with the closing of the needle valve, and independent means for closing the said valve of the overflow outlet.

853,787. STREAM-DEFLECTOR. GEORGE J. HENAY, Jr., San Francisco, Cal. Filed Aug. 29, 1905. Serial No. 276,256.

Claim.—1. As a new article of manufacture, a stream deflector for hydraulic nozzles, the same having a discharge surface for the water shaped to neutralise the pressure of the discharged water.

2. The combination with a hydraulic nozzle, of a stream deflector mounted to swing in advance of the nozzle, of mechanism for actuating the deflector, and said deflector having a discharge surface shaped to counterbalance the forces that exist to force the deflector in the direction of its movement into the nozzle stream.



3. In combination with a hydraulic nozzle, of a stream deflector mounted to swing in advance of said nozzle, the same having a receiving and discharge portion arranged substantially in opposition to one another.

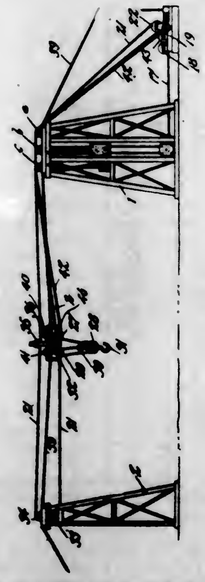
4. The combination with a hydraulic nozzle, of a stream deflector mounted to swing in advance of the nozzle, the same having a receiving and discharge surface both of which surfaces extend rearwardly relative to said nozzle.

5. A deflector attachment for hydraulic nozzles having a receiving portion, and a discharge portion, the discharge portion being arranged in opposition to the receiving portion.

6. The combination with a hydraulic nozzle of a cut-off or deflector connected to the nozzle and arranged to deflect a portion of the stream issuing from the nozzle, and a counteracting discharge portion on said deflector.

7. The combination with a nozzle of a plate for deflecting a portion of the stream issuing therefrom, said plate having a receiving surface and a balancing surface constructed and arranged so that the pressure of the water on the latter tends to neutralize the pressure on the former.

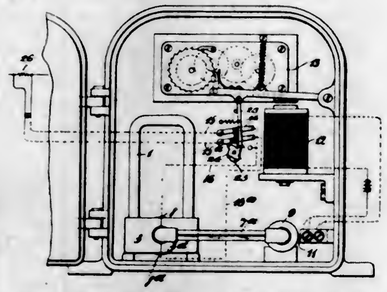
853,788. AERIAL RAILWAY. WILLIAM J. HOGAN, Wilmington, Del., assignor of one-half to Hamilton Stewart, Wilmington, Del. Filed Nov. 10,. 1906. Serial No. 342,862.



Claim.—1. In a cable system aerial railway, a head tower, a tail tower, a main cable passing over said towers, a carriage mounted to travel on said cable, a fall block suspended from said carriage, a pulley journaled on the head tower, a double pulley block suspended from said pulley, a weight connected to said double block, a bracket at the base of said head tower, a pulley mounted in said bracket, and a. cable, secured to said bracket passing around the pulley on the double block and around the pulley in the bracket, and the end of said cable being connected to a drum, substantially as described.

2. In a cable system aerial railway, and in combination with head and tail towers, a carriage, a fall block suspended from said carriage, a double pulley block suspended within the head tower, a cable connected to said block, passing around pulleys on said head tower, and provided with a weight at its free end, a stationary pulley, a cable connected to the block of said pulley and passing around a pulley in the double block and around the stationary pulley, said cable being connected to a drum operated by the engine.

853,789. MERCURY-METER. FRANK HOLDEN, London, England, assignor to General Electric Company, a Corporation of New York. Filed Jan. 24, 1906. Serial No. 297,600.



Claim.—1. A mercury meter comprising a motor responsive to current, a circulating liquid, means for periodically reversing the flow of said liquid, and a register operated thereby.

2. A mercury meter comprising a motor varying in power with the applied current, a circulating stream of liquid delivered from and received by the motor, and a closed channel for the liquid comprising a capillary tube dimensioned to offer a retardation to the flow of the liquid proportional to the rate of flow.

3. An electric meter comprising a stream of liquid, an electric pump varying in power according to the load current, and a capillary tube through which the stream must pass dimensioned to offer a retardation to the flow of the liquid proportional to the rate of flow.

4. A mercury meter comprising a mercury chamber inclosed by a magnetic field, current leads from the consumption circuit to said chamber, a duct leading to and from the chamber comprising a capillary tube dimensioned to offer a retardation to the flow of the liquid proportional to the rate of flow, and an integrating recorder measuring the mercury flow.

5. A mercury meter comprising a magnetic field, a narrow mercury chamber within said field, current leads from the consumption circuit to said chamber, and a closed channel for leading the mercury to and from said chamber comprising a capillary tube dimensioned to offer a retardation to the flow of the liquid proportional to the rate of flow.

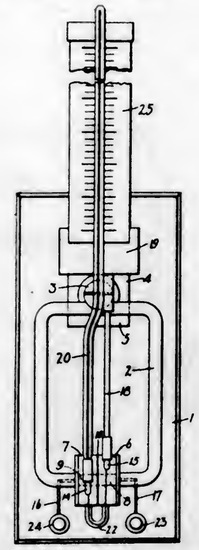
6. An electric meter comprising a chamber for a conducting liquid inclosed in a magnetic field, current leads to and from the liquid, a circulating system for delivering liquid to and from the chamber free from hydrostatic head, said system having a capillary tube at some point through which the stream must pass dimensioned to offer a retardation to the flow of the liquid proportional to the rate of flow, and a register for the amount of liquid passing in a definite time.

7. An electric meter comprising blocks of insulating material, a layer of incompressible insulating material between said blocks having a channel formed therein, a magnet having its poles extending into said blocks close to said channel, current-leads extending to said channel through said blocks, and a closed liquid duct having its ends opening into said channel.

8. An electric meter comprising blocks of insulating material, a layer of incompressible insulating material between said blocks having a channel formed therein, a magnet having its poles extending into said blocks close to said channel, current-leads extending to said channel through said blocks, and a closed duct having its ends opening into said channel and comprising a capillary tube dimensioned to offer a retardation to a liquid flow proportional to the rate of flow.

9. A mercury meter comprising a narrow mercury chamber inclosed by a magnetic field, current leads to and from the mercury, a duct for leading the mercury to and from the chamber, a register, and a reversing switch actuated by reversal of mercury flow operating said register.

853,790. ELECTRIC MEASURING INSTRUMENT. FRANK HOLDEN, London, England, assignor to General Electric Company, a Corporation of New York. Filed Dec. 14, 1906. Serial No. 347,829.



Claim.—1. An electrical measuring instrument comprising means for producing a magnetic field, a chamber containing a liquid located in said field, a supply tube and a gage tube connected to said chamber, conductors entering said chamber, and a by-pass around said chamber for permitting circulation of said liquid.

2. An electrical measuring instrument comprising means for producing a magnetic field, a chamber containing a conducting liquid located in said field, a supply tube connected to one side of said chamber and a gage tube connected to the opposite side, conductors entering said chamber and arranged so that a current passing from one to the other through the liquid will traverse the magnetic field, and a by-pass around said chamber for permitting circulation of said liquid.

3. An electrical measuring instrument comprising means for producing a magnetic field, a chamber containing a liquid located in said field, a reservoir, a tube connecting the reservoir and chamber, a gage tube rising from said

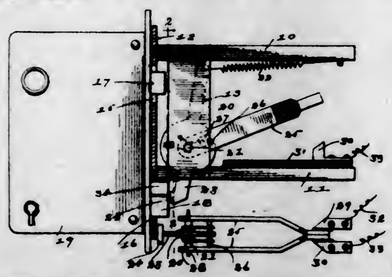
chamber, conductors entering said chamber, and a by-pass around said chamber for permitting circulation of said liquid.

4. An electrical measuring instrument comprising means for producing a magnetic field, a narrow chamber containing mercury located in said field, a reservoir, a tube connecting the reservoir and chamber, a gage tube rising from said chamber, conductors entering said chamber, and a by-pass of small bore around said chamber for permitting circulation of said mercury.

5. An electrical measuring instrument comprising means for producing a magnetic field, a chamber containing mercury located in said field, a reservoir, a tube connecting the bottom of said reservoir and the chamber, a gage tube rising from said chamber and connected to the top of the reservoir, conductors entering said chamber, and a by-pass around said chamber for permitting circulation of said liquid.

6. An electrical measuring instrument comprising blocks of insulating material, a sheet of non-conducting material having a channel therein located between said blocks, a magnet having its poles extending through said blocks close to said channel, conductors extending to said channel, a supply tube connected to one side of said channel, a gage tube connected to the other side of said channel, and a by-pass around said channel for permitting circulation of the mercury contained in the instrument.

853,791. DOOR-LOCK ELECTRIC SWITCH. WILLIAM E. HUGHES, Seattle, Wash. Filed July 17, 1906. Serial No. 326,576.



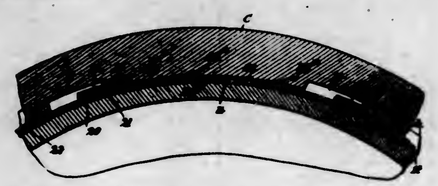
Claim.—1. In an electric switch, a frame, spaced contacts mounted within the frame, a switch pivoted upon the frame and adapted to engage the contacts, a switch operating lever journaled upon the frame, and extending downwardly without the frame, and a resilient member within the frame adapted to automatically close the switch when the lever is released.

2. In an electric switch, a frame adapted for association with a door lock and provided with an opening adapted to receive a bolt of the lock, contacts mounted upon the frame, a switch pivoted upon the frame and arranged to make connection between the contacts, a switch operating lever journaled upon the frame and provided with a notch and having an arm extending over a portion of the bolt receiving opening, a pin rigidly engaging the switch and positioned within the notch of the operating lever, and a spring connected with the operating lever and the pin, and whereby the operating lever is capable of a limited movement independent of the switch and to throw the switch suddenly under tension of the spring.

3. The combination with a strike plate having a bolt opening, of a lever fulcrumed intermediate its ends, and with one end extending across the bolt opening and the other connected with a retracting spring, and a switch blade actuated by the lever.

853,792. VEHICLE-TIRE. GEORGE E. HUCULEY, Atlanta, Ga. Filed June 19, 1906. Serial No. 322,375.

Claim.—1. In vehicle tires, an outer tube having an exterior annular channel at its tread portion, transversely extending keepers secured in said channel at a distance from its bottom wall, a supplemental tread section adapted to cover and to enter the said channel, and latches located at the inner face of the said tread section and arranged to pass between the said keepers and the bottom wall of the said channel.



2. In a vehicle tire, an outer tube section provided with a peripheral annular channel at its tread, keeper plates extending from side to side of said channel and secured to the said tube, the keeper plates being spaced from the bottom wall of the channel, a supplemental tread section which covers the said channel and extends therein, said supplemental tread section being provided with a series of recesses in its inner face, the distance between the recesses corresponding substantially to the distance between the keeper plates in said channel, a latch located at an end side wall of each recess, which latches are secured to the supplemental tread section, said latches being adapted to pass beneath the keeper plates, and a protective strip located upon the bottom wall of the said tread channel on the outer tube, against which protective strip the said latches have bearing.

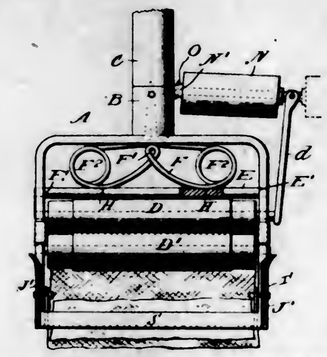
3. In a vehicle tire, an outer tube provided with a peripheral annular channel at its tread, wires vulcanized in the side walls of said channel, keeper plates secured to the wires and extending from one wall to the other, crossing the said channel, a supplemental tread section extending into said channel and beyond the outer face of the said outer tube, protective plates engaging with the inner face of the supplemental tread section, which plates have an end secured in the said supplemental tread section, and latches located at the inner side portions of the said supplemental tread section, to pass beneath the keeper plates in the channel of the outer tube.

4. In a vehicle tire, an outer tube provided in its tread with an annular channel and having keepers extending transversely of the channel and spaced from the bottom thereof, and a supplemental tread section extending into the channel, said supplemental tread section being provided in its inner face with recesses corresponding in number to the keepers of the channel and with latches projecting into the recesses with their lower faces flush with the inner face of the supplemental tread and extending beneath the keepers in the channel of the outer tube.

5. In a vehicle tire, an outer tube provided in its tread with an annular channel, wires vulcanized in the walls of the channel and connected by plates, said plates extending across the channel and spaced from the bottom thereof, a supplemental tread section extending into the channel and provided on its inner face with recesses corresponding in number to the plates in the channel, and latches vulcanized in the supplemental tread section and projecting into the recesses thereof with their lower faces flush with the inner face of the supplemental tread and extending beneath the plates in the channel of the outer tube.

853,793. MOP. JEROME E. HULSE, Albany, N. Y. Filed Aug. 22, 1906. Serial No. 331,648.

Claim.—1. A mop head comprising a frame having arms provided with slots, wringer rollers having spindles mounted in said slots, a bar having angled ends mounted in said slots and bearing against the spindles of one of said rollers, a spring bearing yieldingly against said bar, a fixed jaw at one end of said frame and provided with teeth, a pivotal jaw mounted upon said arms, and spring-dogs mounted upon said arms and having angled ends which are designed to engage registering recesses formed in the two jaws, whereby the latter may be held locked together, as set forth.



2. A mop head comprising a frame having arms provided with slots, wringer rollers having spindles mounted in said slots, a bar having angled ends mounted in said slots and bearing against the spindles of one of said rollers, a spring bearing yieldingly against said bar, a fixed jaw at one end of said frame and provided with teeth at right angles therefrom, said arms having recesses in the ends thereof, a pivotal jaw having angled ends which are pivotally connected to said arms, the ends of said pivotal jaw having recesses adapted, as the pivotal jaw is swung against said teeth, to register with the recesses in the ends of said arms, and spring-dogs mounted upon the arms and having angled ends designed to engage said registering recesses, as set forth.

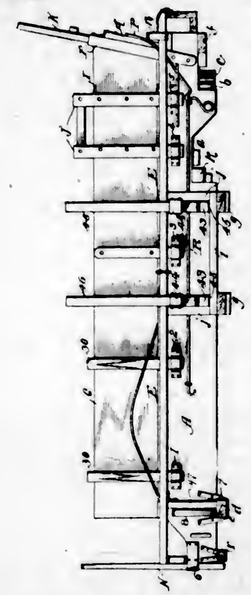
3. A mop head comprising a frame having arms provided with slots, wringer rollers having spindles mounted in said slots, a bar having angled ends mounted in said slots and bearing against the spindles of one of said rollers, a spring bearing yieldingly against said bar, a fixed jaw at one end of said frame and provided with teeth at right angles therefrom, said arms having recesses in the ends thereof, a pivotal jaw having angled ends which are pivotally connected to said arms, the ends of said pivotal jaw having recesses adapted, as the pivotal jaw is swung against said teeth, to register with the recesses in the ends of said arms, and spring-dogs mounted upon the arms and having angled ends designed to engage said registering recesses, the outer swinging edge of said pivotal jaw having an angled flange adapted to extend over the ends of said teeth when the jaws are held together, as set forth.

853,794. WAGON-BODY. WILLIAM HUNT, Cottageville, Ky. Filed Feb. 25, 1907. Serial No. 359,244.

Claim.—1. In a wagon body, the combination with a main frame comprising side walls, a front cross-bar having longitudinally disposed loops at its ends, rubber boards fixed to the side walls, and keepers arranged on the said rubber boards; of removable hay frames respectively comprising a longitudinal bar the forward end of which is adapted to be positioned in one loop on the forward cross-bar, a support fixed to and arranged below said longitudinal bar, and a tongue carried by said support and arranged to engage a keeper on one rubber board, and means for holding the hay frames against laterally outward movement from the side walls of the main frame.

2. In a wagon body, the combination with a main frame having longitudinally disposed loops on its forward portion and also having rubber boards and keepers on said boards; of removable hay frames having forward end portions arranged to enter the loops on the forward portion of the main frame and also having tongues arranged to slide into and out of engagement with the keepers on the rubber boards, and means for holding the hay frames against lateral movement away from the main frame.

3. In a wagon body, the combination with a main frame having side walls, a front cross-bar having longitudinally disposed loops at its ends, a rear cross-bar provided on its extended portions with stops and keepers, rubber boards fixed to the side walls, and keepers arranged on the said rubber boards; of removable hay frames respectively comprising a longitudinal bar the forward end of which is adapted to be positioned in one loop on the forward cross-bar, a support fixed to and arranged below said longitudinal bar and carrying a tongue arranged to engage a keeper on one rubber board, and a support arranged below the longitudinal bar and in rear of the first mentioned support and positioned to rest between one stop and one keeper on the rear cross-bar, and means for holding the hay frames against laterally outward movement from the side walls of the main frame.



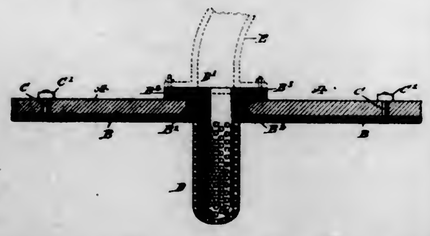
4. In a wagon body, the combination with a main frame having longitudinally disposed loops on its forward portion and rubber boards and keepers on said boards and also having a rear cross-bar on the extended end portions of which are stops and keepers; of removable hay frames having forward end portions arranged to enter the loops on the forward portion of the main frame and tongues arranged to slide into and out of engagement with the keepers on the rubber boards and also having rear supports arranged to rest on the extended end portions of the rear cross-bar and between the stops and keepers thereon, and means for holding the hay frames against lateral movement away from the main frame.

5. In a wagon body, the combination with a main frame having longitudinally disposed loops on its forward portion and rubber boards and keepers on said boards and also having a rear cross-bar on the extended end portions of which are stops and keepers; of removable hay frames having forward end portions arranged to enter the loops on the forward portion of the main frame and tongues arranged to slide into and out of engagement with the keepers on the rubber boards and also having rear supports arranged to rest on the extended end portions of the rear cross-bar and between the stops and keepers thereon, and rock-shafts disposed transversely of and carried by the removable hay frames and having lateral arms at their inner ends arranged to engage the main frame and hold the hay frames thereto.

6. In a wagon body, the combination with a main frame comprising side walls, a forward cross-bar having longitudinally disposed loops at its ends, rubber boards provided with keepers, a rear cross-bar having extended end portions on which are stops and keepers, longitudinally disposed loops on the rear portions of the side walls, and vertically disposed sockets at the rear ends of said side walls; of a rear cross-bar having longitudinally disposed loops at its ends and also having forwardly directed tongues arranged to enter the longitudinally disposed loops on the rear portions of the side walls, stakes removably arranged in the vertical sockets at the rear ends of the side walls, and removable hay frames respectively comprising a longitudinal bar the ends of which are adapted to be positioned in loops of the forward and rear cross-bars, a support fixed to and arranged below said longitudinal bar and carrying a tongue arranged to engage the keeper on one rubber board, and a support arranged below the longitudinal bar and in rear of the first mentioned support and positioned to rest between one stop and one keeper on the rear cross-bar; said hay framees being equipped with means for engaging the side walls of the main frame to hold the hay frames against movement away from the same.

7. In a wagon body, the combination with a main frame comprising side walls the lower edges of the forward portions of which are disposed in a plane above that of the lower edges of the rear portions, a forward end wall, and cross-bars connecting and arranged below the edges of the side walls; of bottom boards removably arranged on the rear cross-bars of the main frame, means opposed to the rear ends of said boards for holding the same against displacement, and bottom sections removably arranged at their ends on the forward cross-bars of the main frame; one of said bottom sections having a keeper, and the other having a bolt movable into and out of engagement with the said keeper for the purpose set forth.

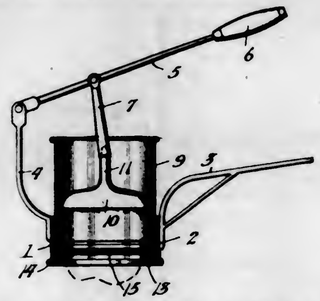
853,795. DIGESTER-COVER. GEORGE D. HUNTINGTON, Watertown, and ALEXANDER R. O'NEILL and FRANCIS P. NOONE, Potsdam, N. Y., assignors to Raquette Foundry & Supply Company, Potsdam, N. Y. Filed Jan. 4, 1907. Serial No. 350,711.



Claim.—1. A digester cover, comprising a body provided with an opening therethrough, a one-piece lining for the body, said lining having an integral bushing extending through the opening and provided with an integral annular flange for engaging the opposite face of the body, said flange being recessed around the opening of the bushing, a strainer extending through the cover and provided with a flange engaging the recess, and means for securing the lining and the strainer to the body.

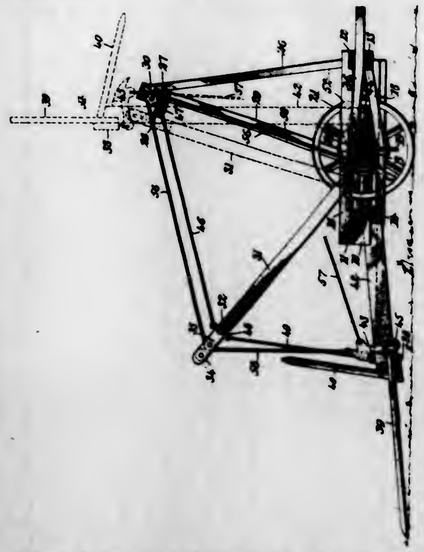
2. A digester cover, comprising a body provided with an opening therethrough, a one-piece lining for the body, said lining having integral stud bolts extending through the body whereby to secure the lining thereto, and an integral bushing extending through the opening and provided with an integral annular flange for engaging the opposite face of the body, said flange being recessed around the opening of the bushing, a strainer extending through the cover and provided with a flange engaging the recess, and means for securing the strainer to the body.

853,796. VEGETABLE-SLICER. UNA A. IMES and HATTIE A. SKILLIN, Ames, Colo. Filed Sept. 12, 1905. Renewed Dec. 13, 1906. Serial No. 347,695.



Claim.—In a device of the class described, an annular body portion provided with a handle and an uprising bearing arm, an open ended receptacle having one end thereof seated in said body portion, a plunger movably arranged in the receptacle and having a stem, an operating lever pivoted at one end in the bearing arm and provided between its ends with a stem operatively and detachably engaged with the first named stem, a ring tapped into the body portion beneath the adjacent end of the receptacle and cutting blades sustained in the ring.

853,797. HAY AND GRAIN LOADER. ALVA S. JOHNSTON, Belgrade, Mont. Filed May 21, 1906. Serial No. 317,965.



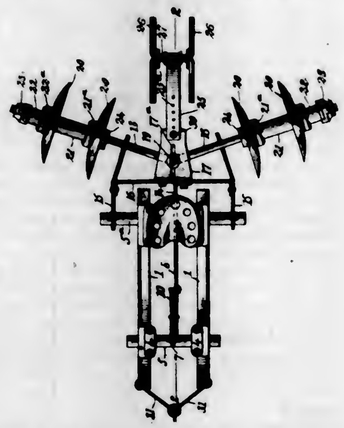
Claim.—1. In a hay and grain loader, a wheel-supported main frame, a head sill rigidly supported above the same at the rear, a swinging guide frame, and a carrying frame independently pivoted to the main frame, a fork pivotally connected with the carrying frame, a winding drum, a clutch mechanism carried by the axle of the main frame and adapted for engagement with said drum, and cables attached to the drum and to the said fork, said cables being passed through the head sill and the swinging guide frame.

2. In a hay and grain loader, a wheel-supported main frame, a head sill rigidly supported above the same at the rear, a swinging guide frame and a carrying frame independently pivoted to the main frame, a fork pivotally connected with the carrying frame a winding drum, a clutch mechanism carried by the axle of the main frame and adapted for engagement with said drum, and cables attached to the drum and to the said fork, said cables being passed through the head sill and the swinging guide frame, a latch on the fork for engagement with the carrying frame, a ratchet and pawl locking device for the drum, a pole-receiving link beneath the main frame, and a pivoted coupling arm which extends out beyond the rear of the main frame.

3. In a hay and grain loader, a wheel supported main frame, a head sill rigidly supported above the same at the rear, a swinging guide frame and a carrying frame independently pivoted to the main frame, a fork pivotally connected with the carrying frame, a winding drum a clutch mechanism carried by the axle of the main frame and adapted for engagement with said drum, and cables attached to the drum and to the said fork, said cables being passed through the head sill and the swinging guide frame, a latch on the fork for engagement with the carrying frame, and a ratchet and pawl locking device for the drum.

4. In a hay and grain loader, a wheel supported main frame, a head sill rigidly supported above the same at the rear, a swinging guide frame, and a carrying frame independently pivoted to the main frame, a fork pivotally connected with the carrying frame, a winding drum having conical spiral grooved end sections, a clutch mechanism carried by the axle of the main frame and adapted for engagement with said drum, and cables attached to the end sections of the drum and to the said fork, said cables being passed through the head sill and the swinging guide frame.

853,798. DISK CULTIVATOR. ASA JOLLY, Seward, Kans. Filed July 17, 1906. Serial No. 326,957.



Claim.—1. The combination with a sled having runners adjustably secured to cross bars, of a disk gang frame rotatably mounted on one of said cross bars and provided with a central draft bar, disk gangs pivotally mounted upon said frame and adjustable vertically and laterally thereon at their inner ends, and a lever secured to said draft bar and adapted to be adjustably secured to said sled substantially as shown and described.

2. The combination with a sled, of a gang frame rotatably secured to said sled, disk gangs mounted upon said frame and adjustable vertically and horizontally at their inner ends, and a lever adjustably secured at its rear end to the frame and at its forward end to the sled, substantially as shown and described.

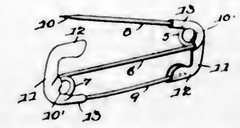
3. The combination with a sled, of a disk gang frame journaled on said sled, disk gangs pivotally mounted on said frame and adjustable vertically and horizontally thereon at their inner ends, a lever adjustably secured to the gang frame, a notched segment secured to the forward end of the sled, and a spring-actuated latch secured to the said lever and adapted to engage said segment substantially as shown and described.

4. The combination with a sled having runners adjustably secured to cross bars, of draw bars secured to one of the cross bars of the sled, a transverse bar connecting said draw bars, a bracket secured to said transverse bar and adjustable vertically thereon, and disk gangs pivoted to said draw bars and adjustable horizontally at their inner ends on said bracket, substantially as shown and described.

5. The combination with a sled, of a gang frame rotatably secured to said sled, a vertically adjustable bracket secured to said frame, disk gangs pivoted to said frame and adjustable horizontally at their inner ends on said bracket, an arm adjustably secured on said bracket, and rotating disks secured to an axle journaled upon the rear end of said arm, substantially as shown and described.

6. The combination with a sled having runners adjustably secured to cross bars, of a gang frame rotatably mounted on one of said cross bars, a bracket secured to said frame and adjustable vertically thereon, disk gangs mounted upon said frame and provided with axles connected together at their inner ends, and adjustable horizontally on said bracket, a central draft bar connected with said frame, and a lever connected with said draft bar, substantially as shown and described.

853,799. DOUBLE-POINTED SAFETY-PIN. HENRY KASPAR, Lynch, Nebr. Filed Mar. 20, 1906. Serial No. 307,087.



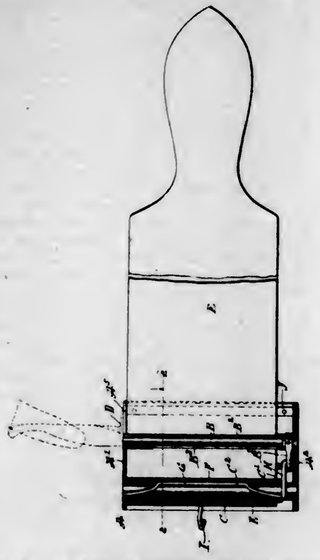
Claim.—1. A safety pin having diagonally disposed spring coils terminating in oppositely disposed garment piercing members, clips each consisting of a metal plate having one end thereof bent around a portion of the pin near the adjacent coil and its free end extended laterally to form an over-hanging arm the opposite edges of which are bent downwardly to produce a guard adapted to receive the point of the adjacent piercing member.

2. A safety pin having diagonally disposed spring coils terminating in oppositely disposed garment piercing members, clips each having one end thereof provided with means for attachment to a portion of the pin near the adjacent coil and its free end extended laterally to form a guard adapted to receive the point of the adjacent piercing member.

3. A safety pin formed of a single piece of wire bent to produce spring coils terminating in oppositely disposed garment piercing members, clips each consisting of a metal plate having one end thereof bent around one of the piercing members near the spring coil thereof and its free end extended laterally to form an over-hanging arm the opposite edges of which are bent downwardly to form a guard adapted to receive the point of the opposite piercing member.

4. A safety pin comprising a body portion formed of a single piece of wire an intermediate portion of which is bent to form a spring coil and thence bent laterally to form a second coil, the ends of the wire after the coils are formed being extended to form piercing members, and a clip secured to one end of each piercing member and having its intermediate portion embracing the adjacent spring coil and extended to form a guard for the point of the opposite piercing member.

853,800. RAZOR-STROPPING MACHINE. EVERETT G. KAUFMAN, Yonkers, N. Y., assignor of four-twelfths to John H. Clauss, Toledo, Ohio, three-twelfths to Ulysses J. Ulery, Yonkers, N. Y., and two-twelfths to Henry Clauss, Fremont, Ohio. Filed Dec. 27, 1905. Serial No. 293,445.



Claim.—1. A razor stropping machine comprising a frame, rock-shafts journaled in the said frame and connected with each other to rock in unison, one of the rock-shafts being adapted to carry the razor, a spring-pressed roller-sleeve on the other rock-shaft, and a razor strop which passes over the sleeve to turn the latter and with it its shaft.

2. A razor stropping machine comprising a frame, rock-shafts journaled in the said frame and connected with each other to rock in unison, one of the rock-shafts being adapted to carry the razor, a roller-sleeve on the other rock-shaft, a razor strop which passes over the sleeve to turn the latter and with it its shaft, and a spring for pressing the said roller-sleeve in contact with its shaft.

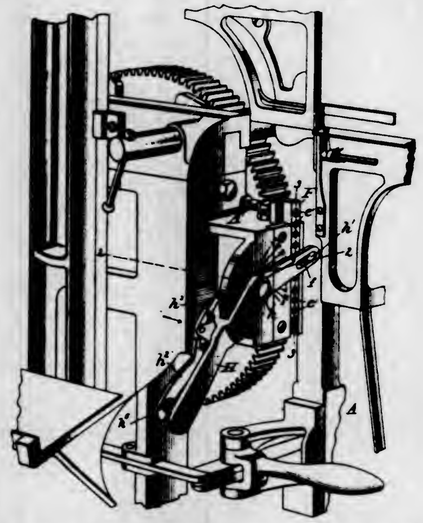
3. A razor stropping machine comprising a frame, a rock-shaft journaled in the frame, a spring pressed sleeve on the said rock-shaft, a razor strop passing over the said sleeve for rotating the sleeve and with it the rock-shaft, a second rock-shaft forming a clamp for holding the razor, and a connection between the said rock-shafts.

4. A razor stropping machine provided with a hollow rock-shaft having a slot, a roller-sleeve loose around the said rock-shaft, a spring within the said rock-shaft and extending through the said slot to bear and press against the inside of the said roller-sleeve, and a razor strop passing over the said roller-sleeve.

5. A razor stropping machine provided with a hollow rock-shaft having a slot, a roller-sleeve loose around the said rock-shaft, a spring within the said rock-shaft and extending through the said slot to bear and press against the inside of the said roller-sleeve, a razor strop passing over the said roller-sleeve, a second rock-shaft having means for carrying the razor-blade, and a connection between the said rock-shafts.

6. A razor stropping machine provided with a hollow rock-shaft having a slot, a roller-sleeve loose around the said rock-shaft, a spring within the said rock-shaft and extending through the said slot to bear and press against the inside of the said roller-sleeve, a razor strop passing over the said roller-sleeve, a second rock-shaft having means for carrying the razor-blade, a connection between the said rock-shafts, and a casing in which the said rock-shafts are journaled, the casing having transverse guide-bars for the passage of the razor strop and arranged in front of the said second rock-shaft carrying the razor-blade.

853,801. LINOTYPE-MACHINE. DAVID S. KENNEDY, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Mar. 5, 1907. Serial No. 360,723.



Claim.—1. In a linotype machine, the combination of a movable knife, a spring tending to move the same in one direction, and a stepped slide to move the same in the opposite direction, the steps of said slide being independently adjustable in height.

2. In a linotype machine, the combination of a knife-block, a slide mounted therein, the knife secured rigidly to said slide, a spring tending to move the slide in one direction, a second slide having steps or shoulders to advance and support the first-named slide, a lever arranged to move the second slide, and means for locking said lever in predetermined positions.

3. In a linotype machine, the combination of a knife-supporting slide, and an actuating member having independently adjustable steps or shoulders; whereby the knives may be set to dress slugs to standard or bastard thicknesses, as demanded.

4. In combination, a support A', a slide D sustained thereby, a slide F provided with adjustable steps *e*, a lever for moving said slide, and a spring acting on slide D in opposition to slide F.

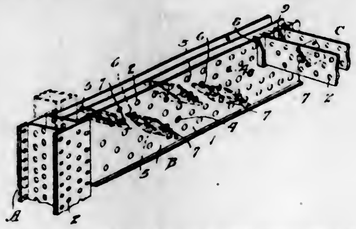
5. In a linotype machine, a knife-adjusting member consisting of a body portion F, screws or studs *e*, and locking screws *e'*.

853,802. BUILDING CONSTRUCTION. WILLIAM H. KEYSER, Wills Point, Tex. Filed May 23, 1905. Renewed Oct. 20, 1906. Serial No. 339,865.

Claim.—1. A structural element for buildings comprising spaced perforated plates and intermediate angularly arranged perforated bracing plates.

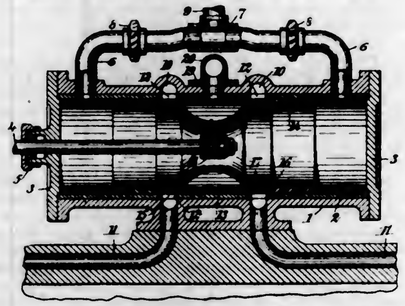
2. A structural element for buildings comprising spaced perforated plates, an intermediate perforated plate, and a body of cement in which the plates are embedded, the portions of the cement between the plates being joined by integral portions thereof projecting through the apertures in the plates.

3. A structural element for buildings comprising spaced parallel plates, angularly arranged bracing plates between said parallel plates, and bolts passing through said bracing plates and tying the same to the parallel plates.



4. A structural element for buildings comprising spaced parallel plates, series of angularly arranged bracing plates between said parallel plates, the bracing plates of one series being arranged on lines between the bracing plates of the other series, and fastenings tying the bracing plates to the parallel plates.

853,803. PISTON-VALVE. PETER KINANDER, Minneapolis, Minn. Filed Aug. 28, 1906. Serial No. 332,336.



Claim.—A piston valve, comprising a casing, a bushing located therein, said bushing having two annular rows of ports, a valve within said bushing, said valve being provided with two annular rows of ports and an annular recess, two packing rings carried by said valve and adapted to simultaneously close said rows of ports, and means for reciprocating said valve, the shape of the ports in the bushing being such that when one row of said ports communicates with a row of ports in the valve and the other row of ports communicates with the annular recess of the valve, the flow of motive fluid through one row of ports will be greater than that through the other.

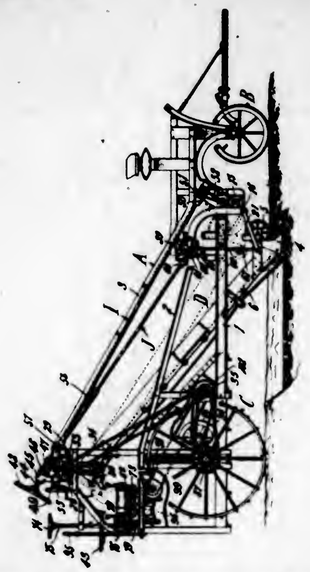
853,804. DITCHING-MACHINE. ADAM J. KOOB, Cedar Rapids, Iowa. Filed Aug. 31, 1906. Serial No. 332,829.

Claim.—1. A ditching machine having a plow, an elevator, and pivotal links for supporting the front and rear ends of the elevator.

2. A ditching machine having a plow, an elevator, laterally-movable forward and rear supporting frames, and pivotal links connecting the ends of said elevator with said forward and rear supporting frames.

3. A ditching machine having a plow, an elevator, forward and rear supporting frames for the ends of the elevator, links connecting the elevator with said supporting frames, means for moving said supporting frames laterally upon the machine, and means for raising and lowering the forward end of the elevator.

4. A ditching machine having a laterally and vertically movable elevator, and an extensible shaft for raising and lowering said elevator.



5. A ditching machine having a laterally and vertically movable elevator, and an extensible shaft for raising and lowering said elevator, said shaft being provided with universal joints, for the purpose specified.

6. A ditching machine having a laterally-movable forward supporting frame, an elevator having a pivotal link connection with said supporting frame, a worm drum mounted on said supporting frame and having a flexible connection with said elevator for raising and lowering the same, a worm for operating said drum, and an extensible shaft connected with said worm and provided with universal joints.

7. A ditching machine having a main frame consisting of lower sills, intermediate rearwardly and upwardly inclined bars and upper rearwardly and upwardly inclined bars, forming a frame which is high at its rear end and low at its forward end, a forwardly and downwardly inclined elevator mounted in said frame, and hand wheels mounted at the rear upper end of said frame for moving said elevator laterally and vertically.

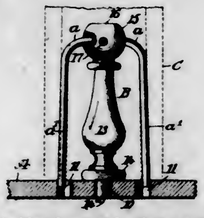
8. A ditching machine having carrying wheels, a plow, an elevator, forward and rear supporting frames, pivotal links connecting the elevator with the forward and rear supporting frames, a worm journaled upon the forward supporting frame, means operated by said worm for raising and lowering the forward end of the elevator, an extensible shaft connected with said worm for rotating the same, a second shaft having flexible elements connected with said forward and rear supporting frames for moving the same laterally, a lateral conveyer mounted adjacent the rear end of said elevator, means for moving said lateral conveyer in a longitudinal direction, means for starting, stopping and reversing said lateral conveyer, a main shaft for operating said elevator and lateral conveyer, an operating connection between said carrying wheels and said main shaft, and an engine having an operating connection with said main shaft.

9. A ditching machine having a forward supporting frame, a plurality of rollers journaled upon said supporting frame so as to rotate around a vertical axis, a plurality of rollers journaled on said supporting frame so as to rotate around a horizontal axis, laterally extending trackways for said rollers, and an elevator having a pivotal

link connection with said supporting frame, for the purpose specified.

10. A ditching machine having a supporting frame consisting of curved main bars, a lower cross-bar and an upper cross-bar, rollers journaled upon said lower cross-bar to rotate around a vertical axis, rollers journaled upon said upper cross-bar to rotate around a horizontal axis, trackways for said rollers, and an elevator having a pivotal link connection with said supporting frame.

853,805. HOLDER FOR GRAPHOPHONE-CYLINDERS. WILLIAM KRENRICH, Bloomfield, N. J., and FORREST HAMMOND, Essex, Conn. Filed Apr. 13, 1906. Serial No. 311,528.



Claim.—1. A holder for graphophone and like cylinders, comprising a central post and retaining arms of a spring character secured at their upper ends to the post, being free at their lower ends.

2. A holder for graphophone and like cylinders, consisting of a central post and resilient retaining arms having their upper portions curved and secured to the upper end portion of the post and their body portions straight but given an outward and downward inclination, the lower ends of the retaining arms being free.

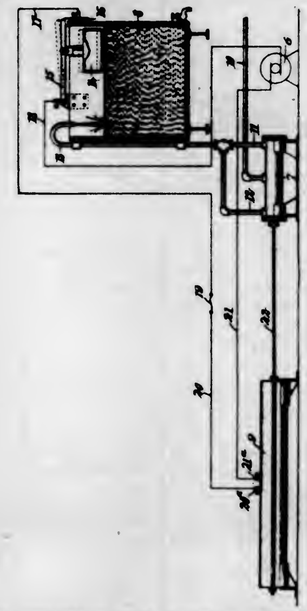
3. The combination with a holder for graphophone or like cylinders, which holder consists of a central post and resilient retaining arms secured to the upper portion of the post, having their upper ends curved, their lower portions straight and their lower extremities free, and a dowel extending from the lower portion of the post, of a support having an opening to receive the dowel of said post and also having its upper face depressed for the reception of the free ends of the retaining arms.

4. The combination with a holder for graphophone and similar cylinders, which holder consists of a post of a rigid material having a dowel at its lower end and having its upper surface flattened, and a series of resilient retaining arms having their upper ends curved and their upper extremities secured in the upper portion of the said post, their major or body portions being straight and given a downward inclination, the lower ends of the said arms being free, of a base or support having openings for the reception of the dowel of said posts and the free ends of the said retaining arms, whereby to hold the post stationary and limit the outward movement of the arms.

853,806. ELECTRIC PUMP. WALTER LAMBERT, Sunnyside, Wash. Filed Oct. 3, 1906. Serial No. 337,229.

Claim.—1. In a device of the class described, the combination of two solenoids arranged in alinement, a core common to both the solenoids and movable longitudinally thereof, oppositely arranged bridges between the adjacent ends of the solenoids, a lever pivoted to one of said bridges, and having its other end resting upon the other bridge, an electric circuit, means whereby the movement of the free end of the lever between the solenoids will connect the current to and from said solenoids in alternation, and means on the core for engaging the lever whereby to move the same.

2. The combination of a slide rod, a core of magnetic material mounted thereupon and movable therewith, collars encircling said core, means for adjusting said collars relatively to said core, a plurality of magnetic members to be energized periodically and alternately for the purpose of attracting said core, contact mechanism for completing and breaking a circuit through said magnetic members, said contact mechanism being provided with a movable member disposed within the path of said collars, and a source of electricity for energizing said magnetic members.

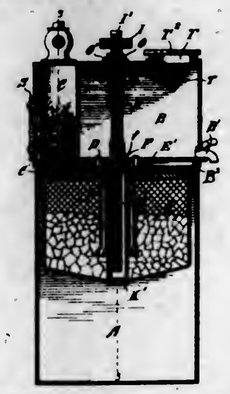


3. The combination of a casing, a pair of solenoids mounted therein and in alinement with each other, a core of magnetic material concentric to said solenoids, a slide rod connected with said core and adapted to reciprocate when actuated thereby, collars encircling said core and provided with portions engaging said slide rod, means for adjusting said last-mentioned portions relatively to said slide rod for the purpose of controlling the relative positions of said collars, and contact mechanism connected with said solenoids for the purpose of energizing the same, said contact mechanism being provided with a movable member disposed within the path of said collars.

853,807. ACETYLENE-GAS GENERATOR. HENRY G. LEISENRING, Wayne, Nebr. Filed Nov. 15, 1906. Serial No. 343,563.

Claim.—1. An acetylene gas generator comprising a generator chamber, a swinging carbid basket suspended therein, a water tank positioned above the generator chamber, a union mounted in a threaded aperture in the bottom of the water tank, a valve regulating the flow of water into a passageway through said union, a tube having a hollow stem extending into the basket, a tube surrounding said hollow stem and having exit nozzles near its upper end opening into the basket, a threaded plug at the lower end of said tube, and a filter tube mounted within the water tank and having a screen-protected opening at the bottom thereof leading into the dust chamber, as set forth.

2. An acetylene gas generator comprising a carbid generator chamber, a water tank positioned above the same, a threaded union mounted in an aperture in the bottom of said tank, a hollow stem projecting from the union into said chamber, a tube surrounding said hollow stem with which it communicates, tubes leading from near the upper end of said tube into said chamber, a valve adapted to contact with a seat in said union and provided with a hollow stem which has threaded connection with a plug at the top of said water tank, a swinging carbid basket suspended from the bottom of the water tank and positioned within said generator chamber, and a filter tube mounted within the water tank and having a screen protected opening between the same and the generator chamber, as set forth.



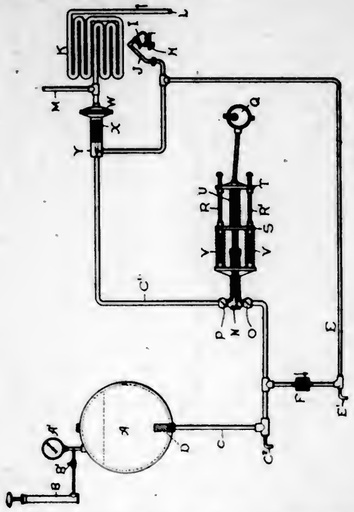
3. An acetylene gas generator comprising a carbid generator chamber, a water tank positioned above the same, a threaded union mounted in an aperture in the bottom of said tank, a hollow stem projecting from the union into said chamber, a tube surrounding said hollow stem with which it communicates, tubes leading from near the upper end of said tube into said chamber, a valve adapted to contact with a seat in said union and provided with a hollow stem which has threaded connection with a plug at the top of said water tank, a generator cap fitted in the upper end of the tubular valve stem, a carbid basket suspended from the bottom of the water tank and positioned within the generator chamber, and a filter tube positioned within the water tank and communicating through a screen opening with the generator chamber, as set forth.

4. An acetylene gas generator comprising a generator chamber, a water tank positioned above said chamber, a union having threaded connection in an opening leading through the bottom of the water tank and into said generator chamber and having openings leading to the water tank, a hollow stem projecting from the lower end of said union, a tube surrounding said hollow stem, a plug at its lower end, tubes leading from the upper portion thereof, a swinging carbid basket suspended within the generator chamber, a valve seated within said union and having openings leading through the stem thereof into the water chamber, a generator cap fitted to the end of said valve stem, a filter tube within the water tank and communicating through a screened opening with the generator chamber, and a plug to the water chamber having a vent therein, as set forth.

853,808. BURNER-REGULATOR. HERMANN LEMP, Lynn, Mass., assignor, by mesne assignments, to General Electric Company, a Corporation of New York. Filed July 15, 1901. Serial No. 68,347.

Claim.—1. In combination, a burner, a single source of fuel supply, separate conduits receiving fuel from said source and delivering it at different pressures to the burner through a common delivery pipe, a check valve included in one of the conduits which opens and permits fuel to flow to the burner under a given condition as to pressure and which closes and prevents it from flowing when the other conduit is in service, and means controlling the other conduit.

2. In combination, a burner, a conduit for delivering a low pressure supply of fuel thereto, a check valve in said conduit and means for delivering a high pressure supply of fuel to the burner, the said latter means when operating causing the fuel of high pressure to actuate said check valve to interrupt the supply of fuel through the means for delivering the low pressure fuel supply.



3. In a steam generating system, the combination of a fuel supply tank, means for creating an air pressure within the fuel tank, a burner, a connection from the tank to the burner, a check valve in the connection which freely admits fuel to the burner at all times, but prevents it from working back into the tank, a second connection between the tank and the burner, a pump in said second connection for increasing the fuel pressure between the tank and burner, which pump is driven from a source of power having a constant stroke, a means for permitting the stroke of the pump to vary, and a device acted upon by the steam pressure of the boiler for varying the opening in the delivery pipe of the pump.

4. In combination, a steam generator, a burner therefor, a fuel tank, two fuel-carrying connections between the tank and the burner, a pump which is included in one of the connections on the burner side for increasing the pressure between the tank and the burner, a check valve in the other connection, means for varying the stroke of the pump, a valve for regulating the fuel supplied by the pump, and means acted upon by the steam pressure for moving the valve.

5. In a steam generating system, the combination of a fuel tank, means for creating an initial air pressure in the tank, a burner, a connection between the tank and the burner, a pump in the connection for increasing the pressure of the fuel delivered to the burner, a second connection leading directly from the tank to the burner so that fuel will be shunted around the pump to the burner when the pump for any reason is not delivering fuel to the burner, a check valve in the second connection and a steam-actuated valve for regulating the delivery of the fuel pump.

6. In combination, a burner, a conduit for supplying fuel to the burner at a low pressure, a check valve in said conduit and means for supplying fuel to the burner at a relatively high pressure which operates to close the valve and interrupt the supply of low pressure fuel and to permit the valve to open for the continuance of low pressure fuel supply upon cessation of the high pressure supply.

7. In combination, a single burner, a single source of fuel supply under pressure, means for supplying fuel therefrom to the burner at a predetermined pressure, mechanically actuated means capable of irregular intermittent ac-

tion for supplying fuel to the burner at a pressure exceeding that of the other supplying means, and means whereby the supply of fuel through the means for delivering the fuel at a low pressure will be discontinued upon the operation of the means for delivering fuel at a high pressure.

8. In combination, a burner, a source of fuel supply under a predetermined pressure, means for supplying fuel to the burner at substantially said pressure, a power means for supplying fuel to the burner at a relatively high pressure, and means whereby the supply of fuel through the means for delivering the fuel at a low pressure will be discontinued upon the operation of the means for delivering fuel at a high pressure.

9. In combination, a burner, a single source of fuel supply under an initial pressure, two independent conduits directly connecting the burner and source of fuel supply and receiving fuel at the same pressure therefrom, one conduit being adapted to supply fuel from said source to the burner at a constant pressure and the other conduit to supply fuel also from said source to the burner at pressures varying approximately from initial to pressures higher than that of the source, and a means in the first conduit for preventing fuel supplied by the other conduit from flowing back to the tank.

10. In combination, a burner, a single source of fuel supply under an initial air pressure, independent conduits leading directly from the source of fuel supply to the burner, a device in one conduit which permits the fuel to flow from said source to the burner at substantially the pressure on the source and prevents a reverse flow of fuel, and means in the other conduit which receives fuel from said source and supplies it to the burner at variable pressures which are higher than that of the source of supply.

11. In combination, a burner, a source of fuel supply under pressure, independent conduits extending from the source of fuel supply to the burner, one conduit for supplying fuel at the pressure derived from the source of fuel supply, means in the other conduit whereby the fuel may be supplied to the burner at a higher pressure than by the other conduit, and means whereby the supply of fuel through the means for delivering the fuel at a low pressure will be discontinued upon the operation of the means for delivering fuel at a high pressure.

12. In combination, a steam generator, a burner therefor, a source of fuel supply under air pressure, a main supply connection and an auxiliary supply connection between said source and the burner, a pump in the main supply connection, and a means in the auxiliary supply connection which prevents the supply of fuel from the main connection from flowing back to the source of fuel supply and interrupts the auxiliary supply of fuel to the burner.

13. In combination, a steam generator, a burner therefor, a source of fuel supply under air pressure, a main and an auxiliary supply connection between the source and burner, a means in the main supply connection which increases the pressure of the fuel supplied to the burner to a point above that of the source, a valve in the auxiliary supply connection which prevents fuel from passing therethrough from the main supply connection and also interrupts the auxiliary supply, and a single means controlled by the steam in the generator for regulating the main fuel supply.

14. In combination, a steam generator, a burner therefor, a source of fuel supply under air pressure, an auxiliary fuel supply pipe connection, a main fuel supply pipe connection, a pump in the latter tending to deliver fuel at a constant pressure to the burner, a device for checking the reverse flow of fuel delivered by the pump through the former connection, and means in the main fuel supply connection adapted to be acted upon by the boiler pressure for directly controlling the quantity of fuel delivered to the burner by the pump and indirectly to control the auxiliary fuel supply through the fuel delivered by the pump.

15. In combination, a generator, a burner therefor, a pump for supplying fuel to the burner, an automatic regulator for the pump, a steam-controlled regulator for controlling the quantity of fuel delivered by the pump, a conduit for supplying fuel to the burner when the steam controlled regulator interrupts the supply from the pump or when the pump is idle, and a device for preventing backward flow of the fuel in said conduit.

853,809. AUTOMOBILE-CAP. CHARLES K. LIEBESKIND, New York, N. Y. Filed May 25, 1905. Serial No. 262,152.



Claim.—1. A cap having a shield provided with eye-pieces, each eye-piece having a frame composed of a continuous piece of wire bent in two parallel planes, the wire bounding both of said planes being of oval form and one of the oval forms being smaller than the other, and a wall connecting said two oval forms.

2. A cap having a shield provided with eye-pieces, and resilient means for holding said shield in normal position; said eye-pieces each having a frame composed of a continuous piece of wire and a wall formed of a fabric capable of admitting air to the inside of the frame.

853,810. IRON-FENCE CONSTRUCTION. JOSEPH B. LINDENSCHMIDT, Evansville, Ind. Filed Feb. 16, 1907. Serial No. 357,636.



Claim.—1. In fence construction, a fence post structure consisting of a flat frame forming an underground base, a socket secured at one upper corner of said base, the other upper corner of said base projecting upwardly and outwardly to form a horn adapted to project above the ground line, a metal post fitting at its lower end in the aforesaid socket, said post having near its lower end an elongated slot therethrough, and a brace secured at its upper end to the post and at its lower end to the horn projecting from the base, said brace having at or near its lower end an elongated slot to receive a bolt passed through said horn.

2. In fence construction embracing posts and rails, a malleable iron bracket for connecting them to each other, the same being attached to each of the parts by means of bolts passing through both, the connection of one of the parts being with a slidable adjustment.

3. In fence construction embracing posts and rails, a malleable iron bracket to connect the ends of the rails to the side of the post, the same consisting of two parts or members angularly arranged, one of which is attached to the side of the post and capable of being bent at its junction with the other member, and the other member adapted for connection with the rail end, the rail end to be connected with the underside of said member.

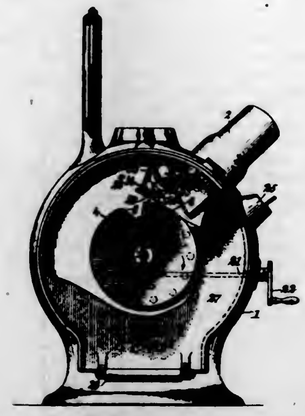
4. In fence construction embracing posts and rails and malleable brackets whereby these parts are connected to each other, said brackets consisting of a vertical side wall, a top wall provided with an opening to receive a bolt, and an angularly disposed transverse wall projecting downwardly from said top wall, said transverse wall provided with an opening to receive a bolt by means of which the said transverse wall may be secured to the side of the post, said transverse wall being disconnected at its side edge from the aforesaid side wall.

5. In a fence structure embracing posts and rails and malleable iron brackets whereby these parts are connected to each other, said brackets consisting of a vertical side wall and a top wall projecting from the same for a portion of its length, a horizontal flange projecting inwardly from said side wall for a portion of its length, and a transverse wall angularly disposed to the top wall and projecting downwardly therefrom at the junction therewith, the side edge of said transverse wall being disconnected from the side wall and having a slot therethrough, said top wall being provided with an opening to receive a bolt to connect the same with the fence rail, said brackets being arranged in pairs and *vis-à-vis* to each other.

6. In fence construction embracing posts and rails, a malleable iron bracket to connect the ends of the rails to the side of the post, the same consisting of a top wall, side walls extending downwardly from the side edges thereof, and a transverse vertical wall extending downwardly from the top wall, but disconnected from the side walls, said top and vertical walls having bolt holes therethrough.

7. In fence construction, a fence post structure consisting of a flat frame forming an underground base, a socket secured at one upper corner of the base, said socket comprising two plates having side flanges and a base flange, said flanges of one plate projecting toward those of the other plate, the said base having its opposite upper corner projecting upwardly and outwardly to form a horn adapted to normally project above the ground line, a metal post fitting at its lower end in the aforesaid socket between the flanges thereof, said post having near its lower end an elongated slot therethrough, and a brace secured at its upper end to the post and at its lower end to the horn projecting from the base, said brace having at or near its lower end means for adjusting it relative to said horn.

853,811. EXHIBITING-REEL FOR MUTOSCOPES. EPHRAIM W. LIVERMORE, Bellingham, Wash. Filed Dec. 11, 1906. Serial No. 347,263.



Claim.—1. A reel adapted to be mounted in a mutoscope, in combination with a plurality of vials, and means for securing said vials upon said reel, said vials being adapted to hold specimens in successive stages of development.

2. A reel adapted to be mounted in a mutoscope and having a plurality of pockets, vials received in said pockets, and means for securing said vials therein.

3. A reel adapted to be mounted in a mutoscope and having oppositely disposed heads, one of said heads having recesses therein, vials adapted to be mounted in said recesses and containing specimens in successive stages of development.

4. A reel adapted to be mounted in a mutoscope and having a pair of heads projecting oppositely at their edges, one of said heads having a plurality of pockets formed therein, a plurality of vials mounted in said pockets and adapted to contain specimens in various stages of development, and means carried in one of said heads opposite said pockets for securing said vials in position.

5. In a mutoscope, in combination, a reel comprising a drum and heads projecting beyond the edge thereof, means for retaining vials between said heads and around said drum, a shoe presenting a transversely disposed bar resting on the edges of said heads, means for supporting said bar near the edges of said heads, means for resiliently constraining said bar against said heads, means whereby said bar may arrest the rotation of said reel in one direction only, and means for rotating said reel.

6. In a mutoscope, in combination, a reel presenting heads with notches in the edges thereof, a pivotally mounted pawl having a shoe with a bar resting on said edges, a spring impelling said pawl to hold said bar against the edges of said heads, means for rotating said reel, said bar being adapted to engage said notches and to prevent the rotation of said reel in one direction.

7. In a mutoscope, in combination, a rotatable reel presenting substantially circular heads, means for supporting vials between said heads and near the edges thereof, a pawl pivotally mounted adjacent to said reel, a shoe adapted to be attached to said pawl and having means for engaging said reel, said heads having notches to engage said shoe to prevent the rotation of said reel in one direction, and means for rotating said reel.

8. In a mutoscope, in combination, a reel presenting substantially circular heads having notches in the edges thereof, means for supporting vials near the edges of said heads, a pawl pivotally mounted in said reel, a removable shoe adapted to be attached to said pawl and having a transverse bar, means for holding said bar in engagement with said heads, and means for rotating said reel.

853,812. EYEPIECE. HENRY C. LOMB, Rochester, N. Y., assignor to Bausch and Lomb Optical Company, Rochester, N. Y., a Corporation of New York. Filed Feb. 11, 1907. Serial No. 356,812.



Claim.—1. An eyepiece comprising two lenses one of which has a negative focal length and separated from the other to give a working distance longer than the equivalent focal length of the entire system.

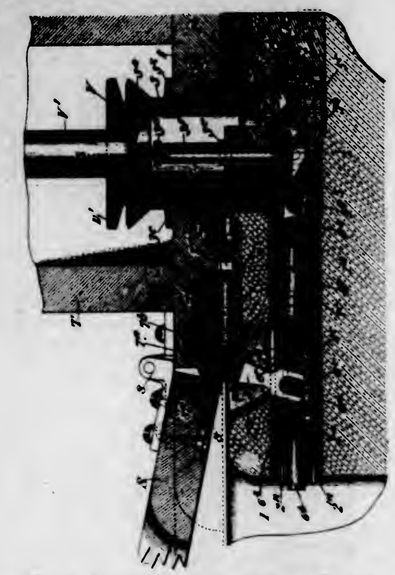
2. An eyepiece comprising component lenses the equivalent focal length and separation of which is such as to bring the exit pupil or eye-point thereof to such a plane that the pupil of the eye of the observer may be brought into coincidence therewith.

3. An eyepiece comprising two positive lenses and a negative lens, the latter being the eyelens of the eyepiece and separated from the former whereby a working distance is produced longer than the equivalent focal length of said lenses.

4. The combination with the objective of an optical instrument, of an eyepiece system comprising a positive collective and a negative eyelens separated from each other

to produce a working distance longer than the equivalent focal length of said lenses.

853,813. FLUSHING-VALVE-OPERATING DEVICE. WILLIAM H. LUDEWIG, Rock Island, Ill. Filed Dec. 20, 1906. Serial No. 348,794.



Claim.—1. In combination with a bowl, a flushing-tank, a flushing-valve in said tank having a depending stem, a dog below the tank adapted to be shifted by the stem when the valve is closed, a reciprocatory catch adapted to engage the dog, and means for reciprocating the catch to cause it to move the dog and open the valve.

2. In combination with a bowl, a flushing-tank supported thereon, a flushing valve in said tank having a depending stem, a swinging dog below the tank adapted to be depressed by the stem when the valve is closed, a catch adapted to engage the dog, means for reciprocating the catch, a spring for operating said means in one direction, and means for moving it in opposition to the spring.

3. In combination, a flushing tank, a flushing valve, and a hinged seat with a swinging dog below the valve adapted to be moved by the closing of the valve, a reciprocatory catch adapted to engage the dog and cause it to open the valve when the catch is moved in one direction, a spring for causing the valve-opening movement of the catch and means actuated by the seat for moving the catch in opposition to the spring.

4. The combination of a bowl, a hinged seat, a flushing tank, a flushing valve provided with a depending stem, a dog pivoted below the stem and adapted to be depressed thereby, a reciprocatory catch adapted to engage the dog, a rod for operating said catch, a swinging lever engaging said rod, a spring for throwing said lever in one direction and devices connected with the seat for moving the lever in the opposite direction.

5. The combination with a flushing tank, a casing beneath the tank, a swinging dog in said casing, a catch slidably mounted in said casing and adapted to engage the dog, means actuated in one direction by a spring for reciprocating said catch, and a flushing valve having a depending stem adapted to engage and depress the dog when the valve is closed.

6. The combination of a flushing tank, a casing beneath the tank, a swinging dog in said casing, a tube connected with said casing, a rod slidably mounted in said tube, a catch pivoted to the inner end of said rod adapted to engage the dog, means for reciprocating said rod, and a flushing valve having a depending stem adapted to engage and depress the dog when the valve is closed.

7. In combination with a valve having a stem, a pivoted dog adapted to engage the stem and provided with a tooth and curved fingers; a catch having a tooth to engage the tooth of the dog and curved fingers adapted to engage the fingers of the dog, and means for reciprocating said catch.

8. In combination, a flushing tank and an outlet valve having a depending stem, with a dog pivoted below the valve and having a roller adapted to engage the stem, and a tooth and curved fingers; with a catch having a tooth and curved fingers respectively adapted to engage the tooth and fingers of the dog, and means for reciprocating said catch.

9. In combination with a flushing tank, an outlet valve having a depending stem, and a pivoted dog adapted to be moved by the stem and having a tooth and curved fingers; with a catch having a tooth to engage the dog and curved fingers adapted to engage the fingers of the dog, a reciprocatory rod engaging the catch, a swinging lever engaging said rod, a spring for moving the lever in one direction, and means for moving the lever in the opposite direction.

10. The combination of a flushing tank, an outlet valve having a depending stem, a dog pivoted below the valve and adapted to engage the stem, with a catch adapted to engage the dog, a reciprocatory rod engaging the catch, a swinging lever engaging said rod, a spring for moving the lever in one direction, and a hinged seat and connections for moving the lever in the opposite direction.

11. In combination, a bowl having a rearward extension and a recess and forwardly extending passages in the upper end of said extension, a casing secured in said recess, a flushing tank mounted over said casing on said extension, an outlet in the tank communicating with the casing, a flushing valve for closing said outlet, means in the casing for opening the valve, and a hinged seat and connections for controlling said means.

12. In combination, a bowl having a rearward extension provided with a recess in its upper end, a casing secured in said recess, a flushing tank mounted over said casing on said extension, an outlet in the tank communicating with the casing, a valve for closing said outlet having a stem depending into the casing, a dog pivoted in the casing adapted to be depressed by said stem, a catch adapted to engage the dog, and means for reciprocating said catch.

13. The combination of a bowl having a rearward extension, a recess in the upper end of said extension, a casing secured in said recess, a flushing tank mounted over said casing on said extension, an outlet in the tank communicating with the casing, and a flushing valve for closing said outlet having a stem depending into the casing; with a dog pivoted in the casing adapted to be engaged by said stem, and means for moving said dog, a spring for operating said means in one direction, and a hinged seat and connections for operating said means in the opposite direction.

14. In combination, a bowl having a rearward extension, a recess in the upper end of said extension, a casing secured in said recess, a flushing tank mounted over said casing on said extension, an outlet in the tank communicating with the casing, a valve for closing said outlet having a stem depending into the casing, a dog pivoted in the casing adapted to be depressed by said stem, a catch adapted to engage the dog, a reciprocatory rod connected to said catch, a pivoted lever engaging said rod, a spring for moving the lever in one direction, and a hinged seat and connections for moving the lever in the opposite direction.

15. The combination of a bowl, a casing secured to the bowl, a flushing tank over the casing, a cylinder passing through the bottom of the tank and into the casing and provided with a flushing valve seat on its upper end, and means for fastening the cylinder to the casing; with a flushing valve adapted to fit said seat, means in said casing for opening the flushing valve, a hinge seat and connections for setting the valve opening means, and a spring for actuating the valve opening means when the seat is released.

16. The combination of a bowl having a rearward extension, a casing secured in said extension, a flushing tank supported on the extension over the casing, a cylinder passing through the bottom of the tank and into the casing provided with a flushing valve-seat on its upper end, means for fastening the cylinder to the casing, a flushing valve adapted to fit said seat and having a stem depending into the casing, means in said casing for opening the flushing valve, a hinge seat and connections for setting the valve opening means, and a spring for actuating the valve opening means when the seat is released.

17. The combination of a bowl having a rearward extension provided with a cavity in its upper portion, a casing secured in the cavity, a flushing tank secured over said casing, a cylinder passed through the bottom of the tank into the casing, and means for fastening the cylinder to the casing; with a flushing valve above the cylinder having a stem depending into the casing, a swinging dog pivoted in the casing adapted to be depressed by the stem when the valve closes, a reciprocatory catch in the casing adapted to engage the dog and cause it to open the valve when moved in one direction, a reciprocating rod connected to said catch, a spring for moving said rod in one direction, a hinged seat and connections for moving the rod in the opposite direction, when the seat is depressed.

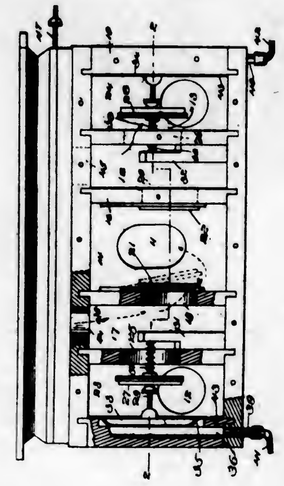
18. The combination of a bowl having a rearward extension provided with a cavity and passages in its upper portion, a casing fitted in the cavity, a flushing tank secured over said casing, a cylinder passed through the bottom of the tank into the casing and means for fastening the cylinder to the casing; with a flushing valve on the outer end of said cylinder having a stem depending into the casing, a swinging dog in the casing adapted to be depressed by the stem when the valve closes, a reciprocatory catch in the casing adapted to engage the dog, a reciprocating rod pivotally connected to said catch, a swinging lever engaging said rod, a spring for moving said lever in one direction, a hinged seat and devices on said seat for moving the lever in the opposite direction when the seat is depressed.

853,814. EXPRESSION-BOX. ENDFRED LUNDBERG, Westfield, N. Y., and JUSTUS HATTEMER, West New York, N. J., assignors to Hardman, Peck & Company, New York, N. Y., a Corporation of New York. Filed Nov. 6, 1906. Serial No. 342,279.

Claim.—1. In a mechanism of the class described, a divided action, a high tension reservoir and a low tension reservoir, ducts communicating with the divided action, a chamber arranged for communication with the low tension reservoir, and having openings communicating with the ducts, valves arranged to close the openings between the low tension chamber and the ducts, chambers in communication with a high tension reservoir and with the ducts, valves arranged to close the communication between the high tension chambers and the ducts, and pneumatics arranged to control the valves governing communication between the high tension reservoir and the ducts.

2. In a mechanism of the class described, a divided action, a high tension reservoir and a low tension reservoir, ducts arranged for communication with the divided action, a chamber in communication with the ducts and communicating with the low tension reservoir, flap valves opening within the chamber and arranged to close communication between the low tension chamber and the ducts, chambers in communication with the ducts, and communicating with the high tension reservoir, puppet valves within the high tension reservoir chambers, and positioned to close the communication between the high tension chambers and the ducts, and pneumatics arranged to actuate the puppet valves.

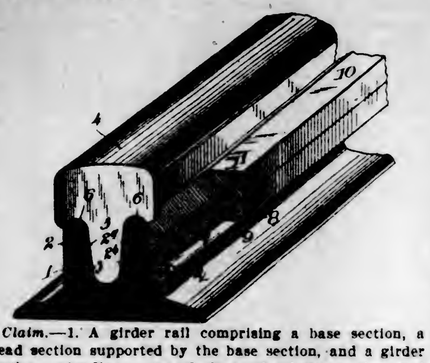
3. In a mechanism of the class described, a divided action, a high tension reservoir and a low tension reservoir, ducts communicating with the divided action, a chamber in communication with the ducts, and also in communication with the low tension reservoir, flap valves within the low tension chamber, and arranged to govern the communication between the low tension chamber and the ducts, chambers in communication with the ducts and also in communication with the high tension reservoir, puppet valves disposed within the high tension chamber and positioned to close communication between such chambers and the ducts, pneumatics disposed within the high tension chambers and arranged to actuate the puppet valves, and means for actuating the pneumatics.



4. In a mechanism of the class described, a divided action, a high tension reservoir, and a low tension reservoir, ducts communicating with the divided action, a chamber in communication with the ducts and also communicating with the low tension reservoir, valves disposed within the low tension chamber and opening inwardly and positioned to govern communication between the low tension chamber and the ducts, chambers in communication with the ducts and arranged for independent communication with the high tension reservoir, valves disposed within the high tension chambers and arranged to govern communication between the high tension chambers and the ducts, pneumatics disposed within the high tension chambers, and arranged to actuate the valves, means for equalizing the exhaust tension upon opposite sides of the pneumatics, and means to overcome the exhaust upon one side of the pneumatics.

5. In a mechanism of the class described, a divided action, a high tension reservoir and a low tension reservoir, ducts communicating with the divided action, a chamber in communication with the ducts and arranged for communication with the low tension reservoir, valves mounted within the low tension chamber and arranged to open inwardly, chambers in communication with the ducts and arranged for communication with the high tension reservoir, secondary pneumatics disposed within the high tension chamber, and provided with an exhaust chamber and passage leading therefrom, valves carried by the secondary pneumatics and governing communication between the high tension chambers, and the ducts, other chambers in communication with the high tension chambers, primary pneumatics disposed within the last-mentioned chambers, means for equalizing the exhaust upon opposite sides of the primary pneumatics, valves carried by the primary pneumatics and arranged to establish communication from the secondary pneumatic passage alternately with the exhaust and with the atmosphere, and means to overcome the exhaust within the primary pneumatic.

853,815. RAILROAD-RAIL. WILLIAM G. MACLAUGHLIN, Walkerville, Ontario, Canada. Filed June 23, 1906. Serial No. 322,991.



Claim.—1. A girder rail comprising a base section, a tread section supported by the base section, and a girder portion extending outward from the base section and consisting of a permanent part rigidly connected to the base section, and an upper wearing part removably secured to said permanent part.

2. A girder rail comprising a base section, a tread section, and a girder section, this latter section being formed of a permanent portion and a removable wearing portion, the latter portion being locked in position by the tread portion.

3. A girder rail comprising a base section, a tread section, and a girder section consisting of a permanent portion and a removable wearing portion, and means for locking said removable section in position.

4. A railroad rail comprising a base section formed in two pieces adapted to fit together along the longitudinal line of the rail, each of said pieces being formed with an upward extending supporting member, and a tread section provided with a depending flange adapted to fit between the supporting members of the base section and with an overlapping part adapted to engage the upper ends of the supporting members and to prevent the lateral spreading thereof, and a girder section carried by one of the base pieces.

5. A railroad rail comprising a base section formed with upward extending supporting members separated a suitable distance to form a central longitudinal channel, a tread section formed with a depending longitudinal web and adapted to fit closely between the supporting members, and a girder portion extending outward from the base section and consisting of a permanent part rigidly connected to the base section, and an upper wearing part removably secured to said permanent part.

6. A railroad rail comprising a base section formed with upward extending supporting members separated a suitable distance to form a central longitudinal channel, said supporting members being provided with longitudinal grooves on their inner surfaces adapted to receive electrical conductors, a tread section formed with a depending longitudinal web adapted to fit closely between the supporting members and to hold the electrical conductors in the grooves in the supporting members, and a girder portion extending outward from the base section and consisting of a permanent part rigidly connected to the base section, and an upper wearing part removably secured to said permanent part.

853,816. RIBBON-FASTENING MACHINE. ALEXANDER M. MAGEE and WILFRED N. EARLE, St. John, New Brunswick, Canada. Filed July 3, 1906. Serial No. 324,610.

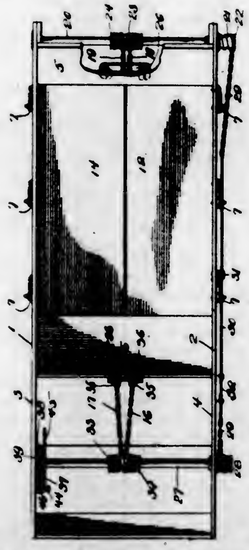
Claim.—1. In a ribbon roll fastener, a clamp adapted to straddle the roll, and a tension bar pivoted on said clamp, said tension bar having side members adapted to embrace the sides of the roll, and two spaced portions extending across the width of the said roll.

2. In a ribbon fastener, a clamp having legs bent at right angles to and on the same sides of the back thereof, one of the legs being provided with a hole, and the other with a slot, and a tension bar having two members extending parallel to said back, said members being connected at their ends by side pieces bent to a desired angle, said pieces having trunnions projecting therefrom adapted to take bearings in said hole and slot respectively.



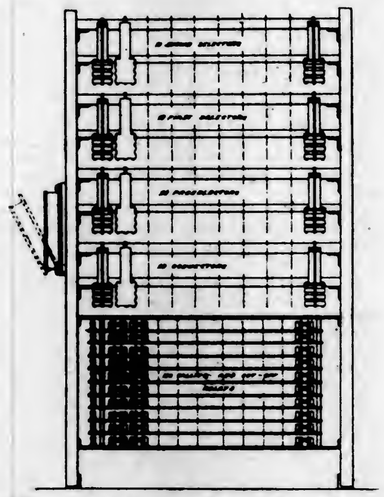
3. A ribbon fastener, comprising a substantially U-shaped body portion adapted to straddle a roll, and a tension bar pivoted between the opposing members of the body and having two parallel and spaced members connected by angular side members adapted to embrace the sides of a roll.

853,817. DUMPING-WAGON. WILLIAM G. MAYER, Pittsburg, Pa. Filed Aug. 13, 1906. Serial No. 330,383.



Claim.—In a dumping wagon, the combination with a hopper embodying side walls having forwardly projecting extensions, a front end wall, and a rear end wall connecting the side walls, a plurality of vertically disposed strengthening cleats secured to the outer faces of the side walls, a pair of doors forming the bottom of said hopper, hinge straps connecting said doors to the lower end of said strengthening cleats, a tubular shaft 20 journaled in the side walls in the rear of the rear end wall, worm drums 23, 24 carried by said shaft centrally of the side walls, eye-bolts passed transversely through said worm drums and the shaft and securing the drums to the shaft, a worm drum 21 carried on one end of said shaft outside of the side wall, an eye-bolt securing said drum 21 to said shaft, a tubular worm shaft 27 journaled in the front extensions of said side walls having one end extended beyond one side wall, a worm drum 28 on said extended end of the shaft 27, an eye-bolt securing said drum 28 to said shaft, worm drums 33—34 arranged on said shaft 27 centrally of the side walls, eye bolts securing said drums 33—34 to said shaft, a pair of chains 16—17 connected at their one end to the eye-bolts which secure the worm drums 33—34 to the shaft 27, and at their other ends to the forward ends of said doors, sheaves carried by the front end wall, over which said chains operate, a pair of chains 18—19 connected at one end to the rear ends of said doors and at their other ends to the eye-bolts which secure the worm drums 23—24 to the shaft 20, a guide strap carried by the rear end wall for said chains 18, 19, a guide bracket carried by one of the side walls, a connecting rod slidably mounted in said guide bracket, chains connecting the ends of said rod with the eye-bolts which secure the worm drums 21 and 28 to their respective shafts, a turnbuckle for adjusting said rod, and ratchet mechanism connected with said shaft 27 for operating the same to close the doors.

853,818. AUTOMATIC TELEPHONE SYSTEM. FRIEDRICH MERK, Berlin, Germany. Filed Jan. 2, 1907. Serial No. 350,386.



Claim.—1. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of preselectors and first selectors for each line group, each preselector comprising line contacts connected to the subscribers' lines of the group, a traveling contact device and means for moving said contact device to cause it to make contact with the line contacts, each first selector comprising line contacts, a traveling contact device in electrical communication with the traveling contact device of one of the preselectors, and means for moving this traveling contact to its line contacts, trunk lines connected in multiple to the line contacts of the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, and means connected with the trunk lines and arranged to make the final connection over the selected trunk line to the desired subscriber.

2. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of preselectors for each line group, each comprising line contacts connected in multiple to the respective subscribers' lines of the group, a traveling contact device and means for moving said contact device to cause it to make contact with the line contacts, a plurality of first selectors for each line group, each having line contacts, trunk lines divided in sets and connected in multiple to the line contacts of the first selectors, a traveling contact device for each first selector, the traveling contact device of each first selector being in electrical communication with the traveling contact device of one of the preselectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, means for moving the traveling contact device of each first selector into engagement with the contacts of an unoccupied trunk line of the desired set, and means connected with the contacts of the first selectors and arranged to make the final connections to the desired subscriber.

3. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, and for each line group a plurality of pairs of switches, each pair comprising a preselector and a first selector, each preselector and first selector comprising line contacts, a traveling contact device coacting with the individual line contacts and means for moving the traveling contact device, the traveling contact device of each preselector being in electrical communication with the traveling contact device of its companion first selector, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, the line contacts of the preselectors being connected to the respective subscribers' lines of the group, of trunk lines divided in sets and connected in multiple to the line contacts of the first selectors, and means arranged to make the final connection to the desired subscriber.

4. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of pairs of switches for each line group, each pair comprising a preselector and a corresponding first selector, each preselector and first selector comprising line contacts, a traveling contact device and means for moving the traveling contact device into engagement with the single line contacts, the traveling contact device of each preselector being in electrical communication with that of its companion first selector, the line contacts of the preselectors being connected to the corresponding subscribers' lines, trunk lines connected to the line contacts of the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, a calling relay for each subscriber arranged to set in action said auxiliary switch and the means for moving the traveling contact device of an idle preselector, and means actuated at the calling station for operating the traveling contact device of the corresponding first selector.

5. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, a plurality of preselectors and first selectors for each line group arranged in pairs, each preselector and first selector comprising line contacts, a traveling contact device and means for moving its traveling contact device, the traveling contact device of each preselector being in electrical communication with that of its corresponding first selector, the subscribers' lines of the group being connected to the line contacts of the preselectors, trunk lines connected to the line contacts of the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, a calling relay for each subscriber's line arranged to set in action said auxiliary switch and an idle preselector upon a call, means at the subscriber's stations to actuate automatically the corresponding calling relay when the receiver is taken up, and means at the subscribers' stations for operating and controlling the first selector and for making the final connection over the selected trunk line.

6. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of pairs of switches for each line group, each pair comprising a preselector and corresponding first selector, each preselector and first selector comprising line contacts, a traveling contact device and means for moving the traveling contact device into engagement with the single line contacts, the traveling contact device of each preselector being in electrical communication with that of its companion first selector, the line contacts of the preselector

being connected to the corresponding subscribers' lines, trunk lines connected to the line contacts of the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, a calling relay for each subscriber arranged to set in action said auxiliary switch and the means for moving the traveling contact device of an idle preselector, and to stop the said preselector upon the arrival of its traveling contact device at the contacts of the calling subscriber's line, and means at the calling station for controlling the traveling contact device of the corresponding first selector.

7. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of pairs of switches for each line group, each pair comprising a preselector and a corresponding first selector, each preselector and first selector comprising line contacts, a traveling contact device and means for moving the traveling contact device into engagement with the single line contacts, the traveling contact device of each preselector being in electrical communication with that of its companion first selector, the line contacts of the preselectors being connected to the corresponding subscribers' lines, trunk lines connected to the line contacts of the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, a calling relay for each subscriber, a common calling relay arranged to be actuated by any subscriber's calling relay and to set in action said auxiliary switch and the means for moving the traveling contact device of an idle preselector, and means actuated at the calling station for operating the traveling contact device of the corresponding first selector.

8. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of switches for each line group, said switches being arranged in pairs, each pair comprising a preselector and a first selector, each preselector and its first selector comprising line contacts, a traveling contact device arranged to engage said line contacts, the traveling contact device of each preselector being in electrical communication with that of the corresponding first selector, the line contacts of each preselector being connected to the corresponding subscribers' lines, trunk lines connected to the line contacts of the first selectors, means for moving said traveling contact devices, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, a calling relay for each subscriber arranged to set in action the means for moving the traveling contact device of a preselector, a cut-off relay for each subscriber arranged to cut out the calling subscriber's calling relay when the preselector is set on the calling line, means at the calling station for controlling the traveling contact device of the first selector, and means operated over the selected trunk line for making the final connection to the desired subscriber.

9. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of switches for each line group, said switches being arranged in pairs, each pair comprising a preselector and a corresponding first selector, each preselector and its first selector comprising line contacts, a traveling contact device arranged to engage said line contacts, the traveling contact device of each preselector being in electrical communication with that of the corresponding first selector, the line contacts of each preselector being connected to the corresponding subscribers' lines, trunk lines connected to the line contacts of the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, means for moving said traveling contact devices, a calling relay for each subscriber arranged to set in action said auxiliary switch and the means for moving the traveling contact device of a preselector, a cut-off relay for each subscriber arranged to cut out the called subscriber's calling relay, means actuated at the calling station for controlling the traveling contact device of the first selector, and means operated over the selected trunk line for making the final connection to the desired subscriber.

10. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of switches for each line group, said switches being arranged in pairs, each pair comprising a preselector and a first selector, each preselector and its first selector comprising line contacts, a traveling contact device of each preselector being in electrical communication with that of the corresponding first selector, the line contacts of each preselector being connected to the corresponding subscribers' lines, trunk lines connected to the line contacts of the first selectors, means for moving said traveling contact devices, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and working simultaneously with the same, and a pair of relays for each subscriber's line, each pair comprising a calling and a cut-off relay, the calling relay being arranged to set in action said auxiliary switch and an idle preselector upon a call, the cut-off relay being arranged to cut out its calling relay when the corresponding subscriber's line is occupied.

11. In an automatic telephone system, the combination, with the subscribers' lines, divided in groups, of a plurality of preselectors and first selectors for each line group, each comprising line contacts, a traveling contact device arranged to engage its line contacts, and means for moving the traveling contact device, the traveling contact device of each preselector being in electrical communication with that of one of the first selectors, the contacts of the preselectors being connected to the corresponding subscribers' lines, trunk lines connected in multiple to the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors, and arranged to control its traveling contact device to bring the same as needed in engagement with the contacts of a calling line, means actuated at the calling station for moving the traveling contact device of the first selector and for making the final connection over the selected trunk line to the desired subscriber.

12. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of preselectors and first selectors for each line group, each comprising line contacts, a traveling contact device arranged to engage its line contacts, and means for moving the traveling contact device, the traveling contact device of each preselector being in electrical communication with that of one of the first selectors, the contacts of the preselectors being connected to the corresponding subscribers' lines, trunk lines connected in multiple to the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and arranged to drive its traveling contact device to the contacts of the calling subscribers line, a coupling device for each preselector to bring its means for moving the traveling contact device in communication with said auxiliary switch ready for a call, and means actuated at the calling station for moving the traveling contact device of the first selector and for making the final connection over the selected trunk line to the desired subscriber.

13. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of preselectors and first selectors for each line group, each comprising line contacts, a traveling contact device arranged to engage its line contacts, and means for moving the traveling contact device, the traveling contact device of each preselector being in electrical communication with that of one of the first selectors, the contacts of the preselectors being connected to the corresponding subscribers' lines, trunk lines connected in multiple to the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and arranged to drive its traveling contact device to the contacts of the calling subscribers line, a preselector finder controlled by the preselectors and arranged to couple an idle preselector for the next call with said auxiliary switch, means actuated at the calling station for moving the traveling contact device of the first selector, and means operated over said trunk lines for making the final connection between subscribers' lines.

14. In an automatic telephone system, the combination

with the subscribers' lines divided in groups and in subgroups, and, for each line group local circuits equal in number to the number of the sub-groups; for each line group a plurality of preselectors, each comprising subscribers' line contacts arranged in series corresponding to the sub-groups, a traveling contact device and means for moving the traveling contact device to the series of contacts and along these, a calling relay in each subscriber's line arranged to set in action an idle preselector upon a call and to alter the condition of the local circuit of the sub-group to which its line belongs; for each line group a common auxiliary switch coupled with an idle preselector ready for a call and working synchronously with the preselector and arranged to stop the traveling contact device of the preselector at the series of contacts of the calling subscriber's sub-group and for causing said traveling contact device to come over the contacts of the calling subscriber's line.

15. In an automatic telephone system, the combination, with subscribers' lines divided in groups and sub-groups, and, for each line group, local circuits equal in number to the sub-groups; for each line group a plurality of preselectors, each comprising subscribers' line contacts arranged in rows corresponding to the sub-groups, a traveling contact device and means for moving said traveling contact device to a desired row and along such row, a calling relay in each subscriber's line arranged to set in action an idle preselector upon a call and to close the local circuit of the sub-group to which its line belongs; for each line group a common auxiliary switch coupled for a call and working in synchronism with an idle preselector, the auxiliary switch having contact points for the said local circuits, a traveling contact device coacting with the contact points, and a relay device arranged to be connected successively to the single local circuits to find the calling subscriber's sub-group; to stop the traveling contact device of the companion preselector at the corresponding contact row, and to cause the preselector to start over the single contacts of the row.

16. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of pairs of switches for each line group, each pair comprising a preselector and a first selector, each preselector and its corresponding first selector comprising line contacts, a traveling contact device coacting with its line contacts and means for moving said traveling contact devices, the traveling contact device of each preselector being in electrical communication with that of the companion first selector, the contacts of the preselectors being connected to the corresponding subscribers' lines of the group, trunk lines connected to the line contacts of the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors, and working simultaneously with the same, a central battery for energizing the means for moving the traveling contacts of the preselectors, an interrupter device for the automatic working of the preselectors, means for controlling the interrupter device to set the traveling contact of an idle preselector on a calling subscriber's line, means at the subscribers' stations for starting an idle preselector and for actuating and controlling its corresponding first selector, and means connected with the trunk lines and arranged to make the final connection to the desired subscriber.

17. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, a plurality of preselectors and selectors arranged in pairs, and a plurality of connectors for each line group, each preselector, selector and connector comprising line contacts, a traveling contact device and means for moving its traveling contact device into engagement with its line contacts, the traveling contact device of each preselector being in electric communication with the traveling contact of its corresponding selector, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors, and working simultaneously with the same, the subscribers' lines of the group being connected in multiple as incoming lines to the line contacts of the preselectors and as outgoing lines to the line contacts of the connectors, a system of trunk lines divided in sets and each connected in multiple to the respective line contacts of the selectors and to the traveling contact device of a corresponding connector, means for the automatic working of the preselectors to set the traveling contact device of an idle preselector on a calling line, and means at the subscribers' stations to start an idle preselector and for actuating and controlling its corresponding selector and a connector of the desired subscriber's line group.

18. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, a plurality of preselectors and first selectors arranged in pairs, a plurality of connectors, and a plurality of intermediate selectors for each line group, each preselector, first selector, intermediate selector and connector comprising line contacts, a traveling contact device and means for moving its traveling contact device in engagement with its line contacts, the traveling contact device of each preselector being in electric communication with the traveling contact device of its corresponding first selector, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors, and working simultaneously with the same, systems of trunk lines, one system for each plurality of selectors, the trunk lines of each system being divided in sets and each trunk line connected in multiple to the respective contacts of its corresponding selectors and to the traveling contact device of a succeeding selector or connector, the subscribers' lines of the group being connected in multiple as incoming lines to the line contacts of the preselectors and as outgoing lines to the line of contacts of the connectors, means for the automatic working of the preselectors to set the traveling contact of an idle preselector on a calling line, and means at the subscribers' stations to start an idle preselector and for actuating and controlling its first selector, the selected intermediate selectors, and a connector of the desired subscriber's line group.

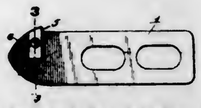
19. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, a plurality of double switches, each consisting of a preselector and a selector, and a plurality of single switches, each consisting of a connector, for each line group, each preselector, selector and connector comprising line contacts, a traveling contact device and means for moving its traveling contact device into engagement with its line contacts, the traveling contact device of each preselector being in electric communication with the traveling contact of its corresponding selector, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors, and working simultaneously with the same, the subscribers' lines of the groups connected in multiple as incoming lines to the line contacts of the preselectors, and as outgoing lines to the line contacts of the connectors, and a system of trunk lines divided in sets and each connected in multiple to the respective line contacts of the selectors and to the traveling contact device of a corresponding connector, the double switches being arranged to make connections from a calling subscriber's line to an unoccupied trunk line of the desired subscriber's line group, each of the single switches being arranged to make connections from its incoming trunk line to a desired subscriber's line.

20. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, a plurality of double switches, each double switch consisting of a preselector and a first selector, and a plurality of single switches, part consisting of connectors and part of intermediate selectors, each preselector, first selector, intermediate selector, and connector comprising line contacts, a traveling contact device and means for moving its traveling contact device in engagement with its line contacts, the traveling contact device of each preselector being in electric communication with the traveling contact device of its corresponding first selector, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors, and working simultaneously with the same, systems of trunk lines, one system for each plurality of selectors, the trunk lines of each system being divided in sets and each trunk line connected in multiple to

the respective contacts of its corresponding selectors and to the traveling contact device of a succeeding selector or connector, the subscribers' lines of the group being connected in multiple as incoming lines to the line contacts of the preselectors and as outgoing lines to the line contacts of the connectors, the double switches being arranged to make connection from a calling subscriber's line to an unoccupied first trunk line of the desired set, the single switches being arranged to continue the connection from trunk line to trunk line and finally to the desired subscriber's line.

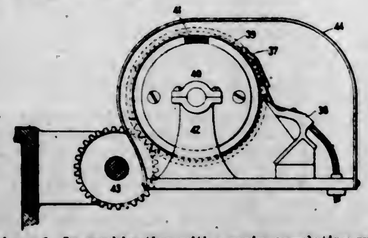
21. In an automatic telephone system, the combination, with the subscribers' lines divided in groups, of a plurality of preselectors and first selectors for each line group, each comprising line contacts, a traveling contact device arranged to engage its line contacts, and means for moving the traveling contact device, the traveling contact device of each preselector being in electrical communication with that of one of the first selectors, the contacts of the preselectors being connected to the corresponding subscribers' lines, trunk lines connected in multiple to the first selectors, an auxiliary switch common to a plurality of preselectors, coupled for a call with one of said preselectors and arranged to drive its traveling contact device to the contacts of the calling subscriber's line, switching apparatus controlled by the preselectors and arranged to bring the next idle preselector into the sphere of control of the said auxiliary switch, means actuated at the calling station for moving the traveling contact device of the first selector, and means operated over said trunk lines for making the final connection between subscribers' lines.

853,819. PILE-WIRE HOOK. JOHN H. MYERS, West Philadelphia, Pa. Filed Aug. 22, 1906. Serial No. 331,632.



Claim.—In a device of the character described, a detachable pile-wire hook having a curved hook portion, an offset provided with a screw hole, a lug extending from said offset, in combination with a pile-wire tool having a recess in which said hook is seated, an aperture for the lug of said hook, and an intermediate web disposed in a recess in the hook, substantially as described.

853,820. SYSTEM OF MOTOR CONTROL. WALTER S. MOODY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 25, 1905. Serial No. 284,307.



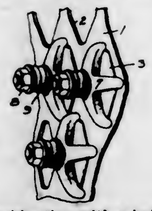
Claim.—1. In combination with a main regulating switch comprising a series of stationary contacts and a movable arm arranged to engage said contacts successively, a driving motor geared to said arm, a reversing switch therefor, a self-opening starting switch for said motor, and a switch driven by said motor arranged to close a shunt circuit around said self-opening switch and to open the motor circuit automatically when the motor has made a predetermined number of revolutions corresponding to a movement of said arm from one contact of said series to the next.

2. In combination with a main regulating switch comprising a series of stationary contacts and a movable arm arranged to engage said contacts successively, a driving motor geared to said arm, a reversing switch therefor, a self-opening starting switch for closing the motor circuit momentarily at starting, and a rotary switch geared to said motor arranged to close a shunt circuit around said starting switch and to open the motor circuit automatically when the motor has made a predetermined number of revolutions corresponding to a movement of said arm from one contact of said series to the next.

3. In combination with a main regulating switch comprising a series of stationary contacts and a movable arm arranged to engage said contacts successively, a driving motor geared to said arm, a reversing switch therefor, a self-opening starting switch for said motor, a switch driven by said motor arranged to close a shunt circuit around said self-opening switch and to open the motor circuit automatically when the motor has made a predetermined number of revolutions corresponding to a movement of said arm from one contact of said series to the next, and a limit-switch controlled by the movement of the motor and adapted to open the motor circuit independently of the other motor-controlling switches when said arm reaches either extreme of said series.

4. The combination with a motor, of an electromagnetic switch controlling the armature circuit thereof, a push-button controlling said switch, a shunt around said button, and a switch controlling said shunt and actuated by said motor, a circuit-breaker for the armature circuit, and a limit-switch actuated by the motor and controlling said circuit-breaker.

853,821. MAN AND HAND HOLE CONNECTION FOR BOILERS. JUNIUS A. MCCORMICK, Pittsburg, Pa. Filed Nov. 3, 1906. Serial No. 341,937.



Claim.—1. In combination with a boiler or drum having a manhole or handhole, a plate seated against the inner face of the boiler or drum body, and spring controlled means for holding the plate to its seat.

2. In combination with a boiler or drum having a manhole or handhole, a plate closing or seated against the inner face of the boiler or drum body, a yoke or arch piece engaging the outer face of the boiler body, a bolt connected to the plate and extending through the arch piece, and a compression spring confined between the yoke and the nut holding the bolt.

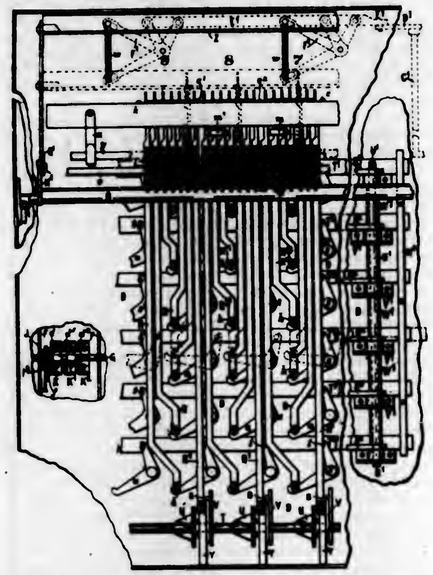
3. In combination with a boiler or drum having a manhole or handhole, a plate closing or seated against the inner face of the boiler body, a yoke or arch piece engaging the outer face of the boiler or drum body, a bolt connected to the plate and extending through the arch piece, and a spiral spring surrounding the bolt and confined between the yoke and the nut securing it in place.

4. The combination with a rigid manhole or handhole plate, and a rigid arch or yoke of spring controlled means for drawing the manhole plate toward the arch.

5. The combination with an inelastic manhole or handhole plate having a compressible gasket arranged at the edge of the plate, of a rigid arch, a bolt passing through the arch and movable therein, said bolt being connected to said plate, a nut carried by said bolt and a spring interposed between the said nut and the said arch.

6. In combination with a boiler or drum having a manhole or handhole, a plate seated against the inner face of the boiler or drum body, and spring controlled means for holding the plate to its seat, constructed and adapted to operate independently of the elasticity of the handhole plate.

853,822. VOTING-MACHINE. ANGUS MCKENZIE, Jamestown, N. Y., assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y., a Corporation of New York. Filed July 25, 1898. Serial No. 686,799.



Claim.—1. In a voting machine, the combination of multicandidate group voting mechanism, with means for preventing a voter from voting more than once for a candidate whose name appears upon two or more of the lists of candidates for the same office, nominated by the different political parties.

2. In a voting machine, the combination of multicandidate group voting mechanism, in which two or more keys can be operated by each voter, with means for preventing a voter from operating more than one of the keys which are used in connection with the name of a candidate appearing two or more times on the list of candidates.

3. In a voting machine, the combination of multicandidate group voting mechanism, and means for interlocking the particular counting mechanisms representing a candidate who is nominated for the same office by two or more political parties, whereby each voter will be prevented from voting more than once for such candidate.

4. In a voting machine, the combination of multicandidate group voting mechanism, of detachable means for preventing a voter from voting more than once for a candidate nominated by two or more political parties.

5. In a voting machine, the combination with multicandidate group voting mechanism, and detachable and adjustable means for preventing a voter from voting more than once for a candidate nominated by two or more political parties, whereby said result will be attained, no matter where the name of the candidate who is nominated more than once appears in the series of nominations for the same office.

6. In a voting machine, the combination with multicandidate group voting mechanism, consisting of two or more series of interlocked voting mechanisms, two or more of which voting mechanisms represent the same candidate, and means detachably connected to the voting mechanisms which represent the same candidate, for preventing a voter from actuating more than one of said voting mechanisms.

7. The combination with the multicandidate group voting mechanism of a voting machine, of detachable means for preventing voting more than once for a candidate nominated by two or more political parties, and suitable interlocked irregular voting mechanism.

8. The combination with the multicandidate group voting mechanism of a voting machine, of detachable means for preventing voting more than once for a candidate nominated by two or more political parties, and straight ticket voting mechanism.

9. The combination with the multicandidate group voting mechanism of a voting machine, consisting of two or more series of interlocked voting mechanisms, two of which voting mechanisms represent the same candidate, of means independent of all except the members of said group for preventing a voter from actuating both of said voting mechanisms, and suitable interlocked irregular voting mechanism.

10. The combination with the multicandidate group voting mechanism of a voting machine, of means for preventing voting more than once for a candidate nominated twice, suitable interlocked irregular voting mechanism, and suitable straight ticket voting mechanism, whereby all the voting devices in the group belonging to any one political party may be actuated.

11. The combination with the multicandidate group voting mechanism of a voting machine, consisting of two or more series of interlocked voting mechanisms, two of which voting mechanisms represent the same candidate, of means for preventing a voter from actuating both of said voting mechanisms, and suitable straight ticket voting mechanism.

12. In a voting machine, the combination with the group voting mechanism, comprising two or more series of two or more voting mechanisms in each series, suitable actuating means for said voting mechanisms, suitable interlocking mechanism between the voting mechanisms of each series, and suitable supplementary interlocking mechanism between two or more of the voting mechanisms in the same series.

13. The combination, in a voting machine, of the interlocking rods of two or more series of two or more voting mechanisms in each series, the interlocking blocks for each series, an abutment between the series, means for rendering the abutment movable or stationary, and suitable supplementary interlocking mechanism between two or more of the voting mechanisms in the same series.

14. The combination, in a voting machine, of variable multicandidate group voting mechanism interchangeable with single candidate voting mechanism, such mechanism comprising two or more series of voting mechanisms, suitable actuating devices therefor, interlocking devices and supplementary interlocking devices between two or more voting devices representing the same candidate for preventing a voter from voting more than once for a candidate nominated for the same office by two or more political parties.

15. In a voting machine, the combination of multicandidate group voting mechanism consisting of counters, actuators adapted to be operated by a voter, and positively actuated means for positively returning said actuators and thereby completing the actuation of the selected counters with means for preventing each voter from voting more than once for a candidate nominated by two or more political parties.

16. In a voting machine, the combination of multicandidate group voting mechanism, means for preventing voting more than once for a candidate nominated by two or more political parties, and suitable irregular voting mechanism interlocked with said multicandidate group voting mechanism, the actuating devices of said irregular voting mechanism being locked together.

17. In a voting machine, the combination of multicandidate group voting mechanism, detachable means for preventing voting more than once for a candidate nominated by two or more political parties, and suitable irregular voting mechanism interlocked with said multicandidate

group voting mechanism, the actuating devices of said irregular voting mechanism being locked together.

18. The combination with the multicandidate group voting mechanism of a voting machine, consisting of two or more series of interlocked voting devices, two of which voting devices represent the same candidate, of means independent of all except the members of said group for preventing a voter from actuating both of said voting devices, suitable interlocked irregular voting mechanism and means for locking the actuating parts of said irregular voting mechanism together.

19. The combination with the multicandidate group voting mechanism of a voting machine, of means for preventing a voter from voting more than once for a candidate nominated twice, suitable straight ticket voting mechanism, suitable interlocked irregular voting mechanism and means for locking the actuating parts of the irregular voting mechanism together.

20. In a voting machine, a multi-candidate voting mechanism including two or more single candidate voting mechanisms arranged in different party rows or columns for voting for the same candidate, and means for preventing the voting at one time of more than one of the single candidate voting mechanisms.

21. In a voting machine, the combination, in a multicandidate group, of a series of counters, the actuators of two or more of which are connected in operation, with suitable interlocking mechanism between said counters and the other counters of said group.

22. In a voting machine, the combination in a multicandidate group devoted to candidates for the same office and arranged in parallel rows, of two or more counter actuating mechanisms and means controlling the operation of said mechanisms so only one vote can be registered by said mechanisms (until after the machine is reset) by any one of said actuating mechanisms.

23. In a voting machine, the combination of a main interlocking mechanism, a plurality of movable parts interlocked thereby, said interlocking mechanism, limiting the operation of said movable parts to a predetermined number more than one, and an auxiliary interlocking mechanism, interlocking a portion of the same movable parts which are interlocked by the main interlocking mechanism, and limiting the operation of the parts controlled thereby to a predetermined number, which number is less than what would otherwise be permitted by the main interlocking mechanism.

24. In a voting machine, the combination in a multicandidate group, of a main interlocking mechanism, a plurality of movable parts interlocked thereby, said interlocking mechanism limiting the number of said movable parts that may be operated, but permitting the operation of more than one of said parts, and an auxiliary interlocking mechanism interlocking a portion of the same movable parts which are interlocked by the main interlocking mechanism and still further limiting the number of parts that may be moved.

25. The combination with the multicandidate group voting mechanism of a voting machine comprising a separate voting device for each candidate, any two of which in any one office line may belong to the same candidate, of separate straight ticket voting mechanism for each party, whereby all the voting devices in the group belonging to any one political party may be simultaneously placed in voted position, and means for preventing voting more than once for a candidate that can be voted for by either of the straight ticket voting mechanism of two or more parties.

26. The combination with the multicandidate group voting mechanism of a voting machine, of separate straight ticket voting mechanism for each party, whereby all the voting devices in the group belonging to any one political party may be simultaneously placed in voted position, and means for preventing voting more than once for a candidate that can be voted for by either of the straight ticket voting mechanism of two or more parties.

27. The combination with the multicandidate group, voting mechanism of a voting machine, of means for preventing voting more than once for a candidate nominated twice, and suitable straight ticket voting mechanism for each party, whereby all the voting devices in the group belonging to any one political party may be simultaneously placed in voted position.

28. In a voting machine, the combination of a plurality of single candidate groups of voting devices, each single candidate group comprising one irregular device for voting for candidates not nominated, and a plurality of keys and counters for voting for regularly nominated candidates, said voting devices being suitably interlocked to prevent the voting of more than one of said devices in a single candidate group, said single candidate group being interchangeably related for accurate multicandidate group voting, and means, when a plurality of single candidate groups are combined in one multicandidate group, for connecting all the irregular balloting devices in said multicandidate group for simultaneous voting operation and preventing the separate voting operation of any one of them whereby the operation of any or all of them is prevented by the interlocking mechanism and the connecting means if one of the regular voting devices has been operated.

29. In a voting machine, the combination of a plurality of single candidate groups of voting devices, each single candidate group comprising one irregular device for voting for candidates not nominated, and a plurality of keys and counters for voting for regularly nominated candidates, said voting devices being suitably interlocked to prevent the voting of more than one of said devices in a single candidate group, said single candidate group being interchangeably related for accurate multicandidate group voting, and means, when a plurality of single candidate groups are combined in one multicandidate group for preventing the casting of a vote by the irregular voting devices of a group if one of the regular voting devices of a group has been placed in voted position.

30. In a voting machine, multicandidate group voting mechanism comprising a plurality of keys suitably interlocked to prevent the voting of more than a predetermined number of said keys less than the whole, two or more of said keys being operable to vote for the one and the same candidate, means to prevent voting for said candidate more than once, said means permitting the voting operation of either of the keys belonging to said candidates.

31. In a voting machine, multicandidate group voting mechanism comprising voting devices all capable of voting operation but suitably interlocked to limit the number of all of said voting devices that may be in voted position at the same time, two or more of said voting devices belonging to the same candidate and an auxiliary means limiting the operation of the voting devices belonging to said candidate so that but one vote may be cast thereby.

32. In a voting machine, the combination of a main interlocking mechanism, a plurality of voting devices interlocked thereby, said interlocking mechanism limiting the operation of said voting devices to a predetermined number more than one, and permitting the operation of two of said voting devices that may belong to the same indorsed candidate, thereby making it possible to vote for said indorsed candidate twice, and an auxiliary interlocking mechanism interlocking only the voting devices belonging to said indorsed candidate and preventing voting twice for the said indorsed candidate without disturbing the relation between the voting devices of the indorsed candidate and the other voting devices included in the group.

33. In a voting machine, the combination of a multicandidate group voting mechanism that limits the total number of voting devices that can be voted in a group and that permits voting twice for an indorsed candidate therein, and an indorsing device that prevents voting twice for the said indorsed candidate without disturbing the relation between the voting devices of the indorsed candidate and the other voting devices included in the group.

34. In a voting machine, the combination of a multicandidate group voting mechanism including a plurality of voting devices for individual candidates suitably interlocked to limit the operation of said voting devices to a predetermined number and permitting the operation of two of said voting devices that may belong to the same indorsed candidate, thereby making it possible to vote for said candidate twice, and an indorsing device that prevents voting twice for the said indorsed candidate without disturbing the relation between the voting devices of the indorsed candidate and the other voting devices included in the group.

35. In a voting machine, the combination of a multicandidate group voting mechanism including a plurality of voting devices for individual candidates suitably interlocked to limit operation of said voting devices to a predetermined number and permitting the operation of two of said voting devices that may belong to the same indorsed candidate, thereby making it possible to vote for said indorsed candidate twice, and an indorsing device that preserves the proper relation between the voting devices of the indorsed candidate and the other voting devices included in the group, and prevents voting twice for said indorsed candidate.

36. In a voting machine, the combination of a plurality of voting devices embodying indicators and registers, a limiting mechanism for preventing the operation to voted position of more than a predetermined number of the whole number of indicators, and connections between a limited number of said devices for permitting the registration of a single vote only by the devices so connected when any one of their indicators is in voted position.

37. In a voting machine, the combination of a series of voting devices, a plurality of which are devoted to the same candidate, a limiting mechanism for preventing more than a predetermined number of the whole from occupying voted position at the same time and connections between the devices devoted to the same candidate for permitting the registration of a single vote only when any one of said devices is in voted position.

38. In a voting machine, the combination of a plurality of voting devices embodying registers, and separably operable by the voter, limiting mechanism for permitting the registration of a predetermined number of votes less than the whole number of voting devices, mechanism controlling the operation of the registers of a predetermined number of said devices less than the whole number and forming them into a sub-group, the operated devices in the subgroup coöperating with the limiting mechanism first mentioned to permit only the proper aggregate number of votes to be registered.

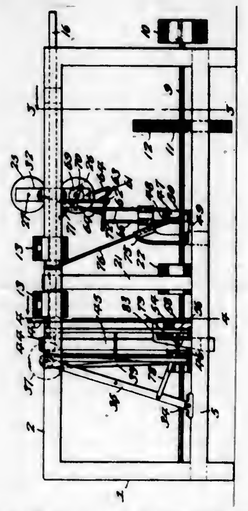
39. In a voting machine, the combination of a plurality of voting devices, a limiting mechanism for preventing the operation to voted position of more than a predetermined number of the whole, and connections between a number of voting devices less than the whole, forming a sub-group and operating to cause the registration of a single vote by the operation of any one of the sub-group of devices.

40. In a voting machine, the combination of a plurality of voting devices embodying registers and separately operable by the voter, a limiting mechanism controlling a portion of said devices forming a sub-group and permitting the operation to voted position of a predetermined number thereof, and a limiting mechanism preventing the operation to voted position of more than a predetermined number of the whole number of devices.

41. In a voting machine, the combination of multicandidate group voting mechanism, with means for preventing a voter from voting more than once for a candidate nominated two or more times by the different political parties whose name correspondingly appears upon two or more of the lists of candidates for the same office with a separate voting device for each appearance of his name.

853,823. CLOTHES-PIN MACHINE. LLOYD D. NEIFER, Traverse City, Mich. Filed July 25, 1906. Serial No. 327,736.

Claim.—1. In a clothes pin machine, a rotary blank holding mandrel, means for rotating the same at determined recurrent intervals, a pair of coöperating blank feeding wheels operable at determined intervals for advancing the blank through the mandrel, a shaping tool adapted to act on the blank during rotation of the mandrel for forming a clothes pin, a bifurcating tool adapted for slotting the shaped pins, a tool for severing the finished pin from the blank, and cam controlled devices for bringing the parts automatically and successively into play.



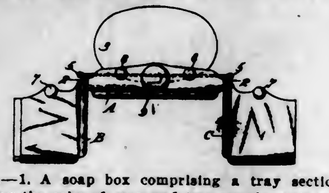
2. In a clothes pin machine, a frame, a shaft journaled therein, a rotary blank holding mandrel having a non-circular bore adapted to receive a pin blank, means for advancing the blank at determined recurrent intervals throughout the mandrel, a clutch member movable into engagement with the clutch mandrel, means including a cam member operated by the shaft for moving the clutch member to engaging position immediately after each advance step of the blank, means for driving the clutch member to rotate the mandrel, means acting on the blank during rotation of the mandrel to form a clothes pin, means for bifurcating the shaped pins, means for severing the finished pins from the blank and mechanism driven from said shaft for bringing the bifurcating and severing devices automatically and successively into play.

3. In a clothes pin machine, a frame, a shaft journaled therein, a rotary blank holding mandrel sustained in the frame, a pair of feeding rollers disposed respectively at opposite sides of the blank and sustained for movement toward and from each other, a system of levers for moving the rollers to grip and advance the blank at determined recurrent intervals, means including a cam member operated by the shaft for actuating the system of levers, means for rotating the mandrel after each advance step of the blank, a shaping tool adapted to act on the blank during its rotation for forming a clothes pin, a bifurcating tool for slotting the shaped pins longitudinally, a blade for severing the finished pins from the blank, and mechanism operated from the shaft for bringing the bifurcating tool and blade automatically and successively into play.

4. In a clothes pin machine, a frame, a drive shaft sustained therein, a cam shaft also sustained in the frame and geared for operation by the drive shaft, cam wheels mounted on the second shaft, a rotary blank holding member having a central bore, a clutch member rotatably mounted on the mandrel and adapted for engagement with and to rotate the mandrel, means operated by the drive shaft for continuously rotating the clutch member, a pair of feeding rollers adapted for engagement with and to advance the blank at determined, recurrent intervals through the mandrel, means operated by one of the cam members for moving the rollers into engagement with the blank and actuating rollers to advance the blank, means actuated by said cam member for moving the clutch member into en-

segment with the mandrel immediately after each advanced step of the blank, a shaping tool adapted to act on the blank during its rotation to form a clothes pin, a bifurcating tool for slotting the shaped pins, a cutting blade for severing the finished pins from the blank, and means actuated by the other cam wheel for bringing the shaping, bifurcating and pin severing tools automatically and successively into play.

853,824. SOAP-BOX. KENZAEMON NISHIMOTO, Oakland, Cal. Filed June 25, 1906. Serial No. 323,302.



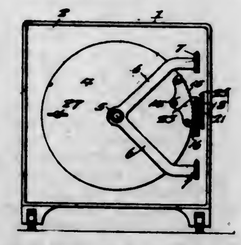
Claim.—1. A soap box comprising a tray section for supporting the cake of soap and two complementary cover sections, said cover sections being hinged at their lower portions to the outer portions of the tray section and being adapted to fold outwardly and downwardly below the tray section to form supporting legs for said tray section.

2. A soap-box comprising a tray section, two complementary cover sections hinged to said tray section and opening outwardly and downwardly relative thereto, and an elastic false bottom secured to the cover sections and supported out of contact with the bottom of the tray section, when the box is open for use.

3. A soap-box comprising a tray section, two complementary cover sections, hinged to said tray section and opening outwardly and downwardly relative thereto, an expandible spring bottom secured to and bearing against the cover sections to hold the latter in open position, and means to hold the cover sections closed in opposition to the action of said spring bottom.

4. A soap box comprising a tray section, cover sections hinged at their lower portions to the tray section, and an expansible false bottom normally of greater width than the tray section and having its sides engaging the cover sections proximate to the hinged points of the latter, whereby the expansive action of said false bottom maintains the cover sections in a substantially rigid open position.

853,825. SAFE-DOOR. EDWARD PASCOE, Sioux City, Iowa. Filed July 3, 1906. Serial No. 324,648.

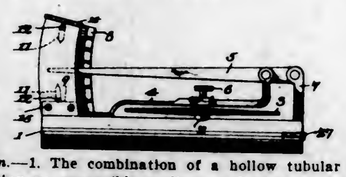


Claim.—1. The combination with a safe having a circular doorway, of a circular door, a hinged arm carrying a pivot on which the door is directly journaled at its center, interlocking means on the door and within the doorway movable into and out of engagement by a partial rotation of the door, and means for partially rotating the door comprising a worm segment carried by the door, a worm mounted on the safe, a hand-lever, and ratchet mechanism associated with said hand-lever and worm, substantially as described.

2. The combination with a safe having a circular doorway, of a circular door, a hinged arm mounted on the safe and carrying a pin or pivot on which the door is directly journaled at its center, interlocking means on the door and within the doorway adapted to be thrown into and out of engagement by a partial rotation of the door, and means for partially rotating the door comprising a worm segment on the door, a worm mounted on the safe, a ratchet wheel on said worm, a hand-lever, and a reversible dog carried by said hand-lever and coöperating with the ratchet wheel, substantially as described.

3. The combination with a safe having a circular doorway, of a circular door fitting the same, a hinged arm connected to the safe and carrying a pivot on which said door is directly journaled at its center, interlocking means on the door and within the doorway movable into and out of engagement by a partial rotation of the door, and means for partially rotating the door comprising a worm segment carried by the door, a worm mounted on the safe, a ratchet wheel connected with said worm, a fulcrum pin for said worm having an angular extension, a hand-lever fulcrumed on said extension, and a dog carried by said hand-lever and movable into and out of engagement with the ratchet wheel and adapted to turn the worm in either direction.

853,826. FIRE-ALARM OR TEMPERATURE-INDICATOR. MICAJAH L. POULTER, Stockport, Iowa. Filed June 4, 1906. Serial No. 320,216.



Claim.—1. The combination of a hollow tubular body containing an expansible medium, a diaphragm actuated by the variation in volume of the medium, a spring supported on the body for weighting the diaphragm and to be moved thereby, and means connected with the spring for receiving motion therefrom.

2. The combination of a hollow body containing an expansible medium, a diaphragm connected with the body and actuated by changes in volume of the medium, a spring supported at one end on the body and extending over the diaphragm, a connection between the spring and diaphragm, and mechanism supported on the body and actuated by the spring.

3. The combination of a hollow tubular body containing an expansible medium, a diaphragm arranged to be actuated by changes in volume of the medium, a spring arranged to weight the diaphragm and receive motion therefrom, a needle connected with the spring to receive motion therefrom, means on one end of the body for pivotally supporting the needle, and a signaling mechanism supported at the opposite end of the body to be controlled by the needle.

4. The combination of a hollow body containing an expansible medium, a diaphragm on the body and arranged to be actuated by changes in volume of the medium, a spring on the body and arranged to weight the diaphragm and receive motion therefrom, an adjustable device connecting the spring with the diaphragm and arranged to vary the tension of the spring, a needle supported on the body which is connected with the spring to receive motion therefrom, and a signal mechanism supporteed on the body which is controlled by the needle.

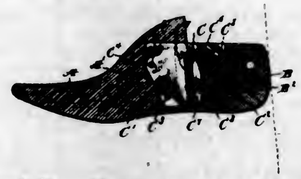
5. The combination of a hollow body containing an expansible medium, a needle, and means arranged between the body and needle for actuating the latter by the variations in volume of the medium, said means comprising a diaphragm supported on the body, a lever extending diametrically of the diaphragm and having a resilient end anchored on the body, a connection between the diaphragm and lever, and means for attaching the lever to the needle.

6. The combination of a straight tubular body having closed ends for containing an expansible medium, an arm extending from one end of the body, a needle disposed at one side of the body and extending approximately parallel therewith, a hinge connection between the arm and lever, a diaphragm sensitive to the variations in volume of the medium in the body, means for supporting the diaphragm on the body, a spring connected with the needle, an adjusting screw between the spring and diaphragm for adjusting the effect of the spring on the latter, a strip of insulating material extending from the end of the body opposite from the said arm and arranged in the path of the free end of the needle, contact means on the said strip arranged in coöperative relation with the needle, and an electric circuit connected with the contact means and grounded on the said body.

7. The combination of a hollow body containing an expansible medium, a needle, means arranged between the body and needle for actuating the latter by variations in volume of the medium, and an electric signal device controlled by the needle, said device comprising strips of insulating material spaced apart on the body to form a pocket to receive the free end of the needle, means for securing the strips directly to the body, and a contact piece arranged between the strips.

8. The combination of a hollow body containing an expansible medium, a needle, means arranged between the body and needle for actuating the latter by variations in volume of the medium, and an electric signal device controlled by the needle, said device comprising strips of insulating material arranged to receive between them the free end of the needle, means for connecting the strips with the body, a cap on the ends of the strips, and contact pieces arranged between the strips for connection with one side of an electric circuit, and means for grounding the other side of the circuit on the body.

853,827. LAST. EDWIN J. PRINDLE, Washington, D. C., assignor to The Premier Last Company, Great River, Long Island, N. Y., a Corporation of New York. Filed Jan. 26, 1900. Serial No. 2,854.



Claim.—1. In combination with a divided last having a portion removed between the fore and heel-parts forming a recess lying transversely of the last when extended, overlapping plates, each of which is secured to one of the last parts and projects into said recess, and means for locking said plates together, such means consisting of a bodily and axially movable locking piece, said plates having locking surfaces which are engaged by said locking piece when said locking piece is turned into one position, and which are not engaged thereby when said locking piece is occupying another position.

2. A jointed last having rigid pieces on the fore and heel-parts and having a single movable part forming a connection between the rigid pieces which is bodily movable with relation to both of said pieces, substantially as described.

3. A jointed last having rigid pieces on the fore and heel parts and having its fore and heel parts bearing against each other, and having a single movable part forming a connection between the rigid pieces, said connection being bodily movable with relation to both of said pieces, substantially as described.

4. A jointed last having rigid pieces on the fore and heel parts and having its fore and heel parts bearing against each other at the bottom, and having a single movable part forming a connection between the rigid pieces, said connection being bodily movable with relation to both of said pieces, substantially as described.

5. A jointed last having rigid pieces on the fore and heel parts and having a single movable part forming a connection between the rigid pieces, said connection being movable to positions toward and from the bottom of the last one of which permits the shortening of the last, and the other of which causes it to be locked, substantially as described.

6. A divided last having rigid pieces on the fore and heel parts and having a single movable part forming a connection between the rigid pieces, said connection being movable to a position toward the bottom of the last, in which position the connection permits the shortening of the last, and said connection being movable to a position away from the bottom of the last, in which position the connection locks the last, substantially as described.

7. A divided last having rigid pieces on the fore and heel parts and having its fore and heel parts bearing against each other and having a single movable part forming a connection between the rigid pieces, said connection being movable to positions toward and from the bottom of the last that permit a swinging movement of the heel-part, and cause the last to be locked, substantially as described.

8. A divided last having rigid pieces on the fore and heel parts and having its fore and heel parts bearing against each other at the bottom and having a single movable part forming a connection between the rigid pieces, said connection being movable to a position toward the bottom of the last in which position the connection permits the shortening of the last, and said connection being movable to a position away from the bottom of the last, in which position the connection locks the last, substantially as described.

9. A divided last having a pintle, rigid pieces on the fore and heel parts, which, with the pintle, connect the fore and heel parts, and which pintle is bodily movable with relation to both of said pieces, substantially as described.

10. A divided last having its fore and heel parts bearing against each other at the bottom, and having rigid pieces on the fore and heel parts, a pintle which, with said pieces, connects the fore and heel parts, and which pintle is bodily movable with relation to both of said parts.

11. A divided last having its fore and heel parts bearing against each other at the bottom, having rigid pieces on the fore and heel parts, and a pintle connecting such pieces, said pintle being bodily movable with relation to both of said parts.

12. A divided last having a plate attached to the fore part, a plate attached to the heel part, each plate having a slot therein, and a pintle situated in said slots and connecting said plates, substantially as described.

13. A divided last having a slotted plate attached to the fore part, a slotted plate attached to the heel part, the fore and heel parts abutting, and a pintle situated in said slots and connecting said plates, substantially as described.

14. A divided last having a slotted plate attached to the fore part, a slotted plate attached to the heel part, the fore and heel parts abutting at the bottom of the last, and a pintle situated in said slots and connecting said plates, substantially as described.

15. A divided last having a single connection between the fore and heel parts, said connection being movable to positions toward and from the bottom of the last, that respectively permit the shortening of the last and cause it to be locked, and means to hold said connection in the last-locking position, substantially as described.

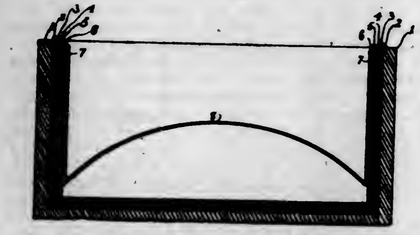
16. A divided last having a slotted plate attached to the fore part, a slotted plate attached to the heel part, the fore and heel parts abutting, a pintle situated in said slots and connecting said plates, and means to hold said pintle in the last-locking position, substantially as described.

17. A divided last having a plate attached to the fore part, a plate attached to the heel part, each plate having a slot therein which slot has substantially parallel sides, a locking piece occupying said slots, said slots having enlargements at the points where it is desired to hold the locking piece from movement, substantially as described.

18. A divided last having a plate attached to the fore part, a plate attached to the heel part, each plate having a

slot therein which slot has substantially parallel sides, a locking piece occupying said slots said locking piece having an end whose thickness is substantially that of the parallel sided slots and whose width is greater than its thickness, said slots having enlargements at points where it is desired to hold the locking piece from movement, and means whereby the locking piece can be turned so that the greater dimension of its end can lie across the direction of the slots in the enlargements thereof, substantially as described.

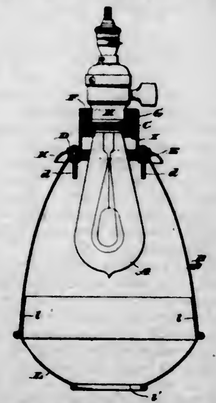
853,828. LINING FOR TANKS. HARRY M. REYNOLDS, Grand Rapids, Mich. Filed May 13, 1905. Serial No. 260,353.



Claim.—1. As a new article of manufacture, a lining for flush tanks composed of two sheets of fibrous material, a layer of water-proof material having a stiffening means interposed between the two sheets, a layer of water-proof material against the outer face of one of the sheets, and a layer of water-proof material against the outer face of the other sheet of material, said last-mentioned layers embodying a stiffening medium.

2. As a new article of manufacture, a lining for flush tanks composed of a base of fabric coated with a water-proof material embodying a stiffening medium.

853,829. THERAPEUTIC AND OTHER ELECTRIC LAMPS. CHARLES M. ROBINSON, New York, N. Y. Filed Feb. 18, 1907. Serial No. 358,005.



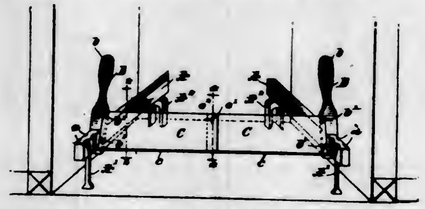
Claim.—1. The combination of a reflector for electric lamps a lamp coupling consisting of a shell, a body of yielding friction-producing material in the shell having a lamp-socket-receiving opening, the surfaces of which frictionally engage the socket, said shell having an outwardly extending flange at one end, and a detachable connection between said flange and the reflector.

2. The combination of a reflector, a coupling adapted to receive a lamp socket, a body of yieldable friction-producing material in the coupling to engage the lamp socket, an air space existing between said body and the reflector, and a gasket or washer of non-conducting material interposed between the coupling and the reflector.

853,830. NITROGLYCERIN EXPLOSIVE. FRIEDRICH J. H. ROEWER, Hamburg, Germany. Filed July 25, 1905. Serial No. 271,252.

Claim.—A nitroglycerin explosive containing dinitromonochlor-hydrin, to protect the explosive from the danger of freezing, substantially as described.

853,831. FIRE DOG OR IRON. LEE C. ROSS, West Point, Miss. Filed May 31, 1906. Serial No. 319,559.



Claim.—1. In a device of the character described, a pair of dogs, a staff removably attached to each dog, and a vertical plate connecting said staffs.

2. In a device of the character described, a pair of dogs, a staff removably attached to each dog, a vertical plate extending inwardly from each staff, and means for detachably connecting the free ends of said plates.

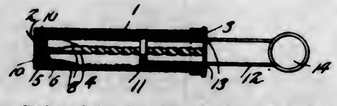
3. In a device of the character described, a pair of dogs, a staff adjustably attached to each dog, a plate detachably secured to the inner edge of each staff extending inwardly toward each other and adapted to overlap, and means for adjustably and removably connecting said overlapping ends.

4. In a device of the character described, a pair of dogs, each dog provided near its front end with a series of grooves on its side faces disposed at different angles, a bifurcated staff adapted to fit in said grooves, a flanged plate detachably secured to the inner edge of each plate, said plates extending inwardly toward each other and adapted to overlap, and means for removably and adjustably connecting said overlapping ends.

5. In a device of the character described, a pair of dogs, removable legs at the front and rear ends of the said dogs, each dog having a series of grooves in its side faces near its front end arranged at different angles, a bifurcated staff adapted to fit in the said grooves of each dog, a plate having a flange at its lower edge, detachably secured to the inner edge of each staff and extending inwardly toward each other and overlapping, and means for adjustably connecting said overlapping ends.

853,832. NAIL-TRIMMING DEVICE. MARTIN M. RYAN, Oberlin, Ohio. Filed Mar. 12, 1907. Serial No. 362,010.

Claim.—1. In a device of the class described, a slotted cylindrical casing, a shaft supported for rotation therein, and cutters supported upon said shaft adjacent to the slotted walls of the casing.



2. In a device of the class described, a cylindrical casing having slots in the side walls and ends thereof, a shaft supported for rotation in the casing and devices mounted upon said shaft for trimming the ends of finger nails inserted through the slots or apertures.

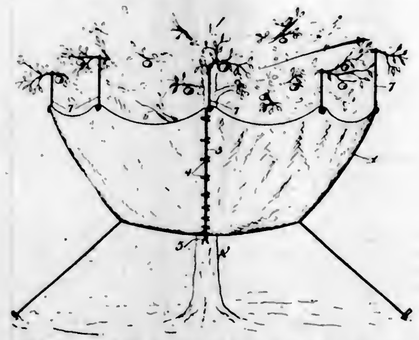
3. In a device of the class described, a cylindrical casing having slots or apertures, a detachable cap at one end of the casing, a shaft supported for rotation in said cap and in the opposite closed end of the cylinder or casing, and nail trimming devices carried by said shaft adjacent to the slots and the casing.

4. In a device of the class described, a casing, a shaft extending therethrough, nail trimming devices upon said shaft, and means for rotating the latter; said casing being provided with slots for the presentation of the ends of nails in the path of the trimming devices.

5. In a device of the class described, a slotted casing having a detached cap, a spirally threaded shaft supported for rotation in the cap and in the opposite closed end of the casing, nail trimming devices carried by said shaft adjacent to the slots in the casing, a nut engaging the spirally threaded shaft, and means for reciprocating the nut to rotate the shaft.

6. In a device of the class described, a casing having a detachable cap, a spirally threaded shaft supported for rotation in the cap and in the opposite closed end of the casing, nail trimming devices carried by the shaft adjacent to the slots in the casing, a nut engaging the spirally threaded shaft, and a yoke connected with the nut, extending through the cap and having a terminal eye.

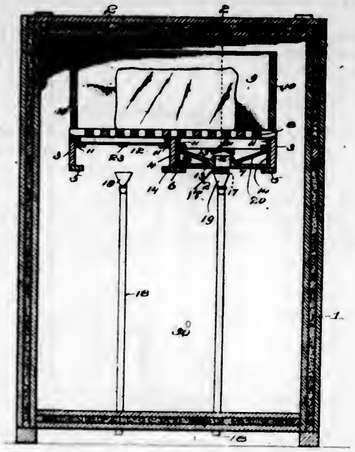
853,833. FRUIT-GATHERER. GEORGE SAUM, Jr., Sherwood, Oreg. Filed Mar. 27, 1906. Serial No. 308,318.



Claim.—A device of the class described comprising a sheet of pliable material adapted for application to a tree and provided with an opening to receive the tree trunk, said sheet being slitted radially from said opening to its marginal edge, means for closing the slit when the sheet is applied, flexible suspending elements attached at spaced intervals to and adjacent the margin of the sheet for suspending the device from the limbs of the tree and serving as the sole means of supporting the device, flexible stretching elements engaged with the sheet at points between its margin and center and serving to distend the sheet for holding the bottom thereof in a substantially horizontal plane, said suspending and stretching elements being extended in relatively reverse directions, and means for engaging the stretching elements with the ground.

853,834. REFRIGERATOR. HARRY J. SHANNEN, Atlanta, Ga. Filed Oct. 28, 1905. Serial No. 284,862.

Claim.—1. A refrigerator, comprising a body provided with an upper receptacle having a perforated bottom, and also with a lower receptacle, the said body having an opening formed therein at a point intermediate the two receptacles, a closure for said opening, a plurality of guideways arranged in pairs positioned within the body and located opposite the said opening, a pan fitting removably in one pair of guideways and receiving the drippings from the upper receptacle, means for draining the pan, and a second pan fitting removably in another pair of guideways and adapted to be placed in position and receive the drippings when the first pan is removed, the said pans being removable through the before mentioned opening in the body of the refrigerator.



2. A refrigerator, comprising a body, parallel, horizontal, outer supports positioned within said body, an intermediate, horizontal support interposed between said parallel, outer supports, a cleat secured to the lower edge of each of said supports, the cleat secured to the intermediate support extending upon opposite sides thereof, a substantially L-shaped cleat in cross-section, secured to the inner side of each of the outer supports, and upon the sides of said intermediate support, a receptacle formed above said supports, and a removable bottom member carried by said cleats between said supports.

3. In a refrigerator, the combination with a body, of a primary receptacle adapted to be positioned within said body, said receptacle comprising an apertured bottom provided with sides, a plurality of supports for said receptacle, an inclined false bottom positioned within said receptacle, parallel, vertical extensions formed longitudinally within said receptacle for directing liquid to one end of said false bottom, and a hood positioned above said parallel extensions for directing liquid into said false bottom.

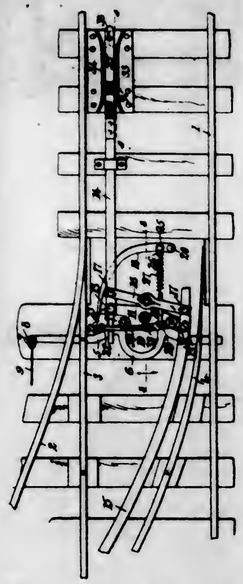
4. A receptacle comprising a bottom, ends and sides integral with said bottom, said receptacle provided with an elongated apertures in the center thereof and an aperture near one end, an inclined false bottom, and a hood carried by the ends of said receptacle positioned above said apertures.

5. In a refrigerator, the combination with a body, of a slidable receptacle positioned within said body, said receptacle comprising sides and ends, a primary bottom and an inclined false bottom, said bottoms provided with an aperture formed near one end, and an elongated aperture in the center of said bottoms, flanges extending around said elongated aperture, a hood positioned above said elongated aperture, and a hollow depending extension formed upon said primary bottom contiguous to the end aperture.

853,835. AUTOMATIC SWITCH. WILLIAM A. SNAPP, Harris, Mo., assignor of one-half to Clifford B. Harris, Harris, Mo. Filed Aug. 30, 1906. Serial No. 332,636.

Claim.—1. The combination of two tracks, switching points for connecting and disconnecting the tracks, means connecting the switching points together, a double bell crank lever engaging said means, a bar connected to each end of the bell crank lever and extending between the tracks, and resilient means carried at the outer end of each bar adapted to be engaged by a device carried by a car or the like for moving the switching points in opposite directions.

2. The combination of two tracks, switching points for connecting and disconnecting the tracks, a trigger mechanism intermediate the switching points and connected therewith, an operating bar extended between each of the tracks and connected to the trigger mechanism, and a spring plate carried by each operating bar adapted to be engaged for throwing the switching points in opposite directions.



3. The combination of two tracks, switching points connecting and disconnecting the tracks, a bar connecting the switching points together, a double bell crank lever engaging the bar, means connected to the lever at each end to throw the switching points and a spring normally tending to move said lever in one direction.

4. The combination of two tracks, switching points for connecting and disconnecting the tracks, a bar provided with a loop connecting the switching points together, a double bell crank lever having a central arm formed into a rounded head engaged in the loop of the bar, and means connected to the outer arms of said lever for the purpose described.

5. The combination of two tracks, switching points connecting and disconnecting the tracks, a bar provided with a loop connecting the switching points together, a bell crank lever having its central arm formed into a rounded head and engaged by the loop of the bar, operating bars connected to the outer arms of the lever, and means carried by the bars for throwing the switching points.

6. The combination of two tracks, switching points connecting and disconnecting the tracks, a trigger mechanism intermediate the switching points and coacting therewith, an operating bar connected to the trigger mechanism and extending between each of the tracks, and a spring plate fixed to the outer end of each bar carrying a block on its upper face for the purpose described.

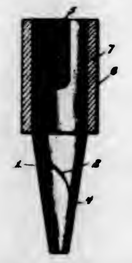
7. The combination of two tracks, switching points for connecting and disconnecting the tracks, a bar connecting the switching points together, a double bell crank lever coacting with the bar for moving the switching points, a spring normally tending to move the switching points in one direction, and a pawl for holding the switching points against the tension of the spring when moved in the opposite direction.

8. The combination of two tracks, switching points for connecting and disconnecting the tracks, a bar connecting the switching points together, a double bell crank lever engaging the bar, a spring normally forcing the lever in one direction, a pawl for engaging the lever and holding it against the tension of the spring when moved in the opposite direction, and means for disengaging and reëngaging the lever and pawl as the switching points are moved to connect and disconnect the tracks.

9. The combination of two tracks, switching points for connecting and disconnecting said tracks, a bar connecting the switching points together, a double bell crank lever in engagement with the bar, an operating bar connected to one end of the lever, and means providing for a limited movement of the bar independent of said lever.

10. The combination of two tracks, switching points for connecting and disconnecting said tracks, a bar connecting the switching points together, a double bell crank lever in engagement with the bar, an operating bar connected to each end of the lever and extending in opposite directions, means providing for a limited movement of the bars independent of said lever, and a second lever connecting the bars together.

853,836. PENCIL-SHARPENER. DE KELLER STAMEY, New York, N. Y. Filed Dec. 5, 1906. Serial No. 346,491.



Claim.—1. A pencil sharpener comprising a tapering tube having a spiral slot therein and a cutting edge projecting at an angle in said slot, and a depression in one end of said tube for pointing the lead, substantially as described.

2. A pencil sharpener having a cutting edge, a cylindrical portion at one end thereof, a depression formed in said cylindrical portion, said depression being roughened for pointing the pencil lead.

3. A pencil sharpener comprising a tapering tube having a cylindrical portion at one end, a depression formed in said cylindrical portion, and a ring provided with a recess to engage said depression to prevent the ring from turning upon said cylindrical portion, said depression being roughened for pointing the pencil lead, substantially as described.

853,837. MOLD FOR CONCRETE. HENRY A. STEBER, Utica, N. Y. Filed Nov. 22, 1906. Serial No. 344,609.

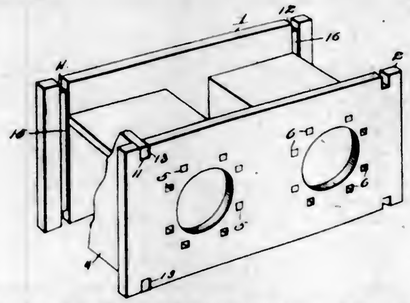
Claim.—1. A mold, comprising walls and ends and a core formed of a plurality of transposable members.

2. A mold, comprising removable sides and ends, and a core positioned in a plane perpendicular to the sides and formed of a plurality of independent transposable members.

3. A mold, comprising bodily and independently removable sides and ends, a core mounted between the sides and supported thereby said core being adapted to be transposed for forming various shaped blocks, and means for securing the mold together.

4. A mold comprising a pair of sides formed with notches in the ends thereof, end members formed with projections that are adapted to engage the notches in said sides, and a core formed of a plurality of transposable parts positioned between said sides and engaged by said sides for holding the same in any desired position.

5. A mold comprising side and end members, a core positioned between said side and end members, said core comprising a plurality of interchangeable parts formed with projecting lugs for engaging said side members, and also formed with beveled portions for permitting easy removal of said core, and means for holding said sides and core in position.



6. In a mold having ends and sides, a core formed of a plurality of members means for individually supporting said members at both ends, said supporting means being of identical construction.

7. A mold comprising sides and ends, said sides being of identical construction and formed with series of apertures therein, means for holding said sides and ends together, and a core formed in parts positioned between said sides, said core being formed with means for engaging some of said apertures in said sides and adapted to being shifted among the series of apertures to vary the shape of the block.

8. In a device of the character described, a core formed of a plurality of separate and independent plates, each plate having individual integral means formed thereon to engage the sides for its own support independent of all other members of the core, said plates being adapted to be separately removed.

9. A mold comprising removable sides and ends, means for securing the same together, and a laterally positioned core formed in parts, said core being formed with lugs for engaging said sides, said lugs being so positioned as to permit the shifting of the parts for varying the shape of the core.

10. A mold comprising removable sides and ends, said sides formed with apertures therein, and grooves near each end thereof, a plurality of core plates positioned between the said sides, means formed integral with said core plates for engaging the apertures in said sides and means for holding said sides together said grooves holding said ends in proper position.

11. A mold comprising removable end and side members, said side members being provided with grooves near each end thereof, a plurality of collapsible core plates positioned between said side members and removably secured thereto, said core plates being adapted to be removed by being collapsed, and means for holding said side members and core in position said grooves being adapted to hold said ends in position.

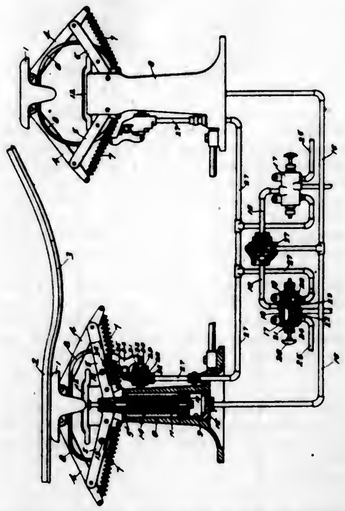
12. A mold comprising sides and ends, means for securing the same together, and a core positioned between said sides formed with a plurality of members, said members being adapted to be independently removable, said member being also formed with beveled portions for forming a beveled corner in the block.

13. A device of the character described, comprising a mold with bodily removable sides, a core member secured between said sides, said core comprising a plurality of parts, and means passing longitudinally through said sides and the hollow of the core member for holding said mold in operative position the said holding means being at all times out of contact with the block being formed.

14. In a device of the character described, comprising a mold having perforated and notched side members, plates having extensions formed thereon, said extensions being adapted to engage the notches in said side members, and plates formed with lugs thereon positioned between said side members for forming a core, said lugs engaging said perforations for holding the core in position.

15. A device of the character described, comprising a mold having perforated and notched sides, end members formed with extensions, said extensions adapted to engage the notches in said sides, and a plurality of plates of identical construction positioned between said sides and adapted to engage said perforations, said plates being adapted to be varied in position for forming a plurality of different shaped blocks.

853,838. CURRENT-COLLECTOR. SAMUEL B. STEWART, Jr., Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 1, 1906. Serial No. 328,668.



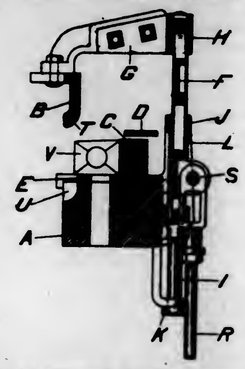
Claim.—1. The combination with a suspended conductor and a current collector for electric vehicles, of a retractor for the collector, means controlled by the movement of the collector out of its normal working position for actuating said retractor, and means disposed at desired intervals upon said conductor for moving said collector out of its working position.

2. The combination with a suspended conductor and a current collector for electric vehicles, of a spring pressed retractor for said collector, means for holding said retractor in inoperative position, means controlled by the movement of the collector out of normal working position for releasing said holding means, and means disposed at desired intervals upon said conductors for moving said collector out of its working position.

3. The combination with a suspended conductor and a current collector for electric vehicles, of a spring pressed retractor for said collector, pneumatic means for holding said retractor in inoperative position, a pilot valve for said pneumatic means actuated by the movement of the collector out of its normal working position and means disposed at desired intervals upon said conductor for moving said collector out of its working position.

4. The combination with a current collector of a retractor therefor, a fluid pressure system for actuating said retractor, an engineer's valve for controlling said fluid pressure, and a pilot valve actuated by the abnormal movement of said collector and automatically controlling the said engineer's valve.

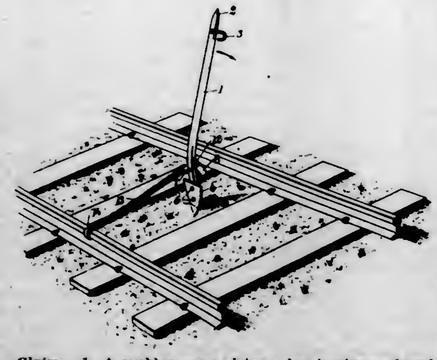
853,839. AUTOMATIC SHUTTLE-CHANGING LOOM WITH SLIDING FRONT PLATE FOR THE SHUTTLE-BOXES. WALLACE I. STIMPSON, Milford, Mass., assignor to Draper Company, Portland, Me., a Corporation of Maine. Filed Mar. 8, 1906. Serial No. 304,868.



Claim.—1. An automatic shuttle-changing loom having, in combination, a movable front-plate for the shuttle-box at the supply side of the loom having a beveled inner edge adapted to move an inserted shuttle backwardly, and means for moving the front-plate.

2. An automatic shuttle-changing loom having, in combination, a lay having a recess at its upper forward edge at the supply side of the loom, a guideway on the lay extending substantially at right angles to the race-plate of the lay, a frame sliding in said guideway, a front-plate for the shuttle box at the supply side of the loom carried by and moving with said frame, said front-plate having its lower edge beveled on its inner face, said bevel normally occupying the said recess in the lay, and means for raising and lowering said frame.

853,840. GRUBBER. DAVID TAYLOR, Jr., St. Francisville, La., assignor of one-half to William R. Percy, St. Francisville, La. Filed July 20, 1906. Serial No. 327,034.



Claim.—1. A grubber, comprising a bar having a shovel, means for removably attaching said bar to an anchor, and a bracket pivotally mounted upon said bar and adapted to rest upon the ground to act as a fulcrum for said bar.

2. A grubber, comprising a bar having a shovel, means for removably attaching said bar to an anchor, and a bracket on said bar adapted to limit the penetration of said shovel into the earth and to act as a fulcrum for said bar.

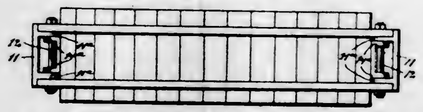
3. A grubber, comprising a bar having a beveled, tapered end, a shovel removably mounted near said end, means for removably attaching said bar to an anchor, and a bracket on said bar having a flat face adapted to rest upon the ground.

4. A grubber, comprising a bar with pointed ends, a shovel removably mounted upon said bar near an end thereof, a hook on said bar, a chain adapted to be removably attached to said hook, and means for anchoring said chain.

5. A grubber, comprising a bar with pointed ends, a shovel removably mounted upon said bar near an end thereof, a hook on said bar, an anchor, a chain adapted to join said hook with said anchor, and a bracket adjustably mounted on said bar adapted to rest upon the ground when said shovel is driven thereinto.

6. A grubber, comprising a bar having pointed ends, a shovel removably mounted near an end of said bar, a stirrup adjustably mounted upon said bar and constituting a bracket adapted to rest upon the ground, a plurality of hooks rigidly attached to said bar, and a chain having an anchoring hook and adapted to be removably attached to one of said hooks.

853,841. ARCH-HOLDER. STEPHEN TEEPLE, Chicago, Ill. Filed June 30, 1906. Serial No. 324,224.



Claim.—1. A support for arches formed of bricks or blocks, comprising a pair of parallel curved bars which span the arch and have connecting cross pieces with depending portions, at the ends, bolts between the bars at each end, within said cross pieces, plates swinging upon said bolts and bearing against the end blocks, and clamping screws between the depending portions of the cross pieces and the plates.

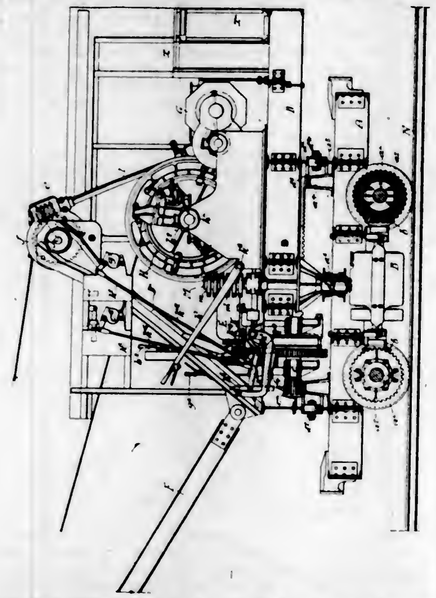
2. The combination with side walls having recesses in the top thereof, and an arch of bricks extending over the space between the walls, of a curved bar spanning the arch above the bricks, and clamping devices at the ends of the bar and in the recesses, bearing against the end bricks, to bind the arch together the inner walls beside the recesses being extending upwardly toward the bricks, to protect the clamping devices from the fire.

853,842. LOCOMOTIVE-CRANE. GEORGE E. TITCOMB, Philadelphia, Pa., assignor to The Dodge Coal Storage Company, Naugatuck, Conn., a Corporation of Connecticut. Filed Jan. 10, 1906. Serial No. 295,489.

Claim.—1. The combination in a crane of a supporting frame, a structure pivotally mounted thereon and provided with a boom, means for swinging said structure on its pivot, hoisting means, and means for controlling said hoisting and swinging means, the same including an operating device common to both of said controlling means, substantially as described.

2. The combination of a supporting frame, a structure pivotally mounted thereon and provided with a boom, hoisting mechanism, a motor for swinging said structure on its pivot, a second motor for operating said hoisting mechanism, a controller for each of said motors, and an operating member common to both of said controllers, substantially as described.

3. The combination of a supporting frame, a structure pivotally mounted thereon and provided with a boom, hoisting mechanism, a motor for swinging said structure on its pivot, a second motor for operating said hoisting mechanism, a controller for each of said motors, and an operating member common to both of said controllers, said member being supported so as to be movable in a plurality of lines, and having connections to the controllers so arranged that its movement in one line operates one controller, while its movement in either of two other lines actuates the second controller, substantially as described.



4. The combination of a supporting frame, a structure pivotally mounted thereon and provided with a boom, hoisting mechanism, a motor for swinging said structure on its pivot, a second motor for operating said hoisting mechanism, a controller for each of said motors, and an operating member common to both of said controllers, said member being supported so as to be movable in a plurality of lines and having connections to the controllers so arranged that its movement in one line operates one controller, while its movement in either of two other lines actuates the second controller, the controllers being connected to be simultaneously operated by movement of said member in another line or lines, substantially as described.

853,843. TRANSFORMER. MATTHEW O. TROY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 21, 1906. Serial No. 335,622.



Claim.—1. In a transformer, a magnetic core, a winding surrounding said core, and cooling pipes extending parallel with the winding axis between the winding and the core.

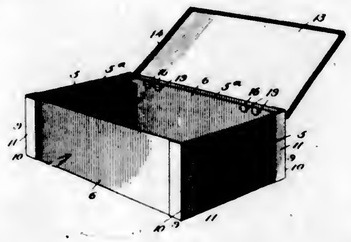
2. In a transformer, a magnetic core having a non-circular cross-section, circular coils surrounding said core, and cooling pipes extending parallel with the coil axis in the spaces between the coils and the core.

3. In a transformer, a magnetic core of cruciform cross-section, circular coils surrounding said core, and cooling pipes extending parallel with the coil axis in the spaces between the coils and the core.

4. In a transformer, a magnetic core having a plurality of parallel legs, a winding surrounding each leg, cooling pipes extending parallel with the winding axes between the windings and the core, and hollow end-plates for the core forming connections between pipes on different legs.

5. In a transformer, a magnetic core having a plurality of parallel legs of cruciform cross-section, circular coils surrounding each leg, cooling pipes extending parallel with the coil axes in the spaces between the coils and the core, and hollow end-plates for the core forming connections between pipes on different legs.

853,844. BOX OR RECEPTACLE. WASHINGTON I. TUTTLE, Baltimore, Md. Filed May 10, 1905. Serial No. 259,772.



Claim.—1. In a box structure, side walls each having integral offstanding corner locking elements removed from the ends of said walls, and corner fasteners each having integral engaging elements co-operating with the first named elements and constructed when in position to draw the ends of adjacent side walls of the structure into contact with each other to form a close joint at the corners of the box.

2. In a box structure, side walls having integral offstanding corner locking elements whose bases are removed from the ends of said walls, but which are parallel therewith, and a corner fastener having integral engaging elements interlocked with the first named elements.

3. In a box structure, side walls having integral corner locking elements whose bases are removed from the ends of said walls, and a corner fastener having integral engaging elements interlocked with the first named elements.

4. In a box structure, side walls having integral tongues stamped therefrom at points adjacent the meeting ends of said walls, and a corner fastener having integral engaging elements interlocked with the said tongues.

5. In a box structure, side walls having integral corner locking elements whose bases are removed from the ends of said walls, and a corner fastening strip having integral engaging elements interlocked with the said elements on the walls, said strip when in position covering the meeting edges of adjacent walls.

6. In a box structure, side walls having integral corner locking tongues stamped from the said walls, the bases of the tongues being removed from the end edges of the walls, and a corner fastening strip having integral engaging elements interlocked with said tongues, said strip when in position covering the meeting edges of adjacent walls of the box.

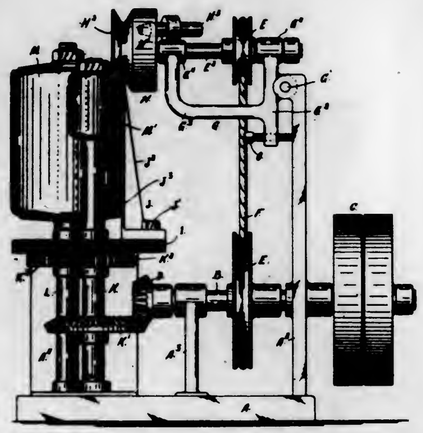
7. A box consisting of a blank having a body portion and integral side and end wings constituting the vertical walls of the box, the opposite ends of each wing being provided with integral outstanding tongues whose bases are removed from the end edges of the wings, and separate corner fastenings for the corners of the box, each consisting of an angular strip having inturned flanges interlocked with the said tongues, the said corner fastening strips being located outside the box.

8. The herein described blank for a box, consisting of a body portion having integral side and end wings, the opposite ends of each wing being provided with integral outstanding tongues, whose bases are removed from the end edges of the wings, said tongues being adapted to interlock with corner fastening pieces.

9. In a box, side walls having abutting edges and free-ended corner locking elements struck up from the material

of the walls, the bases of which are removed from and whose free ends are turned away from the edges of the walls, and a corner fastener having counterpart locking elements to interlock with those of the side walls.

853,845. COMBINED TURN-DOWN-COLLAR FOLDER, SHAPER, AND EDGE-IRONER. HENRY A. TWIGG, Denver, Colo. Filed Apr. 18, 1904. Serial No. 203,741.



Claim.—1. The combination of a vertically disposed plate over which the turn down collar is adapted to fold, an edge ironing wheel mounted above the plate, a roller located in the rear of the edge ironing wheel and coöperating with the plate, the said roller having a vertical axis, the length of the roller being less than the width of the collar, and a second roller located in the rear of the first named roller.

2. In a machine of the class described, the combination of a horizontally disposed operating shaft, a second shaft mounted above the first named shaft, an edge ironing wheel mounted on the second shaft, means for transmitting motion from the operating shaft to the edge ironing wheel shaft, a stationary plate whose upper edge occupies a position below the edge ironing wheel, a roller located in the rear of the edge ironing wheel and coöperating with the said plate, a vertical shaft upon which said roller is made fast, a second roller located in the rear of the first named roller and coöperating with the latter, a shaft upon which the second roller is mounted and made fast, gears connecting the two shafts, and a gearing connection between the operating shaft and one of the roller shafts.

853,846. FENCE. JOHN E. TYLER, Roxobel, N. C. Filed Oct. 5, 1906. Serial No. 337,554.

Claim.—1. The combination substantially as herein described, of the base having at one side a lateral off-set forming an upwardly facing shoulder at its upper side, and provided in the face of said off-set with a groove curved from side to side, the standard composed of slats mounted upon the said off-set, bolts securing said slats together and to the upwardly projecting portion of the base, the fence material having wires held between the said slats and having its bottom wire held in the curved groove in the face of the off-set of the base, a cover plate projecting over said groove, and a bolt extending through said cover plate and base above the groove and securing the plate to the base, substantially as set forth.

2. The base having at one side a lateral off-set forming an upwardly facing shoulder and provided below the said shoulder with a groove to receive a fence wire combined with the standard mounted on said upwardly facing shoulder and secured to the base above the said shoulder, and the fence material secured to the said standard and having its bottom wire arranged in the groove in the base, and a securing device held to the base and projecting over the said groove to retain the wire therein, substantially as set forth.



3. The combination substantially as herein described, of a base having a lateral off-set forming an upwardly projecting shoulder, and provided below said shoulder with a groove curved from side to side, a cover plate projecting over said groove to retain a wire therein, a bolt passing transversely through the base and securing the cover plate thereto, and a standard mounted on the upwardly facing shoulder and secured to the base, substantially as set forth.

4. A post having a concrete base and a standard secured thereto and provided in the concrete base below the standard with a groove extending from side to side and adapted to receive a fence wire, and means for retaining the fence wire in said groove, substantially as set forth.

5. A base having an off-set portion forming an upwardly facing shoulder to receive a standard, and provided in its off-set portion below said shoulder with a groove to receive a fence wire, and means for retaining the fence wire in said groove, substantially as set forth.

853,847. TILTING FRAME FOR COOKING-STOVES. JAFEW S. VAN BUREN, Albany, N. Y., assignor to Rathbone, Sard & Co., Albany, N. Y., a Corporation of New York. Filed Jan. 10, 1907. Serial No. 351,694.

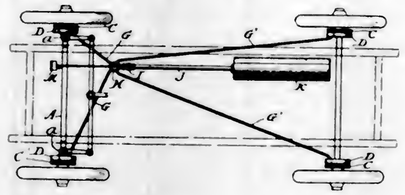


Claim.—1. In a cooking stove, the combination, with a lifting plate having a rib on its lower surface, of a post pivoted to said rib, a ratchet below the top of the stove, for the purpose specified, and a casing adapted to be closed by said rib and to house said post and ratchet.

2. In a cooking stove, the combination, with a tilting plate, of a post pivoted to said plate and having a laterally projecting lug at its end, a ratchet pivoted below the top of the stove, for the purpose specified, said ratchet having a laterally offset portion provided with a tooth at one end and a rounded portion at the other end, and a casing adapted to house said post and ratchet, said casing having its bottom curved up at one end, the lug on said post adapted to ride up onto said tooth as the plate is raised and to escape the laterally offset portion of said ratchet as it is raised farther and engage the rounded portion of said pawl and raise the latter as said plate is lowered.

3. In a cooking stove, the combination, with a tilting plate, of a post pivoted to said plate and having a laterally projecting lug at its end, a ratchet pivoted below the top of the stove, for the purpose specified, said ratchet having a laterally offset portion provided with a tooth at one end and a rounded portion at the other end, and a casing adapted to house said post and ratchet, said casing having its bottom curved up at one end, the lug on said post adapted to ride up onto said tooth as the plate is raised and to pass over the pivoted ratchet and fall against the curved bottom of the ratchet case, compelling the post to assume a horizontal position and become housed within the case as the plate is lowered.

853,848. BRAKE. LEWIS S. WATRES, Scranton, Pa., assignor of fifty-one one-hundredths to Robert C. Adams, Scranton, Pa. Filed Aug. 19, 1905. Serial No. 274,946.



Claim.—1. The combination with the swinging front wheel of a motor-driven vehicle, of a braking surface rotating and swinging with the wheel, a non-rotary brake shoe also swinging with the wheel and an inflatable brake applying member acting when inflated to bring the shoe and braking surface into operative engagement.

2. The combination with the swinging front wheel of a motor-driven vehicle, of a braking surface rotating and swinging with the wheel, a non-rotary brake shoe also swinging with the wheel, and an inflatable brake applying member acting when inflated to bring the shoe and braking surface into operative engagement, a source of fluid under pressure for inflating said member and a flexible coupling between such source and inflatable member.

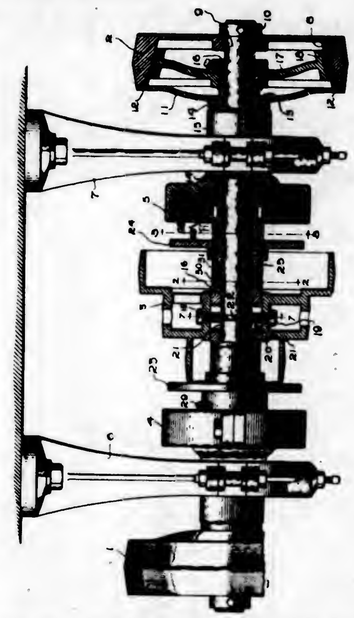
853,849. FRICTION-CLUTCH. EDDY R. WHITNEY, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Nov. 9, 1905. Serial No. 286,488.

Claim.—1. The combination with the driving and driven members of a clutch, of an actuating part rotated by said driving member, stationary means for deflecting said part from its path of rotation, and means for transmitting the deflected motion of said part to one of the clutch members.

2. The combination with the driving and driven members of a clutch, of an actuating part rotated by said driving member, stationary means for deflecting said part from its path of rotation, and means for transmitting said deflected motion to one of the clutch members to effect an axial movement thereof.

3. The combination with the driving and driven members of a clutch, of an actuating part positively connected to said rotating member, stationary means for deflecting said actuating part from its path of rotation, and means for transmitting said deflected motion to one of the clutch members.

4. The combination with the driving and driven members of a clutch, of an actuating part positively driven by said driving member, a stationary device adapted to deflect the actuating part, means for bringing said device and actuating part into engaging relation, and means to transmit the deflected movement of the actuating part to one of the clutch members.



5. The combination with the driving and driven members of a clutch, of an actuating part having an engaging projection and positively rotated by the driving member, a stationary engaging part adapted when brought into the path of said projection to move the actuating part, means whereby the engaging parts may be freely adjusted relatively to each other, and means for transmitting the deflected motion of the actuating part to one of the clutch members.

6. The combination with the driving and driven members of a clutch, of an actuating part positively driven by said driving member, a stationary device adapted to engage said actuating part and deflect it axially, and a connecting member between said actuating part and one of the clutch members whereby the axial movement of the former produces a corresponding movement of the latter.

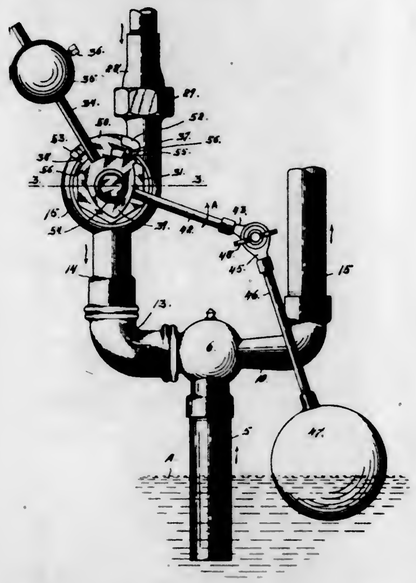
7. The combination with the driving and driven members of a clutch, of an actuating part positively rotated by said driving member and free to move transversely, a stationary device adapted to engage said actuating part to effect its transverse movement, and a shaft having operative engagement with said actuating part and carrying the driven member of the clutch.

8. The combination with the driving and driven members of a clutch, of an actuating part positively rotated by the driving member and free to move axially, a stationary device adapted to engage said actuating part to effect its axial movement, and a shaft connected by a lost motion arrangement with the actuating part and carrying the driven member of the clutch.

9. The combination with the driving and driven members of a clutch, of an actuating part rotated by the driving member and free to move axially, a wedge-shaped projection carried by said part, a stationary projection adapted to engage the wedge-shaped projection to effect axial movement of the actuating part, a shaft connected by a

lost motion arrangment with said actuating part and carrying the driven member of the clutch, and means for moving said actuating part to engage upon one side or the other of the stationary projection.

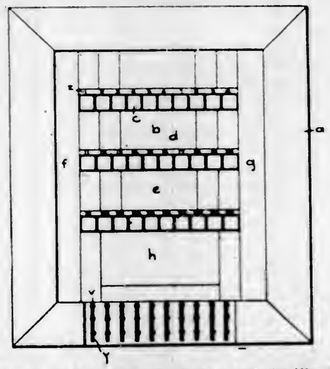
853,850. AUTOMATIC CELLAR-DRAIN. GEORGE WOODALL, Flushing, N. Y. Filed June 2, 1906. Serial No. 319,874.



Claim.—1. An automatic cellar drain comprising a suction pipe, an ejector, a supply pipe and a valve for controlling the passage of fluid from the supply pipe to the ejector, and means for operating the valve comprising a float-actuated trip lever, a spindle connected in operative relation with the valve, the trip lever being loosely connected with the spindle and having a segmental part provided with separated lugs one of said lugs having two engaging parts, a weighted arm loosely mounted on the spindle and occupying a position between the lugs of the trip lever, and a trip socket fast on the spindle and provided with lugs also located on opposite sides of the trip lever, the parts being so arranged and connected that one of the lugs of the trip lever actuates the weighted arm to bring it to the perpendicular position, whereby the lower engaging part of said ing acts on one of the lugs of the trip socket to impart the initial opening movement to the valve and simultaneously imparts the overbalancing movement to the weighted arm whereby the latter falls from the perpendicular position by gravity and acts on the trip socket to suddenly complete the opening movement of the valve.

2. In an automatic cellar drain, the combination with a suction pipe, of an ejector, a fluid supply pipe, and a valve for controlling the passage of the fluid from the supply pipe to the ejector, and means for operating the said valve comprising a spindle journaled in said supply pipe and connected in operative relation with the valve, a float-actuated trip lever loosely mounted on the spindle and provided with separated lugs, a weighted arm mounted on said spindle and a trip socket fastened on the spindle and provided with lugs, one of the lugs on the trip lever adapted to first operate the weighted arm and then the trip socket, substantially as described.

853,851. HOTEL-INDICATOR. ELIAS ABRAHAM, New Liskeard, Ontario, Canada, assignor of one-fourteenth to Henry Hartman, one-fourteenth to Daniel T. K. McEwen, one-fourteenth to Albert A. Morgan, one-fourteenth to Michael Abraham, one-fourteenth to William Taylor, one-fourteenth to Kalil Abraham, and one-fourteenth to Francis Louden Smiley, New Liskeard, Canada. Filed Nov. 23, 1906. Serial No. 344,772.



Claim.—1. In a register for hotels and the like the combination with the casing having the front thereof formed with a plurality of apertures of a plurality of indicator cards each divided into two parts having indicating words on each part, the size of each part being such that it fills the space of the aperture corresponding thereto, a plurality of depressible levers extending externally to the casing, a spring for each lever for holding the same in a normal or depressed position and connecting means extending between the levers and the cards whereby a depression of the lever moves the corresponding card and causes the part exposed through the aperture to be changed as and for the purpose specified.

2. In a register for hotels and the like the combination with a plurality of indicator cards of a plurality of rods supporting the same, means engaging with the upper ends of the rods for holding the same in position, a plurality of depressible levers connected to the rods and adapted to raise and lower the same and a spring for each lever for holding the levers in their normal or depressed positions as and for the purpose specified.

3. In a register for hotels and the like the combination with a plurality of indicator cards, a plurality of vertically extending rods supporting the same, springs connected to the upper ends of the rods, a plurality of depressible levers connected to the rods and adapted to raise and lower the same and means for holding the levers in their normal or depressed position as and for the purpose specified.

4. In a register for hotels and the like the combination with a plurality of indicator cards, a plurality of vertically extending rods supporting the same, springs connected to the upper ends of the rods, a plurality of depressible levers connected to the rods and adapted to raise and lower the same and resilient means for holding the levers in their normal or depressed position as and for the purpose specified.

5. In a register for hotels and the like the combination with a plurality of indicator cards of a plurality of vertically extending rods supporting the same, springs connected to the upper ends of said rods, means for supporting the upper ends of the springs, a plurality of pivoted and depressible levers connected to the rods and adapted when operated to raise and lower the same, springs abutting flat portions formed on said levers adapted to hold them in their depressed or normal position as and for the purpose specified.

6. In a register for hotels and the like the combination with the casing having the front thereof formed with a plurality of apertures, a plurality of indicator cards divided into two parts and having indicating words on each part, the size of the said parts being such that they each fill the space of the aperture corresponding to the card, a plurality of vertically extending rods supporting the cards, springs connected to the upper ends of the rods, means for supporting the upper ends of the springs, a plurality of levers pivoted to the casing extending therethrough having their inner ends connected to the rods, springs adapted to abut flat portions formed on the levers and so hold them in their normal or depressed positions as and for the purpose specified.

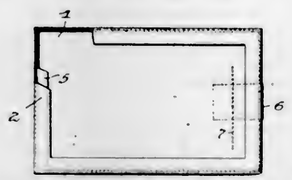
7. In a register for hotels and the like the combination with a plurality of indicator cards of a plurality of rods supporting the same, means for supporting the upper ends of the rods, of operating levers for the rods comprising central pivoted portions having two arms integral therewith and substantially at right angles to each other, one extending external to the casing and having a button secured thereto and the other connected to the rod, and flat springs adapted to abut the arms of the levers and so hold them in their depressed or normal positions as and for the purpose specified.

853,852. INSURANCE SYSTEM. EUGENE G. ADAMS, Lynchburg, Va., assignor to Postal Insurance Corporation, Lynchburg, Va., a Corporation of Virginia. Filed Oct. 22, 1906. Serial No. 340,110.



Claim.—As an article of manufacture, a two part insurance policy consisting of a paper containing an insurance contract provided with suitably designated spaces for the signature of insurer and that of the insured combined with a postal card, both bearing a number or mark of identification, and the postal card bearing also printed reference to the contract paper and the beneficiary thereof, substantially as described.

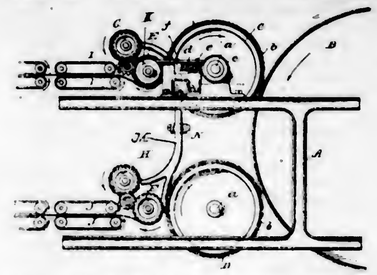
853,853. SOUVENIR POSTAL CARDS. EUGENE G. ADAMS, Lynchburg, Va., assignor to Postal Insurance Corporation, Lynchburg, Va., a Corporation of Virginia. Filed Jan. 25, 1907. Serial No. 354,106.



Claim.—1. In combination with the outer envelop having an open front, an inner member or slide removably held by the outer member and a card held by the slide, said slide having a turned up portion engaging the card and overlying the face of the same, substantially as described.

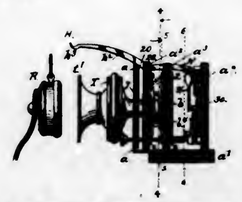
2. In combination with the outer envelop having an open face, an inner member or slide removably held by the outer member and the card held by the slide, said slide having a turned up portion overlying the card and fitting between the same and the envelop, a tab on the slide the outer envelop having a slit engaged by the tab, substantially as described.

853,854. CARDING-MACHINE. THOMAS E. AINLEY, Uxbridge, Mass. Filed Apr. 23, 1906. Serial No. 313,260.



Claim.—In a carding machine the combinations of lower and upper doffer rolls; one of said rolls being provided on its shaft with a worm gear, lower and upper stripper rolls movable to and fro in the direction of their length, a swinging frame engaging the stripper rolls at one end thereof, a circumferentially-grooved wheel mounted on one stripper roll at the opposite end thereof, a horizontally-disposed worm gear intermeshed with the worm gear on the shaft of the doffer roll and bearing a stud, and a horizontally swinging lever having a slot in one arm receiving the stud on the horizontal gear and also having its other arm engaged with the circumferentially-grooved wheel on the stripper roll.

853,855. DESK-TELEPHONE AND SWITCHING MECHANISM. ALBERT K. ANDRIANO, San Francisco, Cal., assignor to Direct-Line General Telephone Company, San Francisco, Cal., a Corporation. Filed July 22, 1905. Serial No. 270,758.



Claim.—1. A telephone outfit comprising a case containing the terminals of a plurality of lines, a movable transmitter having a mouth piece at the front of the case, a line-selecting switch connected with and moved by the transmitter, a receiver adapted to cover the opening of the said mouth piece, and means for holding the receiver in position against the mouth piece when not in use, substantially as set forth.

2. In a line-selecting telephone outfit a case, a transmitter therein movable to effect the line-selecting and having its mouth-piece on the front of the case, a receiver adapted to cover the mouth-piece, and a pivoted telephone-hook arranged to hold the receiver in position against the mouth-piece of the transmitter, and also to control the switches of the local telephone outfit.

3. In a telephone outfit, a case, a line-switching-mechanism having a movable switch-piece, a series of stationary contacts and a transmitter movable in the case and connected with the movable switch-piece whereby the adjustment of the switch-piece is effected by moving the transmitter.

4. In a line-selecting local telephone outfit, the combination of a case, line contacts within the case, switching mechanism therein, a movable switch-piece co-operating with the said line contacts, and a rotatable transmitter adapted to form the setting means for the switch-piece.

5. In a telephone outfit, the combination of a case, a series of stationary contacts for the ringing circuit, a series of stationary contacts for the talking circuit, a movable switch-piece for each of said circuits, and a transmitter

movably mounted in the case and arranged to set the said switch-pieces when moved, substantially as set forth.

6. In a telephone outfit, the combination of a case, a series of stationary contacts for the ringing circuit, a series of stationary contacts for the talking circuit, a transmitter rotatably mounted in the casing, a pair of switch-pieces secured to the transmitter and arranged to move therewith, and an insulating center-piece between the pair of switch-pieces, substantially as set forth.

7. The combination of a case, a transmitter rotatably mounted therein, a switching-device containing stationary contacts in a circle around the axis of the transmitter and a movable contact connected with the transmitter and adapted to move over the stationary contacts and to be operatively set thereto by the rotation of the transmitter.

8. The combination of a case, a transmitter rotatable therein, a circle of switch contacts having the axis of rotation of the transmitter for its center, a rotatable switch-piece adapted to be set by the rotation of the transmitter, and means for limiting such rotation.

9. The combination of a case, a circle of switching contacts therein, a transmitter rotatably mounted in the case, having a hub coincident with the center of said circle of contacts, and provided with a member forming a movable contact-piece to the switching contacts.

10. In a telephone outfit, a switching device containing stationary contact-points in a circle, a rotatable contact-piece arranged axially of said circle for rotation in the case and a transmitter connected with the rotatable contact-piece and constituting the means for setting the contact-piece, and means for indicating the position of the contact-piece.

11. In a telephone-outfit, the combination with a switching device containing a circle of stationary contacts, of a rotatable switch-piece, a rotatable transmitter having its axis of rotation coincident with the switch-piece, means connecting the switch-piece with the transmitter whereby the latter is turned to set the switch-piece.

12. In a telephone outfit, a case, a rotatable transmitter comprising a mouth-piece on the outside of the case and a hub within the case, a contact-piece on the hub a circle of stationary switch-points arranged in operative relation to said contact-piece, and a dial-plate on the hub.

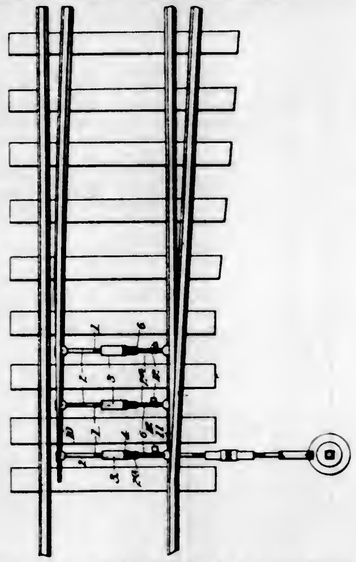
13. In a telephone outfit, the combination of a switching-device having a circle of stationary switch-points, a rotatable transmitter having its axis of rotation coincident with the center of the circle of switch-points and a contact-piece on the transmitter adapted to close the circuit through any selected one of the switch-points by the rotation of the transmitter, and an indicating device operating to show the position of the contact-piece.

853,856. LAMP-BURNER. ELIZA C. BABCOCK, Binghamton, N. Y. Filed May 29, 1906. Serial No. 319,404.



Claim.—The combination with a lamp burner having a horizontal table provided with a plurality of openings and with a depending tubular neck, of a cap seated on the upper face of the table and provided with an outstanding marginal lower edge flange, a base ring formed to fit around the neck and lie flush against the lower face of said table, and a plurality of chimney engaging arms made integral with the ring and extended vertically upward through the respective openings in the table, the arms being folded adjacent their lower ends downward upon and into engagement with the upper face of the table for holding the ring securely in place therebeneath, the folded portions of the arms being engaged with the outstanding flange for retaining the cap in place on the table.

853,857. RAILWAY-SWITCH. SEELEY J. BAXTER, Wamego, Kans., and JOSEPH L. CARLYLE, Doniphan, Mo. Filed Mar. 22, 1907. Serial No. 363,903.



Claim.—1. A switch adjusting device comprising means for operating the adjusting device, said means embracing one part of the device, and means for locking the operating means out of operative position.

2. A switch adjusting device comprising means for operating said device, said means including a lever having a looped end embracing a part of the device, and means for locking the operating means out of operative position.

3. In a switch adjusting device, means for operating said adjusting device, said means including a lever having a looped end embracing a part of the device, and means for locking the operating means upon the part of the device embraced by said loop portion.

4. The combination with a switch including switching points; of adjusting devices between the switch points, each adjusting device comprising rods connected by a sleeve, each sleeve having recesses near one end; and a lever embracing one part of each adjusting device and having a dog for engagement with the recesses of the corresponding sleeve to move the latter to adjust the device.

5. The combination with a switch including switching points; of adjusting devices between the switch points, each adjusting device comprising rods connected by a sleeve, each sleeve having recesses near one end; a lever embracing one part of each adjusting device and having a dog for engagement with the recesses of the corresponding sleeve to move the latter to adjust the device, and means for locking the lever upon the part of the device embraced by the lever.

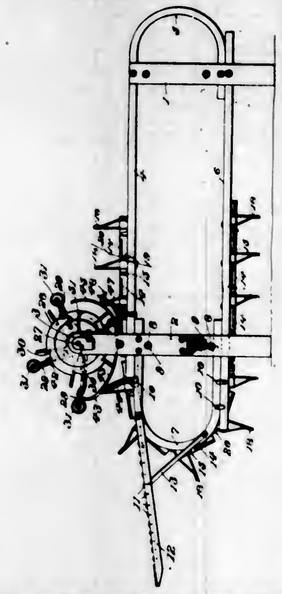
6. In a switch adjusting device, means for operating said adjusting device, and means for locking the operating means when not in use.

7. A switch provided with adjustable switch rods, means carried by said rods to adjust the same, and means for locking the aforementioned means when not in use.

8. A switch provided with adjustable switch rods, a lever carried by the rods for adjusting the same and means for locking the lever to the switch rods when not in use.

9. A lever of the character described having one end bent and provided with a loop with its opposite end provided with an eye and carrying a projecting dog intermediate the ends.

853,858. BRICK, BLOCK, OR TILE CUTTER. BYRON E. BECHTEL, Waterloo, Ontario, Canada. Filed Nov. 19, 1906. Serial No. 344,066.



Claim.—1. A cutting device for severing plastic material bars into sections of uniform length comprising a cutting reel, an endless traveling table consisting of pivotally united sections, each provided with a reel actuating portion, means whereby the spacing of said portions can be varied to vary the length of the sections cut from said bar, and means whereby the spacing of said portions is rendered uniform throughout said table, whereby said sections cut from the bar will be uniform in length, substantially as described.

2. A cutting device for severing plastic material bars into sections uniform in length comprising an endless traveling table consisting of sections, pivotal connections between the sections, each connection comprising a member movable longitudinally of a section whereby the spacing between all of the sections can be varied, to vary the length of plastic sections produced, each section provided with set means, whereby the spacing between all the sections is rendered uniform for the production of plastic material sections of a uniform length.

3. A cutter for severing plastic material bars into lengths comprising a rotary cutting reel, and an endless traveling table receiving said bar and co-operating with said reel in severing said bar into sections of uniform length, said table consisting of sections, pivotal connections between and spacing all the sections, each pivotal connection comprising a member movable longitudinally of a section and provided with means to maintain uniform spacing between the sections, whereby the spacing between the sections can be varied to vary the lengths of plastic material produced and whereby when varied uniform lengths of plastic material will be produced.

4. A cutter of the character substantially as described comprising a cutting reel, endless tracks, and an endless traveling table mounted on said tracks consisting of pivotally united sections, each section comprising a floor having reel actuating standards, longitudinal bars rigid with said floor and provided with longitudinally adjustable extension bars pivotally joined to the longitudinal bars of the adjoining sections.

5. A cutting device of the character substantially as described, comprising an endless table composed of sections, each section having cutting reel actuating standards and longitudinal bottom bars rigid with the sections and provided at one end thereof with longitudinally adjustable extensions, set pins and holes being provided to determine the adjustment of each extension, clamping bolts for locking the extensions, cross shafts passing through said bars and extensions and pivotally uniting the sections, rollers on the cross shafts, a frame having a track for the rollers, and a cutting reel.

6. In combination, in a cutting device, an endless track, means for supporting the same, said track comprising curved ends, one end formed by a U-shaped longitudinally adjustable track sections, and an endless traveling table mounted on said track.

7. A cutting device for cutting plastic material bars, comprising an endless traveling table, an endless track therefor, said track having horizontal top and bottom sections and curved end portions between said sections, one end portion having straight upper and lower portions slidably engaging the upper and lower horizontal track sections, and means rendering said end portion longitudinally adjustable.

8. In combination, in a cutting device for severing plastic material bars into lengths, a cutting reel, an endless traveling table comprising pivotally united sections and provided with means for adjusting the length of each section, an endless track for said table provided with means for varying the length thereof, and a support for said track.

9. A rotary cutting reel for a cutting device for severing plastic material bars into lengths comprising a cutting wire carrying frame, a cutting wire stretched between the ends thereof, and a tightening and securing device for said wire comprising a rotatable spindle mounted on an end of said frame and having a ratchet disk, a tooth set in said arm to engage said teeth of the disk, said wire being attached to and adapted to wind on said spindle, the tension of the wire on the spindle holding said disk to said arm.

10. In a cutter for severing plastic material bars into lengths, in combination an endless traveling table having reel actuating standards and means whereby the spacing of the standards can be varied, a rotary cutting reel comprising a movable cutting wire frame, and controlling cam tracks for said frame having movable sections and means for supporting said movable sections.

11. In a cutter for severing plastic material bars into lengths, a traveling endless table having cutting reel actuating projections, a rotary cutting reel having inwardly and outwardly movable cutting wire frames, means to limit and control the movements of said frames, and fixed cams for throwing said frames successively outwardly as they pass downwardly.

12. In combination, in a cutter for severing plastic material bars into lengths, an endless traveling table having cutting reel actuating portions, a rotary cutting reel having inwardly and outwardly movable cutting wire frames, each frame having a lateral stop projection, a cam track along which said projections move, and a cam successively engaged by said projections to throw the frames outwardly to carry said projections into engagement with said track.

13. A rotary cutting reel having outwardly extending arms, a cutting wire stretched between and passed through said arms, means detachably securing said wire at the outer edges of said arms, said means comprising a mounted rotary spindle loosely mounted in ears at the outer edge of an arm and tending to move away from the outer face of the arm, a ratchet wheel and tooth for locking said spindle, one end of the wire wound on the spindle, the tension of the wire holding the wheel and tooth in locking engagement.

14. A cutting reel having outwardly extending arms, a

cutting wire stretched between said arms, means for detachably securing the wire and holding the same under tension comprising a loosely mounted rotary spindle on which one end of the wire is wound, and a ratchet wheel and tooth for locking said spindle, the tension of the wire holding the spindle with said wheel and tooth in locking engagement, said spindle being mounted to permit lateral play and normally tending to swing laterally and release said wheel and tooth from locking engagement.

15. In combination, in a cutter for severing plastic material bars into lengths, a traveling table, a rotary cutting reel comprising inwardly and outwardly movable cutting wire frames having controlling projections, a track on which said projections move, an end portion of said track being movable toward and from the reel axis, and means for adjusting said track section independently of the remaining portion of the track.

16. In combination, in a cutter for severing plastic material bars into lengths, an endless traveling table having cutting reel actuating standards, means for guiding and supporting said table, a rotary cutting reel having inwardly and outwardly movable cutting wire frames adapted to be engaged by said standards and provided with stop projections, cam tracks fixed with respect to said frames and along which said projections travel, each track having a pivoted rear end section, and means for adjusting and supporting the same.

17. In a cutter for severing plastic material bars into lengths, in combination, an endless traveling table formed of sections provided with supporting rollers, tracks for said rollers comprising upper and lower horizontal lengths connected by curved end tracks, the curved tracks at the receiving end of the machine formed by a pair of U-shaped angle irons, with their lower horizontal ends longitudinally overlapping the lower horizontal track sections, and their horizontal upper ends longitudinally underlying the upper horizontal track sections, whereby the table rollers drop from said upper horizontal track lengths to said upper horizontal ends and thereby successively downwardly tilt the sections of the table at the delivery end of the machine, and a rotary cutting reel arranged above the delivery end of said table.

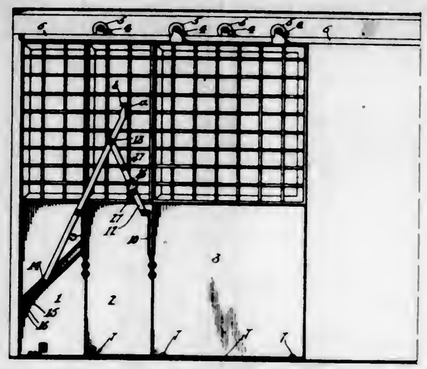
18. In a cutter for severing plastic material bars into lengths, in combination, an endless traveling table comprising sections provided with supporting rollers, endless tracks for said rollers comprising upper horizontal angle irons and lower horizontal angle irons, the upper angle irons curved down at the receiving end of the machine to receive the rollers from the lower track lengths, U-shaped angle irons connecting said horizontal lengths at the delivery end of the machine with their ends longitudinally lapping the same and adjustable longitudinally thereof to vary the length of the endless tracks, and means for adjustably securing said U-shaped ends.

19. In combination, in a machine for severing plastic material bars into lengths, an endless traveling table comprising sections provided with supporting rollers, endless tracks for said rollers comprising horizontal upper and lower lengths connected by curved end tracks, the curved tracks at the delivery end of the machine formed by U-shaped angle irons adjustable longitudinally of said upper and lower lengths, means for adjustably securing said angle iron ends, and a delivery platform secured to and carried by said angle iron ends, to receive the severed lengths from the table.

20. In combination, in a machine for severing plastic material bars into lengths, an endless traveling table, and a track therefor comprising overlapping sections, one section being arranged above the other section and having its extremity 4^a bent down thereto, substantially as described.

853,859. ELEVATOR-DOOR MECHANISM. VICTOR A. BENSON, Los Angeles, Cal. Filed Nov. 26, 1906. Serial No. 345,240.

Claim.—1. In combination with a sliding door, an operating lever having a pivotal connection with the door, and a guideway fixed with relation to the doorway of said door and continuously engaging a movable part of the operating lever at a single point on said lever, that portion of said guideway which engages the lever when the door is closed being located closer to the doorway than the other end of said guideway.



2. In combination with a sliding door, an operating lever having a pivotal connection with the door, and a stationary guide engaging the end of the operating lever, said guide having an offset abutment for opposing longitudinal movement of the operating lever.

3. In combination with a sliding door, a lever fulcrum having a resilient connection with the door, an operating lever pivoted on the fulcrum, and means for controlling the path of movement of one end of the lever.

4. In combination with a plurality of sliding doors, an operating lever having a pivotal connection with one door, a link connecting said lever with the other door, said lever and link lying substantially parallel with the line of movement of the doors when the doors are closed, and stationary means for guiding the path of movement of one end of said lever and opposing longitudinal movement of the lever and link when they are parallel with said line of movement thereby locking the doors.

5. In combination with a plurality of sliding doors, a fulcrum having a resilient connection with one door, an operating lever pivoted on the fulcrum, a pivotal support having a resilient connection with the other door, a link connected to said pivotal support and to the operating lever, and means for guiding one end of the operating lever.

6. In combination with a plurality of sliding doors, a fulcrum having a resilient connection with one door, an operating lever pivoted on the fulcrum, a pivotal support having a resilient connection with the other door, a link connected to said pivotal support and to the operating lever, and a stationary guide engaging one end of the operating lever for guiding it.

7. In combination with a plurality of sliding doors, an operating lever having a pivotal connection with one door, a link connecting said lever with the other door, and a stationary guide engaging one end of the operating lever for guiding the movement of the same, that portion of said guide which is engaged by the end of said lever when the doors are closed being substantially perpendicular to the line of movement of the doors, thereby locking the doors when they are shut.

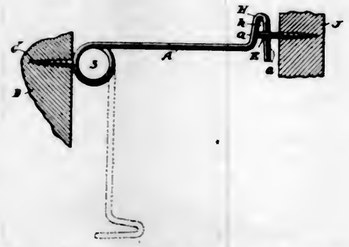
8. In combination with a plurality of sliding doors, a fulcrum having a resilient connection with one door, an operating lever pivoted on the fulcrum, a pivotal support having a resilient connection with the other door, a link connected to said pivotal support and to the operating lever, and a stationary guide engaging one end of the operating lever for guiding it, said guide having an abutment for opposing longitudinal movement of the operating lever.

9. In combination with a plurality of sliding doors, an operating lever pivoted to one door, a link connecting the lever with the other door, means for guiding the movement of the operating lever, the end of the operating lever having a beveled face, and a slide on the link for acting on the bevel face to flex the link and lever.

10. In combination with a plurality of sliding doors, an operating lever pivoted to one door, a link connecting the lever with the other door, means for guiding the movement of the operating lever, the end of the operating lever having a beveled face, and a slide on the link for acting on the bevel face to flex the link and lever, and means for limiting the movement of the slide on the link.

11. In combination with a plurality of sliding doors, an operating lever pivoted to one door, a link connecting the lever with the other door, means for guiding the movement of the operating lever, the end of the operating lever having a beveled face, and a slide on the link for acting on the bevel face to flex the link and lever, a spring catch on the first door adapted to engage and lock the end of the lever, said slide having means for disengaging said catch when the slide is operated to flex the link and lever.

853,860. FASTENING FOR DOORS, BLINDS, SHUTTERS, &c. WILLIAM S. BIGELOW, Boston, Mass. Filed Nov. 28, 1906. Serial No. 345,551.



Claim.—1. In a fastening device, two members each adapted for attachment to one of two parts to be connected, and constructed to engage each other with a wedging action, one of said members formed into a spring whereby said member is held under pressure in engagement with the other member and means for connecting the spring end of the member to a rigid support.

2. In a fastening device, two members each adapted for attachment to one of two parts to be connected, and constructed to engage each other with a wedging action, one of said members formed into a spring whereby said member is held under pressure in engagement with the other member, and means forming part of the spring member for connecting the spring end of the member to a rigid support.

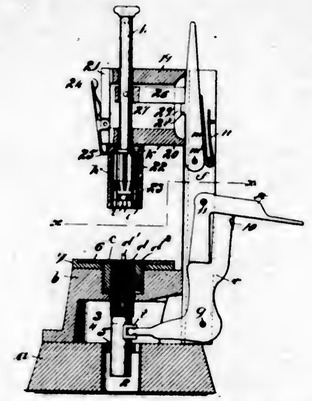
853,861. MOLDING-MACHINE. JAMES BLUMER, New York, N. Y. Filed Nov. 22, 1905. Renewed Sept. 18, 1906. Serial No. 335,149.

Claim.—1. In a molding machine, a base, a plurality of patterns, means for bringing said patterns into and away from juxtaposed positions, and means for changing the relationship of one or more of said patterns to that of the others, so that in the same machine and with the same patterns molds for complementary castings may be made.

2. In a molding machine, a base, a pattern block, a pattern, means for adjusting said pattern revolubly to a predetermined position, a second pattern, and means for placing the same in juxtaposition with and moving the same away from the first aforesaid pattern.

3. In a molding machine, a base, a base-block, a pattern, a pattern-block therefor, means for moving the same pattern into and out of said pattern-block, means for adjusting the said pattern and pattern-block revolubly, a second pattern and means for placing the same in juxtaposition with and moving the same away from the first aforesaid pattern.

4. In a molding machine, a base, a base-block, a pattern, a pattern block therefor, means for moving the pattern into and out of said pattern-block, means for adjusting the said pattern and pattern-block revolubly, a second pattern, a sleeve adapted to receive said second pattern and into and out of which the same may be moved, means for maintaining said sleeve in a predetermined position, and means for maintaining the last aforesaid pattern within the said sleeve.



5. In a molding-machine, a base, a base-block, a pattern, a pattern-block therefor, means for moving the pattern into and out of said pattern-block, means for adjusting the said pattern and pattern-block revolubly, a second pattern, a sleeve adapted to receive said second pattern and into and out of which the same may be moved, means for maintaining said sleeve in a predetermined position, means for maintaining the last aforesaid pattern within the said sleeve, and means for maintaining a given relationship between the said sleeve and the last aforesaid pattern.

6. In a molding machine, the combination with a base, a base-block, a pattern, a pattern-block revolubly mounted within the said base-block, standards secured to the said base-block, levers pivotally mounted in the said standards and adapted through their actuation to move the said pattern longitudinally out of and into the said pattern-block, means for adjusting the position of the said pattern revolubly, a second pattern, a sleeve fitting over the same, and means for lowering the last aforesaid pattern into position above the first aforesaid pattern and raising the same from the said position.

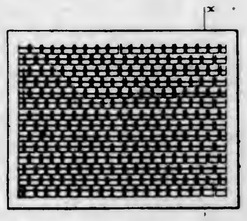
7. In a molding machine, the combination with a base, a base-block, a roll pattern, pattern-block revolubly mounted within the said base-block, standards secured to the said base block, levers pivotally mounted in the said standards and adapted through their actuation to move the said pattern longitudinally out of and into the said pattern-block, means for adjusting the position of the said pattern revolubly, a frame secured to said standards, a rod mounted in bearings in said frame, a gear pattern secured to the lower extremity of said rod, a sleeve adapted to receive the gear pattern and into and out of which the same may be moved, means for maintaining the said sleeve in position beneath the said frame and means for holding the said rod and gear pattern in position with the gear pattern within the said sleeve.

8. In a molding machine, the combination with a base, a base-block, a roll pattern, a pattern-block revolubly mounted within the said base-block, standards secured to the said base-block, levers pivotally mounted in the said standards and adapted through their actuation to move the said pattern longitudinally out of and into the said pattern-block, means for adjusting the position of the said pattern revolubly, a frame secured to said standards, a rod mounted in bearings in said frame, a gear pattern secured to the lower extremity of said rod, a sleeve adapted to receive the gear pattern and into and out of which the same may be moved, a spring actuated lever for maintaining the said sleeve in position beneath the said frame, a spring actu-

ated lever pivotally mounted in the said standards, a lug on the said lever and an arm secured to the said rod within the said frame whose outer end is normally adapted to rest against said lug on the lever to normally maintain the rod in position with the gear pattern within the said sleeve.

9. In a molding machine, the combination with a flask, of co-related patterns adapted to enter the flask in opposite directions and come into contact and to recede from the flask in the opposite direction, said patterns forming a mold for an integral casting, and means for imparting a partial rotation to one of the patterns to change its relation to the other pattern for forming a complementary casting.

853,862. WINDOW-SCREEN AND THE LIKE. JOSEPH F. BUCK and LEO F. BUCK, Camden, N. J. Filed Sept. 10, 1906. Serial No. 333,913.



Claim.—1. As a new article of manufacture, a reticulated window screen comprising a metal sheet having a series of perforations in staggered relation with guards over the perforations, the said guards being struck from the sheet metal in forming the perforations; said guards being inclined to prevent rain from entering the perforations.

2. As a new article of manufacture, a reticulated window screen comprising a metal sheet provided with a series of perforations in staggered relation and a series of integral guards standing at an incline over the perforations to prevent rain from entering the perforations.

853,863. METHOD OF PRODUCING PICTURES, DESIGNS, &c. THOMAS A. CONNOLLY and JOSEPH B. CONNOLLY, Washington, D. C. Filed Oct. 4, 1906. Serial No. 337,480.



Claim.—1. The art of producing pictorial representations, consisting in subjecting a sensitised sheet to the action of light through a positive of the object to be copied to produce an image, then removing a portion of the sheet then hardening the sheet and then passing coloring matter through the interstices so formed onto a suitable receptive surface.

2. The art of producing photo mechanical prints or impressions, consisting in subjecting a photo sensitised sheet or web to the action of light under a photographic positive to produce an image, then dissolving the soluble portions of the sheet then resensitising the sheet and hardening the same, and then passing coloring matter through the interstices of the sheet onto a receptive surface.

3. The art of producing photo mechanical prints or impressions, consisting in subjecting a photo sensitized sheet or web to the action of light to produce an image, then dissolving the soluble portions of the sheet, and then passing coloring matter through the interstices of the sheet onto a receptive surface and then printing the prints or impressions from said surface.

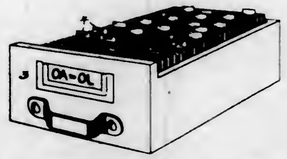
4. The art of producing photo mechanical or pigment prints or impressions, which consists in producing by photographic agency a web or sheet bearing an image to be printed, applying said sheet to a suitable receptive surface for pigment, conveying soluble pigment or coloring matter to the said receptive surface by means of said sheet and then taking impressions of the photographic image in said pigment from the surface upon which it has been laid and from the one charge of color or pigment.

5. The art of producing photo mechanical or pigment prints or impressions, which consists in inking a hectograph to correspond with the print or impression, through the medium of a photographically exposed and developed inking sheet, and then taking impressions from said hectograph.

6. In photo mechanical or pigment printing, the process of duplicating prints consisting in impressing a photo image in soluble color or pigment upon the surface of a body containing a suitable solvent of said color or pigment, then taking impressions therefrom by the application and removal of the sheet upon which the print is to be taken without further inking or charging.

7. The process of producing hectographic copies, consisting in first making a stencil of the matter to be copied, applying this stencil to a hectographic surface, applying a hectographic color upon the exposed side of the stencil, and then making copies from the hectographic surface in the usual manner.

853,864. FILING SYSTEM. JAMES M. CORBOY, Edgewood Park, Pa. Filed Apr. 12, 1906. Serial No. 311,340.



Claim.—1. An improved filing system comprising a plurality of compartments characterized by predetermined vowel and consonant limit identifications with relation to the consecutive letters of a word or name independent of its initial letter, and a series of files having name identifying devices in definite positions with relation to the initial letter of the word or name, substantially as set forth.

2. An improved filing system comprising a plurality of compartments characterized by predetermined vowel and consonant limit identifications with relation to the consecutive letters of a word or name independent of its initial letter, and a series of files each having a series of initial letters adapted to co-operate with an identifying name device, substantially as set forth.

3. An improved filing system comprising a plurality of compartments identified by predetermined vowel and consonant limit identifications, and a series of files each provided with series of initial letters, and name devices appropriately attached thereto, substantially as set forth.

4. A double filing folder having its upper edge provided with series of initial letters, a name device appropriately attached thereto, and having its face provided with suitable data for entries, etc., substantially as set forth.

853,865. AUTOMATIC SAFETY-PIN. WILLIAM COYLE, Devonport, New Zealand, assignor of part interest to Herbert Gentles and John Manners Morran, Auckland, New Zealand. Filed July 17, 1905. Serial No. 270,126.

Claim.—1. An automatic safety pin involving a body having a pin terminating in a point, a slide connected to the free end of said body and having a catch for engagement with the point, a guide on the body portion for actuating the pin to bring the point into engagement with the catch, and an off-set to maintain the slide in a locked position.

2. An automatic safety pin comprising a body having an off-set and a pin, a slide associated with the body and having a catch for engagement with the pin, and means for guiding the body and slide when the latter is being actuated to bring the pin into locking engagement with the catch.

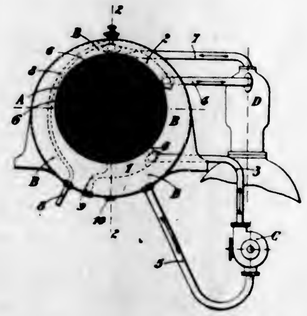


3. In an automatic safety pin, a body formed of a single piece of material, a slide formed of a single piece of material, said body having an off-set and a pin, said slide having a catch at one end, and means associated with the body and coöperative with the slide to form a guide for causing the said catch to be brought into engagement with the pin during the closing action of the safety pin.

4. An automatic safety pin involving a body having a pin terminating in a point, a slide associated with the free end of said body and having a catch at one end for engagement with the point of the pin, a guide formed in the body to bring the catch in operative position with respect to the point of the pin, an off-set in the body, and means formed in the slide for engagement with the off-set to lock the said slide in a closed position.

5. An automatic safety pin comprising a body portion bent on itself to provide a loop and having a pointed terminal, a slide associated with the opposite free terminal of the body and having a catch for locking engagement with the pointed terminal of the body, an off-set in the body, and a guard for engagement with the off-set to hold the body and slide in a locked position with respect to each other when the pin and catch are in engagement.

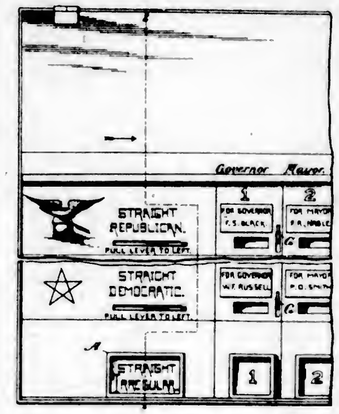
853,866. WATER-CIRCULATING APPARATUS. LOUIS M. G. DELAUNAY-BELLEVILLE, Neuilly-sur-Seine, France. Filed Dec. 4, 1905. Serial No. 290,223.



Claim.—1. The combination with a motor for motor vehicles and a circulation pump, of a radiator, a reservoir, a tubular connection between the lower portion of the pump and the bottom of the reservoir, a connection between the upper part of the pump and the lower portion of the radiator, and tubular connections between the upper part of the motor and the radiator and reservoir respectively.

2. In an apparatus of the class specified, the combination with a motor and circulating pump, of a radiator having a series of baffles therein, a reservoir, and connections between the lower portions of the radiator and reservoir and the pump and between the upper portions of the radiator and reservoir and the motor, whereby the water will circulate upwardly through the radiator and be fed to the motor and downwardly through the reservoir and be supplied to the radiator.

853,867. VOTING-MACHINE. GILBERT S. DEY, Rochester, N. Y., assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y., a Corporation of New York. Filed Sept. 11, 1899. Serial No. 730,128.



Claim.—1. In a voting machine, the combination of straight irregular voting mechanism, ordinary voting mechanism, interlocking mechanism, including rods, actuated thereby, and swinging plates or bars adapted to be moved either over all or some of said interlocking rods to prevent the movement thereof, whereby a partially qualified voter is prevented from voting improperly, substantially as described.

2. In a voting machine, the combination of straight irregular voting mechanism, regular voting mechanism, interlocking mechanism actuated thereby and a sectional plate or bar supported upon a rock shaft, the parts being so arranged that said sections may lock the entire machine by the operation of the straight irregular voting mechanism or a specified part thereof.

3. In a voting machine, the combination of straight irregular voting mechanism, regular voting mechanism, and interlocking mechanism actuated thereby, with a rock shaft, links depending from said rock shaft, a sectional bar supported by some of said links, means for moving certain sections of said bar to lock out a specified portion of the voting mechanisms, and means for locking the entire machine by the operation of the straight irregular voting mechanism.

4. In a voting machine, the combination of voting mechanism, interlocking mechanism, stops carried by said interlocking mechanism, a rock shaft, links depending from said rock shaft, straight irregular voting devices and connections between said rock shaft and said irregular voting device and said stops.

5. In a voting machine, the combination of straight irregular voting mechanism, interlocking mechanism, a sectional bar E, E^1, E^2, the links d^1 and d^2, the rock shaft D, means for moving said bar to lock all or part of the interlocking mechanism and connections between said rock shaft and irregular voting mechanism.

6. In a voting machine, the combination with the casing of the machine, a toothed handle projecting through said casing, a sectional bar to which said handle is attached, links supporting said bar, a shaft on which said links are mounted, and interlocking mechanism.

7. In a voting machine, the combination with the casing of the machine, a toothed handle projecting through said casing, a sectional bar to which said handle is attached, links supporting said bar, a shaft on which said links are mounted, and interlocking mechanism, and means for holding said bar, or a part of it, in proximity to the interlocking mechanism, thereby preventing movement of the latter, substantially as described.

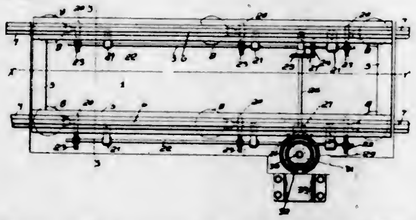
8. In a voting machine, a plurality of voting mechanisms, arranged in different office groups, a locking bar mounted in proximity to said voting mechanisms and consisting of a plurality of independently movable sections, any one or more of which may be moved into locking engagement with one or more of said office groups.

9. In a voting machine, a plurality of voting mechanisms arranged in different office groups, a locking bar pivotally mounted on a shaft in proximity to said voting mechanisms, and consisting of independently movable sections, one or more of which may be moved into locking relation with one or more of said office groups.

10. In a voting machine, a plurality of voting mechanisms arranged in different office groups, a locking device mounted in proximity to said voting mechanisms and consisting of a plurality of independently movable sections, one each for a plurality of office groups, any one or more of which may be moved into locking relation to one or more of said office groups.

11. In a voting machine, a plurality of voting mechanisms arranged in different office groups, a locking device mounted upon a shaft in proximity to said voting mechanisms and consisting of a plurality of adjustable sections, one or more of which may be moved into locking relation with one or more of said office groups.

853,868. DROP-RAIL FOR ROUNDHOUSES. HENRY J. DRUMMOND, Etna, Pa. Filed Feb. 28, 1907. Serial No. 359,856.

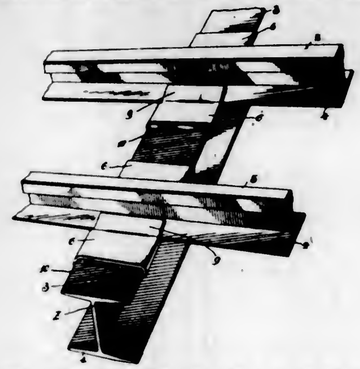


Claim.—1. In an apparatus for elevating car bodies, a rectangularly elevating frame comprising longitudinal parallel beams spaced apart, plates on the upper faces of said beams and plates secured to the lower faces of said beams, cross beams connecting the said parallel beams at the ends, a plurality of jack screws arranged underneath each parallel beam, bearings carried by the plates secured to the lower faces of said parallel beams, shafts journaled in said bearings and geared to said jack screws, and means for operating said shafts to simultaneously actuate the jack screws.

2. In a device for elevating car bodies, a rectangularly elevating frame comprising longitudinal beams spaced apart and arranged parallel with each other, rails mounted on said beams, plates secured to the underneath face of said beams, cross beams connecting the parallel beams at their ends, a plurality of jack screws arranged underneath each parallel beam, bearings carried by the plates and secured to the underneath face of said beams, and shafts journaled in said bearings, gears connecting said shafts with the jack screws, operating means for driving one of said shafts, and gear connections between said operating means and the other shaft for driving both of the shafts simultaneously and operating all of the jack screws in unison.

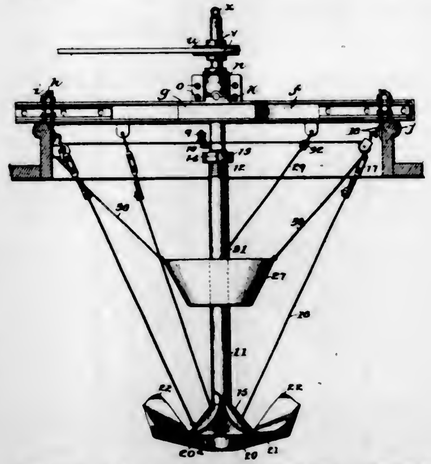
853,869. METALLIC TIE AND RAIL-FASTENER. WILLIAM F. DUBLER, Allegheny, Pa. Filed Feb. 16, 1907. Serial No. 357,681.

Claim.—1. The combination with rails, of a tie of the I-beam construction adapted to support said rails, fasteners slidably mounted upon the top flanges of said tie, said fasteners consisting of sleeves having angular extensions adapted to engage the base flanges of said rails, the inwardly projecting flanges of said sleeves being bent upwardly to provide prongs, and wedge-shaped plates interposed between said sleeves and the top flanges of said tie.



2. The combination with rails, and a tie of the I-beam construction for supporting said rails, of fasteners slidably mounted upon said tie and having extensions adapted to engage said rails, prongs carried by said sleeves and adapted to engage in said tie, and wedge shaped plates driven into said sleeves for holding said sleeves in a fixed position upon said tie.

853,870. DISTRIBUTING APPARATUS. GEORGE C. ELLERTON, U. S. Navy. Filed Nov. 24, 1906. Serial No. 344,976.



Claim.—1. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft pivotally mounted on said frame, and a distributing device carried by said shaft, substantially as described.

2. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft pivotally mounted on said frame, a distributing device carried by said shaft, and a hopper mounted above said distributing device, substantially as described.

3. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft pivotally mounted in said frame and carrying a distributing device on its lower end, and an open ended hopper surrounding said shaft and adjustable relatively thereto, substantially as described.

4. In a distributing apparatus, the combination of a supporting frame, a shaft mounted in said frame and carrying a distributing device at its lower end, an open ended hopper surrounding said shaft, and means for adjusting said hopper in relation to said shaft, substantially as described.

5. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft pivotally mounted in said frame, a distributing device carried on the lower end of said shaft, and means located above said distributing device for throwing the material under treatment, as it falls, outwardly into said distributing device, substantially as described.

6. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft pivotally mounted in said frame, means for adjusting said shaft up and down relatively to said frame, a distributing device carried by the lower end of said shaft, telescoping pipes surrounding said shaft, and a distributing cone supported at the lower end of said telescoping pipes, substantially as described.

7. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft pivotally mounted in said frame, means for adjusting said shaft relatively to said frame, a distributing device carried by the lower end of said shaft, telescoping pipes surrounding said shaft, means for securing said pipes in different positions relatively to each other, a cone located at the lower end of said telescoping pipes, and means for adjustably supporting said cone, substantially as described.

8. In a distributing apparatus, the combination of a rotatable shaft, and a distributing device adapted to be secured to one end of said shaft and including a central support, and curved plates, said plates flaring outward from said central support and having their edges bent upward, the upper edges being separated from each other, substantially as described.

9. In a distributing apparatus, the combination of a rotatable shaft and a distributing device adapted to be secured thereto, said distributing device consisting of a supporting wheel with a screw threaded hub, a series of curved plates attached to said wheel, said plates flaring outwardly from said wheel and having their edges bent up with the upper parts of said edges diverging from each other, and each of said plates being secured to the two adjacent plates, substantially as described.

10. In a distributing apparatus, the combination of a rotatable shaft and a distributing device adapted to be carried thereby, said distributing device consisting of a wheel provided with a screw threaded hub, a series of distributing plates bolted to said wheel, said plates flaring outwardly from said wheel and being bent upwardly having their upper edges separated from each other, but secured together, and protecting clips secured over the lower part of the meeting line of said edges, substantially as described.

11. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft mounted in said frame and carrying a distributing device at its lower end, a hopper open at both ends surrounding said shaft, and means for adjusting said hopper relatively to said shaft, consisting of sustaining cords running over guide pulleys and adjusting pulleys, substantially as described.

12. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft mounted in said frame and carrying a distributing device at its lower end, an open ended hopper surrounding said shaft, and means for adjustably supporting said hopper consisting of cords each attached at both ends of said hopper, and running over guide pulleys and adjusting pulleys, and means for securing said adjusting pulleys in any desired position, substantially as described.

13. In a distributing apparatus, the combination of a supporting frame, means for attaching it to a hatch coaming, a rotatable shaft pivotally mounted in said frame, a distributing device carried by the lower end of said shaft, means for adjusting said shaft relatively to said frame, an open ended hopper surrounding said shaft, means for adjusting said hopper, telescoping pipes surrounding said shaft and located within said hopper, a distributing cone located at the lower end of said pipes, and adjustable means for supporting said cone, substantially as described.

14. In a distributing apparatus, the combination of a rotatable hollow shaft, an eye bolt secured in the upper end of said shaft, a pulley adjustably secured to said shaft, a distributing device carried by the lower end of said shaft, a supporting frame provided with bearings, and means for pivotally supporting said shaft in said bearings, substantially as described.

15. In a distributing apparatus, the combination of a supporting frame composed of a central portion and arms projecting therefrom, bearings on said central portion, a thrust saddle pivoted in said bearings, and a shaft adjustably mounted in said thrust saddle and carrying a distributing device at its lower end, substantially as described.

16. In a distributing device, the combination of a supporting frame comprising a central portion and projecting arms, bearings on said frame, a thrust saddle pivotally mounted on said bearings, a rotatable shaft in said thrust saddle and carrying a distributing device at its lower end, a thrust sleeve located between said thrust saddle and said shaft, and means for locking said shaft in said sleeve, substantially as described.

17. In a distributing apparatus, the combination of a supporting frame, comprising a central rectangular portion and arms projecting therefrom, bearings mounted on said frame, a thrust saddle pivotally mounted in said bearings, a thrust sleeve engaging said thrust saddle, a rotatable shaft adjustably secured to said thrust sleeve, a driving pulley adjustably secured to said shaft, and a distributing device carried on the lower end of said shaft, substantially as described.

18. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft carried by said frame, a distributing device carried by the lower end of said rotatable shaft and rotating therewith, a deflecting member located above said distributing device for laterally directing the material under treatment to said distributing device, said deflecting member being stationary with reference to said rotating distributing device, and means regulating the position of delivery to said deflecting member substantially as described.

19. In a distributing apparatus, the combination of a supporting frame, a vertically adjustable rotatable shaft, means for pivotally supporting said shaft on said frame, and means for rotating said shaft, substantially as described.

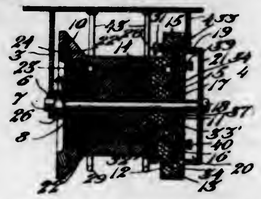
20. In a distributing apparatus, the combination of a supporting frame, a rotatable shaft mounted thereon, means for rotating said shaft, a distributing device carried at the lower end of said shaft, an adjustable pipe encircling said shaft, means for holding said adjustable pipe rigid when in its various adjusted positions, and a deflecting member carried at the lower end of said adjustable pipe, said adjustable pipe being also provided at its lower end with an internal bearing for the lower end of said rotatable shaft, substantially as described.

21. In a distributing apparatus, the combination of a supporting frame, a vertically adjustable rotatable shaft pivotally suspended therefrom, means for rotating said shaft, a distributing device carried at the lower end of said shaft, a pipe rigidly supported by said frame and encircling said shaft, a second pipe telescoping on said first pipe, means for rigidly securing said pipes in their relatively adjusted positions, and a deflecting member carried at the lower end of said second or telescoping pipe and comprising a hollow cone, said second or telescoping pipe extending substantially to the base of said deflecting member and provided with an internal bearing of Babbitt or other suitable metal for journaling the lower end of said rotatable shaft, substantially as described.

22. In a distributing apparatus, the combination of a supporting frame, comprising a central portion and a plurality of radiating arms, clamps for securing the ends of said arms to a hatch coaming or similar support, said clamps consisting of a pair of clamping members connected by a transverse bar, and a set screw for securing said arms between said members of each clamping device, whereby any substantial lateral movement causes a pair

of said divergent arms to bind against said clamping members, and means carried by said frame for distributing the material to be stowed, substantially as described.

853,871. ELECTRIC-LAMP HANGER. ADAM S. ELLIOT, Peterborough, Ontario, Canada, assignor of one-half to Charles Smith Botsford, Peterborough, Canada. Filed Apr. 14, 1906. Serial No. 311,702.



Claim.—1. In an electric lamp hanger, the combination with a supporting bracket, of a drum loosely journaled thereon and having a recess at one end and provided at its opposite end with an insulated head forming a chamber, closures for the recess and chamber, a coiled spring arranged within the recess and having one end fixed to the drum and the other secured to the shaft, clutch mechanism associated with the closure of the recess and the shaft for holding the drum in any desired position, circuit connections arranged in the chambered head, a lamp suspending cord attached to the drum, and conductors extending through the head for electrically connecting the wires of the cord with the inclosed circuit connections.

2. In an electric lamp hanger, the combination with a supporting bracket, and a stationary shaft carried thereby, of a drum loosely mounted on said shaft and having at one end inner and outer recesses, the inner recess being of less diameter than the outer one, a coiled spring within the inner recess and having one end secured to the drum and the other end secured to the shaft, a cover plate fitting in the outer recess and closing the inner recess, and locking means carried by the shaft and cover plate for holding the drum in any desired position.

3. In a lamp hanger, the combination of supporting means, a spring actuated drum revolubly supported thereby, locking means for holding the drum in any desired position, an insulated head upon one end of the drum arranged to form a chamber, circuit connections inclosed within said chamber, a suspending cord attached to the drum, and conductors upon the head connecting the wires of the cord with said circuit connections.

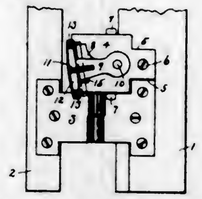
4. In a lamp hanger, the combination of a supporting bracket or frame, a drum loosely journaled thereon, said drum being provided with a recess at one end and an insulating head at the opposite end, means forming part of the supporting bracket and associated with said head to form a chamber, a helical spring arranged within the recess and connected with the drum and frame, a closure for said recess, locking means upon the frame and closure for holding the drum in any desired position, circuit connections within the chamber, and a suspending cord attached to the drum and in circuit with said connections.

5. In an electric lamp hanger, a supporting frame, a spring actuated drum loosely journaled thereon, said drum being provided at one end with a fixed insulating head, a fuse block forming part of the frame and coöperating with said head to provide an intervening chamber, locking means for holding the drum from rotation in any position, commutator plates and brushes upon the head and fuse block, and inclosed within said chamber, binding posts upon the fuse block, fuses connecting said posts with the brushes, a suspending cord attached to the drum and connected with said commutator plates, and conductors leading through the head from the binding posts to the commutator plates.

6. In an electric lamp hanger, a supporting frame, a spring actuated drum loosely journaled thereon, said frame being provided at one end with a fixed insulating head, a fuse block forming part of the frame and coöperating with said head to provide an intervening chamber, locking means for holding the drum from rotation in any position, commutator plates arranged within the chamber and secured to the head, brushes arranged within the chamber and secured to the fuse block, binding posts upon the fuse block connected with the commutator plates, and a suspending cord connected with said binding posts.

7. In an electric lamp hanger, a supporting frame, a spring actuated drum loosely journaled thereon, said drum being provided at one end with an insulating head, a stationary part forming a portion of the frame and coöperating with the head to provide an intervening chamber, circuit connections arranged within the chamber and respectively carried by the head and stationary part, binding posts upon the head and in electrical connection with the circuit connections upon the head, and a suspending cord connected with said binding posts.

853,872. LOCKING DEVICE FOR HINGES. FRIEDRICH GEBHARDT, Baltimore, Md., assignor of one-half to Thomas M. Harrington, Baltimore, Md. Filed Feb. 15, 1907. Serial No. 357,483.



Claim.—1. As an article of manufacture, a locking device for hinges comprising a metal plate having lugs projecting from the top and bottom edges, and a latch pivoted at one end to the side of said plate.

2. As an article of manufacture, a locking device for hinges comprising a metal plate cut away on its inner end at the top and bottom to fit the upper inner edge of the hinge, and a latch pivoted at one end to the side of said plate.

3. As an article of manufacture, a locking device for hinges comprising a metal plate cut away on its inner end at the top and bottom to fit the upper inner edge of the hinge, and a latch pivoted to said plate and provided with a cross-head on its free end.

4. As an article of manufacture, a locking device for hinges comprising a metal plate having lugs projecting from its upper and lower edges, and a latch pivoted to said plate and having a cross-head on its free end.

5. As an article of manufacture, a locking device for hinges comprising a metal plate having an opening in its outer end, and a latch pivoted to said plate and having a cross-head on its outer end and a lug near the outer end projecting through said opening.

6. As an article of manufacture, a locking device for hinges comprising a metal plate cut away on its inner end at the top and bottom, lugs projecting from the upper and lower edges of said plate, and an opening in the front end of said plate, and a latch pivoted to the said plate and having a cross-head on its outer end, a lug projecting through said opening and provided with a cross-piece thereon.

853,873. COMPOSITION FOR REMOVING SOOT FROM CHIMNEYS. GARDNER L. GRAY, Paducah, Ky., assignor of one-half to Jake Biederman, Paducah, Ky. Filed Nov. 3, 1906. Serial No. 341,960.

Claim.—1. A soot removing composition consisting of sodium chlorid, a compound of zinc, rosin, shells, sawdust and oxid of iron compounded together substantially in the proportions and manner set forth.

2. A soot removing composition, consisting of sodium chlorid, a compound of zinc, rosin, shells, and a filler, compounded together substantially in the proportions and manner set forth.

853,874. PRESSER-FOOT ATTACHMENT FOR SEWING-MACHINES. DORR H. HADSELL, Brockton, Mass., assignor of one-half to Thomas D. Barry, Brockton, Mass. Filed Oct. 24, 1906. Serial No. 340,340.

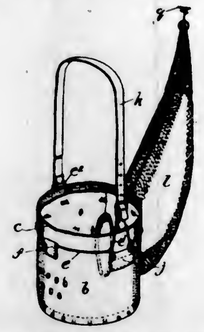


Claim.—1. In a sewing machine, a presser-foot for engaging flat upon the top surface of the work, and lubricating means including ducts opening on the flat work-engaging surface for maintaining the work-engaging surface of said presser-foot and the surface engaged thereby constantly lubricated.

2. In a sewing machine, a presser-foot having its work engaging surface formed in two different approximately parallel planes, and means for delivering independent portions of oil to said different work-engaging surfaces.

3. In a sewing machine, a presser foot, and means for delivering oil to lubricate the work-engaged thereby, said means including a fountain and siphon pipe therefrom.

853,875. FEED-BAG. ADDINGTON B. HAMILTON, Boston, Mass., assignor of two-thirds to James F. O'Brien, Boston, Mass. Filed Dec. 10, 1906. Serial No. 347,193.



Claim.—1. A feed-bag having a band separate from the body of the bag surrounding the upper portion thereof, and a supporting band connected with the surrounding band.

2. A feed-bag having supporting means adapted to pass over the head of an animal, and gathering means passing around the bag and connected with the supporting means, adapted to be drawn inward by the pull of the supporting means to restrict the opening of the bag.

3. A feed-bag comprising a main body, an external receptacle for grain adapted to feed its contents gradually into the body, whereby the depth of grain in the bag may be kept always at a low point, and a hanger for the bag having connected encircling means extending around the upper portion of the body adapted to draw the rim thereof inward.

4. A feed-bag comprising a main body, a hanger adapted to support the bag, a connected external member passing about the upper part of the bag connected to said hanger, and guides through which said member is passed, whereby a pull on the hanger causes it to draw the rim inward, and an external receptacle having an opening into the bag, adapted to contain grain and to admit the same in small quantities to the main portion of the bag, whereby the bag may be hung from the head of a horse with elimination of capacity for up-and-down play.

5. A feed-bag comprising a main portion adapted to be hung from the head of a draft animal, having a narrow slit at the rear, and an elongated receptacle with a narrow outlet at one end secured to the main portion at the sides of such slit, the end opposite to the outlet being adapted to be hung from a portion of the harness at a distance from the animal's head, whereby a movement of the main portion in a direction such as to pull on the receptacle will draw the sides of the slit together and contract the outlet of the receptacle.

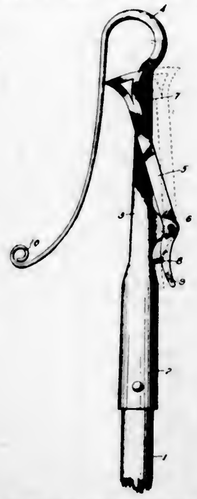
6. A feed-bag comprising a main portion having a partly sewed seam at the rear side, an elongated external receptacle closed at one end and having a narrow outlet at the other end, said outlet end being passed through the unsewed portion of said seam and fastened to the adjacent edges of the main portion, the said main portion of the bag being adapted to be hung from the head of an animal, and the closed end of the receptacle from a point near the shoulder of said animal, and a spring hanger connected with the closed end of the receptacle for connection with a part of the harness, whereby the receptacle may be yieldingly supported and protected from injury.

7. A feed-bag having external guides, a band passing around the bag through said guides, and a hanger extending from said band between adjacent guides at opposite sides of the bag, adapted to be passed over the head of a draft animal and to support the bag, the pull of the hanger being chabged in direction by said guides and causing the band to be drawn inward, restricting the opening of the bag.

8. A feed-bag having a pair of adjacent guides on opposite sides, a gathering band passing externally about the bag and led through said guides, and a supporting band or strap connected to the portions of the gathering band between the guides of each pair, adapted to support the weight of the bag and in so doing, to draw off portions of the gathering band and tighten the latter about the bag, restricting the opening thereof.

9. A feed-bag, a plate secured at opposite points on the sides thereof, guide rings attached to the plates, a cord passing around the bag through the guide rings, and a strap connected to the cord between adjacent rings, adapted to pass over the head of a draft animal and support the bag.

853,876. SHEPHERD'S CROOK. CHARLES HARDING, Forestgrove, Mont., assignor to A. Jackman, Lewistown, Mont. Filed Apr. 9, 1906. Serial No. 310,721.

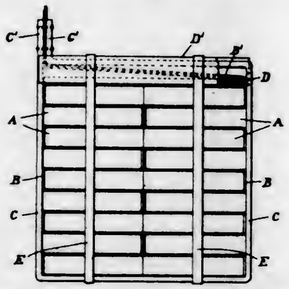


Claim.—1. A shepherd's crook comprising a slotted body portion formed with a shank constituting a shaft attachment, a hook portion, and a locking lever pivotally sup-

ported on said body portion at the rear of said slot and arranged to swing inwardly through said slot for positively closing the hook portion, the inner end of said lever formed substantially in an arc about said pivotal support, substantially as described.

2. A shepherd's crook comprising a slotted body portion formed with a shank constituting a shaft attachment, a hook portion, lugs extending from the outer surface of said body portion, and a locking lever pivotally supported in said lugs and arranged to swing inwardly through said slot into contact with said hook portion, the inner end of said lever formed substantially in an arc about said pivotal support, substantially as described.

853,877. BATTERY ELEMENT. OLIN F. HARVEY, Wilkes-Barre, Pa. Filed Aug. 11, 1905. Serial No. 273,841.



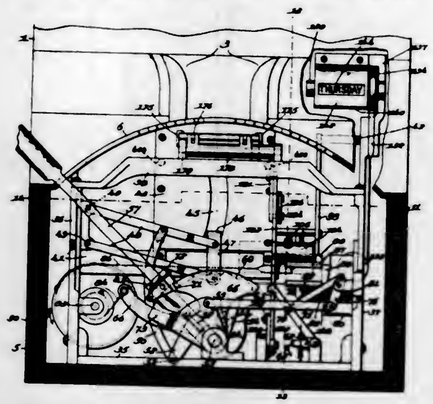
Claim.—1. In a battery element, a series of blocks of active material arranged one above the other, a flexible conducting strip in contact with each of said blocks, said conducting strip terminating in a lug extending from the upper end of the plate, a supporting frame surrounding the blocks of active material and conductor, a plate resting upon the top of the blocks of active material and primarily spaced a distance below the top of the frame, means for guiding said plate upon the frame as it moves vertically during the expansion and contraction of the active material, and elastic means tending to hold the plate in close contact with the top of the active material.

2. In a battery element, a flexible conducting strip bent so as to form spaces, active material disposed within said spaces, the top of the active material being horizontal, a containing frame surrounding the edges of the active material, a space being left between the top of the active material and the top of the frame, a plate resting upon the top of the active material, elastic means tending to force the plate downward upon the active material, means for guiding said plate upon the frame, the end of the conducting strip terminating in a lug, the conducting strip so arranged in between the active material and the lug as to relieve said conducting strip of any strain as the active material expands and contracts.

3. In a battery element, a plurality of rectilinear blocks of active material arranged in tiers one above the other, a strip of conducting material passing in and out between the blocks so that each of the blocks is in contact with the conductor upon one or more of its sides, a containing frame surrounding the element, a space being left primarily between the active material and the top of the frame, the end of the conducting strip terminating in a lug at one corner of the frame, the ends of said frame extending upward upon each side of the lug with the lug secured in between the same, a flat plate resting upon the top of the active material, flanges secured to the plate upon each side and extending upward upon each side of the top of the frame and a slight distance above the same, elastic bands surrounding the element vertically so as to bear downward upon the upper edges of the flanges, said flanges extending outward from each end of the movable plate so as to embrace the sides of the frame.

4. In a battery element, a plurality of rectilinear blocks of active material arranged in tiers one above the other, a strip of conducting material passing in and out between the blocks so that each of the blocks is in contact with the conductor upon one or more of its sides, a containing frame surrounding the element, a space being left primarily between the active material and the top of the frame, the end of the conducting strip terminating in a lug at one corner corner of the frame, the ends of said frame extending upward upon each side of the lug with the lug secured in between the same, a flat plate resting upon the top of the active material, flanges secured to the plate upon each side and extending upward upon each side of the top of the frame and a slight distance above the same, elastic bands surrounding the element vertically so as to bear downward upon the upper edges of the flanges, said flanges extending outward from each end of the movable plate so as to embrace the sides of the frame, the conducting strip adapted to pass upward around that end of the movable plate upon the opposite side from that of the lug and then extend diagonally across to the lug above the movable plate, as and for the purpose specified.

853,878. WORKMAN'S TIME-RECORDER. CHARLES T. HAWLEY, Gardner, Mass., assignor to Simplex Time Recorder Company, Gardner, Mass., a Corporation of Massachusetts. Filed June 21, 1906. Serial No. 322,662.



Claim.—1. In a time recorder, the combination with a time stamp, of a fixed card receiver or guide, an actuating device for causing the stamp to mark a card in the receiver, a movable stop to co-operate with and vary the position of a card in the receiver to thereby vary the position of the card relatively to the stamp, said stop being positioned by operation of the actuating device, and periodically changing means to govern the relative position of the stamp and card receiver.

2. In a time recorder, the combination with a time stamp, of a card receiver or guide, a movable stop to co-operate with a card inserted therein and position such card relatively to the time stamp, a manually operated actuator to move the stop at will to any desired operating position and also to cause the stamp to mark a card in the receiver, and periodically changing means to govern the relative position of the stamp and card receiver.

3. In a time recorder, the combination with a time stamp, of a fixed card receiver or guide, a movable stop to co-operate with and position a card, inserted in said receiver, relatively to the time stamp, and an actuator having a selective movement to determine the position of the stop and having another movement to cause the stamp to mark a card in the receiver.

4. In a time recorder, the combination with a time stamp, of a fixed card receiver or guide, a movable stop

to co-operate with and position a card, inserted in said receiver, relatively to the time stamp, and a manually operated actuator having a selective movement in one path to determine the position of the stop and having another movement at different points in such path to cause the stamp to mark a card in the receiver.

5. In a time recorder, the combination with a time stamp, of a fixed card receiver or guide, a movable stop to co-operate with and position a card, inserted in said receiver, relatively to the time stamp, an actuator having a selective movement in an angular path to determine the position of the stop and having a movement at right angles to such angular path at predetermined points thereon to cause the stamp to mark a card in the receiver, and periodically changing means to govern the relative position of the stamp and card receiver.

6. The combination with a time stamp, and a card receiver or guide, of a movable stop to co-operate with and vary the position of a card in the receiver relatively to the stamp, means to position the stop at the will of the operator and to cause the stamp to mark the card when positioned, periodically changing means to govern the relative position of the stamp and card receiver, and connections between said means and the stop-positioning means to render the former operative, after a periodic change, by or through the first subsequent operation of the latter means.

7. The combination with a time stamp, and a card receiver or guide, of a movable stop to co-operate with and vary the position of a card in the receiver relatively to the stamp, an actuating device to position the stop and also to cause the stamp to mark a card in the receiver, periodically changing means to govern the relative position of the time stamp and card receiver, and means intermediate said actuating device and said governing means to render the latter operative by the first operation only of the actuating device after a periodic change.

8. In a time recorder, the combination with a time stamp, of a card receiver or guide, a movable stop to position a card inserted therein relatively to the stamp, an actuator having a selective movement in one path and a different movement at predetermined points in such path, the former movement determining the position of the stop and the latter movement causing the stamp to mark a card in the receiver, and a detent to retain the actuator at any one of such predetermined points until positively moved therefrom.

9. In a time recorder, the combination with a time stamp, of a card receiver or guide, a movable stop to position a card inserted therein relatively to the stamp, an actuator manually movable to any one of a plurality of points in a single path, to position the stop, a detent to retain the actuator at a selected point until positively moved therefrom, the actuator having a different movement from a selected point to cause the stamp to mark a card in the receiver, and means to automatically render the detent inoperative at predetermined intervals of time.

10. The combination with a manually-actuated time stamp, of a fixed card receiver or guide, a movable stop to vary the position of a card in said receiver relatively to the time stamp, means to effect the movement of the stop at will to any desired position and to actuate the stamp when the stop is positioned, and means to govern the relative position of the stamp and receiver, said means being changed automatically at predetermined intervals and rendered operative by initial movement only of the stop-positioning means after a change.

11. The combination with a time stamp, and a fixed card receiver or guide, of a movable stop to co-operate with the receiver and vary the position of a card therein relatively to the time stamp, means to change the position of the stop at will, and automatic periodically changing means to govern the relative position of the stamp and receiver, brought into operation by the stop-positioning means.

12. The combination with a time stamp, and a fixed card receiver or guide, of a movable stop to co-operate with the receiver and vary the position of a card therein relatively to the time stamp, means to change the position of the stop at will, a detent to retain said means and the stop in a given position until positively moved therefrom, periodically changing means, brought into operation by the stop-positioning means, to govern the relative position of the stamp and card receiver, and a device to render inoperative the detent upon each of such periodic changes.

13. In a time recorder, the combination with a time stamp and operating means therefor, of a card guide or receiver relatively to which the time stamp is adjustable in one direction, a card-engaging stop manually movable to any desired point relatively to the stamp in another direction, and periodically changing means to govern the adjustment of the time stamp with relation to the card receiver.

14. In a time recorder, the combination with a time stamp and operating means therefor, of a card guide or receiver relatively to which the time stamp is adjustable in one direction, a stop movable at the will of the operator to position a card at any desired point in the receiver relatively to the time stamp, means to govern the adjustment of the latter relatively to the card receiver, and time mechanism to effect periodic changes in said means.

15. In a time recorder, the combination with a time stamp and operating means therefor, of a card guide or receiver relatively to which the time stamp is adjustable in one direction, a stop movable at the will of the operator to position a card at any desired point in the receiver relatively to the time stamp, periodically-changing means to govern the adjustment of the stamp relatively to the receiver, a time mechanism to effect such changes, and stop-positioning means to render operative the said governing means.

16. In a time recorder, the combination with a card receiver or guide and a stop to limit movement of a card therein relatively to the time stamp, of a time stamp, a time movement controlling it, an actuating device to position the stop and also to cause the stamp to mark a card in the receiver, means, including a member periodically changed by said time movement, to govern the relative position of the stamp and card receiver, and connections between said means and the actuating device to bring the former into operation upon the first actuation of the latter after a periodic change.

17. In a time recorder, the combination with a card receiver or guide, and a stop to limit movement of a card therein relatively to the time stamp, of a time stamp, movable laterally of the card receiver, a manually-operated actuator having different movements to position the stop and cause the stamp to mark a card in the receiver, a time movement controlling the stamp, means movable laterally with the latter, and including a member intermittingly changed by the time movement, to govern the position of the stamp with relation to the card receiver, and mechanism operated by the first movement only of the actuator after a change in said member of the governing means to bring the latter into operation.

18. In a time recorder, in combination, a fixed card receiver or guide, a movable stop to engage a card therein and position it relatively to the time stamp, an actuator for said stop, a time stamp, a carriage on which it is mounted, movable laterally of the card receiver, an abutment, a series of stops bodily movable with the carriage and adapted to co-operate singly with said abutment, to thereby position the time stamp with relation to the card receiver, automatic means to bring one after another of said stops into operative position at predetermined intervals, and mechanism to move the carriage laterally to effect co-operation between said abutment and the operatively-positioned stop of the series upon the first movement of the actuator after automatic positioning of such stop.

19. In a time recorder, in combination, a fixed card receiver or guide, a movable stop to engage a card therein and position it relatively to the time stamp, an actuator for said stop, a time stamp, a carriage on which it is mounted, movable laterally of the card receiver, an abutment, a spirally-arranged series of stops bodily movable with the carriage, to co-operate singly with the abutment and position the time stamp relatively to the card receiver, automatic means to bring one after another of the

stops into operative position at predetermined intervals of time, a retracting device for the carriage, and mechanism to move the carriage laterally to effect co-operation between said abutment and the operatively-positioned stop of the series upon the first movement of the actuator after automatic positioning of such stop, each automatic change in the position of the stops disengaging the then co-operating stop and the abutment and permitting the retracting device to return the carriage to inactive position.

20. The combination with a time stamp, of an upright, fixed card receiver or guide, manually controlled means to at will vary the effective depth thereof, said means including a vertically movable stop to form a bottom for the receiver, and periodically changing means to govern the lateral position of the time stamp with relation to said receiver, said means being brought into operation manually.

21. The combination with a laterally movable time stamp, of a fixed card receiver or guide adjacent thereto and having an upright opening therein, a stop movable in such opening to support and determine the position of a card in the receiver relatively to the time stamp, an actuator operatively connected with and to move the stop at will, means, including a periodically changing device, to govern the lateral position of the time stamp, and mechanism operated by initial movement of said actuator after a periodic change to bring said governing means into operation, whereby the lateral position of the time stamp is determined until the next periodic change.

22. The combination, with a time stamp, and a laterally movable carriage on which it is mounted, of an adjacent upright card receiver having a stamping opening, a vertically movable stop to sustain a card in the receiver, whereby different portions of the card will be presented at the stamping opening, a manually operated actuator to effect movement of the stop and also to cause the stamp to mark the card, a rotatable drum or carrier mounted on the carriage and provided with a series of radial, helically arranged stops, a stationary spring-abutment to engage any one of such stops and thereby hold the carriage and time stamp in a definite position with relation to the card receiver, a time movement to automatically and intermittingly effect rotation of the drum or carrier to bring one after another of said stops, beginning with the innermost, into position to co-operate with the abutment, a device to retract the carriage whenever a stop is moved out of the path of the abutment, and mechanism automatically operative upon the initial movement of the actuator after retraction of the carriage, to move said carriage and effect co-operation between the abutment and the stop of the series then in operative position.

23. In a time recorder, in combination, a time movement, a time impressing or stamping instrumentality driven thereby, a movable carriage on which said instrumentality is mounted, a retracting device for the carriage, a series of carriage stops controlled by the time movement and movable one by one into operative position at predetermined intervals of time, a relatively stationary abutment to co-operate with an operatively positioned stop and thereby retain the carriage in a given position until such time interval terminates, a manually operated actuator, and mechanism acting upon the first movement of said actuator in one of the time intervals to move the carriage against its retracting device and effect co-operation between the abutment and the operatively positioned carriage-stop.

24. In a time recorder, in combination, a card receiver, manually operated means to vertically position a card therein, a time stamp, a time movement by which the stamp is driven, a carriage on which the stamp is mounted, movable horizontally adjacent said receiver, a stationary abutment, a series of stops on the carriage, to co-operate individually with the abutment and thereby fix the position of the time stamp relatively to a card in the receiver, mechanism controlled by the time movement to bring the stops singly into operative position, a retracting device for the carriage, and a manually actuated traveler to engage the operatively positioned stop and move the carriage from starting position and bring such stop into co-operation with the abutment.

25. In a time recorder, in combination, a time stamp, means to at will change the vertical position of a card relatively thereto, whereby successive records for a given day will lie in a vertical column on the card, a horizontally movable carriage on which the stamp is mounted, means operated upon the first vertical positioning of a card at the beginning of each day to properly position the stamp and card laterally, said means including an automatic daily change mechanism to govern the positioning of the carriage and time stamp, and a visual indicator to show the daily change.

26. The combination with an upright card receiver, a manually-actuated, vertically movable stop to co-operate with a card therein and determine its vertical position relative to the time stamp, and such time stamp, of a laterally movable carriage adjacent the receiver, a relatively fixed abutment, a horizontal, rotatable drum on the carriage provided with a series of helically disposed stops, to successively co-operate with the abutment and thereby position the carriage at gradually increasing distances from its starting point, means to rotate the drum step by step at predetermined intervals of time, to bring one stop after another into operative position and to disengage the next preceding stop from the abutment, releasing the carriage, a spring-actuated retracting device to return the released carriage to starting position, and manually actuated means to move the carriage from such position after an advance of the drum and thereby to effect co-operation between the abutment and the operatively positioned stop.

27. The combination, with a card receiver, of a time stamp, a carriage therefor movable laterally of the card receiver and adjacent thereto, a relatively fixed abutment, a series of stops on the carriage to successively co-operate with the abutment when the carriage is at gradually increased distances from its starting point, means to move said series of stops automatically at midnight of each day, to release one stop from the abutment and bring the next stop into operative position, a device to return the carriage to its starting point when so released, and mechanism, including a manually operated actuator and a sliding traveler having a fixed stroke, to move the carriage from its starting position after a change of stops and bring the newly positioned stop into co-operation with the abutment.

28. The combination, with a card receiver, of a time stamp, a carriage therefor movable laterally of the card receiver and adjacent thereto, a relatively fixed abutment, a series of stops on the carriage to successively co-operate with the abutment when the carriage is at gradually increased distances from its starting point, means to move said series of stops automatically at midnight of each day, to release one stop from the abutment and bring the next stop into operative position, a device to return the carriage to its starting point when so released, mechanism, including a manually operated actuator and a sliding traveler having a fixed stroke, to move the carriage from its starting point after a change of stops and bring the newly positioned stop into co-operation with the abutment, and an automatic trip to disconnect said traveler and actuator after the first operation of the latter to set the carriage.

29. The combination, with a card receiver, of a time stamp, a carriage therefor movable laterally of the card receiver and adjacent thereto, a relatively fixed abutment, a series of stops on the carriage to successively co-operate with the abutment when the carriage is at gradually increased distances from its starting point, means to move said series of stops automatically at midnight of each day, to release one stop from the abutment and bring the next stop into operative position, a device to return the carriage to its starting point when so released, mechanism, including a manually operated actuator and a sliding traveler having a fixed stroke, to move the carriage from its starting point after a change of stops and bring the newly positioned stop into co-operation with the abutment, a trip to automatically disconnect the traveler and actuator after the first operation of the latter to set the carriage, and means to operatively connect the traveler and actuator upon the return of the carriage to its starting point.

30. In a time recorder, an upright, fixed card receiver, a manually controlled stop co-operating therewith to vary its effective depth, an angularly movable actuator to operate the stop and also to cause the time stamp to mark a card in the receiver, a time stamp, including hour and minute marking members, a time movement to drive the minute member continuously and to effect advance of the hour member at the end of each hour, a carriage movable laterally of the card receiver and on which the time stamp is mounted, a relatively fixed, yielding abutment, a horizontal, rotatable drum on the carriage provided with a series of helically arranged stops to co-operate one after another with the abutment, to hold the carriage in a given position, a device to return automatically the carriage to starting position when released, a spring to turn the drum, wound up by or through rotation of the hour marking member, a let-off member rotatable with said drum, a detent normally co-operating with said member and releasing the same at intervals of twenty-four hours, to permit the spring to turn the drum one step, releasing the carriage and bringing another stop into operative position, and means to move the carriage from starting position and effect co-operation of the then operatively positioned stop and the abutment by or through the first angular movement of the actuator after a rotative movement of the drum.

31. In a time recorder, an upright, fixed card receiver, a manually controlled stop co-operating therewith to vary its effective depth, an angularly movable actuator to operate the stop and also to cause the time stamp to mark a card in the receiver, a time stamp, including hour and minute marking members, a time movement to drive the minute member continuously and to effect advance of the hour member at the end of each hour, a carriage movable laterally of the card receiver and on which the time stamp is mounted, a relatively fixed, yielding abutment, a horizontal, rotatable drum on the carriage provided with a series of helically arranged stops to co-operate one after another with the abutment, to hold the carriage in a given position, a device to return automatically the carriage to starting position when released, a spring to turn the drum, wound up by or through rotation of the hour marking member, a let-off member rotatable with said drum, a detent normally co-operating with the let-off member, means governed by the time movement to withdraw the detent at predetermined intervals and permit the spring to advance the drum one step, thereby releasing the carriage and operatively positioning the next stop, manually controlled means to adjust the let-off member with relation to the drum, and means to move the carriage from its starting position and effect co-operation of the abutment and the then operatively positioned stop by or through the first movement of the actuator after an advance of the drum.

32. In a time recorder, a time stamp including hour and minute marking members, and a platen, a fixed card receiver, a movable stop to co-operate therewith and determine the vertical position of a card inserted in the receiver, and a manually operated actuator to move said stop, combined with stamp-operating means controlled by said actuator, to move the marking members and platen toward each other, to make a record on a card in the receiver, a device to automatically release the stamp-operating means from control of said actuator after the latter has been moved, and after the stamp has been operated, and means operative upon the first movement of the actuator in a given day to effect proper relative positioning of the time stamp and card receiver for such day.

33. In a time recorder, a time stamp including hour and minute marking members, and a platen, a fixed card receiver, a movable stop to co-operate therewith and determine the vertical position of a card inserted in the receiver, and an actuating handle movable in one direction to position the stop, combined with means controlled by movement of the handle in a different direction to move the marking members and platen toward each other, to make a record on a card in the receiver, and a device to automatically release said means from control of the actuating handle after the latter has been moved, first to position the stop and thereafter to effect the actuation of the time stamp.

34. In a time recorder, in combination, a time stamp, a laterally movable, swinging carriage on which it is mounted, an operating shaft, connections between it and the carriage to positively swing the latter and cause the time stamp to make a record, a spring to return the parts to normal position, an actuating handle, a coupling between it and the shaft, means to automatically uncouple the shaft and handle when operative movement of the latter has been effected and after the record has been made, periodically changing means to govern the position of the carriage in its lateral path of movement, mechanism to co-operate with said means and position the carriage upon the initial movement of the actuating handle after a periodic change, and a device to disconnect automatically said mechanism and handle after the carriage has been laterally positioned, subsequent movements of the handle to swing the carriage causing no change in its lateral position.

35. In a time recorder, in combination, a time stamp, a rock-shaft operatively connected therewith, a bell-crank, a toggle connecting it and the rock-shaft to turn the latter, an actuating handle, a toggle-actuator positively connected therewith, a coupler pivoted on said actuator to engage the bell-crank and cause it to move in unison with the toggle-actuator, a stationary detent to co-operate with the coupler and maintain it operative until the rock-shaft has been turned, continued movement of the toggle-actuator causing release of the coupler by its detent, and disconnecting the bell-crank and actuator, whereby the rock-shaft is freed, and a spring to pivotally move the coupler and return it to operative position under control of the detent when the toggle-actuator is returned to starting position.

36. In a time recorder, in combination, a card receiver, a time stamp movable relatively thereto, actuating means to cause it to mark a card in the receiver, a relatively fixed abutment, a series of stops to successively co-operate therewith and determine the lateral position of the time stamp, said stops being movable bodily therewith, mechanism to effect automatically a periodic change of the stops with relation to the abutment, means to effect automatic return of the time stamp to starting position upon each periodic change, and mechanism, operated by or through the first operation only of the stamp actuating means when the stamp is in starting position, to move the latter therefrom and effect co-operation between the abutment and the stop which at such time is operatively positioned.

37. In a time recorder, a fixed card receiver, a time stamp and its carriage, movable transversely thereto, a manually controlled actuator, means operated thereby to cause the stamp to mark a card in the receiver, a helical series of stops rotatably mounted on the carriage, a device to co-operate with a stop and retain the carriage at a determined point in its path of movement means to periodically rotate the stops, releasing the carriage and operatively positioning another stop, spring-actuated means to retract the released carriage to starting position, mechanism operated by the actuator to move the carriage from starting position and effect co-operation between the operatively positioned stop and the retaining device, and a device to automatically disconnect the said mechanism and actuator after the carriage has been so moved.

38. In a time recorder, a fixed card receiver, a time stamp and its carriage, movable transversely thereto, a manually controlled actuator, means operated thereby to cause the stamp to mark a card in the receiver, a helical series of stops rotatably mounted on the carriage, a device to co-operate with a stop and retain the carriage at a determined point in its path of movement, means to periodically rotate the stops, releasing the carriage and operatively positioning another stop, a rotatable visual indicator, a spring to turn it in one direction, a flexible connection between the indicator and the carriage, the spring turning the indicator and through said connection retracting the released carriage to starting position, and mechanism operated by the actuator to move the carriage from starting position and effect co-operation between the operatively positioned stop and the retaining device, such movement of the carriage acting against the spring and setting the indicator to correspond with the position of the carriage.

39. The combination, with a time stamp including hour

and minute marking wheels, of a time movement to drive the minute wheel continuously and to cause hourly advance of the hour wheel, a shiftable carriage on which said wheels are mounted, a retracting spring for and operatively connected with the carriage, a horizontal, rotatable drum on the latter, provided with a helically-arranged series of stops, a relatively fixed abutment to co-operate with a stop and retain the carriage in a corresponding position, a segmentally slotted gear loose on the drum-shaft, a let-off member rotatable with the drum, a spring attached at one end to the gear, a pin on the let-off member entering the slot in the gear and co-operating with the other end of the spring, means to advance the gear and compress the spring during each rotation of the hour marking wheel, a detent normally co-operating with the let-off member to hold the drum from rotation, means including a cam, to cause the detent to release the let-off member each time the hour wheel completes one revolution, whereby the spring advances the drum one step, to operatively position a stop, and manually controlled means to move the carriage and bring the last previously positioned stop into co-operation with the abutment, the next advance of the drum releasing the carriage, permitting retraction thereof to starting position by its retracting spring.

40. In a time recorder, in combination, a card receiver or guide, a manually movable stop, to engage a card therein, and position it relatively to the time stamp, a time stamp, including hour and minute marking wheels, a carriage for said stamp, an abutment, a series of stops bodily movable with the carriage, and adapted to co-operate singly with the abutment, to position the time stamp relatively to the card receiver, a time movement operatively connected with and to drive the minute wheel continuously, connections between the time movement and the hour wheel, including a worm let-off, to cause intermittent rotation of the hour wheel, and a spring motor wound by operation of the time movement and rotating the hour wheel when the latter is released by the let-off, the winding of the motor being effected when the let-off is acting to prevent advance of the hour wheel, means controlled by the hour wheel to bring one after another of said stops automatically into operative position at predetermined intervals, and mechanism to effect movement of the carriage and cause co-operation of the abutment and the operatively positioned stop of the series after automatic positioning of the stop.

41. In a time recorder, in combination, a fixed card receiver, a movable stop to co-operate with and position a card inserted in the receiver, an actuating handle operatively connected with and to move the stop, said handle having a selective movement in a fixed main path, a detent to retain the handle at a selected point in such main path until positively moved therefrom, said handle having a secondary movement at right angles to its selective path of movement, a time stamp, means to cause it to stamp a card in the receiver when the handle is given such secondary movement, and a casing having an elongated slot to accommodate selective movement of the handle, and a series of communicating slots at right angles, to direct the secondary movement of the handle and indicate the selective points at which the handle is to be stopped in its main path of movement.

42. In a time recorder, an actuating handle, a support on which it is pivoted, a fulcrum for and on which the support and handle can be swung in unison, the fulcrum and pivot being at right angles to each other, a segment adapted to rock on the fulcrum adjacent said support, a coupling member pivoted on the latter and adapted to ride freely over the edge of the segment or to couple the same and the handle support, a positioning device for the coupling member, movable toward and from the segment and having a face corresponding in curvature to the curved edge of the segment, a follower on said coupling member, a fixed cam-like controller for the follower, to retain the coupling member in coupling position until movement of the handle and segment disengage the follower and controller, uncoupling the segment, the coupling member riding over the edge of the segment and the face of the positioning device on return of the handle and being thereby maintained inoperative, mechanism actuated by movement of the segment when coupled to the handle-support, and means acting at predetermined intervals to move the positioned device away from the segment and permit the follower to pass below said controller, while the coupling member moves into operative position prior to the next swing of the handle in unison with its support.

43. In a time recorder, the combination with marking members or wheels, of means for retaining the same in recording position, and automatic means operating at predetermined intervals to release said members and remove them in an axial direction from such recording position.

44. In a time recorder, in combination, printing or marking wheels, a carriage therefor, and means, including an automatic device mounted on the carriage, to retain the latter in position to print and to effect release thereof at the end of predetermined intervals.

45. In a time recorder, in combination, printing or marking wheels, a carriage therefor, and means, including a device mounted on the carriage and controlled by a time movement, to retain the carriage in position to print and to effect release thereof at predetermined intervals.

46. In a time recorder, the combination, with printing wheels, and a carriage therefor, of means, including an intermittingly rotated member on the carriage to retain it in printing position, and means to remove the carriage from printing position when permitted to operate by rotative movement of said member.

47. In a time recorder, the combination, with time marking mechanism, of an operating member movable in one direction to set said mechanism in proper daily relation to a card to be marked, and movable in another direction to cause said mechanism to mark the card, and means to automatically render said mechanism irresponsive to subsequent setting movements of the operating member for a predetermined period after said mechanism has been set.

48. In a time recorder, the combination, with printing mechanism, of an operating member movable in one direction to effect adjustment of a record card and the printing mechanism in two directions relative to each other prior to actuation of the printing mechanism to mark the card.

49. In a time recorder, the combination, with printing mechanism, of an operating member movable in one direction to effect adjustment of a record card and the printing mechanism in two directions relative to each other, and means whereby movement of said operating member in a secondary direction causes the printing mechanism to make an impression.

50. In a time recorder, means, including a handle, to effect manually the adjustment of a card to proper position to correspond to different periods of the day, means to retain said handle in certain positions, and an instrumentality to release automatically said handle at the end of a fixed period.

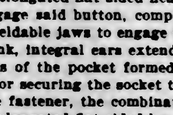
51. In a time recorder, in combination, a bodily movable time stamp, means to retain it in recording position, and independent, automatic means to release and remove the time stamp bodily from such position.

52. In a time recorder, a time stamp, a carriage therefor, automatically controlled and manually operated means to effect operative positioning of the carriage for printing, and a device to thereafter release the carriage from control by said means, and thereby render subsequent operations of said means inoperative to effect a change in the position of the carriage until the end of a predetermined interval of time.

53. In a time recorder, a bodily movable time stamp, manually operated means to move the same into position to mark a card, and a device to release the time stamp from the control of said means before a record can be made by the time stamp.

853,879. TRACE LOOP OR BUCKLE. JOHANNES P. HEISSA, Denver, Colo. Filed Mar. 23, 1906. Serial No. 307,721.

Claim.—1. A trace buckle composed of two separable members, one member consisting of a body portion having longitudinal parts adapted to engage the trace on opposite edges, and transverse members adapted to engage one side of the trace, while the other member consists of a transverse part engaging the trace from the opposite side and whose extremities engage openings formed in the sides of the longitudinal parts and also engaging the opposite edges of the trace.



2. A trace buckle composed of two separable members, one member being composed of longitudinal parts separated to receive the trace and occupying positions adjacent the opposite edges of the trace, and transverse end members engaging the trace on one side, the other member extending transversely across the trace on the opposite side, its extremities being connected with the longitudinal parts of the body member when in operative relation.

3. A trace buckle composed of two separable coöperating members, the main member being provided with separated longitudinal parts and transverse end parts, the other member being a centrally located transverse part whose extremities interlock with the longitudinal parts, the central member engaging the trace on the opposite side from the transverse end parts of the main member.

4. A trace buckle comprising two separable members, the first member consisting of longitudinal parts, and transverse parts connecting the longitudinal parts and adapted to engage the trace on one side, the second member having a transverse part engaging the trace on the opposite side and end members located adjacent the opposite edges of the trace, the longitudinal parts of the first member having shouldered openings which the extremities of the second member engage.

853,880. NECKTIE-FASTENER. WILLIAM HODGKINSON and EUGENE F. CLARKIN, Waterbury, Conn. Filed May 11, 1906. Serial No. 316,417.



Claim.—1. In a neck tie fastener, the combination with a collar button having a flat sided head and oval shank, of a socket to engage such button, comprising oppositely located yieldable jaws having concave recesses upon their insides to engage the opposite sides of the button shank, one of said recesses being situated out farther than the other, and means for securing said socket to a tie.

2. In a neck tie fastener, the combination with a collar button having an elongated flat sided head and oval shank, of a socket to engage said button, comprising a back, oppositely located yieldable jaws to engage the two oval sides of the button shank, integral ears extended from the back to inclose the ends of the pocket formed intermediate the jaws, and means for securing the socket to a tie.

3. In a neck tie fastener, the combination with a collar button having an elongated flat sided head and oval shank, of a socket formed of sheet metal bent up to form two opposed yieldable jaws having concaved recesses therein one of which is out farther than the other, ears intermediate the ends of the jaws, and means for the attachment of the socket to a tie.

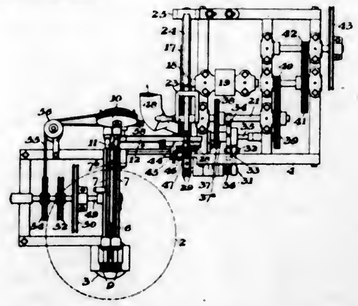
4. In a neck tie fastener, the combination with a collar button having an elongated flat sided head and shank, of a sheet metal socket to engage the button comprising opposed yieldable jaws, ears intermediate the ends of the jaws, and integral extensions on said sheet metal socket, for its attachment to the tie.

5. In a neck tie fastener, the combination with a collar button having an elongated flat sided head and shank, of a socket formed of sheet metal comprising a back plate having extended points to engage a tie, opposed yieldable jaws to engage the flat sides of the button, and means to prevent lateral displacement of the socket with respect to the button.

6. In a neck tie fastener, the combination with a socket formed of sheet metal comprising a back plate having its upper and lower portions turned over upon the back and disposed outward to form spring jaws and a socket therebetween, ears turned up from said back plate disposed across the sides of the pocket, and extended strips for the attachment of the socket to a tie.

7. In a neck tie fastening, the combination with a collar button having an elongated flat sided head and shank, of a socket member formed of sheet metal, end portions turned over upon the front of the sheet and disposed outward opposed to each other to form yieldable jaws and an elongated socket therebetween, a plate to support said jaw member having means to engage the tie, and ears disposed forward to close the end of the pocket formed intermediate of the jaws.

853,881. MACHINE FOR GRINDING OR POLISHING THE ENDS OF CORKS. OSCAR IRWIN, Pittsburg, Pa., assignor to Armstrong Cork Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 20, 1905. Serial No. 283,640.



Claim.—1. A cork grinding or polishing machine having a feed hopper, cork feeding and assorting means to which the corks are delivered from the hopper and which separates out the defective corks and feeds the good corks, a grinding or polishing wheel, and means for carrying the corks discharged from the feeding and assorting device to the action of the grinding or polishing wheel; substantially as described.

2. A cork-grinding or polishing machine, having a pair of cork-feeding rollers which feed the corks in the direction of the axis of the rollers, means for delivering the corks to the said rollers in vertical position with their small ends downward a grinding or polishing wheel, and carrier mechanism intermediate the discharge of said rollers and the grinding or polishing wheel; substantially as described.

3. In a machine of the class described, a cork-feeding and assorting device, comprising two spaced parallel rollers, means for preventing the corks from being thrown off the rollers, and means for revolving the same; substantially as described.

4. In a cork grinding machine, a cork-feeding and assorting device, comprising two spaced parallel rollers, means for delivering the corks to the said rollers in vertical position with their small ends downward and means for revolving the same oppositely to each other; substantially as described.

5. In a cork grinding machine, a cork-feeding and assorting device, comprising two spaced parallel rollers supported in an inclined plane; and means for receiving the corks delivered by the rollers substantially as described.

6. In a machine of the class described, a cork-feeding and assorting device, consisting of two spaced parallel roll-

ers having fluted surfaces and supported in an inclined plane; substantially as described.

7. In a machine of the class described, a cork-feeding device, comprising two spaced parallel inclined rollers, means for revolving the same in opposite directions, and a guard overlying the space between the said rollers; substantially as described.

8. In a machine of the class described, the combination with a grinding or polishing wheel or disk, of a rotary carrier adjacent thereto, a cork-gripping or holding wheel above the said carrier, a conveyer for delivering the corks to said carrier, and an air-suction pipe having a suction opening adjacent to the said carrier; substantially as described.

9. In a machine of the class described, cork-feeding and assorting means, comprising two parallel rollers placed side by side, and spaced so as to permit undersized corks to pass between them, but to retain full sized corks, means for delivering the corks to said rollers in vertical position and means for rotating the rollers; substantially as described.

10. In a machine of the class described, the combination of a conveyer, a stop in the path of corks on the conveyer, a cork-holding and carrier wheel, a pusher for transferring the corks from the conveyer to the said wheel, means for operating the pusher and stop in time relation to each other, a grinding or polishing wheel, and means for forcing the cork into contact with such wheel; substantially as described.

11. In a machine of the class described, the combination with a rotating cork carrier and an endless conveyer, of a reciprocating pusher for transferring the corks from the conveyer to the carrier, a cork-stopping device in advance of the pusher and actuated in time relation therewith, and an air suction pipe having a suction opening adjacent to said carrier and pusher; substantially as described.

12. In a machine of the class described, the combination of a cork conveyer, a rotary cork carrier, a pusher for transferring the corks from the conveyer to the carrier, means for actuating said pusher, a cork-stop in advance of the carrier, a spring actuating said stop in one direction, and a connection with the pusher for operating the stop in a reverse direction; substantially as described.

13. In a machine of the class described, the combination with a feed hopper and a delivery device in the throat thereof, of an inclined feed-tube, and a pair of spaced parallel inclined rollers between the upper portions of which the said tube is arranged to discharge, and means for rotating said rollers; substantially as described.

14. In a machine of the class described, a cork-feeding and assorting device comprising two parallel rollers supported in an inclined plane, means for delivering the corks to said rollers so that they will be received between the rollers in substantially vertical position, and a chute arranged to receive the corks discharged by the said rollers; substantially as described.

15. In a cork machine, a sizing device to and through which the cork blanks are fed, a tool for working the blanks, and transfer devices for carrying the blanks from the sizing device to the tool; substantially as described.

16. In a cork machine, a sizing device to which the cork blanks are fed, which has a channel through which the blanks are arranged to pass with their small ends downward, a tool for working the blanks, and transfer devices for carrying the blanks from the sizing device to the tool; substantially as described.

17. In a cork machine, a sizing device to which the cork blanks are fed, said device consisting of spaced members forming an open channel between them through which the blanks are arranged to move with their smaller ends downward, a tool for working the blanks, and transfer devices for carrying the blanks from the sizing device to the tool; substantially as described.

18. In a cork machine, a sizing channel through which the cork blanks are fed, the walls of such channel consisting of spaced members between which the blanks move with their smaller ends downward; substantially as described.

19. In a cork machine, a sizing channel or passage of definite size and having an open bottom for a portion at least of its length through which under-sized cork blanks can escape, and means for separating over-sized blanks from those of the proper size; substantially as described.

20. In a cork machine, a sizing channel or passage of definite size and having an open bottom for a portion at least of its length to permit the escape of under-sized cork blanks, said channel being also arranged to permit the escape of over-sized blanks at its delivery end, and a conduit communicating with said channel or passage at an intermediate point to receive blanks of the proper size; substantially as described.

21. In a cork-grinding machine, a sizing passage or channel through which the cork blanks are fed, and by means of which they are automatically sized and assorted, a grinding tool, and transfer devices for carrying the blanks from the sizing passage or channel to the tool; substantially as described.

853,882. AUTOMATIC SWITCH. WALTER R. JENNEY, Westfield, Mass., assignor of one-half to Charles H. Beals, Westfield, Mass. Filed Feb. 14, 1907. Serial No. 357,239.



Claim.—1. In a switch, the combination with a main track and a switch, of means for temporarily locking the switch open for the purpose of directing a train on to the siding, means to unlock said switch by the movement of a train over the main track in the direction of the switch, a switch-throwing member, and means to store up energy therein while the switch is being unlocked whereby when said switch is unlocked the switch-throwing member comes into play to throw the switch.

2. In a switch, the combination with a main track and a movable switch rail, of an actuator extending longitudinally of the main track and adapted to be moved by the movement of a car over the track, a lock for the switch rail, means to release the lock by movement of the actuator, a switch-throwing member, and means to store up energy therein by the movement of the actuator in unlocking the switch whereby when said switch is unlocked the switch-throwing member operates to throw the switch.

3. In a switch, the combination with movable switch rails of an actuator extending longitudinally of the track and adapted to be operated by the movement of the car thereover, a lock for the switch, connections between said actuator and both the switch rails and lock, the connections between the actuator and switch rails being a yieldable one, whereby the movement of the actuator first unlocks the switch rails and then shifts the latter.

4. In a switch, the combination with a main track and movable switch rails of a switch-stand having a shaft connected to the switch rails and provided with a locking head slidably mounted thereon, and means operated by the movement of the car on the main track in the direction of the switch first to raise the head, thereby to unlock the switch, and then to turn the shaft and throw the switch.

5. In a switch, the combination with a movable switch rail of a switch-stand having a shaft connected to said switch rail and provided with a locking head slidably mounted thereon, unlocking cams for raising said head thereby to unlock the switch, and means operated by the movement of a car on the main track in the direction of the switch for first operating the cams thereby to unlock the switch, and then to turn the shaft to throw the switch.

6. In a switch, the combination with movable switch rails of a lock therefor, an actuator extending longitudinally of the track and adapted to be moved longitudinally by the movement of a car over the track, a lever connected to the actuator, connections between said lever and lock, and separate yieldable connections between said lever and switch rails.

7. In a switch, the combination with movable switch rails of an actuator extending longitudinally of the track and adapted to be operated by the movement of a car thereon, a lock for the switch, non-yieldable connections between said actuator and the lock, and yieldable connections between said actuator and the switch rails whereby the movement of the actuator first unlocks the switch rails and then shifts the latter.

8. In a switch, the combination with movable switch rails of a switch stand connected thereto and including a lock therefor, an actuator extending longitudinally of the track and adapted to be operated by the movement of a car thereover, connections between said actuator and the lock portion of the switch stand, and other connections between said actuator and switch stand for throwing the latter after it has been unlocked.

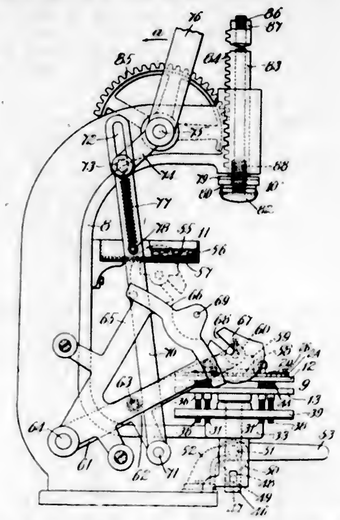
9. In a switch, the combination with movable switch rails of a switch stand connected thereto, a lock for the switch stand, an actuator extending longitudinally of the track and adapted to be operated by the movement of a car thereover, and unyielding connections between said actuator and the lock for the switch stand, and yielding connections between said actuator and the switch stand whereby the switch stand is first unlocked and then operated to throw the switch rails.

10. In a switch, the combination with a movable switch rail of a switch stand having a shaft connected to said switch rail and provided with a locking head slidably mounted thereon, a cam for raising said head thereby to unlock the switch, an actuator adapted to be operated by the movement of a car on the track, connections between said actuator and said cam, and yielding connections between said actuator and the shaft of said switch stand whereby the movement of the actuator operates first to unlock the switch stand and subsequently to throw the switch rail.

11. In a switch, the combination with a movable switch rail of an actuator adapted to be operated by the movement of a car traveling on the track, a spring for throwing the switch, and means operated by the actuator both to unlock the switch rail and to store up energy in the spring whereby the latter may operate to throw the switch rail after they are unlocked.

853,883. MACHINE FOR ATTACHING FABRIC TO BOXES. WILLIAM KAHLE, Boston, Mass. Filed July 25, 1906. Serial No. 327,625.

Claim.—1. In a machine for attaching fabric to boxes, a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material extending across said recess, and a plurality of folders slidable toward and away from the center of said recess, each of said folders having a right angled recess in its upper face adapted to receive a piece of fabric, said folders adapted to fold said fabric over the edges of a box located in said first named recess.



2. In a machine for attaching fabric to boxes, a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material extending across said recess, and a plurality of folders slidable toward and away from the center of said recess, each of said folders consisting of a right angled portion having a right angled recess in its upper face adapted to receive a piece of fabric and a shank portion constructed to slide in ways upon the upper face of said holder plate.

3. In a machine for attaching fabric to boxes, a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material extending across said recess, and a plurality of folders slidable toward and away from the center of said recess, springs acting to move said folders toward each other, and means to move them away from each other.

4. In a machine for attaching fabric to boxes, a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material extending across said recess, and a plurality of folders slidable toward and away from the center of said recess, and means to impart a vertical reciprocatory movement to said holder.

5. In a machine for attaching fabric to boxes, a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material extending across said recess, and a plurality of folders slidable toward and away from the center of said recess, and a plurality of fingers adapted to hold said fabric against said folders.

6. In a machine for attaching fabric to boxes a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material extending across said recess, and a plurality of folders slidable toward and away from the center of said recess, a plurality of fingers adapted to hold said fabric against said folders, and means to move said fabric holder toward and away from said fingers.

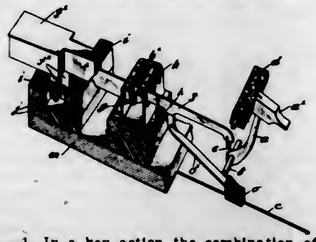
7. In a machine for attaching fabric to boxes, a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material ex-

tending across said recess, and a plurality of folders slidable toward and away from the center of said recess, a plurality of fingers adapted to hold said fabric against said folders, and means to adjust said fingers toward and away from said folders.

8. In a machine for attaching fabric to boxes, a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material extending across said recess, and a plurality of folders slidable toward and away from the center of said recess, springs acting to move said folders toward each other, and a plurality of slidable pins adapted to engage said folders and move them away from each other.

9. In a machine for attaching fabric to boxes, a fabric holder comprising in its construction a plate provided with a recess in its upper face, a sheet of elastic material extending across said recess, and a plurality of folders slidable toward and away from the center of said recess, springs acting to move said folders toward each other, a plurality of slidable pins, each of said pins having an inclined face adapted to engage its respective folder and move it away from the other folders, and means to adjust said pins toward and away from said folders.

853,884. KEY-ACTION FOR MUSICAL INSTRUMENTS. BERNHARD R. KIESSIG, Chicago, Ill., assignor to The American Music Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 25, 1905. Serial No. 275,781.



Claim.—1. In a key action the combination of a hammer, a key articulately connected thereto for operating the same, a fulcrum pin fixed with reference to said key, and a fulcrum piece for pivotally supporting said pin, said fulcrum piece having a depression formed in the upper portion thereof wherein said pin rests.

2. In a key action the combination of a hammer, a key articulately connected thereto for operating the same, a fulcrum pin fixed with reference to said key, and a fulcrum piece for pivotally supporting said pin, said fulcrum piece having an open depression formed in the upper portion thereof wherein said pin rests.

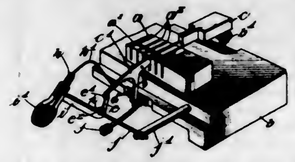
3. In a key action, the combination of a hammer, a key, a fulcrum pin which is fixed with reference to said key, a fulcrum piece having a depression in the top for cradling said pin, and connections between said hammer and said key whereby when the key is depressed, the resistance of the hammer tends to press the fulcrum pin down into said depression in the fulcrum piece.

4. In a key action, the combination of a hammer, a key connected thereto for operating the same, a key rest for limiting the downward movement of said key, a fulcrum pin in said key, and a fulcrum piece having a depression for supporting said pin, said depression being open at the top whereby the key is permitted to rise and lift said pin from its seat during the overthrow period of the hammer.

5. In a key action, the combination of a key, a fulcrum pin and a fulcrum piece for pivotally supporting said fulcrum piece consisting of sheet metal bent up so as to have supporting legs formed thereon and a depression in the top for supporting said pin, whereby the pin is cradled in the fulcrum piece and is prevented from horizontal movement transverse to its axis.

6. In a key action, the combination of a key, a fulcrum pin, and a fulcrum piece for pivotally supporting said pin, said fulcrum piece consisting of a single piece of sheet metal bent into such form as to have supporting legs formed integral therewith and a depression located in the upper portion of the fulcrum piece for cradling said pin, and said fulcrum piece having slots in its upper portion running transverse to said depression for receiving and guiding the key.

853,885. KEY-ACTION FOR MUSICAL INSTRUMENTS. BERNHARD R. KIESSIG, Chicago, Ill., assignor to The American Music Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 3, 1906. Serial No. 299,336.



Claim.—1. In a key action the combination of a hammer, a fixed axis therefor, a pivotally supported key, and a substantially inflexible rod pivotally attached to said hammer and key, substantially as described.

2. In a key action the combination of a hammer, a fixed axis therefor, a key, a rod forming a positive connection between said hammer and key, and a support for said key, adapted to permit the key to rise slightly from said support to admit of overthrow in the hammer.

3. In a key action the combination of a pivoted hammer, a key, means for pivotally supporting said key, and a rod forming a positive connection between said hammer and key, said hammer having a fixed axis and said key having a movable axis for the purpose described.

4. In a key action the combination of a hammer, a fixed axis therefor, a key adapted to swing about a movable axis, and a connecting rod articulately and positively attached to said hammer and key for transmitting movement from one to the other, the point of attachment of said rod to said hammer being close to the axis of said hammer.

5. In a key action the combination of a hammer, a fixed axis therefor, a key support, a key pivotally seated in said key support and adapted to rise from its seat therein against the force of a spring, a spring for yieldingly holding said key seated, and a rod articulately and positively connecting said hammer and key, said connecting rod being pivoted to said hammer at a point nearer to the hammer-pivot than one sixth the distance between the hammer pivot and the striking point of the hammer.

6. In a key action the combination of a hammer, a fixed axis therefor, a key support, a key pivotally seated in said key support and adapted to rise from its seat therein and a rod articulately and positively connecting said hammer and key, said connecting rod being pivoted to said hammer at a point thereon whose distance from the hammer pivot is less than one sixth the distance between the hammer pivot and the striking point of the hammer.

7. In a key action the combination of a set of pivotally supported keys, a set of hammers, rods articulately and positively connecting each key to a hammer, a key support adapted to permit the keys to rise slightly therefrom to permit overthrow, and a stationary rod whereon a plurality of said hammers are mounted.

8. In a key action, the combination of a hammer, a fixed pivot therefor, a key, a key support wherein said key is pivotally mounted in such manner that the key may rise from its support, a connecting rod pivotally attached to said key and to said hammer at a point near the pivot thereof, said rod being located between the hammer and key pivots so that said hammer and key swing in opposite directions, and a hammer stop connected to and movable with said key in directions opposite to said hammer for arresting the same.

9. In a key action, the combination of a hammer, a fixed pivot therefor, a key, a key support wherein said key is pivotally mounted in such manner that the key may rise from its support, a connecting rod pivotally attached to said key and to said hammer at a point near the pivot thereof, said rod being located between the hammer and key pivots so that said hammer and key swing in opposite directions, and a hammer stop connected to and movable with said key in directions opposite to said hammer, said stop moving in the path of the hammer and being thereby adapted to arrest the latter at the end of the back stroke thereof.

10. In a key action, the combination of a hammer, a fixed support therefor, a substantially inflexible rod pivotally attached to said hammer at a point closer to the hammer-pivot than one sixth the distance between the hammer-pivot and the striking point of the hammer, and a pivotally supported key pivoted to said rod, said rod thereby positively connecting said hammer and key and the point of attachment of the rod to the hammer shank being on the opposite side of the fulcrum from the hammer head.

11. In a key action the combination of a hammer, a fixed pivot therefor, a pivotally supported key and a connecting rod having a positive pivot connection with both hammer and key, said rod being located between the key support and hammer support, the point of attachment of said connecting rod to said hammer being closer to the hammer support than the striking point of the hammer, and said point of attachment being on the opposite side of the fulcrum from the hammer head.

853,886. SAFETY DEVICE FOR RAILWAYS. OTTO F. KLOETZER and WILLIAM A. BORDERS, Washington, Ind., assignors of one-third to Charles G. Gardiner, Washington, Ind. Filed Nov. 9, 1906. Serial No. 342,680.



Claim.—1. A safety appliance for railways, comprising track rails divided in blocks, sectional conductor rails divided into blocks, electrical connections connecting each block of the sectional conductor rails with the blocks of the track rails which are located on each side of the blocks of the sectional conductor rails, a pair of contacts carried by the train and contacting with the track rails, a second pair of contacts also carried by the train and contacting with the sectional conductor rails, a source of electric current connected with one pair of contacts, an electro-magnet connected to the other pair of contacts, and means for stopping the train operated by said electro-magnet.

2. A safety appliance for railways comprising track rails divided in blocks, sectional conductor rails divided in blocks, electrical connections connecting each block of the sectional conductor rails with the blocks of the track rails which are located on each side of the blocks of the sectional conductor rails, a pair of contacts carried by the train and contacting with the track rails, a second pair of contacts also carried by the train and contacting with the sectional conductor rails, a source of electric current connected with one pair of contacts, an electro-magnet connected to the other pair of contacts, and means for giving a signal to the engineer, operated by said electro-magnet.

3. A safety appliance for railways, comprising track rails divided into blocks, sectional conductor rails divided into blocks of twice the length of the track-rail blocks, electrical connections connecting each block of the sectional conductor rails with the blocks of the track rails which are located on each side of the blocks of the sectional conductor rails, a pair of contacts carried by the train and contacting with the track rails, a second pair of contacts also carried by the train and contacting with the sectional conductor rails, a source of electric current connected with one pair of contacts, an electro-magnet connected to the other pair of contacts, and means for stopping the train operated by said electro-magnet.

4. A safety appliance for railways, comprising track rails divided into blocks, sectional conductor rails divided into blocks, electrical connections connecting each block of the sectional conductor rails with the blocks of the track rails which are located on each side of the blocks of the sectional conductor rails, a pair of contacts carried by the train and contacting with the track rails, a pair of con tacts connected with each switch rod and adapted to contact with the sectional conductor rails when the switch is open and a source of electric current connected with said contacts on the switch rod.

5. A safety appliance for railways, comprising track rails divided into blocks, sectional conductor rails divided into blocks, the sectional conductor rails being connected to the track rails of adjacent blocks and means carried by the train for delivering a current of electricity to the conductor rails and receiving a current from the track rails.

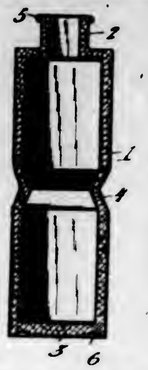
6. A safety appliance for railways, comprising track rails divided into blocks, sectional conductor rails divided into blocks, electrical connections connecting each block of the sectional conductor rails with the blocks of the track rails which are located on each side of the blocks of the sectional conductor rails, a pair of contacts carried by the train and contacting with the track rails, a second pair of contacts also carried by the train and contacting with the sectional conductor rails, a source of electric current connected with one pair of contacts, an electro-magnet connected to the other pair of contacts, an air brake mechanism on the train and a valve on the air brake mechanism connected to the electro-magnet and adapted to be operated thereby, whereby when the magnet is energized the valve will be opened and the brakes applied.

7. A safety appliance for railways, comprising track rails divided into blocks, sectional conductor rails divided into blocks, a pair of contacts carried by the train and contacting with the track rails, a second pair of contacts also carried by the train and contacting with the sectional conductor rails, a source of electric current connected with one pair of contacts, an electro-magnet connected to the other pair of contacts, a switch in the circuit of said electro-magnet, an electrically operated alarm, said switch being adapted to close the circuit of the alarm mechanism when it is thrown to open the circuit to the electro-magnet.

853,887. POISON-BOTTLE. DAVID LA TREMOUILLE and HULDRUE G. LA TREMOUILLE, Oswego, N. Y. Filed Nov. 21, 1905. Serial No. 288,474.

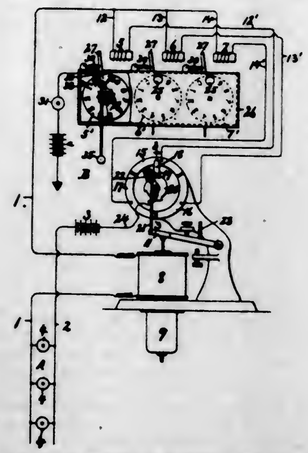
Claim.—The herein described bottle having a rectangular body portion provided with an angular recess upon the outer wall surrounding the body portion, and an inwardly

extending V-shaped rib, the material of the body portion being of equal thickness throughout, a short and rectangular neck portion provided with a rectangular marginal



flange, and said bottle having a rectangular groove in the bottom thereof, essentially as described.

853,888. SYSTEM FOR ELECTRICAL DISTRIBUTION. RICHARD C. LEAKE, Auburn, N. Y., assignor of one-half to Dwight J. Strickland, Auburn, N. Y. Filed Oct. 6, 1905. Serial No. 281,711.



Claim.—1. In a system of electrical distribution, a plurality of electric working circuits, electrically controlled means for closing each of said circuits separately, an electric circuit closer controlling the action of said means, and additional means to retard the action of the first named means under comparatively short current impulses, and to permit its action under prolonged closing of the circuit.

2. In a system of electrical distribution, a plurality of electric working circuits, each deriving current from a single line conductor, a circuit changing switch common to said circuits in circuit with said line conductor, electrically controlled means for actuating the circuit changing switch, and additional means for retarding the movement of the switch actuating means in one direction under comparatively short current pulsations through said electrically controlled means, but adapted to permit such action under prolonged closing of the circuit.

3. In a system of electrical distribution, a line conductor, and a plurality of electric working circuits, each connected to said conductor, a circuit changing switch common to all the circuits, a circuit closer and an electromagnet both in the main-line circuit, means controlled by said magnet for controlling the operation of the circuit changer, and a retarding device for the circuit-changer actuating means, whereby said actuating means is brought into action only by the prolonged closing of the circuit through the electromagnet.

4. In a system of electrical distribution, a main line circuit comprising a main feed wire and return conductors, including therein a sending station and a receiving station, a plurality of circuit closers connected in the main circuit at the sending station, a plurality of electric working circuits at the receiving station, a circuit changing switch for opening one of the working circuits and closing another, the closed working circuit being energized by the current impulses produced by the circuit closers at the sending station of the main circuit, and means brought into action by the prolonged closing of the circuit at the sending station for actuating the circuit-changing switch.

5. In a system of electrical distribution, a main line circuit including a sending and a receiving station, comprising a single main feed wire and return conductor, a circuit closer in the main line circuit at the sending station, a series of electric working circuits deriving current from the main line circuit, a series of electrically operated devices at the receiving station, one for each of said circuits, electric means in each of the circuits for operating one of said devices, a circuit changing switch common to all of said working circuits, an electro magnet in the main line circuit energized by the closing of the circuit closer, an armature for said electro magnet, means controlled by the armature for controlling the operation of the circuit changer, additional means for preventing the operation of the circuit changer under quick impulses produced by the circuit closer in the main line circuit, whereby the device corresponding to the closed working circuit at the receiving station is operated, said means for preventing the action of the circuit closer under quick current impulses through the electro magnet being actuated by the prolonged energizing of the electro magnet to cause the operation of the circuit changing switch to change from one circuit to another.

6. In a system of electrical distribution, a plurality of electric working circuits, a multi-pole electric switch having separate contact terminals, one for each circuit, electrically operated means in circuit with each of said working circuits for shifting the switch to close the working circuits successively, and means for retarding the action of said switch under short current impulses but allowing its operation under prolonged closing of the circuit.

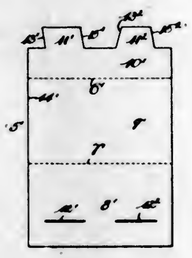
7. In a system of electrical distribution, a plurality of electric circuits, each including therein an electro-magnet, a multi-pole switch and its operating electro-magnet, both electrically connected in circuit with the first named electro-magnet, means for closing said circuits, and additional means for retarding the action of the switch under short current impulses thereby energising one of the first named electro-magnets with which the switch is electrically connected, said retarding means operating under prolonged closing of the circuit to break the circuit through one of the first named electro-magnets and close the circuit through a different one of said first named magnets, and a plurality of indicating devices, each actuated by one of the first named electro-magnets when energized.

8. In an electrical distributing system, a plurality of electric working circuits, each including therein an electro-magnet, a plurality of mechanical devices, each actuated by one of said magnets, a multi-pole switch for successively energising said magnets, an additional electro-magnet for operating said switch, means for simultaneously energising the last named magnet and one of the first named magnets which may be in electrical connection with the switch and additional means for preventing the operation of the switch under short current impulses but allowing the operation of said switch under prolonged closing of the circuit through the switch operating magnet.

9. In combination with a series of rotary mechanical elements and separate electrical operating devices therefor, whereby the latter are rotated step by step by successive closing of the circuit through its operating device, means for releasing the rotary elements, separate devices for restoring the rotary elements to their starting positions, a multi-pole switch in circuit with said electrical devices, an electro-magnet for operating the switch, means for closing the circuit through said magnet and electrical device which may be in electrical connection with the switch and means for retarding the action of the switch under short current impulses through said magnet but permitting the operation of said switch under prolonged closing of the circuit through said magnet.

10. In an electrical distributing system, a plurality of mechanical movements, and a corresponding number of electrical working circuits, each including therein an electro-magnet for operating one of said mechanical movements step by step at each energizing of its magnet, an electric switch having contact terminals in circuit with said magnets, a circuit closer for simultaneously closing the circuit through the last named magnet and one of the first named magnets which may be in electrical connection with the switch and connection with the switch and means controlled by the last named magnet for operating said switch under prolonged closing of the circuit but preventing the operation of said switch under comparatively short current impulses therethrough.

853,889. SELF-FASTENING POSTAL CARD. ABNER B. MAGOUN, Brant Rock, Mass. Filed Aug. 10, 1906. Serial No. 329,992.



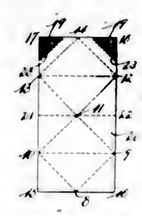
Claim.—1. A postal card comprising a sheet of paper folded to form a front, a back having a slit therein, and a flap, said flap having a tongue extending longitudinally from and beyond one end of said sheet, one side of said tongue extending at an angle toward the side of said sheet adjacent thereto and parallel to the opposite side of said tongue, whereby said tongue is adapted to project into said slit and lock said card against unfolding.

2. A postal card comprising a sheet of paper folded to form a front, a back having a slit therein, and a flap, said flap having a tongue extending longitudinally from one end of said sheet, one side of said tongue extending at an angle toward the side of said sheet adjacent thereto, the opposite side of said tongue extending at an angle away from the side of said sheet adjacent thereto, said sides of said tongue substantially parallel to each other, whereby said tongue is adapted to project into said slit and lock said card against unfolding.

3. A postal card comprising a sheet of paper folded to form a front, a back having slits therein, and a flap, said flap having a plurality of tongues extending longitudinally from one end of said sheet and adapted to project into said slits and lock said card against unfolding, one side of one of said tongues extending at an angle toward the side of said sheet adjacent thereto, the opposite sides of said tongue being substantially parallel to each other, the opposite sides of the other of said tongues converging toward each other.

853,890. RIGHT-ANGLE-TRIANGLE LETTER-SHEET ENVELOP. ABNER B. MAGOUN, Brant Rock, Mass. Filed Dec. 17, 1906. Serial No. 348,120.

Claim.—1. A right angle triangle letter sheet envelop consisting of a rectangular sheet of paper folded first, transversely thereof midway between its ends, second, the two lower corners thereof brought together and the doubled sheet folded at angles of 45° from the center of its opposite sides to the center of its lower end, third, the two upper corners of the front portion of said doubled sheet brought together and the front portion of said doubled sheet folded at angles of 45° from the center of its opposite sides to the center of its upper end, fourth, said doubled portion of said sheet folded transversely thereof midway between its ends, and fifth, the two upper corners of the rear portion of said doubled sheet brought together and the rear portion of said doubled sheet folded at angles of 45° from the center of its opposite sides to the center of its upper end, over upon the rear face of said envelop, the completed envelop forming in outline a right angle triangle.



2. A right angle triangle letter sheet envelop consisting of a rectangular sheet of paper provided with perforations extending at an angle across two corners at one end of said sheet, said sheet folded a plurality of times transversely thereof and along lines extending at 45° to the sides thereof, forming when completed a right angle triangle, said perforated corners being the last portions of said sheet folded at angles of 45° and adapted to be attached to the rear face of said envelop.

3. The hereinbefore described method of folding a rectangular sheet of paper to form a right angle triangle letter sheet envelop which consists in first, folding said sheet transversely thereof midway between its ends, second, bringing the two lower corners of said doubled sheet together and folding said doubled sheet at an angle of 45° from the center of its opposite sides to the center of its lower end, third, then bringing the two upper corners of the front portion of said doubled sheet together and folding the front portion of said doubled sheet at angles of 45° from the center of its opposite sides to the center of its upper end, fourth, folding said doubled portion transversely thereof midway between its ends, and finally bringing the two upper corners of said doubled sheet together and folding the rear portion of said doubled sheet at angles of 45° from the center of its opposite sides to the center of its upper end and over upon the rear face of said sheet, whereby a right angle triangle letter sheet envelop is constructed.

853,891. ELECTRIC RESISTANCE ELEMENT. ALBERT L. MARSH, Lake Bluff, Ill., assignor to The Hoskins Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 17, 1907. Serial No. 352,690.

Claim.—1. An electric resistance element comprising a strip, strand or filament containing vanadium.

2. An electric resistance element comprising a strip, strand or filament formed of an alloy of vanadium and a metal having the properties of nickel and cobalt.

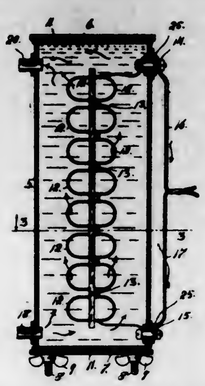
3. An electric resistance element comprising an annealed strip, strand or filament formed of an alloy of neckel and vanadium.

4. An electric resistance element formed of an alloy consisting of nickel and vanadium.

5. An electric resistance element formed of a metal alloy consisting of vanadium in the proportion of less than

twenty per cent. of the element and nickel in the proportion of more than eighty per cent. of the element.

853,892. ELECTRIC WATER-HEATER. EDWARD C. MILES, Denver, Colo. Filed Feb. 11, 1907. Serial No. 356,747.



Claim.—1. An electric water heater comprising a casing, an insulating diaphragm inserted in the casing, and a series of coils mounted on the diaphragm, the said coils being connected in series, and a source of electricity with which the coils are connected, the reservoir being provided with inlet and outlet conduits, substantially as described.

2. An electric water heater, comprising a vertically disposed casing, a diaphragm vertically disposed in said casing and dividing the same into two compartments, the said compartments being in communication both at the top and bottom, and a series of resistance coils mounted on the diaphragm and extending on both sides of the latter, and a suitable source of electricity with which the coils are connected in series.

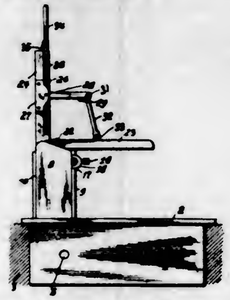
3. An electric heater comprising a vertically disposed casing, top and bottom plates engaging the casing, tie rods for connecting the said plates with the casing, said rods being located on the outside of the casing, and means interposed between the two plates for forming water tight joints at the ends of the casing, a diaphragm inserted in the casing and supported therein by the friction between its edges and the opposite side walls of the casing, and coils mounted on the said diaphragm, and a suitable source of electricity with which the coils are connected in series, substantially as described.

4. An electric heater, the combination of a casing, means for securing the casing to a suitable support, a diaphragm inserted in the casing and composed of insulating material, said diaphragm being of less length than the casing whereby the two compartments are in communication both at the top and bottom, resistance coils mounted on the diaphragm, and a suitable source of electricity with which the resistance coils are connected in series, substantially as described.

853,893. CHAIR. CHARLES L. MILLER, Bellaire, Ohio. Filed Nov. 24, 1905. Serial No. 288,864.

Claim.—1. A chair of the character described, comprising a casing having a hinged lid, a chair housing mounted in said casing, a back casing slidably mounted in said housing and provided with a seat pivotally connected thereto, a back movably mounted in said back casing, arms connected to the seat and back casing, means for limiting the movement of the back in its casing, and means carried by the back for engagement with the casing to hold said back in an elevated position.

2. In a folding chair, the combination with a casing adapted to receive the chair in its folded form, and having a hinged lid or cover, of a chair comprising a chair housing having slotted sides, a cross bar mounted for movement in said slotted sides, a chair pivotally connected to said cross bar, means carried by the chair housing for engagement with said cross bar to hold the latter in its elevated position, a back casing telescoping into the chair housing, arms pivotally connected to the back casing, arm supports pivotally connected to said arms and to the seat, a back movable in the back casing, means carried by the back and engaging means located in the back casing for limiting the movement of said back, and means for holding the back in an elevated position.



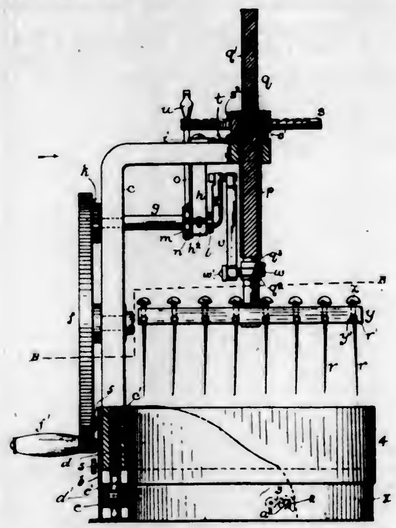
3. In a folding chair, the combination of a chair housing having slotted sides, a cross bar movable in said slotted sides, a seat pivotally connected to said cross bar, means carried by the front plate of said housing for engagement with said cross bar for holding the latter in an elevated position, a back casing, arms pivoted to said back casing, arm supports pivoted to the said arms and to said seat, a back mounted for sliding movement in the back casing, a loop carried by said back, and a block within the back casing to be engaged by said loop to limit the upward movement of the back in its casing.

4. In a folding chair, the combination with a chair housing, and a seat adapted to slide within the housing, of a back casing also adapted to slide within the housing and when extended to project above the same, arms pivoted to the back casing, and arm supports pivotally connecting the arms to the chair seat, a back slidably mounted in the back casing, and pins carried by said back to engage with the back casing and hold the back in an elevated position.

853,894. MEAT-CHOPPING MACHINE. FREDERICK W. ORTH, Portland, Oreg. Filed Dec. 7, 1904. Serial No. 235,838.

Claim.—1. A chopping machine comprising a base consisting of a semi-circular casing, provided with means for fastening the same to a support; a box or socket *b* affixed to the back of said casing; a standard *c*, and means supporting the same in said socket so as to render the same vertically adjustable; a hanger *h*, a crank shaft *g*, journaled in said standard and said hanger; a gear-wheel *f*, journaled in said standard, and a pinion on the shaft *g* meshing with such gear-wheel; a vertically reciprocable rod *q* journaled in the upper end of the standard *c*, and having a longitudinal groove *q'*; an operative connection between the rod *q* and the crank-end of the shaft *g*; means operated by the rotation of the shaft *g*, adapted to progressively turn the rod *q*; a bar affixed to the lower end of the reciprocating rod, and a plurality of knives movably secured to said bar.

2. A chopping machine comprising a base consisting of a semi-circular casing, provided with means for fastening the same to a support; a box or socket *b* affixed to the back of said casing; a standard *c*, and means supporting the same in said socket, so as to render the same vertically adjustable; a hanger *h*, a crank shaft *g*, journaled in said standard and said hanger; a gear-wheel *f*, journaled in said standard, and a pinion on the shaft *g* meshing with such gear-wheel; a vertically reciprocable rod *q*, journaled in the upper end of the standard *c*, and having a longitudinal groove *q'*; an operative connection between the rod *q* and the crank end of the shaft *g*; a crown-wheel *s* journaled on the rod *q*, and having a stud s^2 entering the said slot of said rod; means for holding the crown wheel against vertical displacement; a pitman on the shaft *g*, a lever *o* operated by said pitman, a pawl pivoted to the upper end of the said lever, and arranged to engage with and rotate the crank wheel; a bar affixed to the lower end of the reciprocating rod, and a plurality of knives movably secured to said bar.

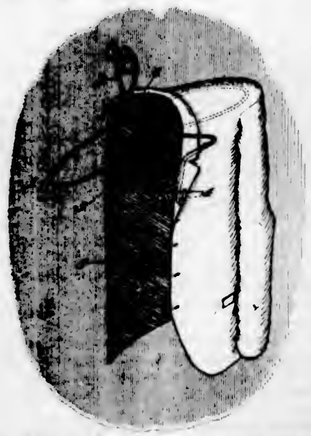


3. A chopping machine comprising a base consisting of a semi-circular casing, provided with means for fastening the same to a support; a box or socket *b*, affixed to the back of said casing; diaphragms in the lower end of said socket; a screw *d* journaled in said diaphragms, said screw being made with a collar, or nut, by which to turn the same; a standard *c*, having a threaded cavity *c'*, which standard is adjustably supported by said screw *d* in said socket *b*; a hanger *h*, a crank shaft *g*, journaled in said standard and said hanger; a gear-wheel *f*, journaled in said standard, and a pinion on the shaft *g* meshing with such gear-wheel; a vertically reciprocable rod *q*, journaled in the upper end of the standard *c*, and having a longitudinal groove *q'*; an operative connection between the rod *q* and the crank-end of the shaft *g*; a crown-wheel *s* journaled on the rod *q*, and having a stud s^2 entering the said slot of the said rod; means for holding the crown wheel against vertical displacement; a pitman on the shaft *g*, a lever *o* operated by said pitman, a pawl pivoted to the upper end of said lever, and arranged to engage with and rotate the crown wheel; a bar affixed to the lower end of the reciprocating rod, and a plurality of knives movably secured to said bar.

4. A chopping machine comprising a base consisting of a semi-circular casing, provided with means for fastening the same to a support; a box or socket *b*, affixed to the back of said casing; diaphragms in the lower end of said socket; a screw *d* journaled in said diaphragms, said screw being made with a collar, or nut, by which to turn the same; a standard *c*, having a threaded cavity *c'*, which standard is adjustably supported by said screw *d* in said socket *b*; a hanger *h*, a crank shaft *g*, journaled in said standard and said hanger; a gear-wheel *f*, journaled in said standard, and a pinion on the shaft *g* meshing with such gear-wheel; a tubular bearing *p*, affixed in the upper extremity of the standard *c*, and provided with diaphragms *p'* at its two ends, a vertically reciprocable rod *q* journaled in said tubular bearing, said bearing being further provided with diaphragms p^2, for the purpose specified, an operative connection between the rod *q* and the crank end of the shaft *g*, a crown-wheel journaled on the rod *q*, and having stud s^2 inserted in a slot *q'* of said rod *q*; means for holding the crown wheel against vertical displacement; a pitman on the shaft *g*, a lever *o* operated by said pitman, a pawl pivoted to the upper end of said lever, and arranged to engage with and rotate the crown wheel; a bar affixed to the lower end of the reciprocating rod, and a plurality of knives movably secured to said bar.

5. A chopping machine comprising a base consisting of a semi-circular casing, provided with means for fastening the same to a support, a chopping block and means for securing the same in said casing; a socket *b* affixed to the back of said casing, diaphragms in the lower end of said socket, a screw *d* journaled in said diaphragm, said screw being made with a collar or nut, by which to turn the same and standard *c*, having a threaded cavity *c'*, which standard is adjustably supported by said screw *d* in said socket *b*, a hanger *h*, a crank shaft *g*, journaled in said standard in said hanger, a gear-wheel *f*, journaled in said standard, and a pinion on the shaft *g*, meshing with such gear-wheel, a tubular bearing *p*, affixed in the upper extremity of the standard *c*, and provided with diaphragms *p'* at its two ends, a vertically reciprocable rod *q* journaled in said tubular bearing being further provided with diaphragms p^2, for the purpose specified, an operative connection between the rod *q* and the crank end of the shaft *g*, a crown-wheel journaled on the rod *q*, and having stud s^2 inserted in a slot *q'* of said rod *q*; a yoke *t*, secured in the standard and arranged in a slot provided in the hub of said crown wheel so as to hold the latter against vertical displacement, a pitman on the shaft *g*, a lever *o*, operated by said pitman, a pawl pivoted to the upper end of said lever, and arranged to engage with and rotate the crown wheel, a bar *y* affixed to the lower end of the reciprocating rod *q*, and provided with a series of transverse slots *y'*, a plurality of knives made with ribs *r'*, inserted in said slots of the bar *y*, set-screws on the bars for clamping the knives in place.

853,895. COAT-HANGER. EDWARD E. PALMER, Lynn, Mass., assignor of one-half to Chester R. Palmer and Harry G. Payrow, Lynn, Mass. Filed Aug. 31, 1903. Serial No. 171,415.



Claim.—1. A coat support comprising oppositely disposed shoulder loops with suspending member, forwardly projecting breast supports, and lapel engaging arms, substantially as and for the purpose specified.

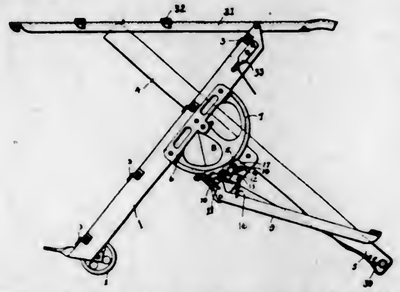
2. A coat support comprising oppositely disposed shoulder loops with suspending member, spring wire breast sup-

ports or loops oppositely disposed and curved to conform to the normal condition of the coat, substantially as and for the purpose specified.

3. A coat support comprising oppositely disposed shoulder loops with suspending member, spring wire breast supports or loops oppositely disposed and curved to conform to the normal condition of the coat, spring members provided to engage under the lapel of the coat, substantially as and for the purpose specified.

4. A coat support comprising oppositely disposed shoulder loops with suspending member, spring wire breast loops, and spring lapel engaging members, constructed of one piece of wire.

853,896. COMBINATION ELEVATOR-TRUCK. GEORGE W. PETER, St. Louis, Mo. Filed Apr. 21, 1905. Serial No. 256,822.



Claim.—1. An elevator mechanism comprising a frame, two side members pivoted to said frame, a ratchet segment attached to the frame, lever and pawl mechanism supported by the side members, and operable in connection with the ratchet segment to open and close the side members and frame, and a platform supported by the frame and side members.

2. An elevator mechanism comprising a frame, a platform pivoted thereto, side members having one end against the platform pivoted to the frame, a ratchet segment attached to the frame, a lever, a plurality of pawls, and means for operating the pawls to engage with and disengage from the ratchet segment as required to raise and lower the mechanism, substantially as described.

3. The combination with a truck frame having cross pieces and rollers near one end of said frame, of two handles pivoted to the truck frame, a platform having flanges extending over the handles pivoted to said truck frame, cross pieces connecting the sides of said platform, two frame pieces carried by the handles, ratchet segments on the truck frame, pawl and lever devices carried by said two frame pieces operable to move the truck frame and handles cross wise of each other, and means to lock the platform to the truck frame as a longitudinal continuation thereof, substantially as specified.

4. The combination with the truck frame and the side members pivoted thereto, of a ratchet segment attached to the truck frame, a pawl carried by one of the side members, a plate movably carried by one of the side members, a lever pivoted adjacent to said pawl and plate, and a pawl carried by said lever substantially as described.

5. The combination with a truck frame, of two side members pivoted thereto, ratchet segments attached to the frame, a plurality of pawls riding upon the ratchet segments, a lever controlling all of said pawls, and a platform supported by the truck frame, substantially as specified.

6. The combination with a truck frame, of two side members pivoted thereto, ratchet segments attached to the frame, a plurality of pawls riding upon the ratchet segments, controlling devices for the pawls, and a lever for operating the pawls and controlling devices, substantially as specified.

7. The combination with a frame provided with rollers near one end, of two handles pivoted to the frame for manual engagement to move the frame, mechanism operable to raise the ends of the handles and of the frame which are opposite from each other, and a platform arranged to rest upon the raised ends of the handles and frame, substantially as specified.

8. The combination with a truck frame, of two handles pivoted to the frame for moving the truck manually, mechanism operable to move the handles and frame crosswise of each other, and a platform arranged to rest upon the frame and handles when they are crossed, substantially as specified.

9. The combination with a truck frame having cross braces, of two members pivoted to the truck frame, cross braces connecting said two members, means for locking said two members to the truck frame to form a longitudinal continuation thereof, and mechanism carried by the truck frame for holding one end thereof above the other end, and for supporting the two members which are pivoted to the truck frame in a horizontal position when one end of the truck frame is held above the other end, substantially as specified.

10. The combination with a frame, of two handles pivoted to the frame for manual engagement, means for holding the handles rigidly against the sides of the frame when manually engaged, mechanism operable to move the handles and frame crosswise of each other, and a platform arranged to rest upon the frame and handles when they are crossed, substantially as specified.

11. The combination with a frame having rollers near one end for supporting the same, of two handles pivoted to the frame for manual engagement to move the frame, means for holding the handles rigidly against the sides of the frame when manually engaged, mechanism operable to move the handles and frame crosswise of each other, two members pivoted to the truck frame, cross braces connecting said two members, and means for locking said two members to the truck frame to form a longitudinal continuation thereof, substantially as specified.

12. The combination with a truck frame, of two handles pivoted to the frame for manual engagement to move the frame, a lever, mechanism controlled by the lever operable to move and hold the handles and frame crosswise of each other, a platform arranged to rest upon the frame and handles when they are crossed, and means for causing the lever, when operated, to operate said mechanism as required to permit the frame and handles to return to their position before they were crossed, substantially as specified.

13. The combination with a truck frame, of two handles pivoted thereto for manual engagement to move the frame, a lever, mechanism controlled by said lever to move the handles and frame to crosswise position, means to cause the lever to release said mechanism as required to permit the frame and handles to move out of crosswise position, two members pivoted to the frame, cross braces connecting said two members, means whereby said two members will be held in a horizontal position when the handles and frame are crossed, and means locking said two members to the frame to form a longitudinal continuation thereof, substantially as specified.

14. In a truck, a frame, two handles, means operable to move the handles and frame crosswise of each other, a platform arranged to rest upon the handles and frame when they are crossed, and means for locking the platform to the frame as a longitudinal continuation thereof.

15. The combination with a truck frame, of two members pivoted to the frame, cross pieces connecting said two members, a lever, mechanism controlled by said lever to move and hold the frame in an inclined position means for holding said two members horisontally when the frame is in an inclined position, and means for locking said two members to the truck frame to form a longitudinal continuation thereof, substantially as described.

16. The combination with a frame, of two handles pivoted thereto, ratchet segments on the frame, a lever, pawls acting on the ratchet segments, devices controlled by the lever to operate the pawls as required to move the frame and handles cross-wise of each other, and a platform adapted to rest upon the ends of the handles and frame when they are crossed, substantially as specified.

17. The combination with a frame, of two members pivoted thereto, mechanism operable to move the frame to inclined position and the two members to a horizontal position, and means for locking the two members to the frame as a longitudinal continuation thereof, substantially as specified.

18. The combination with a frame, of two rollers at or near one end thereof, mechanism operable to move the frame to an inclined position, two members having cross pieces, and means for locking said two members to the frame as a longitudinal continuation thereof, substantially as described.

19. The combination of a frame, cross pieces connecting opposite sides of said frame, mechanism adjustable to hold said frame at any desired inclined position, two members having cross pieces, and means for locking said two members to said frame to form a longitudinal continuation thereof, substantially as described.

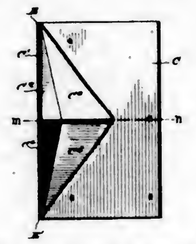
20. The combination with a frame, rollers near one end thereof, and two handles connected to said frame for manual engagement, of a lever, mechanism controlled by said lever to move the frame and handles cross-wise of each other, and a platform arranged to rest upon the ends of the frame and handles when they are crossed, substantially as specified.

21. A frame, rollers near one end thereof, cross pieces on the frame, handles for manual engagement pivoted to the frame, and a platform resting on the frame and handles, in combination with a lever, mechanism controlled by the lever to move the frame and handles cross wise of each other, and a reversing device operable to cause operation of the lever to permit the frame and handles to move out of crosswise position, substantially as specified.

22. The combination with a frame, cross-braces connecting the sides thereof, and rollers near one end of said frame, of two side members pivoted to said frame, handles on the ends of said two members, ratchet segments attached to said frame, a frame piece secured to each of said side members, a two-arm lever pivoted to said frame pieces, and having its ends adjacent to said ratchet segments, a pawl pivoted to each arm of said lever and operating upon the ratchet segments, springs for actuating said pawls, a pawl pivoted to each of said frame pieces, springs holding said last-named pawls in engagement with the ratchet segments, and springs connected to said lever whereby said lever will be oscillated in one direction when in operation, substantially as specified.

23. The combinstion with a frame, cross braces connecting the sides thereof, and rollers near one end of said frame, of two side members pivoted to said frame, handles on the ends of said two side members, ratchet segments attached to said frame, a frame piece secured to each of said two side members a two-arm lever pivoted to said frame pieces and having its ends adjacent to said ratchet segments, a pawl pivoted on each arm of said lever and operating upon the ratchet segments, springs for actuating said pawls, a pawl pivoted to each of said frame pieces, springs holding said last-named pawls in engagement with the ratchet segments, a projection on each of the said several named pawls, springs connected to said lever whereby said lever will be oscillated in one direction when in operation, a longitudinally movable controlling plate supported by each of the said frame pieces, a projection on each controlling plate against the projections on the said pawls on the lever whereby said plate will be moved when the lever is oscillated, shoulders on the plate against the pawls on the frame pieces whereby said pawls will be released from the ratchet segments when said plates are moved by said lever, a lever on each frame piece having pin and slot connection with the controlling plate thereon, a projection on each of said levers acting on the controlling plates and coöperating with the projections on the pawls which are pivoted to the two-arm lever, springs connected to said levers and actuating the same and the controlling plates away from the ratchet segments, connections for moving said levers in opposition to their springs, means to engage said connections to hold them to prevent automatic operation of the levers to which they are connected, an angle iron pivoted to the rear end of each side of the truck frame, the angles of said angle irons projecting over the said two side members, cross pieces connecting said angle irons, and means for locking said angle irons to said frame as a longitudinal continuation thereof, substantially as specified.

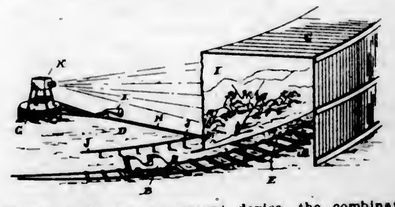
853,897. CHIMNEY-BACK. JAMES A. PORTER, Crawfordsville, Ind., assignor of one-half to William B. Griffith, Crawfordsville, Ind. Filed Apr. 7, 1906. Serial No. 310,550.



Claim.—1. An integral metallic chimney back for roofs, the same comprising an inclined roof section, a vertical chimney portion, and an angular bridge part having a pair of double slopes inclined transversely from and laterally with the walls of the roof section and the chimney portion inwardly together for the purposes set forth, substantially as specified.

2. In an integral metallic chimney back for roofs, the combination with the chimney and the roof of an integral metallic chimney back having an inclined roof section, a vertical chimney portion, and an angular bridge part comprising a pair of double slopes inclined transversely from and laterally with the walls of the roof section and the chimney portion inwardly together for the purposes of structural rigidity and for gravitating rain, debris, etc. as set forth, substantially as specified.

853,898. AMUSEMENT DEVICE. ROBERT F. RICE, Bridgeport, Conn. Filed Oct. 24, 1905. Serial No. 284,158.



Claim.—1. In an amusement device, the combination with an inclosed railway and car therefore, of a picture machine carried independent of the car, and means for moving the machine to move the pictures along the wall of the inclosed railway.

2. In an amusement device, the combination of a roadway inclosed to form a circular tunnel, a picture machine central of the circular inclosure adapted to throw its pictures on the wall of the tunnel, means for rotating the picture machine to move the pictures along the said wall with the movement of the car.

3. In an amusement device, the combination with a roadway having a vertical side wall, of a pleasure vehicle to pass therethrough, a picture machine, and separate means for moving the same to project its pictures along the side wall in unison with the moving vehicle.

4. In an amusement device, the combination with an in-

closed railway, of a car to operate through said way, a picture and phonographic machine, and means for moving the same to project their pictures and sounds against different sections of the wall of the railway inclosure.

5. In an amusement device, the combination with a circular track and car mounted thereon, of an inclosure for the track including a transparent wall, a picture machine and means for moving the same by the movement of the car to throw and move the pictures upon that section of the transparent wall of the inclosure adjacent to the moving car.

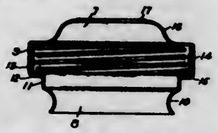
6. In an amusement device, the combination with an inclosed circular track and car to operate thereon, of a rotary table located central of said circular inclosure, means for turning the table with the movement of the car, and a picture machine carried by the table adapted to project its pictures against the wall of the inclosure adjacent to the moving position of the car.

7. In an amusement device, the combination with an inclosed circular track, of a picture machine located central of said circular inclosure, a connection therefrom to the car whereby the machine is turned with the movement of the car and the moving pictures projected against and moved along the wall of the inclosure at a point adjacent to the changing location of the car.

8. In an amusement device, the combination with a circular track and car mounted thereon, of an inner vertical transparent wall parallel with the track, a rotating table located central of the circular track, means for moving the table with the movement of the car, a picture machine mounted upon the table adapted to turn therewith to project its pictures against that portion of the wall adjacent to the moving car.

9. In an amusement device, the combination with an inclosed circular track having a vertical wall beside the same, or a rotatable table central of the circular track, an arm of the table for engagement with the car to turn the table, a picture machine mounted upon the table to project pictures against that portion of the said vertical wall adjacent to the moving car.

853,899. LAMP-TRIMMING. HOWARD R. SARGENT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Feb. 6, 1904. Serial No. 192,277.



Claim.—1. In combination, a socket, a lamp secured in said socket, a reflector resting against the surface of the lamp, and a longitudinally extensible collar extending between said reflector and said socket.

2. In combination, a socket formed with a bead located adjacent its lower end, a lamp secured in said socket, an annular or zone shaped reflector resting against the globe of said lamp, and an expansible collar one end of which engages the bead on said socket and the other end of which engages said reflector to force it against said lamp.

3. In combination, a socket, a lamp secured therein, a reflector resting against the globe of said lamp, and an expansible collar extending between said socket and said reflector comprising two annular members capable of limited relative movement and a spring tending to separate said members.

4. In combination, a socket, a lamp secured in said socket, a reflector for said lamp resting against a portion of its surface, and a collar formed of telescoping sections extending between said reflector and said socket.

5. In combination, an electric lamp globe or bulb, a annular reflector through the opening in which the neck of said bulb is passed, and resilient means for pressing said reflector against said globe.

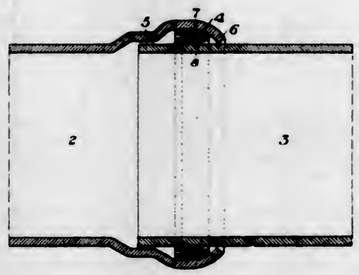
6. In combination, a socket, an electric lamp secured in said socket, a reflector resting against the globe of said lamp, and resilient means extending between said socket and said reflector to hold the latter against the said globe.

7. In combination, a lamp socket, a lamp bulb the neck of which is secured in said socket, a reflector having an opening through which the neck of the lamp bulb passes, and a resilient collar one end of which engages the lamp socket and the other end of which engages the reflector.

8. In combination, an electric lamp globe or bulb, a reflector substantially circular in outline formed with a centrally located aperture through which the neck of the bulb or globe is passed, and resilient means for pressing the reflector against the lamp globe.

9. In combination, a lamp socket, a lamp bulb the neck of which is secured in said socket, a reflector substantially circular in outline and formed with a centrally located aperture through which the neck of the bulb is passed, and an extensible collar extending between said socket and said reflector to hold said reflector against the lamp bulb.

853,900. PIPE-JOINT. AUGUSTUS M. SAUNDERS, McKeesport, Pa., assignor to National Tube Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 26, 1906. Serial No. 327,793.

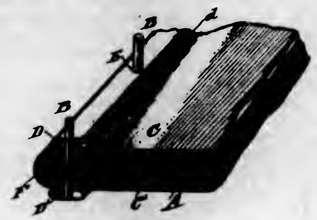


Claim.—1. A pipe joint consisting of a pipe having an integral enlarged end with a contracted mouth, a second pipe telescoped within the enlarged end and a flexible gasket around the telescoped portion of the pipe within the enlarged end, said gasket having an inwardly beveled face which is initially largely out of contact with the pipe and the enlarged end of said pipe having its wall inclined to act upon the outer side of said gasket and bring its inner surface into contact with the pipe under the action of the fluid pressure behind the gasket; substantially as described.

2. A pipe joint consisting of a pipe having an integral enlarged end with a contracted mouth, a second pipe telescoped within the enlarged end and an annular gasket of flexible material around the telescoped portion of the second pipe within the enlarged end of the first pipe, said gasket having a beveled inner face which is largely out of contact with the pipe while telescoping the pipe and which is brought into engagement with the telescoped pipe by the inclined wall of the enlarged end on the first pipe under the action of the fluid pressure behind the gasket; substantially as described.

3. A pipe joint consisting of a pipe having an integral enlarged end with a contracted mouth, a second pipe telescoped within the enlarged end and a flexible gasket around the telescoped portion of the second pipe within the enlarged end of the first pipe, said gasket having a beveled inner face which is initially largely out of contact with the pipe and having a grooved rear end, the gasket being arranged to be moved endwise and compressed under the action of the fluid pressure behind the gasket and bring its inner face into contact with the telescoped pipe; substantially as described.

853,901. LOOSE-LEAF BINDER. JOHN SCHADE, Jr., New York, N. Y. Filed Feb. 23, 1906. Serial No. 302,329.



Claim.—1. In a loose leaf binder, the combination with two backs, posts securely fastened in one of the backs and passing freely into the other back and a shaft mounted in this latter back to rotate axially and to have longitudinal movement, and having spiral grooves for locking said back to the posts, substantially as set forth.

2. In a loose leaf binder, the combination with two backs, of posts secured in one back and passing freely through holes of the other back, a shaft mounted to turn axially and move longitudinally in that back through which the posts pass loosely, said shaft having spiral grooves through which said posts pass, substantially as set forth.

3. In a loose leaf binder, the combination with two backs, of posts secured in one back and passing freely through holes in the other back, a shaft mounted to turn axially and move longitudinally in that back through which the posts pass loosely, said shaft having spiral grooves therein, through which grooves said posts pass, the grooves being inclined in the direction from the two ends of the shaft toward the center, substantially as set forth.

4. In a loose leaf binder, the combination of two backs, posts securely fastened in one back and passing freely through the other, a shaft mounted to revolve on the latter back having spiral grooves therein into which the said posts engage and a straight groove into which a retaining pin is inserted, said groove being wide enough to admit of slight longitudinal movement, thereby causing the binder to lock with an equal pressure on both posts, substantially as set forth.

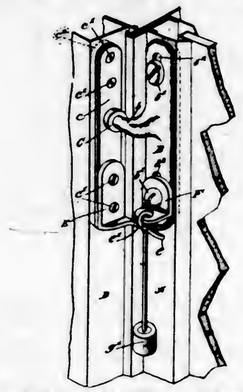
5. In a loose leaf binder, the combination with two backs, of posts secured in the one back and passing freely through holes in the other back, a shaft mounted to rotate axially and move longitudinally in that back through which the posts pass loosely, said shaft having spiral grooves through which the posts pass, and said shaft also having a circumferential groove and a pin passing from the back into said circumferential groove, the width of the groove being greater than that of the pin so as to permit of longitudinal movement of the shaft in the back, substantially as set forth.

6. In a loose leaf binder, a hollow metal back formed of a strip of sheet metal bent to form a top and bottom and side, each of a single thickness and the opposite side formed of a double thickness of metal, the two thicknesses being lapped and pressed together, substantially as set forth.

853,902. WINDOW. HENRY R. SCHWEINLER, New York, N. Y., assignor to Voightmann and Company, Chicago, Ill., a Firm. Filed Nov. 16, 1905. Serial No. 287,571.

Claim.—1. The combination of a tilting window, pivot bearings providing a horizontal axis for the swinging window sash, a stop-bracket secured to the window jamb, provided with a bearing portion having a notch at its upper edge, disposed just below said axis, and a stop-rod swingingly secured to the window-sash and adapted to rest in said notch, but adapted to hang vertically when the window is closed, the said rod provided with means for engaging the under surface of said bearing portion, the said under surface beveled or inclined to extend upwardly and outwardly, substantially as set forth.

2. The combination of a tilting window, pivot bearings providing a horisontal axis for the swinging window sash, a stop-bracket secured to the window-jamb, provided with a bearing portion having a notch at its upper edge, disposed just below said axis, and a stop-rod swingingly secured to the window sash and provided at its end with an enlargement or shoulder, the rod adapted to rest in said notch, but adapted to hang vertically when the window is closed, the enlargement or shoulder too large to pull through the notch, but the rod adapted to be swung up and out of the notch when it is desired to tilt the window beyond a predetermined point, the said bearing portion provided with an under surface beveled or inclined to extend upwardly and outwardly, substantially as set forth.



3. The combination of a tilting window, pivot bearings providing a horizontal axis for the swinging window sash, a stop-bracket secured to the window-jamb, disposed just below said axis, said bracket having an oblique bearing portion provided at its upper edge with a notch, and a stop-rod swingingly secured to the window sash and adapted to rest in said notch, but adapted to hang vertically when the window is closed, the end of the rod provided with an enlargement or shoulder too large to pull through the notch, but the rod adapted to be swung up and out of the notch when it is desired to tilt the window beyond a predetermined point, said bearing portion having its under surface beveled or inclined to extend upwardly and outwardly, said surface adapted to engage said shoulder or enlargement when the window is open and extending obliquely to the rod to keep the latter bottomed in the notch, substantially as set forth.

4. The combination of a tilting window, sockets secured to the window frame, and laterally projecting pivots secured to the window sash and engaging the said sockets, the horizontal axis about which the window is thus adapted to tilt located some distance inside of the sash, to make the window self-closing, substantially as set forth.

5. The combination of a tilting window, pivot-plates adjustably secured to the window sash, socket-plates secured to the window frame, said pivot plates provided with laterally projecting integral pivots, and the socket-plates having sockets adapted to receive said pivots, said sockets and pivots extending horizontally and parallel with the inner surfaces of the pivot plates, but at right angles to the inner surfaces of the socket plates, substantially as set forth.

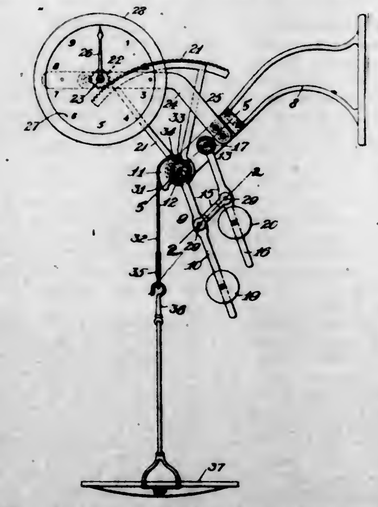
6. The combination of a tilting sheet-metal window sash, clamping-plates secured to the inner surface of the sheet-metal window sash, pivot-plates applied to the outer surface of the sheet-metal window sash and provided with slots b^3, clamping screws extending through the slots b^3 in the pivot-plates and screwed into the clamping plates, a sheet-metal window frame, other clamping-plates secured to the inner surface of said sheet-metal window frame,

socket-plates applied to the outer surface of the sheet-metal window frame, and screws extending through the said socket-plates and screwed into the said last-mentioned clamping plates, said pivot-plates provided with axially alined laterally projecting horizontal pivots, and said socket-plates provided with similarly alined sockets adapted to receive said pivots, substantially as set forth.

7. The combination of a tilting self-closing window sash, a window frame, cast-iron pivots secured to the sash, iron or steel socket-plates secured to the window frame, and brass bushings secured to the said socket-plates and adapted to receive the said laterally projecting pivots, whereby the said pivotal connections do not tend to corrode and interfere with the self-closing of the window, the horizontal axis of the sash being located outwardly and away from the same, for the purpose set forth.

8. The combination of a tilting self-closing window sash, reinforcing plates secured to the inside of the window sash and provided with tapped holes, pivot-plates applied to the outside of the sash and provided with holes, screws extending through the holes in the pivot-plates and engaging the tapped holes in the reinforcing plates, pivots carried by said pivot-plates, socket-plates applied to the outside of the window frame, other reinforcing plates applied to the inside of the window frame, screws extending through the socket-plates and engaging the said last-mentioned reinforcing plates, and a bushing of non-corrosive metal applied to each socket-plate, said bushings adapted to receive the said pivots, the horizontal axis of the sash being located outwardly and away from the same, for the purpose set forth.

853,903. SCALE. HENRY F. SHAW, West Roxbury, Mass., assignor of one-third to George F. Shaw, Dedham, Mass., and one-third to George E. Whipple, West Roxbury, Mass. Filed Mar. 8, 1906. Serial No. 304,889.

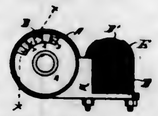


Claim.—1. A scale comprising in its construction a pivotally supported beam, a pivotally supported controlling arm, a link connecting said controlling arm to one arm of said scale beam, and a weight fast to each of said arms, respectively, at different distances from their respective axes of rotation, said axes being located in a plane at an angle to a vertical plane, and the axis of rotation of said controlling arm being located above the axis of rotation of said beam.

2. A scale comprising in its construction a pivotally supported beam, one arm of said beam having a curved surface thereon, a flexible supporting member fast to said beam extending along said curved surface, a pivotally supported controlling arm, and a link connecting said controlling arm to one arm of said scale beam, said controlling arm and beam arm adapted to oscillate in substantially different time, the axes of rotation of said beam and said controlling arm being located in a plane at an angle to a horizontal plane and the axis of said controlling arm being located above the axis of said beam.

3. A scale comprising in its construction a pivotally supported beam, one arm of said beam having a curved surface thereon, a flexible supporting member fast to said beam extending along said curved surface, a pivotally supported controlling arm, a link connecting said controlling arm to one arm of said scale beam, said controlling arm and beam arm adapted to oscillate in substantially different time, and an indicator operatively connected to said scale beam, the axes of said beam and said controlling arm being located in a plane at an angle to a horizontal plane and the axis of said controlling arm being located above the axis of said beam.

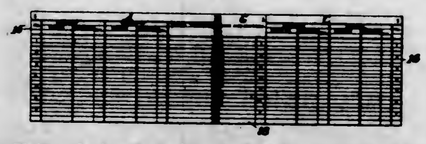
853,904. THILL-SUPPORT. JOSIAH W. SHERWOOD, Green Lake, Mich., assignor of one-half to Eliza S. Sherwood, Green Lake, Mich. Filed Apr. 11, 1906. Serial No. 311,201.



Claim.—1. In a thill support, a cup, a clip for securing said cup to the axletree of a buggy, and corrugations within the cup; a second cup interlocking with said cup and having an arm for securing it to the thill, and a spring catch within the second cup in position to interlock with the corrugations in the first cup, and a pivotal bolt securing the cups together, substantially as and for the purpose set forth.

2. In a thill support, a cup having corrugations within it, a cup having a spring latch in position to engage the corrugations in said cup, the meeting edges of said cups having interlocking projections, and a central pivotal bolt, substantially as and for the purpose set forth.

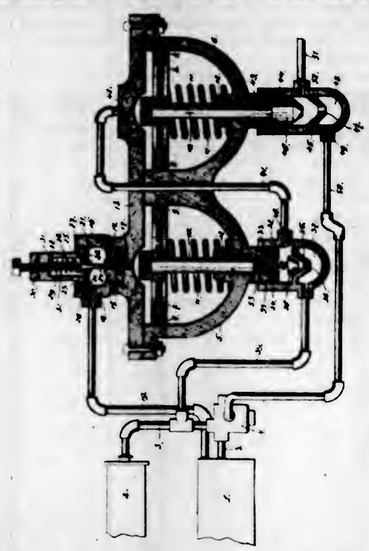
853,905. PERPETUAL ACCOUNT-BOOK. THOMAS E. SMITH, Winthrop, Mass. Filed July 5, 1904. Serial No. 215,454.



Claim.—1. A perpetual account book comprising a binding, a plurality of leaves ruled for accounts temporarily bound in said binding, said account leaves having the entire series of subdivisions of a certain period of time indicated thereon upon opposite sides thereof, the interval between the first-named subdivision upon the obverse side and the first-named subdivision upon the reverse side of any one of said leaves being equal to one half as many subdivisions as there are upon both sides of all of said leaves.

2. A perpetual account book comprising a binding, a plurality of leaves ruled for accounts temporarily bound in said binding, a leaf suitably designated for names temporarily bound in said binding between the bound edges of said account leaves, said account leaves having the entire series of subdivisions of a certain period of time indicated thereon upon opposite sides thereof, the interval between the first-named subdivisions upon the obverse side and the first-named subdivision upon the reverse side of any one of said account leaves being equal to one-half as many subdivisions as there are upon both sides of all of said account leaves.

853,906. RETAINING-VALVE. MICHAEL SOMERS, East Pittsburg, Pa. Filed Nov. 12, 1906. Serial No. 343,030.



Claim.—1. The combination with the air reservoir, triple valve and brake cylinder of an air brake, of a double valve casing, comprising two independent chambers, a piston in each of said chambers, a depending valve chamber below one of said casings having a pipe connection with the brake cylinder, and a pipe connection with the top of the adjacent casing, oppositely disposed valves within said depending chamber, a depending valve chamber below the other casing having a pipe connection with the triple valve, and an exhaust port, a valve controlling said exhaust, and means for admitting air from the reservoir to one of said casings.

2. The combination with the air reservoir, triple valve and brake cylinder of an air brake, of a double valve casing comprising two independent chambers, a piston in each of said chambers, a depending valve chamber below one of said casings having a pipe connection with the brake cylinder, and a pipe connection with the top of the adjacent casing, oppositely disposed valves within said depending chamber, a depending valve chamber below the other casing having a pipe connection with the triple valve, and an exhaust port, a valve controlling said exhaust, and means for admitting air from the reservoir to one of said casings comprising a diaphragm chamber above said casing, a diaphragm therein, a pipe connection between the reservoir and diaphragm chamber, and a valve extending centrally through said diaphragm controlling a port connecting said diaphragm chamber with the casing below it.

853,907. LOCK FOR PINS. EMIL L. SPRENGER, New Kensington, Pa. Filed Nov. 16, 1906. Serial No. 343,692.

Claim.—1. A safety attachment for pins comprising a casing provided with a longitudinal bore and externally screw threaded and longitudinally split and tapered at one end to provide clamping fingers, and an internally-threaded cap provided with a tapered end having a pin opening therein, and means for permanently securing said cap upon the casing comprising a split ring, said cap being provided with an internal annular groove of greater width than said ring.

2. A safety attachment for pins comprising a casing formed with a longitudinal bore, and an annular external groove, and screw threaded above and below said groove and having its upper end tapered and longitudinally split to provide clamping fingers, in combination with an internally threaded cap having a tapered upper end formed with a pin opening and an internal annular groove of greater width than the groove in the casing, and a split ring supported between said grooves.



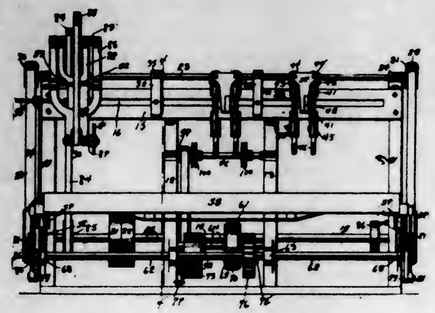
3. A safety attachment for pins comprising a casing formed with a longitudinal bore having a contracted extension at its inner end, and an annular external groove and being screw threaded above and below said groove and having its upper end tapered and longitudinally split to provide clamping fingers, in combination with an internally screw threaded cap tapered at its upper end and formed with a pin opening and provided with an annular internal groove of greater width than the groove in the casing and having its lower end beveled to snugly fit a beveled shoulder on the casing, and a split ring fitting the groove in the casing and adapted to project into the wider groove in the cap to permanently connect the cap and casing.

853,908. ADJUSTABLE BORING AND SAWING MACHINE. MARTIN SWINTEK, Des Moines, Iowa, assignor of one-half to George H. Carlon, Oskaloosa, Iowa. Filed Dec. 4, 1905. Serial No. 290,608.

Claim.—1. An adjustable boring and sawing machine, comprising a suitable support, driving mechanism on said support, gang boring mechanism adjustably mounted on said support and connected to said driving mechanism, sawing mechanism mounted on said support and connected to said driving mechanism, gain sawing mechanism mounted on said support and connected to said driving mechanism, a table mounted for vertical reciprocation toward and from and longitudinally of said boring and past the gain-sawing mechanism, and means for swinging said sawing mechanism across the path of said table.

2. In an adjustable boring and sawing machine, a driving mechanism, a boring mechanism connected thereto, gain-sawing mechanism, a table arranged for reciprocation toward and from and longitudinally of said boring mechanism and past the gain-sawing mechanism, crank mechanism carrying said table, friction-gear connections between said driving mechanism and the crank mechanism and adapted to be thrown in and out of operation, whereby

said table may be raised and lowered by said driving mechanism, sawing mechanism mounted for oscillation, and means for swinging the sawing mechanism across the path of the table.



3. In an adjustable boring and sawing machine, a suitable support, a driving mechanism thereon, gang boring mechanism adjustably mounted on said support and connected to said driving mechanism, sawing mechanism mounted on said support and connected to said driving mechanism, gain-sawing mechanism mounted on said support and connected to said driving mechanism, a table, crank mechanism adapted to raise and lower said table toward and away from and longitudinally of said boring mechanism and past the gain-sawing mechanism, and pedally-operated connecting mechanism between said driving and crank mechanisms, said sawing mechanism adapted to carry a saw across the path of said table.

4. In an adjustable boring and sawing machine, a suitable support, a driving mechanism thereon, a boring mechanism connected thereto, gain-sawing mechanism, a sawing mechanism mounted for oscillation and carrying a saw, a table, crank mechanism adapted to raise and lower said table toward and away from and longitudinally of said boring mechanism and past the gain-sawing mechanism, pedally-operated friction-gear connections between said driving and crank mechanisms, and means acted upon by said crank mechanism for swinging said saw across the path of said table.

5. In an adjustable boring and sawing machine, a suitable support, driving mechanism on said support, gang boring mechanism on said support and connected to said driving mechanism, gain-sawing mechanism, a table, crank mechanism for raising and lowering said table toward and away from and longitudinally of said boring mechanism and past the gain-sawing mechanism, a sawing mechanism mounted for oscillation, and lever mechanism adapted to be acted upon by said crank mechanism to swing a saw in said sawing mechanism across the path of said table.

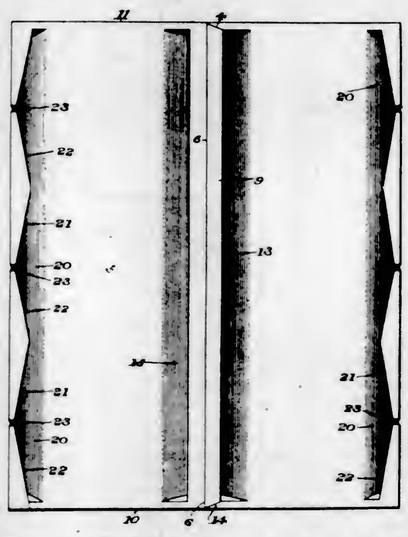
6. In an adjustable boring and sawing machine, the combination of a gang boring mechanism, a sawing mechanism mounted for oscillation, a gain-sawing mechanism, a table mounted for vertical reciprocation toward and from and longitudinally of said boring mechanism and past the gain-sawing mechanism, crank mechanism carrying said table, a driving mechanism common to said mechanisms, and lever mechanism acted upon by the crank mechanism to move the sawing mechanism across the path of said table.

7. In an adjustable boring and sawing machine, the combination of a gang boring mechanism, a table mounted for vertical reciprocation toward and from and longitudinally of said boring mechanism, crank mechanism carrying said table, a sawing mechanism mounted for oscillation, and a driving mechanism common to said mechanisms.

8. In an adjustable boring and sawing machine, the combination of a gang boring mechanism, a table mounted for vertical reciprocation toward and from and longitudinally of said boring mechanism, crank mechanism carrying said table, a sawing mechanism mounted for oscillation, a driving mechanism common to said mechanisms, and lever mechanism acted upon by said crank mechanism and adapted to swing said sawing mechanism across the path of the table.

9. In an adjustable boring and sawing machine, the combination of a gang boring mechanism, a gain-sawing mechanism, a table mounted for vertical reciprocation toward and from and longitudinally of said boring mechanism and past the gain-sawing mechanism, crank mechanism carrying said table, and a driving mechanism common to said mechanisms.

853,909. ROOF FOR MAUSOLEUMS, TOMBS, VAULTS, &c. CHARLES E. TAYNTOR, Brooklyn, N. Y. Filed Oct. 26, 1906. Serial No. 340,678.



Claim.—1. A roof for mausoleums, vaults and the like, comprising pediments, a combined side roof stone and ridge, the latter comprising a lip projecting from said side roof stone and of less length than the latter, a second side roof stone over which said lip projects and extensions on the upper ends of said side roof stone within which said lip is seated and concealed, whereby a straight vision line in all directions is presented and but a single unbroken line joint is visible.

2. A roof for mausoleums, vaults and the like, comprising pediments, a combined side roof stone and ridge, the latter comprising a lip projecting from said side roof stone and of less length than the latter, a second side roof stone over which said lip projects and extensions on the upper ends of said side roof stone within which said lip is seated and concealed, whereby a straight vision line in all directions is presented and but a single unbroken line joint is visible, in combination with a gutter in the upper portion of each of said stones with which said ridge coacts.

3. A roof for mausoleums, vaults and the like, comprising pediments, a combined side roof stone and ridge, the latter comprising a lip projecting from said side roof stone and of less length than the latter, a second side roof stone over which said lip projects and extensions on the upper ends of said side roof stone within which said lip is seated and concealed, whereby a straight vision line in all directions is presented and but a single unbroken line joint is visible, in combination with gutters 26 near the ends of said combined side roof stone and ridge, whereby water, moisture and the like are prevented from reaching said joint.

4. A roof stone having an abutting joint, a vision line, a roof gutter and a gutter leading backwardly from said vision line, behind said joint to said roof gutter.

5. In a side roof stone, an exposed longitudinal surface or vision line, means for protecting said exposed surface, consisting of countersunk grooves in the face of said exposed surface, and gutters between the vision lines of either end leading to said grooves, whereby water and moisture is directed from said vision lines to said grooves.

6. A roof for mausoleums, vaults and the like, comprising pediments, a side roof stone, a lip projecting from said side roof stone longitudinally and terminating a short distance from the front and rear ends thereof, a second side roof stone over which said lip projects and an extension on said second mentioned side roof stone adapted to be seated at the ends of said lip and in front of the same.

7. A roof for mausoleums, vaults and the like, comprising pediments, a side roof stone, a lip projecting from said side roof stone longitudinally and terminating a short distance from the front and rear ends thereof, a second side roof stone over which said lip projects and an extension on said second mentioned side roof stone adapted to be seated at the ends of said lip and in front of the same and forming a beveled joint with said lip.

8. A roof for mausoleums, vaults and the like, comprising pediments, a side roof stone, a lip projecting from said side roof stone and terminating a short distance from the front and rear ends thereof, a second side roof stone, a gutter adjacent its upper edge and over which said lip projects and extensions on said second mentioned side roof stone adapted to form with said lip a beveled joint and being situated at the ends and in front of said lip.

9. A roof for mausoleums, vaults and the like, comprising pediments, side roof stones and a gutter formed in the upper face of each of said side roof stones adjacent the lower edge thereof, the upper portion of said gutter dying away or disappearing, whereby it does not detract from the upper surface of the stone, and a groove in each of said roof stones into which the said gutters are adapted to direct the water, moisture and the like.

10. A roof for mausoleums, vaults and the like, comprising pediments, side roof stones, a gutter formed in the upper surface of each of said side roof stones adjacent the lower edge thereof, the upper portion of said gutter dying away or disappearing whereby it does not detract from the upper surface of the stone, a groove in each of said roof stones into which the said gutters are adapted to direct the water, moisture and the like, and a drip for receiving the water and moisture from each of said grooves for preventing said water and moisture from reaching the cornice and side walls of the structure.

11. A roof for mausoleums, vaults and the like, comprising pediments, side roof stones, a disappearing gutter in the upper surface of each of said roof stones adjacent the lower edges thereof, said gutters terminating a slight distance from the front and rear ends of said roof stones, a groove for each of said gutters adapted to receive the water and moisture therefrom, and a drip formed in the side edge of each side roof stone said drip being within the plane of the vision line of the side roof stone for receiving the water from each of said grooves and directing the same away from the cornice and side walls of the structure.

12. A roof for mausoleums, vaults and the like, comprising pediments, side roof stones, a gutter in the upper face of each of said roof stones adjacent the lower edges thereof, said gutters terminating a slight distance from the front and rear ends of said roof stones, a groove for each of said gutters adapted to receive the water and moisture therefrom and an undercut spout formed in the side edges of each of said roof stones, whereby the moisture and water received from said grooves will be directed away from the cornice and side walls of the structure.

13. A roof for mausoleums, vaults and the like, comprising pediments, and side roof stones laid at an angle to each other, the latter having vents or openings formed in their undersides at suitable intervals and serving as ventilators for the interior of the structure whereby the vent is concealed and at the highest possible place.

14. A roof for mausoleums, vaults and the like, comprising pediments, a combined side roof stone and ridge, a lip projecting from said ridge, a second side roof stone forming an arch with the first mentioned side roof stone and over which said lip projects, said lip being within the plane of the surface of said side roof stone, whereby a straight vision line in all directions is presented and only one joint is necessary, obviating the necessity of an ordinary third stone as commonly used, providing but a single joint, side roof stones co-acting with the first two mentioned side roof stones, and overhanging lips and gutters common to said side roof stones at the joints or seams thereof.

15. A roof for mausoleums, vaults and the like, comprising pediments, a combined side roof stone and ridge, a lip projecting from said ridge, a second side roof stone forming an arch within the first mentioned side roof stone and over which said roof projects, said lip being within the plane of the surface of said side roof stone, whereby a straight vision line in all directions is presented and only one joint is necessary, obviating the necessity of an ordinary third stone as commonly used, providing but a single joint, side roof stones co-acting with the first two mentioned side roof stones, overhanging lips and gutters common to said side roof stones at the joints or seams thereof, and a gutter formed above and adjacent each end of said lips for directing the water and moisture into the gutters.

16. A roof for mausoleums, vaults and the like, comprising pediments, two side roof stones forming an arch, a longitudinally extending lip on one of said side roof stones, a gutter in the other side roof stone over which said lip projects said gutter and lip terminating a short distance from the ends of their respective side roof stones, thereby preserving an unbroken vision line, and a gutter in said first mentioned side roof stone for directing rain, moisture, and the like away from the joint between the stone.

17. A roof for mausoleums, vaults and the like, comprising pediments, side roof stones, a lip on one of the side roof stones having beveled ends and terminating a slight distance from the front and rear ends of the stone and an extension on the other side roof stone, being beveled to correspond to the bevel of the ends of the lip so as to form a complete cover of the joint therebetween as in ordinary cases.

853,910. SHEET-SEPARATING DEVICE FOR SHEET-FEEDING MACHINES. EMIL TYDEN, Hastings, Mich. Original application filed June 8, 1905, Serial No. 264,217. Divided and this application filed Nov. 18, 1905. Serial No. 288,051.

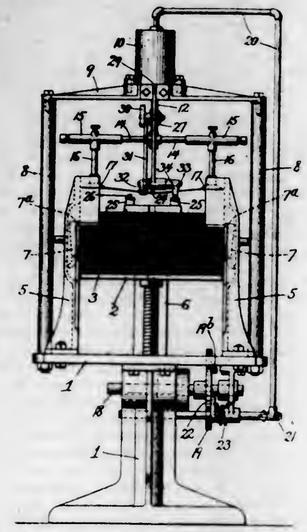
Claim.—1. In a machine for the purpose indicated, a support for a pile of blanks; means pressing upon the exposed blank of the pile between two opposite edges thereof to restrain such blank from being lifted; devices for engaging the exposed surface of said blank at opposite sides of said restraining means; means for moving the engaging devices for lifting said blank at the engaged parts, and means entering between the lifted parts of the said blank and the next blank of the pile for maintaining separation between them.

2. In a machine for the purpose indicated, a support for the blanks; a suction device for lifting the opposite lateral edges of the blank; means for restraining the blank from being lifted between said edges, and blank-feeding means entering under the lifted lateral edges of the blank at the forward edge adapted to engage the blank for feeding at the rear edge.

3. In a machine for the purpose indicated, in combination with a support for a pile of blanks, pneumatic devices comprising two suckers for engaging the exposed blank of the pile at two separated positions; means for lifting said suckers to detach the blank from the pile; a device entering under the detached blank for separating it from the pile; a valve for venting both the suckers, and connections for opening the valve operated by said separating device.

4. In a machine for the purpose indicated, in combination with a support for a pile of blanks, a device adapted to be advanced against the exposed blank of the pile comprising an elastically yielding presser and two suckers at opposite sides of the presser, the presser being protruded

relatively to the suckers so as to encounter the blank before the latter; means for advancing the entire device for such encounter and for retracting it after the suckers encounter the blank.



5. In a machine for the purpose indicated, in combination with a support for a pile of blanks, a device comprising an elastically yielding presser and a sucker adapted to encounter the surface of the exposed blank of the pile; a cylinder having communication with a source of rarefied air for suction; a piston in the cylinder operatively connected with said device for moving the latter for encounter of the presser and sucker with the blank by movement of the piston in one direction and for retracting it upon the reverse movement of the piston, the piston stem constituting a duct for communication of the rarefied air past the piston with the sucker; means for cutting off the rarefied air and venting the passage to the cylinder to permit the piston to move in the direction for such encounter and for re-opening such communication to retract the piston after the sucker encounters the blank.

6. In a machine for the purpose indicated, in combination with a support for a pile of blanks, a cylinder having communication with a source of rarefied air for suction; a valve which controls such communication; a piston in the cylinder adapted to be retracted thereinto upon opening communication with the rarefied air; a device connected with the piston and normally operating by gravity to withdraw the piston, said device comprising an elastically yielding presser and a sucker which are advanced by gravity against the exposed blank of the pile, the presser being protruded relatively to the sucker to encounter the blank first, the piston stem constituting a duct by which the sucker communicates past the piston with the cylinder cavity; means for periodically operating the valve to cut off the rarefied air and re-opening the same after the piston moves outward in the cylinder and the sucker has encountered the blank.

7. In a machine for the purpose indicated, in combination with a support for blanks, adapted to be advanced in the direction of the thickness of the blanks; a device adapted to be moved to encounter the surface of the exposed blank comprising an elastically yielding presser and a sucker, said device comprising a piston and a cylinder in which it operates, the piston stem being hollow and affording communication from the cylinder beyond the piston with the sucker, the cylinder having communication with a source of rarefied air, the presser being protruded relatively to the sucker for encountering the blank before the latter; a valve which controls the rarefied air communication of the cylinder, and means for operating it periodically for opening such communication and for venting the cylinder.

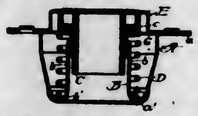
8. In a machine for the purpose indicated, in combination with a support for blanks, adapted to be advanced in the direction of the thickness of the blanks; a device adapted to be advanced against the exposed blank comprising an elastically yielding presser and two suckers at opposite sides of the presser, the presser being protruded relatively to the suckers to encounter the blank in advance of the latter; a cylinder having communication with a source of rarefied air; a valve controlling such communication; a piston in the cylinder, the piston stem being hollow and connected with said device and affording communication from the cylinder beyond the piston to the suckers, said communication having a vent to the atmosphere, and a valve which controls said vent, said valve being normally closed, and means for opening it after the piston is retracted in the cylinder.

9. In a machine for the purpose indicated, in combination with a support for a pile of blanks, a device for separating the top blank from the pile comprising an elastically yielding presser and two suckers at opposite sides of the presser; a piston connected with said device; a cylinder into which the piston may be retracted, said cylinder having communication with a source of rarefied air for so retracting it, the suckers being also connected with said source; a valve controlling said communication and for venting the cylinder back of the piston; means for operating said valve to cut off communication with the rarefied air and open the vent to permit the piston to move outward in the cylinder and for reversing the valve to retract the piston; a vent in the communication of the rarefied air with the suckers, and a valve for controlling said vent adapted to be normally closed, and means for opening said last-named valve to vent the suckers when the first valve is opened for communication of the cylinder with the rarefied air.

10. In a machine for the purpose indicated, in combination with a support for a pile of blanks; two suckers adapted to engage the surface of the exposed blank; a tubular support for carrying said suckers having communication with the source of rarefied air for operating the suckers; an elastically yielding sucker carried by said sucker-support between the two suckers and protruded relatively to the suckers to encounter the blank before the latter; means for advancing the suckers and presser against the exposed blank and for retracting them; a valve for controlling the communication of rarefied air with the suckers and means for operating it to open such communication while the suckers are pressed against the blank; a valve for venting the suckers and means for opening it after the suckers are retracted for lifting the blank.

11. In a machine for the purpose indicated, in combination with a support for a pile of blanks, pneumatic devices for engaging the exposed blank of the pile by suction; means for lifting said device to detach said blank from the pile; means entering under the detached blank to separate it from the pile; a valve for venting the pneumatic devices to relieve the suction and release the blank and connections for operating said valve operated by said separating devices.

853,911. JOURNAL-BEARING FOR CENTRIFUGAL MACHINES. SEVERIN C. ANKER-HOLTH, Riverside, Ill. Filed Dec. 14, 1906. Serial No. 347,814.

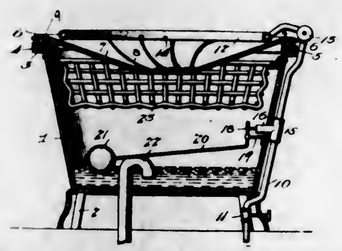


Claim.—1. In a journal bearing, a casing having an inwardly-turned flange at its bottom, a bearing-supporting thimble, the latter sustained by the said inwardly-turned flange and elastically pressed thereon, a bearing engaged by said thimble and its lateral movements controlled thereby, said bearing also having a circumferential flange, and limiting plates above and below said circumferential flange, all combined substantially as described.

2. In a journal bearing, a casing having an outwardly-turned flange at its top and an inwardly-turned flange at its bottom, a bearing-supporting thimble, the latter sustained by the said inwardly-turned flange and elastically pressed thereon, a bearing engaged by said thimble and its lateral movements controlled thereby, said bearing also having a circumferential flange, and limiting plates above and below said circumferential flange, said limiting plate above said flange adapted to be locked to the outwardly-turned flange formed on the top of the said casing, all combined substantially as described.

3. In a journal bearing, a casing having an inwardly-turned flange at its bottom, a bearing-supporting thimble provided with an outwardly-turned flange and sustained by the said inwardly-turned flange at the bottom of said casing, a bearing engaged by said thimble and its lateral movement controlled thereby, said bearing also having a circumferential flange, a limiting plate beneath said circumferential flange, elastic means located between said outwardly-turned flange of the thimble and said limiting plate, and a limiting cap-plate above the flange of said bearing, all arranged and combined substantially as described.

853,912. CUSPIDOR. VICTOR ARDITO, Hoboken, N. J. Original application filed July 16, 1906, Serial No. 326,417. Divided and this application filed Nov. 23, 1906. Serial No. 344,784.

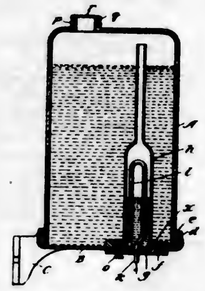


Claim.—1. In a cuspidor of the character described, the combination with a body or casing having a seat in its upper top edge, and a drain pipe in its bottom, an annular frame having rollers mounted therein seated in said seat in the top of said body or casing, and a funnel-plate mounted over said casing on and carried by the rollers in said annular frame, of a water supply adapted to project a jet of water against said funnel-plate to cause the same to rotate.

2. In a cuspidor of the character described, the combination with a body or casing having a seat in its upper top edge, and a drain pipe in its bottom, an annular frame having rollers mounted therein seated in said seat in the top of said body or casing, and a funnel-plate mounted over said casing on and carried by the rollers in said annular frame, of a water supply, and an annular water distributing ring having apertures therein and connected with said water supply by a pivotal cut-off valve, normally setting over and above said funnel-plate, and adapted to project a jet, or jets, of water against said funnel-plate to cause the same to rotate.

3. In a cuspidor of the character described, the combination with a body or casing having a seat in its upper top edge and a drain pipe in its bottom, an annular frame seated in said seat, rollers mounted in said frame, and a funnel-plate having its concave surface corrugated mounted over the top of said casing and carried by said rollers mounted in said annular frame, of a water supply adapted to project a jet of water against said funnel-plate to cause the same to rotate.

853,913. APPARATUS FOR DISINFECTING, ODORIZING, OR OTHER PURPOSES. HENRY S. BLACKMORE, Mount Vernon, N. Y., assignor to American Automatic Disinfectant Company, Washington, D. C. Filed Mar. 25, 1905. Serial No. 252,048.



Claim.—1. A disinfecting or odorizing apparatus comprising a reservoir provided with an air-inlet or duct communicating with the reservoir above the liquid therein, a discharge receptacle provided with a controlling and regulating means for supplying a liquid thereto from the reservoir, and means including an adjustable siphon for discharging the liquid from the discharge receptacle, the operation of which is actuated by the liquid entering the discharge chamber.

2. A disinfecting or odorizing apparatus comprising a reservoir provided with an air-inlet or duct communicating with the reservoir above the liquid therein, a discharge receptacle provided with a controlling and regulating means for regulating the supply thereto of fluid from the reservoir, and means including an adjustable siphon for discharging the liquid from the discharge receptacle, the operation of which is actuated by the liquid entering the discharge chamber.

3. A disinfecting or odorizing apparatus, comprising the combination with a reservoir provided with an air inlet or duct, of a discharge receptacle, means for supplying fluid from the reservoir to the discharge receptacle, means for altering the supply of fluid from the reservoir to the said receptacle, means actuated by the pressure of fluid entering the discharge receptacle for discharging the fluid therefrom, and means for regulating or adjusting the amount of fluid supplied from the discharge receptacle at any given discharge.

4. A disinfecting or odorizing apparatus, comprising the combination with a reservoir provided with an air inlet or duct, of a discharge receptacle, an air inlet to the said receptacle, means for supplying fluid from the reservoir to the discharge receptacle, means for altering the supply of fluid from the reservoir to the said receptacle, means actuated by the pressure of fluid entering the discharge receptacle for discharging the fluid therefrom, and means for regulating or adjusting the amount of fluid supplied from the discharge receptacle at any given discharge.

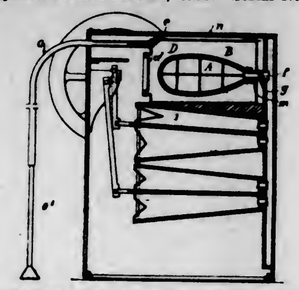
5. In a disinfecting or odorizing apparatus, the combination with a discharge receptacle of an adjustable and automatic means for discharging variable quantities of fluids at a given time, therefrom, said means having a fixed point of discharge.

6. In a disinfecting or odorizing apparatus, the combination with a discharge receptacle of an automatically discharging and adjustable siphon having a fixed point of discharge.

7. In a disinfecting or odorizing apparatus, the combination with a discharge receptacle of an adjustable siphon having a fixed point of discharge.

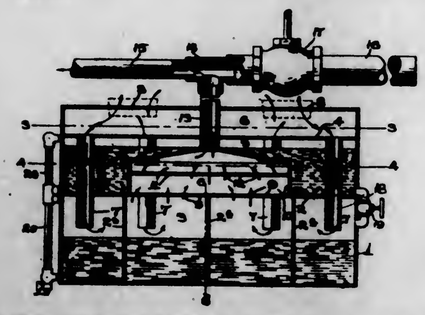
8. In a disinfecting or odorizing apparatus, the combination with a discharge receptacle of a means for regulating the supply of fluid thereto, and an adjustable and automatic means for discharging variable quantities of fluids at a given time, therefrom, and means having a fixed point of discharge.

853,914. FILTERING DEVICE FOR DUST-REMOVING PNEUMATIC MACHINES. JULES R. BLUM, Paris, France, assignor to Company "L'Aspirator," Paris, France, a Corporation of France. Original application filed Apr. 19, 1906, Serial No. 312,672. Divided and this application filed Feb. 20, 1907. Serial No. 358,451.



Claim.—In a machine for removing dust by suction from carpets, furniture, curtains, tapestry and the like, a filtering device comprising in combination, a hermetically closed box D adapted to rest upon the stationary flap of the upper bellows of the machine, a door *d* fitted in said box, an ajutage *e* provided for in said box and adapted to be fitted in the aspiration tube *o* of the machine, a second ajutage *f* provided for in said box and adapted to be fitted in an ajutage *g* leading to the suction compartment, an ovoid receptacle A having its walls made of metallic hoops, a sleeve or ring *m* provided for at one end of the receptacle and adapted to be fitted over the second ajutage *f* of the box D, and an envelop or shell B of loose fibrous material arranged about the ovoid receptacle, substantially as described and for the purpose set forth.

853,915. APPARATUS FOR EXTRACTING GAS FROM GASOLENE. JOHN D. BOWLES and GEORGE H. KAMMERICH, Tipton, Mo., assignors of one-third to Roy F. Bane, Tipton, Mo. Filed June 19, 1906. Serial No. 322,472.



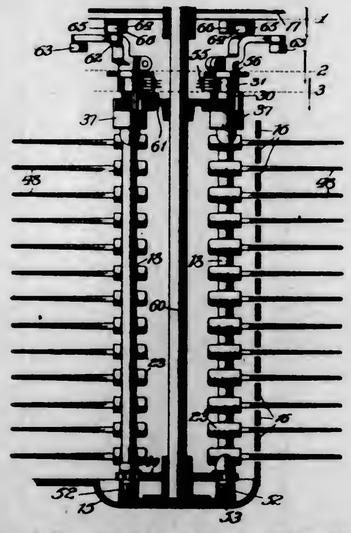
Claim.—1. In an apparatus of the class described, a tank, in the lower portion of which is formed a compartment for containing liquid hydrocarbon, a series of partitions in the bottom of the liquid hydrocarbon compartment which divide the same into a series of communicating compartments, a mixing chamber within the tank immediately above the hydrocarbon compartment, a reservoir surrounding the mixing chamber, and a series of air inlet pipes leading downwardly through the reservoir into the hydrocarbon compartments.

2. In an apparatus of the class described, a tank for containing liquid hydrocarbon, a series of partitions in the bottom compartment of the tank which divide the same into a series of communicating compartments, a series of air inlet tubes leading into said compartments, a mixing chamber arranged above the hydrocarbon chamber and communicating therewith by means of apertures formed in the top of the hydrocarbon chamber, a carbureted air pipe leading from the mixing chamber, an air inlet pipe leading to the carbureted air outlet pipe outside the tank, and a controlling valve located in said last mentioned air inlet pipe.

3. In an apparatus of the class described, a tank for containing liquid hydrocarbon, a series of partitions in the bottom compartment of the tank which divide the same into a series of communicating compartments, a series of air inlet tubes leading into said compartments, a mixing chamber arranged above the hydrocarbon chamber and communicating therewith by means of apertures formed in the top of the hydrocarbon chamber, a hydrocarbon reservoir surrounding the mixing chamber, means whereby hydrocarbon is discharged from the reservoir into the communicating compartments, a carbureted air pipe leading from the mixing chamber, an air inlet pipe leading to the carbureted air outlet pipe outside the tank, and a controlling valve located in said last mentioned air inlet pipe.

4. In an apparatus of the class described, a tank for containing liquid hydrocarbon, a series of partitions in the bottom compartment of the tank which divide the same into a series of communicating compartments, a series of air inlet tubes leading into said compartments, a mixing chamber arranged above the hydrocarbon chamber and communicating therewith by means of apertures formed in the top of the hydrocarbon chamber, a hydrocarbon reservoir surrounding the mixing chamber, means whereby hydrocarbon is discharged from the reservoir into the communicating compartments, an air chamber arranged above the hydrocarbon reservoir, a carbureted air pipe leading from the mixing chamber, an air inlet pipe leading to the carbureted air outlet pipe outside the tank, and a controlling valve located in said last mentioned air inlet pipe.

853,916. COTTON-HARVESTER. ANGUS CAMPBELL, Pittsburg, Pa. Filed June 26, 1906. Serial No. 323,485.



Claim.—1. In a cotton-harvester, the combination with a series of traveling, rotary, cotton-gathering picker-spindles, of a carrier therefor comprising an upright tube having a longitudinal series of openings in one side and a tangential spindle-bearing cup at each of said openings, and spindle-rotating means in the tube.

2. In a cotton-harvester, the combination with a series of traveling, rotary, cotton-gathering picker-spindles, of a carrier therefor comprising an upright tube having a longitudinal series of openings in one side and a tangential spindle-bearing cup at each of said openings, a rotary spindle-holder journaled in each cup, and rotating means for the holders in the tube.

3. In a cotton-harvester, the combination with a series of traveling, rotary, cotton-gathering picker-spindles, of a carrier therefor comprising an upright tube having a longitudinal series of openings in one side and a tangential spindle-bearing cup at each of said openings, a rotary spindle-holder journaled on ball-bearings in each cup, and rotating means for the holders in the tube.

4. In a cotton-harvester, the combination with a series of traveling, rotary, cotton-gathering picker-spindles, of a carrier therefor comprising an upright tube having a longitudinal series of openings in one side, a tangential spindle-bearing cup at each of said openings, a spindle-driving shaft journaled in the tube provided with driving worm-gears adjacent to said openings, and a rotary spindle-holder in each of said bearing cups having a driven worm-gear meshing with the adjacent driving worm-gear.

5. In a cotton-harvester, a traveling picker-spindle carrier formed with a tube having a longitudinal series of openings in one side, a facing strip with openings registering with the tube openings, and spindle-bearing cups secured to the facing strips at the openings therein.

6. In a cotton-harvester, a traveling picker-spindle carrier formed with a tube having a longitudinal series of openings in one side, a facing strip having openings registering with the tube openings, and a spindle-bearing cup covering each of said facing-strip openings, the parts being brazed together.

7. In a cotton-harvester, a traveling picker-spindle carrier formed with a tube having a longitudinal series of openings in one side, tangential spindle-bearing cups secured against said openings, a spindle-holder journaled in each cup, and a dust-excluding cap on each cup having an opening through it for the passage of a spindle.

8. In a cotton-harvester, a traveling picker-spindle carrier formed with a tube having spindle-bearings, a spindle-driving shaft journaled in the tube and provided at its upper end with a pinion, an internally-toothed gear extending laterally beyond said tube and meshing with said pinion and surrounding it at its top and sides, and a plate fitting over the bottom side of said gear, for the purpose set forth.

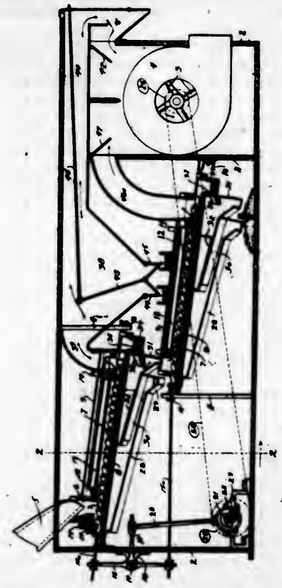
9. In a cotton-harvester, a picker-spindle carrier formed with a tube having a longitudinal series of openings in one side, spindle-bearing cups secured to the tube at said openings, a spindle-driving shaft journaled in the tube, a pinion on the end of said shaft, an internally toothed gear surrounding and meshing with said pinion, a disk on the end of the tube against which said gear rotates and forming therewith, a dust-proof housing for the pinion, and means for rotating said gear during the travel of the carrier.

10. In a cotton-harvester, the combination with a series of traveling picker-spindle carriers and means for moving them, of a guide for the upper-end portions of the carriers comprising a pair of inner and outer bars forming between them an endless, oblong, straight-sided guide-slot through which the carrier projects for guidance in its travel therein.

11. In a cotton-harvester, the combination with a series of traveling picker-spindle carriers, of stems on the upper ends of the carriers, anti-friction rollers on the stems, a carrier guide comprising a pair of inner and outer bars forming between them an endless, oblong, straight-sided guide-slot in which the said rollers travel, and means for moving the carriers.

853,917. ORE SEPARATING AND CONCENTRATING MACHINE. WILLIAM P. CLIFFORD, Iconium, and WILLIAM W. RANKIN, Ottumwa, Iowa. Filed Mar. 2, 1906. Serial No. 303,750.

Claim.—1. An ore separating machine, consisting of a suitable frame provided with side and end walls, a laterally and longitudinally inclined supporting-board or plate adjustably mounted therein, a slidably mounted shaker-plate mounted on said supporting-board or plate, an adjustably mounted plate secured above said shaker-plate and affording an air-passage, said supporting-board or plate being provided with an opening or passage at its side and end, inclined chutes mounted beneath said openings or slots, and means for operating said shaker-plate.



2. In an ore separating and concentrating machine, the combination with a longitudinally and laterally inclined supporting-plate, and a suitably mounted shaker-plate supported above said supporting-plate and provided with a slot at its side; of a chute mounted beneath said slot and provided with a sliding-valve.

3. In an ore separating and concentrating machine, the combination with a longitudinally and laterally inclined supporting-plate provided with suitable openings or slots at the side and end, and a corrugated shaker-plate slidably mounted above said supporting-plate; of a chute mounted beneath said openings or slots of said supporting-plate.

4. In an ore separating and concentrating machine, the combination with an adjustably mounted longitudinally and laterally-inclined supporting-plate and a shaker-plate slidably mounted immediately above the same; of reverse laterally-inclined chutes adapted to receive the material from the sides and ends of said supporting and shaker-plates.

5. An ore separating and concentrating machine, consisting of a pair of laterally and longitudinally inclined supporting-boards or plates adjustably mounted therein, a shaker-plate slidably mounted on said supporting-boards or plates, adjustably mounted plates secured above said shaker-plates and affording an air passage, said supporting-boards or plates being provided with an opening or slot formed at the sides and ends thereof, inclined chutes mounted beneath said openings or slots, a trunk suitably mounted and provided with an air passage communicating with the air passage above the shaker-plate, a suction fan suitably mounted in a casing and provided with an air passage leading to said trunk, an air passage communicating with a suction fan and the air passage above the second or succeeding shaker-plate, and means for operating said shaker-plates.

6. In an ore separating and concentrating machine, the

combination with a pair of laterally and longitudinally inclined supporting-boards or plates, and a pair of shaker-plates slidably mounted thereon; of supporting-boards or plates provided with an opening or slot formed at the sides and ends thereof, a pair of longitudinally and laterally inclined chutes mounted beneath said opening or slot formed at the sides of said supporting-boards or plates, and a pair of laterally inclined chutes mounted beneath said openings or slots formed at the ends of said supporting-boards or plates.

7. In an ore separating machine, the combination with an inclined supporting-board and slidably mounted shaker-plate each provided with a longitudinally-extending slot; of an inclined chute mounted beneath said slot, and a dividing valve mounted in said inclined chute.

8. In an ore separating machine, the combination with a laterally and longitudinally-inclined supporting-board provided with longitudinally and transversely-extending slots and a shaker-plate; of chutes mounted beneath said slots, and dividing valves mounted in said chutes and adapted to be moved along said slots.

9. In an ore concentrating machine, the combination with an inclined supporting-board, and a similarly inclined shaker-plate slidably mounted thereon and provided with a longitudinally-extending slot; of a longitudinally and laterally inclined chute mounted beneath said slot and provided with a dividing valve.

10. In an ore concentrating machine, the combination with a longitudinally and laterally inclined supporting-plate, a corrugated shaker-plate slidably mounted thereon, and provided with a transverse opening or slot formed at one end thereof; of a transverse chute mounted beneath said opening or slot, and a sliding valve mounted in said transverse chute.

11. In an ore concentrating machine, the combination with a laterally inclined supporting-plate, a shaker-plate slidably mounted thereon, and provided with a slot formed at the side thereof; of a reverse laterally inclined chute mounted beneath said supporting-plate and provided with a dividing valve beneath said slot.

12. In an ore concentrating machine, the combination with a laterally inclined supporting-plate provided with side and end slots, and a laterally-corrugated shaker-plate slidably mounted above said supporting-plate; of an oppositely inclined chute mounted beneath said end slot and provided with a sliding dividing valve.

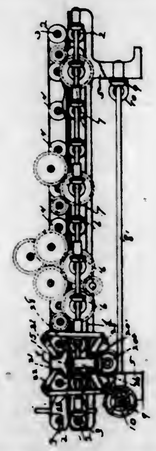
13. In an ore concentrating machine, the combination with a longitudinally and laterally inclined supporting-plate, a shaker plate mounted thereon, a laterally and longitudinally oppositely inclined chute mounted beneath said supporting-plate, and a supporting-plate provided with longitudinal and lateral slots; of a chute mounted beneath said lateral slot, and a second chute mounted therein and provided with a trough leading to said chute mounted beneath said supporting-plate.

14. In an ore concentrating machine, the combination with a laterally and longitudinally inclined supporting-plate, and a shaker-plate slidably mounted thereon; of a supporting-plate provided with laterally and longitudinally-extending slots, inclined chutes mounted beneath said slots, and sliding dividing valves mounted in said chutes.

15. In an ore concentrating machine, the combination with a longitudinally and laterally inclined supporting-plate, a corrugated shaker-plate slidably mounted above the same, and chutes adapted to receive material from the sides and ends of said supporting and shaker-plates; of a plate secured above said shaker-plate and affording an air passage, a trunk suitably mounted and provided with an air passage communicating with said air passage above said shaker-plate, and a suction fan mounted in a casing and provided with an air passage leading to said trunk.

853,918. PAPER-BAG MACHINE. WATSON H. CLINE, Cleveland, Ohio. Filed Jan. 17, 1907. Serial No. 352,682.

Claim.—1. In an automatic bag machine, organized to construct a satchel end upon each extremity of a paper bag tube, the combination of, duplicate sets of conveying devices arranged side by side, for engaging the tube in two places, duplicate devices for opening the ends of the tube, duplicate spreading and flattening devices for the free sides of the end openings, of the tube, duplicate sets for forming devices for the corners of said openings, and duplicate flattening gluing and folding device, for completing said satchel ends, a common source of power operatively connected with the movements of said sets of mechanism, a support for each set of conveying devices, and each set of satchel end forming mechanism, and means for laterally moving said supports to and from each other whereby the length of the bag tube to be operated upon can be increased or diminished, substantially as described.



2. In an automatic machine organized to form two satchel ends upon a bag tube, the combination of duplicate sets of instrumentalities for conveying the bag tube, for separating, spreading and forming the edges of the open ends of the tube, and for flattening, gluing and folding and pressing the said ends to form the satchel ends supports for said duplicate sets of instrumentalities, and means for increasing or diminishing the distance between said supports, to permit of varying the length of the bag tube, substantially as described.

3. In an automatic machine organized to form two satchel ends upon a bag tube, the combination of duplicate sets of tube conveying devices, and satchel end forming devices, arranged parallel to each other, supports for said duplicate sets of devices, guides upon which one of said supports slides and means for adjusting the relative distance between said supports to permit of varying the length of the tube, substantially as described.

4. In an automatic machine organized to construct duplicate satchel ends upon a bag tube, the combination of duplicate sets of conveying devices and duplicate sets of satchel end forming devices, a common source of power for both sets of devices, means for manipulating each device employed in forming said satchel ends, whereby said satchel ends are formed in a continuous manner when passing over the conveying devices, said manipulating means being operatively connected with said common source of power, a support for each of said duplicate set of conveying devices and satchel end forming devices, said supports being adjustable relatively to each other, and adjusting means therefor, substantially as described.

5. In an automatic machine for putting duplicate satchel ends upon a valve bag tube, the combination of duplicate sets of conveying devices, duplicate sets of separating, spreading and forming devices for the ends of the bag tube, duplicate sets of pressure rolls, gluing devices, cloth valve attaching devices, folding devices and pressing devices, a common source of power for said sets of devices, and manipulating means therefor operatively connected with said common source of power, each of said sets of devices being adjustable to and from its duplicate set, whereby the length of the bag tube may be varied, substantially as described.

6. In an automatic machine for putting a satchel end upon a bag tube conveying bands between which the bag tube travels, suction devices adapted to separate the sides of the tube, an arm having a combined longitudinal reciprocating and transversely circular movement at its inner end adapted to enter said opened mouth and fold back one side thereof to flatten the sides of the mouth, a plate over which said side is folded backward, and a plate upon which the end of said tube travels, substantially as set forth.

7. In an automatic machine for putting satchel end upon a bag tube, endless conveying bands between which said tube travels, the end of said bag projecting therefrom, suction devices at the feeding end of said bands, whereby the sides of the tube are separated, a plate upon which the end of the tube is supported, a second plate above said end of the tube, a spreader arm adapted to engage one side of said tube mouth and to fold it back upon said second plate, said arm having a combined reciprocating and swinging movement, triangular forming plates adapted to enter the corners of the bag mouth and shape the same while the spreader is acting and means for automatically operating the said spreader arm and forming plates conjointly with the movements of the conveyers, substantially as described.

8. In a machine for the purpose set forth, the combination with endless conveyers between which a bag tube travels, the end of said tube projecting therefrom, of suction devices adapted to separate the free sides of the mouth of said tube to open the same, a pivoted spreader arm having a combined reciprocating and swinging movement, and adapted to bend back one side of said mouth as it moves between said conveyers, an operating crank and shaft therefor, a plate extending the length of the machine on which the projecting end of the tube lies, an upper plate over which the bent side of the tube mouth is folded, rock arms provided with angular plates adapted to enter the corners of said tube mouth and shape the same while said spreader is acting, cam mechanism adapted to operate said rock arm, a flattening roller for the spread tube mouth, a main source of power, and geared connections between said source of power, said cam mechanism, said crank shaft, and said endless conveyers, substantially as described.

9. In a spreading device for the purpose set forth, a slotted arm provided with a spreader plate at one end, a crank, a crank pin pivoted in said arm intermediate of said slot and plate, a fixed pivot pin adapted to enter said slot, and means for rotating said crank, substantially as described.

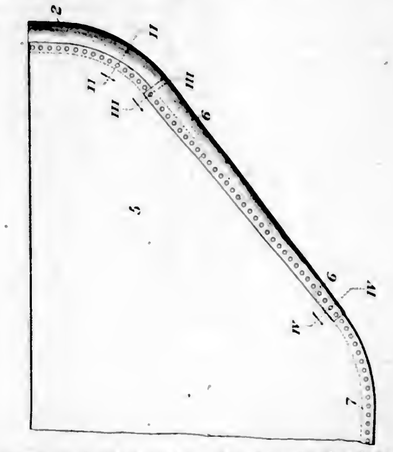
10. In a combined spreading and forming device, for the open end of a bag tube, in combination, upper and lower plates between which the end of tube has longitudinal movement, a bed plate, a slotted arm having a terminal spreader plate thereon, a fixed pin in the bed plate entering the slot in said arm, a crank pin in said arm intermediate betwen said slot and plate, a crank and crank shaft therefor, forming plates adapted to enter the corners of said tube while the spreader is in operation and shape them to a triangular form, a rock arm for each forming plate, cam operated mechanism for operating said rock arms, a common source of power and geared connections between said common source of power and said crank, and cam mechanism, substantially as described.

853,919. FERTILIZER. FREDERICK G. DOKKENWADEL, Coshocton, Ohio, assignor of one-half to Harry M. Grant, New York, N. Y. Filed Dec. 12, 1906. Serial No. 347,515.

Claim.—1. A fertilizer comprising a base of paper pulp and saw-dust intimately combined with nitrate of soda and marl, substantially as described.

2. A fertilizer comprising a base of paper pulp intimately combined with nitrate of soda and marl, substantially as described.

853,920. RAKE CORNER OR KNUCKLE FOR STEEL BARGES. RICHARD J. DONOVAN, Ambridge, Pa., assignor to American Bridge Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Mar. 16, 1907. Serial No. 362,695.



Claim.—1. In barge construction, a corner piece between the side plating and rake plating having a curved cross-section in its upper portion and an angular cross-section in its lower portion; substantially as described.

2. In barge construction, a corner plate overlapping the outside edges of the side plating and rake plating, and riveted thereto, said plate having a curved cross-section in its upper portion and an angular cross-section in its lower portion; substantially as described.

3. In barge construction, a corner piece having an upper section curved longitudinally and transversely, and the remaining section having a curved cross-section in its upper portion and an angular cross-section in its lower portion; substantially as described.

4. In barge construction, a corner piece arranged to overlap the side plating and rake plating, said piece being of curved cross-section in its upper part and of angular cross-section in the lower part, in combination with an angle overlapping the side and rake plating on the inside; substantially as described.

853,921. FLUID-PRESSURE TOOL. GEORGE H. GILMAN, Claremont, N. H., assignor to Sullivan Machinery Company, Claremont, N. H., a Corporation of Maine. Filed Dec. 19, 1905. Serial No. 292,418.

Claim.—1. A differential fluid pressure engine having a differential piston and a transverse differential piston controlling valve, the latter provided with closed ends, an intermediate contracted neck portion about which pressure admission to one end of the cylinder takes place when the valve is suitably positioned, a constant pressure supply passage in lateral communication with said neck and an interior passage through which pressure admission to the opposite cylinder end takes place when the valve is oppositely positioned.

2. A direct fluid pressure engine having a differential piston and a transverse differential piston controlling valve, the latter provided with closed ends, an intermediate contracted neck portion about which pressure admission to the cylinder takes place when the valve is suitably positioned, a constant pressure supply passage in lateral communication with said neck and an exterior chambered portion

through which exhaust from the cylinder takes place when the valve is oppositely positioned and an interior passage through which pressure admission to the opposite cylinder end takes place when the valve is oppositely positioned.



3. A fluid pressure engine having a differential piston, and a transverse differential piston controlling valve, the latter being provided with a contracted neck portion about which pressure admission to one end of the cylinder takes place when the valve is suitably positioned, a constant pressure supply passage in lateral communication with said neck, an exterior chambered portion through which exhaust from said cylinder end takes place when the valve is oppositely positioned, and an interior passage through which pressure admission to the opposite cylinder end also takes place when the valve is oppositely positioned.

4. A fluid pressure engine having a cylinder, a differential piston, a differential piston-controlling valve provided with closed ends, and an interior passage through which pressure admission takes place to one end of the cylinder and a passage for admitting pressure to the opposite end of the cylinder, a passage leading from the pressure supply and opening into the cylinder, a second passage leading from the cylinder to one end of said valve, separated circumferential grooves upon the piston and connecting passages between said grooves whereby when the piston is suitably positioned the said two passages are placed in communication and pressure admitted to one end of the valve.

5. A fluid pressure engine having a cylinder, a cylindrical valve block at the rear of said cylinder and forming a closure for the same, a valve transversely mounted in said block and of substantially the longitudinal extent of said block a sleeve embracing the block and a chambered head inclosing said valve, block and sleeve and having interior threads adapted to engage with similar exterior threads upon said cylinder which clamps the valve block and said sleeve within the chamber of said head and between the same and the cylinder end.

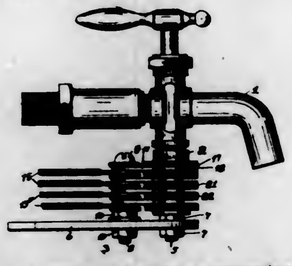
6. A fluid pressure engine having a cylinder, a chambered head secured thereto, a cylindrical valve block within the chambered head and forming an end closure for the cylinder, a valve transversely arranged in said block and a separate sleeve embracing the said block and within said chambered head and of substantially the longitudinal extent of said block.

7. A fluid pressure engine comprising a cylinder and a piston, a transversely arranged differential valve having closed ends, an intermediate passage by which pressure admission to one end of the cylinder takes place when the valve is suitably positioned and an interior passage through which pressure admission takes place to the opposite cylinder end when the valve is oppositely positioned, said valve having an area exposed to constant pressure and a larger area exposed to intermittent pressure, means for admitting pressure to the larger area to reverse the valve on forward piston movement, means acting through reversal of the valve for admitting pressure to the tool end of the piston, a reduced piston portion slidable within contracted cylinder walls at the forward end of the cylinder and an exhaust passage connecting the tool space in front of said contracted cylinder portion, the withdrawal of said reduced piston portion from the contracted cylinder walls permitting pressure to exhaust from the tool end of said cylinder and from the larger area of the valve.

8. A fluid pressure engine having a cylinder, a differential piston, a transversely arranged differential valve having closed ends, an intermediate passage by which pressure admission to one end of the cylinder takes place when the valve is suitably positioned and an interior passage through which pressure admission takes place to the opposite cylinder end when the valve is oppositely positioned, said valve having an area exposed to constant pressure and a larger area exposed to intermittent pressure, means for admitting pressure to the larger end thereof to reverse the valve on forward movement of the piston, means acting through reversal of the valve for admitting pressure to the tool end of the piston, a reduced piston portion slidable within contracted cylinder walls at the forward end of the cylinder, the withdrawal of said reduced piston portion from the contracted cylinder walls permitting pressure to exhaust from the tool end of said cylinder.

9. A fluid pressure engine comprising a cylinder and a piston, a transversely arranged differential valve having closed ends, an intermediate passage by which pressure admission to one end of the cylinder takes place when the valve is suitably positioned and an interior passage through which pressure admission takes place to the opposite cylinder end when the valve is oppositely positioned, said valve having an area exposed to constant pressure and a larger area exposed to intermittent pressure, ports controlled by said valve for admitting pressure alternately to opposite sides of the piston, and an exhaust passage leading from within the cylinder near the forward end thereof and adapted to be uncovered by the rearward movement of the piston, said rearward movement acting thereby both to exhaust the pressure from the tool end of the cylinder and from the larger area of the valve.

853,922. SWITCH. GEORGE GILMORE, Alliance, Ohio, assignor to The Electric Filter Company, Alliance, Ohio, a Corporation of Ohio. Filed Sept. 18, 1905. Renewed Mar. 15, 1907. Serial No. 362,527.

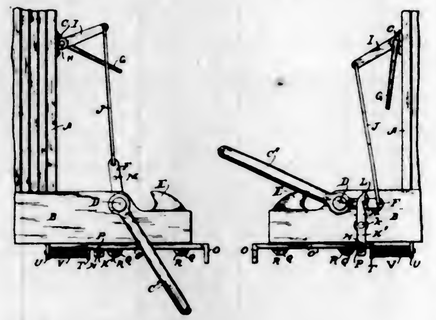


Claim.—1. A switch embodying a supporting plate, a post mounted thereupon, stationary contact members mounted upon said post, insulation disposed between said contact members and said post, conductor wires in positive communication with said contact members, a pintle rotatably mounted in said plate, a series of movable contact members rigidly mounted upon said pintle, insulation interposed between said contact members and said pintle, and conductors surrounding said last-named insulation and connecting the movable contact members.

2. A switch embodying a base, a post mounted thereupon, a plurality of series of stationary contact members mounted upon said post and insulated therefrom, electrical conductors in communication with said contact members of the several series, insulation interposed between each of said stationary contact members, a pintle rotatably mounted in said base, contact members mounted upon said pintle and insulated therefrom, the contact members being arranged in series corresponding to the series of said stationary contact members, electrical conductors interposed between each two contact members of a series, insulation interposed between the adjacent contact members of the several series.

3. In a switch, the combination of a base, a post extending through said base and having a head and a screw threaded end, a nut screwing on the post on each side of the base, a plurality of stationary contact members mounted on said post and insulated therefrom, conductors connected to said contacts, a pintle rotatably mounted in said base, movable contact members disposed in pairs on said pintle, and rotatable therewith, each pair of contact members being electrically connected and each pair of contact members on the pintle being adapted to embrace one of the contact members on the post.

853,923. RAILROAD-CAR COUPLING. JOSEF GRAUVOGL, Plain, Wis. Filed Jan. 14, 1907. Serial No. 352,330.



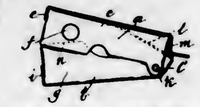
Claim.—1. In an automatic coupler, a buffer, a hook, a link pivotally secured to said buffer, an arm of said link adapted to be manually actuated, a spring controlled coupling bolt, a lock catch pivotally secured to said buffer for engagement with said coupling bolt, and a catch pin for said arm adapted for engagement with said lock catch substantially as set forth.

2. In an automatic coupler, a solid buffer and having an upright hook, a link, an arm rigidly secured to said link, an operating lever and an intermediate rod connecting said lever with said arm, a catch pin for said arm and a lock catch adapted for engagement with said catch pin, substantially as set forth.

3. In an automatic coupler, a link, a single raising and controlling arm rigidly attached to said link, an operating lever and intermediate rod connecting said lever with said arm in combination with the catch pin, a lock catch and a spring controlled coupling bolt, so arranged and constructed as to hold the said link in an upright position until released by impact of the coupler bolts substantially as set forth.

4. In an automatic coupler, a solid buffer, having an upright hook, a link pivotally secured to said buffer, an arm rigidly secured to said link, a catch pin of said arm, a lock catch adapted to engage said catch pin, a spring controlled coupling bolt adapted to automatically release said link from its upright position when actuated by a concussion of the cars, substantially as set forth.

853,924. CIGAR-CUTTER. WILLIAM F. HERDRICH and GEORGE GARMISA, Chicago, Ill. Filed Nov. 11, 1905. Serial No. 286,865.



Claim.—1. A cigar cutter consisting of two sections, each having side walls and a cross wall, the cross wall of one of the sections being extended and reversely turned to form a shoulder for limiting the distention of the sections, and extended to form a spring adapted to abut against the inner face of the cross wall of the other section, the last named section being provided with an abutment co-operating with the shoulder, the side wall of one of the sections being sharpened to form a knife edge, and the side wall of the other section being provided with a perforation adapted to register with the knife edge, and means for pivoting the sections together, substantially as described.

2. A cigar cutter consisting of two sections, each having side walls and a cross wall, the cross wall of one of the sections being extended and reversely turned to form a spring adapted to abut against the inner face of the cross wall of the other section, the edge of one of the sections being sharpened to form a knife, and the co-operating wall of the other section being provided with a perforation adapted to register with the knife edge, and means for pivoting the sections together, substantially as described.

3. A cigar cutter consisting of two sections, each having side walls and a cross wall, the cross wall of one of the sections being extended and reversely turned to form a spring adapted to abut against the inner face of the cross wall of the other section, the side wall of one of the sections being sharpened to form a knife edge, and the side wall of the other section being provided with a perforation adapted to register with the knife edge, a transversely extending pivot pin for pivoting the sections together, and each of the sections having parallel end walls, leaving an end aperture for the discharge of cigar tips when the sections are distended, substantially as described.

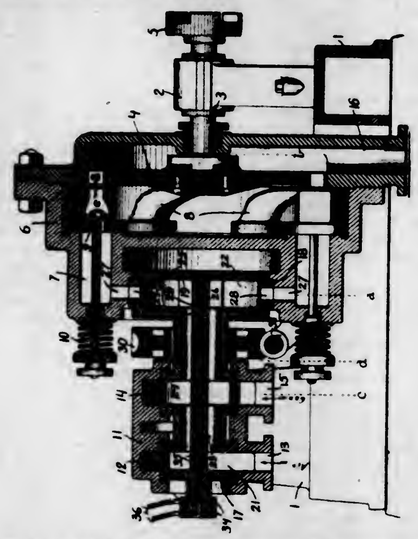
4. A cigar cutter, consisting of two sections each having side walls and a cross wall the cross wall of one of the sections being extended to form a shoulder and reversely turned to form a spring adapted to abut against the inner face of the cross wall of the other section, one of the side walls of one of the sections being somewhat shorter than the companion side wall and sharpened to form a knife edge, and the cooperating side wall of the other section being provided with a perforation adapted to register with the knife edge, and an extension on one of the sections perforated to form an eye and adapted to abut against the outwardly extending shoulder on the other section when the sections are opened to prevent undue distention, substantially as described.

5. A cigar cutter consisting of two sections each having side walls and a cross wall, the cross wall of one of the sections being extended to form a shoulder and reversely turned to form a spring adapted to abut against the inner face of the cross wall of the other section, one of the side walls of one of the sections being somewhat shorter than the companion side wall and sharpened to form a knife edge and the co-operating side wall of the other section being provided with a perforation adapted to register with the knife edge, the free ends of the sections being proportioned to provide an end aperture for the discharge of the severed cigar tips, and an eye on one of the sections adapted to abut against the outwardly extending shoulder on the other section to prevent undue distention when the sections are opened, substantially as described.

853,925. GAS-TURBINE. HANS HOLZWARTH, Hamilton, Ohio, assignor of one-half to Erhard Junghaus, Sr., Schramberg, Germany. Filed Feb. 26, 1906. Serial No. 302,973.

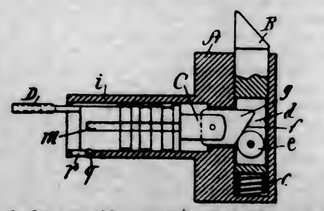
Claim.—1. In a gas turbine, the combination, substantially as set forth, of a turbine-rotor, a casing therefor, an

explosion chamber having an inlet and an outlet, a valve at said outlet opening away from the explosion chamber, a spring holding said valve normally closed, a nozzle leading from said outlet to the vanes of the turbine-rotor, a revolver having an air-chamber and a gas-chamber provided each with an inlet connection and with an outlet port adapted to place them in successive communication with the inlet to the explosion chamber, an igniter carried by the revolver across the inlet to the explosion chamber, and means for rotating the revolver.



2. In a gas turbine, the combination, substantially as set forth, of a turbine-rotor, a casing therefor, a series of explosion chambers each having an inlet and an outlet, a valve at each of said outlets opening away from the explosion chambers, a spring holding each valve normally closed, a nozzle leading from each outlet to the vanes of the turbine-rotor, a revolver having an air-chamber and a gas-chamber provided each with an inlet connection and with an outlet port adapted to place them in successive communication with the inlets to the explosion chambers, an igniter carried by the revolver across the inlets to the explosion chambers, and means for rotating the revolver.

853,926. TUMBLER MECHANISM FOR LOCKS. JOHN HOPE, Jr., Providence, R. I., assignor to Hope Lock Company, Providence, R. I., a Corporation of Rhode Island. Filed Oct. 5, 1905. Serial No. 281,497.



Claim.—1. In a tumbler mechanism for locks, the combination of the casing, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a spring actuated segmentally-formed tumbler held in an external circumferential groove of the tumbler-carrying spindle, and a spring for holding the tumbler-carrying spindle in its retracted position within the casing.

2. In a tumbler mechanism for locks, the combination of the casing, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a pair of oppositely arranged segmentally-formed tumblers held in an external circumferential groove of the tumbler-carrying spindle, and a spring for holding the tumbler-carrying-spindle in its retracted position within the casing.

3. In a tumbler mechanism for locks, the combination of the casing, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a pair of oppositely arranged segmentally formed tumblers held in an external circumferential groove of the tumbler-carrying spindle, a spring for holding the tumbler-carrying spindle in its retracted position within the casing, and a groove located in the tumbler-carrying spindle between the ends of the segmentally formed tumblers for receiving the key.

4. In a tumbler mechanism for locks, the combination of the casing provided with internal studs, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a spring for holding the tumbler-carrying spindle at its retracted position, a segmentally-formed tumbler held in an external circumferential groove of the tumbler-carrying spindle and provided with a notch adapted to receive one of the internal studs of the casing when the tumbler-carrying spindle is being pressed forward against the reverse action of the spring.

5. In a tumbler mechanism for locks, the combination of the casing, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a spring actuated segmentally-formed tumbler held in an external circumferential groove of the tumbler-carrying spindle, a spring for holding the spindle in its retracted position within the casing, a latch bolt, and operative connection between the tumbler-carrying spindle and the latch bolt.

6. In a tumbler mechanism for locks, the combination of the casing provided with internal studs, and a spring-actuated sliding tumbler-carrying spindle provided with external circumferential grooves, with a spring-actuated segmentally-formed tumbler having a peripheral notch adapted for engagement with an inwardly projecting stud of the casing.

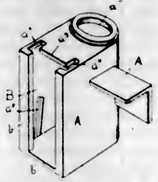
7. In a tumbler mechanism for locks, the combination of the casing provided with internal studs and the tumbler-carrying spindle provided with external circumferential grooves, a plurality of spring-actuated segmentally-formed tumblers, each having a peripheral notch for receiving the studs of the outer casing, and a spring for holding the tumbler-carrying spindle in its retracted position.

8. The combination of the casing provided with internal studs, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a spring for holding the tumbler-carrying spindle in its retracted position staggeredly disposed segmentally-formed tumblers held in the external circumferential grooves of the tumbler-carrying spindle and provided with notches for receiving the studs of the casing, and with bevel-pointed ends.

9. The combination of the casing provided with internal studs, the sliding tumbler-carrying spindle held in the casing and provided with the external circumferential grooves, a spring for holding the tumbler-carrying spindle in its retracted position, staggeredly disposed segmentally formed tumblers held in the external circumferential grooves of the tumbler-carrying spindle and provided with notches for receiving the studs of the casing, and with the bevel-pointed ends adapted to enter the lateral perforations of the key, and the key provided with perforations adapted to receive the bevel-pointed ends of the tumblers, to cause the unlocking of the tumbler-carrying spindle from the studs of the casing.

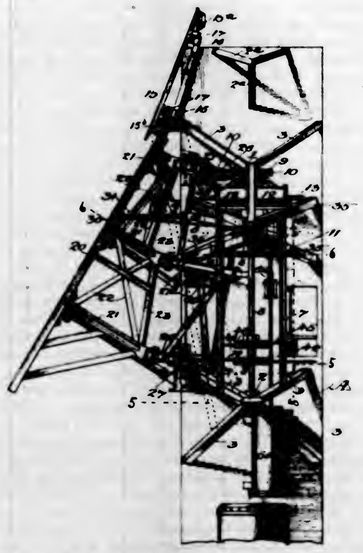
10. The combination of the casing provided with internal studs, the sliding tumbler-carrying spindle held in the casing and provided with the external circumferential grooves, a spring for holding the tumbler-carrying spindle in its retracted position, staggeredly disposed segmentally-formed tumblers held in an external circumferential groove of the tumbler-carrying spindle and provided with notches for receiving the studs of the casing and with the bevel-pointed ends, said tumbler-carrying spindle being provided with a longitudinal groove between the bevel-pointed ends of the tumblers to receive a key.

853,927. CORNER-FASTENING FOR BEDS. LOUIS J. KUTZ, Cleveland, Ohio, assignor to The Farmer Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed Dec. 12, 1906. Serial No. 347,509.



Claim.—A corner lock for bed-steads comprising a side rail, having at its ends male members having inner flat faces, and double beveled outer faces, in combination with a female member secured to the head or foot posts of the bed, said female member being provided with means for receiving and retaining the male member, comprising front flanges and a rear rib, substantially as set forth.

853,928. RAILWAY-GRADING MACHINE. ORVILLE C. MANN, Oak Park, Ill. Filed Dec. 29, 1906. Serial No. 349,982.



Claim.—1. In a railway grader and spreader, in combination with a car, a spreading and leveling wing pivotally supported for swinging upward and inward to withdraw it from working position, the supports to which the wing is pivoted being mounted for equal vertical movement of the wing at both ends of its operating face, and means for raising and lowering such supports.

2. In a railway grader and spreader, in combination with a car, a spreading and leveling wing which is pivotally supported for swinging upward and inward to withdraw it from working position; supports to which it is pivoted mounted for equal vertical movement of the wing at both ends of its working face; means for raising and lowering such supports, and means for securing them in adjusted position.

3. In a railway grader and spreader, in combination with a car, a spreading and leveling wing and supports for the same foldable for withdrawing the wing from working position to a position above the car, such supports having their inner element mounted for equal vertical movement of the wing at both ends of its driving face, and means for raising and lowering said folding supports bodily with respect to the car.

4. In a railway grader and spreader, in combination with a car, a spreading and leveling wing having its operating face diverging rearwardly from the car; links extending from an upper pivotal line on the wing to a fulcrum line on the car; guide tracks on the side of the car curved about an axis parallel to the link fulcrum line with a radius equal to a link length, the wing having struts terminating at a lower line parallel with the upper link pivot line and resting on said curved guide tracks, and means for swinging the links about their fulcrums to raise and lower the wing.

5. In a railway grader and spreader, in combination with a car, a spreading and leveling wing having its operating face diverging rearwardly from the car; links fulcrumed on the car and pivotally connected with the wing at an upper line; means for raising and lowering the links, and struts extended from the wing having their feet terminating at a lower line; guideways on the side of the car in which said struts are footed; guide posts adjacent to the path in which the links swing, and releasable means for stopping the links on the posts.

6. In a railway grader and spreader, in combination with a car, a spreading and leveling wing having its operating face diverging rearwardly from the car; links fulcrumed on the car and pivotally connected with the wing at an upper line; means for raising and lowering the links, and struts extended from the wing having their feet terminating at a lower line; guideways on the side of the car in which said struts are footed; guide posts adjacent to the path in which the links swing, said posts having pin-holes at intervals and removable pins in said holes for securing the links at adjusted position.

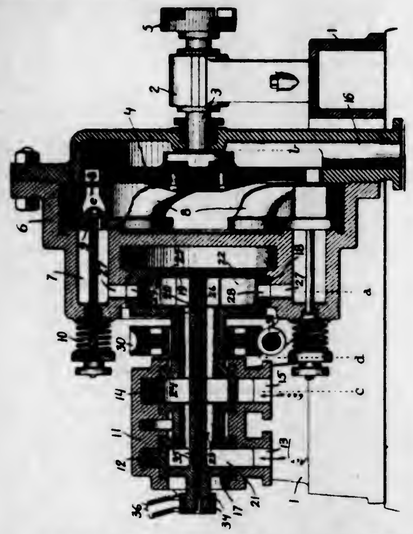
7. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing pivotally supported on the car and having its operating face diverging rearwardly from the car at working position; means for raising and lowering such wing, and means for controlling its movement to equalize the vertical components of such movement at two points of the length of its said diverging operating face.

8. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing; means for raising and lowering such wing comprising a cable connected with the wing; a sheave or drum on which the cable is wound; a second sheave or drum on the same shaft; cables secured thereto and wound thereby, and a motor connected to the cable for drawing thereon.

9. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing on each side of the car; a sheave or drum and a shaft on which it is fixed; cables extending around the sheave and secured thereto for rotating it in opposite directions; motors connected with the cables respectively for drawing them from the sheave to rotate the shaft; means connected with the respective wings for lifting them respectively by rotation of the shaft in opposite directions, the cables having each slack equal to the draft of the motor thereon for lifting the wings, and take-up devices for controlling such slack.

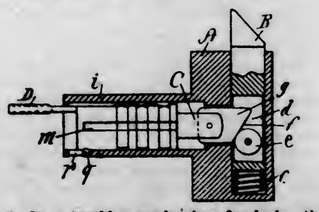
10. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing on each side of the car; a sheave or drum and a shaft on which it is fixed; cables extending around the sheave and secured thereto for rotating it in opposite directions by unwinding therefrom; motors connected with the cables respectively for drawing them from the sheave to rotate the shaft; means connected with the wings for lifting them respectively by the rotation of the shaft in opposite directions, the cables each having slack equal to the draft of the motor thereon in lifting the wings; take-up devices for con-

explosion chamber having an inlet and an outlet, a valve at said outlet opening away from the explosion chamber, a spring holding said valve normally closed, a nozzle leading from said outlet to the vanes of the turbine-rotor, a revolver having an air-chamber and a gas-chamber provided each with an inlet connection and with an outlet port adapted to place them in successive communication with the inlet to the explosion chamber, an igniter carried by the revolver across the inlet to the explosion chamber, and means for rotating the revolver.



2. In a gas turbine, the combination, substantially as set forth, of a turbine-rotor, a casing therefor, a series of explosion chambers each having an inlet and an outlet, a valve at each of said outlets opening away from the explosion chambers, a spring holding each valve normally closed, a nozzle leading from each outlet to the vanes of the turbine-rotor, a revolver having an air-chamber and a gas-chamber provided each with an inlet connection and with an outlet port adapted to place them in successive communication with the inlets to the explosion chambers, an igniter carried by the revolver across the inlets to the explosion chambers, and means for rotating the revolver.

853,926. TUMBLER MECHANISM FOR LOCKS. JOHN HOPE, Jr., Providence, R. I., assignor to Hope Lock Company, Providence, R. I., a Corporation of Rhode Island. Filed Oct. 5, 1905. Serial No. 281,497.



Claim.—1. In a tumbler mechanism for locks, the combination of the casing, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a spring actuated segmentally-formed tumbler held in an external circumferential groove of the tumbler-carrying spindle, and a spring for holding the tumbler-carrying spindle in its retracted position within the casing.

2. In a tumbler mechanism for locks, the combination of the casing, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a pair of oppositely arranged segmentally-formed tumblers held in an external circumferential groove of the tumbler-carrying spindle, and a spring for holding the tumbler-carrying-spindle in its retracted position within the casing.

3. In a tumbler mechanism for locks, the combination of the casing, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a pair of oppositely arranged segmentally formed tumblers held in an external circumferential groove of the tumbler-carrying spindle, a spring for holding the tumbler-carrying spindle in its retracted position within the casing, and a groove located in the tumbler-carrying spindle between the ends of the segmentally formed tumblers for receiving the key.

4. In a tumbler mechanism for locks, the combination of the casing provided with internal studs, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a spring for holding the tumbler-carrying spindle at its retracted position, a segmentally-formed tumbler held in an external circumferential groove of the tumbler-carrying spindle and provided with a notch adapted to receive one of the internal studs of the casing when the tumbler-carrying spindle is being pressed forward against the reverse action of the spring.

5. In a tumbler mechanism for locks, the combination of the casing, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a spring actuated segmentally-formed tumbler held in an external circumferential groove of the tumbler-carrying spindle, a spring for holding the spindle in its retracted position within the casing, a latch bolt, and operative connection between the tumbler-carrying spindle and the latch bolt.

6. In a tumbler mechanism for locks, the combination of the casing provided with internal studs, and a spring-actuated sliding tumbler-carrying spindle provided with external circumferential grooves, with a spring-actuated segmentally-formed tumbler having a peripheral notch adapted for engagement with an inwardly projecting stud of the casing.

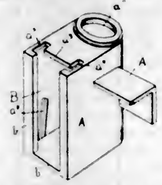
7. In a tumbler mechanism for locks, the combination of the casing provided with internal studs and the tumbler-carrying spindle provided with external circumferential grooves, a plurality of spring-actuated segmentally-formed tumblers, each having a peripheral notch for receiving the studs of the outer casing, and a spring for holding the tumbler-carrying spindle in its retracted position.

8. The combination of the casing provided with internal studs, a sliding tumbler-carrying spindle held in the casing and provided with external circumferential grooves, a spring for holding the tumbler-carrying spindle in its retracted position staggeredly disposed segmentally-formed tumblers held in the external circumferential grooves of the tumbler-carrying spindle and provided with notches for receiving the studs of the casing, and with bevel-pointed ends.

9. The combination of the casing provided with internal studs, the sliding tumbler-carrying spindle held in the casing and provided with the external circumferential grooves, a spring for holding the tumbler-carrying spindle in its retracted position, staggeredly disposed segmentally formed tumblers held in the external circumferential grooves of the tumbler-carrying spindle and provided with notches for receiving the studs of the casing, and with the bevel-pointed ends adapted to enter the lateral perforations of the key, and the key provided with perforations adapted to receive the bevel-pointed ends of the tumblers, to cause the unlocking of the tumbler-carrying spindle from the studs of the casing.

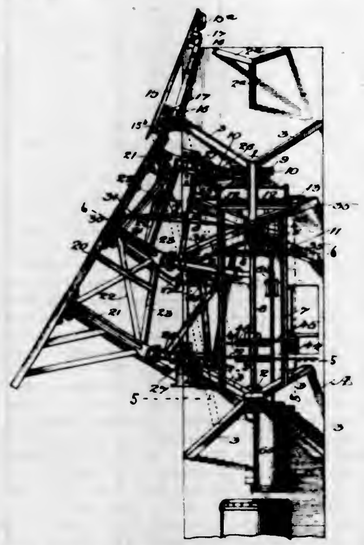
10. The combination of the casing provided with internal studs, the sliding tumbler-carrying spindle held in the casing and provided with the external circumferential grooves, a spring for holding the tumbler-carrying spindle in its retracted position, staggeredly disposed segmentally-formed tumblers held in an external circumferential groove of the tumbler-carrying spindle and provided with notches for receiving the studs of the casing and with the bevel-pointed ends, said tumbler-carrying spindle being provided with a longitudinal groove between the bevel-pointed ends of the tumblers to receive a key.

853,927. CORNER-FASTENING FOR BEDS. LOUIS J. KUTZ, Cleveland, Ohio, assignor to The Farmer Manufacturing Company, Cleveland, Ohio, a Corporation of Ohio. Filed Dec. 12, 1906. Serial No. 347,509.



Claim.—A corner lock for bed-steads comprising a side rail, having at its ends male members having inner flat faces, and double beveled outer faces, in combination with a female member secured to the head or foot posts of the bed, said female member being provided with means for receiving and retaining the male member, comprising front flanges and a rear rib, substantially as set forth.

853,928. RAILWAY-GRADING MACHINE. ORVILLE C. MANN, Oak Park, Ill. Filed Dec. 29, 1906. Serial No. 349,982.



Claim.—1. In a railway grader and spreader, in combination with a car, a spreading and leveling wing pivotally supported for swinging upward and inward to withdraw it from working position, the supports to which the wing is pivoted being mounted for equal vertical movement of the wing at both ends of its operating face, and means for raising and lowering such supports.

2. In a railway grader and spreader, in combination with a car, a spreading and leveling wing which is pivotally supported for swinging upward and inward to withdraw it from working position; supports to which it is pivoted mounted for equal vertical movement of the wing at both ends of its working face; means for raising and lowering such supports, and means for securing them in adjusted position.

3. In a railway grader and spreader, in combination with a car, a spreading and leveling wing and supports for the same foldable for withdrawing the wing from working position to a position above the car, such supports having their inner element mounted for equal vertical movement of the wing at both ends of its driving face, and means for raising and lowering said folding supports bodily with respect to the car.

4. In a railway grader and spreader, in combination with a car, a spreading and leveling wing having its operating face diverging rearwardly from the car; links extending from an upper pivotal line on the wing to a fulcrum line on the car; guide tracks on the side of the car curved about an axis parallel to the link fulcrum line with a radius equal to a link length, the wing having struts terminating at a lower line parallel with the upper link pivot line and resting on said curved guide tracks, and means for swinging the links about their fulcrums to raise and lower the wing.

5. In a railway grader and spreader, in combination with a car, a spreading and leveling wing having its operating face diverging rearwardly from the car; links fulcrumed on the car and pivotally connected with the wing at an upper line; means for raising and lowering the links, and struts extended from the wing having their feet terminating at a lower line; guideways on the side of the car in which said struts are footed; guide posts adjacent to the path in which the links swing, and releasable means for stopping the links on the posts.

6. In a railway grader and spreader, in combination with a car, a spreading and leveling wing having its operating face diverging rearwardly from the car; links fulcrumed on the car and pivotally connected with the wing at an upper line; means for raising and lowering the links, and struts extended from the wing having their feet terminating at a lower line; guideways on the side of the car in which said struts are footed; guide posts adjacent to the path in which the links swing, said posts having pin-holes at intervals and removable pins in said holes for securing the links at adjusted position.

7. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing pivotally supported on the car and having its operating face diverging rearwardly from the car at working position; means for raising and lowering such wing, and means for controlling its movement to equalize the vertical components of such movement at two points of the length of its said diverging operating face.

8. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing; means for raising and lowering such wing comprising a cable connected with the wing; a sheave or drum on which the cable is wound; a second sheave or drum on the same shaft; cables secured thereto and wound thereby, and a motor connected to the cable for drawing thereon.

9. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing on each side of the car; a sheave or drum and a shaft on which it is fixed; cables extending around the sheave and secured thereto for rotating it in opposite directions; motors connected with the cables respectively for drawing them from the sheave to rotate the shaft; means connected with the respective wings for lifting them respectively by rotation of the shaft in opposite directions, the cables having each slack equal to the draft of the motor thereon for lifting the wings, and take-up devices for controlling such slack.

10. A railway grader snd spreader comprising, in combination with a car, a spreading and leveling wing on each side of the car; a sheave or drum and a shaft on which it is fixed; cables extending around the sheave and secured thereto for rotating it in opposite directions by unwinding therefrom; motors connected with the cables respectively for drawing them from the sheave to rotate the shaft; means connected with the wings for lifting them respectively by the rotation of the shaft in opposite directions, the cables each having slack equal to the draft of the motor thereon in lifting the wings; take-up devices for con-

trolling such slack, and means for locking the take-up devices to retain the slack drawn.

11. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing on each side of the car; a sheave or drum and a shaft on which it is fixed; cables extending around the sheave and secured thereto for rotating it in opposite directions by unwinding therefrom; motors connected to the cables respectively for drawing them from the sheave to rotate the shaft; means connected with the wings for lifting them respectively by rotation of the shaft in opposite directions, each cable having slack equal to the draft of the motor thereon in lifting the wings; a take-up pulley for each cable and a carriage on which it is mounted for rotation, such carriage being mounted for movement in direction to deflect a loop or fold of the slack of the cable; a spring operating on the carriage for drawing such slack; a ratchet and dog engaging the same for retaining the carriage in the position to which it is drawn by the spring, the pivot bearing of the dog being mounted for movement to retract the dog independently of its disengagement from the ratchet, and means for so moving said bearing at will.

12. In a railway grader and spreader, in combination with a car, a spreading and leveling wing on each side of the car; cables for lifting the wings; means for taking up slack in the cables comprising a pulley and a carriage for the same mounted for movement to draw the slack; a ratchet and dog device for retaining the slack, the bearing of the dog being mounted eccentrically, and means for rocking it to retract the dog without disengaging it from the ratchet.

13. A railway grader and spreader comprising, in combination with a car, a spreading and leveling wing on each side of the car; a shaft and means for rotating it in opposite directions; a sheave or drum on the shaft and cables from the wings respectively extending in opposite directions around the sheave and secured thereto.

14. A railway grader comprising, in combination with a car, a spreading and leveling wing on each side of the car; means for raising and lowering the wings comprising a sheave or drum mounted on the car; cables from the wings respectively extending in opposite directions around the sheave or drum and secured thereto; means for rotating the drum at will in either direction, each cable being provided with slack equal to the amount necessarily drawn for lifting the wing; means for taking up such slack automatically when it is yielded, and means for releasably locking the take-up device to retain the slack drawn.

15. A railway grader and spreader comprising, in combination with a car a spreading and leveling wing on each side of the car; means for raising and lowering the wings comprising a sheave or drum on the car; cables from the wings respectively extending around the sheave or drum and secured thereto, the cables being provided with slack equal to the amount necessarily drawn in lifting the wing; a device for taking up the slack comprising a pulley engaging the cable and a carriage for the same mounted for movement to draw the slack of the cable; a spring operating on the carriage for such slack-drawing movement; a ratchet and a dog engaging the same for retaining the carriage in the position to which it is drawn by the spring, the pivot bearing of the dog being mounted for movement to retract the dog without disengaging it from the ratchet, and means for so moving said bearing at will.

16. In a railway grader and spreader, in combination with a car, a spreading and leveling wing at each side of the car; means for raising and lowering the wings comprising a sheave or drum mounted on the car; cables connected with the wings respectively extending in opposite directions around the drum and secured thereto; means for rotating the drum at will in either direction consisting of another sheave or drum rigid with the first; cables extending thereabout and secured thereto for rotating it in opposite directions by unwinding therefrom; motors connected with the cables respectively for drawing them from the sheave to so rotate it, the cables connected with the wings having slack equal to the amount drawn for lifting the wing, the cables connected with the motor having slack equal to the draft of the motor thereon for lifting the wing; separate take-up devices for controlling the slack in the several cables, and means for releasably locking such take-up devices to retain the slack drawn.

17. In a railway grader and spreader, in combination with a car, a wing at each side thereof; means for raising and lowering the wings comprising a sheave or drum mounted on the car; a link pivotally supported at one end on the car and pivotally connected at the other end to the wing for swinging up and down to raise and lower the wings; cables connected to the links respectively and extending in opposite directions around the drum and secured thereto; means for rotating the sheave or drum at will in either direction, each cable having slack equal to the amount necessarily drawn in lifting the wing; means for taking up such slack consisting of a pulley engaging the cable; a carriage for the pulley mounted for reciprocating on the link; a cable guide on the link between which and the attachment of the cable to the link the take-up pulley engages the cable; a spring for reciprocating the carriage to draw the slack of the cable, and a releasable locking device to retain the carriage at the position on the link to which it is thus drawn.

18. In a railway grader and spreader, in combination with a car, a spreading and leveling wing on each side of the car; means for raising and lowering the wings comprising a sheave or drum mounted on the car; cables connected with the wings respectively and extending in opposite directions around such drum or sheave and secured thereto; means for rotating the drum at will in either direction, the cable of each having slack equal to the amount necessarily drawn for lifting the wing; take-up devices for controlling such slack and means for releasably locking such devices to retain the slack; swinging links by which the wings are connected with the car, the cables being connected to the wings by attachment to the links, and the take-up devices being mounted on the links.

19. A railway grader comprising, in combination with a car, leveling and spreading wings mounted at the sides thereof having their spreading faces diverging rearwardly; supports to which the wings are pivoted at an elevated point; struts or braces extending from the lower part of the wings; footings mounted at the sides of the car for the struts or braces, and means for swinging the wings about their elevated pivotal supports to fold them back above the car.

20. A railway grader comprising, in combination with a car, leveling and spreading wings pivotally mounted at the sides thereof for swinging upward and inward out of operative position, such wings being adapted to swing inward far enough to be overbalanced inward; supports on the car against which they lean when thus overbalanced; means for raising the wings and controlling their descent, and means for starting them outward from the supports against which they lean consisting of power cylinders having their pistons operating transversely with respect to the car in position for thrusting their stems outwardly against the wings.

21. A railway grader comprising, in combination with a car, a spreading and leveling wing having its vertical face diverging rearwardly from the car; supports to which such wing is pivoted at an elevated point; struts or braces extending from the wing toward the car below the pivots; guide-ways on the side of the car in which such struts or braces are footed; a cable connected with the wing; an elevated sheave or drum on the car about which the cable is wound, and a pivoted outrigger for the cable extending outward from the pivotal support of the wing.

22. A railway grader comprising, in combination with a car, means for spreading and leveling the spoil consisting of a forward and a rear wing, both extending off divergently from the side of the car; means for pivotally supporting both wings on the car at different pivotal lines; means for folding the rear wing upward and inward about its pivotal supports, the forward wing having its rear end lapped outside the rear wing; a roller on one of said wings bearing upon the surface of the other wing for communicating folding movement of the rear wing to the forward wing.

23. A railway grader comprising, in combination with a car, means for spreading and leveling the spoil consisting of a forward and a rear wing, both extending off from the side of the car and both diverging rearwardly from the car, the rear wing having greater angle of divergence than the forward wing; means for pivotally supporting both wings on the car; means for folding the rear wing upward and inward about its pivotal supports, the forward wing having its rear end lapped outside the rear wing; a roller on one of said wings and a shoe on the other with which the roller engages for communicating the folding movement of the rear wing to the forward wing.

24. A railway grader comprising, in combination with a car, means for spreading and leveling the spoil consisting of a forward and a rear wing, both extending off from the side of the car and both diverging rearwardly from the car, the rear wing having greater angle of divergence than the forward wing; means for pivotally supporting both wings on the car; means for folding the rear wing upward and inward about its pivotal supports, the rear end of the forward wing being lapped outside the forward end of the rear wing; a roller mounted on the inner side of the forward wing and a shoe or cam on the outer side of the forward end of the rear wing co-operating with the roller for folding up the forward wing by the folding up of the rear wing.

25. A railway grader comprising, in combination with a car, a spreading and leveling wing extended off from the side of the car diverging therefrom rearwardly; means operating by connection with the wing at an elevated line thereon for raising and lowering it; struts or braces extended from a lower point on the wing inward and rearward to the car, and guideway pockets in which the inner rear ends of said struts are stepped, such pockets being positioned and formed to resist both rearward and inward thrusts of the struts.

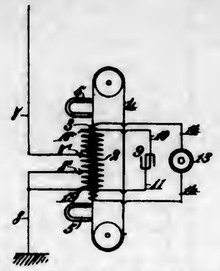
26. A railway grader comprising, in combination with a car, a wing extending off sideward therefrom and diverging rearwardly from the car; means connected with elevated points on the wing for supporting the same and for guiding it in vertical movement; struts or braces extending from lower points on the wing inward and rearward to the car; pockets on the side of the car in which said struts are footed, positioned and formed for resisting both rearward and inward thrust of the struts and extended vertically to seat and guide the struts in the vertical movement of the wing.

27. A railway grader comprising in combination with a car, a wing extended off sideward therefrom; links connecting the wing at elevated points on the latter with the car; means for swinging the links about their fulcrums on the car to raise and lower the wing; struts or braces extended from lower points on the wing inward for bracing against the car, and tracks or guideways on the side of the car against which such struts or braces are folded extending vertically curved convexly outward about centers spaced downward from the pivots of the links a distance equal to the distance between the connection of the links to the wings and the lower ends of the struts respectively, with a radius equal to the length of the links from pivot to pivot.

28. A railway grader comprising, in combination with a car, a wing extended off sideward therefrom and diverging rearwardly; links connecting the wing at elevated points on the latter with the car, and means for swinging the links about their fulcrums on the car to raise and lower the wing; struts or braces extended from lower points on the wing inward and rearward to the car; pockets on the car in which the rear inner ends of the struts are footed, positioned and formed for resisting both the inward and the rearward thrust of the struts, such pockets being extended vertically in curves about centers spaced from the pivots of the links a distance equal to the distance from the pivotal connection of the links to the wings and with a radius equal to the length between centers of links.

853,929. WIRELESS TELEGRAPHY. WALTER W. MASSIE, Providence, R. I. Filed Nov. 4, 1905. Serial No. 285,890.

Claim.—1. In wireless telegraphy, a wave-frequency oscillatory-receiving circuit including a magnetic-detector coil and capacity, said coil constituting inductance for said circuit and being together with the capacity, adjustable for tuning said circuit.



2. In wireless telegraphy, a closed wave-frequency oscillatory circuit including a magnetic-detector coil and capacity, said coil constituting inductance for the circuit and being with the capacity adjustable for tuning said circuit.

3. In wireless telegraphy, a closed wave-frequency oscillatory receiving circuit including the coil of a magnetic-detector, which coil constitutes the inductance of said circuit, the latter also including capacity, and vertical and ground connections adjustably connected with the coil to vary the inductance, and the capacity being also adjustable, said adjustments being for the purpose of tuning said circuit.

4. In wireless telegraphy, two oscillatory circuits, one of which is open and the other closed and all wave-frequency, having a magnetic-detector coil common thereto, the closed circuit having capacity and inductance, the inductance consisting of said coil.

5. In wireless telegraphy, a wave-frequency oscillatory receiving circuit including inductance and capacity adjustable for tuning the circuit, the inductance consisting of a magnetic-detector coil, and the resistance, inductance and capacity of said circuit being constant when the same is tuned.

6. In wireless telegraphy, a closed wave-frequency oscillatory receiving circuit including the coil of a magnetic-detector and capacity, said coil constituting the inductance for said circuit and the capacity being adjustable, and vertical and ground connections adjustably connected with the coil to adjust the inductance of the circuit, said adjustment being for tuning, the resistance, capacity and inductance when the circuit is tuned being constant.

7. In wireless telegraphy, two oscillatory circuits, one of which is open and the other closed and all wave-frequency, having a magnetic-detector coil common to both, and the inductance and capacity of both of which are adjustable.

853,930. RATCHET-WRENCH. CHARLES MILLER, Syracuse, N. Y. Filed Oct. 14, 1905. Serial No. 282,793.

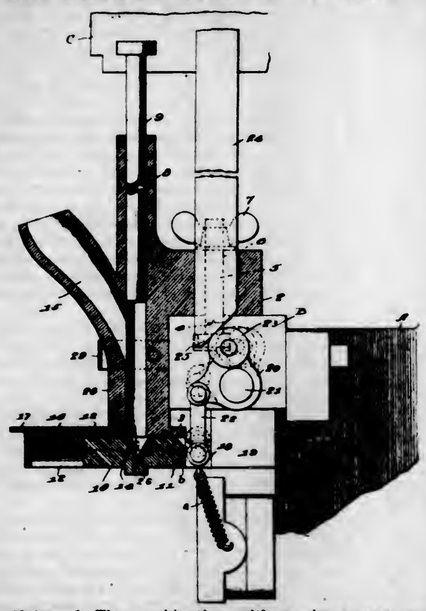


Claim.—1. A device of the character described comprising a handle, a head provided with ratchet teeth rotatably mounted in one extremity of said handle, said handle comprising two members each of which is provided with a longitudinal groove extending throughout the greater part of the length of said members, a pawl having a reduced end slidably mounted in said groove, a coil spring surrounding the reduced portion of said pawl, said coil spring bearing against a shoulder formed on said pawl, and oppositely disposed ribs arranged within said grooves, near the rear extremity thereof.

2. A device of the character described comprising a handle, a head provided with ratchet teeth rotatable in said handle, said handle comprising two members, each of which is provided with a longitudinal groove extending

throughout the greater portion of its length, a pawl mounted in said groove and engaging with the ratchet teeth on said rotatable head, a plurality of oppositely disposed ribs carried in the rear end of said groove, and means engaging with said pawl and said rib for retaining said pawl in engagement with said ratchet teeth.

853,931. NAIL-CHUCK. JOHN A. MILLIKEN, Flushing, N. Y., assignor to Amboy Machine Company, Perth Amboy, N. J., a Corporation of New Jersey. Filed May 28, 1903. Renewed Oct. 19, 1906. Serial No. 339,698.



Claim.—1. The combination with a plunger-way and plunger, of a pair of movable chuck jaws constructed and adapted to guide and grip the nail to be driven, and a movable abutment adapted to cross the path of one of the jaws, and means operating in conjunction with the plunger for moving the abutment out of the path of the jaw.

2. The combination with a plunger-way and plunger, of a pair of movable chuck jaws, constructed and adapted to guide and grip the nail to be driven, and a movable abutment for one of said jaws the abutment formed independently thereof and moving relative to the jaw.

3. The combination with a plunger-way, of a pair of movable chuck jaws, constructed and adapted to guide and grip the nail to be driven, a movable abutment for one of said jaws, a plunger for forcing the nail endwise between the jaws, a cross-head carrying the plunger, and means for removing the abutment from the path of the chuck jaw, preparatory to the latter being forced aside by the plunger and nail head.

4. The combination with a nail chuck body having a plunger-way, therein, of movable chuck jaws, an abutment for one of the jaws, bell cranks connected with the abutment and a trip bar for rocking the bell cranks to move the bar out of the path of the chuck jaw.

5. The combination with a nail chuck body having a plunger-way therein, and provided with chuck jaw guides, of chuck jaws fitted to slide therein, an abutment for one of the jaws, bell-cranks connected with the abutment, and a trip bar for rocking the bell cranks to move the bar out of the path of the chuck jaw.

6. The combination with a nail chuck body having a plunger-way therein, and provided with chuck jaw guides, of chuck jaws fitted to slide therein, an abutment bar for one of the jaws, bell cranks, connected with the abutment links extending therefrom to the bar, and a trip bar for rocking the bell cranks to move the bar out of the path of the chuck jaw.

7. The combination with a body portion, of a pair of outwardly movable chuck-jaws, and stops between the jaws to prevent their crossing the median line between the jaws.

8. The combination with a body portion, of a pair of movable chuck-jaws having recesses in adjacent edges, and stops in the form, of set screws screwed into the body portion with their inner ends in position to be received in the recesses in the chuck-jaws.

9. The combination with a body portion, of a pair of movable chuck jaws having half conical recesses in adjacent edges, and stops in the form of set screws screwed into the body portion at the median line and having conical inner ends adapted to be received in the half conical recesses in the edges of the chuck jaws.

10. The combination with a plunger way, and plunger, of a pair of chuck-jaws, and a movable abutment for one jaw and means operating in conjunction with the plunger for causing the abutment to recede from the path of the jaw by the time the plunger reaches the jaw.

11. The combination with a plunger way, and plunger, of a pair of chuck-jaws, and a movable abutment for one jaw and means operating in conjunction with the plunger for causing the abutment to recede from the path of the jaw by the time the plunger reaches the jaw, said abutment acting to return the jaw to its normal position when the plunger withdraws.

12. The combination with a plunger way, plunger, and chuck jaws, of an abutment for one of the jaws, a cross-head to which the plunger is connected and means carried by the cross-head for moving the abutment into and out of the path of the chuck-jaw.

13. The combination with a plunger way and plunger, of sliding chuck jaws, one of which is spring actuated and removable, and a movable abutment for the other jaw the abutment formed independently thereof and moving relative to the jaw.

14. The combination with a plunger way and plunger, of sliding chuck jaws, one of which is spring-actuated, and removable, and a movable abutment for the other jaw, and removable means for retaining the spring actuated jaw removably in place.

853,932. PROCESS OF MAKING BIMETALLIC PRODUCTS. JOHN F. MONNOT, New York, N. Y., and EDOUARD MARTIN, Paris, France; said Martin assignor to said Monnot. Filed Apr. 30, 1904. Serial No. 205,669.



Claim.—1. The process substantially as hereinafter described of making bi-metallic products of different metals welded together which consists in first applying on the inside surfaces of an ingot mold of suitable shape, a sheet metal lining of the desired metal while in a cold state, for the purpose of forming the coating of the finished product, then running into the cold sheet metal lining of the mold, molten metal for the core or base of a different kind chemically from the metal forming the lining, and forcing the core and the sheet coating metal together by pressure applied to the entire surface of contact of the metals while at a suitable temperature to perfectly weld them and thereby suppress any flaws between them.

2. The process substantially as hereinafter described of making bi-metallic products of different metals welded together, which consists in first applying on the inside surface of an ingot mold of suitable shape, a sheet metal lining of the desired metal while in a cold state, for the purpose of forming the coating of the finished product, then running into the cold sheet metal lining of the mold, molten metal for the core or base of a different kind from the metal forming the lining, and compressing and forcing the sufficiently cooled core and the sheet coating metal while at a suitable temperature through a contracted opening to perfectly weld the two metals together and thereby suppress any flaws between them.

3. The process substantially as hereinafter described of making bi-metallic products, having a base of one kind of metal and a coating of another kind of metal, which consists in preparing the surface of a sheet coating metal, by cleaning the surface and covering the same with an electrolytic deposit of suitable metal, as copper, tin, zinc, or other desired metal, to prevent oxidation and cause perfect welding, then applying the sheet coating metal while in a cold state to the inside surface of an ingot mold of suitable shape for the purpose of forming the coating of the finished product, then running into the cold sheet metal lining of the mold, molten metal for the base of a different kind from the metal forming the lining, and forcing the base and the sheet coating metal together by pressure applied to the entire surface of contact of the metals while at a suitable temperature to perfectly weld them and thereby suppress any flaws between them.

4. The process of making bimetallic ingots, which consists in first applying a sheet-metal lining to the inside surface of a tapering mold, for the purpose of forming the coating of the finished article, then running into the sheet metal lining molten metal for the core or base of a different kind from the metal for forming the coating, and then uniting the core and coating by forcing the ingot, while at a welding temperature, longitudinally of the mold toward the smaller end.

5. The process of producing bimetallic products comprising metals of chemically different character united together which consists in forming a hollow body of one such metal, casting therein an unlike more infusible metal in a molten condition, and compressing the two metals together while still in a plastic condition.

6. The process of producing bimetallic products comprising a ferrous and a non-ferrous metal united together which consists in forming a hollow body of such non-ferrous metal, casting said ferrous metal therein and compressing the two metals together while still in a heated and plastic condition.

7. The process of forming bimetallic products comprising steel and copper united together which consists in forming a hollow copper body, casting steel therein and compressing the two metals together while still in a heated and plastic condition.

8. The process of producing bimetallic products comprising metals of chemically different character united together which consists in forming a hollow body of one such metal, coating with a loose textured film of comparatively fusible metal, casting therein an unlike more infusible metal while in a molten condition, and compressing the two metals together while still in a heated condition.

9. The process of producing bimetallic products of metals of chemically different character united together, which consists in applying to the inside surfaces of an ingot mold of suitable shape, a sheet metal lining of the desired metal while in a cold state, for the purpose of forming the coating of the finished product, then running into the cold sheet metal lining of the mold, a molten metal of chemically different character for the core or base, and forcing the core and the sheet coating metal together by pressure applied to the entire surface of contact of the metals while at a suitable temperature to perfectly unite them and thereby suppress any flaws between them.

10. The process of producing bimetallic products of unlike metals united together, which consists in first applying on the inside surface of an ingot mold of suitable shape a sheet metal lining of the desired metal while in a cold state, for the purpose of forming the coating of the finished product, then running into the cold sheet metal lining of the mold, a molten unlike metal for the core or base, and compressing and forcing the sufficiently cooled core and sheet coating metal while in a plastic condition through a contracted opening to perfectly weld the two metals together and thereby suppress any flaws between them.

11. The process of producing bimetallic products having a base of one metal and a coating of an unlike metal, which consists in preparing the surface of a sheet coating metal by cleaning the surface and covering the same with an electrolytic deposit of comparatively fusible metal, to prevent oxidation and cause perfect welding, then applying the sheet metal while in a cold state to the inside surface of an ingot mold of suitable shape for the purpose of forming the coating of the finished product, then running into the cold sheet metal lining of the mold an unlike molten metal for the base, and forcing the base and sheet coating metal together by pressure applied to the entire surface of contact of the metals while at a suitable temperature to perfectly weld them and thereby suppress any flaws between them.

12. The process of producing bimetallic products comprising unlike metals united together which consists in first applying a sheet metal lining to the inside surface of a tapering mold, for the purpose of forming the coating of the finished article, then running into the sheet metal lining a molten unlike metal for the core or base, and then uniting the core and coating by forcing the ingot while at a welding temperature, longitudinally of the mold toward the smaller end.

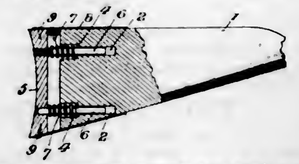
13. The process of producing bimetallic products comprising metals of chemically different character united together which consists in forming a hollow body of one such metal, casting therein a more infusible metal of chemically different character in a molten condition, and forcing the compound ingot so formed through a contracted opening to unite said metals together.

14. The process of producing bimetallic products comprising steel and a metal of chemically different character welded together which consists in forming a hollow body of such unlike metal, casting therein molten steel, and forcing the compound ingot so formed through a contracted opening.

15. The process of producing bimetallic products comprising steel and copper welded together which consists in forming a hollow body of copper, casting steel therein and forcing the compound ingot so formed through a contracted opening.

16. The process of producing bimetallic products comprising unlike metals united togther which consists in forming a hollow body of one such metal, providing its interior surface with a loose textured layer, of comparatively fusible metal casting therein a more infusible unlike metal in a molten condition, and forcing the compound ingot so formed through a contracted opening to complete the union.

853,933. GUN-STOCK. EDWARD J. PERREY, Chamois, Mo., assignor of one-fourth to Victor Gaume and one-fourth to August Gaume, Crook, Mo. Filed May 15, 1906. Serial No. 317,045.

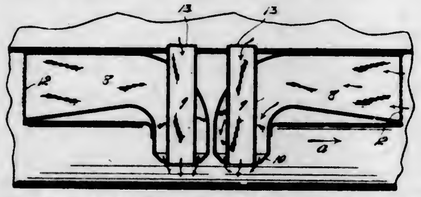


Claim.—In combination with a gun stock provided in its butt end with recesses, of a sheathing designed to encircle the butt end of the stock and provided with eyelets adapted to receive a lacing for detachably securing the sheathing around the stock, said sheathing being of flexible material and having its rear edge turned inwardly, two butt plates secured together on opposite sides of the inwardly turned edge of the sheathing and clamping said edge between them, the two plates having plane meeting faces and the outermost plate having a concave outer face, pins secured to said butt plates and extending forwardly and mounted to slide in said recesses, and springs interposed between said butt plates and a portion of the stock, whereby to normally hold the butt plates spaced from the end of the stock.

853,934. SOLIDIFIED DIASTATIC MALT EXTRACTS. ISIDOR POLLAK, Vienna, Austria-Hungary, assignor to The Firm of Erste Wiener Export-Malzfabrik Hauser & Sobotka, Vienna, Austria-Hungary. Filed May 25, 1906. Serial No. 318,684.

Claim.—Solidified diastatic malt extracts of high durability, consisting of an intimate mixture of the well known liquid concentrated diastatic malt extracts with malt flour, that is finely ground meal of germinated cereals, such mixture forming a stiff dough which can be molded to any desired form and which possesses an increased diastatic action as compared with the liquid extracts employed as a constituent thereof.

853,935. CAR-VENTILATOR. FRANK RIEMER, Denver, Colo., assignor of one-half to Edward H. Vogt, Denver, Colo. Filed Mar. 15, 1907. Serial No. 362,452.



Claim.—1. A ventilator for cars or other structures, comprising a suction member and a ventilating member, the suction member being open ended and so arranged that a draft of air will be automatically passed therethrough, and a ventilating conduit passed through the outlet extremity of the suction conduit, the latter surrounding the ventilating conduit and having its outer extremity bent inwardly whereby the space around the ventilating conduit is considerably contracted and the force of the air current correspondingly increased as it escapes from the suction conduit thus producing a vacuum pull at the outer extremity of the ventilating conduit, the latter communicating with the structure to be ventilated, substanially as described.

2. In a ventilating device for cars and other structures, comprising a duplex apparatus composed of a pair of open-ended suction elbow-shaped conduits whose inlet extremities are in alinement but pointed in opposite directions, and a ventilating conduit passing through the outlet extremity of each suction conduit, the ventilating conduit being considerable smaller than the suction conduit and the latter having its outer extremity inwardly bent whereby the space between the two conduits is contracted to increase the force of the air current as it escapes from the suction conduit around the outer extremity of the ventilating conduit, the inner extremities of the ventilating conduits communicating with the interior of the structure to be ventilated, substantially as described.

3. The combination with a car, of a ventilating structure mounted thereon, the same being composed of a suction conduit and a ventilating conduit, the suction conduit being elbow-shaped and having both extremities open, one extremity of the latter being forwardly directed, and a ventilating conduit intersecting the outlet extremity of the suction conduit at right angles to the lengh of the car, and passing through the outlet extremity of the ventilating conduit, the last named extremity of the latter being bent inwardly toward the ventilating conduit whereby the space between the two conduits is considerably contracted for the purpose set forth.

4. The combination with a car, of a duplex ventilating structure composed of two open-ended elbow-shaped suction members having oppositely directed alined portions extending lengthwise of the car, their other extremities being outwardly directed, both extremities of the said conduits communicating with the atmosphere, and a ventilating conduit intersecting the outlet portion of each suction conduit, one extremity of each ventilating conduit communicating with the interior of the car while its other extremity passes through the outlet portion of the suction conduit, the latter surrounding the ventilating conduit and having its outlet extremity bent inwardly whereby the space between the two conduits is considerably contracted to increase the force of the suction pull acting on the ventilating conduit, substantially as described.

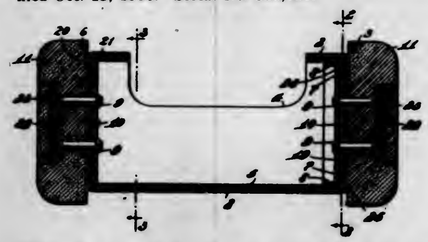
853,936. PNEUMATIC-SERVICE CARRIER. MARION B. RIFFO, Philadelphia, Pa. Original application filed Dec. 18, 1905, Serial No. 292,396. Divided and this application filed Oct. 13, 1906. Serial No. 338,729.



Claim.—1. A carrier for pneumatic service systems consisting of a pair of cylindrical tubular members arranged relatively rotatable and peripherally slotted, each provided with a closed head end and an open end, means to maintain said tubes from relative longitudinal movement, the inner of said tubular members having at its open end an inturned annular flange, a disk smaller than said annular flange fixedly secured to the interior face of the head end of the outer tubular member, with a projecting stop and co-acting segmental recess between the coinciding peripheries of said disk and flange operating to limit the relative rotation of said tubular members.

2. A carrier of the class recited comprising a pair of telescoping and relatively rotatable cylindrical tubular members, peripherally slotted, each with a head end and an open end, a cap over the head end of the inner member, means to fasten them together and to a buffer head, in combination with means to limit the relative rotation of said tubular members, consisting of an inwardly projecting annular flange on the open end of the inner tube, a disk peripherally smaller than and arranged within the opening formed by said annular flange, and a projecting stop and co-acting segmental recess between the coinciding peripheries of said disk and flange; and means to maintain said elements in operative register, consisting of an interiorly arranged flanged disk abutting against the inturned flange of the inner tube, with means to maintain said coinciding elements in fixed relation to each other and to a buffer head.

853,937. PNEUMATIC CARRIER. MARION B. RIFFO, Philadelphia, Pa. Original application filed Dec. 18, 1905, Serial No. 292,396. Divided and this application filed Oct. 13, 1906. Serial No. 338,730.



Claim.—1. A carrier for pneumatic service systems comprising a pair of telescoping tubular members, peripherally slotted and arranged relatively rotatable, each provided with a closed head-end and an opposite open end, the inner of said tubular members having at its open end an inturned annular flange provided on an arc of its peripheral edge with a curved proturberance, a disk-like plate supported within said inturned flange and having a peripheral edge provided with a corresponding curved protuberance, said flange and disk being adapted to be brought into or out of engagement on partial relative rotation, and with means to maintain said elements of the stop device in operative relation to each other and to the outer tubular member; substantially as described.

2. A carrier for pneumatic service systems consisting of a pair of cylindrical tubular members, arranged relatively rotatable and peripherally slotted, each provided with a closed head end and an open end, the inner of said tubular members having at its open end an inturned annular flange provided with a curved engaging protuberance on an arc of its peripheral edge, a disk arranged to abut against said inturned flange of the inner tubular member, and having its center depressed to form a stop plate the periphery of which is provided with a corresponding curved protuberance adapted to operatively co-act with said flange of the inner tubular member and limit the rotation thereof relatively to the outer tubular member; with means to fixedly secure said stop plate of the flanged disk to the head end of the outer tubular member; substantially as described.

853,938. BARBED WIRE. DATUS C. SMITH, New York, N. Y. Original application filed Mar. 9, 1901, Serial No. 50,497. Divided and this application filed Mar. 10, 1904. Serial No. 197,460.



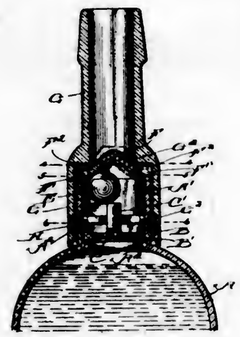
Claim.—1. A single-strand elastic barbed wire comprising a strand having a form other than straight and flattened at intervals and having wire barbs coiled fixedly around its flattened portions.

2. An elastic barbed fence-wire comprising a single strand, coiled throughout its length in elongated convolutions of relatively small diameter, and flattened at intervals, and provided with wire barbs coiled fixedly around its flattened portions.

853,939. NON-REFILLABLE BOTTLE. JOSEPH M. STASSART, Portland, Oreg., assignor to J. H. Keating, Portland, Oreg. Filed June 6, 1906. Serial No. 320,483.

Claim.—1. In a device of the kind described, the combination with a bottle provided with a neck having an annular groove, of a valve arranged in said neck, a neck arranged over said neck provided with an annular groove, means for preventing the outer neck turning on the inner neck and a spring band adapted to fit in said grooves, and lock the neck thereon, for the purpose described.

2. In a device of the kind described, the combination with a bottle provided with an integral neck having an annular groove and lugs formed on said neck, a valve arranged in said neck, a guard arranged on the upper edge of said neck, a neck provided with an annular groove and recesses adapted to fit over said neck, and a spring band adapted to fit in the grooves of the necks, for the purpose described.



3. In a device of the kind described, the combination with a bottle having an integral neck provided with an annular rib, of a ring provided with a flange arranged on said rib, a valve seated on said flange, a bar arranged over said valve on said ring, a ball arranged in said neck on said valve, a guard arranged on the upper edge of said neck, and a neck locked on said neck, for the purpose described.

4. In a device of the kind described, the combination with a bottle having a neck with an annular groove and oppositely disposed V-shaped lugs, of an annular shoulder formed on the lower end of said neck, a ring mounted on said shoulder provided with an inwardly projecting beveled edge flange, a valve mounted on said flange provided with a stem, a cross-bar arranged on said ring provided with an opening adapted to receive said stem, a guard arranged on the upper edge of said neck, and a neck provided with an enlarged lower end having an annular groove and oppositely disposed recesses, adapted to be locked on said neck, for the purpose described.

5. In a device of the kind described, the combination with a bottle provided with a neck portion having oppositely disposed lugs, of a valve arranged in said neck and a neck provided with oppositely disposed grooves adapted to fit over said neck and lugs, for the purpose described.

6. In a device of the kind described, the combination with a bottle provided with a neck provided with oppositely disposed V-shaped lugs, of a valve arranged in said neck and a neck adapted to fit over said neck provided with oppositely disposed V-shaped grooves adapted to receive said lugs for the purpose described.

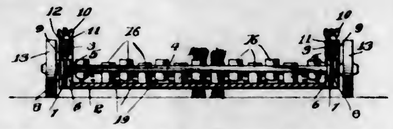
7. In a device of the kind described, the combination with a bottle provided with a neck having an annular groove and oppositely disposed lugs, of a valve arranged in said neck, a neck arranged over said neck provided with an annular groove and oppositely disposed grooves and a spring band adapted to fit in said annular grooves and lock the two necks together, for the purpose described.

8. In a device of the kind described, the combination with a bottle provided with a neck having an annular rib, of a ring provided with a beveled flange arranged on said rib, a stem valve mounted in said ring, an apertured bar arranged on said ring and over the stem of the valve, a ball arranged in said neck on the stem of the valve, a neck arranged on said neck and means for locking the necks together for the purpose described.

853,940. PROCEDURE FOR BLEACHING AND STERILIZING CORN AND ITS PRODUCTS. OTTO ZIMMERMANN, Ludwigshafen-on-the-Rhine, Germany. Filed Dec. 18, 1905. Serial No. 292,302.

Claim.—A process of bleaching and sterilising corn and its products consisting in treating the material with a dilute aqueous solution of hydro-sulfite.

853,941. MOP. GEORGE H. AKRIDGE, Pelham, Ga. Filed Feb. 2, 1906. Serial No. 299,201.



Claim.—1. In a device of the character described, the combination of a carriage comprising a perforated base, end pieces secured to the base and a reinforcing beam connecting the end pieces, a series of tubes projecting from the base and in alinement with the perforations therein and cleaning tufts inserted in the tubes.

2. In a device of the character described, the combination of a base plate, end pieces secured to the base plate, blocks adjustably mounted upon the end pieces, an axle journaled in the blocks, wheels mounted upon the axle, cleaning tufts secured to the base plate, and means for adjusting the blocks to raise and lower the base plate to take up the wear in the cleaning tufts.

3. In a device of the character described, the combination of a base plate, end pieces secured to the plate, said end pieces being provided with transverse slots, blocks slidably mounted in the slots, an axle secured to the blocks, wheels mounted upon the axle, cleaning tufts secured to the base plate, and means for adjusting the blocks so as to raise and lower the base plate to take up the wear in the cleaning tufts.

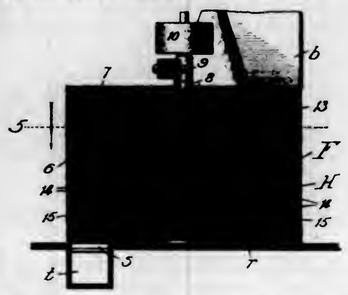
4. In a device of the character described, the combination of a base plate, end pieces secured to the base plate and provided with transverse slots, blocks slidably mounted in the slots, stems secured to the blocks and passing through the end pieces, thumb nuts having an interlocking connection with the end pieces and coöperating with the stems to raise and lower the blocks, an axle secured to the blocks, wheels mounted upon the axle, and cleaning tufts secured to the base plate.

5. In a device of the character described, the combination of a base plate, end pieces secured to the base plate and formed with transverse slots, the ends of the slots being formed with grooves, blocks slidably mounted in the slots and provided with tongues which operate in the grooves, stems connected with the blocks and passing through the end pieces, thumb nuts having an interlocking connection with the end pieces and coöperating with the stems to raise and lower the blocks, an axle secured to the blocks, wheels mounted upon the axle, and cleaning tufts secured to the base plate.

853,942. SEED-COTTON DRYING AND CLEANING APPARATUS. ANGUS CAMPBELL, Pittsburg, Pa. Filed Feb. 21, 1906. Serial No. 302,253.

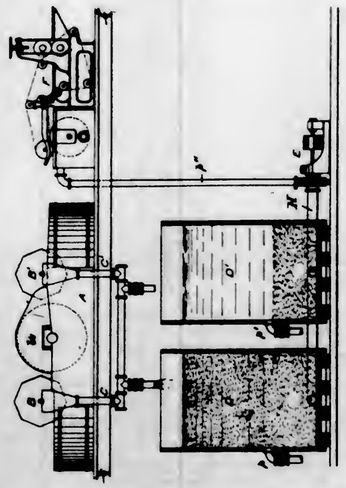
Claim.—1. In a pneumatically operated cotton cleaning apparatus, the combination of an outer chamber, a screen forming the vertical surrounding wall of said chamber, a rotary vertical cylinder within the chamber having an upwardly tapering top-portion, a screen forming the vertical surrounding wall of said cylinder beneath said top-portion, the cylinder being supported in the chamber to leave an annular passage for the cotton between the said walls, means for directing a blast of air from the cylinder across said passage and through the said chamber-wall, means for feeding the cotton onto said tapering top-portion of the cylinder whereby it is directed into said passage to descend through the same, and rotating means for the cylinder.

2. In a pneumatically operating cotton-cleaning apparatus, the combination of a vertical cylindrical chamber, a screen forming the surrounding wall of said chamber, a rotary vertical cylinder within said chamber, a screen forming the surrounding wall of said cylinder, the cylinder being supported in the chamber to leave an annular passage for the cotton between the walls, a spiral guide for the cotton in said passage, means for directing a blast of air from the cylinder across said passage and through the said chamber-wall, means for feeding the cotton to said passage, and rotating means for the cylinder.



3. In a penumatically operating cotton-cleaning apparatus, the combination of an outer cylindrical chamber, a screen forming the surrounding wall of said chamber, a blast-creating fan in said chamber having a cylindrical screen forming a surrounding wall about said fan, the walls forming an annular passage between them for the cotton, and means for rotating the fan and its cylindrical wall to set up and direct a blast of air across said passage and through the outer wall.

853,943. PROCESS OF MANUFACTURING PRODUCTS FROM CORNSTALKS, SUGAR-CANE, &c. VIGGO DREWSEN, New York, N. Y. Filed July 9, 1903. Serial No. 164,759.



Claim.—1. The process of preparing materials for paper making from cornstalks, sugar cane and analogous pithy stalks, which consists in; (1) cooking said stalks continuously in a single cooking liquor which contains the ordinary chemical reagents used to produce cellulose from vegetable fibers for a sufficient length of time to separate

the fibers of the shell and the pith cells from their incrustaceous matter; (2) separating the fibrous matter from the pith cells by washing and screening; (3) collecting the fibrous material and the pith cells, substantially as described.

2. The process of preparing materials for paper making from cornstalks, sugar cane and analogous pithy stalks, which consists in; (1) cooking said stalks continuously in a single cooking liquor containing a caustic alkali for a sufficient length of time to separate the fibers of the shell and the pith cells from their incrustaceous matter; (2) separating the fibrous matter from the pith cells by washing and screening; (3) collecting the fibrous material and the pith cells, substantially as described.

3. The process of preparing materials for paper making from cornstalks, sugar cane and analogous pithy stalks which consists in; (1) cooking said stalks continuously in a single cooking liquor, which contains the ordinary chemical reagents used to produce cellulose from vegetable fibers for a sufficient length of time to separate the fibers of the shell and the pith cells from their incrustaceous matter; (2) separating the fibrous matter from the pith cells by washing and screening; (3) allowing the pith cells to settle out of the washing water in a settling tank; (4) collecting the fibrous material and the pith cells, substantially as described.

4. The process of preparing materials for paper making from cornstalks, sugar cane and analogous pithy stalks, which consists in; (1) cooking said stalks continuously in a single cooking liquor containing a caustic alkali for a sufficient length of time to separate the fibers of the shell and the pith cells from their incrustaceous matter; (2) separating the fibrous matter from the pith cells by washing and screening; (3) allowing the pith cells to settle out of the washing water in a settling tank; (4) collecting the fibrous matter and the pith cells, substantially as described.

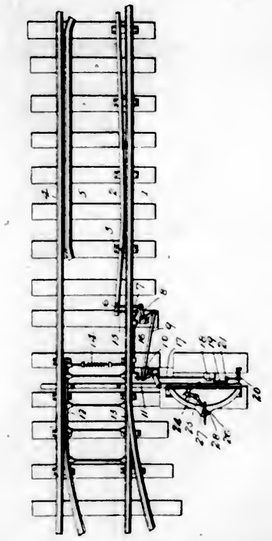
5. The process of preparing materials for paper making from cornstalks, sugar cane and analogous pithy stalks which consists in; (1) cutting or otherwise dividing the stalks into pieces; (2) cooking said stalks continuously in a single cooking liquor which contains the ordinary chemical reagents used to produce cellulose from vegetable fibers for a sufficient length of time to separate the fibers of the shell and the pith cells from their incrustaceous matter; (3) separating the fibrous matter from the pith cells by washing and screening; (4) collecting the fibrous material and the pith cells, substantially as described.

6. The process of preparing materials for paper making from cornstalks, sugar cane and analogous pithy stalks which consists in; (1) cutting or otherwise dividing the stalks into pieces; (2) cooking said stalks continuously in a single cooking liquor containing a caustic alkali for a sufficient length of time to separate the fibers of the shell and the pith cells from their incrustaceous matter; (3) separating the fibrous matter from the pith cells by washing and screening; (4) collecting the fibrous material and the pith cells, substantially as described.

7. The process of preparing materials for paper making from cornstalks, sugar cane and analogous pithy stalks which consists in; (1) cutting or otherwise dividing the stalk into pieces; (2) cooking said stalks continuously in a single cooking liquor which contains the ordinary chemical reagents used to produce cellulose from vegetable fibers for a sufficient length of time to separate the fibers of the shell and the pith cells from their incrustaceous matter; (3) separating the fibrous matter from the pith cells by washing and screening; (4) allowing the pith cells to settle out of the washing water in a settling tank; (5) collecting the fibrous material and the pith cells, substantially as described.

8. The process of preparing materials for paper making from cornstalks, sugar cane and analogous pithy stalks which consists in; (1) cutting or otherwise dividing the stalk into pieces; (2) cooking said stalks continuously in a single cooking liquor containing a caustic alkali for a sufficient length of time to separate the fibers of the shell and the pith cells from their incrustaceous matter; (3) separating the fibrous matter from the pith cells by washing and screening; (4) allowing the pith cells to settle out of the washing water in a settling tank; (5) collecting the fibrous material and the pith cells, substantially as described.

853,944. AUTOMATIC SAFETY-SWITCH. WALTER R. JENNEY, Westfield, Mass., assignor of one-half to Charles H. Beals, Westfield, Mass. Filed June 14, 1906. Serial No. 321,700.



Claim.—1. The combination with a railway switch of means for closing said switch when open by the movement of a train on the main track in the direction of the switch and means for temporarily locking said switch open for the purpose of placing a train on the siding, substantially as specified.

2. The combination with a railway switch of a rail located on the main track having an angle at each end, a pivot, a spring seat, a rod connecting the spring seat with a bell crank lever, a rod connecting the bell crank lever to a lever attached to a rod connected with the point of the switch, substantially as specified.

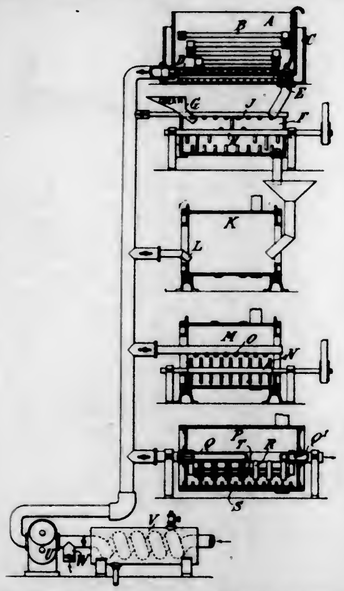
3. The combination with an automatic railway switch having a lever which operates in connection with the flange of a car wheel to close a switch, of a crank lever attached thereto which operates to release a spring latch, substantially as specified.

4. In an automatic railway switch the combination of a pivoted rail resting on carriages, a spring seat, a rod attached to the end of the rail containing the spring seat and to a lever, the lever being attached by means of a rod to a lever attached to a rod connected with the point of the switch, of a crank operating to release a spring latch, of a spiral spring having a tendency to close the switch, all substantially as specified.

5. In an automatic railway switch the combination of a pivoted rail resting on carriages, a spring seat, a rod attached to the end of the rail containing the spring seat and to a lever, the lever being attached by means of a rod to a lever attached to a rod connected with the point of the switch, of a crank operating to release a spring latch, of a spring operating to hold in place the part of said device releasing the spring latch, of a spiral spring having a tendency to close the switch, all substantially as specified.

REISSUES.

12,649. PROCESS OF OBTAINING CONCENTRATED MILK CONTAINING CREAM. CHARLES H. CAMPBELL, New York, N. Y., assignor, by mesne assignments, to National Nutrient Company, Jersey City, N. J., a Corporation of New Jersey. Filed Dec. 14, 1905. Serial No. 291,793. Original No. 786,626, dated Apr. 4, 1905.



Claim.—1. The process of making a food product, which consists in partially concentrating skim-milk by applying heat thereto so as to partially vaporize the same, and exposing it at the same time to a blast of air in such volume as to carry off the heated vapor produced and to maintain the milk at a temperature below that of the applied heat, whereby the milk may be concentrated rapidly and at a low temperature, mixing cream with the partially-concentrated skim-milk, concentrating the mixture to a substantially solid condition by exposing extended surfaces thereof to the evaporating action of the air, and drying the mass by subdivision and exposure to air.

2. The process of making a food product, which consists in partially concentrating skim-milk by applying heat thereto so as to partially vaporize the same and exposing it at the same time to a blast of air in such volume as to carry off the heated vapor produced and to maintain the milk at a temperature below that of the applied heat, whereby the milk may be concentrated rapidly and at a low temperature, mixing cream with the partially-concentrated skim-milk, and concentrating the mixture by exposing extended surfaces thereof to the evaporating action of hot air.

3. The process of making a food product, which consists in partially concentrating skim-milk by applying heat thereto so as to partially vaporize the same, and exposing it at the same time to a blast of air to carry off the heated vapor produced and to maintain the milk at a temperature below that of the applied heat, whereby the milk may be concentrated rapidly and at a low temperature, mixing cream with the partially-concentrated skim-milk, and concentrating and drying the mixture.

4. The process of making a food product, which consists in partially concentrating skim-milk by applying heat thereto so as to partially vaporize the same, and exposing it at the same time to a blast of air to carry off the heated vapor produced and to maintain the milk at a temperature below that of the applied heat, whereby the milk may be concentrated rapidly and at a low temperature, this concentration being continued until the mass is reduced to about one-sixth its original volume, mixing cream with the partially-concentrated skim-milk, and concentrating and drying the mixture.

5. The process of making a food product, which consists in partially concentrating skim-milk by applying heat thereto so as to partially vaporize the same and exposing it at the same time to a blast of air to carry off the heated vapor produced, and to maintain the milk at a temperature below that of the applied heat, whereby the milk may be concentrated rapidly and at a low temperature, mixing cream with the partially-concentrated skim-milk, and concentrating and drying the mixture at a temperature below approximately 120° Fahrenheit.

6. The process of making a food product, which consists in partially concentrating skim-milk by applying heat thereto so as to partially vaporize the same and exposing it at the same time to a blast of air in such volume as to carry off the heated vapor produced, and maintain the milk at a temperature below the coagulating-point of albumen, whereby the milk is concentrated so rapidly as to avoid souring and at such a low temperature as to preserve the soluble and peptogenic qualities of the proteids, mixing cream with the partially-concentrated skim-milk, and concentrating and drying the mixture.

7. The process of making a food product, which consists in concentrating milk to a thick fluid constituting a culture-bed suitable for cream bacteria, adding unsterilized cream to the partially-concentrated milk and mixing it intimately therewith so as to inoculate the same with the cream bacteria, and further concentrating and drying the mixture at such temperatures as to retain uninjured at least a portion of the bacteria in the cream so that further bacterial action is inhibited while the bacteria are retained in a potentially-active state and give a flavor of cream to the final product.

8. The process of making a food product, which consists in concentrating milk to a thick fluid constituting a culture-bed suitable for cream bacteria, adding unsterilized cream to the partially-concentrated milk and mixing it intimately therewith so as to inoculate the same with the cream bacteria, and further concentrating and drying the mixture at a temperature below the coagulating-point of albumen so that the soluble and peptogenic qualities of the proteids are substantially undiminished, the temperature being also such as to retain uninjured at least a portion of the bacteria in the cream so that further bacterial action is inhibited while the bacteria are retained in a potentially-active state and give a flavor of cream to the final product.

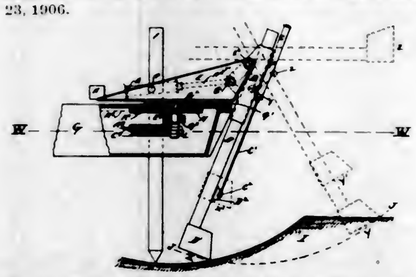
9. The process of making a food product, which consists in sterilizing and concentrating milk to a thick fluid constituting a culture-bed suitable for cream bacteria, adding unsterilized cream to the partially-concentrated sterilized milk and mixing it intimately therewith so as to inoculate the same with the cream bacteria, and further concentrating and drying the mixture at such temperatures as to retain uninjured at least a portion of the bacteria in the cream so that further bacterial action is inhibited while the bacteria are retained in a potentially-active state and give a flavor of cream to the final product.

10. In the process of making a concentrated food product, concentrating skim milk to a thick fluid having approximately one-sixth of its original volume by applying heat thereto so as to partially vaporize the same, and exposing it at the same time to a blast of air in such volume as to carry off the heated vapor produced and to maintain the milk at a temperature below that of the applied heat, whereby the milk may be concentrated rapidly and at a low temperature, and mixing cream with the concentrated skim-milk, until the mass is reduced to a stable emulsion and stopping the mixing before the fat globules are broken up.

11. In the process of making a concentrated food product, concentrating skim-milk to a thick fluid by heating it to a temperature below the coagulating point of albumen, so that the soluble and peptogenic qualities of the proteids are substantially undiminished, and mixing cream with the concentrated skim-milk, until the mass is reduced to a stable emulsion and stopping the mixing before the fat globules are broken up.

12. In the process of making a concentrated food product, concentrating milk to a thick fluid constituting a culture bed suitable for cream bacteria, and adding unsterilized cream to the partially concentrated milk and mixing it intimately therewith so as to inoculate the same with the cream bacteria, and further concentrating the mixture at such temperature as to retain uninjured at least a portion of the bacteria in the cream so that the bacteria produce a flavor of cream in the final product.

12,650. DREDGING AND EXCAVATING MACHINE. BARTON H. COFFEY, Boston, Mass. Filed Jan 3, 1907. Serial No. 350,679. Original No. 824,283, dated June 23, 1906.



Claim.—1. In a dredge or excavating machine, a housing rotatable upon a vertical axis, a dipper-handle guide on said housing rotatable upon a horizontal axis, a dipper-handle longitudinally movable upon the guide, forces applied to rotate the housing in opposite directions, forces applied at one side of its axis to rotate the guide in opposite directions, and forces applied to move the dipper-handle in opposite directions; for the purposes set forth.

2. In a dredge or excavating machine, a dipper-handle adapted to drive a dipper, rotatable about a vertical and upon a horizontal axis, and longitudinally movable at right angles to the horizontal axis, means to move same longitudinally, means to rotate same about the vertical axis, and a force-developing or multiplying organ or organs directly connected to rotate same about the horizontal axis; for the purposes set forth.

3. In a dredge or excavating machine, a housing rotatable upon a vertical axis, carrying a dipper-handle guide rotatable upon a horizontal axis, together with a force-developing or multiplying organ or organs to rotate said guide in opposite directions at will; for the purposes set forth.

4. In a dredge or excavating machine, a dipper-handle guide rotatable upon a horizontal axis; in combination with a directly connected force-developing or multiplying organ to rotate same.

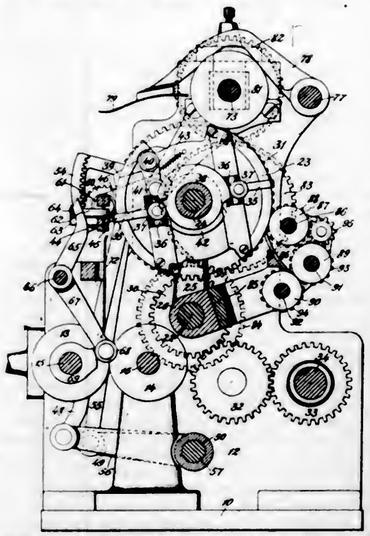
5. In a dredge or excavating machine, a crank rotatable upon a horizontal axis, integral with, or rigidly connected to, a guide; a dipper-handle, adapted to drive a dipper, movable upon the guide; an angle between the crank and guide, making the zone of maximum rotating effort coincide with an assigned portion of the arc described by the dipper; in combination with means to rotate the crank, and means to move the dipper-handle for the purposes set forth.

6. In a dredge or excavating machine, a housing rotatable upon a vertical axis, carrying a guide intergal with, or rigidly connected to, a crank rotatable upon a horizontal axis; a dipper-handle adapted to drive a dipper, movable upon the guide; an angle between the crank and the guide, making the zone of maximum rotating effort coincide with an assigned portion of the arc described by the dipper: in combination with, means to rotate the housing, means to rotate the crank, and means to move the dipper-handle, for the purposes set forth.

7. In a dredge or excavating machine, a dipper-handle guide rotatable upon a horizontal axis; in combination with a hydraulic cylinder to rotate same, and means to operate the cylinder, substantially as described.

8. In a dredge or excavating machine, a housing rotatable upon a vertical axis, carrying a dipper-handle guide rotatable upon a horizontal axis; and a hydraulic cylinder to rotate the guide: in combination with means to rotate the housing and means to operate the cylinder, substantially as described.

12,651. PAPER-BAG MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 15, 1907. Serial No. 368,400. Original No. 847,192, dated Mar. 12, 1907.



Claim.—1. The combination, with a blank support having a shiftable axis and provided with tuck holders, of a folding member provided with means including a defining edge for engaging and turning back the ply of a bag blank carried by the said support, and a movable carrier for pivotally supporting said folding member.

2. The combination, with a rotatable support having a shiftable axis and provided with tuck holders, of a folding member provided with means including a defining edge for engaging and turning back the ply of a bag blank carried by the support, and a movable carrier pivotally supporting said folding member.

3. The combination, with a rotatable blank support provided with tuck holders, of a folding member provided with means including a defining edge for engaging and turning back the ply of a bag blank carried by the support, a movable carrier for pivotally supporting said folding member and means for shifting the axis of the blank support toward and away from said folding member.

4. The combination, with a rotatable blank support having a shiftable axis and provided with tuck holders, of a folding plate provided with means including a defining edge for engaging and turning back the ply of a bag blank carried by the support, a movable carrier pivotally supporting said plate, and means for supporting said carrier for swinging movement.

5. The combination with a rotatable blank support having a shiftable axis and provided with tuck holders, of a

folding plate provided with means including a defining edge for engaging and turning back the ply of a bag blank carried by the support, movable arms pivotally supporting said folding plate, and means for swinging the said arms in the general direction of travel of the blank support.

6. The combination, with a blank support having a shiftable axis and provided with tuck holders, of a folding plate having box holders and a defining edge, a plate carrier having a fixed pivot axis and supporting the said plate for swinging movement, and means for swinging the said folding plate in its carrier.

7. The combination, with a blank support having a shiftable axis and tuck holders, of a folding plate having box holders and a defining edge, a plate carrier supported on a fixed pivot axis and supporting the folding plate for swinging movement, and gearing for swinging the plate.

8. The combination, with a blank support having a shiftable axis and having tuck holders, of a folding plate having box holders and a defining edge, a folding-plate carrier supported on a fixed pivot axis and pivotally supporting the said folding plate, and a cam operated sector for swinging the said plate.

9. The combination, with a blank support having a shiftable axis and having tuck holders, of a folding plate having box holders and a defining edge, a plate carrier supported on a fixed pivot axis and pivotally supporting the said folding plate, and a sector eccentrically pivoted relative to the blank support axis for swinging the said folding plate on the carrier.

10. The combination, with a rotary blank support journaled in movable bearings and having tuck holders, of a member having box holders and a defining edge, means for moving the said bearings, and means for advancing the said folding member with the blank support.

11. The combination, with a rotatable blank support having a shiftable axis, of a folding member provided with means including a defining edge for folding back the ply of a bag blank carried by the support, and means for shifting the said axis to separate the surface of the blank support from the said defining edge during the folding back operation.

12. The combination, with a rotatable blank support having a shiftable axis, of a folding member provided with means including a defining edge for folding back the ply of a bag blank carried by the support, means for moving said edge forward in unison with the blank support during its folding back movement; and means for shifting the said axis to separate the surface of the blank support from said defining edge during said folding back operation.

13. The combination, with a blank support having tuck holders, of movable arms supporting the said blank support for rotation, a folding member having means including a defining edge for folding back the ply of a bag blank carried by the support, and means for moving said arms to separate the surface of said blank support from the said defining edge during the folding back operation.

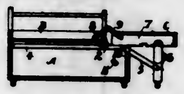
14. The combination, with a blank support having tuck holders, of movable arms supporting said blank support for rotation, a folding member provided with means including a defining edge for folding back the ply of a bag blank carried by the support, and a cam for moving said arms to separate the surface of the blank support from the defining edge during the turning back operation.

15. The combination, with a rotatable blank support having tuck holders, movable arms for supporting said blank support, a folding member having a defining edge and box holders, means carried by said arms for opening the box holders, and means for moving the arms to carry the surface of the blank support a substantial distance away from said defining edge during its operation.

16. The combination, with a rotary blank support having a shiftable axis and provided with tuck holders, of a folding member provided with means including a defining edge for folding back the ply of a bag blank carried by the support, means for shifting the axis of the blank support to carry its surface a substantial distance away from the defining edge during the folding back operation, and means for advancing the folding member in the direction of travel of the blank support during the said folding back operation.

17. The combination, with a rotary blank support having a shiftable axis and provided with tuck holders, of a folding plate provided with means including a defining edge for folding back the ply of a bag blank carried by the support, a movable carrier supporting the said folding plate for swinging movement, means for shifting the said axis to separate the surface of the blank support a substantial distance from the defining edge during the folding back operation, and means for advancing the plate carrier in the general direction of travel of the blank support during the said operation.

12,652. BED-COUCH. JOHN HOBY, San Francisco, Cal. Filed Sept. 1, 1904. Serial No. 222,953. Original No. 714,375, dated Nov. 25, 1902.



Claim.—1. The combination in a bed couch of a hollow box or base, a seat narrower than the box having its front edge flush therewith and the rear edge hinged to the top of the box, said seat having its end bars extended to points just within the back of the box, a back hinged to the seat adapted to be opened out about its hinges or to stand at approximately right angles with the seat, legs pivoted to the upper part of the back, braces connecting the lower parts of the legs with the rear ends of the side bars, and acting in conjunction with the legs to retain the back in its vertical position, the back of the base having slots into which the braces may pass, whereby the seat and back may be turned about the seat hinges and the lower edge of the back rest upon the top edge of the box.

2. The combination in a bed-couch of a containing box or base, a seat hinged to the top of the box between the front and rear, said seat having side bars extending back of the hinges, and within the box, stops within the box against which said bars contact when the seat is opened, and a back portion pivotally connected to said seat and to the ends of said bars.

3. The combination in a bed-couch of a containing box or base, a seat hinged to the box top between the front and rear, rigid side bars on said seat extending behind the hinges, a back carried by and turnable in unison with the seat about its hinges to open the box, the lower edge of the back contacting with the box when opened, and stops against which the seat side bars simultaneously contact.

4. In a bed-couch, a hollow base, a seat having bars projecting rearwardly within the box, and hinges connecting the seat with the base forward of the rear ends of the bars, a back turnably connected with the seat, and braces connecting said back with the seat bars and normally holding it at right angles and tiltable in unison with the seat, the back of the box having slots to admit the braces and means to limit the tilting movement of the seat and back.

5. In a bed couch, a hollow base, a seat hinged to the base between the front and rear and having side bars extending within and to the rear of the box, a back having foldable legs pivoted therein, braces connecting the legs with the seat bars the connection of said braces with said bars being, when the seat is closed, proximate to the horizontal plane of the seat hinges to make it easy for the back to overbalance the seat when the two are tilted backward and channels in the rear of the base within which the braces are received when the seat and back are tilted to the rear and means for limiting such tilting movement.

6. The combination in a bed-couch of a hollow base, a seat hinged to the top and in advance of the rear of the base, a back pivotally connected with the seat, a foldable leg on the back and a link connecting the leg with a part rigid with the seat, and means other than the pivotal connection of the back with the seat for supporting the edge of the back adjacent to the seat when the back is opened out to form a bed.

7. The combination in a bed-couch of a hollow base, a seat hinged to the top and in advance of the rear of the base, a back pivotally connected with the seat, a foldable

leg on the back and a link connecting the leg with a part rigid with the seat, means other than the pivotal connection of the back with the seat for supporting the edge of the back adjacent to the seat when the back is opened out to form a bed, and the back of the couch having a slot to accommodate and guide the link.

8. A bed couch comprising a hollow base, a seat hinged to the top and proximate to the back of the base, projections from the rear under side of the seat, said projections being wholly contained within the base and extending beyond the hinges of the seat, a back portion pivotally connected with the seat, legs hinged to the back and links pivotally connected to the legs and to said seat projections, and means admitting of the back being opened out into the plane of the seat and of the legs contacting with the floor to support the back in such opened position.

9. In a bed couch, the combination of a hollow base, a seat hinged to the base and having rearward projections within the base and below and beyond its hinges, a back turnably connected with the seat, braces connecting the back with said seat projections and tiltable in unison with, and normally holding the back at right angles to the seat, and slots in the base and in the plane of said braces to receive and guide the latter when the parts are turned on their pivots.

10. A bed-couch comprising a hollow box or base, a seat and a back, the seat having bars which project beyond it to a point underneath the back, a support for the back pivoted to said bars and arranged to hold the back at right angles with the seat both when used as a sofa or tilted back to gain access to the box, the seat pivoted to the base at a suitable distance front of the pivot of the support of the back on said rearwardly projecting seat bars to make it easy for the back to overbalance the seat when tilted backward, and a suitable stop between the base and the back to prevent the back sinking farther than is desirable to make it safe and easy to open and close when the back is at right angles with the seat.

11. In a couch, the combination of a box or hollow base, a seat hinged thereto forward of the back of the box, rearward projections on the seat, a back hinged to the seat, legs hinged to the back, braces hinged to the legs and to said rearward projections, said braces, legs and back cooperating to hold the back at right angles to the seat, and means interposing a stop to the pivotal movement of the braces when the seat is turned on its hinges to give access to the box.

12. In a couch, the combination of a box or hollow base, a seat hinged thereto forward of the back of the box, rearward projections on the seat, a back hinged to the seat, legs hinged to the back, braces hinged to the legs and to said rearward projection, said braces, legs and back cooperating to hold the back at right angles to the seat, and means interposing a stop to the pivotal movement of the braces when the seat is turned on its hinges to give access to the box, said stop means provided by the back of the box.

DESIGNS.

38,553. BADGE OR EMBLEM. REUBEN S. CLYMER, Allentown, Pa. Filed Apr. 18, 1907. Serial No. 369,036. Term of patent 14 years.



Claim.—The ornamental design for a badge or emblem as shown.

38,554. FRATERNITY EMBLEM. DUNNING S. WILSON, Louisville, Ky., assignor to Grand Chapter of Phi Chi Medical Fraternity, Louisville, Ky., a Corporation of Kentucky. Filed Apr. 1, 1907. Serial No. 365,895. Term of patent 14 years.



Claim.—The ornamental design for a fraternity emblem, as shown.

38,555. MEDAL. FRED B. RHODES, Washington, D. C. Filed Apr. 13, 1907. Serial No. 368,121. Term of patent 3½ years.



Claim.—The ornamental design for a medal, as shown.

38,556. BASE-BALL EMBLEM. JULIUS B. LEVI, Chicago, Ill. Filed Mar. 25, 1907. Serial No. 364,545. Term of patent 3½ years.



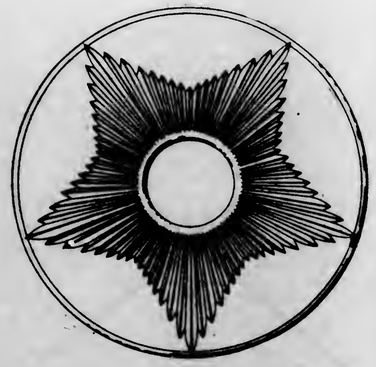
Claim.—The ornamental design for a base ball emblem, as shown.

38,557. FLASK. JOHN M. LEVIS, Chicago, Ill., assignor to Illinois Glass Company, Alton, Ill., a Corporation. Filed Mar. 11, 1907. Serial No. 361,872. Term of patent 14 years.



Claim.—The ornamental design for a flask as shown.

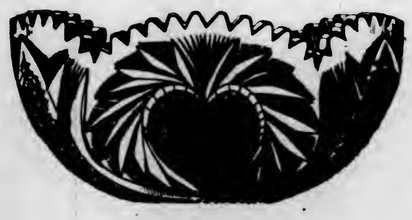
38,558. REFLECTOR OR SIMILAR ARTICLE. OTIS A. MYGATT, New York, N. Y. Filed Mar. 10, 1906. Serial No. 305,413. Term of patent 14 years.



Claim.—The ornamental design for a reflector or similar article having reflecting prisms arranged in form of a star as shown and described.

38,559. BOWL. FRANK C. PARSCHE, Chicago, Ill. Filed Apr. 6, 1907. Serial No. 366,875. Term of patent 7 years.

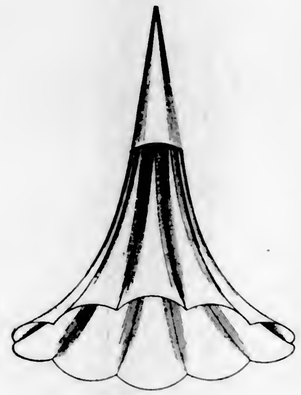






Claim.—The ornamental design for a bowl, as shown.

38,560. HORN. LEONARD L. TERHUNE, Newark, N. J. Filed Sept. 8, 1906. Serial No. 333,844. Term of patent 7 years.



Claim.—The ornamental design for a horn, as shown.

38,561. BACK FOR MIRRORS, BRUSHES, AND SIMILAR TOILET ARTICLES. GEORGE H. BERRY, Shelton, Conn., assignor to International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed Apr. 20, 1907. Serial No. 369,394. Term of patent 7 years.



Claim.—The ornamental design for a back for mirrors, brushes and similar toilet articles, as shown.

38,562. BACK FOR MIRRORS, BRUSHES, AND SIMILAR TOILET ARTICLES. GEORGE H. BERRY, Shelton, Conn., assignor to International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed Apr. 20, 1907. Serial No. 369,395. Term of patent 7 years.



Claim.—The ornamental design for a back for mirrors, brushes and similar toilet articles, as shown.

38,563. BACK FOR MIRRORS, BRUSHES, AND SIMILAR TOILET ARTICLES. GEORGE H. BERRY, Shelton, Conn., assignor to International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed Apr. 20, 1907. Serial No. 369,396. Term of patent 7 years.



Claim.—The ornamental design for a back for mirrors, brushes and similar toilet articles, as shown.

38,564. BACK FOR MIRRORS, BRUSHES, AND SIMILAR TOILET ARTICLES. GEORGE H. BERRY, Shelton, Conn., assignor to International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed Apr. 20, 1907. Serial No. 369,397. Term of patent 7 years.



Claim.—The ornamental design for a back for mirrors, brushes and similar toilet articles, as shown.

38,565. BACK FOR MIRRORS, BRUSHES, AND SIMILAR TOILET ARTICLES. GEORGE H. BERRY, Shelton, Conn., assignor to International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed Apr. 20, 1907. Serial No. 369,398. Term of patent 7 years.



Claim.—The ornamental design for a back for mirrors, brushes and similar toilet articles, as shown.

38,566. POST-CARD. ELISABETH FAITSCHE, Jersey City, N. J. Filed Apr. 11, 1907. Serial No. 367,716. Term of patent 3½ years.



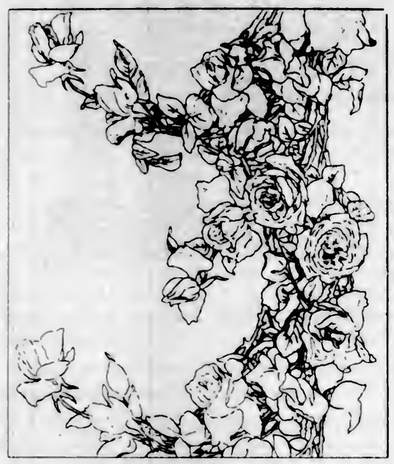
Claim.—The ornamental design for a post card, as shown.

38,567. PILE FABRIC. CHARLES SACKMAN, Brooklyn, N. Y., assignor to The Salts Textile Manufacturing Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Apr. 30, 1906. Serial No. 314,607. Term of patent 3½ years.



Claim.—The ornamental design for a pile fabric, as shown.

38,568. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 17, 1907. Serial No. 368,800. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,569. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 17, 1907. Serial No. 368,802. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,570. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 17, 1907. Serial No. 368,803. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,571. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 17, 1907. Serial No. 368,804. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,572. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 17, 1907. Serial No. 368,805. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,573. CHANDELIER-BODY. ERNEST GOTHBERG, Jersey City, N. J. Filed Mar. 22, 1907. Serial No. 363,992. Term of patent 7 years.



Claim.—The ornamental design for a chandelier body, as shown.

38,574. GAS-RANGE. AUGUST T. WEHRLE, Newark, Ohio. Filed Mar. 12, 1907. Serial No. 362,076. Term of patent 7 years.



Claim.—The ornamental design for a gas range, substantially as shown.

38,575. TEXTILE FABRIC. SOPHIA L. CROWNFIELD, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 17, 1907. Serial No. 368,801. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

TRADE-MARKS

PUBLISHED MAY 14, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,127. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) NAUMKEAG STEAM COTTON CO., Salem, Mass. Filed Apr. 11, 1905.



Particular description of goods.—Cotton Sheeting.

Ser. No. 1,825. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) NATHAN M. URI, Louisville, Ky. Filed Apr. 17, 1905.

THE
Claypool
→M&C.←

Particular description of goods.—Whisky.

Ser. No. 2,489. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE CHENEY CHEMICAL CO. INC., Manchester, Conn. Filed Apr. 20, 1905. Used ten years.



Particular description of goods.—Tooth-Powder.

Ser. No. 2,705. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) SARAH C. MORRILL, New York, N. Y. Filed Apr. 22, 1905.

⊕M⊕

Particular description of goods.—Saw-Sets, Seal-Presses, Punches and Nippers Without Cutting Edges, Screw-Drivers, Hacksaw-Frames, Nail-Pullers, Spike-Pullers, and Pliers Without Cutting Edges.

Ser. No. 3,616. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) UNDERFEED STOKER COMPANY OF AMERICA, Chicago, Ill. Filed Apr. 29, 1905. Used ten years.

JONES

Particular description of goods.—Underfeed-Stokers.

Ser. No. 5,306. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) WEISS EICHOLD LIQUOR CO., Mobile, Ala. Filed May 12, 1905. Used ten years.

BELLE OF MOBILE



Particular description of goods.—Whisky.

Ser. No. 5,308. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) WEISS EICHOLD LIQUOR CO., Mobile, Ala. Filed May 12, 1905. Used ten years.

SIMON SUGGS



Particular description of goods.—Whisky.

Ser. No. 5,411. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) SIEGEL COOPER & CO., Chicago, Ill. Filed May 13, 1905.

Hazel



Particular description of goods.—Tapioca and Split Peas.

Ser. No. 5,417. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) SIEGEL COOPER & CO., Chicago, Ill. Filed May 13, 1905.

HAZEL



Particular description of goods.—Nutmegs, Celery Salt, Mustard, Allspice, Cinnamon, Paprika, Sage, Pepper, Savory, Curry-Powder, Cloves, Mint, Cayenne, Celery Pepper, and Thyme.

Ser. No. 5,428. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) SIEGEL COOPER & CO., Chicago, Ill. Filed May 13, 1905. Used ten years.

Milford Manufacturing Co.



Particular description of goods.—Vinegar, Catsup, and Pickles.

Ser. No. 6,021. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) GRONSETH & OLSEN, Duluth, Minn. Filed May 18, 1905.



VIKING

Particular description of goods.—Wheat-Flour.

Ser. No. 7,471. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) INTERNATIONAL SHOE COMPANY, Boston, Mass. Filed June 5, 1905.

DOLLAR-OFF

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 8,562. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) SAM LANG, Denver, Colo. Filed June 19, 1905.

Gem Ribbon



Particular description of goods.—Whisky.

Ser. No. 8,722. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) NEW YORK GLUCOSE CO., New York, N. Y. Filed June 21, 1905.



Particular description of goods.—Corn-Starch.

Ser. No. 10,035. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE GINTER GROCERY CO., Boston, Mass. Filed July 11, 1905.

GLEN ADAIR

Particular description of goods.—Whisky.

Ser. No. 11,322. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) CLEVELAND BAKING POWDER COMPANY, New York, N. Y. Filed Aug. 7, 1905. Used ten years.



The annular band is red.

Particular description of goods.—Baking-Powder.

Ser. No. 11,631. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) A. R. JUSTICE COMPANY, Philadelphia, Pa. Filed Aug. 14, 1905.

BATTLE AXE



Particular description of goods.—Pocket-Knives, Carving-Knives, Butcher-Knives, Bread-Knives, Razors, Scissors, and Shears.

Ser. No. 12,550. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) NEEDHAM VEALL & TYZACK LTD., Sheffield, England. Filed Sept. 14, 1905. Used ten years.



Particular description of goods.—Cutlery in General, and other Hand-Tools Having a Cutting Edge.

Ser. No. 13,254. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN PRICE HATTER, Decatur, Tex. Filed Oct. 3, 1905.

J. P. Hatter.

Particular description of goods.—A Remedy for Piles.

Ser. No. 15,208. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio. Filed Dec. 5, 1905.

ELIXIR

Particular description of goods.—Prepared Linseed-Oil.

Ser. No. 15,221. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) JAS. H. WELCH, Rochester, N. Y. Filed Dec. 5, 1905.

PLAYERS

Particular description of goods.—A Game Played with Cards.

Ser. No. 15,356. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) MINOT, HOOPER & CO., New York, N. Y. Filed Dec. 12, 1905. Used ten years.

SUN

Particular description of goods.—Sheetings, Shirtings, Drillings, and Osnaburgs.

Ser. No. 16,954. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) HALL BROTHERS, Sheffield, England. Filed Feb. 12, 1906. Used ten years.



Particular description of goods.—Cutlery in General, Except Surgical Instruments, and other Hand-Tools Having a Cutting Edge.

Ser. No. 17,259. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) EDWARD L. SIBLEY, Bennington, Vt. Filed Feb. 23, 1906. Used ten years.

Challenge

Particular description of goods.—Eyelets.

Ser. No. 17,428. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) ST. LOUIS UNION TRUST COMPANY, St. Louis, Mo. Filed Mar. 1, 1906. Used ten years.

CHARTER OAK

Particular description of goods.—Stoves and Ranges.

Ser. No. 18,493. (CLASS 8. DETERGENTS.) THE REMMERS SOAP CO., Cincinnati, Ohio. Filed Apr. 4, 1906.



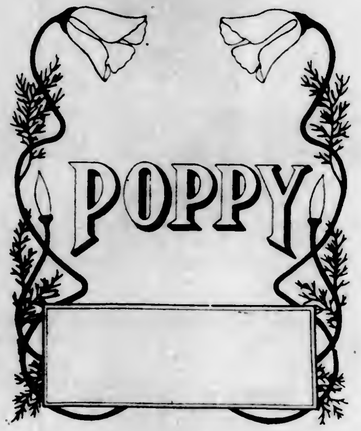
Particular description of goods.—Toilet Soap.

Ser. No. 18,498. (CLASS 28. SEWING-MACHINES AND ATTACHMENTS.) THE SINGER MANUFACTURING COMPANY, New York, N. Y. Filed Apr. 4, 1906.

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Particular description of goods.—Family and Manufacturing Sewing-Machines, Parts of Sewing-Machines, Sewing-Machine Covers, Tables, and Stands, and the Attachments Pertaining to and Used with Sewing-Machines, Embracing Rufflers, Trackers, Chain-Stitch, Embroidery, and other Attachments and Parts of Such Attachments.

Ser. No. 18,911. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) HALE BROS. INC., San Francisco, Cal. Filed Apr. 18, 1906.



Particular description of goods.—Muslin Sheets.

Ser. No. 19,420. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) FRED NIELSEN, Milwaukee, Wis. Filed May 10, 1906.



Particular description of goods.—Bread.

Ser. No. 20,153. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE A. SPIEGEL CO., Milwaukee, Wis. Filed June 8, 1906. Used ten years.

PHALEN'S BITTERS

Particular description of goods.—Medicinal Bitters Intended Particularly for the Treatment of Rheumatism, Gout, Rheumatic Fever, Kidney and Liver Complaints, Chronic Constipation, Indigestion, and Dyspepsia.

Ser. No. 20,363. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) P. BAILLY & CIE., Paris, France. Filed June 16, 1906. Used ten years.



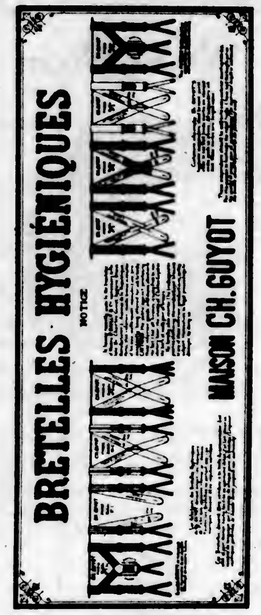
Particular description of goods.—Shoulder-Braces and Suspenders.

Ser. No. 20,364. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) P. BAILLY & CIE., Paris, France. Filed June 16, 1906. Used ten years.



Particular description of goods.—Shoulder-Braces and Suspenders.

Ser. No. 20,365. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) P. BAILLY & CIE., Paris, France. Filed June 16, 1906. Used ten years.



Particular description of goods.—Shoulder-Braces and Suspenders.

Ser. No. 22,223. (CLASS 17. WOOD MANUFACTURES NOT OTHERWISE CLASSIFIED.) JAMES F. NEWLAND, Fort Dodge, Iowa. Filed Sept. 21, 1906.

PURE FOOD EXHIBITOR

Particular description of goods.—Bread-Boards Designed to be Used for Kneading and Slicing Bread.

Ser. No. 22,562. (CLASS 12. MASONRY MATERIALS.) J. A. & W. BIRD & Co., Boston, Mass. Filed Oct. 6, 1906.

REXFLINT

Particular description of goods.—Felt and Paper for Roofing and Covering Buildings and for Insulation Against Heat and Cold.

Ser. No. 22,652. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) MALLEABLE IRON RANGE CO., Beaver Dam, Wis. Filed Oct. 11, 1906.

Monarch

Particular description of goods.—Ranges other than Gas-Stoves, Oil-Stoves, Gasolene or Vapor Stoves, and Vapor Burners and Ovens.

Ser. No. 17,259. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) EDWARD L. SIBLEY, Bennington, Vt. Filed Feb. 23, 1906. Used ten years.

Challenge

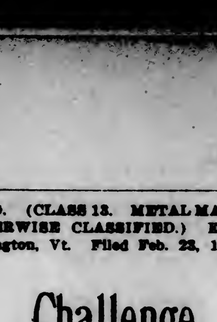
Particular description of goods.—Eyelets.

Ser. No. 17,428. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) ST. LOUIS UNION TRUST COMPANY, St. Louis, Mo. Filed Mar. 1, 1906. Used ten years.



Particular description of goods.—Stoves and Ranges.

Ser. No. 18,493. (CLASS 8. DETERGENTS.) THE REMMERS SOAP CO., Cincinnati, Ohio. Filed Apr. 4, 1906.



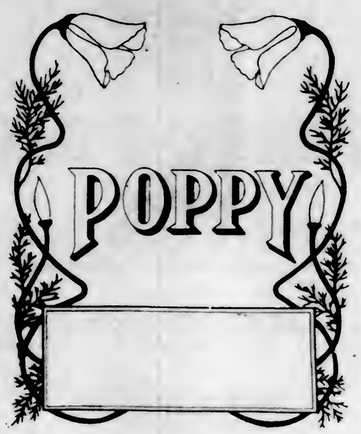
Particular description of goods.—Toilet Soap.

Ser. No. 18,498. (CLASS 28. SEWING-MACHINES AND ATTACHMENTS.) THE SINGER MANUFACTURING COMPANY, New York, N. Y. Filed Apr. 4, 1906.

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Particular description of goods.—Family and Manufacturing Sewing-Machines, Parts of Sewing-Machines, Sewing-Machine Covers, Tables, and Stands, and the Attachments Pertaining to and Used with Sewing-Machines, Embracing Rufflers, Tuckers, Chain-Stitch, Embroidery, and other Attachments and Parts of Such Attachments.

Ser. No. 18,911. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) HALE BROS. INC., San Francisco, Cal. Filed Apr. 18, 1906.



Particular description of goods.—Muslin Sheets.

Ser. No. 19,420. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) FRED NIELSEN, Milwaukee, Wis. Filed May 10, 1906.



Particular description of goods.—Bread.

Ser. No. 20,153. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE A. SPIEGEL CO., Milwaukee, Wis. Filed June 8, 1906. Used ten years.

PHALEN'S BITTERS

Particular description of goods.—Medicinal Bitters Intended Particularly for the Treatment of Rheumatism, Gout, Rheumatic Fever, Kidney and Liver Complaints, Chronic Constipation, Indigestion, and Dyspepsia.

Ser. No. 20,363. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) P. BAILLY & CIE., Paris, France. Filed June 16, 1906. Used ten years.


BRETELLES HYGIÉNIQUES
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MARQUE DÉPOSÉE
MARQUE DÉPOSÉE
Boucles indéplaçables
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Ser. No. 22,980. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) WURTTEMBERGISCHE HARMONIKAFABRIK, CH. WEISS, Trossingen, Germany. Filed Oct. 26, 1906.

Pipeolion

Particular description of goods.—Mouth-Organs.

Ser. No. 23,170. (CLASS 71. TOBACCO PRODUCTS.) R. FERNANDEZ & CA., Havana, Cuba. Filed Nov. 8, 1906. Used ten years.

LAS PERLAS F.L. HABANA

Particular description of goods.—Cigars.

Ser. No. 23,255. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany. Filed Nov. 10, 1906.



Particular description of goods.—Coal-Tar Colors, Including Artificial Indigo.

Ser. No. 23,451. (CLASS 55. WINES.) CARMEL WINE COMPANY, New York, N. Y. Filed Nov. 19, 1906.

TABOR

Particular description of goods.—Wines.

Ser. No. 23,484. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) JÖRGEN B. LYSHOLM, Trondhjem, Norway. Filed Nov. 20, 1906. Used ten years.



Particular description of goods.—A Cordial, Punch, and Brandy.

Ser. No. 23,485. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) JÖRGEN B. LYSHOLM, Trondhjem, Norway. Filed Nov. 20, 1906. Used ten years.



Particular description of goods.—Cordial.

Ser. No. 23,643. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) JOHN A. ROEBLINGS SONS CO., Trenton, N. J. Filed Nov. 28, 1906. Used ten years.

ROEBLING

Particular description of goods.—Insulated Electric Wire and Cables.

Ser. No. 23,644. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) JOHN A. ROEBLINGS SONS CO., Trenton, N. J. Filed Nov. 28, 1906.

JAR

Particular description of goods.—Insulated Electric Wire and Cables.

Ser. No. 23,866. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) FRANCIS STANHOPE HANSON, London, England. Filed Dec. 7, 1906.

THE PEATMOOR OLD SCOTCH WHISKY.

Particular description of goods.—Whisky.

Ser. No. 23,870. (CLASS 47. CONFECTIONERY.) REISS & BRADY, New York, N. Y. Filed Dec. 8, 1906.

CRESCA

Particular description of goods.—Bonbons, Candied Orange-Peel, Candied Lemon-Peel, Candied Cherries, Candied Apricots, Candied Limes, Candied Pears, Candied Figs, Candied Prunes, Candied Almonds, Candied Melons, Candied Strawberries, Candied Angelique, Candied Violets, Candied Mint-Leaves, Candied Lilac-Leaves, Candied Rose-Leaves, Candied Pineapples, Candied Pineapple-Cubes, and Stem-Ginger.

Ser. No. 24,323. (CLASS 48. DAIRY PRODUCTS.) McCANNA & FRASER COMPANY, Burlington, Wis., and Philadelphia, Pa. Filed Dec. 28, 1906.

GLOBE BUTTER

Particular description of goods.—A Certain Specially-Prepared Butter-Print.

Ser. No. 24,324. (CLASS 48. DAIRY PRODUCTS.) McCANNA & FRASER COMPANY, Burlington, Wis., and Philadelphia, Pa. Filed Dec. 28, 1906.

WILDE ROCK WR

Particular description of goods.—A Certain Specially-Prepared Butter-Print.

Ser. No. 24,424. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) LAMSON & HUBBARD, Boston, Mass. Filed Jan. 3, 1907. Used ten years.

Lamson & Hubbard

Particular description of goods.—Men's, Women's, Boys', and Girls' Hats and Caps and other Headwear Made in Whole or in Part of Silk, Velvet, Wool, Cloth, or other Textile Fabrics, or of Felt, Fur, Fur-Felt, or Straw.

Ser. No. 24,486. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) DE GRAFF & PALMER, New York, N. Y. Filed Jan. 7, 1907.

SAPHO

Particular description of goods.—Elastic Webbing.

Ser. No. 24,507. (CLASS 47. CONFECTIONERY.) ELMER H. FARNSLEY, Omaha, Nebr. Filed Jan. 7, 1907.

Pit-Pat

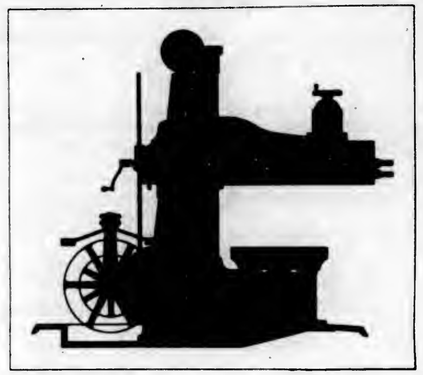
Particular description of goods.—Candy.

Ser. No. 24,598. (CLASS 2. MINERAL.) STANLEY DOGGETT, New York, N. Y. Filed Jan. 12, 1907.



Particular description of goods.—Foundry Facings and Partings of All Sorts.

Ser. No. 24,825. (CLASS 68. PUBLICATIONS.) THE DETRICK & HARVEY MACHINE CO OF BALTIMORE CITY, Baltimore, Md. Filed Jan. 22, 1907. Used ten years.



Particular description of goods.—Pamphlets and Catalogues.

Ser. No. 25,004. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) DOMINGO PANIAGUA BERMUDEZ, Philadelphia, Pa. Filed Jan. 29, 1907.

Hahnemann's Homeopathics



Particular description of goods.—Proprietary Tonic Medicines.

Ser. No. 25,013. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JONATHAN BAKER, Buffalo, N. Y. Filed Jan. 30, 1907.



The diamond being printed in red.

Particular description of goods.—A Remedy in Liniment, Salve, and Powder Form for Diseases, Ailments, and Sores of Horses or other Beasts.

Ser. No. 25,058. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) LINCOLN OVERALL AND SHIRT CO., Lincoln, Nebr. Filed Feb. 1, 1907.

Mary Jane

Particular description of goods.—Ladies' Aprons.

Ser. No. 25,296. (CLASS 8. DETERGENTS.) JACOB ADLER, New York, N. Y. Filed Feb. 14, 1907.

AURINE

Particular description of goods.—A Detergent Cleaning Preparation for Furniture.

Ser. No. 25,346. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) RAJAH AUTO-SUPPLY COMPANY, New York, N. Y. Filed Feb. 16, 1907.

Rajah

Particular description of goods.—Spark-Plugs, Terminals, Hoods, Bushings, and Porcelains.

Ser. No. 25,352. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) WADHAMS OIL COMPANY, Milwaukee, Wis. Filed Feb. 16, 1907.

BADGER

Particular description of goods.—Solid and Liquid Lubricants for Use on Engines and Machinery.

Ser. No. 25,361. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) BENTLEY & OLMSTED COMPANY, Des Moines, Iowa. Filed Feb. 18, 1907.

"REPUBLIC"

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 25,467. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.



Particular description of goods.—Canned Salmon.

Ser. No. 25,573. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

SPALDING

Particular description of goods.—Base-Ball Shirts, Pants, and Uniforms, Tennis and Outing Suits, Foot-Ball Jackets and Pants, Bicycle, Golfing, and Outing Uniforms, Bathing Suits and Trunks, Athletic and Outing Shirts, Tights, Fencing-Jackets, and Base-Ball, Foot-Ball, and Outing Caps and Hats, the Goods Herein Enumerated Not Including Goods Made of Knitted Fabrics.

Ser. No. 25,577. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.



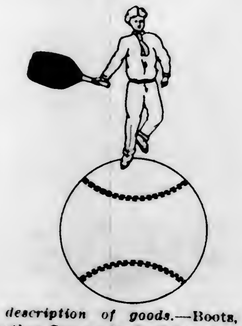
Particular description of goods.—Base-Ball Shirts, Pants, and Uniforms, Tennis and Outing Suits, Foot-Ball Jackets and Pants, Bicycle, Golfing, and Outing Uniforms, Bathing Suits and Trunks, Athletic and Outing Shirts, Tights, Fencing-Jackets, and Base-Ball, Foot-Ball, and Outing Caps and Hats, the Goods Herein Enumerated Not Including Goods Made of Knitted Fabrics.

Ser. No. 25,581. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.



Particular description of goods.—Base-Ball Shirts, Pants, and Uniforms, Tennis and Outing Suits, Foot Ball Jackets and Pants, Bicycle, Golfing, and Outing Uniforms, Bathing Suits and Trunks, Athletic and Outing Shirts, Tights, Fencing-Jackets, and Base-Ball, Foot-Ball, and Outing Caps and Hats, the Goods Herein Enumerated Not Including Goods Made of Knitted Fabrics.

Ser. No. 25,603. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) WRIGHT & DITSON, Jersey City, N. J. Filed Feb. 25, 1907.



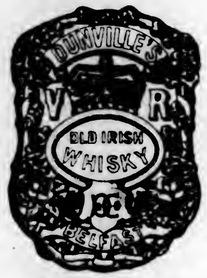
Particular description of goods.—Boots, Shoes, and Slippers of Leather Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golf, for Running, in the Gymnasium, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,618. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE AUTOTONE COMPANY, New York, N. Y. Filed Feb. 26, 1907.

Accentor

Particular description of goods.—Self-Playing Pianos and Self-Playing Organs.

Ser. No. 25,621. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) DUNVILLE & CO., LIMITED, Belfast, Ireland, and New York, N. Y. Filed Feb. 26, 1907. Used ten years.



Particular description of goods.—Whisky.

Ser. No. 25,630. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) THE COX BLODGETT DRY GOODS COMPANY, Wichita, Kans. Filed Feb. 26, 1907.



Particular description of goods.—Pants, Overalls, Jumpers, Dress-Shirts, and Negligée Shirts.

Ser. No. 25,631. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) TAYLOR, STILES & COMPANY, Riegelsville, N. J. Filed Feb. 25, 1907.



Particular description of goods.—Machinery and Parts of Machinery for Cutting Stock for the Manufacture of Paper.

Ser. No. 25,675. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed Mar. 1, 1907.

MONTAUK

Particular description of goods.—Wheat-Flour.

Ser. No. 25,704. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) R. HUDNUT'S PHARMACY, New York, N. Y. Filed Mar. 2, 1907.

CRÈME SEC

Particular description of goods.—Ointments.

Ser. No. 25,795. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) BISCHOF, STERNE & STEIN, Cincinnati, Ohio. Filed Mar. 6, 1907.

B.S.&S.

Particular description of goods.—Ladies', Misses', and Children's Suits, Coats, Jackets, Dress-Skirts, and Fur Garments.

Ser. No. 25,800. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) EDWARD H. HORWOOD, New York, N. Y. Filed Mar. 6, 1907. Used ten years.

"LITTLE BEAUTY"

Particular description of goods.—Hose-Supporters.

Ser. No. 25,818. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Mar. 7, 1907.



Particular description of goods.—Resistance-Rods, Coils, Contact-Blocks, and Bearings, All Being Parts of Electrical Apparatus.

Ser. No. 25,819. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) THE MORGAN CRUCIBLE COMPANY LD., Battersea, London, England. Filed Mar. 7, 1907.



Particular description of goods.—Furnaces, (Experimental,) Including Assayers' Furnaces; Muffles, Being Goods of the Nature of Experimental Furnaces or Assayers' Furnaces.

Ser. No. 25,298. (CLASS 8. DETERGENTS.) JACOB ADLER, New York, N. Y. Filed Feb. 14, 1907.

AURINE

Particular description of goods.—A Detergent Cleaning Preparation for Furniture.

Ser. No. 25,346. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) RAJAH AUTO-SUPPLY COMPANY, New York, N. Y. Filed Feb. 16, 1907.

Rajah

Particular description of goods.—Spark-Plugs, Terminals, Hoods, Bushings, and Porcelains.

Ser. No. 25,352. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) WADHAMS OIL COMPANY, Milwaukee, Wis. Filed Feb. 16, 1907.

BADGER

Particular description of goods.—Solid and Liquid Lubricants for Use on Engines and Machinery.

Ser. No. 25,361. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) BENTLEY & OLMSTED COMPANY, Des Moines, Iowa. Filed Feb. 18, 1907.

"REPUBLIC"

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 25,467. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.



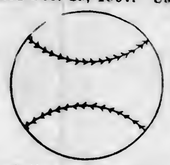
Particular description of goods.—Canned Salmon.

Ser. No. 25,573. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

SPALDING

Particular description of goods.—Base-Ball Shirts, Pants, and Uniforms, Tennis and Outing Suits, Foot-Ball Jackets and Pants, Bicycle, Golfing, and Outing Uniforms, Bathing Suits and Trunks, Athletic and Outing Shirts, Tights, Fencing-Jackets, and Base-Ball, Foot-Ball, and Outing Caps and Hats, the Goods Herein Enumerated Not Including Goods Made of Knitted Fabrics.

Ser. No. 25,577. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.



Particular description of goods.—Base-Ball Shirts, Pants, and Uniforms, Tennis and Outing Suits, Foot-Ball Jackets and Pants, Bicycle, Golfing, and Outing Uniforms, Bathing Suits and Trunks, Athletic and Outing Shirts, Tights, Fencing-Jackets, and Base-Ball, Foot-Ball, and Outing Caps and Hats, the Goods Herein Enumerated Not Including Goods Made of Knitted Fabrics.

Ser. No. 25,581. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.



Particular description of goods.—Base-Ball Shirts, Pants, and Uniforms, Tennis and Outing Suits, Foot Ball Jackets and Pants, Bicycle, Golfing, and Outing Uniforms, Bathing Suits and Trunks, Athletic and Outing Shirts, Tights, Fencing-Jackets, and Base-Ball, Foot-Ball, and Outing Caps and Hats, the Goods Herein Enumerated Not Including Goods Made of Knitted Fabrics.

Ser. No. 25,603. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) WRIGHT & DITSON, Jersey City, N. J. Filed Feb. 25, 1907.



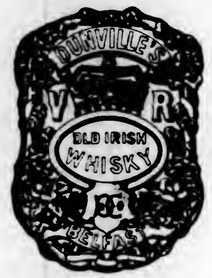
Particular description of goods.—Boots, Shoes, and Slippers of Leather Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golf, for Running, in the Gymnasium, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,618. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE AUTOTONE COMPANY, New York, N. Y. Filed Feb. 26, 1907.

Accentor

Particular description of goods.—Self-Playing Pianos and Self-Playing Organs.

Ser. No. 25,621. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) DUNVILLE & CO., LIMITED, Belfast, Ireland, and New York, N. Y. Filed Feb. 26, 1907. Used ten years.



Particular description of goods.—Whisky.

Ser. No. 25,630. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) THE COX BLODGETT DRY GOODS COMPANY, Wichita, Kans. Filed Feb. 26, 1907.



Particular description of goods.—Pants, Overalls, Jumpers, Dress-Shirts, and Negligée Shirts.

Ser. No. 25,631. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) TAYLOR, STILES & COMPANY, Riegelsville, N. J. Filed Feb. 25, 1907.



Particular description of goods.—Machinery and Parts of Machinery for Cutting Stock for the Manufacture of Paper.

Ser. No. 25,675. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) ABRAHAM & STRAUS, Brooklyn, N. Y. Filed Mar. 1, 1907.

MONTAUK

Particular description of goods.—Wheat-Flour.

Ser. No. 25,704. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) R. HUDNUT'S PHARMACY, New York, N. Y. Filed Mar. 2, 1907.

CRÊME SEC

Particular description of goods.—Ointments.

Ser. No. 25,795. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) BISCHOF, STERNE & STEIN, Cincinnati, Ohio. Filed Mar. 6, 1907.

B.S.&S.

Particular description of goods.—Ladies', Misses', and Children's Suits, Coats, Jackets, Dress-Skirts, and Fur Garments.

Ser. No. 25,800. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) EDWARD H. HORWOOD, New York, N. Y. Filed Mar. 6, 1907. Used ten years.

"LITTLE BEAUTY"

Particular description of goods.—Hose-Supporters.

Ser. No. 25,818. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Mar. 7, 1907.



Particular description of goods.—Resistance-Rods, Coils, Contact-Blocks, and Bearings, All Being Parts of Electrical Apparatus.

Ser. No. 25,819. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) THE MORGAN CAUCIBLE COMPANY LD., Battersea, London, England. Filed Mar. 7, 1907.



Particular description of goods.—Furnaces, (Experimental,) Including Assayers' Furnaces; Muffles, Being Goods of the Nature of Experimental Furnaces or Assayers' Furnaces.

Ser. No. 25,835. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) WHITE LILY WASHER COMPANY, Davenport, Iowa. Filed Mar. 7, 1907.

WHITE-FLYER

Particular description of goods.—Washing-Machines.

Ser. No. 25,852. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) MACBETH EVANS GLASS CO., Pittsburg, Pa. Filed Mar. 8, 1907.

LITTLE GIANT

Particular description of goods.—Lamp-Glasses.

Ser. No. 25,858. (CLASS 47. CONFECTIONERY.) THE PUNK COMPANY, Meadville, Pa. Filed Mar. 8, 1907.

PUNK

Particular description of goods.—Candy Containing or Flavored with Pumpkin-Seed.

Ser. No. 25,865. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) VICTORIA WILLIAMS, Dublin, Tex. Filed Mar. 8, 1907.

C TO C

Particular description of goods.—A Specific for Throat, Bronchial, and Lung Troubles.

Ser. No. 25,878. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) ISOLATOREN-FABRIK "PULVOLIT" GESELLSCHAFT MIT BESCHR. HAFTUNG, Bockenheim, Germany. Filed Mar. 9, 1907.

PULVOLIT

Particular description of goods.—Insulators for Electrical Purposes.

Ser. No. 25,908. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) PHOENIX SILK MFG. CO., Paterson, N. J. Filed Mar. 11, 1907.

24 KARAT

Particular description of goods.—Silk Piece Goods and Ribbons.

Ser. No. 25,914. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) EDGAR YOUNG, Buffalo, N. Y. Filed Mar. 11, 1907.



Particular description of goods.—Bread.

Ser. No. 25,932. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) H. MUELLER MANUFACTURING COMPANY, Decatur, Ill. Filed Mar. 12, 1907.

MISSION

Particular description of goods.—Stop-Cocks, Bath, Basin, Washtray, Gas and Stop and Waste Cocks and Parts of Same.

Ser. No. 25,971. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) A. MAMAUX & SON, Pittsburg, Pa. Filed Mar. 14, 1907. Used ten years.

MAMAUX.

Particular description of goods.—Awnings, Tents, Canopies, Flags, and Tarpaulins.

Ser. No. 26,037. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) GIESECKE-D'OENCH-HAYS SHOE COMPANY, St. Louis, Mo. Filed Mar. 18, 1907.



Particular description of goods.—Misses' and Children's Leather Shoes.

Ser. No. 26,044. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) RAINES & COMPANY, New York, N. Y. Filed Mar. 18, 1907.



Particular description of goods.—Baking-Powder.

Ser. No. 26,047. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Mar. 18, 1907.

CHIPAWAY

Particular description of goods.—Axes, Adzes, Hatchets, Crosscut-Saws, Handsaws, Rip-Saws, Panel-Saws, Butcher-Saws, Hacksaws, Hacksaw-Blades, Wood-Saws, Scythes, Grass-Hooks, Corn-Knives, Cane-Knives, Hedge-Knives, Bush-Hooks, Hay-Knives, Hand Sheep-Shears, Choppers, Cleavers, Awls, Pocket-Knives, Augers, Auger-Bits, Expansive Bits, Chisels, Files, Rasps, Gouges, Plane-Irons, Drawing-Knives, Jack-Planes, Cutting-Pliers, Cutting-Pincers, Belt-Punches, Tinners' Snips, Mattocks, Butcher-Knives, Hunting-Knives, Table-Knives, Table-Forks, Shears, Scissors, Razors.

Ser. No. 26,051. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) HUMPHREY TAYLOR & CO., London, England. Filed Mar. 18, 1907.

"PRICOTA"

Particular description of goods.—Brandy Liqueur.

Ser. No. 26,091. (CLASS 17. WOOD MANUFACTURES NOT OTHERWISE CLASSIFIED.) SAMUEL A. BIGELOW, trustee, Boston, Mass. Filed Mar. 20, 1907. Used ten years.



Particular description of goods.—Wooden Handles for All Kinds of Hand-Tools, Such as Axes, Hatchets, Hammers, and Chisels.

Ser. No. 26,097. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) WILLIAMSVILLE MANUFACTURING COMPANY, Killingly, Conn. Filed Mar. 20, 1907. Used ten years.

WILLIAMSVILLE
A-1

Particular description of goods.—Cotton Piece Goods.

Ser. No. 26,098. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) WILLIAMSVILLE MANUFACTURING COMPANY, Killingly, Conn. Filed Mar. 20, 1907. Used ten years.

WILLIAMSVILLE
B-2

Particular description of goods.—Cotton Piece Goods.

Ser. No. 26,143. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) BARRETT-PALMER COMPANY, New York, N. Y. Filed Mar. 21, 1907.

Alchemo

Particular description of goods.—A Chemical Composition for Treating Fluid Hydrocarbons.

Ser. No. 26,154. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE SANITATION & SUPPLY CO., Ballston Spa, N. Y. Filed Mar. 22, 1907.

NO-SMELL-Y



Particular description of goods.—Disinfectants and Deodorizers.

Ser. No. 26,184. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE WEBB MANUFACTURING COMPANY, Nashville, Tenn. Filed Mar. 23, 1907. Used ten years.

SPURLOCKS

Particular description of goods.—Washing-Blue.

Ser. No. 26,186. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) W. A. ROSS & BROTHER, INCORPORATED, New York, N. Y. Filed Mar. 23, 1907.

V C

Particular description of goods.—Whisky.

Ser. No. 26,247. (CLASS 71. TOBACCO PRODUCTS.) WILLIAM T. DONOVAN, St. Albans, Vt. Filed Mar. 25, 1907.

PRINCE CARL

Particular description of goods.—Cigars, Cheroots, Cigarettes, Smoking, Fine-Cut, and Plug Tobacco.

Ser. No. 26,256. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ASTORIA CHEMICAL COMPANY, New York, N. Y. Filed Mar. 26, 1907.



Particular description of goods.—Laundry Wax.

Ser. No. 26,263. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN RUTGERT PLANTEN, New York, N. Y. Filed Mar. 26, 1907. Used ten years.

BLACK
CAPSULES

Particular description of goods.—A Remedy for the Treatment of Chronic and Acute Gonorrhea, Gleet, Catarrh of the Bladder, Kidney Troubles, and All Forms of Urethritis.

Ser. No. 26,276. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) AKIN ERSKINE MILLING CO., Evansville, Ind. Filed Mar. 27, 1907.



Particular description of goods.—Wheat-Flour.

Ser. No. 26,288. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) WOOLNER DISTILLING CO., Peoria, Ill. Filed Mar. 27, 1907.



Particular description of goods.—Denatured Alcohol.

Ser. No. 26,299. (CLASS 8. DETERGENTS.) ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass. Filed Mar. 28, 1907. Used ten years.



Particular description of goods.—Soap.

Ser. No. 26,301. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) BAIRD-BANKS MFG. & SUPPLY CO., New York, N. Y. Filed Mar. 28, 1907.



Particular description of goods.—Gasolene-Motors and Parts of Same Excepting Electrical Apparatus.

Ser. No. 26,309. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GUY HARTLY FULLER, Detroit, Mich. Filed Mar. 28, 1907.



Particular description of goods.—A Tonic Medicine for the Stomach in Tablet Form.

Ser. No. 26,328. (CLASS 68. PUBLICATIONS.) MASTERSON, GRIESWOLD & MOORE, Chicago, Ill. Filed Mar. 29, 1907.



Particular description of goods.—School-Books.

Ser. No. 26,332. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) MERGENTHALER LINOTYPE CO., New York, N. Y. Filed Mar. 29, 1907.

MONOLINE

Particular description of goods.—Machine for Producing Type-Bars.

Ser. No. 26,353. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) CHARLES EICHHOLD, New York, N. Y. Filed Mar. 30, 1907. Used ten years.



Particular description of goods.—Soft Hats and Stiff Hats in Felt and Men's Straw Hats.

Ser. No. 26,357. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) LAWTON & HALL, Chicago, Ill. Filed Mar. 30, 1907. Used ten years.



Particular description of goods.—Rain-Coats, Oiled Coats, Oiled Pants, Oiled Leggings, Oiled Aprons, Oiled Hats, and Oiled Caps.

Ser. No. 26,372. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed Mar. 30, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 26,382. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) AIR BLAST GIN CO., Dallas, Tex. Filed Apr. 1, 1907. Used ten years.



Particular description of goods.—Gins, Cotton Elevating and Cleaning Machines, Condensers, and Bat-Formers.

Ser. No. 26,395. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) MALCOLM A. SHIPLEY, Philadelphia, Pa. Filed Apr. 1, 1907. Used ten years.

BETHABARA



WOOD

Particular description of goods.—Fishing-Rods.

Ser. No. 26,397. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) VOSS BROTHERS MANUFACTURING COMPANY, Davenport, Iowa. Filed Apr. 1, 1907.

SUNSHINE

Particular description of goods.—Washing-Machines.

Ser. No. 26,399. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEO. ORVILLE YOUNG, Buckhannon, W. Va. Filed Apr. 1, 1907.

"SKIDOO"
(23)

Particular description of goods.—A Preparation for the Treatment and Removal of Corns.

Ser. No. 26,404. (CLASS 47. CONFECTIONERY.) BERTHA H. GALLAND, New York, N. Y. Filed Apr. 2, 1907.

U-MVS-Chu

Particular description of goods.—Chewing-Gum.

Ser. No. 26,430. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) GRAY BROS. & CO., Salt Lake City, Utah. Filed Apr. 3, 1907.

CHESTERFIELD

The mark being red.

Particular description of goods.—Coats, Pants, and Vests.

Ser. No. 26,432. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) TOLMAN MFG. CO., Boston, Mass. Filed Apr. 3, 1907.

Pearlbone

Particular description of goods.—Collar-Supporters.

Ser. No. 26,442. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE WINTERBOTTOM BOOK CLOTH COMPANY, LTD., Manchester, England. Filed Apr. 4, 1907.



Particular description of goods.—Tracing-Cloth.

Ser. No. 26,443. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE WINTERBOTTOM BOOK CLOTH COMPANY, LTD., Manchester, England. Filed Apr. 4, 1907.



Particular description of goods.—Tracing-Cloth.

Ser. No. 26,444. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE WINTERBOTTOM BOOK CLOTH COMPANY, LTD., Manchester, England. Filed Apr. 4, 1907.



Particular description of goods.—Tracing-Cloth.

Ser. No. 26,445. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE WINTERBOTTOM BOOK CLOTH COMPANY, LTD., Manchester, England. Filed Apr. 4, 1907.



Particular description of goods.—Tracing-Cloth.

Ser. No. 26,454. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) ABRAHAM MAYER, New York, N. Y. Filed Apr. 4, 1907.

"Chic"

Particular description of goods.—Patterns for Ladies' Dresses and Parts Thereof.

Ser. No. 26,456. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) MALCOLM A. SHIPLEY, Philadelphia, Pa. Filed Apr. 4, 1907. Used ten years.

BETHABARA

WOOD

Particular description of goods.—Fishing-Rods.

Ser. No. 26,486. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALEXANDER SUTHERLAND, Springfield, Mass. Filed Apr. 5, 1907.



Particular description of goods.—A Skin Food.

Ser. No. 26,508. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE WINTERBOTTOM BOOK CLOTH COMPANY, LTD., Manchester, England. Filed Apr. 6, 1907.



Particular description of goods.—Bookbinders' Cloth.

Ser. No. 26,518. (CLASS 71. TOBACCO PRODUCTS.) BUTLER-BUTLER INCORPORATED, New York, N. Y. Filed Apr. 6, 1907.

SNOWY RIVER

Particular description of goods.—Cigars, Cigarettes, and Smoking and Chewing Tobaccos.

Ser. No. 26,529. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) FRANK A. WHITE, Easton, Md. Filed Apr. 6, 1907.

SPAWS

Particular description of goods.—Potable Water.

Ser. No. 26,530. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) ZEIDLER LAMP & BRASS CO., Lomira, Wis. Filed Apr. 6, 1907.

Baby

Particular description of goods.—Gasolene-Torches.

Ser. No. 26,548. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) WALTER EARHART, Hot Springs, Ark. Filed Apr. 8, 1907.



Particular description of goods.—Spring-Water.

Ser. No. 26,549. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) WALTER EARHART, Hot Springs, Ark. Filed Apr. 8, 1907. Used ten years.

Arsenic Spring

Particular description of goods.—Spring-Water.

Ser. No. 26,557. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) CHIPMAN, HARWOOD & CO., Boston, Mass. Filed Apr. 8, 1907.

Asborn

Particular description of goods.—Misses' and Children's Leather and Canvas Shoes.

Ser. No. 26,573. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) TERRE HAUTE EXTRACT & CHEMICAL CO., Terre Haute, Ind. Filed Apr. 8, 1907.

BREEZO

Particular description of goods.—A Toilet Preparation for the Skin Made in Both a Concentrated and Liquid Form.

Ser. No. 26,574. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE GEORGE WORTHINGTON COMPANY, Cleveland, Ohio. Filed Apr. 8, 1907.



Particular description of goods.—Horse-Blankets.

Ser. No. 26,597. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ROBERTS, JOHNSON & RAND SHOE COMPANY, St. Louis, Mo. Filed Apr. 9, 1907.

WE WALK ON STARS
SO CAN YOU.

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 26,615. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) MOSELEY & MOTLEY MILLING CO., Rochester, N. Y. Filed Apr. 10, 1907. Used ten years.

WHITE SPONGE

Particular description of goods.—Wheat-Flour.

Ser. No. 26,623. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) ILLINOIS GLASS COMPANY, Alton, Ill. Filed Apr. 10, 1907.

AUTO-FLASK

Particular description of goods.—Glass Flasks.

Ser. No. 26,638. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) RECORDS & GOLDSBOROUGH, Baltimore, Md. Filed Apr. 11, 1907.

HAPPY DAYS

Particular description of goods.—Whisky.

Ser. No. 26,651. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) DETROIT OAK BELTING CO., Detroit, Mich. Filed Apr. 12, 1907.



Particular description of goods.—Leather Belting.

Ser. No. 26,652. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) DETROIT OAK BELTING CO., Detroit, Mich. Filed Apr. 12, 1907.

NAIAD

Particular description of goods.—Leather Belting.

Ser. No. 26,655. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) FRANCIS C. BROWN, New York, N. Y. Filed Apr. 12, 1907.

Limit

Particular description of goods.—Fountain-Pens.

Ser. No. 26,662. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) LYON & GREENLEAF, Wauseon, Ohio, and Ligonier, Ind. Filed Apr. 12, 1907.

RELIANCE

Particular description of goods.—Wheat-Flour.

Ser. No. 26,676. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) THE ALLEN'S COFFEE & SPICE MILLS COMPANY, Denver, Colo. Filed Apr. 13, 1907.

GOLD DUST

Particular description of goods.—Coffee.

Ser. No. 26,680. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE BRIDGEPORT CHAIN COMPANY, Bridgeport, Conn. Filed Apr. 13, 1907. Used ten years.

"BROWN"

Particular description of goods.—Wire Chain.

Ser. No. 26,683. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) GEO. W. GITTINS, New York, N. Y. Filed Apr. 13, 1907. Used ten years.

Milton

Particular description of goods.—Pianos.

Ser. No. 26,688. (CLASS 68. PUBLICATIONS.) JOHN M. STAHL, Chicago, Ill. Filed Apr. 13, 1907.

MANY UP-TO-DATE FACTS IN FEW WORDS

Particular description of goods.—Newspapers.

Ser. No. 26,698. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) THE C. S. MOREY MERCANTILE COMPANY, Denver, Colo. Filed Apr. 15, 1907.

SILVER SERPENT

Particular description of goods.—Coffee.

Ser. No. 26,701. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE C. S. MOREY MERCANTILE COMPANY, Denver, Colo. Filed Apr. 15, 1907.

Cabinet

Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 26,706. (CLASS 10. FERTILIZERS.) THE AMERICAN AGRICULTURAL CHEMICAL COMPANY, New York, N. Y. Filed Apr. 15, 1907.

AMERICUS

Particular description of goods.—Phosphatic Fertilizers, Including Ground Bone, Bone-Meal, Bone-Flour, Ground Phosphatic Fertilizers, and Fertilizers Treated with Acid Mixed with Ammoniacal Products, Potash, and other Fertilizing Materials.

Ser. No. 26,721. (CLASS 17. WOOD MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE NIGHTINGALE COMPANY, New York, N. Y. Filed Apr. 15, 1907. Used ten years.

NIGHTINGALE

Particular description of goods.—Wooden Doors and Wooden Flooring.

Ser. No. 26,728. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) STOTT WOOLEN COMPANY, Stottville, N. Y. Filed Apr. 15, 1907.

S.W.M.'s

Particular description of goods.—Woolen Broadcloths.

Ser. No. 26,739. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) BOSTON STORE OF CHICAGO, Chicago, Ill. Filed Apr. 16, 1907.

C. Q.

Particular description of goods.—Whisky.

Ser. No. 26,742. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) LADD & COFFIN, New York, N. Y. Filed Apr. 16, 1907.

DEARIE

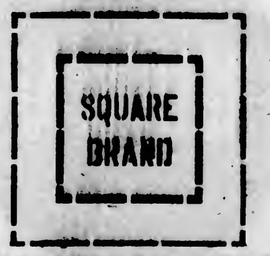
Particular description of goods.—Perfumes, Toilet Waters, Toilet Powders, and Sachets.

Ser. No. 26,747. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE TEREDO PROOF PAINT COMPANY, New York, N. Y. Filed Apr. 16, 1907.



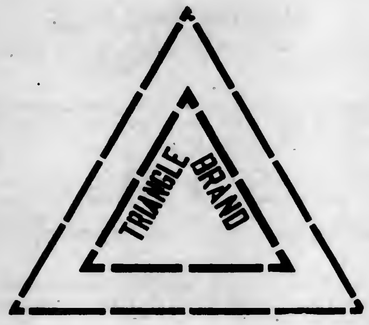
Particular description of goods.—Paints.

Ser. No. 26,748. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y. Filed Apr. 17, 1907.



Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor, and the Plants or Trees from Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 26,749. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y. Filed Apr. 17, 1907.



Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor, and the Plants or Trees from Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 26,750. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) GORDON MANUFACTURING COMPANY, New Rochelle, N. Y. Filed Apr. 17, 1907.



Particular description of goods.—Hose-Supporters.

Ser. No. 26,754. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) COLUMBIA MILL & ELEVATOR COMPANY, Columbia, Tenn. Filed Apr. 17, 1907. The seal being printed in red.



Particular description of goods.—Wheat-Flour.

Ser. No. 26,786. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) R. P. SMITH & SONS CO., Chicago, Ill. Filed Apr. 19, 1907.



Particular description of goods.—Rubber Footwear.

Ser. No. 26,796. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) GEORGE A. HAWS, New York, N. Y. Filed Apr. 19, 1907.

HARD PAN

Particular description of goods.—Machinery-Oil.

Ser. No. 26,790. (CLASS 47. CONFECTIONERY.) NATIONAL CANDY COMPANY, Jersey City, N. J.; St. Louis, Mo., and Chicago, Ill. Filed Apr. 19, 1907.

OH MY!

Particular description of goods.—Confections Composed of or Containing Popcorn.

Ser. No. 26,818. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JONES-PADDOCK CO., San Francisco, Cal. Filed Apr. 20, 1907.

PREMIER

Particular description of goods.—Coffee.

Ser. No. 26,820. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JONES-PADDOCK CO., San Francisco, Cal. Filed Apr. 20, 1907.

SUMMIT

Particular description of goods.—Tea.

Ser. No. 26,823. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JONES-PADDOCK CO., San Francisco, Cal. Filed Apr. 20, 1907.

CHAMPION

Particular description of goods.—Coffee.

TRADE-MARKS

REGISTERED MAY 14, 1907.

62,501. GAS-RANGES OR OTHER GAS STOVES AND HEATERS, VAPOR STOVES AND OVENS. AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo.
Filed January 5, 1907. Serial No. 24,466. PUBLISHED MARCH 19, 1907.

62,502. PORTLAND CEMENT. THE ASSOCIATED PORTLAND CEMENT MANUFACTURERS (1900), LIMITED, London, England.
Filed February 18, 1907. Serial No. 25,364. PUBLISHED MARCH 19, 1907.

62,503. CERTAIN PAINTERS' MATERIALS. THE BALL CHEMICAL CO., Allegheny, Pa.
Filed February 15, 1907. Serial No. 25,315. PUBLISHED MARCH 19, 1907.

62,504. DEADENING-FELT FOR USE IN THE CONSTRUCTION OF BUILDINGS. BARRETT MANUFACTURING COMPANY, New York, N. Y.
Filed February 16, 1907. Serial No. 25,353 PUBLISHED MARCH 19, 1907.

62,505. FELT AND PAPER FOR ROOFING AND COVERING AND FOR INSULATION AGAINST HEAT AND COLD. J. A. & W. BIRD & CO., Boston, Mass.
Filed October 6, 1906. Serial No. 22,561. PUBLISHED MARCH 19, 1907.

62,506. FERTILIZERS. THE CANTON FERTILIZER AND CHEMICAL COMPANY, Canton, Ohio.
Filed October 20, 1906. Serial No. 22,804. PUBLISHED MARCH 19, 1907.

62,507. CERTAIN BOILERS, FURNACES, AND PARTS THEREOF. THE CONTINENTAL IRON WORKS, Brooklyn, N. Y.
Filed January 17, 1907. Serial No. 24,710. PUBLISHED MARCH 19, 1907.

62,508. LEATHER BOOTS AND SHOES. DIXON-BARTLETT CO., Baltimore, Md.
Filed January 29, 1907. Serial No. 24,978. PUBLISHED MARCH 19, 1907.

62,509. SHOE-POLISH PASTE. THE F. F. DALLEY CO. OF HAMILTON, LIMITED, Hamilton, Ontario, Canada.
Filed May 15, 1905. Serial No. 5,639. PUBLISHED MARCH 19, 1907.

62,510. CERTAIN PAINTERS' MATERIALS. SAMUEL H. FRENCH & CO., Philadelphia, Pa.
Filed November 5, 1906. Serial No. 23,099. PUBLISHED MARCH 19, 1907.

62,511. RUBBER BELTING AND HOSE. EDWARD Z. JEFFERSON, Pittsburg, Pa.
Filed February 5, 1907. Serial No. 25,151. PUBLISHED MARCH 19, 1907.

62,512. PAINT. L. SONNEBORN SONS INC., New York, N. Y.
Filed February 20, 1907. Serial No. 25,482. PUBLISHED MARCH 19, 1907.

62,513. PLANTS AND CUT FLOWERS. A. T. LORCH & COMPANY, De Haven, Pa.
Filed February 11, 1907. Serial No. 25,242. PUBLISHED MARCH 19, 1907.

62,514. GAS-BURNERS. OAKMAN MANUFACTURING COMPANY, New York, N. Y.
Filed September 26, 1906. Serial No. 22,345. PUBLISHED MARCH 19, 1907.

62,515. HAMES. THE TODD MANUFACTURING CO., New Albany, Ind.
Filed September 9, 1905. Serial No. 12,422. PUBLISHED MARCH 19, 1907.

62,516. CERTAIN WAXES, OILS, AND GREASES. VACUUM OIL COMPANY, Rochester, N. Y.
Filed January 28, 1907. Serial No. 24,967. PUBLISHED MARCH 19, 1907.

62,517. REFRIGERATORS AND ICE-BOXES. AMERICAN STOVE COMPANY, St. Louis, Mo.
Filed January 24, 1907. Serial No. 24,872. PUBLISHED MARCH 19, 1907.

62,518. MINERAL WATERS, GINGER-ALE, ROOT-BEER, AND NATURAL LAXATIVE WATER. THE BLUE RIBBON MINING MILLING AND INVESTMENT CO., Idaho Springs and Denver, Colo.
Filed December 13, 1906. Serial No. 23,986. PUBLISHED MARCH 19, 1907.

62,519. SPRING-WATER AND FLAVORED SODA-WATER. CHARLES C. BURRILL, Eden, Me.
Filed December 3, 1906. Serial No. 23,728. PUBLISHED MARCH 19, 1907.

62,520. CIGARS. PETER GEORGE CROCOV, Pittsburg, Pa.
Filed February 21, 1907. Serial No. 25,509. PUBLISHED MARCH 19, 1907.

62,521. MEDICATED SOAP. ICHTHYOL GESELLSCHAFT CORDES, HERMANNI & CO., Hamburg, Germany.
Filed December 15, 1906. Serial No. 24,040. PUBLISHED MARCH 19, 1907.

62,522. EARTHENWARE AND PORCELAIN. JOSIAH WEDGWOOD & SONS LTD., Etruria, England.
Filed July 6, 1905. Serial No. 9,825. PUBLISHED MARCH 19, 1907.

62,523. TAPESTRY CHENILLE, TAPESTRY, AND VELOUR. MOSS ROSE MANUFACTURING COMPANY, Philadelphia, Pa.
Filed January 15, 1907. Serial No. 24,658. PUBLISHED FEBRUARY 26, 1907.

62,524. WHISKY. A. SCHWABACHER, Louisville, Ky.
Filed January 28, 1907. Serial No. 24,966. PUBLISHED MARCH 19, 1907.

62,525. LADIES' STRING-TIES. WILLIAM TREVOR, New York, N. Y.
Filed February 15, 1907. Serial No. 25,313. PUBLISHED MARCH 19, 1907.

62,526. BROADCLOTH AND CASKET, CARRIAGE, AND CAP CLOTH. AIREDALE MILLS COMPANY, Boston, Mass.
Filed January 31, 1907. Serial No. 25,027. PUBLISHED MARCH 19, 1907.

62,527. CIGARETTES. BUTLER-BUTLER INCORPORATED, New York, N. Y.
Filed February 21, 1907. Serial No. 25,495. PUBLISHED MARCH 19, 1907.

62,528. CERTAIN TEXTILE FABRICS. CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y.
Filed January 12, 1907. Serial No. 24,588. PUBLISHED MARCH 19, 1907.

62,529. CERTAIN TEXTILE FABRICS. CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y.
Filed January 12, 1907. Serial No. 24,591. PUBLISHED MARCH 19, 1907.

62,530. TURBINE-ROTORS, TURBINE CYLINDRICAL SHAFTING, TWYERS. THE CONTINENTAL IRON WORKS, Brooklyn, N. Y.
Filed January 17, 1907. Serial No. 24,709. PUBLISHED MARCH 19, 1907.

62,531. STAMPED METAL PARTS USED FOR ROOFING AND WALL-COVERING PURPOSES. CORTRIGHT METAL ROOFING COMPANY, Philadelphia, Pa.
Filed December 7, 1906. Serial No. 23,850. PUBLISHED MARCH 19 1907.

62,532. MACHINE-MADE CHAINS. DIAMOND CHAIN AND MANUFACTURING COMPANY, Indianapolis, Ind.
Filed February 18, 1907. Serial No. 25,367. PUBLISHED MARCH 19, 1907.

62,533. ANTIFRICTION BEARING METALS. FAHRIG METAL COMPANY, New York, N. Y.
Filed February 15, 1907. Serial No. 25,320. PUBLISHED MARCH 19, 1907.

62,534. RUGS AND CARPETS. FRIES HARLEY CO., Gloucester, N. J.
Filed December 13, 1906. Serial No. 24,007. PUBLISHED MARCH 19, 1907.

62,535. PRINTED AND DYED CALICOES, PERCALES, DUCKS, AND DRILLS. GARNER & CO., New York, N. Y.
Filed December 26, 1906. Serial No. 24,268. PUBLISHED MARCH 19, 1907.

62,536. BOOKCASES AND PARTS THEREOF. THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio.
Filed February 19, 1907. Serial No. 25,409. PUBLISHED MARCH 19, 1907.

62,537. CLOTH FOR TYPE-WRITER RIBBONS. HERMAN HILKER, New York, N. Y.
Filed January 26, 1907. Serial No. 24,926. PUBLISHED MARCH 19, 1907.

62,538. RAZORS, KNIVES, SCISSORS, AND SHEARS. MAX KLAAS, New York, N. Y.
Filed February 14, 1907. Serial No. 25,304. PUBLISHED MARCH 19, 1907.

62,539. BITTER WINE. MICHAEL KOLASSA, Chicago, Ill.
Filed February 16, 1907. Serial No. 25,344. PUBLISHED MARCH 19, 1907.

62,540. MALT EXTRACT. M. K. GOETZ BREWING CO., St. Joseph, Mo.
Filed January 28, 1907. Serial No. 24,960. PUBLISHED MARCH 5, 1907.

62,541. PRINTED COTTON GOODS. NEUSS, HESSLEIN & CO., New York, N. Y.
Filed February 19, 1907. Serial No. 25,422. PUBLISHED MARCH 19, 1907.

62,542. RUBBER HEELS FOR BOOTS AND SHOES. PNEUMATIC CUSHION RUBBER HEEL COMPANY, Boston, Mass.
Filed February 12, 1907. Serial No. 25,272. PUBLISHED MARCH 19, 1907.

62,543. CIGARS. THOMAS A. ROBINSON, North Baltimore, Ohio.
Filed February 14, 1907. Serial No. 25,307. PUBLISHED MARCH 19, 1907.

62,544. WHISKY. ROCK SPRING DISTILLING CO., Owensboro, Ky.
Filed February 16, 1907. Serial No. 25,347. PUBLISHED MARCH 19, 1907.

62,545. HAIR CURLERS OR WAVERS. MARTIN ROMAN, New York, N. Y.
Filed January 8, 1907. Serial No. 24,523. PUBLISHED MARCH 19, 1907.

62,546. CUSHION-SPRINGS. VENTILATED CUSHION & SPRING COMPANY, Chicago, Ill.
Filed February 18, 1907. Serial No. 25,386. PUBLISHED MARCH 19, 1907.

62,547. METALLIC CLAMPS OR CLASPS FOR WEARING-APPAREL. CLAY WILSON, New York, N. Y.
Filed January 16, 1907. Serial No. 24,696. PUBLISHED MARCH 19, 1907.

62,548. TELEPHONES. THE WIRE & TELEPHONE CO. OF AMERICA, Rome, N. Y.
Filed February 14, 1907. Serial No. 25,296. PUBLISHED MARCH 19, 1907.

62,549. WIRE. THE WIRE & TELEPHONE CO. OF AMERICA, Rome, N. Y.
Filed February 14, 1907. Serial No. 25,297. PUBLISHED MARCH 19, 1907.

62,550. PIANOS. CHARLES A. AHLSTROM, Jamestown, N. Y.
Filed August 18, 1906. Serial No. 21,665. PUBLISHED MARCH 19, 1907.

62,551. FARM AND GARDEN HAND-TOOLS. AMERICAN FORK & HOE CO., Cleveland, Ohio.
Filed January 16, 1907. Serial No. 24,683. PUBLISHED MARCH 19, 1907.

62,552. CIGARS. FERNANDEZ, WODISKA Y CORRAL, Tampa, Fla.
Filed October 13, 1905. Serial No. 13,554. PUBLISHED MARCH 19, 1907.

62,553. HOSIERY. GLIDDEN, HYDE & CO., Boston, Mass.
Filed December 23, 1905. Serial No. 15,612. PUBLISHED MARCH 19, 1907.

62,554. COTTON PIECE GOODS AND COTTON BLANKETS. JACKSON COMPANY, Nashua, N. H.
Filed August 31, 1906. Serial No. 21,831. PUBLISHED MARCH 19, 1907.

62,555. SPICES AND MUSTARD. K K K MEDICINE COMPANY, Keokuk, Iowa.
Filed April 1, 1905. Serial No. 68. PUBLISHED MARCH 19, 1907.

62,556. WHISKY. JACOB KLEIN, South Omaha, Nebr.
Filed July 3, 1905. Serial No. 9,726. PUBLISHED APRIL 10, 1906.

62,557. MINERAL WATERS, SELTZER, GINGER-ALE AND LITHIA-WATER. OHIO BOTTLING CO., Cincinnati, Ohio.
Filed May 12, 1906. Serial No. 19,473. PUBLISHED MARCH 19, 1907.

62,558. PERCALES. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed June 29, 1906. Serial No. 20,657. PUBLISHED MARCH 19, 1907.

62,559. ALL KINDS OF CHOCOLATE AND COCOA. RUNKEL BROTHERS, INCORPORATED, New York, N. Y.
Filed February 19, 1907. Serial No. 25,425. PUBLISHED MARCH 19, 1907.

62,560. CERTAIN FOODS. S. S. PIERCE CO., Boston, Mass.
Filed May 15, 1905. Serial No. 5,695. PUBLISHED MARCH 19, 1907.

62,561. COTTON-SEED OILS. THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y.; Savannah, Ga., and Gretna, La.
Filed February 19, 1907. Serial No. 25,400. PUBLISHED MARCH 19, 1907.

62,562. CERTAIN METAL MANUFACTURES. S. STERNAU & CO., Brooklyn, N. Y.
Filed November 4, 1905. Serial No. 14,335. PUBLISHED MARCH 19, 1907.

62,563. COTTON-SEED FEED-MEAL. TENNESSEE FIBRE COMPANY, Memphis, Tenn.
Filed February 18, 1907. Serial No. 25,387. PUBLISHED MARCH 19, 1907.

62,564. CERTAIN CEREAL FOODS. FRANK L. THORNTON, Providence, R. I.
Filed July 31, 1905. Serial No. 11,065. PUBLISHED MARCH 19, 1907.

62,565. PLAYING-CARDS. THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio.
Filed February 19, 1907. Serial No. 25,427. PUBLISHED MARCH 19, 1907.

62,566. WHEAT-FLOUR. WATSON MILL COMPANY, Wichita, Kans.
Filed January 5, 1906. Serial No. 15,931. PUBLISHED APRIL 3, 1906.

62,567. SOAP AND SOAP-POWDERS. ZARNITS BROTHERS GROCERY COMPANY, Wheeling, W. Va.
Filed January 22, 1907. Serial No. 24,839. PUBLISHED MARCH 19, 1907.

62,568. SPOOL-COTTON AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed February 12, 1907. Serial No. 25,257. PUBLISHED MARCH 19, 1907.

62,569. SPOOL-COTTON AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed February 12, 1907. Serial No. 25,258. PUBLISHED MARCH 19, 1907.

62,570. BREAD. THE BRENNEMAN BAKING COMPANY, Columbus, Ohio.
Filed February 5, 1907. Serial No. 25,156. PUBLISHED MARCH 19, 1907.

62,571. LEATHER SHOES. BROADWALK SHOE COMPANY, Haverhill, Mass.
Filed February 11, 1907. Serial No. 25,234. PUBLISHED MARCH 19, 1907.

62,572. TRADING-STAMPS. DIAMOND TRADING STAMP COMPANY, Philadelphia, Pa.
Filed February 7, 1907. Serial No. 25,186. PUBLISHED MARCH 19, 1907.

62,573. EGGS. CHARLES A. ENGLISH, Ottumwa, Iowa.
Filed January 25, 1907. Serial No. 24,908. PUBLISHED MARCH 19, 1907.

62,574. PNEUMATIC BICYCLE-TIRES. THE FISK RUBBER CO., Chicopee Falls, Mass.
Filed January 15, 1907. Serial No. 24,656. PUBLISHED MARCH 19, 1907.

62,575. MEN'S FLANNEL SHIRTS. FRANK BROS. & CO., New York, N. Y.
Filed January 15, 1907. Serial No. 24,657. PUBLISHED MARCH 12, 1907.

62,576. CERTAIN NAMED CONFECTION. GORDON, WOLF AND CO., New York, N. Y.
Filed January 3, 1907. Serial No. 24,411. PUBLISHED MARCH 19, 1907.

62,577. SASH-FASTENERS. THE H. B. IVES COMPANY, New Haven, Conn.
Filed September 25, 1905. Serial No. 13,009. PUBLISHED MARCH 19, 1907.

62,578. CERTAIN FURNITURE. L. & J. G. STICKLEY INC., Fayetteville, N. Y.
Filed February 6, 1907. Serial No. 25,167. PUBLISHED MARCH 19, 1907.

62,579. MILK, CREAM, AND BUTTER. ALEXANDER E. LITTLE, Lynn, Mass.
Filed January 18, 1907. Serial No. 24,753. PUBLISHED MARCH 19, 1907.

62,580. BREAD. MIDDLETON BAKING CO., New Orleans, La.
Filed January 30, 1907. Serial No. 25,018. PUBLISHED MARCH 12, 1907.

62,581. CERTAIN MACHINERY. THOMAS W. PANGBORN COMPANY, New York, N. Y.
Filed November 10, 1906. Serial No. 23,257. PUBLISHED MARCH 19, 1907.

62,582. CANNED SOUPS AND BOUILLONS. PATTERSON-CABELL CO., New York, N. Y.
Filed January 16, 1907. Serial No. 24,674. PUBLISHED MARCH 19, 1907.

62,583. CERTAIN CUTLERY AND EDGE-TOOLS. RADIGAN, RICH & CO., New York, N. Y.
Filed January 14, 1907. Serial No. 24,611. PUBLISHED MARCH 19, 1907.

62,584. FUDGE, ITALIAN CREAMS, AND OTHER CANDIES. JAMES E. SCHAEFFER, Baltimore, Md.
Filed February 11, 1907. Serial No. 25,244. PUBLISHED MARCH 19, 1907.

62,585. MIXED RYE AND WHEAT FLOUR. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
Filed February 6, 1907. Serial No. 25,172. PUBLISHED MARCH 19, 1907.

62,586. CERTAIN HAND-TOOLS. WILLIAM HUNT & SONS, THE BRADES, LIMITED, Brades Steel Works, near Birmingham, England.
Filed December 29, 1905. Serial No. 15,740. PUBLISHED MARCH 19, 1907.

62,587. FLAVORING EXTRACTS AND JAMS. ABRAHAM & STRAUS, Brooklyn, N. Y.
Filed May 19, 1906. Serial No. 19,690. PUBLISHED MARCH 19, 1907.

62,588. CERTAIN GLASSWARE. AMERICAN BAR-LOCK COMPANY, Philadelphia, Pa.
Filed May 13, 1905. Serial No. 5,402. PUBLISHED MARCH 19, 1907.

62,589. WRITING-PAPER AND ENVELOPS. Z. & W. M. CRANE, Dalton, Mass.
Filed February 14, 1907. Serial No. 25,300. PUBLISHED MARCH 19, 1907.

62,590. COATS, VESTS, TROUSERS, AND OVERCOATS. FRIEND & MARKS, Milwaukee, Wis.
Filed November 14, 1906. Serial No. 23,346. PUBLISHED MARCH 19, 1907.

62,591. GLASS SHADES, GLOBES, AND CHIMNEYS. HOUDAILLE ET TRIQUET, Choisy-le-Roi, France.
Filed June 15, 1906. Serial No. 20,303. PUBLISHED MARCH 19, 1907.

62,592. CHEESE. FRIEDRICK LUDER, Mount Horeb, Wis.
Filed December 8, 1906. Serial No. 23,882. PUBLISHED MARCH 19, 1907.

62,593. POLISHING PREPARATIONS FOR METALS. MARSHALL CHEMICAL COMPANY, New York, N. Y.
Filed March 15, 1906. Serial No. 17,881. PUBLISHED SEPTEMBER 11, 1906.

62,594. CERTAIN LIQUID ADHESIVE. ROBESON PROCESS COMPANY, Camden, N. J.
Filed January 2, 1907. Serial No. 24,387. PUBLISHED MARCH 19, 1907.

62,595. CARD GAME. WILLIAM J. ROCHE, New Bethlehem, Pa.
Filed September 18, 1906. Serial No. 22,176. PUBLISHED MARCH 19, 1907.

62,596. LADIES' CLOAKS, SUITS, AND DRESS-SKIRTS. ALBERT RUBEN & CO., Chicago, Ill.
Filed July 21, 1906. Serial No. 21,074. PUBLISHED MARCH 19, 1907.

62,597. PLOWS, CULTIVATORS, AND STOCK PARTS OR SHAPES THEREFOR. STAR MANUF'G CO., Carpentersville, Ill.
Filed May 4, 1905. Serial No. 4,237. PUBLISHED FEBRUARY 20, 1906.

62,598. KID GLOVES. STEINBERGER & KALISHER, San Francisco, Cal.
Filed September 29, 1906. Serial No. 22,425. PUBLISHED MARCH 19, 1907.

62,599. KID GLOVES. STEINBERGER & KALISHER, San Francisco, Cal.
Filed September 29, 1906. Serial No. 22,426. PUBLISHED MARCH 19, 1907.

62,600. PAPER BAGS, PAPER, AND PAPER-BOARDS FOR WRAPPING PURPOSES. THE UNION BAG & PAPER COMPANY, New York, N. Y.
Filed February 15, 1907. Serial No. 25,327. PUBLISHED MARCH 19, 1907.

62,601. LINIMENTS. FREDERICK PARKER DOUGLAS, Napanee, Ontario, Canada.
Filed July 31, 1905. Serial No. 11,049. PUBLISHED JULY 31, 1906.

62,602. MEDICINAL SULFONIC ACIDS AND THEIR SALTS. ICHTHYOL GESELLSCHAFT CORDES, HERMANNI & CO., Hamburg, Germany.
Filed August 30, 1906. Serial No. 21,799. PUBLISHED MARCH 19, 1907.

62,603. MEDICINAL SULFONIC ACIDS AND THEIR SALTS. ICHTHYOL GESELLSCHAFT CORDES, HERMANNI & CO., Hamburg, Germany.
Filed August 30, 1906. Serial No. 21,800. PUBLISHED MARCH 19, 1907.

62,604. HAIR-TONICS, SHAMPOO, AND HAIR-RESTORERS. JOSEPH KUSKUNA, New York, N. Y.
Filed December 14, 1905. Serial No. 15,420. PUBLISHED MARCH 19, 1907.

62,605. INKS. NORDDEUTSCHE WOLLKÄMMEREI & KAMMGARNSPINNEREI, Bremen and Delmenhorst, Germany.
Filed March 16, 1906. Serial No. 17,955. PUBLISHED MARCH 19, 1907.

62,606. CERTAIN MEDICINE. WILLIAM E. WILLIAMS, Philadelphia, Pa.
Filed November 24, 1906. Serial No. 23,583. PUBLISHED MARCH 19, 1907.

62,607. CERTAIN STARCH SIZES. THE ARABOL M'F'G. CO., New York, N. Y.
Filed January 8, 1907. Serial No. 24,516. PUBLISHED MARCH 19, 1907.

62,608. COAL-TAR PITCH. BARRETT MANUFACTURING COMPANY, New York, N. Y.
Filed February 5, 1907. Serial No. 25,159. PUBLISHED MARCH 19, 1907.

62,609. PREPARATION FOR TREATMENT OF DISORDERS OF THE KIDNEYS. CHESTER H. BRANE, Gardiner, Me.
Filed January 29, 1907. Serial No. 24,981. PUBLISHED MARCH 19, 1907.

62,610. BICARBONATE OF SODA. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.
Filed January 28, 1907. Serial No. 24,957. PUBLISHED MARCH 19, 1907.

62,611. CERTAIN CHEMICALS. FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld, Germany.
Filed January 25, 1907. Serial No. 24,885. PUBLISHED MARCH 19, 1907.

62,612. ANALGESIC. FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld, Germany.
Filed January 25, 1907. Serial No. 24,887. PUBLISHED MARCH 19, 1907.

62,613. ANALGESIC AND ANTIRHEUMATIC. FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld, Germany.
Filed January 25, 1907. Serial No. 24,888. PUBLISHED MARCH 19, 1907.

62,614. CERTAIN CHEMICALS. FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld, Germany.
Filed January 25, 1907. Serial No. 24,889. PUBLISHED MARCH 19, 1907.

62,615. CERTAIN CHEMICALS. FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld, Germany.
Filed January 25, 1907. Serial No. 24,890. PUBLISHED MARCH 19, 1907.

62,616. CERTAIN TOILET PREPARATIONS. FREDERICK STEARNS & CO., Detroit, Mich.
Filed January 19, 1907. Serial No. 24,777. PUBLISHED MARCH 19, 1907.

62,617. MEDICINAL PASTE. STUTLEY I. HENDERSON, West Allis, Wis.
Filed February 11, 1907. Serial No. 25,240. PUBLISHED MARCH 19, 1907.

62,618. STOMACH-BITTERS. THE HOSTETTER COMPANY, Pittsburg, Pa.
Filed October 10, 1905. Serial No. 13,475. PUBLISHED MARCH 19, 1907.

62,619. PREPARATION FOR THE TREATMENT OF DISEASES OF THE THROAT AND LUNGS. MARY A LUPTON, MILLARD F. CATTELL, and PHILIP S. HORTZ, Woodbury, N. J., executors and trustees of Lewis M. Green, deceased.
Filed April 12, 1906. Serial No. 18,720. PUBLISHED MARCH 19, 1907.

62,620. LEATHER SHOES. FRANK A. MCGOWAN, Canton, Ohio.
Filed April 21, 1905. Serial No. 2,509. PUBLISHED AUGUST 15, 1905.

62,621. HAIR-POMADE. RICHARD MOORE, McKeesport, Pa.
Filed January 21, 1907. Serial No. 24,817. PUBLISHED MARCH 19, 1907.

62,622. LEATHER BOOTS AND SHOES. WILLIAM J. NEWMAN, Boston, Mass.
Filed November 8, 1905. Serial No. 14,406. PUBLISHED NOVEMBER 20, 1906.

62,623. CERTAIN MEDICINES. PENN DRUG COMPANY, Chicago, Ill.
Filed August 18, 1906. Serial No. 21,659. PUBLISHED MARCH 19, 1907.

62,624. TOOTH-POWDER. LEWIS H. PFLEGHARDT, Fayette, Pa.
Filed February 18, 1907. Serial No. 25,391. PUBLISHED MARCH 19, 1907.

62,625. DISINFECTANTS AND DEODORIZERS. SANITATION & SUPPLY CO., Ballston Spa, N. Y.
Filed January 16, 1907. Serial No. 24,699. PUBLISHED MARCH 19, 1907.

62,626. INSECTICIDES AND ANTISEPTIC TOOTH-WASH. ALBERT R. SAYLOR, Allentown, Pa.
Filed January 31, 1907. Serial No. 25,033. PUBLISHED MARCH 19, 1907.

62,627. REMEDY FOR THE TREATMENT OF THE HAIR AND SCALP. GEORGE F. SMITH, Woodsboro, Md.
Filed February 11, 1907. Serial No. 25,246. PUBLISHED MARCH 19, 1907.

62,628. BITTERS. UNION WHOLESALE LIQUOR CO., Chicago, Ill.
Filed February 16, 1907. Serial No. 25,351. PUBLISHED MARCH 19, 1907.

62,629. CHEMICAL MIXTURES FOR TANNING. VACUUM OIL COMPANY, Rochester, N. Y.
Filed January 21, 1907. Serial No. 24,812. PUBLISHED MARCH 19, 1907.

LABELS

REGISTERED MAY 14, 1907.

13,531.—*Title:* "SANROC NATURAL MINERAL WATER." (For Natural Mineral Water.) SANROC SPRINGS CO., Chicago, Ill. Filed April 20, 1907.

13,532.—*Title:* "GOLDEN GATE GINGER ALE." (For Ginger-Ale.) TOHANNA KORNAHRENS, Charleston, S. C. Filed April 19, 1907.

13,533.—*Title:* "GOLD NUGGET EXTRA FINE SPECIAL BREW." (For Beer.) BLACK HILLS BREWING CO., Central City, S. D. Filed May 31, 1905.

13,534.—*Title:* "GOLD NUGGET EXTRA FINE SPECIAL BEER." (For Bottled Beer.) BLACK HILLS BREWING CO., Central City, S. D. Filed April 20, 1907.

13,535.—*Title:* "GOLD NUGGET." (For Bottled Beer.) BLACK HILLS BREWING CO., Central City, S. D. Filed April 20, 1907.

13,536.—*Title:* "LOWNEY'S ASSORTED CHOCOLATES." (For Confectionery.) THE WALTER M. LOWNEY CO., Boston, Mass. Filed April 19, 1907.

13,537.—*Title:* "LOWNEY'S ASSORTED CHOCOLATES." (For Confectionery.) THE WALTER M. LOWNEY CO., Boston, Mass. Filed April 19, 1907.

13,538.—*Title:* "LOWNEY'S ASSORTED CHOCOLATES." (For Confectionery.) THE WALTER M. LOWNEY CO., Boston, Mass. Filed April 19, 1907.

13,539.—*Title:* "AMO WHEAT FIBRE CUPS." (For Breakfast Food of Cereal Grain.) WILLIAM E. WILLIAMS, Chicago, Ill. Filed April 22, 1907.

13,540.—*Title:* "SOUTHERN STOCK FOOD." (For Stock-Food.) THE SOUTHERN STOCK FOOD COMPANY, Atlanta, Ga. Filed April 20, 1907.

13,541.—*Title:* "SOUTHERN POULTRY FOOD." (For Poultry Food.) SOUTHERN STOCK FOOD COMPANY, Atlanta, Ga. Filed April 20, 1907.

13,542.—*Title:* "ORIENTAL BATH AROMA." (For a Perfume for the Bath.) ELITE PERFUME CO., Detroit, Mich. Filed April 13, 1907.

13,543.—*Title:* "LIGHTNING GOLD & SILVER POLISH." (For Gold and Silver Polish.) FANNY F. SPINNEY, St. Louis, Mo. Filed February 23, 1907.

13,544.—*Title:* "LEVEY AMERICAS GREATEST CLEANSER AND DYER." (For a Fluid Cleaning Compound.) HARRY LEVEY, New York, N. Y. Filed April 16, 1907.

13,545.—*Title:* "THE EDISON MAGNETIZED WIRE WOVEN RAWHIDE." (For Whips.) COWLES HORAN WHIP CO., Westfield, Mass. Filed April 18, 1907.

PRINTS

REGISTERED MAY 14, 1907.

1,984.—*Title:* "HERE IT IS." (For Whisky.) HURD-WHEELER CO., Detroit, Mich. Filed April 15, 1907.

1,985.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed April 20, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE GRANT.

Decided December 11, 1906.

1. ABANDONED APPLICATION—BY FAILURE TO TAKE RESPONSIVE ACTION.

Where the action taken near the close of the year was not a proper action, *Held* that the applicant has a perfect right to delay action until the close of the year allowed by law therefor, but in doing so he assumes the risk of any mistake in the character of the action.

2. SAME—SAME.

Since earlier action by applicant would have permitted correction of the mistake within the year and since it does not appear that earlier action could not have been taken, the failure to duly prosecute the application cannot be regarded as unavoidable, and it is therefore abandoned under the statute.

ON PETITION.

PRINTING DEVICE.

Mr. William M. Monroe and *Messrs. Hall & Heylmun* for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Examiner holding the application to be abandoned by reason of the unresponsive character of the only action filed by the applicant within the year following the last Office action.

The failure to take proper action within the year following the Office action seems to have been due to the postponement of the attempted response until near the close of that period. The applicant has a perfect right to delay action until the close of the year allowed by law therefor, but in doing so he assumes the risk of such a mistake as occurred in this case. Since earlier action by the applicant would have permitted correction of the mistake within the year and since it does not appear that earlier action could not have been taken, the failure to duly prosecute this case cannot be regarded as unavoidable and the same is therefore abandoned under the statute.

The petition is denied.

EX PARTE THE DE LONG HOOK & EYE COMPANY.

Decided January 19, 1907.

1. TRADE-MARK—"RUST? NEVER!" FOR HOOKS AND EYES—DESCRIPTIVE—NOT REGISTRABLE.

The phrase "Rust? Never!" is clearly the predominant feature of the mark presented for registration and indicates that the hooks and eyes are so treated that they will never rust and that therefore "rust" will never be transmitted to the goods to which they are applied.

2. SAME—SAME—SAME—RED RECTANGULAR BACKGROUND NOT A DISTINCTIVE FEATURE.

The fact that the words "Rust? Never!" appear upon a red rectangular background does not confer registrability upon the mark. It is not an unusual configuration which would impress itself upon the memory of the purchaser, but merely serves to throw the words "Rust? Never!" into bold relief.

ON APPEAL.

TRADE-MARK FOR HOOKS AND EYES.

Mr. W. C. Strawbridge for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing to register a trade-mark which comprises the words "Rust? Never!" on a red rectangular background for hooks and eyes.

The words "Rust? Never!" are clearly the predominant feature of the mark presented for registration and indicate that the hooks and eyes are so treated that they will never rust and that therefore "rust" will never be transmitted to the goods to which they are applied.

The combination "Rust? Never!" is analogous to the marks "No-rip" and "Felt-less" for harness sweat-pads, which were held to be descriptive, and therefore not registrable. (*Ex parte The Crescent Manufacturing Company*, C. D., 1901, 160; 97 O. G., 750; *ex parte McClain*, 1902, C. D., 185; 99 O. G., 2101.)

It is urged that the mark offered for registration presents, as a whole, a distinctive appearance to the eye, and therefore constitutes a valid trade-mark. This contention is not believed to be well founded. The red rectangular background is not an unusual configuration which would impress itself upon the memory of a purchaser, but merely serves to throw the words "Rust? Never!" into bold relief.

The decision of the Examiner of Trade-Marks is affirmed.

EX PARTE STRAUSS.

Decided April 4, 1907.

LABEL—THE WORDS "RED CROSS" REFUSED REGISTRATION IN VIEW OF THE ACT OF JANUARY 5, 1905.

The words "Red Cross," whether construed as "the sign of the Red Cross" expressed in language or as the alternative of the sign "Red Cross," clearly come within the spirit and intent of the provisions of section 4 of the act entitled "An act to incorporate the American National Red Cross," approved January 5, 1905, prohibiting the use of "such sign or any insignia colored in imitation thereof for the purposes of trade or as an advertisement to induce the sale of any article whatsoever.

ON APPEAL.

LABEL FOR COUGH-SYRUP.

Mr. Benjamin Mayer for the appellant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner in refusing to register under the provisions of section 3 of the Copyright Act a label which includes as a feature thereof the words "Red Cross."

In his application for registration appellant entitles his label "Strauss' Red Cross Cough Syrup or Throat and Lung Balsam." The label submitted for registration has the words "Red Cross" printed thereon in three different positions. In one position it is printed in red ink and in the other places in blue ink. The application states that the label is to be used on cartons and bottles containing cough-syrup made by or put up for the applicant Strauss.

The Examiner refused registration on the ground that the use of the words "Red Cross" is in violation of the provisions of section 4 of the act entitled "An act to incorporate the American National Red Cross," approved January 5, 1905. This section of the act reads as follows:

That from and after the passage of this act it shall be unlawful for any person within the jurisdiction of the United States to falsely and fraudulently hold himself out as, or represent or pretend himself to be, a member of, or an agent for, the American National Red Cross, for the purpose of soliciting, collecting, or receiving money or material; or for any person to wear or display the sign of the Red Cross, or any insignia colored in imitation thereof for the fraudulent purpose of inducing the belief that he is a member of, or an agent for, the American National Red Cross. Nor shall it be lawful for any person or corporation, other than the Red Cross of America, not now lawfully entitled to use the sign of the Red Cross, hereafter to use such sign or any insignia colored in imitation thereof for the purposes of trade or as an advertisement to induce the sale of any article whatsoever. If any person violates the provisions of this section, he shall be guilty of a misdemeanor and shall be liable to a fine of not less than one nor more than five hundred dollars, or imprisonment for a term not exceeding one year, or both, for each and every offense. The fine so collected shall be paid to the American National Red Cross.

In my opinion the action of the Examiner is correct.

The label originally submitted by applicant for registration contained beneath the words "Red Cross" the sign of the "Red Cross." This label was refused registration as in violation of the above act. Thereupon applicant substituted for the original label a new label differing from the original merely in the omission of the "Red Cross" sign underneath the words "Red Cross" and in printing these words in red ink instead of the blue of the original. This appears to be an attempt to evade the language of the act without evading its spirit. Applicant's label is obviously an attempt to secure the benefits that may arise from advertising his goods as "Red Cross" goods.

The use of the words "Red Cross" upon applicant's label, especially in red, is believed to be prohibited by the part of the above section which reads:

Nor shall it be lawful for any person or corporation, other than the Red Cross of America, not now lawfully entitled to use the sign of the Red Cross, hereafter to use such sign or any insignia colored in imitation thereof for the purposes of trade or as an advertisement to induce the sale of any article whatsoever.

The words "Red Cross," whether construed as "the sign of the Red Cross" expressed in language or as the alternative of the sign "Red Cross," clearly come within the spirit and intent of the act.

The decision of the Examiner is affirmed.

EX PARTE FORTUNY.

Decided April 19, 1907.

PRACTICE—NEW REFERENCE DISCOVERED SUBSEQUENT TO APPEAL TO COMMISSIONER.

Where a reference was discovered by the Office subsequent to a hearing by the Commissioner on an *ex parte* appeal from a decision of the Examiners-in-Chief affirming a rejection by the Primary Examiner, decision on the appeal was suspended for thirty days and applicant was notified that he might amend or take other action in view of the citation within the time stated, that a failure to amend within the time would amount to a waiver of the right to amend, and that upon failure to act a decision would be rendered upon consideration of the old and the new references. He was further notified that if he did not desire to amend a rehearing would be granted for argument upon the new reference upon request therefor.

APPEAL from Examiners-in-Chief.

THEATRICAL PROPERTY.

Messrs. Munn & Co. for the applicant.

ALLEN, *Commissioner:*

This case is before me upon appeal from the decision of the Examiners-in-Chief refusing the allowance of applicant's claims in view of certain patents. Subsequent to the hearing on appeal a new reference was discovered—patent to Cutler, August 6, 1895, No. 544,248—which appears to be pertinent to the appealed claims. In view of this fact final judgment on the appeal will be suspended for thirty days from the date hereof in accordance with the provisions of Rule 139 *d*. If an amendment or other action is filed in view of this reference within the period stated, the case will be remanded to the Primary Examiner for further consideration. If no amendment or other action is filed within this period, the right to amend will be regarded as waived and a decision will be rendered upon an appeal in which the new reference, as well as the references previously cited, will be considered. If the applicant does not desire to amend, a rehearing of the appeal will be granted for argument upon the new reference upon request therefor.

EX PARTE FAULKNER.

Decided April 19, 1907.

1. SUPPOSED FORMAL OBJECTIONS DISCOVERED BY ISSUE AND GAZETTE DIVISION—DECISION OF EXAMINER CONTROLLING.

When, in the revision of the application in the Issue and Gazette Division, supposed formal objections are discovered, the Examiner's attention should be called thereto; but the Examiner's decision, indorsed upon the reference-slip, that a supposed objection is not in fact one or that correction is not necessary, should settle the matter for this Office.

2. NAME OF APPLICANT—"RAY" FULL CHRISTIAN NAME—NO AFFIDAVIT NECESSARY.

The name "Ray" is commonly used as a full Christian name and no affidavit should be required in connection therewith.

ON PETITION.

COAL-CABINET.

Messrs. C. A. Snow & Co. for the applicant.

ALLEN, *Commissioner:*

This is a petition from the action of the Primary Examiner requiring an affidavit that *Ray* is the full first name of the applicant.

The Examiner has made an elaborate report upon the petition in which he urges that the requirement was unnecessary. It appears that he passed the case to issue without requiring such an affidavit, but that the case was returned to him from the Issue and Gazette Division with a request that he require one. The Examiner thereupon made the requirement, although it appears that he believed the same to be improper.

I am of the opinion that under such circumstances there is no occasion for the entry of the requirement by

the Examiner. When, in the revision of the application in the Issue and Gazette Division, supposed formal objections are discovered, the Examiner's attention should be called thereto; but the Examiner's decision, indorsed upon the reference-slip, that a supposed objection is not in fact one or that correction is not necessary, should settle the matter for this Office. The responsibility in such cases rests with the Examiner, and no reason is known why his conclusion should not be binding upon the Chief of the Issue and Gazette Division. This petition might well be dismissed, with instructions to follow the practice herein announced. It may be stated, however, that in view of the facts set forth in the Examiner's statement showing common acceptance of "Ray" as a full Christian name no affidavit should be required in connection therewith.

Petition granted.

EX PARTE PITTSBURGH VALVE, FOUNDRY AND CONSTRUCTION COMPANY.

Decided April 27, 1907.

1. TRADE-MARK—"ATWOOD" ASSOCIATED WITH AN ARROW-HEAD AND THE LETTER "A"—NOT REGISTRABLE.

Where the name "Atwood" is the predominating feature of the mark and it appears from applicant's specimens to be applied to the goods merely as raised capital letters in the casting bearing the mark, the association with the name of the fanciful symbol is not considered sufficient to render the mark registrable as a whole.

2. SAME—DESCRIPTIVE.

A statement which does not purport to be a description of the mark, but indirectly states the nature of the principal feature of applicant's mark, was properly objected to by the Examiner of Trade-Marks.

3. SAME—DATE OF ADOPTION.

The date of adoption and use of applicant's mark means the whole mark presented for registration, and it is not apparent that any useful purpose can be subserved by a statement as to the date of use of the various features of the mark.

ON APPEAL.

TRADE-MARK FOR VALVES, PIPE-FITTINGS, AND CASTINGS.

Mr. F. N. Barber for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks in refusing to register the mark as presented and in requiring that the statement be revised to omit the partial description of the mark contained therein.

The mark presented for registration consists of the word "Atwood" associated with an arrow-head and the letter "*A*."

The Examiner regarded the latter portion of the mark as a fanciful and arbitrary symbol and proper subject-matter for registration. He refused registration of the mark as a whole on the ground that the term "Atwood" is the name of an individual and is not associated with a portrait of the individual or printed in a particular or distinctive manner, and therefore is not registrable as a technical trade-mark under the provisions of section 5 of the act of February 20, 1905, which states—

That no mark which consists merely in the name of an individual, firm, corporation, or association, not written, printed, impressed, or woven in some particular or distinctive manner or in association with a portrait of the individual, * * * shall be registered under the terms of this act.

This conclusion of the Examiner is considered sound. The name "Atwood" is the predominating feature of the mark, and it appears from applicant's specimens to be applied to the goods merely as raised capital letters in the casting bearing the mark. The association with the name of the fanciful symbol is not considered sufficient to render the mark registrable as a whole. In this respect the mark is similar to that involved *in re Ferdinand T. Hopkins*, decided by the Court of Appeals of the District of Columbia February 5, 1907, (unpublished as yet.) In that case the court did not consider the mark consisting of the words "Oriental Cream, associated with an eagle holding a scroll in its beak" as registrable, notwithstanding the geographical term was associated with a "fantastic winged figure."

The descriptive statement objected to by the Examiner reads as follows:

The trade-mark was first used by said corporation on December 15, 1906, and has been continuously used in the business of said corporation since December 15, 1906, and all of said trade-mark except the word "Atwood" has been continuously used in the business of said corporation since April 15, 1904.

Section 1 of the act approved May 4, 1906, provides—

That the owner of a trade-mark * * * may obtain registration for such trade-mark by complying with the following requirements: * * * a description of the trade-mark itself, only when needed to express colors not shown in the drawing.

In my decision in *ex parte E. C. Atkins Company*, (126 O. G., 3424,) affirmed by the court of appeals on April 9, 1907, this section of the act was construed to mean that the drawing should be relied upon to disclose the mark and that a description should be permitted only when needed to express color not shown in the drawing. Although the above-mentioned statement does not purport to be a description of the mark, it indirectly states the nature of the principal feature of applicant's mark. Attempts to evade the express terms of the act by indirect descriptions should not be encouraged. Inasmuch as the date of adoption and use of applicant's mark means the whole mark presented for registration, it is not apparent that any useful purpose can be subserved by a statement as to the date of use of the various features of the mark.

The decision of the Examiner is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE HODGES.

Decided January 8, 1907.

PATENTABILITY—SUBSTITUTION OF EQUIVALENTS.

Where it is old to heat exhaust-air as it passes from the high-pressure to the low-pressure cylinder of a compound air-engine by means of a liquid substance, and it is also old to use atmospheric air to impart heat to air within a receptacle, it does not amount to invention to substitute the latter heating medium for the former.

Mr. Bayard H. Christy for Hodges.

Mr. Fairfax Bayard for the Commissioner of Patents.

ROBB, *J.:*

This is an appeal from a decision of the Commissioner of Patents sustaining the decisions of two other tribunals in the Patent Office and rejecting five of appellant's ten claims for patent on interheaters for compound compressed-air engines.

The rejected claims follow:

1. An interheater for a compound compressed-air engine which consists of a receptacle receiving air from the high-pressure cylinder and delivering air to the low-pressure cylinder and provided with an extended surface adapted to absorb heat from the

atmosphere at normal temperature and impart heat so absorbed to the compressed air in its flow to the low-pressure cylinder, substantially as described.

2. An interheater for a compound compressed-air locomotive-engine which consists of a receptacle receiving air from the high-pressure cylinder and delivering air to the low-pressure cylinder, the said receptacle with an extended heating surface and arranged to receive a flow of atmospheric air at normal temperature over said surface, substantially as described.

3. An interheater for a compound compressed-air locomotive-engine which consists of a receptacle receiving air from the high-pressure cylinder and delivering air to the low-pressure cylinder, together with means operative on the operation of said locomotive-engine for causing a flow of atmospheric air at normal temperature over said heating surface, substantially as described.

4. An interheater for a compound compressed-air engine which consists of a receptacle receiving air from the high-pressure cylinder and delivering air to the low-pressure cylinder and provided with an extended heating surface together with means for causing a flow of atmospheric air at normal temperature over the said surface of said receptacle, substantially as described.

5. An interheater for a compound compressed-air engine which consists of a receptacle for the air in its passage from the high-pressure cylinder to the low-pressure cylinder, provided with an inlet at its lower end and an outlet at its upper end, and having an extended surface exposed to the heating influence of atmospheric air at normal temperature, substantially as described.

A compound compressed-air engine is an engine in which the compressed air is first used in a high-pressure cylinder, that is, in a cylinder of relatively small diameter, and, after driving the piston connected therewith, instead of being permitted to escape is conveyed to a low-pressure cylinder, that is, to a cylinder of larger diameter where it still has sufficient expansive force to drive another piston. This operation may be again repeated in a third cylinder, or the air be permitted to escape to the atmosphere. When the compressed air enters the first cylinder, it necessarily partially expands and in expanding becomes much colder, and by becoming colder its expansive power is, of course, correspondingly lessened or diminished. It is manifest, therefore, that any arrangement or device that will operate to warm or heat the air after it leaves one cylinder and before it enters the next will greatly increase its efficiency in the second cylinder. Inasmuch as such compressed air, after being partially expanded in the first cylinder, is frequently colder than atmospheric temperature, appellant has arranged what he calls an "interheater," which in fact is a plurality of longitudinally-extending tubes within and along which the compressed air flows from one cylinder to another, and over which a current of atmospheric air passes. The atmospheric air, being warmer than the compressed air within the tubes, imparts or gives up some of its warmth to the compressed air within, and to that extent increases the efficiency of the compressed air. It is simply a reversal of the old idea of warming atmospheric air by a plurality of tubes called radiators through which steam or hot water passes. In one case the atmospheric air absorbs heat from the substance within the tubes, and in the other case it imparts heat to the tubes and the substance therein.

The following references are cited by the Commissioner as the basis for the rejection of the above claims: British patent, No. 3,056 of 1871, Geisenburger, No. 222,950, December 23, 1879, Reynolds & Haupt, No. 344,006, June 22, 1886, Palmer, No. 655,148, July 31, 1900, Dickerson, No. 745,373, December 1, 1903, Nutty.

Reynolds & Haupt in their specification say:

We employ an engine of the compound type, and though we may or may not heat the air before its introduction to the engine *we always heat it after its exhaust from the high-pressure cylinder and before its induction to the low-pressure cylinder;* and to this end our invention consists in the combination, with a compound engine for the use of compressed air for motive power, of a heater placed between its high and low pressure cylinders and containing heated water or other liquid, through or in contact with which the air passes between its eduction from the one cylinder and its induction into the other.

It will be observed that this patent, like the claim in issue, has reference to an interheater for a compound compressed-air engine, the only real difference being that Hodges uses atmospheric air instead of a liquid substance to impart heat to the compressed air within the interheater. Inasmuch as it is obvious that, under certain conditions, an interheater dependent wholly upon atmospheric air for its successful operation possesses advantages over one requiring some liquid substance, Hodges will be entitled to a patent if it can be successfully demonstrated that he is the originator of the idea embodied in this difference between the two devices. On the other hand, if he is not the originator of the idea of using atmospheric air to impart heat to air within some receptacle for the purpose and with the effect of increasing its expansive force, then obviously he ought not to be given a monopoly on all such devices. We pass, therefore, to the other references to determine this question.

The Dickerson patent, as described by him—

consists in the combination, with a receiver for containing the liquid air, of an air-motor connected therewith through suitable intermediate expansion coils or chambers, and a blower or fan which is driven by the motor and which is arranged to produce a current of air over the expansion-coil, so as to impart to the latter sufficient heat to effect the expansion of the air therein and to be delivered at a reduced temperature into the room or other space which is to be cooled and ventilated. * * * The expansion-coils are located in the conduit, through which air is forced by the blower, so that by the absorption of heat from the latter the air in said coils is raised in temperature and expanded. This expanded air on reaching the reservoir is still further expanded by the absorption of heat from the incoming air and exerts a sufficiently high pressure to run the motor.

Without describing this patent further, we refer to the statement in the brief of counsel for appellant in reference thereto:

Although Dickerson here shows that one body of air may impart heat to another body flowing in a coil, and by thus imparting heat may increase the expansive power of the inclosed body of air, it teaches nothing more which is pertinent to the invention under consideration.

Appellant concedes he did not invent the interheater. He found that in the Reynolds & Haupt patent. His claim is for a device susceptible of using atmospheric air instead of a liquid substance to heat and expand air therein, and in the Dickerson patent we find such a device for such a purpose. We think appellant concedes this in the statement taken from his brief.

In *Smith* v. *Nichols*, (21 Wall., 112,) it is said:

A mere carrying forward of new or more extended application of the original thought, a change only in form, proportions, or degree, the substitution of equivalents, doing substantially the same thing in the same way by substantially the same means with better results, is not such invention as will sustain a patent.

The use of atmospheric air as a heating medium is also shown in the Geisenburger patent, and also in the Palmer patent. In the Geisenburger patent the carbonic-acid gas in liquid form passes to the expansion-cylinder through a coil or heater "inclosed in a tank or vessel filled with water or *air*, or any body capable of having the same temperature as the circumambient air."

A careful examination of these cited patents and the drawings and specifications filed therewith convinces us that the Commissioner of Patents was right in disallowing all these claims, and we, therefore, affirm his decision, and direct the clerk to certify the proceedings in this court to him as the law provides. Affirmed.

Court of Appeals of the District of Columbia.

FEINBERG v. COWAN.

Decided February 5, 1907.

INTERFERENCE—PRIORITY—DILIGENCE.

F. conceived the invention in September, 1900, and disclosed it in September, 1903, but did nothing toward reducing it to practice until April, 1904. C. conceived the invention in January, 1904, and reduced it to practice in the following March. The excuse offered by F. for his delay was that he was too busy earning his living to attend to it, and, moreover, he did not have the means to reduce it to practice unless he borrowed the money, which he did not want to do. *Held* that F. was lacking in diligence, it being shown by the evidence that subsequent to his conception he borrowed $3,000 with which to engage in a venture some undertaking, while a small amount of money would have enabled him to construct the invention.

Mr. Joseph L. Levy and *Mr. A. O. E. Edwards, Jr.*, for Feinberg.

Mr. R. B. Wilson for Cowan.

ROBB, *J.*:

This is an appeal involving three concurrent decisions of the Patent Office in an interference proceeding awarding priority of invention to appellee Cowan, the senior party, upon an issue expressed in the following counts:

Count 1. In a device of the class described, in combination, a pair of angularly-disposed legs adapted to rest against the outer face of two abutting plates, a member attached to one of said legs and having an inclined extension lying in the angle between said legs, and a clamping-block attached to said extension.

Count 2. A fastening device for connecting plates, comprising a member having angularly-disposed legs, a stud attached to one of said legs, adapted to pass between the edges of said plates and having an inclined threaded extension lying in the angle between said legs, and a clamping member attaching to the same and engaging the faces of said plates.

The invention described in the above counts is a very simple one, and covers a clamp for holding glass plates. Cowan by competent evidence conclusively established conception of the invention about January 1, 1904, and reduction of the same to practice on or about March 25, 1904, at which time he had a full-sized clamp made. The manager of the shop, where Cowan's clamp was made, identified shop orders under date of March 24, 1904, which Cowan gave him for making the clamp, and testified that Cowan also gave him a wooden pattern; that the order and pattern were delivered to a workman who completed the clamp on March 25, 1904; and that this clamp was delivered to Cowan on the day it was made. Witness identified Cowan's exhibit as being the clamp made on said March 25, 1904. Cowan followed this diligence by having other clamps made.

Feinberg testifies that from some time in September, 1900, to November, 1900, he worked selling plate-glass for I. Feinberg, who was a cousin and a plate-glass dealer in New York, and that during the month of September, 1900, he conceived the invention in issue. His testimony concerning conception in 1900 is not corroborated, and is moreover vague and unsatisfactory. On November 30, 1900, he abandoned his position as plate-glass salesman and went to Philadelphia, where with $3,000 he had borrowed for the purpose he opened and managed three different music schools for mandolin, violin, banjo, guitar and piano teaching. This venture was not a success, and at the end of August, 1903, he returned to New York, and again engaged as a plate-glass salesman for I. Feinberg. About the middle of October, 1903, he engaged in the business, with his cousin Samuel Feinberg, of soliciting orders for glass for buildings. He continued in this last venture until July, 1904. Feinberg testifies that:

In the early part of September, 1903, cousin Ike Feinberg and myself agreed upon terms and I became salesman on the very first day that was on Wednesday after Labor Day, 1903. I bethought myself of my glass-fastener which I thought out before I went in the music business and the very evening when I got home I drafted in my order-book a crude sketch of that clamp, which looked to me like a printed capital F with an elongated inclinedin a dash together with a triangular inner filler and a thumb-screw and when on the following Saturday I went to Philadelphia, I showed the sketch to my cousin, Sam. Feinberg. He however thought it will not hold together.

Feinberg produced his order-book showing this sketch, and his cousin gave corroborative testimony on this point. Nothing, however, was actually done by Feinberg, according to his own testimony, toward reducing his invention to practice until some time in April, 1904, probably late in April, when he engaged a model-maker to make a clamp for him. He introduced in evidence a bill dated June 27, 1904, for making this clamp. The explanation was made that bills were sent out about four weeks after the completion of the work. Accepting this statement as correct, the earliest date of reduction to practice by Feinberg is May 27, 1904. Inasmuch as Cowan reduced his invention to practice on March 25, 1904, it is apparent that, unless Feinberg can satisfactorily explain his failure to reduce his invention to practice prior to that date, Cowan must prevail. The excuse Feinberg gives for his lack of diligence may be found in the following statement:

I was so busy earning my living, in soliciting, hunting up business, taking orders, that I did not have time to attend to the matter in that period, and one of the main reasons why I didn't do anything was that I didn't have any money to do it with, and I did not want to borrow the money to have the samples made.

These reasons are not sufficient to entitle Feinberg to an award of priority. According to his own statement, he conceived this invention in September, 1900, when he was engaged in selling plate-glass. He subsequently borrowed $3,000 to engage in an entirely different line of business, the success of which must have been more uncertain than the success of such a simple and useful device as he claims to have invented. His lack of diligence throughout the three years between his original conception of the invention and his second disclosure to Sam. Feinberg "some time in September, 1903," throws some light on his subsequent conduct, and leads to the conclusion that until late in 1904, he did not regard his invention as of sufficient importance to warrant the expenditure of either time or money. He was willing to borrow $3,000 with which to engage in a new and venturesome business, but delayed the expenditure of the almost nominal sum required to reduce his invention to practice. In view of the very simple nature of his device, the small expense involved in its construction, and the intervention of another party, we do not think his lack of diligence excusable. Manifestly, we cannot now permit him to displace a man who diligently followed conception of the invention with actual reduction to practice prior to the most favorable date of reduction to practice which can be given Feinberg. To do so under the facts disclosed by the record would be to discourage diligence and to encourage delay. Such a decision would tend in the future to subject diligent and honest inventors to needless and expensive litigation, and pave the way for deception and fraud. We, therefore, affirm the decision of the Commissioner of Patents, and it is so ordered

The clerk of the court will certify this opinion and the proceedings in this court to the Commissioner of Patents, as required by law. Affirmed.

Court of Appeals of the District of Columbia.

IN RE HOPKINS.

Decided February 5, 1907.

TRADE-MARK—"ORIENTAL CREAM" FOR SKIN-LOTION—GEOGRAPHICAL IN SIGNIFICANCE—NOT REGISTRABLE.

Held that a trade-mark comprising the words "'Oriental Cream,' associated with an eagle holding a scroll in its beak," is not registrable as a trade-mark for a skin-lotion because of its geographical significance.

Mr. Joseph L. Atkins for Hopkins.

Mr. Fairfax Bayard for the Commissioner of Patents.

SHEPARD, *J.*:

The applicant appeals from a decision of the Commissioner of Patents refusing registration of a trade-mark. The original application was accompanied by a label containing in large letters across the top the words "Oriental Cream," under which follow the words, "or Magical Beautifier." It then proceeds to describe the article as the most elegant and delicate preparation for the skin, etc., etc., with other words indicating manufacturer etc. Under the large words at the top, and about the middle of the label is a figure resembling the eagle on the larger silver coins of the United States, which was described as "a fantastic winged figure." By amendment, the trade-mark was described as the words, "'Oriental Cream' associated with an eagle holding a scroll in its beak."

The refusal to register was on the ground that the term "Oriental" is a geographical term and, therefore, prohibited from registration by section 5 of the Trade-Mark Act of February 20, 1905. The Commissioner said:

> The Orient is a term used to indicate the East, eastern countries, and specifically, the regions to the east and southeast of the leading States of Europe. (*Century Dictionary.*) The term "Oriental" is in general use in commerce to indicate goods that are manufactured in this region, as, for example, Oriental rugs. As applied to a cream it would indicate that the cream came from the Orient.

In support of his conclusion he cites cases holding such terms as: "Lackawanna" in connection with coal (*Del. & H. C. Co.* v. *Clark*, 13 Wall., 311); "Columbia" (*Columbia Mill Co.* v. *Alcorn*, 150 U. S., 460); "Old Country" and "Our Country" (*Wrisley Co.* v. *Iowa Soap Co.*, 122 Fed. Rep., 796); "East Indian" in connection with "Remedy" (*Connell* v. *Reed*, 128 Mass., 477), to be geographical and not capable of appropriation as trade-marks. See also *Continental Ins. Co.* v. *Continental Fire Association*, 101 Fed. Rep., 225 (word "Continental"); and *Koehler* v. *Sanders*, 122 N. Y., 65, (word "International").

The contention of the appellant that the words "Oriental Cream" are not descriptive but arbitrary as applied to his product, which is not a cream but a cosmetical lotion of a creamy appearance, is met by a recent decision of this court in which the question is fully considered. (*In re American Loom Co.*, Dec. 4, 1906.)

The decision of the Commissioner of Patents is affirmed; and this decision will be certified to him as required by law. Affirmed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 4, 1907.

Ida M. Rew, her assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Otis Company, of Ware, Mass., for registration of a trade-mark and a trade-mark registered to Ida M. Rew, of New York, N. Y., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Ida M. Rew and to her attorney of record having been returned, with the information that the registrant cannot be found and that the attorney of record is dead, notice is hereby given to the said Ida M. Rew, her assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 30, 1907.

McConnell, Clancey & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of H. F. Webb Company, of Portland, Me., for registration of a trade-mark and a trade-mark registered to McConnell, Clancey & Company, of Chillicothe, Ohio, and the notice of declaration mailed by the Patent Office in the usual manner to the known address of McConnell, Clancey & Company has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said McConnell, Clancey & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 23, 1907.

Hardgrove & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Robert Harris & Brother, of Reidsville, N. C., for registration of a trade-mark and a trade-mark registered to Hardgrove & Company, of Richmond, Va. It appears from the record of the case that the firm of Hardgrove & Company is no longer in existence, and the attorneys for said firm can also not be found.

Notice is therefore given to the said Hardgrove & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR
UNITED STATES PATENT OFFICE,
Washington, D. C., April 1, 1907.

Empire Soap Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Magnolia Healing Soap Company, of Muscatine, Iowa, for registration of a trade-mark, an application for registration of a trade-mark filed by The Southern Cotton Oil Company, of Jersey City, N. J., and a trade-mark registered to the Empire Soap Company, of St. Louis, Mo. The notice of said declaration mailed by the Patent Office in the usual manner to the said Empire Soap Company at its address as above given has been returned by the Post-Office Department undelivered, and it has been impossible to locate said company.

Notice is therefore hereby given to the Empire Soap Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Assistant Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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Patents	764	No. 853,945 to No. 854,708, inclusive.
Designs	6	No. 38,576 to No. 38,581, inclusive.
Trade-Marks	144	No. 62,630 to No. 62,773, inclusive.
Labels	13	No. 13,546 to No. 13,558, inclusive.
Prints	13	No. 1,996 to No. 1,998, inclusive.
Reissues	3	No. 12,653 to No. 12,655, inclusive.
Total issue	943	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	.....	New Hampshire	2	.....
Alaska, District of	.....	.....	New Jersey	42	3
Arizona Territory	1	.....	New Mexico Ter't'y	.....	.....
Arkansas	2	.....	New York	90	37
California	21	2	North Carolina	3	.....
Colorado	9	.....	North Dakota	4	.....
Connecticut	17	2	Ohio	43	14
District of Columbia	5	.....	Oklahoma Territ'y	2	.....
Florida	1	2	Oregon	1	2
Georgia	4	3	Panama	1	.....
Hawaii Territory	2	.....	Pennsylvania	82	9
Idaho	1	.....	Porto Rico	.....	.....
Illinois	64	9	Rhode Island	.....	.....
Indian Territory	.....	.....	South Carolina	1	.....
Indiana	21	1	South Dakota	2	1
Iowa	28	2	Tennessee	3	.....
Kansas	11	1	Texas	20	5
Kentucky	9	9	Utah	3	.....
Louisiana	2	3	Vermont	3	.....
Maine	7	1	Virginia	8	3
Maryland	10	5	Washington	13	1
Massachusetts	40	8	West Virginia	6	2
Michigan	24	5	Wisconsin	18	2
Minnesota	14	12	Wyoming	.....	.....
Mississippi	.....	.....	U. S. Army	.....	.....
Missouri	20	6	U. S. Navy	.....	.....
Montana	1	.....			
Nebraska	8	2	Total to citizens of the United States	662	152
Nevada	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Natal	.....	.....
Austria-Hungary	3	1	Netherlands	.....	1
Belgium	2	.....	Newfoundland	.....	.....
Brazil	.....	.....	New South Wales	2	.....
British West Indies	.....	.....	New Zealand	2	.....
Canada	16	.....	Norway	.....	.....
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	1	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	.....	.....
Cuba	.....	.....	Scotland	2	.....
Denmark	2	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	22	6	Sweden	.....	3
France	5	.....	Switzerland	2	1
Germany	25	7	Transvaal, South Africa	.....	.....
Haiti	.....	.....	Victoria	1	.....
Ireland	2	.....	Western Australia	.....	.....
Italy	.....	.....			
Japan	.....	.....	Total to citizens of foreign countries	88	18
Java	.....	.....			
Mexico	1	.....			

Protection of Models in Denmark.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 15, 1907.

This Office has received, through the Department of State, a copy of the following Royal Ordinance of Frederick the Eighth, King of Denmark, referred to as about to be promulgated in the letter from the Minister of Denmark to the Secretary of State, published in Vol. 123 of the OFFICIAL GAZETTE, page 1000.

E. B. MOORE,
Acting Commissioner.

ROYAL ORDINANCE.

[Translation.]

We, Frederick the Eighth, by God's grace King of Denmark, the Wends and Goths, Duke of Sleswick, Holstein, Stormarn, Ditmarsh, Lauenburg, and Oldenburg, make known that, inasmuch as it was decided in an exchange of notes between the Danish Government on the one hand and the Governments of England and the United States of America on the other that articles imported from Denmark into the said countries may enjoy the protection granted on the model there, it is our will hereby to order that the provisions contained under No. 4, last paragraph of law No. 107 of April 1, 1905, §11, to the effect that the protection granted on the model shall cease if the applicant for registration from abroad imports or allows to be imported articles manufactured after the same, shall not be applicable to articles imported from England or the United States of America as long as the laws in force on the subject in those countries remain unchanged.

All whom it may concern shall be guided accordingly.

Given at Charlottenlund, August 14, 1906.

Under Our Royal hand and seal.

FREDERICK R.
[L. S.]
SIGURD BERG.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 14, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	May 7	May 6	117
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 4	Apr. 16	130
109	XVI. Telegraphy and Telephony..	May 1	Apr. 15	201
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	Apr. 30	Apr. 15	224
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	Apr. 30	Apr. 15	233
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	Apr. 29	Apr. 16	274
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	Apr. 29	Apr. 16	290
327	XVIII. Steam-Engineering, etc...	Apr. 29	Apr. 1	177
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	Apr. 26	Apr. 11	373
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	Apr. 26	Mar. 23	381
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	Apr 25	Apr. 9	249
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	Apr. 25	Mar. 29	505
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	Apr. 24	Apr. 26	252
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Apr. 24	Apr. 13	230
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	Apr. 24	Apr. 11	106
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	Apr. 22	Apr. 11	203
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Apr. 22	Mar. 21	247
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Apr. 17	Apr. 17	407
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Apr. 16	Apr. 15	299
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 16	Apr. 15	338
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Apr. 15	Apr. 8	385
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr. 15	Mar. 27	144
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Apr. 15	Mar. 4	348
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 13	Mar. 26	340
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 12	Apr. 5	174
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 12	Apr. 1	304
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 11	Mar. 16	403
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 9	Mar. 21	409
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Apr. 8	Apr. 2	434
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 4	Mar. 20	211
332	X. Carriages and Wagons.....	Apr. 3	Mar. 28	568
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Apr. 1	Apr. 1	318
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Apr. 1	Mar. 25	456
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 1	Mar. 13	704
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Mar. 29	Mar. 27	429
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 23	Feb. 23	416
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Mar. 22	Mar. 20	428
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Mar. 21	Mar. 21	350
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Mar. 20	Mar. 18	647
	Total number of applications awaiting action			12,813
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	May 11	May 8	179
	Designs	May 9	May 9	21
	Labels and Prints			....

Applications Under Examination—Continued.

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 4, 1907.

Ida M. Rew, her assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Otis Company, of Ware, Mass., for registration of a trade-mark and a trade-mark registered to Ida M. Rew, of New York, N. Y., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Ida M. Rew and to her attorney of record having been returned, with the information that the registrant cannot be found and that the attorney of record is dead, notice is hereby given to the said Ida M. Rew, her assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

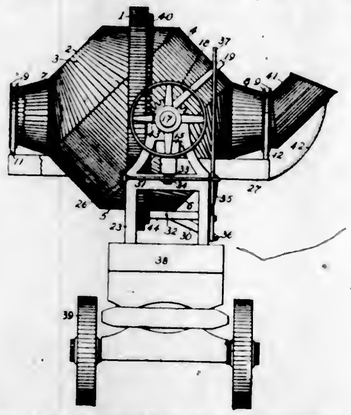
This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

PATENTS

GRANTED MAY 21, 1907.

853,945. CONCRETE-MIXER. CHARLES L. BALDWIN, Waterloo, Iowa. Filed Jan. 15, 1906. Serial No. 296,034.



Claim.—1. In a concrete mixer, the combination of a revoluble mixing drum comprising a hollow cylinder with closed truncated conical ends, the axis of said drum being inclined to the axis of rotation, an inlet spout and an outlet spout connected to opposite ends of said drum in the axis of rotation, a tilting frame, and bearings on said tilting frame for rotatably supporting said spouts.

2. In a concrete mixer, the combination of a revoluble mixing drum, comprising a hollow cylinder having closed truncated conical ends the axis of said drum being inclined to the axis of rotation, an inlet spout and an outlet spout connected to opposite ends of said drum in the axis of rotation, a tilting frame, bearings thereon for said drum, and trunnions on the tilting frame outside the center of gravity of said frame and mixing drum.

3. In a concrete mixer, the combination of revoluble mixing drum, comprising a hollow cylinder having closed truncated conical ends, the axis of said drum being inclined to the axis of rotation, an inlet spout and an outlet spout connected to opposite ends of said drum in the axis of rotation, a tilting frame rotatably supporting said drum, trunnions on the tilting frame outside the center of gravity of said tilting frame and mixing drum, means for holding the tilting frame in operative position, and means for rotating said drum.

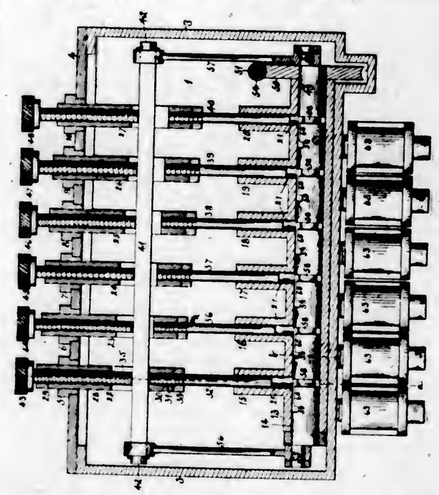
4. In a concrete mixer, the combination of a revoluble mixing drum, comprising a hollow cylinder having closed truncated conical ends the axis of said drum being inclined to the axis of rotation, an inlet spout, and an outlet spout connected to said drum, the said spouts being in the axis of rotation.

5. In a concrete mixer, the combination of a revoluble mixing drum comprising a hollow cylinder having closed truncated conical ends, the axis of said drum being inclined to the axis of rotation, an inlet spout and an outlet spout connected to opposite ends of said drum, the said spouts being in the axis of rotation, and shears within said drum arranged partly in parallel relation and partly at divergent angles to each other.

6. In a concrete mixer, a tilting frame provided with trunnions outside its center of gravity, a revoluble mixing drum comprising a hollow cylinder having closed truncated conical ends the axis of said drum being inclined to the axis of rotation, an inlet spout and an outlet spout connected to said drum in the axis of rotation, bearings on said tilting frame rotatably supporting said spouts, means for detachably holding said tilting frame in operative position, a gear ring surrounding said drum, and means for turning said gear ring to cause the rotation of the drum.

7. In a concrete mixer, the combination of a revoluble mixing drum having its axis of figure inclined to its axis of rotation, an inlet spout and an outlet spout connected to opposite ends of said drum in the axis of rotation, a tilting frame having bearings for the ends of said spouts, trunnions on said tilting frame outside the center of gravity of said tilting frame and mixing drum, a frame provided with bearings for said trunnions, and means mounted on said latter frame for detachably holding said drum with its axis of rotation in a horizontal line.

853,946. LUBRICATOR. EVERITTE K. BARNES, Rockford, Ill. Filed Apr. 3, 1906. Serial No. 309,656.



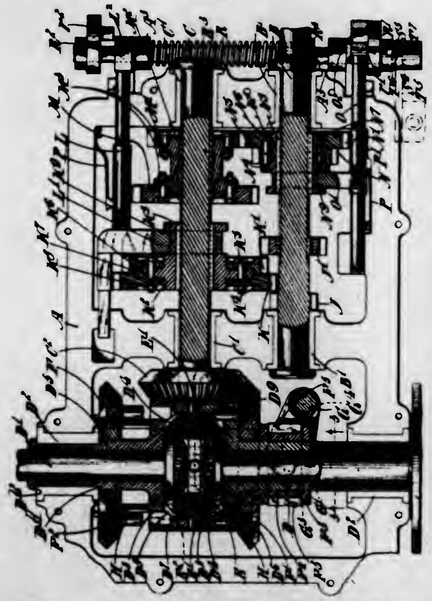
Claim.—1. In a lubricator, the combination of an oil reservoir, a cylinder, a piston for the cylinder, a rotatable valve for the cylinder, comprising a cylindrical shaft, there being an annular groove formed in the periphery of the shaft, a partial annular groove formed in the periphery of the shaft, and a groove extending in the lengthwise direction of the shaft and forming a communication between the annular groove and partial annular groove.

2. In a lubricator, the combination of an oil reservoir, a cylinder, a piston for the cylinder, a rotatable valve for the cylinder comprising a cylindrical shaft, there being an annular groove formed in the periphery of the shaft, a

partial annular groove formed in the periphery of the shaft and a groove extending in the lengthwise direction of the shaft and forming a communication between the annular groove and partial annular groove, means for rotating the shaft and means for reciprocating the piston.

3. In a lubricator, the combination of an oil reservoir, a cylinder, a piston for the cylinder, a rotatable valve for the cylinder comprising a cylindrical shaft, there being an annular groove formed in the periphery of the shaft, a partial annular groove formed in the periphery of the shaft and a groove extending in the lengthwise direction of the shaft and forming a communication between the annular groove and partial annular groove, a connection between the shaft and piston, and means for rotating the shaft and reciprocating the piston.

853,947. SPEED-GEAR FOR MOTOR-VEHICLES. THOMAS H. BASTIN, East Molesey, England. Filed Oct. 8, 1906. Serial No. 338,024.



Claim.—1. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, speed reducing gears for connecting them, a bevel wheel fast on the end of one shaft, a divided shaft disposed at an angle to the other two shafts, differential gears connecting the two parts of this shaft, oppositely disposed bevel wheels carried by the outside member of the differential gears in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting the divided shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheels axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

2. In a change speed gear the combination of two parallel shafts, a frame to carry the same, speed reducing gears for connecting them, a driving bevel wheel fast on the end of one shaft, a divided shaft disposed at an angle to the two other shafts, bevel wheels one on each of the opposed ends of the portions of the divided shaft the beveled faces of the wheels being disposed toward each other, auxiliary bevel pinions situated between them, and gearing them together a sleeve mounted free on each portion of the shaft each sleeve having an enlarged end recessed to receive the bevel wheel mounted thereon the recesses being of such depth that the ends of the sleeves butt against each other and form between them a chamber, a transverse spindle carried in recesses in the abutting ends of the sleeves and having mounted free thereon the aforesaid auxiliary pinions, means for securing these sleeves against endwise movement, oppositely disposed driven bevel wheels carried on the sleeves in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting the divided shaft in such position that these bevel wheels lie on opposite sides of the first mentioned driving bevel wheel with which they are adapted to mesh, means for moving the driven bevel wheels axially to bring one or other into and the other out of mesh, a spacing rod connecting the two driven bevel wheels together and passing through the enlarged ends of the sleeves, the sleeves also having orifices therein whose axes lie parallel with the axis of the divided shaft such orifices opening into the chamber formed by the recesses in the enlarged ends of the sleeves, pins on the driven bevel wheels adapted to enter the orifices of the sleeves as one wheel or other is brought into mesh but which are withdrawn from the orifices when the wheel on which they are carried is not in mesh and a lubricating bath so situated that the enlarged ends of the sleeves dip into the lubricant contained therein, substantially as set forth.

3. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, speed reducing gears for connecting them, a driving bevel wheel fast on the end of one shaft, a divided shaft disposed at an angle to the other two shafts, bevel wheels one on each of the opposed ends of the portions of the divided shaft the beveled faces of the wheels being disposed toward each other, auxiliary bevel pinions situated between them, and gearing them together a sleeve mounted free on each portion of the shaft each sleeve having an enlarged end recessed to receive the bevel wheel mounted thereon the recesses being of such depth that the ends of the sleeves butt against each other and form between them a chamber, a transverse spindle carried in recesses in the abutting ends of the sleeves and having mounted free thereon the aforesaid auxiliary pinions, means for securing these sleeves against endwise movement, oppositely disposed driven bevel wheels carried on the sleeves in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting the divided shaft in such position that these bevel wheels lie on opposite sides of the first mentioned driving bevel wheel with which they are adapted to mesh, means for moving the driven bevel wheels axially to bring one or other into and the other out of mesh, a spacing rod connecting the two driven bevel wheels together and passing through the enlarged ends of the sleeves, the sleeves also having orifices therein whose axes lie parallel with the axis of the divided shaft such orifices opening into the chamber formed by the recesses in the enlarged ends of the sleeves, pins on the driven bevel wheels adapted to enter the orifices of the sleeves as one wheel or other is brought into mesh but which are withdrawn from the orifices when the wheel on which they are carried is not in mesh and a lubricating bath so situated that the enlarged ends of the sleeves dip into the lubricant contained therein, substantially as set forth.

4. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, speed reducing gears for connecting them, a driving bevel wheel fast on the end of one shaft, a divided shaft disposed at an angle to the other two shafts, bevel wheels one on each of the opposed ends of the portions of the divided shaft the beveled faces of the wheels being disposed toward each other, auxiliary bevel pinions situated between them and gearing them together, a sleeve mounted free on each portion of the shaft each sleeve having an enlarged end recessed to receive the bevel wheel mounted thereon the recesses being of such depth that the ends of the sleeves butt against each other and form between them a chamber, a transverse spindle carried in recesses in the abutting ends of the sleeves and having mounted free thereon the aforesaid auxiliary pinions of the differential gear, transverse arms on the spindle extending from opposite sides thereof and lying in the same plane as the spindle the ends of the arms entering recesses in the abutting ends of the sleeves as with the spindle whereby endwise movement of the spindle is prevented, pins projecting from the spindle in the axial line of the divided shafts these pins being disposed on opposite sides of the spindle and each entering a recess in the end of that shaft portion toward it, means for securing the sleeves on the divided shaft against endwise movement, oppositely disposed driven bevel wheels carried on the sleeves in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting the divided shaft in such position that these bevel wheels lie on opposite sides of the first mentioned driving bevel wheel with which they are adapted to mesh, means for moving the driven bevel wheels axially to bring one or other into and the other out of mesh, and spacing rods connecting the two driven bevel wheels together and passing through the enlarged ends of the sleeves substantially as set forth.

5. In a change speed gear the combination of, two parallel shafts, a plurality of wheels fast on one shaft, a plurality of wheels compelled to rotate with but free to slide on the other shaft, an operating member disposed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheels on one of the shafts, a divided casing wherein the shafts and operating members are mounted the division being arranged in the same plane as that occupied by the shafts so that when one half of the casing is removed the shafts and operating members can be lifted out, a bevel wheel fast on the end of one of these shafts, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheels axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

6. In a change speed gear the combination of, two parallel shafts, a toothed wheel fast on one shaft, a toothed wheel fast on the second shaft, a toothed wheel free to slide on the first shaft but compelled to rotate therewith and adapted to engage the fast wheel on the second shaft, a toothed wheel free to slide on the second shaft but compelled to rotate therewith and adapted to engage the fixed wheel on the first shaft, an operating member disposed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheel on one of the shafts, a second operating member disposed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheel on the other shaft, a divided casing wherein the shafts and operating members are mounted the division being arranged in the same plane as that occupied by the shafts so that when one half of the casing is removed the shafts and operating members can be lifted out, a bevel wheel fast on the end of one of these shafts, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheels axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

7. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, a toothed wheel fast on one shaft, a toothed wheel fast on the second shaft, a toothed wheel free to slide on the first shaft but compelled to rotate therewith and adapted to engage the fast wheel on the second shaft, a toothed wheel free to slide on the second shaft but compelled to rotate therewith and adapted to engage the fixed wheel on the first shaft, an operating rod disposed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheel on the first shaft, a second operating rod disposed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheel on the second shaft, a rocking shaft disposed at right angles to the operating rods and adapted to slide endwise in its supports, arms on the rocking shaft disposed one on one side of one of the operating rods and the other on the opposite side of the other rod, means for sliding the rocking shaft endwise so that one or other of the arms is moved toward one of the operating rods, a pin on one of the relatively advanced members whereby engagement is effected the opposite part being recessed to receive the pin the arms being so spaced apart that when one arm is in engagement with one of the operating rods the other is clear of the second operating rod, a bevel wheel fast on the end of one of these shafts, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheels axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

8. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, a toothed wheel fast on one shaft, a toothed wheel fast on the second shaft, a toothed wheel free to slide on the first shaft but compelled to rotate therewith and adapted to engage the fast wheel on the second shaft, a toothed wheel free to slide on the second shaft but compelled to rotate therewith and adapted to engage the fixed wheel on the first shaft, an operating rod disposed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheel on the first shaft, a second operating rod disposed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheel on the second shaft, a rocking shaft disposed at right angles to the operating rods and adapted to slide in its supports, arms on the rocking shaft disposed one on one side of one of the operating rods and the other on the opposite side of the other rod the arms being adapted to engage with the rods, means for sliding the shaft endwise so that one or other of the arms is moved into engagement with one of the operating rods the second arm being at such time brought out of engagement with the second rod, a guide having a recess opposed to the endwise movement of the rocking shaft, a projection on the rocking shaft adapted to enter the recess of the guide as the shaft is moved endwise whereby the shaft is always brought to the same angular position before it can move endwise the guide being of such length that when the shaft arrives at the limit of its endwise movement in either direction the engaging part thereof is free of the guide, a bevel wheel fast on the end of one of these shafts, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheels axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

9. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, a toothed wheel fast on one shaft, a toothed wheel fast on the second shaft, a toothed wheel free to slide on the first shaft but compelled to rotate therewith and adapted to engage the fast wheel on the second shaft, a toothed wheel free to slide on the second shaft but compelled to rotate therewith and adapted to engage the fixed wheel on the first shaft, an operating rod disposed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheel on the first shaft, a second operating rod dis-

posed parallel to the shafts and in the same plane, means for engaging this operating member with the sliding wheel on the second shaft, a rocking shaft disposed at right angles to the operating rods and adapted to slide in its supports, arms on the rocking shaft disposed one on one side of one of the operating rods and the other on the opposite side of the other rod the arms being adapted to engage with the rods, means for sliding the shaft endwise so that one or other of the arms is moved into engagement with one of the operating rods the second arm being at such time brought out of engagement with the second rod, a guide having a recess opposed to the endwise movement of the rocking shaft, a projection on the rocking shaft adapted to enter the recess of the guide as the shaft is moved endwise whereby the shaft is always brought to the same angular position before it can move endwise the guide being of such length that when the shaft arrives at the limit of its endwise movement in either direction the engaging part thereof is free of the guide, an operating lever free to swing about a center co-axial with the axis of the rocking shaft, means whereby the lever is engaged with the rocking shaft in such manner that the latter is free to move endwise without becoming disengaged from the lever, a second lever pivoted to the first in such manner that it swings about an axis at right angles to the axis of the rocking shaft this lever extending from both directions at the point to which it is pivoted, means for connecting one end of this lever to the rocking shaft in such manner that the rocking shaft moves endwise with the lever but is free to rock relatively thereto, a bevel wheel fast on the end of one of these shafts, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheels axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

10. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, a flange carried by and rotating with one shaft, a reversible externally toothed annulus recessed on each side to receive and fit the flange the center of the annulus being fitted to that part over which it is slid to engage the flange, means for detachably securing the annulus to the flange, a wheel on the second shaft adapted to gear with this annular toothed wheel, a bevel wheel fast on the end of one shaft, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheels axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

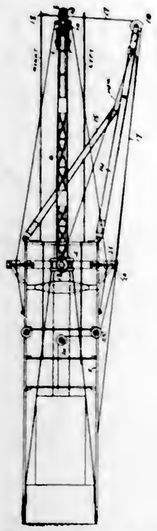
11. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, a sleeve on one of these shafts a flange on the sleeve, a reversible externally toothed annulus recessed at both sides to receive and fit the flange, the center portion of the annulus being made a fit for the sleeve, means for detachably securing the annulus to the flange, a wheel on the second shaft adapted to gear with this annular toothed wheel, a bevel wheel fast on the end of one shaft, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheel axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

12. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, a flange carried by and rotating with one shaft, a reversible externally toothed annulus recessed on each side to receive and fit the flange, the center of the annulus being fitted to that part over which it is slid to engage the flange, means for detachably securing the annulus to the flange, a sleeve on the second shaft, a flange thereon, an externally toothed annulus adapted to mesh with the annulus on the other shaft, fitted with a boss on the sleeve so that it butts against the flange, keys between the sleeve and annulus, bolts connecting the annulus with the flange, a bevel wheel fast on the end of one shaft, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for moving the sliding bevel wheels axially to bring one or other of them into and the other out of mesh, and means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, substantially as set forth.

13. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, a plurality of wheels fast on one shaft, a plurality of wheels compelled to rotate with but free to slide on the second shaft and adapted to mesh with the wheels on the first shaft, a bevel wheel fast on the end of one of these shafts, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, an operating member for sliding one of the speed changing portions of the gear, a channeled sleeve on such sliding portion, a collar transversely divided and adapted to lie in the channel of the sleeve, a fork on the operating member the two arms of which are spaced apart sufficiently wide to embrace the collar, means for supporting the operating member in such position that the arms of the fork engage the half collar portions at points on a line approximately at right angles to the plane of division and thus hold the two portions together, and trunnions on one of the engaging members (namely the fork and collar) the other engaging member being correspondingly slotted so that movement of the fork moves the collar axially, substantially as set forth.

14. In a change speed gear the combination of, two parallel shafts, a frame to carry the same, a plurality of wheels fast on one shaft, a plurality of wheels compelled to rotate with but free to slide on the second shaft and adapted to mesh with the wheels on the first shaft, a bevel wheel fast on the end of one of these shafts, a third shaft disposed at an angle to the other two shafts, oppositely disposed bevel wheels carried thereon in such manner that they are compelled to rotate therewith but are free to move axially thereon, means for supporting this shaft in such position that the bevel wheels lie on opposite sides of the first mentioned bevel wheel with which they are adapted to mesh, means for spacing the sliding bevel wheels apart so that at one point in their axial movement neither wheel is in mesh with the intermediate wheel, an operating member for sliding one of the speed changing portions of the gear, a channeled sleeve on such sliding portion, a collar transversely divided and adapted to lie in the channel of the sleeve, a fork on the operating member the two arms of which are spaced apart sufficiently wide to embrace the collar, a trunnion on each half portion of the collar the trunnions being disposed in a plane at right angles to the plane of division, and means for supporting the operating member in such position that the arms of the fork each of which is slotted can be slid into position so that the trunnions enter the slots and the arms prevent the falling apart of the two half collar portions, substantially as set forth.

853,948. TRACK-SHIFTING MACHINE. WILLIAM G. BIERD, Colon, Panama. Filed Feb. 16, 1907. Serial No. 357,709.



Claim.—1. In a machine of the character described, the combination of track hoisting mechanism, and means for moving a track laterally.

2. In a machine of the character described, the combination of means for raising and lowering a track and means for shifting the track laterally while raised.

3. In a machine of the character described, the combination with a traveling support, of track hoisting means thereon, and means also carried by said traveling support for shifting the track laterally while in raised position.

4. In a machine of the character described, the combination of track hoisting means and track shifting means, and separate operating mechanism for each of said means.

5. In a machine of the character described, the combination with a support, of a two vertically swinging beams, means connected with one of said beams for raising a track, and means coöperating with the other beam for swinging the track laterally.

6. In a machine of the character described, the combination with a support, of two vertically swinging beams, means coöperating with one of said beams to raise a track, means coöperating with the other beam to move the track laterally and means permitting said beams to swing laterally as well as vertically.

7. In a machine of the character described, the combination with a support, a tower on said support and winding drums, of a swinging beam connected with said tower, a cable wound on one of said drums and passing over the tower and said beam, means connected with said cable to engage a track, a cable passing over the other drum and provided with means to engage a rail of the track, and means for causing said last-mentioned cable to exert a lateral pull on the track to shift the same laterally.

8. In a machine of the character described, the combination with a traveling support, of track raising and lowering means, and track shifting means carried by said traveling support, and mechanism for operating each of said means.

9. The combination with a support movable on a track, of means carried by said movable support for elevating the track in rear of the direction of travel of said support, and means also carried by said support for shifting the track laterally while elevated.

10. The combination with a support movable on a track, of means carried by said movable support for elevating that portion of the track adjacent to one end of the support, and means also carried by said support for shifting said raised section of the track laterally.

11. In a machine of the character described, the combination with a platform and hoisting mechanism thereon, of an approximately horizontal beam, a drum on the platform, a sheave on the beam, and a cable wound on the drum, passed over said sheave and secured to a track engaging device at its free end.

12. In a machine of the character described, the combination with a platform, of two beams on the platform, a lifting cable on one beam, and a laterally swinging cable on the other beam.

13. In a machine of the character described, the combination with a car platform, of an approximately horizontal beam connected with one end of said platform, a sheave at the end of said beam, means for preventing lateral swinging of said beam, a drum on the platform, a cable wound on the drum and passed over said sheave, a hook at the free end of the cable to engage a rail of the track, and track hoisting mechanism on the platform.

14. In a machine of the character described, the combination with a car platform, of a vertically adjustable beam thereon, hoisting mechanism connected with said beam, a laterally adjustable beam on the platform, a brace securing the laterally adjustable beam at various adjustments, and means on said laterally adjustable beam for moving a track laterally.

15. In a machine of the character described, the combination with a car platform, of a tower on said platform, an engine or motor on the platform, two drums driven by the engine or motor, a beam hinged to the tower, a cable supporting the beam, a hoisting block, tongs operated by the hoisting block and constructed to engage a tie or ties, a cable to elevate and lower the hoisting block, passed over sheaves on the beam and tower and wound on one of said drums, a laterally swinging approximately horizontal beam hinged to one end of the platform, a brace hinged to the end of the platform and adjustably secured to the laterally adjustable beam, a hook engaging a rail of the track, and a cable secured to the hook and passed over sheaves on the last-mentioned beam and tower and wound on the other of said pair of drums.

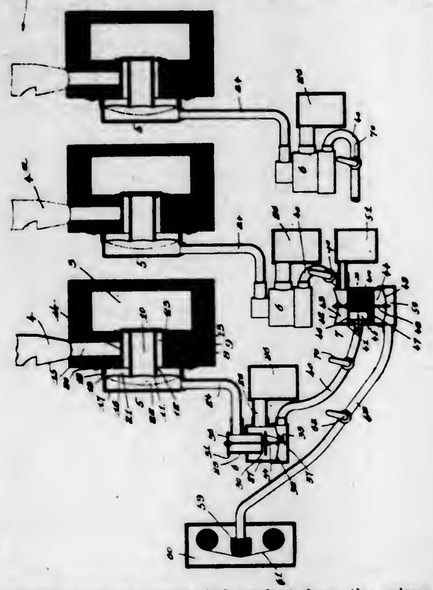
853,949. PNEUMATIC ACTION FOR WIND INSTRUMENTS. JACOB BINNIG, Boston, Mass., assignor of one-half to Mason & Hamlin Company, Cambridge, Mass., a Corporation of Delaware. Filed July 10, 1905. Serial No. 268,911.

Claim.—1. In a wind instrument, the combination with a wind chest of a plurality of secondary pneumatics, a valve device interposed between said wind chest and said secondary pneumatics, said valve device having a separate port for each pneumatic, a valve to control all said ports, a pneumatic for operating said valve, and manually-controlled means independent from said valve device for controlling communication between said valve device and each secondary pneumatic.

2. In a wind instrument, the combination with a plurality of pipe-valves of a secondary valve controlling each pipe-valve, a secondary pneumatic for each secondary valve, a single primary valve for controlling all the secondary pneumatics, a primary pneumatic for the primary valve, and manually-controlled means independent from said primary valve for controlling the communication between each secondary pneumatic and the primary valve independently.

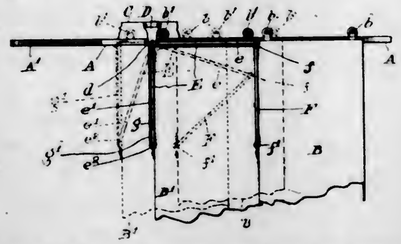
3. In a wind instrument, the combination with a wind chest of a plurality of secondary pneumatics, a primary

valve device having a port communicating with each secondary pneumatic, a primary valve for controlling all of said ports, a primary pneumatic for operating said valve, a pipe-valve controlled by each secondary pneumatic, and



manually-operated means independent from the primary valve for controlling communication between each secondary pneumatic and said valve.

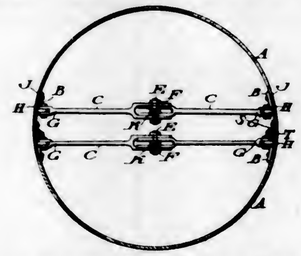
853,950. CONNECTING DEVICE FOR ELEVATOR-DOORS. HARRY BITNER, Estes Park, Colo. Filed Mar. 3, 1906. Serial No. 303,955.



Claim.—1. The combination with two doors sliding in parallel planes, of a connecting device between the two comprising an angle-lever and a link, the angle-lever being pivoted between its ends to a support stationary with relation to the doors, said lever having one of its arms in running engagement with the slow door and the other arm pivoted to one end of the link, and said link being pivoted at its other end to the fast door.

2. The combination with two parallel sliding doors, of a connecting device comprising a right-angle lever pivoted at its angle to a support stationary with relation to the two doors substantially in line with the rear edge of the slow door, one of the arms of said lever extending substantially parallel with said rear edge and having a running engagement therewith, the other arm of said lever extending across the upper portion of the slow door to a point substantially in line with the rear edge of the fast door, and a link pivoted at its upper end to the end of the latter arm, and at its lower end to the rear edge of the fast door.

853,951. MOLD AND CENTERING DEVICE. JACOB B. BLAW, Pittsburg, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa., a Corporation of New Jersey. Filed June 6, 1906. Serial No. 320,394.



Claim.—1. In a mold, a collapsible mold section having a disconnected part comprising a portion of the wall thereof and means connected with said part and section whereby said section may be contracted and said part form a bearing for said means.

2. In a mold, a collapsible mold section having a disconnected part comprising a portion of the wall thereof, a lever connected with said section and part and means for operating said lever whereby said section may be contracted.

3. In a mold, a collapsible mold section having a disconnected part comprising a portion of the wall thereof, a lever pivotally connected with said section and part and means for operating said lever whereby said section may be contracted and said part pressed against the shaped material around the mold.

4. In a mold, a collapsible mold section having a disconnected part comprising a portion of the wall thereof, a lever pivotally connected with both section and part, a means for operating said lever whereby said section may be contracted and said part first pressed against the shaped material around the mold and next drawn inwardly from said material.

5. In a mold, a collapsible mold section, a disconnected part in the wall thereof, a lever connected with said section and part and provided with an arm arranged so that a lateral movement of said arm is adapted to draw said section from the molded sewer wall and a further movement of said arm is adapted to draw said disconnected part from the sewer wall, whereby the mold may be removed.

6. In a mold of the character stated, a collapsible mold section, a lever connected with said section from within the latter for respectively contracting and expanding the same, a bar connected with said lever, a fulcrum member adapted to be supported independent of the mold section, and means coöperating with the fulcrum member and the bar for moving said bar in opposite directions.

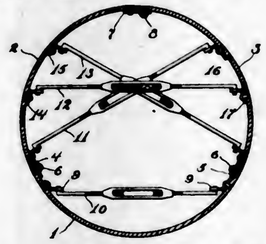
7. In a mold, a collapsible mold section, a lever connected with said section from within the latter for respectively contracting and expanding the same, a bar connected with said lever, a screw attached to said bar, a bearing member for the screw adapted to be supported independent of the mold section and means on the bearing member coöperating with the screw whereby the screw may be reciprocated.

8. In a mold, a semicylindrical collapsible mold section, disconnected sections constituting portions of the wall thereof and located adjacent the edges of the section, levers having arms pivoted to such disconnected sections and to the collapsible sections and a single means for operating the levers.

9. In a mold, a semicylindrical mold section of sheet metal having disconnected parts near the edges comprising portions of the walls thereof, and means connected with the section and said disconnected parts whereby said section may be contracted and said parts form bearings for said means.

10. In a mold, a collapsible mold section having a disconnected part provided with beveled edges adapted to fit similar beveled edges in the mold section and comprising a portion of the wall of such mold section and means connected with said part and section whereby said section may be contracted and said part form a bearing for said means.

853,952. CENTERING-MOLD. JACOB B. BLAW, Pittsburg, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 12, 1906. Serial No. 343,005.



Claim.—1. In combination, a tubular mold member of flexible material comprising an independent parti-tubular bottom member, and a plurality of separable co-operating parti-tubular upper members, and means for collapsing the parti-tubular members.

2. In combination, a tubular mold member of flexible material comprising an independent parti-tubular bottom member and a plurality of separable co-operating parti-tubular upper members, and means for engaging the edges of the members whereby they may be sprung inwardly.

3. In combination, a tubular mold member of flexible material comprising an independent parti-tubular bottom member and a plurality of separable co-operating parti-tubular upper members, and turnbuckles for bracing and collapsing the members.

4. In combination, a tubular mold member of flexible material comprising an independent parti-tubular bottom member and a pair of separable parti-tubular side members engaging each other at their top edges and the lower member at their bottom edges, and means for collapsing the members.

5. In combination, a tubular mold member of flexible material comprising an independent parti-tubular bottom member having a turnbuckle engaging the opposite edges, and a pair of separable parti-tubular side members co-operating with the lower member and having a pair of crossed turnbuckles for springing in the edges of the upper sections.

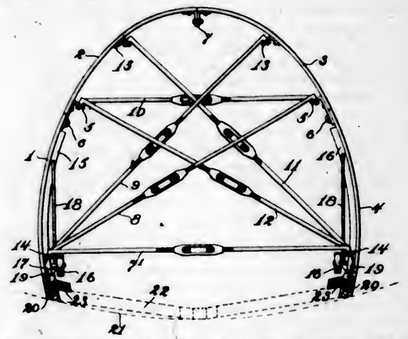
853,953. CENTERING-MOLD. JACOB B. BLAW, Pittsburg, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 12, 1906. Serial No. 343,006.

Claim.—1. In combination, a parti-tubular mold member of flexible material and radially directed stiffening and collapsing braces extending from the edges of the member to the opposite sides of the mold.

2. In combination, a parti-tubular mold member of flexible material, and a plurality of radially directed stiffening and collapsing braces extending from each of the edges of the member to different points on the opposite walls of the mold.

3. In combination, a parti-tubular mold member of flexible material provided with stiffening sections along its lower edges and radially directed stiffening and collapsing braces extending from the edges of the member to the opposite sides of the mold.

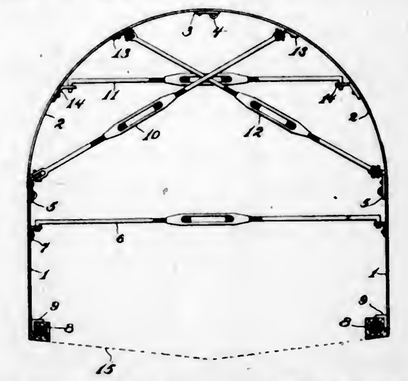
4. In combination, a parti-tubular mold member of flexible material comprising a plurality of sections removably secured together at the edges by flanged stiffening sections and radially directed stiffening and collapsing braces extending from the edges of the member to the flanges of the stiffening sections.



5. In combination, a parti-tubular mold member of flexible material, transversely extending stiffening and collapsing braces secured to the edges of the member, and wheels mounted adjacent such edges.

6. In combination, a parti-tubular mold member of flexible material, stiffening sections extending up from the edges of the member, transversely extending stiffening and collapsing braces secured adjacent the edges of the member, and wheels secured to the stiffening sections.

853,954. CENTERING-MOLD. JACOB B. BLAW, Pittsburg, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 12, 1906. Serial No. 343,007.



Claim.—1. In combination, a U shaped mold member of flexible material comprising an upper arched portion having means for collapsing it, and a pair of substantially flat side members co-operating with the top member and provided with collapsing means adjacent the upper edges thereof.

2. In combination, a U shaped mold member of flexible material comprising an upper arched portion having means for collapsing it, and a pair of side members co-operating with the top member and provided with transverse stiffening and collapsing means for the upper edges, and means for supporting the lower edges of the side members and for preventing lateral movement thereof.

3. In combination, a U shaped mold member of flexible material comprising an upper arched portion having means for collapsing it, and a pair of side members co-operat-

ing with the top member and provided with transverse stiffening and collapsing means for the upper edges, and angle irons on the inside of the lower edges of the side members for supporting such edges.

4. In combination, a U shaped mold member of flexible material comprising an upper arched portion having means for collapsing it, and a pair of side members co-operating with the top member and provided with transverse stiffening and collapsing means for the upper edges, supporting timbers, and angle irons on the inside of the lower edges of the side members for engaging the timbers.

5. In combination, a U shaped mold member of flexible material comprising a pair of substantially flat side members having supporting means for the upper and lower edges, and collapsing means, and an upper arched portion having a pair of crossed turn buckles substantially radial with respect to the arch and adapted to spring in the edges of the arched portion.

6. In combination, a U shaped mold member of flexible material comprising an upper arched portion having stiffening and collapsing braces engaging the edges of such portion, and a pair of substantially flat side members supported at their upper edges on the lower edges of the arched member, means for supporting the lower edges of the side members against lateral movement, and a collapsing and supporting brace intermediate the upper and lower edges.

853,955. CEILING-MOLD. JACOB B. BLAW, Pittsburg, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 12, 1906. Serial No. 343,008.

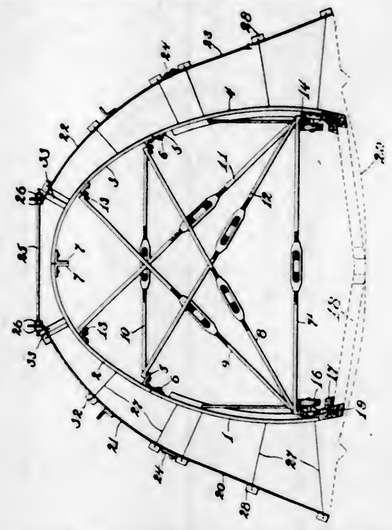


Claim.—1. In combination, a mold composed of flexible material comprising a pair of curved corner sections provided with collapsing means extending between the ends of each section, and a central section adapted to be removably secured to the corner sections and provided with stiffening sections.

2. In combination, a mold composed of flexible material comprising a pair of curved corner sections provided with turnbuckles extending between the ends of each section, and a central section adapted to be removably secured to the corner sections and provided with stiffening sections.

3. In combination, a mold composed of flexible material and comprising curved corner portions and a substantially flat central portion interposed between the corner portions and provided with stiffening sections, and stiffening and collapsing braces extending across the curves of the corner portions.

853,956. CENTERING-MOLD. JACOB B. BLAW, Pittsburg, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 12, 1906. Serial No. 343,009.



Claim.—1. In combination in a mold, a collapsible inner mold, a thin flexible outer sheath spaced therefrom, and detachable means connecting the mold and the sheath for supporting such sheath.

2. In combination in a mold, a collapsible inner mold, a thin flexible outer sheath spaced therefrom, and a plurality of wires connecting the mold and sheath for holding the sheath in position.

3. In combination in a mold, a collapsible U shaped mold, a larger U shaped sheath of thin flexible material thereover and open at the top, and detachable means connecting the mold and sheath for holding the sheath in position.

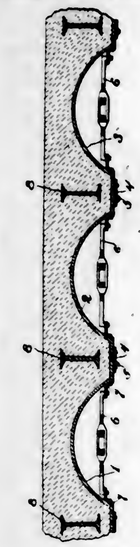
4. In combination in a mold, a thin flexible sheath composed of a plurality of vertical strips, joining and stiffening means for the adjacent edges comprising a T-bar having its flange provided with slots and lying between the plates, and wedges for engaging the slots and bearing against the plates.

853,957. CEILING-MOLD. JACOB B. BLAW, Pittsburg, Pa., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 12, 1906. Serial No. 343,010.

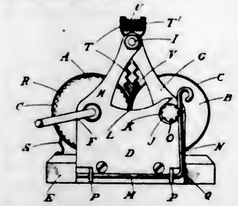
Claim.—1. In combination, a ceiling mold composed of flexible material and comprising a plurality of arched plates detachably secured together at their edges and having stiffening and collapsing braces.

2. In combination, a ceiling mold composed of flexible material and comprising a plurality of arched plates detachably secured together at their edges and having transverse stiffening and collapsing braces engaging the plates near their edges.

3. In combination with a ceiling mold composed of flexible material and comprising a plurality of arched plates having their adjacent edges out turned, of fastening means for holding the out turned edges in alinement, and stiffening and collapsing braces for the arches.



853,958. RAZOR-STROPPING MACHINE. EDWARD C. BOWDEN-SMITH, Brockenhurst, England. Filed July 6, 1906. Serial No. 324,999.



Claim.—1. In a razor stropping machine, the combination with a roller covered with stropping material, of a frame work having end plates with bearings for the roller spindle, a cranked handle for turning same, brackets on the end plates carrying a cross bar, a razor holder pivoted on the said cross-bar, a second roller covered with stropping material and means also pivoted on the cross bar for supporting same in removable and adjustable contact with the first mentioned roller.

2. In a razor stropping machine, the combination with a roller covered with stropping material, of a frame-work having end plates with bearings for the roller spindle, a cranked handle for turning same, brackets on the end plates carrying a cross bar, a razor holder pivoted on the cross bar, a second roller covered with stropping material, pivoted links carrying bearings for the second roller, forks in the end frames forming guides for the latter, and means for retaining the roller in the said guides.

3. In a razor stropping machine, the combination with a roller covered with stropping material of a frame-work having end plates with bearings for the roller spindle, a cranked handle for turning same, brackets on the end plates carrying a cross bar, a razor holder pivoted on the cross bar, a second roller covered with stropping material, pivoted links carrying bearings for the second roller, forks in the end frames forming guides for the latter, a groove in the end of the second roller spindle, a spring actuated angular lever for retaining the roller in the said guides, hinges for same, and a shoulder on the base against which the end thrust is taken.

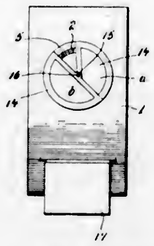
4. In a razor stropping machine, the combination with two revolving rollers covered with stropping material, of a frame for supporting same, a crossbar supported by brackets on the said frame, a razor blade holder composed of two crossed plates so as to form a pivot on the cross bar, and means for enabling the said plates to securely grip and hold the razor between the revolving rollers.

5. In a razor stropping machine, the combination with two revolving rollers covered with stropping material, of a frame for supporting same, a crossbar supported by brackets on the said frame, a razor holder composed of two crossed plates so as to form a pivot on the cross bar, and one or more coiled springs pressing outward on the crossed plates so as to cause the opposite ends of the plates to grip the razor.

6. In a razor stropping machine, the combination of a roller covered with stropping material, with a framework having end plates with bearings for the roller spindle, a cranked handle for turning same, a cross bar supported adjacently to the rollers, a razor holder connected to the cross bar having spring actuated corrugated jaws to grip the razor, a second roller covered with stropping material, links pivoted on the aforementioned cross bar having bearings for the second roller, forks on the end plates to act as a guide for the roller, and spring actuated levers for pressing the rollers into contact with each other.

7. In a razor stropping machine, the combination of a roller covered with stropping material, with a framework having end plates with bearings for the roller spindle, a cranked handle for turning same, a cross bar supported adjacently to the rollers; a razor holder connected to the cross bar having spring actuated corrugated jaws to grip the razor, a second roller covered with stropping material, links pivoted on the aforementioned cross bar having bearings for the second roller, forks on the end plates to act as a guide for the roller, spring actuated levers for pressing the rollers into contact with each other, and a ratchet wheel on one of the rollers with a spring ratchet preventing the revolution of the rollers in a backward direction.

853,959. LUNAR CALENDAR. GIUSEPPE CASALE, Saltillo, Mexico. Filed Oct. 20, 1906. Serial No. 339,761.



Claim.—1. A lunar calendar, comprising a chart formed of a circular band divided into parts representing the days of the lunar month, and a sectional segmental shutter centrally pivoted on the chart and adjustable to expose a part of said chart.

2. A lunar calendar, comprising a circular chart having a circular band about the perimeter thereof, said band being divided into parts representing the days of the lunar month, said chart being also divided into six irregular divisions by radial lines, and a sectional segmental shutter centrally pivoted on the chart and adjustable to expose one only of any of said irregular divisions.

3. A lunar calendar, comprising a circular chart divided into segments representing the days of the lunar month, a shutter composed of two semi-circular segments pivotally secured at the center of the chart adapted to adjustably telescope each other and expose sections of the chart.

853,960. SAFETY-RAZOR. RUSS J. CHRISTY, Fremont, Ohio. Filed May 3, 1906. Serial No. 315,102.



Claim.—1. The combination with a supporting plate having lips at its ends and a blade having ears at its ends to bear against the ends of the lips, of a removable spring clamping plate adapted to embrace the blade and supporting plate and having its rear spring portion in engagement with the rear edge of said blade.

2. The combination with a handle and rigidly mounted supporting plate and a blade on said plate, of a removable clamping plate having a bearing face portion to engage the blade, clamping fingers to engage the plate, and a spring portion connecting said bearing face portion and said fingers, whereby the blade is held against the supporting plate by spring pressure and is readily removable.

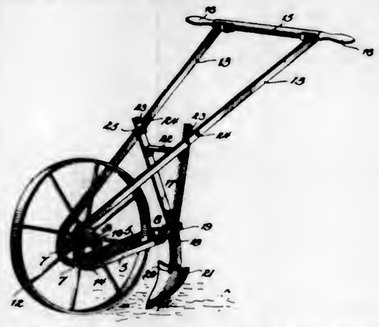
3. The combination with a handle and rigidly mounted supporting plate having lips at its ends and a blade lying on said plate between the lips and having lugs at its ends to engage the lips, of a removable clamping plate shorter than the space between said lips and adapted to slide therebetween, said plate having a bearing face engaging the blade, clamping fingers engaging the plate, and a spring portion connecting said bearing face portion and said fingers.

4. The combination with a handle having a portion thereof bent at an angle of approximately 45°, of a combined supporting plate and comb guard secured to said handle at approximately the center of the supporting portion of said plate, the supporting face of said plate being arranged at a right angle to the bent portion of said handle, and a blade supported on said plate, whereby said blade is held rigidly in a transverse plane approximately 45° to the longitudinal axis of the handle.

5. The combination with a handle having a portion thereof bent at an angle of approximately 45°, of a supporting plate secured to the end of the bent portion of said handle at approximately the center of said plate, the supporting face of said plate being arranged at a right angle to the longitudinal axis of said bent portion, a comb guard on one side of said supporting plate and secured thereto by bent portions, a blade supported on said plate and extending approximately equal distances beyond each side of said plate and the edge arranged adjacent said comb, a spring clamping plate arranged to clamp said blade to said supporting plate and having its rear spring portion in engagement with the rear edge of said blade and curved to correspond in cross section with the comb on the other side of said supporting plate.

853,961. PLOW. JOSEPH S. CLICK, Bridgewater, Va. Filed July 3, 1906. Serial No. 324,678.

Claim.—1. In a plow, the combination with a wheel, of a plow beam connected to the wheel, and a handle connected to the beam in advance of the connection of the said beam with the wheel and below the horizontal plane in which said connection is located.



2. In a plow, the combination with a beam having an upturned portion, and a rearwardly turned front terminal carried by the upper end thereof, of a wheel journaled on the rearwardly turned terminal, and a handle connected to the upstanding portion of the beam below the horizontal plane of the journal axis of the wheel.

3. In a plow, the combination with a beam comprising side bars, having upwardly and rearwardly extending front end portions, of an axle connecting the upwardly extending portions, a wheel mounted on the axle, and handle bars connected to the upwardly extending portions of the side bars in advance of the axle and below the horizontal plane in which said axle is located.

4. In a plow, the combination with a beam, of a handle connected to the front end thereof, and a wheel journaled on the beam in rear of the handle connection therewith and adjustable on the beam toward and from said front end and consequently toward and from said handle connection.

5. In a plow, the combination with a beam having an upwardly turned portion provided with a rearwardly turned terminal, of a handle connected to the upwardly turned portion, and a wheel journaled on the rearwardly turned terminal in rear of the handle connection and adjustable longitudinally along said rearwardly turned terminal toward and from said handle connection.

6. In a plow, the combination with a beam member, of a handle member, a plow standard pivoted to the beam member and adjustable to different angles of inclination with respect thereto, and connections between the standard and handle member for securing said standard against its pivotal movement and at said different angles of inclination.

7. In a plow, the combination with a beam member, of a handle member, and a plow standard mounted on said members and adjustable to different angles of inclination with respect thereto.

8. In a plow, the combination with a beam member, of a handle member, and a plow standard pivoted on one member and having an adjustable connection with the other member to hold said standard at different angles of inclination with respect to the beam.

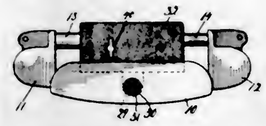
9. In a plow, the combination with a beam, of a handle pivoted thereto, and a plow standard pivoted to the beam and having its upper end adjustable longitudinally along the handle, said handle being also adjustable longitudinally of the standard.

10. In a plow, the combination with a beam, comprising side bars, of a wheel journaled to and between the side bars of the beam, handle bars pivoted to the front portion of the beam, a standard pivoted between its ends to the rear portion of the beam, means for securing a plowing device to the lower side of the standard, the upper portion of said standard comprising spaced arms disposed in transverse relation to the handle bars, said standard arms and handle bars each being adjustable longitudinally along the other, and means for securing them against relative movement.

11. In a plow, the combination with a beam, comprising spaced side bars having upwardly and rearwardly turned front ends, of a wheel journaled on the rearwardly turned portions and adjustable along the same, handle bars pivoted to the side bars of the beam, the pivot connections being disposed below the horizontal plane of the wheel connection, a plow standard pivoted between its ends upon the rear end of the beam and comprising spaced side arms, the upper ends of which are disposed transversely of and are slidable longitudinally along the handle bars, said handle bars being also movable in a substantially upright direction upon the side arms, and means for connecting the side arms and handle bars to secure the standard against movement.

12. In a plow, the combination with a beam having an upturned front portion, of a wheel journaled on said upturned front portion and having its axis of rotation disposed above the main portion of the beam, and a handle connected to said beam.

853,962. LOOSE-LEAF BINDER. JAMES C. DAWSON, St. Louis, Mo., assignor to Sieber & Trussell Manufacturing Company, a Corporation of Missouri. Filed Apr. 30, 1906. Serial No. 314,435.



Claim.—1. In a key-controlled binder, in combination, a plate having a key-hole, a lock secured to the binder and having a manually-advanced and key-withdrawn bolt for covering the key-hole.

2. In a key-controlled binder, in combination, a plate having a key-hole, a lock secured to the binder and having a bolt manually movable in a path intersecting the line of the key-hole.

3. In a key-controlled binder, the combination with a plate having a key-hole, a bolt reciprocable across the key-hole and having a thumb-piece, a spring-advanced and key-retracted detent for retaining the reciprocable plate.

4. In a key-controlled binder, in combination, an end plate having a key aperture, a lock casing carried by the end plate, a bolt reciprocable through the casing to and from the key-hole and having a projecting pressure-receiving end, and a spring-advanced key-retracted detent for holding the bolt in its advance position.

853,963. LOOSE-LEAF BINDER. JAMES C. DAWSON, St. Louis, and THOMAS E. HEETER, Maplewood, Mo., assignors to Sieber & Trussell Mnfg. Co., a Corporation of Missouri. Filed Nov. 15, 1906. Serial No. 343,597.



Claim.—1. In a loose leaf binder, in combination, a longitudinally and upwardly bowed supporting plate, an openable arch comprising a pair of mating binding post members pivotally mounted in the plate at opposite sides of its crown, each of the posts having one end extending below the plate, and a cam-plate mounted within the bowed portion of the plate and reacting downwardly on the inner ends of the posts.

2. In a loose leaf binder, in combination, a longitudinally and upwardly bowed supporting plate, an openable arch comprising a pair of mating binding post members pivotally mounted in the plate at opposite sides of its crown, each of the posts having one end extending below the plate, and a reciprocable cam mounted within the bowed portion of the plate and having a rounded face reacting downwardly on the inner ends of the posts, the highest part of the cam being adapted to pass the point of contact with the posts before reaching the limit of its movement in one direction.

3. In a loose leaf binder, in combination, a slideway housing consisting of a base plate forming the floor of the housing and a longitudinally bowed plate secured thereto, and forming the side walls and cover of the housing, an openable filing arch comprising a pair of mating binding post members each pivotally mounted in a side wall of the housing and having one end extending into its interior, a spring reacting between the floor of the housing and the inner ends of the posts, and a cam-plate mounted on the cover of the housing and reacting downwardly on the inner ends of the posts.

4. In a loose leaf binder, in combination, a slideway housing, an openable arch comprising a pair of mating binding post members each pivotally mounted in a side wall of the housing and having one end extending into its interior, a spring reacting between the floor of the housing and the inner ends of the posts, and a cam-plate mounted on the cover of the housing and reacting downwardly on the inner ends of the posts.

5. In a loose leaf binder, in combination, a supporting member, a binding post member movably mounted thereon, and a reciprocable cam having a rounded face engaging the post, the highest part of the cam being adapted to pass the point of contact with the post before reaching the limit of its movement in one direction.

6. In a loose leaf binder, in combination, a longitudinally and upwardly bowed supporting plate, an openable arch comprising a pair of mating binding post members pivotally mounted in the plate at opposite sides of its crown, each of the posts having one end extending below the plate, and a reciprocable cam mounted within the bowed portion of the plate and having a rounded face reacting downwardly on the inner ends of the posts, the highest part of the cam being adapted to pass the point of contact with the posts before reaching the limit of its movement in one direction.

7. In a loose leaf binder, in combination, a supporting member, an openable arch comprising a pair of mating binding post members pivotally mounted on the supporting member, means for closing the arch, and a three-part spring for opening the arch, one of its parts engaging each of the binding post members and the other part reacting upon the supporting member.

8. In a loose leaf binder, in combination, a supporting member, an openable arch comprising a pair of mating binding post members pivotally mounted on the supporting member, a leaf spring mounted on the supporting member and having three arms, two arms of the springs being bowed upwardly, one of such arms engaging each of the binding post members and the other arm of the spring being bowed downwardly and reacting upon the supporting member, and means for turning the binding post members in opposition to the spring.

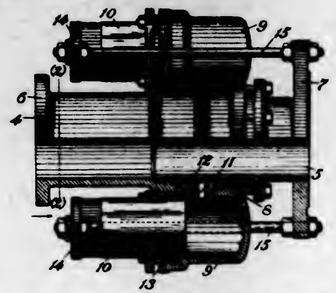
9. In a loose leaf binder, in combination, a supporting member, a binding post member oscillatably mounted thereon, a divided leaf spring secured to the supporting member, one portion of the spring engaging the binding post member and another portion of the spring reacting upon the supporting member, and means for moving the binding post member in opposition to the spring.

853,964. EXPANSION-JOINT. WILLIAM W. DOOLITTLE, Evanston, Ill., assignor to Crane Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 9, 1905. Renewed Feb. 19, 1907. Serial No. 358,241.

Claim.—1. In combination an expansion joint comprising telescoping parts, cylinders secured to one part of the joint and having connections for the admission of fluid pressure, plungers working in the cylinders, and connections outside of the cylinders between the plungers and the other telescoping part.

2. In combination an expansion joint comprising tele-

scoping parts, cylinders secured to one part of the joint and provided with passages leading to such part, plungers working in the cylinders and provided with cross heads, and connections outside of the cylinders between the cross heads and the other telescoping part.



3. In combination an expansion joint comprising telescoping parts, a cylinder secured to one part of the joint and rearwardly facing with respect thereto and having a connection for the admission of fluid pressure, a plunger working in the cylinder and having connections outside of the cylinder with the other telescoping part of the joint.

4. In combination an expansion joint, comprising telescoping parts, cylinders secured to one part of the joint and provided with passages leading to such part, plungers working in the cylinders and provided with cross heads and connections between the extremities of the cross heads and the other telescoping part.

5. In combination an expansion joint comprising telescoping parts, cylinders secured to one part of the joint and provided with passages leading to such part and with stuffing boxes, plungers of such size as to fit both the cylinders and the stuffing boxes, cross heads on the plungers, and connections between the extremities of the cross heads and the other telescoping part.

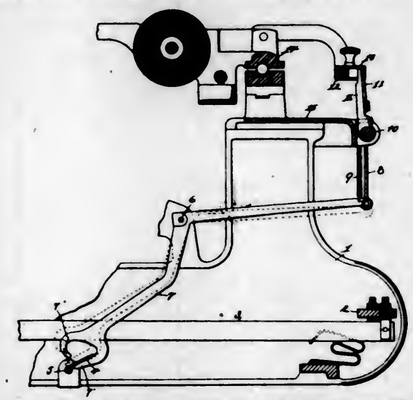
6. In combination an expansion joint comprising telescoping parts, cylinders secured to one part of the joint, and provided with passages leading to such part and with stuffing boxes, plungers of such size as to fit both the cylinders and the stuffing boxes and connections outside the cylinders between the plungers and the other telescoping part.

7. In combination a telescoping joint comprising telescoping members, one of such members being counter bored, cylinders mounted on this member and having passages leading to the counterbores, plungers in the cylinders and connections outside of the cylinders between the plungers and other telescoping member.

8. In combination an expansion joint comprising telescoping members, one of which is provided with a flange, cylinders secured to the other part and provided with passages leading to such part, plungers working in the cylinders and provided with cross heads, and connections between the extremities of the cross head and the flange of the other telescoping part.

853,965. LINE-LOCK MECHANISM FOR TYPE-WRITERS. WILLIAM R. FOX, Grand Rapids, Mich. Filed Feb. 1, 1907. Serial No. 355,328.

Claim.—1. In a line lock for typewriters, the combination of the typewriter frame; the reciprocating carriage thereon; a suitable stop to the rear thereof; a pivoted stop arm 16; an actuating lever pivoted on said stop arm and arranged in the path of the stop, whereby it will be actuated by the stop on the carriage; a line lock lever 7 pivoted in the machine, having a rearwardly extending arm; a spring for holding the rearwardly extending arm normally upward; a connection from the line lock lever to the actuating lever, the line lock lever 7 being provided with a bifurcated lower portion arranged to engage a rocking flat line locking bar, the lower member 7' of said bifurcation extending straight and into close proximity to the axis of the rocking line lock bar, and the upper member 7" being hooked to engage over the top of the bar when in the vertical position, and arranged to depress it when the line lock is released; and a rocking flat line locking bar secured by a suitable pivot at its lower edge within the frame of the typewriter and extending upwardly between the bifurcated members of the line lock member 7 and arranged so that in its vertical position it will prevent the depression of the key levers, all co-acting substantially as described and for the purpose specified.



2. In a line lock for typewriters, the combination of the typewriter frame; the reciprocating carriage thereon; a suitable stop to the rear thereof; a pivoted stop arm 16; an actuating lever pivoted on said stop arm and arranged in the path of the stop, whereby it will be actuated by the stop on the carriage; a line lock lever 7 pivoted in the machine and having a rearwardly extending arm; means for holding the rearwardly extending arm normally upward; a connection from the line lock lever to the actuating lever, the line lock lever 7 being provided with a bifurcated lower portion arranged to engage a rocking flat line locking bar, the lower member 7' of said bifurcation extending straight and into close proximity to the axis of the rocking line lock bar, and the upper member 7" being hooked to engage over the top of the bar when in the vertical position and arranged to depress it when the line lock lever is released; and a rocking flat line locking bar 4 secured by a suitable pivot at its lower edge within the frame of the typewriter and extending upwardly between the bifurcated members of the line lock member 7, and arranged so that in its vertical position it will prevent the depression of the key lever, all co-acting substantially as described and for the purpose specified.

3. In the line lock for typewriters, the combination of the typewriter frame; a reciprocating carriage thereon; a suitable stop to the rear thereof; a line lock lever pivoted in the machine and having a rearwardly extending arm; connection from said line lock lever arranged to be actuated by the stop on the reciprocating carriage, the line lock lever 7 being provided with a bifurcated lower portion arranged to engage a rocking, flat, line locking bar, the lower member 7' of said bifurcation extending straight and into close proximity to the axis of the rocking line lock bar, and the upper member 7" being hooked to engage over the top of the bar when in the vertical position and arranged to depress it when the line lock lever is released; and a rocking, flat, line locking bar 4 secured by a suitable pivot at its lower edge within the frame of the typewriter and extending upwardly between the bifurcated members of the line lock member 7 and arranged so that in its vertical position it will prevent the depression of the key lever, all co-acting substantially as described and for the purpose specified.

4. In a line lock for a typewriter, the combination of the typewriter frame; a reciprocating frame thereon; a suitable stop to the rear thereof; a line locking lever fulcrumed in the central portion of said machine, with a rearwardly extending arm with connections arranged to be actuated by the stop of the carriage, and a downwardly extending bifurcated portion for actuating a line lock bar; and a line lock bar arranged beneath the key levers and in position to be engaged by the bifurcated portion, to be actuated by the said lever, co-acting for the purpose specified.

5. In a line lock for typewriters, the combination of the typewriter frame; a reciprocating carriage thereon; a suitable stop thereon; a line locking lever fulcrumed in the central portion of said machine, with connections arranged to be actuated by the stop of the carriage, and a downwardly extending bifurcated portion for actuating a line lock bar; and a line lock bar arranged beneath the key levers and in position to be engaged by the bifurcated portion, to be actuated by the said lever, co-acting for the purpose specified.

6. In a line lock for typewriters, the combination of the typewriter frame; a reciprocating carriage thereon; a suitable stop thereon; a line locking lever fulcrumed in the central portion of said machine, with connections arranged to be actuated by the stop of the carriage, and a downwardly extending portion bifurcated and arranged to engage a rocking, flat, line locking bar, the lower member 7' of said bifurcation extending straight and into close proximity to the axis of the rocking line lock bar, and the upper member 7" being hooked to engage over the top of the bar when in the vertical position and arranged to depress it when the line lock lever is released; and a rocking flat line locking bar 4 secured by a suitable pivot at its lower edge within the frame of the typewriter and extending upwardly between the bifurcated members of the line lock member 7 and arranged so that in its vertical position it will prevent the depression of the key lever, all co-acting substantially as described and for the purpose specified.

853,966. PROCESS FOR THE PRODUCTION OF TRANSPARENT PATTERNS AND THE LIKE ON TISSUES. ARTHUR GIEHLER, Chemnitz, Germany. Filed Aug. 27, 1906. Serial No. 332,308.

Claim.—1. Process for the production of patterns, designs and letters on tissues, said designs being transparent if penetrated by light, consisting in the printing of these patterns, designs and letters on tissues by means of a thickened acetate of some heavy metal, the application of which substance causes the shrinking or diminishing of the volume of each single thread, and the widening of the adjacent meshes within the limit of the design.

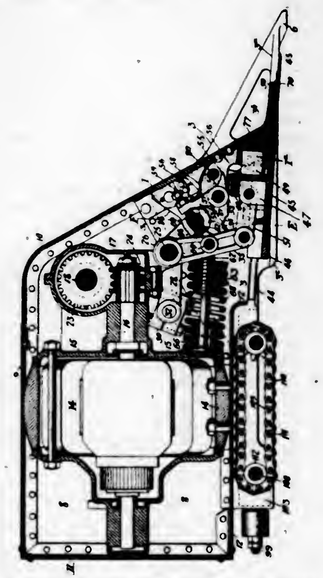
2. Process for the production of patterns, designs and letters on tissues, said designs being transparent if penetrated by light, consisting in the printing of these patterns, designs and letters on tissues by means of a thickened acetate of chromium, the application of which substance causes the shrinking and diminishing of the volume of each single thread, and the widening of the adjacent meshes within the limit of the design.

853,967. MACHINE FOR CUTTING SUGAR-CANE. HENRY G. GINACA, Honolulu, Hawaii, assignor, by direct and mesne assignments, of two-fifths to Abraham Gartenberg, Honolulu, Hawaii. Filed Apr. 1, 1905. Serial No. 253,311.

Claim.—1. A cutting apparatus for cane harvesters and the like, comprising a reciprocating knife having a spring-actuated cutting stroke, means for retracting the knife and compressing the spring, a latch for holding the knife in its retracted position, and a trip for releasing the latch and allowing the spring to actuate the knife.

2. A cutting apparatus for cane harvesters and the like, comprising a reciprocating knife having a spring actuated cutting stroke, means for retracting the knife and compressing the spring, a latch for holding the knife in its retracted position, and a trip for releasing the latch and allowing the spring to actuate the knife, the trip being operated by the standing cane.

3. A cutting apparatus for cane harvesters and the like, comprising a reciprocating knife having a spring actuated cutting stroke, means for retracting the knife and compressing the spring, a latch for holding the knife in its retracted position, and a trip for releasing the latch and allowing the spring to actuate the knife, the trip comprising a yielding plate projecting normally in advance of the knife.



4. In a cutting apparatus for cane harvesters and the like, the combination of a forwardly and rearwardly reciprocating knife, a pivoted lever pivotally connected to the knife, a fixed abutment in rear of the lever, and a spring reacting between the lever and the abutment to thrust the knife forward.

5. In a cutting apparatus for cane harvesters and the like, the combination of a reciprocating knife, a spring pressed lever connected thereto, a pair of constantly operating oscillating arms, and a shaft carried by the arms in front of the lever and operating to strike the lever and retract the knife.

6. In a cutting apparatus for cane harvesters and the like, a reciprocating knife, a spring pressed lever connected thereto, a pair of constantly operating oscillating arms, a shaft carried by the arms in front of the lever to strike the lever and retract the knife, and a latch to catch and hold the knife in its retracted position.

7. In a cutting apparatus for cane harvesters and the like, a reciprocating knife, a spring pressed lever connected thereto, a pair of constantly operating oscillating arms, a sock shaft carried by the arms in front of the lever and having a cam to strike the lever and retract the knife, and means for rocking the shaft to place the cam in position either to strike or miss the lever.

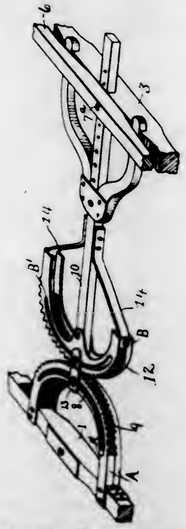
8. In a cutting apparatus for cane harvesters and the like, a reciprocating knife, a spring pressed lever connected thereto, a pair of constantly operating oscillating arms, a rock shaft carried by the arms in front of the lever and having a cam to strike the lever and retract the knife, a latch to hold the knife in its retracted position, a cam on the shaft to release the latch, and means to rock the shaft and place the cam in position either to strike the latch or miss it.

9. In a cutting apparatus for cane harvesters and the like, a reciprocating knife, a spring pressed lever connected thereto, a pair of constantly operating oscillating

arms, a cam shaft carried by the arms in front of the lever to strike the lever and retract the knife, a latch to hold the knife in its retracted position, means to rock the shaft and place its cam in position to release the latch, and a trip plate to be acted on by the standing cane for operating the shaft rocking means.

10. In a cutting apparatus for cane harvesters and the like, a reciprocating knife, a spring pressed lever connected thereto, a pair of constantly operating oscillating arms, a cam shaft carried by the arms in front of the lever to strike the lever and retract the knife, a latch to hold the knife in its retracted position, a pivoted lever having a forked end toward and from which the oscillating arm swings the cam shaft, a trip plate normally springpressed into position to be acted on by the standing cane, and a connection between the trip plate and the forked lever, whereby as the machine advances the standing cane will cause the trip to move the forked lever into position to rock the cam-shaft so as to release the latch, and the spring which presses the trip plate forward will return the forked lever so as to rock the cam-shaft into position to retract the knife operating lever.

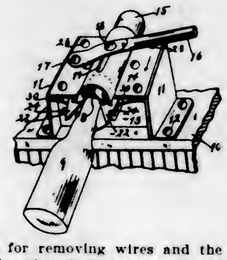
853,968. STEERING-GEAR FOR VEHICLES. JOSEPH T. GIRARD, Deer River, Minn. Filed Apr. 26, 1906. Serial No. 313,770.



Claim.—In a vehicle, the combination of a forward running gear a horizontal rearwardly directed toothed segment secured to said gear and embodying a web and upper and lower inwardly directed flanges, said flanges being slotted for a portion of their lengths in a plane parallel with said web, a rear running gear, a horizontal forwardly directed toothed segment secured to said rear running gear and embodying a web and upper and lower inwardly directed flanges, said flanges being slotted for a portion of their lengths in a plane parallel with said web, the teeth of said segments meshing with each other, vertically disposed rollers positioned between said flanges, and plates or links extending over said slots and pivotally connected at one end to one of said rollers and pivotally connected at the opposite end to the other of said rollers.

853,969. BOTTLE-WIRE CUTTER. JOHN A. GOEBLER, Albany, Ind. Filed Nov. 5, 1906. Serial No. 342,039.

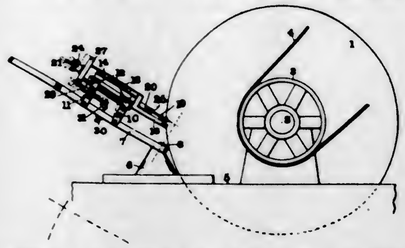
Claim.—1. A device for removing wires and the like from the necks of bottles that includes a casing, means connected with the casing for engaging the wires on the neck of a bottle after it is inserted, and means for moving the neck of the bottle away from said wire-engaging means whereby the wire will be removed from the neck of the bottle.



2. A device for removing wires and the like from the necks of bottles that includes a casing, hooks pivotally mounted in the casing between which the neck of the bottle may be inserted so that the wire thereon will be engaged by said hooks, means for holding the hooks in engagement with the wires, and means for forcing the neck of the bottle outward against the action of said hooks, during which movement said hooks remove the wire.

3. A device for removing wires and the like from the necks of bottles that includes a casing having a chamber into which the neck of a bottle may be inserted, hooks pivotally mounted on each side of said chamber and adapted to extend into said chamber with rearwardly extending hook-shaped points adapted to engage the wire on the bottle after it is inserted, springs that hold said hooks against the bottle, a plunger mounted in said chamber, and a lever for moving said plunger against the bottle and forcing the bottle outward, during which movement the hooks remove the wire.

853,970. BIFOCAL-LENS GRINDER. JOHN E. GRAESSLE, Detroit, Mich. Filed June 26, 1905. Serial No. 266,974.



Claim.—1. In a bifocal lens grinder, the combination with a suitable grinding wheel, of a movable carriage, a lens holder mounted on the carriage and movable to present the lens to the grinder, means for reversing the holder to present both sides of the lens to the grinding wheel, and means for automatically locking the wheel as the carriage moves into the grinding position.

2. In a bifocal lens grinder, the combination with a grinding wheel, of a movably mounted carriage pivoted links supporting said carriage, a lens holder on said carriage positioned to present the lens at an acute angle to the wheel, and means for reversing said holder to present both sides of the lens for grinding.

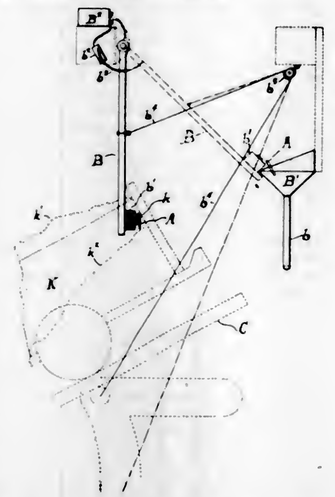
3. In a bifocal lens grinder, the combination with a grinding wheel, of a carriage movable in the arc of a circle, a lens holder upon said carriage, said holder being movable toward and from the grinding wheel and rotatable to present both sides of the lens to said wheel and means for automatically locking the wheel as the carriage moves forward to present the lens to the grinding wheel.

4. In a bifocal lens grinder, the combination with a suitable grinding wheel, of a carriage movable in the arc of a circle, a spring-actuated lens holder mounted on said carriage to present the lens at a tangent to the periphery of the wheel, and means for reversing the holder to enable the grinding of a bevel on opposite sides of the lens.

5. In a bifocal lens grinder, the combination with the grinding wheel, of a carriage pivotally mounted in a plane tangent to the periphery of the wheel, a lens holder mounted on said carriage and movable independently thereof, means for retaining the lens in position while being ground, and means for presenting the lens to the stone to grind the opposite bevels thereon without changing the lens in the holder.

6. The combination with a grinding wheel, of a carriage movable in the arc of a circle adjacent said wheel, a lens holder upon the carriage movable toward and from the grinder, said lens holder being reversible to present the opposite sides of the lens for grinding, a spring-actuated plunger adapted to engage said lens and means for locking the lens holder during the operation of grinding.

853,971. DEVICE FOR COLLECTING MINERS' CHECKS. FRANK C. GREENE, Cleveland, Ohio. Filed Sept. 17, 1906. Serial No. 335,040.



Claim.—1. The combination with the movable track-section of a dump; of a pivotally mounted arm adapted to swing contiguously to a car on said track-section; and a magnet borne by said arm.

2. The combination with the oscillatory track-section of a dump; of a check receptacle; a pivotally mounted arm adapted to pass in different parts of its path of oscillation contiguously to a car on said track-section and to said receptacle, respectively; and a magnet borne by said arm.

3. The combination with the oscillatory track-section of a dump; of a swinging arm connected to operate in unison with said track-section, said arm being disposed to swing contiguously to a car thereon; and a magnet borne by said arm.

4. The combination with the oscillatory track-section of a dump; of a swinging arm connected to operate in unison with said track-section, said arm being disposed to swing contiguously to a car thereon; an electro-magnet mounted upon said arm; and means for energizing said magnet.

5. The combination with the oscillatory track-section of a dump; of a swinging arm operatively connected with said track-section, said arm being disposed to swing contiguously to a car thereon; an electro-magnet mounted upon said arm; and electrical connections for energizing said magnet during a part only of each oscillation of said arm.

6. The combination with the oscillatory track-section of a dump; of a check receptacle; a swinging arm operatively connected with said track-section and disposed to pass in different parts of its path of oscillation contiguously to a car upon said track-section and to said check receptacle, respectively; an electro-magnet mounted upon said arm; and electrical connections for energizing said magnet at all times except when said arm is contiguous to said receptacle.

7. The combination with the oscillatory track-section of a dump; of a check receptacle; a swinging arm disposed to pass in different parts of its path of oscillation contiguously to a car upon said track-section and to said check-receptacle; means operatively connecting said arm with said track-section to swing the same in unison with the movements of the latter; an electro-magnet mounted upon said arm; and electrical connections adapted to energize said magnet to remove a check from said car and to de-energize the same to drop such check into the receptacle.

853,972. ARTIFICIAL BAIT. EDWARD A. GROUT, Medford, Mass., assignor to William Read & Sons, Boston, Mass., a Firm. Filed Oct. 17, 1906. Serial No. 339,313.



Claim.—An artificial bait, comprising a hook and a lure consisting of an iridescent glass bead of polyhedral form adapted to emit opalescent gleams from its facets, substantially as described.

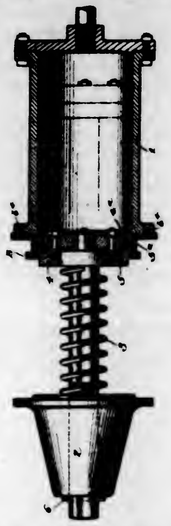
853,973. PISTON-PACKING FORMER AND REPLACER. JAMES J. HANNON, Logansport, Ind. Filed Mar. 18, 1907. Serial No. 363,040.

Claim.—1. A piston replacer consisting of a two part annulus having a diameter corresponding with a given cylinder, the parts of the annulus being hinged at one point and provided with connecting means at an opposite point, and lugs on the face of said annulus adapted for registering with openings in the cylinder flange.

2. A piston packing former and replacer comprising an annulus with flaring mouth, and inner end having a diameter corresponding with a given cylinder, and a separable annulus having the same interior diameter as the inner end of the former and detachably connected thereto.

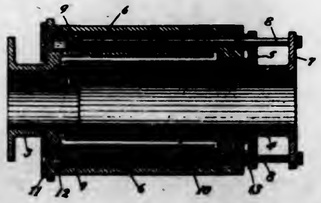
3. A piston packing former and replacer comprising an

annulus with a flaring mouth and an inner end having a diameter corresponding with a given cylinder and an annulus having the same interior diameter as the inner end of the former and detachably connected thereto.



4. A piston packing former and replacer comprising an annulus with a flaring mouth and an inner end having a diameter corresponding with a given cylinder, a separable annulus having the same interior diameter as the inner end of the former, lugs on said first named annulus adapted to engage recesses in the separable annulus, whereby the two may be detachably secured together, substantially as described.

853,974. EXPANSION-JOINT. GEORGE W. HAYDEN, Oak Park, Ill., assignor to Crane Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 9, 1905. Serial No. 291,070.



Claim.—1. In combination an expansion joint comprising two telescoping coupling members, one of which has a plurality of backwardly extending rods paralleling the members and means whereby the rods may be held yieldingly in one direction and the other coupling member in the other direction such means being of sufficient strength to counterbalance the tendency of the telescoping members to separate when steam is admitted and so arranged as to prevent binding of the telescoping parts.

2. In combination an expansion joint comprising two flanged telescoping coupling members, one of which has a plurality of rods spaced uniformly thereabout and parallel to the members, and means co-operating with the rods whereby the members are held yieldingly from longitudinal expansive movement, with a force substantially equal to the force normally tending to separate the telescoping members when steam is admitted.

3. In combination, an expansion joint comprising two telescoping coupling members, a plurality of backwardly extending rods provided with pistons connected to one of the members, a corresponding number of fluid pressure cylinders connected to the other member and having communication with the atmosphere on the rear side of the pistons and to a source of fluid pressure on the front side whereby the tendency of the joint to expand is resisted.

4. In combination, an expansion joint comprising two telescoping coupling members, a plurality of backwardly extending rods provided with pistons having a combined area substantially equal to the area of the coupling members connected to one of the members, a corresponding number of fluid pressure cylinders connected to the other member and having communication with the atmosphere on the rear side of the pistons and to a source of fluid pressure on the front side whereby the tendency of the joint to expand is yieldingly resisted.

5. In combination an expansion joint comprising two telescoping members, a plurality of fluid pressure cylinders on one of the members having passages opening into the joint, and a corresponding plurality of pistons having a combined area substantially equal to the area of the coupling members connected to the other member whereby the members are held in telescoping engagement.

6. In combination a telescoping joint comprising telescoping members, one of such members being counter bored, cylinders mounted on this member and having passages leading to the counterbores, pistons in the cylinders and connections between the pistons and other telescoping member.

7. In combination an expansion joint comprising telescoping members, a plurality of fluid pressure cylinders on one of the parts having passages opening into the joint and a corresponding plurality of pistons connected to the other part whereby the members are held in telescoping engagement.

853,975. LOOSE-LEAF BINDER. THOMAS E. HEETER, Maplewood, Mo., assignor to Sieber & Trussell Manufacturing Company, a Corporation of Missouri. Filed Apr. 30, 1906. Serial No. 314,429.



Claim.—1. In a loose leaf binder, in combination, a pair of binder plates hinged together, locks at both ends of the plates, and operative connection between the pintle of the hinge and the two locks.

2. In a loose leaf binder, in combination, a pair of binder plates hinged together, a hook at each end of the binder for locking the plates together, and crank arms on the hinge pintle one engaging each hook to oscillate the same.

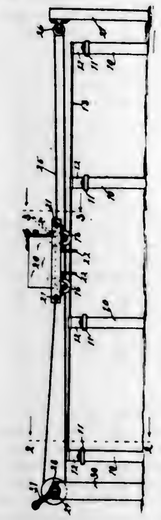
3. In a loose leaf binder, in combination, a pair of binder plates hinged together, a latch-hook pivoted to one plate and engaging the other and having a lateral arm, and a crank arm fixed on the hinge pintle and operatively engaging the hook arm.

4. In a loose leaf binder, in combination, a pair of binder plates hinged together, a latch-hook pivoted to one plate and engaging the other and having a lateral arm, and a crank arm fixed on the hinge pintle and operatively engaging the hook arm and having a thumb wing.

5. In a loose leaf binder, in combination, a pair of binder plates hinged together, a pair of hooks, one at each end of the binder for locking the plates together, a slotted arm projecting laterally from each hook, and a crank arm fixed on the hinge pintle at each end thereof and fitting within the slot of the adjacent hook arm.

6. In a loose leaf binder, in combination, a pair of binder plates hinged together, and means operatively connected with the hinge pintle for locking the binder.

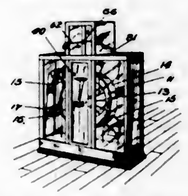
853,976. CONVEYING APPARATUS. ISAAC M. HENRICKS, Greenfield, Ind., assignor of one-half to Horace G. Beckner, Greenfield, Ind. Filed Dec. 20, 1906. Serial No. 348,758.



Claim.—1. Apparatus of the kind described including a carrier, a pair of parallel track wires upon which the carrier moves, a row of posts, cross-arms mounted upon said posts, upwardly extending track wire-holding means on the ends of said cross-arms, a cable for moving the carrier, means higher than the track wires for supporting said cable between the track wires so that the slack thereof will be supported by said cross-arms, and means at one end of the apparatus for actuating said cable.

2. Apparatus of the kind described including a carrier adjustable in width, means for clamping a receptacle between the sides of said carrier, parallel track wires upon which said carrier moves, a row of posts upon the upper end of which said track wires are mounted, a cable for moving said carrier, means mounted higher than the track wires for carrying said cable, means at one end of the apparatus for actuating the cable, and means extending down from the carrier on each side of the track wires substantially as set forth.

853,977. VENDING-MACHINE. CHARLIE C. INMAN, Roachdale, Ind., assignor of one-half to John H. Grantham, Jr., Roachdale, Ind. Filed May 31, 1906. Serial No. 319,450.



Claim.—1. In a coin controlled vending machine, the combination with a containing casing, and a rotatable carrier provided with a plurality of receptacles, of a motor for rotating said carrier, selecting mechanism for stopping said carrier to present any one of the receptacles in delivering position, coin-controlled mechanism, grasping means arranged with the casing, means dependent upon the coin controlled mechanism for locking said grasping means, accessible means for manipulating said grasping means from the exterior of the casing, and means controlled by the coin controlling means for connecting and disconnecting the motor and for releasing said locking means.

2. In a coin controlled vending machine, the combination with a containing casing, of a carrier provided with a plurality of receptacles, of a motor for driving said carrier, selecting mechanism for stopping said carrier to present any one of the receptacles in delivering position, coin-controlled mechanism, grasping means arranged with the casing, means dependent upon the coin controlled mechanism for locking said grasping means, accessible means for manipulating said grasping means from the exterior of the casing, and means controlled by the coin controlling means for connecting and disconnecting the motor and for releasing said locking means.

3. In a coin controlled vending machine, the combination with an inclosing casing, a rotatable carrier mounted therein and provided with a plurality of containers, means for rotating said carrier, and a coin controlled means for controlling the movement of said carrier and stopping the same at any desired position, of ejecting means comprising, a member accessible at one end from the exterior of the casing and provided at its inner end with means for engaging an article, a supporting head for said member pivoted in the casing, a locking bar for said head and means controlled by the selecting means for operating said locking bar.

4. In a coin controlled vending machine, the combination with an inclosing casing, a rotatable carrier mounted therein and provided with a plurality of containers, means for rotating said carrier, and a coin controlled means for controlling the movement of said carrier and stopping the same at any desired position, of a head pivoted in said casing, a locking bar carried by said head and adapted to normally restrain pivotal movement of said head, means controlled by the selecting mechanism for releasing said locking bar, an ejector member carried by said head and movable therein, said ejector member accessible from the exterior of the casing at one end and carried at its other end, and means for engaging an article carried by the carrier.

5. In a coin controlled vending machine, the combination with an inclosing casing, a rotatable carrier mounted therein and provided with a plurality of containers, means for rotating said carrier, and a coin controlled means for controlling the movement of said carrier and stopping the same at any desired position, of a head pivoted in said

casing, a locking bar carried by said head and adapted to normally restrain pivotal movement of said head, means controlled by the selecting mechanism for releasing said locking bar, an ejector member carried by said head and longitudinally movable therethrough, a pair of grasping jaws carried by the inner end of said member, and means at the accessible outer end of said member for the manipulation of said jaw.

6. In a coin controlled vending machine, the combination with inclosing casing, a rotatable carrier mounted therein and provided with a plurality of containers, means for rotating said carrier, a coin controlled means for controlling the movement of said carrier and stopping the same at any desired position, of a head pivoted in said casing, a locking bar carried by said head and adapted to normally restrain pivotal movement of said head, means controlled by the selecting mechanism for releasing said locking bar, and ejector member carried by said head and transversely movable therethrough, a pair of grasping jaws carried by the inner end of said member, and means at the accessible outer end of said member for the manipulation of said jaws.

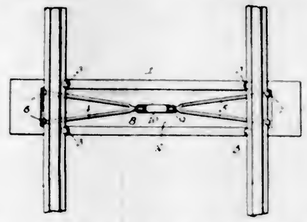
7. In a coin controlled vending machine, the combination with an inclosing casing, of a rotatable carrier mounted therein and provided with a plurality of containers, a motor for rotating said carrier, a plurality of accessible members and a corresponding plurality of locking pins adapted to engage the carrier at predetermined positions, a coin controlled member which may be actuated by any one of the accessible members, means controlled by said member for actuating the motor, and a locking member normally engaging the carrier and operable by any one of the accessible members.

8. In a coin controlled vending machine, the combination with an inclosing casing, of a rotatable carrier mounted therein and provided with a plurality of containers, a motor for rotating said carrier, a plurality of accessible members and a corresponding plurality of locking pins adapted to engage the carrier at predetermined positions, a coin controlled member which may be actuated by any one of the accessible members, means controlled by said member for actuating the motor, and a pair of locking members operable by any one of the accessible members and the other of said locking members operable by the coin controlled members.

9. In a coin controlled vending machine, the combination with an inclosing casing, of a rotatable carrier mounted therein and provided with a plurality of containers, a motor for rotating said carrier, a plurality of accessible members and a corresponding plurality of locking pins adapted to engage the carrier at predetermined positions, a coin controlled member which may be actuated by any one of the accessible members, means controlled by said member for actuating the motor, a locking member normally engaging the carrier and operable by any one of the accessible members, an ejector member movably mounted in a pivoted head, a locking member for normally holding said head against movement permitting engagement of the ejector member with the articles to be vended, and means controlled by the coin controlled member for releasing said locking member.

10. In a coin controlled vending machine, the combination with an inclosing casing, of a rotatable carrier mounted therein and provided with a plurality of containers, a motor for rotating said carrier, a plurality of accessible members and a corresponding plurality of locking pins adapted to engage the carrier at predetermined positions, a coin controlled member which may be actuated by any one of the accessible members, means controlled by said member for actuating the motor, a pair of locking members normally engaging said carrier one of said locking members operable by any one of the accessible members and the other of said locking members operable by the coin controlled members, an ejector member movably mounted in a pivoted head, a locking member for normally holding said head against movement permitting engagement of the ejector member with the articles to be vended, and means controlled by the coin controlled member for releasing said locking member.

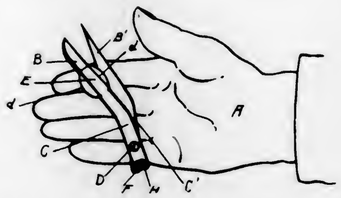
853,978. RAILROAD-TIE. WILLIAM JACOBSON, Sawyer, Wis. Filed Feb. 21, 1907. Serial No. 358,709.



Claim.—1. In a device of the character described the combination with a tie provided with alined upstanding anchors adapted to bear against the inner flanges of the rails and with a central longitudinally extending slot therein, of a pair of V shaped rods disposed within said slot and provided with upturned hooks at the free ends thereof adapted to engage the outside flanges of the rails and means for adjustably securing the inner ends of said V shaped rods substantially as described.

2. In a device of the character described the combination with a tie provided with alined upstanding anchors adapted to bear against the inner flanges of the rails and with a central longitudinally extending slot therein, of a pair of V shaped rods disposed within said slot and provided with upturned hooks at the free ends thereof adapted to engage the outside flanges of the rails, said rods being provided with centrally extending legs at their inner ends and a turn buckle connection adapted to be screwed on said legs to adujstably secure said rods together substantially as described.

853,979. THREAD-CUTTER. ARMAND KARRER, St. Joseph, Mo. Filed June 6, 1905. Renewed Apr. 13, 1907. Serial No. 368,086.



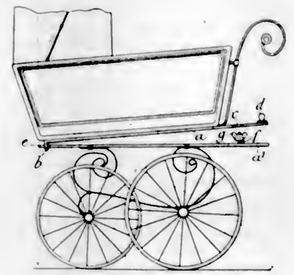
Claim.—1. In a thread cutter the combination of two blades pivotally connected, one of said blades having thumb engaging flanges, handles on the blades set at an angle thereto, a slot in one handle and a lug in the other handle to enter said slot and limit the movement of the blades.

2. A thread cutter consisting of two blades, pivotally connected handles therefor one provided with a slot at its lower end, the other having a lug to enter said slot and a loop to receive the finger as for the purpose set forth.

853,980. PERAMBULATOR. AUGUST KAZMEIER, Ulm, Germany. Filed July 6, 1906. Serial No. 325,025.

Claim.—In a perambulator or like carriage a detachable body, two bars fixed to the underside thereof, a perforated angular forward end and a side slot near the rear end of said bar in combination with two corresponding carriage-bars in engagement with the holes of said body-bars, and stud screws near the rear end of said carriage-bars to enter the side-slots of the former bars, as set forth.

853,980.



853,981. FILTERING MATERIAL. GEORGE M. KNEUPER, New York, N. Y., assignor of one-third to George Kneuper and one-third to Kate Kneuper. Filed May 29, 1906. Serial No. 319,280.



Claim.—1. A filter composed of particles of pulp containing continuous transverse passages.

2. A filter composed of particles of pulp containing continuous transverse passages and a layer of cotton into which the pulp fibers penetrate.

3. A filter composed of particles of pulp containing continuous transverse passages and two layers of cotton between which said pulp particles are arranged.

4. A filtering sheet made of pulp and having the fibers extending transversely, that is, in a direction substantially perpendicular to the faces of the sheet.

5. A filtering sheet consisting of pulp, the fibers of which extend in a direction substantially perpendicular to the faces of the sheet, in combination with a filtering sheet into which the fibers of the first-named sheet penetrate.

6. A filtering sheet comprising a layer of pulp, the fibers of which extend substantially perpendicular to the surface of the sheet, and a layer of cellulose into which the fibers of said pulp layer penetrate, the fibers of the cellulose layer being all parallel with the surface of said layer.

7. A filtering sheet comprising a central layer of pulp, the fibers of which extend substantially perpendicular to the faces of the sheet, and two layers of cellulose between which said pulp layer is arranged.

8. A filtering sheet comprising a central layer of pulp, the fibers of which extend substantially perpendicular to the faces of the sheet, and two layers of cellulose between which said pulp layer is arranged, the fibers of said cellulose layers being parallel with each other and with the faces of the sheet, and the fibers of the pulp layer penetrating into one of the cellulose layers.

9. A filter comprising a tubular perforated support, and a filtering sheet carried by said support, and having fibers perpendicular to the face of said support.

10. A filter comprising a perforated support and a filter sheet carried thereby and comprising a layer the fibers of which are perpendicular to the face of said support, and another layer, the fibers of which run lengthwise of said support.

11. A filter comprising a perforated tubular support and a filtering sheet carried by said support, comprising a central layer of fibers, which are substantially perpendicular to said support, and two layers between which said first-named layer is inclosed, the fibers of said two layers running lengthwise of the support.

853,982. WEATHER-STRIP. HENRY W. KRAFT, Arcadia, Mich. Filed Mar. 28, 1906. Serial No. 306,611.

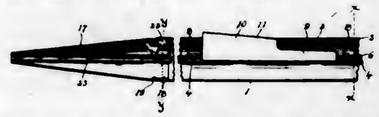


Claim.—1. An article of the class described, comprising a packing strip, and backing strips secured end to end along the edge of the said packing strip with their ends in spaced relation with respect to each other.

2. An article of the class described comprising a packing strip, and backing strips of rigid material secured end to end along the edge of the said packing strip with their ends in spaced relation with respect to each other.

3. An article of the class described comprising a packing strip, and backing strips bent to receive said packing strip, said backing strips being secured end to end along the edge of the said packing strip with their ends in spaced relation with respect to each other.

853,985. PENCIL. JOHN D. R. LAMSON, Toledo, Ohio. Filed Apr. 9, 1906. Serial No. 310,686.



Claim.—1. In a pencil, the combination of a cylindrical body formed of sheet metal with a longitudinal slot along the longitudinal edge of the metal, and a portion of the metal turned inward along one edge of said slot and said portion rolled at its inner edge to form a crayon tube in the axis of the body with a longitudinal slot opposite the slot in body, said inwardly extending portion being formed with means for the engagement of a follower, whereby the body with its crayon tube and follower engaging means may be formed from a suitably shaped sheet metal blank, and a follower to slide within said slots with one edge projecting therefrom and having a bent portion engaging said means.

2. In a pencil, the combination with a cylindrical body having a longitudinal slot and a crayon tube in the axis of said body having a longitudinal slot opposite the slot in the body, of a follower to slide within said slots with one edge projecting from the slot in the body and formed of a

flat piece of spring steel bent laterally to engage the edge of one of the slots, whereby said follower may be lifted from said slot at any point of its travel along said slot.

3. In a pencil, the combination of a cylindrical body formed of sheet metal with a longitudinal slot along the longitudinal edge of the metal and a portion of the metal turned inward along one edge of said slot and the inner edge of said portion rolled to form a crayon tube in the axis of the body with a longitudinal slot opposite the slot in the body and notches in the edge of the metal along the edge of the slot in the tube, and a follower formed of a strip of sheet metal within said slots and having a laterally bent end to engage said notches.

4. In a pencil, the combination with a cylindrical body formed of sheet metal and provided with a longitudinal slot along the longitudinal edge of the metal, adjacent inwardly turned portions at one end of said slot, and a conical end formed of sheet metal adapted to fit within the end of the body and provided with a slot to receive the inwardly turned portion.

5. In a pencil, the combination of a cylindrical body formed of sheet metal and provided with a longitudinal slot along the longitudinal edge of the metal, a portion turned inward along one edge of said slot to form a connecting web, the inner edge of said web portion turned to form a crayon tube in the axis of the body with a longitudinal slot opposite the slot in the body, an inwardly turned lip on the body at one end of said slot therein, and a conical end formed of sheet metal and provided with a flange to fit within the end of the body having a slot to receive the web and lip.

6. In a pencil, the combination of a cylindrical body formed of sheet metal with a longitudinal slot along the longitudinal edge of the metal, a portion turned inward along one edge of said slot to form a radial web in the body, a crayon tube in the axis of the body formed by rolling the edge of the web, said tube extending longitudinally beyond the end of the body to the point of the pencil, an inwardly turned lip at one end of the slot, a conical end formed of sheet metal adapted to receive the extended end of the tube, and a flange on the conical end to fit within the end of the body and formed with a slot to receive the web and lip and with a groove into which the edge of the metal at the end of the body is pressed to secure the conical end to the body.

7. In a pencil, the combination of a cylindrical body formed of sheet metal with a longitudinal slot extending along the longitudinal edge of the metal, inwardly turned portions extending inward from each edge of the slot at one end thereof, a conical end formed of sheet metal and having a flange to fit within the body provided with a slot to receive the inwardly turned portions, a crayon tube in the axis of the body, a follower adapted to slide within said slot with its upper edge projecting therefrom, an eraser cap to fit over the end of the body opposite that to which the conical end is secured, and a lip on said cap to enter the end of the slot in the body and hold the same open to permit the free movement of the follower.

853,984. TOOTH-CROWN MODEL. CHAPIN F. LAUDERDALE, Milwaukee, Wis. Filed Mar. 7, 1906. Serial No. 304,765.

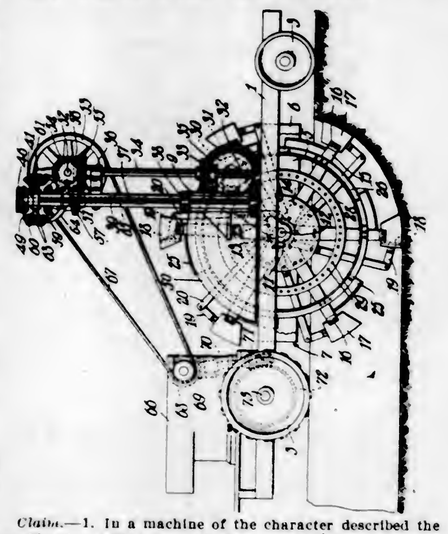


Claim.—1. As a new article of manufacture, a tooth crown model formed of a hollow cap of flexible non-metallic material.

2. As a new article of manufacture, a tooth crown model formed of a hollow cap of soft rubber.

3. A tooth crown model formed of a cap of flexible material arranged to fit over a root to be crowned, and provided with an opening for the insertion of a plastic material.

853,985. DITCHING-MACHINE. TORBJÖRN LINGA, Thor, Iowa. Filed Oct. 8, 1906. Serial No. 338,074.



Claim.—1. In a machine of the character described the combination with a portable frame; of a rotatable series of tubular buckets carried by said frame, means for actuating said series, and means movably mounted within the buckets for successively discharging the contents of the buckets upon reaching a predetermined point.

2. In a machine of the character described the combination with a portable frame; of a bucket carried by the frame and mounted to travel within a circle, means for actuating the bucket, a discharge device within the bucket, and means for automatically actuating said device at a predetermined point during the rotation of the bucket.

3. In a machine of the character described the combination with a portable frame; of a bucket carried by the frame and adapted to travel within a circle, a follower within the bucket, means for actuating the bucket, and means for actuating the follower when the bucket reaches a predetermined point in its movement.

4. In a machine of the character described the combination with a portable frame; of a bucket carried thereby and mounted to travel in a circle, means for rotating the bucket, a follower slidably mounted within and movable with the bucket, and mechanism for automatically sliding the follower within the bucket when said bucket reaches a predetermined point.

5. In a machine of the character described the combination with a portable frame; of an arm carried by the frame and mounted to travel in a circle, a tubular bucket movable with the arm, a follower mounted to slide within the bucket, a lever for actuating the follower, a tripping device for actuating the lever at a predetermined point during the rotation of the arm and bucket.

6. In a machine of the character described the combination with a portable frame; of a wheel rotatably mounted within and supported by the frame, arms radiating therefrom, a tubular bucket carried by each arm, a follower in each bucket, means for successively actuating the follower at a predetermined point during the rotation of the wheel, and means for rotating the wheel.

7. In a machine of the character described the combination with a portable frame; of a wheel rotatably mounted thereon, a plurality of tubular buckets carried by the wheel, a follower within each bucket, levers fulcrumed upon the wheel for actuating the followers, a stationary tripping device for automatically actuating said levers successively at a predetermined point during the rotation of the wheel, and means for rotating the wheel.

8. In a machine of the character described the combination with a portable frame; of a rotatable series of buckets carried by the frame, means for automatically discharging the contents of the buckets successively at a predetermined point, and deflecting means for directing the discharged contents of the buckets toward the sides of the frame.

9. In a machine of the character described the combination with a portable frame, hoppers carried thereby; of a rotatable series of buckets carried by the frame, means for automatically discharging the contents of the buckets successively at a predetermined point, and means for directing the discharged contents into the hoppers.

10. In a machine of the character described the combination with a portable frame, hoppers carried thereby; of a rotatable series of buckets carried by the frame, means for automatically discharging the contents of the buckets successively at a predetermined point, and oppositely inclined deflectors for directing the discharged contents into the hoppers, and means movable with the buckets for preventing the admission of any of said contents between the deflectors.

11. In a machine of the character described the combination with a portable frame; of a wheel rotatably mounted upon the frame, a series of buckets carried by the wheel, means for automatically discharging the contents of the buckets successively at a predetermined point during the rotation of the wheel, deflecting devices disposed at opposite sides of the wheel, and means movable with the wheel for preventing the discharged material from falling between the deflectors.

12. In a machine of the character described the combination with a portable frame; of a wheel rotatably mounted upon the frame, a series of buckets carried by the wheel, means for automatically discharging the contents of the buckets successively at a predetermined point during the rotation of the wheel, deflecting devices disposed at opposite sides of the wheel, and means movable with the wheel for preventing the discharged material from falling between the deflectors, and means for vertically adjusting the wheel and deflectors.

13. In a machine of the character described the combination with a portable frame; of a wheel rotatably mounted upon the frame, a series of buckets carried by the wheel, means for automatically discharging the contents of the buckets successively at a predetermined point during the rotation of the wheel, deflecting devices disposed at opposite sides of the wheel, means movable with the wheel for preventing the discharged material from falling between the deflectors, mechanism for rotating the wheel, and means for adjusting the wheel and deflectors vertically independently of the rotation of the wheel.

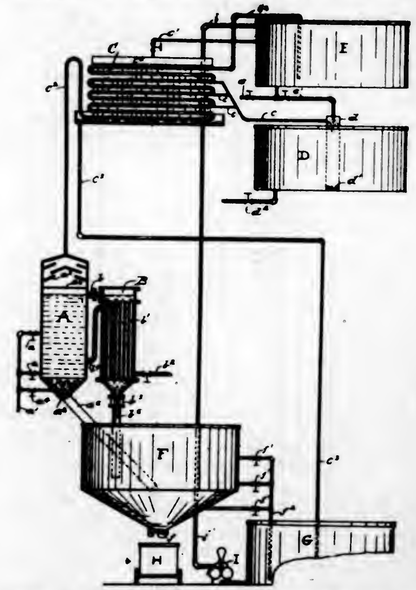
14. In a machine of the character described the combination with a portable frame; of a vertically adjustable frame carried thereby, mechanism for actuating the adjustable frame, a wheel carried by said adjustable frame, buckets rotatable with the wheel, deflectors at opposite sides of the wheel and movable with the adjustable frame, means for automatically discharging the contents of the buckets successively at a predetermined point, and means for rotating the wheel independently of the adjustment thereof.

15. In a machine of the character described the combination with a portable frame; of a vertically adjustable frame carried thereby, a wheel rotatably mounted within the adjustable frame, a series of buckets carried thereby, a follower within each bucket, levers fulcrumed upon the wheel and connected to the followers, rigid means for successively tripping the levers to actuate the followers, angle irons carried by the wheel and between the buckets, oppositely inclined deflectors movable with the adjustable frame and at opposite sides of the wheel, said deflectors being adapted to be overlapped by the angle irons, and means for rotating the wheel independently of its adjustment.

16. In a machine of the character described the combination with a portable frame; of a vertically adjustable frame carried thereby, a wheel rotatably mounted within the adjustable frame, a series of buckets carried thereby, a follower within each bucket, levers fulcrumed upon the wheel and connected to the followers, rigid means for successively tripping the levers to actuate the followers, angle irons carried by the wheel and between the buckets, oppositely inclined deflectors movable with the adjustable frame and at opposite sides of the wheel, said deflectors being adapted to be overlapped by the angle irons, parallel rings carried by the wheel, pins connecting said rings, a gear meshing with the pins to rotate the wheel, and means for rotating said gear independently of the adjustment of the wheel.

17. In a machine of the character described the combination with a portable frame and a motor for propelling the frame; of a vertically adjustable frame, means operated by the motor for adjusting said frame, manually operated means for throwing the adjusting mechanism into or out of contact with the motor, a wheel rotatably mounted within the adjustable frame, buckets carried thereby, means for automatically discharging the contents of the buckets successively during the rotation of the wheel, and mechanism actuated by the motor for rotating the wheel independently of the adjustment of the frame.

853,986. CONTINUOUS BOILING-OUT STILL. JAMES T. LUDLOW and DAVID MOSHER, San Francisco, Cal. Filed Apr. 18, 1904. Serial No. 203,536.

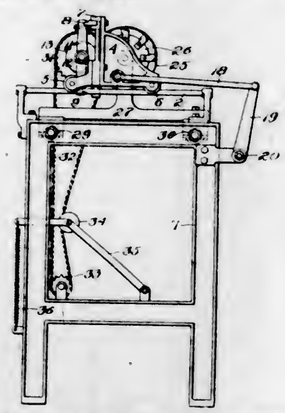


Claim.—1. In an apparatus of the class described, the combination with a continuous boiling out still having a discharge for metal oxid precipitate, an outlet for ammonia gas, an inlet below for ammonia metal oxid solution, and an outlet above for the discharge of hot boiled out solution, of a heat interchanger comprising separate passages in proximity, separate connections with said passages to receive in one the waste hot boiled out solution from the still, and to deliver from the other to the still the ammonia metal oxid solution to be treated, a discharge outlet for the boiled out solution, an inlet for the ammonia metal oxid solution, and means for continuously supplying ammonia metal oxid solution to the heat interchanger, whereby the boiled out solution passes from the still downward through the heat interchanger and is cooled, and the ammonia metal oxid passes upward through the heat interchanger and is heated before entering the still.

2. In an apparatus of the class described, the combination of a continuous boiling out still having a discharge for metal oxid precipitate and an outlet for ammonia gas, a heat interchanger having separate passages in proximity, and separate connections between said passages and the still for receiving in the one the waste hot boiled out solution from the still, and delivering from the other to the still the ammonia metal oxid solution to be treated, a connection from the source of said solution with the last named passage, and a discharge for the boiled out solution from the other passage, a condenser for the ammonia gas, an absorber in connection therewith, a tank for receiving the boiled out solution from the heat interchanger, and means for conveying said boiled out solution from said tank to the condenser to be used as a cooling medium therefor.

3. In an apparatus of the class described, the combination of a continuous boiling out still having a discharge for metal oxid precipitate and an outlet for ammonia gas, a heat interchanger having separate passages in proximity, and separate connections between said passages and the still for receiving in the one the waste hot boiled out solution from the still, and delivering from the other to the still the ammonia metal oxid solution to be treated, a connection from the source of said solution with the last named passage, and a discharge for the boiled out solution from the other passage, a condenser for the ammonia gas, an absorber in connection therewith, a tank for receiving the boiled out solution from the heat interchanger, means for conveying said boiled out solution from said tank to the condenser for a cooling medium, and means for conveying the boiled out solution from the tank to the absorber.

853,987. LATHE FOR TURNING IRREGULAR SHAPES. MICHAEL H. LYONS, Brockton, Mass. Filed Sept. 18, 1905. Serial No. 278,892.



Claim.—1. In a lathe of the kind described, a main frame, parallel longitudinal ways at the opposite sides of the main frame, parallel transverse ways at the opposite ends of the main frame above said longitudinal ways, a guide wheel and cutting means slidingly mounted in axial alinement with each other on said longitudinal ways, and a work frame mounted on said transverse ways to travel above and between said longitudinal ways, provided with means for supporting a model opposite said guide wheel, and for supporting the work to be turned opposite said cutting means.

2. In a lathe of the kind described, a main frame, a guide wheel, a rotary cutter, transverse horizontal ways on the main frame, a work frame provided with opposite carriages having at their lower edges widely separated supporting wheels traveling on said ways and means carried by said work frame at the front side of the carriages above and between said supporting wheels for supporting a model opposite said guide wheel and for supporting the work to be turned by said cutting means.

3. In a lathe of the kind described, a main frame, parallel longitudinal ways at the opposite sides of said frame and parallel transverse ways at the opposite ends of said frame, a guide wheel and cutting means adjustably mounted in axial alinement with each other on said longitudinal ways, and a work frame consisting of opposite end carriages mounted to travel on said transverse ways, upper and lower tracks rigidly secured to said opposite carriages, and means slidingly mounted for adjustment on said upper and lower tracks for supporting a model opposite said guide wheel and for supporting the work to be turned opposite said cutting means.

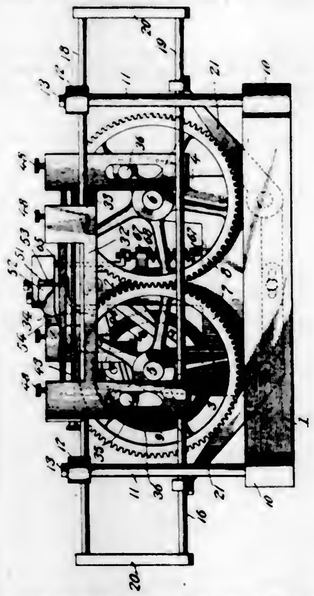
4. In a lathe of the kind described, a main frame, provided adjacent its front side and rear side with longitudinal rods or ways, and adjacent its opposite ends above said longitudinal rods or ways with parallel transverse rods or ways, a guide wheel and carriage and a rotary cutter and carriage mounted to move on said longitudinal rods or ways, a longitudinal frame having end carriages mounted to move transversely on said end rods or ways between said longitudinal rods or ways, means carried by said longitudinal frame for supporting a model opposite said guide wheel and for supporting work to be turned opposite said cutter, a longitudinal rocker shaft adjacent the rear side of the machine, rocker arms fast on the opposite ends of said shaft and connected to said longitudinal frame adjacent the opposite ends thereof, and springs coiled in opposite directions respectively around the opposite ends of said rocker shaft, each spring being secured at one end to a fixed part of the frame and adjustably secured at its other end to the rocker shaft in such relation thereto and of such length of coils as to bring a uniform rearward pull at all times upon said longitudinal frame.

5. In a lathe of the kind described, a guide wheel, a cutter, a frame provided with means for supporting a model opposite said guide wheel and for supporting the work to be turned opposite said cutting means and constructed and arranged to move toward and from said guide wheel and cutting means, a longitudinal rocker shaft, rocker arms fast at the opposite ends of said shaft and connected to said frame adjacent the opposite ends thereof respectively, and springs coiled in opposite directions respectively around the opposite ends of said rocker shaft, each spring being secured at one end to a fixed part of the frame and adjustably secured at its other end to the rocker shaft in such relation thereto and of such length of coils as to bring a uniform rearward pull at all times upon said longitudinal frame.

6. In a lathe of the kind described, a guide wheel, a cutter, a frame provided with means for supporting a model opposite said guide wheel and for supporting the work to be turned opposite said cutting means, said frame having end carriages provided at their lower edges with supporting wheels spaced far apart and at either side of said guide wheel and cutting means to give stability of position to the latter, transverse ways at the opposite ends of the machine for receiving said guide wheels of the respective carriages, a longitudinal rocker shaft, rocker arms fast at the opposite ends of said shaft and connected to said end carriages approximately in line with the wheels at the lower edges thereof for giving additional stability of position and movement to the frame, and springs coiled in opposite directions respectively around the opposite ends of said rocker shaft, each spring being secured at one end to a fixed part of the frame and adjustably secured at its other end to the rocker shaft in such relation thereto and of such length of coils as to bring a uniform rearward pull at all times upon said longitudinal frame.

853,988. SAW-FILING APPARATUS. FRANK J. MILLER, Williamsport, Pa. Filed Nov. 11, 1905. Serial No. 286,877.

Claim.—1. In a saw filing apparatus, the combination of a frame having an elevated file support, vertically arranged carriages movably mounted below said support, yielding supporting means for the carriages adapting the same to have movement toward and from the support, file holders mounted to reciprocate in opposite directions upon and relative to the carriages, and intermeshing gears having cranks engaging the file holders for imparting reciprocatory motion thereto, said gears being operatively connected with the file holders to depress the carriages on the return stroke, whereby the file holders will be retracted in a plane below the toothed edge of the saw.



2. In a saw filing apparatus, the combination with a file support, of vertically moving carriages, oppositely reciprocable file holders arranged to slide thereon and provided with vertically slotted arms, spring means for yieldingly supporting the vertically movable carriages and restoring the same to normal position, and intermeshing oppositely rotating gear wheels provided with cranks acting in said slotted arms to reciprocate the carriages and depress the same for movement in a lowered plane on their return stroke.

3. In a saw filing apparatus, the combination of a saw support, carriages arranged below said support, said carriages being mounted for movement in a vertical plane toward and from the saw support, levers supporting the carriages, spring actuated means acting on said levers for normally holding the carriages in working position, file holders mounted to reciprocate in opposite directions in fixed planes upon and with relation to the carriages, drive gearing for reciprocating the file holders, and crank mechanism actuated by the drive gearing for depressing the carriages against the resistance of said spring supporting means and holding the same depressed on the return stroke of the file holders.

4. In a saw filing apparatus, the combination with a saw support, of vertically movable carriages, file holders slidably mounted upon said carriages and carrying files to operate upon the saw, levers pivotally supporting the carriages to move in a vertical plane, interconnected links attached to said levers, a spring acting on the links to permit depression of the carriages and to restore the same to normal position, and crank mechanism actuated by the drive gearing for reciprocating the file holders in opposite directions and depressing the carriages on the return strokes of said file holders.

5. In a saw filing apparatus, the combination of a frame, a saw support carried thereby, carriages vertically movable upon the frame, file holders arranged to reciprocate in opposite directions upon said carriages, levers for supporting the carriages, interconnecting links attached to said levers, a spring acting upon the links for supporting the carriages and returning them after depression to their normal position, and oppositely rotating intermeshing gears provided with crank pins engaging slotted portions of the file holders to impart reciprocatory movement thereto and to depress said file holders and carriages at the limit of the out strokes of said carriages and to hold them depressed on their return movements.

6. In a saw filing apparatus, the combination of saw guiding and clamping means, saw feeding means operative upon the retraction of said clamping means, saw filing means, a yielding support therefor, means actuated by said support for controlling the saw clamping and feeding mechanism, and means for operating said saw filing means and moving said support to simultaneously actuate the saw feeding means and throw the saw filing means out of operative position upon the return stroke.

7. In a saw filing apparatus, the combination of saw guiding and clamping means, saw feeding means operative upon the retraction of said clamping means, saw filing means, a spring-controlled support therefor, means actuated by said spring-controlled support to govern the action of the saw clamping and feeding means, and means for operating said saw filing means and moving said support to simultaneously actuate the saw feeding means and throwing the saw filing means out of operative position upon the return stroke.

8. In a saw filing apparatus, the combination of a saw guide having an automatically projected clamping jaw, a saw feeding device operative upon the retraction of said jaw, an intermittently movable jaw retracting device, saw filing means, a spring-controlled support therefor, means actuated by said support for operating said jaw retracting device and imparting motion to the saw feeding device, and means for operating said saw filing means and moving said support to simultaneously actuate the saw feeding device to throw the saw filing means out of operative position upon the return stroke.

9. In a saw filing apparatus, the combination of saw guiding and clamping means, saw feeding means, said clamping and feeding means being connected for simultaneous movement, whereby one is retracted upon the projection of the other, saw filing means embodying a movable support operative to adjust the files into and out of filing position, and means actuated by said movable support for operating said saw clamping and feeding means.

10. In a saw filing apparatus, the combination of a saw support having a fixed and a sliding jaw, a saw feeder, a controlling device therefor operative to alternately project and retract said feeder and sliding clamping jaw, saw filing mechanism, and means actuated by said mechanism for operating said controlling device.

11. In a saw filing apparatus, the combination of a saw support provided with a stationary and a sliding clamping jaw, a device for operating said jaw, a feed dog pivotally mounted upon said operating device, means for actuating said dog upon the movement of said device, saw filing means, and means actuated by said saw filing means for actuating said operating device.

12. In a saw filing apparatus, the combination of a frame having a saw support provided with a stationary jaw and a holder, a sliding jaw movable in said holder toward and from the stationary jaw, inclined projections upon the holder and sliding jaw for retracting the latter, a spring for projecting said jaw, an operating bar for sliding the jaw against the resistance of said spring, a saw feed pawl, a support for said pawl pivotally mounted upon the bar, projections on the frame adapted to be engaged by said support to project and retract the pawl in the movement of the bar, saw filing means, and means controlled by said saw filing means for actuating the bar.

13. In a saw filing apparatus, the combination of a saw support having a fixed and a movable jaw, an operating bar for projecting said movable jaw, a supporting lever pivoted upon the bar and having an angularly projecting

arm, a spring actuated pawl, carried by said lever, projections upon the frame of the machine coöperating with said arm to project and retract the pawl in the movement of the bar, saw filing means, and mechanism actuated by said saw filing means for operating the bar.

853,989. VACUUM-TUBE LAMP. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Company, New York, N. Y., a Corporation of New York. Filed Apr. 21, 1904. Serial No. 204,175.



Claim.—1. An electric gas or vapor lamp containing an electrically treated hydro-benzamid.

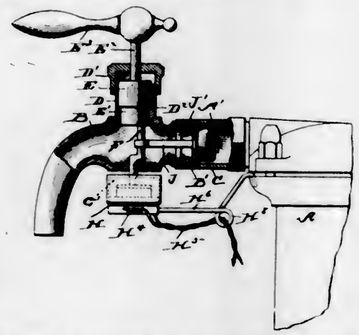
2. A metal vapor electric lamp containing an electrolytically treated organic substance.

3. A metal vapor electric lamp containing material produced by electrolysis of an organic substance of which nitrogen is a constituent.

4. An electric metal vapor lamp containing a material produced by electrolysis of a compound of hydrogen and carbon.

5. A mercury vapor electric lamp containing also an organic substance.

853,990. AUTOMATIC ELECTRICAL CUT-OFF. ROBERT H. MCDOWELL, Alliance, Ohio, assignor to The Electric Filter Company, Alliance, Ohio, a Corporation. Filed May 26, 1905. Serial No. 262,506.



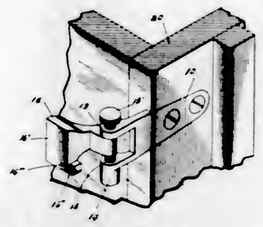
Claim.—1. In combination with a faucet, a valve therein, an angled rod arranged transversely in the faucet, and extending outwardly and downwardly, an electrical switch operated by said rod, a hand lever adapted to rotate said rod, and means connecting the valve to the rod.

2. A device of the kind described comprising a faucet, a valve, a valve stem, said faucet having a covered projection, a shaft therein having a reduced portion extending into the body of the faucet, a stem carried by the shaft, a handle thereon, an angled shaft connected at its upper end eccentrically to the shaft end, the angled shaft extending downwardly through the lower wall of the faucet, the valve stem being pivoted to said angled shaft, and electrical circuit making and breaking means operatively connected to the lower end of the angled shaft.

3. A device of the kind described comprising a switch having a stationary portion, a cut contact ring carried thereby, a contact plate arranged between the ends of the ring and spaced therefrom, a rotatable disk having a segmental contact plate adapted to slide upon the outer face of the contact plate carried by the fixed portion, a discharge faucet having a valve therein, a crank shaft having one end connected to the rotatable disk, a valve stem pivotally connected to the angled portion of the shaft, and means for rotating said shaft.

4. A device of the kind described comprising a discharge faucet, a valve seat, a valve movable toward and away from the seat, an electric switch comprising stationary contact plates spaced apart, and a rotatable semi-circular contact plate adapted to slide upon the stationary plates and bridge the space between them, and common means for rotating the rotatable contact plate and moving the valve as and for the purpose set forth.

853,991. DOOR OR SASH LOCK. WILLIAM H. MCKEIVER, Indianapolis, Ind., assignor to Thomas M. Hardy, Jr., Pendleton, Ohio. Filed Sept. 10, 1906. Serial No. 333,959.



Claim.—In a device of the class described, the combination, with the main body having a portion adapted to be inserted between two members to be locked, of a screw axially movable within said main body, a locking head threaded on said screw, and means carried by the locking head for engagement with the main body by relative movement axially of the screw.

853,992. STEAM-BOILER. ACLAND ORONHYATEKHA, Deseronto, Ontario, Canada. Filed May 11, 1906. Serial No. 316,368.



Claim.—1. A steam boiler comprising a plurality of metal frames; a first plate placed on one side thereof and having its ends lapped or folded over said metal frame; a second metal plate placed on the other side of said metal frame and having its ends lapped or folded over the lapped ends of said first metal plate, each of said plates being provided with one or more holes in alinement with the holes in the opposite plate; means for securing the lapped or folded ends of said metal plates to said metal frame so as to form a tight joint; couplings for providing intercommunication between said sections through said associated holes in said plates, and means for coupling said sections in relative position.

2. A steam boiler comprising a plurality of metal frames, provided with V-shaped bottoms; a metal plate secured to each side of said frame so as to form a tight joint, each plate being provided with one or more holes in alinement with the holes in the opposite plate, the lower sets of holes being near the apex of said V-shaped bottom; couplings for providing intercommunication between said sections through their associated holes in said plates, and means for coupling said sections in relative position.

3. A steam boiler comprising a plurality of metal frames, provided with V-shaped bottoms; a first metal plate having its ends bent around said metal frame; a second metal plate having its ends bent around the bent end of said first metal plate; rivets for securing said ends to said metal frame so as to form a tight joint; the said plates being provided with one or more holes in alinement with the holes in the opposite plate; couplings for providing intercommunication between said sections through their associated holes in said plates, and means for coupling said sections in relative position.

4. A steam boiler comprising a plurality of metal frames provided with V-shaped bottoms; a first metal plate having its ends bent around said metal frame; a second metal plate having its ends bent around the bent end of said first metal plate; rivets for securing said ends to said metal frame so as to form a tight joint; the said plates being provided with one or more holes in alinement with the holes in the opposite plate; couplings for providing intercommunication between said sections through their associated holes in said plates; removable coupling-rods passing through said couplings and said plates; means for keeping said coupling-rods in place, and means for coupling said sections together so as to permit of the removal of said coupling-rods and yet prevent the displacement of said sections.

5. A boiler section comprising a metal frame; a first plate placed on one side thereof, and having its ends lapped or folded over said metal frame; a second metal plate placed on the other side of said metal frame and having its ends lapped or folded over the lapped ends of said first metal plate, each of said plates being provided with one or more holes in alinement with the holes in the opposite plate, and rivets for securing the lapped or folded ends of said metal plates to said metal frame so as to form a tight joint.

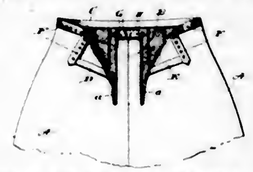
6. A boiler section comprising a metal frame provided with a V-shaped bottom; a first plate placed on one side thereof and having its ends lapped or folded over said metal frame; a second metal plate placed on the other side of said metal frame and having its ends lapped or folded over the lapped ends of said first metal plate, each of said plates being provided with one or more holes in alinement with the holes in the opposite plate, the lower pair of holes in said plates being at the apex of said V-shaped bottom, and rivets for securing the lapped or folded ends of said metal plates to said metal frame so as to form a tight joint.

853,993. SKIRT OR ATTACHMENT THEREFOR. WILLIAM PADEANACHT, New York, N. Y., assignor of one-half to Sam Jaretski, New York, N. Y. Filed May 28, 1906. Serial No. 319,155.

Claim.—1. In a skirt, a back-piece, eyeleted portions adapted to be folded and laid upon said back piece, and two pairs of fastening devices secured to and carried by said back piece adapted to pass through registering eyelets on each of said portions when folded, whereby to secure the layers of each fold in place at separated points.

2. In a skirt, a back-piece, eyeleted portions adapted to be folded and laid upon said back piece, and two pairs of hooks secured to and carried by said back piece adapted to pass through registering eyelets on each of said portions when folded whereby to secure the layers of each fold in place at separated points, said hooks being arranged to have their tongues occupy relatively different planes when in securing position to insure against accidental unfastening of the folded portions by a movement in any one direction.

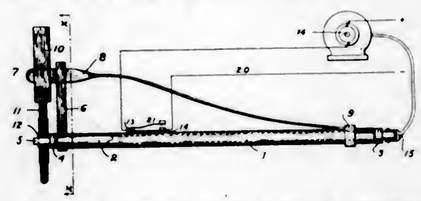
3. In a skirt, a back piece, an eyeleted portion adapted to be folded and laid upon said back piece, and a fastening



device secured to and carried by said back piece adapted to pass through registering eyelets on said portion when folded whereby to secure the layers of the fold in place.

4. In a skirt, a back piece, eyeleted portions adapted to be folded and laid upon said back piece, and fastening devices secured to and carried by said back piece arranged whereby one of said devices will pass through registering eyelets on each of said portions when folded and secure the layers of each fold in place.

853,994. ROTATABLE ERASER. OLA S. PUGERUD, New York, N. Y. Filed May 2, 1906. Serial No. 314,762.



Claim.—1. A rotatable shaft adapted for connection with a motor, a non-rotating handle element, a circular eraser mounted on said rotatable shaft, and a stationary cleaning element having a substantially solid abrading surface adapted to abut against said eraser, and resilient means for pressing the cleaning element against the eraser.

2. A rotatable shaft adapted for connection with a motor, a non-rotating handle element, a circular eraser mounted on said rotatable shaft, and a stationary cleaning element having a substantially solid abrading surface adapted to abut against said eraser, said element composed of soft rubber, and resilient means for pressing the cleaning element against the eraser.

3. A rotatable shaft adapted for connection with a motor, a non-rotating handle element, an eraser mounted on said rotatable shaft, and a stationary cleaning element having a substantially solid abrading surface adapted to abut against said eraser, a guide at that end of the handle adjacent the eraser, a resilient arm in the guide said arm carrying the cleaning element.

4. A rotatable shaft adapted for connection with a motor, a non-rotating handle element, an eraser mounted on said rotatable shaft, and a stationary cleaning element adapted to abut against said eraser, a guide, a resilient arm in the guide said arm carrying the cleaning element, said arm secured to the stationary element and an adjusting collar slidable on the arm and stationary element.

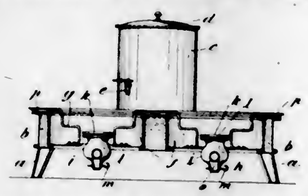
5. A rotatable shaft adapted for connection with a motor, a non-rotating handle element, an eraser mounted on said rotatable shaft, and a stationary cleaning element adapted to abut against said eraser, a guide, a resilient arm in the guide said arm carrying the cleaning element, said arm secured to the stationary element and an adjusting collar slidable on the arm and stationary element, and a switch on said handle element.

6. A rotatable shaft adapted for connection with a motor, a rotatable eraser carried at one end thereof, a

stationary guide radial to the shaft, a stationary sleeve on which it is mounted, a resilient arm passing through said guide and fast at one end to the sleeve, a clamp at its free end, a cleaning element in said clamp with a portion thereof adapted for engagement with said eraser, and an adjusting collar surrounding said arm and sleeve and slidable thereon.

7. A rotatable shaft adapted for connection with a motor, a rotatable eraser carried at one end thereof, a stationary guide radial to the shaft, a stationary sleeve on which it is mounted, a resilient arm passing through said guide and fast at one end to the sleeve, a clamp at its free end, a cleaning element in said clamp with a portion thereof adapted for engagement with said eraser, and a switch carrying contacts on said sleeve, in combination with adjustable means for changing the pressure on eraser and cleaning element.

853,995. GAS-BOILER. CARL RAYER, Esslingen, Germany. Filed Sept. 15, 1905. Serial No. 278,603.

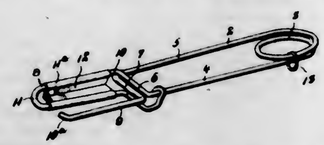


Claim.—1. In gas boilers the combination of a water chamber supported on feet, cylindrical passages in said water chamber from top to bottom and closed at the bottom, said cylindrical passages being encompassed laterally by the water chamber, gas burners inserted through the bottom, supports for cooking vessels arranged round said burner, and a hot water reservoir in communication with and higher than the water chamber, all substantially as and for the purpose set forth.

2. In gas boilers the combination of a water chamber supported on feet, cylindrical passages closed at the bottom and encompassed laterally by the water chamber, a hot water reservoir in communication with the water heating chamber, gas burners inserted through the bottom, a gas mixing chamber of round form, a central support, a head piece adapted to fit over said gas mixing chamber, and a lateral projection on the lower part of the support adapted to work in a spiral, substantially as and for the purpose set forth.

3. In gas boilers as herein described gas burners comprising the combination of a delivery tube, a gas mixing chamber of round form, a head piece to said chamber, a central support for said head-piece passing through the mixing chamber, a lateral projection near the bottom of the central support, a spiral groove in the tubular lower part of the mixing chamber, said lateral projection being adapted to move in said spiral groove all substantially as and for the purpose described.

853,996. COW-TAIL HOLDER. ABIAL B. ROUNDY, Winslow, Me. Filed July 28, 1906. Serial No. 328,170.

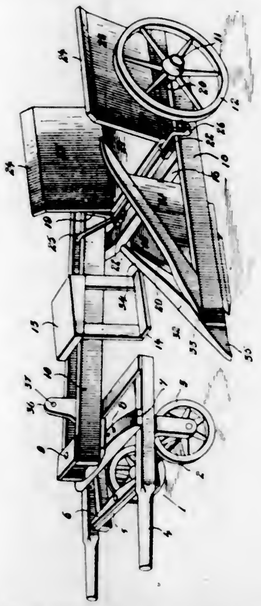


Claim.—1. A device of the character described, comprising a pair of spring arms and clamping jaws, a grooved seat carried by one of said jaws for the opposite jaw and a hook adjacent to the end of the second mentioned jaw, substantially as described.

2. A device of the character described, comprising a pair of spring arms and clamping jaws, one of said jaws being bent to form a loop, a grooved metal plate carried by said jaw adapted to form a seat for the opposite jaw, the said opposite jaw working in the loop on the first mentioned jaw, and a hook adjacent to the end of the second mentioned jaw, substantially as described.

3. A device of the character described, comprising a pair of spring arms and longitudinal extensions thereof forming clamping jaws, one of said jaws being bent to form a loop, a grooved metal plate carried by said jaw adapted to form a seat for the opposite jaw, the said opposite jaw working in the loop on the first mentioned jaw, and an inwardly turned hook adjacent to the end of the second mentioned jaw fitting over the end of the grooved plate, substantially as described.

853,997. CORN-CUTTING MACHINE. JOHN SCHAUBER, near Church Hill, Md. Filed Dec. 3, 1906. Serial No. 346,041.



Claim.—1. In a corn cutter, the combination of a tilting platform with a horizontal blade fixed obliquely in front of the same and in a plane below it, a transverse rock-shaft or rocking-rod provided with a hook and operating arm, a relatively fixed attachment on the machine frame engaged by said hook and a seat arranged in proximity to the said arm substantially as set forth.

2. In a corn cutter, a tilting platform provided with a roller at its rear end to facilitate the discharge of the load, in combination with means for locking said platform against tilting and unlocking said platform at will and a cutting blade arranged in advance of said platform substantially as set forth.

3. In a corn cutter, a tilting platform, in combination with a cutting blade arranged in advance thereof and a deflector, also in advance of the said platform and on one side of the central longitudinal line of the latter, the rear part of said deflector being inclined rearward and outward laterally substantially as set forth.

4. In a corn-cutter a tilting platform and cutting blade, in combination with a deflector extending forward from one side of the said platform, means for locking said platform against tilting and unlocking the said platform at will, and a lifter provided with a point extending forward and outward laterally from said deflector, for passing between the stalks of fallen corn and raising them, the rear part of said deflector being inclined rearward and outward laterally substantially as and for the purpose set forth.

5. In a corn-cutter, the combination of a tilting corn-receiving platform and a cutting blade, arranged in front thereof, with the main frame of the machine, including a forward extending seat-frame and a seat mounted on seat-frame, a foot-rest depending from said seat and a base-board for said cutter-blade, said base-board being arranged to serve also as a second foot-rest and being rigid with said main frame, said platform resting normally on said main-frame and both said platform and said cutter-blade being arranged across the line of draft substantially as shown.

6. In a corn-cutting machine, the combination of a cutting blade with a tilting platform arranged in the rear of said blade, a deflector extending forward from one side of said platform and having its rear part inclined rearward and outward laterally and a pivoted lifter having its point 35 extended in front of said deflector and provided with a handle substantially as and for the purpose set forth.

7. In a corn cutting machine, the combination of a cutting blade with a tilting platform behind said blade, a deflector extending forward from one side of said platform and tapering forward and downward and a detachable pivoted device attached to the forward end of said deflector and provided with a point for passing between and under fallen corn-stalks substantially as set forth.

8. In a corn-cutting machine, the combination of a main frame, transporting wheels and axle, with a tilting corn-receiving platform pivoted on said axle and resting normally in a horizontal position on said frame and provided with side walls, a cutting blade fixed to said frame and arranged obliquely across the line of draft in front of the said platform and a deflector arranged in front of the said platform and approximately in front of one of the said side walls thereof, the said deflector being inclined upward, rearward and outward laterally, to prevent the corn-stalks from toppling over sidewise out of the machine as cut, substantially as set forth.

9. In combination with a draft truck provided with shafts and a bolster having a transverse series of holes for adjustment, a main frame, including a seat-frame which is rigid with the horizontal body of said main frame but extends upward and forward therefrom, in order that its forward end may be above said bolster, a king-bolt connecting said forward end of the seat-frame to said bolster through any one of the said series of holes at will and a horizontal corn-cutting blade fastened to the said main frame across the line of draft substantially as set forth.

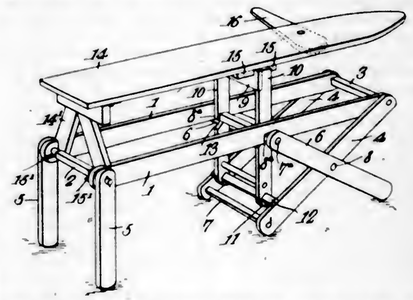
10. In a corn cutter, the combination of a corn receiving platform with a cutting blade arranged in front thereof, a base board for said blade and a seat having a depending foot rest and arranged in proximity to said base board, permitting the latter to be used as a second foot-rest substantially as set forth.

11. In a corn cutter, a horizontal cutting knife, its base-board and a normally horizontal platform behind the same, in combination with a frame having a horizontal part supporting said elements and provided with a seat frame rigidly attached thereto and extending upward and forward, and a seat supported on said seat frame in proximity to said base board, in order that the latter may be used as a foot rest substantially as set forth.

853,998. COMBINED IRONING-BOARD AND WASH-BENCH. ALFRED SCHEDIN, Moscow, Idaho. Filed Jan. 21, 1907. Serial No. 353,343.

Claim.—1. In a device of the character set forth, a main frame, legs pivotally secured at each end of said frame, secondary legs pivotally secured to the legs at one end of said frame, means for securing said secondary legs to said frame, standards pivotally secured to the legs at one end of said frame, a wringer board upon said standards, and means for securing said standards in vertical position.

2. In a device of the character set forth, a main frame, legs pivotally secured at each end of said frame, secondary legs pivotally secured to the legs at one end of said frame, a cross-bar connecting the upper ends of said secondary legs adapted and arranged to engage in a recess provided

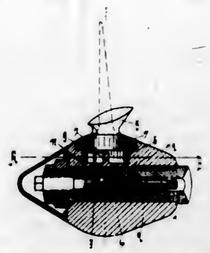


therefor in the said frame, standards pivotally and slidably secured to the legs at one end of the frame and provided with notches adapted to slidingly receive the said cross-bar to hold the standards in vertical alinement, and a wringer board supported by said standards.

3. In a device of the character set forth, a main frame, vertically disposed legs pivotally secured to one end of said frame, a second set of legs pivotally secured to the opposite end of said frame and extending inwardly at an inclination to said frame, a cross-bar connecting the lower ends of said second set of legs, means for retaining said legs in an inclined position, standards pivotally supported by said cross-bar, means for removably securing the standards to the frame in a vertical position, and a wringer board secured to said standards.

4. In a device of the character set forth, a main frame, legs pivotally secured at one end of said frame, a second set of legs secured to the opposite end of said frame, a cross bar attached to the second set of legs near their lower ends and a set of secondary legs pivotally secured to said second set of legs, a cross-bar secured to said secondary set of legs engaging in a recess provided therefor in said frame, standards pivotally and slidably supported upon said first-mentioned cross-bar and provided with notches adapted and arranged to receive said second-mentioned cross-bar to hold said standards in vertical alinement, and a wringer board supported by said standards.

853,999. PROPELLER. WILHELM SCHMID, Schaffhausen, Switzerland. Filed Nov. 20, 1905. Serial No. 288,148.



Claim.—1. In a propeller, the combination with a hub and blades adjustably mounted thereon, said hub and blades having inter-communicating internal recesses, of fixed plates dividing the recesses in the blades into com-

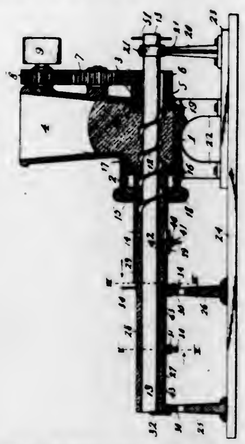
partments, a longitudinally hollowed shaft having lateral passages communicating respectively with the aforesaid compartments, a tube within said shaft communicating with one of said passages, a pump for supplying pressure fluid, and three-way cocks for selectively directing said fluid as desired to one or other of said passages.

2. In a propeller, the combination of a plurality of adjustable blades each having at its root an internal cavity divided into two compartments, a hub carrying said blades and having passages communicating with all the said compartments, a hollow shaft carrying said hub and having passages communicating with the passages in the hub for directing a pressure medium selectively to one of the two compartments in each blade, and means for supplying said pressure medium.

3. In a propeller, the combination of a hub, pivotal blades carried thereby, each having a plurality of internal compartments, two pressure fluid conduits each having communication with one of the compartments of the various blades, means for supplying pressure fluid to said conduit, controlling means therefor having passages communicating respectively with said conduits, two valves respectively controlling said passages, means for simultaneously actuating said valves so that the one acts to admit pressure fluid to its particular conduit while the other relieves the other conduit.

4. In an adjustable propeller, the combination of a hub, blades pivotally carried thereby, means for admitting pressure fluid to said blades so as to turn them on their pivots, a flange on said blades, and a bi-partite nut under said flange, said hub being provided with a recess which is located between said nut and the root of the propeller and constitutes an annular chamber serving to relieve the fluid pressure.

854,000. MACHINE FOR MAKING CEMENT TILES, POSTS, PICKETS, &c. CHARLES D. SCHROEDER, Kansas City, Kans. Filed Oct. 23, 1905. Serial No. 284,059.



Claim.—1. In a machine of the character specified, the combination of a chamber having an extension, a tubular die secured in said extension and forming a reduced extension thereof, a helical feeder extending into the die, means for rotating said feeder, means for guiding a core through said feeder, an offbearing-plate arranged in alinement with the die, and means for supporting said offbearing-plate.

2. In a machine of the character specified, the combination of a chamber, having an outlet opening, a tubular die secured in said opening and extending outwardly, a helical feeder extending into the die, means for rotating said feeder, a core extending slidably through said feeder, a tile-receptacle arranged in alinement with the die, and means for supporting said tile-receptacle.

3. In a machine of the character specified, the combination of a chamber, a tubular die communicating therewith, a tile-receptacle arranged in alinement with the die, means for supporting said receptacle, a helical feeder within the chamber, means for turning said feeder within the chamber, a core extending through said feeder and through the die, and projecting in opposite directions from said chamber, and means for guiding the portions of the core which so project.

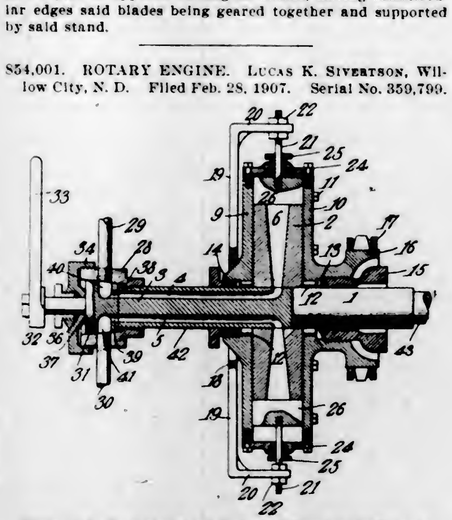
4. In a machine of the character specified, the combination of a chamber, a tubular die communicating therewith, a tile receptacle arranged in alinement with the die, means for supporting said receptacle, a helical feeder within the chamber, means for turning said feeder within the chamber, a core extending through said feeder and through the die, and projecting in the opposite direction from said chamber, means for guiding the portion of the core which so projects, and an offbearing-plate arranged in alinement with the die.

5. In a machine of the character described, a cutting off device comprising, in combination with a core, a pair of opening and closing knives arranged at opposite sides of the core, said knives having semicircular cutting edges which fit the core when closed, means for causing the knives to move simultaneously, and means for actuating them.

6. In a machine of the character specified, in combination with a core, a pair of pivotally-movable knives arranged oppositely with respect to the core, said knives having semicircular cutting edges which fit the core when closed, the pivotal portions of said knives having intermeshing segmental gears, and a lever for actuating the knives.

7. In a machine of the character specified, the combination of a core, a tubular die, an automatic rotary perforator attached thereto, a tile receptacle registering with outer end of the die, a stand supporting said receptacle, and a pair of opposed cutting-off blades, having semicircular edges said blades being geared together and supported by said stand.

854,001. ROTARY ENGINE. LUCAS K. SIVERTSON, Willow City, N. D. Filed Feb. 28, 1907. Serial No. 359,799.



Claim.—1. In a steam engine, a stationary shaft, an eccentric piston-head fast thereon, a rotary member concentrically mounted on said shaft, pistons carried by said rotary member in contact with the periphery of the stationary piston-head, threaded rods fast to said pistons, a connecting frame having two radial arms with ends bent to overhang the rotary member and receive the threaded ends of the piston-carrying rods, and clamp nuts applied to the rods on each side of the overhanging ends of the connecting frame arms.

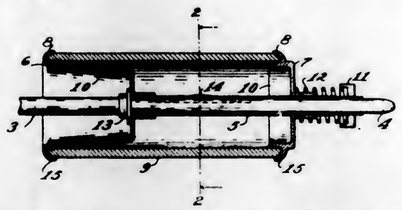
2. In a steam engine, a stationary shaft having two steam inlet and two steam exhaust passages therethrough, an eccentrically mounted piston-head having steam passages connected with the shaft passages and opening at the periphery of the piston head, a rotary member concentric with the shaft and having connected radially-movable pistons, and a valve arranged to couple diametrically opposite pairs of the four passages in the shaft to the steam supply and exhaust respectively.

3. In an engine, a stationary shaft, a stationary piston-head carried thereby, a rotor surrounding the stationary piston head, roller bearings between the rotor and the shaft, packing rings exterior to the roller bearings, and glands confining said packing rings and roller bearings and carried by the rotor.

4. In a steam engine, a stationary shaft, a stationary piston-head eccentrically mounted thereon, a rotary member concentrically mounted on the shaft and inclosing the piston-head, simultaneously-movable radial pistons carried by the rotary member, roller bearings interposed between the movable member and the stationary shaft, packing rings exterior to the roller bearings, and glands confining said packing rings and carried by said rotary member.

5. In a steam engine, a stationary shaft having longitudinal steam passages therein, an eccentric piston-head fast on said shaft and having steam passages communicating with those through the shaft and extending to the periphery of the piston-head, a rotary member inclosing said piston-head and mounted concentrically on said shaft, radially-movable pistons carried by said rotary member and connected exterior thereto for simultaneous movement, a valve seat on one end of said shaft, a valve therein having diametrically opposite steam passages movable into communication with the diametrically opposite pairs of the steam passages in the shaft, cross passages in the valve of larger area than the ports therein, and steam inlet and exhaust pipes connected to said valve seat and communicating with the cross passages in the valve.

854,002. PHONOGRAPH-RECORD HOLDER. THOMAS V. SKELLY, Chicago, Ill. Filed Feb. 11, 1907. Serial No. 356,787.



Claim.—1. A record-holder comprising a shaft, a pair of heads mounted thereon and adapted to engage opposite ends of a tubular record and support the same concentrically of said shaft, one of said heads being slidable on the shaft, a shoulder on said shaft adjustable longitudinally thereof, and a spring bearing between said shoulder and said slidable head and normally urging said slidable head toward the other for clamping the record between said heads.

2. A record-holder comprising a sleeve, a pair of heads mounted on said sleeve and each having a seat adapted to engage one end of a tubular record for supporting the record between said heads, one of said heads being slidable on the sleeve and the other being rigid thereon, and a spring normally urging said slidable head toward the other for clamping the record between said heads, said sleeve being adapted to be slipped on and off of a supporting mandrel and all being adapted to serve as a holder for handling the record when removed from such mandrel.

3. A record-holder comprising a sleeve, a pair of heads mounted on said sleeve and each having a seat adapted to engage one end of a tubular record for supporting the record between said heads, one of said heads being slidable on the sleeve and the other being rigid thereon, a spring normally urging said slidable head toward the other for clamping the record between said heads, and a nut adjustable on said sleeve for changing the tension of said spring.

4. A record-holder comprising a sleeve, a pair of heads mounted on said sleeve and each having a seat adapted to engage one end of a tubular record for supporting the record between said heads, one of said heads being slidable on the sleeve and the other being rigid thereon, and a spring normally urging said slidable head toward the other for clamping the record between said heads, one of said heads being removable to permit the ready removal of the record, said sleeve being adapted to be slipped on and off of a supporting mandrel and all being adapted to serve as a holder for handling the record when removed from such mandrel.

5. In a device of the class described, the combination of a shaft having a free end, a sleeve mounted on said shaft and removable from said free end, means for securing said sleeve against shifting on said shaft, a head at one end of said sleeve, a removable shoulder at the other end, a second head slidably mounted on said sleeve between said shoulder and first head, and a spring bearing between said shoulder and slidable head and normally urging the same toward said first head, said heads being adapted to engage the ends of a tubular record and support the same concentrically of said shaft.

6. In a device of the class described, the combination of a rotatable shaft having a free end, a sleeve mounted on said shaft and removable from said free end, means for securing said sleeve against shifting on said shaft, a pair of heads mounted on said sleeve and movable toward each other, and a spring normally urging said heads toward each other, each of said heads having a conical seat facing the seat in the other head, and said seats being adapted to engage and center a cylindrical record mounted between said heads.

7. In a device of the class described, the combination of a shaft having a free end, a sleeve mounted on said shaft and removable from said free end, a spring tongue acting between said shaft and sleeve for securing said sleeve against shifting on said shaft, a pair of heads mounted on said sleeve and each having a seat adapted to engage one end of a tubular record for supporting the record between said heads, one of said heads being slidable on the sleeve and the other being rigid thereon, and a spring normally urging said slidable head toward the other for clamping the record between said heads.

8. In a device of the class described, the combination of a shaft having a free end, a sleeve on said shaft and removable from said free end, means acting between said shaft and sleeve and adapted to normally prevent rotation of said sleeve relatively of said shaft while permitting said sleeve to be readily withdrawn or replaced upon said shaft, a pair of heads mounted on said sleeve and each having a seat adapted to engage one end of a tubular record for supporting the record between said heads, one of said heads being slidable on the sleeve and the other being rigid thereon, and a spring normally urging said slidable head toward the other for clamping the record between said heads.

9. In a device of the class described, the combination of a shaft having a free end, a sleeve fitting said shaft and adapted to be slipped upon or removed therefrom at said free end, a record cylinder having conical ends, and a pair of heads mounted on said sleeve and having conical seats fitting the respective conical ends of said record cylinder, said sleeve and heads being adapted to serve as a holder for protecting said record against breakage when removed from said shaft.

10. In a device of the class described, the combination of a shaft having a free end, a sleeve fitting said shaft and adapted to be slipped upon or removed therefrom at said free end, a record cylinder having conical ends, and a pair of heads mounted on said sleeve and having therein conical seats fitting the respective conical ends of said record cylinder, said sleeve and heads being adapted to serve as a holder for protecting said record against breakage when removed from said shaft, and said sleeve being extended

beyond one of said heads and serving as a handle for said record.

11. In a device of the class described, the combination of a shaft having a free end, a sleeve fitting said shaft and adapted to be slipped upon or removed therefrom at said free end, a record cylinder having convex conical ends, and a pair of heads mounted on said sleeve and having concave conical seats fitting the respective conical ends of said record cylinder, said sleeve and heads being adapted to serve as a holder for protecting said record against breakage when removed from said shaft.

12. The combination of a tubular record cylinder of the class described, having convex conical ends, a pair of heads having concave conical seats, respectively fitting opposite ends of the cylinder, and means extending through the cylinder and connecting said heads to form a holder for handling the record.

13. A record-holder comprising a sleeve, a pair of heads mounted on said sleeve and each having a seat adapted to engage one end of a tubular record for supporting the record between said heads, one of said heads being slidable on the sleeve, and yielding means normally urging said slidable head toward the other for clamping the record between said heads, said sleeve being adapted to be slipped on and off of a supporting mandrel and all being adapted to serve as a holder for handling the record when removed from such mandrel.

14. The combination of a tubular record cylinder of the class described, a pair of heads respectively fitting opposite ends of the cylinder, and means extending through the cylinder, slidably connecting said heads, and having an open central part to receive a supporting mandrel, said means being adapted to hold said heads into gripping engagement with their respective ends of the cylinder independently of such supporting mandrel.

15. The combination of a tubular record cylinder of the class described, a pair of heads respectively fitting opposite ends of the cylinder, and means extending through the cylinder, connecting said heads, and having an open central part to receive a supporting mandrel, said heads being adapted to yield longitudinally of the cylinder to compensate for expansion and contraction thereof, and said means being adapted to hold said heads into gripping engagement with their respective ends of the cylinder independently of such supporting mandrel.

854,003. MALTING GRAIN. KARL I. SOMLÓ, Temesvár, Austria-Hungary. Filed Jan. 31, 1906. Serial No. 298,860.

Claim.—A process for cleansing grain, which consists in subjecting it to the action of hot water at a temperature of from 33° to 100° C for a period ranging from about 2 hours down to 10 seconds, previous to the usual steeping and germinating operations, substantially as described.

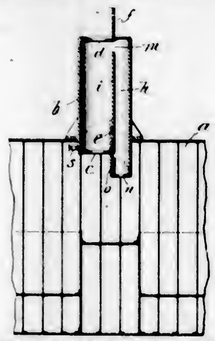
854,004. SUBMARINE BOAT. LAWRENCE Y. SPEAR, Quincy, Mass., assignor to Electric Boat Company, New York, N. Y., a Corporation of New Jersey. Filed Aug. 1, 1906. Serial No. 328,733.

Claim.—1. In a submarine or submergible boat having a tower through which ventilation may be effected, scuttles or hatches in the upper and lower portions of said tower for controlling admission thereto, and an air duct communicating with said tower above the bottom thereof and with the interior of the boat.

2. In a submarine or submergible boat having a tower through which ventilation may be effected, scuttles or hatches on the upper and lower portions of said tower for controlling admission thereto, an air duct communicating with said tower above the bottom thereof and with the interior of the boat, and a stopper or valve controlling said air duct.

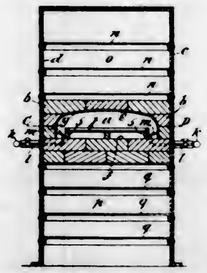
3. In a submarine or submergible boat having a conning tower, a lateral extension of said tower forming an air duct communicating with the interior of the boat, and divided from the tower by a partition terminating below the top of the tower, and scuttles or hatches controlling openings in the upper and lower portions of said tower.

4. In a submarine or submergible boat having a conning tower, a lateral extension of said tower forming an air



duct communicating with the interior of the boat, and divided from the tower by a partition terminating below the top of the tower, scuttles or hatches controlling openings in the upper and lower portions of said tower, and a stopper or valve controlling the air duct.

854,005. MEANS OR APPARATUS FOR BURNING OR FIXING THE COLORS UPON PRINTED OR DECORATED TILES, GLASS, &c. LIONEL W. STANLEY, Bromley, England. Filed Dec. 15, 1905. Serial No. 291,905.



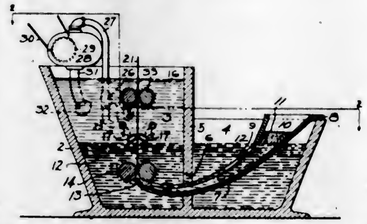
Claim.—1. The combination in a reverberatory furnace of the character described, a metal casing divided into three compartments consisting of a central portion composed of refractory material for firing purposes, an upper chamber for preparatory heating purposes, and a lower compartment for cooling purposes; a lining for the metal casing, a recess in the central portion to form a retort closed at its rear end, and having a flat horizontal portion to form a hearth and an arched roof, a lining for the arched roof, a sliding door for closing the mouth of the retort, means for operating said sliding door, a gaseous mixture supply pipe provided with a regulating tap, and having a number of branch pipes in communication therewith on each side of the retort, said branch pipes being each provided with a regulating tap, and having its inner end projecting above the hearth and curved toward the lower portion of the arched roof of the retort, as set forth.

2. The combination in a reverberatory furnace of the character described, a metal casing divided into three compartments consisting of a central portion composed of refractory material for firing purposes, an upper chamber for preparatory heating purposes, and a lower compartment for cooling purposes, a lining for the metal casing, a recess in the central portion to form a retort closed at its rear end, and having a flat horizontal portion to form a hearth and an arched roof, a lining for the arched roof, a sliding door for closing the mouth of the retort, means for

operating said sliding door, a gaseous mixture supply pipe provided with a regulating tap, and having a number of branch pipes in communication therewith on each side of the retort, said branch pipes being each provided with a regulating tap, and having its inner end projecting above the hearth and curved toward the lower portion of the arched roof, longitudinal guides upon the hearth, and removable trays containing the articles to be fired, as set forth.

3. The combination in a reverberatory furnace of the character described, a metal casing divided into three compartments consisting of a central portion composed of refractory material for firing purposes, an upper chamber for preparatory heating purposes, and a lower compartment for cooling purposes, a lining for the metal casing, a recess in the central portion to form a retort closed at its rear end, and having a flat horizontal portion to form a hearth and an arched roof, a lining for the arched roof, a sliding door for closing the mouth of the retort, means for operating said sliding door, a gaseous mixture supply pipe provided with a regulating tap, and having a number of branch pipes in communication therewith on each side of the retort, said branch pipes being each provided with a regulating tap, and having its inner end projecting above the hearth and curved toward the lower portion of the arched roof of the retort, longitudinal guides upon the hearth, removable trays containing articles to be fired, skeleton framework extending in front of the framework of the furnace, a sliding table working in said framework, means for raising and lowering said sliding table, guides for the table in said preparatory heating chamber, a sliding door for closing the last named chamber, means for operating said sliding door, and guides for the trays in the lower compartments, as set forth.

854,006. PROCESS OF TINNING OR COATING METAL SHEETS. LAWRENCE C. STEELE, Pittsburg, Pa. Filed Sept. 24, 1906. Serial No. 335,954.



Claim.—1. A process of tinning or coating with other metals, consisting in passing the sheet to be coated through the molten coating metal and through the oil, or similar substance, thereon and applying suction at a point adjacent to the sheet and extending across the same as said sheet passes through said oil.

2. The process of tinning or coating with other metals, consisting in passing the sheet to be coated through the molten metal and through the oil, or similar substance, thereon and applying suction at a point adjacent to the sheet on opposite sides thereof and extending across the same as said sheet passes through said oil.

3. The process of tinning or coating with other metals, consisting in passing the sheet to be coated through the molten coating metal and through the oil, or similar substance thereon, and applying suction at a point adjacent to the sheet and extending across the same just above the line of the metal.

4. The process of tinning or coating with other metals, consisting in passing the sheet to be coated through the molten coating metal and the oil, or similar substance, thereon, and drawing off by suction applied adjacent to the sheet and across the same, a portion of the oil and with it the surplus tin.

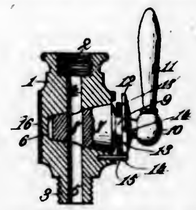
5. The process of tinning or coating with other metals, consisting in passing the sheet to be coated through the molten coating metal and the oil, or similar substance, thereon, applying suction at a point adjacent to the sheet and extending across the same while said sheet passes through said oil and returning the oil and metal so removed to the pot.

6. The process of tinning or coating with other metals, consisting in passing the sheet to be coated through the molten coating metal and the oil, or similar substance, thereon, applying suction at a point adjacent to the sheet and extending across the same while said sheet passes through the oil and filtering, cleaning the oil removed and returning same to the pot.

7. The process of tinning or coating with other metals, consisting in passing the sheet to be coated through the molten metal and through the oil, or similar substance thereon, and drawing the said oil over the surface of said sheet as it passes through the oil.

8. The process of tinning or coating with other metals, consisting in passing the sheet to be coated through the molten metal and through the oil, or similar substance thereon, and drawing the said oil down over the surface of said sheet as it passes through said oil.

854,007. COCK AND FAUCET. ALBERT ULLMANN, Macon, Ga. Filed Dec. 1, 1905. Serial No. 289,832.



Claim.—1. A body-portion having an inlet and an outlet and a plug-receiving socket, a plug mounted in said socket and having a port for establishing communication between the inlet and the outlet of the body-portion, and means surrounding the periphery of the body-portion and engaging the plug for rotatably securing it in position.

2. A body-portion having an inlet and an outlet and a plug-receiving socket, a plug mounted in said socket and having a port for establishing communication between the inlet and the outlet of the body-portion, and a shiftable means surrounding the periphery of the body-portion and adapted when moved in one direction to rotatably secure the plug in position and when shifted to another position adapted to permit of the removal of the plug.

3. A body-portion having an inlet and an outlet and a plug-receiving socket, a plug mounted in said socket and having a port for establishing communication between the inlet and the outlet of the body-portion, means surrounding the periphery of the body-portion and engaging the plug for rotatably securing it in position, and a stop carried by the body-portion and adapted to be engaged by the plug for limiting the rotatable movement thereof.

4. A body-portion having an inlet and an outlet and a plug-receiving socket, a plug mounted in said socket and having a port for establishing communication between the inlet and the outlet of the body-portion, a shiftable means surrounding the periphery of the body-portion and adapted when moved in one direction to rotatably secure the plug in position and when shifted to another position adapted to permit of the removal of the plug, and a stop carried by the body-portion and adapted to be engaged by the plug for limiting the rotatable movement thereof.

5. A cock comprising a body-portion, a rotatable plug, and a clamping shell surrounding the body-portion for retaining the plug in position.

6. A cock comprising a body-portion, a rotatable plug, a self-tightening means for said plug surrounding the body-portion, and a stop for limiting the movement of the rotatable plug in either direction.

7. A cock comprising a body-portion provided with an inlet and an outlet and a tapering recess, a rotatable and tapering closure member for said outlet and inlet extending in said recess, and a self-tightening means surrounding said body-portion and engaging with the plug for retaining it in the recess.

8. A cock comprising a body-portion provided with an inlet and an outlet and a tapering recess, a rotatable and tapering closure member for said outlet and inlet extending in said recess, a self-tightening means surrounding said body-portion and engaging with the plug for retaining it in the recess, and a stop carried by the body-portion and adapted to limit the movement of said member in either direction.

9. A body-portion having an inlet and an outlet and a tapering recess, a rotatable and tapering closure member extending in said recess and adapted to establish communication between the inlet and outlet, and a clamping shell surrounding said body-portion and provided with a pair of spring arms adapted to engage said member for retaining it in position.

10. A body-portion having an inlet and an outlet and a tapering recess, a rotatable and tapering closure member extending in said recess and adapted to establish communication between the inlet and the outlet, a clamping shell surrounding said body-portion and provided with a pair of spring arms adapted to engage said member for retaining it in position, and a stop carried by the body-portion and engaging said member for limiting the movement thereof in either direction.

11. A cock comprising a body-portion having openings, a closure member for said opening, and an exteriorly-arranged self-tightening cylindrical clamping shell for retaining said member in position.

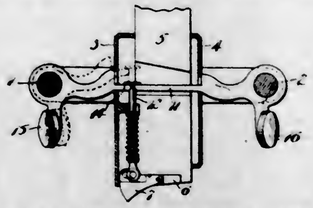
12. A cock comprising a body-portion having openings, a closure member for said openings, a self-tightening cylindrical clamping shell for retaining said member in position, and means for limiting the movement of said member.

13. A cock comprising a closure member, and a shiftable shell adapted when moved in one direction to retain the closure member in position and when shifted in another direction to permit of the removal of the closure member.

14. A cock comprising a closure member, a shiftable shell adapted when moved in one direction to retain the closure member in position and when shifted in another direction to permit of the removal of the closure member, and means for limiting the movement of said closure member when the same is secured in position by said shell.

15. A cock comprising a body-portion having openings, and a closure member for said openings, a shiftable shell adapted when moved in one direction to retain the closure member in position and when shifted in another direction adapted to permit of the removal of the closure member.

854,008. LATCH MECHANISM. HENRY G. VOIGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Jan. 23, 1907. Serial No. 353,591.

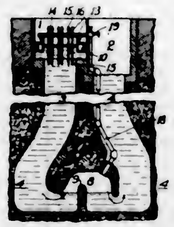


Claim.—1. In combination, oppositely arranged plates, a latch bolt and a latch slide, both carried by one of said plates and at one side of the door, a handle carried by each of said plates, an arm pivoted to the upper portion of each handle, projecting inwardly through its respective plate in operative connection with the latch slide to laterally retract the same.

2. In combination, oppositely arranged plates, a latch bolt and a latch slide, both carried by one of said plates and at one side of the door, a handle carried by each of said plates, an arm pivoted to the upper portion of each handle, projecting inwardly through its respective plate in operative connection with the latch, and laterally retractable, finger pieces carried by said arms, movable independently of said handles for operating said projecting slide operating arms.

3. In combination, oppositely arranged plates, a latch bolt and a latch slide, both carried by one of said plates and at one side of the door, a handle carried by each of said plates, an arm pivoted to the upper portion of each handle, projecting inwardly through its respective plate in operative connection with the latch, and being laterally retractable, finger pieces on said arms pivotally supported by said handles near the upper ends thereof, and movable independently for operating said inwardly projecting slide operating arms.

854,009. AUTOMATIC TIDAL AIR-COMPRESSOR. WILLIAM O. WEBBER, Boston, Mass. Filed Sept. 17, 1906. Serial No. 334,992.



Claim.—1. An automatic tidal air compressor, consisting of passageways connecting a tidal basin with the ocean, each communicating with a leg of an inverted siphon, air inlets situated in the inflow passageway, and an air separator situated at the lower part of said siphon.

2. An automatic tidal air compressor, consisting of passageways connecting a tidal basin with the ocean, each communicating with a leg of an inverted siphon, swinging gates situated in such passageways and adapted to cause any flow of water in either direction to pass through the siphon, air inlets situated in the inflow passageway, and an air separator situated at the lower part of said siphon.

3. An automatic tidal air compressor, consisting of an inlet passageway at one level, connecting a tidal basin with the ocean, and communicating with the longer leg of an inverted, submerged siphon, and an outlet passageway at a lower level, connecting a tidal basin with the ocean, and communicating with the shorter leg of said siphon, air inlets situated in the inflow passageway and an air separator situated at the lower part of said siphon.

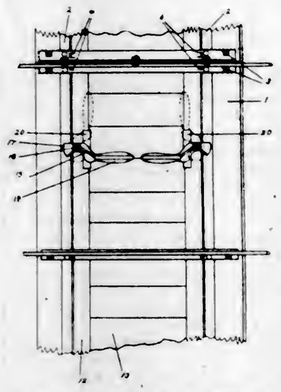
4. An automatic tidal air compressor, consisting of an inlet passageway at one level, connecting a tidal basin with the ocean, and communicating with the longer leg of an inverted, submerged siphon, and an outlet passageway at a lower level, connecting a tidal basin with the ocean, and communicating with the shorter leg of said siphon, swinging gates situated in said passageways and adapted to cause any flow of water in either direction to pass down the longer, and up the shorter, legs of said siphon, air inlets situated in the inflow passageway and an air separator situated at the lower part of said siphon.

5. An automatic tidal air compressor, consisting of an inlet passageway at one level, connecting a tidal basin with the ocean, and communicating with the longer leg of an inverted, submerged siphon, an outlet passageway at a lower level, connecting a tidal basin with the ocean, and communicating with the shorter leg of said siphon, an enlarged chamber located at the bottom of said inverted siphon, provided with an abutment wall, transversely situated to the axis of the descending leg of said siphon.

6. An automatic tidal air compressor, consisting of an inlet passageway at one level, connecting a tidal basin with the ocean, and communicating with the longer leg of an inverted, submerged siphon, an outlet passageway at a lower level, connecting a tidal basin with the ocean, communicating with the shorter leg of said siphon, and a floating head piece provided with air inlet pipes situated in the inlet passageway, directly over the longer leg of said siphon, adapted to automatically maintain a variable degree of submersion of said air inlet pipes.

7. An automatic tidal air compressor, consisting of an inlet passageway at one level, connecting a tidal basin with the ocean, and communicating with the longer leg of an inverted, submerged siphon, an outlet passageway at a lower level, connecting a tidal basin with the ocean, and communicating with the shorter leg of said siphon, a floating head piece provided with air inlet pipes situated in the inlet passageway, directly over the longer leg of said siphon, and adapted to automatically maintain a constant degree of submersion of said air inlet pipes for part of the rise and fall of the tide, and a variable degree of submersion for the remainder of said rise and fall.

854,010. SILO. GEORGE P. YOUMANS, Galesburg, Mich., assignor to The Kalamazoo Tank & Silo Company, Kalamazoo, Mich. Filed Oct. 18, 1906. Serial No. 339,501.



Claim.—1. A silo, comprising a plurality of wall sections, vertically arranged staves at the sides of the door-opening of each section, said staves having mortises in the ends thereof; vertical angle-iron casing strips arranged upon the inner edges of said staves with their angles outward; angle-iron cross-pieces arranged across the door-opening of each wall section and riveted to said casing irons, each wall section having a cross-piece at the top and bottom thereof, the bottom cross-piece being arranged with its angle downward, and the top cross-piece being arranged with its angle upward, so that the outwardly projecting legs of the adjacent cross-pieces are brought together; rivets arranged through the said outwardly projecting legs of the top and bottom cross-pieces of adjacent wall sections; lugs punched in from said cross-pieces to engage the inner sides of said casing strips; dowel plates arranged in said mortises in the ends of said staves; bolts arranged through said cross-pieces, staves and dowel-plates; and hoops for wall sections arranged to embrace said cross pieces, as specified.

2. A silo, comprising a plurality of wall sections, vertically arranged staves at the sides of the door-opening of each section, said staves having mortises in the ends thereof; vertical angle-iron casing strips arranged upon the inner edges of said staves with their angles outward; angle-iron cross-pieces arranged across the door-opening of each wall section and riveted to said casing irons, each wall section having a cross-piece at the top and bottom thereof, the bottom cross-piece being arranged with its angle downward, and the top cross-piece being arranged with its angle upward, so that the outwardly projecting legs of the adjacent cross-pieces are brought together; rivets arranged through the said outwardly projecting legs of the top and bottom cross-pieces of adjacent wall sections; dowel plates arranged in said mortises in the ends of said staves; bolts arranged through said cross-pieces, staves and dowel-plates; and hoops for wall sections arranged to embrace said cross-pieces, as specified.

3. A silo, comprising a plurality of wall sections, vertically arranged staves at the sides of the door-opening of each section; vertical angle-iron casing strips arranged upon the inner edges of said staves with their angles outward; angle-iron cross-pieces arranged across the door-opening of each wall section and riveted to said casing irons, each wall section having a cross-piece at the top and bottom thereof, the bottom cross-piece being arranged with its angle downward, and the top cross-piece being arranged with its angle upward, so that the outwardly projecting legs of the adjacent cross-pieces are brought together; rivets arranged through the said outwardly projecting legs of the top and bottom cross-pieces of adjacent wall sections; lugs punched in from said cross-pieces to engage the inner sides of said casing strips; and hoops for wall sections arranged to embrace said cross-pieces, as specified.

4. A silo, comprising a plurality of wall sections, vertically arranged staves at the sides of the door-opening of each section; vertical angle-iron casing strips arranged upon the inner edges of said staves with their angles outward; angle-iron cross-pieces arranged across the door-opening of each wall section and riveted to said casing irons, each wall section having a cross-piece at the top and bottom thereof, the bottom cross-piece being arranged with its angle downward, and the top cross-piece being arranged with its angle upward, so that the outwardly projecting legs of the adjacent cross-pieces are brought together; rivets arranged through the said outwardly projecting legs of the top and bottom cross-pieces of adjacent wall sections; and hoops for wall sections arranged to embrace said cross pieces, as specified.

5. In a silo, the combination with the vertically arranged staves at each side of the door-opening, of vertical angle-iron casing strips arranged upon the inner edges of said staves with their angles outward; cross-pieces arranged across the door-opening riveted to said casing strips; lugs punched in from said cross-pieces to engage the inner sides of said casing strips; bolts arranged through said cross-pieces and staves; and bushings for said bolts arranged in said staves, as specified.

6. In a silo, the combination with the vertically arranged staves at each side of the door-opening, of vertical angle-iron casing strips arranged upon the inner edges of said staves with their angles outward; cross-pieces arranged across the door-opening riveted to said strips; lugs punched in from said cross-pieces to engage the inner sides of said casing strips; as specified.

7. In a silo, the combination with the vertically arranged staves at each side of the door-opening, of vertical angle-iron casing strips arranged upon the inner edges of said staves with their angles outward so that their legs overlap the staves; cross-pieces arranged across the door-opening riveted to said casing strips; bolts arranged through said cross pieces and staves; and bushings for said bolts arranged in said staves, as specified.

8. In a silo, the combination with the vertically arranged staves at each side of the door-opening, of vertical angle-iron casing strips arranged upon the inner edges of said staves with their angles outward so that their legs overlap the staves; and cross-pieces arranged across the door-opening riveted to said casing strips, as specified.

9. In a silo, the combination with a door casing, of doors adapted to close onto the inside of said casing; latches pivoted on said doors having cam-shaped portions adapted to engage the outside of the door casing whereby the doors may be clamped into position under tension, said latches having handles adapted to serve as steps of the ladder, when in their engaging position; stop plates on said doors; and inwardly projecting lugs on said latches

adapted to engage said stop plates whereby the said latches are supported in a horizontal position to serve as steps and their upward movement limited, as specified.

10. In a silo, the combination with a door casing, of vertically arranged staves at each side of the door opening, of vertical angle-iron casing strips arranged upon the inner edge of the staves with their angles outward so that their legs overlap the staves; cross pieces arranged across the door opening riveted to said casing strips; doors adapted to close onto the inside of said casing; latches pivoted on said doors having cam-shaped engaging portions adapted to engage the outer legs of said angle-iron casing strip whereby the doors may be clamped into position under tension, as specified.

11. In a silo, the combination with a door casing, of doors adapted to close onto the inside of the said casing; latches pivoted on said doors having cam-shaped engaging portions adapted to engage the outside of said door casing, whereby the doors may be clamped into position under tension; stops for said doors; and inwardly projecting lugs on said latches adapted to engage said stops whereby the latches are supported in a horizontal position to serve as steps.

12. In a silo, the combination with a door casing, of doors adapted to close onto the inside of said casing; latches pivoted on said doors having cam-shaped portions adapted to engage the outside of the door casing whereby the doors may be clamped in position under tension; and stops for limiting the movement of said latches.

854,011. PROCESS FOR THE PREPARATION OF LITHOPONES. RUDOLF ALBERTI, Goslar, Germany. Filed Nov. 24, 1905. Serial No. 288,857.

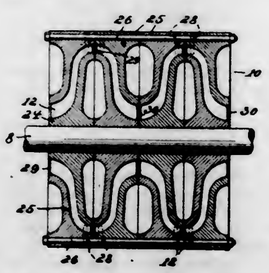
Claim.—1. In the preparation of lithopone, the process which consists in adding a superoxid thereto.

2. In the preparation of lithopone, the process which consists in adding a superoxid of an alkaline substance thereto.

3. In the preparation of lithopone, the process of which consists in subjecting it to the usual incandescent treatment and subsequently adding a superoxid thereto.

4. In the preparation of lithopone, the process which consists in subjecting it to the usual incandescent treatment, and washing it, and subsequently adding a superoxid thereto.

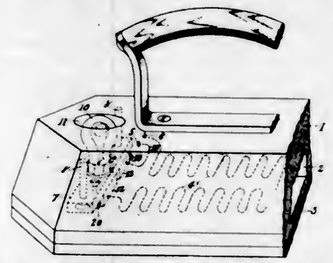
854,012. RUNNER FOR TURBINES AND FLUID-PUMPS. NICHOLAS W. AKIMOFF, West Lynn, Mass. Filed Feb. 12, 1907. Serial No. 357,045.



Claim.—1. A runner, consisting of sections, whereof one is provided with vanes formed integral therewith and both sections in conjunction with the vanes arranged to form passages for fluid, means passing through said sections and vanes for connecting the sections with each other without obstructing the passage of fluid therethrough and means introduced in said outer sections adapted to removably connect such sections with each other.

2. A runner, having a series of runners, each consisting of sections whereof one is provided with vanes formed integral therewith and having openings, each of the outer sections having communicating openings, bolts passing through the openings of said outer sections and adapted to removably connect said sections with each other, and bolts passing through the outer sections and into the openings of the vanes of said inner sections to connect each of said inner sections with the respective outer sections.

854,013. DANGER-SIGNAL FOR PORTABLE ELECTRIC TOOLS. JAMES I. AYER, Cambridgeport, Mass., assignor to Simplex Electric Heating Company, Boston, Mass., a Corporation of Massachusetts. Filed Jan. 14, 1907. Serial No. 352,148.



Claim.—1. A portable tool, an electric heating circuit contained therein, opposite terminal plugs in said portable tool connected with the heating circuit, an insulating plate and socket piece also in said tool, and an electric visual signal device removably mounted in said socket piece and operatively connected with said heating circuit, said signal device being visible externally of the tool for giving visual warning of the presence of current in the tool.

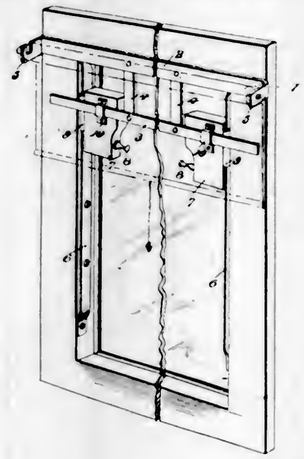
2. An electrically heated tool, an electric heating circuit contained therein, said tool having an internal cavity normally closed against easy access, contact blocks in said cavity insulated from each other and from the tool, the latter also having an opening in position to be readily seen and sufficiently deep to contain and protect a visual signal device, an electric visual signal device mounted in said opening and externally removable therefrom, and means for automatically connecting said signal device operatively with said contact blocks and in said heating circuit to enable the signal device to give visual warning of the presence of current in the tool.

3. An electrically heated tool, containing a recess or chamber, a supporting plate secured in said chamber, means connected with said plate for supporting a lamp, an opening from the outer side of said tool to said supporting means, an electric lamp in said opening mounted in said supporting means, and resistance heating wire in said tool connected with said lamp for giving external visual warning when the current is turned on.

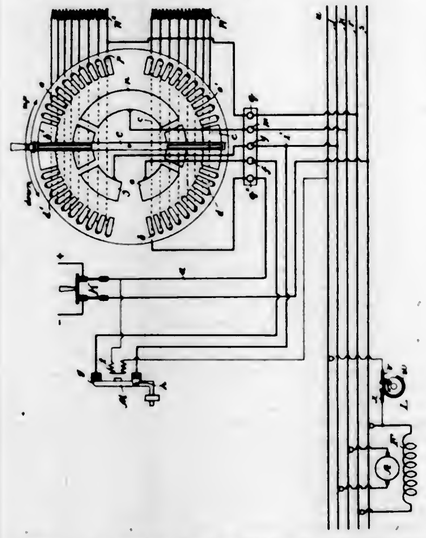
4. An electrically heated tool, containing a recess or chamber, a supporting plate secured in said chamber, means connected with said plate for supporting a lamp, an opening from the outer side of said tool to said supporting means, an electric lamp in said opening mounted in said supporting means, contact blocks carried by said plate and independently connected with the terminals of said lamp, and a resistance heating wire in said tool connected in series with said blocks.

854,014. WINDOW-SHADE HANGER. JOSEPH W. R. BACHMAN and ELBERT M. GREEN, Erick, Okla. Filed Jan. 12, 1907. Serial No. 351,990.

Claim.—In shade roller fixtures, the combination of vertical guides arranged at opposite sides of the window, slides movable vertically upon said guides, means for connecting the slides to the guides in an adjusted position, a bar, keepers slidably connecting said bar to each of the aforementioned slides to admit of the bar having longitudinal movement, a second bar provided with shade roller brackets, and connecting means between the two bars.



854,015. LIMIT-SWITCH. GEORGE BAEHR, McKeesport, Pa., assignor to Electric Controller and Supply Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 3, 1906. Serial No. 341,938.



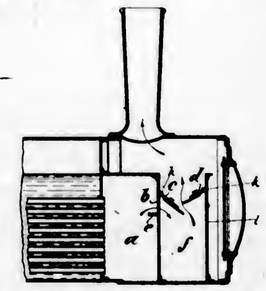
Claim.—1. A motion-limiting device for motor-driven machinery, embracing a reversing controller, a limit switch and means for including the said switch in the motor circuit in one direction of motion, and for bypassing the switch when the controller is reversed.

2. A motion-limiting device for motor-driven machinery, embracing a reversing controller, a limit switch, and means for opening the same automatically when the limit of travel in one direction is reached and for bypassing said switch when the controller is reversed.

3. A motion-limiting device for motor-driven machinery, embracing a reversing controller, a limit switch in the motor circuit, means for automatically opening said switch when the limit of travel in one direction is reached and means for bypassing the switch when the controller is actuated in the reverse direction, the said switch being automatically closed by the reverse motion of the driven machinery.

4. In a system of control for electric motors, the combination of a reversing controller, an electro-magnet, a limit switch in the motor circuit normally held in a closed position by the electro-magnet, a second switch actuated by a driven member for opening the circuit of said electro-magnet when the limit of travel in one direction is reached, and means for bypassing said limit switch when said controller is reversed.

854,016. SPARK-ARRESTER. ALBERT BALLEWSKI, Madgeburg, and WILHELM WESSEL, Berlin, Germany. Filed Aug. 11, 1905. Serial No. 273,789.



Claim.—1. In a spark arrester of the character described, the combination of a smoke box, smoke flues, a flue, a separate chamber situated within said smoke box and with which the smoke flues communicate, said chamber being formed with an opening in the upper part thereof communicating with said flue, and oppositely arranged and adjustably mounted baffle plates above the opening, and exterior of the chamber, said baffle plates converging in a downward direction, substantially as described.

2. In a spark arrester of the character described, the combination of a smoke box, smoke flues, a flue, a separate chamber situated within said smoke box and with which the smoke flues communicate, said chamber being formed with an opening in its upper part communicating with said flue, adjustable baffle plates arranged in a converged downward direction above the opening and exterior of said chamber, and a baffle plate arranged at the lower inner edge of said opening, substantially as described.

854,017. CARTRIDGE-POCKET. FRANK R. BATCHELDER, Worcester, Mass., assignor to Mills Woven Cartridge Belt Company, Worcester, Mass. Filed Sept. 4, 1906. Serial No. 333,138.



Claim.—1. A cartridge pocket having an internal partition arranged therein parallel to the front and rear walls and disposed between the two end walls, said partition being of less width than the width of the front and rear

walls of the pocket for the purpose of acting as a retaining means to prevent the accidental displacement of the clips or cartridges from the pocket.

2. A cartridge pocket having an internal partition arranged therein parallel to the front and rear walls thereof and disposed between the end walls, said partition being of less width than the width of the front and rear walls of the pocket and terminating below the upper edge of the pocket for the purpose set forth.

854,018. PROCESS OF REDUCING METALLIC OXIDS. FREDERICK M. BECKET, Niagara Falls, N. Y., assignor to Electro Metallurgical Company, a Corporation of West Virginia. Filed Sept. 23, 1905. Serial No. 279,857.

Claim.—1. The process of reducing refractory metallic oxids which consists in smelting a charge containing a metallic oxid reducible by silicon and silicon, the silicon being present in substantially the proportion required to combine with the oxygen of said oxid whereby a substantially complete oxidation of the silicon is secured and a product low in silicon is obtained, substantially as described.

2. The process of reducing metallic oxids which consists in electrically smelting a charge containing a metallic oxid reducible by silicon and silicon, the silicon being present in substantially the proportion required to combine with the oxygen of said oxid whereby a substantially complete oxidation of the silicon is secured and a product low in silicon is obtained, substantially as described.

3. The process of reducing refractory metallic oxids which consists in smelting a charge containing a metallic oxid reducible by silicon, silicon and a basic flux, the silicon being present in substantially the proportion required to combine with the oxygen of said oxid whereby a product low in silicon is obtained, substantially as described.

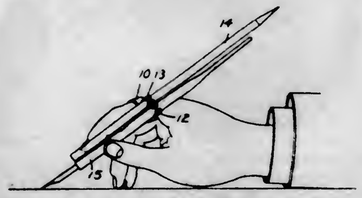
4. The process of reducing metallic oxids which consists in electrically smelting a charge containing a metallic oxid, reducible by silicon silicon and a basic flux, the silicon being present in substantially the proportion required to combine with the oxygen of said oxid whereby a product low in silicon is obtained, substantially as described.

5. The process of reducing metallic oxids which consists in passing an electric current through a molten bath containing a metallic oxid reducible by silicon and silicon, the silicon being present in substantially the proportion required to combine with the oxygen of said oxid whereby a product low in silicon is obtained, substantially as described.

6. The process of reducing metallic oxids which consists in passing an electric current through a molten bath containing a metallic oxid, reducible by silicon silicon and a basic flux, the silicon being present in substantially the proportion required to combine with the oxygen of said oxid whereby a product low in silicon is obtained, substantially as described.

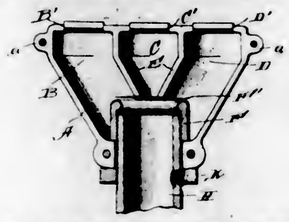
7. The continuous process of reducing metallic oxids which consists in passing an electric current through a molten bath containing a metallic oxid, reducible by silicon silicon and a basic flux, adding fresh portions of the charge and withdrawing the products as required, substantially as described.

854,019. PEN AND PENCIL HOLDER. FRED L. BENSTEAD, Hoxie, Ark. Filed Jan. 29, 1907. Serial No. 354,697.



Claim.—A pen and pencil holder comprising a ring adapted to fit on a finger of the hand, a plate pivoted on the top of the finger-ring, and an open loop or ring secured to each end of the plate.

854,020. BRANCH CONDUIT-BOX FOR ELECTRIC WIRES. LEON W. BOSSERT, Utica, N. Y. Filed Feb. 19, 1906. Serial No. 301,831.



Claim.—1. A branch box for electric conduits comprising two hollow complemental shell sections, each divided into chambers by integral ribs, the marginal edges of which are adapted to contact with each other when the two parts are fastened together, thereby forming inclosed chambers, the end of each section having an inwardly extending flange with a cut-away portion opposite each chamber, means for holding the sections together, and a bushing held by the sections and adapted to receive a conductor pipe, as set forth.

2. A branch box for electric conduits comprising two hollow complemental shell sections, each divided into chambers by integral ribs, extending only partially the length of each section, the edges of said ribs being flush with the edges of the shell sections and adapted, when the latter are fastened together, to form inclosed chambers, a flange integral with the outer flaring end of each section and provided with a cut-away portion opposite each chamber, a bushing mounted between the sections and held between the ends of said ribs and the shoulder adjacent to the inner ends of the shell, a conductor pipe having threaded connection with said bushing, and a nut mounted upon the pipe and adapted to bear against the tapering ends of said shell sections, as set forth.

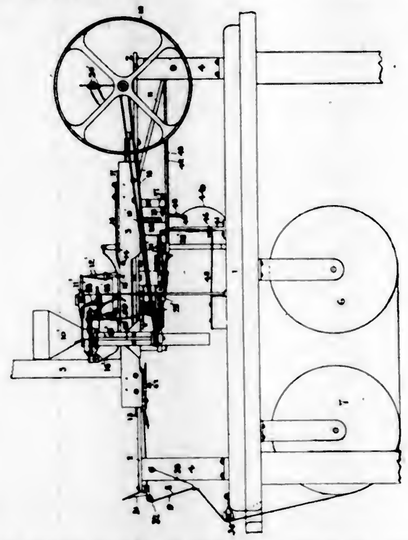
854,021. WRAPPING-MACHINE. JAMES H. BRADY, Louisville, Ky., assignor to himself and David A. Keller, Louisville, Ky. Filed Apr. 3, 1905. Serial No. 253,317.

Claim.—1. Package wrapping apparatus, comprising the combination of means for feeding the article to be wrapped in position upon a web of wrapping material and a folder constructed and operating to fold the free end of the web upon the article and to then engage the article and draw it forward with the web.

2. Package wrapping apparatus, comprising the combination of means for feeding the article to be wrapped in position upon a web of wrapping material, a folder constructed and operating to fold the free end of the web upon the article and to then engage the article and draw it forward with the web and means for severing the web in rear of the article.

3. Package wrapping apparatus, comprising the combination of means for feeding the article to be wrapped in position upon a web of wrapping material, a device constructed and operating to fold the free end of the web over upon the article and to then engage the article and draw it forward with the web and means for severing the web in rear of the article while it is being drawn forward by the folding and drawing device.

4. Package wrapping apparatus, comprising the combination of a hopper, means for feeding articles one by one therefrom upon a web of wrapping material, a reciprocating folding device acting in its rearward movement to fold the free end of the web over upon the article and to then engage the latter and in its forward movement draw the article and web with it, means for severing the web in rear of the article, means for folding the rear free end of the now severed wrapper over upon the article, means for folding the opposite unfolded ends of the wrapper upon the article and means for discharging the wrapped article from the machine.



5. Package wrapping apparatus, comprising the combination of a hopper, means for feeding articles one by one therefrom upon a web of wrapping material, a reciprocating folding device acting in its rearward movement to fold the free end of the web over upon the article and to then engage the latter and in its forward movement draw the article and web with it, means for severing the web in rear of the article, means for folding the rear free end of the now severed wrapper over upon the article, means for folding the opposite unfolded ends of the wrapper upon the article, a receptacle within which the wrapped articles are accumulated and means for simultaneously withdrawing from the receptacle a determined plurality of the wrapped articles.

6. Package wrapping apparatus, comprising the combination of a hopper, means for feeding articles one by one therefrom upon a web of wrapping material, a reciprocating folding device acting in its rearward movement to fold the free end of the web over upon the article and to then engage the latter and in its forward movement draw the article and web with it, means for severing the web in rear of the article, means for folding the rear free end of the now severed wrapper over upon the article, means for folding the opposite unfolded ends of the wrapper upon the article, a receptacle within which the wrapped articles are accumulated, means for simultaneously withdrawing from the receptacle a determined plurality of the wrapped articles and means for applying a securing band around the plurality of packages so withdrawn from the receptacle.

7. Package wrapping apparatus, comprising the combination of a hopper from which articles to be wrapped are successively delivered upon a web of wrapping material, two folding devices arranged one in advance of the other and reciprocating together the rearmost one nearest the hopper being so constructed and operating that in its rearward movement it folds the free end of the web over upon the article and then engages the article to draw it and the web forward on the reverse or forward movement of said folding device, means for severing the web in rear of the article, a seat or platform upon which the article is delivered by said folding device, the other folding device, furthest removed from the hopper, acting to fold the rear end of the wrapper upon the article and to then engage the latter to remove it and the wrapper in which it is enveloped forward to a new position, and folding devices acting to fold the opposite unfolded ends of the wrapper.

8. Package wrapping apparatus, comprising the combination of a hopper from which articles to be wrapped are successively delivered upon a web of wrapping material, two folding devices arranged one in advance of the other and reciprocating together the rearmost one nearest the hopper being so constructed and operating that in its rearward movement it folds the free end of the web over upon the article and then engages the article to draw it and the web forward on the reverse or forward movement of said folding device, means for severing the web in rear of the article, a seat or platform upon which the article is delivered by said folding device, the other folding device, furthest removed from the hopper, acting to fold the rear end of the wrapper upon the article and to then engage the latter to move it and the wrapper in which it is enveloped forward to a new position, folding devices acting to fold the opposite unfolded ends of the wrapper, a vertically disposed receptacle to which the wrapped articles are delivered, a yielding bottom to said receptacle, a device for withdrawing a given plurality of wrapped articles from the bottom of the receptacle and means for putting said device into operation when the yielding bottom of the receptacle has been depressed to a given point by means of the accumulation of the packages in such receptacle.

9. Package wrapping apparatus, comprising the combination of the reciprocating folding shoe 19 having a forwardly projecting wrapper folder, the vertically movable platform 72 and ledge 71 operating substantially as described.

10. Package wrapping apparatus, comprising the combination of means for feeding the article to be wrapped in position upon a web, a reciprocating shoe adapted to fold a free end of the web around the edge of and down upon the article to be wrapped and then to engage the opposite edge of the article and on reverse movement to draw it and the web forward and having a spring pressure device for holding the folded over end of the web.

11. Package wrapping apparatus, comprising the combination of a package receptacle having a yielding depressible bottom and package retaining devices, means for successively pressing the wrapped or completed packages into such receptacle thereby gradually depressing the yielding bottom below side walls of the receptacle as the packages accumulate therein, and means controlled by the depressible bottom of the receptacle for periodically removing from the bottom of the stack of packages in the receptacle a determined plurality of packages.

12. Package wrapping apparatus, comprising the combination of a shoe 19 having a projecting wrapper folder adapted to fold the free end of a wrapper around one edge of an article and a part adapted to then engage the same edge of the article and move it with the wrapper forward, means for reciprocating the shoe in a line longitudinal to the projecting wrapper folder, means for completing the folding operation and means for discharging the package into a receptacle.

13. Package wrapping apparatus, comprising the combination of means for depositing an article to be wrapped in position upon a web of wrapping material, means for drawing the web and article forward, means for severing the web in rear of the article during the forward movement of the web and article and a web detent device for preventing return or reverse movement of the web after it is severed.

14. Package wrapping apparatus, comprising the combination of means for successively depositing articles to be wrapped in position upon a web of wrapping material, a reciprocating folding device adapted to fold the front free end of the web over upon an article thereon and to then engage the rear end of the article and draw it and the web forward, means for severing the web in rear of the article, a seat upon which the article and partly folded web are deposited at the end of the forward stroke of said folding device, a second folding device which, on its rearward movement, passes over said article and partly folded wrapper and, on its reverse or forward movement folds the rear edge of the wrapper over upon the article, engages the rear edge thereof and moves it and the wrapper forward to a

third position, folding devices that act to afford the opposite unfolded edges of the wrapper and means for discharging the folded package thus completed into a receiving receptacle.

15. Package folding apparatus, comprising the combination of a hopper in which articles to be wrapped are contained, means for discharging therefrom an article in position upon a web of wrapping material, means whereby the free end of the web is folded over upon the article and the web and wrapper drawn forward, web severing devices adapted to sever the web in rear of the articles, a device adapted to bear upon the web to enter a perforation or slit therein and means controlled by said device to cause operation of the web severing devices when said device enters a perforation or slit in the web.

16. In a wrapping machine, the combination of means for wrapping articles of uniform shape and size, means for assembling a number of the articles into a pack, and means for applying a rubber band about the pack of such wrapped articles, substantially as specified.

17. In a wrapping machine, means for applying a rubber band over assemblages of wrapped articles comprising a pyramid loosely mounted in a bracket, a stringing stem at the apex of said pyramid, and pushers adapted to strip the rubber band over the base of the pyramid onto an assemblage of wrapped articles, substantially as specified.

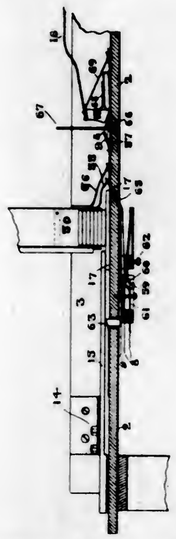
18. In a wrapping machine having means for applying rubber bands to packs of articles wrapped by it, a rubber band separator comprising a hopper, a platen pierced with a channel, a revolving disk forming the floor of said channel, and a reciprocating pick, substantially as specified.

19. In a wrapping machine, a base-plate, a hopper for feeding the articles to be wrapped, a reciprocating carriage mounted on said base-plate, said base-plate provided with a web-slot in front of the base of said hopper, a stop-ledge in front of the base of said hopper, presser-springs in front of the base of said hopper, a wrapper-elevating string in the top of said base-plate, a shearing blade in the path of the wrapper and the article being wrapped, an electric circuit-making device on the under side of said base-plate, a magnet adapted to trip said shearing-blade, a reciprocating folding and article-carrying shoe attached to said reciprocating carriage, a second reciprocating folding and article-carrying shoe attached to said carriage, a second stop-ledge on the upper surface of said base-plate beyond said shearing-blade, a movable platform in front of said second stop-ledge, a pair of spring-actuated presser-feet in the path of the article, a pair of spring scoring-wires, a pair of cam-actuated lateral folding-shoes, a depresser, a pair of lateral holding-springs, a yielding packing-platen secured on the upper end of a stem, a tripping-platform, a holding-platform, a reciprocating pack-pusher adapted to be tripped by said tripping-platform, rubber banding means comprising an open-based pyramid mounted loosely in a stationary bracket and reciprocating rubber-band-pushers, a package-knock-out, and a rubber-band separator and feeder comprising a hopper, a channeled platen, a rotary disk and a reciprocating pick, substantially as specified.

20. Package wrapping apparatus, comprising the combination of means for feeding the article to be wrapped upon a wrapper and reciprocating folder-devices having means acting, when reciprocated in one direction, to fold the wrapper upon the article and means acting, when reciprocated in the other direction to engage the article and draw it and the wrapper forward.

854,022. WRAPPER CUTTING AND REGISTERING APPARATUS. JAMES H. BRADY, Louisville, Ky., assignor of one-half to David A. Keller, Louisville, Ky. Original application filed Apr. 3, 1905, Serial No. 253,517. Divided and this application filed Nov. 16, 1905. Serial No. 287,744.

Claim.—1. A wrapper cutting and registering apparatus, comprising the combination of a cutter, a trigger normally holding the cutter in potential position, a trigger controlling device adapted to bear upon a web of paper in its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, and means whereby when said device enters such slit or perforation the cutter is automatically released to effect severance of the web while the latter is in motion.



2. A wrapper cutting and registering apparatus, comprising the combination of a cutter, a trigger normally holding the cutter in potential position, an electric contact device adapted to bear upon a web of paper during its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, electric contacts operated when the contact device enters such slit or perforation in the web, and an electro magnet, whose circuit is controlled by said contacts, acting to cause release of the cutter to effect severance of the web while the latter is in motion.

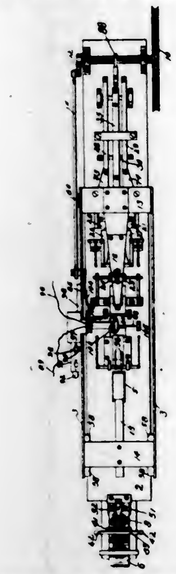
3. A wrapper cutting and registering apparatus, comprising the combination of a cutter normally held in potential position, an electric contact device adapted to bear upon a web of paper during its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, electric contacts controlled by said device and an electro magnet whose circuit is controlled by said contacts and which effects operation of the cutter to sever the web while the latter is in motion when the contact device enters a slit or perforation in the latter.

4. A wrapper cutting and registering apparatus, comprising the combination of a cutter, a trigger normally holding the cutter in potential position, a trigger controlling device adapted to bear upon a web of paper in its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, means whereby when said device enters such slit or perforation the cutter is automatically released to effect severance of the web while the latter is in motion, and means for automatically restoring the cutter to normal potential position.

5. A wrapper cutting and registering apparatus, comprising the combination of a cutter, a trigger normally holding the cutter in potential position, an electric contact device adapted to bear upon a web of paper during its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, electric contacts operated when the contact device enters such slit or perforation in the web, and an electro magnet, whose circuit is controlled by said contacts, acting to cause release of the cutter to effect severance of the web while the latter is in motion, and means for automatically restoring the cutter to normal potential position.

6. A wrapper cutting and registering apparatus, comprising the combination of a cutter normally held in potential position, an electric contact device adapted to bear upon a web of paper during its traverse through the apparatus and to enter a perforation or slit therein, means for intermittently drawing the web forward, electric contacts controlled by said device, an electro magnet whose circuit is controlled by said contacts and which effects operation of the cutter to sever the web while the latter is in motion when the contact device enters a slit or perforation in the latter, and means for automatically restoring the cutter to normal potential position.

854,023. WRAPPING-MACHINE. JAMES H. BRADY, Louisville, Ky., assignor of one-half to David A. Keller, Louisville, Ky. Filed July 12, 1906. Serial No. 325,758.



Claim.—1. Package wrapping apparatus adapted to wrap articles in labels cut from a continuous web, comprising the combination of electro magnetically controlled web severing devices adapted to automatically sever the web at determined points between the labels, mechanically operated means for actuating the web severing devices immediately after the time when they should be actuated by the electro magnetic devices, and means for wrapping articles in the labels.

2. Package wrapping apparatus, comprising the combination of means for feeding the article to be wrapped upon a web of wrapping material, means for folding the web upon the article and drawing them both forward, web severing devices, electro magnetic means for setting them in operation controlled by the web, and mechanically operated means adapted to set said devices in operation immediately following the time when they should be set in operation by the electro magnetic devices.

3. Package wrapping apparatus adapted to wrap articles in labels supplied in the form of a continuous web, comprising the combination of web tension devices consisting of a cross bar spring pressed upon the web, a guide way in which the bar is free to move and a detent acting to prevent back-draft of the web, means for severing labels from the web and means for wrapping articles in the labels.

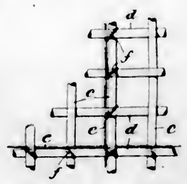
4. Package wrapping apparatus, comprising the combination of a base plate, a reciprocating carriage, a wrapper folding shoe 19 carried by the carriage, a hinged platform 40 mounted in an opening in the base plate and adapted to co-operate with the folding shoe and means whereby on reciprocation of the carriage the platform is raised and lowered as required.

5. Package wrapping apparatus, comprising the combination with means for folding the front and rear ends of the wrapper upon the article to be wrapped, a package receptacle and means for delivering the articles so partly wrapped over said receptacle, perforated side folders adapted to then fold the wrapper at the sides of the articles, package depressing devices adapted to pass through such perforations and force the package into the receptacle and retaining devices located at the mouth of the receptacle and serving to hold the package therein and retain the said folds in folded position.

6. Package wrapping apparatus, comprising the combination of mechanism for wrapping articles or cakes in wrappers, a receptacle to which the completed packages are successively delivered as completed and in which they accumulate, a yielding bottom depressed by the accumulation of packages, means for periodically removing from the accumulation or stack of packages a predetermined number or group thereof and an elongated chute or passage way to which such groups of packages are successively delivered.

7. Package wrapping apparatus, comprising the combination of mechanism for wrapping articles or cakes in wrappers, a receptacle to which the completed packages are successively delivered as completed and in which they accumulate, a yielding bottom depressed by the accumulation of packages, means for periodically removing from the accumulation or stack of packages a predetermined number or group thereof, and a horizontal passage way or chute, having an open front and recessed upper and lower walls, to which such groups of packages are successively delivered.

854,024. RACKET FOR TENNIS, &c. HORACE S. BROWN, Springfield, Mass. Filed Oct. 30, 1906. Serial No. 341,227.



Claim.—1. A racket having a relatively fine binding or locking thread incorporated with the standard strings and binding them together at their intersections.

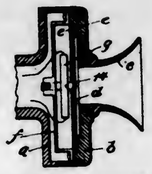
2. A racket having at intervals a relatively fine binding thread, such binding thread being introduced alongside of one of the standard strings and binding together such string and the strings crossing the same at their intersections.

3. A racket having its standard strings interlaced with an over and under weave and at intervals a binding thread introduced with one of the standard strings and having a half hitch over the intersection of such gut with each of the strings crossing the same.

854,025. TELEPHONE-TRANSMITTER. RALPH C. BROWNE, Salem, Mass., assignor to John Abbott, Winchester, Mass. Filed Apr. 25, 1906. Serial No. 313,578.

Claim.—1. A telephone transmitter, comprising confronting retaining walls of non-conducting material, one movable toward and from the other under pressure of sound vibrations, a thin layer of granular material between said walls, electrodes between said walls in contact with the granular material and separated a distance considerably greater than the thickness of said layer of granular

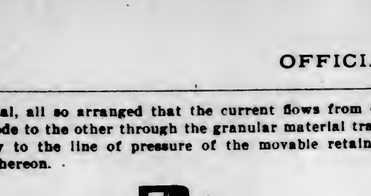
material, all so arranged that the current flows from one electrode to the other through the granular material transversely to the line of pressure of the movable retaining wall thereon.



2. A telephone transmitter comprising a diaphragm, a thin layer of resistance material, electrodes in contact with said layer of resistance material and separated by a space much greater than the thickness of the layer, retaining walls of non-conducting material confining between them said electrodes and said layer of resistance material, and means for transmitting to one of the retaining walls the vibrations of said diaphragm, all so arranged that the current flows from one electrode to the other through the thin layer of resistance material transversely to the lines of pressure from the diaphragm thereon.

3. A telephone transmitter comprising confronting retaining walls of flat non-conducting material forming a thin space between them, at least one of said walls being flexible, a thin layer of resistance material in said space, electrodes less in thickness than said space located therein between the said walls, and separated a distance much greater than the thickness of said layer of material to cause the current to traverse a relatively long path between them, said electrodes being embedded in or overlapped by said layer, all so arranged that the vibration of said flexible wall compresses said resistance material in lines transverse to the path of the current between said electrodes.

854,026. PHOTOGRAPHIC DEVELOPING-MACHINE. FRANK A. BROWNELL, Rochester, N. Y., assignor to Eastman Kodak Company, Rochester, N. Y., a Corporation of New York. Filed Jan. 25, 1904. Serial No. 190,527.



Claim.—1. In a photographic developing machine, the combination with a casing open at the top, a shaft and an apron adapted to be wound thereon, of a supporting device for holding a spool or reel and connections between it and the casing whereby it may be operated to carry the spool or reel into and out of the casing.

2. In a photographic developing machine, the combination with a casing open at the top, a shaft and an apron adapted to be wound thereon, of a supporting device for a spool pivoted to the casing in proximity to its open side whereby the device may be operated to move the spool out of the casing and a stop for limiting the inward movement of the device.

3. In a photographic developing machine, the combination with a casing open at the top, a shaft and an apron adapted to be wound thereon, of a supporting frame for holding a spool, connections between the frame and the casing whereby it may be operated to carry the spool outside of the casing and a stop on the frame adapted to engage the casing to limit its inward movement.

4. In a developing machine the combination with the casing open at the top, of a spool supporting device having adjustable spool centers thereon and pivotally connected to the casing so as to be rotated into and out of the same, and means within the casing for receiving the contents of the spool.

5. In a photographic developing machine the combination with the casing and a frame pivoted therein, of spool centers adjustable on the frame and adapted to be moved into and out of the casing and means within the casing for receiving the contents of the spool.

6. In a photographic developing machine, the combination with a casing and a frame therein, of arms adjustable longitudinally of the frame carrying journals adapted to support opposite ends of a spool of sensitized material, devices for locking the arms and means for supporting said sensitized material when removed from the spool.

7. In a photographic developing machine, the combination with a casing and a frame extending transversely thereof, and provided with ratchet teeth, of relatively movable arms on the frame, adapted to support a spool of sensitized material, pawls coöperating with said teeth to lock the arms and means for supporting said sensitized material when unwound from the spool.

8. In a photographic developing machine, the combination with a casing and a frame arranged therein and having ratchet teeth thereon extending in opposite directions, of slides on the frame, arms on the slides adapted to support a spool of sensitized material and pawls on the slides coöperating with said teeth to prevent the slides being moved relatively away from each other and means for supporting said sensitized material when unwound from the spool.

9. In a photographic developing machine, the combination with a casing and a laterally movable frame arranged therein, of relatively movable slides on the frame, an arm on one of them adapted to support one end of a spool of sensitized material and a head on the other slide movable relatively thereon and adapted to support the opposite end of said spool, and means for supporting said sensitized material when unwound from the spool.

10. In a photographic developing machine, the combination with a casing and a frame arranged therein, of relatively movable slides on the frame, an arm on one of the slides provided with a journal adapted to support one end of a spool of sensitized material, a movable head on the other slide provided with a journal adapted to support the opposite end of said spool and a spring for holding the head in its normal position, and means for supporting said sensitized material when unwound from the spool.

11. In a photographic developing machine the combination with a casing, a frame pivoted therein and slides movable longitudinally thereon and adjustable laterally of the casing, of a rigid arm on one of the slides adapted to support a spool of sensitized material, a pivoted arm on the other slide and means for normally holding it in normal position in engagement with the opposite end of said spool, devices for locking the slides on the frame and means for supporting said sensitized material when unwound from the spool.

12. In a photographic developing machine, the combination with a casing, a flexible apron having a looped end and a bar extending through the loop flattened in cross section and provided with hooks at its ends, said hooks extending toward the inner surface of the apron, of a winding shaft having projections adapted to engage the hooks, means for revolving it and a device for supporting a spool of sensitized material in the casing.

13. In a photographic developing machine, the combination with a casing, an apron having a looped end and hooks secured therein, of a winding shaft, caps arranged eccentrically on the shaft having fingers adapted to coöperate with said hooks, a rod extending over the shaft between the caps and having the ends securing the latter to the shaft and a device for supporting a spool of sensitized material in the casing.

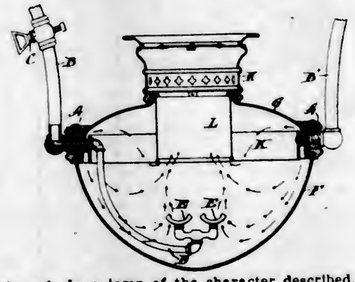
14. In a photographic developing machine, the combination with a casing and a winding shaft therein, of a flexible apron adapted to be wound upon the shaft, flexible ribs or filling strips having transversely-extending corrugations therein attached to the edges of the apron and a device for supporting a spool of sensitized material in the casing.

15. In a receptacle for photographic developing machines, the combination with side pieces, of a bottom piece having the end portions forming the ends of the casing and the central portion extending upwardly and forming a partition dividing the receptacle into separate chambers.

16. In a receptacle for photographic developing machines, the combination with side pieces, of a bottom piece having a central portion extending upwardly in the casing to form a partition wall and curved to provide rounded ends on the casing and bottoms for the chambers located at each side of said partition.

17. In a photographic developing machine, the combination with a casing and a shaft therein, of a flexible apron adapted to be wound thereon composed of colored transparent material which will arrest the passage of actinic rays of light, and a device for supporting a spool of sensitized material in the casing.

854,027. GAS-LAMP. RUDOLPH E. BRUCKNER, Mount Vernon, N. Y., assignor to The Commercial Acetylene Company, New York, N. Y., a Corporation of New Jersey. Filed Dec. 5, 1906. Serial No. 346,384.



Claim.—1. In a lamp of the character described, a gas burner, a translucent inclosure therefor including a centrally perforated reflector above the same, a tubular hood entirely above the burner, the lower edge of the hood projecting below the reflector, and admission ports at the sides of said burner inclosure and a deflector in front of said ports directing the air up and down within said inclosure.

2. A lamp of the character described, a gas burner, a centrally perforated reflector above the same, a transparent tubular hood entirely above the burner, the lower edge of the hood projecting below the reflector, air supply ports at the sides of the lamp and below said reflector and a deflector in front of said ports.

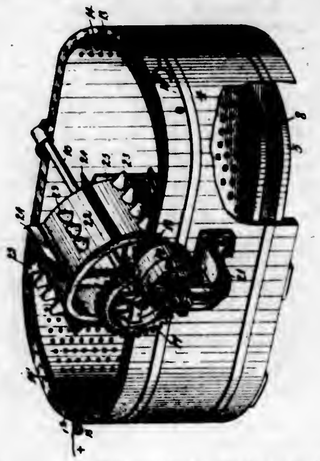
3. In a lamp of the character described, a gas burner, a closure therefor comprising a transparent lower bowl, a reflecting dome, air supply inlets at the sides of said closure, an air outlet through said dome, a substantially transparent hood projecting into said closure terminating above the burner and supported entirely from above, a deflector arranged to direct some of the air entering at the sides upwardly and some downwardly.

4. In a lamp of the character described, a gas burner, a reflector above the same and forming a dome open at the center, a substantially transparent tubular hood projecting below the dome terminating above the burner and suspending entirely from above, air admission ports at the sides, and a deflector in front of said ports to direct some of the air entering the lamp upwardly and some downwardly, and a transparent bowl closing in the burner between it and said dome.

5. In a lamp of the character described, a gas burner, a translucent closure therefor, an air admission port at the side thereof, and a baffling device for said port externally of said closure, a second baffling or deflecting device located within said inclosure and in front of said air port and arranged to deflect air up and down within the closure, and a transparent tubular outlet hood suspended from above projecting below the deflector and terminating above the burner.

6. In a gas lamp, a gas burner, an inclosure therefor, a deflector within said inclosure and overstanding an air admission port therein, a reflector wall above the burner, a translucent tubular hood overstanding said burner and terminating above the same, said hood projecting downwardly in the reflector and extending below the adjacent wall thereof.

854,028. ELECTRIC WOOL WASHING AND CLEANSING APPARATUS. GEORGE D. BURTON, Boston, Mass., assignor to American Electrical Process Company, Boston, Mass. Filed Aug. 11, 1905. Serial No. 273,827.



Claim.—1. In a washing and cleansing apparatus, a tank, a plurality of electrodes therein, an inclined bottom proper for said tank, and a screen bottom above the same.

2. In a washing and cleansing apparatus, a tank, a plurality of electrodes therein, an inclined bottom proper for said tank, a screen bottom above the same, and means for agitating the substance contained in said apparatus.

3. In a washing and cleansing apparatus, a tank, a plurality of electrodes therein, a bottom proper for said tank, a screen bottom above the same, said screen having a perforated portion and a corrugated portion, and an agitating drum adapted to act in conjunction with said corrugated portion.

4. In a washing and cleansing apparatus, a tank for holding an electrolytic solution; electrodes adapted to cause electric action in the said solution; conductors for uniting said electrodes with a source of electricity; an agitating drum mounted in said tank; means for rotating said drum; and a shield partition in said tank separating said electrodes from the main portion of said tank and the substances immersed in the solution contained therein.

5. In a washing and cleansing apparatus, a tank adapted to contain a bath, an inclined bottom to said tank, a screen bottom above the same, a plurality of electrodes in said tank, a rotating agitating drum in said tank, means for rotating said drum, and a shield partition in said tank separating said electrodes from the main portion of said tank and the substances contained within said bath.

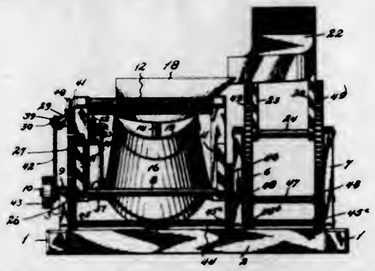
6. In a washing and cleansing apparatus, a tank adapted to contain a bath, an inclined bottom to said tank, a false bottom above the same provided with a perforated portion at its highest end, a plurality of electrodes in said tank, a rotating agitating drum in said tank, means for rotating said drum, and a shield partition in said tank separating said electrodes from the main portion of said tank and the substances contained within said bath.

7. In a washing and cleansing apparatus, a tank adapted to contain a bath, an inclined bottom to said tank, a false bottom above the same provided with a perforated

portion at its highest end, a plurality of electrodes in said tank, a rotating agitating drum in said tank, a corrugated portion beneath said drum, means for rotating said drum, and a shield partition in said tank separating said electrodes from the main portion of said tank and the substances contained within said bath.

8. In a washing and cleansing apparatus, a tank adapted to contain a bath, an inclined bottom to said tank, a false bottom above the same provided with a perforated portion at its highest end, an outlet communicating with the chamber between said bottoms at its lowest point, a plurality of electrodes in said tank, a rotating agitating drum in said tank, a corrugated portion beneath said drum, means for rotating said drum, and a shield partition in said tank separating said electrodes from the main portion of said tank and the substances contained within said bath.

854,029. MIXING-MACHINE. JOSEPH D. CAMPBELL, Columbus, Ohio, assignor to The American Concrete Machinery Company, Columbus, Ohio, a Corporation of Ohio. Filed Feb. 23, 1906. Serial No. 302,381.



Claim.—1. In a mixing machine, the combination with a supporting frame of a mixing drum, means for feeding the materials to be mixed to the drum, and a common mechanism carried by the supporting frame for simultaneously moving both the drum and the feeding means to unload the former and to move the latter into such position that it may be loaded.

2. In a mixing machine, the combination with a supporting frame of a mixing drum, means for feeding the materials to be mixed to said drum, and a common mechanism carried by the supporting frame for bodily moving the drum and the feeding means simultaneously in opposite directions to unload the former and move the latter into such position that it may be loaded.

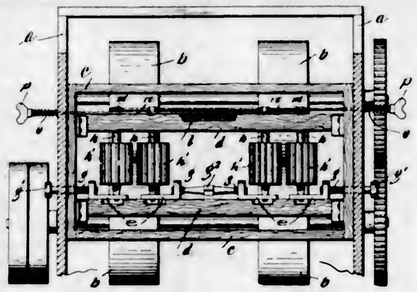
3. In a mixing machine, the combination with a supporting frame, of a tilting frame, a mixing drum rotatably mounted in said tilting frame, a hopper carried by the tilting frame and adapted to conduct material to the drum, a tilting trough adapted to conduct material to the hopper, and common mechanism for simultaneously tilting the drum to discharge the contents thereof and tilting the trough downwardly into such position that it may be loaded.

854,030. FULLING-MILL. JAMES E. DOWD, Hillsboro Bridge, N. H. Filed Apr. 18, 1906. Serial No. 312,384.

Claim.—1. In a fulling mill, the combination of two pairs of feeding rolls mounted on parallel shafts, an adjustable bearing for each shaft at one end thereof, means for adjusting said bearings, means for preventing the shafts of each pair from moving toward each other beyond a certain point, and resilient means for holding the same ends of the shafts of each pair together and for connecting the said ends of the shafts of the two pairs.

2. In a fulling mill, the combination of a frame having two plates one above the other, the upper one having a longitudinal slot, two pairs of vertical shafts arranged in the same plane and mounted on said plates, a corrugated roll mounted on each shaft, said shafts passing through said longitudinal slots, adjustable means for resiliently forcing the upper ends of the two end shafts inwardly toward each other, and resilient means for normally forcing the shafts of each pair away from those of the other pair.

3. In a fulling mill, the combination of a frame having two plates, the upper of said plates being provided with a longitudinal slot, bearing plates slidably mounted on said frame and arranged in pairs, means for adjusting said bearing plates of each pair toward and from each other, each bearing plate being provided with an opening, a vertical shaft resting in the opening in each bearing plate, a roll mounted on each of said shafts, said shafts passing through said longitudinal slots, a hook connected with one of said shafts and passing to the opposite side of the frame, and resilient means for forcing said hook toward said opposite side of the frame.

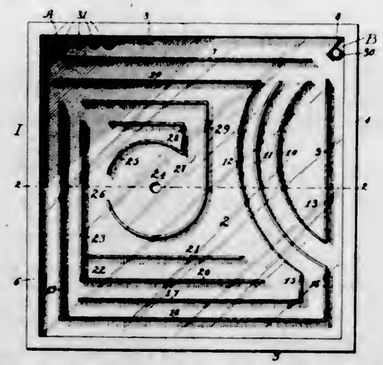


4. In a fulling mill, the combination of two pairs of shafts located in a plane, corrugated rollers mounted on said shafts, a frame having a slot through which said shafts project, a spring for forcing the shafts of each pair away from those of the other, a block mounted between the two shafts of each pair, and means for resiliently forcing the shafts of each pair toward those of the other pair.

5. In a fulling mill, the combination of two pairs of parallel shafts arranged in a plane, rollers mounted on said shafts, means for forcing the two inner shafts away from each other, means for positively separating each inner shaft from the adjacent outer shaft, and means for yieldingly forcing the outer shafts toward each other.

6. In a fulling mill, the combination of two pairs of parallel shafts arranged in a plane, rollers mounted on said shafts, means for yieldingly forcing the two inner shafts away from each other, and adjustable means for yieldingly forcing the outer shafts toward each other.

854,031. PUZZLE. WILLIAM H. FAILOR, Carlisle, Pa. Filed Mar. 17, 1906. Serial No. 306,565.



Claim.—The herein described puzzle comprising a rectangular tray having a base formed adjacent to its center

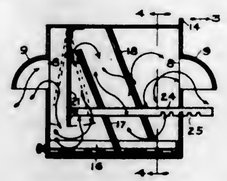
with a single depression and side walls 3, 4, 5, 6 surrounding said base, the V-shaped partition 8 arranged in one corner of the tray and forming a starting place for a single ball, the partition 7 arranged parallel with the wall 3 and having its ends spaced from said partition 8 and said wall 6, the partition 7 and wall 3 forming an open ended starting passage for a plurality of balls, the partition 9 arranged parallel with wall 4 and having one of its ends spaced from the said partition 8, the arc-shaped concentrically arranged partitions 10, 11, 12 forming passages opening adjacent to the partition 8 and one end of the partition 7, said partition 10 having one of its ends connected to the partition 9 to form a blind pocket, the partition 14 leading from one of the ends of the partition 12 and terminating adjacent to the wall 6, the partitions 15, 16 leading from the partitions 12, 11, the partitions 17, 18 leading from the partitions 15, 16 and parallel with the wall 5, the partitions 19, 23 parallel with the wall 6, said partition 19 leading from one end of the partition 18 and having its other end spaced from the partition 14, the partitions 20, 21 leading from the partition 23 and forming a blind pocket between them, the circular wall 25 surrounding the depression 24 and having the openings 26, 27, the right angular partitions 28, 29 leading from the opening 27 in the partition 25, a single ball adapted to fit in said depression and a plurality of balls distinguishable from said single ball, substantially as shown and described.

854,032. PROCESS FOR DYEING GRANULATED LEATHER IN DIFFERENT COLORS OR SHADES. GUSTAV FELDMANN, Berlin, Germany. Filed July 11, 1906. Serial No. 325,727.

Claim.—1. A process for dyeing granulated leather in different colors, or shades, consisting in impregnating the raised places of the granulated surface of the leather with a material rich in fat, followed by a dyeing of the leather with a suitable color, substantially as and for the purpose set forth.

2. A process for dyeing granulated leather in different colors, or shades, consisting in impregnating the raised places of the granulated surface of the leather with a semi-solid material rich in fat, followed by a dyeing of the leather with a suitable color, substantially as and for the purpose set forth.

854,033. WINDOW-VENTILATOR. JOHN T. GLAZIER and COLUMBUS C. PARKER, Indianapolis, Ind., assignors of one-third to Cyrus J. Clark, Indianapolis, Ind. Filed July 17, 1906. Serial No. 326,533.



Claim.—1. A ventilating device having an air box with an inlet through one of its vertical sides and an outlet through its opposite vertical side, a damper-plate swung from its upper edge from the top of the box adjacent to the inlet and extending nearly to the bottom of the box, a partition between the damper-plate and the box outlet having an air passage at its top, and a second partition between the last-named partition and the outlet having an air opening at its bottom.

2. A ventilating device having an air box midway of its length, auxiliary box portions adjustable longitudinally in and out of said middle box to fit the width of a window, said middle box having an inlet opening through its inner vertical wall and an outlet opening through its opposite vertical wall, a damper-plate hinged from its upper edge from the top of the box adjacent to the inlet opening and extending nearly to the bottom of the box, a partition between the damper-plate and said outlet opening having an air passage at its top, and a second partition between the last-named partition and the outlet opening having an air passage at its bottom.

3. A ventilating device having an air box midway of its length, auxiliary box portions adjustable longitudinally in and out of said middle box to fit the width of a window, said middle box having an inlet opening through its inner vertical wall and an outlet opening through its opposite vertical wall, a damper-plate hinged from its upper edge from the top of the box adjacent to the inlet opening and extending nearly to the bottom of the box, a partition between the damper-plate and said outlet opening having an air passage at its top, a second partition between the last-named partition and the outlet opening having an air passage at its bottom and a water pan at the bottom of the air box.

4. A ventilating device having an air box with an inlet opening through its inner vertical wall, and an outlet opening through its opposite vertical wall, a damper-plate hinged from its upper edge from the top of the box adjacent to the inlet opening and extending nearly to the bottom of the box, a partition between the damper-plate and said outlet opening having an air passage at its top, and a second partition between the last-named partition and the outlet opening having an air passage at its bottom and an operating bar attached to the damper and extending through the box into the room for the convenient adjustment of the damper and means for holding a given position of the bar.

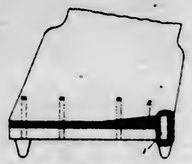
5. A ventilating device having an air box with an inlet opening through its inner vertical wall, and an outlet opening through its outer opposite vertical wall, a damper-plate hinged from its upper edge from the top of the box adjacent to the inlet opening and extending nearly to the bottom of the box, a partition between the damper-plate and said outlet opening having an air passage at its top and a second partition between the last-named partition and the outlet opening having an air passage at its bottom, both of said partitions being oblique to a vertical plane and sloping upwardly toward the outer side of the box.

6. A ventilating device having an air box with an inlet opening through its inner vertical wall, and an outlet opening through its opposite vertical wall, a damper-plate hinged from its upper edge adjacent to the inlet opening, a partition between the damper-plate and said outlet opening having an air passage at its top and a second partition between the last-named partition and the outlet opening having an air passage at its bottom, both of said partitions being oblique to the sides of the air box and being formed of obliquely corrugated material.

7. A ventilating device having an air box with an inlet opening through its inner vertical wall, and an outlet opening through its outer opposite vertical wall, a damper-plate hinged from its upper edge adjacent to the inlet opening, a partition between the damper-plate and said outlet opening having an air passage at its top, and a second partition between the last-named partition and the outlet opening having an air passage at its bottom, both of said partitions being oblique and sloping down toward the inside of the box and having corrugations or channels extending obliquely both ways from the vertical center of each plate.

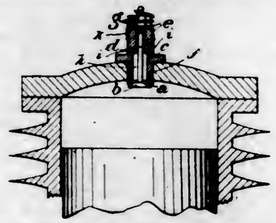
8. A ventilating device having an air box with an inlet opening through its inner vertical wall, and an outlet opening through its outer opposite vertical wall, a damper-plate hinged from its upper edge adjacent to the inlet opening, means extending outside of the air box for adjusting the damper-plate, a partition between the damper-plate and said outlet opening having an air passage at its top, a second partition between the last-named partition and the outlet opening having an air passage at its bottom, both of said partitions being oblique and sloping down toward the inside of the box and having corrugations or channels extending obliquely both ways from the vertical center of each plate and a water pan at the bottom of the air box.

854,034. HOOF-PAD. FRANK S. HANDY and WILLIAM J. HICKEY, Bay City, Mich. Filed Feb. 17, 1906. Serial No. 301,678.



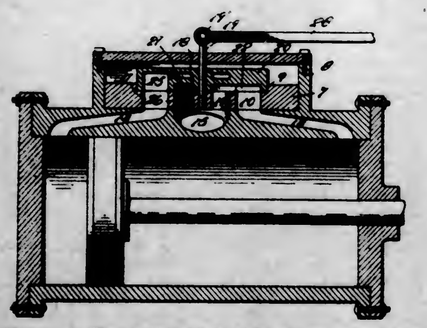
Claim.—The combination with a horse shoe, of a horse shoe pad composed entirely of felt and conforming in shape to the shape of the horse shoe, the central portion being wholly cut away to expose the frog of a hoof, the heel portion of the pad being connected by means of a bar composed of the same material as the pad and a rivet passing through and connecting the pad to the hoof, the pad capable of being easily rasped with the shoe.

854,035. STARTING DEVICE FOR EXPLOSION-ENGINES. JACOB C. HANSEN-ELLEHAMMER, Copenhagen, Denmark. Filed Mar. 21, 1904. Serial No. 199,316.



Claim.—The combination with the cylinder of an explosion engine, of a hollow screw-plug mounted in the cylinder having an enlarged chamber normally communicating with the cylinder at one end and provided with ports in the other end inclined to the axis of the plug connecting the chamber with the atmosphere, a threaded valve-stem passing through the plug guided in an extension formed on the latter above said chamber, a valve on the end of the stem adapted to be seated on the lower end of the plug to close communication between the chamber and cylinder, a spring having one end connected to the plug, and nuts adjustable on the stem connected to the other end of the spring whereby the tension of the latter may be adjusted to normally hold the valve off its seat.

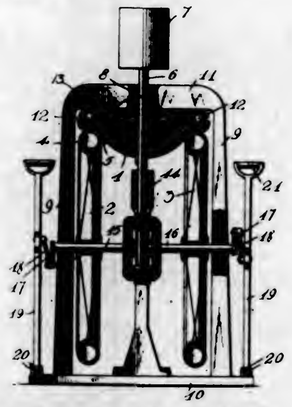
854,036. ENGINE-VALVE. BERNARD HANSON, Shroyer, Kans. Filed Oct. 13, 1906. Serial No. 338,733.



Claim.—1. The combination with an engine cylinder, having a steam chest thereupon, and having spaced ports communicating with the interior of the steam chest, and an intermediate exhaust port, of a block removably disposed within the steam chest and having ports registering with the steam ports of the cylinder and an intermediate opening registering with the exhaust port of the chest, a web extending across the intermediate opening, a stem journaled in the web and a passaged valve mounted upon the stem, said valve being arranged for movement to establish communication between the ports of the block and the intermediate opening and to establish communication between the ports and the interior of the steam chest alternately.

2. A valve mechanism for engines, comprising a block having spaced ports therein and an intermediate opening, a web extending transversely of the opening, a stem journaled in the web, and a disk mounted upon the stem for movement therewith, said disk having a recess in its end face communicating with the intermediate opening of the block, and having a pair of recesses in its end surface outwardly of the central recess and communicating therewith, said disk having a pair of passages, one diametrically opposite each of the second named recesses and having a third passage communicating with the first named passages and with a surface of the disk other than the under surface thereof, said disk being movable to bring its first named passages and corresponding recesses into registration with the ports of the block alternately.

854,037. FRICTION-GEARING. JESS F. HINCK, Devils Lake, N. D., assignor of two-thirds to Oluf Wm. Larsen and James L. Larsen, Lakota, N. D. Filed Feb. 24, 1906. Serial No. 302,771.



Claim.—1. The combination, with a driven shaft and two alining drive shafts, of a friction disk upon said driven shaft, drive wheels upon said drive shafts and engaged with said friction disk, and means for rotating said drive shafts simultaneously in opposite directions.

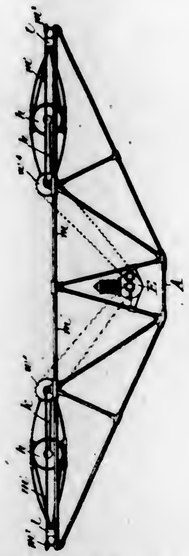
2. The combination with a driven shaft and two alining drive shafts, of a friction disk upon said driven shaft, drive wheels upon said drive shafts to frictionally engage said disk, crank and lever devices for operating said drive shafts, and bevel gearing between said drive shafts for causing them to move simultaneously in opposite directions.

3. The combination, with a driven shaft and two alining drive shafts, of a friction cone disk upon the driven shaft, drive wheels upon said drive shafts to frictionally engage said friction disk, bevel gearing connecting the inner ends of said drive shafts to cause them to turn simultaneously in opposite directions, cranks upon the outer ends of said drive shafts, a pair of operating levers, and links connecting said levers and said cranks.

4. In a machine of the character described, the combination with a frame or support, a driven shaft, and alining drive shafts, of a friction disk upon said driven shaft, an antifriction device between said disk and said support, friction drive wheels upon said drive shafts having their peripheries engaged with said disk, bevel gears fixed upon the inner ends of said drive shafts, a bevel gear loosely mounted upon said driven shaft and in mesh with the first mentioned gears, cranks upon the outer ends of said drive shafts, operating levers pivotally mounted upon said support, and links connecting said levers and said cranks.

5. In a machine of the character described, the combination with a frame or support, a driven shaft and alining drive shafts, of a friction disk upon said driven shaft, ball bearings between said support and said disk, friction drive wheels upon said drive shafts and engaged with said disk, bevel gears fixed upon the inner ends of said drive shafts, bevel pinions loosely mounted upon said driven shaft and in mesh with said gears, a bearing block loosely mounted upon said driven shaft and having bearing recesses to receive the inner ends of said drive shafts, cranks upon the outer ends of said drive shafts, hand levers pivoted upon said support, and links connecting said levers and said cranks.

854,038. MACHINE WITH REVOLVING WINGS OR BLADES, APPLICABLE EITHER AS PROPELLER, MOTOR, PUMP, OR BLOWING-ENGINE. HUGO HÜCKEL, Neutitschein, Austria-Hungary. Filed Apr. 16, 1904. Serial No. 203,490.



Claim.—1. In an arrangement of revolving wings or blades serving either as propeller, motor or for propelling fluids the combination of a wing or blade with a sun and planet gear, means for rotating the latter in a circular path described by a point of the wing or blade and a guide device connected to a fixed point and adapted to control the motion of the sun and planet gear, substantially as described and for the purpose set forth.

2. In an arrangement of revolving wings or blades serving either as propeller, motor or for propelling fluids a wing or blade mounted at its ends in the planet wheels of a sun and planet wheel gear, the center of which is mounted on the pin of a crank adapted to rotate the sun and planet gear and the wing in a circle, the central wheel of the sun and planet gear being fixed rigidly to the pin of the crank, a guide bar connected to a fixed point, and secured at its free end to the outer toothed ring of the sun and planet gear, substantially as described and for the purpose set forth.

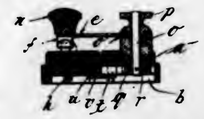
3. In an arrangement of revolving wings or blades serving either as propeller, motor or for propelling fluids a wing or blade consisting of a frame with a stretched flexible sail therein and mounted at its ends in the planet wheels of a sun and planet wheel gear, the center of which is mounted on the pin of a crank adapted to rotate the sun and planet gear and the wing in a circle, the central wheel of the sun and planet gear being fixed rigidly to the pin of the crank, while the outer toothed ring thereof is connected to a guide bar being in connection with a fixed point, substantially as described and for the purpose set forth.

4. In an apparatus of the character described, a wing or blade, a sun and planet mechanism in the planet gear of which the wing or blade is supported, a crank to the free end of which the sun gear of said mechanism is rigidly connected, means for rotating said crank, and means for imparting to the sun and planet mechanism a rocking motion about its own axis in opposition to the direction of normal travel of the planet gear during one half revolution and in conjunction with such direction of travel during the other half revolution, substantially as described.

5. In an apparatus of the character described, a crank, means for rotating said crank, a sun gear secured to the free end of said crank, planet gears meshing with said sun gear, a casing for said gears, a circular rack secured to said casing having a pitch radius equal to twice the pitch radius of the sun gear and meshing with the planet gears, means for imparting to said circular rack during the rotation of the sun gear a rocking motion on its own axis in opposition to the normal direction of travel of the planet gears during one half revolution and in conjunction with said direction of travel during the other half revolution, and a wing or blade mounted in the planet gears, substantially as described.

6. In an apparatus of the character described, a crank, means for rotating said crank, a sun gear secured to the free end of said crank, planet gears meshing with said sun gear, a casing for said gears, a circular rack secured to said casing having a pitch radius equal to twice the pitch radius of the sun gear and meshing with the planet gears, a reciprocating guide block mounted in proximity to said casing, a director rigidly secured at one end to the casing and pivoted at the other end to the reciprocating guide block, and a wing or blade mounted in the planet gears, substantially as described.

854,039. COMMUTATOR-SWITCH. EDWARD B. JACOBSON, Pittsfield, Mass., assignor to Pittsfield Spark Coil Company, Pittsfield, Mass., a Corporation. Filed Sept. 12, 1906. Serial No. 334,306.



Claim.—1. In a switch of the class described, a base-piece, terminals secured to the same, one being a common terminal and the others battery terminals, and step-by-step mechanism between said terminals for connecting and disconnecting the battery terminals to the common terminal.

2. In a switch of the class described, a base-piece, battery terminals, and a common terminal secured to the same, commutator mechanism between said terminals for placing the terminals in circuit with each other, as described, said commutator mechanism including a toothed element.

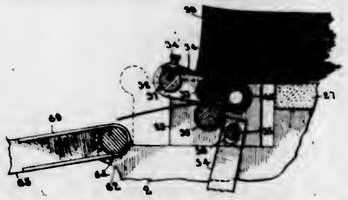
3. In a switch of the class described, a base-piece, terminals secured to the same and in spaced relation, a contact lever, a rotatable shaft passing loosely through the contact-lever for engaging said terminals, a milled head

secured to the rotatable shaft at one end and commutator mechanism secured to the opposite end of said shaft, locking means for holding said commutator mechanism in a plurality of positions, whereby an electrical circuit may be closed between said terminals.

4. In a switch of the class described, a base-piece, a plurality of terminals secured thereto, one of said terminals being a common terminal, a spring-pressed pawl electrically connected to the common terminal, a toothed wheel of insulating material having one of its notches provided with a metallic margin, a rotatable shaft for operating said toothed wheel, the contact-lever pivotally supported on said shaft and adapted to engage said terminals, whereby when the shaft is rotated the toothed wheel may be placed in a plurality of positions for breaking the electrical connection between said terminals, as described.

5. In a switch of the class described, a base-piece of insulating material, and provided with a recessed portion, a plurality of terminals secured thereto, one of the terminals being a common terminal and the other battery terminals, contact pieces spaced from each other and connected to the battery terminals, a spring-pressed detent in electrical connection with the common terminal, and commutator mechanism, engaging said pawl for breaking the electrical connection between the terminals, the terminals, pawl and commutator mechanism being located within the recess, and means for operating the commutator mechanism.

854,040. MECHANISM FOR FEEDING SHEET MATERIAL. WILLIAM G. JOHNSTON, Woodbury, N. J., assignor, by mesne assignments, to The American Paper Goods Company, Kensington, Conn., a Corporation of New Jersey. Filed June 8, 1903. Serial No. 160,530.



Claim.—1. In sheet-feeding mechanism, a suction roll, means for reciprocating said suction-roll, means for oscillating said roll upon its axis and an axially fixed valve-casing carried by said roll and having a passage adapted to register with an opening in said suction-roll, when the latter is in one position for controlling the suction of said roll.

2. In sheet-feeding mechanism, slidable blocks or bearings, a suction-roll journaled in said bearings, means for reciprocating said bearings, and a valve-casing carried by said roll and fixed to one of said blocks for intermittingly controlling the suction of said roll.

3. In sheet-feeding mechanism, a suction-roll carried in reciprocating bearings, means for oscillating said roll, means for reciprocating said bearings, a valve-casing mounted upon said suction-roll, means for preventing said casing from oscillating, a secondary chamber or opening in said valve-casing, said valve-casing and said suction-roll having openings, which are adapted to register with each other, to connect said secondary chamber with the interior of said suction-roll, and means for producing suction in said secondary chamber.

4. In sheet-feeding mechanism, an oscillating, hollow suction-roll therefor, a valve casing carried by said roll, means for preventing said casing from turning upon its axis, a secondary chamber in said valve-casing, said chamber and hollow roll having openings communicating with each other when the roll is in a predetermined position, and means for producing suction in said chamber.

5. In sheet-feeding mechanism, reciprocating bearing-blocks, an oscillating suction-roll carried by said bearing-blocks, rotating feed rolls also carried by said bearing-blocks, means for oscillating said suction-roll, means for reciprocating said bearing-blocks, and means for continuously rotating said feed-rolls.

6. In sheet-feeding mechanism, reciprocating bearing-blocks, a suction-roll carried thereby, means for oscillating said suction-roll, a valve carried by said suction-roll for intermittingly and automatically controlling the suction therein, feed-rolls carried by said bearing-blocks, means for rotating said feed-rolls, means for delivering the sheets to be printed from said feed-rolls to the printing-mechanism.

7. In sheet-feeding mechanism, bearing-blocks, means for reciprocating said bearing-blocks, an oscillating suction-roll carried by said bearing-blocks, means for oscillating said suction-roll, feed rolls also carried by said bearing-blocks, a pulley carried by one of said feed-rolls and a driving-belt coöperating with said pulley.

8. In sheet-feeding mechanism, an automatic valve, comprising a casing having a main chamber, a secondary chamber therein having an opening communicating with said first-named chamber, and an opening communicating with the exterior of the casing, a flexible flap over said last-named opening, and means for preventing said valve-casing from rotating.

9. The combination, with a sheet support for a pile of sheets, of a picker for detaching one of the sheets from the pile, a reciprocatory device carrying said picker, means for actuating said picker on said device to cause it to seize and deliver a sheet, and means carried by said device for advancing a sheet delivered by said picker.

10. The combination, with a table for receiving a pile of sheets, of a picker having a port, a shaft having a bore, and a port registering with the port of the picker, means for applying suction to the shaft, means for reciprocating the shaft, means for rotating the shaft, and feed-mechanism to which the sheet is delivered by said picker.

11. The combination, with a table for receiving a pile of sheets, of a sliding support, means for reciprocating said support, feed-rolls carried by the support, means for continuously-driving said feed-rolls, and a picker for detaching a sheet from a pile and delivering it to said feed-rolls.

12. The combination, with a table for receiving a pile of sheets, of a movable support, means for actuating said support, feed-rolls carried by the support, means for continuously rotating the feed-rolls, a pneumatic-picker for detaching a sheet from the pile and delivering it to the feed-rolls, and means for actuating said pneumatic picker.

13. The combination, with slides, and with means for simultaneously reciprocating said slides, of feed-rolls movable with the slides, means for continuously rotating the feed-rolls, a table for receiving a pile of sheets, and means carried by the slides for detaching a sheet from the pile and delivering it to said continuously-rotating feed-rolls.

14. The combination, with a stationary table for a pile of sheets, of a pneumatic picker for seizing a sheet from the pile, reciprocatory support for said picker, means for rotating the picker, a separator on said support and coöperating with the picker, and feed-rolls for advancing the sheet delivered by the picker.

15. The combination, with a sheet-support of a rotary picker, a reciprocatory device for supporting said picker, a separator movable in synchronism with the picker-supporting device, and feed-mechanism carried by said reciprocating device, and to which the sheet is delivered by the picker.

16. The combination, with a support, for a pile of sheets, of a picker, a reciprocatory support for said picker, means for actuating the picker in an arcuate path as it is reciprocated, a separator coöperating with said picker to remove a sheet from the pile, and feed-devices carried by said reciprocatory support for receiving the sheet delivered by the picker.

17. The combination, with a table for receiving a pile of sheets, of a sliding support, means for reciprocating said support, feed-rolls carried by the support, gearing for continuously-driving said feed-rolls, and a picker for detaching the sheet from the pile and delivering it to said feed-rolls.

18. The combination, with a sliding support, of feed-rolls carried by said support, a table for receiving a pile of sheets, a pneumatic picker also carried by said support, and a separator coöperating with the picker to detach a sheet from the pile.

19. The combination, with a table for supporting a pile of sheets, of a shaft, a picker carried by said shaft, a gear on the shaft, means for reciprocating the shaft, a rack with which the gear on the shaft engages, and a separator carried by the shaft-reciprocating means, and coöperating with the picker.

20. The combination, with a table for supporting a pile of sheets, of a tubular shaft having a port, a pneumatic picker rigid with the shaft, and having a port, means for reciprocating the shaft, rack-and-gear mechanism for actuating said shaft, a separator movable in synchronism with said shaft, and coöperating with the picker, and feed-mechanism to which the sheet is delivered.

21. The combination, with a tubular shaft having a port, of a pneumatic-picker rigid with the shaft, a separator, means for simultaneously actuating the shaft and separator, and feed-mechanism coöperating with the picker.

22. The combination, with a table for receiving a pile of sheets, of a picker, a sliding support for said picker, means for rotating the picker, a driving shaft, gearing actuated by said shaft, feed-rolls actuated by the gearing, and means actuated by the driving-shaft for operating the sliding support.

23. The combination, with a table for the reception of material, of a support, feed-rolls carried by said support, a picker carried by the support, means for continuously rotating the feed-rolls, means for reciprocating the support, and means for independently operating said picker to cause it to remove material from the table, and deliver it to the feed-rolls.

24. The combination, with a table for receiving a pile of sheets, of a suction picker reciprocable beneath said pile, and serving to detach the lower sheet therefrom, means for actuating said picker, feed-rolls, means for continuously rotating said feed-rolls, a separator coöperating with the picker, and means for adjusting said separator.

25. The combination, with a table upon which a pile of sheets is placed, of a pair of slides, means for simultaneously reciprocating said slides, feed-devices carried by said slides, a picker also carried the slides, a separator movable in synchronism with the slides, and means for actuating the picker to cause it to detach a sheet from the pile and deliver said sheet to the feed-devices.

26. The combination, with a table for the reception of a pile of sheets, of suction and feed-devices for detaching and feeding a sheet from the pile, means for simultaneously reciprocating said devices, means for actuating said devices in proper timing with relation to each other, and a separator movable in synchronism with said devices.

27. The combination, with a table for supporting a pile of sheets, of slides mounted on ways of the frame, a shaft journaled in said slides, a picker carried by the shaft, a pinion on the shaft, a rack with which said pinion engages, means for simultaneously reciprocating the slides, feed-rolls carried by the slides, and means for continuously rotating said feed-rolls.

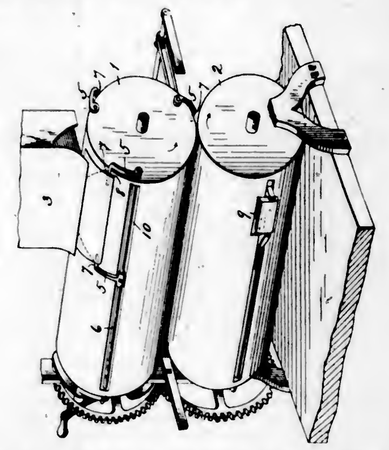
28. The combination with a sheet-support, of a rotary device for taking the sheet from the support, means for actuating said device, a reciprocatory-support and continuously-driven mechanism carried by said reciprocatory-support for seizing and advancing the sheet delivered by said device.

29. The combination, with a stationary support for a pile of sheets, of a movable device for detaching the bottom sheet of the pile, a reciprocatory-support for said device, and feed-rolls carried by the reciprocatory-support for seizing the sheet delivered by said device.

30. The combination, with a support for a pile of sheets, of a picker for detaching a sheet from the pile, a reciprocatory support for the picker, means for rotating the picker, and continuously-driven rolls carried by the reciprocatory support for seizing the sheet delivered by said picker.

31. The combination, with a support for a pile of sheets, of a device for seizing one of the sheets of said pile, a reciprocatory support for said device, a separator coöperating with said device, and feed-mechanism carried by said reciprocatory support, and to which the sheet is delivered by said device.

854,041. ENVELOP ADDRESSING AND PRINTING MACHINE. MICHAEL P. KENNA, Dubuque, Iowa. Filed Mar. 9, 1906. Serial No. 305,115.



Claim.—1. In a machine of the character described, the combination with superposed printing and impression rollers, and an envelop receptacle, of means carried by the impression roller adapted to engage with and feed the envelops successively from the receptacle comprising a rock shaft mounted in the impression roller and arms carried by said shaft and extending in a direction opposite to that in which the impression roller operatively rotates, said arms having bent ends which extend toward each other and engage within the fold of the flap of the lowermost envelop on the receptacle and exert a pulling or dragging action upon said envelop when carrying it around to the printing point.

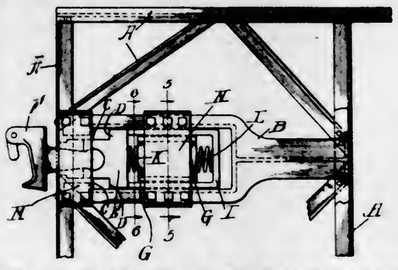
2. In a machine of the character described, the combination with superposed printing and impression rollers, and an envelop receptacle, of means carried by the impression roller adapted to engage with and feed the envelops successively from the receptacle comprising a rock shaft mounted in the impression roller and arms extending in a direction opposite to that in which the impression roller operatively rotates, one of said arms being adjustable toward and from the other arm and both arms having bent ends which extend toward each other and engage within the fold of the flap of the lowermost envelop in the receptacle and exert a pulling or dragging action upon said envelop when carrying it around to the printing point.

3. In a machine of the character described, the combination with superposed printing and impression rollers, and an envelop receptacle, of a rock shaft carried by the impression roller, arms carried by said rock shaft, one of said arms projecting through a slot in the impression roller and the other arm being located upon the shaft beyond one end of the impression roller and both arms extending in a direction opposite to that in which the impression roller operatively rotates and having bent ends which extend toward each other and engage within the fold of the flap of the lowermost envelop in the receptacle and exert a pulling or dragging action upon said envelop when carrying it around to the printing point.

4. In a machine of the character described, the combination with superposed printing and impression rollers, and an envelop receptacle, of a rock shaft carried by the

impression roller, arms carried by said rock shaft, one of said arms projecting through a slot in the impression roller and being adjustable upon said shaft, and the other arm being located upon the shaft beyond one end of the impression roller, both arms extending in a direction opposite to that in which the impression roller operatively rotates and having bent ends which extend toward each other and engage within the fold of the flap of the lowermost envelop in the receptacle and exert a pulling or dragging action upon said envelop when carrying it around to the printing point.

854,042. DRAFT-RIGGING. MARTIN KENNEDY, Chicago, Ill., assignor of one-half to William Renshaw, Chicago, Ill. Filed Sept. 25, 1906. Serial No. 336,108.



Claim.—1. In draft rigging for railway cars, a metal draft member comprising a forked portion forming a pair of draft arms, inwardly projecting shoulders on said arms, a block disposed between the arms of the draft member in such a manner as to leave guide-ways between the block and the sides of the arms, and means whereby the draft member may be attached to the car, said draft member cast or otherwise formed in one piece, in combination with a draw head located between the draft arms so as to abut against the draft shoulders, a yoke connected with the draw head and extending through the guide-ways and around the block, and a pair of springs seated against the block, one of said springs abutting against the inner end of the yoke and the other against the end of the draw head.

2. Draft rigging comprising a draft member having a forked portion and a central abutment, a draw-head, a horizontally disposed yoke connected with the draw-head, said yoke and draw-head within the forked portion of the draft member and lying close to the arms thereof so as to be guided in their reciprocations thereby, a pair of springs interposed between the abutment and the draw-head and end of the yoke, said springs operating one against the other to normally hold the draw-head in a central position, guide-ways formed in the abutment for the yoke, and a plate under the abutment having ribs extending into the guide-ways formed by said abutment.

3. Draft rigging comprising a draft member having a forked portion and a central abutment, a draw-head, a horizontally disposed yoke connected with the draw-head, said yoke and draw-head within the forked portion of the draft member and lying close to the arms thereof so as to be guided in their reciprocations thereby, a pair of springs interposed between the abutment and the draw-head and end of the yoke, said springs operating one against the other to normally hold the draw-head in a central position, and guide-ways formed in the abutment for the yoke, and plates spanning the forked part of the draw-head, one under the yoke and one under the draw-head.

4. Draft rigging comprising a draft member consisting of a bar for attachment to the car and a forked portion having an integral central abutment within the fork, a draw-head, a horizontally disposed yoke connected with the draw-head, said yoke and draw-head within the forked portion of the draft member and lying close to the arms thereof, so as to be guided in their reciprocations thereby, a pair of springs interposed between the abutment and the draw-head and end of the yoke, said springs operating one against the other to normally hold the draw-head in a central position, shoulders on the draw-head, and shoulders on the forks of the draft member.

5. Draft rigging comprising a forked draft member, a block disposed between the forks of the draft member, a draw-head, a yoke connected with the draw-head, said yoke and draw-head lying within the block member and close to the arms thereof so as to be guided thereby, a pair of springs interposed between the fork and the draw-head and end of the yoke, said block being recessed for the springs and forming, together with the forked arms of the draw-head, guide-ways for the yoke.

6. In draft rigging, the combination of an integral draft member consisting of a bar for attachment to the car, a forked portion covered on top, and a block extending from the top of said member within the fork thereof so as to leave guide-ways between the arms of said fork and the block, with a draw-head, a yoke connected with the draw-head and extending through said guide-ways, and a pair of springs interposed between the block and the yoke and draw-head.

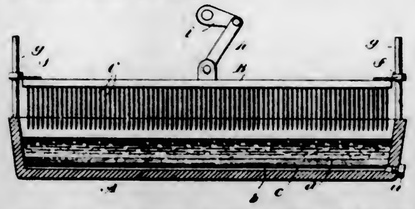
7. In draft rigging, the combination of a forked draft member, inwardly extending shoulders formed on said forked portion, a draw-head having a reduced part arranged so as to always be between and guided by said shoulders, said draw-head provided with transverse shoulders to abut against the shoulders on the draft member, and buffer-springs arranged within the forked portion of the draft member and connected with the draw-head so as to cushion the same.

8. In draft rigging, the combination of an integral draft member consisting of a bar for attachment to the car, a forked portion having inwardly extending shoulders, and a central abutment within the forked portion, with a draw-head having a reduced part extending between the shoulders on the draft member, and transverse shoulders to abut said shoulders on the draft member, a yoke connected with said draw-head, and springs interposed between the central abutment and the yoke and draw-head.

9. In draft rigging, the combination of a hollow draft member having inwardly extending shoulders formed thereon, a draw-head having a reduced part arranged so as to be always between and guided by said shoulders, said draw-head provided with transverse shoulders to abut against the shoulders on the draft member, and buffer springs arranged within said draft member and connected with the draw-head so as to cushion the same.

10. In draft rigging, the combination of a hollow draft member, a central abutment within the draft member, shoulders on the outer end of said draft member, a draw-head within said draft member and having shoulders to abut against the shoulders on the draft member, a yoke connected with the draw-head and extending around the central abutment, and springs interposed between the inner end of the yoke and the abutment and between the abutment and the draw-head.

854,043. PROCESS OF MAKING FILTERING MATERIAL. GEORGE M. KNEUPER, New York, N. Y., assignor of one-third to George Kneuper and one-third to Kate Kneuper. Original application filed May 29, 1906, Serial No. 319,280. Divided and this application filed Oct. 3, 1906. Serial No. 337,168.



Claim.—1. The process herein described of making a pulp filter, which process consists in reciprocating a series of needles through the water in which the pulp is suspended.

2. The herein-described process of making a filter which consists in pouring a body of liquid containing pulp in suspension over a sheet of fibrous filtering material, and then driving the individual pulp fibers downward to give them a substantially vertical direction.

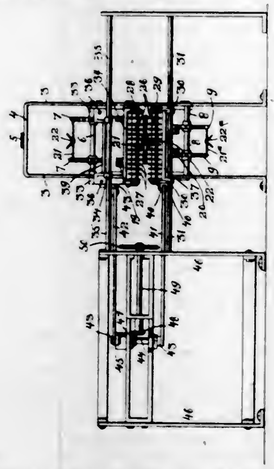
3. The herein-described process of making a filter which consists in pouring a body of liquid containing pulp in suspension over a sheet of fibrous filtering material, and then driving the individual pulp fibers downward into the said sheet to give them a substantially vertical direction and to connect them with the said sheet.

4. The herein-described process of making a filter which consists in pouring a liquid containing pulp in suspension over a sheet of fibrous filtering material, driving the individual fibers downward to cause them to assume a substantially vertical direction, then withdrawing the water, and thereupon again driving the fibers downward to perfect their vertical arrangement.

5. The herein-described process of making filters, which consists in pouring a liquid containing pulp in suspension over a sheet of fibrous filtering material, driving the individual pulp fibers downward into the said sheet, thus causing them to assume a substantially vertical direction, then removing the water and thereupon again driving the pulp fibers downward to perfect their vertical arrangement.

6. The herein-described apparatus for making a pulp filter, which apparatus consists of a tank, a needle-board having closely set needles and mechanism for rapidly reciprocating said needle-board.

854,044. SAUSAGE-LINKING MACHINE. HUGO R. KUERSTEN, Chicago, Ill., assignor of one-third to George M. Hecht and one-third to Carl F. Brod, Chicago, Ill. Filed Feb. 23, 1906. Serial No. 302,549.



Claim.—1. In a sausage linking machine, the combination of co-operating clamping devices for clamping the sausage casing at suitable intervals to form links, continuously movable linking mechanism on which the clamping devices are mounted, and reciprocating twisters movable back and forth in a straight line and in transverse relation to the path of travel of the carriers and adapted to twist the links without impeding their forward travel, substantially as described.

2. In a sausage linking machine, the combination of clamping devices adapted to clamp and hold the stuffed sausage casing at predetermined intervals to form links, and twisters oppositely and simultaneously movable with respect to one another and movable back and forth in a transverse line with respect to the stuffed sausage casing, substantially as described.

3. In a sausage linking machine, the combination of upper and lower endless chains, co-operating interlocking clamping fingers secured to the chains at suitable intervals, sprocket wheels on which the chains are mounted, reciprocating upper and lower twisters, guides on which the twisters are slidably mounted, extending transversely with respect to the endless chains, and mechanism for moving the twisters transversely of the chains and in opposite directions simultaneously with the forward travel of the chains, substantially as described.

4. In a sausage linking machine, the combination of upper and lower endless chains, co-operating interlocking clamping fingers secured to the chains at suitable intervals, sprocket wheels on which the chains are mounted, upper and lower twisters, guides on which the twisters are slidably mounted, extending transversely with respect to the endless chains, arms pivoted to the upper and lower twisters respectively, a revolving arm to which the ends of the first mentioned arms are secured, and mechanism for simultaneously actuating the revolving arm and revolving the chain carrying sprocket wheels, substantially as described.

5. In a sausage linking machine, the combination of forwardly moving clamping mechanism adapted to clamp a stuffed sausage casing at suitable intervals to form links, and co-operating twisters adapted to be simultaneously moved in opposite directions in transverse relation to the path of travel of the clamping mechanism, each of the twisters being composed of flexible disks adapted to compel the rotation of the clamped sections of stuffed casing and permit the forward movement thereof between the flexible disks, substantially as described.

6. In a sausage linking machine, the combination of clamping mechanism adapted to clamp a stuffed sausage casing at predetermined intervals, and reciprocating companion twisters movable in opposite directions with respect to one another and in a transverse line with respect to the stuffed casing, each of the twisters being composed of flexible disks arranged in parallel relation with respect to the line of travel of the stuffed casing for permitting forward movement of the casing and compelling a rotary movement thereof, one of the twisters being adjustable toward and from the other to permit the machine to operate upon stuffed casings of different diameter, substantially as described.

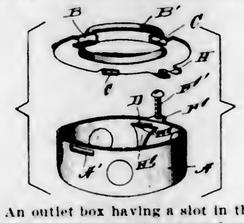
7. In a sausage linking machine, the combination of clamping mechanism adapted to clamp a stuffed sausage casing at predetermined intervals to form links, and a twister adapted to move in transverse relation to the path of travel of the stuffed sausage casing, said twister being composed of flexible disks adapted to impart rotation to the clamped section of stuffed casing, and adapted to permit a forward movement of the casing between the flexible disks, substantially as described.

8. In a sausage linking machine, the combination of a frame, upper and lower carrier wheels journaled thereon, upper and lower endless carriers mounted on the wheels, co-operating clamping devices mounted at suitable intervals on the carriers and adapted to interlock when brought into adjacent position to clamp a section of stuffed sausage casing, companion twisters slidably mounted in transverse relation to the movement of the carriers, means adapted to move the twisters in opposite directions to twist the clamped section into a link of sausage and adapted to reverse the movement of the twisters to twist the next succeeding section in the opposite direction, substantially as described.

9. In a sausage linking machine, the combination of two pairs of upper sprocket wheels, two pairs of lower sprocket wheels, two endless upper sprocket chains, two endless lower sprocket chains, cross-brackets connecting the upper and lower sprocket chains at predetermined intervals, clamping fingers carried by the brackets and adapted to interlock when brought into proximity with one another for measuring off and clamping a stuffed sausage casing, transversely extending upper and lower guide rods, upper and lower twisters slidably mounted thereon and adapted

to permit longitudinal travel of the sausage casing simultaneously with the twisting of the clamped sections thereof, mechanism for reciprocating the twisters in opposite directions with respect to one another for twisting one clamped section of a sausage casing in one direction and the next succeeding clamped section in the opposite direction, and mechanism for rotating a sprocket wheel, substantially as described.

854,045. OUTLET-BOX. LOUIE T. LA PAUGH, Utica, N. Y. Filed Feb. 7, 1906. Serial No. 299,954.

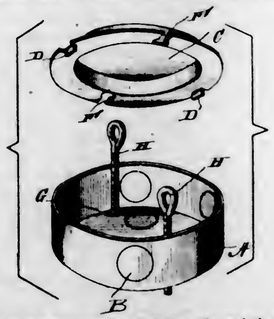


Claim.—1. An outlet box having a slot in the wall thereof, a cover having an integral lip adapted to engage said slot, a loosely mounted member having an angled part projecting through an aperture in the wall of the box, and fastening means engaging said member and cover to hold the latter in place, as set forth.

2. An outlet box having a slot in the wall thereof, a cover having an integral lip adapted to engage said slot, a loosely mounted member having an angled portion passing through an aperture in the wall of the box, and fastening means engaging said member and cover whereby the latter may be held to the box, and means for holding said member within the box, as set forth.

3. An outlet box having a slot in the wall thereof, a cover having an integral lip adapted to engage said slot, an angled member having lateral extensions adapted to bear against the inner wall of the box, and a part extending through an aperture in said box, said extended part having a threaded aperture, a headed screw fitted in said threaded aperture, and a slotted extension upon said cover engaged by said screw, as set forth.

854,046. OUTLET-BOX. LOUIE T. LA PAUGH, Utica, N. Y. Filed Feb. 7, 1906. Serial No. 299,955.

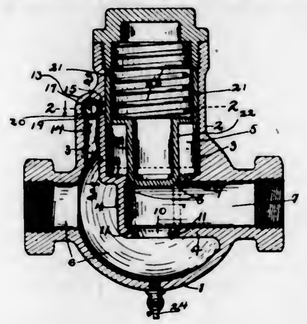


Claim.—1. An outlet box having threaded apertures in the bottom thereof, fastening means extending through said apertures, and held by the threads of the latter and a cover having slots through which said fastening means pass, as set forth.

2. An outlet box having threaded apertures in the bottom thereof, screw-eyes, threaded portions of which are fitted in said threaded apertures, and a cover having slots therein adapted to receive said screws, the eyes at the ends of said screws adapted to be turned transversely across said slots to hold the cover upon the box, as set forth.

3. An outlet box having threaded apertures in the bottom thereof, screw-eyes fitted in said apertures, a cover having slots formed in the edge thereof adapted to receive said screws, and lugs formed about the circumference of the cover and adapted to engage the wall of the box, the eyes of said screws designed to be turned crosswise of said slots to engage and hold the cover in place and serving as an anchorage means to hold the box in the plastering of a wall, as set forth.

854,047. SHUT-OFF VALVE. GEORGE J. LEBER, Cleveland, Ohio. Filed Mar. 14, 1906. Serial No. 305,947.

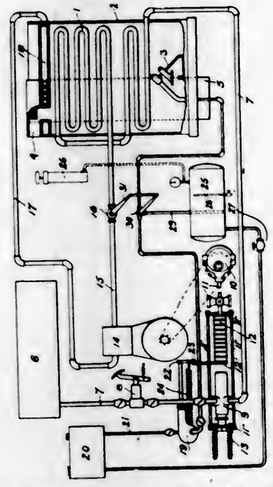


Claim.—1. In combination, a valve casing having a valve chamber, an intake chamber, an outlet chamber communicating with both the valve chamber and the intake chamber, a hollow valve arranged to slide in the valve chamber and when in its lowest position cutting off the communication between the intake chamber and the outlet chamber, a second valve chamber, a channel extending from the valve chamber to the intake chamber through the second valve chamber, a channel extending from the first named valve chamber to the outer surface of the valve casing through the second valve chamber, the mouths of said channels being located so that they will be closed when the valve is in its upper or open position and will be uncovered when the valve is in its lower or closed position and a valve arranged in the second valve chamber.

2. In an automatic-valve, a valve casing having a valve chamber, an intake chamber, an outlet chamber communicating with the valve chamber, and the intake chamber, a hollow valve arranged to slide in the valve chamber and when in its lowest position cutting off communication between the intake chamber and the outlet chamber, a spring arranged between the top of the valve casing and said valve, a second valve chamber, a channel extending from the valve chamber to the intake chamber through the second valve chamber, a channel extending from the first named valve chamber to the outer surface of the valve casing through the second valve chamber, the mouths of said channels being located so that they will be closed when the valve is in its upper or open position and will be uncovered when the valve is in its lower or closed position and a valve arranged in the second valve chamber.

3. In an automatic-valve, a valve casing having a valve chamber, an intake chamber, an outlet chamber communicating with both the valve chamber and the intake chamber, a hollow valve arranged to slide in the valve chamber and having a neck portion arranged to extend down through the outlet chamber and cut off communication between the intake chamber and the outlet chamber, a spring arranged between the top of the valve casing and said valve, a relief valve chamber formed in the wall of said valve casing and having a passage-way extending to the outer surface of the valve casing, a passage-way extending from the relief valve chamber to the main valve chamber in line with said passage-way, a passage-way extending from the intake chamber to the relief valve chamber, a passage-way forming a continuation of the last-mentioned passage-way extending from the relief valve chamber to the main valve chamber and a valve arranged in the relief valve chamber so that in its outer position it will close the passage-way extending to the outer surface of the valve casing.

854,048. FUEL-REGULATION SYSTEM FOR STEAM-GENERATORS. HERMANN LEMP, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Nov. 13, 1903. Serial No. 180,983.



Claim.—1. The combination of a steam generator, an engine, a throttle controlling the delivery of steam to the engine, a burner in co-operative relation to the generator, main and auxiliary sources of liquid fuel supply, a conduit leading from each source to the burner, and means controlled by the throttle for opening and closing the main and the auxiliary supply conduits to the burner reciprocally.

2. The combination of a steam generator, a throttle controlling the delivery of steam therefrom, a burner for heating the generator, separate fuel supply tanks or reservoirs, and means controlled by the throttle for varying the quantity of fuel supplied from one of the tanks to the burner as the operative position of the throttle varies and for supplying a substantially constant quantity of fuel from the other tank when the throttle is closed.

3. The combination of a steam generator, an engine, a throttle between them, a burner for heating the generator, means for supplying fuel to the burner for supporting a main flame, means for supplying fuel to the burner for supporting a pilot flame, means for opening one supply while closing the other, and a connection between the throttle and the last mentioned means which opens the supply for the main flame and closes the supply for the pilot flame simultaneously with the opening of the throttle.

4. The combination of a generator, an engine, a throttle, a burner, separate means for supplying fuel thereto in different quantities, and a device mechanically connected with and operated by the throttle for simultaneously opening one of said supply means and closing the other as the throttle controls the delivery of steam to the engine.

5. The combination of a generator, an engine, a throttle, a burner, separate sources of fuel supply at different pressures, supply connections between the same and the burner, a valve controlling the relation of the separate sources of fuel to the burner, and means positively connecting said valve with the throttle.

6. In combination, a burner, two tanks, conduits therefrom to supply fuel to the burner at different pressures, and means which positively and simultaneously opens one conduit and closes the other.

7. In combination, a burner, a conduit for supplying fuel to the burner at low pressure, a conduit for supplying fuel to the burner at high pressure, a fuel controller for positively opening one conduit while closing the other, an engine, and a regulator for the engine which is operatively connected to the fuel controller.

8. In combination, a vapor generator, an engine deriving its motive energy therefrom, a throttle for controlling the delivery of motive fluid to the engine, a burner for the generator, a pump tending under all conditions of speed to supply fuel at a definite constant pressure to the burner, and means for interrupting the supply from the pump simultaneously with the closing of the throttle, the said means being adapted to admit fuel to the burner at a different pressure.

9. In combination, a generator, an engine, a throttle for controlling the delivery of motive fluid from the generator to the engine, a burner for the generator, a fuel pump driven by the engine for supplying fuel to the burner at a high constant pressure, said pump comprising means for limiting the pressure, means for supplying fuel at a low pressure to the burner, and devices co-operating with the throttle to interrupt the supply of high pressure fuel to the burner and to admit fuel under low pressure to the burner as the delivery of motive fluid to the engine is interrupted.

10. In combination, a burner, a main fuel supply pipe connected to the burner, an auxiliary supply pipe for supplying fuel to the burner at a definite pressure, means for opening either supply pipe and closing the other, a pump in the main supply pipe for delivering fuel at a relatively higher pressure, and an automatic variable stroke mechanism for the pump.

11. In combination, a burner, a main fuel supply pipe and an auxiliary fuel supply pipe connected to the burner, a pump in the main supply pipe, actuating means for the pump provided with devices for automatically maintaining the main supply of fuel at constant pressure, and means for closing the main fuel supply pipe and simultaneously opening the auxiliary fuel supply pipe or vice versa.

12. In combination, a burner, a main fuel supply tank, an auxiliary fuel supply tank under air pressure, connections between the tanks and burner, a valved connection between the tanks, a pump for supplying fuel to the burner from the main tank, an automatic regulator for the pump which tends to maintain the main fuel supply at constant pressure, and means for simultaneously interrupting the main fuel supply and opening the auxiliary fuel supply to the burner or vice versa.

13. In combination, a steam generator and engine, a throttle for controlling the delivery of steam to the engine, a burner for the generator, means for delivering an auxiliary supply of fuel to the burner, means for delivering a main supply of fuel to the burner, a regulator for the latter means which tends to maintain the main supply at a constant pressure, and means which simultaneously opens the main fuel supply and closes the auxiliary fuel supply when the steam throttle opens or vice versa.

14. In a supply system, the combination of a burner, a main tank at atmospheric pressure, an auxiliary tank under air pressure, separate supply connections between the tanks and burner, and a controlled connection between the auxiliary tank and the main tank.

15. In a fuel supply system, the combination of a burner, a main tank at atmospheric pressure, an auxiliary tank arranged below the level of the main tank and adapted to be placed under air pressure, and a controlled connection between the tanks which permits fuel to flow from the main tank to the auxiliary tank under gravity or to flow from the auxiliary tank to the main tank under air pressure in the former.

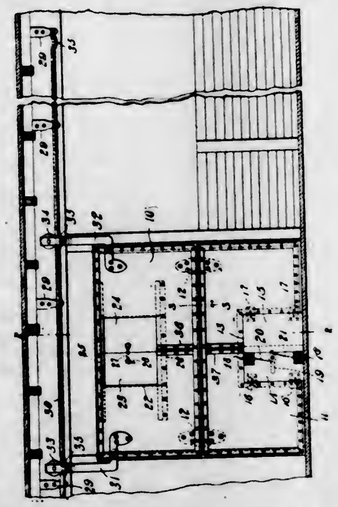
16. In a fuel supply system, the combination of a burner, a main tank at atmospheric pressure connected therewith, an auxiliary tank under air pressure also connected with the burner, means for placing the auxiliary tank under pressure, means for relieving the air pressure from the auxiliary tank, and a controlled connection between the

tanks which permits fuel to flow from the main to the auxiliary tank when the latter is at atmospheric pressure or to flow from the auxiliary to the main tank when the former is under air pressure.

17. In a fuel supply system, the combination of a main supply tank at substantially atmospheric pressure, an auxiliary tank under a higher pressure, a burner connected with the tanks, a pump between the main supply tank and the burner, and a controlled connection for relieving the pressure on the burner by discharging fuel into the auxiliary tank.

18. In a supply system, the combination of a burner, a main source of liquid fuel at substantially atmospheric pressure, a second source of fuel which is located below the level of the first, means for subjecting the second source to an initial air pressure, a connection between the sources through which fuel feeds by gravity from the first to the second source, a valve normally closing the said connection, means for relieving the pressure on the second source when it is desired to replenish it from the main source, a connection arranged to supply fuel from the main source to the burner, and a fuel pump in said connection.

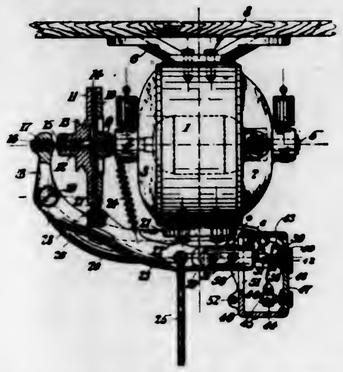
854,049. GRAIN-CAR DOOR. THOMAS LEONARD, Champaign, Ill., assignor of one-half to Alfonso H. Isbell, Champaign, Ill. Filed Mar. 6, 1906. Serial No. 304,574.



Claim.—In a car, a side provided with a doorway, a door for closing said doorway, said door consisting of two closure sections hinged together at horizontal meeting edges, each said section having an opening at the respective upper and lower edges thereof and angle irons extending from said openings to the meeting edges of the sections, doors arranged to close said openings, a track supported above the doorway and extending beyond the side thereof, and hangers bearing movably upon said track.

854,050. ELECTRICAL DRIVING MECHANISM. GUSTAVE C. MARX, Elisabeth, N. J., assignor to Diehl Manufacturing Company, a Corporation of New Jersey. Filed Jan. 11, 1906. Serial No. 295,576.

Claim.—1. The driving mechanism comprising an electric motor constructed with a frame provided with bearings and having an armature shaft journaled therein, an armature mounted upon said shaft, a clutch including a driving and a driven member mounted for relative movement toward and from each other, the one connected to rotate with said shaft and the other rotatable independently thereof, and an operating lever mounted upon a fixed fulcrum carried by said motor-frame and having an operative member disposed substantially in the plane of said shaft and adapted to force one of said clutch members into operative engagement with the other clutch member.



2. The driving mechanism comprising an electric motor constructed with a frame provided with bearings and having an armature shaft journaled therein, an armature mounted upon said shaft, a clutch including a driving and a driven member mounted for relative movement toward and from each other, the one connected to rotate with said shaft and the other rotatable independently thereof, a two-armed angle-lever mounted intermediate its arms upon a fixed fulcrum carried by said motor frame and having said arms disposed in substantially the plane of said shaft and one of its arms adapted to effect the operative engagement of the driving with the driven member of the clutch, and a brake-shoe carried by the other arm of said lever and adapted to operatively engage the driven member of said clutch when the first-named arm is retracted.

3. The driving mechanism comprising an electric motor constructed with a frame provided with bearings and having an armature shaft journaled in said bearings, an armature mounted upon said shaft, a clutch including a driving and a driven member of which the former is fixed upon said armature shaft and the latter is disposed at the end of said shaft upon the side of said fixed clutch member opposite the armature and is movable endwise in respect thereof, a bracket-arm carried by said motor frame and extending therefrom in a direction substantially longitudinally of said shaft, a fixed fulcrum-pin carried by said bracket-arm, and an operating lever mounted upon said fulcrum-pin and disposed in substantially the plane of said shaft and having one arm adapted to force the movable clutch member into operative engagement with the fixed clutch member and another arm by which the same is operated.

4. The driving mechanism comprising an electric motor constructed with a frame provided with bearings and having an armature shaft journaled in said bearings, an armature mounted upon said shaft, a clutch including a driving and a driven member disposed upon and relatively movable in the axial line of said shaft, and one of which members has a positive connection with said armature shaft, a fixed fulcrum-pin carried by said motor frame, an operating lever mounted upon said fulcrum-pin and having an arm adapted to engage the movable clutch member for forcing it into operative relation with the other clutch member and an actuating-arm by which the same may be operated, and a brake device carried by the actuating arm of said lever and adapted for operative engagement with the driven member of said clutch.

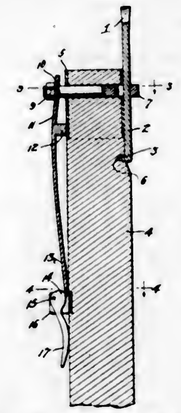
5. The driving mechanism comprising an electric motor constructed with a frame provided with bearings and having an armature shaft journaled in said bearings, a clutch including a driving and a driven member one of which has a positive connection with said armature shaft, a switch carried by the motor frame comprising a swinging lever mounted intermediate the ends upon a fulcrum-pin and adapted to make and break electrical connection between two fixed contact points, electrical connections between said switch and the motor, an operating lever mounted upon a fixed fulcrum carried by said motor frame and having a plurality of arms one of which is adapted to move said clutch members into operative engagement, and a spring-pressed plug carried by another arm of said operating lever and adapted in the movement of the latter to maintain permanent contact with the switch-lever and to tilt the same alternately into operative and inoperative position in passing over said fulcrum-pin.

6. The driving mechanism comprising an electric motor constructed with a frame provided with bearings and having an armature journaled in said bearings, a clutch including a driving and a driven member one of which has a positive connection with said armature shaft, a bracket rigidly attached to said motor frame and having a laterally-projecting arm and a switch-casing provided with a lateral opening, a switch inclosed within said casing and comprising a swinging lever mounted intermediate the ends upon a fulcrum-pin and adapted to make and break electrical connection between two fixed contact points also inclosed within said casing, and an operating lever mounted upon a fixed fulcrum carried by the lateral arm of the motor frame bracket and having one arm extended adjacent the motor-shaft and adapted to move said clutch members into operative engagement and another arm extended through the lateral aperture of the switch-casing and into operative relation with said switch-lever.

7. The driving mechanism comprising an electric motor constructed with a frame provided with bearings and having an armature journaled in said bearings, a clutch including a driving and a driven member one of which has a positive connection with said armature shaft, a bracket rigidly attached to said motor frame and having a laterally-projecting arm and a switch-casing provided with a lateral opening, a switch inclosed within said casing and comprising a swinging lever mounted intermediate the ends upon a fulcrum-pin and adapted to make and break electrical connection between two fixed contact points also inclosed within said casing, and an operating lever mounted upon a fixed fulcrum carried by the lateral arm of the motor frame bracket and having one arm extended adjacent the motor-shaft and adapted to move said clutch members into operative engagement and another arm extended through the lateral aperture of the switch-casing and into operative relation with said switch-lever, the said lateral opening in the switch-casing having parallel side edges spaced apart to correspond with the width of and to guide the adjacent end of the operating lever in its movements and having such length as to enable its ends to serve as stops for said lever in the extreme positions of the latter.

8. The driving mechanism comprising an electric motor constructed with a frame provided with bearings and having an armature shaft journaled in said bearings, a clutch including a driving and a driven member one of which has a positive connection with said armature shaft, a switch carried by the motor frame comprising a swinging lever mounted intermediate the ends upon a fulcrum-pin and adapted to make and break electrical connection between two fixed contact points, electrical connections between said switch and the motor, an operating lever mounted upon a fixed fulcrum adjacent said clutch and having a shorter arm adapted to move the clutch members into operative relation and a longer arm provided with a spring-pressed plug adapted to maintain permanent contact relation with the switch-lever and move longitudinally thereof over its fulcrum-pin to tilt the same into and out of operative position, a spring applied to the longer arm of said lever to maintain it normally in inoperative position, and means also applied to the longer arm of said lever for shifting the same in opposition to said spring to successively actuate said switch and cluth.

854,051. SCYTHE-BLADE ATTACHMENT. CARL A. MCHAFFEY, Bloomington, Ind. Filed Oct. 11, 1906. Serial No. 338,420.



Claim.—1. The combination of a blade having a shank and a stud thereon, a handle having a transverse aperture and a seat to receive said stud, a clamping element engaged with said shank and passed through the aperture in said handle, a lever engaged with said clamping element, and a cam for clamping said lever.

2. The combination of a blade having a shank and a stud thereon, a handle having a transverse aperture and a seat to receive said stud, a bolt extending through the aperture in said handle and having an eye to receive said shank, a lever engaged with said eye bolt and having its fulcrum upon said handle, and a cam for operating said lever.

3. The combination of a blade having a shank and a stud thereon, a handle having a transverse aperture and a seat to receive said stud, a bolt passed through the aperture in said handle and having an eye to receive said shank, a nut upon said bolt, a resilient lever formed intermediate its ends with a fulcrum block to engage said handle, the outer end of said lever being formed with an aperture to receive said bolt and being adapted to engage said nut, a U-shaped plate secured upon said handle and adapted to receive the inner end of said lever, and a cam pivoted in said plate and adapted to engage the inner end of said lever, substantially as shown and described.

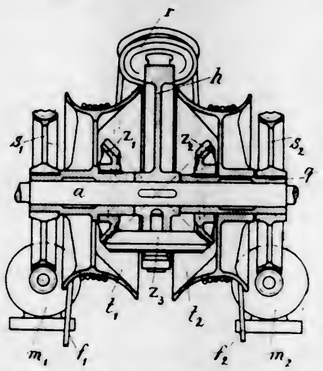
854,052. APPARATUS FOR CONVEYING LOADS BETWEEN POINTS OF VARYING DISTANCE. WALTHER MOLLIER, Hamburg, Germany, assignor to Siemens-Schuckert Werke Gesellschaft mit Beschrankter Haftung, Berlin, Germany. Filed Jan. 29, 1906. Serial No. 298,567.

Claim.—1. In an apparatus for conveying loads between points of varying distance, the combination of a plurality of drums independently journaled, an endless rope wound on said drums, means for operating one of said drums controlled by the tension of said rope to keep same under a predetermined tension.

2. In an apparatus for conveying loads between points of varying distance, the combination of two drums suitably independently journaled, an endless rope wound on said druma, a motor operating one of said drums, a motor adapted to coöperate with said drum operating motor when the rope has its normal tension, and means between said motors and actuated by said motors under an abnormal rope tension adapted to restore the normal tension of said rope.

3. In an apparatus for conveying loads between points of varying distance, the combination of two drums suitably independently journaled, an endless rope wound on

said drums, a motor operating one of said drums having its revolution number varying inversely with the load, a motor adapted to coöperate with the drum operating motor when the rope has its normal tension keeping its revolution number practically constant under all loads, and means between said motors and actuated by said motors under an abnormal rope tension adapted to restore the normal tension of said rope.



4. In an apparatus for conveying loads between points of varying distance, the combination of two drums suitably independently journaled, an endless rope wound on said drums, an electro-motor operating one of said drums having its revolution number varying inversely with the load, an electro-motor adapted to coöperate with said drum operating motor when the rope has its normal tension keeping its revolution number practically constant under all loads, and means between said electro-motors and actuated by said motors under an abnormal rope tension adapted to restore the normal tension of said rope.

5. In an apparatus for conveying loads between points of varying distance, the combination of two drums, suitably independently journaled, an endless rope wound on said drums, a differential gear having one of its outside members connected to one of said drums operating the rope, a motor operating said drum and having its revolution number varying inversely with the load, a motor connected to the other outside member of said differential gear and keeping its revolution number practically constant under all loads, a lever arm suitably pivoted between said drums operatively connected to the intermediate member of said differential gear and having on its free end a pulley adapted to guide said rope between said drums, said lever being inoperative under normal tension of the rope and coiling and uncoiling said rope on the drums respectively under abnormal tension until normal tension is restored.

6. In an apparatus for conveying loads between points of varying distance, the combination of two drums suitably independently journaled, an endless rope wound on said drums, a differential gear having one of its outside members connected to one of said drums operating the rope, an electro-motor operating said drum and having its revolution number varying inversely with the load, an electro-motor connected to the other outside member of said differential gear and keeping its revolution number practically constant under all loads, a lever arm suitably pivoted between said drums operatively connected to the intermediate member of said differential gear and having at its free end a pulley adapted to guide said rope between said drums, said lever being inoperative under normal tension of the rope and coiling and uncoiling said rope on the drums respectively under abnormal tension until normal tension is restored.

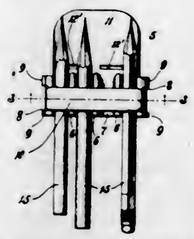
7. In an apparatus for conveying loads between points of varying distance, the combination of two drums coaxially independently journaled, an endless rope wound on said drums, a differential gear having one of its outside members coaxially connected to one of said drums operating the rope, a motor operating said drum and having its revolution number varying inversely with the load, a motor connected to the other outside member of said differential gear and keeping its revolution number practically constant under all loads, a lever arm coaxially independently pivoted between said drums operatively connected at one end to the intermediate member of said differential gear and having at its other end a pulley adapted to guide said rope between said drums, said lever being inoperative under normal tension of the rope and coiling and uncoiling said rope on said drums respectively under abnormal tension until normal tension is restored.

8. In an apparatus for conveying loads between points of varying distance, the combination of two drums coaxially independently journaled, an endless rope wound on said drums, a differential gear having one of its outside members coaxially connected to one of the drums operating the rope, an electro-motor operating said drum and having its revolution number varying inversely with the load, an electro-motor connected to the other outside member of said differential gear keeping its revolution number practically constant under all loads, a lever arm coaxially independently pivoted between said drums, operatively connected at one end to the intermediate member of said differential gear and having at its other end a pulley adapted to guide said rope between said drums, said lever being inoperative under normal tension of the rope and coiling and uncoiling said rope on said drums respectively under abnormal tension until normal tension is restored.

9. In an apparatus for conveying loads between points of varying distance, the combination of a shaft suitably journaled, a drum mounted on said shaft, a sleeve on said shaft, a drum mounted on said sleeve, means for rotating said drum, a lever mounted on said shaft and a pulley mounted on said lever.

10. In an apparatus for conveying loads between points of varying distance, the combination of a shaft suitably journaled, a drum mounted on said shaft, a sleeve on said shaft, a drum mounted on said sleeve, means for rotating said drum, a lever mounted on said shaft and provided with a pulley, and means for revolving said lever around said shaft.

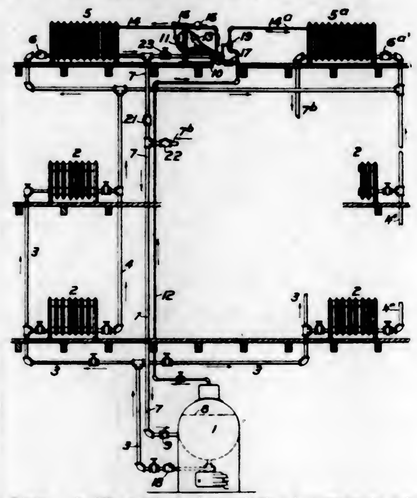
854,053. PENCIL-HOLDING DEVICE. HUGO L. PATZOLD, Meriden, Conn. Filed May 17, 1905. Serial No. 260,759.



Claim.—1. An article-holder consisting of a support having notched edges, and longitudinal corrugations, the latter constituting separated seats for the articles to be held, devices carried by the support for securing said support to a garment, and an elastic-band held in the notches surrounding the support, and extending across the corrugations.

2. An article-holder consisting of a flat sheet-metal plate having a plain portion at its upper part, and in said plain portion fastening-prongs punched from the metal of the plate, said plate being provided below its plain portion with a series of longitudinally-extending corrugations, and with notched and seamed edges, and an elastic-band seated in the notches, and serving to retain the articles in the separated seats formed by the corrugations.

854,054. METHOD OF CIRCULATING HOT WATER IN A HEATING SYSTEM. CASSIUS C. PECK, Rochester, N. Y. Filed June 28, 1905. Serial No. 267,378.



Claim.—1. The method of circulating hot water in a hot water heating circuit, consisting in forcing water by steam pressure on its surface through a portion of the circuit to a higher level, return flow through said portion being prevented; automatically and suddenly admitting steam to the circuit above the upper level of the water, thus permitting the water to flow by gravity through the remainder of the circuit to its starting point; and automatically and suddenly shutting off the steam to the upper portion of the circuit, thus permitting the pressure in said upper portion to be diminished by condensation.

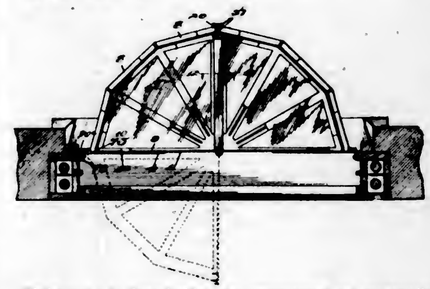
2. The method of circulating hot water contained in a steam boiler in a hot water heating circuit, consisting in forcing the boiler water by steam pressure on its surface through a portion of the circuit to a higher level, return flow through said portion being prevented; automatically and suddenly admitting steam to the circuit above the upper level of the water, thus permitting the water to flow by gravity through the remainder of the circuit back into the boiler; and automatically and suddenly shutting off the steam to the upper portion of the circuit, to permit the pressure in said upper portion to be reduced by condensation.

3. The method of circulating hot water in a hot water heating circuit, consisting in forcing water by steam pressure on its surface through a portion of the circuit to a space at a higher level, return flow through said portion being prevented; automatically and suddenly admitting steam to said space, thus permitting the water to flow by gravity through the remainder of the circuit to its starting point; and automatically and suddenly shutting steam off from said space, thus permitting steam pressure in the space to be diminished by condensation, the supply of steam to said space being controlled according to the water level therein.

4. The method of circulating hot water in a hot water heating circuit, consisting in forcing water by steam pressure on its surface through a portion of the circuit to a higher level, return flow through said portion being prevented; automatically and suddenly admitting steam to the circuit above the upper level of the water, thus permitting the water to flow by gravity through the remainder of the circuit to its starting point; and automatically and suddenly shutting off the steam to the upper portion of the circuit, and condensing it on radiating walls in the circuit, to reduce steam pressure in said upper portion of the circuit.

5. The method of circulating hot water in a plurality of hot water heating circuits, consisting in forcing water by steam pressure on its surface through a portion of each circuit to a higher level, return flow through said portion being prevented; automatically and suddenly admitting steam to each circuit above the upper level of the water, to permit the water to flow by gravity through the remainder of each circuit to its starting point, return through this portion of the circuit being prevented; and automatically and suddenly shutting off the steam to the upper portion of each circuit and reducing its pressure therein by condensation, to permit water of the circuit to be forced into said upper portion to replace the steam.

854,055. DETACHABLE BAY-WINDOW. LEONARD G. QUACKENBOSS, Chicago, Ill. Filed June 22, 1904. Serial No. 213,712.



Claim.—1. A detachable bay comprising an expansible frame and panels supported in said expansible frame.

2. A detachable bay adapted to be secured within an opening, comprising an expansible frame and panels supported in said expansible frame.

3. In a bay, the combination with a frame, comprising top and bottom ribs having suitable cross ribs at the ends thereof and vertical ribs extending between said top and bottom cross ribs, of suitable panels supported in said frame.

4. In a structure, the combination with a frame, comprising top and bottom ribs having suitable cross ribs at the ends thereof and vertical ribs extending between said top and bottom cross ribs, of suitable panels supported within said frame, said ribs being formed of parts which telescope or move upon one another.

5. The combination with a detachable structure, comprising an expansible frame and panels supported in said frame, of extensible rails adapted to be fitted within an opening and support said structure.

6. The combination with a detachable structure, comprising an expansible frame and suitable panels supported in said frame, of extensible rails adapted to be fitted within an opening and support said structure, said rails comprising pieces formed of parts adapted to telescope or move upon one another.

7. A bay, comprising a frame, supporting panels therein, and formed of sections arranged to be secured within an opening, said sections being interlocking at their junctures to form a weather-proof joint between the sections.

8. In a structure, the combination with a suitable frame formed in sections, comprising extending top and bottom ribs having suitable cross ribs at the ends thereof and vertical ribs extending between said top and bottom cross ribs, of suitable panels supported between said ribs, the adjoining ribs of the sections being adapted to interlock with each other, whereby a weather-proof joint between the sections may be formed.

9. In a structure, the combination with adjustable rails, of a structure comprising an adjustable frame and panels adapted to be supported within said frame, and an extensible flashing strip adapted to be secured at the meeting rail of the window sash and engage the top of said rails.

10. The combination with adjustable rails, of a struc-

ture comprising an adjustable frame and suitable panels supported within said frame, said structure having parts which interlock with said rails, whereby a weather-proof juncture is made between the same.

11. The combination with a structure, comprising a frame formed of sections and panels supported in said frame, of a supplemental top and bottom adapted to cover the opening formed between the top and bottom of said sections when the same are partially open.

12. The combination with a structure, comprising a frame formed of sections secured in an opening, of a supplemental top and bottom having downwardly extending portions adapted to engage the top and bottom of each section, whereby when the sections are opened the supplemental top and bottom will be moved into a position to close the opening formed between said sections.

13. A rotatable structure adapted to be secured in an opening and comprising an adjustable expansible frame and suitable panels supported within said frame.

14. The combination with a plurality of extensible rails adapted to be fitted in an opening, of an expansible structure suitable to adjustment as to width, height or projection, having parts interlocking with said rails.

15. A bay, comprising a supporting frame arranged to be placed in an opening, and a second frame forming the bay having parts interlocking with said supporting frame to form a weather-proof juncture between said frames.

16. A bay, comprising a supporting frame arranged to be secured within an opening, a structure formed in sections supported in said frame, said section having adjoining ribs interlocking with each other to form a weather-proof joint between the sections.

17. The combination with a bay formed of sections pivoted at one corner in an opening, of screens secured to one of the sides of each section and extending from the free end of said section to the pivoted end.

18. The combination with a bay having substantially quadrangular sections, of screens secured to one of the straight sides of each section.

19. The combination with a bay having substantially quadrangular sections pivoted in an opening, of screens secured to one of the straight sides of each section.

20. The combination with an expansible bay having substantially quadrangular sections, of screens secured to one of the straight sides of each section.

854,056. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Hartford, Conn., assignor, by mesne assignments, of one-half to American Typographic Corporation, a Corporation of New Jersey. Filed Apr. 23, 1902. Serial No. 104,246.

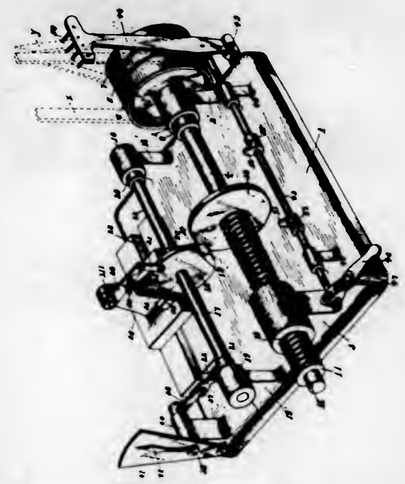
Claim.—1. The combination with a rotative and reciprocatory driving member movable along a predetermined path, of an actuatable member adapted to be actuated thereby at some one point in the line of movement of the driving member.

2. The combination with a rotative and reciprocatory driving member movable to and fro along a predetermined path, of an actuatable member located in said path and adapted to be actuated thereby at a predetermined point in the line of movement thereof in each direction.

3. The combination with a rotative and reciprocatory driving member movable along a predetermined path, of an actuatable member located in position to be initially actuated by said driving member at some point in the line of movement thereof, and an actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

4. The combination with a rotative and reciprocatory driving member movable to and fro along a predetermined path, of an actuatable member located to be initially actuated thereby at some point in the line of movement of the driving member in each direction, and a subsidiary actuator for continuing the motion of the actuable member after the inauguration of its motion by the driving member.

5. The combination with a rotative and reciprocatory driving member movable along a predetermined rectilinear path, of an actuatable member located to be actuated by said driving member at a predetermined point in the line of movement of the driving member.



6. The combination with a rotative and reciprocatory driving member movable to and fro along a predetermined rectilinear path, of an actuatable member located to be actuated by said driving member at a predetermined point in the line of movement of the driving member in each direction.

7. The combination with a driving member movable along a predetermined rectilinear path, of an actuatable member located to be initially actuated thereby at some point in the line of movement of the driving member, and an actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

8. The combination with a driving member movable to and fro along a predetermined rectilinear path, of an actuatable member located to be initially actuated thereby at some point in the line of movement of the driving member in each direction, and a subsidiary actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

9. The combination with a driving member movable to and fro along a predetermined path, of a rotative actuatable member located to be actuated by said driving member at a predetermined point in the line of movement of the driving member in each direction.

10. The combination with a driving member movable along a predetermined path, of a rotative actuatable member located to be initially actuated thereby at some point in the line of movement of the driving member, and an actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

11. The combination with a driving member movable to and fro along a predetermined path, of a rotative actuatable member located to be initially actuated thereby at some point in the line of movement of the driving member in each direction, and a subsidiary actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

12. The combination with a driving member movable to and fro along a predetermined rectilinear path, of a rotative actuatable member located to be actuated by said driving member at a predetermined point in the line of movement of the driving member in each direction.

13. The combination with a driving member movable along a predetermined rectilinear path, of a rotative actuatable member located to be initially actuated thereby at some point of the driving member, and an actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

14. The combination with a driving member movable to and fro along a predtermined rectilinear path, of a rotative actuatable member located to be initially actuated thereby at some point in the line of movement of the driving member in each direction, and a subsidiary actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

15. The combination with a rotative driving member movable along a predetermined rectilinear path, of an actuatable member also movable along a predetermined path at will and located to be initially actuated by said driving member at a predetermined point in the line of movement of the driving member, and an actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

16. The combination with a rotative driving member movable to and fro along a predetermined rectilinear path, of an actuatable member also movable along a predetermined path at will and located to be initially actuated by said driving member at a predetermined point in the line of movement of the driving member in each direction, and a subsidiary actuator for continuing the motion of the actuatable member after the inauguration of its motion by the driving member.

17. The combination with a rotative driving member movable along a predetermined path, of a rotative actuatable member also movable along a predetermined path at will and adapted to be actuated by the driving member at some point in the line of movement thereof.

18. The combination with a rotative driving member movable to and fro along a predetermined path, of a rotative actuatable member also movable along a predetermined path at will and located to be actuated by said driving member at a predetermined point in the line of movement of the driving member in each direction.

19. The combination with a rotative driving member movable along a predetermined path, of a rotative actuatable member also movable along a predetermined path at will and located to be initially actuated by said driving member at a predetermined point in the line of movement of the driving member, and an actuator for continuing the motion of the actuatable member after its inauguration by the driving member.

20. The combination with a rotative driving member movable to and fro along a predetermined path, of a rotative actuatable member also movable along a predetermined path at will and located to be initially actuated by said driving member at a predetermined point in the line of movement of the driving member in each direction, and a subsidiary actuator for continuing the motion of the actuatable member after its inauguration by the driving member.

21. The combination with a rotative driving member movable along a predetermined rectilinear path, of a rotative actuatable member located to be actuated by said driving member at a predetermined point in the line of movement of the driving member.

22. The combination with a rotative driving member movable along a predetermined rectilinear path, of an actuatable member adapted to be initially actuated thereby at some point in the line of movement of the driving member, an actuator for continuing the motion of the actuatable member after its inauguration by the driving member, and co-operative stop faces for determining the limiting positions of said actuatable member.

23. The combination with a rotative driving member movable to and fro along a predetermined rectilinear path, of an actuatable member adapted to be initially actuated thereby at some point in the line of movement of the driving member in each direction, a subsidiary actuator for continuing the motion of the actuatable member after its inauguration by the driving member, and co-operative stop faces for determining the limiting positions of said actuatable member.

24. The combination with a rotative driving member movable along a predetermined path, of a rotative actuatable member adapted to be actuated thereby at some point in the line of movement of the driving member, and co-operative stop faces for determining the limiting positions of said actuatable member.

25. The combination with a rotative driving member movable to and fro along a predetermined path, of a rotative actuatable member adapted to be actuated by said driving member at a predetermined point in the line of movement thereof in each direction, and co-operative stop faces for determining the limiting positions of said actuatable member.

26. The combination with a rotative driving member movable along a predetermined path, of a rotative actuatable member adapted to be initially actuated by said driving member at a predetermined point in the line of movement thereof, an actuator for continuing the motion of the actuatable member after its inauguration by the driving member, and co-operative stop faces for determining the limiting positions of said actuatable member.

27. The combination with a rotative driving member movable to and fro along a predetermined path, of a rotative actuatable member adapted to be initially actuated by said driving member at a predetermined point in the line of movement thereof in each direction, a subsidiary actuator for continuing the motion of the actuatable member after its actuation by the driving member, and co-operative stop faces for determining the limiting positions of said actuatable member.

28. The combination with a rotative driving member movable along a predetermined rectilinear path, of a rotative actuatable member adapted to be actuated thereby at some point in the line of movement of the driving member, and co-operative stop faces for determining the limiting positions of said actuatable member.

29. The combination with a driving member and an actuatable member, said members having co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a subsidiary actuator for continuing the motion of the actuatable member after its inauguration by the driving member, and co-operative faces for determining the limiting positions of said actuatable member.

30. The combination with a driving member and an actuatable member, said members having opposite pairs of co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member first in one direction and then in the opposite, of a subsidiary actuator for continuing the motion of the actuatable member after its inauguration by the driving member, and co-operative faces for determining the limiting positions of said actuatable member.

31. The combination with a driving member and a rotative actuatable member, said members having opposite pairs of co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member first in one direction and then in the opposite, of a subsidiary actuator for continuing the motion of the actuatable member after its inauguration by the driving member, and co-operative faces for determining the limiting positions of said actuatable member.

32. The combination with a rotative driving member movable to and fro, and a rotative actuatable member, said members having co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a subsidiary actuator for continuing the motion of the actuatable member after its inauguration by the driving member, and co-operative faces for determining the limiting positions of said actuatable member.

33. The combination with a rotative driving member movable to and fro in a rectilinear path and a rotative actuatable member, said members having co-operative faces adapted to engage and thereby initiate the movement of the actuatable member, of a subsidiary actuator for continuing the motion of the actuatable member after its inauguration by the driving member, and co-operative faces for determining the limiting positions of said actuatable member.

34. The combination with a driving member and an ac-

tuatable member, said members having co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a spring pressed member having a shiftable connection with said actuatable member, whereby the line of effort is applied in different directions when said actuatable member is shifted, and co-operative faces for determining the limiting positions of said actuatable member.

35. The combination with a driving member and an actuatable member, said members having opposite pairs of co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member first in one direction and then in the opposite, of a spring-pressed member having a shiftable connection with said actuatable member, whereby the line of effort is applied in different directions when said actuatable member is shifted, and co-operative faces for determining the limiting positions of said actuatable member.

36. The combination with a rotative driving member movable to and fro and an actuatable member, said members having co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a spring-pressed member having a shiftable connection with said actuatable member, whereby the line of effort is applied in different directions when said actuatable member is shifted, and co-operative faces for determining the limiting positions of said actuatable member.

37. The combination with a driving member and rotative actuatable member, said members having co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a spring-pressed member having a shiftable connection with said actuatable member, whereby the line of effort is applied in different directions when said actuatable member is shifted, and co-operative faces for determining the limiting positions of said actuatable member.

38. The combination with a rotative driving member movable to and fro and a rotative actuatable member, said members having co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a spring-pressed member having a shiftable connection with said actuatable member, whereby the line of effort is applied in different directions when said actuatable member is shifted, and co-operative faces for determining the limiting positions of said actuatable member.

39. The combination with a driving member and a rotatively mounted actuatable member, said members having opposite pairs of co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a spring-pressed arm, a link pivotally connecting said arm with the actuatable member and shiftable to incline the line of effort from one side of the axis of the actuatable member to the other, and co-operative faces for determining the limiting positions of said actuatable member.

40. The combination with a rotative driving member rectilinearly movable to and fro and a rotatively mounted actuatable member, said members having opposite pairs of co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a spring-pressed arm, a link pivotally connecting said arm with the actuatable member and shiftable to incline the line of effort from one side of the axis of the actuatable member to the other, and co-operative faces for determining the limiting positions of said actuatable member.

41. The combination with a rotative driving member rectilinearly movable to and fro and a rotatively mounted actuatable member adjustable in line with the said movement of the driving member, said members having opposite pairs of co-operative faces adapted at times to engage and thereby initiate the movement of the actuatable member, of a spring-pressed arm, a link pivotally connecting said arm with the actuatable member and shiftable to incline the line of effort from one side of the axis of the actuatable member to the other, and co-operative faces for determining the limiting positions of said actuatable member.

42. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, and a spring-pressed member for continuing the movement of said actuatable head after such motion has been initiated by the driving head.

43. The combination of a driving head having a projecting tooth, means for traversing the driving head back and forth, a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, and a spring-pressed member for continuing the movement of said actuatable head after such motion has been initiated by the driving head.

44. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, a spring-pressed member for continuing the movement of said actuatable head after such motion has been initiated by the driving head, a threaded rod secured to the driving head, and a nut with which the thread on such rod engages.

45. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, a spring-pressed member for continuing the movement of said actuatable head after such motion has been initiated by the driving head, a threaded rod secured to the driving head, a nut with which the thread on such rod engages, and means governed by said driving head for controlling the direction of motion thereof.

46. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, a spring-pressed arm, and a link pivoted to said arm and to said actuatable head, for continuing the movement of said actuatable head after such motion has been initiated by the driving head.

47. The combination of a driving head having a projecting tooth, means for traversing the driving head back and forth, a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, a spring-pressed arm, and a link pivoted to said arm and to said actuatable head for continuing the movement of said actuatable head after such motion has been initiated by the driving head.

48. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, a spring-pressed arm, a link pivoted to said arm and to said actuatable head, for continuing the movement of said actuatable head after such motion has been initiated by the driving head, a threaded rod secured to the driving head, and a nut with which the thread on such rod engages.

49. The combination of a driving member having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, a spring-pressed arm, a link pivoted to said arm and to said actuatable head, for continuing the movement of said actuatable head after such motion has been initiated by the driving head, a threaded rod secured to the driving head, a nut with which the thread on such rod engages, and means governed by said driving head for controlling the direction of motion thereof.

50. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage said actuatable head being adjustable in the line of movement of the driving head, and a spring-pressed member for continuing the movement of said actuatable head after such motion has been initiated by the driving head.

51. The combination of a driving head having a projecting tooth and a rotatably mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, said actuatable head being adjustable in the line of movement of the driving head, a spring-pressed arm, and a link pivoted to said arm and to said actuatable head, and a spring-pressed member for continuing the movement of said actuatable head after such motion has been initiated by the driving head.

52. The combination of a driving head having a projecting tooth, means for traversing the head back and forth a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, said actuatable head being adjustable in the line of movement of the driving head, a spring-pressed arm, and a link pivoted to said arm and to said actuatable head, for continuing the movement of said actuatable head after such motion has been initiated by the driving head.

53. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, said actuatable head being adjustable in the line of movement of the driving head, a spring-pressed arm, a link pivoted to said arm and to said actuatable head for continuing the movement of said actuatable head after such motion has been initiated by the driving head, a threaded rod secured to the driving head and a nut with which the thread on such rod engages.

54. The combination of a driving rod having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, said actuatable head being adjustable in the line of movement of the driving head, a spring-pressed arm, a link pivoted to said arm and to said actuatable head for continuing the movement of said actuatable head after such motion has been initiated by the driving head, a threaded rod secured to the driving head, a nut with which the thread on such rod engages, and means governed by said driving head for controlling the direction of motion thereof.

55. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, said actuatable head being adjustable in the line of movement of the driving head, a spring-pressed member for continuing the movement of said actuatable head after such motion has been initiated by the driving head, a threaded rod secured to the driving head, a nut with which the thread on such rod engages, and means governed by said driving head for controlling its direction of movement and comprising a shipper bar and contact pieces secured thereto.

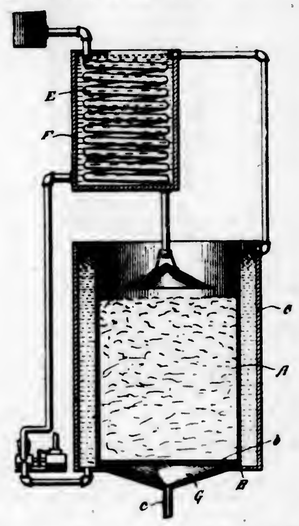
56. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, said actuatable head being adjustable in the line of movement of the driving head, a spring-pressed arm, a link pivoted to said arm and to said adjustable head for continuing the movement of said actuatable head after such motion has been initiated by the driving head, and means governed by said driving head for controlling its direction of movement and comprising a shipper bar and contact pieces secured thereto.

57. The combination of a driving head having a projecting tooth and a rotatively mounted actuatable head having a recess with the end walls of which said tooth is adapted to engage, said actuatable head being adjustable in the line of movement of the driving head, a spring-pressed arm, a link pivoted to said arm and to said actuatable head for controlling the movement of said actuatable head after such motion has been initiated by the driving head, a threaded rod secured to the driving head, a nut with which the thread on such rod engages, and means governed by said driving head for controlling its direction of movement and comprising a shipper bar and contact pieces secured thereto.

854,057. PROCESS FOR OBTAINING LUBRICATING-OIL FROM CRUDE OIL. WILLIAM J. RYAN, Chester, and CHARLES R. BURKE, Overbrook, Pa. Filed May 2, 1906. Serial No. 314,866.

Claim.—1. The process of producing lubricating oils from materials of the petroleum class which consists in reducing the temperature of the material to a temperature of from —10° to 40° Fahrenheit and filtering the same at substantially the same temperature, the process including the additional step of raising said material to a higher flash test, substantially as described.

2. The process of producing lubricating oils from materials of the petroleum class, which comprises the elimination of deleterious elements, by reducing the temperature of the material treated to a temperature varying from —10° to 40° Fahrenheit, passing the same through a filter at substantially the same temperature, and raising the material to a higher flash test, the process also including the varying of the color of the product by passing the material for a greater or less distance through the chilled filtering material, substantially as described.



3. The process of producing lubricating oils from crude petroleum which comprises the reduction of such oil to the desired flash test, bringing said material to the specific gravity of from 70° to 35° Baumé, then reducing it to a temperature of from —10° to 40° Fahrenheit, and filtering the same at substantially the same temperature, substantially as described.

4. The process of producing lubricating oils from heavy materials of the petroleum class, which comprises the bringing of such materials to the specific gravity of from 70° to 35° Baumé by diluting the same with naphtha or its equivalent, reducing the temperature of the diluted material to a temperature of from —10° to 40° Fahrenheit and filtering the same at substantially the same temperature and finally eliminating the naphtha or equivalent, substantially as described.

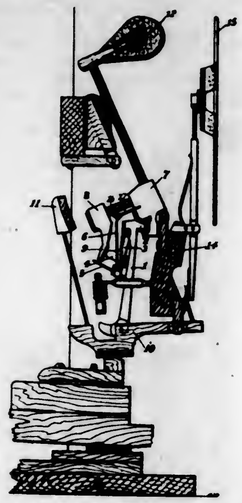
854,058. REPEATING ACTION FOR UPRIGHT PIANOS. CARL SAUTER, Baltimore, Md. Filed Oct. 19, 1906. Serial No. 339,609.

Claim.—1. A repeating piano action, comprising a hammer, a jack to actuate the hammer, a projection carried by the hammer, a lever interposed between and working against said jack and projection for effecting engagement of the jack and hammer, and a spring connecting the lever and hammer for actuating said lever.

2. A repeating piano action, comprising a hammer, a jack to actuate the hammer, a projection carried by the hammer, a lever pivoted to said jack and bearing against said projection for effecting engagement of the jack and hammer, and a spring connecting the lever and hammer for actuating said lever.

3. A repeating piano action, comprising a hammer, a projection carried by said hammer at the front thereof, a jack standing intermediate said hammer and projection, a lever pivoted to said jack and depending at the front thereof, said lever having a forward protuberance to en-

gage said projection, a spring secured to and extending upward from said lever, and connection between the upper end of said spring and the hammer.



4. A repeating piano action, comprising a hammer, a projection carried by the hammer at the front thereof, an upright jack disposed intermediate said hammer and projection, a lever pivoted to said jack and depending at the front thereof in position to bear against said projection, a spring connecting said lever and hammer, and a guide for said lever extending forward from the jack.

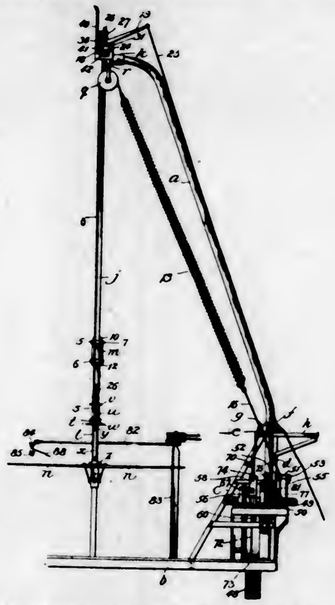
5. A repeating piano action, comprising a hammer, a projection carried by said hammer at the front thereof, an upright jack disposed intermediate said hammer and projection, a lever pivoted to said jack and depending at the front thereof in position to bear against said projection, a spring secured to and extending upward from said lever and having its upper end formed as a hook, and a loop connecting said hook and hammer.

6. A piano action, comprising a hammer, a wippen, an upright jack pivoted to said wippen and arranged to actuate said hammer and to be disengaged therefrom during the operative stroke, a back stop carried by said hammer at the front thereof and in front of said jack, said back stop having an arm depending therefrom, a lever pivoted to said jack and depending intermediate said jack and said arm in position to bear against the latter, a spring connecting said lever and said hammer, and a back check carried by said wippen in front of said back stop and in position to engage the same.

854,059. CORN-SHOCKING MECHANISM. JAMES E. SIMMONDS, Camp Point, Ill. Filed May 16, 1904. Serial No. 208,222.

Claim.—1. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon, locking shoulder mechanism upon one of such members, and detent mechanism mounted wholly upon the other member and movable into and out of engagement with such locking shoulder mechanism for preventing the upward movement of the shock-suspending mechanism when in engaging position and permitting its upward movement when in releasing position, substantially as described.

2. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon, locking shoulder mechanism upon one of such members, detent mechanism mounted wholly upon the other member and movable into and out of engagement with such locking shoulder mechanism for preventing the upward movement of the shock-suspending mechanism when in engaging position and permitting its upward movement when in releasing position, means for raising such shock-suspending mechanism, and means for operating such detent mechanism, substantially as described.



3. In a machine of the class described, the combination of a crane, shock-suspending mechanism slidably mounted thereon and provided with means for engaging the shock, hook mechanism mounted upon one of such members, detent mechanism mounted wholly upon the other member movable into and out of engagement with such hook mechanism for preventing the upward movement of the shock-suspending mechanism when in engaging position and permitting its upward movement when in releasing position, and means for moving such detent mechanism into and out of engagement with the hook mechanism, substantially as described.

4. In a machine of the class described, the combination of a crane, shock-suspending mechanism slidably mounted thereon and provided with means for engaging the shock, hook mechanism mounted upon one of such members, detent lever mechanism mounted wholly upon the other member movable into and out of engagement with such hook mechanism for preventing the upward movement of the shock-suspending mechanism when in engaging position and permitting its upward movement when in releasing position, means for releasing such shock-suspending mechanism with relation to the crane, and means for operating such detent lever mechanism, substantially as described.

5. In a machine of the class described, the combination of a crane, shock-suspending mechanism comprising a hollow shaft slidably mounted thereon and provided with means for engaging the shock, a keeper mounted upon the crane, detent lever mechanism mounted wholly upon such shaft, and means for releasing the shock-supporting mechanism from engagement with the shock, substantially as described.

6. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon and provided with means for engaging the shock, locking shoulder mechanism mounted upon one of such members, detent mechanism mounted upon the other member and movable into and wholly out of engagement with such locking shoulder, means for raising such shock-suspending mechanism, and means for disengaging the shock-suspending mechanism from the shock, substantially as described.

7. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon and provided with means for engaging the shock, a trigger rod mounted upon such shock-suspending mechanism and connected with the means for engaging the shock, locking shoulder mechanism mounted upon such trigger rod, a keeper mounted upon the head portion of the crane, and detent mechanism mounted upon the suspending mechanism and movable into and out of engagement with such locking shoulder and keeper, substantially as described.

8. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon and provided with means for engaging the shock, a trigger rod mounted upon such shock-suspending mechanism and connected with the means for engaging the shock, locking shoulder mechanism mounted upon such trigger rod, a keeper mounted upon the head portion of the crane, detent mechanism mounted upon the suspending mechanism and movable into and out of engagement with such locking shoulder and keeper, and a guard for limiting the movement of such detent mechanism, substantially as described.

9. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon and provided with means for engaging the shock, a trigger rod mounted upon such shock-suspending mechanism and connected with the means for engaging the shock, locking shoulder mechanism mounted upon such trigger rod, a keeper mounted upon the head portion of the crane, detent lever mechanism mounted upon the suspending mechanism and movable into and out of engagement with such locking shoulder and keeper, a guard for limiting the movement of such detent lever mechanism, and a cord connected with such detent lever mechanism for operating it, substantially as described.

10. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon and provided with mechanism for engaging the shock, trigger mechanism mounted upon such shock-suspending mechanism and connected with the mechanism for engaging the shock, locking shoulder mechanism mounted upon such trigger mechanism, a keeper mounted upon the head portion of the crane, and detent lever mechanism provided with a lever arm movable into and out of engagement with the keeper upon the head portion of the crane and having a detent arm provided with a stud movable into and out of engagement with the locking shoulder of the trigger mechanism, substantially as described.

11. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon and provided with mechanism for engaging the shock, trigger mechanism mounted upon such shock-suspending mechanism and connected with the mechanism for engaging the shock, locking shoulder mechanism mounted upon such trigger mechanism, a keeper mounted upon the head portion of the crane, detent lever mechanism provided with a lever arm movable into and out of engagement with the keeper upon the head portion of the crane and having a detent arm provided with a stud movable into and out of engagement with the locking shoulder of the trigger mechanism, and means for operating such detent lever mechanism, substantially as described.

12. In a machine of the class described, the combination of a crane, shock-suspending mechanism movably mounted thereon having a head arranged above such crane and provided with means for engaging the shock, a trigger rod connected with the mechanism for engaging the shock and extending above the crane, a head mounted upon such trigger rod provided with a locking shoulder, a keeper mounted upon the head portion of the crane, and detent lever mechanism mounted upon the suspending mechanism and movable into and out of engagement with the shoulder of the trigger rod and the keeper upon the crane head, substantially as described.

13. In a machine of the class described, the combination of a crane, shock-suspending mechanism comprising a hollow shaft slidably mounted in the head portion of such crane and provided with means for engaging a shock, means for raising such shock-suspending mechanism, a trigger rod extending through such hollow shaft provided with a locking shoulder and connected with the mechanism for engaging the shock, a keeper mounted upon the head portion of the crane, detent mechanism mounted upon the shock-suspending mechanism and movable into and out of engagement with such keeper and the shoulder portion of such trigger rod, and means for raising such shock-suspending mechanism, substantially as described.

14. In a machine of the class described, the combination of shock-suspending mechanism having a flexible element provided with means for engaging the shock, a crane arm, a keeper upon one of such members, detent mechanism connected with the other member and movable into and wholly out of engagement with the keeper, and spring and winding wheel mechanism connected with such flexible element for raising the shock-suspending mechanism automatically when the detent mechanism is released, substantially as described.

15. In a machine of the class described, the combination of a crane arm, shock-suspending mechanism comprising a cable and provided with means for engaging the shock, spring mechanism connected with the cable for raising the shock-suspending mechanism, a winding wheel connected with such spring mechanism, a driven wheel connected with a suitable source of power and provided with a stud adjacent to the winding wheel, a connecting arm mounted upon the winding wheel and movable into and out of engagement with the stud for connecting and disconnecting such winding wheel and driven wheel, a stop arm movable into and out of engagement with the connecting lever upon such winding wheel, means for rotating the crane, and a swinging arm mounted in the frame of the machine and provided with a pulley removably attached thereto for carrying and tightening the shock-binding cords into position with relation to the shock, substantially as described.

16. In a machine of the class described, the combination of a crane arm, shock-suspending mechanism connected therewith and provided with means for engaging the shock, means for operating such shock-suspending mechanism, and a swinging arm pivotally mounted upon the frame of the machine and provided with means for removably holding shock-compressing and binding cords, substantially as described.

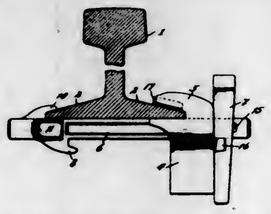
17. In a machine of the class described, the combination of a crane, shock suspending mechanism movably mounted thereon and provided with means for engaging the shock, locking mechanism mounted upon one of such members, detent mechanism mounted upon the other member and movable into and wholly out of engagement with the locking mechanism, means for raising the shock suspending mechanism, and means for disengaging the shock suspending mechanism from the shock, substantially as described.

854,060. RAILWAY-RAIL STAY. HIRAM H. SPONENBURG, Wadsworth, Ill., assignor, by direct and mesne assignments, to Laas & Sponenburg Co., a Corporation of Illinois. Filed Feb. 14, 1907. Serial No. 357,394.

Claim.—1. In a rail-stay, the combination of a pair of clamping members slidably connected, with a key by means of which the clamping members are brought into engagement with the rail flange, one of said members having a plurality of rail engaging devices differently positioned, whereby the stay may be adapted to rails of different size.

2. In a rail-stay, the combination of a pair of clamping members, with means for clamping the same against the rail flange, one of said members being provided with a plurality of rail-engaging devices, said rail engaging devices

being differently positioned so that one or another may be brought into operative position to accommodate for rails of different size.



3. In a rail-stay, the combination of a pair of clamping members, with means for clamping the same against the rail flange, one of said members being provided with a rigid, rail-engaging device and the other of said members being provided with a plurality of rail-engaging devices, said rail engaging devices being differently positioned so that one or another may be brought into operative position to accommodate for rails of different size.

4. In a rail-stay, the combination of a pair of clamping members, with means for clamping the same against the rail flange, a rigid, rail-engaging device on one of said members and a plurality of rigid, rail-engaging devices on the other member, said rail engaging devices being differently positioned so that one or another may be brought into operative position to accommodate for rails of different size.

5. In a rail-stay, the combination of a pair of clamping members, with means for clamping the same against the rail flange, one of said members being provided with a plurality of rail-engaging devices on different sides thereof, said rail-engaging devices being differently positioned so that one or another may be brought into operative position to accommodate for rails of different size.

6. In a rail-stay, the combination of a pair of clamping members, with means for clamping the same against the rail flange, one of said members consisting of a bar slidably engaged with the other member, and one of said members being provided with a plurality of rail-engaging devices, said rail engaging devices being differently positioned so that one or another may be brought into operative position to accommodate for rails of different size.

7. In a rail-stay, the combination of a pair of clamping members, with means for clamping the same against the rail flange, one of said members consisting of a bar slidably engaged with the other member and provided with a plurality of rail-engaging devices arranged on different sides of the bar.

8. In a rail-stay, the combination of a pair of clamping members, with means for clamping the same against the rail flange, one of said members consisting of a bar slidably engaged with the other member and provided with a plurality of rail-engaging devices arranged on different sides of the bar and at different distances from the end of the bar.

9. In a rail-stay, the combination of a block carrying a jaw, with a bar slidably connected therewith and having thereon a plurality of jaws, and a key by means of which the jaws are clamped upon the rail flange, and engaging device for the key corresponding to the several jaws on the bar.

10. In a rail-stay, the combination of a block carrying a jaw, with a bar slidably connected therewith and having thereon a plurality of jaws, a key by means of which the jaws are clamped upon the rail flange and engaging devices for the key on the bar corresponding to the several jaws on the bar.

11. In a rail-stay, the combination of a block having a jaw, with a bar extending through a perforation in the block, a plurality of jaws on the bar, and a key engaging with the end of the bar and abutting against the block.

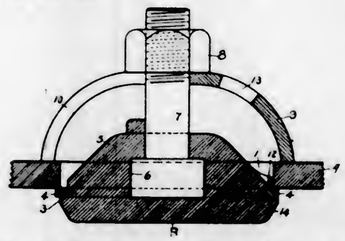
12. In a rail-stay, the combination of a block having a jaw, with a bar extending through a perforation in the block, a plurality of jaws on different sides of the bar, a key, and a plurality of engaging devices for the key on the bar corresponding to the several jaws.

13. In a rail-stay, the combination of a block having a jaw, with a bar extending through a perforation in the block, a plurality of jaws on different sides of the bar, a split key, and a plurality of engaging devices for the key on the bar corresponding to the several jaws.

14. In a rail-stay, the combination of a block having a jaw, with a bar extending through a perforation in the block, a plurality of jaws on different sides of the bar, a split key, a plurality of engaging devices for the key on the bar corresponding to the several jaws, and means for locking the key in position.

15. In a rail stay, the combination of a pair of clamping member, with means for clamping the same against the rail, one of said members having a plurality of rail engaging devices and being adapted to be set in different positions with respect to the other member, so as to bring any one of said engaging devices into operative position, whereby said stay may be applied to rails of different sizes.

854,061. HAND-HOLE PLATE FOR BOILERS. ROBERT C. STEVENS, Indianapolis, Ind. Filed June 6, 1906. Serial No. 320,409.



Claim.—1. The combination with a header or other sheet provided with a truly circular untapered unflanged opening therein, of a round closure therefor, of larger diameter than the opening, said closure being flatted on two opposite sides to permit its passage through the opening, the distance between the flatted portions being approximately equal to the diameter of the opening.

2. The combination with a header or other sheet provided with a round opening therein, of a round closure therefor, of larger diameter than the opening, said closure being flatted on two opposite sides to permit its passage through the opening, the distance between the flatted portions being approximately equal to the diameter of the opening, and guide lugs on the closure for centering it relative to the opening.

3. The combination with a header or other sheet having a truly circular untapered unflanged opening therein, of a closure therefor, a flange formed on the maximum periphery of the closure, the flange being flatted or cut away at diametrically opposite points and a gasket receivable on the flange.

4. The combination with a header or other sheet having a truly circular opening therein, of a circular closure therefor, of greater diameter than the opening, a flange formed around the maximum periphery of the closure, the closure and flange being flatted at two opposite points, and a packing ring receivable on the flange the inner periphery of the packing ring being flatted to correspond with the flatted portions of the closure.

5. The combination with a header or other sheet having a truly circular opening, of a circular closure therefor of greater diameter than the opening, the closure being flatted at two diametrically opposite points, the distance between the flatted portions being approximately equal to the diameter of the opening, a flange formed around the maximum periphery of the closure, and conforming to the flatted contour thereof, and a packing ring receivable on the flange, the packing ring extending beyond the flange at the flatted portions thereof.

6. The combination with a header or other sheet having a truly circular opening therethrough, of a circular closure for said opening, the closure being of greater diameter than the opening, a flange formed around the maximum periphery of the closure, the flange being flatted at two diametrically opposite points and a circular packing ring on the flange, the ring extending beyond the flange at the flatted portions thereof.

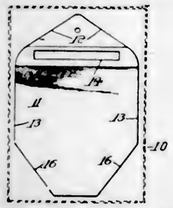
7. The combination with a header or other sheet having a truly circular opening therein, a circular closure therefor, of greater diameter than the opening, a flange formed around the greatest diameter of the closure, the flange only of the closure being flatted at two opposite points, lugs on the closure to center it relative to the opening, and a packing ring receivable on the flange, the closure adapted to pass through the opening.

8. The combination with a header or other sheet having a truly circular opening therein, of a one-piece circular inside-packed closure of larger size than the opening and adapted to pass through and close the opening, a flange on the closure to receive the packing, the flange and closure being flatted at two opposite points to enable it to pass through the opening, the flange overlapping the inner face of the header sheet around the opening except at the points of greatest flattening.

9. The combination with a sheet having a truly circular opening, of a hand-hole plate comprising a circular closure, a flat-faced flange on the closure, the maximum diameter of the flange being larger than the diameter of the opening, the flange being flatted at two opposite points to permit the closure to be inserted through the opening, the flat face of the flange adapted to bear against the inner face of the sheet, and a gasket interposed between the face of the flange and the inner face of the sheet.

10. The combination with a header sheet having a truly circular opening therein, of a round closure therefor of larger diameter than the opening, said closure being flatted on two diametrically opposite sides to permit of its passage through the opening and a flexible ring or gasket of larger diameter than the opening, such ring carried by the closure and engaging the inner face of the sheet around the opening.

854,062. SHIPPING PACKAGE AND HOLDER FOR GARMENTS OR THE LIKE. MAURICE M. STRAUSS, Chicago, Ill. Filed June 20, 1904. Serial No. 213,241.



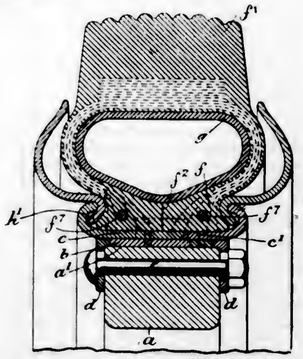
Claim.—1. In shipping packages for garments, the combination of a flat, rectangular box, a flat, rigid form of substantially similar outline fitting snugly within the box but freely removable therefrom, said form having inclined shoulder-engaging portions at its upper edge and straight side edges fitting the sides of the coat or like garment, and extending parallel with and closely adjacent the sides of the box, substantially as described.

2. A shipping package for garments comprising a flat rectangular box, and a flat, rigid form board of substantially similar outline fitting snugly within the box but freely removable therefrom, said form board having a transverse slot at its upper portion through which a pair of trousers may be placed and folded over the back and front surfaces thereof and said board also having inclined shoulder-engaging portions and a hanger at its upper edge, substantially as described.

3. A pasteboard shipping package for garments comprising a flat rectangular box and a flat, substantially rigid form constructed of a sheet of pasteboard, said form being of substantially similar outline as the box and snugly fitting within the same but freely removable therefrom, said pasteboard form having inclined shoulder-engaging portions at its upper edge and straight side edges fitting the sides of the coat or like garment and extending parallel with and closely adjacent the sides of the box, substantially as described.

4. A pasteboard shipping package for garments comprising a flat rectangular box and a flat, substantially rigid form constructed of a sheet of pasteboard, said form being of substantially similar outline as the box and snugly fitting within the same but freely removable therefrom and having a transverse slot at its upper portion through which a pair of trousers may be placed and folded over the front and back surfaces thereof, and said form having inclined shoulder-engaging portions and a hanger at its upper edge and straight side edges extending parallel with and closely adjacent the sides of the box and said form having a reinforcement of pasteboard about the slot therein, substantially as described.

854,063. WHEEL. JOHN THOMSON and FRANKLIN W. KREMER, New York, N. Y., assignors to Trident Tire Company, New York, N. Y., a Corporation of New York. Filed May 14, 1906. Serial No. 316,694.



Claim.—1. The combination with a wheel and a clencher tire, of a band applied to the body of the wheel with notches in its edge and a clencher ring formed of two circumferential members, one member being secured to the band, and the other member having lugs to enter the notches, clips to engage the notches in the band and to impinge upon the lugs, and means to secure the clips to the body of the wheel.

2. The combination with a wheel and a clencher tire, of a band applied to the body of the wheel with notches in its edge, a clencher ring formed of two circumferential members, one member secured to the band, and the other member having lugs to engage the notches, clips having lips to engage the notches in the band and to impinge upon the lugs and having elongated holes, and bolts passed through the holes in the clips on opposite sides of the wheel and through the felly of the wheel.

3. The combination with a wheel and a clencher tire of a band applied to the body of the wheel and notched on its edge, clips secured to the body of the wheel and engaging the notches in the band, a clencher ring formed of two circumferential members and co-operating lugs and recesses on the tire and the ring.

854,064. MARKING FOR NOTE-SHEETS. PERCIVAL K. VAN YORX, New York, N. Y., assignor to The Wilcox & White Company, Meriden, Conn., a Corporation of Connecticut. Filed Apr. 7, 1906. Serial No. 310,523.

Claim.—1. As an article of manufacture, a note sheet for automatic music playing instruments and the like, an

expression marking thereon comprising different distinguishing characters arranged in series extending longitudinally of the sheet to form in effect a line to indicate certain differences.



2. As an article of manufacture, a note sheet for automatic music playing instruments and the like, an expression marking thereon comprising different distinguishing characters arranged in series extending longitudinally of the sheet to form in effect a line to indicate certain differences, said line extending to the right and left relatively to the length of the sheet to indicate certain other differences.

3. As an article of manufacture, a note sheet for automatic music playing instruments and the like, an expression marking thereon comprising a series of different distinguishing characters arranged in line longitudinally of the sheet, said characters indicating certain differences said characters moving away from a given longitudinal line to indicate certain other differences.

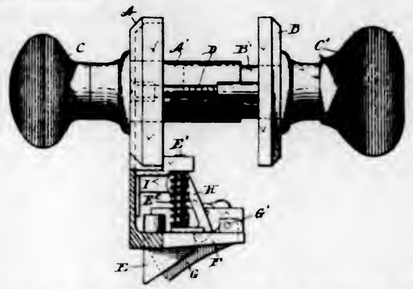
4. As an article of manufacture, a note sheet for automatic music playing instruments and the like, an expression marking thereon comprising different distinguishing letters arranged in series extending longitudinally of the sheet to form in effect a line to indicate certain differences.

5. As an article of manufacture, a note sheet for automatic music playing instruments and the like, an expression marking thereon comprising different distinguishing letters arranged in series extending longitudinally of the sheet to form in effect a line to indicate certain differences, said line extending to the right and left relatively to the length of the sheet to indicate certain other differences.

854,065. LATCH. HENRY G. VOIGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct. 4, 1906. Serial No. 337,344.

Claim.—1. In a latch mechanism, a latch bolt, two escutcheon plates, one of said plates being hollowed out at its inner side, a non-rotatable tubular connection carried by each of said plates, said connections being telescopic to admit of the adjustment of said plates to and fro, a rotatable knob spindle passing through said telescopic connection and concentric with the same, and means carried in the hollowed out portion of said plate connecting said spindle and said latch bolt.

2. In a lock and latch mechanism, a reciprocating latch bolt, a supporting plate therefor, a manually controlled slide, an oscillating retractor pivoted to said supporting plate and having an inclined front end slightly in advance of the adjacent inclined front end of the latch bolt, means to directly connect the latch bolt and retractor, and means to directly connect said retractor and said slide, said slide being connected to said bolt only through the medium of said retractor.

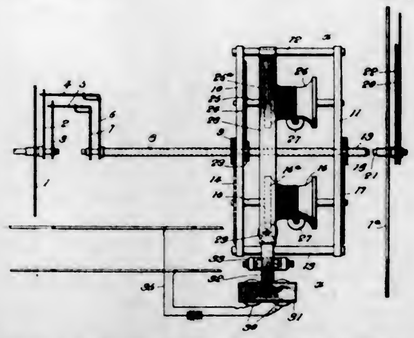


3. In a lock and latch mechanism, a reciprocating latch bolt, a supporting plate therefor, a manually controlled slide separate from said bolt, an oscillating retractor pivoted to said supporting plate and having an inclined front end slightly in advance of the adjacent inclined front end of the latch bolt, means to directly connect the latch bolt and retractor, and means to directly connect said retractor and said slide, the last mentioned means permitting the retractor and latch bolt to be moved independently of the slide, said slide being connected to said bolt only through the medium of said retractor.

4. In a latch mechanism, two escutcheon plates, one of said plates being hollowed out at its inner side to afford room for latch retracting mechanism, including a slide, an interior cover plate for said hollowed out escutcheon plate overstanding said latch retracting mechanism, two telescopic non-rotatable tubular connecting devices carried by said plates respectively and arranged concentric with the axis of rotation of the latch actuating devices.

5. In a latch mechanism, two separable escutcheon plates, rotatable latch actuating mechanism carried by and at the inner side of one of said plates, a telescopic tubular non-rotatable connection between said plates, said connection being concentric with the axis of the rotatable latch actuating mechanism.

854,066. CLOCK MECHANISM FOR SIGNALS. FRANK O. WARNER, Baltimore, Md. Filed Feb. 25, 1907. Serial No. 359,146.



Claim.—1. The combination with a clock, its dial and hands, of an indicator disk provided with characters corresponding to the characters of the clock dial, pointers adapted to revolve over the face of said disk, shafts upon

which said pointers are mounted, means for revolving said shafts, fingers carried by the respective shafts, said fingers extending into the path of the clock hands and adapted to come in contact therewith to stop the rotation of the shafts, means for holding said shaft-revolving means inoperative, and means for automatically releasing such holding means.

2. The combination with a clock, its dial and hands, of an indicator disk provided with characters corresponding to and in registry with the characters of the clock dial, pointers adapted to revolve over the face of said disk, independent shafts upon which said pointers are mounted, means for revolving said shafts, fingers carried by the respective shafts and in registry with said pointers, said fingers extending into the path of said clock hands, and adapted to engage the same to stop the rotation of the shafts, means for holding said shaft revolving means inoperative, and means for automatically releasing such holding means.

3. The combination with a clock, its dial and hands, of an indicator disk provided with characters corresponding to and in registry with the characters of the clock dial, pointers adapted to revolve over the face of said disk, independent shafts upon which said pointers are mounted, means for revolving said shafts, fingers carried by the respective shafts and in registry with said pointers, said fingers extending into the path of said clock hands, and adapted to engage the same to stop the rotation of the shafts, means for holding said shaft revolving means inoperative, and means for automatically releasing such holding means, the said fingers being yieldable in one direction only.

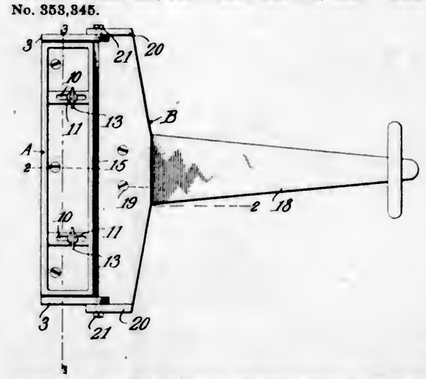
4. The combination with a clock, its dial and hands, of an indicator disk, pointers mounted to revolve across the face of said disk, a shaft upon which one of said pointers is mounted, a weight actuated drum adapted to revolve said shaft, a framework in which said drum is journaled, another shaft to which the other pointer is secured, a third shaft, said latter shaft and the first named shaft being provided with fingers adapted to extend into the path of movement of the clock hands, another weight actuated drum adapted to rotate the shafts for the said other pointer, means for holding said drums against movement, and means for automatically releasing said holding means.

5. The combination with a clock and its dial and hands, of an indicator disk, two pointers mounted to revolve around the face of said disk, a shaft to which one of said pointers is connected, a framework in which said shaft is journaled, an arm secured to the said shaft and provided with a finger projecting into the path of movement to one of the clock hands, a pinion mounted on said shaft, a gear wheel meshing with said pinion, a spindle journaled in the framework and carrying said gear wheel, a weight actuated drum mounted on said spindle, another spindle journaled in said framework, a weight actuated drum mounted on said last named spindle, gear wheels secured to the ends of said last named spindle, pinions meshing with the said gear wheels, hollow shafts journaled in the framework, and to which said last named pinions are secured, said hollow shafts extending oppositely from the framework and inclosing the first named shaft, the other pointer being secured to one of said hollow shafts, an arm secured to the other hollow shaft and provided with a finger projecting into the path of movement of the other clock hand, means for holding said drums as against movement, and automatic means for releasing said holding means.

6. The combination with a clock and its dial and hands, of an indicator disk, two pointers mounted to revolve around the face of said disk, a shaft to which one of said pointers is connected, a framework in which said shaft is journaled, an arm secured to the said shaft and provided with a finger projecting into the path of movement of one of the clock hands, a pinion mounted on said shaft, a gear wheel meshing with said pinion, a spindle journaled in the framework and carrying said gear wheel, a weight actuated drum mounted on said spindle, another spindle journaled in said framework, a weight actuated drum mounted on said last named spindle, gear wheels secured to the ends of said last named spindle, pinions meshing with the said gear wheels, hollow shafts journaled in the framework, and to which said last named pinions are secured, said hollow shafts extending oppositely from the framework and inclosing the first named shaft, the other pointer being secured to one of said hollow shafts, a beam pivotally mounted at one end in the framework and free at its other end, said drums being provided with rims arranged for engagement by said beam, whereby to hold said drum stationary, and automatic means for moving said beams out of engagement with said rims.

7. The combination with a clock and its dial and hands, of an indicator disk, two pointers mounted to revolve around the face of said disk, a shaft to which one of said pointers is connected, a framework in which said shaft is journaled, an arm secured to the said shaft and provided with a finger projecting into the path of movement of one of the clock hands, a pinion mounted on said shaft, a gear wheel meshing with said pinion, a spindle journaled in the framework and carrying said gear wheel, a weight actuated drum mounted on said spindle, another spindle journaled in said framework, a weight actuated drum mounted on said last named spindle, gear wheels secured to the ends of said last named spindle, pinions meshing with the said gear wheels, hollow shafts journaled in the framework, and to which said last named pinions are secured, said hollow shafts extending oppositely from the framework and inclosing the first named shaft, the other pointer being secured to one of said hollow shafts, a beam pivoted at one end in the framework, the other end of the beam being free, the drums being provided with rims with which said beam is adapted to engage whereby to hold the drums stationary, an electro-magnet, an armature therefor, a rocking lever to one arm of which said armature is connected, the other arm of said lever extending underneath the free end of the beam, a support for said lever, a circuit in which said electro-magnet is included, and means for closing said circuit.

854,067. METAL-BENDING MACHINE. CHARLES E. WEEKS, Carterville, Mo. Filed Jan. 21, 1907. Serial No. 353,345.



Claim.—1. A metal bending machine comprising a stationary member consisting of upper and lower boxes spaced away from each other to form a slot adapted to receive sheet metal, the lower box having grooves in its upper surface and the upper box having slots located above said grooves, gage blocks mounted in said grooves and having threaded shanks extending upward through the slots in said upper box, wing nuts connected with said threaded shanks, and a swinging member pivotally connected with the lower box of said stationary member.

2. A metal bending machine comprising a stationary member consisting of upper and lower boxes spaced away from each other to form a slot adapted to receive sheet metal, said lower box having depending front, rear and side flanges, upstanding end flanges and grooves in its upper surface, and said upper box having upstanding front,

rear and side flanges, said front flanges being rearwardly inclined, said upper box being also formed with thickened slotted portions above the grooves in said lower box, gage blocks mounted in the grooves of said lower box and having threaded shanks extending upward through the slots in said upper box, wing nuts engaging the threaded shanks of said gage blocks, and a swinging member consisting of a box having depending front, rear and side flanges, upstanding end flanges overlapping the upstanding end flanges of the lower box of the stationary member and pivotally connected therewith, and a handle connected with the depending flanges of said swinging member.

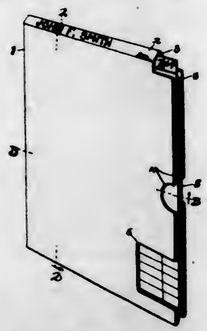
854,068. RAZOR-STROP FASTENER. WILLIAM WHITELEY, New Britain, Conn., assignor to North & Judd Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Jan. 21, 1907. Serial No. 353,203.



Claim.—1. In a device of the character described, a body portion, a hook pivoted thereto, the axis of said pivot being in the plane of the hook, a loop-like device pivoted to the body portion, the axis of said loop pivot being at right angles to the axis of the hook pivot.

2. In a device of the character described, a body portion, a single hook open at one side and pivoted to said body portion, the axis of said pivot being in the plane of the hook, a loop-like device pivoted to said body in a plane at right angles to the axis of the hook pivot.

854,069. CREDIT-ACCOUNT-FILING SYSTEM. EDGAR J. WILLIAMS, Cincinnati, Ohio. Filed Oct. 18, 1906. Serial No. 339,536.



Claim.—1. In a system of the character indicated the combination of an envelop having a display opening in the face thereof, a statement slip adapted to fit into said envelop and having the face thereof arranged to receive entries so that a portion of said entries will show through said display opening and a carrier arranged to hold said statement without covering up the portion of the face of said slip which registers with said opening.

2. In a system of the character indicated the combination of an envelop having a display opening in the face thereof, a statement slip adapted to fit into said envelop and having the face thereof arranged to receive entries so that a portion of the marginal entries will show through said display opening and a carrier comprising a sheet of stiff material folded upon itself to form two leaves, one of which forms a backing for said slip and the other overlaps the face thereof without covering the portion of the face of said slip which registers with said opening.

3. In a system of the character indicated the combination of an envelop, one or more statements slips adapted to fit into said envelop and arranged to receive entries of current accounts and a carrier comprising a sheet of stiff material folded upon itself to form two leaves arranged to receive said statement slip between them, each of said leaves being arranged to receive entries of past or liquidated accounts.

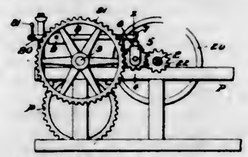
4. In a system of the character indicated the combination of an envelop having a display opening at the top and a display opening at the bottom of the face portion thereof, and a statement slip adapted to fit into said envelop and having the face portion arranged to receive entries so that a portion of said entries will show through said display openings.

5. In a system of the character indicated the combination of an envelop having a display opening at the top and a display opening at the bottom of the face portion thereof, a statement slip adapted to fit into said envelop and having the face thereof arranged to receive entries so that a portion of the marginal entries will show through said display opening and a carrier arranged to hold said slip without covering up the portion of the face of said slip which registers with said openings.

6. In a system of the character indicated the combination of an envelop having its upper top edge inclined at an angle to the face thereof and arranged to receive a name or other mark of identification, said envelop having a display opening at the top and a display opening at the bottom of the face portion, and a statement slip adapted to fit into said envelop and having the face portion arranged to receive entries so that a portion of said entries will show through said display openings.

7. In a system of the character indicated, the combination with an envelop having its upper top edge inclined at an angle to the face thereof and arranged to receive a name or other mark of identification, said envelop having a display opening at the top in line with the inclined surface and a display opening at the bottom of the face portion, a statement slip arranged to fit into said envelop so that the upper right hand corner thereof will appear through the display opening at the top of said envelop and having entries so disposed thereon that the totals, credits, debits and balances will show through the display opening at the bottom of said envelop and a carrier arranged to fit into said envelop, said carrier comprising two leaves, one of which is adapted to form a backing for the statement slip and the other leaf is arranged to partially cover the face of said slip leaving the marginal columns thereon uncovered and columns arranged on said carrier for receiving entries relative to the previous statement slips held by said envelop.

854,070. GEAR-EVENER AND POWER-INDICATING MEANS. MYRON I. WILSON, Ohiman, Ill. Filed May 4, 1906. Serial No. 315,200.



Claim.—1. The combination with a driving shaft a drive pinion at each end, a driven shaft a cog or spur wheel at each end in alinement with the drive shaft pinions; an idler pinion between each set of drive pinions and driven spur wheels, and means for loosely suspending said idlers to intermesh with the gears on the driving and driven shaft.

2. The combination in a drive gear mechanism, of a drive shaft, a driven shaft, a pair of drive gears on the drive shaft, and a pair of spur wheels on the driven shaft in alinement with the drive gears, and an indicator; of an idler gear for each set of driver and driven gears, means for holding said idlers in mesh with the driver and driven gears, said idlers having a limited shiftable movement and adapted to automatically actuate the indicator devices under a predetermined resistance of the driven gears thereon.

3. The combination with the drive shaft and its gears, the driven shaft and its gears driven from the drive gears, and an alarm; of a pivoted lever having an adjustable counterpoise at one end, and a hammer to engage the alarm; a bar disposed transversely of the lever, centrally supported on the front end of the lever, and a gear loosely suspended from each end of the bar held to mesh with the drive and driven gears at each side of the machine, for the purposes described.

4. The combination with the drive shaft and the driven shaft, the spur wheels on the driven shaft and the drive pinions or gears on the drive shaft; of a bar held in parallel plane with the drive and driven shafts, a stirrup pendently supported from each end of the bar and a gear loosely journaled in each stirrup, said gears being held to mesh with the driving and driven gears on the driving and driven shafts aforesaid.

854,071. PROCESS OF RENDERING MANILA COPAL, &c., INSOLUBLE IN OIL. WILLY BARINGER, Berlin, Germany. Filed Feb. 15, 1906. Serial No. 301,324.

Claim.—A process for rendering Manila copal, sandarac and similar resins insoluble in oil, consisting in intimately mixing the resin which must be soluble in alcohol with 1 to 5% of a fatty oil, and then slowly heating the mixture to a temperature at which it becomes viscous, the mass being maintained at this temperature from one half to one hour, substantially as and for the purpose herein set forth.

854,072. ELECTRIC-LIGHTING SYSTEM FOR RAILWAY-CARS. WILLIAM J. BOHAN, St. Paul, Minn. Filed Dec. 3, 1906. Serial No. 346,000.

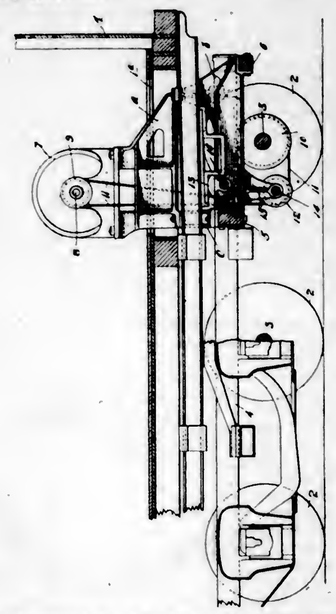
Claim.—1. The combination with a car having swiveled trucks, of a dynamo located within the car body and supported from one of the swiveled trucks thereof, and connections for driving said dynamo from a truck axle, substantially as described.

2. The combination with a car having swiveled trucks, of a dynamo supporting frame carried by one of said swiveled car trucks and projecting into the car body through openings in the bottom thereof, a dynamo supported within the car body, by said supporting frame, and means for driving said dynamo from one of the truck axles, substantially as described.

3. The combination with a car having center sills extending longitudinally of the floor of the body thereof, dynamo supporting legs or brackets carried by one of the trucks and extending into the car body through openings in the floor thereof on opposite sides of the center sills thereof, and a dynamo supported within said car body, by said supporting legs or brackets, and overlying the said center sills, substantially as described.

4. The combination with a car having swiveled trucks, of a dynamo supporting frame carried by one of the swiveled trucks of said car and projecting into the body thereof, a dynamo supported within the car body, by said supporting frame, a pulley on the armature shaft of said dynamo, a pulley on one of the truck axles, a belt running over said pulleys, and a pair of vertically spaced idle guide pulleys carried by the truck frame, operative on the intermediate portion of said driving belt and arranged to compensate for vertical vibrations of said truck frame, substantially as described.

5. The combination with a car, of an arched dynamo supporting frame carried by one of the car trucks and projecting into the car body and spanning an intermediate portion of the car floor, a dynamo supported within the car body, by said supporting frame, and means for driving said dynamo from one of the axles of said car truck, substantially as described.



6. The combination with a car, of a dynamo supporting frame carried by one of the car trucks and projecting into the car body through the bottom thereof, a dynamo supported within the car body, by said frame, pulleys on the opposite ends of the armature shaft of said dynamo, a pair of pulleys carried by one of the axles of said truck, belts running over the alined pulleys on said axle and armature shaft, and intermediate belt guiding pulleys carried by said truck, substantially as described.

854,073. CURTAIN-FASTENING DEVICE. ARTHUR F. BRUCKNER and GEORGE SAYRE, Elgin, Ill. Filed Sept. 14, 1906. Serial No. 334,594.



Claim.—1. A fastening device, comprising a suitable base, a chambered body portion having axial and lateral openings in its walls, studs removably and slidably arranged in the lateral openings, a plunger removably arranged in the chambered portion, bearing against said studs, and having an extension projecting through the axial opening, and a spring bearing on said plunger.

2. A fastening device comprising a suitable base, a chambered body portion having axial and lateral openings in its walls, studs slidably arranged in said lateral openings a plunger slidably arranged in said axial opening and normally bearing against said studs, a spring engaging said plunger, and a removable plug inserted in said base and forming a bearing for said spring.

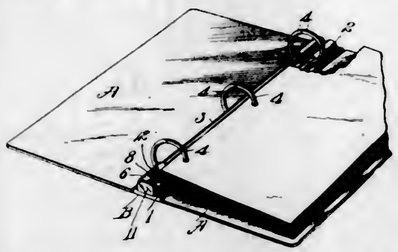
3. A fastening device comprising a suitable base, a chambered body portion having axial and lateral openings therein, studs slidably arranged in said lateral openings, a plunger slidably arranged in said axial opening and bearing against said studs, a spring engaging said plunger to

hold it in its projected position, a screw plug forming a closure for said chambered portion and provided with an extension adapted to be secured to a suitable support.

4. A fastening device comprising a suitable base having an opening therein, a body portion projecting from said base with lateral openings therein, and having a chamber registering with said opening, a plug removably mounted in said opening and having a stem projecting therefrom, a coil-spring arranged in said chamber and bearing on said plug, a plunger mounted in said chamber, having a portion projecting through said body portion, and having its inner end bearing on said spring, and studs slidably mounted in said lateral openings and having their inner ends bearing on said plunger.

5. In a fastening device, a chambered body having axial and lateral openings, a push member slidably mounted in said body and consisting of a plunger having a convex portion, a recessed portion and an extension, said extension projecting through said body, and means for normally holding said extension in its projected position.

854,074. TEMPORARY BINDER. CLYDE J. BRYANT, St. Louis, Mo. Filed Apr. 14, 1906. Serial No. 311,777.



Claim.—1. In a temporary binder, the combination of a pair of rockable rods provided with sheet receiving prongs, and a pair of connected slidable rod actuating members loosely fitted to said rods and having engagement therewith whereby said rods are rotated in unison, substantially as set forth.

2. In a temporary binder, the combination of a pair of rockable rods provided with sheet receiving prongs, and a pair of connected slidable rod actuating members loosely fitted to said rods and having slot and pin engagement therewith whereby said rods are rotated in unison, substantially as set forth.

3. In a temporary binder, the combination of a pair of pocket members, a pair of rockable rods loosely seated in said pocket members and provided with sheet receiving prongs, and actuating means slidably fitted to said rods and having engagement therewith whereby said rods are rotated in unison when said actuating means is moved in a direction longitudinally of said rods, substantially as set forth.

4. In a temporary binder, the combination of a pair of pocket members, a pair of rockable rods loosely seated in said pocket members and provided with sheet receiving prongs, a pair of slidable rod actuating members loosely fitted to said rods and having engagement therewith to impart rotation thereto; said rod acutating members being united to each other, substantially as set forth.

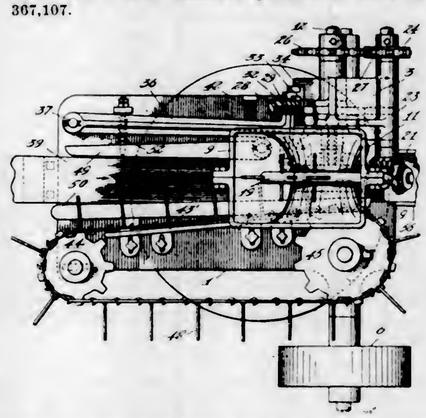
5. In a temporary binder, the combination of a pair of pocket members, a pair of rockable rods loosely seated in said pocket members and provided with sheet receiving prongs, a pair of slidable rod actuating members loosely fitted to said rods and having engagement therewith to impart rotation thereto, and a finger-piece connecting said rod actuating members, substantially as set forth.

6. In a temporary binder, the combination of a pair of pocket members, a pair of prong carrying rods loosely seated in said pocket members and provided with cam slots, and a pair of slidable rod actuating members loosely fitted to said rods and having portions thereof arranged to operate in said slots, substantially as set forth.

7. In a temporary binder, the combination of a pair of pocket members, a pair of prong carrying rods loosely seated in said pocket members and provided with cam shaped slots, a pair of slide rods loosely fitted to said prong carrying rods, and having studs arranged to operate in the slots in said rods, substantially as set forth.

8. In a temporary binder, the combination of a pair of pocket members, a pair of prong carrying rods loosely seated in the pocket members and provided with cam shaped slots, a pair of slide rods loosely fitted to said prong carrying rods and having studs arranged to operate in the slots in said rods, and a finger-piece connecting said slide rods, substantially as set forth.

854,075. CAN-SALTING MACHINE. FRANK W. BURPEE, Bellingham, Wash., assignor to Burpee and Letson, Limited, Bellingham, Wash., a Corporation of Washington. Filed Mar. 1, 1905. Renewed Apr. 8, 1907. Serial No. 367,107.



Claim.—1. In combination with a can conveyer, a receptacle for the material, a carrier for conveying the material for deposit in the cans on said conveyer, and mechanism for ejecting the material from the carrier at different points in the travel thereof, whereby the material can be deposited into the cans or at a point without the same.

2. In combination with a can conveyer, a salt receptacle, means for conveying salt from the receptacle to the cans, and mechanism for ejecting the salt from said conveyer, said mechanism being controlled by the cans.

3. In combination with a can conveyer, a receptacle for the material to be deposited in the cans, a carrier for conveying the material from said receptacle to the cans, ejector means for ejecting the material from the carrier, and mechanism for operating said ejector means to eject the material from the carrier, said mechanism being controlled to vary the point in the path of travel of the carrier at which the ejection normally occurs.

4. In a machine of the type set forth, in combination with a receptacle, a carrier in communication therewith for receiving and conveying a quantity of material therefrom, means for ejecting the material from said carrier and mechanism for controlling and operating said means to eject the material from the carrier before or after the same passes out of communication with said receptacle.

5. In a machine of the type set forth, in combination with a receptacle, a can conveyer, a carrier provided with a plurality of means adapted to receive material from the receptacle for deposit in successive cans, and mechanism for ejecting the material from the said carrier, said mechanism being normally set to effect the ejecting of the material before the carrier passes out of communication with said receptacle and being controlled by the cans.

6. In a machine of the type set forth, in combination with a receptacle, a carrier formed with pockets succes-

sively filled with material from said receptacle, and mechanism for automatically ejecting the material from said pockets back into the receptacle, or without the same.

7. In a machine of the type set forth, in combination with a receptacle having its bottom formed with an opening and being curved inwardly, a revolving carrier having its rim extending across said opening and being formed with pockets adapted to receive material from said receptacle, ejectors for said pockets, means for operating said ejectors after the pockets have passed out of communication with the opening, and means whereby said ejectors can be operated before the pockets pass out of communication with said receptacle.

8. In a machine of the type set forth, in combination with a receptacle formed with discharge opening, a rotary carrier formed with pockets moving into communication with said discharge opening as the carrier rotates, ejectors in said pockets, and means whereby said ejector can be operated independently at different points in the path of travel of the carrier.

9. In combination with a receptacle having an opening in its bottom, a rotary carrier having pockets adapted to register with said opening, ejectors mounted in said pockets, levers connected with said ejectors, and a stationary cam engaging the free ends of said levers for reciprocating said ejectors during movement of the carrier.

10. In combination with a receptacle having a discharge opening, a carrier provided with means for receiving material to be deposited in cans, ejectors in said means, means for reciprocating said ejectors at a predetermined point of travel of the carrier to deposit the material into the cans, and means whereby said ejectors can be reciprocated before reaching such point in the travel of the carrier.

11. In combination with a receptacle, a rotary carrier for conveying material therefrom, said carrier being formed with pockets, ejectors in said pockets, a stationary sectional cam formed with a cam groove, levers connected at one end to said ejectors and having their other ends received in the groove of said cam, and means whereby one cam section can be adjusted to and from the other section whereby the movement of said levers will be varied.

12. In a machine of the type set forth, a receptacle having its bottom formed with an opening and curved inwardly on the arc of a circle, a rotary carrier having its rim extending across said opening and being formed with pockets, ejectors in said pockets, means for reciprocating the same, and an inclined agitator in said receptacle, said agitator having fingers extending into proximity to the opening of said receptacle.

13. In a machine of the type set forth, in combination with a receptacle, a rotary carrier provided with means to receive material from said receptacle, ejectors in said means, a cam, levers connected at one end to said ejectors and having their other ends arranged in the track of said cam, said track being formed to oscillate said levers at predetermined points of their travel, a supplemental track section for oscillating said levers between said points of travel, and means for moving said supplemental track section onto and off of said cam track.

14. In a machine of the type set forth, in combination with a receptacle, a rotary carrier provided with means to receive material from said receptacle, ejectors in said means, a cam formed with a track, levers connected with said ejectors and having their other ends engaging said track, said track being formed to oscillate said levers at predetermined points of their travel and said cam being formed with an opening therebetween, a supplemental track section movable onto and off of said track through said opening of the cam, and means for operating said supplemental track section, substantially as and for the purpose specified.

15. In a machine of the type set forth, in combination with a receptacle, a can conveyer underlying the same, a continuously moving carrier for conveying material from said receptacle for deposit into cans on the conveyer, and means for controlling the depositing of the material from said carrier, said means including an element projecting into the path of travel of the cans.

16. In a machine of the type set forth, in combination with the receptacle and the carrier for discharging material therefrom, a conveyer movable beneath said carrier, and a second conveyer consisting of an endless belt provided with plates movable over the first named conveyer in a direction longitudinally thereof, substantially as and for the purpose set forth.

17. In a machine of the type set forth, in combination, a receptacle, a rotary means forming a conveyer for discharging material from said receptacle into the cans, a conveyer provided with engaging means for conveying cans to the receptacle, and means for controlling the discharging of material from said rotary means, said last named means embodying an element projecting into the path of movement of the cans.

18. In a machine of the type set forth, in combination with the base, a receptacle, and means mounted above the base for discharging material from the receptacle, can guides mounted on the base, one of said guides being pivoted and yieldingly pressed to its normal position, means for conveying the cans between said guides, and means for operating said last named means.

19. In a machine of the type set forth, a base, a belt conveyer mounted thereon, a second conveyer angularly disposed toward said first named conveyer and being provided with plates between which the cans are received, said plates projecting over said belt conveyer, and can guides on opposite sides of said belt conveyer, in combination with means arranged above the base for depositing material in the cans as they are moved therebeneath.

20. In a machine of the type set forth, a base, a belt conveyer mounted thereon, a second conveyer angularly disposed toward said first named conveyer and being provided with plates between which the cans are received, said plates projecting over said belt conveyer, and can guides diverging toward the rear end of the base and being arranged on opposite sides of said belt conveyer, one of said guides being fixed and the other yieldingly pressed, in combination with means arranged above the base for depositing materials in the cans as they are moved therebeneath.

21. In a machine of the type set forth, in combination, a base, a can conveyer mounted thereon, a receptacle arranged above the base, a carrier formed with a pocket to receive and discharge material from said receptacle, means for normally preventing any discharge of material from said receptacle, and means for operating said means comprising an arm pivoted to the base at one end, a vertical arm rigidly connected to the free end of said arm and having its upper end connected to said first named means, and a second arm rigidly connected to said swing arm and projecting into the path of movement of the cans.

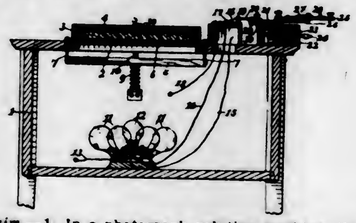
22. In a machine of the type set forth, in combination with a base, and an endless conveyer movable thereon, a receptacle formed in its bottom with an opening, a carrier having its rim formed with pockets to receive material through the opening of said receptacle, ejectors mounted in said pockets, a cam formed with a track, means connected to said ejectors and engaged in said track for reciprocating said ejectors, a supplemental track section, normally overlying a portion of said track, and means for removing said supplemental track section from the track of the cam, said last means embodying an element arranged in the path of travel of the cans, substantially as and for the purpose specified.

23. In a machine of the type set forth, a can conveying and spacing means comprising an endless belt conveyer for reception of the cans, a second conveyer consisting of an endless belt disposed at an acute angle to said first conveyer and having plates movable thereover for engagement with the cans, and means for operating said conveyers.

24. In a machine of the type set forth, a base, a receptacle arranged above the same, means for discharging material from the receptacle, said means normally not being set to discharge material from the receptacle, and means for actuating said means to effect the discharge of material from the receptacle, said last means including an element arranged above the base, in combination with a

conveyer for moving the cans into engagement with said element, and can guides, one of said guides being capable of adjustment relatively to said element, substantially as and for the purpose specified.

854,076. PHOTOGRAPHIC-PRINTING MACHINE. JOSEPH C. CALHOUN, Holland, Mich., assignor of one-half to George P. Hummer, Grand Rapids, Mich. Filed May 17, 1906. Serial No. 317,275.



Claim.—1. In a photograph printing machine, the combination of means for holding sensitized paper in contact with a negative, an electric light, a switch to open and close the circuit of the light, a clock adapted to open the switch, and means for adjusting the clock to open the switch at a pre-determined time.

2. In a photograph printing machine, the combination of means for holding sensitized paper in contact with a negative, an electric light of actinic color, an electric light of non-actinic color, a separate circuit for each light, a switch adapted to shift the circuits, a clock mechanism to shift the switch at a predetermined time, and means for adjusting the clock mechanism to determine said time.

3. In a photograph printing machine, a case having a transparent panel, a movable platen opposite the panel, an electric light in said case, a switch to close and break the circuit of the light, clock mechanism adapted to shift the switch, and means for adjusting said mechanism to determine the time of exposure.

4. In a photograph printing machine, means for holding sentitized paper in contact with a negative, an actinic electric light and a non-actinic electric light, separate circuits for said lights, a movable lever to shift said circuits, a disk, an arm attached to said disk and engaging said lever to move the same and shift the circuits, a lever adjustable on said disk and also adapted to engage said lever, and means for rotating the disk at a predetermined rate of speed.

5. In a photograph printing machine, means for holding sensitized paper in contact with a negative, an electric light, a switch to close and open the circuit of the light, two relatively adjustable members to respectively close and open the switch, and clock mechanism to move said members at a predetermined rate of speed.

6. In a photograph printing machine, a case, a transparent panel in the case, an elastic tape extending across the panel, a movable and elastic platen above the panel, an actinic light in the case, and means for extinguishing the light after a predetermined time of exposure.

7. In a photograph printing machine, a case, a transparent panel in the case, pivoted arms at the respective sides of the panel, a tape attached to said arms and extending across the panel, a spring to move the arms in one direction, means for moving the arms in the opposite direction, an elastic and movable platen above the panel, an actinic light in the case, and means for automatically extinguishing the light at a predetermined time.

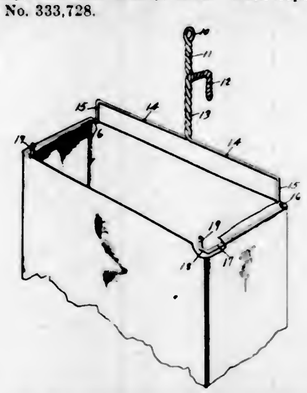
8. In a photograph printing machine, a case, a transparent panel in the case, pivoted levers at the respective sides of the panel, a tape attached to the levers and extending across the panel, a spring to move the levers in one direction, a pin to move the levers in the opposite direction, and a platen hinged to the case and adapted to rest upon the panel when closed and to engage and move the pin when opened.

9. In a photograph printing machine, a case, a transparent panel in the case, a movable tape extending across the panel, a movable and elastic platen above the panel, a white electric light and a red electric light in the case, separate circuits for the respective lights; a contact in each circuit, a movable lever to alternately engage the contacts and shift the circuits, a rotative disk provided with recesses, clock mechanism to rotate the disk, an arm attached to the disk and adapted to engage and move the switch lever in one direction, a lever rotative about the axis of the disk and also adapted to engage the switch lever and oppositely move the same, and a latch on the last named lever to engage the recesses in the disk.

10. In a photograph printing machine, a case, a transparent panel in the case, levers at the respective sides of the panel, a tape attached to one end of each of said levers, and extending across the panel, a bar connecting the other ends of said levers, a spring and a pin oppositely engaging said bar, a frame hinged to the case and engaging said pin when opened, an elastic pad in the frame, an actinic light in said case, and means for extinguishing said light after a predetermined time of exposure.

11. In a photograph printing machine, a case, a transparent panel in the case, an elastic tape extending across the panel, pivoted levers to which the tape is attached, a spring to move the levers in one direction, a pin to move the levers in the other direction, a frame hinged to the case said frame resting upon the panel when closed and engaging the pin when open, two differently colored electric lights in said case, two separate circuits for said lights, a switch to shift said circuits, a disk, clock mechanism for rotating the disk, an arm and a lever on said disk and adapted to oppositely move the switch, and means for relatively adjusting the arm and lever on the disk.

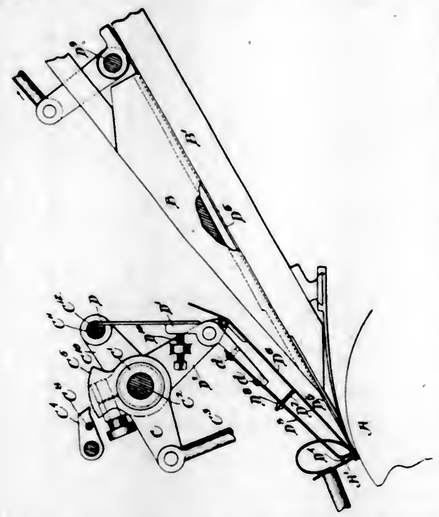
854,077. BAG-HOLDER. OSCAR CRONHOLM, Fairfield township, Palo Alto county, Iowa. Filed Sept. 5, 1906. Serial No. 333,728.



Claim.—An improved bag holder, formed complete of a single piece of spring wire and comprising a loop at the central portion of the wire, a twisted portion extended downwardly from the loop, a hook formed in said twisted portion, a rear piece formed by inclining the wire in opposite directions from the twisted portion, downwardly extended portions at the ends of the rear piece, outwardly extended shoulders at the ends of said downwardly extended portions, side pieces connected with said shoulders, inwardly extended shoulders at the forward portions of the side pieces having upwardly projected ends on said shoulders.

854,078. CONTROLLING MECHANISM FOR MACHINES ACTING ON SHEETS. FRANK L. CROSS, Mystic, Conn., assignor to Cross Paper Feeder Company, Boston, Mass., a Corporation of Maine. Filed Apr. 3, 1905. Serial No. 253,647.

Claim.—1. Controlling mechanism for machines acting on sheets, having in combination front gages against which the sheet is registered, a movable finger arranged above the path of the sheets back of the line of the front gages, means for lifting the sheet against the finger, and throw-out mechanism controlled through the movement of said finger.



2. Controlling mechanism for machines acting on sheets having in combination, throw-out mechanism, a finger arranged above the path of the sheets, means for lifting the sheet against the finger, and devices for controlling the operation of the throw-out mechanism through said finger.

3. Controlling mechanism for machines acting on sheets, having in combination front gages against which the sheet is registered, a movable finger arranged above the path of the sheets back of the line of the front gages, a lifting device extending between the sheet and the cylinder when the sheet is against the front gages, means for operating the lifting device to lift the sheet against the finger, and throw-out mechanism controlled through said finger.

4. Controlling mechanism for machines acting on sheets, having in combination throw-out mechanism, a moving controlling device the arrest of which renders said mechanism active, a stop for arresting the controlling device, a finger connected to operate said stop and arranged out of the path of the sheet, and means for pressing the sheet against said finger to render the stop inactive.

5. Controlling mechanism for machines acting on sheets, having in combination throw-out mechanism, a moving controlling device the arrest of which renders said mechanism active, a stop for arresting the controlling device, a finger connected to operate said stop and arranged above the path of the sheet, and a coöperating plate for carrying the sheet against said finger.

6. Controlling mechanism for machines acting on sheets having in combination throw-out mechanism, a finger arranged above the path of the sheets, intermediate devices for controlling the operation of the throw-out mechanism, a guard for directing the edge of the sheet under the finger, and a coöperating plate for lifting the sheet against the finger.

7. Controlling mechanism for machines acting on sheets, having in combination front gages against which the sheet is registered, a movable finger arranged above the path of the sheets and back of the line of the front gages, a coöperating plate below the path of the sheets, means for moving the plate toward the finger, and throw-out mechanism controlled through said finger.

8. Controlling mechanism for machines acting on sheets, having in combination a finger arranged out of the path of the sheets, a guard movable independently of the finger for directing the edge of the sheet past the finger, a coöperating plate on the opposite side of the path of the sheets, means for forcing the plate toward the finger, and throw-out mechanism controlled through said finger.

9. Controlling mechanism for machines acting on sheets, having in combination front gages against which the sheet is registered, a finger having its front end arranged back of the line of the front gages and above the path of the sheet, a plate extending from the front of the feed board beneath the finger, means for raising and lowering said plate, and throw-out mechanism controlled through said finger.

10. Controlling mechanism for machines acting on sheets, having in combination front gages against which the sheets are registered, a finger having its front end arranged back of the line of the front gages and above the path of the sheets, a guard extending below the front end of the finger, a plate projecting from the front end of the feed board below the finger, means for raising and lowering the plate, and throw-out mechanism controlled through said finger.

11. Controlling mechanism for machines acting on sheets, having in combination a pivoted finger D^3 having its front end arranged above the path of the sheets, a stop D connected with said finger, a plate D^6 extending below said finger, means for raising and lowering said plate, a moving device the movement of which is arrested by the stop when in normal position, and throw-out mechanism rendered active by the arrest of said moving device.

12. Controlling mechanism for machines acting on sheets, having in combination a pivoted finger D^3 having its front end arranged above the path of the sheets, a pivoted guard D^8 arranged below said finger, a plate D^6 extending below the end of said finger, means for raising and lowering the plate, and throw-out mechanism controlled through said finger.

13. Controlling mechanism for machines acting on sheets, having in combination a finger arranged out of the path of the sheets, a transversely adjustable support for said finger, a stop connected with said finger, a transverse bar adapted to be engaged by said stop, means for reciprocating said bar, throw-out mechanism rendered active by the arrest of said bar, a transversely adjustable plate arranged to press the sheet against said finger, and means for moving said plate toward and away from said finger.

854,079. SHEET-FEEDING MACHINE. FRANK L. CROSS, Mystic, Conn., assignor to Cross Paper Feeder Company, Boston, Mass., a Corporation of Maine. Filed July 31, 1905. Serial No. 271,904.

Claim.—1. In a sheet-feeding mechanism the combination with a pivoted supply table, of racks secured to the table, arms pivoted below the table, a shaft mounted in said arms, guide-ways on said table for said shaft, and pinions on the shaft engaging the racks.

2. A sheet feeding mechanism having in combination, a supporting frame provided with a rear section adapted to rest on the feed board of a press, one or more folding front sections, a rear support for the rear section, and devices for withdrawing and advancing the supporting frame.

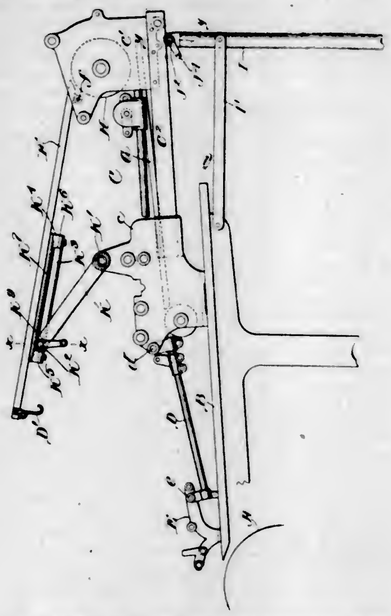
3. A sheet feeding mechanism having in combination, a supporting frame provided with a rear section adapted to rest on the feed-board of a press, one or more folding front sections connected with the rear section, a rear support for the rear section, a shaft mounted in the rear support, and connections between the shaft and rear section for withdrawing and advancing the frame by the rotation of the shaft.

4. In a sheet feeding mechanism the combination with a pivoted supply table, of an arm pivoted below the table, a rotatable pinion mounted in the arm, and a rack on the table engaged by the pinion.

5. In a sheet feeding mechanism the combination with a pivoted supply table, of racks secured to the table, arms pivoted below the table, a shaft journaled in said arms, pinions on said shaft engaging said racks, and stops for determining the travel of the pinions.

6. In a sheet feeding machine the combination with a

feed table of a supply table having its front end pivoted above the rear end of the feed table, one or more supporting arms pivoted below the supply table and manually operated mechanism for swinging said arms to raise and lower the supply table.



7. In a sheet feeding mechanism the combination with a feed table of a supply table pivoted above the feed table, one or more supporting arms pivoted below the supply table, and stops on the supply table for the arms arranged to lie on opposite sides of the vertical plane through the pivotal axis of the arms when engaged by the arms.

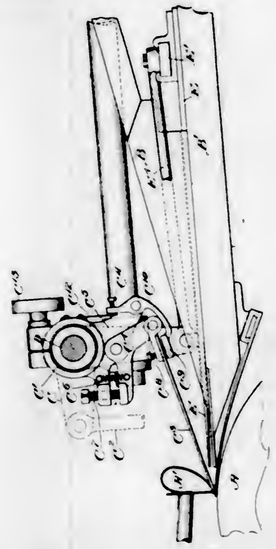
8. In a sheet feeding mechanism the combination with a feed table of a supply table pivoted above the feed table, one or more supporting arms pivoted below the supply table, and devices mounted on the supply table and upper end of the arms for moving the ends of the arms longitudinally along the table to raise and lower the same.

9. A sheet feeding mechanism having in combination, a supporting frame provided with a rear section adapted to rest on the feed board of a press, one or more folding front sections, a rear support for the rear section, a shaft mounted in said support, one or more racks on the rear section, and one or more pinions on the shaft engaging said racks to withdraw and advance the frame by rotation of the shaft.

854,080. CONTROLLING MECHANISM FOR MACHINES ACTING ON SHEETS. FRANK L. CROSS, Mystic, Conn., assignor to Cross Paper Feeder Company, Boston, Mass., a Corporation of Maine. Filed Apr. 3, 1905. Renewed Nov. 2, 1906. Serial No. 341,782.

Claim.—1. Controlling mechanism for machines acting on sheets, having in combination front gages against which the sheet is registered, throw-out mechanism, an arm connected therewith arranged at one side of the path of the sheet and provided with a shoulder back of the line of front gages, an actuator arranged on the opposite side of the path of the sheets and rendered inactive by an interposed sheet.

2. Controlling mechanism for machines acting on sheets, having in combination front gages against which the sheet is registered, throw-out mechanism, an arm connected therewith arranged at one side of the path of the sheets, a recess in said arm back of the line of the front gages, and an actuator adapted to engage said recess in the absence of a sheet between the arm and actuator.



3. Controlling mechanism for machines acting on sheets, having in combination throw-out mechanism, an arm connected therewith and arranged above the path of the sheets, a recess in said arm, and an actuator arranged below the path of the sheets and adapted to engage said recess in the absence of a sheet between the arm and actuator.

4. Controlling mechanism for machines acting on sheets, having in combination throw-out mechanism, an arm connected therewith and arranged above the path of the sheet, a shoulder on said arm located above the edge of the sheet when in position, and an actuator arranged below the path of the sheet and adapted to engage said shoulder in the absence of a sheet between the arm and actuator.

5. Controlling mechanism for machines acting on sheets, having in combination throw-out mechanism, an arm connected therewith, and a reciprocating actuator between which and the arm the sheets pass, a shoulder on said arm in line with the movement of the actuator, and means for adjusting said arm to vary the position of the shoulder in said line.

6. Controlling mechanism for machines acting on sheets, having in combination throw-out mechanism, an arm connected therewith and having its free end above the path of the sheets, a recess in the free end of the arm, and a reciprocating actuator bar arranged below the path of the sheets.

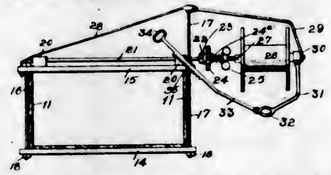
7. Controlling mechanism for machines acting on sheets, having in combination throw-out mechanism, an arm yieldingly connected therewith and having its free end arranged above the path of the sheets, a recess in the free end of the arm, and a reciprocating actuator bar arranged below the path of the sheets.

8. Controlling mechanism for machines acting on sheets having in combination throw-out mechanism, an inclined arm pivotally connected therewith and having its free end arranged above the path of the sheets, a reciprocating actuator below the path of the sheets, a shoulder on the arm in line with the movement of the actuator, and means for adjusting said arm longitudinally and vertically.

9. Controlling mechanism for machines acting on sheets, having in combination front gages against which the sheet is registered, an arm having its free end arranged above the path of the sheets, a shoulder on said arm back of the line of the front gages, a reciprocating bar arranged below the path of the sheets and prevented from engaging said shoulder by the sheet, and throw-out mechanism connected with said arm.

10. Controlling mechanism for machines acting on sheets having in combination, front gages against which the sheet is registered, throw-out mechanism, a connected arm inclined toward the front gages and having its free end above the path of the sheets, a shoulder on said arm, a reciprocating actuator bar below the path of the sheets and prevented from engaging said shoulder by the sheet.

854,081. REEL FOR WAGONS. EDWARD B. CURTIS, Parker, S. D. Filed Oct. 19, 1906. Serial No. 339,688.



Claim.—1. The combination with a wagon bed, of a cross piece below the wagon and a cross piece above the wagon bed, two bolts connecting said cross pieces, one of them projected above the upper cross piece and projected beyond one side of the wagon, and a brace connected at one end with one end of the upper cross piece and at its other end with the top of the upwardly projected bolt, and an arm pivoted to said brace and detachably connected with the outer end of the shaft.

2. The combination of a wagon bed, a frame secured to the wagon bed, a wire reeling shaft mounted in the frame and projected beyond the side of the wagon bed, a collar detachably and rotatably mounted on the outer end of the shaft, an arm pivoted to said collar and formed with a wire guiding eye, a rack pivoted to said arm, and a pin connected with the frame to be engaged by said rack.

854,082. WAVE-POWER MOTOR. TAD DANFORD, Granby, Colo. Filed July 2, 1906. Serial No. 324,350.

Claim.—1. In a wave power motor, a float, means for driving a shaft in one direction by the movement of the float, and means for reducing the variable movement of the shaft to a uniform, constant speed.

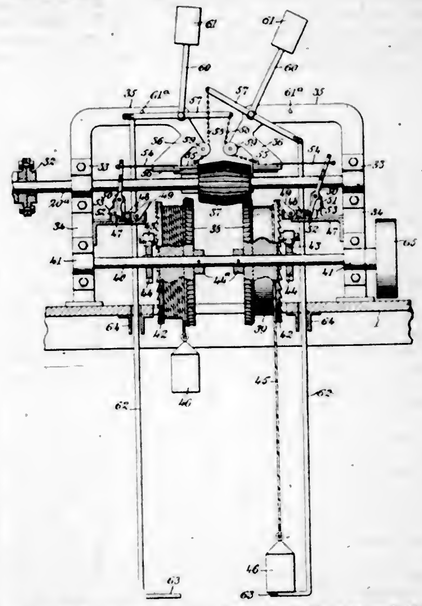
2. In a wave power motor, a float, a shaft, gears journaled on said shaft, means connected with the float adapted to drive one of said gears in opposite directions, a gear intermeshing with said gears for driving them in opposite directions, and means connecting said first-named gears with the shaft whereby said gears drive the shaft in the same direction.

3. In a wave power motor, a float, a shaft, a walking beam mounted intermediate the float and shaft and connected to the float, a rack bar carried by the walking beam, a gear journaled on the shaft adapted to drive it as the rack bar moves in one direction, and a second gear journaled on the shaft adapted to drive it in the same direction when the rack bar moves in the opposite direction.

4. In a wave power motor, a driven shaft, a second shaft, drums journaled on the second shaft, means for driving said drums alternately from said first-named shaft, and means actuated by said drums adapted to give said second shaft a uniform, rotary motion.

5. In a wave power motor, a variably driven shaft, a second shaft, and gearing intermediate said shafts for transforming the variable movement of said first-named shaft into a uniform rotary motion.

6. In a wave power motor, a variably driven shaft, a second shaft, drums journaled on the second shaft adapted to drive it in the same direction, and means automatically operated by said drums for alternately driving them from the first shaft.



7. In a wave power motor, a driven shaft, a second shaft, drums journaled on the second shaft, means slidably mounted on the driven shaft for driving the drums alternately in the same direction, means actuated by the drums to shift the slidable means on the driven shaft, and means adapting the drums to turn the second shaft in the same direction.

8. In a wave power motor, a driven shaft, a second shaft, drums journaled on the second shaft, means slidable on the driven shaft to alternately engage and drive the drums, a weight attached to a flexible connection adapted to be wound about each drum while being driven, and means causing the weights to drive the second shaft when the flexible connections attached thereto unwind.

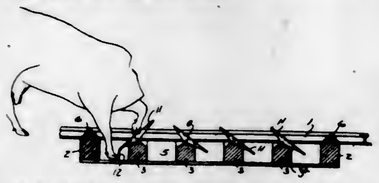
9. In a wave power motor, a driven shaft, a second shaft, drums journaled on the second shaft, means for alternately driving the drums, means for causing the drums to drive the second shaft when moved in one direction, and flexible means carrying weights at their lower ends adapted to be wound about the drums when the latter are moved in the opposite direction.

10. In a wave power motor, a driven shaft, a second shaft, drums journaled on the second shaft, means slidable on the driven shaft adapted to alternately engage the drums and drive them in one direction, flexible connections attached to the drums having weights at their lower ends, and means actuated by the weights for shifting the slidable means on the driven shaft.

854,083. CATTLE-GUARD. THADDEUS ELLIS and JOHN FINNELL, Tacoma, Wash. Filed Sept. 13, 1905. Serial No. 278,248.

Claim.—1. In a cattle guard, the combination of a frame provided with a tie, rails positioned upon said tie, said tie provided with a pair of parallel, longitudinally-extending beveled edges, a plate, and means pivotally securing said plate to said tie near the middle thereof and between said beveled edges, whereby said plate may be swung to engage and bear upon either of said beveled edges.

2. In a cattle guard, the combination of a frame provided with a tie, rails positioned upon said tie, said tie provided with pairs of beveled edges formed at opposite sides of each of said rails, eye-bolts secured to said tie between said beveled edges, plates positioned upon said tie, means pivotally securing said plate to said eye-bolts, whereby said plates may be swung to opposite sides of said tie and engage said beveled edges.

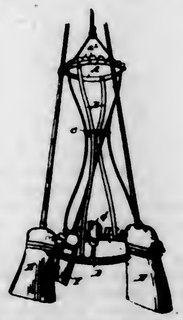


3. In a cattle guard, the combination of a frame provided with a tie, rails positioned upon said tie, said tie provided with beveled edges formed upon opposite sides thereof, a plate provided with depending brackets at its ends, means pivotally connecting said brackets to said tie between said beveled edges, each bracket converging from its center in opposite directions to its outer edges, producing inclined bearing edges adapted to engage the beveled edges of said tie.

4. In a cattle guard, the combination of a frame, comprising a series of parallel ties, boards positioned at the ends of and connecting all of said ties, vertical spacing blocks positioned transversely of and secured between each two contiguous ties and against said boards, each tie provided with horizontal bearing surfaces extending entirely across its upper face, rails resting upon the bearing surfaces of said ties, each tie provided with a plurality of oppositely inclined beveled edges formed between the bearing surfaces and the ends of the tie, and a plurality of movable plates carried by each tie and adapted to engage said beveled edges.

5. In a cattle guard, the combination of a frame provided with a tie, rails positioned upon said tie, said tie provided with beveled edges formed upon opposite portions thereof, a guard member provided with reinforcing depending brackets near its ends, positioned upon said tie, means engaging said brackets and securing said guard member between said beveled edges, and said brackets adapted to engage some of said beveled edges when said guard member is swung to either side of the tie.

854,084. BROOM-RACK. ORLAND C. FLETCHER, Chicago, Ill. Filed Dec. 12, 1904. Renewed Nov. 2, 1906. Serial No. 341,780.



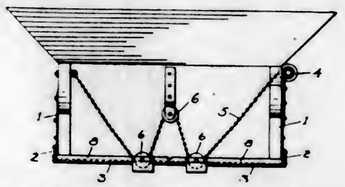
Claim.—1. In a rack, an upper ring having embracing loops secured thereto, a base ring having embracing loops secured thereto, an intermediate ring without loops and metal straps detachably connected with said upper and base rings and passing through said intermediate ring.

2. In a rack, a base ring having a plurality of loops secured thereto, each of said loops consisting of a wire bent to form a broom embracing portion, and legs adapted to be secured to the ring and some of said loops having portions of their legs bent and arranged to form hooks or spurs, and means for securing said loops to said rings.

3. In a rack, one or more rings having eyes formed therein by cutting and punching the metal, a plurality of loops composed of wire bent to form embracing portions extending at right angles from said ring, and having their legs extending through and secured in said eyes.

4. In a rack, a ring, embracing loops secured thereto, said loops having portions projecting into said ring and forming spurs or hooks for the purpose described.

854,085. DUMP-WAGON. CHARLES A. GRIGGS, Troy, Ohio, assignor to The Troy Wagon Works Company, Troy, Ohio, a Corporation of Ohio. Filed Mar. 18, 1907. Serial No. 363,027.



Claim.—1. In a dump-wagon, a hinged bottom door formed from sheet metal, and a reinforcing bar for the bottom of said door, said reinforcing bar being formed hollow and of a U-shape and having laterally-extending flanges secured to said door, substantially as specified.

2. In a dump-wagon, a hinged bottom door formed from sheet metal, and a hollow reinforcing bar for the bottom of said door, said bar being formed of a U-shape and being tapered in height from its center toward its respective ends and having lateral flanges secured to said door, substantially as specified.

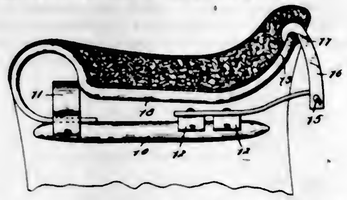
3. In a dump-wagon, a hinged bottom door, a sheave supporting bracket at each end of said door having an extending shank, a hollow U-shaped reinforcing bar having lateral flanges secured to said door, said reinforcing bar being tapered in height from its center toward its respective ends and being adapted to embrace said bracket shanks at its ends, and devices for securing the bar, shanks and door together, substantially as specified.

4. In a dump-wagon, a hinged bottom door, angle-shaped pieces secured to the respective ends of said door to provide upwardly-extending flanges for said door, a hollow U-shaped reinforcing bar having lateral flanges secured to said door, said flanges terminating adjacent to said angle-shaped pieces, a sheave supporting bracket at each end of the door having an extending shank, said hollow bar being tapered in height from its center toward its respective ends and adapted to embrace said shanks, and securing devices to secure the bar, shanks and door together, substantially as specified.

5. In a dump-wagon, a hinged bottom door, a sheave supporting bracket at each end of said door having an extended shank, a U-shaped reinforcing bar extending across the bottom of said door and adapted to embrace said shanks at its respective ends, and means for securing the bar, shanks and door together, substantially as specified.

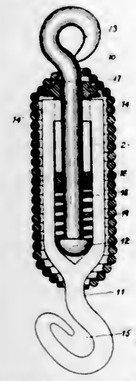
854,086. SADDLE. JOHN H. GILLESPIE, Beallsville, Ohio. Filed June 8, 1906. Serial No. 320,817.

Claim.—1. The combination, with the side bars and cross connections, of the seat springs, connected at their front ends to the side-bars, and extending forward and bent upward over and rearward in recurvate bends, forming the base of the pommel, the rear portion of the spring being expanded into a broadened loop and bent upward to constitute the cantle, the sides of the spring extending nearly parallel with the side bars and above the same, the longitudinally arranged spring strap connected at its inner end with the cross connections of the side bars, and the bifurcated link pivotally connected at its lower end with the outer end of the spring strap, and at its upper end with the cantle portion of the saddle spring.



2. The combination, with the side-bars and their connections, of the spring-seat consisting of a length of wire formed into a loop at its rear end expanded laterally and bent upwardly, forming the cantle, the front portions extending forward and the ends being bent upward, over, downward, and rearward in recurvate bends, the extreme ends being rendered attachable to the side-bars, and resilient means connecting the rear of the cantle with the rearward part of the side-bars.

854,087. SPRING DEVICE. CARL HAINLIN, New York, N. Y., assignor, by direct and mesne assignments, of one-fourth to Eugene E. Von Seyfried, Newark, N. J., and one-fourth to Julius Davis, New York, N. Y. Filed Feb. 18, 1907. Serial No. 358,045.



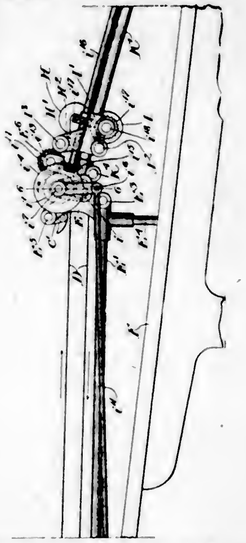
Claim.—In a spring device: a headed bolt; a slotted tube about said bolt and provided with a head; a spring about said bolt and interposed between said slotted tube and the head of said bolt; a forked bolt about said headed bolt, having stops engaging the slots of said tube; and a helical spring about said bolts and spring, concentric therewith and inclosing said bolts and spring.

854,088. SHEET-FEEDING MACHINE. HENNING HALLSTREAM, East Bridgewater, Mass., assignor to American Paper Feeder Company, Boston, Mass., a Corporation of Maine. Filed Oct. 19, 1904. Serial No. 229,079.

Claim.—1. The combination of sheet conveying surfaces, mechanism for driving said surfaces at a substantially constant speed during the major part of their action on the sheet and then gradually retarding said speed just previous to the release of the sheet by said surfaces.

2. The combination of sheet conveying surfaces, traveling sheet conveyers delivering sheets to said surfaces, mechanism for driving said surfaces at the speed of the traveling conveyers during the major part of their action on the sheet and then gradually retarding said surfaces as the rear of the sheet passes between them.

3. The combination of traveling tapes for conveying sheets, delivery rolls to which said tapes deliver the sheets, mechanism for driving said rolls at the speed of the tapes and gradually retarding said rolls as the rear of the sheet passes between them.



4. The combination of traveling tapes for conveying sheets, delivery rolls to which said tapes deliver the sheets, front gages, mechanism for rotating said rolls at the speed of the tapes to bring the sheets near the front gages and then gradually retarding said rolls.

5. The combination of front gages, sheet conveying surfaces for delivering sheets to the front gages, mechanism for driving said surfaces at a substantially constant speed during the major part of their action on the sheet and then gradually retarding them as the sheet is brought to the front gages.

6. The combination of front gages, sheet conveying surfaces for delivering sheets to the front gages, mechanism for driving said surfaces at a substantially constant speed during the major part of their action on the sheet and for gradually retarding them during their action upon the rear end of the sheet.

7. The combination of front gages, delivery rolls for delivering sheets to the front gages, mechanism for driving said rolls at a substantially contant speed during the major part of their action on the sheet and for gradually retarding them during their action upon the rear end of the sheet.

8. The combination of front gages, sheet conveying surfaces for delivering sheets to the gages, gearing through which motion is transmitted to said surfaces, a driving member moving at a uniform speed, and mechanism for causing a relative movement between the driver and gearing as the sheet comes to the front gages.

9. The combination of front gages, sheet conveying surfaces for delivering sheets to the gages, a driving member rotating at a uniform speed, gearing through which motion is transmitted to said surfaces, and mechanism for intermittently moving said gearing in the direction of rotation of the driving member to slow down the conveying surfaces as the sheet comes to the front gages.

10. The combination of front gages, sheet conveying surfaces for delivering sheets to the gages, a driving member, a driven member through which motion is transmitted to said surfaces, intermediate gearing between said members for transmitting motion from the driving to the driven member and in the opposite direction, and mechanism for

moving said intermittent gearing to slow down said surfaces as the sheet comes to the front gages.

11. The combination of front gages, sheet conveying surfaces for delivering sheets to the gages, a driving gear rotating at a constant speed, gearing connecting said driving gear and conveying surfaces including a movable gear engaging the driving gear, and mechanism for moving said gear about the axis of the driving gear to slow down the conveying surfaces as the sheet comes to the front gages.

12. The combination of sheet conveying surfaces, a gear connected to transmit motion thereto, a pinion driving said gear and movable about the axis thereof, and mechanism for intermittently moving said pinion about the axis of said gear to slow down the conveying surfaces at intervals.

13. The combination of front gages, sheet conveying surfaces for delivering sheets to the gages, a driving gear, a pinion engaging the same and movable about the axis of the gear, connections between the pinion and conveying surfaces for transmitting motion thereto, and mechanism for moving said pinion about the axis of the gear to slow down the conveying surfaces as the sheet comes to the front gages.

14. The combination of sheet conveying surfaces, a driving gear, a driven gear connected with the surfaces to transmit motion thereto, intermediate gearing rotating the driven gear in a reverse direction, and mechanism for intermittently moving said intermediate gear about the axis of the gears to slow down the conveying surfaces at intervals.

15. The combination of sheet conveying surfaces, a gear f^4 connected therewith, a driving gear f^3, a pinion f^5 connecting said gears, and mechanism for intermittently swinging said pinion about the axis of said gears.

16. The combination of sheet separating mechanism, a pivoted conveyer frame, conveyer tapes mounted therein, a front frame pivoted to the front end of said conveyer frame, delivery rolls carried by the front frame, gearing for driving said rolls comprising a gear concentric with the pivot of a front frame.

17. The combination of sheet separating mechanism, a pivoted conveyer frame, conveyer tapes mounted therein, a front frame pivoted to the front end of said conveyer frame, delivery rolls carried by the front frame and adjustable longitudinally thereof, and mechanism for driving said rolls.

854,089. WIRE-STRETCHER. JOHN R. HAMILTON, Auburn, Iowa. Filed Feb. 13, 1907. Serial No. 357,128.

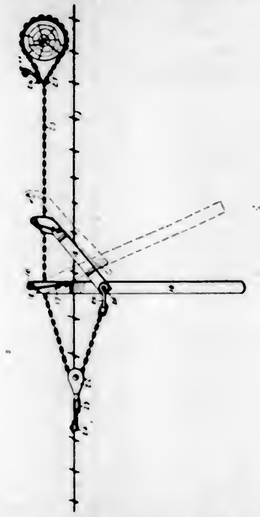
Claim.—1. An improved wire stretcher, comprising a lever, a chain gripping pawl thereon, an arm pivoted to the lever and also provided with a chain gripping device, a pulley, a chain secured to the lever at one end, then passed around the pulley, means for connecting the other end of said chain to a support and a wire gripping device connected with the pulley.

2. An improved wire stretcher, comprising a lever, a chain gripping pawl on the lever, an arm pivoted to the lever, a chain gripping pawl thereon, a pulley, a wire gripping device connected with the pulley, a chain connected with the lever at the point where the said arm is pivoted, said chain passed around said pulley and in engagement with both of said chain gripping pawls and having at one end a hook and a wire gripping device.

3. In a wire stretcher, the combination of a lever having extension sides at one end and shoulders formed on the inner faces of said sides, a chain gripping pawl pivoted between the ends of the extension sides and extended toward the body portion of the lever and a spring for holding the free end of the chain gripping pawl toward the body portion of the lever.

4. In a wire stretcher, the combination of a lever having extension sides at one end and shoulders formed on the inner faces of said sides, a chain gripping pawl pivoted between the ends of the extension sides and extended toward the body portion of the lever, a spring for holding the free end of the chain gripping pawl toward the body portion of the lever and a handle fixed to said chain gripping device.

5. A wire stretcher, comprising a lever, extension sides on one end of the lever, a chain gripping pawl pivoted between the outer ends of the extension sides and extended toward the body portion of the lever, a spring for holding the free end of said pawl in a direction toward the body portion of the lever, an arm pivoted to the lever and also having extension sides and a pawl pivoted between said



sides, a pulley, a wire gripping device attached to the pulley, a chain connected with the said lever and arm at the pivot point of the arm, said chain passed around said pulleys and between the extension sides of the lever and arm and provided on one end with a hook and a wire gripping device.

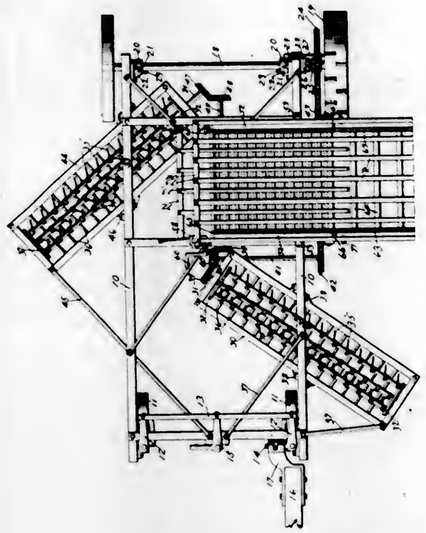
854,090. HAY-LOADER. AUGUST J. HANSEN, Walnut, Iowa. Filed June 18, 1906. Serial No. 322,635.

Claim.—1. In a hay loader, the combination of a frame, supporting wheels therefor, a rotary hay rake mounted in the frame and extended diagonally thereof, a conveyer chute extended transversely of the frame adjacent to the rear end of the rotary hay rake, said rake arranged to move hay from beneath the side of the main frame toward the center of the frame and to the receiving end of the conveyer chute, a conveyer in said chute and means for rotating the hay rake and for advancing the conveyer.

2. In a hay loader, the combination of a frame, a rotary hay rake attached at one side of the frame and inclined rearwardly and toward the center of the frame, a second rotary hay rake at the other side of the frame and in the rear of the first, inclined rearwardly from the side of the machine to which it is attached also toward the center of the frame and a conveyer having its lower end arranged to run close to the ground and adjacent to the rear end of the rear rake and means for rotating said rakes and advancing the conveyer.

3. In a hay loader, the combination of a frame, a rake fixed to one side of the frame and extended rearwardly and toward the center of the frame, a second rake in the rear of the first attached to the opposite side of the frame and extended rearwardly and toward the center of the frame in position to engage hay that had been engaged by the first rake and left standing on the ground, a conveyer fixed to the frame and standing close to the ground adjacent to the rear end of the rear rake and means for advancing said conveyer.

4. In a hay loader, the combination of a frame, supporting wheels at the forward end thereof, supporting wheels at the rear end thereof, means for adjusting the rear end of the frame relative to the rear supporting wheels to raise and lower it relative to the ground, a forward and a rear rotary hay rake fixed to the frame and both attached to opposite sides of the frame and inclined rearwardly and toward the center of the frame and a hay elevator with its lower end close to the ground and arranged to receive hay from the rear end of the rear rake.

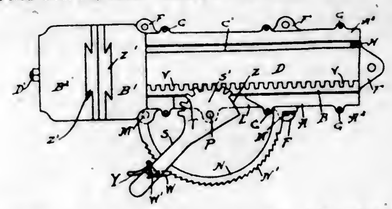


5. In a hay loader, the combination of a frame, a rake fixed to one side of the frame and extended rearwardly toward the center of the frame, a second rake in the rear of the first attached to the opposite side of the frame and extended rearwardly and toward the center of the frame in position to engage hay that had been engaged by the first rake and left standing on the ground, a conveyer fixed to the frame and standing close to the ground adjacent to the rear end of the rear rake, means for advancing said conveyer, a lateral extension at the top of the conveyer and means for vertically adjusting it.

6. In a hay loader, the combination of a frame, supporting wheels for the frame, a rotary hay rake fixed to one side of the frame and extended rearwardly and toward the center of the frame, a second rotary hay rake in the rear of the first attached to the other side of the frame and extended rearwardly and toward the center of the frame, a conveyer chute fixed to the frame with its lower end adjacent to the rear of the rear rake and its body portion extended laterally and away from the rear rake, an extension chute pivoted to the top of the main chute and extended laterally and means for adjusting the incline of the extension chute, a conveyer comprising chains and cross slats and extending over both chutes and arranged to return beneath them and means actuated by power derived from the frame and rotating the hay rakes and advancing the conveyer.

7. In a hay loader, the combination of a frame, a hay rake frame fixed to the main frame, a rotary shaft in said hay rake frame, two disks at the ends of the shaft, cross pieces extending between said disks and attached to them, a series of rake teeth attached to each cross piece and each made of spring wire and having a coil wound upon the cross piece with the teeth extending at a slight incline away from the line at right angles to the cross piece and curved guards fixed to the rake frame to extend under the cross bars and between the rake teeth.

854,091. VISE. MITCHELL J. HILBERG, Cincinnati, Ohio. Filed Dec. 11, 1905. Serial No. 291,202.



Claim.—1. In a vise, a stationary jaw, a movable jaw, said movable jaw sliding in said stationary jaw, a toothed rack, said toothed rack connected to the movable jaw, a lever, said lever pivoted on the stationary jaw, said lever carrying teeth at its forward end, the teeth of the lever meshing with the teeth on the rack, a semi-circular ratchet immovably connected to the stationary jaw, said ratchet, lever and rack lying in practically the same plane, a pawl, said pawl connected to the said toothed lever, said pawl engaging or disengaging the ratchet through mechanism attached to said lever, the mechanism for operating the lever and the pawl capable of simultaneous operation in hands of operator, as set forth.

2. In a vise, a stationary jaw, a movable jaw, the said movable jaw working in and out of the said stationary jaw, a toothed rack, said toothed rack attached rigidly to the movable jaw, means for limiting the outward movement of the movable jaw, a lever, a head on said lever, partly toothed, said lever pivoted on the stationary jaw, a semi-circular ratchet, said ratchet immovably connected to said stationary jaw, a pawl, said pawl connected to said lever, the teeth on the lever meshing with the teeth on the racks and the pawl engaging the ratchet, means on the lever for operating said pawl, said lever, ratchet and pawl lying practically in the same horizontal plane, as set forth.

3. In a vise, a stationary jaw piece, carrying at its forward end a jaw, a movable jaw piece carrying at its forward end a jaw, the stationary jaw piece provided with a bottom and sides forming a channel in which the movable jaw piece moves forward and backward, a rack, said rack attached to the said movable jaw piece, a removable top on the stationary jaw piece, a pin on the stationary piece at its rear end, the movable piece carrying a slot in which the pin extends, to limit the movement of the movable jaw piece, a semi-circular ratchet, said ratchet attached immovably to the stationary jaw piece, the rack lying on the side and the ratchet lying laterally thereto, a lever, said lever having a head provided with teeth, the head of the lever extending inward so that its teeth may mesh with the teeth of the rack, through a recess in the stationary jaw piece, said lever pivoted at its head on the stationary jaw piece, a pawl, said pawl connected to said lever, the pawl engaging the teeth on the semi-circular ratchet, means on the lever for operating said pawl, and means on the stationary jaw piece for securing it to a bench, as and for the purposes set forth.

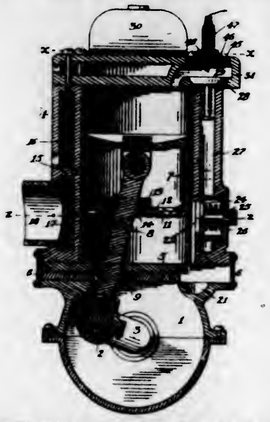
854,092. GAS-ENGINE. WILLIAM H. HOOPER and FREDERICK S. HUTCHINS, San Francisco, Cal.; said Hutchins assignor to said Hooper. Filed Apr. 28, 1905. Serial No. 257,888.

Claim.—1. In a gas engine the combination with the cylinder and with a piston closed at both ends, of the engine shaft and crank and a connecting rod passing through one end of said piston and jointed to the other end.

2. In a gas engine, a cylinder, a hollow piston closed at both ends, a slot in the closure at one end, a slide for closing said slot and a connecting rod passing through said slide and hinged directly to the piston.

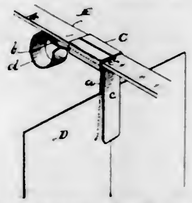
3. In a gas engine, a cylinder, a piston closed at both ends, a slot in the closure for one end, a slide covering said slot, a ball seated in said slide and a connecting rod passing through said ball and hinged to said piston.

4. In a gas engine a cylinder, having a hollow forming a gas space or passage provided with a gas inlet; a crank case secured with the cylinder, a guide way between the cylinder and crank case; a slide valve in said guide way; a channel in the crank case communicating with said gas



passage and with said guide way and means for operating the slide valve; whereby gas is drawn into the cylinder through said gas inlet, gas passage, channel and guide way when said valve is open.

854,093. NEUROPTOMETER. FRANK KENNEDY, Detroit, Mich. Filed June 9, 1906. Serial No. 321,078.



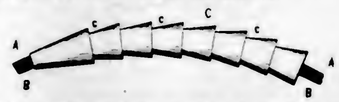
Claim.—1. An instrument of the character described comprising a graduated bar, a slide mounted thereon provided with a clamping member, and a curved shank projecting through the slide and having one end arranged to form a clamping member for coöperating with the aforesaid clamping member to hold a test card.

2. An instrument of the character described comprising a graduated bar, a slide mounted thereon provided with a clamping member, and a curved shank projecting through the slide and having one end arranged to form a clamping member for coöperation with the aforesaid clamping member to hold a test card, the opposite end of the shank being formed into a finger piece.

3. An instrument of the character described comprising a graduated bar, a slide mounted thereon provided with a clamping member, and a shank projecting through the slide and having one end arranged to form a clamping member for coöperation with the aforesaid clamping member to hold a test card, the shank being constructed and arranged to hold the slide yieldably in engagement with the bar.

4. An instrument of the character described, comprising a bar graduated by a series of ages, said bar being bent at one end to provide a handle, a slide mounted upon the bar and provided with an integral clamping member, and a shank projecting through the slide and engaging one face of said bar, the shank having a clamping member coöperating with the aforesaid clamping member to hold a test card, and having one end formed into a finger piece, the slide coöperating with said age graduations for the purposes set forth.

854,094. ELECTRICAL CONDUCTOR AND ARMOR THEREFOR. CHARLES J. KLEIN, New York, N. Y., assignor to Ralph Abraham Schoenberg, New York, N. Y. Filed Sept. 22, 1906. Serial No. 335,775.

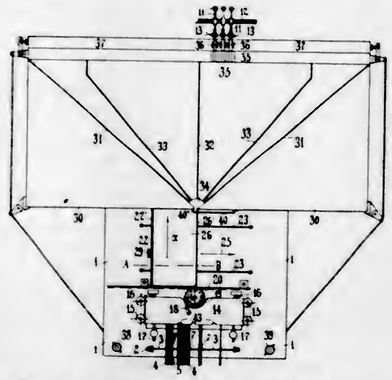


Claim.—v. The combination, with a plurality of electrical conductors; of armor surrounding the conductors and comprising a plurality of flattened longitudinally tapering open-ended members, the end portions of each of which is fitted into the larger end portion of an adjacent member.

2. The combination with a pair of electrical conductors provided with insulating material, of flexible armor surrounding said conductors and comprising a plurality of flattened longitudinally tapering open-ended integral metallic members, the smaller ends of each of said members engaging said insulated conductors and positioning said members with reapect thereto and the larger ends of each of said members accommodating the smaller ends of the adjacent members and allowing relative angular movement between them.

3. The combination with a plurality of electrical conductors, of armor surrounding said conductors and comprising a plurality of flattened substantially conical open-ended members formed of sheet metal, the small end portion of each of said members fitting into and loosely engaging the larger end portion of the adjacent member to allow relative movement between them.

854,095. TYPE SETTING AND DISTRIBUTING MACHINE. LOUIS LEBRUN, Spa, Belgium. Filed Sept. 22, 1903. Serial No. 174,229.

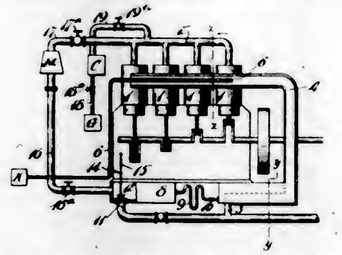


Claim.—1. In a type-setting machine, a composing box or frame, a finger-key, an ejector, connections between the key and the ejector, a group of type-magazines, and connections for shifting the ejector, independently of its reciprocation, to render it effective for removing type from any one of said group of magazines.

2. In a type-setting machine, a composing box or frame, type-magazines, means for ejecting type therefrom under control of finger-keys and connections, and means including a notched plate with the notched and unnotched parts of which the type-ejecting connections coöperate for moving the composing box or frame to the extent desired.

3. In a type-setting machine, a composing box or frame, an inclined table and connections for guiding type toward said composing box or frame, a plurality of type-magazines for delivering type to the inclined table, said magazines being arranged in groups, type ejectors one for each group, means for shifting said ejectors to render them effective on one member of each group of magazines, finger-keys and lever connections for moving said ejectors for ejecting type from the magazines, a plate operated by said lever-connections, and a mechanism for progressing the composing box or frame to an extent corresponding to the width of the type as set, comprising a rack on the box or frame and a wheel driven by the plate aforesaid.

854,096. GAS-ENGINE. RICHMOND LEVERING, New York, N. Y. Filed Jan. 16, 1907. Serial No. 352,478.



Claim.—1. In a gas engine, a cylinder, an exhaust pipe leading therefrom, a gas forming chamber adjacent to said exhaust but not in communication therewith, a fuel supply leading to the interior of said gas forming chamber, a gas storage reservoir connected to said gas forming chamber, a check valve between said reservoir and chamber, a connection leading from said storage reservoir to said cylinder, and a mixer in said connection.

2. In an engine of the internal combustion type, a cylinder, an exhaust pipe leading therefrom, a gas forming chamber adjacent to said pipe but not in communication therewith, a liquid fuel supply leading into said chamber, a gas receptacle, a gas cooler between said gas forming chamber and said receptacle and connecting the same, a check valve between said reservoir and chamber, a connection from said reservoir to said engine, and an air and gas mixer in said connection.

3. In an engine of the internal combustion type, a cylinder, an exhaust, a gas forming chamber, a gas cooler, a gas receiving tank, a connection from said tank to said cylinder, an air and gas mixer therein, a liquid fuel supply leading to said gas forming chamber, a valve therein, an outlet from said gas receiver, and a pressure controlling valve therein.

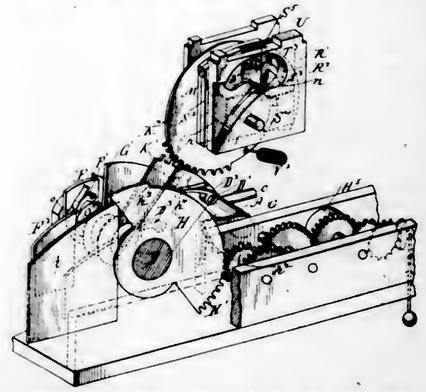
4. In an engine of the internal combustion type, a cylinder, an exhaust, a gas forming chamber, a gas cooler, a gas receiving tank, a connection from said tank to said cylinder, an air and gas mixer therein, a liquid fuel supply leading to said gas forming chamber, a valve therein, an outlet from said gas receiver, a pressure controlling valve therein, and a connection between said last named valve and the valve in the liquid fuel supply pipe.

5. In an engine of the internal combustion type, a cylinder, an exhaust pipe leading therefrom, a gas forming chamber adjacent to said exhaust pipe, a valved liquid fuel supply leading thereto, means to project a spray of liquid fuel into said forming chamber and against the wall of the exhaust pipe, a continuation of said gas forming chamber following said exhaust pipe for a substantial distance, a gas receiving tank, a gas cooler connecting said tank with said gas forming chamber, a check valve therein, an air and gas mixer, a gas pipe leading from said gas tank to said mixer, and a mixture conveying pipe leading from said mixer to said cylinder.

6. In an engine of the internal combustion type, a cylinder, a gas forming chamber adjacent thereto and arranged to absorb heat from the explosions therein, a fuel pipe leading into said gas forming chamber, a gas storage reservoir, a connection between said gas forming chamber and said storage reservoir, a connection leading from said storage reservoir to the cylinder, and an air and gas mixer in said connection.

7. In an engine of the internal combustion type, a cylinder, a gas supply pipe and an exhaust pipe therefor, a gas forming chamber directly adjacent to said cylinder and arranged to absorb the heat of the explosions therein, a fuel pipe leading into said gas forming chamber, a gas storage reservoir, a connection between said chamber and said gas storage reservoir, a check valve therein, a connection leading from said storage reservoir to the interior of said cylinder, and a gas and air mixer in said last mentioned connection.

854,097. COIN-CONTROLLED LIQUID-DISPENSING APPARATUS. JOSEPH J. MACKEOWN, New York, N. Y. Filed Feb. 16, 1904. Serial No. 193,917.



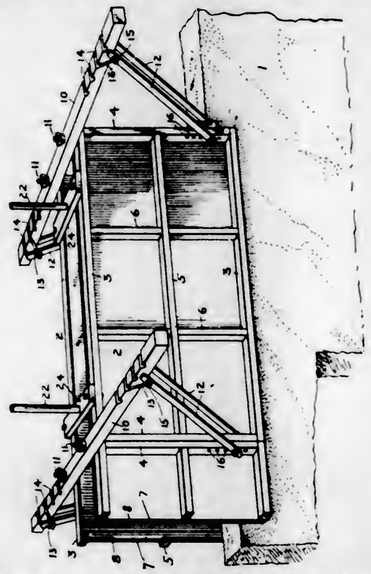
Claim.—1. A liquid-dispensing apparatus, comprising a faucet or valve, manually operated devices for opening said valve, independently releasable checking or restraining devices, automatically operating means for maintaining said valve or faucet open during a predetermined period of time, and then closing it, and means, whereby, after the preliminary or initial movements upon which the opening of the faucet depends, the contributing devices and mechanisms are restored to normal positions.

2. In liquid-dispensing apparatus, the combination with a main shaft, an operating handle, and releasable restraining devices, of a spring-actuated time movement, operatively connected with said shaft and adapted to be operated thereby to increase the tension of the spring, a valve or faucet, means dependent upon the release of said restraining devices for opening said faucet, when said shaft is operated to the limit of its movement, and means for closing said faucet at the expiration of said period.

3. In a liquid-dispensing apparatus, the combination with a time movement to control the flow of liquid, and manually operable means for opening the delivery faucet or valve and controllable devices for holding said manually operable devices in check, of means for winding the spring of the time movement and permitting said time movement to operate, after such winding, and independently of said manually operable devices, and means for allowing said controllable devices to return to their normal positions, after the winding of said spring and before the opening of the valve or faucet.

4. In a liquid-dispensing apparatus, the combination with the main shaft D, having the handle E, of a series of dogs or pawls connected thereto, tumblers or shouldered plates with which said pawls successively engage, devices for releasing said pawls from such engagement, devices which normally restrain the movement of said handle and means, including said restraining devices, for controlling the movement of said pawls.

854,098. CONCRETE-WALL FORM. OSCAR F. MANN, Indianapolis, Ind., assignor to Henrietta Mann, Indianapolis, Ind. Filed July 12, 1906. Serial No. 325,849.



Claim.—1. In a form for concrete structures, a pair of sides between which the structure is formed, transverse beams above said sides, and diagonal braces extending from near the lower portions of the sides upwardly and outwardly to the beams the above structure being raised vertically as the wall is formed and being supported when raised by the frictional contact of the said sides with the newly formed wall.

2. In a form for concrete structures, a pair of sides between which the structure is formed, transverse beams above said sides, diagonal braces extending from near the lower portions of the sides upwardly and outwardly to the beams and means for varying the length of the braces the above structure being raised vertically as the wall is formed and being supported when raised by the frictional contact of the said sides with the newly formed wall.

3. In a form for concrete structures, a pair of sides between which the structure is formed, said sides having an inner lining of sheet metal, transverse beams above said sides to which the sides are rigidly secured, diagonal braces from the beams to the lower portions of the sides and means for adjusting the above enumerated parts so as to maintain the sides in parallel relation to each other the above structure being raised vertically as the wall is formed and being supported when raised by the frictional contact of the said sides with the newly formed wall.

4. In a form for concrete walls, a pair of sides between which the wall is formed, transverse beams secured to the upper edges of said sides, diagonal braces extending from the beams to the lower portions of the sides and a removable pattern or mold placed between the two sides and against the outer one of the sides so as to be supported by it without preventing the side from sliding thereon.

5. The combination with a concrete forming device comprising a pair of parallel sides, of a form or mold placed adjacent to one of said sides between the two sides, said form or mold being adapted to impart an ornamental design to the concrete structure, said form or mold being removable and said sides being slidingly movable independently of said form or mold.

6. In a means for forming concrete walls, a plurality of vertical pipes located where the wall is to be built, a pair of sides between which the wall is formed and between which said pipes are located, transverse blocks connecting the sides of the pair of each form, said blocks having perforations for the passage of a pipe whereby the said form will be guided in a vertical direction, transverse beams secured to the tops of said sides, and diagonal braces extending from near the bottom of said sides, upwardly and outwardly to said beams.

7. A form for concrete walls comprising a pair of parallel sides having inner metal faces, transverse beams bolted to the tops of said sides, vertically perforated blocks also bolted to the tops of said sides, adjustable braces extending from the lower portions of said sides upwardly and outwardly to the beams on top of said sides and vertical pipes anchored firmly at their lower ends and extending up through the perforations of the boards connecting said sides to direct the wall forming device in a vertical direction.

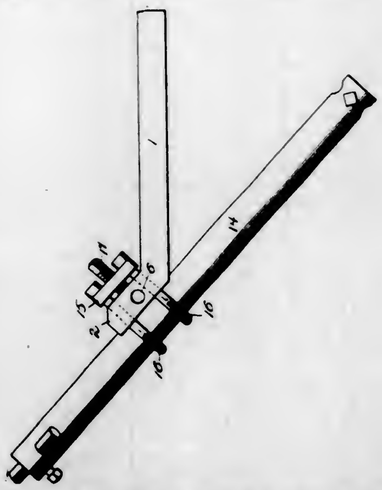
8. In a form for concrete walls, a pair of sides between which the wall is formed, transverse beams above said sides said beams having transverse notches in their upper sides, diagonal braces secured at their lower end to the lower portions of the sides, clevises placed astride of and resting in notches of the beams and having their depending ends bolted to the diagonal brace bars and wedges driven between the bottom of the beam and the bolt which connects the clevis with the diagonal brace bars the above structure being raised vertically as the wall is formed and being supported when raised by the frictional contact of the said sides with the newly formed wall.

854,099. MANUFACTURE OF RAIL-BONDS. GEORGE A. MEAD, Mansfield, Ohio. Filed Feb. 25, 1904. Serial No. 195,135.



Claim.—The method of manufacturing rail bonds, which consists in winding a flat strip of conducting material upon itself to form a body portion, then heating the extremities, and compressing said extremities flatwise to form the same into solid homogeneous masses.

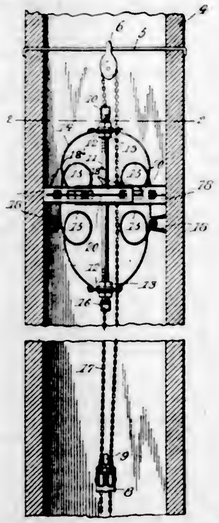
854,100. TOOL-HOLDER. CHARLES W. MEADOWCROFT, Sr., Philadelphia, Pa. Filed Apr. 11, 1906. Serial No. 311,021.



Claim.—1. A tool holder comprising a shank having an off-set head provided with a longitudinal groove formed with overhanging walls, the adjacent edges of said walls being oppositely beveled to present sharp corners, and an adjustable yoke encircling said head for securing the tool between said yoke and said sharp corners.

2. A tool holder comprising a shank having an off-set head provided with a longitudinal groove formed with overhanging walls having beveled edges, the head being provided with screw threaded openings communicating with the opposite sides of said groove from the exterior of the head, and a set screw in one of said threaded openings engaging one side of the tool and securing the latter against the beveled edge of one of said overhanging walls.

854,101. CHIMNEY-CLEANER. OLIVER N. MILLER, Florenceville, New Brunswick, Canada, assignor of one-half to G. Fred Turner, Florenceville, New Brunswick, Canada. Filed Apr. 3, 1905. Serial No. 253,718.



Claim.—1. A chimney clean out comprising a plurality of cleaners having angular bodies and flaring flanges said bodies having a plurality of slots therein and being arranged in pairs, rods arranged on opposite sides of each pair and each having an eye on one end extending through a slot and connected to the other rod, springs provided with eyes adapted to engage said rods through some of said slots, and means connected with said springs for reciprocating said cleaners through a chimney.

2. A chimney clean out comprising a bar provided with oppositely screw-threaded ends, collars disposed on the opposite ends of the bar, nuts disposed on the screw-threaded ends of the bar on each side of said collars, springs secured at their opposite ends to the collars and provided intermediate of their ends with loops and eyes, cleaners arranged in telescoping pairs and secured to said eyes, and means for reciprocating said structure through a chimney.

854,102. CROSSCUT-SAW. LOUIS MÜTSCH, Spokane, Wash. Filed Feb. 16, 1906. Serial No. 301,462.

Claim.—1. As a new article of manufacture, a raker tooth for saws which has opposite raker points, relatively long, flat straight supporting surfaces on the same level with each other to support the saw in action, and an intermediate notch or cut-out portion between said flat supporting surfaces.

2. A raker tooth for saws having its opposite edges which are at the sides of the gullets made on entrant curves, and its outer portion provided with flat supporting surfaces to support the saw in action and having an intermediate cut-out portion, whereby the cutting edges of the raker tooth may be sharpened by filing away its said flat supporting surfaces and will always remain the same regardless of the height of the tooth.



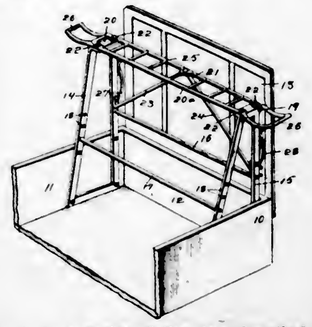
3. A saw having a raker tooth and a sharpened cutting tooth, with an intervening gullet, said cutting tooth having a transversely curved or rounded edge adjacent the gullet and below the sharpened part of the cutting tooth.

4. A saw having a raker tooth and a sharpened cutting tooth, with an intervening gullet, said cutting tooth having a transversely curved or rounded edge merging into the gullet.

5. A saw having a raker tooth and a cutting tooth, with an intervening gullet, the raker tooth having its edge which bounds the gullet of concave shape, and said cutting tooth having its edge bounding the gullet curved or rounded transversely in more or less convex shape.

6. A saw having a raker tooth and a sharpened cutting tooth, with an intervening gullet, said cutting tooth having a transversely curved or rounded edge adjacent the gullet and below the sharpened part of the cutting tooth which gradually diminishes from relatively great convexity to relatively small convexity adjacent the gullet.

854,103. FOOT-REST FOR BUGGIES. JOHN B. MCCARTY, Des Moines, Iowa. Filed Feb. 13, 1906. Serial No. 301,471.



Claim.—1. In a device of the class described, a main rest, an auxiliary rest, means for supporting the main rest and auxiliary rest in position relative to the box of a buggy, and means for securing one end of a robe to the rest.

2. In a device of the class described, a main rest, an auxiliary rest, means for supporting the main rest and auxiliary rest in position relative to the box of a buggy, and springing means for securing one end of a robe to the rest.

3. In a device of the class described, a main rest, supports at the end of the rest for preventing the foot of the user from slipping off the ends of it, an auxiliary rest, and means for supporting the rest in position relative to each other and to the box of a buggy.

4. In a device of the class described, a main rest, supports at the end of the rest for preventing the foot of the

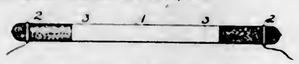
user from slipping off the ends of it, an auxiliary rest, means for supporting the rests in position relative to each other and to the box of a buggy, and means for securing one end of a robe or blanket to the rest.

5. In a device of the class described, upright frames, a main foot rest connecting the top of the frames, means for maintaining the frames in position relative to each other, a curved foot support at each end of the main foot rest, and an adjustable auxiliary rest mounted between the frames.

6. In a device of the class described, upright frames, a main foot rest connecting the top of the frames, means for maintaining the frames in position relative to each other, an adjustable auxiliary rest mounted between the frames, and means for securing a robe to the rest, for the purposes stated.

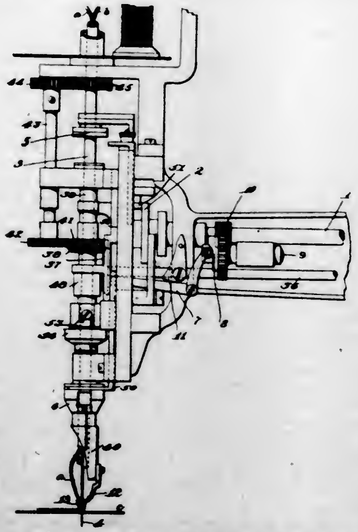
7. In a device of the class described, upright frames, a main foot rest connecting the top of the frames, means for maintaining the frames in position relative to each other, a curved foot support at each end of the main foot rest, an adjustable auxiliary rest mounted between the frames, and means for securing a robe to the rest, for the purposes stated.

854,104. VACUUM-TUBE LAMP. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Company, New York, N. Y., a Corporation of New York. Filed May 25, 1904. Serial No. 209,626.



Claim.—A vacuum tube lamp containing graphitic acid as and for the purpose described.

854,105. SEWING AND EMBROIDERING MACHINE. THOMAS O'NEILL, Brooklyn, N. Y., assignor of one-half to Royal Embroidery Works, New York, N. Y., a Corporation of New York. Filed Oct. 15, 1906. Serial No. 338,919.



Claim.—1. A sewing machine having means for reciprocating the needle, means for oscillating the needle and means for maintaining a plurality of rows of material to be applied upon the cloth within the sphere of action of the needle, and means for maintaining the material in a bent backward position so that the needle passes through the bent portion of the material and a blind zigzag stitch is produced.

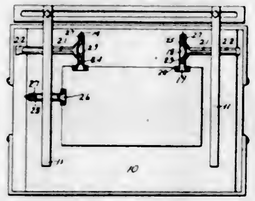
2. In an embroidering machine, the combination of means for attaching material to a backing with a blind zig-zag stitch feeding mechanism, and means for varying the direction of feed of the machine at the will of the operator.

3. In an embroidering machine, the combination of means for attaching a plurality of rows of material to a backing with a blind zigzag stitch feeding mechanism, and means for varying the direction of feed of the machine at the will of the operator.

4. An improved nipple for a sewing machine having a passage for the needle and an inclined slot for the material to be applied to the cloth, the front wall of the needle passage extending down to a level with its back wall.

5. In a sewing machine, the combination with a nipple having a passage therethrough, of a needle, and means for reciprocating and oscillating the needle, the said nipple also having a slot for the material to be applied to the cloth, the said passage being inclined and open at its upper end and communicating at its lower end with the needle passage, the width of the needle passage being such that the material to be applied to the cloth may be freely but snugly inclosed therein.

854,106. GAGE-PIN FOR PLATEN-PRESSES. OSCAR C. OSTERHOLM and JOHN B. EASTMAN, Clarinda, Iowa. Filed June 5, 1906. Serial No. 320,911.



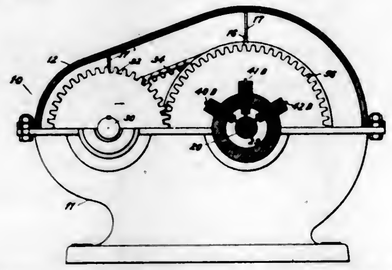
Claim.—1. An improved gage pin, comprising a body portion, a pin connected therewith, an upright part at one end of the body portion, a lug projecting from said upright part and a spring gripper projecting in front of the face of said upright part and below said lug and normally elevated and also capable of being depressed to engage a sheet of paper in front of said upright part.

2. An improved gage pin, formed complete of a single piece of sheet metal, and comprising a flat body portion, a pin formed integral with the body portion, a flat upright face at one end of said body portion, a sharpened projection at the lower edge thereof and a lug projecting forwardly from the upper edge thereof and a gripper formed on the other end of said body portion extended over the top of said body portion and formed with an arch above the upright plate of the body portion and having a rearwardly projecting extension on its lower edge, under the lug at the top of the upright plate, said gripper normally held by the resiliency of the metal in an elevated position.

3. An improved gage pin, formed complete of a single piece of sheet metal and comprising a flat body portion, a pin formed integral with the body portion, a flat upright face at one end of said body portion, a sharpened projection at the lower edge thereof, a lug projecting forwardly from the upper edge thereof, a gripper formed on the other end of said body portion extended over the top of said body portion and formed with an arch above the upright plate of the body portion and having a rearwardly projecting extension on its lower edge under the lug at the top of the upright plate, said gripper normally held by the resiliency of the metal in an elevated position, and an auxiliary gripper arm detachably connected with the gripper to extend laterally therefrom.

4. The combination with a gage pin, of a normally elevated gripper having openings in its end portions and a gripper arm comprising a straight body portion with a downwardly inclined extension at one end, a fork at its other end, the ends of said fork designed to be inserted in said openings when the arm is in an upright position and to be held in said openings when the arm is in its lowered position.

854,107. MAGNETIC CLUTCH. ALFRED PICK, Yonkers, N. Y., assignor of fifteen one-hundredths to William W. Butler, Yonkers, N. Y. Filed Mar. 6, 1905. Serial No. 248,650.



Claim.—1. In a magnetic clutch, a magnet member and an armature, means for energizing the magnet member, an unhomogeneous magnetic circuit through the magnet member and the armature comprising a part of comparatively small cross-sectional area, connected to parts of greater cross-sectional area, and an air gap, said magnetic circuit being so proportioned and arranged as to produce a de-magnetizing force which will act immediately upon cessation of the energizing means.

2. In a magnetic clutch, a rotating magnet member, means for energizing said member, an armature adapted to co-act with said member, and strips of non-magnetic material in the magnet member and in the armature near their outer edges.

3. In a magnetic clutch, a rotating magnet member, means for energizing said member, an armature adapted to co-act with said member, an inside air space between the inside faces of the magnet member and the armature, and strips of non-magnetic material in the magnet member and in the armature.

4. In a magnetic clutch, a rotating magnet member, means for energizing said member, an armature adapted to co-act with said member, and strips of non-magnetic material in the magnet member and in the armature, the whole so proportioned and arranged as to produce a demagnetizing force which will act immediately upon cessation of the energizing means.

5. In a magnetic clutch, a rotating magnet member, means for energizing said member, an armature adapted to co-act with said member, an inside air space between the magnet member and the armature, and strips of non-magnetic material in the magnet member and in the armature, the whole so proportioned and arranged as to produce a de-magnetizing force which will act immediately upon cessation of the energizing means.

6. A self-de-magnetizing magnetic clutch comprising a rotating magnet member, a coil or winding in such member, an armature of magnetic material adapted to co-act with said magnet member, and strips of non-magnetic material in the magnet member and in the armature with a short section of magnetic material between them.

7. A self-demagnetizing magnetic clutch comprising a rotating magnet member, an armature adapted to be brought into contact with said member near its outer edge, and non-magnetic material in the magnet member and in the armature with a short section of magnetic material between them.

8. A self-de-magnetizing magnetic clutch comprising a rotating magnet member, an armature adapted to be brought into contact with said member near its outer edge, an inside air space between said magnet member and the armature, and non-magnetic material in the magnet member and in the armature.

9. In a magnetic clutch, the combination of a driven shaft, a magnet member attached thereto, an armature loosely mounted on the shaft, a driving shaft connected with the armature and strips of non-magnetic material in the magnet member and in the armature with a short section of magnetic material between them.

10. In a magnetic clutch, the combination of a shaft, a magnet member attached thereto, and two armatures loosely mounted on the shaft, either one of which may be brought into contact with the magnet member, and non-magnetic material in the magnet and in the armatures near their outer edges.

11. In a magnetic clutch, the combination of a shaft, a magnet member attached thereto, and two armatures loosely mounted on the shaft either one of which may be brought into contact with the magnet member near their outer poles and non-magnetic material in the magnet member and in the armature near their outer edges.

12. In a magnetic clutch, the combination of a shaft, a magnet member attached thereto, an armature loosely mounted on the shaft, a second shaft directly connected to said armature by means of gears, and another armature also loosely mounted on the shaft, indirectly connected to the second shaft by means of a chain.

13. In a magnetic clutch, the combination of a shaft, a magnet member attached thereto, an armature loosely mounted on the shaft, a second shaft directly connected to said armature by means of gears, and another armature also loosely mounted on the shaft, indirectly connected to the second shaft by means of a chain, and means for moving either armature into contact with the magnet member.

14. In a magnetic clutch, the combination of a shaft, a magnet member attached thereto, an armature loosely mounted on the shaft, a second shaft directly connected to said armature by means of gears, and another armature also loosely mounted on the shaft, indirectly connected to the second shaft by means of a chain, and means for moving either armature into contact with the magnet member near its outer edge.

15. In a magnetic clutch, a magnet member, armatures on either side of said member, means for magnetizing the magnet member, unhomogeneous magnetic circuits through the magnet member and armatures comprising a part of comparatively small cross-sectional area, connected to parts of greater cross-sectional area, and air gaps, said magnetic circuit being so proportioned and arranged as to produce a demagnetizing force which will act immediately upon cessation of the magnetizing means.

16. In a magnetic clutch, a magnet member, armatures on either side of said member, means for magnetizing the magnet member so that it will engage either one or the other of said armatures, unhomogeneous magnetic circuits through the magnet member and armatures comprising a part of comparatively small cross-sectional area, connected to parts of greater cross-sectional area, and air gaps, said magnetic circuit being so proportioned and arranged as to produce a demagnetizing force which will act immediately upon cessation of the magnetizing means.

17. In a magnetic clutch, a magnet member having two magnetic circuits, armatures on either side of the magnet member which complete the magnetic circuit, electrical means for energizing either of the magnetic circuits, and non-magnetic material in each magnetic circuit of the magnet member, said circuits having a plurality of free magnetic poles arranged to create demagnetizing forces in the circuits which will act immediately upon cessation of the electrical energizing means.

18. In a magnetic clutch, a magnet member having two magnetic circuits, armatures on either side of the magnet member which complete the magnetic circuit, electrical means for energizing either of the magnetic circuits, and non-magnetic material in the armatures near their outer edges, arranged to produce a plurality of free magnetic poles which will create a demagnetizing force which will act immediately upon cessation of the electrical energizing means.

19. In a magnetic clutch, the combination of an inclosing casing a magnet member having friction surfaces, armatures on either side of the magnet member arranged to

coact with the friction surfaces, said armatures having oil channels leading to the friction surfaces, and means to supply these channels with oil under pressure from the casing.

20. In a magnetic clutch, the combination of an inclosing casing a magnet member having friction surfaces, armatures on either side of the magnet member arranged to coact with the friction surfaces, said armatures having oil channels leading to the friction surfaces, and means to supply these channels with oil under pressure from the casing, which pressure is obtained by centrifugal force.

21. In a magnetic clutch, the combination of a magnet member, coils or windings for said member, suitable electrical conductors for the coils, a source of electrical supply, armatures on either side of the magnet member arranged to co-act therewith, friction surfaces between the magnet member and the armatures, strips of non-magnetic material in the magnet member and in the armatures with a short section of magnetic material between them, which section includes the friction surfaces and mannally operated means for connecting the coils to the electrical supply.

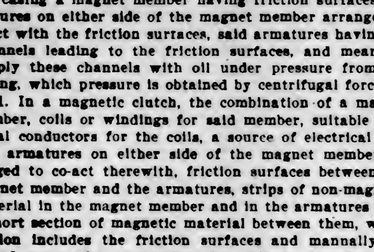
22. In a magnetic clutch, the combination of a magnet member, coils or windings for said member, suitable electrical conductors for the coils, a source of electrical supply, armatures on either side of the magnet member arranged to co-act therewith, friction surfaces between the magnet member and the armatures, strips of non-magnetic material in the magnet member and in the armatures with a short section of magnetic material between them, which section includes the friction surfaces and manually operated means for gradually energizing the coils.

23. In a magnetic clutch, the combination of a casing adapted to contain oil, bearings in the casing, a driving shaft and a driven shaft supported by said bearings, a magnetic member attached to the driven shaft, armatures on either side of said member arranged to transmit the motion of the driving shaft in one direction or the other to the driven shaft, oil channels in the casing and in the bearings, and webs in the casing above the oil channels.

24. In a magnetic clutch, the combination of a magnet member and an armature, friction surfaces between the magnet member and the armature, and strips of non-magnetic material in the magnet member and in the armature with a short section of magnetic material between them which section includes the friction surfaces.

25. In a magnetic clutch, the combination of a casing adapted to contain oil, bearings in the casing, a shaft supported by said bearings, a rotating member attached to the shaft, oil channels in the casing and in the bearings, and webs in the casing above the oil channels.

854,108. COMBINED GAGE AND STOP COCK. HENRY J. REYNOLDS, Cleveland, Ohio. Filed Oct. 6, 1906. Serial No. 337,665.



Claim.—1. In a gage cock, the combination with a valve casing adapted to be screwed into a boiler, of a removable nut threaded into said casing, means for conducting steam or water from the boiler to said nut, said nut having an opening formed therethrough, a valve which closes said opening, a sleeve slidably disposed within the nut, a valve actuating member disposed within the sleeve, and a lever to which both the sleeve and the valve actuating member are connected.

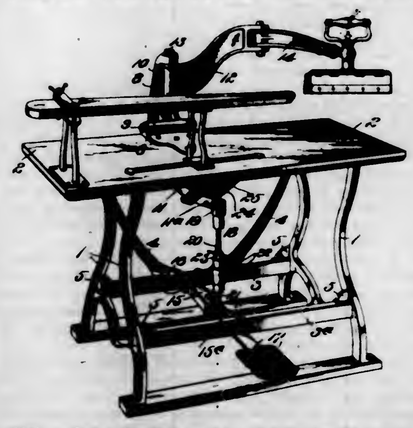
2. In a device of the character described, the combination with a valve casing having a chamber formed therein and having a port adapted to conduct steam or water from the boiler to said central chamber, of a valve stem threaded into said casing adapted to close said port, a removable nut threaded into the casing and having an opening formed therethrough, a sleeve slidably disposed in said nut, a valve which normally closes the opening through said nut, a plunger adapted to lift said valve from its seat, and a lever to which both the plunger and the sliding sleeve are secured.

3. In a device of the character described, the combination with a valve casing having a chamber formed therein, of a port for conducting steam or water from the boiler to said chamber, a valve stem threaded into the casing, a valve carried by said valve stem and adapted to close said port, a nut removably threaded into the casing and having an opening formed therethrough, a valve adapted to close said opening, a sleeve slidably disposed within said nut, a member adapted to lift the last named valve from its seat, and a lever pivoted to a member extending from the valve casing, to which both the sliding sleeve and the valve actuating member are pivotally connected.

4. In a device of the character described, the combination with a valve casing having a chamber formed therein, of a port for conducting steam or water from the boiler to said chamber, a valve stem threaded into the casing, a valve carried by said valve stem and adapted to close said port, a nut removably threaded into the casing and having an opening formed therethrough, a valve adapted to close said opening, a sleeve slidably disposed within said nut, a member adapted to lift the last named valve from its seat, and a bifurcated lever pivoted to a member extending from the valve casing, to which both the sliding sleeve and the valve actuating member are pivotally connected.

5. In a device of the character described, the combination with a valve casing having a chamber formed therein, of a port adapted to conduct steam or water from a boiler to said chamber, a valve stem threaded into the casing in alinement with said port and adapted to close said port, a nut threaded into the casing and having a depending sleeve, a second sleeve slidably mounted upon said depending sleeve, a plunger mounted in said second sleeve, a ball valve adapted to close the first named sleeve, and a lever pivoted to a member depending from the valve casing to which both the last named sleeve and the plunger are pivotally connected.

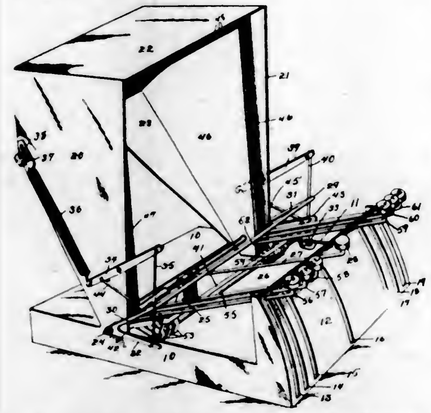
854,109. IRONING-MACHINE. LOUIS ROSENBAUM, St. Louis, Mo. Filed Sept. 29, 1904. Serial No. 226,554.



Claim.—In an ironing machine, the combination with a supporting frame, of a lever pivotally mounted thereon

and having an upper and lower member, the upper member thereof being adapted to carry a sad iron, a clevis secured to the outer free end of the lower member of said lever and carrying a depending threaded rod, a brace mounted on said frame and provided with integral depending lugs or ears and a parallel-sided slot, a treadle pivotally mounted in the depending lugs of said brace, a threaded rod pivotally connected to said treadle and passing up through and closely fitting the slot in said brace and guided thereby to prevent lateral movement of said treadle, a turn-buckle engaging said threaded rods for adjusting the position of the lower member of said lever relative to said treadle and the position of the upper member of said lever relative to said supporting frame, said rods and their connections being also adjustable longitudinally of said treadle and lever for varying the leverage of the machine, and coiled springs secured to the lower member of said lever at a point back of its connection with the treadle rod and to said supporting frame at a point in front of and beyond said connection, said springs resisting the pull when applied on said treadle and tending at all times to hold the upper member of the lever away from said supporting frame.

854,110. INDEX-MACHINE. FERDINAND H. SCHULTZ and MARTIN H. BERKEMEIR, Treynor, Iowa. Filed Mar. 27, 1905. Serial No. 252,290.



Claim.—1. In an index machine, the combination of a casing, index carriers pivoted in the casing and arranged to swing forward therefrom, a retaining rod against which the index carriers rest when the same are swung forward, a key complementary to each carrier for swinging the same forward, a rod resting under the several keys, and a connection intermediate said rod and the returning rod for moving the latter upward when the former is forced downward.

2. In an index machine, the combination of movable index carriers, a returning rod against which the index carriers rest when moved forward, a key complementary to each carrier for moving the same forward, a rod arranged to be moved by the keys when the same are actuated to move the index carriers forward, and a connection intermediate said rod and the returning rod for moving the latter by the former.

3. In an index machine, the combination of movable index carriers, a returning rod against which the index carriers rest when moved forward, a key complementary to each carrier for moving the same forward, a rod arranged to be moved by the keys when the same are actuated to move the index carriers forward, a return key for moving said rod, and a connection intermediate said rod and the returning rod for moving the latter by the former.

4. In an index machine, the combination of a casing, index carriers pivoted in the casing and arranged to swing forward therefrom, a returning rod against which the index carriers rest when the same are swung forward, a key complementary to each carrier for swinging the same forward, a rod resting under the several keys, a returning key for depressing the said rod, and a connection intermediate said rod and the returning rod for raising the latter when the former is depressed.

5. In an index machine, the combination of a casing, index carriers pivoted in the casing and arranged to swing forward therefrom, a returning rod against which the index carriers rest when the same are swung forward; said rod having arms pivoted to the casing and provided with arms, a key complementary to each carrier for swinging the same forward, a rod resting under the several keys and having arms pivoted to the casing, levers pivoted on the casing, a spring connecting one arm of one of said levers and the casing, connections between the forward arms of said levers and the arms of the returning rod, connections between the rear arms of said levers and the arms on the rod below the keys, and a returning key having for its sole function to depress the latter rod.

6. In an index machine, the combination of a casing, a fixed rod therein, a rod also arranged in the casing, index carriers pivoted on the last mentioned rod and having lugs and also having spring hooks yieldingly engaged with the fixed rod, a returning rod against which the index carriers rest when the same are swung forward, a key complementary to each carrier for swinging the same forward; said key being pivoted on the second mentioned rod arranged in the casing and adapted to engage the lug of the carrier, a rod resting under the several keys, a returning key for depressing the said rod, and a connection intermediate said rod and the returning rod for raising the latter when the former is depressed.

7. In an index machine, the combination of a casing, a fixed rod 55 therein, a rod 24 also arranged in the casing, index carriers pivoted on the rod 24 and having lugs and also having spring hooks yieldingly engaged with the rod 55, a returning rod against which the index carriers rest when the same are swung forward; said rod having arms pivoted to the casing and provided with arms, a key complementary to each carrier for swinging the same forward; said key being pivoted on the rod 24 and arranged to engage the lug of the carrier, a rod resting under the several keys and having arms pivoted to the casing, levers pivoted on the casing, a spring connecting one arm of one of said levers and the casing, connections between the forward arms of said levers and the arms on the arms of the returning rod, connections between the rear arms of said levers and the arms on the rod below the keys, and a returning key having for its sole function to depress the latter rod.

8. In an index machine, the combination of a pivoted index carrier having a lug and a spring hook, a stationary keeper which the spring hook yieldingly engages, and a movable key arranged to engage the spring hook and the lug in the order named to disengage the spring hook from its keeper and then swing the index carrier about its pivot.

854,111. DUPLICATING-MACHINE. GRANT H. SHANNON, Chicago, Ill., assignor to A. B. Dick Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 6, 1907. Serial No. 356,021.



Claim.—1. In a duplicating machine, the combination of a rotatable drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum in accordance with the movements of the drum, a bar mounted parallel to the line of coaction of the drum and roller, paper-stops movably mounted on said bar, a spring for moving each of said stops in one direction

and a screw adjustment for moving each of said stops in the opposite direction, substantially as described.

2. In a duplicating machine, the combination of a drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum, stripper arms and paper-stops mounted adjacent to the line of coaction of the roller and drum, means for adjusting the position of said stops independently of said stripper arms, and means for preventing the impression sheets from catching between a stripper arm and stop, substantially as described.

3. In a duplicating machine, the combination of a rotatable drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum in accordance with the movements of the drum, a bar mounted parallel to the line of coaction of the drum and roller, stripper arms extending from said bar toward said roller, paper-stops extending downwardly from said arms, and means for adjusting said stops along the under sides of said arms, substantially as described.

4. In a duplicating machine, the combination of a drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum, a bar mounted parallel to the line of coaction of the drum and roller, stripper arms extending from said bar toward said roller, paper-stops extending downwardly from said arms, and means for adjusting said stops relatively to said arms comprising rods coacting with said stops, springs for moving said stops in one direction and nuts coacting with said bar for moving said stops in the opposite direction, substantially as described.

5. In a duplicating machine, the combination of a drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum, a bar mounted parallel to the line of coaction of the drum and roller, paper-stops mounted on said bar and means for simultaneously adjusting said stops relatively to said line of coaction, to various operative positions, substantially as described.

6. In a duplicating machine, the combination of a drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum, a bar mounted parallel to the line of coaction of the drum and roller, paper-stops mounted on said bar and means for simultaneously or independently adjusting said stops relatively to said line of coaction, substantially as described.

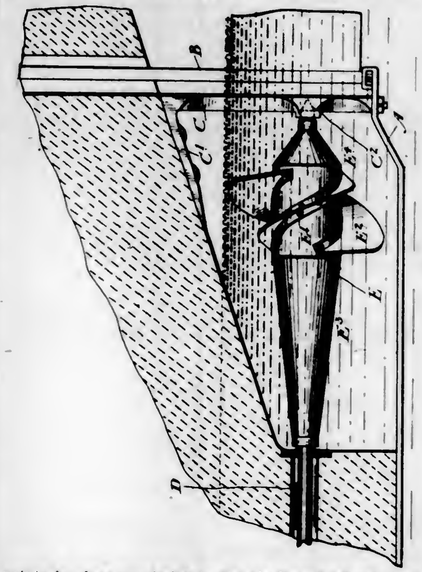
7. In a duplicating machine, the combination of a drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum, a bar mounted parallel to the line of coaction of the drum and roller, paper-stops mounted on said bar, and a guard secured on said bar having an inclined portion for guiding a sheet over the bar, substantially as described.

8. In a duplicating machine, the combination of a drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum, a bar mounted parallel to the line of coaction of the drum and roller, stripper arms extending from said bar toward said roller and a guard on said bar having an inclined portion for guiding a sheet over said bar, substantially as described.

9. In a duplicating machine, the combination of a drum having means for securing a stencil-sheet thereon, a pressure-roller movable toward and away from the drum, a bar mounted parallel to the line of coaction of the drum and roller, stripper arms extending from said bar toward said roller, stops extending downwardly from said arms and adjustable relatively thereto and a guard secured on said bar and having an inclined portion for guiding a sheet over said bar, substantially as described.

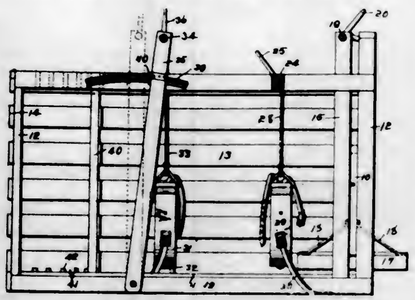
854,112. PROPELLER FOR VESSELS. HUGH R. SHAW, Rosseau, Ontario, Canada. Filed July 12, 1906. Serial No. 325,922.

Claim.—The combination with a propelling shaft and stern post in which the rear end of such shaft is journaled provided with a suitable bearing to receive the end and formed with a knife edge above and below such bearing, of a solid propelling wheel having a central bore fitting the shaft and provided with a conical front portion of comparatively long taper, a short cylindrical intermediate portion having spiral flanges affixed thereto and a conical rear portion of a less length than the intermediate portion, both ends of the propelling wheel tapering down toward



points in close proximity to the shaft and affixed thereto, and the bearings at both ends being likewise of substantially the same diameter as the reduced ends of the cone-shaped portions whereby the churning of the water is avoided, as specified.

854,113. BREEDING-CRATE. LEROY C. SHEPARD, Irwin, Iowa. Filed Oct. 22, 1906. Serial No. 340,092.



Claim.—1. A breeding crate, comprising a frame, an animal retaining and supporting belt therein and a vertically adjustable platform at the rear of the frame.

2. In a breeding crate, the combination of a frame, an animal retaining and supporting belt therein, a partition at the forward end of the frame adjustable longitudinally of the frame, and a vertically adjustable platform at the rear of the frame.

3. In a breeding crate, the combination of a frame, two animal retaining belts therein, means for suspending said belts, and means for moving one of them toward or from the other.

4. In a breeding crate, the combination of a frame, two animal retaining belts therein, means for suspending said belts, means for moving one of them toward or from the other, and an adjustable platform adjacent to the rear belt.

5. In a breeding crate, the combination of a frame, a rear animal supporting belt, means for raising and lowering said belt and for supporting it in different positions of elevation, a forward animal supporting belt, means for raising and lowering it and supporting it in different positions of elevation, and means for moving the forward belt forwardly and rearwardly within the frame and for securing it in different positions.

6. In a breeding crate, the combination of a frame, a rear animal supporting belt, means for raising and lowering said belt and for supporting it in different positions of elevation, a forward animal supporting belt, means for raising and lowering it and supporting it in different positions of elevation, means for moving the forward belt forwardly and rearwardly within the frame and for securing it in different positions, and an adjustable platform at the rear of the frame.

7. In a breeding crate, the combination of a frame, sides connected therewith, a partition adjustably mounted in the forward portion of the frame and capable of movement longitudinally of the frame, arms secured to the base of the frame and extended upwardly, a rope winding and supporting device carried by said arms, ropes connected therewith, an animal supporting belt supported by said ropes, means for securing the upper ends of said arms in different positions of adjustment longitudinally of the frame, a rear animal supporting belt, ropes connected therewith, a rope winding and supporting device connected with said ropes, a vertically movable platform in the rear of the rear belt, a rope winding and supporting device above it, and ropes connected therewith and with the rear platform.

854,114. PROCESS FOR THE MANUFACTURE OF SWEEPING COMPOUNDS. BERTHOLD SINGER, Chicago, Ill., assignor to The Perolin Company of America, Chicago, Ill., a Corporation of Illinois. Filed June 28, 1906. Serial No. 323,930.

Claim.—1. The herein described method for the manufacture of a sweeping compound, which consists in producing a saponified solution and introducing thereinto a quantity of absorbent granules until all of the free liquid is absorbed.

2. The herein described process of manufacturing a sweeping compound, which consists in producing a hot solution of soap and water, and introducing thereinto while hot a quantity of absorbent granules sufficient to absorb all of the liquid.

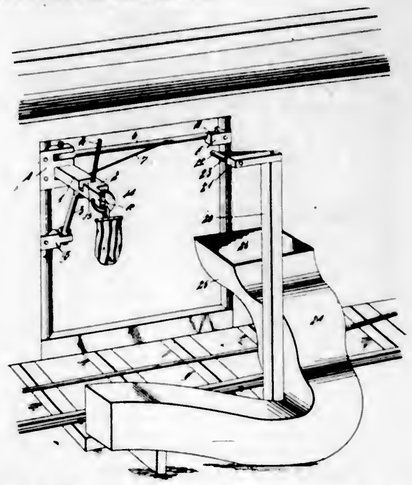
3. The herein described process of manufacturing a sweeping compound, which consists in producing a saponified solution, injecting steam into the same, and introducing into the solution while hot a sufficient quantity of sawdust to absorb the free liquid.

4. A process of manufacturing a granular sweeping preparation which consists in producing a hot soap solution of such strength as to assume a jelly like form when allowed to cool and introducing therein absorbent granules in such proportion as to wholly absorb the said solution.

5. A process of manufacturing a granular sweeping preparation which consists in dissolving soap in water in such proportions that the resulting solution is in a liquid state when hot and in a jelly like state when cool and introducing into said solution while hot porous granular material in such proportions that the liquid will not only be wholly taken up by the said material, but the granules themselves will remain free from a saponaceous coating adapted to cause the said granules to adhere to each other.

854,115. MAIL-BAG-DELIVERY APPARATUS. DAVE SMITH, Villisca, Iowa. Filed Oct. 8, 1906. Serial No. 338,052.

Claim.—1. A mail bag delivery apparatus comprising a crane pivotally mounted on the side of the car door frame, a shaft journaled in the outer end of said crane, a bag supporting hook arranged on said shaft, a keeper to receive the end of said hook when in an operative position, a trip arm connected to said shaft to turn said hook to a position for releasing the bag, a pivotally-mounted retracting lever, a flexible connection between said lever and said crane, a trip lever arranged at one side of the car tracks in position to engage the trip arm on the crane, and a receptacle adapted to receive the mail bag when discharged from the crane, substantially as described.



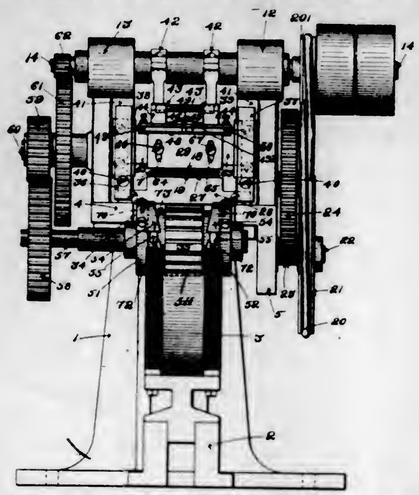
2. A mail bag delivery apparatus comprising a frame pivotally mounted on the side of the car door frame, a bag supporting hook mounted on the outer end of the crane, a trip arm connected with said hook to turn the same to a position for discharging the bag, a retracting lever pivotally mounted on the car door frame, a catch block to hold said lever in position, a flexible connection between said lever and the crane, a standard arranged at one side of the car track, a trip lever on the upper end of said standard to engage the trip arm on the crane, and a chute supported by said standard in position to receive the bag when discharged from the crane, substantially as described.

3. A mail bag delivery apparatus comprising a frame pivotally mounted on the side of the car door frame, a bag supporting hook mounted on the outer end of the crane, a trip arm connected with said hook to turn the same to a position for discharging the bag, a retracting lever pivotally mounted on the car door frame, a catch block to hold said lever in position, a flexible connection between said lever and the crane, a standard arranged at one side of the car track, a trip lever on the upper end of said standard to engage the trip arm on the crane, a mail bag receptacle supported by said standard, said receptacle comprising a distorted tube or chute having an enlarged upper end and curved slightly upward at its reduced lower end, and a door arranged in said chute, substantially as described.

854,116. TOOTHPICK-MACHINE. GEORGE P. STANLEY and WILLIS W. TAINTER, Dixfield, Me. Filed Mar. 6, 1906. Serial No. 304,503.

Claim.—1. In a machine for making tooth pick blanks or the like from a strip, a cutting die having two blades spaced a distance apart equal to the width of the blank to be formed, a rotating conveyer having on its periphery grooves which, when the conveyer rotates, pass beneath the opening of the blades of the cutting die and receive the blanks from the cutting die, said grooves being of a length less than the length of the blanks, a receiving member to which the blanks are delivered from the grooved conveyer,

a housing for the grooved conveyer having annular end flanges, said flanges having beveled inner faces for a portion thereof between which the blanks carried by the conveyer pass, the beveled faces converging toward each other in the direction that the conveyer rotates, the ends of the bevel which are nearest together being spaced apart a distance equal to the length of the blanks, whereby the blanks are all centered with relation to the receiving member.



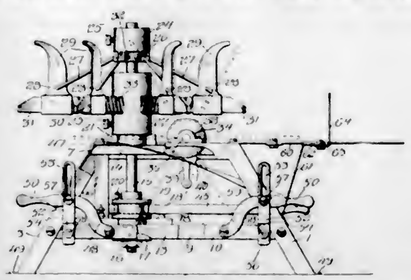
2. In a machine for making tooth pick blanks or the like from a strip, a cutting die having two blades spaced a distance apart equal to the width of the blank to be formed, a rotating conveyer having on its periphery grooves which, when the conveyer rotates, pass beneath the opening of the blades of the cutting die and receive the blanks from the cutting die, said grooves being of a length less than the length of the blanks, a receiving member to which the blanks are delivered from the grooved conveyer, a housing for the grooved conveyer having annular end flanges, said flanges having beveled inner faces for a portion thereof between which the blanks carried by the conveyer pass, the beveled faces converging toward each other in the direction that the conveyer rotates, the ends of the bevel which are nearest together being spaced apart a distance equal to the length of the blanks, whereby the blanks are all centered with relation to the receiving member, the bevel face following the curve of the annular flange from the point where the conveyer receives the blanks to the point where the converging faces are at their nearest approach to each other.

3. In a machine for cutting tooth pick blanks or the like from a strip, a cutting die, a block which forces the strip against the die, feed rolls between which the strip passes to the cutting mechanism, a table having a guide through which the veneer strip passes to the feed rolls, a spring plate supported at one end to the table and having a free end which extends forward of the table and passes between the feed rolls and supports the veneer strip in its passage from the table to the cutting mechanism, a slot in said spring plate through which the lower feed roll projects to engage with the veneer strip, the forward end of the spring plate normally extending forward at an elevation to cause the veneer strip to be fed over the top of the cutting die.

4. In a machine for cutting tooth pick blanks or the like from a strip, a cutting die, a block which forces the strip against the die, feed rolls between which the strip passes to the cutting mechanism, a table having a guide through which the veneer strip passes to the feed rolls, a spring plate supported at one end to the table and having a free end which extends forward of the table and passes between the feed rolls and supports the veneer strip in its passage from the table to the cutting mechanism, a slot in said spring plate through which the lower feed roll projects to engage with the veneer strip, the forward end of the spring plate normally extending forward at an elevation to cause the veneer strip to be fed over the top of the cutting die, and a resilient stop for said spring plate between the feed rolls and the cutting die which is below the normal position of the spring plate and which is engaged by the spring plate when the spring plate is depressed by the pressure of the plunger on the strip.

5. In a machine for cutting tooth pick blanks or the like from a strip, a cutting die, a plunger block which forces the strip against the die, a holder for said block consisting of a side plate to which said block is bolted, bolt holes extending horizontally through the block and through the holder, said slots being elongated vertically to permit vertical adjustment of the block with relation to the holder but preventing lateral movement of the block with relation to the holder, a bearing plate resting on the top of the block, the holder extending higher than the block and having a horizontal flange which overhangs the said plate on the top of the block with a space between the plate and flange, stop screws which pass through said flange in the holder and engage the said plate, a stud fast to the upper side of said plate and projecting upwardly loosely through a hole in the flange on said holder plate, a spring plate on the upper side of said flange through which said stud passes, said stud having a head on its upper end, the spring being given tension by the setting down of the top screws so that when the stop screws are loosened the spring will draw up the said stud and plate again to hold it in constant contact with the stop screws.

854,117. WIRE-REEL. CHARLIS W. STARK, Mountain Lake, Minn. Filed June 23, 1905. Serial No. 266,665.



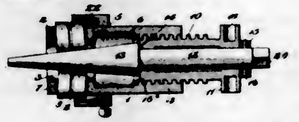
Claim.—1. A machine of the character described, comprising a frame, a vertical shaft arranged for rotation within the frame, a horizontal shaft mounted for rotation in said frame in advance of the vertical shaft, an expansible reel arranged for attachment to either of said shafts, means for rotating said shafts, means for regulating the speed of the shafts, and a guide carried by the machine.

2. A machine of the character described, comprising a frame, a vertical reel receiving shaft arranged for rotation in the frame, a horizontal reel receiving shaft mounted for rotation upon the frame in advance of the vertical shaft, means for rotating said shafts, means for regulating the speed of the shafts, and a shiftable wire guide arranged upon the front of the machine.

3. A machine of the character described, comprising a frame, a vertical reel receiving shaft mounted for rotation in said frame, a horizontal reel receiving shaft mounted for rotation upon said frame in advance of the first named shaft, brake wheels carried by each of said shafts and brake-levers arranged for engagement with said brake-wheels.

4. A machine of the class described comprising a frame, a shaft journaled for rotation in the frame, a fixed head upon the shaft, a head adjustably mounted upon the shaft, arms extending radially from the first named head, fingers adjustably mounted upon said arms, springs engaged upon the arms between said head and said fingers for normally holding the same at the outward limit of their movement and connections between said finger and said adjustable head.

854,118. TUBE-EXPANDER. VICTOR STAVENIK and JOHN MAUTZ, Mansfield, Ohio. Filed Sept. 6, 1906. Serial No. 333,406.



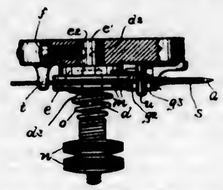
Claim.—1. In a tube expander, comprising a cylindrical head with a plane and unobstructed outer periphery and an inner periphery screw-threaded in one end with an annular recess formed therein to leave a contracted orifice in the opposite end, pocket bearings formed in one end of said head, rollers seated therein, a feed screw having its outer periphery screw-threaded to engage with said cylindrical head, a tapered mandrel journaled to said feed screw having a straight portion, a collar fitted to the straight portion of said mandrel and adapted to contact with one end of the feed screw whereby the feed screw is interposed between said collar and the shoulder formed on said mandrel, means to impart movement to said feed screw whereby the tapered portion of the mandrel is made to contact or expand the cylindrical outline formed by the rollers journaled in the pocket-bearings.

2. In a tube expander, comprising a cylindrical head with a plane and an unobstructed outer periphery and an inner periphery screw-threaded in one end with an annular recess formed substantially in the central portion of the inner periphery leaving a contracted orifice in the opposite end, pocket bearings formed in one end of said head, rollers seated therein and adapted to extend above the outer periphery of the cylindrical head, a feed screw having a ring made integral therewith with apertures formed in the outer periphery, a tapered mandrel provided with a straight shank forming a shoulder and journaled in the inner periphery of the feed screw, a collar securely attached to the projecting end of the mandrel and adapted to contact with the face of the annular ring formed on the feed screw whereby the feed screw is interposed between said shoulder and collar, means to rotate said feed screw and mandrel independent of each other.

3. In a tube expander, comprising a cylindrical head with a plane and unobstructed outer periphery said head having an inner periphery screw threaded in one end and an annular recess formed therein leaving a contracted orifice in the opposite ends, pocket bearings formed in said cylindrical head, rollers seated in said pocket bearings and adapted to extend over the outer periphery of the cylindrical head, an annular ring having outwardly projecting segments extending therefrom fitted to the periphery of the cylindrical head and adapted to be adjusted thereupon, a feed screw fitted to the screw-threaded periphery of the cylindrical head, a tapered mandrel journaled in the inner periphery of said feed screw, a collar fitted to one end of the mandrel and adapted to contact with one end of the feed screw, means to rotate the mandrel, means to impart movement to the feed screw to expand or contract the rollers.

854,119. SEWING-MACHINE SLACK-THREAD CONTROLLER. WILLIAM H. STEDMAN, Hartford, Conn., assignor to The Merrow Machine Company, Hartford, Conn., a Corporation of Connecticut. Filed Mar. 19, 1904. Serial No. 198,965.

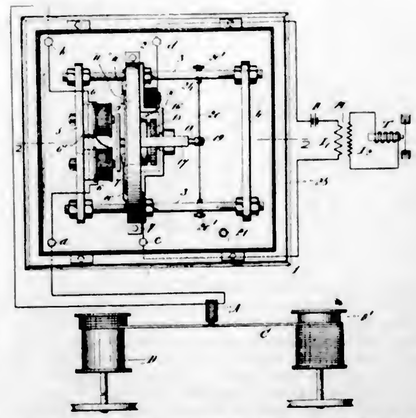
Claim.—1. In a sewing machine slack thread controller, the combination with an angularly adjustable rod and a controller spring having one end connected with the rod, of a casing inclosing the spring, a screw engaging the casing to retain it in position and also engaging the rod to hold it in its position of angular adjustment and a fixed support for the screw, rod and casing; substantially as described.



2. In a sewing machine slack thread controller, the combination with the frame an angularly adjustable rod, a casing having a bearing in which said rod is journaled and itself supported in the frame and a set screw passing through said bearing and engaging the rod to hold it in its position of angular adjustment, of a controller spring located within the casing and having its inner end connected with the rod; substantially as described.

3. In a sewing machine slack thread controller the combination with the frame the angularly adjustable rod, the casing having a central bearing for the rod and supported in the frame and the set screw passing through said bearing and engaging the rod, of the controller spring having its inner end connected with the rod and its outer end passing through the wall of the casing, the tension disks on the rod and closing the outer side of the casing, the spring around the rod outside of the disks and the adjusting nut on the end of the rod; substantially as described.

854,120. DEVICE FOR AMPLIFYING ELECTRICAL CURRENTS. JOHN S. STONE, Cambridge, Mass., assignor to John A. Chrystie, Louis Duncan, and Walter H. Turner, New York, N. Y. Filed May 23, 1906. Serial No. 318,305.



Claim.—1. In an apparatus for amplifying electric currents varying in accordance with sonorous vibrations, a microphonic transmitter comprising a fixed and a movable electrode, magnetically operated means for moving said movable electrode in one direction and mechanical means for moving said electrode in the opposite direction, said mechanical means being so constructed that its tension varies as the square of its deflection.

2. In an apparatus for amplifying electric currents varying in accordance with sonorous vibrations, a microphonic transmitter comprising a fixed and a movable electrode and means maintaining said movable electrode in a condition of stable equilibrium during the operation of the apparatus.

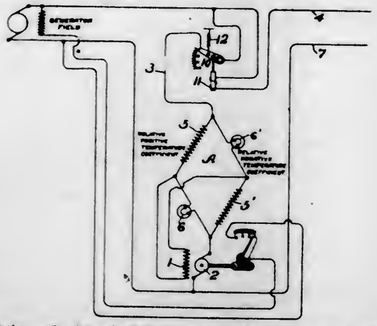
3. In an apparatus for amplifying electric currents

varying in accordance with sonorous vibrations, an armature, a microphonic transmitter comprising a fixed and a movable electrode, means securing said movable electrode to said armature, magnetic means for actuating said armature, and mechanical means secured to said movable electrode and exerting thereon a force in opposition to the force exerted thereon by said magnetic means, said mechanical means being so constructed that the force exerted thereby on said movable electrode varies for all positions of said electrode directly as the force exerted thereon by said magnetic means.

4. In an apparatus for amplifying electric currents varying in accordance with sonorous vibrations, a microphonic transmitter comprising a fixed and a movable electrode, an armature secured to said movable electrode, magnetic means for moving said movable electrode in one direction, and an elastic member secured to said movable electrode for moving the same in the opposite direction, said elastic member being so constructed that the force exerted thereby on said movable electrode varies for all positions of said electrode directly as the force exerted exerted thereon by said magnetic means.

5. In an apparatus for amplifying electric currents varying in accordance with sonorous vibrations, a microphonic transmitter comprising a fixed and a movable electrode, an armature secured to said movable electrode, magnetic means for moving said electrode in one direction and a wire secured to said movable electrode for moving the same in the opposite direction, said wire being so tensioned that the force exerted thereby on said movable electrode varies for all positions of said electrode directly as the force exerted thereon by said magnetic means.

854,121. SYSTEM OF ELECTRICAL DISTRIBUTION. SIMON B. STORER, Syracuse, N. Y. Filed Aug. 10, 1905. Serial No. 273,641.



Claim.—1. An electric current regulator including resistances having different temperature co-efficients in which an electrical balance is established under a predetermined voltage or current intensity, and means brought into action by fluctuations above or below such predetermined voltage or current intensity to restore such balance.

2. An electric current regulator comprising resistances having different temperature co-efficients in which an electrical balance is established under a predetermined voltage, an electrically operated device brought into action by fluctuations above or below such predetermined voltage, and means actuated by said device to restore such balance.

3. An electric current regulator comprising an electrical balance including therein resistances having different temperature co-efficients, an electric motor actuated in reverse directions by fluctuations above or below a predetermined voltage or current value by which the balance is established, and means actuated by the motor to restore such balance.

4. An electric current regulator comprising an electrical balance including therein resistances having different temperature co-efficients in which the balance is destroyed by fluctuations above or below a predetermined voltage or current intensity, an electric motor actuated in reverse directions by such fluctuations, and means actuated by the motor to introduce more or less resistance to restore such balance.

5. An electric circuit and an electric balance deriving current therefrom and held in balance under a predetermined voltage or current intensity, said balance including resistances having different temperature co-efficients an electric motor actuated in reverse directions by fluctuations above or below such predetermined voltage or current intensity, and means actuated by the motor for introducing more or less resistance to restore such balance.

6. An electric current regulator including therein a Wheatstone bridge including resistances having different temperature co-efficients and electrically balanced under a predetermined voltage or current, and means brought into action by fluctuations above and below such predetermined voltage or current to keep the bridge approximately in balance said motor having one of its windings in series with the bridge.

7. An electric circuit including therein a Wheatstone bridge including resistances having different temperature co-efficients and balanced under a predetermined current of voltage, and means brought into action by fluctuations above or below such predetermined voltage or current for actuating the regulator.

8. An electric circuit including therein a Wheatstone bridge including resistances having different temperature co-efficients and balanced under a predetermined voltage or current intensity, an electric motor actuated by fluctuations above or below such predetermined voltage or current intensity, and means actuated by the motor to introduce more or less voltage in the circuit whereby the balance of the bridge is restored.

9. In a system of electrical distribution, means for approximately maintaining a predetermined voltage or current intensity in such system including a Wheatstone bridge having in its branches resistances of different temperature co-efficients and an electric motor having one of its elements forming the cross connection of the bridge.

10. In a system of electrical distribution, means for approximately maintaining a predetermined voltage or current intensity in such system including a Wheatstone bridge having in its branches resistances of different temperature co-efficients and an electric motor having one of its elements forming the cross connection of the bridge, and its other element connected in series therewith.

11. In a system of electrical distribution, means for approximately maintaining a predetermined voltage or current intensity in such system including a Wheatstone bridge and an electric motor having one of its elements forming the cross connection of the bridge, and its other element connected in series therewith, and means actuated by the motor for introducing more or less resistance whereby the electrical balance of the bridge is restored.

12. In a system of electrical distribution, a current regulator comprising a Wheatstone bridge deriving current from the system and balanced under a predetermined voltage or current intensity, an electric motor having one of its elements connecting the normally neutral points of the bridge and its other element in series therewith, and means actuated by the motor to keep the current or voltage approximately constant in the system.

13. In a system of electrical distribution, a Wheatstone bridge deriving current from said system, and including in its branches resistances of different temperature co-efficients and an electric motor having one of its elements forming the cross connection of the bridge.

14. In a system of electrical distribution, resistances of different temperature co-efficients deriving current from said system and balanced under a predetermined current intensity or voltage, and means brought into action by the unbalancing of the resistances for maintaining approximately a constant voltage or current in the system.

15. In a system of electrical distribution, a Wheatstone bridge deriving current from said system and balanced under a predetermined voltage or current, said bridge including in its branches resistances having different temperature co-efficients an electric motor having one of its elements forming the cross connection of the bridge, whereby the motor is actuated in reverse directions as the current flows in reverse directions relative to the other element of the motor through said cross connection due to fluctuations above or below the predetermined voltage or current in the bridge.

16. In a system of electrical distribution, a Wheatstone bridge having unlike resistances receiving current from said system and balanced under a predetermined voltage or current, the unlike resistances having different temperature co-efficients, an electric motor having one of its parts forming the cross connection of the bridge and its other part in series with the bridge whereby the motor is actuated by the flow of current through such connection, and means actuated by the motor to maintain approximately a constant voltage or current in the system.

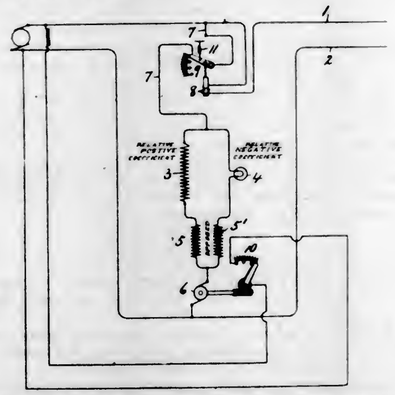
17. In a system of electrical distribution, a Wheatstone bridge deriving current from the system and having normally balanced electrical resistances which vary in degree at the same temperature as effected by the rise and fall of the voltage or current, a motor having one of its windings forming the cross connection of the bridge, whereby the motor is actuated when the resistances are unbalanced and means actuated by the motor to regulate the current or voltage in the system.

18. An electric current or voltage regulator including therein a Wheatstone bridge having in each branch resistances of different electrical characteristics, the resistance in one of said branches varying directly and that of the other inversely with its thermal changes.

19. An electric current regulator including therein two connected branch conductors deriving current from the same source, the resistance of one varying directly and that of the other inversely with its change of temperature, and a motor winding forming a cross connection between said branches.

20. An electric regulating device comprising two branch conductors connected at their ends and deriving current from the same source and each having two unlike resistances normally in electrical balance with those of the other branch, one resistance of each branch varying directly and the other inversely as its temperature changes, a motor winding forming a cross connection between said branches, and a rheostat current regulator actuated by the motor.

854,122. SYSTEM OF ELECTRICAL DISTRIBUTION. SIMON B. STORER, Syracuse, N. Y. Filed Aug. 10, 1905. Serial No. 273,642.



Claim.—1. A device for operating electric regulators including therein resistances having different temperature-co-efficients, and motor-windings connected in series with said resistances.

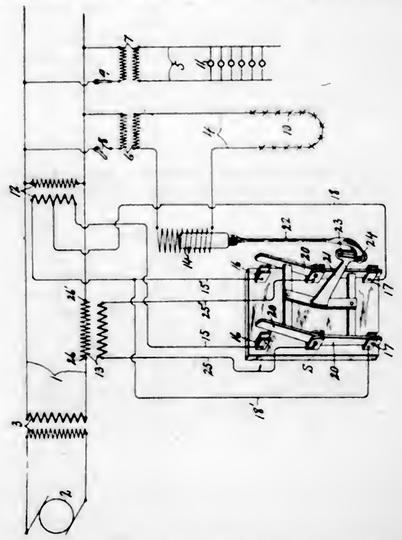
2. A device for operating electric regulators including therein resistances having different temperature co-efficients, and motor-field-windings connected in series with said resistances.

3. A device for operating electric regulators including therein resistances having different temperature co-efficients, in combination with a motor having approximately half of one of its windings electrically connected in series with each of said resistances.

4. A device for operating electric regulators including therein resistances having different temperature co-efficients, in combination with a motor having approximately half of its windings electrically connected in series with each of said resistances, one-half of such winding acting in opposition to the other half.

5. A device for operating electric regulators including therein resistances having different temperature co-efficients, in combination with a motor having approximately half of its field winding electrically connected in series with each resistance, each half of the field winding acting in opposition to the other half.

854,123. VOLTAGE-REGULATOR. SIMON B. STORER, Syracuse, N. Y. Filed Oct. 23, 1906. Serial No. 340,234.



Claim.—1. A system of electrical distribution including therein two transformers, and automatic means for throwing the whole or part of the transformed voltage of one transformer into the other transformer.

2. In combination with an electric circuit including therein the primary winding of a shunt transformer and the secondary winding of a series transformer, and automatic means for throwing the whole or part of the transformed voltage of the first named transformer into the series transformer.

3. In a system of electrical distribution an electric circuit including therein the load of one or more translation devices, means to cut said load into and out of circuit, and separate means brought into action by the opening and closing of said circuit for automatically introducing a predetermined voltage into the system.

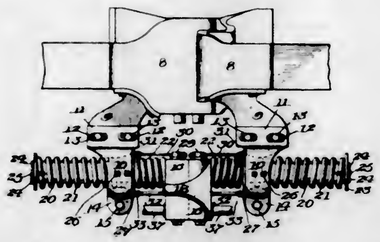
4. A system of electrical distribution including therein the primary winding of a shunt transformer and secondary winding of a series transformer, a translating device deriving current from said system, means for cutting said

translating device into and out of electrical connection with said system, an electric switch connected to the secondary winding of the shunt transformer and to the primary winding of the series transformer and electrically operated means connected in circuit with the translating device, for operating said switch to change the connections in the circuits between the secondary winding of the shunt transformer and the primary winding of the series transformer when the translating device is energized or de-energized.

5. A system of electrical distribution including therein the load of one or more translating devices adapted to be thrown on or off whereby a change of voltage is effected in other parts of the system, means to cut said load into and out of circuit, and automatic means brought into action by the opening and closing of said circuit for automatically introducing a predetermined voltage into the system to compensate in a single step for such change of voltage.

6. In an electrical distributing system including therein any load adapted to be thrown on and off, thereby causing drop or rise of voltage in other parts of the system, a transformer having its primary winding deriving current from said system, a series transformer having its secondary winding in said system, the first named transformer being adapted to produce a voltage in its secondary winding substantially equal to the drop voltage in the system when the load is thrown on, and means brought into action by the closing of the circuit through said load for throwing the voltage from the secondary winding of the first named transformer into the primary winding of the series transformer, thereby adding to the system a voltage substantially equal to the drop.

854,124. TRAIN-PIPE COUPLING. CLARENCE W. TAYLOR, Oak Park, Ill. Filed Jan. 7, 1907. Serial No. 351,056.



Claim.—1. In a train pipe coupling a pipe coupling member having an aperture therethrough and a locking bar slidably seated therein and adapted to be pushed through into an aperture in an opposing pipe coupling member by the recession of said members in the act of coupling.

2. The combination of a pipe coupling member having an aperture and a locking bar slidable therein, with a rotatable valve in the pipe coupling member.

3. The combination with a pipe coupling member having an aperture and a locking bar slidable therein and adapted to be pushed into an aperture in an opposing pipe coupling member by the recession of said members in the act of coupling, of a rotatable valve and means for rotating the valve.

4. In a train pipe coupling, a depending bracket, an extension member, a coupling arm, a pipe coupling member, and a locking bar capable of being extended through the pipe coupling member.

5. A train pipe coupling comprising a depending bracket, an extension member, a compression member, a coupling arm, a pipe coupling member, a locking bar, and a rotatable valve in said pipe coupling member.

6. A train pipe coupling comprising a depending bracket, an extension member, a compression member, a coupling arm, a pipe coupling member, a locking bar, a rotatable valve and means for rotating said valve.

7. A train pipe coupling comprising a depending bracket with an opening therethrough having concave front and rear surfaces and a convex inner surface, an extension member, a coupling arm, a pipe coupling member, and a locking bar capable of being extended through said pipe coupling member into an opposing member.

8. A train pipe coupling comprising a depending bracket with an opening therethrough having concave front and rear surfaces and a convex inner surface, an extension member, a compression member, a coupling arm, a pipe coupling member, and a locking bar capable of being extended through said pipe coupling member into an opposite member.

9. The combination with a car coupler having a depending bracket, of an extension member, a coupling arm, a compression member, a pipe coupling member, and a locking bar.

10. The combination with a car coupler having a depending bracket, of an extension member, a compression member, a coupling arm, a pipe coupling member, a locking bar and a rotatable valve in said pipe coupling member.

11. The combination with a car coupler having a depending bracket, of an extension member, a compression member, a coupling arm, a pipe coupling member, a locking bar, a rotatable valve and means for rotating said valve.

12. The combination with a car coupler having a depending bracket, of an extension member, a compression member, a coupling arm, a pipe coupling member, and means for locking said pipe coupling member to an opposing member.

13. The combination with a car coupler having a depending bracket, of a compression member, a coupling arm, a pipe coupling member, and a locking bar capable of being extended through the pipe coupling member.

14. The combination with a car coupler having a depending bracket, of a compression member, a coupling arm, a pipe coupling member, and a slidable locking bar.

15. The combination with a car coupler having a depending bracket, a compression member, a coupling arm, a pipe coupling member, a rotatable valve in said pipe coupling member, and a locking bar.

16. The combination with a car coupler having a depending bracket, of an extension member, a coupling arm, a compression member, an abutment collar and a pipe coupling member.

17. The combination with a car coupler having a depending bracket, of an extension member, a coupling arm, an abutment collar, and a pipe coupling member.

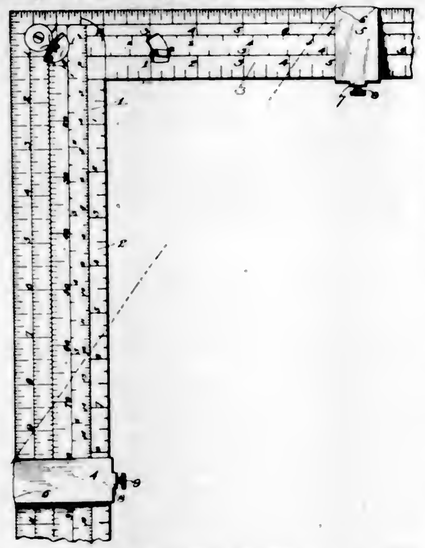
18. The combination with a car coupler having a depending bracket, of a compression member, a coupling arm, an abutment collar, and a pipe coupling member.

19. The combination with a car coupler having a depending bracket, of an extension member, a coupling arm, an abutment collar, a compression member, a pipe coupling member and a locking bar.

20. The combination with a car coupler having a longitudinally adjustable depending bracket, of an extension member, a coupling arm, a locking bar, a compression member and a pipe coupling member.

854,125. CARPENTER'S SQUARE. HARVEY W. THOMPSON, Atlantic City, N. J. Filed Mar. 29, 1906. Serial No. 308,737.

Claim.—An indicator and gage for squares comprising a sleeve adapted to be slidably mounted on the blade of a square, said sleeve being beveled or cut away on one end at its opposite corners, a centrally disposed boss formed on its opposite end, said boss having formed therein a threaded aperture, a set screw arranged in said aperture to engage the edge of said blade thereby holding said gage in its adjusted positions on said blade, lugs formed on and projecting laterally from the opposite corners of one end of the sleeve to form gage stops, substantially as described.



854,126. MANUFACTURE OF CAST METAL. ROBERT C. TOTTEN, Pittsburg, Pa. Filed June 28, 1906. Serial No. 323,931.

Claim.—1. A new composition of casting metal, consisting of coke or coal iron and spiegeleisen.

2. A new composition of casting metal, consisting of coke or coal iron and spiegeleisen, and containing at least one-half of one per cent. of combined carbon and manganese at least one per cent. in excess of the combined carbon.

3. A new composition of casting metal containing iron, at least one-half of one per cent. of combined carbon, and manganese at least one per cent. in excess of the combined carbon.

4. A new article of manufacture consisting of coke or coal iron and spiegeleisen and having a chilled surface.

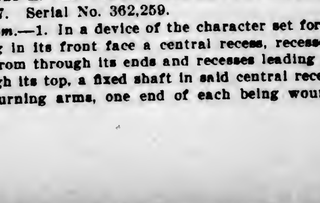
854,127. CALENDAR. JAMES E. TREAT, Boston, Mass. Filed Feb. 2, 1905. Serial No. 243,816.



Claim.—1. A calendar comprising a plurality of monthly indicator sheets numbered from the bottom upward in horizontally-extending rows and having a plurality of horizontally-extending weakened lines starting at a point from one side edge and terminating at a point removed from the other side edge, said weakened lines interposed between the horizontally-extending rows of numbers and dividing the indicator sheets into a plurality of weekly portions, combined with a plurality of bodily-detachable intermediate sheets correspondingly numbered to the indicator sheets and adapted to expose horizontally-extending rows of numbers corresponding to the numbers of detached weekly portions.

2. A calendar comprising a plurality of indicator sheets bearing numbers for the days, each sheet having a plurality of weakened lines for severing days that are past, in combination with a plurality of intermediate sheets, each detachable bodily and bearing numbers for days corresponding in position to the day numbers on the indicator sheet in front of it, but of distinctive appearance therefrom, the numbers on each intermediate sheet being the same as those in the corresponding positions on the preceding indicator sheet; whereby removal of a section of the front sheet does not destroy the entirety of the scope of calendar exposed to vision.

854,128. BAG-FASTENER. HUGO TUECKMANTEL, Newark, N. J. Filed Sept. 28, 1905. Serial No. 280,415.



Claim.—1. A bag frame having a member U-shaped in cross-section, said member having a longitudinal depression in the convex portion thereof, and a pair of projecting nibs or catches pressed outwardly from the bottom of said depression.

2. A bag frame having a member U-shaped in cross-section, said member having a longitudinal depression formed in the convex portion thereof and a latch member seated in said depression and held in position by a torsion spring.

3. A bag frame comprising a pair of hinged U-shaped members, each having a longitudinal depression in the convex portion thereof, a latch member seated in one of said depressions and held in place by a torsion spring, a pair of projecting nibs or catches pressed outwardly from the metal in the bottom of the other depression and designed for engagement with said latch member.

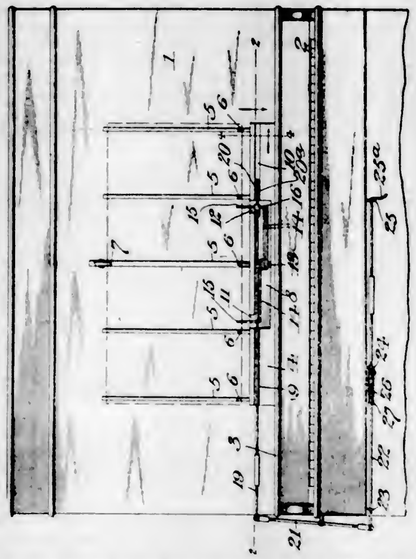
4. A bag frame comprising a pair of hinged frame members, each U-shaped in cross-section, and each having a longitudinal depression in the convex portion thereof, thereby forming terminal apertures, a latch member seated in one of said depressions, and a torsion spring passing through said terminal apertures, and latch member, and projecting nibs in the bottom of the other depression designed for engagement with the latch member, whereby when said hinged frame members are closed, the latch member will lie flush with the surface of the frame members.

5. A bag frame having a member bent over to form a continuous U shaped groove, said member having a longitudinal depression formed therein and having apertures in said depression communicating with said groove, a latch member seated in said depression and a torsion spring mounted in said groove, said spring passing through said apertures and latch member for holding the latch in said depression.

854,129. COMBINED MUSIC-RACK AND LEAF-TURNER. HENRY E. VAN VLECK, Great Bend, Pa. Filed Mar. 14, 1907. Serial No. 362,259.

Claim.—1. In a device of the character set forth, a base having in its front face a central recess, recesses leading therefrom through its ends and recesses leading therefrom through its top, a fixed shaft in said central recess, spring leaf turning arms, one end of each being wound loosely

around said shaft and being secured to said base and the other end extending upwardly through a recess leading through the top of the base, a spring detent for restraining said arms in normal position, a reciprocal rod adapted to be moved by the knee of the operator to engage said detent between the two front leaf turning arms and move it so as to release the front leaf turning arm and means for returning said rod to normal position, substantially as described.



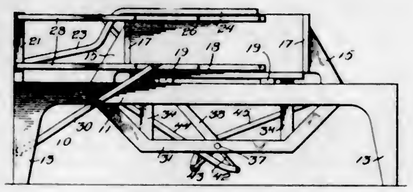
2. In a device of the character set forth, a base, a shaft fixed on said base, spring leaf turning arms, one end of each being wound loosely around said shaft and being secured to said base and the other end extending upwardly, a spring detent engaging the upturned ends of said arms and restraining them in normal position, a reciprocating rod adapted to be moved by the knee of the operator to engage said detent between the two front leaf turning arms and move it so as to release the front leaf turning arm and means for returning said rod to normal position, substantially as described.

3. In a device of the character set forth, a base, spring music turning arms thereon, a spring detent thereon for restraining said arms in normal position, a reciprocating rod mounted thereon, a second reciprocating rod mounted in position to be engaged by the knee of the operator, a pivotally mounted arm pivotally connecting said reciprocating rods, whereby motion is transmitted to the first mentioned rod from the second mentioned rod to move the first mentioned rod into engagement with said detent between the two front leaf turning arms and move it so as to release the front leaf turning arm and means for returning said rods and arm to normal position, substantially as described.

854,130. CONCRETE-BLOCK MACHINE. WALTER W. VERNER, Delmont, S. D. Filed May 9, 1906. Serial No. 315,967.

Claim.—1. A device of the class described comprising a frame, slidable mold members mounted in the frame, and a mold member mounted in the frame for vertical swinging movement and arranged for actuation by one of the sliding mold members after the same has been partially retracted.

2. A device of the class described comprising sliding mold members, a hinged mold member, a rock shaft, connections between the rock shaft and the sliding mold members for movement of the latter, a lever pivotally connected with the rock shaft for movement thereof, and

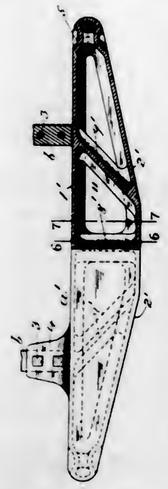


means carried by the hinged mold member for guiding the lever and holding the same in vertical position.

3. A device of the class described comprising a frame, movable mold members mounted in the frame, and a swinging mold member arranged for movement by said first named members after the first-named members have been partially retracted.

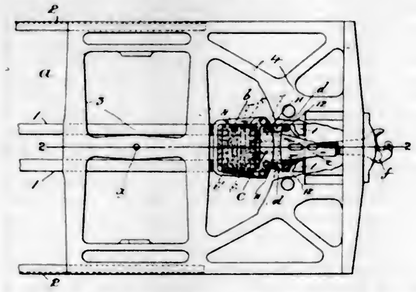
4. A device of the class described comprising a frame, mold members slidably mounted upon the frame, a hinged mold member, a rock shaft, and means for rocking the shaft, connections between the rock shaft and the sliding mold members for actuation of the latter when the former is rocked, said sliding mold members being arranged to actuate the swinging mold member after having been partially retracted.

854,131. LOCOMOTIVE BUFFER-BEAM. CHARLES T. WESTLAKE, St. Louis, Mo., assignor to Davis Locomotive Wheel Company, St. Louis, Mo., a Corporation of Delaware. Filed Feb. 2, 1907. Serial No. 355,446.



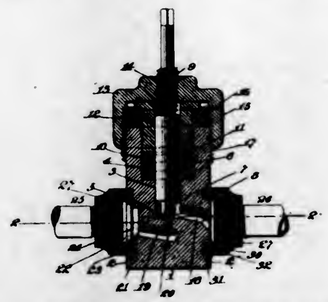
Claim.—The combination with the longitudinal sills of a locomotive or car underframe, of a buffer-beam having a rear member adapted to bear against the ends of the said sills, a front member opposite to, and spaced apart from the rear member, a strut uniting the said members on each side of the longitudinal center of the said frame, the said struts diverging from the front member to their junction with the rear member at points opposite to the said ends of the corresponding sills, and means for fixing the buffer-beam to the said sills, substantially as described.

854,132. DRAFT-GEAR FOR RAILROAD-CARS. CHARLES T. WESTLAKE, St. Louis, Mo., assignor to Transom Draft Gear Company, St. Louis, Mo., a Corporation of Delaware. Filed Mar. 11, 1907. Serial No. 361,787.



Claim.—In a car draft-gear having its pivotal point forward of the car truck center, the combination of a spring, a housing for the spring fixed to the car, a cross-bar adapted to engage one end of the spring, a yoke coupled to the cross-bar and adapted to engage the other end of the spring, a draw-bar spaced apart from the cross-bar and having a suitable coupling, and two links adapted to connect the said bars together, one on each side of the longitudinal center line of the car, so that, on the lateral movement of the coupler from its normal central position, the angle of intersection ordinarily made by the longitudinal center line of the car with that of the draw-bar when pivoted at the said point forward of the truck, is reduced to the same angle or thereabout, as if the pivotal point of the draw-bar was at the truck center, substantially as described.

854,133. VALVE. RICHARD WHITAKER, New Brunswick, N. J., assignor, by direct and mesne assignments, to Brunswick Refrigerating Company, a Corporation of New Jersey. Filed Jan. 11, 1904. Serial No. 188,614.



Claim.—1. A valve, wherein the cover is provided with securing threads engaging with the body and adjusting threads engaging with the stem, both threads being of the same pitch, whereby the cover can be removed or replaced without changing the position of the stem.

2. The combination with a body, having a cylindrical chamber and a valve seat therein, of a stem having a cylindrical portion and a face, and a cover, the said cover having securing threads engaging with the body and adjusting threads engaging with the stem, the said threads being of the same pitch.

3. The combination with a body, having a valve seat and a threaded portion, of a stem within the body and adapted to be rotated and moved longitudinally therein to and away from the seat, the said stem having a threaded portion, and a cover surrounding the stem and engaging with the threads thereon and with the threads on the body, the threads on the stem and body being of the same pitch.

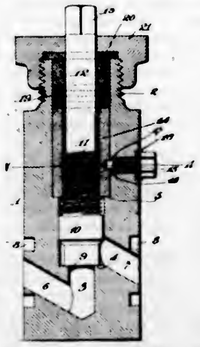
4. The combination with a body, having a valve seat and a threaded portion, of a stem within the body and adapted to be rotated and moved longitudinally therein to and away from the seat, the said stem having a threaded portion, a gland within the body and surrounding the stem, and a cover surrounding the stem and engaging with the threads thereon and with the threads on the body and with the gland, the threads on the stem and body being of the same pitch.

5. The combination with a body, having a valve seat and an external threaded portion, of a stem within the body and adapted to be rotated and moved longitudinally therein to and away from the seat, the said stem having a threaded portion and a cover surrounding the same and engaging with the threads thereon and having an annular depending portion engaging with the threads on the body, the threads on the stem and body being of the same pitch.

6. A valve having a body made of a solid block with a passage drilled therethrough and having a valve seat and a movable valve therein, the sides of the block through which the passage extends having plane opposing faces, concentric seats around the passage, pipes having tie-plates which engage with the seats, and tie-bolts for compressing the plates against the seats and securing the pipes to the body of the valve.

7. A valve having a body formed of a block having a valve therein, a passage therethrough, the said passage having a shoulder therein and a pipe with a tie-plate, the said tie-plate being compressed against the body, and a screen in the passage and on the shoulder so that upon the plate being removed the screen will be exposed.

854,134. VALVE. RICHARD WHITAKER, New Brunswick, N. J., assignor, by direct and mesne assignments, to Brunswick Refrigerating Company, a Corporation of New Jersey. Filed Dec. 28, 1905. Serial No. 293,553.



Claim.—1. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having a threaded portion, a nut engaging with the shoulder within the centerbore the threaded portion of the valve stem also engaging with the nut, a gland, and a cover engaging with the threaded neck for holding the gland within the centerbore.

2. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having an enlarged portion engaging with the centerbore, and a smaller threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, and a cover engaging with the threaded neck for holding the gland within the centerbore.

3. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having a threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, packing between the nut and gland, and a cover engaging with the threaded neck for holding the gland within the centerbore.

4. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having an enlarged portion engaging with the centerbore, and a smaller threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, packing between the nut and gland, and a cover engaging with the threaded neck for holding the gland within the centerbore.

5. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having a threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, a cover engaging with the threaded neck for holding the gland within the centerbore, and a bolt passing through the side of the body, and engaging with the nut to prevent it from turning.

6. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having a threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, a cover engaging with the threaded neck for holding the gland within the centerbore, and a bolt passing through the side of the body, and engaging with the nut to prevent it from turning, and a washer under the head of the bolt for preventing leakage.

7. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having an enlarged portion engaging with the centerbore, and a smaller threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, a cover engaging with the threaded neck for holding the gland within the centerbore, and a bolt passing through the side of the body, and engaging with the nut to prevent it from turning.

8. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having an enlarged portion engaging with the centerbore, and a smaller threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, a cover engaging with the threaded neck for holding the gland within the centerbore, and a bolt passing through the side of the body, and engaging with the nut to prevent it from turning, and a washer under the head of the bolt for preventing leakage.

9. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having a threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, packing between the nut and gland, a cover engaging with the threaded neck for holding the gland within the centerbore, and a bolt passing through the side of the body, and engaging with the nut to prevent it from turning.

10. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having a threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, packing between the nut and gland, a cover engaging with the threaded neck for holding the gland within the centerbore, and a bolt passing through the side of the body, and engaging with the nut to prevent it from turning, and a washer under the head of the bolt for preventing leakage.

11. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having an enlarged portion engaging with the centerbore, and a smaller threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, packing between the nut and gland, a cover engaging with the threaded neck for holding the gland within the centerbore, and a bolt passing through the side of the body, and engaging with the nut to prevent it from turning.

12. A valve having a body with a centerbore and a threaded neck, the said centerbore being formed with a valve seat and a shoulder above the valve seat, in combination with a valve stem, having an enlarged portion engaging with the centerbore, and a smaller threaded portion, a nut engaging with the shoulder within the centerbore and with the threaded portion of the stem, a gland, packing between the nut and gland, a cover engaging with the threaded neck for holding the gland within the centerbore, and a bolt passing through the side of the body, and engaging with the nut to prevent it from turning, and a washer under the head of the bolt for preventing leakage.

854,135. GASKET. JOHN R. WHITTEMORE, Indianapolis, Ind. Filed May 11, 1906. Serial No. 316,302.



Claim.—1. A packing gasket comprising a central transversely-stiff core and a casing of packing fabric presenting a continuous portion at the pressure edge of the core.

2. A packing gasket comprising a central core of transversely stiff material and a casing of a strip of packing fabric doubled to embrace the pressure edge of the core.

3. A packing gasket comprising a metallic core and a casing of packing fabric presenting a continuous portion at the pressure edge of the core.

4. A packing gasket comprising a transversely stiff metallic core lying between a strip of packing fabric doubled over the core at its pressure edge.

5. A packing gasket comprising a central core of transversely stiff material incased in a strip of a woven fabric composed of threads having a metallic core covered by a compressible packing, and doubled over the core at its pressure edge.

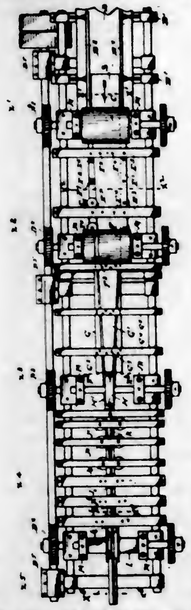
6. A packing gasket comprising a transversely stiff metallic core lying between a strip of a packing fabric woven from threads consisting of a metallic core covered by a compressible packing, and doubled over the core at its pressure edge.

7. A packing gasket comprising a central core of transversely stiff material lying between a strip of compressible packing material, doubled over the pressure edge of the core.

8. A packing gasket comprising a transversely stiff metallic core lying between a strip of compressible packing doubled over at its pressure edge.

854,136. TUBE-FORMING MACHINE. EUGENE WIET, Sacramento, Cal., assignor to Wiet-Goethe Company, Sacramento, Cal., a Corporation. Filed Feb. 12, 1906. Serial No. 300,741.

Claim.—1. In a tube forming machine the combination with a frame and driving mechanism of a feed table of adjustable width, a set of adjustable feed rolls, and two adjustably spaced parallel plates with oppositely beveled edges with progressive bending rollers mounted adjacent said beveled edges; a second set of adjustable feed rolls, and a pair of dies respectively concave and convex, and adjustably suspended one within the other, forming a channel tapering from a flat plane to a "U" shape; a third set



of adjustable feed rolls, and a series of progressive curling, and seaming rollers coöperating with a mandrel; and a set of ejecting rolls synchronized with the before mentioned feed rolls.

2. In a tube forming machine the combination with a frame, and a driving mechanism of a feed table, a set of feed rolls, and parallel plates with beveled edges with rollers mounted adjacent said beveled edges; a second set of feed rolls, and a set of concave and convex dies suspended one within the other; a third set of feed rolls, and a series of progressive curling and seaming rollers coöperating with a mandrel: and a set of ejection rolls synchronized with the before mentioned feed rolls.

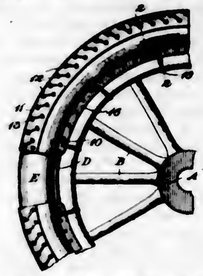
3. A tube forming machine comprising bending mechanism formed of parallel plates having bending rollers mounted adjacent their edges; curling dies suspended one within the other, and adjustable relative to each other, a mandrel, seaming rollers coöperating therewith, and means for pushing a strip of sheet metal successively through the bending, curling and seaming mechanisms.

854,137. TIRE-PROTECTOR. SAMUEL C. WOLFE, Angola, Ind. Filed Mar. 1, 1907. Serial No. 360,033.

Claim.—1. A tire protector comprising a flexible sleeve portion having series of holes along its margins, draft hooks adapted to engage in said holes, plates of substantially the same curvature as the wheel rim and having two sets of holes, threaded bolts adapted to engage in one set of plate holes, the other set of which engage the hooks aforesaid, one or more yokes having threaded ends and adapted to embrace the wheel felly, and threaded means to adjustably secure said bolts to the yoke ends and the protector to the tire.

2. In a tire protector, the combination of a flexible sleeve portion provided with a reinforcement strip and armor plates secured thereto by rivets, said sleeve being provided with series of marginal holes, rigid yokes adapted to embrace the felly and extend on opposite sides thereof toward the sleeve margins, devices interengaged with the holes of the sleeve, and means including turn-buckles for securing said devices to the yokes.

3. A device for securing a protector sleeve to a wheel comprising a plurality of double-ended hooks adapted to



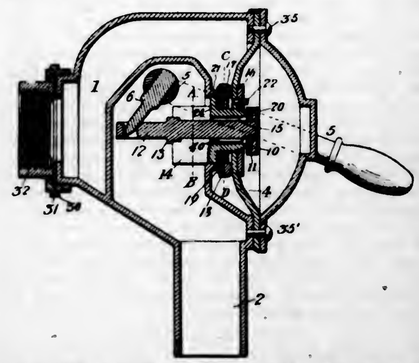
be connected at one end with the said sleeve, rigid plates connected with the other end of the said hooks and having slot holes, T-headed bolts secured in the said slot holes, and means embracing the wheel felly and adjustably connected with the said bolts.

4. The combination of a sleeve provided with series of marginal holes, rigid plates curved to conform to the curvature of the wheel rim and having series of holes spaced the same distance apart as the sleeve holes, means secured to said plates and embracing the wheel felly, and sets of double-ended hooks securing said plates to the sleeve, one end of the said hooks interengaged with the sleeve holes and the other end with plate holes, one end of each hook being adapted to be forced snugly against the shank thereof whereby the hook is permanently secured to the part embraced thereby.

5. Means for securing a protector sleeve to a wheel comprising rigid plates provided with slot holes, bolts having curved ends terminating in T-heads which interlock with said slot holes, and means embracing the wheel rim and adjustably connected with the said bolts.

6. In a tire protector, the combination of a flexible sleeve, a plurality of rigid plates curved to conform substantially to the curvature of a wheel rim, means to detachably secure the said plates to the said sleeve, yokes to embrace the wheel felly, and means to detachably and adjustably secure said yokes to said curved plates, substantially as set forth.

854,138. SLOW-CLOSING VALVE. OSCAR J. BACKUS, Jr., and RAYMOND E. CRANE, Oakland, Cal. Filed June 28, 1904. Serial No. 214,571.



Claim.—1. In a slow closing valve for flushing water closets and the like, a timing chamber, a flexible and movable diaphragm separating the same from the inlet passage

and having an open timing vent therein, a main valve carried by the diaphragm and controlling the flow of flushing water through the valve, a relief valve also carried by the diaphragm for reducing pressure in the timing chamber preliminary to opening the main valve, the stem of the relief valve passing through and having a lost motion connection with the main valve, an operating lever on the outside of the valve casing, and connections between the same and the relief valve stem, whereby both valves may be positively operated in both directions.

2. In a slow closing valve for flushing water closets and the like, a timing chamber, a flexible and movable diaphragm separating the same from the inlet passage, a main valve carried by the diaphragm and controlling the flow of flushing water through the valve, a relief valve also carried by the diaphragm for reducing pressure in the timing chamber preliminary to opening the main valve, the stem of the relief valve passing axially through the main valve, and guide vents or wings on the main valve coacting with the valve orifice to guide said main valve in its movements, the stem of the relief valve being also guided by the vents or wings on the main valve.

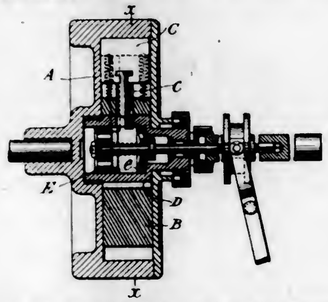
3. In a slow closing valve for flushing water closets and the like, a timing chamber separated from the inlet passage by a flexible and movable diaphragm having an adjustable timing vent therein, a removable cover for the timing chamber, a main valve carried by the diaphragm and controlling the flow of flushing water through the valve, a relief valve also carried by the diaphragm for reducing pressure in the timing chamber preliminary to opening the main valve, said relief valve stem passing axially through the main valve, and having a lost motion connection therewith, whereby both main and relief valves are actuated, an operating lever on the outside of the valve casing, and disconnectible connections between the lever and the relief valve stem, whereby on removing the cover of the timing chamber the timing vent may be adjusted and the operating parts of the valve may be removed.

4. In a slow closing valve for flushing water-closets and the like, a timing chamber having open communication with the inlet pipe through a regulable filling vent, a flexible and movable diaphragm separating the timing chamber from the inlet, a main valve carried by the diaphragm and controlling the flow of flushing water directly from the inlet pipe to the outlet pipe, a relief valve also carried by the diaphragm for reducing pressure in the timing chamber preliminary to opening the main valve, the stem of the relief valve passing through and having a lost motion connection with the main valve, an operating lever on the outside of the valve casing, and connections between the same and the relief valve stem whereby both valves may be positively operated in both directions.

5. In a slow closing valve for flushing water-closets and the like, a timing chamber having open communication with the inlet pipe through a regulable filling vent, a vertically arranged flexible and movable diaphragm separating the timing chamber from the inlet passage, a removable cover for the timing chamber, a horizontally operating main valve carried by the diaphragm and controlling the flow of flushing water from the inlet pipe to the outlet, a relief valve also carried by the diaphragm for reducing pressure in the timing chamber preliminary to opening the main valve, said relief valve stem passing horizontally and centrally through the main valve and having a lost motion connection therewith, whereby both main and relief valves may be positively actuated, a horizontally arranged weighted operating lever on the outside of the valve casing, and disconnectible connections between the shaft of the lever and the relief valve stem, whereby on removing the cover of the timing chamber the timing vent may be adjusted and the operating parts of the valve may be removed.

854,139. CLUTCHING DEVICE. FRANK BAILEY and FREDERICK H. JACKSON, London, England. Filed Nov. 30, 1906. Serial No. 345,794.

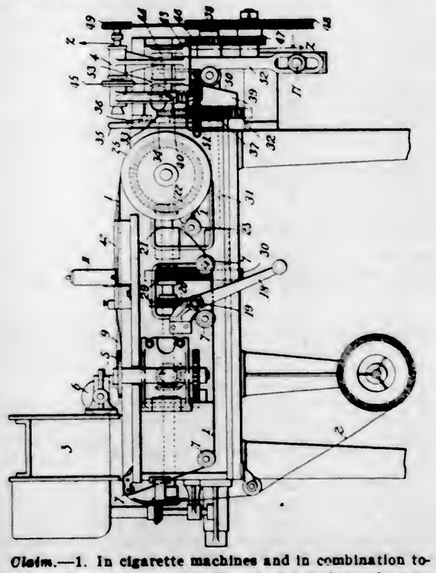
Claim.—1. The herein described clutching device, comprising an eccentrically formed casing or chamber a disk inclosed by said chamber slab-like pistons slidably mounted in said disk a central chamber in said disk fitted with a piston or other suitable valve, and passages which extend from the said central chamber to the periphery of the said disk, such passages terminating at their inner ends in ports capable of being controlled by the piston-valve, and opening at their outer ends to the eccentrically formed casing or chamber.



2. In hydraulic clutch mechanism, the combination with an eccentrically formed casing and a disk inclosed within said casing and furnished with slab-like pistons, of a controlling valve and means operating in conjunction with said valve for engaging the piston-stems and holding one or more of them against the internal periphery of the said casing, substantially as and for the purpose described.

3. In hydraulic clutch mechanism the combination with an eccentrically formed casing and a disk inclosed within said casing and furnished with slab-like pistons, of a controlling valve and a disk mounted on the controlling valve-spindle; the said disk being adapted to engage with the piston-stems when the controlling valve is in position for "full slip," substantially as and for the purpose herein described.

854,140. CIGARETTE-MAKING MACHINE. LOUIS B. BARON, London, England. Filed May 7, 1906. Serial No. 315,647.



Claim.—1. In cigarette machines and in combination tobacco feeding devices, an endless feed belt beneath same and passing beneath the compression and wrapping mechanism, a paper band upon and traveling the full length of the feed belt, a flat faced compression wheel above the paper, two horizontal compression wheels in close proximity to the vertical compression wheel, an adjustable chisel edged scraper plate adapted to make contact with the vertical compression wheel close to the point of greatest compression of the tobacco thereunder and also forming a cover over the feed side of the horizontal compression wheels, scraper plates capable of longitudinal adjustment in plane with the tobacco feed and adapted to make contact with the horizontal compression rollers, an adjustable tapered tongue with outwardly flared ends adapted to collect and deliver to the tobacco rod any fine particles of tobacco which has passed outside the scraper plates, an adjustable pasting device delivering the gum or paste directly from the receptacle to the paper, and means for cutting off the cigarette rod formed, substantially as described.

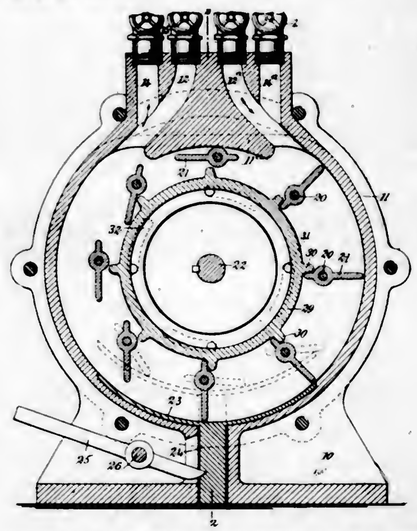
2. In cigarette machines and in combination tobacco feeding devices, an endless feed belt beneath same and passing beneath the compression and wrapping mechanism, a paper band upon and traveling the full length of the feed belt, a flat faced compression wheel above the paper, two horizontal compression wheels in close proximity to the vertical compression wheel, an adjustable chisel edged scraper plate adapted to make contact with the vertical compression wheel close to the point of greatest compression of the tobacco thereunder and also forming a cover over the feed side of the horizontal compression wheels, scraper plates capable of longitudinal adjustment in plane with the tobacco feed and adapted to make contact with the horizontal compression rollers, an adjustable tapered tongue with outwardly flared ends adapted to collect and deliver to the tobacco rod any fine particles of tobacco which has passed outside the scraper plates, and means for wrapping and pasting the paper around the tobacco and cutting off the cigarette rod formed, substantially as described.

3. In cigarette machines and in combination, tobacco feeding devices, an endless feed belt beneath same and passing beneath the compression and wrapping mechanism, a paper band upon and traveling the full length of the feed belt, a flat faced compression wheel above the paper, two horizontal compression wheels in close proximity to the vertical compression wheel, an adjustable chisel edged scraper plate adapted to make contact with the vertical compression wheel close to the point of greatest compression of the tobacco thereunder and also forming a cover over the feed side of the horizontal compression wheels, scraper plates capable of longitudinal adjustment in plane with the tobacco feed and adapted to make contact with the horizontal compression rollers, an adjustable tapered tongue with outwardly flared ends adapted to collect and deliver to the tobacco rod any fine particles of tobacco which has passed outside the scraper plates, and means for wrapping and pasting the paper around the tobacco and cutting off the cigarette rod formed, substantially as described.

4. In cigarette machines and in combination, tobacco feeding devices, an endless feed belt beneath same and passing beneath the compression and wrapping mechanism, a paper band upon and traveling the full length of the feed belt, a flat faced compression wheel above the paper, two horizontal compression wheels in close proximity to the vertical compression wheel, an adjustable chisel edged scraper plate adapted to make contact with the vertical compression wheel close to the point of greatest compression of the tobacco thereunder and also forming a cover over the feed side of the horizontal compression wheels, scraper plates capable of longitudinal adjustment in plane with the tobacco feed and adapted to make contact with the horizontal compression rollers, an adjustable tapered tongue with outwardly flared ends adapted to collect and deliver to the tobacco rod any fine particles of tobacco which has passed outside the scraper plates, means for wrapping and pasting the paper around the tobacco rod and an adjustable cut off mechanism by which the length of cigarette cut from the rod can be varied, substantially as described.

5. In cigarette machines and in combination, tobacco feeding devices, an endless feed belt beneath same and passing beneath the compression and wrapping mechanism, a paper band upon and traveling the full length of the feed belt, a flat faced compression wheel above the paper, two horizontal compression wheels in close proximity to the vertical compression wheel, an adjustable chisel edged scraper plate adapted to make contact with the vertical compression wheel close to the point of greatest compression of the tobacco thereunder and also forming a cover over the feed side of the horizontal compression wheels, scraper plates capable of longitudinal adjustment in plane with the tobacco feed and adapted to make contact with the horizontal compression rollers, an adjustable tapered tongue with outwardly flared ends adapted to collect and deliver to the tobacco rod any fine particles of tobacco which has passed outside the scraper plates, an adjustable pasting device delivering the gum or paste directly from the receptacle to the paper, and an adjustable cut off mechanism by which the length of cigarette cut from the rod can be varied, substantially as described.

854,141. ROTARY ENGINE. THOMAS S. BARWIS, Vancouver, British Columbia, Canada. Filed Aug. 2, 1906. Serial No. 328,836.



Claim.—1. In an engine, the combination of a casing having admission and exhaust ports, a drum operating therein, comprising side members connected to turn together, a cylinder extending between the side members and having movement relative thereto, wings pivotally mounted between the side members, teeth carried by the cylinder and adapted to be engaged by the wings, for the purpose specified, and means permitting the relative shifting of the cylinder.

2. In an engine, the combination of a casing having admission and exhaust ports, a drum operating therein, comprising side members connected to turn together, a cylinder extending between the side members and having movement relative thereto, wings pivotally mounted between the side members, teeth carried by the outer side of the cylinder and adapted to be engaged by the wings, for the purpose specified, and means permitting the relative shifting of the cylinder.

3. A rotary engine having a casing with admission and exhaust ports, a revoluble member operating in the casing, wings pivotally mounted on the revoluble member, and means coacting with the wings to prevent pivotal movement in one direction, said means being adjustable to reverse the direction of pivotal movement of the wings, whereby to permit the reversal of the engine.

4. A rotary engine having a casing with admission and

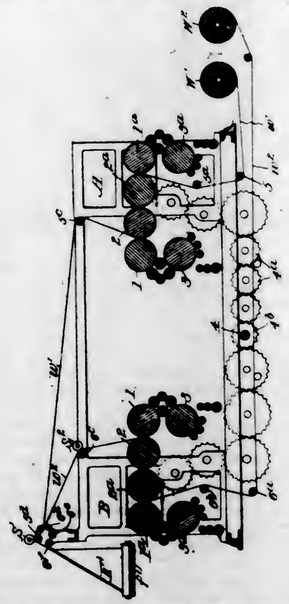
exhaust ports, a drum operating therein and formed of two relatively movable members, wings pivotally mounted on one of said members of the drum and engaging the other member, whereby to permit the wings pivotal movement in one direction only, said second member of the drum being adjustable to reverse the direction of pivotal movement of the wings for the purpose described.

5. A rotary engine having a casing with admission and exhaust ports, a drum operating therein and formed of two relatively movable members, wings pivotally mounted on one of said members and engaging the other member, whereby to permit the wings pivotal movement in one direction only, said second member of the drum being adjustable to reverse the direction of pivotal movement of the wings, and a shoe for assisting in said pivotal movement as described.

6. A rotary engine having a casing with admission and exhaust ports, a drum operating therein and comprising side members with a relatively movable cylinder extending between them, wings pivotally mounted between the side members and engaging said cylinder, and means for shifting the cylinder relatively to the wings, for the purpose specified.

7. A rotary engine having a casing with admission and exhaust ports, a drum operating therein, and comprising side members, and a relatively shiftable cylinder extending between the side members, wings pivotally mounted between said side members, the pivots of the wings being adjacent to the inner edges thereof, and the cylinder having teeth adapted to engage the inner portions of the wings, and means for moving the cylinder relatively to the side members.

854,142. ROTARY WEB-PRESS. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich., a Corporation of Michigan. Filed Sept. 1, 1906. Serial No. 333,013.



Claim.—1. In a rotary printing press, the combination of two parallel series of rotary perfecting mechanisms arranged in substantially the same plane, each series containing two rotary perfecting mechanisms end to end, the cylinders in each mechanism extending longitudinally of the press, and all the cylinders being in substantially the same plane; with a corresponding number of formers at one side of the press, folding mechanisms adjacent the formers, guides for directing webs through each perfecting mechanism straight to the formers without lateral deflection of the webs, and means whereby the webs can be directed into the same or any separate folding mechanism.

2. In a rotary printing press, the combination of parallel series of rotary perfecting mechanisms arranged in substantially the same plane each series comprising a plurality of rotary perfecting mechanisms arranged end to end, the cylinders in each mechanism extending longitudinally of the press; with a corresponding number of formers at one side of the press, a folding mechanism, adjacent each former guides for directing webs through each perfecting mechanism straight to the formers without lateral deflection of the webs, means for slitting the webs, and means whereby the sections of the webs can be directed into any folder.

3. The herein described rotary press, comprising two parallel series of perfecting mechanisms arranged in substantially the same plane each series comprising a plurality of perfecting mechanisms arranged end to end longitudinally of the press, the cylinders in the several mechanisms being in substantially the same horizontal plane, a corresponding number of formers at one side of the press, means for directing the webs printed on the perfecting mechanisms into the adjacent formers without lateral deflection of the webs, means for slitting the webs before reaching the formers, a folding mechanism beside each former, guides for directing the webs through the press, and means whereby the webs may be directed from any former into any folder.

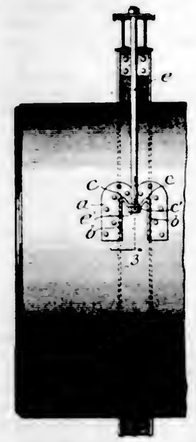
4. The herein described rotary press, comprising two parallel series of perfecting mechanisms, each series comprising two perfecting mechanisms arranged end to end longitudinally of the press, the cylinders in the several mechanisms being in substantially the same horizontal plane, a former for each mechanism at one side of the press, means for directing the webs printed on transversely adjacent perfecting mechanisms into the relative adjacent formers without lateral deflection of the webs, means for slitting the webs before reaching the formers, a folding mechanism beside each former, guides for directing the webs through the press, and means whereby the webs or sections thereof may be directed from any former into any folder.

5. In a rotary printing press, the combination of parallel series of rotary perfecting mechanisms, each series comprising a plurality of rotary perfecting mechanisms, the cylinders in each mechanism extending longitudinally of the press; with a corresponding number of formers at one side of the press, a folding mechanism, adjacent each former guides for directing webs through each perfecting mechanism straight to the formers without lateral deflection of the webs, means for slitting the webs, and means whereby the sections of the webs can be directed into any folder; with a collector adjacent each folding mechanism, and means for driving the several perfecting mechanisms in unison.

6. In a rotary printing press, the combination of two parallel series of rotary perfecting mechanisms in substantially the same plane, each series comprising two rotary perfecting mechanisms, the cylinders in each mechanism extending longitudinally of the press, and all the cylinders being in substantially the same plane; with a corresponding number of formers at one side of the press, a folding mechanism adjacent each former, guides for directing webs through each perfecting mechanism straight to the formers without lateral deflection of the webs; means for operating the perfecting mechanisms in unison, and means whereby one or more of the perfecting mechanisms may be put out of operation; with a collector adjacent to each folding mechanism, and means for driving the several perfecting mechanisms in unison.

854,143. BOILER-HANGER. THOMAS C. BEST, Chicago, Ill. Filed Nov. 26, 1906. Serial No. 345,104.

Claim.—1. A boiler hanger comprising a ∩-shaped flanged plate provided with spaced parallel strengthening ribs, and an integral web connecting the ends of the ribs, said web having a depressed center portion.



2. A boiler hanger comprising a ∩-shaped flanged plate provided with spaced parallel strengthening ribs, an integral web portion connecting the ribs at one end, said web portion having a depressed center, and angularly arranged ends connecting the ribs with the depressed center portion.

3. A boiler hanger comprising a ∩-shaped flanged plate provided with spaced parallel strengthening ribs, an integral web connecting the ends of the strengthening ribs, said web having a depressed center portion, and boiler supporting means connected to the depressed center portion.

4. A boiler hanger comprising a plate adapted to be secured to a boiler shell, a rib projecting laterally from the plate, and a web connected to the rib to which a boiler supporting means is adapted to be secured.

5. A boiler hanger comprising a plate adapted to be secured to a boiler shell, parallel ribs projecting outwardly from the plate, and a web interposed between and connected to the ribs to which a boiler supporting means is adapted to be secured.

6. A boiler hanger comprising a plate adapted to be secured to a boiler shell, parallel ribs projecting outwardly from the plate, and a web interposed between said ribs to which a boiler supporting means is adapted to be secured, said web having diverging portions connected to the ends of the ribs.

7. A boiler hanger comprising a plate adapted to be secured to a boiler shell, spaced strengthening ribs projecting from parallel edges of the plate, and a web interposed between and connected to the ribs to which a boiler supporting means is adapted to be secured.

8. A boiler hanger comprising an ∩-shaped plate adapted to be secured to a boiler shell, a pair of strengthening ribs projecting outwardly from the edges of the plate, and a web intermediate of and connected to the ribs to which a boiler supporting means is adapted to be secured.

9. A boiler hanger comprising an ∩-shaped plate adapted to be secured to a boiler shell, a pair of strengthening ribs projecting outwardly from the edges of the plate, a web intermediate of said ribs having a central portion to which a boiler supporting means is adapted to be secured, and diverging portions on opposite sides of the central portion connected to the ribs.

10. A boiler hanger comprising an ∩-shaped plate adapted to be secured to a boiler shell, a pair of ribs projecting outwardly from the inner edges of the members of said plate, and a web intermediate of and secured to said ribs to which a boiler supporting means is adapted to be secured.

11. A boiler hanger comprising an ∩-shaped plate adapted to be secured to a boiler shell, a pair of ribs projecting outwardly from the inner edges of said plate, and a web intermediate of the ribs having a central portion to which a boiler supporting means is adapted to be secured and diverging portions on opposite sides of the central portion connected to said ribs.

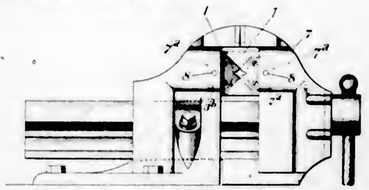
854,144. DRILL-BIT. PETER BROADBOOKS, Batavia, N. Y. Filed Aug. 3, 1906. Serial No. 329,036.



Claim.—1. A drill-bit having chip-channels and eccentrically disposed oil-grooves intermediate the chip-channels, said oil-grooves gradually increasing in depth from their forward edges to their rear edges, and having plane surfaced walls at their rear edges adapted to raise foreign matters in the grooves, substantially as described.

2. A drill-bit having a plurality of equidistant spiral chip-channels arranged at a tangent to a small circle described at the axis of the drill, said channels being of greater depth than width so that their mouths are narrower than their depth and their leading and following walls are substantially parallel.

854,145. PIPE AND ROD GRIPPING ATTACHMENT FOR VISES. PETER BROADBOOKS, Batavia, N. Y. Filed Mar. 9, 1907. Serial No. 361,488.



Claim.—1. In combination with a vise, removable pipe gripping members detachably attached to the vise jaws below the gripping edges of such jaws, and each member comprising a plurality of gripping sections detachably connected together but spaced apart, the sections attached to one member being arranged to pass the sections attached to the opposite member, thereby obtaining a stronger grip-hold and preventing kinking of the pipe when pressure is applied to the jaws.

2. In a pipe or rod gripping attachment for vises, the combination of opposite members each provided with a plurality of gripping sections separated by spacing blocks, and each member being provided with a reduced shank portion adapted to enter a socket in a vise jaw, and be secured therein, while the gripping sections bear against the inner face of the jaw to which the member is attached, substantially as described.

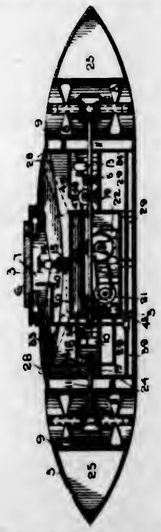
3. In combination, a vise having sockets in the inner faces of its jaws; with a pipe and rod gripping attachment comprising opposite members, each provided with a plurality of notched gripping sections, and interposed spacing blocks, the gripping sections of one member being opposite the spacing blocks of the other member, and each member provided with a reduced shank portion adapted to enter the socket in a vise jaw, while the gripping sections bear against the inner face of such jaw, substantially as described.

4. In combination with a vise having socketed jaws, with pipe-gripping members attached to said jaws; one member comprising a central gripping section having a shank extension to enter a socket in the vise jaw, and

onter sections spaced from the central section by blocks; and the opposite member having a central spacing section having an extension adapted to engage a socket in the vise jaw, and gripping sections at opposite sides of the spacing section, substantially as described.

5. The combination with a vise having sockets in the inner faces of its jaws; with pipe-gripping members, one member having a central and side gripping section, and interposed spacing blocks, and means for detachably connecting the said sections and blocks together; said central section having a shank portion adapted to engage a socket in one of the vise jaws,—the other member having a pair of gripping sections and an intermediate spacing block, said spacing block having a shank adapted to enter the socket in the other jaw; and means for detachably fastening said sections and block together; and means for removably fastening the shanks in the jaw sockets, substantially as described.

854,146. SUBMARINE BOAT. JOHN M. CAGE, Denver, Colo., assignor of one-half to James C. Harvey, Denver, Colo. Filed Feb. 21, 1906. Serial No. 302,245.



Claim.—1. In a submarine boat, a normally water-tight shell comprising an operating room, fresh air and impure-air chambers, means to compress air in the fresh air chamber, means to conduct air therefrom into the operating room, and means to exhaust the impure air from the latter into the foul air chamber.

2. In a submarine boat, a normally water-tight shell comprising separated engine,-operating-, foul-air-and fresh air-compartments, means to compress air in the latter, means to conduct air therefrom into the operating compartment, means to exhaust air from the latter into the engine compartment, and means to exhaust air from the latter into the foul air compartment.

3. In a submarine boat, a normally water-tight shell comprising an operating room, an engine room, compartments adapted to contain gaseous fluids connected therewith, fresh-air and foul-air compartments, and means to lead air from the fresh-air compartment consecutively through the operating and the engine rooms into the foul-air compartments.

4. In a submarine boat, a normally water-tight shell comprising an operating room, an engine room, fresh-air and foul-air compartments and means to lead air from the fresh air compartment consecutively through the operating and the engine rooms into the foul-air-compartment.

5. In a submarine boat, a normaly water-tight shell comprising a centrally located engine room, the surrounding space being horizontally divided into an operating and a fresh-air chamber, foul-air chamber separated therefrom and means to lead air from the fresh-air chamber through the operating room and the engine room, into the foul-air compartment.

6. In a submarine boat, a normally water-tight shell comprising a centrally located engine room, the surrounding space being divided into an operating room and a compressed air compartment, compartments adapted to contain gaseous fluids at the extreme ends of the boat and connected with the engine room, communicating foul-air compartments interposed between the last named compartments and the operating room and compressed air compartment, and means to conduct air from the latter through the operating and engine rooms into the foul-air compartments.

7. In a submarine boat, a normally water-tight shell comprising separated fresh-air and foul-air chambers, means to compress air in the former and to conduct it into the interior of the shell, and means to subsequently exhaust said air and to compress it in the foul-air compartment.

8. In a submarine boat, a normally water-tight shell comprising fresh-air and foul-air compartments, an engine adapted to be actuated by means of gaseous fluids, in said shell, and means to conduct gases exhausted from said engine into said foul-air compartment.

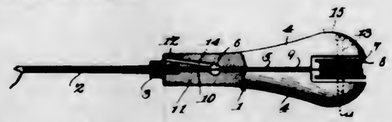
9. In a submarine boat, a normally water-tight shell comprising fresh-air and foul-air compartments, an engine adapted to be actuated by means of gaseous fluids, in said shell, and means to conduct and compress gases exhausted from said engine into said foul-air compartments.

10. In a submarine boat, a normally water-tight shell comprising fresh-air and foul-air compartments, an engine adapted to be actuated by means of gaseous fluids in said shell, an expansion chamber, means to lead gases exhausted from said engine therein, and means to conduct gases from said chamber and compress them in the said foul air compartments.

11. In a submarine boat, a normally water-tight shell comprising fresh-air and foul-air compartments, an engine adapted to be operated by gaseous fluids in said shell, a purifying contrivance, an expansion tank and means to lead gases exhausted from said engine consecutively through the said purifying contrivance and the said tank into the said foul-air compartments and to compress said gases therein.

12. In a submarine boat, a normally water-tight shell, comprising an operating room, fresh-air and foul-air compartments, an engine adapted to be operated by means of gaseous fluids in said operating room, means to conduct air from the fresh-air compartment through the said operating room into the foul-air compartment, means to conduct gases exhausted from the said engine into the said foul-air chamber, and means to compress said air and gases therein.

854,147. SEWING-AWL. LEWIS G. CARILLON and CHARLES P. CARILLON, Millersburg, Ohio. Filed Apr. 20, 1906. Serial No. 312,822.



Claim.—1. In a sewing awl, a single piece handle comprising two resilient members forming jaws adapted to engage the sewing thread.

2. In a sewing awl, a handle which is slotted diametrically and longitudinally to form yielding members between which the thread is adapted to be gripped, and provided with a bore communicating with the slot through which the thread is adapted to pass from between the members.

3. In a sewing awl, a handle having a longitudinal slot terminating at its inner end in a transverse opening and a central bore in the unslotted portion of the handle and alining with said slot.

4. In a sewing awl, a handle provided with a longitudinal slot and a plurality of thread receiving passages extending from said slot.

5. In a sewing awl, the combination of a handle provided with a longitudinal slot to form resilient members compressible toward each other and with a passage communicating with the slot, a spool mounted in the handle at the outer end of the slot and arranged to permit the thread to be drawn from the spool successively through the slot and passage, and a needle mounted in the end of the handle opposite from the spool for receiving the thread from the said passage.

6. In a sewing awl, the combination of a single piece handle split longitudinally to form resilient members compressible toward each other, a thread carrying spool mounted in the handle to permit the thread to be drawn between the members and to be gripped thereby, and a needle mounted in the handle in a position axially in line with the split thereof.

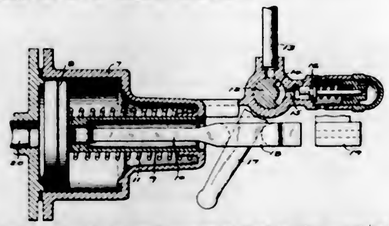
7. In a sewing awl, the combination of a single piece handle which is split throughout part of its length to form two resilient members compressible toward each other for gripping the thread, a spool mounted at the outer end of the handle for holding the thread and permitting it to pass between the members, and a needle mounted in the opposite end of the handle which receives the thread after passing between said members.

8. In a sewing awl, the combination of a handle which is provided with a recess at one end and split longitudinally to form two compressible members, a spool mounted in the recess of the handle and arranged to permit the members to be compressed, and a needle secured to the handle.

9. In a sewing awl, the combination of a handle provided with a plurality of passages at the needle carrying end and slotted outwardly from the inner ends of said passages to form two resilient members adapted to grip the thread, means for holding the thread and permitting it to be drawn inwardly through the slot and either of said passages, and a needle arranged in one end of the handle.

10. In a sewing awl, the combination of a handle having a passage at one end and a slot extending from the inner end of said passage to the opposite end to form two resilient jaws adapted to grip the thread, a spool mounted between the jaws and arranged to permit the thread to be drawn between the latter and through the said passage, an arbor for the spool which is secured in one of the jaws and movable therewith, and a needle secured in the handle which receives the thread from the passage.

854,148. FLUID-PRESSURE BRAKE. FRANCIS L. CLARK, Pittsburg, and WALTER V. TURNER, Wilkinsburg, Pa., assignors to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 11, 1904. Serial No. 220,442.



Claim.—1. In a fluid pressure brake, the combination with an apparatus adapted to be adjusted to a light braking position or to a heavy braking position, of means operated by the train-pipe pressure of the system for automatically setting the apparatus to its light braking position.

2. In a fluid pressure brake, the combination with an apparatus adapted to be adjusted to give light braking power on empty cars and heavy braking power on loaded cars, of means operated by charging up the train pipe for automatically setting the apparatus in light braking position.

3. In a fluid pressure brake, the combination with an apparatus adapted to be adjusted to give light braking power on empty cars and heavy braking power on loaded cars, of means operating upon a depletion of fluid pressure in the apparatus for automatically setting the device in heavy braking position, and means operated by again charging or increasing the pressure for adjusting the apparatus to its light braking position.

4. In a fluid pressure brake, the combination with an apparatus for giving either light braking power or heavy braking power, of a valve device subject to the fluid pressure of the system for adjusting said apparatus, and means for moving said valve device to heavy braking position when the pressure is depleted and to light braking position when the system is recharged.

5. In a fluid pressure brake, the combination with an apparatus for giving either light braking power or heavy braking power, of a valve for adjusting said apparatus and a movable abutment for actuating said valve and normally subject to the fluid pressure of the system when the valve is in light braking position.

6. In a fluid pressure brake, the combination with an apparatus adapted to be adjusted to give light braking power on empty cars and heavy braking power on loaded cars, said apparatus including a cock or valve for adjusting the same, of a piston subject to the fluid pressure of the system for automatically adjusting the position of the cock, and means for manually adjusting the position of the cock at any time, independently of the piston.

7. In a fluid pressure brake, the combination with an apparatus adapted to be adjusted to give light braking power on empty cars and heavy braking power on loaded cars, said apparatus including a cock or valve for adjusting the same, of a piston actuated by the charging up of the system with fluid under pressure for automaticaly adjusting the cock to its light braking position, and a spring for returning the piston to its opposite position when the pressure in the system is depleted.

8. In a fluid pressure brake, the combination with an apparatus having a cock or valve adapted to be adjusted to one position for producing heavy braking power on the car when loaded and when set in another position to produce light braking power for the car when empty, of a piston and pivoted bar operated by the increase of train pipe pressure for automatically adjusting said cock to its light braking position.

9. In a fluid pressure brake, the combination with an apparatus having a cock or valve adapted to be adjusted to one position for producing heavy braking power on the car when loaded and when set in another position to produce light braking power for the car when empty, of a piston subject to the fluid pressure of the system, a bar pivoted to the piston and having a notch for engaging the cock lever, and means for raising the bar out of engagement with the cock lever in light braking position.

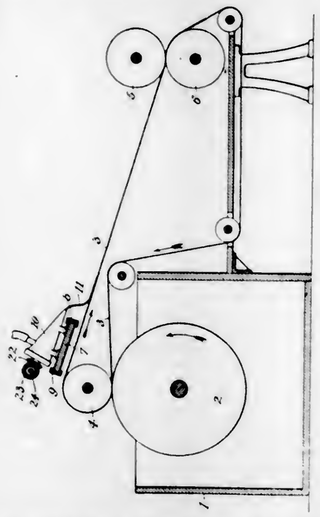
10. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, brake cylinder and triple valve device having an emergency valve and check valve, of an apparatus adapted to be adjusted for light braking power on empty cars and heavy braking power on loaded cars, a movable abutment for adjusting said apparatus, and a pipe or passage leading from the check-valve chamber of the triple valve device to said abutment.

854,149. APPARATUS FOR MAKING IMITATION WOOD. WILLIAM N. CORNELL, Massena, N. Y. Filed Sept. 16, 1905. Serial No. 278,830.

Claim.—1. In an apparatus of the kind described, the combination with a longitudinally moving band or apron adapted to carry a film or layer of pulp on its surface, of means for depositing a plurality of narrow strings or

bands of pulp in sinuous form upon the layer of pulp thus carried, as set forth.

2. In an apparatus of the kind described, the combination with a longitudinally moving apron or carrier, of devices for extruding pulp in a plurality of strings or bands, said devices being arranged to discharge the said strings or bands upon a layer or film of pulp carried by said apron, and means for oscillating the extruding devices transversely to the apron or carrier, as set forth.



3. In an apparatus of the kind described, a device for extruding pulp in the form of a string or band comprising a conical outer casing, having a narrow discharge orifice, a conical screw or worm in the casing, and means for supplying pulp to the interior of the casing, as set forth.

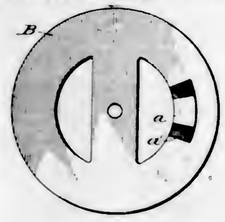
4. In an apparatus of the kind described, the combination with a longitudinally moving band or apron adapted to carry a film or layer of pulp on its surface, of devices for extruding pulp in a plurality of bands or strips, said devices being arranged to discharge said strings or bands upon the layer or film of pulp carried by the apron, as set forth.

5. In an apparatus of the kind described, the combination with a longitudinally movable band or apron adapted to carry a film or layer of pulp on its surface; of a plurality of extruding devices, each comprising a conical casing having a discharge orifice at its smaller end, a conical worm or screw working in the casing, said devices being arranged to discharge upon the film or layer of pulp carried by the apron; and means for supplying pulp to the extruding devices; as set forth.

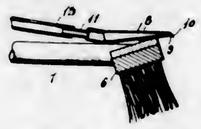
6. In an apparatus of the kind described, the combination with a longitudinally moving band or apron adapted to carry a film or layer of pulp on its surface, a plurality of devices for extruding pulp in bands or strings upon the film or layer carried by the apron, a support for the extruding devices, means for reciprocating said support transversely to the apron, and means for supplying pulp to the extruding devices, as set forth.

854,150. ADJUSTING-WHEEL FOR SWINGLETREES OR DOUBLETREES. LUTHER E. DARST, Louisiana, and WILLIAM H. HARRELSON, Cyrene, Mo. Filed Aug. 21, 1905. Serial No. 275,168.

Claim.—The combination with the plate A, having the integral lug, *a*, of the plate B, having the recess, *a'*, for joint operation in connection with a swingle tree or double tree substantially as described.



854,151. WINDOW-CLEANER. JOHN DEASY, Detroit, Mich. Filed Oct. 2, 1906. Serial No. 337,062.



Claim.—The combination with a brush, of a water supply pipe having a nozzle fixed to the brush back, the nozzle being flared laterally and having a discharge slot at its front edge and a lip projecting over said slot to deflect the water over the brush, and also have laterally extending ears to which the brush is attached.

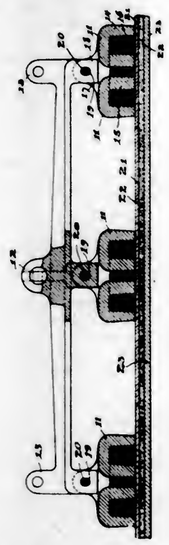
854,152. LADDER. CORNELIUS DE COOK, Bangor, Mich. Filed Mar. 17, 1906. Serial No. 306,619.



Claim.—A ladder having supporting means, extensions adjustably mounted on the same, locking devices coöperating with the extensions, parallel cross braces connecting the supporting means, and a shifting bar fulcrumed intermediately to and movable between the cross braces and engaging the supporting means and extensions, the ends of the bar being free to move with the said supporting means and extensions.

854,153. ELECTROMAGNETIC MEANS FOR TRANSPORTING NON-MAGNETIC MATERIALS. ETHAN I. DODDS, Pullman, Ill. Filed Apr. 27, 1906. Serial No. 314,111.

Claim.—1. The method of supporting a body of non-magnetic material, which consists in resting said body upon an armature and sustaining the latter by the pull exerted thereon by an electro-magnet, substantially as described.



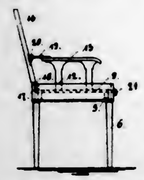
2. The method of supporting a body of non-magnetic material, which consists in resting the same upon an armature placed beneath said body, said armature being sustained by the attraction exerted thereon by an electro-magnet, the lines of force passing through said non-magnetic body, substantially as described.

3. The method of supporting a body of non-magnetic material, which consists in placing an armature on one side of said body, and an electro-magnet on the opposite side, the attraction of said magnet for said armature pressing the parts together sufficiently to sustain said body in any position, substantially as described.

4. The method of transporting a sheet of glass, which consists in resting said sheet upon an armature, sustaining the latter by the attraction of an electro-magnet therefor, and then moving said magnet and supported parts to the location desired, substantially as described.

5. The method of transporting a sheet of glass, which consists in placing an armature on one side of said sheet and a plurality of electro-magnets on the opposite side of said sheet, the attraction of said magnets for said armature pressing the parts together sufficiently to sustain said sheet in any position, and moving said magnets, armature, and sheet of glass to the location desired, substantially as described.

854,154. PORTABLE CHAIR. EMIL DOMSGEN and FRIEDRICH L. KUJAWA, Magdeburg, Germany. Filed July 2, 1906. Serial No. 324,618.

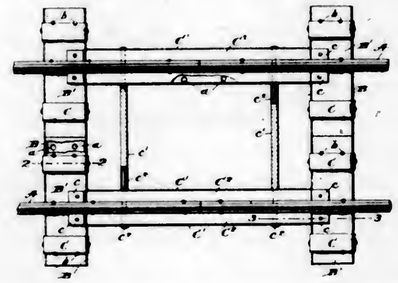


Claim.—1. In a portable chair the combination of a frame having one low side piece, a seat frame, hinges connecting the frame to the low side piece, a back, hinges at one edge of the latter, connecting the back to the seat, arms and hinges attaching the arms to the seat frame, removable legs adapted to be pushed in holes of the frame and a hooking device between the said back and arms, all as described and for the purpose set forth.

2. In a portable chair the combination of an under stand having one side piece lower than the resting three side pieces, a seat frame hinged to said lower side piece, a cover plate forming the back and hinged to the seat frame, arms hinged to the seat frame and loose legs adapted to be pushed into holes in the frame, the whole adapted to be clasped together, to form a satchel-like box, all as described and shown.

3. In a portable chair a frame, a bottom plate on said frame, a superstructure in the corners of the frame provided with holes, spring catches in the holes, and removable chair-legs to be inserted in the holes, a seat frame, a cover hinged on the seat frame and lying inside the frame and a cover plate hinged to the seat and adapted to close the formed satchel-like box.

854,155. RAILROAD-TIE. DAVID P. DUNKLE and JASPER N. WHETSTONE, Keokuk, Iowa. Filed Feb. 8, 1907. Serial No. 356,355.



Claim.—1. In a railway track structure, a pair of longitudinal ties, a plurality of sleeves interposed between said ties, and tie rods connecting said ties and passing through said sleeves.

2. In a railway track structure, separated ties each comprising a metallic trough, a wooden tie seated therein, and tie rods connecting said ties, the extremities of which pass through the sides of the metallic troughs and the ties seated therein.

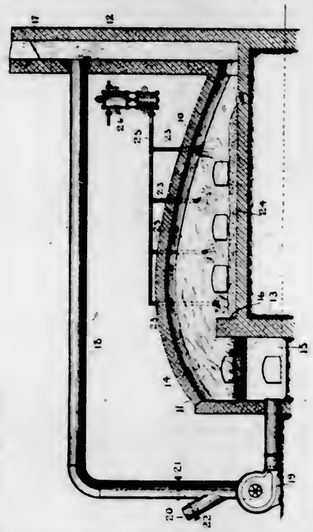
3. In a railway track structure, a pair of cross ties, a pair of longitudinal ties interposed between said cross ties and having their ends secured thereto, a plurality of sleeves interposed between the adjacent sides of the longitudinal ties, and tie rods connecting the longitudinal ties and passing through said sleeves.

4. In a railroad track structure, a pair of separated cross ties and longitudinal ties interposed therebetween, each of said longitudinal ties comprising a metallic trough having flanges extending from the ends thereof and overlying the cross ties and a wooden tie secured within said trough.

5. In a railroad track structure, a pair of cross ties each comprising a metallic trough and a wooden tie seated therein, and a pair of separated longitudinal ties interposed therebetween, each of said longitudinal ties comprising a metallic trough having flanges extending from the ends thereof, and overlying the cross ties and a wooden tie seated in said metallic trough, and tie rods connecting said longitudinal ties, the extremities of which pass through the sides of the metallic troughs and the ties seated therein.

6. In a railway track structure, separated ties therein, a plurality of sleeves interposed between the adjacent sides of said ties, and tie rods passing through said sleeves, the extremities of said tie rods passing through said ties.

854,156. PROCESS OF CONDUCTING COMBUSTION. BYRON E. ELDRED, Bronxville, N. Y., assignor to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Dec. 16, 1904. Serial No. 237,065.



Claim.—1. The process of conducting combustion which consists in producing a tardily burning voluminous inflated flame and locally intensifying the combustion of said flame in a plurality of horizontal strata at points at different distances from its origin.

2. The process of conducting combustion which consists in producing a tardily burning voluminous inflated flame and locally intensifying the combustion of said flame in a plurality of horizontal strata at points at different distances from its origin, each further point being located in higher strata than each nearer.

3. The process of conducting combustion which consists in producing a tardily burning voluminous inflated flame and locally intensifying the combustion of said flame in a plurality of horizontal strata at points at different distances from its origin by a series of piercing air jets directed into said strata at such points from the side.

4. The process of conducting combustion which consists in producing a tardily burning voluminous inflated flame and locally intensifying the combustion of said flame in a plurality of horizontal strata at points at different distances from its origin by a series of piercing air jets directed into said strata at such points from the side, each further point being located in a higher stratum than each nearer.

5. The process of combustion which consists in passing through a shallow bed of ignited fuel a draft current of air diluted with products of combustion, passing the resultant ignited gaseous products through a reverberatory furnace and intensifying their combustion in a plurality of horizontal strata by piercing air jets located at different distances from the fuel bed and directed into different strata.

6. The process of combustion which consists in passing through a shallow bed of ignited fuel a draft current of air diluted with products of combustion, passing the resultant ignited gaseous products through a reverberatory furnace and intensifying their combustion in a plurality of horizontal strata each further jet being directed into a higher stratum than each nearer.

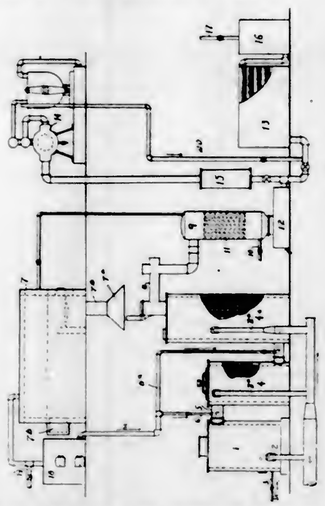
7. The process of combustion which consists in producing a tardily burning inflated voluminous flame, localizing the combustion of said flame at a plurality of points at different distances from its origin and in different strata of said flame by jets of different velocities.

8. The process of combustion which consists in producing a tardily burning inflated voluminous flame, and localizing the combustion of said flame by a plurality of air jets of different velocities acting simultaneously at different distances from the origin of the flame and in different strata of said flame.

9. The process of combustion which consists in producing a tardily burning inflated voluminous flame and localizing the combustion of said flame by a plurality of jets operating at different distances from the origin of the flame and originating at distances from the hearth which successively increase in the direction of travel of the flame.

10. The process of heating material in reverberatory furnaces which consists in exposing the material on the hearth of such a furnace to a tardily burning inflated flame produced by an accelerated draft current of admixed air and products of combustion passed through a shallow bed of ignited fuel, and successively intensifying the combustion in successive upward strata of such flame by piercing air jets directed into such strata, each succeeding jet being located further away from the origin of such flame.

854,157. PROCESS OF GENERATING HYDROGEN. CARLETON ELLIS, White Plains, and BYRON E. ELDRED, Bronxville, N. Y., assignors to Combustion Utilities Company, New York, N. Y., a Corporation of New York. Filed Oct. 21, 1905. Serial No. 283,858.



Claim.—1. The process of producing hydrogen which consists in blowing up a gas producer with an air draft current, burning the gaseous products in a refractory walled region to heat the same, then running the producer with a draft comprising steam, mixing the water gas produced with steam, passing the mixture through the refractory walled region to convert carbon monoxid into carbon dioxid, removing the carbon dioxid produced and collecting the hydrogen, and repeating the alternation.

2. The process of producing hydrogen which consists in heating a checkerwork of indifferent refractory material by burning hot gas therein, passing a mixture of water gas and steam through the checkerwork, removing the carbon dioxid from the gaseous mixture produced in this passage and collecting the hydrogen for use, and repeating the alternation.

3. The process of producing hydrogen which consists in burning hot producer gas in a checkerwork of indifferent refractory material, passing a mixture of water gas and superheated steam through the heated checkerwork, removing the carbon dioxid produced in this passage and collecting the hydrogen, and repeating the alternation.

4. The process of producing hydrogen and by-products which consists in blowing up a gas producer with an air draft current, burning the gaseous products of the blow in a refractory walled region to heat the same, then running the producer with a draft comprising steam, mixing the water gas produced with steam, passing the mixture through the refractory walled region to convert carbon monoxid into carbon dioxid, liquefying out the carbon dioxid from the gaseous products and collecting the hydrogen, and repeating the alternation.

5. The process of producing hydrogen and by-products which consists in blowing up a gas producer with an air draft current, burning the gaseous products of the blow in a refractory walled region to heat the same and generating steam with the products of combustion passing therefrom, then running the producer with a draft comprising steam, mixing the water gas with a portion of the steam generated, passing the mixture through the refractory walled region to convert carbon monoxid into carbon dioxid, removing the carbon dioxid produced and collecting the hydrogen for use, and repeating the alternation.

6. The process of producing hydrogen and by-products which consists in blowing up a gas producer with an air draft current, burning the gaseous products of the blow in a checkerwork of indifferent refractory material to heat the same and generating steam with the products of combustion passing therefrom, then running the producer with a draft current comprising steam, mixing the water gas with a portion of the steam generated, passing the mixture through the checkerwork to convert carbon monoxid into carbon dioxid, liquefying out the dioxid from the gaseous products, and collecting the hydrogen, and repeating the alternation.

854,158. GEM-HOLDER. MONROE ENGELSMAN, New York, N. Y. Filed Mar. 22, 1906. Serial No. 307,443.



Claim.—1. In a gem holder the combination of a spring band, clamping jaws secured thereto, and hooks extending from the jaws.

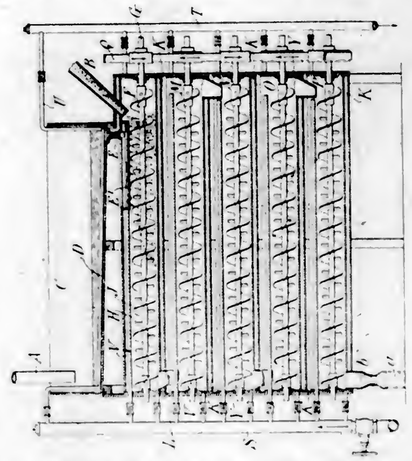
2. In a gem holder the combination of a spring band having an opening therethrough, clamping jaws each having a slot on the band, a screw engaging the slot for each jaw and screwed into the spring band.

3. In a gem holder the combination of a U shaped spring band, a re-inforcing band secured thereto, and clamping jaws adjustably secured to the said spring band.

4. In a gem holder the combination of a U shaped spring band to be placed on a finger and having an opening in its crown, a re-inforcing band having an opening, secured to the spring band so that the latter opening will come in line with the opening of the spring band, clamping jaws adjustably secured to the spring band, and a hook end extending from each of said jaws.

854,159. APPARATUS FOR MAKING MOLASSES FEED. SPENCER L. FRASER, Chicago, Ill. Filed Dec. 8, 1903. Serial No. 184,364.

Claim.—1. An apparatus for making molasses feed, including in combination a tank C, a heating coil therein, a trough F, a shaft therein carrying conveying and mixing blades, a heating jacket for said trough, means for feeding molasses into said tank C, means for feeding fresh base material and the molasses from said tank simultaneously into said trough F, a series of troughs M N O and P, shafts therein carrying stirring and conveying blades, heating jackets for said troughs M N O and P, and means for feeding the mixed material from said trough F through said troughs M N O and P in succession.



2. An apparatus for making molasses feed, including in combination a tank C, a heating coil therein, a trough F, a shaft therein carrying conveying and mixing blades, a heating jacket for said trough, means for feeding molasses into said tank C, means for feeding fresh base material and the molasses from said tank simultaneously into said trough F, a series of troughs M N O and P, shafts therein carrying stirring and conveying blades, heating jackets for said troughs M N O and P, and means for rotating the shaft of said trough F more rapidly than the shafts of said troughs M N O and P.

3. An apparatus for making molasses feed, including in combination a plurality of troughs one above another, stirring blades carried therein, and movable aprons arranged to close the space between two successive troughs.

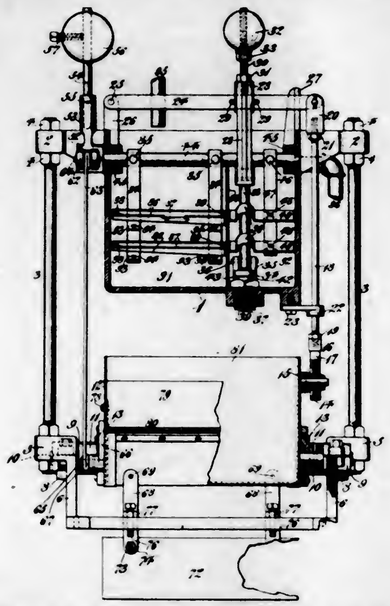
4. An apparatus for making molasses feed including in combination a tank C, a heating coil therein, a trough F, a shaft therein carrying conveying and mixing blades, a heating jacket for said trough, means for feeding molasses into said tank C, a perforated box E' between said tank C and said trough F, means for feeding molasses from said tank C to said box E' and thence through said perforations in a spray or shower into said trough F, and means for simultaneously feeding fresh base material into said trough.

5. An apparatus for making molasses feed including in combination a mixer for mixing the molasses with a base, a plurality of driers, means for feeding the material through said mixer and into and through each of said driers in succession, means for heating said driers, and means for separately controlling the temperatures therein.

6. An apparatus for making molasses feed including in combination a mixer for mixing the molasses with a base, a drier for bringing the mass to a nonsticky condition and preventing the formation of lumps, means for feeding the material through said mixer and drier in succession, means for heating said mixer and drier, and means for separately controlling the temperatures therein.

7. An apparatus for making molasses feed including in combination a heating tank for increasing the fluidity of the molasses, a mixer for maintaining the fluidity thereof and mixing it with a base, means for feeding the material from said tank to said mixer, means for heating the material in said tank and said mixer, and means for separately controlling the temperatures therein.

854,160. FEED-WATER PURIFIER. GEORGE S. GARRETT, Lansdowne, Pa., assignor to American Water Softener Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Aug. 4, 1906. Serial No. 329,199.



Claim.—1. In a water purifier, a chemical tank having an opening therein, a reciprocatory valve for said opening located in said tank, an oscillating receiver and means embodying a rocker arm and a positive connection actuated by said receiver for maintaining a constant head above said valve.

2. In a water purifier, a sectional chemical tank having a discharge opening in one section thereof, a valve for said opening, an oscillating receiver, and oscillatory means positively connected with and actuated by said receiver for removing solution from one section and discharging the same into the valve-containing section to maintain a constant head above said valve.

3. In a water purifier, a container having a diaphragm therein dividing the same into a plurality of compartments, one of said compartments having a valve controlled discharge opening therein, a shaft mounted in said container, an agitating device mounted on said shaft and extending into the valve containing compartment, arms carried by said shaft extending into the other of said compartments, combined agitating and raising members carried by said arms and inclined to the horizontal, and means for rocking said shaft to cause said combined agitating and raising members to discharge the liquid into said valve containing compartment.

4. In a water purifier, a container having a diaphragm therein dividing the same into a plurality of compartments, one of said compartments having a valve controlled discharge opening therein, a shaft mounted in said container, arms carried by said shaft, trough-shaped lifting member carried by said arms and inclining toward said diaphragm, the ends of said members contiguous said diaphragm being open, and an oscillating receiver operatively connected with said shaft for actuating the same.

5. In a water purifier, a sectional container having an opening in one section thereof, a valve for said opening, a shaft journaled in said container, an agitating device mounted on said shaft and extending into the valve containing section, a combined agitator and liquid raising device mounted on said shaft for raising liquid from one section and discharging said liquid into the valve containing section, and means for actuating said shaft.

6. In a water purifier, a container having a partition therein dividing the same into a plurality of compartments, one of said compartments having a valve controlled opening therein, a shaft journaled in said container, an agitating device carried thereby and located within said valve containing compartment, a combined agitating and lifting device carried by said shaft and adapted to discharge the liquid raised thereby into said valve containing compartment, an oscillating receiver, and means actuated thereby for actuating said shaft.

7. In a device of the character described, a sectional container having an opening in one section thereof, a valve for controlling said opening, an oscillating receiver, a combined agitator and liquid-raising device in one compartment of said container, a roller mounted on said receiver, a cam co-acting with said roller and connections between said cam and said valve for controlling the latter.

8. In a device of the character described, a sectional container having an opening in one section thereof, a valve for controlling said opening, an oscillating receiver, a combined agitator and liquid-raising device in one compartment of said container, a roller carried by said receiver, a cam coacting with said roller, connections between said cam and said valve for controlling the latter and an adjustable weight carried by said connections.

9. In a device of the character described, a sectional container having an opening in one section thereof, a valve for controlling said opening, an oscillating receiver, a combined agitator and liquid-raising device in one compartment of said container, a roller carried by said receiver, a cam co-acting with said roller, connections between said cam and said valve for controlling the latter, and a hood secured to said receiver whereby the fluid contained therein is gradually discharged therefrom on the oscillation thereof.

10. In a device of the character described, a sectional container having an opening in one section thereof, a valve for said opening, an oscillating receiver, a combined agitator and liquid-raising device in one compartment of said container, a roller carried by said receiver, a cam co-acting with said roller and adapted to actuate said valve, a shaft journaled in said container, an agitating device mounted thereon, and a connection between said shaft and said receiver whereby the oscillation of the latter actuates said shaft.

11. In a device of the character described, a sectional container having an opening in one section thereof, a valve for said opening, an oscillating receiver, a combined agitator and liquid-raising device in one compartment of said container, a roller carried by said receiver, a cam co-acting with said receiver and adapted to actuate said valve, a shaft journaled in said container, an agitating device mounted thereon, a connection between said shaft and said receiver, whereby the oscillation of the latter actuates said shaft, a tank into which said receiver discharges, and a stirring plate carried by said receiver and extending into said tank.

12. In a device of the character described, a sectional container having an opening in one section thereof, a valve for controlling said opening, an oscillating receiver, a combined agitator and liquid-raising device in one compartment of said container, a roller mounted on said receiver, a cam co-acting with said roller, connections between said cam and said valve for controlling the latter, and means for adjusting said connections.

13. In a device of the character described, a sectional container having an opening in one section thereof, an apertured valve seat in said opening, a valve therefor, an oscillating receiver, a roller carried by said receiver, a cam co-acting with said roller, connections between said cam and said roller for actuating said valve, hoods carried by said receiver for regulating the liquid discharged therefrom, a tank into which said receiver discharges, a shaft journaled in said container, an agitating device mounted thereon, in one compartment of said container, a combined agitator and liquid-raising device on said shaft in the other compartment a connection between said shaft and said receiver, and means carried by the latter for agitating the liquid in said tank.

14. In a device of the character described, a sectional container having an opening in one section thereof, a valve for controlling said opening, an oscillating receiver, a roller carried by said receiver, a cam co-acting with said roller, connections between said cam and said valve for controlling the latter, an agitating device journaled in said container in one compartment thereof, a combined agitator and liquid-raising device on said shaft in the other compartment, and connections between said device and said receiver, whereby the oscillation of the latter actuates said valve and said agitating device.

15. In a device of the character described, a sectional container having an opening in one side thereof, a valve controlling said opening, an oscillating receiver, a roller carried by said receiver, a cam co-acting with said roller, adjustable connections between said cam and said valve for actuating the latter, a shaft journaled in said container, an oscillatory agitating and liquid-raising device carried thereby, a lever mounted on said shaft, connections between said lever and said oscillating receiver, and an adjustable weight carried by said lever.

16. In a device of the character described, a sectional container having an opening in one section thereof, a shaft journaled therein, arms mounted on said shaft, cross arms carried thereby and having deflected portions, a lever mounted on said shaft, a plurality of adjustable weights carried by said lever, an oscillating receiver, a combined agitator and liquid-raising device in one compartment of said container, a connection between said lever and said receiver, a valve for controlling the opening in said container, a valve stem therefor, a lever pivoted to said container and in connection with said valve stem, an adjustable weight carried by said valve stem, a cam in connection with said valve lever, and means carried by said receiver for actuating said cam.

17. In a device of the character described, a sectional container having an opening in one section thereof, a valve seat in said opening, a valve adapted to control said opening, said valve having a reduced end provided with longitudinal grooves, said valve having an annular groove in its upper end, an oscillating receiver, a roller carried thereby, a cam co-acting with said roller, a valve stem for said valve, connections between said stem and said cam, an agitating and liquid-raising device having cross arms journaled in said container and adapted to pass the vertical plane of said valve stem, and means connected with said receiver and with said agitating device whereby the same is actuated on the oscillation of said receiver.

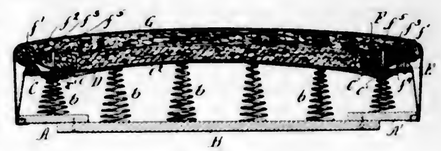
18. In a water purifier, a chemical tank, an oscillating receiver, means actuated by said receiver for maintaining a fixed amount of liquid in said tank, and a combined agitator and liquid-raising device positively connected with said receiver for automatically removing a desired amount of liquid from said tank.

19. In a water purifier, a chemical tank having a plurality of compartments, means for conducting a liquid to one of said compartments, an overflow for said tank, an oscillatory combined agitating and raising device positively connected with said receiver for removing liquid from one compartment and discharging the same into another compartment, and means for removing liquid from said last named compartment.

854,161. CUSHION. HENRY S. HALE, Philadelphia, Pa., assignor to The Hale and Kilburn Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed May 8, 1905. Serial No. 259,391.

Claim.—1. As a new article of manufacture, a strip of textile fabric and elastic upholstery material secured to the surface thereof, said strip being folded longitudinally to bring together the faces on either side of said fold to which said upholstery material has been applied and to form a bead at the folded edge of said strip, substantially as set forth.

2. As a new article of manufacture, a strip of textile fabric and elastic upholstery material secured to the surface thereof, said strip being folded longitudinally to bring together the faces on either side of said fold to which said upholstery material has been applied, and a core lying within said fold at the bight thereof, substantially as set forth.



3. The combination of a cushion-frame, springs carried thereby, a covering overlying said springs and secured at its edges to said frame, an upholstery device extending around the edges of said cushion and comprising a band of textile fabric and upholstery material secured to the surface thereof folded longitudinally, and means for securing said device in position, substantially as set forth.

4. The combination of a cushion-frame, springs carried thereby, a covering overlying said springs and secured at its edges to said frame, an upholstery device extending around the edges of said cushion and comprising a band of textile fabric and upholstery material secured to the surface thereof folded longitudinally and having the webs thereof stitched together, and means for securing said device in position, substantially as set forth.

5. In a cushion, a base or frame, springs supported thereon, an auxiliary frame above the main frame and supported thereon, an upholstery device overlying said auxiliary frame and comprising a strip of textile fabric and upholstery material secured to the surface thereof folded longitudinally, and a covering overlying said upholstery device and secured at its edges to said frame, substantially as set forth.

6. In a cushion, a base or frame, springs supported thereon, an auxiliary frame above the main frame and supported thereon, an upholstery device overlying said auxiliary frame and comprising a strip of textile fabric and upholstery material secured to the surface thereof folded longitudinally and having the webs thereof stitched together, and a cover overlying said upholstery device and secured at its edges to said frame, substantially as set forth.

7. In a cushion, a base or frame, springs secured thereon, an auxiliary frame above the main frame, springs supporting the auxiliary frame upon the main frame, an upholstery device comprising a strip of textile fabric and upholstery material secured to the surface thereof folded longitudinally, and means securing said upholstery device upon said auxiliary frame, substantially as set forth.

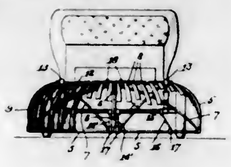
8. The combination with a cushion-frame and springs carried thereby, of means for placing said springs under tension, and an upholstery device extending around the edges of said cushion and comprising a band of textile fabric and upholstery material secured to the surface thereof folded longitudinally, said device being secured to said frame, substantially as set forth.

9. The combination with a cushion-frame and springs carried thereby, of means for placing said springs under tension, and an upholstery device extending around the edges of said cushion and comprising a band of textile fabric folded longitudinally and upholstery material within the fold, the two webs formed by said longitudinal fold being stitched together intermediate their lateral edges and said device being secured to said frame, substantially as set forth.

10. The combination with a cushion-frame and springs carried thereby, of means for placing said springs under tension, and an upholstery device extending around the edges of said cushion and comprising a band of textile fabric folded longitudinally and upholstery material within

the fold, said device having a central core and being stitched adjacent to the fold and secured to said frame, substantially as set forth.

854,162. AUTOMOBILE LIFE-GUARD OR FENDER. BENJAMIN F. HART, Jr., Hoboken, N. J. Filed Oct. 8, 1906. Serial No. 337,942.



Claim.—1. A life guard or fender for automobiles comprising two separate and substantially rectangular frames suitably secured together at one of their sides, outwardly bowed springs crossing each other in each of the frames and having their ends secured to diagonally opposite corners of their rectangular frame, bowed slats or lattices on the outside of the bowed springs and secured to the frames, and means for securing and holding said frames on the front of an automobile.

2. A life guard or fender for automobiles comprising two separate and substantially rectangular frames suitably secured together at one of their sides, outwardly bowed springs crossing each other in each of the frames and having their ends secured to diagonally opposite corners of their rectangular frame, bowed slats or lattices on the outside of the bowed springs and secured to the frames, wire netting supported on the outside of the slats or lattices, and means for securing and holding said frames on the front of an automobile.

3. A life guard or fender for automobiles comprising a substantially rectangular frame, outwardly bowed springs crossing each other and having their ends secured to diagonally opposite corners of the frame, bowed slats or lattices on the outside of the bowed springs and secured to the frame, and means for securing and holding said frame on the front of an automobile.

4. A life guard or fender for automobiles comprising a substantially rectangular frame, outwardly bowed springs crossing each other and having their ends secured to diagonally opposite corners of the frame, bowed slats or lattices on the outside of the bowed springs and secured to the frame, a wire netting supported on the outside of the slats or lattices, and means for securing and holding said frame on the front of an automobile.

5. A life guard or fender for automobiles comprising two separate and substantially rectangular frames suitably secured together at one of their sides, outwardly bowed springs crossing each other in each of the frames and having their ends secured to diagonally opposite corners of their rectangular frame, bowed slats or lattices on the outside of the bowed springs and secured to the frames, means for supporting the upper sides of the rectangular frames from the front supporting springs of the car body, and means for bracing the lower sides of the rectangular frames against the front axle of the car.

6. A life guard or fender for automobiles comprising two separate and substantially rectangular frames suitably secured together at one of their sides, outwardly bowed springs crossing each other in each of the frames and having their ends secured to diagonally opposite corners of their rectangular frame, bowed slats or lattices on the outside of the bowed springs and secured to the frames, wire netting supported on the outside of the slats or lattices, means for supporting the upper sides of the rectangular frames from the front supporting springs of the car body, and means for bracing the lower sides of the rectangular frames against the front axle of the car.

854,163. FOLDING SCAFFOLD-BRACKET. FREDERICK F. HASKELL, Cambridge, Mass. Filed July 20, 1906. Serial No. 327,012.



Claim.—1. In a folding scaffold bracket, the combination of a vertical member; a horizontal member; a brace pivoted to both of these members; a downwardly extending plate secured to the free end of said horizontal member; and means for locking said downwardly extending plate to said vertical member.

2. In a folding scaffold bracket, the combination of a vertical member; a horizontal member; a brace pivoted to both of these members; a downwardly extending plate secured to the free end of said horizontal member; and a threaded bolt and nut for locking said downwardly extending plate to said vertical member.

3. In a folding scaffold bracket, the combination of a vertical member; a horizontal member; a brace pivoted to both of these members; a downwardly extending slotted plate secured to said horizontal member; and a locking device for securing said plate to said vertical member.

4. In a folding scaffold bracket, the combination of a vertical member; a horizontal member; a brace pivoted to both of these members; a downwardly extending slotted plate secured to said horizontal member; and a threaded bolt and nut for securing said plate to said vertical member.

5. In a folding scaffold bracket, the combination of a vertical member; a horizontal member; a brace pivoted to both members; a downwardly extending plate secured to said horizontal member; and a threaded member and nut for securing these members together.

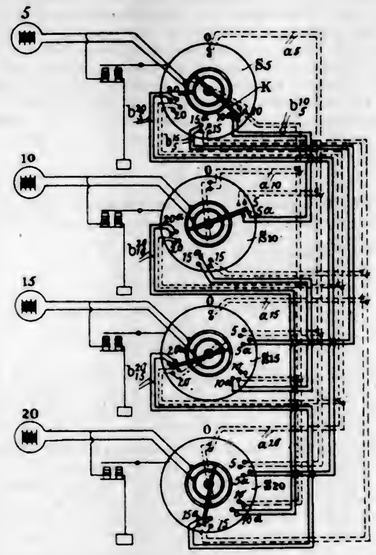
6. In a folding scaffold bracket, the combination of a vertical member; a horizontal member; a brace pivoted to both members; a downwardly extending plate secured to said horizontal member; a threaded member provided on its inner end with a stud-engaging device; and a clamping nut on the threaded end thereof.

7. In a folding scaffold bracket, the combination of a vertical member; a horizontal member; a brace pivoted to both members; a downwardly extending plate secured to said horizontal member; a threaded member provided on its inner end with a spur adapted to engage the stud of a building; and a clamping nut on the threaded end thereof.

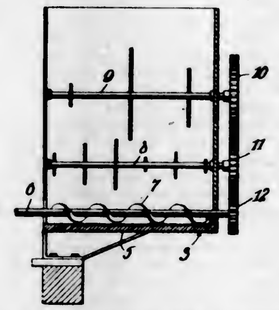
8. In a folding scaffold bracket, the combination of a vertical member formed of two angle irons riveted together and separated at the upper end by a suitable block; a horizontal member formed of two angle irons riveted together; a brace pivoted to each of these members; a downwardly extending plate secured to the free end of the horizontal member and provided with a slot therein; and a bolt extending through the opening in the vertical member and said slot and provided with a nut for clamping said plate to said vertical member.

854,164. AUTOMATIC SWITCH FOR TELEPHONE INSTALLATIONS. PAUL HILDEBRAND, Munich, Germany. Filed Aug. 24, 1905. Serial No. 275,654.

Claim.—In an automatic switch for telephone installations with a single transmitting and receiving wire the combination of a switch dial at the speaking station and a switch disk at the exchange for each subscriber, a contact lever on said disk adapted to be operated from said dial, a zero or rest contact, a series of call contacts and a series of speaking contacts for each speaking station on each of said switch disks and means for electrically interconnecting said contacts and dials whereby subscribers can mutually connect themselves firstly by the call contacts and subsequently by the speaking contacts substantially as described.



854,165. PLANTING MECHANISM. NEELY B. HODGE, Dallas, Tex. Filed Sept. 7, 1906. Serial No. 333,678.



Claim.—1. A seed dropping hopper comprising a body having at its bottom an opening extending from the front to the rear side of the body, a false bottom located in said opening and having laterally disposed wings that rest upon the upper surface of the bottom of the body, and an intermediate depending portion that fits within the opening in the bottom of the body and in its upper side a trough located in its longitudinal axis, and a moving seed separator located in the hopper and operating in said trough.

2. A hopper comprising a body having in its bottom an opening which extends from its front to its rear side, a false bottom located in said opening and having a seed delivery end, and a trough disposed along its central longitudinal axis, a seed separator operating within said trough to convey the seed from the hopper to the delivery end of the false bottom, stirrers mounted for rotation in the upper portion of the hopper, one stirrer rotating in one direction and the other stirrer rotating in the opposite direction.

854,166. GIN-SAW CLEANER. JOSEPH C. HOLLINGSWORTH, Dallas, Tex., assignor of one-half to George C. Walsh, Dallas, Tex. Filed Feb. 28, 1907. Serial No. 359,764.



Claim.—1. A saw-cleaner comprising a plurality of cleaner teeth, a holder for said teeth, means for retaining said teeth in their adjusted positions and means for locking in position said retaining means.

2. A saw-cleaner comprising a plurality of adjustable cleaner teeth, a holder for said teeth, a rod or plate for retaining said teeth in their adjusted positions and means for locking in position said retaining means.

3. A saw-cleaner comprising a plurality of adjustable cleaner teeth, a holder for said teeth, pivotally mounted means for retaining said teeth in their adjusted positions and means for locking in position said retaining means.

4. A saw-cleaner comprising a plurality of cleaner teeth, a holder for said teeth, means for preventing forward movement of said teeth, means for retaining said teeth in their adjusted positions and means for locking in position said retaining means.

5. A saw-cleaner comprising a plurality of cleaner teeth, a holder for said teeth, a pivotally mounted bar adapted to hold said teeth in their adjusted positions and means for locking said bar in operative position.

6. A saw-cleaner comprising a plurality of cleaner teeth, a holder for said teeth, a pivotally mounted bar adapted to hold said teeth in their adjusted positions and a locking lever, whereby said bar is forced into and held in operative position.

7. A saw-cleaner comprising a plurality of cleaner teeth, a holder for said teeth, means for retaining said teeth in adjusted position, means for locking in position said retaining means and means for retaining said locking means.

8. A saw-cleaner comprising a plurality of cleaner teeth, a pivotally mounted retaining bar adapted to bear upon and retain said teeth in their adjusted position, means for preventing forward movement of said cleaner teeth, means for forcing said retaining bar into engagement with said teeth and so locking the same and means for retaining said locking means.

9. A saw cleaner comprising a plurality of cleaner teeth, a holder for said teeth, a pivotally mounted retaining bar adapted to bear upon and retain in adjusted position said teeth, a pivotally mounted locking lever fulcrumed on said retaining bar and means for holding said lever in its operative position.

10. A saw-cleaner comprising a base portion bent to present a supporting edge, a plurality of cleaner teeth, and means for retaining said teeth in said base portion.

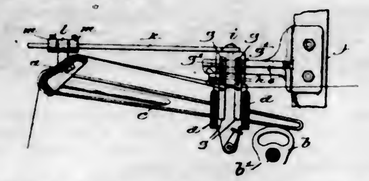
11. In a saw-cleaner, cleaner teeth, a base portion bent at one edge to present a support for the cleaner teeth and at the other edge bent back upon itself to form a guiding flange, and means for retaining said teeth in said base portion.

12. In a saw-cleaner, cleaner teeth, a base portion bent at one edge to present a support for the cleaner teeth and at the other edge bent upon itself to form a guiding flange, means secured to said base plate, whereby forward movement of the teeth is prevented, and means for retaining said teeth in position for use.

854,167. WARP STOP-MOTION FOR LOOMS FOR WEAVING. DENIS M. HOLLINS, Blackburn, England, assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Feb. 2, 1907. Serial No. 355,350.

Claim.—1. In warp stop-motions having drop wires or detectors, a slidably supported stop-motion box in which

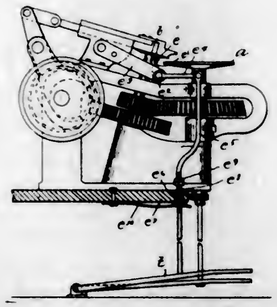
the lower ends of the detectors are located and confined, a back-bearer, and a rod coupling the said stop-motion box with the back-bearer to effect positive sliding movement of the stop-motion box in unison with the back and forth movement of the warp.



2. In warp stop-motions having vertically movable detectors, a slidably supported stop-motion box in which the lower ends of the detectors are located and confined, a vibrating back bearer, a rod coupling the back-bearer with the stop-motion box, to positively slide the latter backward and forward in unison with the back and forth movement of the warp, and an adjustable connection between the coupling and the back-bearer, adjustment of the connection varying the extent of movement of the stop-motion box.

3. In warp stop-motions having drop wires or detectors, a slidably supported stop-motion box in which the lower ends of the detectors are located and alined, a back-bearer, an apertured lug secured thereto, a rod connected at one end with the stop-motion box and having its other end extended loosely through the lug on the back-bearer, and collars adjustably secured on the rod on opposite sides of the lug, vibration of the back-bearer acting through the rod to effect positive sliding movement of the stop-motion box in unison with the back and forth movement of the warp.

854,168. LIP-TURNING MACHINE. GEORGE A. HUBLEY, Rockland, Mass. Filed June 29, 1906. Serial No. 323,992.

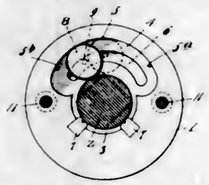


Claim.—1. In a lip turning machine, the combination of lip-turning devices, a work-supporting table rotating in a horizontal plane, a thin flat feed-wheel having a beveled edge, mounted on an axis, inclined relatively to the axis of the table, so that its engaging-face, which extends over the table, is parallel with the face of the table, an edge-guide located beneath the feed-wheel, between its inclined shaft and the edge of the table, and means for moving it in a direction radial to the axis of said feed-wheel, to guide the work and to hold it with its lip free from engagement with the edge of the feed-wheel, substantially as described.

2. In a lip turning machine, the combination of lip-turning devices, a work-supporting table rotating in a horizontal plane, a thin flat feed-wheel having a beveled edge, mounted on a shaft inclined with respect to the shaft bearing said table, a horizontal pivot-shaft, an ear secured thereto, a guiding-finger extending inwardly from said ear, which is located beneath the feed-wheel and between its shaft and the edge of the table, and means for rocking said shaft to move the guiding-finger in a direction radial to the axis of the feed-wheel, substantially as described.

3. In a lip turning machine, the combination of lip-turning devices, a work-supporting table rotating in a horizontal plane, a thin flat feed-wheel having its edge extended over the table, means for rotating said feed-wheel and an edge-guide located beneath said feed-wheel for guiding the work and for holding it with its lip free from engagement with the edge of said feed-wheel, substantially as described.

854,169. STAY-BOLT CLUTCH. WILLIAM JONES, Minneapolis, Minn. Filed Feb. 8, 1906. Serial No. 300,094.



Claim.—1. A clutch of the character described, comprising a head provided with an open recess adapted to receive an object to be clamped and having an eccentric roller seat that approaches more closely to the axis of said head in two directions from an intermediate point, and a clutch roller loosely mounted to freely travel on said eccentric seat and to be automatically forced thereby onto the object to be held, when the clutch is rotated in either of two directions, the reversely extended surfaces of said roller seat, both having materially greater curvature than the said roller, substantially as described.

2. A clutch of the character described, comprising a head provided with a recess and having an eccentric roller seat, a clutch roller mounted to travel on said eccentric roller seat and to be forced by said seat onto the object to be held, and a disk-like retaining plate, detachably secured to said head and perforated centrally to permit the clutch device to be applied to the object to be clamped thereby, substantially as described

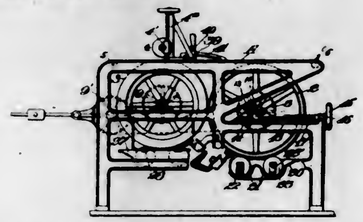
3. In a clutch of the character described, the combination with a head formed with a central seat having an eccentric enlargement affording a roller seat, said roller seat having an eccentric roller bearing surface and a segmental retaining groove, of a clutch roller in said roller seat, arranged to travel over said eccentric bearing surface and provided with a trunnion working in said retaining groove, and a roller retaining plate detachably secured to said head and provided with central perforations permitting the clutch to be applied to the device to be rotated or held thereby, substantially as described.

4. The combination with a head 1, having a central seat 3, a roller seat 4, a retaining groove 6 and clamping jaws 7, said roller seat 4 having an eccentric roller engaging surface that more closely approaches the axis of said head in two directions from its intermediate portion, of a roller 8 within said seat 4, mounted to travel over said eccentric roller engaging surface and provided with a trunnion 9, working in said retaining groove 6, and a roller retaining plate 10, detachably secured to said head 1, and provided with a central perforation 12, substantially as described.

854,170. GRAINING-MACHINE. FRANCIS I. MATTHEWS, Oakland, Cal., assignor to Thomas M. Gardiner and Marshall C. Harris, San Francisco, Cal. Filed May 7, 1906. Serial No. 315,544.

Claim.—1. In a graining machine, the combination of a frame open at the rear, an adjustably, yieldingly-mounted pattern roller journaled in the open portion of said frame and readily removable therethrough, a transfer roller, a spring supported presser roller, sliding carriages for the journals of the pattern roller and a paint-font carried by and movable with said carriages.

2. In a graining machine, the combination of a frame, comprising two side castings suitably supported to form a rigid structure, said side castings having re-entrant portions at one end, track-ways formed in said re-entrant portions, sliding carriages on said track-ways and an adjustable, yieldingly-mounted pattern roller journaled on and movable with said carriages.



3. In a graining machine, the combination of a frame, comprising two side castings suitably supported to form a rigid structure, said side castings having re-entrant portions at one end, track-ways formed in said re-entrant portions, sliding carriages on said track-ways and a pattern roller journaled on and movable with said carriages, and spring-pressed screws for reciprocating said carriages.

4. In a graining machine, the combination of a frame, comprising two side castings suitably supported to form a rigid structure, said side castings having re-entrant portions at one end, track-ways formed in said re-entrant portions, sliding carriages on said track-ways and a pattern roller journaled on and movable with said carriages, and a paint-font supported by and movable with said carriages.

5. In a graining machine, the combination of a frame comprising two side castings having re-entrant portions at one end, horizontal trackways formed in said re-entrant portions, carriages slidable on said trackways, a pattern roller journaled on and movable with said carriages, horizontally disposed screws in the re-entrant portions of the side castings and engaging the carriages for adjusting said carriages, said screws each having a threaded portion engaging a carriage and having another and unthreaded portion slidable horizontally in a side casting of the frame.

6. In a graining machine, the combination with a suitable frame, an adjustable pattern roller, and sliding boxes for the roller, of a paint-font and means whereby it is supported from the boxes, and means including a pair of pinions and intermediate operable means for adjusting the paint-font relative to the pattern roll.

7. In a graining machine, the combination of a frame, a pattern roller, sliding boxes therefor, a paint-font, means for adjustably supporting said font from said boxes, said means including a pair of pinions and an intermediate worm.

8. In a graining machine, the combination of a frame, a pattern roller, a paint-font and means for adjustably supporting said paint-font relative to said roller, said means including a worm and a pinion on each side thereof, and suspending means between the pinions and the font.

9. In a graining machine, the combination of a frame, a pattern roller and paint-font, a means for adjustably supporting said paint-font relative to said roller, said means including a worm and pinion and bail connections between the pinion and the font.

10. In a graining machine, the combination with a frame and a pattern roller journaled therein, of a paint-font, and means for adjustably supporting the same relative to said roller, said means including a pair of pinions and an intermediate worm for operating them, arms on the pinions and connections between the arms and the font.

11. In a graining machine, the combination of a frame, pattern roller and a transfer cylinder, of a cleansing font for the latter, and means for adjustably supporting said font relative to said roller, said means including a bail pivotally supported to swing outward from the machine, said bails having their upper ends threaded, and nuts engaging said ends whereby the font may be raised and lowered.

12. In a graining machine, the combination of a frame, pattern and transfer cylinders carried thereby, respective fonts for said cylinders, scrapers for said cylinders, and means for carrying said scrapers simultaneously into contact with their respective cylinders or for removing them out of contact therewith.

13. In a graining machine, the combination with a frame and roller, and means to apply a pigment or other coating thereto, of a spring-pressed scraper for said roller, said scraper being essentially V-shaped in cross section and having a plurality of scraping parts to engage the roller, a movable support for the scraper and means to move the scraper into and out of engagement with the roller.

14. In a graining machine, the combination with a frame and roller, and means to apply a pigment or other coating thereto, of a scraper for said roller, said scraper being essentially V-shaped in cross section and having a plurality of scraping parts to engage the roller, and means to move the scraper into and out of engagement with the roller, said last named means including a rock-shaft and operating lever.

15. In a graining machine, the combination with a frame and roller, and means to apply a pigment or other coating thereto, of a scraper for said roller, said scraper being essentially V-shaped in cross section and having a plurality of scraping parts to engage the roller, and means to move the scraper into and out of engagement with the roller, said last named means including a spring support for the ends of said scraper and adjustable sliding carriages for said support.

16. In a graining machine, the combination with two suitably supported rollers, one a pattern roller and the other a transfer roller, of a paint-font in connection with the pattern roller, and a cleansing-font in connection with the transfer roller, a spring supported scraper for each roller, and means for simultaneously moving said scrapers into engagement with their respective rollers and for moving them simultaneously out of engagement therewith.

17. In a graining machine, the combination of a pattern roller, a transfer roller, respective liquid applying devices for said rollers, spring pressed scrapers for the rollers, adjustably sliding carriages for each scraper and operative means common to both carriages for actuating the scrapers simultaneously.

18. In a graining machine, the combination of a pattern roller, a transfer roller, respective liquid applying devices for said rollers, spring-pressed scrapers for the rollers, adjustable sliding carriages for each scraper, operative means common to both carriages for actuating the scrapers simultaneously, and means for adjusting the tension of each scraper independently.

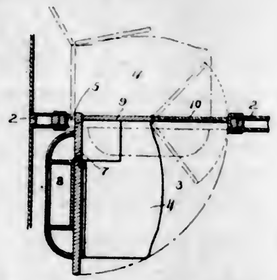
19. In a graining machine, the combination with a suitably supported pattern roller, of a paint-font for said roller, said paint-font comprising a pan having parallel depressions, distributing rollers journaled in said depressions, means for adjusting said pan to carry said rollers into and out of contact with said pattern roller and means for resiliently supporting said distributing rollers in said pan.

854,171. MEANS FOR MOUNTING FURNITURE IN ROOMS. NATHAN C. MERRILL, Vancouver, British Columbia, Canada. Filed Nov. 16, 1906. Serial No. 343,753.

Claim.—1. In the wall of a room having a recess or closet, a panel filling the opening thereto said panel being pivotally mounted toward one edge so as to be movable on a vertical axis therein, a secondary panel projecting at

right angles from the aforesaid panel on the recess or closet side of it and on the edge toward the pivotal axis, said secondary panel being of less width than the primary panel and having hinged toward its outer edge a door adapted with the panel to which it is secured to fill the opening between the room and its closet.

2. In a wall of a room having a recess or closet, a panel pivotally mounted toward one edge in the opening thereto, a secondary panel secured to the first mentioned panel and projecting at substantially right angles from the inner or closet side of the first mentioned panel at the edge toward the pivotal axis thereof, said secondary panel being of less width than the first mentioned panel and a swinging door hingedly secured to said secondary panel to form a continuation thereof all being arranged substantially as shown and described.



3. In a wall of a room, having a recess or closet, a panel pivotally mounted at one edge of the opening thereto, a secondary panel fixedly secured to the first mentioned panel at its pivot end and projecting at substantially right angles to the first mentioned panel, means secured to the first mentioned panel and the secondary panel and supported by said panels, said secondary panel being of less width than the first mentioned panel to provide a passage when the first mentioned panel is swung open, and a swinging door secured to said secondary panel and forming a continuation thereof to normally close said passage, substantially as shown and described.

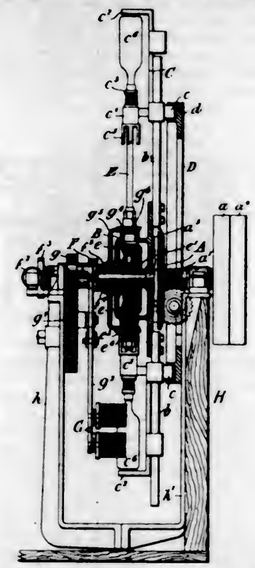
854,172. MACHINE FOR WASHING BOTTLES AND THE LIKE. RICHARD G. NASH, Lucan, near Dublin, Ireland. Filed Feb. 13, 1905. Serial No. 245,510.

Claim.—1. A bottle-washing machine comprising a rotatable hub furnished with radial arms a bottle-carrier reciprocably mounted on each of said arms, a cam supporting said bottle-carriers and reciprocating them on the radial arms, rotatable water-spray nozzles co-axial with said bottle-carriers and furnished with rubbers over which the bottles are passed, means for rotating said hub and radial arms, and means for rotating said water-spray nozzles.

2. A bottle-washing machine comprising a rotating hub furnished with radial arms, a bottle-carrier reciprocably mounted on each of said arms, a cam supporting said carriers and reciprocating them on the radial arms, a socket rotatably mounted in each bottle-carrier and holding the mouth of the bottle, means for rotating said socket, a brush suspended in the path of the bottle, and means for oscillating the brush against the exterior of the bottle.

3. In a machine for washing bottles, the combination, with a tank and a rotating water-spray nozzle furnished with rubbers, of a bottle-carrier mounted to slide to and fro in the axial direction of the bottle and provided with a spring-supported socket for holding the mouth of the bottle, and means for imparting a rotative movement to said bottle.

4. In a machine for washing bottles, the combination, with a rotatable hub furnished with radial arms and a bottle-carrier reciprocably mounted on each of said arms, of a rotary valve, water-spray-nozzles mounted on said valve co-axial with said bottle-carriers, and a water-and-air supply nozzle; the said valve, while rotating, admitting water and air alternately to each of said water-spray-nozzles successively from said water-and-air supply nozzle.



5. In a machine for washing bottles and other articles of a like nature, the combination, with a series of reciprocably-mounted bottle-carriers, and water-spray-nozzles mounted co-axially therewith, of an air-pump for supplying air under pressure to the bottles, substantially as and for the purpose set forth.

854,173. MACHINE FOR WASHING BOTTLES. RICHARD G. NASH, Lucan, near Dublin, Ireland. Filed May 14, 1906. Serial No. 316,704.

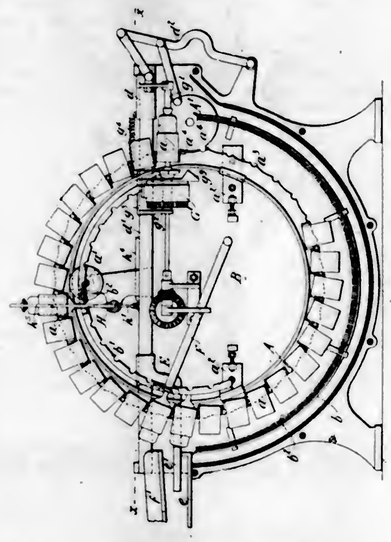
Claim.—1. In a bottle-washing machine, the combination, with a ring furnished with a series of bottle-carriers, of means for pushing the bottles out of their carriers internal and external revolving brushes mounted in stationary bearings and adapted to receive said bottles, and means for returning the bottles to their carriers, arranged or operating substantially as herein described.

2. In a bottle-washing machine, the combination, with a ring, furnished with a series of bottle-carriers, of a scarifier a reciprocable arm provided with means for supplying each carrier successively with a bottle with means for introducing the bottle to said scarifier, whereby it is cleansed both internally and externally, and with means for finally ejecting the bottle from its carrier, substantially as set forth.

3. In a bottle-washing machine, the combination, with a ring furnished with a series of bottle-carriers, of a brush for cleaning the interior of the bottle of a pair of slides connected by a spring, a pusher carried by one slide and adapted to engage with the bottoms of the bottles, and a hollow arm carried by the other slide, such arm surrounding the said brush and being provided with a bell-mouth, suitable for engaging with the mouth of the bottle, substantially as herein described.

4. In a bottle-washing machine of the general character herein referred to, the combination, with the bottle-carrier, of a reciprocating arm furnished with a crank and a chute, arranged beneath said crank and serving to support the bottles to be cleansed, substantially as set forth.

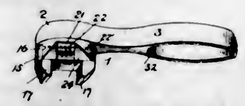
5. In a bottle washing machine, the combination, with a ring furnished with a series of bottle carriers and a disk for intermittingly rotating said ring, of a chute for receiving the cleansed bottles, an arm reciprocated by said disk and a plunger mounted upon said arm, whereby, upon the carriers successively arriving opposite the chute, the bottles are ejected, substantially as set forth.



6. In a bottle-washing machine of the general character herein referred to, the combination, with concentric external and internal rotary brushes, of a reciprocating arm, furnished with a plunger adapted to engage the bottom of the bottle, and a slide connected by a spring to said arm, the plunger and the slide serving to support the bottle while being cleansed by the said brushes, substantially as set forth.

7. In a bottle-washing machine of the general character herein referred to, the combination, with concentric external and internal rotary brushes and with a slide which serves to support the mouth of the bottle, of means for guiding the mouth of the bottle to the slide, substantially as described.

854,174. RATCHET-WRENCH. JOSEPH N. NOYES, Gould City, Wash. Filed May 17, 1906. Serial No. 317,366.

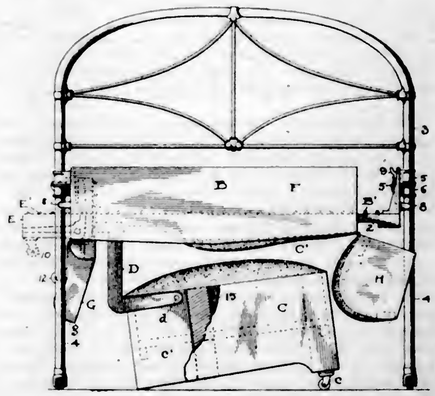


Claim.—1. In a wrench of the character described, the combination with a stock having a bearing socket and a handle, of a cylindrical head arranged in said socket, means to hold said head therein, jaws adjustably mounted in a transversely-disposed passage in said head, worm teeth formed on said jaws, independently-operable worms adapted to engage said worm teeth, a ratchet wheel arranged on said head, and a spring projected reversible pawl adapted to be engaged with said teeth to turn said head in one direction or the other, substantially as described.

2. In a wrench of the character described, the combination with a stock having a bearing socket and a handle, of a cylindrical head revolubly mounted in said socket, means to retain said head in place, nut-engaging jaws slidably mounted in said head, right angularly-projecting offset shanks formed on said jaws to slidably engage a guide passage in said head, toothed ribs formed on said shanks to engage longitudinal guide grooves formed in the walls of said passage, independently-operable worms adapted to engage the toothed ribs of said shanks to adjust the jaws and a spring-projected reversible pawl mounted in the body of said wrench to engage teeth on said head, whereby the same is operated in one direction or the other, substantially as described.

3. In a wrench of the character described, the combination with a stock having a bearing socket, and a recessed open handle, of a cylindrical head revolubly mounted in said socket, means to retain said head in place, nut-engaging jaws slidably mounted in said head, right angularly projecting offset shanks formed on said jaws to slidably engage a guide passage in said head, toothed ribs formed on said shanks to engage longitudinal guide grooves formed in the walls of said passage, independently operable worms adapted to engage the toothed ribs of said shanks whereby said jaws may be adjusted, a bar slidably mounted in a recess in the body portion of said wrench and carrying a pawl, a coil spring arranged on said bar to normally project the pawl into engagement with ratchet teeth on said head, and a head secured to the end of said bar and housed within the handle, substantially as described.

854,175. COMBINED BED AND COUCH. DAVID T. OWEN, Cleveland, Ohio, assignor to The D. T. Owen Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 21, 1905. Serial No. 275,015.



Claim.—1. In a combined bed and couch, a bed frame and a couch seat hinged thereto and adapted to support said bed frame during folding and unfolding operations, in combination with foldable legs at each corner of said bed frame adapted to provide supplementary supports for the front and rear of said bed frame when down.

2. In a combined bed and couch, a bed-frame and a couch-frame, angular arms supporting the rear of the bed-frame from the couch-frame and folding legs at the rear of said bed-frame.

3. In a combined bed and couch, a bed-frame having folding legs at its rear and fulcrum members rigidly fixed to the rear of said frame and shorter than said folding legs.

4. In a combined bed and a couch, a bed-frame having folding supporting legs and rigidly fixed fulcrum members at its rear, in combination with a couch frame and angle arms engaging the rear of the bed frame with the rear of the couch frame.

5. In a combined bed and couch, a bed-frame having rear

folding legs and shorter fixed fulcrum legs, in combination with a couch frame constructed to rest upon the floor at its rear and angle arms operatively connecting the bed-frame therewith.

6. The combination of the bed-frame and the couch-frame, and angle arms connecting said parts, said couch frame constructed to rest directly upon the floor at its rear, and fulcrum legs fixed upon the main frame behind said elbow arms and having a bearing surface on their bottom and rear portions, whereby the bed frame is socketed into vertical position from said angle supports and said fulcrum legs successively.

7. The couch-frame having open spaces at its ends and rear, the bed-frame having folding legs at its front and angle arms rigid upon the bed-frame and pivotally engaged in said open spaces with the couch frame, whereby the rear of the bed is supported from the couch.

8. In a combined bed and couch, a bed-frame having front and rear folding legs and fixed rear fulcrum members shorter than said legs, in combination with a couch frame adapted to rest upon the floor at its rear and angle arms supporting the bed-frame from said couch frame, said fulcrum members having rocking bearings and arranged behind said angle arms.

9. In a combined bed and couch, a mattress frame in said bed, head and foot frames adapted to fold upon the bed and legs operatively engaged with said frames and adapted to be folded thereby, in combination with a couch frame adapted to rest upon the floor, arms supporting the bed-frame from the couch frame and fulcrum members on said bed-frame and adapted to support the same in a rocking position after the said folding legs and supporting arms have performed their office in the conversion of the bed.

10. In a combined bed and couch, a bed-frame having rigid rear fulcrum legs at substantially right angles to the plane of the bed bottom and provided with a floor engaging surface on their rear and under sides, in combination with a couch frame constructed at its rear to rest directly upon the floor, and rigid substantially right angled arms fixed to the bed-frame and pivotally engaged in the ends of the couch frame.

11. In a combined bed and couch, a bed-frame having folding legs and rigid rear fulcrum members shorter than said legs and provided with rounded extremities, in combination with a couch frame and supports for the bed pivotally engaged with the rear of said frame.

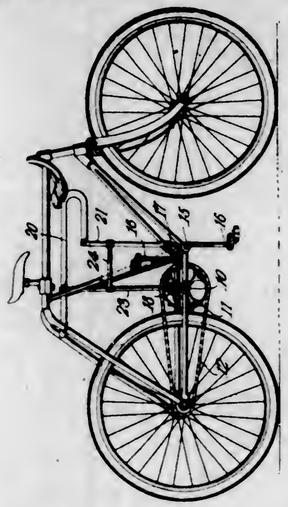
12. In a combined bed and couch, a bed frame and a couch frame hinged thereto between the front and rear sides thereof, and foldable legs both front and rear upon said bed frame whereby said bed frame is supported at all corners when unfolded.

13. In a combined bed and couch, a bed frame having a fulcrum member adapted to initially lower said bed frame from a vertical position, a couch seat pivotally connected with said bed frame and adapted to provide a secondary support in the lowering operation, and separate foldable legs front and rear upon said bed frame adapted to support the same horizontally above said couch seat.

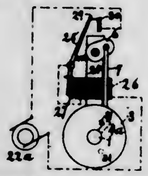
14. A bed frame having fulcrum legs at one side adapted to initially lower the bed, and separate foldable legs at each corner of the bed frame adapted to support the same when lowered, and a hood hinged at the front side of said bed, in combination with a couch seat pivotally supported upon the bottom of said bed frame and adapted to provide a central support therefor when unfolded.

854,176. TRANSMITTING MECHANISM. JAMES A. PAPOT, Los Angeles, Cal. Filed Nov. 27, 1906. Serial No. 345,317.

Claim.—The combination with driving and driven cranks, of which the driving crank is of greater throw than the driven crank, a lever fulcrumed at a fixed point, a pair of pitman rods connecting the cranks to the lever at the same side of the fulcrum, the pitman rod of the driving crank being at a greater distance from the fulcrum that the pitman rod connection of the driven crank, and a link connecting the two pitman rods to insure movement of the driven crank past a dead center.



854,177. ELECTRIC GAS-LIGHTER. EDMUND H. PAYCE, Yonkers, N. Y. Filed July 11, 1906. Serial No. 325,677.



Claim.—1. In an electric gas lighter, the combination of a handle, a shaft, a loose sleeve on said shaft, and fixed to said handle, a gas valve crank, a connecting rod between said crank and said sleeve, spring actuated pawls carried by said sleeve, a ratchet wheel fixed to said shaft and engaging with said pawls, a power storing spring having one end connected to said shaft, a nut, a post thereon connected to the other end of said spring, a stationary frame having sloping pockets, a flanged sleeve loose on said shaft, a gear wheel fixed to said flanged sleeve, pins fixed to said nut, passing loosely through the flange of said flanged sleeve and terminating in said pockets, and a screw fixed on said shaft and engaging with said nut for feeding the same away from said frame until said pins escape from said pockets.

2. In an electric gas lighter, the combination of a handle, a shaft, a loose sleeve on said shaft, and fixed to said handle, a gas valve crank, a connecting rod between said crank and said sleeve, spring actuated pawls carried by said sleeve, a ratchet wheel fixed to said shaft and engaging with said pawls, a power storing spring having one end connected to said shaft, a nut, a post thereon connected to the other end of said spring, a stationary frame having sloping pockets, a flanged sleeve loose on said shaft, a gear wheel fixed to said flanged sleeve, pins fixed to said nut, passing loosely through the flange of said flanged sleeve and terminating in said pockets, a screw fixed on said shaft and engaging with said nut for feeding the same away from said frame until said pins escape from said pockets, an alternator driven by said gear wheel, a magnet and vibratory contacts in series circuit with said alternator, and an armature actuated by said magnet for opening and closing said contacts.

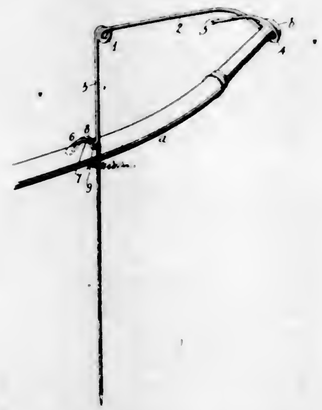
3. In an electric gas lighter, the combination of an electric generator, a handle, a gas valve, and mechanism by which said handle may be operated at a slow speed, by which said valve may be opened while the handle is being operated, and by which said generator is rapidly actuated only after said valve has been substantially all the way opened.

4. In an electric gas lighter, the combination of an electric generator, a handle, a gas valve, a power storing spring wound up by said handle, means actuated by said handle for releasing the power of said spring to turn said generator, means governed by said handle for turning on the gas, a circuit interrupter and electro magnet in series circuit with said generator, and an armature for said magnet for opening said circuit interrupter, a retractile spring being provided to close said interrupter again.

5. In an electric gas lighter, the combination of a handle, a gas valve actuated thereby, a circuit interrupter, a magneto actuated by said handle, an electro magnet in series circuit with said interrupter and said magneto, and an armature for said magnet for breaking the circuit at said interrupter every time said armature is attracted by said magnet.

6. In an electric gas lighter, the combination of a handle, a gas valve actuated to turn on the gas by said handle when the latter is turned in one direction, and to turn off the gas when said handle is turned in the other direction, a magneto actuated by said handle only when turned in the first direction, a circuit interrupter, and an electro magnetic device energized by the current from said magneto for rapidly and successively opening and closing said interrupter.

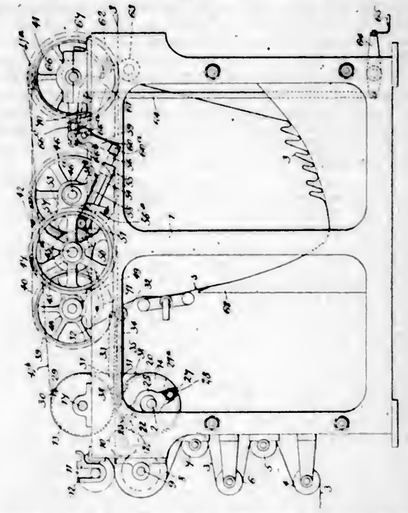
854,178. NOZZLE-HOLDER. JOSEPH H. RUFF, Hollywood, Cal. Filed Nov. 1, 1906. Serial No. 341,144.



Claim.—1. A hose nozzle holder comprising a pivot standard adapted to be thrust into the ground, a nozzle holding arm projecting from the upper end of said standard at an angle thereto and a hose clamping arm projecting from said standard at a suitable distance from the upper end thereof to bear on the upper side of the hose and press the hose against the ground, substantially as described.

2. The herein described hose nozzle holder comprising a standard, a hose clamping arm projecting laterally from one side thereof to bear on the upper side of the hose and press the hose against the ground, spring coils at the upper end of the standard, an arm extending from said spring coils at an angle to the said standard and a nozzle holding loop at the outer end of said spring supported arm, substantially as described.

854,179. PAPER MEASURING AND CUTTING MACHINE. HAROLD W. SANDERSON, London, England, assignor to The Wall Paper Manufacturers Limited, London, England. Filed Mar. 20, 1906. Serial No. 307,039.



Claim.—1. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, means adapted to cut off a length of material from the strip, means for feeding a measured portion of the strip to said cutting means, means adapted to grip the end of the strip and convey it to the delivery end of the apparatus, and means for actuating said cutting means at regular intervals.

2. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, means adapted to cut off a length of material from the strip, means for feeding a measured portion of the strip to said cutting means, means at the delivery end of the apparatus adapted to hold the end of the strip, means adapted to grip the end of the strip and convey it to said holding means, and means for actuating said cutting means at regular intervals.

3. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, means adapted to cut off a length of material from the strip, means for feeding a measured portion of the strip to said cutting means, means at the delivery end of the apparatus adapted to hold the end of the strip, means adapted to grip the end of the strip and convey it to said holding means, means adapted to release the strip from said holding means at will, and means for actuating said cutting means at regular intervals.

4. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, means adapted to cut off a length of material from the strip, means for feeding a measured portion of the strip to said cutting means, means at the delivery side of said cutting means adapted to draw the strip forwardly, means adapted to grip the end of the strip as it leaves said drawing means and convey it to the delivery end of the apparatus, and means for actuating said cutting means at regular intervals, substantially as set forth.

5. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, a pair of rotary cutting rollers arranged one above the other but not in contact, means for feeding a measured portion of the strip between said pair of cutting rollers, a knife blade on one roller of said pair of rollers, a counterpart for said knife blade on the other roller of said pair of rollers, and means for periodically moving said counter-

part toward said knife blade to cut off a length of the strip, substantially as set forth.

6. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, a pair of cutting rollers each formed with a longitudinal groove in its periphery said rollers being arranged one above the other but not in contact, means for feeding a measured portion of the strip between said pair of cutting rollers, a knife blade removably secured in the groove of the upper of said pair of cutting rollers, a bar formed with a groove to receive said knife blade mounted to slide in the groove of the bottom of said pair of rollers and means for periodically moving said grooved bar toward said knife, substantially as set forth.

7. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, a pair of cutting rollers each formed with a longitudinal groove in its periphery said rollers being arranged one above the other but not in contact, means for feeding a measured portion of the strip between said pair of cutting rollers, means for rotating said rollers simultaneously and at a uniform peripheral speed, a knife blade removably secured in the groove of the upper of said pair of cutting rollers, a bar formed with a groove to receive said knife blade mounted to slide in the groove of the bottom of said pair of rollers and means for periodically moving said grooved bar toward said knife, once in each revolution of said rollers, substantially as set forth.

8. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, a pair of cutting rollers each formed with a longitudinal groove in its periphery said rollers being arranged one above the other but not in contact, means for feeding a measured portion of the strip between said pair of cutting rollers, means for rotating said rollers simultaneously and at a uniform peripheral speed, a knife blade removably secured in the groove of the upper of said pair of cutting rollers, a bar formed with a groove to receive said knife blade mounted to slide in the groove of the bottom of said pair of rollers, axles on which said rollers are fixed, a toothed wheel fixed on the upper of said axles, a toothed wheel gearing into said toothed wheel of said upper axle and mounted to freely rotate on the lower of said axles, an internally toothed segment fixed to said toothed wheel of said lower axle, shaft bearings in the ends of said lower roller, a shaft extending through said lower roller mounted to rotate in said bearings, a pinion on said shaft adapted to be engaged by and arranged in the path of said toothed segment, eccentrics on said shaft, and arms connected to said grooved bar and mounted on said eccentrics, substantially as set forth.

9. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, means adapted to cut off a length of material from the strip, means for feeding a measured portion of the strip to said cutting means, means at the delivery end of the apparatus adapted to hold the end of the strip, a pair of chain wheels near the delivery end of the machine, a pair of chain wheels near the cutting means, endless chains engaging said chain wheels and connecting the corresponding wheels of each said pair, means for rotating one of said pair of chain wheels, spring fingers adapted to grip the end of the strip fixed in pairs to said chains, devices near said cutting means in the path of said fingers adapted to open said fingers against their spring action to admit passage of the strip end therethrough, devices near the said holding means at the delivery end of the apparatus in the path of said fingers adapted to open said fingers against their spring action to release said strip, and means for actuating said cutting means at regular intervals, substantially as set forth.

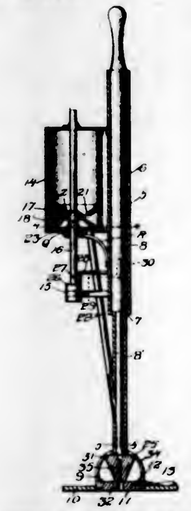
10. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, means adapted to cut off a length of material from the strip, means for feeding a measured portion of the strip to said cutting means, means at the delivery end of the apparatus adapted to hold the end of the strip, a pair of chain wheels near the delivery end of the machine, a pair of chain wheels near the cutting means, endless chains engaging said chain wheels and connecting the corresponding wheels of each said pair, means for rotating one of said pair of chain wheels, spring fingers adapted to grip the end of the strip fixed in pairs to said chains, releasing rollers on said fingers, movable releasing cams near said cutting means, means for periodically moving said releasing cams into the path of said releasing rollers, stationary releasing cams near said holding means at the delivery end of the apparatus in the path of said releasing rollers, and means for actuating said cutting means at regular intervals, substantially as set forth.

11. In apparatus for measuring and cutting uniform lengths from continuous strips of paper or other material, means adapted to cut off a length of material from the strip, means for feeding a measured portion of the strip to said cutting means, an axle mounted in fixed bearings at the delivery end of the apparatus, rings mounted on said axle, a dropper roller located above said rings, levers in which said dropper roller is carried, an axle to which said levers are fixed, an operating arm on said axle, a pair of chain wheels near the delivery end of the machine, a pair of chain wheels near the cutting means, endless chains engaging said chain wheels and connecting the corresponding wheels of each said pair, axles on which said pairs of wheels are fixed, means for rotating one of said axles, spring fingers adapted to grip the end of the strip fixed in pairs to said chains, releasing rollers on said fingers, releasing cams near said cutting means, pivoted levers to which said releasing cams are fixed, a cam adapted to bear on said cam levers and move them to bring said cams into the path of releasing rollers, a rotary axle on which said lever operating cams are fixed, gearing between one of said chain wheel axles and said cam axle for rotating said cam axle, a sliding pusher bar connected to one of said cam levers and arranged in the path of said operating arm when said cam levers are in their operative positions, a roller on said pusher bar, a cam adapted to bear against roller and move said pusher bar in a direction to operate said operating arm, a spring to keep said pusher bar against said cam, a rotary axle on which said pusher bar cam is fixed, gedring for rotating said pusher bar cam axle from one of said ratchet wheel axles, stationary releasing cams near said dropper roller in the path of said releasing rollers, means for lifting said dropper rollers at will, and means for actuating said cutting means at regular intervals, substantially as set forth.

854,180. NAIL-DRIVER. HENRY W. SCHEVE, Jansen, Nebr. Filed June 5, 1906. Serial No. 320,356.

Claim.—1. An implement of the class described comprising a nail magazine having a chute at its bottom, said chute having a notch in its lower edge, a conical member disposed with its minor portion extending upwardly into the chute and lying in close relation to the lower edge of the chute, said conical member having a plurality of radial slots therein terminating at their outer ends in enlargements, said slots being arranged for the reception of shanks of nails and for the passage of nail heads through their enlargements only, said notch being arranged for the passage of nail heads therethrough, said enlargements lying outwardly of the chute, means for revolving the conical member to register its slots successively with the notch, a nail holder, means for conducting nails from the enlargement of a slot, registered with the notch, to the holder, and means for driving nails engaged in the holder.

2. An implement of the class described comprising a nail magazine having a chute at its bottom, said chute having a notch in its lower edge, a conical member disposed with its minor portion extending upwardly into the chute and lying in close relation to the lower edge of the chute, said conical member having a plurality of radial slots therein terminating at their outer ends in enlargements, said slots being arranged for the reception of shanks of nails and for the passage of nail heads through their enlargements only, said notch being arranged for the passage of nail heads therethrough, said enlargements lying outwardly of the chute, means for revolving the conical member to register its slots successively with the notch, a nail holder, means for conducting nails from the enlargement of a slot, registered with the notch, to the holder, means for driving nails engaged in the holder, and a retainer disposed to receive the shanks of nails after the heads thereof have passed through the notch and before they reach the enlargements of the slots and to hold said nails against further outward movement until the slot is moved out of registration with the notch.



3. In an implement of the class described, the combination, with a nail magazine having a chute at its bottom, of a revoluble slotted conical member extending into the chute and adapted for the reception of nails in its slots, means for revolving the member, members arranged for movement into and out of position to engage nails extending transversely of the slots to shift the positions of such nails, and means for operating the nail-engaging members when the cone is revolved.

854,181. LOOSE-LEAF-BOOK BACK. WILLIAM J. SCHULTZ, Cincinnati, Ohio. Filed May 8, 1905. Serial No. 259,448.



Claim.—1. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, said sections being provided with telescopic attaching tubes, springs within said tubes, hooded ends on said sections, the ends on the one section taking within the ends of the other, the one set of ends provided with a rack, a spring-controlled pawl within the ends of the other section and normally in mesh with the racks, means secured within the ends containing the pawls and in operative connection with the latter, bell-crank-levers pivoted to the side of one of said sections and pivoted to means within the ends containing the pawls, a rotatably mounted disk on said section having direct pivotal connection with said bell-crank-levers independently of the casing, whereby, upon the turning of said disk the levers are rocked and the pawls thrown into or out of engagement with the racks, and the casings contracted or expanded.

2. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to each of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends on the one section taking within the ends of the other, a pawl and rack secured within said ends and normally held in mesh, pivoted levers secured within said ends and connected with said pawls, the other ends of the levers extending to the outside of the casing, a rotatably mounted disk on one side of said casing, bell-crank-levers pivoted to said casing and to the pivoted levers, a rod pivoted to said disk and bell-crank-levers respectively, independently of the casing, whereby, upon the turning of the disk the levers are rocked and the pawls and racks disengaged, and means for returning said disk and levers to their normal position.

3. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to each of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends on the one section taking within the ends of the other, a rack secured within each of said ends, a pawl having the end opposite its pointed or engaging end recessed, a spiral spring adapted to enter said recess and bear against said pawl and the adjacent wall of the sectional casing whereby said pawl is caused to engage said rack at direct right angles thereto and said pawl and rack are normally held in mesh, pivoted levers secured within said ends and loosely connected to said pawls, the other ends of the pivoted levers extending to the outside of the casing, and means for operating said levers.

4. A loose-leaf book-back comprising a casing composed of two sections, the one adapted to take upon the other, said sectional casing provided with telescopic attaching tubes or rods, hooded ends secured to each section of said casing, the ends of the one section taking within the ends of the other, a rack secured within one set of said ends, a spring-controlled pawl secured within the other set of said ends, said set of ends formed to provide a guideway for said pawl which is normally held in mesh with the rack, and means secured to said pawls and extending to the outside of the casing whereby the pawls may be thrown out of mesh with the rack, substantially as shown and for the purpose described.

5. A loose-leaf book-back comprising a casing composed of two sections, the one adapted to take upon the other, said sectional casing provided with telescopic attaching tubes or rods, each of said sections provided with hooded ends, the ends on the one section adapted to take within the ends of the other section, racks secured within one set of said ends, spring-controlled pawls secured within the other set of said ends, the pawls provided with grooves in their sides into which a portion of the ends take to form guide-ways, the pawls normally held in mesh with the racks, and means secured to said pawls and extending to the outside of the casing whereby the pawls may be thrown out of mesh with the rack, substantially as shown and for the purpose described.

6. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to each of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends on the one section taking within the ends of the other, a pawl and rack secured within said ends and normally held in mesh, pivoted levers secured within said ends and connected with said pawls, the other ends of the pivoted levers extending to the outside of the casing, a rotatably mounted disk on one side of said casing, bell-crank levers pivoted to said casing and to said pivoted levers, rods slidably pivoted to said bell-crank-levers and pivoted to said rotatably mounted disk whereby upon the turning of the disk the pivoted levers are rocked and the pawls and racks disengaged, and means for returning said disk and pivoted levers to their normal positions.

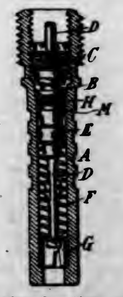
7. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to each of said sections and adapted to telescope, said tubes provided with springs tending to expand

said casing, hooded ends provided on each of said sections, the ends of the one section taking within the ends of the other, a rack secured within each of said ends, a pawl having the end opposite its pointed or engaging end recessed, a spiral spring adapted to enter said recess and bear against said pawl and the adjacent wall of the sectional casing whereby said pawl is caused to engage said rack at direct right-angles thereto, and said pawl and rack are normally held in mesh, pivoted levers secured within said ends and loosely connected with said pawls, the other ends of the pivoted levers extending to the outside of the casing, a rotatably mounted disk on one side of said casing, bell-crank-levers secured to said casing and connected with the pivoted levers and said disk whereby, upon the turning of the disk the levers are rocked and the pawls and racks disengaged, and means for returning said disk and levers to their normal position, substantially as shown and for purpose described.

8. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to one of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends of the one section taking within the ends of the other, a pawl and rack secured within said ends and normally held in mesh, pivoted levers secured within said ends and connected with said pawls, the other ends of the pivoted levers extending to the outside of the casing, a rotatably mounted disk on one side of said casing, bell-crank-levers secured to said casing and connected with the pivoted levers and said disk, whereby upon the turning of the disk the levers are rocked and the pawls and racks disengaged, a slotted piece and rectangular stud secured to said sections respectively whereby said sections are held from disengagement, and means for returning said disk and levers to their normal position, substantially as shown and for the purpose described.

9. A loose-leaf book-back comprising a casing in two sections, the one adapted to take upon the other, attaching tubes secured to one of said sections and adapted to telescope, said tubes provided with springs tending to expand said casing, hooded ends provided on each of said sections, the ends on the one section taking within the ends of the other, a pawl and rack secured within said ends and normally held in mesh, pivoted levers secured within said ends and connected with said pawls, the other ends of the pivoted levers extending to the outside of the casing, means for operating said levers, and a slotted piece and rectangular stud secured to said sections respectively, whereby said sections are held from disengagement.

854,182. TIRE OR OTHER VALVE. MAXIMILIAN C. SCHWEINERT, West Hoboken, N. J., and HENRY P. KRAFT, New York, N. Y. Filed Sept. 5, 1905. Serial No. 277,052.



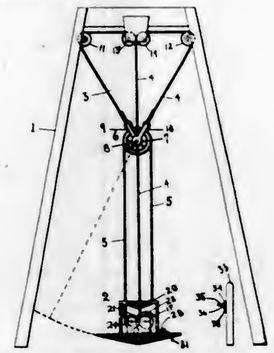
Claim.—1. In a valve for tires or the like, a packing ring, a member having a peripheral groove therefor, and a ring surrounding said packing ring to prevent its expansion over a side wall of the groove, the inner diameter of said ring being less than the outer diameter of said wall, whereby the ring is also retained.

2. In a valve for tires or the like, a seat member B having a peripheral groove, a packing ring H in said groove, and a metal ring M surrounding said packing ring and contracted thereon to a diameter less than that of the adjacent shoulder of said groove.

3. In a valve for tires or the like, a member having a peripheral groove, a surrounding casing, a packing ring in said groove and extending laterally beyond the member on which it is carried, so that its periphery is adapted to engage the surrounding casing to close the space between such casing and said member, and means compressing a portion of said packing ring in the peripheral groove of said member so as to prevent the ring from being accidentally stripped from said member by a strain in an axial direction.

4. In a valve for tires or the like, a member having a peripheral groove, a surrounding casing, a packing ring in said groove, and extending laterally beyond the member on which it is carried, so that its periphery is adapted to engage the surrounding casing to close the space between such casing and said member, and means overlying a portion of said ring to prevent it from being stripped from said member by a strain in an axial direction.

854,183. SWING. ALFRED SPICE, New York, N. Y. Filed July 14, 1905. Serial No. 269,665.



Claim.—1. In an amusement device, the combination of a car for passengers, a supporting frame, a Blackburn's double pendulum suspending said car from said frame, a motor for starting said car to swinging, after which it is propelled by gravity and its own momentum, and a braking device for stopping said car.

2. In an amusement device, the combination of a Blackburn's double pendulum, a car for carrying passengers, said car constituting a bob weight for said pendulum, and an arrangement for preventing said car from rotating upon a vertical axis.

3. In a swing, the combination of a car for passengers, a supporting frame, a Blackburn's double pendulum suspending said car from said frame, and an arrangement for preventing said car from rotating upon a vertical axis.

4. In an amusement device, the combination of a car for passengers, a supporting frame, a Blackburn's double pendulum suspending said car from said frame, a motor for starting said car to swinging, after which it is propelled by gravity and its own momentum, a braking device for stopping said car, and an arrangement for preventing said car from rotating upon a vertical axis.

5. In an amusement device, the combination of a supporting frame, a car for passengers, a Blackburn's double pendulum suspending said car from said frame, a motor, a drum for said motor, a cable for winding on said drum, and a catch for receiving and holding the free end of the cable, the said motor and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and in the angle between

what would be the paths of the two component parts of the said double pendulum considered individually.

6. In an amusement device, the combination of a supporting frame, a car for passengers, a Blackburn's double pendulum suspending said car from said frame, means for preventing said car from rotating upon a vertical axis, a motor, a drum for said motor, a cable for winding on said drum, and a catch for receiving and holding the free end of the cable, the said motor and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and in the angle between what would be the paths of the two component parts of the double pendulum considered individually.

7. In an amusement device, the combination of a supporting frame, a car for passengers, a Blackburn's double pendulum suspending said car from said frame, means for preventing said car from rotating upon a vertical axis, a motor, a drum for said motor, a cable for winding on said drum, a catch for receiving and holding the free end of the cable, the said motor and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and in the angle between what would be the paths of the two component parts of the double pendulum considered individually, and a brake for said drum.

8. In an amusement device, the combination of a supporting frame, a car for passengers, a Blackburn's double pendulum suspending said car from said frame, means for preventing said car from rotating upon a vertical axis, a motor, a drum for said motor, a cable for winding on said drum, and a catch for receiving and holding the free end of the cable, the said motor and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and in the angle between what would be the paths of the two component parts of the double pendulum considered individually, said catch being adapted to release said cable automatically when the said cable is wound to its fullest extent upon the said drum.

9. In an amusement device, the combination of a supporting frame, a car for passengers, a Blackburn's double pendulum suspending said car from said frame, means for preventing said car from rotating on a vertical axis, a motor for moving said car away from its position of equilibrium, a drum for said motor, a cable for winding on said drum, a catch for receiving and holding the free end of the cable, the said motor and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and in the angle between what would be the paths of the component parts of the double pendulum considered individually, said catch being adapted to release said cable automatically when the said cable is wound to its fullest extent upon the said drum, the car being left free to be set in motion by gravity, and a brake for said drum for bringing the said car to rest after the free end of the cable is again caused to be engaged by said catch.

10. In an amusement device, the combination of a supporting frame, a passenger car, a block intermediate to said car and said frame, members connecting and suspending said block from two relatively horizontally disposed points on said frame, other members connecting and suspending said car from said block, a motor for starting said car to swinging, after which it is propelled by gravity and its own momentum, and a brake for stopping the said car.

11. In an amusement device, the combination of a car for passengers, a supporting frame, a Blackburn's double pendulum suspending said car from said frame, a motor for starting said car to swinging, a brake for stopping said car, and means for varying the relative lengths of the component parts of said double pendulum.

12. In an amusement device, the combination of a supporting frame, a car for passengers, a Blackburn's double pendulum suspending said car from said frame, means for preventing said car from rotating upon a vertical axis, a motor, a drum for said motor, a cable for winding on said drum, a catch for receiving and holding the free end of the cable, the said motor and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and in the angle between what would be the paths of the two component parts of the double pendulum considered individually, and mechanism for adjusting the relative lengths of the component parts of said pendulum.

13. In an amusement device, the combination of a supporting frame, a car for passengers, a Blackburn's double pendulum suspending said car from said frame, means for preventing said car from rotating upon a vertical axis, a motor for moving said car away from its position of equilibrium, a drum for said motor, a cable for winding on said drum, a catch for receiving and holding the free end of the cable, the said motor and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and in the angle between what would be the paths of the two component parts of the double pendulum considered individually, said catch being adapted to automatically release said cable when the said cable is wound to its fullest extent upon said drum, the said car being left free to be set in motion by gravity, a brake for said drum for bringing the said car to rest after the free end of the cable is again caused to be engaged by said catch, and mechanism for adjusting the relative lengths of the component parts of said pendulum.

14. In an amusement device, the combination of a supporting frame, a passenger car, a block intermediate to said car and said frame, cables connecting and suspending said block from two relatively horizontally disposed points on said frame, other cables connecting and suspending said car from said block, a motor for starting said car to swinging, a brake for stopping said car, and means for lengthening and shortening the said two sets of cables relatively to each other, whereby the relative distance of said block from a line joining the two above mentioned points of suspension and from said car is changed.

15. In an amusement device, the combination of a supporting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys on said frame alined with the first two and disposed horizontally to each other at opposite sides of the said first named pulleys, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, and two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon one of the said drums and the last named cable upon the other in such manner that as the first named cables are wound up on the one drum the last named cable is unwound from the other drum and vice versa, the said block having guiding surfaces for the two first named cables, the drum upon which the single cable winds rotating with substantially twice the peripheral speed of the other drum.

16. In an amusement device, the combination of a supporting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys on said frame alined with the first two and disposed horizontally to each other at opposite sides of the said first named pulleys, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, and two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon one of the said drums and the last named cable upon the other in such manner that as the first named cables are wound up on the one drum the last named cable is unwound from the other drum and vice versa, the said block having guiding surfaces for the two first named cables, the said block consisting of a shaft for said pulley wheel, and clevises to which the ends of the two first named cables are attached, the said shaft constituting a pin for said clevises and being at an angle horizontally to a line joining the above named alined pulleys.

17. In an amusement device, the combination of a sup-

porting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys in line with the first two in a horizontal direction and at opposite sides thereof, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon one of the said drums and the last named cable upon the other in such manner that as the two first named cables are wound up on the one drum the last named cable is unwound from the other drum and vice versa, the said block having guiding surfaces for the two first named cables, the said block consisting of a shaft for said pulley wheel, and clevises to which the ends of the two first named cables are attached, the said shaft constituting a pin for said clevises and being at an angle horizontally to a line joining the above named horizontally disposed pulleys, a motor for rotating said drums, the drum upon which the single cable winds rotating with substantially twice the peripheral speed of the other drum, and means for locking said drums against rotation.

18. In an amusement device, the combination of a supporting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys at opposite sides of the first two and horizontally in line therewith, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon the same side of one of the said drums and the last named cable winding upon the other drum, the cables being wound in such manner that as the two first named cables are wound up on the one drum the last named cable is unwound from the other drum and vice versa, the said block having guiding surfaces for the two first named cables, the said block consisting of a shaft for said pulley wheel, and clevises to which the ends of the two first named cables are attached, the said shaft constituting a pin for said clevises and being at an angle horizontally to a line joining the above named horizontally alined pulleys, a motor for starting said car to swinging in a direction diagonal to the said line joining the alined pulleys, the said car, after being started, being propelled by its own momentum and by gravity, and a brake for stopping the said car from swinging.

19. In an amusement device, the combination of a supporting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys at opposite sides of the first two and horizontally in line therewith, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by the said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, two drums carried by said car and geared with each other to revolve together, one of said drums being cylindrical and the other of the shape of the joined frustums of a double cone, the last named cable winding upon the cylindrical drum and the two first named cables winding respectively upon the two coned portions of the other drum and each in winding passing from the larger toward the smaller portions of the said double coned drum, the cables being disposed in such manner that as the one cable is wound up on the cylindrical drum the other two cables are unwound from the double coned drum and vice versa, the said block having guiding surfaces for the two first named cables, the cylindrical drum rotating with substantially twice the peripheral speed of the coned drum.

20. In an amusement device, the combination of a supporting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys at opposite sides of the first two and horizontally in line therewith, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, and two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon the same side of one of the said drums and the last named cable winding upon the other drum, the said drum upon which the two cables wind having the shape of the joined frustums of a double cone, each of the said two cables winding respectively upon one of the coned portions, the said two cables in winding passing from the larger toward the smaller portions of the said double coned drum, and the other drum, upon which the last named cable winds, being cylindrical, the relative directions of the winding of the cables upon the two said drums being such that as the two first named cables are wound up on the coned drum the last named cable is unwound from the cylindrical drum and vice versa, the said block consisting of a shaft for said pulley wheel, and two clevises to which the ends of the two first named cables are attached respectively, the said shaft constituting a pin for said clevises and being disposed at an angle horizontally to a line joining the above named horizontally alined pulleys, the said shaft having apertures for guiding the two first named cables.

21. In an amusement device, the combination of a supporting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys at opposite sides of the first two and horizontally in line therewith, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon the same side of one of the said drums and the last named cable winding upon the other drum, the said drum upon which the two cables wind having the shape of the joined frustums of a double cone, each of the said two cables winding respectively upon one of the coned portions, the said two cables in winding passing from the larger toward the smaller portions of the said double coned drum, and the other drum, upon which the last named cable winds, being cylindrical, the relative directions of the winding of the cables upon the two said drums being such that as the two first named cables are wound up on the coned drum the last named cable is unwound from the cylindrical drum and vice versa, the said block consisting of a shaft for said pulley wheel, and two clevises to which the ends of the two first named cables are attached respectively, the said shaft constituting a pin for said clevises and being disposed at an angle horizontally to a line joining the above named horizontally alined pulleys, the said shaft having apertures for guiding the two first named cables, a third drum, a fourth cable, for winding on said third drum for drawing the said car to one side away from its position of equilibrium, and a catch for receiving and holding the free end of said fourth cable, the said third drum and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and within the angle which would be formed by two vertical planes one extended downward from the said line joining the above named horizontally alined pulleys and the other extended downward from the axis of said shaft, said catch being so constructed as to automatically release said fourth cable when the car is fully drawn to one side by the winding of said fourth cable upon said third drum, the car being left free to begin to swing by gravity and to continue to swing by its acquired momentum and by gravity.

22. In an amusement device, the combination of a supporting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys at opposite sides of the first two and horizontally in line therewith, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon the same side of one of the said drums and the last named cable winding upon the other drum, the said drum upon which the two cables wind having the shape of the joined frustums of a double cone, each of the said two cables winding respectively upon one of the coned portions, the said two cables in winding passing from the larger toward the smaller portions of said double coned drum, and the other drum, upon which the last named cable winds, being cylindrical, the relative directions of the winding of the cables upon the two said drums being such that as the two first named cables are wound up on the coned drum the last named cable is unwound from the cylindrical drum and vice versa, the said block consisting of a shaft for said pulley wheel, and two clevises to which the ends of the two first named cables are attached respectively, the said shaft constituting a pin for said clevises and being disposed at an angle horizontally to a line joining the above named horizontally alined pulleys, the said shaft having apertures for guiding the two first named cables, a third drum, a fourth cable winding on said third drum for drawing said car to one side away from its position of equilibrium, a catch for receiving and holding the free end of said fourth cable, the said third drum and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and within the angle which would be formed by two vertical planes one extended downward from the said line joining the above named horizontally alined pulleys and the other extended downward from the axis of said shaft, said catch being so constructed as to automatically release said fourth cable when the car is fully drawn to one side by the winding of said fourth cable upon said third drum, the car being left free to begin to swing by gravity and to continue to swing by its acquired momentum and by gravity, and a brake for said third drum for stopping the car from swinging when the free end of said fourth cable is again caused to be engaged by said catch, at one of the momentary positions of rest of said car.

23. In an amusement device, the combination of a supporting frame, a passenger car suspended from said frame, an intermediate block above said car, two pulleys side by side on said frame above said block, two more pulleys at opposite sides of the first two and horizontally in line therewith, two cables attached to said block and passing respectively first over the last named pulleys then over the first named pulleys then down to the car, a pulley wheel carried by said block, a third cable attached to said car and passing over said pulley wheel and then back to said car, two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon the same side of one of the said drums and the last named cable winding upon the other drum, the said drum upon which the two cables wind having the shape of the joined frustums of a double cone, each of the said two cables winding respectively upon one of the coned portions, the said two cables in winding passing from the larger toward the smaller portions of said double coned drum, and the other drum, upon which the last named cable winds, being cylindrical, the relative directions of the winding of the cables upon the two said drums being such that as the two first named cables are wound up on the coned drum the last named cable is unwound from the cylindrical drum and vice versa, the said block consisting of a shaft for said pulley wheel, and two clevises to which the ends of the two first named cables are attached respectively, the said shaft constituting a pin for said clevises and being disposed at an angle horizontally to a line joining the two above named horizontally alined pulleys, the said shaft having apertures for guiding the two first named cables, a motor for rotating said drums, means for locking said drums against rotation, a second motor, for drawing the said car to one side away from its position of equilibrium, a third drum, operated by the said second motor, a fourth cable, for winding on said third drum, a catch for receiving and holding the free end of said fourth cable, the said third drum and the said catch being relatively located one on the said car and the other in a stationary position extraneous to said car and within the angle which would be formed by two vertical planes one extended downward from the said line joining the above named horizontally alined pulleys and the other extended downward from the axis of said shaft, said catch being so constructed as to automatically release said fourth cable when the car is fully drawn to one side by the winding of said fourth cable upon said third drum, the car being left free to begin to swing by gravity and to continue to swing by its acquired momentum and by gravity, and a brake for said third drum for stopping the car from swinging when the free end of said fourth cable is again, at one of the momentary positions of rest of the car, caused to be engaged by said catch.

24. In an amusement device, the combination of a supporting frame, a passenger car, a block intermediate to said car and said frame, members connecting and suspending said block from two horizontally disposed points on said frame, other members connecting and suspending said car from said block, said car being free to swing in one direction from its points of suspension on said frame as a fulcrum and in another direction from said block as a fulcrum, and a motor for starting said car to swinging in a direction diagonal to the axes of both of said fulcrums, after which the car is propelled by gravity and its own momentum.

25. In an amusement device, the combination of a supporting frame, a passenger car, a block intermediate to said car and said frame, members connecting and suspending said block from two horizontally disposed points on said frame, other members connecting and suspending said car from said block, said car being free to swing in one direction from its points of suspension on said frame as a fulcrum and in another direction from said block as a fulcrum, a motor for starting said car to swinging in a direction diagonal to the axes of both of said fulcrums, after which the car is propelled by gravity and its own momentum, and a manually controlled brake for stopping the said car from swinging at will.

26. In an amusement device, the combination of a supporting frame, a passenger car, a block intermediate to said car and said frame, cables connecting and suspending said block from two relatively horizontally disposed points on said frame, other cables connecting and suspending said car from said block, said car being free to swing in one direction from said horizontally disposed points on said frame as a fulcrum and in another direction from said block as a fulcrum, a motor for starting said car to swinging in a direction diagonal to the axes of both of said fulcrums, after which the car is propelled by gravity and its own momentum, and a manually controlled brake for stopping the said car from swinging at will.

27. In an amusement device, the combination of a supporting frame, a passenger car, a horizontal shaft, members connecting and suspending said shaft from two horizontally disposed points on said frame, said points and the axis of said shaft lying in different vertical planes, and other members connecting and suspending said car from said shaft, said car being free to swing in one direction from its points of suspension on said frame as a fulcrum and in another direction at an angle to the first named direction from said shaft as a fulcrum.

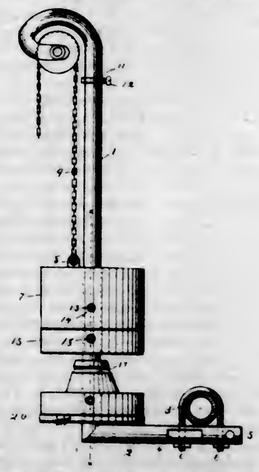
28. In an amusement device, the combination of a supporting frame, a passenger car, a horizontal shaft, clevises for which the said shaft forms a pin, cables secured to said clevises and suspending said clevises and said shaft from two horizontally disposed points on said frame, said points and the axis of said shaft lying in different vertical planes, and other cables suspending said car from said

shaft, said car being free to swing in one direction from its points of suspension on said frame and also free to swing in another direction from its points of suspension on said shaft.

29. In an amusement device, the combination of a stationary supporting frame, a passenger car, an intermediate block above said car, four pulleys in horizontal alinement with each other on said frame, the middle two of said pulleys being side by side and directly above said block, two cables attached to said block and passing respectively first over the end pulleys then over the middle two pulleys and then down to the car, a third cable passing from the said block to the said car, and two drums carried by said car and geared with each other to revolve together, the two first named cables winding upon the same side of one of the said drums and the last named cable winding upon the other drum, the relative directions of the winding of the cables upon the two said drums being such that as the two first named cables are wound up on the one drum the last named cable is unwound from the other drum and vice versa, the said block having guiding surfaces for the two first named cables.

30. In an amusement device, the combination of a stationary supporting frame, a passenger car, a block intermediate to said car and said frame, cables connecting and suspending said block from two relatively horizontally disposed points on said frame, other cables connecting and suspending said car from said block, said car being free to swing in one direction from said horizontally disposed points on said frame as a fulcrum and in another direction from said block as a fulcrum, a motor for starting said car to swinging in a direction diagonal to the axes of both of said fulcrums, after which the car is propelled by gravity and its own momentum, a manually controlled brake for stopping said car from swinging at will, and means for moving said block nearer to said car and farther from a line joining the above named horizontally disposed points of suspension on said frame, and vice versa.

854,184. BASIN AND BATH-TUB ATTACHMENT. GEORGE A. STEINER and JOHN EVANS, Jr., Salt Lake City, Utah. Filed Oct. 1, 1906. Serial No. 337,033.



Claim.—1. In an attachment for basins and bath-tubs a balancing weight on a standard, said weight surrounding said standard and having a chamber in its lower part and a lateral hole entering said chamber and a screw in said hole for the purpose specified.

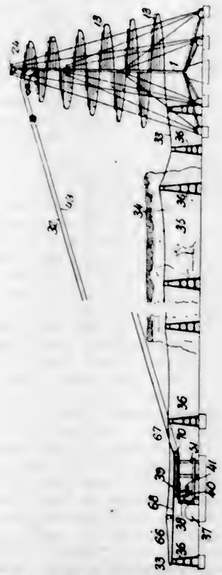
2. In an attachment for basins and bath-tubs a standard, a weight vertically adjustable thereon, a collar on said standard to limit the ascent of said weight, and means to temporarily bind said weight to said standard, substantially as described.

3. An attachment to basins and bath-tubs comprising a standard, a weight thereon having a chamber in its lower part and a lateral screw hole, an additional weight whose upper part is adapted to occupy the chamber in the weight next above it and having a recess in said upper part, and a screw in the screw hole of the weight next above it to engage said recess for the purpose stated.

4. In a basin and bath-tub attachment, a standard, an arm on said standard having a set of cross openings therethrough consisting of a slot and a hole, a yoke having threaded legs adapted to enter said slot and hole and nuts on said legs to tighten up said yoke, as described.

5. In an attachment for basins and bath-tubs having a vertical supporting standard, a fixed arm on the bottom of said standard having two sets of cross openings therethrough at a right angle to each other, each set of said openings consisting of a slot and a round hole, a yoke whose threaded legs are adapted to pass through said openings and nuts on said legs to tighten up said yoke, as herein set forth.

854,185. TROLLEY AMUSEMENT. HARRY G. TRAVER, East Orange, N. J. Filed Jan. 17, 1906. Serial No. 296,496.



Claim.—1. In a trolley amusement, the combination with a track consisting of a single vertical rail, of central supporting means, and means carried by said central means for supporting the track.

2. In a trolley amusement, the combination with a spiral track consisting of a single vertical rail, of central supporting means, and means carried by said central means for supporting the spiral track.

3. In a trolley amusement, the combination with a track consisting of a single vertical rail, of central supporting means, and radially extending means carried by said central means for supporting said track.

4. In a trolley amusement, the combination with a spiral track, central supporting means, radially extending means carried by said central means, and depending means carried by said radially extending means for supporting said track.

5. In a trolley amusement, the combination with a column, of a spiral track encircling said column said track consisting of a single vertical rail, and means carried by said column for supporting said track.

6. In a trolley amusement, the combination with a spiral track increasing in diameter from top to bottom said track consisting of a single vertical rail, of central supporting means, and means carried by said central means for supporting the track.

7. In a trolley amusement, the combination with a spiral track, said spiral track increasing in diameter from top to bottom and consisting of a single vertical rail, of central supporting means, and radially extending means carried by said central means for supporting said track.

8. In a trolley amusement, the combination with a spiral track increasing in diameter from top to bottom, central supporting means, radially extending means carried by said central means, and depending means carried by said radially extending means for supporting said track.

9. In a trolley amusement, the combination with a column, of a spiral track increasing in diameter from top to bottom and encircling said column said track consisting of a single vertical rail, and means carried by said column for supporting said track.

10. In a trolley amusement, a spiral track, and means for supporting it consisting essentially of a column having projecting arms that hold the track so that there may be a free rail.

11. In a trolley amusement, a spiral track for a gravity-descending car, and means for supporting the track consisting of a central column having projecting arms that sustain the track with a free rail, and suitable braces for said arms.

12. In a trolley amusement, a spiral, and a supporting structure therefor consisting essentially of a central column, clamps on said columns having outwardly extended arms, brackets on said arms supporting the track so that its upper edge may be a free rail.

13. In a trolley amusement, the combination with a supporting structure, of a spiral track increasing in diameter from top to bottom and consisting of a vertical piece supported along its center line so that the upper and lower edges may be free, said track being arranged so that the supporting structure is applied thereto in such a manner as to support it at intervals, and a car having wheels engaging with and running upon said track.

14. In a trolley amusement, the combination of a spiral track increasing in diameter from top to bottom and supported along its middle line so that the upper edge may receive car wheels while the lower edge is surrounded by rollers likewise carried by the car, a central supporting means, outwardly extending means carried by said central means, depending means carried by said outwardly extending means for supporting said track, and the car operating on the track, substantially as described.

15. In a trolley amusement, the combination with a spiral track, of a central column, clamps adjustably secured thereon, horizontal arms carried by the clamps, brackets on the outer ends of these arms, which brackets are fastened to the track, and braces for the horizontal arms, together with clamps on the column to which the braces are attached.

16. In a trolley amusement, the combination with a track, of a central jointed column, couplings for the sections, bottom radial arms extending outwardly, foundations for the outer ends of said arms, and brace rods running from said foundations to the couplings for the purpose of securing strength and rigidity in the structure.

17. In a trolley amusement, the combination with a spiral track, of a supporting structure, consisting essentially of a sectional column, radial arms at the base for supporting and strengthening it, inclined braces extending from the outer ends of said radial arms to points along the length of the column, and a series of horizontal arms carried by the column and brackets on the outer ends of said arms which are fastened to the spiral track.

18. In a trolley amusement, the combination with a spiral track increasing in diameter from top to bottom and consisting of a single vertical rail, a central column, outwardly extending means carried by the column, means carried by said outwardly extending means for supporting said track, said track forming a circuitous course consisting essentially of an ascent to the top of the spiral, and a return from the bottom of the spiral to the ascent, said return consisting of undulations and short ascents and descents.

19. In a trolley amusement, the combination with a spiral track increasing in diameter from top to bottom and consisting essentially of a single vertical rail, central supporting means, means carried thereby for supporting the track, and a car having grooved drive wheels engaging the track together with frames connected to the car for carrying the wheels.

20. In a trolley amusement, a spiral track along which the car descends by gravity, said track consisting of a single vertical rail and having the spiral increasing in diameter from top to bottom, central supporting means, outwardly extending means carried by said central means, and depending means carried by said outwardly extending means for supporting the track.

21. In a trolley amusement, a spiral track along which the car descends by gravity consisting of a single vertical rail whose spiral arrangement increases in diameter from top to bottom, in combination with a strengthening strip and means for securing said strengthening strip to the spiral track along its edge.

22. In a trolley amusement, an endless course for a car consisting of a track in the form of a descending spiral, said track consisting of a single vertical rail whose spiral arrangement increases in diameter from top to bottom, a central supporting means, means carried by said means and extending outwardly, depending means carried by said outwardly extending means for supporting said track, an ascending course to the top of the spiral, a return from the bottom of the spiral, and a car having wheels running on the track trolley-wise, all arranged so that said endless course may operate in connection with the car to accomplish the results substantially as and for the purpose specified.

23. In a trolley amusement, the combination with a track, of a car, a frame carrying the car, a trolley wheel journaled in the frame and engaging the track, and means engaging said wheel for preventing its reverse movement.

24. In a trolley amusement, the combination with a vertical track or rail, of a car, a frame on which the car is hung, swiveling means between the car and the frame, grooved wheels journaled in the frame and engaging the opposite sides and bottom edge the track, and safety rollers likewise engaging the track.

25. In a trolley amusement the combination with a spiral track, of a car, a frame on which the car is hung, grooved wheels journaled in the frame and engaging the track, an endless lifting cable carrying clips, and dogs pivoted in the car-supporting frame, said dogs being engaged by the clips when the car is being lifted.

26. In a trolley amusement the combination with a spiral track supported along its middle line so as to leave free the upper and lower portions, of a car, one or more frames supporting the car, grooved wheels journaled in the frames and engaging the upper part of the track, and safety rollers journaled in the frame and engaging the lower part of the track.

27. In a trolley amusement the combination with a track, supported along its middle line so as to leave the upper and lower portions free, of a car, one or more supporting frames therefor, grooved wheels journaled in the frames and engaging the upper part of the track, and anti-friction rollers journaled likewise in the frames and engaging the opposite sides and the bottom edge of the lower free portion of the track.

28. The combination with a track, central means for supporting said track, of a car, one or more frames supporting it, wheels journaled in the frame and engaging the track, bolts swiveled in the lower part of the supporting frames, and loose connections between the bolts and the car, so that the car may swing easily during its movement and its wheels may be adapted to run on a curved rail.

29. The combination with a spiral track, of a car, wheel-carrying frames engaging the track, and loose connections

between the car and the frames so that the wheels may follow the curvature of the track and the car may swing easily.

30. The combination with a spiral track, of a car, a supporting frame carrying wheels engaging the track, a ledge on the frame, an endless lifting cable having clips that engage said ledge, pivoted dogs in the frame for holding the clip in engagement, and releasing means for said dogs.

31. The combination with a track, of a car, frames supporting the car, loose connections between the car and the frames, wheels journaled in the frames and engaging the track, an endless lifting cable, sheaves around which the cable passes, clips on the cable, pivoted dogs in the car-supporting frame for holding the clips in engagement with the frame, all arranged so that when the dogs strike the cable sheave the clip will be released.

32. The combination with a track, of a car descending the same by gravity, an endless clip-provided lifting cable sheaves around which said cable passes, and means on the car adapted to strike said sheaves and automatically engage and disengage the clips and the car.

33. In a trolley amusement, the combination of a spiral track, a car having trolley wheels engaging it and provided with pivoted spring dogs, an endless clip-provided cable for lifting the car to the top of the spiral, the clips on the cable being held engaged with the car by means of said dogs, and means for releasing the dogs when the car begins its descent.

34. In a trolley amusement, a vertical rail, said rail forming an endless course for a car consisting of a descending spiral, an ascending course to the top of the spiral, and a return course from the bottom of the spiral, a part of the endless course being inclosed to form a tunnel.

35. In a trolley amusement, a vertical rail, said rail forming an endless course for a car consisting of a descending spiral, an ascending course to the top of the spiral, and a return course from the bottom of the spiral, a part of the endless course being inclosed to form a tunnel, said tunnel being provided with scenic effects.

36. In a trolley amusement, a vertical rail, said rail forming an endless course for a car consisting of a descending spiral, an ascending course to the top of the spiral, and a returning course from the bottom of the spiral, said course being in combination with a car having wheels running on the course, and a brake mechanism for stopping the car.

37. The combination with a track, of a car descending the same by gravity, a loading station, means for lifting the car from the loading station to the top of the spiral, means for returning the car from the bottom of the spiral to the loading station, and suitable braking means for stopping the movement of the car.

38. The combination with a spiral track, the diameter of which spiral increases toward the bottom of a car, forward and rear supporting frames, each frame having grooved trolley wheels engaging the track, swiveled bolts in the lower ends of said frames, loose connections between the bolts and the car, and a rigid spacing connection between the bolts.

39. The combination with a track supported along its middle line so as to leave the top and the bottom free, of a car, front and rear supporting frames therefor having trolley wheels engaging the track and also having safety rollers engaging the track, swiveled bolts in the frames, a rigid spacing connection between the bolts, and loose rods connected to the bolts and to the car.

40. The combination with a track, of a car, a supporting frame for the car, grooved wheels journaled in said frame and engaging the track, ratchets on said wheels, and pawls on the frame engaging the ratchets, for the purpose of preventing reverse movements.

41. In a trolley amusement, an endless course consisting in part of a cable-way and in part of a track or rail, in combination with means for connecting a cable section with a track section consisting essentially of a rigid connection bored to receive the cable and means for securing the cable within the same as well as for fastening the track to the connection.

42. The combination of an inclined cable, a descending spiral, a connection between the spiral and the cable consisting essentially of a casting to which the spiral is connected said casting being bored to receive the cable, and means for securing the cable within the casting, all arranged so that the wheels of the car may move freely from the cable onto and over the casting and the spiral.

43. In a trolley amusement, the combination with a track, a central column, radially extending arms carried by said column, and depending brackets carried by the arms, said brackets supporting the track so that it has a free edge.

44. In a trolley amusement, the combination with a spiral track, a central column, radially extending arms carried by said column, and depending brackets carried by the arms, said brackets supporting the track so that it has a free edge.

45. In a trolley amusement, the combination with a spiral track, of a car having grooved trolley wheels engaging the track, frames connected to the car for carrying the wheels, and means on the wheels engaging means on the frames for preventing the reversal of said wheels.

46. In a trolley amusement, the combination with a spiral track, of a central column, clamps adjustably secured thereon, arms carried by the clamps, brackets on the arms and fastened to the track, and braces for said arms, together with clamps on the column to which the braces are attached.

47. In a trolley amusement, the combination with a track, of a central column, clamps adjustably secured thereon, arms carried by the clamps, and brackets on the outer ends of said arms, which brackets are secured to the track.

48. The combination with a spiral track, of a central column, clamps adjustably secured thereon, and brackets fastened to the track and upheld by connection with the clamps.

49. In a trolley amusement, the combination with a spiral track, central supporting means, outwardly extending means carried by said central means, and depending means carried by said outwardly extending means for supporting said track.

50. In a trolley amusement, the combination with a spiral track, central supporting means, outwardly extending means carried by said central means, and means carried by said outwardly extending means for supporting said track.

51. In a trolley amusement, the combination with a spiral track increasing in diameter from top to bottom, central supporting means, outwardly extending means carried by said central means, and depending means carried by said outwardly extending means for supporting said track.

52. The combination with a spiral track, of a car, a supporting frame carrying wheels engaging the track, a ledge on the frame, and an endless lifting cable having clips that engage said ledge.

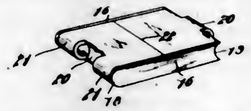
53. The combination with a spiral track, of a car, a supporting frame carrying wheels engaging the track, a ledge on the frame, an endless lifting cable having clips that engage said ledge, and pivoted dogs in the frame for holding the clips in engagement.

54. In a trolley amusement, the combination with a spiral track, central supporting means, outwardly extending means carried by said central means, depending means carried by said outwardly extending means for supporting said track, and a car having wheels operating trolleywise on the track.

55. In a trolley amusement, the combination with a central column, of a spiral track encircling said column and consisting of a single vertical rail whose spiral arrangement increases in diameter from top to bottom, and means carried by said column for supporting said track at uniform intervals throughout the length of the track, substantially as described.

56. In a trolley amusement, the combination with a spiral track increasing in diameter from top to bottom and consisting of a single vertical rail, of central supporting means, means carried by said central supporting means, and means carried by said latter means for supporting the track, the points of support being at certain intervals apart throughout the length of the track so that the support may be uniformly effective.

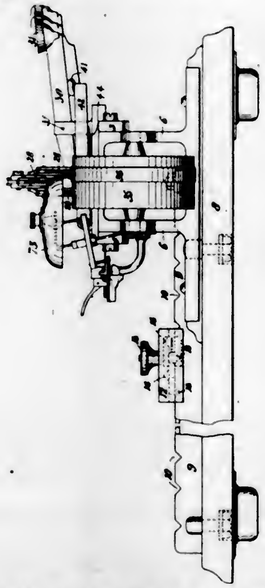
854,186. TIRE-PROTECTOR. HAYNIE L. VOSS, Miles, Tex. Filed June 27, 1906. Serial No. 323,703.



Claim.—1. A chain for armoring and protecting the tread of vehicle tires consisting of hollow resilient links of metal pivotally connected at their ends, and provided with means at their sides to keep mud and other dirt from entering the hollows of the links combined with a strap and band, to which said chain is connected on the outer surface.

2. A chain for armoring and protecting the tread of vehicle tires consisting of hollow resilient links of metal pivotally connected at their ends and having flanges at their sides to keep mud and other dirt from entering the hollow of the links.

854,187. TYPE-WRITER. CHARLES S. WATSON, Newcastle-upon-Tyne, England. Filed Nov. 17, 1905. Serial No. 287,799.



Claim.—1. An apparatus for printing embossed characters, comprising a base, a bridge supported on said base, a spring drum carried by the base, a carriage carried by the bridge and adapted to traverse the same under the tension of said drum, an escapement mechanism carried by the carriage, punches carried by the carriage, keys adapted to actuate said punches and escapement mechanism, a spacing key adapted to actuate the escapement, a platen carried by the bridge, longitudinal bars furnished with indentations arranged at equal intervals apart to correspond with the intervals between successive lines of typing, and a paper carrier having two pair of projections on each end and each of such pair adapted to engage with a pair of adjacent indentations in said bars.

2. An apparatus of the character described, comprising a base, a bridge supported upon the base, and formed of a front and rear bar, the front bar having ratchet teeth on its lower face, a spring drum carried by the base, a carriage carried by the bridge and adapted to traverse the same under the tension of the drum, an escapement carried by the carriage and engaging the ratchet teeth carried by the bar, punches carried by the carriage, keys adapted to actuate said punches and escapement mechanism, a spacing key adapted to actuate the escapement mechanism, a platen carried by the bridge, bars carried by the base and having indentations at equal intervals apart to correspond with the intervals between successive lines of typing, a paper carrier supported upon and adapted to be moved along said bars, a paper clip adjustable lengthwise upon said carrier and adapted to receive a paper sheet that lies between the platen and punches, two pair of projections on each end of the carrier, each such pair being adapted to engage with a pair of adjacent indentations in said bars.

3. An apparatus of the character described, comprising a base, a bridge supported upon the base and formed of a front and rear bar, the front bar having ratchet teeth on its lower face, a carriage supported by the bridge and adapted to traverse the same, an escapement mechanism carried by the carriage and engaging the ratchet teeth, punches carried by the carriage and extending through a block forming a guide therefor, keys operating said punches and the escapement, a spacing key adapted to independently actuate said escapement mechanism, a platen to receive the impact of the punches, bars carried by the base and having indentations at equal intervals apart to correspond with the intervals between successive lines of typing, a paper carrier supported upon and adapted to be moved along said bars, a paper clip adjustable lengthwise upon said carrier and adapted to receive a sheet of paper that lies between the platen and punches, blocks carried by the outer ends of the carrier and straddling the bars, two pair of projections within each block, each of such pair adapted to engage with a pair of adjacent indentations in said bars.

4. An apparatus for printing embossed characters comprising a base, a bridge supported upon said base, and the front bar furnished with a ratchet, and standards supporting said bars, a carriage supported by the bars, punches mounted upon the carriage and passing through an aperture therein, key levers equal in number to and corresponding with the punches, keys upon the extremities of said key levers, upwardly projecting studs, levers fulcrumed on said studs, and flexibly connected at one end to one of said punches, tensional springs connecting said levers with the carriage, links connecting the other ends of said levers with the key levers, guide plates for said punches supported on the underside of said carriage, a grooved platen to receive the impact of the punches, a longitudinal bar beneath the key levers, spring blades that maintain said bar in contact with the underside of said key levers, a spacing key attached to said longitudinal bar, transverse bars connected with said longitudinal bar and pivoted on the carriage, a spring drum mounted upon one of the aforesaid bridge standards, a tape wound upon the drum attached to the carriage, an escapement mechanism, means operated by the depression and release of aforesaid longitudinal bar for actuating said escapement mechanism, a transverse lever pivoted to and located below the carriage, a perforated lug projecting therefrom, a spring detent attached thereto and adapted to engage with the ratchet, a link that connects said transverse lever with said longitudinal bar, a lever longitudinally arranged beneath the carriage and fulcrumed thereon, and having at one end a detent adapted to engage with aforesaid ratchet, a screwed link attached to the other end of last mentioned lever, and having its end passed through the perforation in aforesaid lug, a nut on said link-end, a spiral spring

around said link, longitudinal bars furnished with indentations arranged at equal intervals apart to correspond with the intervals between successive lines of typing, a paper carrier supported upon and adapted to be moved along said bars, a paper clip adjustable lengthwise upon said carrier, two pairs of projections one on each side of the carrier, each such pair being adapted to engage with a pair of adjacent indentations in aforesaid bars, and the pairs of projections on opposite sides of said carrier being displaced in relation to each other, whereby the lines of typing on one side of a sheet of paper can be caused to fall in the spaces intermediate between the lines of typing on its other side, and upon the base a gridiron adapted to support the paper sheet.

5. Apparatus for printing embossed characters, comprising a base, a bridge supported upon said base, and composed of a rear bar and a front bar furnished with a ratchet, standards supporting said bars, a group of six punches carried by the carriage, six key levers fulcrumed upon the carriage, six keys attached to said key levers, links connecting said key levers with the punches, guide plates for said punches upon the underside of the carriage, a platen furnished with three grooves to receive the impact of the punches, a longitudinal bar beneath the key levers, spring blades that maintain said bar in contact with the under side of said key levers, a spacing key attached to said longitudinal bar, transverse bars connected with said longitudinal bar, and pivoted on the carriage, a spring drum mounted upon one of the aforesaid bridge standards, a tape attached to the carriage and to the periphery of said drum, escapement mechanism adapted to be actuated by the depression and release of aforesaid longitudinal bar, a spring detent attached to the carriage and adapted to engage with the ratchet, a lever that is longitudinally arranged beneath the carriage and fulcrumed thereon, and is furnished at one end with a detent adapted to engage with aforesaid ratchet, a screwed link attached to the other end of last mentioned lever, a nut on said link end and around said link a spiral spring, upon aforesaid base, longitudinal bars furnished with indentations arranged at equal intervals apart, to correspond with the intervals between successive lines of typing, a paper carrier supported upon and adapted to be moved along said bars, a paper clip adjustable lengthwise upon said carrier adapted to receive a paper sheet that lies over the platen.

6. Apparatus for printing embossed characters comprising a base, a bridge supported on said base and provided with a ratchet, a spring drum carried by the base, a carriage carried by the bridge and adapted to traverse the same under the action of said drum, escapement mechanism adapted when actuated to allow the carriage to move over the bridge through distance equal to the interval between two adjacent teeth of the ratchet upon said carriage punches, keys adapted to actuate said punches and escapement mechanism, a spacing key adapted to actuate last mentioned mechanism only, a platen carried by the base, longitudinal bars furnished with indentations arranged at equal intervals apart to correspond with the intervals between successive lines of typing, a paper carrier supported upon and adapted to be moved along said bars, a paper clip adjustable lengthwise upon said carrier adapted to receive a paper sheet that lies over the platen, two pairs of projections on each end of the carrier, each such pair being adapted to engage with a pair of adjacent indentations in aforesaid bars, and the pairs of projections on opposite sides of said carrier being displaced in relation to each other, whereby the lines of typing on one side of a sheet of paper can be caused to fall in the spaces intermediate between the lines of typing on its other side, and upon the base a gridiron adapted to support the paper sheet.

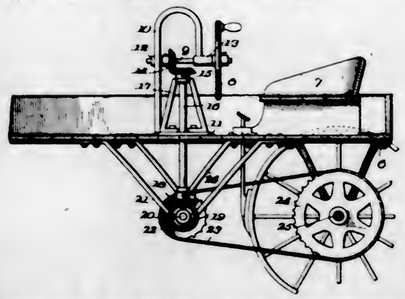
7. In typewriting apparatus, the combination with a base, a carriage movable lengthwise, thereon, a platen below said carriage, imprinting mechanism mounted on said carriage above the platen, bars having upon their upper edges indentations at equal intervals apart corresponding to the space desired between successive lines of typed matter, a paper carrier supported upon and adapted to be moved along said bars, and on each two pairs of projections, on each end of the carrier, one pair on each side of the carrier, each such pair being adapted to engage with a pair of adjacent indentations, and the pairs of projections on opposite sides of each carrier being displaced in relation to each other, whereby the lines of typing on one side of a sheet of paper can be caused to fall in the spaces intermediate between the lines of typing on its other side.

8. An apparatus for printing embossed characters, comprising a base, a bridge supported on said base, ratchet teeth carried by the said bridge, a spring drum carried by the base, a carriage carried by the bridge and adapted to traverse the same under tension of the drum, an escapement mechanism carried by the carriage and engaging the teeth carried by the bridge, punches carried by the carriage, keys adapted to actuate said punches and escapement mechanism, a spacing key adapted to actuate the escapement, a platen carried by the bridge, longitudinal bars furnished with indentations arranged at equal intervals apart to correspond with the intervals between successive lines of typing, and a paper carrier having two pair of projections on each end and each of such pair adapted to engage with a pair of adjacent indentations in said bars.

9. An apparatus for printing embossed characters, comprising a base, a bridge supported upon the base and consisting of a front and rear bar, ratchet teeth carried by the front bar, a spring drum carried by the base, a carriage carried by the bridge and adapted to traverse the same under tension of the drum, an escapement mechanism carried by the carriage and engaging the teeth carried by the bridge, punches carried by the carriage, keys adapted to actuate said punches and escapement mechanism, a spacing key adapted to actuate the escapement, a platen carried by the bridge, longitudinal bars furnished with indentations arranged at equal intervals apart to correspond with the intervals between successive lines of typing, and a paper carrier having two pair of projections on each end and each of such pair adapted to engage with a pair of adjacent indentations in said bars.

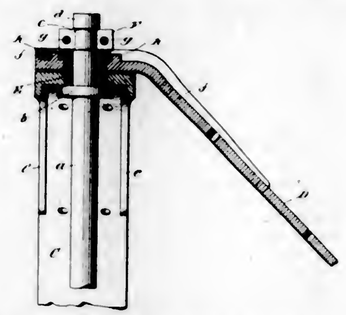
10. An apparatus for printing embossed characters, comprising a base, a bridge supported on said base, a spring drum carried by the base, a carriage supported by the bridge, and adapted to traverse the same under the tension of the drum, an escapement mechanism carried by the carriage, punches carried by the carriage, keys adapted to actuate said punches, and escapement mechanism, a spacing key adapted to actuate the escapement, a platen carried by the bridge, longitudinal bars furnished with indentations arranged at equal intervals apart to correspond with the intervals between successive lines of typing, and a paper carrier having a projection on the upper and lower faces at each end and adapted to engage with the indentations in said bars.

854,188. VEHICLE. RUDOLPH J. WEBER, Detroit, Mich. Filed Aug. 25, 1906. Serial No. 331,996.



Claim.—The combination of a closed platform provided with wheels, an arched bracket standing thereon, shaft hangers depending from the under side thereof, a horizontal shaft supported by said bracket under the arch thereof and provided with a hand-wheel, a vertical shaft extending through the platform under said arch and through one of said hangers and geared to the horizontal shaft, a lower horizontal cross shaft carried in another hanger and geared to the vertical shaft under the platform, and a chain and sprockets connecting said cross shaft and the axle of the vehicle.

854,189. TOP-FITTING FOR DERRICKS. GUSTAF P. WERN, New York, N. Y. Filed Sept. 11, 1906. Serial No. 334,178.



Claim.—1. The combination with a derrick mast, of a pin having a flange, a journal portion, and an annular recess above said journal portion, substantially as and for the purposes set forth.

2. In top-fittings for derricks, the combination of leg straps adapted to bear one upon the other, said straps being perforated and provided each with a marginal strengthening rib, the rib on the under strap being located on the under side and the rib on the upper-strap being located on the upper side, substantially as and for the purposes set forth.

3. In top-fittings for derricks, the combination of leg straps perforated as explained, a pin affording a journal, and a bushing applied upon said pin and in the perforations of the leg straps, substantially as and for the purposes set forth.

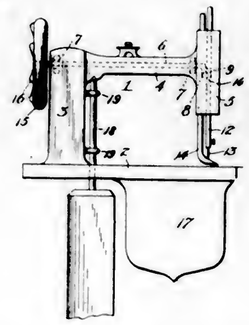
4. In top-fittings for derricks, the combination of leg straps, a pin affording a journal, a bushing applied upon said pin and in said straps, and a removable retaining yoke also applied upon said pin, substantially as and for the purposes set forth.

5. In top-fittings for derricks, the combination with the pin and the leg straps, of a removable bushing having an angular head, one of the leg straps being provided with lugs to prevent the bushing from turning, substantially as and for the purposes set forth.

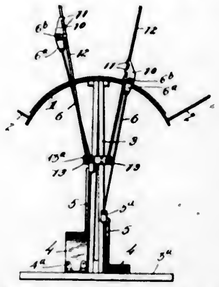
6. In top-fittings for derricks, the combination of the pin having a flange, a journal portion and an annular recess, of leg straps, a removable bushing applied in said straps and around the journal portion of the pin, and a removable yoke applied in the recess in the pin, substantially as and for the purposes set forth.

854,190. MECHANICALLY-OPERATED SIGN. JOSEPH A. WIEDEMANN, Eldorado, Kans. Filed Dec. 28, 1905. Serial No. 293,702.

Claim.—In a mechanically operated sign, a base, a standard thereon provided with eyes, a hollow arm extending laterally from the standard over the base, and provided with a casing, a reciprocatory bar in the casing, a shaft journaled in said arm provided with a crank at one end for engaging with said bar and a wheel at the other end having its spokes in the form of inclined radial blades, a vane depending from the base, and a rod projecting up through the base and the eyes on the standard, and having its upper end engaging with the under side of said arm.



854,191. TOBACCO-BOOKER. ROBERT E. ANGER, Weyauwega, Wis. Filed July 19, 1906. Serial No. 326,882.



Claim.—1. In a tobacco booker the combination of a table mounted on a supporting frame, treadles pivoted to said frame, pivoted rods connected with the treadles, presser rods connected with the upper ends of said pivoted rods, guide rods pivotally connected to said table, and sleeves supported upon the connecting rods through which said guide rods pass.

2. A tobacco booker comprising a semicircular table or support mounted on a supporting frame, treadles pivoted to said frame, connecting rods pivoted to move laterally relative to said treadles, and connected therewith, presser rods connected with the upper ends of said connecting rods, a pair of pivoted guide rods, and sleeves secured to the upper ends of the connecting rods through which said guide rods pass.

3. In a tobacco booker, a table provided at its terminals with supplemental stands, treadles pivoted intermediately of their ends upon the table support, pivotally mounted rods connected with the treadles, presser rods connected with the upper ends of said pivotally mounted rods, guide rods pivotally connected to the support, and sleeves supported upon the connecting rods and through which the guide rods pass.

854,192. MAIL-BOX-DELIVERY APPARATUS. EZEKIEL S. BAUGHMAN, Quincy, Ohio. Filed Jan. 31, 1907. Serial No. 355,055.

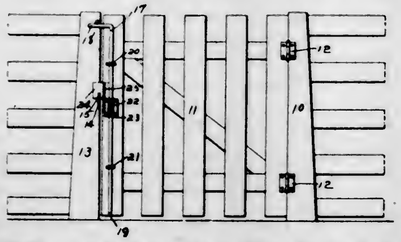
Claim.—In an apparatus of the character described, a supporting cable rigidly secured at its opposite ends, an intermediate supporting post, a supporting frame secured to said post, substantially right angular brackets or hangers arranged in said frame and secured to the under side of said cable to support the latter, a guide pulley at one end of said cable, a double grooved winding drum mounted at the opposite ends of the cable, a carriage, flanged wheels journaled on said carriage and adapted to engage and run

on said cable, a mail box connected to said carriage, an operating wire connected to said box and adapted to pass around said guide pulley, the opposite ends of said wire being connected to the same side of said operating drum



in the grooves formed therein and extended in opposite directions, and a crank adapted to turn said drum to wind up one end of said wire and unwind the other end.

854,193. GATE LATCH AND HOLDER. JOSEPH BETTS, Winterset, Iowa. Filed Sept. 5, 1906. Serial No. 333,723.

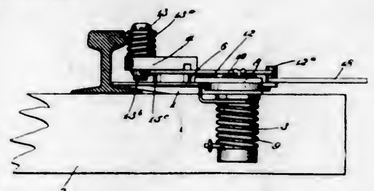


Claim.—1. In a device of the class described, the combination of a latch supporting arm, a gate latch slidingly and detachably connected with the latch supporting arm, a rod connected with the gate latch and held in an elevated position by the latch supporting arm when the latch is in engagement therewith and capable of being projected downwardly below the gate to which the device is attached when the latch is detached from the latch supporting arm and a keeper for the latch.

2. In a device of the class described, the combination of a rod, means for slidingly and detachably connecting it with a gate, a latch fixed to the rod and a latch supporting arm to be fixed to a gate and shaped to hold the rod in an elevated position and the latch in an operative position and also capable of permitting the latch to be withdrawn upwardly from engagement with the latch supporting arm so that the rod may be projected downwardly and a keeper for the latch.

3. In a device of the class described, the combination of a rod having a pointed lower end and a handle at its upper end, a guide plate for the rod having a vertical slot therein, a latch fixed to the rod and capable of moving downwardly through the slot in the guide, a latch supporting arm for supporting the latch, said latch supporting arm open at its top to permit the latch to be withdrawn therefrom and a keeper for the latch.

854,194. TORPEDO-SIGNALING DEVICE. EDWIN E. BLAIN, Columbus, Ohio. Filed Mar. 27, 1907. Serial No. 364,810.



Claim.—1. In a torpedo signaling device, the combination of a hammer to be operated by a train-wheel, mechanism for feeding a torpedo into position to be exploded by said hammer, means for moving the torpedo-feeding mechanism to eject the debris of the exploded torpedo, and means for restoring the torpedo-feeding mechanism to position for reloading same.

2. In a torpedo signaling device, the combination comprising a torpedo magazine, a hammer to be operated by a train-wheel for exploding a torpedo, a torpedo-carrier, mechanism for loading the torpedo-carrier from said magazine, means for moving the torpedo-carrier into position to explode the torpedo, means for moving the torpedo-carrier to eject the debris of the exploded torpedo, and means for restoring the torpedo-carrier to position for reloading the same from said magazine.

3. In a torpedo signaling device, the combination comprising a hammer to be operated by a train-wheel, a torpedo-carrier for feeding the torpedoes to said hammer, a pivoted slideway for said carrier, means for holding the slideway in position to guide the carrier to the firing position of the hammer, means actuated by the hammer for automatically releasing the slideway, and means for turning the slideway on its pivot to move the torpedo-carrier away from the hammer and eject the torpedo-debris after firing.

4. In a torpedo signaling device, the combination comprising a hammer to be operated by a train-wheel, a torpedo-carrier for feeding torpedoes to said hammer, a pivoted slideway for said carrier, a spring for turning the slideway in one direction on its pivot and moving the torpedo-carrier away from said hammer to eject the torpedo debris, means for locking the slideway under tension of said spring and in position for feeding a torpedo to the hammer, and means actuated by the hammer to automatically release said slideway and carrier to eject the torpedo debris.

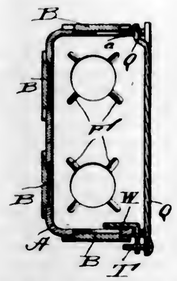
5. In a torpedo signaling device, the combination comprising a hammer to be operated by a train-wheel, a torpedo-carrier for feeding torpedoes to said hammer, a torpedo magazine and means in connection therewith for automatically supplying torepdoes to the tospedo-carrier, a pivoted slideway for said carrier, a spring for turning the slideway in one direction on its pivot and moving the torpedo-carrier away from said hammer to eject the torpedo debris, means for locking the slideway under tension of said spring and in position for feeding a torpedo to the hammer, and means actuated by the hammer to automatically release said slideway and carrier to eject the torpedo debris.

6. In a torpedo signaling device, the combination comprising a hammer to be operated by a train-wheel, a pivoted hammer-carrier, a torpedo-carrier for feeding torpedoes to said hammer, a link connecting said hammer-carrier and torpedo-carrier, a pivoted slideway for the torpedo-carrier, a spring to actuate said slideway, means for locking the slideway against the action of said spring, means for moving the torpedo and hammer carriers to positions adjacent and removed from a track, and means actuated by the hammer for automatically releasing the slideway whereby said torpedo-carrier is moved by said spring to torpedo-debris-ejecting position.

7. In a torpedo signaling device, the combination comprising a hammer to be operated by a train-wheel, a torpedo-carrier for feeding torpedoes to said hammer, a pivoted slideway for the torpedo-carrier, a spring for actuating said slideway to move the torpedo-carrier to eject the torpedo debris, a deflector to guide the torpedo-carrier into reloading position, means for locking said slideway in position for guiding the torpedo-carrier to firing position, and means for automatically releasing said slideway, whereby said torpedo-carrier is moved by said spring to its torpedo-debris-ejecting position.

8. In a torpedo signaling device, the combination comprising a hammer to be operated by a train-wheel, a torpedo-carrier for feeding torpedoes to said hammer, a pivoted slideway for the torpedo-carrier, a spring for actuating said slideway to move the torpedo-carrier in one direction to eject the torpedo-debris, a spring-actuated latch on said slideway, a lever to engage said latch to hold the slideway and torpedo-carrier in position for moving a torpedo to firing position, means connected with said hammer to operate said lever to release said latch, and means for restoring the torpedo carrier to the loading position.

854,195. JUNCTION OR OUTLET BOX. LEON W. BOSSERT, Utica, N. Y. Filed Feb. 10, 1906. Serial No. 300,509.



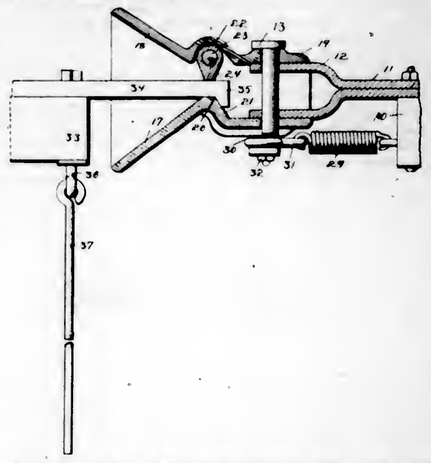
Claim.—1. An outlet box having one or more blanks or plugs partially severed from the wall thereof and projecting beyond the side wall of the box, ridges struck up from the box and extending through the marginal apertures of said blanks and frictionally engaging the same, as set forth.

2. An outlet box having one or more blanks or plugs partially severed from the wall of the box and projecting beyond the outer surface of the box, and ridges projecting from the outer surface of the box about the marginal edges of said blanks or plugs, as shown and described.

854,196. COUPLING FOR TRACTION-ENGINES. WALTER F. BROWN, Newton, Iowa, assignor to Fred L. Maytag, Newton, Iowa. Filed Dec. 27, 1904. Serial No. 238,491.

Claim.—1. In a coupler, the combination of a draw-bar fixed to a support, a draw-head having an opening at its rear to receive the draw-bar pivotally and detachably connecting said parts, said draw-head formed with lugs at its rear corners, links detachably connected with said lugs and contractible coil springs attached to the links and also attached to the same support as the draw-head.

2. In a coupler, a draw-head formed with a draw-bar cavity, a transverse shoulder formed at the bottom of the cavity, a pawl in the cavity extended transversely above the shoulder capable of limited movement from a downwardly inclined position over the shoulder to a rearwardly inclined position and a spring tending to force the pawl to its downwardly inclined position.



3. In a coupler, a draw-head formed with a draw-bar cavity, a transverse shoulder formed at the bottom of the cavity, a pawl in the cavity extended transversely above the shoulder capable of limited movement from a downwardly inclined position over the shoulder to a rearwardly inclined position and a spring tending to force the pawl to its downwardly inclined position, the forward face of the pawl inclined rearwardly and downwardly when at its forward limit of movement.

4. In a coupler, a draw-head formed with a draw-bar cavity, a transverse shoulder formed at the bottom of the cavity, a pawl in the cavity extended transversely above the shoulder capable of limited movement from a downwardly inclined position over the shoulder to a rearwardly inclined position, a spring tending to force the pawl to its downwardly inclined position and a coupling bar having a shoulder on its under surface to engage the shoulder in the draw-head and a flat top surface to be engaged by said pawl.

854,197. BILL-HOOK. EDWARD D. CONKLIN, Newark, N. J., assignor to The Whitehead & Hoag Company, Newark, N. J., a Corporation of New Jersey. Filed Feb. 26, 1907. Serial No. 359,513.



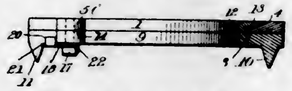
Claim.—1. In a device of the character described, a card or plate adapted to receive advertising matter in combination with a thin piece of sheet metal secured to the plate and provided with a guide, a bill hook having its shank movable in said guide, and a spring tongue on the shank adapted to be brought into interlocking engagement with a portion of the sheet metal disk to lock the hook against rotation when moved in one direction.

2. A device of the character described comprising a flat card board and a sheet metal plate secured thereto, the latter being provided with a channel, and a flat portion at

one end of the channel, a hook having a shank guided in said channel between the disk and card and provided with a flat spring tongue adapted to be brought into engagement with the flattened portion of the sheet metal plate.

3. A device of the character described comprising a back piece, and a sheet metal plate secured thereto and provided with a flattened surface near its upper edge, a hook having a shank interposed between the sheet metal plate and back piece and movable endwise, said shank having its upper end provided with a flat spring tongue adapted to be brought into frictional engagement with the flat surface of the sheet metal plate as the shank is drawn downwardly.

854,198. HORSESHOE. GEORGE T. CRANDELL, Omaha, Nebr. Filed Sept. 19, 1906. Serial No. 335,258.



Claim.—1. A horseshoe comprising a foot engaging member, a ground engaging member provided with toe and heel calks, the heel calks each having a notch in it, means for securing the toe portions of the members together, and plates for locking the heel portions of the members together, one element of each plate fitting in the notch of the corresponding heel calk.

2. A horseshoe comprising a foot engaging member, a ground engaging member provided with toe and heel calks, means for securing the toe portions together, and means for locking the heel portions together, the latter means interlocking with the heel calks.

3. A horseshoe comprising a foot engaging member, a ground engaging member, provided with toe and heel calks, means for securing the toe portions of the members together, bolts passed through the heel portions of the members, each bolt having a head, a plate embracing each bolt and interlocking with the corresponding heel calk, each plate having oppositely disposed fingers for engagement with corresponding sides of the ground engaging member and also having a finger engaging the head of the corresponding bolt, the latter finger being beveled toward its outer end.

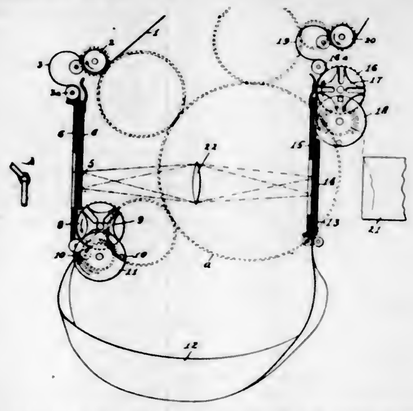
4. A horse shoe comprising a foot engaging member, a ground-engaging member provided with toe and heel calks, the heel calks each having a notch in it, means for securing the toe portions of the members together, and means for locking the heel portions of the members together, one element of the last-mentioned means fitting in the notch of the corresponding heel calks.

854,199. EXHIBITING APPARATUS FOR MOVING PICTURES. FRANK L. DYER, Montclair, and DELOS HOLDEN, Orange, N. J., assignors to Edison Manufacturing Company, West Orange, N. J., a Corporation of New Jersey. Filed Nov. 22, 1905. Serial No. 288,514.

Claim.—1. In a moving picture exhibiting apparatus, the combination with a source of light, of means for intermittently passing a continuous strip through the path of the light in such a manner that two portions of the strip register with each other in said path and come to rest in alternation, substantially as set forth.

2. In a moving picture exhibiting apparatus, the combination with a source of light, of means for intermittently passing a continuous strip through the path of the light in such a manner that two portions of the strip register with each other in said path and come to rest in alternation, said means operating in such a manner that the period of movement of one portion occurs during the period of rest of the other portion, substantially as set forth.

3. In a moving picture exhibiting apparatus, the combination with a source of light, of means for intermittently passing a continuous strip through the path of the light in such a manner that two portions of the strip register with each other in said path and come to rest in alternation, the periods of movement and rest being approximately equal, substantially as set forth.



4. In a picture exhibiting apparatus, the combination with a source of light and an objective, of a pair of display openings situated in optical alinement with each other in the path of said light and at substantially different distances from said objective, substantially as set forth.

5. In a picture exhibiting apparatus, the combination of a source of light, a lens one or more frames or casings formed with a pair of display openings situated at conjugate foci of said lens and means for passing a film across said display openings, substantially as set forth.

6. In a moving picture exhibiting apparatus, the combination with a source of light, of one or more frames or casings formed with a pair of display openings situated in alinement with respect to the path of the light and means for passing a continuous strip across each of said openings, substantially as set forth.

7. In a moving picture exhibiting apparatus, the combination with a source of light, of one or more frames or casings formed with a pair of display openings situated in alinement with respect to the path of the light and means for intermittently passing a continuous strip across each of said openings, substantially as set forth.

8. In a moving picture exhibiting apparatus, the combination with a source of light, of one or more frames or casings formed with a pair of display openings situated in alinement with respect to the path of the light, and means for intermittently passing a continuous strip across each of said openings, the periods of movement at one opening occurring during the periods of rest at the other opening, substantially as set forth.

9. In a moving picture exhibiting apparatus, the combination with a source of light, of one or more frames or casings formed with a pair of display openings situated in alinement with respect to the path of the light and means for intermittently passing a continuous strip across each of said openings, the periods of rest being equal to or greater than the periods of movement, substantially as set forth.

10. In a picture exhibiting apparatus, the combination of one or more frames or casings formed with a pair of optically alined display openings and means for intermittently moving a continuous strip across said openings in such a manner that the period of movement at one opening occurs during the period of rest at the other opening, substantially as set forth.

11. In a picture exhibiting apparatus, the combination of a long flexible strip carrying two series of pictures the members of which alternate, one or more frames or casings formed with a pair of optically alined display openings and means for intermittently moving said strip across said openings, the intermittent feed operating to move the strip at each step a distance equal to the length of the two adjacent pictures, whereby the pictures of only one series will be displayed at each opening, substantially as set forth.

12. In a picture exhibiting apparatus, the combination of a long flexible strip carrying two series of pictures the members of which alternate, one or more frames or casings formed with a pair of optically alined display openings, and means for intermittently moving said strip across said openings, the intermittent feed operating to move the strip at each opening in alternation a distance equal to the length of two adjacent pictures, whereby the pictures of the two series will be at rest successively and in alternation at their respective openings, substantially as set forth.

13. In a picture exhibiting apparatus, the combination of a long strip carrying two series of pictures representing rapidly succeeding positions of objects in motion, the members of which series alternate, one or more frames or casings formed with a pair of optically alined display openings and means for intermittently moving said strip across said openings, the intermittent feed operating to move the strip at each opening in alternation a distance equal to the length of the two adjacent pictures, whereby the pictures of the two series will be at rest successively and in alternation at their respective openings, substantially as set forth.

14. In a picture exhibiting apparatus, the combination of a source of light, a long flexible strip carrying two series of pictures the members of which alternate, and means for successively bringing to rest in the same focal plane as the pictures of one series, images of the pictures of the other series, substantially as set forth.

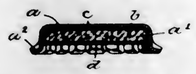
854,200. PROCESS OF MAKING STORAGE-BATTERY ELECTRODES. THOMAS A. EDISON, Llewellyn Park, Orange, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Mar. 30, 1905. Serial No. 252,930.

Claim.—1. The process of making alkaline storage battery electrodes which consists in introducing within a perforated electrode pocket, a loosely packed mass of substantially insoluble metallic flakes, scales or foils, and in then subjecting the same to a welding temperature to secure integrality thereof, as and for the purposes set forth.

2. The process of making storage battery electrodes, which consists in introducing within a perforated electrode pocket a loosely packed mass of flakes, foils or scales containing metallic cobalt, and in then subjecting the same to a welding temperature to secure integrality thereof, as and for the purposes set forth.

3. The process of making storage battery electrodes, which consists in introducing within the perforated electrode pocket a loosely packed mass of cobalt-nickel flakes, films or foils, and in then subjecting the same to a welding temperature to secure integrality thereof, as and for the purposes set forth.

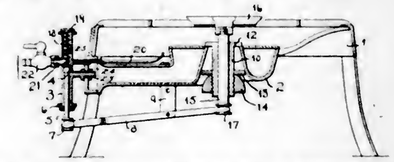
854,201. BOTTLE-STOPPER. ALBERT M. EDWARDS, Jr., Lawrence, Mass. Filed Mar. 13, 1907. Serial No. 362,089.



Claim.—A bottle stopper comprising a metallic cap having a cylindrical wall, a layer of compressible material in the cap, and a disk of ductile metal exterior to said last-mentioned layer and having at its edge an inturned flange, substantially as set forth.

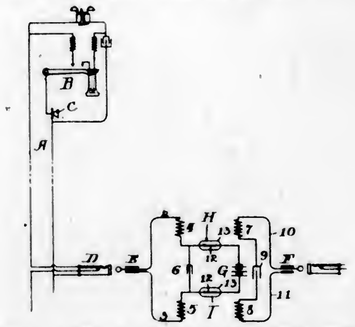
854,202. GAS-STOVE ATTACHMENT. EDWARD EFFERT, Philadelphia, Pa. Filed June 21, 1906. Serial No. 322,786.

Claim.—1. In an attachment for gas stoves, a burner provided with two perforations, a casing provided with a valve seat and with two hollow projections upon one side and one hollow projection on the other side, one of said two projections being screw-threaded and forming a gas inlet, and the other projection on said side being opposite the one projection on said other side and provided with a pilot light, said two projections being adapted to extend through the perforations in the burner, two nuts on the gas inlet upon opposite sides of the wall of the burner, a cap on each end of the casing, one of which is provided with a gland, a valve on said seat with its stem projecting through said cap and gland, a spring on the valve and engaging with the other cap, a lever for engaging with the projecting portion of said stem with one end, and means connected with the other end of the lever for actuating the same when an object is placed on the burner.



2. In an attachment for gas stoves, a burner having an annular inclined wall, a sleeve through the burner having its lower end screw threaded and its upper end provided with a spider which is adapted to rest on the top of the burner, a nut on said lower end, a washer plate on the sleeve above the nut and adapted to engage with the inclined wall, a stem through the sleeve with its upper end adapted to be moved above the top of the stove, a valve for admitting gas to the burner, and means connected with the lower end of the stem for automatically controlling said valve.

854,203. TELEPHONE-EXCHANGE APPARATUS. CLAUDE D. ENOCHS, La Crosse, Wis., assignor to The Vote-Berger Company, a Corporation of Wisconsin. Filed Apr. 24, 1905. Serial No. 257,051.



Claim.—1. Telephone exchange apparatus, comprising a subscriber's line circuit, a line jack connected with said circuit, a cord plug circuit co-operating with said jack, and means adapted to be included in said circuits when connected to automatically steady the resistance thereof.

2. Telephone exchange apparatus, comprising a line circuit, a cord plug circuit co-operating with said line circuit, and a ballast adapted to be included in said circuits, for the purposes specified.

3. Telephone exchange apparatus, comprising a line circuit, a subscriber's set having a transmitter included in said circuit, a cord plug circuit at the central station adapted to co-operate with said line circuit, a source of electric current included in said cord plug circuit, and a ballast connected with said cord plug circuit, for the purposes specified.

4. Telephone exchange apparatus, comprising a line circuit, a subscriber's set having a transmitter included in

said circuit, a line jack, a cord plug circuit adapted to co-operate with said jack at the central station, a battery included in said cord plug circuit, and a ballast connected with said cord plug circuit, for the purposes specified.

5. Telephone exchange apparatus, comprising a line circuit, a subscriber's set having a transmitter included in said circuit, a line jack, a cord plug circuit at the central station adapted to co-operate with said jack, a battery and repeating coil included in said cord plug circuit, and a ballast connected in series with said repeating coil and battery, for the purposes specified.

6. Telephone exchange apparatus, comprising a subscriber's circuit, a line jack connected with said circuit at the central station, a cord plug circuit adapted to co-operate with said line jack, a battery connected with the conductors of said cord plug circuit, and a repeating coil and ballast connected in series with each of said conductors.

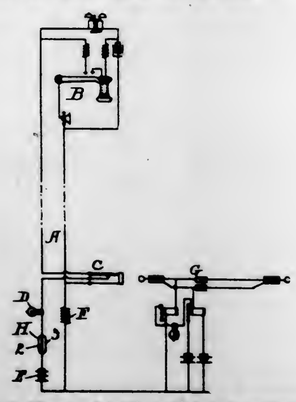
7. Telephone exchange apparatus, comprising a subscriber's line circuit, a line jack connected with said circuit, a cord plug circuit adapted to co-operate with said jack at the central station, a source of current supply connected with said cord plug circuit, and a ballast connected in series with each conductor of said cord plug circuit.

8. A telephone system having associated therewith line circuits of divers resistances, a telephone set for each line circuit, a cord plug circuit, a common source of current supply, and a ballast adapted to be included in said circuits, for the purposes specified.

9. A telephone system, having associated therewith, line circuits of divers resistances, a telephone set for each line circuit, a cord plug circuit, a common source of current supply, and a ballast adapted to be associated with said circuits, for the purposes specified.

10. Telephone exchange apparatus, comprising a subscriber's line circuit A, a subscriber's set B having a transmitter C included in said circuit, a line jack D connected with said circuit, a cord plug E at the central station adapted to co-operate with said line jack, a battery G connected with the conductors of said cord plug, a repeating coil and ballast connected in series with each of said conductors, and a condenser 6 in multiple with said conductors.

854,204. TELEPHONE-EXCHANGE APPARATUS. CLAUDE D. ENOCHS, La Crosse, Wis., assignor to The Vote-Berger Company, a Corporation of Wisconsin. Filed Apr. 24, 1905. Serial No. 257,052.



Claim.—1. The combination with the conductors of a telephone line, a source of current and a signaling instrument in circuit with said line and a ballast in circuit with said signaling instrument to regulate its voltage.

2. In combination with the conductors of a telephone line, a source of current in circuit with said line, a signaling lamp, and a steadying resistance in circuit with said lamp, for the purposes specified.

3. In combination with a telephone line circuit containing a signaling instrument at the central station, a ballast to steady the resistance of said curcuit under variation of the electro motive force in said line.

4. In combination with a line circuit for conducting undulatory, pulsatory or intermittent electric currents, a signaling instrument connected with said line circuit, and a steadying resistance in series with said signaling instrument, for the purposes specified.

5. In combination with a telephone line circuit having a jack, a signaling lamp, and a ballast, all connected in series therewith.

6. The combination in telephone apparatus of the subscriber's line circuit having a line jack, battery, signaling lamp, and a ballast placed in series with said lamp and the line contact of said jack to regulate the voltage across said lamp.

7. A telephone system having associated therewith line circuits of divers resistances, an electrical actuating device, a source of current and an automatic ballast resistance, for the purposes specified.

8. In a telephone system provided with line circuits, a sub-station telephone set for each circuit, a common source of current supply, and a ballast adapted to be associated with said circuits and to be directly affected by the current flowing therein to introduce an automatic compensating resistance proportionately to the amount of current flow, whereby current may be maintained constant in lines of various resistances.

9. In a telephone system, a central station, a subscriber's station, a line circuit interconnecting them, a source of current, means at the subscriber's station to determine the flow of current through the lines leading therefrom, a line signal and a ballast in series with the line circuit adapted to automatically vary proportionately to the current flow in said line.

10. In combination with the conductors of a telephone line, a source of current and a ballast adapted to be included in said line, for the purposes specified.

11. In combination with the conductors of a telephone line, a source of current, and a ballast composed of a conductor having a highly sensitive temperature correction.

12. A telephone system, comprising in combination with the subscriber's circuits, a source of current, and a ballast composed of an iron wire conductor having a highly sensitive temperature correction.

13. The combination with the conductors of a telephone line A, a line jack C, a signaling lamp D, a battery E and an impedance coil F, of a ballast H connected in series with said lamp and the line contact of said jack, for the purposes specified.

854,205. CIRCUIT-CLOSING DEVICE. FREDERIC W. ERICKSON, New York, N. Y. Filed Jan. 29, 1907. Serial No. 354,606.

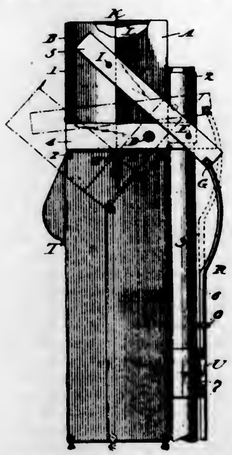


Claim.—1. A circuit closer consisting essentially of outer and inner parts adapted to be separately attached to each other, the outer part having an external flange from which extends an externally threaded shell, a movable tubular portion in said shell one end being of reduced diameter and extending through an orifice in said flange and constituting the push, and holding an insulated dependent spindle; the inner part adapted to engage the said threaded shell and having an orifice at its inner end and two contact springs secured in suitable insulating disks adapted to engage said spindle, with means to connect conductors passing through the said orifice to the contact springs, and a spring adapted to keep the spindle from the contact springs.

2. A circuit closer consisting essentially of outer and inner tubular parts adapted to be separately attached to each other, the outer part having an external plate from which extends an externally threaded shell, a movable tubular portion in said shell one end being reduced in diameter to form a shoulder extending through an orifice in said plate and abutting against the inner face of the same and constituting the push, and holding a dependent metal spindle supported in the shell by an insulating disk and cement; the inner part adapted to engage the said threaded shell at one end, and having its opposite end preferably hemi-spherical with a central orifice, two contact springs secured in an insulating partition adapted to engage said spindle, an insulating lining to the hemi-spherical end and its orifice, with means for connecting insulating conductors entering the orifice with the contact springs, and a spring adapted to keep the spindle from the contact springs.

3. A circuit closer consisting of two metal tubular parts separably connected with each other, the outer part provided with an external flange serving as an abutment when the tubular parts are inserted in a support, having an orifice of less area than the tubular portion to form a shoulder, a push button fitting in the tubular part with an outer portion of smaller diameter projecting from the said orifice and resting against said shoulder, an insulating disk held in the button through which extends a metal spindle whose head is held in place by cement; the inner part having a hemi-spherical end with a central orifice and containing insulating disks, two contact springs supported by said disks adapted to engage said spindle, and provided with means for connecting insulated conductors inside the inner part, and a spring adapted to keep the spindle from the contact springs, as set forth.

854,206. FRUIT-PICKER. MADISON B. FIELDS, Jr., Paris, Ill. Filed June 11, 1906. Serial No. 321,256.

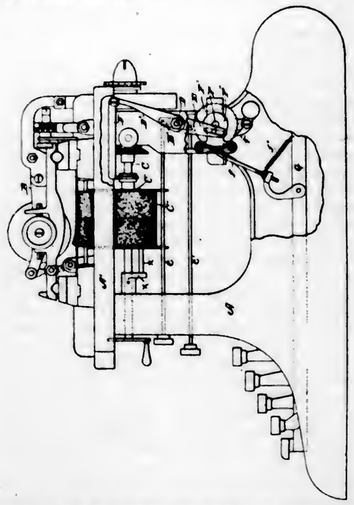


Claim.—1. The combination, in a fruit-picker of a bottomless galvanized iron box, divided vertically to form two similar jaws, one jaw being movable with respect to the other, and horizontal and diagonal bars attached to the jaws of the bottomless box; the knife on the inner edge of the upper side of the movable jaw of the box; the groove in the edge of the upper side of the stationary jaw, into which the knife fits when the box is closed; the small hooks on the lower edge of the box; the slide rod consisting of a haft, a sectional handle, and two curved forks, the ends of which pass through the diagonal bars and are threaded; the wooden handle and the two guide rings in said handle through which the slide rod moves; the eye soldered to the back of the box through which the wooden handle passes; the canvas chute; the pouch on the side of the chute underneath the movable jaw; the chute having eyelets through which the small hooks on the lower edge of the box pass; the nut and bolts which fasten the haft to the handle of the slide rod; the set ring in the end of the handle and the leather neck strap passed through the ring, all substantially as shown, described and for the purpose specified.

2. The bottomless box, divided vertically to form two similar jaws, one jaw being movable with respect to the other; the knife on the inner edge of the upper side of the movable jaw; the groove in the inner edge of the upper side of the stationary jaw; the handle eye on the back of the stationary jaw; the diagonal bars; the slide rod, which passes through the diagonal bars; the horizontal bars attached to the movable jaw and pivoted to the stationary jaw; the hooks on the lower edge of the box; and the canvas chute attached to said hooks, substantially as set forth.

3. The combination of the bottomless box divided vertically to form two similar jaws which are hinged together with the canvas chute having an enlargement forming a pouch, and the eyelets and snaps by which the chute is attached to the lower edges of the jaws of the bottomless box, all as substantially set forth.

854,207. RIBBON MECHANISM FOR TYPE-WRITERS. WILLIAM R. FOX, Grand Rapids, Mich. Filed Oct. 29, 1904. Serial No. 230,580.



Claim.—1. In a ribbon mechanism for typewriters, the combination of ribbon spools supported on suitable sleeves; shafts on which said sleeves are adjustably mounted and adapted to reciprocate thereon; connections from the shaft to the spool whereby the same will be rotated together; driving mechanism for the spool shafts; a transverse rock shaft D to the rear of the machine; upwardly-extending arms D′ secured to said rock shaft D and link connections therefrom to suitable collars on said sleeves; a collar E′ on said rock shaft D provided with teeth *g* on its face; a spring on the periphery of the collar E′ having an inwardly deflecting engaging portion *h*; a collar *d* mounted on said rock shaft, having a longitudinal slot *i*′ therein and lateral notches *i*″ to receive the teeth *g*, said notches *i*″ being larger than the teeth so that there is lost motion

between them, also having a peripheral groove H' arranged to receive the engaging portion *h* of the spring H; a pin *i* extending through the shaft D and engaging the slot *i'* in said collar *d*; a downwardly extending arm or lever E to secure said collar E' containing a longitudinal slot; a disk bearing wrist pin arranged to engage said slot to actuate said arm; a ratchet wheel connected to said disk and a pawl connected to the spacer mechanism for actuating said ratchet wheel to cause the lever and collar E' to oscillate; and a cross-arm E'' on the rock shaft D, having connections *e* and *e'* connecting with push buttons at the front of the machine, all co-acting substantially as described and for the purpose specified.

2. In a ribbon mechanism for typewriters, the combination of ribbon spools supported on suitable sleeves; shafts on which said sleeves are adjustably mounted and adapted to reciprocate thereon; connections from the shaft to the spool whereby the same will be rotated together; driving mechanism for the spool shafts; a transverse rock shaft D to the rear of the machine; upwardly extending arms D' secured to said rock shaft D and link connections therefrom to suitable collars on said sleeves; a collar E' on said rock shaft D provided with teeth *g* on its face; a spring on the periphery of the collar E' having an inwardly deflecting engaging portion *h*; a collar *d* mounted on said rock shaft, having a longitudinal slot *i'* therein and lateral notches *i''* to receive the teeth *g*, said notches *i''* being larger than the teeth so that there is lost motion between them, also having a peripheral groove H' arranged to receive the engaging portion *h* of the spring H; a pin *i* extending through the shaft D and engaging the slot *i'* in said collar *d*; a downwardly extending arm or lever E to secure said collar E', containing a longitudinal slot; a disk bearing a wrist pin arranged to engage said slot to actuate said arm; a ratchet wheel connected to said disk and a pawl connected to the spacer mechanism for actuating said ratchet wheel to cause the lever and collar E' to oscillate, all co-acting for the purpose specified.

3. In a ribbon mechanism for typewriters, the combination of ribbon spools supported on suitable sleeves; shafts on which said sleeves are adjustably mounted and adapted to reciprocate thereon; connections from the shaft to the spool whereby the same will be rotated together; driving mechanism for the spool shafts; a transverse rock shaft D to the rear of the machine; upwardly extending arms D' secured to said rock shaft D and link connections therefrom to suitable collars on said sleeves; a collar E' on said rock shaft D provided with teeth *g* on its face; a spring on the periphery of the collar E' having an inwardly deflecting engaging portion *h*; a collar *d* mounted on said rock shaft, having a longitudinal slot *i'* therein and lateral notches *i''* to receive the teeth *g*, said notches *i''* being larger than the teeth so that there is lost motion between them, also having a peripheral groove H' arranged to receive the engaging portion *h* of the spring H; a pin *i* extending through the shaft D and engaging the slot *i'* in said collar *d*; and means connected to said typewriter for oscillating the rock shaft D, all co-acting substantially as described and for the purpose specified.

4. In a ribbon mechanism for typewriters, the combination with laterally adjustable ribbon spools of a driving mechanism for said spools; a transverse rock shaft D to the rear of the machine; upwardly extending arms D' secured to said rock shaft D and link connections therefrom to the spool supports; a collar E' on said rock shaft D provided with teeth *g* on its face; a spring on the periphery of the collar E' having an inwardly deflecting engaging portion *h*; a collar *d* mounted on said rock shaft, having a longitudinal slot *i'* therein and lateral notches *i''* to receive the teeth *g*, said notches *i''* being larger than the teeth so that there is lost motion between them, also having a peripheral groove H' arranged to receive the engaging portion *h* of the spring H; a pin *i* extending through the shaft D and engaging the slot *i'* in said collar *d*; a downwardly extending arm or lever E to secure said collar E', containing a longitudinal slot; a disk bearing a wrist pin arranged to engage said slot to actuate said arm; a ratchet wheel connected to said disk and a pawl connected to the spacer mechanism for actuating said ratchet wheel to cause the lever and collar E' to oscillate; and a cross-arm E'' on the rock shaft D, having connections *e* and *e'* connecting with push buttons at the front of the machine, all co-acting substantially as described and for the purpose specified.

5. In a ribbon mechanism for typewriters, the combination with laterally adjustable ribbon spools of a driving mechanism for said spools; a transverse rock shaft D to the rear of the machine; upwardly extending arms D' secured to said rock shaft D and link connections therefrom to the spool supports; a collar E' on said rock shaft D provided with teeth *g* on its face; a spring on the periphery of the collar E' having an inwardly deflecting engaging portion *h*; a collar *d* mounted on said rock shaft, having a longitudinal slot *i'* therein and lateral notches *i''* to receive the teeth *g*, said notches being larger than the teeth so that there is lost motion between them, also having a peripheral groove H' arranged to receive the engaging portion *h* of the spring H; a pin *i* extending through the shaft D and engaging the slot *i'* in the said collar *d*; and means connected to said typewriter for controlling the rock shaft D, for the purpose specified.

7. In a ribbon mechanism for typewriters, the combination with the ribbon spools lateraly adjustable, of a driving mechanism therefor; means for shifting the spools laterally; a rock shaft to which said means is connected; a collar on the rock shaft connected to the actuating means, having a suitable tooth, and a longitudinally adjustable collar on the rock shaft coupled to rock therewith, containing suitable notches to receive the tooth of the opposing collar, certain of said notches being enlarged to permit of lost motion to oscillate the ribbon through only a part of its width; and a spring clasping means for retaining said collars together, for the purpose specified.

8. In a ribbon mechanism for typewriters, the combination with the ribbon spools laterally adjustable of a driving mechanism therefor; means for shifting the spools laterally; a rock shaft to which said means is connected; a collar on the rock shaft connected to the actuating means, having a suitable tooth, and a longitudinally adjustable collar on the rock shaft coupled to rock therewith, containing suitable notches to receive the tooth of the opposing collar, certain of said notches being enlarged to permit of lost motion to oscillate the ribbon through only a part of its width, co-acting for the purpose specified.

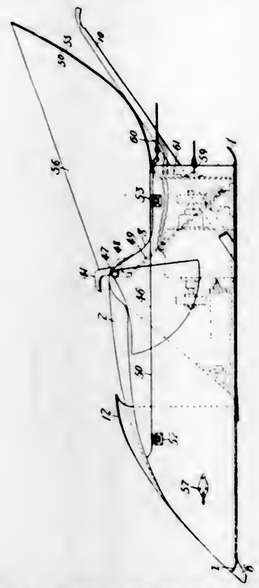
9. In a ribbon mechanism for typewriters, the combination of ribbon spools that are laterally movable; a driving mechanism therefor; a rock shaft with connections therefor for shifting the ribbon spools; a shifting mechanism for actuating said rock shaft; clutch members on said rock shaft with an adjustable connection between them, whereby the ribbon mechanism can be set to oscillate its full width or a portion of its width at either side, for the purpose specified.

10. In a ribbon mechanism for typewriters, the combination of laterally movable ribbon spools; a mechanism for oscillating the said spools, connected to a movable part of the machine; and a clutch between said mechanism and the movable part of the machine, the members of which are adapted to be adjustably connected together or entirely disconnected, for the purpose specified.

11. In a ribbon mechanism for typewriters, the combination of laterally movable ribbon spools; a mechanism for oscillating the said spools, connected to a movable part of the machine; a clutch between said mechanism and a movable part of the machine, the members of which are adapted to be adjustably connected together; and a key for shifting said ribbon spools when the clutch is disconnected, for the purpose specified.

12. In a ribbon mechanism for typewriters, the combination of laterally movable ribbon spools; a mechanism for oscillating the said spools, connected to a movable part of the machine; a clutch between said mechanism and a movable part of the machine; and a key for shifting the ribbon spools when the clutch is disconnected, for the purpose specified.

854,208. MACHINE FOR CUTTING AND CONVEYING SUGAR-CANE. HENRY G. GINACA, Honolulu, Hawaii, assignor, by direct and mesne assignments, of two-fifths to Abraham Gartenberg, Honolulu, Hawaii. Filed Jan. 26, 1905. Renewed Apr. 18, 1907. Serial No. 368,922.



Claim.—1. In a machine for cutting and carrying sugar cane, the combination of a base plate acting as a shoe to support the machine and slide upon the ground, a cutting device, a motor for operating the cutting device, a casing on the base plate inclosing the motor, and operating connections between the motor and cutting device.

2. In a machine for cutting and carrying sugar cane, the combination of a base plate acting as a shoe to support the machine and slide upon the ground, a cutting device mounted on the base plate, a motor for operating the cutting device, means for attaching cables to the machine for hauling it in either direction, and operating connections between the motor and the cutting device.

3. In a machine for cutting and carrying sugar cane, the casting 7 provided with the lip or edge 67 at its forward end, the piece 24 adapted to slide forward and backward in said casting, a pitman pivoted to said piece 24, a motor connected to said pitman, and a knife 23 attached to said piece 24 and adapted to move under said lip.

4. In a machine for cutting and carrying sugar cane, the combination with the base-plate 1, having a fork with a crotch 4, of a lip 67 in said crotch, and a longitudinally reciprocating knife 23 operating below said lip, the cutting edge of said knife when at its rearward position being rearward of the said lip.

5. In a machine for cutting and carrying sugar cane, a base-plate forked at its forward end and adapted to slide upon the ground, a cutting-knife operating below the crotch of said fork, and a motor carried by said plate and connected to said knife.

6. In a machine for cutting and carrying sugar cane, a base-plate forked at its forward end, and a cutting-knife moving in a plane inclined slightly forward and downward to the plane of the base-plate.

7. In a machine for cutting and carrying sugar cane, a knife, the casting 7, the piece 24 adapted to slide forward and backward in the casting 7 and connected to said knife, pitmen connected to said piece 24 for drawing said piece to its rear position, and means for holding said piece in its rear position.

8. In a machine for cutting and carrying sugar cane, a knife, the casting 7, the piece 24 adapted to slide forward and backward in the casting 7 and connected to said knife, means for drawing said piece to its rear position, means for holding said piece in such position, and means for releasing said piece when so held.

9. In a machine for cutting and carrying sugar cane, a knife, the casting 7, the piece 24 adapted to slide forward and backward in the casting 7 and connected to said knife, means for drawing said piece to its rear position, means for holding said piece in such position, means for releasing said piece when so held, and means for adjusting the time of such release.

10. In a machine for cutting and carrying sugar cane, a knife, the casting 7, the piece 24 adapted to slide forward and backward in the casting 7 and connected to said knife, means for drawing said piece to its rear position, means for holding said piece in such position, means for releasing said piece when so held, and means for accelerating the motion of said piece forward when released.

11. In a machine for cutting and carrying sugar cane, a knife, the casting 7, the piece 24 adapted to slide forward and backward in the casting 7 and connected to said knife, means for drawing said piece to its rear position, means for holding said piece in such position, means for releasing said piece when so held, means for accelerating the motion of said piece forward when released, and means for adjusting the force of such acceleration.

12. In a machine for cutting and carrying sugar cane, a forked base-plate 1, side-plates 2 and 3, and a cutting device located at the upper portion of one of the said side-plates and at the edge of the machine.

13. In a machine for cutting and carrying sugar cane, a forked base-plate 1, a motor 14 thereon, side-plates 2 and 3, a stationary knife 41 at the upper edge of one of said side-plates, and a movable knife 42 pivoted to the same side-plate and deriving its motion from the motor 14, said knives coacting to shear any stalks introduced between them.

14. In a machine for cutting and carrying sugar cane, the combination with a base plate 1, of the side plates 2 and 3, and cutting means moving in a vertical plane located at the upper portion of one of the said side plates.

15. In a machine for cutting and carrying sugar cane, a base plate, side plates extending vertically therefrom, a side cutting device mounted upon one of said side plates; a lifting-plate pivoted to the side-plate opposite the side-cutting device, and a motor connected to said lifting plate.

16. In a cutting machine of the kind described, a base plate 1, the side plate 3 extending vertically therefrom, a lifting-plate 46, the pivot 47 in the side-plate 3, the crank 48 attached to said pivot inside of said plate, the shaft 18, the motor 14 connected thereto, the crank pin 22 of the shaft 18 and the pitman 49 connecting the crank with the crank pin 22.

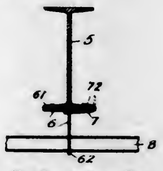
17. In a machine for cutting and carrying sugar cane, a

motor 14, a shaft 18 operated thereby, the casting 7, the piece 24 slidable in said casting, pins 26 and 27 extending from the piece 24, a disk upon each end of the shaft 18, crank pins 21 and 22 mounted respectively upon said disks, pitmen 28 and 29 each having a slot at one end, the slots in said pitmen receiving the pins 26 and 27 respectively, the other ends of said pitmen being respectively connected to the crank pins 21 and 22, a spring 39 interposed between said casting 7 and said knife piece 24, a knife 23 attached to said piece 24, spring pressed catches 30 and 31 pivoted to the casting 7, and adjustable strips 36 and 37 carried by the pitmen 28 and 29 respectively.

18. In a machine for cutting and carrying sugar-cane, a base plate, a side plate vertically extending therefrom, an apron detachably hinged to said side-plate at its upper edge, and a shoe supporting said apron at its outer end.

19. In a machine for cutting and carrying sugar cane, a base plate, a side plate extending vertically therefrom, an apron 50 hinged to the side plate near its top, the shoe 51 supporting the outer end of said apron, bracing 54 connecting the apron with the shoe, and means for attaching a hauling cable to said shoe.

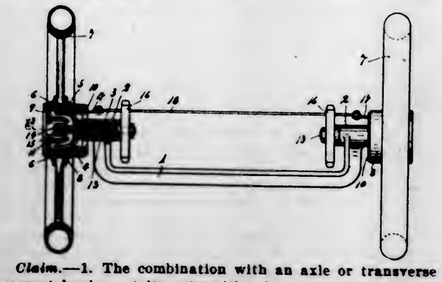
854,209. CLIP FOR METAL BUILDING CONSTRUCTION. WILLIAM GOSS, Chicago, Ill., assignor to Northwestern Expanded Metal Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 25, 1906. Renewed Apr. 15, 1907. Serial No. 368,245.



Claim.—1. The clip for suspending ceilings, etc., from eye or other beams consisting of members 6 and 7, one of said members having an opening, and the other having an integral tongue adapted to be entered in said opening and to be locked therein by a turning movement.

2. The clip for suspending ceilings, etc., from eye or other beams, consisting of two members 6 and 7, the part 6 having a depending hanger portion and the part 7 having a tongue adapted to be entered and turned in an opening in the part 6 to effect a locking of the two members together.

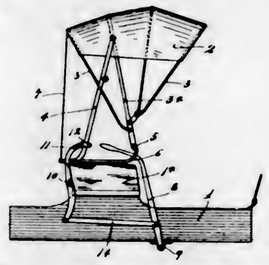
854,210. RUNNING-GEAR FOR AUTOMOBILES. AUGUST GROENIG, Holloway, Minn. Filed May 7, 1906. Serial No. 315,493.



Claim.—1. The combination with an axle or transverse support having, at its extremities, bearing yokes, of bearing collars connected to said yokes by vertical pivots, wheels having their hubs journaled on the said bearing collars, provided with inwardly projecting annular flanges formed with slots, and driving shafts extended through said bearing yokes and provided with driving projections engaging the slots in the annular flanges of the hubs of the respective wheels, substantially as described.

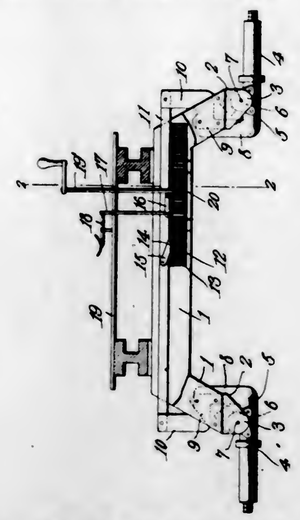
2. The combination with an axle having bearing sleeves 2 formed with non-rotary yokes 4, of bearing collars 5 connected to said yokes by vertical pivots, of wheels having the hubs 8 journaled on said bearing collars and provided with inwardly projected annular flanges 11 formed with slots 12, driving shafts 13 extended through said sleeves 3 and provided, at their outer ends, with heads 14 having rollers 15 that work in the slots 12 of said flanges 11, and means for imparting parallel oscillatory movements to said bearing sleeves on their vertical pivots, substantially as described.

854,211. LEVER-ACTUATED BUGGY-TOP. AUGUST GROENIG, Holloway, Minn. Filed May 21, 1906. Serial No. 318,084.



Claim.—The combination with a buggy or carriage body having a hinged top and laterally spaced hinged lock bars 4 for holding the said top raised, of a pair of levers 11 pivoted at their intermediate portions and their upper ends having sliding engagement with the lower sections of said lock bars 4, a rock shaft 8^a mounted on said body, an operating lever 8 secured to one end of said rock shaft 8^a, an arm 8^b secured to the other end thereof, and a pair of links 14 connecting said operating lever 8 and said arm 8^b to the lower ends of said levers 11, substantially as described.

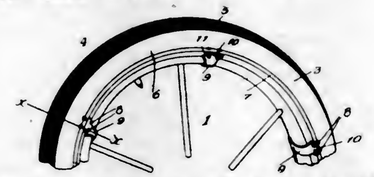
854,212. AXLE. EDDA G. HARTLE, Columbus, Ohio. Filed Sept. 14, 1906. Serial No. 334,638.



Claim.—1. An axle, spindles pivoted to the ends thereof, a rod pivoted at its ends to said spindles, a rack bar mounted for longitudinal movement upon the axle and a link connecting said rod and said rack bar together.

2. An axle, spindles pivoted to the ends thereof, a bar pivoted at its ends to the inner ends of said spindles, a rack bar mounted for longitudinal movement upon the axle, a link connecting the first said bar and said rack bar together, a lever actuated pawl mounted upon the axle for engagement with said rack bar and a crank shaft having a pinion meshing with said rack bar.

854,213. TIRE-PROTECTOR. JAMES E. HEALE, Anaconda, Mont. Filed Dec. 16, 1905. Renewed Mar. 26, 1907. Serial No. 364,645.

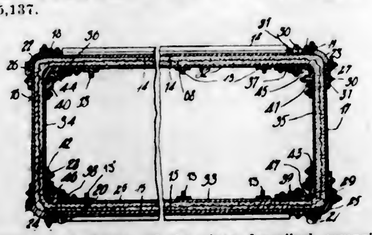


Claim.—1. In a device of the character described, the combination of a guard member fitting around the tread of the tire, the edges of the guard member being provided with outwardly extending flanges which are thickened and are in the nature of circular enlargements, securing clips fitting around the rim of the wheel, the ends of said securing clips being broadened and provided with outwardly extending flanges which fit against and are curved to conform to the shape of the before mentioned circular enlargements upon the guard member, and fastening members engaging with the flanges upon the securing clips and the circular enlargements.

2. In a device of the character described, the combination of a guard member fitting upon the tread of the tire, securing clips fitting around the frame of the wheel and having transverse slots formed in their opposite ends, spindles pivotally connected to the guard member and adapted to be swung into engagement with the before mentioned transverse slots in the securing clips, and nuts fitting upon the spindles and serving to clamp the members securely in position.

3. In a device of the character described, the combination of a guard member fitting upon the tread of a tire, the edges of said guard members being bent to form a bearing and provided with transverse slots, a pintle mounted in said bearing, threaded spindles connected to said pintle and operating in the slots, nuts coöperating with the threaded spindles, and securing clips fitting around the rim of the wheel and having slots in their opposite ends which are adapted to receive the threaded spindles.

854,214. MOLD. JAMES F. HILL and CHARLES M. PECKHAM, Norwalk, Ohio. Filed Nov. 26, 1906. Serial No. 345,137.



Claim.—1. A device of the class described comprising an inner shell having end and side members, a plurality of corner members adapted to be detachably-connected with said inner shell at the ends of said side and end members, an outer shell having end and side members and spaced from said inner shell, and means for increasing the length and width of said outer shell.

2. A device of the class described comprising an inner shell having end and side members, a plurality of corner members adapted to be detachably connected to said inner shell at the ends of said side and end members, an outer shell having end and side members and spaced from said inner shell, and a plurality of corner members adapted to be detachably connected to the ends of the end and side members thereof.

3. A device of the class described comprising an outer and an inner shell spaced apart, means for widening and lengthening said outer and inner shells, whereby body portions of different sizes may be molded, a cover mold comprising a shell conforming interiorly to the outer surface of the cover and of sufficient area to conform to the cover for the largest body portion, and a plurality of blocks of varying sizes adapted to be disposed within the cover shell and spaced therefrom, whereby cover structures of varying sizes may be constructed.

4. A device of the class described comprising an inner shell formed of end and side members, cleats provided with varying shoulders and connected to the ends of said inner shell end and side members, a plurality of sets of pairs of corner members of varying sizes adapted to engage with the shouldered cleats of the inner shell one pair at a time, an outer shell formed of side and end members, cleats for varying shoulders and connected to said outer shell members at their ends, a plurality of sets of pairs of corner members of varying sizes adapted to engage the shouldered cleats of the outer shell one pair at a time.

5. A device of the class described comprising an inner shell formed of end and side members, cleats provided with varying shoulders and connected to the ends of said inner shell end and side members, a plurality of sets of pairs of corner members of varying sizes adapted to be engaged with the shouldered cleats of the inner shell one pair at a time, an outer shell formed of side and end members, cleats having varying shoulders and connected to said outer shell members at their ends, a plurality of sets of pairs of corner members of varying sizes adapted to engage the shouldered cleats of the outer shell one pair at a time, means for adjusting said cleats longitudinally of the said side and end members of said outer shell, whereby said outer shell may be spaced from the structure after the molding operation to permit the insertion of the coating element between the molded structure and the outer shell.

6. A device of the class described comprising an inner shell formed of end and side members, cleats provided with varying shoulders and connected to the ends of said inner shell end and side members, and provided with transverse slots, clamped and extending through said slots and the adjacent portions of the end and side members, a plurality of sets of pairs of corner members of varying sizes adapted to be engaged with the shouldered cleats of the inner shell one pair at a time, an outer shell formed of side and end members, cleats having varying shoulders and connected to said outer shell members at their ends, and a plurality of sets of pairs of corner members of varying sizes adapted to engage the shouldered cleats of the outer shell one pair at a time.

854,215. TIRE-CASE. FRANK B. HOPEWELL, Newton, Mass. Filed Apr. 27, 1906. Serial No. 313,961.

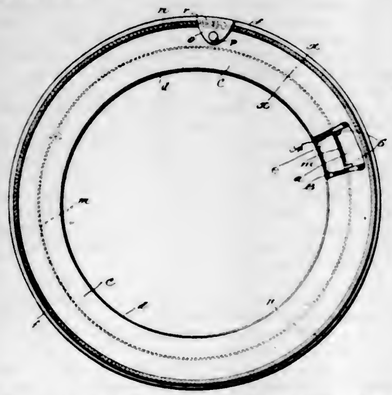
Claim.—1. An annular tire case composed of material having at each edge a longitudinal pocket, and a cord in each pocket to retain the pocketed edges of the case in a circle smaller than the circle defining the circumference of the tire.

2. An annular tire case composed of material having at one edge a longitudinal pocket and adapted to overlap a tire, said pocket being provided with a cord adapted to be drawn to contract the diameter of the edge of the cover that it may fit the tire.

3. An annular tire case composed of material having at both edges a longitudinal pocket and cords in said pockets strain on said cords contracting said edges as described.

4. An annular tire case composed of material having at one edge a longitudinal pocket, a cord in said pocket, and means to hold the cord in its stretched position after hav-

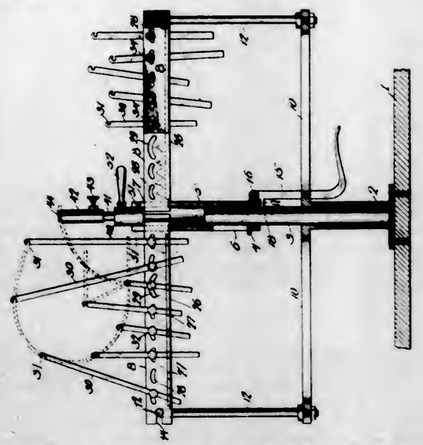
ing been strained to pucker the edge of the case into its smaller circle.



5. An annular tire case composed of material having at one edge a longitudinal pocket, a cord in said pocket, and means to hold the ends of said cord in position after the cord has been strained to pucker the edge of the case into a smaller circle.

6. A tire case composed of material having at one edge a longitudinal pocket, a cord in said pocket, means to hold the ends of said cord in position after the cord has been strained to pucker the edge of the case into a smaller circle, and a flap to cover the united ends of the cord.

854,216. HAT-FRAME FORMER. EDWARD A. HOWE, New York, N. Y. Filed Nov. 12, 1906. Serial No. 343,130.



Claim.—1. In a device of the class described, the combination of a flat circular member, provided with a series of perpendicular supports at or near its outer diameter; radially arranged clamping arms, each pivotally connected at their outer ends to the aforesaid supports, and means to simultaneously raise and lower their inner ends.

2. In a device of the class described, the combination of radially arranged clamping arms each pivotally supported independently at their outer ends, means permitting independent circumferential adjustment of the clamping arms, and means to raise and lower the inner ends of the clamping arms simultaneously.

3. In a machine for making ladies' wire hat frames, radially arranged clamping arms each provided with a horizontal converging supporting arm.

4. In a machine for making ladies' wire hat frames the combination of a series of radially arranged arms each provided with a horizontal converging clamping arm and wire holders adapted to be held thereby.

5. In an adjustable form for making wire frames, the combination of wire supports with a series of radially arranged clamping arms each pivotally supported independently at their outer ends and adapted to hold a plurality of wire supports, means to hold the wire supports in the desired position, means permitting independent circumferential adjustment of the aforesaid clamping arms and a collapsible means to free the completed wire frame.

6. In a device of the class described, in combination, a rotatable support provided with circumferential slots, upright supports adapted to engage the aforesaid slots, a series of radially arranged clamping arms pivotally connected to the aforesaid upright supports, an upright central member provided with a reciprocable tubular member adapted to support the inner ends of the clamping arms, adjustable wire-holding devices carried by the clamping arms, and means to reciprocate and support the reciprocable tubular member.

7. In a machine for making wire hat frames in combination a series of radially arranged clamping arms provided with a series of segmental slots and a series of holes, bolts passing through the series of segmental slots and provided with slots, wire supporters passing through both the slots in the bolts and the holes in the clamping arms.

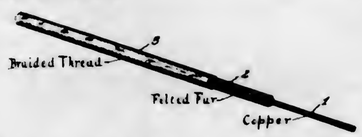
854,217. ELECTRIC CONDUCTOR. OLIVER T. HUNGERFORD, Belleville, N. J. Filed Feb. 15, 1901. Serial No. 47,438.



Claim.—1. An insulated electric conductor comprising a wire free from adhesive coating, a felt covering for said wire, said felt being mounted directly upon the clean surface of said wire and matted thereon without seam, and a water-proof insulating compound filling the irregular interstices between the fibers composing said felt, substantially as set forth.

2. An insulated electric conductor comprising a wire incased by a sheath of felt mounted directly upon the surface of the wire and having the irregular interstices between the fibers of the felt filled and its fibers saturated with an insulating compound, substantially as set forth.

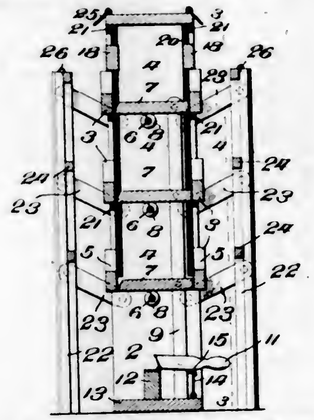
854,218. INSULATED ELECTRIC CONDUCTOR. OLIVER T. HUNGERFORD, Belleville, N. J. Filed Jan. 11, 1904. Serial No. 188,572.



Claim.—An insulated electric conductor comprising a wire, a felt covering mounted directly upon the surface of said wire and matted thereon, a shield of woven threads or fibers surrounding said felt covering for binding it to said wire, and an insulating compound saturating the covering material and filling the interstices between the fibers of the matted felt and of the woven fabric, substantially as set forth.

854,219. NEST. CARL C. IBSON, Astor, Iowa. Filed Dec. 26, 1906. Serial No. 349,464.

Claim.—1. In a device of the class described the combination with a body having vertical partitions therein, of bars extending across the faces of said partitions and body said bars having depressions therein, floor sections pivotally mounted between said partitions and body and means to simultaneously tilt said floor sections whereby foreign particles on the floor will be removed.



2. In a device of the class described the combination with a body having vertically disposed partitions therein, of bars arranged in pairs and extending across each face of said partitions and body, a plurality of floors pivotally mounted between said bars and partitions, means to simultaneously tilt said floor sections, said floor sections and bars forming nests and means to close said nests when desired.

3. In a device of the class described the combination with a body having partitions therein, of means to form nests between said partitions and walls of the body comprising bars arranged in pairs across the face of said body and partitions, rods disposed transversely through said body and partitions, floor sections pivotally mounted upon said rods, a standard for each tier of floor sections, means to operate said standard whereby all the floors in one tier will be simultaneously tilted, a rack at each side of said body, means to pivotally secure said rack to the body and reach bars on said rack adapted to be disposed over the entrances to said nests when the racks are elevated.

854,220. WOVEN FABRIC. JAMES E. KERR, Philadelphia, Pa. Filed Nov. 11, 1905. Serial No. 286,804.



Claim.—1. A new fabric having a heavy weft and a fine weft and three warps, either one of which may at any given point of the fabric be used as a binding warp and the other two as figuring warps, substantially as shown and described.

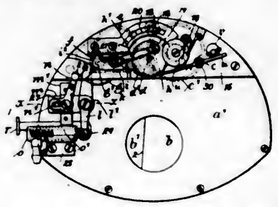
2. A new fabric having a coarse weft and a fine weft and three warps, one of which acts as a binding warp and the other two as figuring warps at any given point of the fabric, each warp thread being of substantially the same length, as described.

3. A new fabric having a coarse stuffer weft of alternately light and dark picks, a fine binding weft alternating with the stuffer weft, and three warps alternately, one of the three warps being at any point used as a binding warp and the other two as figuring warps, and these being interchanged at different parts of the fabric as shown and described.

4. A new fabric having three figuring warp threads in a set and no binding warp, but having any one of the three figuring warps at any point locally used as a binding warp, as shown and described.

5. A new fabric having a ribbed surface and constructed of alternately coarse and fine weft threads, and having three warp threads in a set, all being essentially figuring warp threads, and all of substantially the same length, one of the three being at any given point locally used as a binding warp and forcing the coarse weft threads above the general surface of the cloth to preserve the ribs in the manner shown and described.

854,221. PHOTOGRAPHIC SHUTTER. MAXIMILIAN KLAIBER, New York, N. Y., assignor, by mesne assignments, to Prosch Photographic Shutter and Optical Company, a Corporation of New York. Filed Jan. 11, 1906. Serial No. 295,530.



Claim.—1. In a photographic shutter, the combination with a case and the shutter blades, of a spring actuated train of gears, a connection therefrom to the said blades, a manually actuated speed control, release mechanism and devices actuated by the latter mechanism and controlled by the speed control for regulating the movement imparted to the train of gears.

2. In a photographic shutter, the combination with a case and the shutter blades, of a spring actuated train of gears, a connection therefrom to the said blades, a manually actuated speed control, release mechanism, devices actuated by the latter mechanism and controlled by the speed control for regulating the movement imparted to the train of gears and spring actuated devices adapted to be set to predetermined graduated instantaneous exposures and released by the movement of the train of gear devices.

3. In a photographic shutter, the combination with a case and the pivoted shutter blades, of a spring actuated train of gears, a connection therefrom to the said blades, devices moving with said train of gears and means adapted to contact with said devices to arrest the movement of said gears at predetermined places according to the several exposures to be made.

4. In a photographic shutter, the combination with a case and the shutter blades, of a spring actuated train of gears, a connection therefrom to the said blades, devices moving with said train of gears, means adapted to contact therewith to arrest the movement of said gears at predetermined places according to the exposures to be made and spring actuated devices adapted to be set to predetermined graduated instantaneous exposures and released by the movement of the train of gear devices.

5. In a photographic shutter, the combination with a case, shutter blades and a spring actuated train of gears, of a revoluble disk actuated by the latter and pins in sets secured to and rising above the surface of said disk and of various lengths, a pivoted lever device adapted to contact with two or more of said pins in its movement and with the rotation of said disk according to the exposure to be made, means for swinging said lever on its pivot, a pivoted pointer lever adapted to be set for instantaneous, bulb and time exposures and a device actuated by the swinging of said indicating lever which in turn controls the position of the aforesaid pivoted lever and its contact relation with the pins of the disk.

6. In a photographic shutter, the combination with a case, shutter blades and a spring actuated train of gears, of a revoluble disk actuated by the latter and pins in sets

secured to and rising above the surface of said disk and of various lengths, a pivoted lever device adapted to contact with two or more of said pins in its movement and with the rotation of said disk according to the exposure to be made, means for swinging said lever on its pivot, a pivoted pointer lever adapted to be set for instantaneous, bulb and time exposures, a bearing to which the pointer lever is pivoted, a rocker pin in said bearing, a connection between said latter lever and rocker pin, the aforesaid swinging lever being pivotally mounted on said rocker pin whereby with the movement of the said pointer lever and rocker pin the aforesaid swinging lever is swung to engage the same with predetermined pins of the said disk.

7. In a photographic shutter, the combination with a case, shutter blades and a spring actuated train of gears, of a revoluble disk actuated by the latter and pins in sets secured to and rising above the surface of said disk and of various lengths, a bearing on the shutter frame, a bell crank pointer or indicator lever *n* pivotally connected thereto, its long arm adapted for manual operation to be brought into opposition with letters or marks indicating instantaneous, bulb or time exposures and its short arm slotted, a rocker pin *m* passing through said bearing and having a pin n^1 therein passing through the slot of the lever *n* whereby with the turning movement of the lever *n* the pin *m* is axially turned, a hook ended lever *l* pivotally mounted on said rocker pin *m* and at its hook end adapted to come in contact with predetermined pins of the aforesaid disk, a release mechanism for manual or pneumatic actuation and to which the opposite end of the lever *l* is pivotally connected.

8. In a photographic shutter, the combination with a case, the shutter blades and a spring actuated train of gears, of a disk *g*, a shaft therefor and a pinion on said shaft meshing with the train of gears for its rotation, pins 23, 24, 25 and 26 secured to and arising above the surface of the said disk in pairs and in opposition and of different lengths, a pivoted lever having a hook on its free end and adapted in a normal position to rest against the pin 24, means for swinging said lever on its pivot to move the same away from said pin so that the disk may be rotated, the disk being again arrested by the return of said lever at its release.

9. In a photographic shutter, the combination with a case, the shutter blades and a spring actuated train of gears, of a disk *g*, a shaft therefor and a pinion on said shaft meshing with the train of gears for its rotation, pins 23, 24, 25 and 26 secured to and arising above the surface of the said disk in pairs and in opposition and of different lengths, a pivoted lever having a hook on its free end and adapted in a normal position to rest against the pin 24, means for swinging said lever on its pivot to move the same away from said pin so that the disk may be rotated, the disk being again arrested by the return of said lever at its release and means manually operated and adapted to be set for instantaneous, bulb and time exposures and which means change the relation of the hook end of the lever to said disk so that other of said pins may be contacted with according to the exposures to be made.

10. In a photographic shutter, the combination with a case, the shutter blades and a spring actuated train of gears, of a disk *g*, a shaft therefor and a pinion on said shaft meshing with the train of gears for its rotation, pins 23, 24, 25 and 26 secured to and arising above the surface of the said disk in pairs and in opposition and of different lengths, a pin f^1 radially projecting from the shaft of said disk, spring actuated devices adapted to be set to predetermined graduated instantaneous exposures and a device connected therewith with which said pin f^1 comes in contact for effecting the release of the said devices with the movement of said disk.

11. In a photographic shutter, the combination with a case, the shutter blades and a spring actuated train of gears, of a disk *g*, a shaft therefor and a pinion on said shaft meshing with the train of gears for its rotation, pins 23, 24, 25 and 26 secured to and arising above the surface of the said disk in pairs and in opposition and of different lengths, a pin f^1 radially secured to the shaft of said disk and a spring barrel having a pointer, a rack, a pawl adapted to engage the rack and having a pin on the back thereof, a guide for said pawl and a link pivotally connecting said pawl and said spring barrel, said latter parts forming devices adapted to be set to predetermined graduated instantaneous exposures and released by the movement of the train of gears and said disk by the pin f^1 striking the pin of the pawl and lifting the same so as to bring in evidence the force of said spring barrel.

12. In a photographic shutter, the combination with a case, the shutter blades and a spring actuated train of gears, of a disk *g*, a shaft therefor and a pinion on said shaft meshing with the train of gears for its rotation, pins 23, 24, 25 and 26 secured to and arising above the surface of the said disk in pairs and in opposition and of different lengths, a pin f^1 radially secured to the shaft of said disk and a spring barrel having a pointer, a rack, a pawl adapted to engage the rack and having a pin on the back thereof, a guide for said pawl, a link pivotally connecting said pawl and said spring barrel, said latter parts forming devices adapted to be set to predetermined graduated instantaneous exposures and released by the movement of the train of gears and said disk by the pin f^1 striking the pin of the pawl and lifting the same so as to bring in evidence the force of said spring barrel and a variable spring tension device adapted to bear upon said barrel for retarding its movement.

13. In a photographic shutter, the combination with a case, the shutter blades and a spring actuated train of gears, of a disk *g*, a shaft therefor and a pinion on said shaft meshing with the train of gears for its rotation, pins 23, 24, 25 and 26 secured to and arising above the surface of the said disk in pairs and in opposition and of different lengths, a pin f^1 radially secured to the shaft of said disk and a spring barrel having a pointer, a rack, a pawl adapted to engage the rack and having a pin on the back thereof, a guide for said pawl, a link pivotally connecting said pawl and said spring barrel, said latter parts forming devices adapted to be set to predetermined graduated instantaneous exposures and released by the movement of the train of gears and said disk by the pin f^1 striking the pin of the pawl and lifting the same so as to bring in evidence the force of said spring barrel and a pivoted spring arm adapted to bear at one end on the periphery of the spring barrel and an eccentric device adapted to bear upon the other end of the pivoted spring arm for applying a regulatable friction to the spring barrel for retarding its movement.

14. In a photographic shutter, the combination with the shutter case and blades and a bearing m^1 thereon, of a lever *n* pivotally mounted on said bearing and adapted to be brought to instantaneous, bulb and time indicating marks for such exposures, said lever having a slotted short end, a rocker pin in said bearing, a pin secured thereto and passing through the slot of said lever, a lever *l* pivotally connected with the rocker pin *m* so as to be turned with the movement of said pin as influenced by the swinging movement of the lever *n* and said lever *l* having a hook at one end, a pneumatic release device *o* and push rod *r* for manually actuating the same, a spring within the case thereof connected to the piston thereof, a pivot pin 29 connecting one end of the lever *l* to both the piston of the pneumatic release and the push rod *r* and means substantially as shown and described for actuating the blades of the shutter and the movements of which are controlled by the aforesaid devices for producing instantaneous, bulb and time exposures.

15. In a photographic shutter, the combination with the shutter case and blades and a bearing m^1 thereon, of a lever *n* pivotally mounted on said bearing and adapted to be brought to instantaneous, bulb and time indicating marks for such exposures, said lever having a slotted short end, a rocker pin in said bearing, a pin secured thereto and passing through the slot of said lever, a lever *l* pivotally connected with the rocker pin *m* so as to be turned with the movement of said pin as influenced by the swinging movement of the lever *n* and said lever *l* having a hook at one end, a push rod *r* for manual actuation, a pneumatic release device *o*, a spring within the case thereof connected to the piston thereof, a pivot pin 29 connecting one end of the lever *l* to both the piston of the pneumatic release and to the push rod *r*, a spring actuated train of gears, a pinion meshing therewith and devices connecting the same to the shutter blades to effect their swinging movement and means interposed between the train of gears and the aforesaid swinging lever for effecting the various movements of the shutter blades.

16. In a photographic shutter, the combination with a case, the shutter blades and a pin 8 for swinging the same, of a shaft 12 in the case, a crank b^2 mounted thereon back of the case and a link pivotally connected to said crank at one end and at its other end to the pin 8, a pinion on the shaft 12, and a spring actuated train of gears with which said pinion is in mesh to effect its movement and that of the shutter blades.

17. In a photographic shutter, the combination with a case, the shutter blades and a spring actuated train of gears, of a pinion 13 meshing with said train of gears, a shaft on which said pinion is mounted and connections therefrom to the shutter blades for moving the same, a shaft g^1 and a pinion *f* on said shaft bearing a direct and predetermined proportional relation to the said pinion 13 according to the character of the shutter blades to be actuated, manually actuated indicating mechanism adapted to be set to instantaneous, bulb and time exposures, a releasing mechanism and devices actuated by the latter mechanism and controlled by the aforesaid indicating mechanism and means interposed between the devices actuated by the release mechanism and the train of gears for controlling the movements thereof.

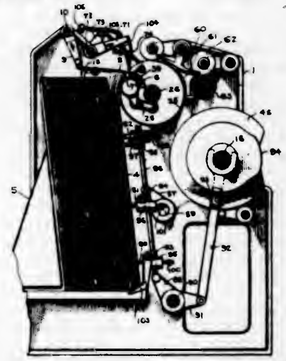
18. In a photographic shutter, the combination with a case, the shutter blades and a spring actuated train of gears, of a pinion 13 meshing with said train of gears, a shaft on which said pinion is mounted and connections therefrom to the shutter blades for moving the same, a shaft g^1 and a pinion *f* on said shaft bearing a direct and predetermined proportional relation to the said pinion 13 according to the character of the shutter blades to be actuated, a disk *g* on the shaft g^1, oppositely placed pins 23, 24, 25 and 26 in pairs, a release mechanism, a pivotally mounted indicating lever adapted to be set for instantaneous, bulb and time exposures, means actuated by the swinging of said lever, a swinging lever pivoted to said means connected at one end to the release mechanism and at the other end adapted to contact with said pins in a predetermined relation according to the character of the exposure.

19. In a photograhpic shutter, the combination with a case, shutter blades and a spring actuated train of gears, of a pinion meshing with the train of gears, a shaft for said pinion, a pin f^1 radially projecting from said shaft, spring actuated devices adapted to be set to predetermined graduated instantaneous exposures and a device connected therewith with which said pin f^1 comes in contact for effecting the release of said devices with the movement of said disk.

20. In a photographic shutter, the combination with a case, shutter blades and a spring actuated train of gears, of a pinion meshing with the train of gears, a shaft for said pinion, a pin f^1 radially projecting from said shaft, a spring barrel having a pointer, a rack, a pawl adapted to engage the rack having a pin on the back thereof, a guide for said pawl and a link pivotally connecting said pawl and said spring barrel, said latter parts forming devices adapted to be set to predetermined graduated instantaneous exposures and released by the movement of the train of gears and said disk by the pin f^1 striking the pin of the pawl and lifting the same so as to bring in evidence the force of said spring barrel.

21. In a photographic shutter, the combination with a case, shutter blades and a spring actuated train of gears, of a pinion meshing with the train of gears, a shaft for said pinion, a pin f^1 radially projecting from said shaft, a spring barrel having a pointer, a rack, a pawl adapted to engage the rack having a pin on the back thereof, a guide for said pawl and a link pivotally connecting said pawl and said spring barrel, said latter parts forming devices adapted to be set to predetermined graduated instantaneous exposures and released by the movement of the train of gears and said disk by the pin f^1 striking the pin of the pawl and lifting the same so as to bring in evidence the force of said spring barrel and a variable spring tension device adapted to bear upon said barrel for retarding its movement.

854,222. MECHANISM FOR SEPARATING SHEETS. JOSEPH P. KNAPP, Bellport, N. Y. Filed May 15, 1902. Serial No. 107,503.



Claim.—1. A sheet separating mechanism comprising, in combination, means for flexing a number of sheets and releasing them successively, and means for retaining one of the sheets from which the others are partly separated by their elasticity.

2. A sheet separating mechanism comprising, in combination, means for flexing a number of sheets and releasing them successively, means for retaining one of the sheets from which the others are partly separated by their elasticity, and means for withdrawing the retained sheet.

3. A sheet separating mechanism comprising, in combination, means for flexing a number of sheets and releasing them successively, means for retaining one of the sheets from which the others are partly separated by their elasticity, and means acting on said retaining means for withdrawing the retained sheet.

4. A sheet separating mechanism comprising in combination, means for flexing a number of sheets and releasing them successively, means for retaining one of the sheets from which the others are partly separated by their elasticity, means acting on said retaining means for withdrawing the retained sheet, and mechanism for receiving and forwarding the separated sheets.

5. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, said mechanism being constructed to engage the sheets at their edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, said sheet retaining mechanism being constructed and operated to withdraw the sheet so separated.

6. A sheet separating mechanism comprising, in combination, means for flexing a number of sheets and releasing them successively, and a pneumatic suction device for retaining one of the sheets from which the others are partly separated by their elasticity.

7. A sheet separating mechanism comprising, in combination, means for flexing a number of sheets and releasing them successively, a pneumatic suction device for retaining one of the sheets from which the others are partly separated by their elasticity, and means acting on said pneumatic suction device for withdrawing the retained sheet.

8. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, the said mechanism being constructed to engage the sheets at their edges and to release them successively,

of a pneumatic suction device for retaining the surface sheet from which the others are partly separated by their elasticity, and means for withdrawing the sheet retained by the pneumatic suction device.

9. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, the said mechanism being constructed to engage the sheets at their edges and to release them successively, of a pneumatic suction device for retaining the surface sheet from which the others are partly separated by their elasticity, said pneumatic suction device being constructed and operated to withdraw the sheets so separated.

10. A sheet separating device comprising, in combination, mechanism for retaining the sheets and withdrawing them singly, and means whereby each sheet is flexed and released before it is separated and is brought into co-operative relation with the retaining mechanism while in a flexed condition.

11. A sheet retaining device comprising, in combination, means for repeatedly flexing a number of sheets and releasing them successively, and means for retaining one of the sheets during each releasing operation.

12. A sheet separating device comprising, in combination, means for repeatedly flexing a number of sheets and releasing them successively, means for retaining one of the sheets during each releasing operation, and means acting on said retaining means for withdrawing the retained sheet.

13. A sheet separating device comprising, in combination, a pneumatic suction device whereby each sheet is flexed and released before it is separated and is brought into co-operative relation with the retaining mechanism while in a flexed condition.

14. A sheet separating device comprising, in combination, a pneumatic suction device for retaining the sheets and withdrawing them singly and means whereby each sheet is repeatedly flexed and released before it is separated and is brought into co-operative relation with the retaining mechanism while in a flexed condition, said means being constructed to engage the sheets at their edges and to release them successively.

15. A sheet separating device comprising, in combination, means for repeatedly flexing a number of sheets, said means being constructed to engage the sheets at their edges and to release them successively, and means for retaining one of the sheets during each releasing operation.

16. A sheet separating device comprising, in combination, means for repeatedly flexing a number of sheets, said means being constructed to engage the sheets at their edges and to release them successively, means for retaining one of the sheets during each releasing operation, and means acting on said retaining means for withdrawing the retained sheet.

17. A sheet retaining device comprising, in combination, means for repeatedly flexing a number of sheets and releasing them successively, and pneumatic suction means for retaining one of the sheets during each releasing operation.

18. A sheet separating device comprising, in combination, means for repeatedly flexing a number of sheets and releasing them successively, and pneumatic suction means for retaining one of the sheets during each releasing operation, and means acting on said retaining means for withdrawing the retained sheets.

19. A sheet separating device comprising, in combination, means for repeatedly flexing a number of sheets, said means being constructed to engage the sheets at their edges and to release them successively, and pneumatic suction means for retaining one of the sheets during each releasing operation.

20. A sheet separating device comprising, in combination, means for repeatedly flexing a number of sheets, said means being constructed to engage the sheets at their edges and to release them successively, pneumatic suction means for retaining one of the sheets during each releasing operation, and means acting on said retaining means for withdrawing the retained sheet.

21. A mechanism for separating sheets comprising, in combination, a sheet retaining device, and means for bending a number of sheets so as to bring one of the sheets into co-operative relation with the retaining device and permitting them to spring back successively.

22. A mechanism for separating sheets comprising, in combination, a sheet retaining device, and means for bending a number of sheets so as to bring one of the sheets into co-operative relation with said retaining device, said means being constructed to engage the edges of the sheets and to permit them to spring back successively.

23. A mechanism for separating sheets comprising, in combination, a sheet retaining device having a curved surface, and means for bending a number of sheets around said surface and permitting them to spring back successively.

24. A mechanism for separating sheets comprising, in combination, a sheet retaining device having a curved surface, and means for bending a number of sheets around said surface, said means being constructed to engage the edges of the sheets and to permit them to spring back successively.

25. A mechanism for separating sheets comprising, in combination, a pneumatic suction sheet retaining device, and means for bending a number of sheets so as to bring one of the sheets into co-operative relation with the retaining device and permitting them to spring back successively.

26. A machine for separating sheets comprising, in combination, a pneumatic sheet retaining device having a curved suction surface, and means for bending a number of sheets around said surface and permitting them to spring back successively.

27. A machine for separating sheets comprising, in combination, a pneumatic retaining device having a curved suction surface, and means for bending a number of sheets around said surface, said means being constructed to engage the edges of the sheets and to permit them to spring back successively.

28. A mechanism for separating sheets comprising, in combination, a sheet retaining device, and means for bending a number of sheets toward the retaining device and permitting them to spring back successively, said sheet retaining device being constructed and operated to withdraw the sheet retained thereby.

29. A mechanism for separating sheets comprising, in combination, a sheet retaining device, means for bending a number of sheets toward the retaining device and permitting them to spring back successively, a device for holding the sheets thus separated by their elasticity from the sheet on the retaining device, and means for withdrawing the retained sheet.

30. A mechanism for separating sheets comprising, in combination, a sheet retaining device, means for bending a number of sheets toward the retaining device, said means being constructed to engage the edges of the sheets and to permit them to spring back successively, a device for holding the sheets thus separated by their elasticity from the sheet on the retaining device, and means for withdrawing the retained sheet.

31. A mechanism for separating sheets comprising, in combination, a pneumatic sheet retaining device having a curved suction surface, means for bending a number of sheets around said surface and permitting them to spring back successively, a device for holding the sheets thus separated by their elasticity from the sheet on the retaining device, and means for withdrawing the retained sheet.

32. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, said mechanism being constructed to engage the sheets at their edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, means for withdrawing the surface sheet and mechanism for holding the other sheets while the surface sheet is being withdrawn.

33. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets said mechanism being constructed to engage the sheets at their edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, means for withdrawing the surface sheet and mechanism for holding the other sheets while the surface sheet is being withdrawn, said holding mechanism including means constructed and arranged to engage the rearward portion of the pile after the surface sheet has been partly withdrawn.

34. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, said mechanism being constructed to engage the sheets at their edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, means for withdrawing the surface sheet and mechanism for holding the other sheets while the surface sheet is being withdrawn, said holding mechanism including means constructed and arranged to engage the pile at successive points beginning at the rearward portion of the pile after the surface sheet has been partly withdrawn and advancing toward the forward portion of the pile as the surface sheet recedes.

35. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, said mechanism being constructed to engage the sheets at their edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, means for withdrawing the surface sheet and mechanism for holding the other sheets while the surface sheet is being withdrawn, said holding mechanism being constructed and arranged to engage both the forward and rearward portions of the pile.

36. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, said mechanism being constructed to engage the sheets at their edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, means for withdrawing the surface sheet and mechanism for holding the other sheets while the surface sheet is being withdrawn, said holding mechanism including a device for holding the forward portion of the pile and means constructed and arranged to engage the rearward portion of the pile after the surface sheet has been partly withdrawn.

37. In a machine for separating sheets from a pile, the combination with mechanism for separating and withdrawing the surface sheet of the pile, of mechanism for holding the other sheets while the surface sheet is being withdrawn, said mechanism being constructed and arranged to engage the forward end of the pile before the sheet is withdrawn and to engage the rearward portion of the pile after the surface sheet has been partly withdrawn.

38. In a machine for separating sheets from a pile, the combination with mechanism for separating and withdrawing the surface sheet from the pile, of mechanism for holding the other sheets while the surface sheet is being withdrawn, said mechanism being constructed and arranged to engage the pile at successive points beginning at the rearward portion of the pile after the surface sheet has been partly withdrawn and advancing toward the forward portion of the pile as the surface sheet recedes.

39. In a machine for separating sheets from a pile, the combination with mechanism for separating and withdrawing the surface sheet of the pile, of mechanism for holding the other sheets while the surface sheet is being withdrawn, said mechanism being constructed and arranged to engage both the forward and the rearward edges of the pile and to engege the pile at an intermediate point after the sheet has been further withdrawn.

40. In a machine for separating sheets from a pile, the combination with mechanism for separating and withdrawing the surface sheet of the pile, of mechanism for holding the other sheets while the surface sheet is being withdrawn, said mechanism including a device for holding the forward edge of the pile and means constructed and arranged to engage the rearward edge of the pile after the surface sheet has been partly withdrawn and to engage the pile at an intermediate point after the sheet has been further withdrawn.

41. A sheet separating mechanism comprising, in combination, means for flexing a number of sheets and releasing them successively, means for retaining one of the sheets from which the others are partly separated by their elasticity, and means for directing a blast of air between the retained sheet and the other sheets.

42. A sheet separating mechanism comprising, in combination, means for flexing a number of sheets and releasing them successively, means for retaining one of the sheets from which the others are partly separated by their elasticity, means for directing a blast of air between the retained sheet and the other sheets, and means for withdrawing the retained sheet.

43. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, said means being constructed to engage the sheets at their edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, and means for directing a blast of air between the retained sheet and the other sheets, said sheet retaining mechanism being constructed and operated to withdraw the sheets when separated.

44. A sheet separating mechanism comprising, in combination, means for flexing a number of sheets and releasing them successively, a pneumatic suction device for retaining one of the sheets from which the others are partly separated by their elasticity, and means for directing a blast of air between the retained sheets and the other sheets.

45. In a machine for separating sheets from a pile, the combination of mechanism for flexing a number of the sheets, said mechanism being constructed to engage the sheets at their edges and to release them successively, a pneumatic suction device for retaining the surface sheet from which the others are partly separated by their elasticity, means for directing a blast of air between the retained sheet and the other sheets, and means for withdrawing the sheet retained by the pneumatic suction device.

46. A sheet separating device comprising, in combination, means for repeatedly flexing a number of sheets and releasing them successively, means for retaining one of the sheets during each releasing operation, means for directing a blast of air between the retained sheet and the other sheets, and means for withdrawing the retained sheet.

47. A mechanism for separating sheets comprising, in combination, a sheet retaining device, means for bending a number of sheets toward the retaining device and permitting them to spring back successively, a device for holding the sheets thus separated by their elasticity from the sheet on the retaining device, means for directing a blast of air between the retained sheet and the other sheets, and means for withdrawing the retained sheet.

48. A mechanism for separating sheets comprising, in combination, a pneumatic sheet retaining device having a curved suction surface, means for bending a number of sheets around the said surface and permitting them to spring back successively, a device for holding the sheets thus separated by their elasticity from the sheet on the retaining device, means for directing a blast of air between the retained sheet and the other sheets, and means for withdrawing the retained sheet.

49. In a machine for separating sheets from a pile, the combination with mechanism for flexing a number of sheets, said mechanism being constructed to engage the sheets at their edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, means for directing a blast of air between the retained sheet and the other sheets, means for withdrawing the surface sheet, and mechanism for holding the other sheets while the surface sheet is being withdrawn.

50. In a machine for separating sheets from a pile, the combination with means for supporting the pile, of means for slightly advancing a number of the sheets near the surface of the pile, means for flexing a number of sheets, said means being constructed to engage the advanced sheets at their forward edges and to release them successively, of mechanism for retaining the surface sheet from which the others are partly separated by their elasticity, and means for withdrawing the retained sheet.

51. In a machine for separating sheets, the combination

of a sheet retaining device consisting of a pneumatic suction tube, a pattern carrier for said tube, and means for

sheets at their upper edges and to permit them to spring back successively.

rier, and means for directing a blast of air between the surface sheet and the other sheets.

threaded through the body at one side of the reduced portion thereof to form arm and leg members, and having their terminals bent to produce loops, strips of fabric en-

of a sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, and means for bending a number of sheets toward the retaining device while it is in position to receive them and permitting them to spring back successively.

52. In a machine for separating sheets, the combination of a sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, a series of fingers for bending a number of sheets toward the retaining device while it is at rest, said means being constructed to engage the sheets at their edges and to permit them to spring back successively.

53. In a machine for separating sheets, the combination of a sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, a series of fingers for bending a number of sheets toward the retaining device while it is at rest, said means being constructed to engage the sheets at their edges and to permit them to spring back successively, means for creating a partial vacuum in the suction tube while the sheets are in contact therewith and means for releasing the vacuum during the rotation of said carrier.

54. In a machine for separating sheets, the combination of a sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, a series of reciprocating fingers for bending a number of sheets around said tube while it is stationary and permitting them to spring back successively, means for creating a partial vacuum in said tube while the sheets are in contact therewith, and means for breaking the vacuum in said tube during the rotation of the carrier.

55. In a machine for separating sheets, the combination of a sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, and means for intermittently rotating said carrier.

56. In a machine for separating sheets, the combination of a sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, and means for intermittently rotating said carrier, said pneumatic suction tube being adjustable circumferentially around its own axis on said carrier.

57. In a machine for separating sheets, the combination of a sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, said pneumatic suction tube being adjustable circumferentially around its own axis on said carrier, means for creating a partial vacuum in said tube while it is stationary, and means for breaking said vacuum during the rotation of the carrier.

58. In a machine for separating sheets, the combination of a sheet retaining device, means for bending a number of sheets toward said retaining device while it is in position to receive them and permitting them to spring back successively, a sheet holding blade, and means for moving said blade between the retained sheet and the other sheets.

59. In a machine for separating sheets, the combination of a sheet retaining device, means for bending a number of sheets toward said retaining device while it is in position to receive them and permitting them to spring back successively, a sheet holding blade, means for moving said blade between the retained sheet and the other sheets and a series of blast nozzles carried with said blade.

60. In a machine for separating sheets, the combination of a sheet retaining device, means for bending a number of sheets toward said retaining device and permitting them to spring back successively, a sheet holding blade and means for moving said blade between the retained sheet and the other sheets, a series of blast nozzles carried with said blade, and means for admitting air to said nozzles when the blade is in its operative position.

61. In a machine for separating sheets from a pile, the combination with means for supporting the pile on edge, of a sheet retaining device located in front of said pile near its upper edge, means for bending a number of sheets toward the retaining device while it is in position to receive them, said means being constructed to engage the sheets at their upper edges and to permit them to spring back successively.

62. In a machine for separating sheets from a pile, the combination with means for supporting the pile on edge, of a sheet retaining device located in front of said pile near its upper edge, means for bending a number of sheets toward the retaining device while it is in position to receive them, said means being constructed to engage the sheets at their upper edges and to permit them to spring back successively, and means for withdrawing the retained sheet.

63. In a machine for separating sheets from a pile, the combination with means for supporting the pile on edge, of a sheet retaining device located in front of said pile near its upper edge, said retaining device consisting of a pneumatic suction tube and rotary carrier for said tube, means for bending a number of sheets toward the retaining device, said means being constructed to engage the sheets at their upper edges and to permit them to spring back successively.

64. In a machine for separating sheets from a pile, the combination with means for supporting the pile on edge of a sheet retaining device located in front of said pile near its upper edge, said sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, and means for bending a number of sheets around said suction tube while it is stationary, said means being constructed to engage the sheets at their upper edges and to permit them to spring back successively.

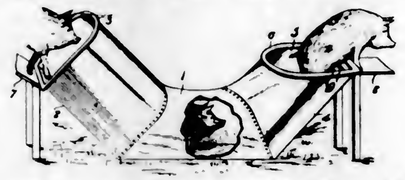
65. In a machine for separating sheets from a pile, the combination with means for supporting the pile on edge of a sheet retaining device located in front of said pile near its upper edge, said sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, means for bending a number of sheets around said suction tube while it is stationary, said means being constructed to engage the sheets at their upper edges and to permit them to spring back successively, means for creating a partial vacuum in said suction tube while it is stationary, and means for breaking said vacuum during the rotation of said carrier.

66. In a machine for separating sheets from a pile, the combination with means for supporting the pile on edge of a sheet retaining device located in front of said pile near its upper edge, said sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, means for bending a number of sheets around said suction tube while it is stationary, said means being constructed to engage the sheets at their upper edges and to permit them to spring back successively, and means for holding the upper edge of the pile during the rotation of said carrier.

67. In a machine for separting sheets from a pile, the combination with means for supporting the pile on edge of a sheet retaining device located in front of said pile near its upper edge, said sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, means for bending a number of sheets around said suction tube while it is stationary, said means being constructed to engage the sheets at their upper edges and to permit them to spring back successively, means for holding the upper edge of the pile during the rotation of said carrier, and means for directing a blast of air between the surface sheet and the other sheets.

68. In a machine for separating sheets from a pile, the combination with means for supporting the pile on edge of a sheet retaining device located in front of said pile near its upper edge, said sheet retaining device consisting of a pneumatic suction tube, a rotary carrier for said tube, means for intermittently rotating said carrier, means for bending a number of sheets around said suction tube while it is stationary, said means being constructed to engage the sheets at their upper edges and to permit them to spring back successively, means for creating a partial vacuum in said suction tube while it is stationary, means for breaking said vacuum during the rotation of said carrier, and means for directing a blast of air between the surface sheet and the other sheets.

854,223. DIPPING-TANK. ANDREW A. KRAMER, Kansas City, Mo. Filed Jan. 5, 1907. Serial No. 350,980.



Claim.—1. A tank of the character described comprising an intermediate body portion, an inclined inlet portion extending from one end thereof and above the top of the body portion, and an inclined outlet portion extending from the other end of the body portion, said outlet portion having its outer end parallel with and above the body portion.

2. A tank of the character described comprising an intermediate body portion, an inclined inlet portion at one end thereof, and an inclined outlet portion at the other end thereof, the outer ends of said portions being disposed above the plane of the body.

3. A tank of the character described comprising an intermediate portion constituting a liquid receptacle, and inclined end portions extending from opposite ends thereof, the outer ends of the end portions being disposed above the plane of the intermediate portion.

4. A tank of the character described comprising an intermediate portion constituting a liquid receptacle, inclined end portions extending from opposite ends of the intermediate portion and constituting an inlet and an outlet, the outer ends of said end portions being disposed above the plane of the intermediate portion, and the outer end of said outlet end portion being also disposed in a plane substantially parallel with the intermediate portion.

5. In a tank of the character described the combination with an intermediate base portion constituting a liquid receptacle; of inclined inlet and outlet portions extending from opposite ends of the intermediate portion, the outer ends of said end portions being disposed above the plane of the intermediate portion, and means for directing stock into and away from the inlet and outlet portions of the tank respectively.

6. A tank of the character described comprising an intermediate portion having a flat bottom constituting a base, said intermediate portion constituting a liquid holder, and inclined inlet and outlet portions extending from the intermediate portion and having their outer ends disposed above the plane of the intermediate portion.

7. A tank of the character described comprising an intermediate or body portion, said portion having a flat bottom constituting a base, and inclined inlet and outlet portions extending upward from the end portion and having reinforcing flanges at their outer ends, said ends being disposed above the plane of the intermediate portion.

854,224. TOY NOVELTY. LOUISE LAMPREY, New York, N. Y. Filed Dec. 9, 1905. Serial No. 291,122.



Claim.—1. A toy novelty comprising a readily puncturable fibrous body, having its central portion reduced wires threaded through the body at one side of the reduced portion thereof to form arm and leg members, and having their terminals bent to produce loops, strips of fabric enveloping the members and fastened to the loops, means for securing the strips to the body, and ornamental materials assembled with the body to form outer garments.

2. A toy comprising a readily puncturable fibrous body having an intermediate portion thereof reduced and the lineaments of a human face depicted on one end thereof crimped wires threaded through the body to form arm and leg members and having their terminals bent to form loops, strips of fabric enveloping the members and fastened to the loops and body portion respectively, and ornamental materials assembled with the body to form outer garments.

3. A toy novelty comprising a pea-nut body having the lineaments of a human face depicted thereon, wires threaded through the body to form arm and leg members and having their terminals bent to form loops, strips of material wound around the members in spiral form and secured to the body and to said loops, and ornamental materials assembled with the body to form outer garments.

4. A toy novelty comprising a pea-nut body having the lineaments of a human face depicted thereon, crimped wires threaded through the body to form arm and leg members and having their terminals smooth and bent to form loops strips of fabric enveloping the members and secured to the body and to the loops respectively, and ornamental materials assembled with the body and said members to form outer garments.

5. A toy novelty comprising a fibrous body having the lineaments of a human face depicted thereon, wires combined with the body to form arm and leg members and having terminals bent to form loops, strips of fabric enveloping the members and secured to the body and to said loops a flexible binding medium wound around the strips, and ornamental materials assembled with the members and body to form outer garments.

6. A toy novelty comprising a pea-nut body having the lineaments of a human face depicted thereon, crimped wires threaded through the body to form arm and leg members and having their terminals bent to form loops, strips of fabric enveloping the members and secured to the body and to said loops, a flexible binding medium wound around the strips for securing the latter to the wires, and ornamental materials assembled with the members and body to form outer garments.

7. A toy novelty comprising a pea-nut body having the lineaments of a human face depicted thereon, wires threaded through the base of the body to form feet-members, wires extending transversely through the center of the body to produce arm-members, strips of fabric enveloping the members, and ornamental materials assembled with the body to form outer garments.

8. As a new article of manufacture, a toy figure comprising a fibrous body formed of a peanut having the lineaments of a human face depicted thereon, wires threaded through the body to form arms and legs and having terminal loops to constitute hands and feet, a covering of fabric enveloping the arms and legs and secured to the body and in the loops, means for fastening the fabric to the wires, and outer garments combined with the body, arms and legs.

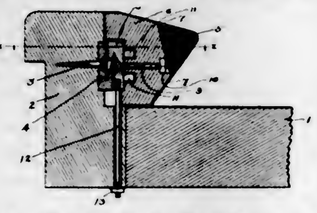
854,225. POOL AND BILLIARD TABLE CUSHION-RAIL. GEORGE A. LANG, Omaha, Nebr. Filed Mar. 30, 1907. Serial No. 365,595.

Claim.—1. In a table of the class described, the combination with the table-rail and cushion-rail, of the interengaging bars secured respectively to said table-rail and cushion-rail, and means for removably holding said bars in interengaged position.

2. In a table of the class described, the combination with the cushion-rail and covering therefor, of a longitudinally extending bar set in the unexposed edge of the said rail, and means for retaining both edges of the said covering between said bar and the rail.

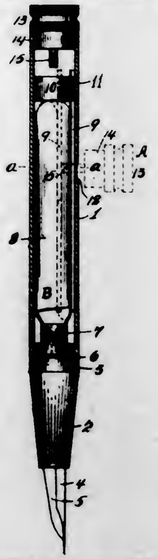
3. In a table of the class described, the combination with the cushion-rail and the covering therefor, of a longi-

tudinally extending bar set in the unexposed edge of the rail and removably secured thereto, there being grooves formed in the rail behind said bar, the edges of the covering each being placed in one of said grooves, and strips for holding said edges of the covering in the grooves, said strips being held in position by the removable bar.



4. In a table of the class described, the combination with the table-rail, the cushion-rail and the covering therefor, of a bar removably held on the unexposed edge of the cushion-rail and adapted to retain thereunder both edges of the covering of said rail, a second bar secured to the table-rail, interengaging portions carried by said bars, and means for removably holding said portions in interengaged position.

854,226. FOUNTAIN-PEN. HENRY B. LEVY, New York, N. Y. Filed July 13, 1906. Serial No. 326,060.



Claim.—1. A fountain-pen comprising a barrel, a compressible ink-reservoir within the same, a compressing-shoe movably supported within said barrel, said support comprising sectors connected by a transverse-bar, said bar supporting the said shoe, and means for actuating the shoe.

2. A fountain-pen comprising a barrel, a compressible ink-reservoir within the same, sectors connected by a transverse-bar within said barrel, a compressing-shoe provided with a slot to permit the shoe to freely pass over of along the transverse-bar, and means for actuating the shoe.

3. In combination, a fountain-pen barrel, a compressible sac therein, a compressing-shoe movably supported in said barrel, a support for said shoe provided with means adapted to be sprung into and frictionally held in said barrel, said shoe being movably connected at one end to said support, and means for actuating said shoe.

4. In a fountain-pen, the combination of a barrel, a nozzle-section in one end thereof, a nipple removably held in the nozzle-section, a compressible ink-sac connected to said nipple, a detachable closure in the opposite end of the barrel, said closure having a stud on its forward end, an elongated compressing shoe in said barrel, and a support sprung into and frictionally held in said barrel, to which support said shoe is movably connected, said stud being adapted to impart to said shoe a transverse bodily movement.

854,227. FOUNTAIN-PEN. WILLIAM C. LUTHER, Newark, N. J. Filed Jan. 26, 1906. Serial No. 297,944.



Claim.—1. A fountain pen comprising a tubular barrel, and an end-member separately connected with said barrel, said barrel and the end-member being made of different materials, one of said materials having the quality and tendency to contract, with an application of heat thereto, while the other material has the tendency to expand with an application of heat thereto and thereby produce a non-sweating joint where said barrel and the end-member are joined.

2. A fountain pen comprising a tubular barrel, and an end-member separably connected with said barrel, said barrel having the quality and tendency to contract, with an application of heat thereto, while the end-member has the tendency to expand with an application of heat thereto and thereby produce a non-sweating joint where said barrel and end-member are joined.

3. A fountain pen comprising a tubular barrel having an open and internally screw-threaded end, and an end-member provided with a screw-threaded shank adapted to be screwed into said screw-threaded end of said barrel, said barrel and screw-threaded end having the quality and tendency to contract, with an application of heat thereto, while said end-member and its shank have the tendency to expand with an application of heat thereto, all being arranged to produce a non-sweating joint where said barrel and end-member are joined, substantially as and for the purposes set forth.

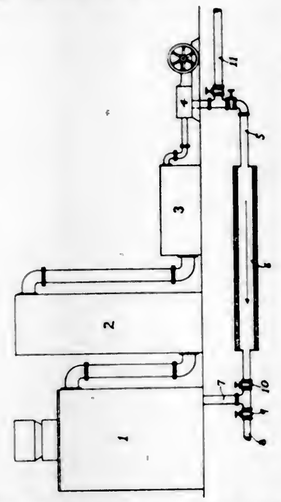
4. A fountain pen comprising a tubular celluloid barrel, and a hard rubber end-member separably connected with said celluloid barrel, said barrel having the quality and tendency to contract, with an application of heat thereto, while the end-member has the tendency to expand with an application of heat thereto and thereby produce a non-sweating joint where said barrel and end-member are joined.

5. A fountain pen comprising a tubular celluloid barrel, having an open and internally screw-threaded end, and a hard-rubber end-member provided with a screw-threaded shank adapted to be screwed into said internally screw-threaded end of said barrel, said barrel and screw-threaded end having the quality and tendency to contract, with an application of heat thereto, while said hard-rubber end-member and its shank have the tendency to expand with an application of heat thereto, all being arranged to produce a non-sweating joint where said barrel and end-member are joined, substantially as and for the purposes set forth.

854,228. PROCESS OF GENERATING PRODUCER-GAS. MAX F. MANGELSDORFF, New York, N. Y., assignor to Combustion Utilities Company, a Corporation of New York. Filed Apr. 24, 1906. Serial No. 313,478.

Claim.—1. The process of producing gas which consists in removing a portion of the nitrogen from products of combustion to enrich the same with regard to carbon dioxid, and in then transmitting the enriched products through a bed of ignited fuel.

2. The process of producing gas which consists in transmitting products of combustion through a porous-walled passage to diffuse away a portion of their nitrogen and in then transmitting the treated products through a bed of ignited fuel.



3. The process of producing gas which consists in diffusing away nitrogen from products of combustion and in then transmitting the residual treated products through a bed of ignited fuel.

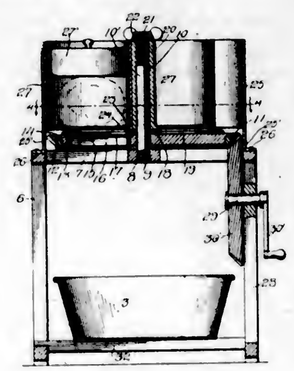
4. The process of making and using gas which consists in transmitting products of combustion from a gas engine through a porous-walled passage, in then transmitting the thus-treated products through a bed of ignited fuel, and in then feeding the produced gas to a gas engine.

5. The process of producing gas which consists in transmitting products of combustion through a porous-walled passage at a pressure greater than that prevailing exteriorly of said passage, and in then transmitting the thus-treated products through a bed of ignited fuel.

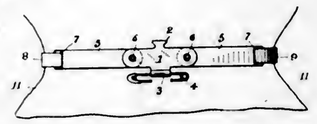
6. The process of producing gas which consists in removing a portion of the nitrogen from products of combustion, and in alternately blowing up a body of ignited fuel with air and with the thus-treated products of combustion.

854,229. VEGETABLE-CUTTER. OTTO H. MILLER, Green Bay, Wis. Filed Dec. 18, 1906. Serial No. 348,462.

Claim.—A vegetable slicer comprising a frame; a series of open ended cylindrical hoppers disposed above said frame; a cylindrical collar mounted upon the upper face of said frame and embracing all of said hoppers, for holding the latter in mutual frictional contact with each other and retaining them in fixed position; a strap connecting the opposite sides of said frame and provided with a bearing disposed directly beneath the central space between said hoppers; a vertical bolt disposed within said space and having its lower end fitted in said bearing; a ring gear carried by said bolt and provided with a series of sockets formed in its rim; a cutter plate detachably carried by said gear and provided with a series of outwardly extending lugs, adapted to be received in said sockets, and with a series of knife-slots; knives disposed in said slots; a sleeve incasing said bolt and provided with an enlarged lower end adapted to contact with said cutter plate, to retain said cutter plate and ring gear in place; means for retaining said sleeve in place upon said bolt; means disposed within each hopper for forcing the material contained therein into the path of movement of the knives; and means for rotating said ring gear, to bring the knives carried by said cutter plate successively beneath said hoppers, to slice the material contained therein.



854,230. GARMENT-SUPPORTER. FRANK J. NARAMORE, Bridgeport, Conn. Filed Mar. 28, 1907. Serial No. 365,154.



Claim.—1. In a device of the character described, the combination of the metallic back plate having integral therewith a stud which projects upwardly from the top edge of said plate, the metallic strips having their inner ends pivoted to the lateral extremities of said plate, and the flexible tapes fastened to the outer ends of said strips for attachment around the waist of the wearer.

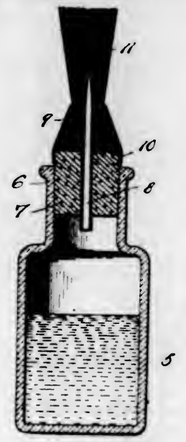
2. In a device of the character described, the combination of the metal plate having projecting from its upper edge a stud and provided with a lip depending from its lower edge, the safety pin around which said lip is curled, the metal strips having their inner ends pivoted to the lateral extremities of said plate while their outer extremities extend only to the back hip portions of the wearer's waist, and the flexible tapes fastened to the outer extremities of these strips and adapted to be secured around the waist of the wearer.

854,231. FOUNTAIN-BRUSH. HERMAN NOTHE, Philadelphia, Pa. Filed June 27, 1906. Serial No. 323,635.

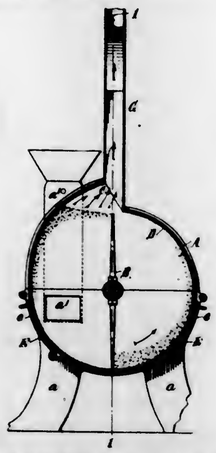
Claim.—1. A device of the kind described, comprising, in combination, a suitable receptacle; a stopper removably fitted in the neck of said receptacle; a metallic bristle holder mounted on said stopper and provided with a downwardly extending flange adapted to engage with said stopper to secure said holder thereto; bristles mounted in said holder; and a hollow tube fitted in said stopper and having its upper end projecting beyond the upper face of said stopper in position to discharge the contents of the receptacle into the bristles, when the receptacle is inverted.

2. A device of the kind described, comprising, in combination, a suitable receptacle; a stopper removably fitted in the neck of said receptacle; a metallic bristle holder mounted upon the upper face of said stopper and having a downwardly extending annular flange adapted to engage with said stopper to secure said holder thereto, said holder being formed with converging sides; bristles mounted in said holder; and a hollow tube fitted in said stopper and having its upper end projecting beyond the upper face of

said stopper in position to discharge the contents of the receptacle into the bristles, when the receptacle is inverted.



854,232. MACHINE FOR DELINTING COTTON-SEED HULLS. WILLIAM OLIVER, Lockport, N. Y. Filed Jan. 14, 1907. Serial No. 352,118.



Claim.—1. The combination of a substantially horizontal casing which is partially cylindrical in shape but is provided with an enlargement or separating space at its upper portion having unobstructed communication with the interior of the main part of the casing, means for rubbing the material against the cylindrical wall of said casing, and a suction trunk leading from said separating space of the casing and having a substantially upright connection with said casing whereby no surface is formed upon which the material can lodge, substantially as set forth.

2. The combination of a substantially horizontal casing which is substantially cylindrical in shape but is provided with an enlargement or separating space at its upper portion having unobstructed communication with the interior of the main part of the casing, a rotary beater in said casing, and a suction trunk leading from said separating space of the casing and having a substantially upright connection with said casing whereby no surface is formed upon which the material can lodge, substantially as set forth.

3. The combination of a substantially horizontal casing which is substantially cylindrical in shape, the cylindrical wall of said casing having a concentric portion and an eccentric portion forming a separating space at the upper portion of the casing, means for rubbing the material against the cylindrical wall of said casing, and a suction trunk ascending from said separating space, substantially as set forth.

4. The combination of a substantially horizontal casing which is substantially cylindrical in shape, a rotary beater in said casing, the cylindrical wall of said casing having a portion concentric with the axis of said beater and an eccentric portion forming a separating space at the upper portion of the casing, and a suction trunk ascending from said separating space, substantially as set forth.

5. The combination of a substantially horizontal casing which is substantially cylindrical in shape, a rotary beater in said casing, the cylindrical wall of said casing having a portion concentric with the axis of said beater and an eccentric portion forming a separating space at the upper portion of the casing, and a suction trunk having opposite substantially upright walls joining the adjacent ends of said concentric and eccentric wall portions of the casing, substantially as set forth.

6. The combination of a substantially horizontal casing which is substantially cylindrical in shape, the cylindrical wall of said casing having a concentric portion and an eccentric portion forming a separating space at the upper portion of the casing and having discharge openings in its lower portion, a perforated lining for the cylindrical wall of said casing crossing said discharge openings, a rotary device for rubbing the material against said lining, and a suction trunk ascending from said separating space, substantially as set forth.

854,233. BUTTON. WINFIELD S. OSBORN, Remington, Ind., assignor of one-half to C. W. Littlefield, Remington, Ind. Filed June 1, 1906. Serial No. 319,794.



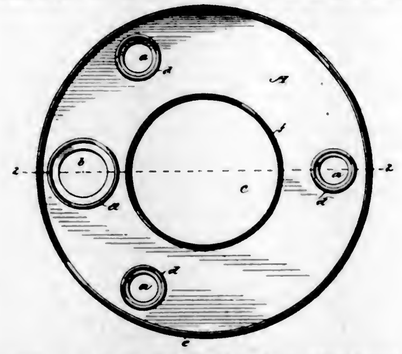
Claim.—1. A button of the class described comprising a body, a tubular member in said body, the upper end of which is disposed at an angle to the axis of the member, said member having a slot therein at an angle to the axis of the tubular member and at the same angle as the angle of the upper end of the member, a cover for said body having an opening therein, a stem having a circumferential groove, a base on said stem and means adapted to engage the groove in said stem to removably lock said body on the stem.

2. A button of the class described comprising the combination with a stem having a conical end and a circumferential groove and a base secured thereto; of a body, a tubular socket in said body having its upper end disposed at an angle to the axis of the socket, said socket having a slot therein at an angle to the axis of the socket and at the same angle as the angle at the upper end of the socket, a locking device disposed in said body and having one portion thereof extending into said slot whereby when said stem is disposed in said tubular socket, said locking device will engage the groove, a cover for said body having an opening therein and means to disengage said locking device from the groove.

3. A button of the class described comprising the combination with a stem, a base at one end of said stem, said stem having a groove near the opposite end thereof; of a body, a tubular socket in said body having its free end disposed at an angle to its axis, a locking device disposed in said body, a portion thereof entering a slot in the tubular member, a cover for said body, said cover having an opening therein, a releasing member in said body and resting on the apex of the angular end of said tubular member, means carried by said member to engage the locking device when tilted and additional means to limit the movement of said releasing member in one direction.

4. A button of the class described comprising the combination with a stem having a conical end and a groove near said conical end; of a body, a cover for said body, a socket in said body having its upper end disposed at an angle to its axis, a locking member in the body, the base of which is adapted to enter a slot in said socket, a releasing member in said body and depending arms integral with said member adapted to be swung into engagement with said base when the member is depressed.

854,234. PACKING OR GASKET. EDWARD L. PERRY, Paterson, N. J. Filed June 12, 1906. Serial No. 321,421.



Claim.—1. As an improved article of manufacture, a gasket or packing in a single integral element having bolt holes therein and a single projection encircling each hole, said projection taking the same line in a circle around the edge and at a distance from each hole.

2. As an improved article of manufacture, a gasket or packing in a single integral element having bolt holes therein and a single projection encircling each hole, said projection taking the same line in a circle around the edge and at a distance from each other, and a similar projection encircling the outer edge of the gasket or packing.

3. As an improved article of manufacture, a gasket or packing in a single integral element having bolt holes therein and a single projection encircling each hole, said projection taking the same line in a circle around the edge and at a distance from each hole, said projections being rounded.

854,235. SKYLIGHT STRUCTURE. WILLIAM F. PLASS, New York, N. Y. Filed Jan. 15, 1907. Serial No. 352,428.



Claim.—1. A skylight structure comprising a supporting member having provision for receiving and carrying off the drippings, a perforated non-metallic cushion for the glass, the upper ends of the perforations being beneath the glass, said cushion being carried by the member, and means for retaining the glass in contact with the cushion.

2. A skylight structure comprising a supporting member having provision for receiving and carrying off the drippings, a perforated cushion for the glass, the upper ends of the perforations being beneath the glass, said cushion being carried by the member and formed of a felted material, and means for retaining the glass in contact with the cushion.

3. A skylight structure comprising a supporting member having provision for receiving and carrying off the drippings, felted material carried by said member for supporting the glass, said material being perforated for the passage of drippings, the upper ends of the perforations being beneath the glass, and means for retaining the glass in contact with the material.

4. A skylight structure comprising a supporting member having a depressed portion to form a drip-carrying channel, said channel having drip openings, a felted cushion located in said channel for wholly supporting the glass, the edges of the channel being spaced from the under surface of the glass a distance which will prevent the free passage bodily of globules of moisture between the glass and the channel edges, and means for retaining the glass in contact with the cushion.

5. A skylight structure comprising a supporting member having an upper and a lower drip receiving and carrying channel, the lower channel receiving drippings from the upper channel, a felted cushion located in the upper channel, said cushion being perforated at points below the glass and extending above the top plane of the edges of the upper channel, whereby the glass will contact solely with the cushion, and means for retaining the glass in contact with the cushion.

6. A skylight structure comprising a supporting member having an upper and a lower drip receiving and carrying channel, the lower channel receiving the drippings from the upper channel, a felted cushion located in the upper channel, said cushion being perforated at points below the glass and extending above the top plane of the edges of the upper channel, whereby the glass will contact solely with the cushion, the edges of said upper channel being spaced from the under surface of the glass a distance which will prevent the free bodily passage of globules of water between the glass and the top of the channel edges, and means for retaining the glass in contact with the cushion.

7. A skylight structure comprising a supporting member consisting of upper and lower channeled parts, the lower part being of a width greater than the width of the upper part and positioned in a manner to receive the drippings from the upper part, the top of the edges of the upper part being spaced from the under surface of the glass a distance which will prevent the free bodily passage of globules of water between the glass and the top of the channel edges, felted material located in the channel of the upper part for supporting the glass, said material being perforated at points below the glass and means for retaining the glass in contact with the material.

854,236. MACHINE FOR MANUFACTURING GLASSWARE. ALVIN S. REICHEL, Point Marion, Pa., assignor of one-third to William H. Smart and one-third to Montie Lee Titus, Point Marion, Pa. Filed July 17, 1905. Serial No. 270,043.

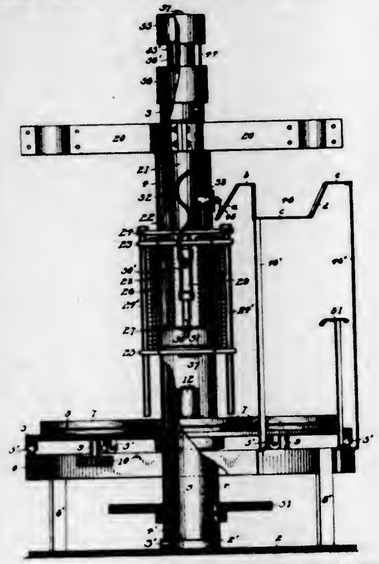
Claim.—1. The combination of a mold-carrier, press and blow-molds movably mounted on the carrier, pressing and blowing mechanism movable with the carrier, and means for so moving the molds on the carrier as to cause them to coöperate, successively, with the pressing and blowing mechanism.

2. The combination of vertically movable combined pressing and blowing mechanism, press and blow-molds, and automatic means for moving said molds, successively, into and out of line with the pressing and blowing mechanism.

3. The combination of a carrier, press and blow-molds movably mounted thereon, and means actuated by the advancing movement of the carrier for moving the molds successively into operative position, and forming mechanism adapted to coöperate with the molds.

4. The combination of a carrier, a mold-support rotatably mounted thereon, press and blow-molds on the sup-

port, means actuated by the advancing movement of the carrier for so turning the mold-support as to place the molds, successively, in operative position, and forming mechanism adapted to coöperate with the molds.



5. The combination of a carrier, a mold-support movable thereon, press and blow-molds on the support, means actuated by the advancing movement of the carrier for so shifting the mold-support as to place the molds, successively, in operative position, forming mechanism movable with the carrier and adapted to coöperate with said molds, successively, and means for causing the forming mechanism and molds to coöperate while they are advancing.

6. The combination of a carrier, press and blow-molds movably mounted thereon, a vertically movable combined pressing and blowing device movable with the carrier, and means operating when said device is elevated for changing the positions of the molds.

7. The combination of a horizontally movable carrier, press and blow-molds thereon, vertically movable pressing and blowing mechanism movable horizontally with the carrier, a vertically and horizontally movable neck-mold, and means operative while the neck-mold is elevated for placing the latter and the press and blow-molds in operative relation successively.

8. The combination of a vertically movable combined pressing and blowing device, a vertically movable neck-mold with which said device coöperates, a horizontally rotatable mold-support, press and blow-molds on the support, and means operating when the neck-mold and pressing and blowing device are elevated for so moving the mold-support as to place the molds successively in operative position.

9. The combination of a horizontally movable carrier, press and blow-molds thereon, vertically movable pressing and blowing mechanism movable horizontally with the carrier, a neck-mold movable horizontally with the carrier and pressing and blowing device and movable vertically with the latter and means operative during the advancing movement of the carrier and while the neck-mold and pressing and blowing device are in elevated position for shifting the position of the press and blow-molds on the carrier.

10. The combination of a carrier, pressing and blowing mechanism adapted to advance simultaneously with the carrier, a neck-mold carried by and movable with the pressing and blowing mechanism, a mold-support rotatably mounted on the carrier, press and blow-molds on the support, means operative while the carrier is advancing for turning the mold-support and placing the molds, successively, in operative position, and means for raising and lowering the neck-mold and pressing and blowing device and for causing said parts to coöperate with the molds during the advancing movement of the carrier.

11. The combination of a horizontally movable carrier, pressing and blowing mechanism movable horizontally therewith, means for moving the pressing and blowing mechanism vertically while the same and the carrier are moving horizontally, a mold-support movable on the carrier, a press-mold and a divided blow-mold on the support, and means operated by the advancing movement of the carrier for changing the positions of the molds and for opening and closing the blow-mold.

12. The combination of a horizontally movable carrier, pressing and blowing mechanism movable horizontally with the carrier, a mold-support rotatably mounted on the carrier, a press-mold and a divided blow-mold on the support, means for so turning the mold-support as to place the molds, successively, in operative position, and means actuated by the turning movement of the support for opening and closing the blow-mold.

13. The combination of a horizontally movable carrier, press and blow-molds movably mounted on the carrier, forming mechanism movable with the carrier, a vertically movable support for the forming mechanism, a fixed irregular surface past which the carrier moves, an operative connection between the supporting mechanism and said surface constructed and arranged to cause the forming mechanism to lower when passing certain portions of said irregular surface and to cause the same to raise when passing other portions of said surface, and mechanism operating while the carrier is in motion and while the forming mechanism is raised to change the position of the molds on the carrier.

14. The combination of a horizontally movable mold-carrier, a mold, a cylinder movable horizontally with the carrier and provided with a piston, forming mechanism actuated by the piston, a valve for the cylinder, and fixed valve-actuating means past which the cylinder moves.

15. The combination of a horizontally movable carrier, molds thereon, a cylinder movable horizontally with the carrier and provided with a piston, forming mechanism actuated by the piston, a valve for the cylinder, a fixed surface of irregular form past which the cylinder moves, and a movable connection between said surface and the valve for actuating the latter.

16. The combination of a horizontally movable carrier, press and blow-molds movably mounted thereon, pressing and blowing mechanism movable horizontally with the carrier, a cylinder and piston for vertically reciprocating the pressing and blowing mechanism, a valve for the cylinder, an arm for moving the valve, a fixed surface over which the arm moves, said surface having two raised portions separated by a depressed portion, said arm being adapted when traversing the raised surfaces to so move the valve as to lower the pressing and blowing mechanism and when traversing the depressed surface to so move the valve as to raise said mechanism, and means operating while the arm is moving over said depressed surface to move the press-mold out of and the blow-mold into operative position.

17. In a glass-forming machine, the combination of a hollow pressing plunger open at its lower end, an air connection for the plunger, a device within the plunger for normally closing said end, and means adapted to be actuated by the downward movement of the plunger for opening said closing device.

18. In a glass forming machine, the combination of a hollow plunger open at its lower end, a device normally closing said open end, a normally closed air-connection, and means opening said closing device and simultaneously establishing communication between the plunger and the air-connection.

19. In a glass forming machine, the combination of a hollow plunger open at its lower end, a tubular device within the plunger and open thereto, a plug carried by the tubular device for normally closing the open end of the plunger, a laterally extending air-connection carried by and normally out of communication with said tubular device, and means actuated by the downward movement of the plunger for raising said plug and simultaneously establishing communication between said tubular device and the air-connection.

20. The combination of a hollow plunger open at its lower end, a closing device for the lower end thereof, an air-connection for the plunger, press and blow-molds which the plunger fits interchangeably and with which it coöperates successively, and means operating while the plunger is within the blow-mold for opening its lower end through which air discharges.

21. The combination of press and blow-molds, a hollow plunger open at its lower end and adapted to fit said molds interchangeably, a closing device for the open end of the plunger, means for raising and lowering the plunger, a normally closed air-connection for the plunger, and means operating while the plunger is lowered within the blow-mold for opening the lower end of the plunger and simultaneously opening said air-connection.

22. The combination of a horizontally movable carrier, press and blow-molds thereon, mold shifting means, a combined pressing and blowing plunger fitting the molds interchangeably, the plunger being movable horizontally with the carrier, means for raising and lowering the plunger, the plunger being hollow and having an air-discharge opening, a closing device for the plunger-opening, and means operating while the plunger is within the blow-mold to open said closing device.

23. The combination of a horizontally movable carrier, press and blow-molds thereon, mold shifting means, a combined pressing and blowing plunger fitting the molds interchangeably, plunger raising and lowering means, the plunger being hollow and movable horizontally with the carrier and open for the discharge of air, a vertically moving closing device within the plunger for the open lower end thereof, an air-connection for the plunger, and a fixed device past which the plunger moves while within the blow-mold, said fixed device operating to raise the closing device and open the plunger for the discharge of air.

24. In a glass forming machine, the combination of a divided mold, oppositely moving slides upon which the mold-sections are mounted, the slides being formed to overlap each other at the ends, and gears interposed between and engaging said overlapping portions for moving the slides toward and from each other.

25. In a glass forming machine, the combination of a divided mold, opposite moving slides upon which the mold-sections are mounted, one end of each slide having a lateral extension which overlaps the unextended end of the other slide, and gears interposed between and meshing with the slide-ends in said extensions for moving the slides toward and from each other.

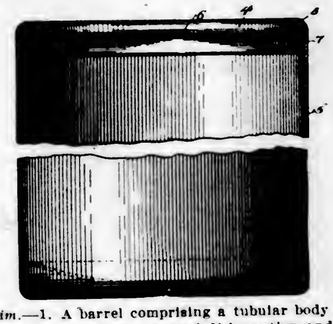
26. In a glass forming machine, the combination of a base having a cam-groove, a mold-support rotatable on the base, a divided mold, overlapping slides on the support to which the mold-sections are secured, a pin depending from one of the slides into the cam-groove of the base, and gears interposed between the slides, whereby when the slide carrying the pin is moved through the medium of the cam-groove the other slide is moved in the opposite direction.

27. The combination of a neck-mold support, slides thereon, mold-sections secured to the slides, gears interposed between the slides whereby the movement of one of the slides operates to move the other slide in a reversed direction, a pin projecting from one of the slides, and an operating lever having a cam-slot into which the pin projects.

28. The combination of a rotatable mold-carrier, molds, a support above and rotatable with the carrier, and forming mechanism secured to and sustained by the support.

29. The combination of a rotatable mold-carrier, molds, a central support above and rotatable with the carrier, and forming mechanism secured to and sustained by the support and overhanging the carrier.

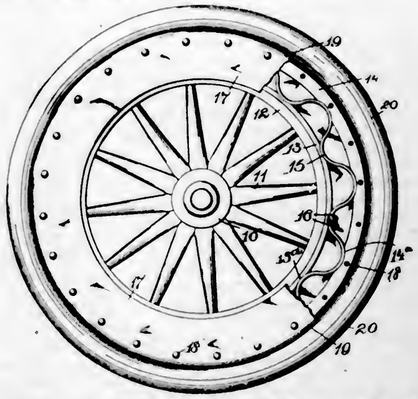
854,237. BARREL OR RECEPTACLE. HENRY S. REYNOLDS, Brooklyn, N. Y. Filed Apr. 20, 1905. Serial No. 256,545.



Claim.—1. A barrel comprising a tubular body member, and a head comprising a central disk portion and a flange portion, the flange portion of the head comprising a cylindrical portion adjacent the disk portion in engagement with the inner wall of the body a short distance removed from the end, the said flange portion having its end extremity curved inwardly forming a roll or bead, the end portion of the body member being similarly rolled inwardly in contact with the bead portion of the head member, the flange portion at the portions where the annular portion merges into the roll portion, being secured to the contacting portion of the body member by brazing or soldering.

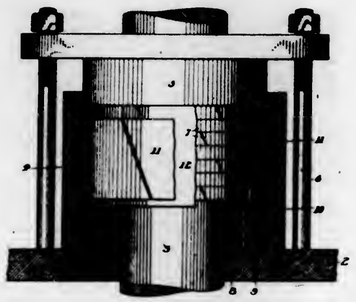
2. The method of securing the end member to the tubular body member of a receptacle which consists in forming the end member with an annular flange having an end portion of the flange bent inward, inserting the end member into the body member beyond its extremity for a sufficient distance to provide a bending portion at the end of the body, thereupon uniting the engaging portions of the flange and body by soldering or brazing, and thereupon bending the end body portion not so united down upon the said bent portion of the end member.

854,238. SPRING-WHEEL. JAMES E. RIELLY, Newark, N. J. Filed Dec. 3, 1906. Serial No. 346,021.



Claim.—A spring-wheel comprising a body-portion having a felly, a rim surrounding the felly at a distance therefrom to form a circumferential space, and an evenly corrugated flat spring in the space and engaging the felly and the rim, the felly and rim being provided with recesses of less than a semicircle to receive the corrugation of the spring.

854,239. HYDRAULIC PACKING. CLARK F. RIOBY, New Martinsville, W. Va. Filed Sept. 26, 1906. Serial No. 336,243.



Claim.—1. In a rod packing, the combination with a stuffing box and a gland, of a series of packing rings, and a compressible rod-embracing annulus within the box and forming an inner abutment for the rings and adapted to be compressed thereby.

2. In a rod packing, the combination with a stuffing box and a gland, of a series of split rod-embracing rings, a two-part sleeve interposed between the rings and box, the parts of said sleeve overlapping each other and having diagonal engaging faces.

3. In a rod packing, the combination with a stuffing box and a gland, of a series of split rod-embracing rings, a compressible sleeve interposed between the rings and the stuffing box, a yielding inner abutment for the packing rings, and an unyielding inner abutment for the compressible sleeve.

4. In a rod packing, the combination with a stuffing box and a gland, of a series of split rod-embracing rings, a soft metal abutment in the inner end of the box for the rings, a compressible sleeve interposed between the rings and the side wall of the box, and a non-compressible seat inclosing said compressible abutment and itself forming an abutment for the inner end of said sleeve.

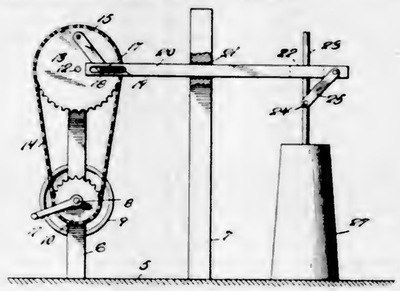
5. In a rod packing, the combination with a stuffing box and a gland, of a series of split rod-embracing rings, a compressible abutment for the inner end of the series of rings, an annular non-compressible device inclosing the compressible abutment, a split two-part sleeve between said rings and the wall of the stuffing box and bearing at its inner end against said annular device, the sleeve being formed of compressible metal and the engaging faces of the parts thereof sloping or inclined.

6. In a rod packing, the combination with a stuffing box and a gland, of a series of split rod-embracing rings, a relatively thin casing inclosing the rings, and a laterally expansible and longitudinally contractible sleeve interposed between the casing and the wall of the stuffing box.

7. In a rod packing, the combination with a stuffing box and a gland, of a series of split rod-embracing rings, a laterally expansible and longitudinally contractible sleeve between the rings and the stuffing box, an annular seat at the inner end of and of less diameter than the stuffing box and forming an abutment for said sleeve, and a flexible cup-shaped ring interposed between said seat and sleeve and closely fitting within the stuffing box.

8. In a rod packing, the combination with a stuffing box and a gland; of a series of split rod-embracing rings, a soft metal abutment for the inner end of the ring-series, an annular non-compressible device surrounding the soft metal abutment and of less diameter than the interior of the stuffing box, a soft metal sleeve interposed between the rings and the wall of the stuffing box, and a flexible cup-shaped ring between said sleeve and said non-compressible device, the flexible ring closely fitting the stuffing box and having its flange or edge extending inward toward the inner end of the box.

854,240. CHURN. WILLIAM J. RINE, Silver Hill, W. Va. Filed Oct. 30, 1906. Serial No. 341,274.



Claim.—1. The combination, with a churn, of a walking beam, a dasher rod connected with the walking beam, and means for simultaneously imparting a reciprocatory movement in a straight line, to said dasher and said walking beam.

2. The combination, with a churn, of a standard, means rotatably mounted upon said standard, a walking beam connected at one end with said means, a dasher connected with the opposite end of said walking beam, and means for rotating said first mentioned means, to impart a simultaneous reciprocatory movement in a straight line to said dasher and said walking beam.

3. The combination with a churn and a pair of spaced vertical standards, one of which is provided with a horizontal guide slot formed therethrough, of a wheel rotatably mounted upon the other standard at its upper end; a walking beam having an endwise movement in a straight line, through said guide slot, said beam being provided at one end with a horizontal guide slot and at the other end with a vertical guide slot formed therethrough; a crank pivotally secured to said wheel; a roller carried by the opposite end of said crank and slidably engaged in the horizontal guide slot in said beam; a dasher extending through the vertical guide slot in said beam, and provided with a pair of pins disposed at diametrically opposite points thereon; a strap pivotally secured at one end to each side face of said beam and pivotally connected at its opposite end to the corresponding dasher pin; and means for rotating said wheel, to impart a simultaneous reciprocatory movement in a straight line to said beam and dasher.

4. The combination with a churn, of a dasher provided at diametrically opposite points with a pair of pins; a walking beam provided at one end with a vertical guide slot, a strap secured at one end to each side face of said beam adjacent the slot end thereof and pivotally connected at its opposite end to the corresponding dasher pin; and means for reciprocating said beam to impart a simultaneous reciprocatory movement in a straight line to said dasher.

854,241. PAINT FOR SHIPS' BOTTOMS. GEORGE G. SCHOBERT, Birmingham, England. Filed Nov. 7, 1905. Serial No. 286,205.

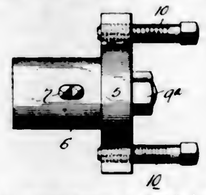
Claim.—1. Paint for ships' bottoms, harbor works, and the like, consisting in the combination of arsenite of lime previously ground to a paste with oxidizing oil, and media for coloring and binding, substantially as set forth.

2. Paint for ships' bottoms, harbor works, and the like, consisting in the combination of arsenite of lime previously ground to a paste with linseed oil, and media for coloring and binding, substantially as set forth.

3. Paint for ships' bottoms, harbor works, and the like, consisting in the combination of arsenite of lime previously ground to a paste with oxidizing oil, varnished gum and a solvent of such gum.

4. Paint for ships' bottoms, harbor works, and the like, consisting in the combination of arsenite of lime previously ground to a paste with oxidizing oil, rosin, shellac, oxid of zinc ground in oxidizing oil, and a solvent of the varnish gums.

854,242. DEVICE FOR HOLDING AIR-BRAKE PISTONS AND CYLINDER-HEADS. WILLIAM S. SCOTT, Pueblo, Colo. Filed Sept. 17, 1906. Serial No. 334,960.



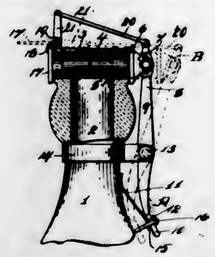
Claim.—1. In combination, a head having a reduced cylindrical extension, gripping members radially movable in the walls of said extension, a wedge located within the extension engaging the inner ends of said gripping devices, the said wedge having a threaded shank extending through the head, and a nut on said shank bearing against the face of the head, substantially as described.

2. In combination, a head having a reduced cylindrical extension, gripping members radially movable in the walls of said extension, a wedge located within the extension engaging the inner ends of said gripping devices, the said wedge having a threaded shank extending through the head, a nut on said shank bearing against the face of the head, and an adjustable cylinder head contact device carried by said head, substantially as described.

3. In combination, a head having a reduced cylindrical extension for insertion within the hollow end of a piston, a cylindrical member slidably mounted within said extension and having grooves with wedge shaped bottoms, gripping devices seated in openings in the wall of said extension and engaging said grooves, means for moving said cylindrical member longitudinally within the cylindrical extension, and set screws passing through the head for bearing against the cylinder head, substantially as described.

4. In combination, a head having a cylindrical extension, a cylindrical member longitudinally movable within said extension, and having two sets of grooves, the grooves of one set having inclined bottoms, radially movable gripping devices seated in openings in the wall of said extension and engaging the said inclined bottomed recesses, and pins carried by the wall of said extension and engaging the other set of recesses, substantially as described.

854,243. BOTTLE-CLOSURE. JOHN SLONKA, New York, N. Y., assignor of one-half to Frank Hromadko, New York, N. Y. Filed July 5, 1906. Serial No. 324,761.



Claim.—1. A bottle provided with an auxiliary neck transversely of the opening in the said bottle and communicating therewith, a movable stopper within said neck adapted to close the opening in said bottle, and means for operating said stopper exteriorly of the bottle.

2. A bottle provided with an auxiliary neck transversely of the opening in said bottle and communicating therewith, the mouth of said auxiliary neck being provided with a movable cover, a movable stopper within said neck adapted to close the opening in said bottle, and means for operating said stopper exteriorly of the bottle.

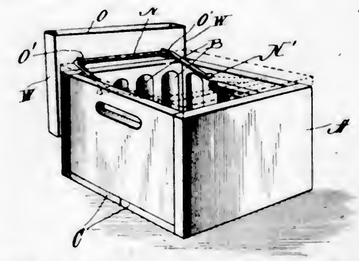
3. A bottle provided with an auxiliary neck transversely of the opening in said bottle and communicating therewith, a movable stopper within said neck and adapted to close the opening in said bottle, and means for actuating said stopper, said means comprising a lever connected to said stopper and bottle.

4. A bottle provided with an auxiliary neck transversely of the opening in said bottle and communicating therewith, a movable stopper within said neck adapted to close the opening in said bottle, a spring-pressed lever adapted to actuate said stopper, and means for maintaining said stopper against premature opening.

5. A bottle provided with an auxiliary neck transversely of the opening in said bottle and communicating therewith, a movable stopper within said neck adapted to close the opening in the bottle, a spring-pressed lever adapted to actuate said stopper, and a pivoted link carried by the lever adapted to impinge upon the bottle, substantially as and for the purpose described.

6. A bottle provided with an auxiliary neck transversely of the opening in said bottle and communicating therewith, the mouth of said auxiliary neck being provided with a movable cover, a movable stopper within said neck adapted to close the opening in said bottle, and means for operating said stopper exteriorly of the bottle, said cover being connected to said stopper operating means and adapted for simultaneous movement therewith.

854,244. SHIPPING-CRATE. CHARLES W. SMITH, Sandusky, Ohio. Filed July 24, 1906. Serial No. 327,566.



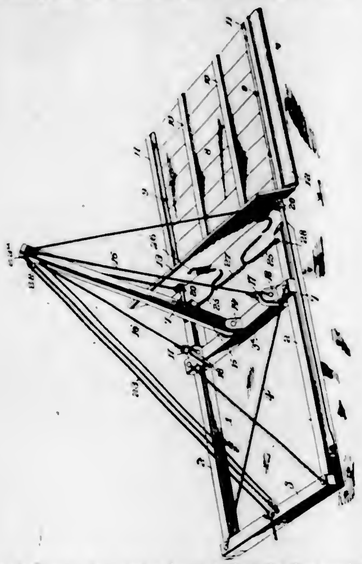
Claim.—A shipping box or crate having vertical grooves formed in the inner faces of the side and end walls thereof, a series of pins rising in rows from the bottom of the crate between said grooves and spaced apart, a bail-shaped member having angled ends which are mounted in bearings formed in the inner surface of the walls of the box, a flangeless closure, eyes projecting therefrom at one side of the center of the closure and through which the swinging part of the bail passes, the bail being engaged with the sides of the box and closure, to hold the latter properly positioned upon the box, or to permit the closure when open to rest vertically against the outer face of the rear wall of the box.

854,245. LOADER. ERNEST N. SMITH, Burns, Kans. Filed Dec. 3, 1906. Serial No. 346,108.

Claim.—1. A loader, comprising a base, a pair of arms mounted to oscillate on said base, a platform carried by the free ends of said arms, said platform being provided with strips extending along and close to the arms and constituting protecting means therefor, and means for swinging the arms upwardly to raise the platform.

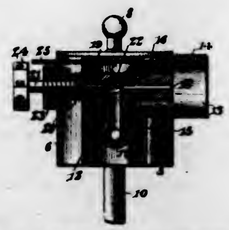
2. A loader, comprising a base embodying longitudinal sills and cross sills, a pair of arms mounted to oscillate on the longitudinal sills, a platform carried by the free ends of said arms, an actuating bar pivotally mounted at one end on a cross sill and adapted to swing in a vertical plane, brace rods connected to the free ends of the actuating bar

and extending oppositely therefrom, posts rising from the said cross sill, yokes pivotally mounted on said posts and connected to the other ends of said brace rods, link rods connecting the free end of said actuating bar with the re-



spective arms, and means for drawing the free end of said bar down toward the base, whereby to oscillate the arms and swing the platform upwardly.

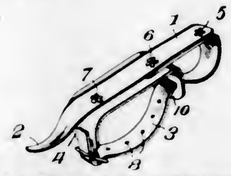
854,246. CARBURETER. JOHN W. SMITH, Aurora, Iowa, assignor to Aurora Manufacturing Company, Aurora, Ill., a Corporation of Illinois. Filed Apr. 26, 1906. Serial No. 313,820.



Claim.—1. In a carbureter, the combination with a hydrocarbon reservoir, of an air conduit comprising an elbow having an upright inlet arm, and a substantially horizontal discharge outlet arm for attachment to an engine, a hydrocarbon conducting pipe comprising an upright arm located centrally within the upright arm of the conduit and connected at its lower end to the reservoir, and a substantially horizontal arm located centrally within the horizontal arm of the conduit and terminating therein in a discharge nozzle, the bore of the upright hydrocarbon conducting pipe arm being of greater diameter than that of the horizontal arm to permit the free flow of hydrocarbon from the reservoir to said horizontal arm, and a valve controlling the passage of hydrocarbon through said horizontal arm.

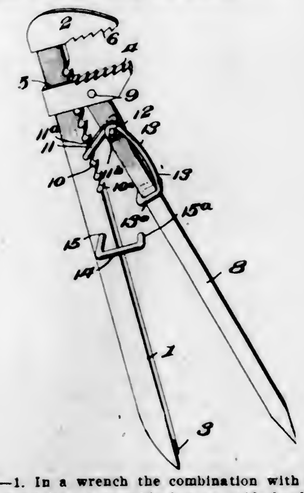
2. In a carbureter, the combination with a hydrocarbon reservoir, of an air conduit located alongside the same and comprising a substantially upright arm having an open lower end, and a substantially horizontal discharge outlet arm, a substantially T-shaped hydrocarbon conducting pipe having a substantially upright arm located within the upright arm of the air conduit and having an offset lower end connected to the lower portion of the reservoir, a substantially horizontal cross arm located at the upper end of the upper arm and extending in opposite directions within the horizontal arm of the air conduit, the inner end of said cross arm terminating in a nozzle, the outer end projecting from the side wall of the air conduit, and a needle valve located in the outer portion of the horizontal cross arm and controlling the passage of hydrocarbon through the nozzle, said valve having its outer end projecting from the exposed end of the horizontal conduit arm.

854,247. HUSKING-PEG. MARCELLUS K. SMITH and JOSEPH E. DAVIS, Ames, Iowa. Filed Oct. 23, 1906. Serial No. 340,176.



Claim.—In a husking peg the combination with a peg having a curved point at one end thereof; of a pair of straps, one of which is wider than the other, the wider strap extending from the center of the peg toward the curved end thereof, rivets directed through the wider strap to secure the same to the peg, a buckle on the end of the wider strap adjacent the curved point, a separating strap integral with the inner end of the wider strap having a slot therein to receive the narrower strap, said separating strap being independently movable of the narrower strap and at right angles to the peg when engaging the narrower strap, rivets to secure one end of the narrower strap to the peg, the secured end of the narrower strap extending below the inner end of the wider strap, the free end of the narrower strap adapted to engage the buckle on the wider strap to adjustably secure the free ends of the straps together.

854,248. WRENCH. NATHAN SMITH, Stevenville, Md. Filed Feb. 4, 1907. Serial No. 355,613.



Claim.—1. In a wrench the combination with a shank having a fixed jaw, a movable jaw on said shank and an

auxiliary shank for said movable jaw; of a latch on one shank adapted to engage the opposite shank and direct the movable jaw toward the fixed jaw said latch being yieldable between its two ends.

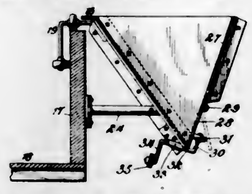
2. In a wrench the combination with a shank having a fixed jaw, a movable jaw slidably mounted on said shank, an auxiliary shank pivotally secured to said movable jaw and resilient means on the auxiliary shank adapted to engage the opposite shank and direct the movable jaw toward the fixed jaw said means being yieldable between its two ends.

3. In a wrench the combination with a shank having a fixed jaw at one end, a movable jaw slidably mounted on said shank, said jaws having teeth thereon, an auxiliary shank pivotally secured to the movable jaw, a resilient latch carried by the auxiliary shank and adapted to engage the opposite shank of said latch being yieldable between its two ends and an arm adapted to hold said latch under tension.

4. In a wrench the combination with a shank, a jaw at one end of said shank, a plurality of ledges in one edge of said shank, the bearing faces of which are semicircular, a movable jaw having a slot therein slidably mounted on said shank, said jaws having teeth on their meeting edges, an auxiliary shank having a curved upper end adapted to enter said slot, means to pivotally secure said auxiliary shank to the movable jaw, a latch carried by said auxiliary shank one end of which is directed through the auxiliary shank to form a pivot point for the latch while the opposite end thereof is adapted to engage the ledges on the main shank, a coiled section at the upper end of said latch, an arm extending from said coiled section and means to secure the free end of said arm to the auxiliary shank, said latch, coiled section and arm being formed of a continuous section of material.

5. In a wrench the combination with a shank having a fixed jaw at one end thereof; of a movable jaw on said shank, an auxiliary shank pivotally secured to said movable jaw, a resilient latch carried by said auxiliary shank and adapted to engage the main shank said latch being yieldable between its two ends, means to direct tension on said latch and a keeper carried by the main shank adapted to engage the auxiliary shank and hold the same in juxtaposition to the main shank.

854,249. CAR-CHUTE. CHARLES L. SPURLIN, Ensley, Ala., assignor of one-half to William H. Tharpe, Birmingham, Ala. Filed Oct. 9, 1906. Serial No. 328,151.



Claim.—1. A car chute provided with means for suspending it on the outside of the car above the ground, said means having vertically and horizontally disposed anti-friction rollers arranged to run, respectively, on the upper edge and inner face of the side of the car to move the chute from one point to another.

2. A car chute provided at the back with hangers arranged to engage the side of a car to support the chute on the outside of the latter at a point above the ground, and anti-friction rollers through which the hangers pass, said anti-friction rollers being arranged to run on the car.

3. A car chute provided with supporting hooks forming hangers and adapted to engage the upper edge of the side of a car, and anti-friction rollers mounted on the hooks and engaging the side of the car, said hooks being passed through the rollers and forming spindles for the same.

4. A car chute provided with supporting hooks consisting of horizontal and vertical arms, vertical rollers arranged on the horizontal arms to run on the upper edge of the side of the car, and horizontal rollers arranged on the vertical arms at the lower ends thereof and engaging the inner face of the side of the car.

5. A car chute having an inclined inner or rear wall and provided at the bottom with a door, means arranged at the top of the chute for mounting the same on a car, and horizontal braces or stays rigidly fixed at their front or outer ends to the chute and having their inner ends bearing against but having no connection with the side of the car, said chute when swung outwardly disengaging the braces from the car to permit the chute to slide along the latter.

6. A chute having its inner or rear wall inclined downwardly and forwardly, hangers arranged at the top of the chute for suspending the same from the side of a car, and a flange extending rearwardly from the upper edge of the rear wall of the chute and spaced from the hangers and bridging the space between the chute and the car.

7. A car chute having an inclined inner or rear wall and provided thereat with exterior flanges, means arranged at the top of the chute for hanging the same on the side of a car, and horizontal braces rigidly fixed at the front or outer ends of the said flanges and provided at their inner or rear ends with heads bearing against but not connected with the side of the car, said chute when swung outward disengaging the braces from the car to permit the chute to slide along the latter.

8. A car chute having an inclined inner or rear wall and provided thereat with exterior flanges, means arranged at the top of the chute for hanging the same on a car, and stays or braces having bifurcated ends straddling the flanges and secured to the same.

9. A chute provided at the bottom with a door, and a locking device having an arcuate movement on the door and provided with an anti-friction device engaging the door and adapted to permit the locking device to be easily moved out of engagement with the same.

10. A chute provided at the bottom with a door, and an oscillatory locking arm provided with an anti-friction device engaging the door and having an arcuate movement on the same.

11. A chute provided at the bottom with a door, and a locking device consisting of a shaft arranged at an angle to the door and provided at its ends with arms, one of the arms being arranged to engage the door and having an arcuate movement on the same.

12. A chute provided with a bottom door and a locking device consisting of a shaft having an arm provided with an anti-friction device engaging the door and having an arcuate movement on the same, and means for operating the shaft.

13. A chute provided at the bottom with a door, a plurality of shafts arranged at an angle to the door and having terminal arms, the arms at one end of the shafts being arranged to engage the door, and an operating device connected with the arms at the other end of the shafts.

14. A chute provided at the bottom with a door, shafts mounted on the chute and provided at their ends with arms, the arms at one end being arranged to engage the door, and an operating bar connecting the arms at the other end of the shafts.

15. A chute provided with an inclined wall and having a door at the lower portion thereof, said door being hinged at the top, and a locking device consisting of a shaft arranged at an angle to the door at the lower edge thereof and provided with a locking arm engaging the said door and having an arcuate movement on the same.

854,250. SASH-LOCK. WILLIAM STEPHENS, Redding, Cal. Filed Apr. 18, 1906. Serial No. 312,345.

Claim.—1. A sash lock comprising a case adapted to be set in a window casing and having a transverse channel adapted to aline with the parting strip of said casing, said case having slots formed therein, locking dogs mounted in said case and having toes normally disposed in the interior of said channel, means for actuating said dogs to advance said toes in said slots whereby they may engage the

sashes, said toes having each a projecting lip at the extremity thereof.

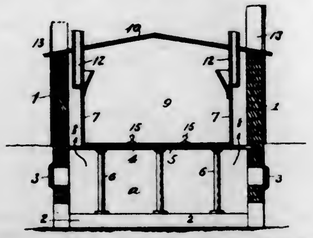
2. In combination, a window casing, a sash lock having a case set into said casing, a locking dog mounted in said case and having a laterally projecting toe normally disposed within said case, said toe having a projecting lip formed at the extremity thereof, a sash mounted in said casing and having a keeper set in the edge thereof, said dog being edapted to rotate with respect to said sash to engage said keeper, said keeper having a lip formed therein adjacent to said dog and affording means for locking said sash against lateral movement from the casement.



3. In combination, a window casing presenting beads and a parting strip therebetween, a lock case set in the jamb of said casing and having a transverse channel formed therein registering with said parting strip and constituting a continuation thereof, said case having slots therein extending through the wall of said channel, locking dogs mounted in said case and having toes normally lying within said channel and adapted to rotate into said slots, sashes guided between said beads and said parting strip, said sashes having keepers mounted in the edges thereof adjacent to said parting strip, said keepers having each a lip formed therein adjacent to the face of said casing, said toes having each a lip formed therein adapted to come into position behind the lip of the keeper engaged thereby, whereby said sashes are locked against lateral movement from said casing.

4. In combination, a case adapted to be attached to a window casing and having a transverse channel adapted to aline with the parting strip of said casing, dogs attached within said case and having toes normally disposed in said channel, keepers adapted to be attached to sashes adjacent to said parting strip, said keepers having transverse lips respectively, said case having slots permitting said toes to move into engagement with said keepers, said toes having lips at the edge thereof engaging behind said transverse lips respectively.

854,251. DRYING-KILN. WILLIAM E. STEPHENS, Wallisville, Tex. Filed Nov. 19, 1906. Serial No. 344,175.



Claim.—1. A drier for lumber employing a general inclosure, having a fire chamber and in its upper portion additional lateral inner walls, and a roof-member overlying said inner lateral walls and the corresponding inclosure walls, a drying chamber and lateral spaces or passages being thus formed the latter opening into the fire-chamber, said drying chamber having ventilating tubes or flues arranged within said lateral spaces for heating and opening thereinto and extending out through said roof.

2. A drier, employing a fire chamber, a general inclosure having roof provided with openings and inner additional lateral walls forming in connection with the corresponding inclosure walls lateral spaces or passages opening into the fire-chamber below, a drying chamber having a floor equipped with means for receiving the lumber or material carrying means, and ventilating tubes opening at their lower ends through said inner lateral walls and communicating with said drying chamber, said ventilating tubes delivering out through the roof of said general inclosure, and said lateral spaces or passages opening upward through openings or outlets formed in said roof.

3. A drier, employing an upper drying chamber having its roof provided with openings and its floor upheld by transverse bars secured at their ends in the outer lateral walls of the drier, and uprights or posts placed under said transverse bars, inner additional lateral walls forming in connection with the corresponding walls of the drier lateral heating spaces opening into the fire-chamber below, and opening upward through openings in the inclosure-roof, and ventilating tubes arranged within said lateral heating spaces or passages and opening out through said roof and communicating with said drying chamber.

854,252. RAIL-BRACE. RICHARD C. STEVENS, Heflin, Ala., assignor of one-half to Richard D. Stevens, Heflin, Ala. Filed Oct. 25, 1906. Serial No. 340,555.



Claim.—1. A rail brace comprising a gage bar adapted to engage the side face of a tie and angularly disposed portions at its opposite ends to engage the upper face thereof, and means extended upward from the end portions to engage the outer rail faces.

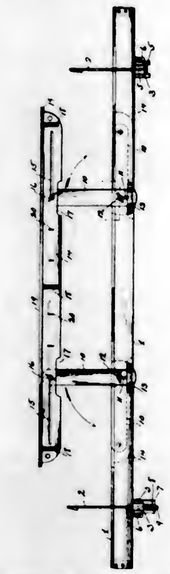
2. A rail brace comprising a gage bar adapted to engage the side face of a tie and angularly disposed portions at its opposite ends to engage the upper face thereof, means extended upward from the end portions to engage the outer rail faces, and a clamping plate having an angularly disposed portion to rest upon the upper face of the tie and means to engage the inner face of the rails.

3. A rail brace comprising a vertically disposed gage bar adapted to engage the side face of a tie and having at its opposite ends flanges each bent upon itself to lie in a parallel plane to the bar and upon the outer rail flanges, and means mounted upon said bar to engage the inner flanges of the rails.

4. A rail brace comprising a bar having end flanges bent at an angle thereto and each flange bent upon itself to form a flange at an angle to the end flange disposed parallel with the body of the bar and having a face to engage the rail web.

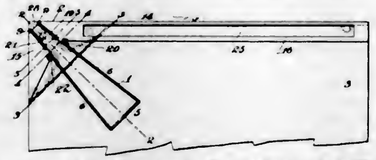
5. A rail brace comprising a gage bar adapted for application to the side of a tie and having end flanges disposed to engage the top thereof, and a clamping plate mounted upon said bar and having a flange disposed to engage the top of the tie.

854,253. ATTACHMENT TO SWINGING SCAFFOLDS. WILLIAM B. STOOPS, Coraopolis, Pa., assignor of one-fourth to George W. Scott and one-fourth to John M. McCabe, Coraopolis, Pa. Filed May 3, 1906. Serial No. 314,999.



Claim.—The combination with a swinging scaffold including a platform and spaced side members, transverse members bearing beneath said side members and provided with longitudinal slots, and supports bearing upon opposite sides of said transverse members and with vertically extending ends having rollers above and below the supporting members, whereby the platform is maintained in horizontal position.

854,254. CLASP. EDWARD K. SUMERWELL, East Orange, N. J. Filed Feb. 6, 1905. Serial No. 244,362.



Claim.—1. A clasp formed of a backing of cardboard, and a metal fitting with a spring wire finger, the ends of the wire being retained in place by being clamped between the cardboard and the metal and embedded in the former.

2. A clasp formed of a backing of cardboard, and a metal fitting with a spring wire finger, the wire being clamped between the cardboard and the metal and embedded in the former, a portion of the metal being bent in curved form to serve as a locking means for the wire.

3. In a clasp, the combination with a backing, of a fitting of sheet metal attached to a corner thereof and having a body portion and two flaps at right angles to each other the said flaps being bent over at an angle to the body portion to form a shoulder for guiding the papers within the clasp, a spring wire finger secured between the backing and the sheet metal fitting, the said flaps having ear portions which engage with and guide the wire.

4. In a clasp, the combination with a backing, of a fitting of sheet metal attached to a corner thereof and having a body portion and two flaps at right angles to each other, the said flaps being bent over at an angle to the body portion to form a shoulder for guiding the papers within the clasp, and a spring wire finger, the said flaps having ears, the said ears being straight, to engage with the wire and serve as guides.

5. In a clasp, the combination with a backing, of a fitting of sheet metal having a body portion and flaps, which are bent over at an angle to the body portion to form a shoulder for guiding the papers within the clasp, and a spring wire finger, the said flaps having ears which engage with the wire finger, the ears being curved to engage with the wire and serve as locks.

6. In a clasp, the combination with a backing, of a sheet metal fitting, having a body portion and flaps, the said flaps being bent over at an angle to the body portion to form a shoulder for guiding the papers within the clasp, and a spring wire finger, the said flaps having straight ears which engage with the wire finger and serve as guides, and other ears which are curved, and engage with the wire fingers and serve as locks.

7. In a clasp of sheet metal, the combination with a backing and a fitting of sheet metal, the said fitting having a flap bent at an angle to the body portion of the fitting, the top of the flap being turned over forming a support for a card, a portion of the metal of the flap being cut away to expose the card, a card, and a spring metal finger secured between the fitting and backing.

8. In a clasp, the combination with a rectangular cardboard backing, of a metal fitting attached to it extending across the top of the backing forming a guide for the papers, and a spring wire finger secured at one corner of the backing and extending diagonally across it.

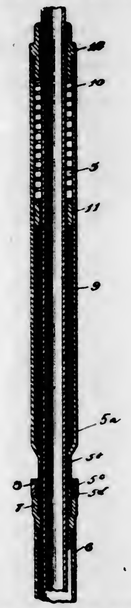
9. In a clasp, the combination with a rectangular cardboard backing, of a metal fitting attached to it extending across the top of the backing forming a guide for the papers, and a spring wire finger secured at one corner of the backing and extending diagonally across it, the wire finger being curved upward from its free portion so as to form an opening within which the thumb of one hand of the operator may be extended for the purpose of lifting up the wire finger.

10. In a clasp, the combination with a rectangular cardboard backing, of a metal fitting attached to it extending across the top of the backing forming a guide for the papers, and a spring wire fitting secured at one corner of the backing and extending diagonally across it, the wire finger being curved upward from its free portion so as to form an opening within which the thumb of one hand of the operator may be extended for the purpose of lifting up the wire finger, the wire finger being engaged by a lock on the fitting to hold it downward or upward free from contact with the papers.

854,255. OIL-WELL PUMP. FRANK H. TAYLOR, Toronto, Ohio. Filed Oct. 17, 1905. Serial No. 283,155.

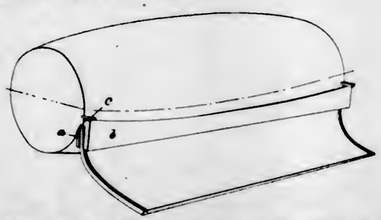
Claim.—A pump of the character described, adapted to be suspended in well tubing, the body of the pump being constructed in upper and lower sections, a hollow plunger rod mounted to reciprocate in said sections and provided with intake and outlet valves, a foot valve in the lower section of the pump body, the upper section of the pump body being contracted near its lower end and the offset to produce the contracted portion constituting the means for suspending the pump within the tube, said upper section snugly fitting the well tubing, while the lower section is adapted to be spaced therefrom, the upper section forming a packing chamber around the plunger rod, a packing in said chamber, a stuffing box secured to the upper end of the upper section, the packing chamber being reduced at its lower end by reason of the said contracted portion of the upper section, and the said contracted portion being formed with a downwardly facing shoulder, and a threaded portion beyond said shoulder, a coupling sleeve connect-

ing the lower section of the pump body with the said threaded extremity of said contracted portion of the upper section, and a cup clamped between the upper edge of said sleeve and the said shoulder, said cup being adapted to engage the walls of the tubing and extend upwardly from



the said coupling with its free edge uppermost, and another cup secured to the lower end of the lower section of the pump body and adapted to engage the walls of the tubing, as and for the purpose set forth.

854,256. MACHINE FOR CUTTING BARREL-VENEERS. FREDERICK THORNTON, Huntington, W. Va. Filed Oct. 22, 1906. Serial No. 340,012.

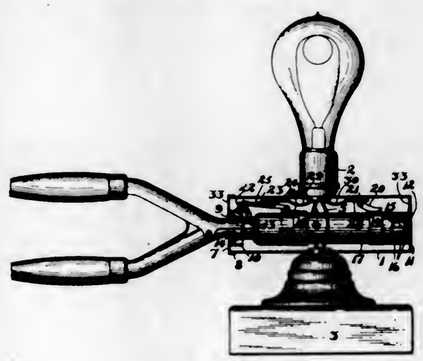


Claim.—1. Means for cutting veneer barrel blanks embodying a straight flat veneer lathe knife having its upper edge sharpened to a cutting edge and curving downwardly from both ends toward its middle.

2. Means for cutting a barrel blank veneer embodying a straight flat veneer lathe knife having its upper edge sharpened to a cutting edge and curved downwardly toward its middle from both its ends, the bevel of the cutting edge facing the log and engaging it at a point below its longitudinal center.

3. An apparatus for cutting a longitudinally curved barrel-body veneer embodying a presser bar having its log-engaging edge curved downwardly from its ends toward its middle and a veneer lathe knife made straight and flat and having its upper cutting edge curved correspondingly to the upper edge of the presser bar, substantially as set forth.

854,257. ELECTRIC HEATER FOR CURLING-IRONS. FREDERICK A. TOBLER, San Francisco, Cal. Filed Oct. 4, 1906. Serial No. 337,354.



Claim.—1. A portable electric curling iron heater, comprising a casing substantially secured to a marble or other suitable heat resisting base, a socket secured to said casing, and adapted to engage an incandescent lamp, electrical conductors from the socket to the base, a heating chamber within the casing, and a resistance coil around the chamber, and connected in shunt with the electrical terminals in either the socket or the base; substantially as described.

2. An electric curling iron heater, comprising a transversely disposed casing, an inverted socket mounted thereon, and a suitable base in cross-section with said socket substantially secured to the casing, a heating chamber within the casing, and a coil around the same, means whereby the heating chamber and its surrounding coil may suspend longitudinally within the casing, said means comprising a boss 12 upon the disk 11 and a transverse collar 10 on the escutcheon 7; all, as and for the purpose specified.

3. An electric curling iron heater, comprising a casing, and a socket secured thereto, and the whole mounted upon a suitable base, a heating chamber within said casing, and a heating coil around the same, and suitable contact anvils fixed about the periphery of said coil in which the respective terminals of the coil find permanent lodgment; substantially as specified.

4. An electric curling iron heater, comprising a casing substantially cylindrical in form, having at one end a guiding or centering device, and at the other end, an escutcheon containing an aperture, a heating chamber contacting on the aperture in the escutcheon, the other end of the chamber adapted to be centered by said centering device, a resistance coil about said chamber, and suitable contact anvils fixed about the periphery of said coil, and means whereby said contact anvils are respectively brought into contacting relation with the source of electricity by the provision of contact shoes 20 and 26; substantially as specified.

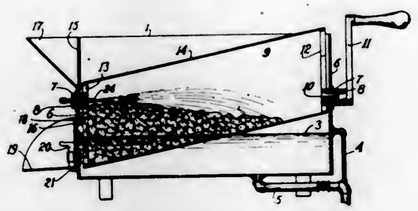
5. An electric curling iron heater, comprising a casing mounted upon a heat resisting base, a socket for a lamp secured to said casing, connecting wires between the terminals of the socket and the base, a chamber adapted to receive the iron to be heated, a resistance coil around said chamber, and means for closing the circuit through the chamber to one of said pairs of terminals, said means comprising an element arranged in the path of the iron to be heated when the latter is being inserted in the chamber, and adapted to be moved thereby to close said circuit; substantially as specified.

6. An electric curling iron heater, comprising a casing, a socket to engage a lamp, a suitable base supporting the whole and connecting with the source of electricity, a heating chamber and a resistance coil about said chamber,

suitable contact anvils fixed about the periphery of said coil, means whereby said chamber and its resistance may suspend in unfixed relation longitudinally within the casing, and in which position contact anvil 19 and shoe 20 are normally brought into position of closed circuit, while contact anvil 18 and shoe 26 are normally held in position of open circuit, means for closing the open circuit through the heating chamber, said means comprising an element arranged in the path of the iron to be heated when the latter is being inserted in the heating chamber and adapted to be moved thereby to close said circuit; substantially as specified.

7. An electric curling iron heater, comprising a casing, a socket to engage a lamp, a heat resisting base in cross-section with said socket, and connecting with the source of electricity, a heating chamber and a resistance coil, means for mounting the chamber and its surrounding coil longitudinally within the casing, a closed circuit terminal and an open circuit terminal, means for closing the open circuit through the chamber by the insertion, within the chamber of the iron to be heated, a pair of laterally projecting hooks secured adjacent to the ends of the casing; substantially as specified.

854,258. VEGETABLE-PEELING APPARATUS. WILLIAM L. WEBER, Boston, Mass. Filed Aug. 17, 1906. Serial No. 330,941.



Claim.—1. A cylindrical receptacle having decorticating surfaced walls and means to rotate it about an axis oblique to the axis of the cylinder.

2. A cylindrical receptacle having decorticating surfaced walls, and means to rotate the receptacle about an axis oblique to the axis of the cylinder, the cylinder being closed at its ends by walls perpendicular to the axis of rotation.

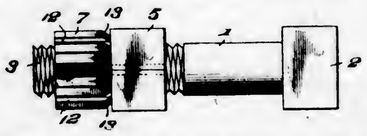
3. In apparatus of the class described, a cylindrical receptacle having open ends and a free space for contents, and having decorticating surfaced walls, and means to rotate the receptacle about an axis oblique to its own axis, in combination with stationary walls set perpendicular to the axis of rotation, closing said open ends and exposed to abrasive contact with the contents of the receptacle.

854,259. INTERCHANGEABLE UMBRELLA-HANDLE. JULIUS F. WITT, Chicago, Ill. Filed Jan. 23, 1907. Serial No. 353,718.

Claim.—In an umbrella, the combination with a handle, of a sleeve secured therein, said sleeve having a longitudinal slot formed therein and a longitudinally projecting tongue on its free end, a longitudinally slotted tubular staff telescoping said sleeve, a spring-pressed dog in said staff adapted to engage the registering longitudinal slots of said staff and sleeve whereby to lock said parts against relative longitudinal movement, and a collar secured on said staff and provided with a longitudinal notch adapted for engagement with the projecting tongue of said sleeve whereby to lock said sleeve and staff against relative rotation, substantially as described.



854,260. NUT-LOCK. GROVER C. WOODDELL, Linwood, W. Va. Filed Nov. 24, 1906. Serial No. 344,811.



Claim.—1. In a nut lock, a binding nut having a channel therein, and lips adapted to form one wall of said channel, a locking bar, one end of which is adapted to enter said channel, corrugations on said locking bar adapted to engage said lips when directed together under pressure and fix the locking bar with the binding nut, and a locking nut having a plurality of notches around its periphery adapted to receive the free end of said locking bar and secure the nuts together.

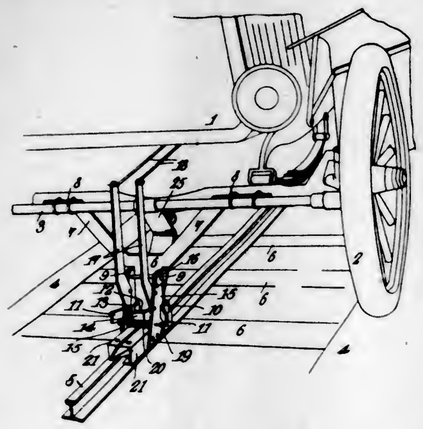
2. In a nut lock, the combination with a binding nut having a channel therein; a locking nut, the inner end of which is tapered, a locking bar, one end of which is adapted to engage the notches in the locking nut and the opposite end thereof to enter the channel in the binding nut, and means to rigidly secure said locking bar in the channel.

3. The combination with a binding nut and a locking nut therefor; of a locking bar, one end of which is secured to said binding nut and the opposite end thereof directed into notches formed on the periphery of said binding nut, and a depending tongue at the free end of said locking bar adapted to engage recesses in the end of the locking nut and hold said bar into engagement with said notches said locking nut having its inner end tapered whereby the locking bar may be released from the notches in the locking nut without disengaging the same from the channel in the binding nut.

854,261. MOTOR-CAR TRAFFIC SYSTEM. ROBERT T. YATES, Lytton Springs, Tex. Filed Feb. 5, 1907. Serial No. 355,910.

Claim.—1. A motor car traffic system comprising a guide-rail for directing the line of travel of the motor car.

a clamp for the same comprising a suitable supporting frame, clamping jaws, pivotal supports for the same, and converging guides for said jaws for moving them into operative relation with the guide rail.



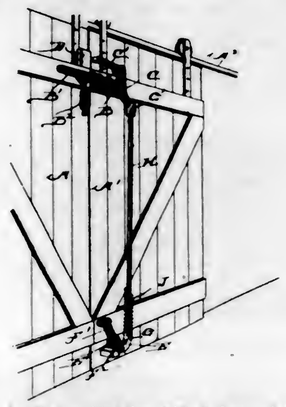
2. A motor car traffic system comprising a guide-rail for the motor car and means for clamping the same to the guide-rail consisting of a suitable frame attached to the car, anti-friction clamp jaws arranged to engage the rail-tread, pivotal hangers for said jaws, a spring tending to separate said jaws, and guiding means for the jaw hangers carried by said frame and constructed to force said jaws toward each other when the hangers are moved rearwardly.

3. A motor car traffic system comprising a guide-rail for the motor car and a clamp for coupling the motor car to the guide-rail comprising a suitable supporting frame connected to the motor car, clamp jaws provided with anti-friction roller-engaging surfaces, hanger plates carrying said clamp jaws and pivotally supported from the aforesaid frame, a spring tending to separate said hangers and the jaws carried thereby, pockets formed on the frame for receiving the hanger plates when the jaws are in operative relation to the rail, and guides leading to said pockets and causing, in conjunction with the spring, a lateral movement of the clamp jaws relative to the rail.

4. A motor car traffic system comprising a guide-rail for the motor car and a clamp mechanism for coupling the motor car to the guide rail consisting of clamp jaws provided with anti-friction rollers with grooved engaging faces for the rail, pointed deflector fingers formed on said jaws and coacting to remove obstructions from the rail, pivotal hangers for said jaws capable of movement around their pivots and laterally thereto, a frame supporting the clamping mechanism and attached to the motor vehicle, pockets formed on the frame, guides leading to said pockets, and a spring acting on said hangers and tending to move the same laterally away from each other.

5. A motor car traffic system comprising a guide rail and a clamp for coupling the motor car to said rail consisting of a suitable frame coupled to a portion of the steering gear of the motor car, pockets with divergent mouths carried by said frame, hanger plates also carried by said frame, pivotal supports for said hanger plates permitting the said hanger plates to swing in the direction of travel of the motor car and also laterally thereto, clamp jaws carried by said hanger plates and provided with grooved roller clamping faces, coacting deflector fingers on said jaws for removing obstructions from the rail, a spring acting on the jaw-carrying hangers and tending to move the same laterally, and connections from the clamp to the motor car body for manipulating said clamp.

854,262. DEVICE TO OPEN DOORS. JAMES M. YOUNG, Spring Creek, Pa., assignor of one-half to W. J. Young, Spring Creek, Pa. Filed Sept. 7, 1906. Serial No. 333,637.

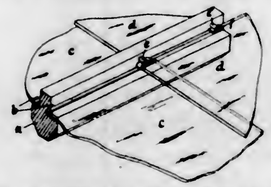


Claim.—1. The combination with a door, of a keeper, a latch carried by the door adapted to engage the keeper a lever carried by the latch, a foot lever carried by the door, means connecting the foot lever and the latch and a fixed object arranged adjacent the door in position to be struck by the lever carried by the latch.

2. The combination with a door, of a latch carried by the door, an arm carried by the latch, a lever pivoted to said arm, a keeper adapted to be engaged by the latch, a rod connected to said arm, and a foot lever pivotally connected to said rod, the first mentioned lever striking a fixed object adjacent the door when the foot lever is depressed and the latch disengaged from the keeper.

3. A device of the kind described comprising a shaft journaled in a door, foot levers arranged upon its ends of said shaft, a latch carried by the inner face of the door, a keeper adapted to be engaged by the latch, an arm carried by the latch, a lever pivoted to the upper end of said arm, a block secured adjacent the keeper adapted to be struck by said lever, and a rod pivotally connected at its upper end to the lower end of said arm and at its lower end to the inner foot lever.

854,263. GLAZIER'S TACK. ROBERT C. ZEPNICK, Milwaukee, Wis. Filed Apr. 1, 1905. Serial No. 253,228.



Claim.—1. A glazier's tack comprising a nail and an abutment-piece having a surface parallel thereto and an eye through which said nail passes.

2. A glazier's tack comprising a nail and a strip of sheet metal having a tubular eye through which said nail passes.

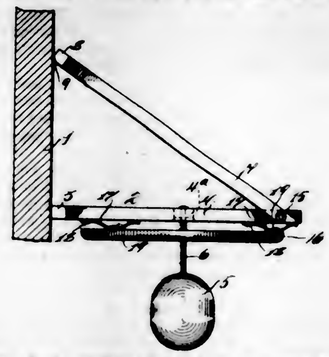
3. A glazier's tack comprising a strip of metal having one end bent back upon itself and an eye formed thereon, and a nail passing through said eye parallel with the surface of the metal strip.

4. A glazier's tack comprising a strip of sheet metal having an eye formed thereon, and a nail passing through said eye parallel to the plane of the strip and having a head covering the end of said eye and excluding moisture from the interior thereof.

5. A glazier's tack comprising a member having a flat abutment-surface and a driving point having its sides parallel and secured to said member parallel to and offset from said surface.

6. A glazier's tack comprising a flat abutment-surface and a driving point substantially parallel to and having a slidable engagement with said surface.

854,264. PUNCHING-BAG PLATFORM. LEO BERGMANN, Newark, N. J. Filed July 14, 1906. Serial No. 326,173.



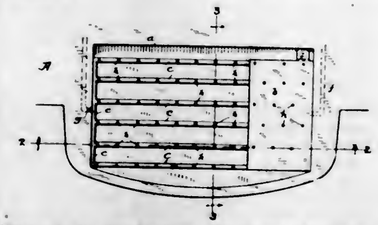
Claim.—1. A punching-bag platform, comprising two horizontally disposed parallel frames and springs interposed therebetween, substantially as described.

2. A punching-bag platform, comprising a frame, means for attaching the same to a support, flat springs secured at their ends to said frame, and a receiver carried by said springs.

3. A punching-bag platform adapted for attachment to a support, comprising a horizontally disposed frame, a brace detachably secured to said frame and adapted to contact said support, and a receiver supported by springs upon said frame, substantially as described.

4. A punching-bag platform, comprising arms, angularly disposed cross-braces connecting said arms, shock-absorbers attached to said cross-braces, a receiver supported by the latter, and means for attaching the platform to a support.

854,265. THEATRICAL APPARATUS. HARRY L. BOWDOIN, New York, N. Y. Filed Aug. 13, 1906. Serial No. 330,484.



Claim.—1. In combination with a stage or platform, a tank for containing water, and air containing means secured therein below the water line and open at the lower side thereof, said means being adapted to enable a person in the water to place his head therein for breathing purposes; substantially as set forth.

2. In combination with a stage or platform, a tank for containing water, air containing means secured therein below the water line and open at the lower side thereof, said means being adapted to enable a person in the water to place his head therein for breathing purposes, and means for supplying air to said containing means and permitting the escape of air therefrom; substantially as set forth.

3. The stage or platform, and the tank adapted to hold water, combined with an elongated air reservoir secured in said tank below the water line and open at its lower side, whereby a performer entering the water may be enabled to place his head within said reservoir for breathing purposes; substantially as set forth.

4. The tank for containing water, and a series of air reservoirs secured therein below the level of the water and open at their lower sides to receive the heads of performers, for breathing purposes; substantially as set forth.

5. The tank for containing water, and a series of air reservoirs secured therein below the level of the water and open at their lower sides to receive the heads of performers, for breathing purposes, said reservoirs having lights in their tops; substantially as set forth.

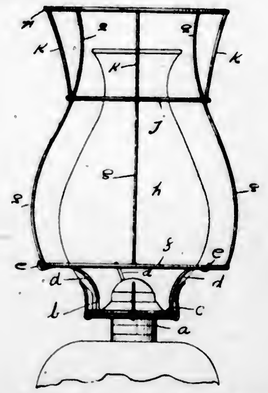
6. In combination with a stage or platform, a tank for containing water, and air containing means secured therein below the water line and open at the lower side thereof, said means being adapted to enable a person in the water to place his head therein for breathing purposes and having a light at the top thereof; substantially as set forth.

7. The tank for containing water, the box air-reservoir therein and having an exit therefrom and being open at its lower side, and a series of air-reservoirs secured in said tank and open at their lower sides; substantially as and for the purposes set forth.

8. The tank for containing water, the box air-reservoir therein open at its lower side, and a series of air-reservoirs secured in said tank and open at their lower sides; substantially as and for the purposes set forth.

9. The tank for containing water, the box air-reservoir therein open at its lower side, and a series of elongated air-reservoirs extending from the side of said box and open at their lower sides; substantially as and for the purposes set forth.

854,266. HEATING-FRAME FOR LAMPS. ZETTA L. BROOKS, Des Moines, Iowa. Filed Mar. 15, 1906. Serial No. 306,170.

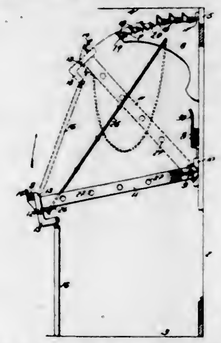


Claim.—1. A device for supporting articles to be heated over a lamp chimney consisting of a tripod comprising a base-ring and supporting wires connected at their lower ends to the said ring and extended upward and outward therefrom and provided on their upper ends with open loops and a frame-work comprising a base-ring adapted to rest in said open loops, upright wires attached to the latter ring at their lower end and connected with a ring at their upper ends, branching wires extending from near the top of the latter, a ring surrounding the frame and connected therewith at the base of the branching wires, a ring at the top of the latter, and wire-netting extended over the upper rings.

2. A device for supporting articles to be heated over a

lamp comprising a base ring and its upward and outwardly curved supports having open loops at their upper ends, and a framework consisting of a base and top ring, suitably bent vertical wires extending between said rings, an intermediate ring connected with the framework, and wire netting covering the top ring, the base ring of the frame being adapted to be supported in the said open loops.

854,267. CLOTHES-DRYING DEVICE. AMASA M. BULLOCK, Vancouver, British Columbia, Canada. Filed Jan. 16, 1906. Serial No. 296,302.



Claim.—1. In a device of the class described, means secured to the wall of a room adjacent the ceiling for holding clothes carrying rods, means for transferring clothes carrying rods from one position and depositing them on the rod receiving means, said last named means comprising arms pivotally mounted to the wall below the rod receiving means, means for holding a clothes carrying rod toward the ends of such arms, and means for elevating the free end of the arms to move the clothes carrying rods over the rod receiving means, and for releasing the hold on the rod and depositing it on the rod receiving means.

2. In an apparatus of the class described, notched rod receiving brackets secured to the wall of a room toward the ceiling, means for depositing clothes carrying rods in the notches of the rod receiving means, said depositing means comprising arms pivotally mounted to the wall of the room about mid-height, an upward projection on the end of said arms, an L-shaped lever pivotally mounted to the arms, the upper end of which lever serves to hold a clothes carrying rod against the upward projection, struts pivotally connected to the lower end of each lever for supporting the arms at the required height from the floor and for affording a means for elevating the free ends of the arms and releasing the rod when desired, substantially as shown and described.

3. In an apparatus of the class described, notched brackets for holding clothes carrying rods, means for transferring clothes carrying rods onto said brackets, checks secured to said brackets for arresting the movement of a rod on the transferring means over a vacant groove in the bracket, said checks comprising triangular pieces pivotally mounted to the sides of the brackets, one angle of each check projecting into the alinement of the further groove so that when a rod occupies that groove the other edge of the triangle will be elevated and will project into the path of a rod on the transferring means and form a check to arrest the movement of such rod, and a stop pin to limit the movement of each triangular check.

4. In a device of the class described, the combination with clothes rod carrying brackets secured to the wall of a room toward the ceiling, a shaft mounted in bearings secured to the wall beneath the brackets, arms secured to the shaft in alinement with one another, and means for supporting the arms at any desired height, such means comprising knotted cords secured to the bracket above and a cleat on each arm adapted to receive the cord but through which a knot will not pass.

5. An apparatus of the class described, comprising rod receiving racks, and means for transferring clothes carrying rods from one position and depositing them on the rod receiving racks, means on the rack for guiding the clothes carrying rods into position thereon, substantially as shown and described.

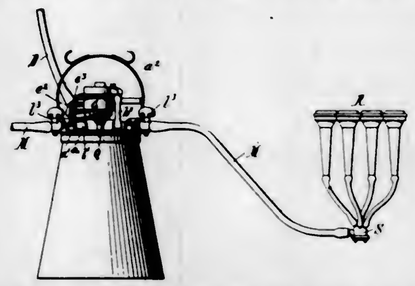
6. In a device of the class described; uprights secured to the wall of a room, brackets toward the upper end of these uprights, arms pivotally mounted toward the lower part of the uprights, means for holding a clothes carrying rod toward the end of the pivotally mounted arms, means for supporting the free end of the arms at a desired height from the ground, such means comprising a strut flexibly connected to the rod holding means toward the end of each arm and that may be used for elevating the arms and for depositing a rod thereon on the brackets.

7. In a device of the class described, the combination with rod receiving racks, of means mounted below the rod receiving racks for transferring clothes carrying rods from beneath the racks and depositing them on the rod carrying racks, substantially as shown and described.

8. In a device of the class described, the combination with rod receiving racks, of means for transferring clothes carrying rods from one position and depositing them on the rod receiving racks, said means comprising arms pivotally mounted below the racks, means for holding a clothes carrying rod toward the ends of said arms, and means for elevating the other ends of the arms over the racks, for releasing the hold on the rod, and depositing it on the racks, substantially as shown and described.

9. In a device of the class described, means for transferring clothes carrying rods from one position to another, said means comprising pivotally mounted arms, means for holding a clothes carrying rod toward the ends of such arms, and means for elevating the other ends of the arms, for releasing the hold on the rod and depositing it on a suitable receiver, substantially as shown and described.

854,268. MILKING-MACHINE. LOOMIS BURRELL, Little Falls, N. Y., assignor to D. H. Burrell & Company, Little Falls, N. Y. Filed Jan. 12, 1906. Serial No. 295,716.



Claim.—1. In a milking machine, the combination of a milk receiving vessel, teat cups connected therewith, a suction conduit which is connected with said vessel and to which suction is applied continuously, and a filter arranged in said conduit and operating to intercept liquid particles which are carried on the air drawn from the vessel into the suction conduit, the suction resisting the return of the intercepted particles to the receiving vessel, substantially as set forth.

2. In a milking machine, the combination of a pulsator valve having an air port, and a valve cylinder having an air inlet port and a milk port, the air port in the valve being arranged to place the air inlet port of the cylinder in communication with said milk port, and the air inlet port of the cylinder having a restricted inlet which communicates directly and without the intervention of a valve with the milk port of the cylinder through the air port of the pulsator valve, substantially as set forth.

3. The combination of a milk vessel provided with a valve cylinder having a milk port and having in its side a restricted air inlet which communicates directly and without the intervention of a valve with the outer air, and a pulsator valve which is provided with an air port arranged to place the air inlet of the cylinder in communication with said milk port, substantially as set forth.

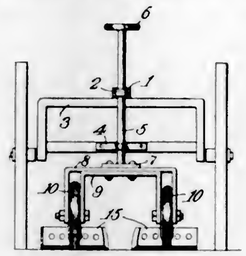
4. In a milking machine, the combination of a milk receiving vessel having a removable cover, a pulsator valve and cylinder arranged upon said cover, a milk pipe connected with said valve cylinder, teat cups connected with said milk pipe, and a restricted air inlet formed on said valve cylinder, substantially as set forth.

5. In a milking machine, the combination of a pulsator valve, an inlet for admitting the external air to the milk passage, and a filter which covers said inlet and through which the air is compelled to pass, substantially as set forth.

6. In a milking machine, the combination of a pulsator valve, a cylinder in which the same is arranged and which is provided with an air inlet for admitting the external air through said valve to the milk passage, and a filter which covers said inlet, substantially as set forth.

7. In a milking machine, the combination of a milk receiving vessel having a removable cover, a pulsator valve and cylinder arranged upon said cover, said cylinder being provided with an inlet for admitting the external air, and a filter which is secured to said inlet, substantially as set forth.

854,269. COTTON-CHOPPER. DANIEL A. CABLE, Bonami, La. Filed Oct. 1, 1906. Serial No. 336,895.



Claim.—1. A cutting implement comprising a shaft journaled for rotation, an arch member carried by the shaft, ground wheels journaled to the arch member, and cutting blades attached to the arch member in advance of the ground wheels.

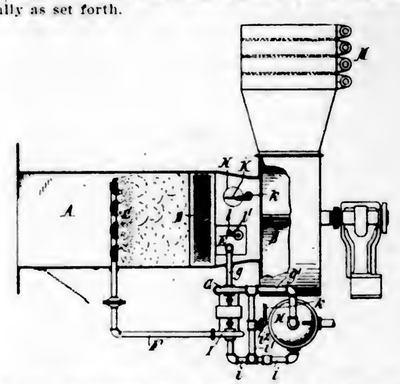
2. A cutting implement comprising a journaled shaft, an arch member attached thereto, ground wheels supporting said arch member, said arch member having horizontally-disposed portions, and cutting blades mounted upon said horizontal portions and being adjustable longitudinally thereof.

3. A cutting implement comprising a journaled shaft, an arch member attached thereto, ground wheels supporting said arch member, said arch member having horizontal portions, blocks adjustably attached to said horizontal portions, and laterally adjustable cutting blades carried by said blocks.

854,270. METHOD OF HEATING AND HUMIDIFYING AIR. WILLIS H. CARRIER, Buffalo, N. Y., assignor to Buffalo Forge Company, Buffalo, N. Y. Filed July 16, 1906. Serial No. 326,328.

Claim.—1. The herein described method of humidifying air, consisting in causing an intimate contact of the air with water heated to a temperature above that of the air and below the boiling point, and automatically regulating the temperature of the water to maintain a practically constant temperature of the air, substantially as set forth.

2. The herein described method of heating air, consisting in spraying into the air water heated to a temperature above that of the air and below the boiling point, and automatically varying the temperature of the water to maintain a practically constant temperature of the air by means controlled by the temperature of the air, substantially as set forth.



3. The herein described method of heating and humidifying air, consisting in causing an intimate contact of the air with water heated to a temperature above that of the air and below the boiling point, and automatically varying the temperature of the water to maintain a practically constant temperature of the air by means controlled by the temperature of the air, substantially as set forth.

4. The herein described method of regulating the absolute humidity of air, consisting in spraying into the air water heated to a temperature above that of the air and below the boiling point, and regulating the temperature of the water by means controlled by the temperature of the humidified air, substantially as set forth.

5. The herein described method of regulating the absolute humidity of air, consisting in spraying into the air water heated to a temperature above that of the air and below the boiling point, separating the free water from the air and regulating the temperature of the water by means controlled by the temperature of the humidified air, substantially as set forth.

6. The herein described method of regulating the absolute humidity of air, consisting in spraying into the air water heated to a temperature above that of the air and below the boiling point, separating the free water from the air and regulating the temperature of the water by a thermostatic device influenced by the humidified air, substantially as set forth.

7. The herein described method of regulating the relative humidity of air, consisting in saturating the air with vapor by causing an intimate contact of the air with water heated to a temperature above that of the air and below the boiling point, regulating the temperature of the water by a thermostatic device influenced by the humidified air, and then changing the temperature of the air, substantially as set forth.

8. The herein described method of regulating the absolute humidity of air, consisting in spraying into the air water heated to a temperature above that of the air and below the boiling point, and regulating the temperature of the water by a thermostatic device enveloped by moisture and influenced by the humidified air, substantially as set forth.

854,271. FIGURE TOY. WILLIAM H. CHANDLEE, Washington, D. C. Filed Mar. 30, 1906. Serial No. 308,962.

Claim.—1. A device of the class described comprising end sections, an intermediate section, the several sections being overlapped, and a pivot member including end portions engaged one in each of the end sections and the intermediate section for pivotal movement of the sections with respect to each other.

2. A device of the class described comprising end sections, an intermediate section, pivots connecting the end

sections with the intermediate section, and rigid connections between the pivots.

3. A device of the class described comprising end sections, an intermediate section, the several sections being overlapped, and a pivot member having its end portions engaged in the end sections respectively and in the overlapped parts of the intermediate section, the central portion of the pivot member being rigid.



4. A device of the class described comprising end sections, an overlapping intermediate section, and a pivot member engaged at its ends through the first named sections and intermediate section, for pivotal movement of the sections with respect to each other, said pivot member having portions lying at the opposite sides of the end sections from the central section.

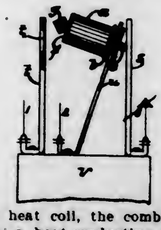
5. A device of the class described comprising end sections, and an intermediate section connected with the end sections for movement of said end sections laterally with respect to each other, and for pivotal movement of said end sections with respect to the intermediate section.

6. A device of the class described comprising end sections and an intermediate section, the several sections being overlapped, and a staple having its end portions engaged through the end sections respectively and the corresponding overlapping portions of the intermediate section, to pivotally connect said sections.

7. A jointed doll comprising separate members overlapped, a pivot member engaged in said overlapped members, and a clothing member attached to one of the first named members and overlapping the other of said first named members.

8. A jointed doll comprising separate members overlapped, a pivot member engaged in the overlapping portions of the first named members, and a flap secured to one of the first named members and extending over the other of said members and the pivot member.

854,272. HEAT-COIL. FRANK B. COOK, Chicago, Ill. Filed Nov. 7, 1903. Serial No. 180,200.



Claim.—1. In a heat coil, the combination of a heat-producing member, a heat-conducting member, a fusible material securing the heat-conducting member to another conducting member, and means apart from the heat coil, by which the members of the heat coil are restored to their normal, relative position, after the fusible material has been softened.

2. In a heat coil, the combination of a heat-producing member, a heat-conducting member, a fusible material, a centrally-bored, conducting member secured to the heat-conducting member by the fusible material, and means apart from the heat coil, whereby the members of the heat coil are restored to their normal, relative position, after the fusible material has been softened.

3. In a heat coil, the combination of a heat-producing member, a heat-conducting member, a centrally-bored, conducting member, through which the heat-conducting member passes, and a fusible material which secures the heat-conducting member to the centrally-bored, conducting member, as described.

4. In a heat coil, the combination of a heat-producing member, a heat-conducting member, a centrally-bored, conducting member, through which the heat-conducting member passes, a fusible material by which the heat-conducting member is normally secured to the centrally-bored, conducting member, and means whereby the members of the heat coil are restored to their normal, relative position, after the fusible material has been softened.

5. In a heat coil, the combination of a heat-producing member, a heat-conducting member, a centrally-bored member through which the heat-conducting member passes, a fusible material by which the heat-conducting member is normally secured to the centrally-bored member, and means apart from the heat coil, whereby the members of the heat coil are restored to their normal, relative position, after the fusible material has been softened.

6. In a heat coil, the combination of a heat-producing element, a centrally-bored, conducting element, a heat-conducting element extending through the heat-producing element and the centrally-bored element, a fusible material which secures the heat-conducting element to the centrally-bored element, and means apart from the heat coil, by which the heat-conducting element and centrally-bored element are restored to their normal, relative position, after the fusible material has been softened, thus allowing their relative position to change, substantially as described.

7. In a heat coil, the combination of a heat-conducting element, a heat-producing element, a centrally-bored element, the heat-conducting element being inclosed by the heat-producing element and the centrally-bored element, and secured to the centrally-bored element by a fusible material, and means apart from the heat coil, whereby the relative positions of the elements of the heat coil are restored to the normal, after being allowed to change by the fusible material becoming softened, substantially as described.

8. In a heat coil, the combination of a heat-producing coil, a heat-conducting member, two centrally-bored, conducting members, the heat-conducting member being inclosed by the heat-producing coil and the two centrally-bored members, and being secured to one centrally-bored member and insulated therefrom, and secured to the other centrally-bored member by a fusible material, and means whereby the relative position of the members of the heat coil is restored to the normal, after being allowed to change by the softening of the fusible material, and secured by the fusible material hardening, substantially as described.

9. In a heat coil of the character described, the combination of a heat-producing coil, a heat-conducting core for the said coil, two centrally-bored, conducting members, forming ends of a spool of which the said heat-conducting core is the core, the said core carrying two annular projections which are inclosed in the respective centrally-bored members, one annular projection being secured to and insulated from one centrally-bored member, by insulating washers, one on each side of the said annular projection, the other annular projection being conductively secured to the other centrally-bored member, by a fusible material, and means whereby, after the fusible material has been softened, thus allowing the relative position of the members of the heat coil to change, the normal, relative position of the members of the heat coil is restored, and secured by the fusible material becoming cool, substantially as described.

10. In a heat coil of the character described, a heat-producing element in the form of a coil, a spool for this coil, consisting essentially of two conducting end pieces and a conducting core normally secured thereto, the said end pieces being centrally-bored to receive respective annular projections of the said core, one annular projection being secured to and insulated from one centrally-bored end piece, by insulating washers, one on each side of the annular projection, the other annular projection being secured to the other centrally-bored end piece by a fusible solder, a lug of conducting material secured to the outer surface of one end piece, a sleeve of insulating material inclosing the said spool from one end piece to the other, and means for operating and restoring the heat coil, substantially as described.

11. In combination, as a protective device for electrical circuits, a heat-producing element inclosing a heat-conducting core, two centrally-bored, conducting elements to which the said core is secured, the said core being insulated from one centrally-bored element, and conductively secured to the other by a fusible material, the centrally-bored elements being terminals for the heat-producing element, a lug secured to the outer face of one centrally-bored element and adapted to engage a spring, a second spring adapted to engage the other centrally-bored element, a suitable base for the said springs, the said fusible material being heated and softened by an abnormally strong current traversing the heat-producing element, thereby allowing the normal, relative position of the elements of the heat coil to change, and the said lug to release itself from the spring engaged therewith, and means coöperating with the said second spring when it operates, whereby the normal, relative positions of the said elements are restored before the fusible material has cooled, substantially as described.

12. In combination, as a protective device for electrical circuits, a heat-producing coil wound around a heat-conducting core, two centrally-bored, conducting elements to which the said core is secured, the said core being insulated from one centrally bored element, and conductively secured to the other by a fusible material, the centrally-bored elements being terminals for the heat-producing coil, a lug secured to the outer face of one centrally-bored element and adapted to engage a spring, a spring provided with a hole therein, through which hole the said lug is normally inserted, a second spring provided with a slot therein and adapted to receive the other centrally-bored element, a third spring used as a ground connection, a suitable support to which the said springs are secured, the said fusible material being heated and softened by an abnormally strong current traversing the heat-producing coil; thereby allowing the normal, relative position of the elements of the heat coil to change, and thereby causing the said lug to release itself from the hole in the spring engaged therewith, the action of the said second spring causing the said core to engage the said ground spring and thereby restore the elements of the heat coil to their normal, relative position, where they are held by the fusible material becoming hardened, substantially as described.

13. In combination, as a protective device for electrical circuits, a heat-producing coil wound upon a heat-conducting core, two centrally-bored, conducting elements to which the said core is secured, one provided with an annular groove therein and the other provided with a conical-shaped lug secured thereto, the said core being insulated from one centrally-bored element, and conductively secured to the other by a fusible solder, the centrally-bored elements being terminals for the heat-producing coil, a spring provided with a conical-shaped hole therein, with which the conical-shaped lug normally engages, a second spring provided with a slot therein and adapted to engage one of the centrally-bored elements at the annular groove therein, a ground plate, a suitable support to which the said springs and ground plate are secured, the fusible material being heated and softened by the heat conducted thereto by the said core when an abnormally large current traverses the said heat-producing coil, thereby allowing the said core to move in one centrally-bored element and thus cause the said lug to release itself from the hole in the spring engaged therewith, the action of the second mentioned spring causing the said core to come in contact with the ground plate, thereby restoring the said core to its normal position in the said centrally-bored element to which it was soldered, and changing the circuit from the said springs and heat coil, to the second mentioned spring and ground plate, substantially as described.

14. In combination, as a protective device for electrical circuits, a heat-producing coil wound upon a heat-conducting core, two centrally-bored, conducting elements to which the said core is secured, one provided with an annular groove therein and the other provided with a conical-shaped lug secured thereto and forming a part thereof, the said core being insulated from one centrally-bored element, and conductively secured to the other by a fusible soldier, the centrally-bored elements being terminals for the heat-producing coil, two springs, one provided with a beveled hole therein and the other provided with a slot therein, the said springs being adapted to normally engage the respective centrally-bored elements, at the said groove and lug thereof, a third spring secured to the spring provided with a slot, and resting against one end of the said core, a ground plate, a suitable support to which the said springs are secured, the fusible material being heated and softened by the heat conducted thereto by the said core, when an abnormally large current traverses the said heat-producing coil; thereby allowing the said core to move upon its soldered support and thus cause the said lug to release itself from the spring engaged therewith, this action causing the last mentioned said spring to engage the ground plate, thereby breaking the circuit between the first mentioned springs and closing a circuit between one of the first mentioned springs and the ground plate, the said third spring causing the said core to be restored to its normal position upon its soldered support, and secured thereto by the cooling action of the fusible solder, substantially as described.

15. In an electrical circuit protector the combination of an excess current operated device, circuit-controlling mechanism coöperating therewith, and means apart from said device for placing the parts thereof in position for another operation.

16. In an electrical circuit protector the combination of a self-soldering heat cartridge, means for supporting the same, and means apart from said cartridge for placing the parts thereof in position for resoldering.

17. In an electrical circuit protector the combination with a heat cartridge, of means for supporting the same, and means apart from the cartridge for resetting the same to place it in condition to permit another operation.

18. In an electrical circuit protector, a heat cartridge provided with a central spindle having a solder connection with the cartridge in combination with means for placing said spindle into position for resoldering.

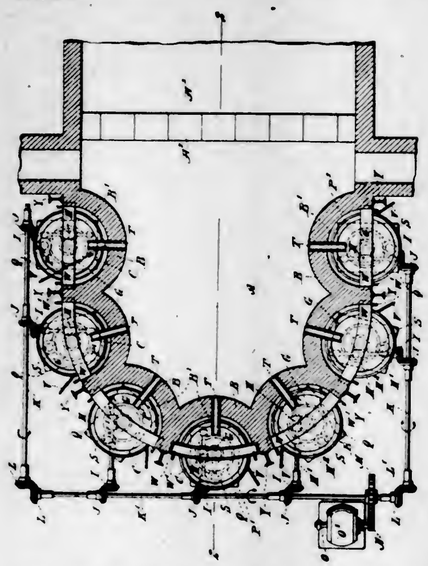
19. In an electrical circuit protector, a heat cartridge provided with a central spindle having a solder connection with the cartridge, means for heating and softening said solder connection on the passage of an unduly strong current, and means for placing said spindle in position for resoldering.

20. In an electrical circuit protector, a heat cartridge provided with a centrally disposed movable member having a solder connection with the cartridge, means for softening said solder on the passage of an unduly strong current to permit movement of said member, and means for placing said member in position in which the solder connection can be hardened, whereby the central member will be resoldered.

21. In an electrical circuit protector, a heat cartridge provided with a centrally disposed movable member having a solder connection with the cartridge, means for softening said solder on the passage of an unduly strong current to permit movement of said member, and means apart from the heat coil for placing said member in position in which the solder connection can be hardened, whereby the central member will be resoldered.

22. In an electrical circuit protector, a heat cartridge comprising a centrally disposed movable member having a solder connection with the cartridge, a heat coil surrounding said central member, and means for placing said member in position to permit it to be resoldered after the solder has been softened by heat generated in said heat coil.

854,273. GLASS-MELTING FURNACE. CHARLES F. Cox, Bridgeton, N. J. Filed Sept. 6, 1905. Serial No. 277,230.



Claim.—1. In a melting furnace, a main tank having a breast wall constructed with a plurality of recesses, a vertically movable auxiliary tank in each of said recesses, a means of communication between said main tank and each of said auxiliary tanks, to permit some of the contents of the main tank to enter each of said auxiliary tanks, and means for vertically adjusting each of said auxiliary tanks..

2. In a melting furnace, a main tank, a plurality of auxiliary tanks arranged around said main tank, sluiceways for permitting the discharge of some of the contents of the main tank into the auxiliary tanks, means for continuously rotating said auxiliary tanks, means for vertically adjusting each of said auxiliary tanks, and means for raising said sluiceways so that the discharge of the contents of the main tank to the auxiliary tanks will be stopped.

3. In a melting furnace, a main tank, a plurality of auxiliary tanks in communication with said main tank, means for vertically adjusting said auxiliary tanks, hollow mantle bars located in close proximity to said auxiliary tanks, and means for circulating a cooling agent through said mantle bars.

4. In a melting furnace, a main tank having a breastwall with an external recess, an auxiliary tank set in said recess, and means for transferring some of the contents of the main tank to the auxiliary tank.

5. In a melting furnace, a main tank having a breastwall with an external recess, an auxiliary tank set in said recess, a top or hood extending over the main tank and partly over the auxiliary tank, leaving a portion of the latter tank projecting beyond the hood, and means for transferring some of the contents of the main tank to the auxiliary tank.

6. In a melting furnace, a main tank having a breastwall with a circularly curved external recess, an auxiliary tank rotatably mounted in said recess, and means for transferring some of the contents of the main tank to the auxiliary tank.

7. In a melting furnace, a main tank having a breastwall with a circularly curved external recess, an auxiliary tank rotatably mounted in said recess, a hood extending over the main tank and a portion of the auxiliary tank, so that the outer portion of the latter is exposed, and means for transferring some of the contents of the main tank to the auxiliary tank.

8. In a melting furnace, a main tank having a breastwall with a circularly curved external recess, an auxiliary tank rotatably mounted in said recess, and projecting therefrom with its outer portion, a hood extending over the main tank and over the auxiliary tank to about its center, and means for transferring some of the contents of the main tank to the auxiliary tank.

9. In a melting furnace, a main tank provided with a cross wall dividing it into a melting chamber and a refining chamber, the breastwall of the refining chamber having a circularly curved external recess, a rotary auxiliary tank set in said recess, means for transferring some of the contents of the main tank to the auxiliary tank, and a hood extending over both chambers of the main tank and over the inner portion of the auxiliary tank, the space below the hood being in permanent communication with the auxiliary tank and with both chambers of the main tank.

10. In a melting furnace, a main tank provided with a cross wall dividing it into a melting chamber and a refining chamber, the breastwall of the refining chamber having a circularly curved external recess, a rotary auxiliary tank set in said recess, means for transferring some of the contents of the main tank to the auxiliary tank, and a hood extending at a distance above said transferring means over both chambers of the main tank and over the inner portion of the auxiliary tank so that a permanently open passage to the auxiliary tank is afforded to the heating gases.

11. In a melting furnace, a main tank, an auxiliary tank adjacent thereto, means for transferring some of the contents of the main tank to the auxiliary tank, a hood extending over the main tank and over the inner portion of the auxiliary tank, and a hollow mantle bar located at the lower edge of the hood immediately adjacent to the auxiliary tank, and adapted to contain a cooling fluid.

12. In a melting furnace, a main tank, having external recesses, auxiliary tanks set in said recesses, bracing devices engaging the main tank between said recesses, so as not to interfere with the auxiliary tanks, and means for transferring some of the contents of the main tank to the auxiliary tanks.

13. In a melting furnace, a main tank having a curved breastwall, rotary auxiliary tanks adjacent to said wall, two shafts extending adjacent to the last auxiliary tanks of the series, a cross shaft forming a connection between said shafts and extending adjacent to the central auxiliary tanks, and means for turning the auxiliary tanks by the rotation of said shafts.

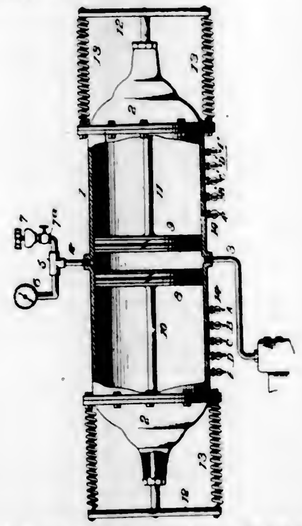
854,274. ATTACHMENT FOR SHOES. JESSE CROOK and JOHN SCHWARTZ, Mendon, Ohio; William J. Schwartz administrator of said John Schwartz, deceased. Filed June 30, 1906. Serial No. 324,208.



Claim.—The combination with a low shoe having a removable upper for converting the same into a high shoe, and fastening devices on the shoe for connecting said upper thereto, of a covering strip engageable with said devices when the upper is removed, to conceal said devices.

854,275. GOVERNOR. CHARLES R. CUDE, San Saba county, Tex. Filed Dec. 26, 1906. Serial No. 349,467

Claim.—1. In a governor, the combination of an air cylinder provided with an air inlet, and a series of vent cocks, means for opening and closing the respective cocks, a piston mounted to move within the cylinder by the pressure of air therein, a rod secured to said piston, and means secured to said rod for resisting the pressure of air exerted on said piston.



2. In a governor, the combination of an air cylinder provided with an air inlet, and a series of vent cocks, the series extending longitudinally of the cylinder, means for opening and closing the respective cocks, a piston mounted to move in said cylinder by the pressure of air therein, a rod secured to said piston and extending out through the head of the cylinder, a cross bar secured to said rod, and contractile springs secured to said cross bar and to the cylinder and adapted to resist the outward movement of the piston.

3. A governor of the character described, comprising an air cylinder provided with an air inlet and an air pressure gage and also provided with a longitudinally extending series of vent cocks, means for opening and closing the respective cocks, a piston mounted in said cylinder and movable by the pressure of air therein, a piston rod secured to said piston and extending out through the head of the cylinder, a cross bar connected to said rod, and contractile springs secured to said cross bar and said cylinder and adapted to resist the movement of the piston as it is acted upon by the air pressure.

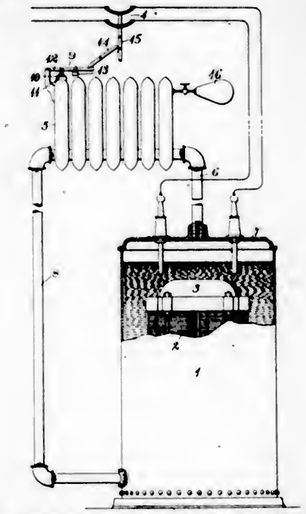
854,276. TEMPERATURE-REGULATOR. FREDERICK DARLINGTON, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Sept. 5, 1905. Serial No. 277,102.

Claim.—1. A temperature regulator for a heat-producing device, comprising an insulating medium in which the device is immersed that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain such device.

2. A temperature regulator for a heat-producing device, comprising an insulating fluid in which such device is immersed, said fluid being volatilizable at a temperature not greater than the maximum at which it is desired to maintain such device.

3. A temperature regulator for heat-producing devices, comprising an insulating, non-combustible medium that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain such devices.

4. A temperature regulator for heat-producing devices, comprising a surrounding medium that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain such devices, and means for condensing the vaporized medium to its original state.



5. A temperature regulator for heat-producing devices, comprising a surrounding medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain such devices, and means for condensing the vaporized medium to its original state.

6. A temperature regulator for heat-producing devices, comprising an insulating, non-combustible medium that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain such devices, and means for condensing the vaporized medium to its original state.

7. A temperature regulator for heat-producing devices, comprising a surrounding medium that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain such devices, means for condensing the vaporized medium to its original state, and means for maintaining an approximately constant pressure upon the medium.

8. A temperature regulator for heat-producing devices, comprising a surrounding medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain such devices, means for condensing the vaporized medium to its original state, and means for maintaining an approximately constant pressure upon the medium.

9. A temperature regulator for heat-producing devices, comprising an insulating, non-combustible medium that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain such devices, means for condensing the vaporized medium to its original state, and means for maintaining an approximately constant pressure upon the medium.

10. A temperature regulator for a heat-producing device, comprising a receptacle, and an insulating fluid in which the device is immersed that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain the device.

11. A temperature regulator for a heat-producing device, comprising a receptacle, and a medium for immersing the device that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain the device and means for condensing the vaporized medium to its original state.

12. A temperature regulator for a heat-producing device, comprising a receptacle, and a medium for immersing the device that volatilizes at a temperature of approximately the same degree as the maximum at which it is de-

sired to maintain the device, means for condensing the vaporized medium to its original state, and means for returning the condensed medium to the receptacle.

13. A temperature regulator for a heat-producing device, comprising a surrounding medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain the device, circulation of the medium in proximity to the heated portions of the device being caused by ebullition thereof.

14. A temperature regulator for a heat-producing device, comprising a surrounding medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain the device, circulation of the medium in proximity to the heated portions of the device being caused by ebullition thereof, and means for condensing the vaporized medium to its original state.

15. A temperature regulator for a heat-producing device, comprising a receptacle for the device, a medium contained therein for surrounding the same that volatilizes at a temperature not greater than the maximum at which it is desired to maintain the device, and a condenser, circulation of the medium in proximity to the heated portions of the device being effected by ebullition of the medium, and the rising of the vapors thus formed into the condenser.

16. A cooling medium for heat-producing devices, comprising carbon tetra chlorid.

17. A cooling means for heat-producing devices, comprising a surrounding medium of carbon tetra chlorid and a condenser for the vapors thereof.

18. A cooling means for heat-producing devices, comprising a surrounding medium of carbon tetra chlorid, a condenser for the vapors thereof, and means for maintaining an approximately constant pressure upon the medium.

19. An automatic cooling means for heat-producing devices, comprising a surrounding insulating and non-combustible medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain the devices.

20. An automatic cooling means for heat-producing devices, comprising a surrounding insulating and non-combustible medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain the devices and a condenser for the vapors thereof.

21. An automatic cooling means for heat-producing devices, comprising a surrounding insulating and non-combustible medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain the devices, a condenser for the vapors thereof, and means for maintaining the pressure upon the medium approximately constant.

22. A temperature regulator for heat-producing devices, comprising a surrounding medium that volatilizes at a temperature of approximately the same degree as the maximum at which it is desired to maintain such devices, and the vapor of which is a non-supporter of combustion.

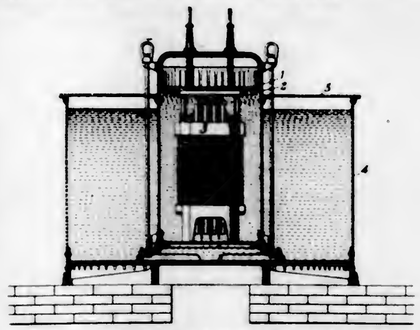
23. A temperature regulator for heat-producing devices, comprising a surrounding medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain such devices, and the vapor of which is a non-supporter of combustion.

24. A temperature regulating for heat-producing devices, comprising an insulating, non-combustible medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain such devices, and the vapor of which is a non-supporter of combustion.

25. The method of regulating the temperature of a heat-producing device, which consists in causing a circulation of a surrounding insulating and non-combustible medium that volatilizes at a temperature not greater than the maximum at which it is desired to maintain the device.

854,277. MEANS FOR COOLING TRANSFORMERS. FREDERICK DARLINGTON, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 25, 1906. Serial No. 323,366.

Claim.—1. The combination with a receptacle containing a heat-producing device and a liquid, of a liquid in which the receptacle is immersed having a greater thermal capacity than the liquid within the receptacle.



2. The combination with a receptacle containing a heat-producing device and a liquid, of another liquid in which the receptacle is immersed having a higher specific heat than the aforesaid liquid.

3. The combination with a heat-producing device, a liquid surrounding the same, and a receptacle therefor, of a reservoir in which the receptacle is located, and a liquid contained therein having greater specific heat than the aforesaid liquid.

4. The combination with a heat-producing device, a liquid surrounding the same, and a receptacle therefor, of a reservoir in which the receptacle is located, and a liquid contained therein having a greater thermal capacity than the aforesaid liquid.

5. The combination with a heat-producing device, a liquid surrounding the same, and a receptacle therefor, of a reservoir of materially greater volume than the receptacle in which the heat producing device is located, and a liquid contained therein of greater specific heat than the aforesaid liquid.

6. The combination with a receptacle containing an electrical translating device and an insulating liquid, of a liquid surrounding the receptacle having a greater thermal capacity than the insulating liquid.

7. The combination with a receptacle containing an electrical translating device and an insulating liquid, of a liquid surrounding the receptacle having a higher specific heat than the insulating liquid.

8. The combination with a receptacle containing a heat-producing device and a liquid, of a substance surrounding the receptacle that has a greater thermal capacity than the liquid in the receptacle.

854,278. RADIATOR. FREDERICK DARLINGTON, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 25, 1906. Serial No. 323,367.

Claim.—1. The combination with a heated liquid, of one or more sealed receptacles that project into the same and contain a liquid that is more volatile than the aforesaid liquid.

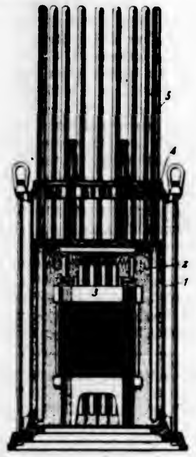
2. The combination with a heated liquid, of one or more sealed receptacles that project into the same and are partially filled with a liquid that is more volatile than the aforesaid liquid.

3. The combination with a heated liquid, of one or more sealed receptacles that project into the same and the submerged portions of which are filled with a liquid that is more volatile than the aforesaid liquid.

4. The combination with a heat-containing device, of one or more sealed receptacles that project thereinto and contain a volatile liquid.

5. The combination with a heat-containing device, of one or more sealed receptacles that project thereinto and are partially filled with a volatile liquid.

6. The combination with a receptacle, an electrical device located therein, and a liquid in which the receptacle is submerged, of one or more sealed receptacles that are partially submerged in the aforesaid liquid and contain another and more volatile liquid.



7. The combination with a receptacle, an electrical device located therein, and a liquid in which the device is submerged, of one or more sealed receptacles that are partially submerged in the aforesaid liquid, and the submerged portions of which contain another and more volatile liquid.

8. The combination with a heated substance, of one or more sealed receptacles that project into the same and contain a volatile liquid.

854,279. TELEPHONE-EXCHANGE SYSTEM. WILLIAM W. DEAN, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed May 19, 1905. Serial No. 261,131.

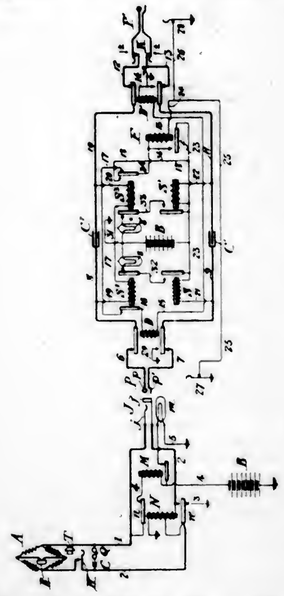
Claim.—1. In a telephone exchange system subscribers' lines having switching terminals, operators' connective circuits having co-operating switching terminals, and means controlled by the subscribers through said circuits for disconnecting the same for operative purposes from the subscribers' lines, without disconnecting or dissociating the said switching terminals, substantially as described.

2. In a telephone exchange system, subscribers' lines, having switching terminals, operators' cord-circuits having co-operating terminals for interconnecting the same, switch contacts separated from said terminals normally completing said cord circuits during conversation, electromagnets connected to said circuits and controlled by the subscribers to operate said switch contacts and thereby disconnect all operative parts of the cord-circuit from the subscribers' lines at the end of a conversation, substantially as described.

3. In a telephone exchange system, subscribers' lines, and operators' plug cord-circuits for interconnecting the same, a cut-off relay for each cord-circuit, and connections therefor such that upon giving a clearing-out signal a subscriber will energize a cut-off relay to sever the cord from his line, without regard to the position of any connecting plug, substantially as described.

4. In a telephone exchange system, a subscribers' line and an operator's cord-circuit, a clearing out signal connected with said cord and adapted to be controlled by the subscriber to indicate that disconnection is desired, together with a cut-off relay controlling the continuity of the cord at the terminal or subscriber's end thereof, and means whereby said cut-off relay is operated upon the operation of the clearing out signal, substantially as described.

5. In a telephone exchange system, subscribers' lines and an operator's cord-circuit for interconnecting them, a clearing out signal associated with said cord-circuit, and controlled by the subscribers, and a cut-off relay controlling the continuity of the cord-circuit and itself controlled by the operation of the clearing out signal, substantially as described.



6. In a telephone exchange system subscribers' lines, with means at the subscribers' station for determining the flow of current in each line, a common source of current supply for all the lines, and an operator's cord-circuit for interconnecting them, a supervisory signal and a controlling relay therefor associated with the cord-circuit, a cut-off relay also associated with the cord-circuit and controlling the continuity thereof, and circuit connections for said cut-off relay controlled by the supervisory relay, whereby at the conclusion of a conversation and the cessation of the current flow through the subscribers' line, the cord-circuit will be severed, substantially as described.

7. In a telephone exchange system, a plurality of subscribers' lines and a common source of current supply therefor, an operator's cord-circuit having terminal plugs for interconnecting the line jacks, a supervisory relay associated with the cord-circuit and under the control of a subscriber when connected, a cut-off relay controlling the continuity of the cord-circuit, and a locking relay, the circuit of the cut-off relay being jointly controlled by the supervisory relay and the locking relay, and means whereby said locking relay will operate to place the cut-off relay circuit under exclusive control of the supervisory relay when a connection is completed, substantially as described.

8. In a telephone exchange system, a plurality of subscribers' lines terminating in jacks, and an operator's cord-circuit terminating in plugs for interconnecting the lines, a pair of supervisory signal magnets associated with the cord-circuits and so connected that each will respond to the control of one of a pair of connected subscribers only, a cut-off relay controlling the continuity of the cord-circuit, a locking or battery control relay initially controlled by the called subscribers' supervisory signal magnet and a circuit for the cut-off relay thereby placed under the joint control of both supervisory relays, substantially as described.

9. In a telephone exchange system, subscribers' lines and an operator's cord-circuit having terminal plugs for

interconnecting the lines, a supervisory signal magnet associated with each plug and controlled during connection by the corresponding subscriber, a cut-off relay associated with each plug and adapted when operated to disconnect the plug from the cord-circuit, and circuits for said cut-off relays controlled by said supervisory signal magnets, substantially as described.

10. In a telephone exchange system, subscribers' lines and an operator's cord-circuit having terminal plugs for interconnecting the lines, a supervisory signal magnet associated with each plug and controlled during connection by the corresponding subscriber, a cut-off relay associated with each plug and adapted when operated to disconnect the plug from the cord-circuit, a locking or battery supply relay under the control of the calling plug supervisory and adapted to be energized upon the completion of a connection to supply battery current to the cut-off relay circuits, said circuits being thereafter jointly controlled by the supervisory signal magnets, substantially as described.

11. In a telephone exchange system, subscribers' lines and an operator's cord-circuit having terminal plugs for interconnecting the lines, a supervisory signal magnet associated with each plug and controlled during connection by the corresponding subscriber, a cut-off relay associated with each plug and adapted when operated to disconnect the plug from the cord-circuit, a locking or battery supply relay under the control of the calling plug supervisory and adapted to be energized upon the completion of a connection to supply battery current to the cut-off relay circuits, said circuits being thereafter jointly controlled by the supervisory signal magnets, together with means controlled by the operator upon withdrawing the plugs, to break the cut-off relay circuit and to restore the cord to operative condition, substantially as described.

12. In a telephone exchange system, subscribers' lines and an operator's cord-circuit having terminal plugs for interconnecting the lines, a supervisory signal magnet associated with each plug and controlled during connection by the corresponding subscriber, a cut-off relay associated with each plug and adapted when operated to disconnect the plug from the cord-circuit, a locking or battery supply relay under the control of the calling plug supervisory and adapted to be energized upon the completion of a connection to supply battery current to the cutoff relay circuits, said circuits being thereafter jointly controlled by the supervisory signal magnets, together with the supplemental winding on each cut-off relay closed to battery through a locking circuit when said relays are excited, and means controlled by the operator in removing the plugs, to break said locking circuits and thereby restore the cord-circuit to normal condition, substantially as described.

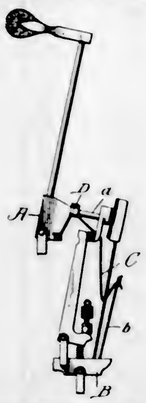
13. In a telephone exchange system, subscribers' lines and an operator's cord-circuit having terminal plugs for interconnecting the lines, a supervisory signal magnet associated with each plug and controlled during connection by the corresponding subscriber, a cut-off relay associated with each plug and adapted when operated to disconnect the plug from the cord-circuit, a locking or battery supply relay under the control of the calling plug supervisory and adapted to be energized upon the completion of a connection to supply battery current to the cut-off relay circuits, said circuits being thereafter jointly controlled by the supervisory signal magnets, together with a plug seat switch included in said cut-off relay circuit and opened to restore the same when the operator withdraws the plugs, substantially as described.

14. In a telephone exchange system, subscribers' lines and an operator's cord-circuit having terminal plugs for interconnecting the lines, a supervisory signal magnet associated with each plug and controlled during connection by the corresponding subscriber, a cut-off relay associated with each plug and adapted when operated to disconnect the plug from the cord-circuit, a locking or battery supply relay under the control of the calling plug supervisory and adapted to be energized upon the completion of a connection to supply battery current to the cut-off relay circuits, said circuits being thereafter jointly controlled by the supervisory signal magnets, together with a plug seat switch associated with each plug, and controlling the cut-off relay circuits, substantially as described.

15. In a telephone exchange system, subscribers' lines and an operator's cord-circuit having terminal plugs for interconnecting the lines, a supervisory signal magnet associated with each plug and controlled during connection by the corresponding subscriber, a cut-off relay associated with each plug and adapted when operated to disconnect the plug from the cord-circuit, a locking or battery supply relay under the control of the calling plug supervisory and adapted to be energized upon the completion of a connection to supply battery current to the cut-off relay circuits, said circuits being thereafter jointly controlled by the supervisory signal magnets, together with a pair of plug seat switches controlling parallel branches to complete said cut-off relay circuit, whereby both plugs must be withdrawn and in their seats in order to restore the circuits, substantially as described.

16. In a telephone exchange system, subscribers' lines, means under the control of operators for interconnecting the lines, and means controlled by the subscribers independently of the operators for severing in two parts the operator's connecting means, substantially as described.

854,280. PIANO-ACTION. JOHN H. DEUTSCH, De Berry, Tex., assignor of one-half to J. T. Strange, Elysian Fields, Tex. Filed July 30, 1906. Serial No. 328,421.



Claim.—1. In a piano action, the combination of a hammer butt provided with a countercheck, a bridle strap, and a fastener comprising a ring secured on the countercheck and having a tongue; the said ring receiving the bridle strap between its tongue and main portion.

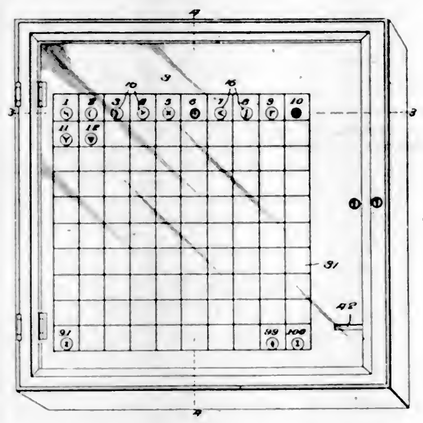
2. In a piano action, the combination of a hammer butt provided with a countercheck, a bridle strap, and a fastener comprising a ring secured on the countercheck and having a slot in its lower portion and a barbed tongue struck up from said portion; the said ring receiving the bridle strap between its tongue and lower portion.

3. In a piano action, the combination of a hammer butt provided with a countercheck, a bridle strap, and a fastener comprising a split ring mounted on the countercheck and having detachably connected end flanges and also having a slot in its lower portion and a barbed tongue struck up from said portion; the said split ring receiving the bridle strap between its tongue and lower portion.

4. In a piano action, the combination of a hammer butt provided with a countercheck, a bridle strap, and a fastener secured on the countercheck and having a tongue; the said fastener receiving the bridle strap between its tongue and main portion.

5. As an article of manufacture, a split ring having means for connecting its end portions together and also having a slot in its intermediate portion and an integral tongue formed by said slot.

854,281. TIME-RECORDER. JOHN ERICSON, Chicago, Ill. Filed July 7, 1906. Serial No. 325,087.



Claim.—1. The combination with a housing having guides therein; of a board slidably mounted on said guides, means to raise and lower the board, a frame laterally adjustable on said board, bars extending over said frame to secure a record sheet to the frame and over the face of said board, one end of said bars entering slots in the frame and means to perforate said sheet whereby a record will be made thereon.

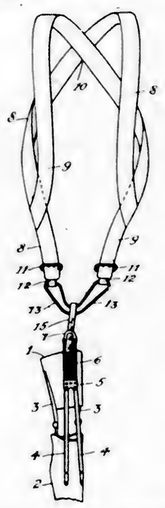
2. A device of the class described comprising a housing having guides therein, a board vertically movable on said guides, a vertically disposed screw at the upper end of the housing, a threaded socket on said board to receive the lower end of the screw, means to rotate said screw whereby the board will be vertically adjusted, a frame carried by said board, bearings in said board to receive the frame, bars to hold a record sheet on the frame, a plurality of perforating devices disposed in front of said record sheet and means to laterally adjust said frame and sheet relative to said perforating device.

3. A device of the class described comprising the combination with a housing having guides therein and a door hinged to one side thereof, of a board vertically slidable on said guides, said board having a plurality of vertically disposed grooves in one face thereof, means to raise and lower said board, a plate hingedly secured to said housing and extending over the face of said board, a plurality of perforating devices disposed through said plate and means to operate said perforating device whereby a record sheet disposed over the face of said board will be punctured and a record made thereon.

4. A device of the class described comprising the combination with a housing having a grooved board slidably mounted therein and means to raise and lower said board; of a frame laterally movable on said board, L-shaped track ways in the board to receive the horizontal portions of the frame, means to secure a record sheet in place on said frame and means to adjustably move said frame comprising a threaded head carried by said frame, a threaded bolt extending through said head and having one of its ends rotatably secured to the board, means on the bolt to limit the movement of the frame and additional means to rotate the bolt.

5. A device of the class described comprising the combination with a housing and a movable board mounted therein; of a frame adjustably secured to said board, means to secure a record sheet to said frame, said means comprising bars, said bars having one of their ends stepped and adapted to enter slots in the frame and keepers at the opposite ends of the bars adapted to engage the frame and hold the bars in position thereon.

854,282. SUPPORTER FOR ARTIFICIAL LEGS. ERICK H. ERICKSON, Minneapolis, Minn. Filed Nov. 26, 1906. Serial No. 345,086.



Claim.—1. A supporter for artificial legs, comprising inelastic shoulder straps, loops adjustably connected to their lower portions, an adjustable strap connected by an elastic connection to the leg-socket, and a cord slidably connecting the latter strap to said loops, substantially as set forth.

2. A supporter for artificial legs, comprising inelastic shoulder straps, loops adjustably connected to their lower portions, an endless cord slidable in said loops, a strap slidable on the cord, and an adjustable connection between the latter strap and the leg, substantially as set forth.

3. A supporter for artificial legs, comprising inelastic shoulder straps, loops adjustably connected to their lower portions, an endless cord slidable in said loops, a strap slidable on the cord, and an elastic connection between the latter strap and the leg, substantially as set forth.

4. A supporter for artificial legs, comprising inelastic shoulder straps, loops adjustably connected to their lower portions, an endless cord slidable in said loops, a slidable strap having bearings on upper and lower portions of the cord, and means for making an adjustable yielding connection between the latter strap and the leg, substantially as set forth.

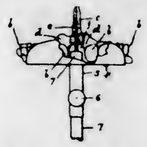
5. A supporter for artificial legs, comprising inelastic shoulder straps, loops adjustably connected to their lower portions, a cord extending across from one loop to the other and slidable therein, a strap slidable on the cord, and means for making an adjustable yielding connection between the latter strap and the leg, substantially as set forth.

6. In a supporter for artificial legs, the combination with an inelastic shoulder strap, of an elastic section, a clamp for uniting the two strap sections, a second clamp on the lower end of the elastic section consisting of coöperating clamping plates, a tongue and slot provided by one of said plates, an adjustable loop retained by said tongue and slot, and a cord therein for connecting the supporter to the artificial leg, substantially as set forth.

854,283. DENTAL ROOT-IMPRESSION AND CROWN-MOUNTING INSTRUMENT. JOHN M. EVEY, Monmouth, Ill. Filed Mar. 24, 1906. Serial No. 307,940.

Claim.—1. In a device of the character described, a tray comprising a bottom, flanged sides projecting in one di-

rection therefrom, and an integral tubular shank projecting therefrom in a contrary direction.



2. In a device of the character described, a tray comprising a bottom provided with a central aperture, flanged sides projecting in one direction therefrom, a tubular shank extending therefrom in a contrary direction, and a set screw threaded in said shank.

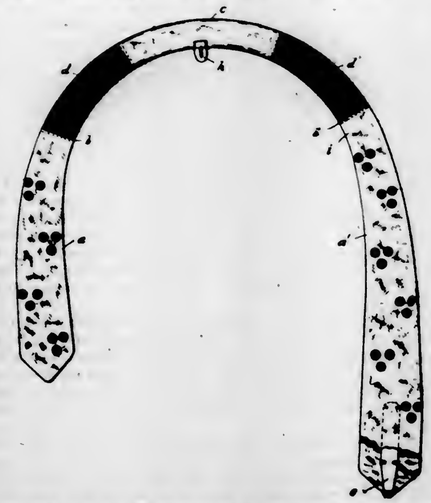
3. The combination with plastic-material holding means, of means adapted to engage therewith comprising a rod, festoons at an end thereof and a centrally disposed pin projecting from the same end of the pin as do the festoons, said rod, festoons and pin being immovable with relation to each other.

4. In a device of the character described, a tray, a hollow shank integral therewith, and a plunger adapted to reciprocate therein and to pass through the bottom of the tray.

5. In a device of the character described, a tray, a hollow shank integral therewith, a plunger adapted to reciprocate therein and to pass through the bottom of the tray and through said shank, and means for normally locking it in position.

6. In a device of the character described, in combination with a tray, a plunger comprising an imperforate rod-like body and an integral guide-pin.

854,284. NECKWEAR. JOSEPH W. FROST, Washington, D. C. Filed Aug. 11, 1903. Serial No. 169,087.



Claim.—1. As a new article of manufacture, a necktie or cravat consisting of two end lengths of textile fabric, and an elastic neck-band portion suitably joined to the same, said elastic neck-band portion being of a sufficient length to engage the sides of the collar, whereby the said necktie or cravat may be made up without shifting it bodily through the collar, substantially as described.

2. As a new article of manufacture, a necktie or cravat consisting of two end lengths of textile fabric, and a flat elastic neck-band portion suitably joined to the same, said neck-band portion being of a sufficient length to engage the sides of the collar, whereby the said neck-band or cravat may be made up without shifting it bodily through the collar, substantially as described.

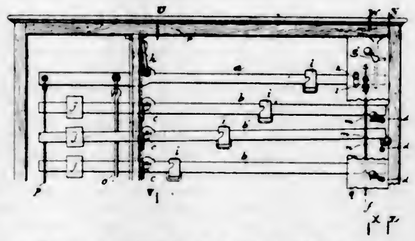
3. As a new article of manufacture, a necktie or cravat consisting of two tie end pieces of textile fabric, a neck-band of elastic material, said elastic neck-band being adapted to engage the respective side portions of a collar, and suitable means for connecting the respective ends of said elastic neck-band to the textile tie end pieces, whereby the said necktie or cravat may be folded or made up without shifting the same bodily through the collar.

4. As a new article of manufacture, a necktie or cravat consisting of two end lengths of textile fabric and a neck-band portion, said neck-band portion comprising two flat strips of elastic material each joined at one end to the said end lengths, and adapted to engage the side portions of the collar, said flat strips of elastic material being connected at their opposite ends by a third piece of textile fabric, whereby the said necktie or cravat may be made up without shifting it bodily through the collar.

5. As a new article of manufacture, a necktie or cravat consisting of two end lengths of textile fabric, and a neck-band portion, said neck-band portion comprising two strips of elastic material each joined at one end to the said end lengths and adapted to engage the side portions of a collar, said strips of elastic material being connected at their opposite ends by a third piece of textile fabric, whereby the said necktie or cravat may be made up without shifting it bodily through the collar.

6. As a new article of manufacture, a necktie or cravat consisting of two tie ends of a textile fabric, which are suitably joined, each to one end of two pieces of elastic material adapted to engage the sides of the collar, and suitable means for connecting the two opposite ends of said elastic material in operative relation.

854,285. WEIGHING-SCALE. THOMAS GAGNON, St. Johnsbury, Vt., assignor to E. and T. Fairbanks and Company, St. Johnsbury, Vt., a Corporation of Vermont. Filed Dec. 24, 1906. Serial No. 349,223.



Claim.—1. In combination, a main beam, a plurality of sets of auxiliary beams, those of one set being disposed in staggered relation to the beams of the other set, and means for connecting and disconnecting the main and auxiliary beams.

2. In a scale of the class described, a main beam, a plurality of sets of auxiliary beams disposed in staggered relation, a connecting ladder for the auxiliary beams and a ladder suspension means including a plurality of spaced supports to prevent side swaying of the ladder.

3. In weighing scales, the combination of a plurality of beams arranged in series, the beams of each series being arranged vertically, but the beams of one series being staggered with relation to those of the other series, bars carrying pivot supports for the knife edges of said beams, and a ladder carrying knife edges to support the opposite ends of said beams; substantially as described.

4. In weighing scales, the combination of a plurality of beams arranged in series, the beams of each series being arranged vertically, but the beams of one series being staggered with relation to those of the other series, bars c, each having on its upper face a beam support, and on its opposite lower face a notch to allow of movement of the beam beneath, the beam support on one bar being opposite the notch on the bar above; substantially as described.

5. In a weighing scale, an engaging and releasing latch, a carrying shaft therefor, said shaft having a projection or arm at one end, and a shaft holder or support having stop faces with which said projection or arm engages to hold the latch in adjusted position.

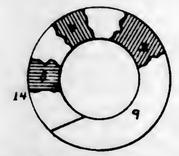
6. In combination with the main beam and ladder *f* carried thereby, a beam box, a shaft holder carried thereby, a series of ingredient beams adapted to be engaged or disengaged from the latter, a latch *d* and a latch shaft having a projection at one end adapted in both raised and lowered positions to engage the holder; substantially as described.

854,286. RESILIENT WHEEL. THOMAS GARE, New Brighton, England. Filed Nov. 21, 1905. Serial No. 288,391.



Claim.—In a silent and resilient vehicle wheel, spokes with wedge shaped outer ends and felly segments with ends shaped to bear against and form a socket for the said outer spoke ends, a plate let into each of the said spoke ends and the adjacent ends of the felly segments and a fastening passing through the said spoke end and plate securing the plate to the spoke end, the ends of the said plate holding the said felly segments laterally as well as radially in position upon the wedge shaped spoke ends and allowing of radial depression thereon, all substantially as set forth.

854,287. ROD-PACKING. OLIN J. GARLOCK, Palmyra, N. Y. Filed Feb. 20, 1907. Serial No. 358,452.

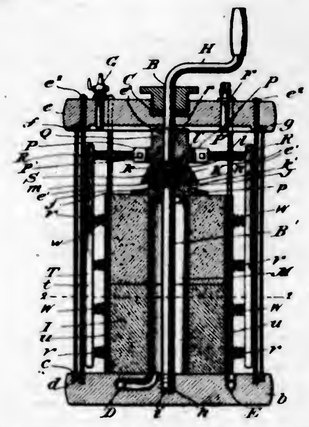


Claim.—1. A slab of packing material for rods, formed of layers of cloth joined by an adhesive substance, the threads of the adjacent layers crossing each other at different angles whereby the ring cut from said slab will have all the threads of each layer turned endwise toward the inner surface of the ring.

2. A slab of packing material for rods formed of layers of cloth joined by an adhesive substance, the threads of the adjacent layers crossing each other at different angles whereby the ring cut from said slab will have all the threads of each layer turned endwise toward the inner surface of the ring to contact with the rod, and a covering for the flat sides of said slab.

854,288. FILTER. THOMAS W. GOREAU, New Orleans, La. Filed Jan. 25, 1907. Serial No. 354,134.

Claim.—1. The combination in a filter, of a casing, a rod fixed to and rising from the bottom of the casing, a filtering cylinder arranged on the bottom of the casing and surrounding said rod, a disk disposed on the upper end of the filtering cylinder and surrounding the rod and having a ball-race in its upper side, anti-friction balls arranged in said race, means on the rod for crowding the disk against the upper end of the filtering cylinder, a sleeve loosely surrounding the rod and bearing on the anti-friction balls and having a guard surrounding and extending below the outer wall of the ball-race in the disk, means for cleaning the outer side of the filtering cylinder, movable in a circle about said cylinder, a connection between said means and the sleeve, and means for rotating the sleeve.



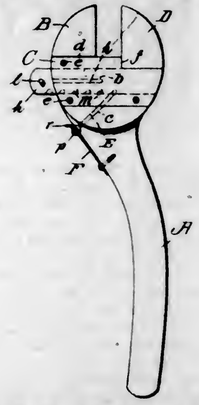
2. The combination in a filter, of a casing, a rod fixed to and rising from the bottom of the casing, a filtering cylinder arranged on the bottom of the casing and surrounding said rod, a disk disposed on the upper end of the filtering cylinder and surrounding the rod and having a circular groove in its upper side, means on the rod for crowding the disk against the upper end of the filtering cylinder, a sleeve loosely surrounding the rod and having a cylindrical portion disposed in the circular groove of the disk and also having a guard surrounding and extending below the outer wall of the said groove, means for cleaning the outer side of the filtering cylinder, movable in a circle about said cylinder, a connection between said means and the sleeve, and means for rotating the sleeve.

3. The combination in a filter, of a casing, a rod fixed to and rising from the bottom of the casing and having a threaded portion, a filtering cylinder arranged on the bottom of the casing and surrounding the rod, a disk disposed on the upper end of the filtering cylinder and having a tapered and ground socket in its upper side and also having a ball-race in said upper side around the socket, a nut mounted on the threaded portion of the rod and having a tapered and ground lower end disposed in the said socket of the disk, a sleeve surrounding the rod and chambered to receive said nut and having a guard surrounding and extending below the upper edge of the outer wall of the ball-race, anti-friction balls arranged in the race and below the lower end of the sleeve, means for cleaning the outer side of the filtering cylinder, movable in a circle about said cylinder, a connection between said means and the sleeve, and means for rotating the sleeve.

4. The combination in a filter, of a casing comprising a cylinder, a lower head having an annular groove receiving the lower end of the cylinder, a gasket in said groove below the lower end of the cylinder, an upper head having an annular groove receiving the upper end of the cylinder and a gasket in said groove above said upper end of the cylinder, a rod fixed to the lower head of the casing and provided with a threaded portion, means connecting the heads, a filtering cylinder arranged on the lower head of the casing and around the rod, a disk surrounding the rod and arranged on the filtering cylinder and having a tapered and ground socket in its upper side and a ball-race surrounding said socket, a nut mounted on the rod and having a tapered and ground lower end disposed in the socket of the disk, anti-friction balls arranged in the said race, a sleeve loosely mounted on the rod and bearing on said balls, means carried by the sleeve for cleaning the filtering cylinder, means exterior of the casing for rotating the sleeve, and a driving connection intermediate said exterior means and the sleeve.

5. The combination in a filter, of a casing, a rod fixed to and rising from the bottom of the casing, a filtering cylinder arranged on the bottom of the casing and surrounding said rod, a disk disposed on the upper end of the filtering cylinder and surrounding the rod and having a circular groove in its upper side, means on the rod for crowding the disk against the upper end of the filtering cylinder, a sleeve loosely surrounding the rod and having a cylindrical portion disposed in the circular groove of the disk and also having a guard surrounding and extending below the outer wall of the said groove, bars adjustably fixed to and extending outward from the sleeve, means carried by said bars for cleaning the outer side of the cylinder, and means for rotating the sleeve.

854,289. WRENCH. NIELS W. GUDMUNDSON, Salt Lake City, Utah. Filed Sept. 25, 1906. Serial No. 336,110.

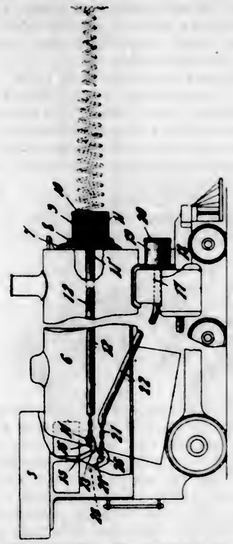


Claim.—1. A wrench comprising a handle having a way or groove in one of its sides and a recess in communication with said way or groove, a jaw integral with said handle, a plate arranged in the recess of the handle and detachably connected thereto and having a shoulder and a reduced end portion, a slidable jaw having a shank movable in the way or groove of the handle and between the handle and the plate and provided at intervals in its lower edge with oblique indentations, a pin disposed obliquely in a bore or passage in the handle, and a flat spring connected to the handle and the pin and tending normally to force the latter inward.

2. A wrench comprising a handle having a way or groove in one of its sides and a recess in communication with said way or groove and also having a longitudinal offset in the inner wall of the way or groove and an oblique bore or passage extending from the bottom of the way or groove to one edge of the handle, a jaw integral with said handle, a plate arranged in the recess of the handle and detachably connected thereto and having a shoulder and a reduced end portion, a slidable jaw having a shank movable in the way or groove of the handle and between the handle and the plate; said shank being provided at intervals in its lower edge with oblique indentations, and on one of its sides with a longitudinal rib movable in the offset of the handle, a pin occupying the oblique bore of the handle, and a flat spring connected to the handle and the pin and having a finger-piece extending beyond the pin.

3. The combination in a wrench, of a handle having a fixed jaw and also having a guideway disposed at a right angle to the face of the jaw, and an oblique bore or passage extending from one of its edges to said guideway, a sliding jaw having a shank disposed in the guideway of the handle and also having oblique indentations in said shank at intervals in the length thereof, and a spring-pressed pin occupying the bore or passage of the handle and arranged to enter the indentations of the shank.

854,290. SAFETY DEVICE FOR LOCOMOTIVES. THOMAS H. HALE, Fayetteville, N. C. Filed Sept. 20, 1906. Serial No. 335,487.



Claim.—1. The combination with a locomotive, of a casing secured thereto, an extensible member arranged within the casing and movable to projected position in advance of the locomotive, and a flexible medium extending longitudinally of and through the extensible member for locking said member in retracted position.

2. The combination with a locomotive, of a casing secured thereto, a yieldable buffer disposed within the casing and movable to projected position in advance of the locomotive, a locking member, and a flexible connection between the locking member and buffer and extending through the latter for holding the buffer in retracted position.

3. The combination with a locomotive, of a casing secured thereto and provided with a closure, a coiled spring disposed within the casing and operatively connected with the closure for moving the latter to projected position in advance of the locomotive, a flexible connection extending within the convolutions of the spring for holding said spring in retracted position, and a locking member engaging one end of the flexible medium.

4. The combination with a locomotive, of a casing secured thereto and provided with a closure, a spring disposed within the casing and fastened to the closure, a locking member, and a flexible connection one end of which is secured to the locking member and the opposite end thereof extended through the coils of the spring and operatively connected with the closure.

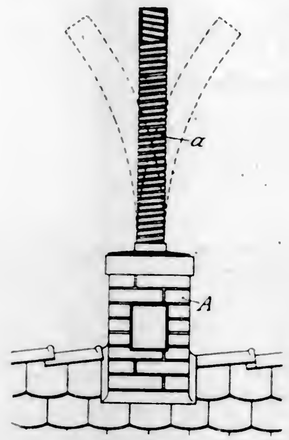
5. The combination with a locomotive, of a casing secured thereto and provided with a closure, a spring disposed within the casing and bearing against the closure, a pivoted locking member provided with a laterally extending lug, and a chain one end of which engages said lug, the opposite end of said chain being extended through the convolutions of the spring and secured to the closure.

6. The combination with a locomotive, of a casing secured to the forward end thereof and provided with a cap, a pivoted hook having its free end provided with an operating handle and its pivoted end formed with a laterally extending lug, a coiled spring disposed within the casing and bearing against the cap, and a flexible connection, one end of which is secured to the cap and the opposite end thereof extended through the convolutions of the spring and operatively connected with the lug of the locking member.

7. The combination with a locomotive, of a casing secured to the forward end of the locomotive and provided with a movable cap, a tube extending longitudinally of the locomotive, a pivoted locking member, and a chain, one end of which is secured to the cap, the opposite end of the chain being threaded through the pipe for engagement with the locking member.

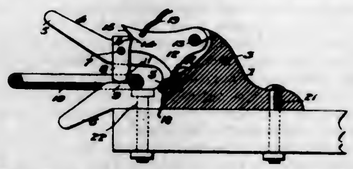
8. The combination with a locomotive, of a casing secured to the locomotive and provided with a movable cap, auxiliary casings disposed one on each side of the main casing and provided with similar caps, coiled springs disposed within the casings, locking members, and a flexible medium secured to the cap of each casing and extending through the convolutions of the adjacent springs for connection with the locking members.

854,291. CHIMNEY AND VENTILATING-SHAFT TOP AND THE LIKE. AUGUST HOLTZHEUER, Cassel, Germany. Filed July 27, 1905. Serial No. 271,527.



Claim.—In combination with a chimney, a straight flexible and resilient metallic pipe having its lower end held in said chimney and its upper end free.

854,292. COUPLING. HOWARD T. INGHRAM, Fairfield, Iowa. Filed Jan. 24, 1907. Serial No. 353,902.



Claim.—1. In combination with a coupling having a pivoted latch, a lock therefor contacting with an end thereof, the contacting portion of the lock being provided with a shoulder to rest on the latch when in operative position, that portion of the lock above the shoulder being inclined to form a guide for the lock with relation to the latch.

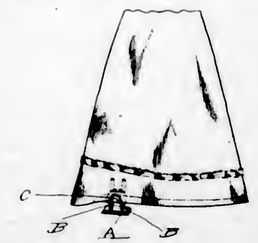
2. In combination with a coupling having a pivoted latch, a lock therefor contacting with an end thereof, the contacting portion of the lock being provided with a shoulder to rest on the latch when in operative position, that portion of the latch which engages the shoulder of the lock being projected.

854,293. SNAP-HOOK. JOHN E. JOHNSON, Seattle, Wash. Filed Sept. 14, 1904. Serial No. 224,389.



Claim.—A device of the class described comprising a threaded stock having a transverse recess intermediate its ends and a longitudinal recess communicating with said transverse recess, a hook extending from said stock, and a tongue pivoted to the free end of said hook and having a transversely extending terminal, a portion of the body of said tongue being adapted to engage the longitudinal recess and the transverse terminal being adapted to engage the transverse recess of the stock, the exterior of said portion of the body of the tongue and its terminal being threaded to correspond to the threads upon the stock, and an interiorly threaded collar engaging said stock and adapted to entirely inclose said terminal and threaded portion of the tongue when disposed in locking position relative to said stock and tongue.

854,294. DEVICE FOR TURNING BOTTOMS OF SKIRTS. MARY A. KELLY, New York, N. Y. Filed Aug. 13, 1906. Serial No. 330,389.



Claim.—1. A turner for skirt bottoms, comprising a trough-shaped folder having an aperture at the bottom thereof for receiving a pin or other fastening means to secure the fold.

2. A turner for skirt bottoms, comprising a trough-shaped sheet metal folder having an aperture in the bottom thereof extending through both folds, through which the fold in the skirt may be secured by a pin or the like.

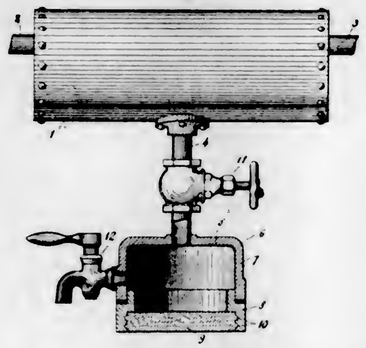
3. A turner for skirt bottoms or the like, comprising a pair of upright posts, a folder, and resilient means for holding the folder in adjusted positions between the posts.

4. A turner for skirt bottoms, comprising a pair of upright posts graduated by notches on their contiguous faces, a folder, a double arm spring secured to the folder and adapted to engage with said notches to hold the folder in adjusted positions.

5. A turner for skirt bottoms, comprising a base, posts projecting therefrom and provided with notches, and a trough-shaped folder having spring arms for engaging in said notches.

854,295. METHOD OF SEPARATING LIQUIDS. SAMUEL M. KINTNER, Pittsburg, Pa., and WILLIAM W. HANKS, Durham, N. C., assignors to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Dec. 4, 1905. Serial No. 290,307.

Claim.—1. The method of separating liquids of different specific gravities which consist in settling the liquid of highest specific gravity and filtering it through a substance for which the liquids have different degrees of capillarity.



2. The method of separating liquids of different specific gravities which consists in settling the liquid of highest specific gravity and filtering it through a substance which is substantially impervious to the other liquid.

3. The method of separating liquids of different specific gravities which consists in settling the liquid of highest specific gravity and filtering it through plaster of paris.

4. The method of separating liquids of different specific gravities which consists in filtering the liquid of high specific gravity through a substance which is substantially impervious to the other liquid.

5. The method of separating liquids of different specific gravities which consists in filtering the liquid of high specific gravity through a substance for which the liquids have different degrees of capillarity.

6. The method of separating liquids of different specific gravities which consists in filtering the liquid of high specific gravity through plaster of paris.

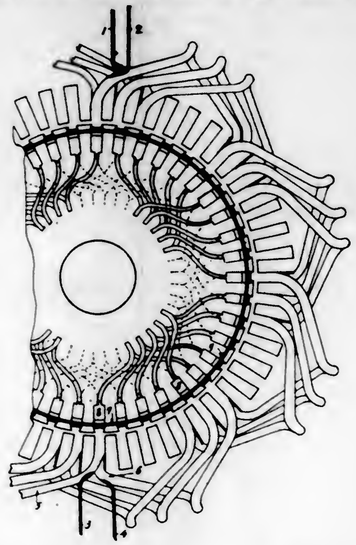
7. The method of separating the constituent liquids of a mixture which consists in filtering one liquid through a substance which is substantially impervious to the other liquid.

8. The method of separating the constituent liquids of a mixture which consists in filtering one liquid through a substance for which the other has a different degree of capillarity.

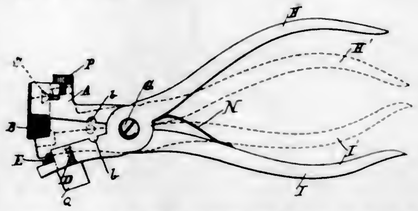
854,296. ELECTROMOTOR OF THE INDUCTION TYPE. FRANK M. LEWIS, Brighton, England. Filed Nov. 21, 1904. Serial No. 233,629.

Claim.—1. An induction motor having a rotor provided with two sets of windings, one composed of locally short-circuited loops of high resistance and the other of short-circuited continuous windings of low resistance, and a multipolar field magnet provided with means for reversing the regular succession of poles in one-half of the field for starting the motor, and for reëstablishing the regular succession of poles for the running condition of the motor, substantially as described.

2. A multipolar induction motor having a field winding provided with means for reversing the regular succession of poles in one-half of the field structure, and an armature having two sets of windings, one a high resistance squirrel-cage and the other composed of short-circuited continuous windings of low resistance, substantially as described.



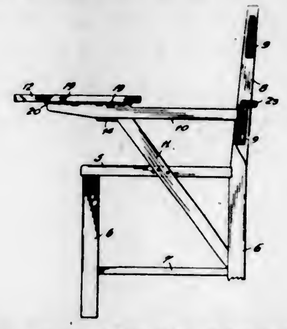
854,297. DEVICE FOR CUTTING MOLDINGS. PIUS F. LIMACHER, Los Angeles, Cal. Filed July 23, 1906. Serial No. 327,447.



Claim.—1. The device consisting of a pair of jaws and operating handles, pivotally connected so that they are movable upon the pivot into the open and closed positions respectively, a V shaped cutter whose cutting edges are situated at the required angle to each other, forming the two sides of a V shaped longitudinal groove, and whose cutting edges are transverse to the length of the cutter body, said cutter body being contained and held in a V shaped recess at the outer end of the cutting jaw, the opposite jaw being constructed with a recess parallel to the V shaped edges of the cutter, and at right angles to the length and cutting edges of the cutter for holding and supporting the molding or other strip of wood, while being cut to two miter or other angles as the cutter and recess are pressed together by the handles, the spring for maintaining the cutting device open when not in use, all operating together in the manner and for the purposes substantially as hereinbefore described.

2. The device consisting of a pair of jaws and operating handles, pivotally connected so that they are movable upon the pivot into the open and closed positions respectively, a V shaped cutter whose cutting edges are situated at the required angle to each other, forming the two sides of a V shaped longitudinal groove, and whose cutting edges are transverse to the length of the cutter body, said cutter body being contained and held in a V shaped recess at the outer end of the cutting jaw, the opposite jaw being constructed with a recess parallel to the V shaped edges of the cutter, and at right angles to the length and cutting edges of the cutter for holding and supporting the molding or other strip of wood, while being cut to two miter or other angles as the cutter and recess are pressed together by the handles, the spring for maintaining the cutting device open when not in use, also the thin guide projecting from the under part of the jaw containing the recess for holding the molding while being cut, all operating in the manner and for the purposes substantially as hereinbefore described.

854,298. CHAIR. ROBERT MATTHEWS, Seattle, Wash. Filed Nov. 30, 1906. Serial No. 345,738.



Claim.—1. The combination with the arm of a chair, of a leaf pivotally connected with the arm such connection being adapted to shorten the distance between the arm and the leaf when the latter is swung in one direction and to increase such distance when swung oppositely, and a spring interposed between said arm and leaf.

2. A chair having an arm with a track-bearing for a superposed leaf, said leaf, and pivotal connections between said arm and the leaf adapted to shorten when moved in one direction said connections consisting of a tubular member provided with screw-threaded ends which register with sockets respectively secured to said arm and said leaf, and an interposed spring tending to separate the leaf from the arm.

3. A chair having an arm with a track-bearing for a superposed leaf, said leaf, and pivotal connections between said arm and the leaf adapted to shorten when moved in one direction said connections consisting of a tubular member provided with screw-threaded ends which register with sockets respectively secured to said arm and said leaf.

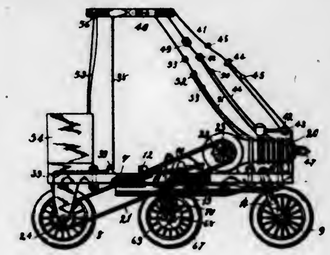
4. In a chair having a single arm, provided with a track-bearing for a superposed leaf, and said leaf, in combination with a pivotal connection between said arm and said leaf whereby the latter can be rotated into various positions, and a spring acting to press apart the leaf and arm.

5. In a chair, the combination of an arm provided with a track-bearing for a superposed leaf, said leaf, and pivotal connections between said arm and said leaf and consisting of a tubular member provided with screw-threaded ends which register with sockets respectively secured to said arm and to said leaf, and an interposed spring tending to separate said leaf from said arm.

6. In combination with the arm of a chair and a leaf, of the pivotal connection between said arm and leaf, comprising flanged sockets provided with internal screw-threads respectively secured to said parts, and a tubular member having screw-threaded ends which respectively engage with said sockets.

854,299. MOTOR-SKATE. CHARLES I. MATSON, Chicago, Ill. Filed May 17, 1906. Serial No. 317,314.

Claim.—1. In apparatus for the purpose specified, a flexible foot supporting frame, a motor arranged on said frame, a pair of foot-plates attached to said frame, wheels supporting the frame, and gearing connecting the motor to one of said wheels.



2. In apparatus for the purpose specified, a flexible foot supporting frame composed of a plurality of subjoined members, a motor carried upon the frame, wheels supporting the framework, means including a pair of foot-plates for securing the feet of the operator to said frame, means for steering the apparatus, and gearing connecting the motor and one of the wheels.

3. An apparatus for the purpose specified including a flexible frame composed of a plurality of subjoined members, a motor, a plurality of wheels supporting the frame, foot-plates mounted upon the frame, means for securing the feet of the operator to said foot plates, and steering means for the apparatus, said steering means controlled by the feet of the operator.

4. An apparatus for the purpose specified including a plurality of conjoined members, flexible connections between said members, a motor, a plurality of supporting wheels, driving gears connecting the motor with one of said wheels, foot plates attached to said members, means for securing the feet of the operator to said plates, steering means controlled by the feet of the operator, and means for retarding the forward movement of the apparatus.

5. An apparatus for the purpose specified including a plurality of members adjustably connected, a motor, a plurality of supporting wheels for the said members, driving gear connecting the motor with one of said wheels, foot plates secured to the said members and provided with means for securing the feet of the operator thereto, steering means controlled by the feet of the operator, a brake for the driven wheel and means for varying the distance between the foot plates.

6. An apparatus for the purpose specified including a framework composed of a plurality of subjoined members, means for varying the distance between the members, a motor carried in said framework, a plurality of wheels supporting the framework, gear connections between the motor and one of said wheels, means for securing the feet of the operator to said subjoined members, means for guiding the apparatus in its forward movement, means for retarding the momentum of the apparatus, means for varying the distance between the feet of the operator independently of the said means for varying the distance between the subjoined members, a belt for the body of the operator and flexible controlling means for the motor attached to said belt.

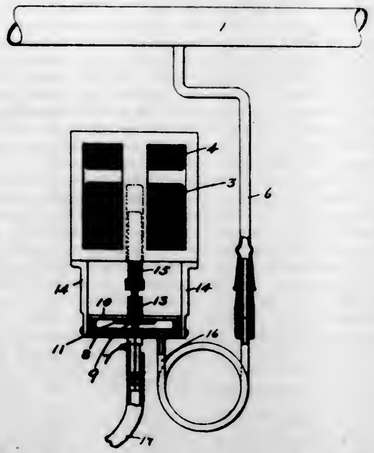
7. An apparatus for the purpose specified including a framework composed of a plurality of subjoined members, means for varying the distance between said members, a motor carried on said framework, a plurality of wheels supporting the framework, gear connection between the motor and one of said wheels, foot plates carried by said members and adapted to be secured to the feet of the operator, means for steering the apparatus, a brake, means for varying the distance between the foot plates independently of the means for varying the distance between the members, a belt adapted to be worn by the operator, flexible controlling means for the motor attached to said belt, means for differentiating said controlling means, and

means for preventing injury to the mechanism if the motor is reversed by a premature explosion.

8. An apparatus for the purpose specified including a framework composed of a plurality of subjoined members, means for varying the distance between said members, a motor carried on one of the members, a plurality of wheels supporting the framework and provided with pneumatic tires, gear connections between the motor and one of said wheels, foot-plates pivoted upon said members and adapted to be secured to the feet of the operator, steering means, a brake manually operated, means for starting the motor, means for varying the distance between said foot-plates, a belt adapted to be worn by the operator, flexible controlling cords for the motor attached to said belt, means for differentiating the several controlling cords and means for preventing injury to the mechanism by a premature explosion in the cylinder of the motor.

9. An apparatus for the purpose specified including a frame composed of a plurality of flexibly joined members, stops for limiting the movement of said members in their mutual relation, a motor carried on said frame, a plurality of wheels supporting said frame, a yielding sprocket mounted upon the motor shaft, a fixed gear mounted upon one of the said wheels, a chain connecting the yielding gear with the fixed gear, foot-plates pivotally secured to the frame, means for adjusting said plates at different angles, steering means operated by the feet, a manually operated brake, a plurality of ratchets to prevent the backward movement of said wheels supporting the frame, means for varying the distance between said foot plates without changing the relative position of the said flexibly joined members, a belt adapted to be worn by the operator, flexible controlling cords for the motor attached to said belt, means for differentiating the several controlling cords, and pneumatic tires for the said wheels supporting the frame.

854,300. VACUUM-TUBE ELECTRIC APPARATUS. DANIEL MCF. MOORE, Newark, N. J., assignor to Moore Electrical Company, New York, N. Y., a Corporation of New York. Filed Feb. 7, 1906. Serial No. 299,886.



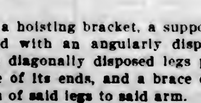
Claim.—1. The combination of a vacuum tube, a valve chamber closed by a spring diaphragm, a valve acted upon by said diaphragm in a direction to keep the valve closed and means responsive to changes in the gaseous condition within the tube for lifting the valve.

2. The combination of a vacuum tube, a valve controlling the supply of a gas to said tube, a valve chamber closed by a spring diaphragm which is connected to the valve and tends to keep the same closed and a transformer supporting energy to the tube and having a movable core connected with the valve and adapted to open the same by an increase in the magnetic pull on said core.

3. The combination of a vacuum tube, a valve controlling the supply of a gas to said tube, a valve chamber closed by a spring diaphragm tending to keep the valve closed, a transformer and means responsive to changes in the magnetic condition thereof for actuating the valve to open the same and admit gas to the tube.

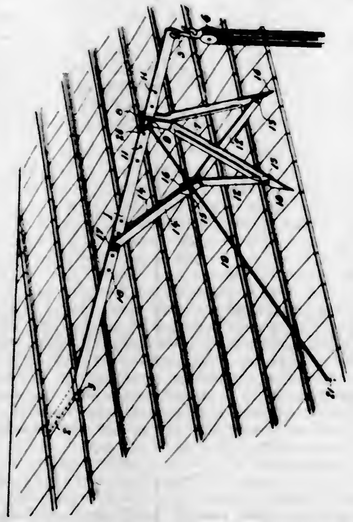
4. The combination of a vacuum tube, a valve controlling the supply of gas to said tube, a valve chamber, a spring diaphragm closing the chamber and connected to the valve, and an actuating electro magnet operating on the diaphragm and valve in response to changes in the electrical resistance of the gas or vapor within the vacuum tube.

854,301. SHIRT-WAIST HOLDER AND SKIRT-SUPPORTER. MARY E. MCCONNELL, Seattle, Wash. Filed June 2, 1906. Serial No. 319,871.



Claim.—A device of the class described comprising a plate having spaced transverse apertures and with a plurality of tongues extending from its side edges and arranged in pairs, the tongues at one side bent into sockets and the tongues at the other side bent into keeper devices, a resilient pin supported at one end in one of said sockets and adapted to be housed at the free end in another of said sockets, and U-shaped pins supported at their bends in the remaining sockets and extending through said apertures and maintained in position in the rear of said keeper devices.

854,302. HOISTING-BRACKET. PETER A. NELSON, Wyanet, Ill. Filed Mar. 11, 1907. Serial No. 361,823.



Claim.—1. In a hoisting bracket, a supporting arm provided at one end with an angularly disposed attaching portion, opposite diagonally disposed legs pivoted to said arm intermediate of its ends, and a brace extending from the lower portion of said legs to said arm.

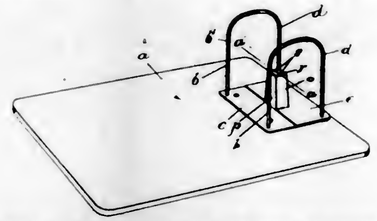
2. In a hoisting bracket, a supporting arm provided at one end with an angularly disposed attaching portion, opposite diagonally disposed legs pivoted to said arm intermediate of its ends, a brace extending from the lower portion of said legs to said arm, and means for adjustably connecting said legs and braces to said arm.

3. In a hoisting bracket, a supporting arm provided at one end with an angularly disposed attaching portion, opposite diagonally disposed legs pivoted to said arm intermediate of its ends, a brace extending from the lower portion of said legs to said arm, and a bracing rod extending from the pivot of said legs and provided with an inserting hook.

4. In a hoisting bracket, a supporting arm provided at its inner end with an angularly disposed attaching portion, opposite diagonally disposed legs having parallel upper ends pivotally connected to said arm, diagonally disposed braces extending from the lower portion of said legs, and parallel links pivotally connected to said braces and said arm.

5. In a hoisting bracket, a supporting arm provided at its inner end with an angularly disposed attaching portion, opposite diagonally disposed legs having parallel upper end pivotally connected to said arm, diagonally disposed braces extending from the lower portion of said legs, parallel links pivotally connected to said braces and said arm, and means for adjusting the pivotal connections of said links and legs with said arm.

854,303. LOCKING-FILE. WILLIAM G. NETHERY, Toronto, Ontario, Canada. Filed Feb. 26, 1906. Serial No. 302,931.



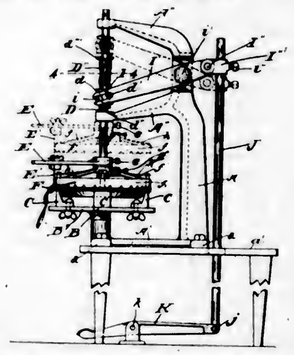
Claim.—1. In a locking file, filing posts extending upward from a plate fastened to the filing board, a hollow post extending upward from said plate, a metal plate having locking members arranged thereon, said metal plate adapted to ride up and down on said hollow post, locking posts arranged with said metal plate, said locking posts adapted to engage with the said filing posts, substantially as described.

2. In a locking file, filing posts extending upward from a plate fastened to the filing board, a hollow post extending upward from said plate, a square sleeve adapted to surround said post, said square sleeve having locking members attached therewith, said locking members adapted to engage with said hollow posts, a metal plate having a sleeve formed integral therewith, said sleeve and plate adapted to ride up and down on said hollow post, locking posts formed with said metal plate, said locking posts adapted to engage with said filing posts, substantially as described.

3. In a locking file, filing posts extending upward from a plate fastened to a filing board, a hollow post extending upward from said plate, a coiled spring contained within said hollow post, a plunger riding on said spring, a square sleeve surrounding said hollow post, flat springs fastened to the sides of said sleeve, slots formed in the sides of said sleeve, the ends of said springs adapted to pass through the said slots, said springs adapted to engage in notches formed in the sides of said hollow post, a metal plate having a sleeve formed integral therewith, said sleeve adapted to surround said square sleeve, means for fastening said sleeve to the said hollow post, locking posts formed with the said metal plate, said locking posts adapted to engage with the said filing posts, substantially as described.

4. In a locking file, a metal plate, filing posts extending upward from said plate, a hollow post extending upward from said metal plate, a coil spring contained within said hollow post, a plunger riding on said spring, a square sleeve adapted to surround said hollow post, flat springs fastened to the sides of said sleeve, slots formed in the sides of said sleeve, the ends of said springs adapted to pass through the said slots, said springs adapted to engage in notches formed in the sides of said hollow post, means for fastening the said sleeve with the hollow post, a metal plate having a sleeve formed integral therewith, said sleeve adapted to surround the said square sleeve, and means to fasten it thereto, locking posts extending upward and forward from said plate, said locking posts adapted to engage with said filing posts, slots formed in the crown plate of said square sleeve, means by which the said springs may be disengaged from the notches in the hollow posts, substantially as described.

854,304. AUTOMATIC PIE TRIMMING AND CRIMPING MACHINE. CLEMENS OSKAMP, Cincinnati, Ohio. Filed July 24, 1905. Serial No. 270,991.



Claim.—1. A pie trimming machine comprising a supporting member adapted to support the pie-plate, a rotary and vertically shiftable shaft centrally located above said supporting member, a holding member loosely carried at the lower end of said shaft adapted to engage the pie, an arm secured to said shaft, and a depending spring-blade secured to said arm adapted to engage the edge of the pie-plate when said shaft is shifted toward said supporting member, together with mechanism to produce co-operative movement of the parts.

2. A pie trimming and crimping machine comprising a supporting member adapted to support the pie-plate, a rotary and vertically shiftable shaft centrally located above said supporting member, a holding and crimping member loosely carried at the lower end of said shaft adapted to engage the pie, an arm secured to said shaft, and a depending spring-blade secured to said arm adapted to engage the edge of the pie-plate when said shaft is shifted toward said supporting member, together with mechanism to produce co-operative movement of the parts.

3. A pie trimming machine, comprising a supporting member adjustable in diameter, a removable holding member adapted to engage the edge of the pie, a rotary trimming blade adjustably supported to accommodate pies of various diameters said blade extending at substantially a right angle to the plane of the pie and adapted to pass around the pie in engagement with the edge of the pie plate and mechanism adapted to produce the co-operative movement of the said parts.

4. A pie trimming machine, comprising a supporting member, a holding member adapted to engage the edge of the pie, spring controlled movable pins carried by said holding member projecting in advance of it, a rotary and endwise shiftable shaft to which said holding member is loosely secured, an arm secured to said shaft, a spring-blade attached to said arm adapted to pass around the pie

in engagement with the edge of the pie-plate, and mechanism to produce the co-operative movement of the parts.

5. A pie crimping and trimming machine comprising a supporting member, a crimping and holding member adapted to engage the edge of the pie, spring-controlled movable pins carried by said crimping and holding member projecting in advance of it, a rotary and endwise shiftable shaft to which said crimping and holding member is loosely secured, an arm secured to said shaft, a spring-blade attached to said arm adapted to pass around the pie in engagement with the edge of the pie-plate, and mechanism to produce the co-operative movement of the parts.

6. A pie trimming and crimping machine, comprising a supporting member adjustable in diameter, a removable holding and crimping member adapted to engage the edge of the pie, a rotary trimming blade adjustably supported to accommodate pies of various diameters, said blade being substantially at right angles to the plane of the pie and adapted to pass around the pie in engagement with the edge of the pie plate and mechanism adapted to produce the co-operative movement of the said parts.

7. A pie trimming machine, comprising a standard, a supporting member secured to said standard having lugs adjustably secured thereto adapted to support the edge of the pie-plate, a vertically shiftable and rotary shaft supported centrally above said supporting member, a holding member removably and loosely secured at the end of said shaft adapted to engage the edge of said pie, a blade carrying arm secured to said shaft, and rotating therewith, a depending spring blade adjustably secured to said arm adapted to engage the edge of the pie-plate, and mechanism to produce co-operative movement of the said parts.

8. A pie trimming and crimping machine, comprising a standard, a supporting member secured to said standard having lugs adjustably secured thereto, adapted to support the edge of the pie-plate, a vertically shiftable and rotary shaft supported centrally above said supporting member by said standard, a holding and crimping member removably, and loosely secured at the end of said shaft adapted to engage the edge of said pie, a blade carrying arm secured to said shaft and rotating therewith, a depending spring blade adjustably secured to said arm adapted to engage the edge of the pie-plate, and mechanism to produce the co-operative movement of the said parts.

9. In a pie trimming and crimping machine, in combination with a supporting member, a crimping member having a ring of the diameter of the pie, the face of said ring above the pie being fluted and adapted to engage the edge of the pie, a spring-blade at right angles to the plane of the pie, adapted to pass around the pie in engagement with the edge of the pie plate, together with mechanism to produce co-operative action of said parts.

10. In a pie trimming and crimping machine, in combination with a supporting-member, a rotary, endwise shiftable shaft supported centrally above said supporting-member, a crimping-member loosely secured to the end of the said shaft above said supporting member, an arm rigidly secured to said shaft above said crimping member, and a spring-blade secured to said arm and adapted to be operated by said shaft.

11. In a pie trimming and crimping machine, in combination with a supporting member, a rotary, endwise shiftable shaft supported centrally above said supporting member, a crimping member loosely and removably secured to the end of said shaft above said supporting member, an arm rigidly secured to said shaft above said crimping member, a spring-blade adjustably secured to said arm, and mechanism adapted to produce co-operative movement of the parts.

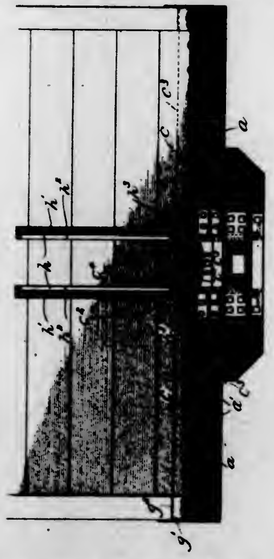
12. In a pie trimming and crimping machine, in combination with a supporting member, a rotary, endwise shiftable shaft supported centrally above said supporting member, a removable crimping member loosely secured at the end of said shaft, movable spring-controlled pins carried by said crimping-member projecting in advance of the same, and a trimming-blade operated by said shaft and adjustable in its distance from the center thereof, together with mechanism to produce co-operative movement of the parts.

13. In a pie trimming and crimping machine, a supporting-member a rotary, endwise shiftable shaft supported centrally above said supporting-member, a crimping-member loosely secured at the end of said shaft, a trimming-blade adapted to be rotated and brought in position by said shaft, an arm, an operating pedal, a link connecting said arm and operating pedal adjustable in length, and mechanism intermediate said arm and said shaft adapted to rotate and depress said shaft upon the operation of said pedal.

14. In a pie trimming machine, in combination with a supporting-member, an endwise shiftable and rotary shaft located centrally above said supporting member, a holding and crimping-member loosely secured to the end of said shaft, a blade-carrying arm rigidly secured to said shaft above said crimping member, and a spring-blade hooked or curved outward at its lower end, together with means for producing co-operative movement of the parts.

15. In a pie trimming and crimping machine, in combination, a supporting-member having radial slotted arms and angular lugs adjustably secured in said slots, a rotary, endwise shiftable shaft centrally located above said supporting-member, and a removable holding and crimping-member loosely secured at the end of said shaft, spring-controlled movable pins carried by said holding and crimping member projecting in advance thereof, a slotted arm rigidly secured to said shaft above said holding and crimping member, a spring-blade curved or hooked outward at its lower end adjustably secured in the slot of said arm, and mechanism adapted to depress and rotate said shaft.

854,305. RAILWAY-CAR. SPENCER OTIS, Chicago, Ill., assignor to National Dump Car Company, a Corporation of Maine. Filed Sept. 7, 1906. Serial No. 333,645.



Claim.—1. A railway car comprising side and end portions, a longitudinal sill and an end sill, said end sill having spaced top plates secured thereto, and an end stake having its lower end extending between spaced top plates and secured thereto and to the longitudinal sill.

2. A railway car comprising side and end portions, a longitudinal sill and an end sill, said end sill having spaced top plates secured thereto, and an end stake formed of a channel bar having its flanges removed at its lower end, said lower end extending between the spaced top plates and secured thereto and to the longitudinal sill.

3. An end stake for railway cars comprising a channel bar member having a web portion and flange portions, said web portion extending below the flanges at its lower end and provided with a recess, substantially as described.

4. A railway car having a longitudinal sill and an end sill secured thereto, said end sill comprising a channel bar, spaced top plates secured thereto and extending rearward therefrom over the longitudinal sill, and an end stake having a recessed lower end extending between the spaced top plates and secured thereto and to the longitudinal sill, said recessed portion engaging a flange of the channel bar.

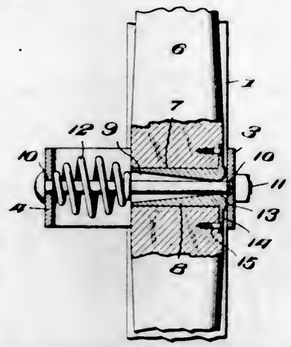
5. A railway car having a longitudinal sill and an end sill, a brace plate secured to the longitudinal sill and to the end sill, and an end stake having its lower end portion secured to the brace plate.

6. A railway car having a longitudinal sill and an end sill, a brace plate secured to the longitudinal sill and to the end sill, and an end stake having a recessed lower portion secured to the brace plate and engaging the end sill.

7. A railway car having an end sill and a longitudinal sill secured thereto, a bowed brace member secured at its ends to the end sill, and an end stake having a recessed portion engaging the end sill, said end stake secured at its lower end to the longitudinal sill.

8. A railway car comprising side and end portions, an end sill, a bowed brace member secured at its ends to the end sill, and gusset plates having a horizontal portion secured to the brace member and vertical flanges secured to the end sill and side members respectively.

854,306. WHIFFLETREE ATTACHMENT. JOHN J. OWENS, Randolph, Wis. Filed Dec. 19, 1906. Serial No. 348,661.

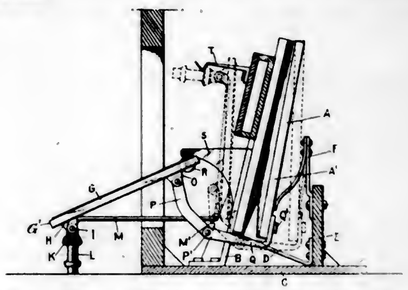


Claim.—The combination with a double tree, of a bracket, a swingle tree disposed through said bracket, a socket through said swingle tree said socket having a flared bore therethrough, ribs at the rear end of said socket, a bolt extending longitudinally through said bracket and bore and a coiled spring surrounding said bolt between the swingle tree and end of the bracket the free ends of said spring being reduced to fit the bolt.

854,307. PEDAL FOR AUTOMATIC PIANOS. JOHN D. PEASE, New York, N. Y. Filed Mar. 22, 1907. Serial No. 363,964.

Claim.—1. The combination of the bellows having a forwardly projecting arm secured to its movable member, the link pivoted to the forward end of said arm, the pedal the toe end of which is pivotally connected with the other end of the link, the rod one end of which is fulcrumed on a stationary support and the other end of which is pivotally connected with the heel end of the pedal, the cam or guide for the toe end of the pedal, and means for holding the pedal in its elevated position.

2. The combination of two bellows each having a forwardly-projecting arm secured to its movable member, the links pivoted to the forward ends of said arms, the pedals having their toe ends pivotally connected with said links, cams or guides for the toe ends of the pedals, rods fulcrumed on a stationary support, a crossbar connecting said rods and pivotally connected with the heel ends of the pedals, and means for holding the pedals in their elevated position.



3. The combination of two bellows, each having a forwardly-projecting arm secured to its movable member, the links pivoted to the forward ends of said arms, the pedals having their toe ends pivotally connected with said links, cams or guides for the toe ends of the pedals, rods fulcrumed on a stationary support, a crossbar connecting said rods and pivotally connected with the heel ends of the pedals, feet depending from said crossbar, and means for holding the pedals in their elevated position.

4. The combination of the bellows, the pedal, the link pivotally connected with the movable member of the bellows and with the toe end of the pedal, the rod one end of which is fulcrumed on a stationary support and the other end of which is pivotally connected with the heel end of the pedal, and the cam or guide for the toe end of the pedal.

5. The combination of the bellows, the pedal, the link pivotally connected with the movable member of the bellows and with the toe end of the pedal, the rod one end of which is fulcrumed on a stationary support and the other end of which is pivotally connected with the heel end of the pedal, the cam or guide for the toe end of the pedal and means for holding the pedal in its elevated position.

6. The combination of the bellows, the pedal, an operative connection between the pedal and the bellows, a normally stationary member connected with the pedal to move therewith when the pedal is being shifted to its inactive position, and a guide for directing the toe end of the pedal during such shifting movement.

7. The combination of the bellows, the pedal, an operative connection between the pedal and the bellows, a normally stationary member connected with the pedal to move therewith when the pedal is being shifted to its inactive position, a guide located adjacent to the path which the toe end of the pedal describes during such shifting movement, and a roller carried by the toe end of the pedal and engaging said guide.

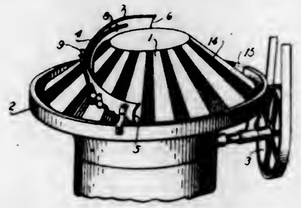
8. The combination of the bellows having a forwardly projecting arm secured to its movable member, the link pivoted to the forward end of said arm, the pedal, the toe end of which is pivotally connected with the other end of the link, the rod one end of which is fulcrumed on a stationary support and the other end of which is pivotally connected with the heel end of the pedal, and the cam or guide for engaging the toe end of the pedal as the latter is being shifted to its inactive position.

9. The combination of two bellows each having a forwardly-projecting arm secured to its movable member, the links pivoted to the forward ends of said arms, the pedals having their toe ends pivotally connected with said links, cams or guides for engaging the toe ends of the pedals as the latter are being shifted to their inactive position, rods fulcrumed on a stationary support, and a crossbar con-

necting said rods and pivotally connected with the heel ends of the pedals.

10. The combination of two bellows each having a forwardly-projecting arm secured to its movable member, the links pivoted to the forward ends of said arms, the pedals having their toe ends pivotally connected with said links, cams or guides for engaing the toe ends of the pedals as the latter are being shifted to their inactive position, rods fulcrumed on a stationary support, a crossbar connecting said rods and pivotally connected with the heel ends of the pedals, and feet depending from said crossbar.

854,308. FORMING-MACHINE. GUNTHER H. PETAI, Boston, Mass. Filed Feb. 23, 1906. Serial No. 302,376.



Claim.—1. A forming machine for plastic material, comprising a carrier having a concave surface, a trough concave toward said surface, the radii of curvature of the said two concave surfaces being diverse; and means to produce relative motion between them in a direction crossing the trough.

2. A forming machine for plastic material, comprising a table having a concave conical surface; a trough adjacent thereto, concave toward said surface; and means to produce relative motion between the two in a direction crossing the trough.

3. A forming machine for plastic material, comprising a table; a trough concave toward the table; means for producing relative motion between them; and a rib adjustable with relation to the surface of the table, set longitudinally in the concave portion of the trough.

4. A forming machine for plastic material, comprising a table; a trough, concave toward the table; means for producing relative motion between them; and a rib set longitudinally in the trough, projecting toward the table and adjustable in position with respect to the trough.

5. A forming machine for plastic material, comprising a table; a trough, concave toward the table; means for producing relative motion between them; and a flexible rib set longitudinally in the trough, projecting toward the table and adjustable in position with respect to the trough.

6. A forming machine for plastic material, comprising a conical table; a trough, concave toward the table; means for producing relative motion between them; said trough being supported at one end by a hinge set perpendicular to the axis of the table and having supports elsewhere adjustable in position parallel to the axis and hinged parallel thereto, whereby its angle, with relation to the axis of the table, may be adjusted.

7. A forming machine for plastic material, comprising a conical table; a trough, concave toward the table; means for producing relative motion between them; and means to withdraw the trough from the table in the direction of the axis of the table to a position parallel with its first position, comprising supports mounted on screws having axes parallel to the axis of the table.

8. A forming machine for plastic material, comprising a rotatable conical table; a rim at the lower edge thereof; and a forming trough, concave toward the table, the entrance of the trough being adjacent to the rim.

9. A forming machine for plastic material, comprising a rotatable conical table; a stationary rim at the lower edge of the table, inclined toward the table; and a forming trough, concave toward the table.

10. A forming machine for plastic material, comprising a rotatable conical table; a stationary rim at the lower edge of the table, inclined toward the table; and a forming trough, concave toward the table; there being a gap in the rim for passage of formed masses delivered by gravity from the trough.

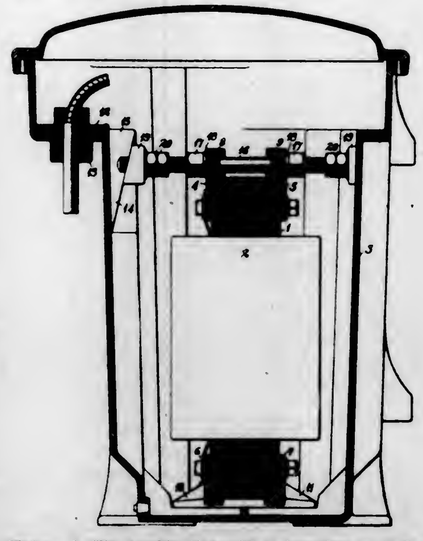
11. A forming machine for plastic material, comprising a rotatable conical table; a stationary rim at the lower edge of the table, inclined toward the table; and a forming trough, concave toward the table; there being a gap in the rim for passage of balls delivered from the trough, said gap being located only in the path of perfectly formed balls, whereby the rim will intercept imperfectly formed balls.

12. A forming machine for plastic material, comprising a rotatable conical table, having its concave surface upward and apex removed; a forming trough, concave toward the surface, running spirally between the apex and base portions of the table; and a conveyer connecting the apex portion with the exterior of the machine.

13. A forming machine for plastic material, comprising a rotating conical table having its concave surface upward and apex removed; a belt conveyer, conveying material to the apex portion of the table; a rim adjacent thereto; a forming trough, starting near the rim and leading spirally upward on the conical surface; and a mechanical conveyer arranged to receive the delivery from the trough and convey the same to the exterior of the machine.

14. A forming machine for plastic material, comprising a rotating conical table; a trough concave toward the surface thereof, having an entrance end near the apex and a discharge end near the periphery of the table; means to produce relative motion between the trough and table; the whole being formed and arranged for passage of the material in a centrifugal direction.

854,309. SUPPORTING MEANS FOR ELECTRIC APPARATUS. EMERSON G. REED, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Nov. 3, 1906. Serial No. 341,922.



Claim.—1. The combination with a transformer casing, of adjustable means for supporting a transformer therein.

2. The combination with a transformer comprising a laminated magnetizable core, a supporting frame therefor, and a plurality of coils, of an inclosing casing, and adjustable means for supporting the transformer in the casing.

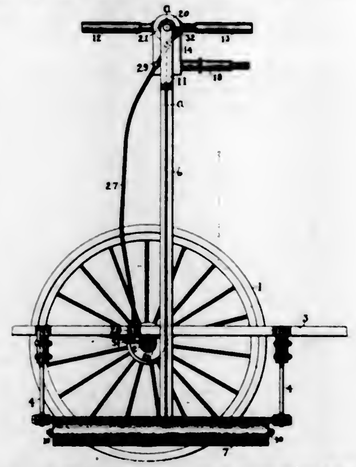
3. The combination with a transformer and a casing therefor, of adjustable means comprising a tie-bolt attached to the transformer and end blocks or washers which are forced against the inside walls of the casing for supporting the transformer in the casing.

4. The combination with a transformer comprising a laminated magnetizable core, a supporting frame therefor, and a plurality of coils, of an inclosing casing, and adjustable means comprising a tie-bolt that is attached to the transformer core and end blocks or washers which are forced against the inside walls of the casing for supporting the transformer therein.

5. The combination with a transformer and a casing having wedge-shaped projections on its inside walls, of adjustable means comprising a tie-bolt that is attached to the transformer core, and beveled end blocks or washers which are forced against the wedge-shaped projections for locking the transformer in the casing.

6. The combination with a transformer comprising a laminated magnetizable core, a binding end frame therefor, ears projecting outwardly from the frame, and a plurality of coils mounted on the core, of an inclosing casing for the transformer having wedge-shaped inward projections and means comprising a tie-bolt that extends through suitable holes in said projecting ears, binding nuts therefor, beveled washers fitted loosely upon the ends of the tie-bolt, the outer surfaces of which are adapted to engage the wedge-shaped projections on the casing, and adjusting nuts which are adapted to force said washers against said projections.

854,310. SIGHTING APPARATUS FOR MOVING VEHICLES. WILLIAM H. ROBERTSON, St. Louis, Mo. Filed Aug. 23, 1906. Serial No. 331,773.



Claim.—1. The combination with a movable vehicle, of a sighting device, and automatic means for focusing the same during movement of the vehicle, substantially as specified.

2. The combination with a movable vehicle, of two oppositely disposed lenses, a single eye-piece for said lenses, and means for focusing said lenses, substantially as specified.

3. The combination with a movable vehicle, of a telescopic instrument, and automatic means for maintaining the same in focus upon a stationary object during movement of the vehicle, substantially as specified.

4. The combination with a movable vehicle, of two telescopic instruments, and automatic means for maintaining the same focused upon separate objects relative to which the vehicle moves during movement of the vehicle, substantially as specified.

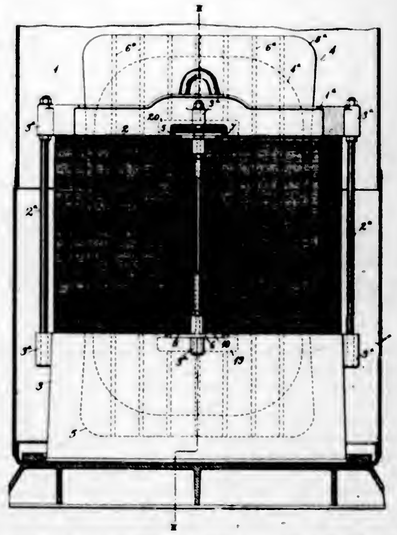
5. The combination with a movable vehicle, of an optical instrument comprising two telescopic tubes having lenses therein, and a single eye-piece for said tubes.

6. The combination with a movable vehicle, of an optical instrument comprising two telescopic tubes, a reflector for each tube, a third reflector to receive reflections from both of said first-named reflectors, and an eye-piece through which the said third reflector may be viewed, substantially as specified.

7. The combination with a movable vehicle, of an optical instrument comprising two separate tubes, a lens in each tube, means for focusing said lenses, a reflector for each tube, a third reflector to receive reflections from both of said first-named reflectors, an eye-piece through which the third reflector may be viewed, and a cross wire device in said eye-piece, substantially as specified.

8. The combination with a movable vehicle, of an optical instrument comprising two telescopic tubes having a lens in each tube, single eye piece for said tubes, a horizontal axis on which said instrument may be moved, and means for keeping the said axis in a horizontal position during the varying positions of the vehicle, substantially as specified.

854,311. TRANSFORMER-COIL SUPPORT. CHARLES E. SKINNER, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Sept. 13, 1905. Serial No. 278,335.



Claim.—1. An extensible frame for supporting transformer coils that comprises a plurality of supporting beams and separating rods therefor.

2. An extensible frame for supporting transformer coils that comprises an upper and a lower supporting beam and a plurality of rods which engage said beams near their ends.

3. In a transformer, the combination with a magnetizable shell or core and a winding therefor, of means for supporting said winding independently of said shell or core.

4. In a transformer, the combination with a magnetizable shell or core, a winding and a supporting base therefor, of means for supporting said winding from said core base independently of said shell or core.

5. In a transformer, the combination with a magnetizable shell or core and a winding therefor, of an extensible frame for supporting said winding independently of said shell that comprises a plurality of supporting beams and separating rods therefor.

6. In a transformer, the combination with a magnetizable core and a winding therefor, of an extensible frame

for supporting said winding independently of said core that is placed within the assembled coils of said winding and extends beyond said coils.

7. In a transformer, the combination with a magnetizable shell or core, a winding and a supporting base therefor, of an extensible frame for supporting said winding independently of said shell or core that is placed within the assembled coils of said winding and is supported by said core base.

8. In a transformer, the combination with a magnetizable shell or core, a winding and a supporting base therefor, of an extensible frame for supporting said winding independently of said shell that comprises an upper beam which engages the upper surface of the opening in said assembled winding, a lower beam that rests on said core-supporting base, and a plurality of separating rods which force said upper and lower beams apart.

9. In a transformer, the combination with a winding comprising a plurality of coils, of means for maintaining the relative positions of said coils.

10. In a transformer, the combination with a magnetizable core and a winding therefor comprising a plurality of coils, of means for supporting said winding independently of said core and for maintaining the relative positions of the coils.

11. In a transformer, the combination with a winding comprising a plurality of coils, of an extensible frame for maintaining the relative positions of said coils.

12. In a transformer, the combination with a magnetizable core and a winding therefor comprising a plurality of coils, of an extensible frame for supporting said winding independently of said core and for maintaining the relative positions of said coils.

13. In a transformer, the combination with a winding comprising a plurality of coils, of an extensible frame for maintaining the relative positions of said coils that comprises a plurality of supporting beams and separating rods therefor.

14. In a transformer, the combination with a magnetizable core and a winding therefor comprising a plurality of coils, of an extensible frame for supporting said winding independently of said core and for maintaining the relative positions of said coils that comprises a plurality of supporting beams and separating rods therefor.

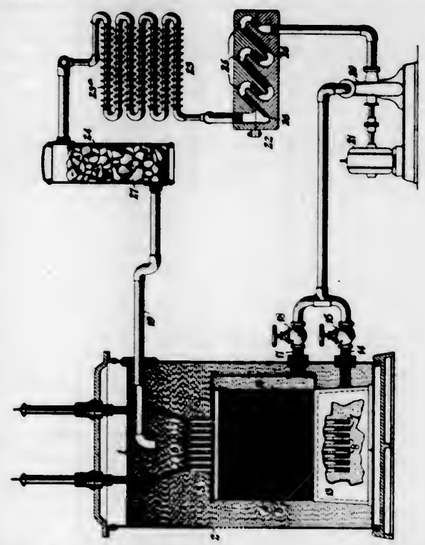
854,312. MEANS FOR COOLING TRANSFORMERS. CHARLES E. SKINNER, Wilkinsburg, and SAMUEL M. KINTNER, Pittsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Oct. 3, 1905. Serial No. 281,185.

Claim.—1. The combination with a transformer having a casing, a laminated core structure provided with ventilating spaces and a winding comprising a plurality of spaced coils, of means for directing streams of insulating liquid respectively into the core spaces and the winding spaces, means for independently regulating the volumes of the streams, and means for withdrawing the united volumes of liquid from the top of the casing.

2. The combination with a transformer having a casing, a laminated core structure provided with ventilating spaces and a winding comprising a plurality of spaced coils, of means for directing independent streams of the liquid respectively into the core spaces and the winding spaces, means for regulating the volume of the streams, and means for withdrawing the united volumes of liquid from the top of the casing.

3. The combination with a transformer the core and winding structures of which are provided with ventilating apertures having non-communicating inlet ends, and an insulating liquid in which the transformer is immersed, of a system of circulation for the liquid comprising means for directing independent streams of the liquid respectively through the core apertures and the winding apertures.

4. The combination with a transformer the core and winding structures of which are provided respectively with ventilating apertures having non-communicating inlet ends, and an insulating liquid in which the transformer is immersed, of a system of circulation for the liquid comprising means for directing independent streams of the liquid respectively through the core apertures and the winding apertures and means for separately regulating the volume of the streams.



5. The combination with a transformer the core and winding structures of which are provided respectively with ventilating apertures having non-communicating inlet ends, and an insulating liquid in which the transformer is immersed, of a system of circulation for the liquid comprising means for effecting movement thereof, means for directing streams of the liquid respectively through the core apertures and the winding apertures and means for cooling the liquid.

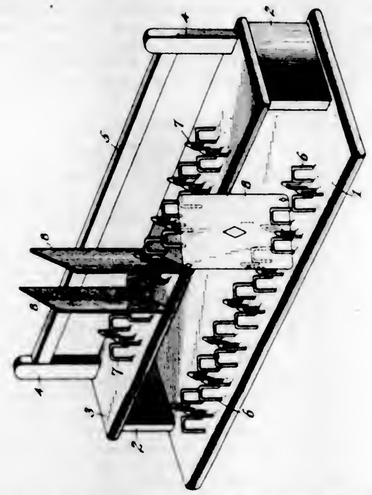
6. The combination with a transformer the core and winding structures of which are provided respectively with ventilating apertures having non-communicating inlet ends, and an insulating liquid in which the transformer is immersed, of a system of circulation for the liquid comprising means for effecting movement thereof, means for directing streams of the liquid respectively through the core apertures and the winding apertures and means for filtering the liquid.

7. The combination with a transformer the core and winding structures of which are provided respectively with ventilating apertures having non-communicating inlet ends, and an insulating liquid in which the transformer is immersed, of a system of circulation for the liquid comprising means for effecting movement thereof, means for directing streams of the liquid respectively through the core apertures and the winding apertures and means for dehydrating the liquid.

8. The combination with a transformer the core and winding structures of which are provided respectively with ventilating apertures hoving non-communicating inlet ends, and an insulating liquid in which the transformer is immersed, of a system of circulation for the liquid comprising means for effecting movement thereof, means for directing streams of the liquid respectively through the core apertures and the winding apertures, means for cooling the liquid, means for filtering the liquid and means for dehydrating the liquid.

854,313. GAME APPLIANCE. FRANK I. SLAUENGER, New York, N. Y. Filed Feb. 27, 1906. Serial No. 303,245.

Claim.—1. In a card supporting device, a base, a platform disposed above said base, and means extending upwardly from said base and platform to support cards and expose them to view as desired.

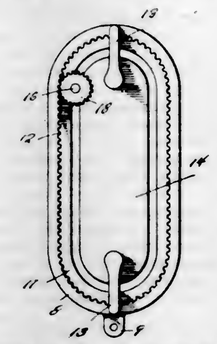


2. In a card supporting device, a base member, a platform disposed above said base member and of less width than the base, and card supporting members extending upwardly from said base and platform and disposed in groups thereon.

3. A card supporting device comprising a base, a platform above said base, means to support said platform, staple like supporting members extending upwardly from said base and platform and disposed in groups to display cards or the like.

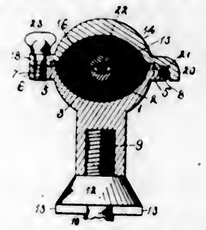
4. In a card supporting device, a base, a platform disposed above said base, a plurality of supports disposed in groups on said base and platform, the free ends of said supports being entered into said base and platform and each support radiating from a common center and disposed apart to receive cards therebetween whereby said cards will be disposed at an angle to the ends of the platform and base.

854,314. MEANS FOR OPERATING PUMPS. EZRA O. SMITH, Galesburg, Ill. Filed March 28, 1906. Serial No. 308,540.



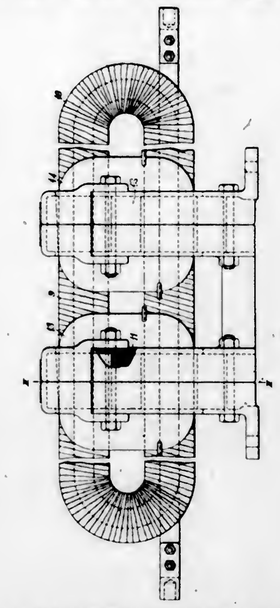
Claim.—A device of the class described comprising an open frame provided with a continuous flange, a continuous rack formed upon the frame to one side of the flange, a web plate, arms connecting the frame and the web plate and supporting the same with its edges in spaced relation to the flange, said frame and web being integrally connected, a shaft arranged to travel between the edges of the flange and the plate, a pinion carried by the shaft and meshing with the rack, and a roller carried by the shaft and arranged to travel upon that portion of the frame which loes at the other side of the flange to the rack.

854,315. INSULATOR. HENRY D. STAUFFER, Oregon, Ill. Filed July 24, 1905. Serial No. 270,974.



Claim.—An insulator comprising two halves hinged together, means for connecting their free edges, their meeting faces—each having a section of insulating material fixedly connected thereto and each section of insulating material having a metallic plate fixedly connected thereto.

854,316. ELECTRICAL APPARATUS. WILBUR H. THOMPSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Nov. 23, 1906. Serial No. 344,763.



Claim.—1. A transformer comprising a primary coil, a plurality of independent core members and secondary windings that are severally influenced by said core members.

2. A transformer comprising a main coil, a plurality of secondary coils, and independent magnetizable core members whereby the secondary coils are severally and magnetically interlinked with the main coil.

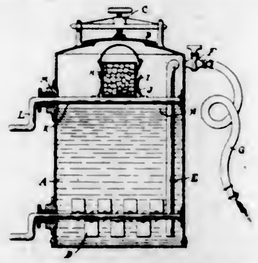
3. The combination with an electric circuit, a primary

coil connected in series therewith, a plurality of independent cores which are magnetized by said coil, of a plurality of secondary windings which are magnetically interlinked with the primary coil by the independent cores.

4. The combination with an electric circuit, an interrupter therefor and a transformer coil connected in series therewith, of independent magnetizable cores surrounding said coil, secondary coils magnetically interlinked by said series coil, means for actuating the interrupter, said means being energized from one of said secondary coils, and another electrical apparatus which is relatively sensitive to electro-magnetic disturbances and is connected to another of said secondary coils.

5. The combination with an electric circuit, an automatic interrupter, and an electrical measuring instrument, of a transformer comprising a primary coil connected in series with said circuit, a pair of independent core members, and secondary coils severally influenced thereby, said automatic interrupter being energized from one of the secondary coils and the measuring instrument being energized from the other secondary coil.

854,317. AUTOMATIC SPRAY FOR PAINTING, AGRICULTURE, DISINFECTING, AND OTHER ANALOGOUS PURPOSES. WILLIAM TYREE, Nelson, New Zealand. Filed Nov. 14, 1906. Serial No. 343,440.



Claim.—1. An automatic spraying device comprising a receptacle, spraying means connected thereto, a carbid receptacle in connection with said receptacle and means for introducing fluid into said carbid receptacle for generating gas.

2. An automatic spraying device comprising a receptacle, spraying means connected therewith, a carbid receptacle in connection with said receptacle and means for introducing fluid to said carbid receptacle, said means including means for inverting the carbid receptacle.

3. An automatic spraying device comprising a receptacle, spraying means connected therewith, a rotary shaft passing through the receptacle and a carbid receptacle carried by said shaft and adapted to be immersed in the liquid in the receptacle when the shaft is rotated.

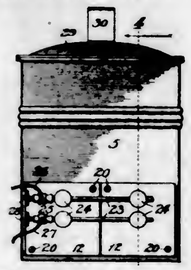
854,318. ELECTRIC STERILIZER. JULIUS B. WANTZ, Chicago, Ill., assignor to Victor Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 9, 1907. Serial No. 361,424.

Claim.—1. In an electric steriliser, the combination of a receptacle having a bottom of convolute form in cross-section, and resistance-coils in tubular casings supported to extend in the troughs of said bottom, for the purpose set forth.

2. In an electric steriliser, the combination of a receptacle having an in-set bottom of convolute form in cross-section, and resistance-coils in tubular casings supported to extend in the troughs of said bottom, for the purpose set forth.

3. In an electric steriliser, the combination of a receptacle having end-openings, tubular resistance-coil casings fastened in the receptacle to extend along the base thereof and coincide with said openings, and resistance-coils supported in said casings and insertible and withdrawable through said openings.

4. In an electric steriliser, the combination of a receptacle having openings in one end and plug-closed openings in its opposite end, tubular resistance-coil casings fastened in the receptacle to extend along the base thereof and coincide with said openings, resistance-coils supported in said casings and insertible and withdrawable through said first-named openings, and a filling of granular heat-retaining material in each casing about the coil therein.



5. In an electric steriliser, the combination of a receptacle, a pair of tubular resistance-coil casings fastened in the receptacle to extend along its base, resistance-coils supported in said casings and provided on their outer ends with heads, binding-posts on the heads, with which the wire-ends of the coil are connected, and pins adapted to have connected with them current-supply wires, separably connecting the binding-posts from one head to the other in pairs, for the purpose set forth.

6. In an electric steriliser, the combination of a receptacle, a pair of tubular resistance-coil casings fastened in the receptacle to extend along its base, resistance-coils supported in said casings with a filling of heat-retaining material about them and provided on their outer ends with heads, binding-posts on the heads with which the wire-ends of the coils are connected, and pins adapted to have connected with them current-supply wires, separably connecting the binding-posts from one head to the other in pairs, for the purpose set forth.

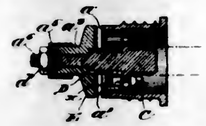
7. In an electric steriliser, the combination of a receptacle having a bottom of convolute form in cross-section, resistance-coils in tubular casings supported to extend in the troughs of said bottom, and a handle-equipped tray seating in the receptacle on said casings, for the purpose set forth.

8. In an electric steriliser, the combination of a receptacle, a pair of resistance-coils fastened in the receptacle to extend along its base and each comprising a wire-wound tube of refractory material with heads on its inner and outer ends and a rod connecting them through the tube, having one end of the wire connected with it and provided on the outer head with a binding-post, and a second binding-post on said outer head with which the other end of the wire is connected, connecting pins withdrawably passing through the binding-posts with which corresponding ends of the wires of the two coils are connected and adapted to have connected with them current-supply wires, and means on the binding-posts for releasably fastening said pins to them.

9. In an electric steriliser, the combination of a receptacle having a bottom of convolute form in cross-section and end-openings, tubular casings fastened in the receptacle to extend along the troughs of the bottom and coincide with said openings, resistance-coils supported in said casings to be withdrawable through said openings and provided with heads on their outer ends covering said openings, said heads carrying binding-posts, and removable fastening devices securing the heads to the receptacle-wall.

854,319. VALVE. JACOB WEBER, Chelsea, Mass. Filed Aug. 15, 1906. Serial No. 330,662.

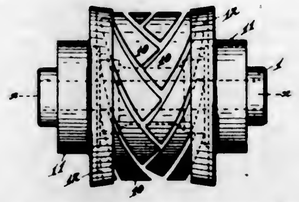
Claim.—1. As a new article of manufacture, the valve, made up of a hollow body portion, having a perforate wall at one end, abutments upon the inside of the body; a stem having cam wings the upper surface of which co-operates with one abutment and the lower surface with another abutment to cause the stem to be first rotated and then moved longitudinally as it is rotated, the inner end of the stem passing through the wall of the body and carrying a valve plate; that valve plate, adapted, by the rotating-longitudinal movement of the valve stem to be moved against or away from the inner wall of the body.



2. As a new article of manufacture, the valve, made up of a hollow body portion, having a perforate wall, abutments upon the inside of the body; a stem having wings carrying cam surfaces upon the upper and lower surfaces thereof, the cams being opposed in action and co-operating with the abutments upon the inside of the body to actuate the stem longitudinally and lock it in its extreme positions, the inner end of the stem projecting through the end wall of the body and carrying a valve fast thereto, all organized to hold the valve against or away from the inner wall of the body.

3. As a new article of manufacture, the valve, made up of a hollow body portion, having a perforate wall; abutments upon the inside of the body; a stem having cam wings the upper surface of which co-operates with one abutment and the lower surface with another abutment to cause the stem to be moved longitudinally as it is rotated, the inner end of the stem passing through the wall of the body and carrying a valve plate; corresponding conical valve seats upon the periphery of the valve plate and body and a recessed portion within the plate seat, substantially as described.

854,320. HEEL-SEAT-FORMING MACHINE. SAMUEL J. WENTWORTH, Newport, Ky., assignor to The Wentworth Company, Cincinnati, Ohio, a Corporation. Filed Apr. 6, 1906. Renewed Mar. 16, 1907. Serial No. 362,776.



Claim.—1. In a heel seat forming device, a hub, a series of irons and supporting bars pivotally attached to the hub, and coil springs supporting the free ends of the bars, substantially as described.

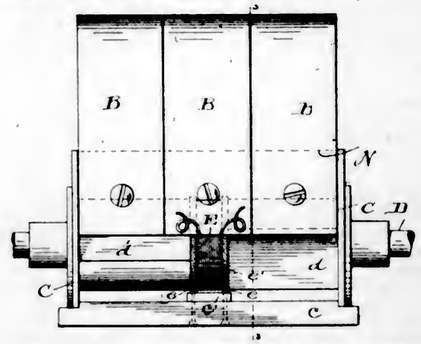
2. In a device of the class described, a hub, a series of bars alternately attached at opposite ends to the hub, springs mounted between the hubs and the free ends of the bars, and irons attached to said bars, substantially as described.

3. In a device of the class described, a hub, a series of bars alternately attached at opposite ends of the hub, the hub being provided with a series of radial orifices adjacent to the free end of said bars, coil springs within said orifices upon the upper ends of which the free ends of said bars engage, and irons secured to the said bars, substantially as described.

4. In a device of the class described, a hub having raised portions at each end the peripheries of which are provided with a series of axially extended slots, a series of bars alternately seated in said slots, with their free ends extending into the intermediately alternating slots, the hub being provided with a series of radial orifices under the free ends of the bars, coil springs within said orifices upon the upper ends of which the free ends of said bars engage, and irons secured to said bars, substantially as described.

5. In a device of the class described, a hub having raised portions at each end the peripheries of which are provided with a series of axially extended slots, a series of bars alternately seated in said slots, with their free ends extending into the intermediately alternating slots, the hub being provided with a series of radial orifices under the free ends of the bars, coil springs within said orifices upon the upper ends of which the free ends of said bars engage, and irons secured to said bars, and collars seated upon the said raised ends of the hub, having guard flanges overhanging the outer ends of said irons, substantially as described.

854,321. DYNAMO-ELECTRIC MACHINE. JOSEPH A. WILLIAMS, Cleveland, Ohio. Filed Feb. 28, 1906. Serial No. 303,328.



Claim.—1. In a magneto-electric machine, the combination of a non-rotatable spool on which are armature windings, and a rotatable core passed axially through said spool and having, at one end of the spool, two diametrically opposed projecting wings, and having, at the other end of said spool two opposed projecting wings lying in a diametrical plane at right angles to that in which the other two wings lie, with magnets having pole pieces whose faces are concentric with the axis of said core,—the distance between the centers of said pole faces being substantially 90°.

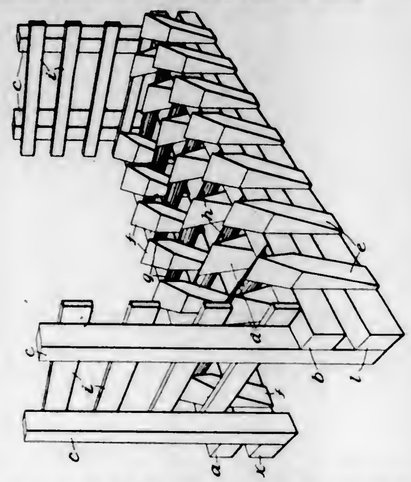
2. In a machine of the character described, a non-rotatable armature winding, a rotatable inductor core passed axially through said winding and having on one side of the winding diametrically opposed wings and having on the other side of the winding diametrically opposed wings lying in a plane at right angles to that of the first named wings, with magnetic pole pieces on opposite sides of the winding and having faces concentric with the said core, the centers of said pole faces being substantially 90° apart.

3. In a machine of the character described, a non-rotatable armature winding, a rotatable inductor core passed axially through said winding and having on one side of the winding diametrically opposed wings and having on the other side of said winding diametrically opposed wings lying in a plane at right angles to that of the first named wings, magnetic pole pieces on opposite sides of the winding, there being two pieces of opposite polarity on each side of the winding, the pieces on each side of the winding being in the same axial plane with pieces having the same polarity on the opposite side of the winding.

854,322. COMBINED HOG-STOP AND CATTLE-PASS. DALTON K. WILSON, Gladbrook, Iowa. Filed Aug. 30, 1906. Serial No. 332,717.

Claim.—1. A device of the character described, comprising in combination with an impounding inclosure, a

longitudinal structure inserted therein, blocks attached to said structure and projecting thereabove, and cross-bars fastened upon said structure between said blocks.



2. A device of the character described comprising in combination with an impounding inclosure, longitudinal structures spaced apart, and inserted therein, blocks attached to said structure and projecting thereabove, and cross-bars fastened transversely upon said structures between said blocks.

3. A device of the character described, comprising in combination with an impounding inclosure, a longitudinal structure inserted therein, cross-bars fastened transversely upon said structure and spaced apart, and a plurality of projecting studs upon said cross-bars.

4. A device of the character described, comprising in combination with an impounding inclosure, longitudinal structures inserted therein and spaced apart, cross-bars fastened transversely upon said structures and spaced apart, and a plurality of projecting studs upon said cross-bars.

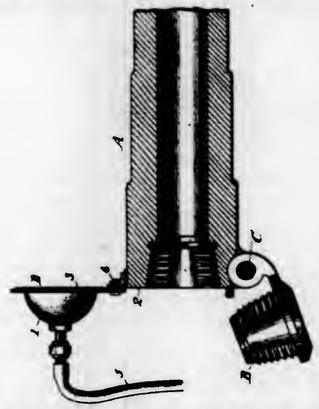
5. A device of the character described, comprising in combination with an impounding inclosure, a longitudinal structure inserted therein, blocks attached to said structure and projecting thereabove, cross-bars fastened upon said structure between said blocks, and a plurality of studs upon said cross-bars.

6. A device of the character described, comprising in combination with an impounding inclosure, longitudinal structures inserted therein and spaced apart, blocks attached to said structure and projecting thereabove, cross-bars fastened transversely upon said structures between said blocks, and a plurality of projecting studs upon said cross-bars.

854,323. MEANS FOR CLEANING AND COOLING GUN-BARRELS BY FLUID UNDER PRESSURE. AUGUSTUS G. WINTER, Chicago, Ill., assignor of one-half to Edmund G. Buckner, Philadelphia, Pa. Filed May 9, 1904. Serial No. 207,121.

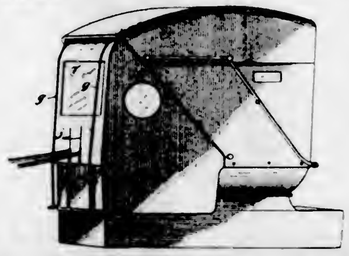
Claim.—1. In a device for preventing flare-backs in the use of ordnance, the combination with a piece of breech-loading ordnance having a removable breech block, of means for introducing fluid under pressure into the breech to expel the inflammable gases or material, said means consisting of a plate or cover for the end of the gun arranged to close the opening made by the removal of the breech block, and a supply pipe or hose, one end of which is connected to said plate or cover while the other is connected to means for supplying fluid or liquid under pressure.

2. The combination with a piece of ordnance having a removable breech block, of means for introducing thereinto after firing fluid under pressure to prevent a flare-back, consisting of a plate or cover arranged to close the opening made by the removal of the breech block, means for holding the cover in place at the breech of the gun, and a supply pipe through which the fluid is delivered connected with the said cover, substantially as set forth.



3. In a device for preventing flare-backs in rapid firing or breech loading ordnance, the combination with a gun having a removable breech block, of a plate or cover for closing the breech after the breech block has been removed, said plate or cover having a central opening, means for locking the plate or cover in the breech, and piping means for conveying fluid under pressure to the said opening in the cover.

854,324. STORM-FRONT FOR BUGGIES. MOSS W. BEARDSLEY, Fremont, Ohio. Filed Oct. 15, 1906. Serial No. 339,043.



Claim.—1. In combination with a buggy, of a storm front adapted to telescope or slide back into the top without folding or rolling, means for locking the storm front down to the dash-board, means for automatically retracting the storm-front when released from the dash-board, said means consisting of a pair of webbings attached to the upper end of the storm-front and a spring actuated roller mounted in the rear upper part of the buggy top.

2. In combination with a buggy provided with guide eyes depending from its top, a storm-hood or front having curved rods mounted in front of it, which rods work through said eyes, the storm-hood or front being suspended from said eyes, and spring means for returning the storm-hood up and back into the buggy top.

3. In combination with a buggy provided with guide eyes depending from its top, of a storm-hood having curved rods in front of it, which guide rods work through said depending eyes and suspend the storm-hood therefrom, whereby said storm-hood may be swung back into the buggy-top.

854,325. DESK-RULER. HENRY F. BELCHER, Irvington, N. J., assignor to The Belcher Brothers Company, New York, N. Y. Filed Dec. 19, 1905. Serial No. 292,454.



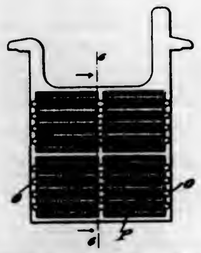
Claim.—1. A ruler having upon its lateral face a central longitudinally extended depression and provided with longitudinally extended non-alined edge surfaces which meet the opposite sides of said central depression at angles forming longitudinally extended projections along opposite sides of said depression and whereon the ruler is adapted to be supported with said edge surfaces and the surface within the said depression out of contact with a supporting surface.

2. A ruler having upon its lateral face a central longitudinally extended depression, and provided with longitudinally extended edge surfaces at angles to each other and which meet the opposite sides of said central depression at angles forming longitudinally extended projections along opposite sides of said central depression, and whereon the ruler is adapted to be supported with said edge surfaces and the surface within said depression out of contact with a supporting surface.

3. A ruler having upon each of its opposite lateral faces a central longitudinally extended depression, and provided at opposite sides of each such depression with longitudinally extended edge surfaces at angles to each other and which meet the opposite sides of the intervening depression at angles forming longitudinally extended projections along opposite sides of said central depression and whereon the ruler is adapted to be supported with said edge surfaces and the surfaces within said depression out of contact with a supporting surface.

4. A ruler having surfaces adapted to meet at angles along its edge, and terminating, opposite to their junctures, in projections extended lengthwise of the ruler, and a metallic strip held to the ruler at the juncture of said angular edge surfaces, and having an edge portion extended beyond the point of juncture of said angular edge surfaces of the ruler and adapted for contact with a support on which the ruler is rested, to maintain the ruler with its lowermost angular edge surface out of contact with such support.

854,326. BATTERY-PLATE AND PROCESS OF MAKING SAME. JOSEPH BIJUR, New York, N. Y., assignor to The General Storage Battery Company, a Corporation of New York. Filed Aug. 14, 1906. Serial No. 330,524.



Claim.—1. The process substantially as herein described of making battery plates which consists in arranging the frame of the plate and the active portions in close proximity, whereby a substantial construction will result if welded together at few points, then superheating globules of lead or alloy to a degree at which they are capable of superficially fusing the surfaces they touch and depositing said globules while in that condition at different points between the frame and active portions.

2. The process substantially as herein described of uniting the parts of a battery plate, which consists in depositing globules of lead or alloy superheated to a degree at which they are capable of superficially fusing the surfaces they touch in suitable position between the frame and active portions, thereby welding the parts of the plate together at separated points.

3. The process substantially as herein described of welding the parts of a battery plate together, which consists in depositing globules of lead or alloy superheated to a degree at which they are capable of superficially fusing the surfaces they touch at isolated points between the frame and active portions.

4. The process substantially as herein described of making battery plates, which consists in arranging the frame of the plate and the active portions in close proximity in substantially the same plane, whereby a substantial construction will result if welded together at a few points, then superheating globules of lead or alloy to a degree at which they are capable of superficially fusing the surfaces they touch and immediately depositing said globules while in that condition at different points between the active portions and the frame.

5. The process substantially as herein described of making battery plates which consists in providing pockets on the frame and lugs on the active portions, arranging said parts in close proximity, with the pockets and lugs registering with each other, then superheating globules of lead or alloy to a degree at which they are capable of superficially fusing the surfaces they touch and depositing said globules while in that condition in the pockets, thereby welding the parts together at different points.

6. The process substantially as herein described of making battery plates which consists in superheating a globule of lead or alloy to a degree at which it is capable of fusing the surfaces it touches and depositing it in that condition while free from oxid in a suitable place between the surfaces of the parts of the plate for uniting said parts.

7. The process substantially as herein described of making battery plates which consists in superheating a globule of lead or alloy in a condition free from oxid, and depositing said globule while superheated and in that condition in a suitable place to make contact with a portion of the frame and a portion of the active part, to weld said parts together.

8. The process substantially as herein described of making battery plates which consists in superheating a globule of lead or alloy to a sufficiently high temperature to be capable of fusing simultaneously with the surfaces of the frame and active part before the globule solidifies, then immediately depositing said globule while superheated and free from oxid between the parts to be united.

9. The process substantially as herein described of making battery plates which consists in superheating a globule of lead or alloy to such temperature that the oxid on its surface readily fuses and combines with the hydrocarbon of the heating flame to leave the incandescent metallic portion of the drop free to unite with the solid metal parts of the plate, then immediately depositing said globule in that condition in a suitable place between the parts of the plate to unite the same.

10. The process substantially as herein described of making battery plates which consists in providing pockets on both sides of the frame and lugs on the active portions, arranging said parts in close proximity in substantially the same plane with the pockets opposite the lugs, then superheating globules of lead or alloy to a degree at which they are capable of fusing the surfaces they touch and depositing said globules in that condition in the pockets on one side of the plate and on the other side thereof to weld the active portions to the frame.

11. The process substantially as herein described of making battery plates which consists in arranging the parts to be united in close proximity, and depositing a globule of superheated lead or alloy while free from oxid between the meeting surfaces of said parts to weld them together.

12. The process substantially as herein described of uniting the active portions of a battery plate in the form of grills to the surrounding frame, which consists in arranging the grills within the frame with the edges in proximity thereto, whereby a substantial construction will result if welded to the frame at few points, then superheating lead or antimonial lead alloy in the form of globules to such temperature that the oxid on the surface of a globule readily fuses and combines with the hydrocarbon of the heating flame to leave the incandescent metallic portion of the globule free to unite with the solid metal parts of the plate, then immediately depositing said globules in that condition in a suitable place between the parts of the plate to unite the same without permitting the globules to flow over portions of the surfaces of the plate and thereby become cooled.

834,327. INDICATING MECHANISM FOR ELECTRIC FUSES OR CUT-OUTS. LEONARD B. BUCHANAN, Woburn, Mass. Filed Sept. 14, 1906. Serial No. 334,585.



Claim.—1. An indicating-mechanism for an inclosed electric fuse consisting of an indicating-device, actuating means therefor, a fuse-wire, a support for said parts, and terminals thereon electrically connected with said fuse wire and means for attaching the support to the outside of the shell or case of a fuse, and for connecting the fuse-wire electrically with the terminals of said fuse, substantially as described.

2. An indicating-mechanism adapted to be supported upon the exterior of the shell or case of an inclosed electric fuse, comprising an indicating-device, actuating means therefor, a fuse-wire, and means for electrically connecting the opposite ends of said fuse-wire with the exterior of the terminals of said fuse, substantially as described.

3. An indicating-mechanism adapted to be supported upon the exterior of the shell or case of an inclosed electric fuse, comprising an indicating-device, actuating means therefor, a fuse-wire, and means for electrically connecting the opposite ends of said fuse-wire with the exterior of the terminals of said fuse, and a support of insulating material for said indicating-mechanism, substantially as described.

4. An indicating-mechanism adapted to be applied externally to an inclosed electric fuse, comprising an indicating-device, actuating means therefor, a fuse-wire having conducting terminals secured to its ends for electrically connecting it with the exterior of the terminals of the fuse, a support for said parts, and means for attaching said support to the exterior of the fuse, substantially as described.

5. An indicating-mechanism adapted to be applied externally to an inclosed electric fuse, comprising an indicating-device, actuating means therefor, a fuse-wire having terminal plates at its opposite ends for electrically connecting it with the exterior of the terminals of the fuse, a support for said parts which is engaged by said terminal plates, and means for attaching said support to the exterior of the fuse, substantially as described.

6. An indicating-mechanism adapted to be applied externally to an inclosed electric fuse, comprising an indicating-device, actuating means therefor, a fuse-wire, means for holding said fuse-wire adjacent said actuating means, and a support for said parts, composed of insulating material and having conducting terminals which are adapted to be attached to the exterior of the terminals of the fuse, substantially as described.

7. A supporting-plate of insulating material having conducting terminals adapted to be attached to the exterior of the terminals of an inclosed electric fuse having a hole through it, an indicating-device at said hole, actuating means for said indicating-device located back of it, but supported by said plate, a fuse-wire also supported by said plate and located adjacent said actuating means, the opposite ends of which are connected with the terminals of the supporting-plate, substantially as described.

8. A supporting-plate of insulating material having conducting terminals adapted to be attached to the exterior of the terminals of an inclosed electric fuse, having a hole through it, an indicating-device at said hole, actuating means for said indicating-device contained in a compartment back of said indicating-device, a fuse-wire extended through said compartment and along the under side of said plate, the opposite ends of which are adapted to be connected with the terminals of the plate, substantially as described.

9. A supporting-plate of insulating material having conducting terminals adapted to be attached to the exterior of the terminals of an inclosed electric fuse, a fuse-wire extending along the under side of said plate, and connected at its ends to the terminals of said plate, and an indicating-device borne by said plate for indicating the condition of the fuse, substantially as described.

10. An inclosed electric fuse having an auxiliary fuse-wire external to the casing thereof and removably connected to the exterior of the fuse terminals and an indicating-device, for indicating the condition of the fuse-wire, substantially as described.

11. An inclosed electric fuse having an external shunt fuse-wire, removably connected at its ends to the exterior of the fuse-terminals, means for covering said fuse-wire and an indicating-device, for indicating the condition of the fuse-wire, substantially as described.

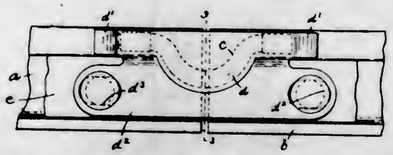
12. An inclosed electric fuse having exteriorly attached to its terminals a shunt fuse-wire, a supporting-plate for said shunt fuse-wire, an indicating-device supported by said plate, and actuating means therefor, substantially as described.

13. An inclosed electric fuse having removably attached to the exterior thereof an indicating-mechanism consisting of a fuse-wire electrically connected to the terminals of the fuse and an indicating-device for indicating the condition thereof, substantially as described.

14. An inclosed electric fuse provided with an indicating-mechanism removably attached to the exterior thereof consisting of a covered fuse-wire, and an indicating-device for indicating the condition thereof, substantially as described.

15. An inclosed electric fuse of the cartridge type having removably attached on the exterior thereof an indicating-mechanism consisting of a covered conductor of small cross sectional area, electrically attached to the terminals of said cartridge fuse and an indicating-device for indicating the condition thereof, and actuating means for causing said indicating-device to operate, substantially as described.

834,328. RAIL-BOND PROTECTOR. LEONARD B. BUCHANAN, Woburn, Mass. Filed Mar. 18, 1907. Serial No. 362,806.



Claim.—1. A protecting plate or shield for rail-bonds consisting of a bond-covering portion and an attaching-portion, the latter adapted to extend from rail to rail and to overlie the fish-plate, and to be secured thereto, substantially as described.

2. A protecting plate or shield for rail-bonds consisting of a bond-covering portion having inturned ends and an attaching-portion, the latter adapted to extend from rail to rail and to overlie the fish-plate and to be secured thereto, substantially as described.

3. A protecting plate or shield for rail-bonds consisting of a bond-covering portion and an attaching-portion, the latter adapted to extend from rail to rail and to overlie the fish-plate, and to be secured thereto, said portions being offset with respect to each other, substantially as described.

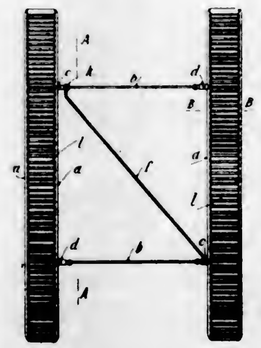
4. A protecting plate or shield for rail-bonds consisting of a bond-covering portion and an attaching-portion, the latter adapted to extend from rail to rail and to overlie the fish-plate, and to be secured thereto, said portions being offset with respect to each other, and having an opening at their junction, substantially as described.

5. A protecting plate or shield for rail-bonds consisting of a bond-covering portion, shaped to occupy a position outside of and close to the bond to be protected and having inturned ends adapted to bear against the rails, and an attaching-portion adapted to extend from rail to rail and to overlie the fish-plate and to be secured by the fish-plate bolts, said portions being offset with respect to each other and having an opening at the lower edge of the covering portion, substantially as described.

6. A protecting plate or shield for rail-bonds attached to the ball of the rail consisting of a bond-covering portion extending outside of the bond, having ends turned at an obtuse angle in toward the rail adapted to deflect wheels of vehicles and an attaching-portion adapted to be secured by the fish-plate bolts, substantially as described.

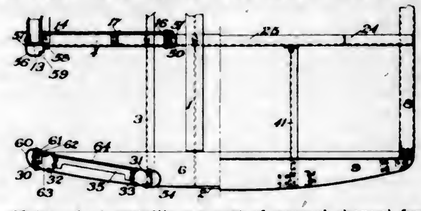
7. A protecting plate or shield for rail-bonds attached to the ball of the rail consisting of a bond-covering portion extending outside of the bond, having ends turned at an obtuse angle in toward the rail adapted to deflect wheels of vehicles, and an attaching-portion offset with respect to the bond-covering portion, said plate having an opening below the bond-covering portion, substantially as described.

854,329. PORTABLE BRIDGE. FERDINAND CHARRON, Puteaux, France. Filed Feb. 5, 1907. Serial No. 355,938.



Claim.—A portable bridge intended to enable vehicles to cross ditches comprising two portable bars *a* of U-shaped cross-section adapted to be placed across the ditch to be traversed,—in combination with lugs fixed on one side of each bar,—two transverse rods *b* adapted to keep the bars *a* at the proper distance apart from each other,—pivots adapted to join fixedly one end of each transverse rod *b* to a lug of one of the bars,—removable linch-pins adapted to secure the other end of each transverse rod *b* to a lug of one of the bars,— and a diagonal transverse rod *f* pivoted at one end by one of the pivots placed in one of the lugs of a bar *a* and free to be fixed at its other hook shaped end on the transverse rod *b* near a lug of the opposite bar *a*, substantially as described and for the purpose set forth.

854,330. PASSENGER AND LIKE CAR. ANDREW CHRISTIANSON, Butler, Pa., assignor to Standard Steel Car Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 25, 1906. Serial No. 332,012.



Claim.—1. A metallic car post of general channel form having one flange at an acute angle to its web.

2. A metallic car post of general channel form having one flange at an obtuse angle to its web.

3. A metallic car post of general channel form having one flange at an acute angle and the other flange at an obtuse angle to its web.

4. A metallic car post formed of a pressed plate of general channel shape and having its outer flange curved and at an obtuse angle to its web.

5. A metallic car post of general channel shape having flanges of different widths and one thereof at an acute angle to its web.

6. A metallic car post of general channel shape having flanges of different widths and one thereof at an obtuse angle to its web.

7. A metallic car post formed of a pressed plate and of general channel form, having flanges of different widths, one of which is at an acute angle and the other at an obtuse angle to its web.

8. A vestibuled corner construction comprising a flanged post, a pressed plate of general U-form inclosing said post and having its limbs secured to the flanges of the post, and an angle member secured to the inner face of a flange of the post, the edge of the flange of the post and of the U shaped plate forming a door stop.

9. A metallic vestibule construction for cars comprising body corner posts, vestibule corner posts, a vestibule end plate bowed both upwardly and outwardly and secured to the vestibule corner posts, and continuous flanged body side plates secured to the body corner posts and directly to the ends of said end plate.

10. A metallic vestibule construction for cars comprising body corner posts, vestibule corner posts, a vestibule end plate of general channel form placed with its flanges projecting upwardly, and a body side plate secured to the upper ends of the body corner posts and directly to the inner flange of the vestibule end plate.

11. A metallic vestibule construction for cars, comprising body corner posts, vestibule corner posts, a vestibule end plate secured to the vestibule corner posts, continuous flanged body side plates secured to the body corner posts and to the ends of the vestibule end plate, and a side door header secured to the body corner post and vestibule corner post.

12. A metallic vestibule construction for cars comprising body corner posts, vestibule corner posts, a body side plate comprising a channel plate with the flanges projecting downwardly and extending from the body corner posts to the vestibule corner posts, and a side door header also of channel form placed with the flanges projecting upwardly and secured to the body corner post and vestibule corner post.

13. A metallic vestibule construction for cars, comprising body corner posts, vestibule corner posts, a channel shaped side plate extending from the body corner posts to the vestibule corner posts, a channel shaped door header secured to the body corner post and the vestibule corner post, the side plate being placed with its flanges extending downwardly and the header being placed with its flanges extending upwardly and both having flanges of different widths with the wider flanges on the outside.

14. A metallic vestibule construction comprising a body

corner post having a flange in the plane of the car end, a flanged post having a web transverse of the car end, a side plate over the corner post, and a bracket having a web secured to the flange of the corner post, a flange secured to the web of the flanged post and another flange secured to the side plate.

15. A metallic vestibule construction for cars, comprising vestibule end posts having webs substantially longitudinal of the car, and metallic filling pieces between said posts of flanged shape and having integral flanges at their ends secured to the webs of the posts.

16. A metallic vestibule construction for cars, comprising metallic channel end posts placed with their webs longitudinal of the car, and a filling member between said posts comprising an angle shape having its ends bent at an angle to the body to provide integral flanges which are riveted to the webs of the end posts, the horizontal flanges of said angle member being riveted to the floor structure.

17. A metallic vestibule construction for cars, comprising body end framing, vestibule end posts, an end plate secured to the upper ends of said posts, a hood buffer strut connecting the posts and body framing, a door header between the end posts, and a bracket secured to the ends of the door header, the buffer strut and the posts and serving to connect said parts.

18. A metallic construction for cars, comprising end posts, an end plate, a door header, and a bracket secured to said post, plate and header and securing the same together.

19. A metallic vestibule construction for cars, comprising a body end framing, vestibule end posts, struts connecting said posts and end framing, a door header between said posts, an end plate, and a bracket secured to said post, door header, strut and end plate, and serving to connect said parts.

854,331. PASSENGER AND LIKE CARS. ANDREW CHRISTIANSON, Butler, Pa., assignor to Standard Steel Car Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 7, 1906. Serial No. 333,620.



Claim.—1. In a metallic railway car, the combination of side posts provided with outwardly extending portions at their upper ends, finishing sheets secured to the outer edges of the posts below said outwardly extending portions, and a facia plate or lettering board secured to the outwardly projecting portions of the posts and having its lower edge overlapping the outside finishing sheets.

2. In a metallic railway car, the combination of side posts having their upper ends projecting outwardly beyond their main bodies, exterior finishing sheets secured to the outer edges of the posts and extending up to the outwardly projecting portions thereof, a facia plate or lettering board secured to the outwardly projecting portions at the upper ends of the posts and having its lower edge overlapping the upper edges of the main finishing sheets, a filling strip between said plates, and securing means passing through the same.

3. In a metallic railway car the combination of side posts providing window openings there between, side sheets secured to the outer edges of the posts and extending up to the bottom of said window openings, and a beaded metallic water table secured between the posts and the window openings and having its edge below the bead projecting downwardly and overlapping the upper edges of the side sheets.

4. The combination in a metallic railway car of side posts, brackets secured thereto at the bottoms of the window openings, a side sheet secured to the outer edges of the posts and extending up to the brackets, and a metallic water table secured to the brackets and extending outwardly, being beaded and bent downwardly and overlapping the upper edges of the finishing sheets and secured with the same to said brackets.

5. In a metallic railway car the combination of side posts, a belt rail secured thereto at the bottom of the window openings, finishing sheets secured to the outer edges of the posts and extending up to the belt rail, and a metallic water table secured to the belt rail and extending outwardly and downwardly with the lower edge overlapping the side finishing sheets.

6. In a metallic railway car, the combination of side posts, a belt rail, brackets securing the belt rail to the side posts and having their upper faces sloping downwardly and outwardly, and a metallic water table provided with an outwardly and downwardly sloping portion resting on the brackets and extending beyond the car side and then bent inwardly to form a bead.

7. In a metallic railway car, the combination of side posts, a belt rail secured thereto, side sheets, window sills on the belt rail, a water table comprising a metallic sheet having its inner edge secured below the belt rail and sloping thence outwardly and downwardly, being provided with a bead beyond the car side and having its lower edge overlapping the car side sheets.

8. In a metallic railway car, the combination of side posts, a belt rail, brackets for securing the belt rail to the side posts, side sheets, a water table consisting of a metallic sheet having its inner edge secured between the brackets and the belt rail and extending outwardly and downwardly beyond the sides of the car and then bent inwardly to form a bead and having the lower edge overlapping the side sheets.

9. In a metallic railway car the combination of side posts providing window openings, a water table secured to the posts and extending not only in the spaces of the window openings but also in the spaces unoccupied by windows and having a downwardly sloping upper face, and outside finishing plates secured to the side posts in the spaces between the windows and having their lower edges flanged inwardly and resting on the sloping face of the water table.

10. In a metallic railway car, the combination of posts, side sheets secured to the outer edges thereof, and a combined molding and outer window stop secured to a post and provided with a recessed portion at right angles to its body and overlapping the edges of the side plates and concealing the securing means thereof.

11. In a metallic railway car, the combination of side posts of channel form placed with their webs transverse of the car and providing window openings there between, outside finishing sheets secured to the outer flanges of the posts, and an outer window stop fitting against the webs of the post and having a molding portion at right angles which overlaps the edges of the outside finishing sheet.

12. In a metallic railway car, the combination of side posts providing window openings there between, outside finishing sheets secured to the outer edges of the posts below and between the window openings, a metallic water table secured between the posts and having its outer edge

overlapping the plates below the window openings, and a combined outer window stop and molding portion at right angles secured to a post and covering the edges of the plates at the sides of the window openings.

13. In a metallic railway car, the combination of channel shaped side posts placed with the webs transversely of the car and providing window openings there between, outside finishing sheets secured to the post both below the window openings and between the same, a water table secured between the posts of the window openings and extending outwardly and downwardly and overlapping the upper edges of the sheets below the window openings, and a combined window stop and molding recessed on its back and overlapping the edges of the sheets at the sides of the window openings and concealing the fastenings of the latter.

14. In a metallic railway car, the combination of posts providing window openings there between and having webs transverse of the car, outside finishing sheets, a metallic inside window stop grooved for receiving the curtains and secured to the webs of the posts, and a metallic outside stop having an integral groove lining and a molding part at right angles thereto and overlapping the side sheets.

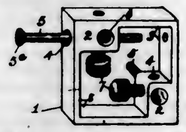
15. In a metallic railway car, the combination of channel shaped posts having the webs arranged transversely of the car, outside finishing sheets secured to the outer edges of the posts both below and between the window openings, an inside metallic window stop secured to the webs of the posts and provided with a groove for the curtains, a metallic combined outside window stop and molding secured to the posts and having a molding portion at right angles thereto and recessed on its back and overlapping and concealing the securing means for the side sheets, and fastening means passing through said molding portion and the outside flange of the post.

854,332. COMPOSITION OF WATER-COLORS. ROBERT W. CORNELISON, Bloomfield, N. J., assignor to H. B. Wiggin's Sons Company, a Corporation of New Jersey. Filed Mar. 9, 1906. Serial No. 305,087.

Claim.—1. A coloring compound, consisting of a prepared starchy substance, vegetable gum, and a soluble dye, the whole soluble in water, substantially as described.

2. A coloring compound, consisting of a prepared starchy substance, gum tragacanth, and a soluble dyeing material, the whole soluble in water, substantially as described.

854,333. SCRIBE-GAGE. GEORGE COUSINO, Toledo, Ohio, assignor of one-half to Robert W. G. Bartlett, Toledo, Ohio. Filed Jan. 24, 1907. Serial No. 353,927.

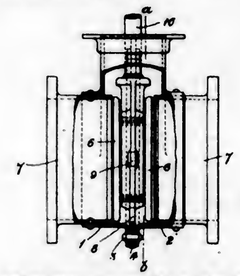


Claim.—1. A gage consisting of a block having a plurality of apertures disposed transversely thereof and a plurality of apertures in planes intersecting said first apertures, two scribe-pins intended to be positioned in either set of apertures and when projecting in the same direction transversely of the block to serve as mortise scribes to simultaneously mark the parallel side lines thereof, and means for securing the pins in adjusted relation to the block.

2. A gage consisting of a block having a considerable portion of its interior transversely cut away and being provided with a plurality of intersecting apertures and a threaded aperture which coincides with the intersecting apertures at their points of intersection, a scribe pin intended to be adjustably positioned in either of said intersecting apertures, and a set-screw in the threaded aperture for engaging the pin when in either aperture.

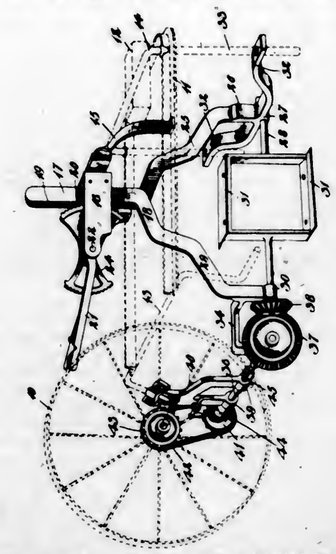
3. A gage consisting of a block having a portion of its interior cut away to provide solid portions at opposing corners, a plurality of intersecting apertures in each of said solid portions, a scribe-pin adjustably positioned in either aperture in each set, and common locking means associated with each set of apertures to secure the pin in either aperture thereof.

854,334. CONSTRUCTION OF VALVE-CASINGS. HENRY CAUSE, Blackley, near Manchester, England. Filed June 14, 1906. Serial No. 321,694.



Claim.—A valve casing comprising two wrought metal dish shaped members, a calking ring extending from the junction of said members into the casing, and a slide valve in the casing, the calking ring forming a guide for the valve.

854,335. COTTON-CHOPPER. JAMES H. CUBINE, Wash, Okla., and LARKIN A. HACKER, Sprule, Ky. Filed Dec. 18, 1905. Renewed Jan. 3, 1907. Serial No. 350,554.



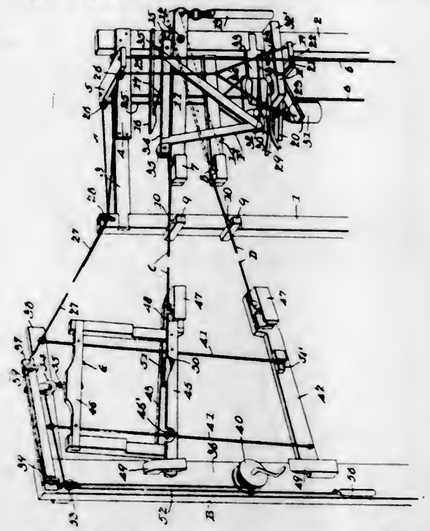
Claim.—1. The combination with a wheeled frame, of a vertically adjustable chopper-shaft thereon, and gearing between the chopper-shaft and one of the wheels, said gearing having a flexible and telescoping section to permit vertical movement of said shaft.

2. The combination with a wheeled-frame, of a vertically adjustable chopper-shaft thereon, and gearing between the chopper-shaft and one of the wheels, said gearing having a flexible and longitudinally-extensible section to permit vertical movement of said shaft.

3. The combination with a wheeled-frame, of a vertically adjustable yoke-shaped frame thereon carrying a revolving chopper-shaft, one of the branches of the last mentioned frame having a laterally-extending arm provided with a bearing, a flexible wheel-driven shaft, one end of which is carried by the wheeled-frame, and its other end in the aforesaid bearing, and gearing between the shafts.

4. The combination with a wheeled-frame, of an arched beam thereon, spaced plates extending from said beam, a vertically adjustable yoke-shaped frame having its upper end formed with a rack and extending between the plates, one of the branches of the last mentioned frame having a laterally-extending arm provided with a bearing, a hand-lever having a segment-gear meshing with the rack to raise and lower the frame, a chopper-shaft journaled in the branches of the yoked-shaped frame, a flexible shaft, one end of which is carried by the wheeled-frame and the other end by the aforesaid bearing, and gearing between the shafts.

854,336. WATER ELEVATOR AND CARRIER. WILLIAM C. DAY, Winchester, Ky. Filed July 30, 1906. Serial No. 328,443.



Claim.—1. In an apparatus of the class described, the combination of a conveying means, a carriage arranged to travel thereon, a receptacle, supporting frames at the opposite ends of said means, a lift at one of the frames, means at the other frame for raising and lowering the lift, mechanism for transferring the receptacle from the carriage to the lift and vice versa, and a shifting device at the frame having the lift raising and lowering means for causing the carriage to be returned.

2. In an apparatus of the class described, the combination of a well frame, a station frame, conveying means between them, a bucket lift on the well frame, a carriage arranged to travel on the conveying means, mechanism for transferring the bucket from the carriage to the lift and vice versa, a shifting mechanism at the station frame for causing the carriage to return to the well, and means extending from the well frame to the station for raising and lowering the bucket lift.

3. In an apparatus of the class described, the combination of a well frame, a station frame, a conveying cable between them, a carriage arranged to travel on the cable, a bucket lift at the well frame, mechanism for transferring the bucket from the carriage to the lift and vice versa, guiding devices for guiding the movement of the lift, a draft line extending between the frames and connected with the lift, and means at the station frame for winding and unwinding the line to operate the lift.

4. In an apparatus of the class described, the combination of a well frame, a station frame, a conveying cable between them, a carriage arranged to travel on the cable, a bucket lift, mechanism for transferring the bucket from the carriage to the lift and vice versa, vertical guide members located at the well frame, devices on the lift engaging the guides for guiding the movement of the lift, and a mechanism at the station frame for raising and lowering the lift.

5. In an apparatus of the class described, the combination of a well frame, a station frame, a conveying cable extending between them, a bucket carriage arranged to travel on the cable, a bucket lift guided on the well frame, shifting mechanism at the station frame for causing the carriage to return to the well, a guiding means on the station frame for the said mechanism, means for actuating the mechanism, and a rope and windlass device at the station frame for actuating the bucket lift.

6. In an apparatus of the class described, the combination of a well frame, a station frame, separate cables strung between them, a switch at the well frame, a bucket carriage arranged to travel on the cables, a bucket lift guided by the well frame, means for transferring the bucket between the carriage and lift, a device at the station frame for shifting the carriage from one cable to the other, and separate means at the station frame for actuating the device and bucket lift.

7. In an apparatus of the class described, the combination of a well frame, a station frame, separate cables strung between them, a bucket carriage arranged to travel on the cables, a switch at the well frame for shifting the carriage from one cable to the other, a bucket lift arranged under the switch, means for transferring the bucket between the carriage and lift, and mechanism on the station frame for actuating the bucket lift.

8. In an apparatus of the class described, the combination of a well frame, a station frame, separate cables strung between them, a bucket carriage arranged to travel on the cables, a switch at the well frame for shifting the carriage from one cable to the other, a bucket lift arranged under the switch, means for transferring the bucket between the carriage and lift, and mechanism on the station frame for actuating the bucket lift, said mechanism comprising an operating cable extending from the lift to the station frame, and suitably arranged sheaves for the cable on both of the frames.

9. In an apparatus of the class described, the combination of a well frame including two arms located one above the other, a station frame including two arms located one above the other and on different levels from the arms of the well frame, separate cables strung respectively between the upper arms and lower arms of the frames, a switch at the well frame, a shifting device arranged on the station frame to move between the arms thereof, and a carriage arranged to travel on the cables.

10. In an apparatus of the class described, the combination of a well frame including two arms located one above the other, a station frame including two arms located one above the other and on different levels from the arms of the well frame, separate cables strung respectively between the upper arms and lower arms of the frames, a carriage arranged to travel on the cables, a switch on the well frame which is movable between the arms thereof to transfer the carriage from the upper to the lower cable, a shifting device on the station frame for transferring the carriage from the lower to the upper cable, and means for guiding the movement of the shifting device.

11. In an apparatus of the class described, the combination of a well frame including two arms located one above the other, a station frame including two arms located one above the other and on different levels from the arms of the well frame, separate cables strung respectively between the upper arms and lower arms of the frames, a carriage arranged to travel on the cables, a switch on the well frame which is movable between the arms thereof to transfer the carriage from the upper to the lower cable, a shifting device on the station frame which includes a rail, means for guiding the movement of the device for changing the rail from the inclination of one cable to that of the other, and an actuating mechanism for the shifting device.

12. In an apparatus of the class described, the combination of a station frame having two arms extending in the same general direction and at an inclination to each other, a cable extending from each arm, a shifting device arranged to move from one arm to the other, and guides on the frame for changing the inclination of the shifting device as the same is moved from one arm to the other.

13. In an apparatus of the class described, the combination of a station frame having two arms extending in the same general direction and at an inclination to each other, a cable extending from each arm, a shifting device arranged to move from one arm to the other which includes a rail, guiding members arranged at a slight angle to a perpendicular line for changing the alinement of the rail from one cable to the other, and means for actuating the shifting device.

14. In an apparatus of the class described, the combination of a station frame having two arms extending in the same general direction and at an inclination to each other, a cable extending from each arm, a shifting device arranged to move from one arm to the other which includes a rail, guiding members arranged at a slight angle to a perpendicular line for changing the alinement of the rail from one cable to the other, stops on the frame for limiting the movement of the shifting device, and means for actuating the device.

15. In an apparatus of the class described, the combination of a bucket carriage, a bucket lift, and means for transferring a bucket from one to the other which comprises separate pairs of gripping members, and a link to which the bucket is attached.

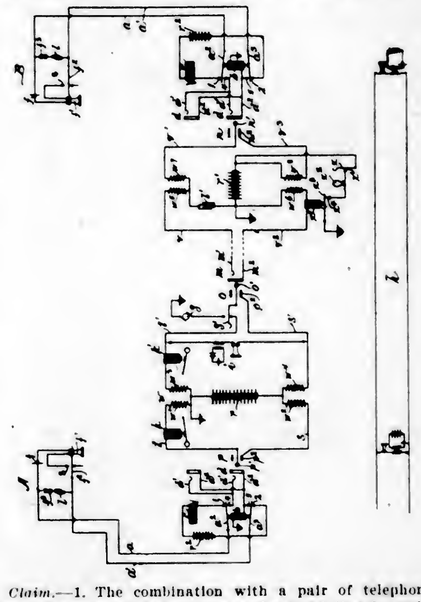
16. In an apparatus of the class described, the combination of a bucket carriage, a bucket lift, and means for transferring a bucket from one to the other which comprises separate resilient jaws on the lift and carriage opening in opposite directions, a link adapted to be gripped by the jaws and supported thereby, and means arranged to cause the jaws of the carriage to release the link for transferring the bucket to the lift.

17. In an apparatus of the class described, the combination of a bucket carriage, a bucket lift, and means for transferring a bucket from one to the other which comprises separate resilient jaws on the lift and carriage opening in opposite directions and arranged one above the other, a notched member for carrying a bucket arranged to be gripped by the jaws, and a device for causing the jaws of the carriage to release the member when the bucket is to be transferred to the lift.

18. In an apparatus of the class described, the combination of a supporting frame, a bucket carriage, a bucket lift, mechanism for arresting the movement of the carriage, and means for transferring a bucket between the carriage and lift which comprises resilient jaws on the carriage and lift which extend in the general direction of travel of the carriage and open in opposite directions, a notched member for carrying a bucket arranged to be gripped by the jaws, and a wedge-shaped device arranged on the supporting frame to engage the jaws of the carriage to release the said member at about the time the carriage is brought to rest.

19. In an apparatus of the class described, the combination of a supporting frame, a bucket carriage, a bucket lift, mechanism for arresting the movement of the carriage, and means for transferring a bucket between the carriage and lift which comprises resilient jaws on the carriage and lift which extend in the general direction of travel of the carriage and open in opposite directions, a notched member for carrying a bucket arranged to be gripped by the jaws, a wedge-shaped device arranged on the supporting frame to engage the jaws of the carriage to release the said member at about the time the carriage is brought to rest, and means on the frame for holding the lift with its jaws in the path of movement of the notched member.

854,337. TRUNK-LINE TELEPHONE SYSTEM. WILLIAM W. DEAN, Chicago, Ill., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill., a Corporation of Illinois. Filed June 10, 1901. Serial No. 63,925.



Claim.—1. The combination with a pair of telephone lines, of an operator's connector and a trunk line for uniting the same for conversation, a charging source of electricity associated with said trunk line, a signal sending device adapted to be connected between said connector and a third conductor, a permanent bridge, containing a condenser, between one side of the trunk line and said third conductor, a signal receiving device at the substation of the called subscriber, and means for sending current from said signal sending device over a circuit including said signal receiving device and one limb of said trunk line with suitable return through said third conductor, substantially as described.

2. The combination with a trunk line, of a repeating coil having its windings united at the ends and included in series in one strand of said trunk line, of a bridge including a condenser and extending between the united ends of said windings and the opposite strand of said trunk line, and a signal sending device adapted to send current through said first named strand and windings, said condenser being adjusted in capacity to prevent the signal current from being shunted therethrough, while permitting the talking currents to traverse said bridge, substantially as described.

3. The combination with a pair of telephone lines, of an operator's connector and a trunk line for uniting the same for conversation, a repeating coil associated with said trunk line, having a pair of windings united at the ends and included in series in one strand of said trunk line, a bridge containing a condenser and joining the united ends of said windings with the opposite strand of the trunk line, a signal sending device associated with said connector, a signal receiving device at the substation of the called subscriber, means for sending current from said signal sending device over a circuit including one strand of said trunk line, said windings and said signal receiving device, said condenser being adjusted in capacity to permit the passage of talking currents while preventing the passage of the signal currents, substantially as described.

4. The combination with a pair of telephone lines, of an operator's connector and a trunk line for uniting the same

for conversation, a charging source of electricity associated with said trunk line, a signal receiving device associated with said operator's connector; and a circuit including said source of electricity, said signal receiving device and a switch at the substantion of the called subscriber; whereby the called subscriber may signal back to the initial operator, substantially as described.

5. The combination with a pair of telephone lines, of an operator's connector and a trunk line for uniting the same for conversation, a charging source of electricity associated with said trunk line, a signal receiving device associated with said operator's connector; and a circuit including said source of electricity, said signal receiving device, one strand of the trunk line, and a switch at the substation of the called subscriber; substantially as described.

6. The combination with a pair of telephone lines, of an operator's connector and a trunk line for uniting the same for conversation, a signal receiving device adapted to be connected between the said connector and a third conductor, and a circuit including a suitable source of electricity, said signal receiving device, one strand of said trunk line, and a switch at the substation of the called subscriber with suitable return through said third conductor, substantially as described.

7. The combination with a pair of telephone lines, of an operator's connector and a trunk line for uniting the same for conversation, a charging source of electricity and a repeating coil associated with said trunk line, said source of electricity being in series with certain of the windings of said repeating coil, a signal receiving device associated with said connector, a switch at the substation of the called subscriber, and a circuit including said source of electricity, said signal receiving device, the said windings of said repeating coil and said switch; substantially as described.

8. In a telephone system, the combination with two telephone lines, of a trunk circuit and a cord circuit adapted to connect said lines together for conversation, a separate source of current associated with each, of a signal associated with the trunk circuit under the control of the originating operator and actuated by current from the cord circuit source, and a signal-controlling device associated with the cord circuit under the control of the called subscriber after connections have been established throughout and actuated by current from the trunk source, substantially as described.

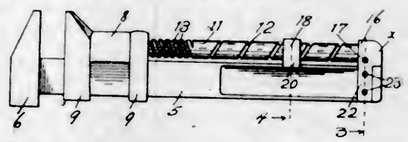
9. In a telephone system, the combination with a pair of telephone lines, of a cord circuit and a trunk circuit adapted by their connection with the lines and with each other to unite said lines for conversation, of a source of current associated with the cord circuit, and a second source of current associated with the trunk circuit, a signal associated with the cord circuit adapted to be actuated by current over the called telephone line from said second source during conversation, substantially as described.

10. The combination with a pair of telephone lines, of a cord circuit and a trunk circuit adapted to connect said lines together for conversation, a source of current associated with said cord circuit, and a second source of current associated with the trunk circuit, a signal-controlling device associated with the trunk circuit adapted to be actuated by current from the cord circuit source when a connection is established between the said cord and trunk circuits, and a signal-controlling device associated with the cord circuit and adapted to be actuated by current from said trunk circuit source over the called telephone line when the called subscriber has answered his call, substantially as described.

11. The combination with a pair of telephone lines, of a cord circuit, and a trunk circuit adapted to connect said lines for conversation, of a source of current associated with said cord circuit, and a second source associated with said trunk circuit, a signal-controlling device associated with said cord circuit having its coil serially included in one of the strands thereof, and adapted to be actuated by current from said second source when a connection has been established throughout and the called subscriber answers his call, substantially as described.

12. The combination with a pair of telephone lines, of a cord circuit and a trunk circuit adapted to connect said lines for conversation, of a source of current associated with the cord circuit, and a second source of current associated with the trunk circuit, a signal-controlling device having its coil serially included in one of the talking strands of the trunk circuit and adapted to be actuated by current from said first source when a connection is established between the cord and the trunk circuits, and a signal-controlling device having its coil serially included in one of the talking strands of the cord circuit, and adapted to be actuated by current from said second source when connections have been established throughout and the called subscriber responds to his call, substantially as described.

854,338. WRENCH. GRIFFEN H. DEEVES, Chicago, Ill. Filed Mar. 11, 1907. Serial No. 361,789.



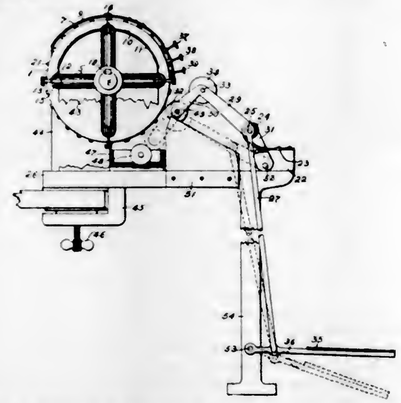
Claim.—1. A wrench comprising, in combination, a shank provided on one end with a fixed jaw and near its opposite end in opposed faces with recesses, a second jaw movably confined on said shank, a bearing on said shank comprising a head provided with a socket and a rearward extension forming a stop bearing against the adjacent portion of the shank, arms extending from said head and secured in said recesses to straddle the shank at its reduced portion, said rearward extension normally bearing against the adjacent face of the shank, a double-threaded shaft extending along said shank journaled at one end in said socket and constructed and arranged to rotate said shaft by manual movement of the nut longitudinally thereof.

2. A wrench comprising, in combination, a shank provided on one end with a fixed jaw and near its opposite end in opposed faces with recesses, a second jaw movably confined on said shank, a bearing on said shank comprising a head provided with a socket and a rearward extension having a stop bearing against the adjacent portion of the shank, arms extending from said head and secured in said recesses to straddle the shank at its reduced portion, a double-threaded shaft extending along said shank and provided near one end in its circumference with a groove, said shaft being constructed and arranged to engage said movable jaw and move it toward and away from the fixed jaw, a non-rotary nut on said shaft constructed and arranged to rotate said shaft by manual movement of the nut longitudinally thereof, and a pin extending through said head and into said groove, for the purpose set forth.

854,339. LAUNDRY-MARKER. GEORGE L. DIXON, Waterloo, Iowa. Filed Feb. 19, 1907. Serial No. 358,233.

Claim.—1. A device of the character described, composed of a rotatable shaft, a printing-wheel secured thereto having raised type-faces on its circumferential edge spaced equidistantly apart, printing sectors rotatably supported on said shaft having raised type-faces on their circumferential edges spaced the same distance apart as the spaces between type-faces on the said printing-wheel, a concentric index-plate over each printing-sector provided with contact-seats, and means connected to each printing-sector adapted to removably engage such contact-seats.

2. A device of the character described, composed of a rotatable shaft, a printing-wheel secured thereto having raised type-faces on its circumferential edge spaced equidistantly apart, printing sectors rotatably supported on said shaft having raised type-faces on their circumferential edges spaced the same distance apart as the spaces between type-faces on the said printing-wheel, a concentric index-plate over each printing-sector provided with contact-seats, means connected to each printing-sector adapted to removably engage such contact-seats, an index-plate supported near said printing-wheel and provided with contact-seats, and means connected to said shaft adapted to removably engage the contact-seats in the last mentioned index-plate.

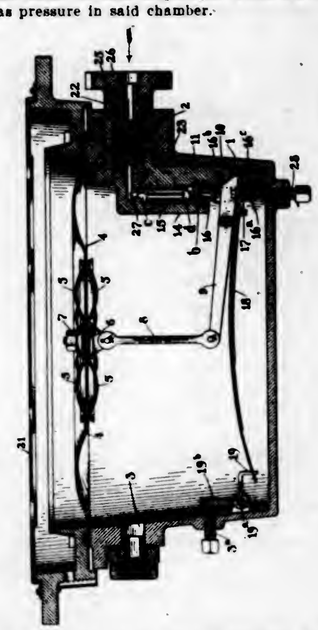


3. A device of the character described, composed of a rotatable shaft, a printing-wheel secured thereto having raised type-faces on its circumferential edge spaced equidistantly apart, printing-sectors rotatably supported on said shaft having raised type-faces on their circumferential edges spaced the same distance apart as the spaces between type-faces on said printing-wheel, a concentric index-plate over each printing-sector provided with contact-seats, means connected to each printing-sector adapted to removably engage such contact-seats, an index-plate supported near said printing-wheel and provided with contact-seats, means connected to said shaft adapted to removably engage the contact-seats in the last mentioned index-plate, and means for bringing a fabric into printing contact with the type-faces adjusted for printing on said wheel and sectors.

4. A device of the character described, composed of a rotatable shaft, a printing-wheel secured thereto having raised type-faces on its circumferential edge spaced equidistantly apart, printing-sectors rotatably supported on said shaft having raised type-faces on their circumferential edges spaced the same distance as the spaces between type-faces on said printing-wheel, an index-plate over each printing-sector provided with contact-seats, means connected to each printing-sector adapted to removably engage such contact-seats to aline certain type-faces thereon with a certain type-face on said printing wheel, and means for inking such alined type-faces before each impression taken therefrom.

854,340. PRESSURE-REGULATOR. ROBERT M. DIXON, East Orange, N. J., assignor to The Safety Car Heating & Lighting Company, a Corporation of New Jersey. Filed Sept. 11, 1903. Serial No. 172,733.

Claim.—1. In a pressure regulator, in combination, a pressure chamber, a flexible diaphragm forming one wall thereof, inlet and outlet apertures provided in said pressure chamber, a valve chamber supported in said inlet aperture and extending within said pressure chamber, a member provided with a plurality of valves located in said valve casing adapted to be seated upon oppositely disposed seats arranged in said casing, a lever pivoted to said valve casing adapted to operate said valve, a link connecting said lever with said diaphragm, a spring having one of its ends attached to said lever intermediate its length, and means operating upon the opposite end of said spring for adjusting the tension thereof, said spring being adapted to oppose a movement of said diaphragm under the influence of the gas pressure in said chamber.



2. In a pressure regulator, the combination of a chamber, one wall of which is formed by a flexible diaphragm, a gas inlet leading into said chamber, a gas outlet leading therefrom, a valve adapted to be seated upon a plurality of oppositely disposed seats in said gas inlet, connecting means between said valve and said diaphragm whereby said diaphragm under the influence of the gas pressure controls the operation of said valve, resilient means connected with said connecting means adapted to co-act with said diaphragm in the control of said valve, and means extending without said chamber for adjusting the tension of said spring.

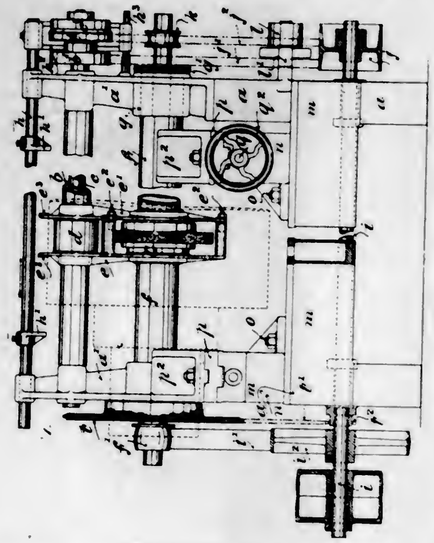
854,341. APPARATUS FOR GRINDING OR SURFACING CALENDER-BOWLS AND THE LIKE. JAMES DRONSFIELD, Oldham, England. Filed Dec. 26, 1906. Serial No. 349,576.

Claim.—1. In bowl grinding machines, a grinder, a supporting shell therefor, a screwed spindle, a sleeve surrounding same, differential sized pulleys for said screwed spindle and sleeve, a belt shifting means, a main bed, brackets adjustable along said bed, slides on said brackets, trunnion holding means on said slides, adjusting screws for the independent adjustment of said slides and trunnion holding means, whereby said bowl may be set-up to the grinder, and micrometer dials *r* and an indicator for setting said dials to, substantially as described.

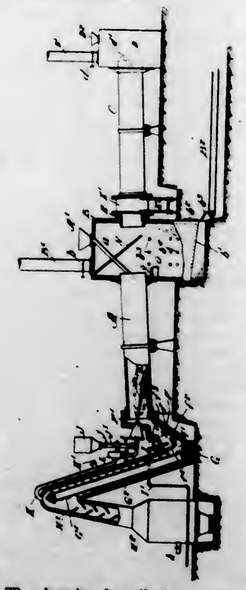
2. In a bowl grinding machine, a grinder, a supporting shell therefor, a screwed spindle, a sleeve surrounding same, strap shifting mechanism, a main bed, brackets adjustable along said bed, slides on said brackets, trunnion holding means on said slides, independent adjusting devices for advancing the bowl to be ground, comprising screws and indicating dials thereon, and removable packing pieces *s*, packing-up said bowl trunnions, substantially as described.

3. In combination in a bowl grinding machine, a traversing grinder, a removable shell for same, removable bushes or sleeves, a traveling boss, a shell, a screwed spindle, differential sized pulleys therefor, adjustable bowl supporting means comprising a main bed, slides thereon, trun-

nion holding means, screws for adjusting said slides, dials on said screws, and packing pieces *s* for setting-up the trunnions.



854,342. MANUFACTURE OF HYDRAULIC CEMENT. BERNARD ENRIGHT, South Bethlehem, Pa. Filed Feb. 25, 1907. Serial No. 359,177.



Claim.—1. The herein described process of drying or calcining calcareous, mineral, or similar material, which consists in feeding fuel and air to a rotary kiln, to which such material is supplied, in such proportions as to develop in the kiln, by the complete combustion of part of the fuel and the partial combustion of the remainder, a heat sufficient to dry, to calcine or to clinker the material, and also by the deficiency of air supplied or the excess of fuel to produce stack gases rich in carbon monoxid suitable when mixed with air to be burned for heating or operating other apparatus.

2. The herein described process of calcining or clinkering cement-forming material which consists in feeding fuel and air to a rotary kiln in such proportions as to develop in the kiln by the complete combustion of part of the fuel and the partial combustion of the remainder, a heat sufficient to calcine or to clinker the cement-forming material fed to the kiln and also by the deficiency of air supplied or the excess of fuel to produce stack gases rich in carbon monoxid suitable when mixed with air to be burned for heating or operating other apparatus.

3. The herein described process of calcining or clinkering cement-forming material which consists in feeding fuel and air to a rotary kiln, to which such material is supplied, in such proportions as to develop in the kiln by the complete combustion of part of the fuel and the partial combustion of the remainder, a heat sufficient to calcine or to clinker such material and also by the deficiency of air supplied or the excess of fuel to produce stack gases rich in carbon monoxid suitable when mixed with air to be burned for heating or operating other apparatus, and in causing the flame of the burning fuel within the kiln to impinge on the cement-forming material to clinker it.

4. The herein described process of drying or calcining calcareous, mineral, or similar material which consists in feeding fuel and air to a rotary kiln, to which such material is supplied, in such proportions as to develop in the kiln by the complete combustion of part of the fuel and the partial combustion of the remainder, a heat sufficient to dry, to calcine or to clinker such material and also by the deficiency of air supplied or the excess of fuel to produce stack gases rich in carbon monoxid and then further enriching such stack gases by passing them through a gas producer.

854,343. BELT-STRETCHER. STEPHEN F. ESHELMAN, Sardis, Ohio, assignor of one-half to David E. Thoenen, Sistersville, W. Va. Filed Apr. 10, 1906. Renewed Apr. 11, 1907. Serial No. 367,591.



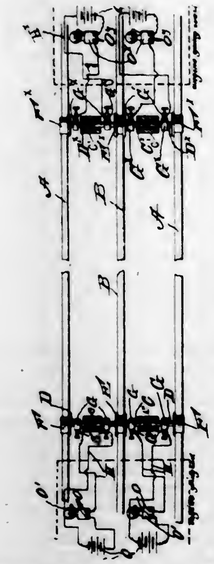
Claim.—1. In a belt-stretcher, two belt-clamps adapted to be attached some distance apart upon a belt, a longitudinal bar bearing a toothed rack, said bar rigidly secured at one end to one of said clamps and slidably mounted at its opposite end upon the other of said clamps, a support rigidly mounted upon the last-mentioned clamp, said support embracing and guiding said bar, a lever pivotally mounted in said support over said bar, and two dogs pivoted in the end of said lever for engaging the teeth of said rack, substantially as described.

2. In a belt-stretcher, two belt-holding clamps adapted to be attached at some distance apart upon a belt, a longitudinal bar bearing a toothed rack in its upper face, said bar rigidly secured at one end to one of said clamps and slidably mounted at its opposite end upon the other of said clamps, a support rigidly mounted upon the last mentioned clamp, said support embracing and guiding said bar, over said last mentioned clamp a lever pivotally mounted in said support over said bar, rearwardly-extending dogs pivoted, one in front of the other, in the point of said lever, the front dog being adapted to firmly engage said rack when said lever is moved forward while the rear dog trails over the teeth which intervene between said dogs, and the rear dog adapted to firmly engage said rack when said lever is moved backward while the front dog slides forward over the teeth, substantially as described.

3. In a device for stretching belts and analogous articles, a longitudinal toothed rack-bar with forwardly-directed teeth, a belt-holding clamp rigidly secured to said rack-bar at its front end, a second belt-holding clamp movably attached to said rack-bar at the rear end thereof, each of said clamps comprising two companion sections having dovetail channels therein in their opposing faces, and tongue-pieces fitted in said channels, a jack rigidly secured upon said movable clamp and adapted for engagement with said rack-bar whereby said movable clamp may be caused to travel forward along said rack-bar, substantially as described.

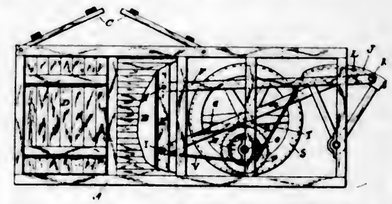
4. In a belt-stretcher, a longitudinal toothed rack-bar, two belt-holding clamps, one of which is rigidly secured to the front end of said rack-bar and the other movable on said rack-bar, each of said clamps comprising two sections adapted to be bolted together about a belt, said sections having channels therein in their opposing faces, tongue-pieces fitted in said channels, and a jack rigidly secured upon said movable clamp in engagement with the teeth of said rack-bar, said jack comprising a support, a lever fulcrumed in said support, and two rearwardly-extending teeth-engaging dogs pivoted in the point of said lever, whereby when said lever is manipulated said movable clamp is caused to travel forward along said rack-bar, substantially as described.

854,344. ELECTRICAL SIGNALING APPARATUS FOR ENGINES. GEORGE J. EXTERKAMP, Covington, Ky., assignor of one-half to John A. Thobe, Covington, Ky. Filed Feb. 25, 1907. Serial No. 359,166.



Claim.—A signaling apparatus for railway locomotives comprising, in combination with three parallel rails, stub axles, bearing arms adapted to be supported by a locomotive and in which the inner ends of said axles are journaled in suitable insulated bearings, stub axles also journaled in the outer ends of said bearings, wheels upon the stub axles designed to travel upon the outer of said rails, a double flanged wheel mounted upon the intermediate of said stub axles and designed to travel upon the middle of the track, collars mounted upon the stub axles, a binding post projecting from each collar, a set-screw fitted to each binding post, an electric signal, and circuit connections between the same and the binding posts of said collars, as shown and described.

854,345. BALING-PRESS. CHARLES W. FIELD, Freeport, Me. Filed Mar. 11, 1907. Serial No. 361,699.

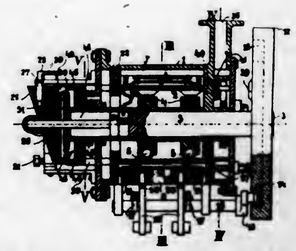


Claim.—1. The combination with a suitable frame and press box, of a reciprocating plunger, a sector lever, thrust rods pivotally attached, one end to the plunger and the other to opposite sides of said sector and at points spaced apart, and means for turning said sector on its pivot.

2. The combination with a suitable frame and press box, of a reciprocating plunger, a rotary sector lever, thrust rods, pivotally attached one end to the plunger and the other end to the sector lever, a rotary drum comprising two sections of varying sizes, a cable secured one end to said sector lever and the other adapted to wind upon the larger section of said drum, a second cable one end attached to the plunger and the other end adapted to wind upon the smaller section of said drum, and means for rotating said drum in both directions.

3. The combination with a suitable frame and press box, of a reciprocating plunger, a rotary sector secured to the frame, thrust rods, one end pivotally attached to the plunger and the other end pivotally attached to the sector lever, a rotary drum comprising two sections of varying sizes, a cable one end attached to the sector lever and adapted to wind upon the larger section of said drum and the other end attached to said plunger and adapted to wind upon the smaller section of said drum, a gear wheel secured to said drum, a pinion adapted to mesh with said gear wheel mounted on a shaft in the frame and a power wheel adapted to drive said pinion.

854,346. ROTARY ENGINE. ANDREA GHIRA, Trieste, Austria-Hungary. Filed Mar. 28, 1907. Serial No. 365,077.



Claim.—1. In a rotary engine, the combination with a casing, of a rotatable member laterally movable therein, a packing member, and means to adjust the latter operated by the variation of pressure of the working fluid.

2. In a rotary engine, the combination with a closed casing of a rotatable cylinder laterally movable therein, a packing member mounted in the casing and means operated by the variation of pressure of the working fluid to press the packing member against the cylinder.

3. In a rotary engine, the combination with a closed

cylindrical casing, of a concentric rotatable cylinder laterally movable therein, a movable packing ring at one end of the cylinder, radially movable slides projecting through the casing in contact with the cylinder forming working chambers, pistons carried by the cylinder, and means operated by the variation of pressure of the working fluid to press the packing ring against the end of the cylinder.

4. In a rotary engine, the combination with a closed cylindrical casing, of a rotatable cylinder concentrically mounted therein, pistons on the cylinder, radially movable slides projecting through the casing forming separate working chambers therein, a movable packing member interposed between one end of the cylinder and the casing, a shaft, and connecting means between the shaft and cylinder to permit the lateral movement of the cylinder thereon.

5. In a reversible rotary engine, the combination with a closed cylindrical casing, of a laterally movable rotatable cylinder mounted therein forming a working chamber, a shaft journaled in the casing having a chamber therein, means connecting the shaft and cylinder, means connecting the working chamber and shaft chamber, a movable packing member at one end of the cylinder, a rotatable cone, means in the shaft chamber controlling said cone, mechanism connecting the cone and packing member, means operated by the shaft to rotate the cone and means to maintain the rotation of the cone in the same direction when the engine is reversed.

6. In a rotary engine, the combination with a closed cylindrical casing, of a laterally movable cylinder concentrically mounted therein forming an annular working chamber, a shaft having a chamber therein, means connecting the cylinder and shaft, pistons on the cylinder, radially movable sliding members projecting through slots formed in the casing engaging the periphery of the cylinder, a packing member for the cylinder movably mounted in the casing, means connecting the working chamber and the shaft chamber, a piston in the latter, levers connected with the packing member and mechanism controlled by the piston to operate the levers.

7. In a rotary engine, the combination with a closed cylindrical casing, of a laterally movable rotatable cylinder concentrically mounted therein forming an annular working chamber, a shaft journaled in the casing having a chamber therein, means connecting the shaft and cylinder, pistons on the periphery of the latter in contact with the casing, radially movable slides dividing the working chamber, a movable packing member at one end of the cylinder, means connecting the working chamber and the shaft chamber, a piston in the latter, a rotatable cone connected with the piston having curved ridges formed thereon, levers having bearing rollers riding on said ridges, and means connecting the levers and packing member.

8. In a rotary engine, the combination with a closed cylindrical casing, of a laterally movable rotatable cylinder concentrically mounted therein forming an annular working chamber, a shaft journaled in the casing having a chamber therein, means connecting the shaft and cylinder, pistons on the periphery of the latter in contact with the casing, radially movable slides dividing the working chamber, a movable packing member at one end of the cylinder, means connecting the working chamber and the shaft chamber, a piston in the latter, a rotatable cone connected with the piston having curved ridges formed thereon, levers having bearing rollers riding on said ridges, means connecting the levers and packing member and means operated by the shaft to rotate the cone.

854,347. WATCH-PROTECTOR. SIGMUND GOLOMBEK, New York, N. Y. Filed Sept. 6, 1906. Serial No. 333,562.



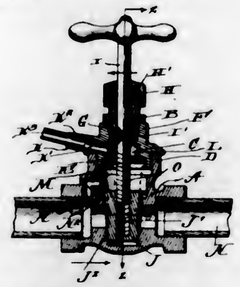
Claim.—1. A watch protector composed of an outer fixed jaw, an inner movable jaw, a curved tubular guide on the fixed jaw, and a curved pin movable in the said guide, substantially as specified.

2. A watch protector composed of an outer crescent-shaped fixed jaw, an inner crescent-shaped movable jaw engaging the fixed jaw, a curved tubular guide on the fixed jaw, and a curved pin movable in said guide, substantially as specified.

3. A watch protector composed of an outer fixed jaw having a slotted curved tubular guide at its outer edge, an inner movable jaw engaging the fixed jaw, a curved pin movable in the guide, and an outwardly extending finger-piece on said pin, substantially as specified.

4. A device of the class described comprising a circular plate having a cut away portion at one side and having a watch-stem receiving opening communicating with the cut away portion, a block movable into and out of position to close the communication between the cut away portion and the opening, an arcuate tube extending around portions of the plate and lying with its ends at opposite sides of the cut away portion, and a pin engaged in the tube and slidably movable therein into and out of position to extend across the cut away portion of the plate.

854,348. VALVE FOR DRAINING PIPES, &c. WILLIAM V. GORDON, New York, N. Y. Filed Mar. 10, 1905. Serial No. 249,412.



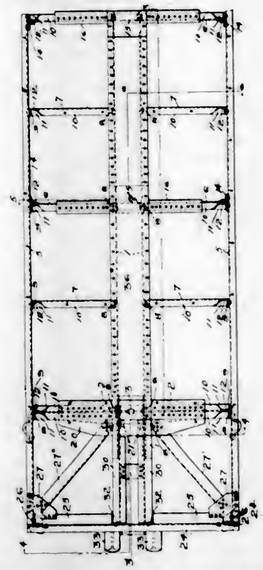
Claim.—A valve casing provided with a lateral extension, a threaded opening, a plug fitted in said threaded opening, a valve mounted upon a tapering seat within the casing and provided with a threaded stem, said plug having an integral tubular extension to which a pipe is connected, the wall of the shell having a by-pass leading from above the valve to a location adjacent to one end of the valve casing, a threaded plug in which said stem has a bearing, and a cap fitted to said plug and through which the stem passes, as set forth.

854,349. METALLIC CAR-UNDERFRAME. JOHN M. HANSEN, Pittsburg, Pa. Filed Sept. 6, 1906. Serial No. 333,493.

Claim.—1. In a metallic underframe for railway cars, the combination of center sills, a cross beam or connector extending therefrom to the car sides, said beam or connector having web members formed from pressed plates provided with vertical webs highest at their outer ends and having integral vertical flanges at the outer ends for connection to the car sides, and also having top flanges terminating short of the outer ends of said webs.

2. In a metallic underframe for railway cars, the combination of center sills, a cross beam or connector extending from said sills to the car sides, said cross beam or connector having web members composed of pressed plates having vertical webs highest at their outer ends and having integral flanges at the top, bottom and outer end edges, the latter extending for the full height of the web members, and the top flanges terminating short of the outer ends of the webs.

3. In a metallic underframe for railway cars, the combination of center sills, a cross-beam or connector extending from the same to the car sides, said cross-beams and connectors having web members formed of pressed plates having their webs arranged vertically and highest at the outer ends, and having integral flanges at the top and bottom edges and outer ends, the flanges at the tops terminating short of the ends of the webs and the bottom and end flanges being continuous, the latter extending for the full height of the ends of the web members.



4. In a metallic underframe for railway cars, the combination of center sills, side sills, a cross-beam or connector having its top at the same height as the tops of the side sills but having its outer ends projecting above the same to serve as stringer abutments, said cross beam or connector having web members composed of pressed plates placed with the webs vertically and with integral flanges on the outer ends and top and bottom edges, the top flanges terminating short of the outer ends of the web members.

5. In a metallic underframe for railway cars, the combination of center sills, side sills, and a cross-beam or connector, the latter having its top on the same level as the tops of the side sills and having upwardly projecting portions at its outer ends, said cross beam including pressed plates having flanges at their outer ends for connecting to the side sills and flanges on the top and bottom edges, those at the top edges terminating short of the outer ends of the beam, and top connecting members riveted to the top flanges of said web members.

6. In a metallic underframe for railway cars, the combination of center sills, end sill, side sills and a body bolster, stringer supports secured to the end sill, and a brace connecting said stringer support and body bolster.

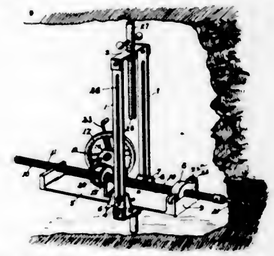
7. In a metallic railway car underframe, the combination of center sills, side sills, end sill, and body bolster, of a stringer support on the end sill, gusset plates connecting the side sills and said stringer support and braces connecting said gusset plates and body bolster.

8. In a metallic underframe for railway cars, the combination of center sills, draft sills riveted thereto and comprising a vertical web having top and bottom flanges projecting in opposite directions and having an integral flange at the outer end for riveting to the car end.

9. A metallic draft beam for railway cars comprising a pressed plate of general Z form having at its outer end an integral flange which is continuous with one of the edge flanges and serving to secure the beam to the car end.

10. A metallic draft beam for railway cars, comprising a pressed plate having a vertical web and being of general Z form with the lower flange projecting outwardly and having at its outer end an integral flange continuous with the out-turned bottom flange and serving to secure the beam to the car end.

854,350. MINING-DRILL. WILLIAM HAUXWELL, Canal Fulton, Ohio. Filed Oct. 30, 1906. Serial No. 341,252.



Claim.—In a mining drill, a frame, means for holding the frame in fixed position, a feed screw support pivotally attached to the frame and adjustable vertically between the ends of the frame, a feed screw carried by the support, said support provided with a right-angled plate, a main gear wheel carried by said right-angled plate, a pinion meshing with said gear wheel, and the main gear wheel journaled above the pinion, beveled gear wheels, one of said gear wheels located upon the shaft having a pinion meshing with the main gear wheel, another beveled gear wheel located upon the feed screw and a crank adjustably connected to the main gear wheel, substantially as and for the purpose specified.

854,351. COMBINATION-SQUARE. ALBERT W. HIGHT, Ballard, Wash., assignor, by direct and mesne assignments, to The Hight Manufacturing Company, Toledo, Ohio, a Corporation of Ohio. Filed Oct. 19, 1905. Serial No. 283,525.

Claim.—1. A square having a slot extending lengthwise the blade, both edges of said slot being notched and the notches on opposite sides being in staggered relation.

2. A square having a slot extending lengthwise the blade, both edges of said slot being notched and the notches on opposite sides being in staggered relation, and a scale adjacent said notches.

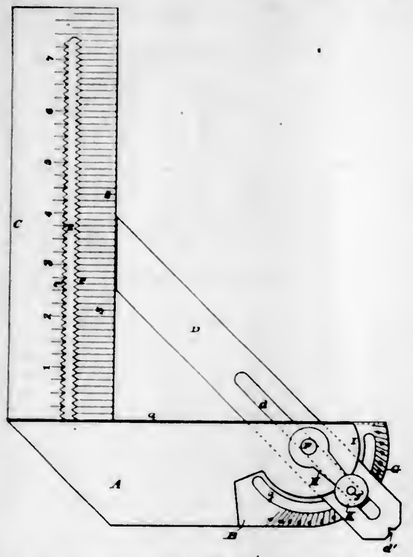
3. A try square having a slot in its beam in the same general plane as its blade, a bevel blade in said slot, a pivot connecting the beam and bevel blade and having an adjustable connection with the bevel blade, and a clamping bolt removed from the said pivot and adapted to bind the bevel blade in adjusted position.

4. A try-square comprising a beam composed of two plates having the blade between them at one end, a blade lying between the other ends of said plates and constituting a bevel or protractor arm, said arm having a longitudinal slot, and a pivot bolt passing through said slot and a clamping bolt also passing through said slot at a point removed from the pivot bolt.

5. A try-square comprising a beam composed of two separated plates, a blade secured between one end of said plates, a protractor or bevel arm between the other ends of said plates, a pivot bolt therefor, a clamping bolt adapted to secure said bevel arm in position, and a scale upon one of the beam plates by which to set the bevel arm.

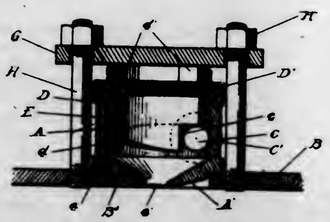
6. A try-square comprising a beam composed of two separated plates, a blade secured between one end of said beam plates, the other ends of said beam plates being shaped to concentric circular segments of unequal radii, a protractor or bevel arm pivoted between said plates concentric of said segments, and a scale upon the segment of larger radius by which to set said arm.

7. A try-square comprising a beam composed of two separated plates, a blade secured between one end of said beam plates, the other ends of said beam plates being shaped to concentric circular segments of unequal radii, a protractor or bevel arm pivoted between said plates concentric of said segments, and having a longitudinal slot whereby the arm may be shifted along the pivot, and a scale upon the segment of larger radius by which to set said arm.



8. A try-square comprising a beam composed of two plates, a blade secured between the beam plates at one end, the other end of the beam plates being shaped to circular segments, the larger segment having a circular slot outside the smaller segment a protractor or bevel arm pivoted concentric with said segments, a clamping arm carried on the same pivot and extending beyond the segment of smaller radius, and a clamping bolt extending through the clamping arm, the slot in the segment and the protractor or bevel arm.

854,352. SPRAYER. FRANKLIN G. HOBART, Beloit, Wis., assignor to Fairbanks, Morse & Company, Chicago, Ill., a Corporation of Illinois. Filed May 1, 1906. Serial No. 314,726.



Claim.—1. In a sprayer, the combination of a body member having a chamber substantially circular in cross-section, and provided with a tangential inlet and an outlet, and a rotatively adjustable controlling member for the inlet, held within the chambered body against relative longitudinal movement.

2. In a sprayer, the combination with a body member formed with a chamber having a portion substantially circular in cross-section, and provided with a tangential inlet and outlet, of a rotatively adjustable cut-off member within the chamber controlling the inlet, and means for operating the cut-off.

3. In a sprayer, the combination with a body member forming a cylindrical chamber having a tangential inlet and an axial outlet, of a member in said chamber having a spiral surface between said inlet and outlet and means for adjusting said member to variably restrict said inlet for the purpose described.

4. In a sprayer, the combination with a body member having formed therein a substantially circular chamber, and provided with a tangential inlet and an axial outlet, of a cut-off valve for the inlet mounted within the chambered body for rotary adjustment, and held against relative axial movement, and means for adjusting said valve.

5. In a sprayer, the combination of a body member formed with a substantially circular chamber, open at one end, and provided with a tangential inlet and an axial outlet, and a combined closure and valve member mounted within the body for rotary adjustment, and held against relative axial movement, said member acting to close the chamber and variably restrict the inlet.

6. In a sprayer, the combination of a body member formed with a substantially circular chamber, open at one end and provided with a tangential inlet and an axial outlet, and a rotatable closure for said open end carrying an annular flange, projecting into said chamber, formed with a spiral surface, substantially as and for the purpose described.

7. In a sprayer, the combination of a body member having a circular chamber therein, and provided with a tangential inlet and an axial outlet, and a cut-off member for variably restricting the inlet arranged within the chamber for adjustment in a horizontal plane.

8. In a sprayer for gas producer scrubbers, the combination with an apertured scrubber top, of a cylindrical casing seated in said aperture having an axial outlet registering with said aperture, and having a tangential inlet, a closure for the top of said casing, studs on the scrubber top on opposite sides of said aperture, a yoke engaging said closure and apertured to engage said studs, and adjustable means for holding said yoke against said closure.

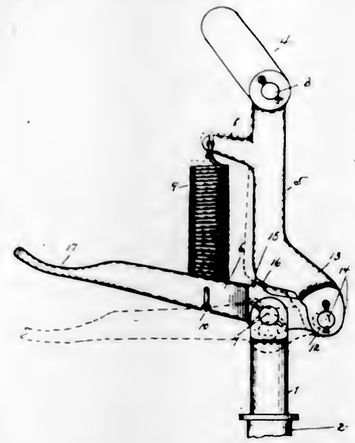
9. In a sprayer, the combination with a body member provided with a cylindrical chamber, having one end substantially conical with an axial outlet therein, said chamber having a tangential inlet, of a rotatable closure for the other end of said chamber held from longitudinal movement, and means carried by the closure and operating upon its rotation to variably restrict the inlet.

854,353. PUMP. FRANKLIN G. HOBART, Beloit, Wis., assignor to Fairbanks, Morse & Co., Chicago, Ill., a Corporation of Illinois. Filed Aug. 4, 1906. Serial No. 329,218.

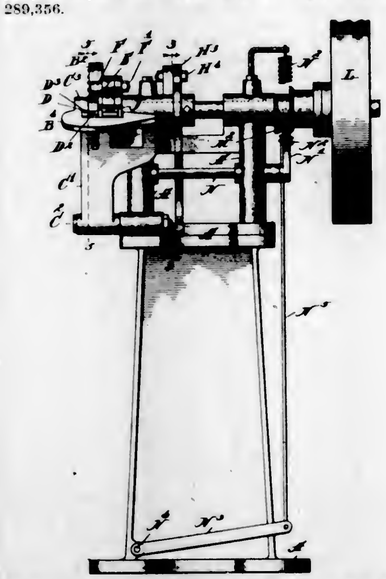
Claim.—1. The combination with a pump and a plunger therefor, of means for actuating said plunger, a link and a lever pivotally connected to each other, and one being pivoted to said plunger and the other pivoted to said means, and yielding means having constant connections with said link and lever for normally holding said link and lever folded on their common pivot into contact with each other, for the purpose described.

2. The combination with a pump and a plunger therefor, of means for actuating said plunger, a link having an arm projecting at an angle to the line of movement to said plunger, a lever pivotally connected to said link, the link being pivoted to said means and the lever being pivoted to said plunger, resilient means for normally holding said lever in contact with the arm of said link, and means for overcoming the tension of said resilient means and for operating said plunger independently of said first-mentioned means.

3. The combination with a pump and a plunger therefor, of means for actuating said plunger, a link pivotally connected to said means, a lever pivotally attached to said plunger and having its end fulcrumed on said link, and a resilient member for yieldingly holding said link and said lever in fixed relation to each other, for the purpose described.



854,354. WIRE-KNOTTING MACHINE. EMIL A. HOEFER, Freeport, Ill., assignor to Hoefer Manufacturing Company, Freeport, Ill. Filed Nov. 27, 1905. Serial No. 289,356.



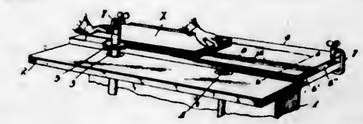
Claim.—1. In a machine of the class described, in combination, a supporting-frame, a shaft mounted therein, a cam-plate eccentrically mounted fast on the shaft and having an oval cam-groove in the outer face thereof, a clamping-jaw and platen support, with its platen, preferably in the form of a bell-crank and pivotally mounted, by the free end of one arm, to a bearing on the frame, and having the free end of its remaining arm provided with a transversely-mounted stud projecting therefrom into engagement with the oval groove in the cam-plate, a lower clamping-jaw mounted fast on the platen-support, an upper clamping-jaw, pivoted on the platen-support and adapted to coöperate with the lower jaw, substantially as described.

2. In a machine of the class described, in combination, a supporting-frame, a shaft mounted therein, a cam-plate eccentrically mounted fast on the shaft and having an oval cam-groove in the outer face thereof, a clamping-jaw and platen support, with its platen, preferably in the form of a bell-crank and pivotally mounted, by the free end of one arm, to a bearing on the frame, and having the free end of its remaining arm provided with a transversely-mounted stud projecting therefrom into engagement with the oval groove in the cam-plate, a lower clamping-jaw mounted fast on the platen-support, an upper clamping-jaw, pivoted on the platen-support and adapted to coöperate with the lower jaw, a knotter-pinion, having a conical recess in its outer end, a radial recess in its inner end, a radial slot therein, connecting the conical and radial recesses, and rotatably mounted in bearings in the frame, a sector-gear mounted fast on the cam-plate shaft, a gear-wheel located between and meshing with both the knotter-pinion and sector-gear, and a shaft carrying said sector-gear, substantially as described.

3. In a machine of the class described, in combination, a supporting-frame, a shaft mounted therein, a cam-plate eccentrically mounted fast on the shaft and having an oval cam-groove in the outer face thereof, a clamping-jaw and platen support, with its platen, preferably in the form of a bell-crank and pivotally mounted, by the free end of one arm, to a bearing on the frame, and having the free end of its remaining arm provided with a transversely-mounted stud projecting therefrom into engagement with the oval groove in the cam-plate, a lower clamping-jaw mounted fast on the platen-support, an upper clamping-jaw, pivoted on the platen-support and adapted to coöperate with the lower jaw, a rotatably and eccentrically mounted stud, adapted to contact and close the upper clamping-jaw upon wire-spring coils, of various diameters, supported by the lower clamping-jaw, substantially as described.

4. In a machine of the class described, in combination, a supporting-frame, the shafts B H mounted therein, a cam-plate B^2 fast on the shaft B and having an oval cam-groove B^3 therein, a clamping-jaw and platen support C pivotally mounted, by the free end of one arm C^1, to a bearing on the frame, and having the free end of its remaining arm C^3 provided with a transversely-mounted roller-stud C^4 projecting into engagement with the groove B^3 in the cam-plate B^2, a lower clamping-jaw D fast on the platen-support C, an upper clamping-jaw E, pivoted on the platen-support and adapted to coöperate with the lower clamping-jaw D, a knotter-pinion J, having a conical recess J^1 in its outer end, a radial recess J^2 in its inner end, a radial slot J^3 therein, connecting the conical and radial recesses, and rotatably mounted in bearings in the frame, a sector-gear G fast on the shaft B, a gear-wheel I located between and meshing with the knotter-pinion J and sector-gear G, and a shaft carrying said sector-gear G, substantially as described.

854,355. SAW OR CUTTER GUARD FOR WOODWORKING-MACHINES. EDWARD W. A. HOLTZ and ARTHUR DICK, Evansville, Ind. Filed Dec. 28, 1905. Serial No. 293,668.



Claim.—1. The combination with the feed table of a wood working machine in which the work is manually pushed past a rotating cutter, of a yieldable stop projecting from the table in the path of the work arranged to yield and be depressed by said work and adapted to spring up behind the work to prevent accidental throwing back of the work by the tool.

2. The combination with the feed table of a wood work

ing machine in which the work is manually pushed past a rotating cutter, of a plurality of yieldable automatically upwardly projecting stops positioned at different points along the line of the feed of the piece of work and so formed as to yield and be successively depressed by the work as it moves forward in a given direction and released and spring up behind the work to prevent accidental throwing back of the work by the tool.

3. The combination with the feed table of a wood working machine in which the work is manually pushed past a rotating cutter, of an open trackway over which the work is adapted to slide, and a yieldable stop adjustable to different positions in said trackway and arranged to yield and be depressed by said work and adapted to spring up behind the work to prevent accidental throwing back of the work by the tool.

4. The combination with the feed table of a wood working machine in which the work is manually pushed past a rotating cutter, of a trackway having an under-cut groove open along its top and over which the work is adapted to slide, a stop comprising a body located in the under-cut portion of the trackway and slidable to different positions, an upwardly projecting stop arranged to yield and be depressed by the work into the trackway and adapted to spring up behind the work to prevent accidental throwing back of the work by the tool, a spring adapted to project the stop upwardly, and a screw for securing the body in the trackway.

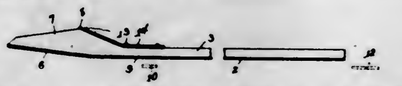
5. The combination with the feed table of a wood working machine in which the work is manually pushed past a rotating cutter, of a trackway open along its top over which the work is adapted to pass, and a plurality of yieldable spring-raised stops projecting upwardly from the trackway and having beveled tops and squared under faces and arranged to yield and be depressed by said work and adapted to spring up behind the work in succession to prevent accidental throwing back of the work by the tool.

6. In a saw or cutter guard, for wood-working machines, the combination with the table thereof, of a plurality of spring-raised stops disposed in the direction of the general line of feed of the work and having squared sides and ends and beveled longitudinally and transversely on their tops, said stops being adapted to be released after passage of the piece of work thereover.

7. The combination with the feed table of a wood working machine in which the work is manually pushed past a rotating cutter, of a supplemental table detachably secured to the feed table, and a yieldable stop projecting from the supplemental table in the path of the work arranged to yield and be depressed by said work and adapted to spring up behind the work to prevent accidental throwing back of the work by the tool.

8. The combination with the feed table of a wood working machine in which the work is manually pushed past a rotating cutter, of a supplemental table detachably secured on the feed table, and a plurality of yieldable stops arranged in succession on the supplemental table in the path of the work which are adapted to yield and be depressed by said work and adapted to spring up behind the work to prevent accidental throwing back of the work by the tool.

854,356. ASSORTING DEVICE. HARVEY HOWELL and JOHN DUFF, Wheeling, W. Va. Filed July 12, 1906. Serial No. 325,888.



Claim.—1. An assorting device comprising a longitudinal trough having a plane flat bottom provided with a central longitudinal slot therein, vertical side-walls terminating in lateral flanges, a receiving end consisting of a hopper having a bottom formed integral with and inclined upward at an angle to the trough-bottom and gradually widened outward from said trough-bottom, vertical side-walls integral with said hopper-bottom, the last-mentioned side-walls being gradually increased in height from the end of the trough to a point substantially midway between the ends of said hopper and terminating in lateral flanges which are integral with and form a continuation of the flanges of the trough, and a guard mounted over the lower end of the hopper and the adjacent end of the trough, said guard having its lateral edges attached to said flanges.

2. An assorting device of the character described, consisting of a trough having a plane bottom, provided with a slot therein at a suitable point, in the rear of its discharge end, vertical side walls, a lateral flange carried by each side wall, a hopper with a flaring mouth formed integral with said trough at the receiving end thereof, said hopper being inclined with relation to the trough and having side-walls which gradually increase in height from the end of the trough to a point substantially midway between the ends thereof, and a plate or guard secured over said hopper and trough whereby, without retarding the progress of articles delivered to the hopper, said articles are directed into the trough in a flatwise position.

3. An assorting device comprising a longitudinal trough having a plane flat bottom provided with a central longitudinal slot therein, vertical side-walls formed integral with said bottom and terminating in lateral flanges, said receiving end consisting of a hopper whose bottom is formed integral with and is inclined upward at an angle to the trough-bottom and is gradually widened from the trough-bottom, vertical side-walls formed integral with said hopper-bottom, the last-mentioned side-walls being gradually increased in height from the adjacent end of the trough to a point substantially midway between the ends of said hopper and terminating in lateral flanges which are integral with and form a continuation of the flanges of the trough, and a guard mounted over the lower end of the hopper and the adjacent end of the trough, said guard having its lateral edges attached to said flanges, and said guard being adapted for directing articles delivered to the hopper into the trough in a flatwise position.

854,357. CELLULAR BOTTLE OR CONTAINER. CLARENCE S. JACKSON, New York, N. Y., assignor of one-half to Septime S. Sanguinette, New York, N. Y. Filed June 19, 1906. Serial No. 322,394.



Claim.—1. In a device of the character specified, the combination with a body portion having a plurality of cells for containing liquid, of a breakable cover for said cells.

2. In a device of the character specified, the combination with a body having a plurality of cells opening upon a common plane, of a breakable closure for said cells, said closure being provided with a distinct configuration above the mouth of each of said cells.

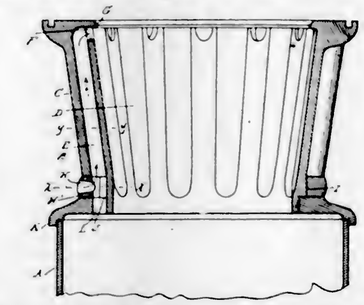
3. In a device of the character specified, the combination with a body having a plurality of cells, of means for closing said cells and an interchangeable pouring mouth for said cells provided with a portion for opening the cell closing means.

4. In a liquid container, the combination with a body portion having a plurality of open cells, said openings being closely assembled, of means for closing said cells, and an interchangeable pouring neck and mouth for said cells.

5. In a device of the character specified, the combination with a body portion having within it a plurality of cells, all but one of said cells being adapted to contain liquid, of an opening device for the closure for said cells located within said excepted cell, and a closure for all of said cells.

6. In a device of the character specified, the combination with a body portion having rectangular sides and ends, said body portion having a number of cells provided with openings in one of the ends of said body, of means for closing said cells, and an interchangeable pouring neck and mouth for said cells for bringing the pouring point above the common plane of said cell mouths.

854,358. STOVE. WILLIAM S. JACKSON, Detroit, Mich. Filed Dec. 29, 1906. Serial No. 350,021.



Claim.—1. In a stove, a fire-pot having a series of vertically-extending flues communicating with the interior of the pot at their upper ends and provided at their lower ends with externally-opening air inlet apertures, an ash-pit section beneath said fire-pot and downward-extensions of said flues below the externally-opening air inlet apertures forming ash discharge passages into said ash pit.

2. In a stove, a fire-pot having a series of vertically-extending flues formed integral therewith, said flues communicating with the interior of the pot at their upper ends and at their lower ends being provided with externally-opening air inlet apertures, an ash pit section beneath said fire-pot, downward extensions of said flues below said externally-opening air inlet apertures communicating with said ash pit, and means for variably restricting said air inlet apertures.

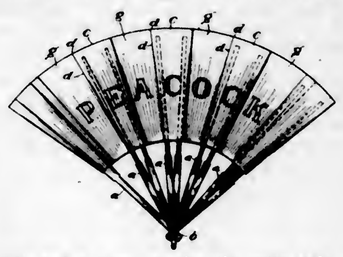
3. In a stove, a fire-pot having a series of vertically extending flues formed integral therewith, said flues communicating with the interior of the pot at their upper ends, and having external openings near their lower ends, an apertured ring surrounding said pot and controlling said outward openings, an ash-pit section a cap in said ash-pit section on which said pot is seated, said cap being apertured in alinement with said flues, for the purpose described.

4. In a stove, a fire-pot having a series of vertically extending flues formed integral therewith, said flues having externally opening apertures at their lower ends and internally opening apertures at their upper ends, downward extensions of said flues, an ash-pit section with which said downward extensions communicate and an inwardly extending flange above said inwardly opening apertures for deflecting the air current through said flues inward.

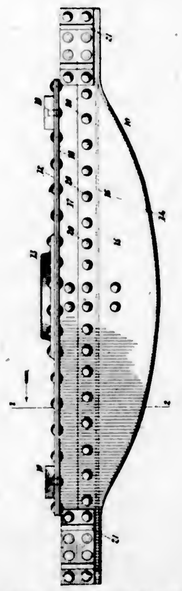
854,359. FAN. HENRY E. JOHNSON, Yeadon, Pa. Filed June 2, 1906. Serial No. 319,863.

Claim.—1. A collapsible fan provided with auxiliary folds one edge of which is hinged to one edge of the ordinary folds of the fan and which are adapted when the fan is opened in one direction to cover one fold of the fan and when the fan is opened in the other direction to cover the adjacent fold of the fan.

2. The combination with a collapsible fan of auxiliary folds hinged at one edge to every other one of the edges of the ordinary folds of the fan, sticks carrying said auxiliary folds, and a pivot carrying the outer ends of said sticks.



854,360. CAR-TRUCK BOLSTER. GEORGE A. JOHNSON, Paterson, N. J., assignor to Benjamin A. Hegeman, Jr., North Plainfield, N. J. Filed Jan. 14, 1907. Serial No. 352,129.

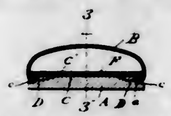


Claim.—1. A bolster comprising a lower trough-shaped member, an upper integral trough-shaped member set upright between the sides of said lower member and secured thereto, and a top-plate secured upon said upper member; substantially as set forth.

2. A bolster comprising a lower trough-shaped member, having horizontal end portions and deeper middle portions, an upper integral trough-shaped member set upright between the sides of said lower member and secured thereto and at its end portions being seated upon the bottom of said horizontal end portions of said lower member, and a top-plate secured upon said upper member; substantially as set forth.

3. A bolster comprising a lower trough-shaped member, an upper integral trough-shaped member of uniform depth set upright between the sides of said lower member and secured thereto and having outwardly extending integral flanges along its upper edges, and a top plate secured upon said flanges; substantially as set forth.

854,361. WET-PROOF FOOTWEAR. JOHN A. KELLY, New York, N. Y. Filed Dec. 22, 1905. Serial No. 292,951.



Claim.—1. In a shoe, a sole, an upper, and a moisture-proof lining partially inclosing the edge portion of the sole and inclosing the edge of the upper, the same lining covering, also, one surface of the sole.

2. In a shoe, a channeled sole, an upper, and a moisture proof covering attached with the upper to the channeled edge of the sole, said covering being folded over the row of stitching and upon the channeled surface of said sole.

3. In a shoe, a channeled sole, an upper, and lengths of moisture proof material attached with the upper to the sole at the edges thereof, said lengths of material overlapping each other and the channeled surface of the sole.

4. In a shoe, a channeled sole, an upper, and lengths of moisture proof material attached with the upper to the sole at the edges thereof, said lengths of material being folded upon the sole and inclosing the row of stitching between said upper and the sole.

5. In a shoe, a channeled sole, an upper and a moisture proof lining inclosing the joint between the upper and the sole and fastened upon the channeled surface of the sole.

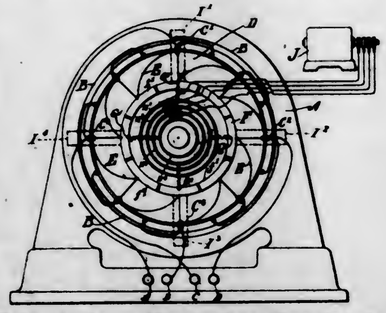
6. In a shoe, a channeled sole, an upper, and a plurality of moisture proof layers fastened to the channeled surface of the sole and inclosing the stitches between the upper and the sole.

7. In shoe, an upper, a sole, and lengths of moisture proof material attached to the edge portion of the sole and upper and folded upon said sole to inclose the stitches which unite the several parts.

8. In a shoe, an upper, a sole, and lengths of moisture proof material attached to the edge portion of the sole and upper and folded upon said sole to inclose the stitches which unite the several parts, said lengths of material being united to the sole and to each other.

9. In a shoe, a channeled sole, an upper stitched thereto, and a moistureproof lining covering the upper surface of said sole and the channeled portions thereof, said lining inclosing the seam between said sole and the upper.

854,362. GENERATION AND DISTRIBUTION OF ENERGY. JOHN F. KELLY, Pittsfield, Mass. Filed Apr. 15, 1903. Renewed May 21, 1904. Serial No. 209,043.



Claim.—1. The combination of an alternating-current generator, means for exciting its field magnets by alternating currents derived from the armature circuits, and a frequency setter for determining the periodicity of said generator.

2. The combination of an alternating current generator having induced armature windings connected to the supply mains, inducing field magnet windings, means for exciting said field magnet windings by alternating currents derived from the armature circuits and a frequency setter for determining the periodicity of said generator.

3. In combination, a main alternating-current generator, an auxiliary alternating-current generator supplying alternating current to the field magnet of the main alternating-current generator, a commutator connected to said field windings, and means for connecting the brushes of said commutator in derived circuit from the armature circuits of said main generator.

4. In combination, a main multiphase alternating-current generator, an auxiliary multiphase alternating-current generator supplying alternating currents to the field windings of said main generator, a commutator connected to said field windings and means for connecting the brushes of said commutator in derived circuit from the armature circuits of said main generator.

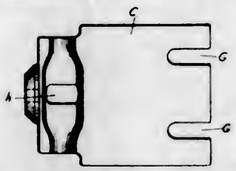
5. In combination, a main multiphase alternating-current generator, an auxiliary multiphase alternating-current generator supplying alternating currents to the field windings of said main generator, a commutator connected to said field windings, and means for inductively connecting the brushes of said commutator in derived circuits from the armature circuits of said main generator.

6. In combination, a main multiphase alternating-current generator, an auxiliary multiphase alternating-current generator supplying multiphase currents to the field windings of said main generator, said two generators having an equal number of phases, a commutator having its segments connected to said field windings, the brushes of said commutator being connected in derived circuit from the armature circuits of said main generator.

7. In combination, a main multiphase alternating current generator, an auxiliary multiphase alternating-current generator supplying alternating currents to the field-windings of said main generator, a commutator having its segments connected to the field-windings, the brushes of said commutator being connected in derived circuit from the armature circuits of the main generator, and transformers having their primaries in series with the armature windings and with the load and their secondaries in series with said brushes.

8. In combination, a main multiphase alternating-current generator, an auxiliary multiphase alternating-current generator of low periodicity supplying alternating-currents to the field-windings of said main generator, a commutator having its segments connected to the field-windings, and its brushes in derived circuits from the armature circuits of the main generator, and transformers having their primaries in series with the armature windings and with the load and their secondaries in said derived circuits.

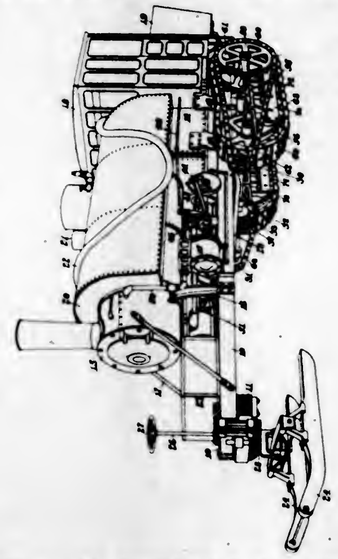
854,363. MAGNET-BOX AND ARMATURE OF MAGNET CONTAINED THEREIN. CHARLES D. LANNING, Boston, Mass. Filed Jan. 26, 1906. Serial No. 297,987.



Claim.—1. In electro-magnetic apparatus, a magnet-container, a magnet therein, an armature lever pivoted to the container, diamagnetic pieces between the armature and magnet poles, a container-cover, and means thereon to control the lateral movement of the armature lever, and maintain the armature and the diamagnetic pieces in coöperative alinement with the cores of the magnet when the cover is applied to the container.

2. In electro-magnetic apparatus, a double core electro-magnet, a magnet-box of magnetic material to which the magnet cores are attached and which serves as the yoke therefor, an armature-lever pivoted upon the box, diamagnetic pieces between the armature and the magnet poles, a cover and means thereon to control the lateral position of the armature lever and maintain the armature and diamagnetic pieces in alinement with the magnet cores when the cover is properly located upon the box.

854,364. LOG-HAULER. ALVIN O. LOMBARD, Waterville, Me. Filed Nov. 22, 1905. Serial No. 288,546.



Claim.—1. In a traction engine, a traction member comprising a number of tread sections rabbeted together by a plurality of end projections tangential to the tread surface of said sections to form a flexible belt with a continuous tread surface, a pivot through said rabbeted portion, and a roller upon said pivot to co-act with a sprocket wheel.

2. In a traction engine, a traction member comprising a number of tread sections rabbeted together by a plurality of end projections tangential to the tread surface of said sections to form a flexible belt with a continuous tread surface, a pivot through said rabbeted portion, and a roller on each of said sections adapted to coact with the teeth of a sprocket wheel.

3. In a traction engine, a traction member comprising a number of tread sections rabbeted together by a plurality of end projections tangential to the tread surface of said sections to form a flexible belt with a continuous tread surface, each of said sections being provided with a central slot at either end, a pivot extending through said rabbeted portion and across said slot, and a roller upon said pivot in said slot adapted to co-act with a sprocket wheel the teeth of which engaging with said roller are adapted to extend into said slot.

4. In a traction engine, the combination with suitable motive power and a driving shaft having a driving member on either end, of a pair of traction members each comprising a framework adapted to rock about a center intermediate its ends, a pair of sprocket wheels supported in bearings secured to either end thereof, a flexible traction belt composed of sections pivoted together and provided with rollers upon the pivots thereof adapted to engage the teeth of said sprocket wheels and with ribs on the outer face, and mechanism interposed between said driving member and one of said sprocket wheels to transmit motion from the former to the latter.

5. In a traction engine, the combination with suitable motive power and two sprocket wheels driven thereby, of a pair of traction members each comprising a framework adapted to rock about a center intermediate its ends, a pair of wheels supported in bearings on either end thereof, a flexible traction belt composed of sections pivoted together to form a continuous tread surface and provided with members adapted to engage said wheels and with ribs on said tread surface said belt passing beneath the under face of said framework from end to end and in the same vertical plane therewith, and mechanism interposed between each of said sprocket wheels and one of said wheels to transmit motion from the former to the latter.

6. In a traction engine, the combination with suitable motive power and members driven thereby, of a pair of traction members each comprising a framework adapted to rock about a center intermediate its ends, a pair of wheels supported in bearings on either end thereof, a flexible traction belt composed of sections pivoted together and provided with members adapted to engage said wheels and with ribs on the outer face said belt passing beneath the under face of said framework from end to end and in the same vertical plane therewith, and mechanism interposed between said driving members and the rear wheel to transmit motion from the former to the latter.

7. In a traction engine, the combination with suitable motive power and members driven thereby, of a pair of traction members each comprising a framework adapted to rock about a center intermediate its ends, a pair of wheels supported in bearings on either end thereof, a flexible traction belt composed of sections pivoted together and supported by said wheels said belt passing beneath the under face of said framework from end to end and in the same vertical plane therewith, and a plurality of rollers supported in bearings in said framework and preventing contact between said belt and the under face of said framework.

8. In a traction engine, a traction member comprising a framework adapted to rock about a center intermediate its ends, a pair of wheels supported in bearings secured to said framework, a flexible traction belt composed of sections pivoted together and supported by said wheels said belt passing beneath the under face of said framework from end to end and in the same vertical plane therewith, and a plurality of rollers supported in bearings in said framework and preventing contact between said belt and the under face of said framework.

9. In a traction engine, a traction member comprising a framework adapted to rock about a center intermediate its ends, a pair of wheels supported in bearings secured to said framework, a flexible traction belt composed of sections pivoted together and supported by said wheels said belt passing beneath the under face of said framework and in the same vertical plane therewith, a plurality of shafts fixed in said framework, and a roller mounted on each end of each shaft adapted to prevent contact between said belt and the under face of said frame.

10. In a traction engine, a traction member comprising a framework, a pair of wheels supported thereby, a flexible traction belt composed of sections pivoted together and supported by said wheels said belt passing beneath said framework, a plurality of shafts fixed in said framework, a capillary oiling device for each shaft, an oil pipe in the end of said shaft communicating with said oiling device, and a roller mounted on each shaft and adapted to prevent contact between said belt and the under face of said frame.

11. In a traction engine, a traction member comprising a framework, a pair of wheels supported thereby, a flexible traction belt composed of sections pivoted together and supported by said wheels said belt passing beneath said framework, a plurality of shafts fixed in said framework, a grooved wooden member inserted in a vertical slot in said shaft, and an oil pipe in the end of said shaft communicating with said vertical slot.

12. In a traction engine, a traction member comprising a framework adapted to rock about a center intermediate its ends, a pair of wheels supported in bearings secured thereto, a flexible traction belt composed of sections pivoted together and supported by said wheels said belt passing beneath the under face of said framework and in the same vertical plane therewith, a sprocket wheel on the

shaft of one of the rear wheels, a sprocket wheel on a driving shaft, and a chain connecting said sprocket wheels.

13. In a traction engine, the combination of a main frame, front and rear sleds therefor, means for steering the front sled, a pair of wheels mounted in each runner of the rear sled, a flexible traction belt on each pair of wheels, a sprocket wheel secured to the shaft of one of each pair of wheels, a driving shaft, two shafts parallel thereto, a sprocket wheel on each of the latter shafts, connectors between said sprocket wheels and those first mentioned, and differential gearing interposed between said parallel shafts and the said driving shaft.

14. In a traction engine, the combination of a main frame, front and rear sleds therefor, means for steering the front sled, a pair of wheels mounted in each runner of the rear sled, a flexible traction belt on each pair of wheels, a sprocket wheel secured to the shaft of one of each pair of wheels, a driving shaft, a pinion thereon, a gear meshing therewith, bevel pinions carried thereby, a shaft on either side of said gear and parallel to said driving shaft, a bevel gear on each shaft meshing with said bevel pinions, a sprocket wheel on each of said last-mentioned shafts, and connectors between the last-mentioned sprocket wheels and those first mentioned.

15. In a traction engine, the combination with the main engine-supporting frame, of depending brackets therefrom, vertically slidable boxes therein, an axle in said boxes, a traction runner member on each end of said axle, and a spring connector interposed between said boxes and frame on opposite sides of said axle.

16. In a traction engine, the combination with the main engine-supporting frame, of depending brackets therefrom, vertically slidable boxes therein, an axle in said boxes, a traction runner member on each end of said axle, members resting on said boxes, and springs interposed between said members and said main frame on opposite sides of said axle.

17. In a traction engine, the combination with the main frame, of depending brackets therefrom, vertically slidable boxes therein, an axle in said boxes, a traction member on each end of said axle, members resting on said boxes on each side of said brackets, stirrups connecting the ends of said members on opposite sides of said axle, and springs interposed between said stirrups and said main frame.

18. In a traction engine, the combination with two traction members composed of two wheels supporting a flexible traction belt, of driving mechanism therefor, two revoluble shafts for said driving mechanism in alinement with the inner ends substantially abutting, a plate supported by the inner ends of said shafts, a toothed annulus secured to said plate, a revoluble pinion for driving said annulus, a revoluble shaft for said pinion, a crank on either end thereof, and an engine for driving each of said cranks.

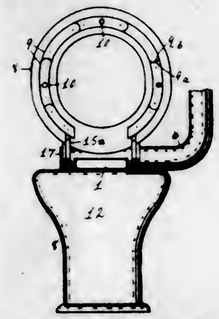
19. In a traction engine, the combination of an axle, a box therefor on either end, a framework secured to each box, sprocket wheels mounted on said framework, a flexible traction belt thereon passing beneath the under face of the same, a driving wheel on the shaft of one of the sprocket wheels, a primary driving wheel, a connector between said driving wheels, means for adjusting said framework relative to said axle box, and means for locking said box and said framework together when in adjusted position.

20. In a traction engine, the combination of an axle, a framework secured thereto, a sprocket wheel secured to said framework, a second sprocket wheel, a box therefor, means for adjusting said box relative to said framework toward or from said first-mentioned sprocket wheel, means for locking said box and framework together when in adjusted position, and a flexible traction belt mounted upon said sprocket wheels and passing beneath the under face of said framework and in the same vertical plane.

21. In a traction engine, the combination of an axle, a framework secured thereto, two sprocket wheels secured to said framework, a fixed bearing for one of said sprocket wheels, a bearing for the other sprocket wheel movable toward and from the fixed bearing, means for locking said bearing to said framework in adjusted position, and a flexible traction belt mounted upon said sprocket wheels and passing beneath the under face of said framework and in the same vertical plane.

22. In a traction engine, the combination of an axle, a framework secured thereto, two sprocket wheels secured to said framework, a fixed bearing for one of said sprocket wheels, a bearing for the other sprocket wheel movable toward and from the fixed bearing, means for locking said bearing to said framework in adjusted position, a flexible traction belt mounted upon said sprocket wheels and passing beneath the under face of said framework and in the same vertical plane, a driving shaft, a driving member thereon, a driven member in axial line with and movable with one of said sprocket wheels, a connector between said driving member and driven member, means for adjusting said framework relative to said axle, and means for locking said framework in adjusted position.

854,365. WATER-CLOSET-VENTILATING DEVICE. ANTON T. LUECKENBACH, Neenah, Wis. Filed Jan. 10, 1907. Serial No. 351,636.

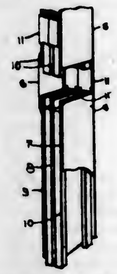


Claim.—1. A water closet ventilating device, consisting of a rectangular conductor adapted to be secured in position at the rear side of the bowl top between it and the seat but entirely disconnected therefrom, a tube of greater diameter than the depth of said conductor connecting transversely thereof with the rear end of said conductor and being integral therewith, the circumference of the tube at one side thereof being in the same plane as one side of said conductor, and being adapted for use either side upward, one end of said tube being provided with a cover, and the other, adapted for connection with a pipe leading to a chimney or other suitable ventilating flue, substantially as described.

2. A water closet ventilating device, consisting of a rectangular conductor adapted to be secured in position at the rear side of the bowl top between it and the seat but entirely disconnected therefrom, a tube of greater diameter than the depth of said conductor connecting transversely thereof with the rear end of said conductor, the circumference of the tube at one side thereof being in the same plane as one side of said conductor and being integral therewith, and being adapted for use either side upward, one end of said tube being provided with a cover, and the other, adapted for connection with a pipe leading to a chimney, or other suitable ventilating flue, in combination with a plurality of curved segments, adapted to be secured to the under side of the seat, from one side of said conductor around the seat to the other side, the meeting ends of which segments are formed one convex and the other concave, for preserving a close joint between their meeting ends, when the segments are arranged within circles of different diameter, and rubber cushions fixed in some of said segments which project below the same for bearing upon the bowl top, and leaving a space for the admission of air, around the front and sides of the bowl top, substantially as set forth.

3. A water closet ventilating device, consisting of a conducting inclosure formed in one piece, one part being adapted to be inserted between the water closet seat and bowl top, and being entirely disconnected from said seat, and another part being adapted for connection with a pipe leading to a suitable ventilating flue, said two parts being of such form as to be capable of use either side of its widest dimension, upward, as the design of the bowl top and its fixtures may require, substantially as described.

854,366. FROST-PROOF CONDUIT. HERBERT H. MACOMBER, Kendallville, Ind., assignor to Flint & Walling Manufacturing Company, Kendallville, Ind., a Corporation of Indiana. Filed Feb. 16, 1907. Serial No. 357,780.



Claim.—1. A non-conducting jacket comprising alternately compressible units and independent rigid air chamber units and means firmly uniting the units.

2. A conduit comprising segmental air space units including parallel walls and a spacing strip for the walls terminating beyond the walls at one end and short of the walls at the other end.

3. A non-conducting jacket comprising independent segmental air space units, a non-conductor packing interposed between the units, and a surrounding means for bringing and holding the units in position.

4. A non-conducting jacket comprising a plurality of longitudinally interlocking sections of segmental units.

5. A non-conducting conduit including longitudinally interlocking sections, said sections each comprising a plurality of air space units, and packing interposed between the sections.

6. A non-conducting jacket comprising segmental units having spaced walls, and spacing means for the walls extending beyond the walls to longitudinally interlock the units.

854,367. IMPERMEABLE, INCOMBUSTIBLE, INSULATING, AND ACID-PROOF MATERIAL. ULDARIQUE A. MARGA, Dieghem, Belgium. Filed Dec. 5, 1904. Serial No. 235,623.

Claim.—1. The method of producing the described product consisting in heating comminuted asbestos, adding an oxid of a metal thereto, adding and mixing an oleaginous material into the asbestos and oxid to form a paste, cooling the paste, mixing a solvent of oils with the cooled paste, drying the latter, and washing it after drying in dilute sulfuric acid.

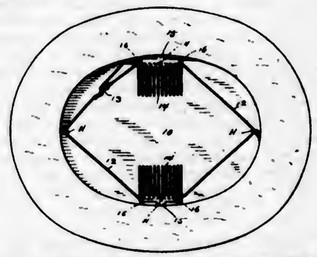
2. The method of producing the described product consisting in heating powdered asbestos, adding protoxid of lead, binoxid of manganese or other metallic oxids, mixing powdered cellulose therewith, mixing this substance with linseed oil to form a paste, cooling the paste, mixing ether or alcohol with the cooled paste, drying this paste and washing the dried product in dilute sulfuric acid.

3. The method of producing the described product comprising heating comminuted asbestos, adding an oxid of a suitable metal and an oxidizable oil thereto to form a paste and after the oxidation of the oil has set in and the product rendered harder, mixing therein a vaporizable solvent of the oil.

4. The method of producing the described product consisting in heating comminuted asbestos, adding an oxid of a metal thereto, adding and mixing an oleaginous material into the asbestos and oxid to form a paste, cooling the paste, mixing a solvent of oils with the cooled paste, drying the latter, and washing it after drying in dilute sulfuric acid.

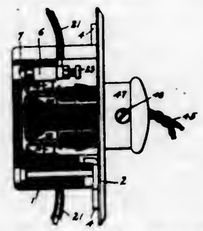
5. The method of producing the described product consisting in heating powdered asbestos, adding protoxid of lead, binoxid of manganese or other metallic oxids, mixing powdered cellulose therewith, mixing this substance with linseed oil to form a paste, cooling the paste, mixing ether or alcohol with the cooled paste, drying this paste and washing the dried product in dilute sulfuric acid.

854,368. LADY'S HAT-FASTENER. JOSEPH B. MARSHALL, Bridgeport, Conn., assignor of one-third to Alden M. Fardee, Bridgeport, Conn. Filed June 22, 1906. Serial No. 322,851.



Claim.—A device of the character described comprising a pair of combs each having eyes and provided with a tongue projecting in a direction opposite to the teeth, and an elastic passing freely through the eyes of each comb and connected to the under side of the crown of a hat at a plurality of points, said elastic constituting the sole connection between the combs and the hat.

854,369. RECEPTACLE AND PLUG FOR ELECTRICAL CONNECTIONS. WALTER S. MAYER, Philadelphia, Pa., assignor to The Machen & Mayer Electrical Manufacturing Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Dec. 12, 1906. Serial No. 347,516.



Claim.—1. In a device of the character described, a receptacle, contact springs located in the said receptacle, means for electrically connecting the ends of the circuit wire to the said springs, and stop lugs or projections independent of the walls of the said receptacle and located in the said receptacle to limit the movement of the said springs.

2. In a device of the character described, a receptacle, contact members located therein, the said members comprising body portions and spring contact portions, means for electrically connecting the ends of the circuit wire to the said contact members, and stop lugs or projections connected to the said body portions to limit the movement of the spring contact members.

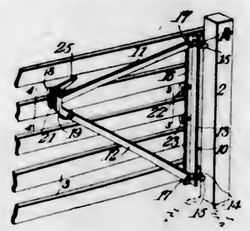
3. In a device of the character described, a receptacle, a face plate secured to the face of said receptacle, the said face plate being provided with an opening, and the material of the said face plate around the said opening being bent inwardly and the outer edges of the said face plate being also bent inwardly to form a depression surrounding the said opening, doors for closing the said openings, means for securing the said doors to the said face plate, springs

for holding the said doors normally closed, the said means and the said springs being located within the said depression in the face plate.

4. A device of the character described, comprising a plug having channels extending through the same, shoulders located adjacent to the said channels toward one end of the said plug and depressions located adjacent to said channels toward the other end thereof, contact strips located in the said channels and having portions bent to engage the said shoulders, plates located in the said depressions, and means for connecting the said plates to the said contact strips.

5. A device of the character described, comprising a plug having channels extending through the same, and shoulders located adjacent to the said channels toward one end of the said plug, and depressions located adjacent to said channels toward the other end thereof, contact strips located in the said channels and having portions bent to engage the said shoulders, plates located in the said depressions, means for connecting the said plates to the said contact strips, and the said plates having lugs or ears which are located upon opposite sides of one side of the said contact strip, and binding screws adapted to be connected to the end of the said strip at points between the said lugs.

854,370. GATE. CHARLES MERCER, Potomac, Ill. Filed Sept. 1, 1906. Serial No. 332,965.



Claim.—1. The combination of a gate having a longitudinal member, and a post, with a bracket supported on the post and comprising two arms mounted to swing in a vertical plane and connected to have a limited lateral movement at their adjacent ends, a device on the bracket disposed at one side of the member, and a wedging means for moving the ends of the arms laterally to clamp the said member of the gate to the device on the bracket.

2. The combination of a gate, and a post, with a bracket for supporting the gate on the post, said bracket comprising an upright member hinged to the post, a pair of arms pivoted on the said member to move in a vertical plane, means for movably connecting the free ends of the arms and attaching the bracket to the gate, and a locking device arranged to lock the free ends of the arms together and the gate to the bracket.

3. The combination of a gate, and a post, with a bracket for supporting the gate on the post, yokes on the bracket for guiding the movement of the gate thereon, and means for hinging the bracket on the post.

4. The combination of a gate having parallel rails, and a post, with a bracket for supporting the gate on the post, yokes on the bracket engaging around the rails of the gate, and anti-friction rollers on the yokes.

5. The combination of a gate having parallel rails, and a post, with a bracket supporting the gate on the post, devices fixed on the bracket which engage the said rails, anti-friction rollers on the devices, and a lock at one of the said devices for clamping the gate and bracket together.

6. The combination of a gate provided with a longitudinally extending member, and a post, with a bracket hinged to the post for supporting the gate, a yoke on the bracket extending around the said member, and a wedge-shaped device arranged to frictionally hold the yoke in engagement with the said member for locking the gate in fixed position.

7. The combination of a gate provided with a longitudinally extending member, and a post, with a bracket hinged to the post for supporting the gate and comprising two members mounted to swing in a common plane and having their corresponding ends slidably connected, means at the connected ends of the members engaging the longitudinal member of the gate, and a locking device for clamping the ends of the bracket members together.

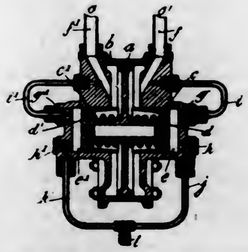
8. The combination of a gate having a longitudinally extending member, a supporting bracket comprising two arms arranged one over the other and both disposed at one side of the said member, a yoke on one of the arms which extends around the said member for attaching the bracket to the gate, and a wedging device arranged to engage between the said arms to clamp the same together and to clamp the bracket to the said member.

9. The combination of a gate having a longitudinally extending member, with a supporting bracket, the same comprising an upright, two arms pivoted thereto and arranged with their free ends overlapping and movable one with respect to the other, a yoke at the free end of one of the arms which extends around the member of the gate, and a pivotally mounted locking device on the said yoke for locking the arms together and the bracket to the gate.

10. The combination of a gate, and a supporting post, with a supporting bracket, said bracket comprising an angle iron upright, means carried thereby for hinging the bracket on the post, arms pivotally mounted on the upright and inclined toward each other with their ends arranged to slide one over the other, a pin for holding one arm permanently on the other, a structure for movably supporting the gate on the bracket, and a locking device pivotally mounted on the said structure for holding the gate in fixed position on the bracket.

11. A supporting bracket comprising an upright, pintle engaging eyes thereon, arms hinged thereto which are arranged with their ends overlapping, a pin on one of the arms for holding the same in overlapping relation to the other, a yoke removably attached to one of the arms, a device mounted on the yoke between the said arms clamping one arm with respect to the other, and a device on the upright coöperating with the yoke for supporting a gate.

854,371. AIR-COMPRESSOR COMBINED WITH AN EXPLOSIVE-MOTOR. ANDRÉ MICHELIN, Paris, France. Filed Dec. 14, 1906. Serial No. 347,806.



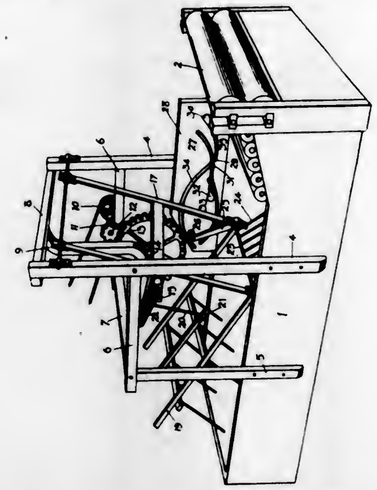
Claim.—1. The combination with an explosive motor, of a compressor comprising a main cylinder, a piston therein arranged to be reciprocated by air fed from the motor, two compressor cylinders, single-acting pistons therein driven by the first named piston, pipes for opening communication from the opposite sides of the main cylinder to the compressor cylinders, suction valves in said pipes, outlet tubes for the compressor cylinders and exhaust valves for said outlet tubes.

2. The combination with an explosive motor, of a compressor comprising a cylinder, a piston therein, tubes opening communication between the motor and cylinder for the passage of air alternately to the opposite sides of the piston, two compressor cylinders, pistons therein driven by the first named piston, pipes opening communication between the compressor cylinders and the tubes leading from the motor, suction valves for said pipes, outlet tubes for the compressor cylinders and exhaust valves for said outlet tubes.

3. The combination with an explosive motor, of a compressor comprising a cylinder, a piston therein, tubes opening communication between the motor and cylinder for the passage of air alternately to the opposite sides of the piston, cocks in said tubes, two compressor cylinders, pistons therein driven by the first named piston, pipes opening communication between the compressor cylinders and the tubes leading from the motor, suction valves for said pipes, outlet tubes for the compressor cylinders and exhaust valves for said outlet tubes.

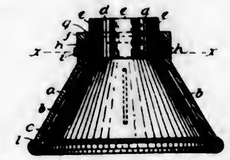
4. The combination with a multi-cylinder explosive motor, tubes for supplying gas to the motor cylinders and cocks for cutting off the gas supply and supplying air to certain of the motor cylinders, of a compressor comprising a cylinder, a piston therein, tubes opening communication between the motor and cylinder for the passage of air alternately to the opposite sides of the piston, two compressor cylinders, pistons therein driven by the first named piston, pipes opening communication between the tubes leading from the motor to the compressor cylinders, suction valves for the said pipes, outlet tubes for the compressor cylinders and exhaust valves for said outlet tubes.

854,372. WOOL-SCOURING MACHINE. WALTER O. MILNE, Stockton, Cal. Filed Nov. 12, 1906. Serial No. 342,952.



Claim.—In a wool scouring machine, the combination of a vat, a fork comprising a shaft and tines, a carrier therefor, means for reciprocating said carrier horizontally, and means for rocking the fork shaft in the carrier, comprising an arm extending from said fork shaft, a roller carried by said arm, a cam rail in contact with which roller travels on the forward movement of the carrier, a vibratable tongue in contact with which on leaving the cam rail the said roller travels in the forward movement of the carrier, a second cam rail in contact with which the roller travels in the rearward movement of the carrier, a vibratable tongue in contact with which on leaving said second cam rail said roller travels in the rearward movement of the carrier, and means for suitably supporting said cam rails and vibratable tongues, substantially as described.

854,373. CENTRIFUGAL CREAM-SEPARATOR. THOMAS W. MORGAN, Waterloo, Iowa, assignor to Wilbur W. Marsh, Waterloo, Iowa. Filed Dec. 14, 1906. Serial No. 347,787.



Claim.—1. In a centrifugal cream separator, the combination with the removable cover containing a milk exit whose inner receiving end is adjustable toward and from the axis of the bowl, of an inner cone contained in and spaced away from the said cover and adapted to separate the issuing streams of separated milk and cream, the cylindrical top of said cone being crimped inward at a point nearest the receiving end of said adjustable exit to permit said receiving end to lie in the same vertical line as the outer line of the cream stratum.

2. In a centrifugal cream separator, the combination with the removable cover provided with an inner annular recess, and containing a milk exit opening into said recess whose inner receiving end is adjustable toward and from the axis of the bowl, of an inner cone contained in and spaced away from the said cover and adapted to separate the issuing streams of separated milk and cream, the cylindrical top of said cone being crimped inward at a point nearest the receiving end of said adjustable exit to permit said receiving end to lie in the same vertical line as the outer line of the cream stratum.

854,374. CELLULOSE ESTER. HARRY S. MORK, Boston, Mass., assignor to Chemical Products Company, Boston, Mass., a Corporation of Maine. Filed July 10, 1905. Serial No. 269,141. (Specimens.)

Claim.—1. The process of preparing cellulose acetate which consists of converting cellulose into a hydrocellulose of the character described and thereafter effecting the acetylation in the presence of a restraining agent in which the cellulose acetate is insoluble thereby conserving the fibrous structure of the original cellulose.

2. The process of preparing cellulose esters which consists of converting cellulose into a hydrocellulose of the character described and thereafter effecting the esterification in the presence of a restraining agent in which the cellulose ester is insoluble thereby conserving the fibrous structure of the original cellulose.

3. The process of preparing cellulose acetate which consists of converting cellulose into a hydrocellulose of the character described by treatment with acetic acid and a condensing agent and thereafter effecting the acetylation at the normal temperature by the action of acetic anhydrid dissolved in benzol thereby conserving the fibrous structure of the original cellulose.

4. As a new article of manufacture, normal, fibrous nonfriable cellulose triacetate in substantially the form of the cellulose structure from which it was derived and possessing in a relatively high degree the properties of a colloid.

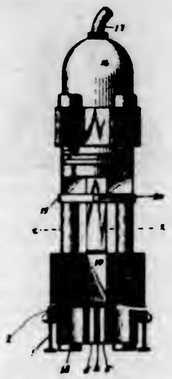
5. As a new article of manufacture, normal, fibrous nonfriable cellulose triacetate in the form of the vegetable fiber from which it was derived and possessing in a relatively high degree the properties of a colloid.

854,375. PRESS FOR FORMING THICK FLUID SUBSTANCES. CHRISTIAN F. MUELLER, Jr., and SAMUEL MUELLER, Jersey City, N. J. Filed Jan. 13, 1905. Serial No. 240,880.

Claim.—1. In a machine for forming and shaping thick fluid substances, a die plate having diagonally arranged perforations and means arranged below the die plate for receiving the product therefrom and directing it into a straight line.

2. In a machine of the class described, a die plate hav-

ing perforations arranged diagonally as shown in combination with sloping partitions to receive the product and direct it into a straight line.



3. In a machine for forming and shaping thick fluid substances, a die plate having perforations arranged diagonally across its face, a suitable compressor as shown, and means for receiving the product from the die plate and directing it into one or more compact straight rows.

4. In a machine for forming thick fluid substances, a die plate mounted in the machine substantially as shown and described, the perforations of the die plate being arranged diagonally in respect thereto and means upon one side of the machine for directing the product into a compact and perfectly straight row moving out and away from the machine in the direction of that side and similar means upon the other side as and for the purposes set forth.

5. In a machine for forming thick fluid substances, a die plate having double sets of diagonally arranged perforations, each double set adapted to produce two single straight and compact rows of finished product.

6. In a machine for making macaroni or spaghetti, consisting of a die plate having diagonally arranged perforations and means upon each side of the machine for producing two single straight rows of the finished product.

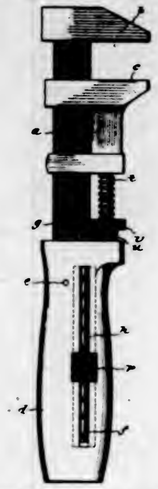
854,376. WRENCH. FINLAY MCARTHUR, Montreal, Quebec, Canada. Filed Mar. 2, 1906. Serial No. 303,910.

Claim.—1. In a wrench of the character described, the combination comprising a shank with a fixed jaw thereon, a handle shell fixed on said shank, a jaw slidable on said shank, a spiral mounted in said shank, a nut on said spiral, an approximately parallel screw-threaded stem seated in said handle and slidable jaw, and pinions adapted to transmit rotary motion from said spiral to said stem, and thereby to the slidable jaw.

2. In a wrench, the combination comprising a fixed jaw, a shank on said jaw, a rotatable spiral mounted in said shank, a pinion on the said spiral, a nut on said spiral, a slidable jaw and a handle shell mounted on said shank, a screw-threaded stem seated in said handle and rotatable in a correspondingly screw-threaded orifice in said slidable jaw and a pinion on said stem in meah with the first mentioned pinion.

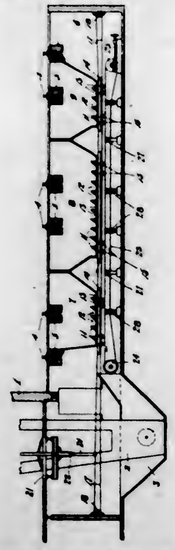
3. In a wrench, the combination comprising a recessed shank, having a fixed jaw thereon, a recessed slidable jaw, a handle fixed on said shank, a nut on said spiral, a pinion on the spiral in the recess of the shank, a screw-threaded stem seated in said handle and engaging said slidable jaw, a burred thumb piece and a pinion on said stem, said pinion meshing with the first mentioned pinion.

4. In a wrench, the combination comprising a recessed shank having a fixed jaw thereon, a slotted handle shell rigidly mounted on said shank, a spiral rotatably mounted in the said shank, a pinion fixed on said spiral, a nut on said spiral, said nut being guided between the shank and handle-shell, a slidable jaw, having screw-threaded orifice therein, a screw threaded stem seated in said orifice and in the handle, a thumb piece on said stem, and a removable bearing in said shank for one end of said spiral.



5. In a wrench of the character described, the combination comprising a recessed shank having a fixed jaw thereon, a bearing mounted in a perforation in said shank, a spiral mounted in said bearing at one end and projecting through a perforation in said shank at the opposite end, a pinion on said spiral in a recess in said shank, a nut on said spiral, a slidable jaw, a handle, a stem mounted in said handle and slidable jaw, and a pinion thereon in mesh with said first mentioned pinion.

854,377. GRAIN-UNLOADING SINK FOR ELEVATORS. FINLAY R. MCQUEEN, Minneapolis, Minn. Filed May 2, 1906. Serial No. 314,819.



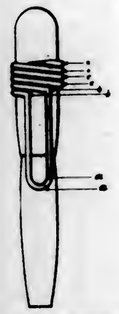
Claim.—1. A hopper having in its bottom a plurality of supplemental discharge hoppers and a plurality of connected valves or gates movable to simultaneously open and to simultaneously close the discharge openings of said discharge hoppers, substantially as described.

2. The combination with a hopper which is contracted in cross section, and is provided in its contracted bottom portion with a plurality of longitudinally alined supplemental discharge hoppers, of a plurality of connected valves or gates movable to simultaneously open and to simultaneously close the discharge openings of said discharge hoppers, substantially as described.

3. The combination with an elevator or similar structure, of a plurality of tracks running along the side thereof, hoppers underlying the several tracks and lying transversely of the several tracks and provided in their bottoms with discharge openings, valves for opening and closing said discharge openings, a common conveyer running transversely of said tracks and located directly under the alined hoppers and arranged to receive the grain directly from any or all of said hoppers, at the same or at different times, and to deliver the same to the said elevator structure, substantially as described.

4. The combination with an elevator structure and an elevator leg and receiving boot of several tracks running along the side of said elevator structure, transversely alined receiving hoppers underlying the several tracks, and provided in their bottoms each with a multiplicity of supplemental discharge hoppers, valves for opening and closing the discharge openings of said supplemental hoppers, a means for operating said valves from within, or in the vicinity of said elevator structure, and an endless conveyer belt running transversely under the several tracks and the several hoppers, and arranged to receive grain discharged therefrom, and to deliver the same to said elevator boot, substantially as described.

854,378. PEN OR PENCIL CLIP. VICTOR L. OCHOA, New York, N. Y., assignor of one-half to Benjamin A. Jackson, New York, N. Y. Filed May 3, 1906. Serial No. 315,001.

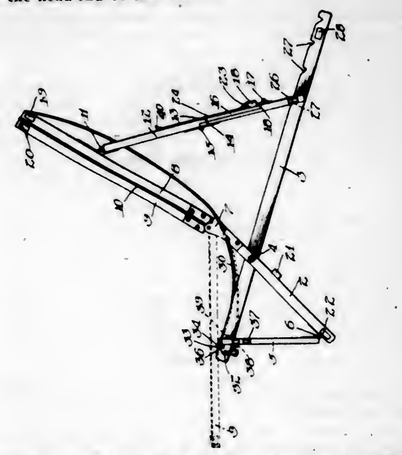


Claim.—As a new article of manufacture, a pen or pencil clip consisting of a loop of wire, the looped portion bent to constitute a tongue, the remaining portions of the wire being wound to form a double spiral spring, substantially as shown.

854,379. FOLDING COMBINATION DECK-CHAIR AND COUCH. ROBERT OSTERBERG, Norway, Mich. Filed Feb. 28, 1907. Serial No. 359,720.

Claim.—1. In a combination chair and bed, a folding chair provided with a back consisting of two pivoted leaves normally folded together and movable together as a single chair-back; means for supporting one of the said leaves over the chair-seat, and means for supporting the other leaf either in alinement with said first-mentioned leaf or at an angle relatively thereto; said last-mentioned means being constructed and arranged so that it serves either as a single chair-back-support, or as a combination bed-extension and bed support.

2. In a combination chair and bed, a folding chair provided with a double back consisting of two leaves pivotally movable together as a single adjustable back and movable apart so that one of said leaves forms an extension of the other leaf; an adjustable chair-back-support consisting of hinged members constructed and arranged so that one of the members is adjustable into a pillow-support which extends the length of the bed while the other member supports the head-end of the bed.



3. The combination with a folding camp-chair provided with a canvas seat and a double canvas back consisting of two pivotally movable leaves, the front leaf adapted to be folded over the chair-seat and the rear leaf adapted to be tilted backward to form a bed, and means for supporting the chair-back and the rear of said leaves in either an inclined or an horizontal position.

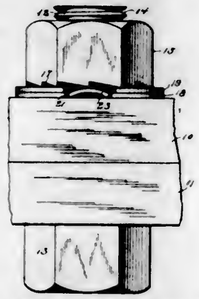
4. A folding combination chair and bed consisting of a series of frames pivoted together and arranged to lie parallel when folded together; two of said frames being two canvas-covered leaves pivoted at the seat of the chair and normally constituting a single back, said leaves being movable apart angularly and thereby extended into a bed in sections composed of said leaves, means for supporting one of said leaves over the chair-seat and means for increasing the length of the other leaf and the length of the bed, said means supporting both the chair-back against angular movement and likewise supporting a portion of said bed.

5. A folding combination chair and bed consisting of a series of frames pivoted together and constructed and arranged to lie parallel when folded together; two of said frames consisting of canvas-covered leaves pivoted at the seat of the chair, said leaves being movable angularly apart and adjustable into bed-extensions; another pair of said frames constituting legs for the chair and bed, and the remaining frames being adjustable supports for holding the other parts of the chair and bed in their adjusted positions.

6. In a combination chair and bed, the two connected pairs of leg-members 2 and 3 pivoted at 4; the support 5 hinged to the lower ends of leg-members 2 and adjustable to support the upper ends of leg-members 3; the back-members or frames 8 and 9 pivoted to the upper ends of the leg-members 2, said back-members or frames being normally folded together; the canvas covering 10 upon the members 8 and 9 arranged as shown; the adjustable chair-seat-support 29; the canvas 30 secured to the member 8 and to the support 29, said canvas 30, between said support 29 and the upper ends of leg-members 2, forming a chair-seat; means for supporting the back-portion 9 in a horizontal position over said chair-seat; a back-support for the member 8, adapted to hold the latter in an horizontal or inclined position and consisting of two parts one of which parts is adjustable to form a bed-extension, or pillow support, while the other part is adjustable as a sup-

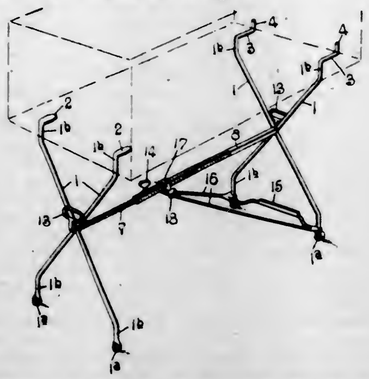
port for the back-member 8; said members and parts being constructed and arranged so that the leg-members 2 will fold over and parallel the members 3, so that the support 5 may be folded over and lie against the members 2 and 3, and so that said back support may be folded forward to lie parallel with and against the members 8 and 2.

854,380. NUT-LOCK. FRANK C. OTT and WILLIAM A. KOST, Swissvale, Pa. Filed Feb. 26, 1907. Serial No. 359,535.



Claim.—A nut-lock comprising a bolt, a non-rotatable washer thereon having a recess, a nut having a ratchet base, and a rotatable washer between the nut and the recessed washer having oppositely presented spring tongues engageable respectively with the ratchet base and with the recess of the first mentioned washer, the spring tongue which engages said recess having a thickness not greater than that of its washer to permit it to enter the space between the base of the nut and the top of the recessed washer.

854,381. COMBINED TRUCK AND SUPPORTING-STAND. CHARLES RAWLINSON, St. Louis, Mo. Filed Feb. 15, 1907. Serial No. 357,566.



Claim.—1. A truck of the character described having ends that are formed by crossed members each of which is enlarged at its point of intersection with its co-operating member, said enlarged portions being provided with notches that interlock with each other, a horizontal bar connecting the members at each end of the truck together and provided with threaded portions that extend through openings in the end members at the points where they cross each other, and clamping nuts mounted on the threaded portions of said bar; substantially as described.

2. A truck of the character described each end of which is formed by two metal members arranged to form an X, a horizontal bar secured to each pair of end members at the point where they cross each other, and handles fastened to the ends of said bar; substantially as described.

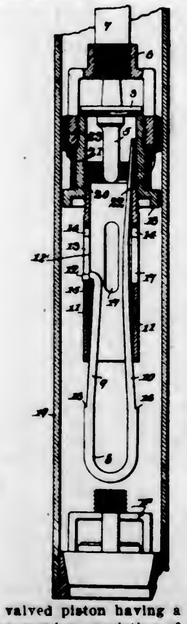
3. A truck of the character described each end of which is formed by two metal members arranged to form an X, a horizontal bar secured to each pair of end members at the point where they cross each other, handles fastened to the ends of said bar, supporting arms at the upper ends of said end members, and rollers mounted in the lower ends of said end members; substantially as described.

4. A truck of the character described comprising end members, a horizontal bar for connecting said end members together and having threaded portions which project through openings in said end members, nuts mounted on said threaded portions, and handles formed integral with said nuts; substantially as described.

5. A truck of the character described comprising crossed end members, a horizontal bar connected to said members at the points where they intersect, a foot-piece arranged between the members which form one end of the truck, and inclined brace bars extending from the foot-piece member to the horizontal bar and being connected to said bar; substantially as described.

6. A truck of the character described comprising crossed end members, a horizontal bar connected to said members at the points where they intersect, a foot-piece arranged between the members which form one end of the truck, inclined brace bars formed integral with said foot-piece member and provided with bifurcated ends that straddle the lower ends of the end members, and an adjustable sleeve mounted on the horizontal bar and having the upper ends of the brace bars connected thereto; substantially as described.

854,382. PUMP-PISTON. CHARLES M. RAY, Lake City, Fla. Filed Feb. 15, 1906. Serial No. 301,306.



Claim.—1. A valved piston having a tubular body, and a valve unseating member consisting of a U-shaped spring slidable therein, the arms of said spring being provided with cut away portions forming piston engaging shoulders.

2. A valved tubular piston having a keyhole slot, and a resilient valve unseating member slidable in the piston and having a hook member engaging the keyhole slot, and an enlarged portion adapted to engage the wide portion of the latter.

3. A valved tubular piston having a keyhole slot, a U-shaped resilient valve unseating member slidable therein and having an arm provided with a slot engaging hook, and an enlarged portion upon said hook adapted for engagement with the wide portion of the slot.

4. A tubular valved piston having a keyhole slot, a U-shaped resilient valve unseating member slidable in the piston and having shoulders adapted to abut upon the lower edge of the piston, said unseating member having a long valve engaging arm and a short arm provided with a slot engaging hook having an enlarged portion adapted to engage the wide portion of the slot.

854,383. METHOD FOR THE MANUFACTURE OF PROCESS BUTTER. ROBERT ROOS, Chicago, Ill., assignor to American Farm Products Company, Jersey City, N. J., a Corporation of New Jersey. Filed June 30, 1906. Serial No. 324,287.



Claim.—1. The herein described process which consists in acidulating skim-milk, adding to it fresh full milk, churning the mixture until it breaks, adding butter oil, and emulsifying by agitation, crystallizing the emulsion by immersion in cold water, curing the crystallized mass in small quantities to which the air has access, and working the cured crystals to remove the excessive milk.

2. As a step in the process of forming butter, forming an emulsion, the constituents of which are butter oil, and partly churned milk, crystallizing the emulsion by immersion in cold water, and curing the crystal by exposing the crystals in small quantities to moderately warm air.

3. As a step in the formation of butter, the curing of butter-crystals by exposure in small lots to moderately warm air.

4. As a step in the formation of butter, the curing of butter-crystals by exposure in small lots to moderately warm air for a period of approximately twenty-four hours.

5. As a step in the formation of butter, the curing of butter-crystals by exposure in small lots to moderately warm air, and inverting the masses of crystals during the curing period.

6. As a step in the process of manufacturing butter, the addition to the cured crystals of an excessive quantity of salt, and working the crystals and salt to drive off the milk contained in the crystals, together with the excess of salt.

7. The herein described process which consists in acidulating skim-milk, adding full fresh milk in about equal quantity, churning the mixture until it breaks, adding butter oil and emulsifying the mixture, crystallizing the emulsion, and subsequently working the crystals.

8. The process of forming butter, which consists in churning milk until it breaks, adding thereto butter oil in the proportion of about five parts of oil to three parts of milk, emulsifying the mixture, crystallizing the emulsion, and subsequently working the crystals.

9. The process of manufacturing butter which consists in acidulating skim-milk, adding thereto an equal proportion of full fresh milk, churning the mixture until it breaks, adding thereto butter oil at a temperature of approximately 108 to 110° F. in the proportion of about five parts of oil to three of milk, emulsifying the mixture, crystallizing the emulsion in cold water, curing the crystals and working the cured crystals.

10. The process of manufacturing butter which consists in acidulating skim-milk, adding thereto an equal proportion of full fresh milk, churning the mixture until it breaks, adding thereto butter oil at a temperature of approximately 108 to 110° F. in the proportion of about five parts of oil to three of milk, emulsifying the mixture, crystallizing the emulsion in cold water, adding to the crystals an excessive proportion of salt and working the crystals to drive off the incorporated milk and excessive salt.

11. The process which consists in acidulating skim-milk adding thereto full fresh milk, bringing the mixture to the temperature of approximately 60° F., churning the mixture until it breaks, adding butter oil at a temperature of approximately 108 to 110° F., emulsifying by agitation, crystallizing the emulsion in cold water, curing the crystals by exposure in small quantities to air, at a temperature of about 60° F., for a considerable period, and working the cured crystalline mass.

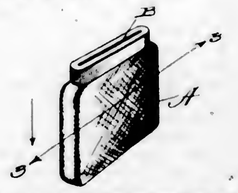
12. As a step in the process of manufacturing butter, churning acidulated milk until it breaks, adding thereto butter oil in excess of the quantity of milk, emulsifying the mixture by agitation, and crystallizing the emulsion by chilling.

13. As a step in the process of manufacturing butter, acidulating skim-milk, adding thereto approximately an equal proportion of fresh full milk, churning the mixture until it breaks, adding thereto butter oil, emulsifying the mixture and crystallizing the emulsion.

14. The process of manufacturing butter, consisting in churning acidulated milk until it breaks, adding thereto butter oil, emulsifying the mixture, crystallizing the emulsion, curing the crystals in small quantities in contact with warm air, and working the crystals.

15. The process of manufacturing butter which consists in churning acidulated milk until it breaks, adding thereto butter oil, emulsifying the mixture, crystallizing the emulsion, adding thereto an excess of salt, and working the crystals to drive off the excess of milk and salt.

854,384. BAG FOR PULVERIZING SLICE PLUG-CUT TOBACCO. GEORGE S. ROSS, Riverside, Ill. Filed Sept. 11, 1906. Serial No. 334,195.

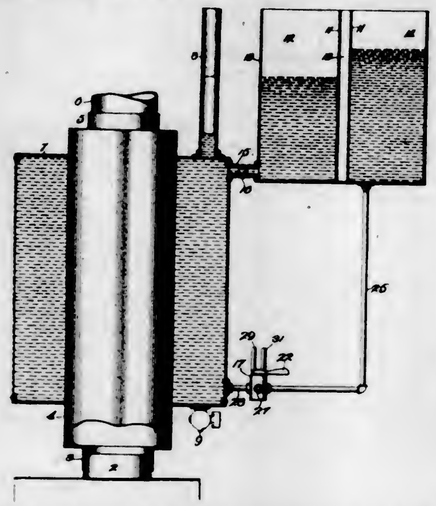


Claim.—A device for grinding slice plug cut tobacco consisting of a bag having an elongated opening at one end, the opposite faces of the bag spaced apart and provided with serrations on their inner faces, as set forth.

854,385. WATER-DISTRIBUTING APPARATUS. HENRY M. SANDERS, Waco, Tex. Filed Aug. 13, 1906. Serial No. 330,511.

Claim.—1. In an apparatus of the character described, the combination of a stove and its stove pipe, with a tank surrounding and bearing a water tight relation to a portion of said pipe, a pipe communicating with and projecting above the tank, a reservoir, a valve-controlled pipe connecting the reservoir with the tank to supply the latter with water, a valve casing, pipes connecting the valve casing with the lower portion of the tank and reservoir, a pipe leading from the casing, and a valve in said casing provided with a port or passage to establish communication between the pipe leading from the reservoir with the third or valve casing pipe.

2. In an apparatus of the character described, the combination of stove and its stovepipe, with a tank surrounding and bearing a water-tight relation to a portion of said pipe, a pipe communicating with and projecting above the tank, a reservoir, a valve-controlled pipe connecting the reservoir with the tank to supply the latter with water, a valve casing, a pair of pipes communicating therewith, a second pair of pipes connecting the tank and reservoir with the casing, and a valve in the casing provided with a pair of ports adapted at times to connect the pipes leading from the tank and reservoir to the first-named pipes connected to the casing and at other times to break communication between said sets of pipes.

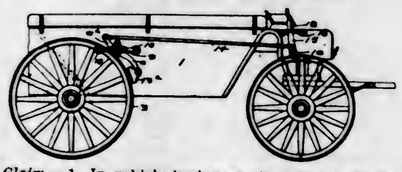


3. In an apparatus of the character described, a tank, a reservoir with a pair of insulated chambers, a valve controlled pipe connecting one of said chambers with the tank, a valve casing connected to the lower portion of the tank and to the other reservoir chamber, a pair of pipes connected to the valve casing, and a valve in said casing provided with a pair of ports, one adapted to establish communication between the tank and one of said pair of pipes and the other between said reservoir chamber and the other set of said pipes.

4. In an apparatus of the character described, the combination of a stove and its stovepipe, with a tank surrounding and bearing a water-tight relation to a portion of said pipe, a pipe communicating with and projecting above the tank, a reservoir, a valve-controlled pipe connecting the reservoir with the tank to supply the latter with water, a valve casing, pipes connecting the valve casing with the lower portion of the tank and reservoir, a pipe leading from the casing, a valve in said casing provided with a port or passage to establish communication between the pipe leading from the tank or the pipe leading from the reservoir with the third or valve casing pipe, and a drain cock for the tank.

5. In an apparatus of the character described, the combination of a stove, a stove pipe, a diametrically enlarged section in said stovepipe, a tank surrounding and bearing a water-tight relation to the said enlarged section, and provided with a drain cock and an upwardly projecting pipe, a reservoir having a pair of chambers insulated from each other, a valve-controlled pipe connecting one chamber of the reservoir and the upper portion of the tank, a valve casing connected to the lower portion of the tank and to the lower portion of the other chamber of the reservoir, pipes connected to the valve casing to conduct water therefrom, and a valve in the casing and provided with ports whereby hot or cold water may be discharged through one of said pipes, hot water through the second one and cold water through the third.

854,386. VEHICLE-BRAKE. OTTO SCHULZ, Pittsburg, Pa. Filed June 4, 1906. Serial No. 319,980.

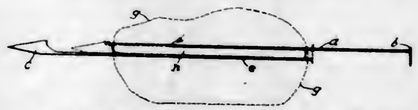


Claim.—1. In vehicle brakes, a pivot standard of varying diameter adapted to be secured to said vehicle in a horizontal position, a hub having a bore of varying diameter and adapted to be mounted on said standard and adjusted longitudinally thereon, a rearwardly and outwardly curved arm integral with said hub carrying a brake shoe at its extremity and an operating arm integral with said hub, substantially as described.

2. In vehicle brakes, a pivot standard, a hub adapted to engage said standard, a brace adapted to engage said standard outside of said hub and attached to the body of said vehicle and means for adjusting said hub longitudinally on said standard, substantially as described.

3. In vehicle brakes, a pivot standard having its outer extremity of a reduced diameter, a hub adapted to engage the portion of said standard adjacent to its base and of larger diameter, means for adjusting said hub longitudinally on said standard, a brace adapted to engage the reduced diameter of said standard and attached to the body of said vehicle and a brake lever carried by said hub, substantially as described.

854,387. LARDING-NEEDLE. JOHN SNYDER, Spokane, Wash., assignor of one-third to William H. Shed, Pueblo, Colo. Filed May 22, 1906. Serial No. 318,268.



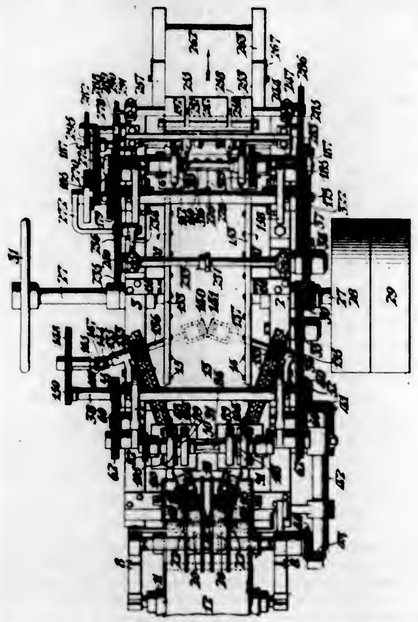
Claim.—A needle for the depositing of lard, tallow, suet or seasoning into meat, such needle comprising two shafts curved in cross section one terminating in a pointed head with a groove to receive the end of the other shaft and the other shaft having a cap at the opposite end extending over the ends of both shafts substantially as set forth.

854,388. TAG-MACHINE. GEORGE W. SWIFT, Jr., Bordentown, N. J. Filed Jan. 17, 1906. Serial No. 296,460.

Claim.—1. In a tag machine, the combination with reciprocatory cross-heads; of blades carried by said cross-heads arranged to partially sever tags from the tag web; and, means whereby one of said blades may be automatically shifted relatively to its cross head, at predetermined intervals, to sever in a gang, the series of tags thus formed, substantially as set forth.

2. In a tag machine, the combination with reciprocatory cross-heads; of blades carried by said cross-heads arranged to partially sever tags from the tag web; and cams mounted on and carried by one of said cross heads arranged to automatically shift its respective blade relatively thereto at predetermined intervals to sever in a gang, the series of tags thus formed, substantially as set forth.

3. In a tag machine, the combination with opposed reciprocatory cross-heads; of blades carried by said cross-heads arranged to partially sever tags from the tag web; cams mounted on and carried by one of said cross-heads arranged to automatically shift its respective blade relatively thereto at predetermined intervals to sever in a gang, the series of tags thus formed; and, means arranged to adjust said blades, substantially as set forth.



4. In a tag machine, the combination with opposed reciprocatory cross-heads; of blades mounted on and carried by said cross-heads arranged to partially sever tags from the tag web; rotary cams arranged to automatically shift one of said blades relatively to its cross head at predetermined intervals to sever in a gang, the series of tags thus formed; bearings supporting said cams, mounted on said cross-heads; and, means arranged to adjust said blades with respect to the axis of said cam, substantially as set forth.

5. In a tag machine, the combination with a reciprocatory cross-head; of a cutting blade mounted in said cross-head and arranged to normally reciprocate therewith, to partially sever the tags from the tag web, but capable of reciprocation relatively thereto; cams mounted on and carried by said cross-head; links connecting said cams and blade whereby it may, at predetermined intervals, be shifted to sever in a gang, the series of tags thus formed, substantially as set forth.

6. In a tag machine, the combination with punching mechanism; of cutting mechanism arranged to operate in definite relation to said punching mechanism; a gear connecting said mechanisms, and comprising relatively rotatable sections, divided in a plane at right angles to its axis; and being in toothed engagement with the gears of punching and cutting mechanism respectively; and, means arranged to rigidly unite said sections, substantially as set forth.

7. In a tag machine, the combination with opposed reciprocatory cross-heads; of co-operating cutting dies carried by said cross-heads; and spring-pressed stripping fingers arranged to engage the web while being cut, and to shift the web from said dies and then withdraw from said web after the cutting operation, substantially as set forth.

8. In a tag machine, the combination with opposed reciprocatory cross-heads; of a cutting blade secured to one of said cross-heads; an auxiliary cross-head mounted on and carried by the other of said cross-heads and arranged to reciprocate relatively therewith at predetermined intervals different from the intervals of reciprocation of said opposed crossheads; and, a cutting blade adjustably secured to said auxiliary cross-head, substantially as set forth.

9. In a tag machine, the combination with opposed reciprocatory cross-heads; of a cutting blade secured to one of said cross-heads; an auxiliary cross-head carried by the other of said cross-heads and arranged to reciprocate relatively therewith at predetermined intervals; cams supported in rigid relation with the latter cross-head, arranged to reciprocate said auxiliary cross-head; and a blade comprising a curved cutting edge adjustably secured to said auxiliary cross-head, substantially as set forth.

10. In a tag machine, the combination with opposed reciprocatory cross-heads; of a cutting blade secured to one of said cross-heads; an auxiliary cross-head carried by the other of said cross-heads and arranged to reciprocate relatively therewith at predetermined intervals; cams supported in rigid relation with the latter cross-head, arranged to reciprocate said auxiliary cross-head; a blade comprising a curved cutting edge adjustably secured to said auxiliary cross-head; and a stripper bar arranged to normally press the web from said blade, substantially as set forth.

11. In a tag machine, the combination with opposed crossheads; of means carried by said crossheads, arranged to impinge on the tag web; a blade secured to one of said crossheads; a blade mounted for relative reciprocation in the other crosshead; means whereby said blades are shifted by said crossheads to partially cut the tag web; and means whereby at predetermined intervals the relatively movable blade is further shifted automatically, with respect to the cross-head which carries it to sever said web, substantially as set forth.

12. In a tag machine, the combination with opposed crossheads; of alined blades carried by said crossheads, arranged to partially cut the tag web; and means mounted on and carried by one of said crossheads arranged to further shift its blade relatively thereto, to sever said partially cut web, substantially as set forth.

13. In a tag machine, the combination with opposed crossheads; of alined blades carried by said crossheads, arranged to partially cut the tag web; means mounted on and carried by one of said crossheads arranged to further shift its blade relatively thereto, to sever said partially cut web; and a stripper bar arranged to press said web from the blade and then withdraw from said web, substantially as set forth.

14. In a tag machine, the combination with opposed crossheads; of means carried by said crossheads arranged to impinge on the tag web; a cutting tool carried by one of said crossheads, arranged to coöperate with said impinging means to cut the web; and means mounted on and carried by said crosshead arranged to automatically reciprocate said cutting tool relatively thereto, substantially as set forth.

15. In a tag machine, the combination with opposed crossheads; of hollow plungers carried by said crossheads, arranged to impinge on the tag web; a cutting tool carried by one of said crossheads arranged to reciprocate within said plungers and cut said web at the impinged region; and means carried by said crosshead, arranged to reciprocate said cutting tool relatively thereto, substantially as set forth.

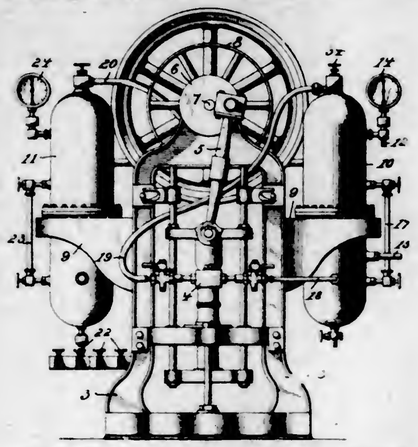
854,389. METHOD OF CASTING TROLLEY-WHEELS. FRANCIS B. TORREY, Portland, Me. Filed Mar. 9, 1906. Serial No. 305,106.



Claim.—The herein described method of casting a composite wheel which consists in first forming a wearing ring of relatively hard material upon a suitable former; forming, by means of a suitable pattern, a mold cavity; withdrawing the pattern; placing the wearing ring together

with its supporting former in the mold cavity; and then casting the wheel, substantially as described.

854,390. APPARATUS FOR CARBONATING LIQUIDS. SELDEN TWITCHELL, Bryn Mawr, Pa., and CHARLES O'CONNOR, Camden, N. J., assignors to S. Twitchell Co., Camden, N. J., a company organized in New Jersey. Filed Aug. 16, 1906. Serial No. 330,794.



Claim.—1. In an apparatus of the character described, a receiving cylinder and a discharging cylinder, each containing in the lower portion carbonated liquid and in the upper portion carbonic acid gas, a pipe connecting the upper portions of said cylinders with each other to permit of the flow of gas or liquid from the discharging cylinder into the receiving cylinder and to prevent complete filling of said discharging cylinder with liquid, pressure controlling means arranged in the pipe to permit of the maintenance of the gas under a higher pressure in the discharging cylinder than in the receiving cylinder, a pump arranged intermediate of said cylinders, feed pipes arranged opposite each other in said pump and connecting the same with the lower and upper portions of said receiving cylinder, a discharge pipe connecting the pump with the upper portion of said discharging cylinder, said pump adapted when actuated to commingle the gas and liquid fed thereto separately and under an even pressure from the receiving cylinder and to force the same into the upper portion of said discharging cylinder so as to pass through the gas contained therein.

2. In an apparatus of the character described, two cylinders, each containing in the lower portion carbonated liquid and in the upper portion carbonic acid gas and forming respectively a receiving cylinder and a discharging cylinder, a pipe connecting the upper portions of the cylinders with each other and terminating a certain distance above the level of the liquid therein, pressure controlling means arranged in the pipe and adapted to permit of the flow of gas or liquid from the discharging cylinder into the receiving cylinder to reduce in the one instance the pressure of gas and in the other prevent complete filling with liquid of said discharging cylinder, a liquid supply pipe adapted to permit of the entrance of liquid into the lower portion of said receiving cylinder, a valve connected with said supply pipe for automatically controlling the level of the liquid in said receiving cylinder, a gas supply pipe for conducting gas into the upper portion of said receiving cylinder, means arranged in said gas supply pipe for reducing the pressure of the gas entering said receiving cylinder, a pump arranged intermediate of said cylinders, feed pipes arranged opposite each other in said pump and connecting the same with the lower and upper portions of said receiving cylinder, a discharge pipe connecting the pump with the upper portion of said discharging cylinder, said pump adapted when actuated to commingle the gas and liquid fed thereto separately and under an even pressure from the receiving cylinder and to force the same into the upper portion of said discharging cylinder so as to pass through the gas contained therein.

854,391. STRUCTURAL I-BEAM. HERMAN F. VOSHARDT, Chicago, Ill., assignor of one-half to Irving W. Kelley, Chicago, Ill. Filed Dec. 7, 1906. Serial No. 346,711.



Claim.—1. A metal I-beam for building structures having its web corrugated vertically and having the head element rigid with the vertical corrugated web and folded at parallel longitudinal lines to form the lateral flanges of an upwardly open channel seat adapted to receive a filler.

2. A metal I-beam for building structures having its web corrugated vertically and having the head element rigid with the vertical corrugated web and folded at parallel longitudinal lines to form the lateral flanges of an upwardly open channel seat, and a wood filler lodged in such channel seat and having said flanges bound against its lateral edges.

3. A metal I-beam for structural purposes having its web comprising two transversely or vertically corrugated plies of sheet metal with their respective corrugations opposed to each other and secured together at the intervals or depressions between such opposed corrugations.

4. A metal I-beam for structural purposes formed of sheet metal corrugated transversely at a portion which forms the vertical web of the I-beam and having the portions which constitute the head and foot flanges, respectively, each folded upon itself and lapped on to the corrugated portion of the web and corrugated at such lapped portion.

5. A metal I-beam for structural purposes formed of sheet metal corrugated transversely at a portion which constitutes the vertical web of the I-beam, such vertical web consisting of two plies of such corrugated metal having their respective corrugations opposed to each other and fastened together at the lines between such corrugations.

6. A metal I-beam for structural purposes formed of sheet metal, the portion which constitutes the vertical web of the I-beam consisting of two plies of one piece of sheet metal having two corrugated areas and folded upon itself to oppose said areas to each other, corrugation to corrugation, and secured together at the lines between such corrugations.

7. A metal I-beam for structural purposes formed of sheet metal, the vertical web portion of the I-beam consisting of two plies of metal vertically corrugated and applied to each other with their corrugations respectively opposed, and a third ply of uncorrugated metal interposed between the two corrugated elements, the three plies being secured together at the lines between the corrugations.

8. A metal I-beam for structural purposes having a vertical web formed of two plies of a single piece of sheet metal transversely corrugated at two parallel areas and folded to oppose such two areas to each other, corrugation to corrugation, the marginal portions of the metal sheet being folded and lapped to form one of the flanges of the I-beam, and the area intermediate the corrugated areas being folded to form the opposite flanges of the beam.

9. A metal I-beam for structural purposes formed of a single piece of metal corrugated transversely at a portion intermediate its edges and having the marginal uncorrugated portions folded to form the head and foot flanges of the I-beam.

10. A metal I-beam for structural purposes formed of a single piece of sheet metal corrugated transversely at the portion which constitutes the web of the I-beam; a marginal portion which forms the head element of the beam being folded to form the side flanges of the upwardly open channel, and a wood filler lodged in such channel and having the flanges bound against its side edges.

11. A metal I-beam for structural purposes formed of a single piece of sheet metal corrugated transversely at an intermediate portion of its width to form the web of the I-beam and having the portion which forms the head and foot flanges folded upon itself and lapped on to the corrugated portion of the web and corrugated at such lapped area.

12. A metal I-beam for structural purposes consisting of a single piece of sheet metal corrugated at the middle portion of the width to form the web of the I-beam, and having each lateral marginal portion folded to form a triangular element, one side of the triangle being at right angles to the web, and the lateral edge of the sheet being lapped on and secured to the web.

13. A metal I-beam for structural purposes consisting of a single piece of sheet metal corrugated at the middle portion of the width to form the web of the I-beam, and having each lateral marginal portion folded to form a triangular element, one side of the triangle being at right angles to the web, and the lateral edge of the sheet being lapped on and secured to the corrugated web and corrugated at such lapped area.

14. A metal I-beam for structural purposes consisting of a single piece of sheet metal corrugated at the middle portion of the width to form the web of the I-beam, and having each lateral marginal portion folded to form a triangular element, one side of the triangle being at right angles to the web, and the lateral edge of the sheet being lapped on and secured to the corrugated web, and corrugations being extended into the two side elements of the triangles which diverge from the web and disappearing in said elements.

15. A metal I-beam for structural purposes consisting of a single piece of sheet metal corrugated transversely at the middle portion of its width, and having each marginal portion outside the corrugated area flexed and reflexed upon itself in successively wider folds to form the head and foot flange elements of the I-beam.

16. A sheet metal I-beam for structural purposes consisting of a single piece of sheet metal corrugated transversely at a middle portion of its width, and having each marginal portion outside said corrugated area flexed and reflexed upon itself in successively wider and wider folds to form the head and foot flange elements of the I-beam, the metal at one lateral margin having the two plies of the metal formed by the last two folds,—one at each side,—folded into parallel positions to form a channel upon the top of the head flange of the I-beam.

17. A metal I-beam for structural purposes comprising a transversely or vertically corrugated web and head and foot elements formed of sheet metal folded to embrace the upper and lower marginal portions of the web beyond the corrugated area of the latter.

18. A metal I-beam for structural purposes consisting of a web element which is vertically or transversely corrugated at the middle portion of its width, and which has its opposite lateral marginal portions beyond the corrugated area folded at right angles to offset them in opposite directions, and head and foot elements folded in triangular form, the marginal portions of such elements meeting at one angle of the triangle being extended at right angles to the opposite side and embracing the web, the right-angularly-offset marginal portions of the web being seated on said opposite side of said triangular head and foot elements.

19. A metal I-beam for structural purposes having its web consisting of two layers of sheet metal vertically corrugated, with their respective corrugations directly opposed to each other and secured together at the depressions or intervals between such opposed corrugations, said elements being divergent from each other at the upper and lower margins of the web, and being folded beyond the corrugated area to form channel seats, and wood fillers lodged in such channel seats and having the marginal flanges thereof bound securely against their lateral edges.

20. A metal I-beam for structural purposes having its web consisting of sheet metal corrugated transversely, and head and foot elements consisting of sheet metal folded upon itself for reinforcement to the end portions of the beam, having corrugated reinforcing plates applied and secured to the corrugated web with the corrugations of said web and reinforcing plates nested in each other.

21. A metal I-beam for structural purposes having its vertical web transversely or vertically corrugated and its flanges, or either of them, formed of the sheet metal folded to embrace the margin beyond the corrugated area of the web, and having at the fold apertures at intervals in the length, the web elements having lugs projecting from its edge which is embraced in such fold, in position to extend through the apertures, such lugs being folded down outside said fold which embraces the web, the flange element being reflexed upon itself outside said folded lugs to embrace the latter and further folded to form outwardly extending flange elements of the I-beam.

854,392. GATE. HAROLD WELLS, Norman, Okla. Filed Oct. 5, 1906. Serial No. 337,588.

Claim.—1. In a folding gate, the combination with the supporting post, the gate proper consisting of lazy-tong members connected with said post, and the operating mechanism; of a guide comprising posts set in the ground, a bail whose feet are pivoted in said posts and whose bent center extends over the gate, and a traveler pivoted on the latter and having eyes which slide on the bail.

2. In a folding gate, the combination with the supporting post consisting of twin upright members, twin sills, and twin braces having oblique tracks, the gate proper consisting of lazy-tong members whose inner lower end is pivoted between said sills and whose inner upper end carries elements moving in said tracks, and the operating mechanism; of a guide comprising a U-shaped bail whose feet are pivoted in supports opposite the sills and whose bent center passed over the gate, and a traveler on the latter having eyes which slide on the guide as the gate is moved.

3. In a folding gate, the combination with the supporting post, a gate carried thereby, a swinging guide, and a

traveler pivoted on the gate and sliding on the guide; of operating mechanism for opening and closing said gate.

4. In a folding gate, the combination with the supporting post, a gate carried thereby, a swinging guide, and a traveler pivoted on the gate and sliding on the guide; of operating mechanism for opening and closing the gate, a latch for holding it in opened condition, and means for tripping the latch by the operating mechanism.

5. In a folding gate, the combination with the supporting post, a gate carried thereby, a swinging guide, and a traveler on the gate sliding on the guide; of operating mechanism for opening and closing the gate, means for latching the gate in opened condition, means for locking it in closed condition, and devices for tripping the latch and the lock by the operating mechanism.

6. In a folding gate, the combination with the supporting post, the gate proper consisting of lazy-tong members connected with said post, and operating mechanism including a rope led around a pulley on the post; of a lock for holding the gate open, the same consisting of a toggle comprising two members whose outer ends are pivotally connected with adjacent arms of the gate, one of said members being of L-shape with its upturned foot connected to said rope and its stem extending beyond its pivot to the other member and carrying a pin resting on the latter when the central pivot of the toggle has passed a straight line between the other pivots.

7. In a folding gate, the combination with the supporting post, the gate proper consisting of lazy-tong members connected with said post, and the operating mechanism including a rope led around a pulley on the post; of a lock for holding the gate open, the same consisting of a toggle comprising two members whose outer ends are pivotally connected with adjacent arms of the gate, one of said members being of L-shape with its upturned foot connected to said rope and its stem pivoted to the other member, a latch on said foot, a loop on said post with which the latch engages to hold the gate open, and means for disengaging these elements by the operating mechanism.

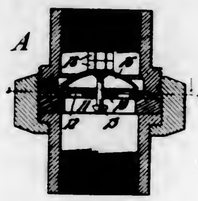
8. In a folding gate, the combination with the supporting post, the gate proper consisting of lazy-tong members connected with said post, and operating mechanism; of braces leading from the post, springs attached to the gate and adjustably connected to the braces, a toggle connecting two of the arms of the gate and having its members adjustably pivoted to each other for the purpose set forth, and means for tripping this toggle by the action of the operating mechanism.

9. In a folding gate, the combination with the supporting post, a loop and a pulley carried thereby, and the operating mechanism including a rope led around said pulley; of the gate proper, a latch thereon having a hook engaging said loop when the gate is opened, and an unlatching device adjacent the hook and having ears which pass beneath said loop when the gate is latched open and which lift the loop and trip the latch through an impulse on said rope.

10. In a folding gate, the combination with the supporting post, a loop and a pulley carried thereby, and the operating mechanism including a rope led around said pulley; of the gate proper, consisting of lazy-tong members, a toggle between two of its arms comprising twin links for the outer member and an L-shaped inner member with an upturned foot having a hook adapted to engage said loop, and an unlatching device consisting of a U-shaped member loosely mounted on the pivot of said L-shaped member and having ears at opposite sides of the hook adapted to pass beneath said loop when the gate is latched open and to lift the loop and trip the latch through an impulse on said rope.

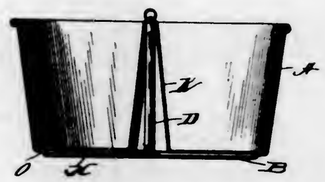
854,393. REGULATOR. REUBEN D. WIRT, Philadelphia, Pa. Filed July 24, 1906. Serial No. 327,576.

Claim.—A fluid pressure regulator adapted for connection in an ordinary pipe union, and comprising a disk, the marginal portion of which is arranged to be clamped between the members of the union, said disk having a centrally disposed unthreaded opening, and a plurality of openings surrounding the central opening, a dished regulating valve disposed above the disk and adapted to cover all of the openings, said valve having a centrally disposed threaded opening, an elongated headed screw having an unthreaded portion extending through the unthreaded opening at the center of the disk and having threaded engagement with the threaded opening of the valve to permit relative adjustment of the valve and screw, the head



at the lower end of the screw serving by engagement with the disk to limit the opening movement of said valve, and an auxiliary valve closing weight detachably mounted on the upper end of said screw to assist in forcing the valve to closed position against the pressure of the fluid.

854,394. COMBINED COLANDER AND CAKE-PAN. CHARLES W. G. ALLENDER, Washington, Pa. Filed Feb. 23, 1907. Serial No. 358,939.



Claim.—In combination with a receptacle having a perforated bottom and an annular raised flange about the marginal edge of said bottom and integral therewith, a solid post rising centrally from said perforated bottom, a conical-shaped member closed at its top and resting upon said post, the lower portion of said conical-shaped member formed into a circular-outlined disk adapted to rest upon said annular shoulder and spaced apart from the perforated bottom, as set forth.

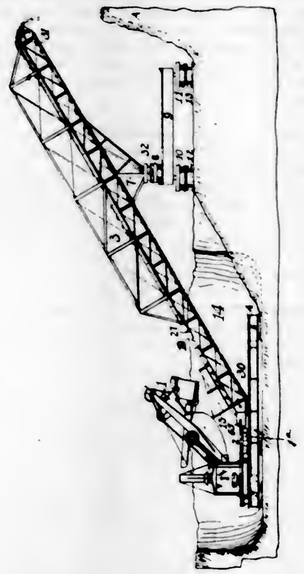
854,395. DIGGING APPARATUS. HARRY B. ARDEN, New York, N. Y. Filed Feb. 3, 1906. Serial No. 299,242.

Claim.—1. An excavator, means for mounting the same so as to permit either transverse or longitudinal movement, and a conveyer connected with said excavator so as to partake of all its transverse and longitudinal movements.

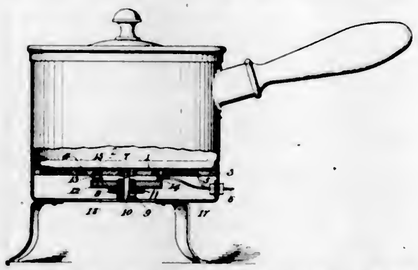
2. An excavator, means for mounting the same so as to permit either transverse or longitudinal movements, a conveyer connected at one end to said excavator and having its other supported by a transverse track mounted on longitudinal tracks through suitable trucks.

3. An excavator, tracks in a cut for supporting the same, a set of tracks on the bank, a conveyer, one end of which is supported by the same means as the excavator and the other from said tracks on the bank.

4. An excavator, tracks in a cut for supporting the same, tracks on a bank, a conveyer supported at one end by the tracks in the cut and at the other by the tracks on the bank, and means for giving the excavator and conveyer the same transverse and longitudinal movements by which their relative positions remain unchanged and the conveyer is kept always ready to receive the material excavated by the excavator.



854,396. SAFETY ATTACHMENT FOR ELECTRICALLY-HEATED VESSELS. JAMES I. AYER, Cambridgeport, Mass., assignor to Simplex Electric Heating Company, Boston, Mass., a Corporation of Massachusetts. Filed Jan. 14, 1907. Serial No. 352,150.



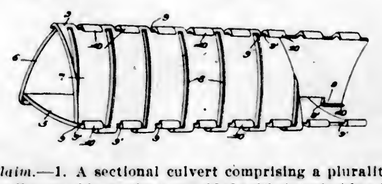
Claim.—1. An electrically heated apparatus, containing a chamber to be heated, a heating circuit therefor, and an automatic cut out in said circuit, including a post extending outside of said chamber for conveying heat from the latter to operate said cut out, and a fusible nut on the outer end of said post, externally of the cut out.

2. An electrically heated device, an electric heating circuit therefor, and an automatic cut-out in said circuit including a heat conveying post, an insulator slidingly mounted on said post, a circuit opener of conductor material carried by said insulator, opposite terminals of said circuit being in position to be engaged by said circuit opener, said post extending through and externally of said insulator and circuit opener, and a fusible nut on the free end of the post externally of and normally retaining said insulator and circuit opener on said post.

3. An electrically heated apparatus, containing a chamber to be heated, an electric heating circuit therefor, and an automatic gravity cut-out in said circuit comprising a heat conducting post depending from the bottom of said chamber, the lower end of said post being externally accessible and extending below the cut-out when the latter is in operative circuit closing position, a heavily weighted gravity conductor plate mounted transversely of said post normally in circuit closing position and capable of freely sliding longitudinally of said post when released, said post being threaded at its outer end, and a fusible nut normally embracing the threaded end of said post beneath said conductor plate and supporting the latter in circuit closing position.

4. An electrically heated device, having a chamber to be heated, an auxiliary chamber beneath the same, a heating circuit within the latter for heating the former, an external opening in said auxiliary chamber and an automatic cut out in said circuit opposite said opening, including a movable current conductor, a depending post supporting the same, and a fusible nut below said conductor normally retaining said movable current conductor in circuit closing position.

854,397. CULVERT. FRED S. BEACH and FITCH H. BEACH, Charlotte, Mich. Filed Aug. 11, 1905. Serial No. 273,786.



Claim.—1. A sectional culvert comprising a plurality of laterally-movable sections provided with interlocking lugs, and projections carried by and extending at an angle from the free ends of the lugs and adapted to engage the exterior walls of an adjacent section for limiting the lateral movement of said sections.

2. A sectional culvert comprising a plurality of laterally-movable sections each provided with interlocking lugs, the spaces between the lugs constituting an interrupted seating flange, and means carried by and extending at an angle from the free ends of the lugs and adapted to engage the exterior walls of an adjacent section for limiting the lateral movement of said sections.

3. A sectional culvert comprising a plurality of laterally-movable interchangeable sections provided with interlocking lugs the ends of which are bent at an angle to the longitudinal plane of the lugs for engagement with the exterior walls of an adjacent section thereby to limit the lateral movement of said sections.

4. A sectional culvert comprising a plurality of laterally movable sections arranged in substantially tri-angular form and provided with interengaging parts, and a projection on each section and extending laterally at an angle from the locking means for engagement with the exterior walls of an adjacent section thereby to limit the lateral movement of said sections.

5. A sectional culvert comprising a plurality of laterally movable sections having interengaging parts for locking said sections against longitudinal movement, and means on each section independent of the locking means for limiting the lateral movement of said sections.

6. A sectional culvert comprising a plurality of laterally movable sections having interengaging parts for locking said sections against longitudinal movement, and means independent of the locking means and extending at an angle from the longitudinal edge of each section for limiting the lateral movement of said sections.

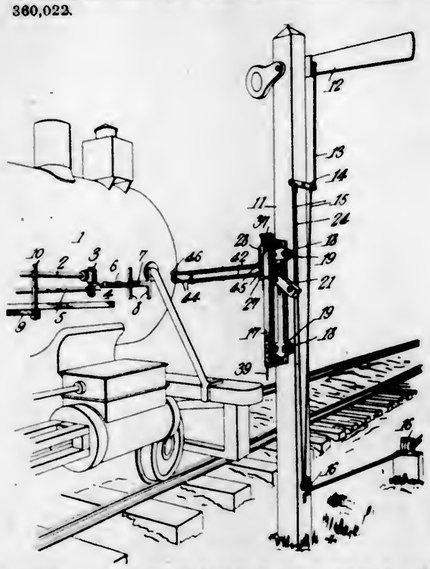
7. A sectional culvert comprising a plurality of laterally movable sections having interlocking parts, and means on each section independent of the locking means and over-lapping the exterior walls of adjacent sections for limiting the lateral movement of said sections.

8. A sectional culvert comprising a plurality of lateral movable interlocking sections, and a flange on each section and extending at an angle from the locking means for en-

gagement with the exterior walls of adjacent sections thereby to limit the lateral movement of said sections.

9. A sectional culvert comprising a plurality of laterally movable sections having their opposite longitudinal edges provided with spaced recesses defining locking lugs adapted to engage the locking lugs on an adjacent section, and projections carried by and extending at an angle from said lugs and over-lapping the exterior walls of adjacent sections for limiting the lateral movement of said sections.

854,398. SAFETY APPLIANCE FOR RAILWAYS. ENDO L. BELL, Norfolk, Va. Filed Mar. 1, 1907. Serial No. 360,023.



Claim.—1. In a safety appliance for railways, a brake-operating mechanism carried by a locomotive engine, a fixed structure on the engine to the rear of and in line with the brake-operating mechanism, and an arm located adjacent to the track in the path of the brake-operating mechanism to engage the same and also in the path of the fixed structure on the engine and movable thereby to an inoperative position.

2. A railway safety appliance coacting with a target or signal and comprising an arm movable to operative position over the track when the signal is set at danger and to an inoperative position when the signal is set at safety, a valve upon an engine, valve-operating means carried by the engine and located to engage the arm when over the track, and means upon the engine for moving the arm out of operative position after it has operated the valve.

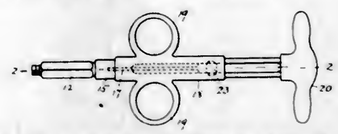
3. In a railway safety appliance, an arm pivoted for movement in a vertical plane, another arm pivoted to the first arm for movement in a plane perpendicular to the movement of the first arm, and a yielding lock for holding the second-named arm against a certain force tending to move it but yielding to a greater force.

4. In a railway safety appliance, an arm pivoted to move in a vertical plane, a rod or bar on one end of said arm and movable therewith in the same vertical plane, a block pivotally mounted upon said rod and having teeth on one face, an arm or frame projecting from said block, another block mounted upon said rod and having teeth engaging the teeth of the first block, and a spring upon said rod tending to maintain the toothed faces of the blocks in mesh.

5. In a device of the character described, an operating valve on an engine having a valve arm or lever normally extending toward the side of the roadbed, a fixed structure also extending from the engine but to a greater extent than the valve arm, toward the side of the roadbed, an arm at the side of the roadbed movable to project laterally toward the track into the path of the valve lever and fixed structure on the engine, and a yielding lock for the arm at the side of the roadbed set to resist the pressure of the valve lever and yielding to the impact of the fixed structure on the engine.

6. In a device of the character described, an arm located at the side of the roadbed and movable to project laterally over the same, a toothed block carrying said arm and pivoted for rotation about a vertical axis, another toothed block held against rotation and adapted to the toothed face of the first-named block, a spring holding the second block in normal engagement with the first block, means for manually lifting the second-named block out of engagement with the first-named block against the action of the spring, means on an engine in the path of the arm when located laterally over the track for operating the air-brakes, and other means on the engine to the rear of the first-named means and arranged to engage and move the arm about its pivot against the action of the spring-pressed toothed block.

854,399. SYRINGE. WALTER G. BRIDGE, Boston, Mass. Filed Apr. 18, 1906. Serial No. 312,381.

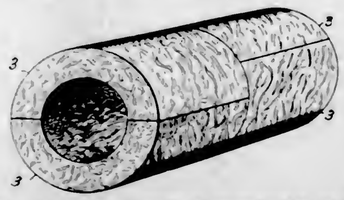


Claim.—1. A syringe comprising a barrel, a plunger movable therein, an operating member movable on the barrel, and means for imparting reverse movement from the operating member to the plunger, the said barrel and operating member having means for engaging different parts of an operator's hand, whereby one hand is enabled to operate the syringe.

2. A syringe comprising a barrel, a plunger movable therein, an operating member movable on the barrel, said plunger and operating member having opposed racks, and a pinion interposed between and meshing with said racks, whereby reverse movement is imparted from the operating member to the plunger.

3. A syringe comprising a barrel having an extension, a plunger having a shank formed as a rack movable in said extension, an operating member formed as a sleeve surrounding and movable on the barrel extension, and provided with an internal rack, and a pinion journaled in bearings in the extension and meshing with said racks.

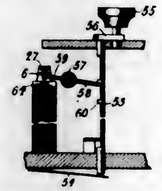
854,400. METALLIC PACKING. WILLIAM M. BROOKS, New York, N. Y., assignor, by direct and mesne assignments, to The New Era Metallic Packing Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Apr. 30, 1906. Serial No. 314,466.



Claim.—1. As a new article of manufacture, an insertible and removable packing ring comprising a plurality of parti-annular plural-part sections each embodying a pressure-compacted quantity of separate interconnected threads or filaments of soft metal, practically each of such separate threads or filaments having been first specially treated to thoroughly and as inextricably as possible intertwist and interconnect it with others and a sufficient quantity of the interlaced mass having afterward and prior to insertion in the stuffing box been forcibly compressed to a parti-annular form possessing a maximum of integrity and resilience by reason of the non-parallelism of the constituent threads.

2. As a new article of manufacture, a packing section comprising a backing which consists of a pressure-compacted mass of promiscuously deposed metallic filaments practically each of which filaments intertwists with another to thereby constitute a body of closely disposed interconnected filaments substantially each of which extends at some portion of its length at an angle to the inner face of the backing, and a connected shell or facing adapted to press against the packed rod.

854,401. TELEGRAPH-TRANSMITTER. JOHN BURRY, Ridgefield Park, N. J. Filed July 21, 1904. Serial No. 217,570.



Claim.—1. A telegraph instrument for transmitting distinctive combinations of current impulses over a plurality of circuits comprising in combination a plurality of circuits, means for controlling the strength, means for varying the direction, and means for determining the order of succession of the impulses sent over the circuits, and keys adapted to engage and operate said means in distinctive combinations, as set forth.

2. A telegraph instrument for transmitting distinctive combinations of current impulses over a plurality of lines or circuits, comprising in combination, a plurality of circuits, devices for varying the strength, devices for controlling the direction, and devices for determining the order of succession of the impulses sent over the lines or circuits, and a series of keys, each engaging with and operating those devices which produce the combination of impulses appropriate to the letter or character corresponding to such key, as set forth.

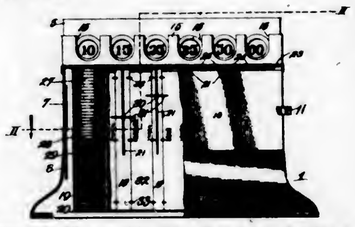
3. A telegraph instrument for transmitting distinctive combinations of current impulses over a plurality of lines or circuits comprising in combination a source of current, devices for directing the current in either direction through a plurality of line circuits, devices for interposing and withdrawing resistance into and from the line circuits, devices for closing breaks in the said circuits in different order of succession, and a series of keys each of which when depressed engages with and operates those devices which produce the combination of impulses appropriate to the letter or character corresponding to such key, as set forth.

4. The combination with two lines or transmission circuits and a source of current, of devices for varying the resistance of the lines, devices for directing the current through the circuits in either direction and devices for closing breaks in the two lines simultaneously or in either order of succession, a series of keys each engaging with a certain number of said devices, whereby the depression of a key will produce a distinctive combination of impulses in the two lines, as set forth.

5. The combination with two line circuits and controllers for varying the strength and direction of current impulses transmitted over the same, of three controllers, one adapted to close breaks in each circuit simultaneously, and the others adapted to close breaks in different order of succession, and keys adapted to engage or operate the controllers in varying combinations, as set forth.

6. The combination with two line circuits of a source of current and a transmitting instrument comprising a series of keys, each of which, when depressed connects the source to both lines, so as to produce therein current impulses in given directions, resistances in each circuit under the control of certain keys, and circuit controllers for closing breaks in the two circuits simultaneously or in different order of succession, with one of which each key is in operative engagement, as set forth.

854,402. ACCOUNTING APPARATUS. JAMES S. CALDWELL, Kansas City, Mo. Filed May 19, 1906. Serial No. 317,731.



Claim.—1. The combination of a device having a series of tubes, to contain checks and open at their upper ends, spring-actuated followers in said tubes and pressing said checks upwardly, means to prevent the checks being ejected from the tubes in a vertical direction, means to indicate at all times the number of checks in the tubes and the money value thereof, and a device provided with a corresponding set of tubes having full length slots and adapted to receive the checks when extracted from the first-named device, and provided with stationary notched means underlying and adapted to limit the downward movement of said checks therein means to disclose at all times the number and money value of the checks in the last-named tubes, and a door covering the means of the last-named device which discloses the number and money value of the checks and provided with a flange overlying the tubes through which the checks extracted from the first-named device may be dropped.

2. The combination of a device having a series of tubes to contain checks and open at their upper ends, spring-actuated followers in said tubes and pressing said checks upwardly means to prevent the checks being ejected from the tubes in a vertical direction, means to indicate at all times the number of the checks in the tubes and the money value thereof, and a device provided with a corresponding set of tubes having full length slots and adapted to receive the checks when extracted from the first-named device, means to disclose at all times the number and money value of the checks in the last-named tubes, a door covering the means of the last-named device which discloses the number and money value of the checks and provided with a flange overlying the tubes through which the checks extracted from the first-named device may be dropped, and pockets containing sample checks over the tubes of each device.

3. A device, comprising a base portion, a portion supported upon the base portion, tubes carried by the last-named portion and depending into the bake portion and provided with vertical slots in their front sides, a spring-elevated follower in each tube, and provided with an arm projecting through its slot and with index fingers, plates at opposite sides of the tube and numbered to indicate the number of checks and the money value thereof, a plate overlying said tubes and provided with registering notches, and removable notched plates fitting between said first-named notched plate and the upper ends of the tubes to prevent the spring followers from ejecting the checks from the tubes.

4. A device comprising a base portion, a portion supported upon the base portion, tubes carried by the last-

named portion and depending into the base portion and provided with vertical slots in their front sides, spring elevated followers in said tubes, and provided with arms projecting through their slots and with index fingers, plates at opposite sides of the tube and numbered to indicate the number of the checks and the money value thereof, a plate overlying said tubes and provided with registering notches, removable notched plates fitting between said first-named notched plate and the upper ends of the tubes to prevent the spring followers ejecting the checks from the tubes, and sample check pockets above and rearward of said notched plate and in the same vertical plane as their respective tubes.

5. A device, comprising a base portion, a portion supported upon the base portion, tubes carried by the last-named portion and depending into the base portion and provided with vertical slots in their front sides, a spring elevated follower in each tube, and provided with an arm projecting through its slots and with index fingers, plates at opposite sides of the tube and numbered to indicate the number of the checks and the money value thereof, a plate overlying said tubes and provided with registering notches, removable notched plates fitting between said first-named notched plate and the upper ends of the tubes to prevent the spring followers ejecting the checks from the tubes, sample-check pockets above and rearward of said notched plate and in the same vertical plane as their respective tubes, and a hinged door secured to the frame and covering said numbered plates.

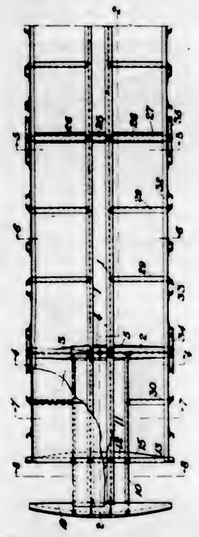
6. In an apparatus of the character described, an upright tube having the rear half of its upper end projecting above the front half of said end and a plate above such tube and provided with a notch of substantially the same radius as and alined with the rear half of the tube to permit checks to be fitted into and occupy a horizontal position in the tube, and a removable plate fitting between such notched plate and the tube and overhanging the interior of the latter to prevent a plurality of said checks from being inserted in a bunch or column into the tube while said removable plate is in position.

7. In an apparatus of the character described, an upright tube having the rear half of its upper end projecting above the front half of said end and a plate above such tube and provided with a notch of substantially the same radius as and alined with the rear half of the tube to permit checks to be fitted into and occupy a horizontal position in the tube, means to press the check or checks in such tube yieldingly upward so that such check or the topmost of such checks shall be held in the horizontal plane of the said upwardly projecting rear half of the tube, and a removable plate fitting between such notched plate and the tube and overhanging the interior of the latter to prevent a plurality of said checks from being inserted in a bunch or column into the tube while said removable plate is in position and provided with a notch in its front edge in alinement with the tube and of smaller diameter than the interior of the latter to permit one to insert a finger through said notch upon a check in the horizontal plane of the rear half of the tube and slide it forwardly out of the tube.

854,403. UNDERFRAME FOR PASSENGER AND LIKE CARS. ANDREW CHRISTIANSON, Butler, Pa., assignor to Standard Steel Car Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 25, 1906. Serial No. 332,013.

Claim.—1. In a metallic car underframe, the combination of central longitudinal sills, platform beams of less depth than the center sills, and an end sill consisting of spacing pieces between the sills and platform beams and outside of the beams, said end sill being of the same depth as the platform beams, and a bottom connecting member secured to the lower edges of the spacing pieces and extending underneath the beams and through slots in the webs of the center sills.

2. In a metallic underframe for railway cars, the combination of central longitudinal sills, platform beams of less depth than said sills, body end sills consisting of spacing pieces between the center sills and beams and outside of the beams and being of less depth than the center sills, and a bottom connecting plate tapering toward its ends and secured to the lower edges of the spacing pieces and extending underneath the beams and through slots in the webs of the central sills.



3. In a metallic underframe for railway cars, the combination of center sills provided with slots through their webs, side platform beams of less depth than said sills, and a body end sill consisting of spacing members between the sills and beams and between the beams and sides of the car, said spacing members being provided with top, bottom and end flanges, the latter being secured to the sills and beams, and a bottom connecting plate secured to the bottom flanges of said spacing pieces and extending underneath the platform beams and through the slots in the center sills.

4. In a metallic underframe for railway cars, the combination of longitudinal center sills, platform beams parallel thereto and of less depth than the center sills, a curved buffer channel sill secured to the outer end of said beams and sills, and a body end sill consisting of spacing members between the sills and beams and outside of said beams, and a bottom connecting member secured to the lower edges of the spacing members and extending underneath the beams and through slots in the center sills.

5. In a metallic underframe for railway cars, the combination of a center sill, and cross connectors or beams extending therefrom to the car sides and having top and bottom flanges, the top flanges being of greater width than the bottom flanges.

6. In a metallic underframe for railway cars, the combination of a center sill, and cross-connectors or beams extending from said sill to the car sides and being composed of members having integral top and bottom flanges, said top flanges being wider than the bottom flanges, and having integral flanges at their inner ends for attachment to the sills.

7. In a metallic underframe for railway cars, the combination of a center sill, cross-connectors or beams extending from the center sill to the car sides and having top and bottom flanges, the top flanges being of greater width than the bottom flanges, and floor plates having meeting abutting edges over said cross-connectors or beams and secured to the top flanges thereof.

8. In a metallic underframe for railway cars, the combination of a center sill, transoms extending outwardly therefrom, and connection plates lying outside and secured to the ends of the transoms and extending longitudinally of the car with their bodies arranged vertically for the attachment of the car sides.

9. In a metallic underframe for railway cars, the combination of a center sill, a transom or cross-bearer extending outwardly therefrom, and a connection plate having its body arranged vertically and secured to the end of the transom and having a top flange resting on said transom.

10. In a metallic underframe for railway cars, the combination of a center sill, a cross-bearer or transom extending outwardly therefrom to the car sides, and connection plates secured to the ends of the transom or cross bearer and having their bodies arranged vertically and having flanges at their ends forming vertical faces lying transversely of the car for the attachment of the superstructure.

11. In a metallic underframe for railway cars, the combination of a flanged center sill having its top flange terminating short of its end, a buffer or end sill having a top plate located in the space of the omitted top flange of the center sill and flush with the top of said sill, and a stiffening and connecting member secured to the web of the center sill and buffer or end sill.

12. In a metallic underframe for railway cars, the combination of a center sill composed of a flanged shape and having the top flange at the end coped off, of an end or buffer sill secured to the end of the center sill, and a top cover plate secured to the buffer or end sill and lying in the space of the coped off flange of the center sill.

13. In a metallic underframe for railway cars, the combination of a longitudinal sill of flanged shape and having the flanges at the end coped off, of an end or buffer sill, a cover plate secured to the top of the latter and occupying the space of the coped off top flange, and a stiffening or connecting member riveted to the web of the longitudinal sill and to the buffer or end sill.

14. In a metallic underframe for railway cars, the combination of a longitudinal sill of flanged shape and having the top flange at the end removed, a buffer or end sill, a cover plate secured to the top edge of the latter and lying in the space of the coped off flange or the longitudinal sill, and a connector and stiffener comprising a plate riveted to the web of the longitudinal sill and having top, bottom and end flanges, the latter being riveted to the end or buffer sill.

15. In a metallic underframe for railway cars, the combination of a longitudinal sill of flanged shape and having the flanges at the end coped off, a buffer or end sill having top and bottom flanges and a vertical web, a connecting member comprising a plate whose body is riveted to the web of the longitudinal sill and having integral top, bottom and end flanges, the latter being riveted to the web of the buffer or end sill.

854,404. FRAME FOR PASSENGER AND LIKE CARS. ANDREW CHRISTIANSON, Butler, Pa., assignor to Standard Steel Car Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Aug. 25, 1906. Serial No. 332,015.

Claim.—1. In a metallic railway car frame, the combination of an underframe having cross members, side posts secured to the ends of said cross members, a side plate secured to the upper ends of the posts, and a bottom chord secured to the inner edges of the posts and top edges of the cross members.

2. In a metallic railway car frame, the combination of an underframe having cross members, side posts secured to the ends of said cross members, a side plate secured to the tops of the posts, a continuous flanged member secured to the lower ends of the posts, and a continuous floor angle secured to the inner edges of the posts and top edges of the cross members of the underframe, said posts being provided with flanges on their inner and outer edges for receiving the inner and outer finishing sheathing.

3. In a metallic railway car frame, the combination of an underframe having cross members, side posts provided with integral top and bottom flanges and secured to the ends of said cross members, a side plate secured to the top flanges of the posts, a continuous flanged member secured to the bottom flanges of the posts, and a continuous floor angle secured to the inner edges of the posts and top edges of the cross members of the underframe.



4. In a metallic railway car frame, the combination of an underframe having cross members providing vertical faces at their ends arranged transversely of the car body, side posts of general channel form secured directly to the vertical faces of said cross members, a continuous flanged member secured to the lower ends of said posts, a continuous side plate secured to the top ends of the posts, and a continuous floor angle secured to the inner flanges of the posts and the tops of the cross members of the underframe.

5. In a metallic railway car frame, the combination of an underframe having cross members whose top edges are provided with depressions near their ends, a floor angle secured to the underframe and having its horizontal leg in said depressions, and floor plates secured to the cross members and overlapping the horizontal leg of the floor angle.

6. In a metallic railway car frame, the combination of an underframe having cross members or beams, connecting plates secured to the ends of said cross members and provided with vertical faces extending transversely of the car, and posts having webs arranged transversely of the car and secured directly to the vertical transverse faces of said connecting members.

7. In a metallic railway car frame, the combination of an underframe having cross members or beams, connecting plates secured to the ends of said cross members and provided with top flanges resting on the cross members and with integral end flanges arranged transversely of the car body, and side posts having webs arranged transversely of the car and secured directly to the vertical transverse flanges of said connecting plates.

8. In a metallic railway car frame, the combination of an underframe, posts secured thereto and having inside and outside flanges, and a belt rail of flanged shape notched to fit over the posts and having a continuous flange located inside of the posts.

9. In a metallic railway car frame, the combination of an underframe, posts rising therefrom, and a belt rail consisting of an angle bar having one flange notched and fitting over the posts, and having the other flange continuous and lying inside of the posts.

10. In a metallic railway car frame, the combination of an underframe having cross members, posts rising therefrom, a continuous flanged belt rail notched to fit over the posts and having an uninterrupted flange inside of the

posts, and a continuous floor angle secured to the inner edges of the posts and the tops of the underframe cross-members.

11. In a metallic railway car frame, the combination of an underframe having cross members providing vertical faces, channel shaped posts riveted through their webs directly to the vertical faces of the cross members, a continuous floor angle riveted to the tops of the cross members of the underframe and secured to the inner edges of the posts, and a flanged belt rail notched to fit between the posts and secured thereto and having a continuous flange inside of said posts.

12. In a metallic railway car frame, the combination of posts, a belt rail notched to fit over and between the posts, and brackets securing said belt rail to the posts.

13. In a metallic railway car frame, the combination of vertical posts of channel form, a belt rail consisting of an angle having one flange notched and fitting over the posts and the other flange uninterrupted, and brackets riveted to the posts and to the flanges of said belt rail.

14. In a metallic railway car frame, the combination of vertical posts, a continuous bottom chord therefor, a continuous top chord therefor, a continuous floor angle secured to the underframe and to the inner edges of the posts, and a continuous belt rail secured to the posts and notched to fit in between the same.

15. In a metallic railway car frame, the combination of vertical posts, an underframe to which the same are secured, a continuous floor angle secured to the underframe, brackets connecting the vertical flange of said angle to the posts, and an angle shaped belt rail notched to fit between the posts and having a continuous flange on one side of the posts, and brackets securing said belt rail to the posts.

16. In a metallic railway car frame, the combination of vertical posts, a belt rail of flanged shape notched to fit over said posts but having an uninterrupted flange on the inside thereof, and brackets consisting of plates riveted to the posts and having top and inside flanges secured respectively to the continuous vertical flange of the belt rail and the notched horizontal portion thereof.

17. In a metallic railway car frame, the combination of posts of channel shape placed with the webs transversely of the car, a belt rail of flanged shape notched to fit over said posts and having a continuous vertical flange on the inner side of the posts, and brackets securing the belt rail to the posts consisting of plates having flanges on the top, inner and outer edges, said top and inner flanges being secured to the horizontal and vertical portions of the belt rail.

18. In a metallic railway car frame, the combination of channel shaped posts placed with their webs transversely of the car, an angle shaped belt rail having one flange notched and fitting between the posts and having the other flange vertical and uninterrupted inside of the posts, brackets securing the belt rail to the posts and, consisting of plates having integral flanges on top, inner and outer edges, the webs being secured to the webs of the posts, the inner flanges to the vertical flange of the belt rail, the top flange to the horizontal flange of the belt rail, and said top flange being sloped downwardly on the outside to serve as a support for a water table.

19. In a metallic railway car frame, the combination of an underframe, posts rising therefrom and provided with top flanges, a channel shaped plate resting directly on top of said post and having its web riveted to the flanges thereof and its flanges projecting downwardly on each side of the posts.

20. In a metallic railway car, the combination of posts, a side plate resting on, and secured to, said posts, said plate being of channel form having flanges of different widths.

21. In a metallic railway car frame, the combination of posts provided with flanges on their upper ends, a channel shaped plate secured to the flanges of the posts, said plate being arranged with its flanges projecting downwardly and having flanges of different widths.

22. In a metallic railway car frame, the combination of posts provided with flanges on their upper ends, a channel shaped plate resting directly on said posts with the flanges projecting downwardly on each side of the posts, carlines provided with flanges resting on said plate, and rivets securing the web of the plate to the flanges of the carlines and posts.

23. A side plate for railway cars consisting of a channel having flanges of different widths.

24. A side plate for railway cars consisting of a pressed channel shaped member having flanges of different widths.

25. In a metallic railway car frame, the combination of side frame, a metallic side plate at the upper edge of said side frame and consisting of a channel shape having flanges of different widths and projecting downwardly.

26. A metallic post for railway cars having a web with inside and outside flanges integral with the body thereof, the outside flange being wider than the inside flange.

27. A metallic post for railway cars composed of a pressed plate having flanges of different widths.

28. A metallic post for railway cars having an integral offset portion at its upper end.

29. A metallic post for railway cars having a web and inside and outside flanges, the outer flange being offset near the upper end.

30. A metallic post for railway cars consisting of a pressed plate having flanges on its inner and outer edges, the flange at the outer edge being bulged outwardly at its upper end.

31. A channel shaped metal post for railway cars having a web of varying width.

32. A metallic post for railway cars of flanged shape and having one flange at the upper end of the post bulged outwardly.

33. A metallic corner post for railway cars of angle shape and bulged outwardly at its upper end.

34. A metallic post for railway cars having a web and flanges on the inner and outer edges, the outer flange being wider than the inner flange and having its upper portion bulged outwardly.

35. A metallic post for railway cars of general channel shape having the web arranged transversely of the wall of the car, the outer flange of the post being wider than the inner flange.

36. A metallic post for railway cars of general channel shape having a web of varying width and having flanges of different widths.

37. A metallic post for railway cars consisting of a pressed plate of general channel form having integral flanges on both edges and top and bottom, the flanges on the two edges being of different widths.

38. A metallic post for railway cars consisting of a pressed plate having integral flanges on both edges and at top and bottom, and the flange on one edge being bulged outwardly near one end of the post.

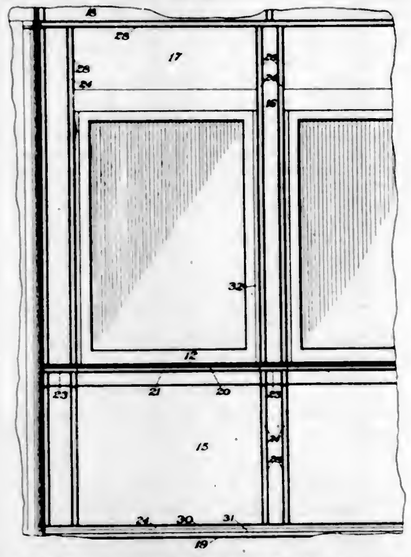
39. A metallic post for railway cars consisting of a pressed plate having integral flanges on both edges and both ends, the flange on one edge being wider than that on the other edge and being bulged outwardly at one end of the post.

854,405. PASSENGER AND LIKE CAR. ANDREW CHRISTIANSON, Butler, Pa., assignor to Standard Steel Car Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 7, 1906. Serial No. 333,621.

Claim.—1. In a metallic railway car, the combination of posts, a belt rail, a window sill covering the belt rail and having an extended molded portion, a corresponding finishing molding in the spaces between the windows, and means for securing the sill and molding to the belt rail.

2. In a metallic railway car, the combination of posts, a belt rail secured thereto, a window sill covering the belt rail and having a depending portion provided with a groove on its outer face, a correspondingly grooved molding for the space between the windows, and tap screws passing through the same and into the belt rail and having their heads located in the groove.

3. In a metallic railway car, the combination of posts, a belt rail secured to the same and having a vertical flange on the inside of the car, a window sill covering the belt rail and having a depending portion, a molding for the space between the windows having a corresponding depending portion, and side finishing plates secured to the posts and having their upper edges held in place by the depending portions of the sill and molding.



4. An interior finish for metallic railway cars, comprising a frame, finishing sheets applied thereto, a molding covering the edges of said sheets, said molding having a back all projecting portions of which are in one plane but being recessed to lighten the same and being provided with a groove in its face, and fastening means for the molding having heads located in said groove.

5. An interior finish for metallic railway cars, comprising a frame, finishing sheets, a metallic molding covering the edges of said sheets and having all projecting portions of its back in the same plane, said molding being provided on its face with a groove, and tap screws having their heads seated in the groove and passing into the frame.

6. An interior finish for metallic railway cars, comprising a frame, finishing sheets, a metallic molding provided with a groove on its face, tap screws for securing the molding to the car frame with their heads located in the groove of the molding, and polygonal spring washers seated in said groove underneath the heads of the screws.

7. A finish for the interior of metallic railway cars, comprising a frame, finishing sheets, a metallic molding having members at a right angle to each other and provided with a groove in the face of each of said members and tap screws passing through each of the two members of the molding and into the car frame and having their heads seated in said grooves.

8. An interior finish for the corners of metallic railway cars, comprising interior finishing sheets, a metallic molding having portions at right angles to each other, each of which is provided with a groove on its face, and tap screws passing through the angle portions into the car frame and having their heads seated in the grooves.

9. In a metallic railway car, the combination of a frame plate provided with a flange on its inner edge, interior finishing sheets meeting over said flange, and a finishing molding covering the edges of the sheets and secured to the flange of the plate.

10. In a metallic railway car, the combination of a frame plate having a vertical flange on its inner edge, interior finishing sheets having their edges meeting over said flange, and a metallic molding covering the edges of said sheets and provided with a groove on its front face, and tap screws passing through the molding into the flange of the plate and having their heads seated in said groove.

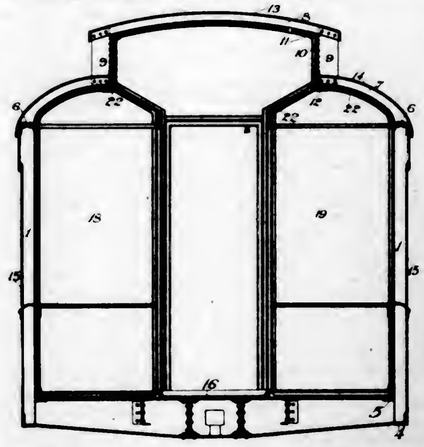
11. In a metallic railway car, the combination of a floor angle, an interior finishing sheet having its lower edge overlapping one flange of said angle, and a metallic molding covering the edge of the sheet and secured to the floor angle and having at its lower edge a rounded portion projecting inwardly.

12. In a metallic railway car, the combination of a side frame, a floor angle secured thereto, side sheets having their lower ends lapped over said floor angle, a metallic molding having its outer face grooved, and having a projecting rounded portion at its lower edge reaching the floor, and tap screws passing through said molding into the floor angle and having their heads seated in the groove thereof.

13. In a metallic railway car, the combination of posts, a belt rail presenting a horizontal face between the posts and a vertical face inside of the posts, interior finishing sheets overlapping the vertical face of the belt rail, and an ornamental metallic sill covering the horizontal face of the belt rail and overlapping the upper edge of the finishing sheets and secured to the frame.

14. In a metallic railway car, the combination of posts provided with window openings there between, a belt rail presenting a horizontal face between the posts and a vertical face inside of the posts, an ornamental sill covering the horizontal face of the belt rail and having a vertical portion, an interior finishing plate having its upper edge concealed by the depending portions of the sill, other finishing plates at the sides of the window openings, and an inside metallic window stop having on its interior edge a laterally projecting portion overlapping the edge of the post.

854,406. METALLIC COMPARTMENT CONSTRUCTION FOR PASSENGER AND LIKE CARS. ANDREW CHRISTIANSON, Butler, Pa., assignor to Standard Steel Car Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 7, 1906. Serial No. 333,622.



Claim.—1. In a metallic railway car, the combination of the frame, a horizontal bar presenting faces at an angle to each other, a vertical inside finishing sheet applied to the vertical face of the bar, a horizontal interior finishing sheet applied to the horizontal face of the bar, a metallic angle molding finishing the corner and covering the edges of the finishing sheets, and means for securing the same to the transverse bar.

2. In a metallic railway car, the combination of a frame, a horizontal bar having faces at an angle to each other, vertical finishing sheets applied to the vertical face of the bar, a horizontal finishing sheet applied to the horizontal

face of the bar, a metallic angle molding having portions at an angle to each other and fitting into the corner, each of said portions being grooved or recessed on the back and grooved on the face, and fastening means passing through the same and into the transverse bar and having the heads seated in the face grooves of the molding.

3. In a metallic railway car, the combination of an end frame, an end carline presenting a vertical face, an outside finish plate secured to the vertical face of the carline and the outer face of the end frame, a transverse bar providing a vertical face in line with the inner face of the end frame and with an inwardly extending horizontal face, vertical finishing sheets applied to the inside of the end frame and the vertical face of the transverse bar, horizontal inside finishing sheets applied to the horizontal face of the transverse bar and a metallic molding having portions at an angle to each other lapping over the edges of the finishing sheets and secured in place.

4. In a metallic railway car, the combination of an end frame, an end carline having a vertical face, outside finishing sheets applied to the outer face of the carline and of the end frame, a transverse bar having a vertical face in line with the inner edge of the end frame and a horizontal face extending toward the car center, a tie plate connecting the transverse bar to the end carline, vertical finishing sheets applied to the inside face of the end frame and vertical face of the transverse bar, horizontal finishing sheets applied to the horizontal face of the transverse bar, a metallic molding having portions at right angles and fitting over the edges of the finishing sheets and provided with face grooves, and securing means passing through the same into the transverse bar and having the heads seated in the face grooves of the molding.

5. In a metallic railway car, the combination of a frame, a bar having a web projecting into the car and having two faces at right angles to said web, one on either side of the web, partition sheets applied to either face of the projecting web of said bar, other finishing sheets applied to the two faces of the bar at right angles to the web, and a metallic molding applied in each of the angles and serving to cover the edges of the partition and finishing sheets.

6. In a metallic railway car, the combination of a frame having a member with a web transverse of the car body, a T bar riveted to said frame member and having a web projecting into the car body and presenting faces at right angles to said web, partition sheets applied to either face of the inwardly projecting web, and side finishing sheets applied to the faces at right angles to the web.

7. In a metallic railway car, the combination of a frame having a member with a web transverse of the car body and a flange on the interior edge longitudinal of the car body, a T bar riveted by one flange to the web of said frame member and having the other flange projecting inwardly and having its leg in line with the inside flange of the frame member, an interior finishing sheet applied to the inner flange of the frame member, a similar finishing sheet applied to the inner face of the leg of the T bar, and partition sheets applied to both faces of the inwardly projecting flange of the T bar.

8. In a metallic railway car, the combination of a frame member having a web transverse of the body and a flange on its inner edge, a T bar having one flange riveted to the web of the frame member and its other flange projecting into the car body and having its leg in line with the inner flange of the frame member, a finishing sheet applied to the inner flange of the frame member, a similar finishing sheet applied to the leg of the T bar, a pair of partition sheets applied one to either face of the inwardly projecting flange of the T bar, and metallic moldings having portions at angles to each other and secured respectively on opposite sides of the inwardly projecting flange of the T bar and secured in place to said T bar and through the edges of the finishing and partition sheets.

9. In a metallic railway car, the combination of carlines, a ventilator plate secured thereto, and a partition top plate having its upper end flanged and riveted to the ventilator plate.

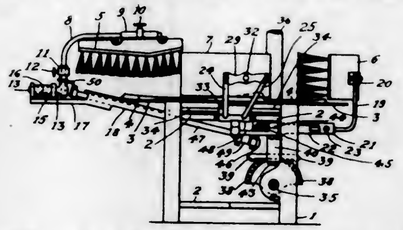
10. In a metallic railway car, the combination of carlines having lower deck members and vertical connecting members, a ventilator plate riveted to the vertical connecting members and provided with an out-turned flange at its lower edge, a compartment top plate having a flange at its upper end secured to the ventilator plate, and inside finishing sheets secured respectively to the flange of the top plate and the out-turned flange of the ventilator plate.

11. In a metallic railway car, the combination of a compartment top plate secured to the car side and having its inner edge turned downwardly, and vertical partition sheets lapped one on either side of the down turned edge of the top plate and secured thereto.

12. In a metallic railway car, the combination of a compartment top plate having one edge secured to the car side and having a free edge turned downwardly, vertical partition sheets lapped one on either side of the down turned edge of the top plate, a filling piece between the top plate and one of the sheets, and means securing the partition sheets to the top plate.

13. In a metallic railway car, the combination of a compartment top plate having one edge secured to the car side and having a free edge turned downwardly, vertical partition sheets lapped one on either side of the down turned edge of the compartment top plate, moldings covering the edges of the partition sheets, and securing means passing through the moldings and the sheets and the down turned edge of the compartment top plate.

854,407. SHOE-POLISHER. MARTIN CHRISTENSON, Minneapolis, Minn. Filed May 25, 1906. Serial No. 318,662.



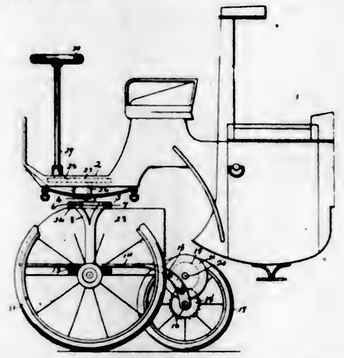
Claim.—1. In a shoe polisher, the combination with a main shaft and means for rocking it, of a pivoted three-armed lever, bevel gears connecting the shaft and lever for causing the shaft movements to oscillate such lever, a rock-shaft, bevel gears connecting the lever and rock-shaft for causing the lever movements to rock said rock shaft, a set of polishing brushes, and means for communicating the motion of said lever and said rock-shaft to the set of polishing brushes, substantially as set forth.

2. In a shoe polisher, the combination with a main shaft and means for rocking it, of a pivoted three-armed lever, bevel gears connecting the shaft and lever for causing the shaft movements to oscillate such lever, a heel brush carried by the middle lever arm to operate in an arc, a pair of side brushes, guide-rods and cross-heads thereon, means connecting the side brushes and cross-heads, and pivotal connections between the latter and the adjacent lever arms for reciprocating the side brushes, substantially as set forth.

3. In a shoe polisher, the combination with a main shaft and means for rocking it, of a pivoted three-armed lever, bevel gears for causing the shaft movements to oscillate such lever, a heel brush carried by the middle lever arm to operate in an arc, a pair of side brushes, guide-rods and cross-heads thereon, brush supports attached to the cross-heads, and tubes and spring-actuated pistons and a guiding device connecting the brushes to their supports, substantially as set forth.

854,408. MOTOR-VEHICLE. BERNARD D. DRUEN, New Haven, Conn. Filed July 9, 1906. Serial No. 325,251.

Claim.—1. In a motor vehicle, the combination with the body and boot thereof, of platform springs below said boot and connected therewith, a fifth wheel on which said springs rest and to which they are connected, the lower member having outwardly extending arms, a front axle and wheels thereon, vertical braces secured to said axle near said wheels and connected with the arms of the fifth wheel to support the same, a motor arranged between said axle and fifth wheel, and connections from said motor for driving said wheel.



2. In a motor vehicle, the combination with a body comprising a boot, front axle and wheels therefor, said body being supported at a point above said axle, a platform bearing on said axle, a motor on said platform, said platform having rearwardly extending arms, a driving wheel mounted at the ends thereof, and means connected with said motors for driving said wheel.

3. A motor vehicle comprising a boot, platform springs beneath the same, a front axle and braces extending upward therefrom to support said springs, a platform arranged on said axle, a motor resting thereon, said platform having rearwardly extending arms, a driving wheel mounted at the ends thereof, and connections between the motor and the driving wheel for imparting movement thereto, substantially as described.

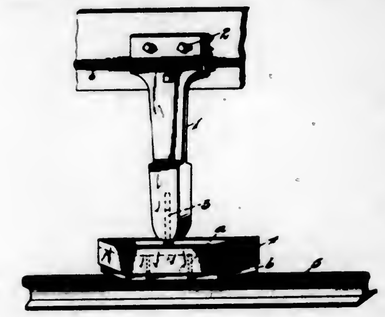
4. A motor vehicle comprising a boot and platform springs beneath the same, a front axle, arms extending upward therefrom to support said springs, fifth wheels pivotally connected with said axle, a platform mounted on said axle and having fifth wheel connection therewith, said platform having rearwardly extending arms, a wheel mounted in the outer end thereof, a motor mounted on said platform, and means for imparting motion to the said forward wheels, a link connecting said forward wheel, a steering rod passing downward through said motor and connected at its lower end with said link, and means above said standard for turning said rod, substantially as described.

854,409. TRACK-CLEANER. DANIEL R. EDWARDS, Orange, Tex. Filed Oct. 11, 1906. Serial No. 338,400.

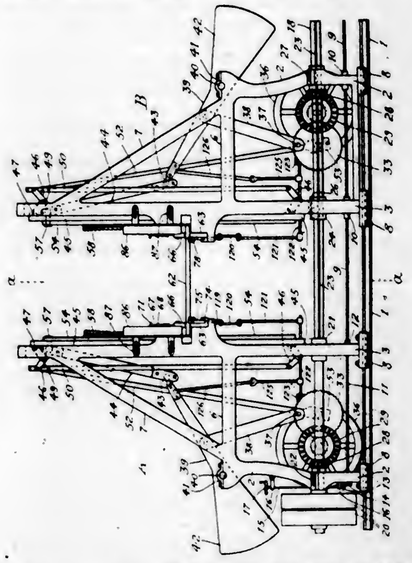
Claim.—1. A track cleaner having in combination with a depending frame piece adapted to be attached to a moving carriage, a shoe member connected therewith and adapted to be moved along its supporting track thereby, said shoe member having on its under face a plurality of compartments spaced from one another by metal ribs, and a plurality of wearing blocks, held therein and adapted to engage directly against the track.

2. In combination with a frame piece adapted to be attached to a movable carriage, the upper portion of said piece being provided with a groove adapted to engage over a complementary rib on said carriage, a shoe member engaged by said frame piece, and a plurality of wearing blocks driven into the under face of said member, substantially as described.

3. In combination with a plurality of wearing blocks adapted to engage over a sawmill track, a shoe wherein said members engage, both said shoe and said wearing members being oblique to the track at the outer ends, and a frame piece whereinto said shoe telescopes, adapted to be attached to the movable portion of the sawmill carriage, substantially as described.



854,410. SELF-FEED FOR MORTISE AND TENON SAWING MACHINES. JOHN E. ERICKSON, St. Paul, Minn. Filed Jan. 15, 1907. Serial No. 352,451.



Claim.—1. The combination with a machine for sawing mortises or tenons, provided with reciprocating saws arranged to recede laterally upon completion of a cut, of an automatic feed mechanism for presenting and holding a board stationary at the sawing point and for conducting it away after it has been sawed, substantially as set forth.

2. The combination with a machine for sawing mortises or tenons, of means for moving the saws to and away from the sawing point, mechanism for presenting and holding a board stationary at the sawing point and for conducting away the sawed boards, and automatic means for piling them by elevating and supporting them, substantially as set forth.

3. The combination with a machine for sawing mortises or tenons, of means for moving the saws to and away from the sawing point, mechanism for presenting and holding a board stationary at the sawing point and for conducting away the sawed boards, devices actuated by the carrier movements for lifting the discharged boards, and means

for supporting them when elevated, substantially as set forth.

4. In a machine for sawing mortises or tenons, a work-holder for holding a board stationary, a gang of saws, means for moving them downward in a vertical plane, means for causing them to recede horizontally for their upward movement, and automatic means for feeding a board transversely to the cutting planes of the saws to and removing it from the work-holder, substantially as set forth.

5. In a machine for sawing mortises or tenons, a work-holder for holding a board stationary, a gang of saws, means for moving them downward in a vertical plane, means for causing them to recede horizontally for their upward movement, and an automatic feed mechanism adapted to move transversely to the cutting planes of the saws one board away from and present another board to the work-holder during each upward movement of the saws, substantially as set forth.

6. In a machine for sawing mortises or tenons, a work-holder for holding a board stationary, a gang of saws, means for moving them downward in a vertical plane, means for causing them to recede horizontally for their upward movement, and an automatic feed mechanism adapted to move transversely to the cutting planes of the saws one board away from and present another board to the work-holder during each upward movement of the saws, and adapted also to pile the boards that it removes from the work-holder, substantially as set forth.

7. In a machine for sawing mortises or tenons, a work-holder, a self-feed mechanism adapted to simultaneously move one board away from and move another to the work-holder, and means actuated by the return carrier movement for lifting the discharged boards and piling them above the plane of the carrier movements, substantially as set forth.

8. A self-feed mechanism for a sawing-machine, comprising a board-carrier, means for reciprocating it, means for causing its feeding reciprocation to move one board away from and another to the sawing point, a lifting device actuated by the carrier for elevating the discharged boards to pile them, and means for holding the pile in suspension, substantially as set forth.

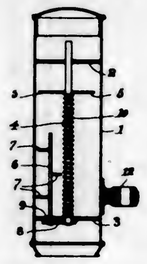
9. In a machine of the class described, duplicate sawing mechanisms for simultaneously sawing both ends of a board, work-holders therefor, and a self-feed mechanism composed of duplicate parts connected to the respective sawing-machine frames, and comprising reciprocating board-carriers and means attached thereto for moving a board to and away from the work-holders, and means actuated by the return carrier movements for lifting the discharged boards and piling them above the plane of the carrier movements, substantially as set forth.

10. In a machine of the class described, duplicate sawing mechanisms for simultaneously sawing both ends of a board, work-holders therefor, and a self-feed mechanism composed of duplicate parts connected to the respective sawing-machine frames, and comprising reciprocating board-carriers and means attached thereto for moving a board to and away from the work-holders, lifting devices actuated by the carrier for elevating the discharged boards to pile them, and means for holding the pile in suspension, substantially as set forth.

11. In a machine of the class described, duplicate sawing mechanisms for simultaneously sawing both ends of a board, and arranged to recede laterally upon completion of a cut, and an antomatic feed mechanism composed of duplicate parts for presenting and holding a board stationary at the sawing point and for conducting it away after it has been sawed, substantially as set forth.

854,411. SOAP-POWDER CANISTER. HENRY C. FAIRCHILD, Bridgeport, Conn., assignor to The Fairchild & Shelton Company, Bridgeport, Conn., a Corporation of Connecticut. Filed May 31, 1906. Serial No. 319,649.

Claim.—1. In a soap canister, the combination of the receptacle for containing the powdered soap having secured therein upper and lower cross webs the latter provided with an enlarged discharge opening, the vertically disposed main slide rod extending loosely through said webs and guided thereby and provided with laterally extending agitator fingers, the coil spring around said rod and confined between said fingers and the lower web, the vertically disposed agitator rod extending through said discharge opening and provided with laterally extending agitator fingers, the cross bar immediately below said lower web and to which are secured the lower extremities of said rods and adapted to normally close said discharge opening, the curved slot formed within the side of said canister, and the operating lever extending from said cross bar snugly through said slot.

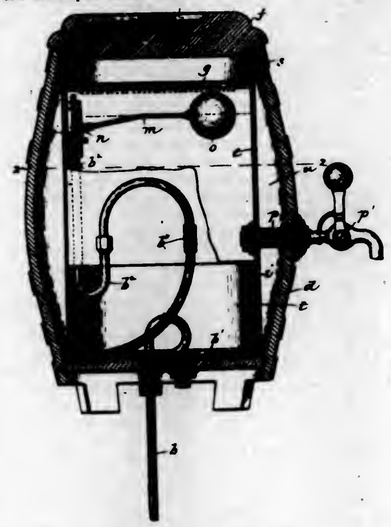


2. In a soap canister, the combination of the receptacle proper having a discharge opening in its bottom and a downwardly leading curved slot in its side, suitable agitator rods extending up within the receptacle through the bottom thereof, the cross bar immediately below the bottom of the receptacle and to which the agitator rods are secured, a spring element for normally elevating said rods and cross bar whereby the latter will close said discharge opening, and an operating lever extending laterally from said cross bar through the curved slot in the side of the receptacle whereby both vertical and horizontal reciprocations will be imparted to the agitator rods and the parts carried thereby.

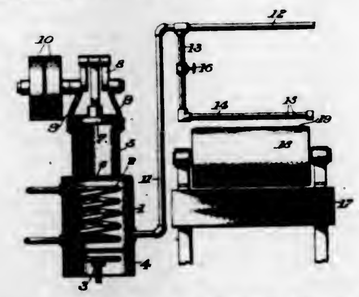
3. In a soap canister, the combination of the receptacle proper having upper and lower cross webs and a discharge opening within the lower web and provided in its side with a vertically disposed slot whose side edges are curved, agitator rods extending within the receptacle, a cross bar immediately below the lower web and to which said rods are secured, said cross bar adapted in its elevated position to close said discharge opening, a spring element for keeping said cross bar and rods in a normally elevated position, and the operating lever extending from said cross bar laterally through said slot.

854,412. LIQUID-DISPENSING APPARATUS. PATRICK J. FLYNN, Boston, Mass. Filed Aug. 18, 1906. Serial No. 331,167.

Claim.—A liquid dispensing apparatus comprising an outer casing, an inner casing bearing on the bottom of the outer casing, the body portions of the inner and outer casings being separated by a closed air space u^2 surrounding the inner casing, a flat-liquid reservoir e attached to the upper part of the inner casing, and separated from the bottom of the latter by an ice storage space t which is also surrounded by the air space u^2, spaces r r being provided between opposite sides of the reservoir and the inner casing for the admission of ice to the space t and for the storage of ice above the latter, a conduit leading from a charged-liquid supply and entering the chamber t, the conduit having branches within said chamber, one branch entering the reservoir e, and the other being elongated and coiled, and extending as a charged-liquid outlet through the walls of the inner and outer casings, means for controlling the branch entering the reservoir, a flat-liquid outlet extending from the reservoir through the walls of the casings, and means outside the casing for controlling said liquid outlets, the spaces t and r holding ice in suitable proximity to the charged liquid outlet branch of the conduit, and to the bottom and sides of the flat-liquid reservoir, while the air space u^2 surrounds all the ice spaces and the flat-liquid reservoir.



854,413. DEVICE FOR REMOVING STATIC ELECTRICITY FROM STOCK. WILLIAM FULLARD, Plainfield, N. J., and CHARLES M. DONHAM, Portland, Me. Filed June 5, 1906. Serial No. 320,283.



Claim.—1. In a device of the character described, a hot air tank and means for discharging the heated pure atmospheric air over the surface of the stock as it is fed to or through the machine.

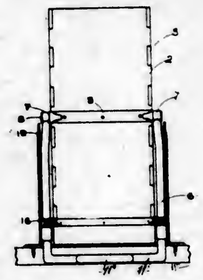
2. In a device of the character described, a tank, means for compressing the air in said tank and for heating the air therein, and means for discharging the air against the stock as it is fed to or through a machine.

3. In a device of the character described, a tank, means whereby the atmospheric air is heated without being mixed with the products of combustion, means for forcing the air into and from said air tank and a distributing pipe in communication with said air tank for directing the hot air downwardly against the stock.

4. In a device of the character described, a tank, heating devices therefor, means for forcing air into and from said air tank, a distributing pipe in communication with said air tank for directing the heated pure atmospheric air against the stock, and means for controlling said distributing means.

5. In a device of the character described, an air tank, means for heating air therein, a pipe leading from the exterior of said tank, an air compressor for forcing air into said tank, and through said pipe, an offset pipe connecting said main pipe, an air distributing pipe having openings therein for discharging the hot air against the stock, and means for controlling said distributing pipe.

854,414. REFERENCE-BOOK HOLDER. NELLIS H. FULTON, Franklin, Pa. Filed Jan. 16, 1905. Serial No. 241,332.



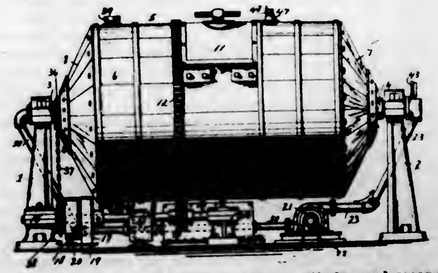
Claim.—1. A reference-book-holder consisting of a book-receptacle, composed of a back and sides, hinged together at their approximate edges, a stirrup to which said receptacle is swingingly attached, and a fork swingingly connected at its open end to said stirrup, in combination with means of slidingly mounting said fork upon a suitable support.

2. In a reference book holder, a case adapted to the reception of a book, a stirrup in which said case is pivotally mounted, a fork to which said stirrup is swingingly attached, and means of slidingly mounting said fork upon a shelf or table.

3. In a reference-book-holder, a book-receptacle, a stirrup or bifurcate member, swingingly attached at its open end to the back of said receptacle, the closed end of said stirrup extending below said receptacle, and a fork swingingly attached at its open end to said stirrup, approximate to its closed end, in combination with means of slidingly mounting said fork upon a shelf.

4. In a reference book holder, the combination of a book receptacle, consisting of a back and covers, hinged together as shown, a stirrup on which said case is pivotally mounted, a horizontal fork, to the ends of which said stirrup is hinged, and the standards adapted to the reception and slidable mounting of said fork.

854,415. COLORING AND TANNING APPARATUS. CHARLES J. GLASEL, Boston, Mass., assignor to T. Latzisperger, Sault aux Recollets, Canada. Filed Sept. 26, 1902. Serial No. 124,963.



Claim.—1. The combination with a cylinder and means for revolving it, of a spring pressed cage supported therein, a cam disk carried by the cage, and a fixedly supported roller bearing on the cam disk to force the cage against the spring pressure.

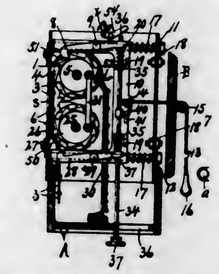
2. In a tanning and coloring apparatus the combination of a rotating drum having hollow trunnions, means for rotating the drum, standards supporting the trunnions, a frame composed of slats, and rings, adapted to reciprocate within the drum, while it rotates, longitudinal slots in the slats, bolts or pins passing through the slot and into the walls of the drum, a cam disk carried by the frame, an anti-friction roller connected with one of the standards and acting on the cam disk as the drum rotates, so as to cause the cam and frame to move longitudinally and springs acting on the frame, in opposition to the roller.

3. In a tanning and coloring apparatus the combination of a rotating drum having hollow trunnions, standards, means for rotating same, stuffing boxes, circulating pipes within the trunnions, conical heads to the drum, a perforated partition in one of the heads, a spatula or beater behind the partition and secured to the circulation pipe and hide agitating means in front of the partition.

4. In a tanning and coloring apparatus the combination of a rotating drum, means for rotating same, hollow trunnions, stuffing boxes, standards, circulating pipes terminating within the trunnions, a fluid mixer or agitator, a pump, a heater, a testing box through which the circulating pipe passes, and openings in said pipe within the box.

5. In a tanning and coloring apparatus, the combination of a rotating drum, means for rotating same, automatic agitating means for the hides or skins within the drum, and circulating means embracing the drum, a mixer, hollow trunnions standards, pipes, a sampling (researching) box a heater and a pump.

854,416. STREET-INDICATOR. JAMES H. GOODIER, Utica, N. Y. Filed July 17, 1906. Serial No. 326,616.



Claim.—1. In a street indicator of the class described, two reels connected for simultaneous rotation and each provided with a ratchet wheel, a sliding frame and automatic means for returning it to one position, manually operated means connected to the frame for drawing the latter against the action of said means, separate pawls mounted on the frame and movable therewith, manually operated means for simultaneously throwing one pawl into engagement with one of the ratchet wheels and the other pawl out of engagement with the other ratchet wheel, whereby the movement of the sliding frame against the action of its returning means causes the pawl which is engaged with its ratchet wheel to rotate the corresponding reel, and an apron bearing the names of the streets actuated by said reels.

2. In a street indicator of the class described, an apron bearing the names of the streets and a pair of reels for actuating the apron, said reels being connected for simultaneous rotation and each provided with a ratchet wheel, a sliding frame and automatic means for returning it to one position, a single operating member to move the frame against the action of its returning means, separate pawls mounted on the sliding frame, one for each ratchet wheel, a sliding rod mounted on the frame and connected to said pawls for throwing one of the pawls into engagement with one of the ratchet wheels and the other pawl out of engagement with the other ratchet wheel, whereby when the frame is moved against the action of its returning means, the pawl which is in engagement with its ratchet wheel will rotate the corresponding reel, and manually operated means movable independently of the sliding rod for forcing the active pawl out of operative position.

3. In a street indicator of the class described, a casing having a sight opening and apron bearing the names of the streets movable across said opening, reels for said apron located above and beneath said opening and connected for simultaneous rotation, each reel being provided with a ratchet wheel, a sliding frame and automatic means for returning it to one position, manually operated means connected to the frame for moving the latter against the action of its returning means, separate pawls mounted on the frame, one pawl for each ratchet wheel, one of the pawls being located above the upper reel, and the other pawl being located below the lower reel to rotate said reels in opposite directions, means for simultaneously moving one pawl into engagement with one of the ratchet wheels and the other pawl out of engagement with the other ratchet wheel, whereby the movement of the frame causes the active pawl to rotate its reel.

4. In a street indicator, an apron bearing the names of the streets, a pair of reels for actuating said apron, each reel being provided with a ratchet wheel, connections between said reels to cause them to rotate in the same direction, a sliding frame and automatic means for returning it to one position, means for operating the frame against the action of its returning means, separate pawls on the frame, one for each ratchet wheel, an axially movable rod rotatably mounted on the frame and connected to said pawls for moving the latter into and out of engagement with their respective ratchet wheels, and means for holding the rod in its axially adjusted position whereby one pawl is held into engagement with one of the ratchet wheels while the other pawl is held out of engagement with the other ratchet wheel.

5. In a street indicating device for street cars, a manually operated sliding frame and retracting means therefor, a flexible apron bearing the names of streets and a pair of actuating reels therefor, one for operating the apron in one direction and the other for moving it in the other direction, a pair of ratchet wheels each secured to one of the reels, a pair of pawls pivotally mounted upon the sliding frame and each movable into and out of engagement with one of the ratchet wheels, a vertically slidable rock bar connected to said pawls for simultaneously throwing one into action and the other out of action, means for holding said rock bar in its adjusted position, and separate means for throwing the active pawl out of action.

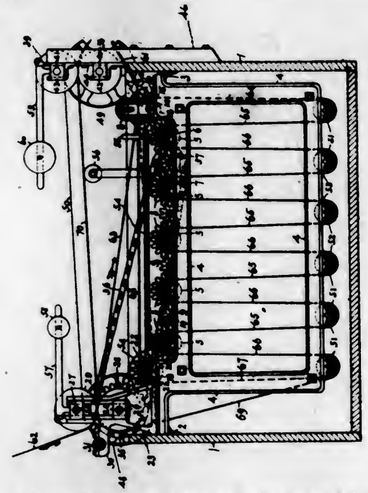
854,417. DYEING-MACHINE. JOHN R. GREENWOOD, Boothwyn, Pa. Filed Sept. 26, 1906. Serial No. 336,226.

Claim.—1. In a dyeing machine, a vat, a framework immersed therein, a pair of initial squeeze or drawing-in rolls, with means for their rotation; a series of power driven rolls with means for their rotation in a direction opposite to the direction of the lower initial or drawing-in roll; and auxiliary rolls adjacent each outer roll of the power driven series, with means for their rotation in a direction opposite to that of the power driven rolls aforesaid.

2. In a dyeing machine, a vat, a framework immersed therein, a pair of initial squeeze or drawing-in rolls, with means for their rotation; a series of power driven rolls with means for their rotation in a direction opposite to the direction of the lower initial or drawing in roll; auxiliary rolls adjacent each outer roll of the power driven series, with means for their rotation in a direction opposite to that of the power driven rolls aforesaid, and a series of idler or carrier rolls located below the power driven rolls.

3. In a dyeing machine, a vat, a framework immersed therein, a pair of initial or drawing-in rolls, with means for their rotation; a series of power driven rolls with means for their rotation; an auxiliary roll between the initial or drawing-in rolls and the power driven rolls, an auxiliary roll at the opposite end of the series of power driven rolls, and a pressure roll mounted above the same for free vertical movement.

4. In a dyeing machine, a vat, a framework immersed therein, a pair of initial or drawing-in rolls, with means for their rotation; a series of power driven rolls with means for their rotation; an auxiliary roll between the initial rolls and the power driven rolls, an auxiliary roll at the opposite end of the series of power driven rolls, a pressure roll mounted above the same for free vertical movement, and a pair of drawing-out or final squeeze rolls above and beyond the auxiliary roll and its pressure roll aforesaid.



5. In a dyeing machine, a vat, and a framework inclosed therein and carrying rolls for the passage of material through dye in the vat aforesaid in multiple return courses, the rolls being arranged in substantially the following manner; an initial squeeze or drawing-in roll with means for its driving by power, a friction driven roll mounted above the aforesaid roll, and means to press it to the aforesaid roll; a series of power driven rolls, and gears therefor, pinions intermediate the aforesaid gears and whereby the rolls are driven in a uniform direction and oppositely to the direction of the lower initial or drawing-in roll, and means for their driving; an auxiliary roll geared to the roll of the series, nearest the initial roll, and oppositely rotated; an auxiliary roll geared to the roll of the series the most remote from the lower initial or drawing-in roll, and oppositely rotated; a series of lower rolls free to be rotated by the friction of the material engaging them; a lower final or drawing-out roll and means for its driving, a friction driven roll mounted above the lower final roll, and means to press it to the said roll.

6. In a dyeing machine, a vat, a framework, rolls mounted thereon, gears for the rolls, pinions intermediate the gears, and a shield to prevent material becoming entangled in the gears and pinions.

7. In a dyeing machine, a vat, a framework supported therein, rolls mounted substantially as set forth, to pass material in parallel horizontal and vertical courses over and around said rolls, and guides located to deflect the material at the termination of the horizontal courses to parallel positions in the vertical courses.

854,418. ENGINE-GOVERNOR. STEPHEN S. HALL, Portland, Conn., assignor to The Pickering Governor Co., Portland, Conn., a Corporation. Filed Jan. 4, 1907. Serial No. 350,842.

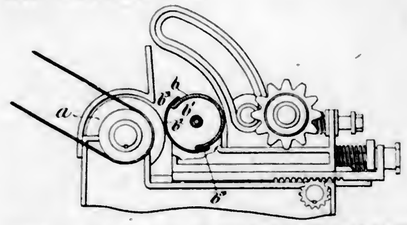
Claim.—1. The herein described valve stem adjusting device comprising a collar, an arm integral with the collar and projecting therefrom, a curved passage connecting the collar and arm, balls arranged within said passage, a valve stem extending into said passage and into contact with said balls, and a screw adapted to enter said arm and bear against said balls, substantially as described.



2. The herein described governor valve stem adjusting device comprising a collar, an integral arm extending horizontally therefrom, a passage through said collar and arm, balls within said passage, a valve stem entering the collar and bearing on said balls, a screw entering said arm and adapted to bear against said balls, substantially as described.

3. The herein described valve stem adjusting device comprising a collar, an integral horizontal arm, a continuous passage through said collar and arm, a valve stem entering said collar, balls arranged within said passage, a nut mounted in the outer end of said arm, and a screw passing through said nut and adapted to bear against said balls, substantially as described.

854,419. HIDE AND LEATHER WORKING MACHINE. HENRY A. HOLDER, West Lynn, Mass. Filed Oct. 4, 1904. Serial No. 227,102.



Claim.—1. In a machine for treating hides and leather, the combination of an air-tight receptacle provided with a flexible wall or face, means for supplying and maintaining fluid at any predetermined pressure unaffected by the varying degrees of displacement of the fluid due to the treatment of different thicknesses of hide.

2. In a machine for treating hides or leather, a yielding work support combined with means for supplying thereto liquid under pressure, and coöperating means for maintaining said fluid pressure at any predetermined point unaffected by the varying degrees of displacement of the fluid due to the treatment of different thicknesses of hides.

3. In a machine for treating hides or leather, the combination with an operating tool mounted to work upon the hide, and a work support arranged adjacent thereto, said work support being provided with a flexible yielding face supported in operative position by a fluid medium, means for forcing said fluid medium under pressure against the inside of said flexible face, and regulating means for maintaining said pressure constant at any predetermined point unaffected by the varying degrees of displacement of the fluid due to the treatment of different thicknesses of hide.

4. In a machine for treating hides, the combination with an operating tool of a work support arranged adjacent thereto and comprising a hollow receptacle having a yielding wall adapted to support the hide against the operating tool, means for supplying fluid under pressure to the inside of said receptacle, and a pressure regulating device for maintaining constant pressure at any predetermined point which may be desired unaffected by the varying degrees of displacement of the fluid due to the treatment of different thicknesses of hide.

5. A work rest for supporting hides in position to be treated by an operating tool comprising a stationary hollow casing provided with a lateral opening, and a flexible wall secured to said casing to close said opening, an inlet pipe for introducing fluid under pressure to the interior of the casing, and regulating devices for regulating the pressure by preventing it from rising above a predetermined point.

6. In a machine for treating hides and leather, in combination, a hollow work support provided with a movable portion normally subjected to an internal fluid pressure of a predetermined amount, and means to relieve said movable portion of said work support from an internal pressure in excess of the said predetermined amount created by an external pressure applied to said movable portion of said work support, substantially as described.

7. In a machine for treating hides and leather, in combination, a hollow work support provided with a movable portion normally subjected to an internal fluid pressure of a predetermined amount, means to relieve said movable portion of said work support from an internal pressure in excess of the said predetermined amount created by an external pressure applied to said movable portion of said work support, and means for automatically re-establishing said internal pressure at said predetermined amount when said external pressure is removed from said movable portion of said work support, substantially as described.

8. In a machine for treating hides and leather, in combination, a hollow work support provided with a movable portion normally subjected to an internal fluid pressure of a predetermined amount, and means communicating with said hollow work support for automatically maintaining said internal fluid pressure at said predetermined point, in the absence of an excessive external pressure on said work support, substantially as described.

9. In a machine for treating hides and leather, in combination, a hollow work support provided with a movable portion normally subjected to an internal fluid pressure of a predetermined amount, a source of fluid pressure in constant communication with said hollow work support, and means to automatically relieve said hollow work support from an internal fluid pressure in excess of a predetermined amount, substantially as described.

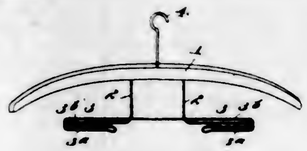
10. In a machine for treating hides and leather, in combination, a hollow work support provided with a movable portion, a tank or reservoir in communication with said hollow work support, a pump to supply fluid pressure to said reservoir, and means for relieving said pressure when it exceeds a predetermined amount in said reservoir, substantially as described.

11. In a machine for treating hides and leather, in combination, a hollow work support provided with a movable portion, a fluid pump in constant communication with said hollow work support to supply pressure thereto, and means to automatically relieve said work support from an internal pressure in excess of a predetermined amount, substantially as described.

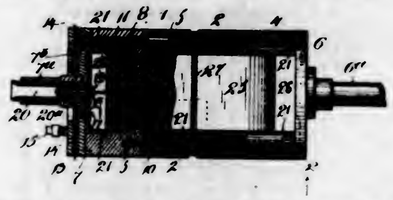
12. In a machine for treating hides and leather, in combination, a hollow work support consisting of a rigid portion and a yielding portion composed of substantially non-extensible material, and means in communication with said work support for automatically maintaining a fluid pressure within the hollow work support at a predetermined point unaffected by the varying degrees of displacement of the fluid due to the treatment of different thicknesses of hide, substantially as described.

854,420. SUIT-HANGER. ANDERS HOLMER, Chicago, Ill. Filed Aug. 6, 1906. Serial No. 329,330.

Claim.—In a suit-hanger, in combination, a cross-bar and a trousers-hanger secured to said cross-bar, said trousers-hanger being formed of an integral piece of wire, the ends of which form attaching posts secured to the under side of said cross-bar, the middle portions of the wire being bent to provide two arms each comprising two arm-portions lying relatively near each other, each of said arm-portions consisting of two members, the outer ends of said double arms being closed and the two members of each of said arm-portions lying in substantially the same vertical plane.



854,421. MAGNETO-ARMATURE. THEODORE HUBERT, New York, N. Y., assignor to Charles F. Splitdorf, New York, N. Y. Filed Oct. 13, 1906. Serial No. 338,707.



Claim.—1. An armature provided with a winding and having insulation over the winding, and flanges integral with the insulation extending between the sides of the winding and the sides of the armature.

2. An armature having a winding providing spaces between the sides of the winding and the sides of the armature, and insulating members laid over the winding and provided with flanges integral therewith that extend into the said spaces to prevent the leakage of current to the metal of the armature.

3. An armature having a winding providing spaces between the sides of the winding and the sides of the armature, and insulating members laid peripherally upon the winding on opposite faces thereof and extended around the ends of the winding to meeting points, said insulating members having integral flanges extending from one end thereof to the other and located in the spaces between the sides of the winding and the armature, whereby the corners between the insulating members and their flanges are integral and unbroken to prevent the escape of current from the winding.

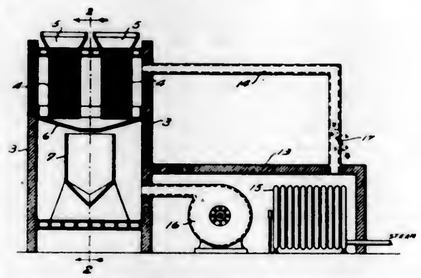
4. An armature provided with primary and secondary windings providing spaces between the sides of the armature and the adjacent sides of the secondary winding, and insulating members laid over the secondary winding on opposite faces thereof and extending unbroken around the respective ends of said winding to meeting points, said insulating members having integral flanges extending from one end to the other and located in said spaces between the sides of the armature and sides of the secondary winding.

5. An insulating member for an armature winding comprising a piece of insulating material relatively flat at its middle part and curved correspondingly at opposite ends and provided with parallel flanges at its edges that extend unbroken from end to end of the member providing a hollow inner space to receive an armature winding.

6. An armature comprising a series of laminated plates provided with heads forming a core, metallic blocks at opposite ends of said plates, screws passing through said blocks and plates securing them rigidly together, heads secured on the ends of said blocks and provided with spindles, primary and secondary windings upon said core, and insulating members located over the secondary winding and provided with integral flanges located between the secondary winding and the inner sides of the armature.

854,422. APPARATUS FOR MELTING AND PURIFYING BUTTER AND FATS. CARL A. JANSON, Chicago, Ill. Filed Oct. 5, 1905. Serial No. 281,422.

Claim.—1. The combination of a closed heating chamber, means for causing heated air to circulate through said chamber, a receptacle partly inclosed by the walls of said chamber and having a part extending outward from said chamber, the part of said receptacle which is within said chamber having perforated walls and the part which is outside of the chamber being arranged to receive a charge of fatty material in a solid state, and a reservoir within the chamber for receiving the molten fat which drips from said receptacle, all arranged to permit of continuous operation while the receptacle is successively charged and recharged.



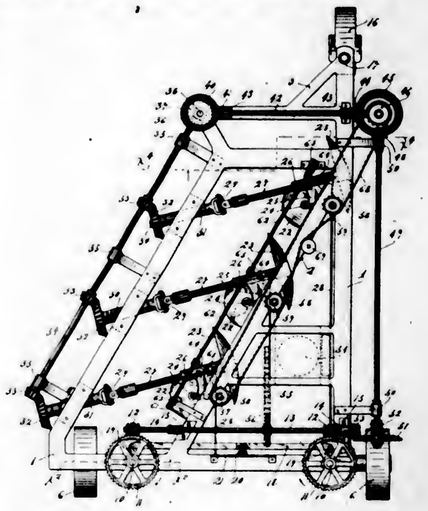
2. The combination of a closed heating chamber, means for causing heated air to circulate through said chamber, a receptacle partly inclosed by the walls of said chamber and having a part extending outward from said chamber, the part of said receptacle which is within said chamber having perforated walls and the part which is outside of the chamber being arranged to receive a charge of fatty material in a solid state, and a settling tank within the chamber for receiving the molten fat which drips from said receptacle, said settling tank having walls separate from those of the chamber and adapted to be heated by the air in the chamber.

3. The combination of a closed heating chamber, means for causing heated air to circulate through said chamber, a receptacle partly inclosed by the walls of said chamber and having a part extending outward from said chamber, the part of said receptacle which is within said chamber having perforated walls and the part which is outside of the chamber being arranged to receive a charge of fatty material in a solid state, a settling tank within the chamber for receiving the molten fat which drips from said receptacle, and adjustable means operated from the outside of said chamber for drawing off the upper portion of the contents of said settling tank to any desired level, without disturbing the portion of the contents below such level.

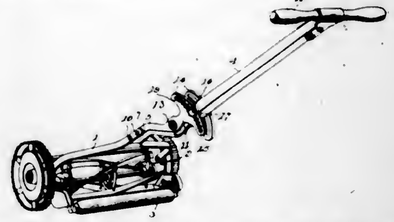
854,423. TRACTION GANG-PLOW. CHARLES J. JOHNSON, Lanham, Tex., assignor of one-half to James J. Lumpkin, Meridian, Tex. Filed June 11, 1906. Serial No. 321,100.

Claim.—1. In a traction gang plow, the combination with traction wheels, of a plurality of furrow opening devices, each comprising a pair of disks, an engine carried by said plow, and driving connections from said engine to said traction wheels and to said disks, the driving connections to said disks including flexible shafts, whereby the said disks may be raised and lowered, substantially as described.

2. In a traction gang plow, the combination with traction wheels mounted for angular movements to steer the machine, a caster wheel supporting the rear portion of the machine frame, a lever actuated connection for imparting parallel steering movements to the said traction wheels, a plurality of furrow opening devices, each comprising a pair of disks, an engine carried by the plow, driving connections between said engine and the said traction wheels arranged to drive said traction wheels while permitting angular steering movements thereof, and driving connections from said engine to said disks, including flexible shafts for raising and lowering said disks, and a clutch whereby said disks may be thrown into and out of action while the machine is under motion, substantially as described.



854,424. ATTACHMENT FOR LAWN-MOWERS. MAX KETTERER, Springfield, Ohio. Filed Aug. 22, 1904. Serial No. 221,618.



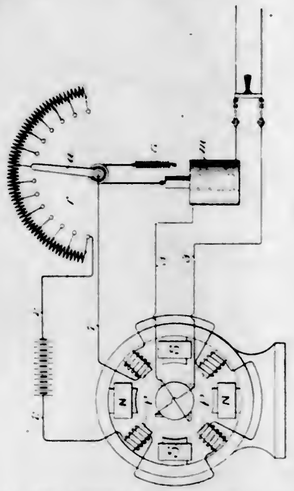
Claim.—1. The combination, with a lawn mower, a bail and a handle located in proximity thereto, of mechanism interposed between said bail and said handle and adapted to connect the one to the other, said mechanism comprising a body, means at one end thereof for securing said body to the bail and means at the opposite end thereof for securing the same to the handle, one of said points of connection being pivotal to permit variations of the angular position of the handle relatively to the bail, substantially as described.

2. The combination, with a lawn mower, a bail and a handle located in proximity thereto, of mechanism interposed between said bail and said handle and adapted to connect the one to the other, said mechanism comprising a body, means at one end thereof for securing said body to the bail, means at the opposite end thereof for securing the same to the handle, one of said points of connection being pivotal to permit variations of the angular position of the handle relatively to the bail, and means combined with the pivotal connection for securing the parts in such different angular positions, substantially as described.

3. The combination, with a lawn mower, a bail, and a handle, of an attachment comprising a body, means at one end thereof for connecting the same to the extremities of the bail, cheek plates at the opposite end of said body adapted to receive said handle and having slots therein, a pivot bolt for securing the handle between said cheek

plates, and clamping devices to secure said handle in different positions along said slot, substantially as described.

854,425. DYNAMO-ELECTRIC MACHINE WITH COMMUTATING-POLES. HENRY R. KING, Hinsdale, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 2, 1906. Serial No. 341,672.



Claim.—1. The combination with a direct-current dynamo-electric machine having compensating field windings acting upon the armature coils undergoing commutation, of means for energizing said compensating windings, and an automatic controlling apparatus governing said energizing means, said apparatus being responsive to changes in the current through the armature circuit of said machine.

2. The combination with a direct-current dynamo-electric machine having compensating field windings acting upon the armature coils undergoing commutation, of a magnet in series with the armature circuit, and means for variably energizing said compensating field windings, controlled through the agency of said magnet.

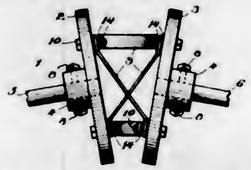
3. The combination with a direct-current dynamo-electric machine having compensating field-windings acting upon the armature coils undergoing commutation, of an energizing circuit for said compensating windings, distinct from the armature circuit, and means controlled by the variation of current flow in the armature circuit for varying the current in said energizing circuit.

4. The combination with a direct-current dynamo-electric machine having commutating poles facing the armature coils undergoing commutation, of an energizing circuit for said commutating poles, distinct from the armature circuit, a rheostat controlling the flow of current in said energizing circuit, and a solenoid included in series in the armature circuit, the core of said solenoid being arranged to operate said rheostat.

854,426. SHAFT-COUPLING. ROBERT L. LOWRY, Louisville, Ky., assignor of one-half to Harry B. Driver, Louisville, Ky. Filed Oct. 9, 1905. Serial No. 281,892.

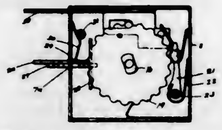
Claim.—1. In a flexible coupling, the combination of two disks arranged to be secured to the shaft-sections to be coupled, a plurality of connecting straps secured to said disks, said connecting straps being provided with slots through which the securing means pass, and linings for said slots, substantially as described.

2. In a flexible coupling, the combination of two coupling members, and connecting straps secured to said coupling members, said connecting straps being provided with slots through which the securing means pass, substantially as described and for the purposes set forth.



3. In a flexible coupling, the combination of a plurality of coupling members, connecting straps secured thereto and means for allowing said straps to move longitudinally on said coupling members, substantially as described.

854,427. PERMUTATION-LOCK. JAMES J. MURPHY, Terryville, Conn., assignor to Eagle Lock Co., Terryville, Conn., a Corporation. Filed Apr. 16, 1906. Serial No. 311,912.



Claim.—1. In a permutation lock, the combination with a bolt, of a dial, a wheel-tumbler rotatable independently of the said dial, and an automatic throw-off made and operating independently of the said bolt to "throw off" the said tumbler without rotating the dial and released for that purpose when the door or part to which the lock is applied is opened.

2. In a permutation lock, the combination with a bolt, of a dial, a wheel-tumbler rotatable independently of the said dial, and an automatic throw-off slide made and operating independently of the said bolt and coacting with the said tumbler and having a projecting outer end which normally holds it in its retired position, whereby when the door or part to which the lock is applied is opened, the slide is released and automatically operated to "throw off" the tumbler without rotating the dial.

3. In a permutation lock, the combination with a bolt, of a dial, two wheel-tumblers one of which is rotatable independently of the dial, and an automatic throw-off made and operating independently of the said bolt and coacting with the said independently rotatable wheel-tumbler which it "throws off" without rotating the dial.

4. In a permutation lock, the combination with a bolt, of a dial, an inner wheel-tumbler rotatable independently of the said dial, an outer wheel-tumbler rotatable therewith, and an automatic throw-off made and operating independently of the said bolt and coacting with the said inner wheel-tumbler to "throw off" the same without rotating the dial when the door or part to which the lock is applied is opened.

5. In a permutation lock, the combination with a bolt, of a dial, a wheel-tumbler rotatable independently of the dial and having a notch and a throw-off pin, and an automatic throw-off slide made and operating independently of the said bolt and coacting with the said pin to turn and so "throw off" the tumbler when the door or part to which the lock is applied is opened, the pin being in operative relation with respect to the slide when the notch is registered with the bolt.

6. In a permutation lock, the combination with a bolt, of a dial, a wheel-tumbler rotatable independently of the said dial and having a notch and a throw-off pin, an automatic throw-off slide made and operating independently of the said bolt and having a shoulder coacting with the said pin which is arranged with respect to the notch so that when the notch is in its unlocking position, the pin is in its operating position with respect to the shoulder on the slide, and means for resetting the said tumbler to secure different permutations for the lock.

7. In a permutation lock, the combination with a bolt, of a dial, two wheel-tumblers one of which is rotatable independently of the said dial and each having notches brought into registration for the opening of the lock, and a throw-off slide made and operating independently of the said bolt and released when the door or part to which the lock is applied is opened and then automatically operating to turn the tumbler rotatable independently of the dial so as to throw the notches of the said tumblers out of registration.

8. In a permutation lock, the combination with a dial, of two wheel-tumblers having notches brought into registration for the opening of the lock, one of the said tumblers carrying a throw-off pin and being rotatable independently of the said dial, an automatic throw-off slide having a shoulder for engaging with the said pin and having a projecting end by which it is held in its retired position, and a spring exerting a constant effort to operate the slide, whereby when the door or part to which the lock is applied is opened, the slide is automatically operated with the effect of moving the tumbler rotatable independently of the dial so as to throw the notches of the tumblers out of registration.

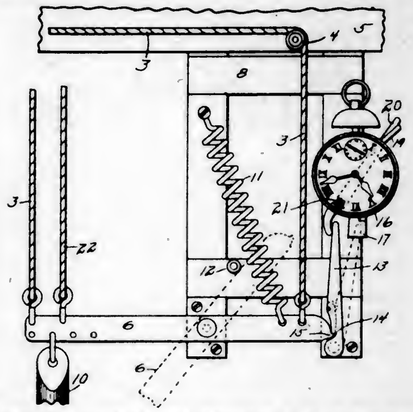
9. In a permutation lock, the combination with a bolt, of a knob and a dial, an outer wheel-tumbler fixed to rotate with the said knob and dial, an inner-wheel tumbler rotatable independently of the said outer tumbler but adapted to be picked up and set thereby and provided with a throw-off pin, the two tumblers being respectively formed with notches which are brought into registration for the opening of the lock, and a throw-off slide made and operating independently of the said bolt and coacting with the said pin for turning the inner tumbler, without rotating the said dial, to automatically throw its notch out of registration with the notch in the outer tumbler when the door or part to which the lock is applied is opened.

10. In a permutation lock adapted to be operated by audible as well as by visual guidance, the combination with a lock-case and cover, of a knob, a dial, a finder-pin carried by the dial and arranged to enter a hole in the said cover, and a spring interposed between the dial and cover and normally keeping the dial pushed away from the cover so that the pin will clear the said hole, whereby when the knob and dial are pushed inward to overcome the spring, the pin enters the hole and establishes a starting point for manipulating the lock by audible guidance.

854,428. DRAFT-CONTROLLING DEVICE FOR FURNACES. GEORGE R. MCDERMAND and ERNEST C. BLACKBURN, Dayton, Ohio. Filed Jan. 23, 1907. Serial No. 353,605.

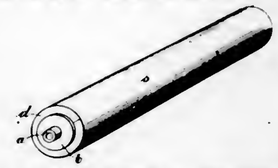
Claim.—1. In a draft-controlling device for furnaces embracing clock mechanism, a main lever, an upward pressure exerted on one end of said lever by means of a spring, and a downward pressure exerted upon the other end of said lever by an equivalent means, a chain connecting the check door of a furnace with one end of said lever, a chain connecting the draft door of a furnace with the other end of said lever, a chain connection extending from one end of said lever and providing means for manually operating said lever, an upright arm maintaining the lever in a horizontal position, a trip lever engaging said upright arm, and a trip piece actuated by the clock mechanism to operate the trip lever and thereby actuate said upright arm to release the said main lever at a predetermined time, substantially as specified.

2. In a draft-controlling device for furnaces embracing clock mechanism, a weight-controlled lever, a chain connection between one end of said lever and the check door of a furnace, a chain connection between the other end of said lever and the draft door of a furnace, a third chain connection extending from said lever, an upright detent arm engaging said lever to hold it against the weight thereon, said upright detent engaging a projected end of said lever in line with the pivot of said detent whereby the pressure of the lever maintains said arm stationary in its upright position, a trip arm attached to the winding shaft of the alarm mechanism of a clock, and a trip lever interposed between the upright detent and said trip arm and



whereby the upright detent is actuated at a predetermined time to release the chain connected lever, substantially as specified.

854,429. PLATEN OR ROLLER FOR TYPE-WRITING MACHINES. THOMAS F. NOLAN, New York, N. Y. Filed July 10, 1906. Serial No. 325,452.



Claim.—1. A platen or roller for typewriting machines comprising a wooden roller body with bearing and shaft, a tube or cylinder of felt made in one piece and forming a tube by parallel laced stitches concealed within the material, and a layer of suitable fabric saturated in a rubber solution applied to the outer surface of the felt cylinder.

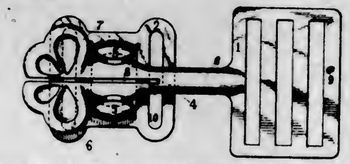
2. A platen or roller for typewriting machines comprising a wooden roller body with bearing and shaft, a tube or cylinder of felt made in one piece and forming a tube by parallel laced stitches concealed within the material, and a layer of silk saturated in a rubber solution applied to the outer surface of the felt cylinder.

3. The method of producing a platen or roller for typewriting machines consisting in preparing a felt cylinder by cutting the felt into an oblong of the desired size, making an incision along the longitudinal sides and producing parallel lace stitches by inserting the needle in one incision, drawing it out in the center line of the one side, carrying the thread over, running it through the center line of the other long side and the second incision, passing the needle through the incision a little farther in and out in the middle of this long side and carrying the thread over, etc., whereby parallel lace stitches result, drawing the lace stitches together until a tube or cylinder is formed, mounting the tube on the roller body, and applying a layer of silk saturated in rubber solution on the top surface of the felt cylinder.

854,430. CLASP. CHARLES H. PHILLIPS, Maplewood, Mass. Filed Mar. 24, 1906. Serial No. 307,771.

Claim.—1. A clasp having, in combination, a tongue member provided with a rounded enlarged portion between two portions of less width, a co-operating member provided with fabric-engaging surfaces formed to correspond substantially in shape with the enlarged portion of the tongue,

and means loosely connecting said members, substantially as described.



2. A clasp having, in combination, a tongue member provided at two points in its length with two enlarged portions and an intermediate narrower portion, a co-operating member having fabric-engaging lugs engaging the tongue at its intermediate narrow portion so as to prevent accidental longitudinal movement of the tongue in either direction, and means loosely connecting said members and permitting relative longitudinal engaging and disengaging movements thereof, substantially as described.

3. A clasp having, in combination, a tongue member provided with an enlarged portion, a co-operating member having fabric-engaging lugs engaging the tongue above and below the greatest width of the enlarged portion so as normally to prevent longitudinal movement of the tongue in either direction, and means loosely connecting said members and permitting relative longitudinal engaging and disengaging movements thereof, substantially as described.

4. A clasp having, in combination, a longitudinally-slotted tongue member having an enlarged portion forming substantially a segment of a sphere, a co-operating member provided with fabric-engaging lugs having inner surfaces corresponding substantially in form with the enlarged portion of the tongue, and means loosely connecting said members and permitting relative longitudinal engaging and disengaging movements thereof, substantially as described.

5. A clasp having, in combination, a tongue member provided with an enlarged rounded portion for engaging and holding the fabric of a garment to be supported, a head of greater width than said enlarged portion, and an intermediate narrow portion, a co-operating member provided with lugs for engaging the fabric at the enlarged portion of the tongue, and means loosely connecting said members and permitting relative longitudinal engaging and disengaging movements thereof, substantially as described.

854,431. PRESS OR SAD IRON. JAMES B. REPLOGLE, Chicago, Ill. Filed Sept. 6, 1906. Serial No. 333,519.

Claim.—1. A press or sad-iron, the smoothing surface of which is composed in part of both poles of an electro-magnet.

2. A press or sad iron comprising a body of paramagnetic material comprising a core and a shell, each terminating at subatantially the smoothing surface of the iron, and at said terminal portions magnetically separated, and an electro-magnet-coil mounted on said core.

3. A press or sad iron comprising a bi-polar electro-magnet having a peripheral pole and an opposite pole included within the confines of said peripheral pole, and a coil operatively associated with the inner pole.

4. A press or sad iron, comprising an electro-magnet having two separated poles presented toward the smoothing surface of the iron, and a coil, combined with a diamagnetic separator for the poles constituting part of the smoothing surface of the iron.

5. A press or sad-iron, comprising a shell of magnetic material such as iron, a hollow electro-magnet coil within said shell and a central core of magnetic material within said coil, the edges of the shell and the free end of the core forming the poles on an electro-magnet and being presented toward the smoothing surface of the iron.

6. A press or sad-iron comprising a shell of magnetic material, such as iron, a hollow electro-magnetic coil within said shell, a central core of magnetic material within said coil, a handle and a fastening means taking into the handle, shell and core for securing said core and handle to said shell.

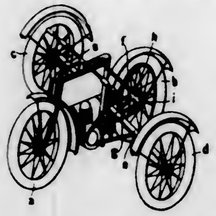
7. In combination, a press or sad-iron and a buck, both composed of para-magnetic material, such as iron, and a means for completing a magnetic flux through both devices to produce pressure upon fabric that may be contained therebetween.

8. In combination, a press or sad iron and a buck, the iron comprising a hollow magnetic body, presenting its edge, constituting a magnetic pole, to the smoothing surface, a pole within the body presenting its end to the smoothing surface and constituting an opposite magnet pole, a coil arranged to magnetize said body and core, and a diamagnetic separator between the core and body, and the buck being of paramagnetic material and of size sufficient to bridge from the core to the body of the iron.

9. A press or sad-iron, comprising in part the core of an electro-magnet, a plurality of magnetizing coils arranged for ready connection in parallel or series relation to vary the ampere turns thereof.

10. A press or sad-iron, made of para-magnetic material, and means for causing magnetic attraction between said iron and a buck of similar material with which it may be used.

854,432. MOTOR-VEHICLE. GEORG ROTHGIESSER, Berlin, Germany. Filed Feb. 8, 1907. Serial No. 356,312.



Claim.—1. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel and a seat, which seats are arranged as close to the motor bicycle as possible, so that the motor and steering gear can be operated and attended from both seats.

2. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel, said frame consisting of a cross-beam passing clear crosswise through the frame of the bicycle, and seats on said cross beam arranged as close as possible to the motor bicycle.

3. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel, said frame consisting of a cross-beam passing clear crosswise through the frame of the bicycle, seats on said cross bar, and a horizontal axis on the frame of the bicycle to which the cross beam is pivoted.

4. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel and a seat, between the frame of the bicycle and the frame of the runner wheels, said runner wheel frame consists of a cross beam, and an elastic device mounted between the cross beam and the bicycle frame to adjust the load on the rear wheel.

5. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel and a seat, which seats are arranged as close to the motor bicycle as possible, so that the motor and steering gear can be operated and attended from both seats, said frame consisting of a pivotally arranged cross beam passing clear through the frame of the bicycle, and an elastic device for adjusting the load on the rear wheel consisting of a rope and two springs so arranged that by pulling or releasing said rope the cross beam is raised or lowered.

854,433. JEWELER'S CUTTING-PLIERS. HARRY B. ROWAN, North Attleboro, Mass. Filed Nov. 30, 1906. Serial No. 345,693.



Claim.—1. Jeweler's pliers having jaws provided with meeting gripping surfaces and cutting edges extending laterally in line with the outer edges of the gripping jaws.

2. Jeweler's pliers having jaws movable toward and from each other and provided with cutting edges transverse to the direction of such motion, the jaws having also gripping surfaces of extended area.

3. Jeweler's pliers having jaws provided with meeting gripping surfaces and cutting edges extending laterally on each side of the gripping surfaces.

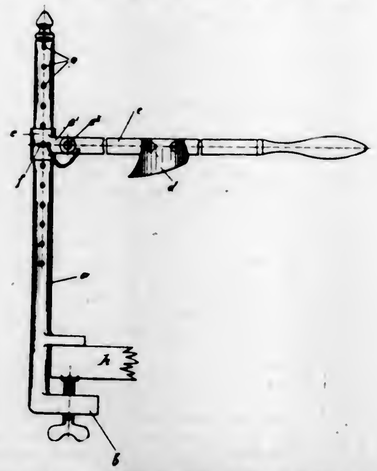
4. Jeweler's pliers having jaws movable toward and from each other, and provided on their extremities with transverse edges for cutting and with intermediate wide surfaces for gripping.

5. Jeweler's pliers having jaws formed with cutting edges extending transversely to the direction in which the jaws approach and recede from each other, and nipper blocks having gripping surfaces secured to said jaws.

6. Jeweler's pliers having jaws formed with cutting edges extending transversely to the direction in which the jaws approach and recede from each other, and nipper blocks having gripping surfaces secured to said jaws intermediate the extremities of the lateral cutting edges.

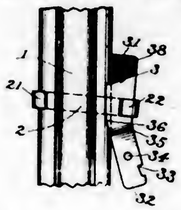
7. Jeweler's pliers having jaws formed with cutting edges extending transversely to the direction in which the jaws approach and recede from each other, each jaw having a recess, and nipper blocks formed with extended co-operating gripping surfaces, set into said recesses and secured therein to the jaws.

854,434. CAN-OPENER. HEINRICH RÜTT, Rheydt, Germany. Filed July 13, 1906. Serial No. 326,014.



Claim.—A can opener provided with a perforated upright having a pair of integral parallel arms, a clamp screw engaging the lower arm, a perforated tubular slide having a laterally projecting arm, a pin for locking the slide to the upright, a vertically oscillating lever pivoted to the arm, and a cutter secured to the lever, substantially as specified.

854,435. RAIL-ANTICREEPER. NEIL E. SALSICH, Hartland, Wis. Filed Jan. 2, 1907. Serial No. 350,439.



Claim.—1. In a rail anti-creeper, a yoke, a wedge for said yoke, and an extension arm on said wedge and forming an integral part therewith and having a hole therein to receive a spike driven into a tie for anchoring said wedge, substantially as described.

2. In a rail anti-creeper, a yoke, a wedge for said yoke, and an extension upon said wedge having a hole to receive a spike driven into a tie for anchoring said wedge, substantially as described.

3. In a rail anti-creeper, a yoke adapted to embrace a rail and a wedge and having an angle at the line of junction of the rail and wedge, a wedge, and means for anchoring said wedge, substantially as described.

4. In a rail anti-creeper, a yoke embracing a rail and a wedge and having an angle at the line of junction of the rail and wedge, and a wedge having a twist whereby a projecting free end of the wedge may approach the plane of the surface of the rail engaged by said yoke, substantially as described.

5. In a rail anti-creeper, a yoke embracing a rail and a wedge and having an angle at the line of junction of the rail and wedge, a wedge having a twist whereby a projecting free end of the wedge may approach the plane of the surface of the rail engaged by said yoke, and means for anchoring the wedge, substantially as described.

6. In a rail anti-creeper, a yoke embracing a rail and a wedge, a wedge having a groove on the surface of contact with the rail, and an extension arm on said wedge and forming an integral part therewith and having a hole therein to receive a spike driven into a tie for anchoring the wedge, substantially as described.

7. In a rail anti-creeper, a yoke adapted to embrace a rail and a wedge and having an angle at the line of junction of the rail and wedge, a wedge having a groove in the surface of contact with the rail, and means for anchoring said wedge, substantially as described.

8. In a rail anti-creeper, a yoke embracing a rail and a wedge, a wedge bent at an angle and extending beyond the angle in an extension for anchoring the wedge, and means for swinging the wedge upon a fulcrum at or near the angle of the wedge to increase the engagement between the wedge the rail and the yoke, substantially as described.

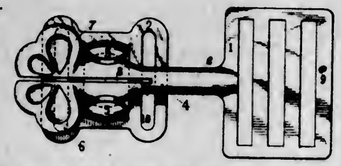
9. In a rail anti-creeper, a yoke, a sliding wedge for said yoke, and an extension member for said wedge and adapted to pass over and in contact with the upper surface of a tie and having a hole for a spike whereby it may be anchored to a tie, substantially as described.

10. In a rail anti-creeper, a wedge fulcrumed on the rail, a yoke embracing said wedge and the rail, and means for anchoring the wedge, substantially as described.

11. In a rail anti-creeper, an anchor part fulcrumed on the rail, a yoke embracing said part and the rail, and an extension on said anchor part having a hole for a spike to anchor said part to a tie, substantially as described.

12. In a rail anti-creeper, a yoke embracing a rail and an anchor part, an anchor part bent at an angle and extending on one side of the angle to engage said yoke and on the other side of the angle to provide means for anchoring the part, and means for swinging the anchor part upon

and means loosely connecting said members, substantially as described.



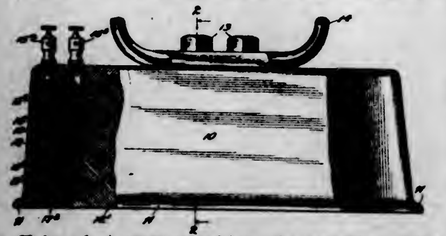
2. A clasp having, in combination, a tongue member provided at two points in its length with two enlarged portions and an intermediate narrower portion, a co-operating member having fabric-engaging lugs engaging the tongue at its intermediate narrow portion so as to prevent accidental longitudinal movement of the tongue in either direction, and means loosely connecting said members and permitting relative longitudinal engaging and disengaging movements thereof, substantially as described.

3. A clasp having, in combination, a tongue member provided with an enlarged portion, a co-operating member having fabric-engaging lugs engaging the tongue above and below the greatest width of the enlarged portion so as normally to prevent longitudinal movement of the tongue in either direction, and means loosely connecting said members and permitting relative longitudinal engaging and disengaging movements thereof, substantially as described.

4. A clasp having, in combination, a longitudinally-slotted tongue member having an enlarged portion forming substantially a segment of a sphere, a co-operating member provided with fabric-engaging lugs having inner surfaces corresponding substantially in form with the enlarged portion of the tongue, and means loosely connecting said members and permitting relative longitudinal engaging and disengaging movements thereof, substantially as described.

5. A clasp having, in combination, a tongue member provided with an enlarged rounded portion for engaging and holding the fabric of a garment to be supported, a head of greater width than said enlarged portion, and an intermediate narrow portion, a co-operating member provided with lugs for engaging the fabric at the enlarged portion of the tongue, and means loosely connecting said members and permitting relative longitudinal engaging and disengaging movements thereof, substantially as described.

854,431. PRESS OR SAD IRON. JAMES B. REPLOGLE, Chicago, Ill. Filed Sept. 6, 1906. Serial No. 333,519.



Claim.—1. A press or sad-iron, the smoothing surface of which is composed in part of both poles of an electro-magnet.

2. A press or sad iron comprising a body of paramagnetic material comprising a core and a shell, each terminating at substantially the smoothing surface of the iron, and at said terminal portions magnetically separated, and an electro-magnet-coil mounted on said core.

3. A press or sad iron comprising a bi-polar electro-magnet having a peripheral pole and an opposite pole included within the confines of said peripheral pole, and a coil operatively associated with the inner pole.

4. A press or sad iron, comprising an electro-magnet having two separated poles presented toward the smoothing surface of the iron, and a coil, combined with a diamagnetic separator for the poles constituting part of the smoothing surface of the iron.

5. A press or sad-iron, comprising a shell of magnetic material such as iron, a hollow electro-magnet coil within said shell and a central core of magnetic material within said coil, the edges of the shell and the free end of the core forming the poles on an electro-magnet and being presented toward the smoothing surface of the iron.

6. A press or sad-iron comprising a shell of magnetic material, such as iron, a hollow electro-magnetic coil within said shell, a central core of magnetic material within said coil, a handle and a fastening means taking into the handle, shell and core for securing said core and handle to said shell.

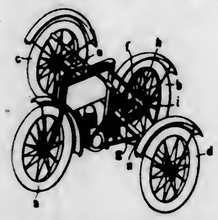
7. In combination, a press or sad-iron and a buck, both composed of para-magnetic material, such as iron, and a means for completing a magnetic flux through both devices to produce pressure upon fabric that may be contained therebetween.

8. In combination, a press or sad iron and a buck, the iron comprising a hollow magnetic body, presenting its edge, constituting a magnetic pole, to the smoothing surface, a pole within the body presenting its end to the smoothing surface and constituting an opposite magnet pole, a coil arranged to magnetize said body and core, and a diamagnetic separator between the core and body, and the buck being of paramagnetic material and of size sufficient to bridge from the core to the body of the iron.

9. A press or sad-iron, comprising in part the core of an electro-magnet, a plurality of magnetizing coils arranged for ready connection in parallel or series relation to vary the ampere turns thereof.

10. A press or sad-iron, made of para-magnetic material, and means for causing magnetic attraction between said iron and a buck of similar material with which it may be used.

854,432. MOTOR-VEHICLE. GEORG ROTHOIESSER, Berlin, Germany. Filed Feb. 8, 1907. Serial No. 356,312.



Claim.—1. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel and a seat, which seats are arranged as close to the motor bicycle as possible, so that the motor and steering gear can be operated and attended from both seats.

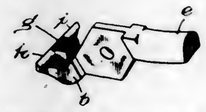
2. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel, said frame consisting of a cross-beam passing clear crosswise through the frame of the bicycle, and seats on said cross beam arranged as close as possible to the motor bicycle.

3. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel, said frame consisting of a cross-beam passing clear crosswise through the frame of the bicycle, seats on said cross bar, and a horizontal axis on the frame of the bicycle to which the cross beam is pivoted.

4. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel and a seat, between the frame of the bicycle and the frame of the runner wheels, said runner wheel frame consists of a cross beam, and an elastic device mounted between the cross beam and the bicycle frame to adjust the load on the rear wheel.

5. In a motor vehicle the combination of a motor bicycle with a frame having on each side of the motor bicycle a runner wheel, said frame consisting of a pivotally arranged cross beam passing clear through the frame of the bicycle, and an elastic device for adjusting the load on the rear wheel consisting of a rope and two springs so arranged that by pulling or releasing said rope the cross beam is raised or lowered.

854,433. JEWELER'S CUTTING-PLIERS. HARRY B. ROWAN, North Attleboro, Mass. Filed Nov. 30, 1906. Serial No. 345,693.



Claim.—1. Jeweler's pliers having jaws provided with meeting gripping surfaces and cutting edges extending laterally in line with the outer edges of the gripping jaws.

2. Jeweler's pliers having jaws movable toward and from each other and provided with cutting edges transverse to the direction of such motion, the jaws having also gripping surfaces of extended area.

3. Jeweler's pliers having jaws provided with meeting gripping surfaces and cutting edges extending laterally on each side of the gripping surfaces.

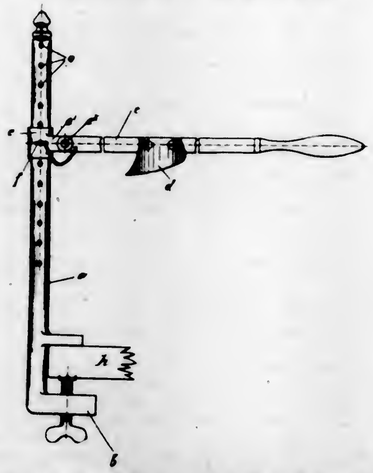
4. Jeweler's pliers having jaws movable toward and from each other, and provided on their extremities with transverse edges for cutting and with intermediate wide surfaces for gripping.

5. Jeweler's pliers having jaws formed with cutting edges extending transversely to the direction in which the jaws approach and recede from each other, and nipper blocks having gripping surfaces secured to said jaws.

6. Jeweler's pliers having jaws formed with cutting edges extending transversely to the direction in which the jaws approach and recede from each other, and nipper blocks having gripping surfaces secured to said jaws intermediate the extremities of the lateral cutting edges.

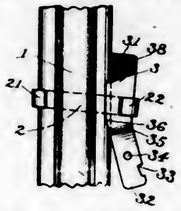
7. Jeweler's pliers having jaws formed with cutting edges extending transversely to the direction in which the jaws approach and recede from each other, each jaw having a recess, and nipper blocks formed with extended co-operating gripping surfaces, set into said recesses and secured therein to the jaws.

854,434. CAN-OPENER. HEINRICH RÜTT, Rheydt, Germany. Filed July 13, 1906. Serial No. 326,014.



Claim.—A can opener provided with a perforated upright having a pair of integral parallel arms, a clamp screw engaging the lower arm, a perforated tubular slide having a laterally projecting arm, a pin for locking the slide to the upright, a vertically oscillating lever pivoted to the arm, and a cutter secured to the lever, substantially as specified.

854,435. RAIL-ANTICREEPER. NEIL E. SALSICH, Hartland, Wis. Filed Jan. 2, 1907. Serial No. 350,439.



Claim.—1. In a rail anti-creeper, a yoke, a wedge for said yoke, and an extension arm on said wedge and forming an integral part therewith and having a hole therein to receive a spike driven into a tie for anchoring said wedge, substantially as described.

2. In a rail anti-creeper, a yoke, a wedge for said yoke, and an extension upon said wedge having a hole to receive a spike driven into a tie for anchoring said wedge, substantially as described.

3. In a rail anti-creeper, a yoke adapted to embrace a rail and a wedge and having an angle at the line of junction of the rail and wedge, a wedge, and means for anchoring said wedge, substantially as described.

4. In a rail anti-creeper, a yoke embracing a rail and a wedge and having an angle at the line of junction of the rail and wedge, and a wedge having a twist whereby a projecting free end of the wedge may approach the plane of the surface of the rail engaged by said yoke, substantially as described.

5. In a rail anti-creeper, a yoke embracing a rail and a wedge and having an angle at the line of junction of the rail and wedge, a wedge having a twist whereby a projecting free end of the wedge may approach the plane of the surface of the rail engaged by said yoke, and means for anchoring the wedge, substantially as described.

6. In a rail anti-creeper, a yoke embracing a rail and a wedge, a wedge having a groove on the surface of contact with the rail, and an extension arm on said wedge and forming an integral part therewith and having a hole therein to receive a spike driven into a tie for anchoring the wedge, substantially as described.

7. In a rail anti-creeper, a yoke adapted to embrace a rail and a wedge and having an angle at the line of junction of the rail and wedge, a wedge having a groove in the surface of contact with the rail, and means for anchoring said wedge, substantially as described.

8. In a rail anti-creeper, a yoke embracing a rail and a wedge, a wedge bent at an angle and extending beyond the angle in an extension for anchoring the wedge, and means for swinging the wedge upon a fulcrum at or near the angle of the wedge to increase the engagement between the wedge the rail and the yoke, substantially as described.

9. In a rail anti-creeper, a yoke, a sliding wedge for said yoke, and an extension member for said wedge and adapted to pass over and in contact with the upper surface of a tie and having a hole for a spike whereby it may be anchored to a tie, substantially as described.

10. In a rail anti-creeper, a wedge fulcrumed on the rail, a yoke embracing said wedge and the rail, and means for anchoring the wedge, substantially as described.

11. In a rail anti-creeper, an anchor part fulcrumed on the rail, a yoke embracing said part and the rail, and an extension on said anchor part having a hole for a spike to anchor said part to a tie, substantially as described.

12. In a rail anti-creeper, a yoke embracing a rail and an anchor part, an anchor part bent at an angle and extending on one side of the angle to engage said yoke and on the other side of the angle to provide means for anchoring the part, and means for swinging the anchor part upon

a fulcrum at or near the angle to effect or increase the engagement of the anchor part the rail and the yoke, substantially as described.

13. In a rail anti-creeper, a yoke shaped at one end to engage one side of the foot of a rail and to pass under the foot of the rail and having an angle at the alternative edge of the rail and projecting beyond the alternative edge of the rail and shaped at its free end to engage an anchor part, an anchor part, said anchor part being fulcrumed upon the rail and extending upon one side of the fulcrum to engage said yoke and upon the other side of the fulcrum to engage a tie and means for anchoring said part to the tie, substantially as described.

14. In a rail anti-creeper, a yoke shaped at one end to engage one side of the foot of a rail and to pass under the foot of the rail and having an angle at the alternative edge of the foot of the rail and projecting beyond the alternative edge of the foot of the rail and shaped at its free end to engage an anchor part, an anchor part having a fulcrum upon the edge of the rail and extending on one side of the fulcrum to engage the free end of the yoke and on the other side of the fulcrum as an operating and anchoring extension, and means for swinging said anchor part upon its fulcrum, substantially as described.

15. In a rail anti-creeper, a yoke embracing a rail and a wedge, a wedge bent at an angle and extending beyond the angle in an extension for anchoring the wedge, and an inclined spike-engaging part of said extension whereby the travel of the wedge with the rail will swing the wedge upon its angle as a fulcrum to increase the engagement between the wedge and the yoke, substantially as described.

16. In a rail anti-creeper, an anchor part fulcrumed on the rail, a yoke embracing said part and the rail, an edge on said anchor part inclined to the edge of the rail and adapted to engage a driven spike and whereby, by the movement of the anchor part jointly with the rail and sliding upon the spike, the anchor part will be swung upon its fulcrum, substantially as described.

17. In a rail anti-creeper, a yoke embracing a rail and an anchor part; an anchor part bent at an angle, engaging the foot of the rail at the angle and extending on one side of the angle to engage said yoke and on the other side of the angle to provide means for anchoring the part, and a surface on said anchor part and inclined to the edge of the rail and adapted to engage a driven spike and whereby the joint movement of the wedge and rail past the driven spike will swing the anchor part upon its point of engagement with the rail, substantially as described.

18. In a rail anti-creeper, a wedge member adapted to be spiked to a tie, and having an edge adapted to lie in contact with the rail, a yoke bar adapted to include within two hook ends the rail and the wedge, and teeth on the face of said wedge adapted to lie in contact with the rail, substantially as described.

19. In a rail anti-creeper, a yoke embracing a rail and an anchor part, an anchor part adapted to lie within said yoke and having teeth to engage the rail, and an inclined edge on said anchor part inclined to the direction of creeping of the rail when the anchor part is in position and adapted to rest slidably against a driven spike whereby the movement of said anchor with the rail will increase the engagement of the anchor with the rail, substantially as described.

20. In a rail anti-creeper, an anchor part having a frictional contact surface for a railway rail, corrugations in said engaging surface to increase the frictional engagement between the anchor and the rail, a projecting part on said anchor and adapted to lie upon a tie, and means for anchoring said anchor part upon the tie, substantially as described.

21. In a rail anti-creeper, an anchor wedge, means for anchoring said part to a tie by spikes, a yoke for affixing said part frictionally to a rail, and a spike engaging surface on said part and inclined to the line of travel of said rail whereby any movement of the anchor part with the rail the engagement of the anchor with the rail will be increased, substantially as described.

22. In a rail anti-creeper, an anchor wedge, means for anchoring said wedge to a tie by spikes, a yoke for affixing said part frictionally to the rail, corrugations on said part in its rail-engaging surface for increasing its grip upon the rail, and a spike-engaging surface on said part and inclined to the line of travel of the rail when said part is adjusted to the rail whereby by any movement of said anchor part with the rail the engagement of said part with the rail will be increased, substantially as described.

23. In a rail anti-creeper, a yoke adapted to embrace a rail and an anchor and having an angle near the line of contact of the rail and the anchor, an anchor, and means for spiking said anchor to a tie, substantially as described.

24. In a rail anti-creeper, a yoke adapted to embrace a rail and an anchor and having an angle near the line of contact of the rail and the anchor, an anchor having a twist whereby a projecting end of the anchor may approach the plane of the lower surface of the rail engaged by said yoke, and means for attaching said anchor to a tie, substantially as described.

25. In a rail anti-creeper, a yoke adapted to embrace a rail and an anchor and having an angle near the line of contact of the rail and the anchor, and an anchor having a twist whereby a projecting end of the anchor may approach the plane of the lower surface of the rail engaged by said yoke, substantially as described.

26. In a rail anti-creeper, a yoke embracing a rail and an anchor and having an angle near the line of junction of the rail and anchor, an anchor having a groove on the surface of contact with the rail, and means for spiking the anchor to a tie, substantially as described.

27. In a rail anti-creeper, a yoke embracing a rail and an anchor, an anchor having a groove on the surface of contact with the rail, and means for spiking the anchor to a tie, substantially as described.

28. In a rail anti-creeper, a yoke embracing a rail and an anchor part, an anchor part bent at an angle and extending beyond the angle in an extension adapted to lie upon the upper surface of a tie, and an inclined spike-engaging part of said extension whereby the travel of the anchor part with the rail will swing the anchor part upon its fulcrum to increase the engagement between the anchor part and the yoke, substantially as described.

29. In a rail anti-creeper, a yoke embracing a rail and an anchor part, an anchor part fulcrumed upon the rail, and an inclined spike-engaging edge on said anchor part whereby the travel of the anchor part with the rail will, through the engagement of the said edge with a driven spike, swing the anchor part upon its fulcrum to increase its engagement between the anchor part and the yoke, substantially as described.

30. In a rail anti-creeper, an anchor fulcrumed on the rail, a yoke embracing said anchor and the rail, and means for spiking the anchor to a tie, substantially as described.

854,436. ELECTRICAL SWITCH. WILLIAM M. SCOTT, Philadelphia, Pa., assignor to The Cutter Electrical & Manufacturing Company, Philadelphia, Pa., a Corporation of New Jersey. Filed May 26, 1904. Serial No. 209,827.

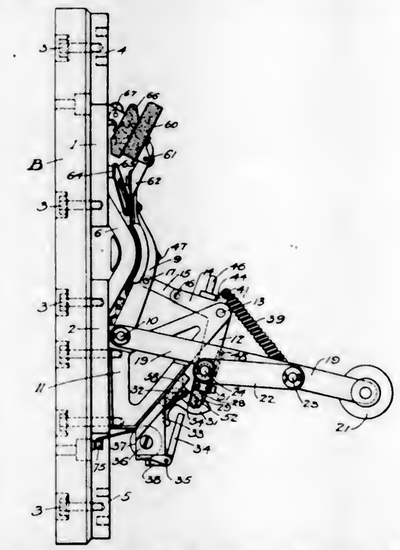
Claim.—1. In combination, fixed contacts, a plurality of members for engaging said contacts, a toggle for operating each of said members, and a toggle for operating said first mentioned toggles.

2. In combination, a pair of fixed contacts, a plurality of independent members for engaging said contacts, a toggle for each member, means for interconnecting said toggles whereby said members are simultaneously operated, and means for engaging said interconnecting means for restraining said members.

3. In combination, fixed contacts, a plurality of members for engaging said contacts, a toggle for each of said members, means for interconnecting said toggles, and a toggle for operating said interconnecting means.

4. In combination, fixed contacts, a plurality of members for engaging said contacts, a toggle, and a force multiplying device intermediate said toggle and each of said members.

5. In combination, a pair of fixed contacts, a plurality of members for bridging said contacts, a toggle for operating each of said bridging members, means for interconnecting said toggles, and a toggle for operating said aforementioned toggles.



6. In combination, fixed contacts, a plurality of laminated bridging members for engaging said contacts, a primary toggle, and a secondary toggle for cramping each of said laminated bridging members into engagement with its co-operating fixed contacts, said secondary toggles being connected in tandem with said primary toggle.

7. In combination, a pair of fixed contacts, a plurality of laminated members for bridging said contacts, a primary toggle, and a secondary toggle for cramping each of said laminated bridging members into engagement with said contacts, said secondary toggles being connected with said primary toggle.

8. In combination, fixed contacts, a plurality of independently pivoted members for engaging said contacts, a toggle for operating each of said members, and a toggle for operating said aforementioned toggles.

9. In combination, fixed contacts, a plurality of independently pivoted members for engaging said contacts, a toggle for operating each of said members, means for interconnecting said toggles, and a toggle for operating said aforementioned toggles.

10. In combination, a pair of contacts located one vertically above the other, a plurality of laminated members for bridging said contacts, a toggle for cramping each of said laminated members into engagement with said contacts, and a toggle for operating said aforementioned toggles.

11. In combination, fixed contacts, a member for engaging said contacts, a toggle for operating said member, a second toggle for operating said first mentioned toggle, a connector between said toggles, and means engaging said connector for restraining said toggles in extended position.

12. In combination, fixed contacts, a member for engaging said contacts, a toggle for operating said member, a second toggle for operating said first mentioned toggle, a connector between said toggles, means engaging said connector for restraining said toggles in extended position, and electro-responsive means for controlling said restraining means.

13. In combination, a pair of fixed contacts, a plurality of members for engaging said contacts, means for operating each member, a latching device for restraining all said operating means, and electro-responsive means for controlling said restraining means.

14. In combination, fixed contacts, a plurality of members for engaging said contacts, a toggle for operating each member, a latch for restraining said toggles, and electro-responsive means controlling said latch.

15. In combination, a pair of fixed contacts, a plurality of members for engaging said contacts, a plurality of force multiplying devices connected in tandem for operating said members, means for restraining said devices, and electro-responsive means for controlling said restraining means.

16. In combination, fixed contacts, a plurality of members for engaging said contacts, a toggle for operating each member, means for interconnecting said toggles, a toggle for operating said first mentioned toggles, and electro-responsive means for controlling said members.

17. In combination, fixed contacts, a plurality of members for engaging said contacts, a primary toggle, a secondary toggle connected with each member and with said primary toggle, means for restraining said members, and electro-responsive means for controlling said restraining means.

18. In combination, fixed contacts, a plurality of members for engaging said contacts, a toggle for operating each of said members, means for interconnecting said toggles, means for restraining said toggles, electro-responsive means for controlling said restraining means, and a contact controlling a circuit of said electro-responsive means, said contact being movable with said interconnecting means.

19. In combination, fixed contacts, a member for engaging said contacts, a toggle for operating said member, a second toggle for operating said first mentioned toggle, and a spring connected between said toggles and operating to cause said toggles to collapse.

20. In combination, fixed contacts, a pivoted member adapted to engage said contacts, a toggle having an element pivoted concentrically with said member and a second toggle connected intermediate said member and said first mentioned toggle.

21. In combination, fixed contacts, a plurality of members for engaging said contacts, a toggle for operating each member, an element of each of said toggles having a bell crank extension, and a second toggle operating upon said bell crank extensions.

22. In combination, fixed contacts, a pivoted laminated member for engaging said contacts, a toggle for cramping said laminated member into engagement with said contacts, a second toggle for operating said first mentioned toggle and comprising an element pivoted concentrically with said laminated member.

23. In combination, fixed contacts, a plurality of pivoted laminated members for engaging said contacts, a toggle for cramping each laminated member into engagement with said contacts, an operating lever, and means connecting an element of each toggle with said operating lever.

24. In an electrical switch, a pivoted movable contact member, a toggle link pivoted concentrically with said contact member, a second toggle connected to said contact member, and another link of said first-mentioned toggle engaging said second toggle.

25. In an electrical switch, a pivoted movable contact member, an operating handle pivoted concentrically with said contact member, a toggle connected to said contact member, and a link intervening between said handle and said toggle, said handle and link constituting a second toggle.

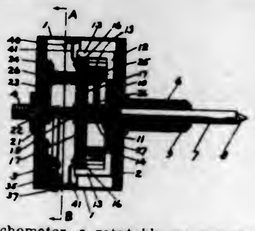
854,437. TACHOMETER. HARRY SHOEMAKER, Jersey City, N. J., assignor of one-half to Cornelius D. Ehert, Philadelphia, Pa. Filed July 30, 1906. Serial No. 328,371.

Claim.—1. In a tachometer, a rotatable magnet system, a magnetizable mass carrying a winding associated with and in the field of said magnet system, indicating means carried by said magnetizable mass, and means for opposing the movement of said magnetizable mass.

2. In a tachometer, a rotatable magnet system, a mag-

netizable member carrying a squirrel-cage winding associated with and in the field of said magnet system, indicating means carried by said magnetizable member, and means for opposing the movement of said magnetizable member.

3. In a tachometer, a rotatable magnet system, a magnetizable mass mounted concentrically therewith for limited movement, a short circuited winding disposed upon said magnetizable mass, and indicating means carried by said magnetizable mass.



4. In a tachometer, a rotatable magnet system, a relatively stationary indicating member comprising a short circuited winding, and means opposing the movement of said indicating member.

5. In a tachometer, the combination with an indicating element of means for opposing the torque of said element comprising a spring operating tangentially upon the shaft of the indicating element, means for adjusting the tension of said spring, and means carrying said adjusting means and itself adjustable to vary the zero of the instrument.

6. In a tachometer, a multipolar permanent magnet constituting a rotatable magnet system, an indicating member comprising a magnetizable mass carrying a short circuited winding and disposed in the field of said magnet system, indicating means carried by said indicating member, and means for opposing the movement of said indicating member.

7. In a tachometer, a rotatable magnet system, an indicating member comprising a magnetizable mass carrying a short circuited winding and disposed in the field of said magnet system, means for opposing the movement of said indicating member, and means for adjusting the zero of the instrument.

8. In a tachometer, the combination with a rotatable magnet system, of an indicating member capable of limited movement and comprising a magnetizable mass carrying a short circuited winding and disposed in the field of said magnet system, a spring for opposing the movement of said indicating member, means for adjusting said spring, and means for varying the zero of the instrument.

9. In a tachometer, the combination with a rotatable magnet system, of a relatively stationary indicating member comprising a magnetizable mass carrying a short circuited winding and disposed in the field of said magnet system, a shaft supporting said indicating member, opposing springs operating tangentially upon said shaft, and means for adjusting the tension of said springs.

10. In a tachometer, the combination with a rotatable magnet system, of a relatively stationary indicating member comprising a magnetizable mass carrying a short circuited winding and disposed in the field of said magnet system, a shaft supporting said indicating member, springs operating upon said shaft to oppose the movement of said indicating member, means for adjusting said springs, and means for varying the zero of the instrument.

11. In a tachometer, the combination with a rotatable magnet, of an indicating member comprising a ring of magnetizable material disposed in the field of said magnet, a winding carried by said ring, means for opposing the movement of said ring, a shaft, an arm supporting said ring upon said shaft, and a counterpoise operating to balance said arm about said shaft.

12. In a tachometer, the combination with an indicating element, of means for opposing the torque of said element, means for adjusting said opposing means, and means carrying said adjusting means and itself adjustable to vary the zero of the instrument.

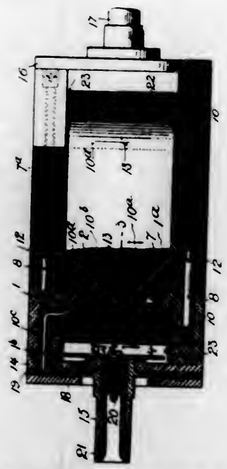
13. In a tachometer, the combination with a rotatable magnet, of an indicating member comprising a ring of magnetizable material disposed in the field of said magnet, a winding carried by said ring, a shaft, an arm supporting said ring upon said shaft, means for opposing the movement of said ring, a counterpoise for balancing the ring member about said shaft, and a post for supporting said shaft extending through said ring, there being a gap between said counterpoise and ring.

14. In a tachometer, the combination with an indicating element, of means for opposing the torque of said element comprising a spring, a lever to which said spring is secured pivoted upon a carrying member, and means for adjusting said carrying member to vary the zero of the instrument.

15. In a tachometer, the combination with an indicating element, of a shaft supporting the same, opposing springs operating upon said shaft to oppose the movement of said indicating element, each spring secured to a pivoted lever, means for adjusting said levers to change the tensions of said springs, a member carrying said pivoted levers, and means for adjusting said carrying member to vary the zero of the instrument.

16. In a tachometer, the combination with a rotatable permanent magnet, of an indicating member comprising a ring of magnetizable material having relatively slight radial depth and disposed in the field of said magnet, a short circuited winding disposed thereon, and means for opposing the movement of said indicating member.

834,438. MAGNETO-ARMATURE. CHARLES F. SPLITDORF, New York, N. Y. Filed Nov. 1, 1906. Serial No. 341,585.



Claim.—1. An armature having a core, a winding over the core, and heads at the ends of the armature having transverse portions divided between their side portions, the inwardly extending portions of said heads projecting within said winding, and means to secure said heads and core together.

2. An armature having windings, and a core comprising separate plates having heads at one end and their opposite ends reduced in size to pass through the windings, the heads of said plates alternating on opposite sides of the windings, heads at the ends of the armature having transverse portions divided between their side portions, the inwardly extending portions of said heads projecting within said windings, and means to secure said heads and plates together.

3. An armature having windings, and a core comprising separate plates having heads at one end and their opposite

ends reduced in size to pass through the windings, the heads of said plates alternating on opposite sides of the windings, heads at the ends of the armature having transverse portions divided between their side portions, the inwardly extending portions of said heads projecting within said windings and having complemental projecting and recessed meeting portions, and means to secure said plates and heads together.

4. An armature having windings, core plates having heads at one end and the opposite ends reduced, said core plates being placed within the windings with their heads alternating on opposite sides of the windings providing spaces between adjacent heads, filling pieces within said spaces between said heads, and means for securing said plates and filling pieces together.

5. An armature having windings, core plates having heads at one end and the opposite ends reduced, said core plates being placed within the windings with their heads alternating on opposite sides of the windings providing spaces between adjacent heads, filling pieces within said spaces between said heads, said heads and filling pieces having alined apertures and rods passing through said apertures for binding said heads and filling pieces together.

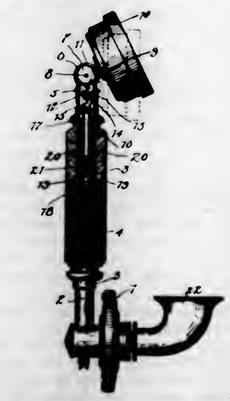
6. An armature having windings, core plates having heads at one end and parallel side extending from said heads to the opposite ends adapted to pass freely through the windings and project without the same, said plates being located side by side with their heads alternating on opposite sides of the windings, heads at opposite ends of the armature, said heads being divided and having transverse portions extending respectively within the windings, and means to secure said heads and plates together.

7. An armature wire winding inclosed along its periphery and sides with insulation that is integral throughout.

8. An armature winding inclosed along its periphery and sides with vulcanized rubber insulation in a single piece without seams.

9. An armature having a core provided with heads, and windings around said core between said heads, said windings having insulation located over the periphery and along the sides and in a single piece without seams.

834,439. PORTABLE COMBINATION TELEPHONE SET. ALFRED STROMBERG, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Nov. 23, 1903. Serial No. 182,296.



Claim.—1. In a device of the class described, the combination with a supporting frame, of a transmitter mounted at the lower end thereof, and a receiver pivoted at the upper end thereof and in operative association with switching mechanism contained by the instrument, said switching mechanism being normally in position to slightly incline the receiver from its correct position for use, and to disconnect the instrument from the telephone circuit, said receiver when brought to its correct position serving to cause actuation of the switching mechanism to connect the instrument with the circuit.

2. In a device of the class described, the combination with a supporting frame, of a transmitter disposed at the lower end thereof, a receiver pivoted at the upper end thereof by means of a ball and socket joint and normally slightly displaced from its correct position for use, an arm extending downwardly into the frame from the ball of the joint, switching mechanism associated with said arm normally serving to disconnect the instrument from the line, and means for causing actuation of said switching mechanism by said arm when the receiver is moved back to its proper position for conversation.

3. In a device of the class described, the combination with a supporting frame, of a transmitter disposed at the lower end thereof, a bell crank lever pivoted at the upper end thereof, a receiver rigidly secured to one end of said lever, and switch springs operatively associated with the other end of said lever and normally disposed to disconnect the instrument from circuit, and to cause said receiver to be normally slightly tilted with respect to the supporting frame, the return of the receiver to its proper position for use by a pressure against the ear of the user causing actuation of the switch springs to connect the instrument in circuit.

4. In a device of the class described, the combination with a supporting frame, of a transmitter disposed at the lower end thereof, a bell crank lever pivoted at the top of said frame, a receiver rigidly mounted at one end of said lever, the other arm of the lever extending downwardly into said frame, a pivoted cam shaped actuating button, an actuating lever intervening between said actuating button and said downwardly extending arm of the bell crank lever, and switch springs extending upwardly into the path of said actuating button, said receiver being normally at an angle to said supporting frame, whereby the actuating button is disposed to allow said springs to disconnect the instrument from circuit, said button being actuated to engage said springs to connect the instrument in circuit as the frame is swung about the receiver to bring the transmitter in proper position for conversation.

5. In a device of the class described, the combination with a supporting frame, of a transmitter at the lower end thereof, a bell crank lever pivoted at the upper end of said frame, a receiver rigidly secured to one arm of said lever the other end of said lever extending downwardly into the said frame, a cam shaped actuating button pivoted in said frame, an actuating lever secured to said button at its lower end and extending upwardly to be pivotally engaged by the lower end of the lever arm, switch springs mounted in said frame and extending upwardly into engagement with said button, the retractile force of said springs serving normally to actuate said button to maintain the receiver in an inclined position, in which position the instrument is disconnected from circuit, swinging of the frame and transmitter about the receiver to bring it in proper position for conversation causing rotation of said button by means of the intervening levers to actuate the springs to connect the instrument with the circuit.

6. In a device of the class described, the combination with a supporting frame, of a transmitter disposed at the lower end thereof, a cap at the upper end of said frame, said cap terminating in a socket, a ball pivoted in said socket, an arm extending outwardly from said ball, a receiver rigidly secured to said outwardly extending arm, an actuating arm extending downwardly from said ball and into said frame, and switching mechanism operatively associated with said actuating arm to normally disconnect the instrument from circuit and to normally maintain the receiver in an inclined position, the swinging of said frame and transmitter about said receiver moving said actuating arm to cause actuation of said switching mechanism to connect the instrument with the circuit.

7. In a device of the class described, the combination with a supporting frame, of a transmitter at the lower

end thereof, a cap over the upper end of said frame and terminating in a spherical socket, a ball pivoted in said socket, an arm extending outwardly from said ball, a receiver rigidly attached to said outwardly extending arm, an actuating arm extending downwardly from said ball into said frame, a cam shaped actuating button of insulating material pivoted in said frame below said ball, an actuating lever secured at its lower end to said button and having pivotal engagement at its upper end with said downwardly extending arm, switch-springs disposed in said frame and extending upwardly to engage said actuating button, the retractile force of said springs serving normally to actuate said button whereby said receiver is maintained in an inclined position, and swinging of said frame about said receiver to bring the transmitter into proper position for conversation causing rotation of said actuating button through the medium of the intervening mechanism, whereby said springs are actuated to connect the instrument with the circuit.

8. In a device of the class described, the combination with a supporting frame, of a transmitter at the lower end thereof, a receiver disposed at the upper end thereof and normally slightly displaced from the proper position for use, switch springs disposed upon the interior of said frame, and an actuating lever rigidly secured to said receiver and extending into said frame to be in operative association with said springs to normally cause said springs to disconnect the instrument from circuit, swinging of said frame about the receiver to bring the transmitter into proper position serving to actuate the lever to cause the springs to connect the instrument with the line.

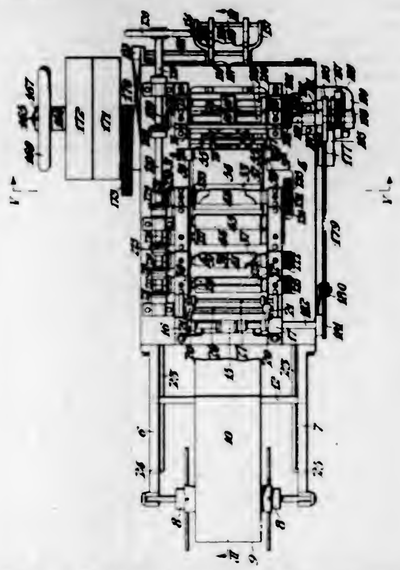
9. In a device of the class described, the combination with a supporting frame, of a transmitter mounted at the lower end thereof, a receiver pivoted at the upper end thereof, said receiver and transmitter being normally substantially in position for use, spring means for automatically disconnecting said instrument from circuit when not in use, and means for connecting said instrument in circuit upon the exertion of a pressure therewith against the ear of the user, to bring the instrument in exact position for conversation.

10. In a combination telephone set to be held in the user's hand, the combination with a supporting frame forming the handle of the instrument, of a transmitter at the lower end of said handle, a receiver disposed at the upper end thereof and normally slightly displaced from the proper position for use, switch springs disposed upon the interior of said frame, and an actuating lever rigidly secured to said receiver and extending into said frame to be in operative association with said springs to normally cause said springs to disconnect the instrument from circuit, swinging of said frame about the receiver to bring the transmitter into proper position serving to actuate the lever to cause the springs to connect the instrument with the line.

11. In a combination telephone set to be held in the user's hand, the combination with a supporting frame forming the handle of the instrument, of a transmitter at the lower end of said handle, a receiver pivoted at the upper end thereof, said receiver and transmitter being normally substantially in position for use, spring means for automatically disconnecting said instrument from circuit when not in use, and means for connecting said instrument in circuit upon the exertion of a pressure therewith against the ear of the user to bring the instrument into exact position for conversation.

12. In a portable telephone set comprised in a unitary structure, the combination with a cylindrical frame forming the handle of the instrument, a transmitter at the lower end of the handle, a receiver pivoted at the upper end of the handle, and switching springs within the handle connected with the receiver and free at all times to move the receiver to an inclined position and to disconnect the instrument from circuit when not in use, the act of bringing the receiver and transmitter into proper position for using causing actuation of the receiver and the switching mechanism connected therewith to cause connection of the instrument with the circuit.

854,440. ENVELOP-MACHINE. GEORGE W. SWIFT, JR., Bordentown, N. J. Filed June 17, 1902. Serial No. 112,020.



Claim.—1. In an envelop machine, the combination with web feeding means; of means to shape the longitudinal edges of said web; means to crease it transversely; a stationary platen; means to feed the web so shaped and creased over the face of said platen; means to hold the web against said face; means to cut a blank from said web while it is so held; and, means to fold the blank along the creased lines, while it is so held, substantially as set forth.

2. In an envelop machine, the combination with web feeding means; of means to shape the longitudinal edges of said web; means to crease it transversely; means to apply paste to certain portions thereof; a stationary platen; means to feed the web so shaped, creased and pasted over the face of said platen; means to hold the web against said face; means to cut a blank from said web while it is so held; means to fold the blank along the creased lines while it is so held; and means to press the folded parts upon the pasted portions of said web, substantially as set forth.

3. In an envelop machine, the combination with means to feed, shape, crease and paste an envelop blank; of a stationary platen; means for holding the creased and pasted blank against the face of said platen; means for folding it along the creased lines while so held; and, independent means for pressing the folded parts against the pasted portions while the blank is still so held, substantially as set forth.

4. In an envelop machine, the combination with means to feed, shape, perforate, crease and paste an envelop blank; of a stationary platen having a central groove in its face; means for holding the blank against said platen; means for folding it along the creased lines while so held; independent means for pressing the folded parts against the pasted portions while the blank is still so held; and, means for removing the finished envelop from said platen, substantially as set forth.

5. In an envelop machine, the combination with web feeding rolls, and means to continuously rotate them; of creasing rolls and shaping rolls, and means to intermittently rotate them; a web take-up device between said feed rolls and creasing rolls; a stationary platen over which the creased and shaped web is fed; means to hold the web against the face of said platen; means to cut off the blank from the web while it is so held; means to fold the blank upon the creased lines while it is so held; means to deliver the folded envelop from said platen; a cam shaft; means to continuously rotate it; and connections from said shaft to said holding, cutting, folding and delivering means, to intermittently operate them, substantially as set forth.

6. In an envelop machine, the combination with web feeding rolls and means to continuously rotate them; of creasing rolls; pasting rolls; shaping and perforating rolls; means to intermittently rotate said rolls; a web take-up device between said feed rolls and said creasing rolls; rolls and guides arranged to change the direction of movement of the web; a platen having a central groove in its face over which the creased, pasted, perforated and shaped web is fed; means to hold the web against the face of said platen; means to cut off the blank from the web while it is so held; means to fold the blank upon the creased lines while it is so held; means to press the folded parts down upon the pasted portions of the blank while it is still so held; means to deliver the finished envelop from said platen; a cam shaft; means to continuously rotate said shaft; and, connections from said shaft to said holding, cutting, folding, pressing and delivering means, to intermittently operate them, substantially as set forth.

7. In an envelop machine, the combination with a platen; of folding wings pivoted along opposite edges of said platen; means to hold a perforated creased and pasted envelop blank against said platen; means to operate said wings while the blank is so held to fold said blank along the creased lines; means to press said folded parts down upon the pasted portions of the blank; said platen being provided with a groove opposite to the perforated and pasted portion of the blank, whereby paste which exudes through the perforations of the blank is prevented from reaching the face of the platen; and, means to remove the finished envelop from the platen, substantially as set forth.

8. In an envelop machine, the combination with a reel arranged to support a roll of web; of a pair of rolls arranged to continuously feed said web from said reel; shaping rolls arranged to trim the longitudinal edges of said web; an automatic take up mechanism engaging said web between said feed rolls and shaping rolls; a shaft arranged to rotate continuously; a crank on said shaft; a rack pivoted to said crank; a gear wheel engaged with said rack and operatively connected with said shaping rolls; and gearing members connecting said shaft with said feed rolls, whereby said feed rolls are rotated continuously and said forming rolls are rotated intermittently, substantially as set forth.

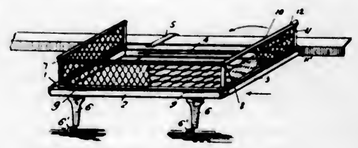
9. In an envelop machine, the combination with means to feed a web; of shaping rolls arranged to trim the longitudinal edges of said web; a pair of waste rolls arranged to discharge the trimmings from said web; a pair of rolls arranged to paste said web in predetermined regions; a receptacle for paste; a distributing roll mounted in said receptacle, in operative connection with said paste rolls; mechanism arranged to successively cut the blanks from said web; means to successively hold said blanks stationary during the folding operation; means to fold said blanks; and, means to discharge said folded blanks from the holding mechanism, arranged to coöperate in definite relation substantially as set forth.

10. In an envelop machine, the combination with means to feed a web; of shaping rolls arranged to trim the longitudinal edges of said web; a pair of waste rolls arranged to discharge the trimmings from said web; a pair of rolls arranged to paste said web in predetermined regions; a platen over which the web is fed; mechanism to hold said web against the face of said platen; mechanism to cut a blank from said web while it is so held; means to fold said blank while it is so held; means to press the folded parts against the pasted portions of the blank; and means to discharge the finished envelop from said platen, substantially as set forth.

11. In an envelop machine, the combination with folding means comprising a platen; of means on said platen to fold a previously creased and pasted blank; means to hold the blank while it is so folded; means to press the folded parts upon the previously pasted portion while it is so held; friction rollers protruding slightly above the face of said platen; and, means intermittently co-acting with said rollers to remove the finished envelop from said platen, substantially as set forth.

12. In an envelop machine the combination with folding means comprising a platen and folding wings pivoted at opposite sides thereof; of means to hold a previously creased and pasted blank against said platen during the folding operation; means to press the folded parts upon said previously pasted portions while the blank is so held; means to remove the finished envelop from said platen; a cam shaft; means to continuously rotate said shaft; and, connections from said shaft to said holding, folding, pressing and delivering means, to operate them, substantially as set forth.

854,441. BABY FOLDING BED. NELS P. THOMPSON, Chicago, Ill. Filed Jan. 2, 1907. Serial No. 350,440.



Claim.—1. The combination, in a baby folding bed, of a main folding frame, consisting of four channels suitably jointed and adapted to fold the end channels in the same direction and bring the side channels thereof into close contact with each other, with legs 6 fastened to the outward channel 2 and provided with casters 6', and straps 5 secured with channel 4 and adapted to be fastened to the frame of an ordinary bedstead, substantially as described.

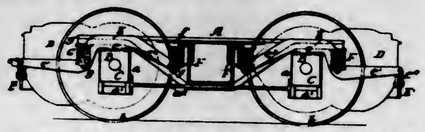
2. The combination, in a baby folding bed, of a main folding frame consisting of a plurality of channels pivotally engaged together and adapted to fold into parallel relation, with legs 6 fastened to the outward channel 2 and provided with casters, straps 5 by means of which one side of the said folding frame may be fastened to and supported by a bedstead, a wire spring mattress 18, and means adapted to adjustably secure the said spring mattress with the folding frame, substantially as described.

3. The combination, in a baby folding bed, of a main folding frame consisting of two long and two short channels pivotally engaged together, a rod engaged in each of the long channels and a spring mattress slidably engaged on said rods.

4. The combination, in a baby folding bed, of a main folding frame constructed of channel iron, with a wire spring mattress, a plurality of rolling legs, means to support and fasten the said folding frame to a bedstead, means for locking said frame in open position, means adjustably engaging said mattress to the frame and permitting it to fold into the channels of said folding frame when the latter is folded together, an inclosure consisting of three sides, so hinged to the said folding frame that it can be dropped down and folded with the frame, in a manner and substantially as described.

5. The combination, in a baby folding bed, of a main folding frame, with a wire spring mattress, a plurality of rolling legs, means whereby the said frame may be supported by and fastened along-side of an ordinary bedstead, means whereby the wire mattres is made to fold within the said channels when the folding frame is closed, an inclosure consisting of three sides, so hinged to the said folding frame that it may be elevated and dropped down along-side of the frame when the latter is moved into its folded position and a locking strap 11 adapted to secure the said inclosure in its elevated position with and upon the said folding frame, substantially as described.

854,442. ELECTRIC-MOTOR TRUCK. BENJAMIN R. VAN KIRK, Philadelphia, Pa., assignor to Burnham, Williams & Company, Philadelphia, Pa., a Firm. Filed Nov. 30, 1906. Serial No. 345,726.



Claim.—1. The combination in a truck, of a frame, axle boxes carried by the frame, axles mounted in the said boxes, a motor mounted on one of said axles and extending beyond the wheel base of the truck, an equalising beam on each side of the truck, each beam being mounted on an axle box, one arm of each beam supporting the overhanging portion of the motor, and a spring for counterbalancing the motor, substantially as described.

2. The combination in a car truck, of a frame, boxes in the frame, axles mounted in the boxes, a motor carried by each axle, each motor extending beyond the wheel base of the truck, one in one direction and the other in the opposite direction, an equalizing beam mounted on each side of the truck, the beams supporting the overhanging portions of the motors mounted on the axles, a counterbalancing spring mounted between one arm of the lever and the frame of the truck, the levers supporting the two motors being independently mounted on the truck frame, substantially as described.

3. The combination in a car truck, of a frame, boxes mounted in the frame, axles mounted in the boxes, a motor carried on one of the axles and extending beyond the wheel base, two equalizing beams one on each side of the frame and mounted on the boxes carried by the axles supporting the motor, a cross bar extending from one beam to the other, the overhanging portion of the motor being carried by said bar, and a spring between each beam and the frame on the opposite side of the box, substantially as described.

4. The combination in a car truck, of a frame, boxes in the frame, axles mounted in the boxes, a motor casing carried by one of said axles and overhanging the wheel base of the truck, beams resting on the boxes, a spring on each side of the box mounted between the beam and the frame of the truck, the overhanging portion of the motor being supported by said beams, substantially as described.

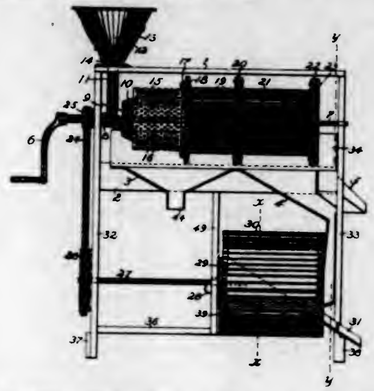
5. The combination in a car truck, of a frame, axle boxes, axles mounted in the boxes, wheels on the axles, a motor casing carried by each axle, each motor casing extending beyond the wheel base, two sets of equalising beams, one set mounted on the boxes of one axle and the other set mounted on the boxes of the other axle, the overhanging portions of the motor being carried by their respective beams, and springs on each side of the boxes between the beams and the frame, the spring on the motor side being nearer the box than the spring on the opposite side, substantially as described.

6. The combination of a car truck, a frame, axle boxes in the frame, axles mounted in the boxes, a motor mounted on one of the axles and extending beyond the wheel base of the truck, a pair of beams on each side of the truck, the beams of each pair arranged side by side and spaced apart, the frame extending between the beams of each pair, a bar extending across the truck and attached to each pair of beams, seats carried by each pair of beams, and springs mounted between the seats and the frame, the overhanging portion of the motor being carried by the cross bar, substantially as described.

854,443. GRAIN-ASSORTER. JOHN K. VOORHEES and JOHN R. VOORHEES, Cedar Falls, Iowa. Filed Feb. 23, 1906. Serial No. 302,349.

Claim.—1. A device of the character described, comprising a rotatable assorting drum having longitudinal reversely crimped peripheral slats spaced apart, provided with inner troughs, and division contrivances suitably placed in said troughs to form a series of open separating pockets.

2. A device of the character described, comprising a rotatable assorting drum having longitudinal reversely crimped peripheral slats spaced apart, provided with inner troughs, division contrivances in said troughs suitably arranged to form a series of open separating pockets, and a hopper supported within said drum.



3. A device of the character described, comprising a rotatable assorting drum having longitudinal reversely crimped peripheral slats spaced apart, provided with inner troughs, division contrivances suitably placed in said troughs to form a series of open separating pockets, and suitable means for oscillating said drum.

4. A device of the character described, comprising a rotatable assorting drum having longitudinal reversely crimped peripheral slats spaced apart, provided with inner troughs, division contrivances suitably placed in said troughs to form a series of open separating pockets, a hopper within said drum, and suitable means for oscillating said drum.

5. A device of the character described, comprising a rotatable assorting drum having longitudinal reversely crimped peripheral slats spaced apart, provided with inner troughs, division contrivances suitably placed in said troughs to form a series of open separating pockets, a hopper within said drum, and suitable means for rotating and for oscillating said drum.

6. A device of the character described, comprising a rotatable assorting drum having longitudinal reversely crimped peripheral slats spaced apart, provided with inner troughs and having inwardly directed deflecting angles, division contrivances suitably placed in said troughs to form a series of open separating pockets, a hopper within said drum, and suitable means for rotating said drum.

7. A device of the character described, comprising a rotatable assorting drum, having longitudinal reversely crimped peripheral slats spaced apart, provided with inner troughs, and having tangentially outwardly directed flanges arranged to prevent return of separated kernels into the assorting pockets, and division contrivances suitably placed in said troughs to form a series of open separating pockets.

8. A device of the character described, comprising a rotatable assorting drum having longitudinal reversely crimped peripheral slats spaced apart, provided with inner troughs, also having inwardly directed deflecting angles and having tangentially outwardly directed flanges arranged to prevent return of separated kernels into the assorting pockets, and division contrivances suitably placed in said troughs to form a series of open assorting pockets.

9. A device of the character described, comprising a rotatable assorting drum having longitudinal peripheral slats provided with inner troughs, also having tangentially outwardly directed flanges arranged to prevent return of separated kernels into the assorting pockets, the tangential flanges being spaced a predetermined distance from the bottom of said troughs, and division contrivances in said troughs to form assorting pockets.

10. A device of the character described, comprising a rotatable separating drum having open heads, having parallel longitudinal peripheral slats spaced apart, the said slats being longitudinally crimped with the angles inwardly directed, and a screw-feeding device in communication with the interior of said drum.

11. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, and suitable means for rotating said drums.

12. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a screw-feeding device in communication with the interior of said drums, and suitable means for rotating said drums.

13. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a rotatable open headed drum having a plurality of peripheral perforations and in communication with the other drums, and suitable means for rotating said drums.

14. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a rotatable open headed drum having a plurality of peripheral perforations and in communication with the other drums, a screw-feeding device in communication with the interior of said drums, and suitable means for rotating said drums.

15. A device of the character described, comprising a rotatable separating drum having open heads and parallel longitudinal peripheral slats spaced apart, the said slats being longitudinally crimped with the angles inwardly directed, a rotatable open headed drum having a plurality of peripheral perforations and in communication with the other drum, and suitable means for rotating said drums.

16. A device of the character described, comprising a rotatable separating drum having open heads and parallel longitudinal peripheral slats spaced apart, the said slats being longitudinally crimped with the angles inwardly directed, a rotatable open headed drum having a plurality of peripheral perforations and in communication with the other drum, a screw-feeding device in communication with the interior of said drums, and suitable means for rotating said drums.

17. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a rotatable open headed drum having a plurality of peripheral perforations and in communication with the other drums, and suitable means for conveying separated kernels to different receptacles.

18. A device of the character described, comprising a rotatable separating drum having open heads, and having parallel longitudinal peripheral slats spaced apart, the said slats being longitudinally crimped with the angles inwardly directed, and a rotatable assorting drum having peripheral openings, and assorting pockets in said drum in communication with said openings and the interior of the drum, and suitable means of communication between said drums.

19. A device of the character described, comprising a rotatable separating drum having open heads, and having parallel longitudinal peripheral slats spaced apart, the said slats being longitudinally crimped with the angles inwardly directed, a rotatable assorting drum having peripheral openings, assorting pockets in said drum in communication with said openings and the interior of the drum, a hopper supported within said drum, suitable means for rotating said drums, and suitable means of communication between said drums.

20. A device of the character described, comprising a rotatable separating drum having open heads, and having parallel longitudinal peripheral slats spaced apart, the said slats being longitudinally crimped with the angles inwardly directed, a rotatable assorting drum having peripheral openings, assorting pockets in said drum in communication with said openings and the interior of the drum, a hopper supported within said drum, means for oscillating said drum, means of communication between said drums, and suitable means for rotating said drums.

21. A device of the character described, comprising a rotatable separating drum having open heads, and having parallel longitudinal peripheral slats spaced apart, the said slats being longitudinally crimped with the angles inwardly directed, a screw-feeding device in communication with the interior of said drum, a rotatable assorting drum having peripheral openings, assorting pockets in said drum in communication with said openings and the interior of the drum, and suitable means of communication between said drums.

22. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a rotatable assorting drum having peripheral openings, assorting pockets in said drum in communication with said openings and the interior of the drum, and suitable means of communication between said drums.

23. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinal peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a screw-feeding device in communication with the interior of said drums, a rotatable assorting drum having peripheral openings, assorting pockets in said drum in communication with said openings and the interior of the drum, and suitable means of communication between said drums.

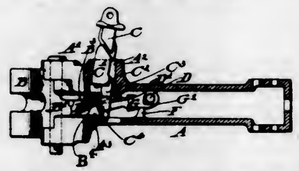
24. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a rotatable open headed drum having a plurality of peripheral perforations, a rotatable assorting drum having peripheral openings, assorting pockets in said drum in communication with said openings and the interior of the drum, and suitable means of communication between said drums.

25. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a rotatable open headed drum having a plurality of peripheral perforations, a rotatable assorting drum having peripheral openings, assorting pockets in said drum in communication

with said openings and interior of the drum, suitable means of communication between said drums, and a screw-feeding device in communication with the interior of said drums.

26. A device of the character described, comprising a pair of rotatable separating drums with open heads and in communication with each other, said drums having parallel longitudinally crimped peripheral slats spaced apart, their angles being inwardly directed, the interstices between the slats of one drum being narrower than the interstices between the slats of the other drum, a rotatable open headed drum having a plurality of peripheral perforations, a rotatable assorting drum having peripheral openings, assorting pockets in said drum in communication with said openings and the interior of the drum, means for oscillating said drum, a hopper within said drum, suitable means of communication between said drums, and suitable means for rotating said drums.

854,444. CAR-COUPLING. EDWARD O. WARNER, Haverford, Pa., assignor to Latrobe Steel and Coupler Company, Camden, N. J., a Corporation of New Jersey. Filed Nov. 15, 1905. Serial No. 287,391.



Claim.—1. In a car coupler a knuckle having a cam surface formed on its tail in combination with a lever pivoted at one end in the draw bar in the rear of the locking pin cavity and having its other end extending below the cam on the knuckle tail, a cam arranged to engage the lever as it presses against the cam on the knuckle tail and force it sidewise, a cam placed to engage the lever and return it to normal non-operative position when it is released by the lug on the locking pin, and a locking pin having a lug extending below the lever and in position to come in contact with said lever and press it against the cam when the pin is lifted above lock set position.

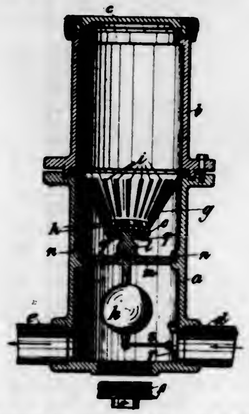
2. In a car coupler having a lever adapted to contact with the knuckle tail and open the knuckle, a pivot extending from the inner side of the draw bar over which the lever can be slipped and a guard lug placed to prevent the disengagement of the lever from the pivot in any normal position of the lever in an assembled coupler.

854,445. APPARATUS FOR THE TREATMENT OF REFRACTORY WATER. ROBERT T. WEAVER, Weehawken, N. J., assignor to Joseph Schneible, Weehawken, N. J. Filed Sept. 25, 1906. Serial No. 336,156.

Claim.—1. An apparatus for the treatment of refractory water, comprising a container for the material to be added to the water, a movable body adapted to move under the influence of the movements of the support for the apparatus, and a device operatively connected with the movable body for causing the separation from the mass of small quantities of the material in a finely divided condition.

2. An apparatus for the treatment of refractory water, comprising a vessel having an inlet and an outlet for the water, a container for the material to be added to the water supported in said vessel, a movable body adapted to move under the influence of the movements of the support for the apparatus, and a device operatively connected with the movable body for causing the separation from the mass of small quantities of the material in a finely divided condition and the addition of the same to the water in the vessel.

3. An apparatus for the treatment of refractory water, comprising a vessel having an inlet and an outlet for the water, a container for the material to be added to the water supported in said vessel, a movable body mounted in said vessel and adapted to move under the influence of the movements of the support for the apparatus, and a device operatively connected with the movable body for causing the separation from the mass of small quantities of the material in a finely divided condition and the addition of the same to the water in the vessel.



4. An apparatus for the treatment of refractory water, comprising a vessel having an inlet and an outlet for the water, a container for the material to be added to the water, a pendulum mounted within the vessel and a device operatively connected with the pendulum for causing the separation from the mass of small quantities of the material in a finely divided condition.

5. An apparatus for the treatment of refractory water, comprising a container adapted to receive, in a relatively coarse condition, the material to be added to the water, and having openings through which such material may project, a movable body adapted to move under the influence of the movements of the support for the apparatus, and a grinder operatively connected with the movably body and adapted to act upon the material projecting from the container to separate the material therefrom in small quantities and in a finely divided condition.

6. An apparatus for the treatment of refractory water, comprising a container for the material to be added to the water and having openings through which such material may project, a pendulum adapted to move under the influence of the movements of the support for the apparatus, and a grinder operatively connected with the movable body and adapted to act upon the material projecting from the container to separate the material therefrom in small quantities and in a finely divided condition.

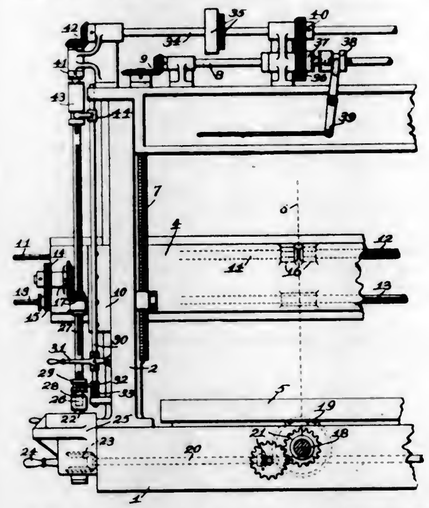
7. An apparatus for the treatment of refractory water, comprising a vessel having an inlet and an outlet for the water, a container for the material, in a relatively coarse condition, to be added to the water mounted in said vessel and having openings through which the material may project, a movable body supported in the vessel and adapted to move under the influence of the movements of the support for the apparatus, and a grinder operatively connected with the movable body and adapted to act upon the material projecting from the container to remove material therefrom in small quantities and in a finely divided condition.

8. An apparatus for the treatment of refractory water, comprising a vessel having an inlet and an outlet for the water, a container for the material, in a relatively coarse condition, to be added to the water mounted in said vessel and having openings through which the material may project, a pendulum supported in the vessel and adapted to move under the influence of the movements of the support for the apparatus, and a grinder operatively connected with the pendulum and adapted to act upon the material projecting from the container to remove material therefrom in small quantities and in a finely divided condition.

9. An apparatus for the treatment of refractory water, comprising a vessel having an inlet and an outlet for the water, a container for the material to be added to the water, a device adapted to cause the separation from the mass of small quantities of the material in a finely divided condition, and a valve or flapper adapted to be vibrated by the incoming water and operatively connected with said device.

10. An apparatus for the treatment of refractory water, comprising a vessel having an inlet and an outlet for the water, a container for the material to be added to the water and mounted in said vessel, a pendulum adapted to move under the influence of the movements of the support for the apparatus also mounted in said vessel, a grinder operatively connected with the pendulum and adapted to separate material from the mass in small quantities and in a finely divided condition, and a valve or flapper adapted to be vibrated by the incoming water and operatively connected with said device.

854,446. MACHINE-TOOL. AUGUSTUS WOOD, Hamilton, Ohio, assignor to Niles-Bement-Pond Company, Jersey City, N. J. Filed Dec. 5, 1906. Serial No. 346,376.



Claim.—1. In a machine tool of the class described, the combination, substantially as set forth, of a rail, feed gearing thereon, a vertically disposed splined shaft operatively connected with the feed gearing on the rail of the machine, power driven mechanism disposed at the base of said splined shaft, power driven mechanism disposed at the top of said splined shaft, and hand operative clutches at the lower and upper ends of said splined shaft to serve in connecting it at will with either of said power driven mechanisms independently.

2. In a machine tool of the class described, the combination, substantially as set forth, of a rail, feed gearing thereon, a vertically disposed splined shaft operatively connected with the feed gearing on the rail of the machine, power driven mechanism disposed at the base of said splined shaft, power driven mechanism disposed at the top of said splined shaft, clutches at the lower and upper ends of said splined shaft to serve in connecting it at will with either of said power driven mechanisms independently, and hand operative mechanism connecting the two clutches for moving them in unison to disengage one clutch before engaging the other clutch.

3. In a machine tool of the class described, the combination, substantially as set forth, of a rail, feed gearing thereon, a vertically disposed shaft operatively connected with the feed gearing on the rail, power-driven mechanism disposed at the base of said shaft, power driven mechanism disposed at the top of said shaft, clutches at the lower and upper ends of said shaft to serve in connecting the shaft at will with either of said power driven mechanisms independently, and hand-operative mechanism connecting the two clutches for moving them in unison to disengage one clutch before engaging the other clutch, the lower clutch being capable of automatically engaging when the hand is removed from said hand-operative mechanism.

4. In a machine tool of the class described, the combination, substantially as set forth, of a rail, feed gearing thereon, a vertically disposed splined shaft operatively connected with the feed gearing on the rail of the machine, power driven mechanism disposed at the base of said splined shaft, power driven mechanism disposed at the top of said splined shaft, clutches at the lower and upper ends of said splined shaft to serve in connecting it at will with either of said power driven mechanisms independently, a vertically movable rod disposed parallel with said splined shaft, connections between said vertically movable rod and said clutches whereby said vertically movable rod by its gravity moves downward and automatically disengages from the upper clutch and engages the lower clutch, and a handle for raising said vertically movable rod to disengage the lower clutch and engage the upper one.

854,447. STEAM-TURBINE. IRA ABBOTT, Wyandotte, Mich. Filed Apr. 23, 1906. Serial No. 313,111.

Claim.—1. In a compound steam turbine, the combination with a cylinder, of a rotary piston in said cylinder provided with circumferential rows of steam pockets, a series of tangential jets to eject steam into said pockets arranged at intervals around the piston, and a series of spirally arranged cross-over passages opening at one end in rear of said jets to receive the steam ejected into said row of pockets and opening at their opposite ends into the next row of pockets.

2. In a compound steam turbine, the combination of a rotary piston having a series of separated rows of undercut steam pockets, and a cylinder formed with a series of tangential inlet openings arranged at intervals around the cylinder near one end to admit steam to the first row of pockets and having a series of spirally arranged cross-over passages opening at one end into the first row of pockets between the inlet openings and at their opposite ends into the next row of pockets and spirally arranged cross-over passages communicating with each succeeding row of pockets between the inlet ends of said passages opening into said rows.

3. In a steam turbine, the combination of a cylinder formed with a series of jet openings arranged at intervals around the cylinder and a series of exhaust passages opening between the jet openings, and a rotary piston in said cylinder provided with pockets equal in number to the number of jet and exhaust openings and formed with deep undercut forward ends and shallow rear ends and divided from each other by webs having extended outer faces to

engage the surface of the cylinder and simultaneously close the jet openings.

4. In a steam turbine, the combination of a cylinder provided with jet openings and cross-over passages opening between the jet openings, and a piston consisting of a drum, a series of rings formed with steam pockets having deep and slightly undercut forward ends and shallow rear ends, secured on said drum, and spacing rings forming dividing walls between said pocket rings and formed with broadened outer edges forming laterally extending deflecting portions in the outer angles of said pockets.

5. In a steam turbine, the combination of a cylinder formed with a circumferential steam passage, holes cutting said passage longitudinally of the cylinder and forming valve seats and jet openings leading from said holes, tubular valves in said holes, a rotary piston in said cylinder, an outwardly extending valve stem on each of said valves, a pinion secured upon each stem, a gear mounted concentric with the axis of the cylinder to engage and simultaneously turn the pinions, and means controlled by the speed of the engine for turning said gear.

6. In a steam turbine, the combination of a cylinder formed with a circumferential steam passage near one end, a circumferential exhaust passage near the opposite end, longitudinal holes cutting the steam passage at intervals around the cylinder, jet openings leading from said holes into the cylinder, and cross-over passages; a rotary piston in said cylinder formed with circumferential rows of steam pockets separated by walls and communicating through the cross-over passages; rotary valves in the holes in the cylinder; and means for turning said valves simultaneously.

7. In a steam turbine, the combination of a cylinder formed with a circumferential steam passage at one end, holes cutting said passage and extending longitudinally of the cylinder, jet openings leading diagonally inward from said holes and cross-over passages arranged at intervals around the cylinder throughout its length; heads on the cylinder formed with axial bearings; a shaft in said bearings; a rotary piston on said shaft consisting of a drum, rings secured upon said drum provided with steam pockets separated by webs, and spacing rings between the pocket rings formed with laterally extending outer edges; tubular valves in the longitudinal holes in the cylinder having valve stems at one end; plugs to close the outer ends of said holes and provided with stuffing boxes through which the stems extend; pinions on the said stems; a gear turning upon the axis of the cylinder and engaging all of the pinions; a governor; and a rod connecting said governor and gear.

854,448. COMPOSITION OF MATTER FOR POLISHING. THURLOW A. D. ACKLEY, Minneapolis, Minn. Filed Aug. 15, 1906. Serial No. 330,749.

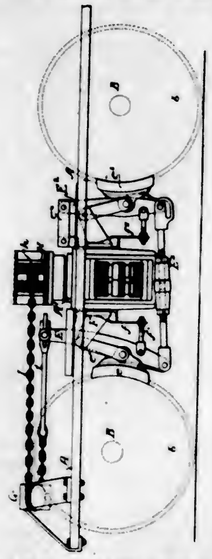
Claim.—The herein described composition of matter, consisting of equal parts of boiled linseed oil, vinegar, and kerosene, substantially as described.

854,449. BRAKE MECHANISM FOR PIVOTED CAR-TRUCKS. WILLIAM L. AUSTIN, Philadelphia, Pa., assignor to Burnham, Williams & Company, Philadelphia, Pa., a Firm. Filed Jan. 7, 1907. Serial No. 351,124.

Claim.—1. The combination of a car, a truck pivoted to the car, brake mechanism on the truck, a sheave on the car body situated at the center of rotation of the truck, a brake chain attached to the brake mechanism on the truck and extending around the sheave and connected to the brake operating mechanism on the car, substantially as described.

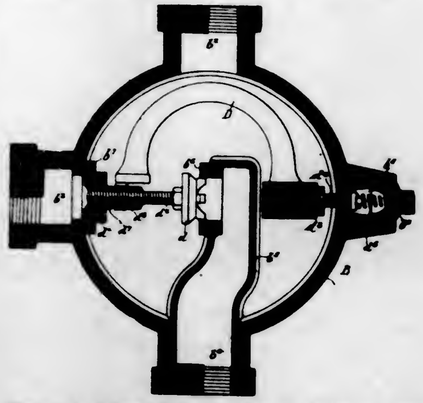
2. The combination of a car, a truck pivoted thereto, brake mechanism on the truck consisting of levers and a brake beam, a sheave on the truck, a sheave at the center of rotation of the truck, a brake chain attached to the brake mechanism on the truck and passing around said sheaves and a brake rod connected to the chain, said brake rod extending to the brake operating mechanism of the car, substantially as described.

3. The combination of a car, a car body transom, a frame at the center of the car body transom, a sheave having its bearings in the frame, a truck pivoted to the car body transom, brake mechanism on the truck, a cross frame on the truck, a sheave on the cross frame, a chain



passing from the brake mechanism around said sheave and around the sheave on the car body transom, with a brake rod attached to the chain and connected to the brake operating mechanism on the car, substantially as described.

854,450. LIQUID-HEATING SYSTEM. JOHN C. BARTLETT, Philadelphia, Pa. Filed Apr. 9, 1906. Serial No. 310,719.



Claim.—1. A liquid heating system consisting of a main heater, an auxiliary heater, connections for the inlet and outlet of liquid to and from the system, a device connected to said heaters having means for automatically directing liquid received from the main heater, either to the auxiliary heater or to the outlet, depending on whether the temperature of said liquid is below a predetermined point or not, substantially as described.

2. A liquid heating system consisting of a main heater connected to a source of liquid supply, an auxiliary heater connected to a discharge main, a conduit connecting said heaters, and a device connected in said conduit and to the discharge main, said device including automatic temperature actuated means for directing liquid entering it from the main heater either to the auxiliary heater or to the discharge main, substantially as described.

3. A liquid heating system consisting of a main and an auxiliary heater, a conduit connecting said heaters, liquid inlet and discharge pipes connected to the system, a casing connected between the heaters and also in connection with the discharge conduit, a thermostat in said casing, and valves actuated by said thermostat for directing liquid received from the main heater either to the auxiliary heater or to the discharge main, substantially as described.

4. A liquid heating system consisting of a main and an auxiliary heater, a casing connected between said heaters, a discharge main connected to the auxiliary heater and to the casing, a liquid inlet for the system, valves in the casing respectively controlling passages to the auxiliary heater and to the discharge main, and a thermostat for actuating said valves, substantially as described.

5. A liquid heating system consisting of a main and an auxiliary heater, a casing connected between said heaters, a discharge main connected to the auxiliary heater and to the casing, a liquid inlet for the system, valves in the casing respectively controlling passages to the auxiliary heater and to the discharge main, and a thermostat for actuating said valves, with means for adjustably connecting the thermostat to said valves, substantially as described.

6. A liquid heating system including a reservoir for liquid, an inlet thereto, means for supplying heated liquid to said reservoir, an auxiliary heater, a discharge main connected thereto, a casing connected to both of said heaters and also to the discharge main, two valves in the casing respectively controlling the openings therefrom to the auxiliary heater and to the discharge main, and a thermostat in the casing constructed to open the valve to the auxiliary heater and close that to the discharge when the temperature of the liquid entering it from the reservoir is below a predetermined point, and to close the valve to the auxiliary heater and open that to the discharge main when the temperature of said liquid is above a predetermined point, substantially as described.

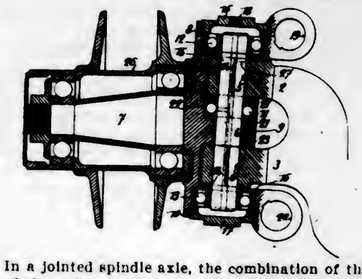
7. A liquid heating system consisting of main and an auxiliary heater, a conduit connecting said heaters, liquid inlet and discharge pipes connected to the system, a casing having openings connected between the heaters and in connection with the discharge conduit, valves respectively for certain of the casing openings, a rod connecting said valves, and a curved thermostat connected to the rod and to the casing, substantially as described.

8. A liquid heating system consisting of a main and an auxiliary heater, a conduit connecting said heaters, liquid inlet and discharge pipes connected to the system, a casing connected between the heaters and in connection with the discharge conduit, valves placed to control the flow of liquid from the casing, a thermostat connected to said valves, the casing having a plug-closed recess, a rod connected to the thermostat extending into said recess and a spring in the recess operative on said rod, substantially as described.

854,451. JOINTED-SPINDLE AXLE. MAURICE BIDEAU, Paris, France. Filed Feb. 20, 1907. Serial No. 358,363.

Claim.—1. In an axle having jointed spindles for motor-cars, the combination of the body part of the axle terminating at each end in a helm or block having two integral parts or branches, a spindle having three eyelets or apertures, the spaces between the said eyelets or apertures being adapted to receive the said parts or branches respectively, and a stud passing through the three eyelets and the two branches.

2. In a jointed spindle axle for motor-cars, the combination of the body part of the axle having at each end a helm or block having two integral parts or branches, a stud securely fixed in the said parts or branches, a spindle having three eyelets so arranged as to loosely surround the said stud, ball-bearings arranged in the two outer or end eyelets around the stud, the two parts or branches of the helm or block being engaged in the spaces between the three eyelets respectively and ball-bearing between the middle or median eyelet and the upper part or branch to transmit the vertical load of the axle to the spindle.



3. In a jointed spindle axle, the combination of the body part of the axle, of a helm or block having two parts or branches at each end of the said body part, a spindle having three eyelets, a stud passing through these three eyelets and the two parts or branches of the helm or block, the said parts or branches being engaged between the said eyelets, ball-bearings arranged in the outer or end eyelets around the stud, caps or stoppers adapted to close the outer orifices of the outer or end eyelets; a longitudinal oil channel or duct in the stud establishing a communication between the chambers of the caps, a ball-bearing between the middle or median eyelet and the upper part or branch of the helm or block, and a transversal oil hole in the stud establishing a communication between the said oil channel or duct and the said ball-bearing.

854,452. FORMALDEHYDE PREPARATION. HENRY S. BLACKMORE, Mount Vernon, N. Y. Filed Apr. 18, 1903. Serial No. 153,330. (Specimen.)

Claim.—1. A new composition of matter consisting of an aromatic oxy-acid ester containing formic aldehyde.

2. A new composition of matter containing formic aldehyde and an anhydrous ester of the aromatic acid series.

3. A new composition of matter containing formic aldehyde and methyl-benzoic ester.

4. A new composition of matter consisting of formic aldehyde, an oxy-acid ester and camphor oil.

5. A new composition of matter consisting of formic aldehyde, methyl-benzoic ester and camphor oil.

6. The process of making the new composition of matter herein set forth which consists in generating formic aldehyde in the presence of an anhydrous oxy-acid ester and exposing the same to intimate association until the formic aldehyde has become associated therewith or occluded therein.

7. The process of making the new composition of matter herein set forth which consists in mixing an anhydrous oxy-acid ester with formic aldehyde and exposing the same to intimate association until the formic aldehyde has become associated therewith or occluded therein.

8. The process of making the new composition of matter herein set forth which consists in mixing an anhydrous oxy-acid ester with dry formic aldehyde and exposing the same to intimate association until the formic aldehyde has become associated therewith or occluded therein.

9. The process of making the new composition of matter herein set forth which consists in mixing an anhydrous oxy-acid ester with formic aldehyde under super-atmospheric pressure and exposing the same to intimate association until the formic aldehyde has become associated therewith or occluded therein.

10. The process of making the new composition of matter herein set forth, which consists in mixing a benzoic ester with formic aldehyde and exposing the same to intimate association until the formic aldehyde has become associated therewith or occluded therein.

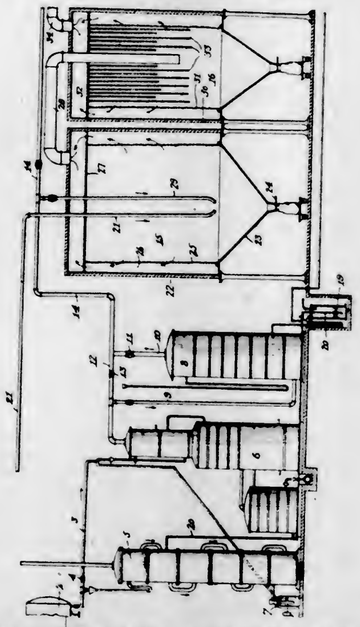
11. The process of making the new composition of matter herein set forth, which consists in mixing methyl benzoic ester with formic aldehyde and exposing the same to intimate association until the formic aldehyde has become associated therewith or occluded therein.

12. A new composition of matter containing formic aldehyde and a benzoic ester.

13. A new composition of matter containing formic aldehyde, a benzoic ester, and an inert diluent.

14. A new composition of matter containing formic aldehyde, a benzoic ester, and camphor oil.

854,453. METHOD OF PRODUCING SALTS OF VOLATILE BASES. TALMADGE BLASS, West Seneca, N. Y., and JACOB L. HAEHNLEN and WALTER W. COX, Lebanon, Pa. Filed July 14, 1906. Serial No. 326,281.



Claim.—1. The method of producing salts, which comprises conducting sulfur dioxid and a suitable base in a gaseous state into a closed chamber in the presence of aqueous vapor in amount only sufficient to effect their union as a powdered salt.

2. The method of producing salts, which comprises conducting an acid gas and a base in a gaseous state into a closed chamber in the presence of aqueous vapor, said base and acid gas being capable of combining to form a plurality of salts, and depositing one of said salts in said chamber and depositing another of said salts in another chamber.

3. The method of producing salts, which comprises conducting an acid gas and a volatilized base into a closed chamber in the presence of aqueous vapor in amount only sufficient to cause the deposition of but one salt as a powder, and conducting the residual gases from said chamber for further treatment.

4. The method of producing salts, which comprises conducting an acid gas and a base in a gaseous state into a closed chamber in the presence of aqueous vapor sufficient to deposit a salt as a powder and conducting the residual gases into another closed chamber and reacting upon them with the same base to deposit another and different salt as a powder.

5. The method of producing salts, which comprises reacting in a closed chamber upon gases resulting from the roasting of pyritic ores, with ammonia gas, in the presence of aqueous vapor in amount only sufficient to cause the deposition of ammonium sulfite as a powder.

6. The method of producing salts, which comprises reacting in a closed chamber upon gases resulting from the roasting of pyritic ores, with ammonia, in the presence of an aqueous vapor, to form ammonium sulfite, and reacting upon the residual gases containing carbon dioxid with ammonia to form ammonium carbamate.

7. The method of producing salts, which comprises reacting in a closed chamber upon gases resulting from the roasting of pyritic ores, with ammonia, in the presence of aqueous vapor, to deposit ammonium sulfite as a dry powder, then reacting in a closed chamber upon the residual gases containing carbon dioxid with ammonia gas to deposit ammonium carbamate as a dry powder.

854,454. BALING-PRESS. CLARENCE E. BOWER, Denver, Colo. Filed Apr. 3, 1906. Serial No. 309,584.

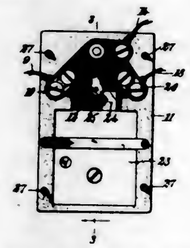


Claim.—1. In a baling press, a power shaft having a pair of oppositely projecting trip arms having vertical abutments, a rock-lever journaled on said power shaft in the horizontal plane of the abutments and in a vertical plane which intersects the vertical plane of the trip arms, a plunger beam, and a link pivotally connecting the plunger beam with one end of the rock-lever so that the rear end of said beam shall just prior to the latter part of the compression stroke be directly engaged by one or the other of the abutments.

2. In a baling press, a power shaft having a pair of oppositely projecting trip arms having vertical abutments, a rock-lever journaled on said power shaft in the horizontal plane of the abutments and in a vertical plane which intersects the vertical plane of the trip arms, a plunger beam in the horizontal plane of the trip arm abutments, a roller journaled at the end of said beam, a link pivotally connecting the rock-lever with the beam, and means for operating the power shaft and causing the latter to swing said link in a relatively opposite direction to that of the trip lever until the contiguous abutment of the latter is pressing against the roller of the plunger beam.

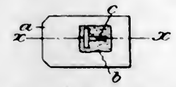
3. A baling press, comprising a suitable frame, a vertical power shaft journaled therein and provided with opposite projecting trip arms having depending abutments, a sweep rigid with the power shaft, a lever pivoted on the power shaft between the abutments of the trip arms and extending at an angle to the latter and occupying the path of motion of said abutments, a reciprocatory plunger in the baling chamber of the framework, a spring to withdraw the same, a plunger beam pivoted to the plunger, and links pivotally connecting the plunger beam with said lever.

854,455. LOCK FOR ELECTRIC SWITCHES. FRANK W. BRANDOW, Pittsfield, Mass. Filed Dec. 12, 1906. Serial No. 347,465.



Claim.—The combination in an apparatus having a sparking device, batteries, separate circuits connecting their respective batteries with the sparking device, and contact points in their respective circuits, of a switch in both said circuits and swinging at one end between said contact points and into and out of connection therewith, and a lock having a bolt operating on a line between said contact points, and notched at its end receiving the free end of the switch and movable into and out of interlock with the swinging end of the switch.

854,456. METHOD OF PRODUCING MATRICES. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, Baltimore, Md., a Corporation of Delaware. Filed May 18, 1905. Serial No. 261,033.



Claim.—1. The method of producing matrices consisting in subjecting a matrix plate having an opening therein, to electrical deposition to form a thin, relatively deep shell spanning said opening, and finally fusing a backing of metal in said shell by means of heat driven directly down upon the shell and backing metal.

2. The method of producing matrices consisting in subjecting a matrix plate having an opening therein, to electrical deposition to form a thin, relatively deep shell spanning said opening, then fusing a backing of metal in said shell by means of heat driven directly down upon the shell and backing metal, and finally completing the matrix by dressing off said backing and the edges of said shell flush with the back of said plate.

854,457. MATRIX-MAKING MASTER-BLOCK. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, Baltimore, Md., a Corporation of Delaware. Filed May 18, 1905. Serial No. 261,034.



Claim.—1. A master block for making matrices comprising a block of one predetermined size irrespective of the size or style of the character to be used therewith, and a type character secured to said block in such position that the meeting point of two of the boundary lines of the type character, irrespective of its size or style, is at a predetermined fixed point on the master block.

2. A master block for making matrices comprising a block provided with predetermined gaging surfaces and having an opening therein, a plurality of the walls of said opening being arranged in definite relation with respect to said gaging surfaces.

3. A master block for making matrices comprising a block provided with predetermined gaging surfaces and having an opening therein, a plurality of the walls of said opening being arranged in definite relation with respect to said gaging surfaces, and a type character located in said opening.

4. A master block for making matrices comprising a block provided with predetermined gaging surfaces and having an opening therein, a plurality of the walls of said opening being arranged in definite relation with respect to said gaging surfaces, and a type character located in said opening and projecting a predetermined distance from the face of said block.

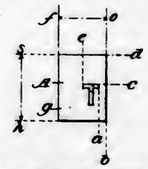
5. A master block for making matrices comprising a block provided with gaging surfaces and having an opening therein arranged in definite relation with respect to said gaging surfaces.

6. A master block for making matrices comprising a block provided with an opening formed therein at a predetermined distance from the edges thereof, whereby the opening is always in the same position, irrespective of the size of the same.

7. A master block for making matrices comprising a block provided with an opening conforming in shape to the contour of said block, said opening being located at a predetermined distance from the edges of said plate, whereby the opening is always in the same position irrespective of the size thereof.

8. A master block for making matrices comprising a rectangular block provided with a correspondingly shaped opening, two walls of said opening being located at predetermined distances from the contiguous edges of the block, whereby the opening is always in the same position irrespective of the size thereof.

854,458. MASTER-BLOCK FOR PRODUCING MATRICES. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, Baltimore, Md., a Corporation of Delaware. Filed May 18, 1905. Serial No. 261,036.



Claim.—1. A master block for producing matrices comprising a block provided with a type character and having guiding or positioning surfaces, said character being separated from said guiding or positioning surfaces by uniform predetermined distances irrespective of the size or style of said character.

2. A master block for producing matrices comprising a block provided with a type character on its face, said block being provided with guiding or positioning surfaces, said character being separated from said guiding or positioning surfaces by uniform predetermined distances irrespective of the size or style of said character.

3. A master block for producing matrices comprising a block provided with a type character on its face, said block being provided with guiding or positioning surfaces, said character being separated from said guiding or positioning surfaces by fixed predetermined distances *a*—*b*, *c*—*d*, irrespective of the size or style of said character.

4. A master block having a guiding surface *n*, contain-

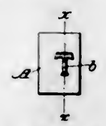
ing a character with a raised surface *m*, with a fixed and predetermined distance between surfaces *m* and *n*.

5. A master block for producing matrices comprising a block provided with guiding or positioning surfaces which intersect, and a character on said block, said character having intersecting boundary lines located at fixed and predetermined distances from said intersecting guiding or positioning surfaces irrespective of the size or style of said character.

6. A master block for producing matrices comprising a block provided with guiding or positioning surfaces arranged at right angles, and a character on said block, said character having boundary lines also arranged at right angles and located at fixed and predetermined distances from the corresponding guiding or positioning surfaces irrespective of the size or style of the character.

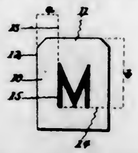
7. A master block provided with gaging surfaces, and a type character located in permanent relation to said gaging surfaces irrespective of the size or style of said character, in combination with a matrix plate provided with similar gaging surfaces, and also with an opening so positioned relative to said gaging surfaces, that the same will fit over the type character of said block when the gaging surfaces of the block and plate are placed in alinement.

854,459. MASTER-BLOCK FOR MAKING MATRICES. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, Baltimore, Md., a Corporation of Delaware. Filed May 18, 1905. Serial No. 261,038.



Claim.—A master block for making matrices comprising a single block of cast metal, said block being provided with a raised character cast integral therewith, the dimensions of the face of said block conforming to the corresponding dimensions of a matrix used in casting type.

854,460. TYPE-MATRIX. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, Baltimore, Md., a Corporation of Delaware. Filed May 27, 1904. Serial No. 210,081.



Claim.—1. The herein described improvement in means for casting type comprising a plurality of matrix plates each having a character thereon, each matrix being of the same size and provided with gaging surfaces which coact to accurately position the matrix in a type mold, the gaging surfaces of each matrix plate being located in the same definite position with respect to the character on said plate irrespective of the setwise or bodywise size of said character.

2. The herein described improvement in means for casting type comprising a plurality of matrix plates each having a character thereon, each matrix being of the same size and provided with intersecting gaging surfaces which coact to accurately position the matrix plate in a type mold, the gaging surfaces of each matrix plate being located in the same definite position with respect to the character on said plate irrespective of the setwise or bodywise size of said character.

3. The herein described improvement in means for casting type comprising a plurality of matrix plates each having a character thereon, each matrix plate being of the same size and provided with a vertical and a horizontal gaging surface which gaging surfaces coact to accurately position the matrix plate in a type mold, the gaging surfaces of each matrix being located in the same definite position with respect to the character on said plate irrespective of the setwise or bodywise size of said character.

4. The herein described improvement in means for casting type comprising a plurality of matrix plates each having a character thereon, each matrix plate being of the same size, one vertical edge and one horizontal edge of each matrix plate forming gaging surfaces which coact to accurately position the matrix plate in a type mold, the said edges of each matrix plate being located in the same definite position with respect to the character on said plate irrespective of the setwise or bodywise size of said character.

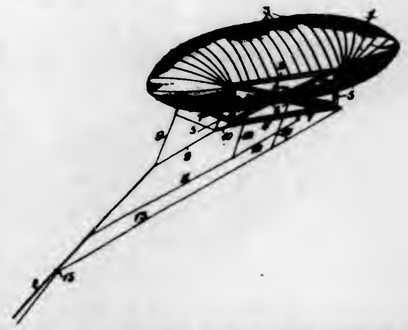
5. A matrix comprising a plate of suitable dimensions to receive a character of any bodywise or setwise size, and a character on said plate located at a predetermined point irrespective of the bodywise or setwise size thereof, said plate being provided with gaging surfaces which are located in the same definite relation to said predetermined point irrespective of the bodywise size or setwise size of said character.

6. A matrix comprising a plate of suitable dimensions to receive a character of any bodywise or setwise size, and a character located at a predetermined point on said plate irrespective of the setwise or bodywise size thereof, said plate being provided with intersecting gaging surfaces which are located in the same definite relation to said predetermined point irrespective of the bodywise or setwise size of the character.

7. A matrix comprising a plate of suitable dimensions to receive a character of any bodywise or setwise size, and a character located at a predetermined point on said plate irrespective of the setwise or bodywise size thereof, said plate being provided with a vertical and a horizontal gaging surface, said gaging surfaces being located in the same definite relation to said predetermined point irrespective of the bodywise or setwise size of the character.

8. A matrix comprising a plate of suitable dimensions to receive a character of any bodywise or setwise size, and a character located at a predetermined point on said plate irrespective of the setwise or bodywise size thereof, one vertical edge and one horizontal edge of said plate forming gaging surfaces, said gaging surfaces being located in the same definite relation to said predetermined point irrespective of the setwise or bodywise size of the character.

854,461. ADVERTISING OR OTHER AIR-SHIP. JOHN C. BURNELL, Chicago, Ill. Filed Apr. 26, 1906. Serial No. 313,792.



Claim.—1. An air ship consisting of an elongated gas bag having secured thereto at different points from front to rear a plurality of lines of suitable length to exert the requisite tension to hold and secure the air ship in substantially horizontal position head on to the wind regardless of changes in wind velocity, substantially as described.

2. An air ship consisting of an elongated gas bag having secured thereto at different points from front to rear a main line and an adjusting line, the lines being of suitable length to exert the requisite tension to hold and secure the air ship in substantially horizontal position head on to the wind regardless of changes in wind velocity, substantially as described.

3. An air ship having a main line secured thereto near one end, and having an adjusting line secured thereto near the opposite end for holding and controlling the position of the air-ship regardless of wind velocity, substantially as described.

4. An air-ship comprising a gas bag, a framework to which the gas bag is fixedly secured, a main line attached to the forward end of the framework, and an adjusting line attached near the rear end of the framework for holding the gas bag in proper position, substantially as described.

5. An air ship comprising a framework having side rails, and a bottom rail rigidly secured to the side rails, an elongated gas bag secured to the frame between the side rails, and lines secured to the framework and adapted to hold, control and firmly position the air-ship regardless of changes in wind velocity, substantially as described.

6. An air-ship comprising a framework having side rails, and a bottom rail rigidly secured to the side rails, an elongated gas bag secured to the frame between the side rails, a main line secured to the forward end of the framework, and an adjusting line secured to the rear end of the framework for holding, controlling and firmly positioning the air-ship regardless of changes in wind velocity, substantially as described.

7. An air-ship comprising a framework having side rails, and a bottom rail rigidly secured to the side rails, an elongated gas bag secured to the frame between the side rails, a main line forked at its upper end to provide attaching lines secured to the upper side rails, and held in position with respect to the lower side rails by means of a restraining line, and an adjusting line secured near the rear end of the framework for holding, controlling and firmly positioning the air-ship, substantially as described.

8. An air ship for advertising purposes comprising a framework having upper and lower side rails, and cross rails connecting the lower side rails, the framework being open at its ends and top, an elongated gas bag projecting outwardly and upwardly from the framework and rigidly held between the side rails, and lines secured to the framework and adapted to hold, control and firmly position the air-ship regardless of wind velocity, substantially as described.

854,462. MANUFACTURE OF ALLOYS. GEORGE E. BUTTENSHAW, Manchester, England. Filed Nov. 15, 1905. Serial No. 287,522.

Claim.—An alloy consisting of metals in the following proximate proportions by weight: copper, 40 to 43.10%, zinc, 41 to 43.86%, nickel, 10 to 10.20%, lead, 1 to 3.5%, phosphor tin, 1%, aluminium, 0.15%, substantially as, and for the purpose, set forth.

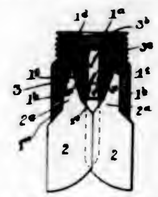
854,463. LAMINATED TIRE. JOHN W. CARHART, Austin, Tex. Filed May 23, 1906. Serial No. 318,330.



Claim.—1. In a tire, the combination of a felly provided with a concave outer surface, a band of resilient material encircling the felly and conforming to the concave surface, and a tire body built up of laminæ, said laminæ being placed with one edge directly abutting the band of resilient material, the other edge forming the tread of the tire, sectors of sheet metal arranged on each side of the tire, said sectors being spaced apart, cross-bolts traversing the laminæ and the sectors, and radial bolts traversing the tire, the band and the felly, said tire having depressions for receiving the heads of the bolts.

2. In a tire, the combination of a felly provided with a concave outer surface, a band of resilient material encircling the felly and conforming to said concave surface, a tire body built up of laminæ, said laminæ being placed with one edge directly abutting the band of resilient material, the other edge forming the tread of the tire, sectors of sheet metal arranged on each side of the tire, said sectors being spaced apart from each other, means for securing the sectors and laminæ together, and means for securing the tire and the band to the felly.

854,464. HYDRAULIC DRILL. JAMES CHARLTON, Houston, Tex. Filed May 5, 1905. Serial No. 259,064.



Claim.—1. A tool of the character described, comprising a tubular drill-head having a radial slot therein with its upper end formed by a downward-facing shoulder, a cutter or bit having its upper end portion tapered or narrowed upward along its edges and flared upward laterally, and let into said slot, and a core having connection with said drill-head and effective for aiding the retention of said bit or cutter in place.

2. A tool of the character described, comprising a tubular drill-head having a radial slot therein with its upper end formed by a downward-facing shoulder, a cutter or bit having its upper end-portion tapered or narrowed upward along its edges and flared upward laterally and let into said slot and a core having screw-threaded connection with said drill-head and tapered downward for engagement with said tapered upper edges of said bits or cutters.

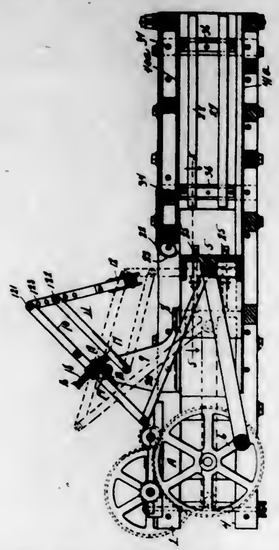
3. A tool of the character described, comprising a tubular drill-head having radial slots therein with their upper ends formed by downward facing shoulders, cutters or bits having their upper end-portions tapered along their edges and flared laterally and let into said slots, and a core having connection with said drill-head and tapered downward for engagement with said upper end-portions of said bits or cutters.

854,465. HAY-PRESS. JOHN CHRISTENSEN, Ann Arbor, Mich. Filed Dec. 4, 1905. Serial No. 290,051.

Claim.—1. In a hay press, in combination with a packing head and its stem, a walking beam actuator therefor, a saddle wherein the walking beam rests, a post to which the saddle is pivoted, a pin provided with heads at each end passing through the saddle and the walking beam and provided with springs, one of which engages around said pin above said walking beam, and the other of which engages around said pin below said saddle, a parallel bar pivoted to said post and to the stem of said packing head whereby said walking beam is cushioned by the joint action of both of said springs, substantially as described.

2. In a hay press, a tucker consisting of a curved plate pivotally supported by the body portion of the press, with its convex face normally in position to engage against the material advanced by the mechanism of the press, and adapted to prevent with an end of its concave face the recession of the material forced past it, and means at-

tached to the opposite end of the tucker whereby it is yieldingly held to its normal position, substantially as described.



3. In a hay press, in combination with longitudinal frame timbers, a casting having lateral portions within which said timbers engage and which form therewith an unbroken track for the plunger, the upper portion of said casting serving as a post on which to journal the packing lever, substantially as described.

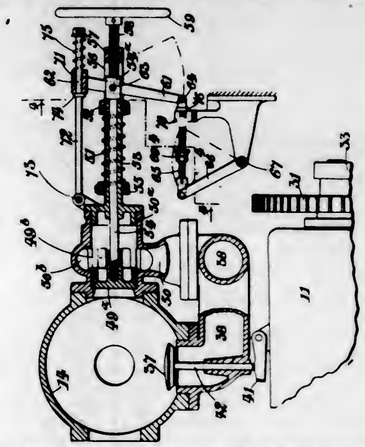
4. In a hay press, in combination with the frame bars extending longitudinally of the delivery chamber, bolts transversing said frame bars and extending across the frame and movable longitudinally along their own axis, posts suspended on said bolts, springs holding said posts in contact with the frame timbers, bars supported by said posts and forming the side walls of an expansible delivery chamber, substantially as described.

5. In a hay press, in combination with the timbers forming the frame of the delivery chamber, expansible side walls, and means whereby said expansible side walls are actuated independently of and without producing strain on the frame timbers, substantially as described.

6. In a hay press, in combination with the frame timbers of the delivery chamber thereof, side walls movable throughout their length to expand said chamber, the said side walls being supported by bolts carried by said frame timbers and which are movable with respect thereto without strain thereon.

854,466. APPARATUS FOR GENERATING AND STORING PRODUCTS OF COMBUSTION UNDER PRESSURE. THOMAS H. COLE, Southsea, England. Filed Nov. 19, 1906. Serial No. 344,095.

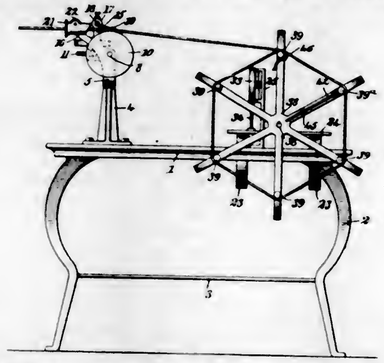
Claim.—1. Apparatus for generating and storing products of combustion under pressure, consisting essentially in the combination with an internal combustion motor adapted to work on a four-phase cycle and provided with means for causing the expulsion of practically the entire gaseous products of combustion at each exhaust stroke, of a reservoir for receiving the products of combustion so expelled, adapted to supply said products as motive fluid to an engine, and provided with outlet valves whereof the one is controlled by a governor actuated by the internal combustion motor so as to be adapted to relieve the working piston of said motor of back pressure so long as the speed of the motor is below a predetermined limit, while the other outlet valve is adapted to relieve the pressure within the reservoir when said pressure exceeds the maximum pressure against which the internal combustion motor is capable of delivering the products of combustion.



2. In apparatus for generating and storing products of combustion under pressure, the combination of an internal combustion motor adapted to work on a four-phase cycle and provided with means for imparting to the working piston a stroke of varying amplitude whereby on the compression stroke a combustion space is left in the working cylinder and on the exhaust stroke practically the entire gaseous products of combustion are expelled from the cylinder; a reservoir for receiving the products of combustion so expelled, adapted to supply said products as motive fluid to an engine, and provided with waste outlet valves whereof the one is controlled by a governor actuated by the internal combustion motor and adapted to relieve the working piston of said motor of back pressure so long as the speed of the motor is below a predetermined limit, while the other outlet valve is adapted to relieve the pressure within the reservoir when said pressure exceeds the maximum pressure against which the internal combustion motor is capable of delivering the products of combustion; and means for controlling the communication between the internal combustion motor and the reservoir, consisting of two lift valves situated in the rear end of the working cylinder of the motor and adapted to close toward one another under spring pressure, that valve which is next the reservoir being adapted to open under the pressure within the motor cylinder while that valve which is next the motor cylinder is carried by a spindle slidable longitudinally through the spindle of the other valve and is provided with means for causing it to open against the pressure within the motor cylinder, substantially as specified.

3. In apparatus for generating and storing products of combustion under pressure, the combination of an internal combustion motor adapted to work on a four-phase cycle and provided with means for causing the expulsion of practically the entire gaseous products of combustion at each exhaust stroke; a reservoir for receiving the products of combustion so expelled adapted to supply said products as motive fluid to an engine, and provided with waste outlet valves whereof the one is controlled by a governor actuated by the internal combustion motor and adapted to relieve the working piston of said motor of back pressure so long as the speed of the motor is below a predetermined limit, while the other outlet valve is adjustably loaded by a yielding pressure and is adapted to relieve the pressure within the reservoir when said pressure exceeds the maximum pressure against which the internal combustion motor is capable of delivering the products of combustion; and means, operated by the opening movement of the last mentioned valve, for controlling the supply of fuel to the internal combustion motor, substantially as specified.

854,467. COMBINED MEASURING, WINDING, AND WEIGHING MACHINE. CHARLES W. COTTRELL, Washougal, Wash. Filed May 12, 1906. Serial No. 316,518.



Claim.—1. In a machine, in combination, a wheel, an adjustable spring plate adapted to engage a rope or like material as it is passed over the wheel, a shaft to which the wheel is fixed, a worm on the shaft, a worm wheel with which the worm is meshed, and a pointer adapted to be revolved over the face of a dial for indicating the length of material passed over the wheel.

2. In a machine, in combination, a machine bed, a standard mounted thereon, a yoke carried at the upper end of the standard, a shaft journaled in the yoke, a worm on the shaft, a wheel fixed to the outer end of the shaft at one side of the yoke, a spring plate adjustably carried by the yoke to press a rope or like material to the wheel, a worm wheel in mesh with the worm, and a pointer adapted to be turned by the worm wheel over a dial for indicating the length of material passed between the wheel and spring plate.

3. In a machine, in combination, a wheel, a spring plate coacting therewith to engage a rope or the like as it is passed over the wheel, means operable by the wheel for indicating the length of the rope passed thereover, and a guide tube having a grooved roller journaled therein for directing the rope between the wheel and spring plate.

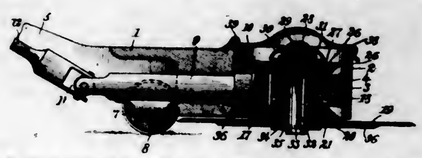
4. In a machine, in combination, a wheel having a rubber periphery, an adjustable spring plate adapted to engage a rope or the like as it is passed over the wheel, means operable by the wheel for indicating the length of the rope passed thereover, and a guide-tube having a roller journaled therein for directing the rope between the wheel and spring plate.

5. In a machine, in combination, a support, a shaft journaled in the support having a wheel fixed thereto, a spring plate adapted to engage a rope or the like as it is passed over the wheel, a worm fixed to the shaft and meshing with a worm wheel operating a pointer to indicate the length of the rope passed over the wheel, and guiding means for directing the rope between the wheel and spring plate.

854,468. GRASS-CUTTER. CHARLES F. CROSBY, Burlington, Vt. Filed Oct. 19, 1906. Serial No. 339,640.

Claim.—1. In a machine of the class described, in combination, a frame, a pair of rotary cutters mounted therein, gear wheels adapted to drive said cutters respectively, a third gear wheel meshing with said first gear wheels, and means for resiliently holding said first gear wheels in mesh with said last gear wheel.

2. In a machine of the class described, in combination, a frame, a pair of rotary cutters rotatably mounted therein, a pair of gear wheels adapted, respectively to drive said cutters, a third gear wheel meshing with said first gear wheels and adapted to drive the same in opposite directions, and resilient means for holding said cutters in co-operative relation and maintaining said gear wheels in mesh.



3. In a machine of the class described, in combination, a frame, a pair of rotary cutters rotatably mounted in said frame, a gear wheel rigid with one of said cutters, a sleeve rigid with the other of said cutters, a second gear wheel adapted to rotate said sleeve, a driving gear meshing with said first gears, and a spring maintaining said gears in mesh.

4. In a machine of the class described, in combination, a frame presenting a substantially vertical bore, a gear wheel rotatably mounted in the lower portion of said frame, a rotary cutter rigid therewith, a sleeve passing upwardly through said first gear wheel, a second cutter attached to the lower portion of said sleeve and abutting the face of said first cutter, a second gear wheel slidably mounted on said sleeve and adapted to rotate the same, a spring pressing said sleeve upwardly and forcing said last gear wheel downwardly, and a driving gear meshing with said first gear.

5. In a machine of the class described, in combination, a frame having a gear case presenting a substantially vertical bore, a gear wheel having a hub rotatably mounted in the lower portion of said bore, a rotary cutter carried by said gear wheel, a sleeve passing upwardly through said cutter and said hub, a second cutter carried by said sleeve and adapted to be driven thereby, a second gear wheel rotatably mounted in said bore and engaging said sleeve to rotate the same and slide thereupon, a spring forcing said sleeve upwardly and said second gear wheel downwardly whereby said spring affords means for holding said cutters resiliently in position, and a gear wheel meshing with both of said first gear wheels.

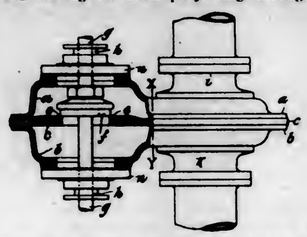
6. In a machine of the class described, in combination, a frame having a gear case presenting a substantially vertical bore therein, a bevel gear having a hub rotatably mounted in said bore, a rotary cutter rigidly attached to said bevel gear, a sleeve passing upwardly through said hub, a rotary cutter attached to said sleeve, a second gear wheel rotatably mounted in said bore and having a feather connection with said sleeve whereby it may slide upon said sleeve and rotate said sleeve, said sleeve projecting beyond said second gear wheel, and a bolt passing upwardly through said sleeve and holding said second cutter in engagement therewith, a plug attached to the upper end of said sleeve, a cup held in position by said plug, a spring under said cup and thrusting downwardly on said second gear wheel, and a third gear wheel meshing with said first gear wheels and affording means for driving the same in opposite directions.

854,469. CONSTRUCTION OF VALVE-CASINGS. HENRY CRUSE, Blackley, near Manchester, England. Filed June 14, 1906. Serial No. 321,693.

Claim.—1. A valve casing comprising two dish shaped metal parts, *a*, *b*, and an intermediate metal diaphragm bolted together and forming two chambers, each of said dish shaped parts having an opening therein adjacent one end of the casing and the diaphragm having an opening therein adjacent the other end, a valve seating surrounding said opening, and a valve coöperating with said seating.

2. A valve casing comprising two dish-shaped metal parts, and an intermediate metal diaphragm bolted together, and forming two chambers, each of said dish-shaped parts having two openings therein, an inlet pipe leading to one opening in one part and outlet pipe connected to the corresponding opening in the other part, said

diaphragm having an opening therein, a valve closing said opening and having its stem projecting through the remaining pair of openings in the dish-shaped parts and glands covering said openings.

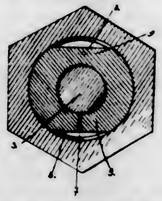


854,470. COMPOSITION FOR TREATING PAPER. JOSEF CZERNY, New York, N. Y., assignor to Moses Lempert, New York, N. Y. Filed Dec. 4, 1906. Serial No. 346,213.

Claim.—1. A compound for treating paper, consisting of potato, corn-starch, rice-starch and gum.

2. A compound for treating paper, consisting of white potato powder, corn-starch, rice-starch and gum tragacanth, mixed in substantially the proportions and in the manner set forth.

854,471. NUT-LOCK. WARREN H. DEVOE, Pittsburg, Pa. Filed May 23, 1906. Serial No. 318,402.



Claim.—In a nut lock, the combination with a threaded bolt, of a tapering inner nut threaded externally and internally from end to end and adapted to engage the threads of the bolt and with oppositely located flat faces, said inner nut split on one side throughout its length, the split extending from one flat face thereof into the central threaded opening, and two outer nuts whose combined thickness corresponds to the thickness of the inner nut and both outer nuts mounted upon the tapering inner nut and with threaded bores engaging the tapering inner nut.

854,472. SANITARY ATTACHMENT FOR TELEPHONE-TRANSMITTERS. JOSIAH W. DOLSON, New York, N. Y. Filed July 3, 1906. Serial No. 324,575.



Claim.—1. A sanitary attachment for transmitters, comprising a frame for attachment to the mouth piece of the transmitter, the said frame having an opening for registering with the opening in the mouth piece, arms extending from the upper end of the frame, at the sides thereof, means for supporting a roll of webbing on the said arms, and guides on the said frame above and below the said opening for guiding the webbing across the said mouth piece, each guide consisting of parallel transverse slots produced in the frame and forming between them a transversely extending bar.

2. A sanitary attachment for transmitters, comprising a frame having an opening for registering with the mouth piece of the transmitter, spring clamping tongues on the wall of said opening for clamping engagement with the edge of the mouth piece, arms extending integrally from the upper end of the frame, and a web carried by said arms, the said frame being provided with parallel transverse slots above and below the said opening, the said slots forming transverse bars, the web being passed through the said slots and behind the said bars.

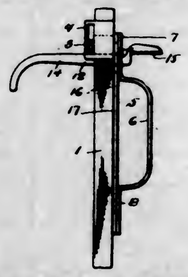
3. A sanitary attachment for transmitters, comprising a support consisting of a frame having an opening for registering with the opening in the mouthpiece of a transmitter, rearwardly extending spring clamping tongues on the wall of the said opening and for clamping engagement with the edge of the said mouthpiece, to hold the support in position on the mouthpiece, rearwardly bent arms extending integrally from the upper end of the frame and provided with rearwardly bent lugs, a spindle held in the said lugs and adapted to carry a roll of webbing, means on the spindle for holding the latter in position in the lugs, and guides on the said support for guiding the webbing across the said opening.

4. A sanitary attachment for transmitters, comprising a support having an opening for registering with the opening in the mouthpiece of a transmitter, spring clamping tongues on the wall of the said opening and for clamping engagement with the edge of the said mouthpiece to hold the support in position on the mouthpiece, a spindle held on the said support and adapted to carry a roll of webbing, the spindle having a head for spring contact with the support to hold the spindle against accidental movement, and guides on the said support for guiding the webbing across the said opening.

5. A sanitary attachment for transmitters, comprising a support having an opening for registering with the opening in the mouthpiece of a transmitter, spring clamping tongues on the wall of the said opening and for clamping engagement with the edge of the said mouthpiece to hold the support in position on the mouthpiece, a spindle held in lugs on the said support and adapted to carry a roll of webbing, the lugs carrying the spindle being bent rearwardly, the said spindle having a head forming a spring locking device for the spindle to hold the same in position in the lugs and guides on the said support for guiding the webbing across the said opening.

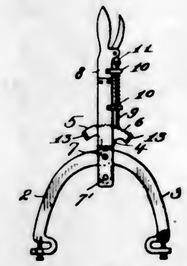
6. A sanitary attachment for transmitters, comprising a support having an opening for registering with the opening in the mouth piece of a transmitter, means for clamping the support in position on the mouth piece, a spindle held on the support, and a roll of webbing carried by the spindle and capable of being drawn across the said opening, the said spindle being provided at one end with a head forming a spring locking device to hold the spindle in position on the support.

854,473. LATCH. CHARLES J. ENGLERT, Allegheny, Pa. Filed May 22, 1906. Serial No. 318,132.



Claim.—In a thumb-latch, the combination of a slitted handle-plate, having an opening in its one end, a latch lever mounted in said opening, and means to prevent said lever from becoming disengaged from said handle-plate, substantially as described.

854,474. CULTIVATOR ATTACHMENT. JAMES S. EVANS, Lovelace, Tex. Filed Oct. 24, 1906. Serial No. 340,373.

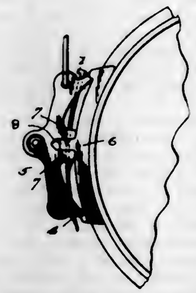


Claim.—1. An attachment of the class described comprising two legs pivoted together, one of the legs having a downward extension and the other an upwardly extending neck provided with a toothed segment, both legs having means for their attachment removably with the beams of a cultivator, and a lever supported by the pivot connecting legs and jointed to said downward extension, said lever having a detent for engagement with the teeth of said segment.

2. An attachment of the class described comprising two legs pivoted together, one of the legs having a toothed segment at its upper end located above the upper end of the companion leg, and the companion leg having a downward extension below the pivot uniting said legs, a lever supported for rocking movement by the pivot uniting said legs and connected with said downward extension below said pivot, and a detent carried by the lever for engaging the teeth of said segment.

3. An attachment of the class described comprising two legs pivoted together, one of which has a neck rising above the upper end of the companion leg, said neck being provided with a toothed segmental head, said companion leg being provided with a downward extension, a lever supported for rocking movement by the pivot uniting said sections and connected with said extension below said pivot, and a detent carried by the lever for engaging the teeth of said segmental head.

854,475. KEY FOR BRAKE-SHOES. DAVID H. FAIRBANKS, Nashville, Tenn. Filed Oct. 23, 1906. Serial No. 340,229.



Claim.—1. A key for brake shoes having lugs formed on opposite faces thereof.

2. A key for brake shoes having elastic gripping means formed on opposite faces thereof.

3. A key for brake shoes having a plurality of spring tongues struck up on opposite faces thereof.

4. A key for brake shoes having barbs punched out and partially detached therefrom.

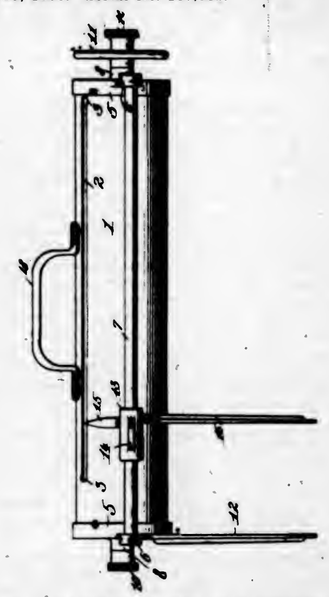
5. A key for brake shoes having barbs punched from and partially detached therefrom and on opposite faces thereof.

6. A key of spring metal having a plurality of spring tongues struck up from opposite faces of the key.

7. A key for brake shoes having compressible portions and spring tongues adjacent said compressible portions.

8. A spring metal key having compressible portions, and oppositely-disposed spring tongues struck up from the key adjacent the said compressible portions.

854,476. MEASURING DEVICE. WILLIAM C. FOGLE, Williamsburg, Kans., assignor, by direct and mesne assignments, to Alfred E. Putnam, Milan, Mich. Filed June 30, 1905. Serial No. 267,862.



Claim.—1. In a measuring machine or instrument of the class set forth, an inclosing casing having a slot therethrough, a cylindrical scale rotatably mounted in the said casing and provided with longitudinal lines forming regular spaces having end or head fold designating numerals consecutively arranged around the scale, the spaces being subdivided in planes at right angles to said lines to indicate the number of yards and fractions of yards, the sub divisions being varied as to their distances apart in the several spaces and proportionate to the number of folds which the several longitudinal spaces represent, and devices for engaging the opposite edges of the folded cloth to be measured, one of said devices being fixed to one end of the casing and the other movable longitudinally with respect to the cylinder and scale and toward and away from the other device.

2. In a measuring machine or instrument of the class described, a rotatable cylinder having thereon a scale divided longitudinally and circumferentially to represent the number of folds in a piece of goods and the yards or fractions of the latter in the specific number of folds, an inclosing casing having a longitudinal slot therein through which the cylinder is exposed, an arm fixed to one extremity of the casing, and an arm slidable longitudinally over the casing and provided with an indicator which cooperates with the slot.

3. In a measuring machine or instrument of the class described, a rotatable cylinder having a measuring scale thereon consisting of longitudinal spaces successively representing different numbers of folds of cloth, and subdivided to designate yards and fractions of yards, the fold spaces having head or marginal numerals at one end of the cylinder, an inclosing casing having a longitudinal slot and a terminal aperture to expose the spaces, subdivisions, and head numerals of the spaces, an arm fixed to one extremity of the casing, and a similar arm slidable longitudinally over the casing and having an indicator to coöperate with the slot.

4. In a measuring machine or instrument of the class described, the combination of a rotatable cylinder having a scale thereon longitudinally divided into spaces representing different numbers of folds, the spaces having head numerals increasing regularly circumferentially around the cylinder, the several spaces being subdivided to designate yards and fractions of a yard, the subdivisions in the several spaces increasing in number proportionately to the increase of the number of folds represented by the successive spaces, and means longitudinally movable with respect to the cylinder and applicable to the folds of cloth to be measured.

5. In a measuring machine or instrument of the class described, the combination of a rotatable cylinder having a scale thereon longitudinally divided into spaces continuing regularly throughout the circumference of the cylinder and having numerals successively increasing regularly to indicate the number of folds in various sizes of wound goods or cloth, the spaces being subdivided to designate yards and fractions of a yard, the subdivisions decreasing in extent proportionately to the increase of the number of folds represented by the successive longitudinal spaces, and devices for engaging the opposite edges of a folded piece of goods or cloth, one of the said devices being movable longitudinally of the cylinder and having an indicator to cooperate with the scale.

6. In a computing caliper, the combination with a casing and a stationary and an adjustable arm, of a chart containing a plurality of parallelly arranged scales, said chart being adjustable to register any desired scale in reading proximity to said adjustable arm.

7. In a computing caliper, the combination with a stationary and an adjustable arm, of a casing to which said arms are secured, a chart having a plurality of scales thereon parallel to each other and extending longitudinally of said casing, said chart being adjustable laterally of said casing to bring any of said scales into position for reading in connection with said movable arm.

8. A computing caliper comprising a fixed and an adjustable arm, a hollow casing upon which said arms are mounted, and a chart within said casing adapted for adjustment to bring different portions thereof in position for reading in connection with said movable arm.

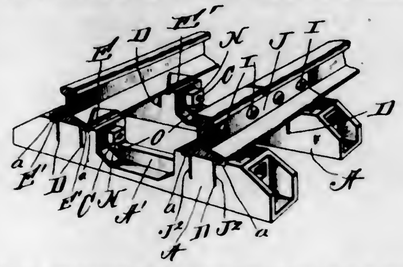
9. A computing caliper comprising a stationary and an adjustable arm, a hollow casing upon which said arms are mounted having a slot extending longitudinally thereof, and a chart within said casing adjustable to bring different portions thereof in registration with said slot.

854,477. COMBINED CROSS-TIE AND RAIL-FASTENING. EDWARD T. FORD and FRANK F. WASSAM, Dunkirk, Ind. Filed Mar. 26, 1907. Serial No. 364,611.

Claim.—1. A rail fastening device comprising, in combination with the ties having slits formed therein, bolts passing transversely through said slits in the ties and held by the latter, and rail clamping plates having each an aperture therein to receive a bolt, each plate being seated in one of said slits, as set forth.

2. In combination with a tie having slits therein, bolts passing through apertures formed transversely through said slits, and clamping plates having angled flanges designed to engage the flange of a rail, each plate positioned in a slit and provided with an aperture to receive a bolt, as set forth.

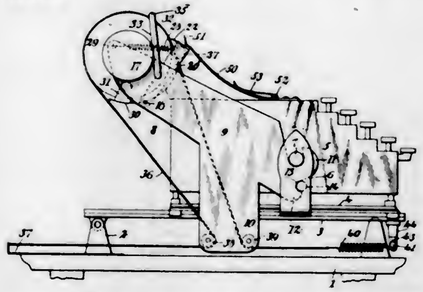
3. A rail fastening device comprising, in combination with the ties having slits formed therein, bolts passing transversely through said slits in the ties and held by the latter, each plate bent to form a shoulder adapted to rest in a recess formed in the top of the tie, the upper portions of said plates engaging the flanges of a rail, as set forth.



4. In combination with a plurality of ties having transverse slits formed therein, bolts passing through the walls of said slits, and rail engaging plates having wings extending into said slits and apertured to receive said bolts, the portions of said plates intermediate said wings extending underneath the bottoms of the rails, as set forth.

5. In combination with a metallic tie, the central portion of which is cut away forming a rib with recesses formed therein, the upper surface of said tie having transverse slits, bolt holes passing transversely through said slits in the ties, the heads of the bolts being adapted to be held from rotation by the angular-outlined hole in the tie, rail clamping plates fixed to the rails and seated in said slits and provided with apertures to receive said bolts, and nuts mounted upon the ends of said bolts, as set forth.

854,478. COPY-HOLDER ATTACHMENT. TULLIUS E. FORD, Philadelphia, Pa. Filed Jan. 5, 1907. Serial No. 350,878.



Claim.—1. A typewriter having a transversely disposed bar, arms supporting said bar, a copy frame having hooks engaging said bar adjacent to said arms, and adapted to swing on said bar, projections on said arms engaging said frame and co-operating with said hooks to support said copy frame, and means for supporting copy on said copy frame.

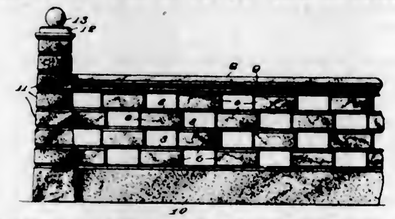
2. A typewriter having a transversely disposed bar projecting beyond the case thereof, a frame below said case and having upwardly extending arms supporting said bar, a copy frame having side plates with hooks engaging said bar, said arms having projections engaging said side plates to support said copy frame, said copy frame having a swinging movement on said bar limited by said projections and means for holding copy on said copy frame.

3. In combination, a frame, a typewriter carriage movably supported thereupon, a copy holder having a roller for holding the copy, and tension bands passing around said roller and having the ends thereof normally fixed with respect to said frame.

4. In combination, a frame, a typewriter carriage movably supported on said frame, a copy holder having a roller for holding the copy, tension bands having ends normally fixed with respect to said frame and passing around said roller, and anchor plates to which one end of said bands are attached and affording means for relieving the tension of said bands.

5. In combination, a frame, a typewriter carriage movably supported thereupon, a copy holder having a roller for holding the copy, tension bands passing around said roller and having the ends thereof normally fixed with respect to said frame, and means for releasing said tension bands when said typewriter is shifted upon said frame.

854,479. ORNAMENTAL FENCE. JOHN FORSTER, Los Angeles, Cal. Filed Oct. 24, 1906. Serial No. 340,293.



Claim.—1. A fence, comprising a plurality of posts having transverse grooves on the two opposite surfaces of each post, grooves on one surface being spaced intermediately of the grooves on the opposite surface, horizontal plates of substantially the same width as the posts and having their ends supported in the grooves in the adjacent posts, and face plates connecting each adjacent pair of posts and being substantially one-half as wide as the distance between the horizontal plates, the upper edge of each face plate being substantially even with the upper edge of the corresponding horizontal plate.

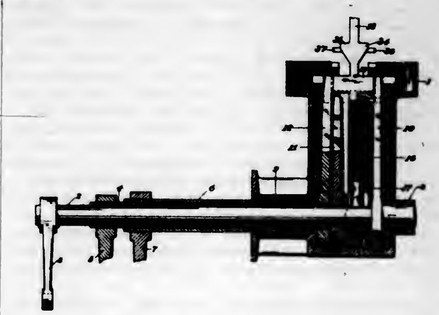
2. A fence, comprising a plurality of posts having transverse grooves on the opposite surfaces of each post, the grooves on one surface being substantially the same distance apart as the grooves on the opposite surface but arranged alternately therewith, horizontal plates of substantially the same width as the posts and having their ends supported in the grooves of the adjacent posts, the upper surfaces of said plates being downwardly inclined from the center and the front edges being provided with tongues, face plates connecting each adjacent pair of posts and provided with grooves on their back sides adjacent their upper edges adapted to fit the tongues of said horizontal plates, a rail extending along the upper ends of the posts and above the plates, and a base board extending along the lower ends of the rail and below the plates.

3. A fence, comprising a plurality of posts, tiers of horizontal plates supported between each adjacent pair of posts, the plates of each tier being of substantially the same distance apart but spaced alternately with the plates in the next succeeding tier, face plates attached to the front edge of the horizontal plates and extending from one post to the next adjacent post, and a rail extending along the upper ends of all of the posts.

4. A fence, comprising a plurality of posts, rows of face plates connecting each adjacent pair of posts, the face plates of one row being spaced alternately with the plates of the next adjacent row and the front surface of each plate being beveled, a rail extending along the upper ends of all of the posts, and a base board extending along the lower ends of all of the posts.

854,480. SHIFTING DEVICE FOR GEARING. LEE A. FRAYER and WILLIAM J. MILLER, Columbus, Ohio, assignors to The Oscar Lear Automobile Company, Columbus, Ohio, a Corporation of Ohio. Filed Apr. 5, 1906. Serial No. 309,968.

Claim.—1. Shifting devices for gearing, comprising nested shafts connected with said gearing, shifting levers mounted on said shafts to rotate the same, a controlling lever mounted on one of the shafts and constructed to oscillate longitudinally thereon to engage some of said shifting levers and to oscillate transversely thereon to actuate any of said levers to compel a rotation of the shaft desired.



2. Shifting devices for gearing comprising nested shafts connected with said gearing, levers mounted on said shafts to rotate the same, a controlling lever mounted on one of the shafts and free to oscillate both longitudinally and transversely thereon and constructed to engage a selected shifting lever to actuate the same, and means to prevent the movement of the remaining levers.

3. Shifting devices for gearing comprising a central shaft, tubular shafts mounted concentrically thereon, shifting levers mounted on said shafts to rotate the same, a controlling lever mounted on one of said shafts and constructed to admit of longitudinal and transverse oscillation thereon and constructed to be depressed radially thereon, said controlling lever being adapted to engage and to rotate any selected shifting lever, and means adapted to prevent movement of the remaining levers.

4. Shifting devices for gearing comprising a central shaft, tubular shafts concentrically arranged thereon, shifting levers mounted upon said shafts, a controlling lever mounted on one of said shafts and constructed to oscillate longitudinally thereon to engage a shifting lever, and constructed to oscillate transversely thereon to compel said shifting lever to rotate its shaft, and pivotally mounted means inclosing said levers and adapted to prevent movement of the levers not engaged by the controlling lever.

5. In a shifting device for gearing, a plurality of shifting levers, a controlling lever mounted to admit of transverse and longitudinal oscillation throughout its length, rigid jaws formed on the faces of said controlling lever adapted to engage a selected shifting lever, pivotally mounted means inclosing said levers, said means being adapted to be moved laterally by said controlling lever when said jaws are brought into engagement with said shifting lever, whereby said means is positioned to lock the remaining shifting levers against movement thereof.

6. In a shifting device for gearing, a plurality of shifting levers, a pivotally mounted frame inclosing said levers, there being a recess in the side of said frame, a controlling lever mounted to be oscillated longitudinally and transversely throughout its length, rigid jaws formed on the faces thereof, said controlling lever being adapted to be swung laterally to engage said jaws with a shifting lever, whereby said frame is swung laterally, and a second shifting lever is thereby locked in said recess.

7. In a shifting device for gearing a fingered shifting lever, a controlling lever adapted to be depressed radially against spring pressure, a casing inclosing said levers, means carried by said controlling lever to engage said fingered lever when said controlling lever is depressed, and means carried by said controlling lever to engage against said casing to maintain said controlling lever in operating engagement with said fingered lever.

8. In a shifting device for gearing, a plurality of shifting levers, a fingered shifting lever, a frame surrounding

said levers, there being pivoted legs having openings therethrough supporting said frame and recesses in said frame, a controlling lever adapted to operate said shifting levers, said fingered shifting lever being held against movement by contacting with said legs when another shifting lever is operated, the fingers on said fingered lever being adapted to pass through the openings in said legs to permit said lever to be operated.

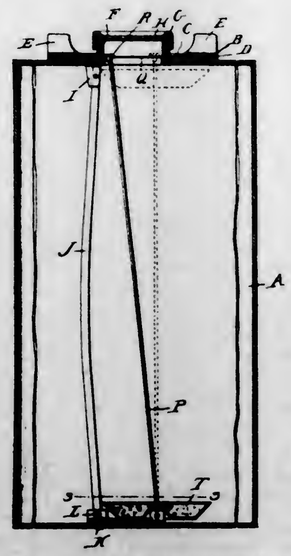
9. In a shifting device for gearing, shifting levers, a controlling lever mounted to be oscillated longitudinally to engage certain shifting levers and to be depressed radially to engage other shifting levers, and to be oscillated transversely to operate any of said shifting levers, means to permit the selection of any shifting lever desired to be operated by said controlling lever, and means to prevent the operation of all shifting levers except the one so selected.

10. In shifting mechanism for gearing, a shaft, a controlling lever mounted thereon and constructed to be depressed radially thereon, and spring-pressed means carried by said lever and bearing against said shaft and adapted to maintain said lever normally in elevated position.

11. In shifting mechanism for gearing, a plurality of levers, a pivotally mounted frame surrounding said levers, a controlling lever adapted to swing said frame upon its pivot, and spring-actuated means constructed to return said frame to normal position.

12. In shifting devices for gearing, a controlling lever, a fingered shifting lever, a frame member surrounding said levers and mounted to oscillate laterally upon pivoted legs, said legs having openings therethrough, means for oscillating said frame member, the operation of said fingered lever being prevented by the engagement of a finger with one of said legs when the frame member is in oscillated position, and the operation of said fingered lever being permitted by the passing of a finger through one of said openings when the frame member is in normal position.

854,481. AUTOMATIC GAGE. PHELPS M. FREER, Barberton, Ohio, assignor of two-fifths to Harold C. Parsons, Akron, Ohio. Filed Sept. 12, 1906. Serial No. 334,367.



Claim.—1. An automatic gage comprising a pivoted indicating member, means tending normally to move said indicator in one direction, a float movable on said indicating member adapted to move it in a reverse direction, and a member for guiding the float in its movement.

2. An automatic gage comprising a pivoted indicating member, a weight tending normally to swing said indicating member in one direction, a float movable on said indicating member effecting its movement in a reverse direction, and a member for guiding said float in its movement.

3. An automatic gage comprising an indicating member pivotally mounted at one end, a weight on one side of the pivot of said member tending normally to swing it in one direction, a float movable on said member for overcoming the action of said weight and swinging the indicating member in a reverse direction, and a member for guiding the float in its movement.

4. An automatic gage comprising an indicating rod pivotally mounted at one end, a weight on one side of its pivot tending normally to swing said indicating rod in one direction, a float slidable on said indicating rod for overcoming the action of the weight and effecting the movement thereof in a reverse direction, and a guiding member for the float, said float being held in contact therewith by said weight.

5. An automatic indicator comprising an upright, a support carried by said upright, an indicating rod pivotally mounted at one end of said support, a weight on one side of the pivot of said rod tending to swing it in one direction and a float slidable on said rod for effecting its movement in a reverse direction, said float being held in contact with the upright during its movement by the action of the weight.

6. An automatic gage comprising an upright, a support adjustable on said upright, an indicating rod pivotally mounted at one end of said support, a weight at one side of the pivot of said rod, and a float slidable on said rod and guided by said upright in its movement.

7. The combination with a vessel having a threaded opening, a cover or plate fitting in said opening formed with a circular opening, a collar surrounding said opening and externally screw-threaded, a dial supported by said collar having an elongated slot graduated along one edge, a transparent plate, a retaining ring engaging said plate, a coupling for securing the retaining ring to the collar, a standard arranged in the vessel provided at its lower end with a support, an indicating rod pivotally mounted at the lower end of said support and having its upper end adapted to move in the slot of the dial, a weight on one side of the pivot of the indicating rod, and a float movable upon said indicating rod and guided in its movement by said standard.

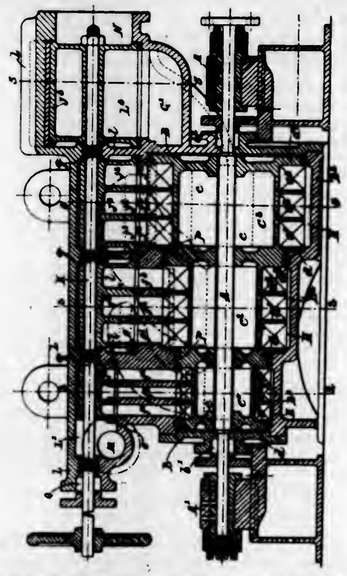
8. The combination with a vessel having an opening formed therein, a plate or cover removably secured to said opening, formed with an opening, a dial secured in said opening of the plate, a rod carried by said plate depending into the vessel, a support carried by said rod, an indicating rod pivotally mounted upon said support, a weight attached to said indicating rod upon one side of its pivot, a pointer carried by the upper end of the indicating rod coacting with said dial, and a float movable upon said indicating rod and guided in its movement by the depending rod carried by the cover.

9. An automatic gage comprising a longitudinal bowed rod, a pivotally mounted indicating member, a weight on one side of the pivotal point of said indicating member, and a float movable on said indicating member and guided by said bowed rod.

10. An automatic gage comprising a pivoted indicating member, a float slidable upon said indicating member, a guide for guiding said float in its movement, and means tending to move said indicating member in one direction and to normally hold the float in engagement with the guide.

854,482. REVERSING STEAM-TURBINE. WILLIAM C. GARDINER, Aberdeen, Scotland. Filed July 31, 1906. Serial No. 328,498.

Claim.—1. In a multiple-expansion reversible steam turbine, a series of bucket-wheels of progressively increasing diameter, a casing forming a series of chambers of progressively increasing size in which said bucket wheels rotate, each chamber being in the shape of segments of two cylinders and of such cross sectional area that the internal diameter of the one segment of each chamber from outlet pipe to outlet pipe is greater than the diameter of the bucket wheel which the casing incloses, and the internal diameter of the other segment of each chamber from outlet pipe to outlet pipe is substantially the same as the diameter of the corresponding bucket-wheel so that a channel is left on the one side only, between the casing and the bucket-wheels for the passage of the steam, substantially as and for the purpose specified.



2. In a multiple-expansion reversible steam turbine, a series of bucket-wheels of progressively increasing size, a series of chambers of progressively increasing size in which the bucket wheels rotate, each chamber having its lower side of greater internal diameter than the external diameter of the corresponding bucket wheel, the bucket wheel being provided with buckets each of which is divided in the axial direction into a series of sections by means of partitions disposed in planes perpendicular to the axis of rotation substantially as described.

3. In a multiple-expansion reversible steam turbine, a series of bucket-wheels of progressively increasing size, a series of chambers of progressively increasing size in which said bucket wheels rotate, each chamber having its lower side of greater internal diameter than the external diameter of the corresponding bucket-wheel, and buckets contracted in their width and made of irregular shape so as to be adapted to offer additional surfaces against which the steam can impinge, substantially as specified.

4. In a multiple-expansion reversible steam turbine, the combination with a casing formed of a series of bucket wheel chambers, valve chests, and exhaust chambers, and a series of bucket wheels each mounted to rotate in one of the bucket wheel chambers, of a series of sector-shaped valves moving together on the same axis, each valve being mounted to oscillate in one of the valve chests, and having pairs of inlet and outlet ports for controlling the entrance of the steam into the bucket-wheel chambers substantially as specified.

5. In a multiple-expansion reversible steam turbine, a casing formed of a series of bucket wheel chambers, valve chests, and exhaust chambers, a series of bucket wheels, each mounted to rotate in one of the bucket wheel chambers, a series of sector-shaped valves all of progressively increasing cross-sectional area, and adjustable wearing shoes for said valves.

6. In a multiple-expansion steam turbine, a series of bucket wheels of progressively increasing size, a series of chambers of progressively increasing size in which said bucket wheels rotate, each chamber having its lower side of greater internal diameter than the external diameter of the bucket wheel, so as to form a narrow channel for the passage of the steam between the walls of the chamber and the bucket wheels, the walls of said portion of the chamber having a series of cavities extending parallel to the axis of the corresponding bucket wheel, the wall of the chamber between the cavities extending adjacent to the periphery of the bucket wheel, substantially as described.

7. A multiple-expansion reversible steam turbine, comprising a casing containing a series of bucket wheel chambers, valve chests and exhaust chambers of progressively increasing cross-sectional area, a series of bucket wheels of progressively increasing cross-sectional area, each wheel being of smaller cross-sectional area in its lower part than that of the chamber in which it rotates, a shaft extending through the bucket wheel chambers and carrying the bucket-wheels, thrust rings fitting into annular grooves formed on the inner surfaces of the bucket-wheel chambers, and valve chests respectively, a sector-shaped high pressure valve with a series of pairs of inlet ports, and intermediate sector-shaped valves with a series of pairs of inlet and outlet ports, each valve being fitted with an adjustable wearing shoe and fitted on a shaft extending the whole length of the valve chests, with means for oscillating the shaft, an intermediate body portion of the casing having series of pairs of inlet ports leading from the valve chests to the bucket-chambers, said portion of the casing constituting steam-tight working surfaces for the valves and bucket wheels, a cylindrical exhaust valve chest, and an exhaust pipe opening out of the valve chest, substantially as described.

854,483. MANIFOLDING-PAD. SOUTH W. GASS, Evart, Mich. Filed May 11, 1906. Serial No. 316,274.



Claim.—1. In a manifolding pad, a pasteboard box partially open at one end, a flap and a top integral with the box, a rectangular opening in the flap, a binding strip carrying a wire loop at the free end of the flap, a flange

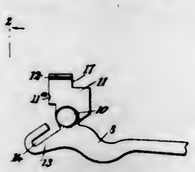
secured to the closed end of the box adapted to be engaged by the wire loop to latch the flap in closed relation, a pasteboard back secured to the bottom of the box, folding strips connecting the edges of the back with the bottom of the box forming a pocket, a cover attached to the box, pockets carried by the cover, manifolding means carried by the box, and a binding material covering the box, flap and cover.

2. A manifolding pad comprising a box having a rounded end partially open, a folded ribbon composed of a plurality of layers in the box and adapted to be passed through the open end over the rounded end thereof, carbon sheets carried on top of the box co-operating with the layers of the ribbon, and means for holding the carbon sheets and ribbon on the top of the box.

3. In a manifolding pad, a ribbon composed of a plurality of layers of paper reversely folded back and forth upon itself, a box in which the ribbon is contained, copying means carried by the box, a flap hinged to one end of the box, a flange fixed to the box, and a loop carried at the free end of the flap adapted to be engaged with the flange for locking the flap to the box, said flange also serving as a means for tearing off the ribbon.

4. In a manifolding pad, a box, carbon sheets carried on top of the box, a ribbon composed of a plurality of layers folded in zigzag fashion in the box passing over the top thereof and embracing the carbon sheets, a flange fixed to the box, and a flap hinged to the box having a loop adapted to be passed over the flange for holding the carbons and ribbon in place, with one end of the ribbon passing through the loop.

854,484. TYPE-WRITER. CHARLES GIBBS, New York, N. Y. Filed Mar. 8, 1907. Serial No. 361,233.



Claim.—1. In a machine of the class described, in combination, a segment having sockets in the edge thereof, a plurality of hangers sliding respectively into said sockets interlocking therewith and projecting beyond the edge of said segment, and type bars pivotally attached to the projecting parts of said hangers beyond said edge.

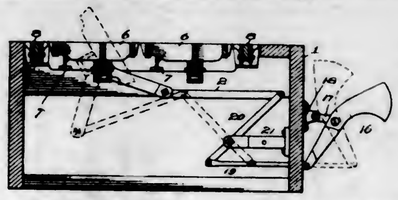
2. In a machine of the class described, in combination, a vertically disposed segment having radially disposed slots in the edge thereof, a plurality of hangers sliding horizontally into said slots, an interlocking connection between said hangers and said slots preventing a radial movement thereof in said slots, said hangers projecting beyond the edge of said segment, and type bars pivotally attached to said hangers on the projecting parts thereof.

3. In a machine of the class described, in combination, a fixed member having a plurality of slots, said slots having grooves therein, a plurality of hangers received in said slots and having tongues adapted to slide into said grooves, and a plurality of type bars respectively pivoted on said hangers.

4. In a machine of the class described, in combination, a segment having a plurality of slots with grooves therein, a plurality of hangers received respectively in said slots and having tongues received in said grooves, a curved lock bar removably attached to said segment adjacent to said hangers and locking the same against withdrawal, and a plurality of type bars pivotally mounted respectively on said hangers.

854,485. FURNACE-GRATE. EDWARD GIBSON, Freneau, N. J. Filed Apr. 4, 1906. Serial No. 309,862.

Claim.—1. In a grate, a frame provided with notches projected from its upper edge, lugs carried by the frame pieces between and below the notches, a rocking bar provided with alined trunnions proportioned to be journaled in the notches, grate sections provided with means for interengagement with the rocking bar, and a connecting bar provided with means for interengagement with the several grate sections, and for contact with the lugs.



2. In a grate, frame pieces provided with bearing notches projected from its upper edge, lugs formed upon the inner surface of the frame pieces between and below the spaced notches, a rocking bar comprising spaced side bars, and upturned end portions, alined trunnions carried upon the extremities of the upturned portions and proportioned to be journaled within the notches, grate sections provided with means for interengagement with the side bars of the rocking bar, and a connecting strip rigidly secured to the grate sections and positioned for engagement with a lug.

3. In a grate, a frame provided with alined bearing notches formed in its opposite sides, lugs formed upon the inner surface of the frame and between and below the bearing notches, a rocking bar comprising spaced side bars and upturned end portions, alined trunnions formed upon opposite faces of the upturned ends and proportioned to be journaled in the bearing notches, grate sections provided with webs adapted to be inserted and secured between the side bars of the rocking bar, a connecting strip rigidly secured to the several grate sections, and positioned to contact with and bear upon one of the lugs, an arm rigidly carried by and obliquely to the rocking bar, and means connected with the arm for moving the rocking bar angularly upon its trunnions.

854,486. DISPLAY-CARRIER FOR ARTIFICIAL TEETH. JOSEPH F. GIBSON, York, Pa., assignor to The Dentists Supply Company, New York, N. Y. Filed Mar. 7, 1907. Serial No. 361,170.



Claim.—A device of the character described, comprising a support having a longitudinal hole, a coiled spring mounted in said hole, and a plurality of holes or recesses extending inward from the face of the support and crossing and extending below the longitudinal hole, whereby the pins of the articles to be supported by said device may extend through and below the coiled spring and be held by the said recesses against removal from the support excepting by an endwise withdrawing movement.

854,487. ERASER-HOLDER FOR LEAD-PENCILS. BYRON B. GOLDSMITH, New York, N. Y. Filed Dec. 29, 1906. Serial No. 349,930.



Claim.—1. The combination of a lead pencil provided with a ferrule irremovably secured to its butt end, an open ended eraser holder detachably fitted to the ferrule, and an eraser block projecting from each end of the holder, substantially as described.

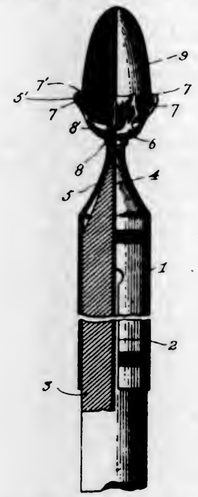
2. A lead pencil provided with a ferrule irremovably secured to its butt end, an eraser holder detachably and reversibly fitted to the ferrule, and an eraser block held in the holder and longitudinally adjustable therein, substantially as described.

3. A lead pencil provided with a ferrule at its butt end, an eraser holding open ended sleeve fitted to the ferrule for insertion and removal at both ends, and an eraser block in the holder projecting at both ends therefrom and longitudinally adjustable therein, substantially as described.

4. A lead pencil provided with a ferrule at its butt end, an open ended eraser holding sleeve, screw-threaded at each end and each end fitted for insertion in and removal from the ferrule, and an eraser block in the holder projecting at each end therefrom and longitudinally adjustable therein, substantially as described.

5. An open ended eraser holding sleeve, screw threaded at each end and each end fitted for insertion in and removal from a ferrule or tube, an eraser block in the holder projecting at each end therefrom and longitudinally adjustable therein, and a screw threaded ferrule or tube into which the holder fits, substantially as described.

854,488. ERASER-TIP FOR LEAD-PENCILS. BYRON B. GOLDSMITH, New York, N. Y. Filed Jan. 15, 1904. Renewed Jan. 30, 1907. Serial No. 354,912.



Claim.—1. An eraser tip for lead pencils comprising a ferrule for embracing the end of the lead pencil, a cup-shaped receptacle having a perforation in its base through which it is slipped upon and permanently secured to one end of said ferrule, and a block of erasive material seated in said cup-shaped receptacle and clamped in place therein by having the circumferential edges of the receptacle bent inwardly upon the block, substantially as described.

2. An eraser tip for lead pencils comprising a ferrule for embracing the end of the lead pencil having one end contracted into a neck, a cup-shaped receptacle having a perforation in its base through which it is slipped upon and permanently secured to the neck, and a block of erasive material seated in said cup-shaped receptacle and clamped in place therein by having the circumferential edges of the receptacle bent inwardly upon the block, substantially as described.

3. As an article of manufacture, a ferrule adapted to embrace either the pointed or butt end of a lead pencil, and having one end reduced and provided with an annular shoulder; a cup shaped receptacle applied to said reduced end so as to abut against the annular shoulder; and an expanded portion of the ferrule clamping the said cup shaped receptacle to the annular shoulder, substantially as described.

4. As an article of manufacture, a ferrule adapted to embrace either the pointed or butt end of the pencil, and having one end reduced and formed into a thimble, at the base of which is an annular shoulder; a cup shaped receptacle passed over the thimble so as to abut against the annular shoulder; and an expanded portion of the thimble clamping the cup shaped receptacle to the shoulder, substantially as described.

5. An eraser tip for lead pencils, comprising a ferrule having one end reduced and formed into a thimble at the base of which is an annular shoulder; a cup shaped receptacle passed over the thimble so as to abut against the shoulder and clamped thereto by an expanded portion of the thimble; a block of erasive material housed in said receptacle; and inturned portions of the rim of the receptacle for holding the erasing block in place, the said block being provided with an axial socket for the reception of the thimble, substantially as described.

854,489. TROLLEY-POLE SUPPORT. JOHN GRIBBEN, Sharpsburg, Pa., assignor of one-half to David J. Morgan, Pittsburg, Pa. Filed Jan. 23, 1907. Serial No. 353,738.



Claim.—1. The combination with a cylindrical trolley pole adapted to be supported in the ground, of a coated post mounted in said pole and ground and adapted to support said pole above said ground, and a collar of insulating material interposed between said pole and ground, substantially as described.

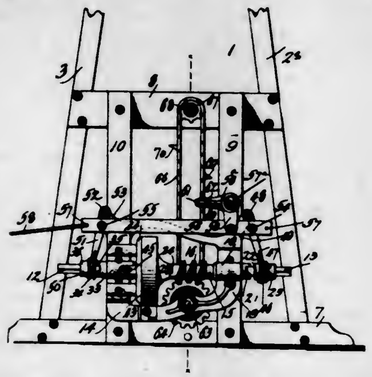
2. The combination with a trolley pole adapted to be supported from the ground, of a locust post fitting in said pole and in the ground for supporting said pole above the ground, and a collar of non-conductive material interposed between said pole and the ground, substantially as described.

3. The combination with a trolley pole adapted to be supported from the ground, a wooden post mounted in said pole and in said ground, and an insulating material interposed between said pole and the ground and surrounding said wooden post.

4. The combination with a hollow metallic trolley pole, of a post received in the hollow pole and supporting said pole, a coating or sheath of preservative material on said post, and an insulating material surrounding said post beneath said pole, substantially as described.

5. The combination with a hollow metallic trolley pole, of a wooden post entering the lower end of the pole and supporting the latter, and an insulating material arranged around the lower end of said pole.

854,490. WAGON-JACK. GEORGE HAAG and ALBERT HAAG, Peoria, Ill. Filed Feb. 5, 1906. Serial No. 300,164.



Claim.—1. In an apparatus of the class specified, the combination with elevating means for the front end of a wagon, a drive-shaft in connection with said elevating means, an internal-ring-gear on said shaft, a plurality of gears in mesh with said internal-gear one of which is carried by the said shaft, clutch controlled means for clutching the gearing to the said shaft, and governing means actuated by the said shaft for disconnecting the clutch controlled means from the gearing.

2. In an apparatus of the class specified, the combination with raising and lowering means, a drive-shaft in connection with said means, an internal-ring-gear carried on said shaft, a plurality of gears in mesh with said ring-gear one of which is carried by the said shaft, hand operated means for clutching said gearing to the shaft, and means operating at predetermined intervals for automatically disconnecting said gearing from the shaft.

3. In an apparatus of the class specified, the combination with raising and lowering means, a drive-shaft, worm and worm-wheel gearing interposed between the said shafts and said raising and lowering means, an internal-ring-gear carried by said shaft and in connection with said worm, a plurality of gears in mesh with said internal-gear one of which is carried by said shaft, hand operated means for clutching the gearing to the shaft, and means operating at pre-determined intervals for automatically disconnecting said gearing from the shaft.

4. In an apparatus of the class specified, the combination with raising and lowering means, a drive-shaft, worm and worm-wheel gearing interposed between the said shaft and said raising and lowering means, an internal-ring-gear carried by said shaft and in connection with said worm, a plurality of gears in mesh with said internal-gear one of which is carried by said shaft, hand operated means for clutching either the said gearing or worm-wheel and their connections with said shaft, and means operating at pre-determined intervals in the raising or lowering of said raising and lowering means for automatically disconnecting the said gearing or worm from the said shaft.

5. In raising and lowering mechanism, a support, an intermittently driven worm-shaft and worm, means for clutching the worm to the shaft, an internal-ring-gear carried by the said shaft and in engagement with said worm, clutch controlled driving devices on said shaft in connection with said ring-gear, and an endless belting provided with means for automatically controlling the clutch controlled driving devices and means for clutching the worm to the shaft, and thereby check the movement of said driving-shaft.

6. In raising and lowering mechanism, a drum-shaft supporting a drum and having attached thereto a worm-wheel, an intermittently actuated driving-shaft, a worm on said shaft in mesh with the said worm-wheel, means for clutching the worm to the shaft for driving the worm-wheel in one direction, an internal-ring-gear also carried by said shaft and in engagement with said worm, gearing meshing with said internal-ring-gear, and mechanism for clutching said gearing to the shaft and thereby reversing the movement of the said worm and worm-wheel through the connection of the internal-ring-gear with said worm.

7. In raising and lowering mechanism, a drum-shaft supporting a drum having attached thereto a worm-wheel, a driving-shaft, a worm on said shaft in mesh with said worm-wheel, means for clutching the worm to the shaft for operating said worm-wheel in one direction, an internal-ring-gear also carried by said shaft and in engagement with said worm, a plurality of gears in mesh with said internal-ring-gear one of which is carried on said shaft, and means for clutching said last mentioned gear to the shaft and thereby reversing the movement of said worm and worm-wheel through the operation of the internal-ring-gear in engagement with the worm.

8. In raising and lowering mechanism, a drum shaft supporting a drum and having attached thereto a worm-wheel, a driving-shaft, a worm on said shaft in mesh with the worm-wheel, mechanism for clutching the worm to the shaft and driving the worm-wheel in one direction, an internal-ring-gear connected with said worm, a plurality of gears in mesh with said internal ring gear one of which is carried by said shaft, mechanism for clutching the last mentioned gear to the shaft for imparting a reverse movement to the worm through the internal-ring-gear connected therewith, and automatically actuated means for dis-connecting the clutch mechanism aforesaid from either the worm or the gear for checking the movement of said shaft.

9. In raising and lowering mechanism, a drum shaft supporting a drum and having attached thereto a worm-wheel, means for actuating said worm-wheel consisting of a driving-shaft, a worm carried thereby and in mesh with the worm-wheel, an internal-ring-gear connected with said worm, clutch mechanism for clutching the internal-ring-gear to the said shaft, a lever connected with said clutch mechanism, hand operated means for moving the said lever to connect the clutch mechanism with the said internal-ring-gear, and automatically actuated means for reversing the lever and thereby dis-connecting the said clutch mechanism from the internal-ring-gear.

10. In an apparatus of the class specified, the combination with raising and lowering means, a driving-shaft, a worm on the driving-shaft and in connection with said raising and lowering means, internally arranged gearing also carried on the said shaft and in connection with said worm, clutch means on the outer opposite ends of said shaft adapted to be intermittently and alternately connected with the worm and said internal gearing for clutching the same to the shaft, lever connections with the clutch means aforesaid, mechanism in connection with said levers, hand operated means for shifting the said lever simultaneously for clutching or disconnecting the worm or said internal gearing with the shaft, and means operating at predetermined intervals for automatically actuating said clutch means through the said levers for checking the movement of said shaft.

11. In an apparatus of the class specified, the combination with raising and lowering means, of a drive-shaft, an elongated sleeve carried on said shaft and provided with a worm, means adapted to have engagement with the outer end of said sleeve for clutching the same to the shaft, internally arranged gearing having clutch connection with the inner end of the worm-sleeve, and means adapted to have engagement with said internal gearing for clutching the same to said shaft, said means for clutching the worm and the internal gearing to the shaft operating alternately.

12. In an apparatus of the class specified, the combination with raising and lowering means, of a drive-shaft, an elongated sleeve carried on said shaft and provided with a worm, a clutch sleeve slidably and revoluably carried on the shaft adapted to have a clutch engagement with the outer end of the worm-sleeve, internally arranged gearing having clutch connection with the inner end of the worm-sleeve, a clutch sleeve slidably and revoluably carried on the opposite end of said shaft adapted to have a clutch engagement with said internal gearing, and means for controlling said clutch sleeves.

13. In an apparatus of the class specified, the combination with raising and lowering means, of a drive-shaft, an elongated sleeve carried on said shaft and provided with a worm, means adapted to have engagement with the outer end of said sleeve for clutching the same to the shaft, an internal-ring-gear having connection with the inner end of the worm sleeve and carried on said shaft, a plurality of gears in mesh with said internal-ring-gear one of which is carried on said shaft, means adapted to have connection with said last mentioned gear for clutching the same to the shaft, and mechanism for controlling the clutch means aforesaid.

14. In an apparatus of the class specified, the combination with raising and lowering means, of a drive-shaft, a worm-sleeve adapted to have an intermittent clutch connection with said shaft, an internal-gear in connection with said worm-sleeve, a gear carried on said shaft and adapted to have an intermittent clutch connection therewith, gearing interposed between the said gear and internal-gear, and means operating alternately for clutching the worm-sleeve and gear to said shaft.

15. In an apparatus of the class specified, the combination with raising and lowering means, of a drive-shaft, a worm loosely carried on said shaft and adapted to have an intermittent clutch connection therewith, an internal-ring-gear provided with a hub portion having connection with said worm, a gear loosely carried on said shaft and adapted to have an intermittent clutch connection therewith, one or more short shafts disposed parallel with the drive-shaft, gears carried by said short shafts and intermeshing with the internal-ring-gear and gear carried by the drive-shaft, and mechanism for clutching the worm or the gear aforesaid to the drive-shaft.

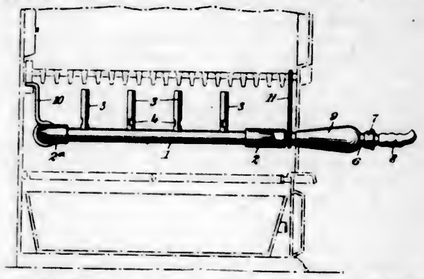
16. In an apparatus of the class specified, the combination of a drum shaft and drum, elevating means adapted to be operated by said drum-shaft, a drive-shaft, a worm loosely carried on said shaft and adapted to have an intermittent clutch connection therewith, gearing connecting the worm with the drum-shaft, internally arranged gearing loosely carried on the drive-shaft in connection with the worm and adapted to have an intermittent clutch connection with said shaft, means for clutching the worm to the shaft when it is adapted to lower said elevating means, and means adapted to clutch the internal gearing to the shaft when it is adapted to raise said elevating means, which said connection reverses the movement of said drum.

17. In an apparatus of the class specified, the combination of a drum-shaft and drum, elevating means adapted to be operated by said drum-shaft, a drive-shaft, a worm loosely carried on said shaft and adapted to have an intermittent clutch connection therewith, gearing connecting the worm with the drum-shaft, internally arranged gearing loosely carried on the drive-shaft in the connection with the worm and adapted to have an intermittent clutch connection with said shaft, means for clutching the worm to the shaft when it is adapted to lower said elevating means, means adapted to clutch the internal-gearing to the shaft when it is adapted to raise said elevating means, a bell-crank-lever having a common connection with the clutch means for the worm and internally arranged gearing, and an endless belting adapted to be actuated by the drum-shaft and provided with means for engaging with said bell-crank-lever for disengaging said clutch means and checking the movement of said shaft.

854,491. FIRE-KINDLER. WILLIAM H. HAGGERTY and WILLIAM J. DARDIS, New York, N. Y. Filed June 27, 1906. Serial No. 323,591.

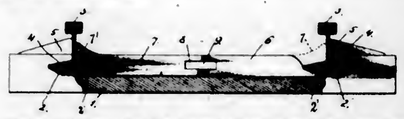
Claim.—1. A fire kindler comprising two pipes arranged side by side and connected together at the ends by U-shaped members, a series of tubular burners carried by each pipe, a supply pipe connecting with one of said U-shaped members, a hand-grip surrounding the supply pipe, and means for suspending the burner from a grate or the like.

2. A fire kindler comprising two pipes arranged side by side and connected together at the ends by U-shaped members, a series of tubular burners carried by each pipe, a supply pipe connecting with one of said U-shaped mem-



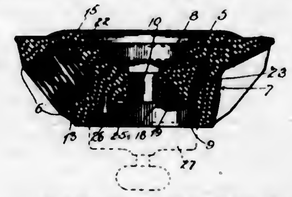
bers, a hand-grip surrounding the supply pipe, a hook connected to the other of said members, and a hook connected to the supply pipe.

854,492. METALLIC TIE AND RAIL-FASTENING. JOHN T. HALLAM, Reicing, Pa. Filed Feb. 23, 1907. Serial No. 358,890.



Claim.—A metallic tie provided adjacent each end with a rail seat and having integral rail fasteners above said rail seats, said tie provided between the rail seats with a central longitudinal groove, in combination with rail fasteners seated in said groove, each of said rail fasteners formed at its outer end with a rail seat and an integral rail clamp, the inner ends of said rail fasteners being in abutting engagement and being grooved, the said tie having transverse slots registering with the grooves in the abutting inner ends of said rail fasteners, a wedge passing through the slots in said tie and the grooves in said rail fasteners for securing the latter in the tie, means for securing said wedge in position, and a catch carried by one of said rail fasteners at its inner end.

854,493. CLUSTER-SOCKET. GUSTAV A. HAHTER, Chicago, Ill. Filed Nov. 22, 1906. Serial No. 344,548.



Claim.—1. As an article of manufacture, a cluster lamp socket comprising a body of insulating plastic material molded to suitable form, and having embedded therein to suitable extent for inseparable attachment thereto, lamp socket rims, center-contact conductors, electrical connections for the rims and center-contact conductors, and exposed terminals for said connections.

2. As an article of manufacture, a cluster lamp socket comprising a body of plastic insulating material molded into suitable form, a series of radially disposed lamp socket shells exteriorly embedded in said body and interiorly open, a connector for said shells embedded in said body and having an extension led to an exposed terminal position, and a center-contact connector likewise led through the material body to an exposed terminal position.

3. As an article of manufacture, a cluster socket comprising a molded plastic body having socket shells partially embedded therein, a socket-shell connecting wire, an exposed terminal part embedded in said body wherewith the wire is connected, and a center-contact connecting wire led to an exposed terminal.

4. As an article of manufacture, a unitary cluster socket comprising a molded body of plastic insulating material, having permanently associated therewith and molded therein lamp socket shells, partially embedded in the body, a shell connector embedded therein and having a part exteriorly exposed for connection with exterior wiring, a center-contact connector having a part likewise exposed, and screw-threaded studs disposed to receive supports for a covering for the connector terminals.

5. An article of manufacture consisting of a unitary cluster socket for incandescent electric lamps, comprising a molded body of insulating material provided with an externally open recess, said body having embedded therein to suitable extent and permanently secured in positions relative thereto, threaded terminal members arranged in the recess, lamp contacts, and connectors for the lamp contacts extended to the recess in the body and electrically connected with the threaded terminal members.

6. As an article of manufacture, a unitary cluster lamp socket comprising a body of plastic material molded to suitable form, and suitable lamp sockets, contacts, connections, and attachment devices inseparably embedded in the body.

7. As an article of manufacture, a unitary cluster socket comprising a body of plastic insulating material having embedded therein in inseparable connection therewith suitable lamp sockets, contacts, connections, and an attaching part, having a projecting threaded portion.

8. As an article of manufacture, a unitary cluster socket comprising a body of plastic insulating material of suitable configuration having an aperture therethrough, suitable lamp sockets, contacts and connections inseparably associated with the body in molding, and an attaching part comprising a tubular portion, and separated legs straddling the orifice and feet embedded in the plastic body.

9. As an article of manufacture, a cluster lamp socket comprising a body of plastic insulating material molded to suitable form providing lamp-receiving recesses, and having embedded therein to suitable extent for inseparable attachment thereto lamp contacts suitably positioned with respect to the recesses, electrical connections for said contacts, and exposed terminals for said connections.

10. As an article of manufacture, a unitary cluster socket comprising a body of plastic insulating material, having embedded to suitable extent therein lamp contacts, connections and exposed terminals for said connections, and an attaching part comprising a threaded tubular portion having lateral apertures therein.

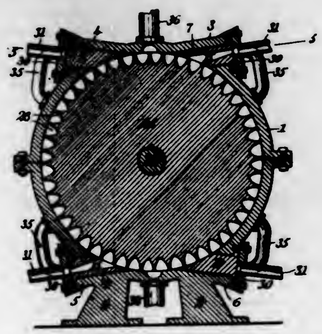
854,494. STEAM-TURBINE. EDWARD HARVEY, New York, N. Y. Filed Aug. 30, 1906. Serial No. 332,602.

Claim.—1. A steam turbine comprising a cylinder, a piston rotatably mounted therein, opposed steam chests at one side of the cylinder, opposed steam chests at the opposite side thereof, and valves slidably mounted in the chests.

2. A steam turbine comprising a cylinder, a piston rotatably mounted therein, opposed steam chests at one side of the cylinder, opposed steam chests at the opposite side thereof, and T-shaped valves provided with a nozzle slidably mounted in the chests.

3. A steam turbine comprising a cylinder, a piston rotatably mounted therein having V-shaped buckets with concaved sides at its periphery, a steam chest at opposite sides of the cylinder, a valve slidably mounted in each steam chest and a conical nozzle in each valve for directing the steam against the buckets of the piston.

4. A steam turbine comprising a cylinder having walls dividing it into three chambers increasing in width from one side to the other, a shaft journaled in the cylinder having pistons fixed thereto, and fitting the chambers, steam chests at opposite sides of the cylinder, a valve in each steam chest provided with nozzles to direct the steam against the pistons, and exhaust ports in said walls leading successively to the nozzles as described.



5. A steam turbine comprising a cylinder, a piston rotatably mounted therein having flanges at its periphery, and V-shaped buckets with concaved sides between the flanges.

6. A steam turbine comprising a cylinder having walls dividing it into a high, intermediate and low pressure chamber, a piston rotatably mounted in each chamber, opposed steam chests at each side of the cylinder, valves slidably mounted in the steam chests each being provided with nozzles of successively increasing diameter adapted to communicate with the chambers of the cylinder and direct the steam against the pistons, and exhaust ports passing through said walls connecting each chamber with the next succeeding nozzle.

7. A steam turbine comprising a cylinder, a piston rotatably mounted therein, opposed steam chests at one side of the cylinder, a valve slidably mounted in each steam chest provided with a conical nozzle, and an exhaust opening intermediate the valves.

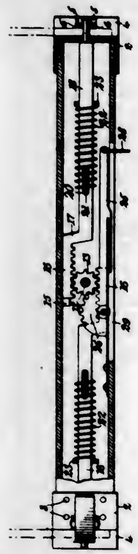
8. A turbine comprising a cylinder, a piston rotatably mounted therein, opposed steam chests at opposite sides of the cylinder, a valve in each steam chest, each being provided with a nozzle, whereby when the nozzles of diagonally opposite valves are blanked and the other nozzles opened, the piston moves in one direction and when the opened nozzles are blanked and the blanked nozzles are opened, the piston moves in the opposite direction.

854,495. WHIFFLETREE. SIMON A. HAZELTON, Pavilion, N. Y. Filed Apr. 17, 1906. Serial No. 312,128.

Claim.—1. In a whiffletree, the combination of a casing substantially square in cross section, caps fitting over the ends thereof, levers pivoted to the caps, springs for forcing the levers inwardly, flanges extending from the base of the caps having slots for engaging the ends of the levers, a pivot pin passing perpendicularly through the center of the tree, a pinion loosely mounted on ball bearings on the pivot pin, rack bars meshing with the pinion at each side thereof, rods carried by the rack bars having reduced ends passing through the caps, guide slots in the rods, pins passing through the slots for limiting the movement of the rods in each direction, springs on said rods pressing on said pins, pins fixed to the rods, a lever journaled at one side of the pinion carrying a quadrant gear meshing therewith, a spring attached to the lever and to the casing of the whiffletree, and means for operating the lever carried at one end thereof.

2. In a whiffletree, a casing, caps at each end thereof, rods having reduced ends adapted to be projected through the caps, a pinion journaled at the center of the casing, rack bars carried by the rods meshing with the pinion, and independent means for operating the pinion in each direction.

3. In a whiffletree, a casing, caps having socket ends fitting over each end thereof, a flange projecting from the base of each cap having a groove therein, a lever pivoted to each cap adapted to engage the groove, and reciprocating means carried in the casing adapted to project into each lever.



4. In a whiffletree, a casing, rods inclosed by the casing adapted to reciprocate therein, trace engaging means and a rack bar at the ends of each rod within the casing, a pinion within the casing meshing with the rack bars, a lever having a gear meshing with the pinion for reciprocating the rack bars in one direction, and springs on the rods for reciprocating them in the opposite direction.

5. In a whiffletree, a casing, caps fitting over each end thereof, levers pivoted to each cap, rods having trace engaging means reciprocating in the casing, a rack bar at the inner end of each rod, a pinion meshing with the rack bars, a lever having a gear meshing with the pinion for reciprocating the rack bars in one direction, springs on the rods for reciprocating them in the opposite direction, and a slot in each rod through which a guide pin passes for limiting the reciprocatory movement in each direction.

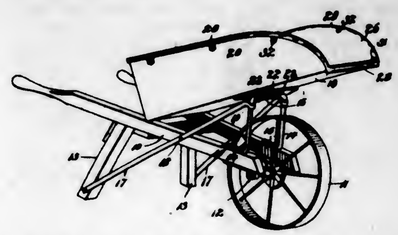
6. In a whiffletree, a casing, trace engaging means adapted to be projected through each end thereof, a lever pivoted at the center of the casing for reciprocating the trace engaging means, and a spring fixed to the casing and passing into a kerf in the lever for returning the lever to its normal position.

7. In a whiffletree, a casing, spring-pressed levers pivoted at each end of the casing, trace engaging means adapted to be projected through the ends of the casing and into the levers, and means for engaging the levers at their free ends, for the purpose described.

854,496. WHEELBARROW-BODY. CHARLES H. HEINEMAN, Falls City, Nebr. Filed Aug. 14, 1906. Serial No. 330,574.

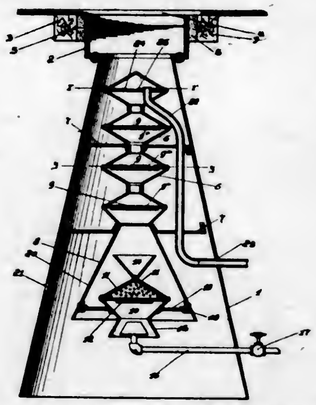
Claim.—1. In a barrow, a wheeled supporting frame, a body mounted upon the frame, spacing strips disposed in the bottom of the body, an interlining proportioned to be placed within the body and rest upon the spacing strips, and a flange formed upon the interlining positioned and proportioned to embrace the edge of the body.

2. In a barrow, a wheeled frame, a dumping body journaled upon the frame, spacing strips disposed upon the bottom of the dumping body, an interlining disposed within the dumping body and resting upon the spacing strips, and a flange formed upon the edge of the interlining and positioned to engage the edge of the dumping body.



3. In a barrow, a wheeled supporting frame, a dumping body mounted upon the frame, and comprising a bottom and one end portion with side pieces reduced in width toward the forward end, and an interlining disposed within the body and having a flange turned over the forward end of the bottom.

854,497. HEATER. CASPER H. HENZEL, Allegheny, Pa. Filed Dec. 4, 1906. Serial No. 346,224.

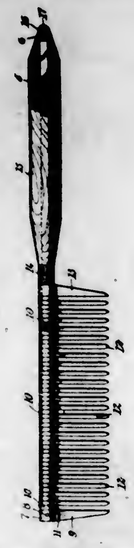


Claim.—In a hot air heater, a box-like structure adapted to be suspended beneath a hot air register, a frusto-conical outer casing suspended from said structure, a plurality of superposed communicating frusto-conical casings supported within the outer casing, the uppermost casing of said inner casings closed at its upper end, a perforated baffle plate in each of said inner casings, a frusto-conical dome supported within the outer casing and in communication with said inner casings, a perforated burner-casing arranged within the dome, an inverted cone-shaped deflector on the burner casing, a gas-supply pipe extending into the burner-casing, a burner on said pipe, and an exhaust pipe communicating at its upper end with the uppermost inner casing above the baffle plate thereof and extending downwardly in the outer casing, substantially as described.

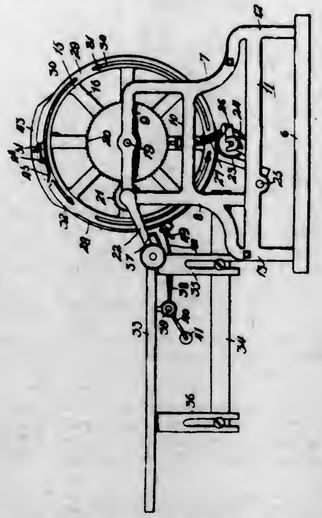
854,498. COMB. JOHN G. HIGGINS, Chattanooga, Tenn. Filed June 5, 1906. Serial No. 320,246.

Claim.—A comb comprising a rod polygonal in cross section, and having one end reduced and screw-threaded, a tooth secured to the other end, teeth having openings to fit the rod arranged thereupon, washers between the teeth, said washers having openings to fit the rod and having a lobe projecting therefrom toward the point of the teeth, whereby to brace the base of the teeth against each other,

and a nut engaging the screw-threaded end, whereby to clamp the parts in their proper position.



854,499. ROTARY DUPLICATING-MACHINE. GEORGE L. HILLIKER, Chicago, Ill., assignor to Airite Duplicating Supply Company, Chicago, Ill., a Corporation of Illinois. Filed July 5, 1906. Serial No. 324,879.



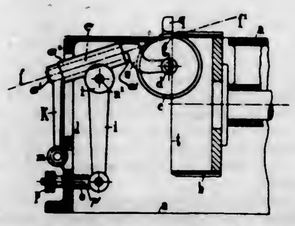
Claim.—1. In a duplicating machine, the combination of a revoluble cylinder, a feed table set at an abrupt angle with respect to the surface of the cylinder, a hinged clamping plate extending transversely to the cylinder, an outwardly projecting cam finger for swinging the clamping plate in a direction opposite to the travel of the cylinder for seizing the projecting end of the sheet of paper from beneath, and an elongated cam track having a curvature concentric with the cylinder, substantially as described.

2. In a duplicating machine, the combination of a revoluble cylinder, a feed table set at an abrupt angle with respect to the surface of the cylinder, a hinged clamping plate extending transversely to the cylinder, an outwardly projecting cam finger for swinging the clamping plate in a direction opposite to the travel of the cylinder for seizing the projecting end of the sheet of paper from beneath, an elongated cam track for actuating the cam finger, a stop normally projecting above the end of the feed table, an arm connected with the stop, and a cam on the cylinder adapted to contact the arm for automatically lowering the stop to permit the forward projection of a sheet of paper prior to the clamping operation, substantially as described.

3. In a duplicating machine, the combination of a revoluble cylinder, a feed table set at an abrupt angle with respect to the surface of the cylinder, a hinged clamping plate extending transversely to the cylinder, an outwardly projecting cam finger for swinging the clamping plate in a direction opposite to the travel of the cylinder for seizing the projecting end of the sheet of paper from beneath, an elongated cam track having a curvature concentric with the cylinder, a stop normally projecting above the end of the feed table, and means for automatically lowering the stop to permit the forward projection of a sheet of paper prior to the clamping operation, substantially as described.

4. In a duplicating machine, the combination of a revoluble cylinder, a feed table set at an abrupt angle with respect to the surface of the cylinder, a hinged clamping plate extending transversely of the cylinder, means for swinging the clamping plate in a direction opposite to the travel of the cylinder for seizing the projecting end of a sheet of paper from beneath, a rock shaft journaled to the under side of the feed table, arms forwardly projecting from the rock shaft, a stop secured to the arms and normally projecting above the forward edge of the feed table, an operating arm rigidly secured to and forwardly extending from the rock shaft, and a cam on the periphery of the cylinder adapted, at the proper time, to depress the actuating arm and retract the stop prior to the clamping operation, substantially as described.

854,500. FEED MECHANISM FOR LEATHER SKIVING AND SPLITTING MACHINES. ALBERT HIRTH, Cannstatt, Germany. Filed Jan. 27, 1906. Serial No. 298,260.



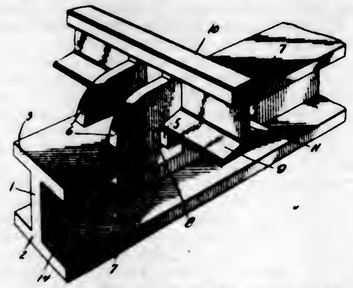
Claim.—1. In a skiving machine, a ring-knife, and a feed-roll mounted to oscillate about an axis which passes through one of the edges of said roll in the plane of said edge and through the cutting edge of said knife.

2. In a skiving machine, a ring-knife, a feed-roll having its axis perpendicular to that of said knife, said feed-roll contacting at one edge with the cutting edge of said knife, and means to rock said feed-roll about an axis passing through said edge thereof in the plane of said edge and through the cutting edge of said knife.

3. In a skiving machine, a ring-knife mounted to rotate in a vertical plane, a feed-roll mounted to rotate in a plane at right angles to that of said knife, and contacting at one edge with the cutting edge of the latter, and means to adjust said feed-roll relatively to said knife on an axis located in a plane at right angles to the rotative plane of the latter and inclined upwardly in a line intersecting one edge of said feed-roll and the cutting edge of said knife.

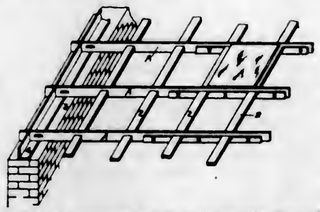
4. In a skiving machine, the combination, with a ring-knife mounted to rotate in a vertical plane, of a lever pivoted to swing vertically in a plane at right angles to the rotative plane of said knife, a sleeve carried by said lever and directed toward the cutting edge of said knife at the upper portion thereof, a spindle rockable in said sleeve, and a feed-roll having its shaft attached to said spindle and one side-edge alined with the axis of said spindle.

854,501. METALLIC TIE AND RAIL-FASTENER. JOSEPH HOGBIN and FRANK KETLEY, Pittsburg, Pa. Filed Feb. 15, 1907. Serial No. 357,454.



Claim.—A metallic tie of the I-beam form having recesses in its upper flange spaced apart at opposite sides of the rail bearing and extending to the vertical web of the beam, rectangular apertures through the upper flange adjacent to said recesses, clamping plates bearing in the recesses of the beam and against the vertical web of the same and with recesses in its ends respectively engaging the beam flange at the ends of the beam recesses and likewise extending over the tie flanges and against the vertical web of the rail, and wedge keys fitting in said rectangular apertures and locking the clamp plates in position.

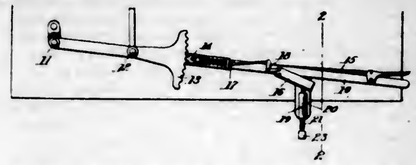
854,502. FLOOR, SIDEWALK, ROOF, AND LIKE SUPPORT. PETER H. JACKSON, San Francisco, Cal. Filed Nov. 23, 1905. Serial No. 288,823.



Claim.—In a structure of the character described, flat single metal bars standing on edge having longitudinal slots intermediate of the top and bottom edges, and at substantially equal intervals between each other and the ends, flat bars slidable through said slots, a wall or arch above which the ends of said edge bars project, angle iron bars having one member lying upon the wall, said bars having their upturned flanges vertically slotted substantially to the surface of the flat portion, and at intervals coinciding with the spaces between the first named edge bars, and forming therewith means for spacing and adjusting said bars to receive equal sized tiles and a surrounding cement filling.

854,503. RAILWAY SAFETY APPLIANCE. GEORGE W. JAYNE, Washington, D. C. Filed Jan. 22, 1907. Serial No. 353,535.

Claim.—1. The combination with a throttle lever and a lock therefor, of means mounted on said lever for controlling said lock, and means for operating the lock controlling means to unlock the throttle lever and to subsequently engage the same to move it in a direction to shut off the power, said lock controlling means and said operating means being normally disconnected, said operating means being located to one side of said throttle lever and independent of the latter.



2. The combination with a throttle lever and a lock therefor, of a member pivoted to said throttle lever for controlling said lock, and means for operating the lock controlling member to unlock the throttle lever and to subsequently engage the same to move it in a direction to shut off the power, said member and said operating means being normally disconnected, said operating means being located to one side of said throttle lever and independent of the latter.

3. The combination with a throttle lever and a lock therefor, of a member pivoted to said throttle lever for controlling said lock, said member being provided with means for limiting the movement thereof, and means for operating said member to unlock the throttle lever and to subsequently move the same in a direction to shut off the power, said member and said operating means being normally disconnected.

4. The combination with a throttle lever and a lock therefor, of a member pivoted to said throttle lever and having a portion to engage the rear edge of the latter, and means for operating said member to unlock said throttle lever and to subsequently move the same in a direction to shut off the power, said member and said operating means being normally disconnected.

5. The combination with a throttle lever and a lock therefor, of a member pivoted at one end on said lever and controlling said lock, and means for moving the free end of said member to disengage said lock and to subsequently engage the throttle lever to move the same in a direction to shut off the power, said member and said operating means being normally disconnected.

6. The combination with a throttle lever, and a lock therefor, of a U-shaped member pivoted to said lever, said member controlling said lock, and means for moving the free end of said member to disengage said lock and subsequently to embrace said lever to move the same in a direction to shut off the power.

7. The combination with a throttle lever, and a lock therefor, of a member pivoted to said throttle lever and controlling said lock, an operating lever, and means for causing said lever to move said member to first disengage said lock and subsequently move the throttle lever in a direction to shut off the power, said pivoted member and said lever being normally disconnected.

8. The combination with a throttle lever, and a lock therefor, of a member pivoted to said throttle lever and controlling said lock, a trip lever, and means operated by said lever for moving said member to first disengage said lock and to subsequently move said throttle lever in a direction to shut off the power, said pivoted member and said moving means being normally disconnected.

9. The combination with a throttle lever, and a lock therefor, of a member pivoted to said throttle lever and controlling said lock, a slidable member for operating said pivoted member and normally disconnected therefrom, and means for operating the slidable member to first move the pivoted member to disengage said lock, and to subsequently cause the same to engage said throttle lever to move the latter in a direction to shut off the power.

10. The combination with a throttle lever and a lock therefor, of a member pivoted to the said lever and controlling said lock, a slidable member for operating said piv-

oted member and normally disconnected therefrom, having a bore, a rod mounted in said bore and engaging the pivoted member, and means for operating said slidable member and rod to move the pivoted member to first disengage said lock and subsequently engage said throttle lever to move the latter in a direction to shut off the power.

11. The combination with a throttle lever and a lock therefor, of a member pivoted to said lever and controlling said lock, a slidable member, and a lever for operating the same, said pivoted member being moved to first disengage said lock and subsequently engage said throttle lever to move the same in a direction to shut off the power.

12. A safety device comprising a lever, means for tripping the same, and means connected to said lever for shutting off the power, for applying sand to the tracks, and for operating the air brakes in the order named.

13. The combination with a throttle lever, of a trip device, and means operated by said trip device for moving said throttle lever in a direction to shut off the power and subsequently provide a temporary lock therefor.

14. The combination with a throttle lever, of a trip device, a slidable member, and means operated by said trip device to project said slidable member against said throttle lever in a direction to shut off the power and to subsequently serve as a temporary lock therefor.

854,504. METALLIC TIE AND RAIL-FASTENER. FRANK F. KAMP, Jr., and ROBERT K. GUNDY, Lawrence, Pa. Filed Mar. 25, 1907. Serial No. 364,281.



Claim.—1. In a metallic tie and rail fastener, the combination with rails, of a metal tie having a longitudinally disposed bore formed therein having its ends terminating at the top of said tie, said tie having openings formed therein to drain said bore, integral fasteners carried by the ends of said tie for bracing the outer sides of said rails, dove tail wedge-shaped fish bars detachably mounted upon the top of said tie and bracing the inner sides of said rails, said tie being formed with triangular shaped blocks, split keys adapted to pass downwardly through said bars and engage said blocks and have their ends separated to lock said keys in said tie.

2. In a metallic tie and rail fastener, the combination with rails, of a metal tie having a longitudinally disposed bore formed therein, fasteners carried by said tie and bracing the outer sides of said rails, dove tail fasteners detachably mounted upon said tie to brace the inner sides of said rails, split keys adapted to pass downwardly through said fasteners to engage in said tie, and means carried within said tie for splitting the ends of said keys.

854,505. BALL-BEARING. HENRY B. KEIPER, Lancaster, Pa. Filed Feb. 18, 1907. Serial No. 357,909.



Claim.—1. A ball-bearing comprising concentric rings or cylinders arranged one within another and having annular grooves in their confronting surfaces forming a main ball-race with provision for inserting balls one at a time in said race, and an annular series of balls confined therebetween in said main ball-race adapted to sustain pressure and also hold the rings together, there being a supplementary ball-race in one of said surfaces only confronting said series of balls, and an annular series of balls confined in said supplementary race serving solely as means for separating adjacent balls of the other series the balls being removably inserted, permitting the assembled parts to be separated.

2. A ball-bearing comprising concentric rings arranged one within another and having annular grooves in their confronting surfaces together forming a main ball-race with provision for inserting balls one at a time in said race, and a series of balls therebetween confined in said ball-race for sustaining pressure, one of said rings having formed therein a supplementary ball-race confronting said series of balls, and another series of balls confined to said supplementary ball-race so as to alternate with and serve solely as a means for slightly separating adjacent walls of the first-mentioned series, the latter being adapted to hold the rings together irrespective of the other series of balls, the balls being removably inserted, permitting the assembled parts to be separated.

3. A ball-bearing comprising concentric rings or cylinders arranged one within another and constructed with a plurality of ball-races in their confronting surfaces with provision for inserting and means for confining balls in one of said races in such manner that the confined balls will hold the rings together, one of said races being formed in one of said surfaces only so as to confront a series of balls in an adjacent ball-race, and an annular series of balls confined between said rings in each of said races, the balls of one series being smaller than those of the other series and confined to their race by contact therewith and with the larger balls only, and serving solely as a means for slightly separating the confronting surfaces of the larger balls, which alone sustain the pressure, and hold the rings together the balls being removably inserted, permitting the assembled parts to be separated.

4. A ball-bearing comprising concentric bearing-rings with an interposed series of pressure-sustaining balls running in confronting tracks in the opposed surfaces of said rings, and a second series of balls arranged beside and alternating with the balls of the first series and serving solely as means for separating the balls of the first series, said second series of balls running in a single track confronting said first series of balls and formed wholly in one only of the said rings, which latter ring is made in separable parts and constitutes the sole means for supporting the second series of balls in proper relation to the first series, the balls being removably inserted, permitting the assembled parts to be separated.

5. A ball-bearing comprising two concentric rings or cylinders having a plurality of ball-races formed in their confronting surfaces with provision for inserting balls in said races, one of said races being formed in one of said surfaces only, and an annular series of balls confined in each of said ball races, one of said series sustaining pressure and also adapted to prevent endwise movement or separation of the rings between which they are confined, while the other series serve solely as means for separating the pressure-sustaining balls with which they alternate, being held in contact therewith by the ring in which they are confined and without touching the other ring, so that

the contacting surfaces of the balls of both series move in the same direction, the balls being removably inserted, permitting the assembled parts to be separated.

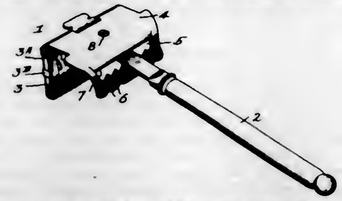
6. A ball-bearing device comprising a plurality of concentric rings or cylinders, the outer ring having a removable portion and a plurality of interior annular grooves, one of said grooves forming a supplementary ball-race in said removable portion only, and the inner ring having a peripheral annular groove confronting one of the grooves in the outer ring, thus forming a main ball-race, a series of balls confined in each of said ball-races, the balls of one series alternating with those of the other series and serving solely as means for holding their confronting surfaces in slightly separated relation, while the latter series of balls irrespective of the former hold the rings together but permit free rotation.

7. A ball-bearing comprising two concentric rings or cylinders one of which is constructed in separable parts, the two rings having adjacent parallel ball-races in their confronting surfaces, one of said races being formed by an annular groove in the periphery of the inner ring and a similar groove in the confronting surface of the main portion of the outer ring and the other race being formed solely in a detachable section of the outer ring, balls confined in said races between said confronting surfaces in two annular series arranged side by side, the balls of one series alternating with and serving solely as separating means for the balls of the other series and the latter irrespective of the former adapted to sustain pressure and also prevent endwise movement or separation of the rings.

8. A ball-bearing device comprising two concentric rings or cylinders one of which is constructed in separable parts, the outer ring having interior annular grooves therein and the inner ring having an annular groove in its periphery confronting one of the grooves in the outer ring, thereby forming a main ball-race and a supplementary ball-race, said outer ring having an interior annular rib separating said races, and balls confined in said races in two annular series arranged side by side, the balls of one series alternating with and serving as separating means for the balls of the other series, said annular rib having a notch therein, and said inner ring having a groove intersecting the annular groove in its periphery and adapted to register with said notch, for inserting the balls one at a time in said main ball-race and adapting such balls to hold the two parts together without other fastening means.

9. A ball-bearing device comprising two concentric rings or cylinders arranged one within the other, the outer ring having a removable section and a plurality of interior annular grooves, and the inner ring having a peripheral annular groove confronting one of the grooves in the outer ring, thereby forming a plurality of ball-races, a series of balls in each of said ball-races, one series alternating with those of the other series and holding their confronting surfaces in slightly separated relation, and an elastic band engaging an annular recess between the main portion of the outer ring and the periphery of said removable section so as to lock the latter in place.

854,506. SAFETY-RAZOR. WALTER H. G. KING, Denver, Colo. Filed Jan. 24, 1907. Serial No. 353,819.

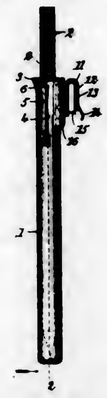


Claim.—1. In a safety razor, the combination of a razor blade supporting body, a slot in said body, a handle extending through said slot and pivotally secured at its end to said body, a notched surface on said body, means connected with said handle for engaging said notched surface, and a spring connected to said razor body for holding said handle in frictional engagement with said notched surface.

2. In a safety razor, the combination of the razor blade, the supporting body provided with a housing portion, a slot in said housing, with a handle projecting through said slot and pivotally connected at its inner end to said housing, a row of notches along the lower edge of said slot in which said handle is adapted to fit, and a tongue portion formed on the upper lip of said slot, and arranged to bear resiliently against said handle, and hold it by a resilient frictional pressure in said notches.

3. In a safety razor, the combination of the razor body provided with a slot, the handle pivotally secured in said razor body and projecting through said slot, a notched surface on said razor body adapted to receive said handle, and means for releasably and adjustably securing said handle at different angular or tilted positions to said razor body.

854,507. PENCIL-HOLDER AND POINT-PROTECTOR. ROBERT KLIPFEL, Larimore, N. D. Filed Aug. 7, 1906. Serial No. 329,538.



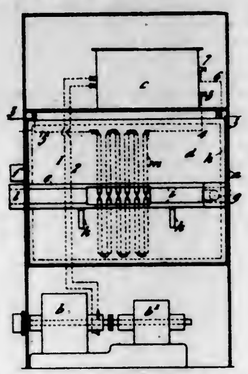
Claim.—1. A pencil holder and point protector, comprising an open-ended tube, a funnel-shaped point protector slidable within said tube and having an outwardly-extending flange in engagement with the walls of said tube, a spring beneath said point protector and in engagement with the bottom of the tube and with said flange and normally pressing the protector toward the open end of the tube, and means within the tube for preventing the removal of the protector from the tube.

2. A pencil holder and point protector, comprising an open-ended tube, means adjacent the open end of the tube for holding a pencil within the same, a funnel-shaped point protector movable within the tube and terminating in a cylindrical portion adapted to receive the lead of the pencil, a coil spring beneath the point protector and normally pressing it toward the open end of the tube, and means adjacent the open end of the tube for preventing the displacement of the point protector.

3. A pencil holder, comprising an open ended tube, means at the upper end of said tube for holding a pencil in position, a funnel-shaped point protector slidable within said tube, a spring beneath said point protector normally pressing it toward the open end of the tube, and a fastener for securing the tube to any desired support.

4. A pencil holder and point protector, comprising an open ended tube, means within said tube for holding a pencil within the same, a point protector movable within said tube, a face plate secured to said tube adjacent its open end, a fastener pivotally secured to said face plate, and a projection on said fastener adapted to enter a recess in the face plate and hold the fastener and face plate against free relative movement.

854,508. PROCESS FOR PRODUCING A BLEACHING, STERILIZING, OR CONDITIONING AGENT. SIDNEY LEETHAM, York, England, assignor to The Ozonized Oxygen Company Limited, Manchester, England. Filed July 16, 1904. Serial No. 216,892.



Claim.—1. A process of producing a bleaching, conditioning or sterilizing agent, which consists in first ozonizing air, and then subjecting it to the action of sparking electrical discharges at a velocity sufficiently high to prevent the complete decomposition of the ozone, substantially as described.

2. The process of producing a bleaching, conditioning or sterilizing agent, which consists in passing air successively through an ozonizer and a spark discharge apparatus connected electrically in series, producing thereby a mixture of ozone and oxids of nitrogen; substantially as described.

3. The process of producing a bleaching, conditioning or sterilizing agent, which consists in passing air first through an ozonizer and then at a velocity sufficient to avoid complete decomposition of the ozone through a chamber wherein it is subjected to the action of a sparking electrical discharge; substantially as described.

4. The process of producing a bleaching, conditioning or sterilizing agent, which consists in passing air first through an ozonizer and then at a velocity of not less than 50 miles per hour through a chamber wherein it is subjected to the action of a sparking electrical discharge.

5. A process of bleaching, conditioning or sterilizing by first ozonising air, then subjecting it to the action of sparking electrical discharges and at a velocity sufficiently high to prevent complete decomposition of ozone, and finally bringing it into intimate contact with the material to be bleached, sterilized or conditioned.

6. The herein described method of producing a bleaching, sterilizing or conditioning agent, which consists in subjecting air successively to dark and sparking electrical discharges while it is maintained in a condition to prevent complete decomposition of ozone.

7. The herein described method of producing a bleaching, sterilizing and conditioning agent, which consists in first subjecting air to dark electrical discharges, and then subjecting it to sparking electrical discharges, said air being maintained in a condition to prevent complete decomposition of ozone.

8. The herein described method of producing a bleaching, sterilizing and conditioning agent, which consists in subjecting air successively to the action of dark and sparking electrical discharges, the air being maintained below a temperature at which ozone is decomposed.

9. The herein described method of producing a bleaching, sterilizing and conditioning agent, which consists in first subjecting air to the action of dark electrical discharges, and then subjecting it to the action of sparking electrical discharges, the air being maintained below a temperature at which ozone is decomposed.

10. The herein described method of treating air for producing a bleaching, sterilizing or conditioning agent, which consists in first subjecting air to the action of dark electrical discharges, and then subjecting the air to sparking electrical discharges, the air being maintained at a velocity to prevent complete decomposition of ozone.

11. The herein described method of treating air for producing a bleaching, sterilizing or conditioning agent, which consists in first subjecting air to the action of dark electrical discharges, and then subjecting it to the action of sparking electrical discharges, said air being maintained at a temperature and at a velocity to prevent complete decomposition of ozone.

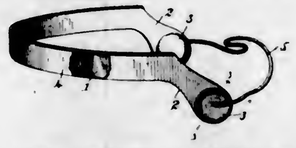
12. In the treatment of ozonized air to produce a bleaching, sterilizing or conditioning agent, the step of treating the gas to produce oxids of nitrogen and maintaining the gas in a condition to prevent the entire decomposition of the ozone, substantially as described.

13. In the treatment of ozonized air to produce a bleaching, sterilizing or conditioning agent, the step of treating the gas to produce oxids of nitrogen and maintaining the gas below a temperature at which ozone is entirely decomposed, substantially as described.

14. In the treatment of ozonized air to produce a bleaching, sterilizing or conditioning agent, the step of treating the gas to produce oxids of nitrogen and maintaining the gas at a velocity high enough to prevent the entire decomposition of ozone, substantially as described.

15. In the treatment of ozonized air to produce a bleaching, sterilizing or conditioning agent, the step of treating the gas to produce oxids of nitrogen and maintaining the gas below a temperature at which ozone decomposes and at a velocity high enough to prevent the entire decomposition of the ozone, substantially as described.

854,509. FOREHEAD-BAND. CHARLES W. MABEY, Indianapolis, Ind. Filed July 20, 1906. Serial No. 327,009.



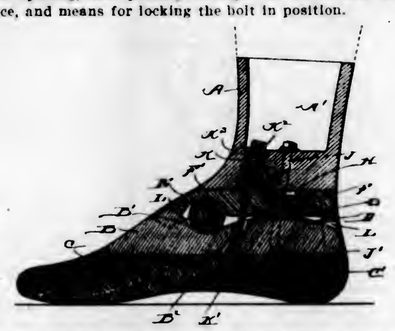
Claim.—1. The combination of a metallic band inclosed within a covering of absorbent material and provided with off-set ends having convex extremities, and an elastic band secured thereto at its ends adapted to hold said metallic band against the forehead of a user by elastic tension, substantially as shown and described.

2. A forehead band comprising a longitudinal metallic plate having angularly depending ends and an elastic band secured to said ends, adapted to exert an elastic pressure on the side of said forehead plate and to encircle the head of a user in a plane below the central longitudinal plane of said plate, substantially as shown and described.

3. A head band comprising a forehead plate consisting of a longitudinal band covered with absorbent material, and provided with ends extending at an angle to the longitudinal line of said plate, and a band connected with said ends and adapted to encircle the head of a user in a plane below the central longitudinal line of said plate.

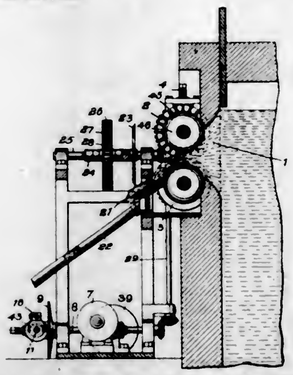
854,510. ARTIFICIAL FOOT. JAMES W. MAHAFFEY, Pueblo, Colo. Filed June 29, 1906. Serial No. 324,079.

Claim.—1. An artificial foot comprising an ankle piece, a foot portion formed partially of a relatively hard material and partially of an elastic material, the portion formed of the first mentioned material being provided with a recess upon its upper face and a vertical opening, and having a curved bearing surface in the rear of the recess, a block interposed between the foot portion and the ankle piece, and recessed upon its under face said recess alining with the above mentioned recess, a ball arranged in the face formed by said recesses, a piece of leather set in the face of said block and adapted to rock upon the curved portion of the foot portion, the said block being provided with an oil receptacle adapted to discharge oil upon said leather piece, and a T-bolt having its cross arms embedded in the foot portion, the bolt passing upwardly through the vertical opening above mentioned and adapted to play in said opening, and passing through the block and ankle piece, and means for locking the bolt in position.



2. An artificial foot comprising an ankle portion, a foot portion, said foot portion being provided with an inverted conical-shaped recess, a connecting block interposed between the foot portion and the ankle portion, a T-bolt passing loosely through said connecting block, one end portion of the bolt passing into the ankle portion and the T-end portion working in the recess of the foot portion, and a ball interposed between the foot and ankle portions.

854,511. MACHINE FOR FEEDING GLASS. WILLIAM A. MANSFIELD, Washington, Pa. Filed July 25, 1906. Serial No. 327,723.



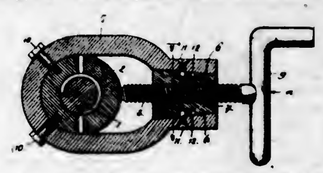
Claim.—1. In a machine for feeding glass, the combination of a receptacle, a trough, rollers interposed between the trough and receptacle and controlling the movement of glass from the receptacle and along the receptacle, means for severing the glass, and means for causing the severed portions of glass to move at a higher speed than that of the glass flowing from the receptacle.

2. In a machine for feeding glass the combination of glass feeding rollers, glass severing means, a motor and independently adjustable driving connections from the motor to the rollers and severing means.

3. In a machine for feeding glass, the combination of glass feeding rollers, a trough for receiving the glass from the rollers, a shear disk movable across the end of the trough, a swinging frame carrying said disk and means for shifting the frame.

4. The combination of peripherally grooved feed rollers, a furnace having a discharge opening having its walls constructed to gradually shape the stream of glass to the contour of the grooves in the rollers, a trough for receiving the glass from the rollers and means for severing the glass as it leaves the trough.

854,512. YOKE AND YOKE-SCREW. CLARENCE T. MAPES, Pittsburg, Pa. Filed Sept. 21, 1906. Serial No. 335,612.



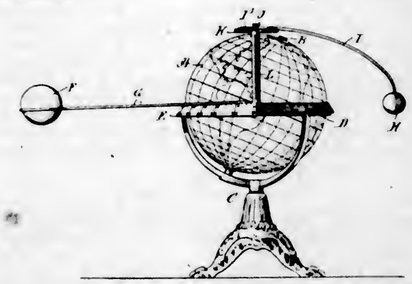
Claim.—1. A yoke for temper screws provided with a tapered seat, in combination with a sectional tapered nut within said seat, means for limiting the movement of said nut sections within said seat, and a yoke-screw extending through said sectional nut.

2. The combination with a temper screw and its reins, of a yoke encompassing the reins and provided with a tapered seat, a sectional conical nut within said seat, a yoke-screw extending through said nut, and means for limiting the movement of the sections of said nut comprising oppositely disposed screws projecting into slots in said sections.

3. The combination with a temper-screw, and its reins, of a yoke embracing said screw and reins, and secured to the latter, a tapering seat at one end of said yoke, a sectional conical nut and a screw extending through said nut to impinge against the adjacent rein member.

4. The combination with a temper screw, and its reins, of a yoke having a tapered seat at one end, a sectional conical nut fitting said seat, a yoke screw extending through said conical nut, and means for limiting the movement of said nut comprising diametrically opposite screws extending through the walls of the tapered seat, and into elongated slots in the sectional nut.

854,513. TELLURIAN. CHARLES B. MARTIN, Portland, Oreg., assignor of ten one-hundredths to J. Fred Kennedy, Portland, Oreg. Filed Jan. 4, 1907. Serial No. 350,705.



Claim.—1. In a tellurian, the combination with a globe and a zodiac ring, of a demonstrating device comprising a graduated ring turnable on the zodiac ring, a sun supported by the said graduated ring, a semi-ring attached to the graduated ring at diametrically opposite points and standing at right angles thereto, and a moon having a support mounted to turn at the top of the said semi-ring.

2. In a tellurian, the combination with a globe and a zodiac ring, of a demonstrating device comprising a graduated ring turnable on the zodiac ring, a sun supported by the said graduated ring, a semi-ring attached to the graduated ring at diametrically opposite points and standing at right angles thereto, a moon-phase and tide dial fixed on the top of the said semi-ring, and a moon having a sup-

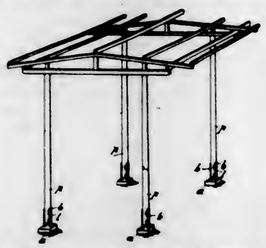
port provided with an apertured disk mounted to turn centrally on the said dial.

3. In a tellurian, the combination with a globe and a zodiac ring, of a demonstrating device comprising a graduated ring turnable on the zodiac ring, the said graduated ring having an hour graduation, a degree graduation and a slot for viewing the graduation on the said zodiac ring, a sun supported by the said graduated ring, a semi-ring attached to the graduated ring at diametrically opposite points and standing at right angles thereto, and a moon having a support mounted to turn at the top of the said semi-ring.

4. A demonstrating device for removable attachment to a globe comprising a ring having an hour graduation, a degree graduation, and a slot at zero of the degree graduation, a sun, and a support for the same and secured to the said ring to support the sun centrally in the horizontal plane of the ring, and centrally in the plane passing through zero of the said degree graduation.

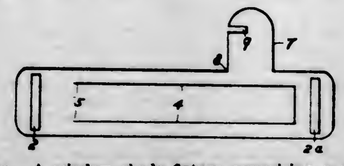
5. A demonstrating device for removable attachment to a globe comprising a ring representing the ecliptic, a semi-ring secured at its ends to the said ecliptic ring and at diametrically opposite points thereof, a dial fixed to the top of the said semi-ring and graduated to indicate the moon's phases and tides, and moon, and a suspending rod for the said moon and provided with a disk mounted to turn centrally on the said dial, the disk having apertures for register with the said dial graduations.

854,514. WOODEN BARN AND SHED. MORITZ VON MAY and CARL WERKENTHIN, Berlin, Germany. Filed Nov. 20, 1906. Serial No. 344,221.



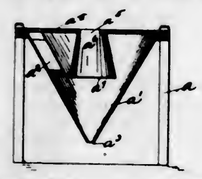
Claim.—The combination, with a base, of parallel upright supports extending therefrom, an upright interposed between said supports and having its lower end spaced upwardly from said base, filling-pieces interposed between each of said supports and said upright, bolts passing through said supports, said filling-pieces and said uprights, and nuts threaded on said bolts and clamping said upright between said supports, said bolts being relieved from the weight of said upright, and such weight transferred to said supports, by the frictional contact between said filling-pieces and said upright.

854,515. WINDOW-SHADE FIXTURE. REUBEN D. MAYBERRY, Findlay, Ohio. Filed Jan. 30, 1907. Serial No. 354,790.



Claim.—A window shade fixture comprising a vertical attachment plate provided with horizontal slots running transversely of its upper and lower ends, a curtain pole supporting arm formed of the middle vertical body portion of said vertical attachment plate, a shade roller supporting fixture formed of a lug or projection at the side of the outer edge of said vertical attachment plate, and means of rigidly securing said window shade fixture in position on the window casing, substantially as described and set forth.

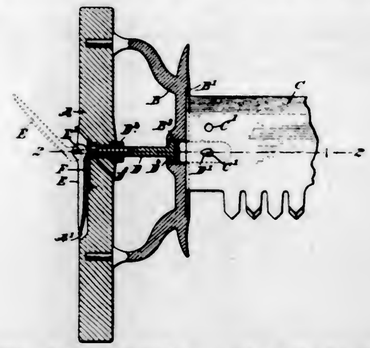
854,516. DUST-COLLECTOR. PHILIP C. MILLER, Chicago, Ill. Filed Aug. 17, 1904. Serial No. 220,998.



Claim.—1. The combination with a downwardly tapering separating chamber having a tangential dust-laden air inlet, a dust escape at its lower end, and a depending tubular guard tapering upwardly to a restricted air exit; to provide a clear central space for the escape of purified air and eliminate the axial back flow.

2. The combination with a vertical cylinder having a tangential dust-laden air inlet, of a downwardly tapering separating chamber having a dust escape at its lower end, and a depending tubular guard tapering upwardly to a restricted air exit; to provide a clear central space for the escape of purified air and eliminate the axial back flow.

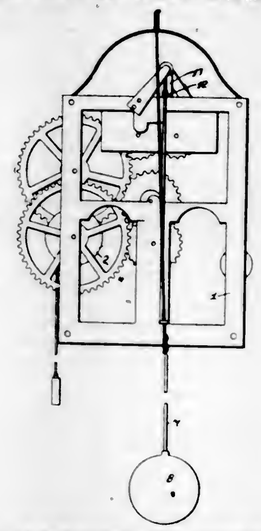
854,517. SAW-HANDLE. WILLIAM B. MCCAIN, Clearlake, Wash. Filed Feb. 14, 1906. Serial No. 300,999.



Claim.—1. A saw handle comprising a hand-hold provided with a transverse aperture, a bracket having a guide-bar provided with a longitudinal guide, a guide-way extending through said bracket, and laterally extending arms connected with said hand-hold, a screw rod extending through said hand-hold and bracket between said arms and provided with a head having a sliding engagement with the guide-way of said bracket, a nut having a threaded engagement with said screw rod, a link secured to said nut, and cam locking mechanism pivotally connected with said link, substantially as shown and described.

2. A saw handle comprising a hand-hold provided with a transverse aperture, a bracket having a guide bar provided with longitudinal and transverse guides, a guide-way extending through said bracket and laterally extending arms connected with said hand-hold, a screw-rod extending through said hand-hold and bracket between said arms, adapted to be secured to a saw blade and provided with a head having a sliding engagement with the guide-way of said bracket and adapted to be reversibly adjusted therein, a nut having a threaded engagement with said screw rod, a link secured to said nut, and cam locking mechanism connected with said link, substantially as shown and described.

854,518. CLOCK-MOVEMENT. CHARLES T. MCCLINTOCK, Oil City, Pa. Filed June 12, 1906. Serial No. 321,339.



Claim.—1. An escapement device, comprising an oscillating shaft, a vibrating member carried thereby, an escapement lever fixed on said shaft, and formed with a longitudinally disposed slot, a rotary shaft, a disk on said rotary shaft, and a crank pin carried thereon and extending into said slot.

2. An escapement device comprising an oscillating shaft, a pendulum operated thereby, an escapement lever fixed upon said shaft, and formed with an elongated longitudinally disposed slot, a rotary shaft arranged parallel with said oscillating shaft and a crank disk fixed to said shaft, and provided with a projecting pin extending into the slot of said lever.

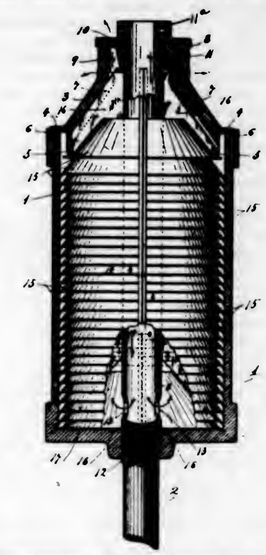
3. An escapement device, comprising an oscillating shaft, a vibrating member carried thereby, an escapement lever fixed upon said shaft, and formed with a longitudinally disposed slot, a rotary shaft, a disk on said rotary shaft, a crank-pin carried on said disk extending into said slot, and an anti-friction roller on said pin.

4. The combination with the clock train and escapement arbor of a clock movement, of an escapement device comprising an oscillating shaft, a pendulum operated thereby, an escapement lever fixed on said shaft and formed with a longitudinally disposed slot, a disk on said arbor and a crank-pin on said disk, and extending into said slot.

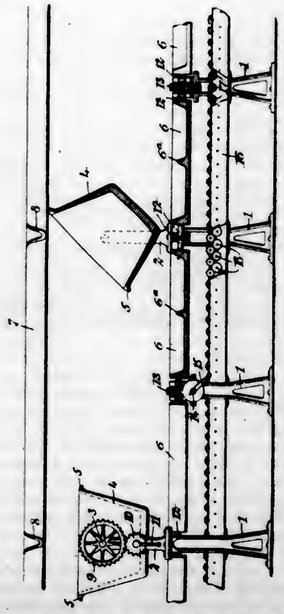
5. The combination with a clock train, of winding mechanism therefor, an escapement arbor driven by said train, a disk mounted on said arbor, a crank-pin projecting from said disk, a shaft above said arbor, an escapement lever fixed upon said shaft, and formed with a longitudinally disposed slot to receive said pin, and a pendulum and bob suspended above said shaft.

854,519. CREAM-SEPARATOR BOWL. FRANK C. MCMULLEN, Minneapolis, Minn., assignor to Clement W. Hooven, Anderson, Ind. Filed Sept. 17, 1904. Serial No. 224,780.

Claim.—A cream separator including a revoluble bowl having a cover formed with an outlet passage for the skimmed milk and cream, a milk supply tube extending through said cover and axially through said bowl and having at its lower end a milk discharge orifice, and a bowl liner split longitudinally and made up of semi-annular frusto conical disk sections and partition plates and flat supplemental disk sections rigidly united, said conical disk sections terminating short of the walls of the bowl and of said supply tube, said partition plates extending from said supply tube through the spaces between said conical disk sections, and said supplemental disk sections having interlocking engagement with the bottom of the bowl, substantially as shown and described.



854,520. CASTING AND CONVEYING MACHINE. WILLIAM MCVAY, Bellaire, Ohio. Filed Nov. 14, 1906. Serial No. 343,369.



Claim.—1. In a machine of the character described, in combination, a plurality of ladles pivotally suspended, a

conduit above said ladles having an exit over each of them, a series of chilling molds longitudinally arranged and pivoted below said ladles, and a conveyer positioned underneath said molds.

2. In a machine of the character described, in combination, a plurality of pivotally suspended ladles, each having lips at each side thereof, a chilling mold pivotally mounted underneath each lip of each ladle, and a conveyer underneath the chilling mold.

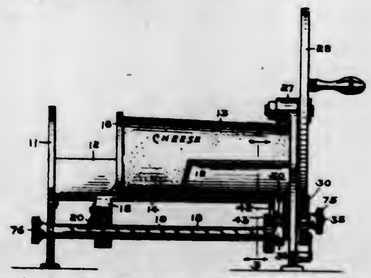
3. In a machine of the character described, in combination, a ladle pivotally suspended, a plurality of chilling molds journaled on trunnions permanently arranged below and at each side of the ladle, a conveyer underneath the molds, and means for turning the molds on their trunnions to discharge them on said conveyer.

4. In a machine of the character described, in combination, a ladle pivotally suspended on trunnions having a series of lips at each side thereof, a series of molds journaled on trunnions arranged at each side and below the ladle, each mold adapted to receive the contents of said ladle through one of said lips, a conveyer underneath the mold, means for tilting the ladle on its trunnions, and means for revolving the molds on their trunnions for discharging their contents upon said conveyer.

5. In a machine of the character described, in combination, two ladles pivotally suspended transversely of the machine, a series of sets of molds pivotally mounted below and between said ladles and arranged longitudinally of the machine, each set comprising two molds rigidly connected together, a conveyer underneath said molds, and means for simultaneously revolving said sets of molds on their pivots whereby the contents thereof are discharged upon said conveyer.

6. In a machine of the character described, in combination, a series of ladles pivotally suspended on trunnions transversely of the machine, a series of molds journaled on trunnions below said ladles and arranged longitudinally of the machine, each set comprising two molds connected together through an intermediate gear, a conveyer underneath said molds, and means for simultaneously operating the connecting gears of the sets of molds to discharge the contents thereof upon said conveyer.

854,521. COMPUTING CHEESE-CUTTER. RICHARD H. NEFF, Indianapolis, Ind. Filed Oct. 22, 1906. Serial No. 339,974.



Claim.—1. In a computing cheese cutter, a cheese holding bed-plate for directing the cheese toward the cutter-knife, a follower arranged within the bed-plate for advancing the cheese toward the cutter-knife, a screw-shaft for moving said follower, a hand-wheel mounted transversely of the path in which the cheese travels, a cutter-knife secured to said wheel, gear teeth on said hand-wheel, a pinion arranged to engage the teeth on the hand-wheel, and means operated by said pinion to engage and operate the screw-shaft.

2. In a computing cheese cutter, a cheese holding bed-plate for directing the cheese toward the cutter-knife, a follower arranged within the bed-plate for advancing the cheese toward the cutter-knife, a screw-shaft for moving said follower, a hand-wheel mounted transversely of the path in which the cheese travels, a cutter-knife secured to said wheel, gear teeth on the hand-wheel, a pinion arranged to engage the teeth on the hand-wheel, means operated by said pinion to engage and operate the screw-shaft, and means for manipulating said screw-shaft independently of said hand-wheel.

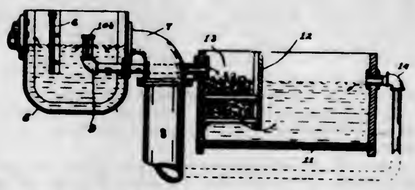
3. In a computing cheese cutter, a cheese holding bed-plate for directing the cheese toward the cutter-knife, a follower arranged within said bed-plate for advancing the cheese toward the cutter-knife, a screw-shaft for moving the follower, a hand-wheel mounted transversely of the path in which the cheese travels, a cutter-knife secured to said wheel, gear teeth on said hand-wheel, a pinion arranged to engage the teeth on the hand-wheel, means for determining a complete rotation of said pinion, a slotted cross-head operated by said pinion, and means extending from said cross-head to engage and operate the screw-shaft.

4. In a computing cheese cutter, a cheese holding bed-plate for directing the cheese toward the cutter-knife, a cheese advancing means for moving the cheese toward the cutter-knife, a screw-shaft for moving the cheese advancing means, a hand-wheel mounted transversely of the path in which the cheese travels, a cutter-knife secured to said wheel, a slotted cross-head operated by said hand-wheel, a pawl slidably secured on said cross-head and adapted to actuate said screw-shaft, and means carried by said cross-head to shift the position and vary the stroke of said pawl.

5. In a computing cheese cutter, a cheese holding bed-plate for directing the cheese toward the cutter-knife, a follower arranged within said bed-plate for advancing the cheese toward the cutter-knife, a screw-shaft mounted parallel with the bed-plate and adapted to impart movement to said follower, a hand-wheel mounted transversely of the path in which the cheese travels, a cutter-knife secured to said wheel, a pinion operated by said hand-wheel, a cross-head operated by said pinion, a pawl slidably mounted in said cross-head and adapted to engage and operate the screw-shaft, and means on said slotted cross-head to vary the stroke of said pawl.

6. In a computing cheese cutter, a cheese holding bed-plate for directing the cheese toward the cutter-knife, a follower arranged within said bed-plate for advancing the cheese toward the cutter-knife, a screw-shaft mounted parallel with the bed-plate and adapted to impart movement to said follower, a hand-wheel mounted transversely of the path in which the cheese travels, a cutter-knife secured to said wheel, a pinion operated by said hand-wheel, a cross-head operated by said pinion, a box slidably mounted in said cross-head, a pawl pivotally secured to said sliding box and adapted to engage and operate the screw-shaft, a threaded shaft in the cross-head that engages the sliding box for changing the position of said box and pawl, and means to automatically and intermittently move said threaded shaft.

854,522. FEEDING DEVICE FOR WATER-PURIFYING APPARATUS. MARTIN F. NEWMAN, Wilkinsburg, Pa., assignor to Wm. B. Scaife & Sons Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Jan. 11, 1907. Serial No. 351,869.



Claim.—1. A chemical feed apparatus comprising a solution tank and outlet, a tank feeding a main supply of liquid by overflow, and an adjustable weir intake for the solution tank placed inside the main feed tank, whereby the amount of liquid fed to the solution tank is always proportional to the main flow.

2. The combination with a feed tank having an overflow outlet, a chemical solution tank having an overflow outlet, and a pipe feeding the solution tank from the liquid in the feed tank having a weir intake, substantially as described.

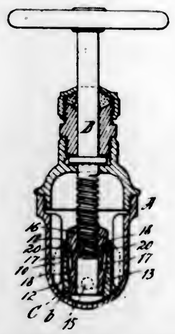
3. The combination with a water feed tank having an overflow outlet, of a supplementary overflow outlet therein provided with an adjustable weir, a chemical solution tank supplied by the latter, and having an overflow outlet with connections to join the main flow of water, substantially as described.

4. In a chemical feeding device the combination with a solution tank having an overflow outlet, a main supply tank, and a supplementary weir outlet from the same to the solution tank, said weir being adjustable in capacity without changing the level of the outflow.

5. The combination with a supply tank, and a solution tank each emptying by overflow, of a weir pipe from the supply tank to the solution tank having a vertical inlet slot and a shutter device for regulating the width of said slot, substantially as described.

6. In water purifying apparatus an intake weir comprising a vertical pipe having a vertical slot, and a slotted sheath on said pipe rotatable thereon for regulating the width of said intake slot, substantially as described.

854,523. GATE-VALVE. LOUIS NOEL, Indian Orchard, Mass. Filed Oct. 13, 1906. Serial No. 338,872.

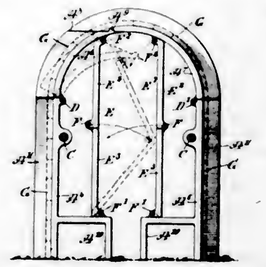


Claim.—1. In a gate valve, the combination with a valve-body having a water way therethrough, and a valve-stem having a screw threaded lower end portion of the valve-gate constructed in two sections, the main section thereof having an upwardly open chamber therein, and having a hole from side to side therethrough intersecting said chamber, and the secondary section fitting and being vertically movable within and relatively to said chamber, and having an upwardly open screw threaded socket within which the threaded lower end of the valve stem engages, the secondary section having vertical ways in their opposite edge portions, with shoulders at the upper and lower ends thereof, and the main section having inwardly projecting members adapted for a limiting extent in the said ways of the secondary section and for engagements with the upper and lower end shoulders thereof.

2. In a gate valve, the combination with a valve-body having a screw threaded valve stem, of the valve gate constructed in two sections, the main section thereof having an upwardly opening chamber therein, and having a horizontal hole therethrough intersecting said chamber, and the secondary section fitting and being vertically movable within and relatively to said chamber, and engaged, and to be vertically moved by, the valve stem, said secondary section having opposite edge recesses, with shoulders at the upper and lower ends thereof, and the opposite portions of the main section having plugs screw threading therethrough and protruding into the said recesses.

3. In a gate valve, the combination with a valve body having a screw threaded valve stem rotatable therein, and constrained against axial movement, of the valve gate constructed in two sections, the main section thereof having an upwardly opening chamber therein, formed with downwardly convergent walls, and having a hole horizontally therethrough, and the secondary section formed downwardly tapered, and having an upwardly opening threaded socket in which said valve stem has an actuated screw engagement, and fitting, and being vertically movable within and relatively to said chamber, and said secondary section having opposite edge recesses with shoulders at the tops and bottoms thereof, and threaded plugs, screw engaged horizontally through opposite edge walls of the main section and inwardly protruding within the said recesses, for the purposes set forth.

854,524. SUPPORTING STRUCTURE FOR BUILDING CULVERTS AND THE LIKE. EDWARD F. PARCAUT, Sutherland, Iowa. Filed Mar. 28, 1906. Serial No. 308,472.



Claim.—1. A supporting structure for building arches comprising abutment posts, arch members hinged to the abutment posts and joined together at or near the top thereof by a substantially horizontal joint, one of the faces of the joint being provided with a groove and the other with a lug fitting into the groove, and foldable braces hinged to the arch.

2. A supporting structure for building arches, comprising abutment posts, inward projections on the abutment posts, arch members hinged to the abutment posts and joined together at or near the top of the arch, and foldable braces hinged to the arch members and to the inward projections.

3. A supporting structure for building arches, comprising abutment posts having flanges and legs, flanged arch members hinged to the upper ends of the said posts and joined together at or near the top of the arch, and braces one for each arch member, each brace being made in sections hinged together and hinged to the said legs and the said arch members.

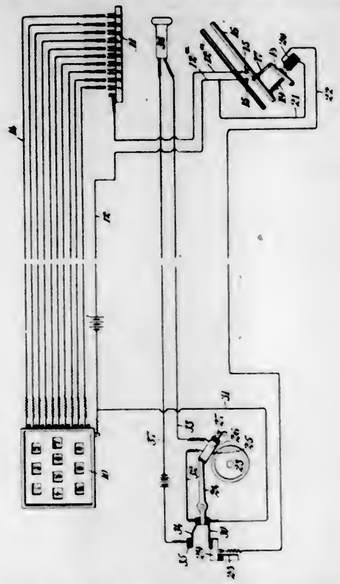
4. A supporting structure for building arches, comprising abutment posts having flanges and legs, flanged arch members hinged to the upper ends of the said posts and joined together at or near the top of the arch, one of the arch members having a lug fitting a groove in the other arch member, and braces one for each arch member, each brace being made in sections hinged together and hinged to the said legs and the said arch members.

5. A supporting structure for building arches, comprising sectional flanged skeleton end arches, intermediate sectional non-flanged skeleton arches, longitudinal rods connecting the end and intermediate arches with each other, and planks covering the arches and abutting with their ends against the flanges of the said arches.

6. A supporting structure for building arches, comprising abutment posts, arch members adapted to turn on said abutment posts and separable near the top of the arch, and a collapsible brace between each abutment post and the adjacent arch member.

7. A supporting structure for building arches, comprising sectional skeleton end arches, intermediate sectional skeleton arches, and means for connecting the arches with each other.

854,525. PHONOGRAPH SYSTEM. WILLIAM PATTEN and JAMES PATTEN, New York, N. Y. Filed Mar. 31, 1905. Renewed Mar. 7, 1907. Serial No. 361,146.



Claim.—1. A talking machine system comprising the combination of a talking machine including a reproducer capable of creating electrical undulations corresponding to the subject impressed on the record of the talking machine, a talking circuit including a receiver removed from the talking machine, means for signaling from the receiver to the talking machine, a coin controlled device controlling said signaling means, and devices actuated by the talking machine automatically resetting said coin controlled device.

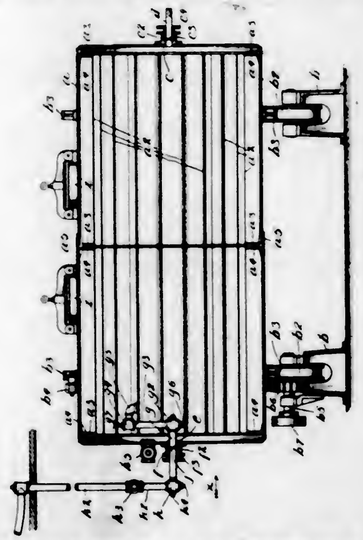
2. A talking machine system comprising the combination of a talking machine including a reproducer capable of creating electrical undulations corresponding to the subject impressed on the record of the talking machine, a talking circuit including a receiver removed from the machine, a means for signaling from the receiver to the talking machine, a coin controlled device controlling said signaling means, and an electrical means including contacts automatically engaged upon the operation of the talking machine for resetting the coin controlled device.

3. In a talking machine system, the combination of a talking machine including a reproducer capable of creating electrical undulations corresponding to the subject impressed on the record of the talking machine, a talking circuit including a receiver removed from the talking machine, an electrical means for signaling from the receiver to the talking machine, said signaling means including an open circuit, a coin controlled device comprising a chute and stop adapted to hold the coin into a position to close said circuit of said signaling means, and devices operated upon the operation of the talking machine for retracting the stop from the coin chute to release the coin.

4. In a talking machine system, the combination of a talking machine including a reproducer capable of creating electrical undulations corresponding to the subject impressed upon the record of the talking machine, a talking circuit including a receiver removed from the machine, an electrical means for signaling from the receiver to the talking machine, said means including an open circuit, a coin controlled device comprising a chute and stop adapted to hold the coin in position to close said circuit of said signaling means, an electro-magnet adapted to retract the stop, and means including a contact moving with the carriage of the talking machine, and also including a second contact stationary with respect to the first contact whereby upon the operation of the machine automatically to energize said magnet.

5. In a talking machine system, the combination of a talking machine, including a reproducer capable of creating electrical undulations corresponding to the impression on the record of the talking machine, the talking circuit including a receiver removed from the talking machine, an electrical signal juxtaposed to the talking machine, means for operating the signal juxtaposed to the receiver, a coin controlled device commanding the circuit of the signal to open or close the same, and means for automatically resetting said coin controlled device, said means being operated by the talking machine.

854,526. APPARATUS FOR TREATING ORES. THOMAS D. PITTS, New York, N. Y., assignor to The New Cyanide Process Company, New York, N. Y., a Corporation of New York. Filed Aug. 15, 1904. Serial No. 220,723.



Claim.—In an apparatus of the class described, a rotatable casing or barrel the inner walls of which are provided at intervals with annular plates or rings, the inner walls of said casing or barrel being also provided with radially arranged baffle plates secured to said annular plates or rings, a stationary inlet pipe connected centrally with one end of said casing or barrel and a stationary outlet pipe passing centrally through the other end of said casing or barrel, and the inner end of which is provided with an upwardly directed member which opens into said casing or barrel, substantially as shown and described.

854,527. PROCESS OF PREPARING AND REDUCING ORES. EMIL POLLACSEK, New York, N. Y. Filed Oct. 18, 1904. Serial No. 229,042.

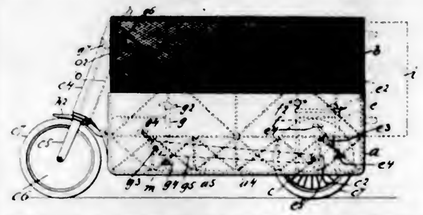
Claim.—1. The herein described composition comprising an iron-containing body, a basic agent, a reducing agent and a binder containing a gluelike material.

2. The herein described composition consisting of iron ore, a basic agent, a reducing agent and water containing a gluelike material of organic origin.

3. A process of preparing ore for reduction, which consists in mixing suitable proportions of an iron-containing body, a basic agent, a reducing agent, and introducing to the mass a fluid containing a gluelike substance for the purpose of giving the mass a plastic consistency and combining together the components of such mass.

4. A process of preparing ore for reduction and smelting which consists in mixing suitable proportions of an iron-containing body, a basic agent, a reducing agent, and a fluid containing a gluelike material.

854,528. TRAVELER'S CYCLE. SAMUEL N. POLISHOOK, New York, N. Y. Filed Aug. 7, 1906. Serial No. 329,517.



Claim.—1. A vehicle of the class described having a body portion the bottom of which is watertight and composed of truss-frames above which is placed a horizontal partition, said truss-frames and partition having a watertight inclosure, the sides of the body part being also provided above said partition with longitudinal benches the end portions of which are hinged at the outer sides of the vehicle, the top part of the body portion being composed of an open framework covered with wire mesh and being provided with detachable side bunks.

2. A vehicle of the class described, having a body portion the bottom of which is watertight and composed of truss-frames above which is placed a horizontal partition, said truss-frames and partition having a watertight inclosure, the sides of the body part being also provided above said partition with longitudinal benches the top end portions of which are hinged at the outer sides of the vehicle, the top part of the body portion being composed of an open framework covered with wire mesh and being provided with detachable side bunks, an axle mounted in the rear bottom part of the body portion of the vehicle and provided with wheels, and said body part of the vehicle being also provided with a forward extension in which is mounted a shaft provided with a fork having a guide wheel, means whereby the driving axle may be operated, and devices for controlling the guide wheel.

3. A vehicle of the class described, provided with a body portion the bottom part of which is watertight, said bottom part being provided with a horizontal partition below which is a watertight chamber, a driving axle mounted in the rear end portion of said chamber and provided with wheels having watertight housings, the body portion of the vehicle being also provided with a front extension in which is mounted a guiding fork provided with a wheel, means for operating the driving axle, and devices for operating said guiding fork.

4. A vehicle of the class described, provided with a body portion the bottom part of which is watertight, said bottom part being provided with a horizontal partition below which is a watertight chamber, a driving axle mounted in the rear end portion of said chamber and provided with wheels having watertight housings, the body portion of the vehicle being also provided with a front extension in which is mounted a guiding fork provided with a wheel, means for operating the driving axle, and devices for operating said guiding fork, said body portion of the vehicle being also provided with longitudinally and vertically arranged partitions forming a central longitudinal chamber and longitudinal side chambers.

5. A vehicle of the class described, provided with a body portion the bottom part of which is watertight, said bottom part being provided with a horizontal partition below which is a watertight chamber, a driving axle mounted in the rear end portion of said chamber and provided with wheels having watertight housings, the body portion of the vehicle being also provided with a front extension in which is mounted a guiding fork provided with a wheel, means for operating the driving axle, and devices for operating said guiding fork, said body portion of the vehicle being also provided with longitudinally and vertically arranged partitions forming a central longitudinal chamber and longitudinal side chambers, and the top part of the body portion being composed of an open framework covered with wire mesh and provided with side bunks.

6. A vehicle of the class described, comprising a watertight body portion having a horizontal partition, an axle mounted in the bottom rear part of the body portion below said partition and provided with wheels having watertight housings and which extend below said body portion, said body portion being also provided with a front guide and supporting wheel mounted forwardly thereof, and means for operating said axle and said front guide and supporting wheel.

7. A vehicle provided with a body portion the bottom part of which is composed of truss frames and made watertight, said bottom part being provided above the truss frames with a horizontal partition forming a bottom chamber, a driving axle mounted in the rear portion of the bottom chamber and provided with wheels mounted in watertight housings and which extend below said body portion, said body portion being also provided with a forward extension in which is placed a steering shaft provided with a guide and supporting wheel, and devices for operating the driving axle, and means for operating said guide and supporting wheel.

8. A vehicle provided with a body portion the bottom part of which is composed of truss frames and made watertight, said bottom part being provided above the truss frames with a horizontal partition forming a bottom chamber, a driving axle mounted in the rear portion of the bottom chamber and provided with wheels mounted in watertight housings and which extend below said body portion, said body portion being also provided with a forward extension in which is placed a steering shaft provided with a guide and supporting wheel, and devices for operating the driving axle and means for operating said guide and supporting wheel, said body portion being also provided with an openwork top and means for inclosing the same.

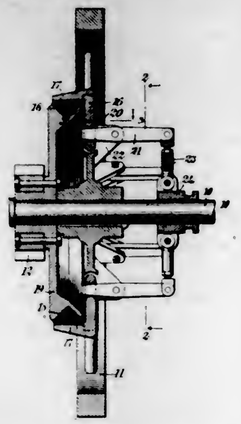
9. A vehicle, comprising a body portion, the bottom part of which is water-tight and the top part composed of openwork material, said bottom part being provided with a horizontal partition forming a water-tight bottom chamber and said bottom part being also provided above said partition with longitudinally arranged side chambers adapted to form bunks and the sides of the openwork top part being provided with bunks, and means for propelling and guiding said vehicle.

10. A vehicle, comprising a body portion, the bottom part of which is water-tight and the top part composed of openwork material, said bottom part being provided with a horizontal partition forming a water-tight bottom chamber and said bottom part being also provided above said partition with longitudinally arranged side chambers adapted to form bunks and the sides of the openwork top part being provided with bunks, and means for propelling and guiding said vehicle, and for inclosing the openwork top thereof.

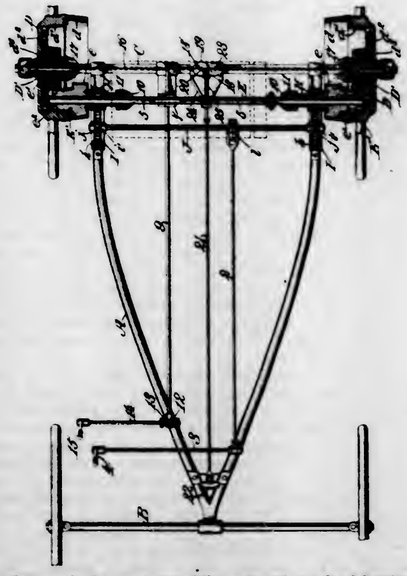
854,529. CLUTCH. BENEDICT F. REICHENBERGER, township 4, Brown county, Kans. Filed May 4, 1906. Serial No. 315,142.

Claim.—In a clutch, the combination with a shaft, of a wheel keyed thereto, and provided with a web between the spokes thereof, said web having at spaced intervals guides arranged radially to the shaft, slides movable in the guides and provided with clutch shoes, said slides having openings therethrough, a wheel loosely mounted on the shaft and having connected therewith a disk provided with a groove on its periphery for coöperating with the clutch shoes, a spaced pair of outwardly projecting lugs on the web adjacent to each of the guides a lever pivoted to each pair of lugs and having one end engaged in the opening of the adjacent slide, a collar slidably mounted on the shaft,

and an adjustable connection between the free end of each member and the collar.



854,530. AUTOMOBILE. JOHN W. RICHLEY, York, Pa. Filed Feb. 25, 1907. Serial No. 359,253.

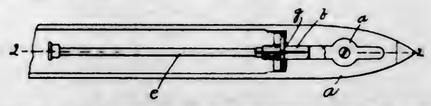


Claim.—1. In an automobile, a traction wheel having a hollow hub, two friction drive surfaces of different diameters upon the interior face of the circumferential wall of the hub, these surfaces being frusto-conical in contour and disposed base to base so as to incline in opposite directions, in combination with an actuating shaft, a friction drive pinion mounted thereon and provided with two frusto-conical friction drive surfaces of different diameters disposed base to base so as to incline in opposite directions, said friction drive pinion capable of sliding movement lengthwise of its actuating shaft, and arranged so that such movement thereon in one direction will bring its drive face of larger diameter in contact with the corresponding face of larger diameter in the hub, and, in the other direction will bring its drive face of smaller diameter in contact with the corresponding face of smaller diameter in the hub, substantially as and for the purposes hereinbefore set forth.

2. In an automobile, a traction wheel having a hollow hub, two friction drive surfaces frusto-conical in contour and of different diameters disposed base to base upon the interior face of the band or circumferential wall of the hub, an internal toothed gear within the hub and on the prolongation of the smaller end of the friction drive surface of smaller diameter, an actuating shaft, bearings therefor, and a friction drive pinion mounted on said shaft and provided with two frusto-conical drive surfaces of different diameters disposed base to base, and with teeth on the prolongation of the outer and smaller end of the surface of smaller diameter forming a toothed pinion, said friction drive pinion being capable of sliding movement upon its actuating shaft, to bring either its high or its low speed friction surface into contact with the corresponding friction face in the hub, and the bearings of the actuating shaft being movable and adjustable in a direction to vary the distance between the shaft and the hub, to permit the further advance of the friction drive pinion in a direction to put the teeth on its end in mesh with the internal toothed gear in the hub, substantially as and for the purposes hereinbefore set forth.

3. In an automobile, a traction wheel having a hollow hub upon the interior of the band or circumferential wall of which are two frusto-conical friction surfaces for forward drive, of different diameters for high and low speed respectively, disposed base to base so as to incline in opposite directions, a central tubular spindle-bearing forming part of the hub and mounted on the traction wheel axle, a reverse drive frusto-conical pulley or wheel mounted on said spindle-bearing in such manner that while revolving with, it may slide lengthwise of, the same, an actuating shaft, and a friction drive pinion mounted to revolve with, but to be capable of sliding lengthwise of, said shaft, and having two tapering reversely inclined friction drive surfaces of different diameters for high and low speed respectively, to coöperate with the corresponding forward drive surfaces in the hub, and having its smaller end portion extending into the space between the slow speed forward drive surface in the band of the hub and the central reverse drive wheel, the arrangement being such that when the friction drive pinion is in neutral position with respect to the forward drive surfaces in the hub, it may be brought into engagement with the central reverse drive wheel, by moving the latter toward the friction drive pinion, substantially as and for the purposes hereinbefore set forth.

854,531. SHUTTLE. JOSHUA ROBINSON, Lawrence, Mass. Filed Jan. 11, 1907. Serial No. 351,749.



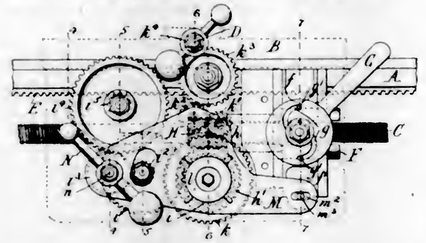
Claim.—1. A shuttle of the character described comprising a pivotally mounted socket piece, and a spindle adapted to be inserted and locked therein, the end portion of said spindle located in the socket comprising a pair of spring arms adapted to fit in the socket and to engage opposite sides thereof to hold the spindle from horizontal or transverse swinging movement in the shuttle, substantially as described.

2. A shuttle of the character described comprising a pivotally mounted socket piece and a spindle having its base end portion adapted to be inserted in said socket the base end portion of said spindle being composed of two oppositely disposed, semi-cylindrical arms fitted in said socket, and acting yieldingly to engage opposite sides of the socket to hold the spindle from transverse swinging movement therein, substantially as described.

3. A shuttle of the character described comprising a body having a recess, a socket piece pivotally mounted at one end in said recess, and having its opposite end portion composed of two sections, means for spreading said sections to fit the sides of said recess, and a spindle adapted to be inserted in said socket piece having its insertible portion composed of two arms adapted to be spread to fit the socket, substantially as described.

4. A shuttle of the character described comprising a body having a recess, a socket piece pivotally mounted at one end in said recess, and having its opposite end portion composed of two sections adapted to be spread to fit the sides of said recess, and a spindle adapted to be inserted in said socket piece having its insertible portion composed of two arms adapted to be spread to fit the socket, substantially as described.

854,532. CARRIAGE-FEED MECHANISM FOR LATHES. WILLIAM RUNGE, Seneca Falls, N. Y., assignor to The Seneca Falls Manufacturing Company, Seneca Falls, N. Y. Filed Aug. 21, 1906. Serial No. 331,545.



Claim.—1. In a lathe or the like, the combination of a tool carriage, a driven feed shaft, a feed device for operatively connecting the carriage with said shaft to feed the tool, feed gear trains for producing different movements of the tool, a movable part connected to be operated with said feed device, one or more gears of each of said gear trains being shifted by said movable part into and out of operative position whereby both of said gear trains are together made operative or inoperative, and means for placing one of said gear trains into and out of action independently of the other, substantially as set forth.

2. In a lathe or the like, the combination of a tool carriage, a driven feed shaft, a feed device for operatively connecting the carriage with said shaft to feed the tool, longitudinal and cross feed gear trains for the tool, a movable part connected to be operated with said feed device, one or more gears of each of said gear trains being shifted by said movable part into and out of operative position whereby both of said gear trains are together made operative or inoperative, and means for connecting one of said gear trains independently of the other to said feed shaft, substantially as set forth.

3. In a lathe or the like, the combination of a tool carriage, a driven feed shaft, a feed device for operatively connecting the carriage with said shaft to feed the tool, feed gear trains for producing different movements of the tool, a movable part operated by said feed device, one or more gears of each of said gear trains being shifted by said movable part into and out of operative position whereby both of said gear trains are together made operative or inoperative, a drive member common to both of said gear trains and driven by said feed shaft, and a clutch for connecting either of said gear trains independently of the other to said common drive member, substantially as set forth.

4. In a lathe or the like, the combination of a tool carriage, a driven feed shaft, a feed device for operatively connecting the carriage with said feed shaft to feed the tool, a gear train for feeding the carriage, a movable part connected to be operated with said feed device, a gear wheel of said gear train being shifted by said movable part into and out of operative position, a hand-operating device for said gear train, and means whereby said hand-operating device is rendered inactive by the movement of said movable part, substantially as set forth.

5. In a lathe or the like, the combination of a tool carriage, a driven feed shaft, a feed device for operatively connecting the carriage with said feed shaft to feed the tool, a gear train for feeding the carriage longitudinally, a movable part operated by said feed device, a gear wheel of said gear train being shifted by said movable part into and out of operative position, and a shaft for said shiftable gear wheel provided with a hand-operating device for said gear train, substantially as set forth.

6. In a lathe or the like, the combination of a tool carriage, a driven feed shaft, a feed device for operatively connecting the carriage with said feed shaft to feed the tool, a gear train for feeding the carriage longitudinally, a pivoted gear carrier operated by said feed device, one of the gear wheels of said gear train being mounted on said gear carrier and shifted thereby into and out of operative position, and a shaft for said shiftable gear wheel provided with a hand crank for said gear train, substantially as set forth.

854,533. FUME-DESTROYING COMPOSITION. HAMILTON SANBORN, Rhyolite, Nev., assignor of one-half to Sam F. Lindsay, Rhyolite, Nev. Filed May 24, 1906. Serial No. 318,559.

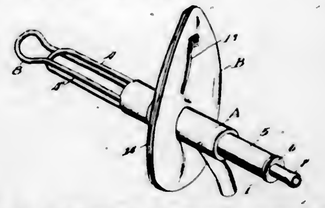
Claim.—1. A composition for fume destroying cartridges consisting of a mixture of carbonate of ammonia, calcium chlorid, and bicarbonate of soda wherein the proportion of the carbonate of ammonia is in excess of that of the calcium chlorid.

2. A composition for fume destroying cartridges consisting of a mixture of carbonate of ammonia, calcium chlorid, and bi-carbonate of soda, the proportion of carbonate of ammonia being in excess of that of either the calcium chlorid and bi-carbonate of soda.

3. A composition for fume destroying cartridges consisting of a mixture of carbonate of ammonia, calcium chlorid, and bi-carbonate of soda, the proportion of calcium chlorid being substantially one-half of that of the carbonate of ammonia.

4. A composition for fume destroying cartridges consisting of a mixture of carbonate of ammonia, calcium chlorid, and bi-carbonate of soda, the proportion of bicarbonate of soda being substantially one-half of that of the carbonate of ammonia and substantially equal to that of the calcium chlorid.

854,534. VAGINAL SYRINGE. HENRY R. SEABLES and SAMUEL S. JONES, Carbondale, Pa.; said Seables assignor to said Jones. Filed Mar. 29, 1905. Renewed Dec. 1, 1906. Serial No. 345,937.



Claim.—1. A dilator for a syringe comprising two perforated pipes, one of said pipes being longer than the other and terminating in a lateral or ogee curvature.

2. A dilator for a syringe comprising two perforated pipes, said pipes independent of each other, one of said pipes being longes than the other and terminating in a lateral or ogee curvature.

3. A vaginal syringe comprising a hollow casing, open at both ends, an annulus carried by the casing and projecting into the bore thereof, a sliding tube of considerably less diameter than the casing, the tube received in the casing and frictionally engaged by the annulus, the latter providing a free annular space between and concentric with the interior periphery of the casing and the exterior periphery of the tube, an irrigating dilator car-

ried by the tube, a cap removably closing the outer end of the tube and engaging the end of the casing to limit the inward movement of the tube, means for introducing liquid into the tube and means for withdrawing liquid from the annular space.

4. A vaginal syringe comprising a hollow casing, an annulus carried by and projecting into the bore of the casing, a tube slidingly received within the casing and of considerably less diameter than the casing whereby an annular space is left between the casing and tube closed at one end by the annulus, an external shoulder formed near one end of the tube, a cap removably secured to the opposite end of the tube outside the casing, the shoulder and cap adapted to engage the outer end of the casing to limit the movement of the tube in either direction relative to the casing, a dilator carried by the tube, means for introducing medicaments into the tube and means for draining the annular space.

5. A vaginal syringe comprising a hollow casing having a plurality of longitudinally extending grooves formed on its inner periphery, a tube of less diameter than the casing slidingly received within the casing, a skeleton dilator carried by the inner end of the tube and extending beyond the inner end of the casing, the members of the dilator receivable in and guided by the grooves in the casing, means for introducing a medicament into the tube and means for draining the space between the tube and casing.

6. A syringe comprising a hollow casing, a tube slidably received within the casing, a skeleton dilator carried by the inner end of the tube, the dilator comprising a plurality of separate and independent hollow perforated pipes freely communicating with the interior of the tube, the pipes removably secured to the tube to permit their removal and substitution and means for supplying medicament to the tube.

7. In a syringe, the combination with a casing, open at both ends, of a tube of considerably less diameter than the casing and slidably received through the outer end thereof, means for closing the outer end of the annular space left between the casing and tube, a plurality of independent approximately U-shaped hollow perforated pipes, the ends of which are removably mounted in the inner end of the tube, the interiors of the pipes in free communication with the interior of the tube, means for introducing medicament into the tube and means for draining the annular space.

8. In a syringe, the combination with a tube, of a skeleton dilator carried thereby, the dilator comprising independent U-shaped hollow perforated pipes, one of the pipes extending some distance in advance of the other and its free end being bent forwardly in a plane at approximately right angles to the body of the pipe and at an angle to the other pipe.

9. In a vaginal syringe, the combination with a hollow casing, of a tube received and slidable within the casing, a skeleton dilator carried by the tube and moving therewith, the dilator extending beyond the open inner end of the casing, means for introducing a medicament into the sliding tube and dilator, means for draining the space between the tube and casing, and a shield adjustable upon the casing, the shield provided with a fenestra for inspecting the parts.

10. In a vaginal syringe, the combination with a casing open at each end, a tube slidably received in and closing one end of the casing, and a skeleton dilator carried by the tube and projecting out of the open end of the casing, the members of the dilator being hollow perforated pipes in communication with the tube of a shield on the casing, the shield being oval in form and gently curved from end to end thereof, the lower end of the shield being broader than the upper end thereof, the shield provided with an elliptical groove on its inner concaved face and also with a fenestra formed on the longitudinal median line of the shield, and a flange surrounding the fenestra on the inner face of the shield and separating the fenestra from the groove.

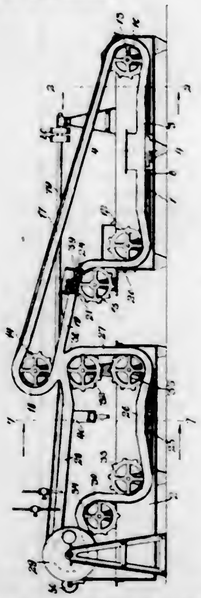
11. The combination with a vaginal syringe, of an oval shield mounted thereon, the shield being curved to fit the parts, and provided with an elliptical groove surrounding a fenestra, and an oval flange located near the apex of the shield, the flange inclosing the fenestra and separating the same from the groove.

12. The combination in a vaginal syringe, of a skeleton dilator comprising a plurality of hollow approximately U-shaped perforated pipes independent of each other and removably supported in the syringe, one of the hollow pipes projecting beyond the other and having an enlarged loop, the loop being bent at an angle to its body portion and to the other U-shaped rod.

13. The combination with a syringe, of an uterine speculum comprising an apertured plate, the syringe slidably received in the aperture in the plate, said plate also provided with an elongated fenestra for inspecting and treating the urethra.

14. The combination in a syringe with a suitable casing, of a shield slidably mounted on the casing, the shield further provided with a fenestra, and a groove extending around the shield near the outer edge thereof, and a cushion removably received in the groove.

854,535. BOTTLE WASHING AND SCRUBBING MECHANISM. WILLIAM SEIDEL, Wheeling, Ill. Filed Mar. 30, 1906. Serial No. 308,830.



Claim.—1. In a machine of the class described, the combination of a soaking tank, a rinsing tank, a trough extending through the soaking tank, a trough extending through the rinsing tank and connecting with the trough in the soaking tank, and feeding mechanism for carrying the bottles through the two troughs, substantially as described.

2. In a machine of the class described, the combination of a soaking tank, a rinsing tank, a trough for each of the tanks, each of the troughs having a lower section within the tank and an upper section above the tank, the two troughs being connected, and endless chains, one for each of the troughs, adapted to carry the bottles through the trough, substantially as described.

3. In a machine of the class described, the combination of a soaking tank, a rinsing tank, a trough for each of the tanks, each of the troughs having a lower section within the tank and an upper section above the tank, the two troughs being connected, and endless chains, one for each of the troughs, said chains being located outside of the troughs and provided with rollers extending into the troughs for rolling the bottles through the troughs, substantially as described.

4. In a machine of the class described, the combination of a soaking tank, a rinsing tank, a trough for each of the tanks, each of the troughs having a lower section in the tank and an upper section above the tank, the trough in the soaking tank being provided with an extension overhanging and connected with the trough in the rinsing tank for allowing the bottles to fall by gravity from one trough to the other, and endless chains, one for each of the troughs, adapted to carry the bottles through the troughs, substantially as described.

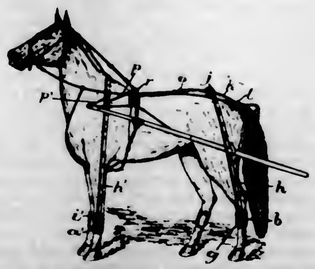
5. In a machine of the class described, the combination of a soaking tank, a rinsing tank, a trough for each of the tanks, each of the troughs having a lower section in the tank and an upper section above the tank, the trough in the soaking tank being provided with an extension overhanging and connected with the trough in the rinsing tank for allowing the bottles to fall by gravity from one trough to the other, and endless chains, one for each of the troughs, said chains being located outside of the troughs and provided with rollers extended into the troughs for rolling the bottles through the troughs, substantially as described.

6. In a machine of the class described, the combination of a soaking tank, a rinsing tank, an endless trough for each of the tanks, each trough having a lower section within the tank and an upper section above the tank, one of the troughs being provided with an upwardly sloping extension having near its extremity and immediately above the trough in the other tank, an orifice for discharging bottles from one of the troughs into the other, and means for feeding the bottles successively through the troughs, substantially as described.

7. In a machine of the class described, the combination of a soaking tank, a rinsing tank, an endless trough for each of the tanks, one of the troughs being provided with an extension overhanging and opening into the other trough, a scrubbing mechanism located within and coacting with the last mentioned trough, and means for carrying the bottles successively through the two troughs and the scrubbing mechanism, substantially as described.

8. In a machine of the class described, the combination of a soaking tank, a rinsing tank, an endless trough for each of the tanks, one of the troughs being provided with an extension overhanging and opening into the other trough, a scrubbing mechanism located within and coacting with the last mentioned trough, and an endless chain for each of the troughs, provided with feeding rollers for carrying the bottles through the troughs and through the scrubbing mechanism, substantially as described.

854,536. HARNESS FOR PRODUCING FREE ACTION OF THE LIMBS OF HORSES. THOMAS A. SHAVER, Toronto township, Peel county, Ontario, Canada. Filed Dec. 5, 1905. Serial No. 290,466.



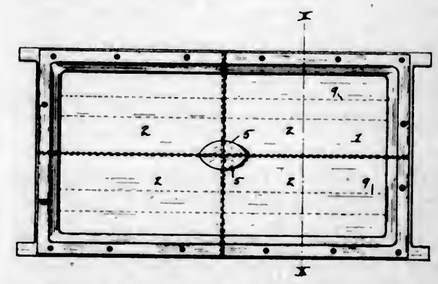
Claim.—1. A harness for producing free action of the limbs of horses comprising two leggings adapted to embrace the shanks of the forelegs below the knee joints, a continuous elastic strap connected to the leggings at the outer sides thereof and adapted to extend vertically along the sides of the forelegs and shoulders and across the back at the withers so as to spread asunder the front hoofs during the movement of the forelegs.

2. A harness for producing free action of the limbs of horses comprising a pair of leggings adapted to embrace the hind legs below the hock joints, a continuous elastic strap connected to the leggings at the outer sides thereof and adapted to extend vertically along the outer sides of the hind legs and the hips and across the animal's back at the rump so as to spread asunder the hind hoofs and prevent them crossing the middle line extending lengthwise between the front and rear hoofs during the movement of the hind legs.

3. A harness for producing free action of the limbs of horses, comprising one or more sets of leggings for the shanks of the legs, an elastic strap for each set of leggings passing over the horse to be connected to said leggings on the outer sides of the shanks, and a retaining strap for the middle of the elastic strap of the hind legs to embrace the crupper strap of the vehicle harness in front of the crupper dock.

4. A harness for producing free action of the limbs of horses, comprising one or more sets of leggings for the shanks of the legs, an elastic strap for each set of leggings passing over the horse to be connected to said leggings on the outer sides of the shanks, a retaining strap for the middle of the elastic strap of the hind legs to embrace the crupper strap of the vehicle harness in front of the crupper dock, and a back strap to be held by the buckle of the crupper strap.

854,537. MILK-VAT. GOTTLIEB H. SIMON, Kiel, Wis. Filed Feb. 4, 1907. Serial No. 355,552.



Claim.—1. In a milk vat of the described class the combination of a plurality of sections of sheet metal having their contiguous edges bent outwardly at right angles to their central portions and secured together so as to form seams and strengthening flanges and re-inforcing disks located at the junction of the longitudinal and transverse seams of the several sections, the upper edges of said re-inforcing disks being bent at right angles and their lower portions parallel with and secured to the bottom of the vat above the transverse seams, while the lower vertical edges of said disks are secured between the strengthening flanges of the longitudinal seams and means for securing said strengthening flanges and disks together.

2. A milk vat of the described class comprising a plurality of sections of sheet metal secured together in parallel longitudinal series, the seams between the sections of one series being formed in line with the seams of the next adjacent series and re-inforcing disks located at the junction of four adjacent sections, one re-inforcing disk being turned over and upon the transverse seam upon one side of the longitudinal seam and the other disk being bent over in the opposite direction upon the transverse seam and upon the opposite side of said longitudinal seam while the lower vertical edges of said disks are secured between the strengthening flanges of the longitudinal seams, all substantially as and for the purpose specified.

854,538. WATER-COCK FOR WATER-HEATERS. RAY C. SIMPSON, Dallas, Tex. Filed Oct. 5, 1906. Serial No. 337,587.



Claim.—1. The combination of the water cock casing, a valve therein having a slot provided with vertical and horisontal branches and having a disk or head at its lower end arranged to bear against the under side of its seat, and an operating stem rotatably mounted in the casing and having an eccentric portion playing in the branched slot in the valve the length of the slot exceeding the thickness of the eccentric portion within the slot whereby when the eccentric portion is disposed longitudinally of the casing the valve may move from its seat automatically upon a reduction of the fluid pressure.

2. The combination of the water cock casing, a valve seat therein, a guideway in the casing above the valve seat, a valve having an upper portion playing in the guideway and provided with a branched slot, and a disk at its lower end arranged to bear against the under side of the valve seat, and an operating stem having a crank engaging the branched slot the length of the branches of the slot being greater than the thickness of that portion of the crank which passes through the same whereby when the crank is disposed longitudinally of the casing a free movement of the valve will be permitted.

3. The combination of the water cock casing, a valve seat therein, a valve comprising a cylindrical body playing through said seat and having grooves in its sides, a disk-like head on the lower end of said body arranged to bear against the under side of the valve seat, and a plate-like portion rising from the upper end of said body and provided with a right-angled slot having vertical and horisontal branches, and a rotatable stem mounted transversely in the casing and having a crank engaging said slot, the said crank being in registry with the vertical branch of the slot when the valve is closed.

854,539. FOREBAY CONSTRUCTION. JOSEPH E. SIRRINE, Greenville, S. C. Filed Jan. 30, 1907. Serial No. 354,897.

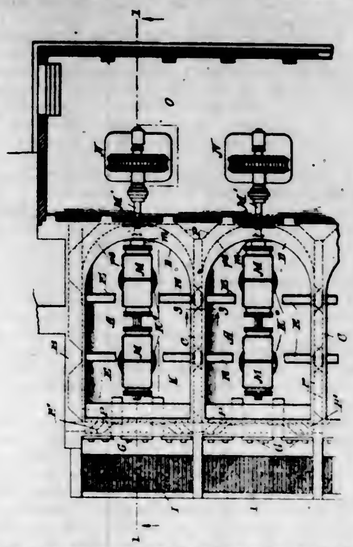
Claim.—1. A fore-bay construction, comprising a foundation and side, front and back walls, all made of an integral mass of concrete tied together with reinforcing rods, with outlet openings in the base of said foundation, and inlet openings in the front walls, substantially as described.

2. A fore-bay construction, comprising a foundation and side, front and back walls, all made of an integral mass of concrete tied together with reinforcing rods, with horisontal tie beams made of reinforced concrete connecting the side walls, with outlet openings in the base of said foundation, and inlet openings in the front walls, substantially as described.

3. A fore-bay construction comprising a foundation and side, front and back walls, all made of an integral mass of concrete tied together with reinforcing rods, the rear walls being in the form of horisontal arches with arch-shaped reinforcing rods tying said arches to the side walls, with outlet openings in the base of said foundation, and inlet openings in the front walls, substantially as described.

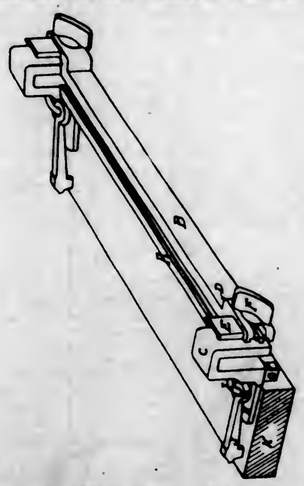
4. A fore-bay construction comprising a foundation and side, front and back walls, all made of an integral mass of concrete tied together with reinforcing rods, the rear walls being in the form of horisontal arches with arch-shaped reinforcing rods tying said arches to the side walls, and inlet and outlet openings for the water, substantially as described.

5. A fore-bay construction comprising a foundation and side, front and back walls, all made of an integral mass of concrete tied together with reinforcing rods, the rear walls being in the form of horisontal arches with arch-shaped reinforcing rods tying said arches to the side walls,



with tie beams connecting the side walls, and inlet and outlet openings for the water, substantially as described.

854,540. SAW-CLAMP. CHARLES H. SPRAY, Indianapolis, Ind. Filed Mar. 11, 1907. Serial No. 361,721.



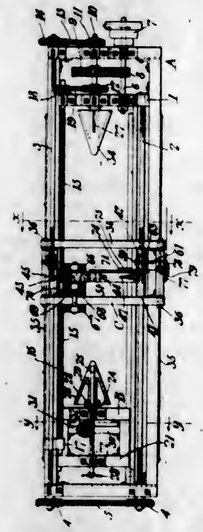
Claim.—1. The combination in a saw clamp, of a saw bar A provided with an integral arch C at each end thereof, a bar B provided with an integral elbow D at each end thereof, the latter being arranged to encompass the arches on the bar A, and means for moving the bar B toward the bar A to clamp the saw.

2. The combination in a saw clamp of a saw bar A provided with an integral arch and vise jaw C at each end thereof, a bar B provided with an integral elbow D, and upward projecting vise jaw E at each end thereof, and means for moving the vise jaws E on bar B toward their corresponding arch and vise jaws C on bar A to clamp the saw.

3. The combination in a saw clamp of a bar A provided with an integral arch and vise jaw C at each end thereof, a bar B provided with an integral elbow D and upward projecting vise jaw E at each end thereof, and having a thumb screw F provided at each end of the clamp, as a means of connecting the bar B to bar A, and to move the former toward the latter to clamp the saw for a filing position, and by the same means to move the vise jaws E on bar B toward their corresponding vise jaws C on bar A to clamp the saw for a jointing position.

4. The combination in a saw clamp of a bar A and B and means of connecting one with the other, the bar A being provided with an integral foot H, a lug hook G and an eyelet I at each end thereof and having attached to each end of the bar A, by universal or link joint, a dog J for the purposes specified.

854,541. WIRE-WINDING MACHINE. GEORGE W. STANCLIFF, Houston, Tex. Filed Dec. 15, 1906. Serial No. 348,045.



Claim.—1. In a wire winding machine, a chuck for engaging a tubular body and consisting of a conical member having a longitudinal groove, a tube receiving member slidable in said groove, and means carried by said member for clamping upon a tube.

2. In a wire winding machine, a longitudinally grooved conical chuck, a tube receiving yoke slidable in the groove, and means carried by the yoke for engaging a tube.

3. In a wire winding machine, a conical chuck having a longitudinal groove in the face thereof, a yoke slidable in said groove, and a set-screw in the free arm of said yoke.

4. In a machine for winding wire about tubular bodies, a tube engaging chuck consisting of a conical member having longitudinal grooves in the face thereof, tube engaging yokes slidable in said grooves, and set screws extending through the free arm of the yokes.

5. In a machine of the class described for winding wire about tubular bodies, a driven shaft having a conical chuck member, tube engaging clamps adjustably engaging said chuck member, an adjustable tail carriage, a screw operating in said tail carriage in axial alinement with the chuck carrying shaft, and a conical tube engaging member swiveled upon said screw,

6. In a machine of the class described, means for supporting and for imparting rotary movement about its axis to a tubular member, a carriage supported for movement parallel to the axis of the supported tubular member, a wire support connected with the carriage, and a tension device connected adjustably with the latter.

7. In a machine of the class described, means for supporting and rotating a body about which wire is to be wound, a wire carrier movable parallel to the axis of rotation, and means supported by the wire carrier for forming wire receiving seats in the object about which wire is to be wound.

8. In a wire winding machine, a plurality of yieldingly supported chisels, a yieldingly supported plunger above each chisel, and rotatable means for successively lifting said plungers and releasing them to actuate the chisels.

9. In a wire winding machine, means for supporting and rotating an object about which wire is to be wound, a movably supported carriage, means for feeding the carriage in a direction parallel to the axis of rotation of the object about which wire is to be wound, wire carrying means supported upon the carriage, a frame adjustable in said carriage toward and from the object about which wire is to be wound, and a seat forming chisel movably supported in said frame.

10. In a wire winding machine, a carriage supported for movement parallel to the axis of rotation of the body about which wire is to be wound, wire supporting means upon said carriage, a frame adjustably supported upon said carriage, a seat forming chisel in said frame, a chisel engaging plunger in the frame, and means for intermittently operating the plunger.

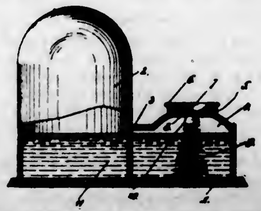
11. In a wire winding machine, a carriage having a wire guiding and tensioning means, a frame adjustable in the carriage, a seat-forming chisel supported in the frame, a chisel-actuating plunger in said frame, a resilient support for the plunger, resilient means for exerting longitudinal pressure upon the plunger, tappet means for actuating the plunger, and means for transmitting motion to the tappet means independently of the movement of the carriage.

12. In a wire winding machine, a main frame, feed screws supported for rotation in the frame, a carriage, vertically movable members connected with the carriage, screw engaging devices movable with said members, and means for actuating the members to disengage said devices from the feed screws.

13. In a wire winding machine, a main frame, feed screws supported for rotation in the frame, a carriage, vertically movable members connected with the carriage, screw engaging devices movable with said members, a shaft journaled within the members, means rotatable with the shaft for raising the shaft and members, and means for facilitating the manual rotation of the shaft.

14. In a wire winding machine, a main frame, a plurality of spring-supported seat-forming chisels, a spring-actuated and spring-supported plunger above each chisel and adapted to impact thereupon, and a series of toothed disks rotatably mounted adjacent to and adapted to successively drop, the plungers to operate the chisels.

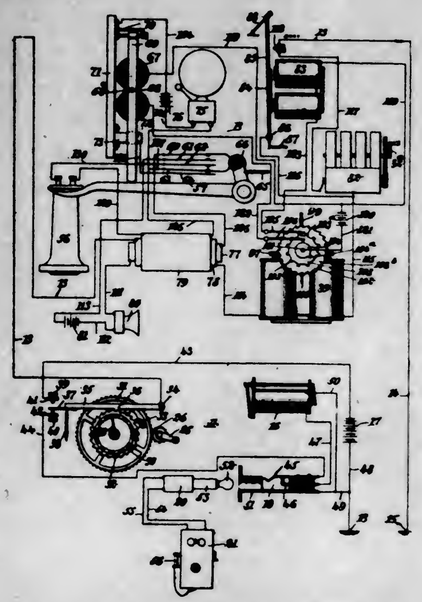
854,542. INK-WELL. LOYD D. ST. CLAIR, Vanvoorhis, W. Va. Filed Feb. 18, 1907. Serial No. 357,912.



Claim.—In an ink well, a base, a receptacle mounted on said base adjacent one end thereof, a dip well mounted on the base adjacent the other end thereof, a partition separating said receptacle and dip well having an opening in its upper edge establishing communication between the re-

ceptacle and the dip well, a cover or lid for said dip well, having a central opening, a gasket seated in the underneath face of said cover or lid, a coiled spring resting on the base beneath said lid, and a ball valve carried in the upper end of said spring normally seating against said gasket.

854,543. PARTY-LINE TELEPHONE SYSTEM. GUY E. TERHUNE, WILLIAM M. EDSON, and WILLIAM B. HUSTON, Willow Hill, Ill. Filed Nov. 11, 1905. Serial No. 286,855.



Claim.—1. In a party line telephone system, the combination of a line, a generator for energizing the same so as to signal a distant station, electrically-operated mechanism for indicating that the line is busy, and means controllable by said electrically-operated mechanism for short-circuiting said generator when said line is busy.

2. In a party line telephone system, the combination of a busy signal, a lockout, a revoluble member movable step by step, separate contacts to be opened and closed by movements of said revoluble member, and electric connections from said separate contacts to said busy signal and said lockout for the purpose of controlling the same.

854,544. CHAIR ATTACHMENT. ALBERT THOMPSON, Fullerton, Nebr. Filed Jan. 7, 1907. Serial No. 351,199.

Claim.—1. A chair attachment comprising a bracket provided with a plurality of key-hole openings, a T-shaped member having the vertical arm extending through said openings provided with a protuberance, and a supporting plate pivotally connected to the horizontal arm of said member.

2. A chair attachment comprising a bracket provided with a plurality of key-hole openings, a T-shaped member having a vertical arm extending through said openings and provided with a protuberance, a supporting plate pivotally connected to the horizontal arm of said member, and a connecting member provided with a plurality of openings and pivotally connected to one end of said bracket.

3. A chair attachment comprising a bracket embodying a body portion, a flange at one end thereof and a plate at the top extending at right angles with respect thereto, said plate and said flange each having a key-hole-shaped opening, a T-shaped member having the vertical arm thereof extending through said openings and provided at its lower end with a protuberance, and a plate pivotally connected to the horizontal arm of said T-shaped member and adapted to be supported upon the plate of the bracket.

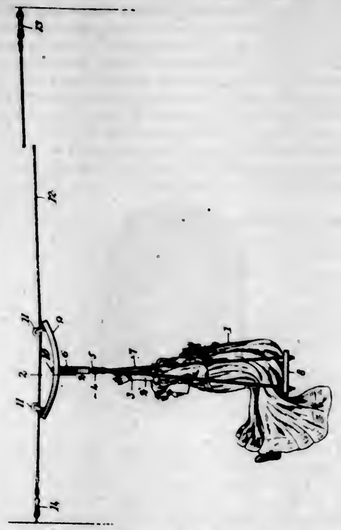


4. A chair attachment comprising a bracket embodying a body portion, a flange at one end thereof and a plate at the top extending at right angles with respect thereto, said plate and said flange each having a key-hole-shaped opening, a T-shaped member having the vertical arm thereof extending through said openings and provided at its lower end with a protuberance, and a plate pivotally connected to the horizontal arm of said T-shaped member and adapted to be supported upon the plate of the bracket, said plate of the bracket provided with a lug to arrest the movement of the plate pivoted to the horizontal arm of the T-shaped member.

5. A chair attachment comprising a bracket embodying a body portion, a flange at one end thereof and a plate at the top extending at right angles with respect thereto said plate and said flange each having a key-hole-shaped opening, a T-shaped member having the vertical arm thereof extending through said openings and provided at its lower end with a protuberance, a plate pivotally connected to the horizontal arm of said T-shaped member and adapted to be supported upon the plate of the bracket, and a connecting member pivoted to the said flange and provided with a plurality of openings.

6. A chair attachment comprising a bracket embodying a body portion, a flange at one end thereof and a plate at the top extending at right angles with respect thereto said plate and said flange each having a key-hole-shaped opening, a T-shaped member having the vertical arm thereof extending through said openings and provided at its lower end with a protuberance, a plate pivotally connected to the horizontal arm of said T-shaped member and adapted to be supported upon the plate of the bracket, said plate of the bracket provided with a lug to arrest the movement of the plate pivoted to the horizontal arm of the T-shaped member, and a connecting member pivoted to said flange and provided with a plurality of openings.

854,545. TOY. AUGUST UBBELE, New York, N. Y. Filed Mar. 4, 1907. Serial No. 360,464.



Claim.—1. The combination of a doll having uplifted arms, wrist bands secured to said arms, hooks connected with said wrist bands, hangers connected with said hooks, and a seat attached to said hangers.

2. The combination of a doll having uplifted arms, wrist bands attached to said arms, hooks connected with said wrist bands, a swing connected with said hooks, and a yoke supporting said hooks.

3. The combination of a doll having uplifted arms, wrist bands attached to said arms, hooks connected with said wrist bands, a swing connected with said hooks, a yoke supporting said hooks, and a carriage pivotally connected with said yoke and provided with wheels.

4. The combination with a line, of a carriage provided with wheels adapted to ride on said line, a yoke pivotally mounted centrally of said carriage, hooks attached to the ends of said yoke, a swing having hangers attached to said hooks, and a doll seated on said swing with uplifted arms provided with wrist bands secured to said hooks.

854,546. EYE-PROTECTOR. EMILE VERDEAU, New York, N. Y., assignor to Cryder & Co., New York, N. Y. Filed Feb. 12, 1907. Serial No. 357,042.



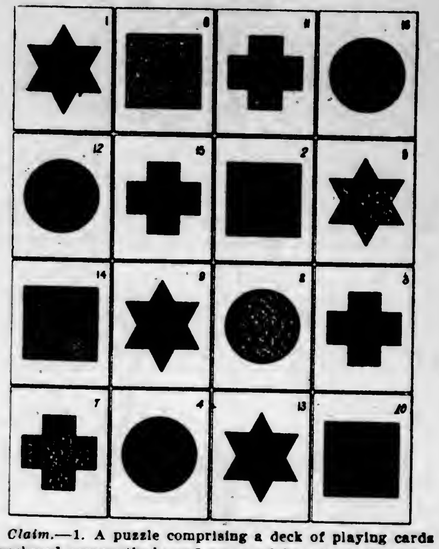
Claim.—1. An eye protector comprising a mask provided with convex opaque shields each having a horizontal slot through which an observer may see.

2. An eye protector comprising a mask portion of leather or other soft material, in combination with opaque shields provided with horizontal slots through which the observer may see.

3. An eye protector comprising a mask portion, metallic shields connected therewith and provided with slots through which an observer may see, and annular lining members connected with said shields and with said mask portion.

4. As an article of manufacture, a metallic shield having a general oval form and made convex, said shield being provided with a longitudinal slot, long as compared with its width and through which an operator may see.

854,547. PUZZLE. WALTER WERNER, New York, N. Y. Filed Mar. 7, 1907., Serial No. 361,022.



Claim.—1. A puzzle comprising a deck of playing cards numbered consecutively and arranged in sets, each set being formed of a number of cards, each of which is provided with a colored design, the designs and colors of the cards in the set being different.

2. A puzzle comprising a deck of playing cards numbered consecutively and arranged in sets, each set being formed of a number of cards, each of which is provided with a colored design, the designs and colors of the cards in the set being different, and the colors of the same designs in the several sets being different.

3. A puzzle comprising sixteen cards numbered consecutively and provided on their faces with geometrical figures, the cards being arranged in four sets of four cards each, the geometrical figures of the cards in each set being of a different shape and of a different color.

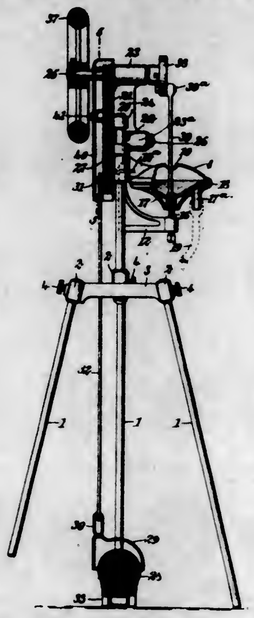
854,548. PNEUMATIC MASSAGE-MACHINE. ALGOT A. WICKLAND, Chicago, Ill., assignor to Carl Rosen, Chicago, Ill. Filed Apr. 21, 1900. Serial No. 312,980.

Claim.—1. In a massage machine, a tripod, standards carried thereby, a gear casing at one side of the standards, gears in the casing, a spindle journaled at the upper end at one side of the casing, a hand wheel fixed to the spindle at one side of the casing, a crank disk fixed to the opposite end of the spindle, a bellows carried on the standards below the crank disk, a pitman connecting the bellows with the crank disk, means for connecting the bellows with a massage device, and a foot treadle for operating the gears.

2. In a massage machine, a support, a bellows cover carried thereby, a bracket secured to the cover having means to engage a cup forming the bottom of the bellows and forcing the same to engage the circumference of a rubber diaphragm between the cover and cup, and means for connecting the cup with a massage device.

3. In a massage machine, a tripod, vertical rods carried

thereon, a bellows cap having guiding apertures slidable over the rods, an L-shaped bracket secured to the cap and having a vertical screw passing through its horizontal arm, a cup adapted to be forced by the screw to engage the cap and secure the circumference of a rubber diaphragm therebetween, means for connecting the cap with a massage device and means for operating the diaphragm.



4. In a massage machine, a tripod, vertical rods carried thereon, a bellows carried by the vertical rods, a gear casing having means to slidably engage the upper ends of the rods and be fixed thereto, a counter-shaft journaled at the upper end of the gear casing, means for operating the bellows carried on the counter-shaft, means carried on the counter-shaft for driving said operating means, and means for connecting the bellows to a massage device.

5. In a massage machine, a tripod, vertical rods carried thereon, a bellows having guiding apertures slidable over the rods, a gear casing slidable over the rods and secured thereto, a counter-shaft journaled at the upper end of the gear casing, means carried on the counter-shaft for operating the bellows, means for connecting the bellows with a massage device, a gear fixed to the counter-shaft and in the casing meshing with a larger gear journaled therein, a crank pin carried by the large gear, and a foot treadle adapted to operate the same through the intermediary of a link, substantially as described.

854,549. TIRE-FASTENER. CORTES L. WILLIAMS, Steubenville, Ohio. Filed Oct. 29, 1906. Serial No. 341,011.

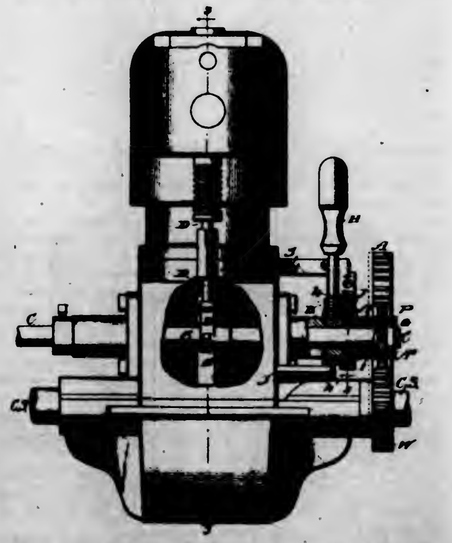
Claim.—1. A wheel including a rim, a tire of flexible material bearing upon said rim and provided with spaced recesses in its inner face, rods embedded in said tire and extending through said recesses and with longitudinal channels in their outer faces, fastening devices consisting of split rods threaded at one end and with the terminals of the split portions inclined inwardly and toward the threaded ends thereof, said rods adapted to pass through the rim at their threaded ends and to enter the recesses in the tire at their split portions and bear by their hooked terminals in the channels of the embedded rods, and clamp nuts engaging the threaded portions of the rods and operating to clamp the same to the wheel.

2. A wheel including a rim, a tire of flexible material bearing upon said rim and provided with spaced recesses in its inner face, rods embedded in said tire and extending through said recesses and with longitudinal channels in their outer faces, fastening devices consisting of rods divided longitudinally and with the adjacent faces serrated near one end and threaded externally of the serrated portion and with the other terminals inclined inwardly and toward the threaded terminals, said divided rods adapted to pass through the rim at their threaded ends and to enter the recesses in the tire at their other ends and bear by the hooked terminals within the longitudinal channels of the embedded rods, and clamp nuts engaging the threaded portions of the rods and operating to clamp the same to the wheel.



3. A wheel including a felly and a rim bearing upon the felly, a tire of flexible material bearing upon said rim and provided with spaced recesses in its inner face, rods embedded in said tire and extending through said recesses and with longitudinal channels in their outer faces, fastening devices consisting of split rods threaded at one end and with the terminals of the split portions inclined inwardly and toward the threaded ends thereof, said rods adapted to pass through the rim and felly at their threaded ends and to enter the recess in the tire at their split portions and bear by their hooked terminals in the longitudinal channels of the embedded rods, and clamping nuts engaging the threaded portions of the fastening devices and bearing upon the inner faces of the felly.

854,550. REVERSING-GEAR FOR GASOLENE-ENGINES. HERMAN E. ZASTROW and JULIUS H. KOEPP, Portage, Wis. Filed Jan. 10, 1907. Serial No. 351,644.



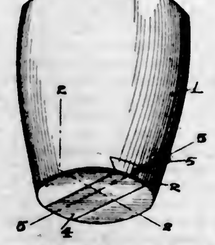
Claim.—1. A reversing gear for gas and gasolene engines, consisting of a shaft bearing a cam and timing wheel and a slip clutch on the shaft arranged with a limited free movement to permit a changed relation of the timing wheel to the cam, said slip clutch being formed of two parts one of which is slidable longitudinally along the shaft and provided with a spring for holding it into yielding engagement with the other part.

2. A reversing gear for gas and gasolene engines, consisting of a shaft bearing a cam and timing wheel, a slip clutch on the shaft arranged with a limited free movement to permit a changed relation of the timing wheel to the cam, said slip clutch having a spring seated portion slidable longitudinally on the shaft and a circuit controller for correspondingly altering the time of the spark arranged beside the clutch and having a rotary adjustment about the same shaft.

3. A reversing gear for gas and gasolene engines, consisting of a shaft bearing a cam, a loose timing wheel on the shaft longitudinally movable on the shaft and having a slip clutch on the outside formed by seats arranged a predetermined distance apart for reversing, a projection on the shaft locking alternately into said seats according to the direction of revolution, and a coil spring arranged on the opposite side of the wheel and having a bearing against which it is held for compression.

4. A reversing gear for gas and gasolene engines, consisting of a shaft bearing a cam, a loose timing wheel on the shaft having a slip clutch on the outside formed by seats arranged a predetermined distance apart for reversing, a projection on the shaft locking alternately into the seats according to the direction of revolution, a coil spring arranged on the shaft behind the timing wheel, a stationary bearing for the shaft, a washer interposed between said stationary bearing and the spring, and a rotary adjustable circuit controller on the stationary bearing.

854,551. CRUCIBLE. JAMES M. ALLEN, St. Louis, Mo., assignor of one-half to C. H. Howard, St. Louis, Mo. Filed July 14, 1906. Serial No. 326,255.



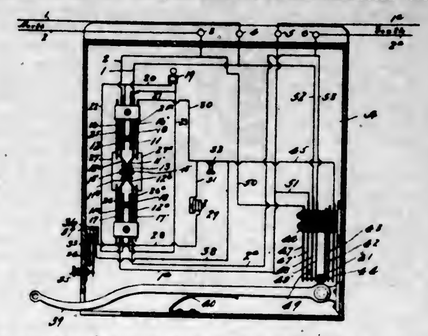
Claim.—As a new article of manufacture, a crucible, provided in its lower end with a centrally arranged opening, there being a transversely arranged dove-tailed recess formed in and extending entirely across the bottom of said crucible, which recess intersects the opening in the bottom of the crucible, a removable dove-tailed plate located in said recess, and a handle fixed to said plate.

854,552. TELEPHONE-SWITCH. JAMES S. ALSOBROOK, Wood Station, Ga. Filed June 30, 1906. Serial No. 324,189.

Claim.—1. The combination with line conductors of a multiple station line, telephone and call bell, a line switch forming the terminal of the conductors, a telephone switch, and an auxiliary switch in connection with said telephone switch whereby the line may be restored through the auxiliary switch when the line switch is left open.

2. The combination in a telephone line, of a line switch and conductors connected thereto, a telephone switch, an auxiliary switch in conjunction with the telephone switch for restoring the line when left open, and a circuit breaker whereby only the bells on the line wanted are energised, when a call is made.

3. The combination with line conductors of a line switch forming the terminals thereof and consisting of two pair of contact plates, a telephone and a bell included in the circuit, contact plates of the switch connected with



the bell and telephone, a telephone switch and auxiliary switch, and an insulated lever adapted to throw the terminals of either line into circuit with the telephone.

854,553. OIL-BURNER. HENRY E. ARMITAGE, Prescott, Ariz., assignor to Annie M. Armitage. Filed Mar. 10, 1906. Serial No. 305,357.

Claim.—1. The combination with a steam jacket having a semi-spherical tip or nozzle at one end, said nozzle hav-



ing a narrow kerf or slit extending horizontally across it in the region of its center, a straight oil pipe extending entirely through the jacket and nozzle at a point above the slit whereby to discharge over the semi-spherical surface of the nozzle and means for opening the pipe at its rear end whereby a device may be thrust therethrough throughout the length of the pipe for cleaning purposes.

2. The combination with a steam jacket, and semi-spherical tip or nozzle removably screwed to one end, and a cap removably screwed to the other end, the nozzle having a horizontal slit or kerf, of a straight oil pipe of uniform internal diameter throughout its length which extends through and opens flush with the upper surface of the semi-spherical tip or nozzle at a point above the kerf or slit, the rear end of the pipe extending through the cap and means whereby access may be gained through the entire length of the pipe.

854,554. ELECTRIC-LIGHT FIXTURE. JOHN F. BARRETT, Chicago, Ill. Filed Mar. 16, 1906. Serial No. 306,464.

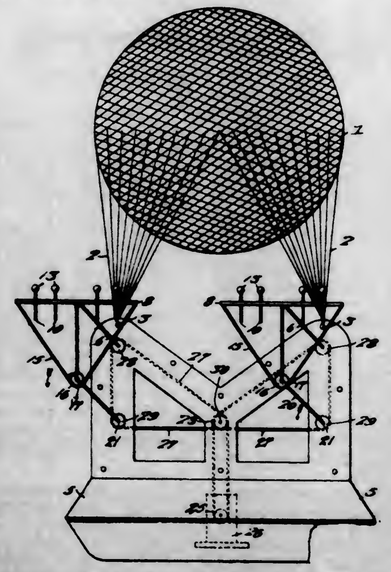
Claim.—In an electric lamp fixture, the combination with a cylindrical casing provided with a slot and socket portion, a stationary shaft mounted in said casing, a cylindrical drum having extended ends revolubly mounted on said shaft, a spring inside of said drum and attached to said drum, and to said shaft, a screw threaded opening in one end of said drum leading into the large central chamber in said drum, a cap screwing into said opening to a depth sufficient to form a recess in the open end of said drum, a ratchet mechanism located within said recess and mounted on said cap and said shaft, flexible electrical connections wound upon said drum, one end of said connections being attached to lugs extending inwardly through the flanged ends of said drum, a lamp supported by the other end of said connections which connections pass out

through the slot in said casing, and spring pressed brushes bearing against one end of said drum whereby an electric



current may be constantly passed through said drum, substantially as described.

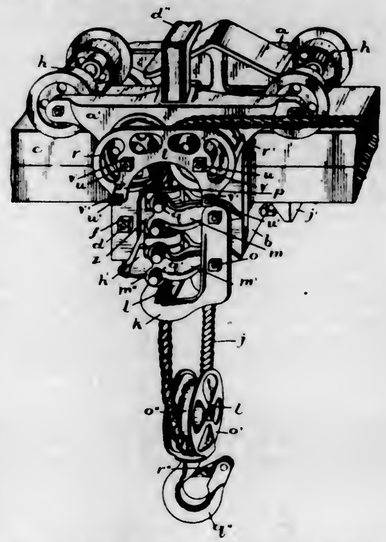
854,555. AIR-SHIP. EMIL BAUMANN, St. Louis, Mo. Filed Oct. 3, 1906. Serial No. 337,293.



Claim.—1. An air ship comprising a buoyant medium of just sufficient capacity to sustain the weight of the entire air ship, a frame connected to said buoyant medium, crank shafts mounted in said frame, aeroplanes pivotally mounted on said crank shafts, weighted vanes pivoted to the aeroplanes and hand wheels for adjusting the inclination of said aeroplanes.

2. An air ship comprising a buoyant bag, a frame to which said bag is connected, crank shafts journaled in said frame, aeroplanes pivotally connected to said shafts, weighted vanes pivotally connected to said aeroplanes, drive chains connected at their ends to said aeroplanes, a shaft carrying a sprocket wheel engaging said chain, a ratchet wheel upon said shaft, a hand wheel on said shaft, a rotatable frame to which said shaft is journaled, and means for rotating said aeroplanes, substantially as described.

854,556. CARRIER. GEORGE BEATTY, WILLIAM G. BEATTY, and MILTON J. BEATTY, Fergus, Ontario, Canada. Filed Nov. 20, 1905. Serial No. 288,319.



Claim.—1. A carrier comprising a carrier frame, a rope-grip oscillatorily connected thereto, laterally arranged duplex guide pulleys above the rope-grip and having a rope-course alined with the rope-course of the rope-grip, a draw-rope attached at one end to the carrier and extending through the rope-course of the rope-grip and between the guide pulleys to run parallel with the track after passing over either of the guide pulleys, means to automatically move the rope-grip into an inoperative position and holding means for the rope-grip when moved into an inoperative position released by the load.

2. A carrier comprising a carrier-frame, guide-pulleys at one side thereof having a rope-course between them, and a rope grip to seize the draw-rope before passing through the rope-course between the guide-pulleys said rope-grip consisting of a hinge member oscillatorily connected to the carrier-frame and clasp-members mounted in the hinge member having the rope-course between them in line with the rope-course between the guide-pulleys.

3. A carrier comprising a carrier-frame, guide-pulleys at one side thereof having a rope-course between them, and a rope-grip consisting of a hinge-member oscillatorily connected to the carrier-frame, and oppositely disposed clasp-members having trunnions mounted in the hinge member to cause the clasp-members to respectively grip or release the draw-rope during the oscillation of the hinge-member.

4. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, and a rope-guide at said side of the carrier-frame having a rope-course in line with that of the rope-grip and guide-pulleys.

5. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-guide at said side of the carrier and below the guide-pulleys, and a rope-grip between the rope-guide and guide-pulleys.

6. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-guide at said side of the carrier-frame and below the guide-pulleys and a rope-grip between the rope-guide and guide pulleys consisting of a hinge member pivotally connected to the carrier-frame and clasp-members mounted therein having a rope-course between them in line with the rope-course between the guide-pulleys.

7. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys consisting of hinge-members pivotally connected to the carrier-frame and oppositely disposed clasp-members having trunnions mounted in the hinge-members to cause the clasp-members to grasp or release the draw-rope as the hinge members oscillate.

8. A carrier comprising a carrier frame, duplex guide-pulleys at one side thereof and in the same plane as the track with a rope-course between them, a rope-grip having a rope-course alined with that between the guide-pulleys a rope-grip release to render the rope-grip inactive and means for maintaining the rope-grip release in an active position displaced by the load when raised by the draw rope.

9. A carrier comprising a carrier frame, two duplex guide-pulleys at one side thereof and in the same plane as the track having a rope-course between them, a rope-grip, a rope-grip-release, and a support for the rope-grip release to be tripped by the lifting of the load.

10. A carrier comprising a carrier-frame, guide-pulleys at one side thereof having a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, a rope-grip-release to render the rope-grip inactive and means for maintaining the rope-grip-release in an active position displaced by the load when raised by the draw-rope in combination with the track, and a cam thereon to actuate the rope-grip-release.

11. A carrier comprising a carrier-frame, guide-pulleys at one side thereof having a rope course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, a rope-grip-release and a support for the rope-grip-release pivoted to the carrier frame to be tripped by the lifting of the load, in combination with the track and a cam thereon to actuate the rope-grip-release.

12. A carrier comprising a carrier-frame, guide-pulleys at one side thereof having a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, a rope-grip-release to actuate the rope-grip, a carrier lock for the rope-grip-release and means for maintaining the rope-grip-release in an active position and a support for the rope-grip-release displaced by the load when raised by the draw-rope, in combination with the track, a cam thereon to actuate the rope-grip-release and detent stops for the track to be engaged by the carrier-lock.

13. A carrier comprising a carrier-frame, duplex guide-pulleys at one side thereof and in the same plane as the track with a rope-course between them, a rope-grip, a rope-grip-release, means for maintaining the rope-grip-release in an active position displaced by the load when raised by the draw-rope, track wheels mounted on axles on the inner faces of the carrier-frame-sides having unoccupied spaces between them for the track and the parts mounted thereon.

14. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, track-wheels mounted on the inner faces of the carrier-frame-sides having unoccupied spaces between them for the parts mounted on the track, a rope-grip-release and a carrier-lock forming part thereof and means for maintaining the rope-grip-release in an active position displaced by the load when raised by the draw-rope, in combination with the track, a cam mounted thereon to actuate the rope-grip-release and detent stops to be engaged by the carrier lock.

15. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip, a rope-grip-release to actuate the rope-grip and a lever connected to the rope-grip-release and to one side of the carrier-frame.

16. A carrier comprising a carrier frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip, a rope-grip-release, a support for the rope-grip-release arranged to be tripped by the lifting of the load and a lever connected to the rope-grip-release and to one side of the carrier-frame.

17. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, and a rope-grip-release to actuate the rope-grip, in combination with the track, a cam thereon to actuate the rope-grip-release and a lever connected to the rope-grip-release and to one side of the carrier-frame.

18. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, a rope-grip-release and a support for the rope-grip-release pivoted to the carrier-frame and arranged to be tripped by the lifting of the load, in combination with the track, a cam thereon to actuate the rope-grip-release, and a lever connected to the rope-grip-release and to one side of the carrier-frame.

19. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, a rope-grip-release to actuate the rope-grip and a carrier-lock for the rope-grip-release, in combination with the track, a cam thereon to actuate the rope-grip-release, detent stops for the track to be engaged by the carrier lock and a lever connected to the rope-grip-release and to one side of the carrier-frame.

20. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, a rope grip release, track-wheels mounted on axles on the inner faces of the carrier-frame-sides having unoccupied spaces between them for the track and the parts mounted thereon and a lever connected to the rope-grip-release and to one side of the carrier-frame.

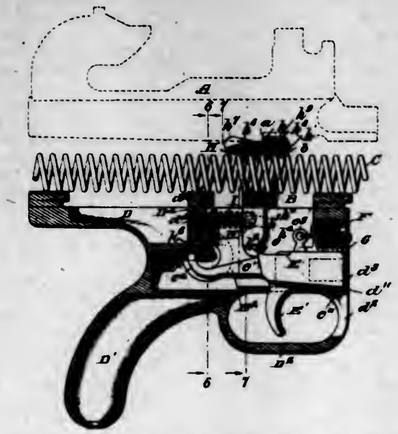
21. A carrier comprising a carrier-frame, guide pulleys at one side thereof with a rope-course between them, a rope grip, a rope-grip-release and track-wheels mounted on axles on the inner faces of the carrier-frame-sides having unoccupied spaces between them for the track and the parts mounted thereon in combination with the track, a cam mounted thereon to actuate the rope-grip-release and a lever connected to the rope-grip-release and to one side of the carrier frame.

22. A carrier comprising a carrier-frame, guide-pulleys at one side thereof with a rope-course between them, a rope-grip to seize the draw-rope before passing through the rope-course between the guide-pulleys, track-wheels mounted on the inner faces of the carrier-frame-sides having unoccupied spaces between them for the parts mounted on the track, a rope-grip-release, a carrier lock forming part thereof and a lever connected to the rope-grip release and to one side of the carrier frame, in combination with the track and a cam mounted thereon to actuate the rope-grip-release, and detent stops to be engaged by the carrier-lock.

854,557. FIRING-GEAR. LAURENCE V. BENET and HENRI A. MERCIÉ, Paris, France. Filed Aug. 20, 1906. Serial No. 331,341.

Claim.—1. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism and a main spring for returning the piston to the forward position, of a detent perforated to permit the pas-

sage therethrough of said spring adapted to hold said piston in a rearward position, a trigger, means controlled by said trigger for releasing said detent from engagement with said piston, and means for automatically restoring said detent to the initial position when said trigger controlled means is thrown out of engagement with said detent, substantially as described.



2. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent adapted to hold said piston in a rearward position, a trigger, means controlled by said trigger for releasing said detent, means for automatically throwing said trigger controlled means out of engagement with said detent when said trigger is pulled, and means for automatically restoring said detent to the initial position when released, substantially as described.

3. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism of a rolling detent adapted to hold said piston in a rearward position, a trigger, means controlled by said trigger for releasing said detent, a cam for throwing said means out of engagement with said detent if desired when said trigger is pulled, means for throwing said cam into and out of engagement with said trigger controlled means, and means for automatically restoring said detent to the initial position when released, substantially as described.

4. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a detent perforated to permit the passage therethrough of the piston spring and mounted to rock in the breech casing and adapted to hold said piston in a rearward position, a trigger, means controlled by said trigger for releasing said detent from engagement with said piston, and a spring automatically rocking said detent back to the initial position when said trigger controlled means is thrown out of engagement with said detent, substantially as described.

5. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted to rock in the breech casing and adapted to hold said piston in a rearward position, a trigger, means controlled by said trigger for releasing said detent, means for automatically throwing said trigger controlled means out of engagement with said detent when said trigger is pulled, and a spring automatically rocking said detent back to the initial position when released, substantially as described.

6. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted to rock in the breech casing and adapted to hold said piston in a rearward position, a trigger, means controlled by said trigger for releasing said detent, a cam for throwing said means out of engagement with said detent, if desired, when said trigger is pulled, means for throwing said cam into and out of engagement with said trigger controlled means, and a spring automatically rocking said detent back to initial position when released, substantially as described.

7. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, and a spring for restoring the same to the initial position of a detent perforated to receive said spring loosely fitting the breech casing and adapted to arrest said piston on its forward stroke, and a trigger block adapted to engage said detent and throw the same out of engagement with said piston, substantially as described.

8. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a trigger block adapted to engage said detent and throw the same out of engagement with said piston, means for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger, and means for automatically restoring the detent to the initial position, substantially as described.

9. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a trigger block adapted to engage said detent and to throw the same out of engagement with said piston, a trigger carried by said trigger block, means for throwing said trigger block out of engagement with said detent at a predetermined point of the travel of said trigger, with means for automatically restoring the detent to the initial position when released from engagement with said trigger block, substantially as described.

10. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a detent perforated to permit the passage therethrough of the piston spring and loosely fitting the breech casing and adapted to arrest said piston on its forward stroke, a trigger block adapted to engage said detent and throw the same out of engagement with said piston with means for restoring said detent and said trigger block to the initial position, when released, substantially as described.

11. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a detent perforated to permit the passage therethrough of the piston spring and loosely fitting the breech casing and adapted to arrest said piston on its forward stroke, a trigger block adapted to engage said detent and throw the same out of engagement with said piston, and springs for restoring the detent and trigger block to the initial position, when released, substantially as described.

12. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a sliding trigger block adapted to engage said detent and throw the same out of engagement with said piston, a trigger carried by said trigger block, with means for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger, means for automatically restoring the detent to the initial position, when released, and means for restoring the trigger block to the initial position when released, substantially as described.

13. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, provided with a hook, of a spring impressed detent perforated to permit the passage therethrough of the piston spring and mounted to rock in the breech casing and adapted to engage said hook and arrest said piston on its forward stroke, and a spring constrained trigger block adapted to engage said detent and throw the same out of engagement with said piston, when drawn rearward, said detent and trigger block returning to the initial position under the action of their respective springs when released, substantially as described.

14. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, provided with a hook, of a spring impressed detent mounted to roll in the breech casing and adapted to engage said hook and arrest said piston on its forward stroke, and a spring constrained trigger block adapted to engage said detent and throw the same out of engagement with said piston, when drawn rearward, said detent and trigger block returning to the initial position under the action of their respective springs when released, with means operable at will for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger block, substantially as described.

15. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, provided with a hook, of a spring impressed detent mounted to roll in the breech casing and adapted to engage said hook and arrest said piston on its forward stroke, and a spring constrained trigger block adapted to engage said detent and throw the same out of engagement with said piston, when drawn rearward, said detent and trigger block returning to the initial position under the action of their respective springs when released, a trigger carried by said trigger block, and means operable at will for throwing said trigger block out of engagement with said detent at a predetermined point of the travel of said trigger block, substantially as described.

16. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a trigger block adapted to engage said detent and throw the same out of engagement with said piston, means for restoring said detent and said trigger block to the initial position, when released, and means for disengaging said trigger block from said detent at a predetermined point of the movement of said trigger block, substantially as described.

17. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a trigger block adapted to engage said detent and throw the same out of engagement with said piston, springs for restoring the detent and trigger block to the initial position, when released, and means for disengaging said trigger block from said detent at a predetermined point of the movement of said trigger block, substantially as described.

18. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a sliding trigger block adapted to engage said detent and throw the same out of engagement with said piston, a trigger carried by said trigger block, a movable cam for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger, means for locking said cam in either the operative or inoperative position, means for automatically restoring the detent to the initial position, when released, and means for restoring the trigger block to the initial position when released, substantially as described.

19. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a detent perforated to permit the passage therethrough of the piston spring and loosely fitting the breech casing and adapted to arrest said piston on its forward stroke, and a trigger block adapted, when pulled rearward, to engage said detent and throw the same out of engagement with said piston, with means for restoring both the trigger block and detent to the initial position when released, substantially as described.

20. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism provided with a hook, of a rolling detent having a hook at each end, mounted in the breech casing and having the hook at its upper end adapted to arrest said piston on its forward stroke, a trigger block adapted to engage the hook at the lower end of said detent and throw the same out of engagement with said piston, means operable at will for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger, and means for automatically restoring the detent and the trigger block to the initial position, when released, substantially as described.

21. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a detent perforated to permit the passage therethrough of the piston spring and loosely fitting the breech casing and adapted, to arrest said piston on its forward stroke, a sliding trigger block adapted to engage said detent and throw the same out of engagement with said piston, a trigger secured to said block, and means for restoring said detent and said trigger block to the initial position, when released, substantially as described.

22. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a detent perforated to permit the passage therethrough of the piston spring and loosely fitting the breech casing and adapted to arrest said piston on its forward stroke, a sliding trigger block adapted, when pulled rearward, to engage said detent and throw the same out of engagement with said piston, a trigger secured to said block, and springs for restoring the detent and trigger block to the initial position, when released, substantially as described.

23. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a sliding trigger block mounted to rock slightly in said casing and adapted to engage said detent and throw the same out of engagement with said piston, a trigger carried by said trigger block, a cam, means for throwing said cam into the path of said trigger block, when desired, for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger, means for automatically restoring the detent to the initial position, when released, and means for restoring the trigger block to the initial position when released, substantially as described.

24. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, provided with a hook, of a spring impressed detent mounted to rock in the breech casing and adapted to engage said hook and arrest said piston on its forward stroke, and a spring constrained trigger block provided with a hook adapted to engage said detent and throw the same out of engagement with said piston, when drawn rearward, said detent and trigger block returning to the initial position under the action of their respective springs when released, said trigger block also being provided with an inclined face in rear of said hook, and a movable cam, with means for locking the same in or out of position to engage said inclined face, substantially as described.

25. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, provided with a hook, of a spring impressed detent mounted to rock in the breech casing and adapted to engage said hook and arrest said piston on its forward stroke, and a spring constrained trigger block adapted to engage said detent and throw the same out of engagement with said piston, when drawn rearward, said detent and trigger block returning to the initial position under the action of their respective springs when released, and a movable cam, with means for locking the same in or out of the path of said trigger block, for releasing said trigger block from said detent at a predetermined point of the movement of the trigger block, substantially as described.

26. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, provided with a hook, of a spring impressed detent mounted to rock in the breech casing and adapted to engage said hook and arrest said piston on its forward stroke, and a spring constrained trigger block adapted to engage said detent and throw the same out of engagement with said piston, when drawn rearward, said detent and trigger block returning to the initial position under the action of their respective springs when released, a trigger carried by said trigger block, a cam, and means operable at will for throwing said cam into engagement with said trigger block and thus throwing the latter out of engagement with said detent at a predetermined point of the travel of said trigger block, substantially as described.

27. In an automatic gun, the combination with a recip-

rocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a trigger block adapted to engage said detent and throw the same out of engagement with said piston, means for restoring said detent and said trigger block to the initial position, when released, and a cam arrangement for disengaging said trigger block from said detent at a predetermined point of the movement of said trigger block, when desired, substantially as described.

28. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a trigger block adapted to engage said detent and throw the same out of engagement with said piston, springs for restoring the detent and trigger block to the initial position, when released, and a cam arrangement for disengaging said trigger block from said detent at a predetermined point of the movement of said trigger block, when desired, substantially as described.

29. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, a detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a sliding trigger block adapted to engage said detent and throw the same out of engagement with said piston, said trigger block having an inclined face in rear of said detent, a trigger carried by said trigger block, a cam arranged in the path of said inclined face for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger, means for locking said cam in either the operative or inoperative position, means for automatically restoring the detent to the initial position, when released, and means for restoring the trigger block to the initial position when released, substantially as described.

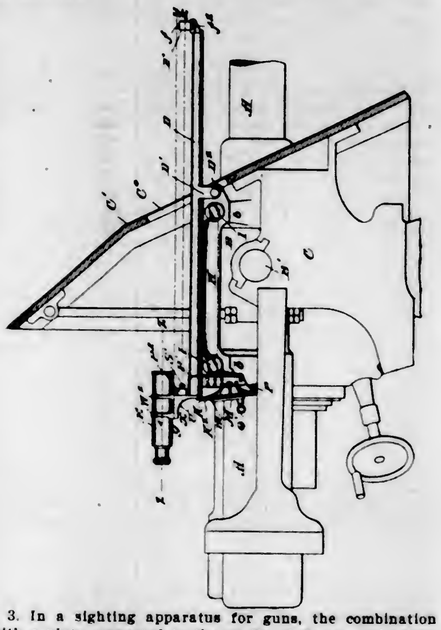
30. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism provided with a hook, of a rolling detent having a hook at each end, mounted in the breech casing and having the hook at its upper end adapted to arrest said piston on its forward stroke, a trigger block adapted to engage the hook at the lower end of said detent and throw the same out of engagement with said piston, a cam arrangement operable at will for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger, and means for automatically restoring the detent and the trigger block to the initial position, when released, substantially as described.

31. In an automatic gun, the combination with a reciprocating piston for operating the breech mechanism, of a rolling detent mounted in the breech casing and adapted to arrest said piston on its forward stroke, a sliding trigger block mounted to rock slightly in said casing and adapted to engage said detent and throw the same out of engagement with said piston, a trigger carried by said trigger block, a cam, means for throwing said cam into the path of said trigger block, when desired, for disengaging said trigger block from said detent at a predetermined point of the movement of the trigger, a spring for automatically restoring the detent to the initial position, when released, and a second spring for restoring the trigger block to the initial position when released, substantially as described.

854,558. APPARATUS FOR SIGHTING ORDNANCE. LAURENCE V. BENÉT and HENRI A. MERCIÉ, Paris, France. Filed Jan. 24, 1907. Serial No. 353,803.

Claim.—1. In a sighting apparatus for guns, the combination with a pivoted supporting bar and sights carried thereby, of means for tilting said bar through a vertical angle, comprising a curved rack carried by said bar, a pinion meshing in said rack, and means for automatically locking said pinion against rotation, and for rotating said pinion comprising compound screw gearing, substantially as described.

2. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, and compound screw gearing for simultaneously rotating said pointer and said pinion, substantially as described.



3. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, compound screw gearing for simultaneously rotating said pointer and said pinion, with means for automatically locking both said pointer and said pinion against rotation, substantially as described.

4. In a sighting apparatus for guns, the combination with a pivoted supporting bar and sights carried thereby, of means for tilting said bar through a vertical angle, comprising a curved rack, a pinion, a spring, and means controlled thereby for automatically locking said pinion against rotation, means for throwing said locking means out of engagement and compound screw gearing for rotating said pinion, substantially as described.

5. In a sighting apparatus for guns, the combination with a plate, and means for connecting same to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a plate carrying a pointer adapted to rotate over said scale plate, means for rigidly connecting said pointer carrying plate and said pinion, and means for rotating said pointer and carrying plate, comprising compound screw gearing substantially as described.

6. In a sighting apparatus for guns, the combination with a plate, and means for connecting same to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, means for rigidly connecting said pointer carrying plate and said pinion, with compound screw gearing for automatically locking said pointer carrying plate against rotation, substantially as described.

7. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, a hand knob, and means controlled by said hand knob for rotating both said pointer and said pinion, with compound screw gearing for automatically locking both said pointer and said pinion against rotation, substantially as described.

8. In a sighting apparatus for guns, the combination with a pivoted supporting bar and a front sight carried thereby, a sliding leaf mounted at the rear end of said bar, and a telescope carriage detachably connected to said sliding leaf and moving therewith, of means for tilting said bar through a vertical angle, comprising a curved rack carried by said bar, a pinion meshing in said rack, and compound screw gearing for rotating said pinion and for automatically locking said pinion against rotation, substantially as described.

9. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, a front sight carried by said bar, a sliding leaf mounted at the rear end of said bar, and a telescope carriage detachably connected to said sliding leaf and moving therewith, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, and compound screw gearing for simultaneously rotating said pointer and said pinion, substantially as described.

10. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, a front sight carried by said bar, a sliding leaf mounted at the rear end of said bar, and a telescope carriage detachably connected to said sliding leaf and moving therewith, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, means for simultaneously rotating said pointer and said pinion, with means for automatically locking both said pointer and said pinion against rotation, substantially as described.

11. In a sighting apparatus for guns, the combination with a pivoted supporting bar and sights carried thereby, of means for tilting said bar through a vertical angle, comprising a curved rack carried by said bar, a pinion meshing in said rack, a female screw carried by said pinion and having a coarse pitch, a hollow sleeve provided with coarse exterior screw threads and fine interior screw threads, the coarse threads engaging the threads of the screw carried by the pinion, said sleeve also being held against rotation but free to move longitudinally, and a screw having fine threads engaging in the interior threads of said hollow sleeve, with means for turning said screw, substantially as described.

12. In a sighting apparatus for guns, the combination with a pivoted supporting bar and sights carried thereby, of means for tilting said bar through a vertical angle, comprising a curved rack carried by said bar, a pinion meshing in said rack, a female screw carried by said pinion and having a coarse pitch, a hollow sleeve provided with coarse exterior screw threads and fine interior screw threads, the coarse threads engaging the threads of the screw carried by the pinion, said sleeve also being held against rotation but free to move longitudinally, a screw having fine threads engaging in the interior threads of said hollow sleeve, with means for turning said screw, and means for automatically locking said screw against rotation, substantially as described.

13. In a sighting apparatus for guns, the combination with a pivoted supporting bar and sights carried thereby, of means for tilting said bar through a vertical angle, comprising a curved rack carried by said bar, a pinion meshing in said rack, a female screw carried by said pinion and having a coarse pitch, a hollow sleeve provided with coarse exterior screw threads and fine interior screw threads, the coarse threads engaging the threads of the screw carried by the pinion, said sleeve also being held against rotation but free to move longitudinally, a screw having fine threads engaging in the interior threads of said hollow sleeve, with means for turning said screw, said means comprising an arm projecting from said screw, and a hand knob revolubly connected to said arm, substantially as described.

14. In a sighting apparatus for guns, the combination with a pivoted supporting bar and sights carried thereby, of means for tilting said bar through a vertical angle, comprising a curved rack carried by said bar, a pinion meshing in said rack, a female screw carried by said pinion and having a coarse pitch, a hollow sleeve provided with coarse exterior screw threads and fine interior screw threads, the coarse threads engaging the threads of the screw carried by the pinion, said sleeve also being held against rotation but free to move longitudinally, a screw having fine threads engaging in the interior threads of said hollow sleeve, with means for turning said screw, said means comprising an arm projecting from said screw, and a hand knob revolubly connected to said arm, with a spring operated detent connected to said hand knob for normally locking said arm against turning, but which may be released by withdrawing said hand knob slightly rearward, substantially as described.

15. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, and compound screw gearing for simultaneously rotating said pointer and said pinion, with an arm and hand knob revolubly connected to said arm for operating said screw gearing, substantially as described.

16. In a sighting apparatus for guns, the combination with a plate, and means for connecting same to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a plate carrying a pointer adapted to rotate over said scale plate, means for rigidly connecting said pointer carrying plate and said pinion, and means for rotating said pointer carrying plate, comprising compound screw gearing and a hand knob revolubly connected to a member of said gearing, substantially as described.

17. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, a hand knob, and compound screw gearing controlled by said hand knob for rotating both said pointer and said pinion, substantially as described.

18. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, a front sight carried by said bar, a sliding leaf mounted at the rear end of said bar, and a telescope carriage detachably connected to said sliding leaf and moving therewith, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box, and meshing with said rack, a scale plate carried by said gear box, a pointer adapted to rotate over said scale plate, and com-

pound screw gearing for simultaneously rotating said pointer and said pinion, with independent means for automatically locking said pointer and pinion against rotation, substantially as described.

19. In a sighting apparatus for guns, the combination with a plate, and means for connecting same to the cradle of the gun, of a supporting bar pivoted to said plate, sights carried by said bar, a curved rack projecting downward from said bar, a gear box carried by said plate, a pinion journaled in said gear box and meshing with said rack, a scale plate carried by said gear box, a plate carrying a pointer adapted to rotate over said scale plate, means for rigidly connecting said pointer carrying plate and said pinion, and compound screw gearing for rotating said pointer carrying plate, with means for simultaneously locking said pointer carrying plate against rotation, comprising a spring operated detent with means for releasing same when desired, substantially as described.

20. In a sighting apparatus for guns, the combination with a pivoted supporting bar and a front sight carried thereby, of a sliding leaf mounted at the rear end of said bar, a telescope carriage connected to said sliding leaf and moving therewith, and means for tilting said bar through a vertical angle, comprising a rack and pinion, and compound screw gearing for rotating said pinion substantially as described.

21. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, a front sight carried by said bar, a sliding leaf mounted at the rear end of said bar, a telescope carriage detachably connected to said sliding leaf and moving therewith, a curved rack projecting downward from said bar, and compound screw gearing for moving said rack through a vertical angle and for automatically locking the same in any desired position, substantially as described.

22. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, a front sight carried by said bar, a sliding leaf mounted at the rear end of said bar, means for automatically locking said sliding leaf in any desired position, and means for tilting said bar through any desired angle, and for automatically locking the bar in the desired position, substantially as described.

23. In a sighting apparatus for guns, the combination with a pivoted supporting bar, of a sliding leaf mounted at the rear end of said bar, a telescope carriage connected to said sliding leaf and moving laterally therewith, and means for tilting said bar through a vertical angle, comprising a rack and pinion, and compound screw gearing for rotating said pinion substantially as described.

24. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, of a supporting bar pivoted to said plate, a sliding leaf mounted at the rear end of said bar, a telescope carriage detachably connected to said sliding leaf and moving laterally therewith, a curved rack projecting downward from said bar, and compound screw gearing for moving said rack through a vertical angle and for automatically locking the same in any desired position, substantially as described.

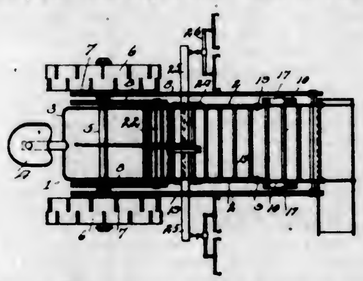
25. In a sighting apparatus for guns, the combination with a pivoted supporting bar, a sliding leaf mounted at the rear end of said bar, a bracket secured to the rear end of said bar, a telescope carriage mounted on said bracket and connected to said sliding leaf and moving laterally therewith, and means for tilting said bar through a vertical angle, comprising a rack and pinion and compound screw gearing for rotating said pinion substantially as described.

26. In a sighting apparatus for guns, the combination with a plate connected to the cradle of the gun, and a supporting bar pivoted to said plate, of a sliding leaf mounted at the rear end of said bar, a bracket secured to the rear end of said bar, a telescope carriage mounted on said bracket and connected to said sliding leaf and moving laterally therewith, a curved rack projecting downward from said bar, and compound screw gearing for moving said rack through a vertical angle and for automatically locking the same in any desired position, substantially as described.

27. In a sighting apparatus for guns, the combination with a supporting bar pivoted to the cradle, a sliding leaf mounted at the rear end of said bar, and means for adjusting and automatically locking said sliding leaf in any desired position, comprising two parallel oppositely disposed racks having teeth of unequal length, carried by said bar, and a longitudinally movable pinion carried by said leaf and adapted to engage one or both of said racks, as may be desired, substantially as described.

28. In a sighting apparatus for guns, the combination with a supporting bar pivoted to the cradle, a sliding leaf mounted at the rear end of said bar, and means for adjusting and automatically locking said sliding leaf in any desired position, comprising two parallel oppositely disposed racks having teeth of unequal length, carried by said bar, and a longitudinally movable pinion carried by said leaf and adapted to engage one or both of said racks, as may be desired, with a spring normally pressing said pinion into engagement with both of said racks, and means for withdrawing said pinion clear of one of said racks in opposition to the action of said spring, substantially as described.

854,559. DITCHING-MACHINE. EDWIN S. BOYD, Norris City, Ill. Filed Aug. 8, 1906. Serial No. 329,784.



Claim.—1. In a machine of the character described, a suitable frame, disk cutters for forming the sides of the ditch, and an excavator working in rear of and on a line between said cutters.

2. In a machine of the character described, a suitable frame, disk cutters for forming the sides of the ditch, an excavator working in rear of and on a line between said cutters, and means for adjusting said cutters and excavator to regulate their depth of penetration.

3. In a machine of the character described, a suitable frame, disk cutters for forming the sides of the ditch, and a rotating excavator working in rear of and on a line between said cutters, said excavator being provided with curved blades to excavate the soil by a spading action.

4. In a ditching machine, the combination of a main frame mounted at its rear on ground wheels, an inclined conveyer pivotally mounted upon the front portion of the main frame and extending above and below the same, a supporting wheel carried by the conveyer, an adjusting frame vertically adjustable on the main frame and connected with the lower end of the conveyer, means for adjusting said adjusting frame, disk cutters arranged at the point of junction of the conveyer with the adjustable frame, a rotary excavator carried by the adjusting frame in rear of said cutters, and drive gearing for actuating the conveyer and excavator from the ground wheels.

5. In a ditching machine, the combination of a main frame mounted at its rear on ground wheels, a conveyer pivotally connected with the forward end of the main frame and extending in inclined relation above and below the same, a supporting wheel carried by the conveyer, a discharge chute arranged at the upper end of the conveyer, an adjusting frame vertically adjustable on the main frame and connected at its lower end to the lower rear end of the conveyer, disk cutters on the lower shaft of the conveyer, a rotary excavator on the adjusting frame in rear of said cutters, a lever on the main frame for adjusting said adjusting frame, and gearing for driving the conveyer and excavator from the ground wheels.

854,560. PROCESS OF SEPARATING BERYLLIA FROM ALUMINA AND IRON. FRIEDRICH BRAN and GABRIEL VAN OORDT, Mannheim, Germany. Filed July 13, 1906. Serial No. 326,144.

Claim.—1. The process of separating beryllia from alumina and iron which consists in treating a mixture containing the same with alkali and carbon dioxid, said alkali being employed in amount sufficient to yield a carbonated compound with the beryllia present wherein the ratio M_2O :BeO subsists.

2. The process of separating beryllia from alumina and iron which consists in treating a mixture containing the same with a solution containing an alkali and carbon dioxid, said alkali being employed in amount sufficient to yield a compound with the beryllia present wherein the ratio M_2O :BeO subsists, and separating the resultant solution from undissolved matters.

3. The process of separating beryllia from alumina and iron which consists in treating a mixture containing the same with an alkali and sufficient carbon dioxid to form a bicarbonte with said alkali, dissolving the resultant beryllium compound and separating the solution from undissolved matters.

4. The process of forming a new beryllium compound which consists in treating beryllium hydroxid with alkali and carbon dioxid, said alkali being employed in amount sufficient to form the ratio M_2O :BeO with the beryllia.

5. The process of forming a new beryllium compound which consists in treating beryllium hydroxid with dissolved alkali and carbon dioxid, said alkali being employed in amount sufficient to form the ratio M_2O :BeO with the beryllia.

6. The process of forming a new beryllium compound which consists in treating beryllium hydroxid with an alkali bicarbonate, said bicarbonate being employed in such an amount that the contained alkali is sufficient to form the ratio M_2O :BeO with the beryllia.

7. As a new composition of matter, a soluble carbonated compound containing alkali and beryllia in the ratio of M_2O :BeO, said compound being soluble in water and its aqueous solution giving a precipitate of beryllium hydroxid when heated, diluted, or treated with alkalies.

854,561. METALLIC BEDSTEAD. JOSIAH BROOKES and HENRY J. BROOKES, Smethwick, England. Filed Feb. 1, 1906. Serial No. 299,034.



Claim.—1. A metallic bedstead comprising a series of tubes having tube receiving apertures therein, a series of transverse tubes contained in the tube apertures of the first mentioned tubes, plugs for the ends of the last mentioned tubes and a cementing element contained within and rigidly securing the tubes together.

2. A metallic bedstead comprising a series of horizontal tubes, having tube receiving apertures therein, a series of transverse tubes having their ends contained in the tube apertures of the horizontal tubes and having not more than three sides of each end cut away, plugs within the horizontal tubes and a cementing substance contained in the tubes to secure horizontal tubes to the transverse tubes.

3. A metallic bedstead comprising a series of tubes having tube receiving apertures therein, a series of transverse tubes contained in the tube apertures of the first mentioned tubes, plugs for the ends of the last mentioned tubes, a cementing element contained within and rigidly securing the tubes together and mounts attached to the ends of the transverse tubes and having out turned locking members contained in the cementing substance.

4. A metallic bedstead comprising a series of horizontal tubes, having tube receiving apertures therein, a series of transverse tubes having their ends contained in the tube apertures of the horizontal tubes and having not more than three sides of each end cut away, plugs within the horizontal tubes and a cementing substance contained in the tubes to secure horizontal tubes to the transverse tubes and mounts attached to the ends of the transverse tubes and having out turned locking members contained in the cementing substance.

854,562. ELECTRIC CONDUCTOR OR CABLE. SIDNEY G. BROWN, London, England. Filed Oct. 8, 1904. Serial No. 227,710.



Claim.—1. An electric conductor or cable having a copper conductor associated with iron or magnetic material the conductor and the iron being of segmental form in transverse section twisted together in an axial direction substantially as and for the purposes specified.

2. An electric conductor or cable having a copper conductor associated with iron or magnetic material of approximately the same segmental form in transverse section twisted together in an axial direction, substantially as and for the purposes specified.

3. An electric conductor or cable having a copper conductor associated with iron or magnetic material of approximately the same segmental form and area in transverse section, twisted together in an axial direction substantially as and for the purposes specified.

4. An electric conductor or cable having a copper conductor associated with iron or magnetic material, the conductor and the iron being of segmental form in transverse section twisted together in an axial direction with an insulating medium or dielectric between them, substantially as and for the purposes specified.

5. An electric conductor or cable having a copper conductor associated with iron or magnetic material of approximately the same segmental form in transverse section twisted together in an axial direction with an insulating medium or dielectric between them substantially as and for the purposes specified.

6. An electric conductor or cable having a copper conductor associated with iron or magnetic material of approximately the same segmental form and area in transverse section, twisted together in an axial direction with an insulating medium or dielectric between them, substantially as and for the purposes specified.

7. An electric conductor or cable having a copper conductor associated with iron or magnetic material each of segmental form in transverse section and adapted to admit of their being assembled so that the centers of gravity come as close as possible and twisted together in an axial direction substantially as and for the purposes specified.

8. An electric conductor or cable having a copper conductor associated with iron or magnetic material of approximately the same segmental form in transverse section and adapted to admit of their being assembled so that the centers of gravity come as close as possible and twisted together in an axial direction substantially as and for the purposes specified.

9. An electric conductor or cable having a copper conductor associated with iron or magnetic material of approximately the same segmental form and of such an area in transverse section as will admit of their being assembled so that the centers of gravity come as close as possible and twisted together in an axial direction, substantially as and for the purposes specified.

10. An electric conductor or cable having a copper conductor associated with iron or magnetic material each of

segmental form in transverse section and adapted to admit of their being assembled so that the centers of gravity come as close as possible and twisted together in an axial direction with an insulating medium ar dielectric between them, substantially as and for the purposes specified.

11. An electric conductor or cable having a copper conductor associated with iron or magnetic material of approximately the same segmental form in transverse section and adapted to admit of their being assembled so that the centers of gravity come as close as possible and twisted together in an axial direction with an insulating medium between them, substantially as and for the purposes specified.

12. An electric conductor or cable having a copper conductor associated with iron or magnetic material of approximately the same segmental form and of such an area in transverse section as will admit of their being assembled so that the centers of gravity come as close as possible and twisted together in an axial direction, with an insulating medium between them, substantially as and for the purpose specified.

13. An electric conductor or cable comprising a conductor of copper wire of half round or segmental form in transverse section arranged with its flat side in juxtaposition to iron wire of half-round or segmental form in transverse section twisted together in an axial direction, substantially as herein described for the purposes specified.

14. An electric conductor or cable comprising a conductor of copper wire of half-round or segmental form in transverse section arranged with its flat side in juxtaposition to the flat side of iron wire of half-round or segmental form in transverse section twisted together in an axial direction substantially as hereinbefore described for the purposes specified.

15. An electric conductor or cable comprising a conductor of copper wire of half-round or segmental form in transverse section having its flat side arranged in juxtaposition to iron wire of highly permeable character of half-round or segmental form in transverse section twisted together in an axial direction, substantially as hereinbefore described for the purposes specified.

16. An electric conductor or cable comprising a conductor of copper wire of half-round or segmental form in transverse section having its flat side arranged in juxtaposition to the flat side of iron wire of highly permeable character of half-round or segmental form in transverse section twisted together in an axial direction, substantially as herein described for the purposes specified.

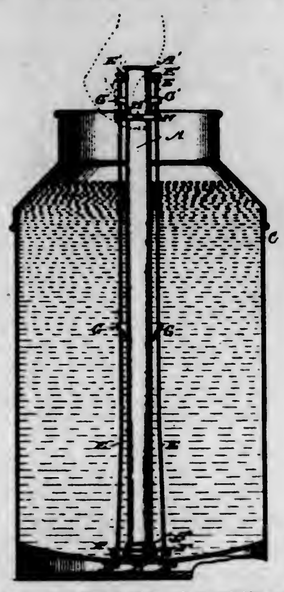
17. An electric conductor or cable comprising a conductor of copper wire of half-round or segmental form in transverse section having its flat side arranged in juxtaposition to iron wire of half-round or segmental form in transverse section and an interposed insulating strip or medium twisted together in an axial direction substantially as herein described for the purposes specified.

18. An electric conductor or cable comprising a conductor of copper wire of half-round or segmental form in transverse section having its flat side arranged in juxtaposition to the flat side of iron wire of half-round or segmental form in transverse section and an interposed insulating strip or medium twisted together in an axial direction, substantially as herein described for the purposes specified.

19. An electric conductor or cable comprising a conductor of copper wire of half-round or segmental form in transverse section having its flat side arranged in juxtaposition to the iron wire of highly permeable character of half-round or segmental form in transverse section and an interposed insulating strip or medium twisted together in an axial direction, substantially as herein described for the purposes specified.

20. An electric conductor or cable comprising a conductor of copper wire of half-round or segmental form in transverse section having its flat side arranged in juxtaposition to the flat side of iron wire of highly permeable character of half-round or segmental form in transverse section and an interposed insulating strip or medium twisted together in an axial direction, substantially as herein described for the purposes specified.

854,563. MILK-SAMPLER. WILLIAM F. BÜCHER, Washington, D. C. Filed Sept. 15, 1906. Serial No. 334,774.



Claim.—1. A sampling device substantially as herein described, comprising a tube open at both ends and having at its lower end a gasket and a clamping ring securing the same and a bolt operating in connection with said ring, a gate pivoted on said bolt at the outer side of the tube and arranged to open to a position out of line with the said tube, rods secured to said gate at the opposite sides thereof, and extending thence upwardly along the outer side of the tube, guides for the said rods arranged on the tube and adapted to limit the movements of said rods whereby to prevent the opening of the gate beyond the center, a hand hold encircling the tube and connected with said rods above the said guides, and guides for the rods above the said hand holds, such rods having above the latter guides stop projections for engagement with such guides, substantially as and for the purposes set forth.

2. The combination of a tube, a pivoted gate for closing the lower end of the tube, rods connected with the gate and extending upwardly along the outer side of the tube, and a hand hold sliding along the tube and connected with the rods, substantially as set forth.

3. A sampler comprising a tube, a gate for closing the lower end of the tube, rods connected with the gate and extending up along the outer side of the tube, devices connected with the tube for guiding the said rods, and a hand hold connected with the rods and sliding along the tube, substantially as set forth.

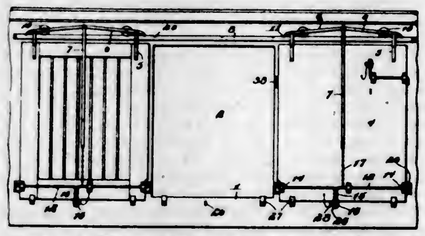
4. The combination in a sampler, with a tube, and a gate for closing the lower end thereof, of rods for operating the gate and extending up along the outer side of the tube, guide devices for said rods for limiting the lateral movement thereof, and stop devices for limiting the longitudinal movement of the rods, substantially as set forth.

5. The combination in a sampling device, of a tube, a pivoted gate for closing the lower end of the tube, rods connected with the gate and extending up along the outer side of the tube, a hand hold connected with the rods and sliding along the tube, guide lugs for the said rods arranged above and below the hand hold, and stop devices on the rods above the upper guides for limiting the longitudinal movement of the rods, substantially as set forth.

6. The combination in a sampling device, of a tube, a gate for closing the lower end of the tube, said gate being pivoted at one side at a point outside of the tube, rods connected with the opposite sides of the gate and extending thence along the outer side of the tube, guides on the tube for said rods, and a hand hold encircling the tube adjacent to the upper end thereof and connected with the rods and arranged in position to be operated by the fingers of a hand, the palm of which is pressed against the upper end of the tube, substantially as set forth.

7. A sampler comprising a tube, a gate, for closing the lower end of the tube, a hand hold sliding along the upper end of the tube, and means extending upwardly along the outer side of the tube and connecting the gate with the hand hold whereby the latter may operate the gate relatively to the tube.

854,564. DOOR-HANGER FOR CAR-DOORS. ROBERT G. BULLARD, Bremen, Ga. Filed Mar. 31, 1906. Serial No. 309,148.



Claim.—1. The combination with a movable door and a track therefor formed with notches, of levers pivotally connected with the door, track wheels carried by said levers, means carried by the door for shifting said levers to cause independent movement of the wheels relative to the tracks, and means carried by the levers to engage the notches in the track when said levers are in a determinate position.

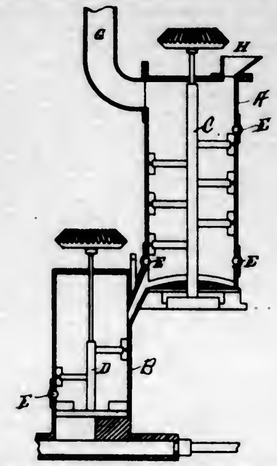
2. The combination with a movable door and a track therefor, of levers pivotally connected to the door, track wheels carried by the levers, an operating rod connected with the levers and adapted to operate the same to cause independent relative movement of said wheels with regard to the track, a locking rod carried by the door, and a flexible connection between said operating rod and locking rod.

3. The combination with a movable door and a track therefor formed with notches, of levers pivotally connected with the door, track wheels mounted on the levers intermediate their ends, means carried by the door and connected to the adjacent ends of the levers for operating the levers to cause a movement of the track wheels relative to the track, the free end of said levers being formed to engage the notches in the track when the levers are in a position to maintain the track wheels out of engagement with the track.

4. The combination with a structure formed with a door opening, a track supported by the structure above the opening, and a door arranged for movement to close the opening, of levers pivotally connected with the door, track wheels carried by the levers, a locking rod mounted for rocking movement on the door, a connection between said rod and levers, whereby operation of said rod will cause independent movement of the wheels relative to the track, said track being formed to provide an interlocking engagement with the free ends of the levers when said levers are in determinate position, and means carried by the structure to coöperate with the locking rod to secure the door when the levers are in engagement with the track.

854,565. PROCESS FOR MANUFACTURING BRIQUETS FROM COAL, PEAT, AND BOG-EARTH. JAKOB BUSS, Munich, Germany, assignor of one-half to Carl Fohr, Schloss Wallenburg, near Miesbach, Germany. Filed Nov. 26, 1906. Serial No. 345,223.

Claim.—1. An improved process for the manufacture of briquets from coal, peat and the like fuel, which consists in thoroughly mixing the fuel constituents with naphthalene and subjecting the mixture during agitation to the action of direct steam of a temperature above the boiling point of the naphthalene.



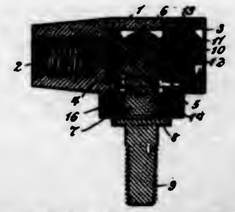
2. An improved process for the manufacture of briquets from coal, peat and the like fuel, which consists in thoroughly mixing the fuel constituents with naphthalene and subjecting the mixture during agitation to the action of direct steam of a temperature above the boiling point of the naphthalene.

3. An improved process for the manufacture of briquets from coal, peat and the like fuel, which consists in thoroughly mixing the fuel constituent with naphthalene and subjecting the mixture during agitation to the action of direct steam of a temperature of from 200° to 400° C.

4. An improved process for the manufacture of briquets from coal, peat and the like fuel, which consists in thoroughly mixing the fuel constituent with from one and one-half to eight per cent. of naphthalene and subjecting the mixture during continued agitation to the action of direct steam having a temperature above the boiling point of the naphthalene.

5. An improved process for the manufacture of briquets from coal, peat and the like fuel, which consists in thoroughly mixing the fuel constituent with one and one-half to eight per cent. of naphthalene and pitch, subjecting the mixture during continued agitation to the action of direct steam having a temperature above the boiling point of the naphthalene and then molding.

854,566. STEERING-GEAR SOCKET FOR AUTOMOBILES. HENRY T. CAMERON, New York, N. Y. Filed Aug. 15, 1906. Serial No. 330,688.



Claim.—1. A steering gear socket embracing a metallic sleeve slotted at one side; a ball and socket joint embracing male and female parts; a detachable metallic band which surrounds the outer end of the sleeve; in combination with interlocking means for locking the band and the parts of the joint securely in position when once adjusted, substantially as described.

2. A steering gear socket embracing a hollow sleeve provided with a slot at one side; a ball and socket joint secured in said sleeve and means for securing said parts adjustably together; in combination with additional means for preventing the admission or ingress of dirt, dust or grit, the aforesaid slot having a width less than the diameter of the bowl part of the joint, substantially as described.

3. A steering gear socket embracing a hollow sleeve screw-threaded internally at both ends and slotted at one side; a ball and socket joint, the ball part being connected by a shank having a diameter substantially the same as the width of the slot, and female parts fitted within one end and surrounding the ball; together with an adjustable screw-threaded nut for securing said parts together, the arrangement being such that the ball may be inserted into the sleeve from one end thereof, substantially as described.

4. A steering gear socket embracing a hollow sleeve having a ball and socket joint located therein, said sleeve being slotted at one side to receive the shank of the male part of the joint; in combination with a detachable band which surrounds the outer end of the sleeve, and means for locking all of said parts together, substantially as described.

5. A steering gear socket embracing a ball and socket joint secured in a hollow sleeve and provided with means for adjusting the parts of the socket with relation to each other, and yielding means for preventing the admission or ingress of dirt, dust, or grit, substantially as described.

6. A steering gear socket embracing a hollow sleeve screw-threaded at one end for attaching it to the axle of a vehicle and provided with a ball and socket joint located in the other end and an adjustable nut provided with means for varying the relations of the parts of the joint; additional means surrounding the end of the sleeve; together with a locking pin adapted to lock all of the parts together when in position, substantially as described.

854,567. ANIMAL-POKE. JOEL F. CARTER, Kaufman, Tex. Filed Oct. 24, 1906. Serial No. 340,394.



Claim.—1. An animal poke comprising a halter embodying cheek pieces, a brow band, a head band, a nose strap, an under jaw strap and a throat latch, combined with upper coupling rings connecting the meeting ends of the cheek pieces, brow band and head band and adapted to suitably connect the ends of the throat latch thereto, upper fender arms rigid with said rings and extending upwardly therefrom, lower coupling rings independent of the upper coupling rings and connecting the meeting ends of the cheek pieces, nose strap and under jaw strap, and lower fender arms pivotally supported from said rings.

2. An animal poke comprising a halter having independent sets of upper and lower coupling rings uniting the elements thereof, upper hooked fender arms rigid with the upper coupling rings, and lower hooked fender arms pivotally supported by the lower coupling rings.

854,568. CLOTHES-LINE SUPPORT. FREDERICK CLARK, Newburgh, N. Y. Filed Feb. 27, 1906. Serial No. 303,226.

Claim.—1. A clothes line support comprising separable members, one of which carries a pintle and the other a retaining seat for the pintle open at the ends to permit the members to be separated by moving the pintle longitudinally within and from its seat, means for clamping a clothes line between the members, and a supporting pulley carried by one of the members.

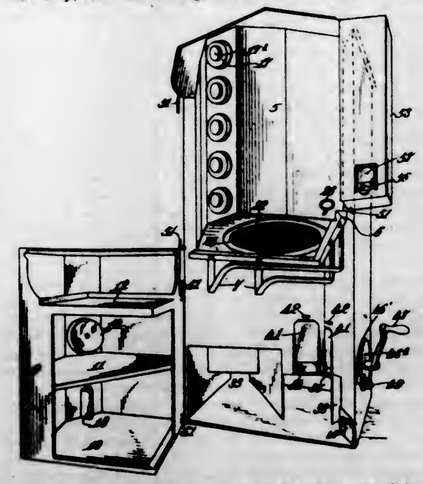


2. A clothes line support comprising separable members, one of which is provided with a pintle and a slot adjacent thereto, the other member being provided with a pintle-receiving seat and a retainer lug adapted to pass through the slot in the first-named member and embrace said pintle, means for clamping a clothes line between the members, and a supporting pulley carried by one of the members.

3. A clothes line support comprising separable members having a hinged and detachable connection with each other, a catch carried by one member and adapted to engage the other member, one of said members being provided with a centering lug and the other with a centering notch to receive said lug, means for clamping a clothes line between said members, and a supporting pulley carried by one of the members.

4. A clothes line support comprising separable members having a hinged and detachable connection with each other and provided with oppositely arranged line holding grooves or seats having spurs or teeth for engaging the line held therein, a pulley carried by one of said members, and a catch on one member adapted to engage the other member for holding the two members together.

854,569. KITCHEN-CABINET. IRVIN O. CURTICE, Kansas City, Mo. Filed Aug. 17, 1906. Serial No. 331,028.



Claim.—1. A cabinet of the class described, involving a body having a plurality of compartments, each terminating with an inclined bottom and having a mouth opening, said body having a recess throughout its longitudinal extent, a removable section supported in said recess, and a hinged section arranged below the removable section and adapted to fit within the recess.

2. A cabinet of the class described, involving a body forming a plurality of compartments independent of each other, removable caps for the compartments for introducing ingredients therein, said body having a V-shaped recess at the front thereof, a bracket having a support for holding a pan or other receptacle and secured in the recess, a detachable section forming a compartment mounted on said bracket and having a plurality of sockets, canisters detachably mounted in the sockets, a hinged section arranged below the support and adapted when closed to fit within the recess, shelves at the interior of said section for supporting articles, and a clasp carried by the body and engageable with the hinged section for holding the same in a closed position.

3. A cabinet of the class described, having a body including a plurality of compartments, the latter having inclined bottoms terminating in openings forming a mouth portion for discharging the contents, of the compartment, slides for at least two of the compartments for controlling the openings to open and close the same, a removable front section a bracket having a pan support secured to the body for supporting the removable section, a plurality of detachable canisters carried by the removable section and having removable caps, a swinging section hinged to said body and having shelves arranged one above the other for receiving articles and also for forming a bread box, means for holding the swinging section in a closed position, each of said compartments having an opening at the top of the body for introducing ingredients therein, and removable covers for the said openings.

4. A cabinet of the class described, having a body including a plurality of compartments, the latter having inclined bottoms terminating in openings forming mouth portions for discharging the contents of the compartments, slides for at least two of the compartments for controlling the openings to open and close the same, a removable front section, a bracket having a pan support secured to the body for supporting the removable section, a plurality of detachable canisters carried by the removable section and having removable caps, a swinging section hinged to said body and having shelves arranged one above the other for receiving articles and also for forming a bread box, means for holding the swinging section in a closed position, each of said compartments having an opening at the top of the body for introducing ingredients therein, and removable covers for the said openings.

5. A cabinet of the class described, having a body including a plurality of compartments, the latter having inclined bottoms terminating in openings forming mouth portions for discharging the contents of the compartments, slides for at least two of the compartments for controlling the openings to open and close the same, a coffee mill mounted in one of the compartments, and a removable receptacle below said coffee mill for receiving the grindings from the mill, a removable front section, a bracket having a pan support secured to the body for supporting the removable section, a plurality of detachable canisters carried by the removable section and having removable caps, a swinging section hinged to said body and having shelves arranged one above the other for receiving articles and also for forming a bread box, means for holding the swinging section in a closed position, means for detaching the same, each of said compartments having an opening at the top of the body for introducing ingredients therein, and removable covers for the said openings, said body having a plurality of recesses below the compartments.

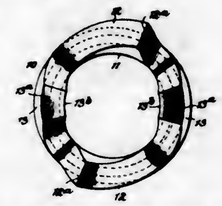
6. A cabinet of the class described, involving a body having a plurality of compartments, said body having a recess throughout its longitudinal extent, a removable section supported in said recess, and a plurality of detachably hinged sections connected to said body, one of said sections when closed adapted to lock the remaining sections against movement.

7. A cabinet of the class described, involving a body having a plurality of compartments, a removable section supported by said body and having a plurality of sockets, canisters mounted in said sockets and detachable therefrom, and detachably hinged sections supported by said body for interlocking engagement with each other when the sections are brought to a closed position.

8. A cabinet of the class described involving a body having a plurality of compartments, a removable section supported by said body, said removable section being provided with a reticulated bottom and further provided with a plurality of sockets, canisters mounted in said sockets and detachable therefrom, and detachably hinged sections supported by said body for interlocking engagement with each other when the sections are brought to a closed position.

9. A cabinet of the class described involving a body having a plurality of compartments, a removable section supported by said body and having sockets, said removable section having a plurality of canisters mounted in said sockets and detachable therefrom, and detachably hinged sections supported by said body for interlocking engagement with each other when the sections are brought to a closed position.

854,570. CORE-DRILL. ROBERT M. DOWNIE, Beaver Falls, Pa., assignor to Keystone Driller Co., Beaver Falls, Pa., a Corporation of Pennsylvania. Filed Feb. 18, 1907. Serial No. 358,038.



Claim.—1. A percussion or reciprocatory core cutting drill having diametrically opposite single channel cutting teeth, and inset core trimming teeth located between the cutting teeth.

2. A percussion or reciprocatory core cutting drill, comprising a tubular body having substantially diametrically opposite single channel cutting teeth, and inset single core trimming teeth that have cutting edges disposed in line with the bore of the body.

3. A percussion or reciprocatory core cutting drill comprising a tubular body, tapered channel cutting teeth projecting from the lower end of the body, and tapered core trimming teeth having cutting edges disposed longitudinally of the body wall, said channel cutting and core trimming teeth having their lower portions spaced apart.

4. A percussion or reciprocatory core cutting drill, comprising a tubular body, outset channel cutting teeth projecting from the lower end of the body, and inset core trimming teeth having cutting edges disposed longitudinally of the body wall.

5. A percussion or reciprocatory core cutting drill, comprising a tubular body, tapered outset channel cutting teeth projecting from the lower end of the body, and tapered inset core trimming teeth having cutting edges disposed longitudinally of the body wall, said channel cutting and core trimming teeth having their lower portions spaced apart.

6. A percussion or reciprocatory core cutting drill, comprising a tubular body having channel cutting and core trimming teeth, one set of teeth being shorter than the other.

7. A percussion or reciprocatory core cutting drill comprising a tubular body having outset channel cutting and inset core trimming teeth, one set of teeth being shorter than the other.

8. A percussion or reciprocatory core cutting drill, comprising a tubular body having substantially diametrically opposite outset channel cutting teeth, and inset core trimming teeth that terminate short of the ends of the channel cutting teeth.

9. A percussion or reciprocatory core cutting drill, comprising a tubular body having substantially opposite outset channel cutting teeth, and inset core trimming teeth, one set of teeth being shorter than the other.

10. A percussion or reciprocatory core cutting drill, comprising a tubular body having substantially diametrically

opposite single channel cutting teeth that are outset, said teeth being tapered, and inset single core trimming teeth that are also tapered and terminate short of the channel cutting teeth, said core trimming teeth having their lower portions spaced from the channel cutting teeth and having cutting edges disposed longitudinally of the body wall.

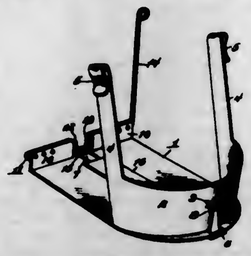
11. The combination with a tubular core cutting barrel, of a core cutting drill comprising a tubular body loosely surrounding the barrel, substantially diametrically opposite single outset channel cutting teeth carried by the lower end of the body, and single inset core trimming teeth depending from the body between the outset teeth and operating beneath the core barrel.

12. The combination with a tubular core cutting barrel, of a core cutting drill comprising a tubular body loosely surrounding the barrel, substantially diametrically opposite single outset channel cutting teeth carried by the lower end of the body, and single inset core trimming teeth depending from the body between the outset teeth and operating beneath the core barrel, said latter teeth being spaced from the outset teeth and having cutting edges disposed longitudinally of the body walls.

13. The combination with a tubular core cutting barrel, of a core cutting drill comprising a tubular body loosely surrounding the barrel, substantially diametrically opposite single outset channel cutting teeth carried by the lower end of the body, and single inset core trimming teeth depending from the body between the outset teeth and operating beneath the core barrel, said latter teeth being shorter than the outset teeth.

14. The combination with a tubular core cutting barrel, of a core cutting body loosely surrounding the barrel, substantially diametrically opposite outset channel cutting teeth carried by the lower end of the body, and tapered inset core trimming teeth depending from the body between the outset teeth and operating beneath the core barrel, said core trimming teeth being shorter than the outset teeth and having cutting edges disposed longitudinally of the body wall.

854,571. BOOT AND SHOE. FRANK R. DUNCAN, Ghent, Ky. Filed May 19, 1906. Serial No. 317,768.



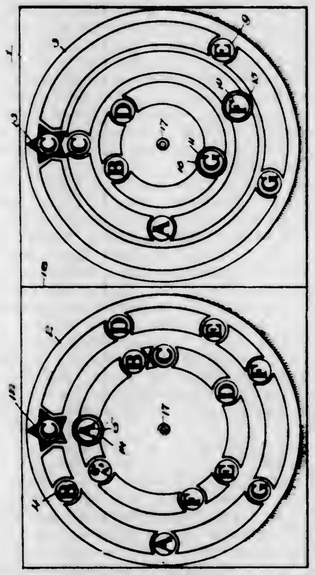
Claim.—1. An attachment for overshoes comprising a base plate designed to fit within the heel portion of the overshoe, a heel plate at the rear edge of said base plate, lips projecting from the forward edge of the base plate, a slide bar movable in the base plate, means for operating said bar, and means carried by said bar to engage the heel of the shoe inserted in the overshoe.

2. An attachment for overshoes comprising a base plate formed with a longitudinal guideway, a slide bar movable in said guideway, a heel plate projecting from the rear edge of the base plate, a spur carried by the slide bar and operative through an opening formed in the heel plate, a crank rod rotatably supported at the forward edge of the base plate, the crank portion of said rod being annularly connected with the slide bar, a lever for operating said rod, arms projecting from the heel plate, and clasps carried by said arms to engage the free edge of the overshoe.

3. An attachment for overshoes comprising a base plate designed to fit within the heel portion of the overshoe, projections at the forward and rear edges of said plate to receive the heel of the shoe between them, a slide rod movable in the base plate, means carried by the forward projections and connected to said slide rod for operating the latter, and means carried by said rod and operative through the rear projection to engage the heel of the shoe.

4. An attachment for overshoes comprising a base plate designed to fit within the heel portion of the overshoe, a heel plate at the rear edge of said base plate, lips projecting from the forward edge of the base plate, a slide bar movable in the base plate, means for operating said bar, and a spur carried by the slide bar and operable through the heel plate to engage the heel of the shoe inserted in the overshoe.

854,572. SCALE AND CHORD CIRCLE. ABBIE R. FITCH, Denver, Colo. Filed Apr. 19, 1905. Serial No. 256,335.



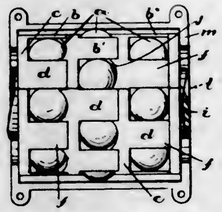
Claim.—1. A musical chart comprising a back embodying the characters of the chromatic scale spaced at equal intervals about a circle, the characters of the chromatic scale equally spaced about an inner concentric circle and with similar characters in the two scales spaced at an interval of aproximately 90 degrees, a disk centrally pivoted concentrically with the circles and provided with openings positioned to register with the outer circle and exhibit characters and spaced to correspond with the intervals of the major diatonic scale and with openings positioned to register with the inner circle and exhibit characters and spaced to correspond with the interval of the minor diatonic scale, and so positioned that the key notes of the related major and minor diatonic scales are exhibited in juxtaposition.

2. A musical chart comprising a back embodying the characters of the chromatic scale spaced at equal intervals about a circle, the characters of the chromatic scale equally spaced about an inner concentric circle and with similar characters in the two scales spaced at an interval of approximately 90 degrees, a disk centrally pivoted concentrically with the circles and provided with openings positioned to register with the outer circle and exhibit characters and spaced to correspond with the intervals of the major diatonic scale and with openings positioned to register with the inner circle and exhibit characters and spaced to correspond with the interval of the minor diatonic scale, and so positioned that the key notes of the related major and minor diatonic scales are exhibited in

juxtaposition, and dissimilar index characters designating adjacent openings of the outer and inner circle properly positioned to at all times indicate the key notes of the related major and minor diatonic scales.

3. A musical chart embodying a back provided with characters representing the chromatic scale spaced at equal distance about a circle and with the characters of the chromatic scale equally spaced about an inner concentric circle and with similar characters in the two scales spaced at an interval approximating 90 degrees, a disk centrally pivoted concentric with the circles and provided with openings positioned to register with the outer circle and exhibit characters, and spaced to correspond with the intervals of the major diatonic scale and with openings positioned to register with the inner circle and exhibit characters, and spaced to correspond with the intervals of the related minor diatonic scale and so positioned that the key notes of the related major and minor diatonic scales are exhibited in juxtaposition, characters formed upon the back arranged upon three concentric circles and each including the characters of the chromatic scale with similar characters arranged radially, a disk pivoted centrally upon the back concentrically of the circles and provided with a series of openings spaced to correspond with the intervals of the tonic chord and positioned to exhibit characters in the outer circle, and with openings positioned to correspond with the intervals of the related dominant chord and to exhibit characters in the middle circle, and with openings positioned to correspond with the intervals of the related sub-dominant scale and positioned to exhibit characters in the inner circle.

854,573. ANTIFRICTION-BEARING. TOBIAS FOX, Toronto, Ontario, Canada. Filed Sept. 12, 1906. Serial No. 334,349.

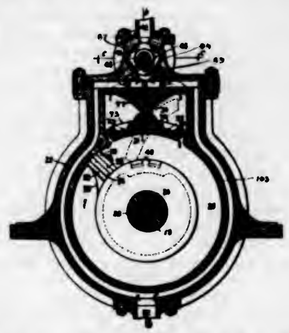


Claim.—1. An anti friction bearing comprising a retaining cage, consisting of a series of annular cage rings of corresponding diameters, and arranged in parallel planes, and having alined annular bores of the same diameter, trundles projecting laterally from the side faces of the cage rings, and equi-spaced to form intervening pockets of slightly greater width than the diameter of the anti friction bearing elements to be contained between them, and having their opposite faces converging to prevent the inward radial displacement of the anti friction bearing elements, and having the trundles of one cage ring arranged opposite the pockets of the next adjacent cage ring.

2. An anti-friction bearing comprising a retaining cage, consisting of an annular cage ring having a central bore therethrough, a series of trundles projecting laterally from one face of the cage ring and spaced from one another by intervening pockets of slightly greater width than the diameter of the anti-friction bearing elements which they are to contain, and having their opposite faces curved to correspond with the curvature thereof, and detents projecting from the other face of the cage ring correspondingly shaped to the opposite faces of the trundles and separated by intervening unoccupied intervals to receive therein the trundles of the next adjacent retaining cage.

3. An anti-friction bearing comprising a series of retaining cages, each consisting of an annular cage ring having a central bore therethrough, a series of trundles projecting laterally from one face of each cage ring and equi spaced to form intervening pockets of slightly greater width than the diameter of the anti-friction bearing elements to be contained between them, and having their opposite faces curved to correspond with the curvature thereof, detents on the other face of each cage ring having their faces correspondingly shaped to the opposite faces of the trundles, and arranged with unoccupied spaces between them to receive the ends of the trundles and cause the retaining cages to be assembled so that the anti-friction bearing elements of one group will be alined opposite the spaces between the anti-friction bearing elements of the adjacent group or groups, and anti-friction bearing elements contained in the pockets formed by the annular rings, trundles, and detents.

854,574. ROTARY ENGINE. JOHN E. FRIEND, Annandale, New South Wales, Australia. Filed Jan. 24, 1907. Serial No. 353,812.



Claim.—1. A rotary engine comprising a piston chamber, a jacket inclosing the piston chamber to form an intervening space between them, a valve chamber, an inlet for the valve chamber, outlets from the valve chamber to the piston chamber, and an inlet from the valve chamber to the space between the piston chamber and jacket, a valve in the valve chamber controlling said inlet and outlets, and an exhaust outlet for the space between the jacket and piston chamber.

2. A rotary engine comprising a piston chamber, a jacket inclosing the piston chamber to form an intervening space between them, a valve chamber, an inlet for the valve chamber, outlets from the valve chamber to the piston chamber, and an outlet from the valve chamber to the space between the piston chamber and jacket, a valve in the valve chamber controlling said inlet and outlets, an exhaust outlet for the space between the jacket and piston chamber, a piston disk centrally contained within the piston chamber, a piston carried by the piston disk, and a rocking valve contained within the piston chamber.

3. A rotary engine comprising a piston chamber, a jacket inclosing the piston chamber to form an intervening space between them, a valve chamber, an inlet for the valve chamber, outlets from the valve chamber to the piston chamber, an inlet from the valve chamber to the space between the piston chamber and jacket, a valve in the valve chamber controlling said inlet and outlets, an exhaust outlet for the space between the jacket and piston chamber, and inwardly projecting annular walls for the sides of the piston chamber concentric with the center thereof, and having an unoccupied space between them.

4. A rotary engine comprising a piston chamber, a jacket inclosing the piston chamber to form an intervening space between them, a valve chamber, an inlet for the valve chamber, outlets from the valve chamber to the piston chamber, an inlet from the valve chamber to the space between the piston chamber and jacket, a valve in the valve chamber controlling said inlet and outlets, an exhaust outlet for the space between the jacket and piston chamber, inwardly projecting annular walls for the sides of the piston chamber concentric with the center thereof, having an unoccupied space between them, a shaft extending cen-

trally through the piston chamber, a piston disk within the unoccupied space between the annular walls revoluble with said shaft, a piston carried by the piston disk and engaging the rims of said walls, and the inner face of the piston chamber.

5. A rotary engine comprising a piston chamber, a jacket inclosing the piston chamber to form an intervening space between them, a valve chamber, an inlet for the valve chamber, outlets from the valve chamber to the piston chamber, an inlet from the valve chamber to the space between the piston chamber and jacket, a valve in the valve chamber controlling said inlet and outlets, an exhaust outlet for the space between the jacket and piston chamber, inwardly projecting annular walls for the sides of the piston chamber concentric with the center thereof, having an unoccupied space between them, a shaft extending centrally through the piston chamber, a piston disk within the unoccupied space between the annular walls revoluble with said shaft, a piston carried by the piston disk engaging the rims of said walls and the inner face of the piston chamber, and a rocking valve within the piston chamber to engage with the rims of said annular walls.

6. A rotary engine comprising a piston chamber, a jacket inclosing the piston chamber to form an intervening space between them, a valve chamber, an inlet for the valve chamber, outlets from the valve chamber to the piston chamber, an inlet from the valve chamber to the space between the piston chamber and jacket, a valve in the valve chamber controlling said inlet and outlets, an exhaust outlet for the space between the jacket and piston chamber, inwardly projecting annular walls for the sides of the piston chamber concentric with the center thereof, having an unoccupied space between them, a shaft extending centrally through the piston chamber, a piston disk within the unoccupied space between the annular walls revoluble with said shaft, a piston carried by the piston disk engaging the rims of said walls and the inner faces of the piston chamber, a rocking valve, a rounded hub for the rocking valve, and means in the piston chamber engaging with said hub.

7. In a motor of the type indicated the valve operating mechanism comprising in combination a main shaft, a cam secured thereto a pivoted lever, a slotted eye in the upper end of the lever, a rocking valve, a shaft to which the rocking valve is secured, a crank upon the end of the valve shaft and a roller revoluble upon the pin of the crank and fitting the slotted eye of the lever, substantially as set forth.

8. In a motor of the type indicated the operating valve with operating means comprising a circular valve chest, a valve fitting therein and having steam and exhaust ports a shaft to which the valve is secured, a main shaft an eccentric secured upon said main shaft an eccentric rod and a quadrant secured to the valve shaft, and to which the eccentric rod is pivoted, substantially as set forth.

9. In a motor of the type indicated the main operating valve and means for operating same and reversing the motor comprising a circular valve chest, a valve fitting the valve chest, a shaft to which the valve is secured, a main shaft, an eccentric secured to the main shaft, an eccentric rod, a slotted quadrant secured to the valve shaft, a jaw upon the end of the eccentric rod, a pin passing through the jaw and through the slot of the quadrant, notches upon each end of the quadrant, a handle having a slotted head slidable upon the quadrant and a spring catch upon the handle adapted to engage the notches of the quadrant, substantially as set forth.

10. A rotary motor comprising in combination a casing, corresponding walls integral with the ends of the casing and projecting toward each other therein, a main shaft mounted axially within the casing, a disk secured to the shaft and filling a space left between the rims of the walls, a piston integral with the disk and rotating within the annular chamber between the walls and the casing a rocking valve having its lower surface shaped to form an arc of a circle, a rounded top to the valve, with means for making it steam tight, a shaft to which the rocking valve is secured, a cam secured to the main shaft, a pivoted lever operated by the cam, a slotted eye upon the upper end of the lever, a main steam valve chest, a valve therein controlling admission and exhaust of steam, a shaft upon which said valve is secured, an eccentric secured to the main shaft, an eccentric rod and a quadrant secured to the valve shaft and to which the eccentric rod is pivoted, substantially as set forth.

11. A rotary motor comprising in combination, a casing, corresponding walls integral with the ends of the casing and projecting toward each other therein, a main shaft mounted axially within the casing, a disk secured to the shaft and filling a space left between the rims of the walls, a piston integral with the disk and rotating within the annular chamber between the walls and the casing, a rocking valve having its lower surface shaped to form an arc of a circle, a rounded top to the valve with means for making it steam tight, a shaft to which the rocking valve is secured, a cam secured to the main shaft, a pivoted lever operated by the cam, a slotted eye upon the upper end of the lever, a main steam valve chest, a valve therein controlling admission and exhaust of steam, a shaft upon which said valve is secured, an eccentric secured to the main shaft, an eccentric rod, and the operating and reversing means comprising a slotted quadrant secured upon the valve shaft, a jaw upon the end of the eccentric rod, a pin passing through the jaw and through the slot of the quadrant, teeth upon each end of the quadrant, a handle having a slotted head, slidable upon the quadrant, and a spring catch upon the handle adapted to engage the teeth of the quadrant, substantially as set forth.

854,575. COLLAR-BUTTON. ALBERT GAINES, Saco, Me. Filed Sept. 22, 1906. Serial No. 335,757.



Claim.—1. As a new article of manufacture, a collar button provided in its base with a receiving socket and in its shank with a passage parallel with the socket, in combination with a looped fastener having its arms lying in parallel planes, one of the arms being slidably fitted in said socket and the other arm slidably projecting through said passage.

2. A collar button provided in its base with a socket extending diametrically from one side thereof and terminating adjacent to its opposite side and formed adjacent the inner end of its shank with a passage parallel with the socket, and a fastener comprising a looped strip of metal having parallel arms for respective insertion within said socket and through said passage.

854,576. LAMP-BURNER. WILLIAM B. GROVER, Vineland, N. J. Filed Aug. 11, 1906. Serial No. 330,173.



Claim.—The herein described lamp burner attachment consisting of a circular diaphragm of a size to fit the inner walls of the dome, said diaphragm having a wick tube engaging slot disposed centrally therein, and slots, one upon each side of said wick tube engaging slot, for the passage of air through said diaphragm, springs secured at opposite sides of said diaphragm and extending downward therefrom, said springs being provided with inwardly extending U-shaped lugs for engaging the wick tube adjustably, substantially as described.

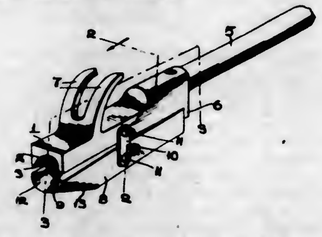
854,577. STRAP-FASTENER. YOUNG D. HANCE, Adelina, Md. Filed Dec. 1, 1905. Serial No. 289,890.

Claim.—The combination with a strap, of a fastening device comprising a strip of sheet metal folded to form a bight portion and parallel arms arranged to receive and clasp the end of the strap, and one of said arms being provided with an outwardly extending keeper-retaining offset, a buckle held by the bight portion, a keeper loop having one of its sides inserted between the offset and the strap and its opposite side arranged outside of said offset, integral spurs upon the offset engaging the inner side of the keeper loop, and spurs upon the arms of the fastener



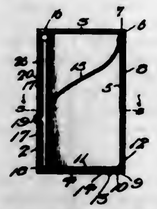
arranged to project in a general direction toward the bight portion thereof, said spurs being integrally formed upon said arms and having their free portions adapted to be embedded in the strap, the spurs of one arm being disposed on lines between the spurs on the other arm, substantially as described.

854,578. PICK-UP FOR NON-INSULATED ELECTRIC WIRES. EDWARD J. HEATH, St. Louis, Mo. Filed Aug. 23, 1906. Serial No. 331,819.



Claim.—A device of the class described, comprising a fixed jaw, a handle therefor, teeth formed integral with the under side of said jaw, fingers integral with and depending from the rear end of said fixed jaw, a jaw connected to and arranged to swing beneath the fixed jaw, there being teeth formed in the top of said swinging jaw, the rearward movement of which swinging jaw is limited by the depending fingers of the fixed jaw, and the meeting faces at the forward ends of said jaws being cut away to form a funnel shaped opening between said jaws; substantially as described.

854,579. MATCH-BOX. JAMES W. HUBD, Dona, Va. Filed Dec. 5, 1906. Serial No. 346,452.



Claim.—A match box provided with a discharge opening and formed in one of its walls with a longitudinal guide slot, and provided with guide flanges located on opposite sides of said slot, the forward end of the slot being enlarged at one end, a tongue upon said wall projecting into the enlarged portion of the slot in line with the contracted portion thereof, and a sliding ejector provided at one end with a match engaging toe and formed intermediate of its length with a finger piece, said finger piece comprising an outwardly bowed offset notched at its side edges to provide reduced necks to travel in the slot and to form shoulders to slide upon said guide flanges, said finger piece being

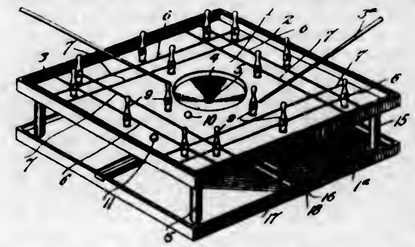
formed by a portion normally lying in the plane of the strip and bent outwardly therefrom, and being of greater width than the slot and adapted to be primarily inserted through the enlarged portion thereof and to be confined in guide slot by bending the tongue in position to form a stop.

854,580. HINGE. WILLIAM S. JOHN, Humansville, Mo., assignor of one-half to Edgar E. John, Billings, Mont. Filed Dec. 5, 1906. Serial No. 346,455.



Claim.—A hinge comprising a pair of leaves having knuckles adapted to conjointly form a barrel provided with a longitudinal bore, a pintle extended longitudinally through said barrel for hingedly connecting the leaves, said pintle being provided with a pair of spaced longitudinal splines and the knuckles having longitudinal grooves to receive said splines, the groove in one of the knuckles being adapted to non-register with those in the other knuckles for locking the pintle against longitudinal movement.

854,581. GAME APPARATUS. WALTER W. KOHLER, Lexington, Nebr. Filed Feb. 16, 1907. Serial No. 357,725.



Claim.—1. A game board comprising an upper member having cushioned flanges, a central concaved pocket having a discharge opening, and a lower member having inclined troughs, and a central dome or deflector, pins and balls adapted to be placed upon the table and operated by cues, substantially as described.

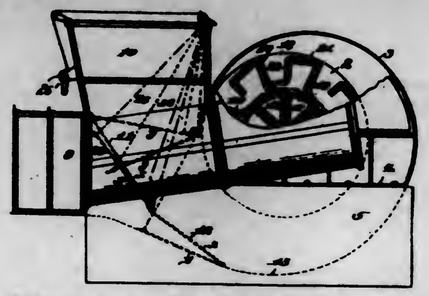
2. A game board comprising a rectangular upper member having field lines marked thereon, and a central concaved pocket having a discharge opening therein, numbered spots and similarly numbered pins for said spots, an object ball and a cue ball, and a lower table having a central dome or deflector and inclined troughs, substantially as described.

3. A game board comprising an upper member having cushioned flanges, a central concaved pocket having a discharge opening therein, and a lower member having outwardly inclined troughs, and a central dome.

4. A game board comprising an upper member provided with marginal cushions and a central concaved pocket having a discharge opening therein, and a lower member provided with outwardly inclined troughs or runways, corner posts between said members, and hooks for securing said two members together.

5. A game board comprising an upper member having marginal cushions, a central concaved pocket having a discharge opening therein, field lines and numbered spots, a lower member spaced from the upper member and provided with troughs or runways inclined from the center outward, a central dome or deflector, a flange surrounding said deflector, means for securing said two members together, numbered pins, a cue ball and an object ball of different colors and numbers, substantially as described.

854,582. VENTILATING APPARATUS. CHARLES KUBEARN, Allegheny, Pa. Filed Jan. 9, 1906. Serial No. 295,284.



Claim.—1. An apparatus of the class described involving a fan having a casing, conduits at opposite sides of the fan casing in communication with said casing and having doors at one end thereof, a boxing into which the opposite ends of said conduits open, doors hinged in proximity to the inner ends of the conduits and to abut against each other to present a V form and to also separate to close the inner ends of the conduits, a chimney, doors located below the chimney adapted to engage each other to cut off the boxing from the fan, one of the doors being shiftable to close the chimney against communication with the fan, and a regulating plate supported by the chimney closing door and shiftable to regulate the area of the discharge opening through which fresh air is supplied by the fan.

2. An apparatus of the class described involving a fan having a casing, cylindrical conduits at opposite sides of the fan casing in communication with said casing and having doors at one end thereof, a boxing into which the opposite ends of said conduits open, doors hinged in proximity to the inner ends of the conduits and to abut against each other to present a V form and to also separate to close the inner ends of the conduits, a chimney, and doors located below the chimney adapted to engage each other to cut off the boxing from the fan, one of the doors being shifted to close the chimney against communication with the fan.

854,583. FASTENING DEVICE FOR LADIES' COLLARS. JOHN D. LEE, Santa Barbara, Cal. Filed Sept. 12, 1906. Serial No. 334,343.



Claim.—1. In a device of the class described, a collar, coupling members attached thereto and provided with engaging portions or studs and a second coupling member having openings to receive said studs and provided between its ends with an opening for engagement with the collar button.

2. In a device of the class described, a collar, coupling members engaged therewith and having engaging portions or studs and a second coupling member composed of flexible material and having openings to receive said studs.

854,584. CLIP OR SUSTAINING DEVICE FOR FOUNTAIN-PENS. ARNOLD MARTINELLI, West Hoboken, N. J. Filed Aug. 20, 1906. Serial No. 331,254.

Claim.—1. In a fountain pen a clip or sustaining device therefor concealed in the cap or cover thereof and adapted to be exposed for use by the insertion of the pen within said cap, substantially as described.

2. A cap or cover for a fountain pen provided with a clip or sustaining device normally exposed for use when the pen is housed or concealed and adapted to be concealed within the cap when the pen is removed therefrom, substantially as described.



3. A cap for a fountain pen provided with an opening and a lid or door for closing the same; in combination with a clip or sustaining device secured to said door: said clip being made operative for sustaining the parts to the body of the user when the pen is housed or concealed, substantially as described.

4. A fountain pen cap or cover provided with an opening and a clip or sustaining device adapted to pass into and out of said opening and to be made operative for sustaining all of the parts of the pen and said cap when the pen is housed or concealed, substantially as described.

5. A cap or cover for a fountain pen provided with a clip or sustaining device movable into and out of the said cap and adapted to be moved in one direction on inserting the pen into the cap, in combination with elastic or yielding means for moving said clip in a reverse direction on removing the pen from the cap, substantially as described.

6. A cap or cover for a fountain pen having an opening therein, a clip or sustaining device yieldingly secured within the cap and adapted, when the pen is removed, to close the opening, and when the pen is housed or concealed to expose the clip for use, substantially as described.

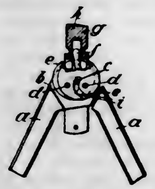
7. A cap or cover for a fountain pen having a yieldingly sustained clip located wholly within the same when the pen is removed and adapted to be exposed for use when the pen is housed or concealed in the cap, substantially as described.

854,585. DRAWING-PEN. OTTO G. MAYER, Stuttgart, Germany. Filed Feb. 7, 1907. Serial No. 356,214.



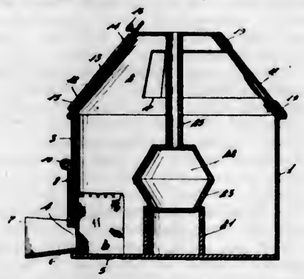
Claim.—In a drawing pen, a fixed blade having a slot therein, a movable spring blade, and a releasable mechanism for precisely adjusting said blades as desired, such releasable mechanism comprising a threaded pin turnably mounted in the movable spring blade and provided with a set nut and with a hooked end for passing through the slot of the fixed blade and engaging the latter to hold both blades firmly together.

854,586. COMPASS-HANDLE-ADJUSTING DEVICE. OTTO G. MAYER, Stuttgart, Germany. Filed Feb. 7, 1907. Serial No. 356,215.



Claim.—A compass or the like having pivoted compass-heads and a handle provided with a recess at its lower part, in combination with means for automatic adjustment of said handle into the middle position, and comprising two rotatable disks provided with radially projecting arms which engage in said recess of the handle, and both disks being symmetrically eccentrically pivoted between said compass heads and close to one another, each disk having a slot lying concentrically to the pivot of rotation thereof and the pivot of the compass heads passing through the slots in the disks.

854,587. BROODER. GEORGE W. MEACHER and STANLEY L. MONTGOMERY, Los Angeles, Cal. Filed Oct. 29, 1906. Serial No. 341,153.

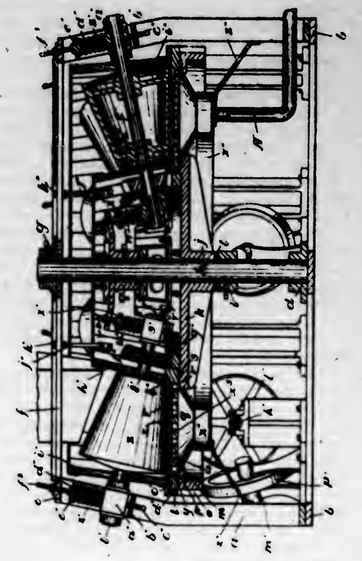


Claim.—1. A brooder comprising a body having an entrance opening for the chicks and a ventilation opening, closures for said openings, a vertical wall upon the bottom of said body, a heater supported upon said vertical wall, an inlet pipe for the heater projecting through the side wall of the brooder body, and a discharge pipe for the heater projecting through the top of the brooder body.

2. A brooder comprising a circular body having a frusto-conical top, the side wall of the body having an entrance opening for the chicks, and the inclined portion of said top having a vertically-extending ventilation opening and a horizontally-extending clean-out opening, closures for the said openings in the side and top of the body, an upright wall upon the bottom of said body, and a heater supported upon said wall.

3. A brooder comprising a circular body having a frusto-conical top, the side wall of the body having an entrance opening for the chicks, and the inclined portion of said top having a vertically-extending ventilation opening and a horizontally-extending clean-out opening, a vertical sliding door for said entrance opening, a curtain for said entrance opening, an inclined plate leading up to said entrance opening, a reticulate material covering said ventilation opening, a sliding door for closing said ventilation opening, a sliding door for closing said clean-out opening, an upright wall arranged centrally upon the bottom of said body, a heater supported upon said upright wall, an inlet pipe for said heater extending through the side wall of the body, and a discharge pipe for said heater extending through the top of said body, substantially as shown and described.

854,588. FILTERING-MACHINE. JOHN MILLS, Toronto, Ontario, Canada. Filed May 7, 1906. Serial No. 315,521.



Claim.—1. A filtering machine comprising a central member, a peripheral member encompassing the central member, and separated therefrom by an intervening space, a filter supported by said members and bridging said space, and squeezing rolls opposed to said filter.

2. A filtering machine comprising a central member, a peripheral member encompassing the central member, and separated therefrom by an intervening space, a filter bridging said space, and supported by said members, means for removably holding said filter in position and squeezing rolls opposed to said filter.

3. A filtering machine comprising a central member, a peripheral member encompassing the central member, and separated therefrom by an intervening space, a filter supported by said members and bridging said space, squeezing rolls opposed to said filter, and a trough supported by said members below the filter.

4. A filtering machine comprising a central member, a peripheral member encompassing the central member, and separated therefrom by an intervening space, a filter bridging said space, and supported by said members, means for removably holding said filter in position, squeezing rolls opposed to said filter, and a trough supported by said members below the filter.

5. A filtering machine comprising a central member, a peripheral member encompassing the central member, and separated therefrom by an intervening space, a filter bridging said space and supported by said members, means for causing the revolution of said members, and squeezing rolls opposed to said filter.

6. A filtering machine comprising a central member a peripheral member encompassing the central member, and separated therefrom by an intervening space, a removable filter bridging said space, and supported by said members means for removably holding the filter in position, and squeezing rolls opposed to said filter.

7. A filtering machine comprising a shaft, a rotary plate revoluble around said shaft, an annular spur wheel concentric with the rotary plate and separated therefrom by an intervening space, a filter connected to the rotary plate and to the annular spur wheel to bridge the intervening space between them, squeezing rolls opposed to the filter

bed and means for causing the revolution of the spur wheel, filter bed and rotary plate.

8. A filtering machine comprising a revoluble plate, an annular spur wheel encompassing said plate, and separated therefrom by an intervening space, a filter connected to said plate, and spur wheel, squeezing rolls opposed to the filter, and means for causing the revolution of the spur wheel, filter, and plate, and other means for causing the revolution of the squeezing rolls.

9. A filtering machine comprising a revoluble plate, an annular spur wheel encompassing said plate, and separated therefrom by an intervening space, a filter connected to said plate and spur wheel, squeezing rolls opposed to the filter, means for causing the revolution of the spur wheel, filter, plate, and other means for causing the revolution of the squeezing rolls, and means for adjusting the squeezing rolls to the filter.

10. A filtering machine comprising a revoluble plate, an annular spur wheel encompassing the revoluble plate, and separated therefrom by an intervening space, a removable filter bridging said space, means for removably holding the filter in place, squeezing rolls opposed to the filter, means for causing the revolution of the annular spur wheel, filter, and plate, and means for causing the revolution of the squeezing rolls.

11. A filtering machine comprising a stationary shaft a rotary plate revoluble around said shaft, means on said shaft for maintaining the rotary plate in a fixed horizontal plane, an annular spur wheel encircling the rotary plate and separated therefrom by an intervening space, a perforated filter bed connected to the annular spur wheel and rotary plate and bridging said space, a filter plate supported upon the filter bed, idlers supporting the annular spur wheel, means for causing the revolution of the spur wheel, filter bed and rotary plate, squeezing rolls opposed to the filter bed and means for causing the revolution of the squeezing rolls.

12. A filtering machine comprising a stationary shaft a rotary plate revoluble around said shaft, means on said shaft for maintaining the rotary plate in a fixed horizontal plane, an annular spur wheel encircling said rotary plate and separated therefrom by an intervening space, a perforated filter bed connected to the annular spur wheel and rotary plate and bridging said space, a filter plate supported upon the filter bed composed of a number of removable filter plate sections, means for removably holding the filter plate sections in their fixed positions upon the filter bed, idlers supporting the annular spur wheel means for causing the revolution of the spur wheel, filter bed and rotary plate, squeezing rolls opposed to the filter bed and means for causing the revolution of the squeezing rolls.

13. A filtering machine comprising a stationary shaft a rotary plate revoluble around said shaft, means on said shaft for maintaining the rotary plate in a fixed horizontal plane, an annular spur wheel encircling said rotary plate and separated therefrom by an intervening space, a perforated filter bed connected to the annular spur wheel and rotary plate and bridging said space, a filter plate supported upon the filter bed, idlers supporting the annular spur wheel, means for causing the revolution of the spur wheel, filter bed and rotary plate, squeezing rolls opposed to the filter bed, means for causing the revolution of the squeezing rolls, and means for adjusting the squeezing rolls to the filter bed.

14. A filtering machine comprising a stationary shaft a rotary plate revoluble around said shaft, means on said shaft for maintaining the rotary plate in a fixed horizontal plane, an annular spur wheel encircling said rotary plate and separated therefrom by an intervening space, a perforated filter bed connected to the annular spur wheel and rotary plate and bridging said space, a filter plate supported upon the filter bed, composed of a number of removable filter plate sections, means for removably holding the filter plate sections in their fixed positions upon the filter bed, idlers supporting the annular spur wheel, means for causing the revolution of the spur wheel, filter bed and rotary plate, squeezing rolls opposed to the filter bed, means for causing the revolution of the squeezing rolls, and means for adjusting the squeezing rolls to the filter bed.

15. A filtering machine comprising a stationary shaft, a collar vertically adjustable upon the shaft, a rotary plate revoluble around said shaft and supported by said collar, an annular spur wheel encircling the rotary plate and separated therefrom by an intervening space, idlers to support the annular spur wheel, an annular drain connected to the rotary plate and to the spur wheel and protruding through the space intervening between them, a filter bed bridging the intervening space above the drain, a filter plate supported by the filter bed composed of a number of removable filter plate sections, a clamping means for each filter plate section to removably hold it in its fixed position, squeezing rolls opposed to the filter surface of the filter plate, adjustable bearings for the shafts of the squeezing rolls whereby they can be adjusted to the filter surface, tension springs engaging the bearings of the squeezing rolls to hold them in their adjusted position, a crown wheel carried by the rotary plate, bevel wheels mounted upon the shafts of the squeezing rolls meshing with the crown wheel, and tub sides inclosing the squeezing rolls adjustable to the filter bed.

16. A filtering machine comprising a stationary shaft a collar vertically adjustable upon the shaft, a rotary plate revoluble around said shaft and supported by said collar, an annular spur wheel encircling the rotary plate and separated therefrom by an intervening space, idlers to support the annular spur wheel, an annular drain connected to the rotary plate and to the spur wheel and protruding through the space intervening between them, a filter bed bridging the intervening space above the drain, a filter plate supported by the filter bed composed of a number of removable filter plate sections, a clamping means for each filter plate section to removably hold it in its fixed position, squeezing rolls opposed to the filter surface of the filter plate, adjustable bearings for the shafts of the squeezing rolls whereby they can be adjusted to the filter surface, tension springs engaging the bearings of the squeezing rolls to hold them in their adjusted position, a crown wheel carried by the rotary plate, bevel wheels mounted upon the shafts of the squeezing rolls meshing with the crown wheel, tub sides inclosing the squeezing rolls adjustable to the filter bed, and a trough located below the drain.

17. A filtering machine comprising a revoluble plate, an annular spur wheel encompassing said plate, and separated therefrom by an intervening space, a filter connected to said plate, and spur wheel, squeezing rolls opposed to the filter, means for causing the revolution of the spur wheel filter, and plate, other means for causing the revolution of the squeezing rolls, and a trough supported by the annular spur wheel and plate below the filter.

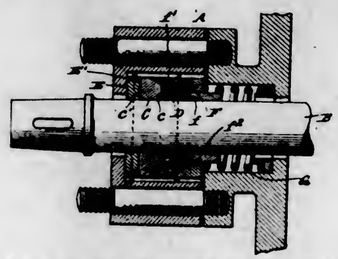
18. A filtering machine comprising a revoluble plate, an annular spur wheel encompassing said plate, and separated therefrom by an intervening space, a filter connected to the said plate and spur wheel, squeezing rolls opposed to the filter, means for causing the revolution of the spur wheel, filter and plate, other means for causing the revolution of the squeezing rolls, means for adjusting the squeezing rolls to the filter, and a trough supported by the annular spur wheel and plate below the filter.

19. A filtering machine comprising a revoluble plate, an annular spur wheel encompassing the revoluble plate, and separated therefrom by an intervening space, a removable filter bridging said space, means for removably holding the filter in place, squeezing rolls opposed to the filter, means for causing the revolution of the annular spur wheel, filter and plate, means for causing the revolution of the squeezing rolls, and a trough supported by the annular spur wheel and plate below the filter.

854,589. CONICAL-RING ROD-PACKING. THOMAS W. MITCHELL, Chicago, Ill. Filed June 13, 1906. Serial No. 321,514.

Claim.—1. The herein described frusto conical rod packing ring for rod packing, formed in co-operating separate sections having overlapping ends with contacting faces, each of said faces lying in a plane tangential to the inner periphery of the ring.

2. In a rod packing, the combination with the cup having a conical recess therein, of the frusto conical packing rings fitting in said recess and formed in sections having overlapping ends with contacting faces lying in planes tangential to the inner periphery of the rings, the outer overlapping ends being cut away to afford clearance and permit of relative movement of the sections toward each other.



3. In a rod packing, the combination with the cup having a conical recess therein, of the frusto conical packing rings fitting in said recess and formed in sections the opposite ends of each section being formed with parallel faces both facing in the same direction said sections being assembled in reversed relation and with the end faces in contact.

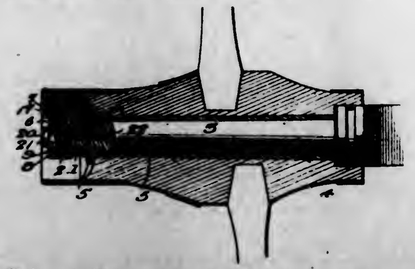
4. In a rod packing, the combination with the stuffing box and gland, of the spring pressed cup having a conical recess therein, the frusto conical packing rings located in said recess and formed in sections with overlapping contacting end faces lying in planes tangential to the interior periphery of the rings and a joint ring against which the packing rings are seated by the pressure on the cup cone; substantially as described.

5. In a rod packing, the combination with the stuffing box and gland, of the spring pressed cup having a conical recess therein, and formed of an annular outer part and a sectional inner part, the frusto conical packing rings located in said recess and formed in sections, and a ring located on the opposite side of the packing rings from the cone cup; substantially as described.

6. In a rod packing, the combination with the cone cup formed of an annular outer part conical on the inside and a sectional conical bushing therein forming a conical recess, of the frusto conical packing rings located in said recess and formed in sections having contacting overlapping end faces; substantially as described.

7. In a rod packing, the combination with the cone cup formed of an annular outer part conical on the inside and a sectional inner part conical on both inner and outer sides and with interlocking ends of the sectional frusto-conical packing rings located in the cone cup and formed in sections having contacting overlapping end faces; substantially as described.

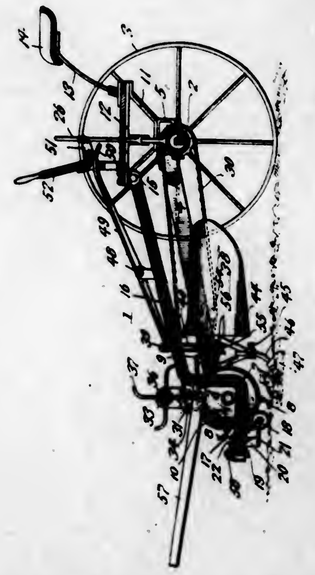
854,590. LOCK-NUT. ERWIN H. MUSSER, York, Pa. Filed Feb. 6, 1907. Serial No. 356,091.



Claim.—1. The combination with a spindle and a securing nut therefor, of a cap member having a nut section to engage the securing nut, a second section to engage the spindle, a spring plate carried by the second section, and a threaded bolt to engage the spindle, said bolt having a head to be engaged by the spring to prevent independent movement of the bolt.

2. The combination of a spindle having a threaded end and a securing nut to co-operate with said threaded end, of a cap member including a nut section formed with flanges to engage opposing surfaces of the nut, a spindle section secured within the nut section and comprising a plate spaced from the plate of the nut section, a spring carried by the plate of the spindle section, and a bolt designed to be passed through the plates of said member and engage a longitudinal bore in the spindle, said bore being reversely threaded with relation to the nut receiving portion of the spindle, the bolt being provided with a head designed to be engaged by the spindle to prevent independent rotation of the bolt.

854,591. BEAN-HARVESTER. JAMES H. MCENTIRE, Williamston, Mich. Filed Mar. 24, 1906. Serial No. 307,906.



Claim.—1. In a bean harvester, a frame, a harvesting drum journaled for rotation therein and provided with vine engaging teeth, a pair of rearwardly converging deflector blades sustained in rear of the drum, a finger bar fixed in the frame at a point between the drum and blade, forwardly projecting guide fingers carried by the bar and adapted to extend partially around the drum between the teeth, and means for feeding the material over the fingers rearwardly between the deflecting blades.

2. In a bean harvester, a frame, a harvesting drum journaled at the forward end thereof and provided with vine engaging teeth, a pair of rearwardly converging deflector blades sustained in rear of the drum, a finger bar fixed in the frame between the blades and drum, forwardly projecting guide fingers carried by the bar and arranged to overlie the drum between the teeth, a rotary feeder shaft sustained above the drum and equipped with feeder arms adapted to free the material from the teeth and direct the same rearwardly over the fingers for delivery between the blades, and means for operating the feeder shaft and drum.

3. In a bean harvester, a frame including an axle

equipped with transporting wheels, a rotary harvesting drum journaled at the forward end of the frame and provided with vine engaging teeth, a pair of rearwardly converging deflector blades sustained in rear of the drum, a series of guide fingers fixed on the frame between the blades and drum and arranged to project forwardly over the latter between the teeth and having arms adapted to free the material from the teeth and direct the same rearwardly over the fingers for delivery between the blades, operative connections between the drum and feeder shaft for driving one of said parts from the other, and operative connections between one of the parts and the axle for operating the drum and shaft.

4. In a bean harvester, a frame including an axle equipped with transporting wheels, a rotary harvesting drum journaled at the forward end of the frame and provided with vine engaging teeth, plow blades connected with the frame in rear of the drum for lifting the vines into the path of the teeth, a pair of rearwardly converging deflector blades sustained in rear of the drum, a series of guide fingers mounted in the frame between the blades and drum and arranged to project forwardly over the latter between the teeth, a rotary feeder shaft sustained above the drum and having arms designed to free the material from the teeth and feed the same rearwardly over the fingers for delivery between the blades, and operative connections between the axle and drum and shaft for operating said parts.

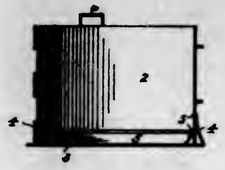
5. In a bean harvester, a frame including an axle equipped with transporting wheels, a pair of longitudinal frame bars pivotally connected at their rear ends with the axle and adapted to swing in a vertical plane, a drum journaled for rotation at the forward end of said bars and provided with vine engaging teeth, a pair of downwardly and rearwardly converging deflector blades sustained by the bars in rear of the drum, means for feeding material from the drum rearwardly between the blades, a lifting lever pivoted between its ends on the frame and having its forward end operatively connected with the frame bars, and an operating lever fulcrumed on the frame and having a cam arm arranged to act on the rear end of the lifting lever for actuating the latter to lift the bars and the parts of the mechanism carried thereby.

6. In a bean harvester, an axle equipped with transporting wheels, a platform sustained above the axle, a vertically movable frame including longitudinal bars pivotally connected at their rear ends with the axle, a central frame bar attached at its rear end to the platform and provided at its forward end with a caster wheel, a rotary harvesting drum journaled at the forward end of the vertically movable frame and provided with vine engaging teeth, a pair of downwardly and rearwardly converging deflector blades sustained by the frame in rear of the drum, a series of guide fingers sustained on the frame between the blades and drum and adapted to project forwardly over the latter, a rotary feeder shaft sustained above the drum and having arms adapted to free the material from the teeth and feed the same rearwardly over the fingers for delivery between the blades, operative connections between the feeder shaft and drum and for driving said parts one from the other, operative connections between the axle and drum for driving the latter, a lifting lever fulcrumed between its ends on the central frame bar and connected at its forward end with the vertically movable frame, and an operating lever having a portion arranged to act on the rear end of the lifting lever for actuating the same to lift the frame and the parts carried thereby.

854,592. BAKING UTENSIL FOR CAKES AND PIES. LOUISA NELSON, Oakland, Cal. Filed Feb. 5, 1906. Serial No. 299,843.

Claim.—A bake pan having separable sides and bottom, means between said sides and bottom for retaining them in position, and a concaved rim within said sides and having its upper edge snugly fitting the latter, said rim resting upon said bottom.

854,592.



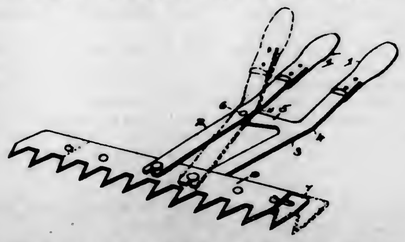
854,593. PESSARY. LOUISE NELSON, Oakland, Cal. Filed Feb. 27, 1906. Serial No. 303,282.



Claim.—1. An improvement in pessary a hard rubber tube with extended edge cup shape and shoulder, a soft rubber tube adjustable to the hard rubber tube, its top edge springing apart and slips over the hard rubber edges and small opening at the bottom, it fitting over the hard rubber tube from the top.

2. An improvement in pessary a hard rubber tube extended edge forming a cup, a soft rubber tube adjusted to the ontside and fitting over the cup. A hard rubber solid stem with shoulder which screws into the shoulder of the hard rubber tube and thereby holding the soft rubber tube between the stem and the hard rubber tube. Said hard rubber stem has a short cross tube at its lower end.

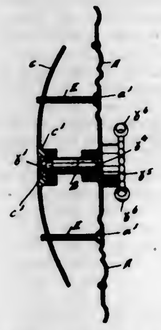
854,594. HEDGE-TRIMMER. JOHN T. NEWBERRY, Norfolk, Va. Filed Sept. 7, 1906. Serial No. 333,695.



Claim.—A hedge trimmer comprising a plurality of knives having cutting teeth formed thereon, a lever secured near one end of one of said knives, a lever secured centrally of the other of said knives, a projection formed integral with the first named lever for holding the second named lever in position, both of said levers being bent at their outer ends in a different plane from said knives.

854,595. VENTILATOR. ALFRED H. NEWBY, Sutton Coldfield, England, assignor of one-half to William John Seal, Birmingham, England. Filed Oct. 30, 1905. Serial No. 285,197.

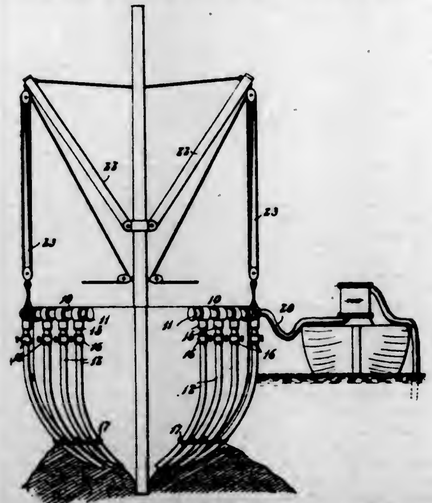
Claim.—1. A ventilator comprising a face plate, a screw threaded collar on the inner surface thereof, a screw plug working through the screw threaded collar, a back plate, means for rotatably attaching the inner end of the screw plug to the back plate and causing it to recede from the face plate and perforations in the face plate through which the air can circulate when the back plate has receded therefrom.



2. A ventilator comprising a face plate, a screw threaded collar on the inner surface thereof, a screw plug working through the screw threaded collar, a back plate, means for rotatably attaching the inner end of the screw plug to the back plate and causing it to recede from the face plate, perforations in the face plate through which the air can circulate when the back plate has receded therefrom, and packing rings attached to the face plate against which the back plate abuts when in its closed position.

3. A ventilator comprising a face plate, a screw threaded collar on the inner surface thereof, a screw plug working through the screw threaded collar, a back plate, means for rotatably attaching the inner end of the screw plug to the back plate and causing it to recede from the face plate, perforations in the face plate through which the air can circulate when the back plate has receded therefrom, guide pins attached to the face plate and guide ways in the back plate for the guide pins.

854,596. WRECKING DEVICE. FREDERICK OLIVER, Portsmouth, Va. Filed Apr. 18, 1906. Serial No. 312,461.



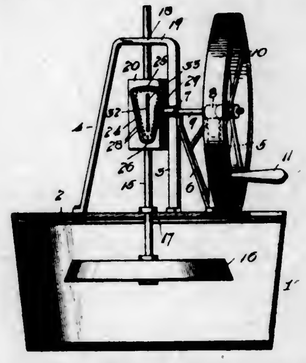
Claim.—1. In wrecking apparatus, a continuous connected series of jet pipes arranged to extend down both sides, and partly under the hull of a vessel, and a vertically adjustable supporting means for said jet pipes.

2. In wrecking apparatus, a series of manifolds having detachable connections and arranged to form a connected series of jet pipes to extend down both sides and partly under the hull of a vessel, and a vertically adjustable supporting means for said manifolds.

3. In wrecking apparatus, a continuous connected series of jet pipes arranged to extend down both sides and partly under the hull of a vessel, a flexible means connecting the lower portions of said jet pipes under the hull of the vessel, and a vertically adjustable supporting means for said pipes.

4. In wrecking apparatus, a plurality of manifolds having detachable connections, and each including curved interchangeable jet pipes arranged to extend down both sides and partly under the hull of a vessel, each of the pipes having an independent valve, a flexible connecting means for the lower portion of said pipes, and a vertically adjustable supporting means for the jet pipes.

854,597. WASHING-MACHINE. IRA L. OWENS, Effingham, Kans. Filed Nov. 21, 1905. Serial No. 288,349.



Claim.—1. In a washing machine, the combination with a receptacle, pounder, pounder-rod, and intermediate actuating-member operatively connected therewith and provided at opposite ends with projections and an intermediate slot, of a collar upon the rod having a projection working in said slot, means of securing the collar to the rod, and springs between said projections and the collar, respectively, on opposite sides thereof.

2. In a washing machine, the combination with a receptacle, pounder, pounder-rod, and intermediate actuating-member operatively connected therewith and provided at opposite ends with projections and an intermediate slot, of a collar upon the rod having a projection working in said slot, adjustable means of securing the collar to the rod, and springs between said projections and the collar, respectively, on opposite sides thereof.

3. In a washing machine, the combination with a receptacle, pounder, pounder-rod, and rotative driving mechanism, provided with a pinion, of an intermediate actuating-member adapted operatively to connect the driving mechanism to the rod, and provided with a series of cogs so disposed with respect to said pinion as to impart to the pounder a shift of position at its lower limit of travel and a minimum of rotative motion at its upper limit of reciprocatory movement.

4. In a washing machine, the combination with a receptacle, pounder, pounder-rod, and rotative driving mechanism, provided with a pinion, of an intermediate actuating-member adapted operatively to connect the driving mechanism to the rod, and provided with a series of cogs disposed in the form resembling an inverted triangle substantially as and for the purpose specified.

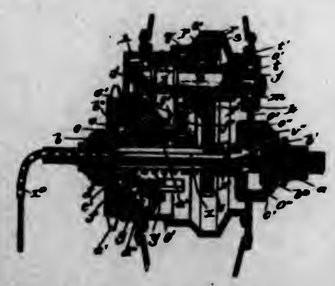
854,598. COMBINED NAME-PLATE AND REGISTER FOR DOORS. JAMES H. PAIGE, Manchester, N. H. Filed July 6, 1905. Renewed Nov. 8, 1906. Serial No. 342,568.



Claim.—1. A device of the character described, having a face plate, an axially movable plate arranged behind said face plate and visible through an opening in said face plate, and means for turning the rear plate, comprising a knob having a rounded portion adapted to extend through an opening in the face plate, and a smaller plate-like portion adapted to engage a correspondingly shaped opening in said rear plate, the part of the rounded portion, which extends laterally from the plate portion, adapted to engage the surface of the rear disk for the purpose specified.

2. A device of the character described, comprising a face plate having a name formed therein by stencil-cut letters, and an axially movable plate, of a different color from the face plate, arranged behind said face plate and showing through said stencil-cut letters, said rear plate bearing indicia discernible through an opening in another portion of said face plate, means for turning the rear plate, comprising a knob having a rounded portion adapted to extend through an opening in the face plate, and a smaller flattened portion adapted to engage a correspondingly shaped opening in said rear plate, the part of the rounded portion, which extends laterally from the flat portion, adapted to engage the surface of the rear disk for the purpose specified.

854,599. GEARING FOR BICYCLES, &c. MIKAEL PEDERSEN, Dursley, England. Filed Aug. 11, 1903. Serial No. 169,107.



Claim.—1. A gearing for bicycles, motor cars, motors and the like comprising, an axle, a drive wheel, a spur wheel driven by the drive wheel, a planet spindle, a pinion on the planet spindle meshing with the spur wheel, a spur wheel loosely mounted on the planet spindle, a friction clutch causing the united revolution of the last mentioned spur wheel and planet spindle, a spur wheel slidingly mounted on the axle and means to selectively position the sliding spur wheel.

2. A gearing for bicycles, motor cars, motors and the like comprising, an axle, a drive wheel, a spur wheel driven by the drive wheel, a planet spindle, a pinion on the planet spindle meshing with the spur wheel, a spur wheel loosely mounted on the planet spindle, a friction clutch causing the united revolution of the last mentioned spur wheel and planet spindle, a spur wheel slidingly mounted on the axle, means to selectively position the sliding spur wheel, a pinion integral with the spur wheel on the planet spindle, a counter spindle, and a pinion on the counter spindle meshing with the last mentioned pinion.

3. A gearing for bicycles, motor cars, motors and the like, comprising an axle, a drive wheel, a hub shell, a clutch member for the drive wheel, a clutch member for the hub shell, an intermediate clutch member interposed between, and engaging with, the clutch members of the drive wheel and hub shell, a spur wheel movable lengthwise on the axle, an actuating means for the intermediate clutch member, engaged by the movable spur wheel, a planet spindle, a spur wheel mounted thereon and engaging with the movable spur wheel, a clutch causing the united revolution of the planet spindle and spur wheel thereon and a pinion fixed on the planet spindle actuated by the drive wheel.

4. A gearing for bicycles, motor cars, motors and the like comprising an axle, a drive wheel, a hub shell, a clutch member for the drive wheel, a clutch member for the hub shell, an intermediate clutch member interposed between, and engaging with, the clutch members of the drive wheel and hub shell, a spur wheel movable lengthwise on the axle, an actuating means for the intermediate clutch member, engaged by the movable spur wheel, a planet spindle, a spur wheel loosely mounted thereon and engaging with the movable spur wheel, a clutch causing the united revolution of the planet spindle and spur wheel thereon, a pinion fixed on the planet spindle actuated by the drive wheel, a pinion carried by the spur wheel on the planet spindle, a counter spindle, and a pinion on the counter spindle meshing with the last mentioned pinion.

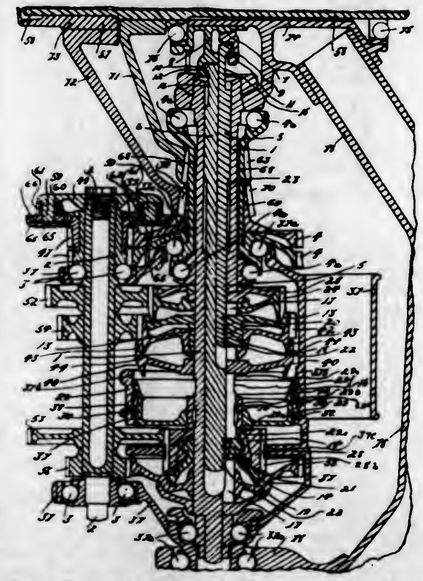
5. A gearing for bicycles, motor cars, motors and the like, comprising an axle, a drive wheel, a hub shell, a clutch member for the drive wheel, a clutch member for the hub shell, an intermediate clutch member interposed between, and engaging with, the clutch members of the drive wheel and hub shell, a spur wheel movable lengthwise on the axle, an actuating means for the intermediate clutch member, engaged by the movable spur wheel, a planet spindle, a spur wheel loosely mounted thereon and engaging with the movable spur wheel, a clutch causing the united revolution of the planet spindle and spur wheel thereon, a pinion fixed on the planet spindle actuated by the drive wheel, and a spring normally pressing the movable spur wheel into mesh with the spur wheel on the planet spindle.

6. A gearing for bicycles, motor cars, motors and the like comprising an axle, a drive wheel, a hub shell, a clutch member for the drive wheel, a clutch member for the hub shell, an intermediate clutch member interposed between, and engaging with, the clutch members of the drive wheel and hub shell, a spur wheel movable lengthwise on the axle, an actuating means for the intermediate clutch member engaged by the movable spur wheel, a planet spindle, a spur wheel loosely mounted thereon and engaging with the movable spur wheel, a clutch causing the united revolution of the planet spindle and spur wheel thereon, a pinion fixed on the planet spindle actuated by the drive wheel a pinion carried by the spur wheel on the planet spindle, a counter spindle, a pinion on the counter spindle meshing with the last mentioned pinion, and a spring normally pressing the movable spur wheel into mesh with the spur wheel on the planet spindle.

7. A gearing for bicycles, motor cars, motors and the like comprising an axle, a drive wheel, a hub shell, a clutch member for the drive wheel, a clutch member for the hub shell, an intermediate clutch member interposed between, and engaging, with the clutch members of the drive wheel and hub shell, a spur wheel movable lengthwise on the axle, an actuating means for the intermediate clutch member, engaged by the movable spur wheel, a planet spindle, a spur wheel loosely mounted thereon and engaging with the movable spur wheel, a clutch causing the united revolution of the planet spindle and spur wheel thereon, a pinion fixed on the planet spindle actuated by the drive wheel, a spring normally pressing the movable spur wheel into mesh with the spur wheel on the planet spindle, and means for shifting the movable spur wheel on the axle.

8. A gearing for bicycles, motor cars, motors and the like comprising an axle, a drive wheel, a hub shell, a clutch member for the drive wheel, a clutch member for the hub shell, an intermediate clutch member interposed between, and engaging with, the clutch members of the drive wheel and hub shell, a spur wheel movable lengthwise on the axle, an actuating means for the intermediate clutch member engaged by the movable spur wheel, a planet spindle, a spur wheel loosely mounted thereon and engaging with the movable spur wheel, a clutch causing the united revolution of the planet spindle and spur wheel thereon, a pinion fixed on the planet spindle actuated by the drive wheel, a pinion carried by the spur wheel on the planet spindle, a counter spindle, a pinion on the counter spindle meshing with the last mentioned pinion, a spring normally pressing the movable spur wheel into mesh with the spur wheel on the planet spindle and means for shifting the movable spur wheel on the axle.

854,600. GEARING FOR MOTOR-VEHICLES, &c. MIKAEL PEDERSEN, Dursley, England. Filed Mar. 15, 1906. Serial No. 306,231.



Claim.—1. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried by the hub shell, a set of spur wheels mounted on the planet spindle and meshing with their respective spur wheels on the stationary spindle, and means for selectively locking the spur wheels to the stationary spindle to vary the speed of the revolution of the planet spindle and shell.

2. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried by the hub shell, a set of spur wheels mounted on the planet spindle and meshing with their respective spur wheels on the stationary spindle, friction clutches for locking the spur wheels to the stationary spindle to vary the speed of the revolution of the planet spindle and shell, means to selectively actuate the friction clutches to lock their respective spur wheels to the stationary spindle and means to vary the speed of the revolution of the planet spindle and hub shell.

3. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried thereby, a set of spur wheels mounted on the planet spindle to mesh with their respective spur wheels on the stationary spindle, friction clutches for locking the spur wheels to the stationary spindle, longitudinally adjustable rods, cams to actuate the longitudinally adjustable rods and adjustable blocks to regulate the lateral movements of said rods.

4. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried by the hub shell, a set of spur wheels mounted on the planet spindle and meshing with their respective spur wheels on the stationary spindle, means for selectively locking the spur wheels to the stationary spindle to vary the speed of the revolution of the planet spindle and shell, a spur wheel carried by the stationary spindle, an expansible ring to lock the last mentioned spur wheel to the hub shell, and a toggle to expand said ring.

5. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried by the hub shell, a set of spur wheels mounted on the planet spindle and meshing with their respective spur wheels on the stationary spindle, friction clutches for locking the spur wheels to the stationary spindle, means to selectively actuate the friction clutches to lock their respective spur wheels to the stationary spindle to vary the speed of the revolution of the planet spindle and hub shell, a spur wheel carried by the stationary spindle, an expansible ring to lock the last mentioned spur wheel to the hub shell and a toggle to expand said ring.

6. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried thereby a set of spur wheels mounted on the planet spindle to mesh with their respective spur wheels on the stationary spindle friction clutches for locking the spur wheels to the stationary spindle, longitudinally adjustable rods, cams to actuate the longitudinally adjustable rods, adjustable blocks to regulate the lateral movements of said rods, a spur wheel carried by the stationary spindle, an expansible ring to lock the last mentioned spur wheel to the hub shell and a toggle to expand said ring.

7. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried by the hub shell, a set of spur wheels mounted on the planet spindle and meshing with their respective spur wheels on the stationary spindle, and means for selectively locking the spur wheels to the stationary spindle to vary the speed of the revolution of the planet spindle and shell, a main spur wheel on the stationary spindle, a spur wheel on the planet spindle meshing therewith, two driven shafts, a bevel wheel driven from the last mentioned spur wheel on the stationary shaft, two studs carried by the bevel wheel, a double spur wheel of different diameters mounted on each stud, a spur wheel on each of the driven shafts one of which meshes with the smaller diametered ones of said double spur wheels, and the other with the larger diametered ones of said double spur wheels.

8. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried by the hub shell, a set of spur wheels mounted on the planet spindle and meshing with their respective spur wheels on the stationary spindle, friction clutches for locking the spur wheels to the stationary spindle and means to selectively actuate the friction clutches to lock their respective spur wheels to the stationary spindle to vary the speed of the revolution of the planet spindle and hub shell, a main spur wheel on the stationary spindle, a spur wheel on the planet spindle meshing therewith, two driven shafts, a bevel wheel driven from the last mentioned spur wheel on the stationary shaft, two studs carried by the bevel wheel, a

double spur wheel of different diameters mounted on each stud, a spur wheel on each of the driven shafts one of which meshes with the smaller diametered ones of said double spur wheels, and the other with the larger diametered ones of said double spur wheels.

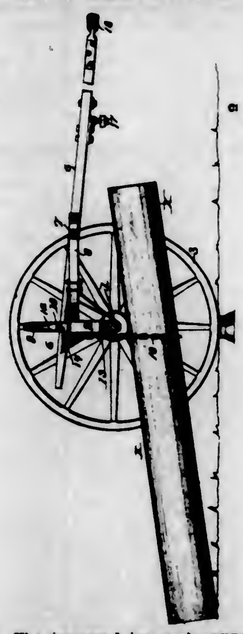
9. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried thereby, a set of spur wheels mounted on the planet spindle to mesh with their respective spur wheels on the stationary spindle, friction clutches for locking the spur wheels to the stationary spindle, longitudinally adjustable rods, cams to actuate the longitudinally adjustable rods, adjustable blocks to regulate the lateral movements of said rods, a main spur wheel on the stationary spindle, a spur wheel on the planet spindle meshing therewith, two driven shafts, a bevel wheel driven from the last mentioned spur wheel on the stationary shaft, two studs carried by the bevel wheel, a double spur wheel of different diameters mounted on each stud, a spur wheel on each of the driven shafts one of which meshes with the smaller diametered ones of said double spur wheels, and the other with the larger diametered ones of said double spur wheels.

10. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried by the hub shell, a set of spur wheels mounted on the planet spindle and meshing with their respective spur wheels on the stationary spindle, means for selectively locking the spur wheels to the stationary spindle to vary the speed of the revolution of the planet spindle and shell, a spur wheel carried by the stationary spindle, an expansible ring to lock the last mentioned spur wheel to the hub shell, a toggle to expand said ring, a main spur wheel on the stationary spindle, a spur wheel on the planet spindle meshing therewith, two driven shafts, a bevel wheel driven from the last mentioned spur wheel on the stationary shaft two studs carried by the bevel wheel, a double spur wheel of different diameters mounted on each stud, a spur wheel on each of the driven shafts, one of which meshes with the smaller diametered ones of said double spur wheels, and the other with the larger diametered ones of said double spur wheels.

11. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried by the hub shell, a set of spur wheels mounted on the planet spindle and meshing with their respective spur wheels on the stationary spindle, friction clutches for locking the spur wheels to the stationary spindle, means to selectively actuate the friction clutches to lock their respective spur wheels to the stationary spindle to vary the speed of the revolution of the planet spindle and hub shell, a spur wheel carried by the stationary spindle, an expansible ring to lock the last mentioned spur wheel to the hub shell, a toggle to expand said ring, a main spur wheel on the stationary spindle, a spur wheel on the planet spindle meshing therewith, two driven shafts, a bevel wheel driven from the last mentioned spur wheel on the stationary shaft, two studs carried by the bevel wheel, a double spur wheel of different diameters mounted on each of said studs, a spur wheel on each of the driven shafts one of which meshes with the smaller diametered ones of said double spur wheels, and the other with the larger diametered ones of said double spur wheels.

12. A gearing for motor vehicles, motors and intermediate motions, and other mechanical purposes, consisting of a stationary spindle, a set of spur wheels loosely mounted thereon, a hub shell, a planet spindle carried thereby, a set of spur wheels mounted on the planet spindle to mesh with their respective spur wheels on the stationary spindle friction clutches for locking the spur wheels to the stationary spindle, longitudinally adjustable rods, cams to actuate the longitudinally adjustable rods, adjustable blocks to regulate the lateral movements of said rods, a spur wheel carried by the stationary spindle, an expansible ring to lock the last mentioned spur wheel to the hub shell a toggle to expand said ring, a main spur wheel on the stationary spindle, a spur wheel on the planet spindle meshing therewith, two driven shafts, a bevel wheel driven from the last mentioned spur wheel on the stationary shaft, two studs carried by the bevel wheel, a double spur wheel of different diameters mounted on each stud, a spur wheel on each of the driven shafts, one of which meshes with the smaller diametered ones of said double spur wheels and the other with the larger diametered ones of said double spur wheels.

854,601. LOG-CART. JAMES A. PERRY, Burgaw, N. C. Filed Sept. 1, 1906. Serial No. 332,937.



Claim.—1. The improved log cart comprising an axle, transporting wheels, a bolster applied to the axle, a log chain connected with the bolster, hounds projecting forward from the latter, a tongue pivoted to the hounds, and means on the bolster for locking the tongue detachably therewith in the normal position, substantially as described.

2. The improved log cart comprising an axle, transporting wheels, a log chain, hounds projecting forward, a tongue pivoted between the hounds, and a stop chain connecting the rear portion of the tongue with the axle whereby the swinging movement of the two is arrested, or prevented exceeding a certain angle in the loading operation, substantially as described.

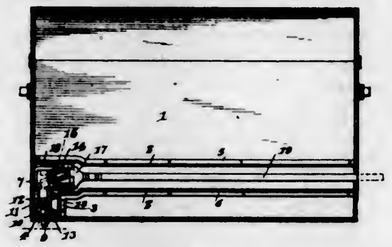
3. The improved log cart comprising an axle, transporting wheels, and a bolster secured to said axle, hounds extending forward, a tongue pivoted between the hounds, guides secured on the bolster and adapted to receive the rear portion of the tongue between them, and a locking device for engaging the tongue and holding it in normal position, substantially as described.

4. The improved log cart comprising an axle having transporting wheels, a bolster secured to the axle, hounds extending forward from the bolster, a tongue pivoted between the front ends of the hounds and extending rearward over the bolster, and a locking device secured to the bolster and adapted for automatic engagement with the tongue, substantially as described.

5. The improved log cart comprising an axle, transporting wheels, a bolster applied to the axle, hounds secured to the bolster, a tongue pivoted between the front ends of the hounds, a slidable spring-actuated latch having its inner end beveled, and guides for supporting the latch whereby, when the tongue is drawn down into the normal position, it automatically engages the latch, substantially as described.

6. The improved log cart comprising an axle, a bolster secured thereto, a bar clamped on the bolster, hounds whose rear portions lie in spaces between the ends of said bar and adjacent ears, or projections, of the bolster, a tongue pivoted between the front portions of the hounds, and a log chain attached to the said bar, substantially as described.

854,602. TRUNK. GEORGE W. PETERSON, Leonardville, Kans. Filed May 16, 1906. Serial No. 317,124.



Claim.—1. In a device of the class described, the combination of a vertical guide, a horizontal guide, a slidable member movable in the vertical guide and provided with a caster wheel, an operating member slidable in the horizontal guide, and means carried by the operating member for raising and lowering the said slidable member.

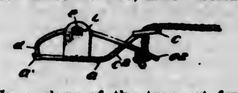
2. In a device of the class described, the combination with a receptacle provided at the bottom with an opening, a vertical guide extending upwardly from the opening, a horizontal guide, a slidable member mounted in the vertical guide and movable through the opening of the said receptacle and provided with a caster wheel, an operating member slidable in the horizontal guide and having an inclined slot, and means mounted on the first mentioned member and operating in the slot for raising and lowering the caster wheel when the operating member is actuated.

3. In a device of the class described, the combination with a receptacle provided with a bottom opening, a vertically slidable member mounted on the receptacle and movable through the said opening, a horizontally slidable member guided on the receptacle and provided with an inclined slot, a projection carried by the vertically movable member and operating in the slot of the horizontally movable member, and means for operating the latter.

4. In a device of the class described, the combination with a receptacle provided at the bottom with an opening and having an end opening, a member slidable through the bottom opening and carrying a caster wheel, an operating bar mounted within the receptacle and extending through the end opening of the same, and means carried by the operating bar for actuating the said member to raise and lower the caster wheel.

5. The combination with a receptacle provided at the bottom with an opening located near one end of the receptacle, said receptacle being provided at the opposite end with an opening, a vertically movable member carrying a roller and operating through the bottom opening, a horizontally movable member having inclined edges for actuating the vertically movable member, an operating bar connected with the horizontally movable member and extending through the end opening, and a casing mounted on the receptacle and receiving the said members and the operating bar.

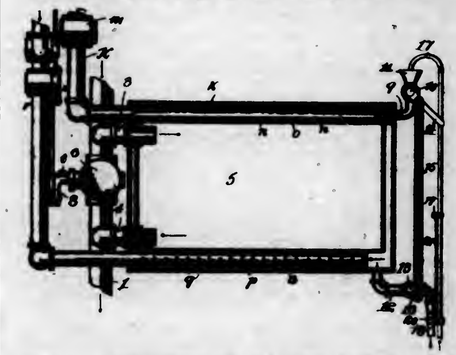
854,603. LEATHER-CLAMP. CHARLES B. RATHBUN, Canton, Mass. Filed Nov. 23, 1906. Serial No. 344,735.



Claim.—1. In a clasp of the type set forth, a pair of jaw plates pivoted together one over the other and having rearwardly extending narrowed tail-pieces crossing each other at a point back of the pivots and each being formed into an open hook, the hooks being one above the other and having their throats opening toward opposite sides.

2. In a clasp or clamp of the type set forth, a pair of jaw plates pivoted together one over the other and having rearwardly extending elastic tail-pieces, the under one bending upward and the upper one bending downward, the two tail-pieces crossing each other at a point back of the pivots and the extreme end of each tail-piece being formed into a cord-engaging device, the upper cord-engaging device consisting of a hook having a throat-like entrance opening toward the forward end of the clasp.

854,604. CARBURETER. HENRY M. REICHENBACH, New York, N. Y. Filed Aug. 28, 1905. Serial No. 276,161.



Claim.—1. The combination of a casing provided with a heating chamber, said casing having absorbent material therein, the whole forming a carbureter, means for heating said chamber, means for mixing the carbureted air passing out of said carbureter with additional air, and means for simultaneously controlling the amount of carbureted air passing out of said carbureter, the amount of air mixed with said carbureted air, and the amount of heat supplied to said carbureter, substantially as described.

2. The combination of a carbureter provided with a heating chamber, a valved pipe connection for supplying hot fluid to said heating chamber, a valved delivery pipe for the carbureted air, a valved pipe connected with said delivery pipe, and means for simultaneously operating the valves in the three sets of pipes, substantially as described.

3. The combination of a carbureter provided with a heating chamber, pipe connections for supplying heated fluid to said chamber, a valve located in said pipe connections, a delivery pipe for the carbureted air, a valve in said delivery pipe, a pipe leading from the external air to said delivery pipe, a valve in said last mentioned pipe, connections whereby said three valves may be operated simultaneously, and means for adjusting each of said valves, substantially as described.

4. The combination of a casing provided with a heating chamber, said casing having absorbent material therein, the whole forming a storage carbureter, a carbureted air delivery pipe, a valve therein, a pipe leading from the external air to said delivery pipe for diluting the carbureted air, a valve in said last-mentioned pipe, connections whereby said valves may be simultaneously operated, and means for separately adjusting each of said valves, substantially as described.

5. The combination of a carbureter provided with a heating chamber, pipe connections for supplying hot fluid to said heating chamber, a valve mounted in said pipe connections, a delivery pipe for the carbureted air, a valve in said delivery pipe, connections whereby said valves may be simultaneously operated, and means for separately adjusting each of said valves, substantially as described.

6. In a carbureter, the combination of a casing, metal partition plates provided with spring edges secured in said casing, absorbent packing located between said plates, said plates and packing being provided with perforations registering with each other forming air passages, and said plates being provided with perforations for the circulation of the liquid fuel, substantially as described.

7. In a carbureter, the combination of a casing provided with internal plates and walls forming a central heating chamber, metal plates provided with spring edges located between said casing and the internal walls, absorbent packing between said metal plates, said plates and packing being provided with perforations which register with each other, thereby forming air passages, and said metal plates being provided with perforations for the circulation of the liquid fuel, substantially as described.

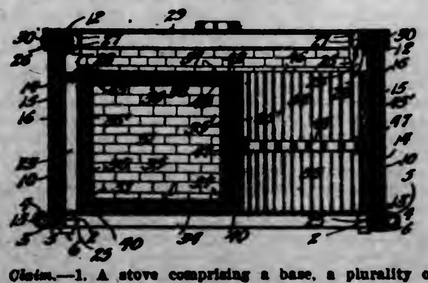
8. The combination of a carbureter and safety devices for filling the same, consisting of supply and drainage pipes connected to said carbureter, a valve located in each of said pipes, connections for simultaneously operating said valves, a fuel tank and supply and drainage connections on said fuel tank detachably engaged with the supply and drainage pipes on said carbureter, substantially as described.

9. In a carbureter, the combination of a casing, a metal plate, provided with a central bead, located in the upper part of said casing, a perforated air pipe extending into said casing and located over said central bead, and a fuel pipe delivering into said air pipe, substantially as described.

10. In a carbureter, the combination of a casing, a metal plate extending across said casing near its top and secured therein by spring edges, said plate being provided with a central longitudinal bead, a perforated air inlet pipe entering said casing and located above said bead, and a fuel pipe entering one end of said air inlet pipe, substantially as described.

11. In a carbureter, the combination of a casing, a heating chamber therein, metal partition plates in said casing, absorbent packing located between said plates, said plates and packing being provided with perforations registering with each other, forming air passages, and said plates being provided with perforations for the circulation of the liquid fuel, and means for causing a regulated flow of hot exhaust gases through said chamber, substantially as described.

854,605. STOVE. JULIUS ROSENTHAL, Atlanta, Ga., assignor of one-half to Morris Lichtenstein, Atlanta, Ga. Filed July 15, 1905. Serial No. 269,796.



Claim.—1. A stove comprising a base, a plurality of overlapping independent tiled walls detachably connected at their lower ends with the base, corner-standards rising from the base and detachably connected thereto, said standards being of angular form to bear against the sides of the overlapping walls at the meeting edges thereof and provided with hooked locking members, channeled coupling pieces engaging the upper edges of the walls and provided with hooked locking members to interlock with the said locking members on the standards, and a top supported by the tiled walls.

2. A stove comprising a rectangular body formed of a bottom having a receiving channel, said bottom being also provided with receiving sockets, overlapping independent walls slidably fitted at their lower ends in the channel of the bottom, each of said walls comprising an open channeled frame having a body of tiles arranged therein and having their faces exposed therethrough, angular corner-standards detachably fitted at their lower ends in the sockets of the bottom and arranged to bear against the sides of the overlapping walls at the meeting edges thereof, channeled coupling strips embracing the upper edges of the walls and having a detachable interlocking connection at the corners of the stove body with each other and with the corner-standards, and a top resting on and supported by said coupling strips and standards.

3. A stove comprising a base, a plurality of overlapping independent tiled walls, each of said walls being detachably fitted at its lower edge in the base and being complete in itself and comprising a boundary frame having a contained body of tiles arranged in rows and detachably fitted therein, corner-standards detachably connected at their lower ends with the base and bearing against the sides of the overlapping walls at the meeting edges thereof, channeled coupling members fastening the upper edges of the walls and detachably connected with the corner-standards, and a top supported upon the upper ends of said walls and the corner-standards.

4. A stove comprising a base having a receiving channel, a plurality of overlapping independent tiled walls inserted at their lower edges in said channel, each of said walls being complete in itself and comprising a boundary frame having a body of tiles detachably arranged in rows therein, corner-standards projecting upwardly from the base and removably connected at their lower ends thereto, said standards being arranged to bear against the sides of the overlapping walls at the meeting edges thereof, coupling members extending longitudinally of and engaging the upper edges of the walls and connected at their ends with the corner-standards, and a top supported upon the upper ends of said walls and corner-standards.

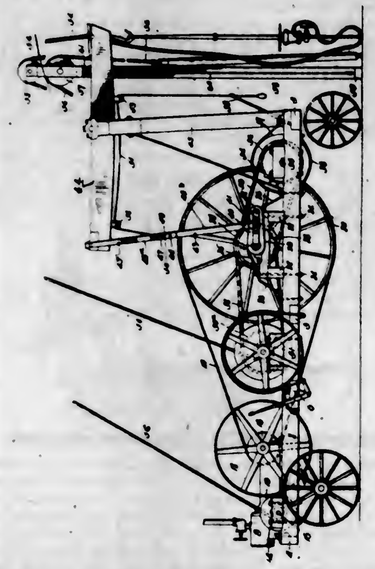
5. A stove comprising a base having a receiving channel, a plurality of independent overlapping tiled walls slidably fitted at their lower ends in the channel, each wall being complete in itself and comprising a boundary frame having a body of tiles arranged in rows and removably mounted therein, corner-standards slidably fitted at their lower ends in the base and bearing against the sides of the overlapping walls at the meeting edges thereof, channeled coupling pieces slidably fitted upon the upper ends of the walls and having a slidable interlocking engagement with the corner-standards, and a top supported upon the walls.

854,606. WELL-DRILLING MACHINE. JAMES ROURKE, Independence, Kans. Filed Nov. 22, 1905. Serial No. 288,592.

Claim.—1. In a well drilling machine, the combination with the crank-shaft, of a walking-beam operated thereby, means for breaking connection between the walking beam and the crank shaft, a bull-wheel, a casing-rope-reel, and a clutch mechanism for establishing connection between the crank shaft and the bull-wheel or between the crank-shaft and the casing-rope-wheel.

2. In a well drilling machine, the combination of the main frame provided with recesses, posts seated on their ends in said recesses, a beam connecting the upper ends of the posts, bolts passing through the frame, the posts and the beam, a journal bearing bolted to the beam, a strap passing around the journal bearing and secured at its ends to the beam by the bolts that pass through the posts, and brace straps also secured at one of their ends by the bolts and secured to the main frame.

3. In a well drilling machine, the combination with the crank shaft and the walking beam, of a pitman connecting said members, and formed of two members adapted to be moved to permit the crank shaft to rotate without rocking the walking beams.



4. In a well drilling machine, the combination with the crank shaft and the walking beam, of a pitman connecting said members, and formed of two members pivoted together, and means holding the members against relative movement.

5. In a well drilling machine, the combination with the crank shaft and the walking beam, of a pitman connecting said members, and formed of two members pivoted together, means holding the members against relative movement, and a controlling rope for said means.

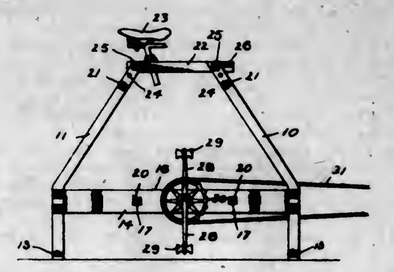
6. In a well drilling machine, the combination with the crank shaft and the walking beam, of a pitman connecting said members, and formed of two members pivoted together, means holding the members against relative movement, and a controlling rope for said means, said means causing the parts to be automatically locked when the controlling rope is released.

7. In a well drilling machine the combination with the crank shaft and the walking beam, of a pitman connecting said members, and formed of two members pivoted together, and means holding the members against relative movement and comprising a sliding bolt on one member adapted to engage the other member.

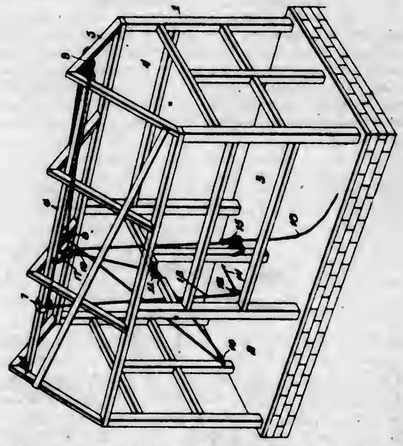
854,607. MECHANICAL MOTOR. BERT M. RUSE and HERBERT D. OXLEY, St. Paul, Minn. Filed Feb. 11, 1907. Serial No. 356,848.

Claim.—A mechanical motor comprising pairs of uprights which converge in a common direction and upwardly, plates secured at their ends to corresponding ones of the uprights, said plates being turned inwardly to extend in parallel relation to each other, spacing bolts for holding the plates in proper position, a shaft journaled in the parallel portion of the plates, cranks carried by the shaft, pedals carried by the cranks, a seat bar supported by the upper end of the standards and adjustable vertically therebetween, a seat supported upon the bar, a sprocket gear carried by the shaft, and a sprocket chain engaged with the gear.

854,607.

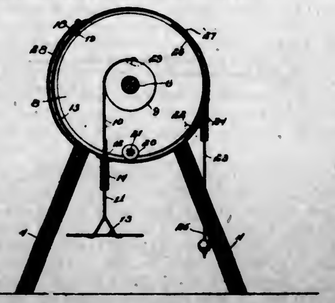


854,608. DEVICE FOR LEVELING HAY. CHARLES SCHUTT, Bay Port, Mich. Filed Apr. 28, 1906. Serial No. 314,221.



Claim.—The herein described device for leveling hay, comprising a bar suspended at the upper part of a barn, pulleys suspended from said bar, a cable passed through said pulleys and having one of its ends attached to a draft device, a grapple connected to said bar, a pulley suspended from said grapple, a leveling fork connected to said cable, essentially as described.

854,609. SCALE. FREDERICK A. SELLEY, Nashville, Tenn. Filed May 29, 1906. Serial No. 319,387.



Claim.—1. A scale comprising a casing, a rotatable member supported in the casing, an article support, connections between said support and member, and sleeves

projecting beyond the casing to receive said connections, said sleeves being of interior sectional contour corresponding with the sectional contour of the connections.

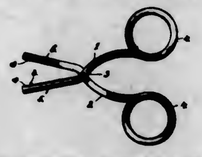
2. A scale comprising a casing, a rotatable member supported in the casing, a scale pan, a flexible connection secured to the member, an inflexible section extending from the connection to the pan, and sleeves projecting from the casing and of an interior contour to correspond with the sectional contour of the inflexible section.

3. A scale comprising a casing, a sectional strip fixed upon the casing a rotatable member mounted therein, said member comprising a shaft supported in the casing, and disks secured upon the shaft, a scale pan and connections secured upon the periphery of the disks and to the pan, and meaens for guiding said connections to prevent vibration of the pan.

4. A scale comprising a relatively fixed casing, a movable member therein, an article support connected with the member, and an additional weight carrier depending from the member beyond the casing, and means pendent from the casing to receive and guide the additional weight carrier.

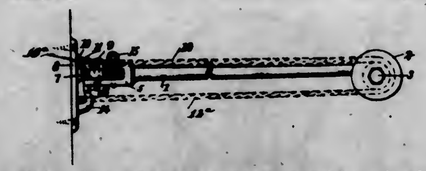
5. A scale comprising a casing formed with slots, a rotating member mounted therein and comprising a shaft, and spaced disks, a scale pan, connections between said pan and disks, a scale strip fixed to the casing and formed with slots to register with the slots in the casing, studs projecting from the disks and extending through said registering slots, and an indicator secured to the studs and overlying the scale.

854,610. PEN-EXTRACTOR. HARRY A. STEINER, Pittsburg, Pa. Filed Feb. 5, 1907. Serial No. 355,784.



Claim.—A pen extractor comprising two substantially similar members secured together, each member formed from a single piece of wire coiled at one end to form a finger loop, each member having a flat face intermediate its ends at which flat faces the members are pivoted together, the outer ends of the members beyond said flat faces being cylindrical and constituting gripping jaws each corrugated on its gripping face and one of which has a recess and the other of which has a tooth adapted to enter said recess, substantially as described.

854,611. CLOTHES-LINE HANGER. FREDERICK W. STEURR, Plainfield, N. J. Filed Dec. 4, 1906. Serial No. 346,204.

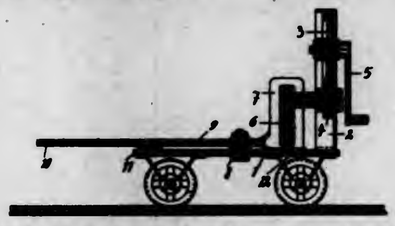


Claim.—1. A clothes line support comprising a bracket substantially circular in outline, and provided with a base plate, lugs formed on said base plate on opposite sides of said bracket, a carrying arm pivoted to said bracket and provided with lugs on opposite sides thereof, adapted to be arranged in connection with the lugs of said base plate so as to form upper and lower closed sockets, a pulley pivoted to the end of said arm, and means for locking said carrying arm on said bracket, substantially as shown and described.

2. A clothes line support comprising a bracket having recesses formed on opposite sides thereof, a carrying arm pivoted to said bracket and provided on opposite sides with lugs adapted to close the recesses of said brackets, a pulley pivoted to the end of said arm, and a locking pin engaging apertures formed in said arm and bracket, substantially as shown and described.

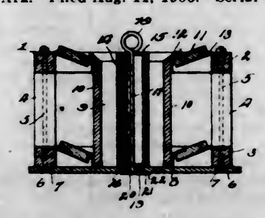
3. A clothes line support comprising a bracket having recesses formed on opposite sides thereof, a carrying arm pivoted to said bracket and provided on opposite sides with lugs adapted to close the recesses of said brackets, a pulley pivoted to the end of said arm, and locking mechanism adapted to lock said arm and bracket together, substantially as shown and described.

854,612. COAL-CUTTING MACHINE. FRIEDRICH STIEPEL, Essen-on-the-Ruhr, Germany. Filed Feb. 18, 1907. Serial No. 358,094.



Claim.—A coal cutting machine comprising in combination, a truck having a top plate (1), a bracket (2) fixed on said top plate, a toothed gearing (3, 4) mounted in said bracket, an eccentric (6) connected with said toothed gearing and thus adapted to be actuated by the latter, a horizontal double-armed lever (9) centered in said top plate, vertical guide-jaws (7) provided at one end of said lever (9) and designed to receive between them said eccentric and thus to be acted upon by the latter, a segmental cutting tool (10) provided on the other end of said lever and thus adapted to be reciprocated upon the actuation of said eccentric, and races (11, 12) provided on said top plate and designed to guide said lever (9), substantially as described and shown.

854,613. MOLD. DAVID N. THOMAS and LEMON O. BUAK, Corning, Ark. Filed Aug. 11, 1906. Serial No. 330,212.



Claim.—1. A mold comprising a pallet board, a frame removably supported thereon, a mold box arranged within the frame and comprising separable sections, and links pivotally connecting the upper and lower ends of said sections to the upper and lower portions of the frame.

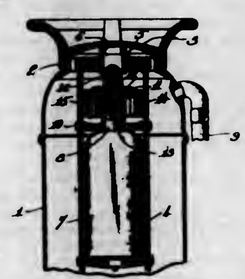
2. A mold comprising a pallet board, a frame removably supported thereon, a mold box arranged within the frame and adapted to be supported in working position by the pallet board, said box comprising separable sections, and links connecting the upper and lower ends of said sections to the upper and lower portions of the frame, said links being downwardly and inwardly inclined from the frame to the box sections, whereby when said frame is elevated the mold box sections will be permitted to tilt outwardly and downwardly by gravity.

3. A mold comprising a pallet board having keeper recesses, a frame provided with dowels to engage said recesses, said frame being rectangular in form, a rectangular mold arranged within the frame and removably supported upon the pallet board, said mold comprising separable sections, and links pivotally connecting the upper and lower portions of said sections to the upper and lower portions of the sides of the frame, substantially as described.

4. A mold comprising a pallet board provided with a bottom recess, an opening communicating therewith and a bottom plate closing said recess, a frame supported by the board, a mold box carried by the frame, and a core having a rod journaled therein, said rod being provided at its upper end with an actuating handle and at its lower end with a locking portion to coöperate with said opening and recess.

5. In a molding apparatus, a core, and a rod extending through and journaled in the core, said rod being provided at one end with a handle and angularly bent at its opposite end to form a locking element.

854,614. CHEMICAL FIRE-EXTINGUISHER. JESSE B. THOMAS, Boston, Mass., assignor of one-half to Alfred J. Knight, Brookline, Mass. Filed Dec. 8, 1905. Serial No. 290,914.



Claim.—1. In a chemical fire-extinguisher, the combination with a main receiver and an acid receptacle therein, of a gravity-closure for said receptacle provided with a deep lip to surround the mouth of the receptacle, longitudinal channels in the inner wall of the lip, and means to limit the opening movement of the closure when the extinguisher is inverted for use.

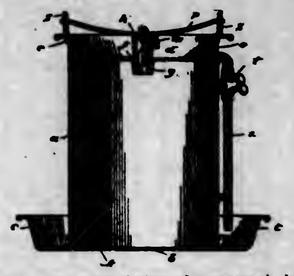
2. In a chemical fire-extinguisher, an acid receptacle having an elongated outlet neck, combined with a gravity closure having a deep lip to surround the neck, channels in the inner wall of said lip, and means to limit the opening movement of the closure when the extinguisher is in use, to always maintain the mouth of the outlet neck inclosed within the lip of the closure.

3. In a chemical fire-extinguisher of the class described, in combination, an acid receptacle having an outlet neck, a gravity closure therefor having an annular, internal, recess to normally receive the end of the neck, a deep peripheral lip on the closure, having longitudinal channels in its inner wall, and means to guide and limit opening movement of the closure when the extinguisher is in use.

4. A gravity-closure for acid receptacles of chemical fire-extinguishers, said closure having oppositely extended projections one of which is adapted to enter the outlet of the acid receptacle, and a deep annular lip surrounding said projection and having longitudinal channels in its inner wall, as and for the purpose described.

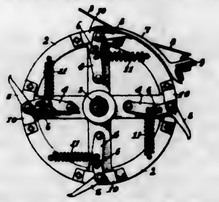
854,615. WATERING DEVICE. ADDISON J. VORHEIS and JAMES C. MOYER, Burlington, Iowa. Filed July 27, 1905. Serial No. 271,454.

Claim.—1. A watering tank consisting of a reservoir having the lower portion of its outer surface free of attachment devices and consequently entirely smooth and uninterrupted with relation thereto, a trough surrounding its bottom portion, and a plurality of water supply openings communicating with such trough and designed to be always open, an air tube opening at its lower end below the level of the top of the trough and communicating at its upper end with the top portion of the reservoir, and means for controlling the passage of water into such trough through the supply openings and for stopping such passage when required consisting of a valve in the air tube, substantially as specified.



2. A watering tank consisting of a reservoir having the lower portion of its outer surface free of attachment devices and consequently entirely smooth and uninterrupted with relation thereto, a trough surrounding its bottom portion, and a plurality of water supply openings communicating with such trough and designed to be always open, an air tube opening at its lower end below the level of the top of the trough and communicating at its upper end with the top portion of the reservoir, means for controlling the passage of water into the trough through the supply openings and for stopping such passage when required, consisting of a valve in said air tube, said reservoir having a dished top extending to and resting upon the top wall of the same, and having an elongated tapered stopper seat, and an elongated tapered rubber stopper, substantially as specified.

854,616. EQUALIZER FOR WIRE-FENCE MACHINES. SHERMAN S. WITHINGTON, Adrian, Mich., assignor to Jackson Fence Company, Jackson, Mich., a Corporation of Michigan. Filed May 21, 1906. Serial No. 318,035.



Claim.—1. An equalizer for wire fence machines, comprising a rotary shaft, a series of wheels of equal circumference fixed on said shaft, a series of grippers mounted on each wheel and each comprising a fixed member and a movable member consisting of a radially disposed arm pivoted at its inner end and movable circumferentially of the wheel at its outer end, bars having surfaces inclined to the fixed member and traversed by said arms, a lever connected to each arm to move the same, and a fixed obstruction to successively engage the levers at each revolution of the wheels.

2. In an equalizer for wire fence machines, a rotative shaft, a series of wheels of equal circumference fixed on said shaft and having recesses in the side of the rim, bridge bars spanning the recesses and having inclined surfaces, grippers movable in the recesses and traversing the inclined surfaces of the bridge bars, springs to move the grippers in one direction, levers to move the grippers in the opposite direction, and fixed segments to engage the levers.

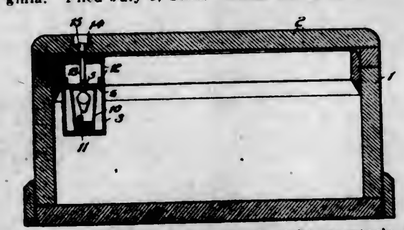
3. In an equalizer for wire fence machines, a rotative shaft, a series of grooved wheels fixed on the shaft, each

wheel having a series of side recesses in its rim, bridge bars spanning the recesses and having inclined surfaces opposite the same, radially disposed and pivoted arms in the recesses, springs attached to the arms to move the same in one direction, bell crank levers connected to the arms to move the same in the other direction, and fixed segments to engage the levers.

4. In an equalizer for wire fence machines, a rotative shaft, a series of grooved wheels fixed on the said shaft, each wheel having a series of side recesses in its rim, bridge bars spanning the recesses and having inclined surfaces opposite the same, gripper plates opposite the bridge bars, radially disposed pivoted arms movable in the recesses, a spring engaging each arm to move the same in one direction, a lever to move each arm in the other direction, and fixed segments to successively engage the levers on each wheel.

5. An equalizer for wire fence machines, consisting of a rotative shaft, a series of grooved wheels fixed on said shaft, each wheel having side recesses in its rim, bridge bars spanning the recesses and having inclined surfaces opposite the same, gripper plates opposite the bridge bars, radially disposed arms pivoted to the wheel and movable in the recesses, springs attached to the arms at one end and to the wheel at the other end, bell crank levers pivoted on the bridge bars, each lever having one member connected to an arm and the other member projecting outward, and fixed segments to successively engage the levers on the respective wheels.

854,617. GAS-GENERATOR FOR FUMIGATION. SAMUEL F. AARON and SAMUEL H. HAMILTON, Philadelphia, Pa.; said Aaron assignor to The Scientific Preservation Company, Philadelphia, Pa., a Corporation of West Virginia. Filed July 3, 1906. Serial No. 324,563.



Claim.—1. In a fumigator, an air tight receptacle, having a normally closed opening, a pair of frangible vessels fixed within said receptacle one below the other, the upper one of said pair having an orifice in alinement with that of the inclosing receptacle and each adapted to contain liquid chemicals for generating gas, and a hand operated rod adapted for insertion through the opening in said inclosing receptacle and in the orifice of the upper vessel of the pair for breaking each of said vessels in succession the upper one first for causing the mixing of its contents with that of the other for producing gas within said air tight receptacle.

2. In a fumigator, an air tight receptacle, a box located therein, and having wall openings, a mixing jar within said box, a necked vessel suspended within said jar for containing a gas producing chemical, a removable stopper closing said neck, a closed vessel depending from said suspended vessel for containing a gas producing chemical, and a rod adapted to be thrust within and through both vessels in succession to break and open them for causing the chemicals to be delivered in a mixed condition therefrom into the jar, whereby a fumigating gas is produced and caused to pass from the box into the closure.

3. In a fumigator, an air tight receptacle, a device located therein for generating a fumigating gas and comprising a box having wall openings, a mixing jar within said box, a pair of connected vessels one depending from the other, both adapted to contain a liquid chemical, and both closed, and a rod adapted to be driven within and through both vessels to open them to cause the chemicals to be delivered in a mixed condition therefrom into the jar.

4. In a fumigator, a fumigating device comprising a box having openings in its walls, a frangible necked vessel for containing a liquid chemical, means for suspending said vessel by its neck within the box, a fabric vessel connected to and depending from the exterior walls of the frangible vessel, each vessel adapted to contain a chemical, the neck of the upper vessel closed by a stopper, and the lower vessel closed by its connection with the upper vessel, an open mixing jar within which the connected vessels are suspended, and means adapted to be inserted into and forced through the walls of the connected vessels for breaking them to cause their contained chemicals to be mixed and delivered into the mixing jar.

5. In a fumigator, a fumigating device comprising a box having openings in its walls, vessels for containing a liquid chemical suspended one above the other, the lower one depending from the walls of the upper one and both rendered air tight, an open mixing jar within which the chemical containing vessels are suspended, and means whereby the connected vessels are caused to be broken open in succession to cause the mixing of the chemical in one with the chemical of the other and the delivery of the mixed chemicals into the mixing jar.

6. In a fumigator, a fumigating device comprising a box having openings, vessels for containing gas producing chemicals suspended one above the other within said box, an open mixing jar into which the contents from said vessels are caused to be delivered, an air tight chest containing said fumigating device and having an opening in vertical alinement with the suspended vessels, a removable plug for said chest opening, and a removable stopper for the upper of the suspended vessels, and means for causing the stopper of said vessel to be driven therein in the operation of breaking the said vessels in succession.

7. In a fumigator, an air tight chest having an opening in its top normally closed by a plug, a box located within said chest and having wall openings, an open mixing jar within said box, a frangible closed vessel suspended within said jar for containing a gas-producing chemical, a fabric vessel depending from said suspended vessel for containing a gas-producing chemical, and a rod adapted to be thrust through the top opening in the chest and through both vessels to break and open them in succession for causing the chemicals to be delivered in a mixed condition therefrom into the jar for the purpose stated.

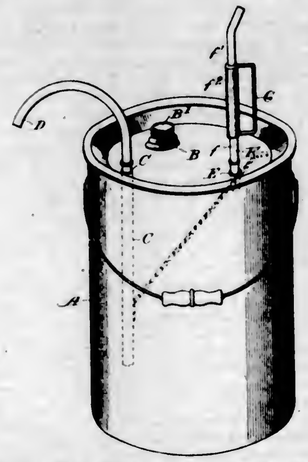
8. In a fumigator, an air tight receptacle having a top opening normally closed by a plug, a box fixed within said receptacle having an opening in alinement with that of the receptacle, a pair of frangible vessels within the box one below the other the upper one of said pair having an orifice in alinement with that of the box and each adapted to contain chemicals for generating gas, and a hand operated rod adapted for insertion through the openings in said inclosing receptacle, the opening in the box and the orifice of the upper vessel of the pair for breaking each of said vessels in succession the upper one first for causing the mixing of their contents for producing gas within said receptacle.

9. In a fumigator, an air tight receptacle, a group of three vessels therein each for containing a chemical, one below the other the upper pair sealed with the chemicals therein, the lower vessel open at its top and within which the pair of closed vessels depend, and a rod hand operated from outside of the chest for piercing the closed pair to break the bottom of each the upper one first for causing the chemicals to be mixed together for generating gas.

10. A receptacle or chest having an opening, a plug closing said opening, a frangible vessel having an open neck and adapted to contain a gas producing chemical, a stopper closing said neck, a sealed vessel depending from the frangible vessel, and a vessel within which the connected chemical containers are supported, the plug, the stopper and the connected vessels being in alinement, and a rod of suitable dimensions adapted to be passed through the chest opening for breaking through the sealed vessels in succession and allow the opening in the chest to be sealed.

11. In a fumigator, an air tight receptacle having an opening, a pair of frangible vessels each adapted to contain a gas producing chemical, each closed and connected together one above the other, means for supporting said vessels in vertical alinement with the opening in the receptacle, and means applied through said opening for breaking said vessels and means for closing said opening for the purpose stated.

854,618. OIL OR GASOLENE CAN. THEOPHILUS W. ALEXANDER, Burlington, Iowa. Filed Feb. 28, 1907. Serial No. 359,866.



Claim.—1. In a device of the character described, the combination, with a can or tank and a discharge pipe, of a sectional air tube having two rigid sections and a flexible connecting section, and rigid connection between said rigid sections for supporting said sections in proper alinement.

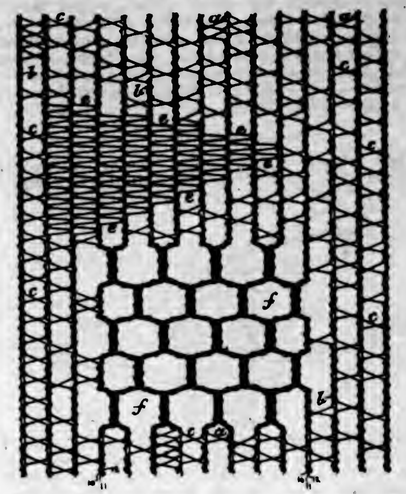
2. The combination, with a can or tank, of a discharge pipe, an air tube or pipe comprising two rigid sections and an intermediate flexible and compressible section, and a yoke connecting said rigid sections of said air tube and supporting them rigidly in proper alinement whereby said flexible section is relieved of strain thereon.

854,619. LACE. THOMAS ANDERSON, Glasgow, Scotland. Filed Jan. 26, 1905. Serial No. 242,758.

Claim.—1. A twist lace fabric made upon a curtain lace machine, in which are produced several different effects, the fabric comprising a series of pillars, each formed of three longitudinal threads and a bobbin thread for binding these together, at least one of the longitudinal threads differing from the others in size, the longitudinal threads being caused to cross over from one pillar to the next to produce the desired effects, and each of the longitudinal threads being thus caused to cross over and be utilized in the production of the design in the lace fabric, substantially as set forth.

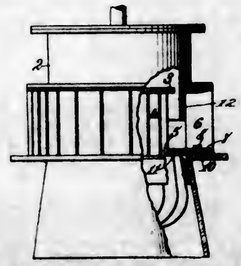
2. A twist lace fabric made upon a curtain lace machine, in which is produced a cross net effect, the fabric comprising a series of pillars, each formed of three threads—a warp thread, a relatively thin spool thread and a relatively thick spool thread—and a bobbin thread for binding together the said three threads, the cross net effect being produced by causing the warp thread from one pillar to cross over and combine with the threads of an adjacent pillar, and the thin spool thread of such adjacent pillar to cross over and combine with the threads of the first-mentioned pillar, substantially as set forth.

3. A twist lace fabric made upon a curtain lace machine, comprising pillars each formed of three longitudinal threads only, to wit, a thick spool thread, a thin spool thread and a warp thread—and a bobbin thread for uniting the said three threads—the fabric having in one part two adjacent pillars combined to form a combination pillar effect, and having in another part a warp thread of one pillar combined with an adjacent pillar and the thin spool thread of such adjacent pillar combined with the



first-mentioned pillar to form a cross net effect, and having in another part of the fabric a thin spool thread combined with an adjacent pillar and its own pillar to form Swiss effects, substantially as set forth.

854,620. TURBINE ATTACHMENT. WALTER C. AYLOR, Madison Mills, Va. Filed Feb. 13, 1906. Serial No. 300,883.

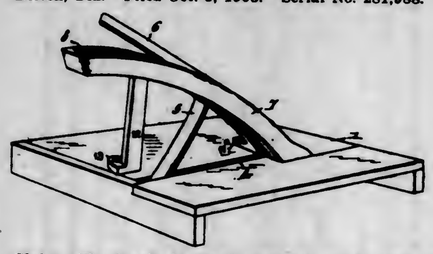


Claim.—1. The combination of a turbine wheel comprising vertically disposed buckets having horizontally formed shoulders, a casing provided with obliquely disposed chutes for directing streams of water against said buckets, and a clearing device extending through one of the chutes, provided with a flange depending from the inner end thereof, said flange being disposed angularly to the shoulders and being adapted to free the same of foreign matter on the rotation of the wheel.

2. In a turbine, the combination of a turbine wheel comprising vertically disposed buckets each having a horizontally formed shoulder, a casing for the wheel provided with obliquely disposed chutes for directing streams of water against said buckets, an obliquely disposed clearing device extending through one of the chutes and provided with a longitudinal slot, and a screw extending through said slot and tapped into the casing, the inner end of said clearing device having a down turned flange angularly disposed with respect to and adapted to clear said shoulders of foreign matter on the rotation of the wheel.

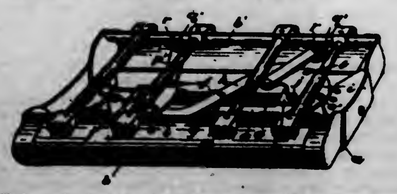
3. In a turbine, the combination of a turbine wheel comprising vertically disposed buckets, each having a horizontally formed shoulder, a casing for the wheel provided with obliquely disposed chutes for directing streams of water against said buckets, an obliquely disposed plate extending through one of the chutes, fitting flatwise against the bottom thereof and having a longitudinal slot, and a screw extending through said slot and tapped into the casing, the inner end of said plate having a downturned flange angularly disposed with respect to and adapted to sweep said shoulders free of foreign matter on the rotation of the wheel.

854,621. VEGETABLE-CUTTER. ROBERT A. BAGGETT, Belton, Tex. Filed Oct. 9, 1905. Serial No. 281,988.



Claim.—The herein-described vegetable cutter comprising the base having the transverse slot and recessed on its under side to clear the cuttings, the segmental guide frame disposed transversely on and extending vertically above the base, said guide frame resting at one end directly on the base and having the lateral lug at said end bearing on and secured to the base; having the depending supporting leg near and for its upper end, provided with the foot bearing on and secured to the base; said frame being further provided with the slot which alines vertically with that in the base and is closed at its ends, the blade pivoted at one end to the frame, in the slot thereof, and having its outer end movable and guided in the slot of the frame, and the operating handle for said blade, pivoted to the outer end thereof and free to swing and lie in the slot of the segmental frame and to be supported by the closed upper end of said slot when not in use.

854,622. LOOSE-LEAF BINDER. DANIEL S. BAIRD, Toronto, Ontario, Canada, assignor to The Business Systems Limited, Toronto, Canada, a Corporation of Canada. Filed June 20, 1906. Serial No. 322,624.



Claim.—1. A loose leaf binder comprising in its construction a binder back consisting of a middle member and two laterally movable side members located at opposite sides of the middle member, an operating screw mounted in bearings connected to the binder back, two wrist plates pivoted within the binder back, a slide-nut movable on the operating screw, a link actuated by the slide-nut and pivotally connected with the wrist plates whereby it will oscillate them during the movement of the slide-nut, two sets of links pivotally connected to the wrist plates on opposite sides of the wrist plate pivots and pivotally connected to their respective movable side members at substantially right angles to the length of the operating screw whereby the links of each set may move in substantially parallel planes during the oscillation of the wrist plates and during said movement constantly exert their lines of force on said movable side members at substantially right angles to the length of the screw.

2. A loose leaf binder comprising in its construction a binder back consisting of a middle member and two laterally movable side members located at opposite sides of the middle member, an operating screw mounted in bearings connected to the binder back, two wrist plates pivoted within the binder back, a slide-nut movable on the operating screw, a slideway in the slide-nut arranged transversely to the length of the operating screw, a link, a tongue for the link slidably contained within the slideway, said link being pivotally connected with the wrist plates whereby it will oscillate them during the movement of the slide-nut on the operating screw, two sets of links pivotally connected to the wrist plates on opposite sides of the wrist plate pivots, and pivotally connected to their respective movable side members at substantially right angles to the length of the operating screw.

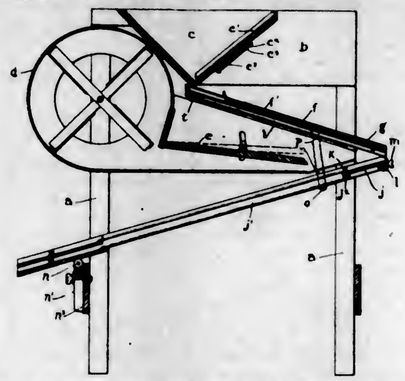
3. A loose leaf binder comprising in its construction a binder back consisting of a middle member and two laterally movable side members located on opposite sides of the middle member, an operating screw operatively mounted in the binder back, two wrist plates pivoted within the binder back, a slide-nut movable on the operating screw, a link actuated by the slide-nut and pivotally connected with the wrist plates whereby it will oscillate them during the movement of the slide-nut and two sets of links pivotally connected to the wrist plates and to their respective movable side members.

4. A loose leaf binder comprising in its construction a binder back consisting of a middle member, and two laterally movable side members located at opposite sides of the middle member, an operating screw mounted in bearings connected to the binder back, two wrist plates pivoted within the binder back, a slide-nut movable on the operating screw, a slideway in the slide-nut arranged transversely to the length of the operating screw, a link, a tongue for the link slidably contained within the slideway, said link being pivotally connected with the wrist plates whereby it will oscillate them during the movement of the slide-nut on the operating screw, two sets of links pivotally connected to the wrist plates on opposite sides of the wrist plate pivots, and pivotally connected to their respective movable side members at substantially right angles to the length of the operating screw.

5. A loose leaf binder comprising in its construction a binder back, consisting of a middle member, and two laterally movable side members located at opposite sides of the middle member, an operating screw mounted in bearings connected to the binder back, two wrist plates pivoted within the binder back, guards within the binder back at the sides of the operating screw, a slide-nut movable on the operating screw and engaging the guards, a slideway in the slide-nut transverse to the length of the operating screw, a link, a tongue for the link contained in the slideway whereby the slide-nut can actuate the link during its movement on the operating screw, said link being pivotally connected with the wrist plates whereby it will oscillate them during its movement with the slide-nut, and two sets of links having their inner ends pivotally connected to the wrist plates on opposite sides of the wrist plate pivots and having their outer ends pivotally connected to their respective movable side members.

854,623. GRAIN CLEANER AND SEPARATOR. THOMAS M. BALES, Dublin, Ind. Filed Feb. 14, 1907. Serial No. 357,408.

Claim.—1. In a grain cleaner and separator, the combination of a hopper, an inclined screen, having an upper smooth surface extension provided with a transverse vertically adjustable guard plate at its upper end, and a transverse zig-zag series of stop pins at its lower end between the same and the screen, means for delivering the grain from the hopper upon said smooth surface extension, a fan casing having a throat adapted to deliver the blast upon said smooth surface extension of the screen, a fan in said casing, and means for vibrating the screen.



2. In a grain cleaner and separator, the combination of a hopper, a riddle upon which the grain is delivered from the hopper and having means in connection therewith for separating oats from grain of rounder formation, said riddle having a grain board below the same, a screen having an upper smooth surface extension upon which the grain is delivered from said grain board, said extension having a transverse vertically adjustable guard plate at its upper end, and a transverse zig-zag series of stop pins at its lower end between the same and the screen, a fan casing having a throat adapted to deliver the blast upon the smooth surface screen extension, a fan in said casing and means for vibrating the screen and riddle.

3. In a grain cleaner and separator, the combination of a hopper, a riddle of about one fourth inch in thickness upon which the grain is delivered from the hopper, said riddle having a cover separated therefrom by about one fourth inch, and a grain board, a screen having an upper smooth surface extension upon which the grain is delivered from said grain board, said extension having a transverse vertically adjustable guard plate at its upper end, and a transverse zig-zag series of stop pins at its lower end between the same and the screen, a fan casing having a throat adapted to deliver the blast upon the smooth surface screen extension, a fan in said casing, means for vibrating the screen and riddle, and means for delivering the grain from the hopper upon said smooth surface extension.

4. In a grain cleaner and separator, the combination of a hopper, an inclined screen having an upper smooth surface extension provided with a transverse vertically adjustable guard plate at its upper end, and a transverse zig-zag series of stop pins at its lower end between the same and the screen, means for delivering the grain from the hopper upon the smooth surface screen extension, a fan casing having an extension of its lower wall forming the bottom wall of the blast throat, a wind board having a hinged connection at one end thereof adjacent to the fan casing and forming the upper wall of such throat, said blast throat being adapted to deliver the blast upon the smooth surface screen extension, a fan in said casing, and means for vibrating the screen.

5. In a grain cleaner and separator, the combination of a hopper, an inclined screen having an upper smooth surface extension provided with a transverse vertically adjustable guard plate at its upper end and a transverse zig-zag series of stop pins at its lower end between the same and the screen, means for delivering the grain from the hopper upon the smooth surface screen extension, a fan casing having a throat adapted to deliver the blast upon the smooth surface screen extension, a fan in said casing, and means for vibrating the screen, and means for altering the inclination of the screen, with relation to the direction of the blast.

6. In a grain cleaner and separator, the combination of a hopper, an inclined screen having an upper smooth surface extension provided with a transverse vertically adjustable guard plate at its upper end, and a transverse zig-zag series of stop pins at its lower end, means for delivering the grain from the hopper upon the smooth surface screen extension, a fan casing having a throat adapted to deliver the blast upon the smooth surface extension of the screen, a fan in said casing, means for vibrating the screen including a transverse rod upon which the screen is supported at its upper end, and a vertically adjustable roller upon which the screen rests at its lower end.

854,624. MEANS FOR THROWING LIFE-LINES. CHARLES H. BANKS, Norfolk, Va. Filed Feb. 2, 1907. Serial No. 355,515.



Claim.—1. In a life line device, the combination with a cartridge shell adapted for the reception of explosives, of a projectile mounted in the same, and a line loosely mounted in said cartridge shell and having its opposite ends connected to said shell and to said projectile, substantially as described.

2. In a life line device, the combination with a cartridge shell adapted for the reception of an explosive, of a hollow projectile mounted in the same, a line connected to and coiled in said projectile and having its rear end connected to the cartridge shell, whereby upon the explosion of the charge in the latter the projectile in its flight unwinds the line, substantially as described.

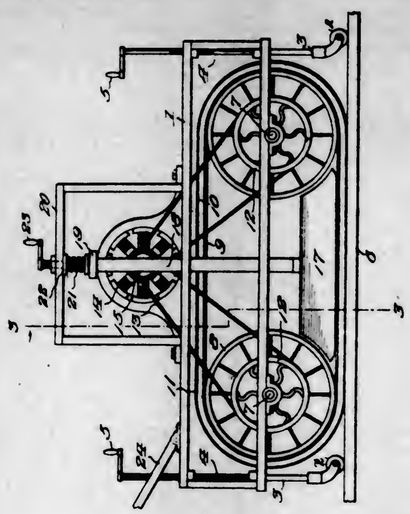
3. In a life line device, the combination with a cartridge shell adapted for the reception of an explosive, of a hollow projectile mounted therein, a line coiled in said hollow projectile, and an auxiliary metallic line mounted in said cartridge shell and connected to the latter and to the line in the projectile, substantially as described.

4. In a life line device, the combination with a cartridge shell adapted for the reception of an explosive, of a line mounted in said shell and connected thereto, a projectile also mounted in said shell and connected to said line, and a whistle mounted in the forward end of the projectile, substantially as described.

5. In a life line device, the combination with a cartridge shell adapted for the reception of an explosive, of a metallic line mounted in the same and connected thereto, a hollow projectile also mounted in said cartridge shell, a line mounted in said projectile and connected to the metallic

line in the cartridge shell, and a whistle mounted in said projectile, substantially as described.

854,625. SANDPAPERING AND POLISHING MACHINE. MICHEAL L. BEAL, Pasadena, Cal. Filed Jan. 23, 1906. Serial No. 297,499.



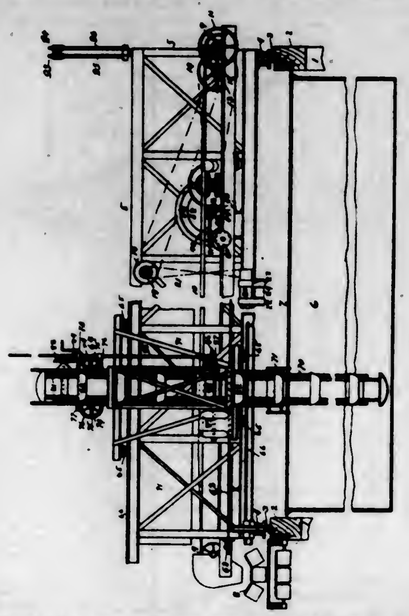
Claim.—1. A machine of the character described comprising a frame, wheeled supports for the frame, means for vertically adjusting the frame on said supports, guides upon the frame, a traveling dressing belt movable around said guides, a shoe arranged between the guides for exerting pressure on the working stretch of the belt, springs acting on the shoe, a pressure regulating element bearing on the springs, and a screw shaft for adjusting said pressure regulating element.

2. A machine of the character described comprising a frame, wheeled supports for the frame, means for vertically adjusting the frame on said supports, guides upon the frame, a traveling dressing belt movable around said guides, a shoe arranged between the guides for exerting pressure on the working stretch of the belt, a vertically adjustable carrier frame supporting said shoe, springs for imparting downward pressure on said frame, the latter being provided with a head bar against which the springs bear, and a screw shaft acting on the bar for compressing said springs to regulate their pressure on the shoe.

3. A machine of the character described comprising a main frame, wheeled supports therefor, means for vertically adjusting said frame on said supports, guides upon the frame, a traveling dressing belt movable around said guides, a shoe arranged between the guides for exerting pressure on the working stretch of the belt, a vertically adjustable carrier frame supporting said shoe, said frame being provided with a head piece, a movable bar arranged above said head piece, springs interposed between the bar and head piece, and a screw shaft acting on the bar for compressing said springs to regulate their pressure on the shaft.

4. A machine of the character described comprising a frame, wheeled supports for the frame, means for vertically adjusting the frame on said supports, guides upon the frame, a traveling dressing belt movable around said guides, a shoe arranged between the guides for exerting pressure on the working stretch of the belt, spring means exerting pressure on the shoe, and means for regulating the pressure thereof.

854,626. EXCAVATOR. HIRAM W. BLAISDELL, Los Angeles, Cal. Filed Aug. 22, 1905. Serial No. 275,303.



Claim.—1. A traveling structure provided with an actuating shaft, an elevator having a cable connected with said shaft, a worm wheel on said shaft, a worm shaft carrying a worm meshing with said worm wheel, a friction wheel driving said worm shaft, and a motor carrying a friction pulley constructed to drive said wheel in either direction, whereby said elevator is caused to travel back and forth.

2. A traveling structure provided with propelling mechanism, an elevator supported on said structure, automatic means for progressing said elevator longitudinally of said structure and devices for effecting the reversal of said elevator progression.

3. A traveling structure provided with propelling mechanism, an elevator supported on said traveling structure, automatic means for reciprocating the elevator in a transverse direction and mechanism for effecting the reverse movement of the elevator in advance of the movement of the traveling structure.

4. A traveling structure provided with propelling mechanism, an elevator supported on said traveling structure, automatic means for moving said elevator forward and back in a transverse direction and automatic means to start said traveling structure after the movement of said reciprocating elevator.

5. A traveling structure provided with propelling mechanism, an elevator supported on said traveling structure, a drum shaft having connection therewith and with said elevator and means for operating said drum shaft to start said elevator in a reverse direction in advance of said propelling mechanism.

6. A traveling structure provided with propelling mechanism, receptacles, an elevator, means for effecting the transverse travel of said elevator and devices for automatically reversing said travel by contact with said receptacle.

7. A traveling structure provided with propelling mechanism, circular receptacles, a reciprocating elevator, means for effecting the reciprocation thereof and instrumentalities to start said means in advance of said propelling mechanism to effect the clearance of said elevator from said receptacle.

8. A traveling structure provided with propelling mechanism, receptacles, an elevator, means for reciprocating said elevator and contact devices connected with said elevator constructed to contact with said receptacles and effect the reversal of the transverse travel of said elevator.

9. A traveling structure provided with an elevator, a motor, actuating mechanism driven by said motor to effect the transverse travel of said elevator, contact devices and connection between said motor and devices, whereby the reversal of said transverse travel of said elevator is accomplished.

10. A traveling structure provided with an elevator, means for effecting the transverse travel of said elevator, a motor to drive said means, receptacles, contact devices connected with said elevator constructed to contact with said receptacles to effect the reversal of the transverse travel of said elevator.

11. A supporting traveling structure provided with an elevator, a movable motor, actuating mechanism driven by said motor to effect the transverse travel of the elevator, an electric switch, electrical connections between said motor and switch, and means for automatically throwing said switch at the limit of the transverse travel of said elevator in either direction.

12. A supporting traveling structure provided with a motor, actuating mechanism driven by said motor to effect the transverse travel of the elevator, an electric switch, electrical connections between said motor and switch and contact devices carried by said elevator to operate said switch at the limit of the travel of said elevator in either direction.

13. A traveling structure provided with an elevator, means to make effective the operation of the elevator in the upward direction and an attachment for said elevator to make effective the operation of said elevator in the downward direction.

14. A traveling structure provided with an elevator, mechanism to operate said elevator upon material in a rising direction and means to effect such operation of said elevator in the descending direction.

15. A traveling structure provided with means for effecting the progression thereof, an elevator supported on said structure, mechanism for effecting the travel of said elevator in a horizontal plane, and means for automatically reversing the direction of said elevator at the limit of its travel.

16. A traveling structure provided with an elevator, automatic contact means for effecting the travel of said elevator in a horizontal plane, devices for raising and lowering said elevator in a vertical plane and mechanism for operating said elevator to raise material.

17. A traveling structure provided with an elevator, automatic contact means for effecting the transverse travel of the elevator back and forth, and adjustable mechanism for starting and stopping the progression of said structure after said elevator has begun its reverse travel.

18. A traveling structure provided with an elevator, means for raising and lowering said elevator, automatic contact devices for effecting the transverse travel of the elevator forward and back, means for starting and stopping the progression of said traveling structure relative to the transverse travel of said elevator.

19. Receptacles, a traveling structure supporting an elevator, means for raising and lowering said elevator, automatic contact devices for effecting the transverse travel of the elevator forward and back, a conveyer on the traveling structure for receiving material from the elevator, means for starting and stopping the progression of said traveling structure relative to the transverse travel of said elevator.

20. A traveling structure provided with propelling mechanism, an elevator, automatic contact means for reciprocating the elevator in a transverse direction, mechanism for effecting the reverse movement of the elevator in advance of the movement of the traveling structure, a conveyer on the traveling structure receiving the material from the elevator.

21. Receptacles, a traveling structure provided with propelling mechanism, an elevator supported on said traveling structure, automatic contact means for moving said elevator forward and back in a transverse direction, a conveyer on said traveling structure receiving material from said elevator, and means to start said traveling structure after the commencement of the forward or backward motion of said elevator.

22. Receptacles, a traveling structure provided with propelling mechanism, an elevator supported on said traveling structure, means for raising and lowering said elevator, automatic contacting means for effecting the transverse travel of said elevator, devices for automatically reversing said traveling structure for receiving material from said elevator, and means for effecting the reverse movement of the elevator in advance of the movement of the traveling structure.

23. A traveling structure provided with propelling mechanism, receptacles, an elevator supported by said structure, means for effecting the transverse travel of said elevator, devices for automatically reversing said travel and a conveyer for receiving material from said elevator.

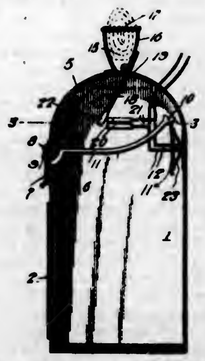
24. Receptacles, a traveling structure provided with propelling mechanism, an elevator supported by said structure, means for raising and traversing said elevator, automatic means for effecting the transverse travel of said elevator and devices for reversing said travel.

25. Receptacles, a traveling structure provided with propelling mechanism, an elevator supported by said structure, means for raising and lowering said elevator, automatic means for effecting the transverse travel of said elevator, devices for reversing said travel and a conveyer on said traveling structure for receiving material from said elevator.

26. A traveling structure provided with an elevator traveling longitudinally thereof, automatic devices for effecting the reversal of said travel and means for raising said devices.

27. A traveling structure provided with propelling mechanism, an elevator supported by said structure, means for effecting the transverse travel of said elevator, devices for automatically reversing said travel, a conveyer on said traveling structure for receiving material from said elevator and a conveyer on fixed supports for receiving material from said conveyer on said traveling structure.

854,627. LETTER-BOX. NORMAN T. CHENEY, Batavia, Ill. Filed Mar. 10, 1906. Serial No. 305,353.

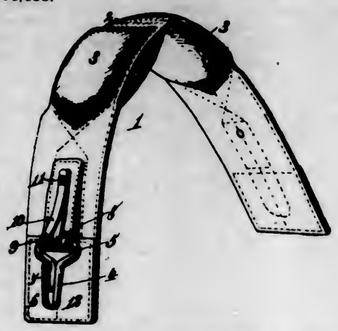


Claim.—1. The combination with a letter box, of an exteriorly arranged mail holder comprising a fixed jaw, a hinged jaw, means for urging one jaw toward the other, an arm carried by the hinged jaw and provided with a contact piece, an electrical circuit including an alarm, and a pair of contact plates in circuit arranged within the sweep of the contact piece of said arm.

2. The combination with a letter box, of a mail holder arranged exteriorly thereof and embodying a stationary jaw, a hinged jaw, means for pressing the hinged jaw normally toward the stationary jaw, an arm carried by the hinged jaw and provided with a contact piece, an electrical

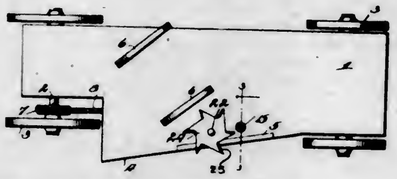
circuit including an alarm, and a pair of spring-supported contact plates in circuit arranged at a distance from each other but within the sweep of the contact piece carried by said arm.

854,628. BACK-BAND FOR HARNESS. BENJAMIN W. CLENDINEN, Dothan, Ala. Filed Mar. 17, 1906. Serial No. 306,618.



Claim.—A trace carrier comprising an eye and hooks formed of a single piece of material, the shanks of the hooks being in the plane of the eye, of unequal length and parallel, the bills of the hooks arranged transverse to said plane.

854,629. CORN-HARVESTER. MILES COOK, Ottawa, Kans. Filed Nov. 17, 1905. Serial No. 287,841.



Claim.—In a corn harvesting machine, a table mounted on transporting wheels and projected at one side transversely beyond the wheels, the outer edge of the projecting portion of the table being outwardly and rearwardly inclined and adapted to contact with the row of stalks to be cut, a knife fixed on the projecting portion of the table at a point adjacent the middle of the inclined edge, a shaft journaled for rotation on the table near said knife and carrying a rotary knife adapted for coöperation with the fixed knife to cut the stalks, a second rotary shaft rising vertically from the table, a collecting member carried by the second shaft and having arms adapted to engage the stalks and direct them into the path of the rotary knife, gear connections between the shafts for rotating the same in relatively reverse directions, bearings beneath the table, a stub shaft journaled in said bearings and having gear connection, with one of the first named shafts, and connections between one of the transporting wheels and stub shaft for driving the latter to transmit motion to the rotary knife and collecting member.

854,630. POCKET CHECK-PUNCH. ROBERT W. COX and JOHN H. ONTRICH, Washington, D. C. Filed Feb. 9, 1907. Serial No. 356,589.

Claim.—1. A check punch comprising a lower disk having a bed portion and a fulcrum adjacent thereto, and an upper disk carrying punching dies, said upper disk being rotatable upon the lower disk and adapted to have one edge pressed down into contact with the bed portion of the lower disk.

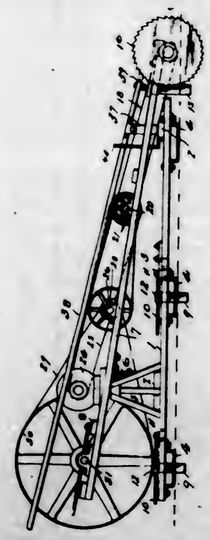
2. A check punch comprising a lower disk having a fulcrum and a roughened surface adjacent thereto, an upper disk rotatable upon the lower disk, and having its circumferential portion inclined, said inclined portion being provided with punching dies.



3. A check punch comprising the upper and lower disks pivotally connected, the lower disk having a lip punched therefrom, said lip being provided with teeth, the upper disk having its central portion radially grooved, the teeth of the lip being adapted to engage the radial slots for the purpose of holding the upper disk, said upper and lower disks being provided with means for punching the check, as set-forth.

4. A check punch comprising the upper and lower disks pivotally connected, the lower disk having a bed portion punched therefrom and also two transverse lips, one of said lips being provided with teeth, the upper disk having its central portion radially grooved and its circumferential portion inclined, said circumferential portion carrying the dies, all of said parts being constructed, arranged and adapted to operate substantially as shown and described.

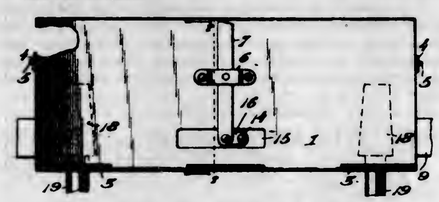
854,631. ICE-CUTTING MACHINE. WILLIAM H. CRAGHEAD, Brigham, Utah. Filed May 15, 1906. Serial No. 316,999.



Claim.—1. An ice cutting machine comprising a runner frame, adjustable guiding blades vertically movable in said frame, a tilting saw frame mounted on the runner frame, and a saw, windlass and operating means mounted so as to substantially balance on said saw frame.

2. A runner frame comprising two hinged sections one section being provided with guiding means, a trestle upon one of the sections, a saw frame pivoted upon said trestle, power mechanism, windlasses and saw mounted to balance on the saw frame, and means for raising and lowering the end of the saw frame.

854,632. HOE-SHARPENING DEVICE. THOMAS B. CRIDDLE, Waxahachie, Tex. Filed July 14, 1906. Serial No. 326,235.



Claim.—1. In a hoe sharpening device, a pair of leaves spaced apart at their upper edges, and a file-carrying member supported for reciprocation upon the inner face of one of the leaves.

2. A hoe sharpening device including a pair of leaves connected together at their lower edges and spaced apart at their upper edges, a file-carrying member supported for reciprocation upon the inner face of one of the leaves, and means for operating said file-carrying member.

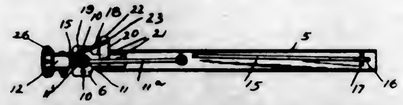
3. A hoe sharpening device including a pair of leaves hingedly connected along their lower edges and spaced apart at their upper edges, a file carrying member supported for reciprocation upon the inner face of one of the leaves, a file adjustably connected to said member, and means for operating the latter.

4. A hoe sharpening device including a pair of leaves connected together along their lower edges and spaced apart at their upper edges, a file-carrying member supported for reciprocation in ways upon the inner face of one of the leaves and having flanges at the ends thereof, a file blade supported for vertical adjustment with said flanges, a pin extending from the file-carrying member through a slot in the leaf upon which it is mounted, and an operating lever pivotally supported upon said leaf and suitably connected with the pin of the file-carrying member.

5. A hoe sharpening device including a pair of leaves hingedly connected along their lower edges, means for spacing and separating the upper edges of said leaves, a file-carrying member supported for reciprocation upon the inner face of one of the leaves, and hoe-blade supporting springs connected with one of the leaves.

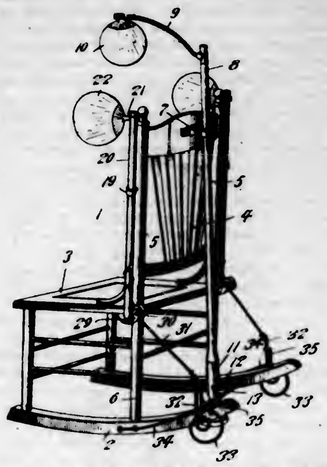
6. A hoe sharpening device including a pair of leaves supported at an angle with one another one of said leaves having a hoe-shank receiving notch, a reciprocatory file-carrier, and springs adapted to support a hoe blade in position to be operated upon.

854,633. CLEVIS. GEORGE H. DARRINGTON, Honey Creek, Iowa. Filed Jan. 29, 1907. Serial No. 354,044.



Claim.—The combination with a plow beam and its clevis, of a plate adjustably connected with the clevis and provided with a plurality of openings, a draft beam having one of its ends bifurcated for the reception of the plate, bolts adjustably engaged through the bifurcated end of the beam and the plate, a brace rod pivotally connected with the end of the beam opposite its bifurcated end and with the plow beam, said rod being disposed in a horizontal plane, a bracket connected with the clevis by means of one of the clevis bolts, a brace rod secured to the draft beam at its lower end and inclined upwardly and engaged at its opposite end through an opening formed in the bracket, said end of the rod being threaded, and a nut engaged upon the rod, said draft beam being provided with a plurality of openings for the interchangeable engagement of a clevis bolt.

854,634. FAN ATTACHMENT FOR CHAIRS. JOSEPH F. DORRIS, Overton, Tex., assignor of one-half to Spencer Florey, Overton, Tex. Filed May 26, 1906. Serial No. 318,973.

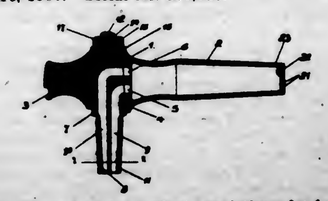


Claim.—1. A fan attachment for rocking chairs comprising a rotary operating shaft having a tubular portion, a spring arranged in said portion and connected for rotating the shaft in one direction, a second spring attached to the chair rocker and having a vertically movable arm adapted for reciprocation during rocking motion of the chair, and a flexible connection engaged with said arm and with the shaft, said connection being wound on the shaft and adapted for rotating the same in one direction against the action of the first named spring.

2. A fan attachment for rocking chairs comprising a rotary operating shaft, a spring operatively connected with the shaft for rotating the same in one direction during rearward movement of the chair, a second spring having an arm adapted for reciprocation during rocking motion of the chair, and a connection between said arm and shaft for rotating the latter in the other direction against the action of the first named spring.

3. A fan attachment for rocking chairs comprising a bearing attached to the chair and provided with a non-circular opening, a rotary fan operating shaft sustained on the chair and having a tubular portion, a spring arranged in said portion and connected at one end with the shaft, a pin rotatably mounted in the tubular portion and engaged with the other end of the spring, said pin having a non-circular portion fitted in said bearing opening for rotation relative to the shaft, a second spring attached to the chair rocker and having an arm arranged for reciprocation during rocking movement of the chair, and a connection between the arm and shaft for rotating the latter against the action of the first named spring.

854,635. FAUCET. CASPER DUERST, Bellevue, Pa. Filed Feb. 16, 1907. Serial No. 357,737.

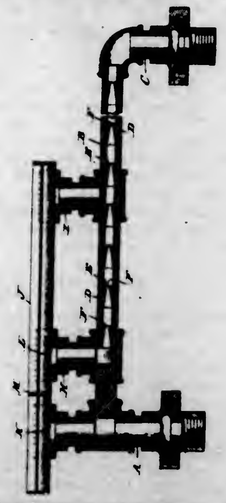


Claim.—1. A faucet or spigot consisting of a body having a hollow tapering stem, a hammer head carried by said

faucet body, said hollow stem having an opening formed adjacent to its end, a perforated plate mounted in the end of said stem and having an indentation for deflecting air or gas through said opening, said faucet body having a valve socket formed therein, a valve mounted in said socket and having a tapering shank, a resilient sleeve mounted upon said shank, said valve and shank having bores formed therein adapted to communicate with said hollow stem, means to retain said valve within said socket, and means to limit the movement of said valve within said socket.

2. A faucet or spigot consisting of a body having a socket formed therein, a hollow stem carried by said body, and communicating with said socket, said stem having an opening formed therein, a perforated plate mounted in the end of said stem and having an indentation for deflecting air or gas through said opening, a valve mounted in the socket of said faucet body and having a tapering shank, a resilient sleeve mounted upon said shank, said valve and shank having bores formed therein adapted to communicate with said hollow stem, means to retain said valve in said socket, and means to limit the movement of said valve within said socket.

854,636. LUBRICATOR. WILLIAM R. EICHENSER, Johnstown, Pa. Filed Jan. 16, 1906. Serial No. 296,339.



Claim.—1. In a lubricator of the character set forth, the combination of a pipe rising from the cross-head, a pipe leading to the wrist-pin, and a trough supported by said pipes, provided with openings in its bottom communicating with said pipes, and having a transverse partition between said openings.

2. In a lubricator, the combination of oil-conveying pipes, a trough supported by and communicating with the said pipes, and a partition within the trough between the points of communication with the said pipes, there being flanges at the upper edges of the trough extending inward to the medial line thereof and having the edges out of contact.

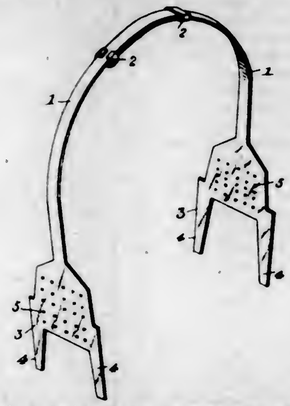
3. In a lubricator, the combination of a trough, pipes supporting said trough and communicating therewith and leading to the cross-head and wrist-pin respectively, and oil-arresters in the pipe leading to the wrist-pin.

4. A pipe mounted so as to reciprocate with the pitman of an engine, and adapted to convey oil to the points of use, there being an opening in the upper side of said pipe, and check valves in said pipe adapted to prevent the return of oil to said opening.

5. A pipe mounted to reciprocate with the pitman of an engine and adapted to convey oil to the points of use, there being an opening in the upper side of said pipe, and conical checks in said pipe arranged to prevent the return of oil to said opening.

6. A pipe mounted so as to reciprocate with the pitman of an engine and adapted to convey oil to the points of use, there being an opening in the upper side of the pipe, and check-valves or oil-arresters removably fitted in said pipe and arranged to prevent the return of oil to the said opening.

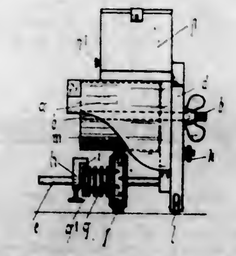
854,637. GUIDE FOR PLACING EYELETS IN HATS. REN W. FADDEN, Omaha, Nebr., assignor of one-half to B. Edward Zeiss, Omaha, Nebr. Filed Feb. 12, 1907. Serial No. 357,089.



Claim.—1. A device of the character described, having opposed plate-members equipped with numerous perforations and fixed to upward-extending connected together strap-members.

2. A device of the character described, having opposed plate-members provided with numerous perforations and fixed to upward-extending strap-members, each provided at its upper end with a clasping loop for adjustably holding the same together.

854,638. PAINTER'S UTENSIL. CHRISTOPH FISCHER, Cassel, Germany. Filed Feb. 15, 1907. Serial No. 357,569.

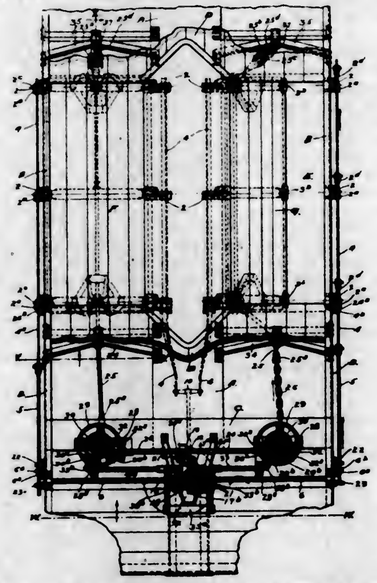


Claim.—1. A painter's utensil comprising in combination a guiding plate *d* provided with a middle slot (*c*) and lateral slots (h^1), a frame (*a*) adjustably fixed in the slots (h^1) of said guiding plate, a fixed spindle (*e*) provided on the lower part of said frame (*a*), a roller (*f*) for drawing colored lines movably and exchangeably mounted on said spindle (*e*) and provided with a boss (*g*) having ring grooves (g^1), a guide-holder (*h*) adapted to be adjustably fixed on said spindle (*e*), a catch (*i*) provided on said guide-holder and designed to catch into the ring grooves (g^1) of the boss (*g*) of said roller (*f*) and thus to hold the latter adjustably on said spindle (*e*), small

rollers (*l*) provided on the bottom of said guiding plate (*d*) and designed to easily guide the latter, a spindle (*b*) adjustably fixed above said spindle (*e*) in the slot (*c*) of said guiding plate (*d*), a coloring roller (*m*) exchangeably mounted on said spindle (*b*), and a color-containing reservoir placed above said coloring roller on said frame and having an outlet with a regulating device, for feeding said coloring roller, substantially as described and shown.

2. A painter's utensil comprising in combination with a guiding plate (*d*), a frame (*a*) adjustably fixed in said guiding plate, a roller (*f*) for drawing colored lines adjustably and exchangeably attached to said frame, and a spindle (*b*) adjustably fixed on said guiding plate; a gliding roller (*n*) for said color roller (*f*) placed above the latter and adjustably and exchangeably mounted on said spindle (*b*), substantially as described and shown.

854,639. DUMP-CAR DOOR MECHANISM. DAVID H. FOREMAN, Denver, Colo., assignor to The Herr Dump Car Company, Denver, Colo. Filed July 16, 1906. Serial No. 326,340.



Claim.—1. In a dump car, the combination of a dumping door, separable hinge members for supporting the door at its opening edge, and means for operating one set of hinge members for releasing and locking the opening edge of the door, said means including a rotary shaft and cooperating gears.

2. In a dumping car, the combination of a dumping door, separable hinge members for supporting the door at its opening edge, means for operating one set of hinge members including a rotary shaft, a gear fast thereon, a second gear meshing with the shaft gear, and a bar slidably mounted and connected in operative relation with the second gear.

3. In a dumping car, the combination of a dumping door, separable hinge members for supporting the door at its opposite edges whereby either edge may be released for opening purposes, a pair of independently operating rotary shafts, and connections including gears located between the respective shafts and the movable hinge members of the respective edges of the dumping door, whereby either door edge may be released at will for dumping purposes.

4. In a dumping car, the combination of a dumping door, separable hinge members for supporting the door at its opposite edges whereby either edge may be released for opening purposes, a pair of independently operating rotary shafts, connections including gears located between the respective shafts and the movable hinge members of the respective edges of the dumping door, whereby either door edge may be released at will for dumping purposes, and means for automatically locking one gear against movement when the other is actuated to release one of the door edges, until the actuated gear is returned to its normal position.

5. In a dumping car, the combination of a dumping door, separable hinge members for supporting the door at its opposite edges whereby either edge may be released for opening purposes, a pair of independently operating rotary shafts, connections including gears located between the respective shafts and the movable hinge members of the respective edges of the dumping door whereby either edge may be released at will for dumping purposes, means for automatically locking one gear against movement when the other gear is actuated to release one of the door edges, until the actuated gear is returned to its normal position, and means for automatically locking the hinge-member-actuating devices against the reverse movement, when shifted to the releasing position, until the released edge of the door has been raised to the closed position.

6. In a dump car, the combination of a dumping door having separable hinge members at its opposite edges, a distinct set of devices for actuating the movable hinge members of each door edge for locking and releasing purposes, and means for automatically locking one set of actuating devices when thrown to the door releasing position, until the door has been returned to the closed position, the automatic locking means being released by the closing movement of the door.

7. In a dump car, the combination of a dumping door having separable hinge members at its opposite opening edges, a distinct set of devices for actuating the movable hinge members of each door edge, each set of devices including a connecting bar and a locking bar which automatically engages the connecting bar of each set of actuating devices and locks the same against movement until the opening edge of the door is returned to the closed position, the locking bar having a part lying in the path of the door during its closing movement, whereby the locking bar is actuated to release the connecting bar.

8. In a dump car, the combination of a dumping door having separable hinge members at its opposite opening edges, a distinct set of devices for actuating the movable hinge members of each door edge, each set of devices including a horizontally disposed connecting bar having a notch in its upper edge, and a vertically disposed gravity locking bar having a part engaging the upper edge of the connecting bar and adapted to drop into the notch of the latter when shifted to release the opening door edge, the said locking bar having a part projecting into the path of the door as it is raised to the closed position, whereby the closing movement of the door lifts the locking bar and disengages the connecting bar.

9. In a dump car, the combination of a dumping door provided with separable hinge members for supporting two of its opposite edges, whereby either edge may be released for dumping purposes, a distinct set of devices for actuating the movable members of the hinges at each door edge, each set of devices including a rotary shaft, a pinion thereon, and a gear coöperating with the pinion; and means actuated by either gear when operated to release one edge of the door, for locking the other gear against movement until the actuated gear is restored to its normal or original position.

10. In a dump car, the combination of a dumping door provided with separable hinge members for supporting two of its opposite edges, whereby either edge may be released for dumping purposes, a distinct set of devices for actuating the movable members of the hinges at each door edge, each set of devices including a rotary shaft, a pinion thereon and a gear coöperating with the pinion; and a vertically movable locking bar located between the two gears and having notches in its opposite edges adapted to receive cam ribs or flanges with which the respective gears are pro-

vided, the connection and arrangement of the parts being such that when either gear is actuated to release one of the door edges, the locking bar is actuated by the engagement of the cam rib of the actuated gear with its notch, to bring its opposite notch out of alinement or register with the cam rib of the other gear.

11. In a dump car, the combination of a dumping door having separable hinge members at opposite opening edges, a distinct set of devices for actuating the movable hinge members of each door edge, each set including an independently operating gear, whereby the respective door edges are released by the movement of the respective gears, means for locking the actuated gear against the reverse movement until the dumping door has been raised to the closed position, and means for locking the opposite or inactive gear against movement until the actuated gear has been returned to its normal position.

12. In a dump car, the combination of a dumping door having separable hinge members at its opposite opening edges, a distinct set of devices for actuating the movable hinge members of each door edge, each set of devices including an independently operated gear, a vertically movable locking bar located between the two gears and notched to receive cam ribs or flanges with which the said gears are respectively provided, whereby as either gear is turned, the locking bar is actuated, and a removable sealing device so located as to prevent the movement of the bar incident to the operation of either gear.

13. In a dump car, the combination of a door having separable hinge members at its opening edges, a distinct set of devices for operating the movable hinge members at each edge of the door, each set of devices including an operating gear, a vertically movable locking bar located between the two gears and provided with notches adapted to receive ribs formed on the respective gears when the bar is properly adjusted, the normal position of the bar being with its notches out of alinement with the ribs whereby the gears are locked against movement.

14. In a dump car, the combination of a door having separable hinge members at its opening edges, a distinct set of devices for operating the movable hinge members at each edge of the door, each set of devices including an operating gear, a vertically movable locking bar located between the two gears and provided with notches adapted to receive ribs formed on the respective gears when the bar is properly adjusted, the normal position of the bar being with its notches out of alinement with the ribs whereby the gears are locked against movement, and means for actuating the bar to bring its notches into operative alinement with the ribs of the gear.

15. In a dump car, the combination of a door having separable hinge members at its opening edges, a distinct set of devices for operating the movable hinge members at each edge of the door, each set of devices including an operating gear, a vertically movable locking bar located between the two gears and provided with notches adapted to receive ribs formed on the respective gears when the bar is properly adjusted, the normal position of the bar being with its notches out of alinement with the ribs whereby the gears are locked against movement, and means for actuating the bar to bring its notches into operative alinement with the ribs of the gear, said means comprising a crank shaft passing through an opening formed in the locking bar.

16. In a dump car, the combination of a door having separable hinge members at its opening edges, a distinct set of devices for operating the movable hinge members at each edge of the door, each set of devices including an operating gear, a vertically movable locking bar located between the two gears and provided with notches adapted to receive ribs formed on the respective gears when the bar is properly adjusted, the normal position of the bar being with its notches out of alinement with the ribs whereby the gears are locked against movement, and means for actuating the bar to bring its notches into operative alinement with the ribs of the gear, said means comprising a crank shaft passing through an elongated opening formed in the locking bar, whereby the latter is allowed to move independently of the crank shaft.

17. In a dump car provided with a dumping door, the combination of separable hinge members at two opposite edges of the door, a distinct set of devices for operating the movable hinge members at each edge of the door, each set of devices including a gear, a locking bar located between the two gears and having notches in its opposite edges to receive cam ribs formed on the gears, an operating crank shaft passing through an elongated opening formed in the bar, a winding shaft, door closing means connected with said shaft, a ratchet on the winding shaft, a locking pawl engaging the ratchet, an operative connection between the pawl and the crank shaft, the arrangement being such that when the crank shaft is actuated to release the pawl, the locking bar is brought into position whereby its notches are in alinement with the ribs of the gears.

18. In a dump car having two dumping doors, the combination of two winding shafts connected in operative relation with the respective doors, a ratchet on each shaft, a pawl engaging the ratchet and normally locking the shaft in a position corresponding with the closed position of the doors, a rock shaft arranged to actuate the pawls at both winding shafts, and a crank shaft connected in operative relation with the rock shaft.

19. In a dump car having two dumping doors, the combination of a distinct set of separable hinge members for holding the opening edge of each door in the closed position, and means for simultaneously actuating the movable hinge members of both doors for releasing or locking purposes, said means, including a rotary shaft and two co-operating gears.

20. In a dump car having two dumping members, the combination of separable hinge members connecting both edges of each door with the car, whereby either edge of either door may be released for dumping purposes, and means for actuating the movable hinge members of both edges of each door, comprising two distinct sets of devices, one set being connected in operative relation with the hinges at one edge of both doors, and the other set with the hinges of the other edge of both doors, each set of operating devices including a gear, and means for automatically locking each set of devices against movement, when the other set of devices is actuated for door-releasing purposes, until the actuated set of devices is restored to its normal position.

21. In a dump car having two dumping members, the combination of separable hinge members connecting both edges of each door with the car, whereby either edge of either door may be released for dumping purposes, and means for actuating the movable hinge members of both edges of each door, comprising two distinct sets of devices, one set being connected in operative relation with the hinges at one edge of both doors, and the other set with the hinges of the other edge of both doors, each set of operating devices including a gear, means for automatically locking each set of devices against movement, when the other set of devices is actuated for door-releasing purposes, until the actuated set of devices is restored to its normal position, and means for preventing the return of the actuated set of devices to its normal position until the open doors have been returned to the closed position.

22. In a dump car having two doors, each adapted to open at two opposite edges, the combination of separable hinge members for connecting both edges of each door of the car, a pair of gears for operating the movable hinge members of both edges of both doors, each gear being connected to actuate the movable hinge members at one edge of both doors, the said gears being located in suitable proximity, a rotary shaft for each gear, each shaft having a pinion meshing with one of the gears, a removable crank for operating each shaft, a slotted plate or bar through which the crank passes, the length of the slot being such that the crank may be disengaged from either shaft and placed upon the other shaft without removing it from the slotted plate.

23. In a dump car having a hinged door, the combination of a flexible device suitably anchored at one extremity and passing under the door for closing purposes, a winding shaft connected with the opposite extremity of the flexible device, a brake wheel on said shaft, a band brake engaging said wheel, a rock shaft connected with the band brake, arms connected with the rock shaft, and a foot tread bar connected with the arms for controlling the brake band.

24. In a dump car having a pair of hinged dumping doors, the combination of flexible devices passing under the doors for closing purposes, the said devices being suitably anchored at one extremity, winding shafts connected with the respective flexible devices at their opposite extremities, brake wheels applied to the respective winding shafts, a band brake engaging each brake wheel, one extremity of each band brake being connected with a stationary support, a rock shaft with which the opposite extremities of the brake bands are connected, arms rigidly connected with the rock shafts, and a foot tread bar attached to the arms.

25. In a dump car having a hinged door, the combination of a flexible device suitably anchored at one extremity and passing under the door for closing purposes, means connected with the opposite extremity of the flexible device for actuating the same to close the door, the said flexible device having an elastic member adapted to allow the flexible device to yield longitudinally when subjected to excessive strain.

26. In a dump car having dumping doors, the combination of separable hinge members connecting one edge of each door with the car, means for actuating the movable hinge members for locking and releasing purposes, including connecting bars provided with slotted heads, a crank shaft having cranks engaging said heads, means for operating the crank shaft to actuate the connecting bars, and means for raising and supporting the slotted heads whereby the studs of the cranks move idly during the operating movement of the shaft.

27. In a dump car having two doors, each adapted to open at two opposite edges, the combination of separable hinge members for connecting both edges of each door of the car, a pair of gears for operating the movable hinge members of both edges of both doors, each gear being connected to actuate the movable hinge members at one edge of both doors, the said gears being located in suitable proximity, a rotary shaft for each gear, each shaft having a pinion meshing with one of the gears, a removable crank for operating each shaft, a slotted plate or bar through which the crank passes, the length of the slot being such that the crank may be disengaged from either shaft and placed upon the other shaft without removing it from the slotted plate, the crank being fashioned both above and below the slotted plate or bar to prevent its removal from the said bar when the parts are assembled.

28. In a dump car having two doors, each adapted to open at two opposite edges, the combination of separable hinge members for connecting both edges of each door of the car, a pair of gears for operating the movable hinge members of both edges of both doors, each gear being connected to actuate the movable hinge members at one edge of both doors, the said gears being located in suitable proximity, a rotary shaft for each gear, each shaft having a pinion meshing with one of the gears, a removable crank for operating each shaft, a slotted plate or bar through which the crank passes, the length of the slot being such that the crank may be disengaged from either shaft and placed upon the other shaft without removing it from the slotted plate, the crank being provided with separated stops above and below the slotted bar and arranged to permit the necessary range of movement and at the same time preventing the removal of the crank from the bar.

29. The combination with a vehicle body having a dumping door, a flexible device suitably anchored at one extremity of the door and extending underneath the same, sheaves located underneath the door and engaged by the flexible device, supports attached to the door in which the sheaves are mounted to permit a transverse swinging movement during the operation of opening and closing the doors.

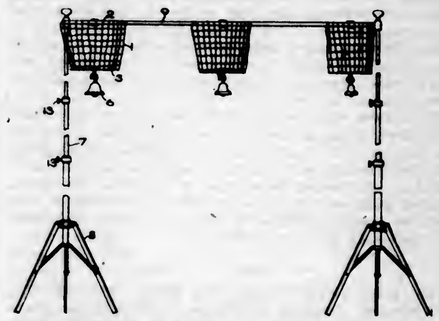
30. The combination with a vehicle body having a dumping door, of a flexible device suitably anchored at one extremity and connected with the winding device at its opposite extremity, the said device extending underneath the door, sheave supports attached to the under surface of the door, and sheaves jointed within their supports to permit a swinging movement in a direction transverse to the axis of the door hinge.

31. In a dump car having two doors, each adapted to open at two opposite edges, the combination of separable hinge members for connecting both edges of each door with the car, and a pair of gears for operating the movable hinge members of both edges of both doors, each gear being connected to actuate the movable hinge members at one edge of both doors.

32. In a dump car, the combination of a dumping door having releasable hinge members at its opposite opening edges, and means for operating the releasable hinge members of each door edge, including operative mechanism suitably interlocked whereby the engaged hinge members are locked against releasing movement while the opposite hinge members are in the released position.

33. In a dump car, the combination of a dumping door having releasable hinge members at its opposite opening edges, means for operating the releasable hinge members of each door edge, and means for automatically locking one set of hinge members against the releasing movement, when the opposite set of members is in the released position.

854,640. GAME APPARATUS. LOUIS D. H. FULLER, Saxonville, Mass. Filed Apr. 27, 1903. Serial No. 154,409.



Claim.—1. A game apparatus comprising a plurality of baskets of different sizes, means for supporting the same, and bells attached to the baskets, the bells being of different pitch proportionate to the sizes of the baskets, substantially as described.

2. A game apparatus comprising a rod, supports for the same, and a basket secured upon the rod, said basket comprising a metal hoop having a socket piece to receive the rod, a set screw for securing the socket piece upon the rod, and netting attached to the hoop, substantially as described.

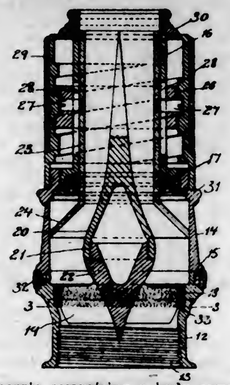
3. A game apparatus comprising a plurality of baskets of different sizes, bells attached to the baskets, the bells being of different pitch proportionate to the size of the baskets, and means for supporting the baskets having provision for adjusting the baskets horizontally toward or from one another, substantially as described.

854,641. CONTROLLING-NOZZLE FOR HOSE AND HOSE-PIPE. THOMAS HALEY, Boston, Mass. Filed Mar. 27, 1906. Serial No. 308,235.

Claim.—1. A hose nozzle comprising a body composed of three sections removably connected together, a cone removably connected with the base section and projecting therefrom through the middle section, and a longitudinally adjustable sleeve co-operating with said cone to regulate the flow of water.

2. A hose nozzle comprising a body composed of three separable sections, a cone having radial arms or wings

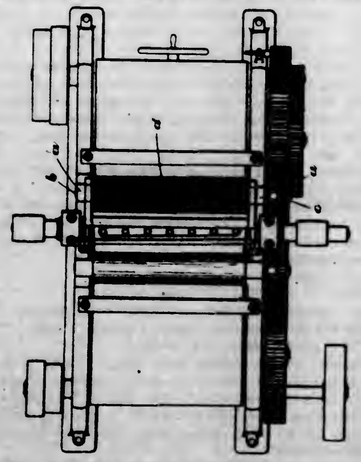
near one end, the said arms and the base section of the body having complemental means for detachably connecting the arms to said section, the other end of the cone extending into the top section of the body, and a longitudinally adjustable sleeve extending from the top section into the middle section and co-operating with said cone to regulate the flow of water.



3. A hoze nozzle comprising a body composed of three separable sections, the base section having an internal screw thread, and a cone having radial arms or wings provided at their outer ends with segments of an external screw thread adapted to engage said internal thread, said cone being supported by said arms and projecting into the outlet end of the nozzle.

4. A hose nozzle comprising a body composed of a base section, a middle section and an outer section, the middle section being internally enlarged, a cone fixedly secured to the base section and projecting therefrom into the outer section, the base of the cone being surrounded by the enlarged middle section, an outlet sleeve slidable in the outer section toward and from the base of the cone, and means for adjusting the said outlet sleeve.

834,642. FEED-ROLL FOR WOOD-PLANING MACHINES. CHARLES E. HARPER, Whitby, Ontario, Canada, assignor to Major Harper & Son, Whitby, Canada, a Firm. Filed Sept. 10, 1906. Serial No. 334,028.



Claim.—1. A feed roll section comprising an annular rim, clutch members projecting inwardly from the inner surface thereof, a clutch hub, clutch members forming part of the clutch hub engaging with the clutch members of the annular rim, feed roll section hubs separate from clutch hub and the rim, and a yielding means interposed between the feed roll section hubs and the rim to yieldingly hold it concentric with the center of the feed roll section hubs.

2. A feed roll section comprising an annular rim, clutch members projecting inwardly from the inner surface thereof, a clutch hub, clutch members forming part of the clutch hub and co-acting with the first mentioned clutch members, feed roll section hubs independent from the rim arranged at the sides of the clutch hub, spring tensioned spokes carried by the feed roll section hub and engaging the inner surface of the rim.

3. A feed roll section comprising a rim, clutch members projecting inwardly from the inner surface thereof, a clutch hub, clutch members for the clutch hub co-acting with the first mentioned clutch members to cause the revolution of the rim, feed roll section hubs at the sides of the clutch hub and separated from the rim, spoke seats in the feed roll section hubs, spokes contained in the spoke seats, flanges for the spokes between their inner and outer ends, springs encircling the spokes between the flanges and the bottom of the spoke seats to normally press them into contact with the inner surface of the rim, and a retaining ring encircling the feed roll section hubs to hold the inner ends of the spokes in the spoke seats.

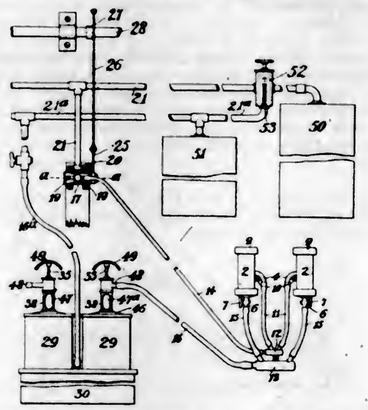
4. A feed roll section comprising a feed roll shaft, a series of independently acting feed roll sections encircling the shaft and separated therefrom but revoluble therewith each feed roll section comprising an annular rim, clutch members projecting inwardly from the inner surface thereof, a clutch hub for each feed roll section mounted on the shaft to revolve therewith, clutch members for each clutch hub co-acting with the clutch members of the rim to cause the latter to revolve with the feed roll shaft, feed roll section hubs loosely mounted upon the feed roll shaft and of less diameter than the rim to provide for the radial movement of the latter, spoke seats contained in the feed roll section hubs, spokes having their inner ends in the spoke seats, and springs normally pressing the spokes outwardly against the inner surface of the rim to maintain it normally concentric with the center of the feed roll shaft.

5. A feed roll section comprising a feed roll shaft, a series of independently acting feed roll sections encircling the shaft and separated therefrom but revoluble therewith, each feed roll section comprising an annular rim, clutch members projecting inwardly from the inner surface thereof, a clutch hub for each feed roll section mounted on the shaft to revolve therewith, clutch members for each clutch hub co-acting with the clutch members of the rim to cause the latter to revolve with the feed roll shaft, feed roll section hubs loosely mounted upon the feed roll shaft and of less diameter than the rim to provide for the radial movement of the latter, spoke seats contained in the feed roll section hubs, spokes having their inner ends contained in the spoke seats, and springs normally pressing the spokes outwardly against the inner surface of the rim to maintain it normally concentric with the center of the feed roll shaft, and means to limit the outward movement of the spokes.

6. A feed roll section comprising a feed roll shaft, a series of independently acting feed roll sections encircling the shaft separated therefrom but revoluble therewith, each feed roll section comprising an annular rim, clutch members projecting inwardly from the inner surface thereof, a clutch hub for each feed roll section mounted on the shaft to revolve therewith, clutch members for each clutch hub co-acting with the clutch members of the rim to cause the latter to revolve with the feed roll shaft, feed roll section hubs loosely mounted upon the feed roll shaft and of less diameter than the rim to provide for the radial movement of the latter, spoke seats contained in the feed roll section hubs, spokes having their inner ends contained in the spoke seats, springs normally pressing the spokes outwardly against the inner surface of the rim to maintain it normally concentric with the center of the feed roll shaft, means to limit the outward movement of the spokes

consisting of an annular rim encircling the feed roll section hubs having slots therein registering with the spoke seats, and flanges connected to the spokes within the circle of the annular rim to engage with the inner surface thereof.

854,643. COW-MILKING APPARATUS. JOHN HARTNETT, Balwyn, and DAVID M. ROBISON, St. Kilda, Victoria, Australia. Filed Sept. 26, 1904. Serial No. 226,027.



Claim.—1. In a cow milking apparatus an automatic releaser having a float, provided at its bottom with a throttle and vacuum cut-off valve the former for throttling a passage way in bottom of float chamber and the latter for closing a passage way leading to the milk receptacle substantially as described and shown.

2. In cow milking apparatus an automatic releaser consisting of a float controlling three valves and arranged within a float chamber which has a milk exit way at its sides and bottom, the said exit way being in communication with the float chamber at its top and at its bottom with the lower chamber leading to the milk receptacle while at top part of releaser is a neck having a sight tube and a nozzle for connection to a tube leading to teat cups and on the top end of spindle above the neck cap a cam prop all substantially as described and shown.

3. In cow-milking apparatus, teat cups, to which a differential vacuum is imparted, an intermittent high degree vacuum being created within chamber about the linings and a low degree constant vacuum in interior chamber of linings, combined with a pulsating appliance and milk pail and their connecting tubes and with a high and a low degree vacuum reservoir or mains having a reducing valve between them substantially as described and shown.

4. In cow milking apparatus the combination of a high degree vacuum pipe 21 leading to reservoir 50, reducing valve 53, low degree vacuum pipe 21^a leading from the latter and communicating with the low degree vacuum reservoir 51 and by pipe 16^a with the milk pail 30 substantially as described and shown.

5. In cow milking apparatus the combination of a high degree vacuum pipe 21 and its reservoir 50 reducing valve 53, low degree vacuum pipe 21^a leading to low degree vacuum reservoir 51 and by pipe 16^a to the milk pail 30 and the high degree vacuum pipe leading to pulsator 17 substantially as described and shown.

6. In a cow milking apparatus, a teat cup having a flexible lining provided near its open end with stiffened opposing inner teat crushing portions adapted to crush the teat near its root and thereby close the passage from udder to teat while the milk is being withdrawn from the teat.

7. A milking apparatus, wherein a differential vacuum is employed, comprising a teat cup having a casing and a flexible lining forming a high-degree-vacuum space within the casing and around the lining, intermittingly operating means comprising a pulsator for intermittingly maintaining the high degree vacuum in said space and opening said space to the atmosphere, and means for constantly maintaining a low-degree vacuum within said lining, substantially as described.

8. In a milking apparatus, wherein a differential vacuum is employed, comprising a teat cup embodying a casing and a flexible lining, a high-degree vacuum space being formed at the exterior of the lining, said teat cup having means to intermittingly release and crush the teat near its root, means for intermittingly opening said space to communication with the atmosphere and maintaining the high degree-vacuum therein, and means for constantly maintaining the low-degree vacuum within said lining.

9. In a cow milking apparatus, a teat cup comprising a flexible lining which is thickest at both ends, and a rigid tubular casing within which said lining is secured, means for alternately reducing the pressure and restoring atmospheric pressure at the exterior of said lining, and means for constantly maintaining a low-degree vacuum in said lining.

10. In a cow milking apparatus, a teat cup having a flexible lining provided at its smallest part and at each side with an inner rib, corrugation or projection located near its top end to operate on the teat near its root and designed to close the passage way from udder to teat thereat, while the milk is being withdrawn from teat, substantially as described.

11. In a cow milking apparatus, a teat cup comprising a metallic casing and a flexible lining within and spaced from the casing, means for intermittingly exhausting the air from the chamber between the casing and lining, and means for maintaining a low-degree vacuum within the lining.

12. In a cow milking apparatus, a teat cup comprising a casing and a flexible lining within the cup, means for intermittingly creating a high degree vacuum between the lining and casing, and means for creating a constant low degree vacuum within the lining.

13. In a cow milking apparatus, a teat cup comprising a casing and lining within the casing, means for maintaining a constant low degree vacuum within the lining, means for creating a high degree vacuum between the lining and casing, and means for admitting atmospheric pressure between the lining and casing between the intervals of operation of the high degree vacuum.

14. In a cow milking apparatus, a teat cup comprising a casing and a flexible lining therein, a pulsator in communication with a vacuum chamber, the teat cup and the atmosphere, and a valve within the pulsator operating to alternately connect the space between the casing and lining with the vacuum chamber and with the atmosphere.

15. In a cow milking apparatus, a teat cup comprising a casing and a flexible lining, means for alternately creating a vacuum within and at the exterior of the lining, and means to automatically release the vacuum at one surface of the lining, whereby to automatically discontinue the action of the apparatus.

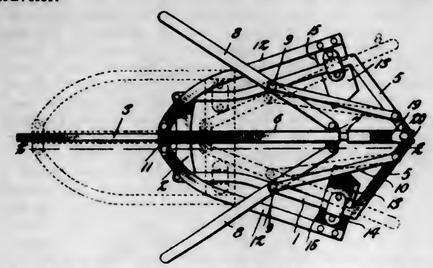
16. In a cow milking apparatus, a teat cup comprising a casing and a flexible lining therein, means for creating a high degree vacuum on one side of the lining, means for creating a low degree vacuum on the opposite side of the lining, and means to automatically release said low degree vacuum to discontinue the action of the apparatus.

17. In a cow milking apparatus, a teat cup comprising a casing and a flexible lining therein, means for creating a high degree vacuum on one side of the lining, means for creating a low degree vacuum on the opposite side of the lining, and to automatically release said low degree vacuum to discontinue the action of the apparatus, said latter means being controlled by the flow of milk from the teat cup.

854,644. HOOF-TRIMMING DEVICE. BERRY HUCKLEBY, Bonham, Tex. Filed Dec. 5, 1906. Serial No. 346,499.

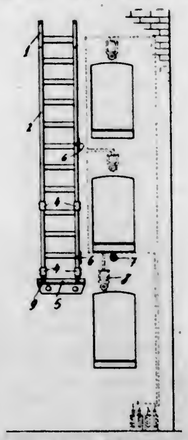
Claim.—1. In a hoof trimming device, a frame including a pair of forwardly converging side rails and a central, longitudinally extending guide rail, a traveler slidably

mounted on said guide rail, operating levers fulcrumed in the frame and operatively connected with the traveler, cooperating trimming knives slidably mounted on the side rails, and operative connections between the knives and traveler.



2. In a hoof trimming device, a frame including a pair of forwardly converging side rails and a central, longitudinally extending guide rail, a traveler slidably mounted on the guide rail, a pair of coöperating trimming knives slidably mounted on the side rails and connected for movement with the traveler, a pair of operating levers fulcrumed in the frame and operatively connected with the traveler, and an adjustable hoof supporting member movably mounted in the frame.

854,645. FIRE-ESCAPE. FRITZ JÄGER, Gladbeck, Germany. Filed Nov. 14, 1906. Serial No. 343,453.



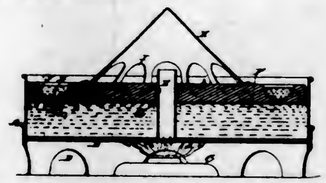
Claim.—A fire escape comprising in combination with a building, an upper ladder (1) hingedly attached to the outside wall of the building so as to project not farther down than to the first floor of the building and to lie when not in use flat on the same, a lower ladder (2) slidably arranged on said upper ladder so as to lie when not in use with its lowest end at the same level as the lowest end of said upper ladder but to project down to the pavement when in use, a bracket (5) fixed to the building and adapted to serve as rest for said upper and lower ladder when the latter are not in use, arms (6) fixed at right angles to said upper ladder in proximity to a window of each floor of the building and adapted to allow of said ladder being turned so as to lie at right angles to the building for its operative position, rollers (9) provided on the lowermost ends of said ladder so as to allow of the latter being easily run on said bracket, alarm devices (8) provided in each floor of the building, and an electric switch (7) connected with said alarm devices and adapted to be operated by one of said arms (6) and thus to set said alarm devices in operation when the ladder comes in operation, substantially as described and shown.

854,646. TOY. DANIEL P. JAMES, Eureka, Ill. Filed Dec. 3, 1906. Serial No. 346,099.



Claim.—A hollow cane, a magnetic needle arranged in the end of said cane, a top having a metal shank adapted to be engaged with and supported from the point of said needle, whereby a current of air blown through the cane upon said top will spin the same upon the point of said needle, substantially as described.

854,647. POULTRY-FOUNTAIN. ALBERT K. JOHNS and WILLIAM LANSING, Cedar Rapids, Iowa. Filed Dec. 21, 1906. Serial No. 349,000.



Claim.—1. In a poultry fountain, the combination of a water tank and a float provided with cups or cavities in the top thereof, said cups being provided with an opening leading to the water below.

2. In a poultry fountain, the combination of a water-tank, a float provided with cups communicating with the water in the tank, and an inclined superstructure attached to the float to prevent the fowls from roosting on the float.

3. In a poultry fountain, the combination of a water-tank having a raised bottom, a ventilated space below it adapted to receive a lamp, and a float having individual drinking cups communicating with the water in the tank.

4. In a poultry fountain, the combination of water-tank having a raised bottom, ventilated sides below said bottom, and an air-shaft or flue extending from said bottom above the upper water line, a float adapted to rise and fall in said tank, and having individual cups communicating at the bottom with the water in the tank, and a ventilated hood attached to the float over said flue.

854,648. REGULATOR-SUPPORT FOR INCUBATORS. MANANDER M. JOHNSON, Clay Center, Nebr. Filed Dec. 24, 1906. Serial No. 349,119.



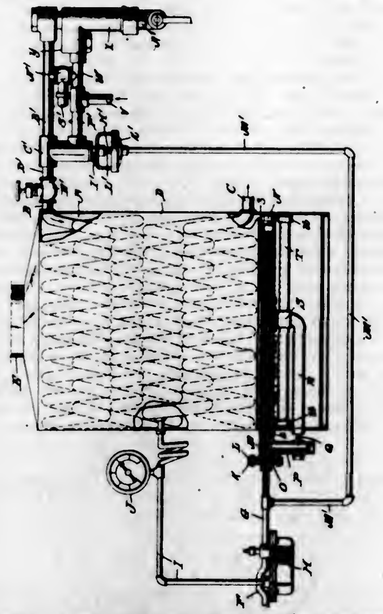
Claim.—1. A regulator support for incubators comprising a horizontally disposed supporting arm having a bearing on its upper side, at a point between its ends, adapted to support the regulating lever, said arm further having a vertical plate at its outer end to attach said bracket to the incubator, and means at the inner end of said arm to support a thermometer at the level of the thermostat disks.

2. A regulator support for incubators comprising a bracket consisting of a horizontally-disposed arm adapted to project inwardly over the egg tray in the incubator and

to support the regulator thermostat above said egg tray, apertured bearing lugs formed on said arms adapted to pivotally support the regulator lever, and a supporting rod adapted to be engaged with the inner end of said arm and to support a thermometer on a level with said thermostat disks, substantially as described.

3. A regulator support for incubators comprising a bracket consisting of an attaching plate adapted to be secured to the inner wall of one end of the incubator, an integrally formed inwardly-projecting supporting arm formed on said plate adapted to support the regulator thermostat in proper position over the egg tray of the incubator and having an opening in its inner end, an upwardly-extending bend formed in said arm, apertured bearing lugs on the upper end of said bend adapted to pivotally-support the regulator lever, a right angularly-formed rod engaged and seated in said opening in the inner end of said arm adjacent to said thermostat disks and to support a thermometer in a horizontal position on a level with said thermostat disks, substantially as described.

854,649. STEAM-GENERATOR. WARREN S. JOHNSON, Milwaukee, Wis. Filed Aug. 16, 1905. Serial No. 274,389.



Claim.—1. In combination with a steam generator; a burner; a source of liquid fuel under pressure leading to the burner; a governor for controlling the passage of the fuel to the burner, said governor being actuated by the pressure within the generator; a pump for forcing water into the generator; a fluid-pressure motor in communication with the fuel supply at a point between the governor and the burner; and a by-pass valve for the pump actuated by said motor.

2. In combination with a steam generator; a burner controllable by the steam pressure within the generator; means for controlling the supply of water to the generator; and controlling means for said supplying means, said controlling means being under the direct influence of the pressure of the fuel passing to the burner.

3. In combination with a steam generator; a water supply communicating therewith through a restricted opening; a pump for forcing water through said opening; an adjustable relief valve; and a by-pass valve for the pump responsive to and actuated indirectly by variations in the generator pressure.

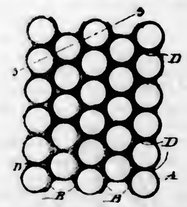
4. In combination with a steam generator; a water supply communicating therewith through a restricted opening; a pump for forcing water therethrough; an adjustable relief valve for the pump; a by-pass valve for the pump; a fluid motor for actuating said by-pass valve; and a pipe connecting said motor and the source of fuel supply.

5. In combination with a steam generator; a burner; a source of fuel supply connected to said burner and adapted to deliver the fuel thereto under pressure; a governor interposed in the connection between the burner and source of fuel supply and serving to cut off the supply when the pressure within the generator has reached a predetermined point; a connection between said generator and the governor; a water-inlet to the generator, said inlet being provided with an adjustable restricted opening; a pump; a by-pass valve for said pump; a fluid-pressure motor serving to actuate said valve; connections between said motor and the source of fuel supply, said connections being made at a point between the governor and the burner; and an adjustable relief valve for the pump.

6. In combination with a steam generator; a burner; a pipe connected to said burner and adapted to deliver fuel thereto under pressure; a governor controlling the passage of fuel through said pipe; connections between said governor and the steam-space of the boiler; a pump adapted and designed to deliver water to the generator through an adjustable, restricted opening; a by-pass valve for the pump; a fluid-pressure motor connected to said valve; connections between said motor and the pipe for supplying fuel to the burner, said connections being made at a point between the burner and the governor; and means for regulating the degree of pressure to be exerted by the pump in forcing the water through the restricted opening.

7. In combination with a steam generator; a burner acting primarily upon the steam-containing coils of the generator, said burner being controlled by the steam-pressure within the generator; means for forcing water into the upper portion of the generator through an adjustable restricted opening; and means controlled by the pressure of the fuel passing to the burner for regulating the amount of water which may be forced through the restricted opening.

854,650. CONDENSER. WARREN S. JOHNSON, Milwaukee, Wis. Filed Nov. 19, 1906. Serial No. 344,133.



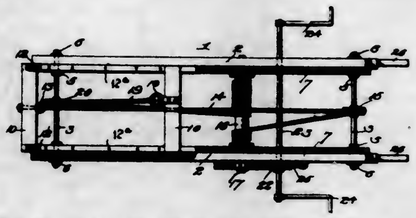
Claim.—1. In combination with a plurality of columns of tubes, each column comprising a series of tubes curved in contour, arranged side to side; spacing members placed between the adjacent columns at each end thereof, each of said members conforming in shape to the contour of that portion of the tubes with which it contacts; and solder securing the ends of the tubes and the spacing members together.

2. In combination with a plurality of columns of superimposed tubes, the tubes when assembled presenting a substantially continuous sinuous face or outline upon each side of each of the columns; spacing members placed between the adjacent columns at each end thereof, each pair of said members at each end of the tubes embracing each of the tubes of the column which lies between them; and solder securing the ends of the tubes and the spacing members together.

3. In combination with a plurality of columns of tubes,

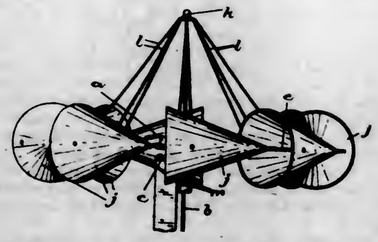
each column comprising a series of tubes arranged in contact with each other and side to side and presenting a substantially continuous sinuous face, the tubes of one column being staggered with relation to those standing adjacent thereto; spacing members placed between the adjacent columns at each end thereof, each of said members comprising a bar having a wavy contour which permits the bar to fit against the faces of the tubes upon opposite sides thereof; and solder securing the ends of the tubes and spacing members together.

854,651. WAGON-LOADER. CHARLES A. JOSE, Argyle, Minn. Filed Apr. 23, 1906. Serial No. 313,275.



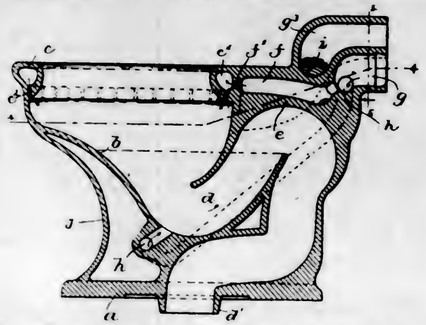
Claim.—In a loading device, the combination with a supporting frame, having longitudinally-disposed side bars, and track bars secured to the side bars, of a carriage slidably mounted upon the track bars, and embodying side bars, and upper and lower cross bars, the former being rabbeted in the side bars and the latter being superposed thereon, guards secured to the side bars and the lower cross-bar and serving to connect and brace the parts, the guards being reinforced at their points of juncture with the side bars by the lower cross bar, a lifting cable connected at one end to the lower cross bar, a guide pulley mounted on a rod secured in the upper end of the frame to receive the lifting cable, a winding drum supported by the frame to actuate the lifting cable and thereby draw the carriage upwardly, a lowering cable connected at one end to the upper end of the carriage and at the other end to the winding drum, a guide pulley mounted upon a rod secured in the lower end of the frame to receive the lowering cable, a drive shaft journaled in the frame and geared to the shaft of the winding drum, means for operating the drive shaft, and means for holding the winding drum against movement.

854,652. WIND-WHEEL. WILLIAM J. KINNEY, Seaforth, Ontario, Canada. Filed Dec. 3, 1906. Serial No. 346,182.



Claim.—A wind wheel comprising an inverted cup shaped hub, a series of rocker arms projecting from the hub, cranks for the inner ends of the rocker arms, a disk slidable within the hub and peripherally grooved to receive the cranks, means for positioning said disk, wind cups at the outer ends of the rocker arms positioned by the actuation of the disk, a shaft for the hub, a head for the shaft and stay rods connected to the head supporting the rocker arms.

854,653. WATER-CLOSET BOWL. GEORGE W. KNAPP, Stoneham, Mass., assignor to the Smith and Anthony Company, Boston, Mass., a Corporation of Massachusetts. Filed Nov. 13, 1899. Serial No. 736,736.



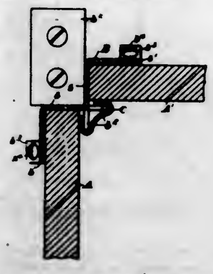
Claim.—1. A water closet bowl having a water supply duct, a ventilating duct, and a neck through which both of said ducts extend, the ventilating duct being located above the plane of the top of the bowl and the terminals of the two ducts being in the same vertical plane, substantially as described.

2. A water closet bowl having a hopper, a flushing chamber located in the rear of the hopper, two ventilating ducts leading from each side of the rear median line of said hopper, and meeting above said flushing chamber, and above the plane of the top of the hopper, and passageways leading into said ducts for supplying water and conducting away air and gas.

3. A water-closet bowl having a neck terminating in a horizontal portion, said neck being partitioned substantially its entire length to form two passageways, of which one is substantially circular and the other is substantially crescent-shaped in cross-section, a ventilating duct communicating with one of said passageways, and a flushing duct communicating with the other of said passageways.

4. A siphon-jet water closet having a rearwardly extending siphonic trap, a ventilating duct extending around the trap, a flushing chamber supported by the crown of the trap, and a rearwardly extending centrally located neck having a passageway communicating with the flushing chamber and a passageway communicating with the bowl, both said passageways terminating at the end of said neck.

854,654. CONSTRUCTION FOR PANEL-BOARDS AND THE LIKE. HUBERT KRANTZ, New York, N. Y. Filed Sept. 22, 1905. Serial No. 279,741.



Claim.—1. A corner piece for panel boards and the like, comprising an angular metallic place with flanged edges, lugs punched from said piece into planes substantially parallel to said flanged edges, in combination with means to secure the boards between said lugs and flanged edges, substantially as described.

2. A corner piece for panel boards and the like, comprising an angular metallic piece with flanged edges, lugs punched alternately from the sides of said piece into planes substantially parallel to said flanged edges, in combination with means to secure the boards between said lugs and flanged edges, substantially as described.

3. A corner piece for panel boards and the like, comprising an angular metallic piece with flanged edges, lugs punched from said piece into planes substantially parallel to said flanged edges and lugs on said flanged edges set at an angle to receive securing screws, substantially as described.

4. A corner piece for panel boards and the like, comprising an angular metallic piece with flanged edges, lugs punched from said piece into planes substantially parallel to said flanged edges, a plate at one end of said piece for securing the same to the base of said panel board, in combination with means to secure the boards between said lugs and flanged edges, substantially as described.

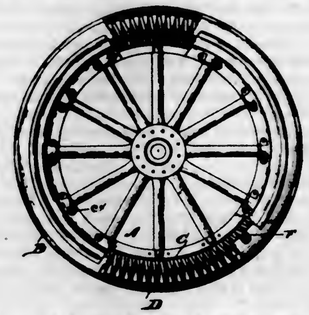
5. A corner piece for panel boards and the like, comprising an angular piece with flanged edges, and lugs punched from said piece into a plane parallel with the flanged edges, in combination with a corner lining piece, having inwardly bent flanges adapted to cover said lugs.

6. A corner piece for panel boards and the like, comprising an angular piece with flanged edges, lugs punched from said piece into planes substantially parallel to said edges, in combination with a corner lining piece, having inwardly bent flanges adapted to fit between said lugs and the sides of said panel board.

7. A corner piece for panel boards and the like, comprising an angular piece with flanged edges, and lugs punched from said piece into planes parallel with the flanged edges, in combination with a corner lining piece and means for securing the same in place, substantially as described.

8. A corner piece for panel boards and the like, comprising an angular piece with flanged edges, lugs punched from said piece into planes substantially parallel to said flanged edges, in combination with a corner lining piece having a plate at one end thereof and means for securing said lining piece between the lugs and panel board, substantially as described.

854,655. VEHICLE-WHEEL. EMIL F. KRELL, Detroit, Mich. Filed Nov. 11, 1905. Serial No. 286,781.



Claim.—1. In a vehicle wheel, a metallic rim formed in two sections having telescopic relation one with the other, an elastic compressible element housed within the parts adapted to act upon both parts of the rim to keep them in elastic relation, one rim portion being formed of two longitudinal parts bolted together upon suitable packing material, substantially as described.

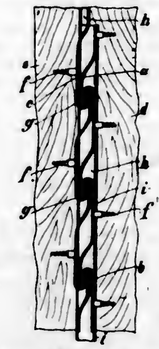
2. In a vehicle wheel, a rim formed in two sections having telescopic relation one with the other, a spiral spring housed within the parts adapted to act upon both parts of the rim to keep them in elastic relation, and a fibrous material between the spring and the telescoping rims of the wheel, substantially as described.

3. In a vehicle wheel, a metallic rim formed in two sections having telescopic relation one with the other, a spiral spring housed within the parts adapted to act upon both parts of the rim to keep them in elastic relation, one rim portion being formed of two longitudinal parts bolted together upon suitable packing material, substantially as described.

4. In a vehicle wheel, a metallic rim formed in two sections having telescopic relation one with the other, the inner portion formed of two longitudinal parts embracing the ends of the spokes and bolted together, an elastic compressible element housed within the rim portions, and means for lubricating the telescoping parts, substantially as described.

5. In a vehicle wheel, a metallic rim formed of two U-shaped sections having telescopic relation one with the other, one rim section formed of two longitudinal parts bolted together to embrace the spokes, a spiral spring housed within the U-shaped sections to keep the parts in elastic relation, and means for holding the telescoping parts in engagement, substantially as described.

854,656. DEVICE FOR DISENGAGEABLE COUPLING OF TWO OBJECTS. GUSTAV LESKE, Berlin, Germany. Filed Mar. 4, 1907. Serial No. 360,523.



Claim.—1. A coupling device comprising two members each consisting of a metal strip bent outward and backward at intervals to form open hooks, the two members arranged in opposition to each other with their respective hooks in engagement.

2. A coupling device comprising two members each consisting of a metal strip bent outward and directly backward at intervals to form open hooks, the two members arranged in opposition to each other with their hooks opening in opposite directions and in engagement.

3. A coupling device comprising two members each consisting of a metal strip bent outward and backward to form open hooks, then bent closely upon itself in the forward direction and extending in a gradual curve to the former plane of the strip, and then bent as before to form other hooks at intervals, the two members arranged in opposition to each other and at an angle of 180° with their respective hooks in engagement.

4. The combination, with two articles to be secured together, of a coupling member secured to the face of each of said articles, said member consisting of a metal strip extending in a general vertical direction and bent outward and backward at intervals to form a succession of open hooks, the two articles arranged with their faces in opposition to each other with the hooks of their respective coupling members in engagement.

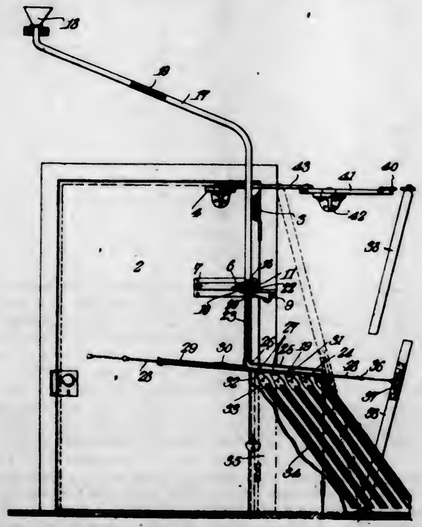
5. The combination, with two articles to be secured together, of a coupling member secured to the face of each of said articles, said member consisting of a metal strip extending in a general vertical direction and bent outward and backward to form open hooks, then bent closely upon itself in a forward direction and extending in a gradual curve to the former plane of the strip, and then bent as

before to form other hooks at intervals, the two articles arranged with their faces in opposition to each other with the coupling members at an angle of 180° to each other and with their respective hooks in engagement.

6. The combination with two articles to be secured together, of a coupling member secured to the face of one of said articles, a second coupling member secured within a channel below the face of the other of said articles, each coupling member consisting of a metal strip extending in a general vertical direction and bent outward and backward at intervals to form a succession of open hooks, the two articles arranged with their faces in opposition to each other with the hooks of their respective coupling members in engagement.

7. The combination, with two articles to be secured together, of a coupling member secured to the face of one of said articles, a channel iron seated below the face of the other of said articles, a second coupling member secured within the channel iron, each of said coupling members consisting of a metal strip extending in a general vertical direction and bent outward and backward at intervals to form a succession of open hooks, the two articles arranged with their faces in opposition to each other with their respective coupling members at substantially 180° to each other with their hooks in engagement.

854,657. VOTING-MACHINE. CLARENCE L. LORRAINE, East Jordan, Mich. Filed Jan. 7, 1907. Serial No. 351,210.



Claim.—1. In a voting machine the combination with a plurality of receptacles; of a reservoir, means for conveying an object by gravity from said reservoir to any one of the receptacles, and a manually operated device within said means for closing all but a predetermined receptacle.

2. In a voting machine the combination with a plurality of distributing devices, a plurality of receptacles communicating with each distributing device, and means for directing an object against the distributing device; of manually operated means within each distributing device for directing an object therefrom into any one of the receptacles, and mechanism for simultaneously returning said means to their initial positions.

3. In a voting machine the combination with a reservoir, a distributing device, a plurality of receptacles communicating with said device, and means for directing an object from said device into any one of the receptacles; of a door operated slidable member disposed to receive an object from the reservoir, and manually operated means for actuating said member to shift the object into the distributing means.

4. In a voting machine the combination with a reservoir, a distributing device, a plurality of receptacles opening into the distributing device, and manually operated means for directing an object from said device into any one of the receptacles; of a door operated slidable member interposed between the reservoir and the distributing device and designed to receive an object from said reservoir, manually operated means for actuating said member to direct the object therein into the distributing member, and door operated means for returning the object directing means to its initial position subsequent to the discharge of the object into the distributing device.

5. A voting machine comprising a plurality of reservoirs, a plurality of distributing devices, a plurality of receptacles adjacent each distributing device, a slide, means for actuating the slide in one direction to receive an object from each reservoir, means for actuating the slide in an opposite direction to simultaneously deposit an object in each distributing device, and means within each distributing device for directing an object into any one of the adjoining receptacles.

6. A voting machine comprising a plurality of reservoirs, a plurality of distributing devices, a plurality of receptacles adjacent each distributing device, a slide, means for actuating the slide in one direction to receive an object from each reservoir, means for actuating the slide in an opposite direction to simultaneously deposit an object in each distributing device, means within each distributing device for directing an object into any one of the adjoining receptacles, and means for indicating the receptacle receiving the object.

7. A voting machine comprising a plurality of reservoirs, a plurality of distributing devices, a plurality of receptacles adjacent each distributing device, a slide, means for actuating the slide in one direction to receive an object from each reservoir, means for actuating the slide in an opposite direction to simultaneously deposit an object in each distributing device, means within each distributing device for directing an object into any one of the adjoining receptacles, and means for simultaneously returning the directing means within the distributing devices to their initial positions.

8. In a voting machine the combination with a structure having a movable door; of a plurality of reservoirs, a plurality of distributing devices, a slide, means operated by the movement of the door in one direction for actuating the slide into position to receive an object from each reservoir, manually operated means for simultaneously directing objects within the slides into the respective distributing devices, a plurality of receptacles adjacent each distributing device, and manually operated means for directing an object from each distributing device into any one of the adjoining receptacles.

9. In a voting machine the combination with a slide having a plurality of apertures therein, and means for directing objects into the respective apertures; of distributing devices, means for shifting the slides to simultaneously discharge the objects therein into the respective distributing devices, a plurality of receptacles adjacent each distributing device, and means for directing an object from each distributing device into any one of the adjoining receptacles.

10. In a voting machine the combination with a reservoir, a distributing device, and a conveyer opening into the distributing device; of shiftable means for directing an object from the reservoir to the conveyer, a plurality of receptacles adjacent the distributing device, and means for directing an object from the distributing device into one of said receptacles.

11. In a voting machine the combination with a reservoir, a distributing device, and a conveyer opening into said device; of a conducting device, a plurality of receptacles disposed adjacent the distributing device, adjustable means for directing an object from the distributing device into any one of the receptacles, manually operated means for shifting the conducting device to convey an object from the reservoir to the conveyer, and simultaneously operated means for reversing the movement of said device and for returning the object directing means within the distributing device to normal position.

12. In a voting machine the combination with a structure having a door; of a reservoir, a distributing device, a conveyer opening into the distributing device, a carrying device interposed between the conveyer and reservoir, means operated by the movement of the door for bringing said device in position to receive an object from the reservoir, manually operated means for shifting said device into position to discharge an object into the conveyer, a plurality of receptacles adjacent the distributing device, means for directing an object from said distributing device into any one of the receptacles, and mechanism operated by the door for simultaneously returning said means to its initial position and for resetting the carrying device to receive an object from the reservoir.

13. The combination with a structure having a door; of a reservoir, a distributing device, a conveyer tube opening into said device, an apertured slide interposed between the conveyer tube and the reservoir, means operated by the movement of the door for moving the slide in position to receive an object from the reservoir, and manually operated means for shifting the slide to discharge an object into the tube.

14. In a voting machine the combination with a structure having a door; of a reservoir, a distributing device, an apertured slide interposed between the reservoir and distributing device, means operated by the movement of the door in one direction for shifting the slide into position to receive an object from the reservoir, means for moving the slide to discharge said object into the distributing device, a plurality of receptacles and means for directing an object from the distributing device into any one of said receptacles.

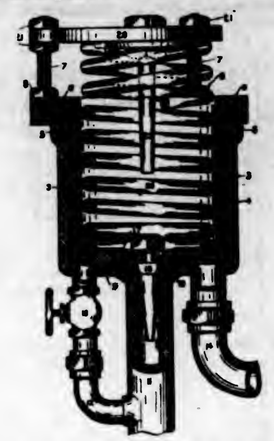
15. In a voting machine the combination with a structure having a door; of a reservoir, a distributing device, an apertured slide interposed between the reservoir and distributing device, means operated by the movement of the door in one direction for shifting the slide into position to receive an object from the reservoir, means for moving the slide to discharge said object into the distributing device, a plurality of receptacles, a slide for directing an object from the distributing device into any one of the receptacles.

16. In a voting machine the combination with a structure having a door; of a reservoir, a distributing device, an apertured slide interposed between the reservoir and distributing device, means operated by the movement of the door in one direction for shifting the slide in position to receive an object from the reservoir, means for moving the slide to discharge said object into the distributing device, a plurality of receptacles, a slide for directing an object from the distributing device into any one of the receptacles, and means operated by the door for returning the slide to its initial position.

17. In a voting machine the combination with a distributing device and a suitably designated casing extending therefrom; of a plurality of receptacles adjacent the distributing device, a slide mounted within the casing and distributing device and having an aperture adapted to register with any one of said receptacles, means upon the slide for designating the registering receptacle, and means for directing an object into the distributing device.

854,658. GOVERNOR. CARL LORENZ, Redfern, New South Wales, Australia. Filed May 26, 1906. Serial No. 318,895.

Claim.—1. A device for regulating the speed of engines by controlling the supply of motive fluid thereto comprising a cylinder, a regulator piston slidable in the cylinder, a fluid supply means connected with the cylinder head having a valve seat surrounding its inlet end, a valve carried by the regulator piston to engage the valve seat, a fluid supply pipe connected with the fluid supply means and the cylinder head, a valve to control the passage of the fluid through the fluid supply pipe, and a pressure spring to engage the regulator piston and balance it on one side while the load on the engine balances it on the other side.



2. A device for regulating the speed of engines by controlling the supply of motive fluid thereto comprising a cylinder, a regulator piston slidable in the cylinder, a fluid supply means connected with the cylinder head having a valve seat surrounding its inlet end, a valve carried by the regulator piston to engage the valve seat, a fluid supply pipe connected with the fluid supply means and the cylinder head, a valve to control the passage of the fluid through the fluid supply pipe, a pressure spring to engage the regulator piston and balance it on one side while the load on the engine balances it on the other side, and a plate adjustably connected to the cylinder to be engaged by the outer end of the spring.

3. A device for regulating the speed of engines by controlling the supply of motive fluid thereto comprising a cylinder, a regulator piston slidable in the cylinder, a fluid supply means connected with the cylinder head having a valve seat surrounding its inlet end, a valve carried by the regulator piston to engage the valve seat, a fluid supply pipe connected with the fluid supply means and the cylinder head, a valve to control the passage of the fluid through the fluid supply pipe, a pressure spring to engage the regulator piston and balance it on one side while the load on the engine balances it on the other side, a plate adjustably connected to the cylinder to be engaged by the outer end of the spring, and a stop to limit the movement of the regulator piston.

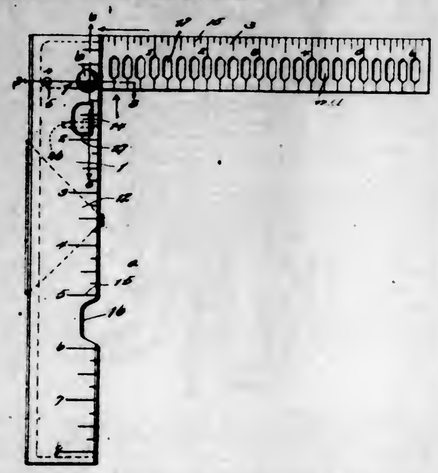
854,659. FOLDING SQUARE. JOHN H. MATTHEWS, Hollister, Cal. Filed Feb. 19, 1907. Serial No. 358,227.

Claim.—1. In a combined square, rule, and mitering instrument, the combination with the handle and blade, the said handle being composed of an upper and lower member, the lower member having a recess in its inner face, a spring secured in said recess in such a manner to allow the free end thereof to frictionally engage the blade, while the upper member is provided with a slot, a thumb piece pivoted in said slot so as to frictionally contact the upper surface of the spring for releasing the spring from contact with the blade, said handle having a raised portion used in mitering, said blade being provided with mortises and tenons openings, as and for the purpose specified.

2. In a combined square, rule and mitering instrument a handle having a longitudinal recess, a blade designed to be received by said recess in said handle, a raised portion, movably mounted upon said handle used in mitering, said blade being provided with mortises and tenons openings.

3. In a combined square, rule and mitering instrument, the combination with a handle and blade, a spring carried by the handle for holding the blade at a right angle to the

handle, said handle being composed of an upper and lower member, the upper member having a slot, and a thumb piece pivoted in said slot for releasing the spring from frictional contact with the blade.



4. In a combined square, rule and mitering instrument, the combination with the handle and blade, said handle having a recess, a leaf spring secured therein for holding the blade at a right angle to the handle, said handle being composed of an upper and lower member, the upper member having a slot, and a thumb piece pivoted in said slot, for releasing the spring.

5. In a combined square, rule and mitering instrument, a handle, a blade fulcrumed thereto, a spring carried by the handle to contact with said blade, said handle having a slot a thumb piece pivoted in said slot, for releasing said spring from contact with the blade.

854,660. BLINDSTITCHING SEWING-MACHINE. FRANK W. MERRICK, Boston, Mass., assignor to Union Lock Stitch Company, Boston, Mass., a Corporation of Maine. Filed Aug. 1, 1904. Serial No. 218,994.

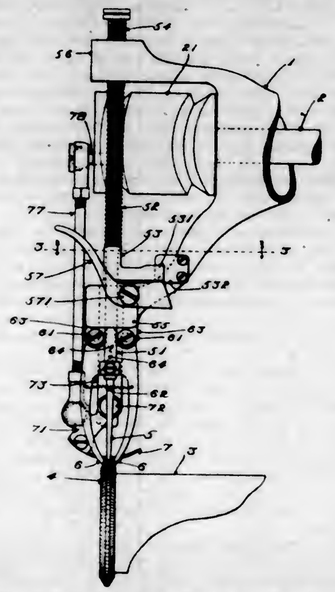
Claim.—1. The combination with the work-support having a V-shaped ridge, and the needle having a path which extends transversely with relation to the said ridge, of the side-pressers movable toward and from each other and acting against the opposite inclined sides of the ridge to bend the material over the latter, and the independent presser-foot acting in the plane of the ridge to press the material against the latter.

2. The combination with the work-support having a ridge, and occupying a relatively fixed position and the needle having a path which extends transversely with relation to the said ridge, of the spring-actuated side-pressers to bend the material over the ridge, the presser-foot acting in the plane of the ridge, the spring by which said presser-foot is actuated, and means to manually raise the presser-foot.

3. The combination with the work-support having a ridge, and a needle moving transversely with relation to the latter, of spring-actuated side-pressers movable transversely toward and from the sides of said ridge, and an independent presser acting in the plane of the ridge.

4. The combination with a work-support having a ridge, and the needle having a path which extends transversely with relation to the said ridge, of independently movable spring-actuated side-pressers, the presser-foot acting in the plane of the ridge, the spring by which the said presser-foot is actuated, and means to normally raise the presser-foot.

5. The combination with a former and feed-device occupying a relatively fixed position, and the needle moving transversely with relation thereto, of side-pressers acting in connection with the opposite sides of the said former and feed-device, and an intermediate independent presser-foot.



6. The combination with a former and feed-device, and the needle moving transversely with relation thereto, of spring-actuated side-pressers movable transversely toward and from each other, and an intermediate presser-foot.

7. The combination with a former and feed-device, and the needle moving transversely with relation thereto, of spring-actuated side-pressers movable toward and from each other, and an intermediate independent spring-actuated presser-foot.

8. The combination with the work-support having a ridge, and a needle moving transversely with relation to the latter, of side-pressers acting at the opposite sides of the said ridge, means to support the said side-pressers, an intermediate presser acting in the plane of the ridge, and means to manually raise the said presser independently.

9. The combination with the work-support, and the needle, of the side-pressers, a support for the said side-pressers, an intermediate presser, and means to raise the said intermediate presser and separate the side-pressers transversely from the work-support.

10. The combination with the work-support and the needle, of the side-pressers, a fixed support for the said side-pressers, an intermediate presser, and means to raise the said intermediate presser and move the side-pressers transversely to thereby separate them from the work-support.

11. The combination with the work-support and the needle, of the pivotally-mounted spring-actuated side-pressers provided with the cam-surfaces, an intermediate presser, the spring-actuated presser-bar provided with means to engage the said cam-surfaces and by acting thereagainst spread the side-pressers to separate them from the work-support, and means to raise the said presser-bar.

854,661. EXPANSIBLE WINDING-DRUM. ANSON C. MILLS, Jackson, Mich., assignor to Jackson Fence Company, Jackson, Mich., a Corporation of Michigan. Filed May 21, 1906. Serial No. 318,036.

Claim.—1. An expanding drum comprising a shaft, collars fixed on the shaft and having peripheral eccentric surfaces, rings surrounding the collars and rotative thereon, and also having radial sockets, arms radially movable in the sockets and engaging the eccentric surfaces at their inner ends, and bars attached to the arms.



2. An expanding drum comprising a shaft, collars fixed on the shaft and having eccentric recesses in their peripheries, a flange on one side of each collar, a disk opposite each flange, a ring rotative on each collar, means for limiting the rotation of the rings, radial sockets in the rings, arms radially movable in said sockets, and bars attached to said arms.

3. In an expanding drum, a shaft, collars fixed on the shaft and having eccentric recesses, rings rotative on said collars and having radial sockets, radially movable arms in said sockets and engaging said recesses, radial slots in the rings, pins in the arms and traversing the slots, and bars attached to the outer ends of the arms.

4. An expanding drum comprising a shaft, a fixed member on said shaft and a rotative member surrounding said fixed member and rotative thereon, the fixed member having cam recesses in its periphery and the other member having radial sockets, radially movable arms in said sockets and engaging the cam recesses at their inner ends, means for limiting the movement of the arms and of the rotative member, and bars forming the periphery of the drum and attached to the arms.

5. An expanding drum, comprising a shaft, a collar fixed on the shaft and having cam recesses, a disk fixed on the shaft, a ring rotative on the collar and having radial sockets, a projection on the disk, a lug on the ring and engaging said projection, radially movable arms in the sockets and engaging the cam recesses in the collar, radial slots in the ring, pins in the arms and traversing the slots, and bars attached to the outer ends of the arms.

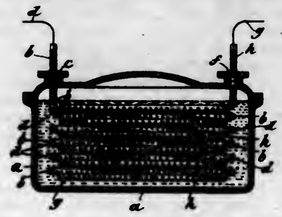
6. An expanding drum comprising a shaft, collars fixed on the shaft and having recesses provided with cam surfaces, rings rotative on the collars, means for limiting the rotation of said rings, radial sockets in said rings, radially movable arms in said sockets and engaging the recesses in the collars, means for limiting the outward movement of the arms, bars attached to the arms, hangers journaled on the shaft and engaging one of the bars, and a rod supported by the hangers.

7. An expanding drum comprising a shaft, a fixed member and a rotative member on said shaft, cam recesses in one member and radial sockets in the other member, radially movable arms in said sockets, said arms engaging the recesses at one end and having T-heads at the other end, angle bars attached to the T-heads, means for limiting the rotation of the rotative member and the outward movement of the arms, a rod movable between two of the angle bars, and pivoted hangers supporting the rod.

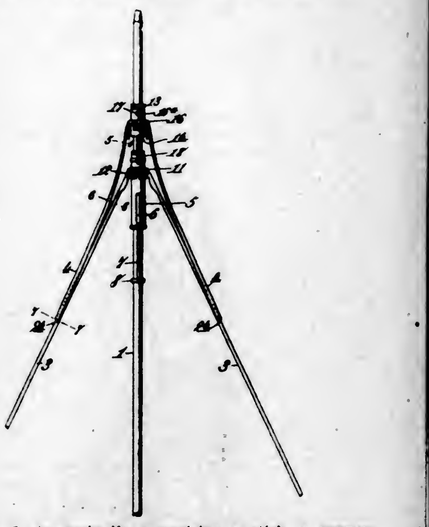
8. An expanding drum, comprising a shaft, collars fixed on the shaft and having flanges at one side and peripheral recesses having bottom cam surfaces, rings rotative on the collars and having radial sockets provided with radial slots, a lug on one socket, a disk fixed on the shaft and having a projection engaged by the lug, radially movable arms in said sockets and engaging the recesses in the collars, pins in said arms and traversing the radial slots, T-heads on the arms, and angle bars attached to the T-heads.

854,662. ELECTRIC CONDENSER. IGNACY MOSCICKI, Fribourg, Switzerland. Filed Feb. 17, 1904. Serial No. 194,027.

Claim.—An electric condenser comprising a vessel of insulating material containing an electrolyte, two coiled tubular dielectrics, the coils of one surrounding the coils of the other, both being immersed in the electrolyte contained in the vessel, each tubular dielectric containing an electrolyte conductor, and conducting terminals inserted within the tubular dielectrics and immersed in the electrolytic conductors contained therein.



854,663. UMBRELLA. MICHAEL G. MCGUIRE, Niagara Falls, N. Y. Filed Mar. 8, 1907. Serial No. 361,242.



Claim.—1. An umbrella comprising a stick, a runner, ribs pivoted thereto, and spring braces pivoted at one end to the stick above the pivot point of the ribs and having the other ends pivotally connected to the ribs, thereby forming, when the umbrella is extended, a plurality of supporting members for the cover of ogee curvature.

2. An umbrella comprising a plurality of pivoted ribs and a plurality of pivoted braces therefor, said braces positioned above and connected to the ribs, the length of the braces being greater than the distance from the point of connection of the ribs to the pivoted end thereof.

3. An umbrella comprising a stick, a notched collar fixed thereto and provided with an annular bead, spring braces pivotally connected to said notches and having their movement in one direction arrested by said bead, a runner mounted upon the stick below the collar and provided with a plurality of notches and an annular bead, ribs arranged below the braces pivotally connected in the notches of the runner and having their movement in one direction arrested by the last-mentioned bead, and means for connecting the spring braces to the ribs.

4. An umbrella comprising a plurality of pivoted ribs, the upper portion of each of said ribs being of greater flexibility than the lower portion, and pivoted spring braces for the ribs, said braces arranged above and con-

nected to the ribs and having the lower portions thereof of greater strength than the upper portions.

5. An umbrella comprising a plurality of ribs, a stick, means for pivotally and slidably connecting the upper ends of the ribs to the stick, means for arresting the movement in one direction of the pivoted ends of the ribs when closing the umbrella, a plurality of spring braces, means for pivotally connecting the upper ends of said braces to the stick above the pivoted ends of the ribs, means for arresting the movement in one direction of the pivoted ends of the braces when closing the umbrella, and means for suitably connecting the lower ends of the braces to the ribs.

6. An umbrella comprising a stick, ribs slidably and pivotally connected therewith, and spring braces pivoted at one end to the stick above the ribs and connected at their lower ends to the ribs and adapted to sustain the ribs when extended, said braces having their lower portions constructed to receive the upper portions of the ribs when the umbrella is closed.

7. An umbrella comprising a stick, a runner slidably mounted thereon and adapted to be shifted toward the handle end of the umbrella when opening the umbrella, means carried by and engaging in the stick to prevent turning of the runner, spring braces pivoted at their upper ends to the stick above the runner, ribs pivoted to the runner, and means for pivotally connecting the spring braces to the ribs, said ribs and braces acting as a support for the cover of the umbrella.

854,664. WIND-MOTOR. CATHERINE J. MCMASTER, Corfield, North Queensland, Queensland, Australia. Filed June 15, 1906. Serial No. 321,901.

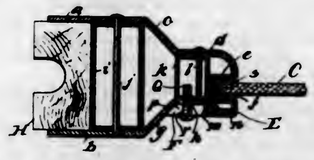


Claim.—1. A wind motor comprising a head frame having an apertured foot bearing, a platform on which the head frame is pivotally supported, a swivel pivotally connected to the head frame, guy ropes attached to said swivel, bearings in said head frame, a wind wheel mounted in said bearings, other bearings in the head frame, a shaft mounted in said second mentioned bearings, means for transmitting motion from the wind wheel to the shaft, a crank for said shaft, guides in said head frame, a cross head reciprocating in said guides, a crank shaft connecting said crank and cross head and a plunger passing through the apertured foot bearing.

2. A wind motor, comprising a head frame having an apertured foot bearing, a platform, a ball race in said platform, balls in said race, a bearing part on said head frame engaging said balls, a swivel, a central shouldered pin on said swivel, a ball race on the head frame, balls engaging said race and the shoulder of said pin, bearings in said head frame, a wind wheel mounted in said bearings, other bearings in the head frame, a shaft mounted in said second mentioned bearings, means for transmitting motion from the wind wheel to the shaft, a crank for said shaft, guides in said head frame, a cross head reciprocating in said guides, a crank shaft connecting said crank and cross head and a plunger passing through the apertured foot bearing of the head frame.

3. A wind motor comprising an apertured head frame, a supporting platform therefor, a ball race in said platform, balls in said race, a bearing part on said head frame engaging said balls, a swivel, a shouldered pin for said swivel, a ball race on the head frame, balls engaging said race and the shoulder of said bearings in the head frame, a wind wheel mounted in said bearings, other bearings in the head frame, a shaft mounted in said second mentioned bearings, means for transmitting motion from the wind wheel to the shaft, a crank for said shaft, guides in the head frame, a cross head reciprocating in said guides, a crank shaft connecting said crank and cross head, a plunger passing through the aperture in said head frame, and a tail piece for the head frame.

854,665. METALLIC WINDOW-SASH. CLEMENT NEIDIG and ORA A. NEIDIG, Bourbon, Ind. Filed Feb. 26, 1907. Serial No. 359,534.



Claim.—1. In a window sash, a bar comprising metallic side sections connected together and suitably held apart; one of the said side sections having walls disposed at right angles to each other and arranged to form a groove for the reception of the edge of a pane of glass, a clamp detachably connected to the other side section, and a metallic pane-retaining strip arranged at the inner side of the clamp and receiving that wall of the first mentioned side section which forms the bottom of the pane-receiving groove.

2. In a window sash, a bar comprising metallic side sections connected together and suitably held apart; one of the said side sections having walls disposed at right angles to each other and arranged to form a groove for the reception of the edge of a pane of glass, and a metallic pane-retaining strip detachably connected with the second mentioned side section and receiving that wall of the first mentioned side section which forms the bottom of the pane-receiving groove.

3. In a window sash, a bar comprising metallic side sections connected together and suitably held apart; one of said side sections having walls disposed at right angles to each other and arranged to form a groove for the reception of the edge of a pane of glass, a metallic pane-retaining strip bent or shaped in cross-section to receive that wall of the first mentioned side section which forms the bottom of the pane receiving groove and bear at one edge against the outer side of the second mentioned side section, a clamp having a portion resting at the outer side of the pane-retaining strip and also having a comparatively thick portion of a shape in cross-section to snugly fit between the outer end of the strip and the opposed portion of the second mentioned side section, and a screw detachably connecting the thick portion of the clamp to the latter side section.

4. In a window sash, a bar comprising metallic side sections having parallel major portions and also having inwardly inclined portions and parallel portions closer to each other than the first mentioned parallel portions; the said side sections being suitably connected together and held apart, and one of the same having walls disposed at right angles to each other and arranged to form a groove for the reception of the edge of a pane of glass, a metallic pane-retaining strip receiving that wall of the first mentioned side section which forms the bottom of the pane receiving groove, and suitable means detachably connecting the pane-retaining strip to the second mentioned side section.

5. In a window sash, the combination of a metallic side section having walls arranged to form a groove for the reception of the edge of a pane of glass, a second section connected to and held away from the first mentioned section, a metallic pane-retaining strip receiving and adjustable on the bottom wall of the first mentioned side section, and means detachably connecting said strip with the second mentioned side section.

6. In a window sash, the combination of a metallic section having walls disposed at right angles to each other to form a groove for the reception of the edge of a pane of glass, and a metallic pane-retaining strip detachably connected with the section and receiving and adjustable on the bottom wall of the pane-receiving groove.

7. In a window sash, a bar comprising metallic sections connected together and suitably held apart; one of said sections having a pane receiving groove open at one side, a clamp detachably connected to the other section, and a metallic pane-retaining strip arranged at the inner side of the clamp and engaged with and held against displacement by the first mentioned section.

8. In a window sash, the combination with a bar having a pane receiving groove open at one side; said bar being formed of metal, a clamp detachably connected to the bar, and a metallic pane-retaining strip arranged at the inner side of the clamp and engaged with the bar, whereby it is held against movement from between the bar and the clamp.

9. In a window sash, a bar comprising metallic side sections having parallel major portions, inwardly inclined portions, and inner parallel portions closer together than the first mentioned parallel portions, a rectangular brace frame interposed between the first mentioned parallel portions of the side sections, means extending through and connecting said portions and frame, a rectangular brace frame interposed between the second mentioned parallel portions of the side sections, and means extending through and connecting said portions of the side sections and the frame.

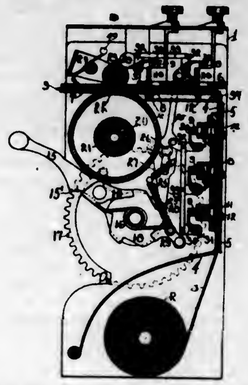
10. In a window sash, a bar comprising metallic side sections suitably connected together and held apart, and a body of wood fastened between and extending beyond the edges of the said side sections, for the purpose set forth.

11. In a window sash, the combination of a hollow sash bar having in one side wall an aperture and a slot extending therefrom, a removable pane-retaining strip, a nut arranged at the inner side of the said side wall of the bar, a clamp arranged at the outer side of the strip, and a screw extending through the clamp and the slot in the side wall of the bar and engaging the nut.

854,666. TICKET ISSUING AND RECORDING MACHINE. JOHN F. OHMER and ELMER H. BRIDENBAUGH, Dayton, Ohio, assignors to Ohmer Fare Register Company, Rochester, N. Y. Filed Oct. 7, 1905. Serial No. 281,750.

Claim.—1. In a ticket-machine, the combination with ticket-issuing mechanism, of a punch to perforate the tickets at selected points, a resilient member lying transversely to the plane of the punch and in the path thereof, and co-operating with said punch in perforating the tickets, and means for holding the tickets against the outward pressure of the punch.

2. In a ticket machine, the combination with ticket-issuing mechanism, of a series of ticket punches to perforate the tickets at selected points, a resilient member lying in the path of each point and co-operating therewith to perforate the tickets, and means adjacent to said resilient members for holding the tickets while being perforated.



3. In a ticket machine, the combination with ticket-issuing mechanism, of a series of ticket punches actuated by said mechanism to perforate the tickets, a series of resilient members lying in the paths of and transversely to said ticket punches and co-operating therewith in punching the tickets, and means for holding the tickets against the pressure of the punches.

4. In a ticket-issuing machine, the combination with ticket-issuing mechanism, of a series of punches or perforators having V-shaped notches, a series of resilient bars mounted in line with said V-shaped notches and co-operating with the perforators in punching the tickets, and means comprising a perforated plate for holding the tickets against the outward pressure of the punches, and upon which the resilient members are supported.

5. In a ticket-issuing machine, the combination with ticket-feeding devices adapted to feed previously printed tickets from a continuous strip, of a plurality of perforators so arranged with reference to the matter on the tickets that each perforator will punch selected data from said tickets, said perforators being operated each time through the ticket-issuing mechanism, a series of resilient bars lying in the paths of said perforators and co-operating therewith in punching the tickets, and means in the rear of the tickets for holding them against the outward pressure exerted by the perforators.

6. In a ticket-issuing machine, the combination with ticket-feeding devices adapted to feed previously printed tickets from a continuous roll or strip, of a plurality of punches so arranged that each punch will perforate selected data from a different part of each ticket, said punches being operated each time through the ticket-feeding mechanism, a series of resilient members mounted in the paths of said punches and co-operating therewith in perforating the tickets, and means for holding the tickets against the pressure of the punches.

7. In a ticket-issuing machine, the combination with mechanism adapted to feed a continuous strip of tickets containing printed data, of a plurality of perforators mounted in the machine and adapted to punch or perforate said tickets at the desired points, a series of resilient bars mounted in the paths of the perforators and engaged by the ends of said perforators in punching the tickets and means for guiding the tickets and holding them against the pressure of the perforators.

8. In a ticket-issuing machine, the combination with ticket-issuing mechanism adapted to feed a continuous strip of tickets containing printed data in transverse parallel groups, of a plurality of perforators adapted each to punch selected data from said groups, a series of actuators to operate said perforators, a series of resilient members in the paths of said perforators and co-operating therewith in punching the tickets, and means for guiding the tickets

into positions to be punched and for holding the same against the pressure of the perforators.

9. In a ticket-issuing machine, the combination with ticket-issuing devices, of a series of perforators adapted to punch or perforate said tickets at predetermined points, means in the rear of the ticket strip for holding the same against the pressure of the perforators, a series of resilient bars adjacent to the ends of the perforators and co-operating with said perforators in punching said tickets, a series of actuators arranged adjacent to the perforators, and means for operating said actuators upon each ticket-feeding operation of the machine.

10. In a ticket-issuing machine, the combination with ticket-feeding devices including an operating lever, of a plurality of perforators adapted to punch or perforate each ticket at predetermined points, said perforators having notches in their punching ends, means in the rear of the ticket strip for holding the same against the pressure of the perforators, a series of resilient bars mounted in alinement with said notches and co-operating with the punches in punching the tickets, a series of actuators to operate said perforators, and means interposed between said actuators and said main operating lever whereby the perforators are operated upon previous to each feeding operation of the machine.

11. In a ticket-issuing machine, the combination with a main operating lever, a feed roller, means interposed between said feed roller and said lever for operating said feed roller, a pressure roller mounted in contact with said feed roller, and means interposed between said pressure roller and the main operating lever, whereby said pressure roller is removed from the feed roller when said lever is moved to the limit of its movement in one direction.

12. In a ticket-issuing machine, the combination with ticket-issuing devices including an operating lever, of a plurality of perforators adapted to punch or perforate each ticket at predetermined points, said perforators having notches in their ends, means in the rear of the ticket strip for holding the same against the pressure of the perforators, a series of resilient bars mounted in alinement with said notches and co-operating with the perforators in punching the tickets, a series of actuators to operate said perforators, and means interposed between said actuators and the operating lever of the machine whereby the punches or perforators are operated upon each initial movement of the operating lever.

13. In a ticket-issuing machine, the combination with a ticket-issuing mechanism, of a perforator or punch to perforate each ticket, a resilient member lying in the path of the perforator or punch and co-operating with said perforator or punch in perforating said ticket, and means in the rear of the ticket strip for holding the same against the pressure of the punches.

14. In a ticket-issuing machine, the combination with ticket-issuing mechanism, of a movable punch or perforator, a resilient member mounted in the rear of the ticket strip, means in the rear of the ticket strip for holding the same against the pressure of the punch or perforator, and a receptacle to receive the punched portions of the ticket.

15. In a ticket-issuing machine, the combination with ticket-issuing mechanism, of a movable punch or perforator, a resilient member engaging said perforator in its operations, means in the rear of the ticket strip for holding the same against the pressure of the perforator, and a receptacle to receive the punched-out portions of the ticket.

16. In a ticket-issuing machine, a movable punch or perforator, in combination with a resilient member co-operating with the punch to perforate a ticket, and means for holding the ticket strip against the pressure of said punch or perforator.

17. In a ticket-issuing machine, a plurality of punches, in combination with a corresponding number of resilient members engaged by the ends of said punches in perforating the tickets, and means for holding the tickets against the pressure of the punches and the resilient members.

18. In a ticket-issuing machine, the combination of a punch or perforator, a resilient bar mounted in the path of said punch or perforator and co-operating therewith to punch the tickets, a perforated plate in the rear of the tickets and holding the same against the pressure of said punch or perforator, and a receptacle to receive the punched portions of the tickets.

19. In a ticket-issuing machine, the combination with a punch or perforator, of a resilient member mounted adjacent to the end of said punch and co-operating therewith in punching the tickets, means for holding the tickets against said punch, and a receptacle to receive the punched portions of the tickets.

20. In a ticket machine, a movable punch, a resilient bar mounted in the path of said punch and engaging the ticket on one side, and means for shifting said punch to operative positions.

21. In a ticket-machine, a series of ticket punches, a resilient bar mounted in the path of each of said punches and engaging the tickets on the sides opposite the punches in the operations of punching the tickets, a slotted plate on the rear side of said punches for holding the tickets against the pressure exerted thereon by the punches.

22. In a ticket machine, the combination of a main operating lever, a feed roller, and means interposed between said feed roller and said lever for operating said roller, a pressure roller, a pivotal frame upon which said pressure roller is mounted, lever and link connections between said pressure roller and the operating lever whereby said pressure roller is elevated from the feed roller when the operating lever is actuated beyond the limit of its ticket-feeding movement.

23. In a ticket machine, ticket feeding rollers, and a main operating lever, in combination with two series of ticket punches, a resilient bar mounted in the path of each of said punches and engaging the tickets, a perforated plate mounted adjacent to each of said ticket punches, the perforations in said plate being in alinement with the resilient bars, and means operated by the main operating lever to actuate said punches.

24. In a ticket machine, the combination with feeding rollers, and a main operating lever, of a series of horizontal ticket punches, a series of vertical ticket punches, a perforated plate mounted adjacent to each of said ticket punches, the perforations in said plates being oblong and in alinement with the ticket punches, and resilient bars mounted in the paths of said punches parallel with the perforations in said plates and lying between said perforations and the ticket punches.

25. In a ticket-issuing machine, the combination with two feeding rollers, and a main operating leter, of an upper series of ticket punches, a lower series of ticket punches, perforated plates mounted adjacent to said punches, the perforations therein being elongated and in alinement with the punches, resilient members mounted upon said perforated plates parallel with the openings in said plates and adjacent to the punches, and mechanism between said upper series of punches and said lower series of punches, whereby all of said punches are operated simultaneously from the main operating lever.

26. In a ticket-issuing machine, the combination with ticket-feeding rollers, and a main operating lever, of a series of upper punches and a series of lower punches, a resilient member co-operating with each punch to perforate the tickets, means in the rear of the tickets for holding them against the pressure of the punches mechanism interposed between said upper and lower series of punches and the main operating lever, whereby said punches are simultaneously operated upon each operation of the lever, and means interposed between said operating lever and one of the feeding rollers, whereby said feeding roller is removed from an operative position when the lever is moved beyond the limit of its movement in feeding tickets.

27. In a ticket-issuing machine, the combination with a main operating lever, and ticket feeding rollers, of an upper series of ticket punches, a lower series of ticket punches, a resilient bar mounted in the path of each of said punches and co-operating with each punch in perforating the tickets and serving to initially retract each punch after each perforating operation, means in the rear of the tickets to hold the same against the pressure of the punches, and mechanism interposed between the lower series of punches and the upper series of punches whereby said punches are simultaneously operated from the main operating lever.

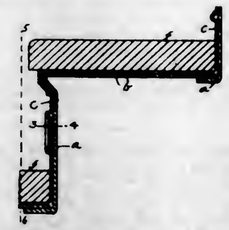
28. In a ticket-issuing machine, the combination with ticket-feeding rollers, and a main operating lever, of an upper series of ticket punches, a lower series of ticket punches, a resilient member co-operating with each punch in perforating the tickets and adapted to initially retract a punch after each operation, means for holding the tickets against the pressure of the punches, an actuator for each punch, a connection between the actuators of the upper series of punches, a connection between the actuators of the lower series of punches, a pitman to which the upper series of punches are connected, and to which the lower series of actuators are connected, and means on the main operating lever for actuating said pitman.

29. In a ticket-issuing machine, the combination with a feeding roll, a pressure roller mounted on pivotal arms above the feed roll, an arm projected from said pressure roller in the direction opposite to that of the supporting arms of said feed roll, a lever engaging said oppositely projected arm, a link extending downwardly from said lever, a bell crank lever to which said link is connected, one arm of said bell crank lever having a lug thereon and a main operating lever having a projection thereon adapted to engage the lug of the bell crank lever when said operating lever is moved to its lowest position, and whereby the pressure roller is lifted from the feed roll.

30. In a ticket-issuing machine, the combination with a feeding roll and a pressure roller mounted upon a pivotal frame, of a tension device for increasing or decreasing the contact of the pressure roller and consisting of a spring engaging said pivotal frame at one end, a stud engaging said spring at the other end, a pin engaging said spring at an intermediate point, and an adjusting screw for said spring on one side of its intermediate connection, said adjusting screw being extended from the outside of the casing of the machine and having an intermediate portion through which the adjusting movements are imparted to the spring.

31. In a ticket-issuing machine, a ticket-feeding roll, a pressure roll to maintain the ticket strip in a suitable contact with the feed roll, a pivotal frame upon which said pressure roll is mounted, a spring secured to the pivot of said frame, one end of the spring engaging the frame, an adjusting plate engaged by the other end of the spring, and a screw engaging said plate to regulate the tension of the spring and thereby maintain the pressure roll in suitable contact with the feed roll.

854,667. STAIRWAY. CHARLES E. PAULSON, New York, N. Y. Filed Mar. 13, 1907. Serial No. 362,217.

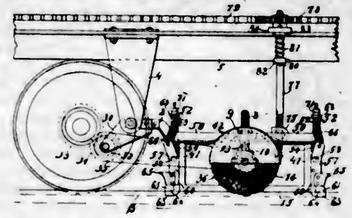


Claim.—1. A stair having risers composed of a plurality of thicknesses of metal, one of which is adapted to be pressed into ornamental form, in combination with means for securing said thicknesses together so that they mutually reinforce each other, substantially as described.

2. A stair having risers and soffits each of which is composed of a plurality of thicknesses of metal, one of which is adapted to be pressed into ornamental form, in combination with means for securing said thicknesses together so that they mutually reinforce each other, substantially as described.

3. A stair having risers, soffits and strings, each of which is composed of a plurality of thicknesses of metal one of which is adapted to be pressed into ornamental form, in combination with means for securing said thicknesses together so that they mutually reinforce each other, substantially as described.

854,668. RAIL-CLEANER. HILARY QUERTIER, Dunedin, New Zealand. Filed Feb. 13, 1906. Serial No. 300,927.



Claim.—1. For the purpose indicated in combination, a frame pivoted at one end upon a vehicle, spring arms connected to the sides of the frame, adjustable rail clearing shares carried by said arms, brackets one upon each side of the frame, screw threaded spindles slidable in each of said brackets and adjusting nuts thereon, springs threaded one upon each spindle, bearing bosses at the ends of said spindles, a brush spindle revolubly mounted therein, rail clearing brushes one at each end of said brush spindle, means for revolving said brush spindle and means for raising and depressing said frame, substantially as specified.

2. For the purpose indicated in combination, a frame pivoted at one end upon a vehicle, brackets fixed upon each side thereof, screw threaded spindles slidable in each of said brackets and adjusting nuts thereon, springs threaded one upon each spindle, bearing bosses at the ends of said spindles, a shaft revolubly mounted therein, rail clearing brushes, one at each end of said shaft and means for raising and depressing said frame, substantially as specified.

3. For the purpose indicated in combination, a frame pivoted at one end upon a vehicle, spring arms fixed two upon each side of said frame, two arms projecting in one direction and two in the opposite direction and adjustable rail clearing shares, one carried by each of said arms, substantially as specified.

4. For the purpose indicated in combination, a cylindrical drum, a conical flange therein, a bristle ring fitting the annular space between said flange and the inner periphery of the drum, U shaped bristles passing through perforations in the bristle ring a cone ring in segments, and a flanged cover with means for securing it and said drum upon a brush spindle, substantially as specified.

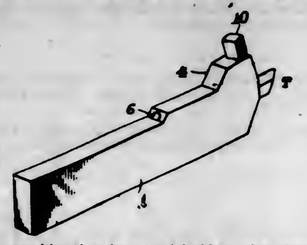
5. For the purpose indicated in combination a spring arm, a square socket at the end thereof, a spindle slidable in said socket, a spring threaded upon and an eye at the end of said spindle, a bifurcated bracket having a jaw at its lower end, pivoted means for securing said bracket to the spindle, the upper ends of the members of the bracket inclining from the vertical forwardly springs connected to said upper ends, adjusting bolts therefor, a cross head plate upon said spindle through which pass said adjusting bolts, and a rail clearing share carried in said jaw, substantially as specified.

854,669. TOOL-HOLDER. MICHAEL D. REIDY, Worcester, Mass. Filed June 20, 1906. Serial No. 322,599.

Claim.—1. In a tool holder, a shank formed with two pockets of equal cross-sectional areas so that each may receive the tool having their external mouths coincident, but one pocket forming an acute angle with the other, in combination with a set screw tapped into the shank or holder near said mouth.

2. In a tool holder, a shank formed with two pockets of equal cross-sectional areas so that each may receive the tool having their mouths coincident but one pocket forming an acute angle with the other, in combination with a

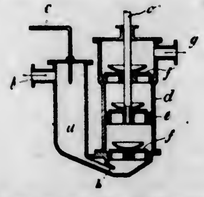
set-screw tapped into the shank or holder at right angles to a plane bisecting the angle formed by said pockets.



3. The combination in a tool holder, of a shank formed with two pockets of equal cross-sectional areas so that each may receive the tool, said pockets making an acute angle with each other, a set screw tapped into the shank close above the juncture of said pockets, and a removable block located in the lower pocket with its upper end made flush with the floor of the upper pocket, in order that the pressure of said set screw upon a tool inserted in the upper pocket may be prevented by said block from curving such tool.

4. The combination in a tool holder, of a shank formed with two pockets of equal cross-sectional areas so that each may receive the tool, said pockets making an acute angle with each other, a set screw tapped into the shank close above the juncture of said pockets, a removable block located in the lower pocket with its upper end made flush with the floor of the upper pocket, and means for adjusting the longitudinal position of said block.

854,670. APPARATUS FOR THE EXTRACTION OF DUST FROM CARPETS AND OTHER ARTICLES. FREDERIK V. SCHIÖDT, Copenhagen, Denmark, assignor to Hj. Hein & Möller-Holst, Copenhagen, Denmark, a Firm. Filed May 3, 1905. Serial No. 258,719.



Claim.—1. In dust extracting apparatus, a suction mouth-piece, means for drawing dust and air therethrough, and means for introducing substantially continuously into such apparatus a relatively large quantity of liquid sufficient to slime the dust, but insufficient to break the vacuum, said apparatus being adapted to effect a substantially continuous discharge of the dust laden liquid to remove the dust from the apparatus.

2. In dust extracting apparatus, a suction mouth-piece, a pump for drawing the dust and air therethrough, and means for introducing substantially continuously into such apparatus a relatively large quantity of liquid sufficient to slime the dust, but insufficient to break the vacuum, said pump being adapted to effect a substantially continuous discharge of the dust laden liquid to remove the dust from the apparatus.

3. In dust extracting apparatus, a suction mouth-piece, a pump for drawing dust and air therethrough, and means for introducing substantially continuously into such apparatus in advance of the pump outlet a relatively large quantity of liquid sufficient to slime the dust, but insufficient to break the vacuum, said pump being adapted to effect a substantially continuous discharge of the dust laden liquid to remove the dust from the apparatus.

4. In dust extracting apparatus, a suction mouth-piece, a reciprocating pump for drawing dust and air therethrough, said pump having an inlet and an outlet valve, and means for introducing substantially continuously into such pump between such valves a relatively large quantity of liquid sufficient to slime the dust, but insufficient to break the vacuum, said pump being adapted to effect a substantially continuous discharge of the dust laden liquid to remove the dust from the apparatus.

5. In dust extracting apparatus, a suction mouth-piece, a pump for drawing air and dust therethrough, a mixing chamber in advance of the pump outlet, and means for introducing substantially continuously into such chamber a relatively large quantity of liquid sufficient to slime the dust, but insufficient to break the vacuum, said pump being adapted to effect a substantially continuous discharge of the dust laden liquid to remove the dust from the apparatus.

6. In dust extracting apparatus, a suction mouth-piece, a reciprocating pump for drawing air and dust therethrough, and means for sprinkling liquid directly against a valve seat of said pump whereby to rinse the latter and to mix the dust with the liquid.

7. In dust extracting apparatus, a pump having a diaphragm, a chamber in which said diaphragm works, said chamber being of larger diameter than the diaphragm so as to provide a space between the latter and the walls of the chamber, and a valve for permitting the escape of air from the upper portion of said chamber adapted to open when such diaphragm is depressed whereby to eliminate the effects of clearance.

8. In dust extracting apparatus, a pump having a diaphragm, inlet and outlet valves, a chamber between said valves, means for introducing a liquid between said valves to absorb the dust passing through said pump, and a special valve at the top of said chamber to permit the escape of air from the upper portion thereof so as to eliminate the clearance space.

9. In dust extracting apparatus, a suction mouth-piece, means for drawing dust and air therethrough, means for absorbing the dust in a relatively large quantity of liquid in advance of the outlet of said dust and air drawing means, such apparatus having means for discharging the liquid containing the dust out of the apparatus, in such manner so as to avoid clogging of the apparatus.

10. In dust extracting apparatus, a suction mouth-piece, means for drawing dust and air therethrough, means for introducing substantially continuously into such apparatus a relatively large quantity of liquid sufficient to slime the dust, but insufficient to break the vacuum, and a chamber in which said fluid and air are introduced, said chamber having an outlet, and the apparatus being arranged to draw both the liquid and air through said outlet.

11. In dust extracting apparatus, a pump for drawing dust and air therethrough, means for introducing substantially continuously into the apparatus a relatively large quantity of liquid sufficient to slime the dust, but insufficient to break the vacuum, such apparatus maintaining a body of liquid through which the air is compelled to rise before it is discharged by the pump and means for discharging the dust laden liquid out of the apparatus.

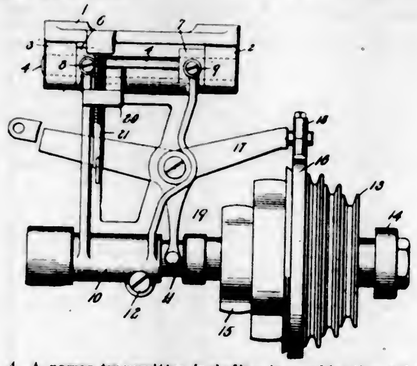
854,671. POWER-TRANSMITTING DEVICE. DUDLEY S. SEYMOUR, Oak Park, Ill., assignor to Union Special Machine Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 12, 1906. Serial No. 343,069.

Claim.—1. A power transmitter including in combination a belt wheel, a pulley for transmitting motion to said belt wheel and means for supporting said pulley and belt wheel, comprising a bracket, a support therefor, and means for angularly adjusting said bracket relative to said support; substantially as described.

2. A power transmitter including in combination a belt wheel, a pulley for transmitting motion to said belt wheel and means for supporting said pulley and belt wheel, comprising a bracket, oppositely disposed arms carried by said bracket, a support for said bracket and means carried by one of said arms for adjusting said bracket relative to said support; substantially as described.

3. A power transmitter including in combination a belt

wheel, a pulley for transmitting motion to said belt wheel and means for supporting said pulley and belt wheel comprising a bracket, oppositely disposed arms carried by said bracket, a support for said bracket, and threaded screws carried by said arms and engaging said support; substantially as described.



4. A power transmitter including in combination a belt wheel, a pulley for transmitting motion to said belt wheel, and means for supporting said pulley and belt wheel comprising a bracket, having ears thereon a shaft secured to said ears, a support, bearings carried by said support, and receiving said shaft, and means for angularly adjusting said bracket relative to said support; substantially as described.

5. A power transmitter including in combination a belt wheel, a pulley for transmitting motion to said belt wheel, and means for supporting said pulley and belt wheel comprising a bracket, having ears thereon a shaft secured to said ears, a support, bearings carried by said support, and receiving said shaft, oppositely extending arms carried by said bracket, and means carried by said arms for angularly adjusting said bracket relative to said support; substantially as described.

6. A power transmitter including in combination a belt wheel, a pulley for transmitting motion to said belt wheel, and means for supporting said pulley and belt wheel comprising a bracket, having ears thereon a shaft secured to said ears, a support, bearings carried by said support, and receiving said shaft, oppositely extending arms carried by said bracket and threaded screws passing through said arms and engaging said support; substantially as described.

7. A power transmitter including in combination a belt wheel, a driven pulley, and means for supporting said belt wheel and driven pulley including a bracket, a support having spaced bearings, there being perforated ears carried by said bracket, and located between said bearings on said support, a shaft passing through said bearings and said ears, set screws for securing said shaft to said bracket, and means for angularly adjusting said bracket relative to said support; substantially as described.

8. A power transmitter including in combination a belt wheel, a driven pulley, and means for supporting said belt wheel and driven pulley including a bracket, a support having spaced bearings, there being perforated ears carried by said bracket and located between said bearings on said support, a shaft passing through said bearings and said ears, set screws for securing said shaft to said bracket, oppositely extending arms carried by said bracket and means carried by said arms for angularly adjusting said bracket relative to said support; substantially as described.

9. A power transmitter including in combination a belt wheel, a driven pulley, and means for supporting said belt wheel and driven pulley including a bracket, a support having spaced bearings, there being perforated ears carried by said bracket and located between said bearings on said support, a shaft passing through said bearings and said ears, set screws for securing said shaft to said bracket, oppositely extending arms carried by said bracket and screws coöperating with said arms for angularly adjusting said bracket relative to said support; substantially as described.

10. A power transmitter including in combination a belt wheel, a pulley for transmitting motion to said belt wheel and means for supporting said pulley and belt wheel, comprising a bracket, a support therefor, and means for angularly adjusting said bracket relative to said support and for holding the same in its adjusted positions; substantially as described.

11. A power transmitter, including in combination, a belt wheel, a pulley for transmitting motion to the said belt wheel, and means for supporting said pulley and belt wheel, comprising a bracket, a support therefor, and means for adjusting said bracket at right angles to the axes of said pulley and belt wheel; substantially as described.

12. A power transmitter, including in combination, a belt wheel, a pulley for transmitting motion to the said belt wheel, and means for supporting said pulley and belt wheel, comprising a bracket, a support for said bracket, and means carried by said bracket for adjusting it upon its support; substantially as described.

13. A power transmitter, including in combination, a belt wheel, a pulley for transmitting motion to the said belt wheel, and means for supporting said pulley and belt wheel, comprising a bracket, a support for said bracket, and means carried by said bracket for swinging the same upon its support; substantially as described.

14. In a power transmitting device, a shaft, a pulley and a belt wheel mounted on said shaft, means to force said pulley and belt wheel into engagement one with the other, means for supporting said shaft, pulley, belt wheel, and pulley engaging means whereby the relative position between the same is maintained, means for adjusting said supporting means at right angles to said shaft, and for maintaining said supporting means in its adjusted position; substantially as described.

15. In a power transmitting device, a shaft, a pulley and belt wheel mounted on said shaft, means to force said pulley and belt wheel into engagement one with the other, means to disengage said pulley and belt wheel, means for supporting said shaft, pulley, belt wheel, the engaging means and disengaging means whereby the same relative position of said parts is maintained, means for adjusting said supporting means at right angles to said shaft, and for maintaining said supporting means in its adjusted position; substantially as described.

16. In a power transmitting device, a shaft, a pulley and belt wheel mounted on said shaft, means to force said pulley and belt wheel into engagement one with the other, means to disengage said pulley and belt wheel, means acting upon the belt wheel to arrest its movement, means for supporting said shaft pulley, belt wheel, said engaging means, said disengaging means and said belt wheel arresting means, and means for adjusting said supporting means at right angles to said shaft, and for maintaining said supporting means in its adjusted position; substantially as described.

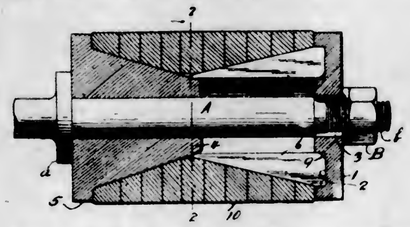
17. A power transmitter including in combination a belt wheel, a pulley for transmitting motion to said belt wheel means for supporting said pulley and belt wheel comprising a bracket, a support therefor, means to force said pulley and belt wheel into engagement one with the other mounted upon said bracket and means to adjust said bracket at right angles to the axis of the said pulley and belt wheel; substantially as described.

18. In a power transmitting device, a pulley and belt wheel, a frame upon which said pulley and belt wheel are supported, a support for said frame, a lever to force said pulley and belt wheel into engagement with each other mounted upon the support for said pulley and belt wheel, whereby said lever is retained in operative relation to said belt wheel and pulley in the various adjusted positions of said belt wheel and pulley and means for adjusting said belt wheel and pulley at right angles to their axis; substantially as described.

19. In a power transmitting device, a shaft, a support-

ing bracket, a pulley and belt wheel mounted on said shaft, and a lever for forcing said belt wheel and pulley into engagement, said supporting frame being provided with a slotted flange through which said lever passes, whereby the stress caused by said lever is central of said bracket; substantially as described.

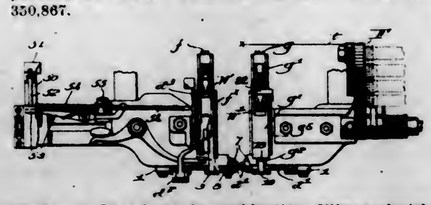
854,672. PACKING. CHARLES B. SHEPARD, Galena, Kans. Filed Sept. 17, 1906. Serial No. 335,009.



Claim.—1. In a piston packing the combination with a piston rod of a stationary coniform element surrounding the same and carried thereby a movable head surrounding said rod, an inverted coniform element seated within said head, said element comprising independent sections having their ends overlapping said first named element and packing rings clamped between said head and said first named element.

2. In a piston packing the combination with a piston rod of a stationary coniform element surrounding the same and carried thereby, a movable head loosely surrounding said rod and formed with an annular recess, an inverted coniform element comprising independent co-extensive sections seated with their larger ends in said recess and having a limited play therein, the lower ends of said sections overlapping said element, an adjusting nut threaded upon said rod and engaging said head and packing rings clamped between said head and said first named coniform element.

854,673. WEFT-REPLENISHING LOOM. HERBERT SMITH and JOSEPH V. LANGLEY, New Bedford, Mass., assignors to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Jan. 5, 1907. Serial No. 350,867.



Claim.—1. In a loom, in combination, filling-replenishing mechanism, mechanisms to take up and let back the cloth, two filling-forks, controlling connections between one only of the forks and all of said mechanisms, to arrest take-up and cause let-back at every actuation of the replenishing mechanism, and means operative when filling absence is detected by said fork, accompanied by arrest of take-up, to prolong such period of arrested take-up by or through the other fork when an intact filling-end remains from a prior operation of the replenishing mechanism.

2. In a loom, in combination, filling-replenishing mechanism, take-up mechanism, a main filling-fork to control the replenishing mechanism and also to arrest take-up of the cloth upon detection of filling-absence, an auxiliary filling-fork controlling only the take-up mechanism, and means to cause initial detection of filling absence by the main fork, which arrests take-up, to also operate through the auxiliary fork to prolong such period of arrested take-up when a filling-end is present opposite the auxiliary fork.

3. In a loom, filling replenishing mechanism, two filling-detectors, take-up mechanism controlled by both detectors to arrest its operation upon detection of filling absence by either detector, one of said detectors controlling the operation of the replenishing mechanism, and means to retract the other detector from detecting position when the first-named detector detects filling absence.

4. In a loom provided with filling-replenishing mechanism, take-up mechanism and a let-back device, a filling-detector to effect the operation of the replenishing mechanism, arrest take-up and effect let-back of the cloth, a second filling-detector controlling only the take-up mechanism and let-back device, and means to retract the second detector from detecting position by or through detection of filling absence by the first detector, to thereby prolong the period during which take-up is arrested and let-back is operative when a filling-end is present opposite the second detector.

5. In a loom, filling-replenishing mechanism, a filling-fork to effect the actuation thereof upon detection of filling absence, a second filling-fork, take-up mechanism and a let-back device controlled thereby, and means whereby detection of filling absence by the first fork causes the second fork to effect arrest of take-up and effect let-back when a filling-end is present due to previous filling replenishment, the action of the second fork being irrespective of the condition of the running filling.

6. In a loom having filling-replenishing mechanism, a controlling filling-detector therefor, and a feeler device to effect the actuation of said mechanism prior to complete exhaustion of the running filling, in combination, take-up mechanism, a let-back device, and means to arrest the operation of the take-up mechanism and cause the let-back device to operate upon either detection of filling failure by the detector or the actuation of the replenishing mechanism by the feeler device.

7. In a loom, in combination, filling-replenishing mechanism, main and auxiliary filling-forks, detection of filling absence by the former effecting the actuation of said mechanism, means to arrest take-up and cause let-back of the cloth when either fork initially detects filling absence, and means to prolong such arrest of take-up when the main fork initially detects filling absence and when a filling-end is present opposite the auxiliary fork.

8. In a loom provided with filling-replenishing mechanism, a controlling rock-shaft therefor, take-up mechanism and a let-back device, two filling-forks, connections between one of them and the rock-shaft to turn the latter upon detection of filling absence, to effect filling replenishment, arrest take-up and cause let-back, and means operatively connected with the other fork to arrest take-up, and cause let-back upon detection of filling-absence by such fork, initial detection by the first-named fork acting through said rock-shaft upon the second-named fork to prolong the period during which take-up is arrested.

9. In a loom provided with filling-replenishing mechanism, a controlling rock-shaft therefor, take-up mechanism and a let-back device, two filling-forks, a sleeve loose on the rock-shaft and having a limited relative rotative movement thereon, a controlling connection between the sleeve and the take-up mechanism and let-back device, whereby rotative movement of the sleeve arrests take-up and causes let-back, means to turn the shaft and sleeve in unison when one fork detects filling absence, and means to turn the sleeve on and relatively to the rock-shaft when the other fork detects filling absence, unison movement of the sleeve and shaft acting through the second fork to prolong the arrest of take-up.

10. In a loom provided with filling-replenishing mechanism, take-up mechanism, a filling-fork, means whereby detection of filling absence by said fork effects the operation of the replenishing mechanism and arrests take-up, a second filling-fork controlling only the take-up mechanism, a vibrating weft-hammer to co-operate at times with such second fork, means to retract the latter from detecting position upon detection of filling absence by the first named fork, the weft-hammer thereafter co-operating with the second fork and thereby prolonging the period during which take-up is arrested, and a safety device to insure the co-operation of the second fork and its weft-hammer after such fork has been retracted from detecting position.

11. In a loom, in combination, filling-replenishing mechanism, mechanisms to take up and let back the cloth, two filling-forks, controlling connections between one of the forks and all of said mechanisms, to arrest take-up and cause let-back at every actuation of the replenishing mechanism, means to retract the other fork from detecting position when the first-named fork detects filling-absence, and means governed by the second-named fork to arrest take-up and cause let-back only.

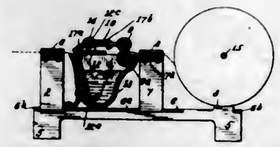
12. In a loom, filling-replenishing mechanism, a filling-detector to effect the actuation thereof upon detection of filling absence, a second filling-detector, take-up mechanism and a let-back device controlled thereby, and means to retract the second detector from detecting position by or through detection of filling absence by the first detector, to thereby prolong the period of arrested take-up.

13. In a loom provided with filling-replenishing mechanism, take-up mechanism and a let-back device, a filling-fork to effect the operation of the replenishing mechanism, a second filling-fork controlling the take-up mechanism and let-back device, and means to retract the second fork from detecting position by or through detection of filling absence by the first-named fork, whereby the second fork effects arrest of take-up and let-back when a filling-end is present due to previous filling replenishment.

14. In a loom, filling-replenishing mechanism, two filling-detectors, one only of them controlling the operation of the replenishing mechanism, means to retract the other detector from detecting position when the first-named detector detects filling absence, and take-up mechanism controlled by the second detector.

15. In a loom, filling-replenishing mechanism and a filling-fork having sole control of and to effect the action thereof upon detection of filling-absence, and a filling-fork at the opposite side of the loom; take-up mechanism, and means controlled by initial detection of filling absence by the first-named one of said forks, to arrest the take-up mechanism for a period of two picks, said means acting through the second-named fork.

854,674. INKER. CHARLES R. SPICER, Springfield, Ill. Filed June 4, 1906. Serial No. 320,125.



Claim.—1. The combination of a base, a tank secured on the base, a springy cover fitting on the tank and having a downwardly extending guide-plate, guide plates contiguous to the tank, a roller having a springy connection with the cover and a roller mounted to turn in the tank and co-operating with said first named roller.

2. The combination of a base, a tank secured on the base, a springy cover fitting on the tank and having a downwardly extending guide plate, guide plates contiguous to the tank, a roller having a springy connection with the cover, a roller mounted to turn in the tank and co-operating with said first-named roller and means for winding the ribbon traveling between said rollers.

3. A combined cover and ribbon-guide having springy ears and a downwardly extending curved member; in combination with a tank on which said cover fits, yielding rollers mounted on the tank, and means for winding the ribbon traveling on the ribbon-guide and between said rollers.

4. The combination of a base, a tubular spool-support on the base, a shaft turning in the tubular spool-support and adapted to turn a spool mounted on the tubular spool support, a tank on the base adapted to contain ink, and means for guiding a ribbon through the ink in the tank during the winding of the ribbon on a spool mounted on the spool-support.

854,675. PRINTING-PLATE. EMANUEL SPITZER, Munich, Germany, assignor of one-half to Mrs. Alpha O. Goldsmith, Berlin, Germany, and one-fourth to Sophie Spitzer, Munich, Germany. Original application filed July 7, 1902, Serial No. 114,682. Divided and this application filed Nov. 14, 1904. Serial No. 232,761.

Claim.—1. A plate showing a photo-mechanically produced image, the minute parts of which lie in different levels and are graded in size, closeness and depth corresponding to the different degrees of light and shade in the original, without interruptions formed by any pattern foreign to the original.

2. A metallic plate having an image, the minute parts of which lie in different levels and are graded in size, closeness and depth corresponding to the different degrees of light and shade in the original, without interruptions formed by any pattern foreign to the original.

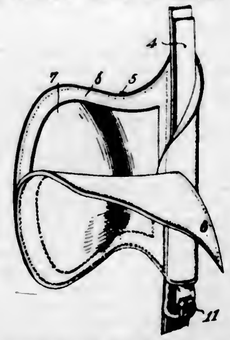
3. An etched plate having an image, formed in its surface, by minute parts which lie in different levels and are graded in size, closeness and depth to produce the different effects of light and shade, without interruptions formed by any pattern foreign to the picture which it is desired to print.

854,676. PRINTING-PLATE. EMANUEL SPITZER, Munich, Germany, assignor of one-half to Mrs. Alpha O. Goldsmith, Berlin, Germany, and one-fourth to Sophie Spitzer, Munich, Germany. Original application filed July 7, 1902, Serial No. 114,682. Divided and this application filed Nov. 14, 1904. Serial No. 232,762.

Claim.—1. A plate showing a photo-mechanically produced image, the minute cavities of which lie in different levels and are graded in size, closeness and depth corresponding to the different degrees of light and shade in the original without interruptions formed by cavities produced by any pattern foreign to the original.

2. An etched metallic intaglio printing plate having an image formed in the metallic surface by minute cavities or depressions graduated in size, closeness and depth, varying according to the degrees of light and shade of the picture to be produced by said plate, without interruptions formed by any pattern foreign to said picture.

854,677. BRIDLE. FRANK A. STIMSON, Page, N. D. Filed Sept. 19, 1906. Serial No. 335,251.



Claim.—A bridle having a blinder comprising an outer cover, a stiffening plate and an inner cover, one of said covers having its rear edge shaped to form a pocket or loop for the cheek strap, the extreme edge of said cover being fitted under the rear edge of the other cover and secured thereto.

854,678. BALING-PRESS. JOSIAH S. TUTTLE, Kansas City, Mo., assignor to Standard Scale and Foundry Co., Kansas City, Mo., a Corporation of Missouri. Filed Apr. 27, 1906. Serial No. 313,941.



Claim.—1. A baling press, comprising a baling case, a reach extending forwardly therefrom, a standard mounted on the front portion of the reach and provided with a trackway, a plunger, a plunger beam pivoted to the plunger and bearing at its opposite end upon the trackway, means to draw said plunger beam down upon the trackway to effect the compression stroke of the plunger, and means for relevating the front end of the plunger to effect its withdrawal stroke.

2. A baling press, comprising a baling case, a reach extending forwardly therefrom, a standard mounted on the front portion of the reach and provided with a trackway, a plunger, a plunger beam pivoted to the plunger and bearing at its opposite end upon the trackway, means to draw said plunger beam down upon the trackway to effect the compression stroke of the plunger, and means for yieldingly relevating the front end of the plunger beam to effect the withdrawal stroke of the plunger.

3. A baling press, comprising a baling case, a reach extending forwardly therefrom, a standard mounted on the front portion of the reach and provided with a trackway, a plunger, a plunger beam pivoted to the plunger and bearing at its opposite end upon the trackway, means to draw said plunger beam down upon the trackway to effect the compression stroke of the plunger, a retractile spring suitably anchored, a cable attached at its opposite ends to the plunger beam and spring, and a fixed guide for the cable disposed forward of and above said spring and the point of attachment between the cable and the plunger.

4. A baling press, comprising a baling case, a reach extending forwardly therefrom, a pair of standards mounted on the front portion of the reach at opposite sides of the longitudinal center of the machine and each provided with a trackway, a plunger, a plunger beam pivoted to the plunger, a bracket secured to the opposite end of the plunger beam, a bolt extending through said bracket, track rollers journaled on said bolt and engaging said trackways, a guide pulley journaled centrally of the bolt, a guide pulley journaled between the lower portions of the standards, and a cable engaging said guide pulleys and attached at its rear end to a fixed point on the machine.

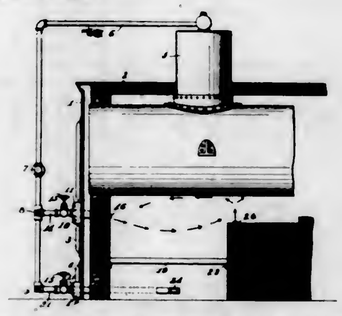
5. In a baling press, a baling case, a reach projecting forwardly therefrom, a standard pivotally rising from the reach and having a trackway, and one or more braces connecting the baling case with said standard.

6. In a baling press, a baling case, a reach projecting forwardly therefrom, runners supporting the rear end of the press, a cross bar carried by the front end of the reach, front runners pivoted to and underlying said cross bar, a standard pivotally rising from the reach and having a trackway, and one or more braces connecting the baling case with said standard.

7. In a baling press, a baling case, a reach projecting forwardly therefrom, a standard pivotally mounted at its lower end on the reach and having a trackway, and means to hold the standard rigid with relation to the reach.

8. A baling press, comprising a baling case, a reach extending forwardly therefrom, a standard mounted on the front portion of the reach and provided with a trackway, a plunger, a plunger beam pivoted to the plunger and bearing at its opposite end upon the trackway, a cable secured at its rear end to a fixed point of the machine and having a sliding connection with the front end of the plunger beam and with the front end of the press contiguous to the reach and adapted for drawing the front end of the plunger beam down upon the trackway of the standard, and means for relevating the front portion of the plunger beam.

854,679. SMOKE-CONSUMER. PHILIPPE VIDAL, Ste. Cunegonde, Quebec, Canada, assignor of one-half to Margaret M. Mireau, Montreal, Canada. Filed May 17, 1906. Serial No. 317,280.



Claim.—1. In a smoke consuming furnace, a combustion chamber, a grate, an ash pit beneath said grate, means for producing a rotary current of air and steam beneath said grate, and means for producing a rotary current of air and steam above said grate at right angles to the first named current.

2. In a smoke consuming furnace, a combustion chamber, a grate, an ash pit beneath said grate, means for producing a plurality of horizontal rotary currents of air and steam beneath said grate, and means for producing a rotary current of air and steam above the grate at right angles to the first named currents.

3. In a smoke consuming furnace, a combustion chamber, a grate, an ash pit beneath said grate, means for producing oppositely rotating horizontal currents of air and steam beneath the grate, and means for producing a rotary current of air and steam above the grate at right angles to the first named currents.

4. In a smoke consuming furnace, a combustion chamber, a grate, an ash pit beneath said grate, a nozzle extending laterally and rearwardly from one side of said ash pit near the rear end thereof, a nozzle extending laterally and rearwardly from the opposite side of said ash pit near the central portion thereof, a plurality of nozzles entering said combustion chamber above said grate at the front of said combustion chamber, a nozzle extending upwardly in the rear end of said combustion chamber, means for supplying steam and air to said nozzles, and means for regulating the supply of steam to each nozzle independently.

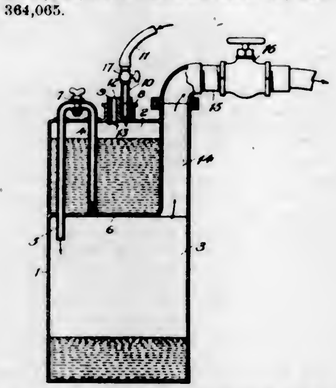
854,680. STREET-FLUSHING APPARATUS. CHARLES E. WIBERG, Ashland, Wis., assignor of one-half to Thomas Bardon, Ashland, Wis. Filed Oct. 15, 1906. Serial No. 338,952.



Claim.—1. An apparatus for flushing streets, comprising a metallic pipe, an axle fixed to the middle of the metallic pipe, and wheels mounted on the said axle and arranged at opposite sides of the metallic pipe to support the same above the ground.

2. An apparatus for flushing streets, comprising a metallic pipe, an axle fixed to the middle of the metallic pipe, wheels mounted on the said axle and arranged at opposite sides of the metallic pipe to support the same above the ground, complementary coupling members, flexible hose sections connecting said coupling members to opposite ends of the metallic pipe, and a draw bar fixedly connected at its middle to the axle and extending longitudinally under the metallic pipe.

854,681. SIPHON GAS-GENERATOR. SAMUEL F. AARON and SAMUEL H. HAMILTON, Philadelphia, Pa.; said Aaron assignor to The Scientific Preservation Company, Philadelphia, Pa., a Corporation of West Virginia. Filed May 19, 1906. Renewed Mar. 23, 1907. Serial No. 364,065.

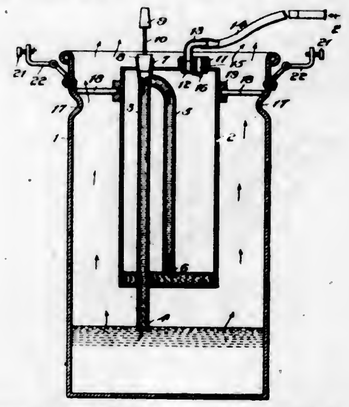


Claim.—1. A gas generator comprising a tank divided into an upper and lower chamber, a siphon having its short leg opening into the upper chamber, passing through the top of the tank, returning in a bend through the same, through the upper chamber, through the bottom thereof and terminating in the lower chamber, a safety-cock in the external bend of the siphon for closing it, a stopper in the top of the tank having a tube for introducing air under pressure into said upper chamber for starting the siphon, a second opening in said stopper controlled by a valve opening in said chamber, and a delivery pipe for the gas from the lower chamber, whereby a forced and a normal air pressure is rendered active in separate and independent action in the upper chamber for the purpose stated.

2. A gas generator comprising a tank divided into an upper and a lower chamber, a siphon having its short leg opening into the upper chamber, passing through the top thereof and its long leg passing through the bottom thereof and terminating in the lower chamber, a safety-cock for closing the siphon, a stopper in the top of the tank having a plurality of openings, a tube in one of the openings for supplying air under pressure into the top chamber for starting the siphon, a second opening in said stopper controlled by a valve opening in said chamber, and a delivery pipe opening into a fumigating closure, whereby the gas is delivered from the generating chamber without pressure.

3. The combination in a gas generator, of a tank divided into an upper and a lower chamber, each for containing a chemical, a siphon connecting the chambers, and a stopper closing an opening in the top of the tank and having an outer valve controlled blow opening, said stopper also having an opening controlled by a valve opening within the upper chamber, whereby the siphon is started and continued by air pressure within the upper chamber, as described.

854,682. SIPHON-FEED GAS-GENERATOR. SAMUEL F. AARON and SAMUEL H. HAMILTON, Philadelphia, Pa.; said Aaron assignor to The Scientific Preservation Company, Philadelphia, Pa., a Corporation of West Virginia. Filed Nov. 9, 1906. Serial No. 342,637.



Claim.—1. In a gas generator, a jar open at its top, a closed receptacle within said jar, a siphon within the closed receptacle having its long leg open at the top of the closed receptacle and its lower end opening into the jar, a stopper for closing the upper open end of the siphon when the device is in use, and a stopper for stopping the siphoning action when the device is not in use, and means adapted to establish gaseous pressure within the closed receptacle for starting the siphon by introducing air under pressure into said receptacle from an external source, whereby a chemical is fed from the closed vessel into a chemical in the jar.

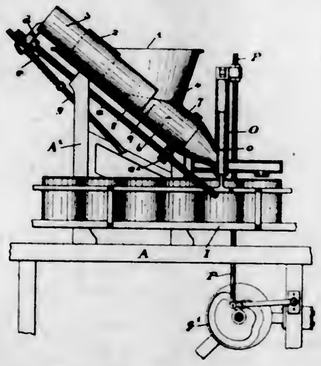
2. In a gas generator, a jar open at its top, a closed receptacle within said jar, a siphon within the closed receptacle having the upper end of its long leg open at the top of the closed receptacle, and its lower end opening into the jar, the short leg connected with and opening into the long leg near its upper open end, a stopper adapted to close the upper open end of the siphon when the siphon is in use, and a stopper for stopping the siphoning action when the device is not in use, and means adapted to establish gaseous pressure within the closed receptacle for starting the siphon by introducing air under pressure into said receptacle from an external source, whereby a chemical is fed from the closed vessel into a chemical in the jar.

3. In a gas generator, a jar open at its top, and adapted to contain a chemical, a closed receptacle within said jar and adapted to contain a chemical, a siphon within the closed receptacle having the lower end of its long leg opening into the jar, its upper end passing through the top thereof and open, the short leg connected with and opening into the long leg near its upper open end, and a pair of stoppers connected in separated relation one adapted to close the communication between the short and the long legs, the other adapted to close the upper open end of the long leg, and means adapted to establish gaseous pressure within the closed receptacle for starting the siphon by in-

troducing air under pressure into said receptacle from an external source.

4. In a gas generator, a jar open at its upper end and having an annular interior wall crimped shoulder, a closed receptacle suspended upon said shoulder, a siphon within the closed receptacle having the lower end of its long leg opening into the jar, its upper end passing through the top of said receptacle and open, the short leg connected with and opening into the long leg near its upper open end, a stopper for closing the upper open end of the siphon when the device is in use, and a stopper for stopping the siphoning action when the device is not in use, means adapted to establish gaseous pressure within the closed receptacle for starting the siphon by introducing air under pressure into said receptacle from an external source, and a removable cover whereby to close and seal the open end of the jar to render the device safely portable.

854,683. CAN-FILLING MACHINE. CHARLES H. AYARS, Salem, N. J., assignor to Ayars Machine Company, a Corporation of New Jersey. Filed Dec. 28, 1904. Serial No. 238,634.



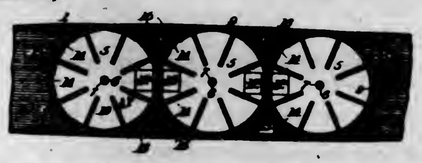
Claim.—1. A can-filling machine having a hopper provided with a discharge outlet; a concave passage at the lower side of said hopper and leading into the said discharge outlet—said concave passage gradually increasing in depth as it extends toward said outlet, and a plunger movable from the shallowest end of the said concave passage toward the deepest end and which gradually becomes inclosed or surrounded as it advances to enter said outlet.

2. A machine of the class described having a hopper with inclined walls and provided with a discharge outlet; a passageway depressed below the hopper walls and leading to said outlet—said passageway gradually increasing in depth as it advances toward said outlet, and a reciprocable plunger of size and shape to fill said passageway.

3. A machine for filling tomatoes and the like into cans having a hopper with inclined converging walls and an outlet, and provided with an inclined passage gradually increasing in depth as it advances to the outlet; a guide attached to the hopper diametrically opposite the outlet; and a plunger moving through the guide and entering the shallowest end of the inclined passage and advancing along said passage toward the deepest end thereof to gradually cut off the discharge from the hopper.

854,684. CIRCULAR CONVEYER FOR SHIPS. JOHN C. BANE, Tacoma, Wash. Original application filed Jan. 16, 1906. Serial No. 296,418. Divided and this application filed Nov. 6, 1906. Serial No. 342,237.

Claim.—1. In a freight-carrying ship, the combination with a deck, of a supplemental freight supporting flooring or turret capable of rotation for transferring freight from one point to another in the ship, and a hatchway in the deck above the rotatable flooring for loading and unloading freight to and from said movable flooring through said hatchway.



2. In a freight-carrying ship, a rotatable floor or turret for transferring freight from one point to another in the ship, and separate freight compartments carried by said floor, constructed to permit the loading and unloading of freight to and from one compartment without disturbing the freight in the other compartments.

3. In a ship, a rotatable deck formed with compartments, said compartments having an inclined floor.

4. In a ship, a rotatable deck formed with compartments, said compartments having a floor inclined outwardly from the center.

5. In a freight-carrying ship, a rotatable flooring or deck for transferring freight from one point to another in the ship, a wall inclosing said deck, and partitions extending inwardly from said wall to form separate compartments, said partitions terminating back from the central portion of the deck to form a space through which access may be had to the compartments from the central portion of the deck.

6. In a ship, the combination with the decks, of supplemental decks capable of rotation and hatches in said decks and supplemental decks for access from one deck to the deck next below.

7. In a ship, the combination with the decks, of rotary turrets or floors, walls inclosing said rotary turrets or floors and doors in said walls for access to said turrets.

8. In a freight-carrying ship, the combination with a deck, of a supplemental circular deck or flooring rotatably mounted thereon for transferring freight from one point to another in the ship, and rollers disposed between said deck and supplemental deck.

9. In a ship, the combination with the decks, of a series of circular floors or turrets rotatably mounted upon said decks, walls inclosing said turrets, and doors in said walls communicating with the space between said turrets.

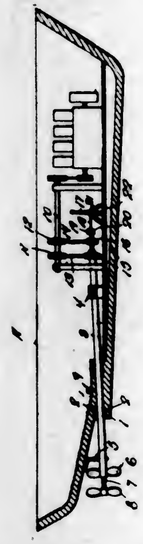
10. In a ship, the combination with the decks, of a series of circular floors or turrets rotatably mounted upon said decks, walls inclosing said turrets, partitions extending inwardly from said walls forming compartments, and doors in said walls to each compartment, said compartments having floors inclined toward said doors.

11. In a ship, the combination with the decks, of a rotatable circular floor or turret to each deck, an upright wall to the floor or turret formed with openings for access to the space inclosed by the wall, vertical partitions extending inwardly from the wall forming compartments to which access is had through the openings in the wall, and hatchways in the decks and turrets for access from the compartments of one turret or floor to the compartments of the turret or floor next below.

12. In a ship, the combination with the decks, of a series of rotatable circular floors or turrets on each deck, vertical walls to each floor or turret, upright partitions extending inwardly from said walls forming compartments, openings in said walls and hatchways in said decks located in the angular spaces between said circular floors or turrets whereby access is had to each one of said compartments through said openings in the walls.

854,685. PROPELLER. JOHN BERMES, Union, N. J., assignor of one-fourth to Daniel Crossley, Union, N. J. Filed Sept. 11, 1906. Serial No. 334,167.

Claim.—1. Means for propelling vessels, comprising a pair of shafts, one being rotatably and telescopically mounted within the other, propellers carried by said shafts, one of said propellers having its blades pitched oppositely to the blades of the other propeller, means for adjusting one of said shafts telescopically within the other, comprising a rack, a lever and a hand-operated pawl to cooperate with said rack, said adjustable shaft having flanges at its ends, a collar rotatably mounted between said flanges and a link having one end pivotally connected to said lever while its other end is pivoted to said collar and a motor belted to said shafts for rotating the same.



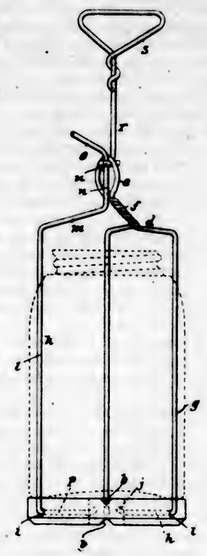
2. Means for propelling vessels comprising a pair of shafts, one being hollow and the other mounted rotatably and telescopically within the hollow shaft, a ball bearing gland and lubricant device for the hollow shaft, propellers carried by said shafts, one of said propellers having its blades pitched oppositely to the blades of the other propeller, means for adjusting one of said shafts telescopically within the other, comprising a rack, a lever and a hand-operated pawl to co-operate with said rack, said adjustable shaft having flanges at its ends, a collar rotatably mounted between said flanges and a link having one end pivotally connected to said lever while its other end is pivoted to said collar and a motor belted to said shafts for rotating the same.

854,686. JAR-HOLDER. HENRY BORNEMAN, Paterson, N. J., assignor to Andrew G. Borneman, Athenia, N. J. Filed Feb. 27, 1906. Serial No. 303,158.

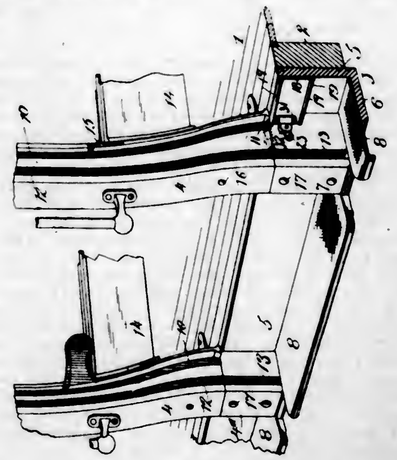
Claim.—1. The combination of a base, several spaced vertical members having their lower end portions extending radially into said base and forming therewith a cage, one of said vertical members being movable in said base on its lower end portion as a pivot out of its normal position for admitting or removing the jar and others being fixed together, and a carrying implement adapted to engage said pivoted member to hold the same in its normal position, substantially as described.

2. The combination of a base, a wire bent to form a loop at its upper end and two downwardly extending members attached to the base, another wire pivoted in the base and extending upwardly therefrom, and a carrying implement comprising a hook adapted to be introduced through said loop and engaged with the pivoted member, substantially as described.

854,686.



854,687. CONVERTIBLE CAR. JOHN A. BRILL, Philadelphia, Pa. Filed June 26, 1906. Renewed Apr. 23, 1907. Serial No. 369,754.



Claim.—1. A convertible car having a floor and stanchions, side steps extending within the lateral limits of the car as defined by the stanchions, and movable panels between the stanchions adapted to extend below the plane of the floor.

2. A convertible car having a floor, stanchions, and side steps below the floor, and within the lateral limits of the car as defined by the stanchions, and movable panels between said stanchions, adapted to be lowered and rest on said car steps.

3. A convertible car having a floor, side sills forming a step within the lateral limits of the car, stanchions secured on the side sill and extending outwardly beyond the car floor, and movable panels for closing the space between

the stanchions, and adapted to be lowered to the step, and below the floor.

4. A convertible car having a floor, and stanchions, side steps extending within the lateral limits of the car, movable panels between the stanchions adapted to rest on the side step, and a filler between the stanchions on the plane of and adapted to form a continuation of the car floor.

5. A convertible car having a floor and stanchions, side steps extending within the lateral limits of the car, movable panels between the stanchions adapted to move below the car floor, and a filler between the stanchions inside the panels, when the latter are down, and adapted to be adjusted to lie vertically against the side sill when the panels are up.

6. A convertible car having a floor, a side sill forming a side step within the car limits, stanchions, and metal pockets therefor, said pockets and stanchions being secured to said step, and a groove in said stanchions and pocket extending to the side step, and a movable panel traveling in said grooves.

7. A car having angle metal side sills which have a lower horizontal web, a plate secured upon the said web and forming side steps, and stanchions secured to the step and sill web.

8. A convertible car having stanchions and movable panels for closing the side openings of the car, and a filler for closing the space between the car floor and panels when down, said filler being secured to the face of the stanchions by brackets, whereby the filler may be moved from a horizontal position between the stanchions to a vertical position against the side sill.

9. In a convertible car having stanchions, and movable panels for closing the side openings of the car, a filler closing the space between the car floor and the panels, when the latter is down, said filler being secured to the face of the stanchions by double jointed brackets.

10. A convertible car having a filler secured between the stanchions by brackets which are pivoted to the stanchions, and are provided with a joint, a flange on said bracket adapted to form a stop for the joint in the bracket.

11. A convertible car having a filler secured between the stanchions by a bracket composed of two pivotal members, one of which is adapted to be secured to the filler, and the other pivoted to the stanchion, and the flange 32 on the upper casting adapted to engage with the lower casting and form a stiff joint when the filler is in a vertical position.

12. A bracket for a convertible car filler comprising a casting having a stud thereon, a second casting provided with an aperture to receive the said stud, a top plate on the second casting adapted to be secured to the filler, a flange 32 on the second casting adapted to act as a stop in one direction for the joint in the said bracket.

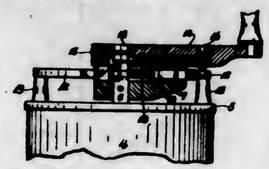
13. A convertible car having stanchions, and a filler secured between the stanchions by brackets, said filler being movable on said brackets from a vertical position to a horizontal position and castings, a plate 34 adapted to be secured to the face of the stanchions for holding the filler in its horizontal position.

14. A convertible car having stanchions, and movable panels for closing the side openings of the car, and a filler between the stanchions, said filler being adapted to be folded parallel and close to the car sill.

15. A convertible car having stanchions, movable panels for closing the side openings, and a filler secured to the stanchions and adapted to be folded from a horizontal position to a vertical position against the side sill of the car.

854,688. CONTROLLER-OPERATING MEANS. ARTHUR J. BROWN, Norwood, Ohio, assignor to Allis-Chalmers Company, a Corporation of New Jersey, and The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Aug. 27, 1906. Serial No. 332,247.

Claim.—1. In combination, a shaft, a notched member, a bolt engaging said notched member to hold the shaft in any desired position, an operating handle, a yielding connection between the shaft and the handle, and means for releasing the bolt from the notched member when the handle has been moved into the desired position in either direction to permit the shaft to rotate under the influence of said yielding means into a position corresponding to the position of said handle.



2. In combination, a controller shaft, an arm fastened thereto and carrying a sliding bolt, an internally notched ring with which said bolt engages, a handle loosely mounted on said shaft, but yieldingly connected therewith, and means for releasing said bolt from the notched ring when the handle reaches the next position in advance to permit the shaft to rotate under the action of said yielding means into said advance position.

3. In combination, a controller shaft, a notched member having notches spaced at irregular distances apart, said notches corresponding to the positions of the controller, a sliding bolt engaging said notched ring to hold the shaft in any desired position, an operating handle, a spring connecting said handle with the shaft, and means for releasing said bolt to permit the shaft to move into said advance positions just as the handle reaches a predetermined advance position independent of the distance apart of the notches corresponding to the controller positions.

4. In a controller, a shaft, an operating handle, a spring connecting said shaft and handle, a sliding bolt engagaing notches corresponding to the controller positions to hold the shaft in a certain position until the handle is moved into the next advance position independent of the distance apart of said position, and means for releasing the bolt when the handle reaches the advance position to permit the shaft to move into said advance position under the influence of said spring.

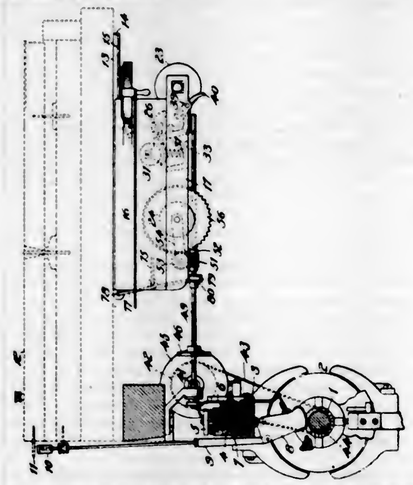
5. In combination, a controller shaft, an operating handle, a spring connecting said shaft and handle, a notched member having the height of the projections between notches proportional to the throw of the shaft between operative positions, a sliding bolt engaging said notched-member to hold the shaft in any desired position, and means for releasing said bolt to permit the shaft to move into said advance position just as the handle reaches an advance operative position.

6. In combination, a handle, controller mechanism having a series of unequally spaced operative positions and biased to move with said handle though movable independently thereof, and a sliding bolt for locking the controller mechanism in any operative position until the handle is moved into the next operative position.

854,689. CONTROLLING DEVICE FOR AUTOMATIC MUSICAL INSTRUMENTS. GEORGE H. DAVIS, West Orange, N. J. Original application filed Nov. 26, 1901, Serial No. 83,687. Divided and this application filed Sept. 27, 1905. Serial No. 280,334.

Claim.—1. A piano having a music sheet holder movably supported beneath the keyboard thereof and adapted to be drawn out to bring the music sheet in view and to be moved in under the keyboard, a delivery and a take-up roll supported by said music holder, and means for driving the take-up roller when the music holder is in its drawn out or pushed in position or in any intermediate position, substantially as described.

2. A piano having a music sheet holder and means whereby said holder is movably supported beneath the keyboard of the piano and adapted to be drawn out to bring the music sheet in view and to be moved in under the keyboard, a delivery and a take up roller supported by said music holder, means for driving the take-up roller and mechanism for varying the speed of said driving means, said driving and speed changing devices being operative when the music sheet holder is in its drawn out or pushed in position or in any intermediate position, substantially as described.



3. A piano having a playing attachment, comprising a rotatable drum and means for rotating it, a bodily movable music-roll holder frame supported beneath the piano keyboard and carrying a delivery and a take-up roll journaled in suitable bearings, a rotary disk driven by the drum, a shaft longitudinally movable in a bearing on the frame of the music-roll holder, gearing intermediate said shaft and take-up roll, a friction wheel carried by said shaft and having its periphery in frictional contact with the rotary disk, and manually controlled means for moving the shaft longitudinally irrespective of the position of the music roll holder frame to shift the position of the friction wheel relatively to the disk whereby to vary the speed of the take-up roll.

4. A piano having a playing attachment, comprising a rotatable drum, means for rotating it, and means actuated by the drum for striking the piano keys, a music sheet holder comprising a frame slidable from and beneath the piano keyboard, a delivery and a take-up roll journaled in said frame, means deriving motion from the rotary drum for rotating the take-up roll, mechanism for changing the speed at which the take-up roll is driven; and means for manually operating said speed mechanism, said speed changing mechanism being operative at all times independently of the location of the sliding frame, substantially as described.

5. A piano having a playing attachment, comprising a rotatable drum, means for rotating it, and means actuated by the drum for striking the piano keys, a music sheet holder comprising a frame slidable from and beneath the piano keyboard, a delivery and a take-up roll journaled in said frame, means deriving motion from the rotary drum for rotating the take-up roll, mechanism for changing the speed at which said take-up roll is driven, and means for operating said speed changing mechanism while the sliding frame is in any of its positions, substantially as described.

6. A piano having a playing attachment, comprising a rotatable drum, means for rotating it, and means actuated by the drum for striking the piano keys, a music sheet holder slidably arranged beneath the piano keyboard, a delivery and a take-up roller journaled in said holder, a friction disk driven from the drum, a shaft longitudinally movable in a bearing carried by said sliding holder, and in a fixed bearing, a friction wheel on said shaft having its periphery arranged in frictional contact with the face of said disk, a worm splined on said shaft and movable with the music sheet holder, gearing driven by said worm for driving the take-up roller, and means for longitudinally shifting the shaft to move the friction wheel toward and from the center of the friction disk, substantially as described.

7. A piano having a playing attachment, comprising a rotatable drum, means for rotating it, and mechanism actuated by the drum for striking the piano keys, a music sheet holder slidably arranged beneath the piano keyboard, a delivery and a take-up roller journaled in said holder, a friction disk driven from the drum, a shaft longitudinally movable in a bearing carried by said holder and in a fixed bearing, a friction wheel on said shaft having its periphery arranged in frictional contact with the face of said disk, a worm splined on said shaft and movable with the music sheet holder, a worm wheel and pinion driven by said worm, a gear wheel on the take-up gearing with the pinion, and means for shifting said shaft longitudinally independently of the movement of the music sheet holder to move the friction wheel toward and from the center of the friction disk, substantially as described.

8. A piano having a playing attachment, comprising a music sheet holder consisting of two independently movable frames slidably arranged beneath the piano keyboard, one of said frames carrying a series of selectors, a delivery roller and a take-up roller carried by the other frame, a contact-roller arranged between said two rollers, a friction disk and means for rotating it, a shaft longitudinally movable in a bearing carried by the selector frame and in a fixed bearing, a friction wheel rigid on said shaft and having its periphery arranged in frictional contact with the face of said disk, a worm splined on said shaft and movable with the selector frame, a swinging arm carried by the roll-holder frame a worm wheel and pinion mounted in the free end of said swinging arm, the worm wheel gearing with the worm and the pinion with the gear wheel on the take-up roller, and means for longitudinally shifting said shaft to move the friction wheel toward and from the center of the friction disk independently of the position of said music sheet holder, substantially as described.

9. A piano having a music sheet holder comprising two independently movable frames slidably arranged beneath the piano keyboard, one of said frames carrying a series of selectors, a delivery roller and a take-up roller carried by the other frame, a contact roller arranged between said two rollers, a friction disk and means for rotating it, a shaft longitudinally movable in a bearing carried by the selector frame and in a fixed bearing, a friction wheel rigid on said shaft and having its periphery arranged in frictional contact with the face of said disk, a worm splined on said shaft and movable with the selector frame, a swinging arm carried by the roll holder frame a worm wheel and pinion mounted in the free end of said swinging arm, the worm wheel gearing with the worm and the pinion with a gear wheel on the take-up roller, means for supporting said swinging arm when the two frames are separated, and means for shifting said shaft longitudinally, substantially as described and for the purpose specified.

10. A piano having a music sheet holder comprising two independently movable frames slidably arranged beneath the piano keyboard, a series of selectors carried by one of said frames, a delivery roller, a contact roller and a take-up roller carried by the other of said frames, a driven shaft, gearing driven by said shaft while the music sheet holder is in any of its positions for driving the take-up roller, speed changing mechanism controlled by the longitudinal movement of said shaft, a collar on the shaft, a swinging arm pivotally connected at one end to a fixed support and loosely connected at its other end to said collar, a bell crank lever, a rod connecting one end of said bell crank lever to the swinging arm, a pivoted lever, and means slidably connecting said lever with the other end of said bell-crank lever, whereby when the pivoted lever is turned the said shaft will be shifted longitudinally to change the speed of the driving mechanism independently of the position of the music sheet holder, substantially as described.

11. A piano having a music sheet holder comprising two

independently movable frames slidably arranged beneath the piano keyboard, a series of selectors carried by one of said frames, a delivery roller, a contact roller, and a take-up roller carried by the other of said frames, a longitudinally movable driven shaft, gearing driven by said shaft while the music sheet holder is in any of its positions for driving the take-up roller, speed changing mechanism controlled by the longitudinal movement of said shaft, a collar on the shaft, a swinging arm pivotally connected at one end to a fixed support and loosely connected at its other end to said collar, a bell crank lever, a rod connecting one end of said bell-crank lever to the swinging arm, a pivoted hand-lever, a slotted bar pivotally connected at one end to a swinging arm and at its other end to said pivoted lever, and a projection on the other end of said bell-crank lever and projecting into the slot of said bar, substantially as described and for the purpose specified.

12. A piano having a music sheet holder comprising two independently movable frames slidably arranged beneath the piano keyboard, a series of frames slidably arranged beneath the piano keyboard, a series of selectors carried by one of said frames, a delivery roller, a contact roller, and a take-up roller carried by the other of said frames, a longitudinally movable driven shaft, gearing driven by said shaft while the music sheet holder is in any of its positions for driving the take-up roller, speed changing mechanism controlled by the longitudinal movement of said shaft, a collar on the shaft, a swinging arm pivotally connected at one end to a fixed support and loosely connected at its other end to said collar, a bell crank lever, a rod connecting one end of said bell crank lever to the swinging arm, a pivoted hand lever, a slotted bar pivotally connected at one end to a swinging arm and at its other end to said pivoted lever, a projection on the other end of said bell crank lever and projecting into the slot of said bar, and means for causing said bar to always move parallel to a fixed line passing through the fulcrum of the hand lever, substantially as described.

13. A piano having a music holder comprising two independently movable frames slidably arranged beneath the keyboard, a series of selectors carried by one of said frames, a delivery roller, a contact roller, and a take-up roller carried by the other of said frames, a longitudinally movable driven shaft, gearing driven by said shaft while the music holder is in any of its positions, for driving the take-up roller, speed changing mechanism controlled by the longitudinal movement of said shaft, a collar on the shaft, a swinging arm pivotally connected at one end to a fixed support and loosely connected at its other end to said collar, a bell crank lever, a rod connecting one end of said bell crank lever to the swinging arm, a hand lever, a slotted bar pivotally connected at one end to said hand lever and at its opposite end to an oscillatory arm, a projection on the other end of said bell crank lever projecting into the slot of the slotted bar, pinions fixed respectively on the axes of the hand lever and oscillatory arm, and a longitudinally movable rack-bar engaging said pinions and operating to cause the slotted bar to always move in a direction parallel to a fixed line passing through the axis of the hand lever, substantially as described.

14. A piano having a music sheet holder formed of independent slidable members, means for slidably connecting said members to the underside of the piano keyboard, the arrangement being such that the members may be drawn out to bring the music sheet into view and moved in under the keyboard, a locking lever pivoted to the lower of said members and provided at one end with a detent, a beveled projection on the other of said members provided in rear of its beveled portion with a recess, a manually operated lever arranged when oscillated to rock said locking lever on its fulcrum and a handle on said manual lever adapted to be grasped to draw out the member carrying said locking lever, the arrangement being such that when the two members are brought together the detent will engage said beveled projection and will be guided by the latter into the recess to lock the two members together and when the handle of the locking lever is grasped and pulled upon to draw out the said member, said locking lever will be rocked on its fulcrum and raise the detent out of said recess, substantially as described.

15. A piano having a music sheet holder formed of independent slidable members, and means for slidably connecting said members to the underside of the piano keyboard, in combination with a locking lever pivoted to one of said members and provided at one end with a detent, a beveled projection on the other of said members adapted to be engaged by the detent and raise the latter when the two members are brought together, and having a recess in rear of its beveled portion for the reception of said detent, a manually operated lever pivoted to the member carrying the locking lever and provided with a handle for withdrawing the said member, a link connecting said manual lever with the detent end of the locking lever, and a spring arranged under the other end of said lever and operating to force the detent into the said recess, the handle when grasped and pulled upon to draw out the said member operating to raise the detent out of the recess and disengage the two members one from the other, substantially as described.

16. A piano having a music sheet holder formed of independent slidable members and means for slidably connecting said members to the underside of the piano keyboard, in combination with a series of selectors carried by the upper of said members, a delivery roller and a take-up roller carried by the other of said members, an oscillatory frame carried by the lower member, a contact roller journaled in said frame, a spring for raising one end of said frame to move the contact roller into engagement with the selectors, and means for drawing out the member carrying said rollers, and arranged when the said means are operated to draw out said member to lower the contact roller out of engagement with the selectors, substantially as described.

17. A piano having a music sheet holder formed of independent slidable members, and means for slidably connecting said members to the under side of the piano keyboard, in combination with a series of selectors carried by the upper of said members, a delivery roller and a take-up roller carried by the other of said members, an oscillatory frame carried by the lower member and provided with means for interlocking with the upper member to lock said members together, a contact roller journaled in said frame, a spring for raising one end of said frame to move the contact roller into engagement with the selectors and to cause said locking means to lock the two members together, and means for drawing out the member carrying said rollers and arranged when said means are operated to draw out the said member to lower the contact roller out of engagement the selectors and simultaneously unlock the two members, substantially as described.

18. A piano having a music sheet holder formed of independent sliding members, and means for slidably connecting said members to the under side of the piano keyboard, in combination with a series of selectors carried by the upper of said members, a delivery roller and take-up roller carried by the other of said members, an oscillatory frame carried by the lower member and provided with detents at one end adapted to interlock with recesses in the upper member to lock said members together, a contact roller journaled in said frame, a spring for raising one end of the frame to move the contact roller into engagement with the selectors and cause said detents to engage said recesses, handles pivoted to the lower member for withdrawing the latter, and links pivotally connecting said handles to the said frame, whereby when said handles are operated to draw out the lower member, said detents are raised out of said recesses and the contact roller is lowered out of contact with the selectors, substantially as described.

19. In a music roll holder for mechanically operated musical instruments adapted to be operated by a perforated music sheet, a frame, a take-up roll journaled in said frame, means for rotating said roll to wind the music sheet thereon, a tracker arranged parallel with said roll, and means carried by the frame for accommodating music spools of different widths, comprising end-bearings, one of which is adjustable toward and from the other, means for holding said adjustable bearing extended, and means for rotating said bearing.

20. A music roll holder for mechanically operated musical instruments adapted to be operated by a perforated music sheet comprising a frame, a take-up roll journaled in the frame, means for rotating said roll to wind the music sheet thereon, a tracker mounted on the frame and over which the sheet passes in its travel to the take-up roll, a music spool, and a pair of end bearings therefor carried by the frame, a slidably mounted spindle carrying one of said bearings, a pinion splined on said spindle, and a gear wheel meshing with the pinion.

21. A music roll holder for mechanically operated musical instruments adapted to be operated by a perforated music sheet, comprising a frame, a take-up roll journaled in the frame, means for rotating said roll to wind the music sheet thereon, a tracker over which the music sheet passes in its travel to the take-up roll, a music spool, and a pair of end bearings therefor carried by the frame, a slidably mounted spindle carrying one of said bearings, means for rotating said spindle to rewind the music sheet on the music spool, and a spacer carried by the frame and adapted to be moved into and out of engagement with the slidably mounted end bearing to hold the latter extended or to permit the same to be retracted.

22. A music roll holder for mechanically operated musical instruments adapted to be operated by a perforated music sheet, comprising a frame, a take-up roll journaled in the frame, means for rotating said roll to wind the music sheet thereon, a tracker over which the music sheet passes in its travel to the take-up roll, a music spool, and a pair of end bearings therefor carried by the frame, a slidably mounted spindle carrying one of said bearings, means for rotating said spindle to rewind the music sheet on the music spool, and a hook pivoted to the frame and adapted to be swung in behind the head of the slidably mounted end bearing to hold the latter extended.

23. A music roll holder for mechanically operated musical instruments, comprising a frame and a tracker carried thereby, a take-up roll journaled in the frame, means for rotating said roll, a music spool, and a pair of end bearings therefor carried by the frame, a slidably mounted spindle carrying one of said bearings, a pinion splined on said spindle, a gear wheel meshing with said pinion, and a hook pivoted to the frame and adapted to be swung over the spindle behind the end bearing carried thereby to hold the same extended.

24. A music roll holder for mechanically operated musical instruments, comprising a frame, a hollow knob projecting from one side thereof, a take-up roll journaled in the frame, and means carried by the frame for accommodating music-spools of different widths, comprising end-bearings, a slidable spindle carrying one of said bearings, said spindle being journaled in the frame and slidable into the said hollow knob, a pinion splined on the spindle, and a gear wheel meshing with the pinion.

25. A music roll holder for mechanically operated musical instruments, comprising a frame, a hollow knob projecting from one side thereof, a take-up roll journaled in the frame, and means carried by the frame for accommodating music spools of different widths, comprising end-bearings, a slidable spindle carrying one of said bearings, said spindle being journaled for rotation in the frame and having one end projecting into the said hollow knob, and means for rotating said spindle.

26. A piano having a music sheet holder comprising a frame movable from and beneath the piano keyboard, a delivery and a take-up roll journaled in said frame, means for driving the take-up roll, mechanism for changing the speed at which the take-up roll is driven, and means for operating said mechanism while the frame is in any of its positions, substantially as described.

27. A piano having a music sheet holder comprising a frame movable from and beneath the piano keyboard, a delivery and a take-up roll journaled in said frame, means for driving the take-up roll, mechanism for changing the speed at which the take-up roll is driven, and means for manually operating said mechanism, at all times independently of the location of the frame.

28. A piano having a playing attachment, comprising a rotatable drum and a motor for rotating it, and a controlling device comprising a music roll holder frame movable beneath the piano key-board and carrying a delivery and a take-up roll, a rotary disk driven by the motor, a shaft supported by the frame and movable longitudinally and independently thereof, a friction wheel carried by said shaft and having its periphery in frictional contact with the disk, gearing to transmit rotary motion from the shaft to the take-up roll, and means for moving the shaft longitudinally to vary the position of the friction wheel relatively to the disk, for the purpose specified.

29. A piano having a playing attachment, comprising a rotary drum, a motor for driving the drum, and means actuated by the drum for operating the sound-producing devices of the piano, a music sheet holder comprising a frame movable from and beneath the piano keyboard, a delivery and a take-up roll journaled in said frame, means deriving motion from the motor for rotating the take-up roll, mechanism for changing the speed at which the take-up roll is driven; and means for manually operating said speed mechanism, said mechanism being operative at all times independently of the location of the movable frame, substantially as described.

30. A piano having a playing attachment, comprising a rotatable drum, means for rotating it, and means actuated by the drum for operating the sound producing devices of the piano, a music sheet holder comprising a frame movable from beneath the piano keyboard, a delivery and a take-up roll journaled in said frame, means deriving motion from the motor for rotating the take-up roll, mechanism for changing the speed at which said take-up roll is driven, and means for operating said speed changing mechanism while the movable frame is in any of its positions, substantially as described.

31. A piano having a playing attachment, comprising a rotatable drum, a motor for rotating it, and means actuated by the drum for operating the sound producing devices of the piano, a music sheet holder movably arranged beneath the piano keyboard, a delivery and a take-up roller journaled in said holder, a friction disk driven from the motor, a shaft longitudinally movable in a bearing carried by said holder, and in a fixed bearing, a friction wheel on said shaft having its periphery arranged in frictional contact with the face of said disk, a worm splined on said shaft and movable with the music sheet holder, gearing driven by said worm for driving the take-up roller, and means for longitudinally shifting the shaft to move the friction wheel toward and from the center of the friction disk, substantially as described.

32. A piano having a playing attachment, comprising a rotatable drum, a motor for rotating it, and mechanism actuated by the drum for operating the sound producing devices of the piano, a music sheet holder movably arranged beneath the piano keyboard, a delivery and a take-up roller journaled in said holder, a friction disk driven from the motor, a shaft longitudinally movable in a bearing carried by said holder and in a fixed bearing, a friction wheel on said shaft having its periphery arranged in frictional contact with the face of the music sheet holder, a worm wheel and pinion driven by said worm, a gear wheel on the take-up gearing with the pinion, and means for shifting said shaft longitudinally independently of the movement of the music sheet holder to move the friction wheel toward and from the center of the friction disk, substantially as described.

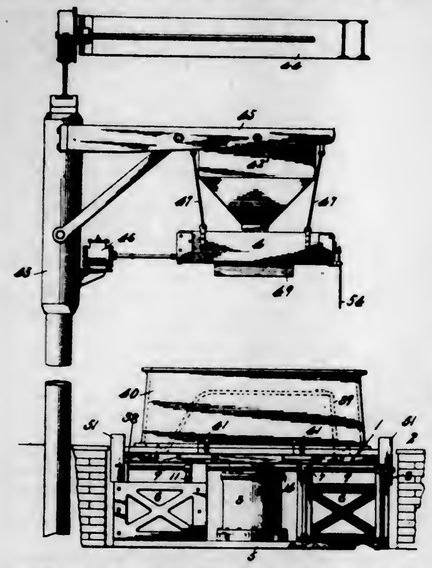
33. A piano having a playing attachment comprising a music sheet holder and means whereby said holder is movably supported beneath the key-board of the piano and adapted to be moved in under the key-board and moved out to bring the music sheet in view, a take-up roll and end bearings for a delivery roll carried by the holder, a rotary disk and means for driving the same, a friction wheel having its periphery in frictional contact with a face of the disk, and gearing between the friction wheel and take-up roll for driving the latter, said gearing being operable when the music sheet holder is in its inner and outer positions or in any intermediate position.

34. A piano having a playing attachment, comprising a bodily movable music-sheet holder carrying a take-up roll and end bearings for a delivery roller, and means for driving the take-up roller, comprising frictional gearing, said

gearing being operable to drive the take-up roller irrespective of the position of the bodily movable music-sheet holder.

35. A piano having a playing attachment, comprising a bodily movable music-sheet holder carrying a take-up roller and end bearings for a delivery roller, and driving means for the take-up roller, said driving means being operable to drive the take-up roller irrespective of the position of the music-sheet holder.

854,690. MOLDING-MACHINE. EDWARD L. DAWES and JOHN F. WHITEHEAD, New Brighton, Pa., assignors to Standard Sanitary Manufacturing Company, Pittsburg, Pa. Filed Dec. 2, 1903. Serial No. 183,542.



Claim.—1. The combination in a molding machine, of a reciprocating mold plate, a main cylinder and piston for operating the same, a valve mechanism for actuating the piston, an auxiliary cylinder and piston, and means for connecting the reciprocating plate and main and auxiliary pistons for automatically actuating the same.

2. The combination in a molding machine, of a reciprocating mold plate, a main cylinder and piston for operating the same, a valve mechanism for actuating the piston, an auxiliary cylinder and piston, a series of connections between the two cylinders, means for opening up any one of said connections, and means for connecting the reciprocating plate and main and auxiliary pistons for automatically actuating the same.

3. In a molding machine, the combination of a main cylinder and piston, an auxiliary cylinder and piston, a valve mechanism connecting both pistons, a reciprocating mold plate, a rod connecting said valve and the auxiliary piston, and a lever connection between the mold plate and said rod.

4. In a molding machine, the combination of a pattern plate, means for jolting said plate, and an anvil frame below the pattern plate having multiple soft metal contact points thereon.

5. In a molding machine, the combination of a cylinder, and an anvil frame having multiple soft metal contact points disposed at the sides of the cylinder.

6. In a molding machine the combination of a main cylinder and piston, an auxiliary cylinder and piston; said cylinders being connected by a series of fluid passages, means for connecting any one of said fluid passages and cutting out the others, a valve mechanism connecting both pistons, a reciprocating mold plate, a rod connecting said valve and the auxiliary piston, and a lever connection between the mold plate and said rod.

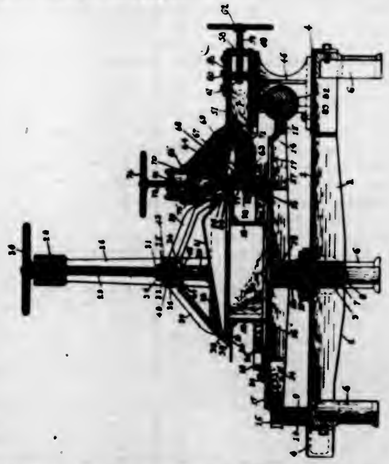
7. In a molding machine the combination of a frame, a mold plate, means for reciprocating the mold plate, a flask upon the mold plate, a hopper and sifter above the mold plate, a swinging jib supporting the hopper and sifter and adapted to swing the latter to and away from above the flask, and a traveling crane adapted to handle the flask.

8. The combination in a molding machine, of a reciprocating mold plate, a main cylinder and piston for operating the same, a valve mechanism for actuating the piston, an auxiliary cylinder and piston having a part controlled by said piston, means connecting the reciprocating plate and main and auxiliary pistons, and multiple ports connecting the main and auxiliary piston.

9. The combination in a molding machine, of a reciprocating mold-plate, a main cylinder and piston for operating the same, a valve mechanism for actuating the piston, an auxiliary cylinder and piston, means connecting the reciprocating plate and main and auxiliary pistons, multiple ports connecting the main and auxiliary pistons, and means for controlling the passages in said ports.

10. The combination in a molding machine, of a reciprocating mold-plate, a main cylinder and piston for operating the same, a valve mechanism for actuating the piston, an auxiliary cylinder and piston having a port controlled by said piston, and means for connecting the reciprocating plate and main and auxiliary piston for automatically actuating the same.

854,691. MACHINE FOR TRIMMING AND WIRING WHEELBARROW-TRAYS. MAXIM A. DUQUETT, Toledo, Ohio, assignor to The J. M. Skinner Bending Company, Toledo, Ohio, a Corporation. Filed Mar. 30, 1906. Serial No. 308,931.



Claim.—1. In a machine for trimming and wiring wheelbarrow trays and the like, the combination of a support, a wheel table revolubly mounted on the support, a tray base of any regular or irregular form other than a circle mounted and secured centrally on the table, a tray holder, means to press the tray holder on a tray mounted on the tray base, a trimming or a beading head mechanically and automatically adjustable radial to the tray base, means to mechanically adjust the head at a radial distance from the tray base, means to revolve the table and means to automatically maintain the head at such radial distance from all radial points of the tray base, as the table revolves, substantially as set forth.

2. In a machine for trimming and wiring wheelbarrow trays and the like, the combination of a support, a wheel table revolubly mounted on the support, a tray base of any regular or irregular form other than a circle, mounted on the table centrally, a cam mounted on the table around the tray base, having a groove of uniform width, at equal radial distance at all points from the rim of the tray base, a tray holder, means to press the tray holder on a tray mounted on the tray base, a mechanically and automatically adjustable trimming head having a wheel adapted to follow the groove of the cam and to thereby move the head radially and maintain the head at a uniform distance from the tray base, and means to revolve the table, substantially as set forth.

3. In a machine for trimming and wiring wheelbarrow trays and the like, the combination of a support, a wheel table revolubly mounted on the support, a tray base of any regular or irregular form other than a circle, mounted centrally on the table, a cam mounted on the table around the tray base, having a groove of uniform width, at equal radial distance at all points from the rim of the tray base, a trimming head and a beading head, each movable radially to the wheel table, and each mechanically adjustable toward or from the tray base, and each having a follower wheel engaging the cam, and adapted to maintain the head at the radial distance from the tray base to which it is mechanically adjusted, and means to revolve the wheel table, substantially as set forth.

4. In a machine for trimming and wiring wheelbarrow trays and the like, the combination of a support, a wheel table revolubly mounted on the support, a tray base of any regular or irregular form other than a circle, mounted and secured centrally on the table, a cam mounted on the table around the tray base, and having a groove of uniform width at equal radial distance at all points from the rim of the tray base, a trimming head and a series of beading heads, each movable radially to the wheel table, each head being mechanically adjustable toward or from the tray base, and each having a follower wheel engaging the cam and adapted to maintain the head at the radial distance from the tray base to which it is mechanically adjusted, and means to revolve the wheel table, substantially as set forth.

5. In a trimming and beading machine, the combination of a main support, a wheel table revolubly mounted on the main support, a work holder mounted centrally on the wheel table, a cam mounted on the wheel table around the work support, a beading head support mounted on the main support, a guide box mounted on the beading head support in line parallel with a line radial to the axis of the wheel table, a beading head having an arm, and movably supported by the arm in the guide box, said arm having a base plate provided with a roller adapted to engage the cam, and means to adjustably connect the base plate and the arm whereby the beading head is adapted to be adjusted radially inward or outward relative to the work holder and the cam independently of the base plate.

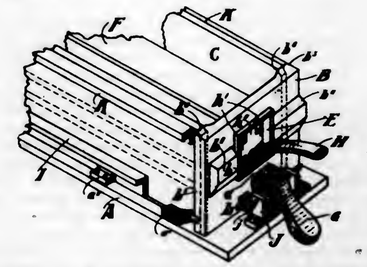
6. The combination in a trimming head of an upper and lower jaw, a recessed swivel head journaled in the jaws by upper and lower axially alined journals, a plunger mounted in the upper journal and adjustable upwardly and downwardly therein, a lower shear wheel journaled in the lower jaw, an upper shear wheel journaled in the plunger, and adjustable by the plunger to shear past the lower shear wheel, both of said shear wheels being journaled to revolve in coinciding vertical planes, transverse the swivel and with their centers off the axial line of the journals of the swivel, substantially as set forth.

7. In a machine for trimming and beading wheelbarrow trays, the combination of a support, a wheel table revolvable on the support, a tray base mounted centrally on the wheel table an arch mounted on the support diametrically spanning the wheel table, and having a threaded orifice in line with the axis of the table, means to hold a tray on the tray base comprising a tray holder, and a screw, the screw being threaded into the orifice of the arch, and pivotally connected to the tray holder, an anti-friction bearing interposed between the screw and the tray holder, and means to operate the screw to raise or lower the tray holder.

8. The combination in a beading head of an upper and lower jaw, a recessed swivel head journaled in the jaws by upper and lower axially alined journals, a plunger mounted in the upper journal and adjustable upwardly and downwardly therein, a grooved beading wheel journaled in the plunger, and adjustable by the plunger relative to the lower beading wheel, both of said beading wheels being journaled to revolve transverse the swivel and with their centers off the axial line of the journals of the swivel and means to adjust the plunger upwardly and downwardly of the swivel, substantially as set forth.

9. In a machine for trimming and wiring wheelbarrow trays and the like, the combination with a horizontal base having a central bearing, and roller bearings located radial to the central bearing, of a master wheel journaled in the central bearing and having its rim portion supported on the roller bearings, a tray support secured centrally on the master wheel, an arch mounted on the base and diametrically spanning the master wheel, a screw in the arch in axial alinement with the axis of the master wheel, a tray holder adapted to hold a tray mounted on the tray support, said tray holder being pivoted on the lower end of the screw, and adapted to be raised and lowered by the screw and pressed thereby on the tray support, and anti-friction bearing interposed between the screw and the tray holder, and together with the roller bearings of the master wheel adapting the master wheel, the tray support, and the tray holder when pressed on the support by the screw to be revolved between the bearings, means to revolve the master wheel, and means to operate the screw.

854,692. MOLD FOR HOLLOW BUILDING-BLOCKS. WILLIAM J. FAULKNER, Chicago, Ill., assignor to Robert P. Faulkner, Chicago, Ill. Filed July 26, 1906. Serial No. 327,879.



Claim.—1. The combination in a mold for hollow building blocks, of a bottom, movable ends, provided respectively with flanges on the sides thereof, and with overlapping lips on the upper edge thereof adjacent to the flanges, means to advance and retract the ends, means to hold the ends to the bottom when such ends are advanced, sides, latches on the sides, such sides held in place by the over-lapping lips and the flanges and latches, such ends respectively provided with an aperture therein, and a collapsible core consisting of a bottom, a top, and side pieces arranged to be inserted in and withdrawn from the aperture in the ends, and means to secure such bottom, top and sides of the collapsible core in place; substantially as described.

2. The combination in a mold for hollow building blocks, of a bottom, movable ends, provided respectively with flanges on the sides thereof, and provided with overlapping lips on the upper edge thereof adjacent to the flanges, and provided with an aperture therethrough, means to advance and retract the ends, sides, means to latch the sides to the bottom, such sides held in place by the flanges on the ends, the over-lapping lips and the latches, and a collapsible core consisting of a bottom, a top and side pieces, each thereof arranged to be independently inserted in and withdrawn from the aperture in the ends, and means to secure such bottom, top and sides in place; substantially as described.

3. In a mold for hollow building blocks, a bottom, movable ends, provided respectively with flanges on the sides thereof, with over-lapping lips on the top adjacent to the flanges, and with an aperture therethrough, and such flanges provided with recesses adjacent to the bottom of the mold, projections on such bottom arranged to engage with the recesses on the flanges when the ends are advanced to hold the ends to the bottom, means to advance and retract the ends, sides, latches pivoted on the sides and projections on the bottom with which the latches engage, such sides held in place by the latches, the flanges on the ends, and the overlapping lips, in combination with a collapsible core consisting of a bottom, a top, and side pieces arranged to be inserted in the aperture in the ends of the mold, and a combined handle and lever arranged to secure such bottom, top and sides in place; substantially as described.

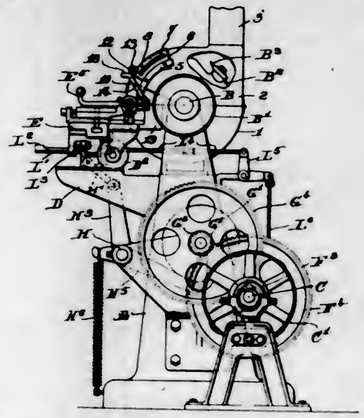
4. The combination in a mold for hollow building blocks, of a bottom provided with a bead molding against which the sides and ends of the mold may abut, movable ends, provided respectively with flanges on the sides thereof and with over-lapping lips on the upper edges adjacent to the flanges, such flanges provided with recesses, and an abutment on the respective ends adjacent to the bottom of the mold, standards on the bottom, a combined handle and lever mounted in the standards to engage with the end and with the abutment thereon adjacent to the bottom to advance and retract such ends, sides, and means to latch the sides to the bottom, such sides extending under the overlapping lips and held in place by such lips, the flanges on the ends and the latches, an abutment on the bottom arranged to engage with the recess in the flanges of the ends to hold such ends to the bottom, and such ends provided with an aperture therein, and a collapsible core consisting of a bottom, a top, and side pieces arranged respectively to be inserted in and withdrawn from the aperture in the ends, and means to secure such bottom, top and sides in place; substantially as described.

5. The combination in a mold for hollow building blocks, of a bottom provided with a bead molding against which the sides and ends of the mold may be forced to abut, movable ends provided with flanges on the sides thereof and with over-lapping lips on the upper edges adjacent to the flanges, such flanges provided with recesses near the ends thereof adjacent to the bottom of the mold, an abutment of the ends, respectively, such abutment provided with an aperture or recess therein, standards on the bottom, and a combined handle and lever mounted in the standards to engage with the face of the end adjacent thereto and to extend into the aperture or recess in the abutment on such end to engage therewith, to advance and retract such end, sides, latches pivotally attached to the sides, abutments on the bottom with which the latches are engageable, such sides extending under the over-lapping lips of and in contact with the flanges on the ends, and such ends provided with an aperture therethrough, and a collapsible core consisting of a bottom provided with upturned edges, a top, and side pieces, such bottom, top and side pieces arranged to be inserted in the aperture in the ends, and a combined lever and handle arranged to be inserted in the end of the collapsible core to constitute a locking block to secure the parts of the core in place; substantially as described.

854,693. BOBBIN-TURNING APPARATUS. ROBERT M. GOODNOW, Hopedale, Mass., assignor to Draper Company, Hopedale, Mass., a Corporation of Maine. Filed Mar. 13, 1907. Serial No. 362,109.

Claim.—1. In a turning lathe, a revolving cutting tool, a sliding table carrying head and tail stocks for the work and movable toward and from the cutting tool, a shield for the latter, and means governed by movement of the table to move the shield to expose the cutter as the work is brought into position to be acted upon by the cutting tool.

2. In a turning lathe, a revolving cutting tool, a shield therefor, a table movable toward and from the tool and provided with work-holding means, and means, operated by movement of the table to present the work to the cutting tool, to retract the shield, and to effect return of the shield to normal position as the table is moved to withdraw the work.



3. In a turning lathe, a revolving cutting tool, a shield movable to cover or uncover the tool, means to hold the work and present it to the cutting tool, and controlling connections between said means and the shield, to cause the latter to uncover the tool when the work is presented thereto and to cover the tool when the work is withdrawn.

4. In a turning lathe, a revolving cutting tool, a hood inclosing the same and having a work-receiving opening, a shield to normally close the opening, a table movable toward and from the tool, work-holding devices on the table, and means to retract the shield by movement of the table to present the work to the cutting tool and to effect return of the shield to normal position when the table is moved to withdraw the work from the cutting tool.

5. In apparatus of the class described, a revolving cutting tool, work-holding means movable toward and from the tool, a shield for the latter, and means to retract the shield and expose the tool when the work is presented to the tool.

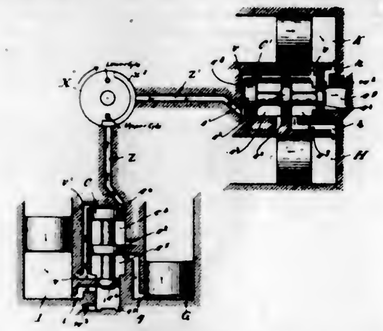
6. In apparatus of the class described, a revolving cutting tool, an inclosing hood having a work-receiving opening, a shield slidable on the hood to close said opening, a table movable toward and from the tool, work-holding means on the table, and a cam device on the table to cooperate with the shield and lift the same to uncover the opening in the hood when the table is moved toward the tool.

7. In apparatus of the class described, a revolving cutting tool, an inclosing hood having a work-receiving opening, a shield to close the opening, shield-carriers slidably mounted on the hood and having rolls, a table movable toward and from the tool and provided with work-holding means, and cam devices on the table to engage the carrier rolls and lift the carriers and shield when the table is moved toward the cutting tool.

8. In apparatus of the class described, a revolving cutting tool, a hood inclosing the cutter and having a work-receiving opening, said hood having a swinging top portion, a shield movably mounted on said top portion and adapted to cover the work-receiving opening, a table movable toward and from the tool and provided with work-holding means, and means on the table to lift the shield when the work is presented to the action of the tool, the opening movement of the top portion of the cover carrying the shield with it.

9. In apparatus of the class described, a revolving cutting tool, work-holding means, devices to cause relative movement of said tool and means toward and away from each other, a shield for the tool, and means to retract the shield and expose the tool when the work and tool are brought together.

854,694. PORTABLE PNEUMATIC TOOL. CHARLES H. HAESELER, New York, N. Y., and ALBERT H. TAYLOR, Easton, Pa., assignors to Ingersoll-Rand Company, a Corporation of New Jersey. Filed Dec. 8, 1906. Serial No. 346,969.



Claim.—1. In a portable pneumatic motor, the combination of a crank shaft, a cylinder, a piston, and connections for turning said shaft, a fluid-actuated valve for controlling the admission and exhaust of fluid to said cylinder, and a rotating valve connected with said shaft for controlling the fluid actuating said first-mentioned valve.

2. In a portable pneumatic motor, the combination of a shaft, means for rotating said shaft by fluid pressure comprising a cylinder, a valve for controlling said means for rotating said shaft, mechanical means exterior to said cylinder for governing the movements of said valve, and a fluid connection between said means and said valve.

3. In a portable pneumatic motor, the combination of a crank-shaft, a cylinder, a piston, and connections for turning said shaft, a valve for controlling the admission and exhaust of fluid to said cylinder, mechanical means exterior to said cylinder for governing the movements of said valve, and a fluid connection between said means and said valve, the fluid pressure of said connection being maintained during the whole of the time the valve is desired to be in a given position.

4. In a portable pneumatic motor, the combination of a crank-shaft, a cylinder, a piston, and connections for turning said shaft, a fluid-actuated valve for controlling the admission of fluid to said cylinder, ports governing the flow to said valve of the fluid for actuating it, and a rotating valve connected with said crank-shaft for controlling said ports.

5. In a portable pneumatic motor, the combination of a crank-shaft, a cylinder, a piston, and connections for turning said shaft, a valve for controlling the admission of fluid to said cylinder, said valve having surfaces such that, when fluid pressure is applied thereto, the valve will be shifted, ports governing the flow of fluid to and from said surfaces, and a rotating valve connected with the crank-shaft for controlling said ports.

6. In a portable pneumatic motor, the combination of a crank-shaft, a cylinder, a piston, and connections for turning said shaft, a valve for controlling the admission of fluid to said cylinder, means whereby a difference of fluid pressure may be applied to opposite sides of said valve, and a valve connected with the crank-shaft for governing the fluid for effecting said difference of pressure.

7. In a portable pneumatic motor, the combination of a crank-shaft, a cylinder, a piston, and connections for turning said shaft, a valve for controlling the admission of fluid to said cylinder, said valve having effectively greater and lesser areas on opposite sides thereof, constantly open ports connected with the source of supply of fluid for admitting fluid to said surfaces to actuate the valve, a port for permitting the escape of fluid from said greater surface, and a valve connected with the crank-shaft for governing the last mentioned port.

8. In a portable pneumatic motor, the combination of a crank-shaft, a cylinder, a piston, and connections for turning said shaft, a valve for controlling the admission of fluid to said cylinder, said valve consisting of two cylindrical portions of different diameters, each of said portions having an annular groove therein, a valve chamber having bores corresponding to the said portions of said valve, said chamber having a port connected with said cylinder, having a supply port within the range of travel of the groove in said smaller portion of the valve, and having an exhaust port within the range of travel of the groove in the said larger portion of the valve, the end of said smaller portion of the valve being open to the atmosphere, and a valve for intermittently admitting pressure to the larger portion of said first-mentioned valve.

9. In a portable pneumatic motor, the combination of a crank-shaft, a cylinder, a piston, and connections for turning said shaft, a valve for controlling the admission of fluid to said cylinder, said valve consisting of two cylindrical portions of different diameters, each of said portions having an annular groove formed therein, a valve chamber having bores corresponding to said portions of the valve, said chamber having a port connected with said cylinder, and having supply and exhaust ports respectively within the range of travel of the grooves in said smaller and larger portions of the valve, the end of the smaller portion of the valve being open to the atmosphere, a supply port connected with the opposite end of the valve chamber, an exhaust port connected with the said end of the valve chamber, and a valve connected with the crank-shaft for controlling said last mentioned exhaust ports.

10. In a portable pneumatic motor, the combination of a crank-shaft, two cylinders, pistons therein, and connections for turning said shaft, a valve for controlling the admission of fluid to said cylinders, said valve consisting of two cylindrical portions of different diameters, each of said portions having an annular groove therein, a valve chamber having bores corresponding to said portions of said valve, said chamber having a port within the range of travel of said smaller groove, that is connected with one of said cylinders, and having a port adjacent to the smaller end of the valve, but not covered thereby in one extreme position, which port is connected with the other of said cylinders, said chamber having supply and exhaust ports which are respectively within the range of travel of said smaller and larger grooves, the end of said smaller portion of the valve being open to the atmosphere, the opposite end of the said valve chamber being connected with the fluid supply by a port, said end of the valve chamber also having an exhaust port, and a valve connected with the crank-shaft for controlling said exhaust port.

11. In a portable pneumatic motor, the combination of a crank-shaft, a plurality of cylinders having pistons, and connections for turning said shaft, a valve mounted in a chamber substantially transverse to said cylinders, for controlling the admission of fluid to said cylinders, whereby the use of simple and direct ports is made possible, and means for shifting said valve to its various positions by fluid pressure.

12. In a portable pneumatic motor, the combination of a crank-shaft, a plurality of cylinders, having pistons connected with said shaft, a valve mounted in a bore transverse to said cylinders, for controlling said cylinders, whereby the use of simple and direct ports is made possible, and means for shifting to and maintaining said valve in its various positions by fluid pressure.

13. In a portable pneumatic motor, the combination of a crank-shaft, cylinders placed at different angles to said shaft, pistons and connections for operating said shaft, a fluid-actuated valve for controlling the admission of fluid to the cylinders at a given angle, and a valve on the crank shaft for governing the flow of fluid to actuate said valves.

14. In a portable fluid motor, the combination of a crank-shaft, cylinders placed at different angles to said shaft, pistons and connections for operating said shaft, a fluid actuated valve for the cylinders at each of said angles, ports leading from said valve-chamber to a port concentric with the crank-shaft, and a valve rotating with said crank-shaft for governing said ports to control said valves, said valve rotating with the crank-shaft having a peripheral groove of an angular extent corresponding to

the angle between said cylinders for controlling said ports.

15. In a portable pneumatic motor, the combination of a crank-shaft, cylinders at different angles to said shaft, pistons and connections for operating said shaft, a fluid-actuated valve for the cylinders at each of said angles, ports leading from said valve-chamber to a port concentric with the crank-shaft, and a valve rotating with said crank-shaft for governing said ports to control said valves, said valve rotating with the crank-shaft having a semi-circular groove in its periphery for controlling said ports.

16. In a portable pneumatic motor, the combination of a casing, a crank-shaft mounted therein, cylinders, pistons, and connections for turning said shaft, fluid-actuated valves for controlling the admission of fluid to said cylinders, and a valve for controlling the fluid for actuating said valve, said last mentioned valve consisting of a cylindrical sleeve having a cross-pin that is adapted to be received in a slot in the end of the crank-shaft, said sleeve rotating within a ported bore in the casing.

17. In a portable pneumatic motor, the combination of a casing, a crank-shaft mounted therein, cylinders, pistons, and connections for turning said shaft, fluid-actuated valves for controlling the admission of fluid to said cylinders, and a valve for controlling the fluid for actuating said valve, said last mentioned valve consisting of a cylindrical sleeve having a cross-pin that is adapted to be received in a slot in the end of the crank-shaft, said sleeve rotating within a ported bore in the casing, and a pin and groove, one of which is on said last mentioned valve, and the other of which is on said crank-shaft, for insuring that said valve will be properly positioned on said crank-shaft.

18. In a portable pneumatic motor, the combination of a crank shaft, cylinders and pistons for rotating said crank shaft, a plurality of fluid-actuated valves for controlling said cylinders, and a mechanically actuated master-valve for controlling the fluid actuating said first mentioned valves.

19. In a portable pneumatic motor, the combination of a crank shaft, cylinders and pistons for rotating said shaft, fluid-actuated valves controlling fluid for said cylinders, a rotating valve controlling the fluid for actuating said first-mentioned valves, said last-mentioned valve being loosely mounted on said crank-shaft to rotate therewith, and a removable bushing in which said last-mentioned valve rotates.

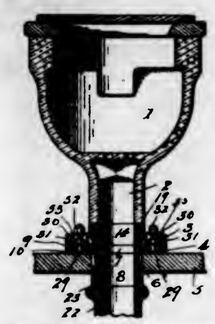
20. In a portable pneumatic motor, the combination of a crank-shaft, fluid-operated means for rotating said crank-shaft, a valve for controlling the admission of fluid to said means, and means controlled by the crank-shaft for actuating said valve, said means comprising a mechanical element and a fluid element in series, whereby a mechanical connection between the shaft and valve is avoided.

21. In a portable pneumatic motor, the combination of a crank-shaft, a plurality of cylinders for rotating said crank-shaft, valves for controlling the admission of fluid to said cylinders, and means controlled by the crank-shaft for actuating said valves, said means comprising a mechanical element and a fluid element in series, whereby mechanical connections between the shaft and valves is avoided.

854,695. CLOSET-BOWL AND SINK CONNECTION. JOHN M. HAYDEN, Norfolk, Va., assignor of one-half to Harvey Abrames, Norfolk, Va. Filed Sept. 24, 1906. Serial No. 335,934.

Claim.—1. A closet bowl and sink connection comprising a tubular section adapted to be secured in an air tight relation within the outlet conduit of a closet bowl or sink, a second tubular section adapted to be rigidly connected with a sewer in an air tight relation, said last named section being provided with external screw threads, a pipe section internally screw threaded and threaded upon said last named section, said pipe section being soldered to a sewer, a packing ring surrounding said last named last tubular section adjacent the said pipe section and means carried by said tubular section to compress said packing and form an air tight joint between said tubular section and said pipe section.

2. A closet bowl and sink connection comprising the base of a fixture of the character specified, said base being provided with an outlet conduit, a tubular coupling member provided within said conduit, an out standing flange mounted upon the lower end of said coupling, a second tubular section provided with an out standing flange adjacent its upper end, said flange resting upon the floor upon which said fixture rests and contained within an opening in the base of said fixture, correspondingly shaped engaging bearing surfaces provided upon the said tubular sections and means engaging said flanges to secure the said sections together.



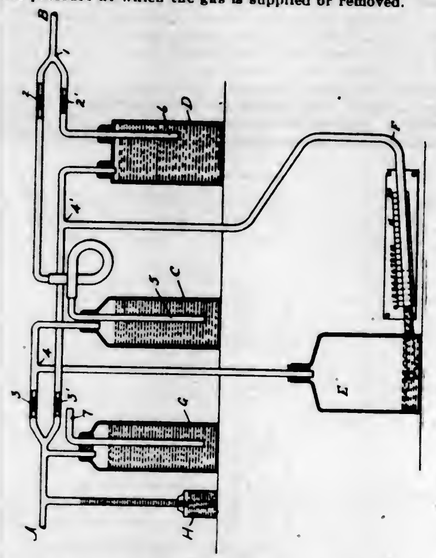
3. A closet bowl and sink connection comprising the base of a fixture of the character specified, said base being provided with an outlet conduit, a tubular coupling member provided within said conduit, said member having an out standing flange adjacent its lower end, a shoulder carried by the lower end of said member, a second tubular coupling member provided adjacent its upper end with a depression shaped to receive and form an air tight connection with the said shoulder, a flange carried adjacent the upper end of the last named coupling member, means to secure the said flanges together, and to the base of said fixture, said base being provided with a recess adapted to receive and conceal the said flanges.

4. A closet bowl and sink connection comprising a tubular member adapted to pass through a floor and be secured to a sewer in an air tight relation, a flat out standing flange carried by the upper end of said tubular member, said flange being adapted to rest upon the floor, a tubular member adapted to bear upon the first named member to form an air tight joint therewith, said tubular member being provided adjacent its lower end with a flat out standing flange, means to secure said flanges together, and a closet bowl or sink having its outlet conduit connected in an air tight relation with said last named tubular section, said fixture having a recess in its base in which the said flanges are received and concealed, the base of said fixture being adapted to rest upon the floor around said flanges.

5. A closet bowl and sink connection comprising a sewer pipe, an internally screw threaded pipe section soldered thereto, a tubular section screw threaded within said pipe section, said tubular section being provided with a flat top to rest upon the floor upon which said closet bowl or sink is to be placed, the said closet bowl or sink having an outlet conduit, a second tubular section adapted to be received within said outlet conduit, means for rigidly securing the said section therein in air-tight relation, said first and last named sections being provided with similarly curved bearing surfaces adapted to engage each other and to form an air-tight joint between said sections, and means for drawing the said tubular sections together.

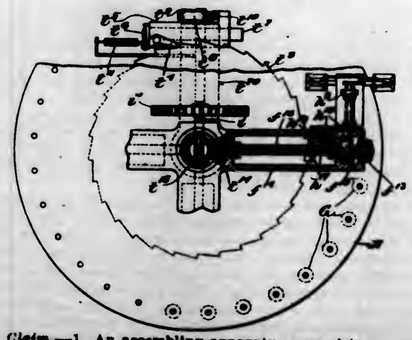
854,696. APPARATUS FOR ANALYZING GASES. WILLIAM JONES, New York, N. Y., assignor to The Jones-Julia Mfg. Co., New York, N. Y., a Corporation of New York. Filed Nov. 21, 1906. Serial No. 344,404.

Claim.—1. In an apparatus for analyzing gases, the combination of means for causing the gas to flow in two streams through two chambers or passages, means for absorbing a constituent of the gas in passing through one of said chambers, and means for giving a continuous indication of the difference of tension of the gases in the two streams by causing their pressures to oppose one another thus permitting the percentage of the constituent removed to be observed without disturbance from fluctuations in the pressure at which the gas is supplied or removed.



2. In an apparatus for analyzing gases, the combination of two chambers through each of which a stream of the gas to be analyzed is passed in limited amount as described, one of said chambers being provided with an absorbing and the other with a non-absorbing solution, and a manometer the opposite sides of which are connected to said chambers respectively so as to be subject respectively to the tension of the gas in said chambers, whereby its readings will be due to the difference between the tension resulting from the removal of the constituent whose percentage is to be measured from one stream, and the tension of the gas in the other stream.

854,697. ASSEMBLING APPARATUS. NORMAN MARSHALL, Newton, Mass. Original application filed Jan. 19, 1905, Serial No. 241,884. Divided and this application filed Apr. 23, 1906. Serial No. 313,102.



Claim.—1. An assembling apparatus comprising a screw driving mechanism, a series of work carrying jigs, screw feeding mechanism, mechanism for bringing the jigs successively to the screw feeding mechanism and then to the screw driving mechanism, and mechanism for intermittently operating the screw driving mechanism.

2. An assembling apparatus comprising a screw driving mechanism, screw feeding mechanism, and devices for presenting the work successively to the screw feeding mechanism and then to the screw driving mechanism.

3. An assembling apparatus comprising a work support, screw feeding mechanism for delivering a screw to a recess in the work, a screw driving mechanism, and means for moving the work support from the screw feeding mechanism to the screw driving mechanism.

4. An assembling apparatus comprising a screw driving mechanism, a work carrying jig, screw feeding mechanism, and means for bringing the jig to the screw feeding mechanism and then to the screw driving mechanism.

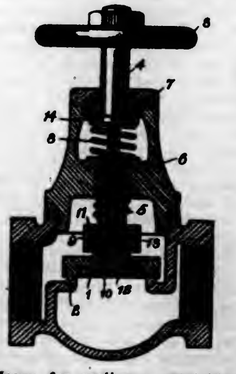
5. An assembling apparatus comprising mechanism for simultaneously operating upon two screws, a series of jigs for carrying the parts to be assembled and presenting them to said mechanism, mechanism for intermittently advancing said series of jigs, and mechanism for feeding two screws to the parts to be assembled.

6. An assembling apparatus comprising mechanism for operating upon a plurality of screws, a series of jigs for carrying the parts to be assembled, mechanism for intermittently advancing said jigs, and mechanism for feeding a plurality of screws to the parts to be assembled.

7. An assembling apparatus comprising a screw driving mechanism provided with a plurality of screw driving spindles, a series of jigs provided with devices for holding the parts to be assembled in proper relation, mechanism for feeding a plurality of screws to the parts to be assembled, and mechanism for bringing the jigs successively to the screw driving mechanism.

8. An assembling apparatus comprising a screw driving mechanism provided with two screw driving spindles, a series of jigs provided with devices for holding the base and screw shell securing nuts in proper relation, mechanism for simultaneously feeding the shell securing screws to the base, mechanism for successively bringing the jigs to the screw feeding mechanism and to the screw driving mechanism, and mechanism for intermittently operating the screw driving mechanism.

854,698. VALVE STRUCTURE. LOUIS H. MARTELL, Ellwood City, Pa. Filed Nov. 5, 1904. Serial No. 231,592.

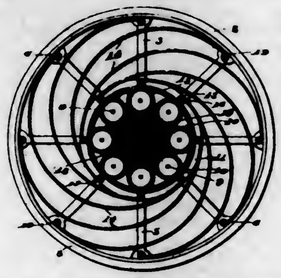


Claim.—1. Means for sealing a rotatable stem in its passage through a chamber wall which consists of a collar formed on the stem, and a loose ring of inelastic material surrounding said stem and interposed between said collar and the chamber wall, the bearing surfaces between said collar and ring being inclined to the axis of the stem, and the bearing surfaces between the chamber wall and ring being in a plane perpendicular to the axis of the stem, and the chamber wall being of such area or extent as to permit

lateral movement of said ring thereon, substantially as described.

2. Means for sealing a rotatable stem in its passage the chamber wall being of such area or extent as to permit on said stem having a bearing surface of curved contour, and a loose ring of inelastic material surrounding said stem interposed between said collar and the chamber wall having a curved bearing surface for said collar, and abutting against said chamber wall in a plane perpendicular to the axis of said stem, said chamber wall being of such extent as to permit lateral displacement of said ring thereon, substantially as described.

854,699. VEHICLE-WHEEL. JOHN NASH, North Yakima, Wash., assignor of one-half to John J. Tyler, North Yakima, Wash. Filed Mar. 16, 1906. Serial No. 306,450.



Claim.—1. A wheel comprising a rigid frame made up of complementary half sections, each section including a central body having an axle opening, spokes radiating from the body, and a rim connecting the outer ends of the spokes, fastenings connecting corresponding spokes of the two sections, a hub independent of the wheel sections, springs extending between the hub and the fastenings and means within the hub for limiting its movement.

2. A wheel comprising a rigid frame, a hub independent of the frame, springs extending between the hub and the frame to yieldably support the hub, a cushion carried by the hub, and an annular series of stops carried by the frame and disposed in position to be cushioned when the hub is displaced beyond a predetermined limit.

3. A wheel comprising a rigid frame, an open ended hub independent of the frame, springs connecting the hub and the frame, an annular series of pins carried by the frame and extending through the open ends of the hub, a cushion carried by the hub within the area bounded by the pins, the pins constituting stops adapted to be cushioned when the hub has been displaced beyond a predetermined limit.

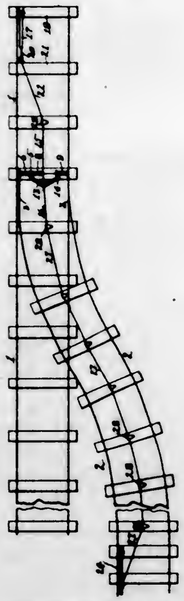
4. A vehicle wheel comprising a rigid frame, an open ended hub within the frame, springs connecting the hub and the frame, open ended sleeves rigidly carried within the hub, a cushion snugly embraced by the sleeves, and pins carried by the frame and extending through the open ends of the sleeves, said pins constituting stops for engagement by the sleeves when the hub has been displaced to a predetermined limit.

5. In a vehicle wheel, the combination of complementary frame sections, each section including a central body having an axle opening, spokes radiating from the body and a rim connecting the spokes, an annular series of fastenings connecting the outer ends of corresponding spokes, an inner annular series of fastenings connecting the bodies of the frame sections, an open ended hub embracing the inner fastenings and provided with terminal and intermediate external annular flanges, open ended sleeves carried within the hub, bowed springs having their outer ends connected to the outer fastenings of the frame with their inner ends received between adjacent flanges of the hub, fastenings piercing the flanges of the hub and connecting the springs thereto, and a rubber cushion snugly embraced by the sleeves, the inner annular series of fastenings constituting stops for engagement by the sleeves when the hub has been displaced beyond a predetermined limit.

6. A wheel comprising a central body having axle receiving openings therein, a rim, spokes rigidly connecting the rim and central body, a hub between the spokes and opposite portions of the body and movable independently thereof, a yielding connection between the hub and the rim and means within the hub for limiting its movement.

7. A wheel comprising a central body having axle receiving openings therein, a rim, spokes rigidly connecting the rim and central body, a hub between the spokes and opposite portions of the body and movable independently thereof, a yielding connection between the hub and the rim, a cushion included within the hub and disposed to bear upon an axle within the body openings, and stop devices secured to the central body and movably disposed within the hub.

854,700. AUTOMATIC RAILROAD-SWITCH. ELMER C. NORTHRUP, Riverside, Cal., assignor of one-half to Evalyn Ross, Riverside, Cal. Filed Oct. 24, 1906. Serial No. 340,280.



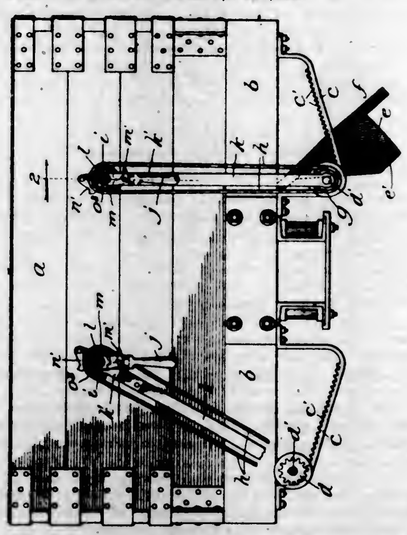
Claim.—1. In combination with the throw-rails of a railroad switch, a switch-rod joining said rails, a slide upon said rod near one end, springs on said rod, one on each side of the slide and bearing against it, the other ends of the springs being secured to the rod, a toggle-lever having one of its extremities pivoted to a fixed point and the other extremity pivoted to the slide, a connecting rod secured to said toggle-lever at its angle, a key-lever in the track, and connections therefrom to the connecting rod of the toggle-lever, and means on the traveling vehicle for operating said key-lever.

2. In combination with the throw-rails of a railroad switch, a switch-rod joining said rails, a slide upon said rod near one end, springs on said rod, one on each side of the slide and bearing against it, the other ends of the springs being secured to the rod, a toggle-lever having one of its extremities pivoted to a fixed point and the other extremity pivoted to the slide, connecting rods secured to said toggle-lever at its angle and thence extending in opposite directions, key-levers in the road-bed, one in the main line in advance of the switch and the other in the siding beyond the switch, intervening oppositely acting connections between said key-levers and the connecting rods of the toggle-lever, and means on the traveling vehicle for operating said key-levers.

3. In combination with the throw-rails of a railroad switch, a switch-rod joining said rails, a slide upon said rod near one end, springs on said rod, one on each side of the slide and bearing against it, the other ends of the springs being secured to the rod, a locking spring on the other end of the rod, said spring having its outer end secured to the rod and its inner end to a fixed bearing, a toggle-lever having one of its extremities pivoted to a fixed point and the other extremity pivoted to the slide, a connecting rod secured to said toggle-lever at its angle, a key-lever in the track and connections therefrom to the connecting rod of the toggle-lever, and means on the traveling vehicle for operating said key-lever.

4. In combination with the throw-rails of a railroad switch, a switch-rod joining said rails, a slide upon said rod near one end, springs on said rod, one on each side of the slide and bearing against it, the other ends, of the springs being secured to the rod, a locking spring on the other end of the rod, said spring having its outer end secured to the rod and its inner end to a fixed bearing, a toggle-lever having one of its extremities pivoted to a fixed point and the other extremity pivoted to the slide, connecting rods secured to said toggle-lever at its angle and thence extending in opposite directions, key-levers in the road-bed, one in the main line in advance of the switch and the other in the siding beyond the switch, intervening oppositely acting connections between said key-levers and the connecting rods of the toggle lever, and means on the traveling vehicle for operating said key-levers.

854,701. CAR. SPENCER OTIS, Chicago, Ill., assignor to National Dump Car Company, a Corporation of Maine. Filed Oct. 4, 1906. Serial No. 337,443.



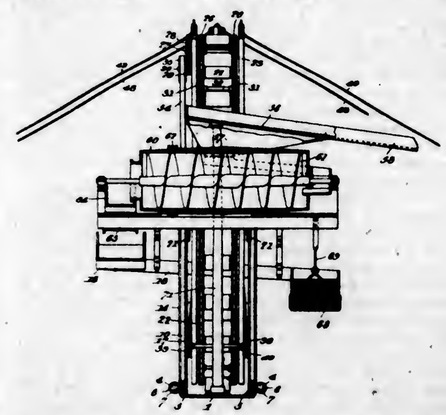
Claim.—1. In a car of the class described, the combination of a frame, a hinged dumping door forming a part of the bottom of the car, a reciprocating shaft beneath the door and operatively connected therewith, and driving mechanism connected at one end to the reciprocating shaft and at its opposite end in sliding engagement with the end of the car.

2. In a car of the class described, the combination of a frame, a hinged dumping door forming a part of the bottom of the car, a reciprocating shaft beneath the door and operatively connected therewith, a link having its lower end movable with the shaft and having its upper end in sliding engagement with the end of the car, and driving means carried by the link.

3. In a car of the class described, the combination of a frame, a hinged dumping door forming a part of the bottom of the car, a reciprocating shaft beneath the door and operatively connected therewith, a track upon which the shaft is supported, a sprocket wheel on the shaft, a sprocket wheel mounted upon the end of the car, a rigid link connecting the sprocket wheels, a chain passing around the sprocket wheels, and an operating device for the chain and sprocket mechanism.

4. In a car of the class described, the combination of a frame, a hinged dumping door forming a part of the bottom of the car, a reciprocating shaft beneath the door and operatively connected therewith, a sprocket wheel upon this shaft, an operating shaft in sliding engagement with the end of the car, a sprocket wheel on the operating shaft, a rigid link connecting the shafts, a detent mechanism for the operating shaft, a chain, and an operating handle on the operating shaft.

854,702. MACHINE FOR HANDLING DIRT AND SAVING GOLD. MARO L. PROCTOR, Elkhart, Ind., assignor to Czarra & Proctor, Elkhart, Ind., a Copartnership. Filed Feb. 27, 1905. Serial No. 247,553.



Claim.—In a machine of the character described the combination with a supporting frame; of a cylinder rotatably mounted upon the frame, a screw conveyer within the cylinder, a standard, a trough extending from the standard and opening into one end of the cylinder, a hopper opening into and reversibly mounted above one end of the trough, a flume supported by and extending at an angle from the upper portion of the hopper, a screen constituting the bottom of that portion of the flume above the hopper, said flume adapted to partly rotate, a magnetic separator, means for directing material from the cylinder on to said separator, a riffle sluice adapted to receive the material not attracted by the magnetic separator, and an elevator for discharging material on to the screen above the hopper.

854,703. MANIFOLDING ATTACHMENT. WILLIAM A. RANKIN, Toledo, Ohio, assignor of one-third to Antonie S. Rankin, Toledo, Ohio. Filed Oct. 24, 1906. Serial No. 340,294.

Claim.—1. In combination, a platen, a set of rolls spaced therefrom, a ribbon connecting said rolls and coacting with the platen, releasable means for communicating rotation from the platen to one of said rolls, and means for effecting an automatic rewinding of the ribbon on the other of said rolls when said first means is released.

2. In combination, a platen, a set of ribbon-rolls associated therewith, a ribbon connecting the ribbon-rolls and coacting with the platen, means for imparting rotation from the platen to one of said rolls, said means being releasable to permit a loose turning of the driven roll, and a spring for actuating a rewinding of the ribbon upon the roll from which it was unwound by the driven roll.



3. In combination, a platen, a paper release lever, a set of rolls, a manifolding ribbon connecting said rolls and coacting with the platen, means for imparting rotation from the platen to one of said rolls, said means being releasable by a movement of said lever, and means for effecting an automatic rewinding of the ribbon on the other roll.

4. In combination, a platen, a set of rolls, a manifolding ribbon connecting the rolls and coacting with the platen, a frictional drive between the platen and one of said rolls, means for effecting a release of the roll from said means, and spring means for effecting a rewinding of the ribbon on the other of said rolls when the driven roll is released.

5. A manifolding attachment for typewriters having its end standards formed with spaced legs which attach to the platen-roll-carrying frame, and provided with a lateral bracing leg which has its lower end loosely embracing the platen-roll shaft.

6. In combination a platen-roll, a set of ribbon-rolls, a manifolding ribbon having its ends connected to different of said ribbon-rolls, releasable means for effecting a winding of the ribbon from one to the other of the ribbon-rolls when the platen is turned, and means for effecting a rewinding of the ribbon on the roll from which it is unwound by the action of the platen, said latter means having its power generated by the unwinding of the ribbon from the roll on which it is normally wound.

7. In combination, a platen, a set of ribbon-rolls mounted in spaced relation above the platen, a manifolding ribbon connecting said rolls, rewinding means associated with one roll and generated by an unwinding of the ribbon from such roll, connection between the platen and the other of said rolls to effect a rotation thereof when the platen is turned, and means for effecting a release of the platen actuated roll to permit a free turning thereof and an automatic rewinding of the ribbon.

8. In combination, a platen, a paper-release lever, a set of rolls, a manifolding-ribbon connecting said rolls and passing under the platen, means for imparting rotation from the platen to one of said rolls, said means being releasable to permit a loose turning of the associated roll, connection between the release lever and said means to effect the release of the means when the paper is released: and means for effecting an automatic rewinding of the manifolding-ribbon on the other roll from the platen-actuated roll when the latter is released.

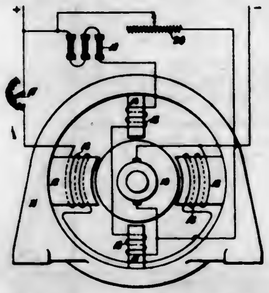
9. In a manifolding apparatus for typewriters, a separable ribbon-roll having end members provided with trunnions and one of said trunnions being provided with sockets, a plurality of rods having one end loosely seating in the sockets in said member and their other end fixed to the other member, means for yieldingly maintaining the ends of the rod in said socket, and a shell carried between the rods and provided with longitudinal grooves for receiving the rods.

10. In a manifolding attachment for typewriters, a ribbon-roll comprising a rod, a trunnion to which one end of the rod is hinged, a disk turning loosely on said rod, a second disk spaced from said first disk and provided with sockets, rods connecting the two disks and having one of their ends removably seated in said sockets, an actuating spring secured to the first mentioned rod and its disk adapted when tightened to impart relative rotary movement thereto, a shell removably carried by the rods connecting the disks, and means for yieldingly retaining the ends of said connecting rods seated in said sockets, substantially as described.

11. An impression ribbon, comprising an impression transferring sheet or layer, and covered on one side by a thin gauze-like textile and on the opposite side by a covering to prevent backsetting of the impression.

12. In combination, a platen, a set of ribbon-rolls, a manifolding-ribbon connecting said rolls and passing under the platen, an idler roll normally having frictional contact with the platen and one of said rolls to impart rotation from one to the other, a paper-release lever, means operated by a movement of said lever to effect a relative movement of the idler roll and the ribbon-roll with which it coacts, whereby to permit a free turning of the latter and means for effecting an automatic rewinding of the ribbon on the other of said ribbon-rolls when the platen-driven roll is released.

854,704. DYNAMO-ELECTRIC MACHINE. WALTER J. RICHARDS, Norwood, Ohio, assignor to Allis-Chalmers Company, a Corporation of New Jersey, and The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Aug. 27, 1906. Serial No. 332,087.



Claim.—1. A dynamo-electric machine having main and commutating windings, and means for causing the current strength in the commutating windings to vary in greater proportion than the main current.

2. In a dynamo-electric machine, an armature, main and commutating windings, and resistances in shunt and in series respectively to the commutating winding.

3. In a dynamo-electric machine, an armature, main and commutating windings, and resistances in shunt and in series respectively to the commutating winding and arranged to be varied to cause the current in the commutating winding to vary in greater ratio than the main current.

4. In a dynamo-electric machine, the combination of main and anti-sparking windings, and a shunt about the anti-sparking winding which increases in resistance as the main current rises.

5. A dynamo-electric machine having main and anti-sparking windings, and means for automatically diverting current from the anti-sparking winding at a rate less than the rate of variation of load on the machine.

6. A dynamo-electric machine having main and commutating field coils, and means for automatically varying the current passing through the commutating coil at a rate greater than the rate of change of load on the machine.

7. In combination, a dynamo-electric machine having a commutating winding, a resistance in series with the commutating winding thereof, and a shunt about said commutating winding and resistance.

8. In combination, a dynamo-electric machine having an anti-sparking winding, a variable resistance in series with said anti-sparking winding, and a shunt about said anti-sparking winding and resistance.

9. In combination, a dynamo-electric machine having an anti-sparking winding, an automatically variable resistance in series with the anti-sparking winding thereof, and an adjustable shunt around said anti-sparking winding and resistance.

10. In combination, a dynamo-electric machine provided with a commutating winding, a resistance in series with the commutating winding thereof which automatically decreases upon an increase of the main current, and a shunt about said commutating winding and resistance.

11. The combination with a dynamo-electric machine having a commutating winding, of a resistance in series with the commutating winding thereof, and a shunt about said commutating winding and resistance which automatically increases in resistance value with an increase in the main current.

12. The combination of a dynamo-electric machine having an anti-sparking winding, a resistance in series with the anti-sparking winding thereof which automatically decreases upon an increase of the main current, and a shunt about said anti-sparking winding and resistance which automatically increases in resistance value with an increase in the main current.

13. In combination, a dynamo-electric machine having an anti-sparking winding, and means for varying the current in said anti-sparking winding in a ratio different from that of the main current.

14. A dynamo-electric machine having main and commutating field windings, and means for causing the ratio between the current in the armature and that in the commutating winding to vary as the armature current varies.

15. A dynamo-electric machine having main and commutating field windings, and means for decreasing the ratio between the current in the armature and that in the commutating winding as the armature current increases.

16. A dynamo-electric machine having main and anti-sparking field windings, and means for decreasing the ratio between the current in the anti-sparking winding and that in the armature as the armature current decreases.

17. A dynamo-electric machine having main and anti-sparking field windings, and means for automatically varying the proportionate part of the main current taken by the anti-sparking winding.

18. A dynamo-electric machine having main and anti-sparking field windings, and means for automatically increasing the proportionate part of the main current taken by the anti-sparking winding as the load increases.

19. A dynamo-electric machine having main and commutating field windings, and means for automatically decreasing the proportionate part of the main current taken by the commutating winding as the current load decreases.

20. A dynamo-electric machine having main and anti-sparking windings, and means for causing the current in the anti-sparking winding to vary proportionately more rapidly than the main current.

21. A dynamo-electric machine having main and anti-sparking windings, and means for increasing the rate of change of current in the anti-sparking winding as the armature current increases.

22. A dynamo-electric machine having main and commutating field windings, and means for decreasing the rate of change of current in the commutating winding as the main current decreases.

854,705. MAIL-HANDLING DEVICE FOR RAILWAY MAIL-SERVICE. CHARLES F. ROBINSON, Montpelier, Vt. Filed July 30, 1906. Serial No. 328,312.

Claim.—1. In a mail-handling device, or the like, the combination with the supporting shaft, of the carrier-block having sockets or sleeves extending at an angle to each other, the said supporting shaft occupying one of said sockets or sleeves and the carrier-block having upper and lower detents in connection with one end of the other socket or sleeve, and the reversible arm provided with the shaft fitting the latter socket or sleeve and having the laterally extending portion which enters between said upper and lower detents and thereby locks the arm in its different positions of adjustment.



2. In a mail-handling device, or the like, the combination with the supporting shaft, of the carrier-block having sockets or sleeves extending at an angle to each other, the said supporting shaft occupying one of said sockets or sleeves and the carrier-block having upper and lower detents in connection with the other socket or sleeve, and the reversible arm provided with the shaft fitting the latter socket or sleeve and having a laterally extending portion which engages with said upper and lower detents and thereby locks the arm in its different positions of adjustment.

3. In a mail-handling device, or the like, the combination with the supporting shaft, of the carrier-block having sockets or sleeves extending at an angle to each other in different planes, the said supporting shaft passing through one of the said sockets or sleeves and the carrier-block having a transverse notch or slot at one end of the other socket or sleeve, and the reversible arm provided with the shaft fitting the latter socket or sleeve and having a laterally extending portion which enters said notch or slot and thereby locks the arm in its different positions of adjustment.

4. In a mail-handling device, or the like, the combination with the shaft 1, of a carrier-block free to turn and slide thereon, and a reversible arm provided with a shaft journaled in said carrier-block and provided with a crank-arm carrying a weighted handle located eccentrically with relation to the said shaft, whereby said weighted handle is adapted to occupy a position at the side of the doorway, leaving the middle space of the latter clear.

5. In a mail-handling device or the like, in combination, the shaft 1, the carrier-block free to turn and slide thereon, a reversible combined catcher and deliverer journaled in said carrier-block, and also provided with the cranked arm carrying the weighted handle located eccentrically with relation to the shaft of said catcher and deliverer, and stops or detents adjacent the opposite ends of said shaft 1 adapted to be engaged by the said cranked arm and arranged to limit the turning movement of the catcher and deliverer under the weight of a bag to be delivered.

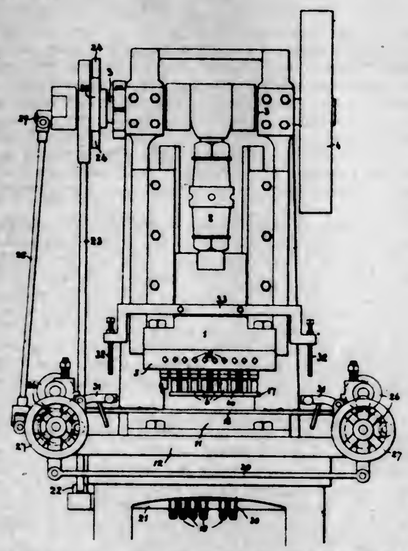
854,706. SHEET-METAL-PUNCHING PRESS. JAMES A. EDEN, Jr., Brooklyn, N. Y., assignor, by mesne assignments, to Rees Hook Company, Elmira, N. Y. Filed July 27, 1905. Serial No. 271,480.

Claim.—1. In a metal punching press, the combination, with one or more forming punches and dies, of means for partially severing a metal strip transversely between the impression receiving portions whereby distortion of the strip by reason of the drawing of the metal in the dies as the strip is fed through the press is prevented, the uncut portion of the strip acting as a carrier for the blanks as they pass through the press.

2. In a metal punching press, the combination, with a reciprocating cross-head of one or more forming punches carried thereby, a shearing blade also carried by the cross-head in advance of the punches and adapted to partially sever a metal strip transversely between the impression receiving portions as the strip is fed through the press whereby distortion of the strip by reason of the drawing of the metal in the dies is prevented, and dies to receive said blade and punches, the uncut portion of the strip acting as a carrier for the blanks as they pass through the press.

3. In a metal punching press, the combination, with a

reciprocating cross-head, of a punch-holder secured thereto and carrying a shearing blade, one or more eyelet forming punches, an eyelet perforating punch, a head forming punch out of line with the eyelet forming punches, and a cutting out punch, corresponding dies to receive said shearing blade and punches, and means for intermittently feeding a metal strip first to the shearing blade, whereby it is partially severed between the eyelet portion of the blanks, the unsevered portion of the strip acting to carry said blanks onward between the several forming punches and dies.

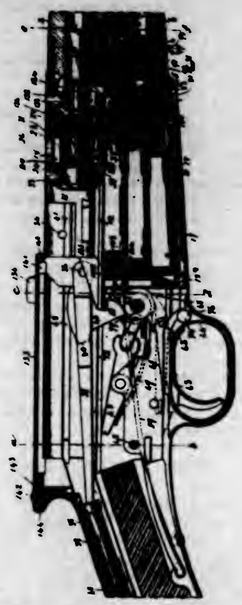


4. In a metal punching press, the combination, with a reciprocating cross-head, of a punch holder secured thereto, a plurality of punches mounted in said holder and spaced apart on centers twice the distance between the centers of the blanks to be formed thereby, a plurality of stationary dies to receive the punches, pockets between dies to receive the blanks where they rest between dies, and means for feeding a metal strip through the press with periodic movements equal to one-half the distance between punch centers.

5. In a metal punching press, the combination, with a reciprocating cross-head, of a plurality of punch blocks carried thereby, a spring actuated stripper plate having slots through which the punch blocks pass, forming heads or plungers projecting from the under side of the punch blocks, a supplementary plate on the stripper plate provided with guide-ways through which certain of the longer forming heads or plungers pass, a plurality of fixed dies adapted to receive said forming heads or plungers, and means for feeding and guiding a metal strip between the dies.

854,707. AUTOMATIC FIREARM. WILLIAM MASON, New Haven, Conn., assignor to The Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Feb. 12, 1906. Serial No. 300,632.

Claim.—1. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel-extension mounted for movement back and forth therein, a recoiling barrel mounted in said barrel-extension, a barrel-closing spring, a breech-closure, a breech-closing spring, a swinging box-magazine constructed to feed the cartridges directly upward into the center of the barrel-extension, and means independent of the magazine for stopping the cartridges in position to be pushed forward by the breech-closure into the gun-barrel after they have been fed out of the magazine, whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open position against the tension of its spring.



2. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel-extension mounted therein for movement back and forth, a recoiling barrel mounted in said barrel-extension, a barrel-closing spring, a breech-closure, a breech-closing spring, a swinging box-magazine constructed to feed the cartridges directly upward into the center of the barrel-extension, and means carried by the recoiling barrel-extension for stopping the cartridges in position to be pushed forward by the breech-closure into the gun-barrel after they have been fed out of the magazine, whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open position against the tension of its spring.

3. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel-extension mounted for movement back and forth therein, a recoiling barrel mounted in said barrel-extension, a barrel-closing spring, a breech-closure, a breech-closing spring, a swinging box-magazine, and cartridge-stop ribs located in the barrel-extension to stop the cartridges in position for being pushed forward by the breech-closure into the gun-barrel after they have been fed out of the magazine, whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open position against the tension of its spring.

4. In an automatic box-magazine firearm, the combination with a receiver having a finger-opening in its left hand side wall, of a recoiling barrel-extension mounted for movement back and forth in said receiver, a recoiling barrel mounted in the barrel-extension, a barrel-closing spring, a breech-closure, a breech-closing spring, a swinging box-magazine located in an opening formed in the right hand wall of the receiver and accessible for being pushed from left to right into its open position through the said finger-opening in the left hand wall of the receiver and constructed to feed the cartridges directly upward into the center of the barrel-extension; and means independent of the magazine to stop the cartridges in position for being pushed forward by the breech-closure into the gun-barrel after they have been fed out of the magazine, whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open position against the tension of its spring.

5. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel-extension mounted therein for moving back and forth, a recoiling barrel mounted in the said barrel-extension, a barrel-closing spring, a breech-closure, a breech-closing spring, a swinging box-magazine adapted in width to receive two vertical columns of cartridges and having its upper end constricted on opposite sides to feed the said cartridges directly upward into the center of the barrel-extension, and means independent of the magazine to stop the cartridges in position for being pushed forward by the breech-closure into the gun-barrel after they have been fed out of the magazine, whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open position against the tension of its spring.

6. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel and barrel extension, a breech-closure, a box-magazine and a movable clip-holder therefor.

7. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-closure, a swinging box-magazine, a movable clip holder therefor, the said clip holder being moved into its clip-holding position when the magazine is swung into its charging position.

8. In a box-magazine firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-closure, a box magazine, and a swinging clip-holder mounted thereon.

9. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel and barrel extension, a breech-closure, and a box-magazine mounted in the receiver and provided with a movable, spring-controlled clip-holder.

10. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-closure, and a swinging box magazine provided at its front and rear ends with pivots flattened in the horizontal plane to enter bearing-openings having narrow entrances.

11. In an automatic magazine firearm, the combination with the receiver and the trigger-guard thereof, of a recoiling barrel-extension mounted in the receiver for movement back and forth therein, a recoiling barrel mounted in the said barrel-extension, a barrel-closing spring, a breech-closure, a breech-closing spring a box-magazine having its rear and forward ends respectively pivoted in the said receiver and guard and constructed to feed the cartridges directly upward into the center of the barrel-extension, and means independent of the magazine to stop the cartridges in position for being pushed forward by the breech-closure into the gun-barrel after they have been fed from the magazine, whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open position against the tension of its spring.

12. In an automatic box-magazine firearm, the combination with the receiver thereof, of a recoiling barrel-extension mounted for movement back and forth therein, a recoiling barrel mounted in the said barrel-extension, a barrel-closing spring, a breech-closure, a breech-closing spring, a swinging box-magazine constructed to feed the cartridges directly upward into the center of the barrel-extension, means independent thereof for stopping the cartridges in position for being pushed forward by the breech-closure into the gun-barrel after they have been fed from the magazine, and a latch for holding the magazine in its open and closed positions, whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open positions against the tension of its spring.

13. In an automatic box-magazine firearm, the combination with a recoiling barrel and barrel-extension, of a breech-closure, a box-magazine adapted to be swung into its open and closed positions irrespective of the position of the breech closure, means carried by the said barrel-extension for stopping the cartridges after they are fed from the magazine, into position to be pushed forward by the breech-closure into the gun-barrel, and a magazine-latch for holding the magazine in its charging and its feeding positions respectively.

14. In an automatic box-magazine firearm, the combination with a recoiling-barrel and barrel-extension, of a breech-closure, a box-magazine adapted to be swung into its open and closed positions irrespective of the position of the breech-closure, means carried by the barrel-extension for stopping the cartridges after they are fed from the magazine, in position to be pushed forward by the breech closure into the gun-barrel, and a magazine latch coacting with the forward end of the magazine.

15. In an automatic box-magazine firearm, the combination with the receiver thereof, of a recoiling barrel-extension mounted for movement back and forth therein, a recoiling barrel mounted in the said extension, a barrel-closing spring, a breech-closure, a breech-closing spring, a swinging box-magazine, means independent of the magazine for stopping the cartridges in position for being pushed forward by the breech-closure into the gun-barrel after they have been fed from the magazine, and a magazine-latch located at the forward end of the magazine and provided with a projecting finger-piece for its manual operation and constructed to hold the magazine in its open and closed positions, whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open position against the tension of its spring.

16. In an automatic box-magazine firearm, the combination with a recoiling barrel and barrel-extension, of a breech-closure, a box-magazine adapted to be swung into its charging position, a magazine-latch, and a plug mounted in the receiver and carrying the said latch.

17. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-closure, a swinging box-magazine, a pivotal clip-holder mounted in the rear wall thereof and engaged by the receiver for being swung into its retired position when the magazine is swung into its feeding position, and a spring coacting with the said holder to move it into line with the magazine when the same is swung out into its charging position.

18. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-closure, a swinging magazine, a clip-holder pivotally mounted in the rear wall of the magazine and provided with a semicircular stud, and a spring also mounted in the magazine and engaging with the flattened side of the stud for controlling the swinging movement of the holder.

19. In an automatic box-magazine firearm, the combination with the receiver thereof, of a recoiling barrel-extension mounted for movement back and forth therein, a recoiling barrel mounted in the said extension, a barrel-closing spring, a breech-closure, a breech-closing spring, a swinging box-magazine constructed to feed the cartridges directly upward into the center of the barrel-extension, means independent of the magazine for stopping the cartridges in position for being pushed forward by the breech-closure into the gun-barrel after they have been fed out of the magazine whereby the magazine may be swung into its open and closed positions without moving the breech-closure into its open position against the tension of its spring, a guide-rod mounted at its rear end in the receiver and extending forward under the barrel and encircled by the said barrel-closing spring, a guide lug depending from the barrel and having the said rod extended forward through it, and a forestock supported at its rear end by the receiver and at its forward end by the rod.

20. In an automatic box-magazine firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-closure, a swinging magazine adapted to

be swung into its charging position and formed at one end with a segmental groove, and a spring-actuated magazine-latch having a nose adapted to enter the said groove.

21. In an automatic firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-block, a locking-slide mounted in the breech-block and longitudinally movable independent thereof, and a rotary breech-lock mounted upon the said slide and rotated thereby for engagement with the barrel-extension and breech-block.

22. In an automatic firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-block, a locking-slide mounted therein and longitudinally movable independent thereof and provided at its forward end with spiral ribs, of a rotary breech-lock mounted upon the said slide having corresponding spiral grooves and adapted when rotated to engage with the said locking extension for locking the same and breech-block together.

23. In an automatic firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-block, a locking-slide mounted therein and longitudinally movable independent thereof, a rotary breech-lock mounted upon the slide and rotated thereby for coupling the barrel-extension and breech-block together, a link pivotally connected with the rear end of the locking-slide, and an action-closing spring operating through the said link.

24. In an automatic firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-block, a locking-slide mounted therein and longitudinally movable independent thereof, a rotary breech-lock mounted upon the said slide, having bearing in the breech-block and adapted when rotated to coact with the breech-block and barrel-extension for locking the same together.

25. In an automatic gun, the combination with the receiver thereof, of a recoiling barrel and barrel-extension, a breech-closure, a box-magazine adapted to be swung into its open and closed positions irrespective of the position of the breech-closure, means carried by the barrel-extension for stopping the upward movement of the cartridges as they emerge from the upper end of the magazine, and a longitudinally movable ejector mounted in the forward end of the breech-closure, provided with an operating lug which is engaged by a shoulder at the rear end of the barrel-extension, and adapted to reach down between the said means and engage with the topmost cartridge for pushing the same forward until its disengagement from the said means when it rises in front of the breech-closure for being pushed forward thereby into the gun-barrel.

26. In an automatic gun, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-block, a locking-slide mounted therein and longitudinally movable independent thereof, a rotary breech-lock mounted upon the said slide, coacting with the said block and barrel-extension for locking the same together and having a forwardly extending hub, an extractor mounted in the breech-block, and a longitudinally movable ejector mounted in the breech-block, having its rear end interlocked with the said hub and provided with an operating lug for engagement by a shoulder upon the rear end of the barrel-extension.

27. In an automatic firearm, the combination with the receiver thereof, of a recoiling-barrel and barrel-extension, a non-rotatable breech-block, a non-rotatable locking-slide mounted therein for movement independent thereof, a rotatable breech-block mounted upon the said locking-slide and rotatable thereby when the breech-block starts its forward movement, and front and rear unlocking levers, the rear end of the rear lever coacting with the locking-slide for holding the same at the limit of its rearward excursion and the upper end of the front lever coacting with the barrel-extension for the operation of both levers thereby.

28. In an automatic gun, the combination with the hammer and trigger thereof, of a sear having its rear portion made laterally flexible and terminating in a lug coacting with the trigger, and means coacting with the flexible portion of the sear every time the trigger is pulled for deflecting it to clear its said lug from the trigger which thus directly controls its own release.

29. In an automatic gun, the combination with the hammer and trigger thereof, of a sear having a laterally flexible shank terminating in an operating lug normally located above the trigger, and a beveled part of fixed location engaging with the said lug for deflecting the same laterally to clear it from the trigger with which it can be reëngaged only after the trigger has been "let go."

30. In an automatic gun, the combination with the trigger and the hammer thereof, of a sear having a rearwardly extending laterally flexible shank terminating in an operating lug located directly over a portion of the trigger in position to be engaged thereby, and a beveled pin mounted in the gun for being engaged by the said lug when the trigger is pulled, whereby the sear is laterally deflected for disengaging the said lug from the trigger which must be "let go" and allowed to assume its normal position before the trigger can reëngage the sear.

31. In an automatic gun, the combination with the hammer having a cocking-notch, of a sear formed at its front end with a nose to enter the said notch, a sear-spring, and a trigger to coact with the sear, the said hammer being constructed to engage as it approaches its cocked position with the rear portion of the sear to insure the entrance of the nose thereof into the cocking-notch in the hammer, whereby in case the sear-spring fails to enter the nose of the sear into the notch of the hammer, the hammer itself will operate the sear for the entrance of the nose thereof into its notch.

32. In an automatic gun, the combination with a hammer formed in its heel with a cocking-notch and provided at its rear upper corner with a fin or projection, of a sear formed at its front end with a nose to enter the said notch and arranged to be engaged by the said fin or projection of the hammer as the hammer is moved into its cocked position, and a sear-spring, whereby in case the sear-spring fails to enter the nose of the sear into the said notch the fin or projection on the hammer will operate the sear and force the nose thereof to enter the notch.

33. In an automatic firearm, the combination with the receiver thereof, of a recoiling barrel and barrel-extension, a non-rotatable breech-block, a non-rotatable locking-slide mounted therein and longitudinally movable independently thereof, a rotatable breech-lock mounted upon the said locking-slide and rotatable thereby when the breech-block starts its forward movement, an action-closing spring connected with the said slide to move the same forward and so rotate the lock for locking the breech-block to the barrel-extension, and a locking-slide latch pivotally mounted in the breech-block for locking the locking-slide at the limit of the rearward excursion thereof.

34. In an automatic gun, the combination with the receiver thereof, of a recoiling-barrel and barrel-extension, a non-rotatable breech-block, a non-rotatable locking-slide mounted therein and longitudinally movable independent thereof, a rotatable breech-lock mounted upon the said slide, a locking-slide latch mounted in the breech-block and coacting with the forward end of the locking-slide for locking the same at the limit of its rearward excursion, the said latch being operated upon by the barrel-extension, as the same reaches the limit of its forward excursion, for releasing the said slide and permitting the same to be moved forward, and an action-closing spring connected with the said slide to move the same forward and so rotate the lock for locking the breech-block to the barrel-extension.

35. In an automatic firearm, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-block, a locking-slide mounted therein and longitudinally movable independent thereof, coacting front and rear unlocking levers the rear end of the rear lever engaging the locking-slide to lock the same at the limit of its rearward movement and the upper end of the front lever being engaged by the barrel-extension for operating the levers, and a locking-slide latch mounted in the breech-block and coacting with the forward end of the locking-slide to hold the same at the limit of its rearward movement after the slide has been unlocked by the rear unlocking lever.

36. In an automatic box-magazine gun, the combination with a receiver thereof, of a recoiling-barrel and barrel-extension, a breech-block, a box-magazine, and a spring-actuated cartridge-indicator mounted in and moving back and forth with the said barrel-extension, located in the path of the cartridges as they are fed out of the magazine, and normally held in its retired position by the cartridges themselves, and released by the feeding of the last cartridge from the magazine for being thrown by its spring into position for stopping the breech-block in its forward movement.

37. In an automatic box-magazine gun, the combination with a receiver, of a recoiling barrel and barrel-extension, of a breech-block, a box-magazine, a spring-actuated cartridge-indicator mounted in and moving back and forth with the said barrel-extension, located in the path of the cartridges as they are fed out of the magazine and normally held in its retired position by the cartridges themselves and released by the feeding of the last cartridge from the magazine for being thrown by its spring into position for stopping the forward movemnt of the breech-block, and a finger-piece projecting outward through the said receiver for mapually operating the said cartridge-indicator.

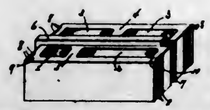
38. In an automatic gun, the combination with the receiver and action mechanism thereof, of a long sliding handle longitudinally arranged upon and interlocked with the top of the receiver and connected at its forward end with the action-mechanism of the gun for the manual operation thereof.

39. In an automatic firearm, the combination with the receiver and action-mechanism thereof, of a long longitudinally arranged sliding handle mounted directly upon the top of the receiver and formed with undercut grooves receiving guide ribs formed upon the receiver and adapted at its forward end to be connected with the action mechanism for the manual operation thereof.

40. In an automatic gun, the combination with a receiver, of a recoiling barrel and barrel-extension, a breech-block, a locking-slide mounted therein, and a sliding handle mounted directly upon the top of the receiver and adapted at its forward end to be connected with said locking-slide for the manual operation thereof.

41. In an automatic gun, the combination with a receiver, of a recoiling barrel and barrel extension, a breech-block, a locking-slide mounted therein, and a sliding handle located directly upon the top of the receiver with which it is interlocked and adapted at its forward end to coact with the said locking-slide for the manual operation of the gun and provided at its forward end with a latch whereby it is normally connected with the receiver.

854,708. BUILDING-BLOCK. FRIEDRICH W. OELSCHLAEGER, Watertown, Wis. Filed Feb. 12, 1906. Serial No. 300,651.

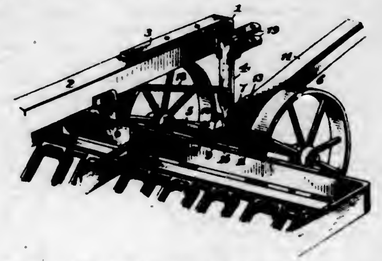


Claim.—1. The hereindescribed building block comprising side walls, an intermediate longitudinal web, and a plurality of transverse webs, there being formed by said walls and webs a plurality of vertical air spaces, the said intermediate web having a projecting rib extending along one end and one edge thereof and also having a groove extending along the opposite end and edge thereof to receive the ribs of adjacent corresponding blocks, and the groove being deeper than the depth of the rib whereby there is formed an additional air space extending longitudinally and vertically of the block.

2. A building wall construction embodying a plurality of similar blocks, each of said blocks comprising side walls, an intermediate longitudinal web, and a plurality of transverse webs, whereby a plurality of vertical air spaces are formed and certain air spaces of one block being in register with certain other air spaces of the blocks next above and below, said intermediate web having a rib projecting therefrom along one end and one edge thereof and also having a groove in the opposite end and edge thereof to receive the ribs of adjacent blocks, the said groove being deeper than the said rib whereby there is formed an air space surrounding each of the several blocks.

REISSUES.

12,653. TRUCK MECHANISM. WILLIAM FETZER, Middletown, Ohio. Filed Feb. 27, 1907. Serial No. 359,703. Original No. 723,662, dated Mar. 24, 1903.



Claim.—1. In an agricultural machine, the combination with tillage instrumentalities, of a forwardly extending stub tongue, means extending downwardly from said tongue, a two-wheeled truck located below said forwardly extending tongue carrying a bearing for said downwardly extending means, said bearing being located approximately at the axis of the wheels of the truck and means for securing the parts together to permit free movement in any direction.

2. In an agricultural machine, the combination with tillage instrumentalities, of a stub tongue projecting forwardly therefrom, a downwardly extending rigid member on the said stub tongue, a two-wheeled truck located below said stub tongue, a universal connection between the said downwardly extending member and the said truck, rearwardly of the tongue, a tongue secured to said truck and draft attaching means secured to the machine independent of the tongue and truck.

3. A truck connection for low-down press-drills comprising an L-iron secured to the frame of said drill and extending downwardly therefrom to the center of a front truck, a front truck for receiving and supporting said iron, and a ball-joint interposed between the end of the iron and the axle of said truck, substantially as described.

4. A truck connection for drills comprising an L-iron having a horizontal leg with an attaching portion formed thereon adapted to be secured to the frame of the drill, a vertical leg extending downwardly from said horizontal leg and carrying a ball at its lower end, a truck for supporting said ball, and a socket-plate carried by the axle of said truck for receiving the said ball, substantially as described.

5. A truck for press-drills comprising an L-iron secured to the frame of a drill, said L-iron having a forward vertical leg extending downwardly from the said frame, means for bracing the said vertical leg with respect to the frame, a truck supporting the vertical leg, and a universal joint interposed between the said iron and front truck, substantially as described.

6. A truck connection for drills comprising an approximately triangular-shaped iron having a ball at its lower end, a truck for supporting said iron, a socket-plate carried on the axle of said truck, means for holding the said ball in said socket, and a clevis mounted upon the said iron for securing draft means to the iron at different heights thereon, substantially as described.

7. A truck connection for drills comprising an L-iron secured to the frame of the drill and having a downwardly-

extending vertical leg, a front truck for supporting the same, and a clevis adapted to be clamped at different heights upon the said vertical leg for attaching a draft mechanism thereto, substantially as described.

8. A truck connection for drills comprising an L-iron secured to the frame of the drill and having one leg extending downwardly to the center of a front truck, a socket upon said front truck for receiving the lower end of said iron, said socket being formed of a socket-plate and a seat-plate, an axle-plate carrying said seat-plate and socket-plate, means for securing said plates together and to the axle of the front truck, and means for securing the tongue of the front truck to said seat-plate and axle-plate, substantially as described.

9. In an agricultural machine, the combination with tillage instrumentalities, of a stub tongue projecting forwardly from the machine, a downwardly extending member on the said stub tongue, a two-wheeled truck, a universal connection directly between the downwardly extending member and the two-wheeled truck, a tongue secured to the truck, and means for connecting the draft means to the machine at a point above the connection and independent of the truck and tongue.

10. In an agricultural machine, the combination with tillage instrumentalities, of a stub tongue part, a two-wheeled truck located below the same, means extending downwardly from the stub tongue to the axle of the truck, a universal connection between said truck axle and said downwardly extending means constructed to permit free movement in all directions, a tongue secured to the truck adjacent to the said connection and in advance thereof and a draft attaching means secured to the machine above and independent of the tongue and truck.

11. In an agricultural machine, the combination with tillage instrumentalities, of means attached to the front part of the machine and projecting downwardly therefrom, a front truck mechanism, a universal connection between the said front truck mechanism and the said downwardly extending means located near the axis of the truck wheels, means for holding the parts together, a tongue secured to the truck member and a draft applying means secured to the machine above the said truck.

12. In an agricultural machine, the combination with tillage instrumentalities, of a stub tongue part, a two-wheeled truck located below the same, a universal connection between the truck and the stub tongue located centrally between and near the axis of the wheels of the truck, a tongue secured to the truck in advance of said connection, and a draft applying means secured to the machine independent of the tongue and truck.

13. In an agricultural machine, the combination with tillage instrumentalities, of a two-wheeled truck, a supporting seat on the axle and adjacent the axis of the wheels of the truck, in combination with a stub tongue having a member extending downwardly therefrom, said member carrying a part resting in said seat, means for coupling the parts together to permit free movement in all directions, a tongue secured to the truck, and a draft applying connecting means secured to the stub tongue.

14. In an agricultural machine, the combination with tillage instrumentalities, of a truck connection therefor, comprising a two-wheeled truck having a connecting axle, a tongue secured to the truck, in combination with a stub tongue, a downwardly extending rigid member on the stub tongue and a coupling between the downwardly extending member and the truck axle in the rear of the tongue, said coupling being constructed to permit tilting and pivotal movement of the truck and being located substantially on the plane of the horizontal axis of the wheels of the truck.

15. In an agricultural machine, the combination with tillage instrumentalities, of a two-wheeled truck, a tongue connected thereto, in combination with a stub tongue on the machine, a rigid depending member secured to the stub tongue, a universal coupling between the axle of the truck and the depending member located centrally between the wheels of the truck and substantially on the plane of the axis of the wheels whereby the truck may be moved in all directions independent of the stub tongue.

16. In an agricultural machine, the combination with tillage instrumentalities, of a stub tongue extending forward from the machine, a rigid downwardly extending member on the stub tongue, a two-wheeled truck below the stub tongue, a pivoted connection between the said downwardly extending member and the axle of the truck located adjacent the horizontal axis of the wheels of the truck, means for positively securing the parts together, and a tongue connected to the truck.

17. In an agricultural machine, the combination with tillage instrumentalities, of a two-wheeled truck located below the forward end thereof, means extending downwardly from said forward end, a pivotal connection between said downwardly extending means and the axle of the truck, located at a point adjacent the horizontal axis of the wheels of the truck, draft applying means connected to said downwardly extending means, and a tongue connected to said truck, substantially as described.

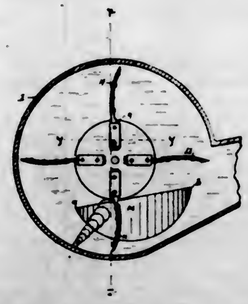
12,654. PROCESS FOR THE PRODUCTION OF AROMATIC ALCOHOLS AND THEIR DERIVATIVES. CHARLES METTLER, Munich, Germany. Filed June 29, 1906. Serial No. 324,096. Original No. 815,548, dated Mar. 20, 1906.

Claim.—1. The process of producing aromatic alcohols and their ethers, which consists in exposing the aromatic esters in a dissolving agent, capable of conducting the electric current in the cathode-space of an electrolytic apparatus in using for the cathode a material of a specially-high cathodic tension, then neutralizing the cathode liquid, then separating the reaction product and finally distilling, substantially as described.

2. The process of producing aromatic alcohols and the corresponding ethers by electrolytically reducing aromatic esters making use of a cathode with a large excess of tension.

3. The process of producing aromatic alcohols and the corresponding ethers by electrolytically reducing aromatic esters making use of a lead cathode.

12,655. ROTARY DISCHARGING APPARATUS. JEFFREY J. POWER, Madison, Wis., assignor of one-half to Le Roy W. Stevens, Syracuse, N. Y. Filed Mar. 11, 1907. Serial No. 361,885. Original No. 798,699, dated Sept. 5, 1905.



Claim.—1. In a device of the described class, the combination of an inclosing casing provided with a discharge aperture; a set of revolving wings in said casing; and a feed trough leading to an aperture in the casing between its periphery and the axis of wing rotation; said feed trough being partially open to the exterior adjacent to the casing.

2. In a device of the described class, the combination of a set of revolving wings; an inclosing casing therefor, provided with a peripheral discharge aperture and having an inlet aperture in its side wall between the axis and a circle parallel with the outer circle of wing rotation; and an inclined feed trough having a feed opening along one side and arranged to admit air tangentially and deflect it along a spiral line leading to that portion of the inlet aperture where the rotary wings are first exposed.

3. In a device of the described class, a set of revolving wings; a casing inclosing the same, and provided with a peripheral discharge opening; a feed trough leading to an inlet aperture in the casing at one side of the path of the wings and between the axis of their rotation and a circle in the side wall of the casing parallel with the circle described by the outer edges of the wings; said feed trough having a feed opening in one of its side walls, extending outwardly from a point adjacent to the inlet aperture of the casing.

4. In a device of the described class, a set of revolving wings; a casing inclosing the same, and provided with a peripheral discharge opening, a feed trough leading to an inlet aperture in the casing at one side of the path of the wings and between the axis of their rotation and a circle in the side wall of the casing parallel with the circle described by the outer edges of the wings; said feed trough having a feed opening extending outwardly from adjacent to the inlet aperture of the casing and in the rear portion of the upper wall of the trough.

5. In a device of the described class, a set of revolving wings; a casing inclosing the same; a discharge chute leading tangentially from the periphery of the casing; and a feed trough communicating with the interior of the casing through an aperture at one side of the axis of the discharge chute projected within the casing, and between the wing axis and the outer circle of wing rotation; said feed trough having a longitudinal opening in that portion of its upper wall nearest the discharge chute.

6. In a device of the described class, a set of revolving wings; a casing inclosing the same; a discharge chute leading tangentially from the periphery of the casing; and a feed trough communicating with the interior of the casing through an aperture at one side of the axis of the discharge chute projected within the casing, and between the wing axis and the outer circle of wing rotation; said feed trough having a concave bottom and a longitudinal opening in that portion of its upper wall nearest the discharge chute.

7. In a device of the described class, the combination of an inclosing casing provided with a discharge aperture; a set of revolving wings in said casing; and a feedway leading to a feed aperture in the casing between its periphery and the axis of wing rotation only; said feed way being open to the exterior adjacent to the casing.

8. In a device of the described class, the combination of an inclosing casing provided with a discharge aperture; a set of revolving wings in said casing; and a feed way leading to a feed aperture in the casing between its periphery and the axis of wing rotation and principally between the periphery and a circle described by the inner ends of the wings, the casing being closed at all points except at such feed opening and said discharge aperture; said feed way being open to the exterior adjacent to the casing, and said feed aperture being located adjacent to the discharge aperture on the side of wing approach.

9. In a device of the described class, the combination of an inclosing casing provided with a discharge aperture; a set of revolving wings in said casing; and a feed way leading to a feed aperture in the casing the latter extending only between its periphery and the axis of wing rotation, adjacent to the discharge aperture on the side of wing approach; said feed way being open to the exterior adjacent to the casing, and said feed aperture being elongated along the line of wing approach toward the discharge outlet.

10. In a device of the described class, the combination of an inclosing casing provided with a discharge aperture; and a set of revolving wings in said casing; a feed way open to the exterior adjacent to the casing and leading to a feed opening in one of the side walls of the casing between its periphery and the axis of wing rotation, adjacent to the discharge aperture on the side of wing approach; said wings being connected with and supported from a central rotary shaft by means of a transversely disposed disk rigidly connected with the shaft.

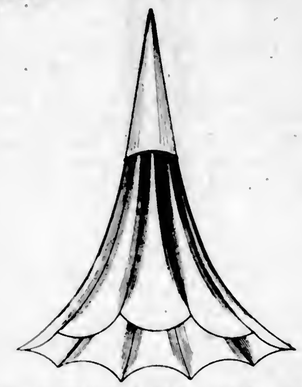
DESIGNS.

38,576. PENDANT FOR WATCHES. LOUIS E. F. WACHTER, Hartford, Conn. Filed Mar. 6, 1907. Serial No. 360,987. Term of patent 14 years.



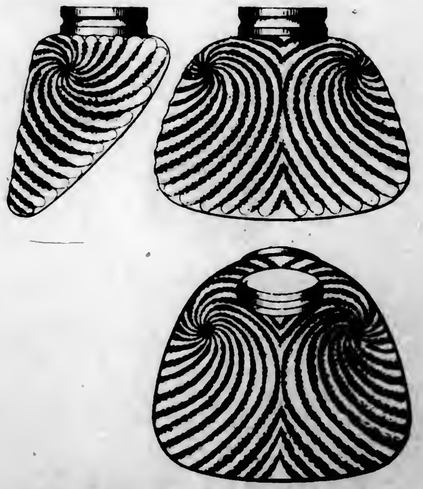
Claim.—The ornamental design for a pendant for watches as shown.

38,577. HORN. LEONARD L. TERHUNE, Newark, N. J. Filed Sept. 8, 1906. Serial No. 333,845. Term of patent 7 years.



Claim.—The ornamental design for a horn, as shown.

38,578. REFLECTOR. ARTHUR J. MORGAN, Chicago, Ill., assignor to National X-Ray Reflector Company, Chicago, Ill. Filed Jan. 11, 1907. Serial No. 351,902. Term of patent 7 years.



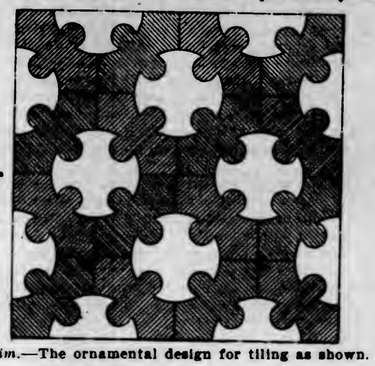
Claim.—The ornamental design for a reflector shown in the accompanying drawing.

38,579. COLLAPSIBLE TUBE. WILLIAM H. BLOOD, Jr., Boston, Mass. Filed Jan. 26, 1907. Serial No. 354,309. Term of patent 3½ years.



Claim.—The ornamental design for a collapsible tube, as shown.

38,580. TILING. ALFRED A. SPADONE, New York, N. Y., assignor to The Gutta Percha & Rubber Company, New York, N. Y., a Corporation of New York. Filed Apr. 2, 1907. Serial No. 366,050. Term of patent 14 years.



Claim.—The ornamental design for tiling as shown.

38,581. RIBBON. EDGAR M. CORBETT, Paterson, N. J. Filed Apr. 17, 1907. Serial No. 368,799. Term of patent 14 years.



Claim.—The ornamental design for a ribbon as shown.

TRADE-MARKS

PUBLISHED MAY 21, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

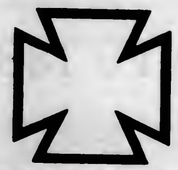
Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,189. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE TOPEKA MILLING COMPANY, Topeka, Kans. Filed Apr. 12, 1905. The border of the cross being blue.



Particular description of goods.—Wheat-Flour, Buckwheat-Flour, and Cornmeal.

Ser. No. 3,566. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) VAN CAMP HARDWARE & IRON COMPANY, Indianapolis, Ind. Filed Apr. 29, 1905.



Particular description of goods.—Knives, Razors, Forks, and Scissors.

Ser. No. 5,687. (CLASS 47. CONFECTIONERY.) HANCE BROS. & WHITE, Philadelphia, Pa. Filed May 15, 1905. Used ten years.



Particular description of goods.—Chocolate and Cacao Butter.

Ser. No. 6,788. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) BENJAMIN MOORE & COMPANY, New York, N. Y. Filed May 27, 1905.



Particular description of goods.—Putty.

Ser. No. 9,567. (CLASS 68. PUBLICATIONS.) THE BROOKLYN DAILY EAGLE, Brooklyn, N. Y. Filed July 1, 1905.



"EAGLE" PRESS

Particular description of goods.—Printed Books, Pamphlets, Posters, Lithographs, and Engravings.

Ser. No. 9,568. (CLASS 68. PUBLICATIONS.) THE BROOKLYN DAILY EAGLE, Brooklyn, N. Y. Filed July 1, 1905.

EAGLE LIBRARY

Particular description of goods.—A Periodical.

Ser. No. 9,569. (CLASS 68. PUBLICATIONS.) THE BROOKLYN DAILY EAGLE, Brooklyn, N. Y. Filed July 1, 1905.

THE BROOKLYN DAILY EAGLE

Particular description of goods.—Newspapers.

Ser. No. 10,957. (CLASS 3. VEGETABLE.) CHARLES ZOLLER CO., New York, N. Y. Filed July 28, 1905.



Particular description of goods.—Pitch and Rosin.

Ser. No. 11,293. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) CHARLES SAWYER, London, England. Filed Aug. 5, 1905.

AUTOTYPE

Particular description of goods.—Carbon-Tissues, Single and Double Transfer-Papers, and Flexible Support, All Used in the Carbon Process of Photography.

Ser. No. 11,305. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE GEORGE H. RUNDLE CO., Piqua, Ohio. Filed Aug. 5, 1905.

PAIN KING

Particular description of goods.—A Remedy for Internal and External Use for Coughs, Colds, Asthma, Headache, Toothache, Rheumatism, Neuralgia, Diarrhea, Backache, Cramps and Colic, Sprains, Bruises, Chilblains, and Pain in Side or Chest.

Ser. No. 11,507. (CLASS 55. WINES.) CLOVER LEAF WINE CO., New York, N. Y. Filed Aug. 10, 1905.



Particular description of goods.—Claret-Wine.

Ser. No. 11,993. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) JAMES R. CROMPTON & BROTHERS LIMITED, Elton Paper Mills, near Bury, Lancashire, England. Filed Aug. 25, 1905.

DANCING GIRL BRAND

Particular description of goods.—White Tissue-Paper, Colored Tissue-Paper, Crape and Crinkled Papers, Crape-Paper Ruching, Crape-Paper Ribbons, Crape-Paper Streamers, Press Copying-Papers, Silver Tissue-Paper, Stereotyping Tissue-Paper, Toilet-Paper, Waxed Tissue-Paper, and Waxed Paper.

Ser. No. 12,202. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) C. F. MUELLER CO., Jersey City, N. J. Filed Sept. 2, 1905.



Particular description of goods.—Macaroni.

Ser. No. 13,091. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILHELM ANHALT GESELLSCHAFT MIT BESCHRANKTER HAFTUNG, Colberg, Germany. Filed Sept. 26, 1905.



Particular description of goods.—Hair-Washes.

Ser. No. 13,290. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) ROBERT H. CATE, Knoxville, Tenn. Filed Oct. 5, 1905. Used ten years.

CATE'S 1888

Particular description of goods.—Whisky.

Ser. No. 13,378. (CLASS 8. DETERGENTS.) RUSCH HAUPT BROS., Fresno, Cal. Filed Oct. 6, 1905.

THANKSGIVING

Particular description of goods.—Laundry Soap.

Ser. No. 15,141. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) THE G. B. FARRINGTON COMPANY, New York, N. Y. Filed Dec. 2, 1905.

ULIKE

Particular description of goods.—Coffee.

Ser. No. 15,360. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) PAUL PISQUET, Rheims, France. Filed Dec. 12, 1905.



Particular description of goods.—Paints to Replace the White Lead or Minium Used in the Fabrication of Pipe Joints for Steam and other Conduits.

Ser. No. 16,893. (CLASS 12. MASONRY MATERIALS.) STAR ROOFING COMPANY, New York, N. Y. Filed Feb. 10, 1906.



Particular description of goods.—A Laid Composite Roofing.

Ser. No. 17,427. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) ST. LOUIS UNION TRUST COMPANY, St Louis, Mo. Filed Mar. 1, 1906. Used ten years.



Particular description of goods.—Stoves and Ranges.

Ser. No. 17,653. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) LEONARDO GRAZIADEI, New York, N. Y. Filed Mar. 8, 1906.



Particular description of goods.—Patent-Leather Shoe-Polish.

Ser. No. 18,476. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) PENNSYLVANIA METALLIC PACKING CO., Pittsburg, Pa. Filed Apr. 3, 1906.



Particular description of goods.—Metallic, Rubber, and Fibrous Packings and Packing Material.

Ser. No. 18,652. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) KÜPPER'S METALLWERKE GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Bonn-on-the-Rhine, Germany. Filed Apr. 9, 1906.

Tinol

Particular description of goods.—Liquid Preparations for Soldering and Coating Metals.

Ser. No. 18,883. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) JOSEPH RODGERS & SONS, LIMITED, Sheffield, England. Filed Apr. 17, 1906. Used ten years.

RODGERS

Particular description of goods.—Manufactures of Silver, Both Solid and Plated, and other Plated Goods, Comprising Flat Ware, Hollow Ware, and Tableware.

Ser. No. 21,112. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) C. BENEDICT CO., Oakland, Cal. Filed July 24, 1906.



Particular description of goods.—Dress-Shields, Bust-Supporters, and Corset-Covers.

Ser. No. 21,761. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALPHEUS C. LONG, Paris, Ill. Filed Aug. 27, 1906.

Nasa Bouchine

Particular description of goods.—A Remedy for Catarrh, Consumption, Indigestion, and Constipation.

Ser. No. 22,135. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) BRAND & CO. LTD., London, England. Filed Sept. 17, 1906. Used ten years.

THE INTERNATIONAL
A1 SAUCE.

Particular description of goods.—A Sauce.

Ser. No. 22,448. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) EMIL SEELIG, A. G., Heilbronn, Germany, and Jersey City, N. J. Filed Oct. 3, 1906. Used ten years.



Particular description of goods.—Coffee Substitutes.

Ser. No. 23,597. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) CHARLES A. ANDERSON, Atlanta, Ga. Filed Nov. 26, 1906.

Mezzo

Particular description of goods.—A Non-Alcoholic Tonic Beverage.

Ser. No. 23,656. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) HOWARDS & SONS LIMITED, Stratford, England. Filed Nov. 27, 1906. Used ten years.



Particular description of goods.—Acetanilid, Benzoic Acid, Boric Acid, Citric Acid, Hydrobromic Acid, Hydrochloric Acid, Nitric Acid, Phosphoric Acid, Sulfuric Acid, Ethers, Ammonium Salts, Antimony Salts, Bismuth Salts, Borax, Sodium Salts, Caffein and Compounds Thereof, Calcium Salts, Mercury Salts, Camphor, Cinchonidine and Salts Thereof, Cinchonine and Salts Thereof, Cocaine and Salts Thereof, Epsom Salts, Magnesia Salts, Iron Salts, Iodin and Compounds Thereof, Lead Salts, Terebene, Potassium Salts, Quinin and Salts Thereof, Quinidin and Salts Thereof, Sulfur and Compounds Thereof, Zinc Salts.

Ser. No. 23,727. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE AMMONOL CHEMICAL COMPANY, New York, N. Y. Filed Dec. 3, 1906. Used ten years.

AMMONIUMPHENYLACETAMID

Particular description of goods.—An Analgesic and Antipyretic.

Ser. No. 23,777. (CLASS 68. PUBLICATIONS.) THE JEWELERS CIRCULAR PUBLISHING CO., New York, N. Y. Filed Dec. 5, 1906. Used ten years.

THE JEWELERS' CIRCULAR

Particular description of goods.—Weekly Periodicals.

Ser. No. 23,898. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE MCINTOSH HARDWARE CORPORATION, Cleveland, Ohio. Filed Dec. 10, 1906.

HEATHER

Particular description of goods.—Pocket-Knives, Table Knives and Forks, Butcher-Knives, Carvers, Scissors, Shears, Razors, Axes, Hatchets, Handsaws, Chisels, Hay-Knives, Hedge-Knives, Mincing-Knives, Sickles, and Scythe-Blades.

Ser. No. 23,922. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) LOCKE SHOE COMPANY, Wheeling, W. Va. Filed Dec. 10, 1906.



Blackstone

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 24,047. (CLASS 24. LAUNDRY APPLIANCES AND MACHINES.) AMERICAN WRINGER COMPANY, New York, N. Y. Filed Dec. 15, 1906.

TRADE AWC MARK

Particular description of goods.—Clothes-Wringers, Mangles, Washing-Machines, and Driers.

Ser. No. 24,281. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) STE. AME. DE COMMENTRY FOURCHAMBAULT ET DECAZEVILLE, Paris, France. Filed Dec. 26, 1906.

INVAR

Particular description of goods.—An Alloy Which is Substantially Inexpansible.

Ser. No. 24,337. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE HOLBROOK GROCERY CO., Keene, Woodsville, and Nashua, N. H., and St. Johnsbury, Vt. Filed Dec. 29, 1906.

Monadnock

Particular description of goods.—Canned Fruits and Vegetables, Baked Beans, Dandelions, Spinach, Succotash, Evaporated Apples, Spices, Nutmegs, Sage, Mustard, Pickles, Olives, Vinegar, Preserves, and Dried Fruits, Including Raisins.

Ser. No. 24,613. (CLASS 55. WINES.) THE ATLANTIC VINEYARD AND WINE CO., Egg Harbor City, N. J. Filed Jan. 14, 1907.

SILVER SEAL

Particular description of goods.—Wines.

Ser. No. 24,621. (CLASS 8. DETERGENTS.) LOVERIN AND BROWNE COMPANY, Chicago, Ill. Filed Jan. 14, 1907.

KER-O-ZINO

Particular description of goods.—A Washing-Powder.

Ser. No. 24,663. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) WELLS FLOUR MILLING COMPANY, Wells, Minn. Filed Jan. 15, 1907.

CREAM OF THE WEST

Particular description of goods.—Wheat-Flour.

Ser. No. 24,714. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) WEIL BROTHERS, New York, N. Y. Filed Jan. 17, 1907.

W. B.

Particular description of goods.—Mesh-Veilings and Net Fabrics.

Ser. No. 24,791. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE YALE & TOWNE MFG. CO., Stamford, Conn. Filed Jan. 21, 1907.

Particular description of goods.—Coat and Hat Hooks, Door-Stops, Drawer-Pulls, Sash-Centers, Screws and Washers, Cupboard-Turns, Casement-Adjusters, Door-Knobs, Door-Pulls, Hook Sash-Lifts, Butts, Turnbuckles, Transom-Lifters, Sash-Sockets, and Push-Plates.

Ser. No. 24,794. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) EVERETT, AUGHENBAUGH & COMPANY, Waseca, Minn. Filed Jan. 21, 1907.

WINGED HORSE

Particular description of goods.—Wheat-Flour, Whole-Wheat Flour, Graham Flour, Rye-Flour, Rolled Oats, Oatmeal, Breakfast Food Made from Wheat, Bran, Shorts, and Mixed Feed Made from Cereals.

Ser. No. 24,923. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) ALMEDA DRAKE, New York, N. Y. Filed Jan. 26, 1907.



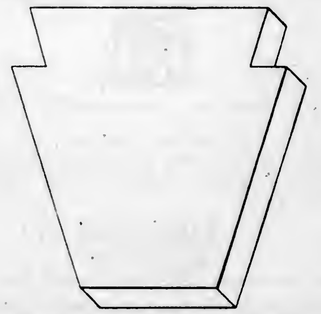
Particular description of goods.—Bust-Supporters and Corset-Covers.

Ser. No. 24,959. (CLASS 19. BOATS AND ROAD-VEHICLES.) MARTIN FISCHER & CIE. AUTOMOBILFABRIK TURICUM, Uster, near Zurich, Switzerland. Filed Jan. 28, 1907.

Turicum

Particular description of goods.—Automobiles.

Ser. No. 25,046. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) KEYSTONE CATARRH REMEDY CO., Bellevernon, Pa. Filed Feb. 1, 1907.



Particular description of goods.—A Salve Employed as a Remedy for Catarrh, Piles, Sore Throat, Neuralgia, Pains in the Breast, Headache, Burns, Chapped Skin, Bruises, Cuts, Colds, &c.

Ser. No. 25,214. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CALIFORNIA CANNERIES CO., San Francisco, Cal. Filed Feb. 9, 1907.

SHIELD BRAND

Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 25,270. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MAGNA VITA COMPANY, Allegheny, Pa. Filed Feb. 12, 1907.

MAGNA VITA

Particular description of goods.—Remedies for Debility.

Ser. No. 25,360. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) HIRTH KRAUSS CO., Grand Rapids, Mich. Filed Feb. 18, 1907.



Particular description of goods.—Leather Shoes.

Ser. No. 25,421. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE JAPAN POLISH COMPANY OF BALTIMORE CITY, Baltimore, Md. Filed Feb. 19, 1907.



Particular description of goods.—Furniture-Polish.

Ser. No. 25,451. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.

DEERHEAD BRAND

Particular description of goods.—Canned Fish.

Ser. No. 25,564. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) SANDERSON BROTHERS & NEWBOULD LIMITED, Sheffield, England. Filed Feb. 23, 1907.

SABEN

Particular description of goods.—Twist-Drills, Mining-Drills, Rock-Boring Drills, Wood-Boring Drills, Milling-Cutters, Slotting-Cutters, Shaping-Cutters, Turning-Cutters, Wood-Cutters, Bone-Cutters, Wheel-Cutters, Dividing-Cutters, Fluting-Cutters, Grooving-Cutters, Machine-Knives, and Shear-Blades, All Being Parts of Machinery.

Ser. No. 25,706. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) MOSE H. LAND, Marshall, Mo. Filed Mar. 2, 1907.



Particular description of goods.—Wheat-Flour.

Ser. No. 25,802. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) GEORGE E. PAYNE, Augusta, Ga. Filed Mar. 6, 1907. Used ten years.

SALUDA VALLEY

Particular description of goods.—Corn Whisky.

Ser. No. 25,824. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) THE CONTINENTAL IRON WORKS, Brooklyn, N. Y. Filed Mar. 7, 1907. Used ten years.

CONTINENTAL

Particular description of goods.—Metal Pipes, Metal Gas-Pipes.

Ser. No. 25,864. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) H. B. WIGGIN'S SONS COMPANY, Bloomfield, N. J. Filed Mar. 8, 1907.



Particular description of goods.—Woven Fabrics Provided with a Suitable Backing and Adapted for Use as Wall and other Interior Decorations of Buildings.

Ser. No. 25,898. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) EDWARD W. BROWN, Cincinnati, Ohio. Filed Mar. 11, 1907.



Particular description of goods.—Varnishes.

Ser. No. 25,910. (CLASS 8. DETERGENTS.) SANITARY CHEMICAL COMPANY OF PITTSBURGH, Allegheny, Pa. Filed Mar. 11, 1907. Used ten years.

SMOKY CITY

Particular description of goods.—A Compound Used for Cleaning Wall-Paper, Calcimine, and Fresco-Work.

Ser. No. 25,933. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CAFARELLI RAFFAELE, Newport, R. I. Filed Mar. 12, 1907.



Particular description of goods.—Medicine to be Used as a Remedy for Tuberculosis, General Debility, Coughs, and Colds.

Ser. No. 25,937. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) JOHN A. MACAULAY, Laurium, Mich. Filed Mar. 12, 1907.

C&H

Particular description of goods.—Babbitt Metal.

Ser. No. 26,046. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) W. R. ROACH & COMPANY, Hart, Mich. Filed Mar. 18, 1907. Used ten years.

HART

Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 26,052. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) J. M. ROBINSON, NORTON & CO., Louisville, Ky. Filed Mar. 18, 1907.



Particular description of goods.—Coats, Overcoats, Duck Coats, Vests, Trousers, and Overalls.

Ser. No. 26,061. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ALART & MCGUIRE, New York, N. Y. Filed Mar. 19, 1907. Used ten years.



Particular description of goods.—Worcestershire Sauce.

Ser. No. 26,082. (CLASS 71. TOBACCO PRODUCTS.) PROSPERO DE NOBILI AND CO., Long Island City, N. Y. Filed Mar. 19, 1907.



Particular description of goods.—Cigars, Cigarettes, Smoking-Tobacco, Chewing-Tobacco, and Snuff.

Ser. No. 26,127. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) P. L. CUSACHS LIMITED, New Orleans, La. Filed Mar. 21, 1907.



Particular description of goods.—A Remedy for Venereal Diseases.

Ser. No. 26,128. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) P. L. CUSACHS LIMITED, New Orleans, La. Filed Mar. 21, 1907.

RAMOS

Particular description of goods.—A Remedy for Venereal Diseases.

Ser. No. 26,129. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) P. L. CUSACHS LIMITED, New Orleans, La. Filed Mar. 21, 1907.



Particular description of goods.—A Toilet Cream.

Ser. No. 26,138. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOHN WANAMAKER, Philadelphia, Pa. Filed Mar. 21, 1907.

Parisienne

Particular description of goods.—Corsets.

Ser. No. 26,174. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BENZOROSE COMPANY, New York, N. Y. Filed Mar. 23, 1907.

BENZOROSE

Particular description of goods.—A Toilet Cream, Lotion, or Powder for the Skin and Complexion.

Ser. No. 26,176. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DODDS MEDICINE CO. OF U. S., Buffalo, N. Y. Filed Mar. 23, 1907.



Particular description of goods.—Balms.

Ser. No. 26,179. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) MOORE & MUNGER, New York, N. Y. Filed Mar. 23, 1907.

CALARIA

Particular description of goods.—Stearin Candle-Pitch.

Ser. No. 26,185. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOSEPH WURTZBURGER, Baltimore, Md. Filed Mar. 23, 1907.

University

Particular description of goods.—Coats, Vests, Trousers, and Overcoats.

Ser. No. 26,206. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) ALLEN BROTHERS COMPANY, Omaha, Nebr. Filed Mar. 25, 1907.

A·B·C

Particular description of goods.—Wheat-Flour, Wheat Graham Flour, White Rye-Flour, Cornmeal, Whole-Wheat Flour, and Sterilized Breakfast Wheat Food.

Ser. No. 26,267. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) NEVIN E. SMITH, Greenville, Pa. Filed Mar. 26, 1907.

CREAM NUT

Particular description of goods.—Bread.

Ser. No. 26,271. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) OLD FORT CHEMICAL COMPANY, Fort Wayne, Ind. Filed Mar. 26, 1907.

"BARKOLA"

Particular description of goods.—Rheumatic, Kidney, and Bladder Remedies.

Ser. No. 26,283. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE PEPTOL COMPANY, Chicago, Ill. Filed Mar. 27, 1907.

Peptol

Particular description of goods.—A Powdered Peptogenic Food Preparation.

Ser. No. 26,317. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE ZEBRA REMEDY COMPANY, Guthrie, Okla. Filed Mar. 28, 1907.



Particular description of goods.—Vegetable Pills.

Ser. No. 26,351. (CLASS 71. TOBACCO PRODUCTS.) BUTLER-BUTLER, (INCORPORATED,) New York, N. Y. Filed Mar. 30, 1907. Used ten years.

SOVEREIGN

Particular description of goods.—Little Cigars.

Ser. No. 26,392. (CLASS 12. MASONRY MATERIALS.) MCCLELLAN PAPER COMPANY, Minneapolis, Minn. Filed Apr. 1, 1907. Used ten years.



Particular description of goods.—Building-Paper.

Ser. No. 26,398. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JUVERNA WILEY, West Hamlin, W. Va. Filed Apr. 1, 1907.



Particular description of goods.—An Eye-Water.

Ser. No. 26,408. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) THE INTERNATIONAL SILVER COMPANY, Meriden, Conn. Filed Apr. 2, 1907.

JSQ

Particular description of goods.—Silver-Plated Flat Ware, Including Knives, Forks, Spoons, and the Like.

Ser. No. 26,451. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) CHATHAM SHIRT COMPANY, New York, N. Y. Filed Apr. 4, 1907. Used ten years.

Chatham

Particular description of goods.—Shirts and Underwear Made of Woven Fabric.

Ser. No. 26,458. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CHARLES H. WINTERSTEEN, Cameron, Mo. Filed Apr. 4, 1907.



Particular description of goods.—Medicated Stock Food.

Ser. No. 26,477. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ARTHUR C. CHASE, Omaha, Nebr. Filed Apr. 5, 1907.

KNOXWEED

Particular description of goods.—A Liquid Preparation for Killing Weeds.

Ser. No. 26,485. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) SEARLE MANUFACTURING CO., Troy, N. Y. Filed Apr. 5, 1907.

TEDDY BEAR

Particular description of goods.—Textile Collars and Cuffs.

Ser. No. 26,487. (CLASS 3. VEGETABLE.) WALKER AND HARP MANUFACTURING CO., Cohoes, N. Y. Filed Apr. 5, 1907.

EMPIRE

Particular description of goods.—Cotton-Batting.

Ser. No. 26,507. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE WINTERBOTTOM BOOK CLOTH COMPANY, LTD., Manchester, England. Filed Apr. 6, 1907.



Particular description of goods.—Tracing-Cloth.

Ser. No. 26,519. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EDWARD J. BUSCH, Carthage, Mo. Filed Apr. 6, 1907.
The heart shown is in red.



Particular description of goods.—Medicine for the Cure of the Tobacco Habit.

Ser. No. 26,531. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) CHEESEMAN CHEMICAL CO., INC., Scranton, Pa. Filed Apr. 6, 1907.



Particular description of goods.—Sodium Sulfid and Blanc Fixe.

Ser. No. 26,583. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) SIMMONS HARDWARE COMPANY, St. Louis, Mo. Filed Apr. 9, 1907.

CHIPAWAY

Particular description of goods.—Hammers, Picks, Grub-Hoes, Braces, Trowels, Wood-Saw Frames, Saw-Sets, Eye-Hoes, Non-Cutting Pliers, Non-Cutting Pincers, Nail-Sets, and Garden-Trowels, Breast-Drills, and Post-Hole Diggers.

Ser. No. 26,588. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE WILCOX & WHITE CO., Meriden, Conn. Filed Apr. 9, 1907.

Themion

Particular description of goods.—Automatic Music-Playing Instruments and Music-Rolls Therefor.

Ser. No. 26,591. (CLASS 3. VEGETABLE.) WILLIAM C. GERATY, Youngs Island, S. C. Filed Apr. 9, 1907. Used ten years.

The Cabbage Plant Man



Particular description of goods.—Cabbage-Plants.

Ser. No. 26,593. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) THE HUNTOON SPRING WATER COMPANY, New York, N. Y. Filed Apr. 9, 1907.

MYSTIC

Particular description of goods.—Natural Spring-Water.

Ser. No. 26,603. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE H. B. CLAFLIN COMPANY, New York, N. Y. Filed Apr. 10, 1907.

ANTISEPTINE

Particular description of goods.—Antiseptics in the Form of Powders and Lotions.

Ser. No. 26,606. (CLASS 68. PUBLICATIONS.) WILLIAM D. BURLESON, Gridley, Cal. Filed Apr. 10, 1907.

THE SACRAMENTO VALLEY HERALD

Particular description of goods.—A Newspaper.

Ser. No. 26,608. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOSEPH COHEN, New York, N. Y. Filed Apr. 10, 1907.

J.C.

Particular description of goods.—Corsets.

Ser. No. 26,611. (CLASS 71. TOBACCO PRODUCTS.) EL ARTE CIGAR CO., Baltimore, Md. Filed Apr. 10, 1907.

PRIMA LUCIA

Particular description of goods.—Cigars.

Ser. No. 26,612. (CLASS 71. TOBACCO PRODUCTS.) HEINEMAN BROS., Baltimore, Md. Filed Apr. 10, 1907.

DE'COSTA

Particular description of goods.—Cigars.

Ser. No. 26,616. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) NOXAL POLISH MANUFACTURING CO., Philadelphia, Pa. Filed Apr. 10, 1907.

NOXAL

Particular description of goods.—Furniture-Polish.

Ser. No. 26,619. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) SHAFER FRUIT & COLD STORAGE COMPANY, Gasport, N. Y. Filed Apr. 10, 1907. Used ten years.

J.W.S.

Particular description of goods.—Fresh Apples, Pears, and Quinces.

Ser. No. 26,630. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) WILLIAM M. CAHILL, Hoboken, N. J. Filed Apr. 11, 1907.



Particular description of goods.—Coffee and Tea.

Ser. No. 26,632. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) D. A. DE LIMA & CO., INCORPORATED, New York, N. Y. Filed Apr. 11, 1907. Used ten years.



Particular description of goods.—Chick and Poultry Food.

Ser. No. 26,669. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ZENNER DISINFECTANT COMPANY, Detroit, Mich. Filed Apr. 12, 1907.

ZENOLEUM

Particular description of goods.—Disinfectant, Insecticide, Animal-Dip, Vermicide, and Antiseptic Preparations.

Ser. No. 26,674. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) HOWLAND-SHEARMAN ENGINEERING CO., Anderson, Ind. Filed Apr. 13, 1907.

Jupiter

Particular description of goods.—Piston, Rod, and Joint Packing.

Ser. No. 26,675. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) HOWLAND-SHEARMAN ENGINEERING CO., Anderson, Ind. Filed Apr. 13, 1907.



Particular description of goods.—Piston, Rod, and Joint Packing.

Ser. No. 26,686. (CLASS 71. TOBACCO PRODUCTS.) PLANTATION TOBACCO COMPANY, INC., Washington, D. C. Filed Apr. 13, 1907.

FLOWER OF THE SOUTH

Particular description of goods.—Smoking-Tobacco.

Ser. No. 26,702. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE C. S. MOREY MERCANTILE COMPANY, Denver, Colo. Filed Apr. 15, 1907.

OK

Particular description of goods.—Baking-Powder.

Ser. No. 26,703. (CLASS 12. MASONRY MATERIALS.) CONSOLIDATED ROSENDALE CEMENT COMPANY, Rondout, N. Y. Filed Apr. 15, 1907.

"BROOKLYN BRIDGE" BRAND

Particular description of goods.—Rosendale Cement.

Ser. No. 26,704. (CLASS 12. MASONRY MATERIALS.) CONSOLIDATED ROSENDALE CEMENT COMPANY, Rondout, N. Y. Filed Apr. 15, 1907. Used ten years.

HOFFMAN

Particular description of goods.—Rosendale Cement.

Ser. No. 26,710. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) COOK AND HOWARD, Portland, Me. Filed Apr. 15, 1907. Used ten years.

ANDREW'S

Bullion Silver Plating

...AND..

Cleaning Fluid.

Particular description of goods.—Metal-Polishing Material.

Ser. No. 26,716. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE INTERNATIONAL FACTORIES CO., Minneapolis, Minn. Filed Apr. 15, 1907.

WHITE ELEPHANT

Particular description of goods.—Baking-Powder.

Ser. No. 26,727. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) STODDARD GILBERT & Co., New Haven, Conn. Filed Apr. 15, 1907.

VOLUNTEER

Particular description of goods.—Wheat-Flour

Ser. No. 26,729. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) TAYLOR, STILES & Co., Riegelsville, N. J. Filed Apr. 15, 1907.

GIANT

Particular description of goods.—Paper-Stock Cutters and Paper-Stock Shredders.

Ser. No. 26,733. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) AVERY MANUFACTURING COMPANY, Peoria, Ill. Filed Apr. 16, 1907. Used ten years.

AVERY

Particular description of goods.—Portable Engines and Traction-Engines.

Ser. No. 26,755. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) EMERSON PIANO COMPANY, Boston, Mass. Filed Apr. 17, 1907.

Electrothematon

Particular description of goods.—Automatic Music-Playing Instruments and Music-Rolls Therefor.

Ser. No. 26,757. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE FRANKLIN ELECTRIC MFG. Co., Hartford, Conn. Filed Apr. 17, 1907.

NOVA

Particular description of goods.—Incandescent Electric Lamps.

Ser. No. 26,765. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) WALKER STOVE AND RANGE Co., San Francisco, Cal. Filed Apr. 17, 1907.

FEDERAL

Particular description of goods.—Stoves and Ranges.

Ser. No. 26,777. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) PACIFIC COAST BISCUIT Co., Portland, Oreg. Filed Apr. 18, 1907.

Particular description of goods.—Crackers.

Ser. No. 26,779. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) SCHULZE BAKING Co., Chicago, Ill. Filed Apr. 18, 1907.

Particular description of goods.—Bread.

Ser. No. 26,797. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) LEECHBURG OIL AND PAINT COMPANY, Leechburg, Pa. Filed Apr. 19, 1907.



Particular description of goods.—Axle-Grease.

Ser. No. 26,798. (CLASS 17. WOOD MANUFACTURES NOT OTHERWISE CLASSIFIED.) ROBERT ALBERT MORRISON, Denver, Colo. Filed Apr. 19, 1907.

20th CENTURY

Particular description of goods.—Wooden Window Sashes and Frames and Parts of Mechanical Windows Made of Wood Entirely or in Part.

Ser. No. 26,803. (CLASS 47. CONFECTIONERY.) STEPHEN F. WHITMAN & SON, Philadelphia, Pa. Filed Apr. 19, 1907. Used ten years.

INSTANTANEOUS

Particular description of goods.—Chocolate.

Ser. No. 26,807. (CLASS 52. PACKING-HOUSE PRODUCTS.) ERNST FREUND, Cincinnati, Ohio. Filed Apr. 19, 1907.

PRIMROSE BRAND

Particular description of goods.—Fresh and Smoked Meats and Lard.

Ser. No. 26,819. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JONES-PADDOCK Co., San Francisco, Cal. Filed Apr. 20, 1907.

ALTA

Particular description of goods.—Coffee.

Ser. No. 26,821. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JONES-PADDOCK Co., San Francisco, Cal. Filed Apr. 20, 1907.

FARALLON

Particular description of goods.—Coffee.

Ser. No. 26,828. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) CORN PRODUCTS REFINING Co., New York, N. Y. Filed Apr. 20, 1907.

GLOBE

Particular description of goods.—Corn-Starch.

Ser. No. 26,829. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) CORN PRODUCTS REFINING Co., New York, N. Y. Filed Apr. 20, 1907.

RADIUM

Particular description of goods.—Laundry Starch.

Ser. No. 26,830. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) CORN PRODUCTS REFINING Co., New York, N. Y. Filed Apr. 20, 1907.



Particular description of goods.—Corn-Starch.

Ser. No. 26,832. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) STEARNS ELECTRIC PASTE Co., Buffalo, N. Y. Filed Apr. 20, 1907. Used ten years.

Particular description of goods.—Animal-Poison.

Ser. No. 26,841. (CLASS 9. EXPLOSIVES.) THE KING POWDER COMPANY, Cincinnati, Ohio. Filed Apr. 20, 1907. Used ten years.

QUICK SHOT

Particular description of goods.—Gunpowder, and Particularly Black Sporting-Powder.

Ser. No. 26,847. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) H. R. HALL COMPANY, Chicago, Ill. Filed Apr. 22, 1907.



Particular description of goods.—Coffee.

Ser. No. 26,852. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOSIAH BOONE AUSTIN, San Diego, Cal. Filed Apr. 22, 1907.



LOOK NATURAL

Particular description of goods.—Hair-Tonics.

Ser. No. 26,853. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) BRILL BROTHERS, New York, N. Y. Filed Apr. 22, 1907.

DUD-LY-4-IN-1

Particular description of goods.—Boys' Suits.

Ser. No. 26,855. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE MILLCREEK VALLEY STARCH COMPANY, Cincinnati, Ohio. Filed Apr. 22, 1907.

BLUEBELL

Particular description of goods.—Laundry Starch.

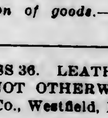
Ser. No. 26,857. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE NATIONAL REFINING COMPANY, Cleveland, Ohio. Filed Apr. 22, 1907.



Particular description of goods.—Illuminating Oil.

Ser. No. 26,873. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) NAPA CANNING CO., San Francisco, Cal. Filed Apr. 23, 1907.

FORTUNE



Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 26,879. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) INDEPENDENT WHIP CO., Westfield, Mass. Filed Apr. 24, 1907.

CORABONE

Particular description of goods.—Whips.

Ser. No. 26,884. (CLASS 8. DETERGENTS.) CLAUDE M. MCAFEE, New York, N. Y. Filed Apr. 24, 1907.

Saxane

Particular description of goods.—Preparations, Mixtures, or Compounds Used as Substitutes for Toilet Soap.

Ser. No. 26,887. (CLASS 68. PUBLICATIONS.) THE SHORT STORIES COMPANY LTD., New York, N. Y. Filed Apr. 24, 1907. Used ten years.

Short Stories

Particular description of goods.—Magazines and Periodicals.

Ser. No. 26,928. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) WHALEY MILL & EL. CO., Gainesville, Tex. Filed Apr. 25, 1907.

ROYAL OWL



Particular description of goods.—Wheat-Flour.

TRADE-MARKS

REGISTERED MAY 21, 1907.

62,630. ELASTIC BANDAGES, SUPPORTERS, AND SUSPENSORIES. A. G. SPALDING & BROS., New York, N. Y.
Filed February 25, 1907. Serial No. 25,575. PUBLISHED MARCH 26, 1907.

62,631. ELASTIC BANDAGES, SUPPORTERS, AND SUSPENSORIES. A. G. SPALDING & BROS., New York, N. Y.
Filed February 25, 1907. Serial No. 25,579. PUBLISHED MARCH 26, 1907.

62,632. ELASTIC BANDAGES, SUPPORTERS, AND SUSPENSORIES. A. G. SPALDING & BROS., New York, N. Y.
Filed February 25, 1907. Serial No. 25,583. PUBLISHED MARCH 26, 1907.

62,633. CERTAIN CUTLERY AND EDGE-TOOLS. THE COLLINS COMPANY, Collinsville, Conn.
Filed February 13, 1907. Serial No. 25,286. PUBLISHED MARCH 26, 1907.

62,634. BUGGIES AND WAGONS. COLUMBUS BUGGY COMPANY, Columbus, Ohio.
Filed February 1, 1907. Serial No. 25,054. PUBLISHED MARCH 26, 1907.

62,635. CERTAIN METAL MANUFACTURES. THE CONTINENTAL IRON WORKS, Brooklyn, N. Y.
Filed January 17, 1907. Serial No. 24,711. PUBLISHED MARCH 26, 1907.

62,636. MEN'S, WOMEN'S, AND CHILDREN'S LEATHER BOOTS AND SHOES. DRAKE & CO., New York, N. Y.
Filed February 23, 1907. Serial No. 25,551. PUBLISHED MARCH 26, 1907.

62,637. MONTHLY JOURNAL. HARVEY J. GONDEN, Chicago, Ill.
Filed February 21, 1907. Serial No. 25,519. PUBLISHED MARCH 26, 1907.

62,638. SAWS AND SAW-BLADES. HENRY DISSTON & SONS, INCORPORATED, Philadelphia, Pa.
Filed February 23, 1907. Serial No. 25,548. PUBLISHED MARCH 26, 1907.

62,639. INTERNAL-COMBUSTION ENGINES. INTERNATIONAL POWER COMPANY, New York, N. Y.; Bridgeport, Conn.; Providence, R. I., and Worcester, Mass.
Filed February 23, 1907. Serial No. 25,613. PUBLISHED MARCH 26, 1907.

62,640. SOAP. IOWA SOAP COMPANY, Burlington, Iowa.
Filed February 26, 1907. Serial No. 25,595. PUBLISHED MARCH 26, 1907.

62,641. PIANOS AND PIANOS WITH INTERIOR PLAYERS. JACOB DOLL & SONS, INC., New York, N. Y.
Filed February 23, 1907. Serial No. 25,528. PUBLISHED MARCH 26, 1907.

62,642. PIPE AND NUT WRENCHES. THE KEYSTONE MFG. CO., Buffalo, N. Y.
Filed February 23, 1907. Serial No. 25,537. PUBLISHED MARCH 26, 1907.

62,643. MEN'S, BOYS', LADIES', MISSES', AND CHILDREN'S LEATHER SHOES AND SLIPPERS. B. ROSENBERG & SONS, New Orleans, La.
Filed February 20, 1907. Serial No. 25,435. PUBLISHED MARCH 26, 1907.

62,644. LEATHER BOOTS AND SHOES. SMITH-BRISCOE SHOE COMPANY, INCORPORATED, Lynchburg, Va.
Filed February 23, 1907. Serial No. 25,566. PUBLISHED MARCH 26, 1907.

62,645. SOAP. SOLON PALMER, New York, N. Y.
Filed February 23, 1907. Serial No. 25,540. PUBLISHED MARCH 26, 1907.

62,646. SOAP. SOLON PALMER, New York, N. Y.
Filed February 23, 1907. Serial No. 25,541. PUBLISHED MARCH 26, 1907.

62,647. MONTHLY PERIODICAL. THE VICKERY & HILL PUBLISHING CO., Augusta, Me.
Filed February 25, 1907. Serial No. 25,602. PUBLISHED MARCH 26, 1907.

62,648. WHEAT-FLOUR. EAGLE ROLLER MILL COMPANY, New Ulm, Minn.
Filed February 1, 1907. Serial No. 25,038. PUBLISHED MARCH 26, 1907.

62,649. WHEAT-FLOUR. EAGLE ROLLER MILL COMPANY, New Ulm, Minn.
Filed February 1, 1907. Serial No. 25,039. PUBLISHED MARCH 26, 1907.

62,650. WHEAT-FLOUR. EAGLE ROLLER MILL COMPANY, New Ulm, Minn.
Filed February 1, 1907. Serial No. 25,040. PUBLISHED MARCH 26, 1907.

62,651. SURGICAL BANDAGES. G. A. CRAVEN & CO., New York, N. Y.
Filed February 18, 1907. Serial No. 25,365. PUBLISHED MARCH 26, 1907.

62,652. WHEAT-FLOUR. THE NEW ERA MILLING COMPANY, Arkansas City, Kans.
Filed February 4, 1907. Serial No. 25,116. PUBLISHED MARCH 26, 1907.

62,653. ALLOY RESEMBLING SILVER. QUEEN METAL COMPANY, New York, N. Y.
Filed February 16, 1907. Serial No. 25,333. PUBLISHED MARCH 26, 1907.

62,654. ALLOY RESEMBLING SILVER. QUEEN METAL COMPANY, New York, N. Y.
Filed February 16, 1907. Serial No. 25,334. PUBLISHED MARCH 26, 1907.

62,655. LADIES', MISSES', AND CHILDREN'S LEATHER BOOTS AND SHOES. B. ROSENBERG & SONS, New Orleans, La.
Filed February 20, 1907. Serial No. 25,432. PUBLISHED MARCH 26, 1907.

62,656. LADIES', MISSES', AND CHILDREN'S LEATHER SHOES AND SLIPPERS. B. ROSENBERG & SONS, New Orleans, La.
Filed February 20, 1907. Serial No. 25,433. PUBLISHED MARCH 26, 1907.

62,657. CERTAIN SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS. RALPH JULIAN SACHERS, New York, N. Y., assignor, by mesne assignments, to The Ikonograph Company of America, New York, N. Y., a Corporation of New York.
Filed February 18, 1907. Serial No. 25,383. PUBLISHED MARCH 26, 1907.

62,658. GAS STOVES AND HEATERS AND VAPOR STOVES AND OVENS. AMERICAN STOVE COMPANY, Jersey City, N. J., and St. Louis, Mo.
Filed January 5, 1907. Serial No. 24,465. PUBLISHED MARCH 26, 1907.

62,659. PREPARED MILK AND CREAM. ALPHEUS FAY, Louisville, Ky.
Filed October 18, 1906. Serial No. 22,766. PUBLISHED MARCH 26, 1907.

62,660. CERTAIN PAINT. JENKINS PAINT AND OIL CO., Norfolk, Va., and New York, N. Y.
Filed December 27, 1906. Serial No. 24,297. PUBLISHED MARCH 26, 1907.

62,661. CANNED FRUITS AND VEGETABLES. THOMAS KENNETT & CO., Baltimore, Md.
Filed August 11, 1905. Serial No. 11,545. PUBLISHED MAY 22, 1906.

62,662. FINISHING PRODUCT. KEYSTONE VARNISH CO., Brooklyn, N. Y.
Filed November 7, 1906. Serial No. 23,158. PUBLISHED MARCH 26, 1907.

62,663. INCANDESCENT GAS-MANTLES. JOHN HASKINS LADD, London, England.
Filed February 1, 1907. Serial No. 25,047. PUBLISHED MARCH 26, 1907.

62,664. CERTAIN FIRE-STANDING GOODS. MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England.
Filed December 18, 1906. Serial No. 24,109. PUBLISHED MARCH 26, 1907.

62,665. WHEAT-BREAD. HARRY RICHTER, St. Louis, Mo.
Filed July 29, 1905. Serial No. 11,005. PUBLISHED MAY 15, 1906.

62,666. FELT ROOFING. THE UNION PAPER & TWINE COMPANY, Cleveland, Ohio.
Filed February 2, 1907. Serial No. 25,108. PUBLISHED MARCH 26, 1907.

62,667. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.: Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.: Durham, N. C., and Memphis, Tenn.
Filed December 12, 1906. Serial No. 23,952. PUBLISHED MARCH 26, 1907.

62,668. STOCK FOOD. WESTERN GRAIN PRODUCTS COMPANY, Milwaukee, Wis.
Filed January 21, 1907. Serial No. 24,800½. PUBLISHED MARCH 26, 1907.

62,669. WHEAT-FLOUR. WHALEY MILL & ELEVATOR CO., Gainesville, Tex.
Filed January 30, 1907. Serial No. 25,008. PUBLISHED MARCH 26, 1907.

62,670. CERTAIN KNIT GOODS. A. G. SPALDING & BROS., New York, N. Y.
Filed February 25, 1907. Serial No. 25,574. PUBLISHED MARCH 26, 1907.

62,671. CERTAIN KNIT GOODS. A. G. SPALDING & BROS., New York, N. Y.
Filed February 25, 1907. Serial No. 25,582. PUBLISHED MARCH 26, 1907.

62,672. COFFEE AND TEA. ABRAHAM & STRAUS, Brooklyn, N. Y.
Filed February 12, 1907. Serial No. 25,263. PUBLISHED MARCH 26, 1907.

62,673. TEA AND COFFEE. ABRAHAM & STRAUS, Brooklyn, N. Y.
Filed February 23, 1907. Serial No. 25,544. PUBLISHED MARCH 26, 1907.

62,674. HAIR-DYEING PREPARATIONS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed May 11, 1906. Serial No. 19,498. PUBLISHED MARCH 26, 1907.

62,675. ARRAC PUNCH. AKTIEBOLAGET BARTHD. DAHLGREN, Gothenburg, Sweden.
Filed August 16, 1906. Serial No. 21,804. PUBLISHED MARCH 26, 1907.

62,676. KNIT UNDERWEAR. BEDFORD-WILLIS COMPANY, Boston, Mass.
Filed February 26, 1907. Serial No. 25,619. PUBLISHED MARCH 26, 1907.

62,677. POWDER USED IN THE MANUFACTURE OF ICE-CREAM AND ICES. FRANK A. BEELER, Pleasant Hill, Mo.
Filed February 15, 1907. Serial No. 25,216. PUBLISHED MARCH 26, 1907.

62,678. WHISKY. BERNHEIM DISTILLING CO. INC., Louisville, Ky.
Filed February 23, 1907. Serial No. 25,546. PUBLISHED MARCH 26, 1907.

62,679. REMEDY FOR BLOOD DISEASES. BLOOD BALM COMPANY, Atlanta, Ga.
Filed February 26, 1907. Serial No. 25,614. PUBLISHED MARCH 26, 1907.

62,680. REMEDY FOR BLOOD DISEASES. BLOOD BALM COMPANY, Atlanta, Ga.
Filed February 26, 1907. Serial No. 25,615. PUBLISHED MARCH 26, 1907.

62,681. MEDICAL PREPARATIONS FOR THE SKIN. BOOTS PURE DRUG COMPANY LIMITED, Nottingham, England.
Filed August 9, 1906. Serial No. 21,428. PUBLISHED MARCH 26, 1907.

62,682. PREPARATIONS FOR REPELLING INSECTS. PAUL BRANDT, Charlottenburg, Germany.
Filed August 28, 1906. Serial No. 21,782. PUBLISHED MARCH 26, 1907.

62,683. SHIRTS, OVERALLS, DUCK COATS, AND JUMPERS. BYRNE & HAMMER DRY GOODS CO., Omaha, Nebr.
Filed August 10, 1906. Serial No. 21,462. PUBLISHED MARCH 26, 1907.

62,684. CERTAIN MEDICINES. CARLETON & HOVEY, Lowell, Mass.
Filed February 12, 1907. Serial No. 25,265. PUBLISHED MARCH 26, 1907.

62,685. DRIED FRUIT. CASTLE BROTHERS, INCORPORATED, San Francisco, Cal.
Filed February 21, 1907. Serial No. 25,501. PUBLISHED MARCH 26, 1907.

62,686. DRIED FRUIT. CASTLE BROTHERS, INCORPORATED, San Francisco, Cal.
Filed February 21, 1907. Serial No. 25,502. PUBLISHED MARCH 26, 1907.

62,687. ROOT-BEER. THE CHARLES E. HIRES COMPANY, Philadelphia, Pa.
Filed February 26, 1907. Serial No. 25,623. PUBLISHED MARCH 26, 1907.

62,688. WHEAT-FLOUR. COMMERCIAL MILLING COMPANY, Detroit, Mich.
Filed August 20, 1906. Serial No. 21,667. PUBLISHED OCTOBER 23, 1906.

62,689. JEWELRY. ELECTRIC CHAIN CO., Attleboro, Mass.
Filed February 20, 1907. Serial No. 25,477. PUBLISHED MARCH 26, 1907.

62,690. EYE REMEDIES. THE HALEY-LAYBOURN EYE INFIRMARY, St. Louis, Mo.
Filed December 20, 1906. Serial No. 24,160. PUBLISHED MARCH 26, 1907.

62,691. FELT AND STRAW HATS. HARRIS-POLK HAT CO., St. Louis, Mo.
Filed February 18, 1907. Serial No. 25,371. PUBLISHED MARCH 26, 1907.

62,692. MINERAL WATER. HEINRICH MATTONI AKTIENGESELLSCHAFT, Carlsbad, Austria-Hungary, and New York, N. Y.
Filed February 18, 1907. Serial No. 25,388. PUBLISHED MARCH 26, 1907.

62,693. PILE CURE. JOHN J. HOAR, Dubuque, Iowa.
Filed February 7, 1907. Serial No. 25,196. PUBLISHED MARCH 26, 1907.

62,694. PREPARED FOODS FOR INFANTS AND INVALIDS. ARTHUR HOROWITZ, Berlin, Germany.
Filed September 20, 1906. Serial No. 22,265. PUBLISHED MARCH 26, 1907.

62,695. GIN. KAUFMANN BAER & CO., Cincinnati, Ohio.
Filed February 23, 1907. Serial No. 25,555. PUBLISHED MARCH 26, 1907.

62,696. PREPARATION FOR THE CURE OF DYSPEPSIA. MARY A. LUPTON, MILLARD F. CATTELL, PHILIP S. HORTH, Woodbury, N. J., executors and trustees of Lewis M. Green, deceased.
Filed April 12, 1906. Serial No. 18,719. PUBLISHED MARCH 26, 1907.

62,697. WATER-TUBE BOILERS. THE MCNEIL BOILER COMPANY, Akron, Ohio.
Filed February 21, 1907. Serial No. 25,514. PUBLISHED MARCH 26, 1907.

62,698. REMEDY FOR DISORDERS OF THE BOWELS. MICROLINE MEDICINE COMPANY, Dallas, Tex.
Filed February 20, 1907. Serial No. 25,439. PUBLISHED MARCH 26, 1907.

62,699. HOSIERY AND KNITTED UNDERWEAR. JOHN S. NAYLOR & CO., Wheeling, W. Va.
Filed February 26, 1907. Serial No. 25,661. PUBLISHED MARCH 26, 1907.

62,700. BUG-POWDER. ARTHUR NUSSEY, Paterson, N. J.
Filed October 22, 1906. Serial No. 22,845. PUBLISHED MARCH 26, 1907.

62,701. MEDICINES FOR THE PREVENTION AND CURE OF VENEREAL DISEASES. JAMES T. PADGETT, New Bloomfield, Mo.
Filed September 27, 1906. Serial No. 22,357. PUBLISHED MARCH 26, 1907.

62,702. OIL-FURNACES. THE RAILWAY MATERIALS COMPANY, Chicago, Ill.
Filed April 17, 1905. Serial No. 2,029. PUBLISHED MARCH 26, 1907.

62,703. CANDY. EMORY C. SPERRY, Canton, Ohio.
Filed February 26, 1907. Serial No. 25,663. PUBLISHED MARCH 26, 1907.

62,704. RYE WHISKY. THOS. G. CARROLL & SON CO. OF BALTIMORE CITY, Baltimore, Md.
Filed March 29, 1906. Serial No. 18,340. PUBLISHED MARCH 26, 1907.

62,705. CERTAIN KNIT GOODS. A. G. SPALDING & BROS., New York, N. Y.
Filed February 25, 1907. Serial No. 25,578. PUBLISHED MARCH 26, 1907.

62,706. PAINTS OF ALL KINDS, ENAMELS, STAINS, AND VARNISHES. ACME WHITE LEAD & COLOR WORKS, Detroit, Mich.
Filed August 28, 1905. Serial No. 12,061. PUBLISHED MARCH 26, 1907.

62,707. COAL-TAR DYESTUFFS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed March 19, 1906. Serial No. 17,991. PUBLISHED MARCH 26, 1907.

62,708. COAL-TAR DYESTUFFS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed March 19, 1906. Serial No. 17,992. PUBLISHED MARCH 26, 1907.

62,709. WHISKY. THE ALBERT M. GUGENHEIM CO., Cincinnati, Ohio.
Filed December 10, 1906. Serial No. 23,901. PUBLISHED MARCH 26, 1907.

62,710. PORTLAND, NATURAL ROCK, AND IMPROVED CEMENT. AMERICAN CEMENT COMPANY, Philadelphia, Pa.
Filed June 20, 1905. Serial No. 8,576. PUBLISHED SEPTEMBER 11, 1906.

62,711. HEADACHE MEDICINES. CHARLES BREVES, Chicago, Ill.
Filed February 22, 1906. Serial No. 17,276. PUBLISHED MARCH 26, 1907.

62,712. SILK DRESS GOODS. FORREST L. BRYANT, Binghamton, N. Y.
Filed January 25, 1907. Serial No. 24,906. PUBLISHED MARCH 26, 1907.

62,713. CERTAIN TEXTILES. FRED. BUTTERFIELD & CO., New York, N. Y.
Filed February 21, 1907. Serial No. 25,500. PUBLISHED MARCH 26, 1907.

62,714. WHISKY. C. P. MOORMAN & COMPANY, INC., Louisville, Ky.
Filed May 11, 1905. Serial No. 5,030. PUBLISHED DECEMBER 12, 1905.

62,715. WHISKY. C. P. MOORMAN & COMPANY, INC., Louisville, Ky.
Filed May 11, 1905. Serial No. 5,032. PUBLISHED DECEMBER 12, 1905.

62,716. WHISKY. C. P. MOORMAN & COMPANY, INC., Louisville, Ky.
Filed May 11, 1905. Serial No. 5,034. PUBLISHED DECEMBER 12, 1905.

62,717. WHISKY. C. P. MOORMAN & COMPANY, INC., Louisville, Ky.
Filed May 11, 1905. Serial No. 5,036. PUBLISHED DECEMBER 12, 1905.

62,718. BLACK DYESTUFF. CASSELLA COLOR COMPANY, New York, N. Y.
Filed June 14, 1905. Serial No. 8,088. PUBLISHED NOVEMBER 7, 1905.

62,719. WHEAT-FLOUR. CENTRAL DAKOTA FLOURING MILL COMPANY, Arlington, S. D.
Filed February 21, 1907. Serial No. 25,504. PUBLISHED MARCH 26, 1907.

62,720. EMULSIONS OF COD-LIVER OIL. THE CLOFTLIN CHEMICAL COMPANY, New York, N. Y.
Filed November 22, 1906. Serial No. 23,531. PUBLISHED MARCH 26, 1907.

62,721. STOVES, RANGES, FURNACES, AND HEATERS. CO-OPERATIVE FOUNDRY CO., Rochester, N. Y.
Filed February 26, 1907. Serial No. 25,589. PUBLISHED MARCH 26, 1907.

62,722. WHISKY. THE DAVIESS COUNTY DISTILLING CO., Owensboro, Ky.
Filed March 3, 1906. Serial No. 17,463. PUBLISHED JUNE 12, 1906.

62,723. MIXTURE OF DRY MILK AND COCOA. G. KAMMERMANN & CIE. SCHWEIZ. TROCKENMILCHGESELLSCHAFT, Glockenthal, Switzerland.
Filed December 9, 1905. Serial No. 15,315. PUBLISHED MARCH 26, 1907.

62,724. DYED COTTON FABRICS. OTTO GOETZE, New York, N. Y.
Filed December 5, 1906. Serial No. 23,771. PUBLISHED MARCH 26, 1907.

62,725. UMBRELLAS. PAUL FRIEDRICH WILHELM GEEEF, Viersen, Germany.
Filed August 11, 1905. Serial No. 11,551. PUBLISHED MARCH 26, 1907.

62,726. SAFETY-MATCHES. JÖNKÖPINGS OCH VULCANS TÄNDSTICKSFABRIKSAKTIEBOLAG, Jönköping, Sweden.
Filed February 12, 1906. Serial No. 16,929. PUBLISHED AUGUST 21, 1906.

62,727. SAFETY-MATCHES. JÖNKÖPINGS OCH VULCANS TÄNDSTICKSFABRIKSAKTIEBOLAG, Jönköping, Sweden.
Filed February 12, 1906. Serial No. 16,930. PUBLISHED MARCH 26, 1907.

62,728. REMEDIES FOR CERTAIN DISEASES. MICROLINE MEDICINE COMPANY, Dallas, Tex.
Filed February 15, 1907. Serial No. 25,323. PUBLISHED MARCH 26, 1907.

62,729. JEWELRY, SOLID, PLATED, AND PRECIOUS-METAL WARE. PAYE AND BAKER MANUFACTURING CO. North Attleboro, Mass.
Filed February 4, 1907. Serial No. 25,133. PUBLISHED MARCH 26, 1907.

62,730. MEDICINAL PREPARATION IN LIQUID, SALVE, OR CREAM FORM. MYRON E. PEASE, Toledo, Ohio.
Filed November 8, 1906. Serial No. 23,178. PUBLISHED MARCH 26, 1907.

62,731. POLISH FOR BOOTS AND SHOES AND POLISH FOR LEATHER. THE PITTSBURGH WATERPROOF SHOE POLISH COMPANY, Pittsburg, Pa.
Filed February 26, 1907. Serial No. 25,626. PUBLISHED MARCH 26, 1907.

62,732. CEREAL BREAKFAST FOODS. POSTUM CEREAL CO., LIMITED, Battle Creek, Mich.
Filed March 17, 1906. Serial No. 17,981. PUBLISHED AUGUST 21, 1906.

62,733. WHISKY. FREDERICK C. RENZIEHAUSEN, Pittsburg, Pa.
Filed May 23, 1905. Serial No. 6,361. PUBLISHED JUNE 19, 1906.

62,734. WITHDRAWN.

62,735. COLIC AND FEVER CURE FOR HORSES AND CATTLE. JOHN G. TRUMAN, Bushnell, Ill.
Filed January 8, 1907. Serial No. 24,835. PUBLISHED MARCH 26, 1907.

62,736. STIFFENING BLADES, CORDS, TAPES, AND FABRICS. THE WARREN FEATHERBONE CO., Three Oaks, Mich.
Filed February 6, 1907. Serial No. 25,174. PUBLISHED MARCH 26, 1907.

62,737. WHEAT-FLOUR. WHALEY MILL & ELEVATOR CO., Gainesville, Tex.
Filed January 30, 1907. Serial No. 25,007. PUBLISHED MARCH 26, 1907.

62,738. CERTAIN CLOTHING. WRIGHT & DITSON, Jersey City, N. J., and Boston, Mass.
Filed January 23, 1907. Serial No. 24,851. PUBLISHED MARCH 26, 1907.

62,739. CERTAIN CHEMICAL COMPOUND. JESSIE T. WRIGHT, Cornhill, Tex.
Filed November 17, 1906. Serial No. 23,435. PUBLISHED MARCH 26, 1907.

62,740. WHEAT-FLOUR. ACME MILLING COMPANY, Indianapolis, Ind.
Filed June 26, 1905. Serial No. 9,016. PUBLISHED SEPTEMBER 5, 1905.

62,741. FILMS, PLATES, AND PHOTOGRAPHIC PAPERS. ACTIEN-GESELLSCHAFT FÜR ANILIN-FABRIKATION, Berlin, Germany.
Filed September 7, 1905. Serial No. 12,324. PUBLISHED MARCH 26, 1907.

62,742. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,568. PUBLISHED MARCH 26, 1907.

62,743. GRASS-SEED. HORACE E. CONKLIN, Binghamton, N. Y.
Filed April 15, 1905. Serial No 1,637. PUBLISHED JULY 17, 1906.

62,744. SHOES CONSTRUCTED OF LEATHER OR PARTIALLY OF LEATHER. SYLVAN DALSIMER, Philadelphia, Pa.
Filed February 2, 1907. Serial No. 25,063. PUBLISHED MARCH 26, 1907.

62,745. PNEUMATIC CUSHION AND SOLID RUBBER AUTOMOBILE AND VEHICLE TIRES. THE DIAMOND RUBBER CO., Akron, Ohio.
Filed April 4, 1906. Serial No. 18,486. PUBLISHED MARCH 26, 1907.

62,746. ELECTRIC LAMPS. GILL BROTHERS COMPANY, Steubenville, Ohio.
Filed January 24, 1907. Serial No. 24,875. PUBLISHED MARCH 26, 1907.

62,747. MAGAZINES AND PAMPHLETS. THE GLOBE MACHINE AND STAMPING COMPANY, Cleveland, Ohio.
Filed February 1, 1907. Serial No. 25,055. PUBLISHED MARCH 26, 1907.

62,748. WASHING-MACHINES. INTERNATIONAL FACTORIES CO., Minneapolis, Minn.
Filed January 26, 1907. Serial No. 24,927. PUBLISHED MARCH 26, 1907.

62,749. TISSUE-PAPER, INCLUDING NAPKINS AND TOILET-PAPER. THE JOHN HOBERG CO., Green Bay, Wis.
Filed February 11, 1907. Serial No. 25,241. PUBLISHED MARCH 26 1907.

62,750. RAZORS AND RAZOR-BLADES. KAMPFE BRO'S., New York, N. Y.
Filed April 17, 1906. Serial No. 1,869. PUBLISHED MARCH 26, 1907.

62,751. RAZORS AND RAZOR-BLADES. KAMPFE BRO'S., New York, N. Y.
Filed April 17, 1906. Serial No. 1,871. PUBLISHED MARCH 26, 1907.

62,752. SAFETY-RAZORS, RAZOR-BLADES, AND SAFETY CORN-KNIVES. KAMPFE BRO'S., New York, N. Y.
Filed April 17, 1906. Serial No. 1,875. PUBLISHED MARCH 26, 1907.

62,753. SAFETY-RAZORS, RAZOR-BLADES, AND SAFETY CORN-KNIVES. KAMPFE BRO'S., New York, N. Y.
Filed April 17, 1906. Serial No. 1,876. PUBLISHED MARCH 26, 1907.

62,754. HOSIERY. LORD & TAYLOR, New York, N. Y.
Filed June 21, 1906. Serial No. 8,063. PUBLISHED MARCH 26, 1907.

62,755. YARN PRODUCED FROM CELLULOSE OR VISCOSE. GEORGE LUND, London, England.
Filed September 4, 1906. Serial No. 21,888. PUBLISHED MARCH 26, 1907.

62,756. BUCKLES. MARVEL BUCKLE COMPANY Baltimore, Md.
Filed January 28, 1907. Serial No. 24,948. PUBLISHED MARCH 26, 1907.

62,757. PLUMBAGO OR GRAPHITE FOR LUBRICATING PURPOSES. MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England.
Filed December 18, 1906. Serial No. 24,105. PUBLISHED MARCH 26, 1907.

62,758. CALIPERS AND GAGES. MORSE TWIST DRILL & MACHINE COMPANY, New Bedford, Mass.
Filed June 23, 1906. Serial No. 20,533. PUBLISHED MARCH 26, 1907.

62,759. DELFTWARE. NAAMLOOZE VENNOOTSCHAP PLATEELBAKKERIJ "DELFT," Amsterdam, The Netherlands.
Filed November 28, 1906. Serial No. 23,648. PUBLISHED MARCH 26, 1907.

62,760. PRINTING-INKS. THE QUEEN CITY PRINTING INK CO., Cincinnati, Ohio.
Filed February 2, 1907. Serial No. 25,082. PUBLISHED MARCH 26, 1907.

62,761. PAPER FOR WRITING AND PRINTING, AND ENVELOPS. RAYNOR & PERKINS ENVELOPE COMPANY, New York, N. Y.
Filed October 31, 1905. Serial No. 14,123. PUBLISHED MARCH 26, 1907.

62,762. COOKING UTENSILS OF STONEWARE, EARTHENWARE, AND PORCELAIN. THE ROSEVILLE POTTERY CO., Zanesville, Ohio.
Filed January 28, 1907. Serial No. 24,965. PUBLISHED MARCH 26, 1907.

62,763. SOAP. GEORGE AUGUST SCHMIDT, Chicago, Ill.
Filed October 31, 1906. Serial No. 23,025. PUBLISHED MARCH 26, 1907.

62,764. WATERPROOF COLLARS AND CUFFS. WALLACE G. STARRY, Harrisburg, Pa.
Filed October 10, 1906. Serial No. 22,636. PUBLISHED MARCH 26, 1907.

62,765. METAL BOTTLE-OPENERS. A. W. STEPHENS MANUFACTURING CO., Waltham, Mass.
Filed January 31, 1907. Serial No. 25,034. PUBLISHED MARCH 26, 1907.

62,766. GARDEN RAKES, SHOVELS, HOES, TROWELS, AND SPADES. TROUT HARDWARE COMPANY, Chicago, Ill.
Filed February 14, 1906. Serial No. 17,029. PUBLISHED MARCH 26, 1907.

62,767. CORSETS. BAY STATE CORSET CO., Springfield, Mass.
Filed April 26, 1905. Serial No. 3,086. PUBLISHED NOVEMBER 20, 1906.

62,768. WHISKY. C. P. MOORMAN & COMPANY, INC., Louisville, Ky.
Filed May 11, 1905. Serial No. 5,035. PUBLISHED DECEMBER 12, 1905.

62,769. BUILDING CEMENT AND CONCRETE. C. W. HULL COMPANY, Omaha, Nebr.
Filed November 12, 1906. Serial No. 23,282. PUBLISHED JANUARY 8, 1907.

62,770. WHISKY. THE J. J. DOUGLAS CO., Louisville, Ky.
Filed May 1, 1905. Serial No. 3,731. PUBLISHED FEBRUARY 26, 1906.

62,771. COTTON PIECE GOODS. STEBBINS LAWSON AND SPRAGINS CO., South Boston, Va.
Filed January 24, 1907. Serial No. 24,877. PUBLISHED MARCH 26, 1907.

62,772. RYE WHISKY. THOS. G. CARROLL & SON CO. OF BALTIMORE CITY, Baltimore, Md.
Filed March 29, 1906. Serial No. 18,241. PUBLISHED MARCH 26, 1907.

62,773. CERTAIN JEWELRY. E. M. WEINBERG & CO., New York, N. Y.
Filed July 2, 1906. Serial No. 20,703. PUBLISHED NOVEMBER 6, 1906.

LABELS

REGISTERED MAY 21, 1907.

13,546.—*Title:* "RAINIER BEER." (For Beer.) SEATTLE BREWING & MALTING COMPANY, Georgetown, Wash. Filed April 29, 1907.

13,547.—*Title:* "LIQUID BREAD." (For Beer.) THOMAS RYAN'S CONSUMERS' BREWING CO., Syracuse, N. Y. Filed April 8, 1907.

10,548.—*Title:* "LIQUID BREAD." (For Ale.) THOMAS RYAN'S CONSUMERS' BREWING CO., Syracuse, N. Y. Filed April 29, 1907.

13,549.—*Title:* "HIRES." (For Root-Beer and Root-Beer Extract.) THE CHARLES E. HIRES COMPANY, Philadelphia, Pa. Filed April 29, 1907.

13,550.—*Title:* "GOLD MEDAL." (For Butter.) K. C. ELDRIDGE, Independence, Oreg. Filed April 4, 1907.

13,551.—*Title:* "WEUZTHA B-L HAIR FLUFF." (For a Preparation for Improving and Fluffing the Hair.) A. B. BELLMAN & Co., Chicago, Ill. Filed April 25, 1907.

13,552.—*Title:* "APPETIGENUM." (For a Medical Compound.) J. R. AVELLANAL, Tampa, Fla. Filed April 29, 1907.

13,553.—*Title:* "FRANKLIN'S 44 TONIC." (For a Liquid Tonic for the Cure of Chills, Fever, Colds, and La Grippe.) F. L. GEORGE, Jacksonville, Fla. Filed October 4, 1906.

13,554.—*Title:* "BALMO EMBALMING FLUID." (For an Embalming Fluid.) PORTLAND CHEMICAL CO., Portland, Oreg. Filed February 18, 1907.

13,555.—*Title:* "PECORA CUTICLE ENAMEL." (For Enamel for Exterior and Interior Work.) PECORA PAINT CO. S. BOWEN'S SON SUCCESSOR, Philadelphia, Pa. Filed April 25, 1907.

13,556.—*Title:* "TEDDY'S BEAR HUNT GAME." (For a Game.) SPOTSWOOD D. BOWERS, Bridgeport, Conn. Filed April 24, 1907.

13,557.—*Title:* "NIRVANA." (For Game-Boards.) ELIJAH J. BOND, Charleston, W. Va. Filed April 24, 1907.

13,558.—*Title:* "PAY CAR OVERALLS." (For Overalls.) MEINHARD, SCHAUL AND CO., Savannah, Ga. Filed April 15, 1907.

PRINTS

REGISTERED MAY 21, 1907.

1,986.—*Title:* "KEWANEE WATER SUPPLY CO." (For a Complete Outfit for Furnishing a Water-Supply System.) THE KEWANEE WATER SUPPLY CO., Kewanee, Ill. Filed February 28, 1907.

1,987.—*Title:* "INCENSO." (For Deodorants.) THE INCENSO Co., Minneapolis, Minn. Filed April 26, 1907.

1,988.—*Title:* "INCENSO." (For Deodorants.) THE INCENSO Co., Minneapolis, Minn. Filed April 26, 1907.

1,989.—*Title:* "INCENSO." (For Deodorants.) THE INCENSO Co., Minneapolis, Minn. Filed April 26, 1907.

1,990.—*Title:* "INCENSO." (For Deodorants.) THE INCENSO Co., Minneapolis, Minn. Filed April 26, 1907.

1,991.—*Title:* "INCENSO." (For Deodorants.) THE INCENSO Co., Minneapolis, Minn. Filed April 26, 1907.

1,992.—*Title:* "INCENSO." (For Deodorants.) THE INCENSO Co., Minneapolis, Minn. Filed April 26, 1907.

1,993.—*Title:* "INCENSO." (For Deodorants.) THE INCENSO Co., Minneapolis, Minn. Filed April 26, 1907.

1,994.—*Title:* "INCENSO." (For Deodorants.) THE INCENSO Co., Minneapolis, Minn. Filed April 26, 1907.

1,995.—*Title:* "TOUR BACKS, TOURIST PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Norwood, Ohio. Filed April 26, 1907.

1,996.—*Title:* "WARREN'S WISHBONE PATTERNSETT." (For Collar Supports or Foundations.) THE WARREN FEATHERBONE CO., Three Oaks, Mich. Filed April 29, 1907.

1,997.—*Title:* "$ TWO $ HATS TRULY WARNER." (For Hats.) TRULY WARNER, New York, N. Y. Filed April 27, 1907.

1,998.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed April 27, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE THE DE LONG HOOK & EYE COMPANY.

Decided January 19, 1907.

TRADE-MARK—"DULL BLACK" FOR HOOKS AND EYES—DESCRIPTIVE—NOT REGISTRABLE.

The words "Dull Black" as applied to hooks and eyes are obviously descriptive of the color of these articles and therefore not registrable.

ON APPEAL.

TRADE-MARK FOR HOOKS AND EYES.

Mr. W. C. Strawbridge for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the decision of the Examiner of Trade-Marks refusing to register the words "Dull Black," appearing upon a red oblong background, as a trade-mark for hooks and eyes.

The words "Dull Black" are the distinctive feature of the mark by which the goods would be known, the red oblong background serving merely to bring the words "Dull Black" into prominence.

"Dull Black" as applied to hooks and eyes is obviously descriptive, and therefore not registrable. Any manufacturer of hooks and eyes has the right to enamel his articles any color he may choose and to describe the color so applied. This being a common right, no manufacturer can exclusively hold the right to any particular color against others. (*Ex parte Olive Wheel Company*, C. D., 1898, 629; 84 O. G., 1871; *ex parte Pearson Tobacco Company*, C. D., 1898, 643; 85 O. G., 287.)

The decision of the Examiner of Trade-Marks is affirmed.

EX PARTE DURYEA.

Decided February 1, 1907.

ABANDONED APPLICATION—DELAY NOT UNAVOIDABLE.

Where it is alleged that the case was inadvertently crossed off the attorney's docket, and therefore overlooked until after the period for action had expired, but it does not appear that there was any intention to respond to the last Office action until near the close of the year allowed therefor or that action could not have been taken in the earlier part of this period had it been so desired, *Held* that the delay was not unavoidable and the case is abandoned.

ON PETITION.

DOUBLE-ACTING GAS OR VAPOR ENGINES.

Mr. James R. Townsend for the applicant.

ALLEN, *Commissioner:*

This is a petition that the application be regarded as a pending case, notwithstanding a delay of more than a year in replying to the last Office action.

It is set forth in the affidavit accompanying the petition that the case was inadvertently crossed off the attorney's docket, and therefore overlooked until after the period for action had expired. It appears, however, that the attorney had instructions before July, 1905, to take the action finally taken if necessary, but delayed taking the same after the Office action of October 26, 1905, repeating the Office action of July 26, 1904, for further consultation with the applicant. It does not appear that there was any intention to respond to the Office action of October 26, 1905, until near the close of the year allowed therefor or that action could not have been taken in the earlier part of this period had it been so desired. Under these circumstances the delay cannot be held to have been unavoidable and the case is abandoned.

Petition denied.

IN RE BOOTH BROTHERS.

Decided February 25, 1907.

1. PUBLIC USE—PRIMA FACIE CASE—SHOWING REQUIRED.

Where the single affidavit upon which the protest rests sets forth the conclusions of the affiant that the machine alleged to have been in public use corresponded to a certain claim of the application instead of giving a description of the machine itself, *Held* that the showing made is entirely insufficient to justify the institution of a public-use proceeding.

2. SAME—SAME—SAME.

In a public-use protest the facts should be set forth as fully as possible, so that the Office may pass upon the identity of the machine used with that claimed by the applicant and upon the success of its operation in determining whether proceedings shall be instituted. Corroborating affidavits should also be filed if other witnesses are to be relied upon. Altogether, the protestants should present their *prima facie* case as well as may be done by affidavits so as to give the applicant opportunity to intelligently oppose the institution of the proceeding and the consequent delay in the prosecution of his application.

Messrs. Bacon & Milans for the protestants.

ALLEN, *Commissioner:*

This is a protest against the issue of a patent upon a certain alleged invention alleging the bar of two years' public use or sale.

The protest was once dismissed because unaccompanied by an offer to produce witnesses and bear expenses. It has been reconsidered, however, in connection with the offer contained in the attorneys' letter of February 15, 1907, to produce witnesses and bear the expenses of taking their testimony.

It is found that the showing made is entirely insufficient to justify the institution of a proceeding which may involve considerable delay and some expense to

the successful party in the interference. The single affidavit upon which the protest rests sets forth the conclusions of the affiant that the machine alleged to have been in public use corresponded to a certain claim of the Hadaway application instead of giving a description of the machine itself. The facts should be set forth as fully as possible, so that the Office may pass upon the identity of the machine used with that claimed by the applicant and upon the success of its operation in determining whether proceedings shall be instituted. Corroborating affidavits should also be filed if other witnesses are to be relied upon. Altogether, the protestants should present their *prima facie* case as well as may be done by affidavits so as to give the applicant opportunity to intelligently oppose the institution of the proceeding and the consequent delay in the prosecution of his application.

The protest is again dismissed.

McCANNA v. MORRIS.

Decided April 4, 1907.

INTERFERENCE—MOTION TO DISSOLVE—DEFINITENESS.

A motion to dissolve on the ground of non-patentability which states that a given count "does not involve patentable invention over each of the following Letters Patent" after which certain patents are specified is not open to the objection of indefiniteness.

APPEAL on motion.

LUBRICATORS.

Messrs. Coburn & McRoberts for McCanna.

Mr. Jesse B. Fay for Morris.

ALLEN, *Commissioner:*

This is an appeal by Morris from a decision of the Examiner of Interferences transmitting a motion to dissolve the interference.

Appellant assigns as reasons for appeal three errors in the decision of the Examiner of Interferences, the first two of which relate to the delay in presenting the motion to dissolve, the third relating to alleged indefiniteness of the motion.

No reason is seen for disturbing the decision of the Examiner of Interferences on the sufficiency of the showing in excuse for the delay.

It is urged that the motion is indefinite, because it does not specify with sufficient particularity the reasons or grounds for the allegation of non-patentability of the issue. In connection with count 1 the motion states that this count "does not involve patentable invention over each of the following Letters Patent" after which certain patents are specified. Appellant calls attention to this part of the motion and contends that it does not comply with the requirements of *Heyne et al. v. De Vilbiss*, (125 O. G., 669.) In this decision, referring to the citation of a number of references, it was said:

> If the moving party is of the opinion that each of the references is a substantial anticipation of each of the claims, it should be so stated.

The part of the motion to which attention is directed satisfies this requirement and seems not to be violative of any other requirement of that decision.

The decision of the Examiner of Interferences is affirmed.

EX PARTE GOLDEN & CO.

Decided April 26, 1907.

1. TRADE-MARK—ANTICIPATION—CONSIDERATION OF THE MARK AS A WHOLE.

The right to registration of a mark in view of earlier registrations must be determined from consideration of the entire mark shown upon the application drawing. It is the mark shown which is registered and not any supposed distinguishing feature thereof. However, in determining the substantial identity or non-identity of two marks it is obviously necessary to consider the comparative prominence in each mark of those features which it has in common with the other mark and those features in which it differs therefrom.

2. SAME—SAME—SAME—ELK'S HEAD, ETC.

Where in an interference involving marks having elks' heads prominently displayed thereon the decision was adverse to the appellant, *Held* that registration of the appellant's mark, which comprises the picture of an elk's head standing out prominently thereon and having in addition thereto the inscription "Elk Grove Creamery, Manufacturers of finest pasteurized Elgin Butter" presented in various styles of lettering and set off in circles and scrolls with other minor ornamentation, should be refused.

ON APPEAL.

TRADE-MARK FOR BUTTER.

Mr. E. G. Siggers and *Mr. J. H. Siggers* for the applicants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing trade-mark registration upon the above-entitled application.

This application was recently involved in an interference proceeding which terminated in a decision that neither party thereto was entitled to any exclusive right in the mark in issue or to the registration thereof. (*Golden & Company v. Heitz & Company*, 125 O. G., 989.) It is not understood that the applicants question here the correctness of that decision, and it is clear that they have no right to do so. Their contention, as understood, is that they are entitled to register the mark shown in their application, notwithstanding the prior adoption of marks by others and the rights of others to use marks established in the interference, and this by reason of the differences between the applicants' mark and those marks which were first adopted by others or which others have acquired the right to use. It is this question that will be considered.

Reference may be made first, however, to the exception taken by the applicants to the Examiner's selection of a portion of their mark as the distinguishing feature in the rejection thereof on the interference record and to their contention that the registrability of the mark must be determined from consideration thereof as an entirety. The applicants are right in their contention that the right to registration must be determined from consideration of the entire mark shown upon the application drawing. It is the mark shown which is registered and not any supposed distinguishing feature thereof. Nevertheless the difference between the applicants and the Examiner upon this point appears to be a mere matter of expression and point of view and not one of substance. In determining the substantial identity or non-identity of two marks it is obviously necessary to consider the comparative prominence in each mark of those features which it has in common with the other mark and those features in which it differs therefrom. Such considera-

tion is of the mark as a whole and is presumably all that is meant by the Examiner of Trade-Marks in his reference to distinguishing characteristics.

Considering the applicants' mark as a whole, it is found that the same has the picture of an elk's head standing out prominently thereon and in addition thereto the following inscription:

ELK GROVE CREAMERY
MANUFACTURERS OF
FINEST
PASTEURIZED
ELGIN BUTTER.

This inscription is presented in various styles of lettering and set off in circles and scrolls with other minor ornamentation.

The marks of Compton Brothers and of Heitz & Company, upon which the interference proceeding was decided adversely to the applicants, have elks' heads prominently displayed thereon. It is believed that the mark of the applicants taken in its entirety so nearly resembles the marks of Compton Brothers and Heitz & Company established in the interference, similarly considered, as to be likely to cause confusion or mistake in the mind of the public or to deceive purchasers. Under such circumstances registration must be refused under section 5 of the Trade-Mark Act.

The action of the Examiner of Trade-Marks refusing registration is affirmed.

PIONEER SUSPENDER COMPANY v. LEWIS OPPENHEIMER'S SONS.

Decided April 27, 1907.

1. TRADE-MARKS—REGISTRATION FOR CARTONS—INVALID.

Where a mark is registered for cartons, but the actual trade which the mark represents is in merchandise contained in the cartons, *Held* that the registration is invalid.

2. SAME—MARK NOT USED ON GOODS—CANCELLATION.

Where certain words were registered as a trade-mark for merchandise of certain characteristics and the words as used by the registrant in trade represented goods of different characteristics, *Held* that the registration should be canceled.

3. SAME—SAME—SAME—SECTION 13 ACT OF 1905 CONSTRUED.

Held that the right to use referred to in the first ground of cancellation set forth in section 13 of the Trade-Mark Act means a right of exclusive use and that the use referred to in the second ground is a use of the mark as a trade-mark for the goods mentioned in the registration.

ON APPEAL.

TRADE-MARK FOR PAPER BOXES.

Mr. Melville Church and *Mr. John P. Croasdale* for Pioneer Suspender Company.

Messrs. Wiedersheim & Fairbanks for Lewis Oppenheimer's Sons.

ALLEN, *Commissioner:*

This is an appeal by Lewis Oppenheimer's Sons from the decision of the Examiner of Interferences sustaining the application for the cancellation of their trade-mark registration 47,163, brought by the Pioneer Suspender Company.

The registration of the Lewis Oppenheimer's Sons is of the words "Combination Sets" for paper boxes. It is stated in the registrants' brief (p. 1) that—

> The trade-mark in question is "Combination Set" as applied to boxes. The proofs establish that Lewis Oppenheimer's Sons first, so far as the record goes, used the words "Combination Set" or "Combination Sets" in connection with boxes which were put out to the trade containing suspenders, garters and arm-bands. So far as the record shows and as Oppenheimers believe, they also first advertised these words and made them valuable, both in connection with the boxes themselves and with the boxes as containing the contents mentioned.
>
> Lewis Oppenheimer's Sons have sold boxes independently of the contents though always with the expectation or intention that suspenders, garters and arm-bands were to be placed in the boxes. The number of such empty boxes was very small. (Stipulation paragraph 4A.)

It was testified on behalf of the Pioneer Suspender Company that this company has been selling since August, 1905, a combination of suspenders, garters, and arm-bands and that one of its customers was Marshall E. Smith & Brother, and the following letter to the latter firm was introduced in evidence:

> Lewis Oppenheimer's Sons,
> "Eagle Make" Suspenders, Garters and Belts,
> 627 Market St. and 618 Commerce street.
>
> New York,
> Chicago,
> Pittsburg,
> St. Louis.
>
> PHILADELPHIA, *December 18, 1906.*
>
> Messrs. MARSHALL E. SMITH & BRO.,
> No. 25 S. Eighth St., Philadelphia, Pa.
>
> GENTLEMEN: It has come to our notice that you are offering for sale garters, arm-bands and suspenders packing in a single box, as Combination Sets. We beg to inform you that this is a registered trade-mark of ours, and would ask you to kindly not offer these goods under this name.
>
> Respectfully yours,
> LEWIS OPPENHEIMER'S SONS.
>
> Dlc. No. 1.

It is clear from the above admissions, testimony, and exhibit that the registration should be canceled. The trade-mark right of the registrants, if any might be predicated upon their use of the words "Combination Sets," was in connection with the sets of suspenders, garters, and arm-bands and not in connection with paper boxes. The registration of the term as a mark for boxes looks very much like an attempt to escape the objection of descriptiveness which is inevitably suggested when the words are considered in connection with the goods for which they were evidently in fact adopted.

The registrants contend that none of the conditions under which cancellation is authorized by the statute are present in this case. Cancelation is authorized by section 13 of the Trade-Mark Act if it appear upon application therefor by any person deeming himself injured by the registration—

(1) That the registrant was not entitled to the use of the mark at the date of his application for registration thereof, or

(2) That the mark was not used by the registrant, or

(3) That it has been abandoned.

It is believed that cancelation is authorized in this case under both the first and second of these conditions. The right to use, referred to in the first of the above conditions, is believed to mean a right of exclusive use. The use referred to in the second condition is clearly a use of the mark as a trade-mark for the goods mentioned in the registration.

The decision of the Examiner of Interferences is believed to be right and is affirmed.

BEECH HILL DISTILLING COMPANY v. BROWN-FORMAN COMPANY.

Decided February 6, 1907.

1. TRADE-MARKS—"TEN-YEAR" PROVISO—EXCLUSIVE USE BUT NOT NECESSARILY SOLE USE REQUIRED.

The word "Exclusive" in the ten-year proviso of section 5 of the Trade-Mark Act is believed to necessarily imply the right to exclude. Provided there is a clear right to exclude, however

it is not thought that there must necessarily have been sole use; otherwise use by another, no matter how fraudulent or trivial, would defeat the right to registration under this provision of the statute.

2. SAME—SAME—SAME.

Where it appears that each party to this interference independently originated the mark and neither party had knowledge of the use of the mark by the other party until nearly two years after the Beech Hill Distilling Company began using the mark and that then the Brown-Forman Company made no objection, but acquiesced in the use of the mark by the former company, *Held* that these circumstances do not show such exclusive use on the part of the Brown-Forman Company as to entitle it to register the mark in issue under the ten-year proviso of section 5 of the Trade-Mark Act.

ON PRIORITY.

TRADE-MARK FOR WHISKY.

Messrs. Mason, Fenwick & Lawrence for Beech Hill Distilling Company.

Mr. Arthur E. Wallace for Brown-Forman Company.

MOORE, *Assistant Commissioner:*

This is an appeal by Brown-Forman Company from the decision of the Examiner of Interferences that it is not entitled to register the trade-mark forming the issue of this interference. Said issue consists of the words "Old Tucker" or "J. C. Tucker" as a trade-mark for whisky.

The mark of the Beech Hill Distilling Company, the junior party, is presented for registration as a technical trade-mark. The words "Old Tucker," arranged in a fanciful scroll, are presented by Brown-Forman Company for registration as a non-technical trade-mark under the ten-year proviso of section 5 of the act of February 20, 1905.

The Examiner of Interferences found that the trade-mark was adopted and used by the Beech Hill Distilling Company as early as January 15, 1902, and that its use since that date has been continuous. He also found that the trade-mark was adopted and has been continuously used by Brown-Forman and Company and their successor, the Brown-Forman Company, since at least as early as October 21, 1895; also that the Brown-Forman Company had knowledge and acquiesced in the use of the mark "J. C. Tucker" by the Beech Hill Distilling Company since December 1, 1903. The Examiner of Interferences held that these findings warranted the conclusion, under the authority of section 7 of the Trade-Mark Act, that neither party is entitled to register the mark—the Brown-Forman Company because it has not had the exclusive use of the trade-mark in issue for ten years next preceding the passage of the Trade-Mark Act of 1905 and the Beech Hill Distilling Company for the reason that it was not the first to adopt and use the mark.

The Beech Hill Distilling Company took no appeal from this decision, and on December 17, 1906, filed a formal withdrawal of its application involved in this interference.

The Brown-Forman Company, however, appealed from said decision. I am of the opinion that the Examiner of Interferences was right in refusing its application for registration.

The only question involved in the case is whether the evidence shows that the Brown-Forman Company had the exclusive use of the mark for ten years next preceding the passage of the Trade-Mark Act of February 20, 1905.

There is no dispute in this case on the question of priority of adoption and use. The Beech Hill Company does not claim to have used the mark prior to January, 1902. The Examiner of Interferences found that the Brown-Forman Company and its predecessor had used the mark "since at least as early as October 21, 1895." He apparently fixed on this date because the witness Anawalt states that he has been connected with said companies since October 21, 1895, and that the mark has been in use by them since that date, but how long prior to said date he does not know. (Q. 7.) This date is early enough to prove prior use by the Brown-Forman Company, but it does not show use for ten years prior to the statute of February 20, 1905. In my opinion, however, the testimony of Brown, the orders for Tucker Rye, (Exhibits G, H, and I,) and the testimony of Barret to the printing of "Old Tucker Rye labels" for the Brown-Forman Company in 1892 show the adoption and use by this company of the mark in 1892.

It remains to consider whether this use was such exclusive use within the meaning of the statute as to entitle the Brown-Forman Company to registration.

The word "Exclusive" is believed to necessarily imply the right to exclude. As stated in the decision in *ex parte Cuhn, Belt & Company*. (118 O. G., 1,936):

The word "Exclusive" in the above-quoted proviso is particularly significant. It necessarily implies the right of the applicant to exclude others from using the mark during the period mentioned, and not merely that he was the *sole* user during that period. He might be the only actual user and at the same time have no right to prevent others from entering the field and using the mark, and in such case he would not have "exclusive" use.

Providing there is a clear right to exclude, it is not thought that there must necessarily have been sole use. Otherwise use by another, no matter how fraudulent or trivial, would defeat the right to registration under this provision of the statute.

Brown, the president of the Brown-Forman Company, testifies that he first learned of the use of the trade-mark "J. C. Tucker" by the Beech Hill Distilling Company on December 1, 1903. (X-Q. 25.) He states that he wrote to this company about the matter and had a reply to the effect that some one in its employ was named J. C. Tucker, that he has no recollection of replying thereto, nor does he find any indication of having done so in the records of his office. (Q. 44, X-Q. 31.) He admits on cross-examination that since December, 1903, he has "made no further objection to the Beech Hill Distilling Company to the use by them of their brand J. C. Tucker" (X-Q. 34) and that as president of the Brown-Forman Company he would be the proper one to make objection. (X-Q. 35.)

Ullman, of the Beech Hill Distilling Company, testifies that in 1902 he was the sole owner of the Beech Hill Distilling Company and that he originated the brand "J. C. Tucker." (Q. 7.) He further states on cross-examination concerning the Brown-Forman Company:

Q. 3. How long have you known of their use of the brand "Old Tucker?"
A. I think it is about two years.
Q. 4. Did you not know or hear of their using their name "Old Tucker" as a trade-mark for whiskies prior to the date of your adoption of the "J. C. Tucker" brand?
A. No, sir.

The evidence shows that the Beech Hill Distilling Company commenced to use the "J. C. Tucker" mark in January, 1902. So far as the evidence discloses

it appears that each party to this interference independently originated the mark and that neither party had knowledge of the use of the mark by the other party until December, 1903, nearly two years after the Beech Hill Distilling Company began using the mark. It also appears that following the letter of inquiry of December, 1903, the Brown-Forman Company has made no objection to the use of the mark by the Beech Hill Distilling Company, but, on the contrary, has acquiesced in such use. These circumstances do not, in my opinion, show such exclusive use on the part of the Brown-Forman Company as to entitle it to register the mark in issue under the ten-year proviso of section 5 of the Trade-Mark Act.

The decision of the Examiner of Interferences is affirmed.

EX PARTE CRESCENT TYPEWRITER SUPPLY COMPANY.

Decided March 11, 1907.

1. TRADE-MARKS—GEOGRAPHICAL—"ORIENT."

The word "Orient" as applied to ink-ribbons and carbon-paper is primarily geographical in significance, and therefore not registrable.

2. SAME—SAME—ASSOCIATION WITH ARBITRARY SYMBOL—"ORIENT" WITHIN A WREATH.

The fact that the geographical word "Orient" is printed in a certain manner and inclosed within a wreath does not make the word registrable as a trade-mark.

ON APPEAL.

TRADE-MARK FOR INK-RIBBONS AND CARBON-PAPER.

Mr. Guy Cunningham for the applicant.

MOORE, *Assistant Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register a mark comprising the word "Orient" inclosed in a wreath as a trade-mark for ink-ribbons and carbon-paper upon the ground that the predominating feature "Orient" is merely geographical in significance.

The objection of the Examiner of Trade-Marks is, in my opinion, well founded.

The word "Orient" as applied to ink-ribbons and carbon-paper clearly signifies ribbons or paper treated with an ink made in the Orient, such as "India" ink, and for the reasons stated in the decision in *ex parte Hopkins*, (125 O. G., 670,) which has recently been affirmed by the Court of Appeals of the District of Columbia, it is held that the word "Orient" is merely geographical in significance, and therefore not registrable as a trade-mark.

It is, however, contended that the mark presented does not include the word "Orient," but merely the letters "OR" and "NT" placed at the side of "E" and "I" in monogram. This contention is clearly refuted by the fact that the applicant described the trade-mark in the statement forming part of his original application as follows:

The trade-mark consists of the word "Orient" inclosed in a wreath, the letters 'e' and 'i' of the word 'Orient' being printed as a monogram.

The fact that the applicant has arranged the letters which spell the word "Orient" in a certain manner does not alter the significance of the word or render it capable of exclusive appropriation; nor does the fact that it is associated with a wreath, which is in itself an arbitrary feature, confer registrability upon this term. In their decision in *ex parte Hopkins, supra*, the court disregarded an arbitrary "fantastic winged figure" which was associated with the words "Oriental Cream" and denied the registrability of the mark in view of the descriptive character of the predominating words.

In *ex parte Weil* (C. D. 1898, 612; 83 O. G., 1882) Commissioner Duell, holding "Yucatan" to be a merely geographical term, said:

As "Yucatan" taken by itself is not registrable, I do not think it is made so by placing it within a square figure.

In this case the wreath does not, in my opinion, form a distinguishing feature of the mark, but serves merely to embellish the inclosed name "Orient," by which the merchandise will undoubtedly be known.

The decision of the Examiner of Trade-Marks is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

IN RE NATIONAL PHONOGRAPH COMPANY.

Decided February 18, 1907.

1. TRADE-MARK—"STANDARD" DESCRIPTIVE—NOT REGISTRABLE. *Held* that the word "Standard" as applied to phonographs is descriptive and therefore not registrable.

2. SAME—SAME—IMMATERIAL WHETHER TRULY OR FALSELY DESCRIPTIVE.

The applicant's claim to the use of "Standard" as a trade-mark is in nowise strengthened, because the word is applied only to machines of inferior design which are not in any sense standard. The word cannot be appropriated as a trade-mark whether it is truly descriptive or falsely descriptive.

Mr. Frank L. Dyer for the National Phonograph Company.

Mr. Fairfax Bayard for the Commissioner of Patents.

MCCOMAS, *J.:*

The Examiner of Trade-Marks refused to register the word "Standard" as a trade-mark for phonographs upon the ground that the mark is descriptive. The Commissioner of Patents affirmed this decision and the National Phonograph Company thereupon appealed to this court. The appellant claims to have continuously used this word as a trade-mark in its business of producing and selling phonographs, since April, 1898.

The act of 1905, chapter 84, section 5, only declared the accepted law of trade-marks when it prohibited the registration of marks which consists—

merely in words or devices which are descriptive of the goods with which they are used, or of the character of such goods.

The general proposition was well established that words merely descriptive of the character, qualities or composition of an article or of the place where it was manufactured or produced, could not be monopolized as a trade-mark. (*Brown Chemical Co.* v. *Meyer*, 139 U. S., 540; *Canal Company* v. *Clark*, 13 Wall., 311; *Manufacturing Company* v. *Trainer*, 101 U. S., 51.)

The adjective "Standard" upon varying applications for its registration as a trade-mark, was held not to be a lawful trade-mark by Commissioners Payne, Doolittle, Fisher and by Commissioner Duell, afterward Justice Duell of this court. The exclusive right to the use of such a word as a trade-mark on a particular article cannot be acquired by the first appropriation of it by one

person because other persons who may produce and sell a similar article have equal right in describing it to employ any appropriate term, including such word.

No one has the right to appropriate to his exclusive use a sign or symbol which from the nature of the fact it is used to signify, others may have an equal right to employ for the same reason. It is because of this principle that a trade-mark cannot be acquired by the adoption of a word which is merely descriptive of the quality, ingredients or characteristics of a commodity. (*Manufacturing Co.* v. *Spear*, 2 Sandf., 599; *Medicine Company* v. *Hilton*, 60 Fed. Rep., 756.)

Chief Justice Shepard, speaking for this court, concluded that the words "Circular Loom" were descriptive of one of the characteristics of the article to which they were applied as a trade-mark, at the present term, in the case, *in re American Circular Loom Company*. Judge Lurton held that "Standard" is a descriptive word and in the particular case before him, stood for a class of computing-scales and, of course, in that connection, it was aptly descriptive of a standard of weights. (*Computing Scale Co.* v. *Standard Computing Scale Co.*, 118 Fed. Rep., 971.)

In any collocation, "Standard" in its common meanings, signifies authority, a type, excellence, fixed or permanent value, a test or rule, or measure of quality. Other makers of phonographs should not be deprived of its use.

We agree with the Commissioner that the applicant's claim to use "Standard" as a trade-mark is in nowise strengthened because the appelant contends that it only applies the word to machines of inferior design and which are not in any sense standard. The word cannot be used whether it is truly descriptive or falsely descriptive.

It would be unprofitable to discuss the numerous cases cited by the appelant's counsel in which other words were registered as trade-marks, since they cannot help us to determine whether "Standard" is a descriptive word. In the instances cited where the words are descriptive, we think such words were improperly held valid as trade-marks, and in the cases where they were not descriptive, such instances do not support the applicant's contention here. The argument in *Williams* v. *Mitchell*, (106 Fed. Rep., 168,) that a word may be a descriptive word and yet used in a non-descriptive sense is not convincing, for the Commissioner should prohibit the registration of descriptive words, and the affidavits of the president of the phonograph company and two other persons that the word "Standard" does not indicate to their minds or to the minds of other persons in the phonograph trade a phonograph of any particular type, quality or character is not convincing, if indeed relevant here. The three affiants can testify only concerning the impression the word "standard" makes upon their minds. This applicant has no right to appropriate the word "standard" which others may desire to employ with equal sincerity. The applicant should not have the exclusive right to describe its product as "Standard Phonographs" and another producer should have an equal right to employ the same word to describe its similar product. Many manufacturers would be tempted to use "Standard" to indicate the quality or grade or uniformity of the goods they produce.

The predecessors of the Commissioner of Patents, who regarded the word "Standard" as a descriptive word, do not appear to have erred and we are convinced that the present Commissioner has not committed error in this instance and his decision is affirmed. The clerk of this court will certify this opinion and decision to the Commissioner of Patents in accordance with law.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 18, 1907.

Charles H. Palmer, Jr., his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of The Columbia Carriage Company, of Hamilton, Ohio, for registration of a trade-mark and a trade-mark registered to Charles H. Palmer, Jr., of Amesbury, Mass., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Charles H. Palmer, Jr., and also the copy mailed to his attorney of record, together with the letter setting times for taking testimony, having been returned undelivered, notice is hereby given to the said Charles H. Palmer, Jr., his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 6, 1907.

The Ohio Chemical Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The Norwich Pharmacal Company, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Ohio Chemical Company, of Columbus, Ohio. The notice of said declaration mailed by the Patent Office in the usual manner to the said Ohio Chemical Company at its known address, 573 North High street, Columbus, Ohio, has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Ohio Chemical Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 30, 1907.

McConnell, Clancey & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of H. F. Webb Company, of Portland, Me., for registration of a trade-mark and a trade-mark registered to McConnell, Clancey & Company, of Chillicothe, Ohio, and the notice of declaration mailed by the Patent Office in the usual manner to the known address of McConnell, Clancey & Company has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said McConnell, Clancey & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 23, 1907.

Hardgrove & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Robert Harris & Brother, of Reidsville, N. C., for registration of a trade-mark and a trade-mark registered to Hardgrove & Company, of Richmond, Va. It appears from the record of the case that the firm of Hardgrove & Company is no longer in existence, and the attorneys for said firm can also not be found.

Notice is therefore given to the said Hardgrove & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Trade-Marks	173—No.	62,774 to No. 62,946, inclusive.
Labels	17—No.	13,559 to No. 13,575, inclusive.
Prints	9—No.	1,999 to No. 2,007, inclusive.
Reissues	1—No.	12,656.
Total issue	945	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	1	.....	New Hampshire	3	1
Alaska, District of	.....	.....	New Jersey	33	10
Arizona Territory	2	.....	New Mexico Ter't'y	.....	.....
Arkansas	3	.....	New York	125	51
California	29	9	North Carolina	3	1
Colorado	9	.....	North Dakota	2	.....
Connecticut	18	3	Ohio	40	22
District of Columbia	5	.....	Oklahoma Territ'y	2	.....
Florida	1	.....	Oregon	4	.....
Georgia	6	2	Pennsylvania	65	9
Hawaii Territory	1	.....	Philippine Islands	.....	.....
Idaho	5	.....	Porto Rico	.....	.....
Illinois	60	15	Rhode Island	3	1
Indian Territory	1	.....	South Carolina	2	3
Indiana	15	2	South Dakota	1	.....
Iowa	11	.....	Tennessee	9	.....
Kansas	15	3	Texas	12	1
Kentucky	5	1	Utah	3	.....
Louisiana	2	3	Vermont	4	.....
Maine	3	2	Virginia	4	3
Maryland	16	1	Washington	9	1
Massachusetts	48	6	West Virginia	5	5
Michigan	30	3	Wisconsin	8	8
Minnesota	14	4	Wyoming	.....	.....
Mississippi	3	.....	U. S. Army	.....	.....
Missouri	22	16	U. S. Navy	1	.....
Montana	2	2			
Nebraska	11	.....	Total to citizens of the United States	686	188
Nevada	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Algeria	1	.....	Natal	.....	.....
Austria-Hungary	1	.....	Netherlands	.....	.....
Belgium	1	.....	Newfoundland	.....	.....
Brazil	.....	.....	New South Wales	1	.....
British West Indies	.....	.....	New Zealand	1	.....
Canada	13	1	Norway	1	.....
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	.....	.....
Cuba	.....	.....	Scotland	1	1
Denmark	.....	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	14	4	Sweden	1	.....
France	3	1	Switzerland	.....	.....
Germany	17	4	Transvaal, South Africa	1	.....
Haiti	.....	.....	Victoria	.....	.....
Ireland	.....	.....	Western Australia	.....	.....
Italy	3	.....			
Japan	.....	.....	Total to citizens of foreign countries	59	11
Java	.....	.....			
Mexico	.....	.....			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 16, 1907.

Charles H. Palmer, Jr., his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of The Columbia Carriage Company, of Hamilton, Ohio, for registration of a trade-mark and a trade-mark registered to Charles H. Palmer, Jr., of Amesbury, Mass., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Charles H. Palmer, Jr., and also the copy mailed to his attorney of record, together with the letter setting times for taking testimony, having been returned undelivered, notice is hereby given to the said Charles H. Palmer, Jr., his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

Attorneys.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 23, 1907.

This Office has been informed by the Secretary of the Interior that Frank M. White, of Petersburg, Ind., was disbarred May 10, 1907, from practicing before the Department or any Bureau thereof.

C. M. IRELAN,
Chief Clerk.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 21, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	May 13	Apr. 30	178
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 11	Apr. 22	125
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May 8	Apr. 22	296
324	XII. Elevators. Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	May 8	Apr. 22	301
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	May 7	Apr. 22	207
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 7	Apr. 22	243
327	XVIII. Steam-Engineering, etc ...	May 7	Apr. 10	189
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	May 6	Apr. 23	222
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 6	Apr. 20	122
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 6	Mar. 29	565
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 4	May 17	360
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	May 2	Apr. 1	377
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 1	May 3	243
109	XVI. Telegraphy and Telephony..	May 1	Apr. 22	213
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 1	Apr. 15	277
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr. 29	Apr. 10	236
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	Apr. 27	Apr. 13	248
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	Apr. 26	Apr. 19	310
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	Apr. 26	Mar. 25	265
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	Apr. 25	Apr. 24	409
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	Apr. 23	Apr. 10	274
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworkers.	Apr. 23	Mar. 11	374
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 22	Apr. 22	348
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Apr. 20	Apr. 12	488

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	Apr. 18	Mar. 28	411
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr 18	Mar. 27	426
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 16	Mar. 26	376
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 15	Apr. 15	187
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Apr. 13	Apr. 3	446
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 11	Mar. 22	207
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 8	Apr. 1	416
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Apr. 8	Mar. 20	452
332	X. Carriages and Wagons.....	Apr 6	Apr. 6	606
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Apr. 6	Mar. 21	360
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Apr. 3	Mar 25	465
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 3	Mar. 13	727
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Apr. 1	Apr. 1	312
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Mar. 28	Mar. 25	640
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Mar. 27	Mar. 2	420
	Total number of applications awaiting action			13,232
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	May 18	May 13	193
	Designs	May 16	May 9	18
	Labels and Prints	.....	.....	.....

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 30, 1907.

McConnell, Clancey & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of H. F. Webb Company, of Portland, Me., for registration of a trade-mark and a trade-mark registered to McConnell, Clancey & Company, of Chillicothe, Ohio, and the notice of declaration mailed by the Patent Office in the usual manner to the known address of McConnell, Clancey & Company has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said McConnell, Clancey & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

PATENTS

GRANTED MAY 28, 1907.

854,709. ELECTRICAL MEASURING INSTRUMENT. JOSEPH ABRAHAMSON, Detroit, Mich. Filed Aug. 27, 1906. Serial No. 332,189.



Claim.—1. In an electrical measuring instrument, the combination with the casing, its slotted dial and scale thereon, of a coil in the casing forming part of a conductor adapted to convey the current to be measured through the coil, said coil being flattened on opposite sides and formed of a ribbon like conductor of large capacity the individual turns of which are separated by air spaces, a shaft pivoted in the flattened sides of the coil an armature and a balanced index hand upon the shaft and a permanent magnet secured upon the coil and coöperating with the armature.

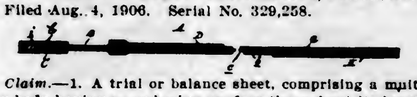
2. In an electrical measuring instrument, the combination with the casing, its slotted dial and the scale thereon, of a coil in the casing forming part of a conductor adapted to convey the current to be measured through the coil, said coil being flattened upon opposite sides and formed of a ribbon like conductor of large capacity the individual turns of which are separated by air spaces, an armature pivotally supported in the coil and carrying a balanced index hand, and a permanent magnet pivotally adjustably secured upon the coil and coöperating with the armature.

3. In an electrical measuring instrument, the combination with an inclosing casing, the slotted dial and scale thereon, of a conductor comprising a fixed contact stud, a coil and an insulated flexible conductor carrying a contact stud at the outer end thereof, the fixed contact stud and the flexible conductor secured in the wall of the casing and extending externally and internally thereof and the coil connected to the inner ends thereof and supported by the fixed contact stud within the casing free and independent thereof, said coil formed of a rigid conductor and supporting the operating parts of the instrument free and independent of the casing.

4. In an electrical measuring instrument, the combination of an inclosing casing, a coil formed of a rigid conductor the individual turns of which are separated from each other by air spaces, a contact stud secured in the wall of the casing and projecting inwardly thereof a limited distance, the coil being secured to its inner end and supported thereby free and independently of the casing, and a flexible insulated conductor passing through an aperture in the wall of the casing and having its inner end secured to the coil and its outer end provided with a contact stud.

5. In an electrical measuring instrument, the combination of an inclosing casing, a coil formed of a rigid conductor the individual turns of which are separated from each other by air spaces, a contact stud secured in the wall of the casing and projecting inwardly thereof a limited distance—the coil being secured thereto and supported thereby free and independently of the casing, a flexible conductor passing through the wall of the casing and having its inner end secured to the coil and its outer end provided with a contact stud, and devices actuated by the passage of a current through the coil, said devices wholly supported by the coil.

854,710. LEDGER-LEAF. JAMES BARKER, Detroit, Mich. Filed Aug. 4, 1906. Serial No. 329,258.



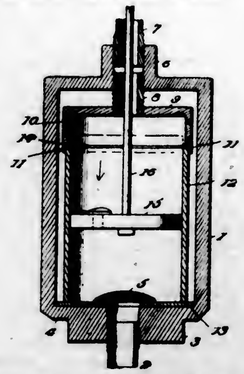
Claim.—1. A trial or balance sheet, comprising a multiply body having an unbroken surface throughout its length and breadth, strips or sections having an erasing surface and of less width than and arranged on the opposite sides of the body at the outer and inner portions thereof, and fastening means connecting the strips with the outer body plies.

2. A trial or balance sheet, comprising a tripleply body having an unbroken surface throughout its length and breadth, transparent strips having an erasing surface and of less width than and arranged upon the opposite sides of the body at the outer and inner portions thereof, and fastening means for the strips extending through the latter, and the outer plies only of the body.

3. A trial or balance sheet, comprising a three-ply body having an unbroken surface throughout its length and breadth, ruled on its opposite faces as described, and complementary transparent celluloid strips arranged upon the opposite faces of the body at the outer and inner portions thereof and stitched marginally to the outer plies only.

4. A trial or balance sheet, comprising a multiply body of uniform thickness and strips or sections having an erasing surface and secured upon the opposite sides of the body and at the outer and inner portions thereof.

854,711. PUMP. CHARLES BARTHOLOMEW, Newark, Ohio. Filed July 2, 1906. Serial No. 324,488.

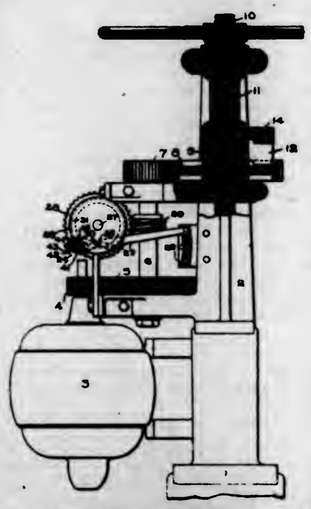


Claim.—1. A pump, comprising a frame provided with a base plate, a cylinder resting in a detachable manner on said base plate, a cap for said cylinder, said cap being provided with a downwardly and inwardly facing shoulder

at its lower edge adapted to clamp upon the upper edge of the cylinder, an exteriorly threaded sleeve supported in the top of the frame and upon which said cap is mounted in screw threaded engagement whereby the cap may be raised and lowered upon the sleeve out of and into engagement with the upper edge of the cylinder, and a piston and rod in said cylinder.

2. A pump, comprising a frame provided with a base plate arranged for connection to an induction pipe and provided with a valve controlling the passage of water from said induction pipe, a cylinder adapted to rest in a detachable manner upon said base plate within the frame, a downwardly facing cap provided with a shoulder at its lower edge adapted to bind upon the upper edge of said cylinder whereby to clamp it within the frame, an exteriorly threaded sleeve held in screw threaded engagement in the upper end of the frame, said cap being mounted with screw threaded engagement on the lower end of said sleeve whereby the cap may be raised and lowered for the purpose specified, said cap being provided in its exterior with holes for the reception of an operating rod, and a piston and rod adapted to operate in said cylinder.

854,712. CONTROLLING MOTORS AT A DISTANCE. NORMAN C. BASSETT, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Mar. 24, 1902. Renewed Mar. 23, 1903. Serial No. 149,207.



Claim.—1. In valve-controlling apparatus, the combination with the valve-spindle, of a rotatable nut for operating said spindle and provided with a lug, an arm freely rotatable on the same axis as the nut and adapted to engage with said lug, a loose gear-wheel concentric with the axis of the nut and carrying a lug to engage with said arm, and an electric motor geared to said gear-wheel.

2. In valve-controlling apparatus, the combination with the valve, of an electric motor, a rheostat in circuit with said motor, a switch-arm for operating said rheostat, and a wheel geared with the motor and having a cam-groove to actuate said switch-arm at predetermined times.

3. In valve-controlling apparatus, the combination with the valve, of an electric motor, a rheostat in circuit therewith, a switch-arm for operating the rheostat, a wheel geared with the motor and having a concentric groove with an offset portion at one side of the wheel, said arm engaging with said groove.

4. The combination with a movable body requiring the application of more energy to start than to continue its movement, of an electric motor for moving said body, and automatic means for giving said motor an increased current before it starts said body and for subsequently cutting down said current to slow down the motor.

5. In valve-controlling apparatus, the combination with the valve, of an electric motor, and automatic means for giving said motor an increased current before it starts the valve and for cutting down said current to slow the motor down.

6. In valve-controlling apparatus, the combination with the valve, of an electric motor, a double-pole, double-throw reversing switch in circuit with said motor, and means for automatically preventing said switch from being closed again on the same contacts after the motor has opened the valve and has been open-circuited.

7. In valve-controlling apparatus, the combination with the valve, of an electric motor, a double-pole, double-throw reversing switch in circuit with said motor, and a pivoted dog adapted to lock the switch open after the valve has been opened and the motor open-circuited.

8. In valve-controlling apparatus, the combination with the valve, of a motor, two signaling circuits in parallel, each containing a contact spring, and means for automatically closing one of said circuits when the valve reaches either end of its travel.

9. In valve-controlling apparatus, the combination with the valve, of a motor, two signaling circuits in parallel, each containing a flexible contact spring, a wheel geared to the motor and carrying two tappets, and a contact against which one of said springs is pressed by a tappet when the valve reaches either end of its travel.

10. The combination with a movable body, of an electric motor for moving said body, gearing connecting said motor and body, said gearing having a predetermined amount of lost motion at starting, and means for increasing the motor current during the rotation of said motor in taking up said lost motion.

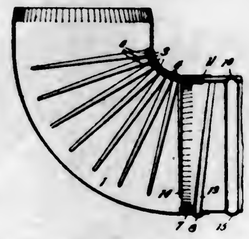
11. The combination with a movable body, of an electric motor for moving said body, gearing connecting said motor and body, said gearing having a predetermined amount of lost motion at starting, and means for increasing the motor current during the rotation of the motor in taking up said lost motion and for decreasing said current to slow down the motor.

12. The combination with a movable body adapted to be moved back and forth between two extreme positions, of an electric motor for moving said body into either position, gearing connecting said motor and body, said gearing having a predetermined amount of lost motion whereby when the motor is started to move said body from either extreme position it rotates a number of times before beginning to move said body, and means for increasing the motor current during the rotation of said motor in taking up said lost motion and decreasing said current when said body nears its other extreme position.

13. The combination of a valve, a rotatable nut for operating the valve spindle and provided with a lug, an arm freely rotatable on the same axis as the nut and adapted to engage with said lug, a loose gear-wheel concentric with the axis of the nut and carrying a lug to engage with said arm, a shaft mounted in proximity to said gear-wheel and geared therewith, an electric motor geared to said shaft, a rheostat in circuit with said motor, a switch-arm for operating the rheostat, a worm-gear on said shaft, and a wheel geared therewith and having a concentric groove with an offset portion at one side of the wheel, said switch arm engaging with said groove.

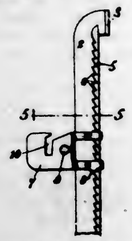
854,713. STOVEPIPE-FASTENER. BEAUFORT C. BROWN, Ionia, Kans. Filed June 4, 1906. Serial No. 320,154.

Claim.—1. The combination of a pipe having a spiral groove in one end thereof, and a connecting pipe formed of sheet material, the opposite edges of which are connected by a seam, a transverse cut being formed in the seam near one extremity of the connecting pipe, and the overlapping portion of the seam between the cut and the extremity of the pipe caused to lie against the inner face of the opposite portion of the seam, the said connecting pipe having a spiral rib pressed outwardly therefrom which is designed to enter the before mentioned spiral groove in the first mentioned pipe in order to form a threaded joint between the two members, the inwardly bent portion of the seam between the cut and the extremity of the pipe preventing any binding when the joint is made.



2. The combination of an elbow formed of sheet material and comprising two arms arranged at angles to each other, one of the arms being adapted to form a connection with the pipe within the chimney, while the opposite arm has a spiral groove pressed outwardly therein, the said spiral groove making one complete revolution and beginning and ending with the seam in the elbow, and a connecting pipe formed of sheet material, the opposite edges of which are connected by a seam, a transverse cut being formed in the seam near one extremity of the pipe and the overlapping portion of the seam between the cut and the extremity of the pipe caused to lie against the inner face of the opposite portion of the seam, the said pipe having a spiral rib pressed outwardly therefrom which makes one complete revolution and begins and ends with the seam in the pipe, and is adapted to enter the before mentioned spiral groove in one of the arms of the elbow in order to form a threaded joint between the two members, the inwardly bent portion of the seam between the cut and the extremity of the pipe preventing any binding when the joint is made and the extremity of the pipe being crimped so as to readily enter the elbow and also provided with an annular rib to prevent its becoming flattened.

854,714. WINDOW-SHADE SUPPORT. CHARLES C. BROWN, Revelstoke, British Columbia, Canada. Filed Oct. 16, 1905. Serial No. 283,066.

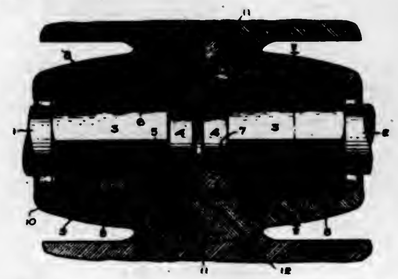


Claim.—1. In a device of the character described, a pair of vertically disposed brackets, each provided with serrations, and a hanger slidably and rockably disposed on each bracket and provided with a lug adapted to engage said serrations, and each hanger comprising a metallic strip bent to conform to the shape of the bracket on which it is disposed.

2. In a device of the character described, a pair of brackets, each having a flange provided with serrations, a hanger slidably and rockably disposed on each bracket and formed from a single strip bent to conform to the shape of the flanged bracket on which it is disposed, and provided on one side with an integral lug adapted to engage said serrations, and a rivet disposed through and adapted to fasten together the ends of the hanger in front of the brackets.

3. In a device of the character described, the combination comprising a pair of vertically extending supporting brackets provided with offset flanges having serrations thereon, and hangers, each formed of a single strip bent to a shape to conform to the shape of the brackets and slidably and rockably disposed thereon, and each of the hangers being provided with an integral lug adapted to engage the serrations when the hangers are rocked downward.

854,715. COMBINED COUPLING AND BEARING. JOHN G. CALLAN, Lynn, and RICHARD H. RICE, Swampscott, Mass., assignors to General Electric Company, a Corporation of New York. Filed Oct. 26, 1905. Serial No. 284,510.



Claim.—1. A combined shaft-coupling and bearing, comprising a sleeve having a polygonal interior and cylindrical exterior, shafts having polygonal portions fitting loosely in said sleeve, and yielding means for taking up the play between said parts.

2. A combined shaft-coupling and bearing, comprising a sleeve having a polygonal interior and cylindrical exterior, shafts having polygonal portions fitting loosely in said sleeve, and yielding means for taking up the play between said parts, comprising flat springs interposed between the faces of said parts.

3. A combined-shaft-coupling and bearing, comprising a sleeve having a polygonal interior and cylindrical exterior, shafts having polygonal portions fitting loosely in said sleeve, yielding means for taking up the play between said parts, and a brass in which said sleeve can rotate.

4. A combined shaft-coupling and bearing, comprising a sleeve having a polygonal interior and cylindrical exterior, shafts having polygonal portions fitting loosely in said sleeve, yielding means for taking up the play between said parts, and a brass in which said sleeve can rotate, said brass having a ball-and-socket bearing.

5. The combination with two shafts having polygonal portions, of a sleeve having a polygonal interior and a cylindrical exterior and composed of two parts having abutting flanges intermediate of said cylindrical portion, means for fastening said flanges together, and a brass extending on each side of said flanges.

6. The combination with two shafts having polygonal portions, of a sleeve having a polygonal interior and a cylindrical exterior and composed of two parts having abutting flanges, means for fastening said flanges together, and a brass having a cylindrical interior and an internal circumferential groove.

854,716. TURBINE FOR FLUE-CLEANERS. THOMAS COATES, Youngstown, Ohio. Filed Jan. 4, 1906. Serial No. 294,545.

Claim.—1. A turbine mounting comprising a casing having an interior stationary feeding head provided with a threaded bolt opening, a driving turbine arranged at one side of the head and provided with an extended hub sleeve having at its outer end a bearing cup, a bearing bushing

rigidly fitted within the turbine and its sleeve and provided at one end within the cup with a conical bearing seat, a journal bolt having a conical bearing head confined within the said cup and engaging said conical seat, said bolt adjustably engaging the threaded opening of the feeding head, a nut locking device arranged on the threaded tip of the bolt at one side of the feeding head, and a coupling cap detachably secured to the bearing cup of the turbine sleeve over the bolt head therein.



2. A turbine mounting comprising a casing, a stationary feeding head within the casing, a driving turbine arranged at one side of and against the feeding head, said driving turbine being provided in the side next to the feeding head with an annular lubricating groove and with oiling holes leading through the top of said grooves, and a journal support for the turbine.

3. A turbine mounting comprising the casing, the stationary feeding head, the turbine provided in its side next to the feeding head with an annular lubricating groove, a bearing bushing fitted within the turbine and having an end exposed to the feeding head inside of the circle of said lubricating groove, and a journal bolt support for the turbine.

4. A turbine mounting comprising a tubular casing, a ported feeding head arranged within the casing and having an exterior stepped post extension, a rigid counterbored discharging ring locked within the casing and receiving said post extension, said ring having a series of supply ports and a turbine.

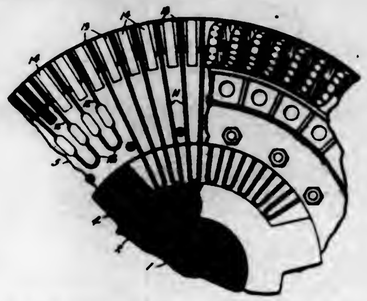
854,717. DYNAMO-ELECTRIC MACHINE. WALTER M. COFFMAN, Madison, Wis., assignor to Northern Electrical Manufacturing Company, a Corporation of Wisconsin. Filed Sept. 5, 1905. Serial No. 276,936.

Claim.—1. In combination, a core lamina formed with conductor receiving slots separated by teeth or projections said teeth or projections being shaped to form troughs, and separator or spacer members entering said troughs.

2. In combination, a body of magnetic material, and a spacer in the form of a bent strip or bar the ends of which engage said body, while an intermediate portion is out of engagement therewith.

3. In combination, a magnetic core comprising sections separated by spaces, and a separator or separators each in the form of a bent bar or strip the ends of which are in the space between said sections, while an intermediate portion is out of said spaces.

4. In a dynamo electric machine, a rotating spider provided with ribs extending parallel to its axis of rotation, an annular laminated core mounted on said ribs, said core being divided into sections separated by ventilating spaces, and U-shaped spacers in said spaces the legs of which are substantially radial and the yokes of which extend into the spaces between the adjacent ribs.



5. In a laminated core divided into sections separated by ventilating spaces, spacers located in said spaces, each of said spacers being formed of a strip of sheet metal the edges of which engage the end laminæ of the adjacent sections, each strip being doubled on itself and having a portion bent substantially parallel to the end laminæ to form a passage for allowing ventilation of the space between the doubled portions of said spacer.

6. In combination, a lamina, a spacer or separator cooperating therewith formed of a strip of sheet metal, doubled upon itself, a portion of said strip extending at right angles to the plane of the lamina, and another portion or portions distorted to form a passage or passages through which the space between the doubled portions of the strip may be ventilated.

7. In a dynamo electric machine, a core comprising an annular body of laminated material divided into sections separated by spaces, and separators between adjacent sections each having two substantially radial portions in said spaces and a connecting portion within the inner surface of the core proper.

8. In a dynamo electric machine, a core comprising an annular body of laminated material divided into sections separated by spaces, said body being formed with conductor receiving slots separated by teeth or projections, and separators between adjacent sections formed of U-shaped pieces of metal, the teeth or projections of one of the end laminæ of each pair of adjacent sections being bent to form troughs in which the ends of the U-shaped members are received.

854,718. HAT-PIN FASTENER. JOHN W. CUNNINGHAM, Leominster, Mass. Filed Oct. 20, 1906. Serial No. 339,800.

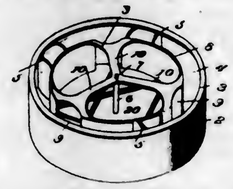


Claim.—1. In a pin fastening device, a suitable separable button adapted for attachment to the brim of a hat, a guide comprising a strip of metal bent on itself to form a loop, and a pin slidable in the looped portion of the guide, the ends of the said strip being secured by the button.

2. In a pin fastening device, a suitable separable button adapted to be attached to the brim of a hat, a guide comprising a strip of metal bent centrally to form a loop, and having its ends parallel and provided with apertures to fit on the separable button, and a pin slidable in the looped portion of the guide, the said pin being flattened to form shoulders to abut the guide for the purpose of preventing disengagement of the guide and pin.

3. In a pin fastening device, a guide comprising a strip of metal bent upon itself to form a looped portion in which the pin is slidable, said strip being perforated, a separable button passing through the perforations of the strip, a pin in the guide, and means on the pin to prevent disengagement of the pin and guide.

854,719. PUZZLE. GEORGE A. DAVIS, San Francisco, Cal. Filed Feb. 4, 1907. Serial No. 355,643.



Claim.—1. A puzzle comprising a base, open-sided cells grouped about a central point of the base, objects as marbles arranged upon the base and adapted to enter the said cells, and a rotary gate poised upon a central support and adapted to close the open sides of the cells and hold the objects captive therein.

2. A puzzle comprising a base, peripheral cells mounted upon the base and opening toward the center, and a central rotary gate poised upon a central support and adapted to close the cells and hold the objects captive.

3. A puzzle comprising a base, a rim projected upward from the base, peripheral cells mounted upon the base within the said rim and opening toward the center, a central rotary gate poised upon a central support and adapted to close the open sides of the cells, and objects as marbles mounted upon the base and adapted to enter the cells and to be held captive therein by means of said rotary gate.

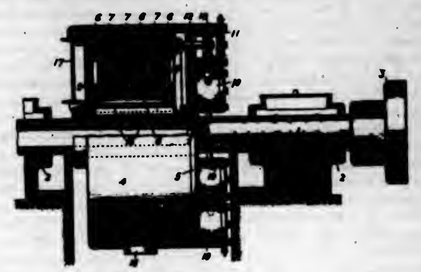
4. A puzzle comprising a base provided with peripheral cells projected upward therefrom and having openings facing inward, objects as marbles arranged upon the base and adapted to enter the cells, and a rotary gate poised upon a central support and comprising a spider and a rim, the latter having openings to admit of ingress and egress of the objects from the space inclosed by said gate.

5. A puzzle comprising a base, a rim projected from the base, peripheral cells mounted upon the base and having openings facing inward, a center post, a cover resting upon the post and cells and retained in place by means of the aforementioned rim, objects as marbles arranged upon the base and adapted to enter the cells, and a rotary gate comprising a rim and a spider poised upon the aforesaid post, the rim having openings to admit of ingress and egress of the objects, and the arms of the spider having their outer ends branched and spanning the spaces formed between the separate parts of the rim.

6. The herein described puzzle comprising a circular base having its center and outer portions of contrasting color, a rim encircling the base and having an inner flange at its outer edge, peripheral cells disposed equidistant about the outer portions of the base and having openings facing inward, a centrally disposed post having its upper end reduced, a transparent cover resting upon the post and cells, objects as marbles arranged upon the base and adapted to enter the cells thereof and a rotary gate poised upon the said post and comprising a rim and a spider, the rim having openings in its sides corresponding in number and position to the said cells and adapted to hold the objects captive therein.

854,720. DYNAMOMETER. WILLIAM F. DAWSON, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed Nov. 14, 1905. Serial No. 287,257.

Claim.—1. In a dynamometer, the combination with a rotatable shaft, of a drum sleeved thereon, annular plates splined in said drum, disks splined on said shaft and alternating with said plates, means for forcing said plates and disks together, and means for conducting liquid to and from the surfaces of said disks and plates.



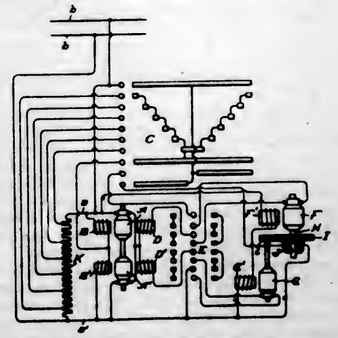
2. In a dynamometer, the combination with a rotatable shaft, of a drum sleeved thereon, annular plates splined in said drum, disks splined on said shaft and alternating with said plates, one or more fluid-pressure devices for forcing said plates and disks together, and means for conducting liquid to and from the surfaces of said disks and plates.

3. In a dynamometer, the combination with a rotatable shaft, of a drum sleeved thereon, annular plates movable lengthwise in said drum, disks movable lengthwise on said shaft and alternating with said plates, one or more cylinders on one end of said drum, and movable abutments in said cylinders acting on said plates and disks to move them lengthwise.

4. In a dynamometer, the combination with a hollow rotatable shaft having ports therethrough, of a drum sleeved on said shaft and having a drain-spout, and the chamber of said drum in communication with said ports annular plates in said drum, disks on said shaft, and means for forcing said plates and disks together.

5. In a dynamometer, the combination with a hollow rotatable shaft, of a hollow hub thereon, said shaft and hub having ports, disks splined on said hub, a drum sleeved on said shaft and having a drain-spout, annular plates in said drum alternating with said disks, cylinders on one end of said drum, a piston in each cylinder, a follower acted on by said pistons, and pipes for conveying fluid-pressure to said cylinders.

854,721. MOTOR CONTROL. MAXWELL W. DAY, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 15, 1906. Serial No. 338,891.



Claim.—1. In combination with a load to be driven, two electric motors of different capacities, mechanical connections between the load and both motors whereby the load may be driven by either motor but at different speeds, a

constant potential supply circuit, means for deriving from said circuit two interdependent voltages for the respective motors, and means for varying said voltages simultaneously but oppositely.

2. In combination with a load to be driven, two electric motors of different capacities, mechanical connections between the load and both motors whereby the load may be driven by either motor but at different speeds, a constant potential supply circuit, means for deriving from said circuit two interdependent voltages for the respective motors, means for varying said voltages simultaneously but oppositely, and means for alternately breaking the circuit of the larger motor and disconnecting the smaller motor from the load.

3. In combination with a load to be driven, two electric motors of different capacities, mechanical connections between the load and both motors whereby the load may be driven by either motor but at different speeds, a constant potential supply circuit, means for deriving from said circuit two interdependent voltages for the respective motors, means for varying said voltages simultaneously but oppositely, a magnetic clutch between the smaller motor and the load, and means for alternately breaking the circuit of the larger motor and of the clutch.

4. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, means for deriving from said circuit two interdependent voltages for the respective motors, and means for varying the said voltages simultaneously but oppositely, said gearing being arranged to give the same load-speed with the smaller motor operating at maximum voltage and with the larger motor operating at minimum voltage.

5. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, means for deriving from said circuit two interdependent voltages for the respective motors, means for varying the said voltages simultaneously but oppositely, said gearing being arranged to give the same load-speed with the smaller motor operating at maximum voltage and with the larger motor operating at minimum voltage, and means for mechanically disconnecting the smaller motor from the load when the larger motor is driving the load.

6. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, means for deriving from said circuit two interdependent voltages for the respective motors, means for varying the said voltages simultaneously but oppositely, said gearing being arranged to give the same load-speed with the smaller motor operating at maximum voltage and with the larger motor operating at minimum voltage, and means for alternately breaking the circuit of the larger motor and mechanically disconnecting the smaller motor from the load.

7. In combination with a load to be driven, two electric motors of different capacities, mechanical connections between the load and both motors, whereby the load may be driven by either motor but at different speeds, a constant potential supply circuit, means for deriving from said circuit two independent voltages for the respective motors, means for varying said voltages simultaneously but oppositely, and controlling means for both motors arranged to operate said motors alternately to drive the load.

8. In combination with a load to be driven, two electric motors of different capacities, low-speed gearing between the smaller motor and the load, high-speed gearing between the larger motor and the load, a constant potential supply circuit, means for deriving from said circuit two interdependent voltages for the respective motors, means for varying the said voltages simultaneously but oppositely, said gearing being arranged to give the same load-speed with the smaller motor operating at maximum voltage and with the larger motor operating at minimum voltage, and controlling means for both motors arranged to operate said motors alternately to drive the load.

9. In combination, an electric circuit, a pair of mechanically-connected regulating machines connected in series across said circuit, means for varying the relative field strengths of said machines, two motors connected in parallel with said regulating machines respectively, a load mechanically connected to both motors, and means for controlling the operation of both motors for driving the load.

10. In combination, an electric circuit, a pair of mechanically-connected regulating machines connected in series across said circuit, means for varying the relative field strengths of said machines, two motors connected in parallel with said regulating machines respectively, a load mechanically connected to both motors, and controlling means for both motors arranged to operate said motors alternately to drive the load.

11. In combination, an electric circuit, a pair of mechanically-connected regulating machines connected in series across said circuit, means for varying the relative field strengths of said machines, two motors connected in parallel with said regulating machines respectively, a load to be driven, mechanical connections from said load to said motors whereby said load may be driven by either motor but at different speeds, and controlling means for both motors arranged to operate said motors alternately to drive the load.

12. In combination, an electric circuit, a pair of mechanically-connected regulating machines connected in series across said circuit, means for varying the relative field strengths of said machines, two motors connected in parallel with said regulating machines respectively, a load mechanically connected to both motors, a magnetic clutch between the load and one motor, and a controlling switch arranged to close alternately the circuit of said clutch and the circuit of the other motor.

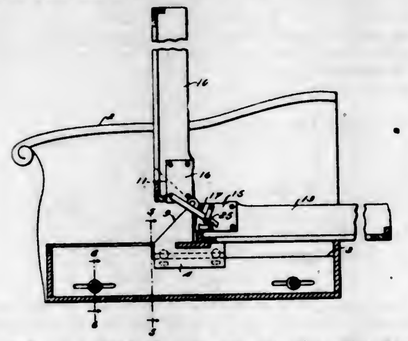
13. In combination, an electric circuit, a pair of mechanically connected regulating machines connected in series across said circuit, means for varying the relative field strengths of said machines, two motors connected in parallel with said machines respectively, a load to be driven, mechanical connections from the load to said motors whereby said load may be driven by either motor but at different speeds, a magnetic clutch between the load and the low-speed motor, and a switch arranged to close alternately the circuit of said clutch and the circuit of the high-speed motor.

14. In combination, an electric circuit, a pair of mechanically-connected regulating machines connected in series across said circuit, two motors connected in parallel with said machines, respectively, a load to be driven, mechanical connections from the load to said motors whereby said load may be driven by either motor but at different speeds, a magnetic clutch between the load and the low-speed motor, and a controlling switch having its contacts arranged, first, to close the circuit of said clutch and gradually to increase the field strength of the regulating machine in parallel with the low-speed motor relative to the other regulating machine, and then to open the clutch circuit, close the circuit of the high speed motor, and gradually increase the relative field strength of the regulating machine in parallel with the high-speed motor.

15. In combination, an electric circuit, a pair of mechanically-connected shunt-wound regulating machines having their armatures connected in series across said circuit, means for varying the relative strengths of the shunt fields of the machines, a motor connected in parallel with one of said machines, and a field winding for said machine connected in series with said motor.

16. In combination, an electric circuit, a pair of mechanically connected shunt-wound regulating machines having their armatures connected in series across said circuit, means for varying the relative strengths of the shunt fields of said machines, two motors connected in parallel with said machines respectively, a load arranged to be driven by either motor, and field windings for said regulating machines in series with the two motors respectively.

854,722. SOFA-BED. RUDOLPH DEJMEL, Chicago, Ill. Filed June 25, 1906. Serial No. 323,284.



Claim.—1. A sofa-bed comprising a supporting base having a pair of parallel end pieces, a carriage having a rigid frame extending between said end pieces, having rollers bearing upon the upper surface of each of said end pieces, and a roller bearing upon the side of each of said end pieces, a pair of bed-sections pivoted to said frame, and means for locking said bed-sections on their pivotal connection, at an angle to each other.

2. A sofa-bed comprising a supporting base having a pair of parallel end pieces, a carriage having a cross-piece extending between said end pieces and having rigidly secured to each end thereof an upright with a part extending above the adjacent end piece, carrying rollers bearing upon the upper surface of said end piece, and a roller bearing upon the side of said end piece, a pair of bed-sections pivoted to said uprights, and means for locking said bed-sections, on their pivotal connection, at an angle to each other.

3. A sofa bed comprising a supporting base, a carriage running transversely of said base, said carriage having a rigid frame extending between the ends of said base and having a pair of uprights each consisting of a broad lower part tapering upwardly, said uprights being rigidly connected by a cross piece extending between their lower parts, a pair of bed-sections pivoted to each other and to said uprights, one of said bed-sections being cut away to fit said tapered uprights, and means for locking said bed-sections at an angle to each other.

4. A sofa-bed comprising a supporting base having each of its end pieces provided with a track, a carriage having upright end pieces riding on said track and having depending parts extending downwardly adjacent to said end pieces and carrying rollers bearing against the inner sides of said end pieces, the upper faces of said uprights being beveled, a pair of bed-sections pivoted together and to said uprights and one of the same being beveled to fit the beveled surfaces of said uprights, and means for locking the said bed-sections at an angle to each other.

5. A sofa bed comprising a supporting base, a carriage running transversely of said base, said carriage having a rigid frame extending between the ends of said base and having a pair of uprights each consisting of a broad lower part tapering upwardly, said uprights being rigidly connected by a cross piece extending between their lower parts, and a pair of bed-sections pivoted to each other and to said uprights, one of said bed-sections being cut away to fit said tapered uprights.

6. A sofa-bed comprising a supporting base having each of its end pieces provided with a track, a carriage having upright end pieces riding on said track and having depending parts extending downwardly adjacent to said end pieces and carrying rollers bearing against the inner sides of said end pieces, the upper faces of said uprights being beveled, and a pair of bed-sections pivoted together and to said uprights and one of the same being beveled to fit the beveled surfaces of said uprights.

7. A sofa-bed comprising a supporting base in the form of a box having opposite end pieces recessed to form a track, a carriage having a rigid frame extending across between said end-pieces and riding on the track in each of said recesses, a pair of bed-sections pivoted to said carriage, and means for locking said bed-sections at an angle to each other.

8. A sofa-bed comprising a supporting base in the form of a box having opposite end pieces recessed to form a track, a carriage having a rigid frame extending across between said end-pieces and riding on the track in each of said recesses, and a pair of bed-sections pivoted to said carriage.

9. A sofa-bed comprising a supporting base in the form of a box having opposite end pieces recessed to form a track, a carriage riding on said track and in said recesses, and having upright end pieces each with an upper beveled part projecting above said box and with a depending part extending below said recesses and carrying rollers bearing against the inside of the recessed end pieces, and a pair of bed-sections pivoted to said uprights, one of the same being beveled to meet the beveled surfaces of said uprights.

10. A sofa-bed comprising a supporting base in the form of a box having opposite end pieces recessed to form a track, a carriage riding on said track and in said recesses and terminating flush with the outside of the end pieces of said box, said end pieces having slots therein, davenport arms or side pieces extending above said uprights and carrying inner bolts seated in said slots, and a pair of bed-sections pivoted to said carriage flush with the sides thereof and free from said side pieces.

11. A sofa-bed comprising a supporting base, a carriage running transversely of said base and having a pair of uprights each consisting of a broad lower part tapering upwardly, said uprights being rigidly connected by a cross-piece extending between their lower parts, a pair of bed-sections pivoted to each other and to said uprights, and means for locking said bed-sections on their pivotal connection at an angle to each other.

12. A sofa bed comprising a supporting base having opposite ends each provided with a track, a carriage having a rigid frame extending between said tracks and riding thereon, a pair of bed sections mounted on said carriage and having pivotal movement relatively thereof and relatively of each other, and means for locking said bed-sections on their pivotal connection, at an angle to each other.

854,723. THERMAL CUT-OUT. JOHN T. H. DEMPSTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 7, 1904. Serial No. 231,662.



Claim.—1. An electric fuse comprising a fusible strip, and one or more independently insulated metal pieces surrounding said strip and adapted to condense the gases of fusion.

2. An electric fuse comprising a fusible strip, and one or more metal mediums through which said strip is threaded.

3. An electric fuse comprising a casing, a fusible strip supported therein, and one or more pieces of metal having extended surfaces arranged in said casing.

4. An electric fuse comprising a casing, a fusible strip supported therein, and a series of metal washers surrounding said strip within the casing.

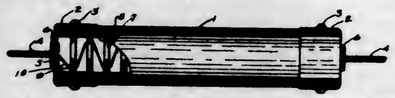
5. An electric fuse comprising a casing, a fusible strip supported therein, and a series of independent metallic washers arranged in planes at right angles to said strip.

6. An electric fuse comprising a tubular casing, a fusible strip supported axially thereof, and a series of iron washers surrounding said strip.

7. An electric fuse comprising a tubular casing, a fusible strip supported axially thereof, a series of metal

washers arranged transversely in said casing and through which said fusible strip is threaded, and insulating rings separating said washers.

854,724. THERMAL CUT-OUT. JOHN T. H. DEMPSTER, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 7, 1904. Serial No. 231,663.



Claim.—1. An electric fuse comprising a fusible strip, and means to subdivide the electric arc and condense the gases of fusion arranged in proximity thereto.

2. An electric fuse comprising a fusible strip, and one or more independent metal pieces arranged in proximity thereto and adapted to subdivide the arc and condense the gases of fusion.

3. An electric fuse comprising a fusible strip, and a series of independent metal pieces engaging said strip and supporting it in a sinuous position.

4. An electric fuse comprising a fusible strip, and a series of independent metal plates provided with slots in which said strip is supported.

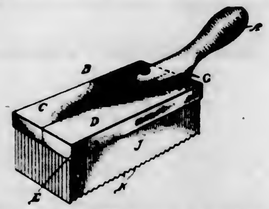
5. An electric fuse comprising an inclosing shell, one or more independent metallic plates arranged therein, and a fusible strip extending through said shell in contact with said plates.

6. An electric fuse comprising an inclosing shell, a series of independent metallic plates provided with apertures and arranged to divide the interior of said shell into compartments, and a fusible strip extending through and substantially filling said apertures.

7. An electric fuse comprising an inclosing shell, a series of independent metallic plates provided with eccentric apertures and arranged transversely of said shell with said apertures disalined, and a fusible strip extending through said disalined apertures.

8. An electric fuse comprising an inclosing shell, a series of metal plates provided with eccentric apertures and arranged transversely of said shell with the apertures in alternate plates on opposite sides of the axis, insulating rings separating said plates, and a fusible strip extending through said apertures.

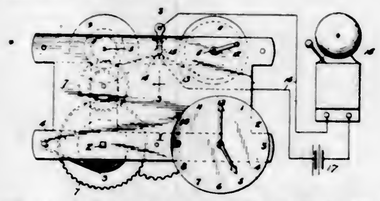
854,725. WOODWORKING-TOOL. NATHAN H. DEVERS, Washington, D. C. Filed Dec. 15, 1906. Serial No. 347,968.



Claim.—1. A woodworking tool, comprising a handle, a frame formed in two sections pivoted together at one end, the other end of one section being connected to the handle, and blades having teeth upon one edge carried by each section the pivoting of the sections of the frame providing a means whereby the tool may be operated in large or small mortises.

2. A woodworking tool, comprising a handle, a series of sections forming a frame pivoted together at one end, the handle being connected to the other end of one of the sections, means for locking the sections together, and a series of blades having one toothed edge carried by the sections of frame the pivoting of the sections of the frame providing a means whereby the tool may be operated in large or small mortises.

854,726. TIME-CONTROLLING MECHANISM. PRESCOTT W. EAMES, Delphos, Kans. Filed Dec. 12, 1906. Serial No. 347,497.



Claim.—1. In a mechanism of the character described, a frame, a pair of shafts, a drum upon one of said shafts, a winding crank upon the last mentioned shaft, a drum loosely mounted upon the other of said shafts, means for connecting the last mentioned drum to its shaft for rotation therewith, a flexible element of non-conducting material attached to and wound upon said drums and having means for completing an electric circuit therethrough, electrical contacts to co-act with said element and an electric alarm or signal circuit including said contacts.

2. In a mechanism of the character described, a frame, a pair of shafts, a drum fixed to one of said shafts, a winding element carried by the last mentioned shaft, a drum loose upon the other of said shafts, clock works for operating the last mentioned shaft, means for causing the loosely mounted drum to rotate with its shaft, a flexible non-conducting band connected to and wound upon said drums and formed with apertures, a stationary contact over which said band passes, and a spring actuated sliding contact for pressing said band against the stationary contact and for completing an electric circuit through the apertures in said band, substantially as described.

3. In a mechanism of the character described, a support, a stationary contact, a circuit controlling element traveling over said stationary contact and having means for completing an electric circuit therethrough, a support of non-conducting material formed with an opening having a longitudinally extending groove therein, a contact pin slidably and rotatably mounted in said opening and having a projection to enter the groove of said opening and a spring for actuating said contact pin, substantially as shown and set forth.

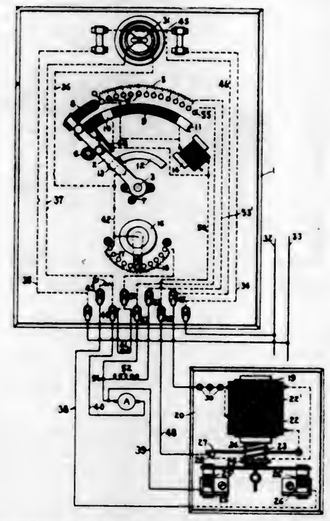
4. In a mechanism of the character described, a frame or support, a pair of shafts mounted therein, a drum fixed upon one of said shafts, a drum loosely mounted upon the other of said shafts, a notched disk slidably but non-rotatably mounted upon the last mentioned shaft, a pin carried by the drum on the last mentioned shaft and adapted to enter one of the notches in said disk to lock said drum to said disk for rotation therewith, a circuit controlling element attached to and wound upon said drums and having means for completing a circuit therethrough and circuit closing contacts to co-act with said element, substantially as described.

854,727. DEVICE FOR CONTROLLING ELECTRIC CURRENTS. HENRY B. EMERSON and GEORGE H. DORGELOH, Schenectady, N. Y., assignors to General Electric Company, a Corporation of New York. Filed Oct. 3, 1906. Serial No. 337,204.

Claim.—1. A starting rheostat comprising a controlling arm biased to the starting position, a no-voltage magnet for maintaining said arm in running position, a brake resistance, and means whereby said brake resistance is applied simultaneously with the de-energizing of the no-voltage magnet.

2. A starting rheostat comprising a controlling arm biased to the starting position, a no-voltage magnet for maintaining said arm in running position, a brake resistance and a switch arranged to de-energize the no-voltage magnet and simultaneously apply the brake resistance.

3. A starting rheostat comprising a controlling arm biased to the starting position, a no-voltage magnet for maintaining said arm in running position, a brake resistance and a plurality of switches in series arranged to de-energize the no-voltage magnet and simultaneously apply the brake resistance.



4. A starting rheostat comprising a controlling arm biased to the starting position, a brake resistance normally applied to the motor armature, means for relieving the armature of said brake when the controlling arm is moved to close the motor circuit, a no-voltage magnet for retaining the arm in running position, and means for again applying the brake and simultaneously de-energizing the no-voltage magnet.

5. A starting rheostat comprising a controlling arm biased to the starting position, a brake resistance normally applied to the motor armature, means for relieving the armature of said brake when the controlling arm is moved to close the motor circuit, a no-voltage magnet for retaining the arm in running position, and a switch arranged to apply the brake and simultaneously de-energize the no-voltage magnet.

6. A starting rheostat comprising a controlling arm biased to the starting position, a brake resistance normally applied to the motor armature, means for relieving the armature of said brake when the controlling arm is moved to close the motor circuit, a no-voltage magnet for retaining the arm in running position, and a plurality of switches in series arranged to apply the brake and simultaneously de-energize the no-voltage magnet.

7. A starting rheostat comprising a controlling arm biased to starting position, a no-voltage magnet for maintaining said arm in running position, a brake resistance, an electromagnetic device controlling said resistance and a series of switches each arranged to actuate said device and simultaneously de-energize the retaining magnet.

8. A starting rheostat comprising a controlling arm biased to starting position, a no-voltage magnet for retaining said arm in running position, a brake resistance, an electromagnetic device controlling said resistance having an actuating coil and a holding coil, means for de-energizing the actuating coil upon the movement of said device, and a switch arranged to de-energize the retaining magnet and the holding coil simultaneously.

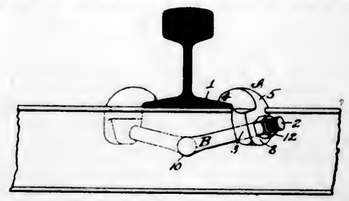
9. The combination with an electric motor having series and shunt field windings, of means for starting the same comprising a controlling arm biased to the starting position, means for cutting out the series field winding when the arm reaches running position, and a no-voltage magnet for retaining the arm in running position.

10. The combination with an electric motor having series and shunt field windings, of means for starting the same comprising a controlling arm biased to the starting position, a no-voltage magnet for retaining the arm in running position, means for cutting out the series field winding when the arm reaches running position, a brake resistance and a switch arranged to de-energize the retaining magnet and simultaneously apply the brake resistance.

11. The combination with an electric motor having series and shunt field windings, of means for starting the same comprising a controlling arm biased to starting position, a no-voltage magnet for retaining the arm in running position, means for cutting out the series field winding when the arm reaches running position, a brake resistance normally applied to the motor armature, means for relieving the armature of said brake when the controlling arm is moved to close the motor circuit, and a switch arranged to de-energize the retaining magnet and simultaneously apply the brake resistance.

12. The combination with an electric motor having series and shunt field windings, of means for starting the same comprising a controlling arm biased to the starting position, means for cutting out the series field winding when the arm reaches running position, a no-voltage magnet for retaining the arm in running position, a brake resistance normally applied to the motor armature, means for relieving the armature of said brake when the controlling arm is moved to close the motor circuit, an electromagnetic device for controlling said resistance, having an actuating coil and a holding coil, means for de-energizing the actuating coil upon movement of said device, and a switch arranged to de-energize the retaining magnet and the holding coil simultaneously.

854,728. RAIL-FASTENING. CHARLES H. EWING, Reading, Pa. Filed Oct. 17, 1906. Serial No. 339,311.



Claim.—1. In a rail fastening, a clip slidable upon the edge portion of a cross-tie to engage and disengage the rail base, and an obliquely arranged tie bolt engaging a clamping lug on said clip substantially as set forth.

2. In a rail fastening, a clip slidable upon the edge portion of a cross-tie to engage and disengage the rail base and formed with a clamping lug having an oblique tie-bolt opening substantially as set forth.

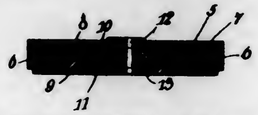
3. In a rail fastening, a clip grooved at right angles to the rail-clamping end thereof to slidably engage the flange of a cross-tie, and an obliquely arranged tie bolt engaging said clip to simultaneously press the same into engagement with the tie-flange and with the rail-flange in clamping the rail to the tie.

4. In a rail fastening the combination with a cross-tie having a vertical web and a flanged rail-bearing head, a rail-clip slidably engaging the edge portion of the tie flange, and a clamping bolt having a hooked portion engaged in a perforation in the tie-web and extending upward and outward from said perforation into adjusting engagement with said slidable clip.

5. In a rail fastening the combination with a cross-tie having a vertical web and a T-head, a pair of rail clips

slidably engaging opposite edge portions of said tie-head, and a double clamping bolt having an intermediate hooked portion engaged in a perforation in the tie-web and extending upwardly and outwardly from said perforation in opposite directions into adjusting engagement with the respective slidable clips.

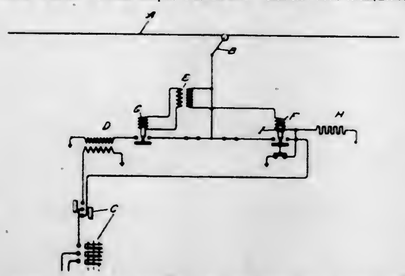
854,729. COMBINED PUMP VALVE AND CAP. ARTHUR R. FOLEY, Trenton, N. J. Filed July 27, 1906. Serial No. 328,093.



Claim.—1. A valve comprising a casing provided with a depending marginal flange defining a compartment, a yieldable packing disk seated in the compartment and provided with a transverse dove-tailed locking lip, and a removable packing disk extending beyond the free edge of the flange and having a transverse groove formed therein for the reception of the locking lip the grooved packing disk being provided with a continuous uninterrupted bearing surface.

2. A valve comprising a perforated casing provided with a depending marginal flange defining a compartment, superposed yieldable packing disks disposed within the compartment and provided with perforations disposed in alinement with the perforation in the cap, one of said packing disks being extended below the free edge of the flange and provided with a transverse dove-tailed locking lip adapted to engage a corresponding groove formed in the adjacent packing disk, said grooved disk being provided with a smooth continuous bearing surface.

854,730. CONTROL OF ELECTRIC CARS. JOHN J. FRANK and JESSE S. PEVEAR, Schenectady N. Y., assignors to General Electric Company, a Corporation of New York. Filed Sept. 19, 1906. Serial No. 335,234.

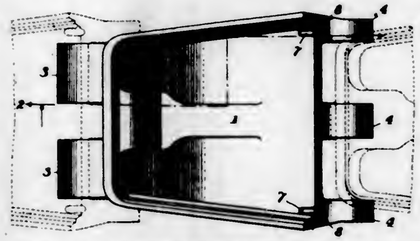


Claim.—1. In an electric car designed for operation on both alternating and direct-current, a transformer in shunt to the power-circuit of the car, two magnet windings connected respectively in series with the primary and secondary windings of the transformer, and switch-contacts controlled by said windings arranged to connect the power-circuit of the car for operation on direct and alternating-current respectively.

2. In an electric car designed for operation on both alternating and direct-current, a current-collecting device, a motor-controller, a direct connection from said device to said controller, an inductive connection from said device to said controller comprising a transformer, a small transformer connected to said device in shunt to the motor circuit, a magnet winding in series with the primary of the small transformer, a switch-contact controlled thereby in said direct-connection, a magnet winding in series with the secondary of the small transformer, and a switch contact controlled thereby in said inductive connection.

3. In a motor car designed for operation on both alternating and direct-current, a transformer in shunt to the power-circuit of the car, two magnet windings connected respectively in series with the primary and secondary windings of the transformer, switch contacts controlled by said windings arranged to connect the power-circuit of the car for operation on direct and alternating-current respectively, and a switch-contact controlled by the magnet in the primary circuit for cutting a resistance into said circuit.

854,731. DREDGE-BUCKET JOINT. ALEXANDER T. FRASER, Butte, Mont. Filed May 18, 1906. Serial No. 317,545.



Claim.—1. In a dredge or conveyer chain, the combination with the links having lugs and with the pivot pins, of bushings for certain of said lugs, each bushing comprising two relatively movable reversely tapered parts adapted, when assembled, to securely hold the bushing in the eye of the lug.

2. In a dredge or conveyer chain, the combination with links having lugs and with pivot pins extending through said lugs, of bushings for certain of the lugs, each bushing comprising a wedge and a reversely tapered portion, for the purpose set forth.

3. In a dredge or conveyer chain, the combination with links having lugs and with pivot pins extending through said lugs, of bushings for certain of the lugs, each bushing comprising a part, of crescent-shaped section, and a longitudinally arranged wedge for expanding the bushing in the eye of the lug.

4. In a dredge or conveyer chain, the combination with links having lugs and with pivot pins extending through said lugs, of bushings for certain of the lugs, the lugs which receive the bushings having eyes which are eccentric to the pivot pins, said bushings comprising crescent-shaped portions adapted to fit the said eyes, and wedge portions adapted to expand the bushings in the eyes.

5. A bushing for a dredge or conveyer chain comprising two reversely tapered sections adapted when brought into register to expand, for the purpose set forth.

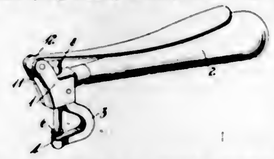
6. The combination with a link of a dredge or conveyer chain having a lug and a substantially elliptical eye therein, of a bushing having two crescent-shaped portions, and an intermediate wedge portion, said bushing being reversible, for the purpose set forth.

7. In a dredge or conveyer chain, the combination with links having lugs, and pivot pins, of means for locking the pins in certain of said lugs comprising blocks adapted to bear on the pins, wedges bearing on said blocks, and seats in said links for the wedges.

8. In a dredge or conveyer chain having links provided with lugs and having pivot pins, means for locking the pins in the links comprising blocks each having a concave face bearing on a pin, a transverse groove in its back, a wedge of elongated cross section operating in said groove, and a seat in the link for said wedge.

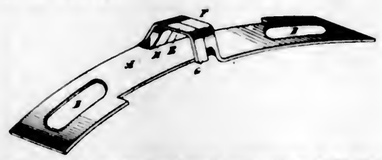
854,732. ROLLER AND COLLET RESETTER TOOL FOR WATCHMAKERS' USE. JOSEPH W. GOUCHER, Stites, Idaho. Filed Oct. 24, 1906. Serial No. 340,388.

Claim.—A tool of the character described, comprising a head and a handle, a frame secured to the head and provided with a seat facing the head, the said head being provided with a bore in alinement with said seat, a plunger mounted in said bore and spring pressed away from the seat, the rear end of the plunger projecting out of the head, and a lever fulcrumed on the head, at a point in advance of and lying wholly without the margin of the bore



of the head and adapted to extend rearwardly from its fulcrum point over the rear end of the plunger and designed for engagement therewith whereby to press the plunger toward the seat, as and for the purpose set forth.

854,733. BRAKE-SHOE. WILLIAM G. GRANT, Suffern, N. Y., assignor, by mesne assignments, to American Brake Shoe & Foundry Company, Jersey City, N. J., a Corporation of New Jersey. Filed Aug. 31, 1906. Serial No. 332,790.



Claim.—1. A brake shoe back comprising a single plate of substantially uniform width, having a key-lug formed from the metal at the side of said plate, substantially as described.

2. A brake shoe back comprising a single plate of substantially uniform width, and a sectional key-lug formed from the metal of said plate, substantially as described.

3. A brake shoe back comprising a plate of substantially uniform width having a sectional key-lug formed from the metal at the opposite sides of said plate, substantially as described.

4. A brake shoe back comprising a plate of substantially uniform width having portions of its sides bent in opposite directions transversely across said plate, forming an integral key-lug, substantially as described.

5. A back plate for use in brake shoes, comprising a plate having its opposite sides slitted, the slitted portions of the plate being free at one end and bent across the plate forming an integral sectional key-lug, substantially as described.

6. A brake shoe back comprising a plate and strips connected to the sides of the plate in staggered relation thereto, said strips being bent transversely across said plate forming a key-lug, substantially as described.

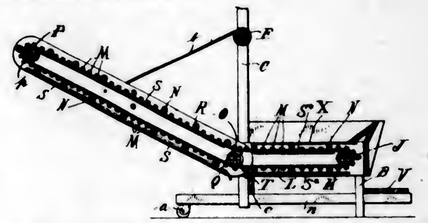
7. A back plate for use in a brake shoe, comprising a plate having its opposite sides slitted, said slitted portions being bent in opposite directions across said plate and having their free ends bent under said plate, forming a sectional integral key-lug, substantially as described.

8. A back plate for use in a brake shoe, comprising a plate slitted for a short distance at right angles to the side edge and for a greater distance parallel therewith, the resulting strip being bent transversely across the plate to form the key-lug, substantially as described.

9. A brake shoe back comprising a plate and having an integral lug divided transversely of its length, substantially as described.

854,734. CONVEYER. ALBERT L. HAINES, Fort Fairfield, Me. Filed Dec. 3, 1906. Serial No. 346,019.

Claim.—1. The combination with a hopper, of a conveyer-chute pivotally connected therewith; a pair of endless chains which pass from said hopper to said conveyer-chute; means for driving said chains; produce-supporting devices which connect said chains; tracks mounted in said hopper; and tracks mounted in said conveyer-chute and disconnected from the tracks mounted in said hopper, the ends of the tracks in said conveyer-chute which are opposed to the ends of the tracks in said hopper being curved, and said devices riding on said tracks.



2. The combination with a hopper, of a conveyer-chute pivotally connected therewith; a pair of endless chains which pass from said hopper to said conveyer-chute; means for driving said chains; produce-supporting devices which connect said chains; tracks mounted in said hopper and conveyer-chute, said devices riding on said tracks; and bars extending parallel to the tracks in said hopper, the ends of said devices passing between said bars and hopper tracks and being held upon said tracks by said bars.

3. The combination with a hopper, of a conveyer-chute leading therefrom; a pair of endless chains in said conveyer-chute; mechanism for driving said chains; cross-bars the ends of which are connected to said chains; slats connected to said chains at intervals between said cross-bars, said slats being longer and higher than said cross-bars; and means mounted in said conveyer-chute for supporting the ends of said slats.

4. The combination with a hopper, of a conveyer-chute leading therefrom; a pair of endless chains in said conveyer-chute; mechanism for driving said chains; cross-bars the ends of which are connected to said chains; slats connected to said chains at intervals between said cross-bars, said slats being longer than said cross-bars; and means mounted in said conveyer-chute for supporting the ends of said slats, said means being separated from each other by a distance greater than the length of said cross-bars, whereby said cross-bars may sag between said means without striking the same.

5. A conveyer made up of a hopper; a conveyer-chute pivotally connected therewith; mechanism for swinging said conveyer-chute about said hopper; a pair of endless chains which pass from said hopper to said conveyer-chute; mechanism for driving said chains; cross-bars connected to said chains, said cross-bars serving to hold the material; slats connected to said chains and interposed at intervals between said cross-bars; and tracks for supporting the ends of said slats.

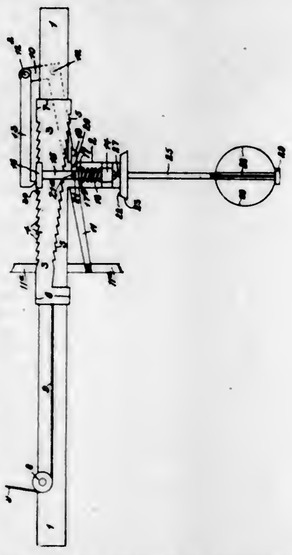
6. A conveyer made up of a hopper; a conveyer-chute leading therefrom; a pair of endless chains which pass from said hopper to said conveyer-chute; mechanism for driving said chains; cross-bars connected to said chains; and slats connected to said chains and interposed between said cross-bars at intervals, said slats being higher than and at least equal in length to said cross-bars to prevent the movement of the material when the conveyer-chute is inclined to the horizontal.

7. The combination of a conveyer-chute; a pair of endless chains mounted therein; mechanism for driving said chains; cross-bars the ends of which are connected to said chains, said cross-bars serving to support the material; and slats connected to said chains and interposed at intervals between said cross-bars, said slats being higher than and at least equal in length to said cross-bars to hold the material against movement when said conveyer-chute is inclined at an angle to the horizontal.

854,735. GOVERNOR FOR WINDMILLS. CHARLES K. HALL, Johannesburg, Transvaal. Filed May 29, 1906. Serial No. 319,243.

Claim.—1. In a governor for windmills, in combination a bar serrated along two edges, means for connecting said

bar with the headgear of the windmill, a pawl adapted to engage the teeth on one edge of the bar, means connecting said pawl with the pump-rod, another pawl adapted to engage teeth on the other edge of the bar, and means actuated by the wind for controlling the pawls to regulate the movement of the ratchet bar.

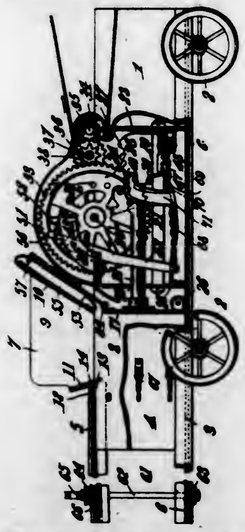


2. In a governor for windmills, in combination a frame, a ratchet bar provided with teeth along two of its edges and slidably mounted on said frame, means for connecting said bar with the headgear of the windmill, a bellcrank lever pivoted to the frame, a pawl pivoted to one arm of the lever and adapted to engage the teeth on the upper edge of the ratchet bar, a stop on the frame which serves for throwing the pawl out of engagement with the teeth on the ratchet bar when said pawl is advanced beyond a certain point, a rod carrying at its upper end a plate which serves for maintaining the pawl out of gear with the teeth of the ratchet bar, another pawl, actuated by the rod supporting the plate to engage teeth on the other edge of the ratchet bar when the plate falls and allows the first mentioned pawl to engage the teeth on the upper edge of the bar, and means actuated by the wind for operating the rod and plate.

3. In a governor for windmills, in combination a frame, a ratchet bar toothed on two edges and slidably mounted on said frame, means connecting said ratchet bar with the headgear of the windmill, a bellcrank lever connected at one end to the pump-rod, a pawl attached to the other end of the lever which is adapted to engage the teeth on the upper edge of the ratchet bar, a stop on the frame for throwing the pawl out of engagement with the teeth when said pawl is advanced beyond a certain point, a spring controlled rod located at the side of the ratchet bar, a plate carried at the upper end of said rod which serves for maintaining the pawl out of engagement with the teeth in the normal running of the mill, another pawl actuated by the rod to engage teeth on the other edge of the ratchet bar to prevent the forward movement of said bar when the pawl is engaging the teeth on the upper edge of the bar, and means which operate to depress the rod and plate to cause both pawls to engage the ratchet bar on an increase in the velocity of the wind, substantially as described.

4. In a governor for windmills, in combination a frame, a ratchet bar toothed on two edges and slidably mounted on said frame, means connecting said ratchet bar with the headgear of the windmill, a bellcrank lever connected at one end to the pump rod, a pawl attached to the other end of the lever which is adapted to engage the teeth on the upper edge of the ratchet bar, a stop on the frame for throwing the pawl out of engagement with the teeth when said pawl is advanced beyond a certain point, a spring controlled rod located at the side of the ratchet bar, a plate carried at the upper end of said rod which serves for maintaining the pawl out of engagement with the teeth in the normal running of the mill, another pawl actuated by the rod to engage teeth on the other edge of the ratchet bar to prevent the forward movement of said bar when the pawl is engaging the teeth on the upper edge of the bar, and means which operate to depress the rod and plate to cause both pawls to engage the ratchet bar on an increase in the velocity of the wind, said means consisting of vanes connected to a vertical rod fitted at its upper end with a dished plate, a stationary dished plate about which the first-named plate may tilt, a flexible connection between the vertical rod and the bar and plate which operates the pawls, a bracket for carrying the rod, and a spring which serves for yieldingly supporting the rod and plate, substantially as described.

854,736. HAY-PRESS. JAMES W. HAMILTON, Weatherford, Tex. Filed Oct. 20, 1906. Serial No. 339,828.



Claim.—1. The combination of a plunger, a rack connected therewith, a continuously rotating mutilated gear adapted to periodically mesh with the rack for driving the plunger forwardly, and a mechanism arranged to become operative simultaneously with the disengaging of the said gear from the rack for returning the plunger, said mechanism including a device carried by and rotating with the gear.

2. The combination of a plunger, a rack connected therewith, a gear wheel at one side of the rack, laterally extending pins on the wheel forming a mutilated gear adapted to periodically mesh with the rack for driving the plunger forwardly, means for driving the wheel and a quick acting mechanism for returning the plunger so as to introduce an idle period between each return stroke and the succeeding forward stroke, said mechanism comprising a lever fulcrumed at one side of the gear and arranged with one end flexibly connected with the plunger, a device on the gear wheel adapted to strike the opposite end of the lever, and means for returning the lever after being actuated by the said device.

3. The combination of a plunger, a rack and gear arranged to drive the plunger forwardly with a gradually increasing power, lever for returning the plunger, and means revolving with the gear and arranged to periodically strike the lever to actuate the same.

4. The combination of a plunger, a rack and gear arranged to drive the plunger forwardly with a gradually increasing power, and a quick acting mechanism for returning the plunger so as to introduce an idle period between each return and succeeding forward strokes, said mechanism comprising a device revolving with the gear, and means arranged in the path of the device and connected with the plunger.

5. The combination of a plunger, a rack and gear device for driving the plunger in one direction, and a mechanism for returning the plunger which includes means revolving with the gear.

6. The combination of a plunger, a rack connected therewith, a gear wheel, teeth thereon adapted to mesh with the rack for driving the plunger in one direction, a lever connected with the plunger for returning the latter, means on the gear wheel adapted to periodically engage the lever for actuating the same, and a mechanism for driving the gear wheel.

7. The combination of a plunger, a rack thereon, a mutilated gear arranged and adapted to periodically engage and disengage the rack for moving the latter forwardly, and a quick acting mechanism for returning the plunger, said mechanism comprising a lever connected with the plunger, and a means on the gear arranged to engage the lever simultaneously with the disengaging of the plunger by the gear for actuating the lever.

8. The combination of a plunger, a revoluble means arranged to engage with the plunger during a portion of its revolution for moving the latter forwardly, means connected with the plunger for returning it quickly, and a device rotating with and supported on said revoluble means for actuating the means immediately after the end of the forward stroke of the plunger.

9. The combination of a reciprocating element, means for driving the same in one direction, a lever having a long and short arm, a flexible member between the long arm and the element, a revoluble means adapted to engage the short arm of the lever at the end of the forward stroke of the element for returning the latter quickly, and a spring connected with the short arm of the lever for returning the latter to its initial position after being actuated by said means.

10. The combination of a reciprocating element, a rack and gear of the mutilated type for driving the element forwardly, and a quick acting mechanism for returning the element, said mechanism comprising a member flexibly connected with the element, and a device revolving with the gear for actuating the member.

11. The combination of a reciprocating element, a rack connected with the element, a mutilated gear arranged to mesh with the rack, a revolving wheel carrying the gear, and a mechanism for actuating the element in a direction opposite from that due to the said gear, said mechanism comprising a lever, a connection between the lever and element, and a device on the wheel having a wiping engagement with one end of the lever for actuating the latter.

12. The combination of a reciprocating element, a rack connected with the element, a mutilated gear arranged to mesh with the rack, a revolving wheel carrying the gear, and a mechanism for actuating the element in a direction opposite from that due to the said gear, said mechanism comprising a lever, a flexible element connecting the lever with the element, a pulley for the flexible element, and a device on the wheel which periodically engages the lever for imparting motion thereto.

13. The combination of a reciprocating element, means for driving the element in one direction only, and a mechanism for driving the element in the opposite direction and at such a rate as to introduce an idle period before the said means operates on the plunger, and means for locking the element during its idle period, said mechanism comprising a lever fulcrumed to have a short and a long arm, a flexible member connecting the long arm of the lever with the element, and a revolving device arranged to engage the short arm of the lever simultaneously with the ending of the stroke of the element due to the said means for actuating the lever to return the element quickly.

14. The combination of a reciprocating element, with a mechanism for driving the same in one direction, said mechanism comprising a pair of levers disposed on opposite sides of the element, a flexible member between each lever and the element, and a revolving device arranged between the lever and having a laterally projecting member on each side to actuate the levers simultaneously.

15. The combination of a reciprocating element, means for actuating the same in one direction, a mechanism for driving the element in the opposite direction, and a device for automatically locking the element during a limited period between its strokes said mechanism comprising a pair of levers disposed on opposite sides of the element and each having a long and a short arm, flexible members connecting the long arms of the levers with the element, pulleys over which the members run, and a revolving device arranged to periodically engage the short arms of the levers for actuating the element quickly.

16. The combination of a reciprocating element, a gear rotating on a horizontal axis for actuating the same in one direction, and a mechanism for driving the element in the opposite direction, said mechanism comprising a pair of levers disposed on opposite sides of the element and gear and each having a long and a short arm, flexible members connecting the long arm of the levers with the element, pulleys over which the members run, and devices on opposite sides of the gear arranged to periodically and simultaneously actuate the levers.

17. The combination of a reciprocating element, means for actuating the same, said means comprising a lever, a flexible member connecting the lever with the element, a pulley for the member, and a yielding means for permanently holding the said member taut.

18. The combination of a reciprocating element, a mutilated rack and pinion device for moving the element in one direction, a revolving wheel carrying the pinion of said device, a mechanism for actuating the element in the opposite direction, and a pin on the wheel for periodically operating the said mechanism.

19. The combination of a pair of spaced gear wheels, teeth between them forming a mutilated gear, a reciprocating element, a rack connected with the element and disposed between the wheels to mesh with the teeth, and a mechanism actuated by the said wheels for returning the element immediately after the latter has been actuated by the gear and rack.

20. The combination of a pair of spaced gear wheels, teeth between them forming a mutilated gear, a reciprocating element, a rack connected with the element and disposed between the wheels to mesh with the teeth, supports on opposite sides of the said wheels, levers fulcrumed thereon, flexible members between the levers and element, springs between the levers and said supports for maintaining the flexible members taut, and means on the wheels for actuating the levers.

21. The combination of a wheel, means carried thereby which form a mutilated gear, a reciprocating element, a rack connected with the element which meshes with the gear for driving the element in one direction, a mechanism for actuating the element in the opposite direction, a device carried by the said wheel for operating the mechanism, and a gearing for driving the wheel.

22. The combination of a supporting frame having transverse walls, a guide bar supported by the walls, a plunger rod, a head on the rod having a bore through which the guide bar extends, means engaging the plunger rod for driving it in one direction, and a mechanism for driving the rod in the opposite direction, said mechanism comprising a flexible element connected with the rod, and a pulley for guiding the movement of the element.

23. The combination of a supporting frame provided with a compartment, a horizontal guide bar supported therein, a horizontal reciprocating plunger rod guided

along said bar, a mechanism within the compartment for driving the plunger forwardly, a second mechanism in the compartment for driving the plunger rod in the opposite direction, and a continuously rotating common driving gearing for automatically actuating the mechanism alternately.

24. The combination of a supporting frame having a pressing chamber, a hopper leading into the same, a plunger moving back and forth in said chamber, a closure connected thereto a yielding guard at the front end of the hopper, and springs exterior to the hopper and connected with the ends of the guard.

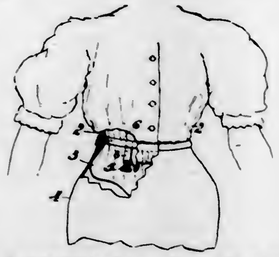
25. In a press, the combination of a plunger, means for reciprocating the plunger with an idler intermediate each return and succeeding forward stroke, and an automatically actuated means for locking the plunger in fixed position during its idle period.

26. In a press, the combination of a plunger, means for reciprocating the plunger with an idle period intermediate each return and succeeding forward stroke, a spring dog for holding the plunger in fixed position during its idle period, and means for releasing the dog preparatory to the forward stroke.

27. In a press, the combination of a plunger, a continuously rotating device, means on the device for driving the plunger forwardly, means actuated by the device for returning the plunger quickly, and a dog controlled by the device for holding the plunger stationary between each return and succeeding forward stroke.

28. In a press, the combination of a plunger, a rotatable device for actuating the plunger, a pin on the device, a dog for holding the plunger stationary, means on the dog engaged by the said pin for rendering the dog inoperative, and means arranged to guide the movement of the plunger and to act as a stop for limiting the movement of the dog.

854,737. SHIRT-WAIST ATTACHMENT. NELLIE E. HANNA, New York, N. Y. Filed May 2, 1906. Serial No. 314,768.



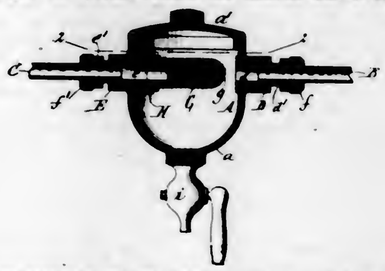
Claim.—1. A shirt waist provided with a separate belt at the waist line said belt having several tabs depending therefrom, in combination with a corset provided with fastening devices below the belt line to which said tabs are adapted to be fastened, substantially as described.

2. A shirt waist having a separate detachable belt 6 secured thereto said belt being provided with one or more tabs depending therefrom, in combination with a corset having fastening devices secured thereto below the waist line, substantially as described.

854,738. LIQUID-FILTER. HERMAN J. HASS, Buffalo, N. Y., assignor to E. R. Thomas Motor Company, Buffalo, N. Y. Filed Sept. 15, 1906. Serial No. 334,814.

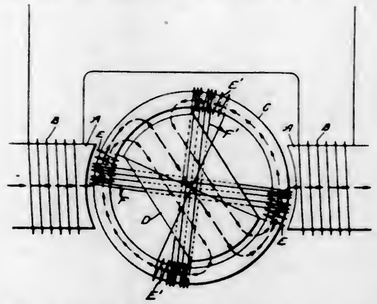
Claim.—1. A liquid filter comprising a separating chamber, inlet and outlet pipes each connected with said chamber by a nipple which screws into an opening in the side of the chamber while its outer end receives the respective pipe, and a packing nut applied to the outer end of said nipple and around said pipe, and a screen arranged over the outlet nipple within the separating chamber, substantially as set forth.

2. A liquid filter comprising a separating chamber, inlet and outlet pipes each connected with said chamber by a nipple which screws into an opening in the side of the chamber while its outer end receives the respective pipe, and a packing nut applied to the outer end of said nipple and around said pipe, a screen having a cylindrical body arranged horizontally within the chamber and a semi



spherical head at one end, and a coupling sleeve which has a screw connection with the inner end of the nipple of the outlet pipe and is connected with the opposite end of the body of the screen, substantially as set forth.

854,739. ALTERNATING-CURRENT MOTOR. LAWRENCE A. HAWKINS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 10, 1906. Serial No. 333,916.



Claim.—1. In an alternating-current motor, a primary winding, a secondary winding comprising independent coils relatively rotatable with respect to the primary winding, a magnetic circuit arranged to shunt the primary flux away from a portion of said coils, and independent cross-magnetizing coils connected in series with the several secondary coils.

2. In an alternating-current motor, a primary member, a winding thereon, a secondary member relatively rotatable with respect to the primary member, the magnetic circuit for the primary flux being arranged to produce unequal magnetizntions in different portions of the secondary member, independent coils distributed on the secondary member, and independent cross-magnetizing coils on the secondary member connected in series with the several secondary coils.

3. In an alternating-current motor, a primary winding, a secondary winding comprising distributed coils connected to form a plurality of independent closed circuits, a magnetic circuit for said windings arranged to produce an unequal distribution of the primary flux in said coils, and cross-magnetizing coils included in said closed circuits.

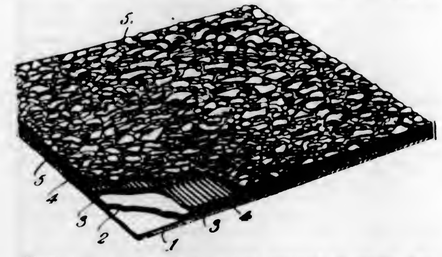
4. In an alternating-current motor, a primary winding, a relatively rotatable second winding comprising distributed coils connected to form independent closed circuits, and a magnetic flux-shunt arranged at an angle to the line of magnetization produced by the primary winding and adapted to form a shunt for the primary flux with respect to a portion of the secondary member.

5. In an alternating-current motor, a primary member, a winding thereon, a Gramme-ring secondary member relatively rotatable with respect to the primary member, ring-wound coils distributed on the secondary member, drum-wound coils connected in series with the ring-wound coils to form a plurality of independent closed circuits, and a magnetic flux-shunt arranged at an angle to the line of magnetization produced by the primary winding and adapted to form a shunt for the primary flux with respect to a portion of the secondary member.

6. In an alternating-current motor, a primary member, a winding thereon, a Gramme-ring secondary member relatively rotatable with respect to the primary member, ring-wound coils distributed on the secondary member, drum-wound coils connected in series with the ring-wound coils to form a plurality of independent closed circuits, and means for producing an unequal distribution of the primary flux in the Gramme-ring member.

7. In an alternating-current motor, a primary member, a winding thereon, a Gramme-ring secondary member relatively rotatable with respect to the primary member, ring-wound coils distributed on the secondary member, drum-wound coils connected in series with the ring-wound coils to form a plurality of independent closed circuits, and means for producing an unequal distribution of the primary flux in the Gramme-ring member, the ring-wound and drum-wound coils being oppositely-wound with respect to the primary flux in said Gramme-ring member.

854,740. COMPOSITE ROOFING. AMZI G. HENNION, Houston, Tex. Filed Oct. 15, 1906. Serial No. 339,132.



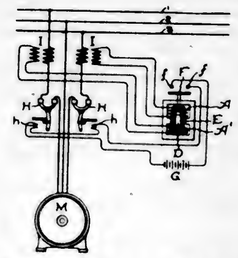
Claim.—1. A composite roofing comprising paper backing having a layer of rubber asphalt applied thereto, straw matting having selvage edges located upon said layer of rubber asphalt, a second layer of rubber asphalt applied to the outer surface of the matting and a coating of fire proof material applied to the last said layer of rubber asphalt.

2. A composite roofing comprising a paper backing having a layer of rubber asphalt applied thereto, straw matting having selvage edges located upon said layer of rubber asphalt, a second layer of rubber asphalt applied to the outer surface of the matting and a coating of shell.

854,741. REVERSE-PHASE RELAY. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed May 4, 1905. Serial No. 258,887.

Claim.—1. In a relay, in combination with a circuit to be protected, a rectilinearly-movable member, a plurality of coils energized with currents of different phase and adapted to produce a progression of the flux along the line of movement of said member, means for normally restraining the movement of said member, and means operated by a movement of said member in the opposite direction for opening said circuit.

2. In a relay, a longitudinally-movable conducting member, a series of coils surrounding said member and energized with currents of different phase whereby a progression of the flux is produced axially with respect to said member, means for normally restraining the movement of said member, and a switch contact operated by said member upon a movement of said member in the opposite direction.



3. In a relay, a central core, a series of coils surrounding said core and energized with currents of different phase whereby a progression of flux is produced in an axial direction in said core, a normally-inoperative member movable upon a reversal of the direction of progression of flux in said core, and a switch contact operated by the movement of said member.

4. In a relay, a central core, a series of coils surrounding said core and energized with currents of different phase whereby a progression of flux is produced in an axial direction in said core, a light conducting tube surrounding said core, means for preventing a movement of said tube in the direction of the normal progression of said flux, and a switch contact operated by the movement of said tube in the opposite direction.

5. In combination with a polyphase circuit, a series of coils energized from different phases of said circuit and arranged to produce a rectilinear progression of flux, a rectilinearly-movable conducting member subjected to said flux, means for restraining the movement of said member in the direction of the normal progression of said flux, and means for opening said circuit upon a movement of said member in the opposite direction.

6. In combination, a polyphase circuit, a longitudinally movable conducting member, a series of coils surrounding said member and energized from different phases of said circuit whereby a progression of flux is produced axially with respect to said member, means for preventing a movement of said member in the direction of normal progression of said flux, a switch contact operated by the movement of said member in the opposite direction, and switches controlled by said contact and adapted to open said polyphase circuit.

7. In combination, a polyphase circuit, a magnetic core, a series of coils surrounding said core and energized from different phases of said circuit whereby a progression of flux is produced in an axial direction in said core, a light conducting tube surrounding said core, a contact operatively connected to said tube, means for preventing the movement of said tube in the direction of normal progression of said flux, a trip circuit arranged to be closed by said contact upon a movement of said tube in the opposite direction, trip coils in said circuit, and switches controlled by said trip coils and adapted to open said polyphase circuit.

8. In a relay, a series of axially-displaced coils energized with currents of different phase, a rectilinearly-movable conducting member disposed axially with respect to said coils, means for restraining the movement of said member in one direction, and a switch contact operated by the movement of said member in the opposite direction.

9. In combination, a polyphase circuit, a rectilinear movable member, a series of coils energized from the several phases of said circuit and adapted to produce a progression of flux along the line of movement of said member, means for normally restraining the movement of said member, and means operated by a movement of said member in the opposite direction for opening said polyphase circuit.

10. In combination, a polyphase circuit, a magnet core,

a series of axially displaced coils surrounding said core and energized from different phases of said circuit, a light conducting tube surrounding said core, means for preventing the movement of said tube in the direction of the normal progression of the flux to said coils, and means operated by a movement of said tube in the opposite direction for opening said polyphase circuit.

854,742. ADJUSTABLE EXTENSION-BIT HOLDER. CHARLES E. HILL, Foster, Ohio. Filed Jan. 12, 1907. Serial No. 351,943.



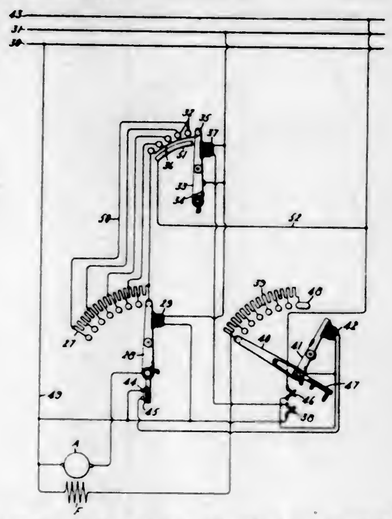
Claim.—1. An extension-shank for bits and the like comprising a longitudinally slotted tube having at one end tool-holding means and open at the other end, a longitudinally grooved stem entering the open end of the tube and slidable therein, a set-screw tapped through the tube and seating in the groove and a set-screw carried by the stem and working in the slot of the tube.

2. An extension-shank for bits and the like comprising a tube open at one end, a collar fixed to the opposite end of the tube and projecting therefrom, and having a threaded bore to receive a tool-holder, a stem entering the open end of the tube and slidable therein, and means for holding the tube and stem at adjustment.

854,743. MOTOR-CONTROL DEVICE. ANDREW KIDD, Jr., Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed July 25, 1906. Serial No. 327,600.

Claim.—1. The combination with an electric motor, of means for starting the same on a multi-voltage system comprising armature control mechanism, field control mechanism, means for retaining the former mechanism in running position across the low-voltage mains and means for automatically returning the same to starting position when the field control mechanism reaches a point of maximum speed.

2. The combination with an electric motor, of means for starting the same on a multi-voltage system comprising armature control mechanism, field control mechanism, means for retaining the former mechanism in running position across the low-voltage mains and means for returning both mechanisms to starting position simultaneously when the field control mechanism reaches the point of maximum speed.



3. The combination with an electric motor, of means for starting the same on a multi-voltage system comprising armature control mechanism, field control mechanism, means for retaining the former mechanism in running position across the low-voltage mains and means for connecting the motor to the high-voltage mains, with the armature resistance in circuit, when the field control mechanism reaches the point of maximum speed, and then simultaneously cutting out both resistances to maintain the motor at substantially constant speed during the change of voltage.

4. The combination with an electric motor, of means for starting the same on a multi-voltage system comprising armature control mechanism, field control mechanism, means for retaining the former mechanism in running position across the low-voltage means and means for automatically returning the same to starting position when the field control mechanism reaches a point of maximum speed and simultaneously connecting the motor across the high-voltage mains.

5. The combination with an electric motor, of means for starting the same on a multi-voltage circuit comprising armature resistance, a controlling element therefor, field resistance, a controlling element therefor, means for retaining the armature controlling element in running position, and means for automatically cutting the armature resistance in and out when the field resistance is at the point of maximum speed without moving the armature controlling element from running position.

6. The combination with an electric motor, of means for starting the same on a multi-voltage system comprising armature control mechanism, field control mechanism, means for retaining the former mechanism in running position across the low-voltage mains and means for returning the same first to starting position and then to running position when the field control mechanism reaches a point of maximum speed.

7. Means for controlling an electric motor circuit comprising armature control mechanism, means for retaining the same in short-circuit position, field control mechanism, means normally tending to return the same to full-field position, and means controlled by the armature control mechanism for rendering the said return means inoperative.

8. Means for controlling an electric motor circuit comprising armature control mechanism biased to the starting position, field control mechanism, means normally tending to return said latter mechanism to full-field position and means controlled by the armature controlling mechanism for rendering the said returning means inoperative.

9. Means for controlling an electric motor circuit comprising armature control mechanism, field control mechanism, means normally tending to return said latter mechanism to full-field position and a no-voltage magnet controlled by the armature controlled mechanism for controlling the returning means.

10. Means for controlling an electric motor circuit comprising armature control mechanism biased to the starting position, field control mechanism, means normally tending to return said latter mechanism to full-field position and a no-voltage magnet controlled by the movement of the armature control mechanism from running position for rendering the said returning mechanism inoperative.

11. Means for controlling an electric motor circuit comprising armature control mechanism biased to the starting position, a no-voltage magnet therefor, field control mechanism, means normally tending to return said latter mechanism to full-field position, and a no-voltage magnet controlled by the movement of the armature control mechanism from running position for rendering the said returning mechanism inoperative.

12. Means for controlling an electric motor circuit comprising armature control mechanism, field control mechanism, means normally tending to return said latter mechanism to full-field position and electrically controlled means responsive to movement of the armature control mechanism from running position for rendering the said returning means inoperative.

13. Means for controlling an electric motor circuit comprising armature control mechanism, field control mechanism, means normally tending to return said latter mechanism to full-field position and means responsive to movement of the armature control mechanism for controlling the returning means.

14. Means for controlling an electric motor circuit comprising armature resistance and independent controlling elements therefor, one of which is biased to running position and the other to starting position, means for retaining said elements in their respective operative positions, field control mechanism, and means controlled thereby for releasing one of said armature controlling elements.

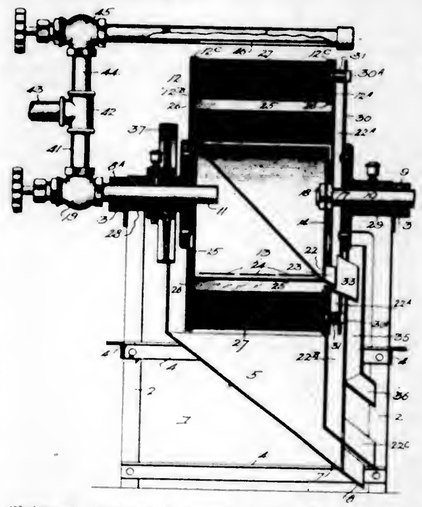
15. Means for controlling an electric motor circuit comprising armature resistance and independent controlling elements therefor one of which has two running positions and is biased to one of them, means for maintaining said element in the other running position, field control mechanism and means controlled thereby for releasing said controlling element to allow it to return to the opposite running position.

16. Means for controlling an electric motor circuit comprising armature resistance having independent controlling elements, one of which is biased to starting position, the other having two running positions and biased to one of them, low-voltage magnet for retaining said elements in running position, field control mechanism, means controlled thereby for releasing said latter controlling element to allow it to return to its opposite running position.

17. Means for controlling an electric motor circuit comprising armature resistance having independent controlling elements, one of which has two running positions with an intermediate starting position and biased to one of said running positions, a no-voltage magnet for retaining said elements in running position, field control mechanism and means controlled by the movement of said mechanism to a predetermined position for releasing said controlling element to allow it to pass from running position through starting position back to the opposite running position.

18. Means for controlling an electric motor circuit comprising armature controlling mechanism having independent controlling arms, one of which is biased to starting position and the other having two running positions with an intermediate starting position and biased to one of them, field control mechanism, means normally tending to return said latter mechanism to full-field position, means responsive to movement of the field control mechanism to full-field position for releasing said latter element to allow it to pass from running position through the starting position back to the opposite running position, and means responsive to movement of the armature control mechanism to running position for rendering the returning means of the field control mechanism inoperative.

854,744. ROTARY SCREEN, ORE SIZER, AND SAMPLER. HOWARD G. KING, Denver, Colo. Filed Apr. 24, 1906. Serial No. 313,421.



Claim.—1. In a rotary screen, a pair of opposing disk shaped screen drum heads rotatably mounted and arranged to form a screen supporting frame, a plurality of concave screens arranged in a circle and rotatably mounted, shelves and ribs arranged on said supporting frame for securing each screen independent of the others, means including an inclined chute for conveying the screenings from the interior of said circle of screens, means including a spout for feeding material to said screens, means including a pipe for washing the interior surface of said screens, and means for conveying the oversize material from said screens.

2. In a rotary screen, the combination with the supporting disks connected by radial ribs, of a circumferential screen comprising a plurality of independent concave screens connecting end to end, means including shelves on said disks for supporting said screens between said disks and their ribs, means including an inclosed inclined chute for conveying the screenings from the interior of the circumferential screen, means including a casing for conveying the oversize from said screen, means for feeding material to said screen, means for flowing a supply of wash water onto said screen, means for flowing water through said screen from the inner side of said circumferential screen, and means for rotating said screen.

3. In a rotary screen, the combination with a supporting frame, of a circumferential screen comprising a plurality of independent concave screens connecting end to end, shelves for supporting said screens, a chute for conveying the screenings from the interior of the circumferential screen, a casing for conveying the oversize from said screen, a chute for feeding material to said screen, a pipe for flowing a supply of wash water onto said screen, means including a pipe for flowing water through said screen from the inner side of said circumferential screen, means for rotating said screen, and means including a spout attached to said circumferential screen for reserving a sample of said screen's screenings at each revolution of said screen.

4. In a rotary screen, the combination with a supporting

frame, of fixed trunnion shafts mounted thereon, a circular screen frame mounted on said trunnion shafts, a plurality of independent screens mounted in the periphery of said circular frame, a suitable screenings receiving hopper inside of said circular frame, having a discharge spout, a pipe for flowing water onto said screens, a chute for feeding ore to said screen, a water receptacle within said circular frame, provided with water jet discharging apertures arranged to discharge jets of water against the inner surface of said screens at the lowest portion of said circular frame, and means for leading the oversize material from said screen.

5. In a rotary screen, the combination of a suitable supporting frame, a cylindrical screen supporting drum rotatably mounted on said frame, comprising a pair of end disks, connected by radial plates, each disk being provided with a rim flange extending toward the other, the outer ends of said radial plates being placed far enough below said rim flange to receive the ends of a concave-shaped screen between them, and a convex projecting shelf on each inner side of said disks extending from the outer edges of said plates, and sheets of concave-shaped screen cloth, arranged to be inserted between said rim flange and the outer edges of said plates, and to rest at their side edges on said shelves, and arranged and adapted to have their opposite ends extend over and be bent down over the outer edges of said plates.

6. In a rotary screen, the combination with the opposing disk shaped screen drum heads rotatably mounted and arranged to form a screen supporting frame, of the oversize hopper within said frame, the screen drum rotatably mounted on trunnion shafts and being partially within said oversize hopper, one of said trunnion shafts being a tube or hollow shaft, a valve controlled water supply pipe connected to the outer end of said hollow shaft, a water receptacle supported by said trunnion shafts and arranged to receive a supply of water from said hollow trunnion shaft, a hopper adjacent to said water receptacle, and within said screen-drum, a plurality of independent concave screens arranged in successive circular order around the periphery of said screen-drum around said hopper and water receptacle, a water supply pipe extending over said screen-drum and arranged to discharge a supply of water on said screens, water discharge apertures in the bottom of said water receptacle arranged to discharge water on the inner side of said concave screens at the lowest portion of said screen-drum, and adapted to discharge water into said oversize hopper.

7. In a rotary screen, the combination of the frame, having oppositely arranged trunnion shafts arranged in axial alinement, one of which is hollow, the oversize hopper supported therein, the screenings discharge spout and the sampling discharge spout formed on said oversize hopper, with a circular hollow screen-drum rotatably mounted on said trunnion shafts and journaled to rotate partially in said oversize hopper, a semi-cylindrical hopper having closed ends supported on said trunnion shafts within said screen drum, and containing a screenings hopper and a water compartment, said screenings hopper having an opening in its upper side, a diaphragm extending from one upper corner of its top at one end to its bottom at the other end, a discharge aperture through said end at the lower end of said diaphragm, a discharge spout surrounding said discharge aperture and projecting a short distance from the end of said cylinder and adapted to discharge into the screenings spout, a disk secured to the side of said screen-drum that lies adjacent to the discharge spout of said cylinder, and positioned at a short distance from the side of said screen-drum and said discharge spout, and provided with a spout extending through it and projecting from it a short distance on each side of it, and provided on its inner side with a projecting lip on its lower side, said sampling spout being arranged and positioned on said disk to register opposite to and to almost touch said cylinder's discharge spout as it passes it at each revolution of said screen drum, and adapted to discharge into said sampling spout, a water receptacle in said cylinder below said screenings hopper and discharging diaphragm, a row of water discharging jets in the bottom of said cylinder, a valved water supply pipe attached to the outer end of said hollow shaft, said hollow shaft extending into said water compartment of said cylinder, a circular row of independent concave screens detachably secured to the periphery of said screen drum, means for feeding ore to each of said screens as said screen drum rotates, a water supply pipe extending over said drum and arranged to discharge jets of water on said screens.

8. In a rotary screen, the combination of the frame, the trunnion shafts and bearings secured to said frame, and the oversize and screenings and sampling hoppers and discharge chutes arranged adjacent to each other, with the circular screen-drum, the circumferential row of independent concave screens on said screen drum, the combined screenings receiving and discharging hopper, and water compartment cylinder supported on said trunnions, the water passage through one of said trunnions into said water compartment of said cylinder, and the water supply pipe for washing the outside and inside surfaces of said concave screens.

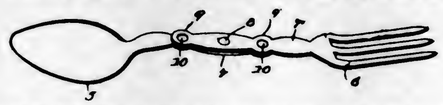
9. In a rotary screen, the combination of the rectangular frame, having a pair of boxes mounted thereon, and a hollow water conveying trunnion shaft mounted in one box and a solid trunnion shaft mounted in the other box, said shafts being in axial end to end alinement, a cylinder having closed ends and divided into a hopper chute at one end and into a water compartment at its opposite end, the said end of said cylinder adjacent to said hopper and chute portions of said cylinder being rigidly secured to said solid trunnion shaft, the opposite end of said cylinder containing an aperture through which said water conveying trunnion shaft extends into said water compartment, a circular drum, of a plurality of independent concave screens surrounding said cylinder, means for rotating said drum, means for feeding ore to the screens of said drum in successive order, a water supply pipe arranged to supply jets of water to the outside surface of said screens, a water supply pipe connected to said hollow trunnion shaft, and water jet apertures in the bottom of the water compartment of said cylinder, and adapted to supply jets of water to the inner side of said concave screens.

10. In a rotary screen, the combination with the frame, of the screen drum rotatably mounted thereon, the plurality of concave independent screens on said screen drum, the combined screenings catching and discharge hopper, and water compartment cylinder, and the screenings discharge spout, with the sampling disk secured to the side of said screen-drum adjacent to said screenings discharge spout, the sampling spout on said disk arranged to register with the discharge face of said discharge spout as it passes it, and the samplings discharge chute into which the samplings spout of said disk discharges.

11. In a rotary screen, the combination of the frame, the oversize and screenings and samplings hoppers, the trunnion shafts, one of which is a water inlet tube, the water cylinder connected to said water inlet tube trunnion shaft, the screenings hopper and discharge chute in said cylinder, the rotary screen-drum revolubly mounted on said frame and surrounding said cylinder and extending partially into said oversize hopper, the circumferential row of independent concave screens removably secured to said drum, the side disks and radial plates and concave shelves of said drum arranged to support said screens, the sampling disk attached to said screen-drum, the sampling spout arranged to cut the screenings discharge from said screenings discharge spout, and discharge them into said sampling hopper, means for feeding ore pulp onto each screen in successive order, and means for supplying jets of wash water to the outer surface of said screens, as said ore pulp is fed on them, and against the inner surfaces of said screens after the ore pulp has been discharged from their outer surfaces.

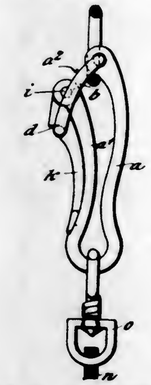
854,745. COMBINED FORK AND SPOON. JOHN KING, Oakland, Me. Filed Mar. 15, 1906. Serial No. 306,263.

Claim.—A device of the class described comprising a pair of pivotally united over-lapping members each provided with a shank having spaced circular enlargements adapted to register with each other when the members are in both open and closed position, the side walls of the shanks between the enlargements being disposed in vertical alinement and curved laterally to form an intermediate operating handle, and projections formed in the center of



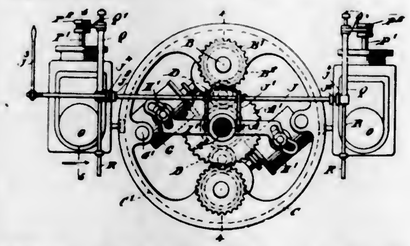
the enlargements of one shank and adapted to enter corresponding sockets formed in the enlargements of the adjacent shank for locking said shanks in extended or folded position.

854,746. FASTENING-HOOK. BRUNO KNOTHE, Dömitz, Germany. Filed May 5, 1906. Serial No. 315,447.



Claim.—A fastening hook comprising in combination an open-ended bow having one limb (a) longer than the other limb (a^1), a link (a^2) pivoted to the end of the limb (a), a lever (k) pivoted to the limb (a^1) and having a recess (d) adapted to be engaged by the free end of the link (a^2), the pivot of the lever (k) lying laterally of the line of the recess (d) and the pivot of the link (a^2) when the hook is closed.

854,747. SPEED-CHANGING GEARING. ROBERT E. LINCOLN, Jersey City, N. J. Filed Sept. 1, 1906. Serial No. 332,903.



Claim.—1. A speed changing mechanism, comprising a rotatable carrier, a drive shaft and a driven shaft co-axial with said carrier, a transmitting shaft journaled on the carrier, toothed gears connecting the transmitting shaft both with the drive shaft and with the driven shaft, a device for opposing a variable resistance to the rotation of the carrier, another device for opposing a variable resistance to the rotation of the transmitting shaft relatively to the carrier, and a connection between said devices so arranged that when the resistance to the carrier's rotation is increased the resistance to the rotation of the transmitting shaft will be diminished, and vice versa.

2. A speed changing mechanism, comprising a rotatable carrier, a piston arranged to be reciprocated by the rotation of the carrier, a device for opposing a variable resistance to the reciprocation of said piston, a drive shaft and a driven shaft co-axial with the carrier, a transmitting shaft journaled on the carrier, gears connecting said transmitting shaft both with the drive shaft and with the driven shaft, a piston connected with said transmitting shaft and carried by the carrier so as to rotate therewith, a device for opposing a variable resistance to the reciprocation of the last mentioned piston, and a connection between said devices so arranged that when the resistance to the carrier's rotation is increased the resistance to the rotation of the transmitting shaft will be diminished, and vice versa.

3. A speed changing mechanism, comprising a rotatable carrier, a transmitting shaft journaled thereon so as to rotate therewith, a drive shaft co-axial with the carrier and having a driving connection with the transmitting shaft; a device for opposing a variable resistance to the rotation of the carrier, another device for opposing a variable resistance to the rotation of the transmitting shaft relatively to the carrier, and a connection between said devices so arranged that when the resistance to the carrier's rotation is increased the resistance to the rotation of the transmitting shaft will be diminished, and vice versa.

4. A speed changing mechanism, comprising a rotatable carrier, a piston adapted to be reciprocated by the rotation of the carrier, a transmitting shaft journaled on the carrier so as to revolve therewith, a piston carried by the carrier and arranged to be reciprocated by the rotation of the transmitting shaft relatively to the carrier, individual devices for opposing a variable resistance to the reciprocation of the aforesaid pistons, a drive shaft co-axial with the carrier and in driving connection with the transmitting shaft, and a connection between said devices so arranged that when the resistance to the carrier's rotation is increased the resistance to the rotation of the transmitting shaft will be diminished, and vice versa.

5. A speed changing mechanism, comprising a rotatable carrier, a drive shaft co-axial therewith, a transmitting shaft journaled on the carrier and operatively connected with the drive shaft, an oscillating cylinder pivoted to the carrier, a piston within said cylinder, a driving connection from the transmitting shaft to said piston, and an adjustable valve for varying the resistance opposed to the reciprocation of the piston.

6. A speed-changing mechanism, comprising a rotatable carrier, a drive shaft co-axial therewith, a transmitting shaft journaled on the carrier and operatively connected with the drive shaft, an oscillating cylinder pivoted to the carrier, a piston within said cylinder, a driving connection from the transmitting shaft to said piston, a valve movable in said cylinder in a direction parallel to the carrier's axis, and means for adjusting said valve to vary the resistance opposed to the reciprocation of the piston.

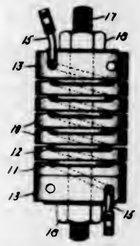
7. A speed-changing mechanism, comprising a rotatable carrier, a drive shaft co-axial therewith, a transmitting shaft journaled on the carrier and in driving connection with the drive shaft, a cylinder carried by the carrier so as to revolve therewith, a piston in said cylinder, a driving connection from the transmitting shaft to said piston, a valve movable in said cylinder in a direction parallel to the carrier's axis, and means for adjusting said valve to vary the resistance opposed to the reciprocation of the piston.

8. A speed-changing mechanism, comprising a rotatable carrier, a drive shaft co-axial therewith, a transmitting shaft journaled on the carrier and in driving connection with the drive shaft, a cylinder carried by the carrier so as to revolve therewith, a piston in said cylinder, a driving connection from the transmitting shaft to said piston, a valve controlling a passage which connects the opposite ends of said cylinder, said valve being movable in a direction parallel to the carrier's axis, and means for adjust-

ing said valve to vary the resistance opposed to the reciprocation of the piston.

9. A speed-changing mechanism, comprising two shafts and a carrier arranged to rotate about the same axis, a transmitting shaft journaled on the carrier eccentrically, an adjustable device for opposing a variable resistance to the rotation of the transmitting shaft relatively to the carrier, two gears on the transmitting shaft, an intermediate gear journaled on the carrier and in mesh with one of said gears, and a longitudinally slidable reversing sleeve held to rotate with one of the first-named two shafts and carrying two gears adapted to mesh respectively with the other gear of the transmitting shaft and with the intermediate gear, according to the position of the sleeve.

854,748. RESISTANCE UNIT. FREDERICK MACKINTOSH, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 11, 1906. Serial No. 321,106.



Claim.—1. A resistance unit, comprising a reflex resistance conductor, and insulating washers locking the several loops into a rigid unit.

2. A resistance unit, comprising a resistance conductor bent back and forth in parallel turns, insulating washers between said turns, and a securing bolt passing through the center of said washers.

3. A resistance unit, comprising a resistance conductor bent back and forth into adjacent turns, insulating washers between said turns provided with grooves to receive said conductors, and means for securing said washers together.

4. A resistance unit, comprising a resistance conductor bent back and forth into adjacent parallel turns, insulating washers between said turns provided with grooves to receive said conductor, and a securing bolt passing through said washers.

5. A resistance unit, comprising a plurality of insulating washers, a securing bolt passing therethrough, and a resistance conductor between said washers and engaging the same on opposite sides of said bolt.

6. A resistance unit comprising a resistance conductor bent back and forth into adjacent turns, insulating washers between said turns, end washers perforated to receive the terminals of said conductors, and means for securing said washers together.

7. A resistance unit comprising a resistance conductor bent back and forth in parallel turns, insulating washers between said turns and grooved to receive said conductor, end washers perforated to receive the terminals of said conductor, and a securing bolt passing through said washers.

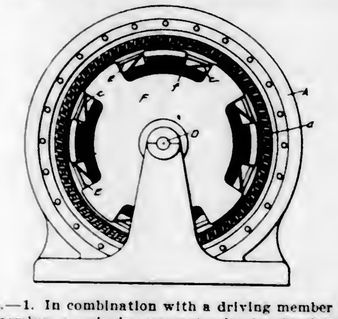
8. A resistance unit, comprising a plurality of insulating washers, a securing bolt passing therethrough, and resistance wire bent back and forth into adjacent turns between said washers and engaging the same on opposite sides of the bolt.

9. A resistance unit, comprising a plurality of insulating washers having substantially parallel grooves therein, a securing bolt passing through said washers and between said grooves, and resistance wire engaging said grooves and bent back and forth in parallel turns.

10. A resistance unit, comprising a plurality of similarly arranged insulating washers each having one face plane and the other provided with substantially parallel grooves, a securing bolt passing through said washers and between said grooves, and resistance wire engaging said grooves and bent back and forth in parallel turns.

11. A resistance unit, comprising a plurality of insulating washers having substantially parallel grooves therein, a securing bolt passing through said washers and between said grooves, a resistance wire engaging said grooves and bent back and forth in parallel turns, and end washers perforated to receive the terminals of said wire.

854,749. POWER-TRANSMISSION MECHANISM. CAMPBELL MACMILLAN, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 1, 1905. Serial No. 289,930.



Claim.—1. In combination with a driving member and a driven member, a unipolar generator having its field magnet carried by one of said members and its armature carried by the other member, brushes carried by said field magnet for collecting the armature current and brush leads extending in a circumferential direction, whereby the current in said leads assists in magnetizing said field magnet.

2. In combination with a driving member and a driven member, a unipolar generator having its field magnet carried by one of said members and its armature carried by the other member, current collecting means for transferring the armature current to the field magnet, and conductors in circuit with said collecting means extending in a circumferential direction.

3. In combination with a driving member and a driven member, a unipolar generator having its field magnet carried by one of said members and its armature carried by the other member, a second unipolar machine comprising a field and armature one carried by one of said members and the other stationary, and connections for supplying to said second machine the current induced in the first unipolar machine.

4. In combination with a driving member and a driven member, a unipolar generator having its field magnet carried by one of said members and its armature carried by the other member, and connections whereby the induced armature current assists in magnetizing the field magnet.

5. In combination with a driving member and a driven member, a unipolar generator having its field magnet carried by one of said members and its armature carried by the other member, a second unipolar machine comprising a field and armature one carried by one of said members and the other stationary, connections for supplying to said second machine the current induced in the field unipolar machine, and connections whereby said induced current assists in magnetizing one of said machines.

6. In combination with a driving member and a driven member, a unipolar generator having its field magnet carried by one of said members and its armature carried by the other member, a second unipolar machine comprising a field and armature one carried by one of said members and the other stationary, connections for supplying to said second machine the current induced in the first unipolar machine, and means for varying the relative field strengths of the two unipolar machines.

7. In combination with an alternating-current synchronous motor, a driven member, a direct-current generator comprising field and armature, one carried by the rotatable member of said motor and the other by said driven member, and connections whereby the current induced in said generator strengthens the field of said motor.

8. In combination with an alternating-current synchronous motor, a driven member, a direct-current generator comprising field and armature one carried by the rotatable member of said motor and the other by said driven member, and a second direct-current machine supplied with current from the first direct-current machine and arranged to assist in driving said driven member.

9. In combination with an alternating-current synchronous motor, a driven member, a direct-current generator comprising field and armature one carried by the rotatable member of said motor and the other by said driven member, a second direct-current machine supplied with current from the first direct-current machine and arranged to assist in driving said driven member, and connections whereby said current strengthens the field of said synchronous motor.

10. In combination with an alternating-current synchronous motor, a driven member, a direct-current generator comprising field and armature one carried by the rotatable member of said motor and the other by said driven member, a second direct-current machine supplied with current from the first direct-current machine and arranged to assist in driving said driven member, and means for varying the relative field strengths of the two direct-current machines.

11. In combination with an alternating-current synchronous motor, a driven member, a unipolar generator comprising field and armature one carried by the rotatable member of said motor and the other by said driven member, and connections whereby the current induced in said unipolar generator strengthens the field of said synchronous motor.

12. In combination with an alternating-current synchronous motor excited by a circumferentially extending field coil, a driven member, a unipolar generator comprising field and armature one carried by the rotatable member of said motor and the other by said driven member, current-collecting means for transferring the armature current of the unipolar generator to the field magnet, and conductors in circuit with said collecting means extending in a circumferential direction.

13. In combination with an alternating-current synchronous motor, a driven member, a unipolar generator comprising field and armature one carried by the rotatable member of said motor and the other by said driven member, and a second unipolar machine supplied with current from the first unipolar machine and arranged to assist in driving said driven member.

14. In combination with an alternating-current synchronous motor, a driven member, a unipolar generator comprising field and armature one carried by the rotatable member of said motor and the other by said driven member, a second unipolar machine supplied with current from the first unipolar machine and arranged to assist in driving said driven member, and means for varying the relative field strengths of the two unipolar machines.

15. In combination with a driven member, an alternating-current synchronous motor and a direct-current generator, one member of one machine being stationary and one member of the other machine being carried by said driven member, an intermediate member comprising the other members of both machines and rotatable both with respect to the stationary member and to the driven member, and connections whereby the current induced in the direct-current generator strengthens the field of the synchronous motor.

16. In combination with a driven member, an alternating-current synchronous motor and a direct-current generator, one member of one machine being stationary and one member of the other machine being carried by said driven member, an intermediate member comprising the other members of both machines and rotatable both with respect to the stationary member and to the driven member, and a second direct-current machine supplied with current from the direct-current generator and arranged to assist in driving said driven member.

17. In combination with a driven member, an alternating-current synchronous motor and a direct-current generator, one member of one machine being stationary and one member of the other machine being carried by said driven member, an intermediate member comprising the other members of both machines and rotatable both with respect to the stationary member and to the driven member, a second direct-current machine supplied with current from the direct-current generator and arranged to assist in driving said driven member, and means for varying the relative field strengths of the two direct-current machines.

18. In combination with a driven member, an alternating-current synchronous motor and a unipolar generator, one member of one machine being stationary and one member of the other machine being carried by said driven member, and an intermediate member comprising the other members of both machines and rotatable both with respect to the stationary member and to the driven member.

19. In combination with a driven member, an alternating-current synchronous motor and a unipolar generator, one member of one machine being stationary and one member of the other machine being carried by said driven member, an intermediate member comprising the other members of both machines and rotatable both with respect to the stationary member and to the driven member, and connections whereby the current induced in the unipolar generator strengthens the field of the synchronous motor.

20. In combination with a driven member, an alternating-current synchronous motor and a unipolar generator, one member of one machine being stationary and one member of the other machine being carried by said driven member, an intermediate member comprising the other members of both machines and rotatable both with respect to the stationary member and to the driven member, and a second unipolar machine supplied with current from the unipolar generator and arranged to assist in driving the driven member.

21. In combination with a driven member, an alternating-current synchronous motor and a unipolar generator, one member of one machine being stationary and one member of the other machine being carried by said driven member, an intermediate member comprising the other members of both machines and rotatable both with respect to the stationary member and to the driven member, a second unipolar machine supplied with current from the unipolar generator and arranged to assist in driving the driven member, and means for varying the relative field strengths of the two unipolar machines.

22. In combination with an alternating-current synchronous motor, a driven member, and a unipolar generator comprising field and armature, one carried by the rotatable member of the synchronous motor and the other by said driven member.

23. In combination with a driven member, an alternating-current synchronous motor and a unipolar generator, the armature of one machine being stationary and the armature of the other machine being carried by said driven member, and an intermediate member comprising the fields of both machines rotatable with respect to both armatures.

24. In combination with a driven member, an alternating-current synchronous motor and a unipolar generator, the armature of one machine being stationary and the armature of the other machine being carried by said driven member, an intermediate member comprising the fields of both machines rotatable with respect to both armatures, and a single magnetizing winding for both fields.

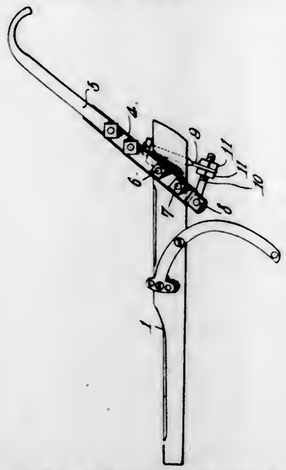
25. In combination with a driven member, an alternating-current synchronous motor and a unipolar generator, the armature of one machine being stationary and the armature of the other machine being carried by said driven member, and an intermediate member comprising the fields of both machines rotatable with respect to both armatures, a single magnetizing winding for both fields, and connections whereby the current induced in the armature of said unipolar machine strengthens said fields.

26. In combination with a driven member, an alternat-

ing-current synchronous motor and a unipolar generator, the armature of one machine being stationary and the armature of the other machine being carried by said driven member, an intermediate member comprising the fields of both machines rotatable with respect to both armatures, and a circumferentially extending magnetizing coil for both fields.

27. In combination with a driven member, an alternating-current synchronous motor and a unipolar generator, the armature of one machine being stationary and the armature of the other machine being carried by said driven member, an intermediate member comprising the fields of both machines rotatable with respect to both armatures, a circumferentially extending magnetizing coil for both fields, means for collecting the current from the armature of said unipolar machine, and conductors in series with said collecting means extending in a circumferential direction.

854,750. MEANS FOR ATTACHING PLOW-HANDLES TO BEAMS. THOMAS M. MANNING, Rome, Ga. Filed Feb. 7, 1907. Serial No. 356,222.



Claim.—1. Means for attaching plow handles to a beam comprising cuffs pivoted to the beam and receiving the handle, a cross-pin located below the beam and connecting said cuffs together, a rod attached to said cross-pin and means for moving said rod longitudinally.

2. Means for attaching plow handles to a beam comprising cuffs pivoted to the beams and receiving the handle, a bolt passing through the cuffs and through an elongated opening in the beam, a cross-pin lying below the beam and connecting the cuffs together and a rod pivotally attached to said cross-pin and means for moving said rod longitudinally.

854,751. CUT-OUT. JOHN T. MARSHALL, Metuchen, N. J., assignor to General Electric Company, a Corporation of New York. Filed June 26, 1905. Serial No. 266,954.



Claim.—1. In an automatic cut-out for electric translating devices, the combination with opposing contacts, movable toward each other when unrestrained, of interposed means for insulating said contacts from each other with a thin layer of insulation and mechanically maintaining them apart a distance greater than the thickness of the insulation.

2. In an automatic cut-out for electric translating devices, the combination with opposing contacts movable toward each other when unrestrained, of an intervening conductor insulated from each of said contacts.

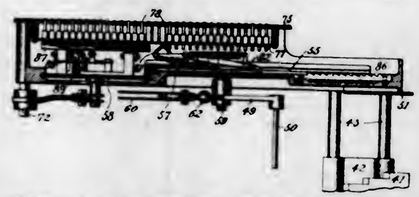
3. In an automatic cut-out for electric translating devices, the combination with opposing contacts, of an intervening conductor insulated from each of said contacts by an interposed film of insulation and normally holding them under strain.

4. In an automatic cut-out for electric translating devices, the combination with opposing contacts movable toward each other when unrestrained, of an intervening conductor insulated from each of said contacts by an interposed film of enamel.

5. In an automatic cut-out for electric translating devices, the combination with opposing contacts movable toward each other when unrestrained, of an intervening conductor coated with a film of insulation so as to maintain said contacts mechanically a considerable distance apart and electrically insulate them from each other by a thin layer of insulation.

6. The combination with an electric transplating device, of opposing contacts in a shunt around the same, and an intervening conductor insulated from each of said contacts.

854,752. APPARATUS FOR DELINEATING CHARACTER ACCORDING TO THE CHARACTER OF THE HAND. HARRY N. MARVIN and HERMAN CASLER, Canastota, N. Y. Filed Sept. 25, 1905. Serial No. 279,979.



Claim.—1. In an apparatus of the kind described, the combination with traveling hand-measuring devices, of a series of cards stored in different positions in a magazine, and mechanism for discharging said cards singly, said discharging mechanism being operatively connected with the said traveling hand-measuring devices, as set forth.

2. In an apparatus of the kind described, the combination with traveling hand-measuring devices, the extent of movement of which is dependent upon the dimensions of a hand applied thereto, of a series of cards stored in different positions in a magazine, and mechanism for discharging said cards singly, said discharging mechanism being operatively connected with the said traveling hand-measuring devices, as set forth.

3. In an apparatus of the kind described, the combination with a support for the hand, a traveling hand-measuring device adapted to traverse the hand support, and means for stopping the movement of the measuring device when the same reaches the limit of a hand applied to the said support, of a series of cards stored in different positions in a magazine, and means for discharging said cards singly, said discharging means being operatively connected with the measuring device, as set forth.

4. In an apparatus of the kind described, the combination of a horizontally arranged support for the hand, a horizontally movable measuring device adapted to traverse the hand support and also capable of vertical movement toward and away from the same, a plurality of gage pins movable vertically in the hand support and having their lower ends projecting into the path of the measuring device, means controlled by the vertical movement of the measuring device for limiting the horizontal movement of the same, and card selecting mechanism dependent upon

the horizontal movement of the said measuring device, as set forth.

5. In an apparatus of the kind described, the combination of a plurality of vertically movable pins, a horizontally moving traveler engaging the lower ends of the pins and capable also of vertical movement, a pawl connected with the traveler, and a rack arranged to be engaged by the pawl, as set forth.

6. In an apparatus of the kind described, the combination of a horizontally arranged pin-carrier, a plurality of pins movable vertically in the carrier, a pair of travelers, one movable longitudinally and the other transversely of the carrier in engagement with the lower ends of the pins therein and capable also of vertical movement, pawls connected with the travelers, and racks arranged to be engaged by the pawls, as set forth.

7. In an apparatus of the kind described, the combination of longitudinally and transversely moving hand-measuring devices, a movable gage block controlled by the said measuring devices, a card magazine having cards stored in different positions therein, and means for selecting a card according to the extent of movement of the gage block, as set forth.

8. In an apparatus of the kind described, the combination of horizontally moving hand-measuring devices, a movable gage block having steps of different heights, card selecting mechanism connected with the gage block, and a gage rod adapted to be located in operative relation to the gage block by the handmeasuring devices, as set forth.

9. In an apparatus of the kind described, the combination of a card magazine having cards stored in different positions therein, a series of ejectors, actuating devices arranged in vernier-scale relation to the ejectors, and means for adjusting the said series of actuating devices, as set forth.

10. In an apparatus of the kind described, the combination of a card magazine having a plurality of card chutes, a series of ejectors for the several chutes, a series of actuating devices arranged in vernier-scale relation to the ejectors, adjustable longitudinally and movable transversely of the said series of ejectors, means for adjusting the series of actuating devices, and hand-gaging mechanism operatively connected with the said adjusting means, as set forth.

11. In an apparatus of the kind described, the combination of a card magazine having cards stored in different positions therein, a series of ejectors, a series of actuating devices arranged in vernier-scale relation to the ejectors, a movable gage block operatively connected with the said actuating devices to adjust the same relative to the ejectors, and hand-gaging mechanism operatively connected with the gage block to determine the extent of movement thereof, as set forth.

12. In an apparatus of the kind described, the combination of a card magazine having a plurality of card chutes, a series of card ejectors, a bar movable transversely of the series of ejectors, a slide adjustable longitudinally in the bar, ejector-actuating devices on the slide in vernier-scale relation to the ejectors, and means for adjusting the slide in the bar to select any of the ejectors, as set forth.

13. In an apparatus of the kind described, the combination of a card magazine having a plurality of card chutes, a series of card ejectors, a bar movable transversely of the series of ejectors, a slide adjustable longitudinally in the bar, ejector actuating devices on the slide in vernier-scale relation to the ejectors, means for adjusting the slide in the bar relative to the ejectors, and hand-gaging mechanism operatively connected with the said adjusting means, as set forth.

14. In an apparatus of the kind described, the combination with a support for the hand, of means for tactually engaging successive portions of the hand in succession to cause sensation therein, as set forth.

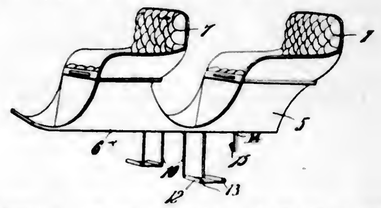
15. The combination with a hand support, of a stop for the hand, to determine the position of the hand thereon, as set forth.

16. The combination with a hand support, of a triangular stop for the hand adapted to fit between the thumb and palm of the hand to determine the position of the hand on the support, as set forth.

17. In an apparatus of the kind described, the combination of a plurality of normally depressed vertically movable pins, and means for pressing pins upwardly and in succession, against the hand applied to the upper ends of the pins, as set forth.

18. In an apparatus of the kind described, the combination of a horizontal plate constituting a support for the hand, a plurality of normally depressed pins movable vertically in said plate and arranged in rows, and means for exerting upward pressure on said rows in succession, as set forth.

854,753. BUGGY-STEP. ELIHU MAY, Magee, Miss. Filed Aug. 7, 1906. Serial No. 329,576.



Claim.—1. The combination with a vehicle, of spaced shafts journaled on the bed of the vehicle and provided with depending hangers the ends of which terminate in laterally extending arms having enlarged heads, a tread surface interposed between the hangers and the enlarged heads of the arms and forming a pivotal connection between said arms, and a locking member secured to the bed of the vehicle and engaging the adjacent hanger for locking the tread surface in elevated position.

2. The combination with a vehicle, of brackets secured to the bed of the vehicle, spaced shafts journaled in the brackets and provided with depending hangers the ends of which terminate in laterally extending arms having enlarged heads, plates interposed between the hangers and the enlarged heads and having their opposite ends bent to form eyes for the reception of the adjacent arms, and a locking member secured to the bed of the vehicle and adapted to engage one of the hangers for locking both hangers in elevated position.

3. The combination with a vehicle, of brackets secured to the bed of the vehicle, spaced shafts journaled in the brackets and provided with depending hangers the ends of which terminate in horizontally disposed arms, a plate forming a pivotal connection between said arms and having its opposite ends bent to form eyes of the same width as the plate for the reception of the arms, and a locking member secured to the bed of the vehicle and adapted to engage one of said hangers for locking the plate in elevated position.

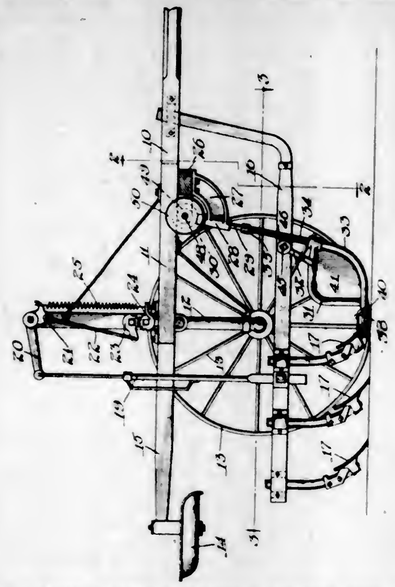
854,754. WHEELED CULTIVATOR. JOHN E. MILLER, Western Springs, Ill. Filed Oct. 8, 1906. Serial No. 338,004.

Claim.—1. In a wheeled cultivator, the combination with shovel-beams and shovels secured thereto, of a rotating agitator carried by said shovel-beams and adapted to engage the ground between the shovels and the corn and throw the dirt toward said corn, and means for rotating said agitator.

2. In a wheeled cultivator, the combination with supporting-wheels, shovel-beams and shovels depending therefrom, of frames carried by said shovel-beams, rotating agitators journaled in said frames and adapted to engage the ground between the shovels and the corn and throw the dirt toward said corn, and connections between said rotating agitators and said wheels adapted to rotate said agitators.

3. In a wheeled cultivator, the combination with supporting-wheels, a shovel-beam and shovels mounted thereon, a frame carried by said shovel-beam, a rotatable agitator journaled in said frame and adapted to engage the ground between the shovels and the corn, a flexible shaft

journaled in said frame and connected with said agitator, and connections between said flexible shaft and said supporting-wheels whereby said agitator is rotated from said supporting-wheels.



854,755. LEATHER-POLISH. JEFFERSON NEWBERRY, Lumberton, N. C. Filed Aug. 23, 1906. Serial No. 331,803.

Claim.—The herein described process for preparing a leather polish which consists, first: take one pound of steel filings, put same into one and one half gallon of apple vinegar, let stand for two weeks, dip off vinegar and dissolved steel filings, strain, then add one half pint of linseed oil and one quarter pound of gum arabic, then second: boil together one pint of neat's-foot oil and one quarter pound of beeswax, let stand until cool, then add this to the above named ingredients, put whole in a stone vessel and stir until thoroughly mixed, all as herein described, the whole forming a complete process for making a leather polish, substantially as shown and described and for the purposes set forth.

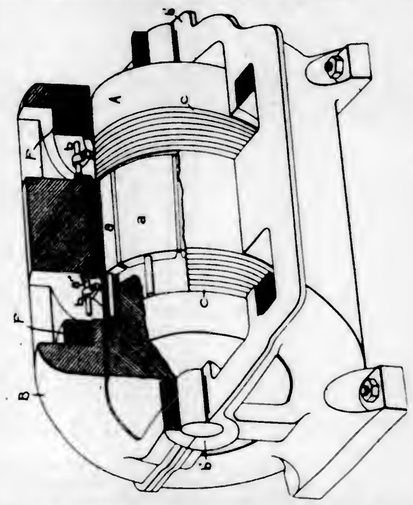
854,756. DYNAMO-ELECTRIC MACHINE. JACOB E. NOEGGERATH, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Mar. 30, 1904. Serial No. 200,677.

Claim.—1. In a dynamo-electric machine, a "homopolar" field structure, a revolving armature, a set of broad conductors carried by said armature and closely spaced so as to form a practically continuous sheet of current-carrying material encircling the armature, and a similar set of conductors carried at or near the inner periphery of said field structure and severally connected in series with the several armature conductors.

2. In a dynamo-electric machine, a "homopolar" field structure, a revolving armature, a plurality of broad conductors connected to collector rings, and similar return-conductors carried by the field structure, both sets of conductors being closely spaced so as to form two opposing substantially continuous sheets of current-carrying material and each return conductor being connected in series with its corresponding armature conductor.

3. In a dynamo-electric machine, a "homopolar" field structure, a revolving armature composed of a plurality of superimposed concentric rings of magnetic material, and a plurality of conductors carried at or near the periphery of said armature.

4. In a dynamo-electric machine, a "homopolar" field structure, and a revolving armature composed of a plurality of concentric rings of magnetic material, said armature being slotted perpendicularly to the axis.



5. In a dynamo-electric machine, a "homopolar" field structure, and a revolving armature slotted perpendicularly to the axis, the slots being of varying depth.

6. In a dynamo-electric machine, a revolving armature body, a plurality of collector rings, and rings movable on said armature body and supporting said collector rings.

7. In a dynamo-electric machine, a revolving armature body, a plurality of collector rings, rings movable on said armature body and supporting said collector rings, and means for moving said supporting rings to vary the tension of said collector rings.

8. In a dynamo-electric machine, a revolving armature body, rings movable axially on said body and having tapered outer surfaces, collector rings having tapered inner surfaces and each one supported between a pair of the first-named rings, and means for moving the first-named rings axially to vary the outward pressure on said collector rings.

9. In a dynamo-electric machine, a "homopolar" field structure, a revolving armature carrying a plurality of conductors connected to collector rings, brushes bearing on said rings, and stationary return conductors connecting said brushes, said brushes arranged relatively to the points of connection of the armature conductors to the several collector rings to produce current distributions in the several rings mutually neutralising their magnetizing effects.

10. In a dynamo-electric machine, a "homopolar" field structure, a revolving armature carrying a plurality of conductors connected to collector rings, brushes bearing on said rings, and stationary return conductors connecting said brushes, said brushes being arranged in groups and arranged relatively to the points of connection of the armature conductors to the several collector rings to produce current distributions in the several rings mutually neutralising their magnetizing effects.

11. In a dynamo-electric machine, a revolving armature carrying a plurality of armature conductors connected to collector rings, the points of connection forming one or more spirals, and brushes bearing on said rings, the points of contact forming one or more opposite spirals.

12. In a dynamo-electric machine, a revolving armature carrying a plurality of armature conductors connected to collector rings, the points of connection forming one or more spirals, and brushes bearing on said collector rings, said brushes being in groups and the points of contact forming one or more spirals opposite in direction to the first-named spirals.

13. In a dynamo-electric machine, a "homopolar" field structure, a revolving armature, a plurality of conductors carried thereby, a plurality of collector rings carried by the armature, a set of connections connecting said conductors to said rings, brushes bearing on said rings, stationary conductors carried by the field structure, and a second set of connections connecting said brushes to said stationary conductors, the connections of one or both sets extending a fraction of a circumference in the same direction around the armature whereby the current in said connections produces a portion of the magnetization of the machine.

14. In a dynamo-electric machine, a "homopolar" field structure, a field winding, a revolving armature carrying a plurality of conductors connected to collector rings, brushes bearing on said rings, stationary conductors carried by the field structure, connections between said brushes and said stationary conductors, each of said connections extending a fraction of a circumference around the armature whereby a compounding magnetization is produced, and means for shifting the brushes to vary said fraction.

15. In a dynamo-electric machine, a "homopolar" field, a field winding, a revolving armature carrying a plurality of conductors connected to collector rings, stationary conductors carried by said field structure, and brushes bearing on said rings and connected to said stationary conductors, the brushes being displaced circumferentially in the same direction from the conductors to which they are connected.

16. In a dynamo-electric machine, a "homopolar" field, a field winding, a revolving armature carrying a plurality of conductors connected to collector rings, stationary conductors carried by said field structure, brushes bearing on said rings and connected to said stationary conductors, each brush being displaced circumferentially from the conductor to which it is connected, and means for varying the amount of said displacement.

17. In a dynamo-electric machine, a revolving armature, a plurality of broad flat conductors carried thereby, the ends of each of said conductors being bent over the ends of the armature, and axially projecting lugs on the ends of the armature extending between the ends of said conductors and adapted to prevent circumferential movement of said conductors relative to said armature.

18. In a dynamo-electric machine, a revolving armature, binding means encircling said conductors and adapted to restrain said conductors against centrifugal force, and a thin sheet of high tensile and compressive strength inserted between said conductors and said binding means and adapted to protect the insulation of said conductors from injury by said binding rings.

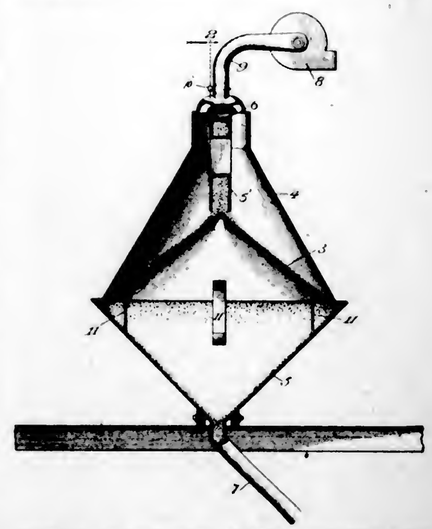
19. In a dynamo-electric machine, a "homopolar" field structure, a revolving armature body carrying two sets of collector rings, and a plurality of armature conductors disposed between said sets, each conductor having extensions at both ends extending through said sets so that all of said conductors are of the same length mechanically, and each conductor being symmetrically connected electrically to said sets so that all of said conductors are of the same length electrically.

20. In a dynamo-electric machine, a "homopolar" field structure, a revolving armature body carrying two sets of collector rings, a plurality of armature conductors disposed between said sets, each conductor having extensions at both ends extending through said sets so that all of said conductors are of the same length mechanically and each conductor being symmetrically connected electrically to said sets so that all of said conductors are of the same length electrically, brushes bearing on said sets, and stationary conductors carried by the field structure connecting brushes of opposite sets, said stationary conductors being symmetrically connected to said brushes so that all of said stationary conductors are of the same length electrically.

21. In a dynamo-electric machine, a "homopolar" field structure, a field winding, an armature, and an armature circuit comprising conductors carried by the armature, collecting means, and connections between said collecting means for connecting the armature conductors in series, a portion of the conductors of the armature circuit having a general circumferential direction, whereby the current in the armature circuit assists the field current in producing the magnetization of the machine.

22. In a dynamo-electric machine, a "homopolar" field structure, a field winding, an armature, and an armature circuit comprising conductors carried by the armature, collecting means, and connections between said collecting means for connecting the armature conductors in series, the conductors of the armature circuit being arranged to produce a circumferential component of current flow in the armature circuit, whereby the current in the armature circuit assists the field current in producing the magnetization of the machine.

854,757. GRAIN-CLEANER. JOSEPH PEACOCK, Savanna, Ill., assignor to Cupola Cleaning Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 15, 1906. Serial No. 306,200.



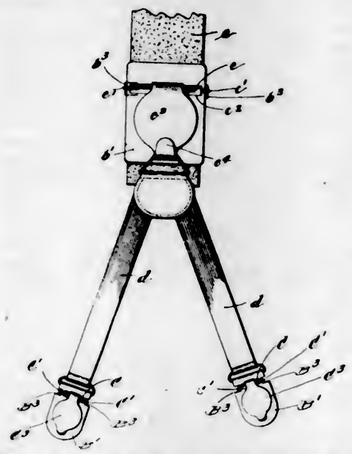
Claim.—1. In combination, a casing comprising a conical hood and a hopper having their edges slightly separated for the admission of air and with the edge of the hood below the edge of the hopper, a conical spreader having its lower edge free and slightly above the lower edge of the hood, means for admitting grain upon the spreader, means for conducting it out of the hopper, and means for drawing air through the hood.

2. In combination, a casing comprising a conical hood and a hopper having their edges slightly separated and with the hood edge below the edge of the hopper, a hollow conical spreader having its surface at an angle to that of the hood with its lower edge close to the lower edge of the hood but slightly above such hood edge, means for admitting grain upon the spreader, means for conducting it out of the hopper, and means for drawing air through the hood.

3. In combination, a casing comprising a conical hood with a vertical edge 12 and a receiver having its edges spaced a slight distance above the lower extremity of the

edge 12, a conical spreader having its lower edge adjacent the upper portion of the edge 12, means for admitting grain upon the spreader, and means for drawing air through the hood.

854,758. SUSPENDERS. SIDNEY W. PHELPS, Globe Village, Mass., assignor of one-fourth to John A. Hall, Southbridge, Mass. Filed May 23, 1906. Serial No. 318,354.



Claim.—1. The combination of a pair of plates having embossed portions and adapted to clamp a sheet between them, one of said plates being pivotally mounted with respect to the other to swing on an axis beyond the surface thereof, said pivotal connection including a bar having a bearing surface adapted to engage one of the plates, and a handle for turning the bar on its pivot, said handle being provided with a hook at the lower end thereof for supporting a suspender tab or the like.

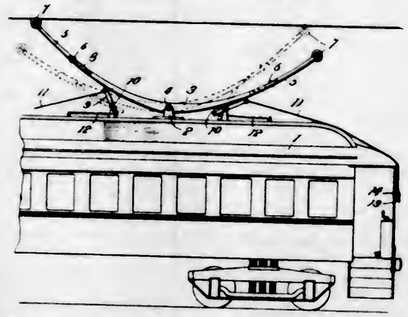
2. The combination of a pair of plates adapted to engage each other for clamping a sheet between them, said plates being movably mounted with respect to each other, one of said plates being provided with perforated ears extending toward and beyond the other plate, a bar having pins adapted to enter the perforations in said ears, said bar having a bearing surface located between the pins and the plates for engaging one of the latter, and means for turning the bar on its pivot, said means being provided with a hook at the end thereof for supporting a tab for a suspender or similar article.

3. The combination of a pair of plates each having an embossed portion, said embossed portions extending from the surface of the plates in the same direction and being of substantially the same size and shape, whereby one of them will enter the other, said plates being movably mounted with respect to each other, one of said plates being provided with a pair of perforated ears extending toward and beyond the other plate, a bar having pins at its ends adapted to enter the perforations in said ears, said bar having a bearing surface located between the pins and the plates for engaging one of the latter, and a handle for turning the bar on its pivot.

4. The combination of a pair of plates each having an embossed portion, said embossed portions extending from the surface of the plates in the same direction and being of substantially the same size and shape, whereby one of them will enter the other, said plates being movably mounted with respect to each other, one of said plates being provided with a pair of perforated ears extending toward and beyond the other plate, a bar having pins at its ends adapted to enter the perforations in said ears, said bar having a bearing surface located between the pins and the plates for engaging one of the latter, and a handle for turning the bar on its pivot, said handle being provided with a hook at the end thereof for supporting a suspender tab.

5. In a suspender, the combination of a main ribbon or elastic, a slide thereon comprising a pair of embossed plates, one plate located on each side of said ribbon or elastic, said plates being movably connected together and one of them having a pair of perforated ears extending beyond the other, a clamp pivotally mounted in the perforations of said ears, said clamp having a hook depending therefrom, a suspended tab hung from said hook, a fastening device on said tab comprising a pair of embossed plates movably connected together, a pair of perforated ears extending from one of said plates beyond the other, and a clamp pivotally mounted in the perforations of said ears.

854,759. TROLLEY-POLE. LEE RADCLIFF, Danvers, Ill., assignor of one-half to Addie Hay, Bloomington, Ill. Filed June 29, 1906. Serial No. 324,074.



Claim.—1. The combination of a car, a standard projecting from the car, a trolley pole pivotally mounted at an intermediate point upon the standard and having a rocking movement whereby either end thereof can be thrown into engagement with the line wire, a spring actuated lever mounted upon the car at each side of the standard, each of the levers bearing loosely against the corresponding end of the trolley pole and tending to throw the same into engagement with the line wire, and means for holding either one of the levers in an inoperative position.

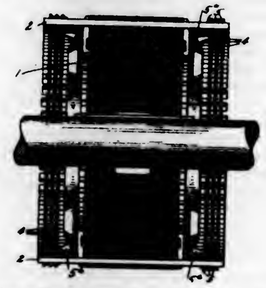
2. The combination of a car, a standard carried by the car, a trolley pole pivotally mounted at an intermediate point upon the standard and having a rocking movement whereby either end thereof can be thrown into engagement with a line wire, an operating lever located upon each side of the standard, the upper end of each operating lever loosely engaging the corresponding arm of the trolley pole, a spring connected to the lower end of each of the operating levers and normally acting to throw the corresponding end of the trolley pole into engagement with the line wire, and means for holding either one of the levers in an inoperative position.

854,760. INDUCTION-MOTOR. HENRY G. REIST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 11, 1906. Serial No. 334,164.

Claim.—1. A short-circuiting device for the conductors of the rotor of an alternating-current motor, consisting of a flat metal ring having conductor-receiving openings and laterally-projecting portions adjacent said openings.

2. A short-circuiting device for the conductors of the rotor of an alternating-current motor, consisting of a thin sheet-metal ring having conductor-receiving openings and projections adjacent said openings struck up from said ring.

3. A short-circuiting device for the conductors of the rotor of an alternating-current motor, consisting of a thin sheet-metal ring having conductor-receiving openings formed therein by displacing a portion of the material of said ring laterally.



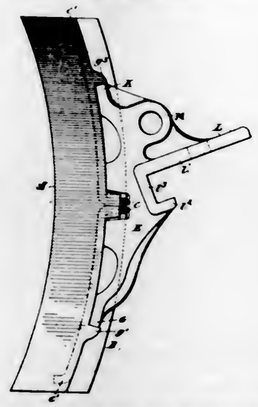
4. In an induction motor, a squirrel-cage armature and a plurality of rings for short-circuiting the armature conductors, certain of said rings having laterally-extending projections which bear against the side of an adjacent ring.

5. In an induction motor, a squirrel-cage armature and a plurality of short-circuiting rings having conductor-receiving openings and having flanges adjacent said openings and bearing upon the armature conductors.

6. In an induction motor, a squirrel-cage armature and a plurality of rings for short-circuiting the armature conductors, said rings having conductor-receiving openings and laterally-extending projections adjacent said openings, the projections on certain of said rings engaging with adjacent rings to maintain the rings separated.

7. In an induction motor, an armature core having laterally-extending projections, conductors on said core, and short-circuiting rings on the ends of said conductors, the inner ring at each end bearing against said laterally-extending projections and the remaining rings having spacing devices extending laterally therefrom.

854,761. SEPARABLE BRAKE SHOE AND HEAD. CHARLES A. REMELIUS, New York, N. Y., assignor to Edward H. Fallows, trustee, New York, N. Y. Filed Mar. 30, 1906. Serial No. 308,834.



Claim.—1. The combination with a brake shoe comprising a body and flange, and provided with a key-lug of a brake head having a bearing surface of sufficient width to extend over said body and flange, substantially as described.

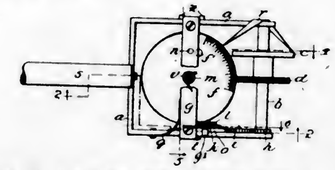
2. The combination with a brake shoe comprising a body and flange provided with a key-lug, of a brake head comprising a plate of sufficient width to extend over said body and flange of the shoe, and arms extending from said plate adapted to rest upon the body of said shoe, substantially as described.

3. The combination with a brake shoe comprising a body and a flange, and provided with a key-lug, the wall of said flange adjacent to the body of the shoe being straight, of a brake head provided with arms adapted to bear against said wall, substantially as described.

4. The combination with a brake shoe comprising a body and flange and provided with a comparatively low key-lug, of a brake head comprising a plate of sufficient width to extend over said body and flange of the shoe and having arms extending from the upper and lower ends of said plate, adapted to rest on the body of said shoe and against the wall of said flange, substantially as described.

5. The combination with a brake shoe comprising a body and flange, said body being provided with a comparatively low key-lug and high guide lugs, of a brake head comprising a plate extending across said shoe and provided with arms extending from the upper and lower ends of said plate and straddling said guide lugs, the inner of said arms adapted to bear against the wall of the shoe flange, substantially as described.

854,762. MEASURING INSTRUMENT. ERNST SCHAEFFER, Rixdorf, near Berlin, Germany, assignor to Hermann Gratta, Berlin, Germany. Filed Sept. 20, 1905. Serial No. 279,284.



Claim.—1. A surface measuring instrument comprising in combination, a frame, a shaft therefor, a graduated surface wheel and a worm wheel carried by said shaft, a graduated indicating wheel, a movable frame supporting said indicating wheel and yieldingly holding the same in mesh with said worm wheel, means for returning said indicating wheel to a zero position, and means serving to disengage said indicating wheel and worm wheel.

2. A surface measuring instrument comprising in combination, a surface wheel, a worm wheel, an indicating wheel yieldingly held in mesh with said worm wheel, means normally acting to return said indicating wheel to a starting or zero position, and means for releasing mesh engagement of said worm wheel and indicating wheel, said means also returning said worm wheel to a starting position.

3. A surface measuring instrument comprising in combination a surface wheel and an indicating wheel operatively related therewith, and means for throwing said surface wheel out of operative relation with said indicating wheel and effecting return of said surface wheel to a starting position.

4. A surface measuring instrument comprising in combination a frame, a graduated surface wheel, a worm wheel and a mutilated ratchet wheel, a shaft mounted in said frame for carrying said wheels, a graduated indicating wheel, a movable frame supporting said indicating wheel, a spring engaging said frame to hold the indicating wheel and worm wheel in mesh, a cam actuated bar for retracting said movable frame, a cam wheel provided with a cam surface engaging said bar, and teeth engaging said mutilated wheel to bring the mutilated portion thereof adjacent the cam pinion, and a spring connecting said cam pinion and said movable frame.

5. A surface measuring instrument comprising in combination a graduated surface wheel and a graduated indicating wheel operatively related, a double pointer or index

for said wheels, and means for throwing said indicating wheel out of operative relation with said surface wheel to permit return of said indicating wheel to a starting or zero position, said means serving to positively return said surface wheel to a starting position.

6. A surface measuring instrument comprising in combination a surface wheel, an indicating wheel operatively related with said surface wheel, a swinging frame for said indicating wheel, and means engaging said frame to throw said indicating wheel out of operative relation with said surface wheel, said means also serving to simultaneously return said surface wheel to a starting position.

7. A surface measuring instrument comprising in combination a surface wheel, an indicating wheel operatively related with said surface wheel, a swinging frame for said indicating wheel, and an oscillating element having oppositely disposed operating parts serving when oscillated in one direction to swing said frame and throw said indicating wheel out of operative relation with said surface wheel and simultaneously effecting return of said surface wheel to a zero or starting position.

8. A surface measuring instrument comprising in combination a surface wheel, a mutilated ratchet wheel for said surface wheel, an indicating wheel operatively related with said surface wheel, a swinging frame for said indicating wheel, and a cam wheel provided on one side with a cam and on its opposite side with teeth adapted to mesh with said ratchet wheel, a cam bar interposed between said cam surface and said frame, said cam wheel serving when oscillated in one direction to simultaneously throw said indicating wheel out of operative relation with said surface wheel and return the latter to a starting position.

9. A surface measuring instrument comprising in combination a frame, a graduated surface wheel, a worm wheel and a mutilated ratchet wheel, a shaft mounted in said frame for carrying said wheels, a graduated indicating wheel, a movable frame supporting said indicating wheel, a spring engaging said frame to hold the indicating wheel and worm wheel in mesh, a cam actuated bar for retracting said movable frame, a cam wheel provided with a cam surface engaging said bar, and teeth engaging said ratchet wheel to bring the mutilated portion thereof adjacent the cam wheel, a spring connecting said cam wheel and said movable frame, and a double pointer or index for said surface and indicating wheels.

10. A surface measuring instrument comprising in combination a graduated surface wheel and a graduated indicating wheel operatively related, a spring for returning said indicating wheel to a zero position, a double pointer or index for said wheels, and means for throwing said indicating wheel out of operative relation with said surface wheel to permit return of said indicating wheel to a starting or zero position, said means serving to positively return said surface wheel to a starting position.

11. A surface measuring instrument comprising in combination a graduated surface wheel and a graduated indicating wheel operatively related, a spring for returning said indicating wheel to a zero position, stops arresting said indicating wheel at a zero position, a double pointer or index for said wheels, and means for throwing said indicating wheel out of operative relation with said surface wheel to permit return of said indicating wheel to a starting or zero position, said means serving to positively return said surface wheel to a starting position.

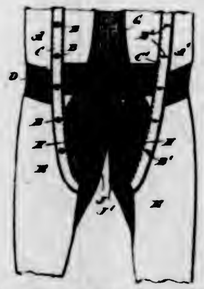
12. A surface measuring instrument comprising in combination a surface wheel, an indicating wheel operatively related with said surface wheel, a spring for returning said indicating wheel to a zero position, stops arresting said wheel at a zero position, a swinging frame for said indicating wheel, and means engaging said frame to throw said indicating wheel out of operative relation with said surface wheel, said means also serving to simultaneously return said surface wheel to a starting position.

13. A surface measuring instrument comprising in combination a surface wheel, an indicating wheel operatively related with said surface wheel, a spring for returning said indicating wheel to a zero position, stops arresting said wheel at a zero position, a swinging frame for said indicating wheel, and an oscillating element having positively disposed operating parts serving when oscillated in one direction to swing said frame and throw said indicating wheel out of operative relation with said surface wheel and simultaneously effecting return of said wheel to a zero or starting position.

14. A surface measuring instrument comprising in combination a surface wheel, a mutilated ratchet wheel for said surface wheel, an indicating wheel operatively related with said surface wheel, a spring for returning said indicating wheel to a zero position, stops arresting said wheel at a zero position, a swinging frame for said indicating wheel, and an oscillating member provided on one side with a cam and on its opposite side with teeth, a cam bar interposed between said cam surface and said frame, said member serving when oscillated in one direction to simultaneously throw said indicating wheel out of operative relation with said surface wheel and return the latter to a starting position.

15. A surface measuring instrument comprising in combination a frame, a graduated surface wheel, a worm wheel and a mutilated ratchet wheel, a shaft mounted in said frame for carrying said wheels, a graduated indicating wheel, a movable frame supporting said indicating wheel, a spring for returning said indicating wheel to a zero position, stops arresting said wheel at a zero, position, a spring engaging said frame to hold the indicating wheel and worm wheel in mesh, a cam wheel provided with a cam surface, a cam bar engaged thereby, and teeth engaging said mutilated wheel to bring the mutilated portion thereof adjacent the cam wheel, a spring connecting said cam wheel and said movable frame, and a double pointer or index for said surface and indicating wheels.

854,763. UNDERGARMENT. JEREMIAH A. SCRIVEN, New York, N. Y. Filed June 12, 1906. Serial No. 321,355.



Claim.—1. An union garment comprising an elastic waist portion, an elastic back insertion extending upward from said waist portion to the neck opening, inelastic upper sections forming the upper body portion of the garment and connected with said back insertion, elastic leg insertions extending downward from the waist portion, inelastic leg sections forming tubular leg portions in connection with said leg insertions, the garment being divided in front from the neck opening to the crotch and in the back from the crotch to the waist portion, inelastic edge strips extending along the edges of the front opening of the garment, and elastic crotch strips extending along the edges of the rear opening of the garment.

2. A union garment comprising an elastic waist portion, an elastic back insertion extending upward from said waist portion to the neck opening, inelastic upper sections forming the upper body portion of the garment and connected with said back insertion, elastic leg insertions extending downward from the waist portion, and inelastic leg sections forming tubular leg portions together with the said leg insertions.

3. A union garment comprising an elastic waist portion, an elastic back insertion extending upward from said waist portion to the neck opening, inelastic upper sections forming the upper body portion of the garment and connected with said back insertion, elastic leg insertions extending downward from the waist portion and spaced from each other at the waist portion, inelastic leg sections forming tubular leg portions in connection with said leg insertions, the garment being divided in front from the neck opening to the crotch and in the back from the crotch to the waist portion, inelastic edge strips extending along the edges of the front opening of the garment, and elastic crotch strips extending along the edges of the rear opening of the garment, the upper ends of said crotch strips being overlapped and secured to the waist portion between the upper ends of the leg insertions.

4. A union garment comprising an upper or body section, an elastic waist portion, elastic leg insertions extending downward from the waist portion, and inelastic leg sections forming tubular leg portions in connection with said leg insertions.

5. A union garment comprising an upper or body section, an elastic waist portion, elastic leg insertions extending downward from the waist portion, inelastic leg sections forming tubular leg portions in connection with said leg insertions, the garment being divided in front from the neck opening to the crotch and in the back from the crotch to the waist portion, inelastic edge strips extending along the edges of the front opening of the garment, and elastic crotch strips extending along the edges of the rear opening of the garment.

6. A union garment comprising an upper or body section, an elastic waist portion, elastic leg insertions extending downward from the waist portion and spaced from each other at the waist portion, inelastic leg sections forming tubular leg portions in connection with said leg insertions, the garment being divided in front from the neck opening to the crotch and in the back from the crotch to the waist portion, inelastic edge strips extending along the edges of the front opening of the garment, and elastic crotch strips extending along the edges of the rear opening of the garment, the upper ends of said crotch strips being overlapped and secured to the waist portion between the upper ends of the leg insertions.

854,764. THREE-PHASE-CURRENT ARC-LAMP. GUIDO SEMENZA, Milan, Italy, assignor to General Electric Company, a Corporation of New York. Filed Oct. 25, 1902. Serial No. 128,760.

Claim.—1. In an electric arc lamp, the combination of a plurality of electrodes, converging toward each other, each electrode being mainly cylindrical but having a flat side of less width than the maximum diameter of the electrode.

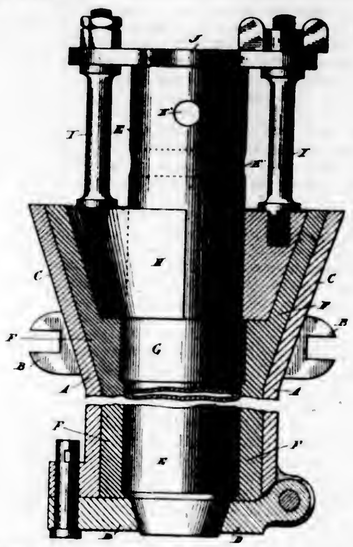
2. In an electric arc lamp, the combination of three electrodes each supported at one end and symmetrically arranged so that the arc is formed at adjacent opposite ends of the electrodes, each electrode being nearly round in cross section but having a flat side presented toward the arc.

3. A multiphase alternating current arc lamp having a plurality of electrodes arranged side by side so as to permit an arc to be formed at adjacent ends, said electrodes presenting flat sides toward the arc to assist in maintaining the arc at the ends of the electrodes.

854,765. PIPE-PATTERN. HARRY SLADE, Wakefield, England, assignor to E. Green and Son Limited, Wakefield, England. Filed Sept. 9, 1903. Serial No. 172,451.

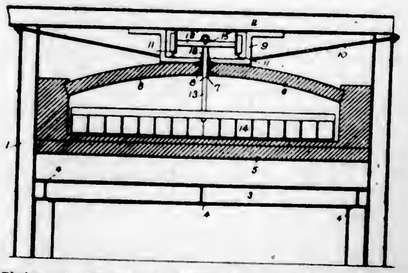
Claim.—1. The combination of a pipe pattern, a cake seating pattern through which the former extends, columns on the cake seating pattern, and a catch carried by and adjustable on the columns, engaging the pipe pattern to determine the position of the cake seating pattern in the mold, as set forth.

2. The combination of a cake seating pattern comprising a centrally apertured frusto-conical member, having a plurality of supports thereon, a plate adjustably carried by the supports, and a pipe pattern extending through the frusto-conical member into engagement with the said plate, as set forth.



3. The combination of a casing having a flaring mouth at one end and a closure at the other end, a pipe pattern positioned within the casing and having one end exposed, a frusto-conical member fitting around the exposed end of the pipe pattern within the flowing mouth of the casing, supports on the said member, extending beyond the end of the pipe pattern, and a plate carried by the said frusto-conical member and resting on the end of the pipe pattern, as set forth.

854,766. ORE-ROASTING FURNACE. WILLIAM H. SMYTH, Berkeley, Cal. Original application filed Mar. 12, 1901, Serial No. 50,868. Divided and this application filed Sept. 29, 1903. Serial No. 175,084.



Claim.—1. In an ore roasting furnace, an arched roof provided with a slot the full length thereof intermediate of its sides and means adapted to support the arch.

2. In an ore roasting furnace, a roof provided with a slot the full length thereof intermediate of its sides and a series of gates movable transversely of the slot.

3. An ore roasting furnace, the roof of which is longitudinally slotted intermediate of its sides, rabbles or stirrers in the furnace and longitudinally traveling means, supported upon tracks, to which the rabbles or stirrers are attached, said means passing through the slot.

4. An ore roasting furnace, the roof of which is longitudinally slotted intermediate of its sides, traveling rabbles or stirrers in the furnace and moving means projecting through said slot to which the rabbles or stirrers are attached and a series of gates movable transversely of the slot in the path of the moving means.

5. An ore roasting furnace, the roof of which is longitudinally slotted intermediate of its sides, rabbles or stirrers in the furnace and means projecting through said slot to which the rabbles or stirrers are attached and means adapted to close the slot consisting of overlapping plates.

6. An ore roasting furnace, the roof of which is longitudinally slotted intermediate of its sides, rabbles or stirrers in the furnace and means projecting through said slot to which the rabbles or stirrers are attached and means adapted to close the slot consisting of flexible overlapping plates.

7. An ore roasting furnace of brick or the like having a multiplicity of roasting chambers, each slotted intermediate of its sides, rabbles adapted to travel in said chambers, means projecting through the slots to effect the travel of the rabbles, means for transferring the rabble moving devices from one slot to another and means independent of the brick structure to maintain the alinement of the slots.

8. An ore roasting furnace having a hearth with a roof slotted longitudinally and plates or gates to the slot adapted to swing transversely thereof and a traveling rabble device adapted to pass through the slot.

9. An ore roasting furnace having a multiplicity of hearths with longitudinally slotted roofs and means adapted to close the slots consisting of overlapping plates.

10. An ore roasting furnace having a multiplicity of hearths with longitudinally slotted roofs and means adapted to close the slots consisting of flexible overlapping plates.

11. An ore roasting furnace comprising a roasting hearth, side walls provided with projections which form an arch over the hearth and provide a slot the full length thereof, stirring devices adapted to pass through said slot and consequently the furnace from end to end, and means for transferring said devices in, through and out of the furnace.

12. In an ore roasting furnace having rabbles, a roof longitudinally slotted intermediate of its sides, traveling means projecting through the slot adapted to effect the travel of the rabbles and means adapted to reduce the width of the slot consisting of plates or the like lying across the slot in the path of the rabble moving means and attached by one edge at one side of the slot, so arranged that the free edge is moved transversely across the slot by the rabble moving means.

13. In a device for roasting ores, a furnace having a hearth and a roof, the roof being formed of longitudinal sections separated from each other by a slot, a metallic frame work having a transverse member above the furnace and means attached thereto adapted to support the slot side of the roof sections.

14. In a device for roasting ores, a furnace chamber constructed of brick or the like having a roof slotted intermediate of its sides, rabbling devices adapted to pass into and through said furnace, tracks for the rabbling devices and a metallic skeleton or frame suitably arranged to form the support and attachment for the rabble tracks and slot independently of the brick structure whereby the tracks and slot are maintained in alinement.

15. The combination with a hearth having arches longitudinally of the roof thereof; a longitudinal slot through the roof between the arches, rabbles and longitudinally traveling means projecting through the slot for effecting their travel.

16. An ore roasting furnace comprising a roof formed of sections which are separated from each other by a longitudinal slot, means for supporting each of the roof sections attached near the slot edge thereof, an arm provided with rabbles projecting through the slot and means for effecting the longitudinal travel of the rabbles.

17. In an ore roasting furnace, a roof formed of longitudinal arch sections separated from end to end by a slot.

18. In an ore roasting furnace, a roof formed of longitudinal arch sections separated from end to end by a slot and means adapted to close the slot.

19. In an ore roasting furnace, a roof formed of longitudinal arch sections separated from each other by a slot and means projecting through the slot for stirring and advancing the ore.

20. In an ore roasting furnace, a roof formed of longitudinal arch sections separated from each other by a slot, means projecting through the slot for stirring and advancing the ore and means adapted to close the slot.

21. An ore roasting furnace comprising a series of chambers arranged side by side, each having an ore roasting hearth with an arched roof, each chamber being provided with an opening or slot intermediate of its sides the full length thereof, rails above said hearth provided with curved portions to form a continuous track, devices for agitating and advancing the ore on said hearths, mounted upon the track and means adapted to transfer the agitating devices from one slot to another.

22. An ore roasting furnace comprising a series of chambers, each having an ore roasting hearth with an arched roof, each chamber being provided with an opening or slot intermediate of its sides the full length thereof, means for covering said slot to prevent the escape of gas, a series of stirrers passing through said slots for agitating and advancing the ore and means for transferring the stirrers from one slot to another.

23. An ore roasting furnace comprising a series of chambers, each having an ore roasting hearth with an arched roof, each chamber being provided with an opening or slot intermediate of its sides the full length thereof, stirring devices mounted in the furnace and passing through the openings and means for moving the devices through and above the furnace from one slot to another.

24. An ore roasting furnace of brick or the like comprising a series of chambers arranged longitudinally side by side, each having an ore roasting hearth with an arched roof, each chamber being provided with an opening or slot intermediate of its sides the full length thereof, stirring devices passing through said slots, means for passing said devices through and out of the furnace from one slot to another, tracks supporting said devices and trucks mounted upon the tracks and connected to the devices and means independent of the brick structure to maintain the alinement of the slots with the tracks.

25. The combination with a hearth having arches longitudinally of the roof, a longitudinal slot through the roof between the arches, an arm provided with rabbles projecting through the slot and means for effecting the longitudinal travel of the arm and rabbles.

26. An ore roasting furnace having a multiplicity of ore roasting chambers, each of which is slotted intermediate of its sides, stirring devices passing through the slots and means for passing said devices from one slot to another and a series of freely movable plates adapted to reduce the width of the slot and metallic means to maintain the alinement of the slots.

27. An ore roasting furnace comprising a series of hearths arranged side by side, arches above said hearths, each arch being provided with an opening or slot the full length thereof, rails above said hearths provided with curved portions to form a continuous track, devices for agitating and advancing the ore on said hearths, mounted upon the track, means adapted to pass said devices from one slot to another and means other than the arches to maintain the slot.

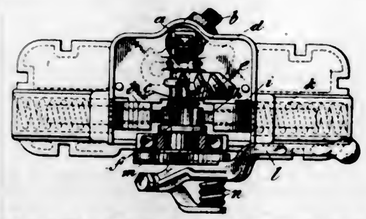
28. An ore roasting furnace comprising a series of hearths, arches provided with an opening or slot the full length thereof above the hearths, means for covering said slot to prevent the escape of gas, a series of stirrers passing through said slots for agitating and advancing the ore, and means for transferring the stirrers from one slot to another and means other than the arches to maintain the slot.

29. An ore roasting furnace comprising a series of hearths, arches above said hearths each provided with an opening the full length thereof, stirring devices mounted in the furnace and passing through the openings, and means for moving the devices through the furnace from one slot to another and means other than the arches to maintain the openings.

30. An ore roasting furnace, comprising a series of hearths, arches for said hearths provided with an opening or slot the full length thereof, stirring devices passing through said slots, means for passing said devices through and out of the furnace from one slot to another, tracks supporting said devices, and trucks mounted upon the tracks and connected to the devices and means other than the arches to maintain the slot.

31. An ore roasting furnace, comprising side walls, projections provided thereon and extending inward to form an arch and provide an opening or slot the full length of the furnace, a hearth below said arch, two sections of track supported in and upon the furnace to form a continuous track, and stirring devices mounted upon said track and adapted to pass through said slot out of and over the furnace, means adapted to transfer said device from one slot to another and means other than the arch to maintain the slot.

854,767. SWITCH-STAND. FRED W. SNOW, Hillburn, and WILLIAM C. KIDD, Suffern, N. Y., assignors to Standard Equipment Company, Mahwah, N. J., a Corporation of New Jersey. Filed Feb. 23, 1907. Serial No. 359,020.



Claim.—1. In a switch stand, the combination of means to connect a switch thereto, means to resist the moving of the switch, and a hand lever adapted to swing parallel with the adjacent rails and so related to the resisting means as to be capable of moving the switch without interference from the resisting means.

2. In a switch stand, the combination with means to connect a switch thereto, means to resist the moving of the switch, and a hand lever to move the switch permanently supported in a substantially vertical plane and adapted to be connected with and disconnected from the resisting means.

3. In a switch stand, the combination of a horizontal shaft, a resisting sleeve thereon, and a hand lever on said shaft adapted to move in a vertical plane and to be connected with and disconnected from said sleeve.

4. In a switch stand, the combination with means to connect a switch thereto, means to resist the moving of the switch including a member normally adapted to turn as the switch moves and rollers held yieldingly against said member on opposite sides thereof, and means to move the switch independently of said member.

5. In a switch stand, the combination of a shaft, means to connect the shaft with a switch, a member free to turn on said shaft, means on opposite sides of said member to resist its turning, and means to turn said shaft normally connecting said shaft and member so that said shaft and member shall turn together but separable from said member whereby the shaft may be turned and said member held stationary by the resisting means.

6. In a switch stand, the combination of a shaft, means to connect the shaft with a switch, a member free to turn upon said shaft, spring pressed rollers on opposite sides of said member to resist its turning, and means to turn said shaft normally connecting said shaft and member so that said shaft and member shall turn together but separable from said member whereby the shaft may be turned while said member is held stationary by the rollers.

7. In a switch stand, the combination of a shaft, means to connect the shaft to a switch, a sleeve free to turn upon said shaft and having four recesses, a spring pressed roller on each side of said shaft engaging a recess, and means to turn said shaft without turning the sleeve.

8. In a switch stand, the combination of a shaft, means to connect the shaft with a switch, means to rotate the shaft, and means to resist its rotation, said last two means being normally in engagement but being separable from each other, whereby the switch is normally held by the resisting means in its turned position but may be freely moved by hand when desired.

9. In a switch stand, the combination of a shaft, means to connect the shaft with a switch, means to rotate the shaft, a sleeve on the shaft, and resisting means engaging the sleeve, the sleeve and rotating means being normally in engagement whereby the sleeve is made to rotate with the shaft but being separable from each other so that the switch may be moved by hand when desired.

10. In a switch stand, the combination of a shaft, means to connect the shaft with a switch, a handle pivoted to the shaft, a sleeve around the shaft, and means to resist the rotation of the sleeve, the handle normally engaging the sleeve but separable therefrom.

11. In a switch stand, the combination of a shaft, means to connect the shaft with a switch, a handle pivoted to the shaft, a sleeve around the shaft having four recesses in its periphery and two grooves in its end face, and means engaging the recesses to resist the rotation of the sleeve, the handle normally engaging in one of the grooves.

12. In a switch stand, the combination of a shaft, means to connect the shaft with a switch, a handle pivoted to the shaft, a sleeve around the shaft having four recesses in its periphery and two grooves in its end face, and spring pressed rollers on opposite sides of the sleeve engaging in opposite recesses therein to resist the rotation of the sleeve, the handle normally engaging in one of the grooves.

13. In a switch stand, the combination of means to connect a switch thereto, means to resist the moving of the switch, and manually operated means adapted to move in a plane substantially parallel to the track to move the switch without interference from the resisting means.

14. In a switch stand, the combination with means to connect a switch thereto, automatically operated means to resist the moving of the switch, and manually operated means adapted to move in the plane substantially parallel to the track to move the switch without interference from the automatically operated means.

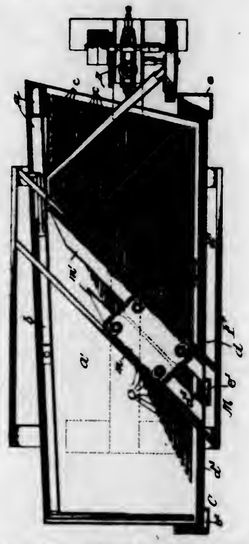
854,768. SHAKING-TABLE SEPARATOR. FREDERICK T. SNYDER, Chicago, Ill., assignor to International Separator Company, Chicago, Ill., a Corporation of New Jersey. Filed Oct. 31, 1904. Serial No. 230,640.

Claim.—1. In a concentrator, the combination with a transversely-inclined shaking table having longitudinal channels thereon, of means for feeding a mixture of magnetic and non-magnetic minerals and gangue to the head of the table, means for imparting a differential reciprocating motion to the table parallel to said channels in a direction to cause a travel of the mixture toward the foot of the table, means for flowing water across the table transversely to said channels to remove the gangue from the mixture, and a magnet suspended above the table near the foot thereof and adapted to exert a lifting force upon the magnetic constituents of the mineral concentrate, sufficient to cause said constituents to be washed by the water across said channels into a path divergent from the remainder of said concentrate.

2. In a concentrator, the combination with a table, of means for feeding materials to be separated to said table, means for agitating said table to pass said materials gradually along the table longitudinally thereof, a magnet having pole pieces above the table close to the surface thereof, said pole pieces extending across the table to the lower lateral edge thereof in a direction diagonal to the direction of passage of materials along the table, and means for flowing water across the table, substantially as set forth.

3. In a separator for mixtures of materials of different

magnetic permeability, but of nearly the same specific gravity, the combination with a transversely-inclined table and means for feeding the mixtures of materials in a thin layer upon the table, a series of low obstructions extending longitudinally upon the table, means for imparting a differential reciprocating motion to said table in a direction to cause a gradual movement of the materials along the table substantially parallel to said obstructions, means for establishing a flow of water across the table at an angle to said obstructions, and a magnet adapted to act upon the materials upon said table to the extent of changing the effective weight of the more permeable particles relative to the weight of the other materials, whereby the materials having the highest effective weight rise above the level of the other materials and are washed over said obstructions by the water, and so separated.



4. In a concentrator, the combination with a table having longitudinal riffles thereon, of means for feeding materials to be separated to said table, means for imparting a differential reciprocating motion to said table in a direction substantially parallel to said riffles to cause a net travel of the material along the channels between said riffles, means for flowing water across the table transversely to the riffles, and a magnet suspended above the table adapted to exert a lifting force upon the magnetic particles sufficient to enable said particles to be washed by the water across the riffles, whereby said magnetic particles are separated from the heavy non-magnetic materials.

5. In an ore-concentrator, in combination, for effecting selective separation of various mineral values and gangue, a table having a riffled top slightly inclined from the horizontal, means for supplying a flow of water over said table-top, means for feeding onto the higher part of the table-top the mixed materials to be separated, mechanism for differentially agitating said table-top, and a source of magnetic influence of limited intensity so arranged that such of said materials as are of like specific gravity but diverse magnetic properties will have their flotation differentiated while passing through the magnetic field and will be resultantly dispersed and isolated from each other, substantially as specified.

6. In an ore-concentrator, in combination, for effecting selective separation of various mineral values and gangue, a table having a riffled top slightly inclined from the horizontal, means for supplying a flow of water over said table-top, means for feeding onto the higher part of the table-top the mixed materials to be separated mechanism for differentially agitating said table-top, and an electro-magnet of limited intensity so arranged that such of said materials as are of like specific gravity but diverse magnetic properties will have their flotation differentiated while passing through the magnetic field and will be resultantly dispersed and isolated from each other, substantially as specified.

7. In an ore-concentrator, in combination, for effecting selective separation of various mineral values and gangue, a table having a riffled top slightly inclined from the horizontal, means for supplying a flow of water over said table-top, means for feeding onto the higher part of the table-top the mixed materials to be separated, mechanism for differentially agitating said table-top, and an electro-magnet of limited intensity suspended slightly above the water-current flowing over said table-top and arranged so as to facilitate the flotation and resultant isolation of such of said materials as are of like specific gravity with others but of higher paramagnetic properties, substantially as specified.

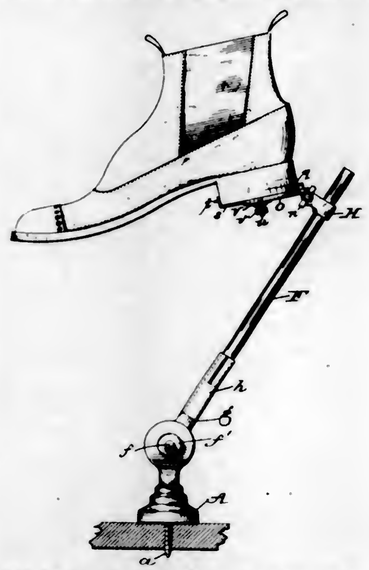
8. In an ore-concentrator, in combination, for effecting selective separation of various mineral values and gangue, a longitudinally movable table having its top slightly inclined from the horizontal and provided with a series of longitudinal riffles successively increasing in length from the upper toward the lower edge of said table, means for supplying a flow of water over said table-top from its upper toward its lower edge, means for feeding onto the higher part of the table-top above the shortest riffle the mixed materials to be separated, mechanism for imparting differential reciprocating movement to said table, and a source of magnetic influence of limited intensity so arranged that such of said materials as are of like specific gravity but diverse magnetic properties will have their flotation differentiated while passing through the magnetic field and will be resultantly dispersed and isolated from each other, substantially as specified.

9. In an ore-concentrator, in combination, for effecting selective separation of various mineral values and gangue, a longitudinally movable table having its top slightly inclined from the horizontal and provided with a series of longitudinal riffles successively increasing in length from the upper toward the lower edge of said table, means for feeding onto the higher part of the table-top above the shortest riffle the mixed materials to be separated, mechanism for imparting differential reciprocating movement to said table, and an electro-magnet of limited intensity so arranged that such of said materials as are of like specific gravity but diverse magnetic properties will have their flotation differentiated while passing through the magnetic field and will be resultantly dispersed and isolated from each other, substantially as specified.

10. In an ore-concentrator, in combination, for effecting selective separation of various mineral values and gangue, a longitudinally movable table having its top slightly inclined from the horizontal and provided with a series of longitudinal riffles successively increasing in length from the upper toward the lower edge of said table, means for supplying a flow of water over said table-top from its upper toward its lower edge, means for feeding onto the higher part of the table-top above the shortest riffle the mixed materials to be separated, mechanism for imparting differential reciprocating movement to said table, and an electro-magnet of limited intensity suspended slightly above the water-current flowing over said table-top and arranged so as to facilitate the flotation and resultant isolation of such of said materials as are of like specific gravity with others but of higher paramagnetic properties, substantially as specified.

854,769. ADJUSTABLE SHOE-DISPLAY DEVICE. WILLIAM F. SPICER, Dayton, Ohio. Filed Sept. 5, 1905. Serial No. 276,943.

Claim.—1. In an adjustable shoe display support, the combination of a sectional supporting base; a supporting standard adapted to be inclined by one of the sections of said base; a splicing socket for connecting said supporting standard to the base; a retaining clamp adjustably mounted upon said standard; and a shoe support adapted to be connected to and supported by said retaining clamp and provided with an adjusting portion adapted to grip the shoe by the heel or sole; all substantially as described.



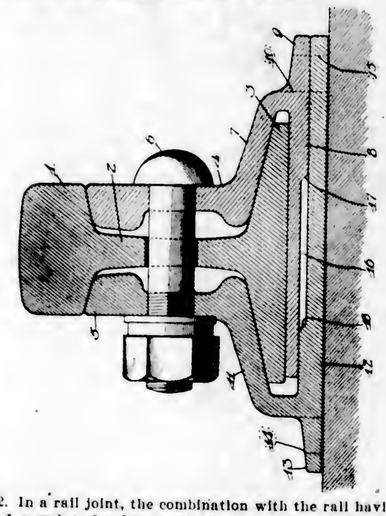
2. The herein referred to adjustable shoe display support, consisting of—a supporting base constructed in sections and adapted to be secured firmly in position; a supporting standard connected with and arising from the upper of said sections, and held in a vertical or an inclined position by same; a splicing socket which connects said supporting standard with said upper section; a retaining clamp adjustably mounted upon the supporting standard and provided with a connecting pin; a shoe support adapted to be adjustably and removably carried by said connecting pin and provided with a card holder and having a sliding portion provided with a lip so as to support a shoe by the heel or sole; substantially as described.

3. In an adjustable shoe display device, a retaining clamp for supporting a body from a standard, having a socket portion provided with a slot, arms or bifurcated portion, a connecting-pin having a head at one end, a body portion provided with an eye, a screw-threaded end smaller in circumference than said body portion, said body and said stem portions adapted to rest each in an eye in each of said arms, and forming a bearing by means of its head,—and shoulder between the body and screw-threaded end, and a thumb-nut mounted upon said screw-threaded end; substantially as described.

4. In an adjustable shoe display device, and in combination with the supporting standard thereof; of an adjustable retaining clamp having two resilient arms provided with a connecting-pin and thumb-nut, said connecting-pin adapted to support a shoe support provided with a card-holder and having a body portion provided with a spur, a sliding portion provided with a lip so as to support a shoe by the heel or sole; substantially as described.

854,770. RAIL-JOINT. ARTHUR L. STANFORD, Chicago, Ill. Filed Feb. 7, 1907. Serial No. 356,182.

Claim.—1. In a rail joint, the combination with the rail having a head, a web and a flange, of splice bars interposed under the head and each having a clamp formed integrally therewith and gripping one edge of the flange, each of said clamps embodying two jaws arranged above and below the rail flange, the lower jaw of one clamp being extended transversely of the rail and gripped between the flange thereof and the lower jaw of the other clamp and the last said jaw being extended transversely of the rail substantially throughout the entire width of the flange, said bottom jaws and their extensions being provided with a recess between them beneath the rail web.



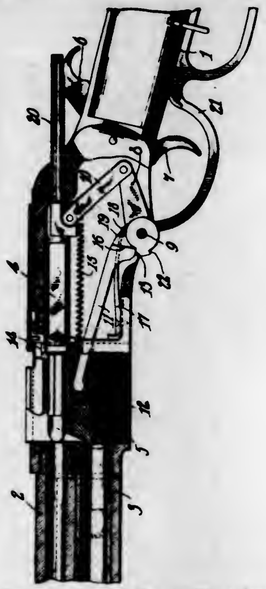
2. In a rail joint, the combination with the rail having a head, a web and a flange, of splice bars interposed between the head and the flange on both sides of the rail and each having a clamp formed integrally therewith and gripping one edge of the flange, one of said clamps comprising two jaws one of which extends under the rail transversely thereof and has a bottom beveled offset, the other of said clamps comprising two jaws, one of which extends under and embraces the edge of the lower jaw of the other clamp and has a top offset, whereby a recess between the two bottom jaws is formed under the rail web.

854,771. AUTOMATIC FIREARM. CHARLES A. STRASBURG, Cridersville, Ohio. Filed Sept. 27, 1906. Serial No. 336,470.

Claim.—1. An automatic fire arm having a stock, a barrel fixed in relation thereto, a magazine disposed longitudinally of and adjacent the barrel, a non-tiltable carrier movable across the end of and designed to receive a cartridge from the magazine, a longitudinally movable recoil operated breech block disposed in alinement with the barrel, an extractor extending from and movable with said block and disposed to draw a shell from the barrel during the recoil, a pivot, a main lever and an auxiliary lever mounted upon said pivot, said auxiliary lever projecting into and loosely engaging the carrier and having shoulders adjacent its pivot, said main lever being disposed to contact with one of the shoulders to lower the auxiliary lever and having a shoulder disposed to bear against the other shoulder of the auxiliary lever to raise said lever, a link connection between the main lever and the breech block, a spring connected to the breech block and disposed to return it to its initial position subsequent to the recoil, and a holding spring for maintaining the auxiliary lever and the carrier in raised position prior to its actuation by the main lever, said holding spring being disposed to engage a notch within the auxiliary lever.

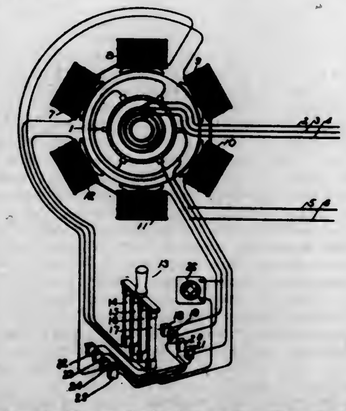
2. An automatic fire arm comprising a fixed barrel and magazine, a non-tiltable carrier disposed to receive a cartridge from the magazine and convey it to a point in rear of the barrel, a longitudinally movable breech block, an

extractor carried thereby, a pivot, a main and an auxiliary lever mounted upon the pivot, said auxiliary lever loosely engaging and disposed to actuate the carrier, a link connection between the main lever and the breech block, a spring connected to the breech block for holding it normally in a predetermined position, means upon the levers



for causing the actuation of the auxiliary lever immediately prior to the completion of either movement of the main lever, and yielding means for locking the auxiliary lever and carrier in raised position prior to its actuation by the main lever.

854,772. REVERSING THE POLARITY OF DYNAMO-ELECTRIC MACHINES. JOHN B. TAYLOR, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Sept. 29, 1904. Serial No. 226,568.



Claim.—1. The method of reversing the polarity of a self exciting alternating current machine, which consists in reversely connecting the field circuit, and completing the operation by throwing the connections of the field into the normal running position.

2. The method of reversing the polarity of a rotary converter, which consists in exciting the field so as to cause the armature to slip back in phase more than one-quarter of a period, thereby causing the voltage of the converter to drop to zero and rise slightly in the opposite direction, and then reversing the direction of current flow in the field windings.

3. The method of reversing the polarity of a self exciting alternating current machine driven by alternating currents, which consists in connecting the field reversely and then in normal relation to the source of excitation.

4. The method of reversing the polarity of a rotary converter which consists in first producing a reversed polarity of the field, allowing the direct current voltage to fall to zero and then to rise slightly in the opposite direction, and then reversing the field excitation.

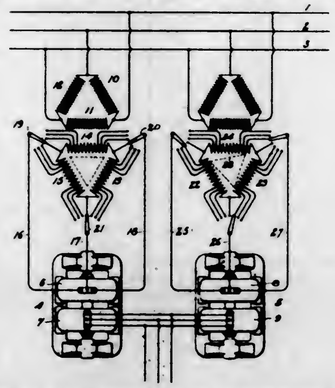
5. The method of reversing the polarity of a rotary converter which consists in reversely closing the field circuit at a multiplicity of points, and then changing the connections to their normal running condition.

6. The method of changing the polarity of a rotary converter provided with a field rheostat, which consists in reversely connecting the field and at the same time omitting the rheostat from circuit, and then changing the circuits to their normal condition with the rheostat in circuit.

7. The combination of a dynamo electric machine having a plurality of field poles, and means for opening the circuit of the field at one or more points between the field poles and then reversely closing the circuit.

8. The combination of a dynamo electric machine provided with a plurality of field poles, a rheostat in the field circuit, means for closing the field circuit so as to leave the rheostat connected in circuit, and for reversing connections so as to leave the rheostat out of circuit.

854,773. EQUALIZING LOADS ON MOTOR-GENERATOR SETS. JOHN B. TAYLOR, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 11, 1904. Serial No. 228,067.



Claim.—1. The combination of an alternating current supply system, a plurality of sets of motor-generators, transformers between said sets and said supply system, and means for shifting the connections of at least one of said motor generators with the transformer from which it receives current.

2. The combination of a transformer, a motor-generator set consisting of a synchronous motor coupled to an alternating current generator, connections between said synchronous motor and said transformer, and means for shifting the phase of the voltage supplied from said transformer to said synchronous motor.

3. The combination of a transformer, a synchronous motor, an alternating current generator driven thereby, and phase shifting connections between said motor and said transformer.

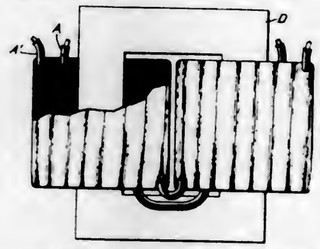
4. The combination of transformer windings, a plurality of taps extending from each winding, a plurality of related dynamo electric machines, and leads extending from one of said machines and adapted to be connected to said windings in a plurality of phase differing relations.

5. The combination of an alternating current supply system, a plurality of synchronous motor generators, and means for adjusting the phase of at least one of said motor generators with respect to another of said motor generators.

6. The combination of an alternating current supply system, dynamo electric machines driven therefrom in synchronism, and means for adjusting the phase of one machine with respect to another.

7. The combination of an alternating current supply system, a plurality of dynamo machines for transforming current from said system, said dynamo machines operating to feed the transformed current to a common receiving circuit, and means for adjusting the ratio between the loads taken by said machines.

854,774. HIGH-VOLTAGE TRANSFORMER. JOHN B. TAYLOR, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 10, 1906. Serial No. 338,206.

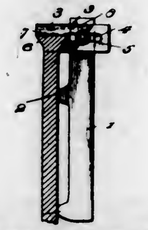


Claim.—1. In a transformer, a high-voltage winding having a greater effective cross-section near its terminals than near its center.

2. In a transformer, a high-voltage winding having an effective cross-section gradually increasing from its center toward its terminals.

3. In a transformer, a high-voltage winding having its end turns formed of a larger conductor than its center turns.

854,775. GAGE FOR SAW-TEETH. LAWRENCE M. TAYLOR, Mulvane, W. Va. Filed July 24, 1906. Serial No. 327,572.



Claim.—In a gage for saw teeth, the combination of a body portion adapted to fit against one face of the saw, a gage plate projecting laterally from the body portion and adapted to fit between the teeth of the saw, the said gage plate having its outer end beveled on an angle corresponding to the angle for the saw teeth, and a transversely disposed pin passing through the gage plate, the ends of the pin projecting from opposite sides of the gage plate and being adapted to engage with the inner edges of adjacent saw teeth to prevent any lateral movement of the gage plate.

854,776. MEANS FOR IMPARTING MOTION OR POWER. JOHN THOMAS, near Coventry, England. Filed June 6, 1905. Serial No. 263,948.



Claim.—1. In means for transmitting motion, in combination, a taut operating wire and an axially compressible metallic tube formed of a strip having a double alternate channel formation and helically coiled so that the outer parts of adjacent convolutions overlap and underlap one another respectively, the wire being movable axially within said tube.

2. In means for transmitting motion, in combination, a taut operating wire, an axially compressible metallic tube formed of a strip having a double alternate channel formation and helically coiled so that the outer parts of adjacent convolutions overlap and underlap one another respectively, and a yielding packing located between abutting points of the convolutions of the strip, the wire being movable axially within said tube.

3. In means for transmitting motion, in combination, a taut operating cable and a flexible and axially compressible and extensible metallic tube made of a strip having a double alternate channel formation and helically coiled so that the outer parts of adjacent convolutions overlap and underlap one another respectively, said cable being movable axially within the tube.

4. In means for transmitting motion, in combination, a taut operating cable, a flexible and axially compressible and expansible metallic tube made of a strip having a double alternate channel formation and helically coiled so that the outer parts of adjacent convolutions overlap and underlap one another respectively, and a yielding packing located between the abutting points of the strip, said cable being movable axially within said tube.

5. In means for transmitting motion, in combination, a prime moving part, a part to be operated, a taut operating cable having its ends respectively connected to said parts and a flexible and axially compressible and extensible metallic tube made of a strip having a double alternate channel formation and helically coiled so that the outer parts of adjacent convolutions overlap and underlap one another respectively, said cable being movable axially within said tube.

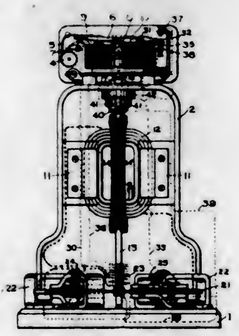
6. In means for transmitting motion, in combination, a prime moving part, a part to be operated, a taut operating cable having its ends respectively connected to said parts, a flexible and axially compressible and extensible metallic tube made of a strip having a double alternate channel formation and helically coiled so that the outer parts of adjacent convolutions overlap and underlap one another respectively, and a yielding packing located between said outer parts, said cable being movable axially within said tube.

854,777. ELECTRIC METER. ELIHU THOMSON, Swampscott, Mass., assignor to General Electric Company, a Corporation of New York. Filed Apr. 21, 1902. Serial No. 103,874.

Claim.—1. In an electric meter, the combination with a shaft, of a switch-arm actuated by the movement of said shaft, two stationary contacts each coöperating therewith, and two motor-coils on said shaft each adapted to have its circuit made and broken by the operation of said contacts.

2. In an electric meter, the combination with a shaft carrying a switch arm or contact, two stationary contacts adapted to be engaged by said switch arm or contact, of an electro-magnetic switch controlled by the oscillations of said shaft, and two motor-coils on said shaft each adapted to have its circuit made and broken by said switch.

3. In an electric meter, the combination with a shaft, of a contact carried thereby, two stationary contacts each adapted to be engaged by the first mentioned contact, two electro-magnets each in circuit with one of said stationary contacts, a rocking beam actuated by said magnets and carrying two insulated contacts, stationary contacts coöperating therewith, and motor-coils on said shaft in circuit with said latter stationary contacts.

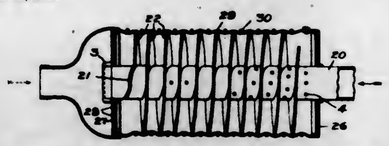


4. In an electric meter, the combination with a shaft, of a contact carried thereby, two stationary contacts each co-operating with the first mentioned contact, two electro-magnets each in circuit with one of said stationary contacts, a rocking beam actuated by said magnets and carrying two insulated contacts, each in circuit with one of said magnets, stationary contacts coöperating with the contacts on the beam, and motor-coils on said shaft each in circuit with one of said last-named stationary contacts.

5. In an electric meter, the combination with the load coils, the damping disk and the permanent magnets therefor, of a magnetic shield, consisting of a plurality of sheet-iron rings separated by air spaces.

6. In an electric meter, a protective shield surrounding said meter and consisting of a plurality of concentric soft iron tubes.

854,778. APPARATUS FOR MUFFLING THE EXHAUST OF GAS-ENGINES. ELIHU THOMSON, Swampscott, Mass., assignor to General Electric Company, a Corporation of New York. Filed Aug. 20, 1904. Serial No. 221,472.



Claim.—1. A device discharging gas or vapor in the form of impulses, in combination with a muffler therefor comprising a chambered receptacle, an elongated passage, and orifices communicating with the receptacle and passage, the cross-sectional area of the orifices being greatest at the inlet end of the receptacle.

2. A device discharging gas or vapor in the form of impulses, in combination with a muffler comprising a chambered receptacle, a plurality of orifices arranged to simultaneously discharge gas or vapor from the chamber, and means causing a greater retardation of the passage of gas or vapor between certain of the orifices and the point of final discharge than between others.

3. A device discharging gas or vapor in the form of impulses, in combination with a muffler comprising a chambered receptacle which is closed at one end, a plurality of orifices for discharging the contents of the receptacle, and an elongated passage communicating with all of the orifices and so arranged that the path of the escaping gas or vapor from one of the orifices is longer than from the other or others.

4. In a muffler, the combination of a receptacle having a plurality of discharge orifices which decrease in cross-sectional area as they recede from the inlet to the receptacle, and means for causing the body of gas or vapor discharged by the orifices nearest the inlet to travel a greater distance than those more remote.

5. In a muffler, the combination of a receptacle, which is open at one end and closed at the other, a plurality of discharge orifices contained in the receptacle which gradually decrease in total area from the inlet toward the closed end, a helically arranged passage communicating with the orifices and so arranged that the gas or vapor from some of the orifices travels farther than from others.

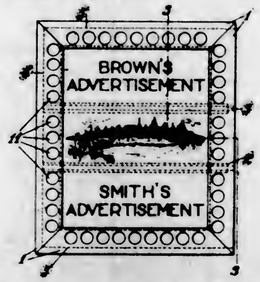
6. In a muffler, the combination of a tube which is open at one end and closed at the other, a plurality of discharge orifices for said tube which decrease in effective cross-sectional area toward the closed end, and a means for carrying off the gas or vapor from the tube, the said orifices and means acting to split up the sound waves and to lag one portion with respect to another.

7. In a muffler, the combination of an elongated passage, with a plurality of orifices discharging into it in multiple, the said orifices being graded so that the amount of gas or vapor passing through them gradually decreases toward the point of discharge of the passage.

8. In a muffler, the combination of a chambered receptacle arranged to receive the exhaust impulses from an engine, means for breaking up the continuity of each impulse, and other means coöperating with the first to cause the several parts of the impulse to issue successively.

9. In a muffler, the combination of a tube having an admission and a closed end, orifices arranged in the tube, which discharge gas or vapor from the tube and are arranged in multiple, and a spiral passage which surrounds the tube and receives gas or vapor from the orifices, the tube and orifices being arranged to cause a part or parts of the impulse to issue before another part or parts.

854,779. ADVERTISING DEVICE. GEORGE L. THORNE, St. Louis, Mo., assignor of one-half to M. J. Pope and one-half to Frank D. Thorne, St. Louis, Mo. Filed Jan. 25, 1906. Serial No. 297,872.



Claim.—1. In a device of the character described, the combination of a frame composed of panels, cross-pieces mounted in said panels, a plurality of panes of glass supported by said panels and cross-pieces, a pane fixed in said frame covering and protecting said other panes, and a translucent screen disposed between the large and the small panes.

2. In a device of the character described, the combination of a frame composed of panels, a fixed front pane resting within said panels, a sliding rear pane and a translucent screen disposed between the two panes, a reflector mounted on said panels, and a lamp within the reflector, whereby rays of light are diffused through the panes and the screen.

3. In a device of the character described, the combination of a frame composed of panels, one of which is slotted, cross-pieces mounted in said panels, a plurality of panes on which advertising matter is placed supported by said panels and said cross-pieces, and a translucent screen placed between two of said advertising panes.

4. In a device of the character described, the combination of a main frame composed of panels, a plurality of cross-pieces mounted therein and serving to divide said frame into independent sections, a translucent screen displayed in one of said sections, and a plurality of separately-removable advertising panes displayed in the remaining sections, said panes being supported by said cross-pieces and said panels.

5. In a device of the character described, the combination of a main frame, a plurality of cross-pieces mounted therein and serving to divide said frame into independent sections, a translucent screen displayed in one of said sections, a plurality of separately-removable advertising panes displayed in the remaining sections, a reflector secured to said frame, and a lamp within the reflector, the lamp being so arranged that the rays of light shine through said translucent screen and each of said panes.

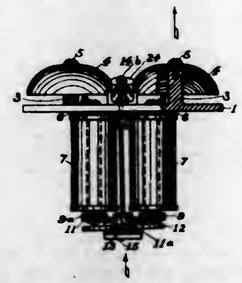
6. In a device of the character described, the combination of a main frame composed of panels, the center opening of said frame being divided into a plurality of independent sections, a translucent screen displayed in one of said sections, a plurality of advertising panes displayed in the remainder of said sections, and a large pane covering and protecting all of said sections.

7. In a device of the character described, the combination of a main frame, a pictorial screen fixed in one section thereof, and advertising panes removably displayed in other sections thereof, said panes and said screen being independent of each other.

8. In a device of the character described, the combination of a main frame, a constantly-exhibited translucent screen, and a plurality of separately-removable advertising panes displayed in portions of said main frame not covered by said screen.

9. In a device of the character described, the combination of a frame composed of perforated panels, one of which is slotted, cross-pieces mounted in said panels, a plurality of sliding panes on which advertising matter is placed supported by said cross-pieces, and a translucent screen displayed midway between two of said advertising panes, said panes being displayed through both the opening in the center of said panels and through the perforations therein.

854,780. COMBINED ANNUNCIATOR AND RINGER FOR TELEPHONE-LINES. HENRY TIDEMAN, Menominee, Mich. Filed Jan. 16, 1905. Serial No. 241,221.

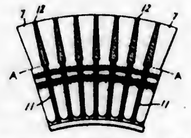


Claim.—1. In a combined magneto bell and drop, a mounting plate, a drop pivoted in front of said mounting plate, and having a conical hole near the edge farthest from its pivot, a pair of gongs mounted on the front of said plate, a striker adapted to play between said gongs, a catch carried on said striker adapted to engage said shutter and said conical hole, and a pair of electro magnets for moving said striker and catch, substantially as described.

2. In an electromagnetic signal, the combination of a drop shutter having a conical hole near the edge thereof, a latch adapted to hold said shutter by latch teeth passing through said conical hole and engaging the edges thereof, said latch teeth being located in different planes parallel to the face of said shutter, and means for vibrating said latch, substantially as described.

3. In a combined ringer and drop, a mounting plate, gong-supporting studs integral with said mounting plate, gongs supported upon said studs, a vibrating tapper arranged to vibrate between said gongs, a shutter having a conical hole and supported upon said mounting plate, and a latch integral with said tapper and projecting through the hole of said shutter and engaging the edges thereof, substantially as described.

854,781. COMMUTATOR. LOUIS E. UNDERWOOD, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Aug. 9, 1905. Serial No. 273,389.



Claim.—1. The combination with the segments of a commutator, of insulation which is comparatively easily worn away by the commutator engaging brushes between those portions of adjacent segments which are worn away by the brushes during the life of the commutator, and tougher insulation between other portions of said segments.

2. In a commutator, a pair of adjacent commutator bars and insulation between them in two portions, one portion adjacent the brush engaging edges of the bars being formed of material which is readily worn away by the commutator engaging brushes, and the other portion of tougher material.

3. In a commutator, bars or segments each formed with a tenon, supporting jaws between which the tenons are clamped, and insulation between each adjacent pair of bars in two portions, an inner portion of tough material formed with a tenon similar to the tenons on the commutator bars, and an outer portion formed of material which is less tough.

4. In a commutator, a pair of adjacent bars, insulation between them in two portions, one portion adjacent the brush engaging surface of the bars of plaster of paris, and the other portion of tougher material.

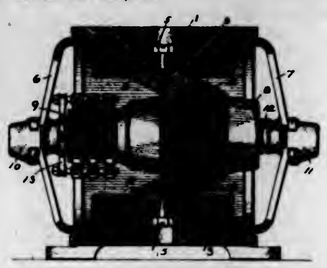
5. In a commutator, bars or segments formed with tenons, supporting jaws between which the tenons are clamped, insulation between each pair of adjacent bars in two portions, an inner portion of tough material formed with a tenon similar to the tenons on the commutator bars, and an outer portion formed of material less tough, the portions of adjacent surfaces of adjacent commutator bars between which the outer portion of insulating material is located being provided with means to facilitate the retention of said insulating material.

6. In a commutator, bars or segments formed with tenons, supporting jaws between which the tenons are clamped, insulation between each pair of adjacent bars in two portions, an inner portion of leather board formed with a tenon similar to the tenons on the commutator bars, and an outer portion formed of material less tough.

7. In a commutator, a pair of adjacent conductor bars and a layer of insulation between said bars, said layer being composed of a portion made of plaster-of-paris adjacent the brush engaging surface and an inner portion of leather board.

8. In a commutator, a pair of adjacent conductor bars and a layer of insulation between said bars, said layer consisting of an inner portion and a portion protecting said inner portion arranged adjacent the brush-engaging surface and which is usually worn away by the brushes during the life of the commutator.

854,782. DYNAMO-ELECTRIC MACHINE. LOUIS E. UNDERWOOD, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 24, 1906. Serial No. 340,307.



Claim.—1. In a dynamo-electric machine, a field magnet frame having an offset polar portion, and means for permitting said polar portion to be adjusted axially of the machine into a plurality of positions.

2. In a dynamo-electric machine, a field magnet frame provided with a pole piece having an offset portion provided with a pole face, and means for securing the parts together so that the pole face may be displaced axially of the machine in either direction with respect to the pole-piece.

3. In a dynamo-electric machine, a field magnet frame provided with an energizing coil having its axis in a plane transverse to the axis of the machine, and a pole member constructed and arranged so as to be placed in operative relation to said coil with its pole face displaced axially of the machine in either direction from said plane.

4. In a dynamo-electric machine, a field magnet structure, and a pole piece detachable from said structure, said pole piece being constructed and arranged to be secured in position with its pole face displaced axially in either direction with respect to the axis of the pole piece.

5. In a dynamo-electric machine, a field magnet structure having a detachable polar portion, and an energizing coil surrounding said polar portion, said polar portion being constructed and arranged so that it may be secured in place with its pole face displaced axially of the machine in either direction with respect to the main portion of the polar portion.

6. In a dynamo-electric machine, a field magnet frame provided with pole pieces having pole faces displaced axially with respect to the body portion of the pole pieces, and means for enabling the pole faces to be positioned on either side of the plane of the body portions of the pole pieces.

7. In a dynamo-electric machine, a field magnet frame, exciting coils on said frame, and polar projections having pole faces arranged to be positioned so as to displace the pole faces axially with respect to the coils and in either direction.

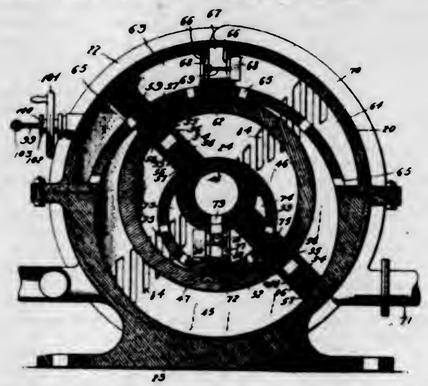
8. In a dynamo-electric machine, a field magnet structure, energizing coils having axes transverse to the axis of the machine, pole pieces having offset pole faces, and means for securing said pole pieces so as to locate the pole faces on either side of the axes of the coils.

9. In a dynamo-electric machine, a field magnet structure having detachable polar portions provided with laterally-displaced pole faces, means for securing the said polar portions in place so as to bring the pole faces in either extreme position axially of the machine, an armature and current-collecting device, and means for supporting the armature and current-collecting device in either end for end relation depending upon the position of the pole faces.

10. In a dynamo-electric machine, a field magnet structure, similar heads at the ends of said structure, bearings in said heads for an armature shaft, an armature having a current-collecting device arranged at one end thereof, polar portions having pole faces, and means for securing said polar portions to the field magnet structure with the pole faces arranged in either of two axially-displaced planes depending upon the end for end relation of the armature and current collecting device in the machine.

11. In a dynamo-electric machine, a field magnet frame having a plurality of detachable polar portions provided with pole faces, and means for securing said polar portions in place so as to bring the pole faces into either of a plurality of axially-displaced positions.

854,783. ROTARY ENGINE. GEORGE VOITH, Baltimore, Md. Filed Dec. 28, 1906. Serial No. 349,807.



Claim.—1. In a rotary engine, a cylinder; a fixed shaft therein; a drum in the cylinder concentric to the shaft; a stationary cam on the shaft inside the drum; radial pistons passing through the drum, and having their opposite ends in sliding contact with the cylinder wall and the periphery of the cam, respectively; inlet ports in the heads of the drums; and exhaust ports from the spaces inside and outside the drum.

2. In a rotary engine, a cylinder having exhaust ports; a fixed hollow shaft in the cylinder; a drum inside the cylinder concentric to the shaft, and having steam inlet ports in its heads; a stationary cam on the shaft inside the drum, and having exhaust openings communicating with the ports of the shaft; and radial pistons passing through the drum, and having their opposite ends in sliding contact with the cylinder wall and the periphery of the cam, respectively.

3. In a rotary engine, a cylinder; a fixed hollow shaft therein; a drum in the cylinder concentric to the shaft, and in contact at one point with the cylinder wall; exhaust passages in the cylinder wall on opposite sides of the aforesaid point of contact, and communicating with the space between the drum and the cylinder wall; gates for the outlet of each exhaust passage; inlet ports in the heads of the drums; a stationary cam on the shaft inside the drum, and in contact therewith at one point; exhaust passages in the cam on opposite sides of its point of contact with the drum, and communicating with the inside of said drum; ports from the last mentioned exhaust passages to the hollow shaft; gates for the outlets of said exhaust passages; and radial pistons passing through the drum, and having their opposite ends in sliding contact with the cylinder wall and the periphery of the drum, respectively.

4. In a rotary engine, a cylinder; a fixed hollow shaft therein; a drum in the cylinder concentric to the shaft, and in contact at one point with the cylinder wall; exhaust passages in the cylinder wall on opposite sides of the aforesaid point of contact, and communicating with the space between the drum and the cylinder wall; an outlet passage common to both exhaust passages; gates between said exhaust and outlet passages; inlet ports in the drum; a stationary cam on the shaft inside the drum; and in contact therewith at one point; exhaust passages

in the cam on opposite sides of its point of contact with the drum, and communicating with the inside of said drum; outlet passages to the hollow shaft common to both of the last mentioned exhaust passages; gates between said exhaust and outlet passages; and radial pistons passing through the drum, and having their opposite ends in sliding contact with the cylinder wall and the periphery of the drum, respectively.

5. In a rotary engine, a cylinder; a fixed hollow shaft therein; a drum in the cylinder concentric to the shaft, and in contact at one point with the cylinder wall; exhaust passages in the cylinder wall on opposite sides of the aforesaid point of contact, and communicating with the space between the drum and the cylinder wall; an outlet passage common to both exhaust passages; gates between said exhaust and outlet passages; a connection between said gates for simultaneously opening one and closing the other, and vice versa; inlet ports in the drum; a stationary cam on the shaft inside the drum, and in contact therewith at one point; exhaust passages in the cam on opposite sides of its point of contact with the drum, and communicating with the inside of said drum; outlet passages to the hollow shaft common to both of the last mentioned exhaust passages; gates between said exhaust and outlet passages; a connection between said gates for simultaneously opening one and closing the other, and vice versa; and radial pistons passing through the drum, and having their opposite ends in sliding contact with the cylinder wall and the periphery of the drum, respectively.

6. In a rotary engine, a cylinder; a drum therein; a piston carried by the drum; inlet ports through the head of the drum; a disk on the end of the drum, and having openings adapted to register with the aforesaid inlet ports; and plates on the disks adjustable to cover and uncover more or less the openings therein.

7 In a rotary engine, a cylinder; a plurality of rotating drums therein carrying pistons, and spaced apart; and inlet ports in the adjacent heads of the drums.

8. In a rotary engine, a cylinder; a plurality of rotating drums therein carrying pistons, and spaced apart; inlet ports in the adjacent heads of the drums; and cut-off and reversing gears between the drums.

9. In a rotary engine, a cylinder; a rotating drum therein carrying pistons; inlet ports in the head of the drum; a disk fitting against said drum-head, and having openings registerable with the inlet ports; and a cut-off plate fitting against the aforesaid disk, and adapted to cover and uncover more or less the openings therein.

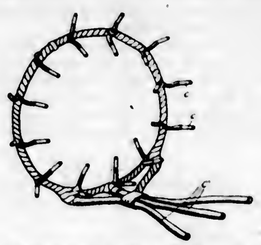
10. In a rotary engine, a cylinder; a rotating drum therein carrying pistons; inlet ports in the head of the drum; a hub projecting from said drum-head; a reversing disk rotatably mounted on the hub, and having openings registerable with the inlet ports; a cut-off plate fitting against the reversing disk, and adapted to cover and uncover more or less the openings therein; toothed hubs on the reversing disk and cut-off plate; a block having a rack engageable with the toothed hub of the cut-off disk; a hollow screw-shaft threaded through the block; a rack engageable with the toothed hub of the reversing disk, and having a stem extending through the screw-shaft; and stop collars on the stem between which the screw-shaft is confined.

854,784. DYNAMO-ELECTRIC MACHINE. JOHN B. WIARD, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Aug. 10, 1906. Serial No. 329,998.

Claim.—1. In a dynamo-electric machine, a distributed winding, and a separate cable connected to the coils of said winding comprising conductors arranged to establish predetermined connections between said coils.

2. In a dynamo-electric machine, a distributed winding, and a separate cable connected to the coils of said winding comprising a plurality of independent conductors having their terminals arranged to establish predetermined connections between said coils.

3. In a dynamo-electric machine, a distributed winding, and a separate cable connected to the coils of said winding comprising a plurality of independent conductors bound together with their ends projecting, said conductors being arranged to establish predetermined connections between said coils.



4. In a dynamo-electric machine, a multipolar distributed winding, the coils of each pole being permanently connected together, and a separate cable connected to said winding comprising conductors arranged to establish the desired connections between poles.

5. In a dynamo-electric machine, a multipolar distributed winding, the coils of each pole being permanently connected together, and a separate cable connected to said winding comprising a plurality of independent conductors bound together with their ends projecting, said conductors being arranged to establish the desired connections between poles.

6. In an induction motor, a distributed primary winding, the coils of each phase for each pole being permanently connected together, and a separate cable connected to said winding comprising conductors arranged to establish the desired connections between poles and phases.

7. In an induction motor, a distributed primary winding, the coils of each phase for each pole being permanently connected together, and a separate cable connected to said winding comprising a plurality of independent conductors bound together with their ends projecting, said conductors being arranged to establish the desired connections between poles and phases.

8. In a dynamo-electric machine, a distributed winding having its coils in part permanently connected at one end, and a separate cable connected to said winding at the other end of said coils and comprising conductors arranged to establish the remaining coil connections.

9. In a dynamo-electric machine, a distributed winding having its coils in part permanently connected at one end, and a separate cable connected to said winding at the other end of said coils and comprising a plurality of independent conductors bound together with their terminals projecting, said conductors being arranged to form the remaining coil connections.

10. In a dynamo-electric machine, a distributed winding, and a separate cable connected to the coils of said winding comprising conductors arranged to establish predetermined connections between said coils and between said winding and the external circuit.

11. In a dynamo-electric machine, a distributed winding, and a separate cable connected to the coils of said winding comprising a plurality of independent conductors bound together with their ends projecting, said conductors being arranged to establish predetermined connections between said coils and between said winding and the external circuit.

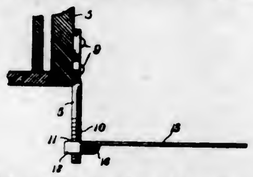
12. In a dynamo-electric machine, a multipolar distributed winding, the coils of each pole being permanently connected together, and a cable detachably connected to said winding comprising conductors arranged to establish the desired connections between poles and between said winding and the external circuit.

13. In an induction motor, a distributed primary winding, the coils of each phase for each pole being permanently connected together, and a separate cable connected to said winding comprising conductors arranged to establish the desired connections between poles and phases and between said winding and the external circuit.

14. In an induction motor, a distributed primary winding, the coils of each phase for each pole being permanently connected together, and a separate cable connected to said winding comprising a plurality of independent conductors bound together with their ends projecting, said conductors being arranged to establish the desired connections between poles and phases.

15. In a dynamo-electric machine, a distributed winding having its coils in part permanently connected at one end, and a separate cable connected to said winding at the other end of said coils and comprising conductors arranged to establish the remaining coil connections and to connect said winding to the external circuit.

854,785. LAMP-BRACKET. PETER M. WICKSTRUM, Lincoln, Nebr. Filed Oct. 30, 1906. Serial No. 341,280.



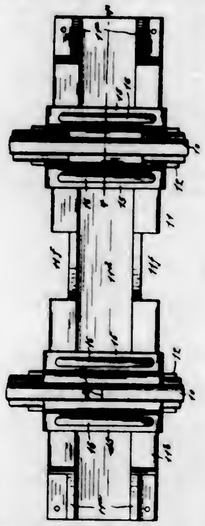
Claim.—The combination with a support, of a hanger having one end thereof provided with laterally extending perforated fingers and its opposite end threaded, fastening devices passing through the perforations in the fingers and engaging the support for securing the hanger in position on the latter, a lamp-supporting bracket having a reduced neck terminating in an enlargement provided with an opening the walls of which are threaded for engagement with the threads on the hanger, and reinforcements extending laterally from the enlargement and conforming to and extending beneath the lamp-supporting bracket, said bracket being eccentrically mounted on the hanger and free to rotate thereon.

854,786. DRAFT-EQUALIZER. WILLIAM P. WILD, Osnabrock, N. D. Filed May 2, 1906. Serial No. 314,820.



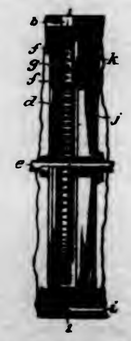
Claim.—In a draft equalizer, the combination with an equalising beam made up of the bars 2 and the sleeve 3 riveted at its ends to said bars 2 and spacing the said bars apart at their intermediate portions, of swingle trees working between said bars 2 and made up of the bars 5 welded at their ends and formed with hooks 6, sleeves 7 riveted at their ends to said bars 5 and spacing apart the intermediate portions of said bars 5, and the ends of said bars 2 and the bolts 4 passed through the ends of said bars 2 and through the sleeves 7 of said swingle-trees, substantially as described.

854,787. RAILWAY-TIE. JAMES A. WILLIS, Libertyville, Ill., assignor of seventy-five one-hundredths to Frank E. Wire, Libertyville, Ill. Filed Aug. 23, 1906. Serial No. 331,743.



Claim.—A railway tie comprising two parallel channel-bars having outwardly extending horizontal top and bottom flanges, and recessed on top, and a base-plate secured to the bottom flanges, channel-beams extending transversely across the tie and seated in the aforesaid recesses, cushion blocks in the beams for supporting the rails, rail fastening means having hook-shaped ends engaging over the top flanges of the aforesaid channel-bars, and fastening means extending through said hook-shaped ends and top flanges.

854,788. STEAM-TURBINE. ROBERT WILSON, West Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Mar. 15, 1904. Renewed Dec. 6, 1905. Serial No. 290,606.



Claim.—1. In an elastic-fluid turbine, a support having a circular groove or channel formed therein, a series of

vanes having bases accurately fitting said channel, shanks on the rear of said bases, perforations in said support into which said shanks are fitted, means for securing said shanks firmly in place in said support, projections on the outer extremities of said vanes, and a band, perforated at intervals to correspond to said projections, into which said projections are firmly secured, substantially as specified.

2. In an elastic-fluid turbine, a rotatory member having circular grooves or channels formed therein, a fixed member having a circular groove or channel, vanes having bases accurately fitting said grooves or channels, integral shanks on said bases, perforations in said grooved members corresponding to said shanks and their position, in which the latter are securely fastened, projections on the outer extremities of said vanes, and bands perforated at intervals to correspond to said projections and their position, into which the latter are securely fastened, substantially as specified.

3. In an elastic-fluid turbine, the combination of a support, a plurality of vanes mounted thereon, other vanes having shanks which are secured to the support, and a cover for securing the first-mentioned vanes in place, that is attached to those vanes having shanks.

4. In an elastic-fluid turbine, the combination of a support, a plurality of vanes carried thereby, retaining shanks for a portion only of the vanes, a cover for the ends of the vanes, and projections on all of the vanes that enter openings in the cover and are riveted over to unite the cover and buckets.

5. In an elastic-fluid turbine, the combination of a support, a plurality of vanes, each having a base that engages the adjacent vane and forms a spacing device, shanks on a portion only of the vanes which enter the support and are secured thereto, a cover for the vanes having openings therein, and projections on the vanes that enter the openings and are riveted over to secure the parts.

6. In an elastic-fluid turbine, the combination of a carrying member, a grooved support mounted thereon, a plurality of vanes mounted in the groove, a cover secured to and covering the ends of the vanes, and shanks for the vanes that pass through and are secured to the support.

7. In an elastic-fluid turbine, the combination of a support, a plurality of vanes mounted thereon, projections on the vanes, shanks for a portion only of the vanes, and a segmental cover that is secured to all of the vanes, each of said segments being secured to at least two of the vanes having shanks.

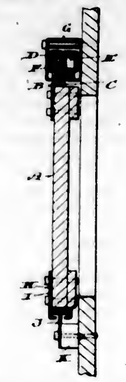
8. In an elastic-fluid turbine, the combination of a grooved support, a plurality of vanes, bases for the vanes which are located in the groove and act as separators for the vanes and also as means to keep them from twisting, shanks for a portion only of the vanes, which enter the support and are secured thereto, and means for securing the vanes which are not provided with shanks to those that are.

854,789. DOOR-HANGER AND MEANS TO PREVENT THE SWAYING OF DOORS. JOSEPH WOYAK, Milwaukee, Wis. Filed Mar. 12, 1907. Serial No. 362,040.

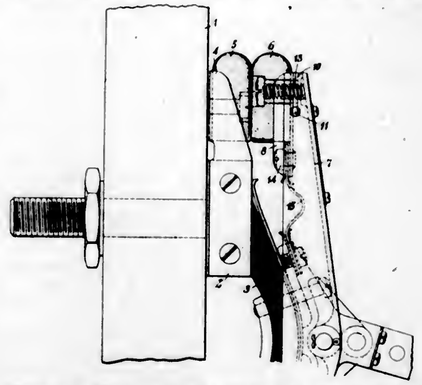
Claim.—1. The combination of a door, hangers in rigid connection therewith and each comprising a pair of angular plates fitting one upon the other, their upper ends being bent in opposite directions to form housings, an axle mounted in parallel vertical portions of the plates and the recurved upper ends of same, and rollers on the axle within the housings; tracks for the rollers, sway-guards rigidly secured to the lower portion of the door; and a stay-rail opposing said guards.

2. The combination of a door, roller-hangers in rigid connection therewith, a roller-track, a plate fastened to the door and bent to extend parallel to the lower edge of same and then at a double right-angle, and a stay-rail having a flange thereof engaging said guard.

3. The combination of a door, roller-hangers in rigid connection therewith, a roller-track, sway-guards each comprising a pair of angular plates fitting one upon the other in rigid connection with the door, and a stay-rail having flanges with which the ends of the sway-guard plates are parallel under the same.



854,790. PIVOTALLY-MOUNTED MEMBER. CHRISTIAN AALBORG, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed May 2, 1906. Serial No. 314,855.



Claim.—1. The combination with a member having flanges, of another member that is pivotally supported between the flanges by means of lugs upon one of the members that project into apertures in the other, the latter member comprising a plate that is no greater in width than the distance between the flanges less the length of one of the lugs, and a part that is secured thereto, whereby withdrawal of the lugs from the apertures is prevented.

2. The combination with a member having flanges, of another member that is pivotally supported between the flanges by means of lugs upon one of the members that project into the apertures in the other, the latter member comprising a plate that is no greater in width than the distance between the flanges less the length of one of the lugs and a part that is secured thereto, whereby withdrawal of the lugs from the apertures is prevented, a screw for clamping said parts together having a recess in one end and a resilient means partially located therein for normally maintaining the pivoted member in a tilted position.

3. The combination with a member having flanges, of another member that is pivotally supported between said flanges and comprises a plate having lugs, the width of the plate being no greater than the distance between the flanges less the length of one of the lugs, and a part of greater width than the plate to which the plate is se-

cured in an approximately central position with reference thereto.

4. The combination with a member having flanges, of another member that is pivotally supported between said flanges and comprises a plate having lugs, the width of the plate being no greater than the distance between the flanges less the length of one of the lugs, and a part of greater width than the plate to which the plate is secured in an approximately central position with reference thereto, a screw for clamping said parts together having a recess in one end, and resilient means partially located therein for normally maintaining the pivoted member in a tilted position.

5. The combination with a member having flanges, of another member that is pivotally supported between the flanges by means of lugs upon one of the members that project into apertures in the other, the latter member comprising a plate that is no greater in width than the distance between the flanges less the length of one of the lugs, and a part of greater width than the plate to which the plate is secured in an approximately central position with reference thereto.

854,791. CATTLE FOOD AND PROCESS OF MAKING SAME. GEORGE F. AHLERS, Covington, Ky. Filed Jan. 7, 1907. Serial No. 351,115.

Claim.—1. In the manufacture of cattle feeds, the process which consists in cooking and partially digesting comminuted roughage in hot distillery slop, separating the liquid and solid components of the cooked mass, rendering the solid portion granular and absorbent, evaporating the liquid portion to a syrup, absorbing the same by the granular absorbent solids and drying the impregnated granules.

2. In the manufacture of cattle feeds, the process which consists in cooking and partially digesting comminuted roughage in hot distillery slop, separating the liquid and solid components of the cooked mass, rendering the solid portion granular and absorbent, evaporating the liquid portion to a syrup, absorbing the same by the granular absorbent solids in a plurality of stages, and drying between stages and finally drying the impregnated granules.

3. In the manufacture of cattle feeds, the process which consists in cooking and partially digesting comminuted roughage in hot distillery slop in the acid condition in which it leaves the still.

4. In the manufacture of cattle feeds, the process which comprises cooking and partially digesting corn cob meal in hot distillery slop in the acid condition in which it leaves the still.

5. In the manufacture of cattle feeds, the process which comprises cooking and partially digesting corn cob meal in hot distillery slop from the manufacture of rye whisky, said slop being in the acid condition in which it leaves the still.

6. In the manufacture of cattle feeds, the process which consists in cooking and partially digesting corn cob meal in hot distillery slop, separating the liquid and solid components of the cooked mass, rendering the solid portion granular and absorbent, reducing the liquid portion to a syrup, absorbing the same by the granular absorbent solids, and finally drying the impregnated granules.

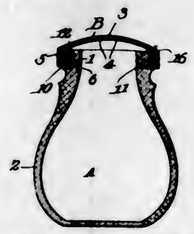
7. In the manufacture of cattle feeds, the process which consists in cooking and partially digesting corn cob meal in hot distillery slop, separating the liquid and solid components of the cooked mass, rendering the solid portion granular and absorbent, evaporating the liquid portion to a syrup, absorbing the same by the granular absorbent solids in a plurality of stages, and drying between stages and finally drying the absorbent granules.

8. As a new cattle feed, a dry granular mass comprising granules of cooked and partially digested comminuted roughage and of the insoluble solids of distillery slop, said granules containing interiorly incorporated the soluble solids of distillery slop, said granules having a pleasant caramel-like odor and a sweetish taste on initial mastication and a different after-taste, said after-taste resembling that of the slop.

9. As a new cattle feed, a mixture of cooked and partially digested corn cob meal with components of distillery slop, said components retaining the acid nature with which they left the still.

10. As a new cattle feed, a mixture of cooked and partially digested corn cob meal with components of distillery slop from the manufacture of rye whisky, said components retaining the acid nature with which they left the still.

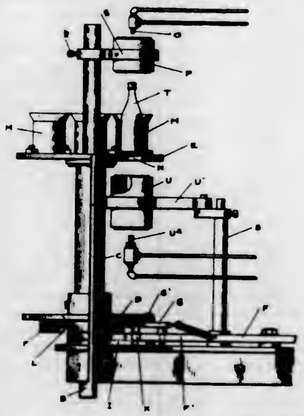
854,792. FLEXIBLE TOP FOR SALT-CELLARS. FRED BARTLETT, Chatham, Ontario, Canada. Filed Sept. 15, 1906. Serial No. 334,717.



Claim.—1. A cover for receptacles intended to contain powdered material molded integrally of soft rubber and having a perforated top which may be distorted by slight pressure to open the perforations when clogged, and a downwardly extending flange provided internally with projecting fastening means.

2. A cover for receptacles intended to contain powdered material, molded integrally of soft rubber and having a perforated dome shaped top capable of distortion by slight pressure to remove any clogging material in said perforations, and a downwardly extending flange provided on its inner side with attaching means.

854,793. FIRE-POLISHING MACHINE. WILLIAM E. BOCK, Toledo, Ohio, assignor to the Toledo Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed June 30, 1905. Serial No. 267,856.

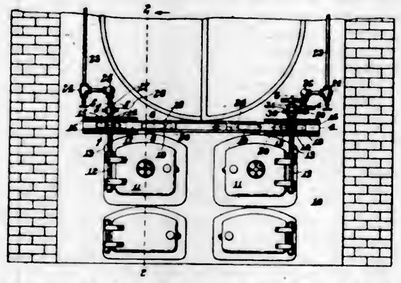


Claim.—1. A fire-finishing machine comprising a base, an intermittently rotating apertured table thereon, holders at the apertures, furnaces or burners above and below the table at a stopping point of the holders, and a second furnace or burner at an adjacent stopping point below the table.

2. In a fire-finishing machine, the combination of a base, a post thereon, a sleeve journaled about the post, a ware-carrier table at the top of the sleeve, a ratchet wheel at the base, a lock for the ratchet wheel, means for actuating the ratchet wheel, and for locking the parts between movements, and for withdrawing the lock before each actuation.

3. In a fire-finishing machine the combination of a base, a post thereon, a sleeve journaled about the post, a ware-carrier table at the top of the sleeve, a ratchet wheel at the base, a lock for the table, a rocking lever, a spring pawl on the lever adapted to engage the ratchet wheel, and means for unlocking the wheel by the lever at each operation, and locking it between operations.

854,794. SMOKE-PREVENTER. JOHN BOYD, Malden, Mass. Filed June 18, 1906. Serial No. 322,139.



Claim.—1. In a furnace, a door therefor, a hinge pin moving therewith, a steam inlet pipe, a valve therein adapted to be operated by the movement of said pin, a plurality of nozzles in said steam inlet pipe extending into said furnace, a front wall to said furnace provided with a plurality of passages extending therethrough for the reception of said nozzles, and means located in the rear of said nozzles upon said front plate for closing and opening said passages by the movement of the door.

2. In a furnace, a door therefor, a hinge pin moving therewith, a steam inlet pipe, a valve therein adapted to be operated by the movement of said pin, a plurality of nozzles in said steam inlet pipe extending into said furnace, a front wall to said furnace provided with a plurality of passages extending therethrough for the reception of said nozzles, and a reciprocating slide located in the rear of said nozzles upon said front plate for closing and opening said passages by the movement of the door.

3. In a furnace, a door therefor, a hinge pin moving therewith, a steam inlet pipe, a valve therein connected directly to said hinge pin and adapted to be operated by the movement thereof, a plurality of nozzles in said steam inlet pipe extending into said furnace, a front wall to said furnace provided with a plurality of passages extending therethrough for the reception of said nozzles, and means for automatically opening and closing each of said passages simultaneously with the opening and closing of said door.

4. In a furnace, a door therefor, a front wall to said furnace provided with a plurality of passages extending therethrough, a steam nozzle located within each of said passages, a sliding member for closing all of said passages, and means directly operated by the opening and closing of said door for sliding said member simultaneously with the movement of the door.

5. In a furnace, a door therefor, a hinge pin movable therewith, a front wall to said furnace provided with a plurality of passages therethrough, a steam nozzle located within each passage, a toothed reciprocating slide for closing said passages, and a toothed segment secured to said hinge pin and meshing with the teeth of said slide.

6. In a furnace, a door therefor, a hinge pin movable therewith, a front wall to said furnace provided with a plurality of passages therethrough, a steam nozzle located within each passage, a toothed reciprocating slide for closing said passages, and a toothed segment adjustably secured to said hinge pin and meshing with the teeth of said slide.

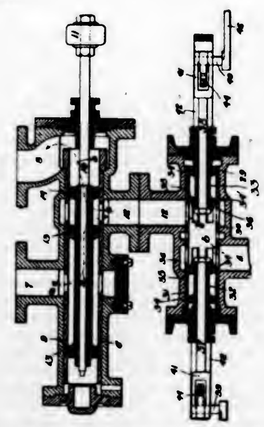
7. In a furnace, a door therefor, a hinge pin movable therewith, a front wall to said furnace provided with a plurality of passages therethrough, a steam nozzle located within each passage, a toothed reciprocating slide for closing said passages, and a toothed segment adjustable lengthwise of said hinge pin and meshing with the teeth of said slide.

8. In a furnace, a door therefor, a threaded hinge pin movable therewith, nuts threaded thereto, a gear segment mounted on said hinge pin and held in position by said nuts, a front wall to said furnace provided with a plurality of passages therethrough, and a reciprocating sliding member operated by said segment to close and open said passages.

9. In a furnace, a door therefor, a hinge pin oscillating therewith, a front wall to said furnace provided with a plurality of passages therethrough, a steam nozzle in each of said passages, a reciprocating slidable member provided with a plurality of openings adapted to move across said passages to open and close the same, a rack secured to said slidable member, and a gear segment meshing therewith secured to said hinge pin.

10. In a furnace, a door therefor, a hinge pin oscillating therewith, a front wall to said furnace provided with a plurality of passages therethrough, a steam nozzle in each of said passages, a slidable member provided with a plurality of openings adapted to move across said passages to open and close the same, a plurality of parallel racks on said slidable member, a gear segment mounted upon said hinge pin and adapted to mesh with one of said racks, and means for adjusting the position of said gear segment to cause it to mesh with either of said racks.

854,795. ELEVATOR VALVE MECHANISM. ROBERT C. BROMLEY, Pittsburg, Pa. Filed Sept. 19, 1905. Serial No. 279,095.



Claim.—1. An automatic terminal stop valve comprising a casing having a port communicating with a source of pressure and a port communicating with a cylinder respectively, two independent valves therein having depressible cups and arranged to close said communication by either valve, and means for actuating either of said valves to close the circulation, substantially as set forth.

2. An automatic terminal stop valve comprising a casing having a port communicating with a source of pressure and a port communicating with a cylinder respectively, and a valve therein arranged to close the exhaust from the cylinder and having a depressible cup adapted when in such position to admit a restricted supply to the cylinder, substantially as set forth.

3. An automatic terminal stop valve comprising a casing having a single port communicating with a source of pressure and a single port communicating with a cylinder respectively, a valve therein arranged to close the exhaust

from the cylinder provided with oppositely arranged inwardly turned cups, with clearance for one of said cups whereby, when in sealing position it will admit a restricted supply to the cylinder, substantially as set forth.

4. An automatic terminal stop valve comprising a casing having a port communicating with a source of pressure and a port communicating with a cylinder respectively, and a valve therein arranged to close the supply to the cylinder and having a depressible cup adapted when in such position to admit a restricted exhaust from the cylinder, substantially as set forth.

5. An automatic terminal stop valve comprising a casing communicating with a source of pressure and with a cylinder respectively, a valve therein arranged to close the supply to the cylinder provided with inwardly turned cups, with clearance for one of said cups whereby, when in sealing position, it will admit a restricted exhaust from the cylinder, substantially as set forth.

6. An automatic terminal stop valve for hydraulic elevators comprising a casing having a port communicating with a source of pressure and a port communicating with the cylinder respectively, two independent valves therein having depressible cups and arranged to independently close said communication by either valve, and means arranged to be actuated by engagement of a device mounted on the elevator car for actuating either of said valves to close the circulation, substantially as set forth.

7. An automatic terminal stop valve for hydraulic elevators comprising a casing having a port communicating with a source of pressure and a port communicating with the cylinder respectively, two independent valves therein having depressible cups and arranged to independently close said communication by either valve, and means arranged to normally maintain either valve open to provide circulation to and from the elevator cylinder and to be actuated by engagement of a device mounted on the elevator car for actuating either of said valves to close the circulation, substantially as set forth.

8. An automatic terminal stop valve comprising a casing having supply and distribution ports respectively, a valve arranged to close one of said ports provided with a stem carrying a rock shaft and a toothed gear, rack teeth arranged to be engaged by said gear, and an operating lever for said rock shaft, substantially as set forth.

9. An automatic terminal stop valve comprising a casing having supply and distribution ports respectively, a valve arranged to close one of said ports provided with a stem carrying a rock shaft and a toothed gear, rack teeth arranged to be engaged by said gear, and an operating lever for said rock shaft, with means for suspending said lever to maintain said mechanism in inoperative position, substantially as set forth.

10. An automatic terminal stop valve comprising a casing having supply and distribution ports respectively, a valve arranged to close one of said ports provided with a stem carrying a rock shaft and a toothed gear, rack teeth arranged to be engaged by said gear, an operating lever for said rock shaft provided with a counterweight, and means for suspending said lever to maintain said mechanism in inoperative position, substantially as set forth.

11. In an automatic terminal stop valve, the combination of a casing provided with supply and distribution ports respectively, oppositely located valves arranged to cover each of said ports, valve stems extending outwardly and provided with rock shafts and toothed gearing, upper and lower series of rack teeth arranged to engage said gearing, counterweighted levers connected with said rock shafts, and means suspending said levers horizontally to maintain the valves in normal inoperative position, substantially as set forth.

12. In an automatic terminal stop valve, the combination of a casing provided with supply and distribution ports respectively, oppositely located valves arranged to cover each of said ports, valve stems extending outwardly and provided with rock shafts and toothed gearing, upper and lower series of rack teeth arranged to engage said gearing, counterweighted levers connected with said rock shafts, means suspending said levers horizontally to maintain the valves in normal inoperative position, and a movable element provided with abutting devices adapted to engage the suspending elements of said levers, substantially as set forth.

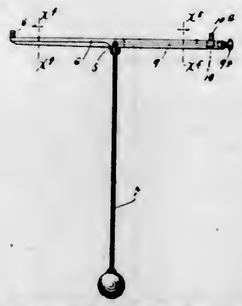
13. In elevator valve mechanism, the combination with a source of pressure and a hydraulic cylinder, of a controlling valve governing the supply to and exhaust from the cylinder, means for actuating said valve, and automatic terminal stop valve mechanism located between the controlling valve and the cylinder, having a port leading to the controlling valve and a port leading to the cylinder, and independently operating valves having depressible cups and adapted to cover one or the other of said ports and to be actuated by mechanism engaged by the elevator car, substantially as set forth.

14. In elevator valve mechanism, the combination with a source of pressure and a hydraulic cylinder, of an elevator car provided with a plunger mounted in the cylinder, a controlling valve governing the supply to and exhaust from the cylinder, means for actuating said valve, automatic terminal stop valve mechanism located between the controlling valve and the cylinder, having a port leading to the controlling valve and a port leading to the cylinder, and independently operating valves having depressible cups and adapted to cover one or the other of said ports and to be actuated by mechanism engaged by the elevator car, substantially as set forth.

15. In elevator valve mechanism, the combination with a source of pressure and a hydraulic cylinder, of a controlling valve governing the supply to and exhaust from the cylinder, means for actuating said valve, and an automatic terminal stop valve located between the controlling valve and the cylinder having a port at one side leading to the controlling valve, a port at the other side leading to the cylinder, independent stop valves having depressible cups and adapted to cover one or the other of said ports, and connections thereto arranged to be actuated by devices mounted on the elevator car, substantially as set forth.

16. In elevator valve mechanism, the combination with a source of pressure and a hydraulic cylinder, of a controlling valve governing the supply to and exhaust from the cylinder, means for actuating said valve, and automatic terminal stop valve mechanism located between the controlling valve and the cylinder, said valve mechanism being provided with cups having clearance at one side, arranged to shut off the full speed or exhaust but to admit a restricted feed or exhaust to or from the cylinder, substantially as set forth.

854,796. SURVEYING INSTRUMENT. ANDREW A. BROTHEN, Mountain Home, Idaho. Filed Feb. 4, 1907. Serial No. 355,603.

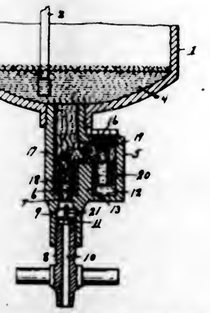


Claim.—1. In an instrument of the kind described, the combination with a suitable support, of a weighted oscillatory sighting bar provided on opposite sides of its pivotal point of suspension with sighting pieces, one of which is adjustable longitudinally of said sighting bar to vary the inclination of said bar with respect to a horizontal, substantially as described.

2. In an instrument of the kind described, the combination with a suitable support having a depending leg or means for anchoring the same to the ground, of a weighted oscillatory sighting bar 6 intermediately pivoted to said support and provided at the end of one of its arms with a sighting piece 8, the other arm thereof being slotted and provided with an adjusting screw, and an adjustable block 10 working in the slot of said bar having screw threaded engagement with said adjusting screw 9 and provided with a sighting piece 10^a, substantially as described.

3. The combination with the casing 1 having a depending supporting leg 2 and the opposite transparent panes 3, of the sighting bar 6 intermediately pivoted within said casing and provided with a depending weighted pendulum 7, a sighting piece 8 secured to one end of said sighting bar, the other arm of said bar being slotted and provided with an adjusting screw 9, and a block 10 working in the slot of said bar, having screw threaded engagement with said screw 9 and provided with a sighting piece 10^a, substantially as described.

854,797. AUTOMATIC OIL-CHECK FOR LUBRICATOR DRAIN-PASSAGES. WILLIAM E. BRYANT, Detroit, Mich., assignor to Michigan Lubricator Co., Detroit, Mich., a Corporation of Michigan. Filed June 11, 1906. Serial No. 321,101.



Claim.—1. The combination with the reservoir of a lubricator adapted to contain liquids of different specific gravity, of means automatically operated by the variation in the specific gravity of said liquids to prevent the escape of the lighter liquid from the reservoir.

2. In a lubricator, the combination with the reservoir adapted to contain liquids of different specific gravity, and having a discharge opening therefrom, of means actuated by the variation in the specific gravity of said liquids to allow the passage of the heavier liquid through said discharge opening and prevent the passage of the lighter liquid therethrough.

3. The combination with the reservoir of a lubricator adapted to contain water and oil in superimposed relation and having a discharge opening leading therefrom, of means immersed in said liquids and actuated by the variation in the specific gravity thereof to allow of a flow of water through said discharge opening but prevent the passage of oil therethrough.

4. In a lubricator, the combination of the reservoir adapted to contain oil and water, and having a drain opening leading therefrom, of means controlling said drain opening actuated by contact of the oil therewith, to automatically close said opening and prevent the passage of the oil therethrough.

5. In a lubricator, the combination with the reservoir adapted to contain water and oil, having a discharge opening leading therefrom, of a gravity valve adapted to close said opening, a counterpoise connected with said valve to hold it from its seat when immersed in water, and means for withdrawing the water from around said valve.

6. The combination with a lubricator reservoir adapted to contain oil and water, of a drain plug fitted into the bottom of the reservoir and communicating therewith, said plug having separate wells therein, one being a water well and containing a counterpoise, and the other being a water and oil well and containing a gravity valve, means connecting the valve and counterpoise to normally hold the valve from its seat, there being a discharge passage way leading from the valve well and a drain cock for drawing the water from the valve well to permit the valve to overcome the counterpoise and close said passage way.

7. The combination with the reservoir of a lubricator adapted to contain oil and water, of a fitting communicating therewith having independent wells, a gravity valve and a counterpoise connected therwith occupying said wells respectively, the weight of the counterpoise being sufficient to hold the valve elevated when both wells are filled with water, the valve well having a discharge opening leading therefrom, said valve when seated closing said opening, a drain cock for closing the discharge opening and means for holding said valve from its seat upon a partial opening of the drain cock.

8. The combination with the reservoir of a lubricator adapted to contain oil and water in superimposed relation and having a drain passage leading therefrom, a valve for closing said drain passage, and means actuated by a lowering of the water level in the reservoir to seat said valve in advance of the entrance of oil into said drain passage.

854,798. APPARATUS FOR BURNING FUEL IN FURNACES. EARL M. BUNCE, Fenton, Mich. Filed Feb. 2, 1907. Serial No. 355,444.

Claim.—1. The combination with a furnace, of two fuel discharge pipes each jointed at one end and freely movable at the other end, means for supplying air and fuel to the pipes, and means for supporting them in different positions so that the air and fuel discharged therefrom may be caused to successively meet at an angle at a plurality of points or places within the furnace.

2. The combination with a furnace, of two fuel discharge pipes each jointed at one end and freely movable at the other end; means for supplying air and fuel to the pipes; and means for adjusting the said pipes to different angular positions in a horizontal plane so that the two streams of air and fuel may be caused to meet at different points or places within the furnace.

3. The combination with a furnace, of two fuel discharge pipes angularly disposed each to the other; means for pivoting the same so the free ends may move; means

for supplying fuel and air to the pipes; and means for adjusting the pipes vertically so the flame may be directed upwardly or downwardly within the furnace.

4. The combination with a furnace, of two fuel discharge pipes each jointed at one end and freely movable at the other end; means for supplying air and fuel to the pipes; and means for adjusting the pipes both vertically and horizontally so the two streams of fuel and air delivered from the pipes may meet at a plurality of points or places within the furnace and form one stream.

5. The combination with a rotary or other kiln, of two fuel discharge pipes each jointed to move in vertical and horizontal planes at the free end; means for adjusting the pipes to angular positions so the streams of air and fuel will meet, change their directions, become thoroughly commingled and form one stream; and means for supplying fuel and air to the same.

6. The combination with a rotary or other kiln, of two fuel discharge pipes each universally jointed at one end to another pipe and the other end freely movable, and said pipes angularly disposed each to the other so the streams of fuel and air will meet to form one stream; means for supplying air and fuel to the pipes; and means for delivering more fuel to one of the pipes than to the other.

7. The combination with a rotary kiln, of two freely jointed and movable fuel discharge pipes angularly disposed each to the other so the streams of air and fuel will unite, change their directions, become thoroughly commingled so as to form one stream, means for supplying air and fuel to the pipes; and means for adjusting the said pipes and holding them in relatively adjusted positions.

8. The combination with a rotary kiln, of two fuel discharge pipes each movable at one end in the wall of a hood or housing and flexibly united at the opposite end to a pipe; means for supplying air and fuel; and means for moving the discharge pipes to different angular positions so the streams of air and fuel will unite to form one stream.

9. The combination with a rotary kiln, of two pipes having ends freely movable for delivering two streams of air and fuel into the kiln so they will unite to form practically one stream; and means for forcing the said stream to one side of the meeting place of the said two streams of air and fuel.

10. The combination with a rotary kiln of a housing having an opening, a plate with an opening supported so as to move horizontally relative to the opening in the housing, an air and fuel supply pipe and a fuel discharge pipe carried by said movable plate and universally jointed to the air and fuel supply pipe at a point outside of and independent of the said plate.

11. The combination with a kiln and a housing having an opening, of two plates, one of said plates movable horizontally and the other vertically; an air and fuel supply pipe and a fuel discharge pipe supported by one of said plates and united by a universal joint to the air and fuel supply pipe.

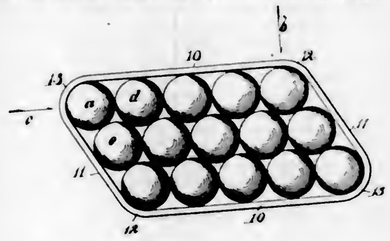
12. The combination with a kiln, of a housing provided with two openings, and two horizontally movable plates each having an opening and suitably supported; two fuel discharge pipes angularly disposed each to the other within the openings of the plates and movable with the same; and means for supplying air and fuel to the pipes; whereby the two streams of air and fuel may be united change their directions and form one stream within the kiln, and whereby the direction of the stream may be changed.

13. The combination with a housing provided with two openings, of two vertically movable plates each having an opening; two horizontally movable plates each supporting one of the vertically movable plates; and two fuel discharge pipes located within the openings of the plates and movable with the same.

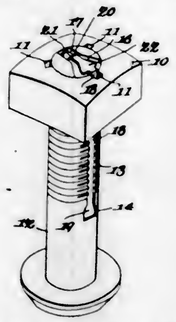
854,799. POOL-BALL FRAME. THOMAS H. CALLAHAN, Harrison, N. J. Filed Sept. 1, 1906. Serial No. 332,979.

Claim.—1. A frame for pool balls, having the shape of a rhomboid.

2. A frame for pool balls having the shape of a rhomboid, and having the angles rounded to receive a ball.



854,800. NUT-LOCK. HENRY M. CHEEK and CHARLES P. BROOKS, Pleasant Plains, Ark. Filed June 2, 1906. Serial No. 319,866.



Claim.—1. In a nut lock, a bolt having a longitudinal groove transversely of its threads, and also having a recess in its outer end communicating at one end with said groove, the inner end of said recess being depressed and the outer end of said recess being widened, a spring latch engaging said groove and with a lateral bend engaging said recess and widened to bear in the widened portion of the same, a lug depending from said laterally bent portion of the latch and adapted to engage the depression in said recess when the latch is in withdrawn position, and a nut having grooves transversely of its threads and adapted to receive said latch when the lug is released from the depression.

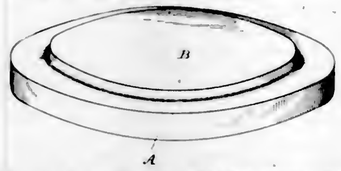
2. In a nut lock, a bolt having a channel longitudinally of its stock and transversely of its threads and deepened at the outer portion and the bolt also having a recess in its outer end in communication with the channel and a depression at the inner end of the recess, a spring latch engaging said channel and provided with a stop rib bearing in the deepened portion of the same and with a lateral bend engaging said recess and terminating in a lug for engaging the depression in said recess, and a nut having grooves transversely of its threads and adapted to receive said latch when the lug is released from the depression.

3. In a nut lock, the nut having grooves transversely of its threads and the bolt having a longitudinal channel deepened into a recess at the outer portion, and extended across the end of the bolt, said end extension having a depression spaced from the recess portion, and a spring latch engaging said channel and extended at the outer end for bearing in the end extension of the channel and with laterally extending wings forming closures to said recess portion and with a terminal depression for yieldably engaging the depression in said end extension of the channel and a lug extending from said latch and bearing in said recess portion.

4. In a nut lock, the nut having grooves transversely of its threads and the bolt having a longitudinal channel extended laterally at the inner end and deepened into a recess at the outer portion and extended across the end of the bolt, said extension having a depression spaced from the recess portion, and a spring latch engaging said channel and extended laterally at the inner end to engage the lateral extension of the channel and likewise extended at the outer end for bearing in said end extension of the channel and with a terminal depression for yieldably engaging the depression in the same, and with lateral wings forming a closure to said recess portion, and a lug carried by said latch and bearing in said recess.

5. In a nut lock the nut having grooves transversely of its threads and the bolt having a longitudinal channel extended laterally at the inner end, and extended across the end of the bolt and with a depression spaced from said recess portion, and a spring latch engaging said channel and extended laterally at the inner end to engage the lateral extension of the channel and likewise extended at the outer end for bearing in said end extension and with a terminal depression for yieldably engaging the depression therein.

854,801. COMPOSITION OF MATTER FOR SOUND-RECORDS. GEORGE K. CHENEY, New York, N. Y., assignor, by mesne assignments, to Victor Talking Machine Company, a Corporation of New Jersey. Filed June 6, 1903. Serial No. 160,432.



Claim.—1. A record tablet having a recording surface consisting essentially of a composition of ozocerite and paraffin in suitable proportions.

2. A record tablet consisting essentially of a composition of equal parts of ozocerite and paraffin.

854,802. TEMPORARY BINDER. ERNEST E. CLARK, St. Louis, Mo. Filed July 2, 1906. Serial No. 324,352.



Claim.—1. In a temporary binder, the combination with the covers, a pair of straps hinged to each other and each of them independently hinged to one of said covers, and pins mounted on said straps in pairs and having points adapted to engage each other; of a bar projecting rigidly from one strap across and above the other strap, and means carried by the latter for raising and lowering the outer end of said bar, for the purpose set forth.

2. In a temporary binder, the combination with the covers, a pair of straps hinged to each other and each of them independently hinged to one of said covers, and pins mounted on said straps in pairs and having points adapted to engage each other; of a bar projecting rigidly from one strap across and above the other strap, and means carried by the latter for positively raising and lowering the outer end of the bar and for holding it in either position, for the purpose set forth.

3. In a temporary binder, the combination with the covers, a pair of straps hinged to each other and each of them independently hinged to one of said covers, and pins mounted on said straps in pairs and having points adapted to engage each other; of a bar projecting rigidly from one strap across and above the other strap, and a member rotatably mounted on the latter and engaging the free end of said bar for raising and lowering it, for the purpose set forth.

4. In a temporary binder, the combination with the covers, a pair of straps hinged to each other and each of them independently hinged to one of said covers, and pins mounted on said straps in pairs and having points adapted to engage each other; of a bar projecting rigidly from one strap across and above the other strap, a member rotatably mounted on the latter and engaging the outer end of the bar for the purpose set forth, and a key removably engaging said member.

5. In a temporary binder, the combination with two members flexibly connected, and a pair of pins mounted on them and having points adapted to engage each other; of a bar on one member projecting rigidly over and above the other and across the line of connection between them independent of the pins, and positive means for adjusting the outer end of said bar with reference to the last-named member, for the purpose set forth.

6. In a temporary binder, the combination with two members flexibly connected, and a pair of pins mounted on them and having points adapted to engage each other; of a bar on one member projecting rigidly over and above the other, a cup on the latter having a vertical slot into which the tip of the bar extends, and means within the cup for positively raising and lowering said tip.

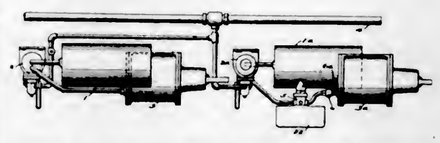
7. In a temporary binder, the combination with two members flexibly connected, and a pair of pins mounted on them and having points adapted to engage each other; of a bar on one member projecting rigidly over and above the other, a cup on the latter having a vertical slot into which the tip of the bar extends, a swivel mounted within the cup and having an oblique slot engaging said tip, and a handle on the swivel.

8. In a temporary binder, the combination with two members flexibly connected, and a pair of pins mounted on them and having points adapted to engage each other; of a bar on one member projecting rigidly over and above the other, a cup on the latter having a vertical slot into which the tip of the bar extends, a swivel mounted within the cup and having an ogee slot engaging said tip, and a handle on the swivel.

9. In a temporary binder, the combination with two members flexibly connected, and a pair of pins mounted on them and having points adapted to engage each other; of a bar on one member projecting rigidly over and above the other, a cup on the latter having a vertical slot into which the tip of the bar extends, a swivel mounted within the cup and having an oblique slot engaging said tip, and a key removably engaging the upper end of the swivel.

10. In a temporary binder, the combination with two members flexibly connected, and a pair of pins mounted on them and having points adapted to engage each other; of a bar on one member projecting rigidly over and above the other, a cup on the latter having a vertical slot into which the tip of the bar extends, a swivel mounted within the cup and having an ogee slot engaging said tip, and a key removably engaging the upper end of the swivel.

854,803. HIGH-SPEED BRAKE APPARATUS. JOHN W. CLOUD, London, England, assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 20, 1905. Serial No. 279,239.



Claim.—1. A fluid pressure brake apparatus comprising a main brake set, an auxiliary brake set, and a speed controlled valve device for regulating the amount of braking pressure exerted by the auxiliary brake set.

2. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of an additional triple valve, auxiliary reservoir, and brake cylinder, and a speed controlled valve device for

regulating the amount of fluid under pressure admitted to the additional brake cylinder.

3. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of an additional brake cylinder, and a speed controlled valve device for regulating the amount of fluid under pressure admitted to the additional brake cylinder.

4. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of an additional triple valve, auxiliary reservoir, and brake cylinder, and a speed controlled valve device for governing communication from the additional triple valve to the additional brake cylinder and to the atmosphere.

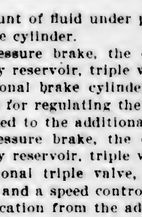
5. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of an additional brake cylinder, a speed controlled valve device for regulating the amount of fluid under pressure admitted to the additional brake cylinder, and means for gradually diminishing the pressure in the additional brake cylinder.

6. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of an additional brake cylinder, a speed controlled valve device for regulating the amount of fluid under pressure admitted to the additional brake cylinder, and a small leak port from the second brake cylinder to the atmosphere.

7. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of an additional auxiliary reservoir, triple valve, and brake cylinder, a speed controlled valve device governing communication from the additional triple valve to the second brake cylinder and to the atmosphere, and a small open leak port from the second brake cylinder to the atmosphere.

8. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of an additional auxiliary reservoir, triple valve, and brake cylinder, a speed controlled valve device governing communication from the additional triple valve to the second brake cylinder, and means tending to hold said governing valve in the same position throughout the period of the stop.

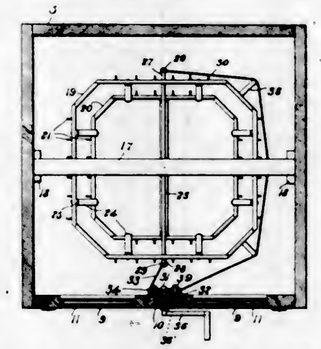
854,804. TROLLEY-WHEEL. JOHN C. CORDREY, La Junta, Colo., and PATRICK J. BRADY, Harvey, Ill.; said Brady assignor to George S. Codling, Chicago, Ill. Filed June 30, 1906. Serial No. 324,217.



Claim.—1. As an article of manufacture a trolley wheel having in its circumference a V shaped recess for the trolley wire there being embedded in the material of the wheel proper around the circumference of the base of said V a plurality of portions of wear resisting material said portions of wear resisting material being staggered with each other upon opposite sides of the central plane of the wheel.

2. As an article of manufacture a trolley wheel comprising two annular rings having projecting from them radial arms as described, the arms upon opposite rings being made of wear resisting material and staggered with reference to each other as described, said rings and arms of wear resisting material being embedded in a wheel portion proper of conducting material as described, the whole being so arranged that the wearing portions of said arms come just at the bottom of the circumferential V shaped recess for the trolley wire in the face of the wheel.

854,805. REFRIGERATOR DISPLAY-RACK AND MEAT-HANGER. HUGH L. CRAWFORD, Bristol, Tenn. Filed Dec. 8, 1906. Serial No. 346,925.



Claim.—1. A refrigerator including a casing provided with a display opening, a rack mounted for rotation within the casing and provided with means for supporting the articles to be exhibited, a shaft journaled in one wall of the casing drums secured to and mounted for rotation with the shaft, a flexible medium secured to each side of the rack and operatively connected with the drums, and a crank formed on one end of the shaft and extending through the adjacent wall of the casing for rotating the drums thereby to successively display the articles at said opening.

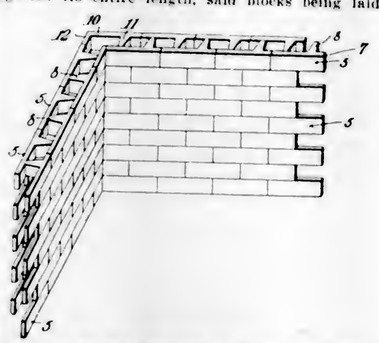
2. A refrigerator including a casing provided with a display opening, a rack mounted for rotation within the casing and adapted to support the articles to be exhibited, arms extended laterally on opposite sides of the rack, drums mounted for rotation within the casing, a flexible medium, one end of each of which is connected to the adjacent arm with its opposite end operatively connected with the drums and a crank shaft extending through one wall of the casing for rotating the drums thereby to successively present the articles at the display opening.

3. A refrigerator including a casing provided with closures having display openings formed therein, a partition separating said closures, a display rack mounted for rotation within the casing and adapted to support the articles to be exhibited, arms extending laterally from opposite sides of the rack, a shaft extending through the casing, drums mounted for rotation with the shaft, a cord forming a connection between one of the arms and the adjacent drum, a similar cord forming a connection between the opposite arm and the mating drum, auxiliary arms for spacing one of the cords from the rack, and a crank secured to the shaft for rotating the drums thereby to successively display the articles at the opening.

4. A refrigerator including a casing provided with closures having display openings formed therein, there being a conical shaped opening formed in one wall of the casing, a rack mounted for rotation within the casing and provided with vertically spaced frames of different widths adapted to support the articles to be exhibited, a bushing engaging the walls of the opening in the casing, a shaft journaled in the bushing and provided with a terminal crank arranged on the outside of the casing, drums arranged within the casing and mounted for rotation with the shaft, and a flexible connection between the drums and the opposite sides of one of the frames for rotating the latter thereby to successively present the articles at the display opening.

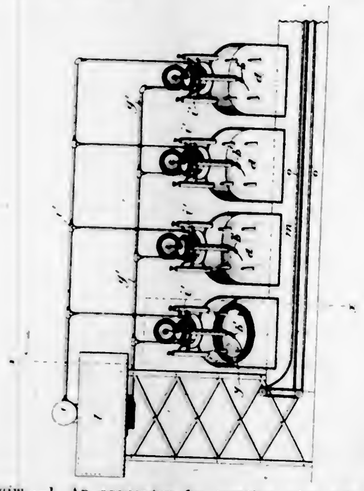
854,806. BUILDING-BLOCK. SIMEON CRITTENDEN, Chatfield, Minn. Filed Aug. 24, 1906. Serial No. 331,937.

Claim.—A wall formed of a plurality of side blocks each consisting of a substantially rectangular body portion provided with a single wedge shaped projection extending laterally from the inner face of the block and arranged at one side of the center thereof, and corner blocks having spaced lateral projections of equal length one of which is wedge shaped and of the same size as the projections of the side blocks and the other is disposed flush with the adjacent end of the corner block and of a uniform width throughout its entire length, said blocks being laid in



superposed courses and arranged to break joint with the projections of the side blocks in one course bearing against the inner faces of the opposite blocks in the same course and overlapping the projections of the blocks in succeeding courses and with the terminal projections of the corner blocks abutting the adjacent ends of the side blocks in the same course.

854,807. APPARATUS FOR TREATING WIRE RODS. FRED H. DANIELS, Worcester, Mass. Filed June 6, 1904. Serial No. 211,306.



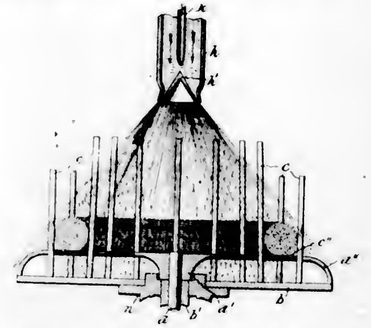
Claim.—1. An apparatus for treating wire rods, comprising a stationary reel, a spraying mechanism arranged to create an atmosphere of finely divided water spray in proximity to the reel, and a revolving coiler arranged to pass the wire through the spray on its way to the reel.

2. An apparatus for treating wire rods, comprising a hollow revolving coiler arranged to receive the wire as it comes from the finishing mill, a relatively stationary reel, atomizers to deliver a finely divided spray upon said reel, and a pipe to force water through said coiler along with the wire.

3. An apparatus for treating wire rods, comprising a hollow, revolving coiler arm arranged to receive the wire as it comes from the finishing mill, and a pipe to force water under pressure through said coiler arm, whereby a stream of water will be caused to issue from said arm with the wire.

4. An apparatus for treating wire rods, comprising a hollow, revolving coiler arm arranged to receive the wire as it comes from the finishing mill, means arranged to convey water into and through said coiler arm, and atomizers to project a finely divided spray or mist onto said wire during the coiling process, said atomizers being located at intervals in a circle approximating that described by the coiler.

854,808. TREATMENT OF WIRE RODS. FRED H. DANIELS, Worcester, Mass. Filed June 6, 1904. Serial No. 211,307.



Claim.—1. An apparatus for treating wire rods, comprising a reel, means for coiling the wire thereon, and an atomizer to forcibly project a finely divided spray of water on the revolving coil.

2. An apparatus for treating wire rods, comprising a reel, means for coiling the wire thereon, and an atomizer to forcibly project a finely divided water spray against a moving surface adjacent to the coil.

3. An apparatus for treating wire rods, comprising a revolving reel, a guide pipe for the wire, and means for forcing water through the pipe along with the wire and projecting it onto and against the moving reel.

4. An apparatus for treating wire rods, comprising a revolving reel, means for coiling the wire thereon, an atomizer, and means to forcibly project the water from said atomizer under sufficient pressure to deliver it in a finely divided state onto the coil and reel.

5. An apparatus for treating wire rods, comprising a revolving reel, an atomizer arranged axially above the reel to spray water thereon during the operation of coiling the wire, said atomizer having an annular aperture for the passage of the water constructed to cause the spray to be thrown out in the form of a circle approximating that of the coil.

6. An apparatus for treating wire rods, comprising a reel, means for coiling the wire thereon, an atomizer located axially above the reel to spray water on the coil during its formation, and a pipe for simultaneously delivering a stream of water onto the coil, said pipe being arranged to cause an impact of the stream from the pipe with the spray from the atomizer.

7. An apparatus for treating wire rods, comprising a revolving reel, an atomizer arranged centrally above the reel to spray water thereon during the operation of coiling the wire, said atomizer having an annular aperture for the passage of the water constructed to cause the spray to be thrown out in the form of a circle, and a pipe axially located within said atomizer to cause a gaseous fluid under pressure to issue with the water.

8. An apparatus for treating wire rods, comprising a revolving reel, an atomizer arranged centrally above the reel to spray water thereon during the operation of coiling

the wire, the wall of said atomizer being constructed adjacent to its mouth and then inclined outwardly and said atomizer having an axially located inverted cone at its mouth whereby a narrow annular conical passage is formed, and a pipe axially located within said atomizer and terminating adjacent to the apex of said inverted cone, and means to force a gaseous fluid through said pipe, whereby the water will be caused to issue from said atomizer in the form of a circle and in a finely divided condition.

9. An apparatus for treating wire rods, comprising a reel, a casing surrounding the same, a pipe to convey the wire from the finishing mill to the reel, means to force a stream of water through said pipe, and an atomizer axially located above said reel to spray water thereon, whereby the water by the impact of the stream and spray together and against the revolving reel, will be delivered onto the hot coil in a finely divided state.

10. An apparatus for treating wire rods, comprising a reel, means for coiling the wire thereon, a revolving plate, and means for projecting a spray or stream of water onto the plate whereby it is broken up and caused to rebound onto the hot coil in a finely divided state.

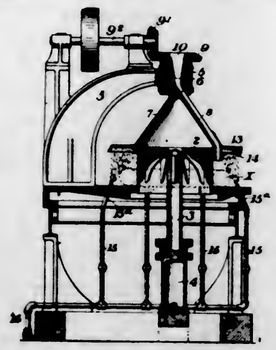
11. An apparatus for treating wire rods, comprising a reel, means for coiling the wire thereon, and means for delivering a stream or spray of water onto said coil in an atomized or finely divided state, said means including a revolving surface onto which the water is projected under pressure and from which it is deflected and rebounds onto the coil.

12. An apparatus for treating wire rods, comprising a coiler, a revolving plate, and means for projecting a stream or spray of water against the plate and causing it to rebound in an atomized or finely divided state onto the coil.

13. An apparatus for treating wire rods, comprising a reel, means for coiling the wire thereon, and means for creating a non-oxidizing mist or atmosphere of finely divided water spray and projecting it upon the wire while it is being coiled.

14. In an apparatus for treating wire rods, the combination of finishing rolls, a reel upon which the wire is coiled, a closed conduit for protecting the wire in its passage from the rolls to the reel; and means for projecting a finely divided spray of water onto the wire as it issues from the conduit.

854,809. WIRE-COILING APPARATUS. FRED H. DANIELS, Worcester, Mass. Filed Aug. 3, 1906. Serial No. 328,994.



Claim.—1. Apparatus for coiling wire rods, having a coiling reel or drum, a rotary rod coiler, a deflecting plate and a circular series of water pipes arranged to direct jets of water against said plate; substantially as described.

2. In apparatus for coiling wire rods, a coiling reel or drum, and a deflecting plate adjacent thereto and having a roughened or corrugated deflecting surface; substantially as described.

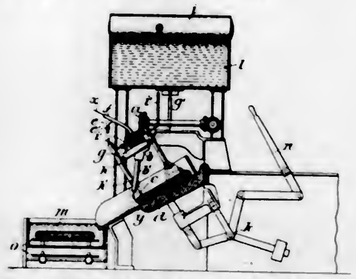
3. A wire coiling apparatus having a coiling reel or drum, a rotary coiler having a hollow journal, and a deflecting plate carried by the coiler; substantially as described.

4. In apparatus for coiling wire rods, a coiling reel or drum, a coiling device having a cone portion, a deflecting plate at the base of the cone and through which the wire guide extends, and means for directing jets of cooling fluid against the under side of said plate; substantially as described.

5. In apparatus for coiling wire rods, a coiling reel or drum having an overhanging deflecting plate, and means for directing jets of cooling fluid against said plate; substantially as described.

6. In apparatus for coiling wire rods, a coiling reel or drum having a deflecting plate surrounding the same above its coiling surface, and means for directing jets of water against the plate; substantially as described.

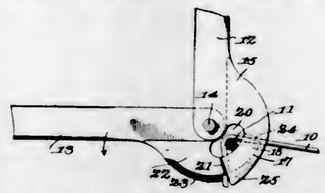
854,810. METHOD FOR THE MANUFACTURE OF WIRE RODS. FRED H. DANIELS, Worcester, Mass. Filed Aug. 3, 1906. Serial No. 328,995.



Claim.—1. The method herein described of treating wire rods, which consists in coiling a wire rod, while hot, and during the coiling operation subjecting it to a spray of water.

2. The method herein described of treating wire rods, which consists in coiling a wire rod while hot, and during the coiling operation subjecting it to an atmosphere of finely divided spray.

854,811. WIRE-WORKING TOOL. JONAS F. DIXON, Carthage, Mo. Filed Apr. 17, 1906. Serial No. 312,258.



Claim.—1. A wire working tool comprising jaws pivotally connected to each other and embodying fingers to embrace the work and carrying shoulders arranged to engage and bend the wire at the predetermined point and to clip the superfluous end in a single movement.

2. A wire working tool comprising jaws pivotally connected and each provided with a shoulder positioned to engage and bend the wire about a body and a lug carried by one jaw and positioned to coöperate with one of the shoulders to clip the superfluous end.

3. A wire working tool comprising jaws pivotally connected to each other and embodying fingers to embrace the work, a shoulder carried upon each finger arranged to engage and bend the wire at the predetermined point, and a lug carried by one finger positioned for coöperation with the shoulder of the other to clip the superfluous end.

4. A wire working tool comprising jaws pivotally connected to each other and embodying fingers to embrace the work, a shoulder carried upon each finger arranged to engage and bend the wire at the predetermined point, and a lug carried by one finger positioned for coöperation with the shoulder of the other to clip the superfluous end and all in a single movement.

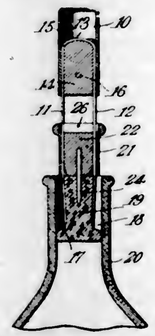
5. A wire working tool comprising jaws pivotally connected and embodying segmental fingers to embrace the work to move circumferentially in contact with each other, shoulders arranged to engage and bend the wire at the predetermined point and to clip the superfluous end in a single operation.

6. A wire working tool comprising jaws pivotally connected and embodying segmental fingers to embrace the work and positioned to move circumferentially in contact with each other, a shoulder carried upon each finger arranged to engage and bend the wire at the predetermined point, and a lug carried by one finger positioned for coöperation with the shoulder of the other finger to clip the superfluous end.

7. A wire working tool comprising jaws pivotally connected and embodying segmental fingers to embrace the work and positioned to move circumferentially in contact with each other, a shoulder carried upon each finger arranged to engage and bend the wire at the predetermined point, and a lug carried by the one finger positioned for operation with the shoulder of the other finger to clip the superfluous end and all in a single movement.

8. A wire working tool comprising jaws pivotally connected and embodying segmental fingers to embrace the work and positioned to move circumferentially in contact with each other, a shoulder carried by each finger and positioned approximately at opposite sides of the pivot and to engage and bend the wire at the predetermined point, and a lug carried at the end of the one finger and positioned to pass by the shoulder of the other finger with a shear movement and to clip the superfluous end of the wire.

854,812. CORK-EXTRACTOR. JAMES B. DODGE, Jacksonville, Fla. Filed Sept. 5, 1906. Serial No. 333,345.



Claim.—1. In an implement of the class described, a tubular stock, spaced arms formed from a single piece bent into U shape and inserted at the bend into said stock, a plug between said arms within said stock, means for securing said plug within said stock, and means operative over said arms for compressing the same.

2. In an implement of the class described, a tubular stock, spaced arms formed from a single piece bent into U shape and inserted at the bend into said stock, means for securing said arms in said stock, a sleeve slidable over said arms and operating to compress the same, and a spur carried by said sleeve.

3. In an implement of the class described, a stock, spaced arms extending from said stock, a sleeve slidable over said arms and operating to compress said arms and provided with a socket for receiving said stock when the sleeve is in withdrawn position.

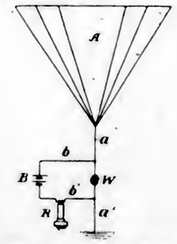
4. An implement of the character described comprising resilient spaced arms adapted to embrace a cork, means carried by the arms for drawing them together, and a cork engaging device carried by said means.

5. An implement of the character described comprising resilient spaced cork embracing arms, means slidably mounted thereon for drawing the arms together, and a cork engaging spur carried by said means.

6. An implement of the class described comprising a stock, resilient spaced cork embracing arms extending from the stock, a sleeve slidably mounted thereon for drawing them together, and a cork engaging device carried by the sleeve.

7. An implement of the character described comprising a stock, resilient spaced cork embracing arms extending from the stock, a sleeve slidably mounted thereon for drawing them together, and a cork engaging device carried by the sleeve, said sleeve having a socket to receive the stock.

854,813. WIRELESS-TELEGRAPH SYSTEM. HENRY H. C. DUNWOODY, Washington, D. C. Filed Apr. 30, 1906. Serial No. 314,479.



Claim.—1. A wave responsive device comprising a concrete mass or body of magnetite.

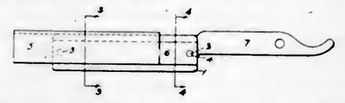
2. A wave responsive device comprising a concrete mass of crystalline magnetite.

3. A wave responsive device comprising a concrete mass of loadstone.

4. A wave responsive device comprising a concrete crystalline mass of iron and oxygen.

5. A wave responsive device comprising a concrete crystalline mass of material expressed by the formula Fe_3O_4.

854,814. RAZOR. THOMAS C. DURHAM, New York, N. Y. Filed June 7, 1906. Serial No. 320,551.



Claim.—1. In a razor, the combination with a member consisting of a thin blade, of a member for supporting said blade one of said members being a magnet, and means for positioning the blade with respect to the supporting member, substantially as described.

2. In a razor, the combination with a thin blade, of a magnetic member for supporting said blade, and means for positioning said blade with respect to said member, substantially as described.

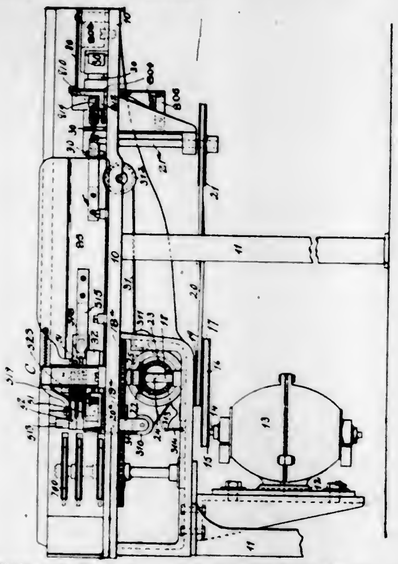
3. In a razor, the combination with a thin blade, of a magnetic member for supporting said blade, means for positioning said blade with respect to said member, and a clamping member, substantially as described.

4. In a razor, the combination with a thin blade, of a magnetic member for supporting said blade, a magnetic cheek-piece, means for positioning said blade between said member and cheekpiece, a clamping member, and a shank extended from one of said members, substantially as described.

5. In a razor, the combination with a thin blade, of a

wedge-shaped magnetic member for supporting said blade, a wedge-shaped magnetic cheek-piece, means for positioning said blade between said member and cheek-piece, a clamping member, and a shank extended from one of said members, substantially as described.

854,815. POSTMARKING AND CANCELING MACHINE. MARTIN V. B. ETHRIDGE, New York, N. Y. Filed June 9, 1905. Serial No. 264,413.



Claim.—1. In a machine of the class described, the combination with marking and conveying mechanism, and a timing mechanism having mail deflecting and stopping elements, of a mail holding and guiding device which is pressed against the mail at a place in advance of the deflecting element, during the period of rest of the mail, and is moved, at the end of said period, to release the mail and permit its travel to be resumed.

2. In a machine of the class described, the combination with marking and conveying mechanism, and a timing mechanism comprising a stop and an arm for deflecting the mail toward the stop, of a mail holding and guiding device, adapted to engage the mail at a place in advance of the deflecting arm, and means whereby said device is pressed against the mail during the period of rest of the latter, and is moved, at the end of said period, to release the mail and permit its travel, along the deflecting arm and to the stop, to be resumed.

3. In a machine of the class described, the combination with marking and conveying mechanism, and a timing mechanism comprising a stop and a deflecting arm, of a mail holding and guiding roller which is pressed against the mail during the period of rest of the mail, and is moved, at the end of said period, to release the mail and permit its travel, along the deflecting arm and to the stop, to be resumed.

4. In a machine of the class described, the combination with marking and conveying mechanism, of timing devices, comprising a mail stopping element, a plurality of elements each movable relatively to the mail path and engaged with the mail at different places in the length thereof and simultaneously pressing the same in opposite directions, the forward one toward the plane of the conveying mechanism and the rearward one toward the mail-stopping element, and means for moving said plurality of elements at predetermined times.

5. In a machine of the class described, the combination with marking and conveying mechanism, of a stop, means for deflecting the mail toward the stop, comprising a roller to act on the mail, and an arm carrying the roller and movable toward and from the path of the mail, the arm being held normally toward the path, and means for pressing the arm away from the path at a predetermined time.

6. In a machine of the class described, the combination with marking and conveying mechanism, of a stop, means for guiding the forward end of the mail away from the plane of the conveying mechanism and toward the stop, said guiding means comprising a roller and a pivotally mounted deflecting lever each adapted to engage the mail, and means for moving the roller and lever toward and from the mail.

7. In a machine of the class described, comprising a conveying means, a marking element and an impression element; a permanent stop interposed in the path of the conveyed mail and in front of the marking element, means for deflecting the mail and moving it positively against the stop, comprising a roller normally pressed against the conveying means, means for maintaining the mail in position against the stop until a predetermined point on the marking element has turned to a point opposite the stop and means for then releasing the mail to move between the impression and marking elements.

8. In a machine of the class described, comprising a conveying means, a marking element and an impression element; a permanent stop interposed in the path of the conveyed mail and in front of the marking element, means for deflecting the mail and moving it positively against the stop, comprising a roller normally pressed against the conveying means, means for maintaining the mail in position against the stop until a predetermined point of the marking element has turned to a point opposite the stop and an arm sweep and its actuating cam for then releasing the mail to move between the impression and marking elements, said cam mounted on the shaft of the marking element.

9. In a machine of the class described, comprising a conveying means, a marking element, an impression element, a permanent stop interposed in the path of the conveyed mail and in front of the marking element, means for moving the mail away from the conveying means, comprising a bell crank lever and an oscillating roller timed to hold the mail between them at that time, means for moving the mail positively against the permanent stop, and a swinging arm adapted to engage with the bearing of the roller for moving the roller away from the mail to allow the latter to move forward when the marking element has turned to a predetermined point.

10. In a machine of the class described, the combination with marking mechanism, and a conveying element, of a stop, and deflecting means comprising a plurality of devices which act upon the mail in opposite directions and are adapted to guide the same from the conveying element and toward the stop, and means for moving said devices toward and from the mail and disengaging the mail from the stop and moving it toward the conveying element, all at predetermined times.

11. In a machine of the class described, the combination with marking mechanism, and a conveying element, of a stop, and deflecting means comprising a plurality of devices which act upon the mail in opposite directions and are adapted to guide the same from the conveying element and toward the stop, one of said devices comprising a roller, and means for moving said devices toward and from the mail, disengaging the mail from the stop and moving it toward the conveying element, all at predetermined times.

12. In a machine of the class described, the combination with marking mechanism and a conveying element, of a stop, and deflecting means comprising a plurality of devices which act upon the mail in opposite directions and are adapted to guide the same from the conveying element and toward the stop, one of said devices comprising a roller, and the other of said devices comprising a lever, and means for moving the devices toward and from the mail, disengaging the mail from the stop and moving it toward the conveying element, all at predetermined times.

13. In a machine of the class described, the combination with relatively movable marking and impression elements, a conveying mechanism, and a stop, of means for guiding the mail comprising an arm and means for moving said arm across the path of the mail, a device movable toward and from said arm and coöperating therewith to restrict the passage leading to the stop, means for moving said device toward and from the mail path, and mechanism for disengaging the mail from the stop and producing a relative movement of the marking and impression elements, all at predetermined times.

14. In a machine of the class described, the combination with relatively movable marking and impression elements, a conveying mechanism, and a stop, of means for guiding the mail comprising a plurality of devices arranged one in advance of the other and adapted to deflect the mail toward the stop, one of said devices being arranged across the path of the mail, means movable toward and from the latter device and coöperating therewith to restrict the passage leading to the stop, and means for advancing the other of said devices toward the conveying mechanism when said passage is restricted.

15. In a machine of the class described, the combination with relatively movable marking and impression elements, a conveying mechanism, and a stop, of means for guiding the mail comprising an arm and means for moving said arm in opposite directions across the path of the mail, a device movable toward and from said arm and coöperating therewith to restrict the passage leading to the stop, means for moving said device toward and from the mail-path, a mail engaging device arranged in advance of said arm and movable toward and from the conveying mechanism, and mechanism for disengaging the mail from the stop and producing a relative movement of the marking and impression elements, all at predetermined times.

16. In a machine of the class described, the combination with mail feeding and marking means, and a stop, of means for guiding the mail toward the stop, comprising a member movable toward and from the mail and adapted to be engaged by the same and a second member also movable toward and from the mail and having connection with the first member and means operating one of said members for moving it and the other member relatively to the path of the mail.

17. In a machine of the class described, the combination with mail feeding and marking means, and a stop, of means for guiding the mail toward the stop, comprising an arm movable toward and from the mail and having a roller to engage the same, a cam, and a pivoted arm movable into the path of the mail and operated by the same and engaging the first mentioned arm and moving the same in one direction.

18. In a machine of the class described, the combination with mail feeding and marking means, of a plurality of arms movable relatively to each other toward and from the path of the mail, and a device movable toward and from the path of the mail and adapted to engage the same in advance of said arms and having connection with one of said arms so as to be operated thereby in one direction.

19. In a machine of the class described, the combination with mail feeding and marking means, and a stop, of means for guiding the mail toward the stop, comprising a plurality of arms movable relatively to each other toward and from the path of the mail, and another arm movable toward and from the mail and provided with a roller to engage the same, the last mentioned arm having connection with and operated in one direction by one of the first mentioned arms.

20. In a machine of the class described, a marking element, means for controlling the admission of mail to the marking element, comprising relatively-movable means cooperating to restrict the passage leading to the marking element, and a device to engage the mail in advance of said means, said device being movable toward and from the mail under the control of one of said relatively-movable means.

21. In a machine of the class described, the combination with mail feeding and marking means, of a timing mechanism, and a device movable toward and from the conveying mechanism for pressing the mail to the latter, said device being connected with and controlled in its movements by an element of the timing mechanism.

22. In a machine of the class described, the combination with mail feeding and marking means, of an arm movable toward and from the mail, said arm having a roller to engage the mail, a cam, a pivoted arm operated by the cam and engaging the first mentioned arm and moving the same in one direction, a lever projecting into the path of the mail from the side opposite the pivoted arm, a cam for moving the lever, and means for operating the cams.

23. In a machine of the class described, the combination with mail feeding and marking means, of a stop, and means for guiding the mail to the stop, comprising a device movable toward and from the path of the mail, a plurality of relatively-movable arms arranged between said device and the stop and movable toward and from the path of the mail, and one of the same having connection with said device and operating the same in one direction and means for moving the latter arm in advance of the other arm.

24. In a machine of the class described, the combination with mail feeding and marking means, of a stop, and means for guiding the mail to the stop, comprising an arm movable toward and from the path of the mail, a roller carried thereby and adapted to engage the mail, and a pair of relatively-movable arms arranged between said roller and the stop and movable toward and from the path of the mail, and one of the same having connection with the first mentioned arm and operating the same in one direction and provided with means for moving it in advance of the other arm of the pair.

25. In a machine of the class described, the combination with mail feeding and marking means, and a stop, of means for guiding the mail to the stop, comprising a device movable toward and from the path of the mail, a plurality of relatively-movable arms arranged between said device and the stop and movable toward and from the path of the mail, one of said arms having connection with said device and moving the same in one direction, means for moving the latter arm, and means for freeing the mail from the stop and moving the other arm out of the path of the mail.

26. In a machine of the class described, the combination with mail feeding and marking means, and a stop; of means for guiding the mail to the stop, comprising a device movable toward and from the path of the mail, a plurality of relatively-movable arms arranged between said device and the stop and adapted to close the mail-passage between the same, one of said arms having connection with said device and moving the same in one direction, means for moving the latter arm in advance of the other arm, and means for freeing the mail from the stop and moving said other arm out of the path of the mail.

27. In a machine of the class described, the combination with marking and conveying mechanisms for the mail, of pivotally mounted levers projecting toward each other and into the path of the mail from opposite sides of said path, and means for moving the levers out of the path of the mail at predetermined places in the movement of the marking mechanism.

28. In a machine of the class described, the combination with mail feeding and marking means, of mail timing mechanism comprising a plurality of movable arms adapted to dependently close the passage leading to the marking means, and mechanism for moving said arms toward each other and across the path of the mail and for moving them away from each other out of such path.

29. In a machine of the class described, the combination with a mail separating means, a mail feeding means and a marking means, of mail timing mechanism arranged between the mail separating and marking means and comprising a plurality of movable arms adapted to dependently close the passage leading to the marking means, and mechanism for moving said arms toward each other and across the path of the mail and for moving them away from each other out of such path.

30. In a machine of the class described, the combination with mail feeding and marking means, of mail timing mechanism, comprising a stop, a plurality of movable arms arranged in advance of the stop and adapted to depend-

ently close the passage leading thereto, and mechanism for moving said arms toward each other and across the path of the mail and for moving them away from each other out of such path.

31. In a machine of the class described, the combination with mail feeding and marking means, of mail timing mechanism, comprising a stop, a plurality of movable arms arranged in advance of the stop and adapted to dependently close the passage leading thereto, mechanism for moving said arms toward each other and across the path of the mail, and for moving them away from each other out of such path, and means for freeing the mail from the stop while the arms are out of mail stopping position.

32. In a machine of the class described, the combination with mail feeding and marking means, of mail timing mechanism, comprising a fixed stop, a plurality of movable arms arranged in advance of the stop and adapted to dependently close the passage leading thereto, mechanism for moving said arms toward each other and across the path of the mail and for moving them away from each other out of such path, an arm for sweeping the mail off from said stop, and means for operating the latter arm while the first mentioned arms are out of operative position.

33. In a machine of the class described, the combination with mail feeding and marking means, of a stop, and means for guiding the mail to the stop, comprising a plurality of relatively-movable arms movable toward and from the path of the mail and means for moving one of said arms out of the path of the mail in advance of the other.

34. In a machine of the class described, the combination with mail feeding and marking means, of a mail timing mechanism comprising a stop, a plurality of relatively movable arms adapted dependently to close the passage leading to the stop, one of said arms adapted to guide the mail to the stop, and means for moving the other of said arms away from the mail guiding arm while the latter is in mail guiding position.

35. In a machine of the class described, the combination with mail feeding and marking means, of a mail timing mechanism comprising a stop, a plurality of arms adapted dependently to close the passage leading to the stop, one of said arms adapted to guide the mail to the stop, and mechanism for moving said arms toward each other to close said passage and for imparting opposite movement to the arms and one in advance of the other, to open said passage.

36. In a machine of the class described, the combination with mail feeding and marking means, of a mail timing mechanism comprising a stop, a plurality of arms adapted dependently to close the passage leading to the stop, one of said arms adapted to guide the mail to the stop, mechanism for moving said arms toward each other to close said passage and for imparting opposite movement to the arms and one in advance of the other, to open said passage, and means for freeing the mail from the stop, all at predetermined times in the movement of the marking means.

37. In a machine of the class described, a marking element and an impression element, one of which is mounted for movement toward and from the other, means tending to move the movable element relatively to the other, and means for restraining such tendency, comprising a stop device for the movable element, a lever adapted to move said device in one direction, and a spring connecting said stop device and lever with each other and adapted to move the former in the other direction.

38. In a machine of the class described, a marking element, an impression element, a movable bearing for one of said elements, means tending to move the latter element toward the other element, and means for restraining such tendency comprising a plurality of levers the first of which is adapted to be moved into and out of the path of the bearing and the other of which is actuated to move the first, and a spring connecting said levers with each other.

39. In a machine of the class described, a marking element, an impression element, a movable bearing for one of said elements, means tending to move the latter element toward the other element and means for restraining such tendency, comprising a lever having a plurality of members one of which is movable into and out of the path of the bearing, an angle lever one of the members of which is connected with a second member of the first lever, and a spring connecting the levers with each other.

40. In a machine of the class described, the combination with mail feeding means, a marking element, an impression element and means tending to move one of said elements toward the other, of means for restraining such tendency comprising a lever having a stop, a second lever operatively connected with the first lever and adapted to move the same in one direction, a spring connecting the levers with each other and adapted to move each of them in one direction and means for moving the second lever in opposition to the spring.

41. In a machine of the class described, a marking cylinder, an impression roll, a swinging bearing for one of said elements, a spring for moving the bearing in one direction, means for restraining such movement, comprising a lever having oppositely projecting arms one of which is adapted to engage the bearing, an angle lever one member of which engages the other of said arms, a spring connecting the levers with each other, and means for operating the bearing and angle lever in opposition to the springs.

42. In a machine of the class described, a marking element, an impression element, a movable bearing for one of said elements, means tending to move the latter element toward the other element, and means for restraining such tendency, comprising a lever having a plurality of members one of which is movable into and out of the path of the bearing, an angle lever one of the members of which is connected with a second member of the first lever, and an operating means engaging the angle lever.

43. In a machine of the class described, a marking element, an impression element, a movable bearing for one of said elements, means tending to move the latter element toward the other element, and means for restraining such tendency, comprising a lever having a plurality of members one of which is movable into and out of the path of the bearing, an angle lever one of the members of which is connected with a second member of the first lever and a second member of which projects into the path of the mail, a spring connecting a third member of the angle lever with the first mentioned lever, and means acting on the second member of the angle lever and forcing the same out of the path of the mail and moving the first mentioned lever and placing the spring under tension.

44. In a machine of the class described, a marking element and an impression element, mounted for relative axial movement, means for conveying the mail singly to a place between said elements, a cam which turns with one of said elements, a swinging arm adapted to be moved by said cam against the mail and a lever adapted to be moved by said arm to allow the other of said elements to contact with the mail.

45. In a machine of the class described, a marking element and an impression element mounted for relative axial movement, means for conveying the mail singly to a place between said elements, a cam which turns with one of said elements, a swinging bearing for the other of said elements, and an arm adapted to be operated by the cam and to move said other element at a predetermined time in the movement of the element with which the cam turns.

46. In a machine of the class described, a marking element, an impression element, means for conveying mail to a place between the marking element and impression element, a swinging bearing for one of said elements, and means for operating the bearing to move its element toward and from the other element, said means having a device for restraining movement of the bearing, a cam and means operated by the cam at a predetermined time in the movement of said other element to remove such restraint.

47. In a machine of the class described, a marking element, and an impression element, mounted for relative axial movement, means for conveying mail singly to a place between said elements, a cam which turns with one of said elements, a swinging bearing for the other of said elements, means for holding said other element against movement toward the companion element, and an arm adapted to contact with the cam to move said other element at a predetermined time in the movement of said companion element.

48. In a machine of the class described, a marking element, and an impression element, mounted for relative axial movement, means for conveying mail singly to a place between said elements, a cam which turns with one of said elements, a swinging bearing for the other of said elements, a two-armed lever, one arm of which is interposed normally in the path of the swinging bearing and adapted to hold the same against movement, and means operated by the cam to move said arm out of such path.

49. In a machine of the class described, a marking element, and an impression element, means for conveying the mail singly to a place between said elements, a cam which turns with one of said elements, a swinging bearing for the other of said elements, a two-armed lever, one arm of which is interposed normally in the path of the swinging bearing and is adapted to hold the same against movement, and a bell crank adapted to press against the second arm of said lever at a predetermined time to move said lever and release the bearing.

50. In a machine of the class described, a marking element and an impression element, a movable bearing for one of said elements and a rotative shaft upon which the other of said elements is mounted, said shaft having a cam, of means tending to move the bearing in one direction and means for restraining such tendency, the latter means comprising a stop movable into the path of the bearing, a movable arm connected with the stop and adapted to move the same, and a lever pivoted to a fixed support and engaging the cam and operated thereby to move the arm.

51. In a machine of the class described, a marking element, an impression element, a movable bearing for one of said elements, means tending to move the latter element in one direction and means for restraining such tendency comprising a lever having a plurality of members one of which is movable into the path of said bearing, an arm pivoted to a fixed support and engaging another member of the lever and adapted to operate the latter and a cam actuated operating lever for said arm.

52. In a machine of the class described, a marking element, an impression element, a movable bearing for one of said elements, a rotative shaft upon which the other of said elements is mounted, said shaft having a cam, means tending to move the bearing in one direction and means for restraining such tendency, the latter means comprising a lever having a plurality of members one of which is movable onto the path of said bearing, an arm pivoted to a fixed support and engaging another member of said lever, and an operating lever for said arm, pivoted to a fixed support and operated by said cam.

53. In a machine of the class described, a marking element, an impression element, means for conveying the mail singly to a place between said marking and impression elements, a swinging bearing for one of said elements, a spring adapted normally to move the bearing toward the other of said elements, a stop normally interposed in the path of said bearing to prevent such movement and cam actuated means for removing the stop at a predetermined point in the rotation of the printing cylinder.

54. In a machine of the class described, a marking element, an impression element, means for conveying mail singly to a place between said elements, a swinging bearing for one of said elements, a spring adapted normally to move the bearing toward the other of said elements, a stop normally interposed in the path of said bearing to prevent such movement, and means for removing the stop at a predetermined point in the rotation of said other element, having a lever adapted to engage with said stop and a cam for moving the conveyed mail against said lever to swing it.

55. In a machine of the class described, a marking element and an impression element, mounted for relative axial movement, means for conveying mail singly to a place between said elements, a swinging bearing for one of said elements, a spring adapted normally to move the bearing toward the other of said elements, a stop device normally interposed in the path of said bearing to prevent such movement, and means for removing the stop at a predetermined point in the rotation of said other element, having a cam on the shaft of said other element, a swinging arm moved thereby against the conveyed mail and a lever adapted to be moved by the pressure of the mail, said lever being provided with a member adapted to move the stop device.

56. In a machine of the class described, a marking element, an impression element, a swinging bearing for one of said elements, a spring for moving the bearing in one direction, means for restraining such movement, comprising a lever having oppositely projecting arms one of which is adapted to engage the bearing, an angle lever one member of which engages the other one of said arms, a spring connecting the levers with each other, and means for operating the bearing and angle lever in opposition to the springs, which means comprise a plurality of pivoted arms, one of which engages the bearing and the other the lever, and cam mechanism acting on the arms.

57. In a machine of the class described, the combination with a mail conveyer, a marking element, an impression element, a spring pressed swinging bearing for one of said elements, and a stop to engage the bearing, of pivotally mounted levers movable toward and from each other and into and out of the path of the mail and from opposite sides of said path, one of said levers having a connection with the stop and adapted to move the same, and means for moving the levers.

58. In a machine of the class described, a marking element, an impression element, a movable bearing for one of said elements, means tending to move the latter element in one direction and means for restraining such tendency comprising a lever having a plurality of members one of which is movable into the path of said bearing, a second lever, having an arm engaging another member of the first lever and adapted to operate the latter and also having another arm projecting into the path of the mail and adapted to deflect the same, and operating means for the second lever engaging the last mentioned arm thereof.

59. In a machine of the class described, a conveying means, a marking element, an impression element, a movable bearing for one of said elements, means tending to move the latter element in one direction, means for restraining such tendency comprising a lever having a plurality of members one of which is movable into the path of the bearing, a stop, means for operating said lever and guiding the mail toward the stop, comprising a second lever having an arm engaging another member of the first lever and a second arm which is arranged across the path of the mail and projects toward the stop, and mechanism for moving the last mentioned lever and freeing the mail from the stop.

60. In a machine of the class described, a stop for the mail, a marking element, an impression element, a movable bearing for one of said elements, means tending to move the latter element toward the other, means for restraining such tendency comprising a lever having a plurality of members one of which is movable into the path of the bearing, and means for actuating said lever and guiding the mail toward the stop, comprising a three-arm lever, one arm of which engages an arm of the first lever, and another arm of which projects into the path of the mail and toward the stop, a spring connecting the third arm of the last lever with the first lever, and a cam-operated lever which sweeps the mail off the stop and moves the levers in opposition to the spring.

61. In a machine of the class described, a marking element, an impression element, a swinging bearing for one of said elements, a spring for moving the bearing in one direction, means for restraining such movement, comprising a lever having projecting arms one of which is adapted to engage the bearing, an angle lever one member of which engages the other of said arms, a spring connecting the levers with each other, and means for operating the bearing and angle lever in opposition to the springs, which means comprise a plurality of pivoted arms, one of which engages the bearing and the other the lever, and cam mechanism

acting on the arms, one member of the angle lever and the last mentioned arms projecting into the path of the mail from opposite sides of the path.

62. In a machine of the class described, a marking element, an impression element, a swinging bearing for one of said elements, a spring for moving the bearing in one direction, means for restraining such movement, comprising a lever having projecting arms one of which is adapted to engage the bearing, an angle lever one member of which engages the other of said arms, a spring connecting the levers with each other, and means for operating the bearing and angle lever in opposition to the springs, which means comprise a plurality of pivoted arms, one of which engages the bearing and the other said lever, and cam mechanism acting on the arms, the angle lever and the last mentioned arm projecting into the path of the mail from opposite sides thereof and adapted temporarily to stop the progress of the mail, a stop contiguous to the arms and angle lever, and a cam operated arm adapted to release the mail from its engagement with the stop.

63. In a machine of the class described, the combination with relatively movable marking and impression elements; means tending to press one of the same toward the other, and a conveying element, of means for restraining such tendency, comprising an arm adapted to deflect the mail from the conveying element, a device arranged in advance of said arm for holding the mail toward the conveying element during the operation of the arm on the mail, a stop arranged in the path of the deflected mail, and instrumentalities for disengaging the mail from the stop and pressing it back to the conveying element and for removing the arm out of the path of the mail and causing it to remove restraint to the relative movement of the impression and marking elements.

64. In a machine of the class described, the combination with relatively movable marking and impression elements, means tending to press one of the same toward the other, and a conveying element, of means for restraining such tendency, comprising an arm adapted to deflect the mail from the conveying element, a roller arranged in advance of said arm for holding the mail toward the conveying element during the operation of the arm on the mail, a stop arranged in the path of the deflected mail, and instrumentalities for disengaging the mail from the stop and pressing it back to the conveying element, and for removing the arm and roller out of the path of the mail and causing the arm to remove restraint to the relative movement of the marking and impression elements.

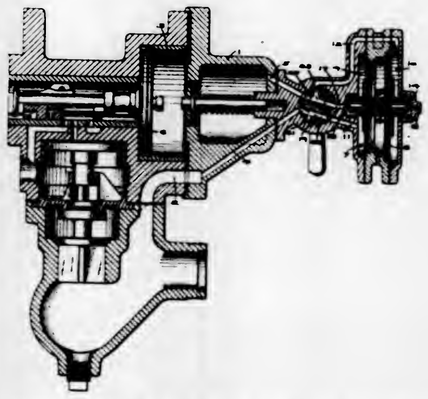
65. In a machine of the class described, the combination with mail feeding means, a marking element, and an impression element, of an arm having a roller to engage the mail, a pivoted arm adapted to move the same relatively to the mail-path, means for moving the pivoted arm, a swinging bearing for one of said elements, means tending to move the bearing in one direction, a device movable into engagement with said bearing to hold the same against such movement, and mechanism for moving the bearing in the opposite direction and for moving said device into and out of engagement with the bearing.

66. In a machine of the class described, the combination with feeding means, and marking and impression elements, of a pivoted lever carrying one of said elements and having a series of arms, a spring engaging one of said arms and tending to move the lever in one direction, means engaging another of said arms and restraining such movement and a cam for operating on another of said arms to move the lever in opposition to the spring.

67. A machine of the class described, comprising a marking mechanism, a conveying mechanism having three belts, one of which is upright and arranged adjacent to the marking mechanism, another of which is horizontal and feeds the mail to the first mentioned belt and the third of which is adapted to feed the mail to the horizontal belt and has its lower edge approximately in the plane of the receiving portion thereof, and means coöperating with the third belt for separating the mail automatically.

68. A machine of the class described, comprising a marking mechanism, a conveying mechanism having three belts, one of which is upright and arranged adjacent to the marking mechanism, another of which is horizontal and feeds the mail to the first mentioned belt and the third of which is adapted to feed the mail to the horizontal belt and has its lower edge approximately in the plane of the receiving portion thereof, and means co-operating with the said belt for separating the mail automatically, a hopper above the horizontal belt, whereby the mail may be fed normally or automatically to the horizontal belt, and means for driving said belts.

854,816. LOAD BRAKE APPARATUS. CLYDE C. FARMER, Chicago, Ill., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 10, 1904. Serial No. 223,970.



Claim.—1. In a fluid pressure brake, the combination with a triple valve, of means for reducing the pressure admitted from the train pipe to the triple valve piston and the auxiliary reservoir.

2. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device interposed between the train pipe and the triple valve piston.

3. In a fluid pressure brake, the combination with a triple valve, of means for limiting the maximum pressure of the auxiliary reservoir and triple valve chamber to a degree less than that of the normal maximum train pipe pressure.

4. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device interposed between the train pipe and the auxiliary reservoir for restricting the maximum pressure admitted to the auxiliary reservoir side of the triple valve piston to a certain amount less than that of the train pipe.

5. In a fluid pressure brake, the combination with a triple valve, of means for maintaining a substantially constant differential between the train pipe pressure and the pressure acting on the train line side of the triple valve piston.

6. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device interposed between the train pipe and the triple valve piston chamber and having means for maintaining a substantially constant differential in the pressures of said chamber and the train pipe.

7. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device interposed between the train pipe and the triple valve piston chamber and having means for varying the pressure on the train line side of the triple valve piston at substantially the same rate as the train pipe pressure is varied.

8. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device interposed between the train pipe and the triple valve piston chamber and operating under a reduction in train pipe pressure to reduce the pressure in the triple valve piston chamber at substantially the same rate.

9. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device interposed between the train pipe and the triple valve piston chamber, and means for cutting said reducing valve device into or out of operation.

10. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device interposed between the train pipe and the triple valve piston chamber, and a cock having ports for opening free communication between the train pipe and said piston chamber or for closing said free communication and connecting the reducing valve device into operation.

11. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device interposed between the train pipe and the triple valve piston chamber and comprising valve mechanism and a movable abutment subject to the opposing pressures of the train pipe and said chamber for controlling the pressure in said chamber.

12. In a fluid pressure brake, the combination with a triple valve, of a valve device having a movable abutment subject to the opposing pressures of the train pipe and the chamber on the train line side of the triple valve piston for controlling the supply of fluid from the train pipe to said chamber.

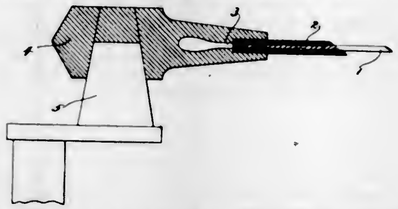
13. In a fluid pressure brake, the combination with a triple valve, of a valve device having a movable abutment subject to the opposing pressures of the train pipe and the chamber on the train line side of the triple valve piston for controlling the supply of fluid from the train pipe to said chamber, and from said chamber to the atmosphere.

14. In a fluid pressure brake, the combination with a triple valve, of a movable abutment having differential areas subject to the opposing pressures of the train pipe and the chamber on the train line side of the triple valve piston, and valve mechanism operated by said abutment for controlling the supply of fluid from the train pipe to said piston chamber.

15. In a fluid pressure brake, the combination with a triple valve, of a movable abutment having differential areas subject to the opposing pressures of the train pipe and the chamber on the train line side of the triple valve piston, and a valve mechanism operated by said abutment for controlling the supply of fluid from the train pipe to said piston chamber, and from said chamber to the atmosphere.

16. In a fluid pressure brake, the combination with a triple valve, of a reducing valve device comprising differential diaphragms subject to the opposing pressures of the train pipe and the chamber on the train line side of the triple valve piston, and valve mechanism operated by said diaphragms for controlling the pressure in said chamber.

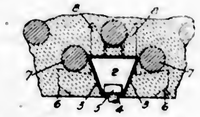
854,817. FLEXIBLE ELECTRIC CONNECTION FOR STORAGE BATTERIES. BRUCE FORD, Philadelphia, Pa. Filed Sept. 24, 1904. Serial No. 225,829.



Claim.—1. An acid proof flexible connection comprising a conductor having an insulating cover and an enlarged bare end, and a non-corrosive lug cast onto the enlarged end and adjacent portions of the cover, substantially as described.

2. An acid proof flexible connection comprising a conductor having an insulating cover and a bare end, a non-corrosive lug cast onto the bare end and adjacent portions of the cover, and means for preventing disconnection of said parts, substantially as described.

854,818. CONCRETE INSERT. FERRIS L. R. FRANCISCO and JAMES C. THOM, New York, N. Y. Filed Jan. 17, 1907. Serial No. 352,829.



Claim.—1. A concrete hanger insert constructed of sheet metal comprising a body portion having a plurality of extended wings arranged to be bent to anchor the insert to the reinforcing bars, substantially as described.

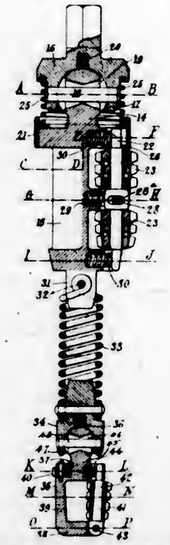
2. A concrete hanger insert constructed of sheet metal comprising a slotted hollow body portion having flaring sides and extended anchoring wings, substantially as described.

3. A concrete hanger insert comprising a slotted hollow body portion having flaring sides and extended anchoring wings, substantially as described.

4. A concrete hanger insert constructed of sheet metal formed from a single blank and having a slotted body portion and extended anchoring wings, substantially as described.

5. A concrete hanger insert constructed of sheet metal comprising a slotted hollow body portion having wings extended therefrom arranged to be bent to anchor the insert to the reinforcing bars, substantially as described.

854,819. DEVICE FOR REMOVING SCALE FROM BOILER-TUBES. JACQUES GEORGES and EMILE A. DORMOY, Algiers, Algeria. Filed Feb. 28, 1906. Serial No. 303,547.



Claim.—1. A device for removing scale consisting of a frame provided with radial projections having openings therein, axles mounted in said projections and having elongated openings therein, springs in said openings in said projections bearing against said axles, chamfered rollers having irregularly arranged teeth and mounted on said axles, and a pin carried by one of said projections

and passing through said elongated opening in each of said axles.

2. A device for removing scale consisting of a frame provided with radial projections having openings therein, axles crossing said openings, chamfered rollers having irregularly arranged teeth mounted on the axles, springs in the radial openings, a head solid with the frame elongated axially at its upper extremity having the form of a sphere flattened upon two opposite sides and being pierced perpendicularly to the flattened portions with a double conical opening in the direction of the axis of the frame, the said upper spheroidal extremity of the head being located in a spheroidal axial opening of a socket piece and also provided with two longitudinal diametrically opposite channels, a pin traversing the double conical opening of the spheroidal extremity of the axial head of the frame, the socket piece having the spheroidal opening being also provided with an axial opening, a spring located in the last named opening, a sleeve screwed upon the upper extremity of the frame, a spring located in said cap, a catch located in an opening formed in the frame, and a spring inserted between it and the base of said opening.

3. A device for removing scale consisting of a frame provided with radial projections having openings therein, axles crossing said openings, chamfered and irregularly toothed rollers mounted on said axles, springs in the radial openings, an axial projection solid with the lower part of the frame, a pin crossing said opening, a double spring connected with said pin, a second pin crossing a socket piece provided with a spheroidal opening and connected with the double spring, a frame composed of two plates connected by arms and having a flattened spheroidal head and a pin crossing the longitudinal axis of this frame, said pin traversing also a double conical opening provided in the upper spheroidal extremity of the head and perpendicularly to the flattened portions of said head.

4. A device for removing scale consisting of a frame provided with radial projections having openings therein, axles crossing said openings, chamfered rollers having irregular teeth mounted on said axles, springs located in the radial openings, an extremity of the said frame having an axial projection, a pin crossing the same, a double spring connected with said pin, a socket piece having an opening, a second frame having a flattened spheroidal head entering said last mentioned opening, a pin in said second frame connected with said double spring, axles pivoted to the outer end of said second frame, chamfered and toothed rollers on said axles, springs located in openings in said second frame and bearing against the free ends of said axles, said axles being normally inclined to the axis of the frame.

854,820. HOLDER FOR CIGARS AND THE LIKE. WILLIAM B. GOODWIN, Columbus, Ohio. Filed Apr. 11, 1906. Serial No. 311,047.

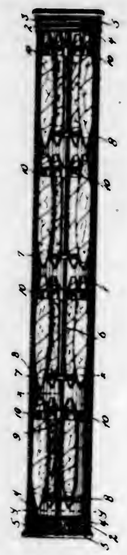
Claim.—1. In a cigar holder, a casing having integral sides, a closure for one end of the casing, a central support, and means for supporting a number of cigars from the central support, said means being arranged to engage the cigars near each end.

2. The combination with a casing having integral sides, of a closure for one end of the casing, a central support arranged in the casing, means for supporting a number of cigars from and about the central support, and means for supplying moisture to the cigars.

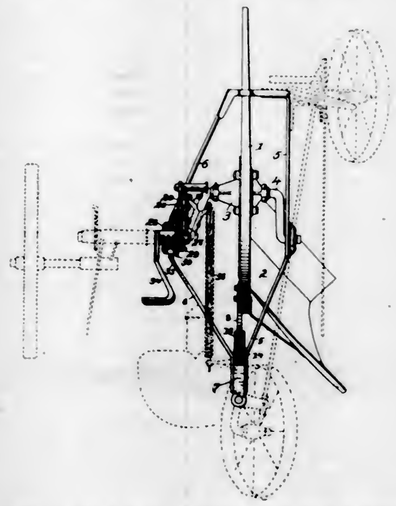
3. The combination with a casing having non-movable sides, of a cap having engagement with one end of the casing, a central support arranged in the casing, and means for supporting a number of cigars from and about the central support.

4. The combination with a casing having non-movable sides, of a central support arranged in the casing adapted to support a number of cigars out of contact with sides of the casing, and a closure for the casing.

5. The combination with a casing, of a support arranged within the casing adapted to carry a number of cigars, spring clips secured to the support and adapted to receive one end of the cigars, and a plate secured to the support having openings adapted to receive the other end of the cigars.



854,821. SULKY-PLOW. WILLIAM S. GRAHAM, Canton, Ill. Filed June 19, 1906. Serial No. 322,489.



Claim.—1. In a plow, the combination with a carrying frame, a plow beam and a plow attached to the beam; of a crank-lift for the beam, extending forward when the plow is lowered, a stiff rearward and upward extension of the beam resting on a fixed bearing in the frame while the plow is in operation and while it is rising, and means for holding the beam extension raised during a part of the plow-lowering action of the crank-lift, substantially as described.

2. In a plow, the combination with a carrying frame a plow beam and a plow attached to the beam; of a crank-lift for the beam extending approximately horizontally forward when the plow is lowered, a stiff rearward and upward extension of the beam resting on a fixed bearing in the frame while the plow is in operation and while it is rising and a rocking support adapted to carry the beam extension forward and hold it raised during a part of the plow-lowering action of the crank-lift.

3. In a plow, the combination with a carrying frame a plow beam and a plow attached to the beam; of a crank-lift for the beam extending approximately horizontally forward when the plow is lowered, a stiff rearward and upward extension of the beam resting on a fixed bearing in the frame while the plow is in operation and while it is rising and an upward-extended rock arm adapted to catch the beam extension and carry it forward as the crank-lift lowers the plow toward an operative position.

4. In a plow, the combination with a carrying frame, a plow beam and a plow attached to the beam; of a crank-lift for the plow beam, a stiff rearward and upward extension of the beam normally resting on a fixed bearing in the frame, a pin in the rear part of the beam extension and an upward-extended rock arm pivoted in the frame and having a notch in its front edge to engage the pin of the beam extension, substantially as described.

5. In a plow, the combination with a carrying frame, a plow beam and a plow attached to the beam; of a crank-lift for the plow beam, a stiff rearward and upward extension of the beam normally resting on a fixed bearing in the frame, a pin in the rear part of the beam extension, an upward-extended rock arm pivoted in the frame and having a notch in its front edge adapted to engage the pin of the beam extension when the plow is raised, and a spring pressing the upper end of the rock arm forward, substantially as described.

6. In a plow, the combination with a carrying frame, a plow beam and a plow attached to the beam; of a crank-lift for the plow beam, a stiff upward and rearward extension of the beam normally resting on a fixed bearing in the frame, a pin in the rear part of the beam extension, an upward-extended rock arm pivoted in the frame and having a notch in its front edge to engage the pin of the beam extension when the plow is raised, a spring pressing the rock arm toward the pin of the beam extension and a stop to disengage the arm from the pin as the plow approaches its lowest position, substantially as described.

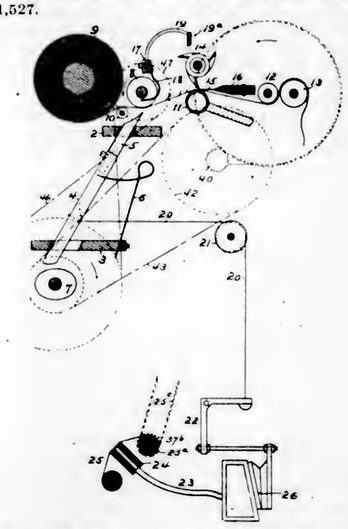
7. In a plow, the combination with a carrying frame, a plow beam and a plow attached to the beam; of a swinging lift for the front part of the plow beam, an incline to raise the rear part of the beam, and a rocking catch to hold the rear part of the beam raised during part of the lowering motion of the front part of the beam substantially as described.

8. In a plow, the combination with a carrying frame, a plow, a plow beam and a beam-lifting bail; of an arm attached to the bail, a toggle joint journaled at one end on the frame and connected at the other end with the arm of the bail, a depressing lever pivotally connected with an extension of the journaled member of the toggle joint and having a limited amount of swing thereon, and a spring connecting with the depressing lever and pressing lengthwise thereof when the lever is approximately half way between its extreme positions, substantially as described.

9. In a plow, the combination with a carrying frame, a plow, a plow beam and a beam-lifting bail; a toggle joint journaled at one end on the frame and connected at the other end with the bail arm, a depressing lever pivotally connected with an extension of the journaled member of the toggle joint and having a limited amount of swing thereon, a spring connecting with the depressing lever and pressing lengthwise thereof when the lever is about midway between extremes of travel, and a catch on the lift lever adapted to engage a stop on the frame when the bail is raised, substantially as described.

10. In a plow, the combination with a carrying frame, a plow, a plow beam and a beam-lifting bail; of a lift lever rigid with the journaled end of the toggle joint, a depressing lever pivotally connected with an extension of the journaled end of the toggle joint and having a limited amount of swing thereon, a spring connecting with the depressing lever and pressing lengthwise thereof when the said lever is about midway between extremes of travel, and a catch on said depressing lever adapted to engage a stop on the frame when the bail is raised, substantially as described.

854,822. PERFORATING-MACHINE. ALVIN L. HART, Burlington, Iowa. Filed Apr. 13, 1906. Serial No. 311,527.



Claim.—1. In a perforating machine, the combination with a roll having annular grooves therein, of a series of cutters to enter the grooves, means for reciprocating said cutters, and means for passing a sheet or strip between the roll and cutters.

2. In a perforating machine, the combination with a roll having annular grooves therein, of a series of cutters to enter the grooves, means for passing a sheet or strip between the roll and cutters, and a cam roll to reciprocate the cutters when the latter are moved into the path of the cam roll.

3. In a perforating machine, the combination with a roll having annular grooves therein, of a series of cutters to enter the grooves in the roll, means for passing a sheet or strip between the roll and cutters, a cam roll to force the cutters through the sheet and into the grooves of the roll, springs normally holding the cutters out of contact with the sheet or strip and cam roll, and independent means for each cutter to move it to position to be operated by the cam roll.

4. In a perforating machine, the combination with a roll having annular grooves, of cutters to enter the grooves, means for reciprocating said cutters, means for passing a sheet or strip between the roll and cutters, and spring fingers in all the grooves to prevent the tongues cut from the sheet or strip winding on the roll.

5. In a perforating machine, the combination with a series of movable cutters, of a cam roll to move any cutter brought into the path thereof, means for moving the cutters into the path of the cam roll, a grooved roll to receive the cutters, and means for passing a sheet or strip between the grooved roll and cutters.

6. In a perforating machine, the combination of means for cutting tongues in a strip of paper, means for projecting the tongues outwardly, and a rotary cutter for severing the outwardly projecting tongues from the strip.

7. In a perforating machine, the combination with means for cutting tongues in a strip of paper, of a perfo-

rated air blast tube over which the strip is moved and which serves to blow the tongues outward, a fixed cutter bar, and a rotary cutter to sever the tongues against the cutter bar.

8. In a perforating machine, the combination with means for cutting tongues in a strip of paper, of a perforated air blast tube over which the strip is moved and which serves to blow the tongues outward, a rotary cutter to sever the tongues, and a saturated wick in the path of the blades of said cutter.

9. In a perforating machine, the combination with a series of cutters, and a continuously rotating cam roller disposed under the cutters for operating them, of bell-cranks, cords connecting the bell-cranks and cutters, a bellows connected with each bell-crank to move the cutter into the path of the cam roll, a tracker board, and tubes connecting the openings in the tracker board with the bellows.

10. In a perforating machine, the combination with means for cutting tongues in a sheet, means for forcing the tongues outward, and means operating to remove the tongues from the strip.

11. In a perforating machine, the combination with means for cutting tongues in a sheet, pneumatic means for forcing the tongues outwardly, and means for removing the outwardly projecting tongues from the strip.

12. In a perforating machine, the combination with perforating mechanism, a roll to feed a sheet of paper past the cutting mechanism, and a roll for a mastersheet, of a conical roller mounted to rotate with said feed roll, another conical roller provided with means for gearing it to the mastersheet roll, a screw between the conical rolls, a flanged pulley mounted on said screw, and a belt passing over said conical rollers and said pulley, whereby the latter will be rotated and simultaneously moved longitudinally of the screw to automatically shift the belt on the conical rollers.

13. In a perforating machine, the combination with perforating mechanism, means for feeding paper past the perforating mechanism, a roll for a master sheet, means for operating said roll to wind the master sheet thereon, and means operating automatically to gradually decrease the speed of the master-sheet roll as the master-sheet accumulates thereon.

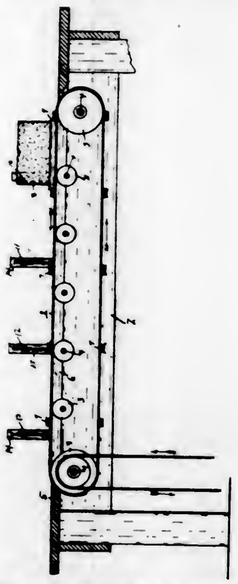
14. In a perforating machine, the combination with perforating means, of means for feeding paper past the perforating mechanism, a master sheet roll, means for driving said master sheet roll and said feeding mechanism from a common source of power, and means operating automatically to gradually decrense the speed of the master-sheet roll relatively to the speed of the feed mechanism.

15. In a perforating machine, the combination with perforating mechanism, means for feeding a sheet past the perforating mechanism, and a mastersheet roll, of a cone pulley connected with said feeding mechanism, another cone pulley, means for gearing the last-mentioned cone pulley to the master sheet roll, a belt passing over said cone pulleys and a shifter for said belt operated by the belt, to automatically change the speed of the master-sheet roll relatively to the speed of said paper feeding mechanism.

854,823. PROCESS OF MANUFACTURING ROOFING-TILES. RICHARD HEDRICH, Milwaukee, Wis., assignor to Martha Hedrich, Milwaukee, Wis. Filed Aug. 20, 1906. Serial No. 331,252.

Claim.—1. The process herein described of manufacturing roofing tiles consisting first, in forming plastic clay into blocks, the vertical sides and ends of which conform in shape to the desired shape of the sides and ends of the tiles when made; second, severing such blocks transversely to the vertical sides and ends into a plurality of thin pieces by a plurality of cuts and permitting the pieces thus formed to fall back upon each other leaving the general contour of the severed blocks unchanged; third, removing the several pieces thus formed with their relative position undisturbed and drying and firing the same in a suitable kiln together; and fourth, separating the several pieces thus formed from each other.

2. The process herein described of manufacturing roofing tiles consisting first, in forming plastic clay into blocks; second, in forming vertical nail receiving channels in the respective vertical sides of said blocks; third, severing said blocks transversely to their vertical sides into a plurality of thin pieces by a plurality of cuts and permitting the several pieces to fall back upon each other and temporarily cohere together leaving the general contour of the severed blocks unchanged; fourth, removing the severed pieces thus formed with their relative position undisturbed and drying and firing the same in a suitable kiln together; and fifth, separating the severed pieces thus formed from each other.

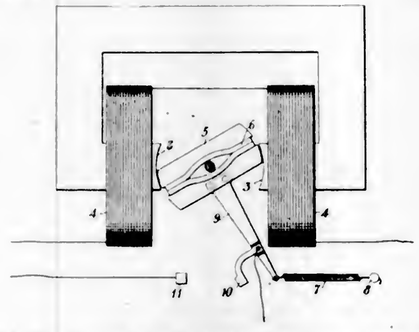


3. The process herein described of manufacturing roofing tiles consisting first, of forming plastic clay into blocks; second, in forming vertical nail receiving channels in the respective vertical sides of said blocks; third, severing said blocks transversely to their vertical sides into a plurality of thin pieces, successively, by a plurality of separate cuts and permitting the severed pieces to fall back upon each other and temporarily cohere together, leaving the general contour of the severed blocks unchanged; fourth, removing the severed pieces thus formed with their relative position undisturbed and drying and firing the same in a suitable kiln together; and fifth separating the severed pieces thus formed from each other.

4. The process herein described of manufacturing roofing tiles consisting, first, in forming plastic clay into blocks; second, in forming vertical V-shaped projections at one end of said blocks; third, severing said blocks transversely to their vertical sides into a plurality of thin pieces by a plurality of cuts and permitting the severed pieces to fall back upon each other; fourth, pressing said V-shaped projections against each other so that they will temporarily cohere together during the process of handling, drying and firing the same in a suitable kiln; and sixth, separating the several pieces thus formed from each other.

854,824. ELECTROMAGNETICALLY-ACTUATED DEVICE. RAY P. JACKSON, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Apr. 3, 1905. Serial No. 253,640.

Claim.—1. The combination with a magnetizable core having opposing pole faces and a magnetizing winding, of an armature core rotatably supported between said pole faces and having a closed-circuit winding the plane of which is parallel to its axis of rotation and is normally maintained at an angle to the direction of the flux between the pole faces.



2. The combination with a magnetizable core having opposing pole faces and a winding therefor, of an armature core rotatably mounted between said pole faces, a closed-circuit winding carried by the armature core with its central plane parallel to the armature axis, means for normally maintaining the plane of the closed-circuit winding at an angle to the direction of the flux between the pole faces of the magnetizable core, and a switch that is operated by the armature when the current traversing the circuit of the magnetizing winding exceeds a predetermined amount.

3. The combination with a magnetizable core having opposing pole faces and a winding therefor, of an armature core rotatably mounted between the pole faces and provided with a closed-circuit winding the plane of which is parallel to the armature axis and is normally maintained at an angle to the direction of the flux between the pole faces of the magnetizable core and that approaches coincidence therewith as the current traversing the magnetizing winding increases in amount.

4. The combination with a magnetizable core having separated, opposing pole faces and a magnetizing winding, of an armature pivotally supported between the pole faces and having a closed-circuit winding the central plane of which is parallel to the armature axis, a spring that tends to hold said member in such position that its winding shall be angularly disposed with reference to the magnetic flux between the pole faces and a pair of contact terminals one of which is supported by said armature.

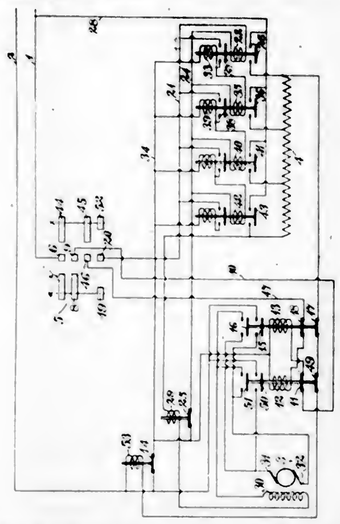
854,825. SYSTEM OF ELECTRIC-MOTOR CONTROL. HENRY D. JAMES, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Aug. 2, 1905. Serial No. 272,400.

Claim.—1. The combination with a translating device and a plurality of separately actuated accelerating switches, of means for preventing reversal of the direction of current flow in said device while any of the switches are closed.

2. The combination with a translating device, a resistance in circuit therewith, and a plurality of independently actuated switches for removing the same from the circuit, of means for preventing reversal of the direction of current flow in said device while any of said switches are closed.

3. The combination with a translating device, a resistance in circuit therewith, and a plurality of independently actuated switches for removing the same from the circuit, of means for governing the direction of current flow in said device, and a switch for preventing operation thereof to effect reversal of the direction of current flow while any of the aforesaid switches are closed.

4. The combination with a translating device, a resistance in circuit therewith, and a plurality of independently actuated switches for removing the same from the circuit, of switches for governing the direction of current flow in said device, controlling magnet windings therefor, and a switch in circuit with the controlling magnet windings that prevents energizing thereof while any of the resistance governing switches are closed.



5. The combination with a translating device, a resistance in circuit therewith, and a plurality of independently actuated switches for removing the same from the circuit, of switches for governing the direction of current flow in said device, controlling magnet windings therefor, a relay switch in circuit with the controlling magnet windings, and a controlling magnet winding for the relay switch the circuit of which becomes established when the current direction governing switches and one or more of the resistance governing switches are closed.

6. The combination with a translating device, a resistance in circuit therewith, and a plurality of independently actuated switches for removing the same from the circuit, of switches for governing the direction of current flow in said device, controlling magnet windings therefor, a relay switch in circuit with the controlling magnet windings, a controlling magnet winding for the relay switch the circuit of which is governed by the resistance switches and by auxiliary switches that are operated by the current direction governing switches.

7. In a control system, the combination with an electric motor, a resistance in series therewith, a plurality of electrically operated switches that may short-circuit portions of the resistance, a reversing switch for the motor armature and a master controller that governs the action of said switches, of means for preventing the reversal of the current supplied to the motor armature while any one of the resistance portions is short-circuited, said means comprising a plurality of relay switches which complete the circuit connection through the closed switch and through a circuit interrupting device that prevents the completion of the motor circuit.

8. The combination with an electric motor and a plurality of accelerating switches, of means for preventing the reversal of the current applied to the motor while any of said switches are closed, said means comprising a plurality of relay switches which complete the circuit connection through the closed switch and through a circuit interrupting device that prevents the completion of the motor circuit.

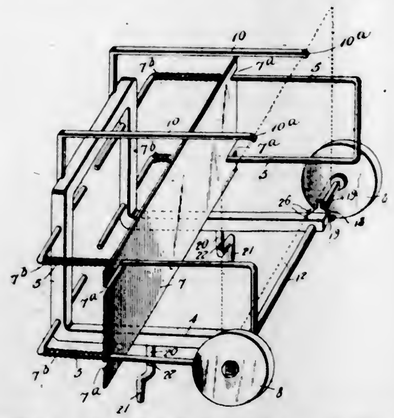
9. In a control system, the combination with an electric motor and means for varying the voltage applied thereto, that is controlled by a plurality of switches, of means for preventing the reversal of the current applied to said motor while any one of said switches is closed, said means comprising a plurality of relay switches which complete the circuit connection through the closed switch and through a circuit interrupting device that prevents the completion of the motor circuit.

10. In a control system, the combination with an electric motor, a resistance in series circuit therewith, a plurality of switches that are controlled by a master controller and automatically short-circuits portions of the resistance in a predetermined order, of means for preventing the reversal of the current applied to said motor when any one of said switches is closed, said means comprising a plurality of relay switches that complete the circuit connection through the closed switch and through a circuit interrupting device that prevents the completion of the motor circuit.

11. The combination with a supply circuit, a translating device and a resistance, of a switch for connecting the translating device to the supply circuit, a plurality of switches for removing the resistance from the circuit of the translating device in gradations, and means controlled thereby for preventing closure of the aforesaid switch while any of the latter switches are closed.

12. The combination with a supply circuit, a translating device and a resistance, of a switch for connecting the translating device to the supply circuit, an operating magnet winding therefor, one or more switches for removing the resistance from the circuit of the translating device, and means controlled thereby for preventing establishment of the circuit of the said controlling magnet winding while any of the resistance removing switches are closed.

854,826. ENVELOP-FEEDER. CHARLES E. JOHNSON, Cleveland, Ohio. Filed July 6, 1906. Serial No. 325,005.

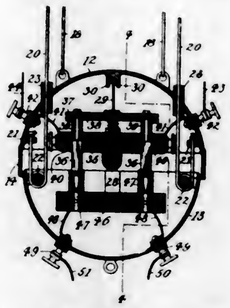


Claim.—1. An envelop feeder for typewriting machines, comprising an envelop holder mounted on the carriage of the machine and having an open front end over the platen thereof and stops in the bottom, at said end, a rotary shaft extending across below the bottom of the holder and under said open end, having projections extending above the bottom and adapted to successively engage and lift envelops over the stops when it is turned, and connections between the shaft and the platen, to turn the former when the latter is turned.

2. An envelop feeder for typewriting machines, comprising a holder having top and bottom bars and open at the front end, said bars being provided with stops at said end to engage and hold envelops between the bars, means to force the envelops against said stops, a rotary shaft located at the front end of the lower bars under the bottom of the holder and having fingers projecting therefrom arranged to lift the envelops successively over the stops on the lower bars and over the shaft, and means to turn the shaft.

3. An envelop holder for typewriting machines, including parallel bottom bars mounted on the frame of the machine and having uprights at the rear connected by a cross bar, and stops at the front, angular side bars having ends extending inwardly through holes in said uprights and adjustable therein, and top bars having downwardly extending portions at their rear ends adjustably connected to said cross bar, and having stops at their front ends.

854,827. SUSPENDING DEVICE FOR ELECTRIC-ARC LAMPS AND SIMILAR OBJECTS. ERNEST KUHNE, New York, N. Y. Filed Jan. 31, 1907. Serial No. 354,987.



Claim.—1. In a device of the character described, an insulating block, a spring-influenced insulating slide, a metal bottom plate secured thereto, a pair of metal shanks depending from the slide, non-conducting sleeves on the upper ends of the shanks, and metal end pieces adapted to be engaged by the shanks in one position of the slide and to make contact with the sleeves in the other position of the slide, substantially as specified.

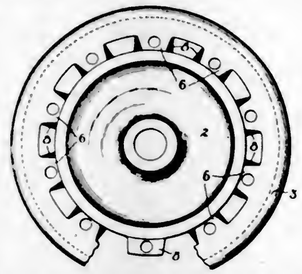
2. In a device of the character described, an upper shell, an insulating block secured thereto, a spring-influenced insulating slide, a metal bottom plate on the slide, a pair of insulating metal shanks depending from the slide, and metal end pieces adapted to engage the metal part of the slide in one position of the device and the metal shanks in the other position of the device, combined with a lower shell, an insulating block secured thereto, and a pair of tubular metal sockets secured to said block and adapted to receive the lower ends of the shanks, substantially as specified.

3. In a device of the character described, an upper shell, a catch pivoted thereto and having a lower beveled edge, an inclined notch, and a transverse groove above said notch, combined with a spring shank projecting upwardly from the catch, a lower shell, and a pin carried by the lower shell and adapted to engage the catch, substantially as specified.

4. In a device of the character described, an upper shell, a catch pivoted thereto and having a lower beveled edge, an inclined notch and a transverse groove above said notch, a spring shank projecting upwardly from the catch, and a recessed lug that engages the upper end of the shank combined with a lower shell having a pin adapted to co-operate with the catch, substantially as specified.

854,828. CAR-WHEEL. FRANK LATIMER, High Bridge, N. J., assignor of one-half to Taylor Iron & Steel Company, High Bridge, N. J., a Corporation of New Jersey. Filed Sept. 11, 1906. Serial No. 334,086.

Claim.—1. A car wheel comprising a center or body and a tire, one of said members having at one side along its edge a plurality of lugs or projections spaced apart and at its opposite edge an annular flange and the other of said members having a plurality of lugs or projections spaced apart and fitting between the lugs and flange of said first member, the lugs of one member passing between the lugs of the other when the members are assembled one laterally of the other and between the lugs and the flange of such other member and in alinement with its lugs when such members are shifted one circumferentially of the other, and means passing through each alined pair of lugs and flange for securing such members together and headed at both ends thereof.



2. A car wheel comprising a center or body and a tire, said tire having at its inner side along one edge a series of lugs or projections spaced apart and at the other edge an annular flange, and the center having on its periphery a series of lugs or projections spaced apart and fitting between the lugs and flange of the tire, the lugs of the center passing between the lugs of the tire whereby such tire and center are assembled one laterally of the other and between the tire lugs and flange and in alinement with its lugs when such tire and center are shifted one circumferentially of the other, and means passing through each alined pair of lugs and the flange for securing such tire and center together and headed at both ends thereof.

3. A car wheel comprising a center or body and a steel tire shrunk thereon, said tire having at its inner side along one edge a series of lugs or projections spaced apart and at the other edge an annular flange, and the center having on its periphery a series of lugs or projections spaced apart and of less width than the width of the tire and fitting snugly between the lugs and flange of the tire, the lugs of the center passing between the lugs of the tire whereby such tire and center are assembled one laterally of the other and between the tire lugs and flange and in alinement with its lugs when such tire and center are shifted one circumferentially of the other, and rivets passing through each alined pair of lugs and the flange for securing such tire and center together and headed at both ends thereof.

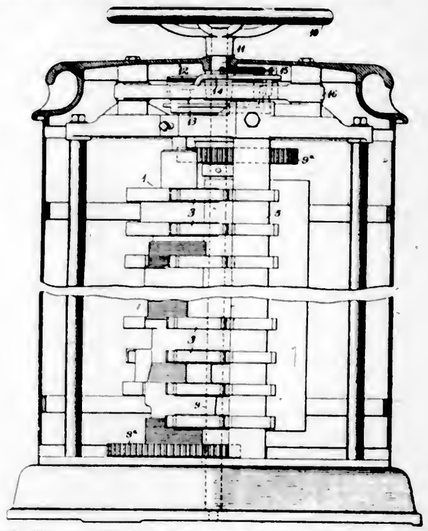
854,829. POTENTIAL-REGULATOR. EDWIN LEHR, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Sept. 20, 1906. Serial No. 335,506.

Claim.—1. An alternating current regulator that comprises a main transformer winding, two similar auxiliary windings and a plurality of intermediate taps in said auxiliary windings.

2. In a transformer regulator, the combination with a main winding, two similar auxiliary windings and a plurality of intermediate taps in said windings, of means for gradually connecting, in circuit, one auxiliary winding, the main winding and the two auxiliary sections in opposition thereto, the main winding and one auxiliary winding and the main winding and both auxiliary windings.

3. In a regulating transformer, the combination with a main winding, two similar auxiliary windings and a plurality of intermediate taps therein, of switching means for gradually increasing the effective turns in steps, which are substantially equal to one of the divisions in the auxiliary winding between two adjacent taps, from zero to the total number of convolutions in the three windings.

4. The combination with a main transformer winding, of two similar auxiliary windings the combined convolutions of which are slightly fewer in number than those of the main winding, as and for the purpose set forth.



5. The combination with a main transformer winding, of two similar auxiliary windings and a plurality of intermediate taps therefor which divide the auxiliary windings into substantially equal parts, said main winding containing a number of convolutions equal to the two auxiliary windings plus a single division between the intermediate taps in the latter.

6. The combination with a main transformer winding, and two similar auxiliary windings, of means for varying the effective turns that comprise a regulator having rotatable contact-carrying drums and means for rotating the drums through a plurality of predetermined positions.

7. The combination with a main transformer winding, and two similar auxiliary windings, of means for varying the effective turns of the windings that comprise a pair of regulating contact-carrying drums adapted to occupy a plurality of predetermined positions, an operating handle therefor, and resilient means interposed between the handle and the drums.

8. The combination with a main transformer winding, two similar auxiliary windings and a plurality of intermediate taps in the auxiliary windings, of means for varying the effective turns that comprise a pair of switching drums adapted to occupy a plurality of positions, means for accentuating said positions and means for effecting a quick motion from one position to the next.

9. In a transformer regulator, the combination with a main winding, two similar auxiliary windings having a plurality of intermediate taps, of switching means for gradually varying, between zero and the total number of convolutions of the three windings, the effective turns in steps which are substantially equal to a division of the auxiliary winding between adjacent taps, that comprises a pair of switching drums adapted to occupy a plurality of positions, means for accentuating said positions and means for effecting a quick motion from one position to the next.

10. In a transformer regulator, the combination with a main winding, two similar auxiliary windings having a plurality of intermediate taps, of switching means for gradually varying the effective turns in steps which are substantially equal to a division of the auxiliary winding between adjacent taps, between zero and the total number of convolutions of the three windings that comprise a pair

of contact-carrying drums adapted to occupy a plurality of predetermined positions, means for accentuating said positions, an operating handle for said drums, a yielding connection between the handle and the drum, and means dependent upon the operating handle for permitting the rapid transition of the drums from one position to the next.

11. In a transformer regulator, the combination with a main winding, a pair of similar auxiliary windings having a relatively large number of intermediate taps, of means for connecting the auxiliary windings with the main winding and for varying such connection to gradually increase or decrease the effective turns of the regulator.

854,830. CALL-REGISTER FOR TELEPHONE SYSTEMS. RAY H. MANSON, Elyria, Ohio, assignor to The Dean Electric Company, Elyria, Ohio, a Corporation of Ohio. Filed Oct. 18, 1906. Serial No. 339,493.



Claim.—1. A call register for telephone service having means for directing a signal to the transmitter and means for damping said signal means.

2. A call register for telephone service mounted directly upon the transmitter, signaling means, means for operating said signaling means, and means for damping said signaling means.

3. A call register for telephone systems comprising a registering device and a sounding device operated simultaneously therewith, means for operating the registering device, said means operating the sounding device in both direct and retrograde movements, and means for damping the sounding device through one movement of the operating means.

4. A call register for telephone systems, comprising a registering device and a sounding device, means for simultaneously operating said devices which operates the sounding device in both directions of its movement, and a spring for damping the sounding device through one movement of the operating means.

5. A call register for telephone systems comprising a registering device and a sounding device, means for operating both simultaneously, said sounding device being operated twice during one operation of the operating means, and means for damping said signal device during a portion of the operation.

6. In a call register for telephone systems, the combination with a transmitter, of a registering device carried thereby, a sounding device carried thereby, means for operating both of said devices simultaneously in one direction of its movement and for operating the signal device only in one of its directions of movement, and means for damping the signal device during the second movement of the operating means.

7. In a call register for telephone systems, the combination with a transmitter, of a registering device carried thereby, a sounding reed also carried thereby, a lever for operating the registering device and sounding reed simultaneously in its initial movement, means for automatically returning the lever to normal position, and means preventing the repetition of the vibration of the reed during the return movement of the lever.

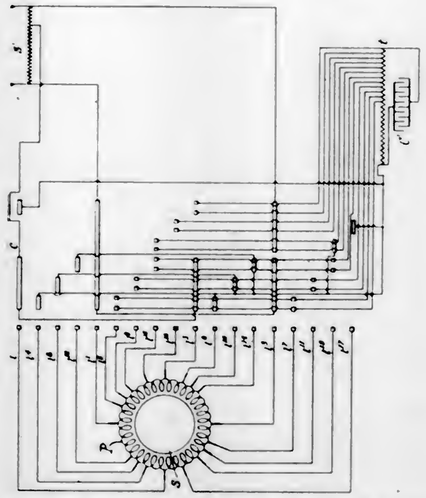
8. In a call register for telephone systems, the combination with a transmitter, of a registering device within the casing of said transmitter, a sound producing reed within the casing of the transmitter, a lever for operating said registering device in its initial movement, means for returning said lever to normal position, means carried by the lever for engaging and operating the sounding reed in both movements of the lever, a damping device in normal engagement with the reed which prevents its vibration on the return movement of the lever, and stops to limit the movement of the lever in both directions.

9. In a call register for telephone systems, the combination with a transmitter, of a supporting plate secured within the shell of the transmitter, a registering device mounted upon said supporting plate, a sound producing reed carried by said supporting plate within the transmitter casing, a lever secured to the shaft of said registering device and adapted to operate it in the initial movement of the lever, means for returning the lever to normal position, an operating stud on the lever which engages and operates said sound producing reed during both movements of the lever, a damper spring normally in engagement with said reed but adapted to be pressed away therefrom to allow the vibration of the reed in one movement of the lever but to engage the reed and prevent its vibration during the opposite movement of the lever, and stops for limiting the movement of said lever in both directions.

10. In a call register for telephone systems, the combination with toll registering and signaling devices, of a base plate for supporting said devices, a transmitter, and means for securing the base plate to the transmitter, said means also securing the transmitter to its support.

11. In a call register for telephone systems, the combination with a transmitter, of toll registering and signaling devices in said transmitter casing, and means to secure said devices therein, said means also securing the transmitter to its support.

854,831. ALTERNATING-CURRENT APPARATUS. RALPH D. MERSHON, New York, N. Y. Filed Oct. 31, 1904. Serial No. 230,663.



Claim.—1. The combination with an alternating current machine, and a single-phase circuit connected therewith, of a quadrature device connected with the primary element of the machine, and means for shifting the connections of the quadrature device to two or more angular positions relative to the connections of the single-phase circuit, as set forth.

2. The combination with an alternating current machine, and a single-phase circuit connected therewith, of a quadrature device connected with the primary element of the machine, the connections thereof being at an angle to those of the single-phase circuit, means for shifting the connections of the quadrature device, and means for regulating the current taken by the quadrature device, as set forth.

3. The combination with an alternating current machine, and a single-phase circuit connected therewith, of a quadrature device connected with the primary element of the machine, means for shifting the connections of the quadrature device to two or more angular positions relative to the connections of the single-phase circuit, and means for regulating the current taken by the quadrature device, as set forth.

4. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a quadrature device connected with the primary element of the machine, and means for shifting the points of connection of the quadrature device for different numbers of poles, as set forth.

5. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a quadrature device connected with the primary element of the machine, and means for shifting the points of connection of the quadrature device from one angle to another relative to the connections of the single-phase circuit, for each number of poles, as set forth.

6. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a quadrature device connected with the primary element of the machine, and means for shifting the points of connection of the quadrature device from one to two or more angular positions relative to the connections of the single-phase circuit, for each number of poles, as set forth.

7. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a quadrature device connected with the primary element of the machine, means for shifting the points of connection of the quadrature device for different numbers of poles, and means for regulating the current taken by the quadrature device, as set forth.

8. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a quadrature device connected with the primary element of the machine, means for shifting the points of connection of the quadrature device from one angle to another relative to the connections of the single-phase circuit, for each number of poles, and means for regulating the current taken by the quadrature device, as set forth.

9. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a quadrature device connected with the primary element of the machine, means for shifting the points of connection of the quadrature device from one to two or more angular positions relative to the connections of the single-phase circuit, for each number of poles, and means for regulating the current taken by the quadrature device, as set forth.

10. The combination with an alternating current machine, and a single-phase circuit connected therewith, of a condenser connected with the primary element of the machine, the connections thereof being at an angle to those of the single-phase circuit, and means for shifting the connections of the condenser, as set forth.

11. The combination with an alternating current machine, and a single-phase circuit connected therewith, of a condenser connected with the primary element of the machine, and means for shifting the connections of the condenser to two or more angular positions relative to the connections of the single-phase circuit, as set forth.

12. The combination with an alternating current machine, and a single-phase circuit connected therewith, of a condenser connected with the primary element of the machine, the connections thereof being at an angle to those of the single-phase circuit, means for shifting the connections of the condenser, and means for regulating the current taken by the condenser, as set forth.

13. The combination with an alternating-current machine, and a single-phase circuit connected therewith, of a condenser connected with the primary element of the machine, means for shifting the connections of the condenser to two or more angular positions relative to the connections of the single-phase circuit, and means for regulating the current taken by the condenser, as set forth.

14. The combination with an alternating-current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a condenser connected with the primary element of the machine, and means for shifting the points of connection of the condenser for different numbers of poles, as set forth.

15. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a condenser connected with the primary element of the machine, and means for shifting the points of connections of the condenser from one angle to another relative to the connections of the single-phase circuit, for each number of poles, as set forth.

16. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a condenser connected with the primary element of the machine, and means for shifting the points of connection of the condenser from one to two or more angular positions relative to the connections of the single-phase circuit, for each number of poles, as set forth.

17. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a condenser connected with the primary element of the machine, means for shifting the points of connection of the condenser for different numbers of poles, and means for regulating the current taken by the condenser, as set forth.

18. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a condenser connected with the primary element of the machine, means for shifting the points of connection of the condenser from one angle to another relative to the connections of the single-phase circuit, for each number of poles, and means for regulating the current taken by the condenser, as set forth.

19. The combination with an alternating current machine, a single-phase circuit connected therewith, and means for varying the number of poles in the machine, of a condenser connected with the primary element of the machine, means for shifting the points of connection of the condenser from one to two or more angular positions relative to the connections of the single-phase circuit, for each number of poles, and means for regulating the current taken by the condenser, as set forth.

854,832. TEMPLET. ALBERT D. MCLALIN and HARRY W. HARRISON, Detroit, Mich. Filed Sept. 24, 1906. Serial No. 335,876.

Claim.—1. In a templet, the combination of wood strips forming the pattern, metallic side bars supporting said strips, means on said bars engaging and detachably holding said strips, and clamps engaging the bars.

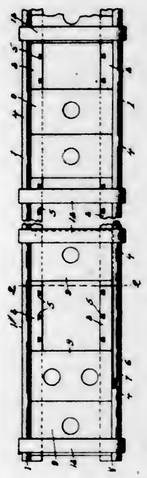
2. In a templet, the combination with a wood filling forming the pattern, of side bars made in sections, means for detachably securing said sections together, and means for detachably securing the filling between the bars.

3. In a templet, the combination with a wood filling forming the pattern, of hollow side bars formed of sections to support the filling, and splice bars adapted to telescope within the abutting ends of the sections.

4. In a templet, the combination with a wood filling forming the pattern, of side bars each formed of sheet metal with a supporting flange for the filling and a tubular strengthening upper edge, and means for detachably securing the filling to the bars.

5. In a templet, the combination with a wood filling forming the pattern, of side bars made in sections and formed of sheet metal with separated parallel vertical walls joined at their upper edges by a tubular strengthening portion, splice bars formed with a straight portion to

fit between the walls of the side bars and a tubular portion to fit within the tubular portion of said bars, and means for detachably securing the filling between said bars.



6. In a templet, the combination with a wood filling forming the pattern, of side angle-bars formed of metal with a horizontal supporting flange at one side to support the filling and means for detachably securing the filling to the flange.

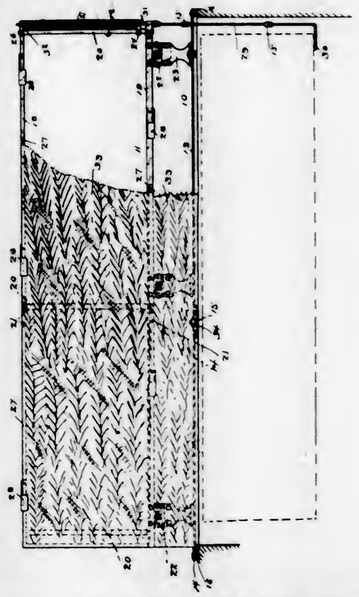
7. In a templet, the combination with a wood filling forming the pattern, of side angle-bars formed of sheet metal with a horizontal supporting flange and a vertical flange consisting of two parallel walls connected by a tubular strengthening portion at their upper edges, and spurs on the supporting flange to engage and hold the filling.

8. In a templet, the combination of side bars formed with a horizontal supporting flange, wood strips supported at their ends by said flanges and other strips extending between said strips, clamps engaging the bars to hold the same against the ends of the transverse strips, and clips to secure the oppositely extending strips to the transverse strips.

9. In a templet, the combination of side bars formed of sheet metal with a supporting flange, spurs on said flange, a filling consisting of wood strips extending transversely between the bars with spaces between and oppositely extending strips between the transverse strips, clips formed of sheet metal with spurs to engage the strips and detachably secure the same together, and clamps formed of spring steel with downwardly curved ends to engage the outer sides of the bars and clamp the same together with the strips between.

10. In a templet, the combination of side bars formed of sheet metal sections with a horizontal flange and a vertical flange formed by forming the metal into a tubular upper edge and parallel vertical walls with a space between, splice bars formed of sheet metal bent longitudinally upon itself and forming a tubular portion along one edge to fit within the tubular portion of the side bar sections, a filling forming the pattern consisting of strips of wood, spurs struck up from the horizontal flange of the side bars to engage the strips, said spurs being arranged at equal distances apart to form a gage, clips to secure the strips together, and clamps having downwardly extending ends to engage the other sides of the bars and clamp the same together with the strips between.

854,833. DEVICE FOR COVERING GRAVES. ANDREW MCMULLEN, Westport, Conn. Filed Feb. 4, 1907. Serial No. 355,561.



Claim.—1. A device for covering graves comprising a base frame, side frames on opposite sides thereof, spring hinges connecting the side frames to the base frame and normally retaining the side frames in the raised position and means operated by a descending box for closing the side frames over a grave.

2. A device for covering graves, comprising a base frame, side frames hinged thereto and normally retained in the raised position, cover frames having covering material thereon detachably secured to the side frames and means operated by a descending box for closing the side frames and cover frames over a grave.

3. A device for covering graves, comprising a base frame, side frames on opposite sides thereof, spring hinges connecting the side frames to the base frame and normally retaining the side frames in the raised position, end frames connected to the side frames and a closing rod connected to the end frames at one end and having an angle piece adapted to be engaged by a descending box whereby the side frames are closed over a grave, the end frames swinging downward into the grave.

4. A device for covering graves, comprising a base frame, side frames on opposite sides thereof, spring hinges connecting the side frames to the base frame and normally retaining the side frames in the raised position, end frames connected to the side frames, cover frames having covering material thereon detachably secured to the side and end frames, whereby a box over a grave is concealed and means operated by a descending box for closing the side frames over the grave, the end frames passing downward into the grave.

5. A device for covering graves comprising a base frame consisting of side strips and end strips, joints at the midlength of the end strips, so that the side strips may be closed together, side frames hinged to the side strips of the base frame, means for retaining the side frames in the raised position and means operated by a descending box for closing the side frames over a grave.

6. A device for covering graves, comprising a base frame consisting of two-part side strips detachably secured together and end strips provided with joints at their mid-

length, two-part side frames hinged to the base frame, end frames detachably secured to the side frames, whereby the device is made compact for transportation, and means actuated by a descending box for closing the side frames over a grave.

7. A device for covering graves, comprising a base frame, side frames hinged thereto, end frames attached to the side frames and having pins 32 near their upper inner corners and an adjustable closing rod having an angle piece adapted to be engaged by a descending box, for the purpose set forth, and having at its upper end pivoted arms which detachably engage the pins on the end frames, substantially as described, for the purpose specified.

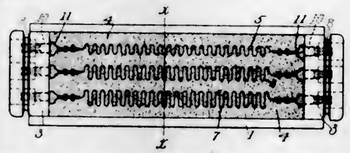
8. A device for covering graves, comprising a base frame, side frames hinged thereto, end frames attached to the side frames, cover frames having covering material thereon detachably connected to the side and end frames and a closing rod having arms detachably connected to the upper inner corners of the end frames and having an angle piece adapted to be engaged by a descending box, substantially as described, for the purpose specified.

9. A device for covering graves, comprising a base frame, side frames hinged thereto, end frames attached to the side frames, cover frames corresponding with the side and end frames and having covering material thereon, hinged catches by which the cover frames are secured to the side and end frames and a closing rod adapted to be engaged by a descending box and having arms detachably connected to the end frames.

10. A device for covering graves comprising a base frame, side frames hinged thereto, end frames detachably connected to the side frames and having pins 32 near their upper inner corners and an adjustable closing rod adapted to be engaged by a descending box and having at its upper end pivoted arms provided with downwardly inclined slots which detachably engage the pins on the end frames.

11. A device for covering graves, comprising a collapsible base frame, side frames hinged thereto, end frames detachably connected to the side frames and an adjustable closing rod detachably connected to the end frames, substantially as described, for the purpose specified.

854,834. ELECTRIC HEATER OR RHEOSTAT. FRANK C. NEWELL, Wilkinsburg, Pa., assignor to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed June 27, 1902. Serial No. 113,503.



Claim.—1. An electric heater having a resistance conductor formed of an alloy of copper, zinc, nickel and ferromanganese.

2. In an electric heater or rheostat, the combination with a casing containing a mass of heat absorbing material and a resistance conductor embedded therein, of a terminal plug having wings riveted to said conductor and passing through an opening in said casing, a binding post having a tapered slotted end threaded onto said plug and a ferrule fitting the tapered end of the binding post.

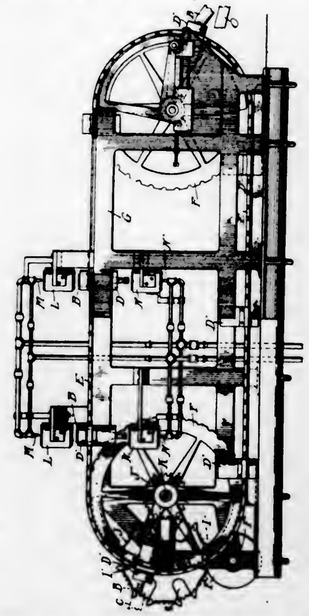
854,835. ATTACHMENT FOR VESSELS, &c. PASCHAL H. NULL, St. Louis, Mo. Filed Aug. 7, 1906. Serial No. 329,624.

Claim.—An attachment for vessels consisting of end members, a plate attached to each of said members, a pin and slot connection between the plates aforesaid permitting of adjustment of the end members relatively to one another, suspending hooks extending upwardly from the end members, the body of one of the said hooks together with an end portion of one of the plates being received in the body of each end member, and fastening means passing through the end members, the hooks, and the ends of the



plates, securing said parts together in the manner described.

854,836. FIRE-GLAZING MACHINE. MICHAEL J. OWENS, Toledo, Ohio, assignor to The Toledo Glass Company, Toledo, Ohio, a Corporation of Ohio. Filed May 14, 1906. Serial No. 316,837.



Claim.—1. The combination with a machine for shaping glass a fire-glazing machine, a carrier therein, a tubular

holder thereon adapted to move to a point below the discharge from the shaping machine, and means for feeding the article endwise by gravity from the shaping machine into said holder.

2. The combination with a machine for shaping glass articles, a fire-glazing machine adjacent and below the same, a tubular holder thereon, and means for feeding by gravity the article delivered from the shaping machine endwise into said holder.

3. The combination with a machine for shaping glass articles, a fire-glazing machine adjacent thereto having a tubular holder, and a chute adapted to direct an article delivered from the shaping machine endwise into the holder.

4. The combination in a fire-glazing machine, of a carrier moving in an upright plane, a tubular holder thereon and a spout for delivering the articles endwise by gravity into the holder.

5. The combination in a fire-glazing machine of a carrier moving in an upright plane, a tubular holder thereon and delivery and discharge spouts for delivering the articles endwise thereto and receiving the articles discharged therefrom.

6. The combination in a fire-glazing machine, of a carrier moving in an upright plane, a series of tubular holders thereon open at both ends, means for automatically delivering bottles thereto and therefrom and fire-glazing means at both ends of the holders.

7. The combination in a fire-glazing machine, of an endless carrier thereon moving in a vertical plane, upright tubular holders fixed transversely of the carrier, a delivery spout at one point, means for intermittently actuating the carrier and stopping it with the opening in the holder opposite the spout, and a burner or furnace adapted to direct its heat upon that portion of the article at the lower end of the holder.

8. The combination with a glass shaping machine, of a carrier to which the articles are delivered endwise by gravity from said machine, and tubular holders on the carrier the shape of the article.

9. The combination with a bottle shaping machine, of a carrier to which the articles are delivered endwise neck downward, and tubular holders on the carrier the shape of the finished article adapted to hold the bottles or jars in inverted vertical position.

10. The combination with a bottle shaping machine of means for delivering the bottles endwise neck down and a carrier having holders shaped to receive the inverted bottles.

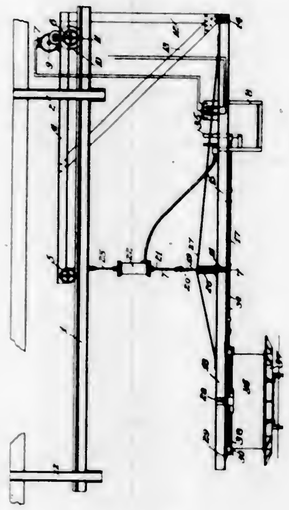
11. The combination with a bottle shaping machine of a carrier, holders on the carrier the shape of the body of the bottle having an opening in the bottom through which the neck may project, and a furnace or burner beneath the holders adapted to heat the projecting neck portion.

854,837. CRANE. DAVID O. PAIGE, Detroit, Mich., assignor to The Pfaudler Company, Rochester, N. Y., a Corporation of New York. Filed Feb. 24, 1905. Serial No. 247,120.

Claim.—1. In a crane, the combination with a suitable carriage having an upright extending downwardly from its rear end, of a beam having its rear end pivotally attached to said upright to insure movement of the beam in a vertical plane only and provided with suitable devices at its forward end for engaging the objects to be handled, trunnion bearings rigidly attached to, and projecting laterally from the opposite sides of the beam at points intermediate its length, a pair of suspension bars each coöperating with one of said trunnion bearings, a member connecting the upper ends of the suspension bars, and a hoisting device supported on the carriage and coöperating with said member for adjusting the beam on its pivots.

2. In a crane, the combination with the tracks or ways, of a carriage mounted to travel on said ways, a substantially horizontal beam pivoted at one end to the carriage and provided with attaching devices at its opposite end, a hoisting device mounted on the carriage for operating the beam, and cables connecting the carriage and beam for limiting the downward motion of the latter during its operation by the hoisting device.

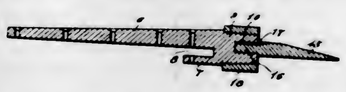
3. In a crane, the combination with the tracks or ways, of a carriage mounted to operate on said tracks, a beam suspended from the carriage having one end pivotally connected to the carriage and provided at its opposite end with attaching devices, a hoisting device attached to the beam intermediately of the attaching devices and its pivotal point for operating the beam, and a truss for reinforcing the free extended portion of the beam.



4. In a crane, the combination with a carriage having the uprights at one end, and a hoisting device supported at the opposite end of the carriage, of a horizontal beam composed of a pair of spaced channel members pivoted at their rear ends to the uprights of the carriage, connected at an intermediate point to said hoisting device, and united at their forward ends to form an extension having flanges extending from opposite sides to form guides, and chuck members mounted to operate on said guides.

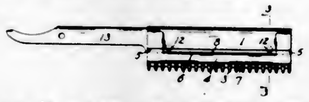
5. In a crane, the combination with a carriage, of a beam pivoted at one end to a part of the carriage, and having chuck members arranged on its opposite end, trunnions projecting laterally from the opposite sides of the beam at a point intermediate of its pivotal center and the chuck members, a hoisting device supported by the carriage, suspension bars connecting the trunnions with the hoisting device, supports arranged on the beam adjacent to the trunnions, and tension rods resting on the supports and having their ends attached to the beam at each side of the trunnions.

854,838. SHOVEL-TOOTH. JAMES A. PARSONS, Chicago, Ill. Filed May 19, 1906. Serial No. 317,715.



Claim.—In a shovel tooth, the combination of a shank having a forwardly extending tapered circular projection with a non-circular socket therein, a point having a non-circular grooved rear end fitting in the socket, a tapered ferrule fitting over the projection, and a wedge in the groove, between the point and the wall of the socket.

854,839. RAZOR. SYDNEY I. PRESCOTT, New York, N. Y., assignor to Thomas C. Durham, New York, N. Y. Filed Oct. 25, 1906. Serial No. 340,510.



Claim.—1. In a razor, the combination with a thin blade, of a sheet metal support bent to form a normally open channel for receiving the blade, means for positioning the blade between the walls of the channel, means for locking the positioning means to retain the blade the locking means having a set of offset pockets, and a safety guard having a set of lugs arranged to slide in and be held by the offset pockets, substantially as described.

2. In a razor, the combination with a thin blade, of a sheet metal support bent to form a normally open channel for receiving the blade, means for positioning the blade between the walls of the channel, a sheet metal sleeve slidable over the walls of the channel to hold them together and retain the blade the sleeve having a set of offset pockets, and a safety guard having a set of lugs arranged to slide in and be held by the offset pockets, substantially as described.

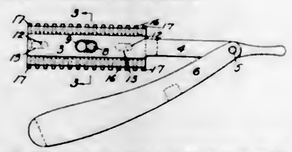
3. In a razor, the combination with a thin perforated blade, of a sheet metal support bent to form a normally open channel for receiving the blade, one of the walls of the channel having depressions therein for engaging the perforations of the blade, a sheet metal sleeve slidable over the walls of the channel to hold the walls together to retain the blade the sleeve having a set of offset pockets, and a safety guard having a set of lugs arranged to slide in and be held by the offset pockets, substantially as described.

4. In a razor, the combination with a thin blade, of a sheet metal support bent to form a normally open channel for receiving the blade and having a shank extended from one end, means for positioning the blade between the walls of the channel, means for locking the positioning means to retain the blade the locking means having a set of offset pockets, and a safety guard having a set of lugs arranged to slide in and be held by the offset pockets, substantially as described.

5. In a razor, the combination with a blade, of a sleeve slidable over the back of the blade and provided with a set of two off-set pockets on opposite sides, and a toothed guard provided with a lug at each end arranged to slide in and be held in position by one of the sets of pockets, substantially as described.

6. In a razor, the combination with a thin blade, of a sheet metal support bent to form a normally open channel for receiving the blade and having a shank extended from one end, means for positioning said blade with respect to the support, a sheet metal sleeve slidable over the walls of the channel to hold said walls together to retain the blade in position, the sleeve being provided with a set of off-set pockets on opposite sides, and a guard provided with lugs arranged to slide in and be held in position by either of the sets of pockets of the sleeve, substantially as described.

854,840. RAZOR. SYDNEY I. PRESCOTT, New York, N. Y., assignor to Thomas C. Durham, New York, N. Y. Filed Jan. 9, 1907. Serial No. 351,418.



Claim.—1. In a razor, the combination with a flat detachable blade, of a support for the blade having a shank extended from one end thereof and lying in planes offset from the planes of the support, and a segregable clamp provided with means engaging the support and having a limited sliding movement thereon to lock the blade between the clamp and support, substantially as described.

2. In a razor, the combination with a flat detachable blade, of a support for the blade, and a segregable clamp provided with a headed stud engaging a shouldered countersunk slot in the support and having a limited sliding movement in the slot to lock the blade between the clamp and support, substantially as described.

3. In a razor, the combination with a flat detachable perforated blade, of a support for the blade, and a segregable clamp provided with positioning studs passing through perforations of the blade and with a headed stud passing through one of the perforations of the blade and engaging a shouldered countersunk slot in the support and having a limited sliding movement therein to lock the blade between the clamp and the support, substantially as described.

4. In a razor, the combination with a flat detachable perforated blade, of a support for the blade, and a segregable clamp provided with positioning studs passing through and projecting beyond perforations of the blade and with a headed stud passing through a perforation of the blade and engaging a shouldered countersunk slot in the support and having a limited sliding movement therein to lock the blade between the clamp and support the support being provided with elongated recesses engaged by the projecting ends of the positioning studs, substantially as described.

5. In a razor, the combination with a flat detachable blade, of a support for the blade, and a segregable clamp provided with blade positioning studs and with means engaging the support and having a limited sliding movement thereon to lock the blade between the clamp and support the clamp being provided with a finger recess, substantially as described.

6. In a razor, the combination with a flat detachable double-edged perforated blade, of a support for the blade having a shank extended from one end thereof the shank lying in planes offset from the planes of the support, and a clamp provided with blade-positioning studs passing through and projecting beyond perforations of the blade and with a headed stud engaging a shouldered countersunk slot in the support and having a limited sliding movement thereon to lock the blade between the clamp and support the opposite edges of the clamp being provided with teeth to form a double safety guard and the corner teeth being bent to intersect the planes of the blade to protect the corners thereof, substantially as described.

7. In a razor, the combination with a perforated blade, of a support for the blade, a clamp, means for positioning the blade between the support and clamp, independent means passing through the blade for holding the support and clamp together, and a shank extended from one end of the support and lying in planes co-incident with the planes of the blade, substantially as described.

854,841. RAZOR. SYDNEY I. PRESCOTT, New York, N. Y., assignor to Thomas C. Durham, New York, N. Y. Filed Mar. 16, 1907. Serial No. 362,750.



Claim.—1. In a razor, the combination with a support, of a slideway formed in the support, a clamp, a detachable blade having an elongated perforation and disposed between the support and clamp, and means shaped to fit and passing through the perforation and engaging the slideway for positioning and locking the blade in position, substantially as described.

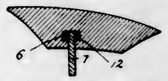
2. In a razor, the combination with a support having a slideway extended from one end thereof, of a clamp, a detachable blade having an elongated perforation and disposed between the support and clamp, and means shaped to fit and passing through the perforation and engaging

the slideway for positioning and locking the blade in position, substantially as described.

3. In a razor, the combination with a support having a shank extended from one end thereof and a slideway extended from the opposite end, of a clamp, a detachable blade having an elongated perforation and disposed between the support and clamp, and means shaped to fit and passing through the perforation and engaging the slideway for positioning and locking the blade in position, substantially as described.

4. In a razor, the combination with a support having a shank extended from one end thereof and a slideway extended from the opposite end, of a clamp, a detachable double-edged blade having an elongated perforation and disposed between the support and clamp, a double-edged safety guard formed on opposite edges of the clamp, and means shaped to fit and passing through the perforation and engaging the slideway for positioning and locking the blade in position, substantially as described.

854,842. ARTIFICIAL TOOTH. JOSEPH RAMSPERGER, York, Pa. Filed Nov. 8, 1906. Serial No. 342,520.



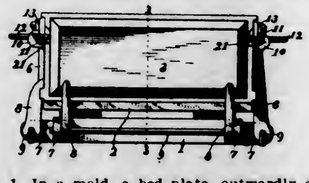
Claim.—1. As an article of manufacture, an artificial tooth having a pin-receiving cavity therein, the inner end portion of which is enlarged, and a sheet metal lining against the side wall only of the enlarged portion of the cavity, the remaining part of the cavity being unlined, and the internal diameter of said lining being greater than the diameter of the unlined portion of the cavity.

2. As an article of manufacture, an artificial tooth having a pin-receiving cavity therein, the inner end portion of which is enlarged, and a sheet metal lining against the side wall only of the enlarged portion of the cavity, the remaining part of the cavity being unlined, and the internal diameter of said lining being greater than the diameter of the unlined portion of the cavity, a pin inserted in the cavity and having a solder head united thereto and to said lining, and filling the enlarged portion of the cavity.

3. As an article of manufacture, an artificial tooth having a pin-receiving cavity therein, the inner end portion of which is enlarged, and a lining of metal foil against the side wall only of the enlarged portion of the cavity, the remaining part of the cavity being unlined, and the internal diameter of said lining being greater than the diameter of the unlined portion of the cavity.

4. As an article of manufacture, an artificial tooth having a pin-receiving cavity therein, the inner end portion of which is enlarged, and a lining of metal foil against the side wall only of the enlarged portion of the cavity, the remaining part of the cavity being unlined, and the internal diameter of said lining being greater than the diameter of the unlined portion of the cavity, a pin inserted in the cavity and having a solder head united thereto and to said lining, and filling the enlarged portion of the cavity.

854,843. MOLD FOR CONCRETE BUILDING-BLOCKS. JOHN H. REMPIS, Grand Rapids, Mich. Filed Dec. 12, 1904. Renewed Feb. 11, 1907. Serial No. 356,895.



Claim.—1. In a mold, a bed plate, outwardly extended lugs on the bed plate, sides and ends having hinge members extending opposite the lugs, removable rods extending through the hinge members and lugs, and rods journaled on the ends, said rods having their respective ends bent to engage the sides and also having their middle portions bent outward to form pivoted handles.

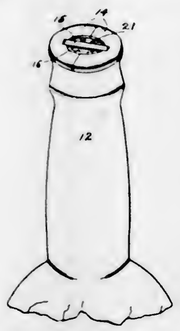
2. In a mold, the combination of a bed, sides and ends hinged to the bed, a removable plank above the bed and extending beneath the sides and ends at its margins, a hollow core having a key opening and supported on the plank, rods journaled on the ends and having their ends bent to engage the sides, inclined surfaces on the sides engaged by the ends of the rods, and means for rotating the rods.

3. In a mold, sides and ends detachable from each other, inclined surfaces on the sides, and rods journaled on the ends and having their ends bent to embrace the sides and engage the inclined surfaces thereon, said rods also having their middle portion bent outward to form pivoted handles.

4. In a mold, detachable sides and ends, inclined surfaces on the sides, hooks on the ends, rods journaled in the hooks, and having their ends bent to embrace the sides and engage the inclined surfaces thereon, said rods also having their middle portions bent outward to form pivoted handles, and stops attached to the ends to retain the rods in the hooks.

5. In a mold, a bed plate, lugs on the bed plate, sides and ends spaced apart from the bed plate to receive a plank therebetween, hinge members on the sides and ends, removable rods extending through the lugs and hinge members, a plank above the bed and beneath the sides and ends at its margins, a removable core supported on the plank, rods journaled on the ends and having their ends bent to embrace the sides and also having their middle portions bent outward to form pivoted handles, and inclined surfaces on the sides engaged by the ends of the rods.

854,844. FRANGIBLE SEAL FOR BOTTLES. FRANK T. ROBINSON, Chicago, Ill., assignor to Twin Bottle-Cap Company. Filed July 20, 1904. Renewed Nov. 16, 1906. Serial No. 343,764.



Claim.—1. A frangible seal for bottles and the like, comprising two members each having its outer edge turned down and bent inwardly and provided on its upper surface with an opening, and a connecting link having its ends downturned and located in said openings, substantially as described.

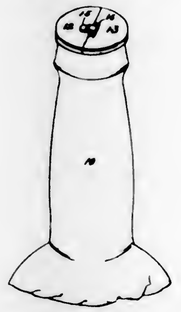
2. A frangible seal for bottles and the like, comprising two partly circular members each having its outer edge downturned and bent inwardly and provided on its upper surface with an opening, and a connecting link having its ends downturned and located in said openings, substantially as described.

3. A frangible seal for bottles, and the like, comprising two members each having its outer edge downturned and bent inwardly and provided on its upper surface with a transverse depression and an opening, and a connecting link having its ends downturned, said link located in the depressions and its downturned ends in said openings, substantially as described.

4. A frangible seal for bottles and the like, comprising two members each having its outer edge downturned and bent inwardly and provided on its upper surface with a transverse depression and an opening, each of said members also being provided with an upwardly extending bead on its inner edge and around the outer edge of said opening, and a connecting link having its ends downturned and located in said depressions and openings, substantially as described.

5. A frangible seal for bottles and the like, comprising two semi-circular members each having its outer edge downturned and bent inwardly and provided at its inner edge with a plurality of transverse recesses and openings, and a plurality of links each having its ends downturned and located in said recesses and openings, substantially as described.

854,845. CLOSURE FOR BOTTLES AND THE LIKE. FRANK T. ROBINSON, Chicago, Ill., assignor to Twin Bottle-Cap Company. Filed July 20, 1904. Renewed Nov. 16, 1906. Serial No. 343,765.



Claim.—1. A closure for bottles and the like, comprising two members each of which has its outer edge downturned and bent inwardly, one of said members having on its inner edge a loop and the other member having on its inner edge a tongue adapted to be passed through said loop and engaged therewith, substantially as described.

2. A closure for bottles and the like, comprising two semi-circular members each having its outer edge downturned and bent inwardly, one of said members having a plurality of loops at its inner edge and the other member having a plurality of tongues adapted to pass through said loops and to engage the same, substantially as described.

3. A closure for bottles and the like comprising two semi-circular members each having its outer edge downturned and bent inwardly, one of said members having at its inner edge a loop and the other member having at its inner edge a tongue adapted to pass through said loop and to be bent upwardly to engage the same, substantially as described.

854,846. FUSE-BOX OF MOLDED INSULATION. ARTHUR C. SAVAGE, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed June 12, 1905. Serial No. 264,819.

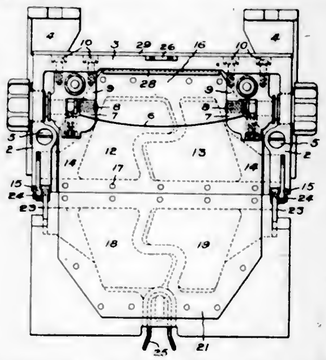
Claim.—1. A thermal cut-out having an arc chute, and a pole-piece mounted at the side thereof and composed of portions separated by a gap.

2. A thermal cut-out comprising an arc chute having a divided pole-piece embedded in it.

3. A thermal cut-out comprising an arc chute having a pole-piece embedded in it and extended to form a hinge knuckle.

4. A thermal cut-out comprising a box having a pole-piece embedded in it, and a cover having a pole-piece embedded in it, said pole-pieces being hinged together.

5. The combination with a fuse box, of a cover therefor, and pole-pieces secured to said box and cover and hinged together.



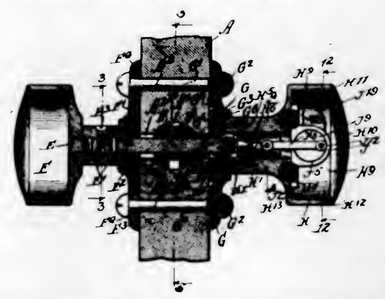
6. The combination with a fuse box, of a cover therefor, and pole-pieces secured to said box and cover and hinged together, each pole-piece being composed of two portions separated by a gap.

7. The combination with a fuse box of insulating material, of a pole-piece embedded therein, and having end portions extending at right angles thereto beyond the edge of said box.

8. The combination with a fuse box of insulating material, of a pole-piece embedded therein having its main portion thicker than the end portions.

9. The combination with a fuse box, of a fuse therein, and pole-pieces extending above said fuse on each side thereof and hinged together below said fuse.

854,847. LATCH-LOCK. HENRY SCHMITT, Chicago, Ill. Filed July 9, 1906. Serial No. 325,354.



Claim.—1. In a latch lock of the kind described, the combination consisting of, a cylindrical case of two longitudinal parts secured together by a screw extending transversely through said parts, the face plate of said case being an integral part of one member of said case; a spring pressed latch bolt slidably supported in said case; a hub journaled in said case, said hub having flanges and a crank pin extending therethrough, said flanges being adapted to engage said screw in said case and to thereby limit the rotary movement of said hub; a draw bar pivotally secured to said crank pin and to the head of said latch bolt; a spindle extending through said hub, said spindle being provided with a stop adapted to limit the lateral movement of said spindle in said hub; a knob secured to said spindle and a knob plate secured on a door in which said case is inserted; an outside knob plate se-

cured to said door and a knob revolubly secured in said plate: an angular sleeve slidably supported in said knob adapted to be moved into and out of engagement with said spindle; a cylinder lock secured inside said knob, the axis of said lock being at right angles to the axis of said spindle, the cylinder of said lock having longitudinal slots; a plug revolubly secured in said cylinder, said plug having a longitudinal key way and a transverse tumbler slot, one end of said plug extending through an aperture in the side of said knob, the other end having a crank pin; a series of spring pressed tumblers slidably supported in said tumbler slot in said plug; a connecting rod pivotally attached to said crank pin and to said sleeve; being adapted to be operated by a key inserted in said lock through the side of said knob and to thereby move said sleeve into and out of engagement with said spindle.

2. In a latch lock of the kind described, the combination consisting of a case in two parts insertible in a door; a spring pressed latch bolt slidable in said case; a flanged hub journaled in said case; a draw bar attached to said flanges and to said latch bolt; a spindle inserted in said hub extending through said door; an inside knob secured to said spindle; an outside knob revolubly secured to the out side of said door; a slidable sleeve in said knob adapted to be moved into engagement with said spindle; a cylinder lock secured inside said knob the axis of said lock being at right angles to the axis of said spindle; a plug revolubly secured in said lock extending through the side of said knob, said plug having a longitudinal key way and tumbler slot; one or more tumblers slidably supported in said plug; means attached to said plug and to said sleeve connecting said plug and sleeve adapted to move said sleeve into and out of engagement with said spindle when said plug is rotated; being adapted to be operated by a key inserted in said lock through the side of said knob and to thereby move said sleeve into and out of engagement with said spindle.

3. In a latch lock of the kind described, the combination consisting of a case insertible in a door; a spring pressed latch bolt slidable in said case; a hub journaled in said case; means for connecting said hub and bolt; a spindle extending through said hub and door; a knob revolubly secured to said door; a sleeve slidably supported in said knob; a cylinder lock having a central plug revolubly therein whose axis is at right angles to the axis of said spindle, one end of said plug registering with an aperture in the side of said knob and having a longitudinal keyway; means attached to the other end of said plug and to said sleeve adapted to move said sleeve into and out of engagement with said spindle when said plug is rotated; being adapted to be operated by a key inserted in said lock through the side of said knob and to thereby move said sleeve into and out of engagement with said spindle.

4. In a latch lock of the kind described, the combination consisting of a case insertible in a door; a latch bolt slidable therein; a hub journaled in said case; means connecting said hub and latch bolt; a spindle supported in said hub; means for rotating said spindle on the inside of the door; an outside knob adapted to be revolubly secured on the outside of the door; a slidable sleeve in said knob adapted to be moved into and out of engagement with said spindle; a cylinder lock secured in said knob the axis of said lock being at right angles to the axis of said sleeve and spindle; a rotatable plug in said lock forming the axis thereof and having a key hole in line with a key hole in the side of said knob; means connecting said plug with said sleeve, adapted to be operated by a key inserted in said lock through the side of said knob and to thereby move said sleeve into and out of engagement with said spindle.

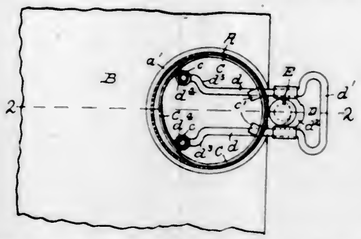
5. In a latch lock of the kind described the combination of a case; a spring pressed bolt slidably supported therein; a hub in said case; means connecting said hub and bolt; a spindle secured in said hub; an outside knob adapted to be revolubly secured to a door; means supported in said knob adapted to be connected with a lock mechanism in said knob and to be moved into and out of engagement with said spindle by the movement of said lock mechanism; a lock in said knob the axis of the lock being secured at right angles to the axis of said spindle, being adapted to be operated by a key inserted in said lock through the side of said knob and to thereby move said sleeve into and out of engagement with said spindle.

6. In a door lock the combination of a case containing a bolt and hub, and a spindle supported in said hub; with a door knob adapted to be revolubly secured to a door; adjustable means contained in said knob and attached to a lock therein adapted to be connected and disconnected with said spindle; the axis of said lock in said knob being at right angles to the axis of said spindle, said lock being adapted to be operated by a key inserted through the side of said knob.

7. The combination with a door lock having a bolt and a hub adapted to operate said bolt; of a knob adapted to be revolubly secured to a door, and a lock in said knob the axis of the lock being secured at right angles to the axis of the hub, said lock in said knob being adapted to be operated through an aperture in the side of said knob; means for connecting said lock in said knob with the hub in said door lock, said means being adapted to be moved into and out of engagement with said hub by the operation of said lock in said knob.

8. The combination with a door bolt; of a knob adapted to be revolubly connected with said door bolt; means for making said connection between said bolt and knob; means in said knob adapted to be connected with a lock in said knob and to be moved by the operation of said lock into and out of engagement with the mechanism of said door bolt and to operate the said mechanism; a lock in said knob the axis of the lock being secured at right angles to the axis of the mechanism in said door bolt, said lock of said knob being operated through the side of said knob.

854,848. CURTAIN-FASTENING. JACOB SCHNEIDER, Newport, Ky. Filed Dec. 13, 1905. Serial No. 291,576.



Claim.—1. In a curtain fastening, the combination of a casing; a ring-formed spring encircled and confined by the casing; loops in the spring; and a fastening slide adapted to engage the loops, substantially as specified.

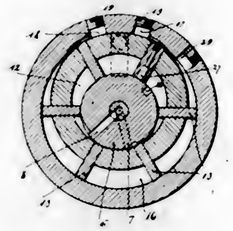
2. In a curtain fastening, the combination of a casing; a ring-formed spring encircled and confined by the casing and having its ends overlapping; loops in the spring; and a fastening slide adapted to engage the loops, substantially as specified.

3. In a curtain fastening, the combination of a casing; a ring-formed spring secured in position by lugs cut from the wall of the casing; loops in the spring; and a fastening slide having outwardly bent-shoulders and lugs adapted to engage the loops, substantially as specified.

4. In a curtain fastening, the combination of a casing; a ring-formed spring, secured in position by lugs cut from the wall of the casing, and having its ends overlapping; loops in the spring; and a fastening slide having outwardly bent shoulders and lugs adapted to engage the loops, substantially as specified.

854,849. ROTARY ENGINE. HENRY A. SEITZ, Brooklyn, N. Y., assignor of one-half to George Isaacs, New York, N. Y. Filed Oct 29, 1906. Serial No. 341,021.

Claim.—1. The combination with a solid cylinder, of an annular cylinder mounted eccentrically to the said solid cylinder and forming a piston space between itself and the said solid cylinder, paddles carried by the said annular cylinder and adapted to work as pistons in the said space, means for supplying and exhausting fluid acting in the piston space, an outer casing loosely mounted on said annular cylinder and means for transmitting the rotation of the annular cylinder to the said casing, substantially as and for the purpose set forth.



2. The combination with a solid cylinder, of a hollow shaft on which the latter is borne, an annular cylinder mounted eccentrically to said solid cylinder and forming a piston space between itself and the latter, paddles carried by said annular cylinder, supply and exhaust ducts in the solid cylinder leading from the said hollow shaft for admitting and exhausting fluid to and from the piston space, an outer casing loosely mounted on the annular cylinder, and means for transmitting the rotation from the latter to the outer casing, substantially as and for the purpose set forth.

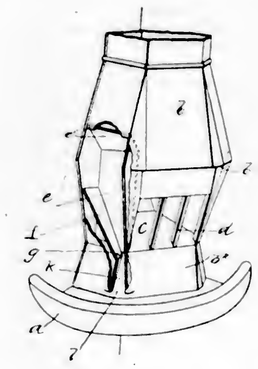
3. The combination with a solid cylinder, of a hollow shaft on which the latter is mounted, eccentrical disks borne on the hollow shaft, an annular cylinder loosely mounted on the said eccentrical disks and forming a piston space between itself and the solid cylinder, paddles carried by said annular cylinder and acting as pistons in the piston space, means for temporarily coupling the eccentrical disks with the solid cylinder, an outer casing loosely borne on the annular cylinder, means for transmitting rotation from the latter to the outer casing and means for admitting and exhausting fluid to and from the piston space, substantially as and for the purpose set forth.

4. The combination with a solid cylinder, of a hollow shaft on which the latter is borne, eccentrical disks at both sides of said cylinder, an annular cylinder mounted on said eccentrical disks, and forming a piston space between itself and the solid cylinder, an outer casing borne on the annular cylinder concentrically with the solid cylinder and forming a second piston space between itself and the annular cylinder, paddles carried by said annular cylinder and projecting with both ends through the said both piston spaces, means for admitting and exhausting fluid to and from either of said piston spaces, means for temporarily and alternatively coupling the annular cylinder with the outer casing and the solid cylinder, substantially as and for the purpose set forth.

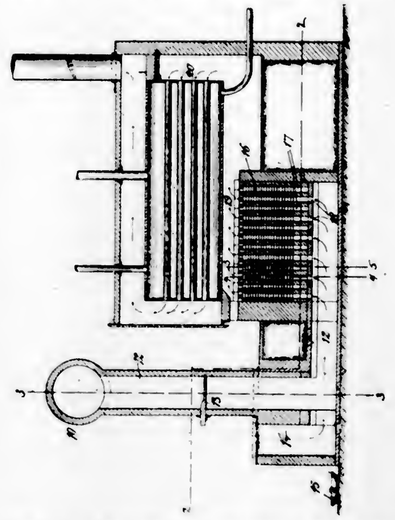
854,850. SLOW-FEEDING DEVICE FOR HORSES. CHARLES E. SEYMOUR, Winsted, Conn. Filed Aug. 14, 1906. Serial No. 330,558.

Claim.—A feed box having diverging sides terminating in a contracted outlet, a discharge chute leading from said outlet and corresponding therewith at its intake end and with two of its walls diverging and two of its walls converging and terminating in a narrow elongated outlet, and a receiver with its bottom contiguous to the outlet of said chute, whereby a small quantity only of material will flow from the feed box and the discharge be retarded.

854,850.



854,851. FURNACE. MARTIN VAN-BUREN SMITH, New York, N. Y. Filed Feb. 28, 1906. Serial No. 303,345.



Claim.—1. In a furnace, the combination with two inlet channels, of checker work having two paths therethrough, one opening into one said channel and the other opening into the other said channel, means for connecting said channels the one with air supply and the other with gas supply and vice versa, and a mixing and combustion chamber for the gas and air as they discharge from the checker work.

2. In a furnace, the combination with two separate inlet channels, of checker work having two paths therethrough, one opening into one said inlet channel, and the other opening into the other said inlet channel, gas and air connections for both and each of the said inlet channels, valves or gates controlling said connections, and a mixing and combustion chamber for the gas and air as they discharge from the checker work.

3. In a furnace in which producer gas is to be employed, the combination with a plurality of separate and independent channels connecting with a source of gas supply, loose gates employed therein for controlling passage therethrough, said gates adapted to be entirely removed when

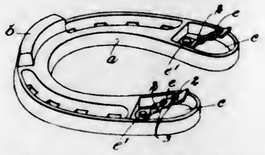
passage of gas through said channels is desired, air inlets and means for controlling them, of checker work having independent contiguous paths therethrough connecting respectively with said channels, and a mixing and combustion chamber into which the said checker work discharges.

4. In a furnace in which producer gas is to be employed, the combination with a plurality of channels connecting with a source of gas supply, loose gates employed therein for controlling passage therethrough, said gates adapted to be entirely removed when passage of gas through said channels is desired, air inlets and means for controlling them, of checker work having separate paths connecting with said channels, and a mixing and combustion chamber into which all the paths through said checker work discharge.

5. In a furnace in which producer gas is to be employed, the combination with a plurality of channels each having branches connecting with both gas supply and air supply, and means for controlling each said supply, whereby gas or air may be admitted to each of them, of checker work having a plurality of separate and independent paths therethrough, one for each said channel, and a combustion chamber into which all the paths through said checker work discharge.

6. In a boiler furnace, the combination with a boiler, of checker work arranged longitudinally beneath same, and having a combustion chamber between it and the boiler, into which the checker work discharges, said checker work having a plurality of independent paths therethrough, of independent air and gas channels connecting, respectively, with said paths, and means for controlling said channels, substantially as set forth.

854,852. CUSHIONED HORSESHOE. WILLIAM R. SMITH, Buffalo, N. Y., assignor of one-half to Herbert H. Hewitt, Buffalo, N. Y. Filed May 5, 1906. Serial No. 315,342.



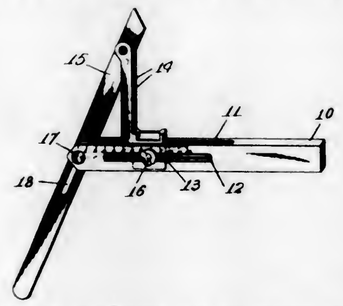
Claim.—1. The combination with a horseshoe having a cavity in its under side, of an elastic calk, a metallic spring core for said calk, and means for rigidly attaching said spring core to the bottom wall of said cavity, said spring being inclined, the inclination thereof starting immediately at the point of attachment and extending upwardly and away from said point of attachment, said spring being free to move with relation to said bottom wall except at such point of attachment.

2. A horse-shoe having a cavity in its under side, a metal spring attached to the bottom of said cavity and inclined outwardly therefrom, said spring having orifices, and a compressible cushion engaged with the walls of the cavity and enveloping the spring, the said spring being corrugated.

854,853. BEVEL, PROTRACTOR, AND SQUARE. THOMAS W. SPELLMAN, Worcester, Mass. Filed Sept. 29, 1904. Serial No. 226,506.

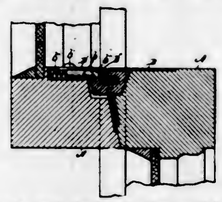
Claim.—1. As an article of manufacture, a bevel comprising a main arm having a graduated scale thereon, a base line arm having a sliding connection with the main arm and held perpendicular thereto in all positions thereof, means for clamping the base line arm in any position along said scale, and a tilting straight edge connected with the end of the base line arm by a fixed pivotal connection and with the end of said main arm by a freely sliding pivotal connection, said base line arm having a constant unadjustable length equal to a definite and predetermined number of units of the scale on the main arm.

2. As an article of manufacture, a bevel for the linear mensurement of angles, comprising a main arm having graduations and longitudinal slots, an adjuating piece or bracket mounted in said slots, a clamp-nut and screw for holding the adjusting piece in different positions, a base line arm extending from the adjusting piece, a tilting piece or straight edge pivoted to the end of the base line arm with a pin-and-slot connection to the main arm, said



parts being so proportioned that the distance from the pivot of the straight edge at the end of the base line arm to a line drawn longitudinally with respect to the main arm through the supporting pin of the straight edge will be equal to twelve units of the scale of graduations on the main arm.

854,854. SASH-FASTENER. CLIFFORD E. THOMAS, Syracuse, N. Y., assignor of one-half to A. R. Thomas, Kalamazoo, Mich. Filed Apr. 15, 1905. Serial No. 255,710.



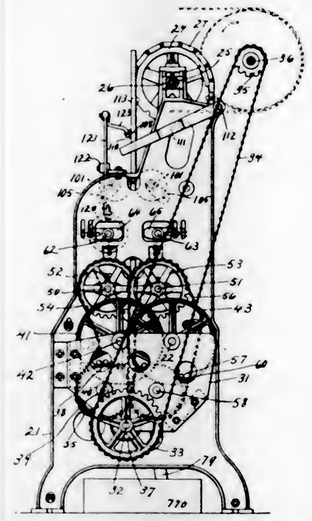
Claim.—1. In a sash fastener, the combination with the meeting rails, of a fastener member comprising a plate, angular in form to fit over the edge of a rail, countersunk therein, a laterally projecting T-shaped engaging portion having a hole therein, carried by said plate, and an opposite fastener member comprising a plate, angular in form to fit over the edge of the other rail, countersunk therein, having a slot therein adapted to receive said engaging portion, a catch pin arranged on the inside of said plate, adapted to engage in said hole in said engaging portion when said members are in their engaging position, and a finger-piece for said catch pin, for the purpose specified.

2. In a sash fastener, the combination with the meeting rails of a pair of fastener members comprising angle-plates arranged over the facing edges of said meeting rails, one of said fastener members having a laterally projecting T-shaped engaging portion on its vertical arm, and the other a vertical slot in its vertical arm, adapted to receive said engaging portion, said engaging portion being adapted to draw said members toward each other as they are brought into engagement; an automatic catch for locking said members in engagement; and a finger-piece for said catch, projecting through the horizontal arm of one of said plates, for the purpose specified.

854,855. LEATHER-DRESSING MACHINE. WILLIAM B. TURNER, Melrose, Mass., assignor to The Turner Tanning Machinery Company, Boston, Mass., a Corporation of Maine. Filed Aug. 26, 1902. Serial No. 121,033.

Claim.—1. A seasoning machine comprising two sets of working members, the operative portions of the members

of each set forming a working surface or plane, a flat work support adapted to lie between said surfaces, means for effecting a relative movement of said support and said members, and means for supplying seasoning to said members.



2. A seasoning machine comprising a plurality of independently yielding cushioned members whose operative portions form a flat working surface or plane, a work-support, means for effecting a movement of said members relatively to said work support, and means for supplying seasoning to said members in succession.

3. A seasoning machine comprising a plurality of independently yielding cushioned members whose operative portions form a flat working surface or plane, an endless carrier for said members for bringing them in succession to form said working surface, a flat support for the work, and means for supplying seasoning to said members.

4. A seasoning machine comprising a plurality of independently yielding cushioned members whose operative portions form a flat working surface or plane, an endless carrier for said members for bringing them in succession to form said working surface, a flat support for the work, and seasoning-supply rolls on which said members may successively impinge.

5. A seasoning machine comprising two sets of working members, the operative portions of the members of each set forming a flat working surface or plane, when acting on the work, a flat work support adapted to lie between said surfaces, means for effecting a relative movement of said support and said members, means for supplying seasoning to said members, and means for holding the work on said work-support.

6. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of members whose operative portions form a flat working surface; and means for effecting a relative movement of said work support and said sets of working members; said instrumentalities being disposed and related whereby said members treat the work on the end and on the sides of the table.

7. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of members whose operative portions form a flat working surface and primarily overlap the members of the opposite set; and means for effecting a relative movement of said work-support and said sets of members, whereby said members treat the entire exposed surface of the work.

8. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of yielding blades adapted to swing on axes parallel to their operative edges and primarily overlapping the blades of the opposite set, and means for effecting a relative movement of said work-support and said sets of members, whereby said members treat the entire exposed surface of the work.

9. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of cushion-shod yielding blades adapted to swing on axes parallel to their operative edges and primarily overlapping the blades of the opposite set; endless carriers for said members whereby they successively engage and treat the entire exposed surface of the work; and means for supplying seasoning to said members.

10. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of cushion-shod yielding blades adapted to swing on axes parallel to their operative edges and primarily overlapping the blades of the opposite set, the alined members of each set breaking joint with the adjacent alined members thereof; endless carriers for said members whereby they successively engage and treat the entire exposed surface of the work, and means for supplying seasoning to said members.

11. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the flat sides thereof; two oppositely disposed sets of working members, each set consisting of a plurality of blades, a series of parallel endless carriers, pivotal connections between said blades and said carriers, and means for effecting a relative movement of said work support and said sets of members.

12. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a continuously reciprocated member.

13. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a continuously reciprocated member movable longitudinally of said end.

14. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a continuously reciprocated member and a support for said member movable transversely of its direction of reciprocation.

15. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a continuously reciprocated member, and means for effecting the engagement and the disengagement of said member with the work.

16. A leather treating machine comprising a flat work support over the end of which the work may be forded to lie against the sides or faces thereof, and means for treating the work lying on the end of the support, said means consisting of a member, and mechanism for causing said member to rub the work first in one direction and then in the other.

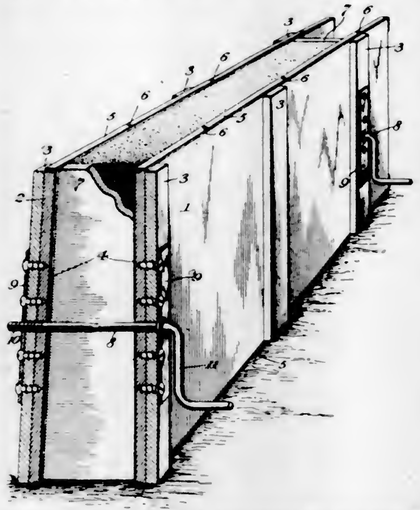
17. A leather treating machine comprising a flat work support over the end of which the work may be folded to lie against the sides or faces thereof, rotary devices for engaging and treating the work on the faces of said support,

and a reciprocatory member adapted to rub the work first in one direction and then in the other for treating the work lying on the end of the support.

18. A working member for a seasoning machine consisting of a blade and a strip of cushioning material secured to said blade and folded over the operative portion thereof.

19. A leather seasoning machine comprising a flat table adapted to receive the work, a cushion-shod yielding member, and mechanism for causing said member to engage the work with a continuous drawing stroke from one end of the table toward the other.

854,856. APPARATUS FOR MANUFACTURING CONCRETE BLOCKS. GEORGE B. TYLER, Hastings, Nebr., assignor of one-half to William R. Waters, Hastings, Nebr. Filed Aug. 25, 1906. Serial No. 331,958.

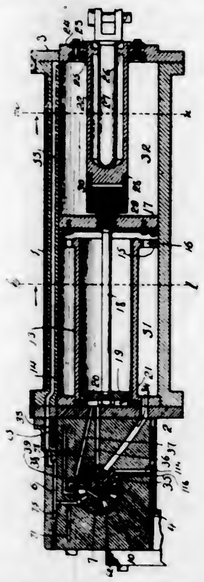


Claim.—In apparatus for manufacturing concrete blocks, a casing comprising wooden side walls provided on their longitudinal edges and corners with stiff binding strips adapted to prevent bending of said walls and having on their inner faces linings of material impervious to moisture which are extended under said stiffening strips and secured in place thereby, end members disposed between said side walls, and clamping devices for securing the side walls and end members in relation.

854,857. AIR-BRAKE. THOMAS H. VAN DYKE, Kansas City, Mo., assignor of one-third to James Doarn and one-third to Lee B. Mettler, Kansas City, Mo. Filed July 12, 1906. Serial No. 325,851.

Claim.—1. The combination with the braking cylinder, of the piston reciprocatively mounted in the said cylinder, means connected with the piston and adapted to be connected with the brake shoes for forcing the brake shoes against the wheels when the piston is moved to the braking position, the train line, and means controlled by the reduction of pressure in the train line by which air stored in the braking cylinder is applied to the piston during the piston travel at a uniform pressure irrespective of the amount of reduction in the train line pressure for moving the piston from the release to the braking position without the discharge of air from the cylinder to the atmosphere.

2. The combination with the braking cylinder, of the piston reciprocatively mounted in said cylinder, means connected with the piston and adapted to be connected with the brake shoes for forcing the brake shoes against the wheels when the piston is moved to the braking position, the train line, means controlled by the reduction of pressure in the train line by which air is applied to the piston during piston travel at a uniform pressure irrespective of the amount of reduction in the train line pressure for moving the piston from the release to the braking position, and means by which when the piston has reached the braking position in the cylinder effective braking pressure is applied to the piston proportionate to the amount of reduction of pressure in the train line and in a direction for forcing the brake shoes against the wheels.



3. The combination with the braking cylinder, of the piston reciprocatively mounted in the cylinder, means by which air at train line pressure may be introduced into the cylinder at both ends of the piston, means by which a greater area at the forward end than at the rear end of the piston may be subjected to the air pressure, thereby forcing the piston to the rear or release position, and means by which the air pressure may be applied to a greater area at the rear than at the forward end of the piston, whereby the piston will be forced from the release to the braking position.

4. The combination with the braking cylinder, of the piston reciprocatively mounted in the cylinder, means by which air at train line pressure may be introduced into the cylinder at both ends of the piston, means by which a greater area at the forward end of the piston than at the rear end thereof may be subjected to the air pressure, thereby forcing the piston to the rear or release position, means by which the air pressure may be applied to a greater area at the rear end of than at the forward end of the piston, whereby the piston will be forced forward from the release to the braking position, and means by which when the piston has reached the braking position air will be discharged to the atmosphere from the cylinder forward of the forward end of the piston.

5. The combination with the braking cylinder, of the piston reciprocatively mounted in the cylinder, means by which air at train line pressure may be introduced into the cylinder at both ends of the piston, means by which a greater area at the forward than at the rear end of the piston may be subjected to the air pressure, whereby the piston is forced from the forward or braking to the release position, means actuated by reduction in the train line pressure by which a greater area at the rear than at the forward end of the piston may be subjected to the air pressure, whereby the piston may be forced from the release to the braking position, and means by which when the piston has reached the braking position air proportionate to the amount of reduction in the train line pressure will be discharged to the atmosphere from the cylinder forward of the forward end of the piston.

6. The combination with the braking cylinder, of the piston reciprocatively mounted in the cylinder, means by which air at train line pressure may be introduced into the cylinder at both ends of the piston, means by which a greater area at the forward than at the rear end of the piston may be subjected to the said air pressure, whereby the piston will be forced from the braking position to the rear or release position, means actuated by reduction in the train line pressure by which a greater area at the rear than at the forward end of the piston may be subjected to said air pressure, whereby the piston will be forced forward to the braking position from the release position, means by which when the piston has reached the braking position air will be discharged to the atmosphere from the cylinder forward of the piston and proportionate to the reduction in train line pressure, and regulatable means for controlling the proportion of the air so discharged relative to the train line reduction.

7. The combination with the braking piston, of the train line, means for applying air at the same degree of pressure from the train line to opposite ends of the piston and alternately over different areas at said ends, the pressure in the train line controlling at which end the greater area is subjected to the said air pressure.

8. The combination with the braking piston, of the train line, means for applying air at the same degree of pressure from the train line at the forward and rear ends of the piston and alternately over different areas at the ends, whereby the piston is moved to and from the braking position, the pressure in the train line determining at which end the greater area is subjected to the air pressure, said means providing when the piston has reached the braking position a reduction in pressure at the forward end of the piston proportionate to the reduction made in pressure in the train line.

9. The combination with the braking piston, of the train line, means for applying air from train line at same degree of pressure at the forward and rear ends of piston and alternately over different areas at the ends, thereby the piston is moved to and from the braking position, the pressure in the train line determining at which end the greater area is subjected to the air pressure, said means providing, when the piston has reached the braking position, a reduction in pressure proportionate to the reduction in pressure in the train line, and adjustable means for varying the proportion of reduction in pressure at the forward end of the piston relative to the reduction in pressure in the train line.

10. The combination with the braking piston, of the train line, means for applying air at the same degree of pressure at the forward and rear ends of the piston from the train line and alternately over different areas at the ends, whereby the piston is moved to and from the braking position, the presure in the train line determining at which end the greater area is subjected to the air pressure, said means providing when the piston has reached the braking position a reduction in pressure will be made at the forward end of the piston proportionate to the reduction of pressure made in the train line, and means by which the excess of pressure at the rear end over that at the forward end of the piston may be automatically limited to a predetermined amount.

11. The combination with the braking piston, of the train line, means for applying air from the train line at the same degree of pressure at the forward and rear ends of the piston and alternately over different areas at the ends, whereby the piston is moved to and from the braking position, the pressure in the train line determining at which end the greater area is subjected to the air pressure, said means providing, when the piston has reached the braking position, a reduction in pressure at the forward end of the piston proportion to the reduction of pressure in the train line, and adjustable means by which the excess of pressure at the rear end over that at the forward end of the piston may be automatically limited.

12. The combination with the braking piston, of the train line, means for applying air from the train line at the same degree of pressure at the forward and rear ends of the piston and alternately over different areas at the ends, whereby the piston is moved to and from the braking position, the pressure in the train line determining at which end the greater area is subjected to pressure, said means providing that when the piston has reached the braking position a reduction in pressure will be made at the forward end of the piston proportionate with the reduction of pressure in the train line, adjustable means for varying the proportion of reduction in pressure at the forward end of the piston relative to the reduction in pressure in the train line, and automatic means for limiting the excess of pressure at the rear over that at the forward end of the piston.

13. The combination with the braking piston, of the train line, and mechanism intermediate the train line and piston by which air at the same degree of pressure may be applied from the train line at the forward and rear end of the piston and alternately over different areas at said ends, said mechanism having means by which when a sufficient pressure is made in the train line the greater area under pressure will be at the forward end of the piston and when a reduction of pressure is made in the train line air will be transferred from the forward end of the piston to a greater area at the rear end of the piston, thus moving the piston to the braking position, said mechanism providing that when the piston has reached the braking position, air at the forward end of the piston will be released to the atmosphere reducing the pressure at the forward end of the piston proportionate to the reduction of pressure in the train line.

14. The combination with the braking piston, of the train line, and mechanism by which when sufficient pressure is made in the train line air therefrom will be applied at both ends of the piston the greater area of pressure being at the forward end of the piston, said mechanism providing that when a reduction of pressure is made in the train line air will be transferred from the forward to the rear end of the piston and against a greater area at the rear than at the forward end, thus moving the piston to the braking position, said mechanism providing also that when the piston has reached the braking position air proportionate in pressure to the reduction of pressure in the train line will be discharged from the forward end of the piston to the atmosphere, means also being provided by said mechanism by which when sufficient pressure has again been placed in the train line air from the train line will be applied at both ends of the piston but over a greater area at the forward end thereof, thus moving the piston from the braking to the release position.

15. The combination with the braking piston, of the train line, and means by which air is applied at the forward and rear ends of the piston, said means providing that when a reduction of pressure is made in the train line air at a substantially uniform pressure will be applied over a greater area at the rear than at the forward end of the piston during the piston travel to the braking position.

16. The combination with the braking piston, of the train line, and means by which air is applied at the forward and rear ends of the piston, said means providing that when a reduction of pressure is made in the train line, air at a substantially uniform pressure will be applied over a greater area at the rear than at the forward end of the piston during the piston travel to the braking position, said means providing that when the piston has reached the braking position pressure of air proportionate to the reduction in pressure in the train line will be removed from the forward end of the piston.

17. The combination with the braking piston, of the train line, and means by which air is applied at the forward and rear ends of the piston, said means providing that when a reduction of pressure is made in the train line, air at a substantially uniform pressure will be applied

to the rear end of the piston and over a greater area than at the forward end and during the whole of the piston travel, said means providing that when the piston has reached the braking position air proportionate to the reduction in pressure in the train line will be removed from the forward end of the piston, said means providing also that when pressure has been sufficiently increased in the train line a greater area at the forward than at the rear end of the piston will be subjected to the air pressure, thus retracting the piston from the braking position.

18. In air brakes, the combination with two cylinders of different diameters, the smaller cylinder communicating at its forward end with the larger cylinder, both ends of the larger cylinder and the rear end of the smaller cylinder being closed, the larger cylinder having air passages communicating respectively with its forward and rear ends, and the smaller cylinder having means for conveying air to and from its rear end, of the braking piston having two heads reciprocatively mounted in the larger and smaller cylinders respectively, the larger head being intermediate the air passages of the larger cylinder and the smaller head being forward of the air conveying means of the smaller cylinder, the piston having a portion forward of the larger head projecting through the forward end of the larger piston, said projecting portion having a diameter smaller than the diameter of the smaller head, means connecting with said projecting portion of the piston for applying the brakes, valve mechanism connecting with said air passages and with the air conveying means leading to the smaller cylinder, and means controlled by and adapted to be connected with the train pipe by which said valve mechanism is actuated to control the passage of air through said passages and air conveying means.

19. In air brakes, the combination with the piston having two heads of different diameters, of two cylinders in which said heads are reciprocatively fitted, the smaller cylinder communicating with the larger cylinder at the forward end of the smaller cylinder, the larger cylinder being closed at both ends and the smaller cylinder closed at its rear end, the piston at the end forward of the larger head having a portion of smaller diameter than the smaller head and projecting through the forward end of the larger cylinder, the larger cylinder having air passages leading to it forward and rearward of the larger head of the piston, the smaller cylinder having air passages leading to it at the rear of the smaller piston head.

20. In air brakes, the combination with two cylinders, one located within the other, the smaller cylinder at its forward end communicating with the larger one, and the larger cylinder being closed at both ends, the rear end of the larger cylinder having air passages extending therethrough at the inside and outside of the smaller cylinder, the larger cylinder having an air passage communicating with it adjacent its forward end, of a piston having two heads reciprocatively mounted in said two cylinders, the piston forward of the larger head having a portion smaller in diameter than the smaller head and projecting through the forward end of the larger cylinder.

21. In air brakes, the combination with two cylinders of different diameters the smaller communicating with the larger at the forward end of the smaller cylinder, the larger cylinder being closed at both ends and the smaller cylinder closed at its rear end, the smaller cylinder having an annular peripheral seat at its rear end, and the larger cylinder at its closed end having a central hole and on its outer side encircling said hole an annular seat, of the piston having two heads fitted reciprocatively respectively in said cylinders, the piston forward of the larger head having a projecting portion extending through said hole and having an annular flange adapted to rest against the seat encircling said hole when the piston is retracted, the smaller head of the piston being adapted to bear upon the annular seat in the smaller cylinder when the piston is retracted, the larger cylinder having air passages communicating with it forward and rearward of the larger piston head, the smaller cylinder having air passages communicating with it to the rear of the smaller piston head and within the annular seat in the smaller cylinder.

22. In air brakes, the combination with the braking piston, of means by which the piston is moved to and from the braking position by air pressure derived from the train pipe and applied at opposite ends of the piston, and automatic means for limiting the preponderance of pressure at one end over the pressure at the other end of the piston.

23. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may be applied at opposite ends of the piston simultaneously, means controlled by train pipe pressure by which alternately a greater area at one end of the piston may be subjected to the air pressure than is applied at the opposite end, thereby forcing the piston to and from the braking position, and automatic means for limiting the preponderance of pressure at one end over the pressure at the other end.

24. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may simultaneously be applied to opposite ends of the piston, means controlled by pressure in the train pipe by which alternately one end of the piston may be subjected to greater pressure than the other end, and automatic means by which the preponderance of pressure at one end over that at the other end of the piston is limited.

25. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may simultaneously be applied to opposite ends of the piston, means controlled by pressure in the train pipe by which opposite ends are alternately subjected to a preponderance of pressure one end over the other, and regulatable means by which is automatically limited the preponderance of pressure at one end of the piston over that at the other end.

26. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may simultaneously be applied to opposite ends of the piston, means controlled by pressure in the train pipe by which opposite ends of the piston may each alternately be subjected to pressure over a greater area than the area of the opposite end subjected to pressure, and regulatable automatic means for limiting the preponderance of pressure at one end over that at the other end.

27. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may be simultaneously applied to opposite ends of the piston, means by which when the train pipe pressure is reduced a greater pressure will be applied at one end than at the other end of the piston, thereby forcing the piston to the braking position, means by which when the piston has reached the braking position air will be discharged from said other end of the piston and automatic means by which the difference in pressure at opposite ends may be limited.

28. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may be simultaneously applied to opposite ends of the piston, means by which when the train pipe pressure is reduced air pressure will be transferred from one end of the piston to the other end thereof, thereby forcing the piston to the braking position, and means by which, when the piston has reached the braking position, air pressure proportionate to the reduction of pressure in the train pipe may be reduced at the end of the piston from which the air pressure was transferred.

29. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may be simultaneously applied to opposite ends of the piston, means controlled by train pipe pressure by which opposite ends of the piston are subjected alternately to a preponderance of pressure at one end over that at the other end whereby the piston may be moved to and from the braking position, and means by which, when the piston has reached the braking position, air pressure proportionate to the reduction of pressure in the train pipe will be withdrawn from the end of the piston having at the time the least pressure against it.

30. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may be simultaneously applied to opposite ends of the piston, means controlled by train pipe pressure by which

opposite ends of the piston may each alternately be subjected to air pressure over an area greater than that subjected to pressure at the opposite end, whereby the piston is moved to and from the braking position, and means by which, when the piston has reached the braking position, air pressure proportionate to the reduction of pressure in the train pipe will be withdrawn from the end of the piston which at the time has the smallest area subjected to pressure.

31. In air brakes, the combination with the braking piston, of means by which air derived from the train pipe may be applied to opposite ends of the piston, means controlled by pressure in the train pipe by which opposite ends of the piston may be subjected each alternately to air pressure over a greater area than the area of the opposite end subjected to the air pressure, whereby the piston is moved to and from the braking position, means by which when the piston has reached the braking position air pressure proportionate to the reduction of pressure in the train pipe will be withdrawn from the end of the piston which at the time has the smallest area exposed to the air pressure, and regulatable means for varying the proportion withdrawn relative to the reduction in the train pipe.

32. In air brakes, a triple valve comprising a casing having two chambers one provided with means for being connected with the train pipe and the other provided with means for being connected with the braking cylinder, a passage connecting the chambers with each other, means controlled by the train pipe pressure controlling the admission of air to the chamber having the means for connecting it with the train pipe, a valve actuated by said controlling means and controlling the passage connecting the two chambers, a second valve controlling the passage of air between the braking cylinder and the chamber connected with the braking cylinder, and means actuated by the first named valve for controlling the action of the second named valve.

33. In air brakes, a triple valve comprising a casing having two chambers and passages leading from one chamber to the atmosphere and to the braking cylinder, a passage leading from the other chamber to the train pipe, means controlled by the train pipe pressure controlling the admission of air from the train pipe to the chamber connected with it, a passage connecting the two chambers, a valve controlling said passage and actuated by the means controlling the admission of air from the train pipe with the chamber connected with it, a second valve controlling the passages leading from the chamber connected with the braking cylinder, and means actuated by air pressure and controlled by the first named valve for actuating the second named valve.

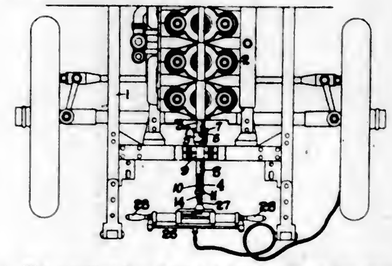
34. In air brakes, the triple valve comprising a casing having chambers 5 and 6, means for connecting said chambers respectively with the train pipe and with the braking cylinder, a passage connecting the two chambers, a valve controlling said passage, means controlled by train pipe pressure for actuating said valve, a second valve controlling the means connecting the braking cylinder with the chamber 6, chambers 63 and 69, pistons 82 and 83 mounted in chamber 63, piston 70 mounted in chamber 69, passages connecting chamber 69 with chambers 5 and 6 respectively at opposite sides of piston 70, said passages being controlled by the first named valve, and means controlled by said pistons for actuating the second named valve.

854,858. STARTING DEVICE FOR AUTOMOBILES. RALPH B. WAITE, Springville, N. Y. Filed June 15, 1906. Serial No. 321,882.

Claim.—1. The combination with a starting device for automobiles having a removable crank, and a shaft normally disconnected from the engine, of a supplementary power transmitting element to which an air pump or the like may be connected.

2. The combination with a starting device for automobiles having a removable crank, and a shaft normally disconnected from the engine, of a supplementary power transmitting element supported by said shaft to which an air pump or the like may be connected.

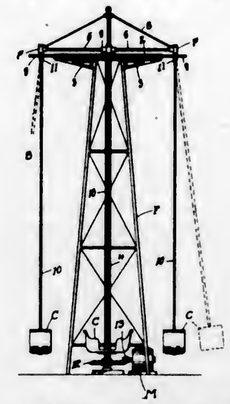
3. The combination with a starting device for automobiles having a removable crank, and a tubular shaft normally disconnected from the engine, of a supplementary power transmitting element within the tubular shaft having means for engagement to the engine and to which an air pump or the like may be connected.



4. The combination with a starting device for automobiles having a removable crank, and a tubular shaft having an enlarged end portion provided with a notched edge for engagement with the shaft of the automobile engine and means for normally maintaining the shaft disengaged from the engine shaft, of a supplementary power transmitting element within the tubular shaft and having an enlarged end portion within the enlarged end portion of the tubular shaft provided with a notched edge for engagement with the shaft of the automobile engine.

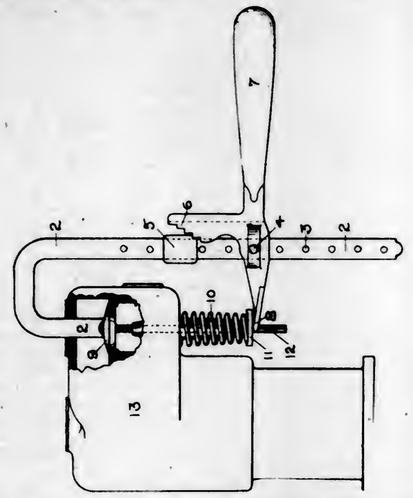
5. The combination with a starting device for automobiles having a removable crank, and a tubular shaft having an enlarged end portion provided with a notched edge for engagement with the shaft of the automobile engine and one or more slots and means for normally maintaining the shaft disengaged from the engine shaft, of a supplementary power transmitting element within the tubular shaft and having an enlarged end portion within the enlarged end portion of the tubular shaft provided with a notched edge for engagement with the shaft of the automobile engine and pins projecting in the slots to prevent independent rotation.

854,859. ROUNDABOUT. JAMES D. WALSH, St. Louis, Mo. Filed Aug. 25, 1906. Serial No. 331,994.



Claim.—A roundabout comprising a central rotating shaft, a stationary circular rack encompassing the same, a series of arms radiating from the shaft above the rack, bearings at the ends of the arms, pinions mounted in said bearings and engaging the rack, rods depending from the pinions, vehicles carried by the rods, and universal joints coupling the rods to the pinions, the parts operating substantially as, and for the purpose set forth.

854,860. TOOL FOR REMOVING ENGINE-VALVES. CHRISTIAN F. WEBBER, Albany, N. Y. Filed Feb. 1, 1907. Serial No. 355,274.



Claim.—1. In a machine of the character described, a bar having one end thereof bent to form a hook, a lever pivoted on the straight portion of said bar, and a block sliding on said bar adapted to lock said lever so as to withstand pressure exerted on one end thereof.

2. In a tool of the character described, a bar having one end thereof bent to form a hook, a lever pivoted on the straight portion of said bar, said lever having a ratchet thereon, and a block sliding on said bar adapted to engage the teeth of said ratchet.

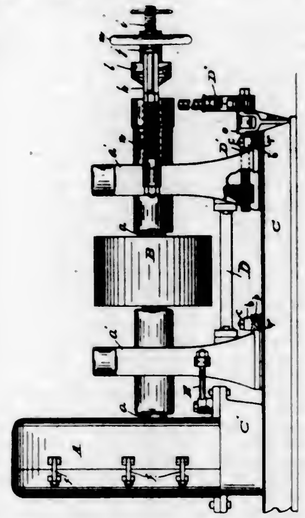
3. In a tool of the character described, a bar having one end thereof bent to form a hook, a lever pivoted on the straight portion of said bar, said lever having a ratchet thereon and block sliding on said bar adapted to engage the teeth of said ratchet, and a means of changing the position of the pivot of said lever longitudinally along said bar.

4. In a tool of the character described, in combination, a bar having one end thereof bent to form a hook adapted to engage the top of an engine valve, a lever pivoted on the straight portion of said bar, said lever having a ratchet member near its fulcrum, and having one end adapted to engage the spring of an engine valve, a block sliding upon said bar and adapted to engage the teeth of said ratchet, a means of changing the position of the pivot of said lever longitudinally along said bar.

854,861. GRINDING-MILL. JAMES F. WINCHELL, Springfield, Ohio; Lida L. Winchell, administratrix of said James F. Winchell, deceased, assignor to Charles E. Pease and William B. Anderson, Dayton Ohio. Filed Sept. 29, 1902. Serial No. 125,308.

Claim.—1. In a grinding mill comprising the bed or base, revoluble shafting, with head-plates secured thereto, a sectional casing inclosing said head-plates, the combination of a pair of standards slidably mounted on said base and to one side of said casing, a link intermediate of said standards and connected therewith, means whereby one of said standards is connected to a section of said casing, and mechanism whereby the pair of standards and the casing-section are moved simultaneously in a direction parallel with the axis of the shaft, substantially as shown and in the manner described.

2. In a mill comprising the base and a sectional casing, a pair of standards, a link intermediate of and connecting said standards, revoluble shafting provided with head-plates, said standards supporting the revoluble shafting provided with the head-plates, means intermediate of the sectional casing, and one of said standards whereby the relative position of the one to the other is controlled, one of said standards provided with a screw-threaded socket, a threaded rod taking into the threaded socket in the standard, so that upon the turning of the rod the pair of standards and sectional casing will be moved simultaneously in the direction of said rod, substantially as shown and for the purpose described.



3. A grinding mill comprising a bed or base, a sectional casing mounted thereon, a pair of standards slidably mounted on the base, means intermediate of said standards whereby they are connected with each other, a link connecting one of said standards with the sectional casing, in combination with means connected with one of said standards and the bed or base whereby the standards and sectional casing are moved simultaneously but retained in their relative positions, substantially in the manner and for the purpose specified.

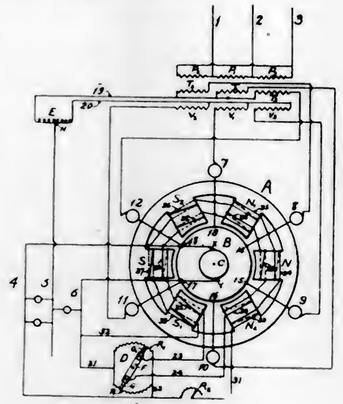
4. The releasing mechanism for the grinding-plates of a mill, comprising a yieldingly held yoke secured to one of the standards, a cam in the arch of the yoke, a sleeve passing through the yoke-arch and provided with a head adapted to ride on said cam, said sleeve being threaded internally to receive the temper or feed-screw whose relation with the bearing of the head-plate shafting is altered according to the position of the sleeve-head on the cam, substantially as shown and for the purpose described.

5. In the releasing mechanism for the grinding plates of a mill, a yieldingly-held yoke secured to one of the standards and having a cam in its arch, a sleeve passing through the yoke-arch and provided with a head adapted to ride on said cam, said sleeve being threaded internally to receive the temper or feed-screw, whereby upon the traveling of said head on the cam, the position of the feed-screw in its relation to the head plate shaft bearing is altered, substantially in the manner and for the purpose specified.

6. In the releasing mechanism for grinding-plates of a mill, a yieldingly held yoke secured to one of the standards, a cam having varying degree of incline and located in the arch of the yoke, a sleeve passing through the yoke-arch and provided with a head adapted to ride on said cam, said sleeve adapted to receive the temper or feed-screw and having controllable connection therewith, and mechanism secured to the outer end of said sleeve whereby the same may be operated and the relative position of the feed screw with the shaft bearing varied according to the position of the sleeve-head on the cam, substantially as shown and for the purpose specified.

7. In a mill comprising a bed or base, a pair of standards slidably mounted on said bed or base and supporting the revoluble shafts carrying the head-plates, a sectional casing inclosing the ends of the shafts carrying the head-plates, a link intermediate of and connecting with the standards on one side of the sectional casing, mechanism connecting one of said standards with the sectional casing, and mechanism connected with one of said standards and the bed or base whereby upon its operation the standards and casing-section may be moved simultaneously, substantially as shown and in the manner described.

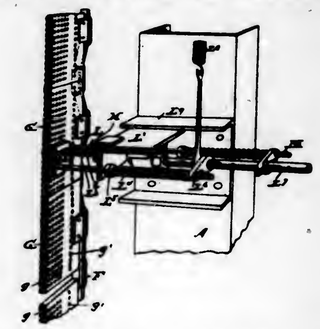
854,862. SYSTEM OF ELECTRICAL DISTRIBUTION. JOSEPH L. WOODBRIDGE, Philadelphia, Pa. Filed Aug. 29, 1906. Serial No. 332,445.



Claim.—1. In combination a polyphase alternating current supply circuit; static transformers having their primary windings connected to said circuit and their secondary windings connected as two independent three phase stars differing in phase by 180 electrical degrees, a six phase rotary converter, the alternating current terminals of whose armature are connected to the corresponding terminals of the secondary windings of the static transformers; means for varying the distribution of the magnetic flux over the pole faces of the rotary converter; a three wire direct current consumption circuit, the outside conductors of which are connected to the respective brushes of the rotary; a reactance connected between the centers of the two secondary stars; and a connection from the neutral conductor of the three wire consumption circuit to an intermediate point in the reactance.

2. In combination a polyphase alternating current supply circuit; static transformers having their primary windings connected to said circuit and their secondary windings connected as two independent three phase stars differing in phase by 180 electrical degrees; a six phase rotary converter, the alternating current terminals of whose armature are connected to the corresponding terminals of the secondary windings of the static transformers and whose magnetic poles are divided each into three parallel paths; means for varying the distribution of magnetic flux in the three paths; a three wire direct current consumption circuit, the outside conductors of which are connected to the respective brushes of the rotary; a reactance connected between the centers of the two secondary stars; and a connection from the neutral conductor of the three wire consumption circuit to an intermediate point in the reactance.

854,863. MATCH-MACHINE. JOHN S. WOODBRIDGE, Detroit, Mich. Filed Feb. 1, 1907. Serial No. 355,198.



Claim.—1. In a match machine, a series of match holding plates supported in an endless chain designed to conduct them to suitable paraffining, and heading mechanism and afterward to convey them over a somewhat devious course in order to give the matches sufficient time to dry before being discharged from the plates, said plates provided with an auxiliary set of perforations to receive the teeth of suitable driving wheels, means for forcing the plates over their course consisting of toothed driving wheels adapted to enter the auxiliary perforations in the plates, said wheels having suitable connection with the driving shaft of the machine to actuate them, and means for throwing the links of the chain out of line with the plane of the adjacent links whereby the plates are brought into abutting contact in order that the perforations in the several plates may register with the teeth of the driving wheel, substantially as described.

2. In a match machine, a series of perforated plates for holding the matches, an endless chain for supporting the match plates designed to conduct the plates to suitable heading and dipping mechanisms and afterward to convey them around a devious course in order that the matches may dry before being discharged, said plates provided with perforations adjacent to their edges, toothed driving wheels, the teeth of which are adapted to enter said last named perforations to force the plates and chain along their course, said wheels provided with projecting lugs designed to engage the links of the chain to force the latter below the plane of adjacent links whereby the match-plates as they reach the toothed driving wheels are drawn together into abutting contact in order that the perforations in the plates provided for the reception of the teeth in the driving wheel may register with said teeth, substantially as described.

3. In a match machine, a plurality of plates provided with perforations to receive the splints, said plates mounted in an endless chain adapted to convey the splints to suitable dipping and heading appliances, said plates also provided with perforations for the reception of the teeth of suitable driving wheels, said toothed wheels provided with adjustably arranged projecting lugs designed to engage the links of the chain as they successively pass said wheel to force the links out of plane with adjacent links, whereby the splint supporting plates are drawn together into abutting contact in order that the perforations in the plates may register with the teeth of the driving wheels, substantially as described.

4. In a match machine, a plurality of perforated plates designed to receive the match splints, said plates mounted in an endless chain traveling around suitable guides, a plurality of match discharging pins designed to enter the perforations in the plates and force the matches therefrom, said pins mounted in a movable frame adapted to move with the plates when the pins have entered the perforations in the same, said plates provided with an auxiliary set of perforations designed to receive a plunger, and a spring actuated plunger mounted in the movable frame

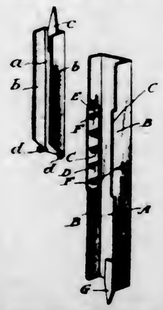
carrying the discharge pins being adapted to enter the auxiliary perforations in the match plates whereby the match discharge pins are guided into each series of perforations in the plates as they are successively presented, substantially as described.

5. In a match machine, a plurality of perforated plates designed to receive the ends of the match splints, said plates mounted in an endless chain traveling over suitable guides to deliver the splints to the paraffining, heading and other mechanism, means for discharging the matches after drying consisting of a plurality of discharge pins mounted in a frame having a vertical and horizontal movement, said plates also provided with an auxiliary set of perforations designed to receive the teeth of a driving wheel and also a spring actuated plunger mounted in the movable frame carrying the match discharge pins, means for forcing the pins into the perforations of the plates successively to discharge the matches, the construction being such that when the pins have entered the plates they will travel with the plates during the interval required to discharge the matches, and means for returning the movable frame carrying the discharge pins back to its initial position when the pins are withdrawn from the plates, substantially as described.

6. In a match machine, a plurality of perforated splint-supporting plates mounted in an endless chain designed to convey the splints to suitable heading and dipping mechanism, a plurality of match discharging pins mounted in a movable frame, means for forcing the pins into the perforations in the plates in successive order and for withdrawing the pins when the matches are discharged, the construction being such that the pins are adapted to move with the plates during the interval required to discharge the matches, and a spring actuated guide for the pins adapted to contact with the plates, the construction being such as to afford support for the forward ends of the pins to keep them in perfect alinement in order that they may freely enter the perforations in the plates, substantially as described.

7. In a match machine, a plurality of perforated splint-supporting plates mounted in an endless chain adapted to convey the splints to suitable heading and dipping mechanism, a plurality of match-discharging pins mounted in a movable frame and provided with means for actuating the pins to force the matches out of the plates, said plates also provided with an auxiliary set of perforations adapted to receive the teeth of a driving wheel, said perforations also designed to receive the teeth of a braking wheel, the toothed braking wheel mounted on a shaft supported in suitable bearings in the frame, a drum mounted on said shaft, a split-sleeve embracing said drum provided with bolts for increasing the tension of the sleeve on the drum, said sleeve having an arm adapted to contact with a projecting lug in the frame to retard its rotation, said lug, and the toothed driving wheel, substantially as described.

854,864. STAIR-CARPET FASTENER. WARREN M. ABBOTT, Philadelphia, Pa. Filed Aug. 25, 1905. Renewed Mar. 14, 1907. Serial No. 362,411.



Claim.—1. In a stair carpet fastener the combination of a hollow casing, the sides whereof are provided with inturned and slotted plates, and an extension piece adapted to enter between the inturned plates and provided with laterally projecting trunnions which engage in the slots of said plates, the casing and extension piece being each provided with a longitudinally extending point.

2. In a stair carpet fastener the combination of a hollow casing, the sides whereof are provided with inturned and bayonet slotted plates, the enlarged end of the slots being eccentric to the axial line of the casing, an extension piece adapted to enter between the inturned plates and provided with laterally projecting trunnions adapted to enter the slots in the inturned plates and rest in the enlarged terminal openings thereof, the casing and the extension piece being each provided with a longitudinally extending point.

854,865. UNDERGARMENT. ROBERT M. APPLETON, Boston, Mass. Filed Apr. 23, 1906. Serial No. 313,112.



Claim.—1. An undergarment consisting of a tubular body portion provided at one end with an undivided supplementary portion in continuation thereof, which is turned over upon the back and attached thereto along its side edges and unattached along its lower edge, substantially as described.

2. An undergarment consisting of a tubular body portion provided at one end with a supplementary portion in continuation thereof, which is turned over the shoulders and extends down upon and entirely across the back to approximately the lower ends of the arm holes, and is attached thereto along its side edges only, substantially as described.

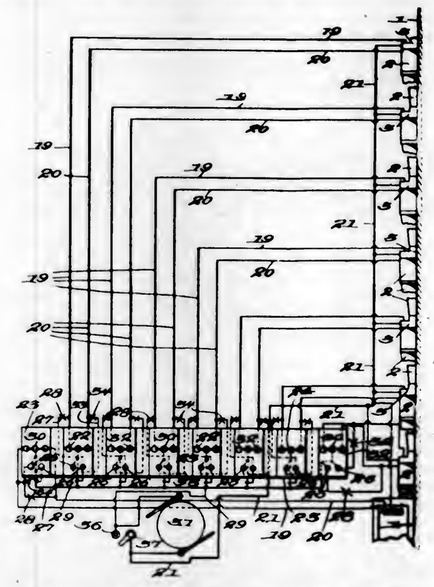
3. An undergarment consisting of a tubular body portion provided at one end with a supplementary portion in continuation thereof, which is turned over the shoulders and down upon the chest and attached thereto along its side edges and having a neck-opening at the junction of said supplementary portion and chest, and a front opening in the supplemented chest thus formed, which extends downward from said neck-opening and is provided with means for closing it and for attaching the supplementary portion and chest together at the middle, leaving the lower edge of the supplementary portion, at opposite sides of the middle, unattached, substantially as described.

4. An undergarment comprising a tubular body portion having supplementary portions in continuation thereof extending over the shoulders and down at the front and back, respectively, of said body portion, overlying said front and back portions and stitched thereto along their side edges but unattached along their lower edges, said front supplementary portion extending for its full length entirely across the front, substantially as described.

5. An undergarment comprising a tubular body portion, the back having a supplementary portion in continuation thereof, which is divided to form flaps which extend over the shoulder portions of the garment and overlie the chest and extend downwardly thereon and are united thereto along their side edges, but unattached along their lower edges, said flaps together extending entirely across the chest for their full length, the chest and said flaps having vertical meeting edges and means for detachably uniting the same, substantially as described.

6. An undergarment comprising a tubular body portion having a divided supplementary portion and an undivided supplementary portion, integral therewith, and extending over the shoulders and down at the front and back, respectively, and overlying said front and back portions and stitched thereto along their side edges and unattached at their lower edges, substantially as described.

854,866. MAIL-CHUTE. ROBERT W. ASHLEY, New York, N. Y. Filed Dec. 23, 1905. Serial No. 293,084.



Claim.—1. An apparatus of the character described comprising a mail chute, a plurality of mailing slots therein, means for automatically closing said slots, means for actuating said closing means, means for indicating the position thereof and means for automatically opening said closing means.

2. An apparatus of the character described comprising a mail chute, a plurality of mailing slots therein, means for automatically closing said slots, means for actuating said closing means, means for indicating the position thereof and means for automatically opening said closing means dissimultaneously.

3. An apparatus of the character described comprising a mail chute, a plurality of mailing slots therein, means for automatically closing said slots, means for actuating said closing means, means for indicating the position thereof, and means for automatically opening said closing means in sequence.

4. An apparatus of the character described including a mail chute, a mailing slot therein, means for closing said slot, electrically controlled means for actuating said closing means and electrically controlled means for indicating the position of said closing means.

5. In an apparatus of the character described including a mail chute, a mailing slot therein, electrically controlled closing means interposed in said mailing slot portion, electrically controlled opening means interposed in said mailing slot portion and means for actuating said closing and opening means.

6. In an apparatus of the character described including a mail chute, a mailing slot therein, closing and opening means interposed in said mailing slot portion said closing and opening means comprising two sets of oppositely operating solenoid magnets.

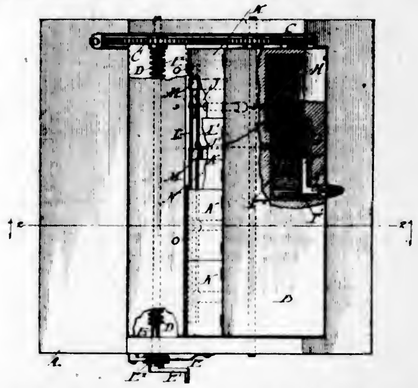
7. In an apparatus of the character described including a mail chute, a mailing slot therein, closing and opening means interposed in said mailing slot portion, two sets of oppositely operating solenoid magnets interposed therein and means for actuating said oppositely operating solenoid magnets.

8. In an apparatus of the character described including a mail chute, a mailing slot therein, closing and opening means interposed in said mailing slot portion, two sets of oppositely operating solenoid magnets interposed therein, means for actuating said oppositely operating solenoid magnets, and means for indicating the position of said solenoid magnets.

9. An apparatus of the character described including a mail chute, a plurality of mail reception apertures therein and means for automatically closing said mail reception apertures dissimultaneously from one or a common point.

10. An apparatus of the character described including a mail chute, a plurality of mail reception apertures therein, means for closing said mail reception apertures dissimultaneously from one or a common point and means for indicating the position of said closing means at said common point.

854,867. ANIMAL-TRAP. FRED R. BAKER, Chicago, Ill. Filed Sept. 4, 1906. Serial No. 333,063.



Claim.—1. An animal trap comprising a cell; a trap door for closing the same; motor means for operating the door for opening and closing; a catch for locking the door in closed position; an electro-magnet for releasing the catch, and an electric generator and circuit for energizing the magnet, comprising a circuit closer mounted on the trap door in position to be operated by the animal to be trapped.

2. An animal trap comprising a cell; a pair of trap doors therefor geared together; motor means for actuating the trap doors for opening and closing; a catch for locking them at closed position; an electro magnet for releasing the catch; an electric generator and circuit for energizing the magnet, and a circuit closer comprised in said circuit mounted on one of the trap doors in position to be operated by the animal to be trapped.

3. An animal trap comprising a cell; a pair of rocking trap doors therefor geared together; motor means for rocking them; a catch for locking them in closed position; an electro magnet for releasing the catch; an electric generator and circuit for energizing the magnet; a circuit closer in said circuit mounted on one of the trap doors in position to be operated by the animal to be trapped.

4. An animal trap comprising a cell; a pair of trap doors therefor mounted for rocking about parallel axes; intermeshing gears connecting said doors for rocking them in opposite directions and causing them to part by descending simultaneously at their meeting edges to open a gap between them into the cell; motor means for rocking them in direction for such opening; a catch for locking them at horizontal closed positions; an electro magnet for releasing the catch; an electric generator and circuit for energizing the magnet, and a circuit closer mounted on one of the trap doors in position to be operated by the animal to be trapped.

5. An animal trap comprising a cell; a pair of trap doors having meeting edges, mounted for rocking about parallel axes and geared together for rocking in opposite directions to cause their meeting edges to part by descending simultaneously; a spring coiled about the shaft of one of the gears connected at one end to the shaft and at the other end to said gear; means outside the cell for rotating the shaft to coil the spring and for retaining it against reverse rotation; a catch for engaging one of the doors to lock them both at horizontal closed position; an electro magnet for releasing the catch; an electric generator and circuit for energizing the magnet, and a circuit closer in said circuit mounted upon one of the doors in position to be operated by the animal to be trapped.

6. An animal trap comprising a cell; a pair of trap doors therefor geared together; motor means for rocking them; a catch for locking them; an electro magnet for releasing the catch mounted on one of the doors; an electric generator and circuit for energizing the magnet, and a circuit closer comprised in said circuit mounted on the same door on which the magnet is mounted in position to be operated by the animal to be trapped.

7. An animal trap comprising a cell; a pair of trap doors therefor geared together; motor means for rocking them to cause them to descend simultaneously at their proximate edges to open a gap between them into the cell; a catch for locking them at horizontal closed position; an electro magnet for releasing the catch mounted on one of the doors; an electric generator and circuit for energizing the magnet mounted on the same door, and a circuit closer in said circuit mounted on one of the trap doors in position to be operated by the animal to be trapped.

8. An animal trap comprising a cell; a trap door therefor; motor means for operating it for opening and closing; a catch for locking it in closed position; an electro magnet for releasing the catch; an electric generator and circuit for energizing the magnet, comprising a circuit closer mounted on the door in position to be operated by the animal to be trapped, the circuit comprising an automatic circuit making-and-breaking device having a gravity-operated circuit-closing piece and in position on the door to be tilted by the opening movement in direction to cause said gravity operated piece to move out of circuit-closing position.

9. An animal trap having a trap door which rotates from closed to open and around to closed position at each action; a catch which arrests it at closed position; electrically operated means for releasing the catch; an automatic circuit-closing-and-opening device in said circuit on the door comprising a gravity-operated circuit-closing piece, and so mounted as to be tilted by the opening movement of the door to cause said gravity piece to leave circuit-closing position.

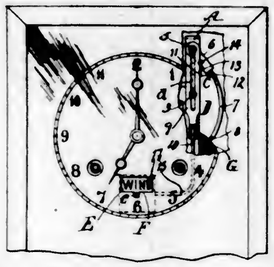
10. An animal trap comprising a cell and a rotative trap door therefor; a catch for arresting its rotation at closed position; electrically-operated means for releasing the catch; an electric circuit for said means comprising a circuit closer on the trap door in position to be operated by the animal to be trapped, and an automatic circuit closer and breaker also mounted on the rotative door comprising a circuit-closing piece, and a track therefor positioned to cause the circuit-closing piece to leave circuit-closing position by centrifugal force during the rotation of the door.

854,868. CLOCK-WINDING INDICATOR. WILLIAM D. BECHTEL, Washington, Mich. Filed Aug. 27, 1906. Serial No. 332,095.

Claim.—1. A clock-winding indicator comprising a vertically slidable rod having a spur and an indicator plate thereon, and a swinging arm having a pin thereon detachably engaging said spur, and a clock spring swinging said arm out of engagement by the uncoiling of said clock spring, substantially as shown and described.

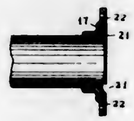
2. A clock-winding indicator comprising a vertically slidable rod having a spur and an indicator plate thereon, and means for connecting same to a clock-works frame, and a swinging arm having a pin thereon detachably engaging said spur, substantially as shown and described.

3. In a clock-winding indicator, the combination with a vertically slidable rod having a slot thereon, a spur and indicating plate thereon, and uprights connecting the device to the frame of a clock-works, of a swinging arm having a pin detachably engaging the said spur, whereby said rod is held in its upward position and the main-spring of a clock automatically releasing said rod, substantially as shown and described.



4. The combination with a clock having a slot in the dial, of an indicating device comprising a vertically slidable rod having a spur and indicator plate thereon, means for connecting the same to the clock-works frame, a swinging arm having a finger and a pin detachably engaging the said spur, and the main-spring of a clock engaging said finger, substantially as shown and described.

854,869. FLANGED PIPE. LOUIS H. BRINKMAN, Hartford, Conn., assignor to Whitlock Coil Pipe Company, West Hartford, Conn., a Corporation of Connecticut. Filed July 5, 1906. Serial No. 324,813.

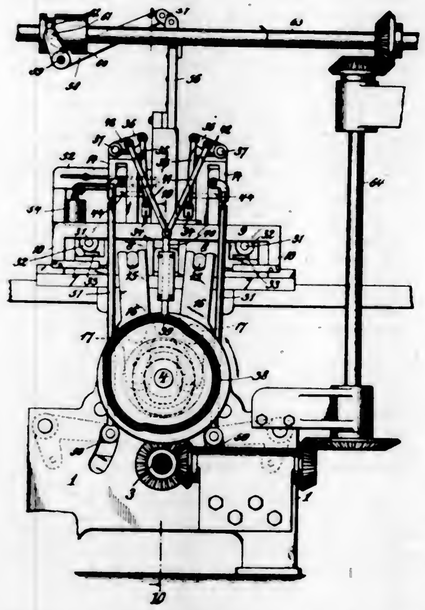


Claim.—1. As an article of manufacture, a pipe having at its end a flange formed by turning the pipe outwardly and then inwardly upon itself to form a double flange with the metal of the outwardly and inwardly turned members of the flange gradually reduced in thickness toward the outer edge of the flange, with the outer side of the outwardly turned member in a plane at substantially right angles to the axis of the pipe, and the outer side of the inwardly turned member at an oblique angle to the axis of the pipe, with a portion of the inwardly turned member of the flange faced in a plane at right angles to the axis of the pipe to form a contacting surface.

2. As an article of manufacture, a pipe having at its end an integral exterior flange, consisting of outwardly and inwardly turned members forming a double flange having the thickness of the outer edge of the flange less than its inner edge and having one side of the flange at substantially right angles to the axis of the pipe, and having the outer portion of opposite face oblique to the axis of the pipe, and the inner portion at right angles to the axis of the pipe.

3. As an article of manufacture, a pipe having at its end an exterior integral flange composed of outwardly and inwardly turned members compressed together, with the thickness of each member less at its outer edge than at its inner edge, and having the outer side of the outwardly turned member substantially at right angles to the axis of the pipe, and having the inner edge of the inwardly turned member faced to form a contacting surface at right angles with the axis of the pipe.

854,870. MATCH-MAKING MACHINERY. ALMON B. CALKINS, Belleville, N. J., assignor to Ferral C. Dininny, New York, N. Y. Filed Apr. 19, 1906. Serial No. 312,589.



Claim.—1. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, individual splint receivers for receiving splints sidewise from the cutting blades, and means for separating the receivers.

2. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, individual splint receivers for receiving splints sidewise from the cutting blades, and means for laterally separating the receivers.

3. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, independent individual splint receivers arranged in line with the cutters, adapted to receive splints sidewise and directly from the cutters, and means for separating the receivers.

4. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, independent individual splint receivers arranged in line with the cutters, adapted to receive splints sidewise and directly from the cutters, and means for laterally separating the receivers.

5. In match making machinery, the combination with separable individual splint receivers, of cutting means for separating veneer strips into splints, means for reciprocating the cutting means a distance sufficient to first perform the cutting operation and subsequently to force the splints thus produced sidewise into the receivers; and means for separating the receivers.

6. In match making machinery, the combination with separable individual splint receivers, of cutting means for separating veneer strips into splints, means for reciprocating the cutting means a distance sufficient to first perform the cutting operation and subsequently to force the splints thus produced sidewise into the receivers, and means for laterally separating the receivers.

7. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, and means for reciprocating the carriages and for individually separating the receivers.

8. In match making machinery, the combination with cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, separable individual receivers for receiving splints from the cutting blades, said receivers reciprocating with the cutter blades, and means for separating the receivers laterally of their paths of reciprocation.

9. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, means for reciprocating the carriages, and means operated by the reciprocating movement of the carriages to individually separate the receivers.

10. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, means for reciprocating the carriages, and means operated by the reciprocating movement of the carriages to separate the individual receivers laterally.

11. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, means for reciprocating the carriages, and a cam for separating the individual receivers.

12. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, means for reciprocating the carriages, a separator cam for the receivers upon each of the carriages, and means for rotating the said cam.

13. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, means for reciprocating the carriages, a separator cam for the receivers upon each of the carriages, and means for rotating the said cam by the reciprocation of the said carriages.

14. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, means for reciprocating the carriages, a separator cam for the receivers upon each of the carriages, and stationary rack means for rotating the cams upon the reciprocation of the carriages.

15. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, cams for reciprocating the blades in paths between and past each other, said cams having dwell portions therein, independent individual splint receivers for receiving splints from the cutting blades, means for laterally separating the receivers, and means for feeding material between the cutter blades while the dwell portions of the cams are active.

16. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, cams for reciprocating the carriages, said cams having dwell portions, means for feeding material between the cutter blades during the time the

dwell portions of the said cams are active, and means for individually separating the receivers during the time the carriages are moving.

17. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, cams upon the carriages for engaging the splints receivers and laterally separating them, gear sectors engaging the cams, stationary racks operating the gear sectors, and means for reciprocating the carriages.

18. In match making machinery, the combination with two sets of individual splint receivers, and reciprocatory means for forcing alternate individual splints from a neutral plane in opposite directions into the receivers, of means for separating the receivers after they have received the splints.

19. In match making machinery, the combination with two sets of individual splint receivers, and reciprocatory means for forcing alternate individual splints from a neutral plane in opposite directions into the receivers, of means for separating the receivers in directions transverse to the plane of movements of the said reciprocatory means.

20. In match making machinery, the combination with reciprocatory means for forcing alternate individual splints from a neutral plane in opposite directions into receivers, of two sets of receivers carried by the oppositely moving reciprocatory elements, and means for separating the individual receivers of each set.

21. In match making machinery, the combination with separable individual splint receivers for receiving individual splints sidewise, and means for separating the receivers, of a guard plate arranged to co-operate with the receivers to prevent accidental sidewise displacement of the splints.

22. In match making machinery, the combination with separable individual splint receivers substantially ⊐ shaped in cross section, whereby they may receive splints presented laterally thereto through their open sides, of a guard plate arranged in its movement to close the open sides of said receivers, means for operating the guard plate, and means for separating the receivers.

23. In match making machinery, the combination with a plurality of separable individual splint receivers substantially ⊐-shaped in cross section, whereby they may receive splints presented laterally thereto through their open sides, said receivers arranged in a row with their open sides in a plane, of a guard plate arranged to move in a path adjacent said plane to form closures for the said splint receivers, means for reciprocating the guard plate, and means for separating the receivers in their row after the guard plate has been moved to a position closing their open sides.

24. In match making machinery, the combination with a plurality of separable individual splint receivers substantially ⊐-shaped in cross section, whereby they may receive splints presented laterally thereto through their open sides, said receivers arranged in a row with their open sides in a plane, of a guard plate arranged to move in a path adjacent said plane to form closures for the said splints receivers, means for reciprocating the guard plate, and cam means for separating the receivers in their row after the guard plate has been moved to a position closing their open sides.

25. In match making machinery, the combination with a plurality of separable individual splint receivers substantially ⊐-shaped in cross section, whereby they may receive splints presented laterally thereto through their open sides, said receivers arranged in a row with their open sides in a plane, of a guard plate arranged to move in a path adjacent said plane to form closures for the said splint receivers, means for reciprocating the guard plate, and a rotary cam for separating the receivers in their row after the guard plate has been moved to a position closing their open sides.

26. In match making machinery, the combination with a reciprocating carriage, of a plurality of separable individual splint receivers carried thereby, said splint receivers having open sides whereby they may receive splints presented laterally to them, a guard plate, means for reciprocating the carriage and for simultaneously separating the receivers, and means for moving the guard plate to a position wherein it will close the open sides of the receivers during their separating movements.

27. In match making machinery, the combination with a reciprocating carriage, a plurality of separable individual splint receivers carried thereby, said receivers being open sided, whereby they may receive splints laterally presented to them, and a guard plate also carried by said carriage for closing the open sides of the receivers, of a separator cam upon said carriage engaging said receivers, means for reciprocating the carriage, stationary means engaging the separator cam thereon for operating same during the reciprocating movements of the carriage, and means for operating the guard plate.

28. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, separable individual splint receivers for receiving splints from the cutting blades, reciprocating guard or retaining plates co-operating with the receivers after the splints have been received thereby, and means for separating the receivers.

29. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, separable individual splint receivers arranged in line with the cutters, adapted to receive splints sidewise and directly from the cutters, guard plates, means for interposing the same between the cutters and the receivers, and means for separating the receivers.

30. In match making machinery, the combination with separable individual receivers, of cutting means for separating veneer strips into splints, means for reciprocating the cutting means a distance sufficient to first perform the cutting operation and subsequently to force the splints thus produced sidewise into the receivers, guard plates, means for moving the guard plates to a position in front of the receivers after the splints have been received therein, and means for separating the receivers.

31. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, guard plates, means for moving the guard plates to a position in front of the splint receivers, and means for reciprocating the carriages and for individually separating the receivers.

32. In match making machinery, the combination with two sets of individual splint receivers and reciprocatory means for forcing alternate individual splints from a neutral plane in opposite directions into the receivers, of guard plates, means for reciprocating same in front of the receivers across the path of movement of the said reciprocatory means, and means for separating the receivers after they have received the splints.

33. In match making machinery, the combination with separable individual splint receivers for receiving individual splints sidewise, and a guard plate arranged to cooperate therewith to prevent accidental sidewise displacement of the splints, of means for separating the receivers, and plungers for ejecting splints from the receivers after they have been so separated.

34. In match making machinery, the combination with separable individual splint receivers substantially ⊐-shaped in cross section, whereby they may receive splints presented laterally thereto through their open sides, of a guard plate arranged in its movement to close the open sides of the said receivers, means for operating the guard plate, means for separating the receivers, and plungers for ejecting the splints endwise from the receivers.

35. In match making machinery, the combination with a plurality of separable individual splint receivers substantially ⊐-shaped in cross section, whereby they may receive splints presented laterally thereto through their open sides, said receivers arranged in a row with their open sides in a plane, of a guard plate arranged to move in a path adjacent to said plane to form closures for the said splint receivers, means for reciprocating the guard plate, means for separating the receivers in their row after the guard plate has been moved to a position closing their open sides, and plungers for ejecting the splints endwise from the receivers.

36. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, separable individual receivers arranged in line with the cutters, adapted to receive splints sidewise and directly from the cutters, means for separating the receivers, and plungers for ejecting the splints endwise from the receivers after they have been separated.

37. In match making machinery, the combination with separable individual receivers, of cutting means for separating veneer strips into splints, means for reciprocating the cutting means a distance sufficient to first perform the cutting operation and subsequently to force the splints thus produced sidewise into the receivers, means for separating the receivers, and plungers for ejecting the splints endwise from the receivers after they have been separated.

38. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, separable individual receivers for receiving splints from the cutting blades, reciprocating guard or retaining plates co-operating with the receivers after the splints have been received thereby, means for separating the receivers, and plungers for ejecting the splints endwise from the receivers after they have been separated.

39. In match making machinery, the combination of cutters comprising two sets of alternately arranged cutting blades, means for reciprocating the blades in paths between and past each other, separable individual receivers arranged in line with the cutters, adapted to receive splints sidewise and directly from the cutters, guard plates, means for interposing same between the cutters and the receivers, means for separating the receivers, and plungers for ejecting the splints endwise from the receivers after they have been separated.

40. In match making machinery, the combination with separable individual receivers, of cutting means for separating veneer strips into splints, means for reciprocating the cutting means a distance sufficient to first perform the cutting operation and subsequently to force the splints thus produced sidewise into the receivers, guard plates, means for moving the guard plates to a position in front of the receivers after the splints have been received therein, means for separating the receivers, and plungers for ejecting the splints endwise from the receivers after they have been separated.

41. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, means for reciprocating the carriages and for individually separating the receivers, and plungers for ejecting the splints endwise from the receivers.

42. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, means for reciprocating the carriages and for individually separating the receivers, and plungers carried by said carriages for ejecting the splints endwise from the receivers after they have been separated.

43. In match making machinery, the combination with two carriages reciprocatory toward and away from each other, two sets of alternately arranged cutter blades carried by said carriages, separable individual splint receivers supported upon said carriages, guard plates, means for moving the guard plates to a position in front of the splint receivers, means for reciprocating the carriages and for individually separating the receivers, and plungers for ejecting the splints endwise from the receivers after they have been separated.

44. In match making machinery, the combination with two sets of individual splint receivers and reciprocatory means for forcing alternate individual splints from a neutral plane in opposite directions sidewise into the receivers, of means for separating the receivers after they have received the splints, and plungers for ejecting the splints endwise from the receivers after they have been separated.

45. In match making machinery, the combination with two sets of individual splint receivers, and reciprocatory means for forcing alternate individual splints from a neutral plane in opposite directions into the receivers, of guard plates, means for reciprocating same in front of the receivers across the path of movement of the said reciprocatory means, means for separating the receivers after they have received the splints, and plungers for ejecting the splints endwise from the receivers after they have been separated.

46. In match making machinery, the combination with a reciprocating carriage, of separable individual receivers carried thereby, means for presenting splints sidewise to the receivers, and plungers carried by the carriages for ejecting the splints endwise from the receivers.

47. In match making machinery, the combination with separable splint receivers, means for bodily moving the receivers in one direction, means for imparting a separating movement to the splint receivers in a direction transverse to their bodily movement, and plungers for ejecting the splints endwise from the receivers, said plungers arranged to partake of the bodily movement of the splint receivers.

48. In match making machinery, the combination with a reciprocating carriage, of separable individual receivers carried thereby, means for presenting splints sidewise to the receivers, a guard or retaining plate arranged to move to a position adjacent the receivers, and plungers carried by the carriages for ejecting splints endwise from the receivers.

49. Splint cutting means comprising two sets of alternately arranged cutting blades, the blades of each set having portions constantly interlocked with portions of the blades of the opposite set, and means for reciprocating the cutter blades with respect to each other.

50. Splint cutting means comprising two sets of alternately arranged cutter blades, said cutter blades arranged with portions at the lower part thereof projecting beyond the cutting faces and constantly interlocked the one set with the other, and means for reciprocating the cutting faces of the blades toward and away from each other.

854,871. MATCH-MAKING MACHINERY. ALMON B. CALKINS, Belleville, N. J. Filed Aug. 10, 1906. Serial No. 330,027.

Claim.—1. Splint cutting mechanism including a plurality of cutter blades arranged to be moved together in a cutting operation, and means for moving certain of the cutter blades in advance of others to effect separation of the cut splints.

2. Splint cutting mechanism comprising two opposed sets of alternately arranged cutter blades arranged to be moved relatively backward and forward to effect a cutting operation, certain of the cutter blades of one set being movable to positions beyond the positions of the other blades in that set.

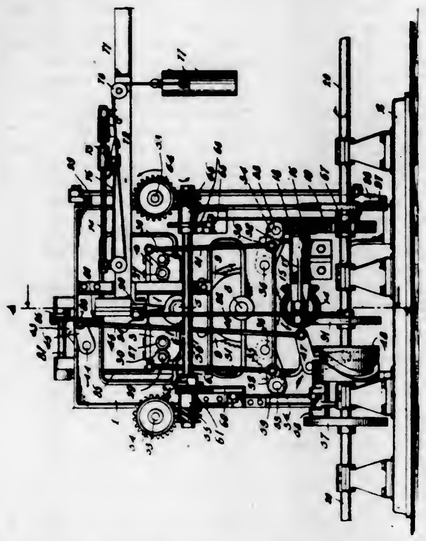
3. Splint cutting mechanism comprising two opposed sets of alternately arranged cutter blades arranged to be moved backward and forward to effect a cutting operation, certain of the cutter blades of each set being movable to positions beyond the positions of the other blades in each said set.

4. Splint cutting mechanism comprising two heads provided with interlocking cutter blades, each head having certain of its cutter blades stationary therewith and others of its cutter blades movable with respect thereto.

5. Splint cutting mechanism comprising two heads provided with interlocking cutter blades, each head having alternate stationary and movable blades therein.

6. Splint cutting mechanism comprising two opposed

sets of alternately arranged permanently interlocked cutter blades arranged to be moved backward and forward to effect a cutting operation, certain of the cutter blades of each set being movable to positions beyond the positions of the other blades in each said set.



7. Splint cutting mechanism comprising two heads provided with interlocking cutter blades, portions thereof being permanently interlocked, each head having certain of its cutter blades stationary therewith and others of its cutter blades movable with respect thereto.

8. Splint cutting mechanism comprising two heads provided with interlocking cutter blades, portions thereof being permanently interlocked, each head having its blades alternately stationary and movable.

9. Splint cutting mechanism comprising two sets of alternately arranged oscillating shearing cutters, each set composed of stationary and movable blades.

10. Splint cutting mechanism comprising two opposed oscillating cutter heads, said heads provided with alternately arranged interlocking shearing cutter blades, certain of the cutter blades carried by each head being stationary therein and others being movable therein, substantially as set forth.

11. Splint cutting mechanism including main and supplemental cutter heads mounted one within the other and adapted to be moved together, a plurality of cutter blades carried alternately by said main and supplemental heads, means co-operating with said cutter blades in a cutting operation, and means for imparting supplemental movements to said supplemental head in addition to the movements imparted to said main and supplemental heads together.

12. Splint cutting mechanism comprising two main cutter heads and two supplemental cutter heads mounted in the main cutter heads and movable therewith, but capable of movements in said main cutter heads with respect thereto, cutter blades carried by said main and supplemental heads, means for moving said main and supplemental heads together to effect a splint cutting operation, and means for imparting further movements to said supplemental heads to separate certain of the splints after they have been cut from others of the splints.

13. Splint cutting means comprising two sets of alternately arranged opposed cutters for severing veneer into splints and at the same time separating the splints into two rows, of means for imparting additional movements to certain of the cutters of each set to separate the two rows of splints into four rows,

14. Splint cutting mechanism comprising main cutter heads, and means for moving said cutter heads toward and away from each other, supplemental cutter heads mounted in said main cutter heads and carried thereby, means for moving said supplemental cutter heads backward and forward in said main cutter heads, and alternately arranged opposed cutting blades carried by said main and supplemental cutter heads.

15. Splint cutting mechanism comprising pivoted main cutter heads, means for oscillating said heads about said pivots, supplemental cutter heads mounted in said main cutter heads and carried thereby, means for moving said supplemental cutter heads backward and forward in said main cutter heads, and alternately arranged opposed cutting blades carried by said main and supplemental cutter heads.

16. Splint cutting mechanism comprising main cutter heads pivoted to oscillate about a common axis, and means for so oscillating said cutter heads, supplemental cutter heads mounted in said main cutter heads and carried thereby, means for moving said supplemental cutter heads backward and forward in said main cutter heads, and alternately arranged opposed cutting blades carried by said main and supplemental cutter heads.

17. The combination with relatively movable cutter heads, of two veneer card magazines, two individual veneer card carriers, means for feeding individual veneer cards from the magazines to the veneer card carriers, and means for moving the veneer card carriers to a position to present the veneer cards carried thereby to the cutter heads.

18. The combination with relatively movable cutter heads, of a veneer card magazine, an individual veneer card carrier, means for feeding individual veneer cards from the magazine to the veneer card carrier, and means for moving the veneer card carrier from a position adjacent the veneer card magazine to a position adjacent the cutter heads.

19. The combination with relatively movable cutter heads, of a veneer card magazine, an individual veneer card carrier, means for feeding individual veneer cards from the magazine to the carrier, means for moving the veneer card carrier from a position adjacent the magazine to a position adjacent the cutter heads, and feeding means for forcing the veneer card from the carrier to the cutter heads.

20. The combination with relatively movable cutter heads, of two veneer card magazines, two individual veneer card carriers, means for feeding individual veneer cards from the magazines to the veneer card carriers, means for moving the veneer card carriers from positions adjacent the magazines to positions adjacent the cutter heads, and a common means for forcing the veneer cards from the carriers to the cutter heads.

21. The combination with two sets of alternately arranged opposed cutter blades, of two veneer card magazines, two individual veneer card carriers, one for each magazine, means for feeding individual veneer cards from the magazines to the carriers, means for reciprocating the carriers toward and away from the cutters, and a common means for simultaneously feeding veneer cards from both said carriers to the cutter blades.

22. Splint cutting mechanism comprising two opposed sets of alternately arranged cutter blades arranged to be moved backward and forward to effect a cutting operation, certain of the cutter blades of each set being movable to positions beyond the positions of the other blades in each set, and means for feeding veneer cards to positions between the said cutter blades when they are in their backward positions.

23. Splint cutting mechanism comprising two opposed sets of alternately arranged cutter blades arranged to be oscillated to effect a cutting operation, certain of the cutter blades of each set being movable to positions beyond the positions of the other blades in each set.

24. Splint cutting mechanism comprising two sets of alternately arranged permanently interlocked cutter blades arranged to be oscillated to effect a cutting operation, certain of the cutter blades of each set being movable to positions beyond the positions of the other blades in each set to effect separating movements of the splints after they have been cut.

25. Splint cutting mechanism comprising two sets of alternately arranged opposed cutting blades, said cutting blades having recessed portions in their side walls to the rear of the cutting edges thereof, substantially as specified.

26. The combination with two sets of alternately arranged interlocking cutter blades, of two rows of plungers arranged in staggered relation in line therewith to discharge splints longitudinally from between the cutters, the walls of the said cutters being slightly recessed at the discharge points, substantially as specified.

27. The combination with two sets of alternately arranged opposed cutters, means for moving the two sets of cutters backward and forward with relation to each other to effect a splint cutting operation, and to initially divide the splints into two rows, means for advancing certain of each set of cutters with respect to others to sub-divide the two rows of splints into four rows, splint carrying means arranged to travel beneath the cutters, and four rows of plungers, the individual plungers of each row being arranged in staggered relation with the plungers of the other rows, arranged above the cutters, and means for reciprocating the plungers to force the splints longitudinally from between the cutter blades into carriers.

28. The combination with alternately arranged opposed cutter blades arranged to cut veneer into splints and separate the splints into four rows, of four rows of plungers arranged in line with the splints when so cut and separated, and means for operating the said plungers to simultaneously discharge the four rows of splints lengthwise from between the cutter blades.

29. Splint cutting mechanism comprising four sets of cutter blades, each set being movable with respect to all the other sets heads in which said blades are mounted, said heads mounted to oscillate on pivots located beneath the cutting faces of the blades, and means for oscillating the said heads.

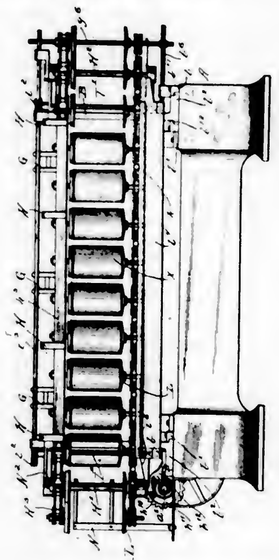
30. Splint cutting mechanism comprising two oppositely arranged pivoted heads, two sets of cutter blades for each head, means for moving the sets of each head relatively to each other the blades of opposite heads being permanently interlocked at their lower ends, the cutting faces arranged at an angle to each other in the limit of their movement in one direction, and substantially parallel when in the limit of their movement in the other direction, and means for oscillating the heads upon their pivotal supports to so move the said blades.

31. Splint cutting mechanism comprising two oppositely arranged pivoted heads, two sets of cutter blades carried thereby, supplemental heads arranged to slide in said first named heads, two sets of cutter blades carried by said supplemental heads, means for oscillating said main heads to produce splints and separate them into two rows, and means for moving said supplemental heads to separate each said row of splints into two rows.

854,872. LOCK-SEAMING MACHINE. ARNOLD D. COLEMAN and CHARLES STECHER, Chicago, Ill. Filed Aug. 4, 1905. Serial No. 272,688.

Claim.—1. A machine of the class described comprising oppositely disposed, rolling chucks having projecting edges adapted to receive a filled can therebetween in upright position and to clamp the head in place thereon, a stationary die and means engaging the upper chuck and rolling the can head and can body flanges against the die acting to seam the head on the can without soldering, link belts carrying said chucks, anti-friction bearings for said belts and guideways for said chucks.

2. A machine adapted to head and seam filled cans comprising chucks adapted to engage the filled can therebetween in upright position and clamp a head thereon, a fixed relatively straight die extending parallel with the travel of the chucks, means for rolling the head and body flanges against said die adapted to afford a locked seam, anti-friction bearings for said means, means releasing the cans from the chucks at the delivery end of the machine, adjustable guideways for said chucks and anti-friction means adapted to actuate said chucks.



3. In a machine adapted for seaming heads on filled cans, oppositely disposed upper and lower chucks, adapted to engage therebetween a filled can and the head therefor means rolling the projecting head and body flanges along a die varying in cross section to correspond with the part of the seaming operation to be done thereby closing the seam.

4. In a machine for heading filled cans, upper and lower chucks, the one to support a can, the other to grip the head thereon a fixed die along which the projecting flanges of the head and body are rolled and continuously movable pressure mechanism acting to force the seam against the fixed die closing the seam.

5. In a machine of the class described, a chuck adapted to support a can in upright position, a complemental chuck adapted to engage a head thereon, a fixed die, means acting on one of the chucks to revolve the chuck and can, forcing the head and body flanges against the die, and mechanisms adjusting said chucks to various sizes of cans.

6. In a machine for heading filled cans upper and lower chucks, the one to support a can the other to grip the head thereon, a fixed die along which the projecting head and body flanges are rolled, a belt acting to force said flanges against the die and antifriction bearings for said belt.

7. In a machine of the class described a chuck adapted to support the can in upright position, an upper chuck to engage the head thereon, a fixed die, means revolving the chucks and can and forcing the head and body flanges against the die, and means adjusting said chucks relatively to each other to adapt the machine to various sizes of cans.

8. In a machine of the class described a stationary straight die, an oppositely disposed pressure belt upper and lower chucks, the upper rolling against the die by the action of said belt and cans engaged between the chucks, the head and body flanges engaging in said die and being closed thereby.

9. A machine for heading filled cans, a plurality of traveling lower chucks adapted to support the can, a com-

piemental upper chuck adapted to engage the head thereon, a die supported at the height of the seam to be formed, movable means acting to hold the seam against the die and to continuously revolve the chuck and the can thereon and means for moving said cans and chucks continuously through the machine.

10. In a machine of the class described a die, connected upper and complemental connected lower chucks adapted to engage a can and its head therebetween, one set of said chucks being adjustable relatively to the other set to accommodate cans of different heights and means engaging the chucks acting to roll the head and body flanges against the die in closing the seam.

11. In a machine adapted to head and seam filled cans, comprising a plurality of continuously movable connected lower chucks complemental connected upper chucks adapted to engage a can and the head therebetween, a continuous die bar in position to be engaged by the upper chucks, a die thereon adapted to engage the projecting body and head flanges to form the seam, means for simultaneously moving said chuck longitudinally through the machine, a link belt applying rolling pressure to the upper chucks thereby rolling the cans and acting to force the projecting flanges against the die, the face of said die being varied in shape in its length to progresively form and close the seam and means for adjusting the die and said link belt relatively for different diameters of cans.

12. In a machine adapted for seaming heads on cans, flexibly connected upper and flexibly connected lower chucks arranged in pairs and adapted to engage the head to a can body between each pair of chucks, means for simultaneously moving said chucks and the cans through the machine, a fixed die positioned for engagement with the head and the body flanges and continuously moving pressure mechanism acting to roll the upper chucks on a part of the die bar thereby rolling the said flanges against said die.

13. A machine for seaming the heads on cans comprising a plurality of pairs of connected chucks adapted each pair to engage a can and its head therebetween a die bar positioned for engagement by the projecting edges of the upper chucks a die thereon adapted to receive the flanges of the can and the head and adjustable pressure mechanism also engaging the chucks acting to roll said projecting flanges against the die, the face of said die bar varying in its length in cross sections and adapted to form and close the seam.

14. In a machine for heading cans the combination with a plurality of pairs of oppositely disposed upper and lower chucks, of flexible connections spacing each of the upper chucks, and each of the lower chucks a uniform distance apart, means for simultaneously moving said chucks through the machine, mechanisms for holding said chucks in gripping relation upon the can and its head therein, a fixed die positioned to be engaged by the projecting head and body flanges of the can, and shaped on its face to form and close the seam, a link belt acting to engage the upper chucks of each pair and to force said flanges against the die and to continuously roll the can and antifriction bearings for said link belt.

15. A machine for the purpose set forth comprising opposing pairs of chucks each comprising an upper and a lower chuck adapted to engage the can and its head therebetween, a stationary die shaped at intervals in its length to form and close the seam, a link belt comprising articulated links each having a rib thereon engaging over and against the upper chucks and acting to rotate the chucks and the cans and to force said flanges against the fixed die, antifriction bearings for said links and upper and lower tracks affording guideways for said chucks.

16. In a machine for the purpose set forth, upper and lower chucks, a straight die bar, a die thereon varied in shape throughout its length to form and close the head and body seam of the can, a belt acting to force the head and body flanges against said die with rolling pressure, antifriction bearings for the belt, and means for adjusting the die relatively to the belt for cans of different diameters and means adjusting the machine for cans of different lengths.

17. In a machine of the class described, a die and a continuously moving link belt acting to roll the can body and head flanges thereagainst and antifriction bearings for the links of said chain, for a part of the run of the same adjacent the die.

18. In a machine of the class described an endless pressure belt comprising articulated sections, sprocket wheels therefor, a frame along which said belt is drawn, ball races formed in said frame and belt sections, antifriction balls in said races and plates engaging around said sections and holding the same to the frame.

19. In a machine of the class described a pressure chain comprising individual abutting and articulating sections each having a flat outer face and shaped on the back to afford knuckles whereby the sections are articulated together, a frame against which said sections slide, antifriction bearing members between the frame and the back of said sections and plates engaging the sections closely to the frame.

20. In a machine of the class described a pressure chain comprising articulated sections each forming one link in the chain, sprocket wheels at each end of the machine about which said chain is trained, a frame intermediate the sprocket wheels, a ball race between the frame and the back of each section or link, balls therein against which the chain runs, ball races at the ends and outer side of the frame communicating with the ball races adjacent the chain and affording a circuit for the balls.

21. In a machine of the class described a horizantally rotating sprocket wheel at each end of the machine, a link pressure chain trained around the same and having a continuous outer surface between the sprocket wheels, ribs on the back of each link, a frame against which the chain moves, a guideway in the frame, ball races at the back of each link and in the inner faces of said guide way, balls in said races, connecting ball races extending transversely of the frame at each end thereof and along the outer side of the frame and adapted to receive the balls from the races between the frame and the chain, a straight die opposite the chain and mechanism adapted to adjust the die and chain relatively to each other.

22. In a machine of the class described comprising standards, a straight die thereon, a pressure chain comprising duplicate articulated links, a rigid backing for said pressure chain or belt, antifriction bearings therein, rotatable means for adjusting the die and pressure chain, relatively, vertical shafts at each end of the machine, sprocket wheels thereon, upper and lower sprocket chains thereon, slidable and rotatable chucks spaced equal distances apart and in oppositely disposed pairs on said chains and adapted to engage the cans and can heads therebetween, the upper chucks engaged between the die and pressure chain and rolling the can and head flanges against the die and trucks or guideways acting to support the chucks in fixed relation while closing the seam.

23. In a machine of the class described the combination with a fixed die and a continuously movable pressure chain of chucks adapted to engage the can and head between the same, antifriction bearings for the pressure chain, a projecting lip on the face of each section of the pressure chain adapted to engage over and against the upper chuck and to clamp the can and can head together, and bear the chuck against the die, a guide way supporting the lower chucks at a uniform height, the face of said die varying in shape throughout its length and adapted to form and close the head seam.

24. In a machine of the class described the combination with a straight die having a face varying in cross section at intervals in its length of a pressure chain opposite the die and continuously movable and acting to roll the can and the head flanges against the die in closing the seam, a vertical shaft at each end of the machine, sprocket wheels on each, an upper and a lower sprocket chain trained around the sprocket wheels, tracks disposed to support both runs of both sprocket chains between the sprockets, laterally disposed rollers on the chains adapted to support the same on the tracks and oppositely arranged chucks slidably and rotatably carried on alternate links of said upper and lower chains and adapted for vertical movement in inserting the can.

25. In a machine of the class described the combination with a straight die bar, of a link pressure belt opposite and parallel therewith and adapted to roll the can and head flanges against the die, upper and lower chucks adapted to engage and carry the can and head between the die and pressure chain, upwardly directed spindles on the upper chuck chains through alternate links of which said spindles extend, a track above the die on which said chain and the chucks are carried, downwardly directed spindles on the lower chuck, a chain in alternate links of which the spindles of the lower chucks are slidably engaged, a track below the lower chucks in which the spindles thereof engage and rotatable means adapted to adjust said track relatively thereby adjusting the chucks for different can lengths.

26. In a machine of the class described the combination with a die of rolling pressure mechanism acting oppositely thereto, means for adjusting said die and pressure mechanism relatively to each other comprising standards upon which the die is supported, adjusting means at the top and the bottom of said standards and rotatable means acting simultaneously to adjust said standards bodily to shift the die toward or from the pressure mechanism.

27. In a machine of the class described the combination with a die of pressure mechanism movable parallel to the die and acting against the same, adjustable standards on which the die is supported, upper and lower chuck carrying chains revoluble around said standards, upper and lower chucks carried thereon oppositely in pairs, a track carried on said standards and adapted to support the upper chuck chains, a vertically adjustable carriage on said standards acting to support the lower chuck chain and to afford a positive support for the chucks thereon, and means for adjusting said carriage to vary the distance between the opposite chucks.

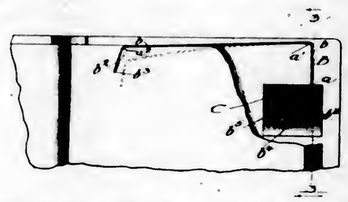
28. In a can heading machine the combination with upper and lower chucks of sprocket wheels journaled at each end of the machine, upper and lower chuck carrying chains thereon, means for vertically adjusting the upper sprockets and chain, a stationary die extending longitudinally of the machine and against which the upper chucks revolve, a frame supported opposite said die and parallel therewith, a pressure chain carried on said frame and adapted to rotate said chucks and anti-friction bearings in said frame for said pressure chain.

29. In a machine for seaming heads on cans, a plurality of upper and lower chucks, a die extending longitudinally of the machine against which the upper chucks revolve, a frame extending parallel with said die, a guide way on the inner face thereof, a sprocket wheel journaled at each end of said frame, a pressure chain thereon adapted to move in said guide way, a longitudinal rib on said chain adapted to engage the upper chucks and revolve the same, antifriction bearings for said chain, adjustable tie bars connecting said frame and die and means for simultaneously adjusting said tie bars and moving the die to and from the frame.

30. In a machine for heading cans the combination with upper and lower chucks of a stationary die bar against which the upper chucks revolve, a frame parallel with said die bar and having a guide way in its inner face, sprocket wheels journaled at the ends of said frame, a pressure chain carried therein and movable in said guide way, ball bearings in said frame for the pressure chain, a vertically adjustable carriage for the lower chucks, means adjustably connecting said die bar and frame and means for adjusting said carriage vertically.

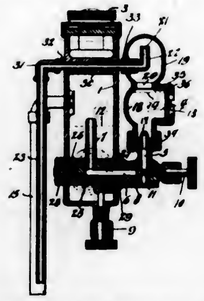
31. In a device of the class described the combination with upper and lower chuck carrying chains, of chucks journaled therein, a die bar extending parallel with the travel of said chucks, adjustable standards supporting said bar in position for the upper chucks to revolve thereagainst, a screw shaft engaged on each standard, a worm shaft connecting said screw shafts and adapted to simultaneously adjust said standards, a frame supported parallel with said die bar, a guide way therein, a pressure chain movable in said guide way and adapted to revolve the upper chucks, antifriction bearings for said chain, longitudinally slotted tie bars carried on said die bar, nuts carried on said frame and extending through the slots in said tie bars, shafts having threaded engagement in said nuts and journaled in said tie bars, worm gears thereon, a worm shaft meshing with said gears and means operatively connecting said worm shafts.

854,873. AUTOMATIC BOOK-MARK. MICHAEL J. CONTER, Chicago, Ill. Filed Jan. 30, 1907. Serial No. 354,821.



Claim.—In combination with a book having a rigid rear cover, an automatic book mark consisting of a single piece of wire secured at one end to the inner face of such rear cover and extending from its point of securement off past the head of the book, being thence bent toward the back with trend toward the foot of the book and near its end being bent at an oblique angle toward the foot trending inward toward the back in a plane trending obliquely toward said face of the book cover to which it is secured.

854,874. LUBRICATOR. JAY E. CRANDALL, Belvidere, Ill., assignor to National Sewing Machine Company, Belvidere, Ill., a Corporation of Illinois. Filed July 3, 1903. Serial No. 164,128.



Claim.—1. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a bull's-eye chamber provided with an inlet at its bottom communicating with said receiver by separate passages at two different elevations, means for controlling said separate passages individually, means for producing pressure on the lubricant in said receiver, and means for conducting the lubricant away from said bull's-eye chamber.

2. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a bull's-eye chamber communicating with said receiver at different elevations therein through separate passages, means for controlling said passages individually, a discharge passage for carrying the lubricant away from said bull's-eye chamber communicating with the chamber located near the top thereof, whereby water carried upwardly by the lubricant rising in the bull's-eye chamber will not pass directly into said discharge passage, and means for supplying said receiver with lubricant under pressure.

3. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a bull's-eye chamber communicating with said receiver by separate passages at different elevations therein, means for controlling said pas-

sages individually, means for conducting the lubricant away from the bull's-eye chamber, means for supplying said receiver with lubricant under pressure, an overflow passage from said receiver, and a pressure regulator for resisting the overflow from the receiver.

4. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a bull's-eye chamber communicating therewith at different elevations therein by separate passages, means for controlling said passages individually, means for conducting the lubricant away from said bull's-eye chamber, a pump for continually forcing lubricant into said receiver under pressure, an overflow from said receiver communicating with the inlet of said pump, and means in said overflow for resisting the discharge from said receiver.

5. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a stand-pipe in said receiver, said receiver also having a discharge outlet near its bottom, a bull's-eye chamber communicating with said stand-pipe and discharge outlet, means for controlling communication between said bull's-eye chamber and said discharge outlet and stand-pipe individually, means for supplying lubricant to said receiver under pressure, and means for conducting the lubricant away from said bull's-eye chamber.

6. In a forced feed lubricator, the combination of a receiver for oil and another liquid, having a hollow core extending transversely thereacross, a stand-pipe rising from said core, a hollow stem extending through said core and having its hollow communicating at one end with said stand-pipe, a valve for controlling said passage in said stem, a bull's-eye chamber communicating with the other end of said hollow stem, means for tightening said stem in said core, means for supplying said receiver with oil under pressure, and means for conducting the oil away from said bull's-eye chamber, said bull's-eye chamber communicating with said receiver at another point below the top of said stand-pipe and means being provided for controlling said communication.

7. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a hollow core extending transversely thereacross, a stand-pipe extending from the upper side of said core and communicating therewith, said core having a separate passage communicating with said receiver below said stand-pipe and extending through the end of the core, a stem having two longitudinal passages communicating with said stand-pipe and passage respectively and inserted in said hollow core, means for drawing said stem into said hollow core, a bull's-eye chamber communicating with both of said longitudinal passages, means for controlling said longitudinal passages individually, means for supplying said receiver with oil under pressure and means for conducting the oil away from said bull's-eye chamber.

8. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a hollow core extending transversely thereacross, a stand-pipe rising from said core and communicating therewith, said core also having a separate longitudinal passage communicating with the receiver below said stand-pipe, a stem fitting in said core and having two longitudinal passages communicating with said stand-pipe and said separate longitudinal passage respectively, means for controlling the resulting longitudinal passages individually, a conical nut threaded on one end of said stem for drawing it into said core and forming a tight joint therewith, a bull's-eye chamber communicating with both of said longitudinal passages, means for conducting the oil away from said bull's-eye chamber, and means for supplying the receiver with oil under pressure.

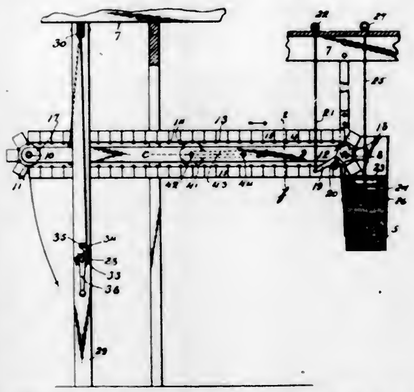
9. In a forced feed lubricator, the combination of a receiver for oil and another liquid, means for supplying pressure to said receiver a stem inserted in said receiver and having two separate passages communicating with said receiver at different elevations, means for controlling the resulting passages individually, a bull's-eye chamber supported on said stem and communicating with said passages, and means for conducting the lubricant away from said chamber.

10. In a forced feed lubricator, the combination of a receiver for oil, a bull's-eye chamber having its lower end in communication with said receiver, a bulb on the upper end of said bull's-eye chamber, and an elbow passage in said bulb with its inlet end arranged at the upper side for conducting the lubricant away from said bulb.

11. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a bull's-eye chamber communicating at its lower end with said receiver at different elevations through separate passages, means for controlling said passages individually, a bulb arranged over said bull's-eye chamber, and connecting therewith through a narrow neck, a discharge passage from said bulb having its inlet end arranged uppermost and turned away from said narrow neck, and means for supplying said receiver with oil under pressure.

12. In a forced feed lubricator, the combination of a receiver for oil and another liquid, a bull's-eye chamber communicating with said receiver at different elevations therein through separate passages and having the back portion thereof formed concave and provided with a reflecting surface, a bull's-eye sight-glass arranged opposite said concave surface, means for controlling said separate passages individually, means for supplying oil under pressure to said receiver, and means for conducting the oil away from said bull's-eye chamber.

854,875. FURNACE-FEED. GOODLET C. CROW, Kansas City, Mo. Filed Oct. 18, 1905. Serial No. 283,263.



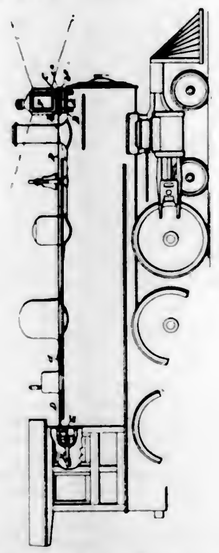
Claim.—1. In a furnace feed, the combination with a furnace having a feed opening, of a closure for said feed opening, means operated from a distant point for controlling the opening and closing movement of said closure, an inclined chute discharging into said feed opening, an endless belt conveyer discharging into said chute, a support for the said conveyer pivotally supported at the end adjacent the chute so that the opposite end may be swung vertically, means for vertically adjusting the free end of said support, means for driving said belt conveyer, means leading to a distant point for actuating said belt driving means, and local means by which the conveyer may be driven.

2. In a furnace feed, the combination with an inclined chute for discharging fuel into the furnace, of a support pivoted at one end adjacent said chute so as to be swung vertically, a rotary drum, a pulley located above said support, a cord or similar instrumentality passing over said pulley and connected at its ends to said support and to said drum respectively, means for rotating said drum in one direction, releasable means for preventing rotation of the drum in the opposite direction, two rotatable members mounted on said support adjacent its ends respectively, local means for rotating one of said members step by step, an endless belt conveyer mounted on and driven by said rotary members and discharging into said chute, and means leading to a distant point for actuating the said local means.

3. In a furnace feed, the combination with the furnace having a feed opening, of a closure for said opening, an inclined chute discharging into said opening, a gate in said chute above said closure, a cord or similar instrumentality connected to said gate and closure and by the proper moving of which said gate and closure may be simultaneously opened or closed, a vertically swinging support having its pivoted end disposed adjacent said chute, two rotary members mounted on said support, means for imparting step by step rotation to one of said rotary members, said means having a cord or similar instrumentality leading to a distant point and by the proper moving of which said means is actuated, an endless belt conveyer mounted on and driven by said rotary members and discharging into said chute above said gate, and means for vertically adjusting the free end of said support.

4. In a furnace feed, the combination with the furnace having a feed opening, of an inclined chute discharging into said opening, a vertically swinging closure for said opening, a vertically swinging gate in said chute above said closure, means leading to a distant point for simultaneously swinging said gate and closure to and from the closed positions, an endless belt conveyer discharging into said chute above said gate, a vertically swinging support upon which said endless belt is mounted, means mounted on said support for carrying and driving said endless belt conveyer, means leading to a distant point for actuating said driving means, a rotary drum, means for rotating said drum in one direction, a pulley disposed above said support, a cord or similar instrumentality passing over said pulley and supported thereby and having its ends connected respectively to said support and to the periphery of said drum, and releasable means for preventing rotation of the drum in the opposite direction.

854,876. HEADLIGHT FOR LOCOMOTIVES. WILLIAM H. DONALDSON, Joliet, Ill. Filed Aug. 4, 1906. Serial No. 329,243.



Claim.—1. In combination with a locomotive, of a headlight mounted thereon so as to swivel laterally, a spring normally tending to turn the headlight in one direction out of normal, and a connection controlled from the cab for adjusting the headlight laterally in the opposite direction against the action of the spring.

2. In combination with a locomotive, of a headlight journaled on the forward part thereof so as to swivel laterally, a spring normally tending to turn the headlight in one direction out of normal, a pull-rope extending from the headlight into the cab and arranged so that pulling on the rope swings the headlight against the action of its spring, and means in the cab for pulling and adjustably holding the rear end of the pull-rope against the pulling tendency of the spring.

3. In combination with a locomotive, of a swiveled headlight thereon, spring means tending to reverse the headlight, and a pull-rope extending from the headlight to the cab, a rack in the cab, a pivoted lever carrying a locking bolt adapted to engage into said rack, this lever carrying a grooved sheave or cam to which the rear end of the rope is attached, substantially as set forth.

4. In combination with a locomotive of a headlight and a support therefor, said support embodying a pair of interfitting rings or casings rotatably mounted one upon the other, a spring within the casing formed by these interfitting casings and tending to normally reverse the headlight, a pull-rope attached to the outer ring or casing and extending forward to the cab, and means in the cab for pulling the rope and holding it in its adjusted positions.

5. In combination with a locomotive, of a headlight and support therefor, said support embodying a pair of interfitting rings or casings rotatably engaging each other, one being fastened to the locomotive and the other to the bottom of the headlight and each casing being provided fore and aft with a lateral flange or lug provided with a hole, the ears or lugs carried by the upper ring lying upon the lugs carried by the lower ring, for the purpose set forth, a spring within the casing formed by said interfitting rings and tending to normally reverse the headlight, and means controlled from the cab for adjusting the headlight against the action of its spring.

6. In combination with a locomotive, of a headlight and a pivotal support therefor, a depending drum adapted to rotate with the light, a spring inclosed in this drum and connected up so as to normally tend to reverse the headlight, a pull-rope fastened to this drum and wound around the same and extended rearwardly to the cab, and means in the cab for pulling the rope or paying it out and locking it, for the purpose set forth.

7. In combination with a locomotive, of a headlight and support therefor, said support embodying a pair of rings or casings rotatably engaging each other, one being fastened to the locomotive and the other to the bottom of the headlight and each casing being provided fore and aft with a lateral flange or lug, the flanges or lugs carried by the upper ring lying upon the lugs carried by the lower ring, for the purpose set forth, a spring within the casing formed by said rings and tending to normally reverse the headlight, and means controlled from the cab for adjusting the headlight against the action of its spring.

854,877. ANTIFRICTION-BEARING. JOSEPH DOVE-SMITH, Toronto Junction, and FRANK E. LAUER, Niagara Falls, Ontario, Canada. Filed Oct. 24, 1906. Serial No. 340,384.



Claim.—1. An anti friction bearing for end, thrust and step bearing purposes, comprising a series of load bearing rollers each having two conical bearing surfaces tapering from the middle of its peripheral surface toward the ends thereof, a series of spacing rollers intermediate the load bearing rollers, each having its ends tapered to correspond with the taper of the conical surfaces of the load bearing rollers, and having a V-shaped groove extending from the inner edges of the tapered ends to the median line of its peripheral surface with the apex of the V-

shaped groove alined with the apex of the conical surface of the adjacent load bearing roller, a retaining ring at each end of the load bearing and spacing rollers and fastening bolts locking the retaining rings together to hold the load bearing and spacing rollers in their assembled condition.

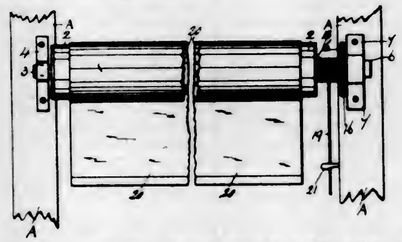
2. An anti friction bearing for end, thrust and step-bearing purposes, comprising a series of load bearing rollers each having two conical bearing surfaces tapering from the middle of its peripheral surface toward the ends thereof, a series of spacing rollers intermediate the load bearing rollers, each having its ends tapered to correspond with the taper of the conical surfaces of the load bearing rollers and having a V-shaped groove extending from the inner edges of the tapered ends to the median line of its peripheral surface with the apex of the V-shaped groove alined with the apex of the conical surface of the adjacent load bearing roller, a retaining ring at each end of the load bearing and spacing rollers and fastening bolts passing through the retaining rings and centrally through their respective load bearing and spacing rollers.

3. An anti friction bearing for end, thrust and step bearing purposes, comprising a series of load bearing rollers each having two conical bearing surfaces tapering from the middle of its peripheral surface toward the ends thereof, a series of spacing rollers intermediate the lond bearing rollers, each having its ends tapered to correspond with the taper of the conical surfaces of the load bearing rollers, and having a V-shaped groove extending from the inner edges of the tapered ends to the median line of its peripheral surface with the apex of the V-shaped groove alined with the apex of the conical surface of the adjacent load bearing roller, a retaining ring at each end of the load bearing and spacing rollers and fastening bolts locking the retaining rings together to hold the load bearing and spacing rollers in their assembled condition, in combination with a shaft having a conical bearing surface contacting the conical bearing surfaces at one side of the middle of the load-bearing rollers, and tapered to correspond with the taper thereof and a load resisting element having a conical bearing surface contacting the conical bearing surfaces, at the other side of the middle of the load bearing rollers, at a place diametrically opposite and parallel to the place of contact of the conical bearing surface of the shaft.

4. An anti friction bearing for end, thrust and step bearing purposes, comprising a series of load bearing rollers each having two conical bearing surfaces tapering from the middle of its peripheral surface toward the ends thereof, a series of spacing rollers intermediate the load bearing rollers, each having its ends tapered to correspond with the taper of the conical surfaces of the load bearing rollers and having a V-shaped groove extending from the inner edges of the tapered ends to the median line of its peripheral surface with the apex of the V-shaped groove alined with the apex of the conical surface of the adjacent load bearing roller, a retaining ring at each end of the load bearing and spacing rollers and fastening bolts passing through the retaining rings and centrally through their respective load bearing and spacing rollers, in combination with a shaft having a conical bearing surface contacting the conical bearing surfaces at one side of the middle of the load bearing rollers, and tapered to correspond with the taper thereof, and a load resisting element having a conical bearing surface contacting the conical bearing surfaces at the other side of the middle, of the load bearing rollers at a plane diametrically opposite and parallel to the place of contact of the conical bearing surface of the shaft.

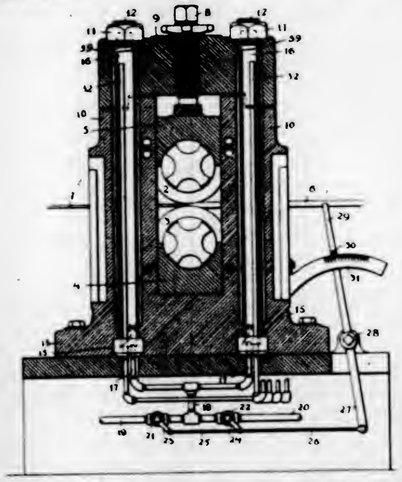
854,878. WINDOW-SHADE ROLLER. JOB DUDLEY, Hamilton, Ontario, Canada. Filed Apr. 9, 1906. Serial No. 310,598.

Claim.—1. The combination with a window shade roller, of a stationary spindle extending into and journaling the roller and provided with a cam, a separable two-part drum or pulley rotatable with the roller and journaled on the spindle, a ferrule holding the parts of the drum together a cord adapted to wind on the drum or pulley, and a gravitally and centrifugally acting stop-block or catch carried by the roller and engageable with the cam to lock the roller.



2. The combination with a window shade roller, of a spindle projecting thereinto and provided with a cam, an inner separable two-part ferrule embracing the roller, a separable two-part drum or pulley around the spindle, an outer ferrule surrounding the inner ferrule and one of the flanges of the said drum or pulley, the adjacent faces of the inner ferrule and of the flange on the pulley being provided with radial grooves, and a gravitally and centrifugally acting stop-block slidable in said grooves and adapted to engage the cam aforesaid.

854,879. MECHANISM FOR ADJUSTING BEARINGS. VICTOR E. EDWARDS, Worcester, Mass., assignor to Morgan Construction Company, Worcester, Mass., a Corporation of Massachusetts. Filed Oct. 8, 1906. Serial No. 337,908.



Claim.—1. The combination with a bearing and means for holding said bearing from movement in one direction, of means for producing a thermal variation in said holding means, thereby adjusting said bearing.

2. The combination with a bearing and means for holding said bearing from movement, of means for producing a thermal variation in said holding means, thereby adjusting said bearing.

3. The combination with a bearing, and holding means, having an interior chamber, for limiting the movement of said bearing, of means for supplying said interior chamber with a heating medium, whereby said holding means is expanded to provide for an adjustment of said bearing.

4. The combination with a bearing, and holding means, provided with an interior chamber, for limiting the movement of said bearing, of means for admitting a cooling medium to said chamber, whereby said holding means is contracted to provide for an adjustment of said bearing.

5. The combination with a bearing and means for applying pressure to said bearing, of means for producing a thermal variation therein, whereby the bearing is adjusted by the expansion or contraction of said pressing means.

6. The combination with a bearing and means for limiting the movement of said bearing, provided with an interior chamber, of means for maintaining a fluid circulation through said chamber, and means for varying the temperature of said fluid.

7. The combination with an adjustable bearing and means, provided with an interior chamber, for limiting the movement of said bearing, of means for maintaining a fluid circulation through said chamber, means for varying the temperature of said fluid and means for determining the temperature of said fluid.

8. A thermal adjusting apparatus for the adjustment of a bearing, comprising a circulating medium and means for varying the temperature of said circulating medium at will.

9. A thermal adjusting apparatus for the adjustment of a bearing, comprising a circulating medium, means for varying the temperature of said circulating medium at will, and means for ascertaining the temperature of said circulating medium.

10. The combination with a bearing and means for varying the position of said bearing, comprising a hollow bolt applied to hold the bearing from movement in one direction and having an interior chamber, a water pipe communicating with one end of said chamber, an overflow pipe communicating with the opposite end of said chamber and forming part of a circulating system, and means for varying the temperature of the water in said system.

11. The combination with a framework and a bearing held therein, of means for adjusting the position of said bearing in its framework, comprising a hollow bolt adapted to press against one side of said bearing, a water supply pipe for said bolt, means for connecting said water supply pipe with a source of hot water and a source of cold water, and means for controlling the relative supply of hot and cold water through said supply pipe.

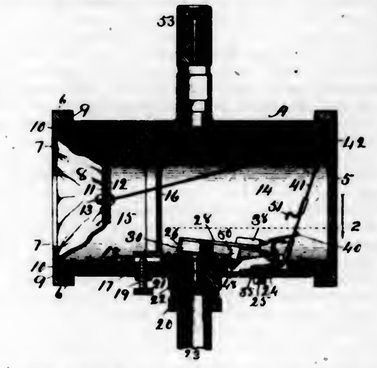
12. The combination with an adjustable bearing and means, provided with an interior chamber, for limiting the movement of said bearing, of a water supply pipe for said chamber, a feed pipe connecting said supply pipe with a source of hot water, a feed pipe connecting said supply pipe with a source of cold water, and means for controlling the relative flow of hot and cold water, whereby the temperature of the water supplied to said interior chamber is varied.

13. In a bearing adjusting mechanism, of the character described, the combination with a bearing of means for exerting a pressure against said bearing to effect its adjustment, means for internally varying the temperature of said pressing means, and means for protecting said pressing means from external variations of temperature.

854,880. FLASH-LIGHT. GEORGE F. EHEMANN, Chicago, Ill. Filed June 22, 1906. Serial No. 322,917.

Claim.—1. In a device of the character described, the combination of a gas holder having an inlet and an outlet, a valve for closing said inlet at intervals, a piston and connections between the same and the valve adapted to be actuated by the gas-pressure within the holder and constituting the actuating means for the valve, and an automatically-releasable positive lock distinct from said actuating means for holding said valve in closed and open positions.

2. In a device of the character described, the combination of a gas holder having an inlet and an outlet, a valve for opening and closing said inlet at intervals, a piston connected with said valve to close the same, said piston being adapted to be actuated by the gas-pressure within the holder, a spring for automatically opening the valve, and an automatically releasable positive lock for holding said valve in closed and open positions.



3. In a device of the character described, the combination of a gas holder having an inlet and an outlet, a valve for opening and closing said inlet at intervals, a spring for holding said valve normally open, a positive locking device normally inoperative with reference to said valve, a gas-pressure operated piston, and means operated by said piston when being distended under gas-pressure first to permit said locking device to lock said valve positively in open position, then to apply pressure to the valve tending to close the same, and finally to release the locking device permitting the valve to close under such pressure.

4. In a device of the character described, the combination of a gas holder having an inlet and an outlet, a valve for opening and closing said inlet at intervals, a spring for holding said valve normally open, a positive locking device normally inoperative with reference to said valve, a gas-pressure operated piston, and means operated by said piston when being distended under gas-pressure first to permit said locking device to lock said valve positively in open position, then to apply pressure to the valve tending to close the same, and finally to release the locking device permitting the valve to close under such pressure, said locking device being constructed upon closing of the valve immediately and positively to lock the same in closed position, and the piston-operated means being arranged to again release said locking device upon collapse of said piston, permitting the valve to open instantaneously under the action of its spring.

5. In a device of the character described, the combination of a gas holder having an inlet and an outlet, a valve for opening and closing said inlet at intervals, a spring for holding said valve normally open, a positive locking device, a spring for moving the same into locking position with reference to the valve, a gas-pressure-operated piston, and piston connections arranged normally to hold said locking device inoperative against the tension of its spring, and during the distention of said piston under gas-pressure to permit said locking device to assume locking position with reference to the valve in its open position, then to apply pressure to the valve tending to close the same, and finally to release the locking device permitting the valve to close under such pressure, said locking device being contructed upon closing of the valve immediately and positively to lock the same in closed position, and said piston connection being arranged to return the locking device to inoperative position upon collapse of the piston, permitting the valve to open instantaneously under the action of its spring.

6. In a device of the character described, the combination of a gas holder having an inlet and an outlet, a valve for opening and closing said inlet at intervals, a spring for holding said valve normally open, a positive locking device, a spring for moving the same into locking position with reference to the valve, a gas-pressure-operated piston, and piston connections having spring means for holding

them in normal position in which they hold the locking device inoperative, said connections being arranged during the distention of said piston under gas-pressure to permit said locking device to assume locking position with reference to the valve in its open position, then to apply pressure to the valve tending to close the same, and finally to release the locking device permitting the valve to close under such pressure, said locking device being constructed upon closing of the valve immediately and positively to lock the same in closed position, and said piston connections being arranged to return the locking device to inoperative position upon collapse of the piston, permitting the valve to open instantaneously under the action of its spring.

7. In a device of the character described, the combination of a gas holder having an inlet and an outlet, a valve for opening and closing said inlet at intervals, a spring for holding said valve normally open, a positive locking device, a spring for moving the same into locking position with reference to the valve, a gas-pressure-operated piston, and piston connections arranged normally to hold said locking device retracted against the tension of its spring, and during the distention of said piston under gas pressure to permit said locking device to assume locking position with reference to the valve in its open position, then to apply pressure to the valve tending to close the same, and finally to retract the locking device permitting the valve to close under such pressure, said locking device having a bevel over which said valve rides in closing after the device has been partially retracted and which permits the device to move slightly forward under the action of its spring to lock the valve closed, and said piston connection being arranged again to retract the locking device upon collapse of the piston, permitting the valve to open instantaneously under the action of its spring.

8. In a device of the character described, the combination of a gas holder having an inlet and an outlet, a valve for opening and closing said inlet at intervals, a spring for holding said valve normally open, a positive locking device, a spring for moving the same into locking position with reference to the valve, a gas-pressure operated piston, a spring rod anchored at one end and connected with said piston at the other, said rod being arranged normally to hold said locking device retracted in inoperative position against the tension of its spring, and during distention of the piston under gas-pressure to permit said locking device to assume locking position with reference to the valve in its open position and then to bear against said valve tending to close the same, and a finger carried by said rod in position to engage and retract said locking device during the further distention of the piston, permitting the valve to close instantaneously under the pressure of the rod, said locking device being constructed upon closing of the valve immediately and positively to lock the same in closed position, and said rod being arranged to again retract the locking device upon collapse of the piston, permitting the valve to open instantaneously under the action of its spring.

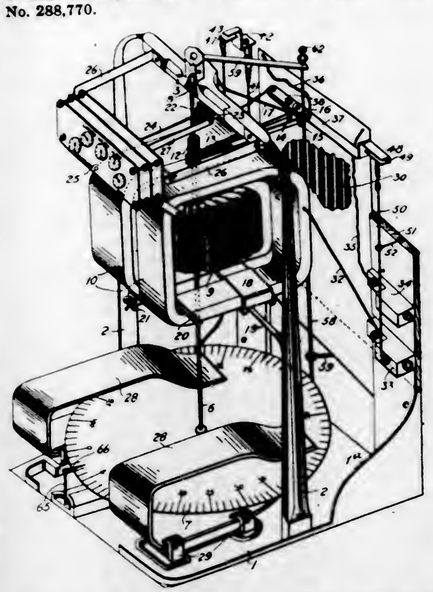
9. In a device of the character described, the combination of a gas holder divided by a partition into two compartments, there being a restricted gas passage through said partition, a flexible piston in one of said compartments being exposed to the pressure of the atmosphere, a gas inlet and outlet at the other side of the partition, and an automatically opening and closing valve co-operating with said inlet and operatively connected with said piston.

10. In a device of the character described, the combination of a gas holder divided by a partition into two compartments, there being a restricted gas passage through said partition, a flexible piston in one of said compartments being exposed to the pressure of the atmosphere, a gas inlet and outlet at the other side of the partition, an automatically opening and closing valve co-operating with said inlet and operatively connected with said piston, and manually operated means for regulating the size of said passage.

11. In a device of the character described, the combination of a gas holder divided by a partition into two compartments, there being a restricted gas passage through said partition, a flexible piston constituting one of the walls of one of said compartments, a gas inlet and outlet at the other side of the partition, and an automatically opening and closing valve co-operating with said inlet and operatively connected with said piston.

12. In a device of the class described, a gas-holder, a gas inlet valve located therein, a lever upon which the same is mounted, a locking-arm inserted through said lever and provided with a catch adapted to engage the upper-side of said lever when the valve is closed and the under-side when the valve is in its normal open position, and means for actuating said locking arm to correspond to the position of said valve.

854,881. PORTABLE TEST-METER. CHRISTIAN H. EVERS, Birmingham, Ala. Filed Nov. 23, 1905. Serial No. 288,770.



Claim.—1. In a test meter, a potential circuit which includes a resistance and suitable connections, a current circuit which includes field coils and suitable connections, and means to shunt the line current at substantially full voltage from said current circuit through the portion of said potential circuit including said resistance to heat the meter before utilizing it for the purpose of testing, as and for the purposes described.

2. In a test meter, a potential circuit which includes a resistance, an armature, commutator, brushes, and suitable connections, a current circuit which includes field coils and suitable connections, and means to connect said resistance in series with both of said circuits and pass the line current at full voltage through it, for the purposes described.

3. In a testing system for electrical meters, the combination with a test meter comprising, an armature, a commutator, a field, indicating devices, field and potential circuits, of a house meter supply mains and service wires therefor, said field circuit being in series with the house meter and the work circuit, said potential circuit being connected to said supply mains in shunt to said house meter, a resistance in said potential circuit, a switch and circuit connections controlled thereby for shunting the field current through said resistance, as and for the purposes described.

4. In an apparatus of the character described, a normally closed casing, a meter therein comprising, in combination, field coils, an armature, a commutator, brushes, an armature shaft, indicating devices driven thereby, and circuit connections forming field and armature circuits, a make and break switch in said latter circuit disposed within the casing, and means, such as a press button, for readily controlling said switch from without said casing, substantially as and for the purposes described.

5. In an apparatus of the character described, a normally closed casing, a meter therein comprising, in combination, field coils, an armature, a commutator, brushes, an armature shaft, indicating devices driven thereby, and circuit connections forming field and potential circuits, a resistance in said latter circuit, circuit connections controlled by two switches in said casing, one switch acting to make and break the potential circuit, and one to shunt said field current through said resistance, and means for controlling said switches, which means project without said casing.

6. In an apparatus of the character described, a substantially dust proof outer casing, a meter within said casing comprising a potential circuit in a shunt to a main circuit, a field circuit in series with said main circuit, a resistance in said potential circuit, a shunt circuit connecting said potential and field circuits, and a switch on said latter circuit which is operable from without said casing.

7. In an apparatus of the character described, an outer casing, a meter within said casing comprising potential and current circuits, a disk subdivided to indicate fractions of watt seconds, a pointer disposed adjacent to said disk, a plurality of dials for indicating watt seconds, an armature shaft operatively connected to said disk and dials, suitable sight openings in said casing, which is substantially dust proof, through which said disk and dials may be inspected, a switch in said potential circuit, and means for operating said switch from without the casing.

8. In a meter comprising a casing an armature, a shaft driven thereby and a fixed jewel support for said shaft, the combination therewith, of a spring pressed device which engages said shaft or parts connected therewith and tends normally to hold it off its jewel support, and means disposed without said casing to move said device against said spring action to lower the shaft upon the jewel support and lock it in said lowered position, for the purposes described.

9. In an apparatus of the character described, a normally closed outer casing, a meter therein having an armature shaft, an indicating disk connected to said shaft, a jewel support for said shaft, a spring pressed device adapted to engage the under side of said disk and lift said shaft off its jewel, and means for operating said device from without said casing, as and for the purposes described.

10. In a portable test meter inclosed within a dust proof casing, the combination with an armature shaft thereof and its jewel support, of means operable from without said casing for lifting said shaft off its jewel support and holding it against displacement when the meter is not in service, said means comprising a pair of spring pressed rubber covered arms which pass on each side of said shaft and engage parts movable therewith.

11. The combination with a test meter having a current circuit adapted to be connected up in series between the house meter and the service mains, of a potential circuit in said test meter which includes a resistance and is connected in a shunt around said house meter to the supply mains, and switch means to shunt the current from said current circuit through said resistance.

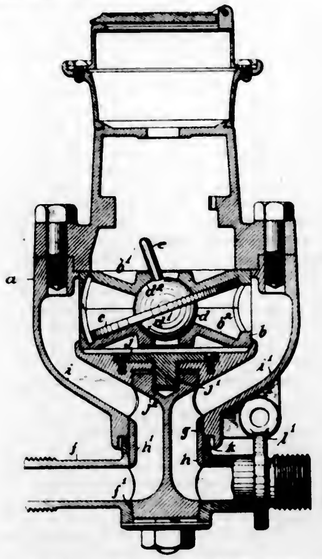
12. In a test meter, the combination with an armature, field coils, a commutator, an armature shaft, indicating mechanism movable thereby, and circuit connections, of a resistance, and a switch to connect said field coils and armature in multiple with said resistance across the mains, as and for the purposes described.

13. In a meter for testing the accuracy of a house meter in measuring the flow of current to a consumption circuit, the combination of an armature commutator, an armature shaft and indicating mechanism movable thereby, of a current or field circuit adapted to be connected in series with the house meter and consumption circuit and a potential or armature circuit, said latter circuit comprising a resistance, a switch, and connections controlled by said switch to shunt the full service current through said fields and resistance, as and for the purposes described.

14. A test meter comprising a field circuit through which the current to be measured is adapted to flow to the consumption circuit, a potential circuit in a shunt across the supply mains, a resistance in said potential circuit, a normally open shunt circuit leading from the discharge end of said field circuit to the potential circuit in advance of said resistance, and a switch in said shunt circuit.

15. A meter for testing the accuracy of a house meter in measuring the flow of current to a consumption circuit, said meter comprising armature and field coils, potential and current circuits which respectively include said coils, a main circuit, said current circuit being adapted to be connected in shunt to said main circuit and in series with said house meter and consumption circuit, a resistance in said potential circuit, switch means to shunt current flowing through said meter circuits around said consumption circuit and through said resistance, and indicating mechanism adapted to be operated by said armature.

854,882. WATER-METER. ERNEST E. GAMON, Long Island City, N. Y., assignor to Neptune Meter Company, Long Island City, N. Y., a Corporation of New Jersey. Filed Mar. 12, 1906. Serial No. 305,486.



Claim.—1. The combination of a water meter casing and a valve casing, inlet and discharge passages in each of said casings, a valve plug rigidly and directly secured to said water meter casing and rotatably secured to said valve casing, direct and return flow ports in said plug in normal registry respectively with the inlet and discharge passages of said casings to carry the entire flow of water from the valve casing inlet passage to the discharge passage through said meter casing passages, stops on said plug and valve casing respectively for limiting the rotation of said plug therein, whereby the rotation of the said meter and plug from normal position will completely close communication between said valve casing passages.

2. The combination of a water meter casing and a valve casing, each respectively having an inlet and a discharge passage, a plug rigidly and directly secured to one of said casings and rotatably secured to the other casing, direct

and return flow ports in said plug in normal registry respectively with the inlet and discharge passages of said casings, whereby the entire flow of water through the inlet passage is conducted through the meter casing, or completely interrupted by the rotation of said meter casing relatively to said valve casing.

3. The combination of a water meter casing and a valve casing, each respectively having an inlet and a discharge passage, a plug rigidly and directly secured to one of said casings and rotatably secured to the other casing, direct and return flow ports in said plug in normal registry with the inlet and discharge passages in said casings, thereby affording communication between the passages in said valve casing by way of said meter casing only, and whereby upon the rotation from normal position of said meter casing relatively to said valve casing said communication is completely cut off.

4. In a water meter, a fluid transmission valve comprising a casing, a longitudinal passage therethrough for conveying fluid under pressure, a transverse aperture in said casing intersecting said passage, a plug or core rotatably secured in said aperture, said plug or core having a direct flow port and a return flow port therein, said ports being adapted for registry with said longitudinal passage, and a water meter directly and rigidly secured to and surrounding said plug or core, said meter having inlet and delivery ports in constant registry with said direct and return flow ports respectively.

5. A transmission valve for water meters, comprising a casing having inlet and delivery passages and a transverse aperture therein, a plug fitted into said transverse aperture, direct and return flow ports in said plug designed for registry with said inlet and delivery passages respectively, said ports opening through the head of said plug, a water meter, the head of said plug extending directly into and secured within a recess in the base of said water meter with the passages in said water meter in registry with said direct and return flow ports, and stops upon said plug and casing for limiting the rotation of said plug, whereby the initial rotation of said meter will interrupt the flow of water through said ports and passages and further rotation will release the meter from said plug.

6. A transmission valve for water meters, comprising a casing having a longitudinal passage therethrough, a transverse plug rotatably secured in said casing, said plug having direct and return flow ports therein for registry with said passage, said ports opening through the head of said plug, means for limiting the rotation to open or close said passage and a water meter having passages therein opening into a recess upon its under side, the head of said plug being secured within said recess with said direct and return flow ports in registry with the passages in said meter.

7. The combination of a water meter casing and a valve casing, inlet and discharge passages in each of said casings, a valve plug rigidly but detachably secured to said meter casing and rotatably secured in said valve casing, ports in said plug for establishing communication between said inlet passages and said discharge passages respectively, stops on said valve casing and said plug respectively, whereby the initial rotation of said meter and plug will close said ports and passages and further rotation of the meter will detach the same from said plug.

8. A fluid transmission valve, consisting of a valve casing and a core or plug therefor, a direct passage through said casing, said core or plug having a direct flow port and a return flow port therein, a translating mechanism directly and rotatably secured to and surrounding said core or plug, ports or passages in said translating mechanism registering respectively with the ports in said core or plug, whereby fluid may be conveyed through said casing by way of said direct flow port through said translating mechanism and return flow port.

9. A fluid transmission valve, comprising a core provided with a direct flow port and a return flow port, and a translating device directly and rotatably secured to and surrounding said core, said translating device being provided with ports or passages in registry with the ports in said core respectively, whereby fluid through said valve may be continuously tranamitted or interrupted by the rotation of said translating device.

10. In a fluid tranamission mechanism, the combination of a valve casing, a passage through said casing a valve core interposed in said casing, across said passage a direct flow port and a return flow port in said core, said core designed to permit or to interrupt the continuous transmission of fluid by way of said direct and return flow ports through said casing passage, and translating mechanism directly secured to and surrounding said core, said mechanism being provided with ports or passages in registry with the ports in said core.

11. In a fluid transmission mechanism, the combination of a valve casing having a passage therethrough, a valve plug or core in said casing, translating mechanism secured directly to and surrounding said plug or core, a direct flow port and a return flow port in said plug or core designed to register simultaneously with the passage in said casing, ports or passages in said translating mechanism in registry respectively with the direct flow port and the return flow port of said plug or core, whereby fluid may be conveyed through said casing by way of said direct flow port, through said translating mechanism and return flow port.

12. A by-pass transmission valve, for fluid pressure devices, comprising a valve casing provided with inlet and discharge passages and a transverse aperture, a valve plug or core rotatably secured in said transverse aperture, a direct flow port and a return flow port in said plug or core, and a translating device directly secured to and surrounding said core and having passages therein which register with the ports of said plug or core, whereby the passage of fluid through said inlet and discharge passages by way of said direct flow port and return flow port may be interrupted by the rotation of said core or plug.

13. In a fluid transmitting device, the combination of a fitting provided with inlet and discharge passages, a plug or core secured to said fitting having direct and return flow ports in registry respectively with said inlet and discharge passages and a translating device secured to and surrounding said plug, said translating device having a passage therethrough which registers with both direct and return flow ports of the plug.

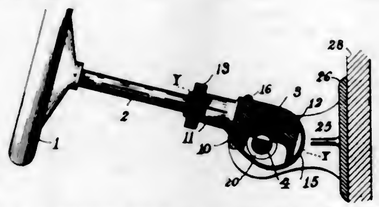
14. In a fluid transmission device, the combination of a fitting provided with inlet and discharge passages, a translating device directly and rotatably secured to said fitting and provided with a passage therethrough in registry with the passages respectively in said fitting, means in said fitting in connection with said translating device, whereby upon the rotation of said translating device the passages in said fitting are cut off.

15. In a fluid transmission device, a fitting provided with inlet and discharge passages, a translating device rotatably but detachably secured to said fitting, passages in said translating device normally in registry with said passages in said fitting, whereby upon the initial rotation of said translating device, the transfer of pressure through all of said passages is interrupted and upon further rotation, said meter is detached from said fitting.

16. A fitting for fluid mains, having inlet and discharge passages, a by-pass leading from said inlet passage, a second by-pass connecting with the discharge passage of the fitting in combination with a meter having a passage therein designed for normal registry with said by-passes respectively, said meter being rotatably but detachably secured to said fitting, whereby upon the initial rotation of said meter, said by-passes are closed and upon further rotation, said meter is detached.

854,883. STEERING DEVICE. WILLIAM E. GEYER, Cambridge, Mass. Filed May 19, 1906. Serial No. 317,752.

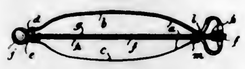
Claim.—1. In a steering device, the combination with a fixed base having two projections therefrom, of a member fitted between said projections, a cylindrical rack-bar loosely supported in said member, a steering device and shaft having bearings in said member, a pinion fixed on said shaft and meshing with said rack-bar, bearings for said member in said projections substantially concentric with said rack-bar, and means for clamping one or both of said projections against the adjacent side of said member and thereby retaining the steering device and shaft at a desired angle.



2. In a steering device, the combination with a fixed base, of a cylindrical rack-bar loosely supported thereby, a steering wheel and shaft, bearings for said shaft pivoted to said base concentric with said rack-bar, and a pinion fixed on said shaft and meshing with said rack-bar; one of the pivots for said bearings consisting of a hand-screw penetrated by said rack-bar and tapped into the member composing said bearings.

3. In a steering device, the combination with a fixed base having two leaves projecting therefrom, of a casting located between said leaves, hand-screws loosely penetrating said leaves and tapped into said casting, a cylindrical rack bar loosely located in openings axially extended through said hand-screws, a shaft having bearings composing parts of said casting, a pinion fixed on said shaft between said bearings and meshing with said rack-bar, and a hand-wheel at the outer end of said shaft.

854,884. HAIR-CURLING DEVICE. FREDERICK C. GROCOTT, Walthamstow, England. Filed Nov. 21, 1905. Serial No. 288,393.



Claim.—1. A hair curling device comprising a frame-like part, a divided bar adapted to receive and clamp the hair between its members, and having one end permanently connected to said frame and capable of axial rotation therein, means for receiving and securing the free end of said divided bar in said frame-like part while permitting independent axial rotation thereof, and a handle fixed to said divided bar and extending beyond said frame-like part, said part and said bar having a sufficient space between them to permit the hair to be rolled or wound upon said bar by rotating said handle when both ends of said bar are connected to said part.

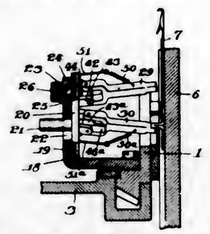
2. A hair curling device comprising a frame-like part, a divided bar adapted to receive and clamp the hair between its members and having one end permanently connected to said frame and capable of axial rotation therein, and having a handle fixed at such end, and means for receiving and securing the free end of said divided bar in said frame-like part while permitting independent axial rotation thereof, the divided bar being capable of pivoting as a whole about its point of permanent connection when its free ends are released from the frame part, said part and said bar having a sufficient space between them to permit the hair to be rolled or wound upon said bar by rotating said handle when both ends of said bar are connected to said part.

3. A hair curling device comprising a frame-like part, a divided bar adapted to receive and clamp the hair between its members and having one end permanently connected to said frame and capable of axial rotation therein and a sliding member on the frame adapted to engage and secure the free end of said divided bar while permitting independent axial rotation thereof.

4. In a hair curling device, a bar and a frame within which said bar is mounted to rotate, said frame having means at each end of said bar for preventing the hair from slipping therefrom, and said bar having a handle fixed thereto for rotating it, said frame and said bar having a sufficient space between them to permit the hair to be rolled or wound upon said bar by rotating said handle when both ends of said bar are connected to said frame.

5. In a hair curling device, a frame-like part, and a bar capable of rotation relatively to said part, said bar having a pivotal connection with said part whereby it may swing relatively thereto, and a handle fixed thereto and extending outwardly of such connection, whereby the bar may be rotated, said part and said bar having a sufficient space between them to permit the hair to be rolled or wound upon said bar by rotating said handle when both ends of said bar are connected to said part.

854,885. KNITTING-MACHINE. ANDREW V. GROUPE, Philadelphia, Pa., assignor to E. Jenckes Manufacturing Company, Pawtucket, R. I., a Corporation of Rhode Island. Filed Feb. 14, 1906. Serial No. 300,977.

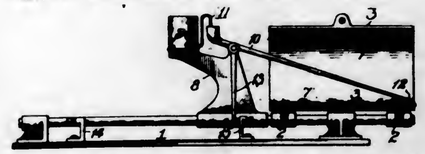


Claim.—1. In a knitting machine, the combination with the cam cylinder, of a support thereon, a member pivotally connected to said support, a picker arm pivotally connected to said member and provided with oppositely disposed needle engaging portions, means to prevent movement of said member when the picker arm is moved in one direction, and means to prevent relative motion between said member and arm when the picker arm is moved in another direction.

2. In a knitting machine, the combination with the cam cylinder, of a support thereon, a member pivoted to said support, a picker arm pivoted to said member and provided with oppositely disposed needle engaging portions; a stop to prevent movement of said member when the picker arm is moved upon its pivot, and a stop to prevent movement of the picker arm relatively to the member when the latter is moved upon its pivot.

3. In a knitting machine, the combination with the cam cylinder, of a support thereon, a member pivoted to said support, a picker arm pivoted to said member and provided with oppositely disposed needle engaging portions; a stop to prevent movement of said member when the picker is moved on its pivot, a stop to prevent movement of the picker arm relatively to the member when the latter is moved upon its pivot, and means for yieldingly maintaining said member and arm in engagement with their respective stops.

854,886. MANUFACTURE OF CYLINDRICAL PHONOGRAPH RECORD-BLANKS. VARIAN M. HARRIS, Chicago, Ill. Filed Oct. 13, 1906. Serial No. 338,727.



Claim.—1. In an apparatus for forming sheet celluloid into cylindrical phonograph record blanks, the combination of a cylindrical work holder adapted to maintain a

sheet of celluloid in a cylindrical form, means for supporting the work holder in a horizontal position, a slideway arranged longitudinal to the work holder, a carriage moving on said slideway, and a fountain pen carried by said carriage.

2. In an apparatus for forming sheet celluloid into cylindrical phonograph record blanks, the combination of a longitudinally slotted cylindrical work holder adapted to maintain a sheet of celluloid in a cylindrical form, means for effecting a change in the diameter of said work holder, means for supporting the work holder in a horizontal position, a slideway arranged longitudinal to the work holder, a carriage moving on said slideway, and a fountain pen carried by said carriage.

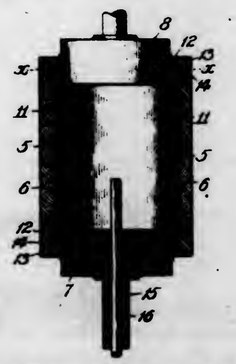
3. In an apparatus for forming sheet celluloid into cylindrical phonograph record blanks, the combination of a cylindrical work holder adapted to maintain a sheet of celluloid in a cylindrical form, stationary saddle pieces for supporting the work holder in a horizontal position, a slideway arranged longitudinal to the work holder, a carriage moving on said slideway, and a fountain pen carried by said carriage.

4. In an apparatus for forming sheet celluloid into cylindrical phonograph record blanks, the combination of a longitudinally slotted cylindrical work holder adapted to maintain a sheet of celluloid in a cylindrical form, stationary saddle pieces for supporting the work holder in a horizontal position, a slideway arranged longitudinal to the work holder, a carriage moving on said slideway, and a fountain pen carried by said carriage.

5. In an apparatus for forming sheet celluloid into cylindrical phonograph record blanks, the combination of a cylindrical work holder adapted to maintain a sheet of celluloid in a cylindrical form, means for supporting the work holder in a horizontal position, a slideway arranged longitudinal to the work holder, a carriage moving on said slideway, a supply tank on said carriage, a pivoted fountain pen carried by said carriage and connected with said tank, and means for tilting said pen near the ends of its travel.

6. In an apparatus for forming sheet celluloid into cylindrical phonograph record blanks, the combination of a longiutdinally slotted cylindrical work holder adapted to maintain a sheet of celluloid in a cylindrical form, means for effecting a change in the diameter of said work holder, means for supporting the work holder in a horizontal position, a slideway arranged longitudinal to the work holder, a carriage moving on said slideway, a supply tank on said carriage, a pivoted fountain pen carried by said carriage and connected with said tank, and means for tilting said pen near the ends of its travel.

854,887. MOLDING PHONOGRAPH-RECORDS. VARIAN M. HARRIS, Chicago, Ill. Filed Oct. 13, 1906. Serial No. 338,728.



Claim.—1. In an apparatus for molding cylindrical phonograph records, the combination of a matrix having an indented cylindrical bore, a pair of tapering heads closing the respective ends of the matrix chamber, and floating rings arranged at the respective ends of the matrix and provided with internal annular channels adapted to form pressure tight joints with the ends of the cylindrical phonograph blank operated on.

2. In an apparatus for molding cylindrical phonograph records, the combination of a matrix having an indented cylindrical bore, a pair of tapering heads closing the respective ends of the matrix chamber, and floating rings arranged at the respective ends of the matrix and provided with internal annular chambers adapted to form pressure tight joints with the ends of the cylindrical phonograph blank operated on, the said grooves having radial exit passages for the escape of air therefrom.

854,888. PERPETUAL CALENDAR. WILLIAM J. HARTMAN, Chicago, Ill. Filed May 4, 1906. Serial No. 315,219.

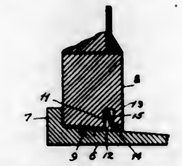


Claim.—1. A main frame in the form of a picture frame, having one of its side members reduced at the rear, said frame being provided at the top and bottom with a rabbeted cross piece, an auxiliary frame slidable between said cross pieces and adapted to be removed from the reduced side, said auxiliary frame being provided with rabbeted cross pieces adapted to slidingly retain a card therein and being open to expose said card toward the front, said main frame having a groove forward of and around said sliding frame and opening toward said reduced side, and a pane of glass slidale into said groove from said reduced side.

2. The combination of a main frame in the form of a rectangular picture frame having one of the upright members reduced in thickness by cutting the same away at its rear, a pair of rabbeted cross pieces extending across the rear of the upper and lower members of the frame, an auxiliary frame slidable between said rabbeted members, being open toward the front and adapted to slidably retain a card therein, said auxiliary frame being open toward said reduced side to permit the removal of said card.

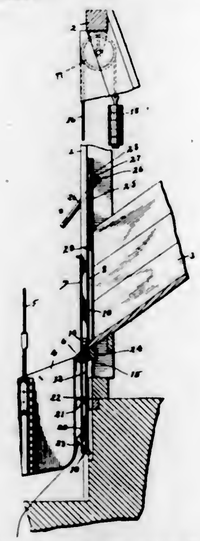
3. The combination of a main frame in the form of a picture frame having one side reduced in thickness by being cut away at its rear, an auxiliary frame slidably secured to the back of said main frame and adapted to be removed therefrom at said reduced side, said auxiliary frame consisting of a back piece having rabbeted cross pieces on its face for slidably retaining cards thereon, said auxiliary frame being open at the reduced side of the main frame to permit the removal of the cards, and having its back piece cut away at said open side, and cards overlapping the cut-away part of said back piece.

854,889. WEATHERPROOF WINDOW-SILL. PETER L. HEDBERG, Chicago, Ill. Filed Sept. 10, 1906. Serial No. 333,929.



Claim.—In a weather proof window sill, the combination with the sill, of a stool horizontally located on the upper surface thereof, a metallic sealing strip having a base portion secured to the sill outwardly from the stool and provided at its outer edge with a longitudinally and upwardly extending rib provided at its upper edge with an obliquely downwardly and outwardly extending flange, the said flange being spaced from the rib at its lower portion and extended to near the lower portion of the rib, a vertically movably lower sash rail having in its lower surface a longitudinally extending channel open at its bottom, and a metallic strip or plate secured to the lower surface of said rail outwardly from the channel therein and having a longitudinal flange on its inner portion obliquely and upwardly extended from the lower portion of the outer wall of said channel to overlap and co-act with the flange of the sealing rib whereby a yielding and close joint is produced, substantially as described.

854,890. LOADING AND UNLOADING APPARATUS. AXEL R. HOLMÉN, Columbus, Ohio. Filed July 16, 1906. Serial No. 326,367.



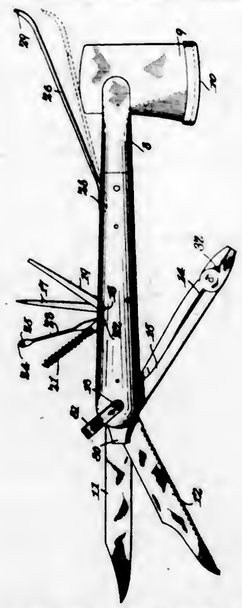
Claim.—1. In a device of the character described, a reciprocating gate adapted to open and close its outlet, dogs pivotally connected therewith, a reciprocating receptacle adapted to engage the dogs, and means to move the said dogs out of the path of said receptacle.

2. In a device of the character described, a reciprocating gate adapted to open and close its outlet, brackets on the gate, dogs pivotally secured to the said brackets, and a reciprocating receptacle arranged to engage the said dogs.

3. The combination with a shaft having a loading chute leading therein, a vertically movable gate adapted to close the discharge end of said chute by being elevated in said shaft frame, a second gate slidably mounted in the shaft frame and adapted when lowered to close the discharge end of said chute, and means for detachably supporting said upper gate in an elevated position, of a bucket movably supported in said shaft and adapted when elevated to carry said first mentioned gate to a closed position and when lowered to move the same to an open position.

4. In a device of the character described, the combination with a supporting frame, of a vertically movable bucket, a chute the lower end of which is secured to said frame, a gate which when elevated closes the lower end of said chute, means carried by the bucket for engaging the gate and depressing said gate to open the lower end of the chute as the bucket descends, pulleys mounted at the top of the frame, cables which pass over said pulleys and have one of their ends secured to the gate, and counterbalancing weights which are secured to the other ends of said cables.

854,891. COMBINATION-TOOL. DANIEL B. HUFFMAN, White, Idaho. Filed May 16, 1906. Serial No. 317,185.

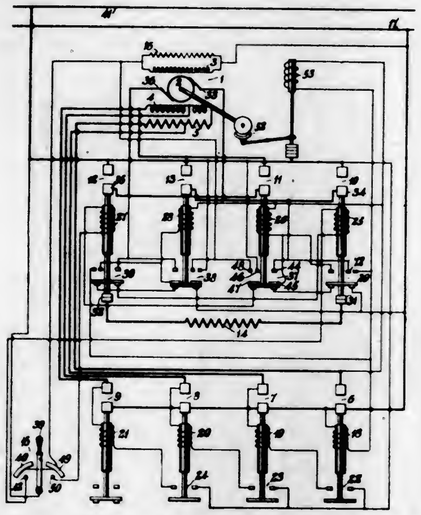


Claim.—1. A tool holder comprising a handle having a longitudinal compartment formed at its edge and extending into its end, a bail pivoted at the end of the handle and adapted to swing over the end of said compartment, a shank pivoted in the opposite end of said compartment and adapted to close the same, the shape of said shank in side elevation conforming generally to the contour of the edge of the handle containing the compartment, tool bits pivoted in said compartment at points intermediate of the ends thereof and arranged to lie within the same with their ends disposed in opposite directions, said shank being adapted to close down over the said tool bits and said bail being adapted to retain the free end of the shank in closed position.

2. A tool holder comprising a handle having at its edges longitudinally extending compartments, a bail pivoted at the end of the handle and adapted to swing over the said compartments, tool elements mounted upon the pivot of the bail and adapted to swing in one of the said compartments, a shank pivoted in the opposite compartment and

adapted to close the same, the shape of said shank in side elevation conforming generally to the contour of the edge of the handle, tool bits pivoted in the same compartment with the shank and being located at points intermediate of the ends thereof, and arranged to lie within the compartment with their ends disposed in opposite directions, said shank being adapted to close down over the said tool bits and said ball being adapted to retain the free end of the shank in closed position.

854,892. SYSTEM OF CONTROL FOR ELECTRIC MOTORS. HENRY D. JAMES, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Oct. 3, 1905. Serial No. 281,188.



Claim.—1. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, the operation of the second switch of each pair being governed by that of the first, and means for preventing simultaneous closure of switches belonging to different pairs.

2. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, the operation of the second switch of each pair being governed by that of the first.

3. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation and means for preventing closure of the second switch of each pair until after closure of the first.

4. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, means for preventing closure of the second switch of each pair until after closure of the first and manually operated means for controlling operation of the first switch of each pair.

5. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, of means for preventing closure of the second switch of each pair until after closure of the first and means for controlling operation of the first switch of each pair.

6. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation and means for preventing operation of the first switch of each pair when the non-corresponding second switch is closed.

7. The combination with an electric motor, a pair of switches for arranging the motor armature circuit for forward rotation, and another pair of switches for arranging the circuit for reverse rotation, of interlocking switches for preventing simultaneous closure of switches belonging to the different pairs, and interlocking switches for preventing closure of one switch of each pair until after closure of the other.

8. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, the closing of the second switch of each pair being governed by the operation of the first, and means for preventing opening of the second switch of each pair while the electromotive force of the motor operating as a generator exceeds a predetermined amount.

9. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, means for controlling operation of the first switch of each pair, means for preventing closure of the second switch of each pair until after closure of the first and means for preventing opening of the second switch of each pair while the electromotive force of the motor operating as a generator exceeds a predetermined amount.

10. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a resistance, and means for connecting the same in closed circuit with the motor armature when one switch of each pair is open.

11. The combination with a motor having an armature and a field magnet winding, of two pairs of separately actuated switches for connecting the motor armature respectively for forward and reverse rotation and means for maintaining the circuit of the field magnet winding while the speed of the motor exceeds a predetermined amount.

12. The combination with a motor having an armature and a field magnet winding, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation and means governed by said switches, and dependent in operation upon the electromotive force of the motor when operating as a generator for maintaining the circuit of the field magnet winding while the said electromotive force exceeds a predetermined amount.

13. The combination with a motor having an armature and a field magnet winding, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation and means controlled by one switch of each pair for maintaining the circuit of the field magnet winding while the electromotive force of the motor operating as a generator exceeds a predetermined amount.

14. The combination with a motor having an armature and a field magnet winding, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, means for controlling operation of the first switch of each pair, means for preventing closure of the second switch of each pair until after closure of the first and means controlled by the second switch of each pair for maintaining the circuit of the field magnet winding while the electromotive force of the motor operating as a generator exceeds a predetermined amount.

15. The combination with a motor having an armature and a field magnet winding, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, means for controlling operation of the first switch of each pair, means for preventing operation of the first switch of each pair when a non-corresponding second switch is closed, means for maintaining the circuit of the field magnet winding while the speed of the motor exceeds a predetermined amount, a resistance, and means for connecting the same in closed circuit with the motor armature when the first switches of both pairs are open.

16. The combination with a motor having an armature and a field magnet winding, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a master switch whereby the circuit of the field magnet winding is established and then the

first switch of one of the pairs caused to close, the operation of the second switch of each pair being governed by that of the first.

17. The combination with a motor having an armature and a field magnet winding, and resistances located in the circuit of the field magnet winding that are adjusted respectively for forward and reverse rotation of the motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation and means controlled by one of the switches of each pair for removing the resistance from the field magnet circuit which does not correspond with the direction of rotation of the motor.

18. The combination with a motor having an armature and a field magnet winding, and resistances located in the circuit of the field magnet winding that are adjusted respectively for forward and reverse rotation of the motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, means for controlling the operation of the first switch of each pair, means for preventing closure of the second switch of each pair until after closure of the first, and means controlled by the second switch of each pair for removing the non-corresponding resistance from the circuit of the field magnet winding.

19. The combination with a motor having an armature and a field magnet winding, of two separate resistances in circuit with the field magnet winding that are adjusted respectively for forward and reverse rotation of the motor, means for further controlling the motor circuits and means for removing the resistances from the circuit of the field magnet winding until after completion of operation of the aforesaid means.

20. The combination with a motor having an armature and shunt and series field magnet windings, two separate resistances in circuit with the shunt field magnet winding that are adjusted respectively for forward and reverse rotation of the motor and a resistance in the armature circuit, of means for removing the resistance and series field magnet winding from the armature circuit and means for removing the resistances from the circuit of the shunt field magnet winding until after completion of operation of the aforesaid means.

21. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, controlling magnet windings for the switches and means for preventing energizing of the controlling magnet winding of one of the switches of each pair until after closure of the other switch.

22. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, controlling magnet windings therefor and auxiliary switches operated thereby which prevent closure of one of the switches of each pair until after closure of the other switch.

23. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, controlling magnet windings therefor and auxiliary switches that are operated by one of the switches of each pair for preventing closure of the corresponding other switches until after operation thereof and for preventing simultaneous operation of the switches belonging to different pairs.

24. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, controlling magnet windings therefor and auxiliary switches operated thereby for preventing closure of one of the switches of each pair until after closure of the other.

25. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, controlling magnet windings therefor and auxiliary switches operated thereby for preventing closure of one of the switches of each pair until after closure of the other and for preventing opening of the second switch of each pair while the electro-motive force of the motor operating as a generator exceeds a predetermined amount.

26. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, controlling magnet windings therefor and auxiliary switches operated thereby for preventing energizing of the controlling magnet winding of one switch of each pair until after operation of the other switch and for preventing opening of the second switch of each pair while the electromotive force of the motor operating as a generator exceeds a predetermined amount.

27. The combination with an electric motor having an armature and field magnet winding, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, controlling magnet windings therefor and auxiliary switches operated thereby for maintaining the circuit of the field magnet winding while the electromotive force operating as a generator exceeds a predetermined amount.

28. The combination with an electric motor having an armature and field magnet winding, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, controlling magnet windings therefor and auxiliary switches operated thereby for preventing energizing of the controlling magnet of one of the switches of each pair until after closure of the other switch for preventing opening of the second switch and for maintaining the circuit of the field magnet winding while the electromotive force of the motor operating as a generator exceeds a predetermined amount.

29. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a resistance and auxiliary switches operated respectively by one of the main switches of each pair for connecting the resistance in closed circuit with the motor armature when the corresponding main switches are open.

30. The combination with a motor having an armature and a field magnet winding and resistances located in the circuit of the field magnet winding that are adjusted respectively for forward and reverse rotation of the motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation and auxiliary switches operated thereby for removing that resistance from the field circuit which is not adapted to the desired direction of rotation of the motor.

31. The combination with a motor having an armature and a field magnet winding, of two separate resistances in circuit with the field magnet winding that are adjusted respectively for forward and reverse rotation of the motor, means for further controlling the motor circuits and means for removing the resistances from the circuit of the field magnet winding until the motor attains a predetermined speed.

32. The combination with a motor having an armature and shunt and series field magnet windings, resistances in circuit with the shunt field magnet winding that are adjusted respectively for forward and reverse rotation of the motor and a resistance in the armature circuit, of switches for removing the resistance and the series field magnet winding from the armature circuit, and an interlocking switch operated by one of the aforesaid switches for shunting the resistances in the circuit of the shunt field magnet winding until the motor attains a predetermined speed.

33. The combination with a motor having an armature and a field magnet winding, of two separate resistances in circuit with the field magnet winding that are adjusted respectively for forward and reverse rotation of the motor, a set of switches for controlling the motor circuits and interlocking switches operated by switches of said set for removing that resistance from the field circuit which is not adapted to the desired direction of rotation of the motor.

34. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a set of switches for further controlling the motor circuits and means for preventing opening of the second switch of each pair while one or more of the said set of switches remains closed.

35. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, means for preventing

closure of the second switch of each pair until after closure of the first, a set of switches for further controlling the motor circuits and means for preventing opening of the second switch of each pair while one or more of the set of switches remains closed.

36. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a brake and means that are dependent in operation upon the first switch of each pair for controlling the same.

37. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a brake magnet winding and means that are operated by the first switch of each pair for controlling the circuit thereof.

38. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a brake and means for releasing the same while the first switch of each pair remains open.

39. The combination with an electric motor, of two pairs of separately actuated switches for connecting the motor armature respectively for forward and reverse rotation, a set of switches for further controlling the motor circuits and means for preventing closure of the first switch of said set until after closure of the first switch of one of said pairs.

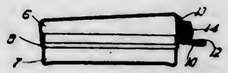
40. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a set of switches for further controlling the motor circuits, means for preventing closure of the first switch of said set until after closure of the first switch of one of said pairs and means for preventing closure of the second switch of each pair until after closure of the first switch of said set.

41. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a set of switches for further controlling the motor circuits, a brake, means for preventing closure of the first switch of said set until after closure of the first switch of one of said pairs and means for preventing closure of the second switch of each of said pairs and release of the brake until after closure of the first switch of said set.

42. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a set of switches for further controlling the motor circuits, a brake, interlocking switches operated respectively by the first switch of each pair for preventing closure of the first switch of said set until after closure of the first switch of one of said pairs and means for preventing closure of the second switch of said pairs and release of the brake until after closure of the first switch of said set.

43. The combination with an electric motor, of two pairs of switches for connecting the motor armature respectively for forward and reverse rotation, a set of switches for further controlling the motor circuits and interlocking switches operated respectively by the first switches of said pairs for preventing closure of the first switch of said set until operation of the corresponding main switches.

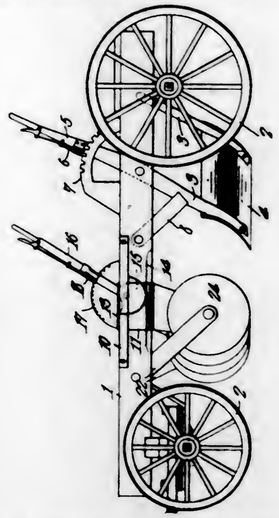
854,893. BOX-COVER OPENER. JAMES JOHNSTON, Medford, Mass. Filed Feb. 9, 1906. Serial No. 300,228.



Claim.—1. In box cover openers, the box body having a peripheral projection, in combination with the cover having lever bearings affixed thereto, and a lever pivoted in said bearings to normally occupy a vertical position substantially parallel with the sides of the box and form upper and lower arms, leaving the top and bottom of the box unobstructed, said upper arm being movable toward the side of the box and into engagement with said projection and said lower arm being movable away from the side of the box to cause the engagement of said upper arm with said projection and thereby effect the opening of the box, substantially as described.

2. In box cover openers, the box body having a peripheral projection and the cover having a metallic plate affixed thereto, in combination with a pivoted lever mounted in bearings on said plate and adapted to engage such projection, and with a spring interposed between and connected terminally to said plate and lever, for the purpose set forth.

854,894. GRADING-MACHINE FOR BUILDING AND REPAIRING ROADS. WALTER A. JONES, Coolidge, Ga. Filed Feb. 15, 1907. Serial No. 357,526.



Claim.—1. A machine of the character described comprising a portable frame, a plurality of earth engaging devices, pivoted supports therefor, and slidable means for actuating the supports.

2. The combination with a portable frame; of a plurality of earth engaging devices, pivoted supports therefor and suspended from the frame, and slidable means for actuating the supports to raise or lower the earth engaging devices.

3. The combination with a portable frame; of a shaft, earth engaging devices connected thereto, shaft supports pivotally connected to the frame, and slidable means engaging the shaft to swing the supports.

4. The combination with a portable frame; of supporting elements pivotally connected to the frame, a shaft connecting the lower ends of said elements, earth engaging devices mounted thereon, and means slidably mounted upon the frame and loosely engaging the shaft for swinging said shaft and its supporting elements.

5. The combination with a portable frame; of a shaft, soil engaging devices thereon, pivoted supports for said shaft, and a non-yielding slide mounted upon the frame and loosely engaging the shaft.

6. The combination with a portable frame; of a shaft, soil engaging devices thereon, supporting elements pivotally connected to the frame and shaft, a cross strip slidably mounted upon the frame, slotted hangers depending therefrom and loosely engaging the shaft, and means for actuating the strip to swing the supporting elements.

7. The combination with a portable frame; of supporting elements pivotally connected thereto, a shaft journaled within said elements, a soil engaging device carried by the shaft, a slide slidably mounted upon the frame, manually operated means for actuating the slide, and a hanger rigidly connected to and depending from the slide, said hanger loosely engaging the shaft.

8. The combination with a portable frame; of supporting elements pivotally connected thereto, a diagonally disposed shaft journaled within said elements, a cross strip, guide plates extending therefrom and slidably engaging the frame, guide strips extending over said plates, manually operated means for sliding the cross strip along the frame, and means rigidly connected to and depending from the cross strip for loosely engaging the shaft.

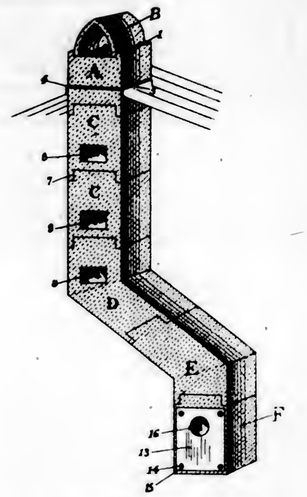
9. The combination with a portable frame, and earth engaging devices suspended therefrom and mounted to oscillate; of a cross strip, guide plates extending therefrom and engaging and slidably mounted on the frame, guide strips extending transversely of the plates, slotted hangers depending from the cross strip and loosely engaging the earth engaging devices, means for sliding the cross strip to adjust the earth engaging devices, and means for locking the cross strip in adjusted position.

10. The combination with a portable frame, and earth engaging devices suspended therefrom and mounted to oscillate; of a cross strip, guide plates extending therefrom and engaging and slidably mounted on the frame, guide strips extending transversely of the plates, slotted hangers depending from the cross strip and loosely engaging the earth engaging devices, a rack bar upon the cross strip, means for actuating said bar to slide the cross strip and adjust the earth engaging devices, and a lock for securing the cross strip in adjusted position.

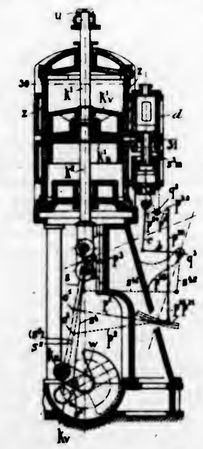
11. The combination with a portable frame; of supporting elements pivotally connected thereto, a diagonally disposed shaft journaled within said elements, a cross strip, guide plates extending therefrom and slidably engaging the frame, guide strips extending over said plates, manually operated means for sliding the cross strip along the frame, means rigidly connected to and depending from the cross strip for loosely engaging the shaft, and a diagonally disposed scraper adjustably supported from the frame and in rear of the soil engaging devices.

12. The combination with a portable frame; of an adjustable scraper suspended therefrom, a cross strip, guide plates extending therefrom and bearing upon and slidably mounted on the frame, guide strips secured upon the frame and extending across the guide plates, a rack bar upon the cross strip, a gear meshing therewith, an actuating lever extending from the gear, a lock therefor, slotted hangers rigidly connected to and depending from the cross strip, pivoted supporting elements, a shaft supported thereby and disposed within the slots of the hanger, and an earth engaging device carried by said shaft.

854,895.



854,896. ENGINE. ADOLPH KLOSE, Berlin, Germany. Filed Feb. 20, 1903. Serial No. 144,349.



Claim.—1. In a steam engine a cylinder having steam admission ports at each end and at the center, in combination with a pair of double acting pistons in the cylinder, a single crank shaft to which said pistons are connected and by which the relative movements of the pistons are controlled, a valve operating crank on the crank shaft, a separate valve for each port in the cylinder and mechanism connecting said valves to the valve operating crank, the stroke of said pistons being greater than half the length of the cylinder and said valve mechanism operating to admit steam between the pistons when in their middle position in the cylinder, said steam being expanded during the movement of one of the pistons past the middle of the cylinder.

2. In an engine, a cylinder in combination with two pistons therein and a crank shaft whose cranks make an angle of substantially sixty degrees, whereby each piston for a portion of its travel will traverse a portion of the path

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854,895. CHIMNEY. SOLOMON M. KEMP, Baltimore, Md. Filed May 11, 1906. Serial No. 316,398.

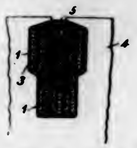
Claim.—1. The combination of a chimney cap and a chimney substantially as hereinbefore described, comprising a section made of concrete, of a woven wire reinforcement molded within the walls thereof, of extensions or tenons on the lower end portion, of similar extensions on the opposite end or upper portion thereof, the upper extensions affording a means for securing the cap on the section for the purpose herein set forth.

2. The combination of a chimney substantially as hereinbefore described, comprising a base or lower section made of concrete and provided with woven wire molded within the walls thereof, and an extension and shoulder forming a mortise joint on the top end portion, of a series of metal bolts secured within the edges of the parallel side walls and threaded on the extended end portions thereof, and a door provided with an opening therein and means within the door for allowing the extended end portions of the bolts to pass therethrough whereby by the means of a series of nuts the door is removably secured to the said base or section for the purpose as herein set forth.

of the other piston and suitable valve mechanism, substantially as described.

3. In an engine, the combination with a cylinder, of two pistons therein, cranks set substantially sixty degrees apart and suitable valve mechanism to admit steam at each end of the cylinder and at its center between the two pistons, whereby each piston will traverse a portion of the path of the other piston, substantially as described.

854,897. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Sept. 20, 1906. Serial No. 335,508.



Claim.—1. The combination with a magnetizable core having peripheral slots the outer portions of which are wider than the inner portions, of a winding that comprises a plurality of coils the sides of which are located respectively in the outer and wider portions and in the inner and narrower portions of the slots, and conductors for connecting the winding to a commutator cylinder that are also located in the outer and wider portions of the slots.

2. The combination with a magnetizable core having peripheral slots the outer portions of which are wider than the inner portions, of a winding that comprises a plurality of coils the sides of which are located respectively in the outer and wider portions and in the inner and narrower portions of the slots, and conductors for connecting the winding to a commutator cylinder that are also located in the outer and wider portions of the slots and that are disposed adjacent to the conductors of the coils to which they are connected.

3. The combination with a magnetizable core having peripheral slots the outer portions of which are wider than the inner portions, of a winding that comprises a plurality of coils the sides of which are located respectively in the outer and wider portions and in the inner and narrower portions of the slots, and conductors for connecting the windings to a commutator cylinder that are also located in the outer and wider portions of the slots and that alternate in position with the conductors of the coils.

4. The combination with a magnetizable core having partially inclosed peripheral slots the outer portions of which are wider than the inner portions, of a winding that comprises a plurality of coils the conductors of which are arranged in groups of not greater width than the slot openings and the sides of which are located respectively in the outer and wider portions and in the inner and narrower portions of the slots, and conductors for connecting the winding to a commutator cylinder that are also located in the outer and wider portions of the slots.

5. The combination with a magnetizable core having partially closed peripheral slots the outer portions of which are wider than the inner portions, of a winding that comprises a plurality of coils the conductors of which are arranged in groups of not greater width than the slot openings and the sides of which are located respectively in the outer and wider portions and in the inner and narrower portions of the slots, and conductors for connecting the winding to a commutator cylinder that are also located in the outer and wider portions of the slots and that are disposed adjacent to the conductors of the coils to which they are connected.

6. The combination with a magnetizable core having partially closed peripheral slots the outer portions of which are wider than the inner portions, of a winding that comprises a plurality of coils the conductors of which are arranged in groups of not greater width than the slot openings and the sides of which are located respectively in the outer and wider portions and in the inner and narrower portions of the slots, and conductors for connecting the winding to a commutator cylinder that are also located in the outer and wider portions of the slots and that alternate in position with the conductors of the coils.

854,898. MOUTH-BRACE. HANS LORENZ, Rochester, N. Y. Filed Feb. 28, 1907. Serial No. 359,798.



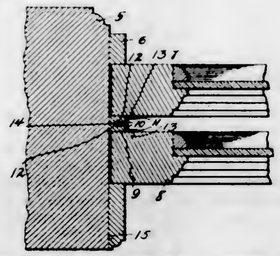
Claim.—1. In a mouth brace, the combination of two parts movable one on the other, one of which parts is graduated, means for fastening the parts together at different points of position, and two forks, one carried by each part, and having their openings directed in opposite directions.

2. In a mouth brace, a bar, a block sliding on said bar, means for fastening the block and bar together at different positions, and two forks, one carried by the block and the other carried by the bar, and having their openings directed in opposite directions.

3. In a mouth brace, the combination of two parts movable one on the other, one of which parts is graduated, means for fastening the parts together at different points of position, and two forks, one carried by each part, and having their openings directed in opposite directions, one or both of said forks having one arm movable and spring-actuated.

4. In a mouth brace, a bar, a block sliding on said bar, means for fastening the block and bar together at different positions, and two forks, one carried by the block and the other carried by the bar, and having their openings directed in opposite directions, one or both of said forks having one arm movable and spring-actuated.

854,899. WEATHER-STRIP. JOHN LUTZ and JAMES MCKELLAR, Columbus, Ohio. Filed Aug. 4, 1906. Serial No. 329,163.



Claim.—1. A window construction comprising a frame, upper and lower sash, a parting strip located between said upper and lower sash, and weather strips secured to the adjacent faces of said upper and lower sash, said weather strips having members which are disposed to travel in a groove formed in the face of the parting strip.

2. A window construction comprising a frame, upper and lower sash, a parting strip located between said upper and lower sash, weather strips secured to the adjacent faces of said upper and lower sash, said weather strips having members which are disposed to travel in a groove formed in the face of the parting strip, a parting strip extending across the upper portion of the window frame between the upper and lower sash, and a weather strip secured to the top rail of the upper sash and having a member adapted to engage a recess formed in the face of said parting strip.

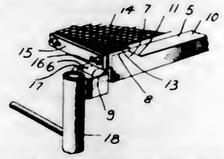
3. A window construction comprising a frame, upper and lower sash, a parting strip located between said upper and lower sash, weather strips secured to the adjacent faces of said upper and lower sash, said weather strips having members which are disposed to travel in a groove formed in the face of the parting strip, a parting strip secured to the bottom rail of the upper sash, and a weather strip secured to the top rail of the lower sash and having a member adapted to engage a groove formed in the upper face of said last named parting strip.

4. A window construction comprising a frame, upper and lower sash, a parting strip located between said upper and lower sash, weather strips secured to the adjacent faces of said upper and lower sash, said weather strips having members which are disposed to travel in a groove formed in the face of the parting strip, a parting strip extending across the bottom of the window frame between the upper and lower sash, and a weather strip secured to the bottom rail of the lower sash, said weather strip having a member adapted to engage a groove formed in the upper face of said last named parting strip.

5. The combination with a window comprising upper and lower sash, of a parting strip secured to the bottom rail of the upper sash, and a weather strip secured to the top rail of the lower sash and having a member adapted to engage in a groove formed in the upper face of said parting strip.

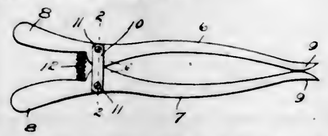
6. In a window, the combination with a frame, upper and lower sash, a parting strip located between said upper and lower sash, and Z-shaped weather strips secured to said sash portions of which are disposed to travel in a groove formed in the face of the parting strip.

854,900. MATTRESS-FRAME. RICHARD W. MILLER, Perry, Iowa. Filed Jan. 14, 1907. Serial No. 352,251.



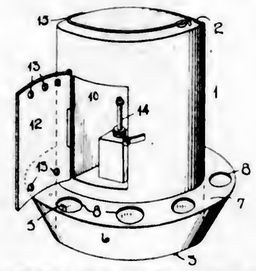
Claim.—In a mattress frame, in combination, angle side rails, each provided with tenoned ends and enlarged vertically adjacent each tenon to form an upstanding shoulder, each shoulder having a perforation formed therethrough, the top face of each shoulder being disposed at right angles to its outer face and above the top face of its side rail, and the inner faces of the shoulders of each side rail being oppositely beveled with respect to each other, angle end rails connecting said side rails and fitting over the top and end faces of said shoulders, a cleat disposed against the side face of each end rail and provided with a bolt extending through the adjacent end of said end rails and through the perforation in the corresponding shoulder for securing said cleats to said end rails and shoulders, and a flexible mattress having its opposite ends clamped between said cleats and end rails.

854,901. HAIR-PIN. FRED J. MOOERS, Orofino, Idaho, assignor of one-fourth to Cully W. Mooers and one-fourth to Pearl L. Mooers, Orofino, Idaho. Filed Apr. 19, 1906. Serial No. 312,721.



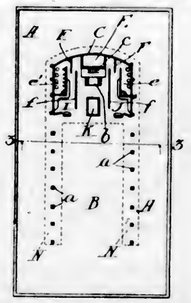
Claim.—A hair pin comprising a pair of members each provided with a handle portion at its upper end and a convexed jaw at its lower end, each member being further provided with an inwardly directed shoulder having a longitudinal slot formed therein, said slots being in alinement with each other when said members are connected together; a metal strip having its opposite ends engaged in said slots to form a guide for said members; a strap disposed transversely across said members adjacent said shoulders, on each side thereof, each strap being connected at opposite ends to the corresponding members; and a spring connected at opposite ends to said handles, to normally force said handles apart and said jaws together.

854,902. DRINKING-FOUNTAIN. FRED L. MCNITT, California, Mich. Filed Nov. 19, 1906. Serial No. 344,176.



Claim.—A drinking fountain for poultry comprising a tank provided at its lower end with a saucer having a cover containing a plurality of drinking openings, the wall of the tank being provided with an opening through which water flows from the tank to the saucer, a lamp compartment formed within the tank and wholly free from communication with the latter, said compartment having a door-way formed in the side wall of the tank, a heating lamp arranged in the compartment and a door for closing said door-way.

854,903. SKATING-RINK. FRANK L. OLESON, Chicago, Ill. Filed Feb. 18, 1907. Serial No. 357,972.



Claim.—1. A skating rink comprising a floor provided with a central area having a partitioned inclosure at one end that is spaced from the walls on all sides to provide a track surrounding said central area and inclosure.

2. A skating rink comprising a floor provided with a central area having a partitioned inclosure at one end that is divided into convenience rooms and has a stairway leading from another floor, said partitioned inclosure being spaced from the walls on all sides to provide a track surrounding said central area and inclosure.

3. A skating rink comprising a floor, two parallel rows of vertical columns dividing said floor into an outer endless track and a central area, and galleries supported by said columns from which said endless track can be viewed on one side thereof and the central area on the other.

4. A skating rink comprising a floor, two parallel rows of vertical columns dividing said floor into an outer endless track and a central area, a partitioned inclosure for convenience rooms located at one end of said central area, and galleries supported by said columns from which said endless track can be viewed on one side thereof and the central area on the opposite side.

5. A skating rink comprising a floor provided with a central area having a partitioned inclosure at one end, that has a pavilion over the same, said partitioned inclosure being spaced from the walls on all sides to provide a track surrounding said central area and inclosure.

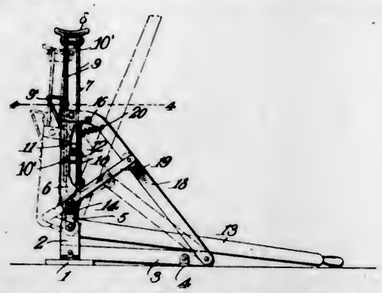
6. A skating rink comprising a floor provided with a central area having a partitioned inclosure at one end that has a pavilion over the same, said partitioned inclosure being spaced from the walls on all sides to provide a track surrounding said central area and inclosure, and promenades extending from said pavilion from both sides of which the floor below can be seen.

7. A skating rink comprising a floor divided into an outer endless track, a central area, a partitioned inclosure for convenience rooms located at one end of said central area, a pavilion over said inclosure, and parallel promenades extending therefrom over the longitudinal lines of demarcation between said outer track and central area, from both sides of which the floor below can be seen.

8. A skating rink comprising a floor divided into an outer endless track and a central area, a partitioned inclosure for convenience rooms located at one end of said central area, and a pavilion over said inclosure having stairs leading thereto which pass up through said inclosure but are walled in therefrom.

9. A skating rink comprising a floor provided with a central area having a partitioned inclosure at one end that is divided into convenience rooms and a skate room and a stairway leading from another floor, said partitioned inclosure being spaced from the walls on all sides to provide a track surrounding said central area and said inclosure.

854,904. LIFTING-JACK. WILLIAM ORSBORN and LOUIS GRAEBER, Kansas City, Mo. Filed Oct. 2, 1906. Serial No. 337,095.



Claim.—1. A jack comprising a base, a lug located thereon, a link pivoted to said lug, a bar pivoted to said link, a crutch member supported by said bar, a lever fulcrumed to the lug in alinement with the lower pivot of said link and having its working end pivoted to the bar in alinement with the upper pivot of said link.

2. A jack comprising a base, a lug attached thereto, a link pivoted to said lug, a bar pivoted to said link, a crutch adjustably supported by said bar, a lever fulcrumed to the lug in alinement with the lower pivot of the link and having its working end pivoted to the bar in alinement with the upper pivot of the link.

3. A crutch comprising a base, a lug located thereon, a link pivoted to the lug, a bar pivoted to the link, a latch pivoted to the bar and having a series of perforations, a crutch mounted upon the bar and having a pin which enters one of the perforations of the latch, a lever fulcrumed to the lug in alinement to the lower pivot of the link and having its upper end pivoted to the bar in alinement with the upper pivot of the link.

4. A jack comprising a base, a lug located thereon, a link pivoted to the lug, a bar pivoted to the link, a latch pivoted to the bar and having a series of perforations, a crutch mounted upon the bar and having a pin provided with a chamfered nut which enters one of the perforations of the latch, a lever pivoted to the lug in alinement with the lower pivot of the link and having the working end pivoted to the bar in alinement with the upper pivot of the link.

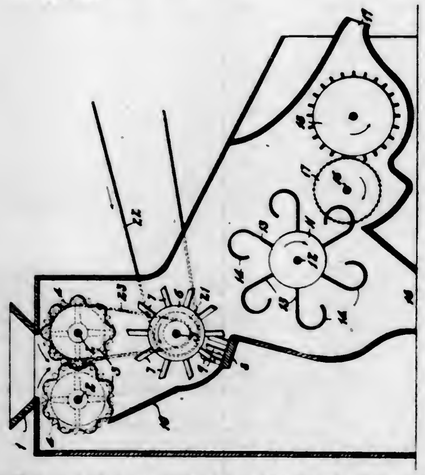
5. A jack comprising a base, a lug located thereon, a link pivoted to said lug, a bar pivoted to said link, a spring actuated latch pivoted to the bar, a crutch adjustably supported by the bar and having means for engaging the latch, and a lever fulcrumed to the lug in alinement with the lower pivot of the link and having its working end pivoted to the bar in alinement with the upper pivot of the link.

6. A jack comprising a base, a lug located thereon, a link pivoted to the lug, a bar pivoted to the link, a crutch member supported by the bar and having at its lower portion spaced bars, a latch pivoted to the first said bar, means carried by one of the crutch bars for engaging said latch, a lever fulcrumed to the lug in alinement with the lower pivot of the link and having its upper end pivoted to the first said bar in alinement with the upper pivot of the link.

7. A jack comprising a base, a lug, a link, a bar and a crutch member successively connected together and supported by the base, a bar extending rearwardly from said base, a bar extending rearwardly from the first said bar, a link connecting the last said bars together, a link connecting the last said link, and the first said link together, a lever fulcrumed to the lug in alinement with the lower pivot of the first said link and having its working end pivoted to the first said bar in alinement with the upper pivot of the first said link.

8. A jack comprising a base, a lug, a link, a bar and a crutch successively connected and mounted upon said base, a lever fulcrumed to the base and having its working end operatively connected with said bar, a bar extending rearwardly from the base and a laterally extending foot attached to the rear end of the last said bar.

854,905. COTTON CLEANER AND SEPARATOR. JAMES G. PARK, Alligator, Miss. Filed Oct. 1, 1906. Serial No. 336,899.



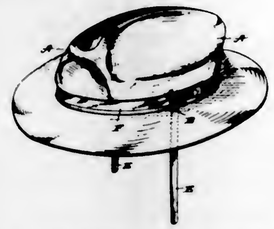
Claim.—1. In a machine of the class described, a picker cylinder having radial resilient teeth or fingers provided with terminal coils or approximately circular hooks said coils being turned in a direction opposite the direction of movement thereof.

2. In a machine of the class described, a picker cylinder having radial resilient teeth provided with approximately circular terminal coils whose axes are parallel to the axis of the cylinder said coils being turned in a direction opposite the direction of movement thereof.

3. In a machine of the class described, a toothed cylinder and a toothed bar constituting a concave coöperating with the cylinder; in combination with non-yielding, intermeshing corrugated crushing rollers disposed to feed material to the cylinder and concave, and a picker cylinder disposed to receive material from said cylinder and concave; said picker cylinder having radial resilient teeth provided with terminal coils said coils being turned in a direction opposite the direction of movement thereof.

4. In a machine of the class described, a casing having an inlet hopper, a trash exit and a lint exit; a pair of non-yielding, intermeshing crushing and feeding rollers disposed beneath the inlet hopper, a toothed cylinder and concave disposed beneath and receiving material from the crushing and feeding rollers, a picker cylinder disposed beneath and receiving material from the cylinder and concave, said picker cylinder being provided with radial resilient teeth having terminal coils turned in a direction opposite the direction of movement thereof and said picker cylinder being disposed above the trash exit, a saw carrying shaft supported for rotation adjacent to the picker cylinder and having saws disposed intercurrently with and overlapping the picker teeth, and a brush cylinder supported for rotation adjacent to the saw and adapted to strip material from the saws and to convey the same to the lint exit.

854,906. HAT HOLDER AND BAND. WILLIAM A. PIERCE, Topeka, Kans. Filed Oct. 29, 1906. Serial No. 341,082.



Claim.—1. A hat holder having portions adapted to pass around both the front and rear of the crown of a hat, and an intermediate fastening extension adapted to pass through the brim of the hat.

2. A hat holder having portions adapted to pass around both the front and rear of the crown of a hat, and intermediate fastening extensions at opposite sides of the device adapted to pass through the brim of the hat.

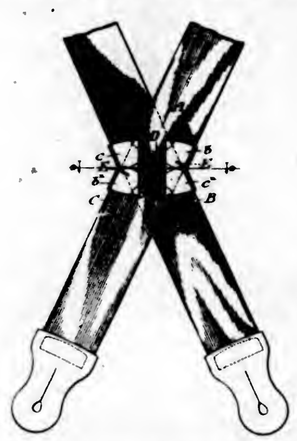
3. In combination with a hat, a holder therefor having portions adapted to pass around both the front and rear of the crown of the hat, and intermediate fastening extensions at opposite sides of the hat adapted to pass through apertures in the brim of the hat at points near the juncture of the crown and brim.

4. A holder formed of a strip of material split longitudinally to form an opening closed at its ends for the reception of the crown of a hat, and a fastening extension thereon.

5. A holder formed of a strip of material split longitudinally to form an opening closed at its ends for the reception of the crown of a hat, and fastening extensions projecting from the opposite ends of the split portion.

6. A holder comprising a portion adapted to encircle the crown of a hat, and oppositely disposed fastening extensions adapted to pass through the brim of the hat, in combination with a hat having apertures in its brim to accommodate said extensions.

854,907. SUSPENDER-CLASP. WILLIAM PIGOTT, Chicago, Ill. Filed Apr. 12, 1907. Serial No. 367,731.



Claim.—1. A back clasp for suspenders having guide loops at each side thereof, the upper and lower portion of each side forming reversely inclined portions receiving the suspenders and the edges of the guide loops being arranged a distance apart to permit the suspenders to be inserted in the clasp, said clasp being provided with means to hold the clasp in adjusted position upon the suspenders.

2. A back clasp for suspenders formed of two sections pivoted together, each section having an upper loop at one side of its pivotal point and a lower loop at the opposite side of its pivotal point, the upper and lower loops of one section being arranged opposite the corresponding loops of the other section, said clasp being provided with one or more catches for engaging the suspender fabric and holding the clasp in position for use.

3. A back clasp for suspenders formed of two sections pivoted together, each section having an upper loop at one side of its pivotal point and a lower loop at the opposite side of its pivotal point, the upper and lower loops of one section being arranged opposite the corresponding loops of the other section and prongs projecting from the opposite edges of the clasp to engage the edges of the suspenders.

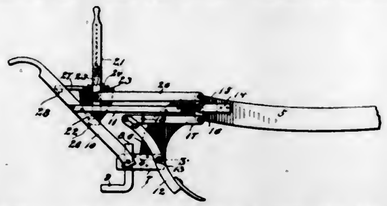
854,908. SAFETY-VALVE. JAMES C. POGUE, Findlay, Ill. Filed Apr. 23, 1906. Serial No. 313,346.

Claim.—A device of the character described, comprising a vulcanizer-pot cap having a tube extension extending practically through it, downward and upward beyond the lower and upper surface of its bottom portion, said cap having an upper shell-like extension of much greater diameter than said tube-extension and having a perimetric screw-threaded surface out through which opens a lateral outlet-passage of said tube-extension, a valve-chamber casing screwed to said perimetric surface, and having an upper end neck-member provided with an internally screw-threaded passage, a needle-valve seated in the upper portion of said tube-extension, an adjusting screw engaging said internally screw-threaded passage, and a spring arranged between disks, one resting upon said needle-pointed valve and the other carried by said adjusting

screw, and a jam-nut fitted upon the latter and bearing upon said neck-members.



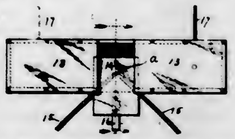
854,909. PLOW ATTACHMENT. CALVIN L. POLK, Martin, Tex. Filed Apr. 5, 1907. Serial No. 366,509.



Claim.—1. The combination with a plow-beam and its handles, of a standard comprising plates arranged on opposite sides of the beam and pivotally connected thereto, a lever pivoted on one side of the beam, a hand-lever pivotally mounted between the handles, a link connecting one end of the first mentioned lever to the aforesaid plates, said link having a laterally offset portion entering between the plates and connected thereto, and a link connecting the other end of the said lever to the hand-lever.

2. The combination with a plow-beam and its handles, of a standard pivotally connected to the beam, a lever pivoted on one side of the beam, a plate extending between and secured to the handles behind the beam, a segment rack on the plate, a hand-lever pivoted to the segment rack and having a latch engageable therewith, and links connecting the ends of the first mentioned lever to the standard and the hand-lever, respectively.

854,910. FLY-TRAP FOR ATTACHMENT TO WINDOWS. WILLIAM J. POSAKONY, Pocahontas, Iowa. Filed Nov. 1, 1906. Serial No. 342,167.



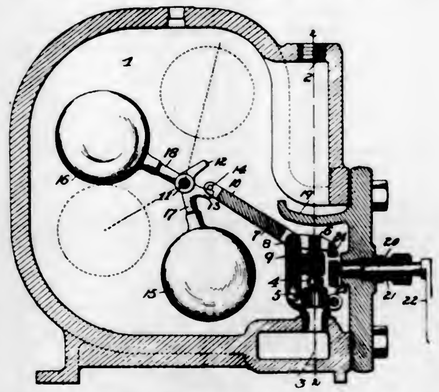
Claim.—1. A fly trap consisting of an oblong box having a transparent front, an opening in the front, a slide for closing the opening, an opening in the bottom and guides fixed therein to extend downward and inclined in reverse ways and means for closing the opening between the tops of the guides.

2. A fly trap consisting of an oblong box having a transparent front, an opening in the front, a slide for closing the opening, an opening in the bottom guides fixed therein to extend downward and inclined in reverse ways and a plug fixed to the slide to engage the upper ends of the guides as set forth.

3. A fly trap consisting of an oblong box having a transparent front, an opening in the front, a slide for closing the opening, an opening in the bottom and guides fixed therein to extend downward and inclined in reverse ways and a plug fixed to the slide for engaging the tops of the guides and means for detachably connecting the trap with a window.

4. A fly trap attachment for windows comprising an oblong box made of opaque material and its front of transparent material, an opening at the center of the front, a slide for closing the opening, an opening in the bottom of the box and jointed guides fixed therein to extend downward and inclined in reverse ways, a plug fixed to the slide for engaging the inclined guides and hooks fixed to the trap for connecting it with a window, to operate as set forth.

854,911. STEAM-TRAP. HENRY RITTER, Cincinnati, Ohio, assignor to The Lunkenheimer Co., Cincinnati, Ohio. Filed Jan. 14, 1907. Serial No. 352,254.



Claim.—1. In combination in a trap, a casing, a shaft, a pair of floats arranged in different angular positions about the shaft, said floats being rigidly connected together to move in unison, a valve and means for operating the valve including separated contact members connected with the shaft, said separated contact members effecting the operation of the valve after the floats have acquired a certain momentum, substantially as described.

2. In combination in a trap, a casing, a pair of floats arranged in different angular positions about a shaft, said floats being rigidly connected together to move in unison, a valve, a lever adapted to close or open said valve, said lever being operated by separated contact members after the floats have acquired a certain momentum, substantially as described.

3. In combination in a trap, a casing, a valve, a pair of floats, a shaft common to the floats, said floats being disposed in different angular positions about the shaft, and when in the lowest position with one substantially below the shaft and the other to one side thereof, and when in highest position with the upper float across the vertical plane of the axis of the shaft, substantially as described.

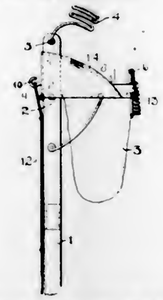
4. In combination in a trap, a casing, a valve, a pair of floats, a shaft common to the two, a lever arm between the shaft and the valve, said floats being disposed in different angular positions about the shaft and when in the lowest position with one substantially below the shaft and the other to one side thereof, and when in highest position with the upper float across the vertical plane of the axis of the shaft, substantially as described.

5. In combination in a trap, a casing, a valve, a pair of floats disposed in different angular positions about a common axis and connected thereto, a pair of divergent arms at said axis, a pivoted lever connected to the valve and with its ends adjacent the axis of the floats, the said divergent arms operating the lever after the floats have moved through a certain arc, substantially as described.

6. In combination in a trap, a casing, a valve, a pair of rigidly connected floats, an axis common to them both, said floats being arranged in different angular positions about the said axis whereby one is in substantially neutral or opposing position and when moved by the other float augments the operating force thereof, a lever connection between the floats and the valve, having an extended end 24 and means for operating said lever by hand comprising a rock shaft extending through the casing and an arm on the inner end of the shaft engaging the extended end of the said lever, substantially as described.

7. In combination in a trap, a pair of floats, a valve, a common axis about which the floats turn, a connection between the floats and the said axis, one of the floats when the water is at its lowest level being located in neutral or opposing position below the said axis and the other float being in an elevated position so that while the water is rising in the trap to the upper float both floats will remain stationary, and a connection between the floats and the valve, substantially as described.

854,912. FRUIT-PICKER. LAURA A. SAMPLE, Worthington, Ind. Filed Sept. 24, 1906. Serial No. 335,932.



Claim.—1. A fruit picker comprising a handle, a bag or receptacle secured thereto, a series of segmental picking fingers arranged on the upper end of said handle, a spring-retracted severing blade to coact with said fingers, an operating cord connected to said blade, and a tender arranged partly around and extending above said receptacle, substantially as described.

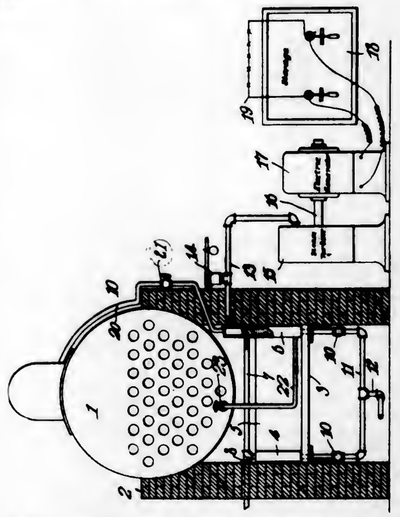
2. In a fruit picker, a handle, a wire secured at its ends to the upper end thereof, the intermediate portion of the wire being bent into fingers, a blade, means pivotally secured to the handle for supporting the blade, a cord connected with said means for actuating the same, and a receptacle secured to the handle below the knife.

3. In a fruit picker, a handle, a series of fingers at the upper end thereof, a knife, arms pivotally secured near their ends to the handle for supporting the knife, a cord secured to said ends, a ring secured to the handle below the knife, a receptacle secured to the ring, and a spring secured to the central portions of the ring and knife respectively to return the latter to its retracted position.

4. In a fruit picker, a handle, a wire secured at its ends to the upper end thereof and having its intermediate portion bent in opposite directions to form fingers, a ring secured to the handle, a receptacle and a guard secured to the ring, and a wire frame for supporting the upper edge of the guard in such position as to cause the fruit to fall into the receptacle.

854,913. STEAM-GENERATOR. THOMAS F. SCOLLARD, Warsaw, Ind. Filed Sept. 18, 1906. Serial No. 335,091.

Claim.—1. In combination with a primary steam generator mounted upon a furnace, a secondary steam generator located in the fire box of the furnace and comprising water backs arranged around the sides of the furnace one of said water backs having a steam dome and a steam pipe connected therewith, a water supply pipe connecting with the secondary steam generator, and means for maintaining the water in the secondary steam generator at a uniform level.



2. In combination with a primary steam generator mounted upon a furnace, a secondary steam generator comprising water backs arranged against the walls of the fire box of the furnace, one of said water backs having a steam dome with a steam pipe connected thereto, a water supply pipe connecting with the water backs, a means for maintaining the water within the secondary steam generator at a uniform level, and valve controlled water outlet pipes connected with said water backs.

3. In combination with the primary steam generator mounted upon a furnace, a secondary steam generator located within the fire box of the furnace and comprising water backs one of which is provided with a steam dome having a steam pipe connected therewith, transversely extending pipes connecting opposite water backs together, a water supply pipe connected with said water backs, and means for maintaining the water within the secondary steam generator at a uniform level.

854,914. WHEEL FOR VEHICLES. ROBERT T. SMITH, Jr., Warrington, England. Filed Sept. 6, 1906. Serial No. 333,488.

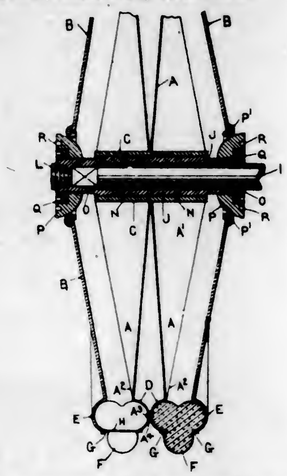
Claim.—1. In a wheel for vehicles the combination of a pair of radially corrugated plates each having near its periphery a channel to embrace one side of a rubber tire and outer plates having corresponding channels to grip the other sides and means for holding and tightening the parts substantially as described.

2. In a wheel for vehicles the combination with a pair of radially corrugated plates each having near its periphery a channel, and outer plates having corresponding channels, of a tire portion having three ribs or treads, anyone of which may be used as the actual tread interchangeably with the others, substantially as set forth.

3. A wheel for vehicles having two inside corrugated plates, two outer plates and two sets of rubber blocks gripped between them in such manner that the compression of anyone of these blocks vertically compresses the others, substantially as described.

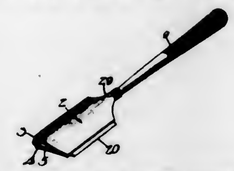
4. In a wheel for vehicles the combination with the cor-

rugated plates A, outer plates B and the rubber tire, of wires G and H, substantially as set forth.



5. The combination with wires G and H, of wires T and U, threaded through holes V in the rim of the wheel and alternately through holes W in lugs thereon, substantially as and for the purposes described.

854,915. RAZOR-BLADE HOLDER. CHARLES W. SPEECE, Chicago, Ill. Filed Nov. 10, 1906. Serial No. 342,836.



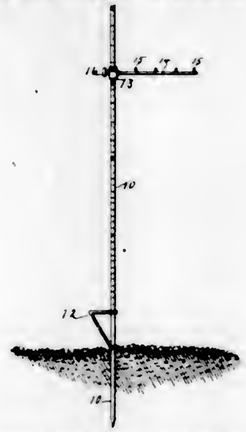
Claim.—1. A razor blade holder comprising a pair of leaves or sections which are hinged together and have threaded tang portions adapted to engage a threaded socket; a handle provided with a threaded socket adapted to engage said tang portions to lock said leaves or sections together, and elastic friction material between said leaves or sections.

2. The combination with a wafer blade, of a holder therefor which consists of a pair of hinged together leaves which constitute a blade-holding head; a handle for said head; means for locking said handle and head together; said wafer blade arranged between the leaves of said head so that only the cutting edge of said blade is exposed; said head having hollowed or concaved sides which substantially meet at the edge of said blade, and elastic material compressible upon the blade between the leaves of said head for the purpose of holding said blade against movement relatively to said head.

854,916. DITCH-LEVELING DEVICE. SYLVAN E. STONER, Ottosen, Iowa. Filed Nov. 24, 1906. Serial No. 345,248.

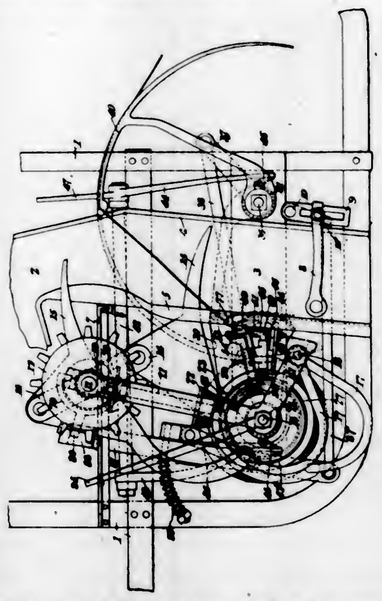
Claim.—1. In a ditch leveling device, a standard pointed at its lower end, a step fixed to the lower end portion of the standard, a slide adjustable on the standard, a line holder fixed to the slide and means to fasten the slide to the standard at different points of elevation.

2. A ditch leveling device comprising two standards, a step fixed to each standard, an adjustable slide on each standard and a line holder fixed to each slide and provided with a plurality of studs, means for fastening the slides that carry the line holder to the standards at different



points of elevation and a line connected with each line holder, to operate as set forth.

854,917. BINDING MECHANISM FOR CORN-HARVESTERS. WILLIAM H. TILSON, Plainview, Tex. Filed Feb. 6, 1906. Serial No. 299,753.



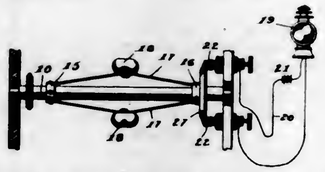
Claim.—1. A stalk chute, a rock shaft, a trip connected with said rock shaft and extending across the chute, a constantly driven vertical shaft, a pinion loose upon said shaft, a spring actuated yoke connected pivotally with the hub of said pinion and having a terminal pin, a clutch member connected fixedly with the shaft and having a flange provided with a notch for the reception of said pin, a pivotally supported link, a lever pivoted upon said link and having at one end a beveled hook the point of which extends above the horizontal plane of the notch in the clutch member upon the shaft, an arm extending from the trip carrying rock shaft, a link rod connecting said arm with the link supported lever, a knotter shaft operated at intervals by the constantly driven shaft, a pinion meshing with the loose pinion upon the constantly driven shaft, a cam member upon the knotter shaft, a friction roller upon the fulcrum pin connecting the lever with its supporting link, and spring means for forcing said lever in the direction of the cam member.

2. In a binding mechanism, a knotter shaft having a non-circular sleeve, a member slidably engaging said sleeve and carrying a disk provided with gear portions, a bracket member connected with the slidable member, means for retaining the bracket member stationary while the slidable member rotates, and operative parts of the knot tying and twine cutting mechanisms supported upon the bracket member and operable by the gear sections upon the rotary and slidable disk.

3. A knotter shaft, a non-circular sleeve connected therewith, a hub slidably engaging said sleeve and having an annular recess and a disk provided with gear sections, a bracket having an annular flange engaging the recess in the hub, means for connecting the bracket with the hub for slidable movement with the latter, means for retaining the bracket stationary while the hub rotates with the knotter shaft, knot tying and twine cutting means supported upon the bracket and operable by the gear sections upon the disk supported by the rotary hub, and means for effecting adjustment of the latter and related parts.

4. In a binder mechanism for corn harvesters, a stalk chute, a rock shaft, a trip connected with said rock shaft and extending across the chute, a constantly driven vertical shaft, a pinion loose upon said shaft, a spring actuated yoke connected pivotally with the hub of said pinion and having a terminal pin, a clutch member connected fixedly with the shaft and having a flange provided with a notch for the reception of said pin, a pivotally supported link, a lever pivoted upon said link and having at one end a beveled hook the bevel of which is located in the same plane as the path of the notch in the flange of the clutch member fixed to the constantly driven shaft, an arm extending from the trip carrying rock shaft, a link connecting said arm with the link supported lever, a knotter shaft operated at intervals by the constantly driven shaft, a pinion meshing with the loose pinion upon the constantly driven shaft, a cam member upon the knotter shaft, a fulcrum pin mounted upon the lever supporting link and spring means for forcing said lever in the direction of the cam member.

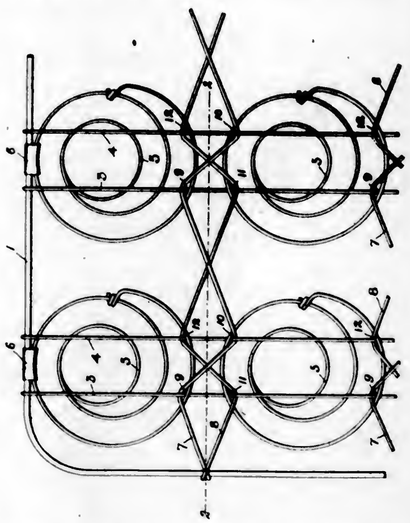
854,918. ELECTRIC GOVERNOR. HERMAN WEBER, Colorado Springs, Colo. Filed Apr. 30, 1906. Serial No. 314,538.



Claim.—1. A street car having signal lamps arranged approximately at the level of the steps, and extending through the dash board so that the steps will be illuminated, and a signal displayed at the rear of the car when the lamp is ignited, a source of electrical energy, and means operated by a revoluble member of the car for breaking the lamp circuit while the car is in motion and permitting the closing of said lamp circuit when the car stops.

2. In signaling devices for cars and the like, an electrically operated signal, a circuit including the signal, and a source of energy, a pair of stationary contact members forming terminals of the circuit, a revoluble shaft receiving motion from one of the car axles, a collar rigidly secured to the shaft, a second collar loose on the shaft, a plurality of weighted springs connecting the fast and loose collars and movable outward under centrifugal force, and a disk of conducting material carried by the loose collar and arranged to engage said stationary contacts and close the circuit when the car is stopped.

854,919. SPRING FOR BEDS, SEAT-BOTTOMS, &c. TOLLY R. WOODWARD, Augusta, Ga. Filed Mar. 21, 1907. Serial No. 363,774.



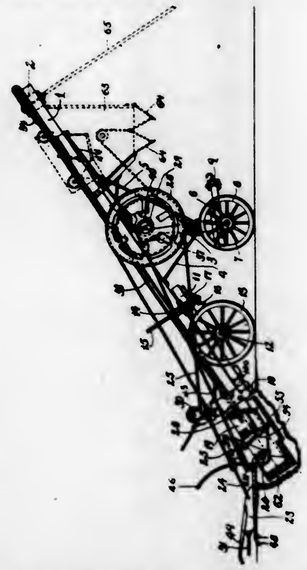
Claim.—1. The combination with a plurality of coil springs, of a plurality of pairs of supporting wires, each pair of said supporting wires passing across the end coils of a plurality of coil springs, locking stay-wires interlocking with said springs and supporting wires at diagonally opposite points of engagement between adjacent sides of adjacent end spring-coils crossed by a pair of said supporting wires and forming diagonal stays between such points and between diagonally opposite points of engagement between adjacent wires of separate adjacent pairs of supporting wires and the end coils of the springs crossed thereby.

2. The combination with a plurality of coil springs, of a plurality of pairs of supporting wires, each pair of said supporting wires passing across the end coils of a plurality of coil springs, locking stay-wires interlocking with said springs and supporting wires at diagonally opposite points of engagement between adjacent sides of adjacent end spring-coils crossed by a pair of said supporting wires and forming crossed diagonal stays between such points and between diagonally opposite points of engagement between adjacent wires of separate adjacent pairs of supporting wires and the end coils of the springs crossed thereby.

3. The combination with a pair of frames, a plurality of pairs of supporting wires extending across said frames and made fast at their ends to the sides of said frames, a plurality of coil springs arranged in rows respectively between each pair of supporting wires of one frame and a corresponding pair of the other of said frames, the said pairs of supporting wires passing across the end coils of said springs, locking stay-wires extending across said frames in a direction transverse to said supporting wires and made fast at their ends to opposite sides of said frames, said locking stay-wires interlocking with said

springs and supporting wires at diagonally opposite points of engagement between adjacent sides of adjacent end spring coils crossed by a pair of said supporting wires and forming diagonal stays between such points and between diagonally opposite points of engagement between adjacent wires of separate adjacent pairs of supporting wires and the end coils of the springs crossed thereby.

854,920. EXCAVATING AND ELEVATING APPARATUS. FREDERICK E. ALLEN, San Leandro, Cal. Filed Aug. 4, 1906. Serial No. 329,192.



Claim.—1. An apparatus of the character described comprising an inclined body, elevating means mounted to travel on said body, an excavating scraper having freedom of movement in all directions, and means leading from the body for drawing the scraper toward, and dumping its contents into, the elevating means.

2. An apparatus of the character described comprising an inclined body, elevating means mounted to travel on said body, a disconnectible driver for said elevating means, an excavating scraper, means for drawing the scraper toward, and dumping its contents into, the elevating means, and a trip operated by said scraper for connecting said driver to cause operation of the elevating means.

3. An apparatus of the character described comprising an inclined body, elevating means mounted to travel on said body, a disconnectible driver for said elevating means, an excavating scraper, means for drawing the scraper toward, and dumping its contents into, the elevating means, and a trip operated by said scraper for connecting said driver to cause operation of the elevating means, said trip having lost-motion connections whereby to defer the operation of the elevating means until after the scraper has been dumped.

4. An apparatus of the character described comprising an inclined body, elevating means mounted to travel on said body, an excavating scraper, means for drawing the scraper toward the elevating means, and a tilting trip having an upward arm adjacent the elevating means and a lateral arm; the upward arm arranged to check, and be displaced by, the scraper, and the lateral arm to raise the rear portion of the scraper and dump the contents thereof.

5. An apparatus of the character described, comprising an inclined body, elevating means mounted to travel on said body, an excavating scraper, means for drawing the scraper toward the elevating means; and a tilting dumping device having a lateral portion lying on the ground so that the scraper may ride over it, and an upstanding arm adjacent the elevating means adapted to be struck and displaced by the scraper, whereby the lateral portion is raised and the scraper dumped.

6. An apparatus of the character described comprising an inclined body, elevating means mounted to travel on said body, an excavating scraper, means for drawing the scraper toward the elevating means; and a tilting frame pivoted adjacent the lower end of the inclined body and having a lateral portion adapted to lie on the ground, and an upstanding portion arranged to be struck by a part of the scraper after the same has been drawn over said lateral portion, whereby the frame is tilted, the rear end of the scraper raised, and the contents thereof dumped.

7. An apparatus of the character described comprising an inclined body, elevating means mounted to travel on said body, an excavating scraper, means for drawing the scraper toward the elevating means, an apron or plate resting on the ground extending from the body adapted to support the scraper when adjacent the latter, and a dumping device having a lateral portion lying beside the apron and an upstanding arm; the scraper in moving toward the elevating means arranged to strike said upstanding arm, tilt the same, and raise the lateral portion to tip up the scraper and discharge the contents thereof.

8. In an apparatus of the character described, an inclined guiding body, an elevating conveyer, means including a disconnectible clutch for raising the conveyer on the body, a trip for throwing in said clutch, and a trip operated by the conveyer at the limit of its upward travel for throwing out the clutch, whereby the conveyer is permitted to descend.

9. In an apparatus of the character described, an inclined guiding body, an elevating conveyer, means including a disconnectible clutch for raising the conveyer on the body, a trip for throwing in said clutch, a trip operated by the conveyer at the limit of its upward travel for throwing out the clutch, whereby the conveyer is permitted to descend, and a resilient cushion at the bottom of said body for yieldingly bringing the conveyer to rest.

10. In an apparatus of the character described, an inclined guiding body, an elevating conveyer, means including a disconnectible clutch for raising the conveyer on the body, a trip for throwing in said clutch, a trip operated by the conveyer at the limit of its upward travel for throwing out the clutch, whereby the conveyer is permitted to descend, and a partially inclosed chamber at the bottom of the body into which the conveyer is adapted to move, forming an air cushion for gradually bringing the conveyer to rest.

11. In an apparatus of the character described, an inclined guiding body, an elevating conveyer, means including a disconnectible clutch for raising the conveyer on the body, an excavating scraper for gathering material and dumping it into the conveyer, a trip operated by the scraper as the contents thereof are dumped into the conveyer for throwing in said clutch, and a trip operated by the conveyer at the limit of its upward travel for throwing out the clutch, whereby the conveyer is permitted to descend.

12. In an apparatus of the character described, an inclined body having guides, a carrier adapted to ride on said guides, means for moving the carrier upward, a door pivoted to the carrier closing the bottom thereof, a latch holding the door closed, a trip on the upper portion of the body for engaging and tripping the latch as the carrier passes the same, whereby the door is released and allowed to open to discharge the contents of the conveyer, and means on the body for engaging and closing the open door on the descent of the carrier.

13. In an apparatus of the character described, an inclined body having guides, a carrier adapted to ride on said guides, means for moving the carrier upward, a door pivoted to the carrier closing the bottom thereof, a latch holding the door closed, a spring tending to to retain said latch in holding position, a trip on the upper portion of the body for engaging and tripping the latch against the tension of said spring as the carrier passes the same, whereby the door is released and allowed to open to discharge the contents of the conveyer, and means on the body for engaging and closing the open door on the descent of the carrier, the spring thereupon moving the latch into holding position.

14. In an apparatus of the character described, an inclined body having guides, a carrier adapted to ride on said guides, means for moving the carrier upward, a door pivoted to the carrier closing the bottom thereof, a latch holding the door closed, a projection on the body in the path of the latch adapted to engage and displace the same as the carrier is moved past the projection, and thereby allow the door to open, and rollers mounted on the body adapted to engage the open door and raise it into closed position as the carrier descends, said rollers being located to permit passage of the carrier freely over them when the door is closed.

15. A conveyer for an apparatus of the character described, consisting of a receptacle having its bottom formed by two downwardly-swinging doors pivoted adjacent opposite ends of the receptacle, a latch engaging a projection on one of the doors to hold it closed, arms on the ends of one door, and links connected to said arms and the other door for retaining the latter also in closed position.

16. A conveyer for an apparatus of the character described, consisting of a receptacle having its bottom formed by two downwardly-swinging doors pivoted adjacent opposite ends of the receptacle, a latch engaging a projection on one of the doors to hold it closed, a spring acting on the latch to hold it in engagement with the projection, arms on the ends of said door, and links connected to said arms and the other door for retaining the latter also in closed position, the latch being displaceable to permit opening of the doors.

17. An apparatus of the character described comprising an inclined frame having guideways, a conveyer movable thereon, an axle having a standard to which said frame is secured, an adjusting frame pivoted to the first frame, an axle to which said adjusting frame is secured, and adjusting means for varying the distance between the non-pivoted portions of said frames for raising and lowering one end of the first frame.

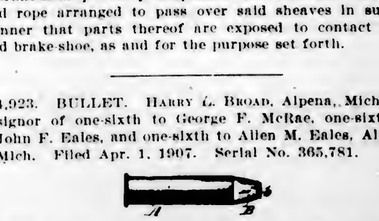
18. An apparatus of the character described comprising an inclined frame having guideways, a conveyer movable thereon, an axle having a standard to which said frame is secured, an adjusting frame pivoted to the first frame, an axle to which said adjusting frame is secured, nuts pivoted to one, and screws pivoted to the other, of said frames meshing with said nuts for changing the distance between the non-pivoted portions of the frames, and thereby raising and lowering one end of the first frame.

19. An apparatus of the character described comprising an inclined frame having guides, a carrier mounted to run on said guides, a line connected to said carrier, a drum over which the line passes, a scraper, a pulley, a line connected to said scraper passing around said pulley for drawing the scraper toward the lower end of the frame, and a disconnectible coupling between the drum and pulley; the parts being arranged so that movement of the scraper away from the frame will draw the carrier upward on the guides.

854,921. PLOW. ROBERT A. ARMSTRONG, Avonmore, Ontario, Canada. Filed Dec. 3, 1906. Serial No. 346,181.

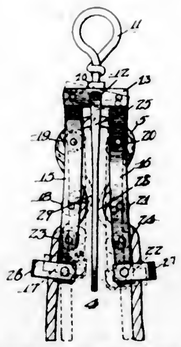
Claim.—1. In a plow the combination with the plow beam and the plow downwardly extending from the rear end of the same, the axle bar, wheels on the same, of a ring pivoted to the beam and connected to the axle bar, means for revolving the ring and means for connecting the beam to the axle bar with freedom of vertical movement as and for the purpose specified.

2. In a plow the combination with the plow beam and plow downwardly extending from the rear end of the same, the axle bar and wheels thereon of a ring pivoted to the beam and connected to the axle bar, means for tilting the ring, vertical extending standards secured to the axle bar and extending through a hole in the beam as and for the purpose specified.



3. In a plow, the combination with the plow beam and the plow, the axle bar and the wheels thereon, of an adjustable connection between the plow beam and the axle bar, a lever pivoted to the rear of the plow beam, and means operated by the tilting of the lever for raising and lowering the plow beam with reference to the axle bar, as and for the purpose specified.

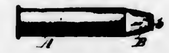
854,922. FIRE-ESCAPE APPARATUS. CLAES W. BERGQUIST, Chicago, Ill. Filed Jan. 14, 1907. Serial No. 352,080.



Claim.—1. The combination with a rope or the like, of a pair of pivoted hangers movable angularly toward and from each other; a brake-shoe suspended between said hangers; a series of sheaves or friction-members over which said rope is arranged to pass along a tortuous path over said hangers; said rope arranged so that it may contact with said brake-shoe during its passage over said sheaves or friction-members.

2. The combination, with a rope, of a brake-mechanism comprising pivotally suspended hangers, or rope-guides, having sheaves or friction-members, mounted therein, and a brake-shoe pivotally suspended between said hangers; said rope arranged to pass over said sheaves in such a manner that parts thereof are exposed to contact with said brake-shoe, as and for the purpose set forth.

854,923. BULLET. HARRY L. BROAD, Alpena, Mich., assignor of one-sixth to George F. McRae, one-sixth to John F. Eales, and one-sixth to Allen M. Eales, Alpena, Mich. Filed Apr. 1, 1907. Serial No. 365,781.

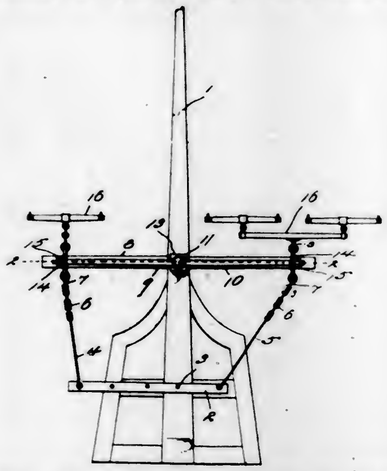


Claim.—1. A bullet comprising a jacket having an inturned flange, a filling arranged in the jacket, and a comparatively hard, tapered expander arranged in the filling with its blunt end foremost and having a circumferential groove adjacent to said end receiving the inturned flange of the jacket.

2. A bullet comprising a jacket having an inturned

flange at its forward end, a filling arranged in the jacket and having a rearwardly tapered socket in its forward portion and an air chamber in rear of said socket, and a comparatively hard, tapered expander arranged in the tapered socket of the filling with its blunt end foremost and having a circumferential groove adjacent to said end receiving the inturned flange at the forward end of the jacket.

854,924. DRAFT-EQUALIZER. BENJAMIN J. BRUNKE, Campbell, Nebr. Filed Mar. 14, 1906. Serial No. 306,029.



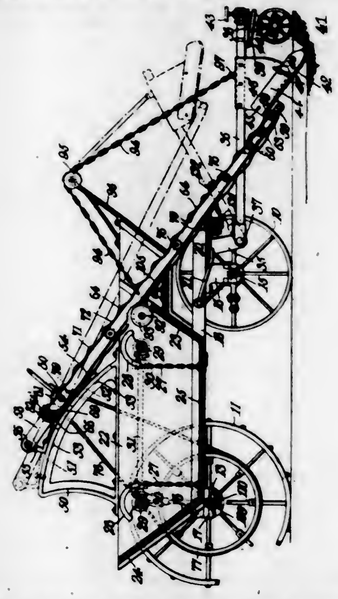
Claim.—In a device of the class described, the combination with a tongue, of a block disposed upon the tongue, a doubletree formed in sections, a bolt engaged through said block, tongue and said doubletree, apertured clips carried by said doubletree section, and rods having eye members engaged with said bolt and having their outer ends engaged through the apertures in said clips, an equalizer bar adjustably mounted upon the said tongue and adjustable connections between said equalizer bar and said doubletree members.

854,925. EXCAVATING-MACHINE. JOHN D. BUCHANAN, Rubyville, Tenn., assignor of one-half to James K. Jeffries, Memphis, Tenn. Filed Aug. 3, 1906. Serial No. 329,128.

Claim.—1. In apparatus of the class described, a wheeled receptacle, an arm extending forwardly of and pivoted to said receptacle, an inclined conveyer frame, the forward end of which is supported by the arm, the rear end of the conveyer being loosely supported, means for raising said arm to adjust the frame to inoperative position, an endless conveyer supported by the frame, and an excavating blade secured to the lower and forward end of the frame.

2. In apparatus of the class described, the combination with a wheeled receptacle, of a pair of arms pivoted to the forward end of the receptacle, an inclined conveyer frame having its upper rear end supported by the receptacle, means for connecting the lower and forward end of the frame to the arms, means for supporting the arms, an excavator blade, and an endless conveyer supported by the frame and arranged to carry the excavated material from the blade to the receptacle.

3. In apparatus of the class described, a wheeled receptacle, a pair of spaced arms pivoted to the forward portion thereof, an adjustable means for supporting said arms, a conveyer frame, the upper rear end of which extends over the receptacle, means for connecting the lower front end of the frame to the arms, an endless conveyer on said frame, and an excavator blade adjustably secured to the forward ends of the arms.



4. In apparatus of the class described, a wheeled receptacle, arms extending forwardly of and pivoted to said receptacle, a pair of hangers at the forward ends of said arms, a blade carried by the hangers, a conveyer frame, means for pivotally connecting the lower forward end of the conveyer frame to said hangers, and an endless conveyer supported by the frame.

5. In apparatus of the class described, a wheeled receptacle, a pair of arms extending forwardly of and pivoted to the receptacle, hangers on said arms, an excavating blade adjustably secured to the hangers, a conveyer frame, the lower forward end of which is pivoted to the hangers, the rear end of said frame being slidably supported by the receptacle, an endless conveyer carried by the frame, and means for adjusting the arms to vary the depth of cut of the blade.

6. In apparatus of the class described, the combination with a wheeled receptacle, of a pair of arms extending forwardly of and pivoted to the receptacle, a vertically adjustable supporting means for the arms, hangers carried by said arms, an excavating blade supported by the hangers, a conveyer frame having its lower forward end pivoted to the hangers, the rear end of said frame being slidably mounted over the receptacle, an endless conveyer supported by the frame, and means for raising said arms to adjust the conveyer and blade to inoperative position.

7. In a device of the class described, the combination with a wheeled receptacle, a pair of arms extending forwardly of and pivoted to the receptacle, vertically adjustable supports for the forward ends of said arms, a pair of hangers carried by the arms, an excavating blade carried by said hangers, an inclined conveyer frame, the forward end of which is pivoted between the hangers, the rear end of said frame being slidably supported above the receptacle, and an endless conveyer carried by said frame.

8. In apparatus of the class described, the combination with a load receptacle, of a pair of arms extending forwardly of and pivoted to the receptacle, vertically adjustable supports for the forward ends of said arms, a pair of hangers carried by the arms, an adjustable excavating blade carried by the hangers, means for locking said blade in adjusted position, an inclined conveyer frame, the forward end of which is pivoted between the hangers, slidable supports for the upper end of said frame, an endless conveyer carried by the frame, and means for raising the arms to elevate the blade and conveyer to inoperative position.

9. In apparatus of the class described, a wheeled receptacle, a pair of arms pivoted to the forward portion thereof, a pair of wheeled supports for the forward ends of the arms, means for adjusting said supports to vary the vertical depth of cut, a pair of hangers carried by the arms, an excavating blade pivoted to said hangers and adjustable to varying angular positions, means for locking said blades in adjusted position, a conveyer frame, the lower end of which is pivoted between the hangers, slidable supports for the upper ends of the frame, and an endless conveyer mounted on said frame.

10. In apparatus of the class described, a wheeled receptacle, a pair of arms pivoted thereto, plates secured to the lower faces of the outer ends of the arms, bars pivoted to said plates, hangers depending from the bars, wheels journaled in said hangers, screws passing through the arms and plates and bearings on the bars, a pair of plates depending from the inner faces of the arms, a cutting blade pivoted between said plates and adjustable to varying angular positions, means for locking said blade in adjusted position, a conveyer frame having its lower forward end pivoted between the plates, an endless conveyer mounted on the frame, sheave supporting brackets, arm lifting chains guided over said brackets, and winding drums to which the opposite ends of the chains are connected.

11. In apparatus of the class described, the combination with a wheeled receptacle, of a pair of arcuate brackets carried thereby, a cutting blade, an endless conveyer, a conveyer frame, the rear end of which is slidably mounted on the brackets, a driving axle, gearing connections between the driving axle and the conveyer, the arcuate faces of the brackets being struck on lines from the center of the axle to prevent disconnection of the gearing during adjustment of the conveyer.

12. In apparatus of the class described, the combination with a wheeled receptacle, of a revoluble axle on which the rear wheels are mounted, a conveyer frame, an endless conveyer thereon, an excavating blade arranged at the forward end of the conveyer, a pair of brackets having arcuate surfaces struck from the center of rotation of the axle, said brackets being slotted, slidable arcuate bars mounted on the brackets and carrying headed bolts extending through the slots, said bars having bearings for the upper driving shaft of the conveyer, a sprocket wheel on said shaft, a driving sprocket having its center of rotation coincident with the axis of the axle, and a link belt extending between the two sprockets, whereby adjustment of the conveyer is permitted without disengagement of the driving connections.

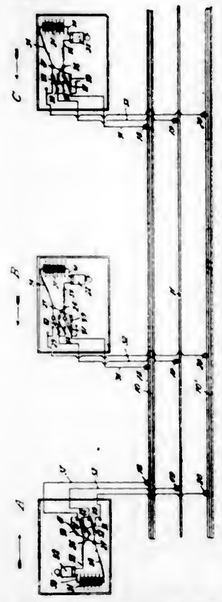
13. In apparatus of the class described, the combination with a wheeled receptacle, of an axle on which the rear wheels are mounted, a pair of brackets having arcuate faces struck from the center of rotation of the axle, a pair of arcuate bars slidably mounted on the bracket, a conveyer frame having its upper end pivotally connected to said bars, a conveyer driving shaft also mounted on the bars, a sprocket wheel on the shaft, a driving sprocket having its center of rotation coincident with that of the shaft, and a link belt connecting the two sprockets.

14. In apparatus of the class described, the combination with the supporting wheels and axles, of a pair of bars connected to the axles and extending parallel with each other, the forward ends of said bars being bent into relatively close relation, a cross bar connecting the forward ends of the bars, side and end walls arranged to form a receptacle, and a draft gear attaching bar carried by said cross bar.

15. In apparatus of the class described, the combination with the supporting wheels, of the axles, brackets on said axles, a pair of parallel side bars carried by the brackets, a cross bar connecting the forward ends of said side bars, side and end members carried by the side bars, and forming a receptacle, a pair of arms extending forwardly of the cross bar and pivoted thereto, an endless conveyer, and an excavating blade between said arms, a draft attaching bar extending transversely of the machine, and draft attachments carried by the opposite end portions of said bar.

16. In apparatus of the class described, the combination with a wheeled receptacle, of a pair of tubular arms pivoted to the forward end thereof, an excavating blade, and a conveyer arranged between said arms, and a U-shaped draft bar having its opposite arms adapted to fit within the ends of the tubular arms.

854,926. ELECTRIC RAILWAY SIGNALING SYSTEM. ANTONIO CASALE, Scranton, Pa. Filed June 23, 1906. Serial No. 323,097



Claim.—In a system of the class described, three continuous road bed conductors arranged in parallel relation, three traveling contacts carried by each train and engaging the respective conductors, switch points to which the three contacts are electrically connected on each train, the switch points each having a laterally extended portion, a source of electrical energy, and an alarm on each train, and a pair of double throw pole reversing switches, each having one end connected to the terminals of the source of energy, the switches being movable independently of each other, one to engage any two of the switch points, and the other to engage any two of the laterally extended portions of such switch points, whereby either pole of the source of energy may be electrically connected to any one of the road bed conductors, and the other pole connected to any of the other road bed conductors, thereby permitting the closing of circuits between a train running ahead, running backward, or standing, with other trains moving in either direction.

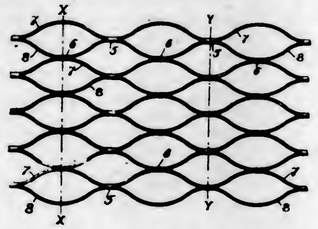
854,927. RETICULATED METAL. NORRIS E. CLARK, Plainville, Conn. Filed Dec. 23, 1905. Serial No. 293,052.

Claim.—1. As an article of manufacture, a reticulated material formed of sheet metal having strands arranged at right angles to the plane of the material and connected by integral bonds adjacent to but slightly below the surface of said article.

2. As an article of manufacture, a reticulated material

formed of sheet metal having strands arranged with their cut edges forming the upper and lower surfaces of the material connected at intervals by integral folded bonds adjacent to but slightly below the surface of said article.

3. As an article of manufacture, a reticulated material formed of sheet metal having strips arranged at right angles to the plane of the material, connected at intervals by rows of integral folded bonds arranged alternately on opposite sides of the material said bonds being adjacent to but slightly below the surface of said article.

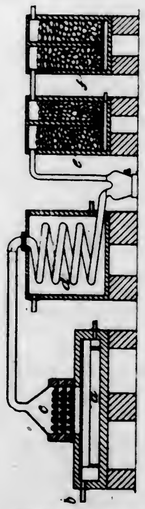


4. As an article of manufacture, a reticulated material formed of sheet metal having strips arranged at right angles to the plane of the material, connected at intervals by rows of integral folded bonds arranged alternately on opposite sides of the material and below the surfaces thereof.

5. As an article of manufacture, a reitculated material formed of sheet metal having strands substantially at right angles to the plane of the material, with openings between them, and connected at intervals by an integral arched portion the crown of the arch being below the surface of the article.

6. A plate of material formed of sheet metal having strands arranged with their flat edges forming the upper and lower surfaces of the plate or material, connected at intervals by integral folded portions and spaced apart between the connections to form openings the fold being below the bearing surface of the article.

854,928. METHOD OF CONCENTRATING NITRIC ACID. EMIL COLLETT, Christiania, Norway. Filed Aug. 10, 1905. Serial No. 273,618.



Claim.—1. The method of concentrating nitric acid which includes exposing the dilute acid to the influence of a current of a hot gaseous medium free from acid and bringing the so obtained mixture of gases and vapors into contact with a cold aqueous liquid for the purpose of condensing the vapors.

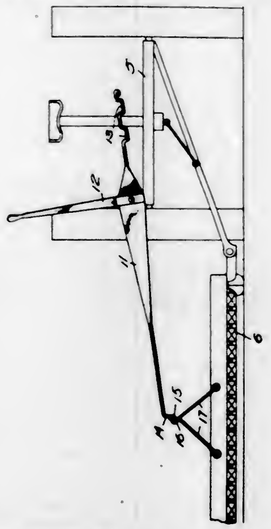
2. The method of concentrating nitric acid, which includes exposing the dilute acid to the influence of a current of a hot gaseous medium free from acid, and bringing the so-obtained mixture of gases and vapors into contact with a cold stream of diluted nitric acid for the purpose of condensing the major part of the vapors and pre-heating the diluted nitric acid.

3. The method of concentrating nitric acid, which includes exposing the acid to the influence of a current of a hot gaseous medium, bringing the so obtained mixture of gases and vapors into contact with a cold stream of diluted nitric acid for the purpose of condensing the major portion of the vapors and preheating the diluted nitric acid, and bringing the mixture of gases and vapors into contact with cold bodies for condensation of a further quantity of nitric acid vapors.

4. The method of concentrating nitric acid, which includes exposing the acid to the influence of a current of a hot gaseous medium, bringing the resulting mixture of gases and vapors into contact with a cold stream of diluted nitric acid to condense the major part of the vapors and preheat the diluted nitric acid, then bringing the mixture of gases and vapors into contact with cold bodies to condense a further quantity of acid, and finally into contact with a substance capable of forming a nitrate with nitric acid.

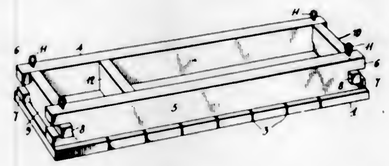
5. The method of concentrating nitric acid, which consists in exposing the acid to the influence of hot air, bringing the resulting mixture of gases and vapors into contact with cold diluted nitric acid to condense the major portion of the vapors and preheat the diluted acid, then bringing the mixture of gas and vapors into contact with cold surfaces to condense a further quantity of acid and finally into contact with limestone.

854,929. HAY-DROPPER. WILLIS A. COOK, Sturgis, S. D. Filed Jan. 24, 1906. Serial No. 297,715.



Claim.—The combination with a mowing machine including a carrier, of a lever having an enlarged recessed lower end, a rocking bar received intermediate its ends in the recess, a supporting arm having a downturned portion provided with a plurality of bolt holes and disposed against the rocking bar at its point of connection with the lever, and a bolt engaged through the enlarged recessed portion of the lever, the rocking bar, and interchangeably through the openings in the supporting arm, the said rocking bar being connected at one of its ends with the carrier and being provided at its other end with foot rests, substantially as described.

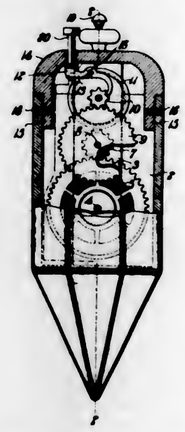
854,930. BUTTER-MOLD. CLOSSER A. CRANE, LAFAYETTE F. CRANE, and FRANK M. HENTIG, Topeka, Kans. Filed Jan. 3, 1907. Serial No. 350,632.



Claim.—1. A butter mold comprising a base-board or bottom having apertures in the corners thereof, and grooves extending transversely of the edges thereof, the grooves at one side being arranged opposite those on the other side, and interlocking side and end members having tongues with apertures extending therethrough and registering with the apertures in the corners of the base-board, and pins extending through said apertures to hold said members detachably connected with the bottom.

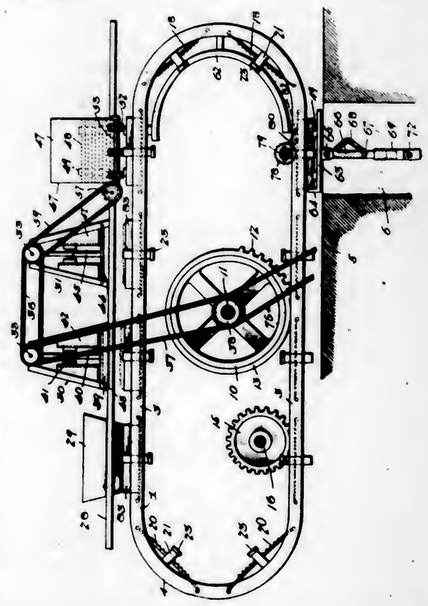
2. A butter mold comprising a bottom or base-board having grooves extending transversely of the edges thereof, and side and end members connected with said bottom and with each other, in combination with a flexible cutting member to span said member and operate in said notches.

854,931. PLUMB-BOB. ALONZO CROCHETT, Iola, Kans. Filed Nov. 30, 1906. Serial No. 345,746.



Claim.—A plumb bob comprising a body portion having a longitudinally extending recess, a frame fitting within the recess and having a spring actuated drum, a pawl and ratchet mechanism for controlling the rotation of a drum, a cap having depending ears which fit within the recess, a line passing through the cap and winding upon the drum, a push peg mounted upon the opening cap and adapted to engage the end of said pawl.

854,932. MOLD-PREPARING MACHINE. LOUIS P. DAGES, Baltimore, Md., assignor of one-half to George P. Zulauf, Baltimore, Md. Filed Nov. 8, 1906. Serial No. 342,555.



Claim.—1. In a machine of the class described, an endless track having an arcuate rail member, a plurality of carriers having automatically movable catch devices, flasks separately applied to the carriers, devices for supplying sand to and forcing it into the flasks, mechanism for delivering closures to the flasks in succession, said arcuate rail member being adapted to actuate the catch devices for bringing the same into operative position when contacting with said member, and means for operating the carriers to impart a step-by-step movement thereto.

2. In a machine of the class described, a track, a plurality of carriers having movable catch devices, flasks separately applied to the carriers, devices for supplying sand to and forcing it within the flasks, mechanism for delivering closures to the flasks in succession, means coöperative with the track for engagement with the movable catch devices for bringing the same into operative position when traversing said means, and means for imparting movement to the carriers.

3. In a machine of the class described, a track, a plurality of carriers supported by said track and movable over the same, and having movable catch devices, flasks separately mounted on the carriers, devices for supplying sand to and forcing it within the flasks, mechanism for delivering closures to the flasks in succession, a rail member situated beyond the mechanism for delivering closures to the flasks for engagement with the movable catch devices for actuating the latter to cause the same to lock the closures on the flasks, and means for receiving the flasks and molded sand therein.

4. In a machine of the class described, a track, a plurality of carriers having removable flasks supported by said track, means for imparting simultaneous step-by-step movement to the carriers, devices for supplying sand to and forcing it within the flasks, mechanism for delivering closures to the flasks, catch members associated with the carriers for locking the closures therein, and means cooperative with the track for actuating the catch members to lock the same for maintaining the closures in position

in the flasks, and mechanism for automatically discharging the flasks from the carrier.

5. In a machine of the class described, an endless track, a plurality of flasks movable on said track, means for simultaneously actuating the carriers in a step-by-step movement, means for supplying sand to and forcing it within the flasks, mechanism for delivering closures to the flasks, catch members carried by the carriers, means associated with the track for actuating the catch-members to lock the closures in position in the flasks, and automatically operative mechanism having a tilting platform for receiving the flasks after the same has been filled with material, and for discharging the same from the carriers.

6. In a machine of the class described, a track, a plurality of carriers movable on said track, flasks supported by said carriers, means for simultaneously moving the carriers by a step-by-step movement, mechanism for supplying sand to and forcing it within the flasks in succession, mechanism for delivering closures to the flasks in succession, catch members for the closures supported by the carriers, means coöperative with the track for actuating the catch members for locking the closures in position and for releasing the same, and a tilting platform for receiving the flasks when the latter are brought in position to be discharged from the carriers.

7. In a machine of the class described, and endless track, means having removable flasks connected to the track for simultaneous step-by-step movement, mechanism for supplying sand to and forcing it within the flasks, mechanism for delivering closures to the latter in succession and independently operating in conjunction with the several flasks, while each of the devices is operating with relation to an individual flask, catch members for locking and releasing the closures, means arranged in proximity to the track for actuating the catch members, and independent means for receiving the flasks when the latter have been filled with material.

8. In a machine of the class described, a plurality of flasks, carriers for supporting the flasks and movable in a step-by-step manner, a track for supporting the carriers, devices for supplying sand to and forcing it within the flasks, independent mechanism for delivering closures to the flasks, catch members for locking and releasing the closures, means in proximity to the track for actuating the catch members, mechanism operative upon the flasks for loosening the material contained therein, and means for receiving the flasks after having been filled with material.

9. In a machine of the class set forth, an endless track, a plurality of carriers movable upon said track and adapted to be actuated in a simultaneous step-by-step movement, flasks removably mounted on the carriers, devices for supplying sand to and forcing it within the flasks, independent mechanism for delivering closures to the latter, means carried by the carriers for locking and releasing the closures, means coöperative with the track for actuating the latter means, and tilting mechanism for receiving a flask from the carriers after said flask has been filled with sand.

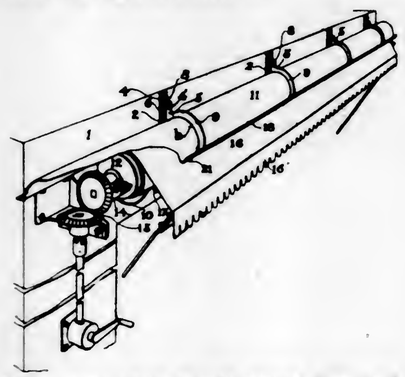
854,933. AWNING. BASTIAN DE YOUNG, Los Angeles, Cal. Filed Oct. 10, 1905. Serial No. 282,136.

Claim.—1. An awning fixture provided with a roller and with shields extending over and under the roller, each terminating in front of the roller in curved lips, the upper one being curved upward approximately on a level with the axis of the roller and the lower one curved downward, thereby forming a gutter to protect the awning, and a support beneath said gutter for the awning, said awning being attached to the roller and extending between said gutter and support.

2. An awning fixture provided with a roller and a shield extending over the top of the roller and down in front of the upper part of the roller and terminating in an upwardly-curved lip that forms an open ended gutter approximately on a level with the axis of the roller.

3. An awning fixture provided with a roller and a shield extending over the top of the roller and down in front of the upper part of the roller, and provided with an open ended gutter along its front edge.

4. A support; bracket sections fastened thereto and respectively provided with a body and an arm; bracket sections fastened to said bodies respectively, and shield sections clamped between said bracket sections and forming a forwardly opening recess between them.



5. A support; bracket sections fastened thereto and respectively provided with a body and an arm; bracket sections fastened to said bodies respectively; shield sections clamped between said bracket sections and forming a forwardly opening recess between them and having lips, the one being curved upwardly and the other downwardly.

6. A support; brackets fastened thereto, respectively comprising a main body and an arm, said arm being recessed in its upper face and said body being recessed above said arm; a recessed under shield section in the recesses of the arms; a reversely recessed over shield section above the under section; an open space being provided between said sections, forming a slot at the front; and upper bracket sections, respectively comprising a body and an arm; the bodies of said bracket sections being seated in the main bracket section and fastened thereto and said shield sections being clamped between said bracket sections.

7. A roller, brackets having bent arms above and below said roller, transversely bent shields in said arms above and below the roller and forming a slot in front of the roller, and an awning sheet on the roller and extending through the slot.

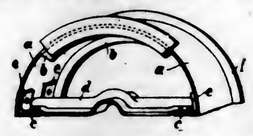
8. A roller, reversely bent bracket arms above and below the roller, an open space being provided between said arms, and a hollow shield around the roller held by said arms and provided with an open way in front of the roller.

9. A support; brackets, each formed of an upper and a lower section, each upper section having a clamp point; upper and lower shield sections in said brackets, one of said shield sections being bent to form a recess in which the clamp points of the upper bracket sections seat, and means fastening the bracket sections to each other and to the support; said shield sections being arranged to form a recess between them for an awning roller and sheet.

10. A support; brackets fastened thereto, respectively comprising a main body and an arm, said arm being recessed in its upper face; a recessed under shield section in the recesses of the arms; a reversely recessed over shield section above the under section; an open space being provided between said sections, forming a slot at the front; and upper bracket sections, respectively comprising a body and an arm; the bodies of said bracket sections being fastened to the main bracket section, means being provided for holding said shield sections in place, and said shield sections being clamped between said bracket sections.

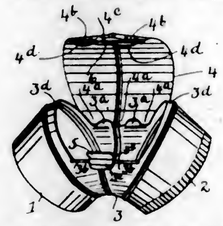
854,934. SPLIT PULLEY. EMIL DIETRICH, Burgstädt, near Chemnitz, Germany. Filed Apr. 26, 1905. Serial No. 257,456.

Claim.—In a split sheet metal pulley, the combination of a plurality of rim segments respectively provided with inwardly bent ends and internal lateral flanges, arms provided with strengthening ribs and outwardly bent ends, said bent ends being fixed to said rim segments, and



strengthening rings attached to said lateral flanges and extending outwardly beyond the circumference of the pulley rim.

854,935. STOVEPIPE-ELBOW. JAMES A. DOREE, Cloquet, Minn. Filed June 18, 1906. Serial No. 322,170.



Claim.—1. In a stove pipe elbow, the combination of a body portion, provided with a cleaning out aperture, and having inwardly and outwardly bent fingers formed upon the opposite longitudinal edges of said aperture, the outwardly bent fingers upon one of said edges being rolled to form a part of a hinge, and the outwardly bent fingers upon the opposite of said edges being rolled to form supports for a shaft, a tongue formed upon or mounted on said shaft, and a hinged cover for said aperture, said cover having outwardly and inwardly bent fingers formed upon its hinged edge said outwardly bent fingers forming part of the hinge and the inwardly bent fingers alternating and interlocking with the inwardly bent fingers upon the adjoining edge of said body portion, said cover having outwardly and inwardly bent fingers upon its opposite or free longitudinal edge, the latter said outwardly bent finger forming a support for a shaft extending longitudinally of said elbow and adapted to engage the tongue, said free edge of the cover being provided with other inwardly bent fingers attached thereto, substantially as described.

2. In a stove pipe elbow, the combination of a body portion having a cleaning out aperture formed therein intermediate of its ends and provided with fingers formed upon the longitudinal edges of said aperture, a cover for said aperture adapted to overlap the ends of the aperture and provided at its longitudinal edges with fingers adapted to alternate with and interlock with said fingers formed upon the longitudinal edges of said body portion, and means for locking said cover in closed position.

3. In a stove pipe elbow, the combination of a body portion, having a cleaning out sperture formed therein intermediate of its ends, a cover portion, for said aperture, hinged upon said body portion, the edges of said cover portion being adapted to extend over the edges of said body portion, a lever mounted upon one of said portions and adapted to engage the other of said portions for drawing said portions into close relation to each other and holding them there.

4. In a stove pipe elbow, the combination of a body portion open at each end and having an aperture formed therein intermediate of its ends, and a cover portion, each of said portions having fingers extending from its longitudinal edges, the fingers on each portion being adapted, when said cover is closed, to extend within the opposite portion.

5. In a stove pipe elbow, the combination of a body portion open at each end and having an aperture formed therein intermediate of its ends, and a cover portion each having fingers provided upon its longitudinal edges, some of said fingers on each of said portions being bent inwardly and some of said fingers being bent outwardly.

6. In a stove pipe elbow, the combination of a body portion having an aperture formed therein intermediate of its ends, a curved finger extending from one of the longitudinal edges of said aperture, a shaft or pin grasped by said finger, a curved finger extending from one of the longitudinal edges of said cover, a shaft or pin grasped by the second said finger, and a curved tongue supported by one of said shafts and adapted to engage the other of said shafts.

854,936. COUPLING FOR BELL AND SPIGOT PIPES. SOLOMON R. DRESSER, Bradford, Pa., assignor to S. R. Dresser Manufacturing Company, Bradford, Pa., a Corporation of Pennsylvania. Filed Sept. 5, 1905. Serial No. 277,075.



Claim.—1. In a pipe coupling for bell and spigot pipe, the combination with the packing ring, of a clamping ring adapted to fit over the spigot and provided with means for engaging and compressing the packing ring, a second clamping ring adapted to surround the bell, having its interior surface provided with separated, inwardly extending bearing lugs for directly engaging the exterior of the bell to distribute the strain of said bolts around said ring and bell and clamping bolts connecting said clamping rings, substantially as described.

2. In a pipe coupling for bell and spigot pipe, the combination with the packing ring, of a clamping ring adapted to fit over the spigot and provided with means for engaging and compressing the packing ring, a second clamping ring adapted to surround the bell, having its interior surface provided with separated, inwardly extending bearing lugs for directly engaging the exterior of the bell to distribute the strain of said bolts around said ring and bell, said bearing lugs being arranged closely adjacent to those portions of the ring through which the bolts pass, for transmitting the strain of the bolts directly to the bell and bolts connecting said clamping rings, substantially as described.

3. In a pipe coupling for bell and spigot pipe, the combination with the packing ring, of a clamping ring adapted to fit over the spigot and provided with means for engaging and compressing the packing ring, a second clamping ring adapted to surround the bell, having its interior surface provided with separated, inwardly extending bearing lugs for directly engaging the exterior of the bell to distribute the strain of said bolts around said ring and bell, said second clamping ring being provided with bolt holes and said bearing lugs being arranged in pairs, and the lugs of each pair being located on opposite sides of one of the said bolt holes, and clamping bolts passing through said bolt holes and connecting said clamping rings, substantially as described.

4. In a pipe coupling for bell and spigot pipe, the combination with the packing ring, of a clamping ring adapted to fit over the spigot and provided with means for engaging and compressing the packing ring, a second clamping ring adapted to surround the bell, provided on its inner face with inner and outer annuair flanges, and reinforcing webs connecting said flanges at intervals and having its interior surface provided with separated, inwardly

extending bearing lugs in line with said webs for directly engaging the exterior of the bell to distribute the strain of the bolts around said ring and bell and bolts connecting said clamping rings, substantially as described.

5. In a pipe coupling for bell and spigot pipe, the combination with the packing ring, of a clamping ring adapted to fit over the spigot and provided with means for engaging and compressing the packing ring, a second clamping ring adapted to surround the bell provided on its inner face with concentric annular flanges, and reinforcing webs disposed substantially radially, arranged in pairs around the ring and connecting said concentric flanges, the ring proper being provided with bolt holes between said webs, the inner annular flange being provided on its interior face, with separated bearing lugs for directly engaging the bell, to distribute the strain of the bolts around said ring and bell, each of said lugs being in line with one of said reinforcing webs, and bolts connecting said clamping rings, substantially as described.

6. In a pipe coupling, the combination with the packing ring, of a clamping ring adapted to fit over the pipe, and provided with a laterally extending sleeve for engaging the packing ring, and reinforcing webs connecting said ring and sleeve, and arranged in pairs around the sleeve, said ring being provided with bolt holes between the webs of said pairs, and clamping bolts extending through said bolt holes, substantially as described.

7. The combination with two pipe sections, having their adjacent ends provided, the one with two successive bells, the outer bell being of greater diameter than the inner, and the other with a spigot adapted to fit within the inner bell, and form a packing recess between the spigot and the outer bell, a packing ring fitting in said recess, and provided on its outer face with an annular groove, a clamping ring surrounding said spigot, and provided with a laterally extending sleeve, to engage said groove, and having reinforcing webs, connecting said sleeve and ring and arranged in pairs around the ring, the ring being provided with bolt holes each located between a pair of said webs, a second clamping ring surrounding one of said bells and bolts connecting said clamping rings, substantially as described.

8. The combination with two pipe sections, having their adjacent ends provided, the one with two successive bells, the outer bell being of greater diameter than the inner, and the other with a spigot adapted to fit within the inner bell, and form a packing recess between the spigot and the outer bell, a packing ring fitting in said recess, and provided on its outer face with an annular groove, a clamping ring surrounding said spigot, and provided with a laterally extending sleeve, to engage said groove, and having reinforcing webs, connecting said sleeve and ring and arranged in pairs around the ring, the ring being provided with bolt holes each located between a pair of said webs, a second clamping ring surrounding the outer bell, and having its interior face provided with separated, inwardly extending bearing lugs directly engaging the outer surface of said outer bell for distributing the strain of the bolts around said ring and bell, and bolts connecting said clamping rings, substantially as described.

854,937. GAME APPARATUS. EDWARD C. D'YARMETT, Bartlesville, Ind. Ter. Filed Nov. 17, 1906. Serial No. 343,924.

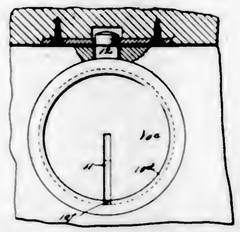
Claim.—1. Game apparatus comprising a casing, a central raised goal therein, a concealed magnet beneath said goal, a circular ridge surrounding said goal, and magnetic and non-magnetic balls.

2. Game apparatus comprising a casing having a glazed top, a central raised goal having sloping sides in said casing, a concealed magnet beneath said goal, a circular ridge having sloping sides surrounding said goal, and magnetic and non-magnetic balls.

3. Game apparatus comprising a casing having a glazed top, a central raised goal in said casing, a magnet concealed in the bottom of said casing beneath said goal, a circular ridge surrounding said goal, and a series of colored and appropriately designated balls within said casing, one at least of said balls being of magnetic material.

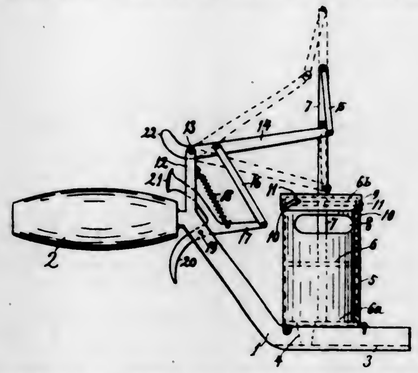


854,938. LOCK. FRANCIS X. ECKSTEIN, Steger, Ill. Filed Oct. 10, 1906. Serial No. 338,333.



Claim.—In a lock, in combination, a cylindrical casing closed at the rear end and open at the front end and having an inwardly-projecting flange around the edge of the open end, the flange having a notch, a circular face plate fitting and rotatable in the casing, behind the flange, and having a key slot adapted to register with the notch, a circular disk fitting and rotatable in the casing, behind the plate, and having a cam slot, and a key notch in its edge adapted to register with the slot in said face plate, and a bolt slidable radially in the casing behind the disk and having a pin extending into the slot.

854,939. MASON'S POINTING-TOOL. ARENT EIDE, Knox, N. D. Filed Feb. 8, 1907. Serial No. 356,368.



Claim.—1. A pointing tool having a handle and a groove or face adapted to do the pointing, and a port adapted to feed mortar into the groove, a cylinder opening into the port, a piston rod and piston in the cylinder and a finger-operated lever pivoted near the handle and operatively connected with the piston rod, and a spring tending to raise the piston.

2. A pointing tool having a handle and a groove or face adapted to do the pointing, and a port adapted to feed mortar into the groove, a cylinder opening into the port, a piston rod and piston in the cylinder and a finger-operated lever pivoted near the handle and operatively connected with the piston rod, a trigger pivoted near the handle and a link connecting it with the finger-operated lever, said trigger having touching points for the forefinger and for the thumb of the hand holding the handle.

3. A pointing tool having a handle and a groove or face adapted to do the pointing, and a port adapted to feed mortar into the groove, a cylinder opening into the port, a piston rod and piston in the cylinder and a finger-operated lever pivoted near the handle and operatively connected with the piston rod, a trigger pivoted near the handle and a link connecting it with the finger-operated lever, said trigger having touching points for the forefinger and for the thumb of the hand holding the handle, and a spring tending to raise the piston.

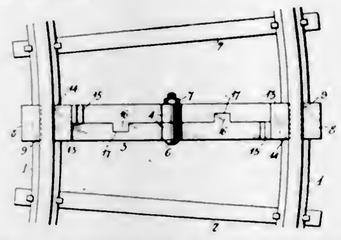
854,940. PROCESS FOR THE PRODUCTION OF ACTIVE MATTER FOR ACCUMULATORS WITH MIXED OXIDS. HENRI FREDET, Brignoud, France. Filed Jan. 2, 1904. Serial No. 187,754.

Claim.—1. The process of making an active material for accumulator plates, which includes the mixing of lead oxid with ammonium hydrosulfid, substantially as described.

2. The process of making an active material for accumulator plates, which includes the mixing of different oxids of lead with ammonium hydrosulfid, substantially as described.

3. The process of making an active material for accumulator plates which includes mixing oxid of lead with ammonium hydrosulfid and precipitating the sulfur from the hydrosulfid on the surface of the mass.

854,941. BRIDLE-ROD FOR RAILWAY-TRACK RAILS. HOWARD W. FREEMAN, Newark, Ohio. Filed Mar. 4, 1907. Serial No. 360,507.



Claim.—1. A bridle rod for railway track rails composed of longitudinally-separable sections, each section having at one end an upwardly-projecting, inwardly-extending lug to engage the outer flange of a rail at one side of the track and at its other end with an upwardly-projecting, outwardly-extending lug to engage the inner flange at the opposite side of the track, and means for securing said sections together.

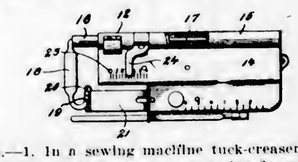
2. A bridle rod for railway track rails composed of longitudinally-separable sections having coacting rail-engaging lugs on the opposite ends thereof, the lugs on one section being extended laterally to engage the other section, and means for clamping said sections together.

3. A bridle rod for railway track rails composed of longitudinally-separable sections having coacting rail-engaging lugs on the opposite ends thereof, the lugs on one section being extended laterally and provided with means for interlocking with the means on the other section, and means for clamping said sections together.

4. A bridle rod for railway tracks consisting of longitudinally disposed separable sections, integral upwardly and laterally projecting rail engaging lugs formed on the opposite ends of said sections, the laterally projecting portions of said lugs being adapted to be engaged with the upper surface of the opposing section, means to brace said inner rail engaging lugs, a series of interlocking projections formed on said sections, and a clamping bolt to securely bind the latter together, substantially as described.

5. A bridle rod for railway track rails, consisting of longitudinally disposed sections, an outer upwardly and laterally projecting rail engaging flange formed on one end of each of said sections, a flange engaging lip formed on the upper inner side of said lug, a tongue formed on the lower side of the laterally projecting portions of the same to engage a groove in the upper side of the adjacent ends of the opposing section, inner upwardly and laterally projecting flange engaging lugs formed on the opposite ends of said sections, the laterally projecting portions of said inner lugs being adapted to fit over upon the upper side of the opposing section, means to brace said laterally projecting portions of said lug when engaged with said opposing section of the rod, rail flange engaging lips formed on said lugs, laterally projecting locking lugs formed on the inner edges of said sections, said lugs being adapted to engage notches or recesses in the opposing sections of the rod when said sections are brought together, apertured lugs formed on the upper side of said sections, and a clamping bolt and nut adapted to be arranged in said apertured lugs to bind the sections of the rod together, substantially as described.

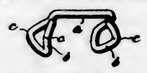
854,942. SEWING-MACHINE TUCK-CREASER. PERCY R. GREIST, New Haven, Conn., assignor to The Greist Manufacturing Company, a Corporation of Connecticut. Filed Mar. 13, 1907. Serial No. 362,093.



Claim.—1. In a sewing machine tuck-creaser, the combination with a creasing lip, of a creasing finger co-operating therewith, and a torsional, rocking, wire rod extending lengthwise of the attachment and having at its forward end an integral right-angular creasing arm provided with an integral creasing finger co-operating with said creasing lip, said arm being flattened out thin to afford proper resilience to said creasing finger in addition to the resilience afforded by said torsional rod.

2. In a sewing machine tuck-creaser, the combination with a plate or frame having a tubular portion at its rear side, of a rocking tube mounted in said tubular portion of said plate or frame, a torsional wire rod extending into said tube longitudinally and connected thereto so as to rock therewith, said rod having a flattened-out, thin, right-angular integral portion to form a creasing arm and which arm is provided with an integral creasing part or finger, and a creasing lip with which said finger co-operates.

854,943. PLATING-SEPARATING DEVICE. PERCY R. GREIST, New Haven, Connecticut, assignor to The Greist Manufacturing Company, a Corporation of Connecticut. Filed Mar. 13, 1907. Serial No. 362,094.



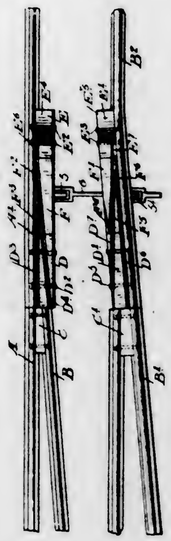
Claim.—1. A separating device, for use in metal plating, consisting of a piece of wire having a longitudinal body portion provided at its opposite ends with eyes which are disposed substantially at right angles to the said body portion.

2. A separating device, for use in metal plating, consisting of a piece of wire having a longitudinal body portion provided at its opposite ends with eyes which are disposed substantially at right angles to the said body portion, said eyes being bent to present irregularities in their outer or contact surfaces, for the purpose of reducing the extent of such contact surfaces.

3. A separating device, for use in metal plating, consisting of a single piece of wire and comprising two longitudinal bars and two eyes disposed approximately at right angles to said bars at the ends thereof.

4. A separating device, for use in metal plating, consisting of a single piece of wire and comprising two longitudinal bars and two eyes disposed approximately at right angle to said bars at the ends thereof, said eyes being bent to present irregularities in their outer surfaces, for the purpose of reducing the extent of their contact faces.

854,944. RAILWAY-SWITCH. JOHN HARMER, Toronto, Ontario, Canada. Filed Mar. 11, 1907. Serial No. 361,785.



Claim.—1. In a railway switch, the combination with the main line and siding, the inner rail of each terminating abruptly and the outer rails extending continuously, of turnable blocks located one opposite the abruptly terminated siding rail adjacent to the main line rail and one opposite the abruptly terminated main line rail and each provided with grooves on two sides, and means for turning the blocks simultaneously whereby the train may be directed along the main line from the grooves on the one side of the block and on to the siding by the grooves on the other side of the block when turned as and for the purpose specified.

2. In a railway switch, the combination with the main line and siding, the inner rails of each terminating abruptly and the outer rails extending continuously, of turnable blocks located one opposite the abruptly terminated siding rail adjacent to the main line rail and one opposite the abruptly terminated main line rail and each provided with grooves on two sides, means for turning the blocks simultaneously whereby the train may be directed along the main line from the grooves on the one side of the block and on to the siding by the grooves on the other side of the block when turned, and spring plates for pressing against the exposed side of the turnable block and suitably secured in position as and for the purpose specified.

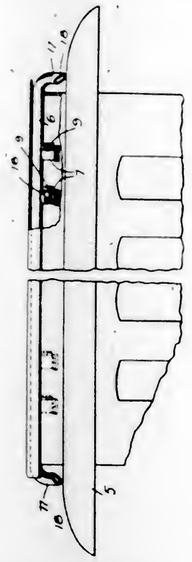
3. In a railway switch, the combination with the main line and siding, the inner rail of each terminating abruptly and the outer rails extending continuously, of turnable blocks located one opposite the abruptly terminated siding rail adjacent to the main line rail and one opposite the abruptly terminated main line rail and each provided with grooves on two sides, means for turning the blocks simultaneously whereby the train may be directed along the main line from the groove on the one side of the block and on to the siding by the grooves on the other side of the block when turned, and arms connected to turnable blocks and the operating rod to which said arms are pivotally connected as and for the purpose specified.

4. In a railway switch, the combination with the main line rails and one siding rail extending thereto and the other extending beyond the main line rail on to the main line, and the blocks connecting the ends of the main line rail and the siding rail, of the bearing or stationary blocks located at a point opposite the merging of the side rail into the main line rail, the turnable blocks journaled on bearings between the aforesaid blocks adjacent to each rail and provided with guiding grooves on two sides of the block for directing a train on to the siding or straight along on the main line as and for the purpose specified.

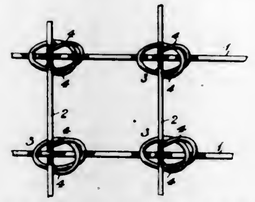
5 In a railway switch, the combination with the main line rails and siding having the inner rail of each terminating abruptly and the outer rails extending continuously, of blocks located between the abruptly terminating ends aforesaid and below the level of the same and suitably secured in position, grooved stationary blocks secured adjacent to the main line rail and the siding rail abutting the aforesaid blocks and each provided with grooves, the block next the main line rail being provided with a groove adjacent to the tread of the rail and a groove having the inner edge on a line with the edge of the abruptly terminating siding rail, and the opposite block having a groove alined with the edge of the main line rail, and a groove adjacent to the siding rail, the said top of the block being flush with the tread, stationary blocks secured one to the main line rail and the other to the siding rail at the point where it merges into the main line rail, and the blocks being opposite each other and provided with portions located beneath the level of the tread of the rails, and portions flush with the tread of the rails and provided with grooves adjacent to the rails, and turnable blocks journaled on pins in the stationary blocks and each provided with two grooved sides, one of the two grooved sides of one block next the main line rail being provided with a groove continuous with the stationary blocks and having the corner cut away so as to leave a portion of the block substantially flush with the tread of the rail, and the corresponding face or side of the co-acting block being provided with a groove on a line or continuous with the groove in the stationary blocks and with an outer corner cut away and an inner groove lying next the siding rail and parallel therewith and the other faces of the blocks being arranged when turned with a groove forming a continuation of the groove on the stationary blocks and the corresponding face or side of the co-acting block being provided with a groove forming, when turned, a continuation of the grooves in the stationary block as and for the purpose specified.

854,945. CAR-VENTILATOR. ROGER J. HARTY, St. Louis, Mo. Filed Mar. 4, 1907. Serial No. 360,389.

Claim.—A ventilating tube of the class described having branch portions, the open ends of which are threaded, grooved flanges formed at the ends of the branches, collars engageable upon the threaded ends of the branches, said collars being flanged, and said flanges being provided with ribs adapted to seat in the grooves in the flanges upon the branches, and a sheet of foraminous material stretched across the open end of each branch and having its edges seated in the grooves and held therein by the ribs.



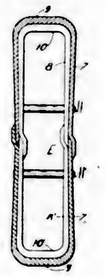
854,946. WIRE-FENCE LOCK. IVAN R. HILL, Reading, Mich. Filed Jan. 10, 1907. Serial No. 351,735.



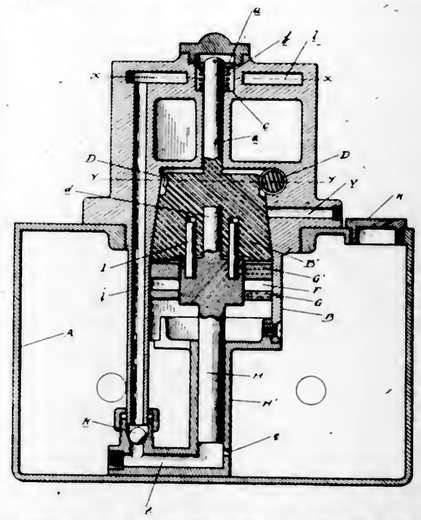
Claim.—A wire-fence lock formed of a wire bent in oblong outline and applied to the opposite sides of the vertical or transverse and longitudinal fence-wires, with one terminal portion passed through the looped portion of the other terminal portion and the latter terminal portion overlying the aforesaid terminal portion and the extreme end of one terminal portion abutting said transverse fence-wire and the corresponding end of the other terminal portion stopping opposite to said transverse fence-wire.

854,947. METALLIC BEAM OR GIRDER. THOMAS G. HILL, Portland, Oreg. Filed Mar. 18, 1907. Serial No. 363,123.

Claim.—A structural metal beam or girder, composed of two or more sections, each of which is formed of oppositely disposed flat-bottomed U-shaped members of sheet metal thicker at the bay-shaped ends, or sides 10—10', and longitudinally joined by welding so as to form an integral girder with plane side surfaces, the sections being provided with a suitable number of separating bolts 11—11', on either side of said joint, and said sections being joined together at their ends by flat-bottomed U-shaped straps 7—7', thicker at the bay-shaped ends or sides 9—9', the same being securely brazed over the plane section end joint, all substantially as described.



854,948. FORCE-FEED LUBRICATOR. CLARENCE B. HODGES, Detroit, Mich. Filed Apr. 3, 1905. Serial No. 253,429.



Claim.—1. In a force feed lubricator, the combination of a reservoir, a tapering cylindrical valve casing, a rotary valve in the valve casing, an axially arranged cylinder and piston in the valve forming a pump, means for rotating the valve and for thereby reciprocating the piston, there being a cross passage in the valve communicating with the inner end of the cylinder, and inlet and outlet passages on opposite sides of the casing with which said cross passage is adapted to connect in the rotation of the valve.

2. In a force-feed lubricator, the combination of a reservoir, a valve casing therein, a rotary valve in the valve casing controlling the inlet and exit ports of a pump, the pump, a second pump operated by the rotation of the valve, adapted to take the oil from the reservoir and deliver it to a regulated sight-feed chamber, and a connection from the sight-feed chamber to the inlet port of the first mentioned pump.

3. In a force-feed lubricator, the combination of a reservoir, a valve casing therein, a rotary valve in the casing, an axially arranged cylinder in the valve, a piston therein turning with the valve, means for reciprocating the piston by the rotation of the valve, a second piston formed as an extension thereof, a cylinder in which said piston works,

connected to take oil from the reservoir and deliver it to a chamber at the top of the reservoir, a series of valve-controlled sight-feed devices leading from the chamber to induction ports in the valve casing, there being a cross-passage in the valve adapted to successively connect with these induction ports, and with eduction ports opposite thereto.

4. In a force-feed lubricator, the combination of a rotary valve, an axially arranged cylinder therein, a reciprocating head having oppositely extending pistons thereon, one piston entering the cylinder in the valve, a cylinder for the other piston having an induction port connecting to the reservoir, and an education port leading through a sight-feed passage to the valve, and a passage in the valve adapted to connect with inlet and outlet ports.

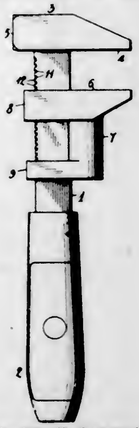
5. The combination of a casing having a series of inlet and outlet passages, a rotary valve having a cross passage adapted to successively connect with said series of passages, a pump in the valve, and means for reciprocating the pump.

6. The combination of a pump, a rotary valve, controlling the inlet and outlet of the pump, having a cylinder formed therein, a piston in the cylinder, the piston H connected to said first mentioned piston, a cylinder for the piston H, means for rotating the valve, and means actuated by said rontry means for actuating both pumps, the pumps having suitable inlet and outlet connections.

7. In a force feed lubricator, the combination of a casing having a tapering cylindrical bore, a rotary valve fitting therein having a cross passage, there being a series of inlet and outlet passages arranged on opposite sides of the casing, and a pump adapted to draw oil successively from each inlet passage and deliver it to the complementary exit passage.

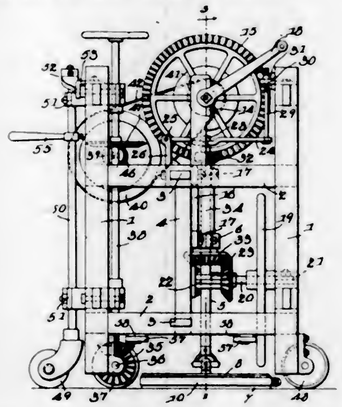
8. The combination with a reservoir, a feed pump for delivering oil from the reservoir, a sight feed device in the discharge from said pump, a supply pump having its inlet port connected to the dischnrge from the feed pump beyond the sight feed, and a rotary valve controlling the inlet and outlet of the supply pump.

854,949. WRENCH. GOTTLIEB K. HOLBINE, Eustis, Nebr. Filed Sept. 24, 1906. Serial No. 335,919.



Claim.—The herein-described wrench comprising a shank having a fixed jaw at its outer end, a handle at its inner end and rack teeth on its outer edge, a sliding block on said shank having a jaw at its outer end, provided at its ends with loops through which the shank extends, and a longitudinal recess in its inner face at a point between its ends and spaced between its sides, the loop at the outer end of the block being larger than that at the inner end thereof and provided in its face which opposes the outer edge of the shank with rack teeth to engage those of the shank, the faces of the said loops opposed to the inner edge of the shank being inclined and diverging from said shank toward its outer end to permit said block to be turned angularly to disengage its teeth from those of the shank, and a bowed spring in the recess in the block having one end secured to the block, the other end free to play longitudinally in the bottom of the recess and having its intermediate portion bearing against one edge of the shank, the sides of the block forming the side walls of the recess serving to conceal said spring.

854,950. PLANING AND SANDPAPERING MACHINE FOR FLOORS. GEORGE J. KEPPLINGER, Dwight, Ill. Filed May 12, 1906. Serial No. 316,567.



Claim.—1. The combination of a frame comprising uprights and cross pieces connected therewith, of a central shaft mounted for rotation and longitudinal movement on the frame, a tool flexibly connected at the lower end of the shaft, a transverse shaft mounted on the frame, a gearing between the shafts, a lever for raising and lowering the central shaft, a crank for turning the second shaft, rollers on which the frame is supported, a mechanism between the second shaft and one of the rollers for propelling the frame and attached parts, a steering roller, means for raising and lowering the frame relatively to the steering roller to remove the propelling roller from the floor.

2. In a machine of the class described, the combination with a suitable frame and a set of rollers for supporting it, of a tool mounted on the frame and arranged to coöperate with the floor or other work when the frame rests on the supporting rollers, driving devices for the tool, operative connections between the latter and one or more of the supporting rollers for moving the device during the operation of the tool, and means for disengaging the driving rollers from the floor to permit operation of the tool independently.

3. In a machine of the class described, the combination with a suitable frame, supporting and driving rollers mounted thereon, a tool held by the frame and arranged to coöperate with the floor or other work, and operative connections between the tool and the driving rollers for causing simultaneous operation, of a steering wheel adjustable vertically relative to the frame, and means for effecting the relative vertical adjustment between the steering wheel and the frame for moving the driving rollers out of coöperative relation with the floor or other support.

4. In a machine of the class described, the combination with a suitable frame, supporting and driving rollers mounted thereon, a tool carried by the frame, operating mechanism for the tool, and operative connections between the toool operating devices and the driving rollers for effecting a simultaneous operation, of a supplemental roller adjustable vertically relative to the frame, and a lever pivotally attached to the frame and pivotally connected to the supplemental roller for adjusting the latter vertically relatively to the frame.

5. In a machine of the class described, the combination of a supporting structure, a tool carrying shaft, a driving shaft geared thereto, rollers on which the front end of the structure is mounted, a propelling means on the rear of the structure and a mechanism for guiding the movement of the machine and for rendering the propelling means inoperative, comprising a steering roller at the rear end of the structure, a vertical shaft for carrying the roller, means for turning the said shaft, and means for adjusting the said vertical shaft relatively to the structure to disengage the propelling means from the floor.

6. In a machine of the class described, the combination of a supporting structure, a tool carrying shaft, a driving shaft geared thereto, rollers on which the front end of the structure is mounted, a propelling roller, means for driving the propelling roller, and a steering mechanism, comprising a roller, a shaft on which the roller is mounted, a steering lever on the roller, and means for adjusting the structure vertically to the shaft of the steering roller for transferring the weight of the machine from the propelling to the steering rollers, or vice versa.

7. In a machine of the class described, the combination of a supporting structure, a tool carrying shaft, a driving shaft geared thereto, rollers on which the front end of the structure is mounted, a propelling roller, means for driving the propelling roller, and a steering mechanism, comprising a roller, a shaft on which the roller is mounted, a steering lever on the roller, and a lever connected with the shaft of the steering mechanism for transferring the weight of the machine from the propelling to the steering roller, or vice versa.

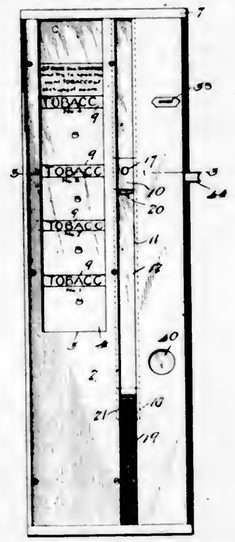
8. In a machine of the class described, the combination of a supporting structure, a tool carrying shaft, a driving shaft geared thereto, rollers on which the front end of the structure is mounted, a propelling roller, means for driving the propelling roller, and a steering mechanism, comprising a roller, a shaft on which the roller is mounted, a steering lever on the roller, a lever fulcrumed on the said structure which is connected to the upper end of the shaft of the steering mechanism, and a stop with which the said lever is adapted to engage.

9. In a machine of the character described, the combination with a suitable frame and an operating shaft mounted thereon, of a tool shaft mounted in angular relation to the operating shaft, a sleeve movable axially of the tool shaft and keyed to turn therewith, operative connections between said sleeve and operating shaft, a bevel gear arranged on the lower end of said sleeve, a fly wheel, and a shaft therefor journaled in the frame on an axis transversely of the tool shaft and having a bevel gear coöperating with that of the sleeve, a bearing through which the tool shaft passes and in which the adjacent end of the fly wheel shaft is journaled, and means for adjusting the tool shaft axially relatively to said sleeve.

854,951. GAME APPARATUS. FLORENTINE R. KISTLER, Youngstown, Ohio. Filed Sept. 13, 1906. Serial No. 334,526.

Claim.—1. In a game apparatus, a casing having an exhibiting panel provided with a plurality of scoring designations, and having a play chute and a finger slot at the lower end of such chute, a finger operated playing projectile slidably mounted in the chute and adapted to be exposed in said finger slot, said projectile bearing a designation coöperating with said scoring designations, means for catching and holding the projectile at any one of a plurality of elevations, and means for releasing the projectile to permit the same to gravitate to its starting point.

2. In an apparatus of the class described, a casing having an exhibiting panel provided with a plurality of scoring designations, said casing being further provided with a play chute having front and rear windows, and a series of tally indications along side of the rear window, said casing also having a finger slot, a finger operated projectile slidably mounted in the play chute and exposed to view through both of the windows thereof, said projectile also being exposed in said finger slot when in its starting position, means for catching and holding the projectile, and means for releasing the projectile.



3. In an apparatus of the class described, a casing having an exhibiting panel provided with a plurality of scoring designations, and with a play chute having a front observation window and a finger slot below such window, a finger operated playing projectile slidably mounted in the chute and adapted to be exposed in its starting position within said finger slot, means for catching and holding the projectile at a plurality of elevations, and means for releasing the projectile to permit the same to fall by gravity to its starting point.

4. In an apparatus of the class described, a casing having an exhibiting panel provided with a plurality of spaced scoring designations, and with a play chute having a front observation window and a finger slot below said window, a guard pin arranged at the upper end of the finger slot, a finger operated projectile slidably mounted in the chute and adapted to lie in a starting position exposed within said finger-slot, said playing projectile carrying a catch element, a projectile catcher arranged to be engaged by said catch element of the projectile at a plurality of elevations, and a locking and releasing device co-operating with said catcher.

5. In an apparatus of the class described, a casing having an exhibiting panel provided with a plurality of scoring designations, and with a play chute arranged at one side of said panel, a finger operated projectile slidably mounted in said play chute and provided at one end with a strike cushion and at one side with a spring catch dog, a shiftable retaining catch bar having a series of ratchet teeth adapted to be engaged by the dog of the projectile, a combined locking and releasing device comprising means for locking said bar in operative relation to the projectile and also permitting the bar to move to an inoperative position, and a setting device for said bar.

6. In an apparatus of the class described, a casing having an exhibiting panel provided with a plurality of scoring designations, a finger operated projectile slidably mounted in the casing and having a spring catch dog, a spring retracted ratchet catch bar mounted in the casing and arranged to be shifted into and out of the path of movement of the dog of said projectile, said bar being provided at one side with clearance notches, a locking device

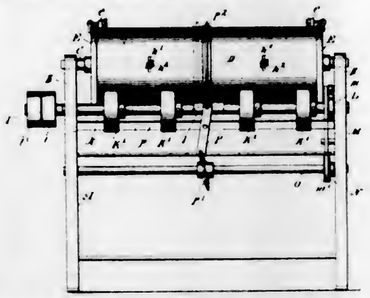
consisting of a pair of connected pivotally mounted dogs adapted to move at one side of the bar into and out of the plane of the clearance notches thereof, and a spring projected setting slide mounted in one side of the casing and adapted to operate against said ratchet catch bar.

854,952. SHEARS. CHARLES B. KLEIN, Denver, Colo. Filed May 31, 1906. Serial No. 319,629.



Claim.—The combination with a pair of shears having a pivot of less length than the combined thickness of the blades to provide a socket at each end of the pivot, of a yoke spring to straddle the shear blades and having its terminals provided with inwardly-projecting studs to engage the said sockets.

854,953. APPARATUS FOR GRAINING METALLIC PLATES. CHARLES M. KNEPPLER, New York, N. Y., assignor to Louis E. Kneppler, Brooklyn, N. Y. Filed Oct. 10, 1906. Serial No. 338,238.



Claim.—1. In an apparatus of the character described, the combination with a cylinder, of means attached to said cylinder for clamping a plate in position contained within said cylinder, means for rotating said cylinder and means for imparting a step by step longitudinal movement thereto, substantially as described.

2. In an apparatus of the character described, the combination with a cylinder, of means attached to said cylinder for clamping a plate therein, means for rotating said cylinder, and means for imparting an intermittent reciprocating movement thereto, substantially as described.

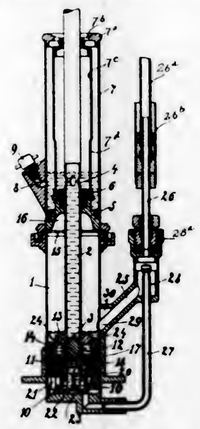
3. In an apparatus of the character described, the combination with a cylinder, of means attached to said cylinder for clamping a plate therein, means for rotating said cylinder, and means for simultaneously imparting a step by step longitudinal movement thereto, substantially as described.

4. An apparatus of the character described, the combination with a cylinder, of means attached to said cylinder for clamping a plate therein, means for rotating said cylinder, and means for simultaneously imparting an intermittent reciprocating movement thereto, substantially as described.

5. In an apparatus of the character described, the combination with a cylinder, of means attached to said cylinder for clamping a plate therein, means for rotating said cylinder, and means for intermittently advancing said cylinder in the direction of its length, substantially as described.

6. In an apparatus of the character described, the combination with a rotating cylinder provided with means for clamping a plate therein, a shaft provided with rollers on which said cylinder rests for rotating the same, a cam mounted on said shaft, a pawl mounted on said shaft and engaging said cam, a shaft provided with a ratchet engaging said pawl and with a cam, and a lever engaging said latter cam and cylinder whereby the latter is given an intermittent longitudinal movement, substantially as described.

854,954. AIR-PUMP. MAX KOHL, Chemnitz, Germany. Filed Sept. 20, 1905. Serial No. 279,297.



Claim.—1. An air pump comprising a cylinder provided with an air inlet, a tubular piston rod provided with openings for communicating with said cylinder and normally containing a supply of liquid, said openings forming an air outlet through said liquid, and means associated with said piston and normally closing said openings and cooperating with said cylinder to open the same, said means preventing the escape of liquid into said cylinder.

2. An air pump comprising in combination a cylinder provided with an air inlet, a tubular piston rod provided with openings adapted to communicate with said cylinder and normally containing a supply of liquid, said openings forming an air outlet through said liquid, a piston for said rod, and a piston valve normally closing said openings and adapted to coöperate with said cylinder to close the same, said valve preventing the escape of liquid into said cylinder.

3. An air pump comprising in combination a cylinder provided with an air inlet, a tubular piston rod provided with openings adapted to communicate with said cylinder and normally containing a supply of liquid, said openings forming an air outlet, means for supplying oil or the like to said cylinder through said openings, and means associated with said piston and normally closing said openings and coöperating with said cylinder to open the same, said means preventing the escape of liquid into said cylinder.

4. An air pump comprising a cylinder provided with an air inlet, a tubular piston rod provided with openings adapted to communicate with said cylinder and forming an air outlet therefor, means for supplying oil to the cylinder through said openings, a piston for said rod adapted to receive a portion of the oil, a valve associated with said piston and normally closing said openings and itself provided with openings communicating with the piston, said openings being arranged to impart a rotary flow of oil outwardly discharged therethrough.

5. An air pump comprising in combination a cylinder provided with an air inlet, a tubular piston rod provided with openings adapted to communicate with said cylinder and forming an air outlet therefor, means for supplying oil to said cylinder through said openings, a piston for said rod, a valve associated with said piston, a spring displacing said valve to close said openings, a bolt limiting displacement of said valve, and a non-return valve for said piston.

6. An air pump comprising in combination a cylinder provided with an air-inlet, a tubular piston rod provided with openings adapted to communicate with said cylinder and forming an air outlet therefor, means for supplying oil to said cylinder through said openings, a piston for said rod, a valve associated with said piston, a spring displacing said valve to close said openings, a bolt limiting displacement of said valve, a non-return valve for said piston, and a by-pass communicating with said cylinder and said air inlet.

7. An air pump comprising a cylinder provided with an air outlet, a piston for said cylinder adapted to perform its function of expelling air in connection with a quantity of liquid, and means associated with said piston serving to agitate the liquid to expel minute air bubbles adjacent said outlet.

8. An air pump comprising a cylinder provided with an air outlet, a piston for said cylinder adapted to perform its function of expelling air in connection with a quantity of liquid, and means associated with said piston serving to impart a radial rotary flow of the liquid to expel minute air bubbles adjacent said outlet.

9. An air pump comprising a cylinder provided with an air outlet, a piston for said cylinder adapted to perform its function of expelling air in connection with a quantity of liquid, and a movable member provided with tangentially disposed openings serving to impart a radial rotary flow of the liquid to expel minute air bubbles.

854,955. VETERINARY TOOTH-CUTTER OR DENTAL FLOAT. CHARLES F. MARTIN, Evansville, Ind. Filed Apr. 16, 1906. Serial No. 311,982.



Claim.—1. In a veterinary tooth cutter or dental float, a cutter having toothed or roughened surfaces on its periphery alternating with longitudinally extending grooves in said periphery.

2. In a veterinary tooth cutter or dental float, the combination with a holder having a cut-out or open portion provided with longitudinally extending guard and guide walls at the sides of said opening, said guard and guide walls converging toward each other from the outer end of the holder inwardly thereof as they proceed inwardly, of a cutter located within said holder and having a portion projecting into the cut-out or open portion aforesaid.

3. In a veterinary tooth cutter or dental float, the combination with a holder having a cut-out or open portion provided with longitudinally extending guard and guide walls at the sides of said openings, said holder having a depressed solid portion located inwardly from the cut-out or open portion aforesaid and said guard and guide walls being continued along said depressed portion of the holder, said depressed portion being located therebetween, of a cutter located within said holder and having a portion projecting into the cut-out or open portion aforesaid.

4. In a veterinary tooth cutter or dental float, the combination with a holder, of a cutter therein, a tubular handle detachably connected to the holder and provided with an internal shoulder, a sectional drive shaft within the handle adapted for operating the cutter, one section of the drive shaft being adapted to abut the shoulder, and means for preventing displacement of the drive shaft in the opposite direction.

5. In a veterinary tooth cutter or dental float, the combination with a holder, of a cutter therein, a tubular handle detachably connected to the holder and provided with an internal shoulder, a sectional drive shaft within the handle adapted for operating the cutter, one section of the drive shaft being adapted to abut the shoulder, means for preventing displacement of the drive shaft in the opposite direction comprising a sleeve having a shoulder and receiving the shouldered section of the drive shaft, and a nut detachably engaged with the handle and bearing on the shoulder of the sleeve.

6. In a veterinary tooth cutter or dental float, the combination with a cutter holder, of a cutter therein, a handle, and a releasable connection which fastens the handle to the holder comprising a spring latch on one of said parts for engaging the other of said parts, and means for releasing said spring latch.

7. In a veterinary tooth cutter or dental float, the combination with a cutter holder, of a handle, said holder and handle having a telescopic connection with each other, and a spring arm connected to one of said members and provided with a pin to engage an opening in the other of said members and having its free end received in the recess in the member with which it is engaged.

8. In a veterinary tooth cutter or dental float, the combination with a cutter holder, of a handle having a telescopic connection therewith, one of said members having oppositely disposed recesses, spring arms connected to the other of said members on opposite sides thereof and having free ends provided with pins adapted for engagement with the recessed member and themselves adapted to lie in said recesses, and a slidable unlatching collar or member for spreading said spring arms apart.

9. In a veterinary tooth cutter or dental float, the combination with a holder having a closed outer end constituting a guard and a cut-out or open side provided with longitudinal walls or margins extending to the outer face of the closed outer end aforesaid, of a cutter located in said holder and having a portion projecting into the cut-out or open side aforesaid.

854,956. VETERINARY SURGICAL INSTRUMENT. CHARLES F. MARTIN, Evansville, Ind. Filed Nov. 16, 1906. Serial No. 343,779.

Claim.—1. In a veterinary surgical instrument, the combination with a movable puncturing device, of self-contained friction means for heating said puncturing device.

2. In a veterinary surgical instrument, the combination with a rotary drilling or puncturing device, of means for heating said drilling or puncturing device during its rotation.

3. In a veterinary surgical instrument, the combination with a rotary drilling or puncturing device, of self contained means for heating said drilling or puncturing device during its rotation.

4. In a veterinary surgical instrument, the combination with a rotary drilling or puncturing device, of friction means for heating said drilling or puncturing device during its rotation.

5. In a veterinary surgical instrument, the combination

with a rotary drilling or puncturing device, of a spring-actuated friction member bearing on said drilling or puncturing device while in rotation to cause heating thereof.



6. In a veterinary surgical instrument, the combination with a rotary drilling or puncturing device, of a friction member bearing on said drilling or puncturing device, and a leaf spring pressing the said friction member against the drilling or puncturing device.

7. In a veterinary surgical instrument, the combination with a rotary drilling or puncturing device, of a yieldable abutment located adjacent to said drilling or puncturing device and adapted to yield or move as the drilling or puncturing device is pressed into the diseased part being treated.

8. In a veterinary surgical instrument, the combination with a rotary drilling or puncturing device, of a spring-actuated carrier, and means carried thereby having an abutment located adjacent the drilling or puncturing device and adapted to yield as the drilling or puncturing device is pressed into the diseased part.

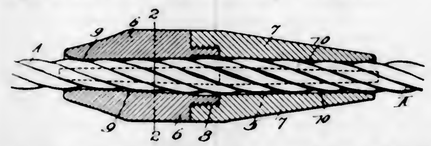
9. In a veterinary surgical instrument, the combination with a rotary drilling or puncturing device, of a spring-actuated carrier, a leaf-spring secured thereto and movable therewith, and a friction member carried by the leaf-spring and bearing on the drilling or puncturing device and constituting a combined friction means and abutment to yield as the drilling point is pressed into the diseased part being treated.

10. In a veterinary surgical instrument, the combination with a rotary drilling or puncturing member, of a slidable abutment and carrier through which the drilling or puncturing device loosely passes, a spring urging said combined abutment and carrier, means for limiting the movement of the abutment and carrier, leaf-springs secured to the abutment and carrier, and friction blocks bearing against the drilling or puncturing member near the tip thereof and constituting a combined friction device and abutment.

854,957. ROPE FASTENING OR BUTTON. THOMAS S. MILLER, South Orange, and CHARLES L. WACHTER, Hoboken, N. J.; said Wachter assignor to Lidgerwood Manufacturing Company, a Corporation of New York. Filed July 25, 1906. Serial No. 327,626.

Claim.—1. The combination with a rope, cable, or the like, of a tapered pin inserted in the same, the angle of taper of the pin being less than the angle of repose, and a shell mounted upon the rope at that portion containing the pin.

2. The combination with a rope, cable or the like, of a pin inserted within the same, and a shell surrounding the portion of the rope containing the pin, said pin being of a length substantially equal to the length of the shell.

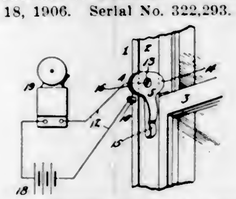


3. In combination with a rope containing a tapered spreader, the angle of which is less than the angle of repose, a shell member surrounding the portion of the rope containing the spreader and having a bore extending approximately parallel to the angle of the spreader and adapted to be locked against movement upon the rope.

4. The combination of a rope or cable, a spreader consisting of a tapered pin inserted within the rope, and a shell composed of two sections surrounding the portion of the rope containing the spreader, the bore of the shell sections being approximately parallel to the tapering pin, whereby a blow on either shell section is not transmitted to the spreader or to the other section.

5. The combination with a rope, of a stop or button therefor having a contact surface and a tapered bore, and a tapered pin within the rope extending approximately parallel with the bore, whereby a blow upon the contact surface of the stop or button tends to drive the same more firmly into engagement with the rope.

854,958. COMBINED BURGLAR-ALARM AND SASH-HOLDER. JAMES M. MONTGOMERY, Berl, W. Va., assignor of one-half to Franklin W. Sine, Bond, Md. Filed June 18, 1906. Serial No. 322,293.



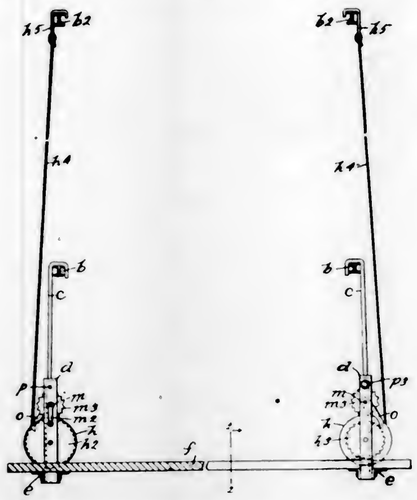
Claim.—1. The combination with a window frame and a sash, of coacting contact plates secured upon said frame and sash, a cam upon said frame for coaction with said sash and adapted to project into the path of one of said contact plates, and an electric circuit having one of its terminals connected to the other of said contact plates and the other of its terminals to said cam.

2. The combination with a window frame and a sliding sash, of the plate 7 secured upon said sash, the plate 6 secured upon said frame, the elongated cam 5 pivoted at its center upon said frame and adapted to have its opposite ends coact with said sash, one of said ends hanging normally in the path of the contact plate 7, and an electric alarm circuit having one of its terminals connected to the contact plate 7 and its other to said cam, substantially as shown and described.

3. The combination with a window frame and sash of co-acting contact plates secured upon said frame and sash respectively, a sash locking member adapted to project into the path of one of said plates, and an electric circuit having one terminal connected to the other of said contact plates and with its other terminal connected to said locking member.

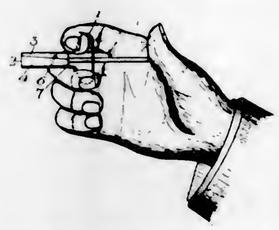
854,959. ADJUSTABLE SCAFFOLD. WILLIAM J. MURRAY, New York, N. Y. Filed Nov. 12, 1906. Serial No. 342,978.

Claim.—The combination with two bars having means for detachably securing them to a building, of a platform, frames on said platform carrying means operable from the platform and having connections adapted to be connected to one of said bars for raising the platform, and supporting means on said frames extending above the said bar when the platform has been fully raised and adapted to detachably engage said bar and rigidly support the platform therefrom, whereby, the platform may be connected



to one bar by the raising means and raised to a level to engage the supporting means with said bar and may then remain supported by said bar while the other bar is placed at a higher level and the raising means secured to the latter, the bars thus becoming alternately points of raising support and of rigid support for the platforms.

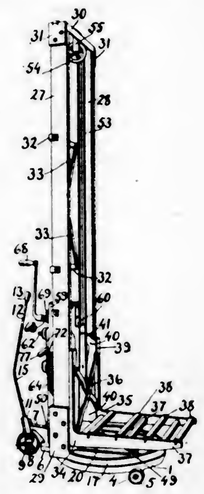
854,960. MATCH-LIGHTER. JUSTIN G. MCCARTHY, Chicago, Ill. Filed Dec. 31, 1906. Serial No. 350,189.



Claim.—1. A match lighter comprising a tubular neck and a transversely arranged base, the neck being adapted to receive and light the match, and the base being adapted to be grasped in the hand and having an opening through which the match can be pushed into the neck, and both neck and base being made of a single piece of metal bent to form the base out of its middle portion and the neck out of its ends.

2. A match lighter consisting of a single piece of metal bent to form a transverse base and side pieces extending up diagonally from the ends of the base, and a tubular neck formed of the end pieces of said metal strip, bent transversely so as to form a tubular socket for the match, and one of which has its edges provided with teeth to light the match.

854,961. REVOLVING PORTABLE ELEVATOR. THOS. J. MCCARTHY, Los Angeles, Cal., assignor to McCarthy Portable Elevator Company, Jersey City, N. J., a Corporation of California. Filed May 9, 1906. Serial No. 315,881.



Claim.—1. A revolving portable elevator comprising a truck, an elevator frame with a laterally-projected base rotatably supported thereon, a platform located upon and rotating with the frame, and means carried by the elevator for raising and lowering the platform.

2. In a revolving portable elevator, the combination with a truck, of a frame with a laterally-projected base extending over the truck and adapted to rotate thereon, a platform connected with the frame and having its load-receiving portion projected above and parallel with the base so as to revolve in a same vertical plane therewith, and means carried by the elevator for raising and lowering the platform.

3. In a revolving portable elevator, the combination with a truck, of a frame having a lateral base extension revoluble thereupon, ball-bearings interposed between the truck and base extension, a platform located upon and rotating with the frame, and hoisting mechanism carried by the elevator.

4. In a revolving portable elevator, the combination with a truck, of a revoluble frame with a base extending over the truck-bed, ball-bearings arranged in central and peripheral races formed in said bed and base, a platform, and means for raising and lowering it on the revoluble frame.

5. In a revolving portable elevator, the combination of a truck-bed, a pair of wheels secured to the rear end thereof, a steering-wheel at the forward end of the bed, a yoke within which the steering-wheel is mounted, a bracket projecting forwardly from the bed and having a swivel connection with the yoke, a drawbar, an elevator frame with a lateral base extension rotatably mounted on the truck-bed, a platform connected with the frame and means for raising and lowering it.

6. In a revolving portable elevator, the combination of a truck mounted on suitable wheels, a clevis attached to the mounting of a forward wheel, a brake-shoe adapted to bear on the forward wheel and secured within the clevis, a drawbar having a rigid connection with the clevis and vertically movable therewith, a rotary elevator frame on the bed of the truck, a platform on the frame, and hoisting apparatus.

7. In a revolving portable elevator, the combination of a truck having a pair of wheels at one end and a leading

wheel at the opposite end, a vertically-movable drawbar connected with the lead-wheel's mounting, one or more springs on the mounting adapted to hold the drawbar in a standing position, an elevator frame rotatably mounted on the truck-bed, a platform connected with the frame, and means for raising and lowering the platform.

8. In a revolving portable elevator, the combination of a truck, an elevator frame thereon with a lateral base extension arranged to bear and revolve on the truck-bed, a platform with vertical guides fitted to the frame and a horizontal load-receiving portion projecting outwardly therefrom over the base, an extension to the platform consisting of a pair of folding arms pivoted to its outer end, and pins projecting from opposite sides of the platform on which the folded arms may rest.

9. In a revolving portable elevator, the combination of a truck, an elevator frame thereon comprising oppositely-turned vertical channel-beams standing on one side of a base extending over and revoluble upon the truck-bed, a vertically-movable platform having bent arms with their upper portions fitted to the beams and serving as guides thereon, studs on the upper arms, rollers carried by the studs and engaging the webs of the opposite beams, and means for moving the platform up and down the frame.

10. In a revolving portable elevator, the combination of a truck, a rotary elevator frame thereon including oppositely-turned vertical channel-beams with flaring inner walls, a platform having guides fitted to the forward edges of the beams and provided with wings extending across the channels therein, conical rollers on the wings bearing oppositely upon the flaring walls of the beams, intermediate rollers respectively bearing upon the bottom of each channel, and means for raising and lowering the platform.

11. In a revolving portable elevator, the combination with a truck, of a base extending over and revoluble upon the truck-bed, an elevator frame comprising columns standing on one side of said base a platform and means for raising and lowering it, including outwardly-disposed gears mounted in the rotatable frame, and guards over the gears.

12. In a revolving portable elevator, the combination with a truck, of an elevator frame rotatably mounted thereon, a platform and means for raising and lowering it, including parallel shafts and intermeshing gears thereon, a band-brake adapted to check two of the shafts, and a double-acting lever connected with the ends of the brake.

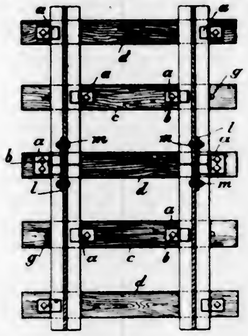
13. In a revolving portable elevator, the combination with a truck, of an elevator frame with a laterally-projected base extending over and revoluble upon the truck-bed, a platform connected with the frame, uprights secured to the base within the frame and revolving therewith, means for raising and lowering the platform, including superimposed shafts journaled in the uprights and provided with intermeshing gears, friction-pulleys on two of the shafts, a band-brake coiled around each friction-pulley, and a centrally-pivoted lever connected on opposite sides of its fulcrum to the ends of the band-brake.

14. In a revolving portable elevator, the combination with a truck, of an elevator frame rotatably mounted thereon, a platform and means for moving it up and down the frame, including intermeshed gears and suitable shafting therefor, a ratchet-wheel and pawl to normally check back-rotation of the gears, and means for preventing the lifting of the pawl by hand, the pawl having a rigid pivot adapted to be rocked by means of a crank.

15. In a revolving portable elevator, the combination with a truck, of an elevator frame rotatably mounted thereon, a platform connected with the frame, means for raising and lowering the platform, including suitable gearing and shafts therefor, a ratchet-wheel on one of the shafts, a spring-pressed pawl engaging the ratchet-wheel and causing it normally to prevent retrograde movement of the gearing, the pawl being incapable of manipular operation, and a rigid pivot for the pawl adapted to receive a crank, to be rocked thereby.

16. In a revolving portable elevator, the combination with a truck, of an elevator frame rotatably mounted thereon, a vertically-movable platform and means for moving it, including intergeared shafts, a ratchet-wheel and pawl operating normally to check back the gearing, a spring arranged to bear upon the pawl so as to prevent its being lifted by hand, a rigid pivot for the pawl adapted to be rocked therewith by means of a crank, and a stop to limit the outward movement of the pawl.

854,962. SUPERSTRUCTURE FOR NARROW-GAGE RAILWAYS. FRIEDRICH NELLEN, Essen, Germany. Filed Sept. 4, 1906. Serial No. 333,161.



Claim.—1. In a railway track the combination with the rails of wooden ties provided alternately with inner holders and with outer holders both adapted to engage the foot of the rails, the said holders comprising a clip part adapted to engage the top of the rail foot and a bottom part adapted to engage the tie, projecting ribs arranged on the lower surface of the said bottom part of the holder parallel to the edge of the rail foot, a hole in said bottom part and a wood screw adapted to engage the tie through the said hole, substantially as and for the purpose set forth.

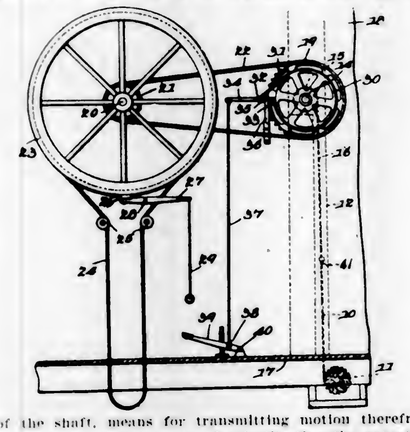
2. In a railway track the combination with the rails of wooden ties alternately provided with inner holders and with outer holders both adapted to engage the rail foot, of means provided on the said holders for adjusting same, of means for securing the said holders to the ties, of holes bored into the ties provided with inner holders, opposite the said inner holders and adjacent to the rail foot, and of ring bolts adapted to engage the said holes, substantially as and for the purpose set forth.

3. In a railway track the combination with the rails of wooden ties alternately provided with inner holders and with outer holders both adapted to engage the rail foot of means provided on the said holders for adjusting same, of means for securing the said holders to the ties, of holes bored into the said ties provided with inner holders opposite the latter and adjacent to the rail foot, and of head screws adapted to engage the holes, substantially as and for the purpose set forth.

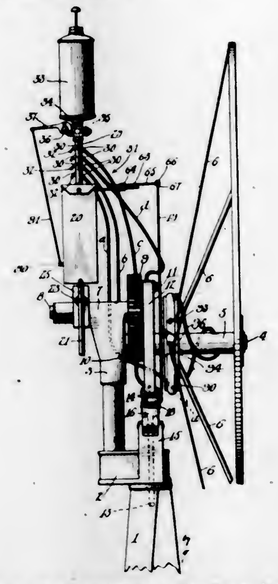
4. In a railway track the combination with the rails of wooden ties alternately provided with adjustable inner holders and adjustable outer holders, both adapted to engage the rail foot, of screws adapted to secure the said holders to the ties, the holders of the joint ties being outer and larger ones, a fishplate secured to each of the said outer holders and means for securing the said fishplate to each of the abutting ends of the rails, substantially as and for the purpose set forth.

854,963. CURTAIN-OPERATOR. WILLIAM L. OSBORN, York, Nebr. Filed Mar. 10, 1906. Serial No. 305,386.

Claim.—The combination with a structure having a floor and walls; of guides within the walls, a spring-controlled roller beneath the floor, said floor having a slot therein registering with the guides, a shaft above the guides, drums thereon above and registering with the guides, a flexible curtain adapted to be wound upon the spring-controlled roller and extending through the slot between the guides, said curtain having an end portion adapted to close the slot and lie flush with the upper surface of the floor, flexible connections between the edges of the curtain and the drums, a power wheel disposed adjacent one end of the shaft, means for transmitting motion therefrom to the shaft, flexible means for facilitating the actuation of the power wheel, guides therefor, a foot-controlled brake device for regulating the rotation of the shaft, and a hand-controlled brake device for regulating the rotation of the power wheel.



854,964. WINDMILL-OILER. LINNAEUS C. POND and GEORGE C. WAGNER, Los Angeles, Cal. Filed May 12, 1906. Serial No. 316,575.



Claim.—1. An oil reservoir, a distributer below the reservoir and having discharge orifices at different horizontal levels, a wheel, and means operated by the wheel for allowing oil to flow down by gravity from the reservoir to the distributer.

2. An oil reservoir, means having a normally closed connection with the reservoir for distributing oil to the bearings, a wheel, and means operated by the wheel for periodically opening and then closing said connection thereby allowing oil to pass from the reservoir to the distributing means, and means for regulating the closing of said connection to suit the character of oil.

3. An oil reservoir, a distributer below the reservoir and having discharge orifices at different horizontal levels, a wheel, means operating automatically for releasing a definite quantity of oil from the reservoir and allowing it to flow to the distributer from the reservoir at periods regulated by the revolutions of the wheel.

4. An oil reservoir, a distributer, a valve normally preventing flow of oil from the reservoir to the distributer, a wheel, means operated by the wheel for periodically opening the valve, and means for retarding the closing of the valve.

5. An oil reservoir, a distributer, a valve normally preventing flow of oil from the reservoir to the distributer, a wheel, means operated by the wheel for periodically opening the valve, and pneumatic means for retarding the closing of the valve.

6. An oil reservoir, a distributer, a valve between the reservoir and distributer, a wheel, gearing operated by the wheel for opening the valve after a definite number of revolutions of the wheel, means for regulating said gearing to vary the ratio between the revolutions of the wheel and the opening of the valve, and means for retarding the closing of the valve.

7. In a windmill oiler, a clamping frame adapted to be attached to a part of the windmill, a rod adjustably supported by the clamping frame, an oil reservoir supported by the rod, a distributer supported by the rod, a wheel, means operated by the wheel for allowing oil to pass from the reservoir to the distributer, and means for carrying oil from the distributer to the parts of the windmill to be lubricated.

8. An oil reservoir, a distributer, a valve between the reservoir and distributer, a wheel, means operated by the wheel for opening the valve, means for closing the valve, and means for retarding the closing of the valve comprising an air cylinder, a piston therein, a connection from the piston to the valve, and means for regulating the escape of air from the piston.

9. An oil reservoir, a distributer, a valve between the reservoir and distributer, a wheel, a train of gearing operated step by step by the wheel, a carrier, an air cylinder mounted on the carrier, a piston therein, a connection from the piston to said valve, an abutment on one of the wheels of said train for lifting said carrier, means for depressing said carrier when released by said abutment, means for closing said valve, and means for regulating the escape of air from said cylinder.

10. An oil reservoir, a distributer, a valve between the reservoir and distributer, a train of ratchet gearing, a rock arm, a ball loosely carried by said rock arm for operating said gearing, a rod fixed to said rock arm, an extension rod adjustably mounted on the former rod, a wind wheel, means operated by the wind wheel for rocking said extension rod and thereby operating said gearing, a carrier, a cylinder mounted on said carrier, a piston therein, a rod along which said carrier is adapted to slide, an abutment on said rod, a compression spring on said rod between said abutment and said carrier, a hollow piston rod connected to the piston, means for regulating the escape of air through said piston rod, an arm carried by the piston rod, a lever for operating said valve, and a link connecting said lever with said arm.

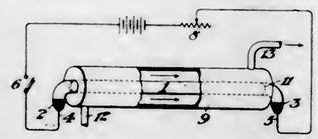
11. An oil reservoir, a distributer, a valve between the reservoir and distributer, a casing, a timing mechanism removably mounted in said casing comprising a frame, a plurality of shafts mounted in said frame, a plurality of ratchet wheels mounted on said shafts, one of said ratchet wheels having a hub with a dog adapted to drive the in-

termediate ratchet wheel, the hub of the intermediate ratchet wheel having a dog adapted to drive another ratchet wheel, a rock arm having a recessed head with a ball loosely confined therein for operating the first named ratchet wheel, a carrier within said casing, a double rod, one end of which is connected to said frame, the other end having a hook, a compression spring coiled around said double rod and lying between said hook and the carrier, the carrier being slidable along said double rod, a cylinder mounted on said carrier, a piston and a hollow piston rod mounted in said cylinder, valve means for controlling the passage of air through said hollow piston rod, an arm attached to the end of the piston rod and extending through the opening in said casing, a rod rigidly attached to said rock lever and extending through an opening in said casing, an extension rod adjustably connected to the first rod, a wind wheel, a pitman operated thereby, a rock lever operated by said pitman, a link connecting said rock lever with said extension rod, a lever for opening said valve, a spring for closing said valve, and a link connecting said last named lever with the arm on said piston rod.

12. A distributer, a wind wheel, an outer ring fastened to the wind wheel, the outer ring having an internal channel, a similar inner ring slit and sprung within the outer ring and detachably fastened therein, a tube connected with the distributer with its discharge end arranged to deliver oil to the channel of the inner ring, a plurality of tubes connected to the bearing of the wheel and extending to the inner ring for conveying oil from the inner ring to the bearing of the wheel.

13. A rod, a reservoir mounted at the upper end of said rod, a distributer formed in said rod, a valve between the distributer and reservoir, means for adjustably fastening said rod to the upper part of the wind mill, a casing carried by said rod below said distributer, a train of gearing in said casing, a connection from said gearing to said valve for operating the valve, means operated by the wind wheel for operating said gearing, and pneumatic means within said casing for retarding the closing of said valve.

854,965. OZONIZER. HENRY N. POTTER, New Rochelle, N. Y., assignor to Geo. Westinghouse, Pittsburg, Pa. Original application filed Jan. 6, 1904, Serial No. 187,865. Divided and this application filed Jan. 20, 1905. Serial No. 241,936.



Claim.—1. The combination with a container pervious to ozonizing radiation, electrodes therein, and means for passing an electric current between the electrodes, of an envelop composed of material impervious to such rays, and means whereby the ozone generated inside the envelop may pass to a selected point.

2. The combination with a container pervious to ozonizing radiation, electrodes therein, and means for passing an electric current between the electrodes, of an envelop composed of material impervious to such rays, an air or oxygen inlet to the said envelop and an outlet from the said envelop leading to a selected point.

3. The combination with a container pervious to ozonizing radiation, electrodes therein, and means for passing an electric current between the electrodes, of an envelop composed of material impervious to such rays, an air or oxygen inlet to the said envelop, and an outlet from the said envelop leading to a selected point, and cooling devices for the said envelop.

4. The combination with a container pervious to ozonizing radiation, electrodes therein, and means for passing an electric current between the electrodes, of an envelop inclosing the described ozone generator, and composed of material impervious to such rays, an air or oxygen inlet and outlet leading to and from the said envelop, and means for causing the air or oxygen admitted to the envelop to pass through a zig-zag or tortuous path between the said inlet and outlet.

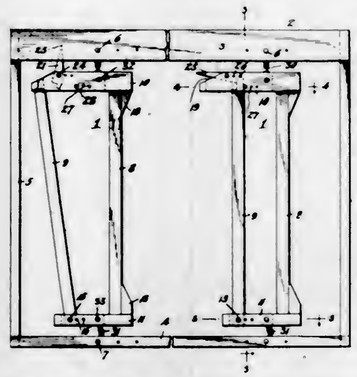
5. The combination with a container pervious to ozonizing radiation, electrodes therein, and means for passing an electric current between the electrodes, of an envelop inclosing the described ozone generator, and composed of material impervious to such rays, an air or oxygen inlet and outlet leading respectively to and from the said envelop, and means for causing the air or oxygen admitted to the envelop to pass through a zig-zag or tortuous path between the said inlet and outlet, the whole being surrounded by a water-jacket as described.

6. The combination with a container pervious to ozonizing radiation, electrodes therein, and means for passing an electric current between the electrodes, of an envelop inclosing the described ozone generator, and composed of material impervious to such rays, an air or oxygen inlet and outlet leading respectively to and from the said envelop, and means for causing the air or oxygen admitted to the envelop to pass through a zig-zag or tortuous path between the said inlet and outlet, and cooling devices for said envelop.

7. The combination with a tube of silica, electrodes therein, and means for causing electric current to pass between the electrodes, of an envelop surrounding the said tube, the said envelop consisting of material impervious to ozonizing radiation, and air inlets and outlets leading to and from the said envelop.

8. The combination with a tube of silica, electrodes therein, and means for causing electric current to pass between the electrodes, of an envelop of glass surrounding the said tube and air inlets and outlets leading to and from the said envelop.

854,966. STANCHION. ASA W. REEVES, Corydon, Pa. Filed Nov. 24, 1906. Serial No. 344,926.



Claim.—1. A stanchion having head and base members, a stationary bar uniting said members, a swinging arm adjustably pivoted in said base member, a stop adjustably mounted in said head member for engagement by said arm, and a latch adjustably pivoted in said head member to co-act with said arm.

2. A stanchion having head and base members formed with slots, said head member having one of its ends beveled, a stationary bar uniting said members, a swinging arm adjustably pivoted in the slot in said base member, the upper end of said arm being adapted to swing in the slot in said head member, the outward swinging movement of the arm being limited by one end of said slot, an adjustably mounted stop in the slot in said head member to limit the inward swinging movement of said arm, and an adjustably pivoted, gravity latch in the slot in said head member and adapted to co-act with the upper end of said arm, the lighter end of said latch being adapted to project out of said head member through its beveled end, substantially as shown and for the purpose set forth.

3. The combination with a supporting frame, consisting of spaced head members and spaced base members united by uprights, said head and base members being formed with series of apertures, of bolts or the like passed through said apertures, a stanchion comprising head and base members united by a stationary bar and formed with longitudinal slots, one of the upper corners of said head member of the stanchion being beveled, flexible connections engaged with said bolts and secured in the slots in said members of the stanchion for supporting the latter, an arm adjustably pivoted in the base member of the stanchion and movable in the slot in the head member thereof, an adjustable stop to co-act with said arm, and an adjustably mounted, gravity latch to co-act with said arm, said latch being pivoted in the slot in the head member of the stanchion and adapted to project out of said member through its beveled end and to project between the head members of the supporting frame, substantially as shown and for the purposes set forth.

4. A stanchion having head and base members formed with slots, the base member having a series of apertures and the head member having upper and lower series of apertures, a bar rigidly connecting said members, a swinging arm having its ends projecting into the slots in said members, a pivot pin in one of the apertures in the base member for adjustably pivoting the lower end of the swinging arm, a stop pin adjustable in the lower series of apertures in the head member and adapted to limit the inward swinging movement of said arm, a gravity latch arranged in the slot in the head member and adapted to co-act with the swinging arm and a pivot pin in one of the apertures of the upper series in the head member for adjustably pivoting said latch.

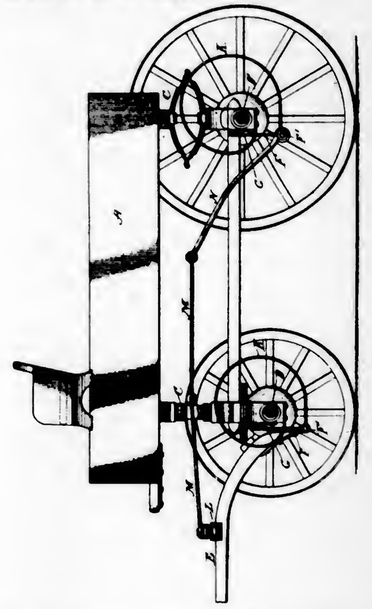
5. The combination with the supporting frame having at its top spaced longitudinally extending bars, of stanchions suspended in said frame and each comprising connected head and base members, a swinging arm adjustably pivoted in the base member and a gravity latch adjustably pivoted in the head member to co-act with the upper end of said arm, the lighter end of said latch being adapted to swing upwardly between the bars of said frame to hold the stanchions in alinement therewith.

6. The combination with the supporting frame consisting of spaced head members and spaced base members united by uprights, said head and base members being formed with series of apertures, of pins passed through said apertures, stanchions and flexible connecting elements attached to the opposite ends of the stanchions, inserted between the spaced head and base members of the frame and engaged with said pins, whereby the stanchions are adjustably suspended in the frame.

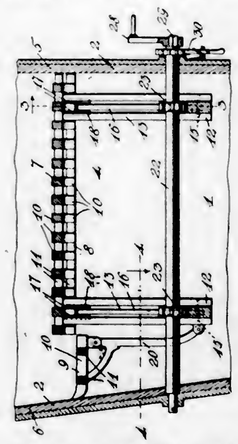
854,967. DRAFT DEVICE FOR WAGONS. GEORGE F. SHAW, Dedham, Mass. Filed July 6, 1906. Serial No. 325,031.

Claim.—1. A draft device for wagons, comprising thills or poles; a front axle having brackets and swinging hangers to which the said thills or poles are pivotally attached by pivot rods; volute springs, each connected by one of its ends to the said pivot rods, and thereby to the said thills or poles; the other ends of the said volute springs are made fast to the said front axle; substantially as and for the purpose set forth.

2. A draft device for wagons, comprising thills or poles; a rear axle having brackets and swinging hangers; a draft rod connecting the said thills or poles to the said swinging hangers by means of pivot rods; volute springs, each connected by one of its ends to the said pivot rods, and thereby to the said thills or poles; the other ends of the said volute springs are made fast to the said rear axle; substantially as and for the purpose set forth.



854,968. STOVE-GRATE. FREDRICK P. SOUPESET, Rocky Ford, Colo. Filed Apr. 5, 1906. Serial No. 310,125.



Claim.—1. The combination with a fire box, of a grate vertically adjustable therein and compriaing a main section, and a laterally or horizontally adjustable section having a pivotal connection with the main section.

2. The combination with a fire box, of a grate vertically adjustable therein and comprising a main section, swinging arms carried by the main section, and a laterally or horizontally adjustable section pivotally mounted upon the arms.

3. The combination with a fire-box having an inclined wall, of a grate vertically adjustable therein and comprising a main section, swinging arms carried by said main

section, and a laterally or horizontally adjustable section pivotally mounted upon said arms.

4. The combination with a fire-box having an inclined wall, of a main grate section, arms or standards depending therefrom, means for adjusting said standards, vertical arms pivotally mounted at their lower ends in said standards and having stop projections at their upper ends, and a laterally or horizontally adjustable grate section pivotally mounted upon the upper ends of said pivot arms and adapted to engage said stop projections, substantially as described.

5. The combination with a fire-box having inclined side and end walls, of a main grate section adjustable vertically in said fire-box, and laterally or horizontally swinging side and end sections carried by said main section.

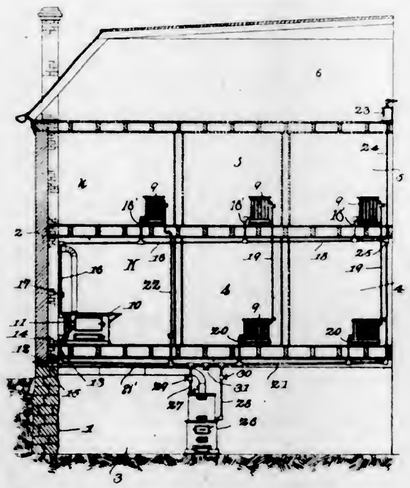
6. The combination with a fire-box having inclined side and end walls, of a main grate section, a rack and pinion device for adjusting the same vertically, and laterally or horizontally adjustable side and end grate sections mounted to swing from said main section.

7. The combination with a fire-box having inclined side and end walls, of a main grate section, arms depending therefrom and having racks thereon, a shaft, pinions upon said shaft to engage said racks, means for operating said shaft and holding it against movement, and side and end grate sections mounted to swing from said main section, substantially as described.

8. The combination with a fire box having an inclined side and end wall, of a vertically adjustable grate composed of a plurality of sections, certain of which are adapted to bear against the inclined walls of the fire box.

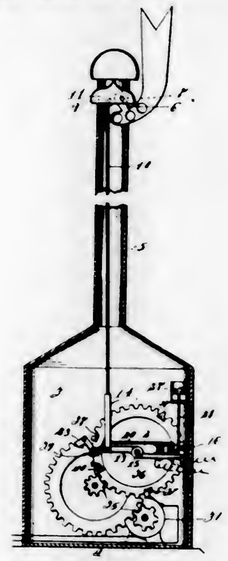
9. A grate composed of two longitudinal sections and a transverse section having a pivotal connection with the first-named sections, and means for vertically adjusting all the sections in unison.

854,969. HEATING SYSTEM. JOHN F. STAUDT, Staudtsville, Pa. Filed Sept. 23, 1905. Serial No. 279,817.



Claim.—A hot water heating system comprising in combination two water heaters, a pipe establishing communication between said heaters, upper and lower radiators, supply pipe connections between one of said heaters and the upper radiators, return pipe connections between the lower radiators and the other of said heaters, a pipe connection between one of the upper radiators and the pipe connecting the heaters, pipe connections between the other upper radiators and the lower radiators, respectively.

854,970. ELECTRICAL BLOCK-SIGNAL. ELZA S. STOTTS and LESTER O. DICKEY, Omaha, Nebr. Filed Aug. 13, 1906. Serial No. 330,503.



Claim.—1. In combination with a signal tending to move to its danger position, of means for holding it normally in its safety position comprising a holding lever, an electro-magnet thereon, an armature for said magnet pivoted upon said lever, and a keeper for engaging said armature lever.

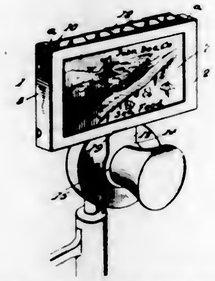
2. In combination with a signal tending to move to its danger position, of means for holding it normally in its safety position comprising a holding lever, an electro-magnet thereon, an armature for said magnet pivoted upon said lever, a keeper to engage said armature lever, and means for moving said lever into engagement with said keeper.

3. In combination with a signal tending to move to its danger position, of means for holding it normally in its safety position comprising a holding lever, an electro-magnet thereon, an armature for said magnet pivoted upon said lever, and a swinging dog to engage said armature lever, a rotary element, a tappet upon said element, a detent carried by said armature lever and disposed in the path of said tappet, and a releasing device to engage said detent and disengage it from said tappet.

4. In combination with a signal tending to move to its danger position, of means for holding it normally in its safety position comprising a holding lever, an electro-magnet thereon, an armature for said magnet pivoted upon said lever, a swinging dog to engage said armature, a rotary element, a tappet upon said element, a detent carried by said armature and disposed in the path of said tappet, a releasing device to engage said detent and disengage it from said tappet, a circuit breaker, an electric circuit including said magnet and said circuit breaker, a motor for operating said rotary element, a circuit closer, and an electric circuit including said motor and said circuit closer, substantially as described.

5. In combination with a signal, tending to move to its danger position, of means for holding it normally in its safety position, comprising a holding lever, a dash-pot coacting therewith, an electro-magnet carried by the lever, an armature for the magnet pivoted upon the lever, a swinging dog to engage the armature, a rotary element, a tappet upon the element, a detent carried by the armature and disposed in the path of the tappet, a releasing device to engage the detent and disengage it from the tappet, a circuit breaker, an electric circuit including the magnet and the circuit breaker, a motor for operating the rotary element, a circuit closer, and an electric circuit including the motor and the circuit closer.

854,971. TELEPHONE ATTACHMENT. EDWARD B. THOMAS, Columbus, Ohio. Filed June 29, 1906. Serial No. 324,073.



Claim.—1. In a device of the character described, the combination of a case formed of a single piece of sheet material and comprising a front and a back connected along one of their edges by a base and provided at their ends with extensions which are bent inwardly and overlap each other to form the ends of the case, a series of cards fitting loosely within the case, and a bracket connected to the case and provided with means whereby it can be attached to a telephone transmitter.

2. In a telephone attachment, the combination of a case comprising a front and back which are in the nature of frames and have one of their corresponding edges connected by a base, the said front and back being formed with end extensions which are bent inwardly to form the ends of the case and have ears stamped therefrom which are bent inwardly to hold cards over the openings in the back and front, a series of index cards fitting loosely within the case, and a bracket secured to the case and provided with means whereby it can be readily attached to a telephone transmitter.

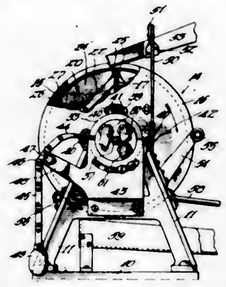
3. In a telephone attachment, the combination of a case comprising a front and back connected by ends and a base, a series of index cards fitting loosely within the case, a bracket, one end of which is passed through the base and formed with tongues which engage with the front and back of the case, while the opposite end of the bracket is provided with means whereby it can be readily attached to a telephone transmitter.

4. In a telephone attachment, the combination of a case comprising a front and back connected by ends and a base, a series of index cards fitting loosely within the case, and a bracket formed with shoulders toward one end thereof, the said end of the bracket being passed through the base of the case until the shoulders engage therewith and then bent to form a rigid connection between the two members, the said bracket being also provided with means whereby it can be readily attached to a telephone transmitter.

5. In an attachment for telephones, the combination of a case comprising a front and back connected by ends and a base, a series of index cards fitting loosely within the case, and a standard having one end thereof reduced to form shoulders, the said end being split to form tongues and passed through an opening in the base of the case until the shoulders engage therewith, the tongues being then bent in opposite directions so as to pass through openings in the front and back of the case, respectively, the said bracket being also provided with means whereby it can be readily attached to a telephone transmitter.

6. A case, comprising a front and back, and a base, and angularly disposed extensions overlapping each other and constituting ends, the extensions being provided with stamped out ears extending inwardly therefrom, and adapted to maintain a card in place in the case, said opposite or overlapping extensions being provided with tongues adapted to enter the openings formed by the stamped out ears, whereby to secure the respective extensions together.

854,972. FILTER. ERWIN M. WADE, Los Angeles, Cal. Filed Nov. 15, 1906. Serial No. 343,583.



Claim.—1. A device of the class described, comprising a revolving drum having a plurality of compartments therein provided with ports, said drum having a periphery of filtering material; mechanism for connecting said ports to exhaust during a portion of the revolution of said drum; means for shifting said exhaust connection to a following compartment; and means to rotate said drum.

2. A liquid filter comprising a frame; a drum having a filtering medium secured to its periphery revolubly mounted in said frame, said drum having a plurality of compartments therein and a port leading from each compartment; a valve cap rotatably secured to said drum, said cap having a plurality of ports adapted to register with the ports of the drum during its rotation; mechanism for connecting said last named ports to exhaust during a portion of the revolution of said drum; means for shifting said exhaust connection to the following compartment; and means to rotate said drum.

3. A liquid filter comprising a revoluble shaft mounted in a frame; a drum rigidly secured to said shaft having a plurality of compartments with a port leading from each compartment and a periphery of filtering material; a valve cap rotatably secured to said drum having a plurality of ports adapted to register with the ports leading from the drum during the rotation of said drum; means to create an exhaust in some of said compartments and pressure in other of said compartments simultaneously; means for securing the valve cap to the drum during its rotation; means for releasing said valve cap from engagement with the drum at a predetermined point during its rotation; means for returning said valve cap to its initial position; and means to rotate said drum.

4. A liquid filter comprising a revoluble shaft mounted in a frame; a drum rigidly secured to said shaft having a plurality of compartments with a port leading from each compartment and a periphery of filtering material; a valve cap rotatably secured to said drum having a plurality of ports adapted to register with the ports leading from the drum during the rotation of said drum; means to create an exhaust in some of said compartments and pressure in other of said compartments simultaneously; means for securing the valve cap to the drum during a portion of its rotation; means for releasing said valve cap from engagement with the drum at a predetermined point during its rotation; means for returning said valve cap to its initial position; liquid sprays secured to the frame adjacent the periphery of the drum; detaching means secured to the frame adapted to bear against the periphery of the drum; and means to rotate said drum.

5. A liquid filter, comprising a frame, a drum provided with a periphery of filtering material and having a plurality of compartments therein provided with ports, said

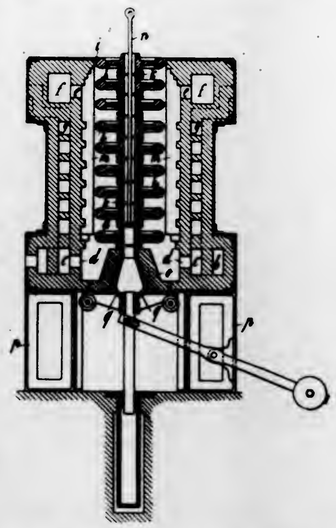
compartments having bottoms inclined toward said ports; mechanism for connecting said ports to exhaust during a portion of the revolution of said drum; means for shifting said exhaust connection to a following compartment; and means to rotate said drum.

854,973. ANIMAL-YOKE. PERCY W. WHELDEN, Norcatur, Kans. Filed Aug. 9, 1906. Serial No. 329,922.



Claim.—A yoke comprising an outer collar, an inner collar provided with curved orifices projecting through a corner of the edge thereof, means to hold the collars yieldingly spaced, and inward curved prods carried by the outer collar and adapted to project through the orifices of the inner collar.

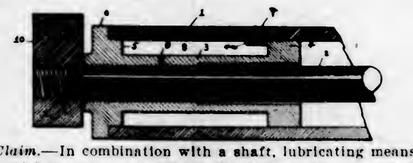
854,974. FURNACE FOR HEATING DISK WHEELS OR THE LIKE. ADOLF WIECKE, Düsseldorf, Germany. Filed Nov. 26, 1906. Serial No. 345,092.



Claim.—1. A furnace having a heating chamber, means within said chamber for separately sustaining therein a series of superposed articles to be heated, a bottom at the lower end of the chamber, and means for raising and lowering said bottom, substantially as specified.

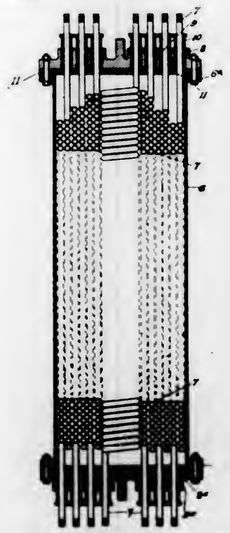
2. A furnace having a heating chamber, means for admitting gas and pre-heated air to said chamber, a movable perforated bottom, a series of perforated plates above the bottom, and a rod adapted to engage said plates, substantially as specified.

854,975. LUBRICATING MEANS. BENJAMIN M. WILLIAMSON and WILLIAM B. RIPLEY, Stockton, Cal. Filed May 3, 1906. Serial No. 314,990.



Claim.—In combination with a shaft, lubricating means comprising a sleeve having a flange formed on one end thereof, a shoulder formed on said flange, a flange on the other end of said sleeve, a laterally extending lug carried by said second named flange, said second flange being provided with an opening, and a roller having one end seated upon the shoulder of the first named flange, said roller being provided with an opening adapted to register with the opening formed on the lateral projecting lug of the second named flange thereby forming means by which the lubricant container is filled, said roller forming one of the side walls of the lubricant container, the other of said walls being provided with an opening, said opening connecting the lubricant container with the shaft, and a screw passing through the opening in the roller, and the opening in the lateral projecting lug, thereby forming means by which said opening is closed after the lubricant container has been filled.

854,976. REFRIGERATOR-CONDENSER. WILLARD J. WOODCOCK, Brooklyn, N. Y. Filed July 24, 1906. Serial No. 327,530.



Claim.—1. A condenser shell for ammonia and the like comprising an inclosing cylinder, cast heads for closing the cylinder, a wrought iron or steel lining plate under the heads, and means to pack a pipe passing through the head and also means to seal the joints between the head and lining, whereby the cast head supports the pressure but is not exposed to the gases in the shell, substantially as described.

2. In a condenser shell for ammonia and the like, the combination with a cylinder, of cast heads for closing the ends of the shell provided with pipe glands, a wrought iron or steel plate placed under the casting and perforated for pipes, and means for sealing off the pipe and the joints between the plate and casting to protect the latter from the contents of the tank.

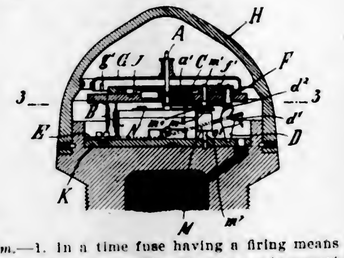
3. A condenser for volatile liquids comprising a coil and an inclosing shell closed by cast heads, sheet iron or steel linings under said heads perforated for the outlet of the coil pipes, and packing glands formed in the cast heads concentric with said perforations, whereby the packing for the pipes also closes the joints between the casting and the lining, substantially as described.

4. The combination with a steel tank, of a cast head for closing the tank, a steel lining plate under the head, gland studs tapped into but not through the lining plate, and gland openings in the head closed at the bottom by said plate, whereby the packing for pipes running through said gland openings also closes the joint between the casting and said plate.

5. In an ammonia tank the combination of a steel shell, a cast head closing the shell, a perforated steel plate under the head, gland sockets in the casting, gland studs tapped into but not through the steel plate, and a packing to surround a pipe passing through the head and at the same time close the joint between the steel plate and the casting, substantially as described.

6. A condenser comprising a coil and an inclosing cylinder having a wrought metal closing disk at the end, and the cast metal support for said disk, and means to pack the pipes of the coil and the surfaces of the cast support, whereby the said cast support may resist the pressure but is not exposed to the gas in the condenser, substantially as set forth.

854,977. TIME-FUSE. CARL BÄKER, Berlin, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Mar. 26, 1906. Serial No. 308,165.



Claim.—1. In a time fuse having a firing means and a timing mechanism controlling the same, a transport safety device independently opposing the action of both said means and said mechanism and mounted to move longitudinally of the fuse out of opposing relation to such parts by its own inertia at time of firing.

2. In a clock-work time-fuse having a locking-shaft rotating to release a firing device and prevented from completing its rotation by the clock-work; a transport safety attachment controlling both the movement of the clock-work and the rotation of the locking-shaft, consisting of a bolt movable longitudinally of the fuse, and arms carried respectively by a rotary part of the clock-work and by the locking shaft and engaged by said bolt until the latter is moved out of the paths of the arms at the time of firing.

3. In a transport safety attachment for clock-work time fuses, the combination of a locking shaft holding the igniting spring under tension, and rotating to release said spring, and a securing device M, movable longitudinally of the fuse, under its own inertia, at time of firing, which, while in its securing position independently opposes both the starting of the clock-work and the rotation of the locking shaft.

854,978. CONNECTION FOR ELECTRICAL SOCKETS AND CONDUITS. REUBEN B. BENJAMIN, Chicago, Ill. Filed Sept. 19, 1906. Serial No. 335,268.

Claim.—1. A lamp socket support for electric conduits comprising a clamping member arranged to fit over the electric conduit and a second clamping member carried thereby and extending at right angles thereto arranged to receive the lamp socket, and means for securing said first member to the conduit and said second member to the socket.



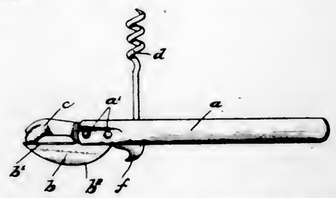
2. A lamp socket support for electric conduits comprising a clamping member arranged to clamp upon an electric conduit and a second clamping member carried thereby, and extending at an angle thereto arranged to receive the lamp socket, and a common means for clamping said first member upon the conduit and said second member upon the socket.

3. A lamp socket support for electric conduits comprising a sleeve arranged to fit over an electric conduit, a second sleeve extending at an angle thereto arranged to receive the lamp socket, and a common means for drawing said sleeve tightly upon the conduit and upon the socket.

4. A lamp socket support for electric conduits, comprising a split sleeve arranged to fit over the conduit, a second split sleeve extending at an angle thereto, and arranged to fit over a projection upon the lamp socket, and a common means for drawing the portions of said sleeves together to cause them to fit tightly over the conduit and over the projection of the lamp socket.

5. A lamp socket support for electric conduits comprising a sleeve arranged to fit over an electric conduit and having inwardly formed members extending at angles thereto arranged to form a second sleeve to receive the projection of the lamp socket, and a clamp or clamps arranged to fit over one of said sleeve members to draw the same together and clamp the first mentioned sleeve member upon the conduit and the second mentioned sleeve member upon the projection of the lamp socket.

854,979. COMBINATION-TOOL. BENJAMIN F. BIRD, Kingston, N. Y. Filed Mar. 28, 1907. Serial No. 364,972.

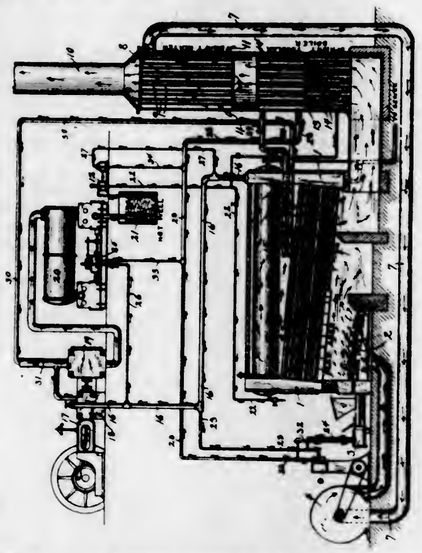


Claim.—1. A combination tool comprising a handle, a fulcrum head therefor, a cutting blade in said handle and extending under said fulcrum head, and a hook positioned rearwardly of said cutting blade adjacent to the under edge thereof, whereby said blade acts as a fulcrum relative to said hook, in removing a cap.

2. A combination tool comprising a handle, a fulcrum head, the shank of which has a channel adjacent to the head, on the under side thereof adapted to receive the blade, oppositely disposed rearwardly projected arms, pendent, integral coincident hooks thereon, a cutting blade mounted in said channel and extending under said fulcrum head, a corkscrew having an eye on the end of its shank, said arms being constricted on one side, and a rivet drawing said arms upon said eye, and said hooks together, whereby movement of said corkscrew to open it is limited to a direction away from said blade and said hook, and said fulcrum head, said blade, said hook and said corkscrew are simultaneously attached to the handle.

3. A combination tool comprising a handle, a fulcrum head therefor, a cutting blade extending under said fulcrum head, a rearwardly projected shank to said fulcrum head, and a hook forming an integral part of said shank disposed rearwardly of said blade whereby the under edge of said blade acts as a fulcrum for said hook in removing a cap.

854,980. POWER SYSTEM. GEORGE Y. BONUS, Chicago, Ill. Filed Feb. 13, 1905. Serial No. 245,521.



Claim.—1. In a power economizing system, a source of steam supply, a plurality of engines one of which is a compound engine, a steam superheater and connections whereby the exhaust steam from all engines except the compound engine is led through said superheater and thence with the exhaust from the high pressure cylinder of said compound engine to the low pressure cylinder of said compound engine.

2. In a power economizing system, a high pressure boiler, a low pressure boiler, a steam superheater, a furnace for heating said two boilers and said superheater, a plurality of engines one of which is a compound engine, and connections whereby the exhaust steam from all engines except the compound engine is led to the low pressure boiler, thence through said steam superheater and with the exhaust from the high pressure cylinder of the compound engine to the low pressure cylinder of the compound engine.

3. In a power economizing system, a high pressure boiler, a steam superheater, a furnace for heating said boiler and said superheater, a plurality of engines one of which is a compound engine and connections whereby the exhaust steam from all engines except the compound engine is led through said superheater and thence together with the exhaust from the high pressure cylinder of the compound engine to the low pressure cylinder of said compound engine.

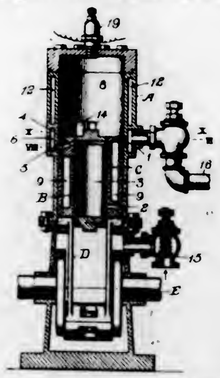
4. In a power economizing system, a high pressure boiler, a plurality of engines one of which is a compound engine, a steam superheater and connections whereby the exhaust steam from all engines except the compound engine is led through said superheater and thence together with the exhaust from the high pressure cylinder of the compound engine to the low pressure cylinder of said compound engine.

5. In a power economizing system, a high pressure boiler, a low pressure boiler, a plurality of engines one of which is a compound engine, a steam superheater and connections whereby the exhaust steam from all engines except the compound engine is led to the low pressure boiler, thence through the said steam superheater and together with the exhaust steam from the high pressure cylinder of the compound engine to the low pressure cylinder of said compound engine.

6. In a power economizing system, a high pressure boiler, a compound engine for furnishing power, an engine for operating the furnace stoker, an engine for operating the feed water pump, a steam superheater and connections whereby the exhaust steam from the two last named engines is led through said superheater and thence together with the exhaust steam from the high pressure cylinder of said compound engine to the low pressure cylinder of said compound engine.

7. In a power economizing system, a high pressure boiler, a low pressure boiler, a steam superheater, a furnace for heating said two boilers and said steam superheater, a compound engine for furnishing power, an engine for operating the furnace stoker, an engine for operating the feed water pump, and connections whereby the exhaust steam from the two last named engines is led through said low pressure boiler, thence through said superheater and together with the exhaust steam from the high pressure cylinder of the compound engine to the low pressure cylinder of the compound engine, to the low pressure cylinder of said compound engine.

854,981. GAS-ENGINE. WILLIAM F. BREHM, Rochester, Pa. Filed Aug. 17, 1905. Serial No. 274,603.



Claim.—1. In a gas engine the combination of a reciprocating piston, a chamber for compression and explosion arranged upon one side of said piston, displacement chambers for gas and air respectively arranged upon the opposite side of said piston, and communications controlled by such movement of said piston, for admitting air and gas to said displacement chambers, for permitting the air and gas to pass from said displacement chambers to said chamber for compression and explosion and for discharging the products of explosion from the last named chamber, substantially as described.

2. In a gas engine, the combination of an outer cylinder, a piston reciprocating therein and dividing the space within said outer cylinder into a chamber for compression and explosion and a space for receiving air and gas, an inner cylinder arranged within said outer cylinder and at one side of said piston and co-operating with said piston to divide the space for receiving air and gas into separate displacement chambers, a gas inlet, an air inlet, an exhaust, means for causing explosion of gas in said chamber for compression and explosion and several means operative on the traverse of the piston for admitting air and gas to the displacement chambers, for causing air and gas to pass from said displacement chambers to said chamber for compression and explosion and from the last named chamber to the exhaust, substantially as described.

3. In a gas engine including in its structure a chamber for compression and explosion closed by a movable piston ports opening into said chamber through which gas and air respectively are admitted and the products of explosion exhausted, said ports controlled by said piston and so arranged that the traverse of said piston will cause the successive opening of the exhaust, the air inlet, and the gas inlet, and their closure in inverse order, substantially as described.

4. In a gas engine including in its structure a chamber for compression and explosion closed by a movable piston, an arrangement of ports in said chamber such that air and gas enter said chamber unmingled at one side thereof and the products of explosion pass from said chamber at the opposite side thereof, and a baffle plate arranged to obstruct direct passage of gas and air from inlet to exhaust when both inlet and exhaust ports are open, substantially as described.

5. In a gas engine the combination of a cylinder of uniform diameter from end to end, a piston reciprocating in said cylinder and dividing the space within said cylinder into a chamber for compression and explosion, and a space for receiving air and gas, an inner cylinder arranged within said outer cylinder and at one side of said piston and co-operating with said piston to divide the space for receiving air and gas into separate displacement chambers, and communications controlled by said piston in its movement for admitting air and gas to said displacement chambers for permitting air and gas to pass from said displacement chambers to said chamber for compression and explosion, and for discharging the products of explosion from the last named chamber, substantially as described.

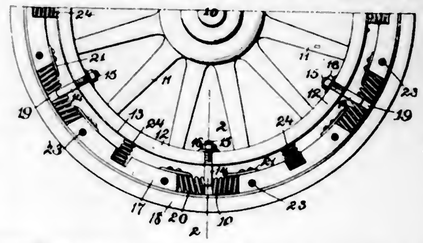
6. In a gas engine the combination of a cylinder and a piston reciprocating therein, separate chambers for gas and air on one side of said piston wherein gas and air are compressed by traverse of said piston in one direction and wherein gas and air are admitted on traverse of the piston in opposite direction, and an explosion chamber on the opposite side of said piston to which gas and air are admitted from said gas and air chambers and in which gas and air so admitted are exploded to drive said piston, substantially as described.

7. In a gas engine the combination of an outer cylinder, an inner cylinder concentrically arranged therein and extending from one end of the outer cylinder part way of the length thereof, a piston arranged within the outer cylinder and by a cylindrical extension bearing also upon the outer surface of the inner cylinder, and dividing the space within said outer casing into a compression and explosion chamber at one side thereof and central and peripheral chambers for gas and air at the other side thereof, and reciprocating to vary the volumes of said several chambers, an air supply leading to said air chamber and controlled by an inwardly closing check-valve, a gas supply leading to said gas chamber and a port for admitting gas from said supply to said chamber opened when the volume of said chamber is at its maximum, ports for admitting air and gas from said air and gas chambers to said compression and explosion chamber when the volumes of said gas and air chambers are at their minimum, a port opening from said compression and explosion chamber to an exhaust when the volume of said explosion and compression chamber is at its maximum, and means for exploding the gas within said explosion and compression chamber when the volume of said chamber is at its minimum, substantially as described.

854,982. SPRING-WHEEL. SAMUEL S. CHILDS, Bernardsville, N. J. Filed Jan. 9, 1907. Serial No. 351,441.

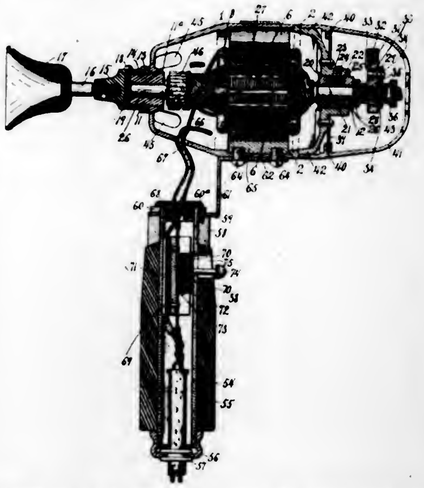
Claim.—1. A spring wheel comprising a body portion having a felly, a rim surrounding the felly at a distance therefrom, wings projecting from the felly, and springs between the opposite faces of the wings and connected to the rim, the wings being perforated to allow the insertion of a lubricant.

2. A spring wheel comprising a body portion having a felly, a rim surrounding the felly at a distance therefrom the rim being recessed, springs in the recesses and abutting on the ends thereof, wings projecting from the felly and



between the springs, side plates secured to the rim, and plates partly covering the open side of the recesses.

854,983. MASSAGE-MACHINE. RICHARD V. CLARK, St. Louis, Mo. Filed Aug. 1, 1906. Serial No. 328,770.



Claim.—1. In a massage machine, the combination of the casing, a motor therein, a bearing for the shaft of the motor, engaging the inner face of the casing, and projecting through the casing to the outside thereof, and a massage member securing device engaging the projecting end of the bearing.

2. In a massage machine, the combination of the casing, a motor therein, and a motor shaft bearing, and a massage-member securing-device engaging respectively the inner and the outer walls of the casing and connected together.

3. In a massage machine, a casing a bearing engaging the inner wall thereof and provided with a threaded portion projecting to the outside of the casing, and a massage member securing device secured on the threaded projecting end of the bearing.

4. The combination of a motor casing, a motor therein having a shaft extending to the exterior of the casing, a massage member secured to the casing, means for inducing vibrations in the casing secured to that portion of the shaft extending to the exterior of the casing, and a removable cap secured to the casing and inclosing said means.

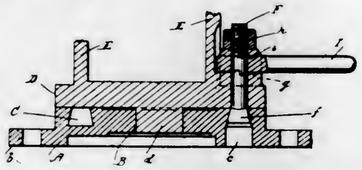
5. The combination with a casing, of a motor therein, a massage member secured to the casing, an eccentric disk secured to the motor shaft and provided with a peripheral flange and a projection extending in a direction parallel to the shaft, an eccentric disk turning on the periphery of

the first disk, an eccentric clamping disk holding the second named disk in engagement with the flange on the first named disk, and a nut movable on the shaft to hold the clamping disk in place.

6. In a massage machine, an electric motor, a handle supporting the motor and provided with a central tube having a slot, lead wires extending through the tube, an insulated contact supporting member arranged within the tube having a channel through which one of the lead wires passes, and carrying a pair of contacts to which the other lead wire is connected, a sliding switch member within the tube adapted to bridge the contacts, and a finger piece extending through the slot.

7. In a massage machine, an electric motor, and a handle comprising a central tube provided with screw threaded ends, a rubber sleeve surrounding the tube, a ferrule at one end of the tube abutting one end of the sleeve, a collar at the other end of the tube abutting the other end of the rubber sleeve, a bracket surrounding the tube and connected with the motor, and a nut clamping the bracket against the collar.

854,984. SWIVELED BASE. JOHN G. CORBETT, Waynesboro, Pa., assignor to The Emmert Manufacturing Company, Waynesboro, Pa. Filed Dec. 8, 1906. Serial No. 346,991.



Claim.—1. The combination, with two plates pivotally connected together, one of the said plates having an annular groove and the other said plate having a stationary and rigid boss provided with a guide-hole and having an inclined face, of a non-revoluble bolt slidable in the said guide-hole and having a head at one end which engages with the said groove, a nut on the projecting end portion of the said bolt, and a locking-device pivoted on the said bolt between the said nut and boss and having an inclined face which engages with the inclined face of the boss and which operates to slide the said bolt longitudinally in the said guide-hole to clamp and release the two said plates.

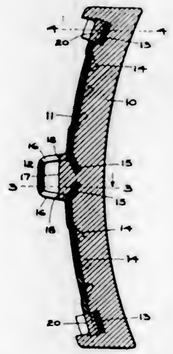
2. The combination, with two plates pivotally connected together, one of the said plates having an angular wedge-shaped groove, and the other said plate having a rigid boss provided with an inclined face and a guide-hole, of a non-revoluble bolt slidable in the said guide-hole and having a wedge-shaped head for engaging with the said groove, a nut on the projecting end portion of the said bolt, and a locking-device pivoted on the said bolt between the said nut and boss and having an inclined face which engages with the face of the said boss.

854,985. BRAKE-SHOE. SETH A. CRONE, New York, N. Y. Filed Feb. 21, 1907. Serial No. 358,629.

Claim.—1. A brake-shoe having a cast-metal body and plate back, said back being a plate which extends across the width of said body and is formed with a transverse box-loop containing in its upper and lower sides openings for a key, and said cast-metal being entered within the inner portion of said loop and between the side walls and over the inner edge walls of said openings; substantially as set forth.

2. A brake-shoe having a cast-metal body and plate back, said back having a box-loop containing key-way openings formed by slitting the metal at three sides to form lips and bending said lips inwardly; substantially as set forth.

3. A brake-shoe having a cast-metal body and plate back, said back having a box-loop containing key-way openings formed by slitting the metal at three sides to form lips and bending said lips inwardly, and said cast metal being entered within the inner portion of said loop and between the side walls of said openings; substantially as set forth.



4. A brake-shoe having a cast-metal body and plate back, said back having at its end portion a transverse inwardly depressed integral loop over which the cast metal extends; substantially as set forth.

5. A brake-shoe having a cast metal body and plate back, said back having at its end portion a transverse inwardly depressed integral loop over which the cast metal extends and said cast metal over said loop forming projecting guides; substantially as set forth.

6. A brake-shoe having a cast-metal body and plate back, said back having at its opposite end portions transverse inwardly depressed integral loops over which the cast metal extends and said cast metal over said loops forming projecting guides; substantially as set forth.

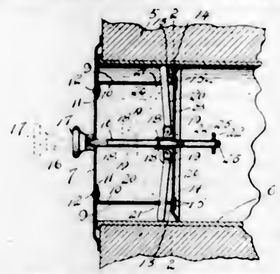
7. A brake-shoe having a cast-metal body and plate back, said back having its inner transverse end portions depressed inwardly beyond the general plane of the back and said cast metal being extended over said portions, and said transversely depressed inner end portions of said back being integral at both their ends with said back; substantially as set forth.

8. A brake-shoe having a cast-metal body and plate back, said back having its inner transverse end portions depressed inwardly beyond the general plane of the back and said cast metal being extended over said portions, and therein forming projecting guides, and said transversely depressed inner end portions of said back being integral at both their ends with said back; substantially as set forth.

9. A brake-shoe having a cast-metal body and plate back which throughout is of substantially the full width of said body and secured thereto by the body-metal being cast over lips cut from said back and pushed inwardly, said body-metal covering over said lips and filling the openings made in said back by the formation of said lips but not covering over the general surface of said back, and said back being formed at its transverse middle portion with a box-loop of the full width of the plate and having in its upper end lower sides openings for the key-way, substantially as set forth.

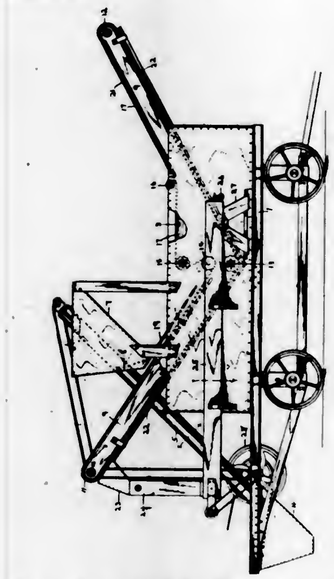
10. A brake-shoe having a cast-metal body and plate back which is of substantially the full width of said body and secured thereto by the body metal being cast over portions of said back, said back being formed at its transverse middle portion with a box-loop of the full width of the plate and having at the center of its upper and lower sides openings for the key-way, and said openings being formed by slitting the metal on three sides and bending the lips thus formed inwardly on converging lines to become embedded in the cast metal; substantially as set forth.

854,986. FLUE-STOPPER. JAMES W. DE WEESE, Hoopeston, Ill. Filed June 27, 1906. Serial No. 323,631.



Claim.—A device of the class described comprising a pair of plates, slotted strips connecting said plates, a rod movably engaged through the plates, and arms connected with the rod and engaged through the slots formed in said strips and arranged to engage the sides of a flue in which the device is located, the said arms being arranged to spread by the movement of said rod.

854,987. GRAIN AND SEED CLEANER. HALSEY H. DUNNING, Marysville, Cal. Filed Oct. 22, 1906. Serial No. 339,970.



Claim.—1. In an apparatus of the class described, a tank for liquid, a conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, an endless slatted belt with the lower side running in close proximity to said frame, an inclined feed plate beneath the upper side of said belt and with the lower end within the liquid in the tank, a guard plate above the upper side of the belt opposite the feed plate, means for feeding the material upon the upper end of said feed plate, and means for operating said belt.

2. In an apparatus of the class described, a tank for liquid, an imperforate conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, an endless slatted belt arranged for operation with the lower side in close proximity to the frame and with a portion of the upper side in horizontal position and at the surface of the liquid, an imperforate feed plate within the belt at one side of the horizontal portion, a perforated plate within the belt at the other side of the horizontal portion, means for feeding the material to be cleansed from the upper end of said plate, and means for operating said belt, whereby the material will be first drawn into the water and the heavier particles then elevated therefrom at one point and the lighter floating particles removed from the tank at another point and carried over said perforated plate.

3. In an apparatus of the class described, a tank for liquid, a conveyer frame having elevated ends and with an intermediate depressed portion within the liquid in the tank, a slatted belt operating within said conveyer frame and within the liquid in the tank, an inclined feed plate with one end within the liquid, a receiver for grain to be cleaned, a feed receptacle arranged to discharge upon the upper end of said feed plate, a perforated inclined spout between said receiver and feed receptacle, a conveyer device operating in said spout, and means for operating said belt.

4. In an apparatus of the class described, a tank for liquid, an imperforate conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, an endless slatted belt arranged for operation with the lower side in close proximity to the frame and with a portion of the upper side in horizontal position and at the surface of the liquid, an imperforate feed plate within the belt at one side of the horizontal portion, a perforated plate within the belt at the other side of the horizontal portion, a guard plate disposed over the belt opposite the feed plate, a receiver for the material to be cleansed, a receptacle from which the material is fed to the feed plate, a perforated spout between the receiver and the receptacle, a conveyer within the feed spout, and means for simultaneously operating said belt and conveyer.

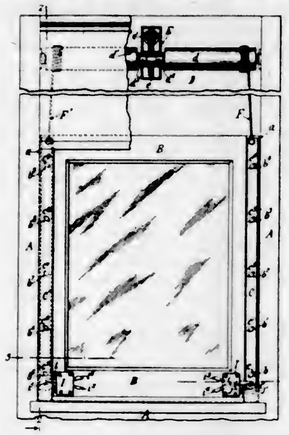
5. In an apparatus of the class described, a tank for liquid, an imperforate conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, an endless slatted belt arranged for operation with the lower side in close proximity to the frame and with a portion of the upper side in horizontal position and at the surface of the liquid, an imperforate feed plate within the belt at one side of the horizontal portion, a perforated plate within the belt at the other side of the horizontal portion, a guard plate opposite the feed plate and spaced therefrom, means for feeding the material to be cleaned between the feed plate and guard plate, and means for actuating said belt.

6. In an apparatus of the class described, a tank for liquid, a conveyer frame having elevated ends and an intermediate depressed portion within the liquid in the tank, a slatted belt operating within the said conveyer frame and within the liquid in the tank, an inclined feed plate with one end within the liquid, means for feeding the material to be cleaned upon the upper end of said feed plate, means for operating said belt to cause said material to be first drawn into the water therein and then elevated therefrom, a conveyer trough adapted to receive the material discharged from said conveyer frame, a conveyer disposed in said conveyer trough, and means for heating the material while passing through the conveyer trough.

7. In an apparatus of the class described, a tank for liquid, an imperforate conveyer having elevated ends and a depressed portion within the liquid in the tank, an endless slatted belt arranged for operation with the lower side in close proximity to the frame and with a portion of the upper side in horizontal position and at the surface of the liquid, an imperforate feed plate within the belt at one side of the horizontal portion, a perforated plate within the belt at the other side of the horizontal portion, a guard plate opposite said feed plate and spaced therefrom, a receiver for the material to be cleaned, a receptacle for the material disposed in position to discharge upon the upper end of the feed plate, a perforated spout between the receiver and receptacle, a conveyer within the perforated spout, a conveyer trough adapted to receive the material

discharged from the conveyer frame, a conveyer operating in said conveyer trough, and means for supplying heat to the material in the conveyer trough.

854,988. WINDOW. OLIVER M. EDWARDS, Syracuse, N. Y. Filed Apr. 5, 1905. Serial No. 254,030.



Claim.—1. In a window the combination, substantially as set forth, of a guideway, a sash adapted to move therein, holding means arranged at each edge of the sash and engageable with the guideway, each of which holding means is provided with a movable portion, movable relatively to the sash, each holding means being movable independently of the other holding means in holding the sash in the guideway, counterbalancing means connectible to each of the movable portions of the holding means, and means connecting such counterbalancing means directly to each of the movable portions of the sash holding means, whereby each of such movable portions may be moved relatively to the sash and independently of each other and the space between the sash, counterbalancing means and such connecting means are left substantially unobstructed.

2. In a window the combination, substantially as set forth, of a guideway, a sash adapted to move therein, holding means arranged at each edge of the sash, each means being adapted to move the sash both edgewise and sidewise in the guideway and each means being provided with a movable portion adapted to move relatively to the sash, counterbalancing means adapted to be connected directly to the movable portions of the holding means, and connecting means, separately connecting such counterbalancing means directly to the movable portions of the holding means, whereby the sash may be moved in both sidewise and edgewise directions by the action of the counterbalancing means upon the movable portions of the holding means.

3. In a window the combination, substantially as set forth, of a guideway, a sash adapted to move therein, holding means a portion of which is arranged at one edge of the sash and is movable relatively thereto to move the sash both edgewise and sidewise in its guideway, and counterbalancing means having a plurality of separately operable parts one of which is connected with the movable portion of the holding means and acts thereon independently of the other operable part in holding the sash in its guideway.

4. In a window the combination, substantially as set forth, of a guideway, a sash adapted to move therein, holding means mounted on the sash, a portion of which is movable relatively thereto, counterbalancing means having a plurality of separately operable parts, connectible with the movable portion of the holding means to hold the sash in the guideway, and adjusting means connecting with such plurality of separately operable parts and adapted to simultaneously adjust the force which the counterbalancing means exerts on the sash through such movable portion of the holding means.

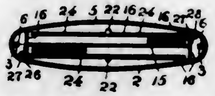
5. In a window the combination, substantially as set forth, of a guideway, a sash adapted to move therein, holding means mounted at each edge of the sash, a portion of each holding means being movable relatively to the sash, a plurality of spring rollers a portion of each of which is movable independently of the other portion, and connecting means, connecting the movable portion of each of such rollers directly with the movable portion of the sash holding means, whereby each movable portion of the sash holding means is independently movable by its respective spring roller to hold the sash in the guideway.

6. In a window the combination, substantially as set forth, of a guideway, a sash adapted to move therein, holding means mounted at each edge of the sash, a portion of which is movable relatively to the sash, a plurality of spring rollers, the shell portions of which are movable independently of each other and each is connectible with a movable portion of the sash holding means, adjusting means for each roller adapted to engage with and simultaneously adjust the tension of the springs thereof, and connecting means connecting each shell portion of the rollers and each of the movable portions of the sash holding means, whereby each shell portion and connected movable part of the sash holding means may move independently of the other shell portion and its connected portion of such holding means.

7. In a window the combination, substantially as set forth, of a guideway, a sash adapted to move therein, holding means mounted at each edge of the sash, a portion of which holding means is movable relatively to the sash, a plurality of spring rollers, the shell portions of which are movable independently of each other and each portion is connectible with a movable portion of the sash holding means, each roller being provided with a spindle which is engageable with adjusting means, adjusting means, adapted to engage with each of such spindles, and connecting means connecting each of the shell portions of the rollers with one of the movable portions of the sash holding means, whereby the tension of the springs of the plurality of rollers are adjusted simultaneously and the movable portions of the sash holding means are movable independently of each other.

8. In a window the combination substantially as set forth, of a guideway, a sash adapted to move and be held therein, holding means carried by each edge of the sash and provided with a movable portion, and counterbalancing means composed of a plurality of separately acting parts, each of which is connected with the sash through such movable portions of the sash holding means and their connections therewith, whereby either of such movable portions can be moved relatively to the sash without disturbing any other separately acting part.

854,989. POCKET AND OTHER CASE. WILLIAM E. EDWARDS, Irvington, N. J., assignor of one-half to August O. Schuster, Newark, N. J. Filed Apr. 9, 1906. Serial No. 310,735.



Claim.—1. As a new article of manufacture, a case, comprising a body-section and a cover section, pivotally connected by means of a spring-hinge, a supporting plate pivotally connected with the said hinge, said supporting-plate being provided at its two sides and the rear with a wall or flange extending above and beneath the said supporting-plate to form pockets or receptacles for the reception of cigarettes or similar articles, means connected with the said supporting plate for swinging or tipping the front side thereof above the sides of the case when the same is opened, and means upon said supporting-plate adapted to retain the cigarettes or similar articles thereon, substantially as and for the purposes set forth.

2. As a new article of manufacture, a case, comprising a body-section and a cover-section pivotally connected by means of a spring-hinge, a supporting plate pivotally connected with the said hinge, said supporting plate being provided at its two sides and the rear with a wall or flange extending above and beneath the said supporting-plate to form pockets or receptacles for the reception of cigarettes or similar articles, means connected with the said supporting plate for swinging or tipping the front side thereof above the sides of the case when the same is opened, and means upon said supporting-plate adapted to retain the cigarettes or similar articles thereon, consisting of retaining bars on each side of the said supporting plate, hinged or pivotally connected to the wall or flange of the said supporting plate, and springs connected with said retaining-bars, adapted to normally retain the said retaining-bars in their positions extending across the face of the said supporting plate, substantially as and for the purposes set forth.

3. As a new article of manufacture, a case, comprising a body section and a cover section, pivotally connected by means of a spring-hinge, a supporting plate pivotally connected with the said hinge, said supporting plate being provided at its two sides and the rear with a wall or flange extending above and beneath the said supporting plate to form pockets or receptacles for the reception of cigarettes or similar articles, means connected with the said supporting plate for swinging or tipping the front side thereof above the sides of the case when the same is opened, and means upon said supporting-plate adapted to retain the cigarettes or similar articles thereon, and means connected with the said body-section and the said cover-section for locking or holding the said body-section and cover-section in their closed position, substantially as and for the purposes set forth.

4. As a new article of manufacture, a case, comprising a body-section and a cover-section, pivotally connected by means of a spring-hinge, a supporting plate pivotally connected with the said hinge, said supporting-plate being provided at its two sides and the rear with a wall or flange extending above and beneath the said supporting-plate to form pockets or receptacles for the reception of cigarettes or similar articles, means connected with the said supporting plate for swinging or tipping the front side thereof above the sides of the case when the same is opened, and means upon said supporting-plate adapted to retain the cigarettes or similar articles thereon, consisting of retaining bars on each side of the said supporting plate, hinged or pivotally connected to the wall or flange of the said supporting plate, and springs connected with said retaining-bars, adapted to normally retain the said retaining-bars in their positions extending across the face of the said supporting-plate, and means connected with the said body-section and the said cover-section for locking or holding the said body-section and cover-section in their closed position, substantially as and for the purposes set forth.

5. As a new article of manufacture, a case, comprising, a body-section and a cover-section, pivotally connected by means of a spring-hinge, laterally and inwardly projecting flanges on said body-section and said cover-section extending around three sides of the said body and cover sections from the said spring-hinge, means for locking or holding said body and cover sections in their closed position, consisting of pairs of guide-lugs on said laterally and inwardly projecting flanges of said body and cover sections, a lock-plate provided with a nose or catch-piece adapted to slide between said guide-lugs, said nose or catch piece being adapted to engage with the said laterally and inwardly projecting flange of the cover-section, a finger-piece extending laterally from said lock-plate through a hole or opening in the said body-section, a flat-spring extending across the rear of said lock-plate, said flat-spring being held in its normal operative relation by lugs on said

laterally and inwardly extending flange of the said body-section, substantially as and for the purposes set forth.

6. As a new article of manufacture, a case, comprising a pair of hinged body-sections, means for locking the said body-sections in their closed relation, a supporting-plate pivotally connected with the hinge of the said body-sections by means of a tongue or lug, a spring-bearing in said tongue or lug, a flat spring in said spring-bearing, the ends of said flat-spring being adapted to extend above and below the said supporting-plate and to engage with the body-sections of the case, substantially as and for the purposes set forth.

7. As a new article of manufacture, a case, comprising a pair of hinged body-sections, means for locking the said body-sections in their closed relation, a supporting plate pivotally connected with the hinge of the said body-sections by means of a tongue or lug, a spring-bearing in said tongue or lug, a flat spring in said spring-bearing, the ends of said flat-spring being adapted to extend above and below the said supporting plate and to engage with the body-sections of the case, and a wall or flange extending around the sides and rear of said supporting plate, and above and beneath the same, and retaining-bars on each side of said supporting-plate pivotally connected to the said wall or flange and adapted to retain cigarettes or similar articles upon the said supporting plate, and springs connected with said retaining-bars adapted to hold the said retaining-bars in their normal operative relation to the said supporting-plate, substantially as and for the purposes set forth.

854,990. POCKET AND OTHER CASE. WILLIAM E. EDWARDS, Irvington, N. J., assignor of one-half to August O. Schuster, Newark, N. J. Filed Apr. 9, 1906. Serial No. 310,736.



Claim.—1. As a new article of manufacture, a case consisting of a body-section and a cover-section, hinged together by a spring-hinge, means for holding or locking said body-section and said cover-section together in their closed relation, and means to release the said cover section from the body section to open said case, a supporting plate adapted to receive cigarettes, or the like, means for retaining said cigarettes or the like upon the said supporting-plate, consisting of a retaining bar extending across the face of the said supporting plate, one end of said retaining bar being pivotally secured upon the upper surface of the said supporting plate by means of a hinge connection, said hinge connection being provided with a spring adapted to retain the said retaining bar in its operative relation with the said supporting plate, and means for raising or elevating the said supporting-plate above the sides of the case, when open, consisting of a pair of link-plates or leaves pivotally secured at one end to the bottom of said body-section and being provided with springs adapted to swing the said link-plates or leaves in an upward direction, said link-plates or leaves being provided at their free ends with slotted portions through which they are pivotally connected by a pin or rod to the bottom of the said supporting-plate, substantially as and for the purposes set forth.

2. As a new article of manufacture, a case, consisting of a body section and a cover-section pivotally connected by a spring-hinge, means for locking or holding the said body-section and cover-section in their closed relation, a supporting plate adapted to receive cigarettes or the like, movably connected or secured to the bottom of the said body section by means of a pair of link-plates or leaves, and springs connected with said link-plates or leaves adapted to swing said link-plates or leaves in an upward

direction, thereby raising or elevating the said supporting plate when the case is opened, substantially as and for the purposes set forth.

3. As a new article of manufacture, a case consisting of a body-section and a cover section pivotally connected by a spring-hinge, means for locking or holding the said body section and cover section in their closed relation, a supporting-plate adapted to receive cigarettes or the like, movably connected or secured to the bottom of the said body-section by means of a pair of link plates or leaves, springs connected with said link-plates or leaves adapted to swing said link-plates or leaves in an upward direction, thereby raising or elevating the said supporting-plate when the case is opened, and means connected with said supporting plate, adapted to retain cigarettes or the like, substantially as and for the purposes set forth.

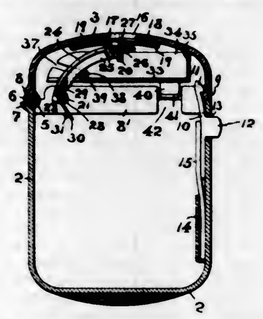
4. As a new article of manufacture, a case consisting of a body-section and a cover section pivotally connected by a spring-hinge, means for locking or holding the said body section and cover section in their closed relation, a supporting plate adapted to receive cigarettes or the like, movably connected or secured to the bottom of the said body-section by means of a pair of link-plates or leaves, springs connected with said link-plates or leaves adapted to swing said link-plates or leaves in an upward direction, thereby raising or elevating the said supporting-plate when the case is opened, and means connected with said supporting plate, adapted to retain cigarettes or the like, consisting of a retaining bar extending across the face of the supporting-plate, said retaining-bar being pivotally connected at one end to the upper side of the supporting plate, and a spring connected with said retaining bar adapted to retain the said retaining bar in its operative relation with the said supporting-plate, substantially as and for the purposes set forth.

5. A cigarette or similar case comprising a body and cover movably connected therewith, hinge-connections within said body, a supporting-plate, hinge-connections upon the under side of said supporting-plate, link-plates having their lower end-portions pivotally connected with the hinge-connections within said body, each link-plate having a slotted end-portion connected with the hinge-connection of said supporting-plate, and means connected with each link-plate for producing an upward movement of said plates and the supporting-plate when the cover of the case is raised, substantially as and for the purposes set forth.

6. A cigarette or similar case comprising a body and cover movably connected therewith, hinge-connections within said body, a supporting-plate, hinge-connections upon the under side of said supporting plate, link-plates having their lower end-portions pivotally connected with the hinge-connections within said body, each link-plate having a slotted end-portion connected with the hinge-connection of said supporting plate, and means connected with each link-plate for producing an upward movement of said plates and the supporting-plate when the cover of the case is raised, consisting of a coiled spring connected with each hinge-connection with said body of the case, substantially as and for the purposes set forth.

7. As a new article of manufacture, a case consisting of a body-section and a cover-section pivotally connected by a spring-hinge, said body-section and cover-section being respectively provided with laterally and inwardly projecting rims, means for holding or locking said sections in their closed relation, consisting of a lock-plate provided upon its upper portion with a holding catch adapted to engage with the laterally and inwardly extending rim of the cover-section, and means for operating said lock-plate to release its holding catch from engagement with said rim, consisting of a finger-piece extending laterally through an opening in the side of the body-section, and a spring extending across the rear of said lock-plate, and downwardly projecting holding lugs upon the inwardly extending rim of said body-section with which the end-portions of said spring are in engagement, said spring being adapted to retain said lock-plate normally in its holding or locking relation, substantially as and for the purposes set forth.

854,991. MATCH-BOX. WILLIAM E. EDWARDS, Irvington, N. J., assignor of one-half to August O. Schuster, Newark, N. J. Filed May 3, 1906. Serial No. 314,915.



Claim.—1. A match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, and a cigar-tip cutter movable past said opening, said cover being actuated by the opening and closing movements of the cover, and a cigar-tip accumulating receptacle hinged and removably arranged in said cover, substantially as and for the purposes set forth.

2. A match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a cigar-tip cutter movable within said cover past said opening, a spring-controlled finger pivotally connected with the body of the box, said finger extending upwardly into the chambered portion of said cover, and being provided with a post-receiving perforation in said upwardly extending portion of said finger, a downwardly projecting post on said cutter, said post extending into the perforation in said finger, all arranged for raising the cover of said box and withdrawing the cutter from beneath said opening in the cover and for the further purpose of moving said cutter past said opening when the cover is closed, substantially as and for the purposes set forth.

3. A match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a cigar-tip cutter movable within said cover past said opening, a spring-controlled finger pivotally connected with the body of the box, said finger extending upwardly into the chambered portion of said cover, and being provided with a post-receiving perforation in said upwardly extending portion of said finger, a downwardly projecting post on said cutter, said post extending into the perforation in said finger, all arranged for raising the cover of said box and withdrawing the cutter from beneath said opening in the cover and for the further purpose of moving said cutter past said opening when the cover is closed, and a cigar-tip accumulating receptacle in said cover, substantially as and for the purposes set forth.

4. A match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a cigar-tip cutter movable within said cover past said opening, a spring-controlled finger pivotally connected with the body of the box, said finger extending upwardly into the chambered portion of said cover, and being provided with a post-receiving perforation in said upwardly extending portion of said finger, a downwardly projecting post on said cutter, said post extending into the perforation in said finger, all arranged for raising the cover of said box and withdrawing the cutter from beneath said opening in the cover and for the further purpose of moving said cutter past said opening when the cover is closed, and a cigar-tip accumulating receptacle hinged and removably arranged in said cover, substantially as and for the purposes set forth.

5. In a match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a pin extending across the chambered portion of said cover, and a cigar-tip accumulating receptacle pivotally supported upon said pin, substantially as and for the purposes set forth.

6. In a match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a pin extending across the chambered portion of said cover, and a cigar-tip accumulating receptacle pivotally supported upon said pin, and means connected with said receptacle adapted to be brought in frictional contact with a portion of the cover to retain said receptacle in its receiving relation within said cover, substantially as and for the purposes set forth.

7. In a match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a pin extending across the chambered portion of said cover, and a cigar-tip accumulating receptacle pivotally supported upon said pin, but adapted to be removed from said pin, substantially as and for the purposes set forth.

8. In a match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a pin extending across the chambered portion of said cover, and a cigar-tip accumulating receptacle pivotally supported upon said pin, and means connected with said receptacle adapted to be brought in frictional contact with a portion of the cover to retain said receptacle in its receiving relation within said cover, substantially as and for the purposes set forth.

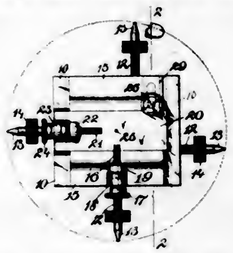
9. In a match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a pin extending across the chambered portion of said cover, and a cigar-tip accumulating receptacle pivotally supported upon said pin, but adapted to be removed from said pin, said receptacle consisting of a scoop-shaped body, the sides of which are formed with slotted portions 37 and retaining openings 38, all for arranging said scoop-shaped body upon said pin, substantially as and for the purposes set forth.

10. In a match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a pin extending across the chambered portion of the cover, and a cigar-tip accumulating receptacle pivotally supported upon said pin, but adapted to be removed from said pin, said receptacle consisting of a scoop-shaped body, the sides of which are formed with slotted portions 37 and retaining opening 38, all for arranging said scoop-shaped body upon said pin, and means connected with said scoop-shaped body adapted to be brought in frictional contact with a portion of the cover to retain said receptacle in its receiving relation within said cover, substantially as and for the purposes set forth.

11. In a match-box comprising a body and a chambered cover hinged to said body, said cover being provided with an opening for the insertion of the end of a cigar therein, a pin extending across the chambered portion of the cover, and a cigar-tip accumulating receptacle pivotally supported upon said pin, but adapted to be removed from said pin, said receptacle consisting of a scoop-shaped body, the sides of which are formed with slotted portions 37 and retaining openings 38, all for arranging said scoop-shaped body upon said pin, and means connected with said scoop-shaped body adapted to be brought in frictional contact with a portion of the cover to retain said receptacle in its receiving relation within said cover, consisting of a downwardly extending member 40, and a finger-piece upon the free end of said member, substantially as and for the purposes set forth.

854,992. CENTERING DEVICE. JACOB EHNI, Bloomfield, N. J. Filed Oct. 19, 1906. Serial No. 339,638.

Claim.—1. A centering device comprising a base plate, screws projecting radially therefrom from one face, a slide plate arranged on the base plate to move in one direction, a slide on the slide plate arranged to move at right angles thereto, means for independently moving the slide plate on the slide, and a center point designated on the slide.



2. A centering device comprising a base plate, screws arranged to project one from each edge of the base plate and having means on each for its manual operation, a slide plate arranged to slide on the base plate, means for regulating the slide plate, a slide on the slide plate working transversely of the movement of the slide plate, means for operating the slide, a center point on the slide, and a means for locking the slide plate and the slide in their adjusted positions.

3. A centering device comprising a base plate having lugs projecting from one face, screws working in the lugs and arranged to engage the walls of a perforation, a slide plate on the base plate, a screw to operate the slide plate and bearing on the base plate, a slide on the slide plate and operating at right angles thereto, a screw to operate the slide, said screw bearing on the slide plate, a center point on the slide, and a screw working in a slot in the base plate and bearing on the slide plate and the slide to lock the parts in their adjusted positions.

4. A centering device comprising a base plate having, on one face, a shifting and adjustable slide having a center point, and a series of screws arranged to project from the edges of the base plate to engage the walls of a perforation the screws being individually operated.

5. A centering device comprising a base plate having a slide carrying a shifting and adjustable center point on one face, and a series of screws arranged to project from the edges of the base plate, the screws on opposed edges being out of axial alinement, and this pair of screws being arranged in a different plane from the screws on the second pair of opposed edges.

6. A centering device comprising a plate having independently operated screws projecting from its edges, none of the screws being in axial alinement, and a slide carrying a center point on the plate.

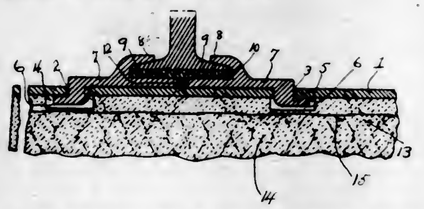
7. A centering device comprising a base plate having a center point thereon, and screws projecting from the sides of the base plate, the screws being adapted to be individually operated to place the base plate with the center point central to the ends of the screws, the screws projecting from opposed sides of the base plate being arranged in parallel relation so as to have their inner ends pass beyond the center of the base plate.

854,993. RAILWAY-TIE AND RAIL-FASTENER. FRED C. EVANS, Ithaca, N. Y., assignor of one-half to Frank T. Brock, Ithaca, N. Y. Filed June 14, 1906. Serial No. 321,653.

Claim.—1. The combination with a railway-tie having a metallic plate with two pairs of vertical perforations therein, integral tongues depending from said plate permanently securing the latter to a supporting body of plastic material, flat triangular shaped rail retaining-blocks, an integral foot carried by the under surface of each retaining-block and removably retained within one of said vertical perforations, an integral finger carried by each of said blocks and bent to fit the rail-flange for securing the rail to the tie as set forth.

2. The combination with a railway-tie having a metallic

plate with two pairs of vertical perforations therein, integral depending tongues carried by said plate permanently embedded so as to secure the latter to a supporting body of plastic material, indented pockets formed in said body registering with the perforations through said plate, flat triangular shaped rail retaining-blocks, an integral foot carried by the under surface of each retaining-block, said feet removably secured within said indented pockets, integral fingers carried on the upper surface of each block and bent to fit the opposite sides of the rail-flange for securing the latter to the tie as fully set forth.

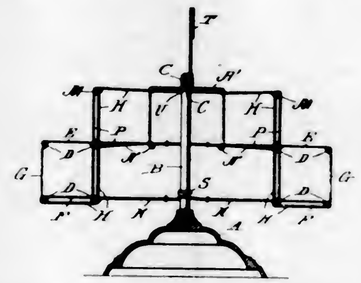


3. The combination with a railway-tie having a metallic plate with two pairs of vertical perforations therethrough, of integral depending tongues carried by said plate permanently embedded in a supporting body of plastic material for securing the plate to said body, indented pockets formed in said body registering with the perforations through said plate, flat triangular-shaped rail retaining-blocks disposed to lie with their under surfaces contacting the top surface of the metallic plate, an integral foot carried by the under surface and an integral finger carried by the upper surface of each block, said fingers bent to fit the rail-flange for securing the rail to the tie, said feet being capable of insertion into and withdrawal from said pockets and through the perforations in the plate, and a locking hook for retaining said fingers in a clamped relation as fully set forth.

4. The combination of a railway-tie having a metallic plate with two pairs of vertical perforations therethrough, integral depending tongues carried in two parallel rows by said plate, said tongues interlocking with and permanently secured to a metal frame-work, the latter being surrounded and embedded in a supporting body of plastic material, indented pockets formed in said body registering with the perforations through said plate, flat triangular-shaped rail retaining-blocks disposed on the top surface of said plate and capable of partial revolution in a horizontal plane, an integral foot carried by the under surface and an integral finger carried by the upper surface of each block, said fingers bent to fit the rail-flange for securing the rail to the tie and an intermediate cushion-block between the rail-bottom and the supporting retaining-blocks, said feet being capable of insertion into and withdrawal from said pockets through the perforations in the plate, and a hook for locking said fingers in a clamped position as fully set forth.

5. The combination of a railway-tie having a metallic plate with two pairs of vertical perforations therethrough, integral depending tongues carried in two parallel rows by opposite edges of said plate, said tongues interlocking with and permanently secured to a metal frame work of substantially square cross-section, the latter being surrounded by and incorporated in a supporting body of plastic material, indented pockets formed in said body registering with the perforations through said plate, flat wedge-shaped rail retaining-blocks disposed on the top surface of said plate and capable of partial revolution in a horizontal plane, an integral foot carried by the under surface and an integral finger carried by the upper surface of each block, said fingers bent to fit the rail-flange for retaining the rail, an intermediate cushion-block between the rail-bottom and the supporting retaining-blocks, said feet removably secured in said pockets and capable of partial revolution therein, a malleable hook for retaining the said retaining-blocks and said fingers in a clamped relation as fully set forth.

854,994. DISPLAY-STAND. HENRY H. FACK, Muscatine, Iowa, assignor to Automatic Button Company, Muscatine, Iowa, a Corporation of Iowa. Filed Aug. 13, 1906. Serial No. 330,390.



Claim.—1. A stand of the character described including a wire frame formed to provide a receding series of pockets in combination with means for rotatably supporting said stand including a stem having a shoulder at its upper end, a transverse plate secured to the frame and provided with an opening to receive said stem and rest upon said shoulder whereby to turn on said stem.

2. A stand of the character described including a wire frame formed to provide a receding series of pockets in combination with means for rotatably supporting said frame including a stem having a shoulder at its upper end, crossed wires at the lower portion of the stand coiled about said stem, and a transverse plate secured to the frame and provided with an opening to receive said stem and rest upon said shoulder whereby to turn on said stem.

3. A stand of the character described including a base, a stem thereon, a wire frame revolubly mounted on said stem, and means for detachably maintaining the frame on the stem including a coiled spring wire friction lock engaging the end of the stem which protrudes above the frame.

4. A stand of the character described including a base, a stem thereon, a wire frame revolubly mounted on said stem, and means for detachably maintaining the frame on the stem including a coiled friction lock engaging the end of the stem which protrudes above the frame, in combination with a display card holder formed with said coiled friction lock.

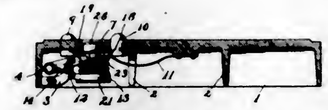
5. In a stand of the character described, the combination with a stem, of a frame revolubly mounted thereon, a friction lock above said frame including a horizontally coiled portion engaging the stem and a vertically coiled portion constituting a support for a display card.

6. In a stand of the character described, the combination with a base, of a stem secured thereto, a wire frame revolubly mounted on said stem separable therefrom in an axial direction, and a frictional locking device engaging the stem for maintaining the frame in position against such separation.

7. As an article of manufacture, a display rack for cards of buttons consisting of a wire framework of step formation forming receding series of open-faced pockets, the pockets of each series being arranged in the same horizontal plane and the bottoms of the pockets of each inner series occupying a plane substantially that of the tops of the pockets of the outer series immediately adjoining the same whereby the entire face of each pocket is presented to view and the cards therein not obstructed by any of the pockets in advance thereof.

8. A stand of the character described including a wire frame formed to provide a receding series of pockets in combination with means for rotatably supporting said frame including a stem having a shoulder at its upper end, a transverse wire at the lower portion of the stand coiled about said stem, and a transverse plate secured to the frame and provided with an opening to receive said stem and rest upon said shoulder whereby to turn on said stem.

854,995. ELECTROTYPE OR THE LIKE. ERNEST A. FALLER, New York, N. Y. Filed May 31, 1905. Serial No. 263,000.



Claim.—1. A printing device comprising a body portion, a lever pivoted within said body portion, a printing surface mounted on said lever, means within said body portion for inking said printing surface, levers operatively connected to the end of said first mentioned lever, a rocking frame pivotally supported by the second mentioned levers, and lugs extending from said rocking frame above the upper surface of the body portion arranged to cooperate with the impression surface of a press to operate said printing surface.

2. A printing device, comprising a body portion, levers fulcrumed therein, a rocking frame pivotally supported by said levers, a pair of lugs carried by said rocking frame and adapted to extend above the upper face of said body portion, said lugs being arranged to be engaged one at a time by the ink rollers of a press and simultaneously by the impression receiving surface, a pivoted lever having one end operatively connected for movement by said levers, an ink receptacle mounted upon said lever near the other end thereof, and a printing surface carried by said ink receptacle and adapted to pass through the upper face of said body portion.

3. A printing device, comprising a hollow body portion, levers fulcrumed therein, a rocking frame pivotally supported by said levers, a pair of lugs carried by said rocking frame and adapted to extend above the upper face of said body portion, said lugs being arranged to be engaged one at a time by the ink rollers of a press and simultaneously by the impression receiving surface, a pivoted lever having one end operatively connected for movement by said levers, an ink receptacle mounted upon said lever near the other end thereof, and a printing surface carried by said ink receptacle and adapted to pass through the upper face of said body portion, and a spring acting to keep said lugs normally above the printing level and said printing surface normally below the same.

4. A printing device, comprising a hollow body portion, a pair of levers fulcrumed therein, a rocking frame pivotally supported by said levers, a pair of lugs extending from diagonally opposite portions of said rocking frame and adapted to extend above the upper face of said body portion, said lugs being arranged to be engaged one at a time by the ink rollers of the press and simultaneously by the impression receiving surface, a pivoted lever having one end operatively connected for movement by said pair of levers, a closed ink receptacle mounted upon said lever near the other end thereof, a printing surface carried by said ink receptacle and located between said lugs on a diagonal line connecting the two, the said printing surface adapted to be sent above the upper face of said block or casting, and a spring acting to keep the said lugs normally above the printing level and the said printing surface normally below the same.

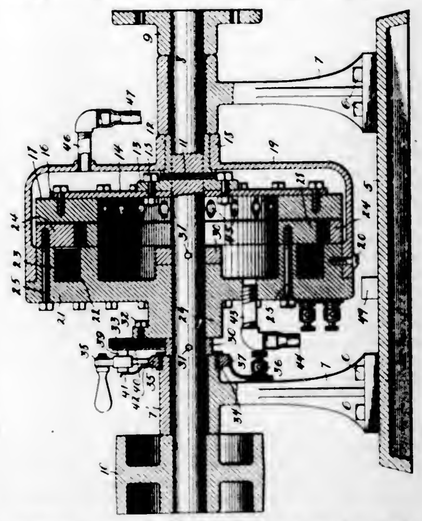
5. A printing device, comprising a hollow body portion, a pair of levers fulcrumed therein, a rectangular rocking frame pivotally supported by said levers, a pair of lugs extending from diagonally opposite corners of said rocking frame and adapted to extend above the upper face of said block or casting, said lugs being arranged to be engaged one at a time by the ink rollers of the press and simultaneously by the impression receiving surface, a pivoted lever having one end operatively connected for movement by said pair of levers, a closed ink receptacle yieldingly mounted upon said lever near the other end thereof, a spring pressed plunger mounted in said receptacle and adapted to force the ink to the said printing surface, porous material in the top of said receptacle behind the said printing surface, and a spring acting to keep the said lugs normally above the printing level and the said printing surface normally below the same.

6. An electrotype or the like, having relatively movable printing surfaces, movable lugs arranged to extend above the fixed top surface of the electrotype or the like, a system of levers connecting said lugs with the movable printing surface, resilient means coöperating with said levers to normally maintain the tops of the said lugs above the top surface of said electrotype or the like and to maintain the movable printing surface normally below the same, said lugs and levers being so arranged that the depression of said lugs one at a time will not raise the movable printing surface, but the depression of both lugs will raise said movable surface, the said lugs being so situated as to be engaged one at a time only by the ink rollers of a press, passing over said electrotype or the like either longitudinally or transversely of the same, and by the impression receiving surface simultaneously.

7. A printing device, comprising a body portion, a movable printing surface therein, movable lugs arranged to normally extend above the upper surface of said body portion, said lugs being so situated as to be engaged one at a time only by the ink rollers of a press passing either longitudinally or transversely of said device and by the impression receiving surface simultaneously, and a system of levers coöperating with said lugs to impart motion to said printing surface.

8. A printing device, comprising a body portion, a movable printing surface therein, movable lugs arranged to normally extend above the upper surface of said body portion, said lugs being arranged in a line passing diagonally across said movable printing surface and so situated as to be engaged one at a time only by the ink rollers of a press passing either longitudinally or transversely of said device and by the impression receiving surface simultaneously, and a system of levers coöperating with said lugs to impart motion to said printing surface.

854,996. DYNAMOMETER. CLAUDE M. GARLAND, Urbana, Ill. Filed Dec. 15, 1906. Serial No. 348,054.



Claim.—1. In a device of the character described, a rocking member, a rotative member, means for producing electrical eddy currents between said members, means for measuring the magnetic drag between said members, and means for maintaining a water circulation between said members.

2. In a device of the character described, the combina-

tion with a rocking member, of a casing secured to said rocking member, a rotative shaft, a member fixed upon said shaft and rotating therewith, and electrical means for producing mechanical friction between said members.

3. In a device of the character described, the combination with a rocking member, of a casing secured to said rocking member, a rotative shaft, a member fixed upon said shaft and rotating therewith, electrical means for producing mechanical friction between said members, and means for maintaining a water circulation about said members.

4. In a device of the character described, the combination with a rotative shaft, of an armature mounted upon said shaft and rotating therewith, field members loosely mounted upon the shaft, rheostat resistance plates secured to said field members and moving therewith, a contact handle for said plates mounted upon a stationary object, and field coils with which said rheostat plates are in series.

5. In a device of the character described, the combination with a rotative shaft, of an armature mounted upon said shaft and rotating therewith, field members loosely mounted upon the shaft, rheostat resistance plates secured to said members and moving therewith, a contact member for said plates mounted upon a stationary object, field coils with which said rheostat plates are in series and a weighted arm secured to said rocking member.

6. In a device of the character described, the combination with a rotative shaft, of an armature mounted upon said shaft and rotating therewith, field members loosely mounted upon the shaft, rheostat resistance plates secured to said members and moving therewith, a contact handle for said plates mounted upon a stationary object, field coils with which said rheostat plates are in series, a weighted arm secured to said rocking member and means for limiting the movement of said rocking member in one direction.

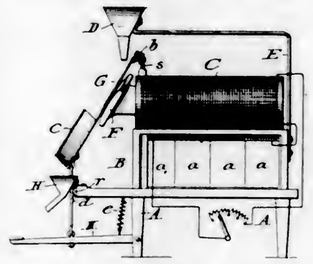
7. In a device of the character described, the combination with a rotative shaft, of a field plate loosely mounted upon said shaft, field coils carried by said field plate, pole plates secured to said field coils and constructed in such manner as to produce a magnetic field of varying density, an armature carried by the shaft and rotating adjacent said field, and a weighted arm carried by the field plate.

8. In a device of the character described, the combination with a rotative shaft, of a field plate loosely mounted upon said shaft, field coils carried by said field plate, pole plates secured to said field coils and constructed in such manner as to produce a magnetic field of varying density, an armature carried by the shaft and rotating adjacent said field, a weighted arm carried by the field plate, a casing secured to the field plate and inclosing the armature, and means for maintaining a circulation of water through said casing.

9. In a device of the character described, the combination with a rotative shaft, of a field plate loosely mounted upon said shaft, field coils carried by said field plate, pole plates secured to said field coils and constructed in such manner as to produce a magnetic field of varying density, an armature carried by the shaft and rotating adjacent said field, a weighted arm carried by the field plate and a rheostat in series with the field coils, the body portion of said rheostat being movable with the field plate, and the contact handle thereof being mounted for adjustment to any selected position upon a stationary object.

854,997. APPARATUS FOR SEPARATING GOLD FROM MAGNETIC SANDS. ELMER GATES, Chevy Chase, Md., assignor, by mesne assignments, to Washington Loan & Trust Company, a Corporation. Filed Mar. 19, 1900. Serial No. 9,268.

Claim.—1. Apparatus for separating gold from magnetic sand, comprising a magnet producing a non-uniform field, an inclined screen or apron extending within the magnetic field and upon which the material is fed, and means for imparting a succession of rapid but slight vibrations to the screen or apron, whereby the magnetic sand is arrested upon the screen and is caused to undergo a series of re-arrangements thereby liberating the gold particles and permitting them to fall down the incline, to be separately collected; substantially as described.



2. Apparatus for separating gold from magnetic sand, comprising a magnet, a screen or apron extending within the magnetic field, and having a double incline, the lower end of said screen forming a lateral chute, and means for imparting a succession of rapid but slight vibrations to the screen or apron; substantially as described.

3. Apparatus for separating gold from magnetic sand, comprising an electro-magnet having a core terminating in an inclined pole piece, a screen or apron located in front of said pole piece and having a double incline, the lower end of said screen forming a lateral chute, and means for imparting a succession of rapid but slight vibrations to the screen or apron; substantially as described.

4. Apparatus for separating gold from magnetic sand, comprising a magnet, a screen or apron extending within the magnetic field and upon which the material is fed, said screen having a double incline and having a lateral chute at its lower end, and a supplemental magnetic element located at a lower level and mounted to move below the screen thereat so as to attract and remove from the recovered gold any remaining particles of magnetic sand; substantially as described.

5. Apparatus for separating gold from magnetic sand, comprising a magnet, a screen or apron extending within the magnetic field and upon which the material is fed, said screen having a double incline and having a lateral chute at its lower end, and a supplemental magnetic element located at a lower level and mounted to move below the screen thereat so as to attract and remove from the recovered gold any remaining particles of magnetic sand, said magnetic element consisting of a plurality of electro-magnets upon a rotary shaft, and having widened pole pieces; substantially as described.

6. Apparatus for separating gold from magnetic sand, comprising a feed apron and a magnet pole piece relatively movable with respect to each other, both of them having roughened surfaces; substantially as described.

7. Apparatus for separating gold from magnetic sand, comprising a feed apron and a magenet having roughened surfaces, and means for imparting to the apron a rapid series of short up and down movements; substantially as described.

8. Apparatus for separating gold from magnetic sand, comprising a feed apron and a magnet, means for feeding upon the apron the gold-and magnetic sand, and means for imparting an up and down movement to the one relatively to the other and separate means for simultaneously jostling the apron; substantialy as described.

9. Apparatus for separating gold from magnetic sand, comprising a feed apron and a magnet said feed apron passing through the field of the magnet, a hinge upon which the feed apron has a limited capacity of up and down movement, a flexible arm upon which the hinge is mounted so as to give the apron a further range of up and down movement when desired and means for imparting movement to said apron; substantially as described.

10. Apparatus for separating gold from magnetic sand, comprising an electro-magnet having a core terminating in an inclined pole piece, a screen or apron located in front of said pole piece and having a double incline, the lower end of said screen forming a lateral chute, and means for imparting a succession of rapid but slight vibrations to the screen or apron, said means consisting of a spring treadle connected by a link to the screen or apron; substantially as described.

854,998. PROCESS OF EXTRACTING METALS FROM THEIR ORES. WILLIAM L. GEORGE, Williams, Ariz., assignor to George Metal Extracting Company, of Arizona Territory. Filed Jan. 23, 1902. Serial No. 90,981.

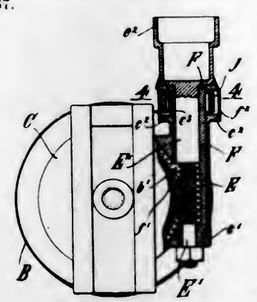
Claim.—1. The process of preparing ores for further metallurgical treatment, which consists in treating the ore so as to reduce the metal values to the metallic state and cause the particles thereof to gather or collect in small grains or globules.

2. The process of treating ores which consists in crushing the ore, then heating the crushed ore in contact with carbon to a temperature and for a period of time sufficient only to reduce the mineral dispersed through it to the metallic state and cause the particles thereof to gather or collect in small grains or globules.

3. The process herein described of treating ores, which consists in heating the ore to a temperature and for a period of time, sufficient only to substantially change the specific gravities of metal values relative to the specific gravities of the other components of the ore.

4. The process of preparing an ore for the separation of the metals by concentration, which consists in heating the ore in contact with carbon to a temperature and for a period of time, sufficient only to reduce the metal values to the metallic state and cause the particles thereof to gather or collect in small grains or globules.

854,999. SCREW-GEAR FOR GUN-SIGHT DEVICES, &c. OSKAR GRAUHERING, Essen-Rüttenscheid, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed Apr. 9, 1906. Serial No. 310,867.



Claim.—1. In an adjusting gear, the combination of a gear, a rotatable housing, a second gear member rotatably and eccentrically mounted in the housing, and means automatically returning the second gear to the first named gear when the housing is released.

2. In an adjusting means, the combination of a gear member, a rotatable housing, a second gear member rotatably and eccentrically mounted in the housing, and a spring tending to rotate the housing to keep the second gear member in engagement with the first-named gear member.

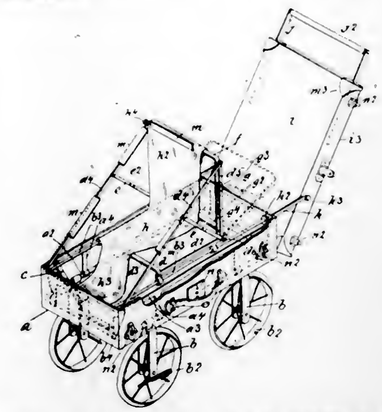
3. In an adjusting means, the combination of a gear member, a rotatable housing, a second gear member rotatably and eccentrically mounted in the housing, and a spring tending to rotate the housing to keep the second gear member in engagement with the first-named gear member; the plane passing through the axes of the second gear member and the housing being located at an angle to the plane of the first-named gear member when the gear members are in engagement with each other.

4. In an adjusting means for sight devices, the combination with the attachment bar provided with a fixed gear member and the sight device rotatably mounted on the attachment bar, of a rotatable housing mounted in the sight device and a second gear member rotatably and eccentrically mounted in the housing.

5. In an adjusting means for sight devices, the combination with the attachment bar provided with a fixed gear member and the sight device rotatably mounted on the attachment bar, of a rotatable housing mounted in the sight device and a second gear member rotatably and eccentrically mounted in the housing, and means tending to rotate the housing to hold the second gear member in engagement with the fixed gear member.

6. In an adjusting means for sight devices, the combination with the attachment bar provided with a fixed gear member and the sight device rotatably mounted on the attachment bar, of a housing rotatably mounted in the sight device, a screw eccentrically and rotatably mounted in said housing, and means tending to rotate the housing to hold the screw in engagement with the fixed gear member; the plane passing through the axes of the screw and of the housing being located at an angle to the plane of the gear member when the screw engages with the gear member.

855,000. BABY-WAGON OR GO-CART. FREDERIC H. GRIMMER, Brooklyn, N. Y. Filed Apr. 23, 1906. Serial No. 313,162.



Claim.—1. A baby wagon or go-cart composed of parts adapted to be folded together to form an oblong rectangular box or case and comprising a main frame composed of parallel sides and parallel end members, rods rotatably mounted longitudinally of the opposite sides of the frame and in the bottom portion thereof when the wagon or go-cart is in use, wheel hangers connected with said rods and adapted to turn therewith, wheels mounted in said hangers and adapted to be folded into the frame, stationary rods mounted longitudinally of the opposite sides of the frame and in the top portion thereof when the wagon or go-cart is in use, a slide seat frame mounted on said stationary rods, seat frame members pivoted to said slide frame and to the front end portion of the main frame and adapted to be folded into different positions in said frame and provided with a flexible sheet which forms in one position the bottom and back of the seat and in another position the one side of the box or case when the separate parts of the device are folded together to form said box or case, and a box or case member hinged to one end of said frame and adapted to be folded so as to form in one position the other side of the box or case when the separate parts of the device are folded together to form said box or case and into another position to form means for propelling the wagon or go-cart.

2. A baby wagon or go-cart composed of parts adapted to be folded together to form an oblong rectangular box or case and comprising a main frame composed of parallel sides and parallel end members, rods rotatably mounted longitudinally of the opposite sides of the frame and in the bottom portion thereof when the wagon or go-cart is in use, wheel hangers connected with said rods and adapted to turn therewith, wheels mounted in said hangers and adapted to be folded into the frame, stationary rods mounted longitudinally of the opposite sides of the frame and in the top portion thereof when the wagon or go-cart is in use, a slide seat frame mounted on said stationary rods, seat frame members pivoted to said slide frame and to the front end portion of the main frame and adapted to be folded into different positions in said frame and provided with a flexible sheet which forms in one position the bottom and back of the seat and in another position the one side of the box or case when the separate parts of the device are folded together to form said box or case, and a box or case member hinged to one end of said frame and adapted to be folded so as to form in one position, the other side of the box or case when the separate parts of the device are folded together to form said box or case and into another position to form means for propelling the wagon or go-cart, said box or case member and said main frame being provided with means whereby when all the parts are folded together a complete closed oblong rectangular case is produced.

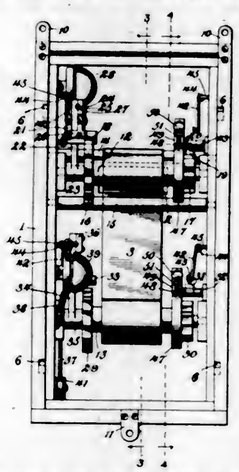
3. A baby wagon or go-cart composed of parts adapted to be folded together to form an oblong rectangular box or case and comprising a main frame composed of parallel sides and parallel end members, rods rotatably mounted longitudinally of the opposite sides of the frame and in the bottom portion thereof when the wagon or go-cart is in use, wheel hangers connected with said rods and adapted to turn therewith, wheels mounted in said hangers and adapted to be folded into the frame, stationary rods mounted longitudinally of the opposite sides of the frame and in the top portion thereof when the wagon or go-cart is in use, a slide seat frame mounted on said stationary rods, seat frame members pivoted to said slide frame and to the front end portion of the main frame and adapted to be folded into different positions in said frame and provided with a flexible sheet which forms in one position the bottom and back of the seat and in another position the one side of the box or case when the separate parts of the device are folded together to form said box or case, and a box or case member hinged to one end of said frame and adapted to be folded so as to form in one position the other side of the box or case when the separate parts of the device are folded together to form said box or case and into another position to form means for propelling the wagon or go-cart, said box or case member and said main frame being provided with means whereby when all the parts are folded together a complete closed oblong rectangular case is produced, and said box or case member being also provided with an adjustable handle device.

855,001. STATION-INDICATOR. ALBERT J. GRUNERT and WILLIAM S. WHITNEY, Fort Smith, Ark. Filed Aug. 9, 1906. Serial No. 329,935.

Claim.—1. In a device of the class described, the combination of a name strip, a roll receiving the same, feeding means embodying a ratchet wheel, an oscillatory lever, and an actuating pawl engaging the ratchet wheel, a bell having an operating arm, and a flexible connection secured at one end to the operating arm of the bell and connected at an intermediate point to the said lever and the portion of the cord between the lever and the arm of the bell being normally slack to permit the lever to have a limited movement independently of the said operating arm.

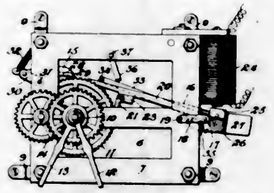
2. In a device of the class described, the combination of a roll provided with a ratchet wheel, a lever having an actuating pawl for engaging the ratchet wheel, a bell having operating means, a flexible connection secured to the operating means of the bell, and a clamp carried by the lever for adjustably engaging the flexible connection at an intermediate point.

3. In a device of the class described, the combination with a casing, of upper and lower rolls, a name strip arranged on the rolls, a disk or wheel, a resilient horizontal arm fixed at one end to the casing and having its other



end arranged above the disk or wheel to frictionally engage the top of the same, adjusting means for varying the pressure of the arm against the disk or wheel, and feeding means for operating the rolls.

855,002. SECONDARY ELECTRIC CLOCK. WILLIAM S. GUTHRIE, Terrell, Tex. Filed July 5, 1906. Serial No. 324,809.



Claim.—1. In mechanism of the character described, the combination with a rotatable driven member, of a movable dog for actuating the member, a movable support for the actuating dog, a stop dog movable into and out of engagement with the member to prevent its overthrow when moved by the actuating dog, said stop dog being normally maintained out of engagement with the member by the actuating dog support, and means for moving said support to move the actuating dog and effect the movement of the stop dog into engagement with the member.

2. In mechanism of the character described, the combination with a rotatable driven member, of a swinging arm, an actuating dog mounted on the arm and operating on the member for rotating the same, a pivotally mounted stop dog movable into engagement with the driven member and normally held out of such engagement by the swinging arm, and means for swinging the arm to move the actuating dog and effect the movement of the stop dog into engagement with the driven member.

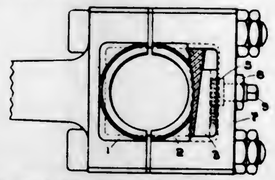
3. In mechanism of the character described, the combination with a rotatable driven member, of a supporting lever, a dog pivoted on the supporting lever for actuating the driven member, a stop dog movably mounted separately from the lever and movable into engagement with the driven member, said stop dog having a portion engaging the arm and being normally held thereby out of engagement with the driven member, a spring connecting the stop dog, a lever for maintaining said portion of the stop dog against the lever, and means for operating the lever to effect the movement of the driven member by the actuating dog, and permit the movement of the stop dog into engagement with the driven member.

4. In mechanism of the character described, the combination with a frame, of a toothed wheel journaled therein, a lever fulcrumed on the frame, an actuating dog pivoted on one arm of the lever and engaging the wheel to operate the same, a stop dog pivoted on the fulcrum of the lever and having an offset tooth that is movable into engsgement with the wheel to prevent its overthrow by the actuating dog, said tooth engaging the lever and being normally held thereby out of engagement with the wheel, a spring connecting the lever and stop dog, and an electro-magnet for actuating the lever.

5. In mechanism of the character described, the combination with a frame, of a rotary wheel journaled therein, a lever, a fulcrum for the lever adjustably mounted on the frame, an actuating dog carried by the lever and operating on the wheel, a stop dog pivoted on the fulcrum of the lever and adjustable therewith, said dog being movable into engagement with the wheel and being normally held out of such engagement by the lever, and means for actuating the lever to effect the movement of the wheel by the actuating dog, and permit the movement of the stop dog into engagement with the wheel.

6. In mechanism of the class described, the combination with a frame, of a toothed wheel journaled therein, links pivotally mounted on the frame and normally held against movement thereon, a fulcrum carried by the links, a lever mounted on the fulcrum, an electro-magnet for operating the lever, an actuating dog carried by the lever and engaging the wheel to operate the same, an overthrow preventing dog pivoted on the fulcrum and movable into engagement with the wheel when the same is operated by the actuating dog, said stop being normally held out of engagement with the wheel by the lever, a swinging stop disposed in the path of movement of the dog for limiting the movement of the same away from the wheel, another link pivotally mounted on the frame and normally held against movement thereon, and a dog pivoted on the last mentioned link and engaging the wheel to prevent retrograde movement of the same.

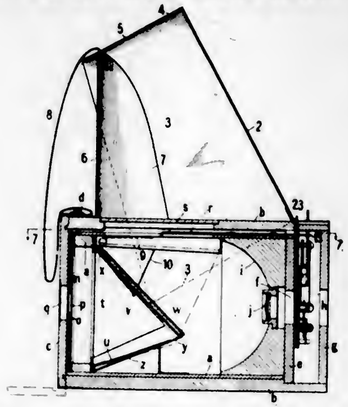
855,003. WEDGE-ADJUSTING DEVICE FOR CONNECTING-ROD HEADS. JOHN P. HENRY, Franklin, Pa. Filed Dec. 22, 1906. Serial No. 349,088.



Claim.—1. In a wedge-adjusting device for connecting-rod heads, the combination with the brasses in said head, one of which brasses is suitably beveled, of a wedge having a rack formed therein, and a pinion revolubly mounted in said head adapted to mesh with said rack for the purpose set forth, there being means on said pinion whereby it may be revolved, and means for locking the same.

2. In a wedge-adjusting device for connecting-rod heads, the combination with the brass-retaining strap or housing, of a front or outside brass, beveled upon its outer face, a wedge positioned between and bearing against the front wall of said strap or housing and the beveled face of said brass, there being a vertically-disposed slot in the outer face of said wedge and a rack located at one side of said slot, a pinion seated in said slot and meshing with said rack there being a stem upon said pinion, extending revolubly through said front wall of said housing, for revolving said pinion, and means for locking the same.

855,004. PHOTOGRAPHIC CAMERA. LODEWYK J. R. HOLST, New York, N. Y., and LOUIS BORSUM, Plainfield, N. J. Filed Apr. 10, 1906. Serial No. 310,975.



Claim.—1. A photographic camera comprising an outer section, an inner section removably seated therein and formed with receptacles, in front of the focal plane, for the film spools and light excluding side pieces between which and the sides of the inner section, the film travels, an angularly disposed focusing mirror and a focusing glass, above the mirror, in the top of the outer section, combined with an objective, and with a shutter having openings through which focusing and exposure are effected.

2. A photographic camera comprising a reflecting surface normally protecting the focal plane from light and adapted to be moved out of the way for the purpose of making an exposure, an objective by which pictures are focused and taken, combined with a shutter having an opening normally in register with the objective for the purpose of focusing, a shutter actuating device and operative connections between it and the reflecting surface whereby the latter may be moved from and returned to normal position, said shutter comprising means acting initially to close the focusing opening, means for uncovering and covering the objective for making an exposure after the reflecting surface has been raised, and means for restoring the shutter to normal focusing position after the reflecting surface is in normal position.

3. A photographic camera comprising a reflecting surface normally protecting the focal plane from the pencil of light entering through the objective and means for moving the reflecting surface to uncover the focal plane, combined with shutter mechanism having two swinging overlying shutter plates normally locked to move together and having co-incident apertures normally co-incident with the objective opening, means whereby, on the actuation of the shutter to take a picture, the shutter plates are moved to cover the objective opening, means acting after such movement of the shutter plates to move the reflecting surface to uncover the focal plane and means for then tripping the outer plate and means for swinging it so that the objective opening may be uncovered for the taking of a picture when the aperture in such outer plate passes across a picture taking aperture in the inner plate.

4. A photographic camera comprising a structure for normally excluding light from the focal plane consisting of side pieces *v* and bottom piece *u*, a reflecting surface normally closing the rear opening of such structure against admission of light, hinged at its upper edge and carrying at its lower edge a plate *y* with an exposure opening *z* therein normally lying under the plate *u*, whereby when the reflecting surface is swung upwardly the focal plane is exposed to the pencil of light from the objective passing through the exposure opening in the plate *y*.

5. A photographic camera comprising the combination of an angularly disposed hinged reflecting mirror nor-

mally seated to prevent passage of light from the objective to the focal plane, a spring whose reaction tends to keep the mirror so seated, a lever for swinging the mirror upwardly and an operative connection between it and the mirror, combined with objective shutter devices comprising overlying shutter plates through openings in which the objective is normally exposed and the under one of which plates has also a picture exposure opening, means whereby the shutter, when actuated for the taking of a picture, first moves the overlying plates so that the objective is covered, means for then acting upon the mirror lifting lever to elevate the mirror and means for then moving the outer shutter plate relative to the inner one to effect an exposure.

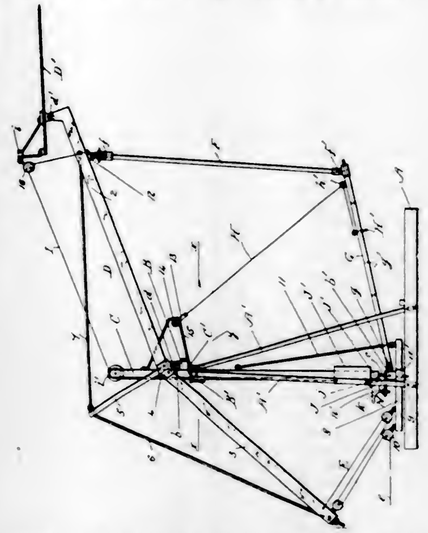
6. A photographic camera comprising a reflecting surface normally seated to exclude light from the local plane, means for moving the surface to expose the focal plane when a picture is to be taken, combined with a shutter comprising overlying shutter plates normally locked to move together, a shutter controlling lever on actuation of which the shutter plates are moved to cover the objective opening and to bring an exposure opening in the underlying plate co-incident to the objective opening, means whereby on further movement of the shutter controlling lever the means for moving the reflecting surface are actuated to move the surface to uncover the focal plane and means whereby on continued movement of the shutter actuating lever the outer shutter plate is tripped and moved so that the aperture therein passes over the exposure aperture in the underlying shutter plate and means whereby on reverse movement of the shutter mechanism toward normal position the reflecting surface is restored to normal position and the shutter plates to normal overlying position with co-incident apertures therein opposite the objective opening.

7. A photographic camera comprising an angularly disposed reflecting mirror normally protecting, but capable of movement to uncover, the focal plane, combined with a shutter comprising normally overlying shutter plates normally locked to move together about a common axis, a swinging arm, a link connection between it and one of the shutter plates, a shutter actuating lever and a jointed link connection between it and said swinging arm, a part moved by the shutter actuating lever, a trip device for disconnecting the two shutter plates and a spring for then automatically swinging the outer plate relatively to the inner one.

8. A camera comprising a reflecting surface normally seated to protect the focal plane from light and movable to permit access of light from the objective to the focal plane, combined with a shutter comprising overlying apertured plates normally latched together to swing as one about a common axis, a pivoted arm, a thrust link between it and one of the shutter plates, a shutter actuating lever and a jointed link connection between it and said swinging arm, a part actuated by the lever and a tripping device controlled by said part to unlatch or disconnect the two shutter plates, the combination being and operating so that on the actuation of the shutter to take a picture first, the objective opening is closed by the swinging of the two shutter plates, second, the reflecting surface is moved to uncover the focal plane and finally the jointed link connection between the swinging arm and shutter actuating lever flexes upon its joint to permit a further movement of the arm and the actuation of the trip device, whereby the outer shutter plate is released from the inner one and swings to carry its aperture past an exposure aperture in the inner plate.

9. A photographic camera comprising a reflecting surface normally protecting the focal plane from the entrance of light through the objective, means for moving the surface to uncover the focal plane when a picture is to be taken, combined with shutter mechanism comprising a shutter actuating lever, a swinging arm, a two-part jointed link connection between the lever and swinging arm, a thrust link connected with the swinging arm, two shutter plates one overlying the other and formed with apertures normally co-incident with the objective opening and the under plate having an independent exposure aperture, a latch normally locking the two plates together, so that they move as one, a connection between one of the plates and said thrust link, a tripping device for tripping the latch connection between the two plates, a part moved by the shutter lever provided with means for moving the reflecting surface to uncover the focal plane and for tripping the latch connecting the two shutter plates, a spring applied to the outer shutter plate for moving it independently of the other one and an arm pivoted to said swinging arm and acting to restore the outer shutter plate to normal position after an exposure, the combination being and operating substantially as described.

855,005. HAY-STACKER. MARION R. JENKINS, Browning, Mo. Filed Jan. 18, 1907. Serial No. 352,913.



Claim.—1. In a hay-stacker, the combination, with a support, of a lifting-beam formed of two sections provided with side-bars which are arranged at an obtuse angle with each other, a pivot joint arranged in the apex of the said angle below the said beam and connecting it to the said support, struts projecting from the said beam on the opposite side thereof from its said pivot joint, tie-bars arranged between the upper parts of the said struts and the end portions of the beam and inclined in the same directions as the said side-bars but at a less obtuse angle, and a fork carried by the said beam.

2. In a hay-stacker, the combination, with a support, of a lifting-beam formed of two sections provided with side-bars which are arranged at an obtuse angle with each other, junction-plates secured to the adjacent ends of the said side-bars, a pivot-joint arranged in the apex of the said angle below the said beam and connecting the said junction-plates to the said support, struts projecting from the said beam on the opposite side thereof from the said pivot joint, tie-bars arranged between the upper parts of the said struts and the end portions of the said beam and inclined in the same directions as the said side-bars but at a less obtuse angle, and a fork carried by the said beam.

3. In a hay-stacker, the combination, with a supporting frame, and a mast pivoted in the said frame, of a lifting-beam pivotally supported by the said mast and provided with a fork at one end, an arm pivoted in the said frame under the said mast and movable laterally independent of the said mast and beam, and a lifting-tackle between the other end of the said beam and the said arm.

4. In a hay-stacker, the combination, with a supporting frame, and a mast pivoted in the said frame, of a lifting-beam pivotally supported by the said mast and provided with a fork at one end, an arm pivoted in the said frame under the said mast and movable laterally independent of the said mast and beam, a connection pivoted between one end of the said arm and the said mast, and a lifting-tackle arranged between the other end of the said arm and the other end of the said beam.

5. In a hay-stacker, the combination, with a base, of uprights secured to the base and having a socket at their upper parts, a cross-bar supported by the said base independent of the said uprights, a mast pivotally supported by the said cross-bar and journaled in the said socket, a lifting-beam pivotally supported by the said mast and having a fork at one end, a support also pivoted to the said cross-bar, a radius-rod pivotally connected with the said supports and the said beam, and a lifting-device connected to the other end of the said beam.

6. In a hay-stacker, the combination, with a supporting frame, of a mast pivoted in the said frame, a lifting-beam pivotally supported by the said mast and having a fork at one end, a radius-rod having its upper end pivoted to the said lifting-beam, a support pivoted to the said frame and having the lower end of the said radius-rod pivoted to it, a guide-track projecting from the upper part of the said mast, a connection attached to the said support and having a sliding piece at its upper end which runs on the said guide-track, and a lifting-device connected to the other end of the said beam.

7. In a hay-stacker, the combination, with a supporting-frame, of a mast pivoted in the said frame and provided with a guide at its upper part, a lifting-beam pivotally supported by the said mast, a fork pivoted to the front end of the said beam, a catch normally engaging with the said mast, a pulley-block carried by the said fork, and a connection passing over the said pulley-block and having its ends connected with the said catch and with the front end portion of the said beam respectively.

8. In a hay-stacker, the combination, with a frame, of a mast pivoted in the said frame, a lifting-beam supported by the said mast, a fork pivoted to the said beam, a slidable weight guided by the said mast, a connection between the said fork and weight, and a catch pivoted to the said weight and normally preventing it from sliding upwardly on the said mast.

855,006. HAY-RAKE. MARION R. JENKINS, Browning, Mo. Filed Feb. 2, 1907. Serial No. 355,484.

Claim.—1. In a hay-rake, the combination, with a draft-attachment frame, of a main frame pivoted longitudinally to the said frame so that each frame can rock pivotally and independent of the other, and a rake-head carried by the said main frame.

2. In a hay-rake, the combination, with a draft-attachment frame, of a pivot-bar secured to the said frame and arranged on the longitudinal axis of the machine, a main frame provided with bearings which are pivoted upon the said bar so that each frame can rock pivotally and independent of the other on the said pivot-bar as an axis, and a rake-head carried by the said main frame.

3. In a hay-rake, the combination, with a draft-attachment frame, of a main frame slidably and pivotally connected with the said frame so that each said frame can slide longitudinally and rock pivotally and independent of the other, a rake-head carried by the said main frame and provided with an upwardly-projecting arm, a reach-bar having its front end connected to the said arm, and intermediate connections between the two said frames and the rear end portion of the said reach-bar.

4. In a hay-rake, the combination, with a draft-attachment frame, of a longitudinal guide-bar secured to the said frame, a main frame provided with bearings which slide on the said guide-bar, a lever pivotally connected with the two said frames, a rake-head carried by the said main frame and provided with an upwardly-projecting arm, and a reach-bar operatively connected to the said arm and lever.

5. In a hay-rake, the combination, with a draft-attachment frame, of a main frame slidably connected with the said frame, a rake-head connected to the said main frame and provided with an upwardly-projecting arm, a reach-bar having its rear end portion operatively connected with the said frames, and a slidable spring-controlled connection between the front end part of the said reach-bar and the said arm.



6. In a hay-rake, the combination, with a draft-attachment frame, of a longitudinal guide-bar secured to the said frame and provided with a catch, a main frame provided with bearings which slide on the said guide-bar, a lever pivotally connected with the two said frames, a locking-bar pivoted to the said rear frame and engaging with the said catch, a trip for disengaging the said locking-bar from the said catch, a rake-head carried by the said main frame and provided with an upwardly-projecting arm, and a reach-bar connected to the said arm and lever.

7. In a hay-rake, the combination, with a rake-head provided with two ground wheels, of a frame for propelling the said rake-head also provided with two ground wheels and means for pivotally connecting the said rake-head and frame so that each may rock with respect to the other upon a longitudinal axis.

8. In a hay-rake, the combination, with a rake-head provided with two ground wheels, of a frame for propelling the said rake-head, said frame being formed in two sections, means for pivotally connecting the said sections so that each may rock with respect to the other upon a longitudinal axis, and two ground wheels carried by the rear section of the said frame and arranged at the opposite end of the said frame from the said rake-head.

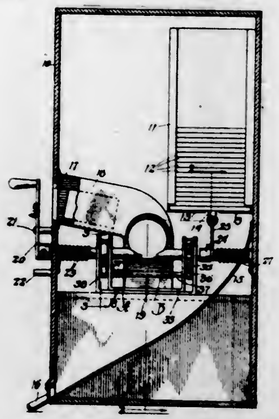
855,007. VETERINARY APPLIANCE. GEORGE P. JOHNSON, Story City, Iowa. Filed July 14, 1906. Serial No. 326,246.

Claim.—In combination, a handle, a holder, a shank on the holder engaging the handle, file sections within the holder said file sections having extensions on their ends, an extension on one end of each of the sections extending within the recess of the holder, the teeth of the succeeding file sections projecting in opposite directions, an intermediate section mounted on the shank, and an extension on said intermediate section extending within the holder and projecting above the extensions on the opposite ends of the file sections the handle on the shank holding the intermediate section in its operative position.

855,007.



855,008. COIN-CONTROLLED APPARATUS. HOMER G. KELLOGG, Chicago, Ill. Filed Mar. 21, 1906. Serial No. 307,146.



Claim.—1. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed coins or tokens, and means for operating said means.

2. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed coins or tokens, and manually operable shifting means for the tokens.

3. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, and means for positively shifting said means so a coin or token will be shifted thereby.

4. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising two members one of which is movable, and means for operating said movable member.

5. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising two movable members, and means for manually operating one of said members.

6. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising two rotatable members and means for rotating one of said members.

7. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising means for engaging one of the faces of a token and the edge adjacent the other face.

8. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising a movable member provided with an element for engaging one of the edge-portions of one face of a token, and an inclined edge or cam for engaging the edge adjacent the other face.

9. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising a member having a longitudinally extending recess, and means at each side of said recess between which the token will be held and for rejecting a slug.

10. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising a rotatable member having a longitudinally extending recess, and means at each side of said recess between which the token will be held and for rejecting a slug.

11. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising a movable member provided with a longitudinally extending seat or recess, a projection adapted to engage one face of a token, and a cam edge or surface between which a truly formed token will be held and for rejecting a slug.

12. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising a rotatable member provided with a longitudinally extending seat or recess, a projection for engaging one face of a token, and a cam edge or surface between which a truly formed token will be held and for rejecting a slug.

13. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising two movable members, one of which is provided with means between which a coin will be held and for rejecting a slug and the other of which is provided with means for causing a coin to operate the member.

14. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising two rotatable members, one of which is provided with means between which a coin will be held and for rejecting a slug and the other of which is provided with means for causing a coin to operate the member.

15. A coin-detector comprising the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed coins, said means comprising a member having a recess, a projection for engaging one face of a truly formed coin or token, and an edge or surface adjacent the other face of the token, said projection being undercut to overlie a rim on a coin.

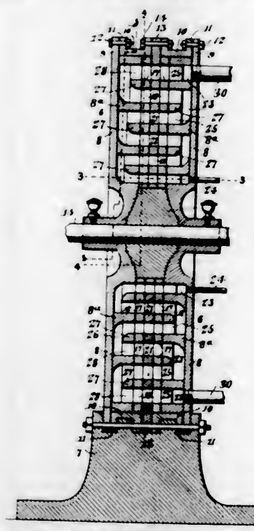
16. In coin-controlled mechanism the combination of two rotatable members, means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed coins or tokens, means for manually operating one of said members, and a device operatively connected to the other member.

17. In coin-controlled mechanism, the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising a pair of rotatable members each having a longitudinally extending recess whereby the tokens will be centralized longitudinally and transversely, and means at each side of said recess between which a coin will be held and for rejecting a slug.

18. In coin-controlled machines, the combination of means for directing a slug having a curved or inclined edge-portion or face in one direction and for differently disposing truly formed tokens or coins, said means comprising a pair of members each having a longitudinally extending recess whereby the tokens will be centralized longitudinally and transversely, and means at each side of said recess between which a coin will be held and for rejecting a slug.

19. In coin-controlled mechanism, the combination of means whereby a slug having a curved or inclined edge-portion or face will be disposed differently from truly formed tokens or coins, said means comprising a pair of members each having a longitudinally extending recess whereby the tokens will be centralized longitudinally and transversely, and means at each side of said recess between which a coin will be held and whereby a slug will be rejected.

855,009. ROTARY ENGINE. GEORGE A. KELLY, Longview, Tex. Filed June 14, 1906. Serial No. 321,675.



Claim.—1. In a rotary engine, the combination with a rotary piston having a plurality of independent annular sets of blades located one outside the other, of a casing including side walls located on opposite sides of the piston, said side walls having annular sets of channels located one outside the other, each set comprising a successive series of independent channels with partitions separating the adjacent channels, said channels having their ends coöperating with adjacent sets of blades.

2. In a rotary engine, the combination with a rotary piston having a plurality of independent annular sets of blades located one outside the other, of a casing including side walls located on opposite sides of the piston, said side walls having annular sets of channels located one outside the other, each set comprising a successive series of independent channels with partitions separating the adjacent channels, said channels having their ends coöperating with adjacent sets of blades, and deflectors located in the end portions of the channels, said deflectors being shorter than the partitions separating the channels.

3. In a rotary engine, the combination with a rotary piston having a plurality of independent annular sets of blades located one outside the other, and rings arranged between said sets of blades, of a casing including side walls located on opposite sides of the piston, said side walls having annular sets of channels located one outside the other, each set comprising a successive series of independent channels with partitions separating adjacent channels, said channels having their ends coöperating with adjacent sets of blades, annular partitions alining with the rings of the piston and constituting the inner walls of the channels between their ends, and deflectors located in the end portions of the channels on opposite sides of the annular partitions and terminating short of the rear ends of the partitions that separate the channels.

4. In a rotary engine, the combination with a rotary piston having a plurality of independent annular sets of blades located one outside the other, of a casing including side walls disposed on opposite sides of the piston, each wall comprising inner and outer sections, the inner sections having a plurality of annular sets of channels, partitions separating the channels of each set and extending entirely across the sections, and deflectors located in the channels and terminating short of the outer sides of the sections.

5. In a rotary engine, the combination with a piston comprising a plurality of spaced detachable rings located one outside the other, of annular sets of blades located between the adjacent rings, and fasteners connecting the adjacent rings and securing each to the next, and means for directing motive fluid successively from one set of blades to the next.

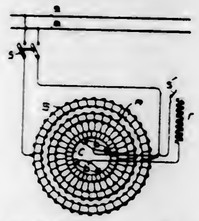
6. In a rotary engine, the combination with a rotary piston comprising detachably associated annular rings located one outside the other and having blades disposed between them, certain of said blades being thicker than others, of screws passing through the thicker blades and engaging the rings for holding them together, and means for directing motive fluid against the blades.

7. In a rotary engine, the combination with a casing having a side wall comprising inner and outer sections, of a rotary piston operating in the casing and having a plurality of sets of blades, said inner section having channels formed wholly therein for conducting motive fluid from one set of blades to another, the outer section closing the outer sides of said channels.

8. In a rotary engine, the combination with a casing having a side wall comprising inner and outer sections, of a rotary piston operating in the casing and having a plurality of sets of blades, said inner section having channels formed entirely through and wholly in the same for conducting motive fluid from one set of blades to the other, the outer wall section constituting the outer walls of said channels.

9. In a rotary engine, the combination with a casing having spaced side walls, each of said side walls comprising inner and outer sections, of a rotary piston operating in the casing between the side walls and having a plurality of annular sets of blades, said inner sections having channels formed entirely through and wholly in them and having inlet and outlet mouths coacting with the different sets of blades, the outer wall sections having inner substantially flat faces constituting the outer walls of said channels.

855,010. ALTERNATING-CURRENT MOTOR. MARIUS C. A. LATOUR, Paris, France, assignor to General Electric Company, a Corporation of New York. Filed June 18, 1904. Serial No. 213,056.



Claim.—1. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, means for closing the circuit of the secondary winding at starting on a line at an angle to the line of field magnetization, and means for closing the circuit of the secondary winding on a second line at an angle to the first when the motor is up to speed.

2. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, means for closing the circuit of the secondary at starting on a line at an angle to the line of field magnetization, and means for closing the circuit of the secondary winding through a source of voltage on a second line at an angle to the first when the motor is up to speed.

3. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, means for closing the circuit of the secondary winding at starting on a line at an angle to the line of field magnetization, and means for impressing a voltage on the secondary winding on a line at an angle to the first when the motor is up to speed.

4. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, means for closing the circuit of the secondary winding at starting on a line at an angle to the line of field magnetization, and means for impressing a shunt excitation on the secondary winding on a line at an angle to the first when the motor is up to speed.

5. In combination with an alternating-current motor of the commutator type, means for connecting it at the start as a repulsion motor, and means for connecting it as a shunt motor when it is up to speed.

6. In combination with an alternating-current motor of the commutator type, means for short-circuiting the rotor to cause the motor to start as a repulsion motor, and means for establishing additional connections from the rotor to source of voltage to cause the motor to operate as a shunt motor.

7. In an alternating-current motor, a distributed primary winding supplied with alternating-current, a secondary member provided with a distributed winding connected at intervals to the segments of a many-part commutator, brushes bearing on said commutator, connections for short-circuiting the secondary winding through the brushes on a line at an angle to the line of the field magnetization, connections for feeding an exciting current through said brushes on a line displaced substantially 90 electrical degrees from the line of the short-circuit, and a switch in the circuit of the latter connections for opening the circuit at starting and closing it at normal speed.

8. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, brushes bearing on said commutator and arranged and connected to short-circuit said secondary winding on parallel lines at an angle to the field magnetization, and means for interconnecting the parallel short-circuits when the motor has started.

9. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, brushes bearing on said commutator and arranged and connected to short-circuit said secondary winding on parallel lines at an angle to the field magnetization, and means for interconnecting the parallel short-circuits through a source of voltage.

10. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, brushes bearing on said commutator and arranged and connected to short-circuit said secondary winding ou parallel lines at an angle to the field magnetization, and means for connecting the parallel short-circuits to a source of shunt excitation.

11. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, brushes bearing on said commutator and arranged and connected to short-circuit said secondary winding on parallel lines at an angle to the field magnetization so as to start the motor as a repulsion motor, and means for interconnecting the parallel short-circuits through a source of shunt excitation so as to operate the motor as a shunt motor.

12. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, four commutator brushes per pair of poles arranged and connected in pairs so as to form two parallel short-circuits at an angle to field magnetization, and means for connecting said parallel short-circuits to a source of voltage.

13. In an alternating-current motor, a distributed primary winding, a secondary winding provided with a commutator, four brushes per pair of poles bearing on said commutator and arranged and connected in pairs so as to form two parallel short-circuits at an angle to the field magnetization, and means for supplying to the secondary winding through said short-circuiting connections a current derived from the field.

14. In combination, a repulsion motor having two sets of commutator brushes, said sets being displaced from each other by approximately 90 electrical degrees and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, and means for closing the circuit of the other set through a source of compensating electromotive force when the motor is up to speed.

15. In combination, a repulsion motor having two sets of commutator brushes, said sets being displaced from each other by approximately 90 electrical degrees and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, and means for impressing a variable voltage on the other set.

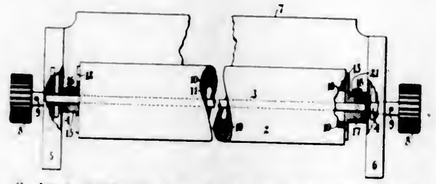
16. In combination, a repulsion motor having two sets of commutator brushes, said sets being displaced from each other by approximately 90 electrical degrees and both sets being displaced from the line of magnetization of the primary member, a source of voltage, and a switch adapted to close the circuit of the second set of brushes through said source when the motor is up to speed.

17. In combination, a repulsion motor having two sets of commutator brushes, said sets being displaced from each other by approximately 90 electrical degrees and both sets being displaced from the line of magnetization of the primary member, means for short-circuiting one set, and means for connecting the second set to a portion of the winding of the primary member of the motor.

855,011. TYPE-WRITING MACHINE. ARTHUR F. LEAR, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 30, 1907. Serial No. 365,563.

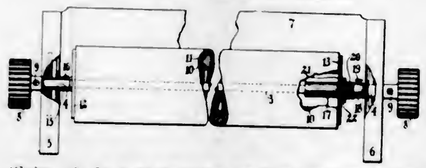
Claim.—1. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads, an axle passing through said heads and journaled in said bearings and having finger-wheels attached thereto outside of said platen frame, one of said heads being provided with an exterior hub, a device in the form of a ferrule fitting upon said hub and adjustable axially to take up longitudinal play of the platen between said bearings, and means to secure said ferrule to the hub at various adjusted positions, the platen being removable from the frame by withdrawing the axle, and the ferrule being removable with the platen without disturbing the adjustment of the ferrule on the platen.

2. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads, an axle passing through said heads and journaled in said bearings and having finger-wheels attached thereto outside of said platen frame, one of said heads being provided with an exterior hub, a device in the form of a ferrule fitting upon said hub and adjustable axially to take up longitudinal play of the platen between said bearings, means to secure said ferrule to the hub at various adjusted positions, and a screw threaded into said hub to secure it to said axle; said ferrule having a slot for said screw, the platen being removable from the frame by withdrawing the axle, and the ferrule being removable with the platen without disturbing the adjustment of the ferrule on the platen.



3. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads, an axle passing through said heads and journaled in said bearings and having finger-wheels attached thereto outside of said platen frame, one of said heads being provided with an exterior hub, a device in the form of a ferrule fitting upon said hub and adjustable axially to take up longitudinal play of the platen between said bearings, set screws threaded into said ferrule to bear against the periphery of said hub and lock the ferrule upon the hub, and a screw threaded into said hub to bear upon said axle; the ferrule being slotted to receive the shank of the last-mentioned screw, the platen being removable from the frame by withdrawing the axle, and the ferrule being removable with the platen without disturbing the adjustment of the ferrule on the platen.

855,012. TYPE-WRITING MACHINE. ARTHUR F. LEAR, New York, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 1, 1907. Serial No. 365,741.



Claim.—1. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads, an axle passing through said heads and journaled in said bearings, one of said heads being provided with a hub to fit upon said axle, said hub being adjustable longitudinally of the platen, to take up longitudinal play of the platen between said bearings, and means to secure said hub to its head at different adjustments of the hub; the platen being removable from the frame by withdrawing the axle, and the hub and hub-securing means being removable with the platen without disturbing the adjustment of the hub.

2. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads, an axle passing through said heads and journaled in said bearings, one of said heads being provided with a hub to fit upon said axle, said hub being adjustable longitudinally of the platen, to take up longitudinal play of the platen between said bearings, means to secure said hub to its head at different adjustments of the hub, and means outside of the platen, to secure said hub to the axle; the platen being removable from the frame by withdrawing the axle, and the hub and hub-securing means being removable with the platen without disturbing the adjustment of the hub.

3. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads and an axle passing through said heads and journaled in said bearings, one of said heads being provided with a hub to fit upon said axle, said hub being threaded into its head for adjustment longitudinally of the platen, to take up longitudinal play of the platen between said bearings, means to secure said hub to its head at different adjustments of the hub, and a set screw to secure said hub to said axle; the platen being removable from the frame by withdrawing the axle, and the hub and hub-securing means being removable with the platen without disturbing the adjustment of the hub.

4. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads and an axle passing through said heads and journaled in said bearings, one of said heads being provided with a hub to fit upon said axle, said hub being threaded into its head for adjustment longitudinally of the platen, to take up longitudinal play of the platen between said bearings; the platen and hub being removable together from the frame without disturbing the adjustment of the hub relatively to the platen.

5. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads and an axle passing through said heads and journaled in said bearings, one of said heads being provided with a hub to fit upon said axle, said hub being exteriorly threaded at a point between its end portions, to screw into its head, for adjustment longitudinally of the platen, to take up longitudinal play of the platen between said bearings, and means to secure said hub to its head at different adjustments of the hub; the platen and hub being removable together from the frame without disturbing the adjustment of the hub relatively to the platen.

6. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads and an axle passing through said heads and journaled in said bearings, one of said heads being provided with a hub to fit upon said axle, said hub being exteriorly threaded at a point between its end portions, to screw into its head, for adjustment longitudinally of the platen, to take up longitudinal play of the platen between said bearings, and means to secure said hub to its head at different adjustments of the hub; the inner end of the hub projecting within the platen to give a lengthened bearing of the hub on the axle; the platen and hub being removable together from the frame without disturbing the adjustment of the hub relatively to the platen.

7. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads, an axle passing through said heads and journaled in said bearings, one of said heads being provided with a hub to fit upon said axle, said hub being exteriorly threaded at a point between its end portions, to screw into its head, for adjustment longitudinally of the platen, to take up longitudinal play of the platen between said bearings, means to secure said hub to its head at different adjustments of the hub, and a set screw threaded into the outer end of the hub, to fasten it to the axle; the platen and hub being removable together from the frame without disturbing the adjustment of the hub relatively to the platen.

8. In a typewriting machine, the combination with a frame having ends, each provided with a bearing, of a platen having heads, a detachable axle having a hand wheel and passing through said heads and journaled in said bearings, a hub member whereby one of said heads is mounted upon said axle, said hub member mounted for adjustment longitudinally of and relatively to the platen, means for securing said hub member to its head at different adjustments, and independent means for securing the

platen detachably to the axle, whereby the platen may be detached from the frame without disturbing the adjustment of said hub member; the platen and the hub-member being removable from the frame without disturbing the adjustment of the hub-member relatively to the platen.

855,013. HAT-FASTENER. JOHN C. MORRISON, New York, N. Y. Filed June 14, 1906. Serial No. 321,770.



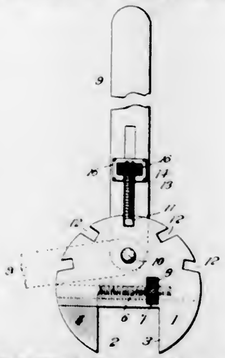
Claim.—1. A hat fastener comprising a carrier, a spring disposed exteriorly of the carrier and extending outwardly therefrom, said spring constituting a pin guide, and means extending outwardly from said carrier and for positively preventing the hair from entering into the spaces between the coils of said spring.

2. A hat fastener comprising a carrier, a spring disposed externally of the carrier and extending outward therefrom and constituting a pin guide, and a guard for the spring connected with one of the inner coils thereof and extending outward from said carrier.

3. A hat fastener comprising a carrier, a spring disposed externally of the carrier, constituting a pin guide and having its inner terminal coil vertically disposed and attached to said carrier, and a guard for the spring extending thereover, having a perforation to receive said inner terminal coil.

4. A hat fastener comprising a carrier, a spring exterior to the carrier having its inner terminal coil vertically disposed and attached to said carrier, a pin movable through said spring, and a guard extending over the spring, having a perforation at its inner end to receive said inner terminal coil, and a downwardly extending perforated flange, the perforation in said flange freely receiving said pin.

855,014. WRENCH. WILLIAM MCGLONE, Mount Iron, Minn. Filed Nov. 3, 1906. Serial No. 341,935.

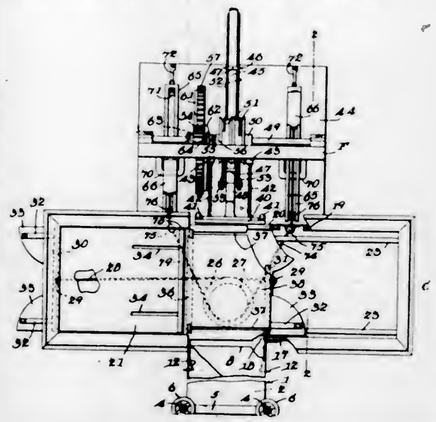


Claim.—1. In a wrench, the combination of a head having a nut receiving opening and provided with a space intermediate of its sides and having corresponding notches in the edges of said sides, a handle arranged within the space of the head and pivoted to the latter, a T lock fitted in an opening of the handle and comprising a cross head adapted to engage corresponding notches in the edges of said sides, a threaded stem, and a set nut arranged in the opening of the T lock to admit of adjusting the latter.

2. In a wrench, the combination of a head provided with coöperating jaws and having a space forming sides, the latter having corresponding notches in their outer edges, a handle having an end portion fitted in the space and pivoted to the sides of the head, a T lock fitted in an opening in the handle and comprising a dog and a threaded stem, the ends of the dog projecting beyond opposite sides of the handle and adapted to enter selected notches of the aforesaid sides, a plate closing a side of the opening in the handle to retain the T lock in place, and a set lock mounted upon the threaded stem of the T lock for adjustment thereof.

3. The herein described wrench comprising a head of approximately circular form having an edge portion removed to form a fixed jaw and having a space to provide side pieces and having corresponding notches in the edges of said side pieces, a movable jaw fitted between the side pieces and having interlocking connection therewith and provided with a threaded stem, a set nut mounted upon the threaded stem of the movable jaw and fitted in a transverse opening of the head extending through the outer faces of said side pieces, an operating handle pivoted between said side pieces and having an opening therein, a T lock mounted in the opening of the handle and comprising a dog, a threaded stem, the ends of the dog projecting beyond opposite sides of the handle to enter selected corresponding notches in the sides of the head, a set nut mounted upon the threaded stem of the T lock for adjustment thereof, and a plate for closing the side of the opening in the handle receiving the T lock to retain the latter in place.

855,015. BALING-PRESS. EMMET H. MCMURRY, Pedee, Ark. Filed Apr. 27, 1906. Serial No. 314,074.



Claim.—1. In a baling press, a press box comprising upper and lower plates and side members formed of spaced strips, threaded rods connecting the top and bottom members and extending through the end portions of the spaced strips, and adjustable nuts mounted on said rods for altering the cross sectional area of the discharge end of the press box.

2. In a baling press, a press box including top and bottom plates and side members formed of spaced strips the ends of which are beaded, compression bars, threaded rods extending through the compression-bars and through the beaded portions of the side strips, and adjusting nuts on the threaded rods.

3. In a baling press, a press box including top and bottom plates having flanges constituting side strips, intermediate side strips, beads on the end of the strips, and means passing through the beads for pressing the top and bottom members toward each other for altering the cross sectional area of the discharge end of the press box.

4. In a baling press, a press box including top and bottom members having flanges constituting side strips having beaded ends, intermediate side strips having beaded ends,

compression bars, threaded rods extending through the compression bars and through the beaded portions of the side strips, and adjusting nuts on said rods.

5. In a baling press, a press box, a feed compartment disposed with its length at right angles to the axis of the press box, a reciprocating element in the feed compartment for imparting an initial compression to the charges, a plunger reciprocating transversely through the feed compartment and longitudinally of the press box, a driving mechanism for the plunger, a rotatable means, a flexible element driven by the said means and connected with the reciprocating element for actuating the latter, and a flexible element intermediate the said means and driving mechanism for actuating the former.

6. In a baling press, a press box, a feed compartment at the receiving end thereof, a reciprocating element in the compartment for initially compressing the charges, a plunger for projecting the initially compressed charges into the press box, means for actuating the plunger on its pressing stroke, a separate means for actuating the plunger in the opposite direction, and an intermittently operating device actuated by the first mentioned means for reciprocating said element, said device comprising a pair of members reciprocating simultaneously in opposite directions, a flexible traction member connected with the members to be moved back and forth thereby, a wheel rotated by the traction member, and a mechanism between the wheel and reciprocating compressing element for actuating the latter.

7. In a machine of the class described, a feed compartment, a longitudinally movable compressing element therein, members mounted for simultaneous reciprocation in opposite directions, means for intermittently actuating the members, a device rotated by the members, and means between the device and said element for moving the latter.

8. The combination with a press box, of a feed compartment open at its top and having a laterally movable bottom carrying end walls and an independently movable partition member arranged to laterally compress the successive charges at the entrance of the press box, a roof member disposed centrally of the compartment to form a platform for the operator, means thereon for limiting the movement of the partition, and a plunger for forcing the compressed charges into the press box.

9. In a machine of the class described, the combination with a press box and plunger, of a feed compartment, a reciprocating element therein, a mechanism for intermittently actuating the plunger, means for actuating the said element during the idle periods of the plunger, said means comprising a wheel, means for oscillating the wheel, a flexible traction member passing around the wheel and connected at its ends with the said reciprocating element, an automatically actuated clutch controlling the plunger, and an automatically actuated device for locking the said element in fixed position during the strokes of the plunger.

10. The combination with a press box and plunger, of a feed compartment having a laterally movable bottom provided with rotary supporting means, tracks for the latter, and a device for reciprocating the said bottom, comprising a rotatable driving member fixed on the compartment, and a flexible element connected with the bottom and engaging the member.

11. The combination with a press box and plunger, of a feed compartment having a laterally movable bottom provided with rotary supporting means, tracks for the latter, cross bars extending between the tracks, a pulley supported for rotation between the cross bars, a flexible traction member wound upon the pulley and having its ends extended to and connected with the ends of the bottom member, and means for intermittently rotating the pulley, alternately in opposite directions.

12. In a baling press, a press box, a feed compartment located at the entrance end of the press box and having a laterally movable bottom member, means carried by the bottom member for effecting preliminary compression of charges placed in the feed compartment, a double pulley supported for rotation beneath the bottom of the feed compartment, a flexible member wound upon one member of the double pulley and having its extremities connected with the ends of the movable bottom member, a pair of slides supported for reciprocation, a flexible element wound upon the other member of the double pulley and having its extremities connected with the two slides, a shaft supported for rotation and having cranks adapted for alternate engagement with said slides to move the latter alternately in opposite directions, intermittently, a plunger, and means for projecting the plunger through the feed compartment in the direction of the press box during the intervals when the slides are at rest.

13. In a baling press, a press box, laterally movable compression means for effecting preliminary compression of charges to be inserted into the press box, and means for operating the laterally movable compression means including hingedly supported guide members, slides mounted for reciprocation thereon, a suitably guided flexible traction element having its extremities connected with the slides, a shaft supported for rotation, and cranks on said shaft disposed in alinement with each other for alternate engagement with the slides.

14. A reciprocatory compression member and means for operating the same said means including hingedly supported guides, slides movable thereon, a suitably guided flexible traction element having its terminals connected with the slides, a shaft having cranks adapted to engage the slides, and means for moving the free ends of the hinged guides carrying the slides in the direction of the cranks.

15. A reciprocatory compression member and means for operating the same said means including hingedly supported spring actuated guide members, slides movable thereon and having transverse recesses, and a shaft having cranks adapted for engagement with said recesses.

16. A reciprocatory compression member and means for operating the same said means including hingedly supported guide members, slides movable thereon and having recesses, a suitably guided flexible traction element having its extremities connected with the slides, a shaft having cranks adapted for engagement with the recesses in the slides, and means for temporarily retaining either slide in the position to which it is adjusted by the engaging crank.

17. A reciprocatory compression member and operating means for the same including hingedly supported guide members, slides movable thereon, a suitably guided flexible traction element connecting said slides, a shaft having cranks adapted for engagement with the slides to intermittently shift the position thereof, and means for temporarily retaining either slide in the position where it is placed by the engaging crank.

18. A reciprocatory compression member and operating means for the same including hingedly supported guide members slides movable thereon and having transverse recesses in their under sides, lids hinged adjacent to the front edges of said recesses and depending from the slides, a shaft having cranks adapted for alternate engagement with the slides to carry the latter in a rearward direction, means for temporarily securing either slide at the rear limit of its movement, and a suitably guided flexible traction element connecting the slides.

19. A reciprocatory compression member and operating means for the same including hingedly supported guide members, slides movable thereon, a suitably guided flexible traction element connecting the slides, a shaft having cranks adapted for engagement with the slides to intermittently shift the position of said slides, and stationary bracket members adapted for engagement with recesses in the slides to retain the latter in the position where they are placed by the engaging cranks.

20. In a device of the class described, a hingedly supported guide member, a slide movable thereon and having a recess, a shaft supported adjacent to the guide member and having a crank adapted for engagement with the recess in the slide, and spring means for impelling the hinged guide member in the direction of the shaft.

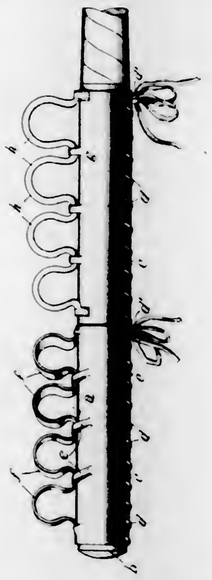
21. In a device of the class described, a hinged guiding yoke, a slide having grooves engaging the limbs of the yoke, a shaft having a crank adapted to engage the slide,

and means for impelling the free end of the guiding yoke in the direction of the shaft.

22. In a baling press, a reciprocatory compression member, and operating means for the same including hingedly supported guide yokes, slides movable thereon and having beveled ends and transverse grooves, depending lids hinged adjacent to said grooves, a shaft having cranks adapted for alternate engagement with the grooves in the slides, means for forcing the free ends of the yokes in the direction of the shaft, and a suitably guided flexible traction element connecting the slides.

23. In a baling press, a press box, a feed compartment located adjacent to the entrance end of the press box, preliminary compression means disposed for reciprocation in the feed compartment, means for actuating the reciprocatory compression means including hingedly supported guide members, slides movable thereon, a suitably guided flexible traction member connecting the slides, and a shaft having cranks adapted for alternate engagement with the slides to shift the position of the latter, intermittently; a pulley driven by the flexible traction member, a flexible element wound upon the pulley and having its terminals connected with the ends of the reciprocatory compression means, a spring retracted plunger, and means for projecting the plunger through the feed compartment in the direction of the press box during the intervals when the reciprocatory compression means is at rest.

855,016. GOLF-CLUB. WILLIAM R. ORTHWEIN, St. Louis, Mo. Filed Mar. 5, 1907. Serial No. 360,709.



Claim.—1. A stick of the character described having secured thereto a plurality of finger loops each of which is of a size and shape adapting it to fit snugly a finger of the player.

2. A stick of the character described having secured thereto a hand-hold provided with a plurality of finger loops each of which is of a size and shape adapting it to fit snugly a finger of the player.

3. A stick of the character described having a hand-hold provided with finger loops and lacing for holding said hand-hold in place.

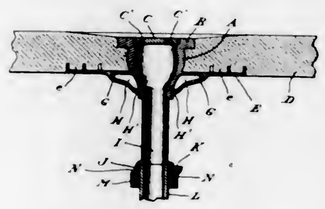
4. A stick of the character described having secured thereto two series of finger loops, one for each hand; said loops serving to maintain the hands of the player in the same relative position.

5. A stick of the character described having secured thereto a hand-hold provided with a strip formed into a series of loops each of a size and shape adapting it to fit snugly a finger of the player.

6. A stick of the character described having a hand-hold and a lacing which secures said hand-hold in place; said lacing serving to adapt the hand-hold to different sizes of sticks and enabling the hand-hold to be readily removed therefrom.

7. A stick of the character described having secured thereto a pair of hand-holds each of which is provided with a strip for holding the fingers.

855,017. BASIN OR TRAP FOR STABLE-FLOORS. MICHAEL J. O'BRIEN, New York, N. Y. Filed Apr. 5, 1906. Serial No. 310,049.



Claim.—1. A floor drain, having a basin open at the top of the floor and means extending outward below the top of the basin having connection with said basin to carry back liquid percolating through the floor.

2. A floor drain, having a draining means open at the top of the floor and a pan extending outward below the top of the draining means and discharging into the same.

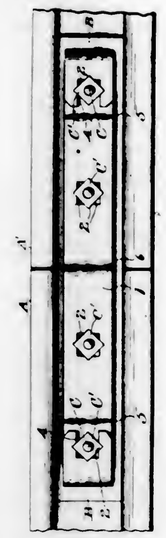
3. In a floor drain, the combination with the floor of a draining means extending through the floor and open at the top thereof, and means extending outward from the draining means under the floor having connection with said draining means to carry back liquid percolating through the floor.

4. In a floor drain, the combination with the floor of a draining means extending through the floor and open at the top thereof, and a pan extending outward from the draining means under the floor having connection with said draining means to carry back the liquid percolating through the floor, said pan having interrupted flanges projecting upward into the floor.

855,018. NUT-LOCK. WILLIAM H. PHILLIPS, Sacramento, Cal., assignor of one-fourth to M. S. Wahrhaftig, Sacramento, Cal. Filed Mar. 2, 1907. Serial No. 360,214.

Claim.—In a nut lock for a plurality of nuts in a line, a strip of metal provided with pointed holes to receive the intermediate nuts and circular holes to receive the end bolts, the ends of the strip being provided with notches to receive the nuts on the end bolts when bent on themselves for that purpose, said strip being provided with depressions so as to admit of the adjustment of the length of the strip and also to cause the parts surrounding the intermediate nuts to set out so as to securely engage them, substantially as shown and described.

855,018.



855,019. PROCESS OF REGENERATING WASTE LIQUORS FROM THE MANUFACTURE OF CHROME PIGMENTS. ALEXANDER S. RAMAGE, Detroit, Mich. Filed Mar. 27, 1907. Serial No. 364,828.

Claim.—1. The process of regenerating waste liquors from chrome pigment manufacture which consists in concentrating said liquors, liberating acetic acid therein by addition of sulfuric acid, separating sodium sulfate by refrigeration, and utilizing the resulting acid solution for the preparation of lead acetate.

2. The process of regenerating waste liquors from chrome pigment manufacture which consists in concentrating said liquors, liberating acetic acid therein by addition of sulfuric acid, separating a portion of the sodium sulfate by refrigeration, separating the remaining sulfuric acid by precipitation and utilizing the resulting acid solution for the preparation of lead acetate.

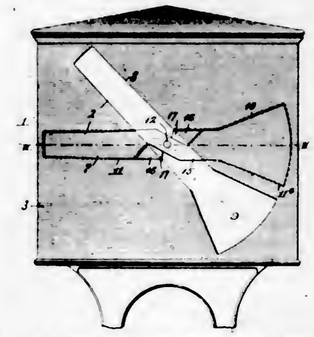
3. The process of regenerating waste liquors from chrome pigment manufacture which consists in adding acetic acid to said liquors, dissolving a lead compound therein and precipitating a chrome pigment, repeating the operation to concentrate the alkali acetate in the liquor, concentrating the resulting liquor by evaporation, liberating acetic acid therein by addition of sulfuric acid, separating sodium sulfate by refrigeration, and utilizing the resulting acid solution for the preparation of lead acetate.

4. The process of regenerating waste liquors from chrome pigment manufacture which consists in concentrating said liquors, liberating acetic acid therein by addition of sulfuric acid, separating sodium sulfate by refrigeration, utilizing the resulting acid solution for the preparation of lead acetate, and precipitating a chromate of lead from said solution.

5. The cyclical process of regenerating waste liquors from chrome pigment manufacture which consists in concentrating said liquors, liberating acetic acid therein by addition of sulfuric acid, separating sodium sulfate by refrigeration, utilizing the resulting acid solution for the preparation of lead acetate, precipitating a chromate of lead from said solution, and utilizing the liquor in continuing the process.

6. The cyclical process of regenerating waste liquors from chrome pigment manufacture, which consists in adding acetic acid to said liquor, dissolving a lead compound therein and precipitating a chrome pigment, repeating the operation to concentrate the alkali acetate, further concentrating the resulting liquor by evaporation, liberating acetic acid therein by addition of sulfuric acid, separating a portion of the sodium sulfate by refrigeration, separating the remaining sulfuric acid by precipitation, utilizing the resulting acid solution for the preparation of lead acetate, precipitating a chromate of lead from said solution, and utilizing the liquor in continuing the process.

855,020. RAILWAY-SIGNAL. BARNEY SAMUELS, St. Joseph, Mo., and DAVID SAMUELS, Leavenworth, Kans. Filed Aug. 24, 1903. Serial No. 170,518.



Claim.—1. A signal comprising a casing having one or more openings in its front wall forming two permanent positions, and a blind adapted to alternately cover said positions.

2. A signal comprising a casing having an opening forming two positions radiating from a common center, and a blind mounted to alternately cover said positions.

3. A railway signal comprising a suitable casing having an opening forming two intersecting positions, a blind mounted to alternately cover said positions, and an auxiliary blind adapted to assist the main blind in covering the danger position.

4. In a railway signal, a corrugated reflector consisting of a plurality of sections arranged at an angle so the under surface of one section will reflect light upon the upper surface of the succeeding section.

5. A railway signal comprising a suitable casing having an opening forming two intersecting positions, a main blind mounted to alternately cover said positions, an auxiliary blind adapted to assist the main blind in covering the "danger" position, and a partition interposed between the two blinds to cover the auxiliary blind when the "danger" position is exposed.

6. A railway signal comprising a suitable casing having an opening forming two intersecting positions, and a blind mounted to alternately cover said positions.

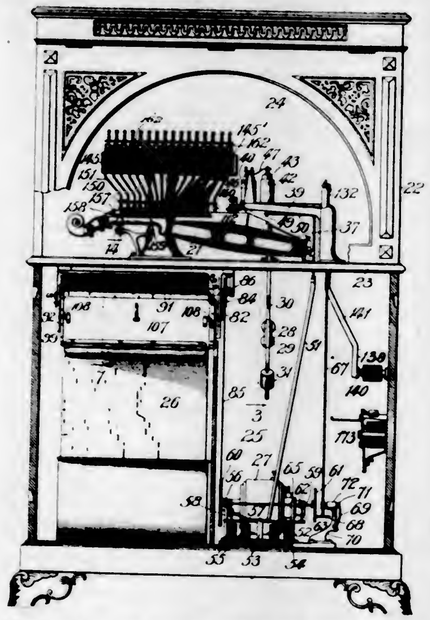
7. A signal comprising a casing having one or more openings in its front wall and one or more openings in its rear wall registering with those in its front wall, said openings being arranged to form two positions, and a blind adapted to alternately cover said positions.

8. A railway signal comprising a suitable casing having an opening forming two intersecting positions, indicating safety and danger, a main blind mounted to alternately cover said positions, an auxiliary blind adapted to assist the main blind in covering the danger position, a partition interposed between the two blinds to cover the auxiliary blind when the danger position is exposed, and a reflector to which said partition is secured.

855,021. ELECTRIC SELF-PLAYING VIOLIN. HENRY K. SANDELL, Chicago, Ill., assignor to Mills Novelty Company, a Corporation of Illinois. Filed Oct. 29, 1906. Serial No. 341,060.

Claim.—1. In combination with a stringed instrument, means constructed and arranged to normally maintain the

strings under tension, said means comprising a vibratory attachment operating to produce variation in the tension of the strings above and below their normal tension, for the purpose set forth.



2. In combination with a stringed instrument, a pendulous vibratory lever connected with the strings of the instrument, and means for vibrating said lever, for the purpose set forth.

3. In combination, a stringed instrument having flexibly supported upon it a tail-piece to which the strings of the instrument are fastened, a vibratory attachment connected with said tail-piece constructed and arranged to normally exert tension upon the strings, and means for actuating said attachment to vibrate the tail-piece and thereby vary the tension on the strings above and below their normal tension, for the purpose set forth.

4. In combination, a stringed instrument having flexibly supported upon it a tail-piece to which the strings of the instrument are fastened, a pendulous lever connected with said tail-piece, and means for vibrating said lever, for the purpose set forth.

5. In combination, a stringed instrument having flexibly supported upon it a tail-piece to which the strings of the instrument are fastened, a pendulously supported lever spring-pressed in one direction and carrying a weight opposing the force of said spring, a connection between said lever and tail-piece, and means for actuating said lever to vibrate the tail-piece, for the purpose set forth.

6. In a self-playing stringed instrument, the combination with a string, of a sounding-device comprising a rotatably mounted shaft and a sounder thereon adapted to sound said string, said sounding-device including an electro-magnet; a plurality of fingering-devices each provided with an electro-magnet and adapted to finger said string when its magnet is energized; an electric circuit having branches, certain of said branches including said fingering-device magnets, each branch including one only of said fingering-device magnets, and the common part including the sounding-device magnet, whereby each of said fingering-device magnets is included in series with said sounding-device magnet; a vibratory attachment connected with said string and carrying an armature, and an electro-magnet for actuating said armature, included in a branch of said circuit.

7. In a self-playing stringed instrument, the combination with a string, of a sounding-device comprising a rotatably mounted shaft and a sounder thereon adapted to sound said string, said sounding-device including an electro-magnet; a plurality of fingering-devices each provided with an electro-magnet and adapted to finger said string when its magnet is energized; an electric circuit having branches, certain of said branches including said fingering-device magnets, each branch including one only of said fingering-device magnets and the common part including the sounding-device magnet, whereby each of said fingering-device magnets is included in series with said sounding-device magnet; the tail-piece of said instrument, and a vibratory attachment for the string, comprising an electro-magnet included in a branch of said circuit, a pendulously supported weighted and spring-pressed lever carrying near one end an armature adjacent to said last-named magnet, and a connection between the opposite end of said lever and said tail-piece.

8. In an electric self-playing stringed instrument, the combination with a casing supporting the parts, of a circuit having branches, a motor, an electrical contact-roller in said circuit, contact-fingers co-operating with said roller, and means for feeding a perforated music-sheet across said roller and contact-fingers; sounder-devices for the springs, each including an electro-magnet having an oscillatory armature connected with a sounder-device; fingering-devices for the strings, each including an electro-magnet; lugs on the armatures of the sounding-device magnets, and means for varying the extent of depression of said armatures, comprising a rocker-plate supported to extend in the path of said lugs and an electro-magnet in said circuit having an oscillatory armature connected with said plate to rock it by the movements of said armature.

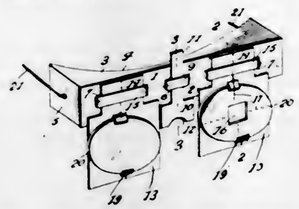
9. In a self-playing stringed instrument, the combination with a string, of a sounding-device comprising a rotatably mounted shaft and a sounder thereon adapted to sound said string; means for rotating said shaft and means for oscillating it to engage the sounder with said string and withdraw it therefrom; a pressure-varying device constructed and arranged to co-operate with the sounder-shaft to vary the degree of pressure of the sounder against the string; and a speed-changing device constructed and arranged to co-operate with said pressure-varying device and said shaft-rotating means to vary the speed of rotation of the latter with variation in the pressure of the sounder against said string.

10. In a self-playing stringed instrument, the combination with a string, of a motor, a sounding-device comprising a rotatably-mounted shaft and a sounder thereon adapted to sound said string; means for oscillating said shaft to engage the sounder with said string and withdraw it therefrom; a pressure-varying device constructed and arranged to co-operate with the sounder-shaft to vary the degree of pressure of the sounder against the string; a speed-changing device for said shaft, comprising a rotatable shaft geared to said motor and carrying a friction-disk on one end, an oscillatory bearing in which the last named shaft is journaled, means for oscillating said shaft-end, and a rotary shaft carrying on one end a friction-wheel engaging with said disk and geared at its opposite end with said sounder-shaft; and means co-operatively connecting said pressure-varying and speed-varying devices.

11. In an electric self-playing stringed instrument, the combination with a string, of a motor, a circuit having branches; a sounding-device comprising a rotatably mounted oscillatory shaft and a sounder adapted to sound said string and including an electro-magnet in a circuit-branch, having an oscillatory armature connected with said sounder-shaft and carrying a lug; means for varying the extent of depression of said armature, comprising a rocker-plate supported to extend in the path of said lug and an electro-magnet in a branch of said circuit having an oscillatory armature connected with said plate to rock it; and a speed-changing device for said sounder-shaft, comprising a pair of electro-magnets in branches of said circuit, a pivotal armature extending over the poles of said pair of magnets, a rotatable shaft geared to said motor and carrying a friction disk on one end, an oscillatory bearing in which the last named shaft is journaled, a connection between said pivotal armature and said disk-carrying shaft, a vertical rotary shaft carrying on its lower end a friction-wheel engaging said disk and geared at its opposite end with said sounder-shaft to rotate the latter, and a connection between the armature of said rocker-plate actuating magnet and said pivotal armature.

12. In an electric self-playing stringed instrument, the combination with a casing supporting the parts, of a circuit having branches, a motor, an electrical contact-roller in said circuit, contact-fingers co-operating with said roller, and means for feeding a perforated music-sheet across said roller and contact-fingers; sounding-devices for the strings of the instrument, each including an electro-magnet having an oscillatory armature, and each comprising a rotatably mounted oscillatory shaft connected with said armature and a sounder on said shaft adapted to sound a string; a series of fingering-devices for each string, each including an electro-magnet and adapted to finger a string when its magnet is energized; said fingering-device magnets being included in branches of which each branch includes one only of said fingering-device magnets and the common part of each said series including a sounding-device magnet, whereby each of said fingering-device magnets in a series thereof is included in electric series with a sounding-device magnet; lugs on the armatures of said sounding-device magnets; means for regulating the extent of depression of said armatures, comprising a rocker-plate supported to extend in the path of said lugs and an electro-magnet in a branch of said circuit having an oscillatory armature connected with said plate to rock it; a speed-changing device for the sounder-shafts, comprising a pair of electro-magnets included in branches of said circuit, a pivotal armature extending over the poles of said pair of magnets, a rotatable shaft geared to said motor and carrying a friction-disk on one end, an oscillatory bearing in which the last named shaft is journaled, a connection between the oscillatory end of said disk-carrying shaft and said pivotal armature, a vertical rotary shaft carrying on its lower end a friction-wheel engaging said disk and geared at its upper end with said sounder-shafts to drive them, and a connection between the armature of said pressure-regulating magnet and said pivotal armature.

855,022. TRIAL-FRAME FOR OPTICIANS' USE. JOHN W. C. SMITH, West Lafayette, Ind. Filed Apr. 23, 1906. Serial No. 313,331.



Claim.—1. A device of the character described, comprising a base, eye pieces carried by said base, the latter being provided with a guide strip between said eye pieces, and a nose piece provided with a shank arranged for insertion underneath said guide strip and adapted for frictional engagement therewith, whereby the nose piece may be held in different adjusted positions with respect to the base.

2. A device of the character described, comprising a base, a nose piece carried by said base, the base being provided with longitudinally extending guide strips on opposite sides of said nose piece, and eye pieces provided with shanks arranged for insertion underneath said guide strips and adapted for frictional engagement therewith, as and for the purpose set forth.

3. A device of the character described, comprising a base, a nose piece designed for adjustable attachment for said base, and independently adjustable eye pieces also designed for attachment to said base and arranged for both vertical and horizontal adjustment thereon.

4. A device of the character described, comprising a base consisting of a body portion, corner pieces provided ranged in substantially longitudinal alinement, and removable and adjustable eye pieces and a nose piece designed for insertion in said guide strips.

5. A device of the character described, comprising a base consisting of a body portion, corner pieces provided with angular flanges at one side, and a member 3 having a curved edge and extending angularly to the body portion, the said flanges being designed for attachment to the ends of the said member 3, and adjustable eye pieces and a nose piece, arranged for attachment to said base.

6. In a device of the character described, a supporting base for adjustable eye pieces and nose piece, the said base resulting from bending up a blank consisting of a rectangular body portion 1, a member 3 provided with a curved edge 4, and corner pieces 5 provided with angular flanges 6 designed for attachment to the ends of the member 3.

7. A device of the character described, comprising a base consisting of a body portion, an angularly disposed portion designed to abut against a person's forehead, and corner pieces designed to be connected to the ends of the angular member, the body portion 1 being provided with slits producing guide strips, adjustable eye pieces and nose piece arranged for engagement by said strips, and a head band attached to said base.

8. A device of the character described, comprising a base of sheet material resulting from bending up a blank consisting of a body portion, a member 3 with a curved edge and adapted to engage a person's forehead and corner pieces 5 provided with flanges arranged for attachment to the ends of the member 3, means for securing said base to a person's forehead, a nose piece of sheet material arranged for vertically adjustable connection to the body portion of the base and eye pieces also arranged for adjustable connection to the body portion of the base and constructed of sheet material, said eye pieces being provided with central openings and with integral lugs arranged to detachably hold a lens.

9. A device of the character described, comprising a base arranged for detachable engagement with a person's forehead, and a nose piece and two eye pieces arranged for connection to said base, the eye pieces being constructed of sheet material and having lugs struck up therefrom, said lugs being adapted to hold a lens.

855,023. BURGLAR-ALARM. JOSEPH A. SMITH, Denver, Colo., assignor of one-half to Robert J. Mitchell. Filed May 8, 1906. Serial No. 315,834.

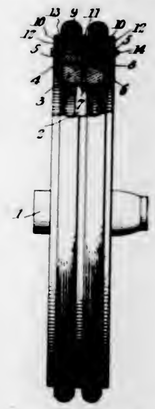


Claim.—1. In an alarm, the combination of a tubular support closed at one end and provided with transversely and longitudinally extending slots, the latter slot being open at the open end of the support, a firing pin arranged in the support and provided with a transversely extending slot, a finger-piece on the firing pin which extends through the longitudinal slot and passes freely in and out of the latter during the removal and insertion of the firing pin, a key or trigger for engaging in the transversely extend-

ing slot of the support and firing pin for holding the latter in set position, and a cartridge holder removably supported in the open end of the support in coöperative relation with the firing pin and forming a closure for the open end of the support to retain the firing pin therein.

2. In a device of the class described, the combination of a single-piece hollow member open at one end and provided with a transverse slot intermediate its ends and a longitudinal slot extending inwardly from the open end, a helical compression spring abutting the closed end of the member, a firing pin arranged in end to end relation to the spring and having a transverse slot adapted to register with the slot of the member when the pin is in set position, a flat key for engaging the transverse slots of the pin and member, a flexible element attaching the key to the member, a device on the pin engaging in the longitudinal slot of the member for preventing the pin from turning and permitting it to move longitudinally, and a cartridge holder removably held in the open end of the member.

855,024. TIRE. EUGENE F. SOBERS, Bethlehem, Pa. Filed July 27, 1906. Serial No. 328,095.



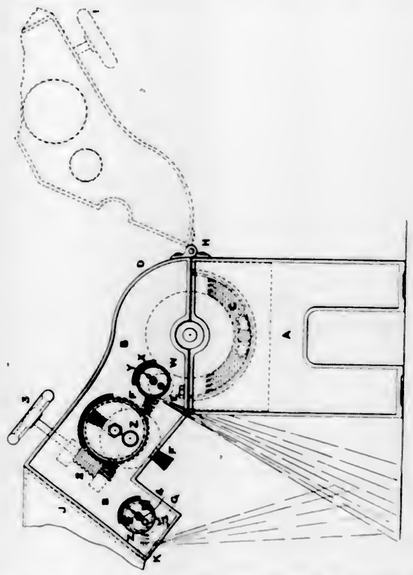
Claim.—1. The combination with a vehicle wheel, and a clencher tire holder thereon, of an annular member cut away at its sides to fit between the rims of the holder, fastening devices passing through the member and tire holder and also through the felly of the wheel, a plurality of tires extending around the said annular member and bearing on the same, a fastening ring between adjacent tires, clamping rings disposed on the sides of the said member and coöperating with the first mentioned ring for holding the tires in position the clamping rings coöperating with said tire holder to center the tires relatively to the wheel and fastening devices passing through the clamping ring and annular member.

2. The combination with a vehicle wheel, and a clencher rim thereon, of an auxiliary felly having a portion arranged between the flanges of the rim, fastening devices for securing the auxiliary felly in position, a plurality of tires having base extensions bearing against the periphery of the auxiliary felly and arranged with the extensions of adjacent tires in contact, an annular member arranged between the tires and engaging the adjacent base extensions for holding the latter against the auxiliary felly, flanged clamping rings engaging the outermost base extensions and coöperating with the said annular member for holding the tires on the auxiliary felly, said clamping rings coöperating with the outer sides of the flanges of the said clencher rim, and bolts passing through the auxiliary felly and clamping rings.

3. The combination with a vehicle wheel, and a clencher rim thereon, of an auxiliary felly fitting the said rim and adapted to receive a tire, and a pair of clamping members arranged at opposite sides of the felly to secure the tire thereon and coöperating with the sides of the clencher rim to hold the auxiliary felly centered relatively to the plane of rotation of the wheel.

4. The combination with a vehicle wheel and a clencher tire holder thereon, of an annular member cut away at its sides to fit between the rims of the holder, bolts passing through the member and tire holder together with the felly of the wheel, tires extending around the said annular member, a fastening ring intermediate the tires, and clamping rings coöperating with the first mentioned ring and the tire holder for holding the tires on the said member.

855,025. FIBER-OILING MACHINE. FRED SPIVEY, Heckmondwike, England. Filed Nov. 4, 1905. Serial No. 285,857.



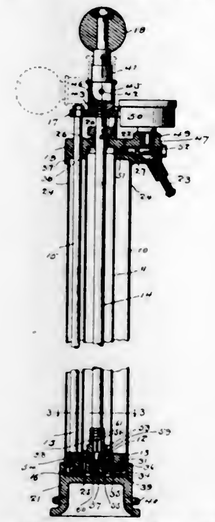
Claim.—1. In a fiber oiling machine, the combination, with a main supporting frame provided with an oil trough, and a taking-up roller dipping into the said trough; of an auxiliary frame hinged to the said main frame, and a licker-off roller and a distributing brush journaled in the said auxiliary frame.

2. In a fiber oiling machine, the combination, with a frame provided with a cover, a heating pipe arranged at the lower part of the said cover, and an oil trough carried by the said frame; of a taking-up roller dipping into the said trough, a licker-off roller and a distributing brush operating in connection with the said taking-up roller, and a second distributing brush operating in connection with the said pipe.

3. In a fiber oiling machine, the combination, with an oil trough, and a taking-up roller dipping into the said trough and provided with conical end portions; of a licker-off roller also provided with conical end portions, and means for adjusting the said licker off roller longitudinally so as to vary the distance between the said roller.

855,026. TIRE-PUMP. WILLIAM S. STAPLEY, Bridgeport, Conn., assignor to The Bridgeport Brass Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Dec. 20, 1905. Serial No. 292,585.

Claim.—1. A pump comprising an inner tube and an outer tube concentrically placed and communicating with each other at the bottom, a cap having an eduction passage leading from the inner tube and pistons in said tubes which move together but operate alternately, whereby during the downward stroke air will be forced from the outer tube into the inner tube and out past the inner piston, and during the upward stroke air will be forced out by the inner piston and incoming air will pass the outer piston and enter the inner tube behind the inner piston.



2. In a pump, the combination with inner and outer tubes concentrically placed and a cap having an eduction passage leading from the inner tube, of an inner piston provided with a valve whereby the piston is made operative during the upward stroke and air is permitted to pass during the downward stroke and a piston in the outer tube consisting of rings threaded to engage each other and flexible washers clamped between said rings and engaging the inner and outer tubes respectively whereby said piston is made operative during the downward stroke and air is permitted to pass during the upward stroke.

3. A pump consisting of inner and outer tubes concentrically placed and rigidly secured in fixed relative positions and opening into each other at one end, a piston in the inner tube and a piston in the outer tube consisting of rings threaded to engage each other and flexible washers clamped between said rings and engaging the inner wall of the outer tube and the outer wall of the inner tube respectively.

4. A pump consisting of inner and outer tubes concentrically placed and opening into each other at one end, a piston in the inner tube and a piston in the outer tube consisting of rings threaded to engage each other and flexible washers clamped between said rings and engaging the inner wall of the outer tube and the outer wall of the inner tube respectively.

5. In a pump, the combination with inner and outer tubes concentrically placed and communicating at the bottom, of a cap to which said tubes are secured and which is provided on one side with a hub, said cap and hub being provided with an eduction passage communicating with the inner tube, pistons in said tubes which act alternately to force air from the inner tube through said passage and a valve in said passage which prevents back pressure in the inner tube.

6. In a pump, the combination with inner and outer tubes concentrically placed and communicating at the bottom, of a cap to which said tubes are secured and which is provided on one side with a hub, said cap and hub being provided with an eduction passage communicating with the inner tube, pistons in said tubes which act alternately to force air from the inner tube through said passage, a valve in said passage which prevents back pressure in the inner tube and a pressure gage communicating with the eduction passage outside the valve whereby the pressure is indicated.

7. In a pump, the combination with inner and outer tubes concentrically placed and communicating at the bottom, of a cap to which said tubes are secured and which is provided on one side with a hub, said cap and hub being provided with an eduction passage communicating with the inner tube, pistons in said tubes which act alternately to force air from the inner tube through said passage, a nozzle communicating with said passage, a valve in said passage which prevents back pressure and a stop screw which limits the backward movement of the valve when air is being forced from the inner tube through the passage.

8. In a pump, the combination with inner and outer tubes concentrically placed and communicating at the bottom, of a cap to which said tubes are secured, inner and outer piston rods passing through said cap, a flanged tubular packing in said cap through which the inner piston passes and a nut engaging the cap and having on its underside a V-shaped rib which engages the flange of the packing to retain it in place.

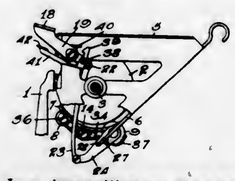
9. In a pump, the combination with a piston rod and a plate to which it is secured, of a block secured to the plate and having a central hub, a permanently connected handle having a shank pivoted to the hub and a sleeve on the shank adapted to engage the hub to lock the handle and shank in operative position and when moved upward on the shank out of engagement with the hub permitting the handle and shank to fold outward laterally whereby the longitudinal space required for the pump in transportation is shortened.

10. In a pump, the combination with an inner tube and an outer tube concentrically placed and pistons in said tubes connected to work simultaneously, of a cap to which both tubes are connected, a base to which the outer tube is connected and oppositely swinging foot-rests hinged to the base and adapted to swing upward against the outer tube to reduce the space required for the pump in transportation.

11. In a pump, the combination with inner and outer tubes concentrically placed and inner and outer pistons and piston rods, of a cap through which the piston rods pass and which is provided with a central threaded socket having a circular rib projecting from its base, a flanged leather packing in said socket and surrounding the inner piston rod, and a nut engaging the socket and having at its lower end a circular rib of unequal diameter with the rib in the socket, said nut when turned to place clamping the flange of the packing between the ribs and compressing the packing against the piston rod.

12. In a pump, the combination with an inner tube and an outer tube concentrically placed, and pistons in said tubes connected to work simultaneously, of a cap to which the upper ends of both tubes are connected, and a base to which the outer tube is connected.

855,027. TYPE-WRITING MACHINE. HERMAN L. WAGNER, Mount Vernon, N. Y., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 28, 1906. Serial No. 336,632.



Claim.—1. In a typewriting machine having a platen and a platen frame, the combination of a shaft extending

along the platen and having a roll thereon, means for pressing the roll against the platen, a lever fixed upon said shaft and connected to a finger key, said lever being fulcrumed upon the platen frame, spurs fixed upon said shaft, a second spring-pressed roller-shaft, and levers extending from said second shaft to said spurs upon the first shaft to be actuated thereby, to move the second shaft away from the platen, a support being provided for the end of the first shaft remote from said fulcrum arm, to enable said end of the first shaft to oscillate to move the corresponding end of the second shaft away from the platen.

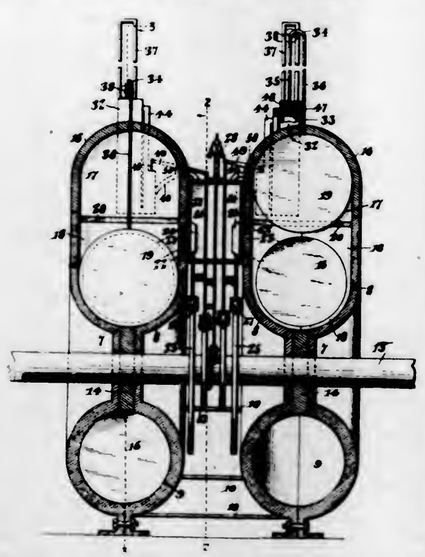
2. In a typewriting machine having a platen, a roll, and means to press the roll against the platen, the combination with a key for releasing said roll, of a latch called into action by the depression of said key for locking the roll away from the platen, said latch having a releasing device in proximity to said key and operable independently thereof.

3. In a typewriting machine having a platen, a roll and means to press the roll against the platen, the combination with a depressible key for releasing said roll, of a latch called into action by the depression of said key for locking the roll away from the platen, said latch having a releasing arm immediately beneath said key, said arm movable upward to release the latch.

4. In a typewriting machine having a platen, a roll and means to press the roll against the platen, the combination of a lever provided with a finger-piece and connected to said roll to release the same, a latch pivoted upon said lever, and a finger-piece for releasing said latch.

5. In a typewriting machine having a platen, a roll and means to press the roll against the platen, the combination of a lever provided with a finger-piece and connected to said roll to release the same, a latch pivoted upon said lever, and a latch-releasing finger-piece rigid with said latch, said finger-piece extending beneath said release key and constituting a weight to operate the latch at the depression of the finger key.

855,028. ROTARY ENGINE. JAMES C. WALKER, Waco, Tex. Filed Dec. 31, 1906. Serial No. 350,177.



Claim.—1. In a rotary engine, the combination with spaced cylinder members, of a shaft extending through the members and across the space between them, rotary pistons mounted on the shaft and operating in the cylinder members, a steam chest located between the cylinder members at one side of the shaft and having communication with said cylinder members, cam mechanism mounted on the shaft between the cylinder members and exteriorly of the steam chest, and valves located in the steam chest and controlling the communication with the cylinder members, said valves having stems projecting through the inner wall of the steam chest and actuated by the cam mechanism.

2. In a rotary engine, the combination with spaced cylinder members having inner spaced walls provided with ports, of a single steam chest located between the cylinder members and having side walls disposed adjacent to the inner walls of the cylinder member, said side walls also having ports that aline with the ports of the cylinder member walls, rotary pistons operating in the cylinder members, reciprocating valves located in the opposite portions of the steam chest and controlling the ports, and cams located exteriorly of the steam chest and connected to the valves for periodically operating the same.

3. In a rotary engine, the combination with spaced cylinder members, of a single steam chest located between them and having ports in its opposite sides that communicate with said cylinder members, rotary pistons operating in the cylinder members, reciprocatory valves located in the opposite sides of the steam chest and controlling the ports, and cams located between the cylinder members and associated with the valves for periodically operating the same.

4. In a rotary engine, the combination with spaced cylinder members, of a steam chest located between the cylinder members and communicating therewith, rotary pistons operating in the cylinder members, a shaft connecting the pistons and bridging the space between the cylinder members, valves located in the steam chest for controlling the communication thereof with the cylinder members, cams mounted on the shaft between the cylinder members and periodically operating the valves, cylinders associated with the cylinder members and having reciprocating pistons therein, reciprocatory abutments operating in the cylinder members and connected to the pistons, means for supplying motive fluid to and exhausting it from the cylinders to effect the operation of the abutments, valves controlling the supply and exhaust, and cams located on the shaft between the cylinder members and connected to said latter valves.

5. In a rotary engine, the combination with a cylinder member, of a rotary piston operating therein, an abutment movable within the cylinder member, another cylinder located exteriorly of the cylinder member, a reciprocatory piston operating in the latter cylinder, means for periodically supplying motive fluid to the cylinder on opposite sides of the reciprocatory piston to move the same, a piston rod connecting the piston and the abutment, and a reciprocatory guide for the piston rod.

6. In a rotary engine, the combination with a cylinder member, of a rotary piston operating therein, an abutment casing mounted on the cylinder member, a reciprocatory abutment movable in the casing and within the cylinder member, a guide-way associated with the abutment casing, a cylinder disposed adjacent to the abutment casing, a reciprocatory piston operating therein, a piston rod connected to the piston and to the abutment, a roller carried by said piston rod and operating in the guide-way, and means for supplying motive fluid to the cylinder to reciprocate the piston.

7. In a rotary engine, the combination with a cylinder member, of a shaft extending therethrough, a rotary piston located within the cylinder member and carried by the shaft, a movable abutment operating in the cylinder member and coacting with the piston, another cylinder, a reciprocatory piston mounted therein and connected to the abutment, a valve casing having motive fluid communication with the ends of the cylinder and having separate exhaust channels, valve mechanism located in the valve casing and controlling the communication and the exhaust channels, and means operated by the shaft for periodically moving the valve mechanism.

8. In a rotary engine, the combination with a cylinder member, of a shaft extending therethrough, a rotary piston located within the cylinder member and carried by the shaft, a movable abutment operating in the cylinder member and coacting with the piston, another cylinder, a reciprocatory piston mounted therein and connected to the abutment, a valve casing having motive fluid communication with the ends of the cylinder and having separate exhaust channels, valve mechanism located in the valve casing and controlling the communication and the exhaust channels, a cam secured to the shaft, and a rod operated by the cam and connected to the valve mechanism.

9. In a rotary engine, the combination with a cylinder member, of a rotatable piston operating therein, a movable abutment coöperating with the piston, another cylinder, a reciprocatory piston mounted therein and connected to the abutment, a valve casing including a wall having a plurality of supply and exhaust ports therethrough, reciprocatory valves located in opposite sides of the wall and respectively controlling the supply and exhaust ports, and means for reciprocating the valves.

10. In a rotary engine, the combination with a cylinder member, of a rotary piston operating therein, a movable abutment operating in the cylinder member and coacting with the piston, another cylinder, a reciprocatory piston mounted therein and having a connection with the abutment, a valve casing including a wall having supply and exhaust ports therethrough, a reciprocatory valve stem extending through the casing, valves connected to the stem and located on opposite sides of the wall, said valves respectively controlling the supply and exhaust ports, a shaft operated by the piston, a cam mounted on the shaft, an actuating rod coöperating with the cam, and a lever fulcrumed between its ends and connected to the rod and to the valve stem.

11. In a rotary engine, the combination with a cylinder member, of a rotatable piston operating therein, an abutment casing mounted on the cylinder member, an abutment slidable in the casing and movable into and out of the cylinder member, another cylinder located alongside the abutment casing, a piston operating in the latter cylinder and connected to the abutment, and means for supplying motive fluid to the latter cylinder to move the piston and thereby the abutment.

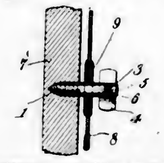
12. In a rotary engine, the combination with a cylinder member, of a rotary piston operating therein, an abutment casing mounted on the cylinder, a reciprocatory abutment slidably mounted in the casing and movable into the cylinder member, a cylinder located alongside the casing a reciprocatory piston operating in the cylinder, a substantially U-shaped piston rod connected to the piston and to the abutment, a guide-way extending above the cylinder, a roller carried by the piston rod and operating in the guide-way, a valve casing including a wall having supply and exhaust ports therethrough, a reciprocatory valve stem operating in the casing, valves carried by the stem and controlling the supply and exhaust ports, and means operated by the rotary piston for effecting the movement of the valve stems.

13. In a rotary engine, the combination with a cylinder member, of a rotatable piston operating therein, a movable abutment coöperating with the piston, another cylinder, a reciprocatory piston mounted on the latter cylinder and connected to the abutment, a valve casing including a wall having a plurality of supply and exhaust ports therethrough, a plurality of reciprocatory valves associated with the wall and respectively controlling the different supply and exhaust ports, and means operated by the piston for reciprocating the valves.

14. In a rotary engine, the combination with spaced cylinder members, of a single steam chest located between them and communicating with both, separate valves controlling said communication, means located between the cylinder members for alternately operating the valves, rotary pistons located in the cylinder members, movable abutments coöperating therewith, motive fluid operated means for moving the abutments, said means being connected to the steam chest, a governor mounted on the steam chest, and means for rotating said governor.

15. In a rotary engine, the combination with spaced cylinder members having enlarged portions and grooves formed in said enlarged portions, of abutment casings mounted on said enlarged portions and having interior chambers alined with the grooves, rotary pistons operating in the cylinder members, a shaft carrying said pistons, abutments operating in the grooves and casings, cylinders associated with said casings, reciprocatory pistons operating in the cylinders and connected to the abutments directly or otherwise for moving the same, a steam chest located between the cylinder members and having ports communicating therewith, valve mechanism operated from the shaft for controlling the ports, conduits connecting the steam chest and cylinders, valve mechanism controlling the supply of motive fluid to said cylinders, and means operated by the shaft for effecting the movements of the latter valve mechanisms.

855,029. FASTENER FOR VEHICLE-CURTAINS AND THE LIKE. JOHN M. WALSH, Henrico county, Va. Filed June 21, 1906. Serial No. 322,797. (Model.)



Claim.—1. A fastener comprising a forked stem, a pivot extending therethrough, a head mounted upon and adapted to describe a circle around the pivot and to freely oscillate thereon, said head having straight parallel edges and the width thereof being substantially equal to the width of the fork, said fork being disposed to bind upon the head at predetermined points during each rotation to retard the movement thereof.

2. A fastener comprising a forked stem, a head mounted to rotate therein and having a groove, and means within the fork for binding upon the head to hold it at a predetermined angle to the stem, said means normally projecting into the groove.

3. A fastener comprising a forked stem, a head pivotally mounted within the fork, said head having oppositely disposed grooves concentric with the pivot, and a lug upon the fork adapted to bind upon the head between the grooves to hold said head at a predetermined angle to the stem, said lug normally projecting into one of the grooves.

4. A fastener comprising a stem, a head pivotally mounted thereon, and having a groove therein and a lug upon the fork adapted to bind upon the head adjacent the groove, said lug being normally disposed within the groove.

5. A fastener comprising a stem, a head pivotally connected thereto, oppositely disposed grooves within the head and concentric with the pivot, and a lug upon the stem and normally disposed within one of the grooves, said lug adapted to bind upon the head at points between the grooves.

855,030. METAL SHEET-PILING. JULIUS R. WEMLINGER, Brooklyn, N. Y. Filed Nov. 25, 1905. Serial No. 289,035.



Claim.—1. In metal sheet piling, a unit comprising a web, sides at an angle thereto, the said web being thicker than the said sides, and locking flanges integral with the said web.

2. In metal sheet piling, a unit comprising a web, sides at an angle thereto, the said web being thicker than the said sides, locking flanges integral with said web, and enlargements at the edges of the said sides.

3. In metal sheet piling, the combination of units each having a web, sides at an angle thereto having re-inforced edges, the said web being thicker than the said sides, and

means integral with the said web for locking contiguous units together.

4. In metal sheet piling the combination of units each having a web, sides at an angle thereto having reinforced edges, the said web being thicker than the said sides, and locking flanges integral with the said web for securing contiguous units together.

5. In metal sheet piling, the combination of units having heavier and lighter portions, the latter being at an angle to the former, and being provided with enlarged edges, the units being so arranged that the lighter portions of contiguous units overlap each other, and means for locking contiguous units together.

6. In metal sheet piling the combination of units each comprising a heavy portion, lighter portions at the sides thereof and at an angle thereto, and means for securing the said units together at their edges.

7. In metal sheet piling the combination of units each comprising a heavy portion, lighter portions at the sides thereof and at an angle thereto, the said lighter portions being approximately half the thickness of the said heavy portion, and means for securing the said units together at their edges.

8. In metal sheet piling, the combination of units each comprising a heavy portion, lighter portions at the sides thereof, and at an angle thereto having locking edges, and means for securing the said units together.

9. In metal sheet piling the combination of units each comprising a heavy portion, lighter portions at the sides thereof and at an angle thereto having marginal enlargements, and locking flanges integral with the said heavy portion for securing the said units together.

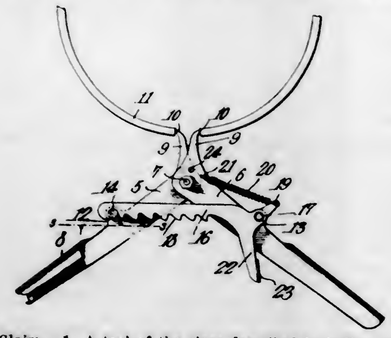
10. In metal sheet piling, the combination of units each comprising a heavy portion, lighter portions at the sides thereof and at an angle thereto, said lighter portions having bulb-shaped edges, and locking means integral with the said heavy portion for securing the said units together.

11. In metal sheet piling, the combination of units each comprising a web and diverging sides, the said web being thicker than the said sides, and locking flanges integral with the said web for securing the said units together.

12. In metal sheet piling, the combination of units each comprising a web and diverging sides, the said sides having enlarged edges, and correspondingly shaped locking flanges integral with the said web for securing the said units together.

13. In metal sheet piling, the combination of units each comprising a web and diverging sides, the said web being approximately double the thickness of the said sides, the said sides having bulb-shaped edges, correspondingly shaped locking flanges integral with the said web for securing the said units together.

855,031. PISTON-RING EXPANDER. OSCAR WINTER, Elyria, Ohio. Filed Jan. 31, 1907. Serial No. 355,111.

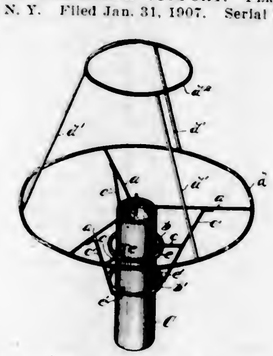


Claim.—1. A tool of the class described including pivotally united jaws one of which is provided with a locking pin, a locking member pivotally mounted on the opposite jaw and provided with spaced teeth adapted to engage the locking pin for holding the jaws in adjusted position, a spring for yieldably supporting the locking member in engagement with the pin, and a finger piece carried by the locking member for moving the same to released position.

2. A tool of the class described including pivotally united jaws each formed of a flat piece of metal having one end thereof extended laterally to form a work-engaging arm, one longitudinal edge of each jaw being curved laterally to form a curved bearing surface constituting an operating handle, a pin carried by one of the jaws, a locking member pivotally mounted on the opposite jaw and provided with spaced teeth adapted to engage the pin, a finger piece carried by the locking member, and a spring interposed between the locking member and the adjacent jaw for yieldably supporting the teeth in engagement with the pin.

3. A tool of the class described including pivotally united jaws having laterally extending work-engaging arms the terminals of which are pointed, said jaws having their longitudinal edges curved laterally in opposite directions to form operating handles, lugs extending laterally from one longitudinal edge of each jaw, a pin secured to one of the lugs and provided with a circumferential groove, a locking member pivotally mounted on the opposite lug and provided with spaced teeth adapted to engage the groove in the locking pin, said locking member being provided with a finger piece and having an extension projecting laterally at the pivot point of the locking member, and a spring one end of which is secured to the extension of the locking member and the opposite end thereof secured to the adjacent jaw.

855,032. CANDLE-SHADE SUPPORT. PERCY WISNER, Goshen, N. Y. Filed Jan. 31, 1907. Serial No. 354,963.

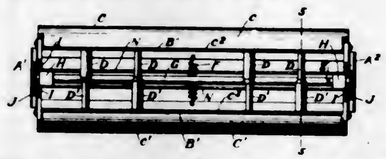


Claim.—1. A candle shade support comprising a group of three steadying fingers extending radially from the candle divergently from each other and having their inner extremities free and disposed to bear endwise against the sides of the candle and their outer extremities united together by a rigid connector, a supporting member shaped and disposed to bear upon the top of the candle, and means for rigidly connecting together said fingers and said supporting member.

2. A candle shade support comprising a group of three supporting rods extending radially from the candle, having their inner ends free and disposed to bear on the top of the candle, and, disposed below said rods, a group of three steadying fingers extending radially from the candle divergently from each other and having their inner extremities free and disposed to bear, endwise, against the sides of the candle and their outer extremities united together by a rigid connector, and means for rigidly connecting together said rods and said fingers.

3. A candle shade support comprising a group of three supporting rods extending radially from the candle, having their inner extremities free and disposed to bear on the top of the candle and their outer extremities united together by a rigid connector, an inferiorly disposed member comprising a group of three steadying fingers extending radially from the candle divergently from each other and having their inner extremities free and disposed to bear, endwise, against the sides of the candle and their outer extremities united together by a rigid connector, corresponding units of said rods and said fingers being in alinement substantially as and for the purposes described.

855,033. LOOSE-LEAF BINDER. ANDREW WOLLENSAK, Rochester, N. Y., assignor to Wollensak Optical Company, Rochester, N. Y., a Corporation of New York. Filed Dec. 18, 1905. Serial No. 292,207.



Claim.—1. In a temporary binder, the combination with two parallel, transversely-movable, spring actuated, clamping members, of a lever pivotally supported between said clamping members; link connections between said lever and said clamping members whereby the latter are opened; and means coöperating with the operating member for holding said clamping members open against the action of the spring.

2. In a temporary binder, the combination with two parallel, transversely movable, clamping members, of disks rotatively supported between said members at right angles thereto; links connecting said disks with the ends of said members, respectively; and means for rotating said disks in unison.

3. In a temporary binder, the combination with two parallel, transversely-movable, spring actuated, clamping members, of a suitable support for said members; a disk rotatively supported at right angles to said clamping members; links pivotally attached to said disk and said clamping members, respectively; means for rotating said disk; and a stop adapted to engage said disk after the links have passed the rotary center of said disk.

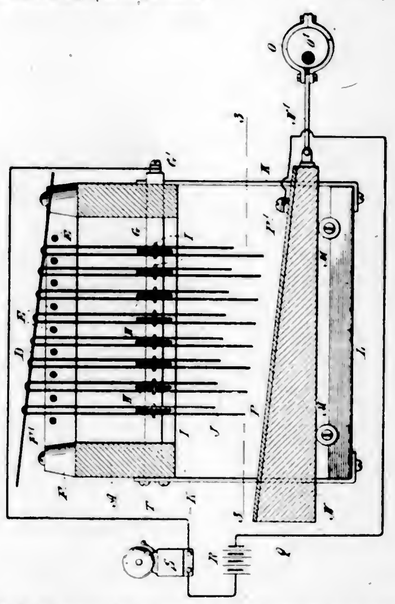
4. In a temporary binder, the combination with the two parallel, transversely-movable clamping members B, B', of the operating rod G, rotatively supported between said members; the disks J, J, carried by said rod; and the links K, K', K, K', connecting said disks with said clamping members, respectively, at their ends; substantially as shown and described.

5. In a temporary binder, the combination with the two parallel, transversely-movable clamping members B, B', of the operating rod G, rotatively supported between said members; the disks J, J, carried by said rod, and having the shoulders j', j'; links K, K', and K, K' connecting said disks with said clamping members, respectively, at their ends; and stops adapted to engage said shoulders on said disks after said links have passed the rotary center of said disks, respectively; substantially as shown and described.

855,034. WARP STOP-MOTION FOR LOOMS. CARL ADAMS, Easton, Pa. Filed Jan. 25, 1906. Serial No. 297,743.

Claim.—1. In an alarm for looms, a contact member arranged to straddle a warp thread, a strip extending between said contact member and connected with one terminal of an electrical alarm, and a reciprocating platform connected with the other terminal of said alarm, with which platform said contact member is adapted to connect when a warp thread breaks and by which it is adapted to be brought into engagement with said strip to complete the electrical circuit and sound the alarm.

2. In an alarm for looms, a contact member arranged to be normally supported by a warp thread, and a drop when the thread breaks, in combination with a member in a substantially horizontal plane arranged to reciprocate beneath said contact member, and an alarm circuit arranged to be closed by the engagement of said contact member with the reciprocating member.



3. In an alarm for looms, a contact member arranged to be normally supported by a warp thread, and to drop when the thread breaks, in combination with a member arranged to reciprocate beneath said contact member, and having an inclined upper surface, and an alarm circuit arranged to be closed by the engagement of said contact member with the reciprocating member.

4. In an alarm for looms, a contact member, substantially U-shaped, arranged to straddle a warp thread and having one end or tine longer than the other, in combination with a member arranged to reciprocate beneath said contact member in a substantially horizontal plane and an alarm circuit arranged to be closed by the engagement of the longer tine of said contact member with the reciprocating member.

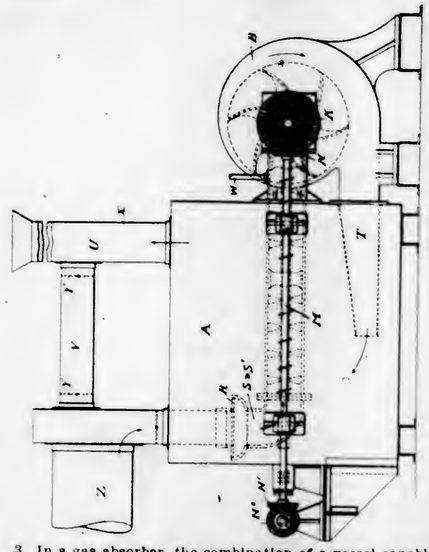
5. In an alarm for looms, a contact member substantially U-shaped, arranged to straddle a warp thread and having one end or tine longer than the other, in combination with a member arranged to reciprocate beneath said contact member, and having an inclined upper surface which is highef on that side on which the longer tine is arranged, and an alarm circuit arranged to be closed by the engagement of said contact member with the reciprocating member.

855,035. GAS-ABSORBER. FREDERICK W. ALLAN, Buffalo, N. Y. Filed Mar. 2, 1907. Serial No. 360,123.

Claim.—1. In a gas absorber, the combination of a vessel capable of retaining liquids, a centrifugal pump connected with said vessel, one or more suction pipes in said vessel connected with said pump, revolving-shafts in said pipe or pipes, blades set on said shafts and means for operating said pump and said shafts, substantially as described.

2. In a gas absorber, the combination of a vessel capable of retaining liquids, a centrifugal pump connected with said vessel, one or more suction pipes in said vessel connected with said pump, revolving shafts in said pipe or pipes, blades set on said shafts, means for operating said pump, means for operating said shafts, means for permit-

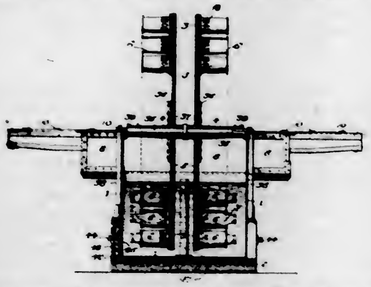
ting the entrance of gases to said vessel, means for permitting water to enter said suction pipes and means for discharging said gases and water, substantially as described.



3. In a gas absorber, the combination of a vessel capable of retaining liquids, a centrifugal pump connected with said vessel, one or more suction pipes in said vessel connected with said pump, revolving shafts in said pipe or pipes, collar bearings on said shafts, blades set on said shafts and means for operating said pump and said shafts, substantially as described.

4. In a gas absorber, the combination of a vessel capable of retaining liquids, a centrifugal pump connected with said vessel, one or more suction pipes in said vessel connected with said pump, revolving shafts in said pipe or pipes, blades set on said shafts, means for operating said pump, means for operating said shafts, means for permitting the entrance of gases to said vessel, means for permitting water to enter said suction pipes, means for discharging said gases, and means for freeing gases from said vessel when engine is not in motion, substantially as described.

855,036. BOTTLE-WASHING MACHINE. JOHN R. AMACKER, Oak Park, Ill., assignor to The Creamery Package Mfg. Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 8, 1904. Serial No. 192,498.



Claim.—1. In a bottle-washing machine, a tank, a wheel mounted for rotation therein, a plurality of bottle-pockets provided upon the side of said wheel, each consisting of a hollow, truncated cone, the axis of which is normal to the plane of the wheel and suitable perforations provided in said pockets, to cause a backward flow of the fluid therein, substantially as and for the purpose specified.

2. In a bottle-washing machine, a soaking-tank, in combination with a conveyer-wheel having a horizontal axis and dipping into said tank, and a plurality of cone-like bottle-holders having their axes perpendicular to the side of said wheel, and provided with openings in their small ends to receive bottles, substantially as described.

3. In a bottle washing machine, a disk-like rotary member, in combination with a hollow, truncated cone-shaped pocket projecting from the side of said member, said pocket having an opening at its small end to receive a bottle, and provided with a perforated but otherwise closed base, substantially as described.

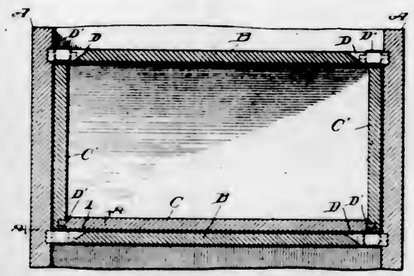
4. In a bottle washing machine, a bottle-holder, shaped as a truncated, hollow cone, closed at its large end and open at its small end, to receive the base of a bottle, the large end of said pocket containing perforations and having a cushion, and a pocket carrier for causing the immersion and emersion of said holder, substantially as described.

5. In a bottle washing machine, the combination, with the conveyer wheel, of a plurality of cone-shaped bottle pockets open at their small ends, cushions provided in the large ends or bottoms of said pockets, and the large ends of said pockets having drain holes, substantially as described.

6. In a bottle-washing machine, a tank, a wheel mounted for rotation therein, a plurality of bottle-pockets, each formed as a hollow, truncated cone having a base flange secured to the side of said wheel and carrying a bottle entirely upon one side of the wheel, substantially as described.

7. In a bottle washing and soaking machine, a tank, in combination with a conveyer wheel mounted therein, cone-like bottle holders mounted with their axes substantially perpendicular to the face of said wheel and being so constructed that a bottle placed therein will remain at an angle to the horizontal at all positions of the conveyer wheel, and said holders having drain holes at their inner or large ends, substantially as described.

855,037. SLIDING-DRAWER CONSTRUCTION FOR FURNITURE. THEODORE J. AMBERG, Chicago, Ill., assignor to Amberg File & Index Co., Chicago, Ill., a Corporation of Illinois. Filed Apr. 2, 1906. Serial No. 309,368.



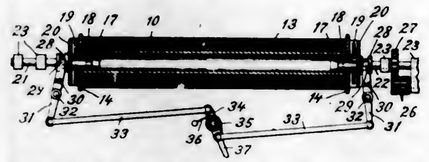
Claim.—1. The combination with a vertical member and a horizontal shelf of a cabinet structure and the like supported on said vertical member, of a roller bearing device comprising a block removably supported at one end on said vertical member and at its other end on said shelf, and a bearing roller carried by said block, said block being provided at its end remote from the vertical member with a downwardly facing beveled surface contacting with an upwardly facing beveled surface of said shelf.

2. The combination with the vertical members and horizontal shelf of a cabinet structure and the like, arranged to constitute a compartment for a drawer, and a sliding drawer therein, said vertical members being grooved on their inner faces to receive the ends of said horizontal shelf, of roller bearings comprising bearing blocks seated in recesses in the ends of said shelf, the outer ends of said blocks being supported in the grooves in the vertical members, and the inner ends thereof supported on said shelf, and rollers mounted in said blocks.

3. The combination with the vertical member and a horizontal shelf of a cabinet structure and the like, the former provided with a horizontal groove to receive the end of the shelf, said shelf being provided at its end with a recess, of a roller bearing device comprising a block seated in said recess and supported at its inner end on the shelf and at its outer end in said groove, and a bearing roller mounted in said block.

4. The combination with the vertical member and a horizontal shelf of a cabinet structure and the like, the former provided with a horizontal groove to receive the end of the shelf, said shelf being provided at its end with a recess, of a roller bearing device, comprising a block seated in said recess and supported at its inner end on the shelf and at its outer end in said groove, a bearing roller mounted in an opening in said block, and a pin seated in an opening extending inwardly through the end of said block, on which said roller is mounted.

855,038. MUSIC-ROLL FOR MECHANICAL MUSICAL INSTRUMENTS. HENRY P. BALL, New York, N. Y., assignor of one-half to Samuel Insull, Chicago, Ill. Filed Feb. 9, 1903. Serial No. 142,507.



Claim.—1. A music roll comprising in its construction, a supporting body having the same coefficient of expansion as the music strip wound thereon, nipples in the ends of said supporting body, and guiding flanges longitudinally movable on said nipples.

2. A music roll comprising in its construction, a supporting body variable in length under atmospheric changes, nipples in the end of said supporting body, having ends at right angles to the body of the nipple, and guiding flanges carried by said nipples and longitudinally movable thereon.

3. A music roll comprising a tube having the same expansion and contraction as the music strip wound thereon, separate and freely movable guiding flanges pressed against each end of the tube, and means whereby the tube and its flanges are centered in relation to the tracker-board of the instrument with which they are used.

4. In combination with a music roll comprising in its construction a supporting body variable in length under atmospheric changes and provided with longitudinally movable guiding flanges, also supports on which said flanges move having turned up ends, of longitudinally movable disks slotted on their inner faces to receive the turned up ends of the supports.

5. The combination with a music roll having a supporting body variable in length under atmospheric changes, of means for centering said roll relative to the tracker-board, said means consisting of a lever pivoted centrally of the tracker-board upon the musical instrument, an elastic device exerting a constant tension on said lever in one direction, and means interposed between the lever and the ends of the music roll, whereby the elastic tension exerted upon the lever will be transmitted to and equally exerted upon opposite ends of the music roll.

6. In combination with a music roll provided with a supporting body and longitudinally movable flanges, of a pair of longitudinally movable supporting shafts, disks secured to said shafts, and means for exerting an inward elastic tension through said disks upon said guiding flanges.

7. The combination with a music roll, of longitudinally movable supports therefor, and means external to the roll for producing equal longitudinal travel of said supports.

8. In combination with a music roll, of means external to the roll for centering the roll in relation to the tracker-board in accordance with the expansion and contraction of such roll.

9. In combination with a music roll, of bearings therefor, and means for moving the roll upon its bearings to maintain a central relation with the tracker-board.

10. The combination of a tubular body, freely movable guiding flanges located in relation to said body, supporting bearings for said body and flanges, and means pivoted centrally of the tracker-board of the machine upon which the roll is used, adapted to exert constant inward pressure upon the guiding flanges and to center the roll relative to the tracker-board.

11. A music roll comprising in its construction, a tubular body, nipples in the ends of said body, guiding flanges longitudinally movable on said nipples.

12. In a mechanical musical instrument and in combination with the means for driving the music roll, a music roll comprising a tubular body, structurally independent guiding flanges, nipples situated in the ends of said body and serving as a support for said guiding flanges, and adapted to co-act with said driving means.

13. The combination with a music roll and the longitudinally movable bearings upon which it is supported, of collars on said bearings, levers co-acting with said collars, a pivoted lever, means for exerting a constant tension in one direction upon said last named lever, and links interposed between said last named lever and said first named lever.

14. The combination with a music roll, of guiding flanges at the ends of the roll but not connected to said roll, journal pins carrying said guiding flanges, and means for shifting said journal pins in their bearings to maintain a point on the roll at the center of the tracker-board.

15. The combination with a music roll, of means not connected to the roll for supporting the roll and centering it in relation to the tracker-board, said means comprising supporting flanges mounted on spindles located in bearings in which they are longitudinally movable, and means for effecting longitudinal movement of said spindles in their bearings.

16. The combination with a music roll, of means for supporting said music roll, centering it in relation to the tracker-board and rotating it, said means consisting of supporting flanges not connected to said roll, spindles situated in bearings in which they are longitudinally movable connected to said flanges, a narrow-faced gear mounted on one of said spindles, a broad-faced gear with which said narrow-faced gear co-acts, and means for effecting a coincident longitudinal movement of the spindles in their bearings.

17. The combination with a music roll, of supporting and guiding flanges not connected to the roll, means for effecting a constant inward tension upon said flanges, spindles connected to said flanges, bearings in which said spindles are longitudinally movable, means for centering said roll in relation to the tracker-board, and means for rotating said roll irrespective of its position relative to its supporting bearings.

18. A music roll comprising a tube having the same expansion and contraction as the material to be wound thereon, and means whereby the tube is centered relative to the tracker-board of the musical instrument in which it is used, and a flange pressed against each end of the tube.

19. A music roll, comprising a cylindrical body variable in length under atmospheric conditions, a perforated music strip wound upon said body, independent guiding flanges situated at the opposite ends of said body and sides of said music roll, independent means located in the ends of the supporting body for supporting and permitting longitudinal movement of said flanges relative to said

supporting body, together with means for supporting and rotating said parts in a mechanical musical instrument.

20. In combination, a music roll comprising a supporting body and a perforated music strip formed of material which will coincidently expand and contract under atmospheric changes, and mechanism for supporting and centering said music roll, comprising supporting and guiding flanges, spindles upon which said flanges are mounted, and means for effecting longitudinal movement of said spindles and flanges to maintain a point on the music roll at the center of the tracker-board.

21. The combination with a music roll, of longitudinally movable bearing supports therefor, and means external to the roll for producing equal longitudinal travel of said supports.

22. A music roll comprising in its construction, a tubular body, guiding flanges at each end thereof, and nipples securing the flanges to the body.

23. A music roll comprising a tubular supporting body, a music strip thereon, separable flanges, tubular bodies for holding said flanges in relation with the supporting body, and means for imparting rotary motion to the supporting body, music strip and flanges.

24. A music roll comprising a tubular supporting body, a music strip thereon, separable flanges, supporting means for said flanges held in relation with said body by friction, and means for driving said parts when placed in a mechanical musical instrument.

25. A music roll comprising a tubular body, separable flanges at each end of said body, separable nipples at each end of said body, said nipples adapted to co-act with the driving means of a mechanical musical instrument to impart rotary movement to the roll.

26. In a mechanical musical instrument, a music roll comprising a tubular body, a music sheet wound thereon, a nipple at each end, disks independent of the tubular body, and means for transmitting rotary motion from the disks to the body through the nipple.

27. In a mechanical musical instrument, a music roll comprising a tubular body, a music sheet wound thereon, a flange at each end of the body, means for securing the flanges to the body, a pair of independent disks, and means for transmitting motion from the independent disks to the music sheet.

28. In a mechanical musical instrument, a paper tube, a flange at each end thereof, a nipple holding each flange in position, a disk at each end of the tube engaging with but detachable from each nipple, said disks having free longitudinal movement on but no rotary movement relative to said nipples.

29. A spool for a music roll comprising a tubular body, terminal flanges therefor, and means structurally independent of the flanges for reinforcing the tubular body and securing the flanges in position.

30. A spool for a music roll comprising a tubular body, flanged members fitted in the ends of the tubular body, and flanges secured in position by said flanged members but not attached thereto.

31. In a mechanical musical instrument, the combination with a music sheet take-up roller, comprising opposed flange members adjustable toward and away from each other; of means operatively connecting said flange members, arranged to insure their reciprocatory movement in definite relation to each other.

32. A spool for a music roll comprising a tubular body, flanges at each end of the body, and tubular members securing the flanges in position but not attached thereto.

33. A spool for a music roll comprising a tubular body, flanges at each end of the body, and tubular flanged members securing the flanges in position but not attached thereto.

34. A spool for a music roll comprising a tubular body, flanges at each end of the body, and hollow flanged members securing the flanges in position but not attached thereto.

35. A spool for a music roll comprising a tubular body, a flange at each end thereof, re-inforcing means for the tubular body securing the flanges in position, and separable flanged members serving as supports for the spool.

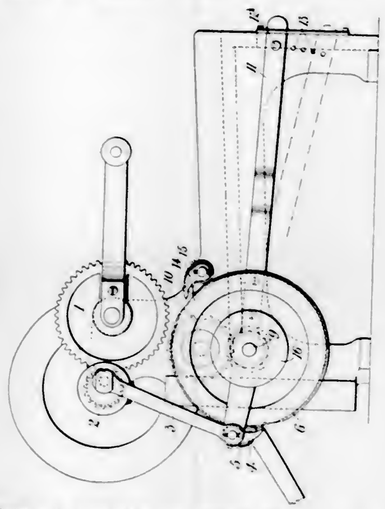
36. A spool for a music roll comprising a tubular body, a flange secured at each end thereof, and separable flanged members serving as supports for the spool.

37. A spool for a music roll comprising a tubular body, a flange secured at each end thereof, and separable flanged members serving as supports and driving means for the spool.

38. A spool for a music roll comprising a tubular body, a flange secured at each end thereof, and separable members provided with clutching flanges serving as supports for the spool.

39. A spool for a music roll comprising a tubular body, flanges at the ends thereof, and spring pressed supports for the roll.

855,039. INTERMITTENT-FEED APPARATUS. BERNHARD BARON, London, England. Filed Nov. 12, 1906. Serial No. 343,143.

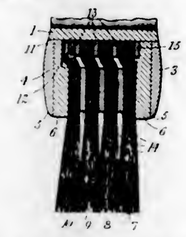


Claim.—1. Apparatus for varying the amount of or stopping intermittent feed consisting of a ratchet wheel, a ratchet finger normally adapted to engage therewith, an operating arm carrying said finger, a second finger working in unison with the ratchet finger, an adjustable cam loosely mounted on the shaft carrying the ratchet-wheel and in the same plane as the second finger, a lever attached to said cam, and means for holding said lever in the desired position so as to raise or lower the second finger and hold the ratchet finger out of engagement with the ratchet wheel or permit it to engage therewith and move same a predetermined distance irrespective of the length of stroke of the operating arm substantially as and for the purposes set forth.

2. Apparatus for varying the amount of or stopping intermittent feed consisting of a ratchet wheel, a ratchet finger normally adapted to engage therewith, an operating arm carrying said finger, a second finger working in unison with the ratchet finger, an adjustable cam in the same plane as the second finger and means for adjusting and holding said cam so as to raise or lower the second finger and hold the ratchet finger out of engagement with the ratchet wheel or permit it to engage therewith and move same a predetermined distance irrespective of the length of stroke of the operating arm, a pawl normally adapted to engage with the ratchet wheel, a second finger working in unison with the pawl, a second adjustable cam in the same plane as the pawl finger adapted to be worked in

unison with the first cam and to hold the pawl out of engagement or permit it to engage at a predetermined point with the ratchet wheel substantially as and for the purposes described.

855,040. BRUSH. PETER B. BLEIMEYER, New York, N. Y., assignor to Zucker & Levett & Loeb Company, New York, N. Y., a Corporation of New York. Filed Oct. 15, 1906. Serial No. 338,901.



Claim.—1. In a brush of the kind described, a cylindrical body for holding the fiber, comprising side clamping members, a plurality of separate layers of fiber between said clamping members and a plurality of separate rings of different sizes disposed between adjacent layers of fiber substantially as described.

2. In a brush of the kind described, a cylindrical body for holding the fibers, comprising side clamping members, a plurality of layers of fibers between said clamping members, each layer being separated from the adjacent layers by a plurality of rings, the rings between adjacent layers being staggered with regard to each other, substantially as described.

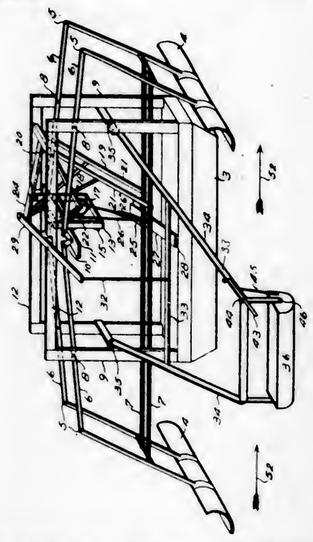
3. In a brush of the kind described, a cylindrical body for holding the fibers, comprising side clamping members, a plurality of layers of fiber between said clamping members, each layer being separated from the adjacent layers by a plurality of rings, the rings being staggered with regard to each other, and the inner ends of the fibers being forced out of line by the side clamping members and the rings, substantially as described.

4. In a brush of the kind described, a side clamping member, 3, and a side clamping member, 4, containing a recess, 12, a plurality of layers of fiber secured between said side clamping members, concentric rings, 13 and 14, disposed between said layers of fiber, the inner ends of the fibers being forced out of line in the direction of the recess, 12, substantially as described.

855,041. WATER-CURRENT MOTOR. JAMES A. CAMERON, Butte, Mont., assignor to The Cameron Manufacturing and Development Company, a Corporation of Maine. Filed Oct. 30, 1905. Serial No. 285,217.

Claim.—1. In a current motor, the combination of a supporting frame mounted above a stream of water; a horizontally disposed beam mounted to oscillate on said frame; a depending arm pivotally connected to one end of said beam and having thereon a paddle adapted to dip into the stream and cause said arm to be swung in one direction by the current; a spring connected to the paddle arm and to the opposite end of said beam and adapted to swing the beam and raise the paddle out of the water when it arrives at a certain downstream position; and means for preventing the tilting of the beam until the paddle arrives at said downstream position.

2. In a current motor, the combination of a supporting frame mounted above a stream of water; a horizontally disposed beam mounted to oscillate on said frame; a depending arm pivotally connected to one end of said beam and having thereon a paddle adapted to dip into the stream and be swung in one direction by the current; a spring connected to the paddle arm and to the opposite end of said beam and adapted to swing the beam and raise the paddle out of the water after the completion of its downstream stroke; dogs movably mounted on the support and adapted to hold said beam at the limits of its oscillation; and means for automatically releasing said dogs to permit an oscillation of the beam at the completion of each stroke of the paddles.



3. In a current motor, the combination of a supporting frame mounted above a stream of water; a horizontally disposed beam mounted to oscillate on said frame; a depending arm pivotally connected to one end of said beam and having thereon a paddle adapted to dip into the stream and be swung in one direction by the current; a spring connected to the paddle arm and to the opposite end of said beam and adapted to swing the beam and raise the paddle out of the water after the completion of its stroke; dogs movably mounted on the support and adapted to hold said beam at the limit of each oscillation thereof; said dogs being connected to said paddle arm and adapted to release said beam at the completion of each backward and forward stroke of the paddle.

4. In a current motor, the combination of a supporting frame mounted above a stream of water; a horizontally disposed beam mounted to oscillate on said frame; a depending arm pivotally connected to one end of said beam and having thereon a paddle adapted to dip into the stream and be swung in one direction by the current; means for automatically oscillating said beam; dogs movably mounted on the support and adapted to hold said beam at the limit of each oscillation thereof; said dogs being connected to said paddle arm and adapted to release said beam at the completion of each backward and forward stroke of the paddle.

5. In a current motor, the combination of a supporting frame mounted above a stream of water; a horizontally disposed beam mounted to oscillate on said frame; a depending arm pivotally connected to one end of said beam and having thereon a paddle adapted to dip into the stream and be swung in one direction by the current; a spring connected to the paddle arm and to the opposite end of said beam and adapted to swing the beam and raise the paddle out of the water when it arrives at a certain downstream position; means for preventing the tilting of the beam until the paddle arrives at said downstream position; a bucket vertically movable on the frame and adapted to lift water from the stream, and means connecting said bucket and paddle arm, said means being adapted to lift the bucket through the movement of the

paddle by the current and to swing the paddle to its initial position through the weight of the bucket when said paddle is lifted from the water.

6. In a current motor, the combination of a frame mounted above a stream, a pair of horizontally disposed beams extending longitudinally of the stream and pivotally mounted on opposite ends of said frame, a member vertically movable in said frame and connected to the adjacent ends of said beams; depending paddles pivotally hung on the outer ends of said beams and adapted to swing longitudinally of the stream, a link connecting said paddles, mechanism operated by the paddles for moving said member to oscillate said beams for raising the paddles, movable dogs for securing said member in an upper and lower position for controlling the elevation of the paddles, a spring comprised by said mechanism and connected to said member and to said paddles and adapted to draw said member downwardly when the paddles have reached the limit of their down stream stroke, means for causing the paddles to be returned to their initial position when lifted from the water, and means for automatically releasing said dogs to permit the beams to oscillate at the completion of each stroke of the paddles.

7. In a current motor, the combination of a supporting frame mounted above a stream of water, a horizontally disposed balance beam pivotally mounted on a horizontal axis in said frame, a depending arm pivotally connected to one end of said beam and having thereon a paddle adapted to dip into the stream and to be swung in one direction by the current, said beam being adapted to oscillate to move said paddle into and out of the stream, movable dogs for securing said beam at the limits of its oscillation, being connected with said paddle and arranged to release said beam when the paddle is in either limit of its movement, means normally urging the paddle toward its upstream position, and a spring connected to the paddle and to the opposite end of said beam and adapted to swing the beam and raise the paddle out of the water at the completion of its stroke.

8. In a current motor, the combination of a supporting frame mounted above a stream of water, a horizontally disposed balance beam pivotally mounted on a horizontal axis in said frame, a depending arm pivotally connected to one end of said beam and having thereon a paddle adapted to dip into the stream and to be swung in one direction by the current, said beam being adapted to oscillate to move said paddle into and out of the stream and being unequally balanced and adapted to normally urge the paddles to a submerged position, movable dogs for securing said beam at the limits of its oscillation, being connected with said paddle and arranged to release said beam when the paddle is in either limit of its movement, means normally urging the paddle toward its upstream position, and a spring connected to the paddle and to the opposite end of said beam and adapted to swing the beam and raise the paddle out of the water at the completion of its stroke.

9. The combination of a frame mounted above a stream of water, a horizontally-disposed arm, pivotally mounted on said frame and adapted to oscillate in a vertical direction between certain limits, mechanism operated by current of the stream for oscillating said arm a bucket mounted on said arm and adapted to normally assume an upright position, mechanism for tipping said bucket when the same is in a raised position, and means for adjusting said tipping mechanism to cause said bucket to tip at different elevations.

10. The combination of a frame mounted above a stream of water, a horizontally-disposed arm pivotally mounted in said frame and adapted to oscillate vertically thereon, mechanism operated by current of the stream for oscillating said arm a bucket pivotally mounted at the free end of said arm and adapted to normally assume an upright position thereon, a second arm pivotally mounted on said frame in axial alinement with the first arm, and means connected with said second arm and adapted to tip the bucket for discharging its contents when said first arm approaches the second arm, substantially as described.

11. The combination of a frame mounted above a stream of water, a horizontally-disposed arm pivotally mounted on a horizontal axis in said frame and adapted to oscillate vertically thereon, mechanism operated by current of the stream for oscillating said arm a bucket pivotally mounted on said arm and adapted to normally assume an upright position thereon, a support located above said arm and having thereon means adapted to co-act with means on said arm for tipping said bucket when said arm approaches said support, and means adapted to tip the bucket when said arm is lowered a certain distance below said support.

12. The combination of a frame mounted above a stream of water, a horizontally-disposed arm pivotally mounted on a horizontal axis in said frame and adapted to oscillate vertically thereon, mechanism operated by current of the stream for oscillating said arm a bucket pivotally mounted on said arm and adapted to normally assume an upright position thereon, a second arm pivoted on the frame in axial alinement with said first arm, means for adjusting said second arm angularly on said axis, means mounted on said second arm and adapted to tip said bucket when said first arm approaches the second arm, and tripping mechanism connecting said bucket and said second arm and adapted to tip the bucket when the first arm has been lowered a certain distance below said second arm and to release said bucket to cause the same to assume an upright position when said first arm reaches a certain further distance below the second arm.

13. The combination of a frame mounted above a stream of water, a horizontally-disposed arm pivotally mounted on a horizontal axis in said frame and adapted to oscillate vertically thereon, mechanism operated by current of the stream for oscillating said arm a bucket pivotally mounted on said frame and adapted to normally assume an upright position thereon, a second arm pivoted on the frame in axial alinement with said first arm, means for adjusting said second arm angularly on said axis, a flume having one end suspended from said second arm and being adjustable vertically therewith, and means on said second arm adapted to tip said bucket and cause the same to discharge its contents into said flume when said bucket has been lifted to a certain position above the flume.

14. The combination of a frame mounted above a stream of water, a horizontally-disposed arm pivotally mounted in said frame on a horizontally-disposed axis and adapted to oscillate vertically thereon, mechanism operated by current of the stream for oscillating said arm a bucket pivotally mounted on said arm and adapted to assume a normally upright position, a lever fulcrumed upon said arm above said bucket, a link connecting said lever with said bucket, a vertically adjustable support above said arm and having thereon a shoulder adapted to engage said lever for tilting the bucket when said first arm approaches said support, a cord or the like connecting said lever with said support and adapted to tip the bucket when said arm has been lowered a certain distance below said support, and means for suddenly releasing the tension on said cord to permit said bucket to regain its upright position while said arm is in its lowest position.

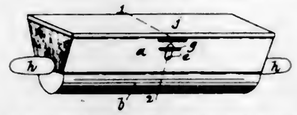
15. The combination of a frame mounted above a stream of water, a horizontally-disposed arm pivotally mounted in said frame on a horizontally-disposed axis and adapted to oscillate vertically thereon, mechanism operated by current of the stream for oscillating said arm a bucket pivotally mounted on said arm and adapted to normally assume an upright position, a support above said arm, a member mounted on said support and having a limited vertical movement thereon, said member being adapted to be lifted by the raising of said arm, a catch for holding said member in its lifted position, and a cord or the like connected between said bucket and member and adapted to tip the bucket when in a lowered position, said catch being adapted to yield for releasing said member through a further downward movement of the bucket and thereby permit the bucket to return to its normal upright position, substantially as described.

16. In a current motor, the combination of a frame mounted above a stream of water and a horizontally-disposed arm pivotally mounted in said frame on a horizontally-disposed axis and adapted to oscillate vertically thereon, a bucket pivotally mounted on said arm and adapted to normally assume an upright position, mechanism operated by the current of the stream and adapted to oscillate said arm for alternately dipping the bucket into the stream and lifting it a certain distance above the surface of the stream, mechanism for tipping the bucket to discharge its contents when in a lifted position and mechanism for tipping the bucket while the same is being lowered into the stream, said mechanism being adapted to automatically release the bucket to permit its return to its normal upright position, before being again lifted from the stream, substantially as described.

17. In a current motor, the combination of a frame mounted above a stream, a pair of horizontally-disposed beams extending longitudinally of the stream and pivotally mounted at opposite ends of the frame, a member vertically movable in said frame and connected to the adjacent ends of said beams, depending paddles pivotally hung on the outer ends of said beams and adapted to swing longitudinally of said stream, a link connecting said paddles, mechanism operated by the paddles for moving said member to oscillate said beams for raising the paddles from the stream at certain downstream positions, movable dogs for securing said member in its upper and lower positions for controlling the elevation of the paddles, mechanism for returning the paddles to certain upstream positions after the same have been lifted from the stream and means controlled by the paddles for moving said dogs to release said member and permit said beams to oscillate when said paddles arrive at certain upstream and downstream positions.

18. In a current motor, the combination of a supporting frame mounted above a stream of water, a horizontally disposed beam mounted to oscillate on said frame, a depending arm pivotally connected to one end of said beam and having thereon a paddle adapted to dip into the stream and cause said arm to be swung in one direction by the current, mechanism acting between the paddle arm and said beam and adapted to swing the beam and raise the paddle out of the water when it arrives at a certain downstream position, a part arranged to be lifted during the downstream stroke of the paddle and adapted through its weight to return said paddle to a certain upstream position when the paddle is lifted from the water, a detent for preventing the tilting of said beam while said paddle is being swung between said upstream and downstream positions, and means operated by the paddle for withdrawing said detent when the paddle reaches said certain downstream position.

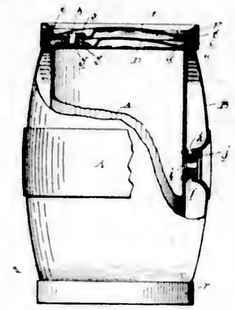
855,042. ROLLING-PIN. ALFRED CATTLIN, Akaroa, New Zealand. Filed Dec. 29, 1906. Serial No. 349,956.



Claim.—1. In rolling pins, the combination with the pin of a hopper secured upon and extending longitudinally along it and having an open bottom enveloping the upper portion of the pin's periphery, a vertical slot in each side of the hopper a plate against the inside face of each side of the hopper, a threaded pin secured to such plate and passing through the corresponding slot in the hopper's side and a thumb nut screwed upon such pin, substantially as specified.

2. In rolling pins, the combination with the pin of a hopper extending longitudinally along it and the open bottom of which envelops the upper portion of the pin's periphery, such hopper being provided with vertically adjustable plates secured upon the inner surfaces of its sides and having handles on each of the two ends of the hopper fitting upon and enveloping the handles of the pin substantially as specified.

855,043. METALLIC VESSEL. CHARLES L. COFFIN, Detroit, Mich., assignor to Electric Metal Working Company, Detroit, Mich., a Corporation of Michigan. Filed Sept. 5, 1905. Serial No. 277,097.

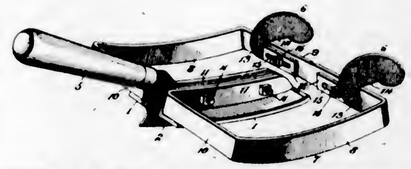


Claim.—1. A metallic barrel, comprising a body formed of an inner shell and an outer bilged shell spaced centrally from the inner and secured to the ends of the latter, the bulging member having a depressed apertured section registering with an aperture formed in the inner shell, an annular flange interposed between the shells about the apertures, and a flanged bushing set within the depressed portion and fitting said annular flange.

2. A metallic barrel, comprising a body formed of an inner shell and an outer bilged shell, the shells being separated at the centers and connected at their ends, and the bulging member having a depressed apertured section registering with an aperture formed in the inner shell, and a hoop extending about the outer section over its depressed portion and apertured to register with said portion, substantially as described.

3. In a metallic barrel, the combination with a shell having a depressed apertured section formed in its side, and a reinforcing band encircling the shell and having a correspondingly depressed and apertured section registering with the apertured section in the shell.

855,044. JOINT-MARKING TOOL. JOSEPH B. COLBURN, Washington, D. C. Filed Dec. 8, 1906. Serial No. 346,875.



Claim.—1. A device for marking joints comprising a gage frame having sides arranged to fit against a straight edge, and side markers located at opposite sides of the median line and spaced from the sides of the gage frame to off-set the markers from the straight edge.

2. A device for marking joints comprising a gage frame having a straight face to fit against a straight edge, and a side marker arranged in spaced relation with the said face to off-set it from the straight edge.

3. A device for marking joints comprising a gage frame having side faces arranged in parallelism to fit against a straight edge, and side markers spaced from the said side faces to off-set the side markers from the straight edge.

4. A device for marking joints comprising a gage frame provided with sides to fit against a straight edge, and side markers mounted on and supported by the gage frame and spaced from the sides thereof.

5. A device for marking joints comprising a gage frame provided with sides to fit against a straight edge, and side

markers adjustably mounted on and supported by the gage frame and spaced from the sides thereof, said side markers being movable toward and from each other.

6. A device for marking joints comprising a gage frame having parallel sides and provided with a connecting front portion, and side markers mounted on and projecting from the gage frame at points between the sides thereof to space them from a straight edge.

7. A device for marking joints comprising a gage frame provided with side faces to fit against a straight edge having a transverse supporting portion, and longitudinally disposed side markers carried by the transverse supporting portion and spaced from the said side faces.

8. A device for marking joints comprising a gage frame having a transverse supporting portion, and side markers consisting of longitudinal blades and transverse shanks secured to the transverse portion of the gage frame.

9. A device for marking joints comprising a gage frame having a handle, and side markers consisting of spaced substantially semicircular blades having curved cutting edges.

10. A device for marking joints comprising a substantially rectangular gage frame having parallel sides and provided at the back with attaching arms, and side markers mounted on the front of the frame.

11. In a device for marking joints, the combination with a tool having a central depending blade for cutting a joint, and side markers spaced from the central blade, said blades and markers being arranged for alternate use.

12. In a device for marking joints, the combination with a tool having a central depending blade for cutting a joint, and upwardly projecting side markers arranged in spaced relation to the central blade and adapted to be brought into position for use by reversing the device.

13. In a device for marking joints, the combination with a tool having a depending central blade for cutting a joint, of side markers arranged in spaced relation to the blade, and a gage frame supporting the side markers and connecting the same with the said tool and having side faces spaced from the markers to fit against a straight edge.

14. In a device for marking joints, the combination with a tool having a central blade for cutting a joint, of side markers arranged in spaced relation to the central blade, and a gage arranged in spaced relation to the side markers to space the latter from a straight edge.

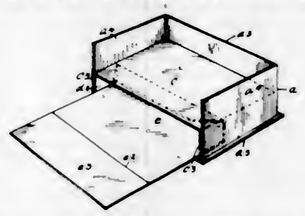
15. In a device for marking joints, the combination with a tool having a depending blade for cutting a joint, of a substantially rectangular frame provided at the back with forwardly projecting arms secured to the tool at opposite sides thereof, the front of the gage frame being spaced from the front of the tool, and side markers mounted on the front of the gage frame.

16. In a device for marking joints, the combination with a substantially rectangular gage frame, of a central depending blade located within the frame between the sides thereof and terminating short of the front of the frame, and side markers mounted on the front of the frame on opposite sides of the central blade.

17. In a device for marking joints, the combination with a substantially rectangular gage frame having the inwardly extending arms arranged at the back of the frame and extending forwardly toward the front of said frame but terminating short thereof, of a central depending blade secured between the said arms, angled pieces also secured between said arms, and side markers carried by the gage frame.

855,045. STATIONERY-BOX. CHARLES W. COOK, Holyoke, Mass. Filed Apr. 2, 1906. Serial No. 309,308.

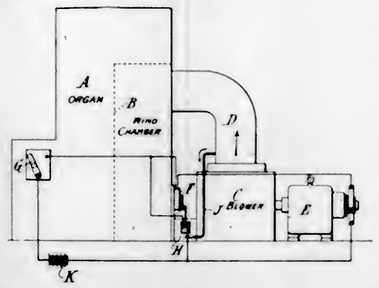
Claim.—1. A stationery box or package of the class described, comprising a main box member open at the front and top and provided with a horizontal partition forming top and bottom compartments, and a supplemental paper holder or drawer adapted to be inserted into the bottom compartment through the open front thereof and comprising a sheet having a front folding member adapted to form the front wall of the box or package and to extend to the top thereof, said sheet being also folded at a predetermined distance from its rear edge upwardly, and said upwardly folded portion being provided with a forwardly directed fold, substantially as shown and described.



2. A stationery box or package of the class described, comprising a main box member open at the front and top and provided with a horizontal partition forming top and bottom compartments, and a supplemental paper holder or drawer adapted to be inserted into the bottom compartment through the open front thereof and comprising a sheet having a front folding member adapted to form the front wall of the box or package and to extend to the top thereof, said sheet being also folded at a predetermined distance from its rear edge upwardly, and said upwardly folded portion being provided with a forwardly directed fold, and a cover open at the bottom and adapted to inclose the main box member, substantially as shown and described.

3. A stationery box or package of the class described, comprising a main box member open at the top and front and provided with a central horizontal partition forming top and bottom compartments, a supplemental paper holder adapted to be inserted into the bottom compartment through the open front thereof and comprising a sheet *e* adapted to be folded in three different places as indicated at e^2, e^6 and e^7 so as to form parts e^3, e^8, e^4 and e^5, the part e^3 being adapted to form the front wall of a box or package and to extend to the top thereof and the parts e^4 and e^5 to form the back wall of the paper holder and a forwardly directed member which overlaps the rear edge of the paper when placed in said holder, and a cover open at the bottom and adapted to inclose the main box member.

855,046. STARTER FOR BLOWERS. LOUIS B. COUSANS, Lincoln, England. Filed Dec. 17, 1904. Renewed Apr. 22, 1907. Serial No. 369,579.

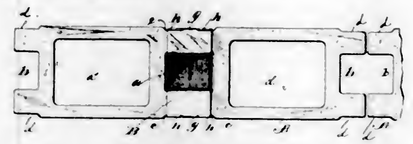


Claim.—1. The combination with an electrically-driven organ blower, of a switch for making and breaking the electric circuit, a rheostat controlling the current in use, and a pneumatic apparatus H controlling said rheostat, said apparatus having a main chamber receiving air from the blower, a diaphragm S closing the outlet of said chamber and held closed by air pressure on its rear face, and an electrically-operated valve V for releasing the pressure at the rear of said diaphragm when the current is cut off.

2. The combination with an electrically-driven organ blower, of a switch for making and breaking the electric circuit, a rheostat controlling the current in use, and a pneumatic apparatus H controlling said rheostat, said apparatus having a main chamber receiving air from the blower, a diaphragm S closing the outlet of said chamber and held closed by air pressure on its rear face, an electrically-operated valve V for releasing the pressure at the rear of said diaphragm when the current is cut off, and a check-valve Q opening inwardly into said chamber.

3. The combination with an organ having a wind chamber B, of an electrically-driven blower C therefor, a switch G for making and breaking the electric circuit, a rheostat G at a distance from said switch and controlling the current in use, and a pneumatic apparatus H controlling said rheostat, having a main chamber connected by a pipe J with the blower, an outlet diaphragm valve S from said chamber normally held closed by air pressure on its rear face, and a valve V for releasing the pressure of said valve S when the circuit is opened.

855,047. BUILDING BLOCK AND WALL. WILLIAM CURLETT, San Francisco, Cal. Filed Sept. 25, 1906. Serial No. 336,111.



Claim.—1. As an article of manufacture, a clip for the purpose described comprising a depending portion, arms reaching outward from the upper part of said depending portion, wings extending downward from the arms, and other wings extending upward from said arms.

2. A building block having a vertical central opening *a*, vertical grooves *b* in its ends, vertical recesses *c* in its vertical sides extending throughout its height and arranged in the same transverse plane as the vertical central opening *a*, and vertical recesses *d* in the end portions of its vertical sides extending throughout its height and arranged in the same transverse planes as the vertical grooves *b*.

3. As an article of manufacture, a clip for the purpose described comprising a depending U-shaped portion, arms reaching outward from the ends of said portion, wings extending downward from the arms, and other wings extending upward on said arms.

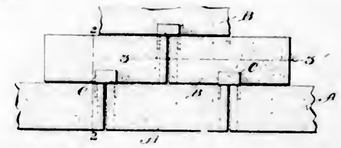
4. A wall comprising a block having a vertical opening, a block superposed on the first mentioned block and having a vertical opening registered with the opening thereof, a clip interposed between the blocks and having a depending portion resting in the vertical opening of the first mentioned block and provided at its lower end with a cross-bar, and a core resting in the vertical openings of the blocks and supported by the cross-bar of the depending portion of the clip and forming a dowel.

5. A wall comprising a block having a vertical opening, a clip having a U-shaped portion depending into said opening and also having arms resting on the block and wings reaching up and down on the arms, a block superposed on the first mentioned block and having a vertical opening alined with that of said first mentioned block, and a core resting in said alined openings and on the depending portion of the clip.

6. A wall comprising blocks each of which has a vertical opening at an intermediate point of its length and vertical grooves or recesses in its ends; the said blocks being arranged with the meeting ends of two blocks above the intermediate opening of a lower block, a clip having a depending U-shaped portion resting in the intermediate opening of the lower block and also having arms interposed between the lower and upper blocks, and upwardly and downwardly extending wings carried by the arms and resting at the sides of the blocks, and a core of plastic material occupying the space between the ends of the upper blocks and extending down into the intermediate opening of the lower block and bearing on the depending portion of the clip.

7. A wall comprising a block having a vertical opening, a clip having a depending portion resting in said opening and also having arms resting on the block and wings reaching upward and downward from the arms; a block superposed on the first mentioned block and having a vertical opening alined with that of said first mentioned block, and a core resting in said alined openings and on the depending portion of the clip.

855,048. BUILDING-WALL. WILLIAM CURLETT, San Francisco, Cal. Filed Sept. 26, 1906. Serial No. 336,361.



Claim.—1. A wall comprising lower, hollow blocks arranged end to end, an upper block superposed on the lower blocks, and a clip having a flat body resting on the adjacent end walls of the lower blocks and between the upper edges of said end walls and the upper block, arms reaching downward at right angles from the body and arranged at the inner sides of the adjacent end walls of the lower blocks to hold said blocks together or against endwise movement away from each other, an arm reaching upward at a right angle from one end of the flat body and opposed to one side of the upper block, and an arm reaching upward at a right angle from the opposite end of the flat body and opposed to the opposite side of the upper block; said upwardly reaching arms being adapted to hold the upper block against lateral displacement.

2. A wall comprising lower, hollow blocks arranged end to end, an upper, hollow block arranged with its intermediate portion above the meeting ends of the lower blocks, and a clip arranged entirely between the vertical planes of the outer sides of the blocks and having a flat body resting on the adjacent end walls of the lower blocks and between the upper edges of said end walls and the upper block, arms reaching downward at right angles from the body and arranged at the inner sides of the adjacent end walls of the lower blocks to hold said blocks together or against endwise movement away from each other, an arm reaching upward at a right angle from one end of the flat body and opposed to the inner side of one side wall of the upper block, and an arm reaching upward at a right angle from the opposite end of the flat body and opposed to the inner side of the opposite side wall of the upper block, for the purpose set forth.

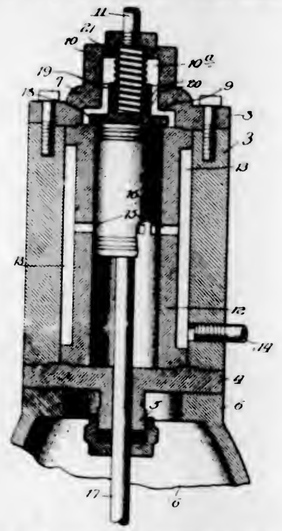
855,049. FLAT-OPENING LEAF FOR BOOKS. JOHN J. DIEHL, Chicago, Ill., assignor of one-third to Hoyt N. McClain and one-third to Walter Hollowell, Chicago, Ill. Filed June 11, 1906. Serial No. 321,138.



Claim.—A leaf of sized paper provided with an integral band-like flexible hinge strip, said strip being surfaced

with minute corrugations extending lengthwise thereof and consisting mainly of sizing, and the body of the strip being unbroken and uncorrugated.

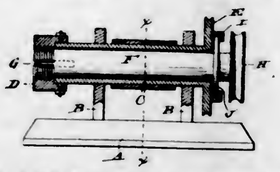
855,050. COMPRESSOR. CHARLES W. DIETRICH, Chicago, Ill. Filed Dec. 15, 1906. Serial No. 348,087.



Claim.—1. In a compressor of the character described, the combination of a cylinder communicating with the gas-supply and containing a reciprocating piston, a head on the cylinder containing a gas-chamber provided with a discharge-outlet, a circumferential series of Z-shaped ribs in said chamber, and a spring-pressed valve seating against the discharge-end of the cylinder in said chamber guidingly within the lower sections of said series of ribs to co-operate with the horizontal sections thereof, and provided with a sleeve-extension fitting guidingly within the upper sections of said series.

2. In a compressor of the character described, the combination with a cylinder communicating with the gas-supply and containing a reciprocating piston, a head on the cylinder containing a gas-chamber provided with a discharge-outlet, a circumferential series of Z-shaped ribs in said chamber, and a spring-pressed valve seating against the discharge-end of the cylinder in said chamber guidingly within the lower sections of said series of ribs to co-operate with the horizontal sections thereof, and provided with a sleeve-extension having ports and fitting guidingly within the upper sections of said series.

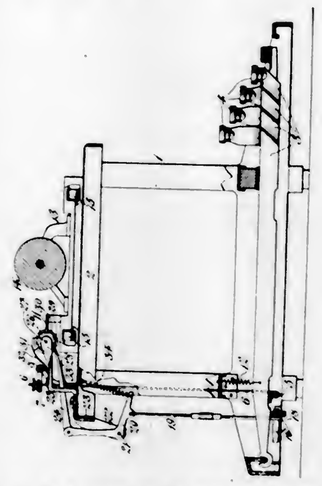
855,051. THREAD-CUTTING MACHINE. THOMAS B. EARHART, Sacramento, Cal., assignor to Earhart Steel and Iron Works, Sacramento, Cal., a Corporation of California. Filed May 9, 1906. Serial No. 315,953.



Claim.—1. A thread cutting machine comprising a tubular spindle mounted to rotate in its bearings, threading dies secured to said spindle, another spindle journaled in said tubular spindle, a combined drill and tap secured to said inner spindle, means to rotate said spindles independently of each other, and means to secure said spindles against relative longitudinal movement, substantially as shown and described.

2. A thread cutting machine comprising a tubular spindle mounted to rotate in its bearings, threading dies secured to one end of said spindle, a pulley secured to the other end of said spindle, another spindle journaled in said tubular spindle so as to rotate independently thereof, a combined drill and tap secured to one end of said inner spindle, a pulley secured to the other end of said inner spindle, an annular shoulder on said inner spindle, and angular ears secured to the first mentioned pulley and engaging said annular shoulder, substantially as shown and described.

855,052. ATTACHMENT FOR TYPE-WRITERS. HENRY B. FEBIGER, Philadelphia, Pa. Filed Oct. 6, 1905. Serial No. 281,627.



Claim.—1. In a typewriter, a carriage, an escapement adapted to release the carriage step by step and independent means, operated by the partial depression of a key, for preventing improper movement of the carriage by such partial depression.

2. In a typewriter, a carriage, an escapement adapted to release the carriage step by step, and a carriage stop or lock, operated by the partial depression of a key, adapted to prevent movement of the carriage by such partial depression of the key at each step of the carriage until the type has printed.

3. In a typewriter, printing keys, a carriage, an escapement adapted to release the carriage step by step, a carriage stop operated by a partial depression of a printing key to lock the carriage, and means actuating the same, by such partial depression, whereby improper movement of the carriage is prevented during its entire passage across the machine.

4. In a typewriter, a carriage, an escapement, and a carriage stop or lock operated by the partial depression of a key, whereby the carriage is halted, by such partial depression after each escapement has taken place, until the type has printed.

5. In a typewriter, a carriage, an escapement adapted to release the carriage step by step and a carriage stop or lock operated by the partial depression of a key and adapted to hold the carriage by such partial depression at each step of the carriage until the type has printed.

6. In a typewriter, a carriage, an escapement and separate means operated by a partial depression of a key, for preventing improper movement of the carriage when actuated by such partial depression, until each type bar key lever, when actuated, has reached the bottom of its stroke.

7. In a typewriter, a carriage, an escapement therefor, means for actuating said escapement, a bail operated by the type bar levers and a carriage stop in suitable connection with said bail and adapted to be actuated by the partial depression of a key to lock the carriage by such partial depression at each step of the carriage until the type has printed.

8. In a typewriter, a carriage, an escapement therefor adapted to release the carriage step by step, means for actuating said escapement, a bail, means for operating said bail and said actuating means, a carriage stop adapted to lock the carriage at each step thereof against improper manipulation of the operator, a push pawl for actuating said carriage stop and a connection between said pawl and said bail.

9. In a typewriter, a carriage, an escapement therefor, adapted to release the carriage step by step, means for actuating said escapement, a bail adapted to be actuated with the escapement by the movement of the type bar lever, a pawl in suitable connection with said bail, a carriage stop adapted to lock the carriage, on a partial depression of a key lever at each step of the carriage, and to be actuated by said pawl and means for preventing improper return of said stop.

10. In a typewriter, a carriage, a rack thereon, an escapement therefor, means for actuating said escapement, a bail suitably supported and actuated with said escapement, a pawl in suitable connection with said bail, a carriage stop having openings therein and adapted to pass the rack on said carriage and means on said stop adapted to engage with the teeth of said rack and prevent improper movement thereof.

11. In a typewriter, the combination of a key lever, a rack, an escapement, a carriage, means for bringing said carriage step by step across the printing point, a stop that prevents the movement of the carriage at each step thereof until an effective depression of the key lever is made and means for actuating said stop.

12. In a typewriter, a carriage, a key lever, an escapement, a stop independent of said escapement normally permitting movement of the carriage for locking said carriage until an effective depression of the key lever has been made and means whereby said escapement and said stop are simultaneously actuated by the movement of the key lever.

13. In a typewriter, a carriage, an escapement mechanism therefor to permit a step by step movement of the carriage and independent locking means for the carriage normally in unlocking position and adapted to prevent the movement thereof until the operating keys are sufficiently depressed to cause an effective movement of the printing devices.

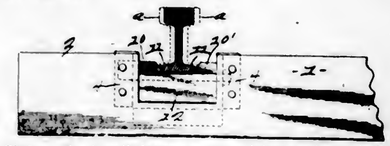
14. In a typewriter, a carriage, an escapement mechanism therefor and independent locking means operated step by step with the carriage to prevent movement thereof until the operating keys are sufficiently depressed to cause effective movement of the printing devices and permit movement thereof when the operating keys are sufficiently depressed to cause an effective movement of the printing devices.

15. In a typewriter, a printing key lever, and escapement suitably actuated and separate means normally in unlocking position and actuated by said lever for locking the carriage until an effective depression of the printing key lever has been made.

16. In a typewriter, printing key levers, an escapement adapted to release the carriage step by step and independent means normally in unlocking position and actuated by said levers for locking the carriage against movement until an effective depression of a key lever has been made.

17. In a typewriter, a carriage, an escapement mechanism therefor, a type bar key lever and independent locking means for the carriage to prevent movement thereof until the type bar key lever is sufficiently depressed to cause an effective movement of the printing devices.

855,053. RAILWAY-RAIL FASTENER. WALTER S. GLASGOW, Toledo, Ohio. Filed Mar. 29, 1907. Serial No. 365,348.



Claim.—1. A rail fastener comprising a channeled body secured transversely upon a tie, a rail-supporting cushion carried by the body, and fastening bolts passing through the vertical sides of the fastener body, and supported at the ends by said sides, each bolt formed with a hook to engage the rail base, the hooks disposed at an intermediate point between the ends of the bolts, substantially as described.

2. A rail fastener comprising a channeled body secured transversely upon a tie, a rail-supporting cushion confined between the vertical sides of the body, and a pair of fastening bolts arranged transversely of the body and passing through the sides thereof, each bolt having the shank thereof threaded at one end and provided with a nut thereon and having a rail engaging hook at an intermediate point upon the shank, the bolts arranged in opposite relation to each other, substantially as described.

3. In combination, a U-shaped tie having alined notches cut in the vertical sides thereof, and rail fastening means comprising a U-shaped body arranged transversely of the tie and registering with the notches therein, a pair of bolts supported in the sides of the fastener body, the bolts arranged in opposite relation to each other and provided with hooks at intermediate points to engage the rail base, substantially as described.

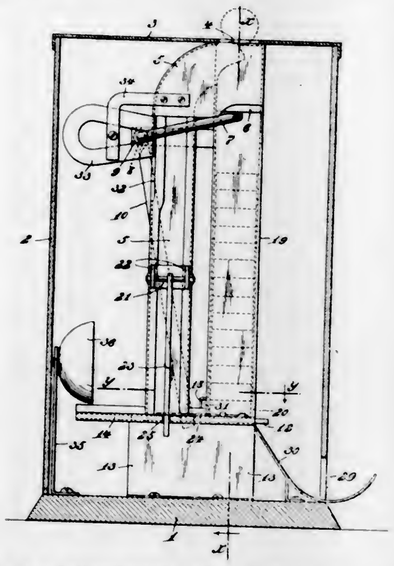
4. In combination, a U-shaped tie having alined notches cut in the vertical sides thereof, and rail fastening means comprising a U-shaped body arranged transversely of the tie and registering with the notches therein, a pair of bolts supported in the sides of the fastener body, the bolts arranged in opposite relation to each other and provided with hooks at intermediate points to engage the rail base, and a cushioned support for the rail confined between the sides of the fastener body and provided with grooves to receive the bolts, substantially as described.

855,054. COIN-OPERATED VENDING-MACHINE. GEORGE T. HAINES, Philadelphia, Pa. Filed Mar. 8, 1906. Serial No. 304,834.

Claim.—1. In a coin-controlled vending machine, the combination of the package-containing chute, the horizontally slidable plate constituting the bottom of said chute when in the forward position, a support below said plate for supporting the packages within said package-containing chute when said plate is retracted, means for yieldingly maintaining said plate in forward position, a coin-chute, means actuated by the insertion of a coin into the coin-chute, for withdrawing said plate from beneath said package-containing chute, means for automatically locking said plate in said retracted position, together with means actuated by the coin for partially releasing said locking means and retaining the coin in the chute and so permitting the plate to be automatically returned to the forward position, and to thereby eject a package from the bottom of said column, and means to completely release the locking means to discharge the coin from the coin-chute, substantially as set forth.

2. In a coin-controlled vending machine, the combination of the package-containing chute, the horizontally slidable plate constituting the bottom of said chute when in the forward position, means for yieldingly maintaining said plate in said forward position, a support below said

plate for supporting the packages within said package-containing chute when the said plate is retracted, a coin-chute, the pivoted arm having the part extending into said coin-chute to be actuated by the insertion of the coin therein-into, the downwardly extending arm whose upper end is connected with said first mentioned arm, and whose lower end engages said plate, means for automatically locking said plate in said retracted position, together with means actuated by the coin for partially releasing said locking means and retaining the coin in the chute, and so permitting the plate to be automatically returned to the forward position, and to thereby eject a package from the bottom of said column, and means to completely release the locking means to discharge the coin from the coin-chute, substantially as set forth.



3. In a coin-controlled vending machine, the combination with a casing having a coin-slot of the package-containing chute, the horizontally slidable plate constituting the bottom of said chute when in the forward position, a support below said plate for supporting the packages within said package-containing chute, when said plate is retracted, means for yieldingly maintaining said plate in forward position, a coin-chute communicating with said coin-slot, the slidable plate extending across the mouth of said coin-chute, and in line with said coin-slot, and whose upper edge partially closes the slot against the insertion of a coin in the normal position of the parts, the pivoted arm whose free end extends beneath and supports said last mentioned plate, the downwardly extending arm connected with said pivoted arm, and whose lower end engages said horizontal plate, means for automatically locking said horizontal plate in said retracted position, together with means actuated by coin for releasing said locking means, and so permitting the plate to be automatically returned to the forward position, and to thereby eject a package from the bottom of said column, substantially as set forth.

4. In a coin-controlled vending machine, the combination of the package-containing chute, the horizontally slidable plate constituting the bottom of the said chute when in the forward position, a support below said plate for supporting the packages within said package-containing chute, when said plate is retracted, means for yieldingly maintaining said plate in forward position, a coin-chute, the vertical, slidable plate extending across the entrance end of said coin chute, and having its upper end of less width than that of the coin-chute, and undercut, forming an edge, means for connecting said last mentioned plate with the said horizontal plate, whereby downward pressure upon said vertical plate will withdraw said horizontal plate from beneath the package-containing chute, means for automatically locking said horizontal plate in said retracted position, together with means actuated by the coin for releasing said locking means, and so permitting the plate to be automatically returned to the forward position, and to thereby eject a package from the bottom of said package-containing chute, substantially as set forth.

5. In a coin-controlled vending machine, the combination of the package-containing chute, the horizontally slidable plate constituting the bottom of said chute when in the forward position, a support below said plate for supporting the packages within said package-containing chute when said plate is retracted, means for yieldingly maintaining said plate in forward position, a coin-chute, means actuated by the insertion of a coin into the coin-chute, for withdrawing said plate from beneath said package-containing chute, the teeth on the edge of said plate, the spring controlled pawl, adapted to engage one of the said teeth when the plate is retracted to lock said pawl in retracted position, a part on said pawl extending into the coin-chute in the path of the coin, whereby impingement of the coin thereon partially releases said pawl from engagement with the said teeth but retains the coin in the chute, and means to completely release said pawl to discharge the coin from the coin-chute, substantially as set forth.

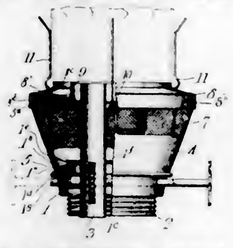
6. In a coin-controlled vending machine, the combination of the package-containing chute, the horizontally slidable plate constituting the bottom of said chute when in forward position, a support below said plate for supporting the packages within said package-containing chute when the said plate is retracted, means for yieldingly maintaining said plate in forward position, a coin-chute, means actuated by the insertion of a coin into the coin-chute, for withdrawing said plate from beneath said package-containing chute, the teeth on the edge of said plate, the portion of the edge of said plate to the rear of said teeth being in a plane beyond that of the outer edges of said teeth, the spring-controlled pawl adapted to engage one of the said teeth when the plate is retracted, and to ride on said outwardly extending edge of said plate when the latter is in forward position, a part on said pawl extending into the coin-chute in the path of the coin, whereby impingement of the coin thereon relenses said pawl from engagement with said teeth, substantially as set forth.

7. In a coin controlled vending machine, the combination of the package-containing chute, the horizontally slidable plate constituting the bottom of said chute when in the forward position, a support below said plate for supporting the packages within said package-containing chute, when said plate is retracted, means for yieldingly maintaining said plate in forward position, a coin-chute, means actuated by the insertion of a coin into the coin-chute, for withdrawing the said plate from beneath said package-containing chute, means for automatically locking said plate in said retracted position, together with means actuated by the coin for releasing said locking means, and so permitting the plate to be automatically returned to the forward position, and to thereby eject a package from the bottom of said column, said plate being provided with a coin-slot in registry with the lower end of the coin-chute when the said plate is in the forward position, substantially as set forth.

8. In a coin-controlled vending machine, the combination of the package-containing chute, the horizontally slidable plate constituting the bottom of said chute when in the forward position, a support below said plate for supporting the packages within said package-containing chute when said plate is retracted, means for yieldingly maintaining said plate in forward position, a coin-chute, means actuated by the insertion of a coin into the coin-chute, for withdrawing said plate from beneath said package-containing chute, the teeth on the edge of said plate, the spring-controlled pawl adapted to engage one of the said teeth when the plate is retracted, a part on said pawl extending into the coin-chute in the path of the coin, whereby impingement of the coin thereon releases said pawl from engagement with the said teeth, said plate being provided with a coin-slot in registry with the lower end of the coin-chute when said plate is in the forward position, substantially as set forth.

9. In a coin-controlled vending machine, the combination of the package-containing chute, the horizontally slidable plate constituting the bottom of said chute when in the forward position, a support below said plate for supporting the packages within said package-containing chute when said plate is retracted, means for yieldingly maintaining said plate in forward position, a coin-chute, means actuated by the insertion of a coin into said coin-chute, for withdrawing said plate from beneath said package-containing chute, means for automatically locking said plate in said retracted position, together with means actuated by the coin for partially releasing the said locking means and retaining the coin in the chute, and so permitting the plate to be automatically returned to the forward position, and to thereby eject a package from the bottom of said column, means to completely release the locking means to discharge the coin from the coin-chute, and a stop limiting the forward movement of said plate, substantially as set forth.

855,055. LAMP-BURNER. ALEXANDER H. HANDLAN, Jr., St. Louis, Mo. Filed Jan. 7, 1907. Serial No. 351,122.



Claim.—1. In a lamp burner, a base, a pair of wick tubes supported by said base, and a guard attached to said tubes near their upper ends and comprising a pair of segmental collar portions; said collar portions being united by a horizontal web located beneath the upper end of the guard, substantially as set forth.

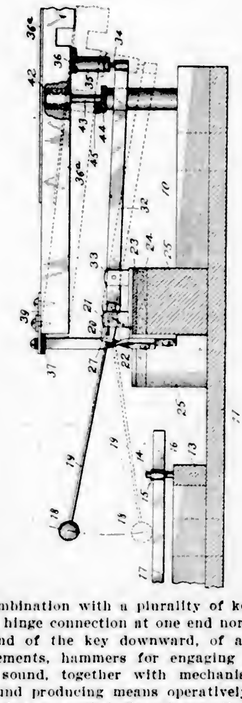
2. In a lamp burner, a base, a pair of wick tubes supported by said base, and a guard attached to said tubes near their upper ends and comprising a pair of segmental collar portions; said collar portions being united by a web containing an orifice, substantially as set forth.

3. A lamp burner comprising a base provided with lower and upper plates, twin wick tubes secured in the plates, a twin guard consisting of merged segmental collars having depending tubes and providing segmental channels and a connecting web having an orifice.

855,056. BELL-PIANO. FRIEDRICH HIRSCHFELD, New York, N. Y. Filed Jan. 22, 1907. Serial No. 353,510.

Claim.—1. The combination with a plurality of black and white keys arranged as in the ordinary piano keyboard, of a plurality of sounding elements, a plurality of hammers adapted to engage the sounding elements, rods connected to the hammers, blocks carrying the rods, levers connected to the blocks, springs normally forcing the hammers and the outer ends of the levers upward, and spring hinges for forcing the keys to engage a part of the levers.

2. The combination with a plurality of black and white keys arranged as in the ordinary piano keyboard, of a plurality of sounding elements, a plurality of hammers adapted to engage the sounding elements, rods connected to the hammers, blocks carrying the rods, levers connected to the blocks, springs normally forcing the hammers and the outer ends of the levers upward, and spring hinges for forcing the keys so as to engage a part of the levers.



3. The combination with a plurality of keys each having a spring hinge connection at one end normally forcing the outer end of the key downward, of a plurality of sounding elements, hammers for engaging the elements to produce sound, together with mechanism connected with the sound producing means operatively and loosely engaging the keys near their fingering portions and adapted to be depressed by the movement of said keys.

4. The combination with a frame, of uprights or posts projecting from said frame, strings supported by the posts, sounding elements supported by the strings, hammers adapted to engage the sounding elements; rods connected to the hammers, pivoted blocks supporting the rods, springs for forcing the hammers upward, levers pivoted adjacent to the blocks and having one end connected to the hammer blocks and their outer ends provided with upright posts or engaging parts, a plurality of black and white keys, and a spring hinge yieldingly holding one end of each key to the frame and normally forcing the outer end of said key downward to engage the upright post of one of the levers.

5. The combination with a frame, of sounding elements supported on the frame, hammers adapted to engage the sounding elements, rods connected to the hammers, pivoted blocks supporting the rods, springs for forcing the hammers upward, levers pivoted adjacent to the blocks and having one end connected to the hammer blocks and their outer ends provided with key-engaging parts, a plurality of black and white keys, a spring yieldingly holding one end of each key to the frame and normally forcing said key downward to engage one of the levers.

6. The combination with a frame, of sounding elements supported on the frame, hammers adapted to engage said elements, blocks supporting the hammers, means for forcing the hammers upward, levers pivoted adjacent to the blocks and having one end connected to said blocks, a plurality of black and white keys, and a spring yieldingly holding one end of each key to the frame and normally forcing the outer end of said key downward to engage the outer end of one of the levers.

7. The combination with a frame, of uprights or parts projecting from said frame, strings supported by the posts, bars supported by the strings, hammers adapted to engage the bars, rods connected to the hammers, blocks supporting the rods, springs for forcing the hammers upward, levers pivoted adjacent to the blocks and having one end connected to the hammer blocks and their outer ends provided with posts or engaging parts, a plurality of black and white keys, and a spring hinge yieldingly holding one end of each key to the frame and normally forcing the outer end of said key downward to loosely engage the post of one of the levers.

8. The combination with a frame, of instrument strings supported by the frame, bars supported by strings, hammers adapted to engage the bars, blocks supporting the hammers, springs for forcing the hammers upward, levers connected to the hammer blocks, a plurality of black and white keys, and spring hinges yieldingly holding one end of the keys to the frame and normally forcing the outer ends of said keys downward to engage the levers.

9. The combination with a plurality of sounding elements, of a plurality of black and white keys, a hammer for each key, a block supporting each hammer, and means for pivotally supporting the block comprising a bracket, a bolt secured in said bracket, and a spring having a spiral part arranged around the bolt and serving as a washer between the bracket and the hammer block, said spring having parts engaging the hammer block and the bracket so as to force the hammer upward.

10. The combination with a frame, of a plurality of black and white keys arranged as in the ordinary piano keyboard and having their inner ends provided with a spring plate the forward end of which is slotted to permit adjustment of the keys and which normally force the outer ends of the keys downward, a plurality of sounding elements, and mechanism operated by the keys when the latter are depressed to cause the elements to produce sound.

11. The combination with a support, of a plurality of white and black keys arranged as in an ordinary piano keyboard, a plurality of sounding bars each having an opening therein, posts projecting from the support and arranged in two rows one post of one of the rows entering the opening of each sounding bar and the posts of the other row being arranged between said bars, strings carried by the posts and serving to suspend the bars, a plurality of hammers one for each bar, and means operatively connected between the hammers and the keys whereby said hammers may be made to engage the bars.

12. The combination with a support, of a plurality of white and black keys arranged as in an ordinary piano keyboard, a plurality of sounding bars, posts projecting from the support in two rows and engaging said bars, strings carried by the posts by which the bars are suspended, a plurality of hammers one for each bar, and means operatively connected between the hammers and the keys whereby said hammers may be made to engage the bars.

13. The combination with a support, of a plurality of white and black keys arranged as in an ordinary piano keyboard, a plurality of sounding bars each having an opening therein, posts projecting from the support and entering the openings of the sounding bars, strings carried by the posts and suspending the bars, a plurality of hammers one for each bar, rods connected to the hammers, blocks to which the hammer rods are secured, brackets to which the blocks are pivoted, springs normally forcing the hammers upward and serving as washers between the blocks and the brackets, means against which the hammer rods may rest in their upward position, levers pivoted to the brackets and having one end connected to the blocks and their outer ends projecting upward under the fingering portion of the keys, guides for the keys, and a spring hinge for each key normally forcing the keys into engagement with parts of the levers.

14. The combination with a support, of a plurality of white and black keys arranged as in an ordinary piano keyboard, a plurality of sounding bars each having an opening therein, posts arranged in two rows projecting from the support one post of one of the rows entering the opening of one of the sounding bars, strings carried by the posts and suspending the bars, a plurality of hammers one for each bar, rods connected to the hammers, blocks to which the hammer rods are secured, brackets to which the blocks are pivoted, springs normally forcing the hammers upward, means against which the hammer rods may rest in their upward position, levers pivoted to the brackets and having one end connected to the blocks and their outer ends projecting upward under the fingering portion of the keys, and a spring for each key normally forcing the keys into engagement with parts of the levers.

15. The combination with a support, of a plurality of white and black keys arranged as in an ordinary piano keyboard, a plurality of sounding bars, posts projecting from the support and engaging the sounding bars, strings carried by the posts and suspending the bars, a plurality of hammers one for each bar, rods connected to the hammers, blocks to which the hammer rods are secured, brackets to which the blocks are pivoted, strings normally forcing the hammers upward and serving as washers between the blocks and the brackets, and levers pivoted to the brackets and having one end connected to the blocks and their outer ends projecting upward under and engaging the fingering portion of the keys.

855,057. MECHANICAL CHANGEABLE PICTURE. WILLIAM H. HOYT, Stamford, Conn., assignor of one-half to E. I. Horsman Co., New York, N. Y., a Corporation of New York. Filed Mar. 3, 1906. Serial No. 303,959.



Claim.—1. A changeable picture having a face section, and upper and lower lip sections movable relatively to each other and relatively to the face section.

2. A changeable picture having a face section, upper and lower lip sections movable relatively to each other and relatively to the face section, and a tooth section stationary in relation to the face section.

3. A changeable picture having a face section provided with sights at the eye region, upper and lower eyelid sections movable relatively to each other and relatively to the face section, and an eye section having portions adapted to show through said sights and to be covered more or less by said eyelid sections.

4. A changeable picture having a face section, and upper and lower eyelid sections movable relatively to each other and relatively to the face section.

5. A changeable picture having a face section, another section having an upper eyelid portion and an upper lip portion, and a third section having a lower eyelid portion and a lower lip portion, said second and third sections being movable relatively to each other and relatively to the face section.

6. A changeable picture having a face section pivoted at its upper portion, a shoulder section pivoted at its lower portion, and a neck or throat section the upper portion of which has a pivotal connection with the face section, while its lower portion has a pivotal sliding connection with a

stationary support, said neck or throat section having a sliding engagement with the shoulder section.

7. A changeable picture having a face section pivoted at its upper portion, a shoulder section pivoted at its lower portion and provided with tongues at its upper portion, and a neck or throat section connecting the face section with the shoulder section and engaged by said tongues.

8. A changeable picture having a foundation, a drive shaft journaled therein, a rod driven by said shaft, a bar connected with said rod, parallel bars extending from said bar, a cross bar fulcrumed on the foundation and pivotally connected with the other ends of said parallel bars, a face section secured to the central bar, and upper lip and lower lip sections secured to the side bars.

9. A changeable picture having a foundation, a drive shaft journaled therein, a rod driven by said shaft, a bar connected with said rod, parallel bars extending from said bar, a cross bar fulcrumed on the foundation and pivotally connected with the other ends of said parallel bars, a face section secured to the central bar, a section secured to one of the side bars and having an upper eyelid portion and an upper lip portion, and another section secured to the other side bar and having a lower eyelid portion and a lower lip portion.

10. A changeable picture having a foundation, a drive shaft journaled therein, a rod driven by said shaft, a bar connected with said rod, parallel bars extending from said bar, a cross bar fulcrumed on the foundation and pivotally connected with the other ends of said parallel bars, a face section and a tooth section secured to the central bar, said face section having sights at the eye region, a stationary section having eyes adapted to show through said sights, another section secured to one of the side bars and having an upper eyelid portion and an upper lip portion, and a further section secured to the other side bar and having a lower eyelid portion and a lower lip portion.

11. A changeable picture having a foundation, a drive shaft journaled therein, a rod driven by said shaft, a bar connected with said rod, parallel bars extending from said bar, a cross bar fulcrumed on the foundation and pivotally connected with the other ends of said parallel bars, a face section and a tooth section secured to the central bar, said face section having sights at the eye region, a stationary section having eyes adapted to show through said sights, another section secured to one of the side bars and having an upper eyelid portion and an upper lip portion, a further section secured to the other side bar and having a lower eyelid portion and a lower lip portion, a neck or throat section pivotally connected at its upper portion with said central bar and having a slot at its lower portion, a projection extending from the foundation into said slot, and a shoulder section pivoted to the foundation at its lower portion and engaging the said neck or throat section.

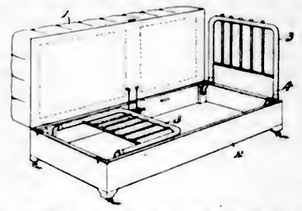
12. A changeable picture comprising a face section substantially parallel movable bars, means for moving them, and picture sections connected with said substantially parallel bars and relatively movable with reference to the face section and one another.

13. A changeable picture comprising a face section substantially parallel movable bars, cross-bars connecting them, means for moving said bars and picture sections connected with said substantially parallel bars and relatively movable with reference to the face section and one another.

855,058. CONVERTIBLE COUCH AND BED. THOMAS M. JAMISON and AUGUST PETRTYL, Chicago, Ill.; said Jamison assignor to said Petrtyl. Filed Dec. 12, 1906. Serial No. 347,518.

Claim.—1. In an article of the character set forth, the combination of a base, folding end pieces pivotally connected with the base to either fold thereon or to be turned into upright position, and a top for concealing the end pieces when folded upon the base and adapted to come between said end pieces when turned into upright position and act jointly with the base to hold said end pieces in fixed position against either inward or outward movement.

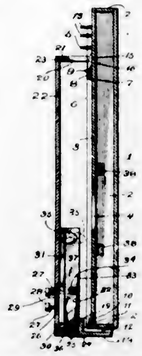
2. In an article of the character set forth, the combination of a base, an end piece adapted to lie concealed within the base to be turned into an upright position, and a hinge connection between the end piece and said base, and adapted to extend over the edge of the latter and having connection with said end piece at a point of the folding end piece occupying a position exterior to the end piece of the base when turned into upright position.



3. In a device of the character specified, the combination of a base and a top, end pieces adapted to lie concealed within the base or to be turned into upright position, hinge connections between the end pieces and the base and arranged to extend over edge portions of said base, said top adapted to come between the end pieces and form a brace therefor to limit the inward movement at their upper ends.

4. In an article of the character specified, the combination of a base having slots in an edge portion thereof, a folding end piece, hinge connections between said end piece and the base and adapted to lie within the aforesaid slots, and metal boxes reinforcing the slots.

855,059. PIANO-ZITHER. JOHN JUSZCZESKI, Chicago, Ill. Filed July 20, 1906. Serial No. 327,051.



Claim.—1. In a piano zither, the combination of a base consisting of top, bottom, side and end walls inclosing a chamber, a series of bass strings and a series of treble strings, both series of strings above the top wall of the base, a series of resilient vibratable carriers located above the series of treble strings one carrier for each treble string, a support for one end of each carrier, each carrier having at its supported end a return bend to form a spring, a hammer for and attached to the free end of each carrier, and means for vibrating the carriers and causing the hammers to strike the strings, substantially as described.

2. In a piano zither, the combination of a base consisting of top, bottom, side and end walls inclosing a chamber, a series of bass strings and a series of treble strings, both series of strings above the top wall of the base, an upper plate covering the treble strings, a series of depressible stems extending above and through the upper plate, one stem for each treble string, a series of swinging blocks underneath the upper plate, one block for and connected with each stem, a resilient vibratable carrier for and engaged with each swinging block, a support for one end of

each carrier, each carrier having at its supported end a return bend to form a spring, and a hammer for and attached to the free end of each carrier, substantially as described.

3. In a piano zither, the combination of a base consisting of top, bottom, side and end walls inclosing a chamber, a series of bass strings and a series of treble strings, both series of strings above the top wall of the base, an upper plate covering the treble strings, a series of depressible stems extending above and through the upper plate, one stem for each treble string, a cap for each stem with a designating character for a treble string, a series of swinging blocks underneath the upper plate, one block for and connected with each stem, a resilient vibratable carrier for and engaged with each swinging block, a support for one end of each carrier, each carrier having at its supported end a return bend to form a spring, and a hammer for and attached to the free end of each carrier, substantially as described.

4. In a piano zither, the combination of a base consisting of top, bottom, side and end walls inclosing a chamber, a series of bass strings and a series of treble strings, both series of strings above the top wall of the base, an upper plate covering the treble strings, a series of depressible stems extending above and through the upper plate, one stem for each treble string, a series of swinging blocks underneath the upper plate, one block for and connected with each stem, a vibratable spring carrier for and engaged with each swinging block, a support for one end of each carrier, each carrier having at its supported end a return bend to form the spring, and a hammer for and attached to the free end of each spring carrier, substantially as described.

5. In a piano zither, the combination of a base consisting of top, bottom, side and end walls inclosing a chamber, a series of bass strings and a series of treble strings, both series of strings above the top wall of the base, an upper plate covering the treble strings, a series of depressible stems extending above and through the upper plate, one stem for each treble string, a cap for each stem with a designating character for a treble string, a series of swinging blocks underneath the upper plate, one block for and connected with each stem, a resilient vibratable carrier for and engaged with each swinging block, each carrier having at its supported end a return bend to form a spring, a hammer for and attached to the free end of each carrier, and a support for the other end of each spring carrier and located under the series of carriers, substantially as described.

6. In a piano zither, the combination of a base consisting of top, bottom, side and end walls inclosing a chamber, a series of bass strings and a series of treble strings, both series of strings above the top wall of the base, an upper plate covering the treble strings, a series of depressible stems extending above and through the upper plate, one stem for each treble string, a cap for each stem with a designating character for a treble string, a series of swinging blocks underneath the upper plate, one block for and connected with each stem, a resilient vibratable carrier for and engaged with each swinging block, each carrier having at its supported end a return bend to form a spring, a hammer for and attached to the free end of each carrier, a support for the other end of each spring carrier and located under the series of carriers, and a stop located under and common to all of the spring carriers, substantially as described.

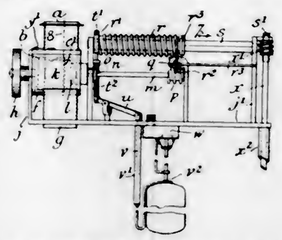
7. In a piano zither, the combination of a base consisting of top, bottom, side and end walls inclosing a chamber, a series of bass strings and a series of treble strings, both series of strings above the top wall of the base, an upper plate covering the treble strings, a series of depressible stems each stem extending above and through the upper plate, one stem for each treble string, a cap on each stem with a designating character for a treble string, a series of swinging blocks underneath the upper plate, one block for and connected with each stem, a resilient vibratable carrier for and engaged with each swinging block, each carrier having at its supported end a return bend to form a spring, a hammer for and attached to the free end of each carrier, a support for the other end of each spring carrier and located under the series of carriers, and a stop located under and common to all of the spring carriers, substantially as described.

855,060. PROCESS FOR MANUFACTURE OF INCANDESCENT BODIES FOR ELECTRIC LAMPS. ALEXANDER JUST and FRANZ HANAMAN, Budapest, Austria-Hungary, assignors to Egyesült Izzólampá és Villamossági Részvény Társasag, Uj-Pest, Austria-Hungary. Original application filed July 6, 1905, Serial No. 268,523. Divided and this application filed Jan. 5, 1907. Serial No. 350,924.

Claim.—1. The method of making incandescing bodies for electric lamps which consists in producing the said body from a mixture of carbon and tungsten and replacing the carbon totally by tungsten, substantially as described.

2. The method of making incandescing bodies for electric lamps which consists in heating a mixture of carbon and tungsten to a red heat in the vapor of oxyhalogen compound of tungsten by an electric current in the presence of hydrogen to cause the carbon to be replaced totally by tungsten, substantially as described.

855,061. COIN-SLOT METER AND MACHINE. MICHAEL KING, Wickham, and JOHN E. JAMES, Islington, New South Wales, Australia. Filed Dec. 7, 1905. Serial No. 290,704.



Claim.—1. In coin-actuated mechanism, in combination, an operating handle, a worm adapted to be rotated by such handle, a gear adapted to be rotated by said worm, a sliding worm adapted to be moved by said gear, and means for rotating said sliding worm to restore it to its original position.

2. In coin-actuated mechanism, in combination, an operating handle, a worm adapted to be rotated by such handle, a gear adapted to be rotated by said worm, a sliding worm adapted to be moved by said gear, a shaft upon which said gear slides, a gear carried by said shaft, and a worm adapted to rotate said gear.

3. In coin-actuated mechanism, in combination, an operating handle, a worm adapted to be rotated by said handle, a gear adapted to be rotated by said worm, a sliding worm moved by said gear, an actuating part arranged adjacent to the normal position of said sliding worm, and a cam mounted on said sliding worm and adapted to be rotated by the latter to move said actuating part.

4. In coin-actuated mechanism, in combination, an operating handle, a rotatable worm arranged in direct line with said operating handle and a gear rotated by said worm, a sliding worm adapted to be moved by said gear, a shaft on which said sliding worm is mounted, a pinion at the end of said shaft, and a third worm for operating said pinion.

5. In coin-actuated mechanism, in combination, an operating handle, a sliding worm adapted to be moved by said handle, and gearing for rotating said sliding worm in a reverse direction, such gearing being adapted to be changed to produce a slower or faster rotative movement of said sliding worm.

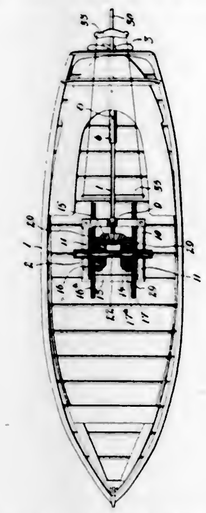
6. In coin-actuated mechanism, in combination, a shaft, a worm slidably mounted thereon, a fixed gear for sliding such worm, a second shaft adapted to be turned to move said sliding worm, and a second worm fixed on such shaft.

7. In coin-actuated mechanism, in combination, a shaft, a worm slidably mounted thereon, a fixed gear for sliding such worm, a second shaft adapted to be turned to move said sliding worm, a second worm fixed on such shaft, and a ring loosely mounted on said sliding worm, such ring carrying a pointer.

8. In coin-actuated mechanism, in combination, a shaft *s*, having thereon a sliding worm *r*, a shaft *m* adapted to be turned, and having thereon a fixed worm *p*, a gear *q* interposed between said worms, and a connection adapted to turn said shaft *s*.

9. In coin-actuated mechanism, in combination, a shaft *s*, having thereon a sliding worm *r*, a shaft *m* adapted to be turned, and having thereon a fixed worm *p*, a gear *q* interposed between said worms, and a connection adapted to turn said shaft *s* comprising a worm *s'* and a gear *s'* mounted on the shaft *s*.

855,062. BOAT. WALLACE KIRKPATRICK, Savage, Minn. Filed May 31, 1906. Serial No. 319,547.



Claim.—1. In a boat propelling machanism, a propeller shaft, opposing gears arranged to act alternately on opposite sides of said shaft to revolve it, two annular rows of ratchet teeth carried by each of said gears, the teeth in the two rows on each gear projecting in opposite directions, an operating lever, two double pawls, each having a weighted end to normally engage one of the annular rows of ratchet teeth on one of said gears and a reduced end to engage the other annular row of ratchet teeth on the same gear, and means for elevating and supporting the weighted ends of said pawls to hold their reduced ends in yieldable engagement with their co-acting rows of ratchet teeth.

2. In a boat propelling mechanism, a propeller shaft, opposing gears arranged to act alternately on opposite sides of said shaft to revolve it, two annular rows of ratchet teeth carried by each of said gears, the teeth in the two rows on each gear projecting in opposite directions, an operating lever, two double pawls, each having a weighted end to normally engage one of the annular rows of ratchet teeth on one of said gears and a reduced end to engage the other annular row of ratchet teeth on the same gear, operating devices for elevating and yieldably supporting the weighted ends of said pawls, and means for locking said operating devices against movement.

3. In a boat propelling mechanism, a propeller shaft, opposing gears arranged to act alternately on opposite sides of said shaft to revolve it, two annular rows of ratchet teeth carried by each of said gears, the teeth in the two rows on each gear projecting in opposite directions, an operating lever, two double pawls, each having a weighted end to normally engage one of the annular rows of ratchet teeth on one of said gears and a reduced end to engage the other annular row of ratchet teeth on the same gear, reversing levers carried by said operating lever, yieldable connections between said reversing levers and the weighted ends of said pawls, and means for locking said reversing levers in adjusted position.

4. In a boat propelling mechanism, a propeller shaft, opposing gears arranged to act alternately on opposite sides of said shaft to revolve it, two annular rows of ratchet teeth carried by each of said gears, the teeth in the two rows on each gear projecting in opposite directions, an operating lever, two double pawls, each having a weighted end to normally engage one of the annular rows of ratchet teeth on one of said gears and a reduced end to engage the other annular row of ratchet teeth on the same gear, reversing levers pivotally mounted upon said operating lever, spring connections between said reversing levers and the weighted ends of said pawls, and latches for holding the said reversing levers against movement.

5. In a boat propelling mechanism, a propeller shaft, a pinion fixed thereon, a support, a second shaft mounted therein, opposing gears loosely mounted upon said shaft and in mesh with said pinion, the peripheries of each of said gears being provided with two annular rows of ratchet teeth, the teeth in the two rows on each gear projecting in opposite directions, a substantially U-shaped operating lever mounted for oscillation upon said second shaft and provided with a cross bar, a pair of double pawls pivotally mounted upon said cross bar, each pawl being adapted to co-act with the two rows of ratchet teeth on one gear, and each of said pawls having one of its ends weighted to normally engage one row of ratchet teeth and its other end reduced and adapted to be moved into engagement with the ratchet teeth of the adjacent row on the same gear, means for elevating and supporting the weighted ends of said pawls, and means for holding said operating lever normally in a vertical position.

6. In a boat propelling mechanism, a support, a shaft therein, an oscillatory operating frame consisting of a substantially H-shaped inner section having its inner end mounted to swing from said shaft, and a substantially U-shaped outer section having handles at its outer end, the inner end of said outer section and the outer end of said inner section having telescoping parts, means for securing said telescoping parts in adjusted position, a propeller shaft, and gearings arranged on the first mentioned shaft and actuated by said operating frame for driving said propeller shaft.

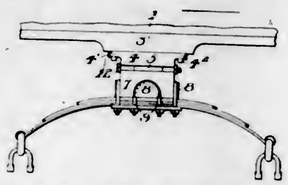
855,063. FISH-NET FLOAT. JOSEPH KOENIG, Two Rivers, Wis. Filed Feb. 18, 1907. Serial No. 357,830.



Claim.—1. A fish-net float comprising an air-tight shell provided with paired strengthening beads, and a partition held between each pair of said beads.

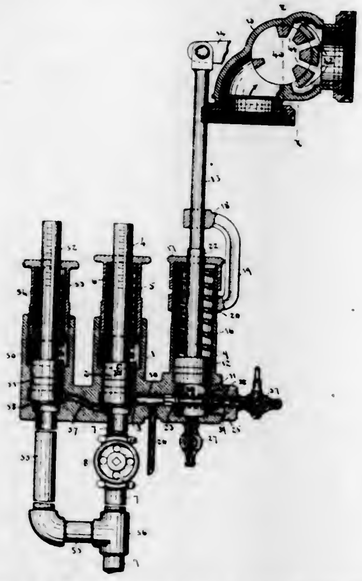
2. A fish-net float comprising a seamless metallic shell having external annular grooves adjacent its ends, paired strengthening ribs, and a partition held between each pair of said ribs.

855,064 VEHICLE. CHARLES H. KRAMER, Allegheny, Pa. Filed Mar. 10, 1906. Serial No. 305,202.



Claim.—In a device of the character described the combination, with the body portion and springs of a vehicle, of securing plates rigidly fixed to the under side of the body portion and hounds, a hinged member operatively connected with each securing plate; a plurality of grooved projections formed on the hinged member and adapted to receive securing means for uniting said hinged members with the spring.

855,065. PUMP-GOVERNOR. CHARLES R. MOORE, Elmira, N. Y. Filed June 7, 1906. Serial No. 320,562.



Claim.—1. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, a conduit leading to said cylinder from the delivery side of the pump, a valve in said conduit adapted to be opened automatically at determinate pressures, and means automatically operative to close communication between the cylinder and the conduit and prevent admission to the cylinder until the pressure of the flow past the valve exceeds the pressure at which the valve is set to open.

2. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, a conduit leading to said cylinder from the delivery side of the pump, a valve in said conduit adapted to be opened automatically at determinate pressures, a restricted discharge outlet leading from the valve on the side toward the cylinder, and a second valve adapted to open communication between the first valve and the cylinder when the flow from said valve exceeds the capacity of said discharge.

3. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, a valve mounted in a casing adjacent the cylinder provided with means for adjusting it to open at determinate pressures, a passage-way leading from said valve to the cylinder below the piston, a conduit leading to the valve from the delivery side of the pump, a restricted discharge outlet leading from the passage-way between the valve and cylinder, a spring actuated valve normally closing communication between said passage-way and the cylinder, and means for accomplishing a discharge from the cylinder when the pressure falls below that for which the governor is set to operate.

4. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, a valve mounted in a casing adjacent the cylinder provided with means for adjusting it to open at determinate pressures, a passage-way leading from said valve to the cylinder, an independent discharge outlet leading from the cylinder, connecting devices whereby the opening of the valve will close the discharge outlet and vice versa, and a conduit leading to the valve from the delivery side of the pump.

5. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, a valve mounted in a casing at the side of the cylinder provided with means for adjusting it to open at determinate pressures, a passage-way leading from the valve to the cylinder at the under side of the piston, a drain cock controlling a discharge outlet from the cylinder below the piston, a rock-arm mounted between the casing and cylinder, links coupling the ends of said rock arm to the valve and to the drain cock, for the purpose set forth, and a conduit leading to the valve from the delivery side of the pump.

6. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, a valve mounted in a casing at the side of the cylinder provided with means for adjusting it to open at determinate pressures, a passage-way leading from the valve to a chamber in the cylinder below the piston, a restricted discharge outlet leading from said passage-way, a valve in said chamber adapted to open communication between the passage-way and chamber when the flow from the first valve exceeds the capacity of said discharge, a drain cock controlling a discharge outlet from said chamber, means whereby the opening and closing of the first valve will automatically close and open the cock, and means for returning the piston to normal position as discharge takes place from said chamber.

7. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, means for automatically opening admission to said cylinder from the delivery side of the pump at predetermined pressures to actuate said piston for a quick stroke in one direction, means for accomplishing a slow discharge from the cylinder when the pressure falls, and means for returning the piston to normal position as the discharge takes place, whereby the engine will be stopped quickly and started slowly by the operation of the governor.

8. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein, a throttle valve in the admission pipe leading to the engine cylinders provided with a plurality of narrow ports, connecting devices between said piston and valve whereby the valve will be closed by a short stroke of the piston, means for automatically opening admission to the governor cylinder from the delivery side of the pump at predetermined pressures to actuate the piston in one direction under full pressure, and means for automatically returning the piston to normal position under a slow discharge from the cylinder when the pressure falls below the critical point.

9. The combination, with a pumping engine, of a governor comprising an auxiliary throttle valve provided with a plurality of narrow ports registering with corresponding ports in a valve casing provided therefor in the admission

pipe leading to the engine cylinders, a valve stem, means for adjusting the valve and stem to turn freely at the temperature of admission, an arm on the stem, a cylinder, a piston therein coupled to said arm, means for automatically opening admission to the cylinder from the delivery side of the pump at predetermined pressures to actuate the piston and close the valve, means for opening a discharge from the cylinder when the pressure falls below the critical point, and means for returning the piston to normal position as the discharge takes place.

10. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, means for automatically opening admission to the cylinder from the delivery side of the pump at predetermined pressures to actuate the piston, means for automatically opening a restricted discharge from the cylinder to permit the return of the piston to normal position when the pressure falls below the critical point, and a manually operated discharge for use in case the automatic discharge fails to operate.

11. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, a valve set to open admission to the cylinder from the delivery side of the pump at a certain pressure, a second valve set to open said admission at a higher pressure, and means for cutting off the admission to the first valve.

12. The combination, with a pumping engine, of a governor comprising a cylinder, a piston therein in operative connection with an engine control, a conduit leading to the cylinder from the delivery side of the pump, a valve in said conduit provided with means for setting it to open at determinate pressure, a second valve provided with means for setting it to open at determinate higher pressures, a passage-way leading from the second valve to the first, a by-pass leading from the main conduit to the second valve between the pump and the first valve, and a valve to close communication between the main conduit and the first valve.

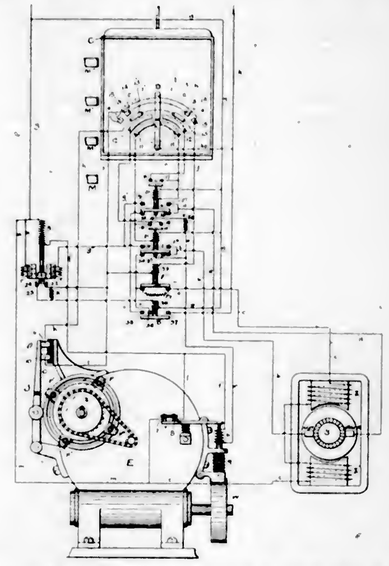
13. In a governor of the type described, the combination of a cylinder, means for automatically opening admission from the delivery side of a pump to one end of the cylinder at determinate pressures, a piston in the cylinder, a piston rod projecting from the other end of the cylinder, an engine control to which said rod is coupled, a guide for the rod mounted on an arm projecting from the cylinder, and a shoulder on the rod adapted to strike said guide to limit the stroke of the piston.

14. In a governor of the type described, the combination of a cylinder, means for automatically opening admission from the delivery side of a pump to one end of the cylinder at determinate pressures, a piston in the cylinder, a piston rod projecting from the other end of the cylinder, an engine control to which said rod is coupled, a guide for the rod mounted on an arm projecting from the cylinder, a shoulder on the rod adapted to strike said guide to limit the stroke of the piston, and means for adjusting the arm on the cylinder to lengthen or shorten said stroke.

15. In a governor of the type described, the combination of a cylinder, means for automatically opening admission from the delivery side of a pump to one end of the cylinder at determinate pressures, a piston in the cylinder, an engine control operated by said piston, a drain cock on the cylinder through which discharge takes place on the return stroke of the piston, means for closing and opening said cock automatically as the pressure respectively rises to and falls below the critical point for which the governor is set to operate, and means for adjusting the size of the passage-way through the cock.

855,066. MEANS OF CONTROL FOR AN ELECTRICALLY-ACTUATED BODY. BENJAMIN MCINNERNEY, Omaha, Nebr. Filed Apr. 9, 1906. Serial No. 310,750.

Claim.—1. In the operation of an electrically driven body, a station switch adapted to automatically open and close a controlling circuit at predetermined intervals in the travel of the driven body and a manually operated switch arranged to render the operation of said station switch effective or ineffective.



2. In the operation of an electrically driven body, a station switch adapted to automatically open and close a controlling circuit at predetermined intervals in the travel of the driven body and a plurality of manually operated switches arranged to render operation of said station switch effective or ineffective.

3. In the operation of an electrically driven body, a station switch adapted to open and close a controlling circuit at predetermined intervals in the travel of a driven body and a manually operated switch adapted to control the movements of said driven body and provided with means which enable operator to render the operation of said station switch effective or ineffective.

4. In the operation of an electrically driven body, a station switch adapted to open and close a controlling circuit at predetermined intervals in the travel of the driven body and a manually operated switch adapted to control the movement of said driven body and means for closing said controlling circuit around said station switch.

5. In the operation of an electrically driven body, an operating switch adapted to be operated manually to reduce speed of driven mechanism and provided with means for automatically making effective the operation of a station switch.

6. In a system of control for an electrically driven body, a plurality of operating switches, each adapted to be operated manually to reduce speed of driven mechanism and provided with means for automatically making effective a station switch.

7. In the operation of an electrically driven body, a station switch adapted to open and close a controlling circuit at predetermined intervals in the travel of the driven body, a manually operated switch adapted to control the movement of said driven body and provided with means which enable the operator to render the operation of said station switch effective or ineffective and an electrically actuated reversing switch, a line switch with means for preventing the operation of the line switch when the reversing switch is improperly disposed.

8. In the operation of an electrically driven body, a station switch adapted to open and close a controlling circuit at predetermined intervals in the travel of the driven body, a manually operated switch adapted to control the

movement of said driven body and provided with means which enable operator to render the operation of said station switch effective or ineffective, and a reversing switch with brake connections with means to prevent the release of brake while reversing switch is improperly disposed.

9. In the operation of an electrically driven body, a station switch, a manually operated switch with means for rendering the operation of said station switch effective or ineffective, a reversing switch, a line switch, brake connections with means for preventing the operation of said line switch or release of brake when reversing switch is improperly disposed.

10. In a system of control for an electrically actuated body, a plurality of manually operated switches any one of which is adapted to control the movement of such driven body and a station switch the operation of which is rendered effective or ineffective by any one of said manually operated switches.

11. In a system of control for an electrically actuated body, a plurality of operating switches, a station switch, means for rendering the operation of said station switch effective or ineffective and means for rendering all of said manually operated switches ineffective, except the first of said switches operated.

12. In a system of control for an electrically actuated body, a plurality of operating switches with means for rendering all but one when operated ineffective, and means for rendering all but said one and the first operated of remaining switches ineffective and an automatic station switch the operation of which is rendered effective or ineffective by said operating switches.

13. In a system of control for an electrically actuated body, a plurality of operating switches, non-interference switches, reversing switches and a station switch with means for rendering the operation of such station switch effective or ineffective by manipulation of any one of said operating switches.

14. In a system of control for an electrically actuated body, a mechanically operated station switch in a single controlling circuit and a manually operated switch adapted to render said controlling circuit effective or ineffective.

15. In a system of control for an electrically actuated body, a mechanically operated station switch in a single controlling circuit and a plurality of manually operated switches each one of which is adapted to render said controlling circuit effective or ineffective.

16. In a system of control for an electrically actuated body, a mechanically operated station switch in a single controlling circuit and a plurality of manually operated switches, each one of which is adapted to render said controlling circuit effective or ineffective and means to render all other operating switches ineffective when one is first operated and all ineffective when more than one is operated at the same time.

17. In a system of control for an electrically actuated body, an automatic station switch in a single controlling circuit and a manually operated switch arranged to render the operation of said station switch effective or ineffective and arranged to change the speed of the driving mechanism when the operation of said station switch is made effective.

18. In a system of control for an electrically actuated body, an automatic station switch in a single controlling circuit and a plurality of manually operated switches each of which is arranged to render the operation of said station switch effective or ineffective and arranged to change the speed of the driving mechanism when the operation of said station switch is made effective and non-interference switches arranged to render all other operating switches ineffective when one alone is first operated and all ineffective when more than one is first operated at the same time.

19. In a system of control for an electrically actuated body, an automatic station switch in a single controlling circuit, said station switch adjustable to a varying number and location of stations and a manually operated switch arranged to render the operation of said station switch effective or ineffective.

20. In a system of control for an electrically actuated body, a plurality of operating switches and non-interference switches arranged to give the operating circuit established by any one of said operating switches, power over that established by all other of said operating switches when such one is alone first operated.

21. In a system of control for an electrically actuated body, a plurality of operating switches and non-interference switches arranged to give the operating circuit established by a selected operating switch power over that of all of said remaining operating switches and the operating current established by any one of the said remaining operating switches power over that established by any or all other of said remaining operating switches except said selected operating switch.

22. In a system of control for an electrically actuated body, a plurality of operating switches adapted to control the movement of said driven body and to render effective or ineffective the operation of an automatic station switch in a single controlling circuit with means to render all of said operating switches inoperative if more than one is initially operated at the same time.

23. In a system of control for an electrically actuated body, an operating switch upon the driven body and a plurality of operating switches remote from said body, said operating switches adapted to control the movement of said driven body and render effective or ineffective the operation of an automatic station switch in a single controlling circuit with means to render all of said operating switches remote from said driven body, ineffective when the operating switch upon the said driven body is manipulated, and when more than one of said operating switches remote from said driven body are initially operated at the same time.

24. The combination of a body and a motor to actuate it, of an adjustable automatic station switch having a single set of contacts and an operating switch adapted to control the movement of said body, with means for rendering the operation of said station switch effective or ineffective at the will of the operator for the purposes set forth.

25. The combination of a body and a motor to actuate it, of an adjustable automatic station switch having a single set of contacts and a plurality of operating switches any one of which is adapted to control the movement of said body, with means for any one of said operating switches to render the operation of said station switch effective or ineffective when any one of the said operating switches is alone initially operated for the purposes set forth.

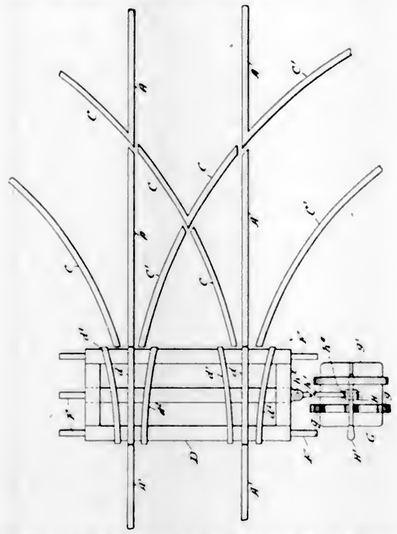
26. The combination of a body and motor to actuate it, of an adjustable automatic station switch having a single set of contacts and an operating switch adapted to control the movement of said body with means for rendering the operation of said station switch effective or ineffective, and means for changing the speed of said motor when said operating switch renders the operation of said station switch effective.

27. The combination of a body and motor to actuate it, of an adjustable automatic station switch having a single set of contacts and an operating switch to control the movement of said body with means for rendering the operation of said station switch effective or ineffective at will of operator, reversing switches and means to render said reversing switches ineffective when improperly disposed.

28. The combination of a body and motor to actuate it, of an adjustable automatic station switch having a single set of contacts and a plurality of operating switches, any one of which is adapted to control the movement of said body and to render the operation of said station switch effective or ineffective, non-interference switches adapted to give any one of said operating switches initially operated, power over all other of said operating switches reversing switches with means to prevent the operation of said reversing switches when improperly disposed.

29. The combination of a body and motor to actuate it, of an adjustable automatic station switch having a single set of contacts and an operating switch adapted to control the movement of said body, with means for rendering the operation of said station switch effective or ineffective and changing the speed of said motor when the operation of said station switch is rendered effective, a reversing switch with means to render the same inoperative when improperly disposed.

855,067. RAILROAD-SWITCH. EMIL NORDEN, Chicago, Ill., assignor to Herbert A. Streeter, Chicago, Ill. Filed July 16, 1906. Serial No. 326,309.



Claim.—1. In a switch for railway tracks, the combination with the main track rails and two switch track rails branching one to each side of the main track, of a transversely movable switch bed having thereon short sectional main track rails and two switch track rails, one curving to each side of the main track rails on the switch bed, substantially as specified.

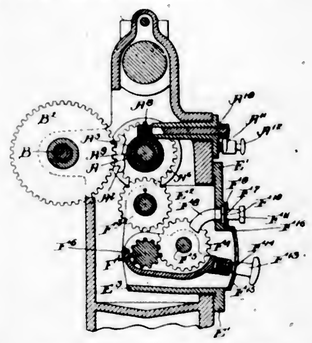
2. In a railway track switch, the combination with the main track rails and switch track rails of a transversely movable switch bed, having flanged guide shoes on the under side thereof, guide rails for supporting and guiding said switch bed, said switch bed being provided with short sectional main track rails and switch track rails, a switch stand provided with locking notches, and a switch lever connected to said switch bed and provided with a hinged locking arm adapted to engage the locking notches on the switch stand, substantially as specified.

3. In a railway track switch, the combination with the main track rails and switch track rails, of a transversely movable switch bed, having flanged guide shoes on the under side thereof, guide rails for supporting and guiding said switch bed, said switch bed being provided with short sectional main track rails and switch track rails, a switch stand provided with locking notches, a switch lever connected to said switch bed and provided with a hinged locking arm adapted to engage the locking notches on the switch stand, said switch stand having an inner set of locking notches and an outer set on each side thereof, and a connecting rod extending between the two sides of the switch stand, substantially as specified.

4. In a railway track switch, the combination with the main track rails and switch track rails, of a movable switch bed carrying short sectional main track rails and short sectional curved switch track rails one on each side of each main track rail which are adapted to be brought into registry at one end with the main track rails and at the other end with the switch track rails, substantially as specified.

5. In a railway track switch, the combination with the main track rails and switch track rails, of a movable switch bed carrying short sectional main track rails and short sectional curved switch track rails which are adapted to be brought into registry at one end with the main track rails and at the other end with the switch track rails, and means for locking the switch bed in its different positions, substantially as specified.

855,068. GEARING. JOHN PARKER, Providence, R. I., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Filed Feb. 9, 1904. Serial No. 192,852.



Claim.—1. The combination with the spindle, the driving member therefor, the back gearing, a cam on the back gear shaft, a lever operated thereby, a sleeve connected with the lever, a locking pin carried by the sleeve for connecting and disconnecting the spindle and driving member, substantially as described.

2. The combination with the spindle, the driving member therefor, the back gearing, a cam on the back gear shaft, a lever operated thereby, a sleeve connected with the lever, a spring pressed locking pin carried by the sleeve for connecting and disconnecting the spindle and driving member, substantially as described.

3. The combination with a spindle, a driving member therefor and back gearing, of one or more spring pressed devices for connecting and disconnecting the driving member and spindle, and connections between said devices and the back gear shaft for operating the devices through their springs, substantially as described.

4. The combination with a spindle, a driving member therefor and back gearing, of a spring pressed locking pin for connecting the driving member and spindle, a cam on the back gear shaft, and connection between the cam and pin, substantially as described.

5. The combination with a shaft of a driving mechanism therefor comprising a cone gear having an even number of gears varying in substantially geometrical progression, two gears for engaging the largest cone gear and the smaller of the two center cone gears respectively, and means for throwing either of said gears into the active train, substantially as described.

6. The combination with a shaft of a driving mechanism therefor comprising a cone gear having an even number of gears varying in substantially geometrical progression, two gears connected with the shaft arranged to engage the largest cone gear and the smaller of the two center cone gears respectively, and means for throwing either gear into the active train, substantially as described.

7. The combination with a shaft of a driving mechanism therefor comprising a cone gear having an even number of gears varying in substantially geometrical progression, two gears mounted on the shaft and arranged to engage the largest of the cone gears and the smaller of the two center cone gears respectively, and means for throwing either gear into the active train, substantially as described.

8. The combination with a shaft of a driving mechanism therefor comprising a cone gear having an even num-

ber of gears varying in substantially geometrical progression, a quill gear on the shaft having gears to engage the largest cone gear and the smaller of the two center cone gears, and means for shifting said quill gear longitudinally of the shaft, substantially as described.

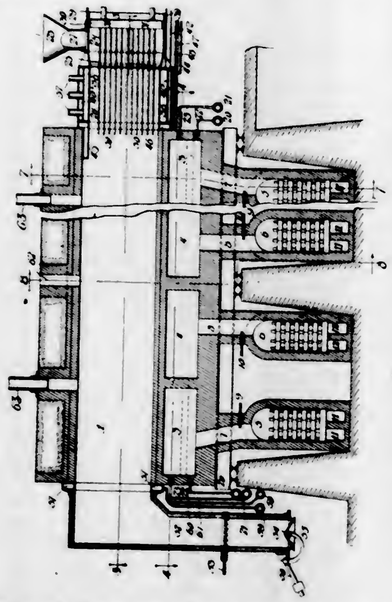
9. The combination with a shaft of a driving shaft, a variable speed mechanism, a casing in which said mechanism is mounted, devices for securing the casing in place, connecting gears between the shaft and said mechanism and a coupling device between the driving shaft and the driving shaft of the variable speed mechanism, substantially as described.

10. The combination with a shaft A of a driving shaft D, a bracket D^3 in which it is mounted, a casing E, variable speed gearing mounted in the casing provided with a driving shaft F, devices for securing the casing E to the machine frame, a coupling between the shafts D and F, and gears connecting the shaft A and variable speed gearing, substantially as described.

11. The combination with a shaft of a cone gear F^3 connected to drive the shaft, a gear F^2, a casing E in which said gears are mounted, having a vertical slot, a frame F^6 mounted in the casing to swing about the axis of gear F^2, a shaft F^5 in the frame, an intermediate gear F^4 on the shaft F^6, a stud projecting from the frame through the slot, locking recesses, a locking sleeve on the stud, and devices for adjusting the gear F^4 on the shaft F^6, substantially as described.

12. The combination with a shaft of gears A^5, A^6, connected therewith, devices for throwing either gear into the active train, a cone gear F^3 for driving said gears, a gear F^2, an intermediate gear F^4, a frame F^6 in which gear F^4 is mounted, a casing in which the gearing is mounted, locking devices carried by the frame and located outside the casing, and a device for adjusting the gear F^4 laterally, substantially as described.

855,069. PROCESS OF COKING COAL. SAMUEL B. SHELDON, Buffalo, N. Y. Filed Oct. 2, 1906. Serial No. 337,055.



Claim.—1. The process of coking coal which consists in applying pressure to one end of a mass of coal while confining it laterally to compress the coal and advance the mass horizontally toward and into a coking retort or oven, applying heat to the mass for preheating the coal during its approach toward the retort or oven and applying coking heat to the portion of the mass within the coking retort or oven.

2. The process of coking coal which consists in applying horizontal pressure to one end of a mass of coal to advance the mass horizontally toward and into a coking retort or oven, pre-heating the mass during its approach toward the retort or oven and applying coking heat to the portion of the mass within said retort or oven.

3. The process of coking coal which consists in advancing a mass of coal toward a coking retort or oven, applying lateral pressure to the mass during its movement toward the retort or oven to compress the said mass from the outside toward the center thereof, confining the mass laterally after it is compressed until it enters said retort or oven, advancing the compressed mass into the said retort or oven without admitting air thereto, and applying coking heat to the part of the mass within said retort or oven.

4. The process of coking coal which consists in applying pressure to one end of a mass of coal to advance the mass toward a coking retort or oven and at the same time applying to the mass lateral pressure to compress the same from the outside toward the center thereof, confining the mass laterally after it is compressed until it reaches the said retort or oven, advancing said mass into said retort or oven without admitting air thereto, and applying coking heat to the portion of the mass within said retort or oven.

5. The process of coking coal which consists in applying pressure to one end of a mass of coal to advance the mass toward and into a coking retort or oven, and at the same time applying to the mass lateral pressure to compress the same from the outside toward the center thereof, preheating the compressed mass during its movement toward the retort or oven, and applying coking heat to the portion of the mass within said retort or oven.

6. The process of coking coal which consists in applying horizontal pressure to one end of a mass of coal confined in an inclosing tube or passage to advance the mass through said tube or passage into a coking retort or oven, applying heat to the walls of said passage for preheating the coal during its movement toward the retort or oven, and applying coking heat to the portion of said mass within said retort or oven.

7. The process of coking coal which consists in applying horizontal pressure to one end of a mass of coal confined in an inclosing tube or passage to compress the coal into a solid mass and advance the mass through said tube or passage into a coking retort or oven, applying heat to the walls of said passage for preheating the compressed mass of coal during its movement toward the retort or oven, and applying coking heat to the portion of said mass within said retort or oven.

8. The process of coking coal which consists in applying pressure to one end of a mass of coal confined in an inclosing tube or passage, to advance the mass toward and into a coking retort or oven, applying lateral pressure to the mass during its movement through said tube or passage to compress said mass from the outside toward the center thereof, applying heat to the inclosing tube or passage for preheating the coal during its movement therethrough, and applying coking heat to the portion of the mass within said retort or oven.

9. The process of coking coal which consists in advancing coal in a compact and continuous mass toward and into a coking retort or oven without admitting air to the latter, perforating the compressed mass, applying coking heat to the portion of the mass within the retort or oven, and removing the finished coke from the oven from time to time without admitting air to said retort or oven.

10. The process of coking coal which consists in applying pressure to one end of a mass of coal to advance the mass toward a coking retort or oven, applying lateral pressure to the mass to compress the same from the outside toward the center thereof, confining the compressed mass laterally during its movement toward the retort or oven, advancing the said compressed mass into the said retort or oven without admission of air thereto, perforating the mass when under lateral pressure, and applying coking heat to the portion of the mass within the said retort or oven.

11. The process of coking coal which consists in applying pressure to one end of a mass of coal while confining it laterally to advance the mass toward and into a coking retort or oven, perforating the mass before it reaches the retort or oven, applying heat to the mass during its approach toward the retort or oven for preheating the same, and applying coking heat to the portion of the mass within the retort or oven.

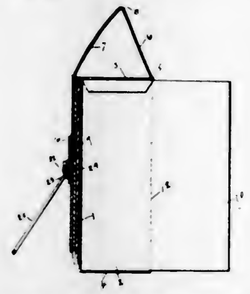
12. The process of coking coal which consists in applying pressure to one end of a mass of coal to advance the same toward and into a coking retort or oven, applying lateral pressure to the mass to compress the same in a direction from its outside toward its center, perforating the mass while under compression, applying heat to the mass during its approach toward the retort or oven, and applying coking heat to the portion of the mass within said retort or oven.

13. The process of coking coal which consists in applying pressure to one end of a mass of coal confined in an inclosing tube or passage which has direct connection with a coking retort or oven to advance the mass through said passage and from the latter into said retort or oven without the admission of air thereto, perforating the mass longitudinally during its movement through said passage toward said retort or oven, applying coking heat to the portion of the mass within said retort or oven and removing the finished coke from the retort or oven from time to time without admitting air thereto.

14. The process of coking coal which consists in applying pressure to one end of a mass of coal confined in an inclosing tube or passage, applying lateral pressure to the mass during its movement through said tube or passage for compressing the mass from its outside toward its center, perforating the mass longitudinally while under lateral pressure, and applying coking heat to the portion of the mass within said coking retort or oven.

15. The process of coking coal which consists in applying pressure to one end of a mass of coal confined in an inclosing tube or passage, applying lateral pressure to the mass during its movement through said tube or passage to compress the same from its outside toward its center, perforating the mass longitudinally while under lateral pressure, applying heat to the mass during its movement through said tube or passage toward the retort or oven, to preheat the coal, and applying coking heat to the portion of the mass within said retort or oven.

855,070. PACKING AND DISPLAY DEVICE. SAMUEL R. SLAYMAKER, Lancaster, Pa. Filed July 31, 1906. Serial No. 328,534.



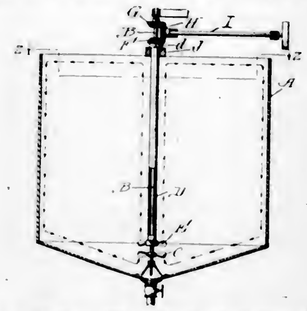
Claim.—1. The combination, in a case, of the top, a section depending from the rear of the top and having vertical slits therein, a section extending upward from the bottom and lapping the top section, ears connected with the lower section and engaging said slits, a flap for covering the front of the case and constructed to be folded back, and a lip on said flap adapted to engage said horizontal slit.

2. The combination, in a case, of a back comprising flaps attached to opposite edges of the case and lapping each other, a section depending from the rear of the top and having vertical slits therein, a section extending upward from the bottom and lapping the top section, said top and bottom sections being outside of said side sections, ears connected with said lower section and engaging said slits, a flap for covering the front of the case and constructed to be folded back, a lip on the front flap adapted to engage said horizontal slit, clamps securing trunnion bearings to the back and binding together the opposite flaps of the back and said top and bottom sections together, and an easel-back engaging said trunnion bearings.

3. The combination in a case, of a top, a flap for covering the front attached thereto, a section depending from the rear of the top and having vertical slits therein, a section extending upward from the bottom and lapping the top section and ears connected with the lower section and engaging said slits.

4. The combination in a case, of the top, a flap for covering the front attached thereto, a section depending from the rear of the top, and having vertical slits therein, a section extending upward from the bottom and lapping the top section, ears connecting with the lower section and engaging said slits of the rear section, trunnion bearings and clamps securing said bearings to the back and binding said sections together.

855,071. PROCESS OF COMBINING OILS AND FATS WITH HEAVIER FLUIDS. THEODORE E. SMITH, Weehawken, N. J. Filed Nov. 12, 1906. Serial No. 343,078.



Claim.—1. The process of mechanically combining fluids of different specific gravities which comprises mechanically projecting a current of heavier fluid upwardly through and in continuous contact with an overlying body of lighter fluid.

2. The process of mechanically combining fluids of different densities which comprises projecting an unconfined and undivided current of a heavier fluid upwardly through an overlying body of a lighter fluid.

3. The process of mechanically combining fluids of different densities which comprises projecting an unconfined and undivided current of a heavier fluid upwardly through and in continuous contact with an overlying fluid body of less density.

4. The process of mechanically combining fluids of different densities which comprises projecting a current of the denser fluid vertically through and in free and continuous contact with a body of lighter fluid and also causing induced descending return currents until the fluids of different densities are brought into homogeneous intimate molecular combination with each other.

5. The process of mechanically combining water with fats and oils which comprises projecting a mechanically created current of water vertically through and in free and continuous contact with a body of fats and oils.

6. The process of combining water with fats and oils which comprises sufficiently heating the fats and oils to hold the same in a sufficiently fluid condition and then projecting a mechanically created current of water through and in continuous contact with the body of fats and oils until said elements are brought into such intimate molecular contact with each other as to form a homogeneous mass.

7. The process of producing a homogeneous compound containing water and fats or oils, which are solid or semi-solid at ordinary atmospheric temperatures, which comprises bringing the fats or oils to a sufficiently fluid condition, projecting a mechanically created current of water through and in continuous contact with an overlying body containing the fats or oils and producing induced return currents, while the fats or oils are maintained in a sufficiently fluid condition, until said elements are brought into thorough intimate molecular combination with each other, and then cooling the homogeneous mass to solid or semi-solid condition.

8. The process of combining fluids reluctant to mix which comprises projecting an unconfined and undivided current of one fluid, having a substantially uniform diameter, through and in continuous contact with a body of the other fluid until a mechanical combination of said fluids is produced.

9. The process of combining fluids reluctant to mix which comprises bringing the fluids together in a vessel and mechanically generating through the fluid body in the vessel an undivided and unconfined rising current having a substantially straight path, said current being in continuous contact with the surrounding body of fluid.

10. The process of combining fluids reluctant to mix which comprises bringing the fluids together in a vessel and creating opposing currents near the bottom of the vessel whereby a resulting single vertical current is produced which is projected vertically through the entire fluid body and in continuous contact therewith.

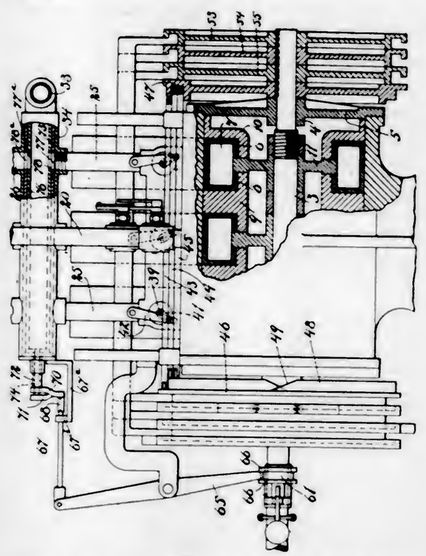
11. The process of combining fluids reluctant to mix which comprises bringing the fluids together in a vessel, creating an initial rising and diverging current near the bottom of the vessel and simultaneously creating a second rising and diverging current in such a manner that a single, vertical current is created as the resultant of said two initial currents and is projected vertically through and in continuous contact with the body of fluids in said vessel.

12. The process of combining materials which are reluctant to mix, at least one of which is solid or semi-solid at ordinary atmospheric temperatures which comprises associating said materials together in a fluid condition, projecting through the body of said fluids from a point near the bottom thereof a vertical current in free and continuous contact with said fluid body and so as to produce return descending currents until an intimate mechanical combination of said fluids is obtained, bringing said fluids when so combined within the influence of a cooling medium whereby they are sufficiently cooled to make the combination thereof permanent, the primary body of said fluids being continuously intermingled as above set forth, while such combined fluids are being conveyed to such cooling influence, whereby the mechanical combination of said elements is continuously maintained until said elements are cooled into a solid or semi-solid mass.

13. The process of combining fluids reluctant to mix, which comprises projecting through and in continuous contact with a body of said fluids a vertical current having a substantially uniform diameter which is relatively small in comparison with the diameter of the entire fluid body through which it is projected.

14. The process of combining fluids reluctant to mix which comprises projecting a fluid current through and in continuous contact with the body of said fluids and maintaining said fluid body inert and without agitation except for said projected current and the return and entrained currents resulting therefrom.

855,072. ROTARY ENGINE. JAMES M. SPARKES, Lynn, Mass., assignor of nine-twentieths to Fred H. Seavey, Boston, Mass., and one-twentieth to Charles W. Blackett, Lynn, Mass. Filed Nov. 17, 1905. Serial No. 287,776.



Claim.—1. A rotary engine comprising a single external cylindrical casing, a shaft extending longitudinally through said casing, a plurality of annular rings set side by side within the casing and having grooves in their meeting faces forming an annular pressure chamber, and a piston fitting in said grooves and connected to the shaft.

2. A rotary engine comprising a single external cylindrical casing, a shaft extending longitudinally through said casing, a plurality of annular rings having external cylindrical surfaces set side by side and fitted closely within the casing, said rings having in their adjacent faces annular grooves forming together a pressure chamber, and a piston fitting in said chamber and connected to the shaft.

3. A rotary engine comprising a single external cylindrical casing, a shaft extending longitudinally through said casing, a plurality of annular rings having external cylindrical surfaces set side by side and fitted closely within the casing surrounding and out of contact with the shaft, said rings having in their adjacent faces annular grooves forming together a pressure chamber, and a piston fitting in said chamber and connected to the shaft.

4. A rotary engine comprising a single external cylindrical casing, a shaft extending longitudinally through said casing, a plurality of annular rings having external cylindrical surfaces arranged side by side and fitting closely within the casing, being held thereby in perfect alinement and contact, and surrounding the shaft out of contact therewith, disks mounted on the shaft with their peripheries projecting slightly between adjacent rings and being out of contact with the inner cylindrical surfaces of the rings, said rings having in their sides annular grooves of which each two adjacent grooves form a single pressure chamber, and pistons secured to the disks and fitting in said chambers.

5. A rotary engine comprising a single external cylindrical casing, a shaft extending longitudinally through said casing, a plurality of annular rings having external cylindrical surfaces arranged side by side and fitting closely within the casing, being held thereby in perfect alinement and contact, and surrounding the shaft out of contact therewith, disks mounted on the shaft with their peripheries projecting slightly between adjacent rings and being out of contact with the inner cylindrical surfaces of the rings, said rings having in their sides annular grooves of which each two adjacent grooves form a single pressure chamber rectangular in cross-section, and pistons secured to the disks and fitting in said chambers.

6. A rotary engine consisting of rings placed closely together and having annular grooves formed in their adjacent sides, these grooves in adjacent rings forming separated pressure chambers, the rings being equal in diameter and forming externally an extended cylindrical surface, a cylindrical shell closely surrounding all the rings, heads secured to the ends of said shell, a shaft journaled in said heads, and pistons connected to the shaft and movably mounted in the chambers, the rings being separated by open spaces from the shaft and heads of the casing.

7. A rotary engine comprising a shaft, a plurality of pistons secured thereto extending at different angles therefrom, a plurality of annular rings recessed on their adjacent sides to form chambers into each of which one of the pistons extends and fits movably, a casing surrounding and binding together said rings, admission ports in the chambers in line axially of the engine, and valves operated successively by the shaft for admitting steam to each chamber as the piston therein passes the port.

8. A rotary engine comprising a shaft, a plurality of pistons secured thereto extending at different angles therefrom, a plurality of annular chambers into each of which one of the pistons extends and fits movably, admission ports in the chambers in line axially of the engine, a valve for admitting and cutting off the steam to each chamber, a plurality of reciprocable bars lying side by side parallel to the shaft and each connected to one of the valves, and cams arranged to operate the bars and thereby the valves successively for admitting steam to each chamber as the piston therein passes the port, and cutting off the steam after a fractional revolution of the piston.

9. A rotary engine comprising a shaft, a plurality of pistons secured thereto extending at different angles therefrom, a plurality of annular chambers into each of which one of the pistons extends and fits movably, admission ports in the chambers in line axially of the engine, an abutment extending across each chamber, said abutments being all approximately in the same plane, and in alinement, cams equal in number to the abutments connected to each end of the shaft, and yokes extending longitudinally of the engine engaged at their ends with the cams and each connected to one of the abutments for retracting and again projecting each of the abutments as the piston in the respective chamber approaches and passes the same.

10. A rotary engine comprising a shaft, a plurality of pistons secured thereto extending at different angles therefrom, a plurality of annular chambers into each of which one of the pistons extends and fits movably, admission ports in the chambers in line axially of the engine, a plurality of abutments substantially in the same plane and in alinement extending into and across the chambers, one in each, an admission and cut-off valve for each chamber, and cams rotated by the shaft having eccentric grooves and cylindrical flanges varying in width and connected respectively to the abutments and valves for operating them successively to retract and project the abutments and subsequently open the valves as the pistons in the respective chambers approach and pass the corresponding abutments and admission ports.

11. In a rotary engine, a rotary admission and cut-off valve, a cam connected to the engine shaft, a reciprocating member actuated by said cam, an arm connected to the valve stem, and an intermediate connection engaged with said arm and member for communicating motion to the former from the latter, and arranged to travel at its point of engagement in a path divergent from those of the reciprocating member and intermediate the two.

12. In a rotary engine, a rotary admission and cut-off valve, a cam connected to the engine shaft, a reciprocating member actuated by said cam, an arm connected to the valve stem, and a pivoted intermediate longer arm engaged adjacent its movable end with said member and intermediate its ends with the first arm through which rotation is given to the valve.

13. In a rotary engine, a shaft, a piston, a steam chamber, a rotary valve interposed in the steam passage to the chamber, cams on the shaft on opposite sides of the chamber, a bar extending parallel to the shaft and connected to each cam to be reciprocated endwise thereby, a pivoted arm engaged with the bar, and a second arm secured to the valve stem and engaged with the first arm intermediate the ends of the latter, whereby the valve is rotated to admit and cut off the steam.

14. In a rotary engine, a casing having annular chambers, abutments arranged to slide radially through the casing and into and across the chambers, a shaft, pistons carried by the shaft and movable within the chambers, cams mounted on the shaft at opposite sides of the chamber, and cross-heads or yokes arranged parallel side by side engaged at their opposite ends with said cams and connected intermediate their ends each to one of the abutments for reciprocating the latter.

15. In a rotary engine, a casing having annular chambers, abutments mounted substantially in line arranged to slide radially through the casing and into and across the chambers, pistons carried by the engine shaft movable within the chambers, cams on the shaft at opposite ends of the casing, a yoke parallel with the shaft lying beside the abutments and connected to one of them, a second yoke lying on the other side of the abutments and connected to another of them, and a third yoke beside the second having an arm extending over said second yoke and connected to a third abutment, said yokes being engaged at their ends, each with one of the cams.

16. In a rotary engine having a plurality of pressure chambers, speed-governed means including coaxial valve members for diminishing and stopping the supply of working fluid to the chambers successively.

17. In a rotary engine having a pressure chamber and a steam admission passage leading thereto, speed-controlled means for diminishing and stopping the flow of steam through the passage comprising oppositely-movable valve members having registering openings, and mechanism operated by variations in speed for moving said means to cover the openings therein.

18. In a rotary engine, a pressure chamber, a steam passage leading thereto, and means governing the supply of steam thereto; comprising concentric cylindrical valve members having openings, and mechanism operated by variations in speed for moving said valve members in opposite directions to bring their openings into and out of line with each other and the steam passage.

19. In a rotary engine, a pressure chamber, a valve casing, a steam passage leading from the valve casing to the pressure chamber, concentric cylindrical valves rotatably mounted in the casing and each having an opening, and a centrifugal governor connected to the valve members for rotating them oppositely with variations of speed to bring their openings into and out of registry with each other and with the passage.

20. In a rotary engine, a pressure chamber, a valve casing, a steam passage leading from the valve casing to the pressure chamber, concentric cylindrical valves rotatably mounted in the casing and each having an opening, a collar slidable on the engine shaft, a centrifugally-operated weight engaged to move the collar, and connections between the collar and valve members for rotating the latter simultaneously and oppositely.

21. In a rotary engine, a pressure chamber, a valve casing, a steam passage leading from the valve casing to the pressure chamber, concentric cylindrical valves rotatably mounted in the casing and each having an opening, stems connected to the valve members and co-axial therewith, a centrifugal governor, a rod connected for reciprocation thereby, arms connected to said stems, and links joining the arms and rod.

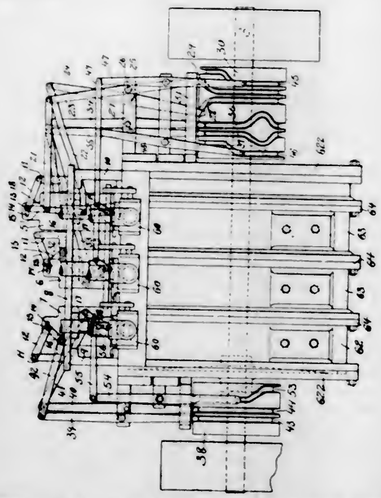
22. In a rotary engine, a plurality of pressure chambers and pistons, and a governing device comprising a valve

casing having outlets leading to each pressure chamber, superposed valves having openings of varying widths, and centrifugal means for moving said valves oppositely to bring the openings into and out of line with each other and with the respective passages, said valves and openings being arranged so that continued motion thereof will close the passages successively.

23. In a rotary engine, a plurality of pressure chambers and pistons, and a governing device comprising a valve casing having outlets leading to each pressure chamber, superposed valves, and centrifugal means for moving said valves oppositely with variations of speed, each valve having openings adapted to register with those of the other valve and with the passages leading to the respective chambers, successive openings being extended in width in the direction opposite to that of the valve-closing movement, whereby such movement causes the chambers to be cut off one by one.

24. In a rotary engine having a pressure chamber, a disk secured to the engine shaft, and a piston shaped to fit in the chamber, formed with acting faces radial of the disk a shank set into a socket in the periphery of the disk, and front and rear steadying extensions continuing beyond said faces and bearing on the rim of the disk.

855,073. ROTARY ENGINE. JAMES M. SPARKES, Lynn, Mass., assignor of nine-twentieths to Fred H. Seavey, Boston, Mass., and one-twentieth to Charles W. Blackett, Lynn, Mass. Filed Aug. 15, 1906. Serial No. 330,710.



Claim.—1. A rotary engine comprising a shaft; pistons secured thereto; and a plurality of division rings separate from each other and each having an annular chamber formed in one side thereof, in which one of the pistons travels; each chamber being closed by the side of the adjacent ring, whereby the number of chambers and the size of the engine may be indefinitely increased or reduced.

2. In a rotary engine, co-operating rings, one having an annular recess in one side to form a piston-chamber, and the other having on the adjacent side a plane surface adapted to extend over the recess of the first ring to inclose the chamber, and heads having bearings for the engine shaft engaging and extending across the rings on the outer sides thereof, forming the ends of the engine.

3. In a rotary engine, a ring having on one side an annular groove, a flange forming the outer wall of said groove, and a second flange of less width than the first-named flange forming the inner wall of the groove, the ring having on its other side a narrow flange of the same diameter as the second said flange, whereby to co-operate with a second, similarly-formed ring to constitute a piston-chamber.

4. In a rotary engine, a plurality of rings, one of which has outer and inner flanges of different heights, and the other of which has a flange adapted to project over the edge of the first ring and has also a lateral flange of the same diameter as the inner flange of the first ring, said rings when placed together inclosing an annular chamber for the reception of a piston.

5. In a rotary engine, separably connected rings containing between them a groove forming an annular piston chamber, co-axial flanges on said rings forming the inner wall of said chamber and separated from each other, a piston-carrying disk located between said flanges, packing rings bearing against opposite sides of said disk, and means retaining packing rings in place adjacent the flanges.

6. In a rotary engine, separable members having between them a groove forming an annular chamber, alining flanges forming the inner walls of said chamber and separated from each other by a space, a piston-carrying disk located between the said flanges, ribs on the inner sides of the flanges, packing rings located between said ribs and the sides of the disk, and holding rings connected to the packing rings and having portions in locked engagement with said ribs.

7. In a rotary engine, separable members having between them a groove forming an annular chamber, alining flanges forming the inner walls of said chamber and separated from each other by a space, a piston-carrying disk located between the said flanges, ribs on the inner sides of the flanges, packing rings located between said ribs and the sides of the disk, and holding rings connected to the packing rings and having peripheral extensions projecting in rear of said ribs co-operating with the latter to retain the packing and holding rings in place.

8. In a rotary engine, separable members having between them a groove forming an annular chamber, alining flanges forming the inner walls of said chamber and separated from each other by a space, a piston-carrying disk located between the said flanges, ribs on the inner sides of the flanges, packing rings located between said ribs and the sides of the disk, holding rings connected to the packing rings and having portions in locked engagement with said ribs, and springs mounted in said separable members bearing on said holding rings to force the packing rings into tight engagement with the disk.

9. In a rotary engine, a member having a flange forming one wall of a steam chamber, an annular rib formed on the inner wall of said flange and having a transverse slot, a holding ring made in a plurality of parts adapted to be separately inserted behind the annular rib and having a groove to receive such rib, a key fitting in said slot and retaining the members of the packing ring separated and in locking engagement with the rib, and a packing ring detachably secured to the holding ring.

10. A rotary engine comprising a revoluble piston, an annular chamber in which said piston is adapted to travel, an abutment, and a plurality of devices for reciprocating said abutment, each having a range of movement insufficient to advance and retract the abutment fully, but arranged so as by their combined movement to give the required amount of travel to the abutment.

11. A rotary engine, comprising a revoluble piston, an annular chamber in which said piston is adapted to travel, an abutment, and a plurality of actuating members for advancing and retracting the abutment; each of said members being adapted to give part of the necessary movement to the abutment and to supplement the movement given thereto by the other member.

12. A rotary engine comprising a revoluble piston, an annular chamber in which said piston is adapted to travel, an abutment, levers arranged to be simultaneously oscillated by the motion of the engine in opposite directions, and connecting rods attached to said levers and to a plurality of members which by their combined movements in opposite directions actuate the abutment.

13. A rotary engine comprising a revoluble piston, an annular chamber in which said piston is adapted to travel, an abutment, a plurality of oppositely moving members connected to each other and to the abutment, adapted by their combined movements to reciprocate the abutment, connecting rods attached to said members, and levers attached to said connecting rods and oscillated by the engine in opposite directions.

14. A rotary engine comprising a revoluble piston, an annular chamber in which said piston is adapted to travel, an abutment, links connected respectively to the abutment and a fixed pivot, an intermediate link pivoted thereto by joints movable in opposite directions, and oppositely traveling members connected to the joints for straightening and breaking the linkage to reciprocate the abutment.

15. A rotary engine comprising a revoluble piston, an annular chamber in which said piston is adapted to travel, an abutment, a linkage forming a compound toggle pivotally connected at its ends to the abutment and a fixed portion of the engine and having a plurality of joints intermediate its ends, and a plurality of members movable simultaneously in opposite directions, each engaged with one of said joints for straightening and breaking said toggle, whereby the several movements of the several actuating members supplement each other and reciprocate the abutment through the required distance.

16. A piston for rotary engines comprising a prismatic center-block, wide angular bearing members adapted to embrace the edges at each end of said block and bearing on their outer surfaces against the walls of the pressure chamber, means tending to move the bearing members outwardly from the center-block, and stops fastened to the block for preventing excessive outward movement of said bearing members.

17. A piston for a rotary engine comprising a body, front and rear plates thereon having peripheral lips, and bearing members located between said plates surrounding the block, and having projections adapted to engage and be retained by said lips.

18. A piston for rotary engines comprising a rigid center block; bearing members arranged between the block and the outer, inner and lateral bounding walls of the annular chamber in which the piston is adapted to travel, having wide surfaces to bear on said chamber walls, whereby to prevent leakage of steam; means pressing said members outward to cause them to wear to an exact fit in the chamber; and retaining means for the bearing members fixed to the center block permitting such outward movement, but confining the same within narrow limits, whereby to hold the bearing members and prevent friction with the chamber walls after they have worn to a true fit.

19. A piston for rotary engines comprising a rigid center block; angular bearing members arranged between the block and the outer, inner and lateral bounding walls of the annular chamber in which the piston is adapted to travel, and springs set in recesses in the center block pressing against the several bearing members to force their angular edges outward into the angles of the chamber.

20. A piston for rotary engines comprising a rigid center block; angular bearing members arranged between the block and the outer, inner and lateral bounding walls of the annular chamber in which the piston is adapted to travel, and springs set in recesses in the center block pressing against the several bearing members to force their angular edges outward into the angles of the chamber; the meeting ends of the several members being beveled to overlap, and pressed into tight engagement by said springs.

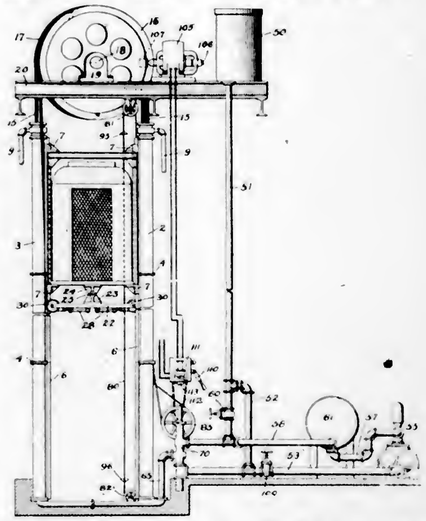
21. A piston for rotary engines comprising a rigid center block; bearing members arranged between the block and the outer, inner and lateral bounding walls of the annular chamber in which the piston is adapted to travel; plates secured to the front and rear of said center block, having grooves bounded by peripheral lips; flanges on the bearing members entering said grooves; and springs tending to force the bearing members outwardly, such outward movement being limited by engagement of the flanges with the lips.

22. In a rotary engine having a steam chamber, an abutment movable into and out of the chamber, toggle links, connecting rods joined to the joints of said links for straightening and breaking the toggle, and a swinging link pivoted to one end of the toggle linkage for taking the thrust of the connecting-rods; the pivotal connection between such link and the toggle being engaged with the abutment to reciprocate the latter.

23. In a rotary engine having a steam chamber, an abutment movable into and out of the chamber, toggle links, connecting rods joined to the joints of said links for straightening and breaking the toggle, and a link lying approximately parallel to said rods and pivotally connected to a fixed point and to the toggle linkage, for resisting the thrust of the latter, said link being adapted to swing about its fixed pivot and engaged with the abutment for causing reciprocation of the latter.

24. In a rotary engine, a piston-carrying disk, a piston having flanges set into and flush with the periphery thereof, pins or bolts extending through said flanges and into the body of the disk, and keys passing transversely through the disk and bolts to secure the latter.

855,074. ELEVATOR. DE WITT C. SUPLEE, Philadelphia, Pa. Filed May 8, 1906. Serial No. 315,723.



Claim.—1. In an elevator, in combination, cylinders located upon the sides of an elevator well or shaft, pistons located in the said cylinders and adapted to travel therein, an elevator car, cables connected to the said pistons and to the said car, wheels located above and intermediate the said cylinders and adapted to support the said cables, and means for occasioning revolution of the said wheels in opposite directions.

2. In an apparatus of the character described, the combination of an elevator car, rotatable wheels located above said car, cylinders located on opposite sides of said car, the said wheels being located in planes angularly related to a plane passing through the said cylinders, one wheel being in a plane passing longitudinally through one of the said cylinders, and the other wheel being in a plane passing longitudinally through the other of said cylinders, pistons located in the said cylinders, cables connected to the said pistons and to the said car, the said cables extending over the said wheels.

3. In an apparatus of the character described, the combination of an elevator car, rotatable wheels located above the said car, the said wheels being arranged in parallel re-

lation with respect to each other, cables extending over the said wheels, one end of one of the cables being extended down on one side of and connected to the elevator car and one end of the other cable being extended down on the other side of and connected to the elevator car, and means for occasioning movement of the said cables, and the said wheels being adapted to rotate in opposite directions as the car is raised or lowered.

4. In an apparatus of the character described, the combination of an elevator car, rotatable wheels located above said car, weights, cables passing over the said wheels and being connected to the said car and to said weights, and means located intermediate the said wheels and engaging the same to occasion rotation thereof.

5. In an apparatus of the character described, the combination of an elevator car, rotatable wheels located above the car, weights located on opposite sides of the said car, a cable passing over each of the said wheels, the cable passing over one wheel being connected at one end to the car and at its other end to one of the weights, and the cable passing over the other wheel being connected at one end to the car and at its other end to the other one of said weights, and means independent of the said cables to occasion simultaneous rotation of the said wheels in opposite directions.

6. In a device of the character described, the combination of an elevator car, rotatable wheels located above the said car, the said wheels being arranged in parallel relation with respect to each other, weights, cables extending on opposite sides of and connected to the said car, and the said cables extending over the said wheels and being connected to the said weights, a power device located intermediate the said wheels and being in engagement with each of them and adapted to occasion rotation in opposite directions of the said wheels for the purpose of occasioning the raising and the lowering of the said car.

7. In an apparatus of the character described, the combination of an elevator car, rotatable wheels located above the said car, cylinders upon opposite sides of the said car, pistons located and operating in the said cylinders, cables connected at one end to the said car, and extending over the said wheels, and being connected at their other ends to the said pistons, a rotatable device located intermediate the said wheels and adapted to occasion rotation thereof in opposite directions.

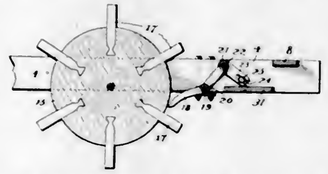
8. In a device of the character described, the combination of an elevator car, rotatable wheels located above the said car, cylinders located upon the opposite sides of the said car, the said wheels being located in planes angularly related to a plane passing through the said cylinder, and one of the said wheels being in a plane passing longitudinally through one of the said cylinders, and the other of the said wheels being in a plane passing longitudinally through the other of the said cylinders, cables connected to the said elevator car and extending over the said wheels, and being connected to the said pistons, the weight of the pistons being sufficient to overcome the weight of the elevator car and the load carried thereby, and a power device located intermediate the said wheels and adapted to occasion rotation thereof in opposite directions for the purpose of assisting in the elevation of the said pistons.

9. In an apparatus of the character described, the combination of an elevator car, rotatable wheels located above the said car, cylinders located upon the opposite sides of the said car, pistons located and operating in the said piston cylinders, cables connected to the said car and to the said pistons, the said cables extending over the said rotatable wheels, means for supplying hydraulic power for the purpose of occasioning the raising of the said pistons, and a power device located intermediate the said wheels and being adapted to occasion rotation of the same in opposite directions.

10. In an apparatus of the character described, the combination of an elevator car, cylinders located upon opposite sides of the said car, the said cylinders being adapted to receive a suitable operating fluid and being in communication with each other, pistons in said cylinders, rotatable wheels located above the said elevator car, cables connected to the said car and to the said pistons, a tank for holding a supply of said fluid, the said tank being in communication with the said cylinders, the height of the said tank with relation to the said cylinders being such that the downward pressure of the column of fluid from the said tank is in excess of the downward pressure of the fluid in the said cylinders, and the said excess of fluid pressure from the said tank being counterbalanced by the weight of the portions of the cables between the said pistons and the said wheels, a pump for forcing the said fluid into the said cylinders to occasion the elevating of the pistons, and a power device located intermediate the said wheels and being in engagement with each of them and adapted to occasion rotation of the said wheels in opposite directions to assist in raising the said cylinders and also to assist in raising the said elevator car.

11. In an apparatus of the character described, the combination of an elevator car, cylinders located on opposite sides of the said car, the said cylinders being adapted to receive a suitable operating fluid and being in communication with each other, pistons in said cylinders, rotatable wheels supported above the said elevator car, the said wheels being located respectively in different planes extending longitudinally through the respective cylinders, cables connected to the said car and to the said pistons, a tank for holding a supply of said fluid, the said tank being in communication with the said cylinders, and the height of the said tank with relation to the said cylinders being such that the downward pressure of the column of fluid from the said tank is in excess of the downward pressure of the fluid in the said cylinders, and the said excess of fluid pressure from the said tank being counterbalanced at all positions of the pistons by the weight of the portions of the cables between the said pistons and the said wheels.

855,075. LAND-ROLLER. BENJAMIN A. THOMAS, Paducah, Ky. Filed Jan. 29, 1906. Serial No. 298,418.



Claim.—1. In combination with a land-roller, a finger-shaft, clearer-fingers thereon, and an adjusting-shaft connected with said fingers.

2. In combination with a land-roller, a finger-shaft, clearer-fingers thereon, an adjusting-shaft connected with said fingers, and means whereby said adjusting-shaft is adjustably held in place.

3. In combination with a land-roller, a finger-shaft, clearer-fingers thereon, an adjusting-shaft connected with said fingers, and an arm connected with said adjusting-shaft whereby the latter is adjustably held in place.

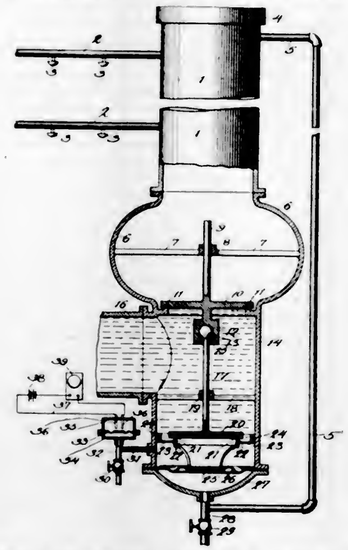
4. In combination with a land-roller, a finger-shaft, clearer-fingers thereon, an adjusting-shaft connected with said fingers, a slotted arm connected with said adjusting-shaft, and a bolt passed through the shield in said arm whereby the latter is adjustably secured.

5. In combination with a land-roller, a finger-shaft, clearer-fingers thereon, an adjusting-shaft connected with said fingers, an arm connected with said adjusting-shaft, and a bolt engaging said arm whereby the latter is adjustably secured.

6. In combination with longitudinal frame members, a roller journaled therein, a finger-shaft attached to said frame-members, clearer-fingers on said finger-shaft, an adjusting-shaft connected with said fingers, an arm connected with said adjusting-shaft, and a bolt attached to one of said frame-members and engaging said arm whereby the latter is adjustably secured.

7. In combination with a land-roller, clearer-fingers, a slotted arm operatively connected with said fingers whereby the latter are adjusted, and a bolt passed through the slot in said arm whereby the arm is adjustably secured.

855,076. DRY-PIPE VALVE FOR AUTOMATIC-SPRINKLER SYSTEMS. EVERETT L. THOMPSON, New York, N. Y. Filed Sept. 22, 1903. Serial No. 174,159.



Claim.—1. In automatic sprinklers, a supply pipe having distributing pipes and sprinklers connected therewith to form a distributing system, a water pipe connected to said supply pipe, a supply valve governing the access of water to said supply pipe, a differential compensating valve yieldingly connected to said supply valve, a compensating chamber adjacent said water pipe, a movable valve seat coöperating with said compensating valve mounted upon a flexible flange normally tending to hold said valve seat in released position, an auxiliary chamber having a flexible diaphragm dividing the same from said compensating chamber, a support connecting said compensating valve seat and said diaphragm, an auxiliary pipe connecting said auxiliary chamber and said distributing system above said distributing pipes and an alarm connected to said compensating chamber.

2. In automatic sprinklers, a supply pipe connecting with a distributing system, a water pipe connected to said supply pipe, a supply valve opening into said water pipe and governing the access of water thereto, a compensating valve connected to said supply valve, a compensating chamber adjacent said water pipe, a valve seat coöperating with said compensating valve and yieldingly mounted with respect thereto, an auxiliary chamber having a yielding wall to normally hold said compensating valve and seat in engagement, and an auxiliary pipe connecting said auxiliary chamber and said distributing system.

3. In automatic sprinklers, a distributing system comprising a supply pipe, a supply valve, a water pipe connecting with said supply pipe through said supply valve, a compensating valve connected to said supply valve and operating therewith, a compensating valve seat, an auxiliary chamber connected to said distributing system, and means controlled by the pressure in said auxiliary chamber to separate said compensating valve and seat on the reduction of pressure in said distributing system.

4. In automatic sprinklers, a distributing system comprising a supply pipe, a supply valve, a water pipe connecting with said supply pipe through said supply valve, a compensating valve, a compensating chamber normally under reduced pressure and provided with a yielding valve seat to engage said compensating valve and means to move said valve seat away from said valve on the reduction of pressure in said distributing system.

5. In dry pipe valves, a valve casing to be connected with a supply pipe and with a water pipe, a supply valve coöperating with a seat in said casing, a differential compensating valve yieldingly connected with said supply valve, a compensating chamber having a valve seat flexibly mounted and normally tending to move away from said compensating valve into released position, and an auxiliary chamber provided with yielding means to normally press said compensating valve seat against its valve.

6. In dry pipe valves, a valve casing, a supply valve cooperating with a seat therein, a compensating valve connected with said supply valve, a compensating valve seat yieldingly mounted with respect to said compensating valve and forming a compensating chamber under the same, and an auxiliary chamber adjacent said compensating chamber and provided with a flexible diaphragm to hold said compensating valve seat against its valve.

7. In dry pipe valves, a valve casing having a water pipe connection adapted to be joined to a water pipe, a supply valve coöperating with a seat in said casing, a compensating chamber, a compensating valve connected with said supply valve and operating between said water pipe connection and said compensating chamber and a compensating valve seat yieldingly mounted to move relatively to said compensating valve while said supply valve is in closed position.

8. In dry pipe valves, a valve casing having a water pipe connection adapted to be joined to a water pipe, a supply valve coöperating with a seat in said casing, a compensating chamber, a compensating valve connected with said supply valve and operating between said water pipe connection and said compensating chamber, a compensating valve seat yieldingly mounted to move with respect to said compensating valve while said supply valve is in closed position and means to normally maintain said compensating valve seat in engagement with its valve.

9. In dry pipe valves, a valve casing having a water pipe connection adapted to be joined to a water pipe, a supply valve coöperating with a seat in said valve casing, a compensating chamber, a compensating valve connected with said supply valve and operating between said water pipe connection and said compensating chamber, and a compensating valve seat yieldingly mounted in said casing to coöperate with said compensating valve.

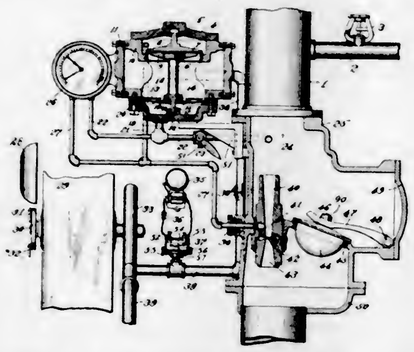
10. In dry pipe valves, a valve casing, a supply valve to coöperate with a seat therein, a compensating valve connected to said supply valve, a compensating valve seat yieldingly mounted to move with respect to said compensating valve and communicating with a compensating chamber normally under reduced pressure and to be connected with an alarm and yielding means to normally hold said compensating valve and seat in engagement.

11. In dry pipe valves, a valve casing having a water pipe connection adapted to be joined to a water pipe, a supply valve seat in said casing, a compensating chamber, a yieldingly mounted compensating valve seat between said water pipe connection and said compensating chamber, a supply valve above said supply valve seat and a compensating valve connected with said supply valve and cooperating with said compensating valve seat and means for moving said compensating valve seat relatively to said compensating valve while said supply valve is in closed position.

12. In dry pipe valves, a valve casing having a water pipe connection adapted to be joined to a water pipe, a supply valve seat in said casing, a compensating chamber, a compensating valve seat yieldingly mounted in said casing between said water pipe connection and said compensating chamber, a supply valve above said supply valve seat and a compensating valve connected with said supply valve and operating above said compensating valve seat and means connected with the upper distributing system to relieve the pressure in said compensating chamber.

13. In dry pipe valves, a valve casing having a water pipe connection adapted to be joined to a water pipe, a supply valve seat in said casing, a yieldingly mounted compensating valve seat in said casing, a supply valve and a compensating valve connected therewith and operating to move simultaneously toward their seats and means connected with the upper distributing system to cause a relative movement between said compensating valve and seat.

855,077. SPRINKLER ALARM DEVICE. EVERETT L. THOMPSON, New York, N. Y. Filed Feb. 6, 1906. Serial No. 299,797.



Claim.—1. In sprinkler alarm devices, a check valve casing connected with a supply pipe and distributing system and provided with a check valve and a Venturi tube substantially in line with said supply pipe, a balanced valve casing adjacent said supply pipe and provided with an exhaust chamber having a valve seat, an intermediate neutral chamber and a pressure chamber, a resilient diaphragm provided with a valve seat between said neutral chamber and said pressure chamber and a balanced valve mounted within said casing and coöperating with said seats, alarm mechanism, a pressure pipe provided with a setting valve connecting said pressure chamber and said supply pipe, an exhaust pipe connecting said exhaust chamber and the throat of said Venturi tube and an alarm pipe connected with said neutral chamber and operating said alarm mechanism.

2. In sprinkler alarm devices, a check valve casing, a check valve and Venturi tube within said casing, a balanced valve casing having an exhaust chamber provided with a seat, a neutral chamber and a pressure chamber, a resilient diaphragm provided with a valve seat adjacent said pressure chamber, a connected valve mechanism cooperating with said valve seats, alarm mechanism, a pressure pipe connecting said pressure chamber and said valve casing, an exhaust pipe connecting said exhaust chamber and said Venturi tube and an alarm pipe connecting said neutral chamber and said alarm mechanism.

3. In sprinkler alarm devices, a supply pipe, a Venturi tube communicating with said supply pipe to be operated by a flow through said pipe, a valve casing provided with an exhaust chamber, a neutral chamber and a pressure chamber, valve seats adjacent either side of said pressure chamber, one of said valve seats being yieldably mounted, a balanced valve coöperating with said seats, an exhaust pipe to connect said exhaust chamber with said Venturi tube, a pressure pipe to connect said pressure chamber with said supply pipe and alarm mechanism operated by the pressure in said neutral chamber.

4. In sprinkler alarm devices, a supply pipe, a Venturi tube connected with and operated by flow in said supply pipe, a valve casing provided with an exhaust chamber, a neutral chamber having a drain aperture and a pressure chamber, coöperating valve seats adjacent said neutral chamber, connected valves coöperating with said valve seats, an exhaust pipe connecting said exhaust chamber with said Venturi tube and a pressure pipe provided with a setting valve connecting said pressure chamber with said supply pipe.

5. In sprinkler alarm devices, a supply pipe, means to cause a difference of pressure on the commencement of flow through said supply pipe, a balanced valve casing provided with an exhaust chamber, a neutral chamber and a pressure chamber, valve seats adjacent said neutral chamber, connected valve mechanism coöperating with said seats, alarm mechanism connected with said neutral chamber, an exhaust pipe connecting said exhaust chamber and said supply pipe and a pressure pipe connecting said exhaust chamber and said supply pipe to cause a change in the relative pressure in said pressure and exhaust chambers on the commencement of flow through said supply pipe.

6. In sprinkler alarm devices, a balanced valve casing provided with an exhaust chamber, a neutral chamber and a pressure chamber, valve seats between said chambers, one of said seats being yieldably mounted, coöperating connected valve mechanism coöperating with said seats, a pressure pipe provided with a setting valve having a drain aperture connected with said pressure chamber to connect the same with a supply pipe, an exhaust pipe connected with said exhaust chamber and an indicator connected with said pressure and exhaust chambers.

7. In sprinkler alarm devices, a balanced valve casing having an exhaust chamber, a neutral chamber and a pressure chamber, valve seats between said chambers, connected valve mechanism coöperating with said seats, a pressure pipe provided with a setting valve and drain aperture connected with said pressure chamber to connect the same with a supply pipe, means to drain said neutral chamber and a pressure pipe to connect said pressure chamber with a sprinkler system.

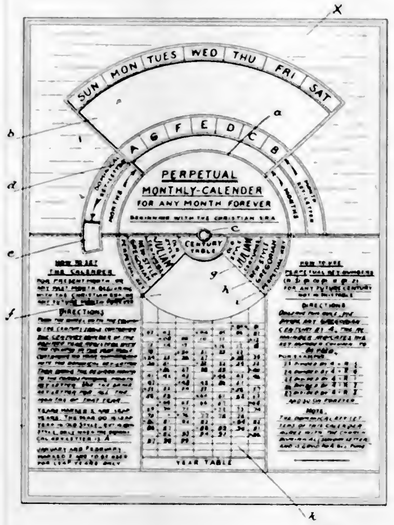
8. In sprinkler alarm devices, a balanced valve casing having an exhaust chamber, a neutral chamber and a pressure chamber, a valve seat between said exhaust chamber and said neutral chamber, a diaphragm between said neutral chamber and said pressure chamber, a valve seat mounted on said diaphragm, a stop coöperating with said diaphragm to limit the movement thereof and a balanced valve loosely mounted within said casing and coöperating with said valve seats.

9. In sprinkler alarm devices, a valve casing provided with an exhaust chamber, a pressure chamber and an intermediate neutral chamber, a valve seat on one side of said neutral chamber, a yielding diaphragm on the other side of said neutral chamber, a valve seat on said diaphragm, a stop to limit the movement of said diaphragm and connected valve mechanism coöperating with said valve seats to separate said neutral chamber from said exhaust and pressure chambers.

855,078. PERPETUAL CALENDAR. HARRY V. VOGT, Philadelphia, Pa. Filed Sept. 12, 1906. Serial No. 334,206.

Claim.—1. A perpetual calendar comprising a fixed card having four orifices and a movable card having spaces containing respectively figures indicating the days of a month, Dominical key-letters, characters indicating the months of a year, and a table of century numbers, said spaces registering with said orifices respectively, said disk also containing a year table adjacent to the orifice with which said century table registers, and a series of month key-letters adjacent to the orifice registering with the space containing said month characters.

2. A perpetual calendar comprising a fixed card having an orifice and characters indicating the days of the week adjacent thereto, a second orifice and month key-letters adjacent thereto, a third orifice and at least two spaces adjacent thereto, a fourth orifice, and a table containing year numbers; and a movable card having a space containing figures indicating the days of the month and adapted to register with the first orifice, a second space containing characters indicating the months of a year adapted to register with the second orifice, a third space having two sub-spaces containing century numbers adapted to register with the third orifice, the year table, and respectively with the said two spaces of the fixed card, and a fourth space containing Dominical key-letters adapted to register with the fourth orifice.



3. A perpetual calendar comprising a fixed card having four orifices and a movable card having spaces containing respectively figures indicating the days of a month, Dominical key-letters, characters indicating the months of a year, and a table of century numbers and perpetual key-numbers, said spaces registering with said orifices respectively, said disk also containing a year table adjacent to the orifice with which the last named table registers, and a series of month key-letters adjacent to the orifice registering with the space containing said month characters.

4. A perpetual calendar comprising a fixed card having an orifice and characters indicating the days of the week adjacent thereto, a second orifice and month key-letters adjacent thereto, a third orifice and three spaces adjacent thereto, a fourth orifice, and a table containing year numbers; and a movable card having a space containing figures indicating the days of the month and adapted to register with the first orifice, a second space containing characters indicating the months of a year adapted to register with the second orifice, a third space, adapted to register with the third orifice, having three sub-spaces containing two sets of century numbers and perpetual key-numbers all adapted to register with the year table and also adapted to register respectively with the three spaces of the fixed card adjacent to the third orifice, and a fourth space containing Dominical key-letters adapted to register with the fourth orifice.

5. A perpetual calendar comprising a revoluble disk having four concentric spaces arranged about a common center, one space containing radial columns of figures indicating the days of a month, another space containing a series of Dominical key-letters, another space containing characters indicating the months of a year, and another space containing a table of numbers indicating centuries; and a fixed card to which the revoluble disk is pivoted at said common center, said fixed card having four orifices located at radial distances from said common center corresponding to the radial distance from said common center of said four spaces so as to respectively register therewith, said fixed card also having a year table adjacent to the orifice registering with the space containing the century table, and month key-letters adjacent to the orifice registering with the space containing the month characters.

6. A monthly calendar comprising a fixed card and a revoluble disk pivoted thereto, said disk having four spaces concentric with said pivot point, one space being divided into sub-spaces containing radial columns of figures representing the days of a month, a second space being divided into sub-spaces containing Dominical key-letters, a third space being divided into sub-spaces containing characters indicating the months of a year, and a fourth space containing radial columns of figures indicating century numbers, said fixed card having an orifice adapted to register with the first space of the disk and substantially corresponding in length with the length of seven sub-spaces of the first space, a second orifice adapted to register with the second space of the disk and substantially corresponding in length with the length of one sub-space of the second space, a third orifice adapted to register with the third space of the disk and substantially corresponding in length with the length of seven sub-spaces of the third space, and a fourth orifice adapted to register with the fourth space of the disk and substantially corresponding in length with the width of seven columns of the fourth space, said fixed card also having seven columns indicating year numbers adapted to register with seven successive columns of the fourth space of the disk, and seven spaces containing seven month key-letters adapted to register with seven successive sub-spaces of the third space of the disk.

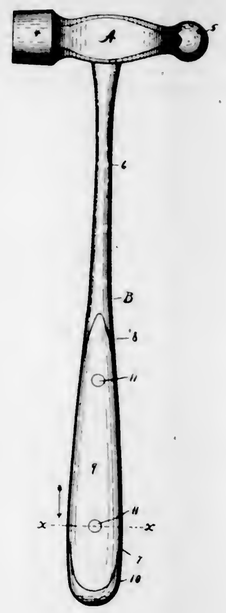
7. A perpetual calendar comprising a movable card containing columns of figures indicating century numbers, a fixed card containing columns of figures indicating year numbers, the movable card being adapted to be moved to cause one of the century columns thereon to register with one of the year columns on the fixed card, there being Dominical key-letters one for each combination of year column and century column thus adapted to be registered, means indicating the proper key-letter when said combination of year column and century column is thus registered, the fixed card containing a series of month key-letters corresponding to said Dominical key-letters, and the movable card containing a series of characters indicating the months of the year, said movable card being movable to register one of said month characters with one of said month key-letters the fixed card containing a series of characters indicating the days of the week and the movable card containing a series of columns of figures indicating the days of the month, seven of the last named columns registering respectively with seven of the last named characters when the movable card is moved to register its month characters with one of the month key-letters of the fixed card.

855,079. FORGED-STEEL HAMMER. WILLIAM S. WARD, Plantsville, Conn., assignor to H. D. Smith & Company, Plantsville, Conn., a Corporation. Filed Sept. 26, 1905. Serial No. 280,125.

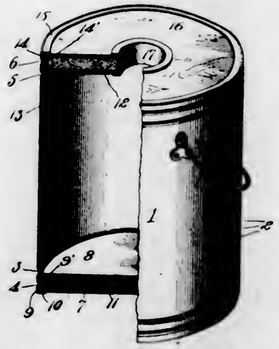
Claim.—1. A hammer consisting of a hammer head and main portion of the handle formed in a single piece of forged steel, the shank of the said handle extending from the middle portion of the hammer head with an oval form toward each end, while its middle portion is slender and substantially round in cross section, and having a spring temper for giving a desirable and effective stroke.

2. A hammer consisting of a hammer head and main portion of the handle formed in a single piece of forged steel, the said handle having a flattened handle web and handle scales arranged parallel to the length of the hammer head, and with a long and slender shank of an oval form toward each end while its middle portion is substantially round in cross section.

855,079.



855,080. SHEET-METAL CAN. FREDERICK WESTERBECK, St. Louis, Mo. Filed Jan. 2, 1906. Serial No. 294,319.



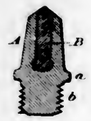
Claim.—1. In a can, the combination of a shell, a flanged sheet metal end member fitting in said shell and having its flange terminating in a lip, a cement end member seated in said sheet metal end member, and a facing sheet fitting against said cement member and held by the lip of said sheet metal end member.

2. In a can, the combination of a shell, a flanged sheet metal end member fitting in said shell and having its flange terminating in a lip, a cement end member seated in said sheet metal end member, and a wooden facing sheet fitting against said cement member and held by the lip of said sheet metal end member.

855,081. ELECTRICALLY INSULATING WIRE AND OTHER ELECTRICAL CONDUCTORS. ALLEN D. WHIPPLE, Chicago, Ill. Filed Nov. 11, 1905. Serial No. 286,973.

Claim.—The process of insulating electrical conducting wires or the like consisting in coating the same with a plurality of layers of highly volatile viscous fluid insulating material in which each layer is chemically different from and a non-solvent of the preceding layer, each layer being allowed to set before another layer is applied.

855,082. PROCESS OF MAKING HORSESHOE-CALKS. RICHARD WHITAKER, New Brunswick, N. J., assignor to The Neversilp Manufacturing Company, New Brunswick, N. J., a Corporation of New Jersey. Filed Oct. 24, 1903. Serial No. 178,377.



Claim.—1. The process of making horseshoe calks provided with hard centers, which consists in partially boring out a length of soft steel, inserting a high carbon steel pin in said bore, so that it rests upon the bottom thereof, the said pin being grooved, then swaging or upsetting the piece lengthwise so as to give the form to the calk, and swage or upset the metal of the body of the calk upon the center pin to secure it in place, and finally tempering the calk, substantially as set forth.

2. The process of making horseshoe calks provided with hard centers, which consists in inserting a high carbon steel pin within an opening formed in a length of soft steel, the said pin being grooved and having an enlarged head, and then swaging or upsetting the piece lengthwise, so as to give it the form of the calk, and swage or upset the metal of the body of the calk upon the center piece and around the same, to secure it in place, and finally tempering the calk, substantially as set forth.

855,083. CLOSURE FOR CANS OR SIMILAR RECEPTACLES. WILLIAM YOUDS, Mansfield, Ohio. Filed Sept. 19, 1906. Serial No. 335,335.

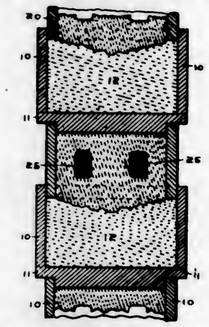


Claim.—In combination with a can or receptacle of the class described and having an offset or shouldered portion at its upper open end, a closure adapted to rest upon the shouldered portion, said shouldered or offset portion being provided with an integral vertical flange extending upwardly therefrom and formed at intervals with slits substantially as specified, and a gasket embracing the peripheral portion of the closure and extending above and beneath said closure, the vertical slitted flange aforesaid being turned or bent as to engage over the peripheral portion of the closure to secure said closure in position upon the can, the gasket being compressed by the coöperation of the flange with the closure.

855,084. MOLD FOR MAKING PLASTIC BLOCKS. HENRY A. ZURBUCH, Marion, Ind. Filed Sept. 25, 1906. Serial No. 336,097.

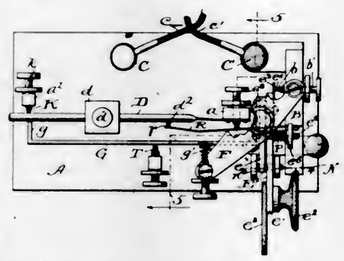
Claim.—1. A mold for making plastic blocks comprising a matrix composed of cohesive, heterogeneous, hygroscopic material, for accelerating the removal of the water from the molded block.

2. A mold for making plastic blocks comprising a matrix composed of cohesive, heterogeneous, hygroscopic material, to accelerate the removal of the water from the molded block, and a frame to support said matrix.



3. A mold for making plastic blocks comprising a matrix composed of cohesive, heterogeneous, hygroscopic material, to accelerate the removal of the water from the molded block, a frame to support said matrix, and a block-frame to fit the matrix-frame and adapted to shape the body of the block.

855,085. TELEGRAPH-KEY. BENJAMIN F. BELLOWS, Cleveland, Ohio. Filed July 9, 1906. Serial No. 325,215.



Claim.—1. In a telegraph key, in combination, a contact, a vibrating controller for making and breaking a circuit with said contact, restraining means normally holding said controller in an idle position, additional contacts independent of said controller, a pivoted key comprising a key lever for operating said restraining means, a finger lever pivoted to said key lever and capable of moving independently thereof to cause the engagement of the said additional contacts, and means whereby the movement of the finger lever in the reverse direction past its neutral position will move the key lever in the direction to release said restraining means.

2. In a telegraph key, in combination, a vibrating controller capable of making and breaking a circuit and carrying a contact, a pivoted key lever, a restraining arm secured thereto and adapted to engage with said controller to hold it in an idle position, a spring carrying a contact opposed to the contact on the controller, a finger lever pivoted to the key lever and capable of moving in one direction from its neutral position independently of the key lever, a spring secured to the rear end of said finger key lever and carrying a contact, and a fixed contact opposed to said contact.

3. In a telegraph key, in combination, a vibrating controller capable of making and breaking a circuit, a pivoted key lever, a restraining arm normally engaging said controller and holding it in an idle position and adapted to be withdrawn from such engagement by the key lever, a finger lever pivoted to the key lever on an axis parallel with the axis of the key lever and extending in both directions from its said pivot and normally engaging at its rear end with the side of the key lever, independent contacts, of which one is carried by the finger lever, which contacts are adapted to be brought together by the movement of the finger lever upon its pivot.

4. In a telegraph key, in combination, a pivoted key lever and a finger key lever, a screw passing loosely through a hole in one of said levers and screwing into the other, and balls confined in recesses between said members, and other balls confined between the head of said screw and the adjacent surface of one of said key members.

5. In a telegraph key, in combination, a pivoted key lever and a finger lever pivoted to said key lever on an axis parallel with the pivot of said key lever, said finger lever extending on both sides of its pivot in a direction substantially parallel with the key lever, finger pieces secured to the front end of the finger lever, and a spring yieldingly holding the rear end of said finger lever in contact with said key lever.

6. In a telegraph key, in combination, a pivoted key lever and a finger lever lying side by side, balls confined in recesses in the proximate faces of said members, and means for holding said members together to prevent the escape of said balls, a spring operating to swing the rear end of the finger lever against the key lever and to yieldingly hold said members in contact.

7. In a telegraph key, in combination, a pivoted key lever and a finger lever, a screw passing loosely through a hole in one of said levers and screwing into the other, and balls confined in recesses between said members, and other balls confined between the head of said screw and the adjacent surface of one of said key members, and a spring operating to yieldingly hold said members in contact.

8. In a telegraph key, in combination, a pivoted key lever and a finger lever, a screw passing loosely through a hole in one of said levers and screwing into the other, balls confined in recesses between said members, and other balls confined between the head of said screw and the adjacent surface of one of said key members, a spring operating to yieldingly hold said members in contact, a fixed contact, a contact carried by the finger key lever and adapted to be carried against a fixed contact by a movement of the finger key lever independent of the key lever in opposition to said spring.

9. In a telegraph key, the combination of a vibrating controller carrying a contact, an opposed contact, a spring-actuated restraining arm engaging said controller, an insulated stop against which said controller is forced by said controller arm, an insulated stop limiting the withdrawing movement of said restraining arm, a key comprising a key lever to which said restraining arm is connected, and a finger lever pivoted, between its end, to said key lever, a contact carried by said finger lever, at one end thereof, a finger piece connected with said finger lever near the other end thereof and another contact secured to a fixture, and against which the last contact piece is moved by the movement of said finger lever independent of the key lever.

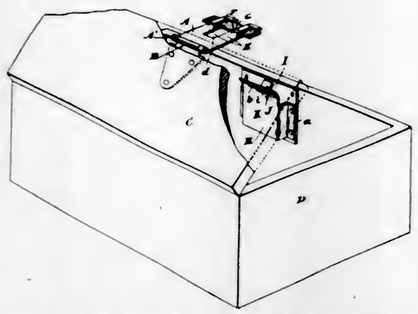
10. In a telegraph key, the combination of a metallic base plate, a standard B secured to the same but insulated therefrom, a vibrating controller, a restraining arm normally holding the same in an idle position, a key for operating said restraining arm, a contact carried by said controller, a contact opposed thereto electrically connected with said insulated standard, another contact also electrically connected with said insulated standard, and an opposed contact carried by said key, a binding post carried by the base plate, another binding post carried by said standard,—the contacts carried by the controller and by the key being electrically connected with the base plate.

11. In a telegraph key, the combination of a metallic base plate, a metallic post thereon, a vibrating metallic controller secured to said post and carrying a contact, a key lever pivoted to the base plate and electrically connected therewith, means operated by said key lever for holding the vibrator in an idle position, a finger lever pivoted to said key lever and carrying a contact, an opposed contact electrically connected with said standard, a spring connected with said standard and carrying a contact opposed to the contact on the controller, a spring act-

ing upon said finger lever to withdraw the contact which it carries from the opposed contact, and a spring acting to move the restraining arm against said controller.

12. In a telegraph key, the combination of a rotatably pivoted post with a key lever and a clamping plate connected therewith and having grooves in their approximate faces which embrace said pivoted post, a finger lever pivoted to said key lever, and a spring acting upon the finger lever to yieldingly hold its rear end against said key lever.

855,086. SEAL-LOCK. ALFRED D. BENTLEY, Toronto, Ontario, Canada, assignor of one-half to Robert Henry Schultz, Toronto, Canada. Filed Jan. 27, 1906. Serial No. 298,106.



Claim.—1. A seal-lock comprising a movable pendent member comprising two members separated by a slot and from each of which is stamped a loop; a frangible seal held in said loops and bridging the slot between said two members, and another member, with which said seal-carrying pendent member co-acts, operating in the slot between said two members so as to rupture said frangible seal when said members are separated.

2. A seal-lock comprising a movable pendent member having reciprocating movement solely in relation to another member; the said other member, and a frangible seal held by said movable pendent member and carried thereby into position in relation to said other member so as to form the sole coupling means by means of which the said members are united or coupled and which is ruptured when said members are separated or uncoupled.

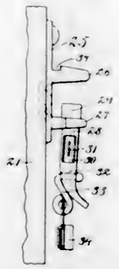
3. A seal lock comprising a movable pendent member cut away so as to provide two portions from each of which is stamped a loop; a frangible seal held in said loops; another member comprising a plate; an open-ended guard secured to said plate and means secured to or forming part of said plate under which said frangible seal is moved when said seal lock is locked; the said frangible seal being ruptured against said means when said seal lock is opened.

4. A seal lock comprising an attaching member; a pendent member hinged thereto and provided with two portions from each of which is stamped a loop; a frangible seal held in said loops; another member comprising a plate; an open-ended guard secured to said plate and provided with a backward curved top portion, and a member secured to said plate and constructed with a downward formed intermediate portion, and an upward outward curved portion; the said member being a suitable distance from said guard so as to permit of said frangible seal being passed between these members and placed underneath said member secured to said plate by the movement of said pendent member into position; said frangible seal designed to be moved against said member secured to said plate and ruptured during the withdrawal of said pendent member from said other member.

5. The combination with a receptacle, and the lid therefor, of a seal lock comprising a member secured to the under side of said lid; a pendent member hinged thereto and provided with two portions from each of which is stamped a loop; a frangible seal held in said loops; another member comprising a plate secured on the inner side of said receptacle; an open-ended guard secured to said plate and provided with a backward curved top portion, and a member secured to said plate and constructed with a downward formed intermediate portion, and an upward outward curved portion; the said member being a suitable distance from said guard so as to permit of said frangible seal being passed between these members and placed underneath said member secured to said plate by the movement of said pendent member into position caused by the closing of the lid; said frangible seal designed to be moved against said member secured to said plate and ruptured during the withdrawal of said pendent member from said other member caused by the opening of the lid.

6. A seal lock comprising a movable pendent member provided with a slot; another member which operates in the slot in said movable pendent member, and a frangible seal held by said movable pendent member and bridging the slot therein, and designed to be held in place before the said members are united or brought into operative position and carried by said movable pendent member into position, relative to said other member as the members are united or brought into operative position and so coupled by said seal which is designed to be ruptured as said members are separated or uncoupled.

855,087. HASP-LOCK. WARREN K. BLODGETT, Cambridge, Mass. Filed Aug. 5, 1905. Serial No. 272,835.



Claim.—1. A hasp-lock comprising a hasp-retaining member having a transverse seal-strip passage, and a movable locking member for said hasp-retaining member, said locking member having a seal-strip passage extending from end to end thereof, whereby a seal-strip will hold the locking member in endwise position relatively to the hasp-retaining member.

2. A hasp lock comprising a hasp-retaining member and a movable locking member for said hasp-retaining member, said members having each a passage for a seal-strip to extend through both, one of said members having a recess to receive a portion of the other member for the purpose of preventing access to the seal-strip at or adjacent to the point where the seal-strip joins the two members, and by clutching the mouth of the locking member in position, relieving the neck of the seal-strip from undue strain.

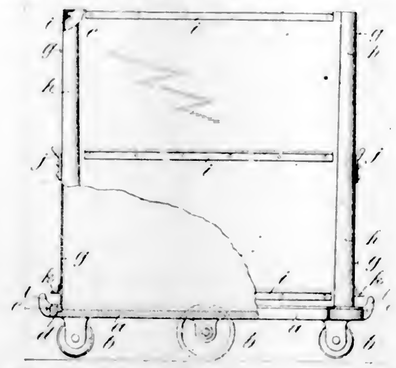
3. A hasp lock comprising a hasp-retaining member and a movable locking member for said hasp-retaining member, said members having each a slot or passage for a seal-strip to extend through both, the passage through the locking member extending longitudinally thereof and one of said members having a recess to receive a portion of the other member, the passages of the two members being in alinement when a portion of one member is in the recess of the other member.

4. The combination with a hasp, of a retaining member therefor and a locking member for the retaining member, said members being formed with passages for a seal-strip, the passage through the locking member extending longitudinally thereof, the retaining member having a recess to receive the tip or end of the other member when the two members are assembled with their passages in alinement.

5. A hasp lock comprising a hasp-retaining member and a movable locking member for said hasp-retaining member, each of said members having a passage for a seal-strip to extend through both, the passage through the locking member extending longitudinally thereof and said members having means to prevent their being incorrectly assembled.

6. A hasp lock comprising a hasp retaining member and a movable locking member for said hasp-retaining member, each of said members having a passage for a seal-strip to extend through both, the passage through the locking member extending longitudinally thereof and said members being formed to permit the hasp to be swung to and engaged by the hasp-retaining member from the right side or from the left side of the latter.

855,088. COOLING-FRAME FOR SOAP OR OTHER MATERIAL. ARTHUR E. BOARDMAN, Warrington, England. Filed Dec. 9, 1905. Serial No. 291,045.



Claim.—1. In a cooling frame for liquid or semi-liquid soap or other similar material the means for connecting the sides and ends consisting in turning over the joining edges of said sides and ends into curved formation, the transverse section of each curve at the bottom being larger than the transverse section of each curve at the top, said curved ends interlocking with each other substantially as described.

2. In a cooling frame for liquid or semi-liquid soap the combination with sides and ends of the frame provided with curved angles capable of interlocking with each other of the means for enabling said sides and ends to be readily separated consisting of projecting plates secured to the ends in conjunction with projections formed on the base substantially as described.

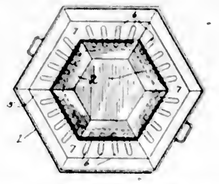
3. In a cooling frame for liquid or semi-liquid soap a suitable base, sides and end sections acting in conjunction with the base, tapered interlocking flanges forming extensions of the ends of the sides and ends.

4. In a cooling frame for liquid or semi-liquid soap, a suitable base having sides and ends, the extremities of the sides and ends being formed into tapered interlocking flanges, the flanges of one section partially embracing the flanges of the other section.

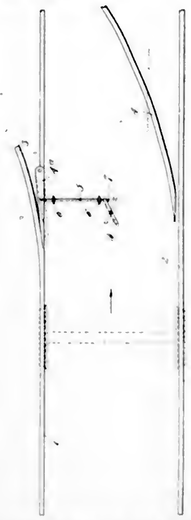
5. In a cooling frame for liquid or semi-liquid soap a suitable base, sides and ends having flanges forming tapering sockets, the said flanges being adapted to interlock.

855,089. COMBINED DISH AND DRIP PAN. DAVID E. BONATHAN, Lake Linden, Mich. Filed May 1, 1906. Serial No. 314,645.

Claim.—A device of the type set forth comprising an outer receptacle, an inner receptacle arranged in spaced concentric relation thereto but without communication therewith, a drain plate interposed as a dish support in the space between said receptacles and embodying perforate sections and means for detachably engaging said sections with one another.

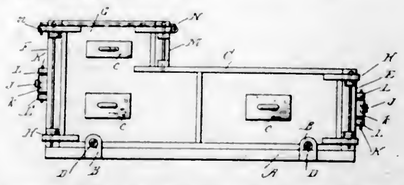


855,090. AUTOMATIC STREET-RAILWAY SWITCH. JOHN A. BOQUIST, Minneapolis, Minn. Filed Apr. 2, 1906. Serial No. 309,332.



Claim.—The combination with the rails of a main line and a branch line, and a pivoted switch rail for switching the cars from one line to the other, of a rod connected to said switch rail and having a single upturned end or projection that is mounted to move from one side to the other of the center of the track, and a vertical switch rod mounted on the car for pivotal and vertical movements, said switch rod having a depending end, a cam head adapted to be raised and lowered and to be set at different angles with respect to the line of travel, said cam head when lowered being operative, under both directions of travel of the car, upon the upturned end of the rod which is connected to said switch fail, substantially as described.

855,091. MOLD. PETER A. BOWSHER, Terre Haute, Ind., assignor to Modern Concrete Machine Company, Terre Haute, Ind., a Corporation of Indiana. Filed Sept. 25, 1906. Serial No. 336,101.



Claim.—1. In a mold, the combination, with a stretcher having lugs at its front edge, of a removable pallet, side

plate and end plates provided with means for connecting them together, stops which prevent all the said parts from sliding on the said stretcher, and screws engaging with the said lugs and forcing the said side plate rearwardly.

2. In a mold, the combination, with a stretcher having lugs at its front edge, of a pallet resting on the rear part of the said stretcher, a side plate resting on the front part of the stretcher, set-screws engaging with the said lugs and forcing the side plate rearwardly, end plates hinged to the said side plate and provided with catches for engaging with the said pallet, and dowel pins engaging with the said end plates and the end portions of the said stretcher.

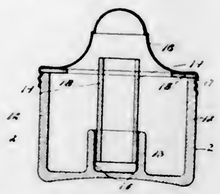
3. In a mold, the combination, with a stretcher, of a pallet at the rear part of the stretcher provided with an extension at one end, end plates of unequal height hinged to the said side plate and provided with catches for engaging the said pallet, and a short end plate hinged to the extension of the said side plate above the middle portion of the mold and provided with a fastening device for holding it in engagement with the said extension of the pallet.

4. In a mold, the combination, with a stretcher, and a side plate and a pallet resting thereon; of an end plate hinged to the said side plate and provided with projecting lugs, an eccentric pivoted between the said lugs and provided with an operating device, and a hook for engaging with the pallet pivoted on the said eccentric and operating to press the end portion of the said pallet forcibly against the rear edge of the said end plate when the said eccentric is turned in one direction.

5. In a mold, the combination, with a stretcher, and a side plate and a pallet resting thereon, said side plate being provided with a guide hole and a vertical guide-groove; of a slotted bar slidable horizontally in the said guide hole, and a partition plate slidable vertically in the slot of the said bar.

6. In a mold, the combination, with a stretcher, and a side plate and a pallet resting thereon; of an angle-shaped piece extending between the said side plate and pallet and formed of two plates of unequal length having beveled ends, the longer of the two said plates extending across the mold and having one end of the shorter plate secured to its middle portion.

855,092. PASTE-JAR. REUBEN BROOKS, Gloucester, Mass., assignor to Russia Cement Company, Gloucester, Mass., a Corporation of Massachusetts. Filed July 31, 1906. Serial No. 328,592.



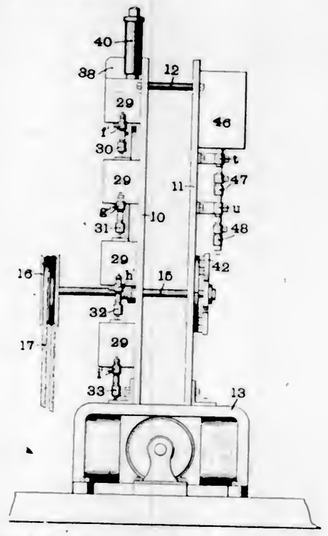
Claim.—1. A paste-jar having a two-part water-well composed of a lower member which is formed on the bottom of the jar and constitutes the bottom of the well, and an upper member open at both ends and having a sliding engagement with the lower member.

2. A paste-jar having a two-part water-well composed of a lower member which is formed on the bottom of the jar and constitutes the bottom of the well, and an upper member open at both ends and having a sliding engagement with the lower member, said members having reciprocal bearing faces forming a liquid-tight slip joint.

3. A paste-jar provided internally with a socket closed at its bottom and forming the lower member of a two-part water-well, and a tube open at both ends and movable in said socket, the said tube forming the upper member of said well.

4. A paste-jar having a water-well composed of a lower member connected with the bottom of the jar, and provided with a conformable lining, and a tube open at both ends and movable in said lower member, the outer surface of the tube closely fitting the said lining.

855,093. CONTROLLER FOR ELECTRIC MOTORS. FREDRICK H. BURMESTER, St. Louis, Mo., assignor to William A. Miller Elevator Manufacturing Company, St. Louis, Mo., a Corporation of Missouri. Filed Feb. 1, 1905. Serial No. 243,617.



Claim.—1. In a controller for electric motors, the combination with a motor, of a controller shaft, means for operating said shaft, a switch arm operated by said shaft, solenoids controlled by said switch arm, and reversing means for the motor controlled by said solenoids.

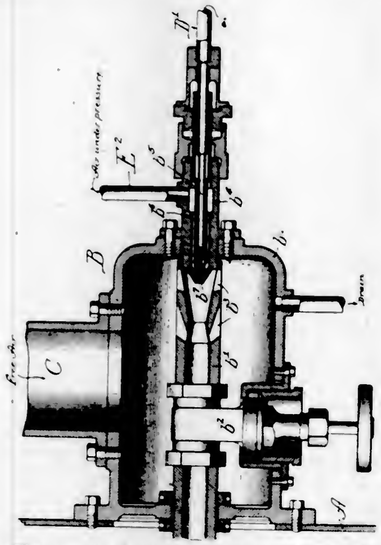
2. In a controller for electric motors, the combination with a motor, of a controller shaft, means for operating said shaft, a switch arm operated by said shaft, solenoids controlled by said switch arm, reversing means for the motor controlled by said switch arm, a contact arm controlled by said switch arm, solenoids controlled by said contact arm, and a variable resistance in circuit with said motor and controlled by said latter named solenoids.

3. In a controller for electric motors, the combination with a motor provided with an armature and field windings, of a solenoid controlling the connections to the field of said motor, two solenoids controlling the connections to the armature of said motor, and means for energizing said first named solenoid and either of said second named solenoids.

855,094. GAS-MANUFACTURING PROCESS. JACOB J. BUSENBENZ, Chicago, Ill., assignor to Industrial Gas Construction Co., Chicago, Ill., a Corporation of Illinois. Filed May 26, 1906. Serial No. 318,828.

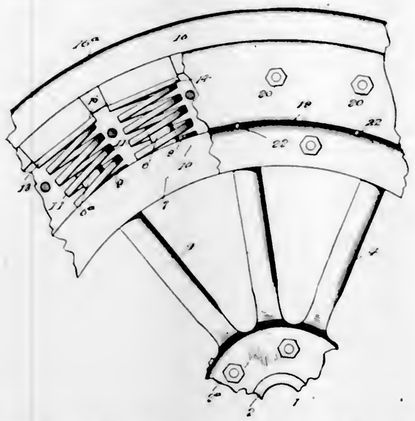
Claim.—1. The process of manufacturing a stable gas from a volatile liquid without the use of heat, which consists in injecting air and volatile liquid in atomizing relationship into an unheated mixer-chamber, and employing an induced flow of external atmosphere to complete the proper proportion of air in the mixture.

2. The process of manufacturing a stable gas from a volatile liquid without the use of heat, which consists in forcing volatile liquid and air under corresponding pressure into an unheated mixer-chamber and inducing such flow of external atmosphere into the mixer-chamber as is necessary to complete the proper proportion of air in the mixture.



3. The process of manufacturing and storing a stable gas, which consists in injecting air and oil in a common direction and under a common uniform pressure into a mixer-chamber, inducing a flow of external air to complete the proper proportion of air in the mixture, and maintaining a substantially uniform pressure in the mixer-chamber.

855,095. SPRING-WHEEL. JOHN W. COOPER, Boston, Mass. Filed Aug. 27, 1906. Serial No. 332,253.



Claim.—1. In a vehicle wheel, the combination of an inner and an outer rim, the outer rim comprising a series of independent shoes provided on their inner surface with sockets, the inner rim being formed with a series of protuberances on its outer surface, a series of helical springs, the outer ends of which are received in said sockets, and the inner ends of which surround the said protuberances, a tire received in the outer rim, and means for limiting the outward movement of the said outer rim.

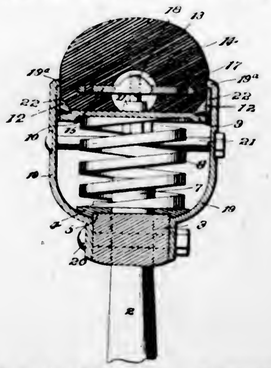
2. A vehicle wheel, comprising a hub, a series of spokes secured to said hub, said spokes being provided with extended tenons, a felly through which said tenons extend and beyond which they project, a tubular inner rim, angular in cross section and embracing said felly, the said rim being provided with tubular bosses acommodating the projecting ends of said tenons, an outer rim, a tire in said outer rim, and springs interposed between said outer rim and said inner rim.

3. A vehicle wheel comprising a hub, a series of spokes connected to said hub and provided with extended tenons at their outer ends, a felly through which said tenons extend and beyond which they are projected, an inner rim secured to said felly and provided with tubular bosses housing the projecting ends of said tenons and also provided with annular protuberances on their outer surface, an outer rim constituting a series of shoes provided with sockets in their lower faces, a tire received in said shoes, and helical springs interposed between said shoes and the inner rim, the outer ends of said springs being received in said sockets and the inner ends of said springs encircling the said protuberances.

4. A vehicle wheel, comprising a hub, a series of spokes secured to said hub, said spokes being provided with extended tenons, a felly through which said tenons extend and beyond which they project, a tubular inner rim angular in cross section and embracing said felly, the said rim being provided with tubular bosses accommodating the projecting ends of said tenons, an outer rim consisting of a series of independent shoes provided on their inner faces with sockets and also provided with rim flanges which produce outwardly facing shoulders, coil springs having their outer ends fitted in said sockets and their inner ends encircling the tubular bosses of the inner rim, and side plates secured to opposite sides of the said inner rim and secured together between the said springs, the outer ends of said side plates being formed with inwardly facing shoulders adapted to co-act with the outwardly facing shoulders of the outer rim, and a tire held in said outer rim.

5. A vehicle wheel comprising a hub, a series of spokes secured to said hub, said spokes being provided with extended tenons, a felly through which said tenons extend and beyond which they project, a tubular inner rim constructed in mating side sections adapted to embrace said felly, the said sections being provided with tubular bosses adapted to fit around the projecting ends of said tenons, an outer rim, a tire in said outer rim, and springs interposed between said outer rim and said inner rim.

855,096. SPRING-WHEEL. JOHN W. COOPER, Boston, Mass. Filed Jan. 9, 1907. Serial No. 351,561.



Claim.—1. In a vehicle wheel, the combination of a felly, a series of plates secured thereto and provided on their outer sides with seats for helical springs, springs seated at one end upon the outer sides of said plates, shoes

provided in their faces with recesses into which the outer ends of the springs fit, said shoes being also provided with central openings and outwardly extending side flanges, a tire provided with a central opening and embedded cross bars extending across said opening, fastenings extending through said cross bars and the openings of the shoes whereby to secure the cross bars to the shoes and hold the tire between the side flanges of the shoes, side plates inclosing the shoes, the springs, and the first named plates, and wear plates interposed between the side edges of the shoes and the said side plates, as and for the purpose set forth.

2. In a wheel, the combination with the felly, of a series of plates secured to the outer face of the felly, a series of helical springs mounted at one end upon said plates, shoes into which the other ends of said springs fit, said shoes being provided with side flanges and with wear plates secured to the outer edges thereof and also formed with central openings, a tire adapted to fit between the side flanges of said shoes, a series of cross bars embedded in the tire, the tire being provided with an opening and the cross bars extending across said opening, bolts extending through the openings of the shoes and having a screw threaded engagement with the cross bars, and side plates secured at their inner edges to opposite sides of the felly and provided at their outer edges with inwardly facing shoulders adapted for engagement with the outer edges of said wear plates.

3. In a spring wheel, the combination with the felly of a series of helical springs, shoes carried by the outer ends of said springs, a tire adapted to rest in said shoes, a series of cross bars embedded in the tire, and means for securing said cross bars to the said shoes.

4. In a spring wheel, the combination with the felly of a series of helical springs, shoes carried by the outer ends of said springs, a tire adapted to rest in said shoes, a series of cross bars embedded in the tire, bolts connected to said cross bars, links connected to said bolts and mounted to slide through the said shoes and provided with shoulders limiting their inward movement with respect to the shoes, link bolts with which said links have a relatively slidable movement, and means for securing the said link bolts to the inner rim or felly of the wheel.

5. In a spring wheel, the combination of a series of helical springs, an inner and an outer rim between which said springs are interposed, said outer rim consisting of a plurality of shoes provided with central openings, links extending through said openings and having a slidable movement relative to the shoes, means for limiting the relative inward movement of the links with respect to the shoes, a tire mounted in said shoes and having operative connection with the links, link bolts having a relatively slidable engagement with the links, and tension bolts extending through the inner rim and connected thereto, and having an adjustable connection with said link bolts.

855,097. GALLEY FOR ADDRESSING-MACHINES. SANDFORD C. COX, Chicago, Ill., assignor to The Cox Multi-mailer Co., Sioux Falls, S. D., a Corporation of South Dakota. Filed May 1, 1905. Serial No. 258,384.

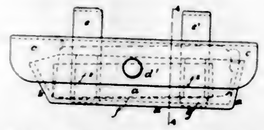


Claim.—1. In a device for the purpose described the combination of a feed race for the slugs, a galley adapted to be inserted in said feed race, for holding a supply of slugs, and a gate at the inner end of said galley, pivoted to the sides thereof and having a cross member adapted to turn down across the end of the galley to hold the slugs in and to stand across the top of the galley at a sufficient elevation to permit the slugs to be pushed thereunder.

2. In a device for the purpose described, the combination of a feed race for the slugs, means movable in said race for feeding the slugs forward, a galley for charging the race with slugs adapted to be inserted therein, and means in the race for holding the galley aloof from said feeding means.

3. In a device for the purpose described, the combination of a feed race for the slugs, means in said race for feeding the slugs forward, a galley for charging said race adapted to be inserted therein, tracks or flanges in said race for supporting said galley, and a hinged gate at one end of said galley.

855,098. CARTRIDGE-POUCH. RICHARD M. CUTTS, U. S. Marine Corps, assignor to Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn., a Corporation of Connecticut. Filed July 25, 1906. Serial No. 327,732.



Claim.—1. A pouch for cartridge-packets having parallel front and rear sides, and one end parallel to the adjacent ends of the cartridge-packets, and having the other end inclining upward and outward to leave an upwardly increasing space between said end of the pouch and the ends of the cartridge-packets, and provided with a flexible cover and with means for securing said cover to said pouch, substantially as described.

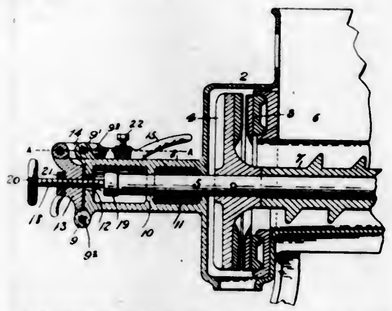
2. In a pouch for holding cartridge-packets, the combination of the body having parallel front and rear sides, and one end parallel to the adjacent ends of the cartridge-packets, and the other end inclining upward and outward to leave an upwardly increasing space between said end of the pouch and the ends of the cartridge-packets, with a packet-holder secured in said body, and the flexible cover attached to said body and means for locking down said cover, substantially as specified.

3. In a cartridge-box, the combination of the body for receiving cartridge-packets edgewise, the sides of said body being lower than the height of a cartridge-packet resting edgewise therein, the flexible cover attached to said body and means for locking down said cover, with the packet-holder secured in said body and constructed with a lengthwise partition and with lugs reinforcing the sides of said body and adapting said body for yieldingly clasping and separately holding a plurality of cartridge-packets, one end of said body inclining outward and upward, whereby the cartridge-packets in the box are adapted to be in succession turned upward and to be grasped for removal from the box.

4. In a cartridge-pouch, in combination, the receptacle for tubular cartridge-magazines, having sides lower than the height of the magazines resting edgewise therein, and provided with a cover and means for locking down said cover, the magazine-holder secured in said receptacle and formed with a lengthwise partition and with lugs reinforcing the sides of said receptacle and adapting the same for grasping and holding a plurality of magazines side by side, said magazines constructed with inclined, upwardly projecting bottom-plates, and said receptacle having one end inclining upward and outward, substantially as and for the purpose specified.

855,099. VERTICAL-DISK GRINDING-MILL. ABRAHAM M. DELLINGER, Lancaster, Pa. Filed June 15, 1906. Serial No. 321,884.

Claim.—1. In a grinding machine, the combination of a casing, a housing extending therefrom, a rotatable shaft supported by said casing and extending within the housing, said shaft being movable longitudinally, a lever, a fragile pin pivotally securing said lever to the housing, a temper screw threaded through the lever passing freely through the end of the housing and adapted to engage the end of the shaft, a second lever pivoted to the housing, and links pivotally connecting the first named lever and the second lever beyond its point of connection with the housing.



2. In a grinding machine, the combination of a casing, a housing extending therefrom, a rotatable shaft supported by said casing and extending within the housing, said shaft being movable longitudinally, a lever pivoted to the housing, a temper screw threaded through the lever passing freely through the end of the housing and adapted to engage the end of the shaft, a second lever pivoted to the housing, links pivotally connecting the first named lever and the second named lever beyond its point of connection with the housing, and a set screw carried by the second lever contacting with the housing.

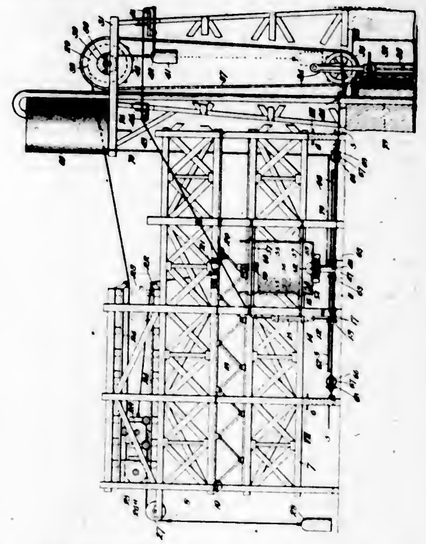
3. In a grinding machine, the combination of a casing, a housing extending therefrom, a rotatable shaft supported by said casing and extending within the housing, said shaft being movable longitudinally, a lever pivoted at one end of the housing, a temper screw threaded through the lever passing freely trough the end of the housing and adapted to engage the end of the shaft, a lever at an end of the housing, and links pivotally connecting the first named lever and the second named lever beyond its point of connection with the second named lever below the plane passing through the pivotal connections of the links and the first named lever and the pivotal connection of the second named lever and the housing.

4. In a grinding machine, the combination of a casing, a housing extending therefrom, a rotatable shaft supported by said casing and extending within the housing, said shaft being movable longitudinally, a lever pivoted at one end of the housing, a temper screw threaded through the lever passing freely through the end of the housing and adapted to engage the end of the shaft, a second named lever at an end of the housing, links pivotally connecting the first named lever and the second named lever beyond its point of connection with the housing, the pivotal connection between the links and the second named lever being below the plane passing through the pivotal connection of the links and the first named lever and the pivotal connection of the second named lever and housing, and a set screw threaded through the free portion of the lever and adapted to contact with the housing.

855,100. WATER ELEVATING AND STORAGE APPARATUS. WILLIAM W. DOUGLASS, Salt Lake City, Utah. Filed Dec. 18, 1905. Serial No. 292,365.

Claim.—1. In an apparatus of the character described, a pumping mechanism, an hydraulic jack connected thereto, a valve to prevent back flow from the jack to the pumping mechanism, a frame movable with the piston of the jack, a stationary frame, a lazy-tong lever between said frames and extended under movement by the movable frame toward the stationary frame, and a weight adapted to gravitate during the initial part of the movement of said frame.

2. In an apparatus of the character described, a pumping mechanism, an hydraulic jack connected thereto, a valve to prevent back flow from the jack to the pumping mechanism, a frame movable with the piston of the jack, a stationary frame, a lazy-tong lever between said frames and extended under movement by the movable frame toward the stationary frame, a weight adapted to gravitate during the initial part of the movement of said frame, means whereby the weight during its gravitative movement coöperates with the jack in effecting the first part of the movement of the frame, and means whereby the weight is reëlevated during the latter part of such movement.



3. In an apparatus of the character described, a pumping mechanism, an hydraulic jack connected thereto, a valve to prevent back flow from the jack to the pumping mechanism, a frame movable with the piston of the jack, a stationary frame, a lazy-tong lever between said frames and extended under movement by the movable frame toward the stationary frame, a weight adapted to gravitate during the initial part of the movement of said frame, means whereby the weight during its gravitative movement coöperates with the jack in effecting the first part of the movement of the frame, and means whereby the weight is reëlevated during the latter part of such movement.

4. In an apparatus of the character described, a pumping mechanism, an hydraulic jack connected thereto, a valve to prevent back flow from the jack to the pumping mechanism, a frame movable with the piston of the jack, a stationary frame, a lazy-tong lever between said frames and extended under movement by the movable frame toward the stationary frame, a weight adapted to gravitate during the initial part of the movement of the frame, means whereby the weight during its gravitative movement coöperates with the jack in effecting the first part of the movement of the frame, and means whereby the frame in the latter part of its movement reëlevates the weight.

5. In an apparatus of the character described, a pumping mechanism, an hydraulic jack connected thereto, a valve to prevent back flow from the jack to the pumping mechanism, a frame movable with the piston of the jack, a stationary frame, a lazy-tong lever between said frames and extended under movement by the movable frame toward the stationary frame, a weight adapted to gravitate during the initial part of the movement of the frame, means whereby the weight during its gravitative movement coöperates with the jack in effecting the first part of the

movement of the frame, means whereby the frame in the latter part of its movement reëlevates the weight, and means to lock the weight elevated.

6. In an apparatus of the character described, a pumping mechanism, an hydraulic jack connected thereto, a valve to prevent back flow from the jack to the pumping mechanism, a frame movable with the piston of the jack, a stationary frame, a lazy-tong lever between said frames and extended under movement by the movable frame toward the stationary frame, a weight adapted to gravitate during the initial part of the movement of the frame, means whereby the weight during its gravitative movement coöperates with the jack in effecting the first part of the movement of the frame, means whereby the frame in the latter part of its movement reëlevates the weight, means to lock the weight elevated, and means to free the water in the jack to permit the frame to reverse its movement.

7. In an apparatus of the character described, a pumping mechanism, an hydraulic jack connected thereto, a valve to prevent back flow from the jack to the pumping mechanism, a frame movable with the piston of the jack, a stationary frame, a lazy-tong lever between said frames and extended under movement by the movable frame toward the stationary frame, a weight adapted to gravitate during the initial part of the movement of the frame, means whereby the weight during its gravitative movement coöperates with the jack in effecting the first part of the movement of the frame, means whereby the frame in the latter part of its movement reëlevates the weight, means to lock the weight elevated, means to free the water in the jack to permit the frame to reverse its movement, and means to release the weight as the next charging action of the jack begins.

8. In an apparatus of the character described, a stationary frame, a vertically movable frame below said stationary frame, a lazy-tong lever between said frames, means to raise the movable frame to effect the extension of the lazy-tong lever, a vertically movable weight, and means whereby said weight shall be raised with the latter part of the upward movement of the movable frame.

9. In an apparatus of the character described, a stationary frame, a vertically movable frame below said stationary frame, a lazy-tong lever between said frames, means to raise the movable frame to effect the extension of the lazy-tong lever, a vertically movable weight, means whereby said weight shall be raised with the latter part of the upward movement of the movable frame, and means for locking said weight elevated.

10. In an apparatus of the character described, a stationary frame, a vertically movable frame below said stationary frame, a lazy-tong lever between said frames, means to raise the movable frame to effect the extension of the lazy-tong lever, a vertically movable weight, means whereby said weight shall be raised with the latter part of the upward movement of the movable frame, means for locking said weight elevated, and means whereby the movable frame is permitted to resume its original position.

11. In an apparatus of the character described, a stationary frame, a vertically movable frame below said stationary frame, a lazy-tong lever between said frames, means to raise the movable frame to effect the extension of the lazy-tong lever, a vertically movable weight, means whereby said weight shall be raised with the latter part of the upward movement of the movable frame, means for locking said weight elevated, means whereby the movable frame is permitted to resume its original position, means whereby the weight is unlocked, and means whereby the weight in its gravitative movement coöperates in moving the frame in the first part of its upward movement.

12. In an apparatus of the character described, the combination of a stationary frame, a vertically movable frame below it, a lazy-tong lever between and adapted to be extended or retracted by upward or downward movement of the movable frame, one or more hydraulic jacks to raise the movable frame, a vertically movable weight to move downward by gravity, and means whereby said weight in such movement shall coöperate with said jack or jacks in raising said frame in the fore part of its movement.

13. In an apparatus of the character described, the combination of a stationary frame, a vertically movable frame below it, a lazy-tong lever between and adapted to be extended or retracted by upward or downward movement of the movable frame, one or more hydraulic jacks to raise the movable frame, a vertically movable weight to move downward by gravity, means whereby said weight in such movement shall coöperate with said jack or jacks in raising said frame in the fore part of its movement, and means whereby said frame in the latter part of such movement shall reëlevate said weight.

14. In an apparatus of the character described, the combination of a stationary frame, a vertically movable frame below it, a lazy-tong lever between and adapted to be extended or retracted by upward or downward movement of the movable frame, one or more hydraulic jacks to raise the movable frame, a vertically movable weight, a cylinder having its piston stem supporting said weight and charged with water when the weight is elevated, a pipe connection between said cylinder and said jack or jacks, a valve or valves controlling said connection, and means for opening said valve or valves as the jacks begin to receive the charge of water for raising said frame.

15. In an apparatus of the character described, the combination of a stationary frame, a vertically movable frame below it, a lazy-tong lever between and adapted to be extended or retracted by upward or downward movement of the movable frame, one or more hydraulic jacks to raise the movable frame, a vertically movable weight, a cylinder having its piston stem supporting said weight and charged with water when the weight is elevated, a pipe connection between said cylinder and said jack or jacks, a valve or valves controlling said connection, means for opening said valve or valves as the jacks begin to receive the charge of water for raising said frame, and means to close said valve or valves before the frame is fully elevated.

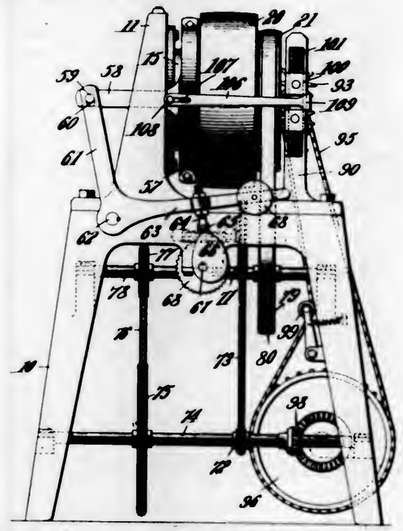
16. In an apparatus of the character described, the combination of a stationary frame, a vertically movable frame below it, a lazy-tong lever between and adapted to be extended or retracted by upward or downward movement of the movable frame, one or more hydraulic jacks to raise the movable frame, a vertically movable weight, a cylinder having its piston stem supporting said weight and charged with water when the weight is elevated, a pipe connection between said cylinder and said jack or jacks, a valve or valves controlling said connection, means for opening said valve or valves as the jacks begin to receive the charge of water for raising said frame, means to close said valve or valves before the frame is fully elevated, means whereby the latter part of the upward movement of the frame shall reëlevate the weight, and a check valve to prevent the escape of the water from the cylinder during the downward or reverse movement of said frame.

855,101. LATHE. GEORGE M. FENN and CLINTON D. YOUNGS, Charlotte, Mich. Filed Oct. 4, 1906. Serial No. 337,449.

Claim.—1. In combination, a revoluble cutter head having a pair of face plates, a pair of work guides carried by one of said face plates, a work support, and a cutter carried by the other face plate, and a pattern mechanism for adjusting the positions of the guides, the work support and the cutter.

2. In combination, a revoluble cutter head, a pair of face plates carried thereby, a pair of work guides on one of said face plates, a work support, and a cutter on the other face plate, a pattern mechanism, and means operable therefrom for simultaneously adjusting the guides, the support and the cutter.

3. In combination, a revoluble cutter head, a pair of face plates carried thereby, a pair of diametrically opposed work guides, mounted on one of said plates and formed of yieldably connected sections, a work support, and a cutter arranged diametrically opposite each other on the other plate, the common plane of the work guides being at a right angle to the common plane of the work support and cutter, a pattern mechanism, and means operable therefrom for simultaneously adjusting the guides, the support and the cutter.



4. The combination with a lathe, of a revoluble cutter head, a tubular support post therefor, inner and outer face plates on said cutter head, a plurality of slides carried thereby, a cutter mounted on one of said slides, and the remainder of the slides acting as work guides, the outer ends of all of the slides being provided with dove tailed ribs, a cam ring, a plurality of arms mounted thereon and provided with inclined dove tailed grooves for the reception of the ends of the slides, and a pattern cam mechanism for adjusting the position of said ring.

5. In a machine of the class described, a revoluble cutter head, a cutter, a pair of diametrically opposed work guides each formed of a pair of yieldably connected sections, and means for adjusting said work guide.

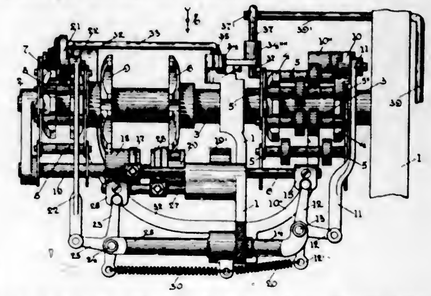
6. In a machine of the class described, a revoluble cutter head, a cutter supported thereby, a pattern mechanism controlling the position of the cutter, a pair of spring pressed feed rollers, journal boxes carrying the said rollers, means for operating the feed rollers, a pair of cam arms arranged to move between the journal boxes, and means connecting said cam arms to the pattern mechanism, whereby the feed rollers are separated and held in spaced relation at the completion of each operative movement of the pattern mechanism.

7. In a machine of the class described, a revoluble cutter head having a central work passage, and a cutter head support having an elongated slot to permit the passage of the work and limit whirling movement of the work.

855,102. MULTIPLIER MECHANISM FOR BOX-LOOMS. GEORGE R. FORBES and GEORGE W. FRAKER, Spray, N. C., assignors to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Mar. 28, 1905. Serial No. 252,600.

Claim.—1. In a loom, the combination with a box pattern chain, a multiplier pattern chain, and a chain connected with the take-up mechanism, and said take-up mechanism, of the indicator lever for the multiplier pattern chain, and connections intermediate said indicator lever and the pattern chain connected with the take-up mechanism, and means for operating said connections to move said indicator lever to an inoperative position.

2. In a loom, the combination with a box pattern chain, a multiplier pattern chain, and a pin wheel and star wheel operating mechanism for said chains, of a third pattern chain connected with the take-up mechanism, to control the operation of said pin wheel and star wheel mechanism and said take-up mechanism.



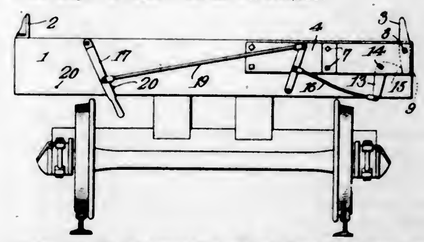
3. In a loom, the combination with a box pattern chain, a multiplier pattern chain, and a chain connected with the take-up roll, and said take-up roll, of the indicator lever for the multiplier pattern chain, and connections intermediate said indicator lever and the pattern chain connected with the take-up roll, to positively move said indicator lever to an inoperative position through the revolution of the box pattern chain, and to allow said pattern indicator to be returned to its operative position.

4. In a loom, the combination with a box pattern chain, a multiplier pattern chain, and a chain connected with the take-up roll and said take-up roll, of the indicator lever for the multiplier pattern chain, and connections intermediate said indicator lever and the pattern chain connected with the take-up roll, to positively move said indicator lever to an inoperative position through the revolution of the box pattern chain, and to allow said pattern indicator to be returned to its operative position, the movement of said connections being controlled by the pattern chain connected with the take-up roll.

5. In a loom, the combination with a box pattern chain, a multiplier pattern chain, and a chain on the take-up roll and said take-up roll, of the indicator lever for the multiplier pattern chain, a connection from said lever to an angle or bell crank lever, a movable pin connecting said lever with the box pattern chain, and a connection from said pin to a rock shaft, and said rock shaft, an arm on said rock shaft, an indicator lever engaged by said arm and extending in the path of and engaged by the pattern chain on the take-up roll, and a spring connected with the said angle or bell crank lever.

6. In a loom, the combination with a box pattern chain, a multiplier pattern chain, and the indicator lever of the multiplier pattern chain, and a pattern chain connected with the take-up roll and said take-up roll, of connections, intermediate said indicator lever and said pattern chain connected with the take-up roll, the operation of said connections controlled by the pattern chain connected with the take-up roll.

855,103. LOG-CAR DOG. JOHN HANLEY, Laurel, Miss. Filed Sept. 24, 1906. Serial No. 335,951.



Claim.—1. In an apparatus of the class described, the combination of a dog pivoted at a point intermediate its

ends, with a stationary abutment arranged to be engaged by one of the ends of the dog when the latter is in operative position, a locking member pivotally mounted and arranged to move independently of the dog and engaging the end thereof that bears on the abutment, and a mechanism directly connected with the locking member for moving the same into and out of operative relation with the dog.

2. In an apparatus of the class described, the combination of a dog, and a pivot disposed intermediate the ends of the dog, with a locking member in the form of a lever arranged to engage at one extremity said dog, and an operating mechanism directly connected with the locking member for moving the same into and out of contact with the dog, said mechanism comprising a hand lever, an intermediate lever, a connection between one lever and the other, and a connection between the intermediate lever and locking member.

3. In an apparatus of the class described, the combination of a dog, a pivot on which the dog is mounted, and a stationary abutment which the dog abuts in two different positions, with a locking member arranged to hold the dog against the abutment in one position, and means for actuating the locking member.

4. In an apparatus of the class described, the combination of a vehicle, with a dog attachment, said attachment comprising a supporting frame removably mounted on the vehicle, a dog pivoted thereon, and a locking member mounted on the frame in operative relation to the dog, said frame comprising spaced plates disposed on opposite sides of the dog and member, and an abutment extending between the plates to form a bearing for the dog when the latter is in its operative position.

5. In an apparatus of the class described, the combination of a vehicle, with a dog attachment, said attachment comprising a frame removably supported on the vehicle, a dog pivoted on the frame, an abutment adjacent the dog, a locking member arranged to lock the dog against the abutment, means for mounting the locking member on the frame, and a mechanism for actuating the locking member.

6. In an apparatus of the class described, the combination of a vehicle, with a dog attachment, said attachment comprising a frame removably supported on the vehicle and comprising spaced plates, a dog pivoted between the plates, an abutment on the frame which the dog abuts in two different positions, a locking member pivoted between the plates in such a relation as to hold the dog against the abutment in one of its positions, and a mechanism for actuating the locking member.

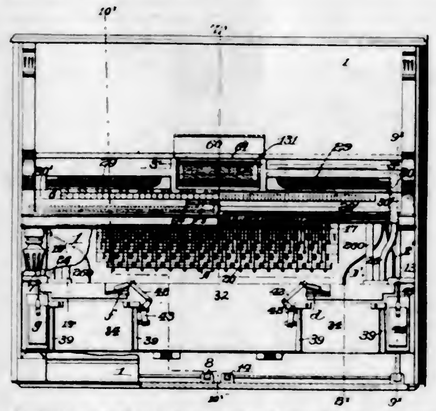
7. In an apparatus of the class described, the combination of a vehicle, with a dog attachment, said attachment comprising a frame secured to the vehicle and composed of spaced plates and an abutment between the plates, a dog pivoted adjacent the abutments to engage the same and arranged between the plates, a bell crank lever pivoted between the plates and arranged with one arm to bear against the dog and hold the latter against the abutment, and a mechanism connected with the bell crank lever.

8. In an apparatus of the class described, the combination with a vehicle, and a stationary standard, of a dog attachment mounted on the vehicle, said attachment comprising a frame composed of parallel connected plates, a dog pivoted between the plates, a locking member pivoted between the plates in coöperative relation with the dog, an operating lever, an intermediate lever mounted on the frame, a link between the intermediate lever and locking member, and a link connecting the intermediate and operating levers.

855,104. SELF-PLAYING PIANO. JOHN J. HEALY, Rochester, N. Y., assignor of one-half to Solomon F. Hess, Rochester, N. Y. Filed Dec. 26, 1902. Serial No. 136,530.

Claim.—1. The combination with a musical instrument action, keys and the casing for said action having a hollow breast, of operating devices located in the casing outside of the breast, levers connected to the keys and arranged within the breast and connections between the levers and the operating devices.

2. The combination with a musical instrument action, keys and the casing having a hollow breast extending beneath the keys, of pivoted levers arranged in the breast, operating devices arranged in the casing outside of the breast and attached to the levers and connections between the levers and keys for operating the latter and permitting their independent movement.



3. In a musical instrument playing mechanism, the combination with a key bed, a tracker board located at one side of the key bed and pneumatic devices at the opposite side thereof, of wind passages leading from said devices, coöperating passages leading from the tracker board and means for connecting the corresponding passages at the end of the key bed whereby the mechanism arranged at one side of said key bed may be removed without disturbing that at the other side.

4. In a musical instrument, the combination with a casing, a key bed therein and a hollow frame mounted in the casing and supporting said bed, of operating mechanism depending beneath the frame and supported thereby, connections between it and the outer ends of the keys operating through the frame and controlling mechanism for said devices.

5. In a musical instrument, the combination with a casing, a key bed therein and a supporting frame for the bed mounted in the casing and provided with an open portion arranged beneath the outer ends of the keys forming a hollow breast, and operating devices supported on the frame, of operating connections between said devices and the keys located in the breast and mechanism for controlling the operation of said devices.

6. In a musical instrument, the combination with a casing, a frame therein and a key bed supported on the frame, of key operating bellows supported on the frame, a wind-chest connected to said bellows and valves for controlling the latter, passages for controlling said valves arranged within the frame, a tracker board and passages leading therefrom and communicating with those in the frame.

7. In a musical instrument, the combination with a casing, a frame therein, a key bed arranged in the casing and key-operating bellows supported on the frame, of a wind-chest connected to said bellows, controlling valves therefor located beneath the key bed, a tracker board located above the key bed and passages leading around the end of said bed and governing the movement of the valves.

8. In a musical instrument, the combination with a casing, a key bed therein and key operating bellows arranged beneath the bed, a wind-chest connected thereto and valves for controlling the operation of the bellows, of a tracker board located above the key bed and controlling passages extending laterally from the tracker board and leading around the ends of the key bed to the valves located beneath the latter.

9. In a musical instrument, the combination with a casing, a key bed therein and key operating bellows arranged beneath the bed, a wind-chest connected thereto and secondary valves for controlling the operation of the bellows, of a tracker board, a wind-chest and primary valves operated from the tracker board and located above the key bed and passages connecting the primary and secondary valves.

10. In a musical instrument, the combination with a key bed, key operating bellows, a wind-chest and a secondary valve therein controlling the operation of the bellows all arranged below the key bed, of a tracker board, a wind-chest and a primary valve, located above the key bed and a passage connecting the two valves.

11. In a musical instrument, the combination with a key bed, key operating bellows, a wind-chest and a secondary valve for each bellows all arranged beneath the key bed, of a tracker board, a wind-chest and primary valves operated from the tracker board and located above the key bed, passages leading from the primary valves to the secondary valves and passing through a header comprising separate parts located at the ends of the key board whereby the devices at opposite sides of the latter may be disconnected.

12. In a musical instrument, the combination with the keys, key pneumatics and a wind-chest connected to some of the key pneumatics and another wind-chest connected to the remaining pneumatics, of feeder bellows attached to each wind-chest, a passage connecting said bellows, a valve controlling the passage and means for operating it whereby either bellows may be connected to its respective wind-chest independently of the other bellows.

13. In a musical instrument, the combination with keys, key pneumatics arranged in groups, a high tension bellows and a low tension bellows, of a wind chest for each group of pneumatics, each wind chest communicating with the high and low tension bellows and a valve for disconnecting one of said bellows from the wind chests, means for operating the valve and a feeder bellows connected to both the high and low tension bellows.

14. In a musical instrument, the combination with keys, key pneumatics, a plurality of wind chests each connected to a group of key-pneumatics, of feeder-bellows, a pair of bellows for each group connected to the corresponding wind-chest and to the feeder-bellows, each pair comprising a low tension and a high tension bellows, a passage connecting the bellows of each pair and a passage connecting the several pairs of bellows, a valve for disconnecting the low and high tension bellows of each pair and a valve for closing the connecting passage of said pairs and means for operating the valves.

15. In a musical instrument, the combination with the keys, pneumatic devices for operating them, said devices being arranged in groups, a feeder bellows and a pair of high and low tension bellows for each of said groups, of separate wind-chests, one for each group and passages each connecting one of them with the high tension bellows of its respective pair of bellows, a passage connecting the high and low tension bellows of each pair and a valve for closing said passage.

16. In a mechanical operating mechanism for musical instruments, the combination with an action, keys, key pneumatics and a plurality of feeder bellows, low and high tension bellows arranged in pairs and connected to their respective feeder bellows, passages connecting the low and high tension bellows of each pair and a passage connecting said pairs of bellows for balancing them, wind-trunks leading from each high tension bellows to the key pneumatics, valves for closing the passages between the respective low and high tension bellows of each pair and also the passage between the different pairs of bellows, and means for operating said valves.

17. In a musical instrument embodying keys and operating pneumatics therefor, the combination with a feeder bellows and a division board, a high tension bellows and a low tension bellows thereon, of passages in the board connecting said bellows and connecting them with the feeder bellows, a wind-trunk connecting the pneumatic devices and the passage between the latter and the low tension bellows and pneumatic devices for operating said damper.

18. In a musical instrument embodying keys and pneumatic operating devices therefor, the combination with a feeder bellows and a division board, a high tension bellows located at one side thereof and a low tension bellows located at the other side of said board, of passages in the board connecting the high and low tension bellows and connecting them with the feeder bellows and a wind-trunk connecting the key operating pneumatic devices with the high tension bellows, a damper for closing the passage between the latter and the low tension bellows and pneumatic devices for operating said damper.

19. In a musical instrument embodying the keys and pneumatic operating devices therefor arranged in sets, the combination with a feeder bellows and a plurality of pairs of high and low tension bellows connected to the feeder bellows, of passages connecting the respective high and low tension bellows of each pair, another passage affording communication between the separate pairs of bellows, and wind-ways one leading from each of the several sets of pneumatic devices to the several high tension bellows, damper devices for closing communication between the high and low tension bellows of each pair, said damper devices also operating to close the passage affording communication between said pair and the other pairs of bellows and means for operating the damper devices.

20. In a musical instrument, the combination with keys, key pneumatics arranged in groups and normally-connected high and low tension bellows, of separate wind-chests each connected to one of the groups of pneumatics and communicating with said bellows, a valve for disconnecting one of said bellows from the other and another valve for disconnecting all but one of the wind-chests from said other bellows, means for operating the valves and a feeder bellows connected to said low and high tension bellows.

21. In a self playing musical instrument and in combination with the action and manually operable keys, of a tracker board located above the keys, key-pneumatics located beneath them and passages extending between the tracker board and pneumatics leading around the ends of the key bed.

22. In a self playing musical instrument and in combination with the action and manually operable keys, of a controlling mechanism located above the keys, a key operating mechanism located beneath them and connections extending between the controlling and operating mechanisms leading around the ends of the key bed.

23. In a musical instrument, the combination with keys, key pneumatics and feeder and main bellows arranged at one side of the key bed, of a wind chest located at the other side of the bed, valves arranged therein for controlling the operation of the pneumatics and a tracker board supported on the wind chest.

24. In a musical instrument, the combination with keys, key pneumatics and feeder and main bellows arranged at one side of the key bed, of wind chests located at the other side of the key bed, a tracker board located between them and valves in the chests for controlling the pneumatics.

25. In a musical instrument, the combination with keys, key pneumatics and feeder and main bellows arranged at one side of the key bed, of a wind chest located at the other side of the key bed, a tracker board supported thereon, said chest and tracker board forming a single member, valves in the chest and passages leading therefrom to the ends of the member and thence to the pneumatics.

26. In a musical instrument, the combination with a support, keys, key pneumatics and feeder and main bellows arranged at one side of the key bed, of a member comprising a wind chest and a tracker board arranged at the other side of the key bed and held at its ends on the support and valves in the chest connected to and controlling the pneumatics.

27. The combination with a board having a passage and disposed with one of its edges elevated above the other, and two feeder bellows arranged centrally on one side of the board and connected to the passage, of two main bellows arranged on the same side of the board, one being located at each end thereof and connected to the passage and pedals for operating the centrally arranged feeders.

28. The combination with a board having a passage

therein, high and low tension bellows mounted on opposite sides of the board and connected to the passage, of a feeder bellows also mounted on the board and connected to the passage and means for operating the feeder bellows.

29. The combination with a board having a passage therein, conjointly operating high and low tension bellows arranged in pairs at the ends of the board, the two bellows of each pair being located at opposite sides of the board and connected to the passage, of two feeder bellows located between the pairs of high and low tension bellows and means for operating the feeders.

30. In a musical instrument, the combination with a casing, an open frame mounted thereon having a cross bar dividing it into forward and rear compartments and a plurality of keys arranged above the frame, of operating mechanism supported in the rear compartment and connections between said mechanism and the keys located in the forward compartment of the frame.

31. In a musical instrument, the combination with a key bed, key operating bellows arranged beneath the bed, a wind chest therefor and valves for controlling the operation of the bellows, of a tracker board located above the key bed, passages leading from the tracker board to the controlling valves and passing through a header located at the end of the key bed and comprising separable parts.

32. In a piano player, the combination with a divided pneumatic chamber, of the independent trunks connected thereto and having orifices, suitable controlling valves for the orifices, and independent exhaust reservoirs communicating with each trunk, and exhausters for each reservoir, means for operating the exhausters, and a by-pass extending between the exhaust reservoirs.

33. In a musical instrument, the combination with a casing, keys therein, key-pneumatic and secondary valves controlling their operation and located beneath the keys, of primary valves located above the keys and controlling the operation of the secondary valves, wind-chests for both the primary and secondary valves, bellows and separate trunks leading therefrom and connected to said chests.

34. In a musical instrument, the combination with a casing, keys therein, key pneumatics, secondary valves controlling their operation and a wind chest for said valves all arranged beneath the keys, of primary valves controlling the operation of the secondary valves and a primary wind-chest located above the keys, bellows and separate wind trunks leading therefrom and connected to said wind chests.

855,105. BINDER'S STAMP. JAMES HENRY, New York, N. Y. Filed Nov. 29, 1905. Serial No. 289,571.



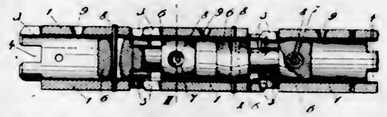
Claim.—1. A binders' stamp comprising a back, a shell secured thereto and a filling for the shell composed of powdered asbestos and glue, as and for the purpose set forth.

2. A binders' stamp comprising a metal back, a metal shell secured thereto and a filling for the shell composed of powdered asbestos and glue, as and for the purpose set forth.

3. A binders' stamp comprising a shell and a filling therefor composed of powdered asbestos and glue, as and for the purpose set forth.

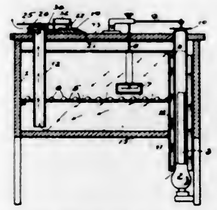
855,106. FLEXIBLE LINK-SHAFT. EMIL HENSEL, Berlin, Germany. Filed Jan. 31, 1906. Serial No. 298,806.

Claim.—1. In a flexible link shaft the combination of a number of tubular links, teeth being provided on the adjoining faces of said links, the teeth of succeeding links being in staggered relation, said teeth having broad lateral faces for transmitting motion and force of one link to the next, bolts inserted into and connecting said links said bolts being provided with ball-formed heads having holes, pins passing through said holes, said pins being firmly connected to the links, all substantially as set forth.



2. In a flexible link shaft the combination of a number of tubular links, teeth being provided on the adjoining faces of said links, the teeth of succeeding links being in staggered relation, said teeth having broad lateral faces adapted to transmit motion and force from one link to the next, bolts inserted into and connecting said links, said bolts being provided with ball-formed heads having holes, said holes being conically enlarged from the center of the head to the outside, pins passing through said holes, said pins being firmly connected to the links, all substantially as set forth.

855,107. AUTOMATIC VENTILATION-REGULATOR FOR INCUBATORS. ALSON E. LEAVENSWORTH, New Haven, Conn. Filed Feb. 23, 1906. Serial No. 302,415.



Claim.—1. In combination with an incubator having an egg-chamber and ventilator openings for the ingress and egress of air to and from the egg-chamber, a valve located over one of said openings, means for actuating the same entirely by the temperature outside of the incubator so as to regulate but not completely shut off the current of air passing through the incubator, for the purpose set forth.

2. In an automatic ventilation regulator for incubators, a base having an opening therethrough, a valve operatively overlying said opening but not fully closing the same, a thermostat adapted to be influenced by the temperature outside of the incubator and operatively connected with the valve, means for maintaining said connection, a shield to protect the thermostat from the air escaping from the incubator, for the purpose set forth.

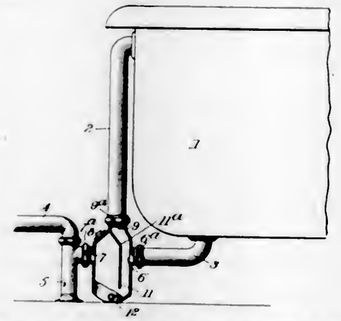
3. In an automatic ventilation regulator for incubators having an egg-chamber and ventilator openings for the ingress and egress of air to and from the egg-chamber, of a valve overlying one of said openings but not fully closing the same, a supporting-rod therefor, a rock-shaft to actuate said rod, a thermostat adapted to be actuated by the temperature outside of the indicator, means to adjustably connect the valve rod with said thermostat, a shield to protect the thermostat from the air escaping from the incubator, for the purpose set forth.

855,108. MINING-AUGER. CHARLES C. LOCKHART, Brookfield, Nova Scotia, Canada. Filed Nov. 25, 1904. Serial No. 234,155.

Claim.—An auger embodying a spiral bit having one end bifurcated to provide substantially elongated diverging blades, each blade being curved in an arc of the same pitch as the bit with its inner and outer edges beveled throughout their length and arranged at an acute angle to each other whereby a sharp cutting point is formed on each blade, the outer cutting edges projecting laterally beyond the bit and the said cutting points being arranged within the line of the outer longitudinal edges of the spirals forming the bit.



855,109. BATH-TUB TRAP. THOMAS E. LOGAN, Sault Ste. Marie, Mich. Filed June 13, 1906. Serial No. 321,560.

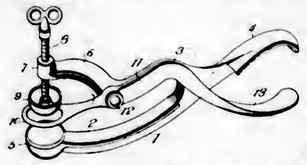


Claim.—1. As a new article of manufacture, a trap of the class described comprising a body which is closed at its bottom and provided at its top with an over-flow opening, an upright partition depending from the top of the trap at one side of the over-flow opening and deflected toward the opposite side of the trap to divide the latter into a small inlet chamber and a large outlet chamber, the top of the outlet chamber having a clean-out opening, the inlet chamber having an inlet opening in its upright side, and the outlet chamber having an outlet opening in its upright side and at the same level as the inlet opening.

2. The combination with a trap divided into inlet and outlet chambers provided respectively with inlet and outlet openings, the top of the inlet chamber having an over-flow opening, of a waste pipe connected to the inlet opening, an over-flow pipe connected to the over-flow opening, a discharge pipe having an elbowed connection with the outlet opening and extending downwardly therefrom, and a vent pipe connected to the top of the discharge pipe.

855,110. SHOE-STRETCHER. NILS A. LYBECK, New York, N. Y. Filed Sept. 21, 1906. Serial No. 335,666.

Claim.—1. A shoe stretcher comprising a frame having a receiving slot extended inward from one end to form companion arms, one of said arms being provided with a clamp member, and the other arm having its outer portion deflected away from said clamp member, a lever pivoted to the deflected arm and provided with a clamp member to coöperate with the aforementioned clamp member, and a pressure head mounted upon the outer end of the deflected portion of the arm.



2. A shoe stretcher comprising a frame having a curved slot or opening extended inward from an end thereof to form arms, one of the arms having its outer portion deflected away from the other arm, a pressure head mounted upon the outer end of the deflected portion of the arm, a clamp member at the outer end of the arm opposite to the pressure head, and a lever pivoted to the deflected arm and provided with a clamp member coöperating with the aforesaid clamp member.

3. A shoe stretcher comprising a frame composed of spaced arms connected at one end and provided at the latter end with a handle, a clamp coöperating with one of the arms and comprising a fixed and a movable member, the latter having a handle corresponding to and coöperating with the handle of the frame, and a pressure head mounted upon the other arm and adapted to coöperate with the clamp.

4. A shoe stretcher comprising a frame, having a slot or opening extended inward from an end thereof to form a receiving space and arms, a clamp member at the outer end of one of the arms, a lever pivoted to the other arm and provided at one end with a handle and at its opposite end with a clamp member coöperating with the clamp member of the arm, a pressure head mounted upon the outer end of the arm to which the said lever is pivoted, and a handle provided upon the outer end of the frame and adapted to coöperate with the handle of the said lever to admit of firmly gripping the device and applying the clamp.

5. A shoe stretcher comprising a frame having spaced arms connected at one end and provided with a handle, a clamp coöperating with one of the arms and comprising a fixed and a movable clamp member, the latter having a handle, a set screw mounted in a threaded opening in the outer end of the arm opposite to that provided with the clamp, and a pressure head connected to the inner end of the said screw by means of a swivel joint.

6. The herein described shoe stretcher, comprising a frame having a longitudinally curved slot extended inward from an end thereof to form a receiving space and arms, said frame being provided at its closed end with a handle, a cup-shaped clamp member at the outer end of one of the arms, the opposite arm having its outer portion deflected and terminating in a head in which is formed a threaded opening, a set screw mounted in said threaded opening, a pressure head of rounded form connected to the inner end of the set screw by means of a swivel joint, a lever pivoted to the deflected arm and provided at one end with a handle and having a clamp member of ring form at its opposite end to coöperate with the cup-shaped clamp member.

855,111. FARRIER'S TOOL. WILLIAM W. LYONS, Newark, N. J., assignor to Heller Tool Co., a Corporation of New Jersey. Filed Feb. 1, 1907. Serial No. 355,266.

Claim.—1. A farrier's paring tool comprising a pair of pivoted members, one of said members being provided with a bearing surface formed with a shearing face, and the other member being provided upon one of its faces with a series of alternately disposed depressions and raised parts, said raised parts terminating in a serrated cutting edge, substantially as and for the purposes set forth.

2. A farrier's paring tool comprising a pair of pivoted members, one of said members being provided with a bearing surface formed with a shearing face, and the other member being provided upon one of its faces with a series of alternately disposed depressions and raised parts, said raised parts terminating in a serrated cutting edge, and handle-members extending rearwardly from the point of the pivotal connection of the pivoted members, substantially as and for the purposes set forth.



3. A farrier's paring tool comprising a pair of pivoted members, one of said members being provided with an upwardly extending leg having a bearing-surface provided with a shearing face, and said other member being provided with a downwardly extending leg, said leg having its front face vertical and in vertical alinement with the plane of said shearing face, and having its inner face tapering downwardly toward the cutting edge of said leg, and said inner tapering face of said leg being provided with a series of alternately disposed depressions and raised parts, said raised parts terminating in a serrated cutting edge, substantially as and for the purpose set forth.

4. A farrier's paring tool comprising a pair of pivoted members, one of said members being provided with an upwardly extending leg having a bearing-surface provided with a shearing face, and said other member being provided with a downwardly extending leg, said leg having its front face vertical and in vertical alinement with the plane of said shearing face, and having its inner face tapering downwardly toward the cutting edge of said leg, and said inner tapering face of said leg being provided with a series of alternately disposed depressions and raised parts, said raised parts terminating in a serrated cutting edge, and handle-members extending rearwardly from the point of the pivotal connection of the pivoted members, substantially as and for the purposes set forth.

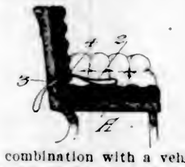
5. A farrier's paring tool comprising a pair of pivoted members, one of said members being provided with a bearing surface formed with a shearing face, and the other member being provided upon its faces with alternately disposed depressions and raised parts, said raised parts terminating in a serrated cutting edge, substantially as and for the purposes set forth.

6. A farrier's paring tool comprising a pair of pivoted members, one of said members being provided with a bearing surface formed with a shearing face, and the other member being provided upon its faces with alternately disposed depressions and raised parts, said raised parts terminating in a serrated cutting edge, and handle-members extending rearwardly from the point of the pivotal connection of the pivoted members, substantially as and for the purposes set forth.

7. A farrier's paring tool comprising a pair of pivoted members, one of said members being provided with an upwardly extending leg having a bearing-surface provided with a shearing face, and said other member being provided with a downwardly extending leg, said leg having its front face vertical and in vertical alinement with the plane of said shearing face, and having its inner face tapering downwardly toward the cutting edge of said leg, and the outer and inner faces of said leg being provided with alternately disposed depressions and raised parts, said raised parts terminating in a serrated cutting edge, substantially as and for the purposes set forth.

8. A farrier's paring tool comprising a pair of pivoted members, one of said members being provided with an upwardly extending leg having a bearing-surface provided with a shearing-face, and said other member being provided with a downwardly extending leg, said leg having its front face vertical and in vertical alinement with the plane of said shearing face, and having its inner face tapering downwardly toward the cutting edge of said leg, and the outer and inner faces of said leg being provided with alternately disposed depressions and raised parts, said raised parts terminating in a serrated cutting edge, and handle-members extending rearwardly from the point of the pivotal connection of the pivoted members, substantially as and for the purposes set forth.

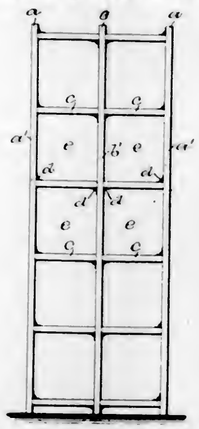
855,112. HANDHOLD-STRAP FOR AUTOMOBILES. CHARLES S. MACMULLAN, Oakland, Cal. Filed Mar. 8, 1907. Serial No. 361,247.



Claim.—1. The combination with a vehicle seat having an opening, of a hand-hold-strap slidably held in said opening, and an anchorage member to limit the sliding movement of the strap in and out of the opening.

2. The combination with a vehicle seat having an opening, of a fixed pin in the opening, and a looped-strap embracing the pin and slidable thereon in and out of the opening, said pin serving as an anchorage for the strap.

855,113. CHECKING-RACK. WILLIAM MANTELL, Brooklyn, N. Y. Filed Feb. 5, 1906. Serial No. 299,601.

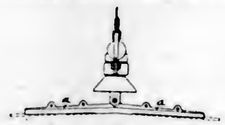


Claim.—In a rack for checking wearing apparel, the combination of outside vertical supports *a a* composed of the strips *a' a'*, a central vertical support *b* composed of the strips *b' b'*, a series of intermediate shelves *c c* composed of the side strips *c' c'* connected together by the front strip c^2, the back strip c^3 and the intermediate strip c^4, and the hinges *d d* secured to the supports *a a*, to the top of the shelves *c c*, to the support *b*, and to the bottom of the shelves *c c*, whereby the rack may be expanded into an open position forming the checking compartments *e e* or collapsed into a compact closed position for carrying, packing or storage purposes.

855,114. SUSPENDER FOR THE CONTACT-WIRES OF ELECTRIC RAILWAYS. JOSEPH MAYER, Rutherford, N. J. Filed Feb. 5, 1907. Serial No. 355,894.

Claim.—1. A suspender for the contact-wires of electric railways, consisting of two longitudinal sections, and

means for connecting them, said sections having a central portion which firmly clamps the wire and protects it from bending strains due to the pressure of the sliding bow, and two channels gradually enlarged toward the ends.



2. A suspender for the contact-wires of electric railways, consisting of two longitudinal sections and means for connecting them at their upper edges, said sections having a central curved portion for supporting the contact-wire and longitudinal channels gradually enlarged toward the ends both in height and width.

3. A suspender for the contact-wires of electric railways, consisting of two longitudinal sections, and means for connecting them at their upper edges, said sections having a central curved portion for supporting the contact-wire, and channels gradually enlarged from the center-portion toward the ends in vertical and lateral directions and provided with recesses and intermediate projections or cheeks.

4. A suspender for the contact-wires of electric railways, consisting of two longitudinal sections connected at their upper parts and provided with a central curved portion for supporting the contact-wire and with longitudinal channels open at their lower ends and formed at the top and sides of cylindrical surfaces tangential with the top and sides of the contact-wire where it leaves the central portion.

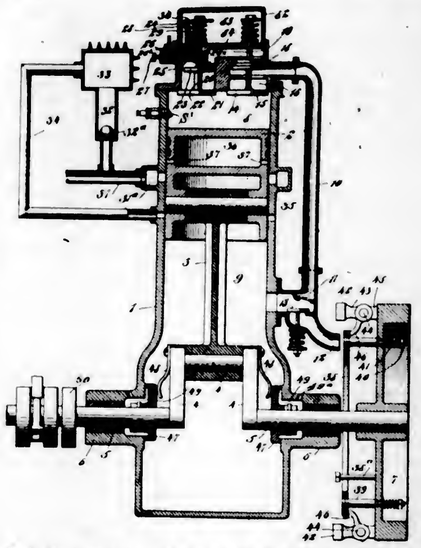
5. A suspender for the contact-wires of electric railways, consisting of two longitudinal sections connected at their upper parts and provided with a central curved portion for supporting the contact-wire and with longitudinal channels open at their lower ends and formed at the top and sides of cylindrical surfaces tangential with the top and sides of the contact-wire.

6. A suspender for the contact-wires of electric railways, consisting of two longitudinal sections connected at their upper parts and open at their lower parts, and provided with a central curved portion for supporting the contact-wire, and with longitudinal channels formed at the top and sides of cylindrical surfaces tangential with the top and sides of the wire, said cylindrical surfaces being recessed so as to form projections or cheeks.

855,115. INTERNAL-COMBUSTION ENGINE. PAUL METZLER, Jersey City, N. J., assignor of one-half to Julius Minck, Brooklyn, N. Y. Filed Sept. 5, 1906. Serial No. 333,371.

Claim.—1. In an internal combustion engine, a cylinder having two inlet ports and an exhaust port, a piston arranged to reciprocate in said cylinder, an inlet for compressed air connected with one of the inlet ports of the cylinder, a passage leading from said compressed air inlet to the other inlet port of the cylinder, a fuel inlet connected with said passage, a valve controlling the connection of the compressed air inlet with said passage, another valve connected with the first-named valve and controlling the air inlet port of the cylinder, so that air will first enter the cylinder and then also the said passage, and another inlet valve controlling the connection of said passage with the cylinder.

2. In an internal combustion engine, a cylinder having two inlet ports and an exhaust port, a piston arranged to reciprocate in said cylinder, an inlet for compressed air connected with one of the inlet ports of the cylinder, a passage leading from said compressed air inlet to the other inlet port of the cylinder, a fuel inlet connected with said passage, a valve controlling the connection of the compressed air inlet with said passage, another valve connected with the first-named valve and controlling the air inlet port of the cylinder, so that air will first enter the cylinder and then also the said passage, another inlet valve controlling the connection of said passage with the cylinder, and a fuel inlet valve controlled by the second-named inlet valve, controlling the admission of fuel to said passage.



3. In an internal combustion engine, a cylinder provided with two inlet ports and an exhaust port, a passage connecting the two inlet ports, a valve controlling said passage, and two inlet valves controlling the cylinder inlets, one of said inlet valves being connected with the valve controlling said passage, an inlet for compressed air leading to the engine between the two connected valves, and a fuel inlet leading to said connecting passage, so that air will first enter the cylinder through one of its inlets and will then pass through the said passage and mix with fuel before entering the other inlet of the cylinder.

4. In an internal combustion engine, a cylinder having two inlet ports and an exhaust port, a valved connection between the two inlet ports and means for first injecting air through one of the inlet ports and then injecting a mixture of air and fuel through the other inlet port.

5. In an internal combustion engine, a cylinder having two inlet ports and an exhaust port, a passage connecting the two inlet ports, a valve controlling the admission of compressed air to said passage, another valve connected with the first-named valve and controlling the direct admission of compressed air to the cylinder, a third valve controlling the connection of said passage with the cylinder, a fuel inlet valve controlled by said third valve to govern the admission of fuel to the said passage, and a cap forming a chamber communicating with said passage and inclosing the stems of the valves entirely, so as to equalize the pressure and prevent the escape of fuel along the valve stems.

6. In an internal combustion engine, a cylinder having two inlet ports and an exhaust port, a passage connecting the two inlet ports, a valve controlling said passage, another valve connected with the first-named valve and controlling one of the cylinder inlets, a compressed air supply leading to the engine between said valves, another valve closing the second cylinder inlet, means for supplying fuel to said passage, and a cap forming a chamber in communication with said passage and inclosing the valve stems entirely to prevent the escape of fuel along the stems.

855,116. TALKING-MACHINE ATTACHMENT. CHARLES M. MILLER, Alameda, Cal. Filed Jan. 18, 1907. Serial No. 352,932.

Claim.—1. In a disk record talking machine, a radially projecting arm and a part slidably guided on said arm and

having a notch in its outer end adapted to be engaged by the tone producing points after the record has been completed.

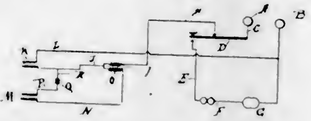


2. In a disk record talking machine, the combination of an arm provided with guides, means for attaching said arm to the central post of the machine, and a member slidable in the guides on said arm, and having its outer end notched to form a stop for the tone producing point when the record has been completed.

3. In a disk record talking machine, an arm, means by which said arm is attached to the central post with slight frictional hold, a radially slidable plate carried upon said arm, said plate having a terminal point and notch adapted to engage the tone-producing point after the completion of the record.

4. In a disk-record talking machine or the like, a radially adjustable arm, a socket by which it may be attached to the central post, with slight frictional adherence, a point and notch at the outer end having an upturned lip adapted to be engaged by the tone-producing point upon its arrival at the end of the record.

855,117. APPARATUS FOR TESTING TELEPHONE-WIRES. JAMES M. MILLER and CLINTON J. MURRAY, Newtown Square, Pa. Filed June 20, 1906. Serial No. 322,511.



Claim.—In a line-man's testing set for telephone lines, a bell, a magneto, a circuit in which said bell and magneto is included, a switch for cutting said bell and magneto circuit in or out of the line circuit, a receiver jack, a circuit in which said receiver jack is included, said last named circuit being so arranged as to be cut in or out of the line wire circuit by the switch, a secondary coil also included in the receiver jack circuit, a transmitter jack, a local circuit in which said transmitter jack is included, a battery and a primary coil also included in the last named circuit, as specified.

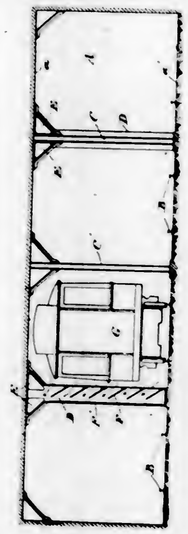
855,118. METHOD OF VENTILATING TUNNELS. CHARLES A. MORRIS, Bloomfield, N. J. Filed July 14, 1905. Serial No. 269,605.

Claim.—1. The method of ventilating an underground structure which consists in expelling foul air from said structure and admitting fresh aid thereto by the motion of a moving car or body in the structure, and trapping the expelled foul air against return to said structure.

2. The method of ventilating underground structures which consists in forcing air out of said structure through normally closed outlets, by the motion of a moving car or body therein, trapping the expelled air against return to said structure, and also drawing fresh air into the structure through normally closed inlets operated by the movement of said train.

3. The method of ventilating railway tunnels which consists in displacing the air in the tunnel, and forcing it out of said tunnel, by the motion of a moving car, conducting the expelled air to a place of discharge independent of the entrance to, or exit from, the tunnel, and trapping the air against return to the tunnel.

4. The method of ventilating railway tunnels which consists in establishing a current of the foul air in the tunnel by the motion of a car; inducing the inflow of fresh air by the suction created by the motion of the car; conducting the foul air to a place of discharge exteriorly of the tunnel; and trapping the foul air against return to the tunnel.



5. The method of ventilating railway tunnels which consists in displacing the air in, and forcing it out of, the tunnel by the motion of a moving car therein, utilizing the pressure of the displaced air in trapping the same against return to the tunnel, and conducting the trapped air to a place of discharge exteriorly of the tunnel.

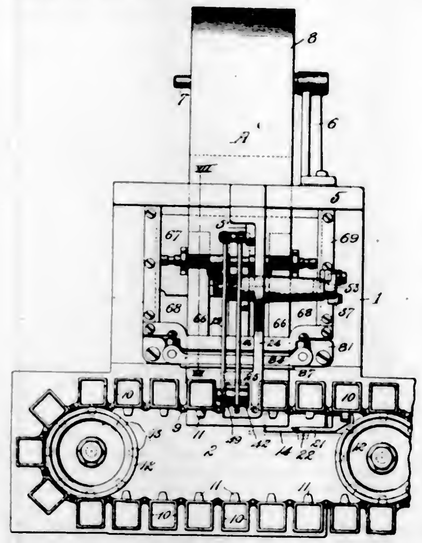
6. The method of ventilating tunnels and similar chambers which consists in compressing the air therein by a moving body, automatically expelling such compressed air from the tunnel through normally closed exits, and automatically introducing fresh air in said tunnel through normally closed inlets.

7. The method of ventilating tunnels which consists in simultaneously drawing fresh air into the tunnel through normally closed inlets and compressing the foul air in said tunnel by a moving car, and in utilizing the air thus compressed to automatically operate valved exits to the tunnel, whereby such foul air is permitted to escape against return to the tunnel.

8. The method of ventilating tunnels which consists in compressing the foul air therein by a moving body and in utilizing said compressed air to automatically operate normally closed exits for the escape of said compressed foul air from the tunnel, and simultaneously admitting fresh air to the tunnel through normally closed inlets operated by said moving body.

9. The method of ventilating tunnels and similar chambers, which consists in expelling foul air from the tunnel by the piston-like action on such air of a car or train moving in said tunnel; drawing fresh air into the tunnel by the suction created by said car or train; and cooling the fresh air prior to, or at the time of, its admission to the tunnel.

855,119. CARAMEL-WRAPPING MACHINE. BENJAMIN B. MOSS, St. Louis, Mo., assignor of one-half to James M. Davis, Lorain, Ohio. Filed Aug. 7, 1905. Serial No. 273,254.



Claim.—1. In a caramel wrapping machine, the combination of a table provided with a feed opening, folding mechanism located beneath said table, a main upper plunger arranged to deliver the caramels and their wrapper sheets through said feed opening to said folding mechanism, an auxiliary upper plunger having yielding arms arranged to ride against said main upper plunger and adapted to be projected beyond the lower end of the main plunger for wrapper folding action, substantially as set forth.

2. In a caramel wrapping machine, the combination of a table provided with a feed opening, folding mechanism located beneath said table, a main upper plunger having a foot provided with tapering sides, and an auxiliary upper plunger having spring arms provided with feet arranged to ride against the tapering sides of said main plunger foot and adapted to project beyond said foot for wrapper folding action, substantially as set forth.

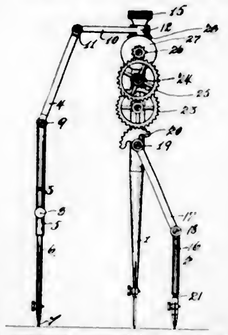
3. In a caramel wrapping machine, the combination of a table provided with a feed opening, means for delivering caramels and their wrapper sheets through said feed opening to partially fold the wrapper sheets, horizontally disposed reciprocating folder plates located in proximity to said feed opening, vertically disposed reciprocating pairs of folder fingers located beneath said folder plates, and rocking folder arms located beneath one pair of said folder fingers, substantially as set forth.

4. In a caramel wrapping machine, the combination of a table provided with a feed opening, means for delivering the caramels and their wrapper sheets through said feed opening, means for folding the wrapper sheets to the caramels at their ends, means for elevating the caramels and their wrapper sheets after said sheets have been folded at the ends, and rocking folder arms arranged to fold the unfolded end portions of the wrapper sheets while they are in upheld position, substantially as set forth.

5. In a caramel wrapping machine, the combination of a table provided with a feed opening, a main lower plunger on which the caramels and their wrapper sheets are lowered through said feed opening, means for folding the top and end portions of said wrapper sheets, an auxiliary lower plunger operating through said main lower plunger and by which the partially wrapped caramels are elevated, and means for completing the folding of the wrapper sheets while the caramels are in uplifted position, substantially as set forth.

6. In a caramel wrapping machine, the combination of a table provided with a feed opening, a main lower plunger on which the caramels and their wrapper sheets are lowered through said feed opening, means for folding the top and end portions of said wrapper sheets, an auxiliary lower plunger operating through said main lower plunger and by which the partially wrapped caramels are elevated, and rocking folder arms arranged to move beneath the partially wrapped caramels to complete the wrapper folding action, substantially as set forth.

855,120. COMPASSES. MAX C. MÜHLBACH, Newport News, Va. Filed Jan. 28, 1907. Serial No. 354,355.



Claim.—1. A compass, comprising a pivotal member, a radially adjustable positioning arm, rotatably mounted thereupon, a radially movable arm carried by said pivotal member and adapted to carry a marking element, and means adapted to cause said radially movable arm to gradually move away from the pivotal member when said pivotal member is rotated.

2. A compass, comprising a pivotal member, a radially adjustable positioning arm, rotatably mounted thereupon, a radially movable arm carried by said pivotal member and adapted to carry a marking element, and means carried by said pivotal member and actuated by said radially adjustable positioning arm adapted to cause said radially movable arm to describe a spiral when said pivotal member is rotated.

3. A compass, comprising a pivotal member, a radially adjustable positioning arm, rotatably mounted thereon, a radially movable arm carried by said pivotal member and adapted to carry a marking element, a train of intermeshing gears carried by said pivotal member and actuated by said radially adjustable positioning arm adapted to cause said radially movable arm to describe a spiral when said pivotal member is rotated.

4. A compass, comprising a pivotal member, a radially adjustable positioning arm, rotatably mounted thereon, a radially movable arm carried by said pivotal member and adapted to carry a marking element, a train of intermeshing gears carried by said pivotal member, a gear carried by said radially adjustable positioning arm, adapted to mesh with one of said train of gears, whereby said train of gears is operated when said pivotal member is rotated, and means operated by said train of gears adapted to operate said radially movable arm.

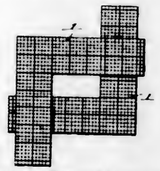
5. A compass, comprising a pivotal member, a radially adjustable positioning arm, rotatably mounted thereon, a radially movable arm carried by said pivotal member and adapted to carry a marking element, a train of intermeshing gears carried by said pivotal member, a gear carried by said radially adjustable positioning arm, adapted to mesh with one of said train of gears, whereby said train of gears is operated when said pivotal member is rotated, and a toothed segment carried by said radially movable arm adapted to mesh with one of said train of gears.

6. A compass, comprising a pivotal member, a radially adjustable positioning arm, rotatably carried thereby, a

radially movable marking arm pivotally mounted on said pivotal member, and means adapted to move said marking arm outwardly when said pivotal member is rotated, said means comprising toothed elements actuated by said positioning arm.

7. A compass, comprising a pivotal member, a radially adjustable positioning arm rotatably carried thereby, an arm pivotally mounted on said pivotal member and adapted for an outward movement in a vertical plane, a tubular member pivotally mounted on said arm, a holder adjustably mounted in said tubular member and adapted to receive a marking element, a train of gears adapted to operate said vertically movable arm, and a gear carried by said positioning arm adapted to operate said train of gears.

855,121. LANTERN-SLIDE AND MAT THEREFOR. LEWIS M. MCCORMICK, New York, N. Y. Filed Dec. 22, 1902. Serial No. 136,110.



Claim.—1. A lantern slide mat comprised of a pair of L-shaped mat sections formed of thin flexible opaque paper having longitudinal and transverse gage marks thereon and adapted to be adjusted on each other and to be pasted together to form a mat having a rectangular opening of the desired dimensions, the mat sections being arranged according to the transverse gage marks to secure the rectangular opening and according to the longitudinal gage marks to place the mat so that the margins of the said opening will be parallel with the corresponding edges of the slide glass and to be permanently secured to the lantern slide.

2. A lantern slide mat comprising a pair of L-shaped mat sections formed of thin opaque paper having parallel transverse gage lines thereon and adapted to be adjusted on each other and to be connected together where they overlap to form a permanent mat having a rectangular opening of the desired dimensions, the inner margins of the one of the mat sections being parallel with the transverse gage lines of the other section to secure the rectangular opening.

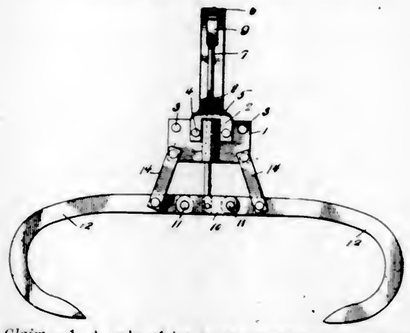
3. A lantern slide comprising a diapositive, a pair of L-shaped mat sections formed of thin opaque paper having parallel transverse gage lines thereon and adapted to be adjusted on each other to form a mat having a rectangular opening the inner margins of one of the mat sections being parallel with the transverse gage lines of the other section to secure a rectangular opening, a cover glass and a binding strip secured to the edges of the cover glass and the diapositive to secure them together and to hold the mat between them.

855,122. HEADLIGHT ATTACHMENT. CHARLES T. MCELVANEY, Denison, Tex., assignor of one-half to Mark McComas, Denison, Tex. Filed Jan. 8, 1906. Serial No. 295,034.



Claim.—The combination with an illuminating device having a lens; of a signal display device fixed with respect to the illuminating device and comprising a box-like body arranged above and extending forward of the lens at a right angle thereto, the said body having openings in its upright walls forming signals and being open at its under side throughout its area in front of the lens, and also having an upright partition intermediate said upright walls.

855,123. ICE-TONGS. WILLIAM T. MCNABB, Ben Avon, and FRANK ENDERS, Kittanning, Pa. Filed Mar. 27, 1907. Serial No. 364,809.

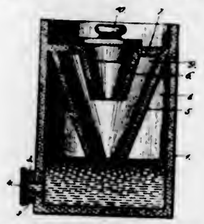


Claim.—1. A pair of ice tongs consisting of connected plates, a sleeve formed by said plates, a handle connected to said plates, an actuating rod movably mounted in said sleeve and terminating in a handle within the first mentioned handle, a spring located between said handles for holding said actuating rod in a lowered position, a head carried by the lower end of said rod, hook-shaped members or tines pivotally connected to said head, and links connecting said members or tines with said plates, substantially as described.

2. A pair of tongs consisting of a sleeve, a handle located above said sleeve, an actuating rod slidably mounted in said sleeve and terminating in a handle within the first mentioned handle, a spring mounted between said handle, hook-shaped members connecting with the lower ends of said rod, and links supporting said members upon each side of said rod.

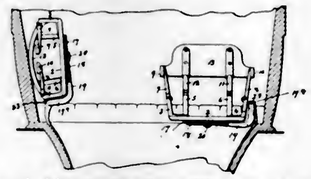
3. A pair of tongs embodying plates providing a handle, a rod slidably mounted between said plates and terminating in a handle within the first mentioned handle, hook-shaped members connecting with the lower end of said rod, links connecting said members and said plates, and means interposed between said handles for maintaining said rod in a lowered position.

855,124. INKSTAND. THOMAS H. NEWMAN, Pittsburg, Pa. Filed Nov. 1, 1906. Serial No. 341,633.



Claim.—An inkstand comprising a receptacle provided with an interior horizontal partition located below the top or rim of said receptacle and having a central opening, and two inverted truncated cones integral with said partition and depending therefrom into the receptacle, one of said truncated cones being arranged within the other and wholly inclosed thereby, the cones being spaced from each other to form a chamber between the same, substantially as described.

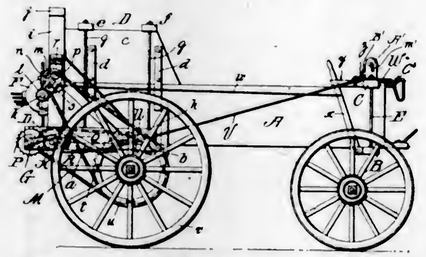
855,125. FOLDING SEAT FOR AUTOMOBILES. JAMES M. NOLAN, New Haven, Conn., assignor of one-third to William H. Wilson and one-third to Charles Rasmussen, New Haven, Conn. Filed Dec. 20, 1906. Serial No. 348,665.



Claim.—1. The combination with a seat having front posts and rear posts extending upward therefrom, of arms having braces hinged to the upper ends of the front posts, a back having braces hinged to the rear posts, said arms extending rearward and engaged with the ends of the back and a plate secured to the underside of said seat, a spider on which the plate is swiveled, said spider formed at the outer end of a compound curved arm said arm terminating in a stem, and means for supporting the said stem and holding it against rotation in one direction, but permitting it to be turned in the opposite direction, substantially as described.

2. The combination with a seat having front posts and rear posts extending upward therefrom, of arms having braces hinged to the upper ends of the forward posts, a back having braces hinged to the rear posts, said arms extending rearward and engaged with the ends of the back, a plate secured to the underside of said seat, a spider on which the plate is swiveled, said spider formed at the outer end of a compound curved arm said arm terminating in a stem, and a socket for supporting said arm but permitting it to be turned therein, said arm formed with a lug adjacent to and adapted to bear against said socket to prevent the rotation of the stem in one direction, substantially as described.

855,126. MANURE-SPREADER. ERIK PALM, Eldred, Minn. Filed Jan. 7, 1907. Serial No. 351,241.



Claim.—1. Means for unloading wagons, comprising a frame, a follower, means for moving the follower, a drum mounted on the frame, a cable connecting the follower with said drum, a second cable connected to the first mentioned cable, and means connected with and operated by the second cable for stopping the follower when it reaches the end of its traverse.

2. Means for unloading wagons, comprising a frame, a follower, means for moving the follower, a lever mounted on the frame, means connected with and operated by said lever for disconnecting the follower from the means for moving the same, a drum mounted on the frame, a cable connecting the follower with said drum, and a second cable connected to the first mentioned cable and with the said lever.

3. Means for unloading wagons, comprising a frame, a movable shaft journaled therein and provided with a gear, a gear engaging the first mentioned gear and adapted to be connected with means for rotating the shaft, a rock-shaft mounted on the frame and having arms one of which is arranged to move the shaft to carry the first mentioned gear out of engagement with the second mentioned gear, a follower, a connection between the follower and the shaft, a lever mounted on the frame and connected with the rock-shaft, a drum mounted on the frame, a cable connecting the follower with said drum, and a second cable connecting the lever with the first mentioned cable.

4. Means for unloading wagons, comprising a frame, a shaft journaled therein, an apron connected to and arranged to be wound on the shaft, a follower connected to the apron, means for rotating the shaft, a lever mounted on the frame, means connected with and operated by said lever for disconnecting the shaft from the means for rotating same, a drum mounted on the frame, a cable connecting the follower with said drum, and a second cable connecting the lever with the first mentioned cable.

5. Means for unloading wagons, comprising a frame, an endwise-movable shaft journaled therein and provided with a spur gear, a pinion intermeshed with said spur gear and adapted to be connected with means for rotating the shaft, a rock-shaft mounted on the frame and having arms one of which is arranged to move the shaft endwise, an apron connected to and arranged to be wound on the shaft, a follower connected to the apron, a lever mounted on the frame and connected with the rock-shaft, a drum mounted on the frame, a cable connecting the follower with said drum, and a second cable connecting the lever with the first mentioned cable.

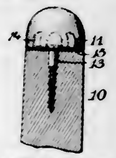
6. Means for unloading wagons, comprising a frame, a movable shaft journaled therein and provided with a gear, a gear engaging the first mentioned gear and adapted to be connected with means for rotating the shaft, a rock-shaft mounted on the frame and having arms one of which is arranged to move the shaft to carry the first mentioned gear out of engagement with the second mentioned gear, a follower, an apron connected to and arranged to be wound on the shaft and also connected to the follower, a lever mounted on the frame and connected with the rock-shaft, a drum mounted on the frame, a cable connecting the follower with said drum, a second cable connecting the lever with the first mentioned cable, a toothed cylinder mounted in the frame and arranged above the apron, means for rotating said toothed cylinder, and means whereby the operator is enabled to control the rotation of the toothed cylinder.

7. The combination of a wagon having a body, forward frame bars removably secured on the body, a rear frame removably secured on the body and comprising lower cross bars disposed below the body, side boards removably arranged on the side walls of the body and having depending cleats resting at the outer sides of said side bars, cross bars removably arranged on the side boards, bolts connecting said cross bars to the lower cross bars, longitudinal bars arranged on and fixed to the end portions of the lower cross bars, upright bars fixed to and rising from the rear portions of the longitudinal bars, and a crown bar connecting the upper ends of the upright bars, a toothed cylinder journaled in bearings on the upright bars of the rear frame, means for rotating said cylinder, a shaft journaled in the longitudinal bars of the frame a follower movable in the wagon body, a connection between the shaft and said follower, means for rotating the shaft, a drum mounted on the upper of the frame bars, and a connection between the follower and said drum.

855,127. TIP FOR CUES. ARTHUR PAUL, Newark, N. J. Filed Jan. 29, 1907. Serial No. 354,757.

Claim.—1. The combination with a cue, of a tip having a screw arranged thereon, and spring teeth secured to the tip and being inclined at an angle opposed to the pitch of the screw-thread of the screw to engage the end of the cue to lock the tip on the end of the cue.

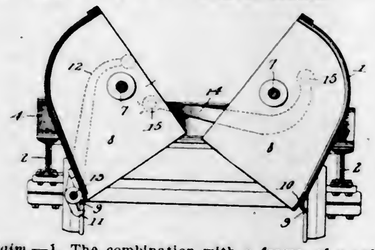
2. The combination with a cue, of a tip having a plate secured thereto, a screw attached to the plate, and pointed spring teeth projecting from the plate and being inclined at an angle opposed to the pitch of the screw-thread of the screw to lock the tip on the cue.



3. The combination with a cue, of a tip, a plate having wings to enter the tip, a screw attached to the plate, spring teeth projecting from the plate, the teeth having pointed ends and being inclined at an angle opposed to the pitch of the screw-thread of the screw.

4. The combination with a tip having a screw arranged thereon, and teeth secured to the tip and being inclined at an angle opposed to the pitch of the screw thread of the screw, of a cue adapted to receive the screw of the tip and having its end adapted to receive the teeth of the tip.

855,128. DUMPING-CAR. ALBERT PELTZER, Chicago, Ill. Filed Mar. 6, 1907. Serial No. 360,825.



Claim.—1. The combination with a frame, of a pair of swinging body sections pivoted at their ends on the frame, in position to swing to and from each other, and connections between the sections, movable therewith, and constructed to produce simultaneous corresponding movement of both sections.

2. The combination with a frame, of a pair of swinging body sections pivoted at their ends on the frame, in position to swing to and from each other, and a link pivotally connected between the ends of the opposite sections, to produce simultaneous corresponding movement of both sections.

3. The combination with a frame, of a pair of pivoted body sections which swing to and from each other and have meeting edges, one of said edges having a lap strip offset to pass and lap within the other edge when swung together.

4. A dumping car comprising side and end sills mounted on trucks, bolsters extending across upon the side sills, at the ends thereof, and a pair of inwardly-tilting body sections extending lengthwise between the side sills and having continuous pivot bars extending across within said sections from one end to the other and resting at their ends in bearings on the bolsters.

855,129. WALL-PLUG. FRANCIS J. PLYM, Kansas City, Mo. Filed Oct. 21, 1905. Serial No. 283,851.

Claim.—1. A flattened tubular wall plug provided with a flaring mouth and at its opposite end with one or more arms extending substantially parallel with and in the same direction as the long diameter of the mouth of the plug.

2. A flattened tubular wall plug provided with a flaring mouth and at its opposite end with one or more arms extending substantially parallel with and in the same direction as the long diameter of the mouth of the plug; said arms having their faces or wide sides roughened.

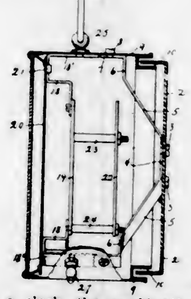
3. A flattened tubular wall plug provided with a flaring mouth and at its opposite end with one or more arms extending substantially parallel with and in the same direction as the long diameter of the mouth of the plug; said arms having punctures to produce cavities and protuberances on the opposite faces or wide sides thereof.



4. A flattened wall plug comprising a pair of superposed parts united at their side margins and provided at its front end with a flaring mouth, and a strip secured to the rear end of the plug and constituting an arm extending substantially parallel with and in the same direction as the long diameter of the mouth of the plug with its faces or wide sides parallel with the superposed parts forming the plug.

5. A flattened wall plug, comprising a plate bent to produce two substantially parallel sides or walls forming a comparatively long and narrow mouth, an extension at the free end of one of said sides or walls bent to overlap the opposite side of the free edge of the companion wall, flanges projecting in opposite directions from the ends of said walls, and a flat strip fitted and secured between the rear ends of said sides or walls and extending substantially parallel with and in the same direction as the long diameter of the mouth of the plug with its faces or wide sides parallel with the substantially parallel sides or walls of the plug.

855,130. CLOCK. ARTHUR H. PORTER, Bristol, Conn., assignor to The E. Ingraham Co., Bristol, Conn., a Corporation. Filed Dec. 31, 1906. Serial No. 350,123.



Claim.—1. In a clock, the combination with a cylindrical case-body open at the back, of a bell-carrier extended forward into the case-body parallel with the sides thereof and directly attached thereto, and a bell arranged concentrically with the case-body and attached to the projecting rear portion of the bell-carrier, the said case-body opening at the back directly into the said bell.

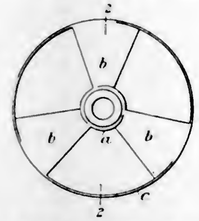
2. In a clock, the combination with a cylindrical case-body open at the back, of a bell-carrier extended forward into the case-body parallel with the sides thereof and directly fastened thereto, a bell arranged concentrically with the case-body at the back thereof and secured to the projecting rear portion of the bell-carrier, and a dust-guard applied to the rear edge of the case-body and coacting with the bell in excluding the dust from the case-body which opens at the back directly into the said bell.

3. In a clock, the combination with a cylindrical case-body open at the back, of a skeleton bell-carrier having radial arms terminating in fingers extending forward parallel with the sides of the said case-body and secured directly to the inner face thereof, and a concentrically arranged bell fastened to the said carrier which projects rearwardly out of the case-body which opens at the back directly into the said bell.

4. In a clock, the combination with a cylindrical case-body open at the back, of a bell-carrier itself carried by the said case-body a bell arranged concentrically with the case-body at the back thereof and fastened to the said carrier, and an annular dust-guard of U-shaped cross-section applied to the case-body and receiving the edge of the bell into which the case-body opens at the back.

5. In a clock case, the combination with a cylindrical case-body open at the back, of a clock-movement located therein, straps for securing the movement to the case-body, the said straps being formed with feet, a bell-carrier located within the case-body and formed with fingers arranged in line with the said feet and secured directly to the case-body, a bell arranged concentrically with the said case-body at the back thereof and attached to the said bell-carrier, and an annular dust-guard applied to the rear edge of the case-body and receiving the edge of the bell into which the case-body opens at the back.

855,131. SCREW-PROPELLER. WENZEL PREIDEL, London, England. Filed Dec. 5, 1905. Serial No. 290,393.



Claim.—1. In a screw propeller, the combination with blades of a ring encircling the ends of said blades and secured thereto, said ring being of greater width than the width of said blades and extending rearwardly therefrom, the front edge of said ring being provided with notches between said blades, substantially as described.

2. In a screw propeller, the combination with blades, of a two part ring encircling said blades, said ring being concentric with the axis of rotation and having one part thereof secured to said blades, the other part thereof being adapted to remain stationary, substantially as described.

3. In a screw propeller, the combination with blades, of a two part ring encircling said blades, said ring being concentric with the axis of rotation and of greater width than the width of said blades, and having one part thereof secured to said blades, the other part thereof being adapted to remain stationary, substantially as described.

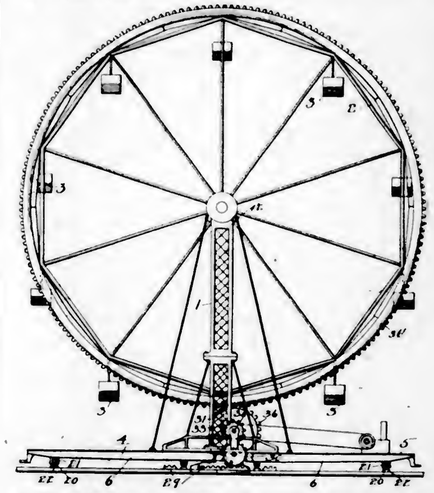
4. In a screw propeller, the combination with blades, of a two part ring encircling said blades, said ring being concentric with the axis of rotation and of greater width than the width of said blades and having one part secured to said blades, the front edge of said part being notched between said blades, the other of said parts being adapted to remain stationary, substantially as described.

855,132. AMUSEMENT DEVICE. FRED PULMAN and WALTER I. LEATHERLAND, Alexandria, Va. Filed Nov. 8, 1906. Serial No. 342,559.

Claim.—1. In an amusement device, in combination with a rotating platform, a tower thereon, a single central rotating wheel hung on said tower, and common means for rotating both said platform and said wheel, substantially as described.

2. In an amusement device, in combination with a single rotating wheel, a rotating platform on which said wheel is centrally mounted, a suitable source of driving power, a driving shaft, said shaft having at one end means for driving the platform and at the other end means for driving the wheel, substantially as described.

3. In an amusement device, in combination with a rotatable platform, a tower centrally mounted thereon, a rotatable passenger carrying wheel journaled in the upper end of said tower, a suitable source of motive power, a cog wheel mounted on the platform, a fixed cog track with which said cog wheel engages, means for driving said carrier-wheel, and common mechanism intermediate the source of power and the said wheel driving means and cog wheel, substantially as described.



4. In an amusement device, in combination with a rotatable platform, a rotatable passenger carrying wheel centrally mounted thereon, said wheel having a circular rack, a cog wheel on said platform engaging said rack, a fixed cog track, a cog wheel on said platform engaging said track, and common means for driving said cog wheels, substantially as described.

5. In an amusement device, in combination with a rotatable platform, a fixed cog track beneath said platform, a cog wheel engaging said track and mounted on said platform whereby the rotation of said platform is effected by the traverse of the cog wheel on the track, a passenger-carrying wheel mounted on said platform and having a circular rack, a driving shaft mounted on said platform, a driving pulley thereon connected to a suitable source of motive power, a gear wheel on said shaft engaging said platform rotating cog wheel and a gear wheel thereon engaging said rack, substantially as described.

6. In an amusement device, in combination with a rotating passenger carrying wheel, a rotating platform on which the wheel is mounted, a cog track, a cog wheel on the platform engaging said track, said passenger carrying wheel provided with means whereby it may be driven, common motive means for said cog wheel and passenger wheel driving means and a shifting device for throwing said cog wheel out of engagement with said cog track, substantially as described.

7. In an amusement device, in combination with a rotatable passenger carrying wheel, a tower in which said wheel is centrally hung, a rotatable platform on which said tower is centrally mounted, said platform having a central head fixed thereto over which the passenger wheel moves, and a fixed pedestal on which the head is rotatably mounted, substantially as described.

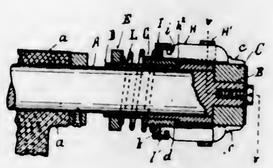
8. In an amusement device, in combination with a rotatable passenger carrying wheel a rotatable platform on which said wheel is mounted, said platform having fixed thereto, a central head, a pedestal on which the head is mounted, anti-friction bearings between said head and pedestal, a frame extending from said head, rollers mounted on said frame and tracks on which said rollers move, substantially as described.

9. In an amusement device, in combination with a rotatable platform, a rotatable passenger carrying wheel centrally mounted thereon, said platform having a central head, and having radial beams extending from said head, a pedestal on which said head is rotatably supported, and rolling bearings supporting the outer parts of said beams, substantially as described.

10. In an amusement device, in combination with a rotatable platform, a rotatable passenger wheel carried thereby, said platform having a central head, radial beams set on edge extending from said head, a fixed pedestal resting on the ground and supporting said head, radial sleepers extending from said pedestal, tracks mounted on said sleepers, and rollers carried by said platform beams and bearing on said tracks, substantially as described.

11. In an amusement device, in combination with a rotatable passenger carrying wheel, a rotatable platform on which said wheel is centrally mounted, said platform having a central head over which said wheel moves, a fixed pedestal resting on the ground on which said head is rotatably mounted, a cog-track below said platform, a cog wheel on said platform engaging said track whereby the platform is rotated, an inner and an outer series of rollers on said beams and fixed tracks on which they move, said rollers and head adapted to receive the weight of said platform and thus prevent undue pressure on the platform driving cog wheel, substantially as described.

855,133. SOLE-EDGE TRIMMER. WILLIAM F. REULMANN, Cincinnati, Ohio. Filed Dec. 31, 1906. Serial No. 350,193.



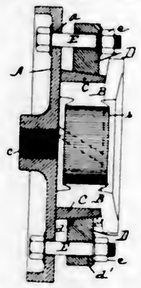
Claim.—1. In a device of the character indicated, a buffer sleeve having a series of ways to guide the buffer blades, a collar threaded to said sleeve, and a series of buffer blades having members engaging said collar in such manner tha said blades are simultaneously shifted endwise in either direction by the shifting of said collar, and locked against movement endwise when said collar is at rest upon said sleeve.

2. In a device of the character indicated, a buffer sleeve having a series of ways to guide the buffer blades, a collar threaded to said sleeve, and a series of buffer blades having members engaging said collar in such manner as to simultaneously shift said blades endwise in either direction when said collar is turned upon the sleeve, said collar having a cross-recess which when shifted to register with the respective blades permits the blades to be detached or inserted.

3. In a device of the character described, a buffer sleeve having a series of slots to receive buffer blades, a collar threaded to said sleeve and provided with an annular groove and a side slot leading thereto, and a series of buffer blades having lugs adapted to engage the annular groove of said collar.

4. In a device of the character described a shaft, a sleeve adapted to be locked to the shaft and provided with a shoulder, a collar threaded to and adapted to be locked to said sleeve, a second sleeve loosely mounted on said first named sleeve and provided with a shoulder to engage the shoulder of said first sleeve, a series of buffer blades carried by and adjustable endwise relative to said second sleeve, a collar threaded to said second sleeve, and a spring interposed between said sleeves to yieldingly hold their shoulders in engagement.

855,134. COMMUTATOR ASSEMBLING AND FINISHING DEVICE. JOHN RISBRIDGER, North East, Pa., assignor of fifty-five one-hundredths to Eureka Tempered Copper Works, North East, Pa., a Corporation of Pennsylvania. Filed Dec. 1, 1905. Serial No. 289,920.



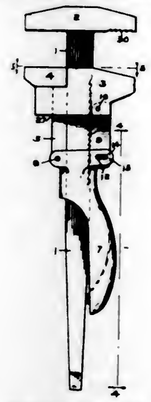
Claim.—1. In a commutator assembling and finishing device, the combination of a compression ring of sufficient mass and rigidity to practically maintain its shape under ordinary use, and a contractible former adapted to engage commutator bars arranged in annular form, said contractible former being arranged within the compression ring, the former being comparatively flexible, said compression ring and former having engaging surfaces, the engaging surface of one of them having a varying diameter to compress the former by a relative movement of said surfaces in engagement, the former being flexed and its shape maintained approximately a true circle as it is compressed by the compression ring.

2. In a commutator assembling and finishing device, the combination of a compression ring of sufficient mass and rigidity to retain approximately a circular shape under conditions of ordinary use, and a contractible former ring adapted to engage commutator bars arranged in annular form, said contractible former arranged within the compression ring, the former being comparatively flexible, one of said rings being tapered and adapted to engage the other of said rings to contact the former as said rings are moved relatively to each other in an axial direction, the former being flexed and its shape maintained approximately in a true circle as it is compressed by the relative movement of the rings.

3. In a commutator assembling and finishing device, the combination of a compression ring of sufficient mass and rigidity to retain approximately a circular shape under the conditions of ordinary use, and a contractible former ring adapted to engage commutator bars arranged in annular form, said contractible former arranged within the compression ring, the former being comparatively elastic, the outer surface of the former being tapered and the inner surface of the compression ring being tapered in opposition to the surface of the former, said tapered surfaces being in engagement and closing by actual movement of said rings relative to each other the former, the former being flexed and its shape maintained approximately in a true circle as it is compressed by the relative movement of said rings.

4. In a commutator assembling and finishing device, the combination of a compression ring of sufficient mass and rigidity to maintain its shape under ordinary use, and a contractible former ring adapted to engage commutator bars arranged in annular form, said former being arranged within the compression ring, the former being comparatively flexible, one of said rings having a tapered engaging surface for acting on the other of said rings to compress the former when said rings are moved relative to each other in an axial direction, and said compression ring being provided with a series of openings through which bolts may be passed for moving the same in an axial direction to effect the compression of the former and which may be used as a means of securing said compression ring for operating upon the commutator bars.

855,135. WRENCH. JOHN B. RUNNER, Indianapolis, Ind. Filed Feb. 5, 1906. Serial No. 299,646.



Claim.—1. In a wrench comprising a shank body portion including a fixed jaw, a companion jaw adjustably mounted on said shank body, a secondary jaw slidably mounted in said companion jaw, a locking means pivotally engaging the companion jaw and adapted to hold said jaw against reverse movement, and a handle pivotally secured to both the locking means and secondary jaw, for imparting additional movement to said jaw.

2. In a wrench comprising a shank body portion including a fixed jaw, a companion jaw adjustably mounted on said shank body, a secondary jaw slidably mounted in said companion jaw, a locking means pivotally engaging the companion jaw and adapted to hold said jaw against reverse movement, means permitting the locking means to be moved into a disengaged position, and a handle pivotally secured to both the locking means and the movable secondary jaw, and adapted to impart additional movement to said jaw.

3. In a wrench comprising a shank body portion including a fixed jaw, a companion jaw adjustably mounted on said shank body, a secondary jaw slidably mounted in said companion jaw, a pawl pivotally engaging the companion jaw and adapted to hold said jaw against reverse movement, and a handle pivotally secured to both the pawl and movable secondary jaw, for imparting additional movement to said jaw.

4. In a wrench comprising a shank body portion including a fixed jaw, a companion jaw adjustably mounted on said shank body, a secondary jaw slidably mounted in said companion jaw, a locking means pivotally engaging the companion jaw and adapted to hold said jaw against reverse movement, a pawl pivotally engaging the companion jaw and adapted to hold said jaw against reverse movement, means permitting the pawl to be moved into a disengaged position, and a handle pivotally secured to both the pawl and the movable secondary jaw, for imparting additional movement to said jaw.

855,136. FIREPROOF MATERIAL. KEIZO SAKURAI, San Francisco, Cal., assignor of one-third to Gustav Abrahamson, San Francisco, Cal. Filed Dec. 1, 1905. Serial No. 289,869.

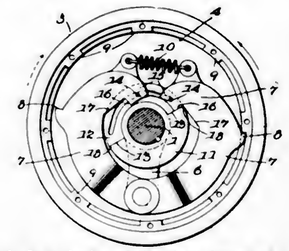
Claim.—1. As a new article of manufacture, a fireproof building material consisting of a vehicle characterized as having a specific gravity of approximately .6 and being relatively rich in silicon oxid and capable of being reduced to a fine non-gritty powder, and a suitable binder.

2. As a new article of manufacture, a fireproof material consisting of a vehicle characterized by having a specific gravity of approximately .6 and containing approximately 50% of silicon oxid and containing not to exceed approximately 30% of aluminium oxid, and a suitable binder.

3. As a new article of manufacture, a fireproof material consisting of a vehicle characterized by having a specific gravity of approximately .6 and containing approximately 50% of silicon oxid and containing not to exceed approximately 30% of aluminium oxid, and a suitable binder, said vehicle and binder mingled in approximately the proportions of ten-parts of the vehicle to four-parts of the binder.

4. As a new article of manufacture, a fireproof material consisting of a vehicle characterized by having a specific gravity of approximately .6 and containing approximately 50% of silicon oxid and containing not to exceed approximately 30% of aluminium oxid, and a suitable binder, said vehicle and binder mingled in approximately the proportions of ten-parts of the vehicle to four-parts of the binder, said binder consisting of a mixture of clay and dead-burnt-gypsum.

855,137. CLUTCH MECHANISM FOR AUTOMOBILE-DRIVES. FRANCIS F. SCHAUWEKER and RUSSELL E. ROBESON, Cleveland, Ohio. Filed May 19, 1906. Serial No. 317,787.



Claim.—1. In a device of the class described, the combination of a driving shaft, an arm loosely mounted on the shaft, a pair of dogs hingedly connected to the outer end of the arm, a drum extending around the dogs and adapted to be engaged by the latter at approximately diametrically opposite points, and an actuator for the dogs keyed on the shaft and connected with the dogs to move one into engagement with the drum while moving the other out of engagement.

2. In a device of the class described, the combination of a driving element, a driven element having a toothed cylindrical wall, clutching members adapted to engage the said wall, a member loosely mounted on the driving element, a pivot on the said member for the clutching members, and an actuator secured to the driving element to rotate therewith for engaging one of the members while simultaneously disengaging the other to drive the driven member in either direction.

3. In a device of the class described, the combination of a driving and a driven element, clutching members between them, an arm loosely mounted on the driving element and extending radially from the center of the latter, means hingedly connecting the members to the arm, an actuator mounted on the driving element for actuating the members to drive the driven member in either direction, and a spring arranged to assist in the movement of the members and to hold the latter in operative engagement with the actuator.

4. In a device of the class described, the combination of a driving and a driven element, an arm loosely mounted on the driving element, symmetrically disposed dogs pivoted on said arm which are adapted to engage the driven element, and an actuator on the driving element arranged to actuate the dogs so that the driven element may be automatically driven in either direction or permitted to run free of the driving element.

5. In a device of the class described, the combination of a driving and a driven element, dogs mounted between them which are provided with radially extending shoulders, an actuator positively connected with the driving element which is provided with radial shoulders adapted to engage those of the dogs for holding the latter in locked position with the driven element, and means for supporting the dogs.

6. In a device of the class described, the combination of a driving and a driven element, dogs mounted between

them which are provided with radially extending shoulders, an actuator having shoulders adapted to engage those of the dogs, and a slot and pin connection between the actuator and the dogs.

7. In a device of the class described, the combination of a driving and a driven element, dogs mounted between them which are provided with bifurcated ends, an actuator having a tongue extending into the bifurcation of said dogs, a connection between each dog and the tongue whereby the actuator imparts motion to the dogs, and means between the actuator and the dogs for holding the latter in locked position.

8. In a device of the class described, the combination of a driving and a driven element, dogs provided with shoulders and surfaces arranged at an angle thereto, an actuator for the dogs provided with shoulders adapted to interlock with those on the latter, and means on the actuator engaging said surfaces for imparting movement to the dogs.

9. In a device of the class described, the combination of a driving and a driven element, dogs provided with shoulders and surfaces arranged at an angle thereto, an actuator for the dogs provided with shoulders adapted to interlock with those on the latter, means on the actuator engaging said surfaces for imparting movement to one of the dogs at a time, and connections between the actuator and the dogs whereby the latter are moved simultaneously.

10. In a device of the class described, the combination of a driving and a driven element, dogs provided with shoulders and surfaces arranged at an angle thereto, an actuator for the dogs provided with shoulders adapted to interlock with those on the latter, means on the actuator engaging said surfaces for imparting movement to one of the dogs at a time, connections between the actuator and the dogs for moving the latter simultaneously, and a spring connected with the dogs which operate in conjunction with said connections to actuate the latter.

11. In a device of the class described, the combination of a driving and a driven element, dogs provided with bifurcated noses and surfaces arranged adjacent the latter, an actuator connected with the driving element provided with a tongue engaging the bifurcations of said noses and with shoulders interlocking with the noses, means on the actuator coöperating with the said surfaces for moving the dogs, groove and pin connections between the actuator and dogs, and a spring connecting the dogs together.

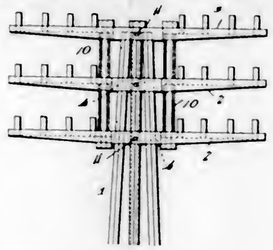
12. In a device of the class described, the combination of a driving and a driven element, a covered drum carried by the driven element, and means for supporting the elements in coöperative relation, with a clutch mechanism arranged in the drum for automatically connecting the driving and driven elements for rotating the latter in either direction and for automatically disconnecting them, said mechanism comprising an arm loosely mounted on the driving element, symmetrically disposed dogs pivoted on the arm, an actuator arranged between the dogs and keyed to the driving element, interlocking shoulders between the actuator and dogs, means between the dogs and actuator for moving the dogs simultaneously, an extension spring connected with the free ends of the dogs, and interlocking teeth on the said drum and dogs.

855,138. CROSS-ARM FOR CARRYING TELEGRAPH, TELEPHONE, OR OTHER WIRES AND ROPES. HENRY M. SCIPLE, San Francisco, Cal. Filed Aug. 2, 1906. Serial No. 328,921.

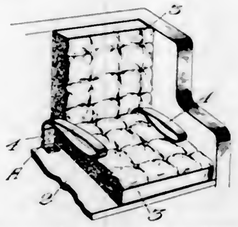
Claim.—1. The combination with a pole, of a plurality of cross-arms disposed thereon, one of the arms resting on the upper end of the pole, and means connecting the upper arm to the lower arms, the said lower arms being suspended from the upper arm.

2. The combination with a pole, of a plurality of arms held thereon, one of the arms resting on the upper end of the pole and the remaining arms provided with intermediate openings to fit over the pole, and means for connecting the said arms.

3. The combination with a pole, of a cap arm having a socket fitted on the upper end of the pole, and other arms below the cap arm provided with openings in the center to fit over the pole, and means for suspending the arms below the cap arm from the latter.



855,139. HANDHOLD-STRAP FOR AUTOMOBILES. JOHN R. SCOTT, Oakland, Cal. Filed Oct. 29, 1906. Serial No. 341,015.



Claim.—The combination with a vehicle-seat, of bracket-members secured to the bottom of the seat and extending up back of the cushions, and hand-hold straps secured to these brackets.

855,140. ATTACHMENT FOR HAMMERS. WILLIAM H. SMALLEY, Yonkers, N. Y. Filed Feb. 2, 1906. Serial No. 299,102.



Claim.—1. A hammer, a handle therefor, a socket-wedge permanently fixed in said handle, a boss or projection formed and constructed to be removably attached to the hammer and means for holding the boss and the wedge together.

2. A hammer, a handle therefor, a socket-wedge permanently fixed in said handle and arranged to hold the hammer onto the handle, a boss or projection formed and constructed to be removably attached to the hammer, and means in the wedge for holding the boss or projection.

3. A hammer, a handle therefor, a hollow wedge in said handle, a boss or projection, springs attached to said boss or projection and arranged to fit into said wedge.

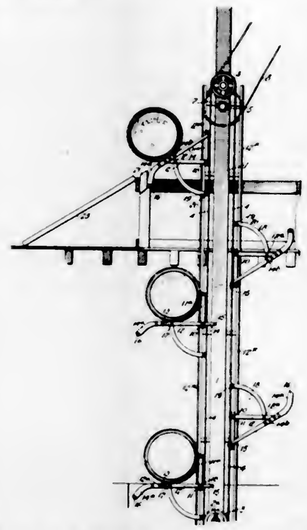
4. A hammer, a handle therefor, a hollow wedge in said handle, recesses in the sides of the wedge, a boss or projection, springs attached to said boss or projection and arranged to be slipped into said wedge and locked in the recesses.

5. A hammer, a handle therefor, a hollow wedge in said handle, a boss or projection, flanges on said boss or projection, springs attached to said boss or projection and arranged to fit into said wedge.

6. A hammer, a handle therefor, a hollow wedge in said handle, recesses in the sides of the wedge, a boss or projection, flanges on said boss or projection, springs attached to said boss or projection and arranged to be slipped into said wedge and locked in the recesses.

7. A hammer, a handle therefor, a socket-wedge permanently fixed in said handle, a boss or projection formed or constructed to be temporarily attached to the hammer, and means connected with the boss or projection and arranged to be placed within said wedge for holding the boss or projection onto the hammer.

855,141. BARREL ELEVATOR AND TRIP. BERNHARDT F. SOMMERS, Evansville, Ind. Filed Nov. 9, 1906. Serial No. 342,653.



Claim.—1. In a barrel elevator, the combination with endless conveyer chains, of barrel carriers secured thereon and comprising a barrel receiving frame, braces adjustably secured thereto, a trip frame pivotally carried by said barrel receiving frame, means for tripping said trip frame and means for limiting the movement of said trip frame, substantially as shown and described.

2. The combination with an endless conveyer, of a barrel carrier mounted thereon and comprising a barrel receiving frame, a trip frame pivotally and adjustably mounted in said barrel frame, and means for tripping said trip frame at times.

3. The combination with an endless conveyer, of a barrel carrier mounted thereon and comprising a barrel receiving frame, a trip frame pivotally and adjustably mounted on said barrel receiving frame, means for tripping said trip frame at times, and a yoke frame supported by the barrel receiving frame for regulating the movement of the trip frame.

4. The combination with an endless conveyer, of a barrel carrier mounted thereon and comprising a barrel receiving frame, a trip frame pivotally and adjustably mounted in said barrel receiving frame, means for tripping said trip frame at times, and means for holding the endless conveyer from swinging out when the trip frame is tripped, substantially as shown and described.

5. In a barrel receiving means, a barrel carrier comprising a barrel receiving frame, a trip frame pivotally and adjustably mounted in said barrel receiving frame, a yoke frame carried by the barrel receiving frame for coöperating with the trip frame, and braces for supporting the barrel receiving frame, and adjustable connections between said braces and said barrel receiving frame, substantially as shown and described.

6. In a barrel receiving means, a barrel carrier comprising a pivotally mounted barrel receiving frame, a trip frame pivotally and adjustably mounted in said barrel receiving frame, a yoke frame carried by the barrel receiving frame for coöperating with the trip frame, and braces for supporting the barrel receiving frame, and adjustable connections between said braces and said barrel receiving frame, substantially as shown and described.

7. The combination with endless conveyer chains, of supplemental link members carried thereby, a barrel receiving frame having spindle portions at one end passing through bearings in said supplemental links, guide rollers carried by said spindle portions, a fixed guide for coöperating with said guide rollers, said barrel receiving frame including a notched beam and a rod, a trip frame pivotally mounted on said rod and having portions lying in the notched beam, and means for tripping said trip frame at times.

8. The combination with endless conveyer chains, of supplemental link members carried thereby, a barrel receiving frame having spindle portions at one end passing through bearings in said supplemental links, guide rollers carried by said spindle portions, a fixed guide for coöperating with said guide rollers, said barrel receiving frame including a notched beam and a rod, a trip frame pivotally mounted on said rod and having portions lying in the notches of the notched beam, means for tripping said trip frame at times, and adjustable braces for supporting said barrel receiving frame substantially as shown and described.

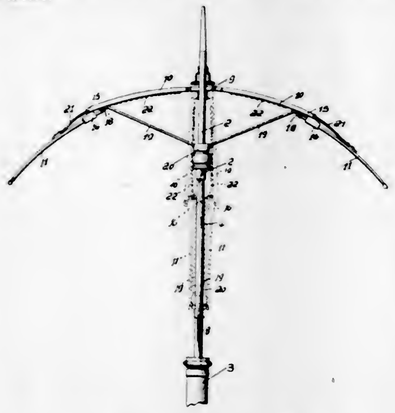
9. The combination with endless conveyer chains, of supplemental link members carried thereby, a barrel receiving frame having spindle portions at one end passing through bearings in said supplemental links, guide rollers carried by said spindle portions, a fixed guide for coöperating with said guide rollers, said barrel receiving frame including a notched beam and a rod, a trip frame pivotally mounted on said rod and having portions lying in the notches of the notch beam, a yoke frame carried by said notched beam to form a stop for said trip frame, and means for tripping said trip frame at times.

855,142. FOLDING UMBRELLA. ANDREWS STEININGER, Allegheny, Pa. Filed Oct. 11, 1906. Serial No. 338,437.

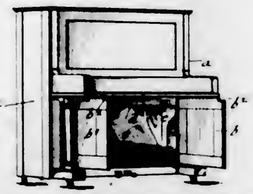
Claim.—1. In a folding umbrella, the combination with an inner rib section and an outer rib section, of a sleeve pivotally secured to the outer end of the inner rib section and through which sleeve the inner end of the outer rib section is received, a spring secured to the outer rib section and pivotally secured at its inner end to said sleeve, a stretcher, a link pivotally connected to the outer end of said stretcher and the inner end of said outer rib section, a pin carried by the inner rib section near its inner end, and a spring connected to said pin at one end and at its other end connected to the outer end of the stretcher.

2. In a folding umbrella, the combination with an umbrella stick, a notch thereon, and a runner slidable on the stick, of ribs each formed of an inner and an outer section, the inner section pivotally secured at its inner end to the notch, a sleeve pivotally secured to the outer end of said inner section, the outer rib section having its inner end received through said sleeve, a spring secured to the outer

rib section and pivotally secured at its inner end to said sleeve, stretchers pivotally secured at their inner ends to the runner, links pivotally connected to the outer ends of said stretchers and to the inner ends of the outer rib sections, and springs having one end connected to the outer ends of said stretchers and their other ends connected to the inner rib sections adjacent the pivoted inner end of the latter.



855,143. CASE FOR UPRIGHT PIANOS. FREDERICK T. STEINWAY, New York, N. Y. Filed Jan. 11, 1907. Serial No. 351,777.



Claim.—1. In an upright piano-case, the combination, with the cross-piece immediately below the keyboard, of sections hinged laterally to the case to close the lower part thereof, means for locking said sections in closed position, and means carried by said cross-piece whereby said sections are urged toward open position when the locking means is released.

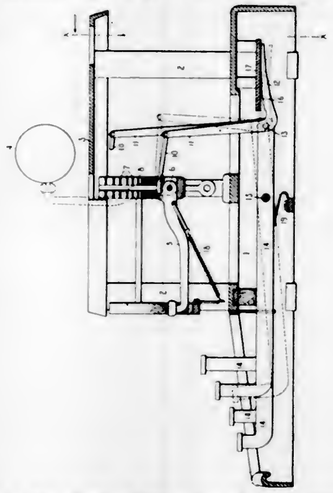
2. In an upright piano-case, the combination of laterally hinged sections arranged to close the lower front part of the case, means for locking said sections in closed position, a cross-piece which is covered by said sections when they are closed, and spring buttons carried by said cross-piece which urge said sections toward open position when said locking means is released.

3. An upright piano-case having a cross-piece immediately beneath the keyboard and open below said cross-piece, sections hinged at their side edges to the ends of the case and capable of being swung laterally to close the lower open part thereof, spring-buttons carried by said cross-piece and against one of which each section abuts when it is closed, and a latch consisting of a single spring by which both of said sections are maintained in completely closed position in opposition to the action of said buttons.

855,144. TYPE-WRITING MACHINE. BURNHAM C. STICKNEY, Elizabeth, N. J., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 14, 1903. Serial No. 177,001.

Claim.—1. The combination with a type bar, of a key lever of the first order, a sub-lever pivoted to said key lever, one of said levers having an elongated tread, a fulcrum wheron said tread operates so as to afford a changing leverage during the printing stroke of the type bar, and a connection from said sub-lever to the type bar.

2. The combination with a type bar, of a key lever pivoted intermediate of its ends, a sub-lever pivoted to the rear end portion of said key lever and connected to said type bar, said sub-lever having an elongated tread, and a fulcrum whereon said tread operates so as to afford a changing leverage during the printing stroke of the type bar, to diminish the leverage of the key upon the type bar.



3. In a front-strike writing machine, the combination with a rearwardly striking type bar, of a key lever pivoted intermediate of its ends to form a lever of the first order, an elbow lever pivoted at the rear end portion of said key lever and connected to the type bar; said elbow lever having a rearwardly extending elongated tread; and a fulcrum whereon said tread rolls to afford a changing leverage during the printing stroke of the type bar.

4. In a front-stroke writing machine, the combination with a rearwardly striking type bar, of a key lever of the first order; an elbow lever pivoted thereto and comprising an upwardly extending arm which is connected to the type bar and also a rearwardly extending arm having an elongated tread upon its upper edge; and a fulcrum whereon said tread rolls during the printing stroke; one of said tread and fulcrum elements being curved.

5. In a front strike writing machine, the combination with a rearwardly striking type bar, of a key lever of the first order, an elbow lever pivoted thereto comprising an upwardly extending arm which is connected to the type bar and also a rearwardly extending arm having an elongated tread upon its upper edge; and a fulcrum whereon said tread rolls during the printing stroke; one of said tread and fulcrum elements being curved, and said type bar being shiftable to enable different type to print.

6. In a typewriting machine, the combination of a series of segementally arranged type bars, a series of key levers of the first order, a series of sub-levers pivoted to and carried by said key levers and both sets of arms of which are progressively longer from the center to the sides of the series of sub-levers.

7. In a front-strike typewriting machine, the combination of a series of segmentally arranged rearwardly striking type bars, a series of key levers of the first order, a series of elbow sub-levers pivoted to and carried by said key levers, each of said sub-levers having an upwardly extending arm that is operatively connected to a type bar, and a fulcrum arm that extends in the general direction of the length of the associated key lever, both sets of arms increasing in length from the center to the sides of the system of sub-levers, and a fulcrum against which the fulcrum arms bear and on which they have a rolling action to afford a changing leverage during the printing strokes.

8. In a front-strike typewriting machine, the combination of a series of segmentally arranged rearwardly striking type bars, a series of key levers of the first order, the pivots of which are in a single transverse plane, a series of elbow sub-levers pivoted to the rear ends of and carried by said key levers, each of said sub-levers having an upwardly extending arm that is operatively connected to a type bar, and a rearwardly extending fulcrum arm, both sets of arms increasing in length from the center to the sides of the system of sub-levers, and a fulcrum against which the rearwardly extending fulcrum arms bear and on which they have a rolling action to afford a changing leverage during the printing strokes.

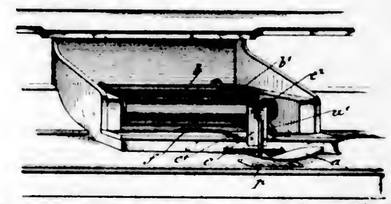
9. In a front-strike typewriting machine, the combination of a series of segmentally arranged rearwardly striking type bars, a series of key levers of the first order, the pivots of which are in a single transverse plane, a series of elbow sub-levers pivoted to the rear ends of said key levers in a single transverse plane, each of said sub-levers having an upwardly extending arm, a link connecting each of said upwardly extending arms to a type bar, a rearwardly extending fulcrum arm on each sub-lever, both sets of arms of the sub-levers increasing in length as the sides of the system of sub-levers are approached, and a fulcrum against which the rearwardly extending fulcrum arms bear and on which they have a rolling action to afford a changing leverage during the printing strokes.

10. In a front-strike typewriting machine, the combination of a series of segmentally arranged rearwardly striking type bars, a series of key levers pivoted intermediate of their ends and the pivots of which are in a single transverse plane, a series of elbow sub-levers pivoted to the rear ends of said key levers in a single transverse plane, each of said sub-levers having an upwardly extending arm and a rearwardly extending fulcrum arm that projects beyond the associated key lever and in the general direction of the length thereof, a series of links which connect the said upwardly extending arms to the type bars, a fulcrum with which fulcrum arms co-operate and on which they have a rolling action to vary the leverage during the printing strokes, and curved contact faces between the said fulcrum arms and fulcrum, both sets of arms of said elbow sub-levers increasing in length from the center to the sides of the system.

11. In a front-strike typewriting machine, the combination of a series of segmentally arranged rearwardly striking type bars, a series of key levers of the first order, a series of elbow sub-levers pivoted to the rear ends of said key levers and with their pivots in a single transverse plane, each of said sub-levers having an upwardly extending arm and a rearwardly extending fulcrum arm that projects beyond the associated key lever and in the general direction of the length thereof, a series of links which connect the said upwardly extending arms to the type bars, a fulcrum with which fulcrum arms co-operate, and on which they have a rolling action to vary the leverage during the printing strokes curved contact faces between the said fulcrum arms and fulcrum, both sets of arms of said elbow sub-levers being shorter at the center of the system than they are at the sides, and means which afford a shift of the type bars to change the case position thereof for upper and lower case writing.

855,145. CONTROLLER FOR MECHANICAL MUSICAL INSTRUMENTS. JOHN W. SUTTON, New York, N. Y. Filed Mar. 15, 1906. Serial No. 306,107.

Claim.—1. In a mechanical musical instrument, the combination, with a music-sheet provided with a number of tempo-indicating marks extending laterally in opposite directions from a straight base-line and differing in size, of a tempo-lever carrying a pointer, and a tempo-scale over which said pointer is movable and provided with a center-line corresponding to the base-line on the music-sheet and with indicating-marks extending laterally to either side of said center-line and corresponding to those on the music-sheet.



2. In a mechanical musical instrument, the combination, with a tempo-lever and connections to control the speed of the music-sheet, of a pointer carried by said lever, and a laterally-shiftable tempo-scale over which said pointer is movable.

3. In a mechanical musical instrument, in combination, a tempo-lever and connections to control the speed of the music-sheet, a pointer carried by said lever, and a laterally-shiftable tempo-scale provided with a vertical center-line to register with said pointer and with indicating-marks of different lengths extending laterally from said line to either side thereof.

4. In a mechanical musical instrument, in combination, a tempo-lever, a tempo-plate having indicating-marks over which said lever is movable, a pointer carried by said lever, and a laterally-shiftable tempo-scale over which said pointer is movable.

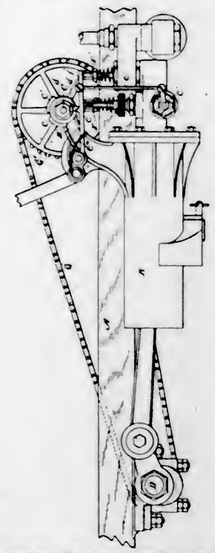
5. In a mechanical musical instrument, the combination of a perforated music-sheet provided with a number of templ-indicating marks arranged in a line at one side of the same, a tempo-lever controlling the speed of the music-sheet, a pointer applied to said controlling-lever, a shiftable templ-scale arranged adjacent to the pointer and provided with a number of indicating-marks extending symmetrically from the center-line and corresponding in size and direction to the templ-indicating marks on the music-sheet, and means for guiding and retaining the tempo-scale.

6. In a mechanical musical instrument, the combination of a perforated music-sheet provided with templ-indicating marks along one side of the same, a tempo-plate having division-lines indicating the different templ, a tempo-lever extending over said plate, a pointer applied to the tempo-lever, and an upright tempo-scale adjacent to the pointer provided with templ-indicating points corresponding with the templ-marks on the music-sheet, said tempo scale being shiftable until its center-line is in alinement with the prescribed tempo-line on the tempo-plate and the base-line of the templ-marks on the music-sheet.

855,146. VALVE-GEAR FOR GAS ENGINES OR MOTORS. FRANK A. THOMAS, Three Rivers, Mich., assignor to The Sheffield Car Company, Three Rivers, Mich. Filed Nov. 20, 1903. Serial No. 181,952.

Claim.—1. In a gas engine, the combination with a driving shaft, of a sprocket wheel loosely mounted thereon having a projecting lug or tooth on the hub thereof; a collar fixed to said shaft having a projecting driving lug adapted to engage the lug on said sprocket wheel whereby the position of said sprocket wheel is shifted on the reversing of the driving shaft; a cam shaft; a sprocket wheel on said cam shaft; a connecting chain for said sprockets; exhaust and inlet valves; a sparker actuating lever having a cam projection thereon; a spring for returning said sparker lever to its initial position; a sparker cam having a pivoted tooth adapted to engage said cam projection on said sparker lever; an exhaust valve actuating cam loosely mounted on said cam shaft; an air inlet valve actuating cam loosely mounted on said cam shaft; means for limiting the movement of said inlet and exhaust valve cams on said cam shaft, whereby the cams assume their proper relative positions for the actuation of the valves and sparker, when the cam shaft is driven in either direction.

2. In a gas engine, the combination with a driving shaft, of a sprocket wheel loosely mounted thereon having a projecting lug or tooth on the hub thereof; a collar fixed to said shaft having a projecting driving lug adapted to engage the lug on said sprocket wheel whereby the position of said sprocket wheel is shifted on the reversing of the driving shaft; a cam shaft; a sprocket wheel on said cam shaft; a connecting chain for said sprockets; exhaust and inlet valves; a sparker actuating lever having a cam projection thereon; a sparker cam having a pivoted tooth adapted to engage said cam projection on said sparker lever; an exhaust valve actuating cam loosely mounted on said cam shaft; an air inlet valve actuating cam loosely mounted on said cam shaft; means for limiting the movement of said inlet and exhaust valve cams on said cam shaft, whereby the cams assume their proper relative positions for the actuation of the valves and sparker, when the cam shaft is driven in either direction.

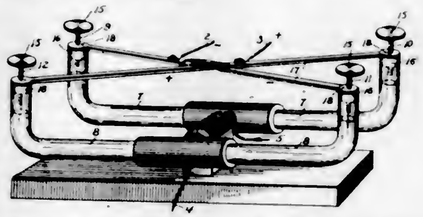


3. In a gas engine, the combination with a cam shaft; exhaust and inlet valves; a sparker actuating lever having a cam projection thereon; a spring for returning said sparker lever to its initial position; a sparker cam having a pivoted tooth adapted to engage said cam projection on said sparker lever; an exhaust valve actuating cam loosely mounted on said cam shaft; an air inlet valve actuating cam loosely mounted on said cam shaft; means for limiting the movement of said inlet and exhaust valve cams on said cam shaft, whereby the cams assume their proper relative positions for the actuation of the valves and sparker when the cam shaft is driven in either direction.

4. In a gas engine, the combination with a cam shaft, of exhaust and inlet valves; a sparker actuating lever having a cam projection thereon; a sparker cam having a pivoted tooth adapted to engage said cam projection on said sparker lever; an exhaust valve actuating cam loosely mounted on said cam shaft; an air inlet valve actuating cam loosely mounted on said cam shaft; means for limiting the movement of said inlet and exhaust valve cams on said cam shaft, whereby the cams assume their proper relative positions for the actuation of the valves and sparker when the cam shaft is driven in either direction.

5. In a gas engine, the combination with a cam shaft, of exhaust and inlet valves; a sparker; a sparker cam having a pivoted cam tooth; an exhaust valve actuating cam loosely mounted on said cam shaft; an air inlet valve actuating cam loosely mounted on said cam shaft; means for limiting the movement of said inlet and exhaust valve cams on said cam shaft, whereby the cams assume their proper relative positions for the actuation of the valves and sparker when the cam shaft is driven in either direction.

855,147. REVERSING-SWITCH. CHARLES A. TUNSTALL, Kamloops, British Columbia, Canada. Filed Dec. 18, 1905. Serial No. 292,195.



Claim.—1. As a means for closing an electric circuit and directing a current in either direction through it, two similar tubes having upwardly turned ends to be partially filled with quicksilver, said tubes being insulated from one another and susceptible of being inclined endwise to one side or the other, means for connecting the positive terminal of an external electric circuit to one of the upwardly turned ends of one tube and to the opposite end of the other tube, means for connecting the negative terminal of the external circuit to the other end of the tubes, and means for connecting the opposite terminals of the circuit through which the current is designed to be passed to the mid-portion of each tube so that such terminals are in electrical contact with the quicksilver within them.

2. As a means for directing an electric current in either direction through a circuit, two similar tubes having upwardly turned ends partially filled with quicksilver such tubes being secured to and insulated from one another and susceptible of being inclined endwise to one side or the other, a contact stem secured to and projecting into the end of each upwardly turned end of the tubes; the stems being insulated from the quicksilver in the tubes except when immersed within it, means for connecting the positive wire of an exterior electric circuit to the contact stem at one end of one tube and to the contact stem at the opposite end of the other tube, means for connecting the negative wire of the external circuit to the contact stems in the other ends of each of the tubes and means for connecting the wires of the circuit through which the current is designed to be sent to the mid-portion of each of the tubes so as to be in electrical contact with the quicksilver within them.

3. As a means for directing an electric current in either direction through a circuit, two similar tubes having upwardly turned ends and partially filled with quicksilver such tubes being secured to and insulated from one another and susceptible of being inclined endwise to one side or the other, a contact stem secured to and endwise adjustable in each upwardly turned end of the tubes the stems being insulated from the quicksilver except when immersed within it, means for connecting the positive wire of an exterior electric circuit to the contact stem in one end of one tube and to the stem in the opposite end of the other tube, means for connecting the negative wire of the external circuit to the other end of each of the tubes, and means for connecting the opposite end of the circuit through which the current is designed to be sent to the horizontal portions of each tube so as to be in electrical contact with the quicksilver within them.

4. In a device of the class described, two similar tubes of electrical insulating material having upwardly turned ends and partially filled with quicksilver, means for securing said tubes together to be susceptible of being inclined to one side or the other, means for connecting the terminals of the circuit through which the current is desired to be sent, one to the mid-length of each tube so that said terminals are in electrical contact with the quicksilver within them, and means for connecting the positive terminals of the external circuit to one end of one tube and to the opposite end of the other tube, and means for connecting the negative terminal of the external circuit to the other ends of the tubes, all being so arranged that as the tubes are inclined to one side or the other, the quicksilver within the tubes will effect contact at the lower ends of the tubes and break contact with the terminals on the opposite ends, substantially as shown and described.

5. A device of the class described, comprising a pair of parallelly disposed U-shaped tubes, means for connecting said tubes together to move in unison, means for pivotally mounting said tubes for oscillatory movement, a fluid within said tubes, adjustable contacts projecting through the mouths of said tubes and adapted to engage said fluids at times, and other contacts projecting into the tubes in alinement with their pivot points, and means for cross connecting the contacts of the U tubes substantially as shown and described.

6. A device of the class described, comprising a pair of parallelly disposed U-shaped tubes, means for pivotally mounting said tubes to be oscillatable in unison, closure caps for the ends of said tubes, liquid conductors within said tubes, leading in wires through the tubes for said liquid conductors in a plane with the pivot axis of the tubes, and leading in members passing through the closure caps of said tube ends adapted to contact with the liquid conductors at times, and bridge connections between diagonally opposite closure caps substantially as shown and described.

7. A device of the class described, comprising a pair of parallelly disposed U-shaped tubes, means for connecting said tubes together to move in unison, means for pivotally mounting said tubes for oscillatory movement, a fluid within said tubes, adjustable contacts projecting through the mouths of said tubes and adapted to engage said fluids at times, other contacts projecting into the tubes in alinement with their pivot points, and means for retarding surging of the liquids within the tubes.

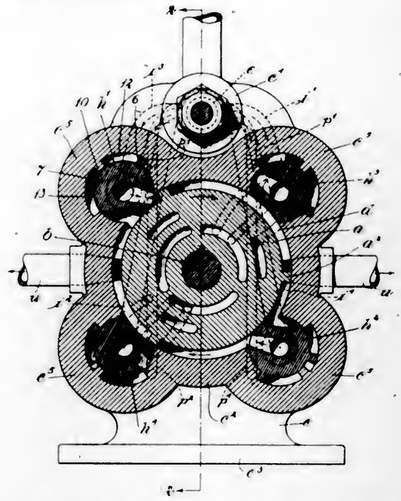
8. A device of the class described, comprising a pair of parallelly disposed U-shaped tubes, means for pivotally mounting said tubes to be oscillatable in unison, closure caps for the ends of said tubes, liquid conductors within said tubes, leading in wires through the tubes for said liquid conductors in a plane with the pivot axis of the tubes, and leading in members passing through the closure caps of said tube ends adapted to contact with the liquid conductors at times, bridge connections between diagonally opposite closure caps, and means for retarding surging of the liquids within the tubes.

855,148. ROTARY ENGINE. SILVANUS F. VAN CHOATE, Boston, Mass. Filed Oct. 4, 1904. Serial No. 227,110.

Claim.—1. An engine or motor comprising a casing having a piston-chamber, a fixed passage forming a portion of a conduit extending from a source of supply to said chamber, an oscillatory abutment-valve forming a movable part of said conduit, and a rotary piston having abutments upon its periphery, said piston moving in said piston-chamber and impelled by steam, or other impelling force, passing through said conduit, the said casing, piston, and valve having coöperating means for causing the impelling force to oscillate the abutment-valve.

2. An engine or motor comprising a casing having a piston-chamber, a fixed passage forming a portion of a conduit extending from a source of supply to said chamber, an oscillatory valve having, first, a hollow hub or chamber and a delivery port extending therefrom, said hub and port forming movable parts of said conduit, and secondly, an abutment face or jaw at one side of said port, and a rotary piston having an abutment on its periphery, said piston being movable in said chamber and impelled by steam, or other impelling force, passing through said conduit, the said casing, piston, and valve having coöperating means for causing the impelling force to move the said abutment face alternately toward and from the periphery of the piston.

3. An engine or motor comprising a casing having a piston-chamber and a subsidiary valve-chamber communicating therewith, and having segmental enlargements or steam-spaces, a fixed passage extending from a source of supply to the valve-chamber, an oscillatory valve in said subsidiary chamber, having first, a hollow hub, and a delivery port extending therefrom, said hub and port forming movable parts of said conduit, secondly, a concave abutment face at one side of said port, and thirdly, two abutments projecting into said segmental chambers, and a rotary piston having abutments upon its periphery said piston moving in said piston-chamber and impelled by steam, or other impelling force, passing through said conduit, the said casing and piston having coöperating means for causing the impelling force to enter the said segmental spaces alternately, and act on said valve abutments to oscillate the abutment-valve.



4. An engine or motor, comprising a casing having a piston-chamber, a fixed passage forming a portion of a conduit extending from a source of supply to said chamber, an oscillatory abutment-valve having, first, a hollow hub or chamber, and a delivery port extending therefrom, said hub and port forming movable parts of said conduit, secondly, a concave piston-abutment clearing face at one side of the delivery port, and thirdly, an abutment face between said abutment-clearing face and port, and a rotary piston having abutments on its periphery, said piston moving in said piston-chamber and impelled by steam, or other impelling force, passing through said conduit, the said casing, piston, and valve having coöperating means for causing the impelling force to hold the abutment-valve alternately in its abutment position and in its piston-clearing position.

5. An engine or motor comprising a casing having a piston-chamber and a subsidiary valve-chamber communicating therewith, said chamber having recesses or countersinks forming valve-bearings, a fixed passage extending from a source of supply through one of said bearings to the valve-chamber, an oscillatory valve in said chamber, having, first, end trunnions journaled in said bearings, secondly, a hollow hub or central chamber communicating through one of said trunnions with said passage, and a delivery port extending from the hub, said hub and port forming movable parts of said conduit, and thirdly, an abutment face or jaw at one side of said port, and a rotary piston movable in the piston-chamber, and having abutments on its periphery, said piston being impelled by steam, or other impelling force, passing through said conduit, the said casing, piston, and valve having coöperating means for causing the impelling force to rock the abut-

ment-valve and move the said abutment jaw alternately toward and from the periphery of the piston.

6. An engine or motor comprising a casing having, first, a piston-chamber, secondly, a fixed passage forming a portion of a valve-supplying conduit extending to said chamber, thirdly, a subsidiary valve-chamber communicating with the piston-chamber and having two segmental enlargements or spaces, and fourthly, two outer passages which communicate at their outer ends with said segmental spaces and a central passage which communicates with the central portion of the valve-chamber, an oscillatory abutment-valve, forming a movable part of said conduit and having a hollow hub or central chamber communicating at one end with said central passage and at the other end with the said valve-supplying conduit, said valve having a delivery port communicating with the hub, and radial abutments, said valve movable in said segmental spaces, and a rotary piston having abutments upon its periphery movable in said piston-chamber and impelled by steam or other force, passing through said conduit, the body of said piston having segmental ports adapted to connect the said outer passages with the said central passage alternately.

7. An engine or motor comprising a casing having, first, a piston-chamber, secondly, a fixed passage forming a portion of a valve-supplying conduit extending to said chamber, thirdly, a subsidiary valve-chamber communicating with the piston-chamber and having segmental enlargements or spaces, fourthly, a plurality of passages comprising outer passages which communicate at their outer ends with said segmental spaces and a central passage which communicates with the central portions of the valve-chambers, and fifthly, escape or exhaust passages, an oscillatory abutment-valve forming a movable part of said conduit, and having a hollow hub or chamber communicating at one end with said central passage and at the other end with the said valve-supplying conduit, said valve having delivery ports communicating with the hub or central chambers and radial abutments movable in said segmental spaces, and a rotary piston having abutments upon its periphery, said piston being movable in said piston-chamber and impelled by steam, or other impelling force, passing through said conduit, the body of said piston having segmental supply-ports or grooves and a series of exhaust-ports, the said supply-ports being adapted to connect the said outer passages with the central passage alternately, while the exhaust-ports are adapted to connect said outer passages with exhaust passages.

8. An engine or motor comprising a casing having a piston-chamber, and a throttle-valve chamber, a fixed passage forming a portion of a conduit extending from the throttle-valve chamber to the piston-chamber, a hollow throttle-valve acting as a steam chamber and adapted to turn in said throttle-valve chamber and having a port adapted to register with said fixed passage, an oscillatory abutment-valve forming a movable part of said conduit, and a rotary piston having abutments upon its periphery, said piston being movable in said piston-chamber and impelled by steam, or other impelling force, passing through said conduit, the said casing, piston, and valve having coöperating means for causing the impelling force to oscillate the abutment-valve.

9. An engine or motor comprising a casing having a piston-chamber, and a throttle-valve chamber, a plurality of abutment-valve chambers communicating with the piston-chamber, a plurality of fixed passages extending from the throttle valve chamber to the abutment-valve chambers and forming parts of piston-supplying conduits, the said passages being arranged in pairs and the throttle-valve being provided with ports adapted to communicate first with the passages of one pair and then with the passages of another pair, abutment-valves movable in said abutment-valve chambers and forming movable parts of said conduits, said abutment-valves being arranged in oppositely and alternately acting pairs, and a rotary piston having a plurality of abutments upon its periphery, and moving in said piston-chamber, the said casing, piston, and valves having coöperating means for causing the impelling fluid to oscillate the acting abutment-valves.

10. An engine or motor comprising a casing having a piston-chamber and a throttle-valve chamber, a plurality of abutment-valve casings communicating with the piston-chamber and having segmental enlargements, a plurality of fixed larger passages extending from the throttle-valve chamber to the central portions of the abutment-valve casings and forming parts of piston-impelling conduits, a plurality of smaller passages extending from the throttle-valve chamber to the enlarged outer portions of the abutment-valve casings, the said larger and smaller passages being arranged in pairs and the throttle-valve being provided with ports adapted to connect and close said passages in pairs, abutment-valves movable in said abutment-valve casings and forming movable parts of said conduits, said abutment-valves being arranged in oppositely and alternately acting pairs and having abutments moving in said segmental spaces, and a rotary piston having a plurality of abutments upon its periphery, said piston moving in the piston-chamber, the said piston-casing and piston having coöperating passages and ports which admit steam alternately to the segmental enlargements of the abutment-valve casings.

11. An engine or motor comprising a casing having a piston-chamber, a subsidiary valve-chamber communicating therewith and having segmental enlargements or steam spaces, an oscillatory valve in said subsidiary chamber, having abutments movable in said segmental spaces, said casing having exhaust passages communicating with the segmental spaces, and adjustable cocks controlling the said exhaust passages, and adapted to regulate the cushioning effect of steam on the abutments in the said spaces.

12. An engine or motor having a rotary piston or disk provided with means for causing steam or other impelling force to pass from a throttle-valve or source of power to the bodies of valves which communicate with the chamber in which the piston rotates.

13. An engine or motor having a rotary piston or disk provided with a passage forming an intermediate part of one or more conduits which serve to carry steam, or other impelling force, between the boiler or generator and the bodies of one or more abutment-valves and to bridge the steam over the space or opening between the piston and the said valves.

14. An engine or motor having a rotary piston provided with a conduit whereby it acts as an automatic valve to distribute steam, or other impelling force, from one passage or set of passages to another passage or set of passages, the said passages including a working valve or valves, all co-operating to cause and regulate the movement of the piston.

15. An engine or motor having a rotary piston or disk provided with a passage which alternately or intermittently forms a part of a conduit or passage between a generator or source of power and a piston-chamber, and while in motion alternately or intermittently brings into unison or incident connection a series of ports or passages carried by it with fixed passages or sets or systems of such passages, and at the same time automatically bridges the impelling force over the openings between the said piston and the bodies of adjacent abutment-valves.

16. An engine or motor having a rotary piston which contains or is constructed with ports or grooves in its sides, adapted to receive and convey steam, or other impelling force, and to automatically distribute the same intermittently from one set or system of passages to another set or system of passages, to alternately or intermittently and automatically operate abutment-valves and cause the latter to control the passage of the steam to and from the chamber in which said piston rotates.

17. An engine or motor having a rotary piston or disk which serves as a distributing-valve, and, when in motion, by means of ports formed in its sides distributes steam, or other impelling force, from one fixed passage or set of passages to another fixed passage or set of passages, thereby causing a series of abutment-valves to clear the abutments upon said rotary piston.

18. An engine or motor having a rotary piston or disk which acts as an automatic valve to distribute steam, or other impelling force, between various fixed passages and the bodies of abutment-valves, to cause and regulate the movement of said piston.

19. An engine or motor having a rotary piston or disk which is provided with ports in its sides, said ports being arranged in series occupying different positions relatively to the center of the piston, one series serving to move a series of abutment-valves in one direction, while another series serves to move the said valves in another or opposite direction.

20. An engine or motor provided with a hub or bearing for a throttle-valve, and said hub or bearing being provided at each of its sides with two sets of differently sized passages, there being two larger and two smaller passages at each side, said sets being arranged in pairs each including two smaller and two larger passages, said larger passages extending laterally from each side of said hub or bearing, to and connecting with the working valves of the engine or motor, and coöperating with other intermediate tubes or openings to rotate a piston or disk, while the smaller tubes or openings extend laterally from each side of the hub or bearing to the casings of the working valves and supply steam to set and hold the said valves in a closed position.

21. An engine or motor whose throttle-valve contains or is provided with two sets of ports or openings in its sides, there being one smaller and one larger opening on each side, the arrangement being such that when said valve is moved in one direction from its cut-off position, one of its smaller openings and one of its larger openings on each side is caused to match or correspond, in a diagonal direction across to the other side, with two respective and alternate fixed passages on each side of the hub or bearing of said valve, while a similar movement of the valve in the other direction from a full cut-off position brings a larger and a smaller opening on each side of the valve in a diagonal relation or position and in unison or in the desired position to connect diagonally with the other and alternate set of larger and smaller openings on the two sides of the said hub or bearing.

22. An engine or motor having a throttle-valve provided with a longitudinal bore or chamber and with two openings of different sizes on each side for the exit of steam, the said valve being seated in or connected with a hub or bearing, and said hub or bearing being provided with eight openings of different dimensions, four smaller and four larger, two smaller and two larger on each side, said valve and said hub or bearing being constructed and arranged relatively to each other so that when the valve is moved or turned in one direction, steam is allowed to pass out of said valve-chamber to move and operate two working valves and a revolving piston or rotary disk in one direction, and to hold two other working valves in a fixed position, and when said throttle-valve is moved or turned in the opposite direction, to move and operate the two latter working valves and move and operate said piston or disk in the other direction, and to hold in a fixed position the two former working valves.

23. An engine or motor having a throttle-valve provided with openings of different dimensions, one smaller and one larger on each side, said valve being seated in a hub or bearing provided with eight openings, two of smaller and two of larger dimensions, on each side, the said openings in the valve and in the bearing being constructed and related so that when the valve is turned or moved in one direction, the first small and the first large openings on one side of the valve are made to come into unison with and to match the first small and the first large openings in the hub or bearing on the same side, and at the same time, bring into unison the small and the large openings on the other side of the valve with the second small and second large openings in the bearing on that side, and on turning or moving the valve in an opposite direction, the second small and second large openings on the side of the valve are brought into unison with the second small and the second large openings in the first side of the bearing, and the small and the large openings of the valve and the bearing on the other side are brought into unison with the first small and the first large openings in the bearing on the other side, and thus allow the steam to pass out of both the small and the large openings on either side of the system and in a diagonal direction as to the position of the openings, and to move and operate the working valves and the piston or disk of the engine or motor.

24. An engine or motor having a throttle-valve, four working valves, and a revolving piston or rotary disk, said valve being provided with openings on its two sides for the emission of steam to move and operate said working valves and said piston or disk and said throttle-valve being constructed and arranged so that on moving it in one direction two of said working valves are made to move and operate said piston or disk, while the other two working valves are set and continuously held in position to clear the passing abutments on the periphery of the disk while the engine or motor is running in one direction, and when the said throttle-valve is moved or turned in an opposite direction, the other or latter two working valves are brought into action to move and operate the piston or disk, while the other or first two working valves are set and continuously held in position to clear the passing abutments.

25. An engine or motor having a throttle-valve provided with a central or longitudinal opening to hold or convey steam, and with different sizes of openings in its sides, and seated in a hub or bearing having double the number of similar openings in its sides, the valve and bearing so constructed and arranged that on moving or turning the valve in one direction two openings on each side of the valve will come or be brought into unison with the same number of similar openings in the two sides of the hub or bearing, so that steam or vapor from the openings in the valve can pass out on each side through the diagonally corresponding openings in the bearing, and by means of intermediate tubes or openings, move and operate the working valves and the revolving piston or rotary disk.

26. An engine or motor having a throttle-valve provided with a central bore or chamber, and main admission and valve controlling openings of different sizes in its sides, and held in position by a hollow screw sleeve or abutment at each end, said valve being provided with a hand crank wheel or handle and other means or fixture to operate said valve and to lock it in position.

27. An engine or motor having working valves, each of which is provided with projections or trunnions at its ends, serving as pivots or centers for said valve to turn upon, the projections and the valve having a central bore or opening extending from end to end of the valve, for the passage of steam and a lateral mouth or port opening on one side for the emission or discharge of steam into a piston-chamber.

28. An engine or motor having a throttle-valve and working valves arranged in pairs and each pair on lines at right angles to each of the other, each of said valves being provided with projections or trunnions at its ends, a center bore or opening extending entirely through the valve, and a lateral mouth or port on one side constructed and adapted to emit or discharge steam into a piston-chamber.

29. An engine or motor having working valves, each of which is provided with projections or trunnions on its ends and a central bore or opening, each valve having on its periphery one or more abutments or lugs extending lengthwise of the valve and parallel with the central openings, said central bore or opening and said lateral slot or mouth being for the purpose of carrying and emitting or injecting steam into a piston or disk-chamber to move and operate a rotary piston therein.

30. An engine or motor having a casing and working valves, each of which is provided with hubs or projections at its ends, a central bore entirely through the valve, and a lateral mouth or port opening on one side, each valve having also a concave recess in one side adapted to conform to or constitute a continuation of the inside circular wall of a piston or disk chamber in said casing.

31. An engine or motor having a casing and working valves, each of which is provided with hubs or projections at its ends, abutments on its periphery, a central bore or opening, a lateral mouth or port in one side, and a concave recess near the said mouth or port, the said recess

forming the face of a jaw or abutment to prevent the steam or vapor issuing from the said port from escaping backwardly, said jaw being carefully turned or ground to closely conform to the periphery of a piston or disk in said casing.

32. An engine or motor having a casing and working valves arranged diametrically opposite to each other in said casing and in pairs of two, and each pair being on lines at right angles with the other pair, the said casing being provided with circular cavities or chambers accurately formed to closely fit the peripheral bodies of said valves, and each chamber provided at one side with a segmental enlargement and with a fixed central abutment which occupies the central portion of said enlargement and subdivides the latter into segmental spaces which terminate at their outer ends in solid abutments or shoulders, openings being provided at each side of said central abutment and at one end of one of said segmental spaces, which openings are connected with various intermediate tubings or openings to carry and admit steam into said segmental spaces on each side of said central abutment to oscillate the valve, by impingement or pressure against projecting abutments on the peripheral body of the valve, and to one of said segmental spaces for the admission of steam or vapor to move, set, and hold one set or pair of valves in a non-active position, while the other pair or set are being operated to move and revolve the piston or disk.

33. An engine or motor having a casing and working valves oscillating or moving on their trunnions or projecting ends in counter-sinks or bearings formed in the sides of the casing, and said valves being provided with central openings or steam-chambers extending entirely through the axial lengths of the valves, and said openings being connected centrally with tubes or openings constructed for and capable of furnishing steam from a boiler or generator through a throttle-valve and said connecting and intermediate tubes or openings to the central openings or chambers in the working valves, and thence through the lateral mouths or openings in the valves into the piston or disk chamber to move and operate said piston or disk.

34. The combination with a casing and a rotatable piston therein each having a passage, of an abutment valve provided with a supply passage extending between its opposite ends said supply passage being connected with the piston passage by that in the casing.

35. The combination with a casing and a rotatable piston therein, of an abutment valve provided with a supply passage extending between its opposite ends, the casing having separated passages registering with the valve passage, and means carried by the piston for controlling the flow through the supply passage.

36. The combination with a casing and a rotatable piston therein, of an abutment valve provided with a supply passage extending between its opposite ends and a branch passage opening from the supply passage and through the side of the valve, the valve delivering fluid through both the ends of the supply passage and through the branch passage.

37. The combination with a casing and a rotatable piston therein, of an abutment valve provided with a supply passage extending between its opposite ends, there being an exhaust passage in the casing controlled by the piston.

38. The combination with a casing and a rotatable piston therein, of an abutment valve provided with a supply passage, the piston having recesses and the casing having passages connecting said recesses with the supply passage of the valve.

39. The combination with a casing and a rotatable piston therein, of an abutment valve provided with a supply passage, the piston having inner and outer recesses and the casing having passages connecting said recesses with the supply passage of the valve.

40. The combination with a casing and a rotatable piston therein, of an abutment valve provided with a supply passage, the piston having inner and outer recesses of different length and the casing having passages connecting said recesses with the supply passage of the valve.

41. The combination with a casing and a rotatable piston therein, of a throttle valve, and a rotatable abutment valve provided with a supply passage, there being a plurality of connecting passages between the throttle valve and abutment valve, one leading to the supply passage of said valve and another to its periphery.

42. A rotary engine comprising a casing having a main chamber and a secondary chamber having an enlargement, a piston rotatable in the main chamber, a valve rotatable in the secondary chamber and having a projection extending into its enlargement, said valve being provided with a recess which may co-operate with the piston and a recess forming a portion of the main chamber and means for supplying pressure to the chamber enlargement to rotate the valve.

43. A rotary engine comprising a casing having a main chamber and a secondary chamber having an enlargement, a piston rotatable in the main chamber, a valve rotatable in the secondary chamber and having separated projection extending into its enlargement and means controlled by the piston for alternately applying pressure to the projections.

44. A rotary engine comprising a casing having a main chamber and a secondary chamber having an enlargement into which a projection from the casing extends, said casing having supply passages leading to opposite sides of the projection, a piston rotatable in the main chamber and controlling the flow through the passages, and a valve rotatable in the secondary chamber and having separated projections lying in the enlargement at opposite sides of the casing projection.

45. The combination with a casing and a rotatable piston therein, of a throttle valve having ports of different length and an abutment valve provided with a supply passage, there being a plurality of connecting passages between the throttle valve and abutment valve.

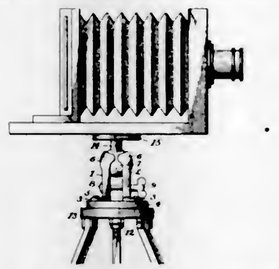
46. The combination with a casing and a rotatable piston therein, of a throttle valve having ports of different length, an abutment valve provided with a supply passage, there being a plurality of connecting passages between the throttle valve and abutment valve, and an exhaust passage controlled by the piston.

47. An engine or motor comprising a casing, a rotary piston having segmental conduits on its outside faces arranged in series, and a piston-chamber centrally located in the casing, and four abutment valves arranged diametrically to each other around the outer periphery of the piston-chamber, and operating together in sets or pairs of two, each pair located at right angles to a direct line between the other pair, each valve being adapted to furnish steam to operate the piston, one set acting to move the piston in one direction, and the other set to move it in the other direction, and said piston controlling the movements of said valves by its movement and steam passing through the center bore of the valves and segmental conduits in the two sides of the piston, the conduits in one side of the piston serving to operate one pair of valves and move the piston in one direction, and the conduits in the other side of the piston serving to operate the other pair of valves and to move the piston in the other or opposite direction.

48. An engine or motor comprising a casing, a piston chamber and a piston rotating therein, a series of abutment valve chambers surrounding said piston-chamber and oscillatory hollow center abutment valves therein, said hollow center forming a part of a main steam conduit, and the casing being provided with sets of intermediate and smaller conduits, each set consisting of three conduits practically parallel to each other, one end of each conduit leading to an abutment valve chamber, the center conduit of the three terminating at the end of the hollow center of an abutment valve, and the other two conduits in each set, and the conduits in the sides of the piston serving to take steam from the central conduit and alternately delivering it to an abutment chamber to operate the valve; and said piston having formed in each side of its outside faces three sets and three series of segmental grooves or connecting conduits of various lengths, one of said grooves or conduits of each set being adapted or fitted to take steam from the central or middle conduit of the set of three formed in the casing, and to discharge it into one of the two outside conduits in a set formed in the casing to operate the valve in one direction, and another conduit of the series in the face of the piston being adapted to take steam from said central conduit and to discharge it into the other outside conduit of the set formed in the side of the casing and to operate the valve in the other direction, while other segmental conduits in the face of the piston act to exhaust the steam from said conduits, the piston by its movement and the conduits on its sides completing the continuity between the various conduits in the sides of the casing and the hollow center abutment valves.

49. An engine or motor comprising a casing, a central piston-chamber, a rotary piston having sets and series of segmental grooves or conduits in both of its outside faces and rotating in said chamber, four abutment valve chambers formed in the sides of said casing and located at equal distances around the outer periphery of said piston-chamber and partly opening out into the same; abutment valves in said abutment-chambers oscillating upon hubs with hollow centers, and each valve having a lateral outlet for emission of steam into said piston-chamber, the said hollow centers forming an extension part or continuation of a main steam conduit from the steam source to and through a throttle-valve and to and through the hollow centers of said abutment-valves, and a plurality of smaller conduits adapted to furnish steam to said abutment-valves and formed in sets of three for each valve, and three of the series of the segmental grooves or conduits in the side of the piston being adapted to connect with the central conduits of the sets in the sides of the casing and adapted to take steam from the main conduit at each side of the central bore in the abutment-valve and convey it to one of the two outside conduits in a set in the casing to move a valve in one direction, and another segmental conduit of the set in the side of the piston being adapted to take and deliver steam from said central conduit and deliver it to the other outside conduit in the set to operate the valve in the other direction, and the other series of segmental conduits in the sides of the piston being adapted to exhaust the steam from said smaller conduits and said abutment-valves on motion of the piston, and the piston being operated by means of steam passing through the conduits in its sides and through the hollow centers of the abutment-valves.

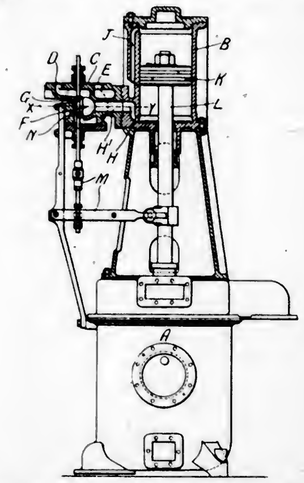
855,149. ATTACHMENT FOR TRIPOD-CAMERAS. BENJAMIN A. VAUGHN and WILLIAM G. BISSELL, Corning, Cal. Filed Oct. 12, 1906. Serial No. 338,603.



Claim.—1. An attachment for tripod-cameras, comprising a pair of yielding socket-plates having ball receiving depressions at their upper ends and flanged at their lower ends, a base-plate rigidly secured to the flanged ends of the socket-plates connecting them permanently together, a clamping bolt passed transversely through the plates at a point between the flanges and depressions, a clamping nut threaded on the end of the bolt, and a ball having means of attachment to the camera and located between the plates in the depressions thereof, substantially as shown and described.

2. An attachment for tripod-cameras, comprising a pair of socket-plates having depressions to receive a ball and transverse bolt-apertures below said depressions, one of the bolt-apertures being in the form of a keyhole slot, a bolt passed through the bolt-apertures, and a nut threaded on the bolt and having a shank adapted to take into the larger portion of the keyhole slot; together with a ball adapted to be inserted between the plates into the depressions therein, said ball having means of attachment to the camera, substantially as shown and described.

855,150. DIRECT-ACTING PUMP. WILLIAM WEIR, Cathcart, Scotland. Filed Oct. 21, 1905. Serial No. 283,763.



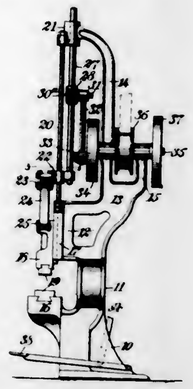
Claim.—1. In a pumping apparatus, the combination with a single acting air pump provided with a piston, of actuating means therefor comprising a single cylinder, a steam actuated piston in said cylinder, a piston rod connecting said pistons, said piston rod providing differential areas on the opposite sides of said steam actuated piston, a steam actuated valve for alternately admitting steam to the side of said steam actuated piston to which said piston rod is attached to cause said steam actuated piston to move in one direction to produce the effective stroke of said pump piston, and for transferring said steam from said last-mentioned side to the opposite side to cause said steam actuated piston to move in the opposite direction to produce the idle stroke of said pump piston, and means, connected to said piston rod, for controlling the movements of said valve.

2. In a pumping apparatus, the combination with a single-acting air pump, of actuating means therefor comprising a cylinder having a pair of ports, a piston in said cylinder, a piston rod connecting said piston and said pump, and means for alternately admitting steam to one side of said piston to cause said piston to move in one direction to produce the effective stroke of said pump, and for permitting said steam to pass to the opposite side of said piston during the idle stroke of said pump, said means comprising a casing, a valve slidably mounted within said casing, said valve being provided with a system of passages adapted to control the passage of steam to and from said cylinder ports and with a second system of passages adapted to control the passage of steam to and from the ends of said casing beyond said valve, and means connected to said piston-rod for controlling the passage of steam to and from said second system of passages.

855,151. POWER-HAMMER. LEWIS WILSON and FRANCIS I. MATTHEWS, Oakland, Cal. Filed Jan. 25, 1905. Serial No. 242,595.

Claim.—1. In a power hammer, a frame having vertical ways upon the front, a hammer carrying ram with slides

movable in said ways, a curved arm extending above the ways and forming a recess rearwardly from the line of said ways, said arm carrying bearing boxes for the crank-shaft and having its upward end projecting forward substantially into line with the ways, a crank-shaft in said boxes, guide-rods having their upper ends fixed to the said upper projection of the frame and the lower ends to the ways, a cross-head slidable upon said guides, a rod located behind the cross-head and forming a connection between it and the crank, arms projecting forwardly from the cross-head, a segmental or bow spring having its center fixed to said arms in direct line with the hammer carried by the ram, and an anvil supported in the same line below the hammer.



2. In a power hammer, the combination with the anvil of a frame having ways, a hammer movable upon the ways, guides rising from the frame, a cross-head having a forwardly extended arm and movable upon the guides, a spring fixed to the arm and connected with the hammer, a rod extending from the cross-head, rotatable driving mechanism, a sleeve variable in position upon the rod and provided with a stud, and a link connecting the stud and driving mechanism.

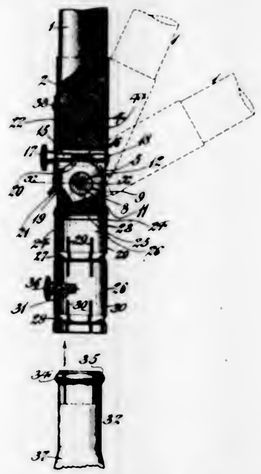
3. In a power hammer, the combination with a frame and the anvil carried thereby, of a hammer guided and movable upon the frame and coacting with the anvil, rotatable driving mechanism, a cross-head, guides upon which it is slidable, a rod guided and movable in unison with the cross-head, a sleeve adjustable upon the rod, a link connecting the sleeve with the driving mechanism, and an elastic connection between the cross-head and the hammer, said elastic connection being movable in the direct line of movement of the hammer.

855,152. BROOM-HANDLE. STEPHEN G. WILSON, Philadelphia, Pa. Filed July 1, 1905. Serial No. 267,880.

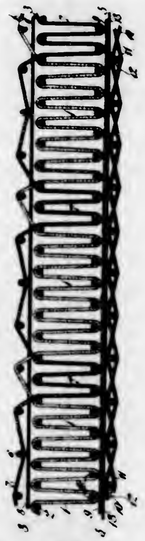
Claim.—1. In a device of the character described, a divided broom handle, intermeshing plates projecting from the parts thereof, a sleeve passing through said plates and provided with interior screw threads, a screw fitting in said sleeve, the sleeve and screw being provided with heads lying on opposite sides of the plates, and a spring arm adapted to engage with the edges of the plates to hold the same in proper position.

2. In a divided broom handle, one portion connected with the broom, the intermediate portion surrounding and rotatably connected with the first portion and having a transverse slit therein, a screw adapted to pass through said slit and enter the first portion and a third portion hinged to said intermediate portion.

855,152.



855,153. PILE FABRIC. JOHN ZIMMERMAN, Philadelphia, Pa., assignor to Philadelphia Tapestry Mills, a Corporation of Pennsylvania. Filed May 5, 1906. Serial No. 315,336.



Claim.—1. In a double pile fabric, outer and inner weft planes in each fabric, and a combined pile, binding and figuring warp engaging only the inner row of wefts in each fabric when making pile.

2. In a double pile fabric, a plurality of rows of weft threads forming an upper and lower cloth in combination with a pile warp passing from one cloth to the other and engaging only each weft of the inner rows of wefts of the upper and lower cloth when forming the pile, and the outer rows of wefts upon one side only of one of the cloths to act as a binding and figuring warp.

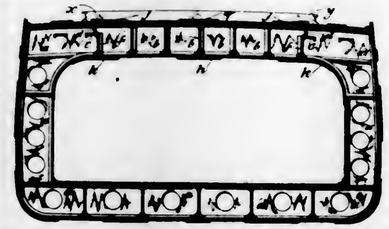
3. In a double pile fabric, upper and lower weft planes, body warps between the wefts in said planes and pile and figuring warps serving both as figure warps and binding warps by engaging with the outer wefts of one plane when not making pile and engaging only the inner wefts of both planes when forming pile.

4. In a double pile fabric, a plurality of inner and outer planes of weft threads and a warp continuously binding the threads of an outer plane of wefts together when not making pile and engaging only the inner rows of wefts when making pile.

5. In a double pile fabric, a plurality of inner and outer planes of weft threads and a warp continuously binding the threads of an outer plane of wefts together when not making pile and engaging only the inner rows of wefts when making pile and independent binding warps uniting the inner and outer weft threads.

6. In a double pile fabric, inner and outer planes of wefts and combined pile and binding warps each engaging only each weft of the inner rows of wefts to form a plurality of double passages of pile, and acting as a binding and figuring warp when different warps are forming the pile.

855,154. SHIP CONSTRUCTION. WASHINGTON I. BABCOCK, New York, N. Y. Filed Nov. 30, 1904. Serial No. 234,844.



Claim.—1. In a decked ship having hatches extending across the center line and without stanchions, the combination of deep frames between the hatches, and a beam of substantially uniform depth between the hatch lines across the top of each deep frame, the lower flange of said beam being braced to the deck at or near the hatch lines to prevent sidewise motion.

2. In a decked ship having hatches extending across the center line and without stanchions, the combination of deep frames between the hatches, a beam of substantially uniform depth between the hatch lines across the top of each frame, and means to secure the lower flange of said beam to the deck at or near the hatch lines.

3. In a decked ship having hatches extending across the center line and without stanchions, the combination of deep frames between the hatches, and a beam across the top of each deep frame, said beam being of substantially uniform depth between the hatch lines and strengthened or made heavier in itself at the center line of ship.

4. In a decked ship having hatches extending across the center line and without stanchions, the combination of deep frames between the hatches, and a beam across the top of each deep frame, said beam being of substantially uniform depth between the hatch lines and strengthened or made heavier in itself at or near the hatch lines.

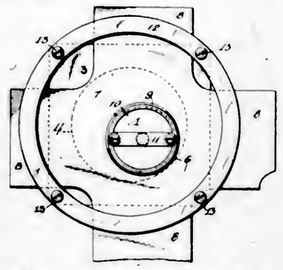
5. In a decked ship having hatches extending across the center line and without stanchions, the combination of deep frames between the hatches, and a beam across the top of each deep frame, said beam being of substantially uniform depth between the hatch lines and strengthened or made heavier in itself at the center line of the ship and at or near the hatch lines.

6. In a decked ship having hatches extending across the center line and without stanchions, the combination of deep frames between the hatches, and a beam across the top of each deep frame, said beam being of substantially uniform depth between the hatch lines and strengthened or made heavier in itself at the center line of the ship, and the lower flange of said beam being braced to the deck at or near the hatch lines to prevent sidewise motion.

7. In a decked ship having hatches extending across the center line and without stanchions, the combination of deep frames between the hatches, and a beam across the top of each deep frame, said beam being of substantially uniform depth between the hatch lines and strengthened or made heavier in itself at the hatch lines, and the lower flange of said beam being braced to the deck at or near the hatch lines to prevent sidewise motion.

8. In a decked ship having hatches extending across the center line and without stanchions, the combination of deep frames between the hatches, and a beam across the top of each deep frame, said beam being of substantially uniform depth between the hatch lines and strengthened or made heavier in itself at the center line of the ship and at the hatch lines, and the lower flange of said beam being braced to the deck at or near the hatch lines to prevent sidewise motion.

855,155. ADJUSTABLE OUTLET-BOX. MAX D. BABON, borough of Manhattan, N. Y. Filed Feb. 24, 1906. Serial No. 302,680.



Claim.—1. A wall box, comprising a body portion, an adjustable cross shaped cover portion, and a clamping member secured to the corners of said body portion to clamp said cover portion in position.

2. An outlet box, comprising a body portion having a restricted front opening, an adjustable cross shaped cover portion having a centrally located open throat piece, and a clamping member secured to said body portion to clamp said cover portion in position.

3. An outlet box, comprising a body portion, an adjustable cross shaped cover portion, and a clamping member secured to the corners of said body portion to clamp said cover portion in position, said cover portion having a wide range of lateral and rotary adjustability.

4. An outlet box, comprising a body portion having a restricted front opening, an adjustable cross shaped cover portion having a centrally located open throat piece, and a clamping member secured to the corners of said body portion to clamp said cover portion in position, said cover portion having a wide range of lateral and rotary adjustability.

5. An outlet box, comprising a body portion, an adjustable cross shaped cover portion, and a clamping ring secured to the corners of said body portion to clamp said cover portion in position.

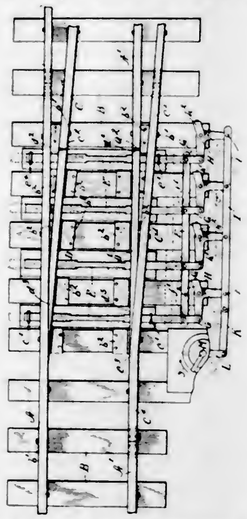
6. An outlet box, comprising a body portion having a restricted front opening, and adjustable cross shaped cover portion having a centrally located open throat piece, and a clamping ring secured to the corners of said body portion to clamp said cover portion in position.

7. An outlet box, comprising a body portion, an adjustable cross shaped cover portion, and a clamping ring secured to the corners of said body portion to clamp said cover portion in position, said cover portion having a wide range of lateral and rotary adjustability while in closing position.

8. An outlet box, comprising a body portion having a restricted front opening, an adjustable cross shaped cover

portion having a centrally located open throat piece, and a clamping ring secured to the corners of said body portion to clamp said cover portion in position, said cover portion having a wide range of lateral and rotary adjustability while in closing position.

855,156. RAILWAY-SWITCH. ALVIN W. BARTHEL, Viroqua, Wis. Filed Nov. 7, 1905. Serial No. 286,224.



Claim.—1. A railway switch including the rails of a main track and a side track, connecting switch rails adapted to be vertically reciprocated and provided with notches, a plurality of cam rods arranged transversely to said switch rails and engaging said notches and means for reciprocating said cam rods.

2. A railway switch including a main track and a side track, connecting switch rails adapted to be vertically reciprocated and provided with a plurality of T-shaped notches, a plurality of cam rods arranged transversely to said switch rails and provided with inclined surfaces and lateral flanges adapted to engage said slots in the switch rails and means for reciprocating said cam rods longitudinally.

3. A railway switch including a main and a side track, connecting switch rails adapted to be vertically reciprocated, guides for said switch rails, T shaped notches in the lower margin of said rails, a plurality of cam rods arranged transversely to said rails, said cam rods provided with a plurality of oppositely inclined surfaces and lateral flanges adapted to interlock with said notches and means for reciprocating said cam rods longitudinally.

4. A railway switch including a main and a side track, connecting switch rails adapted to be vertically reciprocated, lateral guides for said rails secured to the sleepers, filling members interposed between the said switch rails and their adjacent fixed rails, rectangular notches formed in the lower margin of each switch rail and adapted to engage the sleepers, T-shaped notches in the lower margin of the switch rails, a plurality of cam rods arranged transversely to said rails, said rods having oppositely inclined surfaces and lateral flanges adapted to interlock with said T-shaped notches and means for simultaneously reciprocating said cam rods longitudinally.

5. A railway switch including a main track and a side track, switch rails connecting the rails of the main and side tracks, a plurality of series of notches in said rails, a plurality of rods arranged transversely to said switch rails and provided with cams adapted to engage one of said series of notches and means for reciprocating said rods.

6. A railway switch including a main and a side track, switch rails connecting the rails of the main track with the rails of the side track and provided with T-shaped notches in their lower margins, a plurality of cam rods arranged transversely to said switch rails and provided with cams adapted to engage the said T-shaped notches, means for reciprocating said rods, said means consisting of a plurality of bell crank levers connecting said cam rods with an actuating lever.

7. A railway switch including a main and a side track, switch rails connecting the rails of the main track with the rails of the side track and provided with two series of rectangular and T-shaped notches formed in their lower margins, one of said series of notches adapted to engage the ties, a plurality of cam-rods arranged transversely to said switch rails and provided with cams adapted to engage the other of said series of notches, means for reciprocating said cam rods, said means consisting of a plurality of bell crank levers arranged in series, having link attachment with said cam levers, and pivotal connection with an actuating lever.

855,157. PROCESS OF REDUCING METALLIC SULFIDS. FREDERICK M. BECKET, Niagara Falls, N. Y. Filed Mar. 5, 1907. Serial No. 360,712.

Claim.—1. The process which consists in reacting upon a metallic sulfid with silicon.

2. The process which consists in reacting upon a metallic sulfid with a silicon alloy.

3. The process which consists in reacting upon a metallic sulfid with ferrosilicon.

4. The process which consists in commingling a metallic sulfid and a silicon-bearing reducing agent, and electrically smelting the mixture.

5. The process which consists in commingling a metallic sulfid and ferrosilicon, and electrically smelting the mixture.

6. The process of producing metals of low silicon and carbon content which consists in reacting upon a metallic sulfid with silicon, the silicon being present in substantially the proportion required to unite with the sulfur of the sulfid.

7. The continuous process of reducing metallic sulfid which consists in smelting a mixture of said sulfid and a silicon-bearing reducing agent, adding fresh portions of the charge, and withdrawing the product as desired.

8. The process of reducing molybdenum sulfid which consists in reacting thereon with silicon.

9. The process of reducing molybdenum sulfid which consists in reacting thereon with a silicon alloy.

10. The process of reducing molybdenum sulfid which consists in reacting thereon with ferrosilicon.

11. The process of reducing molybdenum sulfid which consists in reacting thereon with silicon in substantially the proportion required to unite with the sulfur of the sulfid.

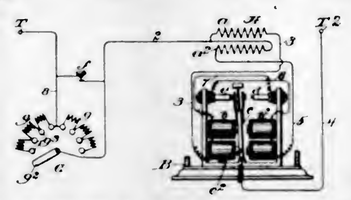
12. The process of reducing molybdenum sulfid which consists in reacting thereon with ferrosilicon in substantially the proportion required to supply silicon to unite with the sulfur of the sulfid.

12. The process of reducing molybdenum sulfid which fid which consists in smelting a mixture of molybdenite and silicon, adding fresh portions of the charge, and withdrawing the product as desired.

855,158. DEMAGNETIZER. DONALD M. BLISS, New York, N. Y., assignor to Engineering Specialty Company, a Corporation of New York. Filed Mar. 1, 1906. Serial No. 303,621.

Claim.—1. In a demagnetizer, a solenoid having two windings in opposite directions; and means for alternately connecting the said windings in circuit from a suitable source of current, whereby the direction of flow of current through the solenoid is reversed at intervals.

2. In a demagnetizer, a solenoid having two reversely wound coils; and an electromagnetic device for alternately connecting said coils in circuit with a suitable source of current.



3. A demagnetizer having a solenoid provided with coils reversely wound; an electromagnet in circuit with each coil; and a switch controlled by said electro magnets for electrically connecting said coils in circuit with a suitable source of current.

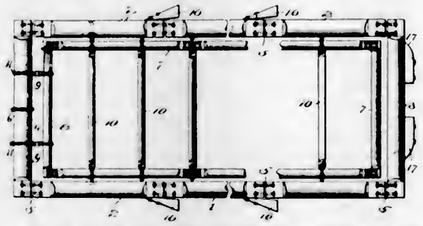
4. In a demagnetizer, the combination with a solenoid provided with reversely wound coils; of an electro magnet in circuit with each coil; a vibrating armature located in the magnetic field of both electro magnets; a circuit closer for closing said circuit through one electro magnet when said armature is attracted by the other; and means for controlling the main circuit through the instrument.

5. In a demagnetizer, the combination with a solenoid having reversely wound coils; of an electro magnetic switch for alternately connecting said coils in circuit with a suitable source of current; and a manually operated circuit closer for closing the circuit through said demagnetizer.

6. In a demagnetizer, the combination with a solenoid having reverse windings; of a circuit for each winding; an electro-magnetic device for alternately closing said circuits; and a rheostat to control the main circuit through the instrument, whereby the strength of the current is gradually varied.

7. In a demagnetier, the combination with an inclosed solenoid having reverse windings; of a circuit for each winding; an electro-magnetic device for alternately controlling said circuits; and an inclosing case for said electro-magnetic device, said case also constituing a support for the solenoid.

855,159. LOG-RAFTING APPLIANCE. MICHAEL F. BROWN, Seattle, Wash. Filed Dec. 18, 1906. Serial No. 348,472.

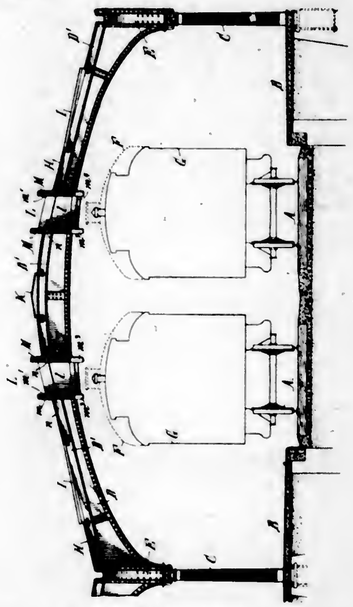


Claim.—1. A logging raft, comprising a system of loosely connected booms, and tapered blocks secured to the booms and projecting over the joints.

2. A logging raft, comprising a system of loosely connected booms, and approximately wedge-shaped blocks having their reduced ends secured to the booms while their larger ends project over the joints between the booms.

3. In a logging raft, the combination of an outer raft, an inner raft, a chain connecting the tow stick of the outer raft to the head stick of the inner raft, an eye at one end of the chain, a hook at the opposite end of the chain adapted to engage an intermediate portion thereof, and a U bolt carried by the hook and engaging the chain to prevent accidental releasing of the hook.

855,160. RAILROAD TRAIN-SHED. ABRAHAM L. BUSH, East Orange, N. J. Filed Dec. 27, 1905. Serial No. 293,537.



Claim.—1. In a railroad train shed, the combination of a roof having transverse members which extend across the track and longitudinal walls carried by said members and forming between them a ventilating duct which extends lengthwise and centrally over the track and opens through the roof directly into the outer air, whereby the steam, smoke and gases issuing from a locomotive in any position on the track are discharged directly into the outer air and prevented from becoming disseminated in the shed and remaining therein, substantially as set forth.

2. A railroad train shed provided in its roof above the track with purlins or longitudinal walls, forming between them a ventilating duct which extends lengthwise and centrally over the track and opens through the roof directly into the outer air, and with transverse rafters to which said purlins or longitudinal walls are secured and which extend across said duct, substantially as set forth.

3. In a railroad train shed, the combination of transverse rafters, purlins or longitudinal walls which are intersected by and secured to the rafters and form between them a ventilating duct which is arranged lengthwise over the track and opens directly into the outer air, and a roof which is fitted against the outer sides of the purlins or longitudinal walls, with the upper portions of the latter projecting above the roof, substantially as set forth.

4. In a railroad train shed, the combination of transverse rafters and purlins or longitudinal walls which are intersected by and secured to the rafters and form between them a ventilating duct which is arranged lengthwise over the track and opens upwardly directly into the outer air, said rafters extending across said duct and said purlins or longitudinal walls extending below the rafters and across the under sides of the same, substantially as set forth.

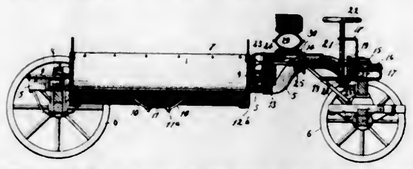
5. In a railroad train shed, the combination of transverse rafters and purlins or longitudinal walls secured to the same and forming between them a longitudinal duct which opens upwardly into the outer air, said rafters being provided with water conduits which extend lengthwise

of the rafters and through said purlins or longitudinal walls, substantially as set forth.

6. In a railroad train shed, the combination of transverse rafters and purlins or longitudinal walls secured to the same and forming between them a longitudinal duct which opens upwardly into the outer air, said rafters extending across said duct and said rafters being provided within said duct with a concrete covering having in its top a gutter which opens through the purlins or longitudinal walls, substantially as set forth.

7. A railroad train shed provided in its roof above the track with purlins or longitudinal walls, forming between them a longitudinal duct which opens through the roof upwardly into the outer air, said purlins or longitudinal walls extending below the roof and being provided below the roof with openings for the escape of steam and gases from the space underneath the roof into said duct, substantially as set forth.

855,161. DUMPING-WAGON. RICHARD G. CATOR and LEON. CATOR, Palmyra, N. Y., assignors to Cator Dump Wagon Company, Palmyra, N. Y., a Corporation of New York. Filed July 27, 1906. Serial No. 328,008.



Claim.—1. In a wagon, a semi cylindrical box, rods secured to the corners of the box and extending diagonally therefrom toward the center of the under side of the box, and means connecting the inner ends of said rods with the bottom of the box.

2. In a wagon, a semi-cylindrical box, rods secured to the corners of the box, and extending diagonally therefrom toward the center of the box and following the curvature of the box, and means for adjustably connecting the inner ends of the rods with the bottom of the box.

3. In a wagon, a semi-cylindrical box, rods secured to the corners of and extending under said box, a plate secured to the under side of the box, and means for adjustably connecting the inner ends of said rods with said plates.

4. In a wagon, a semi-cylindrical box, brace rods extending diagonally under said box and means adjustably connecting said rods with said box.

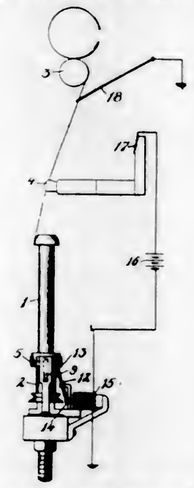
5. In a wagon, a sheet metal box, means for bracing said box, said means consisting of a plate secured to the under side of the box at its center, said plate having lugs thereon, threaded rods passing through said lugs and having adjusting nuts adjacent to said lugs, said rods being rigidly secured to said box.

6. In a wagon, a rotatably mounted box, means for locking said box against rotation, said means adapted to be released by the foot or feet of the driver, and to automatically engage the box when in its normal position, and manually operable means for rotating said box in either direction.

7. In a wagon, a semi-cylindrical metal box having trunnions rotatably mounted in a suitable frame, means for rotating said box, said means consisting of a pulley mounted on one of the trunnions, a chain wound on said pulley and on a drum, normally operable means for operating said drum, and means for locking said box against rotation, said means comprising a spring held latch engaging the box, and a foot operated shaft connected with said latch.

8. In a wagon, a semi-cylindrical metal box rotatably mounted in a suitable frame, means for rotating said box, said means comprising a grooved pulley secured to said box, a chain traveling over said pulley and means for manually operating said chain, in combination with manually operable means for locking said pulley against rotation when the box is in dumping positions.

855,162. STOP MECHANISH FOR BOBBINS. RICHARD H. COOK, Fall River, Mass., assignor to American Thread Company, Fall River, Mass., a Corporation of New Jersey. Filed Mar. 15, 1906. Serial No. 306,097.



Claim.—1. A stop mechanism for a winding bobbin, comprising a spring-pressed ring for disengaging the bobbin from the driving spindle, provided with a depending post, a standard supporting and guiding said post; a latch member normally holding said ring free from the bobbin, and means for releasing said latch automatically upon the breaking of the yarn.

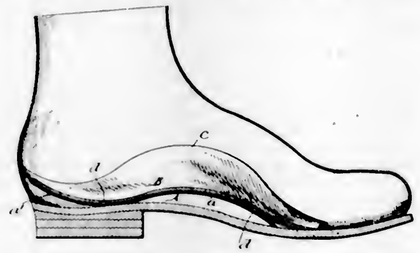
2. A stop mechanism for a winding bobbin, comprising a spring-pressed ring for disengaging the bobbin from the driving spindle, provided with a depending post, a standard supporting and guiding said post; a latch member normally holding said ring free from the bobbin, and electrically operated means for releasing said latch automatically upon the breaking of the yarn.

3. A stop motion for a winding bobbin, comprising a lifting ring provided with a depending post, a standard supporting and guiding said post, a latch normally holding said ring disengaged from the bobbin, a pivoted lever carrying said latch, an armature carried by said lever, and electromagnetically operable means for retracting said armature and releasing said lifting means upon the breaking of the yarn.

4. A stop motion for a winding bobbin comprising a lifting ring adapted to engage the base of the bobbin, a post depending from said ring, a standard provided with a socket to support and guide said post, a spring between the base of said post and the bottom of said socket, a latch member normally holding said post in its depressed position, a pivoted lever carrying said latch, an armature carried by said lever, and electromagnetically operable means for retracting said armature and releasing said lifting means upon the breaking of the yarn.

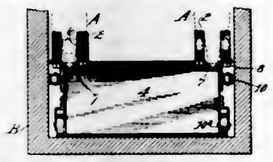
855,163. SPRING-INSOLE FOR SHOES. CORNELIUS J. COTTER, Buffalo, N. Y. Filed Sept. 5, 1905. Serial No. 277,023.

Claim.—An insole spring for shoes constructed of a sheet of spring metal, and consisting of a front part having the form of an arch and a rear part having the form of a tongue which curves upwardly and rearwardly from the rear end of said arch, said insole being adapted to rest on the bottom of a shoe at the front end of said arch and at the junction of said arch and tongue so as to elevate the central part of the arch and the rear part of said tongue above the bottom of the shoe and cause the same to be depressed alternately by the instep and heel of the foot, thereby producing a rocking movement of the insole in the act of walking, substantially as set forth.



855,164. CURRENT-MOTOR. EUSEBE P. COUTURE, Knightsen, Cal. Filed Mar. 8, 1906. Serial No. 304,848.

Claim.—1. In a current motor of the character described, an inclosed horizontal water-way, parallel shafts journaled above the way, with sprockets fixed thereto in pairs, chains composed of alternate double and single links pivoted together, triangular sheet metal buckets having outwardly turned flanges upon the upper sides, bolts by which said flanges are secured to the exterior members of pairs of the double links, and rollers journaled on the lower angles, and upon the sides of the buckets.



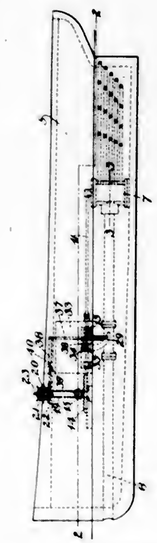
2. In a current motor of the character described, an inclosed horizontal water-way or channel, parallel sprocket-carrying shafts journaled above the way, endless chains composed of alternate double and single links pivoted together so that the sprocket teeth may enter the spaces between the double links, triangular sheet metal buckets having outwardly turned flanges along their upper edges, bolts by which said bucket flanges are secured to the exterior members of pairs of the double links, and angular plates or housings bolted to the exterior sides of said links.

855,165. DEVICE FOR PROPELLING AND STEERING VESSELS. WILLIAM O. CUTTER, Natick, Mass. Filed Apr. 13, 1906. Serial No. 311,502.

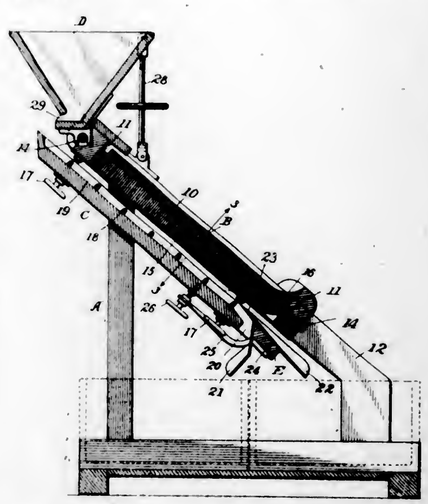
Claim.—1. In combination, a vessel, a water pipe extending longitudinally of the hull of said vessel beneath the water line and opening at one end thereof out of the bow of said vessel, a cock consisting of a casing provided with an inlet orifice connected to the other end of said pipe and a rotatable plug provided with a passage extending therethrough having sides diverging adjacent to the inlet orifice of said casing, a plurality of outlet pipes leading from said cock to the stern of said vessel, an ejector having its inlet and outlet orifices connected to said pipe between said cock and bow, and a receptacle for fluid under pressure connected to the intermediate orifice of said ejector.

2. In a jet propulsion and steering apparatus for a vessel, a cock consisting of a casing provided with an inlet orifice, a plurality of outlet orifices and a rotatable plug provided with a passage extending therethrough having sides diverging adjacent to the inlet orifice of said casing, said passage connecting said inlet to said outlet orifices, and a plurality of outlet pipes leading from said outlet orifices out of the stern of said vessel.

855,165.



855,166. MAGNETIC ORE-SEPARATOR. EDGAR A. EDWARDS, Cincinnati, Ohio, assignor to Alice V. Edwards, Cincinnati, Ohio. Filed July 30, 1904. Serial No 218,793.



Claim.—1. In an electro-magnetic separator, the combination with an inclined magnetic element the under surface of which co-operates with the material under treatment, of a circuit therefor, a source of energy adapted to produce in said circuit an alternating current having periods of rest between successive alternations, and means for feeding stock beneath said element, substantially as described.

2. In an electro-magnetic dry separator, an inclined

magnetic element having a laminated core the under surface of which co-operates with the material under treatment, means for alternately energizing said element positively and negatively and causing periods of rest between successive energizations, and means for feeding stock to the under surface of said element, the inclination of said element being such that the magnetic particles move along its under surface unaided except by gravity and magnetism, substantially as described.

3. In an electro-magnetic separator, the combination with an inclined magnetic element, of means for periodically energizing said element and causing periods of rest between successive energizations, an inclined stationary tray arranged beneath said element and adapted to convey the stock along the magnetic element, and means for feeding stock between said element and tray, the inclinations of said element and tray being such that the stock will travel along the same unaided except by gravity and magnetism, substantially as described.

4. In an electro-magnetic separator, the combination with an inclined magnetic element, of means for periodically energizing said element and causing periods of rest between successive energizations, an inclined stationary tray arranged beneath said element and adapted to convey the stock along the magnetic element, means for feeding stock between said element and tray, the inclinations of said element and tray being such that the stock will travel along the same unaided except by gravity and magnetism, and means for adjusting the tray to and from said element, substantially as described.

5. In an electro-magnetic separator, the combination with an inclined magnetic element, of means for periodically energizing said element and causing periods of rest between successive energizations, an inclined stationary tray arranged beneath said element and adapted to convey the stock along the magnetic element, means for feeding stock between said element and tray, the inclination of said element being such that the stock will travel along the same unaided except by gravity and magnetism, and independent means at each end of the tray for adjusting the respective ends of the tray to and from the magnetic element, substantially as described.

6. In an electro-magnetic separator, the combination with an inclined magnetic element, of means for periodically energizing said element and causing periods of rest between successive energizations, an inclined tray arranged beneath said element and adapted to convey the stock along the magnetic element, means for feeding stock between said element and tray, the inclination of said element being such that the stock will travel along the same unaided except by gravity and magnetism, and a guide at the lower end of said tray adapted to direct the ore and gangue to their respective places of deposit, substantially as described.

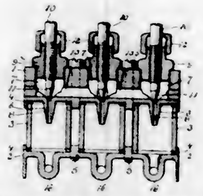
7. In an electro-magnetic separator, the combination with an inclined magnetic element, of means for periodically energizing said element and causing periods of rest between successive energizations, an inclined tray arranged beneath said element and adapted to convey the stock along the magnetic element, means for feeding stock between said element and tray, the inclination of said element being such that the stock will travel along the same unaided except by gravity and magnetism, and a guide interposed between the tray and magnetic element, substantially as described.

8. In an electro-magnetic separator, the combination with an inclined magnetic element, of means for periodically energizing said element and causing periods of rest between successive energizations, an inclined tray arranged beneath said element and adapted to convey the stock along the magnetic element, means for feeding stock between said element and tray, the inclination of said element being such that the stock will travel along the same unaided except by gravity and magnetism, a guide at the lower end of said tray adapted to direct the ore and gangue to their respective places of deposit, and means for adjusting said guide, substantially as described.

9. In an electro-magnetic separator, the combination with an inclined magnetic element the under surface of which co-operates with the material under treatment, and with means for feeding stock to the under surface of said element, means for positively and negatively magnetizing the coils with periods of rest between energizations, and means for causing said field to shift transversely of the magnetic element, for the purpose set forth.

10. In an electro-magnetic separator, the combination of an inclined magnetic element having a series of coils arranged transversely to the flow of the magnetic particles along said element, a common source of current for said coils, means for feeding stock beneath said element, and means for successively energizing and de-energizing said coils, and producing periods of rest between successive energizations, the period of rest of one coil occurring when the adjacent coil is energized, substantially as described.

855,167. MULTIPLE SIGHT-FEED OILER. GEORGE B. ESSEX, Detroit, Mich. Filed Oct. 9, 1905. Serial No. 281,897.



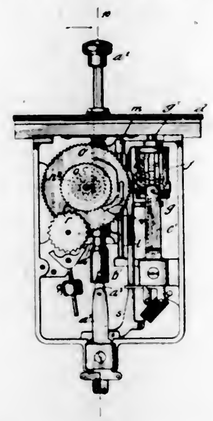
Claim.—1. The combination of a sight-feed having a series of sight-glasses and discharge passages leading therefrom, a series of externally screw-threaded stems forming a continuation of said passages and extending laterally from the sight-feed to project through openings in a dash-board or similar support, tubes connected to the ends of said stems, and nuts on the stems to engage the dash-board and secure the sight-feed thereto.

2. The combination of a head having a longitudinal oil passage, a stem formed integral with said head and extending laterally therefrom and provided with a passage communicating with the passage in the head, a supply pipe connected to said stem, a lower head provided with discharge passages, a series of sight-tubes interposed between said heads, a series of stems formed integral with the lower head and extending laterally therefrom with passages communicating with the discharge passages, tubes secured to the ends of said screws or stems, and means on said stems for securing the same within openings in a dash-board with the heads in contact with the face of said board.

3. The combination of a head formed with a longitudinal passage for oil and with ducts leading from said passage for the discharge of the oil therefrom, a series of needle valves to control the flow of oil through said ducts, an externally screw-threaded stem formed integral with said head with a passage communicating with the passage therein and extending laterally from the rear side of said head, a lower head formed with a series of discharge passages, sight-tubes interposed between said heads, a series of stems formed integral with the lower head with passages communicating with the discharge passages and extending laterally from the rear side of the head, there being a downwardly extending flange on the front side of said lower head.

4. The combination of a head formed with chambers and a longitudinal passage connecting said chambers and recesses in its lower side, a series of nipples extending downward from the lower side of the head in the axis of said recesses and provided with ducts communicating with the chambers, valve fittings screwed into the upper ends of said chambers, valve stems extending through said fittings and provided with needle points to engage the said ducts, a stem formed integral with said head and extended laterally from the rear side thereof, a lower head formed with a series of recesses and discharge passages leading from the axes of said recesses, sight-tubes engaging the recesses in said heads, externally screw-threaded stems having passages communicating with the discharge passages and extending laterally from the rear side of said lower head, nuts on said stems, there being a flange extending downward from said lower head at the front side thereof.

855,168. SIGNALING-KEY. OSCAR F. FORSBERG and JULES A. BIERSFIELD, Chicago, Ill., assignors to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 27, 1902. Serial No. 128,871.



Claim.—1. In a ringing key for telephone switchboards, the combination with a switch adapted to control the application of ringing current, of a number of transmitter members for determining the actuation of said switch, selecting mechanism whereby any one of said transmitter members may be brought into operative relation to the switch, and motor mechanism arranged to operate the switch through the agency of the selected transmitter.

2. In a key, the combination with a switch, of a number of distinctive signal transmitters, a plunger adapted in its rotation to bring any of said transmitters and the switch into operative correlation, said plunger being adapted in a longitudinal movement to cause the coöperation of the selected transmitter with the switch to produce a distinctive signal.

3. The combination with a signal switch, of a transmitter cylinder independent of the circuit of said switch, and a series of transmitter members carried by said cylinder and arranged to be selected or brought into operative relation to the signal switch by the relative rotation of the cylinder, the transmitter so selected being caused to engage and operate the signal switch by the relative longitudinal movement of the cylinder.

4. In a key, the combination with a rotatable and longitudinally-movable plunger, of a main switch operated by the depression of the plunger, a subsidiary switch adapted when operated to produce signals in the circuit governed by said main switch, a number of transmitter members for determining the actuation of said subsidiary switch, any one of said transmitter members being brought into operative relation to the switch by the rotation of the plunger, a motor mechanism set in operation by the depression of the plunger, adapted to bring the subsidiary switch and the selected transmitter member into active co-operation in the transmission of a signal and mechanism for retaining the plunger during the operation of the transmitting mechanism.

5. In a ringing key the combination with a switch for controlling the application of ringing current, of a series of transmitter members, said members being adapted to be selected or brought into operative relation to the switch, a longitudinally movable plunger, motor mechanism set in the depression of the plunger adapted to effect a movement of the selected transmitter member to operate said switch, and means actuated by the plunger at the end of its downward movement adapted to release said motor mechanism.

6. In a ringing key, the combination with a transmitter for controlling the application of ringing current, said transmitter comprising a switch and a transmitter member adapted to engage the switch to determine its operation, of a longitudinally-movable plunger adapted in its depression to effect a relative movement of the switch and transmitter member, motor mechanism set in the depression of the plunger, means actuated by the plunger at the end of its downward movement to release the motor mechanism to effect a reverse relative movement of the switch and transmitter member, and mechanism also actuated by the plunger at the end of its downward movement operating to establish an operative condition of the transmitter only during the reverse relative movement of the switch and transmitter member.

7. In a ringing key, the combination with a subsidiary switch for controlling the application of ringing current to a line, of a transmitter cylinder, a series of transmitter members carried by said cylinder and arranged to be brought selectively into operative relation to the subsidiary switch by the relative rotation of the cylinder and to actuate said switch by a relative longitudinal movement of the cylinder, a rotatable and longitudinally movable plunger adapted in its rotation to effect a rotation of the cylinder and in its depression to effect a longitudinal movement of the cylinder, motor mechanism set in the depression of the plunger for effecting a reverse longitudinal movement of the cylinder independent of the plunger, means actuated by the plunger at the end of its downward movement to release said motor mechanism, a catch for holding the plunger depressed during the reverse movement of the cylinder, and a main switch actuated while the plunger is depressed, to establish connection between the aforesaid subsidiary switch and the line.

8. In a ringing key, the combination with a main switch for controlling the application of ringing current to a line, of a plunger adapted when depressed to operate said switch, a transmitter adapted to determine the character of the ringing current applied through the main switch, said transmitter being made operative by the depression of the plunger, a detent lever *s* for holding the plunger depressed and a cam *s'* moved against the detent lever in the operation of the transmitter to release the plunger.

9. In a ringing key, the combination with a switch *c* of a transmitter member *f* adapted to be moved to actuate said switch, a transmitter carriage *m*, a manually operated plunger for moving said transmitter carriage, clockwork for returning said carriage to its normal position, mechanism for transmitting motion from the plunger to the transmitter carriage as the plunger is depressed, means operated at the end of the downward movement of the plunger to release the transmitter carriage from the plunger, whereby the carriage is allowed to return independently of the plunger, a detent lever *s* for holding the plunger depressed while the transmitter carriage is returning, and a cam *s'* actuated by the clockwork to release the plunger at the end of the return movement of the transmitter carriage, substantially as described.

10. In a ringing key, the combination with a plunger, of a cam plate *n* rotated by the depression of the plunger, a disk *n'* and mechanism for coupling the cam plate with the disk while the plunger is being depressed, a device p^2 operating to disconnect the disk from the cam plate when the plunger reaches the limit of its downward movement, clockwork for causing a reverse rotation of the disk to return it to its normal position, a detent lever *s* operating to hold the plunger depressed, a cam *s'* carried by the disk *n'* and adapted to be brought into engagement with detent lever *s* to effect the release of the plunger as the disk completes its reverse movement, a transmitter member moved in the rotation of the disk, and a ringing switch operated by said transmitter member, substantially as described.

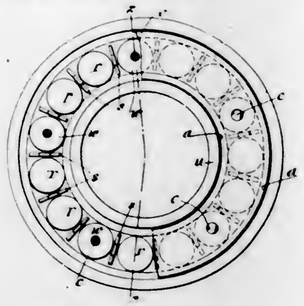
11. In a ringing key the combination with a switch for

controlling the application of ringing current, of a series of transmitter members, a support therefor, said members being adapted to be selected or brought into operative relation to the switch, a longitudinally-movable plunger, motor mechanism set in the depression of the plunger adapted to effect a movement of said transmitter support, the selected transmitter member as the support is moved operating said switch, and means actuated by the plunger at the end of its downward movement adapted to release said motor mechanism.

12. The combination with a signal switch, of a cylinder, a series of transmitter members carried thereby, and a rotatable plunger adapted to rotate said cylinder and bring any one of said transmitter members individually into operative relation to the switch, said plunger being adapted when moved longitudinally to effect a longitudinal movement of the cylinder and cause the selected transmitter member to operate said switch.

13. In a ringing key for telephone switchboards, the combination with a switch adapted to control the application of ringing current, of a number of transmitter members for actuating said switch, a plunger adapted when rotated to bring any individual transmitter member into operative relation to the switch, and motor mechanism set by said plunger in its longitudinal movement, adapted to operate the switch through the agency of the selected transmitter.

855,169. ROLLER-BEARING. ERNST GESCHKE, Charlottenburg, Germany, assignor to The Firm of Deutsche Waffen & Munitionsfabriken, Berlin, Germany. Filed Dec. 20, 1906. Serial No. 348,690.



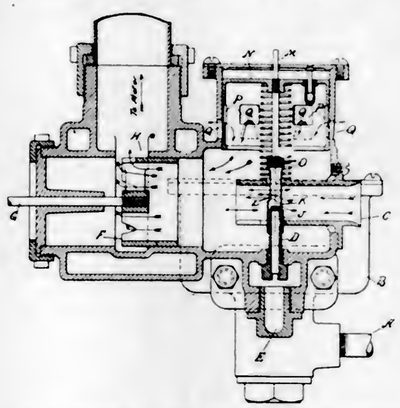
Claim.—In a roller-bearing, the combination, with inner and outer bearing-rings having grooves at the sides thereof, of a roller-cage comprising annular side-plates which fit in said grooves, distance-pieces secured between said side-plates, pins connecting said side-plates, rollers mounted on said pins between certain of said distance-pieces and traveling in contact with said bearing-rings, and free unmounted rollers travelling in contact with the bearing-rings between the other distance-pieces.

855,170. CARBURETER. BUDD D. GRAY, New York, N. Y. Filed July 14, 1905. Serial No. 269,626.

Claim.—1. In a carbureter having an air admission opening of unchanging constant area, the combination with said opening of fuel admitting means with which the air entering said opening coöperates, and mechanism controlled by the suction of the motor, and adapted on the increased speed of the motor, to increase the fuel entraining power of the air.

2. In a carbureter, the combination with auxiliary air-admitting means, of fuel-controlling means connected thereto and operated thereby; whereby the fuel supply will vary in direct proportion to the supply of auxiliary air.

3. In a carbureter, the combination with a fuel-admitting nozzle, of an air stream director coöperating with the nozzle, and means controlled by the suction of the motor for adjusting said director relatively to the nozzle.



4. In a carbureter, the combination of air-admitting means, fuel-admitting means, an air stream director coöperating with the fuel-admitting means to vary the amount of fuel entrained, and connections between the director and air-admitting means for controlling the entraining power of the air stream.

5. In a carbureter, the combination of an auxiliary air-admitting means, fuel-admitting means, an air stream director coöperating with the fuel-admitting means to vary the amount of fuel entrained, and operative connections between the director and the auxiliary air-admitting means, acting to control the entraining power of the air stream.

6. In a carbureter, the combination of a fuel-admitting nozzle, a movable cylinder provided with an air stream director coöperating with the nozzle to vary the amount of fuel entrained, and means controlled by the suction of the motor for moving the cylinder, and thereby varying the fuel entraining power of the air stream.

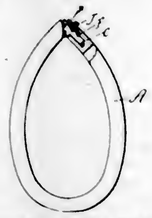
7. In a carbureter, the combination of a fuel-admitting nozzle, an adjustable cylinder provided with an air stream director coöperating with the nozzle to vary the amount of fuel entrained, said director being formed to cause the air current to flow in an oblique direction, and means controlled by the suction of the motor for moving the cylinder, and thereby varying the entraining power of the air stream.

8. In a carbureter, the combination of a fuel-admitting nozzle, an adjustable cylinder provided with an air stream director coöperating with the nozzle and movable out of operative relation to the same, and automatic means controlled by the speed of the motor for so adjusting the cylinder that at high speeds the air stream director will be moved to an inoperative position.

9. In a carbureter, the combination of a fuel-admitting nozzle, an air stream director coöperating therewith and movable out of operative relation thereto, and means controlled by the speed of the motor for adjusting the air stream director relatively to the nozzle at low speeds, and acting to move the air stream director out of operative relation to the nozzle at high speeds.

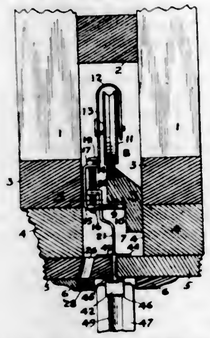
10. In a carbureter, the combination of a fuel-admitting nozzle, primary air-admitting means adapted to supply air in constant volume, auxiliary air-admitting means controlled by the speed of the motor and adapted on increased speed to admit an auxiliary supply of air in increasing volume, and a device controlled by the auxiliary air-admitting means, and acting to vary the entraining power of the primary air on the nozzle in direct proportion to the auxiliary air supply.

855,171. FASTENER FOR HORSE-COLLARS. ABRAHAM GREENSPAN, Philadelphia, Pa. Filed July 21, 1906. Serial No. 327,118.



Claim.—In combination with a horse collar, a shank secured in one end thereof, a latch hinged to said shank, said latch having notches formed therein, a socket secured in the opposite end of the collar adapted to receive the latch, two pawls pivoted in the socket and adapted to engage the notches in the latch, a link connecting the two pawls and a push rod pivoted to the link whereby both pawls may be actuated by the depression of the push rod, as specified.

855,172. DOOR-HANGER AND TRACK THEREFOR. JOHN HANDSCHUMACHER, San Francisco, Cal. Filed Apr. 6, 1906. Serial No. 310,213.



Claim.—1. In combination with a door hanger, a wooden track beam having a mortise at the top of one side, a wooden rail secured to said beam in said mortise, the upper edge of the rail extending above the beam, a hanger and a wheel mounted in said hanger and running upon said rail, said beam being also mortised at the lower portion of the same side, and a guard plate carried by the hanger and passing into said mortise to limit the vertical and lateral movement of the hanger, substantially as described.

2. In a door hanger, the combination of a wheel, a plate having a yoke in which the wheel is rotatably mounted, said plate being bent out at right angles and then inward again to form bearings, an adjusting screw passing through said bearings, and a hanger proper having a flange through which the screw is screwed, substantially as described.

3. In a door hanger, the combination of a wheel, a plate having a yoke in which the wheel is rotatably mounted, said plate being bent out at right angles and then inward again to form bearings for an adjusting screw, an adjusting screw passing through said bearings, the plate having a lip cut out therefrom and bent downward over the screw to hold it in position, and a hanger proper having a flange through which the screw is screwed, substantially as described.

4. In a door hanger, the combination of a wheel, a plate having a yoke in which the wheel is rotatably mounted, said plate being bent out at right angles and then inward again to form bearings for an adjusting screw, an adjusting screw passing through said bearings, and a hanger proper adjustably supported on said screw, substantially as described.

5. In a door hanger, the combination of a wheel, a plate having a yoke in which the wheel is rotatably mounted, said plate being bent out at right angles and then inward again to form bearings for an adjusting screw, an adjusting screw passing through said bearings, a guard plate secured to the first named plate, and a hanger passing through a slot in the guard plate, and having a flange through which the screw is screwed, substantially as described.

6. In combination with a door hanger, a door plate secured to the top of the door, a latching plate pivoted beneath said door plate, said plates having slots through which the hanger can pass, the lower end of the hanger having notches, and the latching plate having tongues adapted when the plate is turned on its pivot to engage said notches, to secure the plate to the hanger, substantially as described.

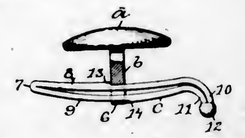
7. In combination with a door hanger, a door plate secured to the top of the door, a latching plate pivoted beneath said door plate, said plates having slots through which the hanger can pass, the lower end of the hanger having notches, and the latching plate having tongues adapted when the plate is turned on its pivot to engage said notches, to secure the plate to the hanger, and a spring for moving said plate, substantially as described.

8. In combination with a door hanger, a door plate secured to the top of the door, a latching plate pivoted beneath said door plate, said plates having slots through which the hanger can pass, the lower end of the hanger having notches, and the latching plate having tongues adapted when the plate is turned on its pivot to engage said notches, to secure the plate to the hanger, and a spring for moving said plate, the top of the door having a depression permitting an instrument to be inserted to engage the edge of the latching plate, substantially as described.

9. In combination with a door hanger, a door plate secured to the top of the door, a latching plate pivoted beneath said door plate, said plates having slots through which the hanger can pass, the lower end of the hanger having notches, and the latching plate having tongues adapted when the plate is turned on its pivot to engage said notches, to secure the plate to the hanger, and a spring for moving said plate, the door plate having a curved slot and the latching plate having an aperture beneath said slot, substantially as described.

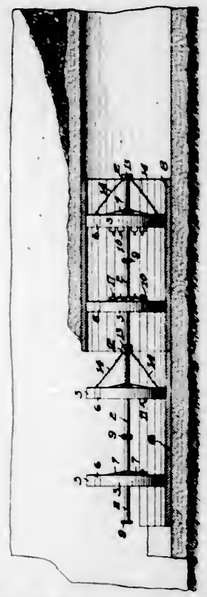
10. In combination with doors having recesses cut out at the top of their meeting edges, a stop therefor comprising a U-shaped piece, a bolt upon which said U-shaped piece is screwed, and plates in contact with the upper and lower surfaces respectively of the head jambs, through which plates said bolt passes, substantially as described.

855,173. BUTTON OR STUD. CHARLES E. HANSEN, Providence, R. I. Filed June 28, 1906. Serial No. 323,840.



Claim.—A button composed of a head, a shank having a hole transversely through its outer end, a shoe composed of two spaced concavo-convex spring arms one overlying the other and being connected to one another at each of their ends, and being passed through said hole, a shoulder on the outer face of the upper arm engaging said shank at a point above said hole, and a shoulder on the outer face of the lower arm to engage the opposite side of said shank below said hole.

855,174. MOLD FOR CONCRETE CONSTRUCTION. FRANCIS M. HENRY, Minneapolis, Minn. Filed Dec. 18, 1905. Serial No. 292,126.



Claim.—1. A mold for concrete construction comprising a ring divided into a series of segments spaced from one another, means supporting said segments, blocks wedge-shaped in cross section adapted to fit into the spaces between the ends of the contiguous segments, means for moving said blocks toward or from the center of the mold to contract or expand the same, and a planking inclosing said ring, substantially as described.

2. A mold for concrete construction comprising a ring divided into a series of segments spaced from one another, means for supporting said segments, blocks wedge-shaped in cross section fitting into the spaces between the ends of adjoining segments, means for moving said blocks toward or from the center of the mold to contract or expand the same, a planking inclosing said ring, and means for temporarily locking said planking on said segments, substantially as described .

3. A mold for concrete construction comprising rings each divided into a series of segments, each segment of a ring being spaced from the adjoining segment of the same ring, blocks wedge-shaped in cross section fitting into the spaces between said segments, mechanism for moving said segments and said blocks toward or from the center of the mold to contract or expand the same, and means connecting the moving mechanism of one ring with the corresponding mechanism of the other ring, and a planking inclosing said rings, substantially as described.

4. A mold for concrete construction comprising a ring divided into a series of segments with spaces between them, blocks wedge-shaped in cross section fitting into said spaces, a centrally arranged rod, and bars connecting said rod with said segments and said blocks respectively, and the bars connecting said blocks with said rod forming a smaller angle therewith than the bars connecting said segments and said rod, and a planking inclosing said ring, substantially as described.

5. A mold for concrete construction comprising a ring divided into a series of segments with spaces between them, blocks wedge-shaped in cross section fitting into said spaces, a centrally arranged rod, means connecting said rod with said segments and said blocks respectively, and whereby the longitudinal movement of said rod will impart a greater initial movement to said blocks than to said segments, and a planking inclosing said ring, substantially as described.

6. In a mold for concrete construction, the combination, with a ring divided into a series of segments with spaces between their contiguous ends, of blocks wedge-shaped in cross section fitting into said spaces and engaging the ends of said segments, a longitudinally movable rod, and means connecting said rod and blocks to move the latter toward and from the center of the mold to contract and expand said ring and a casing inclosing said ring.

7. In a mold for concrete construction, the combination with a ring divided into a series of segments with spaces between the contiguous ends of adjoining segments, and blocks wedge-shaped in cross section fitting into said spaces, of a centrally arranged rod, and bars connecting said rod with said segments and said blocks, the bars connecting said segments with said rod being substantially at right angles thereto, and the bars connecting said blocks with said rod being obliquely arranged with respect thereto when said ring is in its expanded position and a casing inclosing said ring, substantially as described.

8. In a mold for concrete construction, the combination with a ring divided into a series of segments with spaces between the contiguous ends of adjoining segments, and blocks wedge-shaped in cross section fitting into said spaces, a centrally arranged rod, bars connecting said rod with said segments and said blocks respectively and arranged to expand said ring or contract the same when said rod is moved longitudinally, and means for locking said segments and blocks in their expanded position, substantially as described.

9. In a mold for concrete construction, the combination with a ring divided into a series of segments with spaces between them, and blocks wedge-shaped in cross section fitting into said spaces, a centrally arranged rod, bars connecting said rod with said segments and blocks respectively, a collar slidable on said rod, and chains connecting said collar with said segment bars, substantially as described.

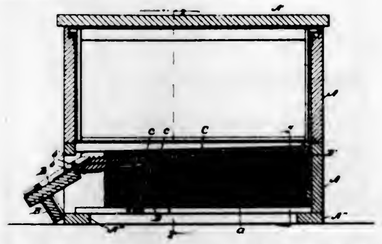
10. A mold for concrete construction comprising rings each divided into a series of segments with spaces between them, and blocks wedge-shaped in cross section fitting into said spaces each ring having a centrally arranged rod and a coupling connecting them, bars connecting said rods with said segments and said blocks, the bars connecting said blocks with said rod being arranged to impart a quicker initial movement to said blocks than the bars connecting said segments with said rod, and a planking inclosing said rings, substantially as described.

11. A mold for concrete construction comprising a shell divided into a series of segments with spaces between them, blocks wedge-shaped in cross section fitting into said spaces, a rod, means connecting said rod with said segments and blocks, and whereby the longitudinal movement of said rod will impart a greater initial movement to said blocks than to said segments and a casing inclosing said ring, substantially as described.

12. A mold for concrete construction comprising a ring divided into a series of segments, a centrally arranged rod, means connecting said rod with said segments whereby longitudinal movement of said rod will contract or expand said ring, and a suitable planking inclosing said ring.

855,175. BEEHIVE. OREL L. HERSHISER, Buffalo, N. Y. Filed Sept. 28, 1904. Serial No. 226,385.

Claim.—1. In a bee hive, the combination of the hive body A'; of a base or stand A open at its top and bottom and at each side, and at the front, with screens *a'* for the side openings; a bottom board C adjustable up and down and forward and back within the stand A; cleats across the front and rear under sides of the bottom-board, the front cleat being beveled upward and backward to conform to a like bevel on the upper front end of the bottom-board to provide a suitable entrance to the hive body; an elastic wire support D' for the rear end of the bottom board when in its upper position; an adjustable bail-like support D pivoted toward the lower edges of the side walls of the stand A, and positioned to swing up against the under side of the bottom board for adjusting the same; a removable front board B for the stand, with cleat B' secured to its inner side, arranged to project inwardly and lock the bottom board in its lower position; loops *b* on the front board B, and hooks *b'* on the front of the bottom board C for engaging the same, all coacting substantially as described and for the purpose specified.



2. In a bee hive, the combination of the hive body A'; the base or stand A, open at top and bottom and each side, and provided with a removable front board, adapted to be used as an alighting board; screens for the side openings of said stand; an adjustable bottom board with suitable supports for holding it in an elevated position in the upper part of the base or stand, and cleats for supporting it in its lower position, and connections on the front board for detachably securing it to the bottom board, for permitting it to be inserted into the front of the stand, coacting for the purpose specified.

3. In a bee hive, the combination with the hive body of a base or stand beneath the same; an adjustable bottom board adjustable up and down within the base or stand for opening the hive body varying degrees; openings through the side of the stand or base with suitable screen over the same, to facilitate ventilation within the hive; a removable front board in the base, adapted to be connected to the bottom board to serve as an alighting board when required, coacting for the purpose specified.

4. In a bee hive, the combination of the hive body; a box-like base or stand beneath the same; a front-board for closing the front; a bottom-board for closing the bottom; and lateral openings covered with screen to confine the bees within a suitable inclosure, for the purpose specified.

5. In a bee hive, the combination of the hive body; a box-like base or stand with open sides covered with screen and a bottom-board for the body of the hive adjustable up and down and forward and back within the box-like base, for the purpose specified.

6. In a bee hive, the combination of a hive body; a box-like stand beneath the same open at its front with suitable inside cleats at the top; a yielding support D' provided at the rear of the inside of the box; a bail-like support D toward the front; a bottom board adapted to rest on said supports; and an alighting board having a separable hinge connection to the front end of the bottom board, whereby the bottom board is adjustable to vary the size of the entrance by moving the same forward and back, coacting for the purpose specified.

7. In a bee hive, the combination of a hive body; a box-like base beneath the same with screen side openings; a removable front board with separable hinges on the front board for engaging it to the bottom board whereby the front board can be used as an alighting board, coacting as specified.

8. In a bee hive, the combination of a hive body; a box-like base beneath the same; a removable front board with separable hinges on the front board for engaging it to the bottom board whereby the front board can be used as an alighting board, co-acting as specified.

9. In a bee hive, the combination of a hive body; a box like stand with a removable front board with a cleat on its inner side; a detachable bottom board arranged to be locked in its bottom position by the cleat on said front board, for the purpose specified.

10. In a bee hive, the combination of a hive body; a box-like base or stand; a removable bottom board and a yielding wire support D' for the rear end of the bottom board and a bail like support for the front end of the bottom board.

11. In a bee hive, the combination of a hive body; a box like stand or base, a removable bottom and a support for the rear end of the bottom board and a bail like support for the front end of the bottom board.

12. In a bee hive, the combination of a hive body; a box-like base, the bottom board adjustable therein; cleats at the bottom for retaining the bottom board and a cleat a little above the bottom board for bracing the same when adjusted to its lower position.

13. In a bee hive, the combination of a hive body; a suitable base or stand; an adjustable bottom board and an adjustable alighting board with a separable hinge for attachment to the front of the bottom board.

14. In a bee hive, the combination of a hive body; a suitable base or stand; a bottom board adjustable back and forth beneath the same; and an alighting board detachably hinged to the front of the bottom board, whereby the entrance to the hive can be adjusted by merely drawing the alighting board forward, for the purpose specified.

15. In a bee hive, the combination of a hive body; a box-like base with a bottom-board for the hive adjustable in said base; cleats at the lower inside margin of the sides for retaining the bottom-board, a cleat on the inside of the front-board, and a cleat at the inside rear of said box-like base, properly placed for bracing the same when adjusted to its lower position, for the purpose specified.

16. In a bee hive, the combination of a box-like base with an opening through the front, and a bar across the top; cleats around the inside upper portion of said box-like base; a bottom-board adjustable within the box-like base, fitting against the said cleats and adjustable back and forth to regulate the entrance opening between the front and the top front bar; and an alighting-board connected to the front of said top-board, for the purpose specified.

17. In a bee hive, the combination of a box-like base with an opening through the front and a bar across the top; cleats around the inside upper portion of said box-like base; a bottom board adjustable within the box-like base, fitting against the said cleats and adjustable back and forth to regulate the entrance opening between the front and the top front bar, for the purpose specified.

18. The combination of a bee hive; a box-like base; an adjustable bottom-board within the same, somewhat shorter than the inside dimension from front to rear of the said box; a cleat underneath the front of said bottom-board, the said bottom-board and cleat beneath the same being beveled to provide a suitable entrance to the hive body when adjusted for ordinary outdoor use, for the purpose specified.

19. The combination of a bee hive; a box-like base; an adjustable bottom-board within the same, somewhat shorter than the inside dimension from front to rear of the said box, for the purpose specified.

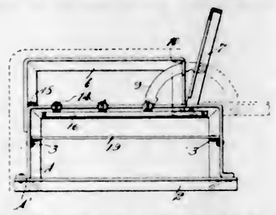
20. The combination of a bee-hive with a box-like base; cleats at the top and inside of the same; a bottom-board loosely fitting into the box with means of clamping it adjustably against the underside of the said cleats, for the purpose specified.

21. The combination of a bee-hive with a box like base; cleats at the top and inside of the same; a bottom-board loosely fitting into the said box with means of clamping it against the underside of the said cleats, for the purpose specified.

855,176. COUCH. JOHN HOEY and FRANK J. CROUCH, San Francisco, Cal.; said Crouch assignor to said Hoey. Filed May 29, 1906. Serial No. 319,335.

Claim.—1. A couch consisting of an angle iron base, a main frame, the ends of which are formed of angle iron notched and bent at right angles to form a horizontal por-

tion, and vertical legs, said legs having the lower ends vertically slit on the line of the angle, and one of the flanges turned at right angles, and riveted to the top of the base part and the other flange extending downwardly and riveted to the vertical flange of the base bar.



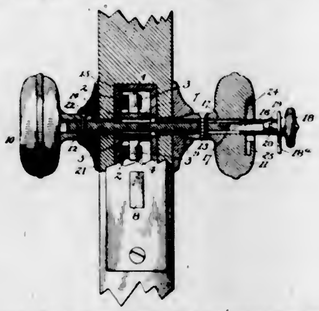
2. An improved furniture structure having in combination an interior metallic frame, an exterior wooden frame channeled to fit the metallic frame and slidable from one end to inclose and expose the same, and independent supporting devices for each frame.

3. The combination in a couch and davenport of a metallic seat frame and arms, a back pivoted to the seat frame in front of its rear edge, and means for holding it in either a vertical or horizontal position, an exterior wooden frame channeled to fit the metallic main frame and slidable from the rear to inclose or expose said frame, and independent supporting devices for each frame.

4. An improved couch or like structure having in combination a main frame, a metallic seat frame, the ends of which are formed of angle iron bent at right angles to form a horizontal portion, and vertical legs, said legs having their lower ends vertically slit on the line of the angle to form braced connections between the legs and the base bar of the main frame, one of said slitted portions being bent and secured to the horizontal face of the base bar and the other slitted portion being bent at right-angles to the first named slitted portion and being secured to the vertical face of the base bar.

5. An improved furniture structure having in combination an interior metallic frame comprising a seat-portion and a back-portion, an exterior wooden frame channeled to fit the metallic frame and slidable from the rear to inclose and expose the same, said exterior frame having independent caster supports.

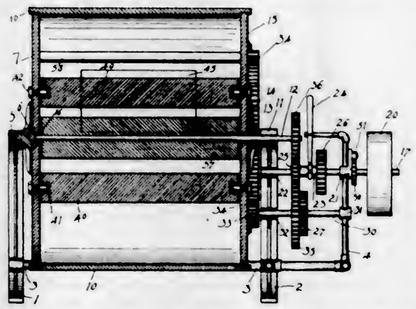
855,177. DOOR-LOCK. THOMAS B. JACK, Herminie, Pa. Filed Feb. 9, 1907. Serial No. 356,577.



Claim.—1. In a door lock, the combination with the latch, operating-hub therefor, and knob-spindle, the latter being smaller than the opening in the operating-hub through which it passes, of a sleeve slidably mounted on the knob-spindle and adapted to be moved in and out of engagement with the operating-hub.

2. In a door lock, the combination with the spring-latch and operating-hub therefor, the latter having a square opening therethrough, of a spindle extending through the operating-hub and smaller than the opening therein, a sleeve slidably mounted on the spindle and extending through one of the knobs and adapted to be moved in and out of engagement with the opening in the operating-hub, said sleeve having slots at opposite sides, a screw connecting the knob to the spindle passing through said slots to limit the movement of the sleeve, and a milled wheel or knob secured to the outer end of the sleeve, substantially as shown and described.

855,178. COMBINED CHURN AND BUTTER-WORKER. AAGE JENSEN, Eureka, Cal. Filed Mar. 28, 1907. Serial No. 365,193.



Claim.—1. A combined churn and butter worker comprising a rotatable drum, an axial working roller therein, means for rotating said roller, a pair of diametrically opposite idler rollers, and two shelves for raising the butter, diametrically opposite each other, and arranged substantially at right angles to the plane of the idler rollers, substantially as described.

2. A combined churn and butter worker comprising a drum, an axial working roller therein, two shelves for raising the butter arranged diametrically opposite to each other, and a door in the round side of the drum immediately above or in front of each shelf, substantially as described.

3. A combined churn and butter worker comprising a drum an axial working roller therein, and diametrically opposite shelves, each shelf having a concave upper or front face formed of longitudinal slats spaced from each other, said shelves extending from the side of the drum in the direction of the working roller but spaced therefrom, substantially as described.

4. A combined churn and butter worker comprising a drum, an axial working roller, diametrically opposite idler rollers, diametrically opposite shelves arranged substantially at right angles to the plane through the idler rollers, each shelf composed of slats spaced from each other and extending from the circumference of the drum toward the working roller but spaced therefrom, and guides extending longitudinally of the drum, one in front of each shelf, substantially as described.

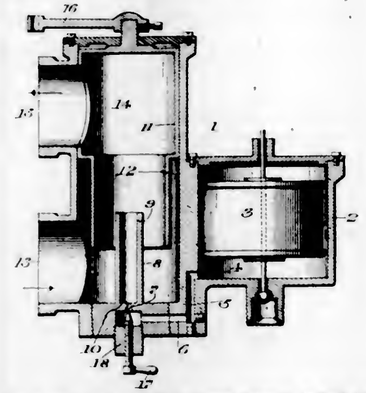
855,179. CARBURETER. PETER JENNESS, Philadelphia, Pa. Filed Jan. 17, 1907. Serial No. 352,714.

Claim.—1. In a carbureter, means for feeding a fuel, means for feeding air, and a nozzle located to receive said fuel, the discharge opening of said nozzle being of greater area than the opening which receives said fuel.

2. In a carbureter, an air inlet of constant area, means for feeding a fuel, means for feeding air, and a nozzle located to receive said fuel, the discharge opening of said nozzle being of greater area than the inlet opening which receives said fuel.

3. In a carbureter, means for feeding a fuel, an air inlet of constant area, and a nozzle having a bore of uniform diameter and located to receive said fuel, the discharge opening of said nozzle being of greater area than the inlet opening which receives said fuel, said inlet opening being in alinement with said bore.

4. In a carbureter, a fuel nozzle having a fuel inlet of small area, the discharge opening of said nozzle being of greater area than said fuel inlet, an air inlet, and a commingling chamber into which said nozzle discharges.



5. In a carbureter, a fuel nozzle having a fuel inlet of small area, the discharge opening of said nozzle being of greater area than said fuel inlet, an air inlet of constant area, a strangle tube into which said nozzle projects, and a commingling chamber above said strangle tube.

6. In a carbureter, the combination with the communicating float and commingling chambers thereof, of a nozzle intermediate said chambers and discharging into the latter, said nozzle having a restricted inlet for the liquid hydrocarbon, a throttle drum carried by said casing, a strangle tube carried by said throttle drum, a valve spindle journaled in said throttle drum and passing through said nozzle, a valve carried by said spindle for controlling the inlet port, and actuating means for said spindle.

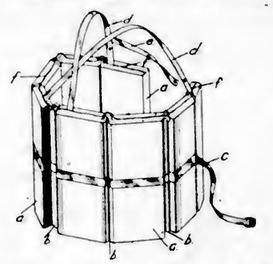
7. In a carbureter, a casing having communicating float and commingling chambers therein, a nozzle detachably carried by said casing, located intermediate said chambers and discharging into the commingling chamber, said nozzle having a restricted inlet for the liquid hydrocarbon, a throttle drum movably mounted within said casing, a strangle tube carried thereby and surrounding the outer end of said nozzle, and means passing through said nozzle for varying the size of said inlet.

8. In a carbureter, a casing having communicating float and commingling chambers therein, a nozzle detachably carried by said casing, located intermediate said chambers and discharging into said commingling chamber, said nozzle having a restricted inlet, a valve stem passing into said nozzle and having a conical valve head controlling said inlet, means for actuating said stem, a strangle tube within said casing surrounding the outer end of said nozzle, and said valve stem above said nozzle having the same diameter as the diameter of said nozzle to form a substantially uniform opening through said strangle tube.

855,180. LIFE-PRESERVER. KARL J. JOHANSSON, Seattle, Wash. Filed May 21, 1906. Serial No. 318,049.

Claim.—1. A life preserver comprising a belt made of canvas and having pockets formed therein, a belt strap secured to and encircling the belt provided with a buckle, metallic floats arranged in the pockets, said floats being rectangular in form with rounded corner edges and made of non-corrosive material, there being seams provided between the pockets to prevent friction between the floats, shoulder straps secured to the upper edge of the belt near the central portion and at the ends thereof, the straps crossing in the back and secured together at the point of crossing, a breast strap secured to one of the shoulder straps near the front end thereof and having detachable connection with the other shoulder strap.

2. A life preserver comprising a canvas belt formed with pockets therein, the longitudinal edges of the fabric being stitched along the upper edge, a strap secured to and encircling the belt provided with a buckle, copper floats arranged in the pockets, said floats being rectangular in form having round corner edges, the belt formed with flat portions and seams between the pockets to prevent friction



between the floats, crossed shoulder straps secured to the upper edge near the middle of the belt and secured together at their point of crossing, the front ends of the straps secured near the ends of the belt, a breast strap secured to one of the shoulder straps near its front end, and a detachable fastening for securing the opposite end of the breast strap to the other shoulder strap.

855,181. TAKE-DOWN GUN. THOMAS C. JOHNSON, New Haven, Conn., assignor to Winchester Repeating Arms Co., New Haven, Conn., a Corporation. Filed Jan. 31, 1907. Serial No. 355,070.



Claim.—1. In a take-down gun, the combination with the receiver thereof, of a barrel, a receiver-extension carried by the barrel and having its rear face adapted to bear directly upon the front face of the receiver, and a stop-shoulder formed integral with and projecting rearward from the left hand side of the said receiver-extension and entering a suitable cut or recess formed in the left hand side of the front face of the receiver, whereby the rotation of the barrel in the receiver is stopped when the receiver-extension is brought into registration with the receiver, and whereby the said front face of the receiver is left flat to be fitted with respect to the rear face of the said extension.

2. In a take-down gun, the combination with the receiver thereof, of a barrel, a receiver-extension carried by the barrel and having its rear face adapted to bear directly upon the front face of the receiver, and a take-up screw having a large head located in the receiver-extension at a point directly below the barrel for taking up any wear that may occur between the said bearing faces.

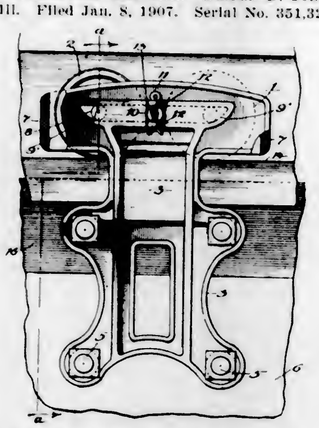
3. In a take-down gun, the combination with the receiver thereof, of a barrel having sectional threads coacting with corresponding threads in the receiver, a receiver-extension carried by the barrel and having its rear face adapted to bear directly upon the front face of the receiver, a take-up screw located directly below the center of the barrel and having a knurled or roughened edge, and means for locking the screw against rotation.

4. In a take-down gun, the combination with the receiver thereof, of a barrel having threads taking into corresponding threads in the receiver, a receiver-extension carried by the barrel and having its rear face adapted to engage directly with the front face of the receiver, a take-up screw located in the rear face of the receiver-extension

at a point below the center of the barrel, a locking dog engaging with the edge of the said take-up screw, and a locking screw for holding the dog in its locking position.

5. In a take-down gun, the combination with the receiver thereof, of a barrel adapted to be detachably connected with the receiver, a receiver-extension carried by the barrel and having its rear face adapted to engage directly with the front face of the receiver, and a sliding lock located in a slot in the lower edge of the receiver-extension and adapted at its rear end to enter a locking notch in the front face of the receiver.

855,182. CAR-DOOR HANGER. BELDEN D. JONES, Chicago, Ill. Filed Jan. 8, 1907. Serial No. 351,328.



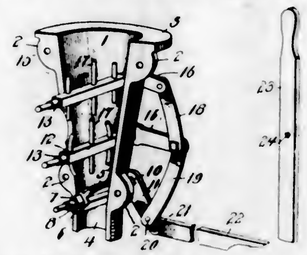
Claim.—1. In a hanger for sliding doors, a bracket adapted for attachment to the door and provided with an integral head comprising front and rear walls and closed ends, a track-roller mounted within said head, a detachable roller-pin adapted to be passed axially through said roller, said front and rear walls being provided with longitudinal opposed bearing surfaces which rest upon the projecting ends of said roller-pin, one of said walls being provided with an opening located to permit the insertion of the roller-pin through the bore of the track-roller while the latter is in assembled position, and a removable closure for said roller-pin opening, the inner face of said closure being flush with the adjacent end of said roller-pin.

2. In a hanger for sliding doors, a bracket adapted for attachment to a door and provided with a head comprising front and rear walls and integral closed ends, a track-roller mounted within said head, a detachable roller-pin adapted to be passed axially through said roller, said front and rear walls being formed with longitudinal opposed bearing surfaces which rest upon the projecting ends of the roller-pin, one of said walls being provided with an opening in transverse alinement with a part of the path of movement of said pin, a removable closure for said opening, and an ejector opening opposed to said first named opening.

3. In a hanger for sliding doors, a bracket adapted for attachment to the door and provided with an integral head comprising front and rear walls and closed ends, a track roller mounted within said head, a detachable roller-pin adapted to be passed axially through said roller, said front and rear walls being provided with longitudinal opposed bearing surfaces which rest upon the projecting ends of said roller-pin, one of said walls being provided with an opening located to permit the insertion of the roller-pin through the bore of the track-roller while the latter is in assembled position, and a detachable locking member arranged to confine the roller-pin against endwise movement through said opening.

4. In a hanger for sliding doors, a hanger-head comprising a front wall, a rear wall and closed ends, said walls being formed with interior, longitudinal, opposed grooves, a roller-pin loosely retained by said grooves, a track-roller loosely mounted upon said roller-pin, said grooves being formed with converging end portions, one of said walls being provided with a suitably located opening to permit insertion of the roller-pin through the bore of the track-roller when the latter is in operative position, and a removable closure for said opening, the inner face of said closure being flush with the adjacent end of said roller-pin.

855,183. SAND-BOX. PETER S. KECK, Allentown, Pa. Filed Mar. 27, 1907. Serial No. 364,924.



Claim.—1. A sand box comprising a casing having a discharge portion at its lower end, an oscillating valve mounted at said portion upon a shaft extending across said casing, a stirrer comprising a shaft having teeth extended laterally therefrom and disposed above said valve, and means connecting the stirrer and valve shafts for simultaneous oscillation thereof.

2. A sand box comprising a casing, an oscillating valve mounted therein, a stirrer mounted to oscillate above said valve, crank arms carried by said stirrer and valve shafts, a link pivotally connected to each of said arms, and an operating connection with the arm of the valve.

3. In a sand box, a casing, a disk valve mounted in the lower portion thereof and provided with a central angular aperture therethrough, a shaft for said valve having an angular portion to fit said aperture and bearings at its ends in opposite sides of said casing, and means for oscillating said shaft.

4. In a sand box, a casing, a disk valve mounted in the lower portion thereof and provided with an angular aperture therethrough, a shaft for said valve having an angular portion to fit said aperture and bearings at its opposite ends in said casing and provided with a crank arm, a crank arm upon the valve shaft, a connecting link between said crank arms, and means connected to one of said arms for simultaneously operating the stirrer and valve.

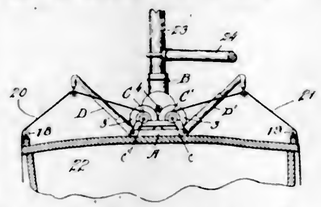
5. In a sand box, a casing, a pivoted valve mounted at the lower portion thereof and provided with a crank arm, a plurality of stirrer shafts disposed one above another and each provided with a crank arm, a link pivoted to the crank arms of each stirrer shaft, a connecting link from the lower stirrer shaft to the valve arm, and an operating connection from said valve arm.

6. In a sand box a casing provided at its lower portion with a tubular outlet, a disk valve of greater diameter than said outlet portion and disposed therein diagonally to the axis of the outlet, and means for oscillating said valve.

855,184. HOIST FOR OYSTER-DREDGES. JAMES P. KEMP, Baltimore, Md., assignor to The Fairbanks Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 19, 1907. Serial No. 353,160.

Claim.—1. The combination with a bed plate, of an engine and a hoisting drum mounted thereon, an extensible jib arm pivoted to said bed plate, said jib arm being adapted to extend outwardly and upwardly from said bed plate and overhang the line of travel of the rope from said drum and an adjustable stay for said jib arm.

2. The combination with a bed plate, of an internal combustion engine and two hoisting drums mounted thereon, and pivoted jib arms, one on each side of said bed plate, adapted to extend outward laterally beyond the edges of said bed plate and upwardly therefrom.



3. The combination with a bed plate, of an internal combustion engine and two hoisting drums mounted thereon, extensible jib arms, one pivoted to each side of said bed plate between its respective drum and said engine and adapted to extend outwardly and upwardly from said bed plate, and adjustable stays, one for each of said jib arms.

4. The combination with a bed plate, of an internal combustion engine and a hoisting drum mounted thereon, a roller supported at a distance from said drum and a jib arm extending outward laterally beyond the edges of said bed plate and upwardly from said bed plate whereby the rope is supported between said drum and roller.

5. The combination with a vessel, of a hoisting means upon the deck of a vessel, a roller supported at one side of the vessel and a jib arm extending from said hoisting means, whereby said jib arm is arranged to support the hoisting rope between said hoisting means and said roller.

6. The combination with a vessel, of a hoisting means upon said deck, a roller supported at one side of said deck, an extensible jib arm pivoted at said hoisting means and an adjustable stay for said jib arm, whereby said jib arm is arranged to support the hoisting rope between said hoisting means and said roller.

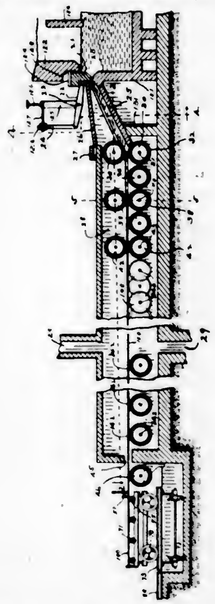
855,185. MACHINE FOR MAKING SHEET OR PLATE GLASS. WILLIAM W. W. KEYES, Alexandria, Ind., assignor of one-eighth to John A. Keyes, one-fourth to John F. Merker, and one-eighth to James Fall, Alexandria, Ind. Filed Feb. 15, 1904. Renewed Nov. 1, 1906. Serial No. 341,622.

Claim.—1. In a glass machine the combination with a tank for the molten glass, of a leer adjacent the same, a horizontal opening in the tank through which the glass may flow from the tank to the leer, means within the leer for forming a sheet of glass and conveying the same through the leer, means for adjusting the opening from the tank so as to regulate the flow of glass therefrom, and a movable top for the end of the leer adjacent the tank that is connected with said means for regulating the size of the outlet opening from the tank so as to move therewith and exclude the air from that portion of the leer.

2. In a glass machine, the combination with a tank for the molten glass, of a leer arranged adjacent thereto, sheet forming mechanism arranged in said leer, means for heating said leer to maintain the temperature of the glass in its passage therethrough, means for automatically feeding the molten glass from said tank to said sheet forming mechanism, a gate for controlling the flow of the molten glass from said tank to said feeding means, and a cover connected with said gate and with said leer for excluding air from the molten glass in its passage to the sheet-forming mechanism.

3. In a glass machine, means for moving a sheet of glass longitudinally, a cutter mechanism extending across the sheet of glass, and means for connecting the cutter mechanism with the sheet of glass so that it will be moved by the sheet of glass while the same is being operated to sever the sheet of glass.

4. In a glass machine, means for moving the sheet of glass longitudinally, a track parallel with the sheet of glass, a cutter supporting mechanism movable on said track and extending across the sheet of glass, and a cutter movable on said supporting mechanism transversely of the sheet of glass for severing the same.



5. In a glass machine, means for moving the sheet of glass longitudinally, a track parallel with the sheet of glass, a cutter supporting mechanism movable on said track and extending across the sheet of glass, a cutter movable on said supporting mechanism transversely of the sheet of glass for severing the same, and means for clamping the supporting mechanism to the sheet of glass.

6. In a glass machine, means for moving the sheet of glass longitudinally, a track parallel with the sheet of glass, a cutter supporting mechanism movable on said track and extending across the sheet of glass, a cutter movable on said supporting mechanism transversely of the sheet of glass for severing the same, a clamp slidably mounted on said supporting mechanism on each side of the sheet of glass for engaging each edge of the sheet of glass, and means for moving said clamps toward each other to hold the supporting mechanism in combination with the moving sheet of glass.

7. In a glass machine, means for moving a sheet of glass longitudinally, a track parallel with the sheet of glass, a cutter supporting mechanism movable on said track and extending across the sheet of glass, a cutter movable on said supporting mechanism transversely of the sheet of glass for severing the same, a clamp slidably mounted on said supporting mechanism on each side of the sheet of glass for engaging each edge of the sheet of glass, a lever pivoted to said supporting mechanism, and connecting rods running from said lever to said clamps for moving them toward and away from each other.

8. In a glass machine, means for moving a sheet of glass longitudinally, a track parallel with the sheet of glass, a carriage mounted on said track, a supporting bar pivotally mounted on said carriage and extending across the sheet of glass, means for connecting it with the sheet of glass whereby it will be moved along with the sheet, and a cutter movable on said supporting bar and across the sheet of glass for severing the same.

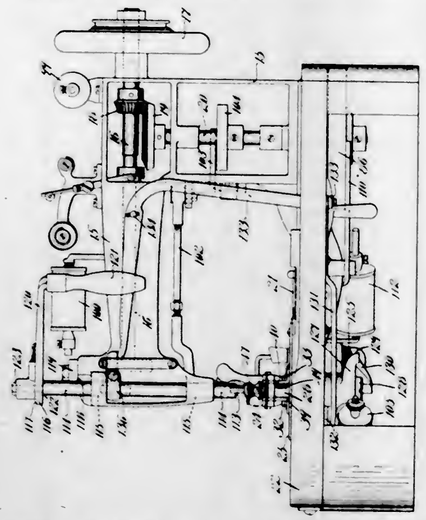
9. In a glass machine, means for moving a sheet of glass longitudinally, a track parallel with the sheet of

glass, a carriage mounted on said track, a supporting bar pivotally mounted on said carriage and extending across the sheet of glass, means for connecting it with the sheet of glass whereby it will be moved along with the sheet, a cutter carriage movable on the supporting bar, a cutter carried by said carriage in contact with the glass, and means for drawing said cutter carriage across the sheet of glass.

10. In a glass machine, means for moving a sheet of glass longitudinally, a truck parallel with the sheet of glass, a carriage movable on said track, a supporting bar connected with said carriage and extending across the sheet of glass, said supporting bar having a vertical portion, means for connecting the supporting bar with the sheet of glass so that it will move with the sheet of glass, a cutter carriage consisting of a frame, a pair of grooved rollers above and a pair below connected with said frame and riding on said supporting bar, a cutter carried by said carriage, and means for moving said carriage along said supporting bar.

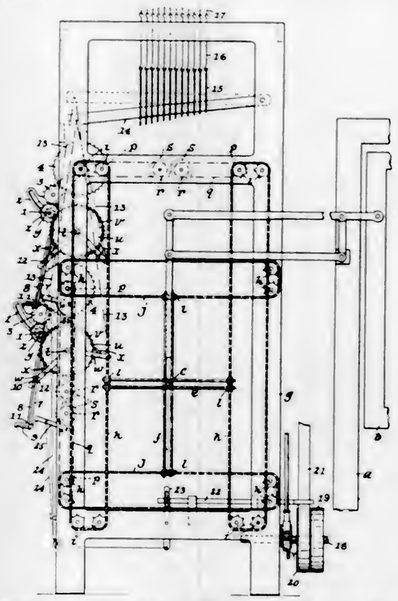
11. In a glass machine, means for moving a sheet of glass longitudinally, a track parallel with the sheet of glass, a carriage movable on said track, a supporting bar connected with said carriage and extending across the sheet of glass, said supporting bar having a vertical portion, means for connecting the supporting bar with the sheet of glass so that it will move with the sheet of glass, a cutter carriage consisting of a frame and a pair of grooved rollers above and a pair below connected with said frame and riding on said supporting bar, a cutter holder mounted in said carriage, a spring for pressing said cutter holder down, a cutter in the lower end of said cutter holder, and means for moving said carriage along said supporting bar.

855,186. BUTTONHOLE-SEWING MACHINE. JOHN KIEWICZ, Hyde Park, Mass., assignor to Wheeler Manufacturing Company, a Corporation of Maine. Filed Feb. 19, 1906. Serial No. 301,744.



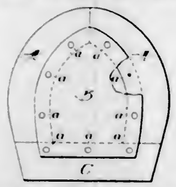
Claim.—In a button hole sewing machine a needle throat provided with a passage extending therethrough and adapted to guide a needle, a work-plate through which said needle throat projects, said work-plate provided with a slot consisting of a semi-circular portion concentric with said needle throat and two radial portions extending outwardly from the opposite ends of said semi-circular portion and a radial portion extending from one end of said semi-circular portion to said needle throat; in combination with a pair of cutters, one of said cutters located above and the other below said work-plate, mechanism to move said cutters toward and away from each other and through said last named radial portion of said slot, a fabric clamp actuating cam provided with a groove in one face thereof, a fabric clamp slidable upon said needle throat and rotatable thereon, and a pin carried by said clamp and projecting through said slot and into said cam groove.

855,187. FABRIC-FRAME-MOVING MECHANISM FOR EMBROIDERY-MACHINES. WILLIAM LE BERT DE BAR, Union, N. J. Filed July 10, 1906. Serial No. 325,476.



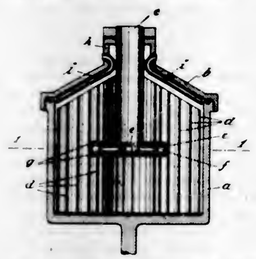
Claim.—The combination, with the part to be moved and the fabric-frame controlled therefrom, of crossed guides, said part being engaged with and movable in each guide, carrying means for said guides movable each in a course transverse of its respective guide, and means for moving said carrying means consisting of a rotary toothed part, pawl carrying levers for rotating said toothed part, other levers, operative connecting means between each of said other levers and the respective first-named levers, and stirrups engaged with each of said other levers at different distances from its fulcrum, substantially as described.

855,188. HOOF-PAD. ANDRÉ LARSEN, Chicago, Ill. Filed Dec. 3, 1906. Serial No. 346,058.



Claim.—The combination, in a hoof-pad, adapted to be interposed between the hoof of the horse and the shoe, said pad comprising a flexible rim made in two like halves or parts and of the general contour of a horseshoe; a central metal plate or shield which is attached at its outer margin to the inner margin of said rim, and a transverse leather strip which extends from one side of the pad to the other, said transverse strip overlapping at its forward edge the rear edge of said central plate or shield and attached thereto by rivets, all substantially as set forth.

855,189. CENTRIFUGAL LIQUID-SEPARATOR. BIRGER LJUNSTRÖM, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a Company. Filed Dec. 16, 1904. Serial No. 237,144.



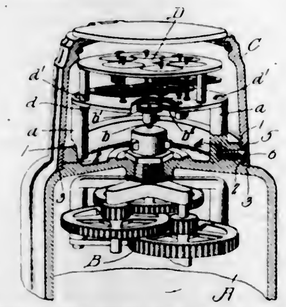
Claim.—1. In a centrifugal creamer, a liner consisting of a plurality of upright plates intersecting the radial line of the bowl, each of said plates having its inner edge cut away forming an annular recess, a ring mounted in said recess opening toward the wall of the bowl and a central feed tube communicating with said ring.

2. In a centrifugal creamer, a liner consisting of a plurality of upright plates intersecting the radial line of the bowl, each of said plates having its inner edge cut away forming an annular recess about midway of the height of the bowl, a ring in said recess having an opening facing the inner wall of the bowl, the distance between said opening and the center of the bowl being greater than the distance between said center and the inner edges of the plates, a central feed tube, and radial pipes connecting the latter with the interior of the ring.

3. In a centrifugal creamer, a liner consisting of a plurality of upright plates intersecting the radial line of the bowl, each of said plates having a rectangular notch in its inner edge forming an annular recess in the liner, and means to direct new milk into said recess.

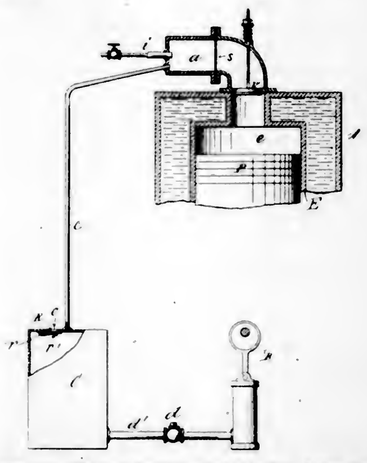
4. In a centrifugal creamer, a liner consisting of a plurality of upright curved plates intersecting the radial line of the bowl, each of said plates having a rectangular notch in its inner edge between its ends forming an annular recess in the liner, and means to direct new milk into said recess.

855,190. TAMPER-PROOF WATER-METER. CHRISTIAN E. LOETZER, Sayre, Pa. Filed Mar. 13, 1906. Serial No. 305,852.



Claim.—In a water-meter, the combination with the shell or case for the actuating mechanism, said shell having an annular threaded boss thereon, of the movement-box or cap mounted on said shell and having an annular threaded portion engaging with said boss, the female screw-member being provided with a lateral hole, and a fastening pin inserted through said hole and into the male screw-member, and a seal or plug in said hole covering the head of said fastening-pin.

855,191. HYDROCARBON-MOTOR. ABBOT A. LOW, Horseshoe, N. Y. Filed Jan. 16, 1906. Serial No. 296,326.



Claim.—1. The combination with a hydro carbon motor, and with air compressing mechanism, of an accumulator or reservoir interposed between them and arranged to supply air to the mixing chamber of the motor, said reservoir formed with an inlet relief valve for the purpose set forth.

2. The combination of a hydro carbon motor, means for compressing air, a reservoir or accumulator connected with said air compressing mechanism by a conduit in which is interposed a check valve, an inlet relief valve in said reservoir or accumulator and a conduit for introducing air from said reservoir into the mixing chamber of the motor, for the purpose set forth.

855,192. PLAYING-CARDS. THOMAS W. LUCKE, Chicago, Ill. Filed Nov. 24, 1905. Serial No. 288,955.

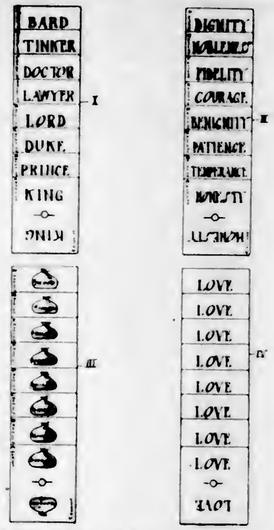
Claim.—1. In a card game pack, a plurality of suits composed of equal number of cards, each card of a suit bearing an indication of its suit denomination, and the several cards of each said suit bearing indications of successive values in their respective suits, and another suit containing a like number of cards, each of which bears only an indication of its suit denomination and is devoid of value indicia.

2. In a card pack, a plurality of suits, the cards of each suit bearing indications of suit denomination, indications of successive value and different words arranged to rhyme when read in the order of the card values.

3. In a card game pack, a suit of a denomination indicative of some attribute, each card of the suit bearing an expression indicative of that attribute differing from that of every other card of the suit, the cards of said suit bearing indicia of successive value, and the indicative attribute-expressions of the cards being arranged to rhyme when read in the order of successive valuations.

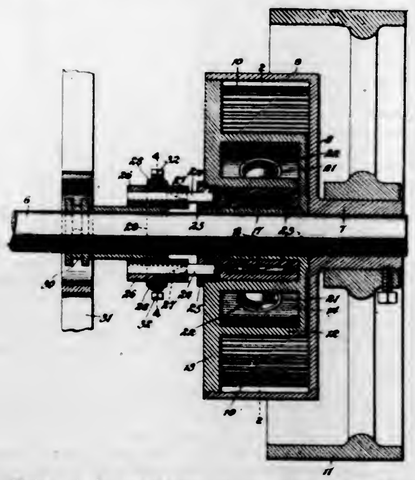
4. In a card pack, a plurality of suits of different suit denominations indicative of personal attributes, the cards of each suit bearing indicia of successive value and each card of said suits bearing a word expressive of said attribute differing from the word on every other card of said

suit, and said words being arranged to rhyme when read in order of successive value; and a distinctive penalty suit



whereof the cards bear suit denomination only and are devoid of value indicia.

855,193. CLUTCH MECHANISM. HENRY C. LYLE, Chattanooga, Tenn., assignor of one-half to Samuel V. Weeks, Chattanooga, Tenn. Filed Oct. 29, 1906. Serial No. 341,061.



Claim.—1. In mechanism of the class described, the combination with relatively movable members, one of which is provided with a track or guide, of a pump, an operating device for the pump connected thereto and rotatably mounted on the other member, said device revolving against said track or guide upon the relative movement of the members, and means for controlling the passage of fluid through the pump and thus resisting the revolution of the device against said track or guide to resist the relative movement of the members.

2. In mechanism of the class described, the combination with relatively movable members, one of which is provided with a toothed track or guide, of a gear wheel rotatably mounted on the other member, said gear wheel meshing with the teeth of and revolving against the track or guide, a pump mounted on the member having the gear wheel and having operative connections with said wheel, and means for controlling the passage of fluid through the pump, and thus affording resistance to the rotation of the wheel to thereby resist the relative movement of the members.

3. In mechanism of the class described, the combination with a casing having an internal gear track, of a relatively movable support located within the casing, a gear wheel journaled on the support and meshing with the gear track, a pump, a crank connection between the pump and gear wheel, and means mounted on the support for affording a variable resistance to the passage of material through the pump.

4. In mechanism of the class described, the combination with relatively movable members, one of which is provided with a track or guide, of a device rotatably mounted on the other member and engaging the track or guide, relatively movable piston and cylinder elements mounted on the latter member, one of said members being connected to the rotatable device, means for admitting fluid to and discharging it from the cylinder element, and means for controlling the passage of fluid therethrough.

5. In mechanism of the class described, the combination with relatively rotatable members, one of which is provided with an annular track or guide, of a device rotatably mounted on the other member and revolving against the track or guide, relatively movable piston and cylinder elements mounted on the latter member, one of the elements being connected to the rotatable device, means for admitting fluid to and exhausting it from the cylinder element, and means for controlling the passage of the fluid therethrough.

6. In mechanism of the class described, the combination with relatively movable members, one of which is provided with a gear track or guide, of a gear wheel rotatably mounted on the other member and meshing with the teeth of the track or guide, relatively movable piston and cylinder elements mounted on the latter member, one of said elements having a crank connection with the gear wheel, means for admitting fluid to and exhausting it from the cylinder element, and means for controlling the passage of fluid therethrough.

7. In mechanism of the class described, the combination with relatively movable members, one of which is provided with an annular toothed track or guide, of a gear wheel rotatably mounted and revolnble with the other member, said gear wheel meshing with the teeth of the track or guide, relatively reciprocatory piston and cylinder elements mounted on the member carrying the gear wheel, one of said elements having a crank connection with the gear wheel, means for admitting fluid to and exhausting it from the cylinder element, and means for controlling the passage of fluid therethrough.

8. In mechanism of the class described, the combination with a casing having an internal gear track or guide, of a relatively rotatable support mounted within the casing, a gear wheel journaled on the support and meshing with the gear track, said gear wheel having a crank, a cylinder element carried by the support, a reciprocating piston operating therein and connected to the crank of the gear wheel, means for admitting fluid to and exhausting it from the cylinder, and a valve for controlling the passage of fluid therethrough.

9. In mechanism of the class described, the combination with a casing having a circular gear track, of a relatively rotatable support having spaced ears, spaced gear wheels journaled on the ears and meshing with the track, a crank connecting the gear wheels, a cylinder element carried by the support, a piston operating in the cylinder element and having a connection with the crank, means for admitting fluid to and exhausting it from the cylinder element, and a manually operated valve for controlling the passage of fluid therethrough.

10. In mechanism of the class described, the combination with a casing, having an internal gear wheel, of a relatively rotatable support located within the casing, a plurality of gear wheels journaled on the support and meshing with the track, pump mechanism mounted on the support and operated by the gear wheels, and means for obstructing the flow of material through the pump mechanism and thereby imparting resistance to the rotation of the gear wheels.

11. In mechanism of the class described, the combination with a casing having an internal gear track, of a relatively rotatable support located within the casing, a plurality of gear wheels journaled on the support and meshing with the track, a plurality of sets of plunger and cylinder elements, one element of each set being connected to one of the gear wheels eccentrically of its axis of rotation, and means for controlling the supply and discharge of the cylinder elements.

12. In mechanism of the class described, the combination with relatively rotatable members, of a pump carried by one member and comprising relatively movable piston and cylinder elements, actuating means for the pump associated with the other member, a conduit connected at one end to the cylinder element and having a valved inlet and discharge, both of which are located at one side of the cylinder element, and a controlling valve for varying the area of the conduit, said valve being located in the conduit between the inlet and discharge.

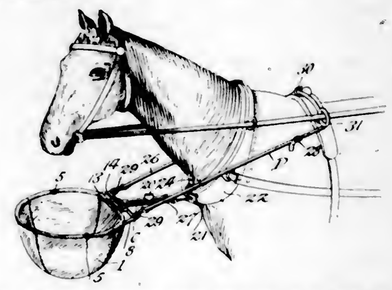
13. In mechanism of the class described the combination with relative rotatable members, one of which is provided with a fluid reservoir, of a pump carried by said member and comprising relatively reciprocatory piston and cylinder elements, actuating means for the pump associated with the other member, a conduit connected at one end to the cylinder element and having a valved inlet and discharge, both of which are disposed at one side of said cylinder element and communicating with the reservoir, a rotatable controlling valve located in the conduit between the inlet and discharge, and means for rotating the valve while the membera are rotating.

14. In mechanism of the class described, the combination with relatively rotatable members, of a plurality of pump mechanisms carried by one member and operated by the other on their relative rotation, a plurality of rotatable controlling valves for affording resistance to the movement of the fluid acted on by the pump mechanism, said valves having stems extending longitudinally of and on different sides of the axis of rotation of the members and having curved slots, and means for rotating the controlling valves, said means including a sleeve mounted on one of the members and movable longitudinally of its axis of rotation, eyes carried by different portions of the sleeve and sliding upon the valve stems, projections carried by the eyes and engaging in the slots of said stems, and means for moving the sleeve.

15. In mechanism of the class described, the combination with a shaft, of a casing loosely journaled thereon and having an internal gear track, a support fixed to the shaft within the casing and having a fluid reservoir therein, cylinders carried by the support, a conduit communicating with the cylinders and having valved inlet and outlets that communicate with the reservoir, rotatable valves located in the conduit and having exposed stems disposed longitudinally of the shafts and provided with curved slots, a sleeve slidable on the shaft and having sockets that receive the stems, pins carried by the sleeve and engaging in the slots, sets of spaced gear wheels journaled in the support and meshing with the internal gear track of the casing, a crank connecting the gear wheels on each set, and pistons operating in the cylinders and having hooks that engage the crank.

855,194. FEED-BAG. SAMUEL F. MAINSTER and FREDERICK E. WILSON, Baltimore, Md. Filed Mar. 2, 1907. Serial No. 360,199.

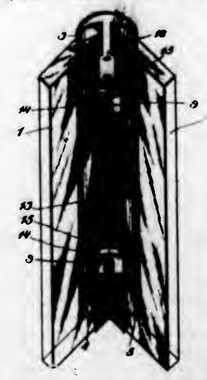
Claim.—1. In a device of the class described, a flexible bag, a foldable distending hoop for said bag comprising two hingedly connected members, one of which is provided with an auxiliary frame including a cross-bar and arms and braces connecting said cross-bar with the hoop member, a supporting member hinged upon the hoop member intermediate the braces extending from the latter and having a transverse channel engaging the cross-bar, and a guy strap having snap hooks connected with the ends of the cross-bar.



2. In a device of the class described, a collapsible bag having a foldable distending hoop, a cross-bar connected with and spaced from the hoop, and having apertures at the ends thereof, a supporting member hingedly connected with the hoop and having a transverse groove or channel adapted for engagement with the cross-bar, said brace comprising two slidably connected plates one of which is provided with a supporting member at its rear end and with a transverse slot adjacent to said supporting member, a collar engaging strap in said slot, and an adjustable guy strap provided at its ends with snap hooks to engage the apertures at the ends of the cross-bar connected with the distending hoop.

3. In a device of the class described, the combination with a collapsible bag having a foldable distending hoop and a cross-bar spaced from and connected with said hoop, of a guy strap connected with the ends of the cross-bar, and a brace or supporting member comprising two slidably connected plates, one of said plates being hingedly connected with the hoop and provided with a transverse channel for engagement with the cross-bar, downturned side flanges, and a loop at its rear end, and the other plate being fitted to slide in said loop between the side flanges and provided at its rear end with a supporting plate and a collar engaging strap.

855,195. EXPANSION-POST AND SHOW-WINDOW FASTENER. GEORGE C. MARR, Washington, D. C. Filed Feb. 16, 1907. Serial No. 357,712.



Claim.—1. A device for securing and clamping together the contiguous edges of plates of glass comprising a post having its longitudinal edges turned inwardly to form a

resilient or spring gripping surface, a post clamp within said post having its ends in engagement with the inner faces of the said longitudinal edges of the post, a fastening bolt carried in said post clamp, a bar arranged to engage the inner surface of the glass, and a nut for said bolt, substantially as described.

2. A device for securing and clamping together the contiguous edges of plates of glass comprising a post having its longitudinal edges turned inwardly, a post clamp within said post having its ends in engagement with the inner faces of the said longitudinal ends of the post, a fastening bolt carried in said post clamp, a bar arranged to engage the inner surface of the glass, and a nut for said bolt, substantially as described.

3. A device for securing and clamping together the contiguous edges of plates of glass comprising a post having its longitudinal edges turned inwardly, a post clamp within said post having its ends in engagement with the inner faces of the said longitudinal edges of the post, and a fastening means for drawing the said longitudinal edges of the post in engagement with the glass, substantially as described.

4. A device for securing and clamping together the contiguous edges of plates of glass comprising a post having its longitudinal edges turned inwardly, a post clamp within said post having its ends in engagement with the inner faces of the said longitudinal edges of the post, a rotatable bolt carried in said post clamp and a stationary nut for said bolt, substantially as described.

5. A device for securing and clamping together the contiguous edges of plates of glass comprising a post having its longitudinal edges turned inwardly, a post clamp longitudinally movable within said post and having its ends in engagement with the said longitudinal edges of the post, and means for holding the post firmly in engagement with the glass, substantially as described.

6. A device for securing and clamping together the contiguous edges of plates of glass comprising a post having its longitudinal edges turned inwardly to form a resilient or spring gripping surface, a post clamp longitudinally movable within said post, and means for holding said post in position against the glass, substantially as described.

7. A device for securing and clamping together the contiguous edges of plates of glass comprising a post having a resilient or spring gripping surface for engagement with the glass, a longitudinally movable post clamp within said post, and means for holding said post in position on the glass, substantially as described.

8. A device for securing and clamping together the contiguous edges of plates of glass comprising a post, a longitudinally movable post clamp within said post, and means for drawing said post in contact with the glass, substantially as described.

9. A device for securing and clamping together the contiguous edges of plates of glass comprising a post having its longitudinal edges turned inwardly, a longitudinally movable clamp and a fastening means associated with said post for drawing the said longitudinal edges of said post in contact with the glass, substantially as described.

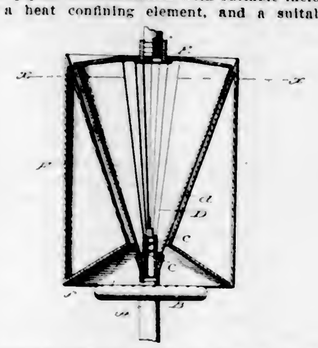
835,196. PUZZLE. WILLIAM D. MCMILLAN, Union, Oreg. Filed July 2, 1906. Serial No. 324,423.



Claim.—A puzzle comprising a transparent close-ended tube, interiorly unobstructed from end to end, cushioning devices arranged at the tube terminals, and a series of distinctively marked disks arranged in the tube and being of such size as to be readily shifted past each other.

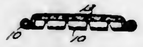
835,197. WATER-HEATER. PHILO G. OLDS, Elyria, Ohio. Filed July 30, 1906. Serial No. 328,301.

Claim.—In a water heater, a cone shaped water receptacle provided with vertical, wide, triangular shaped folds, covered top and bottom, provided with suitable supply and discharge pipes, in combination with suitable inclosed casing, as a heat confining element, and a suitable heat



burner, or heat producing element, all as above set forth and substantially described.

835,198. METAL SEALING-CAP. CHARLES C. PARKER, Baltimore, Md. Filed Jan. 22, 1907. Serial No. 353,459.



Claim.—1. In a bottle seal, a cap having a skirt divided and formed into outwardly and upwardly extending coils, for the purpose set forth.

2. In a bottle seal, a cap having the skirt divided into a plurality of wings, each wing being coiled outwardly and upwardly, for the purpose set forth.

3. In a bottle seal, a cap having a skirt divided into a plurality of wings, each wing being coiled outwardly and upwardly, and said wings being proportioned in length to allow a portion thereof to remain uncoiled when clamped on a bottle, for the purpose set forth.

4. In a bottle seal, a cap having the skirt thereof divided into a plurality of radial wings with the opening between the wings extending to a point adjacent to the top of the cap, said wings being coiled outwardly and upwardly, and forming with the undivided part of the skirt a seat for the gasket.

5. In a bottle seal a cap formed from a blank of sheet metal consisting of a circular disk having a plurality of radial wings, said disk being dished, and said wings being coiled outwardly and upwardly, for the purpose set forth.

6. A bottle seal comprising a cap and inclosed gasket, said cap having a skirt divided into wings, and the several wings being outwardly and upwardly coiled, said coils being less in length than the thickness of the locking shoulder of the bottle it is adapted to engage whereby a partial uncoiling of the wings is required in applying the seal to a bottle, as and for the purpose set forth.

835,199. RESILIENT WHEEL FOR VEHICLES. JOHN PARTINGTON, Saltaire, England. Filed June 11, 1906. Serial No. 321,207.



Claim.—A wheel having a broad tread divided into sections, each section comprising a hub portion having a corrugated outer circumference, a rim portion having a corrugated inner circumference, said corrugations in the rim portion being separated from each other by cavities and a cushion between the two corrugated surfaces.

835,200. PORTABLE PLACER-MINING MACHINE. JAMES E. PENNICK and JOHN O. HALE, Topeka, Kans. Filed Mar. 10, 1906. Serial No. 305,216.



Claim.—1. The combination of a centrifugal pump having the intake from above, a hose connected therewith, a nozzle having a perforated end and a rod-handle therefor, a number of upright rods built upon the pump, an upper frame secured thereon, rods pivoted thereto and foldable against said frame and supporting a shaft and pulleys, a drive-shaft and pulley for the pump, a bracket for securing the sluice-box thereto, and pulleys concentric with said bracket pivots, a sluice-box made up of sections detachably secured together, an agitating rod extending through the sluice-box and means for operating said rod.

2. The combination of a centrifugal pump, a frame built upon the same, an upright discharge tube leading therefrom and pivotally mounted in the frame, a sluice-box secured to said upright tube, a battering-board in the sluice-box, riffles, and an agitating rod therein, pulleys mounted concentrically with said upright tube for operating the agitating rod, and the pivoted rods and foldable braces therefor with driving shaft and pulleys supported thereon.

3. The combination of a centrifugal pump having the intake from above, a hose connected therewith, a nozzle having a perforated end and a rod-handle therefor, a number of upright rods built upon the pump, an upper frame secured thereon, a bracket for securing the sluice-box thereto, and pulleys concentric with said bracket pivots, a sluice-box made up of sections detachably secured together, an agitating rod extending through the sluice-box and means for operating said rod.

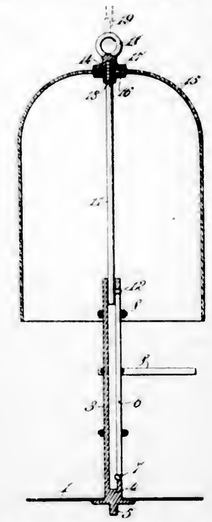
4. The combination of a centrifugal pump having the intake from above, a hose connected therewith, a number of upright rods built upon the pump, an upper frame secured thereon, a bracket with pivots for securing the sluice-box thereto, and pulleys concentric with said bracket pivots, a sluice-box made up of sections detachably secured together, an agitating rod extending through the sluice-box and means for operating said rod.

5. The combination of a centrifugal pump, a number of rods built upon the pump, an upper frame secured thereon, a bracket for securing a sluice-box thereto and pulleys concentric with said bracket pivots, and a sluice-box detachably secured to said frame and an agitating rod and means for operating same by said pulley.

6. The combination of a centrifugal pump having the intake from above, a flexible hose connected therewith, an upright frame built upon the pump, suitable power transmission devices mounted in said frame, and a sluice-box detachably secured to said frame and an agitating rod therein.

7. The combination of a centrifugal pump having the intake from above, a flexible hose connected therewith, a number of upright rods built upon the pump and an upper frame secured thereon, suitable power transmission devices mounted in said frame, and a sluice-box pivotally and detachably secured to said frame.

835,201. DISPLAY-CASE. BASIL P. RAMSEY, Louisville, Ga. Filed Mar. 26, 1907. Serial No. 364,653.



Claim.—1. A display case comprising a bottom, a vertically-movable sleeve to which the bottom is secured, a cover, and means depending in said cover and engaging in the sleeve for supporting the latter and the bottom when elevated or lowered.

2. A display case comprising a vertically-movable article-supporting section, a cover adapted to inclose the same, and means depending in said cover and engaging in the article-supporting section for suspending the same when in its elevated or lowered position.

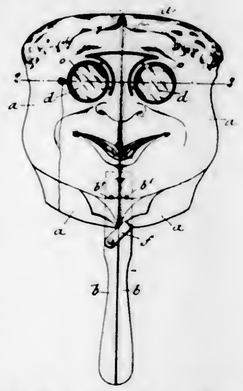
3. A display case comprising a vertically-shiftable sleeve provided with an elongated slot having an offset, a bottom carried by the sleeve, a cover adapted to inclose the sleeve and bottom, and a rod depending in the cover and provided with a lug extending in the slot and adapted to suspend the sleeve when elevated or lowered.

4. A display case comprising a cover, a sleeve adapted to be elevated and lowered within said cover, a bottom carried by the lower end of the sleeve, and means secured in the cover and engaging in the sleeve for suspending the latter in its elevated or lowered position.

5. A display case comprising a cover, a rod depending in the cover, means for securing the upper end of the rod to the top of the cover, said means embodying an eye, a slotted sleeve shiftable upon said rod, a lug secured to the lower end of the rod and adapted to engage the sleeve for supporting it in its elevated or lowered position, and a bottom carried by the sleeve.

6. A display case comprising a cover, a vertically-shiftable article-supporting means, and a suspension means arranged within the cover and connected thereto and adapted to engage the article-supporting means when lowered thereby supporting it and adapted to engage the article-supporting means when it is moved in the cover thereby retaining said means in position.

855,202. COMBINED FAN AND EYE-PROTECTOR. THEODOR RITTER, West Hoboken, N. J. Filed Feb. 20, 1906. Serial No. 302,077.



Claim.—1. A fan comprising a body of cardboard or similar material constructed to fold into two sections, and a handle comprising two handle-sections which are secured to said fan, one at either side of the folding line.

2. A fan comprising a body of cardboard or similar material arranged to fold along its center-line and provided with a handle consisting of two handle-sections secured to said body, one at either side of said center-line and extending parallel to the latter, said handle-sections being swung together when the fan is folded so that their front faces oppose each other.

3. A fan comprising a body arranged to fold along its center-line into two sections, and a handle for said fan comprising two handle-sections pivoted to said body, one at either side of said center-line and extending parallel to the latter, said sections being pivoted to said body so as to swing in a plane parallel to the sections of said body formed by folding the same and into position alongside the folded edge of said body.

4. A fan comprising a body of cardboard or similar material arranged to fold into two sections, a handle for said fan consisting of two handle-sections secured to said body, one at either side of the folding line, and a device in connection with said handle whereby the fan is held in flat condition.

5. A fan comprising a body of cardboard or similar material arranged to fold along its center-line, a handle for said fan consisting of two handle-sections secured to said body, one at either side of said center-line, and a device carried by one of said handle-sections and arranged to extend across the other handle-section in order to hold the fan in flat condition.

855,203. CIGAR-CUTTER. ALFRED SCHICKERLING, New York, N. Y. Filed Oct. 15, 1906. Serial No. 338,915.

Claim.—A cigar cutter consisting of four sections, each of which has a curved outer edge, each section having a sharpened inner edge, each of said inner edges having a central curved portion and straight end portions, the end portions of one section being adapted to contact with the end portion of the opposite section when the device is manipulated, the sides of each of said sections converging toward the center and one of said sides being extended outwardly forming an attaching ear, the latter overlapping the adjacent sections and pivoted thereto, substantially as described.



855,204. REINFORCING-BAR FOR CONCRETE STRUCTURES. EDSON M. SCOFIELD, Philadelphia, Pa. Filed Feb. 5, 1907. Serial No. 355,820.



Claim.—1. A reinforcing bar of substantially elliptical section, having a series of transverse ribs on each side, staggered relatively to each other, with a substantially conical projection, between each pair of adjacent transverse ribs, substantially as described.

2. A reinforcing bar of substantially elliptical section, having a series of transverse ribs on each side, with a plurality of projections arranged in lines inclined to the axis of the bar, and placed between each pair of transverse ribs, substantially as described.

3. A reinforcing bar of substantially elliptical section, having a series of transverse ribs on each side, each rib being divided into two parts staggered relatively to each other and extending in planes substantially at right angles to the longitudinal axis of the bar, substantially as described.

4. A reinforcing bar of substantially elliptical section, having a series of transverse ribs on each side, each rib being divided into two parts staggered relatively to each other, with a plurality of projections arranged in lines inclined to the axis of the bar, and placed between each pair of adjacent transverse ribs, substantially as described.

5. A reinforcing bar of substantially elliptical section, having a series of transverse ribs on each side, with a plurality of projections arranged in lines inclined to the axis of the bar, and placed between each pair of transverse ribs, each rib consisting of two substantially parallel sections having an intermediate section extending substantially at right angles to and uniting them, substantially as described.

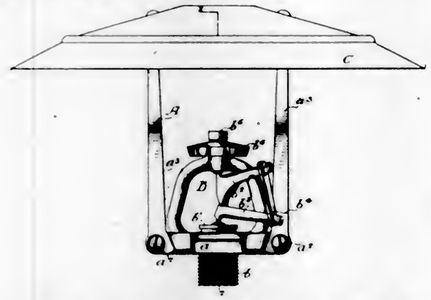
6. A reinforcing bar of substantially elliptical section, having a series of transverse ribs on each side, each rib consisting of portions lying in substantially parallel planes transverse to the longitudinal axis of the bar, with an intermediate portion extending substantially parallel to said longitudinal axis, substantially as described.

855,205. HOOD FOR AUTOMATIC SPRINKLER-HEADS. JOHN C. SCOTT, Philadelphia, Pa., assignor to International Sprinkler Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Aug. 31, 1906. Serial No. 332,751.

Claim.—1. The combination of an automatic sprinkler, and a cover for the same extending above and for relatively great distances beyond the lines of the sides thereof, with means independent of the sprinkler mechanism for supporting said cover, substantially as described.

2. The combination with an automatic sprinkler of a hood or cover wholly above the sprinkler and independent of the deflector thereof, said hood being provided with means whereby it may be attached to said sprinkler head, substantially as described.

3. The combination of a substantially conical hood, with an automatic sprinkler having a deflector, and an open frame connecting said hood to the sprinkler head, said frame being arranged to support the hood so that the latter extends above and covers the sprinkler mechanism, substantially as described.



4. The combination with an automatic sprinkler, of a frame consisting of two side members each having a projecting portion or portions, means for connecting said side members so as to clamp the device to the sprinkler head, and a hood supported on the side members, substantially as described.

5. The combination with a sprinkler head, of a pair of horizontally extending side members each having an upwardly projecting standard at its end, screws connecting the ends of the side members and serving to clamp them to the sprinkler head, with a conical hood supported by said standards, substantially as described.

855,206. TYPE-WRITING MACHINE. CHARLES H. SHEPARD, New York, N. Y., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed Mar. 28, 1901. Serial No. 53,337.



Claim.—1. In a typewriting machine, the combination with a platen and its usual or ordinary line spacing mechanism, of an intermediate line space mechanism constructed to turn the platen and paper irregular line spaces which differ in width from those afforded by the main line spacing mechanism, and means for predetermining the width of such irregular line spaces to distances intermediate successive tooth spaces of the main line spacing mechanism.

2. In a typewriting machine, the combination of ordinary line-feeding mechanism, including a rack, means for releasing the paper from the control of said rack, and mechanism having a minutely adjustable throw for effecting special line-feeding movements of the paper to distances which differ from the distance effected by the teeth of the rack of the ordinary line feeding mechanism.

3. In a typewriting machine, the combination of ordinary line-feeding mechanism, including a rack, means for releasing the paper from the control of said rack, mechanism having a minutely adjustable throw for effecting special line-feeding movements of the paper, and means for preventing accidental movement of the paper in line-feeding direction when released from the control of said rack.

4. In a typewriting machine, the combination of a revoluble platen, an ordinary line-feeding mechanism, including a platen-positioning ratchet wheel, a co-operating spring detent normally engaging said ratchet wheel, and a reciprocatory clutch mechanism having an adjustable throw for rotating the platen so as to produce a plurality of variable special line-feeding movements of the paper.

5. In a typewriting machine, the combination of a revoluble platen, an ordinary line-feeding mechanism, including a platen-positioning wheel, a releasable detent normally engaging said wheel, a reciprocatory clutch mechanism having an adjustable throw, for rotating the platen so as to produce a plurality of variable special line-feeding movements of the paper, and means for frictionally opposing rotation of the platen and which is brought into co-operation therewith when the detent is released.

6. In a typewriting machine, the combination of a revoluble platen, an ordinary line-feeding mechanism, including a platen-positioning wheel, a releasable detent normally engaging said wheel, hand actuated means for releasing said detent so as to free the wheel from control of the detent, a reciprocatory clutch mechanism for variably rotating the platen, and a screw for effecting minute variations in the throw of said reciprocatory clutch mechanism.

7. In a typewriting machine, the combination of a platen, a platen frame, a line-feeding mechanism arranged at one end of the platen and including a platen-positioning wheel, a releasable detent normally engaging said wheel, hand actuated means for releasing said detent so as to free the wheel from control of the detent, and a reciprocatory clutch mechanism arranged at the other end of the platen for variably rotating the latter.

8. In a typewriting machine, the combination of a revoluble platen, a line-space wheel, a releasable detent therefor, hand actuated means for releasing said detent so as to free the wheel from control of the detent, ordinary line-feeding devices co-operating with said wheel, a clutch for effecting a plurality of variable special line-feeding movements of the platen, and means for variably limiting the throw of said clutch.

9. In a typewriting machine, the combination of a revoluble platen, a line-space ratchet wheel, a releasable detent therefor, hand actuated means for releasing said detent so as to free the wheel from control of the detent, ordinary line-feeding devices co-operating with said wheel, a clutch for effecting a plurality of variable special line-feeding movements of the platen, means for variably limiting the throw of said clutch, and a returning spring.

10. In a typewriting machine, the combination of a platen, a platen shaft, a platen frame, arm 22, sleeve 23, gripper 21 pivoted upon said arm 22 and having handle 25, stop arm 30 upon said sleeve, spring 27, screw 31, and binding nut 33.

11. In a typewriting machine, the combination of a platen, a platen shaft, a platen frame, arm 22, sleeve 23, gripper 21 pivoted upon said arm 22 and having handle 25, stop arm 30 upon said sleeve, spring 27, screw 31 carried upon arm 32, and binding nut 33.

12. In a typewriting machine, the combination with a platen, of a line-space wheel, reciprocatory devices for rotating said wheel regular tooth-spaces, a reciprocatory clutch for independently effecting rotative universal adjustments of the platen, and means for mechanically lim-

iting the throw of said clutch and thereby determining the extent of movement of the paper.

13. In a typewriting machine, the combination with a platen, of a line space wheel regular line spaces, reciprocatory devices for rotating said wheel, a reciprocatory clutch for independently effecting universal rotative adjustments of the platen, and minutely adjustable means for variably limiting the throw of said clutch.

14. In a typewriting machine, the combination with a platen, an ordinary line space wheel, and its operating lever and means for rotating the platen regular line spaces, of a clutch having a limited throw and operated independently of said lever, for causing special rotative universal adjustments of the platen and the line-space wheel.

15. In a typewriting machine, the combination with a platen, an ordinary line-space wheel, and its operating lever and means for rotating the platen regular line spaces, of a clutch lever for independently rotating the platen and line-space wheel universally and, finely adjustable means for mechanically limiting the stroke of said clutch lever.

16. In a typewriting machine, the combination with a platen, of a clutch for rotating the platen irregular line spaces in opposite directions, and means for mechanically limiting the throw of the clutch in both directions.

17. In a typewriting machine, the combination with a revoluble platen, of a clutch lever for rotating the platen irregular line spaces in opposite directions, and adjustable means for limiting the stroke of the clutch lever in both directions.

18. In a typewriting machine, the combination with a platen, of an arm 22 pivoted concentrically therewith, opposite grippers 21 and 37 pivoted upon said arm, and lever 25 formed integral with said grippers.

19. In a typewriting machine, the combination of a platen, arm 22, grippers 21 and 37, lever 25, formed integral with said grippers platen hend 20, and stops for the arm 22 on opposite sides thereof.

20. An intermediate line spacing device for typewriting machines, comprising a clutch normally out of engagement with the paper cylinder, means for engaging the clutch and the paper cylinder and for rotating the cylinder independently of the line spacing mechanism of the machine and means for limiting in scope the movement of the cylinder under the influence of the clutch to a distance less than a normal line space and means for automatically returning the paper cylinder to its original position.

21. An intermediate line spacing device for typewriting machines, comprising a clutch normally out of engagement with the paper cylinder, means for engaging the clutch and the paper cylinder and for rotating the cylinder independently of the line spacing mechanism of the machine and an adjustable stop adapted to limit in scope the movement of the cylinder under the influence of the clutch to a distance less than a normal line space and means for automatically returning the paper cylinder to its original position.

22. An intermediate line spacing device for typewriting machines comprising a clutch normally out of engagement with the paper cylinder, adapted to rotate the latter in the direction opposite to the normal roation for spacing the lines, means for engaging the clutch with the paper cylinder and for rotating the cylinder in the aforesaid direction independently of the line spacing mechanism of the machine.

23. An intermediate line spacing device for typewriting machines comprising a clutch normally out of engagement with the paper cylinder, adapted to rotate the latter in the direction opposite to the normal rotation for spacing the lines, means for engaging the clutch with the paper cylinder and for rotating the cylinder in the aforesaid direction independently of the line spacing mechanism of the machine, and means for limiting in scope the movement of the cylinder to a distance less than a normal line space.

24. An intermediate line spacing device for typewriting machines comprising a clutch normally out of engagement with the paper cylinder, adapted to rotate the latter in the direction opposite to the normal rotation for spacing the lines, means for engaging the clutch with the paper cylinder and for rotating the cylinder in the aforesaid direction independently of the line spacing mechanism of the machine, and an adjustable stop adapted to limit the scope of the rotation of the cylinder to a distance less than a normal line space.

25. In line spacing mechanisms for typewriting machines, the combination of a platen, means for affording predetermined regular line spacing movements of said platen through fixed distances, and universal line spacing means for affording any predetermined extent of universal line spacing movement of the platen.

26. In line spacing mechanisms for typewriting machines, the combination of a platen, means for affording predetermined regular line spacing movements of said platen through fixed distances, universal line spacing means for affording any predetermined extent of universal line spacing movement of said platen, and means for regulating the predetermined extent of movement of the platen effected at each operation of the universal line spacing means.

27. In a typewriting machine, the combination of a platen, a platen head having a smooth peripheral bearing surface, a spring restored vibratory frame which is pivoted to vibrate on the same center that the platen turns on, an engaging member pivoted to a portion of said frame and normally out of engagement with said peripheral bearing surface, hand operated means for moving said member around its pivot and into engagement, a stop on said vibratory frame to limit the movement of the frame in the direction of the feed of the platen, and an adjustable stop carried by said frame to limit the reverse or backward movement thereof.

28. In a typewriting machine, the combination of a platen, a smooth peripheral bearing surface connected thereto, a spring restored vibratory frame which is pivoted to vibrate on the same center that the platen turns on, an engaging member pivoted to said frame, a hand operated finger piece integral with said member for first moving it around its pivot and into engagement with its co-operating bearing surface and for then moving the member, frame and platen together for spacing, a stop carried by the frame to limit the movement of the frame in the direction of the feed of the platen, and an adjustable stop carried by the frame to limit the reverse or backward movement of the frame, whereby a variable throw may be imparted to the frame and variable line spacing be produced.

29. In a typewriting machine, the combination of a platen, a platen head secured thereto and having a smooth peripheral bearing surface thereon, a pivoted vibratory frame having two arms that extend to opposite sides of its pivotal center, said frame being pivoted to vibrate on the same center that the platen turns on and to move independently of said platen, an engaging member pivoted to a portion of said frame and adapted to move to and away from the bearing surface, a finger piece connected directly to said member to move it into engagement with the bearing surface and then to move the member, platen and frame together for line spacing, a stop carried by one of said arms to limit the vibration of the frame in the direction of the feed of the platen, and an adjustable set screw carried by the other of said arms and adapted to limit the backward or reverse movement of the frame.

30. In a typewriting machine, the combination of a platen carriage, a platen, a platen head secured thereto, a pivoted vibratory frame having two arms that extend upon opposite sides of the pivotal center of said frame and each arm provided with a stop that is adapted to bear upon an end rail of the platen carriage, an engaging member pivoted to said frame and a finger piece connected to said member.

31. In a typewriting machine, the combination of a platen, a pawl and ratchet line spacing mechanism co-operating with the platen for effecting line spacing movements of the platen through given distances corresponding to the distances between two or more teeth of the ratchet, and auxiliary universal or fractional line spacing mechanism co-operating with the platen and effective to move the platen a predetermined distance at each operation.

32. In a typewriting machine, the combination of a platen, a pawl and ratchet line spacing mechanism co-operating with the platen for effecting line spacing movements of the platen through given distances corresponding to the distances between two or more teeth of the ratchet, and universal fractional line spacing devices that are adapted to move the platen any desired fraction of the distance between two teeth of the ratchet at each operation.

33. In a typewriting machine, the combination of a platen, a pawl and ratchet line spacing mechanism co-operating with the platen for effecting line spacing movements of the platen through given distances corresponding to the distances between two or more teeth of the ratchet, auxiliary universal or fractional line spacing mechanism co-operating with the platen and effective to move the platen a predetermined distance at each operation, a detent co-operating with said ratchet, a brake for the platen, and means for throwing said detent out of co-operation with the ratchet and for applying the brake.

34. In a typewriting machine, the combination of a platen, means for moving the platen predetermined line space distances, means for moving the platen a predetermined fraction of a line space distance as determined by said first mentioned means, and means for automatically returning the platen to the writing line position determined by said first mentioned moving means.

35. In a typewriting machine, the combination of a platen, means for moving the platen predetermined line space distances, fractional spacing means for moving the platen a predetermined fraction of a line space distance as determined by said first mentioned means, means for automatically returning the platen to the writing line position determined by said first mentioned moving means, and adjustable means for regulating the extent of fractional spacing effected by said fractional spacing means.

36. In a typewriting machine, the combination of a platen, means for moving the platen a predetermined line space distance at each operation, and means for moving the platen a predetermined fractional extent of the distance it is capable of being moved at each operation by said first mentioned means.

855,207. TYPE-WRITING MACHINE. CHARLES H. SHEPARD, New York, N. Y., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed July 12, 1905. Serial No. 269,345.

Claim.—1. In a typewriting machine, the combination of a ribbon vibrator, a printing point indicator that is in the form of an angle lever and is movable independently of the vibrator, and an automatically actuated lever that actuates said vibrator and indicator.

2. In a typewriting machine, the combination of a printing point indicator, an independently movable ribbon vibrator, and a spring which constitutes an operative connection between said vibrator and indicator.

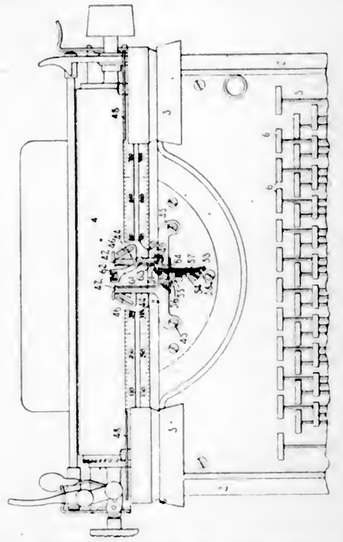
3. In a typewriting machine, the combination of a ribbon vibrator, means for automatically actuating said vibrator, an indicator, and a spring between said vibrator actuating means and the indicator.

4. In a typewriting machine, the combination of an automatically actuated ribbon vibrator, a printing point indicator, and a lost motion connection between the vibrator and indicator.

5. In a typewriting machine, the combination of an automatically actuated ribbon vibrator, a printing point indicator separate from but connected to said vibrator so as to be actuated when the vibrator is moved and to afford a movement of the vibrator independently of said indicator.

6. In a typewriting machine, the combination of a ribbon vibrator, an automatically actuated lever for operating said vibrator at each printing operation, and a printing point indicator in the form of a bell crank or angle lever pivoted to a fixed portion of the machine, one arm of said bell crank lever constituting a pointer adapted to register with the printing point, the other arm of said lever being operatively connected to said operating lever.

7. In a typewriting machine, the combination of a ribbon vibrator, an automatically actuated lever for operating said vibrator at each printing operation, a printing point indicator in the form of a bell crank or angle lever pivoted to a fixed portion of the machine and one arm of which constitutes a pointer adapted to register with the printing point, and a spring between the other arm of said angle lever and the automatically operated lever for the vibrator.

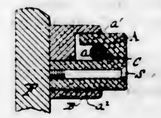


8. In a typewriting machine, the combination of a ribbon vibrator, a device for actuating said vibrator, a printing point indicator, and a spring interposed between said device for actuating the vibrator and said indicator and through which motion is transmitted from the vibrator actuating device to said indicator.

9. In a typewriting machine, the combination of a printing point indicator having an opening therein that corresponds substantially in size to a character to be written by the machine, means for normally maintaining the indicator in position where the said opening therein will register with the printing point, and means for automatically moving said indicator away from the printing point at each printing operation.

10. In a typewriting machine, the combination of a ribbon vibrator, means for automatically actuating said vibrator, means for effecting a variable throw of said vibrator, an independent printing point indicator, and means for effecting a given extent of movement to the indicator from the means for automatically actuating the vibrator.

855,208. INSULATOR. HERBERT SINCLAIR, Trenton, N. J. Filed Feb. 19, 1907. Serial No. 358,199.



Claim.—1. A knob insulator, consisting of two parts, one a body part grooved on its rear side to receive the

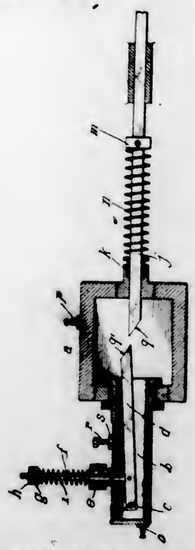
wire and the other a ring into which said body part enters, the ring being interposed between the wire and the support for the insulator.

2. A knob insulator, consisting of two parts, one a body part grooved on its rear side to receive the wire with a long and a short leg on opposite sides of the groove, the other part being a ring into which said body part enters, and being interposed between the wire and the support for the insulator.

3. A knob insulator, consisting of two parts, one a body part grooved on its rear side to receive the wire and the other a ring into which the body part enters, the ring being interposed between the wire and the support for the insulator, and the body part having a hole longitudinally through it for the passage of the securing means.

4. A knob insulator, consisting of two parts, one a body part grooved on its rear side to receive the wire with a long and a short leg on opposite sides of the groove, the other part being a ring interposed between the wire and the support for the insulator, and having a passage through the rear for said long leg, which itself has a hole for the passage of the securing means.

855,209. IGNITION DEVICE FOR EXPLOSIVE-ENGINES. JOHN STADTHERR, Gibbon, Minn. Filed Feb. 8, 1907. Serial No. 356,397.

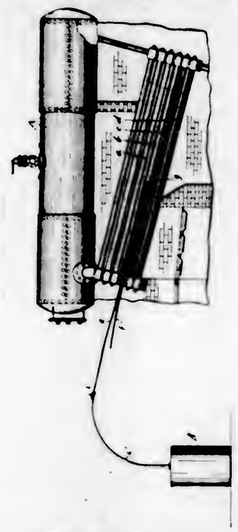


Claim.—In a device of the character described, the combination of a spring-controlled electrode mounted free to oscillate; a slidable electrode which co-operates therewith; an explosion cylinder into which the ends of said electrodes project; and means operable from outside said cylinder to limit the travel of said oscillatory electrode, and thereby to control the time of ignition.

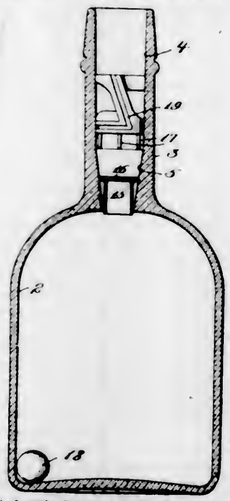
855,210. BOILER-FLUE CLEANER. ARCHIBALD STEWART, Keota, Iowa. Filed Sept. 26, 1906. Serial No. 336,244.

Claim.—1. An apparatus for cleaning boiler flues consisting of a pipe having a burner thereon, and means for supplying air under pressure and discharging it in rear of the burner.

2. An apparatus for cleaning boiler flues consisting of a pipe having a burner thereon, a tank containing burning fluid, and a flexible connection extending therefrom to the pipe and means for supplying air under pressure and discharging it in rear of the burner.



855,211. BOTTLE. FRANCIS S. TULL, Houston, Tex. Filed Jan. 14, 1907. Serial No. 352,275.



Claim.—1. A bottle having a discharge passage, a plug fitted in said passage and involving two heads and a connecting neck, one head having an outlet located at one side of said neck, and the other head having an inlet located at the opposite side of said neck, and said lower head having means between the outlet and inlet whereby a wire which may be inserted into the bottle will be bent.

2. A bottle having a discharge passage, and a plug fitted in said passage involving upper and lower heads and a neck connecting the heads, the upper head having an outlet at one side of said neck, and the lower head having an inlet at the opposite side of said neck, and said lower head also having a bulge on its upper side provided with an inclined face which slopes upward toward said outlet.

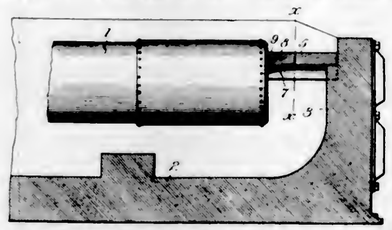
3. A bottle provided with a discharge passage, a plug fitted in said discharge passage and provided with upper and lower heads and a connecting neck for the heads, the upper head having an outlet, and the lower head having an inlet substantially centrally thereof, and a valve in said passage below the plug.

4. A bottle provided with a discharge passage, a plug fitted in said discharge passage and provided with upper and lower heads and a connecting neck for the heads, the upper head having an outlet, and the lower head having an inlet substantially centrally thereof, and a valve in said passage below the plug, said lower head having depending pins to prevent the valve from directly engaging the plug.

5. A bottle provided with a discharge passage, a plug fitted in said passage and involving upper and lower heads, and a connecting neck for said heads, the upper head having an outlet, and the lower head having a substantially centrally disposed inlet, and a valve movable below the plug, the latter having pins to prevent the valve coming into direct contact therewith.

6. A plug for use in bottles comprising two heads and a connecting neck, one head having an outlet at one side of the neck, and the other head having an inlet at the opposite side of the neck, and said plug having an air vent extending along the lower head, along the neck and across said upper head exteriorly thereof.

855,212. BOILER-FURNACE. DAVID VINES, Mechanicsville, N. Y. Filed Mar. 8, 1907. Serial No. 361,352.



Claim.—1. In a boiler-furnace, the combination, with the boiler and the side walls of the combustion chamber, of a laterally curved arch supported on said side walls, the end of said arch adjacent to the boiler being thicker at the central portion thereof for the purpose specified.

2. In a boiler-furnace, the combination, with the boiler and the side walls of the combustion chamber, of a laterally curved arch composed of a plurality of bricks and supported on said side walls, the bricks forming the central portion of said arch being thicker at the ends adjacent to the boiler for the purpose specified.

3. In a boiler-furnace, the combination, with the boiler and the side walls of the combustion chamber, of a laterally curved self-sustaining brick arch supported on said side walls, the end of said arch adjacent to the boiler being thicker at the central portion thereof for the purpose specified.

4. In a boiler-furnace, the combination, with the boiler and the walls of the combustion chamber, of an arch having its end adjacent to the boiler beveled upwardly and away from the boiler, forming a V-shaped slot to receive a filling material.

5. In a boiler-furnace, the combination, with the boiler and the walls of the combustion chamber, of an arch composed of a plurality of bricks, said bricks having their end faces adjacent to the boiler beveled upwardly and away from the boiler forming a V-shaped slot to receive a filling material.

855,213. MANUFACTURE OF VISCOSE. MONTGOMERY WADDELL, New York, N. Y., assignor, by mesne assignments, to Silas W. Pettit, Philadelphia, Pa. Filed July 7, 1904. Serial No. 215,679.

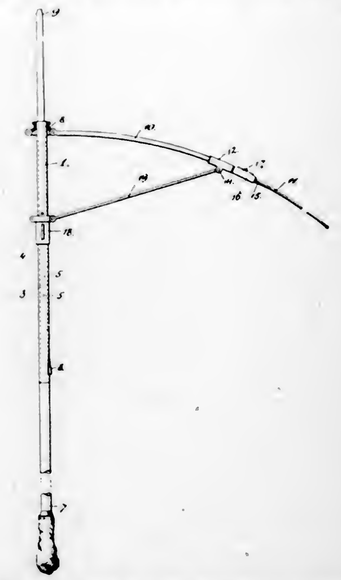
Claim.—1. The hereinbefore described improvement in the manufacture of viscose, which consists in submerging a mass of alkali cellulose in carbon bisulfid until it is converted into cellulose xanthate while secluding the same from the atmosphere; draining the free carbon bisulfid from the mass; then covering the xanthate with an aqueous solution of a solvent; and removing the surplus carbon bisulfid as vapor, substantially as set forth.

2. The hereinbefore described improvement in the manufacture of viscose, which consists in submerging a mass of alkali cellulose in carbon bisulfid until it is converted into cellulose xanthate while secluding the same from the atmosphere; draining the free carbon bisulfid from the mass; then covering the xanthate with an aqueous solution of a solvent; and removing the surplus carbon bisulfid as vapor, by producing a partial vacuum adjacent to said mass, substantially as set forth.

3. The hereinbefore described improvement in the manufacture of viscose, which consists in submerging a mass of alkali cellulose in carbon bisulfid until it is converted into cellulose xanthate while secluding the same from the atmosphere; draining the free carbon bisulfid from the mass; then covering the xanthate with an aqueous solution of sodium hydrate; agitating the mass during said treatment; and, removing the surplus carbon bisulfid as vapor, by producing a partial vacuum adjacent to said mass, substantially as set forth.

4. The herein described improvement in the manufacture of viscose which consists in submerging a mass of alkali cellulose in carbon bisulfid, until it is converted into cellulose xanthate while secluding the same from the atmosphere, draining the free carbon bisulfid from the mass, then covering the xanthate with an aqueous solution of a solvent until of the required consistency for forming filaments, and then removing the surplus carbon bisulfid, substantially as set forth.

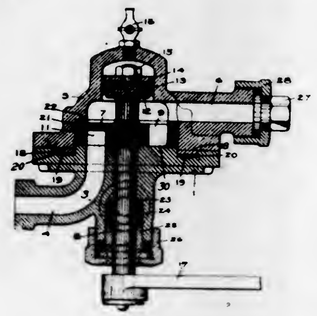
855,214. FOLDING UMBRELLA. JOHN Q. ADAMS, Sr., Allegheny, Pa. Filed Feb. 26, 1907. Serial No. 359,425.



Claim.—In a folding umbrella, the combination with a foldable telescopic stick, a notch carried by the stick, a runner slidable on the stick, and a rib comprising an inner and an outer section, the outer section having an integral sleeve through which the inner section is received, said sleeve provided with lugs, stretchers pivotally connected

at their outer ends to said lugs and at their inner ends to said runner, a sleeve integral with the outer end of said inner section and through which the outer section is received, a spring carried by the sleeve of the outer section extending through the sleeve of the inner section having a notch to engage with the outer end of the sleeve carried by said inner section, said inner and outer sections of the rib being substantially channel-shaped in cross section, and the sleeve carried by the outer section having a substantially channel-shaped groove which receives the said inner section.

855,215. HYDRAULIC VALVE. JOHN H. ALLENDORFER, Westmont borough, Pa. Filed Nov. 19, 1904. Serial No. 233,485.



Claim.—1. In a valve, a body having exhaust and delivery ducts formed therein, a shell secured to said body, arranged with an inlet duct and a valve chamber, a revoluble flat disk in said chamber provided with a stem or spindle projecting outwardly of said body, a collar upon said stem or spindle subjected to the fluid pressure acting upon the said disk and arranged to balance the same, means for preventing leakage past the said collar and means for releasing any fluid that may collect thereabove.

2. In a valve, a body having outlet and delivery ducts formed therein, a shell secured to said body arranged with an inlet duct and a valve chamber, a revoluble flat disk mounted in said chamber, ports or openings through said disk and a passageway underneath and within the body thereof, each of said ports or openings being adapted to register with one of said delivery ducts while the said passageway forms a continuous channel between the other delivery duct and the outlet or exhaust duct, a stem or spindle connected with said flat disk and projecting outwardly of said body, means for packing the stem, a collar upon said stem or spindle above the valve-disk subjected to the fluid pressure acting upon the said disk and arranged to balance the same, a cup and washer secured above said collar and located therewith in a recess within the shell, and a stopcock attached to said recess for releasing any fluid that may collect above said collar.

3. In a valve, a body having exhaust and delivery ducts formed therein, a shell secured to the said body arranged with an inlet duct and a valve chamber, means for securing the body and the shell, and a packing space therebetween, a revoluble flat valve-disk seated in said valve chamber and upon the said body, ports or openings through said valve-disk and a passageway underneath and within the body thereof, a stem or spindle connected with said flat disk and projecting outwardly of the valve body, packing surrounding the stem and compressed by a gland secured to the said body, a collar upon the said stem or spindle above the valve-disk, a cup and washer secured to said collar located therewith in a recess within said shell, and a stopcock attached to said shell communicating with the said recess.

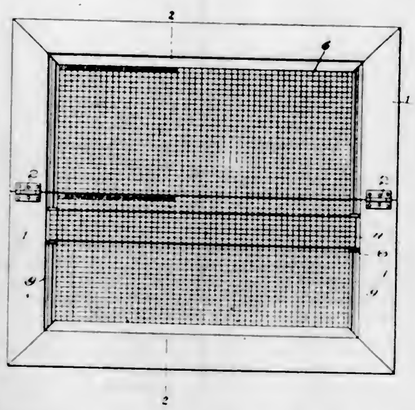
855,216. MEANS FOR CARDING ARTICLES OF MERCHANDISE. LAURITZ W. ANDERSEN, Waterbury, Conn., assignor to The Plume & Atwood Mfg. Co., Waterbury, Conn., a Corporation of Connecticut. Filed Dec. 19, 1906. Serial No. 348,539.



Claim.—1. A card for safety pins, having two parallel rows of holes of appreciable area forming parallel pairs, and slits extending between the holes of each pair and of such irregular outline as to form central and side tongues.

2. A card for safety pins, having two parallel rows of holes of appreciable area forming parallel pairs, and slits through the card of a double ogee curved form extending across between the holes of each pair and from similar limbs of each hole so as to form central and side tongues.

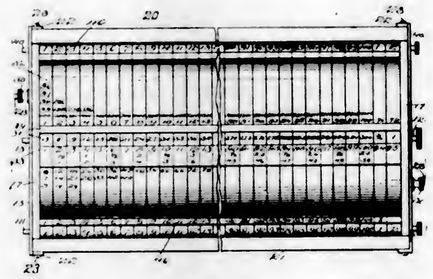
855,217. CHART-FRAME WITH ADJUSTABLE SLIDE. JOHN A. ANSELL, Seattle, Wash. Filed Oct. 9, 1905. Serial No. 282,030.



Claim.—1. In a device of the class described, a hinged frame having grooves formed in its longitudinal inner edges, and a slide having tenons formed upon its opposite ends and slidably mounted in the grooves, and removable therefrom when the frame is folded.

2. In a device of the class described, a hinged frame having grooves formed in its longitudinal inner edges, a slide having tenons formed upon its opposite ends and slidably mounted within the groove, and with reversely inclined sides forming beveled opposite edges, and removable therefrom when the frame is folded.

855,218. COMPUTING DEVICE. JOHN A. ANSELL, Seattle, Wash., assignor to The Ansell Company, Seattle, Wash., a Corporation of Washington. Filed June 2, 1906. Serial No. 319,902.

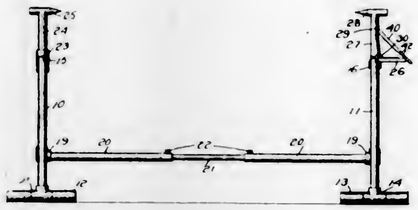


Claim.—1. In a computing device, a casing embodying end sections provided with slots, arms movably mounted in the slots and provided with bearing openings, and a cylinder journaled within the casing and in the bearing openings.

2. In a computing device, a casing provided with a transparent side, and embodying an end plate provided with a slot, an arm slidably mounted in the slot and provided with a bearing opening, and a cylinder journaled in the bearing opening.

3. In a computing device, a casing embodying transparent sides, and an end plate joining the transparent sides and provided with a slot, an arm slidably mounted in the slot and provided with a bearing opening, and a cylinder disposed longitudinally within the casing and journaled in the bearing opening.

855,219. STAND FOR REVOLUBLY SUPPORTING ARTICLES TO BE PAINTED. JOSEPH S. ANTHONY, Jr., Newport, R. I. Filed Jan. 9, 1907. Serial No. 351,503.

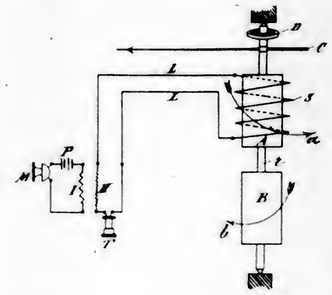


Claim.—A device of the type set forth comprising a pair of frames, an adjustable connection therebetween whereby said frames may be spaced at selected distances from one another, a rigid spur member carried centrally of one of said frames, two hinged spurs carried by the other of said frames and pointing oppositely to said first named spur, a spring pressed yoke engaging each of said last named spurs, and means for retaining said last named spurs at selected positions about their pivots.

855,220. ELECTRIC METER. RICCARDO ARNO, Milan, Italy. Filed Jan. 6, 1906. Serial No. 294,904.

Claim.—1. The method of measuring a variable electric current, which consists in causing such current to affect a rotatable member placed within the influence of a rotary magnetic field.

2. The method of measuring a variable electric current which consists in subjecting a rotatable magnetic body to the influence of a rotary magnetic field, and causing a deviation of the magnetic lag in said body by superposing thereon a field due to said variable current.



3. The method of measuring a variable electric current which consists in placing a rotatable member within the influence of a rotary magnetic field, superposing thereon a field due to said variable current, and measuring the deviation of the rotatable member.

4. The method of measuring a variable electric current which consists in subjecting a rotatable member to a rotary magnetic field, impressing thereon a field due to said variable current, and measuring the deviation of said member caused thereby.

5. The method of measuring a variable electric current which consists in subjecting a rotatable magnetic member to the torque due to a rotary magnetic field, restraining the movement of said member by an opposing torque, and disturbing the equilibrium by the influence of said variable current upon the rotatable member.

6. The method of measuring variable electric currents which consists in subjecting a rotatable magnetic member to equal opposing torques due to rotary magnetic fields, and disturbing the equilibrium of said member by the influence of said variable currents.

7. The method of measuring variable electric currents which consists in subjecting a rotatable magnetic member to equal opposing torques due to rotary magnetic fields, and affecting one of said rotary fields by the influence of said variable currents.

8. An instrument for measuring variable electric currents comprising a rotatable member, means for impressing thereon a rotary magnetic field, and means for causing said variable currents to affect said member.

9. An instrument for measuring variable electric currents comprising a rotatable magnetic member, means for impressing thereon a rotary magnetic field, means for opposing the torque due to said field, and means for causing said variable currents to affect said member.

10. An instrument for measuring a variable electric current comprising a rotatable magnetic member, means for impressing thereon substantially equal opposing torques due to rotary magnetic fields, and means for causing said variable current to disturb the equilibrium of said body.

11. An instrument for measuring a variable electric current comprising a rotatable member, means for impressing thereon substantially equal opposing torques due to rotary magnetic fields, means for causing said variable current to disturb the equilibrium of said body, and means for measuring the amount of movement caused thereby.

12. An instrument for measuring a variable electric current comprising a rotatable member having two magnetic portions, means for subjecting said magnetic portions to equal opposing torques respectively due to rotary magnetic fields, and means for disturbing the equilibrium of said rotatable member by subjecting one portion to a magnetic field due to said variable current.

855,221. ELECTROLYTIC DIAPHRAGM AND METHOD OF MAKING SAME. LEO H. BAEKELAND, Yonkers, N. Y., assignor to Development and Funding Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 10, 1906. Renewed Feb. 16, 1907. Serial No. 357,756.

Claim.—1. A diaphragm comprising a pervious base and a permeable coating or filling dried thereon, substantially as described.

2. A diaphragm comprising a base of woven fabric and a permeable coating or filling dried thereon, substantially as described.

3. A diaphragm comprising a base of asbestos cloth and a permeable coating or filling dried thereon, substantially as described.

4. A diaphragm comprising a pervious base and a permeable coating or filling dried thereon, said coating containing an oxid of iron and a binder, substantially as described.

5. A diaphragm comprising a base of asbestos cloth and a permeable coating or filling dried thereon, said coating containing an oxid of iron and a binder, substantially as described.

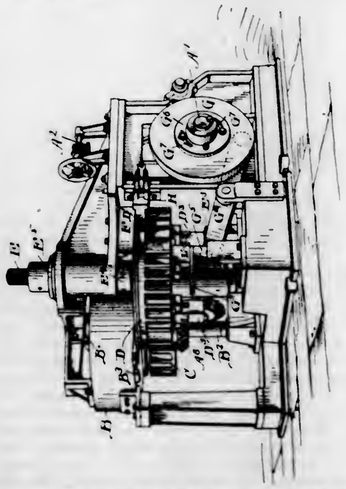
6. A diaphragmn comprising a base of asbestos cloth and a permeable coating or filling applied thereto, said coating containing an oxid of iron, a filling material and a binder substantially as described.

7. A diaphragm comprising a base of asbestos cloth, and a permeable coating or filling applied thereto, said coating containing an oxid of iron, asbestos and a hydroxid of iron, substantially as described.

8. A diaphragm comprising a base of asbestos cloth and a permeable coating or filling applied thereto, said coating comprising an alkaline mixture of ferric oxid, asbestos, and a hydroxid of iron, substantially as described.

9. The method of making a diaphragm which consists in applying to a pervious base a permeable coating or filling, and drying it thereon, substantially as described.

855,222. BRICK-PRESS. GEORGE W. BALKWILL, Cleveland, Ohio, assignor to The Semisteel Company, Cleveland, Ohio, a Corporation of Ohio. Filed Mar. 10, 1906. Serial No. 305,208.



Claim.—1. A mechanically operated brick press comprising a rotating mold cylinder having therein a plurality of mold cavities, a plunger in each cavity and vertically reciprocatable therein, a removable face plate fitted to the top of the mold cylinder and having openings therein above the mold cavities, a projecting ledge around the lower part of each mold cavity below the lower limit of movement of the upper face of the plunger, lining plates fitted about the four side walls of the mold cavities, said lining plates being provided with shouldered recesses along the longitudinal edges and fitted in the mold cavity above said projecting ledge in such manner that the shoulders come underneath the edges of the face plate overhanging the mold cavity, and adjusting devices carried by said ledge whereby the lining plates may be held up in such position that their upper edges are flush with the surface of the face plate.

2. A mechanically operated brick press comprising a rotatable mold cylinder having therein a plurality of mold cavities, a vertically reciprocatable plunger in each cavity, lugs depending from the mold cylinder at the side of the mold cavities carrying adjusting screws for fixing the lowermost position of the plunger, a projecting ledge around the lower part of each mold cavity below the lower limit of movement of the upper face of the plunger, a removable face plate fitted to the top of mold cylinder and having openings therein above the mold cavities, lining plates removably fitted about the four side walls of the mold cavities, said lining plates being provided with shouldered recesses along the longitudinal edges and fitted in the mold cavity above said projecting ledge in such manner that the shoulders come underneath the edges of the face plate overhanging the mold cavity and adjusting pins in said ledge by which the lining plates may be held up in such position that their upper edges are flush with the surface of the face plate.

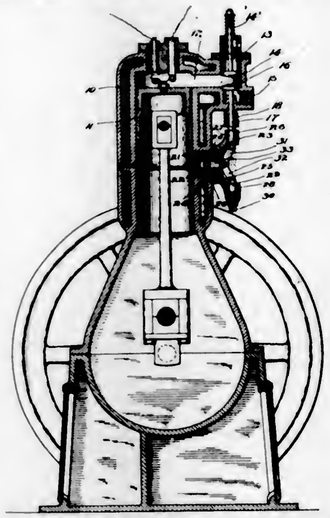
3. A mechanically operated brick press comprising a rotatable mold cylinder having therein a plurality of mold cavities, an intermittent gear rigid with said mold cylinder, a mutilated gear positioned to mesh with said intermittent gear, a constantly rotating shaft for transmitting motion to said mutilated gear, a crank on said shaft, a presser-head positioned beneath the path of the mold cavities in such location that the intermittent motion of the mold cylinder will bring each cavity in turn to rest over said presser-head, operating connection between said presser-head and said crank, a disk on said crank shaft, a cam wheel fixed to said disk in a manner to allow of circumferential adjustment, a rocking arm controlled by said cam wheel, a platform vertically reciprocatable in ways on the machine base, said platform being connected with the said rocking lever and provided with an arc-shaped extension lying beneath the path of the mold cavities.

4. A mechanically operated brick press comprising a rotatable mold cylinder having therein a plurality of mold cavities, a gear rigid with said mold cylinder, a second gear positioned to mesh with said gear, a constantly rotating shaft for transmitting motion to said second gear, a crank on said shaft, a presser-head positioned beneath the path of the mold cavities in such location that the intermittent motion of the mold cylinder will bring each cavity in turn to rest over said presser-head, operating connection between said presser-head and said crank, a disk on said crank shaft, a cam wheel fixed to said disk, a rocking arm controlled by said cam wheel, a platform vertically reciprocatable in ways on the machine base, said platform being connected with the said rocking lever and provided with an extension lying beneath the path of the mold cavities.

855,223. GAS-ENGINE. JOHN HENRY BIRCH and JOHN HAYS BIRCH, Crawfordsville, Ind. Filed Mar. 21, 1907. Serial No. 363,590.

Claim.—1. In an internal combustion engine, the combination, with the combustion chamber, the power piston therein and an exhaust valve controlling the passages leading from said combustion chamber, of a supplemental cylinder having a passage leading to the combustion chamber and having an exhaust passage, both of said passages of the supplemental cylinder being opened and closed by the movement of the power piston, a piston mounted in the supplemental cylinder, and a pair of toggle links connected with said piston and arranged to operate the exhaust valve.

2. In an internal combustion engine, the combination, with the combustion chamber, the power piston therein and an exhaust valve controlling the passage leading from said combustion chamber, of a supplemental cylinder having a passage leading to the combustion chamber and having an exhaust passage, both of said passages of the supplemental cylinder being opened and closed by the movement of the power piston, a piston mounted in the supplemental cylinder, a pair of toggle links connected with said piston, an adjustable abutment for one end of said toggle, a sliding pin adapted to engage the exhaust valve stem, and a suitable support for said pin.



855,224. APPARATUS FOR FIRING EXPLOSIVES IN WELLS. LUKE H. BROADWATER, Findlay, Ohio, assignor to The E. I. du Pont de Nemours Powder Company, Wilmington, Del., a Corporation of New Jersey. Filed Feb. 18, 1907. Serial No. 357,927.

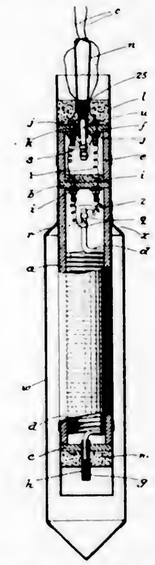
Claim.—1. The combination with an apparatus for firing explosives, comprising a firing fuse, of firing wires, a connection between said firing wires and said apparatus adapted to be ruptured by an explosive, an explosive carried by said apparatus, adapted to rupture said connection, and electrical connection between said firing wires and the firing fuse and explosive.

2. The combination with an apparatus for firing explosives, comprising a firing fuse, of firing wires, a connection between said firing wires and said apparatus adapted to be to be ruptured by an explosive, an explosive carried by said apparatus, adapted to rupture said connection, and electrical connection between said firing wires and the firing fuse and explosive, the explosive and the firing fuse being sealed from each other.

3. The combination with an apparatus for firing explosives, comprising a firing fuse, of firing wires, a connection between said firing wires and said apparatus adapted to be ruptured by an explosive, an explosive carried by said apparatus, adapted to rupture said connection, and electrical connection, in multiple, between said firing wires and the firing fuse and explosive.

4. The combination with an apparatus for firing explosives, comprising a firing fuse, of firing wires, a connection between said firing wires and said apparatus adapted to be ruptured by an explosive, an explosive carried by said apparatus, adapted to rupture said connection, an electrical connection, in multiple, between said firing wires and the firing fuse and explosive, the explosive and the firing fuse being sealed from each other.

5. In an apparatus for firing explosives in wells, the combination with a chamber containing the firing fuse, and a chamber containing an explosive, of firing wires, a connection between said firing wires and said apparatus, adapted to be ruptured by said explosive, and electrical connection between said firing wires and the fuse and explosive.



6. In an apparatus for firing explosives in wells, the combination with a sealed chamber containing the firing fuse, and a sealed chamber containing an explosive, of firing wires, a connection between said firing wires and said apparatus, adapted to be ruptured by said explosive, and electrical connection between said firing wires and the fuse and explosive.

7. In an apparatus for firing explosives in wells, the combination with a chamber containing the firing fuse, and a chamber containing an explosive, of firing wires, a connection between said firing wires and said apparatus, adapted to be ruptured by said explosive and electrical connection, in multiple, between said firing wires and the fuse and explosive.

8. In an apparatus for firing explosives in wells, the combination with a sealed chamber containing the firing fuse, and a sealed chamber containing an explosive, of firing wires, a connection between said firing wires and said apparatus, adapted to be ruptured by said explosive, and electrical connection, in multiple, between said firing wires and the fuse and explosive.

9. The combination with an apparatus for firing explosives, comprising a firing fuse, of suspension wires, a connection between said suspension wires and said apparatus, adapted to be ruptured by an explosive, an explosive carried by said apparatus adapted to rupture said connection and electrical connection to the firing fuse and explosive.

10. The combination with an apparatus for firing explosives, comprising a firing fuse, of suspension wires, a connection between said suspension wires and said apparatus adapted to be ruptured by an explosive, an explosive carried by said apparatus, adapted to rupture said connection, and electrical connection to the firing fuse and explosive, the explosive and the firing fuse being sealed from each other.

11. The combination with an apparatus for firing explosives, comprising a firing fuse, of suspension wires, a connection between said suspension wires and said apparatus, adapted to be ruptured by an explosive, an explosive car-

ried by said apparatus, adapted to rupture said connection, and electrical connection, in multiple, to the firing fuse and explosive.

12. The combination with an apparatus for firing explosives, comprising a firing fuse, of suspension wires, a connection between said suspension wires, and said apparatus adapted to be ruptured by an explosive, an explosive carried by said apparatus, adapted to rupture said connection, and electrical connection, in multiple, to the firing fuse and explosive, the explosive and firing fuse being sealed from each other.

13. In an apparatus for firing explosives in wells, the combination with a chamber containing the firing fuse and a chamber containing an explosive, of suspension wires, a connection between said suspension wires and said apparatus adapted to be ruptured by said explosive and electrical connection to said fuse and explosive.

14. In an apparatus for firing explosives in wells, the combination with a sealed chamber containing the firing fuse, and the sealed chamber containing an explosive, of suspension wires, a connection between said suspension wires and said apparatus, adapted to be ruptured by said explosive, and electrical connection to said fuse and explosive.

15. In an apparatus for firing explosives in wells, the combination with a sealed chamber containing the firing fuse, and a sealed chamber containing an explosive, of suspension wires, a connection between said suspension wires and said apparatus, adapted to be ruptured by said explosive, and electrical connection, in multiple, to said fuse and explosive.

16. In an apparatus for firing explosives in wells, the combination with a sealed chamber containing the firing fuse, and a sealed chamber containing an explosive, of suspension wires, a connection between said suspension wires and said apparatus, adapted to be ruptured by said explosive, and electrical connection, in multiple, to the firing fuse and explosive.

17. In an apparatus for firing explosives in wells, in combination with a sealed chamber, an inverted casing in said chamber containing an explosive, electric conductors leading to said explosive, a second sealed chamber, a firing fuse in said chamber, a casing, adapted to contain an explosive, opening into said chamber, said fuse entering said casing, and electric conductors leading to said fuse.

18. In an apparatus for firing explosives in wells, in combination with a sealed chamber, an inverted casing in said chamber containing an explosive, electric conductors leading to said explosive, a second sealed chamber, a firing fuse in said chamber, a casing, adapted to contain an explosive, projecting into said chamber, said fuse entering said casing, electric conductors leading to said fuse, the electric conductors leading to the first mentioned explosive and the electric conductors leading to the firing fuse being in multiple.

19. In an apparatus for firing explosives in wells, in combination with a sealed chamber, an inverted casing in said chamber, containing an explosive, a ball connected to said casing, electric conductors leading to said explosive, a second sealed chamber, a firing fuse in said chamber, a casing, adapted to contain an explosive, opening into said chamber, said fuse entering said casing, and electric conductors leading to said fuse.

20. In an apparatus for firing explosives in wells, in combination, a cylinder, caps closing the bottom and top of said cylinder, said caps being sealed, a fuse in said chamber, electric conductors leading to said fuse, a casing, adapted to contain an explosive, opening into said cylinder into which said fuse extends, a second cylinder above the first cylinder, a cap closing the top of said cylinder, an inverted casing, adapted to contain an explosive, opening into said cylinder, electric conductors in last mentioned cylinder leading to the casing projecting therein, and to the firing fuse in the first mentioned cylinder.

21. In an apparatus for firing explosives in wells, in combination, a cylinder, caps closing the bottom and top of said cylinder, said caps being sealed, a fuse in said chamber, electric conductors, leading to said fuse, a casing, adapted to contain an explosive, opening into said cylinder into which said fuse extends, a second cylinder above the first cylinder, a cap closing the top of said cylinder, an inverted casing, adapted to contain an explosive, opening into said cylinder, electric conductors, in multiple in last mentioned cylinder leading to the casing projecting therein and to the firing fuse in the first mentioned cylinder.

22. In an apparatus of the character described, in combination, a sealed chamber containing a fuse, a surrounding vessel adapted to contain a primary charge, a portion of said vessel being secured to the exterior of said chamber, whereby liquids may pass or be pressed to the interior of said vessel when said vessel is secured to said chamber.

23. In an apparatus of the character described, the combination with a primary charge, suspension wires, a connection of the suspension wires and apparatus, the explosive for firing the primary charge and the explosive for rupturing the suspension wires connection, of a fuse connected to each explosive, the fuse to the rupturing charge being adapted to explode the rupturing charge before the explosive for firing the primary charge is exploded by its fuse.

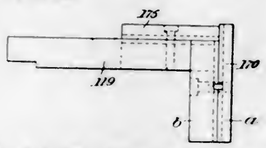
24. The combination with an apparatus for firing explosives in wells and its fuse, of suspension wires for said apparatus said suspension wires being connected to said apparatus, an explosive, adapted to rupture the connection of said suspension wires and said apparatus, and electrical connection to said firing fuse and said rupturing explosive.

25. The combination with an apparatus for firing explosives in wells and its fuse, of suspension wires for said apparatus said suspension wires being connected to said apparatus, an explosive, adapted to rupture the connection of said suspension wires and said apparatus, and electrical connection, in multiple, to said firing fuse and said rupturing explosive.

26. The combination with an apparatus for firing explosives in wells and its fuse, of firing wires for said apparatus said firing wires being connected to said apparatus, an explosive, adapted to rupture the connection of said firing wires and said apparatus, and electrical connection from said firing wires to said firing fuse and said rupturing explosive.

27. The combination with an apparatus for firing explosives in wells and its fuse, of firing wires for said apparatus said firing wires being connected to said apparatus, an explosive, adapted to rupture the connection of said firing wires and said apparatus, and electrical connection, in multiple, from said firing wires to said firing fuse and said rupturing explosive.

855,225. MOLD FOR TYPE-CASTING MACHINES. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, Baltimore, Md., a Corporation of Delaware. Filed May 18, 1905. Serial No. 261,039.



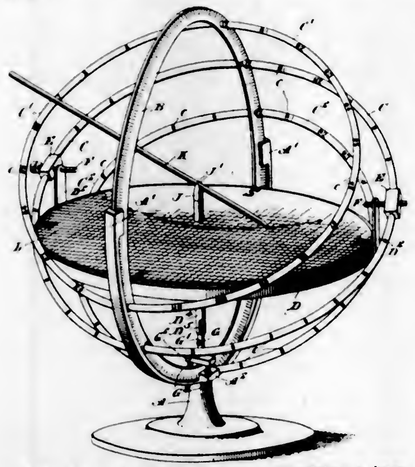
Claim.—1. A mold member comprising a plurality of sections, and means interposed between the meeting faces of said sections which will permit the latter to expand and contract and keep them in their positions relative to each other.

2. In molds for type casting, the combination of two or more mold sections provided with keys and key-ways so located that the mold sections can expand or contract and be retained in their relative position.

3. A mold member comprising a plurality of sections the meeting faces of which are provided with a plurality of angularly arranged keys and key ways, whereby said sections are retained in their relative positions under expansion and contraction.

4. A mold member comprising a plurality of sections the meeting faces of which are provided with centrally located keys and key ways arranged at right angles to each other, whereby said sections are retained in their relative positions under expansion and contraction.

855,226. ARMILLARY SPHERE. FRANK L. BRYANT, New York, N. Y. Filed Sept. 27, 1906. Serial No. 336,437.



Claim.—1. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated about its own center in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, an interior horizon member located within said circles, and means for pivotally connecting said horizon member with the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle.

2. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated about its own center in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, an interior horizon member located within said circles, means for pivotally connecting said horizon member with the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle, and a device for locking the horizon member to the base.

3. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated about its own center in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon member pivotally connected with the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle, and a device for locking the horizon member to the base.

4. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated about its own center in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon disk located within said circles and means for pivotally connecting said disk with the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle.

5. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon member, and means for pivotally connecting said member, at different levels, with the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle.

6. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon disk located within the said circles and provided with superposed sets of sockets, and pivotal supporting means adapted to engage either of said sets of sockets and located on the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle.

7. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon member provided with superposed sets of sockets, and retractable pivotal supporting means adapted to engage either of said sets of sockets and located on the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle.

8. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon member having superposed sets of supporting points, and pivotal supporting means adapted to hold said member either in a central or in a lowered position and located on the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle.

9. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon member having superposed sets of supporting points, pivotal supporting means adapted to hold said member either in a central or in a lowered position and located on the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle, and an extensible pointer projected centrally from the horizon member at a right angle to the plane thereof, to indicate on the meridian circle.

10. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon disk and means for pivotally supporting said disk at points above its plane, located on the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle.

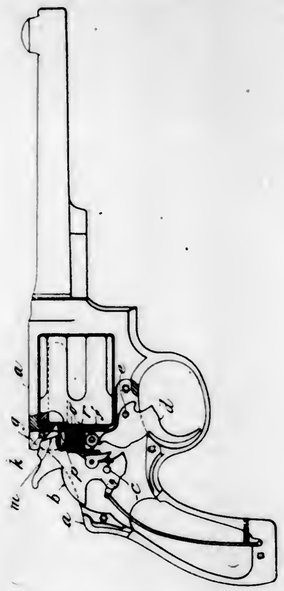
11. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon disk, means for pivotally supporting said disk at points above its plane, located on the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle, a guide mounted to turn and projected upwardly at the center of the horizon disk to the center of the meridian circle, and a shadow-tracing rod adapted to rest on said guide.

12. An armillary sphere, comprising a base, a meridian circle loosely supported thereon so as to be capable of being rotated in its own plane, sun-path circles extending at right angles to the meridian circle and connected therewith, a horizon member pivotally connected with the largest sun-path circle at points equidistant from the connections of said circle with the meridian circle, and a locking device, slidable up and down relatively to said horizon member and arranged to hold the same stationary in relation to the base.

855,227. HAMMER-RETRACTING DEVICE. HARCOURT W. BULL, Springfield, Mass. Filed Dec. 5, 1906. Serial No. 346,407.

Claim.—1. In a revolver, a hammer, a slidable block located between the hammer and barrel, a trigger engaging

the block, means on the block for engaging the face of the hammer to retract the same, and means located within the block for controlling its movements.



2. In a revolver, a hammer, a slidable block located between the hammer and barrel, a trigger engaging the block, means on the block for engaging the face of the hammer to retract the same, and means comprising a spring carried by the block, one end of which engages a fixed abutment on the recoil-plate for controlling its movements.

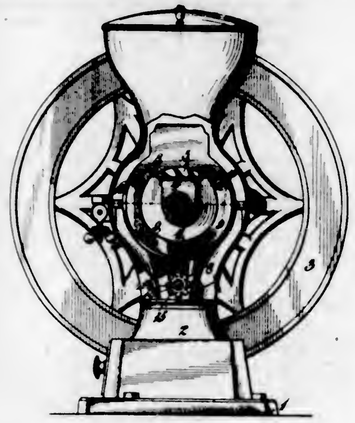
3. In a revolver, a trigger, a hammer, a block between the latter and the recoil-plate slidable in the plane of movement of the hammer, a portion of said block being cut away to permit the hammer to swing by it, and means on another portion of the block to engage the hammer to move it in one direction, said trigger having an operative engagement with the block to move the latter and the hammer in the opposite direction.

855,228. COFFEE-MILL. WILLIAM J. BUSSINGER, Philadelphia, Pa., assignor to National Specialty Manufacturing Company, Philadelphia, Pa., a Firm. Filed Oct. 21, 1905. Serial No. 283,770.

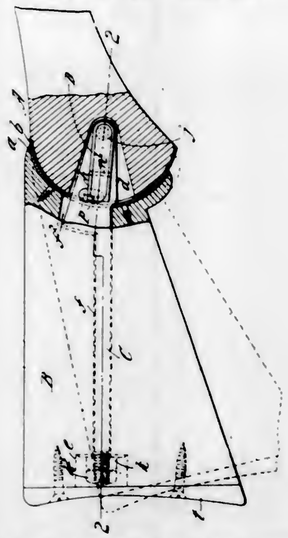
Claim.—1. In a device of the character described, a shaft, a revoluble grinder connected therewith, an adjustable grinder having an opening through which the shaft passes, means independent of the shaft secured to said adjustable grinder on opposite sides of the axial line thereof, and adjustable means supporting said first mentioned means, whereby the adjustable grinder is held in its adjusted positions.

2. In a device of the character described, a shaft, a revoluble grinder connected therewith, an adjustable grinder and a yoke adjustably supported independent of the shaft and rigidly secured to said adjustable grinder and reinforcing that portion thereof which is subjected to the greatest strain.

3. In a device of the character described, a shaft, a revoluble grinder connected therewith, an adjustable grinder, means rigidly secured to the major portion of said adjustable grinder, a rod or bar upon which said means is mounted, means for adjusting said bar, and means for holding said bar in its adjusted position.



855,229. GUN-STOCK. PATRICK H. CLARISEY, Dalton, Mass. Filed Feb. 15, 1907. Serial No. 357,468.



Claim.—1. An adjustable gun stock comprising separately formed and relatively movable grip and butt sections, a bar engaged with, extending through and forwardly of, the butt-section, pivotally connected to the grip-section, and having adjacent the pivot point a plurality of sockets, and a catch mounted on the side of the grip section and operative to have detachable engagement in one or another of said sockets.

2. An adjustable gun stock comprising separately formed and relatively movable grip and butt sections, the grip section having within its rear portion a rearwardly divergent recess and the butt section having a straight passage longitudinally therethrough, a bar engaged with, extending through, the butt-section and having a vertically widened forwardly convergent forward portion and forwardly extended into said grip section recess and having a series of sidewise opening recesses, means for an axially-horizontal pivotal connection between the forward portion of said bar and said grip section, and a spring catch mounted on the side of the grip section and to detachably engage in said sockets.

3. An adjustable gun stock comprising relatively movable grip and butt sections, the grip section having within its rear portion a rearwardly divergent recess and the butt section having a straight round, rearwardly countersunk passage longitudinally therethrough which is merged into a vertically widened recess at its forward end, a round bar having its rear end portion screw threaded extending through the butt-section and having a vertically widened, opposite flat sided, forwardly convergent, forward portion, disposed within said widened butt section recess, and forwardly extended into said grip section recess and having a series of sidewise opening recesses arranged in an arc line, means for an axially-horizontal pivotal connection between the forward portion of said bar and said grip section, a nut screw engaging the rear end of said bar, and disposed in the aforesaid countersink, a spring catch, mounted on the side of the grip section, and to detachably engage in any one of said sockets, and a butt-plate covering the bored and countersunk end of the butt section and parts therein.

4. An adjustable gun stock comprising relatively movable grip and butt sections, a bar engaged with, extending through and forwardly of the butt section and within a rearwardly opening recess in the grip section, having an aperture transversely through its forward extremity, and having a series of sidewise opening sockets to the rear of said aperture, a casing fitted in one side of the grip section and having a trunnion extending through the transverse aperture in said bar, forming a fixed pivot for the latter, and a catch lever pivoted in said casing and having a stud adapted to engage in one or another of the sockets in said bar.

5. An adjustable gun stock comprising relatively movable grip and butt sections, a bar engaged with, extending through and forwardly of the butt section and within a rearwardly opening recess in the grip section, having an aperture transversely through its forward extremity, and having a series of sidewise opening sockets to the rear of said aperture, a casing fitted in one side of the grip section and having a trunnion extending through the transverse aperture in said bar, forming a fixed pivot for the latter, a catch lever pivoted in said casing and having a stud adapted to engage in one or another of the sockets in said bar, and a screw which by its head engages a side portion of the grip section, and by its shank has a screw thread engagement in said trunnion.

6. An adjustable gun stock comprising relatively movable grip and butt sections, a bar engaged with, extending through and forwardly of the butt section, and within a rearwardly opening recess in the grip section, having an aperture transversely through its forward extremity, and having a series of sidewise opening sockets to the rear of said aperture, a casing fitted in one side of the grip section and having a hollow trunnion extending through the transverse aperture in said bar, forming a fixed pivot for the latter, a lever intermediately pivoted in said casing and having a catch stud pivotally hung thereto, guided through the wall of said casing, and adapted to engage in one or another of the sockets in said bar, a screw which by its head has an engagement with a side portion of the grip section, and which by its shank screw engages in said hollow trunnion, and a spring in said hollow trunnion and reacting outwardly against a member of said lever.

855,230. ANIMAL-TRAP. JEREMIAH W. COLLINS, Sherrill, N. Y., assignor to Oneida Community, Limited, Kenwood, N. Y., a Corporation of New York. Filed Sept. 4, 1906. Serial No. 333,280.

Claim.—1. In an animal trap, a frame having a portion thereof pressed or stamped upwardly to form a loop, said loop having a lengthwise slot and pintles projecting across the slot, and a platform having an eye receiving said pintles.

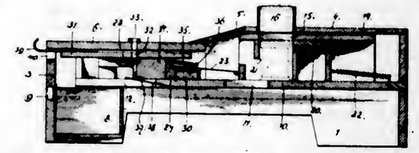
2. In an animal trap of the class described, a supporting frame having a cross-bar, a portion of said cross-bar being pressed upwardly forming a loop, the closed side of the loop being slotted and provided with pintles on opposite sides of the slot, and a platform tang having an eye inserted in said slot and receiving said pintles.



3. In an animal trap of the class described, a jaw supporting frame having a laterally extending arm terminating at one end in an upturned flange and formed with a slotted loop near the flange, the opposite sides of the slot of said loop being formed with pintles, a tongue pivoted on the flange and a platform tang having an eye receiving said pintles, and also formed with a notch receiving the tongue.

4. A platform support for animal traps consisting of a bar of metal having a portion thereof bent in the form of a loop and slotted, portions of the loop at opposite sides of the slot being formed with inturned pintles and capable of being sprung apart or drawn together to vary the distance between the meeting ends of the pintles, and a platform having an eye inserted in said slot.

855,231. VENDING-MACHINE. JAMES P. CONROY, Pittsburg, Pa. Filed Sept. 12, 1906. Serial No. 334,268.

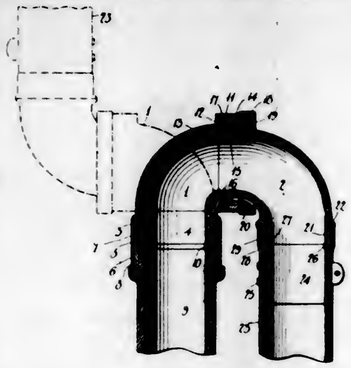


Claim.—In a vending machine, an oblong casing open underneath, a horizontal partition within said casing having a slotted forward end, and provided between its ends with an opening, an open ended rectangular casing mounted on said horizontal partition and having an opening in its top, a magazine mounted in the top of said oblong casing and registering with the opening in the top of said rectangular casing, a frame slidably mounted in said rectangular casing having an opening in its body, registering with the opening in the top of the rectangular casing and with the magazine, a spring connected to the rear end of said casing and to the partition, guides carried by said partition at the sides of the slot therein, a spring-held plunger slidably mounted in said guides, a cable connecting said plunger with the said frame, a slidable actuating plunger for operating said spring held plunger, and a removable receptacle mounted in the oblong casing beneath the slotted end of said partition, substantially as described.

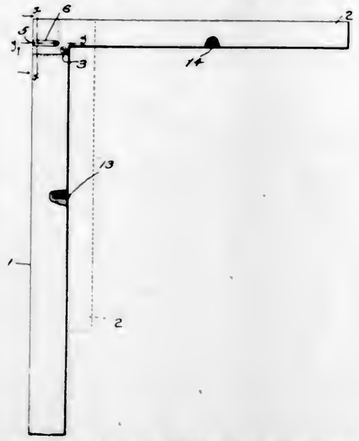
855,232. HOSE-COUPLING. CHARLES C. CORLEW, Fresno, Cal. Filed Sept. 18, 1905. Serial No. 278,984.

Claim.—An improved hose coupling comprising an elbow-member, having one end provided with internal screw-threads; a sleeve screwed into engagement with the threaded end of the elbow, and projecting beyond said end and having its extremity provided with an annular flange; a gland surrounding the sleeve and the end of the elbow, having a flange on its interior below one end, one side of said flange forming a shoulder which abuts the end of the elbow, and the other side of the flange being engaged by the flange on the sleeve, said gland having a portion projecting beyond the flanged end of the sleeve and internally threaded, and provided with an annular flange or shoulder at the outer extremity; a pipe section adapted to screw into engagement with the internal threads of the gland and to abut against the shoulder at the extremity thereof;

and a washer or packing between the adjacent ends of the pipe section and the flange on the internal sleeve.



855,233. SQUARE. DONAT S. CORMIER, Waltham, Mass. Filed Sept. 13, 1906. Serial No. 334,428.



Claim.—1. In a folding square, the combination with two legs pivoted together to fold inwardly, one of said legs having a locking notch in its outer edge, of a locking lug yieldingly carried by the other leg to move laterally thereof and adapted to engage said notch when the legs are open thereby to lock them in open position and to engage the inner edge of the notched leg when the legs are closed thereby to lock them in their closed position.

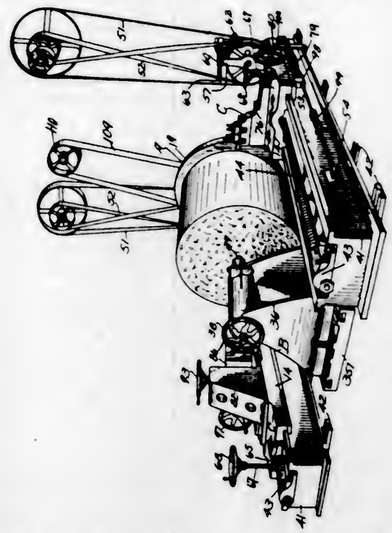
2. In a folding square, two legs pivoted together to fold inwardly, one of said legs having a locking notch in its outer edge and a locking lug carried by the other member and adapted to engage either said notch when the legs are open, thereby to lock them in open position, or the inner edge of the notched leg when the legs are closed, thereby to lock them in their closed position.

3. In a folding square, the combination of two legs pivoted together, each being reduced in thickness at the pivotal joint and provided with an undercut shoulder and a beveled edge, the beveled edge of each being adapted to engage the undercut shoulder of the other when the square is open, one of said legs having a locking notch in its outer edge, of a locking lug carried by the other member and adapted to engage said notch when the legs are open, thereby to lock them in open position, and to engage the inner beveled edge of the notched member when the legs are closed, thereby to lock them in their closed position.

4. In a folding square, the combination of two legs pivoted together, each being reduced in thickness at the pivotal joint and provided with an undercut shoulder and a beveled edge, the beveled edge of each being adapted to engage the undercut shoulder of the other when the square is open, one of said legs having a locking notch in its outer edge, of a locking lug carried by the other member and adapted to engage said notch when the legs are open, thereby to lock them in open position and to engage the inner beveled edge of the notched member when the legs are closed, thereby to lock them in their closed position, and a protractor scale placed on the side face of one of the reduced portions.

5. A folding square having in combination two legs pivoted together, means to lock the legs on either their open or closed position and a spring pressed pin carried by the edge of one leg and adapted to enter a recess in the edge of the other leg when the squsre is folded.

855,234. STONE TURNING AND CUTTING MACHINE. JACOB S. DETRICK and JOSEPH W. NEIDHARDT, Baltimore, Md. Filed Jan. 30, 1906. Serial No. 298,605.



Claim.—1. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising in combination means for supporting the column at each end thereof, means for holding said column in a fixed position and adjustable to permit intermittent or continuous rotation of said column, means for rotating said column, a tool carriage at each side of said column, and means for moving each of said carriages longitudinally of the column during the rotation of the latter to permit the turning of the column and also intermediate its intermittent rotations and when the column is fixed against movement to permit the grooving or fluting thereof.

2. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising in combination means for supporting the column at each end thereof, means for holding said column in a fixed position and adjustable to permit intermittent or continuous rotation of said column, means for rotating said column, a runway at each side of said column-supporting means and adjustable to the same extent throughout toward and from said column-supporting means, a tool

carriage on each of said runways, and means for moving each of said carriages lengthwise of the column during the rotation of the latter to permit the turning of the column and also intermediate its intermittent rotations and when the column is fixed against movement to permit the grooving or fluting thereof.

3. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising in combination means for supporting the column at each end thereof, means for holding said column in a fixed position and adjustable to permit rotation thereof, means for rotating said column, a tool carriage located at each side of said column, means operative through the medium of the column-rotating means for moving one or both of said carriages longitudinally of the column during the rotation thereof and whereby the carriage will have a fixed relative speed to that of the column, and means for moving both of said carriages longitudinally of said column when the latter is fixed against movement to permit the grooving or fluting of the same.

4. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising in combination means for supporting the column at each end thereof and including a geared face plate, means coöperating with said face plate gear for holding said column in a fixed position and adjustable to permit intermittent and continuous rotation thereof, means for rotating said column and comprising gearing one member of which is in mesh with said face plate gear, a tool carriage located at each side of said column, one or both movable longitudinally of the column during the rotation of the latter to permit the turning of the column, and both movable longitudinally thereof when the column is fixed against movement to permit the grooving or fluting thereof, and means for moving said carriages.

5. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising in combination means for supporting the column at each end thereof, means for holding the column in a fixed position and operative to permit the rotation thereof, means for rotating said column at different speeds and comprising two sets of gears, clutch mechanism between a pair of loosely mounted gears, one of each set, a tool carriage movable longitudinally of the column during the rotation of the latter to permit the turning of the column and also when the column is fixed against movement to permit the grooving or fluting of the column, and means for moving said carriage.

6. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising in combination means for supporting the column at each end thereof, means for holding the column in a fixed position and operative to permit the rotation thereof, means for rotating said column at different speeds and comprising two sets of gears, clutch mechanism between a pair of loosely mounted gears, one of each set, a pair of tool carriages located one at each side of said column and movable longitudinally of the column during the rotation of the latter to permit the turning of the column and also when the column is fixed against movement to permit the grooving or fluting of the column, and means for moving said carriages.

7. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof, means for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column, a tool carriage, means for moving said carriage longitudinally of the column during the rotation of the latter, means carried by said carriage for turning the column, means for adjusting said means toward and from the column, means for also moving said carriage longitudinally of the column when the latter is fixed against movement, means adapted to be mounted on said carriage on the removal of the turning tool for grooving or fluting the column, and means for adjusting said means in the plane of the column and also toward and from said column.

8. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof, means for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column, a tool carriage movable longitudinally of the column during the rotation thereof and also when fixed against rotation, means for moving said carriage, a removable upright mounted on said carriage, a tool holder carried thereby and adjustable in the plane of the column and toward and from the same to permit grooving or fluting of the column and adapted to be mounted on said carriage on the removal of said upright and adjustable toward and from the column.

9. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column, means for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column, a tool carriage located at each side of the column for movement longitudinally of the column during the rotation of the latter and also when the column is fixed against movement, means for moving one or both of said carriages, tools carried by said carriages for turning the column and adjustable toward and from the column, means adapted to be mounted on said carriages on the removal of the turning tool for carrying grooving or fluting tools, and means for adjusting said tools in the plane of the column and also toward and from said column.

10. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof and including a geared face plate, means for holding the column in a fixed position and operative to permit the rotation thereof, means for rotating said column at different speeds and comprising two sets of gears one in mesh with said face plate gear, clutch mechanism between a pair of loosely mounted gears one of each set, a tool carriage movable longitudinally of the column during the rotation of the latter to permit the turning of the column and also when the column is fixed against movement to permit the grooving or fluting of the column, and means for moving said carriage.

11. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof and including a geared face plate, means coöperating with said face plate gear for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column at different speeds, and comprising two sets of gears, one set having a gear in mesh with said face plate gear, clutch mechanism between a pair of loosely mounted gears one of each set, a tool carriage located at each side of said column and one or both movable longitudinally of the column during the rotation of the latter to permit the turning of the column, means for moving either or both of said carriages and operative through the medium of the column-rotating means whereby each carriage will have a fixed relative speed to that of the column, means for moving both of the carriages on occasion longitudinally of the column when the same is fixed against movement for grooving or fluting the same, and means for automatically reversing said carriages.

12. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof and including a geared face plate, means coöperating with said face plate gear for holding said column in a fixed position and operative to permit the rota-

tion thereof, means for rotating said column at different speeds and comprising two sets of gears, one set having a gear in mesh with said face plate gear, clutch mechanism between a pair of loosely mounted gears one of each set, a tool carriage located at each side of said column and one or both movable longitudinally of the column during the rotation of the latter to permit the turning of the column, means for adjusting said carriages longitudinally of the column, means for moving either or both of said carriages and operative through the medium of the column-rotating means whereby each carriage will have a fixed relative speed to that of the column, means for moving both of the carriages on occasion longitudinally of the column when the same is fixed against movement for grooving or fluting the same, and means for automatically reversing said carriages.

13. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof and including a geared face plate, means for rotating said face plate, means for holding said face plate against rotation and comprising a detent in position to engage the teeth of said geared face plate to lock the same and thereby the column against rotation, said detent having an adjustment in the plane of movement of said face plate, and means for dressing said column.

14. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof, means for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column, a runway located at each side of said column, a traveling tool carriage mounted on each of said runways, means for moving said carriages on said runways, means for automatically reversing each of said carriages, and means carried by each of said carriages for permitting the manual adjustment of the carriage on said runway.

15. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof, means for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column, a runway located at each side of said column, a traveling tool carriage mounted on each of said runways, means for moving said carriages on said runways and including a rotatable screw, means for automatically reversing each of said carriages, and means carried by each of said carriages for permitting the manual adjustment of the carriage on said runway and including worm gearing for locking the carriage to the screw when the screw is rotated and for adjustment of the carriage on the screw when the same is stationary.

16. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, means for supporting the column at each end thereof, means for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column, a runway located at each side of said column, a traveling tool carriage mounted on each of said runways and movable longitudinally of the column during the rotation thereof to permit the turning of the column and also when the column is fixed against movement to permit the grooving or fluting thereof, means for moving each of said carriages, a removable tool holder carried by each of said carriages and adjustable toward and from the column, an upright adapted to be mounted on each of said carriages on the removal of said tool holder, a saddle mounted on said upright and adjustable in the plane of the column for supporting said tool holder on its removal from said carriage, and means for adjusting said tool holder on said upright toward and from the column.

17. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, adjustable means for supporting the column at each end thereof, means for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column, a runway located at each side of said column and adjustable toward and from the column, a traveling tool carriage mounted on each of said runways and movable longitudinally of the column during the rotation thereof to permit the turning of the column and also when the column is fixed against movement to permit the grooving or fluting thereof, means for moving each of said carriages, a removable tool holder carried by each of said carriages and adjustable toward and from the column, an upright adapted to be mounted on each of said carriages on the removal of said tool holder, a saddle mounted on said upright and adjustable in the plane of the column for supporting said tool holder on its removal from said carriage, and means for adjusting said tool holder on said upright toward and from the column.

18. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising in combination, means for supporting the column at each end thereof, means for holding said column in a fixed position and operative to permit the rotation thereof, means for rotating said column at different speeds, a runway located at each side of said column, a traveling carriage mounted on each of said runways and movable longitudinally of the column during the dressing thereof, means for adjusting each of said carriages on said runway, and means for automatically reversing said carriages at predetermined periods during the work on said column.

19. A stone dressing machine constructed and organized for performing different kinds of work on massive stone columns without the rehandling of said columns, comprising, in combination, a column supporting runway, adjustable means thereon for supporting a stone column for dressing, a runway located at the side thereof and adjustable toward and from said column supporting runway, one runway being higher than the other, a traveling tool carriage mounted on said last runway and movable thereon both when the column is fixed against movement and when rotating, means for rotating said column, and means for holding said column fixed against movement.

20. In a stone column turning and cutting machine, the combination of a head stock member provided with a live spindle, a face-plate on one end of the spindle, a live center on the face plate, means for rotating the face plate, a tail stock member provided with a dead center alining with the live center, a runway on each side of the line of centers, each runway being provided with a traveling carriage, means for reciprocating each carriage, means for driving said latter means at a predetermined speed relative to the rotation of the face plate, a tool holder mounted on each carriage and adjustable relative to the line of centers, a means for locking the face plate in successive positions of its revolution.

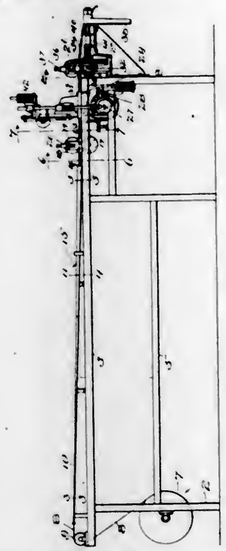
21. In a stone column turning and cutting machine, the combination of a head stock member provided with a live spindle, a face plate on said spindle, a live center on the face plate, a driving pulley carried by the head stock, means for operating the live spindle from said pulley, a tail stock member provided with a dead center in alinement with the live center, a runway on each side of the line of centers, a carriage movable on each runway, a screw shaft carried by each runway, a nut member on each carriage in engagement with the screw shaft to advance the carriage upon rotation of the shaft, pulleys connected with each screw shaft comprising a drive pulley and two idlers, and a pulley on the head stock operatively connected with the live spindle, the latter pulley being in alinement with the drive pulleys of the screw rods whereby either tool carriage may be driven by belt from the live spindle.

22. In a stone turning and cutting machine, the combination with a runway and tool carriage, of an upright removably mounted on the tool carriage, a saddle member carried by the upright and vertically adjustable thereon, and a tool holder removably secured to the saddle, said tool holder and tool carrige being organized whereby upon removal of the tool holder from the saddle, the tool holder can be mounted on the tool carriage in place of the upright.

23. In a stone turning and cutting machine, the combination of a runway, a carriage movable on the runway, an upright removably secured on the tool carriage, a saddle carried by the upright and vertically adjustable thereon, and a tool holder organized to be removably mounted on the saddle, and also to be removably mounted on the tool carriage upon removal of the upright therefrom.

24. In a stone turning and cutting machine, the combination of a runway, a carriage movable on the runway and provided with a dovetail guide extending transversely along its upper face, an upright having a dove-tail slot on its lower face arranged to engage said guide to removably secure the upright on the tool carriage, a saddle carried by the upright and vertically adjustable thereon, the saddle being provided with a dove-tail guide on its outer face corresponding in section to the dove-tail guide on the tool carriage, and a tool holder provided with a dove-tail slot on one face whereby the holder can be removably mounted on the dove-tail guide on the saddle, and also can be removably mounted on the dove-tail guide on the tool carriage upon removal of the upright therefrom.

855,235. MACHINE FOR MAKING PACKING-STRIPS. WILLIAM DICHMANN, Oshkosh, Wis. Filed Jan. 31, 1906. Serial No. 298,854.



Claim.—1. In a device of the class described, an envelop former, a stitching mechanism, forming rolls, intermittently rotated rolls under yielding tension and arranged to draw the formed envelop through the stitching mechanism and forming rolls.

2. In a device of the class described, an envelop former, a stitching mechanism, forming rolls disposed between the envelop former and the stitching mechanism, a cut-off mechanism, and drawing rolls operated with a step by step movement positioned between the stitching mechanism and cut-off and arranged to draw the formed envelop through the stitching mechanism and feed it to the cut-off.

3. In a device of the class described, an envelop former, a stitching mechanism, rolls disposed between the envelop former and the stitching mechanism and provided with envelop forming depressions in their peripheries, and means to draw the formed envelop through the rolls and the stitching mechanism.

4. In a device of the class described, an envelop former, a stitching mechanism, rolls disposed between the stitching mechanism and the former, and provided with forming depressions in their peripheries, a cut-off mechanism, and intermittently operated rolls disposed between the stitching mechanism and the cut-off and arranged to draw the formed envelop through the forming rolls and the stitching mechanism and feed it to the cut-off.

5. In a machine of the class described, a tapered envelop former, an upturned filling guide carried by the former a stitching mechanism disposed adjacent the small end of the former, and means to draw the formed envelop through the former and stitching mechanism.

6. In a machine of the class described, a tapered envelop former, a stitching mechanism disposed adjacent the small end of the former, rolls positioned between the stitching mechanism, and the former and provided with forming depressions in their peripheries, and means to draw the formed envelop through the former, forming rolls and stitching mechanism.

7. In a machine of the class described, a tapered envelop former, a stitching mechanism disposed adjacent the small end of the former, rolls positioned between the stitching mechanism and the former, and provided with forming depressions in their peripheries, a cut-off mechanism, and intermittently operated feeding means disposed between the stitching mechanism and the cut-off.

8. In a machine of the class described, a tapered envelop former having inturned longitudinal edges, an upturned filling guide carried by one of the edges a stitching mechanism disposed adjacent the small end of the former, and means to draw the formed envelop through the former, and stitching mechanism.

9. In a machine of the class described, a tapered envelop former having inturned longitudinal edges, a stitching mechanism, rolls positioned between the stitching mechanism and the small end of the former and having forming depressions in their peripheries corresponding to and registering with the small end of the envelop former, and means to draw the formed envelop through the former, rolls and stitching mechanism.

10. In a machine of the class described, a tapered envelop former having inturned longitudinal edges, a stitching mechanism adjacent the small end of the former, a cut-off mechanism, and an intermittently operated feeding means disposed between the cut-off and the stitching mechanism.

11. In a machine of the class described, a tapered envelop former having inturned longitudinal edges, a stitching mechanism disposed adjacent the small end of the former, rolls positioned between the stitching mechanism and the former and having depressions in their peripheries corresponding to and registering with the small end of the former, a cut-off mechanism, and intermittently rotated feeding rolls positioned between the cut-off and the stitching mechanism.

12. In a mechanism of the class described, a tapered envelop former having inturned longitudinal edges gradually approaching each other and overlapping, a curved filling guide carried by one of the overlapping edges a stitching mechanism disposed adjacent the small end of the former, and means to draw the formed envelop through the former and stitching mechanism.

13. In a machine of the class described, a tapered envelop former having inturned longitudinal edges gradually approaching each other and overlapping, a stitching mechanism, rolls positioned between the stitching mechanism and the small end of the former and having depressions in their peripheries corresponding to and registering with the small end of the former, and means to draw the formed envelop through the former, the rolls and the stitching mechanism.

14. In a machine of the class described, an envelop former having converging sides, a stitching mechanism positioned adjacent the small end of the former, rolls positioned between the stitching mechanism and the former, and provided with envelop engaging recesses formed in

their peripheries, a rotary cut-off, and intermittently rotated feed rolls positioned between the cut-off and the stitching mechanism.

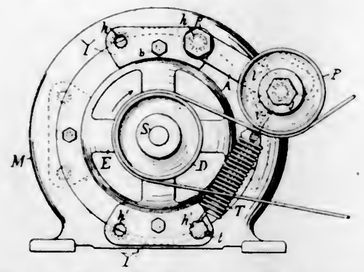
15. In a machine of the class described, an envelop former having gradually converging and overlapping sides, a stitching mechanism disposed adjacent the small end of the former, forming rolls positioned between the stitching mechanism and the former and provided with envelop engaging peripheral recesses, a rotating cutting knife, and feeding rolls positioned between the cutting knife and the stitching mechanism and means to intermittently move the feeding rolls and cutting knife.

855,236. QUADRAT. JOSEPH S. DUNCAN and JOHN B. HALL, Chicago, Ill., assignors to Addressograph Company, a Corporation of Illinois. Filed Dec. 12, 1905. Serial No. 291,441.



Claim.—A rubber quadrat having its sides beveled to make the quadrat narrower at its bottom than at its top and provided with recesses in its sides extending from said bevel through the top of the type, the quadrat being bodily wider above the bevel than the type and the type groove to receive the type and quadrat.

855,237. BELT-TIGHTENING IDLER. GANO S. DUNN, East Orange, N. J., assignor to Crocker-Wheeler Company, Ampere, N. J., a Corporation of New Jersey. Filed Sept. 19, 1906. Serial No. 335,236.



Claim.—1. The combination of a pulley, a supporting shaft, a frame surrounding the shaft with angularly spaced points of attachment, an idler pulley, an arm for the support of the idler pulley, a yoke with a plurality of connection points for the arm, and a tension device applied to the arm, substantially as described.

2. The combination of a pulley, a supporting shaft, a frame surrounding the shaft with angularly spaced points of attachment, an idler pulley, an arm for the support of the idler pulley, and a yoke with a plurality of connection points for the arm with different angular spacing from the spacing of the points of attachment of the yoke to the frame, substantially as described.

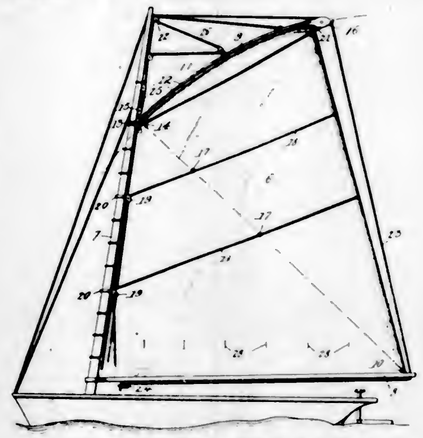
3. The combination of a pulley, a supporting shaft, a frame surrounding the shaft with angularly spaced points of attachment, an idler pulley, an arm for the support of the idler pulley, a yoke with a plurality of connection points for the arm, a tension spring for the idler arm and an anchor pin adapted to be attached at the connection points provided for the arm, substantially as described.

4. The combination of a pulley, a supporting shaft, a frame surrounding the shaft with angularly spaced points of attachment, an idler pulley, an arm for the support of the idler pulley, a stud-yoke with a plurality of connection points for the arm, a tension spring for the idler arm, and an anchor-yoke with a plurality of anchor points for the tension spring, substantially as described.

5. In a belt tightening idler, the combination of a pulley, a shaft, a supporting frame, an indler pulley, an idler arm, and an adjustable tension device connected between the idler arm and the supporting frame, the tension device consisting of a tension spring and a hook-screw engaging convolutions at one end of the tension spring, substantially as described.

6. In combination, an electric motor having a frame and an end-head, a plurality of equally spaced bolts for attaching said end-head to said frame, a belt-tightener comprising an idler-pulley, a pivoted support for said pulley, and a plate on which said support is mounted, said plate being mounted on a bolt passing through the end-head into the frame, substantially as described.

855,238. SAIL-REEFING APPARATUS. JOHN V. ERICSON, Chicago, Ill. Filed Feb. 25, 1907. Serial No. 359,103.



Claim.—1. The combination with a mast and gaff, of a sail the head of which has traveling connections with the gaff, rings attached to the sail on a line between the outer foot clew and the throat, brails connected at the leech and extending across the sail and through said rings and to the mast and arranged to draw in the head of the sail along the gaff, and an out-hauling line running from the peak of the sail to the outer end of the gaff, and arranged to draw the head of the sail out along the gaff.

2. The combination of a gaff curved on an arc concentric with the clew at the outer lower corner of the sail, a sail having traveling hangers at the head slidable along the gaff, and means to draw the head of the sail in or out along the gaff, to reef or set the same.

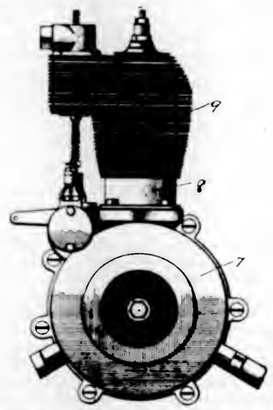
3. The combination with a mast, and a curved gaff concentric with the outer clew at the foot of the sail, of a sail the head of which has traveling connections with the gaff, rings attached to the sail on substantially a line between said clew and the throat, brails connected at the leech and extending through said rings to and down the mast, and an outhauling line connected to the peak of the sail and extending to the tip of the gaff and thence to and down the mast.

855,239. RADIATOR FOR EXPLOSIVE-ENGINES AND METHOD OF MAKING SAME. JAMES F. FARIES, Decatur, Ill. Filed Feb. 26, 1904. Serial No. 195,495.

Claim.—1. The method of uniting metals the fusibility of one of which is below the brazing-temperature of the other, which consists in uniting said metals to a joining-medium the fusibility of which is less than that of one of the metals to be joined, and which is susceptible of being brazed to the more fusible of said metals, substantially as described.

2. The method of uniting metals the fusibility of one of

which is below the brazing-temperature of the other, which consists in employing a joining-medium the fusibility of which is less than that of one of the metals to be joined, and which is susceptible of being brazed to the more fusible of said metals, welding said joining-medium to the less fusible of said metals, and brazing the other of said metals to said joining-medium, substantially as described.



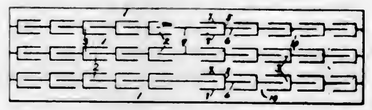
3. The method of uniting copper and cast-iron, which consists in welding the iron to a joining-medium susceptible of being brazed to copper at a lower temperature than the fusing point of the copper, and then brazing the copper to such joining-medium, substantially as described.

4. The method of uniting copper and cast-iron, which consists in welding sheet steel to the iron, and then brazing the copper to the steel, substantially as described.

5. A cylinder, having a thin external steel shell welded thereto, and copper radiating-flanges brazed to said shell, substantially as described.

6. A cylinder, having a thin external steel shell welded thereto, and copper radiating-flanges brazed to said shell, said flanges having angularly-disposed lips at their inner ends, substantially as described.

855,240. REINFORCING MEMBER FOR CONCRETE CONSTRUCTION. WILLIAM D. FORSYTH, Pittsburg, Pa., assignor to Trussed Concrete Steel Company, Detroit, Mich., a Corporation of Michigan. Filed Feb. 1, 1907. Serial No. 355,189.



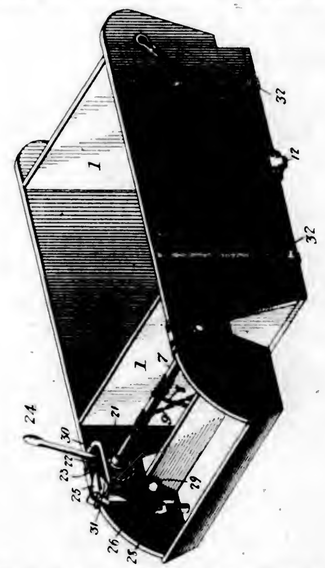
Claim.—1. A reinforcing member for concrete construction comprising parallel longitudinal rods, all in the same plane, and auxiliary members attached to the sides of said rods, the auxiliary members projecting upward and laterally from the rods and being inclined toward the nearer ends of the rods, the ends of auxiliary members of adjacent rods being joined.

2. A metal web formed of parallel rods and inclined members attached to said rods and projecting from the general plane of the rods, the inclined members of adjacent rods being joined at their outer ends.

3. A metal web formed of longitudinal members, all in the same plane, and outwardly projecting auxiliary members attached thereto and joined at their outer ends.

4. A metal web formed of longitudinal members, and laterally projecting connecting members, the connecting members inclining toward the ends of the longitudinal members from a common transverse line, the longitudinal members being separated and the connecting members of adjacent longitudinal members being in pairs connected at their ends.

855,241. DUMPING-WAGON. RAYMOND S. C. FOW, Trenton, N. J. Filed Jan. 28, 1907. Serial No. 354,562.



Claim.—1. In a dumping wagon a combination of a box having a swinging bottom section, a chain supporting said bottom section at its hinged side and at the front and rear ends of its free side, a windless adapted to operate said chain, to drop and raise said bottom sections, and means for operating said windlass.

2. In a dumping wagon, the combination of a box having two swinging bottom sections, a chain supporting each of said bottom sections at its hinged side and at the front and rear ends of its free side, a windlass adapted to operate said chains to drop and raise said bottom sections, and means for operating said windlass.

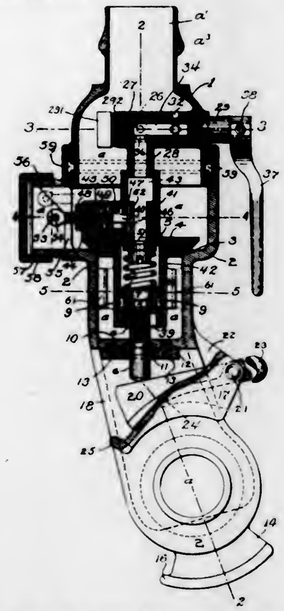
3. In a dumping wagon, the combination of a box having two swinging bottom sections, two chains, each of said chains supporting one of said bottom sections at its hinged side and at the forward and rear ends of its free side, and having a fixed connection with said rear end, and a sliding connection with said forward end, and passing diagonally under the forward portion of said bottom section, and a windlass adapted to operate said chains, to drop and raise said bottom sections, and means for operating said windlass.

4. In a dumping wagon, the combination of a box having a swinging bottom section; a chain supporting said bottom section at its free side and its hinged side; a windlass adapted to operate said chain to drop and raise said bottom section, and means for operating said windlass.

5. In a dumping wagon, the combination of a box having a swinging bottom section, a chain connected with said bottom section and adapted to close or open the same, a windlass on which said chain may be wound, said windlass having a drum, a ratchet wheel provided with a series of teeth on its periphery, and a similar series of teeth on one of its sides, an operating lever adapted to engage the said teeth on the said ratchet wheel, and a detent pawl adapted to engage the teeth on the periphery of said ratchet wheel.

6. In a dumping wagon, the combination of a box having a swinging bottom section, a chain connected with said bottom section and adapted to close or open the same, a windlass on which said chain may be wound, said windlass having a drum, a ratchet wheel provided with a series of teeth on its periphery, and a similar series of teeth on one of its sides, an operating lever adapted to engage the said teeth on the said ratchet wheel, and a detent pawl adapted to engage the teeth on the periphery of said ratchet wheel, means for operating said detent pawl, and a cam guard adapted to prevent contact of said lever with said teeth on the side of said pawl when the said lever is in its normal condition.

855,242. COUPLING FOR AIR-BRAKE HOSE. OLIVER J. GOLDSMITH, Portsmouth, N. H. Filed May 28, 1906. Serial No. 319,022.



Claim.—1. An air-brake hose coupling for trains, comprising a main body having an air passage, automatic means for first partially closing the passage upon disconnection of the coupling, to retard escape of air from the brake system, and subsequently wholly closing the passage after escape of sufficient air to cause setting of the brakes, and automatic securing means therefor, whereby the pressure in the system may be subsequently raised without loss of air.

2. An air-brake hose coupling for trains, comprising a main body having an air passage, a valve for checking, without wholly preventing, escape of the air in the hose when the pressure therein is greater than that at the outlet of the passage, means for stopping further escape of air when the pressure thereof has been reduced, and automatic means for preventing displacement of said means when the escape is stopped, whereby the pressure may be again raised without loss of air.

3. An air-pipe coupling, comprising a body having a passage, a valve actuable to partially close such passage by pressure of the air in the pipe, a reducing valve operable by the same air pressure to permit a limited outflow of the air, opposing means for closing said reducing valve to stop entirely the flow of air, and means automatically operative when said reducing valve is closed to prevent opening thereof.

4. An air-pipe coupling, comprising a body having a passage, a main valve adapted to obstruct said passage, an escape vent, a reducing valve for covering said escape vent, and a lock for securing said reducing valve when closed.

5. A coupling for air-brake hose including a main valve adapted to close when the coupling is disconnected, a reducing valve arranged to permit a retarded escape of air when the main valve is closed and to prevent further escape when the pressure is reduced to a predetermined degree, and a lock automatically operative to secure the reducing valve in escape-preventing position.

6. An air-pipe coupling comprising a body having a locking member for engagement with a complemental coupling, and a main air-passage; an arm pivoted adjacent the locking member, having rotary motion only; and a valve adapted to close said main passage when the coupling is disconnected and provided with a stem projecting into position to be acted on and retracted by said arm when the latter is turned through pressure of the locking member of the complemental coupling when two couplings are interlocked.

7. An air-pipe coupling comprising a body having a locking member for engagement with a complemental coupling, and a main air-passage; a main valve adapted to close said main passage when the coupling is disconnected, the coupling having an escape passage to permit outflow of air; and a reducing valve opening oppositely to the main valve, automatically operative to close the escape passage when the pressure has been reduced, and the main valve being provided with a stem projecting into position to be acted on and retracted by the locking member of the complemental coupling when two couplings are interlocked.

8. An air-pipe coupling, comprising a body having a main air passage, and a by-pass opening into the main body at separated points, a main valve arranged to seat intermediate the by-pass openings and to be unseated by the connection of two complemental couplings, and an auxiliary valve controlling one of the by-pass openings for permitting and preventing flow of air between the portions of the passage separated by the valve, whereby the pressure may be equalized on both sides of the valve to permit connection of the couplings.

9. An air-pipe coupling, comprising a body having a main air passage, a main valve arranged to set and obstruct said passage and having a projection arranged for actuation by a complemental coupling upon connection thereof to unseat the valve, the coupling body having also a by-pass opening into the main passage, and an auxiliary valve governing the by-pass adapted to permit flow of air from the high-pressure to the low-pressure side of the valve to balance the latter, whereby the valve may be readily opened by the connection of the complemental couplings.

10. The combination with the pipes of an air-brake system, of a pair of couplings having passages with registering external openings, locking projections on the couplings for connecting them together, a valve in each passage arranged to be closed and held by pressure of air therein tending to flow out of the opening, and having a stem operated by the locking projection of the other coupling to open the valve, and an auxiliary valve in each coupling for equalizing the pressure in the passage on opposite sides of the first-named valves.

11. The combination with the pipes of an air-brake system, of a pair of couplings having passages with registering external openings, and each having a locking projection and a recess for receiving the locking projection of the other coupling, a valve in each coupling having a stem projecting into the recess and arranged to close the passage under an excess of pressure, movable longitudinally of the coupling and increasing the amount of projection of its stem in closing, and an arm pivoted to each coupling in the recess thereof arranged to bear on the valve stem and having a cam surface engaged by the projection of the other coupling when the same are connected, for causing the arm to swing upon its pivot to open the valve.

12. A coupling comprising a body having a longitudinal passage, a main valve arranged to shut off the passage and prevent flow of fluid therethrough, being held closed by excess pressure on one side thereof, and having an opening, a reducing valve over said opening arranged to open and close oppositely to the main valve; the casing having auxiliary passages, one of them leading around the main valve for equalizing when open the pressure on both sides thereof, the other leading to the reducing valve, and both adapted to receive a supply of fluid from the main passage; and a valve governing the fluid supply to both passages.

13. A coupling comprising a body having a longitudinal passage, a main valve arranged to shut off the passage and prevent flow of fluid therethrough, being held closed by excess pressure on one side thereof, and having an opening, a reducing valve over said opening arranged to open and close oppositely to the main valve; the casing having auxiliary passages, one of them leading around the main valve for equalizing when open the pressure on both sides thereof, the other leading to the reducing valve, and both opening into a single valve chamber; and an auxiliary valve in said chamber having ports, whereby to admit fluid to either passage exclusively or to shut it off from both, according to the position of such valve.

14. A pressure pipe coupling having a longitudinal passage, a main valve having an escape opening through it adapted to seat across the passage to check flow of air therethrough, a reducing valve mounted on the main valve to cover the opening in the latter, means tending to hold said reducing valve against its seat, and a positive lock for securing the same when seated.

15. A pressure pipe coupling having a longitudinal passage, a main valve having an escape opening through it adapted to seat across the passage to check flow of air therethrough, a reducing valve mounted on the main valve to cover the opening in the latter, a lock for holding the reducing valve in place when seated, and means for withdrawing the lock when the main valve is opened.

16. A pressure pipe coupling having a main passage extending through it, a main valve adapted to seat across said main passage, leaving an escape vent open, a reducing valve adapted to close the escape vent independently of the main valve, a positive lock for securing the reducing valve when closed, means tending to bring the lock into operative valve-seating position, and a check for retarding the action of said lock-operating means.

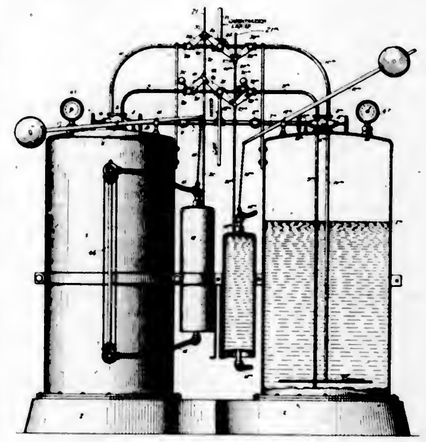
17. A pressure pipe coupling having a main passage extending through it, a main valve adapted to seat across said main passage, leaving an escape vent open, a reducing valve adapted to close the escape vent independently of the main valve, a positive lock for securing the reducing valve when closed, means for rendering the lock inoperative when the main valve is open, means normally tending to bring the lock into operative valve-securing position, and a check for retarding the action of said lock-operating means, whereby the lock is restrained sufficiently to permit opening of the reducing valve after the main valve is closed.

855,243. APPARATUS FOR CHARGING LIQUIDS WITH CARBONIC-ACID GAS. FRANK D. GREEN and JOHN P. MACLEARN, Philadelphia, Pa.; said MacLearn assignor to said Green. Filed July 5, 1902. Serial No. 114,470.

Claim.—1. In carbonating apparatus, the combination of liquid containing means, means for introducing liquid thereto, means for automatically controlling the introduction of such liquid, means for introducing a charging gas thereto, means controlling the inlet of gas to said liquid containing means, means for drawing off the charged liquid, and mechanism for automatically operating said gas controlling means and the means for drawing off the charged liquid.

2. In a carbonating apparatus, the combination of a tank, means for introducing liquid and a charging gas thereto, means for drawing off the charged liquid, mechanism for controlling the inlet of gas, mechanism for controlling the outlet of the charged liquid, and means for operating said controlling mechanisms, said operating means serving to actuate certain parts of said controlling mechanisms independently of the others.

3. In a carbonating apparatus, the combination of a plurality of tanks, means for introducing liquid and a charging gas thereto, a pipe for drawing off the charged liquid, valves controlling the inlet of gas, valves controlling the outlet of the charged liquid, levers connected to said valves, and means for operating said levers whereby certain of the valves may be opened and closed independently of the others.



4. In a carbonating apparatus, the combination of a plurality of tanks, means for supplying gas and liquid to said tank, a discharge pipe for the carbonated liquid, valves controlling the inlet of gas and the outlet of the charged liquid, levers controlling the movement of said valves, vertically moving members in communication with the contents of said tanks, and means connected with said vertically moving members whereby certain of the valves may be operated by the same independently of the movement of the others.

5. In a carbonating apparatus, the combination of a plurality of tanks, means for supplying gas and liquid to said tank, a discharge pipe for the carbonated liquid, valves controlling the inlet of liquid and gas and the outlet of the charged liquid, levers controlling the movement of the gas and the charged liquid valves, vertically moving members in communication with the contents of said tanks, said members adapted to rise as their respective tank empties of its liquid, and fall as the tank fills, and means connecting said movable members with the levers controlling certain of the valves whereby they may be operated by the rise and fall of the vertically moving members.

6. In a carbonating apparatus, a plurality of tanks, means for alternately supplying said tanks with liquid and gas, discharge pipes for the carbonated liquid, independent movable tanks in communication with the main tanks, valves controlling the inlet of liquid and gas and the discharge of the carbonated liquid, levers controlling the gas and the charged liquid valves, and means carried by the movable tanks in operative connection with said levers whereby the rise and fall of the movable tanks will actuate said levers to operate the valves.

7. In a carbonating device, a plurality of tanks, means for alternately supplying the tanks with liquid and gas, air vent valves carried by said tanks, means for opening said valves prior to the introduction of liquid to the tanks, auxiliary movable balance tanks in communication with said main tanks, said movable tanks, when falling, permitting the closing of the air vent valves, valves for controlling the inlet of gas to each tank alternately, valves for controlling the discharge of the carbonated liquid from each tank alternately, connections between said valves and the movable tanks, and means whereby the charged liquid valves will be actuated by the rise of the movable tanks,

while the gas valves will be operated by the fall of said tanks.

8. In a carbonating apparatus, the combination with the main tanks and the pipes leading thereto for the passage of gas and carbonated liquid, of valves controlling the passage of gas and the carbonated liquid, the respective valves being coupled by suitable levers, movable members adjacent to the tanks, and connections between said movable members and the levers of the valves whereby the latter will be operated by the rise and fall of said movable members, one set of valves being moved by the rise of said movable members, while the other set is moved by the fall of said members.

9. The combination in an apparatus of the character described, of the main tanks, pipes communicating therewith for the passage of gas and carbonated liquid, auxiliary movable tanks in communication with the main tank, valves controlling the inlet of gas and discharge of the carbonated liquid, levers for coupling the respective valves, rods carried by the auxiliary tanks and adapted to engage said levers, one set of valves being moved by the rise of the auxiliary tanks, and the other by the fall of the same, means connecting the gas valves and rods whereby said valves may be opened gradually, and means for closing said valves quickly.

10. The combination in an apparatus of the character described, of the two main tanks, means for introducing liquid into the same, means for introducing gas to said liquid and discharging the carbonated liquid, valves controlling the entrance of the gas and the discharge of the carbonated liquid, movable members in communication with the liquid in the tanks, said members being adapted to rise and fall and controlling in their movement the position of the valves, and means for automatically causing a change of flow of gas and carbonated liquid to and from the main tanks as they fill and discharge.

11. In a carbonating apparatus, the combination of a tank, valved pipes for supplying a charging gas and liquid to said tank, a discharge pipe for the charged liquid, mechanism controlling the inlet of gas and the outlet of the charged liquid, a movable liquid container in communication with said tank, and means connected with said movable liquid container for operating the mechanism controlling the inlet of gas and the outlet of the charged liquid.

12. In a carbonating apparatus, the combination of a tank, valved pipes for supplying a charging gas and liquid to said tank, a discharge pipe for the charged liquid, mechanism controlling the inlet of gas and the outlet of the charged liquid, a movable liquid container in communication with said tank, and means connected to said movable liquid container for operating the mechanism controlling the inlet of gas and the outlet of the charged liquid, said operating means serving to actuate certain parts of said controlling mechanism independently of the others.

13. In a carbonating apparatus, the combination of a tank, means for supplying a charging gas and liquid to said tank, a discharge pipe for the carbonating liquid, valves controlling the inlet of gas and the outlet of the charged liquid, levers controlling the movement of said valves, a moving member in communication with the contents of said tank, and means connected with said moving member whereby certain of the valves may be operated by the same independently of the movement of the others.

14. In a carbonating apparatus, the combination of a series of tanks, means for supplying a charging gas and liquid to said tanks, discharge pipes for the carbonated liquid, valves controlling the inlet of gas and the outlet of the charged liquid to and from said tanks, levers for moving said valves, and means for operating said levers whereby the valves of each tank may be operated independently of the movement of the others.

15. In a carbonating apparatus, the combination of a series of tanks, means for supplying a charging gas and liquid to said tanks, a discharge pipe for the carbonated liquid, mechanism controlling the inlet of gas and the outlet of the charged liquid to and from said tanks, movable liquid containers in communication with said tanks, and means connected with said movable liquid containers whereby the mechanisms controlling the inlet of gas and the outlet of charged liquid to each tank may be alternately and independently operated.

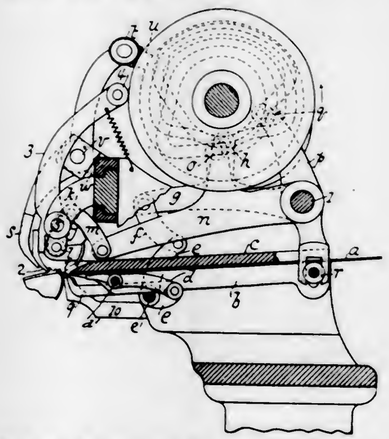
16. In a carbonating apparatus, the combination of a series of tanks, means for supplying gas and liquid to said tanks, a discharge pipe for the carbonated liquid, valves controlling the inlet of gas and the outlet of the charged liquid alternately to and from said tanks, levers controlling the movement of said valves, moving members in communication with the contents of said tanks, and means connected with said moving members whereby certain of the valves may be operated by the same alternately, independently of the movement of the others.

17. In a carbonator or similar device, automatic means for admitting gas when a predetermined quantity of water is in the carbonator, automatic means for admitting water, and means for permitting air to escape until the predetermined amount of water is in the carbonator.

18. In a carbonator or similar device, automatic means for admitting water to the carbonator, means for admitting gas when a predetermined quantity of water is in the carbonator, whereby additional pressure is developed in the carbonator and the water supply cut off, and means for allowing both air and gas to escape from the carbonator when water is being admitted thereto, and until the water obtains a certain level.

19. In a carbonator or similar device, automatic means for admitting water until a certain pressure is developed in the carbonator when the water is shut off, means for admitting and shutting off gas, said means acting to admit gas when the water has reached a predetermined level and to shut off the gas supply when the water has fallen to a second level, and means for permitting air or gas to escape from the carbonator when water is being admitted and the gas supply is shut off.

855,244. MACHINE FOR UNITING WELTS TO STOCK. HERMANN C. GROS, Leipzig-Leutzsch, Germany. Filed May 31, 1904. Serial No. 210,360.



Claim.—1. In a machine for uniting layers of material by means of metallic fasteners the combination of an awl, a bender for clenching the point of the fastener, a feeding finger for the work, a slide forming a raceway for the strip composed of the fasteners, a guide for the slide a lever having a cutting end, and pivoted in the slide, a device for displacing the slide and the lever for feeding the fasteners and a device for rocking the lever for cutting off the first fastener.

2. In a machine for uniting layers of material by means of metallic fasteners the combination of an awl, a bender for clenching the point of the fastener, a feeding finger for the work, a slide forming a raceway for the strip composed of the fasteners, a guide for the slide a lever having a cutting end, and pivoted in the slide, a device for displacing the slide and the lever for feeding the fasteners, means for rocking the lever for cutting off the first fastener, and for holding the lever in its position after cutting, the cutting end of the lever constituting an anvil for holding the fastener driven into the material during the operation of the bender.

855,245. HORSESHOE-CALK. GEORGE F. HAILMAN and ENOS S. HARNDEN, Washington, D. C., assignors to American Horse Shoe Grip Company, Incorporated, a Corporation of the District of Columbia. Filed Oct. 3, 1906. Serial No. 337,205.

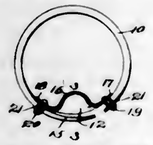


Claim.—1. A toe-plate for horseshoes, provided with lugs to engage a shoe, an opening to receive a calk, a calk engaging said opening ribs or reinforces on the outer face of the plate at each end of the calk-opening and extending over the lugs which engage the shoe, a lug having an inclined face, and a clamping-bolt having a member engaging the inclined face of said lug.

2. A toe-plate for horseshoes, provided with means to engage a shoe, a slot to receive a calk, and a slot to receive a bolt, a lug having an inclined face, a calk, a clamping-bolt having a member provided with an inclined surface on one side and engaging the shoe on the opposite side, and a liner between the inclined adjacent surfaces of said lug and said member, and provided with a tongue engaging the bolt-slot.

3. A toe-plate for horseshoes, provided with means to engage a shoe, a slot to receive a calk, a slot to receive a bolt, a lug having an inclined face, a calk, a clamping-bolt having a member provided with an inclined surface engaging said lug on one side and the shoe on the opposite side, and a locking device having members engaging the bolt-slot in the toe-plate, and members engaging the head of the clamping-bolt.

855,246. MAST-HOOP. PETER J. HANSEN, Seattle, Wash. Filed Aug. 10, 1906. Serial No. 330,064.



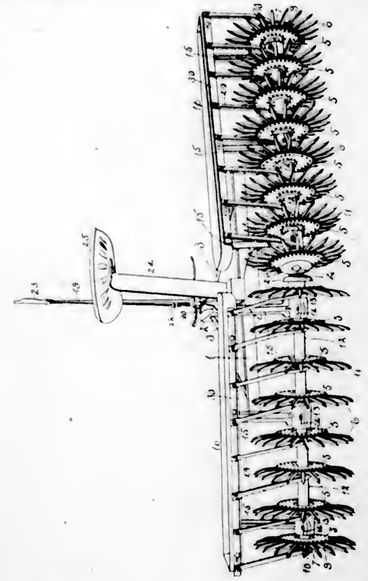
Claim.—1. In a device of the class described, a hoop having over lapped tapered ends, and a curved member disposed within the hoop and having its curvature disposed reversely to the curvature of the hoop, and its opposite ends secured to the hoop adjacent the extremities of the overlapped tapered ends.

2. In a device of the class described, a hoop comprising tapered overlapped ends, a curved member within the hoop disposed with its opposite ends adjacent the tapered ends and means rigidly securing the curved member to the hoop and the ends of the hoop rigidly together.

3. In a device of the class described, a hoop comprising tapered overlapped ends, a member disposed within the hoop, and curved reversely thereto, and with its opposite ends adjacent the ends of the tapered portions, and means rigidly securing the opposite ends of the curved member to the hoop and the ends of the hoop rigidly together.

855,247. AGRICULTURAL IMPLEMENT. JOEL J. HURT, South Omaha, Nebr., assignor to Emerson Manufacturing Company, Rockford, Ill. Filed Mar. 28, 1907. Serial No. 364,966.

Claim.—1. An implement of the character described comprising a tongue, two approximately horizontal shafts pivoted with relation to the tongue and adjustable about their pivots, a series of spike-toothed heads suitably retained in spaced relation on each of said shafts, and in operation adapted to penetrate and loosen the ground, and hand lever means for varying the angular relations of the shafts to the line of draft and holding them in their different positions.



2. An implement of the character described comprising a tongue, two approximately horizontal shafts pivoted with relation to the tongue and adjustable about their pivots, a series of spike-toothed heads suitably retained in spaced relation on each of said shafts to rotate together, all the teeth of each head of the same series being canted in the same general direction relative to the axis of rotation of the head and in operation adapted to penetrate and loosen the ground, and hand lever means for varying the angular relations of the shafts to the line of draft and holding them in their different positions.

3. An implement of the character described, comprising a frame, a tongue attached thereto, a pair of shafts fulcrumed to said frame, a series of spike-toothed heads located on each of said shafts, each head comprising a disk, a ring connected to rotate with the disk and a plurality of suitably spaced teeth held between the disk and ring, and projecting from between the same, spools located on the shafts and each abutting against two adjacent disks to hold the toothed heads in spaced relation, the teeth of the heads adapted in operation to penetrate and loosen the ground, and hand lever means for varying the angles of the shafts with respect to the line of draft, and holding them in their various positions.

855,248. PROCESS OF MAKING ANTHRACENE DYE. MAX ISLER, Mannheim, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation. Filed Feb. 12, 1907. Serial No. 357,060.

Claim.—1. The process of producing coloring matter of the anthracene series by heating alpha-amidoanthraquinone with a hereinbefore defined condensing agent.

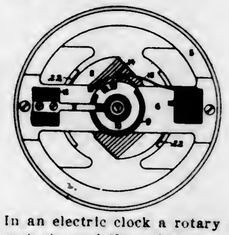
2. The process of producing coloring matter of the anthracene series by heating alpha-amidoanthraquinone with sulfuric acid.

3. The process of producing coloring matter of the an-

thracene series by heating alpha-amidoanthraquinone with sulfuric acid in the presence of an oxidizing agent.

4. The process of producing coloring matter of the anthracene series by heating alpha-amidoanthraquinone with sulfuric acid in the presence of chromic acid.

855,249. SELF-WINDING ELECTRIC CLOCK. MAXIMILIAN JURWICK, New York, N. Y. Filed Dec. 10, 1906. Serial No. 347,050.



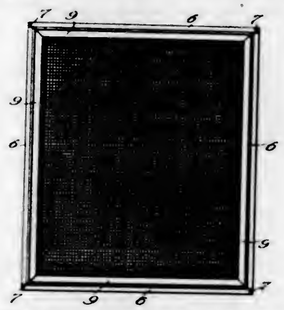
Claim.—1. In an electric clock a rotary circuit breaker with sliding contact consisting of an insulated disk cut out in the front, a contact plate in said cut out portion having but part of its circumference extending to the peripheral surface of the disk, a bridge secured to the rear part of said disk, a contact spring resting constantly on the contact plate and a contact pin on which said bridge slides during the movement of the circuit breaker so arranged that the contact pin drops from the end of the said bridge onto the contact plate whereby the circuit is closed.

2. In an electric clock an electro magnet, an armature mounted on a shaft, a clock spring with a shaft coupled to the armature shaft and a rotary circuit breaker with sliding contact secured to said armature shaft and consisting of an insulated disk cut out in the front, a contact plate in said cut out portion having but part of its circumference extending to the peripheral surface of the disk, a bridge secured to the rear part of said disk, a contact spring resting constantly on the contact plate and a contact pin on which said bridge slides during the movement of the circuit breaker so arranged that the armature is moved away from the magnet poles during the unwinding of the clock spring whereby the rotary circuit breaker is turned and the contact pin drops from the bridge onto the contact plate closing the circuit and upon the return of the armature to its normal position by the magnet poles said pin will pass onto the insulating disk and from there again on the bridge whereby the circuit is opened.

3. In an electric clock an electro magnet, an armature mounted on a shaft and having a winding, means on said shaft to connect the armature winding in the circuit, a clock spring with a shaft coupled to the armature shaft and a rotary circuit breaker with sliding contact secured to said armature shaft and consisting of an insulated disk cut out in the front, a contact plate in said cut out portion having but part of its circumference extending to the peripheral surface of the disk, a bridge secured to the rear part of said disk, a contact spring resting constantly on the contact plate and a contact pin on which said bridge during the movement of the circuit breaker so arranged that the armature is moved away from the magnet poles during the unwinding of the clock spring whereby the rotary circuit breaker is turned and the contact pin drops from the bridge onto the contact plate closing the circuit and upon the return of the armature to its normal position by the magnet poles said pin will pass onto the insulating disk and from there again on the bridge whereby the circuit is opened.

855,250. WINDOW-SCREEN. WARREN KEMMERLING, Hitchcock, Tex. Filed May 29, 1906. Serial No. 319,401.

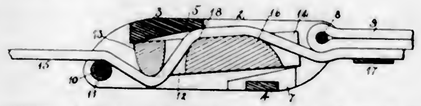
Claim.—1. A window screen comprising a frame provided with flanges arranged at right angles to the plane thereof, screen material applied to the frame over the flanges, and bars secured to the frame and provided with locking flanges having inclined portions terminally engaging the screen material and impinging it against the frame, the flanges of the frame being adapted to be bent into engagement with said inclined portions to stretch the screen material.



2. A window screen comprising a frame provided with a flange arranged at right angle to the plane thereof, screen material applied to the frame over the flange, and means secured to the frame and provided with an inclined portion terminally engaging the screen material and impinging it against the frame, the flange being adapted to be bent into engagement with the inclined portion to stretch the screen material.

3. A window screen comprising a frame provided with a flange, screen material applied to the frame over the flange, and means secured to the frame and provided with an inclined portion terminally engaging the screen material and impinging it against the frame, the flange being adapted to be bent into engagement with the inclined portion to stretch the screen material.

855,251. BUCKLE. ROBERT C. KIRBY, Rockford, Ill., assignor of one-half to Robert H. Turner, Rockford, Ill. Filed Nov. 12, 1906. Serial No. 343,062.



Claim.—1. In a buckle, the combination of a casing provided with parallel inclined faces and a bar at each end, and a plate adapted to simultaneously contact with the inclined faces, the plate having a transverse opening near one end.

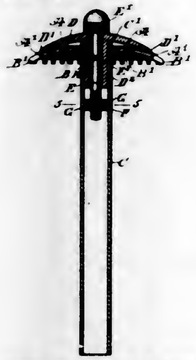
2. In a buckle, the combination of a casing provided with parallel inclined faces and a bar at each end, a roller supported by one of the bars, and a plate adapted to simultaneously contact with the inclined faces, the plate having a transverse opening near one end.

3. In a buckle, the combination of a casing provided with parallel inclined surfaces, a clamping plate adapted to engage the inclined surfaces, and a roller located on the casing adjacent to one end of the clamping plate.

4. In a buckle, the combination of a casing provided with parallel inclined surfaces, a clamping plate adapted to engage the inclined surfaces, a roller located on the casing adjacent to one end of the clamping plate, and a support located adjacent to the other end of the clamping plate.

855,252. SAFETY-RAZOR. EDWARD KRUSIUS, New York, N. Y. Filed Nov. 1, 1905. Serial No. 285,449.

Claim.—1. In a safety razor, a square support having a convex outer face and provided with a guard at each edge, a handle secured to the support, a flat and resilient blade square in shape and having a slot at each corner, means for holding the blade on the support to prevent it from turning thereon, a square backing plate having a concave inner face and engaging the blade adjacent to its edges, a nut in the handle, and a screw passing through the backing plate and engaging said nut.



2. A safety razor, comprising a flexible square blade having a central polygonal aperture and a cutting edge at each side, a blade support made square and having a central polygonal offset for engaging the said blade aperture, a handle secured to the said support and having a polygonal bore, a backing plate for the blade having a polygonal shank fitting the said handle bore, a nut in the handle, and a screw-rod mounted to turn in the said backing plate and screwing in the said nut, the head of the screw-rod being centrally arranged on the outside of the said backing plate to form a guide.

3. A safety razor, comprising a flexible square blade having a central polygonal aperture and a cutting edge at each side, a blade support made square and having a central polygonal offset for engaging the said blade aperture, a handle secured to the said support and having a polygonal bore, a backing plate for the blade having a polygonal shank fitting the said handle bore, a nut in the handle, a screw-rod mounted to turn in the said backing plate and screwing in the said nut, and means on the said backing plate for holding the said screw-rod against movement in the direction of its length.

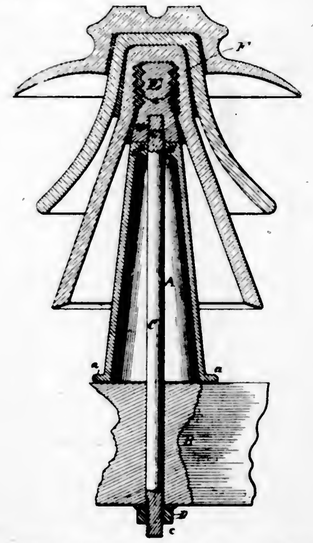
4. In a safety razor, a hollow polygonal handle, a polygonal support secured upon the handle a short distance from one end thereof, a polygonal blade on the support and having a central polygonal opening through which the projecting end of the handle extends, a backing plate having a polygonal tubular shank fitting in the handle, a nut in the handle, a screw passing through the tubular shank of the backing plate and engaging the nut, and means for preventing the screw from moving endwise.

5. In a safety razor, a support having a curved outer face, a handle secured to the support with its end projecting a short distance beyond the outer face of the support, the inner end of the handle being polygonal and having a correspondingly shaped bore, a thin resilient blade on the support and having a central polygonal opening through which the end of the handle extends, a backing plate having a concave inner face and a polygonal tubular shank fitting in the bore of the handle, a nut in the handle, a screw in the shank of the backing plate and engaging the nut, the screw being provided with an annular groove, and a transverse pin in the shank of the backing plate and engaging the said groove.

855,253. INSULATOR-PIN. WILLIAM S. LEE, Jr., Charlotte, N. C. Filed Feb. 10, 1906. Serial No. 300,440.

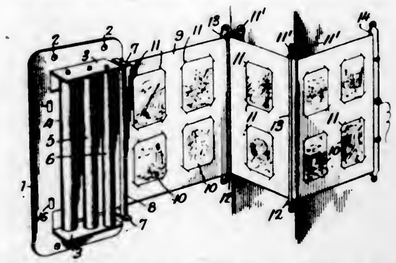
Claim.—1. An insulator pin comprising a hollow conical metal base, and a securing bolt passing through the same, said bolt threaded at its upper end, and a metal head screwed on the upper end of said bolt, said head adapted to be fastened into an insulator and to be unscrewed from the upper end of the bolt to replace a damaged insulator.

2. An insulator pin comprising a hollow conical metal base, a securing bolt passing through the same and threaded at its upper end, and a separate conical metal head or cap internally threaded to screw on the upper end of the bolt, said conical cap having its lower edge parallel with the lower end of the hollow conical base, and fitting true the upper end of the same, the upper end of said cap provided with means to secure the same in an insulator by cementing or otherwise.



3. An insulator pin comprising a hollow metallic truncated cone shaped base part having a horizontal flange at its lower end, and an opening through its upper end, its upper face and the lower face of the flange being parallel, a securing bolt passing through said opening and threaded at its upper end, a truncated cone shaped metallic cap screwed on the upper threaded end of said bolt, the lower edge of said cap being parallel with the lower face of the horizontal flange at the lower end of the base part, and fitting true the upper end of the base part, the upper end of said cap provided with detents to receive cement and secure said cap in an insulator.

855,254. ROLLER-MOUNT. CHARLES LEONARD-STUART, New York, N. Y. Filed Oct. 3, 1905. Serial No. 281,195.

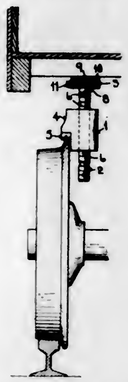


Claim.—1. A mounting apparatus comprising a sheet metal base plate having a plurality of outstanding integral flanges, a plurality of spring rollers journaled on said flanges at different distances from the base plate, a plurality of flexible bands each connected with one of said rollers and having means to receive ornamental articles, a

guide roller journaled on the flanges of said base plate for guiding said flexible bands, and a casing hinged to said base plate and covering said spring rollers.

2. A mounting apparatus comprising a base plate cut to form integral bendable flanges, a spring roller removably journaled between the bendable flanges, a guide member on the base plate, and a flexible band connected with the spring roller and passing under the guide member and adapted to support ornamental articles.

855,255. CAR-JACK. HENRY F. LOESCHNER and MOSES LESAR, Tamms, Ill. Filed Dec. 6, 1906. Serial No. 346,600.



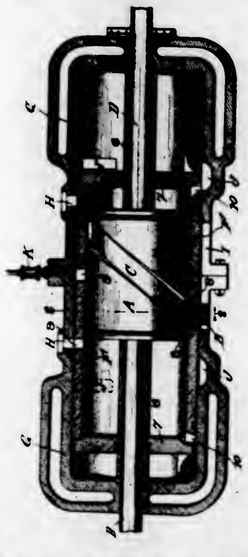
Claim.—The herein-described car jack comprising the bit having the vertical screw-threaded opening, and the laterally-projecting shoulder on one side having the underside convex to bear on the flanges of a wheel, the screw engaging the opening of the bit, extending therethrough and provided with means to facilitate the turning of the screw, and the head swiveled to the upper end of the screw and having the convex milled upper surfaces.

855,256. INTERNAL-COMBUSTION ENGINE. FRANK MOREY, Scrafford, W. Va. Filed Dec. 17, 1906. Serial No. 348,246.

Claim.—1. In an internal combustion engine, the combination with a cylinder and hollow piston, of a shaft extending coaxially through the cylinder and having a drum at the rear end of the cylinder and within the hollow piston, said drum and piston head forming a compression chamber therebetween and means between the piston and the shaft to convert the reciprocation of the former into rotation of the latter.

2. In an internal combustion engine, the combination with a cylinder and a hollow piston therein, the cylinder having inlet, exhaust and by-pass ports controlled by the piston, of a shaft extending coaxially through the cylinder and piston and having a drum thereon fitting within the hollow of the piston, said drum and piston forming a compression chamber therebetween, said chamber communicating through the by-pass with the explosion chamber in the cylinder, and means to transmit and convert the reciprocation of the piston into rotation of the drum and shaft.

3. In an internal combustion engine, the combination with a cylinder having inlet and exhaust ports in the side thereof and a by-pass passage in the wall thereof, of a hollow piston in the cylinder arranged to cover and uncover the exhaust port and having an inlet port through the side thereof arranged to register with the inlet port to let in a charge to the space within the piston, and also having a port arranged to register with the by-pass to connect the said space with the explosion chamber in the cylinder, a shaft within the cylinder and piston, having a drum fitting within the piston, said drum and piston head forming a compression chamber therebetween, and means to transmit and convert the reciprocation of the piston heads into rotation of the shaft.



4. In an internal combustion engine, the combination of a pair of coaxial cylinders and piston heads therein arranged and acting oppositely, a shaft extending coaxially through the cylinders and piston heads and having a drum thereon, said drum and piston heads forming compression spaces therebetween, and means to convert and transmit the reciprocation of the piston heads into rotation of the shaft.

5. In an internal combustion engine, the combination of a pair of two-cycle rear-compression cylinders and piston heads therein, arranged coaxially and acting oppositely, a shaft extending coaxially through the cylinders and piston heads and having thereon a drum located between the piston heads, said drum and piston heads forming compression chambers therebetween, said drum having a cam groove, and a pin connected to the piston heads and extending into the groove to transmit the motion of the piston heads to the drum and shaft.

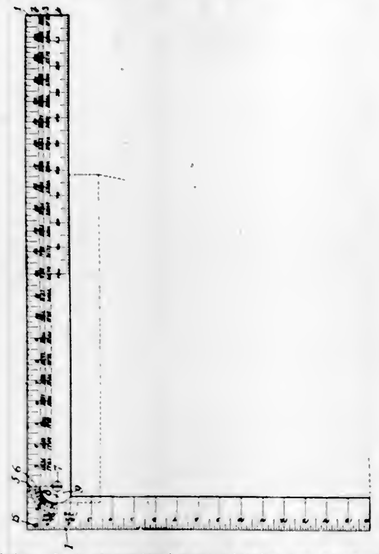
6. In an internal combustion engine, the combination of a pair of opposed coaxial cylinders, a hollow piston therebetween having heads in the opposite cylinders, a shaft extending axially through the cylinders and piston and having a drum thereon within the piston and between said heads, said drum having a cam groove extending around the same and forming with the piston heads compression spaces, a pin projecting from the piston into the groove, and means to prevent relative rotation of the piston and cylinders.

7. In an internal combustion engine, the combination of a pair of opposed coaxial cylinders having axial sleeves therein, a hollow piston slidable between the cylinders and having heads through which the sleeves extend, a shaft extending through the sleeves and having thereon a drum within the piston and between the ends of the sleeves, and means to transmit and convert the reciprocation of the piston into rotation of the drum and shaft.

8. In an internal combustion engine, the combination of a cylindrical casing having two explosion chambers in opposite ends thereof and a longitudinal slot in the middle portion, a hollow piston between the explosion chambers, a coaxial shaft extending through the casing and piston and having a drum thereon within the piston provided with a cam groove, and a pin carried by the piston and projecting at its outer end into the slot and at its inner end into the groove.

9. In an internal combustion engine, the combination of a pair of opposed cylinders arranged coaxially and having inlet and exhaust ports in the side walls, and by-passes, a hollow piston between the cylinders and having a head in each, a shaft extending axially through the cylinders and piston and having a drum fitting within the body of the piston, said drum forming with the respective piston heads compression spaces, said piston heads being arranged to alternately cover and uncover the respective exhaust ports, and said piston also having ports extending therethrough and arranged to alternately register with the inlet ports and by-passes to let a charge into the piston and compress and force the same into the explosion chambers of the cylinders, and means to transmit and convert the reciprocation of the piston into rotation of the drum and shaft.

855,257. CARPENTER'S SQUARE. JOSEPH A. MCCLOSKEY, Mount Vernon, N. Y. Filed Feb. 12, 1907. Serial No. 357,032.

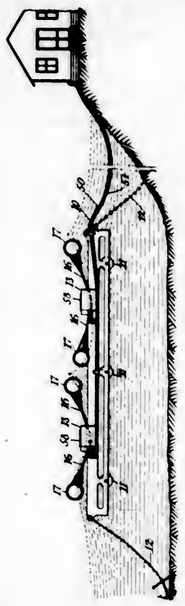


Claim.—1. A carpenters' square having two arms of unequal length pivoted together, and provided with a protractor extending across the pivoted ends of both of said arms and provided with a scale for determining the angle of inclination of the ends of a common rafter, and a scale for determining the angle of inclination of the ends of a hip rafter of predetermined pitch, substantially as shown and described.

2. A carpenters' square having two arms of unequal length pivoted together and provided with a protractor extending across the pivoted ends of both of said arms, having scales reading similary from each end to the center and adapted to indicate by means of the inner edges of the arms of said square the angle of inclination at the ends of a hip or valley rafter having a predetermined pitch, substantially as shown and described.

3. A carpenters' square having arms of unequal length pivoted together, and provided with a protractor extending across the pivotal ends of both of said arms, the protractor comprising two scales reading similarly from each end to the center, one of said scales measuring the inclination of the opposite ends of a hip rafter, the other scale measuring the inclination of the opposite ends of a common rafter, as indicated by the relative position of the inner edges of said arms, substantially as shown and described.

855,258. WAVE-MOTOR. JOHN W. NEAL, Keaiia, Hawaii. Filed Mar. 16, 1906. Serial No. 306,422.



Claim.—1. In a wave motor, a buoyant frame, a shaft supported on the frame, a float having connection with the shaft, two gear wheels loosely mounted on the shaft, clutch devices carried by the shaft for each gear wheel and operating alternately, and a crank rotated in one direction only by the alternate operation of said gear wheels.

2. In a wave motor, a buoyant frame, a casing on the frame, a shaft extended into the casing, a float having connection with the shaft, two gear wheels loosely mounted on the shaft within the casing, clutch devices carried by the shaft for each gear wheel and operating alternately, a crank rotated in one direction only by the alternate operation of said gear wheels, and a compressor carried by the frame and operated in said gearing.

3. In a wave motor, a buoyant frame, a casing mounted on the frame, a shaft extended into the casing, two disks rigidly connected to the shaft, gear wheels loosely mounted on the shaft adjacent to the disks, clutch devices carried by the disks for engaging with the gear wheels, the clutches on one disk being inclined in an opposite direction to the clutches on the other disk, a float having connection with said shaft, a crank shaft, driving connection between said gear wheels and the crank shaft, whereby the crank shaft is rotated continuously in one direction upon the up and down movement of the float, and a device on the frame operated from the crank shaft.

4. A wave motor comprising a buoyant frame, a plurality of casings arranged on opposite sides thereof, shafts extended into the casings, arms extended from the shafts, floats supported by said arms, crank shafts in the casings, driving connections between the floats and crank shafts, and air compressors carried by the frame and operated from the crank shafts.

855,259. STORM-WINDOW FASTENER. ENOCH C. RICHARDS, Portland, Me. Filed Mar. 10, 1906. Serial No. 305,224.

Claim.—1. The combination with a storm window, screen, etc., of a fastener therefor comprising a rotatable drum secured to and projecting above the face thereof and

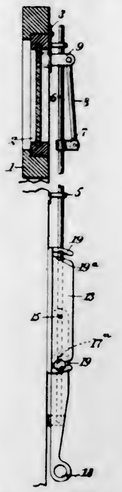
provided with a locking lug adapted to be turned into and out of engagement with the edge of the window frame.



2. The combination with a storm window, screen, etc., of a rotatable drum projecting inwardly from the face thereof and provided with a lug adapted to be turned into engagement with the edge of the window frame with a wedging action.

3. The combination with a storm window, screen, etc., of a rotatable drum projecting inwardly from the face thereof and provided with peripheral spiral grooves adapted to engage a bead on the edge of the window frame with a wedging action.

855,260. TRANSOM-LIFTER. LESTER C. SMITH, New Orleans, La., assignor of one-half to John J. Baehr, New Orleans, La. Filed June 8, 1906. Serial No. 320,753.



Claim.—1. A device for operating a transom, comprising a main lever, an auxiliary lever pivoted to and having its fulcrum on said main lever, and a member connecting said auxiliary lever with the transom.

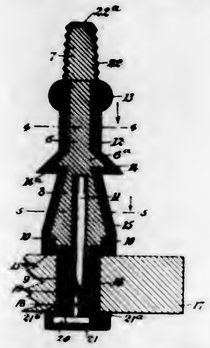
2. A device of the class described, comprising, in combination, a bracket, a main lever pivotally attached thereto, an auxiliary lever having its fulcrum on said main lever, a connecting rod attached to said auxiliary lever, and means for connecting said connecting rod with the transom.

3. In a device of the class described, in combination, a bracket, a main lever pivotally attached to said bracket, a clamping screw carried by said main lever and adapted to clamp the same to said bracket, an auxiliary lever pivotally mounted on said main lever, and a connection from said auxiliary lever to the transom.

4. In mechanism of the class described, in combination, a bracket adapted to attach to a door frame, a main lever pivotally attached to said bracket, an auxiliary lever having its fulcrum pivot on said main lever at a point removed from the pivot point of said main lever, a slide rod jointed to said auxiliary lever, means for guiding said slide rod to move longitudinally, a link attached to said slide rod, and a member adapted to attach to the transom and engaging said link.

5. In a transom lifter, in combination, a bracket, a main lever pivoted thereto, an auxiliary lever pivoted on said main lever and having a laterally projecting member engaging the edge of said main lever, and a link adapted to connect said auxiliary lever with the transom.

855,261. INSULATOR-PIN. LOUIS STEINBERGER, New York, N. Y. Filed Oct. 9, 1905. Serial No. 282,000.



Claim.—1. An insulator pin, comprising a strengthening member having an enlarged head, and a jacket of insulating material enveloping said strengthening member and provided with an annular thickened portion constituting a bead and disposed adjacent to said enlarged head.

2. An insulator pin, comprising a body member provided with a substantially conical portion having anchorages, and a jacket of insulating material enveloping said conical portion and secured by said anchorages, said jacket of insulating material being also conical in form.

3. An insulator pin, comprising an enlarged body portion of metal having a metallic tube integral therewith and projecting therefrom, a jacket of insulating material enveloping said body portion, and a fastening member for engaging said metallic tube in order to hold said body member upon a cross-arm.

4. An insulator pin, comprising a body member provided with a conical portion, a jacket of insulating material enveloping said body member and said conical portion so as to present a shoulder, and means for securing said shoulder against a cross-arm so as to form a watertight joint.

5. An insulator pin, comprising a body member provided with a substantially conical portion and with a tube, a jacket of insulating material encircling said substantially conical portion and said tube, said jacket of insulating material being provided with an annular shoulder for fitting upon a cross-arm, and with a portion encircling said tube for extending partially through said cross-arm, and a metallic fastening member provided with means for engaging said tube and with means for engaging said portion of said jacket extending into said cross-arm.

6. An insulator pin, comprising a body member having a portion for engaging the upper surface of a cross-arm and having also a portion of smaller diameter for extending into said cross-arm, a jacket of insulating material covering said body member, a fastening member for engaging the portion thus projecting into said cross-arm, and an envelop covering all parts of said fastening member which would otherwise be exposed, said envelop engaging said portion of said body member projecting into said cross-arm.

7. An insulator pin, comprising a metallic member provided with a shoulder, a jacket of insulating material encircling said metallic member and provided with a shoulder for engaging the upper surface of a cross-arm, a fastening member for engaging the lower surface of said cross-arm, said fastening member being provided with a portion for engaging said metallic member and for drawing the same downward, and an envelop of insulating material covering said fastening member and engaging directly said jacket of insulating material.

8. An insulator pin, comprising a body member provided with a shoulder and with a projecting portion of smaller diameter than said shoulder, a jacket of insulating material engaging said shoulder and provided with an extended portion encircling said projecting portion, a fastening member for engaging said projecting portion of said body member, and an envelop of insulating material covering said fastening member and engaging directly said extended portion of said jacket of insulating material.

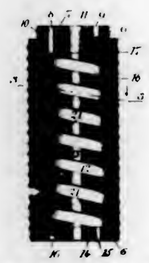
9. An insulator pin, comprising a portion of insulating material for extending into a cross-arm, a strengthening member connected with said portion of insulating material for supporting an insulator, a bolt for engaging said strengthening member, said bolt being provided with a head, and an envelop of insulating material secured rigidly to said head.

10. An insulator pin, comprising a body member having a portion of reduced diameter for insertion into a cross-arm, a revoluble fastening member connected with said portion of reduced diameter for pulling the same downward from below said cross-arm, said revoluble fastening member being provided with a head, and an envelop of insulating material secured rigidly to said head and revoluble therewith.

11. An insulator pin comprising a body member provided with a tube threaded internally, a jacket of insulating material covering said body member and said tube, and extending below said tube, a bolt provided with a portion threaded externally engaging said tube, and an envelop of insulating material encircling the exposed part of said bolt, said envelop of insulating material extending practically into engagement with the lower portion of said tube.

12. An insulator pin, comprising a strengthening member provided with a threaded portion, a jacket of insulating material mounted upon said pin but leaving said threaded portion thereof exposed, a threaded sleeve of insulating material detachably mounted upon said threaded portion, said sleeve of insulating material directly engaging said jacket of insulating material.

855,262. SPIRAL-CORE INSULATOR. LOUIS STEINBERGER, New York, N. Y. Filed June 11, 1906. Serial No. 321,200.



Claim.—1. As an article of manufacture, a member of insulating material provided with ends threaded internally, and a coupling threaded externally and adapted to engage said threads.

2. As an article of manufacture, a substantially cylindrical member of insulating material provided externally with a spirally raised thread and with a metallic member wound around said member of insulating material and disposed parallel with said thread.

3. As an article of manufacture, a single integral member of insulating material provided with an axial bore extending therethrough, and with a spiral space disposed about said bore, and means for admitting a cooling medium into said spiral space.

4. A device of the character described, comprising a substantially cylindrical member of insulating material threaded externally and provided with a spiral armor wound thereupon.

5. An insulating structure, comprising members of insulating material, and a coupling of insulating material revolubly connected therewith for the purpose of securing a plurality of members of insulating material together, said coupling being provided with means for facilitating the application of a wrench thereto.

6. An insulating structure comprising a substantially cylindrical section of insulating material, provided with a spiral opening extending axially throughout its entire length, and further provided with a tube disposed axially through the center of said section and concentric to said spiral opening.

7. As an article of manufacture, a member of insulating material provided externally with a thread, and a metallic member joined spirally around said member of insulating material and constituting an armor for the same.

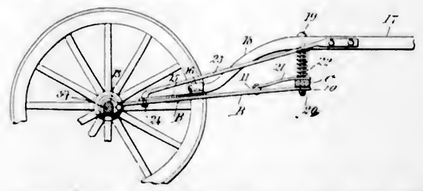
8. As an article of manufacture, a member of insulating material provided with an axial bore forming a bearing surface, and a spirally formed channel below the general surface of said bore.

9. An insulating device, comprising a longitudinal member of insulating material provided with an axial bore having a spirally formed bearing portion, and a conductor disposed within said bore, the insulating member having a spirally formed channel extending about said conductor.

10. As a new article of manufacture, an insulator consisting of a body of insulating material having a bore forming a support for a conductor, and a chamber extending around the said bore and conductor support.

11. As a new article of manufacture, an insulator consisting of an insulator body having a bore, the wall of which is in spiral form and forms a support for receiving a conductor.

855,263. DRAFT ATTACHMENT FOR VEHICLES. JAMES M. SUDDUTH, Manhattan, Kans. Filed Dec. 26, 1906. Serial No. 349,483.



Claim.—1. In a draft attachment for vehicles, the combination with the axle, of side bars pivotally connected with the axle, a draft device connected with the side bars, a pole or tongue held against lateral movement above the side bars, and a cushion for the pole or tongue located between it and the draft device.

2. In a draft attachment for vehicles, the combination with the forward axle and its supporting wheels, of side bars pivotally connected with the axle, the forward ends of which side bars converge and are connected, an arched bar, a socket carried thereby, means for supporting the arched bar, and a pole or tongue fitted to said socket and extending over and beyond the forward connected portions of the side bars, a draft device located between the forward portions of the side bars and the pole or tongue, a pivot bolt passed through the pole or tongue and through the draft device, and a cushion intervening between the draft device and said pole or tongue, engaging with both of said factors.

3. The combination with the forward axle of a vehicle, its supporting wheels, side bars having hinged connection with the said axle and extending forwardly therefrom, the side bars being made to converge at their forward ends, and a connecting plate for the forward ends of the side bars, an arched bar located in front of the said axle, crossing the side bars, a socket carried by the arched bar, and a pole having its rear end within said socket, of guy rods for the pole, extending rearwardly therefrom, a doubletree located between the pole and the forward connecting plate of the said bars, a bolt passed through the pole, the doubletree and the connecting plate for the side bars, and

a spring carried by the bolt, engaging with the doubletree and with the pole or tongue.

4. The combination with the forward axle and supporting wheels of a vehicle, side bars pivotally connected with the said axle, which side bars converge at their forward ends, a connecting plate for the forward ends of the side bars, an arched bar carried by the side bars at a point in front of the axle, a socket secured to the arched bar, and a pole or tongue having its inner end inserted in said socket, of a draft tree located on the connecting plate of the side bars beneath the tongue or pole, a bolt passed through said tongue or pole, the draft tree and the connecting plate of the side bars, a spring coiled around the bolt, bearing against the draft tree and the pole or tongue, guy rods attached to said tongue or pole at its sides, and means for anchoring the rear ends of the said guy rods.

5. In a draft attachment for vehicles, the combination of an axle, side bars, a pivotal connection between the side bars and the axle and a pole or tongue secured at its rear end between the side bars, a draft device supported by the side bars, and a cushion intervening between the under face of the pole or tongue and the draft device.

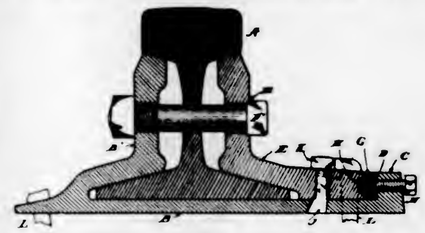
855,264. RAIL-BRACE. MARTIN L. SWINGLE, Roseville, Ohio. Filed Jan. 29, 1907. Serial No. 354,640.



Claim.—A track brace including a pair of sections including plate portions the outer ends of the plate portions being bent upwardly and above their body portions at an acute angle to embrace the outer base flanges of rails with which the sections are to be engaged, and an upstanding rib formed integral with and projecting upwardly from the upper face of each plate section, the said rib being adapted to abut the edge of the inner base flange of the respective rail, and a turn buckle connecting the sections, each of the said sections being adapted to have its bent end portion engaged with the outer flange of a rail and then swung upwardly until the said outer base flange is snugly received in the said bent portion and the edge of the inner base flange abuts the rib.

855,265. RAIL-SPLICE. JAMES THOMAS, Joliet, Ill., assignor of one-fourth of John Mabus, East Peoria, Ill. Filed Sept. 7, 1906. Serial No. 333,642.

Claim.—1. The combination with a base having at one side of the place of the rail an upwardly extending portion under cut on its inner face, of a member interposed between the place of the rail and said portion and having the face next said portion undercut, and a key adapted to fit the space between the said undercut faces.



2. The combination with a base having at one side of the place of the rail an upwardly extending portion under cut on its inner face, of a member interposed between the place of the rail and said portion and having the face next said portion recessed, and a key adapted to fit the space between said undercut face and said recessed face.

3. A rail splice comprising a base for supporting the rail the same being of greater width than the base of said rail and having at one side an upward extension for inclosing one side of the rail, and having at its opposite side an upturned portion the inner surface of which forms an overhang, a second member for inclosing the opposite side of the rail there being a space between it and the overhang, there being a substantially longitudinal groove in the second member to face the overhang and an insertible member for entering the space and the groove beneath said overhang, said groove and the overhang together with said insertible member preventing relative movement of the first and second members.

4. A rail splice comprising members for inclosing the rail, one of said members extending beneath and beyond the rail and supporting the latter and having an upward extension beyond the rail, such extension being undercut to form an overhang facing the rail, the clamping member at that side of the rail being recessed longitudinally facing the overhang, the recessed portion being removed from the vicinity of the overhang, and means adapted to enter the space between the overhang and the recessed member and also adapted to enter the recess for preventing movement of the clamping member.

5. A rail splice comprising a base for supporting the rail, the same being of greater width than the base of the rail and inclosing one side of the rail, and having at its opposite side an upturned portion whose inner surface has an overhang facing the rail, a second member for inclosing the opposite side of the rail, the same lying partially upon the first member and partially upon the rail base, there being a space left between it and the overhang, there being a substantially longitudinal groove in the second member to face the overhang, and a third member adapted for entering the space and the groove, the groove and said overhang preventing the vertical movement of the second and third members relatively and relative to the first member.

6. A rail splice comprising a base for supporting the rail, the same being of greater width transversely than the width of the rail-base and having at one side an inclosing extension for one side of and to fit the rail, its opposite edge having an overhang facing the rail, a second member for fitting the opposite side of the rail from that inclosed by the first member and lying upon the latter member and the rail-base, and a third member adapted for entrance between the second member and the overhang of the first member, there being a longitudinal groove in the said second member, the third member being adapted to engage the groove and thereby prevented having vertical movement and also preventing vertical movement of the second member.

7. A rail splice comprising a base for supporting the rail, the same being of greater width than the rail-base and having at one side an extension for inclosing one side of the rail, its opposite side having an overhang facing the rail, said overhang extending upward from the base and inward toward the rail, the bottom of the overhang being substantially in line with the under side of the rail-base, a second member for inclosing that side of the rail facing the overhang and resting upon the rail-base and the base of the first described member, there being a longitudinal groove in said second member facing the overhang, and means entered between the second member and the overhang and within the groove for preventing the second member from moving relative to the first member and the rail.

8. A rail splice comprising a base for supporting the rail, the same being of greater width than the rail-base and having at one side an extension for inclosing one side of the rail and having at its other side a vertical extension, its upper edge facing the rail and overhanging its own base, a second rail inclosing member seated upon the rail-base and the base of the first member between the rail and the overhanging vertical extension, there being a space left between the second member and the overhang, there being a longitudinal groove in the said second member facing the overhang, and means entered in said space and occupying the groove and lying beneath the overhang for holding the parts all in rigid relation.

9. A rail splice comprising a base for supporting the rail, the same being of greater width than the width of the rail-base and having at one side an inclosure for one side of the rail and having at its opposite side an upturned extension, the inner upper edge of the extension overhanging its base, a second member inclosing the opposite side of the rail and resting upon the rail-base and the base of the first member, there being a space between the said second member and the overhang, bolts for drawing the rail-inclosing portions firmly together against the rail, and means for filling the space between the overhang and the second member after the said bolts are tightened, there being a longitudinal groove in the said second member into which said means is designed to enter, the means adapted through the overhang and groove to prevent vertical movement of the parts relatively.

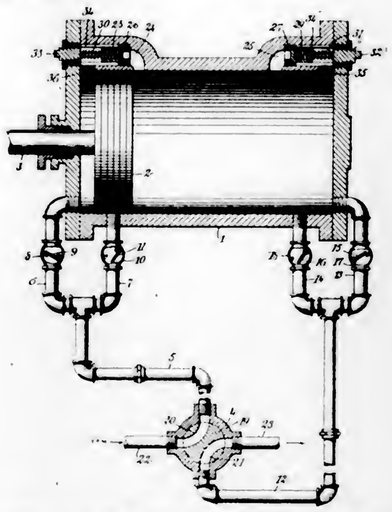
10. A rail splice comprising a base for supporting the rail, the same being of greater width than the rail-base and having at one side an upward extension for inclosing one side of the rail and having at its opposite side an upturned portion, the inner surface of which forms an overhang, a second member for inclosing the opposite side of the rail, there being a space between it and the overhang, bolts for drawing the rail-inclosing members against the rail, means for entering the space between the second member and the overhang after the bolts are tightened, there being a longitudinal groove in the said second member facing the overhang, the space filling means adapted to enter said groove and prevent relative movement of the parts, and means for locking the first and second members together.

11. A rail splice comprising a base for supporting the rail, the same being of greater width than the rail-base and having at one side an upward extension for inclosing one side of the rail and having at its opposite side an upward extension, the inner surface of which forms an overhang, a second member for inclosing the opposite side of the rail, there being a space between it and the overhang, bolts for drawing the rail-inclosed members against the rail, means for entering the space between the second member and the overhang after the bolts are tightened, there being a longitudinal groove in the said second member facing the overhang, the space filling means adapted to enter the groove and prevent relative movement of the parts and means for preventing longitudinal movement of the space filling means.

12. A rail splice comprising a base for supporting the rail, the same being of greater width than the rail-base and having at one side an upward extension for inclosing one side of the rail and having at its opposite side an upturned portion, the inner surface of which forms an overhang a second member for inclosing the opposite side of the rail, there being a space between it and the overhang, bolts for drawing the rail-inclosing members against the rail, means for entering the space between the second member and the overhang after the bolts are tightened, there being a longitudinal groove in the said second member for facing the overhang, the space filling means adapted to enter said groove and prevent relative movement of the parts, means for preventing longitudinal movement of the space filling means, and means for locking the first and second members together.

13. A rail splice comprising a base as a support for the rail, the same extending at each side of the latter, one side having a vertical portion for inclosing the rail as shown, the opposite side having an upturned portion the inner surface of which overhangs the base, a second member for inclosing the opposite side of the rail the same resting upon the base and having a groove in its edge opposite the overhanging upturned portion, there being a space left between the two, a member for entering the space for the purposes set forth, and set screws in the upturned portion for engaging the insertible member for securing it in place against voluntary movement.

855,266. AUTOMATIC STOP FOR PISTONS. ERNEST C. THORSCHMIDT, New York, N. Y. Filed June 5, 1906. Serial No. 320,291.

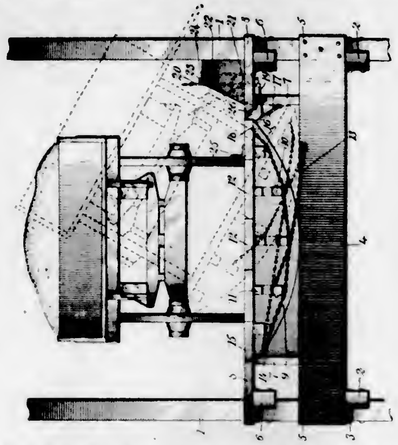


Claim.—In a mechanism for the purpose specified, a cylinder, a piston in the cylinder, equalizing ports in the wall of the cylinder near the ends, valves for controlling said ports, a pipe having a supply branch leading through one end of the cylinder, an inwardly opening valve therein, an exhaust branch connecting with said pipe, an outwardly opening valve in the exhaust branch, a second pipe having a supply branch leading through the piston end of the cylinder, an inwardly opening valve in said branch, an exhaust branch communicating with said second pipe, and an outwardly opening valve in said last-named exhaust branch.

855,267. DUMPING DEVICE FOR VEHICLES. MERRITT I. TUTTLE, Fort Morgan, Colo. Filed July 28, 1906. Serial No. 328,217.

Claim.—1. In a device of the class described, a frame having transverse members, rockers upon said members, a platform upon said rockers and adapted to carry a vehicle transversely of said rockers, means for rocking said platform in a horizontal position, a stop to limit the tilting of said platform, and a stop upon said platform to limit the lateral movement of a vehicle, the arrangement being such

that the center of gravity of the vehicle, when loaded, is to one side of the point of contact of the rockers and when unloaded, the center of gravity is to the opposite side of the point of contact of said rockers.



2. In a device of the class described, a frame having transverse members, rockers upon said members, a platform upon said rockers and adapted to carry a vehicle, a stop upon said platform limiting the lateral movement of the vehicle, means for preventing the displacement of said rockers from said transverse members, and a catch adapted to be manually released and normally to hold said platform in a horizontal position.

3. In a device of the class described, a frame having transverse members, rockers upon said members and having a platform adapted to carry a vehicle, a catch upon said frame adapted to hold said platform in a normal position and having a lever adapted to displace said catch, said platform being adapted to be depressed by the weight of the vehicle thereupon, and a stop upon said frame adapted to abut against said vehicle to limit the movement of said platform.

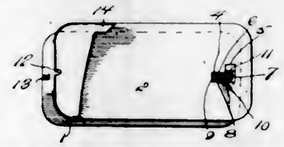
4. In a device of the class described, a frame having rockers, a platform upon said rockers and having means for holding a vehicle thereupon with the center of gravity to one side of the center of said platform, a catch adapted to hold said platform in a normal position, a stop upon said frame to limit the tilting of said vehicle, and means for preventing said platform from rocking in one direction.

5. In a device of the class described, a frame having transverse members, rockers upon said members and having a platform adapted to carry a vehicle, a bar pivotally mounted upon said frame and adapted to engage with said platform to hold the same in a normal position, and a lever attached to said bar and adapted to displace the same when the position of said lever is altered.

6. In a device of the class described, a frame having a transverse member, a rocker upon said member and having a platform adapted to carry a vehicle, a flexible member secured to said rocker and to said frame at a point adjacent to the opposite end of said rocker, and a second flexible member secured to said rocker and to said frame at a point adjacent to the opposite end of said rocker and remote from the point of the frame at which the first flexible member is secured.

855,268. PUZZLE. WILLIAM S. WATSON and FREDERICK ARTZ, Galesburg, Ill. Filed Mar. 29, 1906. Serial No. 308,783.

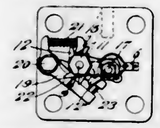
Claim.—1. A device of the class described comprising a box, a main lid for the box, said lid being provided with a recess and having a slot formed therethrough and communicating with said recess, a detent seated in the said recess and including spaced arms, a supplemental lid, a pivot pin engaged through said supplemental lid and through the said slots in said main lid.



2. A device of the class described comprising a box, a main lid having recesses formed therein and having a slot formed therethrough and communicating with said recesses, a supplemental lid, a pivot-pin carried by said box and engaged through said slot, and said supplemental lid, a detent disposed in one of said recesses, and means disposed in the other of said recesses for holding said detent in engagement with said pivot pin.

3. A device of the class described comprising a box, a main lid having communicating recesses formed therein and having communicating slots formed therethrough and communicating with the said recesses, a pivot pin carried by said box and engaged through said slots and said supplemental lid, a detent seated in one of said recesses, and a resilient element located within the other of said recesses and arranged to hold said detent and said pivot pin in engagement when the parts are in locked position.

855,269. ELECTRIC IGNITER. ANDREW D. WILKINSON, Wellsville, Ohio. Filed Oct. 6, 1906. Serial No. 337,715.



Claim.—1. An electric igniter comprising a support, a stationary conductor carried thereby, an oscillating conductor coöperating therewith, an angular anvil fixed to the oscillating conductor, a ratchet wheel journaled in said conductor, an angular hammer having a contact pin upon one arm thereof to engage one of the arms of the anvil, a spring interposed between and bearing on the opposite arms of the anvil and hammer, and an operating member journaled on said oscillating conductor and carrying a pawl to engage the ratchet wheel, the teeth of the pawl being adapted to engage and move the hammer.

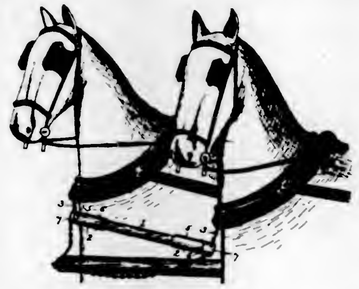
2. An electric igniter comprising a support carrying a stationary conductor, an oscillating conductor coacting therewith, a bell crank anvil fixed to the oscillating conductor, a bell crank hanger journaled on the support and having one of its arms provided with a beveled-faced lug and a contact pin, the latter being adapted to engage one of the arms of the anvil, a spring interposed between and bearing on the opposite arms of the hammer and anvil, a ratchet wheel journaled on the oscillating conductor and adapted to coöperate with said lug, and an operating member pivoted to the anvil and having a pawl to engage the ratchet wheel.

855,270. BREAST-CHAIN SPREADER FOR HARNESS. JOSEPH W. WISTAR, Philadelphia, Pa. Filed Jan. 5, 1907. Serial No. 350,946.

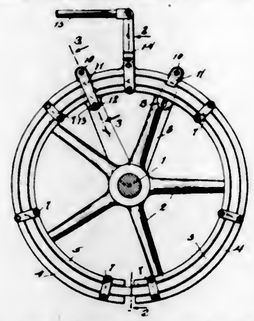
Claim.—1. A breast chain spreader freely movable with the chains, and having freely sliding and disconnected ends to which said chains are attached.

2. A breast chain spreader consisting of a bar having sliding end sleeves slotted for engagement with stop pins carried by the end portions of the bar.

3. A breast chain spreader consisting of a bar having sliding end sleeves, with projecting flanges perforated at each end, and stops for limiting the sliding movements of the sleeves.



855,271. BRAKE. RICHARD W. BAINBRIDGE, New York, N. Y. Filed Dec. 29, 1905. Serial No. 293,788.



Claim.—1. In a brake, a rotary member having a flange thereon, frictional brake bands co-operating with the interior and exterior surfaces of said flange and movable relatively about the axis of said flange at all points throughout their lengths, links connecting said bands, and means for moving the bands relatively about the axis of the flange, substantially as described.

2. In a brake, a shaft, a wheel having a flange secured thereon, a brake band co-operating with the exterior of said flange, two brake bands lying parallel to each other co-operating with the interior of said flange, said inner and outer bands being movable relatively about said shaft at all points throughout their lengths, links connecting the outer band to each of the inner bands, and means for moving the inner and outer bands relatively about the axis of the shaft, substantially as described.

3. In a brake, a rotary member having a flange thereon, frictional brake bands co-operating with the interior and exterior surfaces of said flange, a plurality of links each pivotally connected to said bands and means for moving said bands relatively about the axis of said flange, substantially as described.

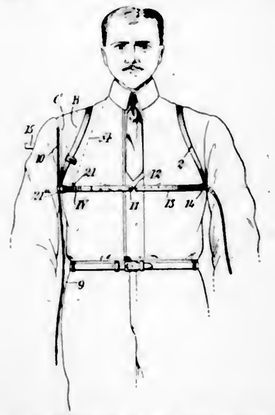
4. In a brake, a rotary member having a flange thereon, frictional brake bands co-operating with the interior and exterior surfaces of said flange, a plurality of links each pivotally connected to said bands, said links being distributed throughout the lengths of the bands, a lever pivotally connected to said bands, and means for operating said lever, substantially as described.

5. In a brake, a shaft, a wheel having a flange secured thereon, a brake band co-operating with the exterior surface of said flange, two bands lying parallel to each other and co-operating with the interior surface of said flange, a plurality of links each connecting said outer band with one of said inner bands, and means for moving said inner and outer bands relatively, substantially as described.

6. In a brake, a rotary member having a flange thereon, frictional brake bands co-operating with the interior and exterior surfaces of said flange, a plurality of links each pivotally connected to said inner and outer brake bands, means for moving said bands relatively about the axis of said flange, and a support for said bands, substantially as described.

7. In a brake, a rotary member having a flange thereon, frictional brake bands co-operating with the interior and exterior surfaces of said flange, a plurality of links each pivotally connected to said brake bands, means for moving said bands relatively about the axis of said flange, and means for supporting one of said bands when out of engagement with said flange permitting movement thereof into engagement with the flange, substantially as described.

855,272. TAILOR'S MEASURING APPARATUS. JACOB BARNETT, New York, N. Y. Filed July 19, 1906. Serial No. 326,855.



Claim.—1. In apparatus of the class described, in combination, a back scale, a blade scale pivotally attached thereto and adapted to extend forwardly under the arm of the model, a second scale adjustably mounted on said blade scale and having means for alining the same with respect to the forward side of the arm of the model, said second scale having dimensions thereupon corresponding to the scye measures, and a third scale attached to said back scale in a substantially horizontal position above said blade scale and having divisions thereupon corresponding to models of different sizes.

2. In apparatus of the class described, in combination, a strap adapted to be passed around the body below the arm pits, a bar attached to said strap at the back, a back scale carried by said bar, a blade scale pivotally attached to said back scale and adapted to extend forwardly under the arm, a second scale adjustably attached to said blade scale and adapted to be positioned forwardly of the arm of the model, and a third scale pivotally attached to said back scale and extending horizontally across the shoulder blade of the model, said second scale having divisions thereupon corresponding to the scye measures of different models, said last scale having divisions thereupon corresponding to models of different sizes.

3. In apparatus of the class described, in combination, a back scale, means for attaching the same in a vertical position on the back of the model, a blade scale pivotally attached to said back scale and extending forwardly under the arm pit of the model, a second scale adjustably mounted on said blade scale, and a third scale pivotally attached to said back scale at a point above said blade scale.

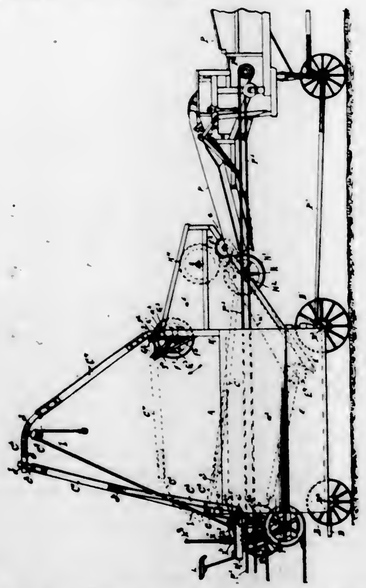
4. In apparatus of the class described, in combination, a strap adapted to be attached to the model, a blade scale attached to said strap at the back and adapted to extend forwardly under the arm of the model, a second scale ad-

justably attached to said blade scale and having divisions thereupon corresponding to the scye measures of different models, and a second scale attached in a horizontal position above said blade scale and having divisions thereupon corresponding to models of different sizes, said last divisions coöperating with said second scale to take shoulder measures.

5. In apparatus of the class described, in combination, a back scale, means for attaching the same to the model at the back, a blade scale attached to said back scale and extending forwardly under the arm pit of the model, a clamp adjustably mounted on said blade scale, a side scale depending from said clamp, said back scale and said side scale being formed with plates jointed together whereby they may conform to the figure of the model.

6. In apparatus of the class described, in combination, a bar, a strap attached thereto and adapted to secure said bar at the back of the model in a substantially horizontal position, a back scale adjustably attached to said bar, a blade scale pivotally attached to said back scale and extending forwardly under the arm pit of the model, a clamp adjustably mounted on said blade scale, a second scale carried by said clamp and having divisions thereupon corresponding to the scye measures of different models, a side scale depending from said clamp, said side scale and said back scale being composed of plates jointed together, said back scale extending above said bar, and a third scale pivotally attached to the upper extremity of said back scale and extending substantially horizontally across the back of the model, said last scale having divisions thereupon corresponding to models of different sizes.

855,273. GRAIN-FEEDING APPARATUS FOR THRESHING-MACHINES. JOHN B. BARTHOLOMEW, Peoria, Ill., assignor, by mesne assignments, to Avery Manufacturing Company, Peoria, Ill., a Corporation of Illinois. Filed May 7, 1901. Serial No. 59,138.



Claim.—1. The combination of a threshing mechanism, means for gathering straw from points remote from the threshing mechanism, means for feeding the gathered straw toward the cylinder of the threshing mechanism, an engine arranged on the side of the gathering and feeding mechanisms opposite the threshing mechanism, a driving belt connecting the engine shaft with the gathering and feeding mechanisms, a separate and independent driving belt connecting the engine with the threshing mechanism, said belt extending past the gathering and feeding mechanisms, and hoods extending outward from the gathering and feeding mechanisms and protecting the belt from the threshing mechanism, and over which the straw is drawn by the gathering mechanism, substantially as set forth.

2. In a threshing apparatus, the combination of a threshing mechanism on a transporting truck, the straw feeding mechanism on an independent transporting truck and having a straw dragging mechanism adapted to drag the straw from remote points, feeding mechanism adapted to advance the straw in a stream toward the threshing mechanism, and having a hood or straw guide a^3 at its side, an engine mounted upon independent ground wheels or trucks, a drive belt extending from the engine to the feeding mechanism, and a drive belt extending from the engine to the thresher mechanism and arranged to lie under said straw hood the threshing mechanism, the straw-feeding mechanism, and the engine being arranged in line with each other in the order named, substantially as set forth.

3. In a straw feeding machine of the class described, the combination of the hopper, means for gathering straw from remote points into the hopper, the endless carrier E' inclined forward and upward, the endless carrier E inclined forward and downward and arranged to exert a feeding pressure upon the straw toward the carrier E' said carriers being arranged in the lower part of said hopper, the reciprocating devices G^2 arranged to throw backward the top portions of the straw, and the straw pressing and advancing device above the path of the straw at the place of its escape from the endless carrier E' and adapted to press the straw down and deliver it in a substantially uniform stream, substantially as set forth.

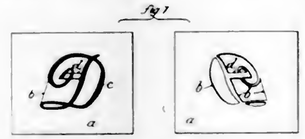
4. In a feeding mechanism of the class described, the threshing machine, a wheel truck, a straw hopper thereon, a straw gathering fork, the straw advancing mechanism in the bottom of the hopper, the fork rope I, the rope winding device, the prime power shaft, the frictional power transmitting device between the power shaft and the rope winding mechanism a brake shoe, and means for adjusting the frictional power-transmitting device either into operative engagement with said power shaft or into engagement with said brake shoe, substantially as set forth.

5. In a straw feeder of the class described for threshing machines, the combination with the fork, the fork rope, the elevated rope pulley, the feeder frame and the straw receiving hopper thereon, of a derrick frame having the front bars mounted on said feeder frame and adapted to swing forward and backward longitudinally of the machine, and the rear bar having one end detachably secured to the feeder frame and the other end pivotally secured to the outer ends of the front bars, whereby when the lower end of the rear bar is detached from the feeder frame, the rear and front bars can be folded down upon the machine, the former below the latter, without disconnecting them, substantially as set forth.

6. In a straw feeder of the class described for threshing machines, the combination with the fork, the fork rope, the elevated pulley, the feeder frame, and the straw receiving hopper, of a derrick frame having the front bars mounted on said feeder frame and adapted to swing forward and backward longitudinally of the machine, the rear bar having one end detachably secured to the feeder frame and the other end pivotally secured to the outer end of the front bars, and the brace rods pivotally secured to the feeder frame and to the said rear bar, whereby when the said end of the rear bar is detached from the feeder frame the rear and front bars and brace rods can be folded down upon the machine without disconnecting any of their pivotal connections.

7. In a straw-feeding mechanism, the combination of a hopper-like receiver into which the loose straw is delivered in irregular masses, an endless carrier in the bottom of the hopper inclining downward and forward, another endless carrier in the bottom of the hopper inclining upward and forward, the first-named carrier being arranged to deliver to the second, and reciprocating devices disposed above the second-named carrier and arranged to act upon the top portions of the straw carried thereby to throw the same backward, substantially as set forth.

855,274. EMBROIDERY IN DIVERS CORDS. FRANCIA BAUDENON, Vorey, France. Filed July 18, 1906. Serial No. 326,705.

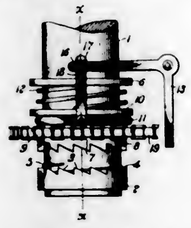


Claim.—1. The combination of a cord embroidery application with a supporting sheet of paper, the said sheet of paper being cut away along the inner contours of the application.

2. The combination of cord embroidery application with a supporting sheet of paper, the said sheet being cut away by a continuous cut along the inner contours of the application and on a perforated line along the outer contours of the said application.

3. The combination of a cord embroidery application with a supporting sheet of paper, that part of the sheet covered by the application being partially separated from the remainder on lines following the contour of the application.

855,275. ATTACHMENT FOR AUTOMOBILES. SAMUEL T. BEAL, Conway Springs, Kans. Filed Dec. 26, 1906. Serial No. 349,477.



Claim.—1. The combination with a motor shaft and a clutch member rotatable therewith; of a starting device comprising a spring pressed clutch member loosely mounted upon the shaft, and normally engaging the first mentioned clutch member, a lever, a flexible connection between the lever and loose clutch member for rotating said member when the lever is actuated, and means operated by the movement of said lever in an opposite direction for disengaging the clutch members.

2. The combination with the shaft of a motor having a fixed clutch member thereon; of a clutch member loosely mounted on the shaft, resilient means for holding the members normally in engagement, a lever, a flexible connection between the lever and the loose clutch member for rotating said member when the lever is actuated, and means operated by the movement of said lever in the opposite direction for disengaging the clutch members.

3. The combination with a motor shaft having a clutch member rigidly secured thereto; of a clutch member loosely mounted on the shaft, resilient means for holding said member normally in engagement with the fixed clutch member, an actuating lever, means operated by the lever for shifting the movable clutch member from engagement with the fixed clutch member, and a flexible connection between the lever and the loose clutch member for rotating said member when the lever is moved in one direction to release the clutch shifting means.

4. The combination with the shaft of a motor and a clutch member fixed thereon; of a clutch member movably mounted on the shaft, a spring for holding said member normally in engagement with the fixed member, an actuating lever, means operated by the movement of the lever in one direction for shifting and holding the movable clutch member against the tension of the spring, and a flexible connection between the lever and the loose clutch member for rotating said member when the lever is shifted to release the clutch shifting means.

5. The combination with a motor shaft and a clutch member fixedly secured thereon; of a clutch member movably mounted upon the shaft, means for holding said member normally in engagement with the fixed member, a lever, means for transmitting motion from said lever to the movable clutch member, an actuating lever, means operated by the movement of said lever in one direction for actuating the first mentioned lever to disengage the clutch members against the action of the holding means, and means operated by the movement of the lever in the opposite direction for rotating and releasing the movable clutch member.

6. In a starting device for automobiles the combination with a motor shaft and a clutch member rigidly secured thereto; of a clutch member loosely mounted on the shaft, a spring for holding said member normally in engagement with the rigid clutch member, a bell crank lever, a link connection between the lever and movable clutch member, an actuating lever, means operated by said lever when moved in one direction for operating the bell crank lever to tension the spring and disengage the clutch members, and means operated by the movement of the actuating lever in the opposite direction for releasing the bell crank lever and rotating the loose clutch member.

7. In a starting device for automobiles the combination with a motor shaft having a clutch member fixedly secured thereto; of a clutch member loosely mounted on the shaft, a spring for holding the clutch member normally in engagement with the fixed member, a sprocket carried by the loose clutch member, a chain extending therearound, an actuating lever, a connection between said lever and the chain, and means operated by the movement of the chain in one direction for rotating the sprocket and disengaging the clutch members, and by the movement of the chain in the opposite direction for rotating the sprocket and permitting the clutch members to re-engage.

8. In a starting device for automobiles the combination with a motor shaft and a clutch member rigidly secured thereto; of a clutch member loosely mounted upon said shaft, a spring for holding the members normally in engagement, a sprocket carried by the movable member, a chain engaging the sprocket, a bell crank lever, a connection between said lever and the movable member, means carried by the chain for actuating the bell crank lever to move the movable member against the tension of the spring to disengage said members, and a lever for actuating the chain to rotate and reciprocate the movable clutch member.

9. In a starting attachment for automobiles the combination with a motor shaft and a clutch member rigidly connected thereto; of a clutch member loosely mounted upon the shaft, a resilient buffer interposed between said members, a spring for holding the members normally in engagement, a bell crank lever, a connection between said lever and the clutch members, an actuating lever, and means operated by the actuating lever for actuating the bell crank lever and rotating the movable clutch member.

10. In a starting attachment for automobiles the combination with a motor shaft having a clutch member rigidly mounted thereon; of a clutch member loosely mounted on said shaft, a spring for holding the members normally in engagement, a sprocket carried by the movable clutch member, a bell crank lever connected to the movable member, a chain mounted on the sprocket, an actuating lever, an arm connecting said lever and the chain, and a finger depending from the arm and adapted to abut against and actuate the bell crank lever.

855,276. PROCESS OF MANUFACTURING YEAST. JACOB BLUMER, Peekskill, N. Y. Filed July 25, 1906. Serial No. 327,636.

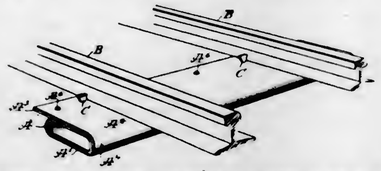
Claim.—1. The process of manufacturing yeast by the use of cotton-seed meal, consisting in peptonizing the nitrogenous substances contained therein, extracting the same from the solid residue, mixing the extract with a saccharine solution, then inoculating the same with yeast, then propagating yeast, and then separating the yeast.

2. The process of manufacturing yeast by the use of cotton-seed meal, consisting in peptonizing the nitrogenous substances contained therein, boiling the same under pressure, then extracting the same from the solid residue, then mixing the extract with sterilized saccharine solution, then inoculating the same with yeast, then propagating yeast, and then separating the yeast.

3. The process of manufacturing yeast by the use of cotton-seed meal, consisting in mixing the meal with water, heating the mixture to a degree best suited to lactic acid formation, keeping the same approximately at the same degree of temperature for a period of time, then extracting the liquid from the solid residue, then mixing the extract with molasses, then inoculating the same with yeast, then propagating yeast, and then separating the yeast.

4. The process of manufacturing yeast by the use of cotton-seed meal, consisting in mixing the meal with water, heating the mixture to a temperature best suited to lactic acid formation, then keeping the same at approximately the same temperature for a period of time, then boiling the same under pressure, then extracting the liquid from the solid residue, then mixing the extract with sterilized molasses, then inoculating the same with yeast, then propagating yeast, and then separating the yeast.

855,277. RAILROAD-TIE. ROBERT L. BOWER, Blandburg, Pa. Filed Jan. 26, 1907. Serial No. 354,173.



Claim.—1. A railroad tie made of a sheet of metal rolled up to form a plurality of superimposed convolutions.

2. A railroad tie made of a sheet of metal rolled up to form a plurality of superimposed convolutions, and having a flat base for the railroad bed and a flat top for the rails to rest on.

3. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up to form contacting layers, the lower multiple layers producing a flat base and the upper multiple layers producing a flat top.

4. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up to form contacting layers, the lower multiple layers producing a flat base and the upper multiple layers producing a flat top, and fastening devices on the said top for securing the rails in place.

5. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up to form contacting layers, the lower multiple layers producing a flat base and the upper multiple layers producing a flat top, the latter terminating in a single layer, and fastening means on the said terminals for engaging the rails.

6. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up into tubular form, the tube having multiple layers at the flat top and the flat bottom.

7. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up into tubular form, the tube having multiple layers at the flat top and the flat bottom, one end of the said sheet forming the upper layer of the bottom of the tie and the other end of the said sheet forming the upper layer of the top of the tie.

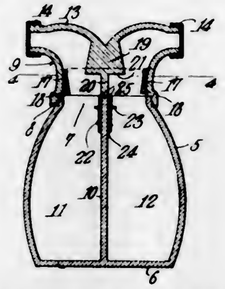
8. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up into tubular form, the tube having multiple layers at the flat top and the flat bottom, one end of the said sheet forming the upper layer of the bottom of the tie and the other end of the said sheet forming the upper layer of the top of the tie, the said upper layer of the top of the tie being extended beyond one side thereof.

9. A railroad tie made of a single piece of sheet metal of a width corresponding to the length of the tie, the said piece of sheet metal being rolled up into tubular form, the tube having multiple layers at the flat top and the flat bottom, one end of the said sheet forming the upper layer of the bottom of the tie and the other end of the said sheet forming the upper layer of the top of the tie, the said upper layer of the top of the tie being extended beyond one side thereof, and fastening means on the said extended portion for securing the rails in place.

10. A railroad tie made of a sheet of metal rolled up to form a plurality of superimposed convolutions, the free edge of the sheet being extended at a tangent to the outer layer, whereby to form a brace to prevent rolling of the tie.

11. A railroad tie made of a sheet of metal rolled up to form a tube, the free edge of the sheet being extended at a tangent to the tube to form a brace to prevent rolling of the tie.

855,278. SALT AND PEPPER SHAKER. ALFRED L. BUCKLAND, Marietta, Minn. Filed Mar. 7, 1907. Serial No. 361,136.



Claim.—1. A condiment holder including a receptacle having a partition forming independent compartments, a cap having discharge orifices formed therein and communicating with the compartments, and a guard slidably mounted on the partition and locked in position by engagement with the cap.

2. A condiment holder including a receptacle having a transverse partition forming independent compartments, a cap engaging the receptacle and provided with discharge orifices communicating with said compartments, and gravity actuated valves pivotally mounted within the cap for controlling the discharge through said orifices.

3. A condiment holder including a receptacle having a partition defining independent compartments, a cap engaging the receptacle and provided with discharge orifices communicating with the compartments, and valves disposed within the cap for controlling the discharge through the orifices, and a guard slidably mounted on the partition and movable to operative position above the open end of the receptacle when the top is removed.

4. A condiment holder including a receptacle provided with a partition defining independent compartments, a cap detachably engaging the receptacle and provided with oppositely disposed necks having discharge orifices, an enlargement disposed at the juncture of said necks and depending within the cap, and valves pivotally mounted within the cap and co-acting with the enlargements for controlling the discharge through the orifices.

5. A condiment holder including a receptacle having independent compartments, a cap engaging the receptacle and provided with laterally extending necks having perforated closures, an enlargement disposed at the juncture of the necks and depending within the cap, and gravity actuated valves pivotally mounted in the caps and co-acting with the enlargement for controlling the discharge through the perforations in the closures.

6. A condiment holder including a receptacle provided with a partition defining independent compartments, a cap engaging the receptacle and having discharge orifices formed therein, a guard slidably mounted on the partition and movable to operative position above the open end of the receptacle when the cap is removed, and a reduced extension formed on the cap and adapted to engage the guard for locking the latter in engagement with the partition.

7. A condiment holder including a receptacle provided with a partition defining independent compartments, a cap mounted on the receptacle and provided with discharge orifices, a guard slidably mounted on the partition and movable vertically to operative position above the open end of the receptacle when the cap is removed, an enlargement disposed within the cap and provided with a reduced extension adapted to bear against the guard for locking the latter in inoperative position, and valves pivotally mounted within the cap and co-acting with the enlargement for controlling the discharge through the orifices.

8. A condiment holder including a receptacle having a partition defining independent compartments, a guard slidably mounted on the partition and movable to operative position above the open end of the receptacle, finger pieces extending laterally from the guard, and a cap detachably secured to the receptacle and adapted to engage the guard for locking the latter in inoperative position.

9. A condiment holder including a receptacle provided with a partition having stop lugs formed thereon and defining independent compartments, a guard slidably mounted on the partition and movable vertically to operative position above the open end of the receptacle, said guard being provided with laterally extending flanges adapted to engage the stop lugs for limiting the vertical movement of the guard, a cap engaging the receptacle and provided with discharge orifices, and an auxiliary partition depending from the cap and adapted to engage the guard for locking the latter in inoperative position.

10. A condiment holder including a receptacle having its upper end threaded and provided with a transverse partition defining independent compartments, a cap engaging the threads on the receptacle and provided with oppositely disposed necks having perforated plates forming closures, an enlargement depending from the cap at the juncture of the necks, valves pivotally mounted within the cap and co-acting with the enlargement for controlling the discharge through the perforations in the plates, a guard slidably mounted on the partition and movable vertically to operative position above the threaded end of the receptacle when the cap is removed, and an extension depending from the enlargement and adapted to engage the guard for locking the latter in inoperative position.

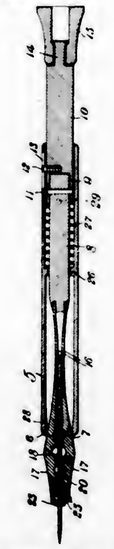
855,279. HAT-HOLDING DEVICE. WILLIAM H. BURDEN, Detroit, Mich. Filed July 7, 1906. Serial No. 325,145.



Claim.—1. A hat holding device comprising a fixed hair engaging comb having downwardly and inwardly inclined teeth and provided with a horizontal shank portion, a movable clamping member having an outwardly projecting finger piece, and a substantially Z-shaped spring disposed between and having its end portions attached respectively to said shank and finger piece and serving as the sole means for connecting the clamping member with the comb.

2. A hat holding device comprising a fixed hair engaging comb having downwardly and inwardly inclined teeth and provided with a right angularly projecting shank portion adapted to lie upon and perforated for attachment to a hat brim, a clamping member connected with the comb and having a body portion disposed parallel with and adapted to coöperate with the comb for engaging the hair, said clamping member being provided with a right angularly disposed shank portion arranged in spaced relation and substantially parallel with the shank portion of the comb, and a spring interposed between the shank portions of the comb and clamping member for pressing the latter to clamping position.

855,280. INTERCHANGEABLE AND ADJUSTABLE SCREW-DRIVER AND COMBINED TOOL-HOLDER. VICTOR E. CAMPBELL, Portland, Oreg. Filed Nov. 14, 1906. Serial No. 343,423.



Claim.—1. An implement of the class described comprising a casing having one end thereof provided with an inwardly extending flange, clamping jaws carried by the casing and adapted to receive a tool, said clamping jaws being provided with laterally curved spring shanks adapted to engage the adjacent end of the tool, there being alined recesses formed in the flange for the reception of said tool.

2. An implement of the class described comprising a casing, a rod slidably mounted within the casing and provided with a terminal handle, clamping jaws secured to the rod and having their adjacent faces provided with longitudinal channels, a tool interposed between the jaws and provided with a laterally extending pin adapted to engage the walls of the channel, said jaws being provided with spring shanks having their central portions bowed laterally and adapted to engage the adjacent edge of the tool, and a spring arranged within the casing for holding the rod in retracted position.

3. An implement of the class described comprising a casing having its interior walls formed with an annular shoulder, a rod mounted for longitudinal movement within the casing and provided with a pair of clamping jaws

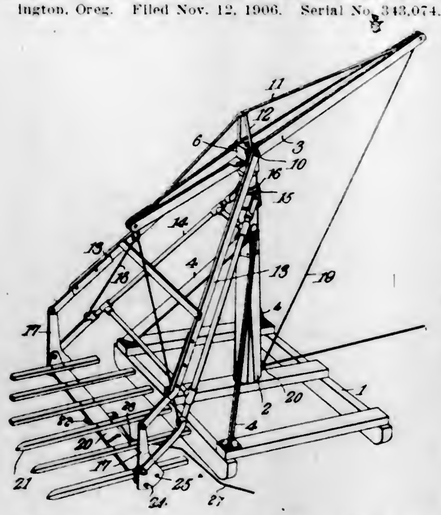
adapted to engage one end of a tool, the intermediate portions of the jaws being curved laterally to form spring shanks adapted to engage the opposite end of the tool, a handle secured to the rod and provided with a terminal finger piece, and a spring interposed between the shoulder and the handle for holding the rod in retractted position.

4. An implement of the class described comprising a casing, a pair of clamping jaws carried by the casing and adapted to engage a tool, said clamping jaws being provided with intermediate laterally curved spring shanks adapted to engage the adjacent end of a tool, the free ends of the jaws being reduced to form a terminal annular flange, a rod slidably mounted within the casing and connected with the shanks of the jaws, a handle secured to the rod and having a finger piece swiveled on the free end thereof, and a spring coiled around the rod for normally holding the same in retracted position.

5. An implement of the class described comprising a casing having an elongated slot formed therein and provided with alined openings, a pair of clamping jaws carried by the casing and adapted to engage a tool, a rod connected with the clamping jaws, a handle having a socket formed in one end thereof for the reception of the rod, a pin connecting the handle and rod and adapted to register with the openings in the casing, a screw carried by the handle and engaging the walls of the slot for limiting the movement of the rod, and a spring coiled around the rod for normally holding the same in retracted position.

6. An implement of the class described including a casing provided at one end with an inwardly extending flange having alined recesses formed therein, spring clamping jaws seated within the casing and having their adjacent faces provided with longitudinal channels, a blade interposed between the jaws and seated in said recesses, said blade being provided with oppositely disposed pins adapted to engage the walls of adjacent channels, the longitudinal edges of the blade being serrated thereby to present a roughened gripping surface, and a spring disposed within the casing and, operatively connected with the jaws for yieldably supporting the same in contact with the flange.

855,281. HAY-STACKER. WILLIAM E. CARTER, Huntington, Oreg. Filed Nov. 12, 1906. Serial No. 343,074.



Claim.—1. A stacker comprising an upright, a lever fulcrumed thereon and adapted to swing laterally with relation thereto, a cradle connected to the working end of said lever, means for depressing the power end of the lever and means located at the fulcrum of the lever for automatically turning the lever as the power end thereof is depressed.

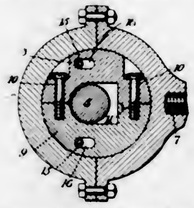
2. A stacker comprising an upright, a lever fulcrumed thereon, a cradle connected with the working end of said lever, means for depressing the power end of the lever, means for automatically turning the lever as the power end thereof is depressed, comprising two members, one carried by the lever and the other by the upright and being capable of horizontal rotation with relation to each other, one member having inclined surfaces which are engaged by the other member.

3. A stacker comprising an upright, a member having an inclined surface and a stud mounted thereon, a second member journaled upon said stud and engaging said inclined surface of the first member, said member having a laterally extending pintle, a lever fulcrumed upon the pintle, a cradle connected to the working end of said lever and means for depressing the power end of the lever.

4. A stacker comprising an upright, a lever fulcrumed thereon and adapted to swing laterally with relation thereto, parallel bars supported by the upright and adapted to swing laterally with the lever, links spacing the free ends of said bars apart, a cradle carried by said parallel bars and being connected with the working end of the lever and means for depressing the power end of the lever.

5. A stacker comprising an upright, a lever fulcrumed thereon, bars pivotally supported by the upright and being connected with the working end of the lever, a cradle pivotally supported by said bars, a lever fulcrumed to said cradle, bolt rods pivoted to said lever, springs engaging said lever, said bolt rods adapted to pass through registering perforations in the cradle and the cradle support, a tackle attached to said lever and passing through an eye located upon the cradle laterally with relation to the same.

855,282. ECCENTRIC. REUBEN M. CLARK, Webb City, Mo. Filed Dec. 11, 1906. Serial No. 347,245.



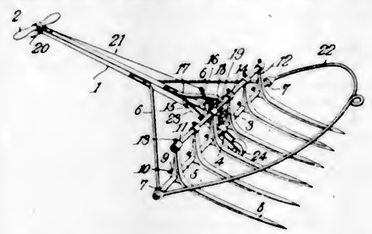
Claim.—1. In combination, a shaft, a collar secured thereto, and formed of two separable parts an eccentric disk formed of two separable parts, means for adjustably securing said disk to said collar, and an eccentric strap inclosing said disk.

2. In combination, a split collar, a split annular disk, means for securing said disk to said collar, whereby the disk may be moved laterally in respect to the collar to very the eccentricity of said disk and an eccentric strap surrounding the disk.

3. In combination, a shaft, a split collar rigidly secured thereto, said collar being provided with a flange, an eccentric disk formed of two parts secured together and inclosing said shaft, said disk being provided with elongated slots, bolts extending through said slots and entering said flange, whereby the disk may be rigidly secured to the flange of the collar and the position of said disk readily adjusted and an eccentric strap inclosing said disk.

4. In combination, a shaft, a split collar inclosing said shaft and rigidly secured thereto, there being an annular flange carried by said collar, a disk composed of two parts inclosing said shaft and rigidly secured thereto, said disk having elongated slots and an axial opening, bolts extending through the elongated slots and carried by said flange for rigidly securing the disk to the flange of the collar and adjusting the position thereof in respect to the shaft, and a split eccentric strap surrounding said disk.

855,283. MANURE-FORK. WILLIAM H. COMPTON, Minneapolis, Minn. Filed Oct. 3, 1906. Serial No. 337,240.



Claim.—1. A fork comprising a handle staff, a cross-rod journaled thereto, tines mounted upon said cross-rod, a cross-rod connecting the ends of said tines together and having a lug attached thereto, a spring attached to the handle shaft and adapted to engage said lug, a lever fulcrumed upon the handle staff and having a cam adapted to engage said spring and means for operating said lever.

2. A fork comprising a handle staff, a cross-rod journaled thereto, tines mounted upon said cross-rod, a second cross-rod connecting said tines together and having a lug attached thereto, a collar located upon the handle staff and having a rib located in the path of the second said rod, a spring mounted upon the handle staff and having an end for engagement with said lug, a lever fulcrumed upon the handle staff and having a cam adapted to engage said spring and a means for operating said lever.

3. A fork comprising a handle staff, a collar located thereon and having a depending bearing, a cross-rod journaled in said bearing, tines mounted upon said cross-rod, a second cross-rod connecting said tines together and having a lug attached thereto, a spring mounted upon the handle staff and adapted to engage the said lug and means for forcing said spring out of engagement with said lug.

4. A fork comprising a handle staff, a collar located thereon and having a depending bearing, a cross-rod journaled in said bearing, tines attached to said cross-rod, a second cross-rod connecting said tines together and having a lug attached thereto, said collar having a rib located in the path of said second cross-rod, said collar also having spaced lugs located at the rear of said rib, a spring attached to the handle staff and adapted to engage said lug of said second cross-rod, a lever fulcrumed between the lugs carried by said collar, a cam located between the last said lugs and being attached to the said lever and adapted to engage the said spring and means for operating said lever.

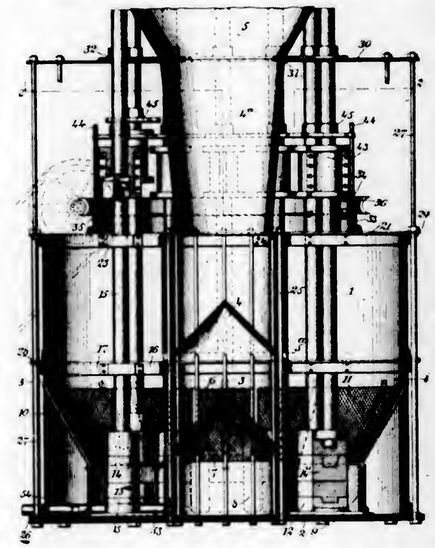
5. A fork comprising a handle staff, a series of tines journaled thereto, said handle staff having means for holding said tines in relatively fixed position, a link pivoted to the handle staff, a ground wheel journaled to said link and adapted to be swung under said tines.

6. A fork comprising a handle staff, a cross-rod journaled thereto, tines mounted upon said cross-rod, a second cross-rod connecting said tines together, a casting fixed to the second said cross-rod and having depending perforated portions which receive the first said cross-rod and spring mechanism attached to the handle for engagement with said casting.

855,284. STAMP-MILL. GEORGE COON, Mount Vernon, Wash. Filed May 3, 1906. Serial No. 314,961.

Claim.—1. In a stamp mill in combination, an outer tank, an inner tank disposed therein, a plurality of hammers disposed in said outer tank and surrounding said inner tank, a centrally disposed chute, a cone disposed within said inner tank and adapted to deflect ore falling thereupon toward said hammers, said inner tank having openings near said cone through which the said ore may pass, a screen under said cone, a second screen in the lower portion of said outer tank, the space below said screens forming settling chambers, and means for actuating said hammers.

2. In a stamp mill, in combination, an outer annular tank and inner annular tank, a set of stamps in the inner tank, means for operating the stamps, a central tank with an upper set of openings and a lower set of openings through its walls, a feed cone in the upper part of the central tank delivering ore through the said upper set of



openings to the said stamps, a screen covering the outer tank, a screen covering the lower portion of the central tank below the said lower set of openings for receiving reduced material from the said stamps, and means for withdrawing the concentrates from the spaces below said screens.

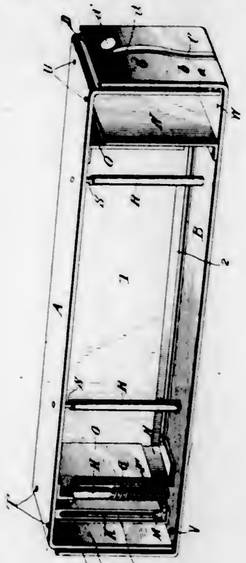
855,285. LOOSE-LEAF BINDER. FRANK H. CRUMP, Los Angeles, Cal. Filed Aug. 2, 1906. Serial No. 328,960.

Claim.—1. A binder for loose leaves consisting of an upper and a lower plate, each plate having its ends bent at right angles, vertically slotted plates projecting upwardly from the lower plate, headed lugs projecting inwardly from the bent ends of the upper plate and projecting through said slotted plates, and means for holding the upper and lower plates at any distance apart.

2. A loose leaf binder consisting of top and bottom plates each having its ends bent at right angles, and adapted to slide past each other, the outer face of the bent ends of the top plate provided with beveled teeth or serrations, and the bent ends of the bottom plate having beveled end spring bolts adapted to engage said teeth or serrations, finger-holds projecting from said bolts, rigid posts projecting from one of said plates, tubular sockets adapted to fit over said rigid posts and springs for causing sliding movement of said tubular sockets with respect to the rigid posts, plates projecting from the top and bottom plates and overlapping each other to conceal the rigid posts and tubular sockets, and other mechanism, and pins projecting from the top or bottom plates to receive the loose leaves.

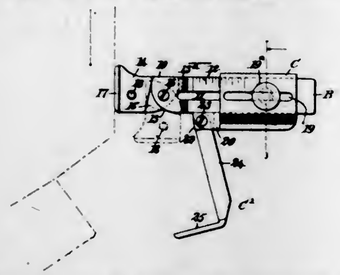
3. A loose leaf binder consisting of a top and a bottom plate, each having its ends at right angles thereto and adapted to slide one within the other, the outer face of the bent end of the top plate having thereon beveled teeth, and the bent end of the bottom plate having an opening therethrough near its upper end, a spring bar rigidly secured at one end to the outer face of said bent end of the bottom plate and having at its other end a beveled nose projecting through the aforesaid opening of

the bent end and adapted to engage the beveled teeth on the outer face of the bent end of the top plate, posts projecting from one of said plates, tubular sockets adapted to fit over said posts, and springs for causing sliding movement of said sockets, plates projecting from the top and bottom plates and overlapping each other to conceal the



posts and tubular sockets, and pins projecting from the top or bottom plates to receive the loose leaves, the beveled end of the spring bar being adapted normally to restrain upward movement of the bent end of the upper plate, but permitting free sliding movement thereof downwardly.

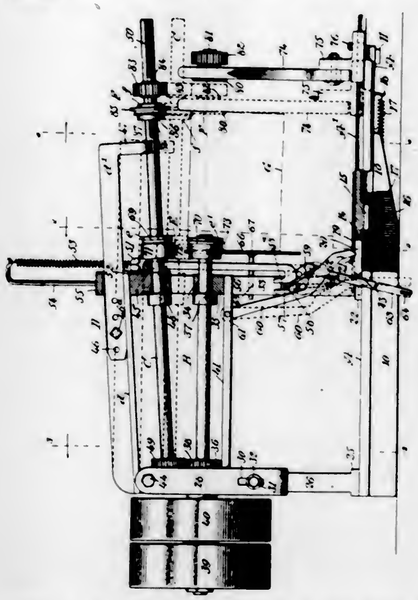
855,286. SEWING-MACHINE GAGE. DAVID DANTZIG, New York, N. Y., and JACOB BONOWITZ, Philadelphia, Pa. Filed Mar. 30, 1906. Serial No. 308,898.



Claim.—1. A sewing machine gage comprising a body bar, a guide member pivoted at the forward end of the body bar, movable outward to substantially an alinement with the outer marginal edge of the body bar and inward at an angle to said body bar, means for checking the movement of the guide, a slide mounted on the body bar, means for simultaneously locking the body bar and slide, a second guide member pivoted to the inner forward portion of the slide, having lateral movement to and from the inner longitudinal edge of the body bar and comprising a shank and a head section at an angle to the shank, said head section being adapted in its operative position to be parallel with the corresponding section of the guide carried by the body bar, whereby either guide member may be independently moved and the body bar and slide may be independently or collectively adjusted.

2. In a sewing machine gage, the combination with a body bar having a scale at one of its longitudinal edges and its forward end curved and a guide member pivoted to the forward end of said body bar, having an inclined surface for engagement with the curved surface of the body bar, whereby the guide member may be moved in one direction to practically an alinement with one longitudinal edge of the body bar and in an opposite direction to a position at an angle to the opposite longitudinal edge of the body bar, of a slide mounted upon the body bar, a fastening device common to both the slide and the body bar, an angular guide pivoted on said slide and adapted for lateral movement to and from the inner edge of the body bar, one member of said angular guide being adapted in one position to be parallel with and in advance of the other end of the said guide member pivoted to the body bar, the said angular guide having movement toward and yet being independent of the guide member carried by the said body bar.

855,287. CAN-SEAMING MACHINE. EMILE P. DATOW, New Orleans, La. Filed Dec. 12, 1906. Serial No. 347,407.



Claim.—1. In a can-seaming machine, a drive shaft, a driven shaft pivotally mounted over the drive shaft, being adapted for movement to and from the same, a driving connection between the two shafts, a slidable support, a seaming set one member whereof is carried by the driven shaft, the other member being carried by the movable support, a gear connection between the driven shaft and the seaming member carried by said support, which connection is brought about when the driven shaft is drawn in direction of the drive shaft.

2. In a can-seaming machine, a drive-shaft, a driven shaft pivotally mounted for movement to and from the drive shaft, a driving connection between the two shafts, a slidable support, a seaming set, one member of which is secured to the driven shaft and the other member being carried by the said slidable support, means for turning

the member of the seaming set carried by the support when the driven shaft is drawn in direction of the drive shaft, and means for bringing the two members of the seaming set in co-operative relation when the said driven shaft is moved in direction of the drive shaft.

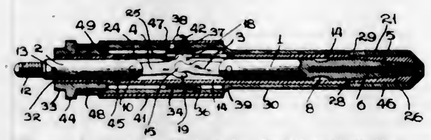
3. In a can-seaming machine, a drive shaft, a driven shaft mounted for movement to and from the drive shaft, a driving connection between the two shafts, a third shaft located beneath the driven shaft, a support for said third shaft, a seaming set one member of which is secured to the driven shaft, the other member being attached to the third shaft, gear connections between said third shaft and the driven shaft when the driven shaft is drawn toward the drive shaft, and means for moving the driven shaft toward the drive shaft and simultaneously bring the members of the seaming set in co-operative relation.

4. In a can-seaming machine, a drive shaft, a driven shaft mounted for movement to and from the drive shaft, a driving connection between the two shafts, a third shaft parallel with the driven shaft and independent of the drive shaft, means for driving the third shaft from the driven shaft, a combined beading and mouthing set of dies, one member whereof is carried by the drive shaft and the other by the driven shaft, and a set of seaming dies, one member of which is carried by the driven shaft and the other by said third shaft.

5. In a can-seaming machine, the combination with a drive shaft, a driven shaft mounted for movement to and from the drive shaft, a gear connection between the two shafts, a third shaft mounted parallel with and adjacent to the driven shaft independent of the drive shaft, means for driving the said third shaft from the driven shaft, tension-controlled means for holding the driven shaft out of alinement with the drive shaft, and means for bringing the driven shaft into alinement with the drive shaft, of a set of combined beading and mouthing roller dies, one of which is attached to the driven shaft and the other to the drive shaft, and a set of seaming dies, one of which is carried by the driven shaft and the other by the said third shaft.

6. In a can-seaming machine, the combination with a base, supports from the base, a drive shaft mounted upon said supports, a driven shaft pivotally mounted in said supports for parallel movement to and from the drive shaft, a platform mounted to slide upon the base, a support carried by the said platform, and a third shaft mounted in said support, being parallel with the driven shaft, of means for driving the third shaft from the said driven shaft, a combined beading and mouthing set of roller dies, one of which is secured to the driven shaft and the other to the drive shaft, a set of seaming dies, one of which is secured to the driven shaft and the other to the said third shaft, tension-controlled means for normally holding the driven shaft out of parallelism with the drive shaft, and means for simultaneously lowering the driven shaft and bringing the dies of the two sets in co-operative relation.

855,288. HANDPIECE FOR DENTAL ENGINES. FREDERICK W. DEAN, Des Moines, Iowa. Filed Aug. 16, 1906. Serial No. 330,876.



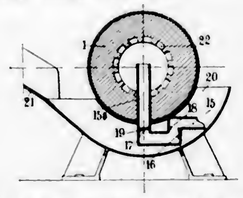
Claim.—1. In a hand piece for dental engines the combination of a casing having a longitudinal slot, its front end provided with an interior journal bearing, its rear end enlarged and threaded interiorly; of a rotatable tubular shaft mounted therein fixed as to endwise movement and provided with a longitudinal slot and having a journal on each end, its front end having an interior cone journal, a band encircling said tubular shaft and fitted to slide thereon and provided with an exterior annular channel and having one of its ends flared, a shoe seated in said channel and provided with a threaded hole, a sleeve encircling the said casing and fitted to slide thereon and provided with a hole near one end, its ends slightly enlarged, a screw seated in said hole to engage said shoe; a rod fitted to slide in the front part of said tubular shaft, having its front end cone shaped and provided with a clutch composed of spring jaws formed on the end thereof and having a valley near the base of said jaws; a rotatable plug fixed as to endwise movement, its rear end provided with a threaded shank and a hole near the base of said shank; a joint composed of one male member, and one female member bearing a crown, together forming a flexible joint without a supporting pin and located between the approximate ends of the said rod and plug and hinged thereto, and a bearing having a midrib and threaded on each end; substantially as specified.

2. A chuck device for dental hand pieces comprising in its construction a rod provided with a single set of long spring jaws formed on its end and having an annular valley or recess near the base of said jaws, substantially as specified.

3. In a dental hand piece the combination of a rotatable plug fixed as to endwise movement, of a sliding rod having formed on its end a single set of long spring jaws and having an annular valley near the base of said jaws, of a flexible joint composed of one male, and one female member bearing a crown and located between the approximate ends of the said plug and rod and hinged to them and of a bearing counter to the cone of the chuck, substantially as specified.

4. In a dental hand piece a joint or hinge comprising in its construction a male and a female member the latter bearing a crown, said members being so formed and fitted one to the other, not to part by endwise push or pull, in combination with a fixed casing and a relative fixed plug and a sliding rod located in said casing.

855,289. FURNACE. ANTONIO DUCCO, Turin, Italy. Filed Mar. 15, 1906. Serial No. 306,168.



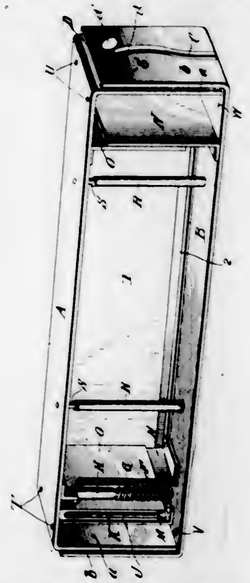
Claim.—1. In a mechanical furnace for the treatment of ore and the like, the combination of a rotary chamber having helical grooves, with an automatic charging device mounted thereon, consisting of a pipe having multiple bends, hinged valves or doors in said pipe, one end of said pipe projecting into the rotary chamber, and the other projecting outward.

2. In a furnace for the treatment of ore and the like, the combination of a rotary chamber, a trough below one end of the chamber, and a pipe leading from the interior of the furnace and having a bent outer end, the terminal of which is approximately at right angles to the body of the pipe.

3. In a furnace for the treatment of ore and the like, the combination of a rotary chamber, a trough below one end of the chamber, a pipe leading from the interior of the chamber and provided with a bent outer end, the terminal of which is approximately at right angles to the body of the pipe, and automatic valves in said pipe, said valves being alternately opened and closed.

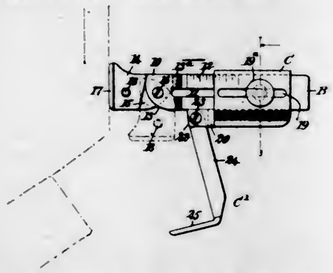
4. In a furnace for the treatment of ore and the like, the combination of a rotary chamber, a trough below one end of the chamber, a pipe leading from the interior of the chamber and provided with an angular outer end, the terminal of which is at right angles to the body of the pipe, and hinged valves, one in the body of the pipe and the other in the angular end.

the bent end and adapted to engage the beveled teeth on the outer face of the bent end of the top plate, posts projecting from one of said plates, tubular sockets adapted to fit over said posts, and springs for causing sliding movement of said sockets, plates projecting from the top and bottom plates and overlapping each other to conceal the



posts and tubular sockets, and pins projecting from the top or bottom plates to receive the loose leaves, the beveled end of the spring bar being adapted normally to restrain upward movement of the bent end of the upper plate, but permitting free sliding movement thereof downwardly.

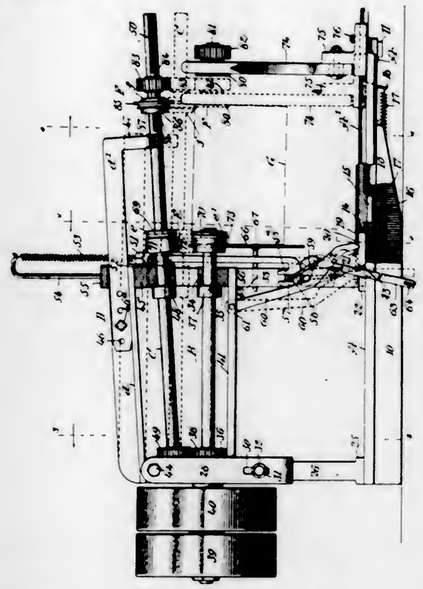
855,286. SEWING-MACHINE GAGE. DAVID DANTZIG, New York, N. Y., and JACOB BONOWITZ, Philadelphia, Pa. Filed Mar. 30, 1906. Serial No. 308,898.



Claim.—1. A sewing machine gage comprising a body bar, a guide member pivoted at the forward end of the body bar, movable outward to substantially an alinement with the outer marginal edge of the body bar and inward at an angle to said body bar, means for checking the movement of the guide, a slide mounted on the body bar, means for simultaneously locking the body bar and slide, a second guide member pivoted to the inner forward portion of the slide, having lateral movement to and from the inner longitudinal edge of the body bar and comprising a shank and a head section at an angle to the shank, said head section being adapted in its operative position to be parallel with the corresponding section of the guide carried by the body bar, whereby either guide member may be independently moved and the body bar and slide may be independently or collectively adjusted.

2. In a sewing machine gage, the combination with a body bar having a scale at one of its longitudinal edges and its forward end curved and a guide member pivoted to the forward end of said body bar, having an inclined surface for engagement with the curved surface of the body bar, whereby the guide member may be moved in one direction to practically an alinement with one longitudinal edge of the body bar and in an opposite direction to a position at an angle to the opposite longitudinal edge of the body bar, of a slide mounted upon the body bar, a fastening device common to both the slide and the body bar, an angular guide pivoted on said slide and adapted for lateral movement to and from the inner edge of the body bar, one member of said angular guide being adapted in one position to be parallel with and in advance of the other end of the said guide member pivoted to the body bar, the said angular guide having movement toward and yet being independent of the guide member carried by the said body bar.

855,287. CAN-SEAMING MACHINE. EMILE P. DATOW, New Orleans, La. Filed Dec. 12, 1906. Serial No. 347,407.



Claim.—1. In a can-seaming machine, a drive shaft, a driven shaft pivotally mounted over the drive shaft, being adapted for movement to and from the same, a driving connection between the two shafts, a slidable support, a seaming set one member whereof is carried by the driven shaft, the other member being carried by the movable support, a gear connection between the driven shaft and the seaming member carried by said support, which connection is brought about when the driven shaft is drawn in direction of the drive shaft.

2. In a can-seaming machine, a drive-shaft, a driven shaft pivotally mounted for movement to and from the drive shaft, a driving connection between the two shafts, a slidable support, a seaming set, one member of which is secured to the driven shaft and the other member being carried by the said slidable support, means for turning

the member of the seaming set carried by the support when the driven shaft is drawn in direction of the drive shaft, and means for bringing the two members of the seaming set in co-operative relation when the said driven shaft is moved in direction of the drive shaft.

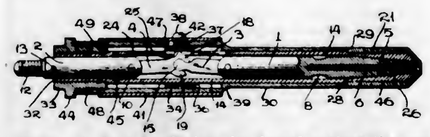
3. In a can-seaming machine, a drive shaft, a driven shaft mounted for movement to and from the drive shaft, a driving connection between the two shafts, a third shaft located beneath the driven shaft, a support for said third shaft, a seaming set one member of which is secured to the driven shaft, the other member being attached to the third shaft, gear connections between said third shaft and the driven shaft when the driven shaft is drawn toward the drive shaft, and means for moving the driven shaft toward the drive shaft and simultaneously bring the members of the seaming set in co-operative relation.

4. In a can-seaming machine, a drive shaft, a driven shaft mounted for movement to and from the drive shaft, a driving connection between the two shafts, a third shaft parallel with the driven shaft and independent of the drive shaft, means for driving the third shaft from the driven shaft, a combined beading and mouthing set of dies, one member whereof is carried by the drive shaft and the other by the driven shaft, and a set of seaming dies, one member of which is carried by the driven shaft and the other by said third shaft.

5. In a can-seaming machine, the combination with a drive shaft, a driven shaft mounted for movement to and from the drive shaft, a gear connection between the two shafts, a third shaft mounted parallel with and adjacent to the driven shaft independent of the drive shaft, means for driving the said third shaft from the driven shaft, tension-controlled means for holding the driven shaft out of alinement with the drive shaft, and means for bringing the driven shaft into alinement with the drive shaft, of a set of combined beading and mouthing roller dies, one of which is attached to the driven shaft and the other to the drive shaft, and a set of seaming dies, one of which is carried by the driven shaft and the other by the said third shaft.

6. In a can-seaming machine, the combination with a base, supports from the base, a drive shaft mounted upon said supports, a driven shaft pivotally mounted in said supports for parallel movement to and from the drive shaft, a platform mounted to slide upon the base, a support carried by the said platform, and a third shaft mounted in said support, being parallel with the driven shaft, of means for driving the third shaft from the said driven shaft, a combined beading and mouthing set of roller dies, one of which is secured to the driven shaft and the other to the drive shaft, a set of seaming dies, one of which is secured to the driven shaft and the other to the said third shaft, tension-controlled means for normally holding the driven shaft out of parallelism with the drive shaft, and means for simultaneously lowering the driven shaft and bringing the dies of the two sets in co-operative relation.

855,288. HANDPIECE FOR DENTAL ENGINES. FREDERICK W. DEAN, Des Moines, Iowa. Filed Aug. 16, 1906. Serial No. 330,876.



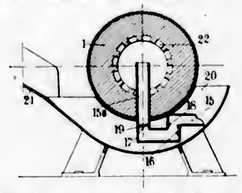
Claim.—1. In a hand piece for dental engines the combination of a casing having a longitudinal slot, its front end provided with an interior journal bearing, its rear end enlarged and threaded interiorly; of a rotatable tubular shaft mounted therein fixed as to endwise movement and provided with a longitudinal slot and having a journal on each end, its front end having an interior cone journal, a band encircling said tubular shaft and fitted to slide thereon and provided with an exterior annular channel and having one of its ends flared, a shoe seated in said channel and provided with a threaded hole, a sleeve encircling the said casing and fitted to slide thereon and provided with a hole near one end, its ends slightly enlarged, a screw seated in said hole to engage said shoe; a rod fitted to slide in the front part of said tubular shaft, having its front end cone shaped and provided with a clutch composed of spring jaws formed on the end thereof and having a valley near the base of said jaws; a rotatable plug fixed as to endwise movement, its rear end provided with a threaded shank and a hole near the base of said shank; a joint composed of one male member, and one female member bearing a crown, together forming a flexible joint without a supporting pin and located between the approximate ends of the said rod and plug and hinged thereto, and a bearing having a midrib and threaded on each end; substantially as specified.

2. A chuck device for dental hand pieces comprising in its construction a rod provided with a single set of long spring jaws formed on its end and having an annular valley or recess near the base of said jaws, substantially as specified.

3. In a dental hand piece the combination of a rotatable plug fixed as to endwise movement, of a sliding rod having formed on its end a single set of long spring jaws and having an annular valley near the base of said jaws, of a flexible joint composed of one male, and one female member bearing a crown and located between the approximate ends of the said plug and rod and hinged to them and of a bearing counter to the cone of the chuck, substantially as specified.

4. In a dental hand piece a joint or hinge comprising in its construction a male and a female member the latter bearing a crown, said members being so formed and fitted one to the other, not to part by endwise push or pull, in combination with a fixed casing and a relative fixed plug and a sliding rod located in said casing.

855,289. FURNACE. ANTONIO DUCCO, Turin, Italy. Filed Mar. 15, 1906. Serial No. 306,168.



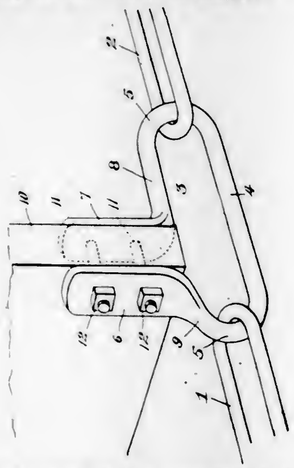
Claim.—1. In a mechanical furnace for the treatment of ore and the like, the combination of a rotary chamber having helical grooves, with an automatic charging device mounted thereon, consisting of a pipe having multiple bends, hinged valves or doors in said pipe, one end of said pipe projecting into the rotary chamber, and the other projecting outward.

2. In a furnace for the treatment of ore and the like, the combination of a rotary chamber, a trough below one end of the chamber, and a pipe leading from the interior of the furnace and having a bent outer end, the terminal of which is approximately at right angles to the body of the pipe.

3. In a furnace for the treatment of ore and the like, the combination of a rotary chamber, a trough below one end of the chamber, a pipe leading from the interior of the chamber and provided with a bent outer end, the terminal of which is approximately at right angles to the body of the pipe, and automatic valves in said pipe, said valves being alternately opened and closed.

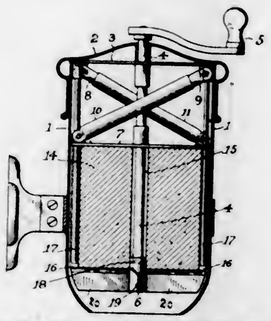
4. In a furnace for the treatment of ore and the like, the combination of a rotary chamber, a trough below one end of the chamber, a pipe leading from the interior of the chamber and provided with an angular outer end, the terminal of which is at right angles to the body of the pipe, and hinged valves, one in the body of the pipe and the other in the angular end.

855,290. LINK. WILLIAM A. DUFFIELD, Hartranft, Tenn. Filed Feb. 26, 1907. Serial No. 359,327.



Claim.—A connecting link comprising a longitudinal bar, curved end portions, a member parallel to the longitudinal bar extending from one end of the link and provided with an angular flattened arm, a similar arm extending from near the curved opposite end portion of the link, and bolts passing through said arms for holding a paddle or conveyer flight between them.

855,291. SOAP-SHAVING DEVICE. FREDERICK EGGE, Bridgeport, Conn. Filed Sept. 22, 1905. Serial No. 279,698.



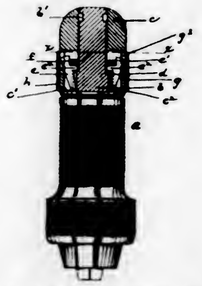
Claim.—1. In a device of the character described, the combination of the casing, the cover, the vertically disposed rotary shaft journaled within said cover, the cutter secured to the lower end of the shaft, the presser plate through which said shaft loosely extends, the elements adapted to slide upon each other and pivoted respectively to the cover and to the top of the presser plate, and the coil springs supported by said elements.

2. In a device of the character described, the combination of the casing, the cover, the vertically disposed rotary shaft journaled within said cover, the cutter secured to the lower end of the shaft, the presser plate through which said shaft loosely extends, the telescoping tubes whose outer extremities are pivoted respectively to the cover and presser plate, and the coil springs contained within said tubes.

3. In a soap shaving machine, the combination of a container, a cutter, means for operating said cutter, means for holding the soap against movement with said cutter, two pairs of oppositely inclined telescoping members, and resilient means coöperating therewith to hold a cake of soap in position against the cutter.

4. In a soap shaving machine, the combination of a container, a cover for said container, a cutter, means for operating said cutter, means for holding the soap against movement with said cutter, a follower plate adapted to engage a cake of soap, two pairs of oppositely inclined telescoping members attached to opposite sides of said cover and follower plate, and resilient means co-operating therewith to hold a cake of soap in position against the cutter.

855,292. RATCHET MECHANISM. ROBERT C. ELLRICH, Southington, Conn., assignor to Peck, Stow & Wilcox Company, Southington, Conn., a Corporation of Connecticut. Filed Nov. 16, 1904. Serial No. 232,960.



Claim.—1. In a ratchet mechanism for screw drivers and other tools, a driven member, a driving member, mechanism for connecting said driving and driven members comprising two independent oppositely faced floating pawls carried by one of said members and adapted to rock in a radial plane, means for normally holding said pawls in engagement with the other member, further means for disengaging said pawls from the other member and separate fulcrums on which said two means rock the pawls respectively.

2. In a ratchet mechanism for screw drivers and other tools a driving member vertically slotted, a driven member having a spindle, a ratchet on said spindle, oppositely faced floating pawls located in the slots in said driving member and adapted to engage said driven member, front and rear fulcrum bearings for said pawls, pawl operating mechanism, rocking said pawls on one fulcrum and yielding means operating in opposition to said mechanism, and rocking said pawls on the other fulcrum as and for the purposes specified.

3. In a ratchet mechanism for screw drivers and similar tools a driving member, a driven member, and mechanism for connecting said driving and driven members comprising one or more loosely mounted pawls carried by one member, front and rear fulcrums therefor, yielding means rocking said pawls on one fulcrum for normally holding said pawls in engagement with the other member, and devices operating in opposition to said yielding means rocking said pawls on the other fulcrum for disengaging said pawls one at a time from the last mentioned member.

4. In a ratchet mechanism for screw drivers and other tools, a driving member, a driven member having a spindle, a ratchet on said spindle, floating pawls carried by the driving member and fulcrumed front and rear, a spring tending to throw said pawls into engagement with the ratchet, and a pawl operating ring operative in opposition to said spring for disengaging said pawls from said ratchet one at a time said spring and ring rocking said pawls on separate fulcrums respectively.

5. In a ratchet mechanism for screw drivers and other tools, a driving member having pawl receiving slots, a driven member, a spindle and a ratchet carried thereby, pawls located in the slots in the driving member and having lateral projections bearing on said spindle above said ratchet, a ring surrounding said pawls and cut away to provide a fulcrum therefor at a point opposite said projections, an upstanding ledge on said ring co-operating with the upper ends of the pawls, and springs between the spindle and the upper ends of the pawls, substantially as described.

6. In a ratchet mechanism for screw drivers and other tools, in combination, a driven member comprising a tool holding body, a spindle, and a ratchet on the spindle immediately above said body, a driving member pierced to receive the spindle and having a slotted hub fitting about said ratchet, said hub, pawls located in said slots and having fulcrum bearing on the spindle, an operating ring fitting about said hub and cut away to form fulcrum bearings for said pawls, an upstanding ledge on said ring co-operating with said pawls, and springs normally exerting outward pressure on the upper ends of said pawls, substantially as described.

7. In a ratchet mechanism for screw drivers and other tools, a driven member, a spindle connected therewith, ratchet teeth formed on the spindle immediately above said body, a driving member pierced to receive said spindle, a hub on said driving member fitting closely about said spindle and ratchet, said hub being slotted, a ring fitting about said hub and cut away to form an upstanding ledge, pawls located in said slots in the hub and having fulcrum bearings on said spindle and on the edge of the ring where it is cut away, springs located between the spindle and the upper ends of the pawls, said upstanding ledge on said ring co-operating with the upper ends of the pawls, and a sleeve surrounding and secured to said ring, substantially as described.

8. A driven member having a ratchet, a driving member, oppositely faced rocking pawls carried thereby, front and rear fulcrums for said pawls springs operating on the upper ends of said pawls to normally throw the lower ends into engagement with said ratchet, and means acting on the upper ends of said pawls in opposition to said springs to disengage said pawls one at a time from said driven member said springs and means rocking said pawls on separate fulcrums.

9. A driven member having a ratchet, a driving member having a slotted hub, pawls loosely mounted in said slots, a pawl operating ring surrounding said hub, front and rear fulcrums for said pawls on said driven member and said ring, means for engaging said pawls with said ratchet, and other means for disengaging said pawls from said ratchet one at a time, said two means operating upon said pawls above said fulcrum points and rocking said pawls on separate fulcrums respectively.

10. A driven member having a ratchet, a driving member having a slotted hub, pawls loosely mounted in said slots, a pawl operating ring surrounding said hub, front and rear fulcrums for said pawls on said driven member and said ring, springs pressing against said pawls above said fulcrums but normally engaging their lower ends with said ratchet, said operating ring acting on the upper ends of said pawls above the fulcrums to disengage said pawls one at a time from said ratchet, said spring and ring rocking said pawls on separate fulcrums respectively.

11. A driven member having a spindle and a ratchet, a driving member having a slotted hub fitting closely about said spindle and ratchet, pawls freely mounted in said slots and adapted for rocking motion in a radial plane coincident with the axis of the said spindle, front and rear fulcrum points for said pawls, springs acting upon said pawls above the fulcrum point to cause their engagement with said ratchet, and means acting upon said pawls above their fulcrum points and in opposition to said springs to disengage said pawls one at a time from said ratchet, substantially as described.

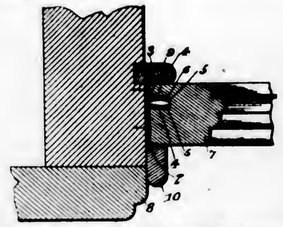
12. In a ratchet mechanism, driving and driven parts, a hub carried by the driving part, the end of said hub being slotted through transversely, oppositely faced tilting pawls located in the slots in said hub, a spindle carried by the driven parts and rotatable relatively to the driving part, a ratchet carried by the driven part and having a plurality of teeth extending longitudinally of the axis thereof, an annular bearing shoulder on said driven part for said pawls and a controller for varying the permissive operative engagement between the pawls and the ratchet.

13. In a ratchet mechanism, driving and driven parts, a hub carried by one part and having recesses, oppositely faced pawls located in said recesses, a spindle carried by the other part and rotatable relative to the hub carrying part, a ratchet rotatable with said spindle and having teeth extending longitudinally of the axis thereof, an annular pawl fulcrum on said driven part, said pawls having their teeth portions movable in a direction away from the axis of said spindle and ratchet, a controller sleeve surrounding said pawls, and a cam carried by said sleeve for controlling the position of said pawls.

14. A ratchet mechanism, comprising driving and driven parts, a ratchet carried by one part having teeth facing outwardly from the axis thereof, tilting pawls carried by the driving part, supported by the driven part and adapted to engage said ratchet teeth, and a cam ring surrounding said pawls having portions with beveled edges adapted to engage and tilt said pawls for retracting them from engagement with said ratchet.

15. A ratchet mechanism, comprising driving and driven parts, a spindle carried by one part rotatable relative to the other, a ratchet carried by said spindle and having teeth extending radially therefrom, and a pawl supporting shoulder, tilting pawls carried by the other part, each pawl having an angular projection engaging on said supporting shoulders between said spindle and the end of said ratchet, and a controller for said pawls.

855,293. COMBINED WEATHER-STRIP AND GUIDE. WILLIAM H. ETTER, Marietta, Ohio. Filed Jan. 17, 1906. Serial No. 296,488.



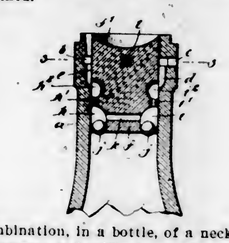
Claim.—A combined guide and weather strip comprising a folded base constructed of sheet metal, the edges of which are bent at an angle to the base to provide side flanges or members, forming a resilient tongue, said flanges or members closely approaching at the base, and first diverging from the same, and then converging, the outer ends of the flanges or members being spaced apart, the said flanges being adapted to engage the opposite walls of a groove at the place formed by the said diverging and converging portions, and the space between the flanges or members at their points of connection to the base being materially less than the space between their outer edges, whereby the tongue can be arranged at different angles to the base without materially changing the relative arrangement of the flanges forming the said tongue.

855,294. BOTTLE. PIERRE FEITU and JULES REBEYROLLE, New York, N. Y. Filed June 29, 1906. Serial No. 323,982.

Claim.—1. The combination, in a bottle, of a neck provided with an internal groove, a stopper fitting said neck, said stopper being provided with a transverse hole, and a pin inserted in said hole, and projecting beyond the body of the stopper, adapted to move in said groove, as and for the purpose specified.

2. The combination, in a bottle, of a neck provided with an internal groove and with an aperture in one wall of said neck communicating with said groove, a stopper fitting said neck, said stopper being provided with a trans-

verse hole, and a pin adapted to be inserted through said aperture into said hole, while the stopper is in position to close the bottle, so arranged as to project beyond the body of the stopper and to move in said groove, as and for the purpose specified.

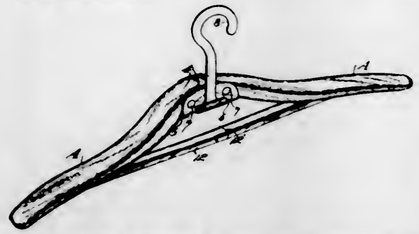


3. The combination, in a bottle, of a neck provided with an internal groove and with an aperture in one wall of said neck communicating with said groove, and being further provided with a channel connecting said aperture with the interior of the bottle, and with a second channel connecting the interior of the bottle with the exterior thereof, a stopper fitting said neck, said stopper being provided with a transverse hole, and a pin adapted to be inserted through said aperture into said hole while the stopper is in position to close the bottle, so arranged as to project beyond the body of the stopper and to move in said groove, as and for the purpose specified.

4. The combination in a bottle of a neck provided with an internal groove and with an aperture in one wall of said neck communicating with said groove, a stopper fitting said neck, said stopper being provided with a transverse hole and with two channels provided with ball valve seats and ball valves, and a pin adapted to be inserted through said aperture into said hole, while the stopper is in position to close the bottle, so arranged as to project beyond the body of the stopper and to move in said groove, the neck being further provided with a channel connecting said aperture with one of the channels in the stopper, and a second channel in the neck connecting the second channel in the stopper with the exterior of the bottle, as and for the purpose specified.

5. The combination in a bottle of a neck having channels, one for the entrance of air and the other for the escape of the liquid, a stopper mounted to turn within the neck and provided with two valved channels which in one position of the stopper register with the channels of the neck and in other positions are closed by the walls of the neck, and means for preventing a withdrawal of the stopper from the bottle while allowing it to turn.

855,295. CLOTHES-HANGER. ERICK O. FELLROTH, San Francisco, Cal., assignor of one-half to Archibald F. McD. Craig, San Francisco, Cal. Filed Aug. 25, 1906. Serial No. 331,971.



Claim.—1. In a garment hanger, the combination of a central support and two arms hinged to said support and foldable one on the other, said support comprising a metal plate made from a blank having a central longitudinal slot closed at the ends, said blank having side extensions between its ends, said side extensions folded over the top of said opening and united to form a central stop to limit the upward movement of the inner ends of the hinged arms, and the portions of said plate at the ends of said slot forming stops for the downward movement of the outer ends of said arms.

2. In a garment hanger, the combination of a central support and two arms hinged to said support and foldable one on the other, said support comprising a metal plate made from a blank having a central longitudinal slot closed at the ends, said blank having side extensions between its ends, said side extensions folded over the top of said opening and united to form a central stop to limit the upward movement of the inner ends of the hinged arms, the portions of said plate at the ends of said slot forming stops for the downward movement of the outer ends of said arms, and a hook portion for supporting said hanger formed integral with the blank and bent upward into suitable shape.

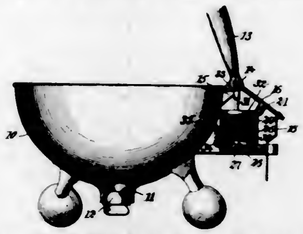
3. A garment hanger comprising a central support and two arms pivoted thereto, said arms foldable into substantially parallel position, said arms each provided with a suitable yoke, wire loops pivoted to said yokes and having projections to engage the arms when the loops are pendent and lock the yokes against movement.

4. In a garment hanger having oppositely extending supporting arms, a yoke slidable on each arm, a wire-loop member pivoted to each yoke and having an inwardly extending projection to coöperate with an arm and lock the yoke against movement when a garment is supported by the loop.

5. The combination with a garment-hanger having oppositely extending arms, of a sectional hinged brace having means for detachably securing said brace to the under side of said arms.

6. The combination with a garment-hanger having oppositely extending arms, of a brace formed with a pair of channeled sections hinged together at their ends, one of said sections overlapping the other section and providing a stop to limit the pivotal movement of one section on the other, and connections for the outer ends of said sections with the corresponding arms of the hanger.

855,296. SANITARY CUSPIDOR. ARTHUR FISHMANN, New York, N. Y. Filed Dec. 28, 1905. Serial No. 293,655.



Claim.—1. In combination, a cuspidor bowl, a reservoir, an injecting pump fed from said reservoir and delivering to said bowl, said pump having a piston, a pivoted lid having a cam, a spring normally holding said piston against said cam whereby the dropping of said lid will actuate said piston, and a treadle adapted to raise said lid.

2. In combination, a cuspidor bowl, a reservoir, an injecting pump fed from said reservoir and delivering to said bowl, said pump having a cylinder with a piston movable therein, a pivoted lid having a cam, a spring within said cylinder thrusting against the underside of said piston and holding the same against said cam, whereby the dropping of said lid may actuate said piston, and a treadle for raising said lid.

855,297. RAMROD. HENRY P. FITZGERALD, Jamestown, Kans. Filed Nov. 20, 1906. Serial No. 344,312.

Claim.—1. In a device of the type set forth, a rod carrying a wiper at its lower end and designed for manual reciprocation, means for rotating said rod during its reciprocation, said rod being formed at its upper end with an annular shoulder 21 formed to serve as a raceway and a reduced portion beyond said shoulder, a sleeve 23 having flaring upper and lower ends, a nut 26 threaded on said reduced portion and formed to serve as a raceway, ball bearings disposed in said raceways between said flaring ends and said respective shoulder and nut, and a nut 28 threaded on said reduced end and engaging said nut 20.



2. In a device of the type set forth, a rod carrying a wiper at its lower end and designed for manual reciprocation, means for rotating said rod during its reciprocation, said rod being formed at its upper end with an annular shoulder 21 formed to serve as a raceway, and a reduced portion beyond said shoulder, a sleeve 23 having flaring upper and lower ends, a nut 26 threaded on said reduced portion and formed to serve as a raceway, ball bearings disposed in said raceways between said flaring ends and said respective shoulder and nut, a nut 28 threaded on said reduced end and engaging said nut 26, and a screw cup 29 turned on the upper end of said sleeve.

3. In a device of the type set forth, a rod carrying a wiper at its lower end and designed for manual reciprocation, means for rotating said rod during its reciprocation, said rod being formed at its upper end with a reduced portion, a sleeve surrounding said reduced portion, ball bearings held between said sleeve and said reduced portion, a cord wound about said sleeve, and formed to be coated with glue and a socketed handle surrounding said sleeve, said cord being glued to said handle.

855,298. EARTH-ANCHOR. CLINTON E. FROST, Cleveland, Ohio. Filed Sept. 12, 1906. Serial No. 334,274.

Claim.—1. A ground anchor having a rib lengthwise on its back and provided with an eye at about its middle, and one end of the anchor straight lengthwise with its side edges tapered to a point and the other end having square corners turned to an inclination away from the side having said rib.

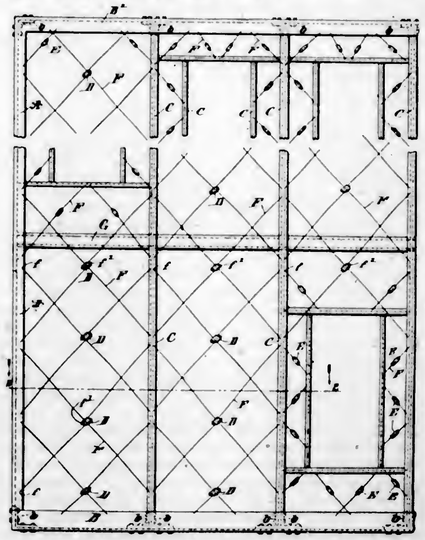
2. A ground anchor having a rib longitudinally at its center on one side and a substantially flat body having a tapered point at one end and the other end having a straight transverse edge and a portion thereof on both sides said rib bent to an inclination to the plane of the anchor.

3. A ground anchor having a rib centrally on its back lengthwise, said rib beveled at both ends substantially to the plane of the body of the anchor and provided with a transverse eye near the middle, and said anchor provided with a square end having its corners turned in the same direction, in combination with a stay having a loop engaged directly through said eye.



4. A ground anchor having a flat body with a rib integral therewith centrally between its ends and one end of the anchor tapered along its edges to a point and the other end full width of said body and the corners thereof turned away from said rib to an inclination, a stay having a loop engaged through said rib and said rib and loop constructed to throw the stay and anchor into alinement one with the other.

855,299. REINFORCED CONCRETE CONSTRUCTION FOR BUILDINGS AND OTHER STRUCTURES. GEORGE GEORGENSON and JOSEPH E. HENNEN, Fond du Lac, Wis. Filed June 12, 1906. Serial No. 321,307.

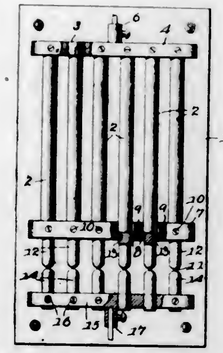


Claim.—1. A reinforced concrete structure, comprising framework composed of corner uprights, sills connected with the lower ends of the uprights, roof beams connected with the upper ends of the uprights, floor supporting beams connected with the uprights intermediate the sills

and the roof beams, studding connected with the beams and sills intermediate the corner uprights, brace or tie rods connecting the parts with each other, each brace comprising a plurality of sections having at one end a hook for engaging the structure and having the other end screw threaded, a block having openings to receive the ends of the converging sections, nuts engaging the screw threaded ends of the sections for tightening said braces, and a concrete filling, said tie rods forming a reinforce and a support for the filling.

2. A reinforced concrete structure comprising a framework composed of corner uprights, sills connected with the lower ends of the uprights, roof beams connected with the upper ends of the uprights, floor supporting beams connected with the uprights intermediate the sills and the roof beams, studding connected with the beams and sills intermediate the corner uprights, brace or tie rods connecting the parts with each other, each brace comprising a plurality of sections having at one end a hook for engaging the structure, means for engaging the ends of the converging sections, whereby to secure them together, and a concrete filling, said brace or tie rods forming a reinforce and a support for the filling.

855,300. LIGHTNING-ARRESTER. WILLIAM GIFFORD, Thompsonville, Mich. Filed Apr. 21, 1906. Serial No. 313,073.



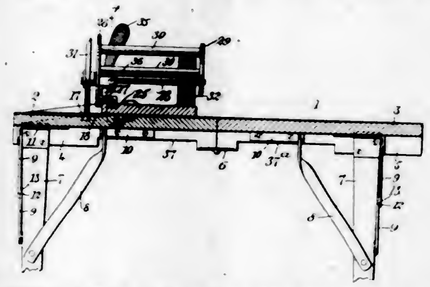
Claim.—1. A lightning arrester, comprising an insulating base, resistance elements mounted thereon, a metal rack which secures the elements to the base and is connected with the elements to distribute the electric charge thereto, and a series of spark gaps secured to the base in coöperative relation to the resistance elements.

2. A lightning arrester, comprising an insulating base, a plurality of resistance elements, a metal rack engaging corresponding ends of the elements for securing the same to the base and distributing the electric charge thereto, a series of spark gaps arranged in coöperative relation to the elements, and a rack of insulating material secured to the insulating base which forms the sole support for one set of terminals of the spark gaps and the opposite ends of the resistance elements.

3. A lightning arrester, comprising an insulating base, a plurality of resistance sticks, a metal rack engaging one end of the elements for supporting them on the base, a rack of insulating material secured on the base which is provided with shouldered openings with which the opposite ends of the resistance elements engage, a series of spark gaps arranged on the base in coöperative relation to the resistance sticks, one set of terminals thereof being provided with shoulders which engage the shoulders on the rack of insulating material for securing the said terminals in place, and a ground connection for the other terminals of the spark gaps.

4. A lightning arrester, comprising an insulating base, a metal rack secured thereto, which is provided with a plurality of openings, a plurality of resistance elements, caps on corresponding ends of the elements that engage the openings of said rack to provide an intimate electrical connection between the latter and the elements, an insulating rack on the base having shouldered openings whose shoulders receive the opposite ends of the resistance elements, combined caps and terminals provided with shoulders that engage the shoulders of the openings in said insulating rack, terminals disposed opposite the first mentioned terminals to form air gaps, and a ground for the latter terminals.

855,301. PAPER-HANGER'S TRIMMER. EDWIN E. GOBIE, Brattleboro, Vt. Filed June 8, 1906. Serial No. 320,750.



Claim.—1. In a device of the class described, a table, inlaid strips of different colors at one edge thereof, said table having a groove therein adjacent to the strips, a metal straight edge secured to the table and overhanging the groove, a board pivoted to the table, a reciprocatory cutter wheel journaled on the board, and means for guiding the cutter wheel.

2. In a device of the class described, a table, a straight edge secured to the table, a spindle having a roller and a cutter wheel fixed to it at opposite ends, means in which the spindle is journaled for guiding it on the table, a lever pivoted to said means, a shoe fixed to the lever, and a shoulder on the spindle adapted to be engaged by the shoe, for the purpose described.

3. In a device of the class described, a combined clamping and guiding board, links pivotally connecting the board and the table, and a cutter wheel journaled in guiding means adapted to be reciprocated on the board, said links and guiding means serving in the capacity of stops to limit the movement of the cutter in each direction.

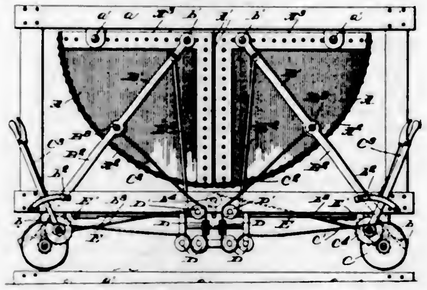
4. In a device of the class described, a table, a board pivoted to the table, and having a groove therein near one edge thereof, a metal strip secured to the board and overhanging the groove and its edge, a plate having guiding means embracing the strip, a second plate spaced from the first and rigidly secured thereto by transverse rods, a spindle journaled in the plates, a roller and a cutter wheel fixed to the spindle, and a straight edge secured to the table against which the cutter wheel is adapted to bear as it is reciprocated, for the purpose described.

855,302. DUMPING-BODY. WILLIAM R. GOIT, Oklahoma, Okla. Filed Aug. 21, 1906. Serial No. 331,489.

Claim.—1. A dumping body composed of two symmetrical sections in the form of quarter cylinders having each an upright edge and a bottom curved on the arc of a circle to which the upright edge is radial and each of said sections being pivoted near its upper outer edge whereby when the loaded sections are released they will dump their contents by gravity, props consisting of sections jointed together and adapted to hold their respective sections in position to carry the load, and pivoted aprons extending beneath their respective body sections and means connecting the said aprons with the props of their respective body sections, all substantially as and for the purpose set forth.

2. In a dumping body, a section in the form of a quarter-cylinder having a bottom curved approximately on the arc of a circle and pivoted adjacent to the upper edge of said bottom, a frame in which said section is pivoted, a prop consisting of jointed sections pivoted respectively to the frame and the body section, an apron pivoted to the frame and extending at its free edge below the dumping edge of the section and means connecting said apron with a jointed prop for said section, substantially as set forth.

3. A dumping body having opposite pivoted sections opening toward each other at their adjacent sides and having their bottoms curving downward to such open sides and adapted to operate by gravity to discharge its load, and means for holding the sections in position to retain the load.



4. The combination with a suitable frame, of a dumping section pivoted therein and having a curved bottom or other form and adapted to discharge its contents by gravity, a prop consisting of sections pivoted respectively to dumping sections and to the frame and devices connected with said prop whereby to break the same for dumping the section, and for readjusting the prop to return the dumping section to position to receive its load, substantially as set forth.

5. In a dumping body, a section pivoted adjacent to its upper edge whereby it will dump by gravity, a prop for maintaining said section in position to support its load, a pivoted apron below the said section and means connecting the pivoted apron with the prop whereby it may be operated by the movement thereof, substantially as set forth.

6. The combination of a frame, a dumping section pivoted thereto, an apron pivoted to the frame, and intermediate devices between the apron and the dumping section.

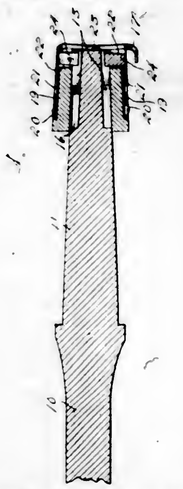
7. The combination with the frame and the dumping section pivoted therein, of a prop for holding the said section in position to receive its load, said prop consisting of sections pivoted respectively to the dumping section and to the frame, the latter section being extended beyond its pivot forming a lever extension whereby to operate the prop, substantially as set forth.

8. A dumping section pivoted near its upper outer edge open at one side and having a bottom curving down to the lower edge of said open side, means opposite said open side to retain the load in said section, and means for holding the section in position to retain the load.

9. The combination of a dumping section pivoted to dump by gravity, means for maintaining said section in position to support its load, a pivoted apron below the said section, and means whereby the apron may be operated with the operation of the dumping section.

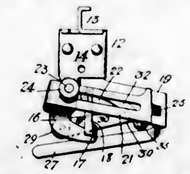
855,303. WHEEL-SPINDLE. PATRICK H. GRAVES, Sharps Chapel, Tenn. Filed Aug. 11, 1906. Serial No. 330,180.

Claim.—1. The combination with the spindle provided with grooves, of the nut having a central bore adapting it to be secured on the spindle, notches in the end of the said nut, springs connected with the sides of the nut and having means extending through the notches in the end of the nut and into the grooves in the spindle, said springs being also provided with angular extensions disposed side by side across the end of the nut.



2. The combination with the spindle provided with grooves, of the nut having a central bore adapting it to be secured on the spindle, notches in the end of the said nut, springs secured to the nut and having lugs projecting through the said notches into the grooves in the spindle, the springs having angular extensions and angular ribs on the extreme end of the extensions.

855,304. SEWING-MACHINE HEMMER. MARY F. W. GREIST and PERCY R. GREIST, New Haven, Conn., administrators of John M. Greist, deceased, assignors to The Greist Manufacturing Company, a Corporation of Connecticut. Filed Apr. 3, 1907. Serial No. 366,223.



Claim.—1. An adjustable sewing machine hemmer comprising two oppositely facing, stationary or fixed edge-turning lips or guides, two parts or members on each of which one of said lips or guides is formed, and an expansible and contractible tongue comprising one stationary or fixed part and two adjustable or movable parts.

2. An adjustable hemmer comprising two oppositely facing, stationary or fixed edge-turning lips or guides, two separate parts or members each of which is provided with one of said lips or guides, and an expansible and contractible tongue consisting of the stationary or fixed finger 18 and the swinging links 30 and 32 jointed together and to the adjustable and stationary or fixed parts of the hemmer respectively.

3. An adjustable sewing machine hemmer comprising a presser-foot, two stationary edge-turning parts, two stationary members, fixed with relation to said presser-foot, and each of which is provided with one of said edge-turning parts, a laterally adjustable guiding part, and an expansible and contractible tongue connected with said stationary and adjustable parts.

4. An adjustable sewing machine hemmer comprising a presser-foot, two oppositely-facing, stationary edge-turning parts, two stationary members, fixed with relation to said presser-foot, and each of which is provided with one of said edge-turning parts, a laterally adjustable guiding part, and an expansible and contractible tongue connected with said stationary and adjustable parts, said tongue comprising the stationary finger 18 and the connected swinging links 30 and 32.

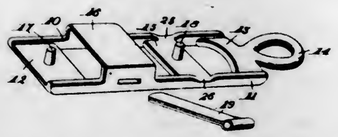
5. An adjustable hemmer comprising a presser-foot, a laterally extending stationary arm supported thereby, a forwardly extending stationary finger also supported by said presser-foot, oppositely facing edge-turning lips supported by said arm and finger, respectively, a laterally adjustable plate guided on said arm and finger in its adjusting movements and carrying a guiding part, and an expansible and contractible tongue.

6. An adjustable hemmer comprising a presser-foot, a laterally extending stationary arm supported thereby, a forwardly extending stationary finger also supported by said presser-foot, oppositely facing edge-turning lips supported by said arm and finger, respectively, a laterally adjustable plate guided on said arm and finger in its adjusting movements and carrying a guiding part, and an expansible and contractible tongue connected with said stationary finger and adjustable plate and comprising the finger 18 and the connected swinging links 30 and 32.

7. An adjustable sewing machine hemmer comprising the slotted laterally extending stationary arm 19 having the guiding lip 33, the stationary finger 16 having the stud or pin 23, set-nut 24, guiding lip 17 and finger 18, a support for said arm and finger, the slotted laterally adjustable sliding plate 21 guided by said arm and said stud or pin in its adjusting movements and having the finger 29, the guide 26 and arm 27, and the links 30 and 32 jointed together and also to the said fingers 29 and 18, respectively.

8. An adjustable sewing machine hemmer comprising the slotted laterally extending stationary arm 19 having the guiding lip 33, the stationary finger 16 having the stud or pin 23, set-nut 24, guiding lip 17 and finger 18, a presser-foot by which said arm and finger are supported, the slotted laterally adjustable sliding plate 21 guided by said arm and said stud or pin in its adjusting movements and having the finger 29, the guide 26 and arm 27, and the links 30 and 32 jointed together and also to the said fingers 29 and 18, respectively.

855,305. STRAP-SPLICER. FRANK M. HALL, Potomac, Ill., assignor to John E. P. Butz, Potomac, Ill. Filed May 29, 1906. Serial No. 319,348.

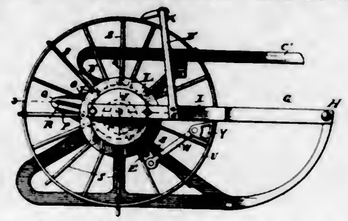


Claim.—1. A strap splicer comprising a base member having spaced lateral studs and a loop disposed trasversely of said base member and between said studs, and a key member operating through said loop and adapted to bear against the straps supported thereby.

2. A strap splicer comprising a base member having spaced lateral studs and with an eye at one end, a loop disposed transversely of said base and between said studs, and a key member operating through said loop and adapted to bear against the straps supported thereby.

3. A strap splicer comprising a base member having longitudinal ribs at the side edges and with spaced lateral studs, and an eye at one end, a loop disposed transversely of said base and of the ribs formed thereon and between said studs, and a key operating through said loop and adapted to bear against the straps supported thereby.

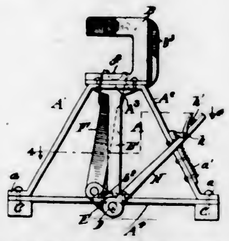
855,306. SLED-PROPELLER. JOHN J. HANSEL, Muskegon, Mich. Filed Jan. 18, 1906. Serial No. 296,592.



Claim.—1. A sled propeller comprising an arm with its forward end pivotally secured to the sled leaving its rear end free, a wheel secured to the rear end of said arm, arms on the wheel adapted for adjustment to protruding and withdrawn position, means on the pivoted arm adapted for effecting said adjustment of the wheel arms, a rotatably supported power shaft on the sled, and means on the power shaft connecting the wheel therewith adapted for driving it, and at the same time be adapted to permit free vertical movement of the wheel.

2. A sled propeller employing an arm having its forward end pivoted to the sled, leaving its rear end free, a wheel on the free end of said arm; the wheel being adapted to roll upon the ground, a journal at the free end of said arm, a collar having support on said journal with its center to one side of the wheel center, adjustable means connecting the wheel and collar, arms extending from the collar, to and into openings through the wheel-rim, a scraper having yielding bearing on the wheel-rim, and means for rotating the wheel.

855,307. STAND FOR MOTOR-CYCLES, &c. JOHN J. HANSEL, Muskegon, Mich. Filed May 24, 1906. Serial No. 318,523.



Claim.—1. A stand for motor cycles and the like, consisting of a frame, a casting surmounting the said frame and provided with an opening in its front, a lifting rod adapted to be moved upwardly into said opening, and means for actuating said lifting rod.

2. A stand for motor cycles and the like, consisting of two side frames spaced apart and connected, heads surmounting said frame, each having an open front, a horizontal shaft mounted in the lower part of said frames, links rigidly secured to said shaft, lifting rods pivotally connected at their lower ends to said links and extending upwardly adjacent to said side frames, and adapted to be moved upwardly into the openings of the heads surmounting the frame, and means for rotating said horizontal shaft.

3. A stand for motor cycles and the like, consisting of two side frames carrying heads comprising top, bottom and rear members, the inner face of the bottom members of said heads having vertical passages, or guideways therethrough, lifting bars fitted to slide vertically at their upper ends through said passages or guideways, a horizontal shaft mounted in the side frames, links rigidly secured to said shaft at one end and at their opposite ends pivotally secured to the lower ends of the lifting rods, a lever rigidly secured to said shaft for turning the same and causing vertical movement of the lifting rods, and means for locking the lever.

4. A stand for motor cycles and the like, consisting of two laterally extensible side frames, heads surmounting said frames, said heads each comprising rigid top, bottom and rear members, said heads adapted to receive the rear axle of a motor cycle or the like.

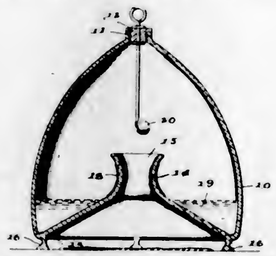
5. A stand for motor cycles and the like consisting of two laterally extensible side frames, heads surmounting said side frames and having their fronts open to receive the rear axle of a cycle, lifting rods mounted to be moved vertically into said openings, and means for actuating said lifting rods.

6. A stand for motor cycles and the like, consisting of two side frames, heads surmounting said frames, said heads having open fronts, a plate laterally adjustably connecting said frames, lifting bars mounted in said frame and adapted to be projected vertically into the openings in the front of the heads, and means for causing vertical movement of said lifting bars.

7. A stand for motor cycles and the like, consisting of two side frames, heads surmounting said frames and comprising top, bottom and rear members, brace rods extending downwardly from said heads centrally of the side frames, said braces having journals in their lower ends, a horizontal shaft mounted in said journals, links rigidly connected at one end to said shaft, lifting rods pivotally connected to the opposite ends of said links and extending upwardly adjacent to the said side frames and adapted to be projected vertically into the opening of the heads, and means connected with the horizontal shaft for rotating the same to cause vertical movement of the lifting bars.

8. A stand for motor cycles and the like, consisting of a frame, a head surmounting said frame, said head comprising a top, bottom and rear members said members being rigid and adapted to receive the rear axle of a motor cycle or the like.

855,308. FLY-TRAP. INGVART HANSEN, Orofino, Idaho. Filed Oct. 13, 1906. Serial No. 338,744.

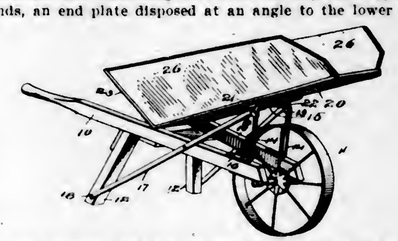


Claim.—A fly-trap comprising an inclosure of glass having a bottom upwardly and inwardly inclined from its edges and terminating in a neck having a flared mouth opening into the inclosure, an annular section of the neck being coated to render it opaque.

855,309. WHEELBARROW. CHARLES H. HEINEMAN, Falls City, Nebr. Filed Aug. 13, 1906. Serial No. 330,469.

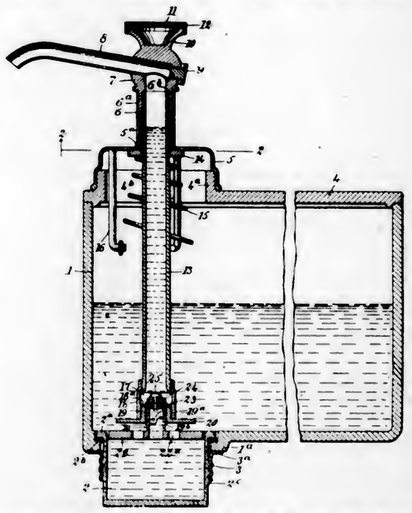
Claim.—1. In a barrow, a wheel supported frame, uprights erected upon the frame upon opposite sides of the wheel, a cross bar supported by the uprights in parallelism with the axis of the wheel, a body disposed upon the cross bar, and with its rear end bearing upon the frame, pivoting means secured to opposite sides of the body embracing the cross bar adjacent each end, the said body being proportioned to tilt upon the cross bar and its movement to be limited by engagement with the wheel.

2. In a barrow, a wheel supported frame, spaced uprights erected upon the frame, a cross bar carried by said uprights in parallelism with the wheel axis, a platform mounted upon the cross bar in an inclined position with its rearward end the lower and in engagement with the frame, pivoting means secured upon opposite sides of the platform and embracing the cross bar adjacent opposite ends, an end plate disposed at an angle to the lower end



of the platform, and bracing means disposed between the end plate and the platform.

855,310. MEASURING-PUMP. THEODOR HENTGEN, New York, N. Y. Filed Oct. 5, 1906. Serial No. 337,638.



Claim.—1. A pump comprising a tube provided at one end with a valve seat extending longitudinally of the tube, a valve movable longitudinally on said seat, and provided with a plunger disk, substantially as shown and described.

2. A pump comprising a tube provided at one end with a valve seat extending longitudinally of the tube, a valve adapted to slide longitudinally on said seat, and provided with a perforated plunger disk, and a well adapted to receive said disk, substantially as shown and described.

3. A pump comprising a tube provided with a valve seat, a tubular valve adapted to slide lengthwise of said seat and provided with an open interior, and inlet ports connected therewith, and a gasket adapted to close the joint between said valve and its seat, substantially as shown and described.

4. A pump comprising a tube provided with a valve seat and a laterally extending flange, a tubular valve adapted to slide lengthwise of said seat and provided with inlet ports adapted to be closed by said valve seat, and a gasket secured to said valve and adapted to overlap the joint between the valve and seat, substantially as shown and described.

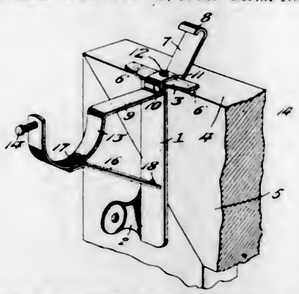
5. A pump comprising a tube movable bodily in the direction of its length and provided with a longitudinal valve seat, and a laterally extending flange connected therewith, a tubular valve adapted to slide lengthwise of said seat, having an open end and provided with inlet ports adapted to be arranged opposite said valve seat, and

a perforated disk connected with the lower end of said valve, substantially as shown and described.

6. The combination with a receptacle having a well extending below the bottom of said receptacle, and a pump comprising a tube movable bodily in the direction of its length in said receptacle, and provided on its lower end with a longitudinal valve seat and a laterally extending flange connected therewith, a tubular valve adapted to slide lengthwise of its seat, and provided with an open end and inlet ports adapted to be closed by said seat, and a plate connected with said valve adapted to travel in said well, substantially as shown and described.

7. The combination of a receptacle having a well extending below the bottom of said receptacle, and a pump movable bodily in the direction of its length in said receptacle, and provided with a longitudinal valve seat, a tubular valve adapted to slide lengthwise of said seat having an open end and provided with inlet ports adapted to be closed by said seat, a plate connected with said valve adapted to travel in said well, and means adapted to adjust the normal position of said plate in said well, substantially as shown and described.

855,311. CURTAIN-FIXTURE. FRANK HERBECK, Orange, Mass. Filed Jan. 16, 1906. Serial No. 296,368.



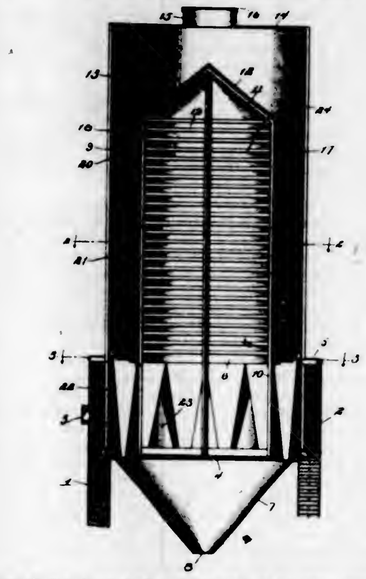
Claim.—A combination bracket comprising a base provided with a curtain shade bracket arm, a top flange extending at right angles to the base and provided with angular retaining spurs, a spring arm extending upward and backward from said flange to bear against the wall, a curtain pole bracket arm having a portion thereof overlapping said flange, a fastener passing through said flange and through the overlapping portions of the curtain bracket arm, and a brace extending through the base and secured to the curtain pole bracket, substantially as described.

855,312. GRAIN-DRIER. JOSEPH A. HIGDON, Henderson, Ky. Filed Oct. 17, 1906. Serial No. 339,405.

Claim.—1. A drier of the type described comprising a body portion consisting of inner and outer louvered walls having a grain-receiving space between them and provided with air passages leading outward through said space, an air drum arranged beneath the body, and a spout or duct extended through the drum and communicating at its upper end with the lower end of the grain space.

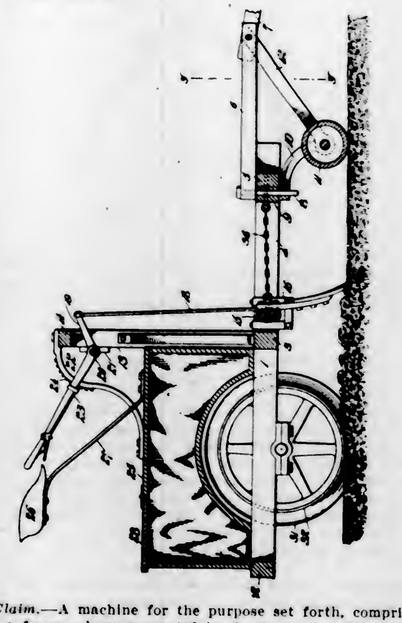
2. A drier of the type described comprising a body portion consisting of inner and outer louvered walls having a grain-receiving space between them, and provided with air passages leading outward through said space, an air-tight drum arranged beneath and having communication with the interior of the body and a series of spouts or ducts extended through the drum and communicating at their upper ends with the lower end of the grain space.

3. A drier of the type described comprising a body consisting of inner and outer louvered walls having a grain-receiving space between them, said body being provided with an inner air chamber and having passages leading from said chamber outward through the grain space, a deflector cap arranged over the air chamber for directing the material into said space, an air-tight drum sustained beneath the body and having communication with the air chamber, and a plurality of spouts or ducts extended



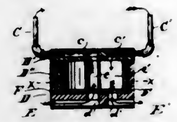
through the drum and communicating at their upper ends with the lower end of the grain space.

855,313. FURROW PLOW AND ROLLER. CHARLES E. HOLBROOK, Carson City, Nev. Filed Aug. 15, 1906. Serial No. 330,658.



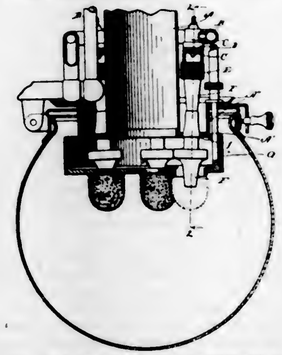
Claim.—A machine for the purpose set forth, comprising a frame, plows supported in the frame, a roller journaled in the frame behind each of the plows, said rollers comprising a central ring corresponding in cross section to the shape of the plow point, and a cylindrical portion upon each side of the ring, said cylindrical portions being of lesser diameter than the ring, and said central ring being directly behind the plow point, whereby said ring will enter and smooth the furrow formed by the plow, and the cylindrical portions will press and smooth the ground adjacent to the edges of the furrow.

855,314. METER CONNECTION. ALBA L. HOLMES, Grand Rapids, Mich. Filed Mar. 1, 1906. Serial No. 303,720.



Claim.—In combination with a water meter, an inflow and an outflow pipe, a large intermediate cup having a small central opening in the bottom, and an outflow opening to one side of the center, the sides of the cup extending up and having a screw thread in the inside surface, a cap having an annular body with a screw thread on its periphery to mesh with the screw thread in the cup, forming a water tight joint, a small central tube integral with the cap and extending down forming a water tight joint with the bottom of the cup and a water way from the inflow pipe to the meter, and an outflow pipe from the meter into and out of the large cup, as shown and described.

855,315. GAS-LAMP. ALFRED H. HUMPHREY, New York, N. Y. Filed June 25, 1906. Serial No. 323,319.



Claim.—1. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube formed of a material which is a non-conductor of heat, said tube having an upwardly tapered portion arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded, upon said nipple, said coupling section having air openings therein; and a sleeve-like valve for said air openings threaded upon said coupling section, for the purpose specified.

2. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube formed of a material which is a non-conductor of heat arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded, upon said nipple, said coupling section having air openings therein, for the purpose specified.

3. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube formed of a material which is a non-conductor of heat arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded upon said nipple, said coupling section having air openings therein; and a sleeve-like valve for said air openings threaded upon said coupling section, for the purpose specified.

4. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; an inverted burner consisting of a burner tube formed of a material which is a non-conductor of heat arranged through said opening in said flange; and a burner tip, for the purpose specified.

5. In a gas lamp, the combination with a gas delivery pipe, of a chimney and inverted burner tube formed of a non-heat-conducting material arranged through the wall of the chimney with its valve outside thereof; and a burner tip for said burner tube, for the purpose specified.

6. In a gas lamp the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of non-heat-conducting material arranged through said opening in said flange and adapted when in position to close the same; a coupling section into which said burner tube is threaded, adapted to connect the same to said nipple, and a burner tip.

7. In a gas lamp the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; an inverted burner consisting of a burner tube formed of non-heat-conducting material arranged through said opening in said flange to close the same, and a burner tip arranged below said flange for the purpose specified.

8. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube, said tube having an upwardly tapered portion arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded upon said nipple, said coupling section having air openings therein; and a sleeve-like valve for said air openings threaded upon said coupling section, for the purpose specified.

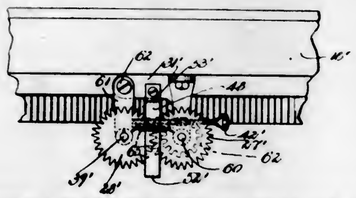
9. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded upon said nipple, said coupling section having air openings therein; and a sleeve-like valve for said air openings threaded upon said coupling section, for the purpose specified.

10. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end; said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded upon said nipple, said coupling section having air openings therein, for the purpose specified.

11. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner arranged through said opening in said flange and adapted when in position to close the same; a coupling section into which said burner tube is threaded, adapted to connect the same to said nipple, and a burner tip.

12. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; an inverted burner consisting of a burner tube arranged through an opening in said flange to close the same, and a burner tip arranged below said flange, for the purpose specified.

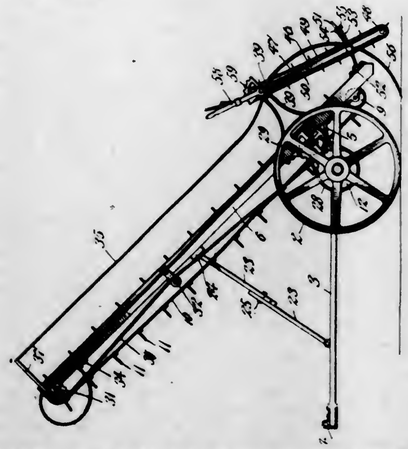
855,316. YARN MEASURING AND FEEDING DEVICE FOR KNITTING-MACHINES. DANIEL HURLEY and WILLIAM T. BARRATT, Bennington, Vt., assignors to Charles Cooper, Bennington, Vt. Filed Mar. 29, 1905. Serial No. 252,775.



Claim.—1. In a knitting machine, a pair of yarn feed gears meshing into each other and adapted to measure the yarn between them before it is led to the needles of said knitting machine, means to guide the yarn between said gears, one of said gears journaled to rotate upon a stationary support, a pivotally supported arm upon which the other of said gears is rotatably supported, a spring acting to rock said arm to move said last named gear toward the other of said gears, and an adjusting screw adapted to move said arm to move the gear supported thereon away from the other of said gears.

2. In a circular knitting machine, a rotary cylinder, a series of needles mounted thereon, a yarn holder, means to lead the yarn to said needles, a pair of yarn feed gears meshing into each other and adapted to measure said yarn between them before it is fed to said needles, one of said gears movable toward and away from the other, a spring acting to move one of said gears toward the other, and means to positively move said movable gear away from the other of said gears.

855,317. HAY-LOADER. JENS N. JEPPESEN and NIELS MICHELSEN, Monroe, Utah. Filed Oct. 13, 1906. Serial No. 338,824.



Claim.—1. In a hay rake, the combination of a series of rake teeth, a traveling conveyer for receiving the hay from the teeth, and a gatherer comprising rollers, a series of belts provided with teeth and mounted upon said rollers, said belts being disposed between the rake teeth, means for moving the belts, and means for adjusting the gatherer vertically, substantially as described.

2. In a hay rake, the combination of a series of rake teeth, an endless conveyer, means for adjusting said conveyer at different degrees of inclination, curved strippers secured at their ends to the conveyer frame, and a traveling spring mounted gatherer comprising belts mounted upon rollers, said belts having projecting fingers thereon, and said belts being disposed between the rake teeth.

3. In a hay rake, the combination of a series of rake teeth, an endless conveyer, and a traveling gatherer, curved rods, said gatherer being adjustable upon said curved rods, and surrounding said rods, substantially as described.

4. In a hay rake, the combination of a series of rake teeth, a conveyer, a wind shield comprising longitudinal rods and cross bars, strippers on the conveyer, and a traveling gatherer comprising belts armed with teeth and said belts being located between the rake teeth, said gatherer being mounted to yield in operation, and means for adjusting said gatherer vertically, substantially as described.

855,318. SPIKE. SAMUEL C. KINDIG, Baltimore, Md., assignor to Frederick Henkelman, Baltimore, Md. Filed Feb. 13, 1906. Serial No. 300,876.



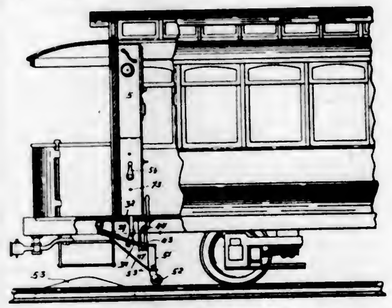
Claim.—1. A spike having two diverging prongs attached to the body of the spike at their upper ends and their lower ends pointed and adapted to be forced outwardly from the body of the spike, and a shoulder on the body of the spike below each of the prongs, said prongs being the same width as the spike throughout their entire length.

2. A spike having two diverging prongs attached to the body of the spike at their upper ends and having beveled sharpened lower ends and being of the same width as the body of the spike throughout their entire length, the body of the spike having a contracted portion just below its head, which terminates at its lower end in the two shoulders on opposite sides thereof.

855,319. STATION-INDICATOR. JOHN KNUTSON, Denver, Colo. Filed Nov. 1, 1904. Serial No. 230,918.

Claim.—1. The combination with a suitable casing, of drums mounted therein, a name curtain mounted on the drums, one of the latter being provided with ratchet zones, pawls adapted to engage the respective zones, a reciprocating pawl holder, means for actuating the said holder, a shaft journaled in the casing and provided with a cam interposed between the two pawls for throwing either pawl out of the drum actuating position while the other pawl remains in position to actuate the drum, the relatively inactive pawl serving when at its upward limit of movement to prevent the drum from moving too far under the influence of the actuating pawl, an exposed crank connected with the shaft, the crank being provided with a longitudinally movable spring-actuated part provided with a cam face engaging a similar opposing face on the relatively

stationary part, the movable part being also allowed a partial rotary movement, the casing being provided with a socket adapted to receive one extremity of the movable part whereby the crank and its connections are locked in the adjusted position.



2. The combination with station indicating mechanism mounted on a car, of a reciprocating device for actuating the mechanism, the said device being provided with a stem passing through the bottom of the car and having a part pivotally connected with its lower extremity, an oscillating arm mounted on the car and having an opening to receive the stem and its pivoted part, a depending part connected with the oscillating arm and adapted to be automatically actuated from the track, a device mounted on the oscillating arm for locking the pivoted part of the stem thereto, and suitable means for unlocking the lever after the arm is moved upwardly a predetermined distance.

3. The combination with station indicator mechanism mounted on a car, of depending operating means connected with the bottom of the car, and a connection between said depending means and the indicator mechanism, the operating means consisting of an oscillating arm having a depending part, a locking device mounted on the oscillating arm and adapted to lock the latter to the connection with the indicating mechanism, and a lever mounted on the car and projecting up through the bottom thereof for unlocking the locking device of the oscillating arm.

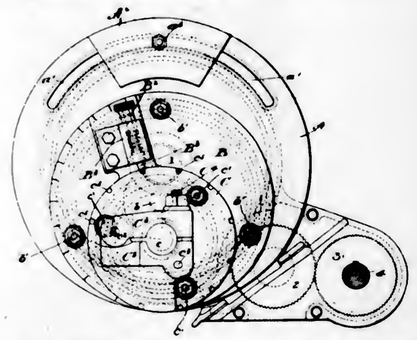
4. Station indicating mechanism including a drum having two ratchets provided with oppositely disposed teeth, and a pair of separated pawls mounted to reciprocate and arranged to coöperate with the two ratchets, each pawl having two recesses separated by a projection, a cam adapted to be adjusted to throw either pawl out of the drum-actuating position, the cam in this event engaging the upper recess of the pawl, and means for moving the pawls sufficiently to bring the cam into the lower recess of the pawl which it engages, the arrangement being such that the cam engaged by the pawl serves when at its upward limit of movement to engage its ratchet and lock the drum against moving too far in response to the actuating movement of the other pawl.

855,320. ECCENTRIC WORK-HOLDER FOR GRINDING-MACHINES. ABRAHAM B. LANDIS, Waynesboro, Pa. Filed Nov. 18, 1905. Serial No. 288,050.

Claim.—1. The combination, with the head-stock of a grinding-machine, of the face-plate, a plate swiveled thereon at one side of its center, a second plate swiveled on said first swiveled plate eccentric to the axis thereof, and a work holding device mounted on said second swiveled plate, substantially as set forth.

2. The combination, with the head stock of a grinding machine, of the main face-plate, a second plate pivoted thereon eccentric to the axis of said face-plate, means for adjusting said second plate and securing it in adjusted position, a third plate pivoted on said second plate, eccentric to the axis of said second plate and carrying the work holding device, and formed with notches at intervals around its periphery, and a holding detent on said pivoted plate for engaging said notches, substantially as set forth.

3. The combination with the head-stock of a grinding machine, the main face-plate formed with a circular groove in its face, the center of which is at one side of the axis of said face-plate, a second plate mounted on said face-plate and secured by clamping bolts engaging with said groove, and another plate mounted on said second plate, eccentric to the axis thereof and carrying the work holding clamp, substantially as set forth.



4. The combination with the head stock of a grinding machine, of the main face-plate mounted upon a spindle and connected with the driving mechanism, a second plate swiveled upon said main face-plate eccentric to the axis thereof, means for adjusting said second plate and securing it in adjusted position and a third plate swiveled upon said second plate, eccentric to the center thereof, means for adjusting said third plate and securing it in adjusted position comprising graduated notches in its periphery and a holding detent, and the work holding device mounted upon said third plate, substantially as set forth.

5. The combination with the head stock of a grinding machine, of the face-plate, the second plate pivoted thereon eccentric to the axis thereof, clamping bolts for holding said second plate rigidly in position, a third plate pivoted on said second plate eccentric to the axis thereof, means for securing it in the desired position comprising notches around its periphery at stated intervals and a detent on the second plate to engage with said notches, and the work holding clamp mounted on said third plate, substantially as set forth.

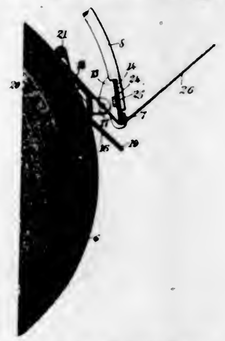
6. The combination with the head stock of a grinding machine, of a face-plate mounted upon the spindle and connecting to the driving mechanism, the second plate swiveled upon said face-plate eccentric to its center, the third plate mounted upon said second plate eccentric to the axis of said second plate and a bracket extending out from the face of said third plate forming a U-shaped recess and having the work holding clamp, upon its outer end, substantially as set forth.

855,321. ATTACHMENT FOR ROLL-PAPER CUTTERS. FRANCIS H. MAASS, Clinton, Iowa. Filed June 11, 1906. Serial No. 321,195.

Claim.—1. An attachment for a roll paper cutter, presenting a pair of clips adapted to be secured on the knife of said paper cutter, and a shoe pivotally attached to said clips and adapted to lie against the face of the roll, said shoe presenting an outwardly projecting apron adapted to dispose itself behind the knife.

2. An attachment for a paper roll cutter, comprising a pair of clips adapted to be secured on the knife of said paper cutter, a shoe pivotally attached to said clips and adapted to lie against the face of the roll, and a guide bar attached to said shoe and under which the web passes from said roll, said shoe having an outwardly projecting apron behind said knife.

3. In a roll paper cutter, in combination, a frame, a knife having arms pivotally mounted on said frame and a shoe pivotally connected with said knife and having a bar lying against the face of the roll whereby the cutting edge of said knife is maintained removed from the face of the roll, the arrangement being such that the web passes from the roll under said bar and under the edge of said knife.

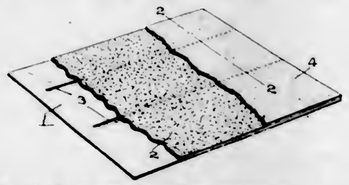


4. In a paper roll cutter, in combination, a knife, means for supporting the same adjacent to the face of the roll, a shoe pivotally connected with said knife, adapted to rest against the face of the roll and maintaining said knife removed therefrom, and a guide bar attached to said shoe and under which the web passes to said knife.

5. In a paper roll cutter, in combination, a knife, means for supporting the same adjacent to the face of the roll, clips attached to said knife, a shoe having ears pivotally attached to said clips, and normally resting against the face of said roll, said shoe having a bent cheek inclined and lying substantially tangent to the face of said roll, said shoe further having an apron projecting outwardly, and a guide bar attached to said shoe and under which the web passes to said knife.

6. An attachment for a paper roll cutter, comprising a pair of clips adapted to be slipped over the extremities of the knife, means carried by one of said clips for rigidly attaching the same to said knife, and a shoe pivotally attached to said clips and engaging the face of the roll, said shoe affording means for holding the knife removed from said roll.

855,322. FLEXIBLE BACK FOR PAPER PADS AND BOOKS. JAMES MACCALLUM, St. Louis, Mo. Filed Jan. 18, 1907. Serial No. 352,935.

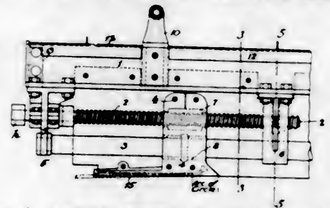


Claim.—1. As a new article of manufacture, a binder for blocks of paper, comprising a sheet of flexible material, a coat of adhesive material on one side of the sheet, and binding threads embedded in said adhesive material.

2. As a new article of manufacture, a flexible back for books or blocks of paper, comprising a sheet of flexible material, a coating of flexible adhesive material on one side of the sheet, a coating of adhesive material on the coating of the flexible adhesive material, and binding threads embedded in the coating of flexible adhesive material.

3. A binder for blocks of paper, comprising a sheet of flexible material, a coat of elastic flexible adhesive substance on one side of the sheet, and binding threads embedded in said coating.

855,323. STRAIN-ADJUSTER FOR CONTACT-WIRES OF ELECTRIC RAILWAYS. JOSEPH MAYER, Rutherford, N. J. Filed Feb. 5, 1907. Serial No. 355,895.

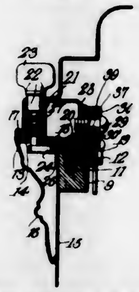


Claim.—1. A strain adjuster for the contact-wires of electric railways, comprising a frame suspended by means of insulators, hanger-brackets attached to the frame, two screw-spindles turning in said hanger-brackets, two cross-heads provided with female threads engaging the screw-spindles, and a guide-rod for said cross-heads supported in the hanger-brackets, the cross-heads being provided at the lower part with suspending and anchoring means for the contact-wire, and side-plates for guiding the sliding bow.

2. A strain adjuster for the contact-wires of electric railways, comprising a supporting frame, means for suspending the same, hanger-brackets attached to said supporting frame, two screw-spindles the ends of which are supported in said hanger-brackets, two cross-heads formed of two semi sections connected by cross-bolts, a stationary guide-rod passing through the hanger-brackets and the cross-heads, means at the lower part of the cross-heads for suspending and anchoring the ends of the contact-wires, and side-plates for guiding the sliding-bow.

3. In a strain adjuster for the contact-wires of electric railways, the combination of a supporting frame, removable roof-plates for the same, side plates attached to said frame, hanger-brackets attached to the supporting frame, screw-spindles supported at their ends in said hanger-brackets, a stationary guide-rod also supported in said hanger-brackets below said screw-spindles, cross-heads provided with a screw-nut for engaging the screw-spindles, and openings for the guide-rod, and means at the lower ends of the cross-heads for suspending and anchoring the ends of the contact-wires.

855,324. BURIAL-CASKET. ALBERT J. MERKELBACH, Oskaloosa, Iowa. Filed Aug. 17, 1906. Serial No. 331,065.



Claim.—1. A casket comprising a body portion provided with a marginal groove and having a laterally extended perforated flange, a cover provided with a correspondingly shaped depending rib adapted to engage the groove, and a spring actuated bolt slidably mounted in the cover and provided with a lateral lug passing through the perforation in the flange and adapted to engage the adjacent wall of the body portion for locking the rib in engagement with the groove.

2. A casket comprising a metallic body portion provided with a marginal V shaped groove and having a laterally extended perforated flange, a cover bearing against one side of the flange and provided with a correspondingly shaped depending rib adapted to engage the groove, a plate secured to one side of the flange and having spaced notches formed therein, a spring actuated bolt slidably mounted in the flange and provided with a laterally extending lug passing through said perforation and engaging the notches in the plate for locking the rib in engagement with the groove, lugs secured to the interior walls of the body portion, and an auxiliary locking device carried by the cover and adapted to engage the lugs thereby to assist in locking the cover in closed position.

3. A casket comprising a body portion having its side walls provided with a laterally extended perforated flange, a cover engaging the body portion, and a spring actuated bolt slidably mounted in the cover and provided with a laterally extending lug passing through the perforation in the flange and adapted to engage the body portion for locking the cover in closed position.

4. A casket comprising a body portion having a laterally extending perforated flange, a projection depending from the flange at said perforation and provided with spaced notches, a cover engaging the flange, and a spring actuated bolt slidably mounted in the cover and having one end thereof provided with a finger piece and its opposite end extended through the perforation in the flange and provided with a laterally extending lug adapted to engage the notches in the projection for locking the cover in closed position.

5. A casket comprising a body portion provided with a laterally extending perforated flange, a cover engaging one side of the flange, a plate secured to the opposite side of the flange and having spaced notches formed therein, a spring actuated locking bolt passing through the perforation in the cover and engaging the notches in the plate for locking the cover in closed position, and a molding strip secured to the flange and side walls of the body portion, respectively, and forming a housing for one end of the bolt.

6. A casket comprising a body portion, lugs extending laterally from the body portion, a cover adapted to engage the body portion, a cap secured to the cover, laterally movable spring actuated hooks pivotally mounted in the cap and adapted to engage the lugs for locking the cover in closed position, and means for locking the hooks in inoperative position.

7. A casket comprising a body portion, lugs extending laterally from the side walls of the body portion, a cover, spring actuating hooks movable laterally into engagement with the lugs for locking the cover in closed position, and means for locking the hooks in inoperative position.

8. A casket comprising a body portion provided with a laterally extending flange and spaced inwardly extending lugs, a cover provided with a corresponding flange, a bracket secured to the cover, a cap carried by the bracket, spring actuated hooks pivotally mounted in the cap and movable laterally into engagement with the lugs for locking the cover in closed position, and a screw carried by one hook and adapted to engage an opening in the adjacent hook for locking said hooks in inoperative position, the lateral movement of said hooks being limited by engagement with the interior walls of the cap.

9. A casket comprising a body portion, lugs extending inwardly from the side walls thereof, a bracket secured to the cover and provided with a lateral pin a cap secured to the bracket and having a recess formed therein for the reception of the pin, spring actuated hooks pivotally mounted in the cap and movable laterally into engagement with the lugs for locking the cover in closed position.

855,325. GUIDE FOR THREAD, YARN, &c. JOHN R. MITCHELL, New York, N. Y., assignor to Mitchell-Bissell Co., New York, N. Y., a Corporation of New Jersey. Filed Dec. 3, 1906. Serial No. 346,129.

Claim.—1. A thread guide provided with a head A and a stem B, the head having an inclined inlet slot and a curved channel with which the slot communicates at one side, and a slot communicating at one side with the upper end of said channel and extending in both directions beyond this point of communication with the channel, for the purpose set forth.

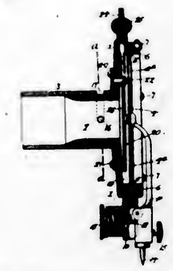


2. A thread guide provided with a stem B and a head A, the latter having an inlet slot and a channel with which said slot communicates, fingers on opposite sides of said slot, one of said fingers being thicker than the other and having an inclined terminal face extending inward beyond the side of said other finger, for the purpose described.

3. A thread guide provided with a stem B and a head A, the latter having an inlet slot and a channel with which said slot communicates at one side near its lower end, fingers on opposite sides of the inlet slot, the upper finger being thicker than the lower finger and having an inclined terminal face extending inward beyond the side of the lower finger, for the purpose described.

4. A thread guide consisting of a stem and a head, the latter having a channel provided with a curved upper end communicating with a slot extending in both directions beyond the point of communication, and an inlet slot communicating with said channel between its ends, for the purpose described.

855,326. SOUND-BOX FOR TALKING-MACHINES. EDWIN H. MOBELEY, Rutledge, Pa. Filed June 9, 1905. Serial No. 264,465.



Claim.—1. The combination of the sound box casing having a resilient diaphragm normally tending to press outwardly toward the stylus lever, a pivoted stylus lever against which said diaphragm exerts an outward pressure, and a spring acting upon the stylus lever, so as to exert thereupon a pressure in opposition to that of the diaphragm, substantially as specified.

2. The combination of the sound box casing and its diaphragm, a stylus lever pivoted to said sound box casing, and a spring having an axial extension bearing upon the stylus lever, substantially as specified.

3. The combination of the sound box casing and its diaphragm, the stylus lever pivoted to said casing and having a recess in one side of the same, and a spring having an axial extension adapted to said recess, substantially as specified.

4. In a sound box for talking machines, a diaphragm made in one piece having annular stiffening ribs, and formed with a relatively thinner portion between the two outer ribs.

5. The combination, in a sound box for talking machines, of the diaphragm, a casing supporting said diaphragm and having a projecting sound-carrying tube whose axial line is in the same direction as that of the diaphragm, and externally accessible and adjustable means for varying the area of the inner end of said tube, coincidently with the axis of said tube.

6. The combination, in a sound box for talking ma-

chines, of the diaphragm, a casing supporting said diaphragm and having a projecting sound-carrying tube whose axial line is in the same direction as that of the diaphragm, and an externally accessible and adjustable supplementary diaphragm structure located in the rear of the main diaphragm and serving to vary, co-incidently with the axis of said tube, the area of the passage through the latter.

7. The combination of the sound box casing and its main diaphragm, with a pair of swinging diaphragms located in the chamber behind said main diaphragm, and each having an aperture therein and means for swinging each diaphragm upon its pivot so that it will gradually overlap and close the aperture in the other diaphragm.

8. The combination of the sound box casing and its main diaphragm, with a pair of diaphragms pivotally mounted in the chamber behind said main diaphragm and having apertures which, when said diaphragms are in one extreme position, are in line with each other and with the bore of the outlet neck of the sound box casing, and means for swinging said diaphragms upon their pivot so as to cause each to gradually overlap the aperture in the other, substantially as specified.

9. The combination of the sound box casing and its diaphragm, a damper for the latter, and means, operating in the chamber behind said diaphragm, for varying the area of the outlet from said chamber and for forcing the damper into contact with the diaphragm, substantially as specified.

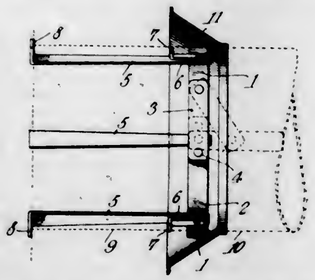
10. The combination, of the sound box casing and its diaphragm, a damper for the latter, and means operating in the chamber behind said diaphragm for gradually lessening the area of outlet from said chamber and for forcing the damper into contact with the diaphragm when such outlet is closed, substantially as specified.

11. The combination of the sound box casing and its main diaphragm, with a pair of apertured diaphragms pivoted in the chamber behind said main diaphragm, one of said pivoted diaphragms being provided with a damper block, and the other serving, when the diaphragms are moved so as to close their apertures, to cause said damper block to be pressed against the said main diaphragm, substantially as specified.

12. The combination of the sound box and its diaphragm, the stylus lever bearing upon said diaphragm and a pivot pin carried by said stylus lever, and having a bearing in the sound box casing on one side of said lever, and a conical end resting upon a supporting bearing on the other side of said lever, substantially as specified.

13. The combination of the sound box casing and its diaphragm with the stylus lever bearing upon said diaphragm and carrying a pivot pin which has on one side of the lever a bearing in which it can turn, and on the other side of the lever a conical end resting upon a supporting bearing, substantially as specified.

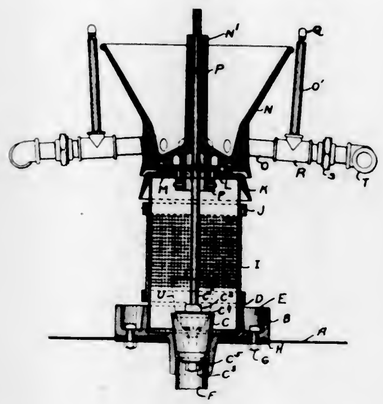
855,327. STOVEPIPE-LOCK. THOMAS MOSLEY, Lawton, Okla. Filed July 30, 1906. Serial No. 328,490.



Claim.—1. A pipe lock comprising a resilient band having spaced ends, strips secured to and extending from the band, each of said strips having a looped end portion embracing the band, wall engaging projections upon the ends of the strips, a link pivotally connected to one end of the band, and a lever pivotally connected to the other end of the band and to the link, said lever and link being movable laterally upon the band and designed to rest upon the outer face thereof to hold the band contracted, said lever and link conforming to the contour of the contracted band.

2. The combination with a pipe; of a resilient band extending therearound and having spaced ends, a lever fulcrumed adjacent one of said ends, a link pivotally connected to the other end and to the lever, said link and lever being curved to conform with the contour of the band, holding strips having looped end portions embracing and secured to the band, laterally extending wall engaging projections upon the ends of the strips, and a collar upon the pipe and concealing the band and the parts connected thereto.

855,328. REVOLVING DISTRIBUTER FOR PULP OR LIQUID. EDWARD H. MOYLE, Los Angeles, Cal. Filed Oct. 20, 1904. Serial No. 229,344.



Claim.—1. In a pulp distributer, a rotatable bowl, discharge pipes projecting radially therefrom, means for automatically rotating the bowl, and means for introducing air to said pipes for controlling the passage of material therethrough.

2. In a pulp distributer, a rotatable bowl, means for automatically rotating the same, discharge pipes projecting radially from the bowl, air pipes communicating with said discharge pipes, and means for regulating the entrance of air to said air pipes.

3. In a pulp distributer, a rotatable bowl, discharge pipes projecting radially therefrom and provided with means for automatically rotating the bowl, an air pipe communicating with each discharge pipe, and a cut plug in each air pipe for regulating the entrance of air thereto.

4. In a pulp distributer, means for discharging the overflow at the center of the tank, and a distributer mounted at the top of said means.

5. In a pulp distributer, means for discharging the overflow through the center of the tank, and a distributer removably mounted at the top of said means.

6. In a pulp distributer, means for discharging the overflow through the center of the tank, and a removable distributer rotatively mounted on top of said means.

7. In a pulp distributer, means for discharging the overflow through the center of the tank, and an automatically rotatable distributer removably mounted on top of said means.

8. In a pulp distributer, means for discharging the overflow through the center of the tank, a rotatable bowl mounted on top of said means and provided with radially-projecting pipes, the outer ends of which are provided with means for automatically rotating the bowl.

9. In a pulp distributer, a perforated stand-pipe for discharging the overflow through the center of the tank, and an automatically-rotatable distributer removably mounted on top of said pipe.

10. In a pulp distributer, a perforated stand-pipe for discharging the overflow through the center of the tank, a sieve-cloth around said pipe, means for securing said cloth in position, and an automatically rotatable distributer removably mounted on top of said pipe.

11. In a pulp distributer, a flanged member provided with a valve seat and means for securing it in a tank, a perforated stand-pipe secured to said flange, a valve for said seat, and a distributer removably mounted on top of said pipe.

12. In a pulp distributer, a flanged member provided with a valve seat and means for securing it in a tank, a perforated stand secured to said flange, an automatically rotatable distributer removably mounted on top of said pipe, and a plug valve for said seat, the stem of which extends up through the distributer.

13. In a pulp distributer, a perforated stand-pipe for discharging the overflow through the center of a tank, a distributer removably mounted on top of the pipe, and a flanged member at the bottom of the distributer for engaging with the top of the stand-pipe.

14. In a pulp distributer, a perforated stand-pipe for discharging the overflow through the center of a tank, a distributer removably mounted on top of the pipe, a flanged member loosely secured to the bottom of the distributer, and antifriction means between said member and the distributer.

15. In a pulp distributer, a perforated stand-pipe for discharging the overflow through the center of a tank, a distributer removably mounted on top of the pipe, the bottom of which is provided with a cylindrical portion, a collar on said portion, and a flanged stand loosely mounted on said portion between the collar and the bottom of the distributer.

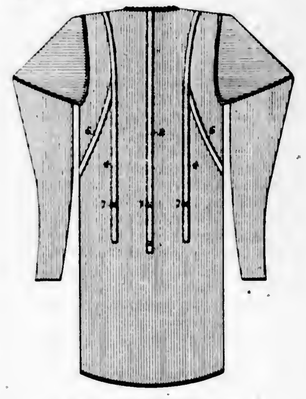
16. In a pulp distributer, a member provided with a valve seat and means for securing it in position, a perforated pipe secured to said member, a distributer removably mounted on top of said pipe and provided with a centrally located cylinder, a valve for said seat, the stem of which is perforated and extends up through said cylinder, and a removable rod adapted to be inserted in said perforation and rest on top of the cylinder to hold the valve off its seat.

17. In a pulp distributer, a bowl with an extending tube projecting through the center of the bowl, a ball race in the bottom of the bowl and around the tube, a plate extending around the tube and supporting the ball race, and an annular shoulder on the tube below the plate for lifting the ball race with the bowl when the latter is raised.

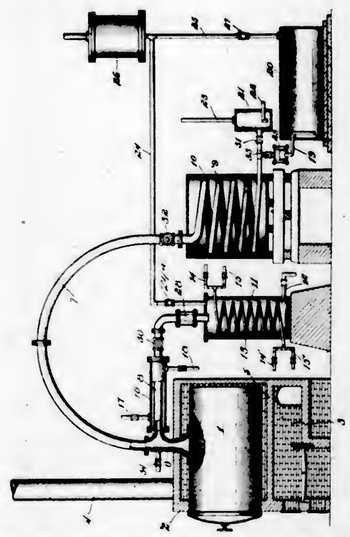
18. In a pulp distributer, a rotatable bowl, a ball race supporting the bowl and means for suspending the ball race from the bowl when the bowl is lifted.

855,329. KNITTED UNDERGARMENT. QUENTIN McADAM, Utica, N. Y., assignor to Utica Knitting Company, Utica, N. Y., a Corporation of New York. Filed Sept. 8, 1906. Serial No. 333,825.

Claim.—An undergarment composed of knitted web having its upper portion relatively stiffened by means of a plurality of tapes or bands, comprising front and rear tapes or bands extending from the shoulders to the waist portion of the garment, a central rear tape or band extending from the neck to the said waist portion, and side tapes or bands extending to said waist portion, and each connected to the front and rear tapes or bands on its respective side by diagonal tapes or bands, the lower or skirt portion of the garment being free from such tapes or bands and retaining the full natural elasticity of the knitted web of the garment.



855,330. APPARATUS FOR DISTILLING WOOD. ANDREW J. McARTHUR, Collins, Ga. Filed July 11, 1906. Serial No. 325,623.



Claim.—1. In a distilling apparatus of the character described, the combination of a retort having a vapor outlet, a turpentine condenser, a tar receiver, conducting pipes leading from the vapor outlet to said condenser and receiver, a hermetically closed turpentine tank or receiver communicating with the turpentine condenser, air exhaust pipes leading from the receivers, and a vacuum pump for exhausting air through said pipes, the latter being provided with valves for closing communication between the pump and receivers.

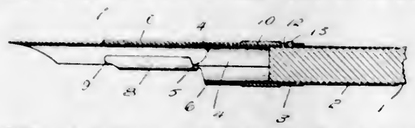
2. In a distilling apparatus of the character described, the combination of a retort having a vapor outlet, a turpentine condenser, a tar receiver, pipes leading from the vapor outlet to said condenser and receiver, a turpentine tank or receiver communicating with the turpentine condenser, valved exhaust pipes communicating with the re-

ceivers, a vacuum pump for extracting air through said pipes, and a valved relief pipe communicating with the vapor outlet.

3. In a distilling apparatus of the character described, the combination of a retort having a vapor outlet, a turpentine condenser, a tar receiver, valved conducting pipes leading from the vapor outlet to said condenser and receiver, a hermetically closed turpentine tank or receiver communicating with the condenser, valved air exhaust pipes communicating with the tar and turpentine receivers, a vacuum pump for exhausting air through said pipes, and a valved relief pipe for admitting air to the system.

4. In a distilling apparatus of the character described, the combination of a retort having a vapor outlet, a turpentine condenser comprising a vessel having a condensing coil therein, a tar receiver, valved conducting pipes leading from the vapor outlet to the coil of the condenser and to the receiver, a turpentine tank or receiver, a delivery pipe connecting the coil of the condenser therewith, a trap communicating with the coil, valves for cutting out the delivery pipe and trap, a vacuum pump, valved exhaust pipes connecting said pumps with the tar and turpentine receivers, and a valved relief pipe connecting with the vapor outlet.

855,331. PENHOLDER. LOUIS G. MCCONKEY, Goodhope, W. Va. Filed Jan. 25, 1906. Serial No. 297,821.



Claim.—A penholder comprising a handle; a ferrule fixed upon the handle and provided with a forward extension at its front end and with an upstanding pin at its rear end; and a sleeve slidably mounted upon the ferrule and having its lower face slitted at its forward end, the edges of the slit being folded inwardly against the adjacent portion of the sleeve and provided with forwardly extending ways bent angularly toward each other, to receive and hold a pen point independently of the ferrule, said sleeve being further provided with a bayonet slot formed in its upper face toward the rear end thereof and adapted to receive said pin to hold said sleeve in its forward position upon the ferrule, the extension of the ferrule being positioned to contact with and eject the pen point from the sleeve when the pin is released from engagement in said bayonet slot and the sleeve is moved rearwardly upon the ferrule.

855,332. HOISTING MECHANISM. ANGUS A. MCINTOSH, Alexandria, Ontario, Canada. Filed Apr. 20, 1906. Serial No. 312,916.

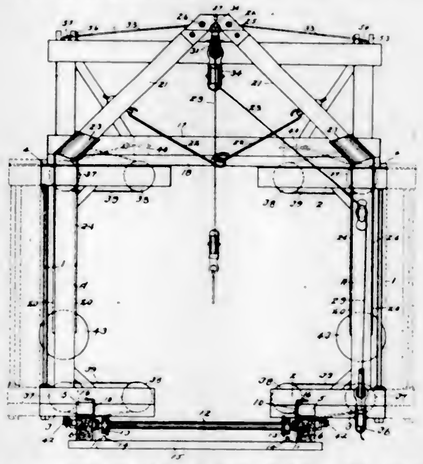
Claim.—1. A crane comprising a suitable base, side frames movably supported on the base and adapted to be moved toward or from each other, a stationary carriage connecting the upper ends of the side frames, and relative to which the side frames are movable, and a jib, the legs of which are pivotally secured to the respective side frames, the adjacent ends of the legs at the apex of the jib being pivotally connected.

2. A crane comprising side frames, a base and a bridge with which the side frames slidably engage, and means on the side frames and secured to the bridge and base for moving the side frames toward and from each other.

3. A crane comprising a base, a bridge, side frames movable relative to the bridge and base, pulleys mounted on the side frames, cables passing over the pulleys, the cables being made fast to the bridge and base respectively and a drum on which the cables are wound and unwound.

4. A crane comprising a base, a bridge, side frames independently movable relative to the bridge and base, pulleys mounted on the side frames, flexible connections passing over the pulleys, the connections fixedly secured to the base, adjustable means on the bridge to which the connections are secured for taking up the slack therein, and drums on which the connections are wound and unwound.

5. A crane comprising a bridge, a base, guides on the bridge and base respectively, side frames slidably received in the guides and means for moving the side frames relative to the bridge and base.



6. A crane comprising a bridge, a base, a way carried by the bridge, guides adjustably secured to the base, side frames slidably received in the guides and way respectively, and means for moving the side frames relative to the bridge and base.

7. A crane comprising a base, a bridge, side frames slidingly engaging the bridge and base, and adapted to be moved toward and from each other, independently or simultaneously, a jib, the legs of which are connected to the respective side frames, and means for pivotally connecting the outer ends of the legs.

8. A crane comprising sides movable toward and from each other, a jib, the legs of which are pivotally connected to the respective sides to swing the jib vertically, and a pivotal connection between the apex ends of the jib to permit the legs to move horizontally with the sides toward and from each other.

9. A crane comprising a base, a frame mounted thereon, a jib carried by the frame, hangers pivoted to the base and trucks releasably engaged by the hangers.

10. A crane comprising base members located a greater distance apart than the rails of a track, hangers pivoted to the base, trucks received in the hangers, the crane adapted to be supported on the trucks when the hangers are in one position, the base members adapted to be lowered and seated upon the outer ends of the ties of the track when the hangers lie in their opposite positions.

11. A crane provided with a base, hangers pivotally secured thereto, trucks removably carried by the hangers, stops for retaining the hangers in one position when the crane is supported on the trucks, the crane adapted to rest on the base when the hangers and trucks have been moved to their inoperative position.

12. A jib for cranes comprising a pair of divergent legs pivotally connected at their meeting ends, levers pivotally connected to the crane, and sockets carried by the levers to receive the divergent ends of the legs.

13. A jib for cranes comprising a pair of divergent legs, a casing, the outer end of each leg pivotally secured to the casing, an adjustable brace connecting the divergent legs intermediate their ends, levers pivotally secured to the crane and sockets carried by the levers for receiving the lower ends of the legs.

14. A jib for cranes comprising a pair of divergent legs pivotally connected at their outer ends, levers pivotally secured to the crane, and means for adjustably connecting the lower ends of the legs to the outer ends of the levers.

15. A jib for cranes comprising a pair of divergent legs pivotally connected at their outer meeting ends, a pair of levers pivotally secured to the crane, inclined sockets mounted on the free ends of the levers and being of larger size in one dimension than the legs, the free ends of the legs received and movable in the sockets.

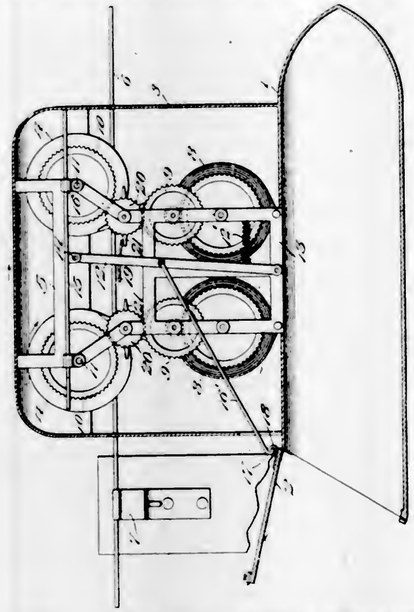
16. A jib for cranes comprising a pair of divergent legs, a casing to which the outer end of each leg is pivotally secured, levers pivotally secured to the crane, and means for adjustably connecting the lower ends of the legs to the outer ends of the levers.

17. A crane comprising a suitable frame, bowed supports projecting rearwardly of the frame, and a jib mounted on the bowed supports and extending forwardly of the frame.

18. A crane comprising side frames, rearwardly extending knees secured thereto, and a jib, the legs of which are pivoted to the knees and extend from the rear to a point some distance in advance of the frames.

19. A crane comprising a frame, knees projecting from the frame at opposite sides, a jib pivotally connected to the frame, a drum suitably mounted in the frame, a block mounted at the apex of the jib, idlers journaled in the brackets, a cable wound on the drum and extending from thence over one of the idlers, to the block, and thence rearwardly over the remaining idler, the end of the cable being made fast to the opposite knee.

855,333. CARRIER. CLAYTON A. MCINTOSH, Washington, Kans., assignor to Barton S. Wilson, Washington, Kans. Filed July 18, 1906. Serial No. 326,754.

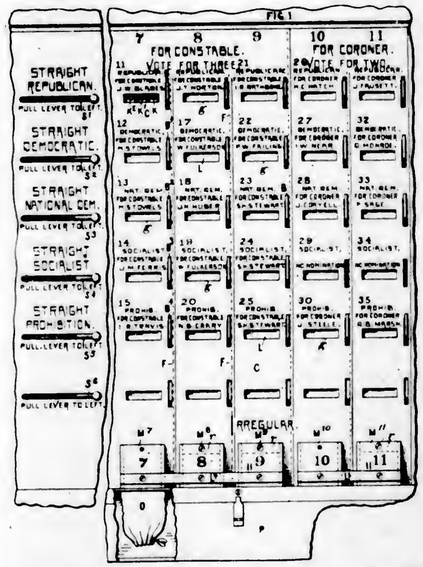


Claim.—1. A parcel carrier comprising a receptacle having a movable door, a mechanism for moving said carrier consisting of two grooved wheels each having a motor mechanism consisting of a spring actuated train of gearing, and a mechanism connected with the door of the receptacle and with a clutch mechanism in each motor mechanism, whereby each motor mechanism is alternately locked and released and each grooved wheel is thrown into and out of engagement with the motor mechanism, as herein set forth.

2. A parcel carrier consisting of a frame supporting a receptacle and having two grooved wheels mounted on a wire or track, each grooved wheel connected by a train of gearing to a spring actuating device, each grooved wheel being normally held in clutch engagement with the train of gearing, the latter being provided with a stop device for locking said gearing, in combination with a mechanism for alternately locking and unlocking and releasing the grooved pulley and its operating mechanism.

3. A parcel carrier consisting of a receptacle having a hinged door and a double motor mechanism in combination with grooved wheels mounted on the wire or track, said grooved wheels being alternately held in clutch engagement with a train of gearing, and means for alternately locking one of the trains of gearing and releasing the other and also throwing one grooved wheel into engagement with its motor mechanism and releasing the other from its motor mechanism consisting of a reciprocating frame connected by a vibrating bar which is in turn connected by a rod with the hinged door whereby said shifting of the grooved wheels into locking engagement with their motor mechanisms is controlled by the movements of the door.

855,334. VOTING-MACHINE. ANGUS MCKENZIE, Jamestown, N. Y., assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y., a Corporation of New York. Filed June 19, 1899. Renewed Mar. 15, 1907. Serial No. 362,528.



Claim.—1. In a voting machine, the combination of a plurality of counters devoted to the same candidate for an office and arranged on as many different party tickets, and means for compelling each of said counters to register a vote cast on any one of them.

2. In a voting machine, the combination of a plurality of counters devoted to the same candidate for an office and arranged on as many different party tickets, and means for compelling each of said counters to register the votes given directly to it and to register the votes given directly to the other counters as well.

3. In a voting machine, the combination of a plurality of counters devoted to the same candidate for an office and arranged on as many different party tickets, means for causing the successive registration of votes on said counters, and means for compelling all of said counters to register an equal number of votes at every stage of the election.

4. In a voting machine, the combination of a plurality of voting keys suitably interlocked, and a plurality of counters devoted to the same candidate nominated for the same office by as many different parties, and means for causing the operation of all of said counters upon the actuation of any one of said counters by the movement of the voting key corresponding to said counter.

5. In a voting machine, the combination of a series of counters devoted to candidates for a single office, an actuator for each of said counters, and means for directly connecting the actuators of any two or more of the counters of said series for simultaneous operation, leaving the remaining actuators free for independent operation.

6. In a voting machine, the combination of a series of voting keys arranged in party rows and suitably interlocked, a counter for each of said keys, and means for causing the operation of one of said counters when either of a plurality of a predetermined number of keys is operated.

7. In a voting machine, the combination of a series of voting keys suitably interlocked, a series of counters, one for each of said keys, a plurality of said counters being devoted to the same candidate nominated for the same office by as many different parties, and means for causing the operation of all of said counters devoted to the same candidate upon the actuation of any one of said counters, resulting from the voting movement of the key of said counter.

8. In a voting machine, the combination of a series of keys arranged in party rows and suitably interlocked, counters to register the votes indicated by said keys, means co-acting with a predetermined number of said keys or their counter actuators belonging to the same candidate, so that any one of the counters belonging to said keys will suffice to register all of the votes indicated by all of the keys of said predetermined number.

9. In a voting machine, the combination, in a multicandidate group, of a plurality of balloting means devoted to candidates nominated by more than one political party for the same office, and means for causing said balloting means to operate simultaneously.

10. In a voting machine, the combination, in a multicandidate group, of a plurality of balloting means devoted to candidates for the same office, two or more of said balloting means belonging to the same candidate, and means compelling the operation of all of said balloting means by the operation of any one of them.

11. In a voting machine, the combination, in a multicandidate group, of a plurality of ballot indicators devoted to candidates for the same office, a plurality of registers, one for each indicator, and connections between registers devoted to the same candidates for causing the simultaneous operation of said registers.

12. In a voting machine, the combination, in a multicandidate group, of a series of counters, actuators therefor, direct connections between two or more of said actuators, and suitable interlocking mechanism between said connected counters and the counters which are not connected together.

13. In a voting machine, the combination, in a multicandidate group, of two or more counters devoted to the same candidate and their actuating mechanisms, with a connection between said actuating mechanisms.

14. In a voting machine, the combination, in a multicandidate group, of two or more counters provided with actuating mechanisms, comprising oscillating arms, with a link pivoted to said arms and joining said actuating mechanisms together.

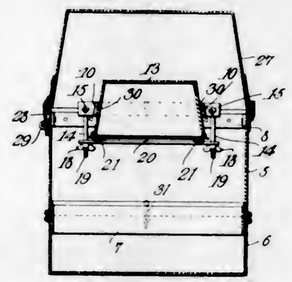
15. In a voting machine, the combination, in a multicandidate group, of two or more counters, the actuators of which are directly connected together so as to be operated simultaneously, with suitable interlocked irregular voting mechanism.

16. In a voting machine, the combination, of counters arranged in groups, a direct connection between the actuators of two or more of said counters in the multicandidate group of said machine, and suitable straight ticket voting mechanism.

17. In a voting machine, the combination of counters arranged in groups, a direct connection between the actuators of two or more of said counters in the multicandidate group of said machine, suitable straight ticket voting mechanism, and suitable irregular voting mechanism.

18. In a voting machine, the combination, in a multicandidate group, of two or more counters devoted to the same candidate, means for actuating said counters, and means directly connecting said actuating means together, thereby compelling said actuating means to actuate all of said counters whenever one of said actuating means is operated to cast a vote.

855,335. ASH-SCREENER. HENRY PLATT, Hazleton, Pa. Filed Oct. 11, 1906. Serial No. 338,455.



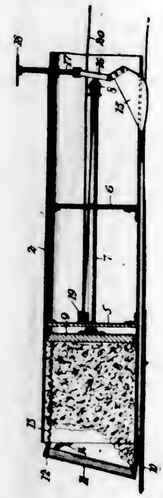
Claim.—1. A device of the class described comprising a receptacle, a supporting frame arranged within the receptacle and adapted to receive an ash-pan, said frame being provided with lateral extensions, a screen covering the ash-pan, spaced pins secured to the extensions of the supporting frame and having their free ends threaded, a clamping bar mounted on one of the pins at each end of the frame and provided with a lateral recess adapted to receive the adjacent pin, and nuts threaded on the pins for clamping the bars in engagement with the screen.

2. A device of the class described comprising a casing, a supporting frame arranged within the casing and consisting of spaced longitudinal bars having their opposite ends off-set and connected by cross bars, a pan supported by the frame, pins secured to the off-set portions of the side bars and piercing the adjacent ends of the cross-bars of said frame, a screen covering the pan, clamping bars engaging the screen, and clamping nuts carried by the pins and bearing against the clamping bars for locking the screen in engagement with the pan.

3. A device of the class described comprising a casing, a supporting frame journaled in the casing and consisting of spaced longitudinal bars inclined laterally and having their opposite ends off-set and connected by cross bars, said frame being adapted to support a pan, threaded pins extending through the off-set portions of the longitudinal bars of said frame and piercing the adjacent cross-bars, a screen covering the pan, a clamping bar pivotally mounted on one of the pins at each end of the supporting frame and having its opposite end provided with a lateral slot adapted to receive the adjacent pin, and clamping nuts engaging the threads on the pins for locking the clamping bars in engagement with the screen.

4. A device of the class described comprising a sectional casing, a cover pivotally mounted on one of said sections, a supporting frame arranged within the casing and journaled in the side walls of one of the sections, a pan carried by the supporting frame, a detachable screen covering the pan and having its upper surface reinforced by longitudinal strengthening bars and its opposite surface reinforced by transverse bars, threaded pins carried by the supporting frame, clamping bars mounted on the pins, and nuts engaging the threads on the pins and bearing against the clamping bars for locking the screen in engagement with the pan.

855,336. EARTH-SCRAPING MACHINE. WELLINGTON RANDALL and JOHN RANDALL, Marysville, Wash. Filed Sept. 17, 1906. Serial No. 334,875.



Claim.—1. A scraping machine, comprising an open-ended body portion, a scraping plate pivotally secured to the lower edge of the body portion at one end thereof, and means for automatically raising said scraping plate when the body portion becomes filled.

2. A scraping machine, comprising an open-ended body portion, a scraping plate pivotally secured to the body portion adjacent one end thereof, arms secured to the outer edge of said scraping plate, and means for automatically moving said arms backward to raise the scraping plate when the body portion becomes filled with material.

3. A scraping machine, comprising an open-ended body portion, a scraping plate pivotally secured to the lower side thereof adjacent one end, a plunger within said body portion, and means connecting said plunger and said scraping plate, whereby the latter is moved upward when the body portion becomes filled.

4. A scraping machine, comprising an open-ended body portion, a plunger located therein, and means secured to the back end for forcing said plunger toward the front end of the machine to eject the material, and for drawing the machine in the opposite direction.

5. A scraping machine, comprising an open-ended body portion, a plunger located therein, plunger arms secured to said plunger, and means connected to said plunger arms for forcing said plunger toward the front end of the machine to eject the excavated material.

6. A scraping machine, comprising an open-ended body portion, a scraping plate pivotally secured to the front end adjacent the lower side, a plunger within said body portion, means connected to said plunger for raising said scraping plate when the machine becomes filled, and means for moving said plunger forward to eject the material.

7. A scraping machine, comprising an open-ended body portion, runners located along the opposite sides, and means for steering the machine, comprising a plurality of rudders permanently set at different angles and means for raising and lowering said rudders.

8. A scraping machine, comprising an open-ended body portion rectangular in cross section, a scraping plate pivotally connected to the front end of the body portion at the lower edge thereof, means for automatically raising said scraping plate when the body portion becomes filled, means for ejecting the material as the machine is drawn backward, and means for steering the machine, said last mentioned means comprising a plurality of rudders mounted at diverging angles and each provided with means for raising and lowering the same.

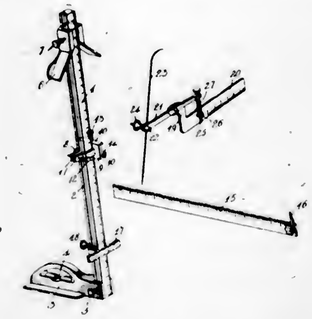
855,337. FASTENING DEVICE. FRITZ RAUPACH, London, England. Filed May 21, 1906. Serial No. 317,994.



Claim.—1. A fastening device constructed of a single piece of spring wire comprising a narrow elongated loop, a widened handle portion formed adjacent the open end of said loop, and a longitudinal clasping tongue formed from one extension of said handle and extending centrally through said handle portion and said elongated loop, said tongue having a portion lying in the plane of said loop, and another portion extending beyond said loop and out of the plane of said loop, substantially as described.

2. A fastening device constructed of a single piece of spring wire comprising a narrow elongated loop, having extensions thereon bent to form a handle portion of greater width than said loop and adjacent the open end thereof, one of said extensions being locked in said handle portion and the other of said extensions being bent to lie centrally through said handle portion and said loop and in a plane therewith for a portion of its length and being slightly bent to pass beyond the loop, substantially as described.

855,338. COMBINATION-TOOL. MARSHALL C. RAYMOND, Rutland, Vt. Filed Mar. 4, 1907. Serial No. 360,518.

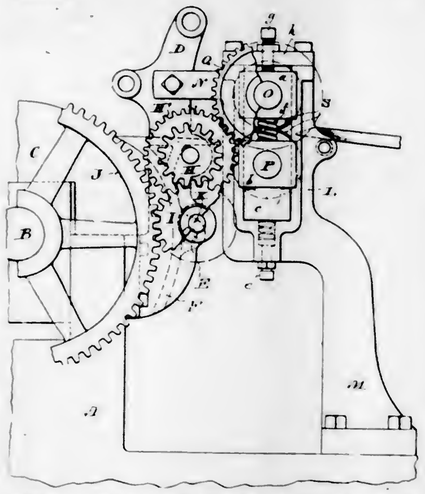


Claim.—1. A combination tool comprising a stock, a head adjustably mounted thereon and carrying a spirit level, a centering head adjustably mounted upon the stock, a guard also adjustably mounted upon the stock, a clamp adjustably mounted upon the stock, a scriber holder arranged to engage the clamp, said holder comprising an arm, an adjustable spring-pressed lever fulcrumed thereon, and a scriber clamp carried by the lever.

2. A combination tool comprising a stock, a head thereon, a clamp adjustably mounted upon the stock, and a scriber holder arranged to engage the clamp, said holder comprising an arm, a pivoted spring-pressed lever carried by the arm, and a scriber clamp and bolt carried by the lever.

3. A combination tool comprising a stock, a head adjustably mounted thereon, a guard also adjustably mounted upon the stock and embodying a plate provided with ledges, a clamping screw carried by one ledge, a hand or pointer carried by the other ledge, a graduated scale arranged to engage the clamp, and a scriber carried by one end of the scale.

855,339. PERFORATING AND CREASING ATTACHMENT FOR PRINTING-PRESSES. HENRY G. RAZALL, Milwaukee, Wis. Filed July 6, 1905. Serial No. 268,404.



Claim.—1. The combination with a cylindrical printing-press, of a detachable perforating or creasing machine consisting of a bracket secured to the frame of the press, a pair of shafts mounted in said bracket at the discharge side of the printing-cylinder, perforating or creasing disks secured to the said shafts, and a driving means connecting one of the shafts with the driver of said printing-cylinder.

2. The combination with a cylindrical printing press, of a detachable perforating or creasing machine consisting of a bracket secured to the frame of the press at the delivery end of same, a pair of perforating or creasing disks mounted on shafts, adjustable boxes for the shafts supported in said bracket, and a driving-gear mounted upon one of said shafts in mesh with the driving-gear of the paper-discharge roller of the press.

3. The combination with a cylindrical printing press, of a detachable perforating or creasing machine consisting of a bracket secured to the frame of the press at the delivery end of same, upper and lower shafts adjustably mounted in said bracket, meshed gears on the shafts at one end thereof, perforating or creasing disks adjustably secured to each of said shafts, a driving-gear secured to the upper shaft in mesh with the driving-gear of the paper-discharge roller of the press, and intermediate gears interposed between the last named gear and the printing-cylinder driving-gear.

4. In a perforating mechanism, a wheel provided with a series of radial pins, a pliable metallic cylindrical bed in the path of said pins, and a smoothing-roller in opposition to said bed.

5. In a perforating mechanism, a wheel having a series of radial pins, a drive shaft for the wheel, a soft metallic cylindrical bed in opposition to the pins, a shell for said bed and a shaft for the shell, means for adjusting said shell longitudinally of the shaft, and a smoothing-roller in opposition to the aforesaid bed.

855,340. SKIRT STAY AND FASTENER. WILSON H. REGNER, York, Nebr., assignor of one-half to Wilson H. Regner and one-half to Philip J. Haas, York, Nebr. Filed June 29, 1906. Serial No. 324,035.

Claim.—1. In a device of the character described, two inwardly curved stay members constructed of spring steel, and a headed pin projecting from one of said stays, the other stay having an inwardly turned end provided with an oblong eye through which the head of said pin is adapted to pass in pivotally connecting the stay members together.



2. In a device of the character described, spring steel stay members pivotally connected together, belt strips pivoted to the opposite ends of the stays, one of said belt strips being provided with a series of projecting headed pins, the other of said belt strips having its end bent upon itself adjacent to its pivotal connection, and a slot formed therein for engaging any one of said pins.

3. In a device of the character described, two stay members pivoted together, belt strips attached to the opposite ends of the stay members, one of which is provided with a slot having an enlargement, and a plurality of headed pins projecting from the other belt strip, each adapted to be engaged by said slot for the purpose described.

855,341. THIN-PLACE-DETECTOR MECHANISM FOR LOOMS. ROBERT E. RHODEN, Graniteville, S. C. Filed July 13, 1904. Serial No. 216,347.



Claim.—1. A thin place detector comprising a lever, an arm pivotally connected to one end of said lever, a feeler having a spring actuated pivotal connection with said arm, and a finger carried by the arm and adapted to engage a projection upon the reed cap.

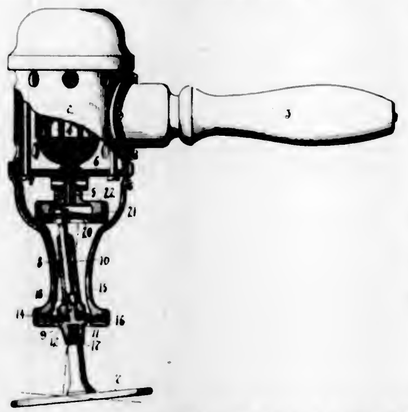
2. A thin place detector comprising a lever pivoted to the breast beam, an arm pivoted to one end of said lever, a spring actuated pin carried at the end of said arm, the feeler adjustably connected to said pin and a finger carried by the arm and adapted to engage a bunter arranged upon the reed cap.

3. The combination with a lever, adapted to be pivoted to the breast beam of a loom, of an arm pivotally connected to one end of said lever, the outer end of said lever being recessed, a pin arranged transversely in said end, a spring surrounding said pin, one end fastened to the pin and the other to the arm, the feeler adjustably connected to said pin and a finger attached to said arm and adapted to engage a bunter arranged upon the reed cap of a loom.

4. In a thin place detector the combination with an arm, of a pin passed transversely through the end of said arm, a spring surrounding said pin, one end of which is attached to the pin and the other end to the arm, a feeler threaded into the said pin and a projecting finger carried by the arm.

5. In a thin place detector the combination with an arm, of a spring actuated pin carried by said arm and having a threaded bore, a feeler having a point at one end and threaded at the opposite end and screwed into the pin and a finger pivoted to said arm.

855,342. MOVEMENT-CURE DEVICE. LOUIS E. RICHMOND, Cleveland, Ohio, assignor of one-third to Henry J. Hunger and one-third to G. Scheidegger, Cleveland, Ohio. Filed Oct. 4, 1906. Serial No. 337,357.



Claim.—1. In a movement cure device, a power shaft and an applicator having operative connections therewith, and a yielding fulcrum support comprising a flexible diaphragm affixed to said operative connections and adapted to support said applicator.

2. In a movement cure device, a power shaft and an applicator having an actuating member connected therewith, a supporting casing for said parts, and a flexible non-metallic member mounted upon said casing and affixed to said actuating member and adapted to yieldingly support said applicator for vibratory movement.

3. In a movement cure device, an applicator having crank actuating connections and a power shaft therefor, a flexible member adapted to provide a fulcrum support for said applicator connections, and a sound absorbing member intervening said crank connections and said shaft.

4. In a movement cure device, an applicator and a crank member therefor, and a non-metallic support for said crank member adapted to insulate the metallic parts against sound.

5. In a movement cure device, an applicator and a crank member therefor, and a yielding non-metallic sound absorbing base member for said crank member.

6. In a movement cure device, an applicator and a flexible diaphragm providing a yielding fulcrum support therefor and connected therewith to sustain end pressure thereon and power means for operating said applicator.

7. In a movement cure device, an applicator and a flexible diaphragm providing a yielding fulcrum support therefor, operating connections for said applicator, and a sound absorbing member in the line of said connections.

8. In a movement cure device, an applicator and a flexible diaphragm support therefor having an operating member, and a power operated crank member rotatably and slidably engaged with said first member.

9. In a movement cure device, an applicator and a flexible support therefor having a crank operated member affixed thereto, in combination with power means and a flexibly supported crank stem adapted to engage said member.

10. In a movement cure device, an applicator and a flexible diaphragm support therefor, a power shaft and an angularly disposed crank stem and diaphragm member adapted to impart gyratory movement to said applicator.

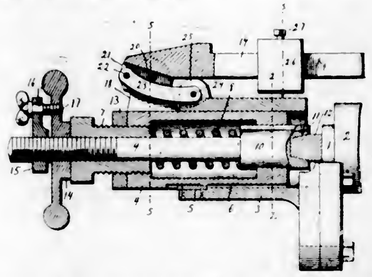
11. In a movement cure device, a casing and power transmitting means supported thereby, in combination with an applicator, operating connections between said power means and said applicator, and a working chamber for said operating connections closed at all points and provided with a diaphragm affixed to both said casing and said operating connection.

12. In a movement cure device, a motor and a casing therefor having a removable cap at one end, a flexible diaphragm removably mounted upon said cap, an applicator supported by said diaphragm, and a crank member operated by said motor and adapted to gyrate said applicator.

13. In a movement cure device, a motor and a casing support therefor having a removable cap at one end, a flexible diaphragm removably mounted upon said cap, a tubular crank bearing and locking nut affixed to said diaphragm, an inclined crank pin carried by said motor and engaged with said bearing, in combination with an applicator adapted to be operatively supported by said parts.

14. In a movement cure device, a motor and a casing having a removable cap, a flexible diaphragm supported by said cap and an applicator operating member supported by said diaphragm, and a crank member having a diaphragm support operatively connected with said motor, in combination with an applicator detachably secured to said applicator operating members.

855,343. QUICK RELEASE FOR GRINDING-MILLS. AARON J. ROBINSON, Fremont, N. H. Filed Mar. 10, 1905. Serial No. 249,419.



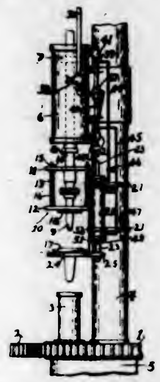
Claim.—1. The combination of a grinding disk, a shaft therefor movable endwise away from working position, means including a spring holding said disk yieldingly to its work, and means brought into action by the yielding movement adapted to progressively lessen the resistance to said movement.

2. The combination of a grinding disk, a shaft therefor movable endwise away from working position, means including a spring holding said disk yieldingly to its work, and means brought into action by the yielding movement adapted to progressively lessen the resistance to said movement and also to return the disk to its working position.

3. The combination of a grinding disk, a shaft therefor movable endwise away from working position, means including a spring holding said disk yieldingly to its work, and a link-connected lever brought into action by the yielding movement adapted to progressively lessen the resistance to said movement.

4. The combination of a grinding disk, a shaft therefor movable endwise away from working position, means including a spring holding said disk yieldingly to its work, a link-connected lever brought into action by the yielding movement adapted to progressively lessen the resistance to said movement, and a weight adjustable on said lever to vary the degree of resistance of said lever.

855,344. APPARATUS FOR MANUFACTURING GLASSWARE. JOHN SCHIES, Anderson, Ind. Filed June 4, 1906. Serial No. 320,062.



Claim.—1. In apparatus for manufacturing glassware, the combination with an upright plunger, of pressed-glass lifting means, said pressed-glass lifting means comprising an upright independent cylinder therefor, a piston in said cylinder, a piston-rod therefor, a laterally extending arm secured to said piston-rod and extending toward the vertical plane of said upright plunger and trips pivoted to said arm to the side of said independent cylinder, substantially as described.

2. In apparatus for manufacturing glassware, the combination with a vertical plunger and plunger-cylinder, of a vertical lift-out and lift-out cylinder, the latter cylinder located in a different vertical plane from the former cylinder, the said lift-out comprising a piston in said lift-out cylinder, a vertical piston-rod depending therefrom, an arm extending laterally from said piston-rod and adjustably secured to said piston-rod, trips pivoted to said arm at both sides of the longitudinal axis of said plunger-cylinder and to the side of said lift-out cylinder, and an adjustable stop on said piston-rod for limiting the upward movement of said lift-out arm with relation to said plunger, substantially as described.

3. In apparatus for manufacturing glassware, the combination with a vertical plunger and plunger-cylinder, of a vertical lift-out and lift-out cylinder, the latter cylinder located in a different vertical plane from the former cylinder, the said lift-out, comprising a piston in said lift-out cylinder, a vertical piston-rod secured thereto, an arm extending laterally from said piston-rod, and trips pivoted to said arm at both sides of the longitudinal axis of said plunger-cylinder and to the side of said lift-out cylinder, an operating valve, and pipes branching from the latter and from each other to the respective ends of both said cylinders, substantially as described.

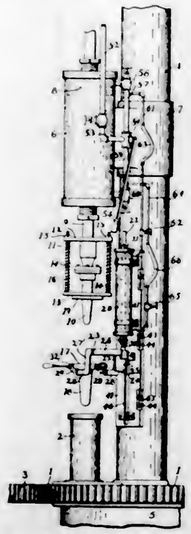
4. In apparatus for manufacturing glassware, the combination with a plunger and plunger-cylinder, of a lift-out and lift-out cylinder, the latter cylinder located in different vertical plane from the former cylinder, said cylinders extending up and down parallel to each other the said lift-out comprising trips located to the sides of the longitudinal axis of said plunger-cylinder and to the side of the longitudinal axis of said lift-out cylinder, and an arm extending laterally from the longitudinal axis of said lift-out cylinder, the said trips being pivoted to said arm, substantially as described.

5. In apparatus for manufacturing glassware, the combination with a vertical plunger and plunger-cylinder, of a vertical lift-out and lift-out cylinder, the latter cylinder located in different vertical plane from the former cylinder, the said lift-out comprising trips located to both sides of the longitudinal axis of said plunger-cylinder and to the side of the longitudinal axis of said lift-out cylinder, and an arm extending laterally from the longitudinal axis of said lift-out cylinder, the said trips being pivoted to said arm, and a stop for limiting the upward movement of the lift-out with relation to the plunger.

6. In apparatus for manufacturing glassware, the combination with a vertical pressing-plunger and operating means therefor, of a lift-out mechanism for the glass-blank comprising an independent vertical cylinder and piston therefor located to the side of said pressing plunger and laterally extending means having connection with said piston for raising the glass-support.

7. In apparatus for manufacturing glassware, the combination with an upright pressing-plunger and plunger-cylinder, of a lift-out mechanism for the glass-blank comprising an independent upright cylinder and piston therefor located to the side of said pressing plunger and laterally extending means having connection with said piston for raising the glass-support, a valve, pipes respectively connecting with each end of each of said cylinders and having connection with said valve, a regulating valve in each of said pipes, and an operating-lever for said first named valve controlling the pressure-supply to both said cylinders, substantially as described.

855,345. APPARATUS FOR MANUFACTURING GLASSWARE. JOHN SCHIES, Anderson, Ind. Filed Dec. 7, 1906. Serial No. 346,778.



Claim.—1. In apparatus for manufacturing glassware, the combination with a press-mold, a glass-support and a plunger and plunger-head in line with each other, of a lifting-head, said press-mold and lifting-head having relative lateral movement between them, said lifting-head having a downwardly opening yoke to the side of said plunger-head and forwardly extending lifting arms extending under said plunger-head, substantially as described.

2. In apparatus for manufacturing glassware, the combination with a press-mold, a glass-support and a plunger and plunger-head, of a lifting-head, said press-mold and lifting-head having relative lateral movement between them, said lifting-head having a downwardly opening yoke to the side of said plunger-head and forwardly extending lifting arms extending under said plunger-head, and trips at the outer ends of said arms arranged to engage said glass-support, substantially as described.

3. In apparatus for manufacturing glassware, the combination, with a press-mold, a glass-support, and a plunger and plunger-head, of a lifting-head for said glass-support, a column to the side of said plunger-head, a lifting-head cylinder located in a vertical plane to the side of said plunger-head and column, and an adjustable support on which said cylinder is mounted adjustably secured to said column.

4. In apparatus for manufacturing glassware, the combination, with a press-mold, a glass-support, and a plunger and plunger-head, of a lifting-head for said glass-support, a column to the side of said plunger-head, a lifting-cylinder located in a vertical-plane to the side of said plunger-head and column, a piston and piston-rod therefor, an adjustable support on which said cylinder is mounted having a guide-way for the piston-rod thereon, and means for securing said last-named support adjustably to said column.

5. In apparatus for manufacturing glassware, the combination with a press-head, a press-mold, and means for moving said mold laterally with relation to the press-head, of a lifting means for the glass-blank comprising a laterally extending lifting-head having a downwardly opening yoke for clearance for the press-mold and forwardly extending arms for clearance for the press-head, with means on said arms for connecting with the glass-support for lifting the latter from the press-mold, and means for reciprocating said head.

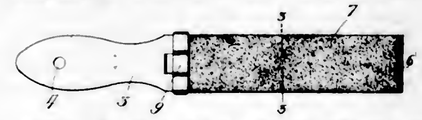
6. In apparatus for manufacturing glass, the combination with a press-head and plunger, a press-mold, and means for moving the press-mold laterally with relation to the plunger, of a lift-out head having a downwardly opening yoke through which the press-mold is adapted to move, the lower ends of the walls of which yoke merge into lateral extensions provided with means at their extremities for connecting with the glass-support for raising the latter with the head, said lateral extensions being provided for clearance by said press-head of said lift-out head, and means for operating said lift-out head up and down, substantially as described.

7. In apparatus for manufacturing glassware, the combination with a press-head and press-mold, a glass-support therefor, means for moving said press-mold laterally with relation to said press-head, and means for moving said press-head up and down, of a laterally extending lifting-head having downwardly extending side-walls between which the press-mold is adapted to pass when the lifting-head is in lowermost position, said side-walls having arms extending therefrom under said press-head for permitting relative movement and clearance between said press-head and lifting-head, means on said arms for forming connection with said glass-support for raising the same, and means for moving said lifting-head up and down, substantially as described.

8. In a machine for manufacturing glassware, the combination with a press-mold, a glass-support therefor, a plunger-head and plunger operating in conjunction with the press-mold, and means for moving said press-mold laterally, of a lifting-head comprising an upper cross-bar having depending shanks at the sides for forming clearance between the lifting-head and press-mold and forwardly extending arms projecting from said shanks at their bottoms and reaching under the press-head for making contact with the glass-support and forming clearance between the press-head and lifting head and permitting relative vertical movement between the same, actuating means located to the side of said press-head for reciprocating said lift-out head, and means for permitting adjusting of said actuating means up and down, substantially as described.

9. In a machine for manufacturing glassware, the combination with a press-mold, a glass-support therefor, a plunger-head and plunger operating in conjunction with the press-mold, and means for moving said press-mold laterally, of a lifting-head comprising a cross-bar having depending shanks at the sides for forming clearance between the lifting-head and press-mold and forwardly extending arms projecting from said shanks at their bottoms and reaching under the press-head for making contact with the glass-support and forming clearance between the press-head and lifting-head for permitting relative vertical movement between the same, a lifting-head cylinder, piston and piston-rod, a support for the same having a guide-way thereon, a guide for said piston-rod guided by said guide-way, and means permitting adjustment of said plate up and down with relation to the press-mold, substantially as described.

855,346. PENCIL-SHARPENER. WILKENS A. SCHENCK, Allegheny, Pa. Filed Oct. 20, 1906. Serial No. 339,872.



Claim.—1. A device of the character described comprising a blade provided with a cutting edge at one end, an abrading element having an engaging member at one end to engage and shield the blade, and means for connecting the free end of the abrading element with the other end of the blade.

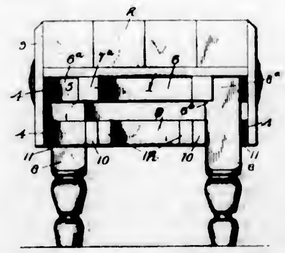
2. A device of the character described comprising a blade provided with a cutting edge at one end, an abrading element having a hook at one end to engage and shield said blade, and fastening means for connecting the free end of the abrading element with the other end of the blade.

3. A device of the character described comprising a blade having a cutting edge at one end, an abrading element provided at one end with a hook to engage and shield the edge of the blade and having a tongue at its opposite end, and a sliding keeper on the blade operative to engage the tongue to secure said abrading element to the blade.

4. A device of the character described comprising a cutting blade, an abrading strip provided at one end with means to engage and shield the cutting edge of the blade, and means for securing the opposite end of said strip to the blade.

5. A device of the character described comprising a cutting blade having a cutting edge at one end thereof, an abrading element embodying a plate provided with a covering of abrasive material, said plate being provided at one end with a hook to engage the cutting edge of the blade and at its opposite end with a tongue, and a sliding keeper on the blade to engage said tongue.

855,347. BUTCHER'S CHOPPING-BLOCK. FREDERICK J. SCHMITT, Petoskey, Mich. Filed Feb. 18, 1907. Serial No. 358,062.



Claim.—1. In a butchers' chopping block, the combination with the top or chopping surface provided with parallel opposed depending sides forming a false bottom therebelow comprising a deep rectangular compartment, of legs therefor, and means for detachably securing said legs to said chopping block within said compartment, with said legs at two of their sides substantially abutting against the inside faces of said depending sides, substantially as described.

2. In a butchers' chopping block, the combination with the top or chopping surface provided with parallel opposed depending sides forming a false bottom therebelow comprising a deep rectangular compartment, of legs therefor, means for detachably securing said legs to said top within

said compartment, with said legs at two of their sides substantially abutting against the inside faces of said depending sides and means for bracing said legs against lateral movement at the base of said compartment, substantially as described.

3. In a butchers' chopping block, the combination with the top or chopping surface provided with sockets on its underneath face and having parallel opposed depending sides forming a false bottom comprising a deep rectangular compartment, of legs detachably fitting within said sockets, with said legs at two of their sides substantially abutting against the inside faces of said depending sides and means for bracing said legs against lateral movement at the bottom of said compartment, substantially as described.

4. In a chopping block, the combination with the top or chopping surface provided with sockets on its underneath face and having depending sides forming a false bottom comprising a deep compartment, of legs detachably fitting within said sockets, and means for bracing said legs against lateral movement at the bottom of said compartment, comprising corner braces secured to said sides and forming therewith pockets inclosing said legs, substantially as described.

5. In a chopping block, the combination with the top or chopping surface provided with sockets on its underneath face and having depending sides forming a false bottom comprising a deep compartment, of legs detachably fitting within said sockets, and means for bracing said legs against lateral movement at the bottom of said compartment, comprising a frame work formed from cross bars abutting at their ends against opposite sides of said compartment and at their adjacent ends forming with said sides pockets for the reception of said legs, substantially as described.

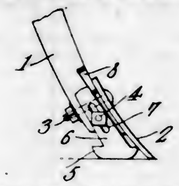
6. In a chopping block, the combination with a base, of a top or chopping surface mounted on said base and formed of blocks glued together, facing members secured to the sides and ends of said blocks for protecting them against separation and depending below said top forming a false bottom comprising a compartment, a bracing frame comprising intersecting bars secured within said compartment adjacent said base and forming sockets with said facing members, legs fitting in said sockets, and means for bracing said legs against lateral movement at the bottom of said compartment, substantially as described.

7. In a chopping block, the combination with a base, of a top or chopping surface mounted on said base and formed of blocks glued together, facing members secured to the sides and ends of said blocks for protecting them against separation and depending below said top forming a false bottom comprising a compartment, a bracing frame comprising intersecting bars secured within said compartment adjacent said base and forming sockets with said facing members, legs fitting in said sockets, and means for bracing said legs against lateral movement at the bottom of said compartment, comprising a second frame formed from intersecting cross bars and forming with said facing members pockets for the reception of said legs, substantially as described.

8. In a chopping block, the combination with a base, of a top or chopping surface mounted on said base and formed of blocks glued together, facing members secured to the sides and ends of said blocks for protecting them against separation and depending below said top, forming a false bottom comprising a compartment, a bracing frame comprising intersecting bars secured within said compartment adjacent said base and forming sockets with said facing members, legs having squared ends recessed to form a tenon fitting said sockets, and a second bracing frame secured within said compartment at the bottom thereof and forming with said facing members pockets for the reception of said legs, substantially as described.

855,348. ADJUSTABLE PLOW-HEEL. GEORGE W. SIMMONS, Yellow River, Ga. Filed Apr. 26, 1907. Serial No. 370,438.

Claim.—A plow heel adapted to be applied to the side of a plow standard and in the rear of the plow point comprising a metallic body having a rectangular section with a side section extending at a right angle to the breadth of the first said section, said side section having an elongated



perforation adapted to receive a bolt, the first said section having its longitudinal axis extending at an acute angle with the longitudinal axis of the said side.

855,349. THREAD-GUIDE. GEORGE SINGLETON, Dover, N. J. Filed May 31, 1906. Serial No. 319,467.



Claim.—1. The combination of a thread-guide rail, a thread-guide resting against the same, and a clamp having a part thereof rebent in the form of a socket receiving the rail and another part thereof bearing against the thread guide and pressing the same against the rail, substantially as described.

2. The combination of a thread-guide rail, a thread-guide resting against the same, and a clamp having a part thereof rebent in the form of a socket receiving the rail and bearing against opposite sides thereof, and another part thereof bearing against the thread guide and pressing the same against the rail, substantially as described.

3. The combination of a thread-guide rail, a thread-guide resting against the same, and an elastic clamp having a part thereof rebent in the form of a socket receiving the rail and bearing against opposite sides thereof and another part thereof bearing against the thread-guide and pressing the same against the rail, substantially as described.

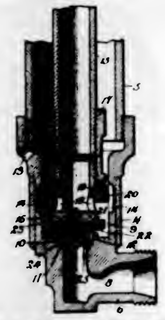
4. The combination of a thread-guide rail, a thread-guide resting against the same, and a wire clamp bent to form a rebend receiving the rail and bearing against opposite sides thereof and having its extremities bearing against the thread-guide and pressing the same against the rail, substantially as described.

5. The combination of a thread-guide rail, a thread-guide resting against the same and grooved on its top side, and a wire clamp bent to form a rebend receiving and bearing against opposite sides of the rail and having its extremities bearing against the thread-guide in the groove thereof and pressing the same against the rail, substantially as described.

855,350. HYDRANT. JAMES W. SINGMASTER, Macungie, Pa., assignor of one-half to Horace F. Neumeyer, Macungie, Pa. Filed Aug. 18, 1905. Serial No. 274,755.

Claim.—1. In a hydrant, the combination with a casing having a liquid passageway including a counterbored portion forming a valve seat, of a stem having a shank longitudinally movable in the passageway, a valve disk slidably mounted on the shank and movable into and out of engagement with the seat to close the liquid passageway, and a compressible and expansible collar mounted on the shank behind the disk, said collar being expanded and compressed against the walls of the counterbore when the disk is seated.

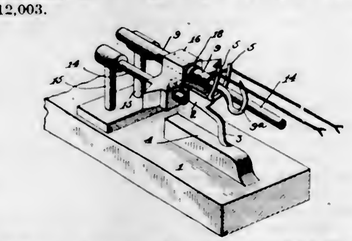
2. In a hydrant, the combination with a casing having a passageway and spaced valve seats surrounding the same, of relatively movable valves co-operating with the seats, and a yielding device interposed between the valves and maintaining them in separated condition, said device being expanded against the walls of the passageway when the valves are relatively moved toward each other and seated.



3. In a hydrant, the combination with a casing having a passageway and spaced valve seats surrounding the same, of a stem operating longitudinally of the portion of the passageway having the seat, valves carried by the stem and co-operating with the seat, one of the valves being slidable upon said stem, and a compressible and expansible device separating the valves and being longer than the distance between the seats, said device being compressed and expanded against the walls of the passageway when the valves are seated and the sliding valve is thereby moved toward the other valve.

4. In a hydrant, the combination with a casing having a water inlet passageway including an upwardly extending portion provided at its upper end with a counterbore, of a valve seat at the lower end of the counterbore and a valve seat at the upper end of the same, a stem slidably mounted in the casing and having a valve at its lower end that co-operates with the upper valve seat to close the passageway therethrough, a shank carried by the free end of the stem, a valve disk slidably mounted on said shank and co-operating with the lower valve seat to close the passageway therethrough, and a compressible and expansible collar interposed between the valves, said collar constituting a side-seating valve that is expanded against the side walls of the counterbore when the valves are seated.

855,351. BANDING-MACHINE. THOMAS A. SIZEMORE, Greenville, S. C. Filed Apr. 16, 1906. Serial No. 312,003.



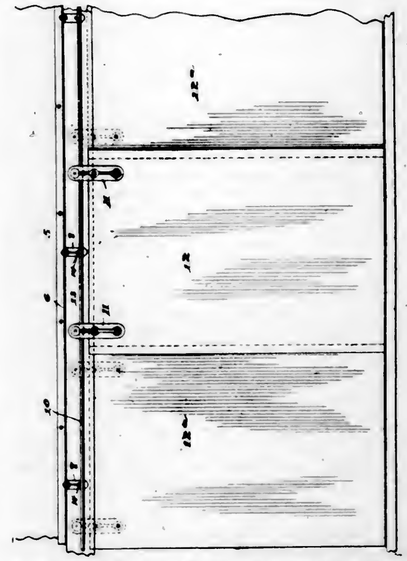
Claim.—1. In combination with a machine of the type set forth, carrying a sliding head and a final twister shaft journaled therein, of a supplemental hook adapted to hold the strands while being preliminarily twisted, and means whereby the strands are delivered therefrom into the final twister hook immediately before the final twisting action begins.

2. In combination with a banding machine of the class set forth, embodying a final twister hook, means for supporting the band adjacent to the final twister hook during part of the initial twisting operation and for transferring it to the final twister hook while the initial twisting operation is going on, for the purpose set forth.

3. In combination with a machine of the class set forth, embodying a sliding head carrying a final twister shaft and hook, an auxiliary hook carried by said head, and means whereby the partially twisted band is transferred from this auxiliary hook to the final twister hook during the twisting operation.

4. In combination with a machine of the class set forth, embodying a sliding head carrying a twister shaft and hook, an auxiliary hook pivoted to the head underneath the twister shaft and carrying a prong-like hook straddling the twister shaft and extending above the same, a stationary cam supported on the bed in the line of travel of the head, and a foot carried by the auxiliary hook, said cam adapted to actuate said foot to raise and lower the auxiliary hook, for the purpose set forth.

855,352. DOOR-HANGER. HENRY C. SMITH, Chicago, Ill., assignor to Allith Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Sept. 24, 1906. Serial No. 335,904.



Claim.—1. In a door hanger, the combination with a bracket suspended from the upper margin of the door opening, a track supported thereby, a hanger mounted to travel on said track, and a door suspended by said hanger, of a strip secured to said bracket and closing the space between the upper edge of the opening and the top of the door, substantially as described.

2. In a door hanger, the combination with a bracket suspended from the upper margin of the door opening, a track supported thereby, a hanger mounted to travel on said track, and a door suspended by said hanger, of a strip secured to said bracket with its upper edge engaging the upper margin of the door opening and its lower edge overlapping the upper end of the door, substantially as described.

3. In a door hanger, the combination with a pair of oppositely extending brackets suspended from the upper margin of the door opening, of tracks carried by said

brackets, hangers mounted on said tracks, doors suspended by said hangers, and a parting strip interposed between said brackets and closing the space between the upper edge of the opening and the tops of the doors, substantially as described.

4. In a door hanger, the combination with a pair of oppositely extending brackets suspended from the upper margin of the door opening, of tracks carried by said brackets, hangers mounted on said tracks, doors suspended by said hangers, and a parting strip secured to and between said brackets with its upper edge engaging the upper margin of the door opening and its lower edge extending below and between the upper margins of the doors, substantially as described.

855,353. POST-FORMING DEVICE. WILLIAM E. SNYDER, Lagrange, Ind. Filed Nov. 6, 1906. Serial No. 342,201.



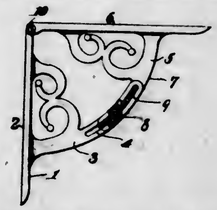
Claim.—1. A device for forming posts of cementitious materials, consisting of upright side plates or walls, arched and hinged bridge bars connecting the upper edges of the same, a locking bar pivotally secured to the end of one of the side walls and a keeper on the end of the other side wall through which said pivoted locking bar passes.

2. A device for forming posts of cementitious materials, consisting of upright side plates, hinged bridge bars connecting the upper edges of the same, and outwardly and upwardly extending handles projecting from said side walls for lifting and spreading the said side walls apart.

3. A device for forming posts of cementitious materials, consisting of upright side plates or walls, hinged bridge bars connecting the upper edges of the same, a notched locking bar pivotally secured at one end to the end of one of said side walls, and a keeper on the adjacent end of the other side wall through which said notched locking bar is guided to lock the side walls in operative position.

4. A device for forming posts of cementitious materials, consisting of upright side plates or walls, upwardly and inwardly bent bars projecting from the upper edges of the side bars, and pivotally secured together at their inner ends, upwardly extending handles projecting from the outer surface of the side walls, and means at the end of said walls for locking the same in operative position and also permitting spreading of said side walls, whereby when force is exerted upwardly on said handles the side walls will be raised and simultaneously spread apart.

855,354. BRACKET. FRANK B. SOUCEY, Collegeview, Nebr. Filed July 5, 1906. Serial No. 324,875.



Claim.—A bracket consisting of a wall plate and a shelf plate hinged together at one end, each of said plates being provided with an integral brace section, the free ends of the brace sections being adapted to overlap, and means for adjustably connecting said sections together.

855,355. HIGH-POTENTIAL INSULATOR. LOUIS STEINBERGER, New York, N. Y. Filed Sept. 12, 1906. Serial No. 334,277.



Claim.—1. A device of the character described, comprising an insulator body provided with a hood integral therewith, said hood being fashioned at its bottom so as to present oppositely disposed sloping edges terminating in drip points.

2. A device of the character described, comprising a member of insulating material, a hood mounted thereupon and provided with means for discharging moisture at predetermined points only, said member being provided with a base and with aprons depending from said base, said hood being downwardly sloped to points at opposite sides and said points being outside the vertical plane of the base.

3. A device of the character described, comprising a pin body, a strengthening member mounted centrally therein, and provided with an enlarged portion serving as an anchorage, and hoods mounted integrally upon said pin body at points adjacent to said enlarged portion of said strengthening member, and bracing portions for strengthening said hood relatively to said pin body at points adjacent to said enlarged portion of said strengthening member.

4. A device of the character described, comprising a hood provided with an annular rib and spaced from the body, the said annular rib projecting downwardly below the seat of the hood and with radial portions extending outwardly from said annular rib for the purpose of strengthening said hood.

5. A device of the character described, comprising a hood of insulating material provided with an annular strengthening rib and with an annular air space encircled by said rib, said rib being further provided with radially disposed bracing portions extending outwardly from said annular strengthening rib the lower edges of said radial ribs ranging upwardly and outwardly from the annular rib.

6. A high potential insulator, comprising a hood provided with an outer edge and with drip points mounted upon said hood and nearer to the center thereof than said outer edge, and means for supporting said hood.

7. A high potential insulator, comprising a hood provided upon its under face with a plurality of drip points arranged in rows, said rows being concentric with each other, and means for supporting said hood.

8. A high potential insulator, comprising a hood of insulating material provided with a plurality of drip points arranged in rows, the drip points of one row being staggered relatively to those of another row, and means for supporting said hood.

9. A high potential insulator, comprising a hood provided with drip points arranged in a plurality of rows, the drip points of one row being alternated between the intervals of the drip points of another row, said hood being further provided inside of the innermost row with means for preventing the travel of moisture, and means for supporting said hood.

10. A high potential insulator, comprising a hollow stem forming a body portion, a hood mounted integrally thereupon, and a cuneiform base integral with said body portion and provided with aprons for protecting a portion of the cross arm from moisture the hollow body portion accommodating a securing pin.

11. A device of the character described, comprising a hood provided with radial rib portions for the purpose of strengthening and supporting the outer portions of said hood the said ribs at their lower edges ranging in an outward and upward direction.

12. A device of the character described, comprising a support, and a member of insulating material mounted thereupon and provided with a hood, said hood having edges sloping obliquely outward from each other and terminating in drip points.

13. An insulator, comprising a hood provided with a plurality of drip points, and with radial ribs disposed at a series of points between the drip points and forming barriers separating the said points into separate groups.

14. In an insulator, a hood having drip points on its under side and an annular depending member at a point inside the drip points, and a second hood below the first hood and projecting outward beyond the said annular depending member.

15. A high potential insulator, comprising a central supporting pin provided with a threaded boss and with channels crossing each other, a hood threaded internally and mounted upon said boss, and a portion of cement filling said channels and securing said hood to said boss the channels extending across the top of the pin and downward at the sides to a point above the threads, and the hood having an aperture through it leading to the channel.

16. An insulator, provided with a base and a hood, said hood being downwardly sloped to points at opposite sides and said points being outside the vertical plane of the base.

17. An insulator provided with drip points arranged in staggered positions.

18. An insulator having radially disposed drip members, the lower edges of which range from the inside in an outward and upward direction.

19. As an article of manufacture, an insulator hood provided with a groove on its upper surface and with an aperture in its under surface, and further provided with a smaller aperture extending from said groove to said first-mentioned aperture.

20. In an insulator, a detachable hood of insulating material provided on its under face with a shoulder for engaging a seat, an annular depending member encircling said shoulder and projecting below the latter, said annular depending member being separated from said shoulder by an air space extending upward beyond said shoulder.

21. In an insulator, a hood of insulating material provided on its under face with a shoulder and with an annular depending member extending below said shoulder and separated therefrom by an air space, said air space being partly above and partly below said shoulder, the under surface of the hood outside of the annular depending member being provided with studs forming drip points.

22. In an insulator, a hood of insulating material provided on its under face with a shoulder and with an annular depending member extending below said shoulder and separated therefrom by an air space, said space extending above and below said shoulder, said hood being further provided with radial ribs, the lower edges of which incline upwardly and outwardly from the annular depending member.

23. In an insulator, a hood of insulating material provided on its under face with a shoulder and with an annular depending member extending below said shoulder and separated therefrom by an air space, said air space extending above and below said shoulder, said hood being further provided outside of the annular depending member with studs forming drip points and with radial ribs separating said drip points into groups and forming barriers therebetween, said ribs joining the annular depending member and the lower edges of the ribs ranging in an upward and outward direction.

24. In an insulator, a hood of insulating material of disk-like form and having a central portion rising therefrom, said hood having an air space of a general annular form, and a strengthening ring mounted upon said hood.

25. An insulating hood provided on its exterior with a strengthening ring having an upwardly extending inner portion overhanging toward the top, said ring having an outwardly extending lower portion projecting beyond the upwardly-ranging and overhanging portion.

26. An insulator hood having a disk-like portion provided with an annular air space and with a strengthening ring disposed adjacent to said air space.

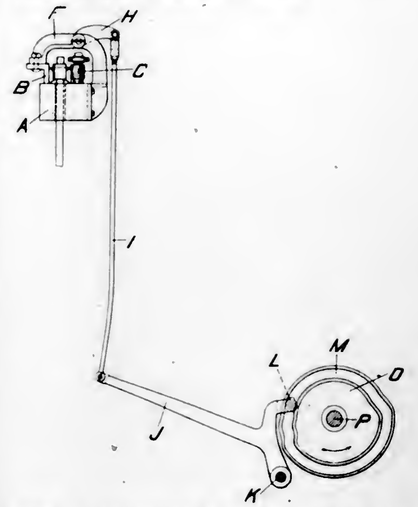
27. A laterally-extending insulator provided with an edge and with a broad under surface provided with drip points, said drip points being disposed intermediate said edge and the center of said insulator.

28. An insulator provided with radially-disposed members, and groups of drip points between said members and separated thereby, said drip points being studded upon a flat surface.

29. An insulator hood provided with a comparatively wide disk-like portion and with a central portion projecting upwardly therefrom, and a strengthening member encircling said upwardly-projecting portion and extending laterally a little distance so as to follow the surface of said disk-like portion.

30. A hood provided with a flattened surface, the latter being studded by a plurality of drip points disposed intermediate the edge of said hood and the center thereof.

855,356. SHUTTLE-CHANGING LOOM WITH SWINGING FRONT-PLATE FOR THE SHUTTLE-BOX. EDWARD S. STIMPSON, Hopedale, Mass., assignor to Draper Company, Portland, Me., a Corporation of Maine. Filed Mar. 8, 1906. Serial No. 304,853.



Claim.—1. An automatic shuttle-changing loom having, in combination, a front-plate for the shuttle-box at the supply side of the loom which swings both up and down and fore and aft, and positive means for swinging the front-plate in both directions.

2. An automatic shuttle-changing loom having, in combination, a front-plate for the shuttle-box at the supply side of the loom which swings up and down and fore and aft on a horizontal axis substantially parallel with the length of the lay, said axis being over the rear plate of the shuttle-box and sufficiently forward to enable the lower

rear edge of the front-plate when elevated to be forward of the front edge of the race-plate of the lay, and means for positively moving said front-plate in both directions.

855,357. EXCAVATOR. OLTMANN STRENGE and WUBBO K. STRENGE, Elisabethfehn, near Augustfehn, Germany. Filed Oct. 30, 1905. Serial No. 285,184.



Claim.—1. An excavator for peat or the like material comprising an upright chain frame, an endless chain supported on said frame, means for actuating the endless chain about the frame, lifting buckets secured to the chain, means for progressively moving the frame at right angles to the movement of the buckets cutters attached to the chain and interposed between the buckets, said cutters extending obliquely outward on both sides of the buckets whereby in one displacement or movement of the chain frame transversely to the path of the chain and buckets the excavator is capable of cutting a section or strip from the wall of peat of sufficient height to obtain a uniform mixture of the peat independent of the variable height of the peat layers.

2. An excavator for peat or the like material comprising an upright chain frame, an endless chain supported on said frame, means for actuating the endless chain about the frame, lifting buckets secured to the chain, means for progressively moving the frame at right angles to the movement of the buckets consisting of a screw spindle engaging a nut having a universal connection with the chain frame, the free end of the spindle being supported in a bearing capable of vertical and lateral displacement, cutters attached to the chain and interposed between the buckets, said cutters extending obliquely outward on both sides of the buckets whereby in one displacement or movement of the chain frame transversely to the path of the chain and buckets the excavator is capable of cutting a section or strip from the wall of peat of sufficient height to obtain a uniform mixture of the peat independent of the variable height of the peat layers.

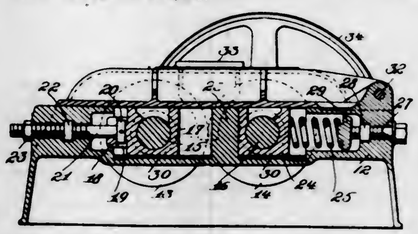
3. An excavator for peat or the like material comprising an upright chain frame, an endless chain supported on said frame, means for actuating the endless chain about the frame, lifting buckets secured to the chain, means for progressively moving the frame at right angles to the movement of the buckets, consisting of a screw spindle engaging a nut having a universal connection with the chain frame, the free end of the spindle being supported in a bearing capable of vertical and lateral displacement, means for automatically reversing the screw spindle, cutters attached to the chain and interposed between the buckets, said cutters extending obliquely outward on both sides of the buckets whereby in one displacement or movement of the chain frame transversely to the path of the chain and buckets the excavator is capable of cutting a section or strip from the wall of peat of sufficient height to obtain a uniform mixture of the peat independent of the variable height of the peat layers.

4. An excavator for peat or the like material comprising a chain frame, an endless chain supported on said frame, means for actuating the endless chain about the frame, lifting buckets secured to the chain, means for progressively moving the frame at right angles to the movement of the buckets, cutters attached to the chain and interposed between the buckets, said cutters extending obliquely outward on both sides of the buckets whereby in one displacement or movement of the chain frame transversely to the path of the chain and buckets the excavator is capable of cutting a section or strip from the wall of peat of sufficient height to obtain a uniform mixture of the peat independent of the variable height of the peat layers, means for displacing the excavator as a whole with its operating mechanism in the direction of the path of the endless chain or substantially at right angles to the direction of movement of the chain frame.

5. An excavator for peat or the like material comprising an upright chain frame, an endless chain supported on said frame, means for actuating the endless chain about the frame, lifting buckets secured to the chain, means for progressively moving the frame at right angles to the movement of the buckets, consisting of a screw spindle engaging a nut having a universal connection with the chain frame, the free end of the spindle being supported in a bearing capable of vertical and lateral displacement, means for automatically reversing the screw spindle, consisting of a reversing rod controlling the means for actuating the chain frame and adjustable stops on the rod engaged by the chain frame, cutters attached to the chain and interposed between the buckets, said cutters extending obliquely outward on both sides of the buckets whereby in one displacement or movement of the chain frame transversely to the path of the chain and buckets the excavator is capable of cutting a section or strip from the wall of peat of sufficient height to obtain a uniform mixture of the peat independent of the variable height of the peat layers.

6. An excavator for peat or the like material comprising an upright chain frame, an outer support *w'* and an inner support *w* adapted to receive the weight of the chain frame, a motor truck, means for transmitting the weight of the inner support *w* to the motor truck, an endless chain supported on said frame, means for actuating the endless chain about the frame on said truck, lifting buckets secured to the chain, means for progressively moving the frame at right angles to the movement of the buckets, cutters attached to the chain and interposed between the buckets, said cutters extending obliquely outward on both sides of the buckets whereby in one displacement or movement of the chain frame transversely to the path of the chain and buckets the excavator is capable of cutting a section or strip from the wall of peat of sufficient height to obtain a uniform mixture of the peat independent of the variable height of the peat layers.

855,358. ROLL CRUSHING-MACHINE. THOMAS L. STURTEVANT, Quincy, and THOMAS J. STURTEVANT, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed Apr. 3, 1906. Serial No. 309,608.



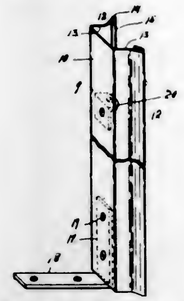
Claim.—1. In a roll crushing machine, the combination with a machine frame having open topped recesses, of a crushing roll rigidly mounted on said machine frame, a second crushing roll, bearing boxes for said second crushing roll yieldingly mounted for sliding movement in said recesses, and a cover over said rolls and extending over the tops of said recesses, said cover thus providing upper guideways for said yielding bearing boxes.

2. In a roll crushing machine, the combination with a machine frame having open-topped recesses, of a pair of crushing rolls, shafts by which said rolls are carried, bearing boxes for one of said shafts rigidly mounted on said machine frame, a pair of bearing boxes for the other of said shafts yieldingly mounted in said recesses, and a hinged cover over said rolls, said cover thus providing upper guideways for said bearing boxes; whereby when the said hinged cover is lifted or thrown back convenient access to said rolls and said bearing boxes is afforded.

3. In a roll-crushing machine, the combination with the machine frame the side portions of which are provided with suitable open-topped recesses and with projections or abutments between said recesses, of two rolls, two shafts by which said rolls are carried, bearing boxes for said shafts located on opposite sides of said projections or abutments, springs for yieldingly holding the bearing boxes of one of said shafts against the said projections or abutments, to force one of said rolls yieldingly toward the other roll, and a hinged cover over said rolls closing the tops of said recesses and providing upper guideways for said bearing boxes.

4. In a crushing machine having crushing rolls, the combination with a side frame having a longitudinal recess, of a bearing box for one of said rolls movable in said recess, and an adjusting screw having a positive threaded connection with said frame, said screw having a head positively but rotatively engaging said bearing box, and said head being provided with means by which it may be turned to rotate said screw and thereby effect a positive adjustment of said bearing box in either direction.

855,359. REMOVABLE GUIDE FOR METAL WINDOW-SASH. FLETCHER D. SWANEY, Denver, Colo., assignor of one-half to Frederick Stapp, Denver, Colo. Filed July 27, 1906. Serial No. 328,033.



Claim.—1. A window sash provided with a detachable guide adapted to enter the groove of the frame, said guide having outwardly flared portions with inwardly bent lips.

2. A metal window sash provided with a removable guide, the guide being connected with one extremity of the sash whereby it is conveniently accessible for purposes of removal, said guide having outwardly flared side portions adapted to enter the grooves of the window frame.

3. A window sash provided with vertical grooves, and guides removably connected with the opposite sides of the sash and engaging the grooves thereof but protruding therefrom whereby they are adapted to enter the grooves of the frame, said guides having outwardly flared side parts with inwardly bent lips.

4. A metal window sash, in combination with a removable guide applied to the side rail of the sash and adapted to enter the groove of the frame, the said guides having outwardly flared side portions with inwardly bent lips.

5. A metal window sash provided with a removable guide engaging the side rail of the sash and having outwardly projecting sides provided with outwardly flared portions with inwardly bent lips adapted to enter the grooves of a window frame.

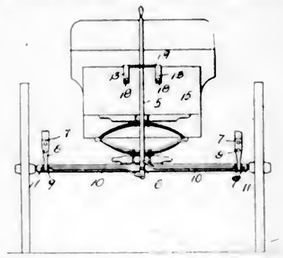
6. A window sash provided with removable guides connected with its side rails and adapted to enter the grooves of the frame, but which when detached shall permit the removal of the sash from the frame, said guides having outwardly flared portions, with inwardly bent lips.

7. A metal window sash whose side rails are provided with outwardly flared side parts with inwardly bent lips adapted to enter the grooves of the window frame.

8. A metal window sash provided with side parts having outwardly flared portions provided with inwardly bent lips.

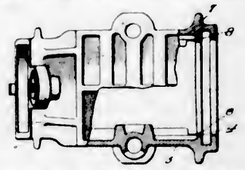
9. A metal window sash whose side rails are provided with outwardly flared resilient side parts with inwardly bent lips adapted to enter the grooves of the window frame.

855,360. HORSE-RELEASER. MARTIN L. SWINGLE, Roseville, Ohio. Filed Mar. 6, 1907. Serial No. 360,882.



Claim.—The combination with a vehicle axle and a thill adapted for connection therewith, of a lever pivoted upon the axle, bolt rods pivotally connected with the lever, and a rack carried by the dash-board of the vehicle for co-operation with the lever, said rack comprising a plate formed of resilient sheet metal bent for frictional engagement over the upper edge of the dash-board, said plate having a portion extending forwardly above the upper edge of the dash-board and stamped up to form rack teeth for the engagement of the lever and a guard member which is located in a common plane with the teeth and extends in advance of the same.

855,361. RAILROAD JOURNAL-BOX. THOMAS H. SYMINGTON, Baltimore, Md., assignor to The T. H. Symington Company, Baltimore, Md., a Corporation of Maine. Filed June 29, 1905. Serial No. 267,555.



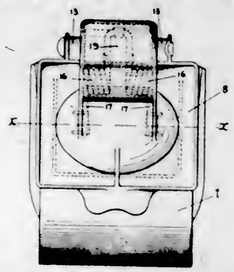
Claim.—A journal box of standard type, having an inner and an outer wall to the dust guard well apertured to receive an axle, the axle aperture in the inner wall being of a horizontal diameter less than the horizontal diameter of the aperture in the external wall so that the inner wall will receive the impact of the axle when it is displaced laterally from its normal position in the box, and a strengthening rib on the exterior of the box in the same vertical plane as the interior wall of the dust guard well, substantially as described.

855,362. LID FOR JOURNAL-BOX. THOMAS H. SYMINGTON, Baltimore, Md., assignor to The T. H. Symington Company, Baltimore, Md., a Corporation of Maine. Filed Jan. 9, 1906. Serial No. 295,295.

Claim.—1. In a journal box the combination of a hinged lid, an independent torsional spring mounted upon the interior of the lid, but detachable therefrom, although secured thereto, and which contacts with the cam surface upon the box to hold the lid upon its seat.

2. In a journal box the combination of a lid attached

to the box, with a torsional spring interposed between the lid and the box and a cam on one of said parts co-operating with the spring to hold the lid upon the seat.



3. In a journal box, the combination of a lid secured to the box and bearing upon a seat thereon, with a torsional spring one end of which bears upon the box and acting upon a cam on the box and the other end upon the lid and holds the lid upon its seat.

4. In a journal box the combination of a lid which is hinged to the box above the opening, a torsional spring attached to the interior surface of the lid, a cam surface upon the box bearing upon the free end of the spring carried by the lid, and adapted to maintain said spring under tension, whereby the lid may be pressed upon its seat on the box.

5. In a journal box the combination of a lid hinged to the box and engaging a seat, an independent torsional spring maintained on the lid by its own tension, and bearing upon a cam on the box while under tension to press the lid upon its seat on the box.

6. In a journal box having an opening the combination of a lid designed to close the opening hinged to the box, the box portion of the hinge being beveled away from the lid upon the sides, the lid portion of the hinge being provided with lips which may be bent into contact with sides of the box portion when the lid is closed, and which by virtue of the bevels of the sides of the box portion will clear them as the lid is opened.

7. In a journal box the combination of a lid with a double torsional spring acting upon a cam on the box, each leg being coiled, and bent so as to form a loop between them, the free ends being so bent as to hold themselves in place by their own elasticity.

8. In a journal box the combination of a lid having a central housing and two inwardly projecting hooked lugs the hooks being located opposite each other, with a double torsional spring having a central lip and two coil legs, the coils of the spring being seated in the housing of the lid and the free legs of the spring being seated and held by the hooks upon the interior of the lid, the lip of the spring being free to exert pressure upon the box, substantially as described.

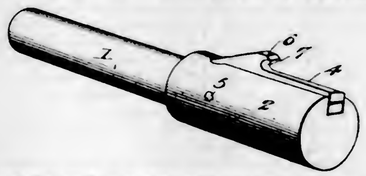
9. A journal box lid hinged to the box, the pintle of the hinge having its free end clenched upon the hinge lug of the lid, so as to be fast thereto and to turn therewith.

10. In a journal box the combination of a lid hinged thereto, by a lug on the box and two lugs on the lid, one of the lid lugs being provided with a notch on its exterior surface, and a pintle passing through the hinge lugs and having its free end clenched into the notch on the exterior of the lid lug, whereby the pintle will be secured in the hinge and held fast to the lid.

855,363. FLUE-BEATER TOOL. LEWIE A. TINNES, Bird Island, Minn. Filed Mar. 16, 1907. Serial No. 362,681.

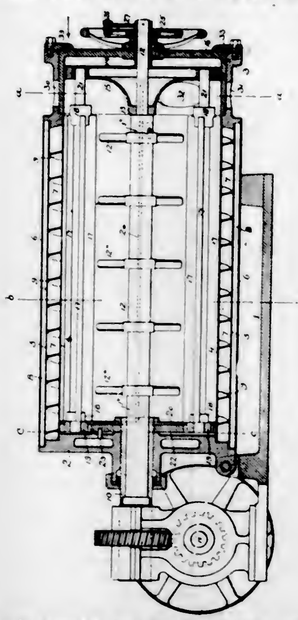
Claim.—1. A flue working device comprising a shank having a head provided with a longitudinal laterally opening slot, a tool movably arranged in said slot and provided with a projecting portion having an undercut forming surface, and a spring arranged beneath the tool for pressing the same yieldably to active position.

2. A flue beating device comprising a body provided with a longitudinally extending laterally opening slot, a tool pivoted in said slot and having a laterally extending portion provided with concaved surface for operating on



the expanded end of a flue, and a spring arranged beneath the tool for pressing the latter yieldably to active position.

855,364. ICE-CREAM FREEZER. FRANK TYSON, Canton, Ohio. Filed May 14, 1906. Serial No. 316,805.



Claim.—1. A rotary horizontal ice cream freezer, having, at the same end, inlet and outlet, both opening directly into the freezing chamber, a valve controlling said outlet, and means located at the said end for operating said valve whereby the condition of the contents of the latter may be observed through said inlet opening and the cream supply and delivery of frozen cream controlled by the operator at the said end of the machine without changing his position.

2. A rotary ice cream freezer having both inlet and discharge ports at the same end, and a single valve controlling both of said ports.

3. A rotary ice cream freezer having both inlet and discharge ports at the same end, and a single valve having but one port and controlling both the inlet and discharge ports of the freezer.

4. A rotary ice cream freezer comprising a cylindrical freezing vessel with inlet and discharge ports at the same end, and a valve closing said end of the freezing vessel and controlling said inlet and discharge ports.

5. A rotary ice cream freezer having a cylindrical freezing vessel, and a blade therein adjustable either into line with the axis of the vessel or to a spiral position, so as to serve as an ejector.

6. A rotary ice cream freezer having a cylindrical freezing vessel, an ejector plate therein, and means for imparting to one end of said plate a partial turn around the axis of the freezing vessel without corresponding movement of the other end of the plate.

7. A rotary ice cream freezer having a cylindrical freezing vessel, an ejector blade therein, fixedly mounted at one end and a carrier engaging the other end of said blade, and mounted so as to be susceptible of a partial turn around the axis of the freezing vessel.

8. A rotary ice cream freezer having a cylindrical freezing vessel, an ejector blade therein fixedly mounted at one end, and a carrier loosely engaging the other end of said blade, and mounted so as to be susceptible of a partial turn around the axis of the freezing vessel.

9. A rotary ice cream freezer comprising a cylindrical vessel with inlet and discharge ports at one end, a controlling valve for said ports fitting said end of the freezing vessel, a carrier mounted so as to be susceptible of a partial turn in said valve, and an ejector blade engaging said carrier.

10. A rotary ice cream freezer having a cylindrical freezing vessel, an ejector blade therein free to move at one end independent of the other end, and a carrier engaging said independently movable end of the blade and having an axial extension projecting to the outside of the freezing vessel, whereby it may be turned.

11. A rotary ice cream freezer having oppositely disposed and movably mounted scrapers, and means connecting a movable portion of one scraper to a corresponding movable portion of the other scraper, whereby movement of one scraper independently of the other is prevented, and joint, simultaneous and similar action of the scrapers is effected.

12. A rotary ice cream freezer having a cylindrical freezing vessel, a central shaft having projecting beater arms, set diagonally in respect to the axial line of the shaft, a combined beater and scraper mounted adjacent to the inner wall of the freezing vessel, and means for rotating the central shaft and the combined beater and scraper independently but in the same direction about the axis of the freezing vessel.

13. A rotary ice cream freezer having a cylindrical freezing vessel, a central shaft having projecting beater arms disposed diagonally in respect to the axial line of the shaft, a combined beater and scraper mounted adjacent to the inner wall of the freezing vessel, means for rotating the central shaft and the combined beater and scraper independently but in the same direction about the axis of the freezing vessel, and means for rotating said combined beater and scraper about its own axis independently of its rotation about the common axis.

14. A horizontal ice cream freezer having a stationary freezing vessel, and rotating scraping and agitating mechanism therein, said freezing vessel having inlet and discharge openings at the same end communicating directly with the freezing chamber, a valve controlling said outlet and means located at said end of the machine for operating the said valve, whereby the condition of the contents of the chamber may be observed through said inlet opening and the cream supply and delivery of the frozen cream controlled by the operator at said end of the machine without changing his position.

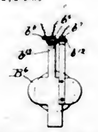
15. A rotary ice cream freezer comprising a cylindrical freezing vessel, a rotary beater and scraper mounted adjacent to the inner wall of said vessel, an ejector blade, and a two-part disk, one part providing a bearing for the beater and scraper and the other for the ejector blade, said two parts of the disk being mounted so as to have movement relatively to one another.

16. A rotary horizontal ice cream freezer having both inlet and discharge openings at the same end communicating directly with the freezing chamber, said discharge opening delivering in a substantially vertical direction, a valve controlling said outlet and means located at said end of the machine for operating the said valve, whereby the condition of the contents of the chamber may be observed through said inlet opening and the cream supply and delivery of the frozen cream controlled by the operator at said end of the machine without changing his position.

17. A rotary ice cream freezer having a cylindrical freezing vessel, an ejector blade therein, a carrier for one end of said blade mounted so as to be susceptible of a partial turn around the axis of the freezer, and external devices whereby the adjustment of said carrier can be effected.

18. A rotary ice cream freezer having a cylindrical freezing vessel, an ejector blade therein, a carrier for one end of said blade mounted so as to be susceptible of a partial turn around the axis of the freezer, external devices whereby the adjustment of said carrier can be effected, and means for locking said devices in either position of adjustment.

855,365. RELAY. EUGENE W. VOGEL, Chicago, Ill., assignor, by mesne assignments, to The Railroad Supply Company, a Corporation of Illinois. Filed May 20, 1901. Serial No. 61,146.



Claim.—1. In a circuit controller, the combination with a plurality of magnets, of an armature operated by each magnet, said armatures having intersecting paths of movement, a relatively fixed contact located at the point of intersection of the paths of said armatures, insulating material carried by the portion of one of said armatures which extends into the path of movement of the other armature, and leads connected to said armatures and contact.

2. In a circuit controller, the combination with a plurality of magnets, of an armature operated by each magnet, said armatures having intersecting paths of movement, a relatively fixed contact located at the point of intersection of the paths of said armatures, insulating material carried by the portion of one of said armatures which extends into the path of movement of the other armature, a contact supported by said insulating material, and leads connected to said contact and said armatures.

3. In a circuit controller, the combination with a plurality of magnets, of an armature operated by each magnet, said armatures having intersecting paths of movement, a relatively fixed contact located at the point of intersection of the paths of said armatures, insulating material carried by the portion of each of said armatures which extends into the path of movement of the other armature, a contact supported by the insulating material on each armature, and leads connected to said contacts.

4. In a circuit controller, the combination with a plurality of magnets, of an armature operated by each magnet, a plurality of contacts carried by each armature, the contacts on the respective armatures having intersecting paths of movement, relatively fixed contacts located at the point of intersection of the paths of movement of corresponding pairs of movable contacts, insulating material supported upon the portions of the contacts carried by one armature which in one position of said armature extend into the paths of movement of the corresponding contacts carried by the other armature, and leads connected to said contacts and said armatures.

5. In a relay, the combination with a plurality of electro magnets of an armature operated by each, an inwardly directed contact member on each armature said contact members having intersecting paths of movement, a contact piece located to engage either of said contact members, and means whereby separate and independent circuits are closed dependent upon the order in which said armatures make contact with said contact pieces.

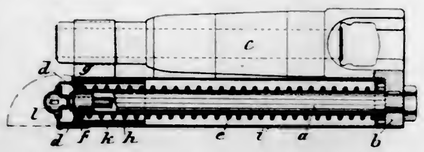
6. In a relay, the combination with a plurality of electro-magnets of an inwardly directed armature operated by each, a conductor on the extremity of each armature and insulated therefrom, a fixed contact piece located between and in operative relation with said armatures and means whereby a plurality of circuits may be controlled thereby depending upon the position and coaction of said armatures.

7. In a device of the class described, an armature, a plurality of resilient contact members thereon one of which is insulated therefrom, a conductor plate secured on the outer end of each contact member and also insulated therefrom, a conductor leading to each and a contact piece for each contact member and means whereby each contact member together with the contact piece and conductor plate is adapted to make and break a plurality of circuits.

8. In a relay, the combination with coacting armatures of contact members secured on each, those of one armature acting to engage those of the other when in one position, contact pieces located in position to be engaged by the contact members of either armature whereby a plurality of separate and independent circuits may be closed or broken dependent upon the relative position of said armatures to each other and the contact pieces.

9. The combination with two electro magnets, of conductors located between the same each provided with a separate contact piece, armatures adapted to be normally supported by said electro magnets and a plurality of resilient contact members on each armature adapted each to engage a contact piece when the armature is unsupported by the electro magnet, insulated contact plates on each contact member and conductors leading therefrom and forming parts of separate and independent circuits adapted to be opened and closed by the engagement of the contact members contact plates and contact pieces.

855,366. GUN WITH RECOILING BARREL. KARL VÖLLER, Düsseldorf, Germany, assignor to Rheinische Metallwaren- und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Filed June 22, 1906. Serial No. 322,902.



Claim.—1. In a recoil brake for guns, a detachable recoil cylinder, a stop carried by the cylinder, a loose disk bearing upon the stop, a forward motion spring bearing upon the disk to return the parts after recoil, and a stop carried by the cradle in the path of the disk and independent of the cylinder to limit the relaxation of the spring.

2. In a recoil brake for guns, a cradle, a detachable recoil cylinder within the cradle, a stop carried by the cylinder, a loose disk bearing upon the stop, a forward motion spring bearing upon the disk, and a stop carried by the cradle to limit the relaxation of the spring, the two stops lying in substantially the same plane transversely of the cylinder.

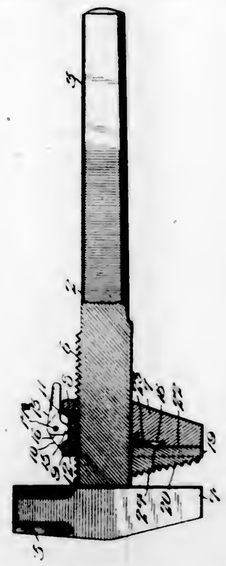
3. In a recoil brake for guns, a recoil member moving with the gun, a forward motion spring bearing with one end on a fixed abutment and with the other end on the recoil member, and means interposed in the path of the relaxing spring to limit the movement of the same when the recoil member is withdrawn.

4. In a recoil brake for guns, a cradle, a forward motion spring within the cradle bearing with one end against a fixed support, a detachable recoil member movable within the cradle and surrounded by the spring, a stop carried by the recoil member and serving as an abutment for the other end of the spring during recoil, a loose disk between the recoil member stop and spring, and an adjustable stop on the cradle in the path of the relaxing spring to engage the disk when the recoil member is withdrawn.

5. In a gun with recoiling barrel the combination with a cradle of a brake cylinder, a forward motion spring, a flange on the brake cylinder, a loose disk between this flange and the forward motion spring and a flange connected with the cradle and serving as a support for the said loose disk if the brake cylinder is removed, substantially as described and for the purpose set forth.

6. In a gun with recoiling barrel the combination with a cradle of a brake cylinder, a forward motion spring, a flange on the brake cylinder, a loose disk between this flange and the forward motion spring, a sleeve screwed into the cradle and a flange connected with this sleeve and serving as a support for the said loose disk if the brake cylinder is removed, substantially as described and for the purpose set forth.

855,367. WRENCH. JOHN M. WALLACE, Newcastle, Pa. Filed May 19, 1906. Serial No. 317,821.



Claim.—1. A wrench comprising a shank provided with a stationary jaw and with teeth, a movable jaw mounted upon the shank and having its end provided with an opening, a dog movable within said opening, a spring carried by said dog and engaging the upper edges of the walls of said opening, and a lever pivotally mounted upon the movable jaw and provided with a cam portion adapted to be brought into engagement with the spring to move and hold the dog in engagement with the teeth.

2. A wrench comprising a shank provided with a stationary jaw and with teeth, a movable jaw mounted upon the shank and having its upper end provided with an opening, a dog mounted in said opening, a leaf spring secured to the dog and having its ends disposed in engagement with the upper edges of the walls of said opening, said spring being adapted to retain the dog normally withdrawn from the teeth, and a lever pivotally mounted upon the movable jaw and provided with a cam portion adapted to be brought into engagement with the spring to move and hold the dog in engagement with the teeth, said lever being provided with a plain face adapted to be engaged by the spring to retain the lever in position to be moved to bring the dog in engagement with the teeth.

855,368. SNAP-HOOK. THOMAS WATSON, Evanston, Ill. Filed Nov. 9, 1906. Serial No. 342,681.



Claim.—1. In a snap hook, the combination of a body, a substantially V-shaped block carried by said body, a movable tongue provided with curved hooks, the hooks of said tongue adapted to be positioned upon and engage opposite sides of said block for limiting movement of the tongue, and means for locking said tongue upon said block.

2. In a snap hook, the combination of a body provided with sides having longitudinally-extending, elongated slots, arms secured to said body, a pivotally mounted tongue carried by said arms, slidable locking means carried by said body, and a pin extending through the elongated slots of said body and securing said locking means thereto, the locking means adapted to engage said tongue and retain it in a fixed position upon the arms.

3. In a snap hook, the combination with a body, a pivoted tongue carried by said body, of a slidable catch in engagement with said body and adapted to secure said tongue in a fixed position, said catch comprising a base-plate, vertical, parallel lugs integral with said base-plate, a hook integral with said base-plate and positioned between said lugs, and means securing said catch to said body.

4. In a snap hook, the combination with a body, and a movable tongue, of a catch for securing said tongue in a fixed position upon said body, said catch comprising a horizontal base-plate provided at one end with vertical lugs engaging the sides of said body, means engaging said lugs and body for holding said catch upon the body, a hook secured to said base-plate, and means for normally exerting pressure upon said catch for retaining the hook in engagement with said tongue.

5. In a snap hook, the combination with a body, of a movable tongue carried by said body, said body provided with a pair of depending stops or spurs integral with the lower portion thereof, a slidable catch engaging the under portion of said body and adapted to engage said stops for limiting movement of said catch, and means for securing the catch to said body.

6. In a snap hook, the combination with a body, provided with a compartment, a movable tongue carried by said body, a portion of the tongue adapted to extend into said compartment, of a catch in engagement with said body, said catch comprising a base, a lug positioned upon the outside of said body and secured to said base, fastening means carried by the body and engaging said lug and securing said catch upon the body, a hook positioned within said compartment and normally in engagement with said tongue, the hook secured to said base between its sides, and a spring normally holding the hook of said catch in engagement with said tongue.

7. In a snap hook, the combination with a body, and a movable tongue, of a catch carried by said body and normally in engagement with said tongue, said catch comprising a base positioned upon the outside of said body, a hook secured to said base and positioned entirely within said body, and means for securing said catch to said body.

8. In a snap hook, the combination of a body provided with a compartment and sides, said sides provided with elongated slots, a movable tongue carried by said body, a catch adapted to secure the tongue in a fixed position, said catch comprising a base provided with side-lugs, a central hook secured to said base, and a pin positioned within the elongated slots and extending through said lugs and hook.

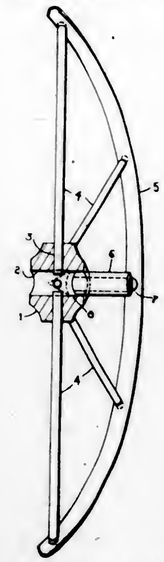
9. In a snap hook, the combination of a body provided with an open-bottom compartment, a movable tongue carried by said body, and bodily-movable locking means carried by said body for securing said tongue in a fixed position, said locking means closing the bottom of said compartment.

10. In a snap hook, the combination of a body provided with a compartment closed at its top and open at its bottom, a movable tongue carried by said body, and a bodily-movable catch closing the bottom of said compartment and adapted to normally secure the tongue in a fixed position upon the body.

11. In a snap hook, the combination of a body provided with a compartment open at its bottom, a pivotally mounted tongue carried by said body and a portion adapted to extend into said compartment, a slidable catch closing the bottom of said compartment and provided with means extending into the compartment for engaging and securing the tongue in a fixed position.

12. In a snap hook, the combination of a body provided with a compartment open at its bottom, of a pivotally mounted tongue carried by said body, a slidable catch in engagement with said body and closing the bottom of said compartment, said catch provided with a hook extending into the compartment, the hook adapted to engage said tongue for securing the same in a fixed position, means for normally exerting pressure upon said catch, a depending stop integral with said body and adapted to limit movement of said catch, and fastening means extending through said body and engaging said hook for securing said catch to said body.

855,369. ART OF ASSEMBLING WHEELS. JOHN WEBER, Jr., Toledo, Ohio, assignor to The Toledo Metal Wheel Company, Toledo, Ohio, a Corporation of Ohio. Filed May 12, 1906. Serial No. 316,447.



Claim.—1. That improvement in the art of assembling wheels which comprises the following combination of steps: the provision of a hub member and a continuous rim member, one of which shall have spoke guiding passages and the other seating surfaces limiting the longitudinal movement of the spokes and a series of spokes of equal length, and the arrangement of said spokes to project through said passages, and the arrangement of the hub and rim members in an approximately concentric relation but one of them free with relation to the other and the spokes, and the simultaneous and equal projection of the spokes longitudinally toward the other member into permanent seating relation and securing said spokes so

seated against reverse movement by applying a permanent concentric member.

2. That improvement in the art of assembling wheels which comprises the following combination of steps: the provision of a hub having spoke guiding passages and a continuous rim having seating surfaces limiting the longitudinal movement of the spokes and having directing walls to guide the spokes to said surfaces and a series of spokes of uniform length, and the arrangement of said spokes to project through said passages, and the arrangement of the hub and rim in an approximately concentric relation but the rim free from the hub and the spokes, and the simultaneous and equal projection of the spokes longitudinally toward the rim to be guided thereby into permanent seating relation and securing said spokes so seated against reverse movement by applying a permanent concentric member.

3. That improvement in the art of assembling wheels which comprises the following combination of steps: the provision of a hub member and a continuous rim member, one of which shall have spoke guiding passages and the other continuous seating surfaces limiting the longitudinal movement of the spokes and a series of spokes of uniform length, and the arrangement of said spokes to project through said passages, and the arrangement of the hub and rim members in approximately concentric relation in a plane, but in any angular relation with one of them free with relation to the other and the spokes, and the simultaneous and equal projection of the spokes longitudinally toward the other member into permanent seating relation and securing said spokes against reverse movement by applying a permanent concentric member.

4. That improvement in the art of assembling wheels which comprises the following combination of steps: the provision of a hub having spoke guiding passages, a rim having a plurality of flanges with adjacent seating surfaces limiting the longitudinal movement of the spokes and a series of spokes of equal length, and the arrangement of said spokes to project through said passages, and the arrangement of the hub and rim in an approximately concentric relation but the rim free from the hub and the spokes, and the simultaneous and equal projection of the spokes longitudinally toward the rim to be guided by the flanges into permanent seating relation and securing said spokes so seated against reverse movement by applying a permanent concentric member.

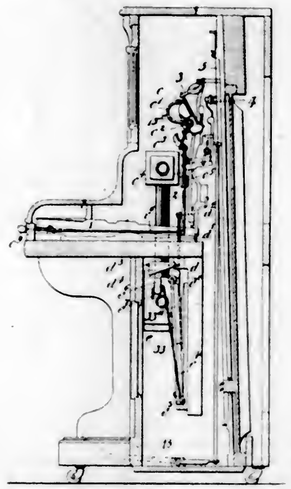
5. That improvement in the art of assembling wheels which comprises the following combination of steps: the provision of a hub having spoke guiding passages, a series of spokes of uniform length, a rim having spoke seats, spoke actuating means and a spoke locking follower, and the arrangement of the spokes in the passages of the hub, the arrangement of the rim and hub in an approximately concentric relation but the rim free from the hub and the spokes, the arrangement of the follower on the spoke actuating means, the arrangement of the means to actuate the spokes longitudinally into the seats of the rim and leave the follower to retain the spokes in permanent locking position.

6. That improvement in the art of assembling wheels which comprises the following combination of steps: the provision of a hub member and a continuous rim member, one of which shall have spoke guiding passages and the other seating surfaces limiting the longitudinal movement of the spokes and a series of spokes of equal length, and the arrangement of said spokes to project through said passages, the arrangement of the hub and rim members in an approximately concentric relation but one of them free with relation to the other and the spokes, and the simultaneous and uniform projection and locking of the spokes into permanent seating relation.

855,370. AUTOMATIC PIANO. JOHN A. WESER, New York, N. Y. Filed Feb. 25, 1907. Serial No. 359,280.

Claim.—1. In a pneumatic piano, the combination of hammers, bellows and intermediate connections to actuate the hammers, and independent means actuated by variations of pressure in the bellows to vary the force of the blows of the hammers.

2. In a pneumatic piano, the combination of hammers, bellows and intermediate connections which actuate the hammers, independent means to vary the force of the blows of the hammers, and connections whereby the last named means are actuated in correspondence with the movement of the bellows.



3. In a pneumatic piano, the combination of hammers, bellows and intermediate connections to actuate the hammers independent means to vary the force of the blows of the hammers, and connections actuated by the movement of the bellows to operate said means.

4. In a pneumatic piano, the combination of hammers, bellows and intermediate connections to actuate the hammers, a movable rest rail to vary the backward throw of the hammers and connections whereby the rest rail is moved in correspondence with the movement of the bellows.

5. In a pneumatic piano, the combination of hammers, bellows and intermediate connections to actuate the hammers, a movable rest rail to vary the backward throw of the hammers and connections actuated by the movement of the bellows to move said rest rail.

6. In a pneumatic piano, the combination of hammers, bellows and intermediate connections to actuate the hammers, a movable rest rail to vary the backward throw of the hammers, a lever having one arm arranged to be acted upon by the movable member of said bellows and connections between said lever and said rest rail whereby the latter is moved through the movement of said movable bellows member.

7. In a pneumatic piano, the combination of hammers, bellows and intermediate connections to actuate the hammers, a movable rest rail to limit the backward throw of the hammers, connections whereby the rest rail is moved in correspondence with the movement of the bellows, and independent manually operated devices to move said rest rail.

8. In a pneumatic piano, the combination of hammers, bellows and intermediate connections to actuate the hammers, a shiftable bar carried by the movable member of said bellows, means to shift said bar, a lever arranged to be acted upon by said bar in one position, and connections between said lever and said rest rail to shift the latter in correspondence with the movement of the bellows member.

855,371. MILK COOLER AND AERATOR. CHARLES H. WHITE and ALEXANDER S. MACKAY, Vancouver, British Columbia, Canada. Filed May 21, 1906. Serial No. 318,974.



Claim.—1. In a milk cooler, the combination with a conical cooling vessel having an annular channel at the base and a delivery spout therefrom, of a circumferentially directed water inlet toward the bottom, a central overflow toward the top, and a receiving vessel held over said cooling vessel with its bottom forming a closure for the inside thereof and projecting over the outside thereof, said receiving vessel having outlets in its bottom for discharging the milk on the outer surface of the conical vessel, and a removable baffle within said receiving vessel, substantially as shown.

2. In a milk cooler; the combination with a conical cooling vessel having an inwardly projected base and an annular channel surrounding the same, of a circumferentially directed water inlet within the vessel toward its base, an overflow down the center having a flared mouth at the upper end, an outer conical casing surrounding the outer conical side of the cooling vessel, said casing resting on the rim of the base channel of the vessel so as to leave an annular space for the ingress of air and a similar outlet at the top and means for distributing milk over the outer surface of the cooling vessel.

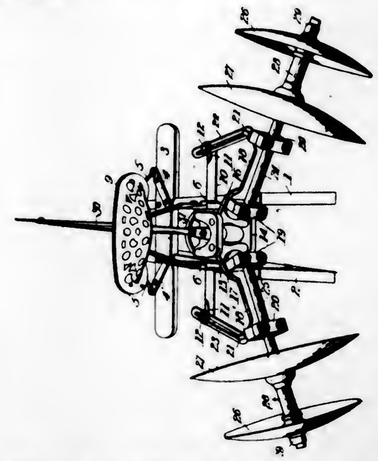
3. In a milk cooler having a conical cooling vessel; a milk receiving vessel resting on the open upper end of the cooling vessel the bottom of said milk receiving vessel having an annular perforated depression outside of its seat upon the cooling vessel, a depression within such seat which depression deepens toward the center, an upwardly convex or conical baffle supported above the bottom of the cooling vessel which baffle extends beyond the perforated annular depression in the bottom of the vessel.

4. In a milk cooler, the combination with a conical cooling vessel, having a conical bottom and open at the top, and having an annular channel at the base and a delivery spout therefrom, of a circumferentially directed water inlet toward the bottom of said cooling vessel, a central overflow forward the top of said cooling vessel, a receiving vessel having a bottom to form a closure for the top of said cooling vessel, said receiving vessel bottom projecting over said cooling vessel top and provided with an annular depression having perforations for discharging the milk onto the outer surface of the cooling vessel in a spray, and a removable baffle within said receiving vessel, substantially as shown and described.

5. In a milk cooler, the combination with a conical cooling vessel, having a conical bottom and open at the top, and having an annular channel at the base and a delivery spout therefrom, of a circumferentially directed water inlet toward the bottom of said cooling vessel, a central overflow toward the top of said cooling vessel, a receiving vessel having a bottom to form a closure for the top of said cooling vessel, said receiving vessel bottom projecting over said cooling vessel top and provided with an annular depression having perforations for discharging the milk onto the outer surface of the cooling vessel in a spray, and a removable baffle within said receiving vessel, substantially as shown and described.

6. In a milk cooler, the combination with a conical cooling vessel, having a conical bottom and open at the top, and having an annular channel at the base and a delivery spout therefrom, of a circumferentially directed water inlet toward the bottom of said cooling vessel, a central overflow toward the top of said cooling vessel, a receiving vessel having a bottom to form a closure for the top of said cooling vessel, said receiving vessel bottom projecting over said cooling vessel top and provided with an annular depression having perforations for discharging the milk onto the outer surface of the cooling vessel in a spray, a baffle within said receiving vessel, and a conical casing held over said cooling vessel and spaced therefrom at the bottom and top to permit air admission at the bottom and air discharge at the top, substantially as shown and described.

855,372. LISTER-CULTIVATOR. AUGUST E. WILSHUSEN, Stafford, Kans. Filed May 13, 1905. Serial No. 260,275.



Claim.—1. In a lister cultivator, a pair of runners, brackets rigidly secured on the runners, a clamp rigidly secured on an axle carried by the brackets, wings pivoted to the outer ends of the clamp, plates provided with bearing boxes secured to the wings, disk carrying axles rotatably mounted in the bearing boxes, means for adjusting laterally the disks carrying axles and means for raising and lowering the disks, substantially as described.

2. In a lister cultivator, a pair of parallel runners connected by a cross piece, brackets rigidly secured to the runners, an axle provided with a flat end portion carried by the brackets, a clamp comprising two sections, rigidly secured on the axle, wings pivoted between the free ends of the clamp, plates provided with bearing boxes secured to the wings, disk carrying axles rotatably mounted in the bearing boxes, disks mounted on the disk carrying axles, means for raising and lowering the entire series of disks and means for adjusting the disks at an angle to the runners, as and for the purpose described.

3. In a lister cultivator, a pair of parallel runners, said runners being connected by a cross piece, brackets provided with a flange secured to the runners, said brackets being provided with apertures, an axle mounted in the apertures of the brackets, said axle having flat end portions, a clamp comprising two sections rigidly secured on the axle, wings pivotally mounted between the outer ends of the sections comprising the clamp, plates provided with bearing boxes bolted to each wing, disk carrying axles rotatably mounted in the bearing boxes, disks mounted on the disk axle, sleeves arranged between the disk, means for preventing the disks from accidentally leaving the disk axle, a link having one end secured to the bearing box bolt

and its opposite end secured to the first named axle, and means for raising and lowering the entire series of disks substantially as described.

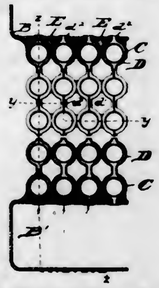
4. In a lister cultivator, a pair of parallel runners, said runners being connected by a cross piece, brackets, provided with a flange secured on the runners, an axle carried by the brackets, a seat suitably secured to the brackets, a clamp comprising two sections rigidly secured on the axle, wings pivotally mounted between the free ends of the clamp sections, plates provided with bearing boxes secured to the wings, disk carrying axles provided with disks secured thereon, means for adjusting the disks at an angle to the runners and means for raising and lowering the disks, as and for the purpose described.

855,373. RADIATOR FOR AUTOMOBILES. JOHN A. WILSON, Jr., Detroit, Mich., assignor to The Detroit Auto Specialty Co., Detroit, Mich., a Corporation of Michigan. Filed Sept. 7, 1906. Serial No. 333,615.



Claim.—In a radiator, a plurality of independent pipes, and a plurality of radiating plates embracing the pipes to bind them together, the plates having oppositely disposed crimped edges, the crimped edges of each plate engaging with the corresponding crimped edges of the adjacent plates, whereby each plate is spaced throughout its surface intermediate the crimped edges from the corresponding adjacent plates.

855,374. RADIATOR FOR AUTOMOBILES. JOHN A. WILSON, Jr., Detroit, Mich., assignor to The Detroit Auto Specialty Co., Detroit, Mich., a Corporation of Michigan. Filed Sept. 17, 1906. Serial No. 334,887.



Claim.—1. In a cellular radiator for automobiles, a series of tubes, a jacket surrounding each of said tubes forming a water space around alining series of tubes, substantially as described.

2. A radiator comprising a series of tubes, and a series of communicating jackets surrounding the tubes, the jackets being flanged at their ends and secured to the corresponding tubes to form the end walls of the radiator.

3. A radiator comprising spaced water chambers, a series of tubes between the chambers, and a series of communicating jackets surrounding the tubes and communicating with said chambers.

4. A radiator comprising a plurality of tubes, and jackets surrounding the tubes in separate sets constructed and arranged to circulate water in a fixed course with respect to the corresponding set of tubes.

855,375. PRINTING-FRAME. WILLIAM B. YOUNG, Brandon, Manitoba, Canada. Filed Mar. 31, 1906. Renewed Apr. 15, 1907. Serial No. 368,378.

Claim.—1. A printing frame comprising a frame provided with flanges to receive the negative, and a removable back for holding the sensitive paper against the negative, said back having an opening with a transparent material therein, as and for the purpose specified.

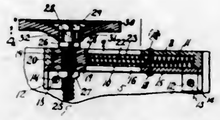


2. In a device of the class described, the combination with the receiving frame, and the spring pressed removable back, of a transparent material within the back, as and for the purpose specified.

3. In a printing frame, the combination with the receiving frame of a spring pressed removable back, said back being composed of two portions hinged together, one portion of which has an opening extending therethrough and a transparent material secured to and flush with the inner face thereof, as and for the purpose specified.

4. In a printing frame, the combination with the receiving frame of a removably secured back, said back being composed of two portions hinged together, one portion of which has an opening extending therethrough and grooves cut in the outstanding sides, so placed and designed to secure and hold the glass flush with the inner face of the back, as and for the purpose specified.

855,376. AUTOMATIC DOOR-CLOSER FOR ELEVATOR-SHAFTS. EDWARD E. ASHLEY, New York, N. Y. Filed Dec. 9, 1904. Serial No. 236,258.



Claim.—1. The car-member of the door-closer comprising an inner plate, having longitudinal side, bottom and top openings, an outer plate having a longitudinal side opening, a slide block having a stem opening and bottom and top tongues and working in the longitudinal openings, a spring between the slide block and the end of the inner plate, a stem secured in the stem opening and having a shank providing an axle, and a head, and a wheel mounted upon the shank.

2. The car-member of the door-closer comprising an inner plate having longitudinal side, bottom and top openings and an end recess, an outer plate having a longitudinal side opening, a slide-block having a stem opening, and bottom and top tongues and working in the longitudinal openings and a rearwardly extending rod projecting into the end recess, a spring surrounding the rod between the inner end of the end recess and the slide-block, a stem secured in the stem opening of the slide-block and having a shank providing an axle and a head, and a wheel mounted upon the shank.

3. The car-member of the door-closer comprising an inner plate having longitudinal side, bottom and top openings, an outer plate having a longitudinal side opening, a slide-block having a stem opening and bottom and top tongues and working in the longitudinal openings, a spring between the slide-block and the end of the inner plate, a screw stem having a shank, providing an axle, and a head, inner and outer nuts securing the screw stem in the stem opening, and a wheel mounted upon the shank.

4. The car-member of the door-closer comprising an inner plate, having longitudinal side, bottom and top openings, an outer plate having a longitudinal side opening, a slide-block having a stem opening and bottom and top tongues and working in the longitudinal openings, a spring between the slide-block and the end of the inner plate, a stem having a shank, providing an axle, and a head, a wheel mounted upon the shank, and having a con-

cavity for the head of the stem and a hub formed with a roller race or socket, and antifriction rollers surrounding the shank within the roller race or socket.

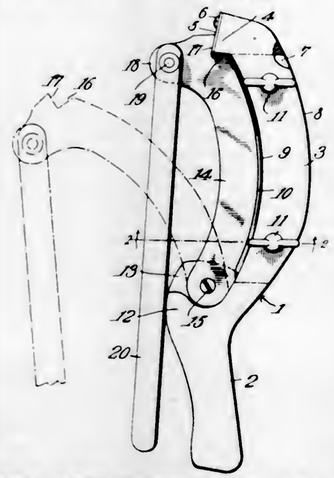
5. The car-member of the door-closer comprising an inner plate, having longitudinal side, bottom and top openings and angular projections at the ends for securing the member, an outer plate having a longitudinal side opening, and angular recesses at the ends corresponding to and fitting the angular projections, a slide-block having a stem opening and bottom and top tongues and working in the longitudinal openings, a spring between the slide-block and the end of the inner plate, a stem secured in the stem opening and having a shank, providing an axle, and a head, and a wheel mounted upon the shank.

855,377. SWIMMING-SHOE. ROBERT G. AYERS, Orion, Ill. Filed Aug. 3, 1906. Serial No. 329,090.



Claim.—A sole for a swimming shoe embodying in its construction perforated ears extending upward and inward from the edges at the broadened portion of the toe part, and a strap severed from the margin of the heel turned up and integrally connected at its ends with the heel portion of the sole to form a back-stop for the heel of the swimmer.

855,378. KNIFE. ROBERT A. BAGGETT, Belton, Tex., assignor of one-half to Edwin F. Lanham, Temple, Tex. Filed Sept. 8, 1906. Serial No. 333,842.



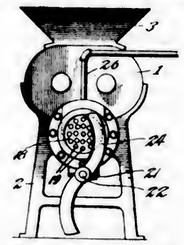
Claim.—1. A knife comprising a slotted stock, a chopping block adjustably mounted in said slot, a knife blade, one end of which is pivotally connected to the stock and adapted to co-operate with the chopping block, an abutment carried by the stock and arranged to be engaged by the free end of the knife, and a handle pivotally connected to the free end of the knife.

2. In a knife of the class described, a handled stock provided with a transversely extending slot, a detachable chopping block adjustably mounted within the slot, means for securing said chopping block in position, a knife blade having one end pivotally connected to the stock, and a second handle pivotally connected to the free end of the knife blade.

3. A knife comprising a stock having a handle, an abutment and a chopping block, a knife blade pivotally connected with said stock and having a shoulder adapted to engage said abutment for limiting the movement of the stock toward the knife blade, and a handle pivotally connected with said knife blade.

4. A knife comprising a stock having a handle, a curved intermediate portion having a slot, an abutment having a wear plate, an enlargement adjacent said handle formed with a recess, a knife blade pivotally mounted in said recess and having a notched outer end forming a shoulder adapted to co-operate with the wear plate of said abutment, a chopping block mounted in the slot of said intermediate portion, set screws extending through said intermediate portion and engaging said chopping block, and a handle pivotally connected with the outer free end of said knife blade.

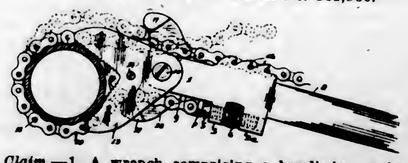
855,379. BRIQUET-MACHINE. DAVID E. BANGS, Medford, Mass. Filed Oct. 27, 1906. Serial No. 340,876.



Claim.—1. A machine of the type described comprising a casing having an upper, disintegrating chamber and a lower mixing chamber, a pair of rotary shafts arranged side by side in the upper chamber and provided with alternately disposed disintegrating teeth and cutting blades, a feed shaft arranged in the lower chamber centrally beneath the first named shafts and equipped with mixing blades pitched to feed the material forwardly, said feed shaft being further provided with a spiral feed screw, a perforated die plate arranged at the forward end of the feed screw, and a cutting knife arranged to sweep over the outer face of the die plate.

2. In a machine of the class described, a casing containing an upper, disintegrating chamber and a lower mixing chamber, a pair of rotary shafts arranged side by side in the upper chamber and provided with alternately disposed, disintegrating teeth and cutting blades, a feed shaft arranged in the lower chamber on a line centrally beneath the first named shafts and equipped with inclined blades adapted to mix the material and feed the same forwardly in the chamber, the casing being provided with an extension disposed at the forward end of the mixing chamber and constituting a feed compartment, a screw provided on the feed shaft within said compartment, a perforated die plate mounted at the forward end of the compartment and through which the material is forced under the action of the screw, and a cutting blade arranged to sweep over the mouth of the extension at the outer face of the die plate.

855,380. PIPE-WRENCH. EDMUND C. BATES, Alliance, Ohio. Filed Mar. 12, 1907. Serial No. 361,960.



Claim.—1. A wrench comprising a handle-bar, a bearing-shoe pivoted on the end of the bar, a flexible member

forming a loop on the same end of the bar and having one end adjustably attached on one edge of the bar and detachably connected on the other edge of the bar, and lugs on the bar outside the flexible member and adapted to flex the same inward when the bar is rotated one way or the other on the shoe-pivot.

2. A wrench comprising a handle-bar, a bearing-shoe pivoted on the end of the bar, a flexible member forming a loop on the same end of the bar and having one end attached on one edge of the bar and detachably connected on the other edge of the bar, and lugs on the bar outside the flexible member and adapted to flex the same inward when the bar is rotated one way or the other on the shoe-pivot.

3. A wrench comprising a handle-bar, a bearing-shoe pivoted on the end of the bar, a flexible member forming a loop on the same end of the bar and having one end adjustably attached on one edge of the bar and connected on the other edge of the bar, and lugs on the bar outside the flexible member and adapted to flex the same inward when the bar is rotated one way or the other on the shoe-pivot.

4. A wrench comprising a handle-bar having a tapered end, a bearing-shoe pivoted on the same end of the bar, a flexible member forming a loop on the same end of the bar and connected on the edges thereof, and lugs on the bar outside the flexible-member adapted to flex the same inward when the bar is rotated one way or the other on the shoe-pivot.

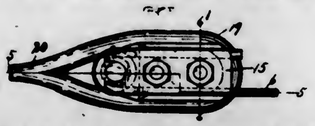
5. A wrench comprising a handle-bar, a bearing-shoe pivoted on the end of the bar, a flexible member forming a loop on the same end of the bar and connected on the edges thereof, and lugs on the bar outside the flexible-member adapted to flex the same inward when the bar is rotated one way or the other on the shoe-pivot.

6. A wrench comprising a handle-bar having a tapered end, a bearing-shoe pivoted on the same end of the bar, a flexible member forming a loop on the same end of the bar and having its ends connected therewith, and a lug on the edge of the bar outside the flexible-member and adapted to flex the same inward by the rotation of the bar on the shoe-pivot.

7. A wrench comprising a handle-bar, a bearing shoe pivoted on the end of the bar, a flexible member forming a loop on the same end of the bar and having its ends connected therewith, and a lug on the edge of the bar outside the flexible-member and adapted to flex the same inward by the rotation of the bar on the shoe-pivot.

8. In a wrench having a handle-bar with a bearing-shoe pivoted on the end thereof, an endwise adjustable-bolt on one edge of the bar, and a flexible member forming a loop on the same end of the bar and having one end attached to the bolt with means for detachably connecting the other end to the opposite edge of the bar.

855,381. GUY-WIRE FASTENER. AARON BEARSE, Syracuse, N. Y., assignor of one-half to N. C. Pangburn, Albany, N. Y. Filed Mar. 12, 1907. Serial No. 361,962.



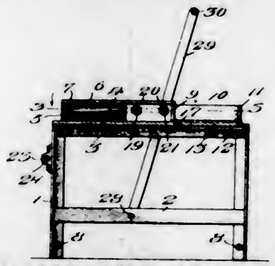
Claim.—1. A guy wire fastener comprising separable wire clamping plates for receiving the wire between them, and means for drawing said plates together, a roller bearing mounted on one of the plates in the plane of the meeting edges of said plates, and an anchor rod secured to one of said plates.

2. A guy wire fastener comprising a pair of wire clamping plates, and means to draw them together, a sheave mounted on one of the plates, and an anchor rod detachably connected to one of said plates.

3. A guy wire fastener comprising two clamping plates, a sheave, and an anchor rod, the sheave and anchor rod being located in the plane of the meeting edges of the clamping plates and means to draw the clamping plates together.

4. A guy wire fastener comprising separable plates having parallel grooves for receiving the guy wire, a sheave mounted on one end of the plates at one end of said grooves, and an anchor rod secured to one of the plates at the side of the sheave opposite to that in which the grooves are formed, and means to draw the clamping plates together.

835,382. BRICK-MOLDING MACHINE. NEWTON H. BOLTON and JAMES BELISLE, Minneapolis, Minn. Filed Oct. 13, 1906. Serial No. 338,867.



Claim.—1. A brick molding machine comprising a supporting frame, a table carried thereby, said table being provided at its rear with upwardly extending longitudinal flanges, forming the front and rear walls of a mold chamber, the front wall being formed with a plurality of slots, said table also being provided in front of said front wall with side flanges having longitudinal guide slots, a plurality of partitions arranged for movement through said slots in the front walls to be projected into and out of the mold, a pallet removably arranged within the mold chamber, said pallet being of a width somewhat less than said chamber, a filling piece between the front wall of the mold and front edge of the pallet, a pair of rods connecting the forward ends of the partitions, the ends of the rods forming guides movable in the slots in the guide flanges, the ends of one of the rods being extended beyond the flanges to provide journals, a rock shaft having crank arms beyond the sides of the frame, links connecting said arms with the journals, and an operating lever having a slot therein receiving one of said journals.

2. In a device of the class described, a mold, a pallet removably arranged therein, said pallet being of a width somewhat less than that of the mold, and a filling piece extended longitudinally of the mold at one edge of the pallet.

855,383. HAIR-TONIC AND DANDRUFF PREVENTIVE. FRANS W. BROCK, Tombstone, Ariz. Filed July 20, 1905. Serial No. 270,508.

Claim.—1. A composition of matter to prevent dandruff and to stop falling out of the hair, consisting of extract of witchhazel, hydrate of chloral, cochineal, Florida water and alcohol, in substantially the described proportions.

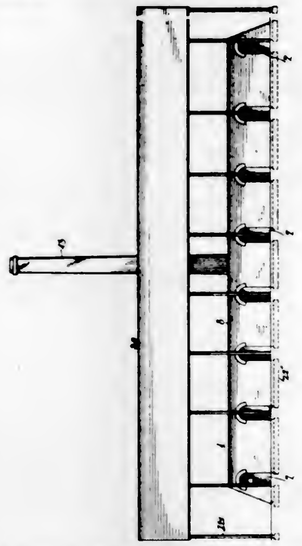
2. A composition to prevent dandruff and stop falling out of the hair consisting of extract of witchhazel, hydrate of chloral, and a suitable diluent and vehicle in substantially the described proportions.

3. A composition for preventing dandruff and stopping the falling out of the hair, containing extract of witchhazel and hydrate of chloral in the proportions of ten ounces of the former and two drams of the latter.

855,384. BRICK-KILN. BAPTISTE F. CANAVERA, Coulterville, Ill. Filed Feb. 4, 1907. Serial No. 355,770.

Claim.—1. In a continuous kiln, walls arranged to form a continuous elongated space, the end portions being substantially semi-circular, the outer wall being provided

with openings leading into said space, and the inner wall provided with a chamber in communication with the chimney of the kiln and having its ends enlarged, means for dividing said space into individual compartments, and means for establishing communication between said compartments and said chamber in the middle wall, the end compartments communicating with the enlarged portions of said chamber.

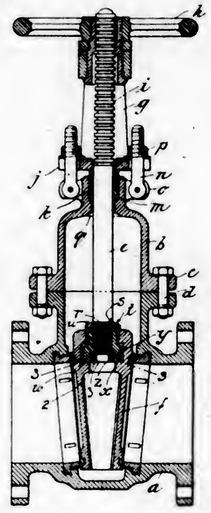


2. In a continuous kiln, walls arranged to form a continuous elongated space, the ends of which are semi-circular, means for dividing said space into individual compartments, the outer wall of the kiln being provided with openings, one for each compartment, and the central wall being provided with a chamber communicating with the chimney of the kiln and having its ends enlarged and semi-circular, the top of the kiln being provided with rows of perforations for each compartment and the chamber and its enlargements in the central wall being provided with openings, one for each of said rows of openings in the compartments, a removable flue on the top of the kiln for establishing communication between each of said rows of openings in the compartments and the corresponding opening in the chamber in the middle wall.

855,385. VALVE. CHARLES O. CHURCHILL, Bloomfield, N. J., assignor to The Fairbanks Company, New York, N. Y., a Corporation. Filed Sept. 29, 1906. Serial No. 336,767.

Claim.—1. In a valve construction of the class described, a valve-spindle having a threaded lower end and a rectangular portion, a shoulder portion between the threaded and unthreaded portion, a packing-collar engaging the shoulder portion, a plug-nut interiorly threaded and engaging the packing-collar and the threaded lower end of the spindle, a rectangular bushing carried by the spindle and located within the plug-nut and on the rectangular portion, and means for securing the plug-nut to said bushing, the plug-nut being located in the upper portion of the plug, as described.

2. In a valve of the class described, a plug having a recess therein, a valve-spindle provided with means for connecting the plug to the said spindle, said means consisting of a bushing carried by the lower end of the valve-spindle, a plug-nut located within the recess of the plug and inclosing said bushing, a pin connecting the bushing and plug-nut whereby all torsional strain is removed from the pin, as described.



3. In a valve of the class described, a spindle having its lower extremity threaded, the diameter of the threaded portion being less than the diameter of the unthreaded portion whereby a shoulder is formed between the said portions, a packing collar, one side of which engages the shoulder, an interiorly threaded plug-nut engaging the threaded portion of the spindle and the opposite side of the collar, a bushing engaging the lower end of the spindle and located within the lower portion of the plug-nut, a pin passed through the bushing and plug-nut whereby the parts are retained in place on the spindle, as described.

4. In a valve construction of the class described, a valve spindle having a threaded lower end and a rectangular portion, a shoulder portion between the threaded and unthreaded portion, a packing collar engaging the shoulder portion, a plug-nut interiorly threaded and engaging the packing collar and the threaded lower end of the spindle, an element carried by the spindle and located on the rectangular portion of the spindle and engaging the plug-nut.

855,386. LUBRICATING DEVICE. JOSEPH S. COATES, Denver, Colo., and GEORGE F. HART, Helper, Utah. Filed Jan. 6, 1904. Serial No. 187,962.



Claim.—1. The combination with a journal box of a locomotive or car wheel, of a cellar, mesh covering applied to the cellar adjacent the journal, the cellar being adapted to hold a cake of lubricant which is placed directly therein, a follower located in the cellar below the cake of lubricant, a spring engaging the follower, and a plate hinged at its outer extremity to the journal box and having a short upwardly bent lip or flange adapted to engage the inner extremity of the cellar, and suitable means detach-

ably connected with the journal box for holding the hinged plate in the closed position, the said plate being adapted to swing downwardly by the action of the spring to release the cellar when the means for holding the plate is detached, substantially as described.

2. The combination with a journal box, of a cellar located therein, a cake of lubricant located directly in the cellar, the latter being capable of moving longitudinally of the journal between the depending parts of the journal box, a follower located in the cellar and engaging the lubricant, a spring engaging the cellar, and a plate against which the spring bears, the said plate being hinged at its outer extremity and having a short upwardly projecting lip engaging the cellar at its inner extremity when in the locking position, and a removable bolt connected with the journal box for holding the hinged plate in the said position, substantially as described.

3. In mechanisms of the class described, the combination of a main box portion, a removable oil cellar, and a movable cellar retainer with upwardly extending flange lips at its forward end only for removably holding the oil cellar in position, substantially as described.

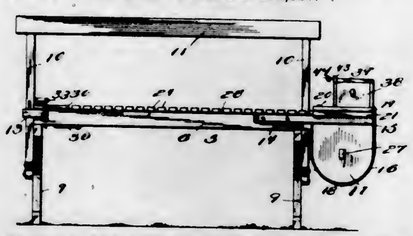
4. In mechanisms of the class described, the combination of a main box casting, a removable oil cellar, a swinging retaining block with upwardly extending flange lips at its forward end only for removably holding the oil cellar in position, and means for pivotally supporting said retaining block, substantially as described.

5. In mechanisms of the class described, the combination of a main box casting, a rectangular removable oil cellar provided with upwardly extending end and side walls, and a movable retaining block with upwardly extending flange lips at its forward end only for removably holding said oil cellar in position.

6. In mechanisms of the class described, the combination of a main box casting, a removable oil cellar provided with upwardly extending end and side walls, a swinging retaining block pivotally secured at its inner rear edge to the main box casting for removably holding the oil cellar in position, and means at the forward portion of the journal box only for holding the forward end of the retaining block and thereby the oil cellar in operative position, substantially as described.

7. In mechanisms of the class described, the combination of a main box casting, a removable oil cellar provided with upwardly extending outer walls, a swinging retaining block pivotally supported in position and provided with upwardly extending flanged lip portions at its forward end only to prevent the removal of the oil cellar when the parts are in operative position, and means for holding the parts in operative position, substantially as described.

855,387. BENCH. PATRICK A. COGAN, New York, N. Y. Filed June 10, 1905. Serial No. 264,617.

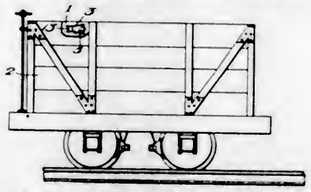


Claim.—1. The combination with a bench including a frame, of a seat and a protector, both attached to the same end of said frame, and movable longitudinally thereover, into and out of operative position; means for normally retaining and holding said seat and said protector in inoperative position; and means for retaining said seat and protector in operative position.

2. The combination with a bench including a frame, of a casing mounted at one end of said frame; a pair of rollers mounted one above the other in said casing; a seat connected to the lower of said rollers, and a protector connected to the upper of said rollers, said seat and protector being adapted to be normally wound upon their respective rollers; and separate means for retaining said seat and protector in unwound position with respect to said rollers.

3. The combination with a bench, including a frame, of a casing mounted at one end of said frame and arranged transversely with respect thereto; a pair of spring rollers mounted one above the other in said casing; a seat connected with the lower roller and a protector connected with the upper roller, said seat and protector lying normally wound upon their respective rollers, and arranged, when unwound, to extend longitudinally over the face of the frame; and separate means at the opposite end of the frame for holding the said seat and protector in such unwound position.

855,388. CHECK-HOLDER FOR MINE-CARS. WILLIAM J. CONNELL, Huntington, W. Va., assignor of one-third to A. E. Youmans and one-third to J. W. Koontz, Huntington, W. Va. Filed Mar. 21, 1906. Serial No. 307,299.



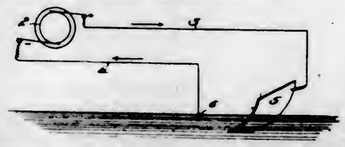
Claim.—1. A check holder for mining cars comprising a pair of coöperating members disposed in spaced relation to provide a check receiving compartment having a discharge mouth, one of said members being relatively movable, and check retaining means provided on the holder beyond the discharge mouth, said movable member being operable to release the check.

2. A check holder for mining cars having a check receiving compartment provided with a reduced discharge mouth, a movable head disposed in said mouth and check engaging portions provided on the holder, one of said portions being movable with the head to release the check.

3. A check holder for mining cars comprising a pair of members spaced to produce a compartment, one of said members being movable relative to the other and an extension provided on the movable member beyond the discharge end of the compartment and having a check engaging portion.

4. A device of the class described comprising a base piece having a socket, an inner plate movably arranged on the base and having a bearing lug disposed in said socket, an outer plate attached to the base and maintained in spaced relation to the inner plate to form a check receiving compartment having a discharge mouth, an extension on the outer plate forming a shield for said mouth, a check engaging portion provided on the inner plate beyond the discharge mouth, and a spring disposed in the socket to act on the bearing lug for maintaining the engaging portion normally in engaging position.

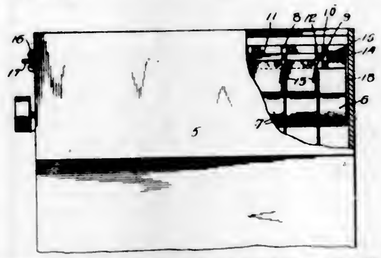
855,389. ELECTRIC ATTACHMENT FOR MOVABLE OBJECTS. JOHN R. DAWKINS, McKinney, Tex. Filed Feb. 19, 1906. Serial No. 301,885.



Claim.—1. In combination, a ground working device, an electrical source, a positive conductor communicating therewith and electrically connected to the ground working device, and a negative conductor connected with said source and in contact with the ground for completing an electrical circuit thereby preventing the adhering of earthy substances to said device.

2. In combination, a ground working device, a source of electrical energy, an electrical connection between said source and said device, and electrical connections between said source and the ground thereby completing an electrical circuit to prevent the adhering of earthy substances to said device.

855,390. SHARPENER FOR BAND-CUTTERS. CHARLES N. DETWILER, Delta, Ohio. Filed Nov. 28, 1905. Serial No. 289,534.



Claim.—The combination with a band cutter for threshers having disk-knives of a supporting board, U-shaped guides fixed to said board in registering alinement with one another, said guides having straight faces, an arm slidably mounted in the guides, and having straight faces, plates fixed the their upper ends to said arm and depending therefrom, sharpening devices carried upon the lower ends of said plates for engagement with said respective disk-knives, a spring for forcing said arm to the limit of its inward movement whereby said sharpening devices will engage said knives, and means for moving said arm and the knives suspended therefrom outwardly against the tension of said spring.

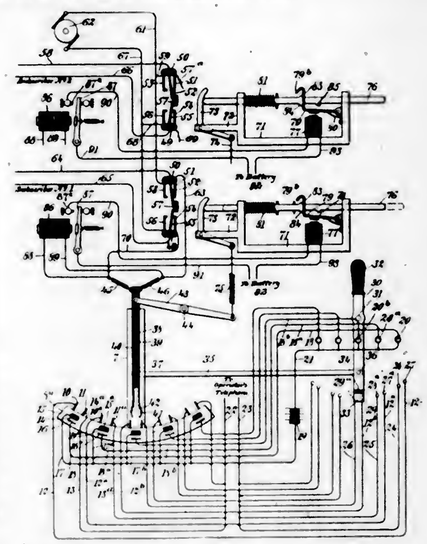
855,391. TELEPHONE-SWITCHBOARD. JOHN M. DOSBAUGH, Cedar Vale, Kans. Filed Aug. 1, 1905. Serial No. 272,144.

Claim.—1. In a telephone switch board, the combination of a source of electricity, a plurality of busy signals adapted to be energized thereby, contacts connected with said busy signals, said contacts being normally open, and mechanism for connecting one subscriber's circuit with another, said mechanism including a plurality of movable members, said contacts being disposed within the respective paths of said movable members and adapted to be closed by said movable members.

2. In a telephone switchboard, the combination of a plurality of contacts, subscribers' lines connected with said contacts, connecting strips situated adjacent to said contacts, said contacts being adapted to be brought into and out of communication with each other through said connecting strips, a push rod provided with mechanism for bringing said contacts in connection with said connecting strips when the push rod is moved in one direction from its normal position, a spring for forcing said push rod in the opposite direction beyond its normal position so as to enable it to act as a signal, and mechanism for engaging and holding the rod against the tension of its spring, the said mechanism being electrically operated from subscribers' lines for releasing said push rod and consequently disconnecting said contacts from said connecting strips.

3. In a telephone switchboard, the combination of a swinging frame, a hand lever for moving the same into different positions, contacts to be closed by movements of said hand lever, operators' circuits connected with said contacts, contact strips mounted upon said swinging frame, a plurality of subscriber's lines, contacts connected with said lines, and means for bringing said last-mentioned contacts in connection with said contact strips.

4. In a telephone switchboard, the combination of a push rod, a bell crank to be actuated thereby, a lever connected with said bell crank, conducting strips depending from said lever and movable by the same, contact strips to be engaged and disengaged by said conducting strips, a swinging member carrying said contact strips, means controllable at will for actuating said swinging member so that the position of said contact strips carried thereby is altered relatively to the general position of said conducting strips, and mechanism controllable at will for connecting said conducting strips with, and disconnecting the same from, the various subscribers lines.



5. In a telephone switchboard, the combination of a swinging frame, a hand lever for moving the same into different angular positions, contact strips mounted on said swinging frame, a multitude of subscribers' lines terminating in contacts adjacent to said contact strips, mechanism controllable at the will of the operator, adapted to bring said contacts in connection with said contact strips, busy signal contacts disposed between said contact strips and having no electrical connection therewith but mechanically so arranged that when a subscribers' line is thrown in contact with said contact strips, said busy signal contacts are closed, and busy signal circuits connected with said busy signal contacts and so arranged that the operator can determine by said busy signals which of the said contact strips are in use.

6. The combination of a swinging frame, provided with contact strips, a plurality of conducting strips disposed adjacent to the path of said contact strips, subscribers' lines connected with said conducting strips, mechanism for moving said conducting strips endwise so as to place the same into and out of engagement with said contact strips, contact mechanism disposed adjacent to the ends of said conducting strips and adapted to be opened and closed by movements thereof, and busy signals connected with said last-mentioned contact mechanism.

7. In a telephone switchboard, the combination of a bracket, a push rod slidably mounted therein and provided with teeth spaced apart in the general direction of the length of said push rod, a pawl disposed adjacent to said push rod and provided with portions to be engaged by said teeth, a magnet for actuating said pawl so as to release the same from said teeth, a spring for retracting said push rod, mechanism connected with said push rod for opening and closing contacts, and a member to be actuated by said push rod, said member being adapted to occupy different

relative positions corresponding to the relative positions of said teeth upon said push rod.

8. An electrical switch composed of four stationary contacts and two movable contacts, said movable contacts being adapted to be in electrical connection with two of said stationary contacts at one time, subscribers' lines connected with said movable contacts, conducting strips connected with two of said stationary contacts, a circuit for carrying electrical energy for ringing subscriber's bell, connected with the other two stationary contacts, and a push rod, said movable contacts being adapted to be actuated by the push rod in such a manner as to release said movable contacts from the stationary contacts which are connected with said conducting strips and to bring said movable contacts in connection with the stationary contacts connected with the ringing circuit.

9. In a telephone switch-board, the combination of a plurality of contacts, subscribers' lines connected with said contacts, and adapted to be brought into and out of communication with each other by the closing and opening of said contacts, a push rod mounted to slide, mechanism actuated by the push rod, when the latter is moved in one direction from its normal position, to close said contacts, the said push rod when moved in the other direction from its normal position acting as a signal, a spring for forcing said push rod in the direction to enable it to act as a signal, electrically operated mechanism for engaging the push rod, when the latter is in position to close said contacts, to hold the push rod against the tension of its spring, said mechanism also engaging and holding the rod against the tension of its spring when the rod is in its normal position, the said mechanism being operated from the subscribers' lines to release the push rod when the latter is in either of said positions.

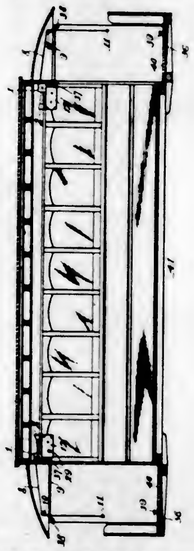
855,392. SIGN. PAULINE ELLEAU, Seattle, Wash. Filed Apr. 14, 1906. Serial No. 311,707.



Claim.—The combination, with a door-frame having an opening therethrough, of a lamp placed in said opening, a transparent pane of glass back of said opening, a frame on the out-side margin of said opening and transparent sign elements having opaque characters on their faces adapted to be supported in the said frame, whereby an illuminated sign is formed on the outside of the door-frame, and the lamp is made to illuminate the apartment or hall inside the door-frame.

855,393. ANNUNCIATOR FOR CARS. REUBEN B. EUBANK, Jr., Kansas City, Kans., assignor, by direct and mesne assignments, to The Eubank Indicator Manufacturing Company, a Corporation of Missouri. Filed July 28, 1905. Serial No. 271,582.

Claim.—1. In an apparatus of the character described, a casing having an opening, spools journaled in said casing, a ribbon arranged to be alternately wound upon the spools, said ribbon containing suitably-spaced information to be consecutively displayed at the opening, means for operating the spools, a brake having two members engaging the ends of one of said spools, a universal joint upon which the brake is mounted so that its two members may bear with equal pressure upon the spool, and a device for simultaneously adjusting said members.



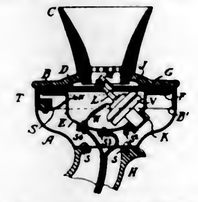
2. In an apparatus of the character described, a casing having an opening, spools journaled in said casing, a ribbon arranged to be alternately wound upon the spools, said ribbon containing suitably-spaced information to be consecutively displayed at the opening, means for operating the spools, a brake having two resilient members engaging the ends of one of the spools, a universal joint upon which the brake is mounted so that its two members may bear with equal pressure upon the spool, and a set-screw for simultaneously adjusting said members.

3. In an apparatus of the character described, a display device consisting of a casing having an opening, spools journaled in said casing, flanges formed integral with the ends of one of said spools, guide-rollers journaled in the casing near its opening, a ribbon arranged to be alternately wound and unwound from the spools and travel around the guide-rollers, said ribbon containing suitably spaced names to be consecutively displayed at the opening in the casing, means for rotating the spools, spacing mechanism for controlling the rotation of the spools so the latter will move the ribbon step by step, distances corresponding to those at which the names are placed upon said ribbon, a Y-shaped brake having two spring-members bearing against the flanges, a ball and socket joint connecting said brake to the casing, and a set-screw for adjusting the brake.

4. In an apparatus of the character described, the combination of a phonograph arranged to call a list of names, a device for displaying said names, a ratchet-wheel mounted upon the motor-shaft of the phonograph for the purpose of stopping the phonograph after it has called each name, a pawl normally held in engagement with said ratchet-wheel, and a cable attached to said pawl and the controlling mechanism of the display device.

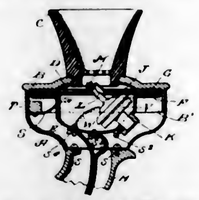
855,394. TELEPHONE. OSCAR F. FALK, Boston, Mass., assignor to American Telephone and Telegraph Company, a Corporation of New York. Filed July 1, 1905. Serial No. 267,962.

Claim.—1. In a hand-set or combination telephone, a handle-bar having a receiver at one end and a transmitter at its other end, the transmitter including a granular carbon button connected and disposed at an angle to the transmitter diaphragm, whereby contact between the granulated conducting material of the carbon button and its co-operating electrodes will be maintained in all positions which the hand-set may take while in use.



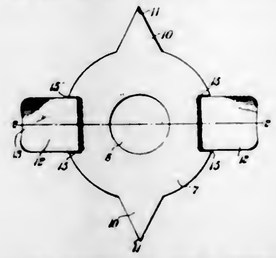
2. In a hand-set or combination telephone, a handle-bar having a receiver at one end and a transmitter at its other end, the diaphragm of the receiver and transmitter being in planes approximately at right angles to each other, and the transmitter including a granular carbon button connected and disposed at an angle to the transmitter diaphragm, whereby contact between the granulated conducting material of the carbon button and its coöperating electrodes will be maintained in all positions which the hand-set may take while in use.

855,395. TELEPHONE-TRANSMITTER. OSCAR F. FALK, Boston, Mass., assignor to American Telephone and Telegraph Company, a Corporation of New York. Original application filed July 1, 1905, Serial No. 267,962. Divided and this application filed July 2, 1906. Serial No. 324,525.



Claim.—In a telephone transmitter, the combination of a case or shell; a diaphragm secured to and closing said shell; a variable resistance button inclosed within and supported by said shell in a position oblique to the diaphragm, said button having electrodes and containing granular carbon between the same, one of the electrodes being secured to the diaphragm and the other to the wall of the shell, the whole constituting a unitary device comprising the several parts of the transmitter.

855,396. NUT-LOCK. ERNEST J. FOREMAN, Trinidad, Colo., assignor of one-half to Fred H. Hee, Trinchera, Colo. Filed Jan. 23, 1907. Serial No. 353,707.

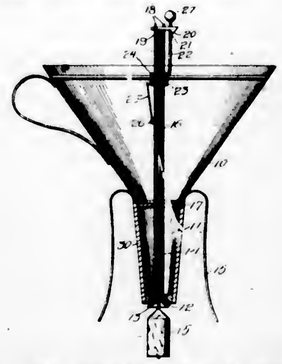


Claim.—1. The combination with a support having a bolt extended there-through and provided with a clamping nut, of a washer interposed between the nut and support and provided with attaching spurs adapted to pierce the support, oppositely disposed ears formed integral with the washer and provided with terminal depressions defining inwardly extending spring locking lips adapted to bear against the sides of the nut, there being slits formed in the washer on each side of the locking ears and connected by transverse weakening grooves thereby to permit the ears to be bent laterally into engagement with the nut.

2. The combination with a support having a bolt extended there-through and provided with a clamping nut, of a washer interposed between the nut and support and provided with attaching spurs adapted to pierce the support, locking ears extending from opposite sides of the washer and each provided with a terminal depression defining a spring locking lip adapted to bear against the adjacent walls of the nut, there being slits formed in the washer on each side of the locking ears, and a transverse weakening groove connecting said slits at the juncture of the ears with the washer.

3. As an article of manufacture, a washer formed of a singe piece of metal having a bolt-receiving opening formed therein and provided with oppositely disposed locking ears the terminals of which are provided with depressions defining spring locking lips, there being slits extending inwardly from the peripheral edge of the washer at said locking ears, a transverse weakening groove connecting said slits at the base of said ears, and attaching spurs disposed at an angle to one face of the plate and extending in a direction opposite the locking ears.

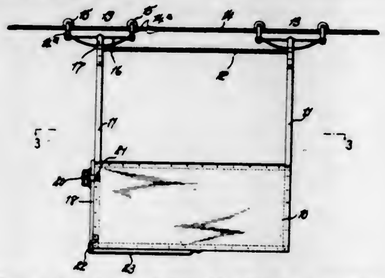
855,397. FUNNEL. ERNEST L. F. FRALEY, Rockville, Md. Filed June 7, 1906. Serial No. 320,653.



Claim.—1. The combination, with a funnel and its spout, of a valve-seat in the spout, a guiding cross-piece in the spout having an opening therethrough, a valve below the valve-seat, a tube connected with the said valve and extended through an opening in the cross-arm to the top of the funnel, a weighted arm, a fixed collar, a yoke with which the weighted arm is connected pivoted on the collar, a wire connecting the yoke with the tube, a latch engaging the weighted arm to hold it against action by its weight, a wire connected with the latch and extended through the tube and valve, and a float adjustably connected with the lower end of the wire.

2. The combination, with a funnel and its spout, of a valve-seat in the spout, a guiding cross-piece in the spout having an opening therethrough, recurvate arms connected with the spout, a valve below the valve-seat, a tube connected with the said valve and extended through the opening in the cross-arm to the top of the funnel, a weighted arm, a fixed collar, a yoke with which the weighted arm is connected pivoted on the collar, a wire connecting the yoke with the tube, a latch engaging the weighted arm to hold it against action by its weight, a wire connected with the latch and extended through the tube and valve, and a float adjustably connected with the lower end of the wire.

855,398. CARRIER FOR ENSILAGE AND OTHER THINGS. ROBERT M. GLOR, ALVIN J. GLOR, and WILLIAM P. WEST, Attica, N. Y. Filed Jan. 21, 1907. Serial No. 353,274.



Claim.—1. A atructure such as described, comprising a box having upwardly extending bails at the ends, and provided with an end gate, a hinge connection between the lower part of the gate and the box, and means for permitting the hinged part to slide beneath and parallel with the box.

2. A device of the kind described, comprising a box open at the top and provided with an end gate, the corner posts of the box being formed of angle irons which are projected upward and formed into the supporting bails.

3. In a carrier, the combination with the box, of the outwardly and downwardly swinging end gate, a locking device to fasten the upper part of the gate, and guiding devices slidably supporting the lower end of the gate, said guiding devices extending beneath the box.

4. In a carrier, the combination with the box, of the outwardly and downwardly swinging end gate arranged to slide beneath the box when open, and a depending bail on the box to support the gate.

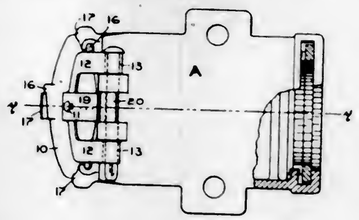
5. The combination with the box, of the outwardly and downwardly swinging end gate, the track extending from the front part of the box, beneath it and along the bottom, and the sliding and supporting connections between the lower part of the gate and the tracks.

855,399. GARMENT-STAY. HARRIET L. GREGG, North Plainfield, N. J. Filed Feb. 24, 1906. Serial No. 302,811.



Claim.—A garment stay comprising a backing strip, a facing strip, a sheathing inclosing said strips, and securing hooks carried by the facing strip and projecting through the adjacent side of the sheathing in a plane parallel with said strips.

855,400. JOURNAL-BOX. FREDERICK HACHMANN, St. Paul, Minn., assignor, by mesne assignments, to American Railway Appliance Company, Minneapolis, Minn., a Corporation of Minnesota. Filed July 24, 1905. Serial No. 270,923.



Claim.—1. In combination, a journal box, comprising an inlet opening, a lid arranged to close said opening, an arm having hinge support upon said journal box and rotatably supporting said lid from the center thereof in connection with interlocking means between the box and lid for holding said lid in closed position.

2. In combination, a journal box provided with an inlet opening, a downwardly depending arm having hinge support upon said journal box above said opening, a lid rotatably supported from its center upon the end of said arm in position to close said opening, in connection with cooperating wedge shaped tongues and lips carried by the adjacent edges of said journal box and lid for the purpose set forth.

855,401. IMPRESSION-STITCH MACHINE. JOHN B. HADAWAY, Brockton, Mass. Filed Apr. 25, 1904. Serial No. 204,663.



Claim.—1. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, and means for imparting to the wheel a rolling movement over the work and a work feeding movement, substantially as described.

2. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, means for rolling the wheel back and forth over the work and for feeding the work in one direction only, substantially as described.

3. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel mounted to be rotated by the engagement of the wheel with the work, and means for feeding the work and for moving the wheel bodily back and forth over the work while in contact therewith to cause the wheel to roll over the work alternately in opposite directions.

4. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, means for moving the wheel bodily back and forth over the work while in contact therewith to cause the wheel to roll over the work alternately in opposite directions, and means for stopping the rolling movement of the wheel during its bodily movement in one direction to cause the wheel to feed the work, substantially as described.

5. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, means for moving the indenting wheel bodily back and forth over the work while in contact therewith, a ratchet wheel mounted to rotate and move bodily with the indenting wheel, a pawl and means for moving the pawl into and out of engagement with the ratchet wheel to cause the indenting wheel to feed the work during its bodily movement in one direction, substantially as described.

6. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, means for moving the indenting wheel bodily back and forth over the work while in contact therewith, a ratchet wheel mounted to rotate and move bodily with the indenting wheel, a pawl mounted on a fixed support arranged to engage the ratchet wheel and cause the indenting wheel to feed the work during its bodily movement in one direction, and means for adjusting the pawl to vary the extent of the feeding movement imparted to the indenting wheel, substantially as described.

7. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, means for imparting to the wheel a rolling movement over the work and a work feeding movement, and means for adjusting the extent of the work feeding movement, substantially as described.

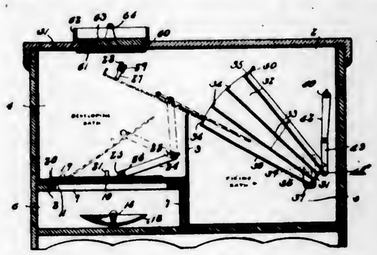
8. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, means for imparting to the wheel rolling movements over the work alternately in opposite directions, and work feeding movements, substantially as described.

9. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, means for imparting to the wheel rolling movements over the work alternately in opposite directions, and work feeding movements, and means for adjusting the extent of the work feeding movements, substantially as described.

10. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, means for moving the wheel bodily back and forth over the work while in contact therewith to cause the wheel to roll over the work alternately in opposite directions, means for stopping the rolling movement of the wheel during its bodily movement in one direction to cause the wheel to feed the work, and means for varying the point in the bodily movement of the wheel at which its rolling movement is stopped to adjust the extent of the feeding movement, substantially as described.

11. A machine for making impression or imitation stitches, having, in combination, a work support, an indenting wheel, and means for feeding the work and for rolling the wheel back and forth over the work, substantially as described.

855,402. PHOTOGRAPHIC DEVELOPING AND FIXING APPARATUS. ARTHUR C. HAYDEN, Brockton, Mass., assignor to Hayden Photographic Manufacturing Company, Brockton, Mass. Filed Feb. 2, 1906. Serial No. 299,205.



Claim.—1. In a photographic developing apparatus, the combination of a case, developing and fixing baths housed therein, of a removable plate holder within the fixing bath, a plate carrier within the developing bath, and means to move the carrier to transfer a plate from the developing bath into the holder in the fixing bath.

2. A photographic developing apparatus having a bath, a plate holder mounted in the bath and provided with a series of superposed plate receiving pockets, and means to lower and elevate the holder in the bath to successively submerge the pockets.

3. A photographic developing apparatus having a bath, a swinging plate holder mounted in the bath and provided with a series of superposed plates receiving pockets open at one end of the holder and closed at the opposite end thereof, and means to lower and raise the holder to successively submerge the pockets.

4. A photographic developing apparatus having a bath, a removable vertically swinging plate holder mounted in the bath and provided with a series of superposed plate receiving pockets, and means detachably connected to the holder for lowering and raising the same within the bath to successively submerge the pockets.

5. A photographic developing apparatus having a bath, a swinging plate holder mounted in the bath and including an open bottom, an upstanding rear end, upstanding longitudinal sides, the front of the holder being open, a series of longitudinal ledges upon the inner faces of the sides forming plate-receiving pockets which are open at their front ends and closed by the back of the holder, and means to lower and raise the holder to successively submerge the pockets thereof.

6. A photographic developing apparatus having a bath, a plate holder mounted in the bath and having a series of superposed plate receiving pockets, and means to lower the holder with a step by step movement to successively submerge the pockets.

7. A photographic developing apparatus having a bath, a plate holder working in the bath and provided with a series of superposed plate receiving pockets, a rock bar, means extending between the rock bar and the holder to lower the latter, a crank handle for the rock bar, and means associated with the crank handle to successively lock the holder in different adjusted positions.

8. In a photographic developing apparatus, the combination of a case having a bath, a plate holder working in the bath and provided with a series of superposed plate receiving pockets, means for raising and lowering the holder including a crank handle mounted upon the exterior of the case, a projection carried by the crank handle, and a swinging latch mounted upon the case and provided with a series of notches for successive engagement with the projection to lock the crank handle and the plate holder in different successive positions.

9. In a photographic developing apparatus, the combination of a case, developing and fixing baths housed therein, a plate carrier working in the developing bath, means to move the carrier to transfer a plate to the fixing bath,

a plate holder working in the fixing bath, and means to set the holder to receive a plate from the carrier.

10. In a photographic developing apparatus, the combination of a case, developing and fixing baths therein, a plate carrier working in the developing bath, means to move the carrier to transfer a plate to the fixing bath, a plate holder mounted in the fixing bath and having a series of plate receiving pockets, and means to set the holder to receive plates in the successive pockets from the plate carrier.

11. In a photographic developing apparatus, the combination of a case, developing and fixing baths therein, a plate carrier working in the developing bath, means to move the carrier for transferring a plate to the fixing bath, a swinging plate holder mounted in the fixing bath and provided with a series of plate receiving pockets having their open ends directed toward the developing bath, and means to set the holder to bring the open ends of the pockets successively into position to receive plates from the plate carrier.

12. In a photographic developing apparatus, the combination of a case, developing and fixing baths therein, a partition separating the baths and terminating short of the top of the case, a plate carrier working in the developing bath, means to elevate the plate carrier and tilt the same across the top of the partition to discharge a plate into the fixing bath, a tiltable plate holder mounted in the fixing bath and provided with a series of superposed plate receiving pockets having their open ends directed toward the partition, means to set the plate holder to bring the open ends of its pockets successively into position to receive plates from the plate carrier, a removable cover for the case provided with an entrance slot in communication with the developing bath, a guideway carried by the cover and leading downwardly to the slot therein, and a closure for the slot working in the body of the guideway.

13. A photographic developing apparatus comprising a case, developing and fixing baths therein, a series of plate holders within the fixing bath, a guideway fixedly mounted upon the case for directing plates into the developing bath, and means for conveying said plates into the respective plate holders.

14. A photographic developing apparatus comprising a case, a bath therein, a chute extending into and fixed in relation to the case, a movable plate holder mounted within the bath and having a plurality of compartments, and a plate carrier mounted to swing in the case for conveying a plate, which has been inserted through the fixed chute, into any one of the compartments.

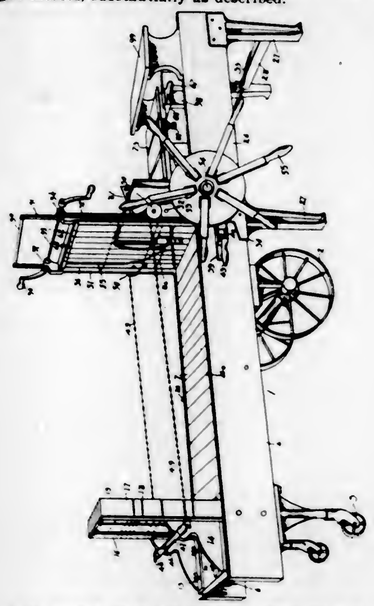
855,403. BUSHING OR THIMBLE FOR LASTS. HENRY E. HOWE, Auburn, Mass., assignor of one-half to Robert L. Golbert, Worcester, Mass. Filed July 14, 1906. Serial No. 326,189.



Claim.—A bushing or thimble for lasts comprising a piece of sheet-metal having a pair of upwardly diverging cuts or slits at the lower edge thereof forming a V-shaped prong, leaving a supporting tongue of a general trapezoidal shape on each side of the prong, the sheet being rolled into a tube having an axis at right angles to the edge in which the cuts or slits are located to bring the prong at the lower end of the tube, and the end of the prong being bent outwardly, and the body of the prong inwardly, whereby the bushing or thimble can be inserted in a last and the prong forced into the wood by a mandrel, leaving the trapezoidal tongue in undisturbed position.

855,404. BUTTER-CUTTER. AAGE JENSEN, Eureka, Cal. Filed Jan. 17, 1907. Serial No. 352,731.

Claim.—1. In an apparatus of the character described, the combination, with a cutter, of a carrier having a movable end gate, brackets for supporting said end gate, and chains for drawing the end gate toward the cutter, said brackets being provided with means for selectively securing said chains to the brackets at different points in the height thereof, substantially as described.



2. In an apparatus of the character described, the combination, with a cutter, of a carrier having a movable end gate, brackets for supporting said end gate, said end gate comprising vertical plates and transverse grooved pieces forming when placed together a continuous wooden block with vertical and horizontal grooves, substantially as described.

3. In an apparatus of the character described, the combination of a cutter table, a carrier having a movable bottom formed of slats flexibly connected together, and an inclined support upon the cutter table, upon which the slats move as they advance and leave the carrier, substantially as described.

4. In an apparatus of the character described, the combination of a cutter table, a carrier having a movable bottom formed of slats flexibly connected together, and an inclined support upon the cutter table, upon which the slats move as they advance and leave the carrier, said carrier having inclined side guides at its front end to guide the slats on to the inclined support, substantially as described.

5. In an apparatus of the character described, in combination a cutter table, a cutter thereon, a carrier having a movable bottom, means supported upon the cutter table for moving said bottom toward said table, and means carried by the carrier and cutter table and co-operating with each other to cause the carrier to register in suitable relation to the cutter table, substantially as described.

6. In an apparatus of the character described, in combination with a cutter table, a carrier having a removable bottom, means supported upon the cutter table for moving said bottom toward said table, and means for guiding the carrier into engagement with said table, comprising guide plates on the front of the cutter table, and devices on the carrier adapted to engage said guide plates to register it therewith, substantially as described.

7. In an apparatus of the character described, in combination with a cutter table, a carrier having a movable bottom, means carried by the cutter table for moving said bottom toward said table, and means for clamping the carrier and cutter table together, substantially as described.

8. In an apparatus of the character described, in combination, a cutter table, a carrier having a movable bottom and a movable end gate, brackets supporting said end gate, each having a plurality of sockets, a transverse bar in sockets thereof, chains attached to the ends of said bar and means carried by the cutter table for winding up said chains, substantially as described.

9. In an apparatus of the character described, in combination, a cutter table, a carrier having a movable bottom and a movable end gate, brackets supporting said end gate, each having a plurality of sockets, a transverse bar in sockets thereof, chains attached to the ends of said bar and means carried by the cutter table for winding up said chains, said means comprising a transverse shaft and winding drums on the ends of the shaft, substantially as described.

10. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, substantially as described.

11. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, said tray comprising a frame, vertical rods on said frame, and butter plates movably secured to said rod, whereby they can be separated from each other, substantially as described.

12. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, and means for securing said tray in a vertical position, substantially as described.

13. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, and means for adjustably securing said tray in a vertical position, substantially as described.

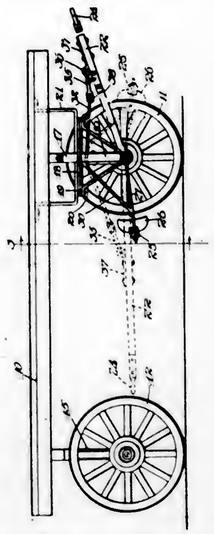
14. In an apparatus of the character described, the combination of a cutter table, means for moving a mass of butter toward said table, wires for severing the butter longitudinally into blocks, and a tray for arresting the movement of the butter, said tray being supported to swing from a vertical to a substantially horizontal position, and having a shelf to support the bottom of the butter so severed from the mass, and a back or tray portion to support the butter when in a horizontal position, means for securing said tray in a vertical position, and an adjusting device arranged midway of the height on the tray for adjusting the longitudinal position of the whole tray when vertical, substantially as described.

15. In an apparatus of the character described, the combination of wires for dividing butter longitudinally into blocks, vertical posts, racks guided on the outside of said post, a rigid bar connecting the tops of the racks, a cutting off wire exclusively connecting the bottoms of the racks, the post having vertical slots of substantially the same width as the wire to permit only said wire to pass therethrough, and pinions engaging said racks for moving them vertically, substantially as described.

16. In an apparatus of the character described, the combination of wires for dividing the butter longitudinally into blocks, vertical posts, racks guided on the outer sides of said post, a rigid bar connecting the tops of the racks, a cutting off wire exclusively connecting the bottoms of the racks, and pinions engaging said racks for moving vertically, substantially as described.

17. In an apparatus of the character described, the combination of wires for dividing the butter longitudinally into blocks, posts, a frame comprising side members guided vertically on the outer sides of posts, a rigid bar connecting the tops of said members, and a cutting off wire exclusively connecting the lower ends of said members, and means for moving said frame vertically on said posts, substantially as described.

855,405. TRUCK. PHILIP KERRIGAN, Chicago, Ill., assignor of two-thirds to himself and one-third to Edward S. Averill, Chicago, Ill. Filed Mar. 2, 1906. Serial No. 303,798.



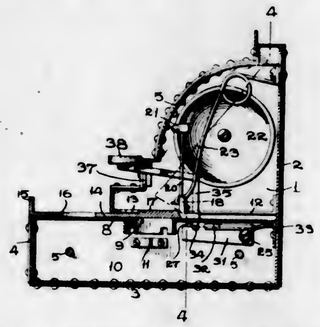
Claim.—1. In a wheeled vehicle, the combination with a pivoted tongue, of a brake-beam in rear of and adjacent to the front wheels of the vehicle, a rod connected at its rear end to the brake-beam, and a pivoted arm on the tongue provided with an elongated eye, into which eye the forward end of said rod projects, substantially as described.

2. In a wheeled vehicle, the combination with the front axle thereof and a bolster, of a pivoted tongue, a brake-beam in rear of and adjacent to the front wheels of the vehicle, and a rod connected at its forward end to the tongue and at its rear end to the brake-beam and adapted to pull the brake-beam forward when the forward end of the tongue is dropped, said bolster being slotted for the passage of said rod, substantially as described.

3. In a wheeled vehicle, the combination with the front axle thereof, a movable tongue connected therewith and a bolster on said axle, of a brake-beam in rear of and adjacent to the front wheels of the vehicle, a supporting-bar for said brake-beam secured to said bolster, said supporting-bar extending rearwardly and downwardly and loosely

engaging the brake-beam, and a rod connected at its rear end to said brake-beam and at its front end to said tongue and passing through an opening in said bolster, substantially as described.

855,406. TOY SAVINGS-BANK. HENRY C. LAMPE, Jr., St. Louis, Mo. Filed Aug. 27, 1906. Serial No. 332,136.



Claim.—1. A toy savings bank, constructed with a casing, a horizontally disposed partition therein, there being an opening formed in said partition, a slide operating on said partition, in which slide is formed a coin opening, means whereby the slide is locked at its inner limit of movement, a release key for the locking means, a gong arranged on the interior of the casing, and a striker carried by the coin slide; substantially as specified.

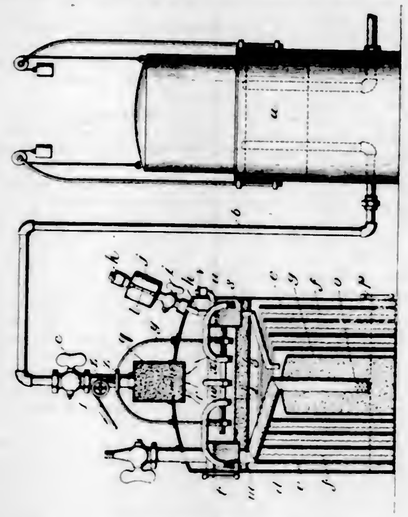
2. A toy savings bank, constructed with a casing, a horizontally disposed partition therein, in which partition is formed an opening, a slide operating on said partition, in which slide is formed an opening, a device arranged beneath the partition for locking the slide at its inner limit of movement, and a release key for the locking device, a bell arranged on the interior of the casing, and means arranged on the interior of said casing for sounding the bell when the release key is actuated; substantially as specified.

855,407. CARBURETER. MAXMILIAN LOEWENSTEIN, Brussels, Belgium, assignor of two-thirds to Jonas Stork, Brussels, Belgium, and Maurice Kind, New York, N. Y. Filed Apr. 11, 1905. Serial No. 255,014.

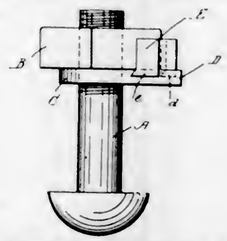
Claim.—1. In a carbureter, the combination of a casing, screens inclosing a pervious material and dividing said casing into two parts, an air pipe passing into said casing and through said screens, a receptacle packed with pervious material surrounding the discharge end of said air pipe, one or more wicks surrounding said pervious receptacle, and means for delivering a volatilizable liquid to the receptacle surrounding the lower end of said air pipe, substantially as described.

2. In a carbureter, the combination of a single casing, a plurality of carbureting means in said casing, one of said means dividing said casing into two parts, means for supplying air to said casing, means for supplying a volatilizable liquid to each of said carbureters, and means for discontinuing the supply of volatilizable liquid to one of said carbureters, thereby throwing it out of operation, substantially as described.

3. In a carbureter, the combination of a casing, a layer of pervious material dividing said casing into two parts, screens for holding said pervious material in place, an air inlet tube passing into said casing and through said screens, a trough located above said pervious material, a plurality of siphons entering said trough and provided with wicks, an adjustable frame supporting said siphons, means for raising and lowering said frame, a bag of loosely woven material filled with pervious material surrounding the lower end of said air pipe, a plurality of screens covered by wicking surrounding said bag, and a filler for the outflowing gas, substantially as described.



855,408. NUT-LOCK. GEORGE W. MIMS, Paducah, Ky., assignor of one-third to Cecil Reed and one-third to Carrol J. Smith, Paducah, Ky. Filed Jan. 12, 1907. Serial No. 351,987.

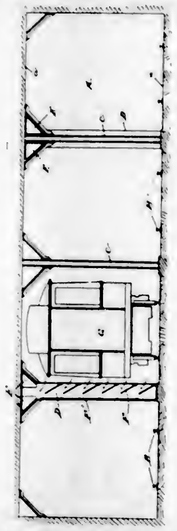


Claim.—In a nut lock, the combination, with a bolt, and its nut; of a washer-plate provided with a hole for the said bolt and having also an extension upon one side provided with a wedge-shaped and dovetailed groove which is overlapped by the corners of the said nut, and a locking-plate provided at its bottom edge with a wedge-shaped and dovetailed portion which is slidable in the said groove and having also a V-shaped notch in the middle part of one of its side faces for engaging with a corner of the said nut.

855,409. APPARATUS FOR VENTILATING TUNNELS. CHARLES A. MORRIS, Bloomfield, N. J. Original application filed July 14, 1905, Serial No. 269,605. Divided and this application filed June 20, 1906. Serial No. 322,584.

Claim.—1. In a ventilating apparatus, a chamber to be ventilated, a foul air exit flue, and air trapping means for establishing communication between the flue and said chamber to be ventilated, the aforesaid air trapping means being operated by the air pressure produced by the movement of a car adapted to operate in said chamber.

2. In a ventilating apparatus, a chamber to be ventilated, a fresh air inlet flue, and an air trapping valve normally cutting off communication between the chamber and the flue, said valve being operated by the suction produced in the chamber incident to the movement of a car or other body adapted to operate in said chamber.



3. In a ventilating apparatus, a tunnel or subway, a foul air eduction flue adapted to communicate therewith, and a normally closed air trapping valve controlling communication between said tunnel and flue, said valve being automatically operated by air pressure produced in the chamber by the movement of a car or other body therein.

4. In a ventilating apparatus, a chamber to be ventilated, a normally closed fresh-air conduit connected therewith, and means operated by an excess of air pressure in the conduit for admitting fresh air to the chamber.

5. In a ventilating apparatus, a chamber to be ventilated, a plurality of foul air eduction-flues extending therefrom, and air trapping means intermediate each eduction flue and the chamber, said air trapping means being operated by the air pressure produced in the chamber by the movement of a car therein, whereby communication is established between the chamber and the successive flues.

6. In a ventilating apparatus, a chamber to be ventilated, a plurality of foul air eduction flues leading therefrom each of which is provided with air-trapping means for cutting off communication with said chamber, and a conduit connected with said flues and open to the outer air, the air trapping means of each flue being operated by the air pressure produced in the chamber by the movement of a car or other body moving therein.

7. In a ventilating apparatus, a chamber to be ventilated, a plurality of flues connected therewith, air trapping means for normally cutting off communication of the flues with the chamber, a conduit connected with each of said flues, and a branch leading from said conduit, the air trapping means being operated by the air pressure produced in the chamber incident to the movement of a car or other body therein.

8. In a ventilating apparatus, a chamber to be ventilated, a plurality of air flues, and air pressure valves in one side of each flue.

9. In a ventilating apparatus, a chamber to be ventilated, an air-flue, and a plurality of valves in two sides of the flue.

10. In a ventilating apparatus, a tunnel or subway, columns therein, air flues at intervals between the columns, and means for establishing communication between the flues and the tunnel on the passage of a moving body.

11. In a ventilating apparatus, a tunnel or subway, eduction and induction air flues at intervals in the tunnel, and means controllable by air pressure produced by a moving body in the tunnel for automatically establishing communication between the flues and the tunnel.

12. In a ventilating apparatus, a chamber to be ventilated, a fresh air intake flue or conduit leading thereto, and air trapping means operated by suction due to the movement of a car or other body in said chamber for establishing communication between said chamber and the flue or conduit, whereby fresh air may be supplied automatically to the chamber.

13. In a ventilating apparatus, a chamber to be ventilated, vertical flues or conduits adapted to communicate with said chamber, and air trapping means in each of said flues or conduits for normally shutting off communication between the chamber and said flues or conduits, which air trapping means is operated by the air pressure produced in said chamber, whereby communication is established between said chamber and the successive flues or conduits.

14. In a ventilating apparatus, a chamber to be ventilated, a series of vertical conduits, a flue connecting with and common to said vertical flues, and an automatic valve in each vertical conduit and adapted to close communication between the chamber and said conduit, said valve being operated by the pressure of air produced by the movement of a car in said chamber.

15. In a ventilating apparatus, a chamber to be ventilated, a plurality of flues or conduits communicating therewith, and a plurality of automatic valves in each flue or conduit, the valves of each flue being operated simultaneously by a body moving in said chamber.

16. In a ventilating apparatus, a chamber to be ventilated, a flue adapted to communicate therewith, an upright conduit, adapted to communicate with the flue, and a plurality of automatic valves in said flue.

17. In a ventilating apparatus, a chamber to be ventilated, a flue or conduit, and automatic valves in a plurality of sides of the flue or conduit, each valve being adapted to be operated by the pressure of air produced by a body moving in said chamber.

18. In a ventilating apparatus, a chamber to be ventilated, a plurality of flues, and a plurality of automatic valves in each of said flues, said valves being adapted to open simultaneously by the displacement of air incident to the movement of a car in the chamber, to permit the outflow of air from the chamber into the flues, and said valves closing by a reduction of air pressure in the chamber for trapping the expelled air against return to the chamber.

19. In a ventilating apparatus, a chamber to be ventilated, vertical flues or conduits spaced one after the other in the chamber, and means adapted to entrap air in each of the flues or conduits against return to the chamber, said air trapping means of one flue being independent of each of the other flues and each air trap being operated by a body moving in the chamber.

20. In a ventilating apparatus, a chamber to be ventilated, an eduction flue or conduit for leading foul air from the chamber, an induction flue or conduit for supplying fresh air to the chamber, and automatic devices operated by a moving body in said chamber for controlling the communication between said chamber and the flues.

21. In a ventilating apparatus, a chamber to be ventilated, a foul air eduction flue leading therefrom, automatic valves controlling communication between said chamber and flue, and a fresh air flue communicating with said chamber.

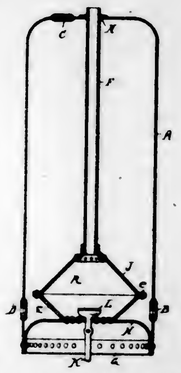
22. In a ventilating apparatus, a chamber to be ventilated, and an automatic foul air-eduction trap adapted to be put into communication with said chamber by the movement of a car or train in said chamber.

23. In a ventilating apparatus, a chamber to be ventilated, and a plurality of independent automatic air-eduction traps each adapted to be put in communication with said chamber, by the movement therein of a car or other body.

24. In a ventilating apparatus, a chamber to be ventilated, and a plurality of vertically-extending air-eduction traps, each trap being independent of the other trap or traps and each being put into communication with said chamber by the movement therein of a car or other body.

25. In a ventilating apparatus, a chamber to be ventilated, an air-eduction trap, and a plurality of fresh air induction traps, said traps being independent of each other and each adapted to be operated by the movement of a car or other body in said chamber.

855,410. WATER-HEATER. ALBERT OLESON, WILLIAM A. WILLIAMS, and CHARLES C. WILLIAMS, Toledo, Ohio; said Oleson assignor to said William A. Williams and Charles C. Williams. Filed June 14, 1906. Serial No. 321,613.



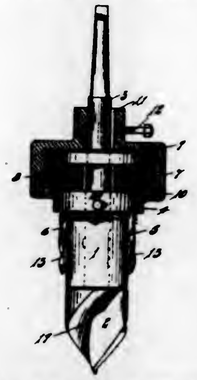
Claim.—1. In a water heater, in combination with a vertically extending tank, provided with an inlet orifice near its lower end and with an outlet orifice near its upper end, a flue extending lengthwise thereof to a point external to its upper end, and wholly out of communication with the fluid containing part of the tank, a biconical chamber truncated at each end and connected at one end with the inner end of said flue, that portion of the chamber which is of greatest diameter being located above the inlet orifice, a diaphragm registering with the lower end of the chamber, and, with the walls thereof, closing its interior from communication with the water-containing portion of the tank, and a burner within said chamber and communicating with an external source of supply, adapted to heat the walls of the chamber and thereby to heat and cause to rise above the large diametered portion of the chamber and toward the top of the tank the water adjacent thereto, substantially as described.

2. In a water heater, in combination with a tank provided with an inlet opening near the bottom portion and an outlet opening near the top, a diaphragm partially closing the lower end of the tank, a burner communicating with an external source of fuel supply extending through the open central portion of the diaphragm, a biconical chamber, whose greatest diameter is at its center portion about said burner and registering with its lower edge with the open portion of the diaphragm, its greatest diametrical portion being above said inlet opening, and a flue leading from the top of said chamber and passing through the tank to the outer air at the top thereof, substantially as described.

3. In a water heater, in combination with a tank provided with an inlet opening near the bottom thereof, a diaphragm, whose central portion is perforated, within the tank and spaced from one end thereof, a burner in communication with an external source of supply engaging through the perforated central portion of said diaphragm, a biconical air chamber surrounding said burner and wholly out of communication with the water-containing portion of the tank, the lower edges of its walls being complementary to and connected with the centrally perforated edge of the diaphragm, and that portion of the chamber whose diameter is greatest being above the inlet opening, pipes extending through said chamber from that portion of its walls below said portion of greatest diameter to points thereabove, and a flue leading from the opposite end of the chamber from that adjacent to the diaphragm through the tank to the outer air, substantially as described.

4. In a water heater, in combination with a tank and a longitudinally extending flue therewithin, said tank being provided with inlet and outlet pipes, a water tight chamber in the bottom portion of said tank, and connecting at its upper end with said flue, and its top and bottom portions being of smaller diameter than the center portion, a plurality of conductor pipes extending through said chamber from apertures in the lower portion of the walls of said chamber to similar apertures in the upper surface of the walls of the chamber, and a burner within the chamber communicating with a source of fuel supply external thereto, substantially as described.

855,411. BORING-TOOL. ALBERT OLESON, Toledo, Ohio, assignor to The Ruedy Bushing Company, a Corporation of Ohio. Filed June 23, 1906. Serial No. 323,035.



Claim.—1. In a boring tool, the combination of an inclosing casing, a revolving main bit therewithin, the lower portion of said casing being of the same diameter as that part of the main bit immediately external thereto, a pair of auxiliary bits one on each side of said main bit, projecting knives fixed to said casing on each side of each of said auxiliary bits, and intermeshing gear wheels carried by said main bit and said auxiliary bits within said casing whereby upon the rotation of said main bit said auxiliary bits are caused to rotate in the same direction, substantially as described.

2. In a boring tool, in combination with the boring head, a stationary body adapted to follow the head into the hole made thereby, auxiliary bits partially embedded in said body and adapted to bore holes adjacent to and communicating with the main hole there being on each side of each bit projecting sharpened portions of said body adapted to engage against and cut away portions of the wood adjacent to the holes being bored, substantially as described.

3. In a boring tool, in combination with a body portion adapted to be held from rotation, said body portion having a plurality of longitudinally extending grooves in its outer surface and projecting knives integral with said body portion on each side of each groove, a boring head journaled therewithin, the diameter of said boring head immediately external to said body portion being the same as that of the adjacent portion of said body, auxiliary boring members located within said grooves and journaled within said body portion within the peripheral cutting plane of said boring head, and interconnecting means between said boring head and said auxiliary boring members whereby upon the rotation of said boring head said members are also caused to rotate in the same direction, substantially as described.

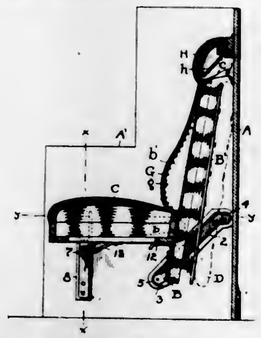
4. In a boring tool, in combination with a stationary body portion, a plurality of auxiliary bits journaled therein, knife pieces projecting from said body portion on each side of each auxiliary bit, a main bit having in its cutting portion a tapering spiral groove of a depth and width increasing regularly from the point to the shank, the greatest diameter of said main bit being the same as that of the adjacent body portion, and interconnecting means between said auxiliary bits and said main bit whereby, when it is rotated, said auxiliary bits are also rotated in the same direction, substantially as described.

5. In a boring tool, in combination with a stationary body, a boring head journaled therein and having the portion immediately external to said body of the same diameter as the lower portion of said body, there being in its engaging surface a tapering groove of constantly increasing width and depth and a cutting edge at one side thereof, a pair of auxiliary bits journaled in said body above its lowermost portion, adapted to intersect the hole made by said boring head when said body is forced therethrough after the completion of the cutting thereof, and interconnecting gear wheels carried by the stem portions of said boring head and of said auxiliary bits whereby the rotation of said boring head causes said bits to be actuated in the same direction, substantially as described.

6. In a boring tool, in combination with a revolving head, a stationary body, auxiliary bits partially embedded in said body, knives integral with said body lying adjacent to said bits, and a system of ratchet wheels within said head whereby when the head is revolved the auxiliary bits are also caused to revolve in the same direction, substantially as described.

7. In a boring tool, in combination with a casing, a main bit journaled therein, that portion of the bit projecting from said casing and immediately below the same being of the same diameter as the lower portion of said casing, auxiliary bits journaled in said casing in such position that their cutting planes intersect the plane of the periphery of the lower portion of said casing and of the adjacent portion of the main bit, said bits being partially protected by projecting portions of said casing on each side of each bit, and intermeshing gear wheels whereby when said main bit is revolved the auxiliary bits are actuated in the same direction, substantially as described.

855,412. COMBINED BED AND COUCH. DAVID T. OWEN, Cleveland, Ohio, assignor to The D. T. Owen Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 25, 1905. Serial No. 275,763.



Claim.—1. In a combined bed and couch, a main frame providing end supports, a bed frame, straight inclined guide ways in said end supports for the rear of said bed frame and horizontal extensions at the top of said guide ways, and fulcrum links pivotally engaged with said end supports and the bed frame above its rear and lower edge, and rollers on said bed frame adapted to ride in said guide ways, in combination with a removable seat.

2. In a combined bed and couch, a main frame, and straight guide ways for the bed in the ends of said frame at an angle of substantially 45 degrees inclination terminating at its top in a horizontal extension, and fulcrum links for the bed in front of said guide way and rollers for the bed engaged within said guide ways, in combination with a removable seat in front of said bed, and means to support said bed and seat at their front when used independently.

3. In a combined bed and couch, end supports and means on said supports adapted to rest the bed and the couch seat at different elevations at their front, in combination with a bed and a seat of the same length, and brackets on said bed adapted to support the rear of said seat.

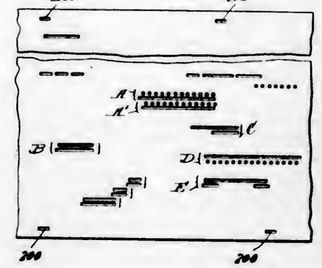
4. In a combined bed and couch, a bed frame adapted to rest in both a vertical and a horizontal position, and a removable couch seat of the same length adapted to rest at its rear upon the bottom of the bed frame, and a common support for both couch seat and bed frame at their front.

5. In a combined bed and couch, a tilting bed frame and a separate removable couch seat and self determining means adapted to move the bed bodily forward and then backward when lowering same, in combination with vertically adjustable rests adapted to support the bed frame and the couch seat at different elevations.

6. In a combined bed and couch, a couch seat and a bed of equal length and supports for both said seat and bed adapted to be changed as to elevation according as whether the seat or the bed is to rest thereon.

7. In a combined bed and couch, a couch seat and a bed of the same length, end supports therefor and vertically adjustable rests on said supports for the front of said bed and seat respectively.

855,413. MUSIC-SHEET. WILLIAM H. REES, Worcester, Mass., assignor to The Aeolian Company, New York, N. Y., a Corporation of New Jersey. Original application filed Nov. 25, 1905, Serial No. 289,077. Divided and this application filed May 7, 1906. Serial No. 315,461.



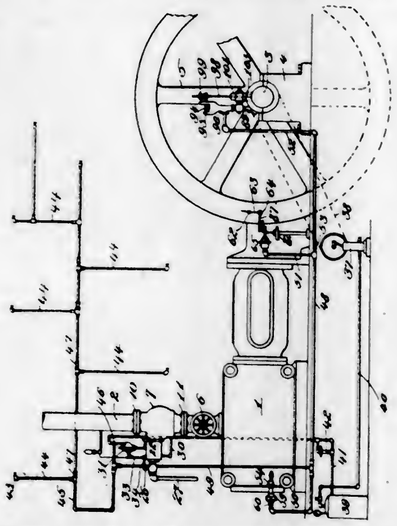
Claim.—1. As an article of manufacture, a music sheet having two sets of note perforations located in interspersed rows, one set representing a distinct musical part and the other the accompaniment therefor, said sheet having a marginal row of perforations at the side of the note perforations.

2. As an article of manufacture, a music sheet having two sets of note perforations located in alternate rows, one set representing a distinct and complete musical part and the other the accompaniment therefor, said sheet having a marginal row of perforations at each side of the note perforations, each of said marginal perforations being located in alinement with one or more of the note perforations.

3. As an article of manufacture, a music sheet for use on a double manual automatic musical instrument, said sheet having two sets of note perforations located in alternate rows, one set representing a distinct musical part corresponding to one manual and the other the accompani-

ment therefor for the other manual, said sheet also having a marginal row of perforations located in transverse alinement with certain of the note perforations, and a second additional row of perforations located in transverse alinement with certain note perforations corresponding to the lower manual, whereby said sheet may be used on a double manual instrument and the two last named rows of perforations may be employed in connection therewith for modifying the rendering of the musical composition represented by said sheet.

855,414. FLUID-PRESSURE-OPERATED STOP-VALVE MECHANISM FOR ENGINES. HUBERT R. ROCKWELL, Chattanooga, Tenn., assignor of one-third to Joshua C. Wall, Jr., and one-third to Henry F. Temple, Chattanooga, Tenn. Filed Oct. 17, 1906. Serial No. 339,398.



Claim.—1. A fluid pressure operated stop valve mechanism for engines comprising an oscillatory valvular member mounted in a steam supply and shiftable from and to open position by fluid pressure, a shiftable element operated by steam pressure and connected to said valve for normally retaining said valve in open position, a fluid pressure operated means for causing an exhaust of steam thereby allowing of the shifting of said element in one direction by steam pressure, causing thereby the moving of said valve to closing position, and means for automatically supplying a pressure of steam against said element when the exhaust has been closed, causing thereby the shifting of said element in the opposite direction and the moving of said valve to open position.

2. A fluid pressure operated stop valve mechanism for engines comprising an oscillatory valvular member mounted in a steam supply, and shiftable from and to open position, a normally-closed steam exhaust, a shiftable element impacted upon by the incoming steam and connected to said valve for normally retaining said valve in open position, a fluid pressure operated means for opening the steam exhaust to allow of the shifting of said element in one direction by the incoming steam, causing thereby the moving of said valve to open position, and means for automatically supplying a pressure of steam against said element when the exhaust has been closed, causing thereby the shifting of said element in the opposite direction and the moving of said valve to open position.

3. A fluid pressure operated stop valve mechanism for engines comprising a valvular member shiftable from and to open position for closing and opening the steam supply, a normally closed steam exhaust, a shiftable element operated by steam pressure and connected to said valve for normally retaining said valve in open position, means communicating with an air supply for normally retaining the steam exhaust closed, means for exhausting the air thereby permitting of the opening of the steam exhaust and the exhaust of steam to allow of the shifting of said element in one direction by the incoming steam, causing thereby the moving of said valve to closing position, and means for automatically supplying a pressure of steam against said element when the exhaust has been closed, causing thereby the shifting of said element in the opposite direction and the moving of said valve to open position.

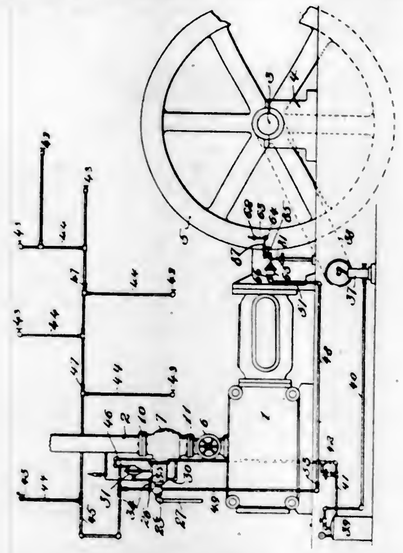
4. A fluid pressure operated stop valve mechanism for engines comprising a valvular member shiftable to and from closing position for opening and closing the steam supply, a differential piston connected to said valve for shifting it, means for applying steam pressure to one end of said piston for normally retaining the valve open, a steam exhaust valve mechanism, means communicating with an air supply for retaining said exhaust valve mechanism normally in position, means for exhausting the air, thereby releasing said exhaust valve mechanism and permitting the steam to exhaust and the shifting of the valvular member to closing position, and means when the exhaust of air is discontinued to cause the application of steam pressure against said piston thereby moving the valvular member to open position.

5. A fluid pressure operated stop valve mechanism for engines comprising a valvular member shiftable to and from closing position for opening and closing the steam supply, a differential piston connected to said valve for shifting it, means for applying steam pressure to one end of said piston for normally retaining the valve open, a steam exhaust valve mechanism, means communicating with an air supply for retaining said exhaust valve mechanism normally in closed position, and means for exhausting the air thereby releasing said exhaust valve mechanism and permitting the steam to exhaust and the shifting of the valvular member to closing position.

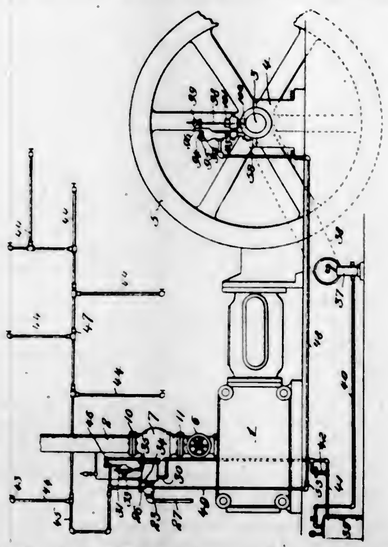
855,415. FLUID-PRESSURE-OPERATED STOP-VALVE MECHANISM FOR ENGINES. HUBERT R. ROCKWELL, Chattanooga, Tenn., assignor of one-third to Joshua C. Wall, Jr., and one-third to Henry F. Temple, Chattanooga, Tenn. Original application filed Oct. 17, 1906, Serial No. 339,398. Divided and this application filed Jan. 9, 1907. Serial No. 351,484.

Claim.—1. A fluid pressure operated stop valve mechanism for engines comprising a valvular member shiftable to and from closure position for opening and closing the steam supply, means for normally holding said valve in an open position by steam pressure, means communicating with the air supply for closing the steam exhaust, means operated when the engine exceeds a certain speed limit for exhausting the air, causing the opening of the steam exhaust and the exhaust of the steam, and the shifting of the valve-holding means by steam pressure thereby causing the moving of said valve to closing position, and means for automatically applying steam pressure for opening the valve when the exhausting of air is discontinued which causes the closing of the steam exhaust.

2. A fluid pressure operated stop valve mechanism for engines comprising a valvular member shiftable to and from closure position for opening and closing the steam supply, a differential piston connected with the valve and impacted upon by the incoming steam for normally holding said valve in open position, a steam exhaust, means communicating with an air supply for normally retaining the said exhaust closed, means operated when the engine exceeds a predetermined speed limit for exhausting the air, causing the opening of the steam exhaust, the exhausting of steam and the shifting of the piston by steam pressure in one direction, thereby causing the moving of said valve to closing position, and means for automatically applying steam pressure to said piston for shifting it in the opposite direction, thereby opening the valve when the exhaust of steam is discontinued.



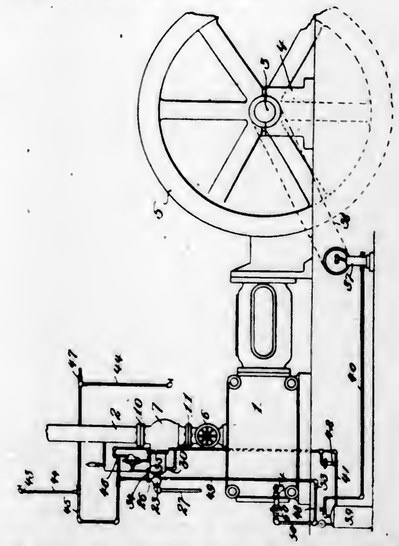
855,416. FLUID-PRESSURE-OPERATED STOP-VALVE MECHANISM FOR ENGINES. HUBERT R. ROCKWELL, Chattanooga, Tenn., assignor of one-third to Joshua C. Wall, Jr., and one-third to Henry F. Temple, Chattanooga, Tenn. Original application filed Oct. 17, 1906. Serial No. 339,398. Divided and this application filed Jan. 9, 1907. Serial No. 351,485.



Claim.—1. A fluid pressure operated stop valve mechanism for engines comprising a valvular member shiftable to and from closure position for opening and closing the steam supply, a normally closed steam exhaust means for normally holding said valve in an open position by steam pressure, means communicating with an air supply for closing the steam exhaust, means automatically operated when the bearings of the engine shaft become hot for exhausting the air, causing the opening of the steam exhaust and the exhaust of the steam, and the shifting of the valve-holding means by steam pressure thereby causing the moving of said valve to closing position, and means for automatically applying steam pressure for opening the valve when the exhausting of air is discontinued which causes the closing of the steam exhaust.

2. A fluid pressure operated stop valve mechanism for engines comprising a valvular member shiftable to and from closure position for opening and closing the steam supply, a steam exhaust, a piston connected to said valve and impacted upon by the incoming steam for normally holding said valve in an open position, means communicating with an air supply for closing the steam exhaust, an air exhaust, a valvular means for closing said exhaust, means automatically operated when the bearings of the engine shaft become hot for releasing said valvular means, causing thereby the exhaust of air, the opening of the steam exhaust, the exhaust of steam and the shifting of the piston by steam pressure, thereby causing the moving of said valvular member to closing position, and means for automatically applying steam pressure to said piston for shifting it to move the valvular member to open position when the exhaust of steam is discontinued.

855,417. FLUID-PRESSURE-OPERATED STOP-VALVE MECHANISM FOR BOILERS. HUBERT R. ROCKWELL, Chattanooga, Tenn., assignor of one-third to Joshua C. Wall, Jr., and one-third to Henry F. Temple, Chattanooga, Tenn. Original application filed Oct. 17, 1906. Serial No. 339,398. Divided and this application filed Jan. 9, 1907. Serial No. 351,486.

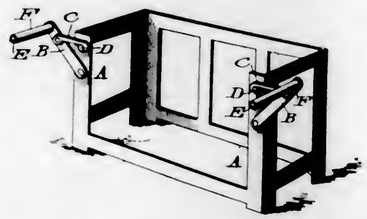


Claim.—1. A fluid pressure operated stop valve mechanism for engines comprising a valvular member shiftable to and from closure position for opening and closing the steam supply, means for normally holding said valve in an open position by steam pressure, means communicating with an air supply for closing the steam exhaust, means automatically operated by the water in the cylinder of the engine for exhausting the air, thereby permitting of

the opening of the steam exhaust and the exhaust of the steam, thereby causing the moving of said valve to closing position and means for automatically applying steam pressure for opening the valve when the exhausting of air is discontinued, which causes the closing of the steam-exhaust.

2. In an engine, the combination with a fluid pressure operated valve mechanism adapted when closed to shut off the supply of steam, of a valvular means operated by the water of condensation in the cylinder of the engine for automatically exhausting the fluid pressure thereby causing the actuation of said valve mechanism to closing position.

855,418. WARP HOLDER OR SUSTAINER. AUGUST C. SCHOEN, Philadelphia, Pa., assignor to Stinson Brothers, Philadelphia, Pa., a Firm. Original application filed Feb. 28, 1906, Serial No. 303,399. Divided and this application filed Oct. 26, 1906. Serial No. 340,763.



Claim.—1. In a warp holding device, a support, arms pivoted thereon to move toward and away from each other, means for holding said arms in operative position, and a limb extending at an angle from the outer end of each arm.

2. In a warp holding device, a support, arms pivoted thereon to swing toward and from each other, a limb projecting horizontally from and at an angle to each arm with their outer ends free and disconnected, and means coöperating with each arm and the support for holding each arm independently in its operative position.

3. In a warp-holding device, a support, an arm pivoted thereon, a limb projecting horizontally angularly from said arm with its outer end free, a latch for holding said arm in its operative position, and a sleeve on said pin.

4. In a warp-holding device, a support, an angular arm pivoted thereon and having its limb disposed horizontally with its outer end free, a latch for holding said arm in its operative position, and a sleeve removably mounted on the outward limb of said arm.

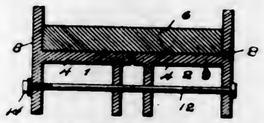
5. In a warp holding device, a support, arms pivoted thereon to move toward and away from each other, a latch for holding each arm in operative position, a limb extending at an angle from the outer end of each arm, and a sleeve removably supported on each limb.

855,419. PRODUCTION OF COHERENT BODIES FROM COMMINUTED SUBSTANCES. WILHELM SCHUMACHER, Osnabrück, Germany, assignor to Ernst Thalmann, New York, N. Y. Original application filed Sept. 16, 1904, Serial No. 224,717. Divided and this application filed Feb. 20, 1907. Serial No. 358,491.

Claim.—1. The herein described process for the production of coherent bodies from fine ores, blast furnace dust and the like, which consists in subjecting a mixture of finely divided calcium silicate with the substance to be agglomerated, to the action of steam under pressure.

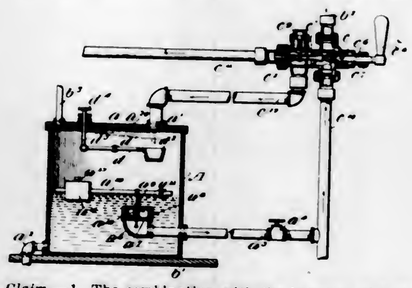
2. The herein described process for the production of coherent bodies from fine ores, blast furnace dust and the like, which consists in subjecting a mixture of finely divided calcium silicate and lime with the substance to be agglomerated, to the action of steam under pressure.

855,420. BELT-HOLDING DEVICE. JOHN J. SHERIDAN, Cassandra, Pa., assignor of one-half to Bernard Hendler, Cassandra, Pa. Filed Feb. 26, 1906. Serial No. 302,951.



Claim.—A belt holding device comprising two similar members, each member embodying a horizontal plate provided with a curved upper face, an end plate extending beyond both the upper and lower face of said horizontal plate, a flange projecting from the lower face of said horizontal plate near the opposite end thereof, said flange and the portion of said end plate which projects below the horizontal plate being provided with bolt openings, and bolts passed through the openings in said parts of the two members for binding the members to a wheel, substantially as described.

855,421. INJECTOR. WALTER H. WINKS, Baltimore, Md., assignor of one-half to Charles W. Cavey, Baltimore, Md. Filed Feb. 18, 1907. Serial No. 357,865.



Claim.—1. The combination with the injector, of a tank with which the overflow pipe thereof communicates, a pipe leading from the tank to the water supply pipe of the injector, a valve within the tank and normally closing said pipe, a lever pivoted within the casing, a link connecting the valve and the lever, a float on the lever, and a spring for holding the valve against the pressure of the water passing through the supply pipe.

2. The combination with the injector, of a tank with which the overflow pipe thereof communicates, a pipe leading from the tank to the water supply pipe of the injector, a valve within the tank normally closing said pipe, a lever pivoted within the casing, a link connecting the valve and the lever, and a float on the lever, whereby a predetermined height of water in the tank will open the valve.

3. The combination with the injector, of a tank with which the overflow pipe thereof is connected, a communication between the tank and the supply pipe of the injector, a balanced float valve normally closing said communication, and a valved discharge pipe connected with the tank.

4. The combination with the injector, of a tank with which the overflow pipe thereof is connected, a communication between the tank and the supply pipe of the injector, a balanced float valve normally closing said communication, and a steam pipe connected with the tank for heating the water therein.

5. The combination with the injector, of a tank with which the overflow pipe thereof is connected, a communication between the tank and the supply pipe of the injector, a balanced float valve normally closing said communication, and a spring for holding the valve against the pressure of the water passing through the supply pipe.

6. The combination with the injector, of a tank with which the overflow pipe thereof is connected, a communication between the tank and the supply pipe of the injector, and a balanced float valve normally closing said communication.

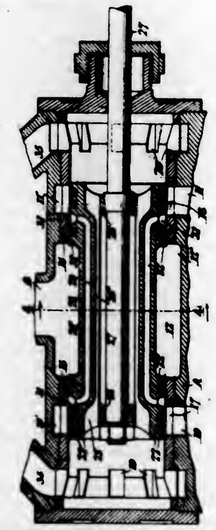
7. The combination with the injector, of a tank to which the overflow pipe delivers, a communication between the tank and supply pipe of the injector, and a balanced float valve controlling the communication.

8. The combination with the injector, of a tank to which the overflow pipe delivers, a communication between the tank and the supply pipe of the injector, a balanced float valve controlling the connection, a lever pivoted within the tank and having a perforated cup on one end thereof, said cup being directly below the discharge opening of the overflow pipe, and an indicator outside the tank and connected with the opposite end of the lever.

9. The combination with the injector, of a tank to which the overflow pipe delivers, a connection between the tank and the supply pipe of the injector, a balanced float valve within the tank and controlling said connection, and a manually operated valve in said connection outside of the tank.

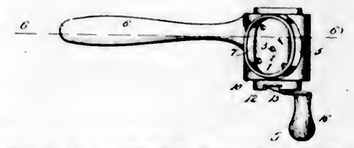
10. The combination with the injector, of a tank to which the overflow pipe delivers, a communication between the tank and the supply pipe of the injector, and a float valve controlling the communication.

855,422. VALVE. BYRD O. YEARWOOD, Portsmouth, Va., assignor of one-half to E. Schnefer, Toccoa, Ga. Filed Nov. 17, 1905. Serial No. 287,852.



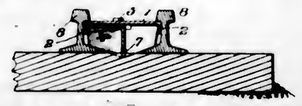
Claim.—In combination, a valve casing having an approximately central inlet port and provided with exhaust ports at both ends, bushings arranged in the casing and each provided with an annular series of ports, cylinder ports in communication with the bushing ports, a piston valve having enlarged end portions that slide within the bushings and a reduced central portion opposite the steam inlet, such reduced central portion forming a port through which steam may be directed from the main inlet to either of the bushing ports, said valve having a central opening extending from end to end thereof to permit the free passage of the exhaust to the exhaust ports at both ends of the cylinder in all positions of the valve, and an annular steam port surrounding and separate from the central opening, the annular steam port having both of its ends extended outward to the periphery of the enlarged end portions of the valve, the mouths of said annular port being tapered, and the opposite ends of the reduced central portion being, also, tapered, substantially as and for the purpose specified.

855,423. NUTMEG-PULVERIZER. GEORGE A. ALGER, Manchester, N. H. Filed May 10, 1906. Serial No. 316,083.



Claim.—In a nutmeg-grater a handle, a hopper for admitting the nutmeg and a cylindrical jacket having a contracted end, all in one piece, in combination with a grating cylinder within said jacket but protruding at both ends through the ends thereof yet provided with grating protuberances which prevent it from slipping out through said contracted ends and having also mortises 12 in its end corresponding thereto, and a handle having parts that are fitted into said mortises substantially as set forth.

855,424. GUARD FOR SWITCH-FROGS, GUARD-RAILS, OR THE LIKE. ALFRED ANDERSON, Minneapolis, Minn. Filed May 3, 1906. Serial No. 315,100.



Claim.—1. A guard of the class described, comprising a body plate, and means including a toothed engaging surface for said body plate to hold the guard in operative position between adjacent rails of a railway track.

2. A guard for filling the space between adjacent rails of a railway track consisting of a body plate, and a longitudinal bar applied to said plate and projected from its under side, said longitudinal bar being toothed so as to engage with the ties of a road bed.

855,425. CONVEYER. HARRY B. ARDEN, New York, N. Y. Original application filed Feb. 3, 1906, Serial No. 299,242. Divided and this application filed May 18, 1906. Serial No. 317,510.

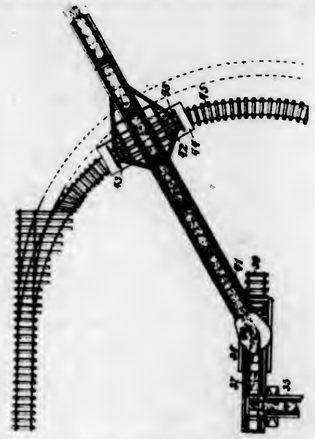
Claim.—1. A series of conveyers, each adapted to receive excavated material from the preceding conveyer or other source of supply, one of said conveyers being pivoted at one end on a pivot supported on a movable base and supported at its other end from a car on a curved track independent of said movable base whereby the last mentioned conveyer may be dumped on a curved spoil pile.

2. In a device of the class described, a conveyer, longitudinal tracks, trucks carrying frames with transverse tracks on said frames, means for carrying the conveyer from said transverse tracks whereby it may have either a longitudinal or a transverse movement, and a horizontal pivotal connection between one of said carrying means and said conveyer.

3. In a device of the class described, a conveyer, longitudinal tracks, trucks carrying frames with transverse tracks on said frames, means for carrying the conveyer from said transverse tracks whereby it may have either a longitudinal or a transverse movement, said conveyer carrying means having horizontal pivotal connections at both ends.

4. In a device of the class described, a conveyer, means for supporting said conveyer so as to permit both longitudinal and transverse movements and a hopper supported above said conveyer, said hopper having an open bottom narrower than the buckets of said conveyer.

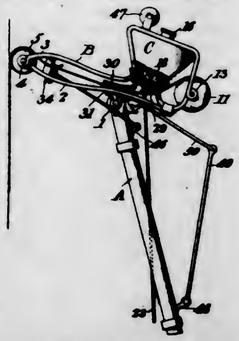
5. In a device of the class described, a curved track, a second track extending through the center of curvature of the curved track but separate from the same, a conveyer, means for supporting one end of said conveyer from said curved track, and movable means for pivotally supporting the other end of said conveyer from the other track.



6. In a device of the class described, a curved track, a straight track, trucks on each of said tracks, a conveyer, means for pivotally supporting one end of said conveyer from the truck on said straight track, means for supporting the other end of the conveyer from the truck on said curved track, a second curved track and a straight extension of said curved tracks parallel with the first mentioned straight track so that the conveyer may be moved so as to be supported by the trucks on both of said straight tracks, then moved longitudinally of said straight tracks, then have its free end moved over said second curved track.

7. In a device of the class described, a curved track, a second track extending through the center of curvature of the curved track, a conveyer, a car on said curved track, rollers adapted to run laterally on said car, a pier mounted on said rollers which supports one end of the conveyer, a car on said straight track and pivotal means for supporting the other end of said conveyer from said car.

855,426. PAPER-HANGING MACHINE. ANNA V. AUSTIN and NATHAN M. PURVIANCE, Spokane, Wash., assignors of one-third to Emma N. Sims, Spokane, Wash. Filed Aug. 16, 1906. Serial No. 330,909.



Claim.—1. A paper hanging machine having a supporting handle, a cutter bar guide, a toothed cutter bar slidable in said guide, automatic means for retracting said cutter bar, means controlled by the operator at one end of the handle for operating said cutter bar, and a cutter bar receiving member having a slot provided with a stationary cutter bar adapted to coöperate with said sliding cutter bar.

2. A paper hanging machine having a frame comprising upper and lower frame members pivotally connected with each other, a slidable cutter bar carried by one of said frame members, and a cutter bar receiving member carried by the other of said frame members.

3. A paper hanging machine having a handle, a frame mounted upon said handle and consisting of upper and lower frame members pivotally connected with each other, one of said frame members having a loop formed with a recess and the other of said frame members having a beveled end formed with a projection adapted to engage said recess, and a sleeve slidably mounted upon said loop of one member and adapted to engage the beveled end of the other member for holding said projection within said recess and thus locking the upper and lower members of the frame together.

4. A paper hanging machine having a handle, a frame pivotally mounted upon said handle and consisting of upper and lower frame members pivotally connected with each other, a wall-engaging roller mounted in line with the pivot point of the upper and lower members of said frame, a reciprocatory cutter bar carried by the lower frame member, a cutter bar receiving member carried by the upper frame member, flexible elements connected with said reciprocatory cutter bar, a slide rod mounted upon the handle and connected with said flexible elements, a paste receptacle mounted upon the upper member of said frame, means controlled by the operator at the lower end of the handle for regulating the flow of paste from said receptacle, a short paste trailer mounted in advance of said receptacle, a long paste trailer mounted in rear of said receptacle, a paper rod mounted upon said upper frame member, and means for locking said upper and lower frame members together.

5. A paper hanging machine comprising a handle, a frame pivotally mounted thereon and consisting of upper and lower frame members pivotally connected, a bearing plate carried by one of said members, paste distributing mechanism carried by the other member and adjacent said plate, means for locking the frame members together, a paper cutter carried by the frame, means for actuating said cutter, and a roller mounted in the frame for supporting paper in contact with a wall.

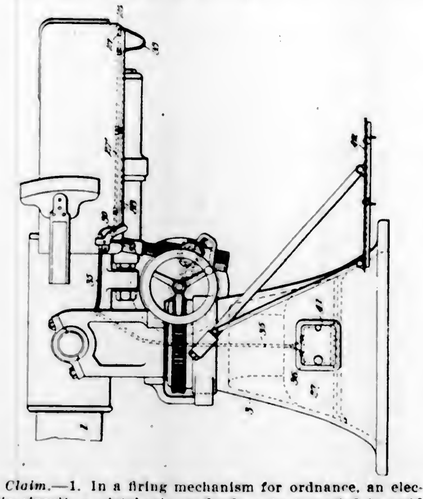
6. A paper hanging machine comprising a handle, a frame pivotally connected thereto and consisting of upper and lower members pivotally connected, means for securing said members in fixed relation, means for rocking the frame upon the handle, a bearing plate carried by one of the members, a paste applying mechanism carried by the other member and adjacent the bearing plate, means for supporting a paper roll upon one of the members, a paper supporting roller carried by the frame and adapted to travel on a wall, and a paper cutter carried by the frame adjacent said roller.

7. A paper hanging machine comprising a handle, a frame pivotally mounted thereon and consisting of upper and lower members pivotally connected, means for securing said members together, paste distributing mechanism carried by one of the members, a paper supporting roller carried by the frame, a cutter bar guide upon one of the members and between the paste distributing mechanism and the roller, a cutter bar receiving member upon the other frame member and registering with the guide, a cutter bar mounted to reciprocate within the guide, and means for projecting said bar into the receiving member, said receiving member and guide being spaced apart to constitute a paper guide.

8. A paper hanging machine comprising a frame consisting of upper and lower members pivoted together, means for detachably securing said members together, paste distributing mechanism carried by the frame, a paper supporting and applying roller carried by the frame, a cutter bar receiving member upon one of the frame members, a cutter bar guide upon the other frame member and registering with the receiving member, said guide and receiving members being spaced apart to constitute a paper guide, curved guide flanges extending from the receiving member and cutter bar guide, a cutter bar mounted within the guide, and means for projecting said bar into the receiving member to cut the paper within the paper guide.

9. A paper hanging machine comprising a frame, paste applying mechanism carried thereby, a paper supporting and applying device carried by the frame, a paper guide interposed between the paste applying mechanism and the paper supporting device, a cutter bar mounted within one portion of said paper guide, and means for projecting the cutter bar into the opposite portion of the paper guide.

855,427. ELECTRIC AND PERCUSSION FIRING MECHANISM. WILLIAM H. BEVANS, Bridgeport, Conn. Filed May 9, 1904. Serial No. 207,130.



Claim.—1. In a firing mechanism for ordnance, an electric circuit, a pistol-grip, a fixed contact carried by said grip and insulated therefrom to which one of the circuit wires is attached, a sliding contact maker and breaker movable in said grip to and from said fixed contact and to which the other wire of the circuit is attached, a pivoted trigger carried by said grip, and a projection carried by said trigger and insulated therefrom engaging and effecting the movement of said contact-maker and breaker to make and break the circuit.

2. In a firing mechanism for ordnance, the combination with the firing-pin and a member for tripping the same, of a sliding-rod mounted upon a non-recoiling part of the mount adapted to engage and actuate said tripping-member, a rock-shaft mounted adjacent to said sliding-rod, a trigger for rocking said shaft, and an operative connection between the shaft and sliding rod.

3. A firing-mechanism for ordnance comprising electric and percussion gears for firing the charge, and operating means constructed and arranged whereby a certain movement thereof effects the operation of one of said gears and a further movement, the operation of the other gear.

4. A firing-mechanism for ordnance comprising an electric circuit, a contact maker and breaker for making and breaking said circuit, a firing-pin, tripping means for said pin, a member for operating said tripping means, and means arranged to operate said member upon a certain movement and upon a further movement to operate the circuit maker and breaker to make the circuit.

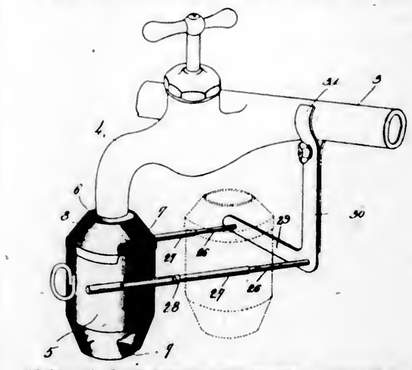
5. A firing mechanism for ordnance comprising an electric-circuit, a circuit maker and breaker, a firing-pin, a tripping member therefor, a sliding operating-member for operating said tripping-member, a trigger, an operative connection between said trigger and sliding member, and means carried by the trigger for actuating the circuit-maker and breaker to form the circuit.

6. A firing-mechanism for ordnance comprising an electric circuit having a fixed, and a movable terminal, a pivoted trigger means carried by said trigger for moving the movable terminal into contact with the fixed terminal for making the circuit, a firing-pin, tripping-means therefor, a sliding-rod for operating said tripping-member, and an operative connection between the rod and trigger.

7. A firing mechanism for ordnance, comprising electric and percussion gears for firing the charge, and a single operating means for both of said gears constructed and arranged so as to be normally capable of operating both of said gears.

8. A firing mechanism for ordnance comprising means for firing the gun electrically, and means for firing the same by percussion, and a single operating means so constructed and arranged that a slight movement thereof effects the operation of one of said means and a further movement effects the operation of the other means.

855,428. SOAP-HOLDER. SYDNEY E. BISHOP, Cambridge, Mass. Filed May 9, 1904. Serial No. 207,017.



Claim.—1. In a soap receptacle, the combination with an L-shaped supporting member, the vertical arm of which has a pipe-engaging clamp at its upper end, and the horizontal arm of which has extending therefrom two telescopic arms, of a soap receptacle situated between the telescopic arms and rigid with the outer section of each arm.

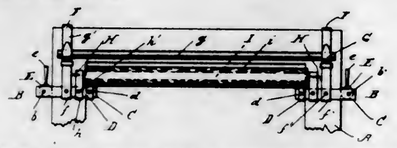
2. In a device of the class described, the combination with a soap receptacle, of an L-shaped supporting member 30 having at its upper end a pipe-engaging clamp 31, two rods 26 extending horizontally from the horizontal portion of the support, two other tubular members 27 telescoping over the rods 26, and two other tubular members 28 between which the soap receptacle is received and rigid therewith, said members 28 telescoping over the members 27, and spring stops 33 to limit the outward movement of the members 28.

855,429. SHADE AND CURTAIN HANGER. GOVERNOR L. BREWER, Terre Haute, Ind., assignor of one-half to Peter N. Staff, Terre Haute, Ind. Filed Oct. 6, 1906. Serial No. 337,705.

Claim.—1. The combination, with a clamping bar provided with a rearwardly projecting pin at one end portion, of a socket secured to the other end portion of the said bar and provided with a rearwardly projecting plate, an eccentric clamp mounted on the said pin, and a shade roller bracket secured to the middle portion of the said bar.

2. The combination, with a supporting bar provided with a rearwardly projecting pin at one end portion, of a

socket slidable upon the other end portion of the said bar and provided with a rearwardly projecting plate and a fastening screw, an eccentric clamp mounted on the said pin, and a shade roller bracket secured to the middle portion of the said bar.



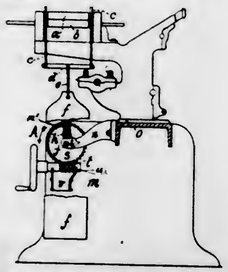
3. The combination, with a supporting bar provided with a rearwardly projecting pin at one end portion, of a socket secured to the other end portion of the said bar and provided with a rearwardly projecting plate, an eccentric clamp mounted on the said pin, a supporting loop for a curtain pole having its main portion bent double and forming a hook for engaging with the top of the window frame and having its lower end secured to the said bar, and a shade roller bracket secured to the middle portion of the said bar.

4. The combination, with a clamping bar having a rearwardly projecting plate at one end portion, of an eccentric clamp pivoted to the rear face of the other end portion of the said bar, said plate and clamp being arranged to engage with the opposite side edges of a window frame, and a shade roller bracket secured to the middle portion of the said bar.

5. The combination, with a clamping bar having a rearwardly projecting plate at one end portion, of an eccentric clamp pivoted to the other end portion of the said bar, a shade roller bracket secured to the middle portion of the said bar, and a hook for engaging with the top of the window frame, said hook being provided with a longitudinally adjustable shank secured to the said bar, and having its main portion bent double and having a supporting loop for a curtain pole depending from its said main portion.

6. The combination, with a clamping bar provided at one end portion with a rearwardly projecting plate, and an eccentric clamp pivoted to the rear face of the other end portion of the said bar; of a shade roller bracket secured to the said bar, an adjustable hook for engaging the top of the window frame also secured to the said bar and provided with a shank formed of two overlapping portions, and a clamping loop surrounding the overlapping portions of the said shank and securing them together after the position of the hook has been adjusted.

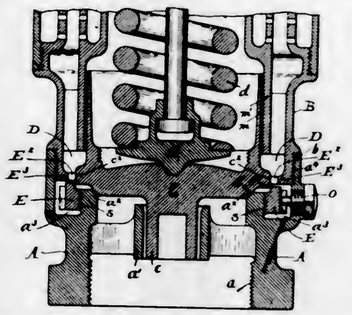
855,430. COMBING-MACHINE FOR COTTON, WOOL, &c. FRANK W. CHADDERTON, Oldham, England. Original application filed Feb. 25, 1902, Serial No. 95,517. Divided and this application filed July 29, 1904. Serial No. 218,598.



Claim.—1. In a combing machine (combined combing machine and drawing frame) the combination with a top-roller of the draw-box and a weight supported thereby and exerting pressure thereon during the working of the machine, of means whereby the said weight may be engaged by a rod, a rod to engage with the said weight and raise and support it, two cams to act on the said rod at opposite ends thereof and each furnished with a hollow to receive the said rod when raised by the said cams, a shaft to carry both such cams and means to turn such shaft.

2. In a combing machine (combined combing machine and drawing frame) the combination with a top-roller of the draw-box and a weight supported thereby and exerting pressure thereon during the working of the machine, of means whereby the said weight may be engaged by a rod, a rod to engage with the said weight and raise and support it, two cams to act on the said rod at opposite ends thereof each with two operative faces leading in opposite directions from a part of least radius two hollows to receive the said rod when raised by the said cams, a shaft to carry both such cams, a worm-wheel connected to such shaft, a worm engaging with the said worm-wheel and means to turn such worm.

855,431. SAFETY-VALVE. FRANK W. COALE and MARY L. COALE, Baltimore, Md., executors of Joseph M. Coale, deceased, assignors to Coale Muffler and Safety Valve Co., Baltimore, Md., a Corporation of New Jersey. Original application filed Oct. 5, 1904, Serial No. 227,268. Divided and this application filed Jan. 26, 1906. Serial No. 298,076.



Claim.—In a safety valve of the class described, the combination with the valve and the valve casing and with the adjusting ring forming the outer wall of the huddling chamber, of an inwardly extending annular projection on the inner wall of the casing, arranged above the adjusting ring and operating to form a restricted annular throat or passage-way intermediate the huddling chamber and the relatively large discharge chamber.

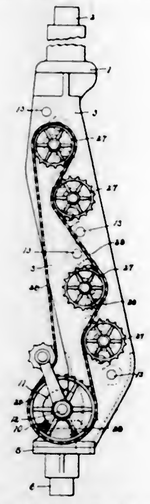
855,432. BEAN-PICKING MACHINE. GEORGE F. CRIPPEN, Ypsilanti, Mich. Filed Sept. 26, 1905. Serial No. 280,242.

Claim.—1. In a bean picking machine, the combination of two discriminating rolls revolving toward each other combining to form varying angles of resistance to the passage of material between the rolls, which angles are greatest at one end of the rolls and gradually decrease toward the opposite end of the rolls to give an increasing seizing tendency and means for feeding the beans to the end of the rolls forming the greatest resisting angle.

2. In a bean picking machine, the combination of pairs of discriminating rolls journaled with their adjacent surfaces nearer together at one end of the rolls than at the other and arranged to rotate toward each other, whereby the rolls combine to form varying angles of resistance to the passage of material between the rolls.

3. In a bean picking machine, the combination of parallel roll shafts rotating toward each other and rubber rolls on said shafts so formed that the angles of resistance to the passage of material between said rolls are greater at one end of the rolls than at the other, to cause the rolls to seize the material less readily at one of their ends than at the other.

4. In a bean picking machine, the combination of a swing frame, a series of discriminating rolls journaled in said frame in pairs, each pair being set off from vertically below the pair above to prevent the material passing between the rolls above from falling upon the rolls below and being drawn back between said lower pair.



5. In a bean picking machine, the combination with a swing frame, of a series of discriminating rolls journaled in said frame and arranged in pairs, the upper roll of each pair being set above and at one side of the vertical center line of the lower roll to form one side and the bottom of a trough for the beans, and each pair of rolls being so set relative to the pair above that the upper roll of the lower pair is below the lower roll of the upper pair.

6. In a bean picking machine, the combination with a swing frame, of a series of discriminating rolls journaled in said frame and arranged in groups, gears on the ends of the rolls to transmit motion from one roll to the others of each group, a sprocket wheel on the shaft of one roll of each group and a sprocket chain engaging said sprockets.

7. In a bean picking machine, the combination with discriminating rolls along which the beans are fed by centrifugal force, of a frame in which the rolls are journaled formed with recesses at the inner ends of the bearings for the inner ends of the rolls in the axes of which recesses the roll shafts extend, and cups to fit tightly into the recesses and formed with axial openings fitting the roll shafts between the bearings and the rolls.

8. In a bean picking machine, the combination with a series of discriminating rolls, of a swing frame in which said rolls are journaled consisting of top and bottom castings provided with trunnions upon which the frame is adapted to turn, an inner end casting provided with bearings for one end of the rolls and with curved openings leading therethrough to each pair of rolls to conduct the beans thereto, and an outer end casting provided with bearings and formed with a vertical passage and openings into said passage at the discharge end of the rolls.

9. In a bean picking machine, the combination with discriminating rolls arranged in pairs to form the bottom and one side of a trough, of a swing frame having an inner end casting formed with bearings for the roll shafts and a recess at the inner end of each bearing and provided with a curved feed opening for each pair of rolls, an outer end casting formed with a vertical passage and openings leading into said passage at the discharge end of each pair of rolls, plates engaging slots in the end castings and forming the other side of the trough, a back plate extending across between the end castings at the rear of the rolls to form a passage for the material passing between the rolls, and a hopper at the lower end of the frame having its discharge openings at its outer end adjacent to the vertical passage in the outer end casting.

10. In a bean picking machine, the combination of a series of discriminating rolls journaled in pairs with each pair set off from vertically beneath the pair above with the upper roll of the lower pair adjacent to the lower roll of the upper pair, each pair of rolls being arranged with the upper roll above and to one side of the lower roll to form one side and the bottom of a trough for the beans; a frame having bearings in its ends for the rolls and offset from a vertical line toward its lower end and provided with feed openings at one end of the rolls and a discharge passage at the opposite end, trunnions on the upper and lower end of the frame in axial alinement, a shaft in the axis of the lower trunnion, a horizontally extending shaft in bearings on the frame, bevel gears on the ends of said shafts, a sprocket wheel in the outer end of the horizontal shaft, sprockets on the roll shafts, a chain engaging said sprockets, a back plate extending across between the ends of the frame at the rear of the rolls to form a passage for the material passing bewteen the rolls, and a discharge hopper at the lower end of the last named passage extending downward at one side of the horizontal shaft.

855,433. PNEUMATIC DUST-REMOVER. MILES E. FREEMAN, Bradford, Pa., assignor of one-half to James J. Freeman, Bradford, Pa. Filed Aug. 24, 1905. Serial No. 275,586.



Claim.—1. A cleaning device comprising a hollow head provided with a lower bottom wall having a depression therein with ridges arranged at opposite sides of said depression, the edges of said ridges being angular and adapted to bear on the carpet and agitate the nap thereof when the device is moved over a carpet, and said lower wall being provided between the ridges with an aperture communicating with the interior of the hollow head.

2. A cleaning device comprising a hollow head having a lower bottom wall provided with spaced ribs having sharp bearing edges to engage the nap of the carpet and agitate it during the passage of the device thereover, said bottom wall having apertures therein between said ribs communicating with the interior of said hollow head and a suction tube leading from said head.

855,434. HORSE-POWER. WILLIAM D. MCATLIN, Sioux Falls, S. D. Original application filed Jan. 27, 1906, Serial No. 298,219. Divided and this application filed Apr. 13, 1906. Serial No. 311,570.

Claim.—1. The combination of a supporting frame work and a tumbling rod mounted thereln, means for actuating said tumbling rod, a carriage supporting said actuating means, and slidably mounted on said frame work, and a screw rod connected to said frame work and to said carriage and adapted to adjust the latter with respect to the frame work.

2. The combination of a support, a tumbling rod mounted in said support, a tongue pivotally connected to said

rod, a rotatable part provided with a boxing in which said tongue is mounted to turn longitudinally and axially, a cross head mounted in said part and carrying said boxing, and an adjusting rod secured to said cross head.



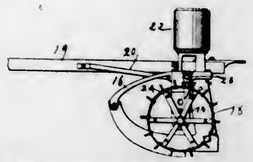
3. The combination of a frame work, a tumbling rod mounted therein, a gyrating tongue pivotally connected at one end to said rod, a rotatable support designed to gyrate said tongue, a cross head mounted to slide in said support, the tongue being mounted to turn axially and move longitudinally in the cross head, and means for adjustably sliding said cross head in the support.

4. The combination of a frame work, a tumbling rod mounted therein, a gyrating tongue pivotally connected at one end to said rod, a rotatable support consisting of spaced apart bars, a cross head mounted to slide longitudinally between said bars, a boxing pivotally mounted in said cross head, the tongue being mounted to move axially and longitudinally in the boxing, and an adjusting rod mounted in the support for the cross head and having an adjustable connection with the said cross head, as and for the purpose set forth.

5. The combination of a frame work, a tumbling rod mounted therein, a gyrating tongue pivotally connected at one end to said rod, a rotatable support consisting of spaced apart bars, a cross head mounted to slide longitudinally between said bars, a boxing pivotally mounted in said cross head, the tongue being mounted to move axially and longitudinally in the boxing, and an adjusting rod mounted in the support for the cross head and having a threaded connection with a bearing in said cross head, whereby the rotation of said rod will move the cross head within its support.

6. A cross bar, comprising a supporting frame work, a carriage adjustably mounted on said frame work, means for adjusting the carriage to different positions along the frame work, an annulus supported on said carriage, a tumbling rod journaled in the frame work below said annulus, a ring mounted to turn around said annulus, a draft tongue secured to the carriage by said ring, spaced apart bars 19 disposed at an angle to the tongue and also carried by said ring, a gyrating tongue secured at its lower end to the tumbling rod and extending up through the spaced apart bars, a cross head mounted to slide between said bars, a pivoted boxing carried by said cross head and through which the tongue of the tumbling rod extends and has both axial and longitudinal movement, and an adjusting rod supported between said bars and having an adjustable connection with the cross head, as and for the purpose set forth.

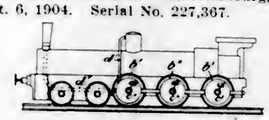
855,435. CHECK-ROW CORN-PLANTER. ELLSWORTH ROBINSON, Kellogg, Iowa. Filed Feb. 24, 1906. Serial No. 303,068.



Claim.—1. An automatic attachment for corn-planters to produce check-rows comprising brackets fixed to the carriage frame to project downward, a rotatable shaft mounted on the brackets, traction wheels fixed to the ends of the shaft, markers fixed to the wheels to project outward, a second shaft parallel with the first mentioned shaft, cams on the ends of the second shaft and means to actuate the cams at each revolution of the wheels, arranged and combined to operate as set forth.

2. An automatic attachment for corn-planters to produce check rows, comprising a rotatable shaft mounted under the front carriage frame, traction wheels fixed to the ends of the shaft, markers fixed to the wheels to project outward, a second shaft mounted under the carriage frame, cams on the ends of the said shaft and means to actuate the same at each revolution of the wheels, arranged and combined to operate in the manner set forth, for the purposes stated.

855,436. LOCOMOTIVE WITH STEAM-TURBINE DRIVE. JOHANN STUMPF, Charlottenburg, Germany. Filed Oct. 6, 1904. Serial No. 227,367.



Claim.—1. A locomotive comprising an axle, driving wheels mounted on the axle, independent elastic fluid turbines for the wheels co-operating to drive them in the same direction and with substantially equal torque, and conduits for supplying elastic fluid to the turbines.

2. A locomotive comprising an axle, and driving wheels mounted thereon, in combination with elastic fluid turbines directly connected to the ends of the axle, one constituting a high pressure and another a low pressure turbine operating simultaneously and driving in the same direction.

3. A locomotive comprising axles, and driving wheels mounted thereon, in combination with a plurality of elastic fluid turbines for each axle, said turbines being adapted to successively abstract energy from the motive fluid and designed and arranged to produce substantially the same torque at each wheel.

4. A locomotive comprising axles, and driving wheels mounted thereon, in combination with a plurality of elastic fluid turbines directly connected to each axle, and conduits connecting the turbines in series.

5. A locomotive comprising axles, driving wheels mounted thereon, and a frame supported on the axles, in combination with a high speed turbine adjacent each wheel and connected with its axle, and an independent casing for each turbine mounted on the frame.

6. A locomotive comprising axles, driving wheels mounted on the ends of the axles, a turbine adjacent each wheel, means for passing motive fluid in series through the turbines on one side of the locomotive, and means for passing motive fluid in series in the opposite direction through the turbines on the other side of the locomotive so that the pairs of driving wheels are uniformly driven by a pair of turbines connected with the axle of each pair of wheels and receiving motive fluid at different pressures.

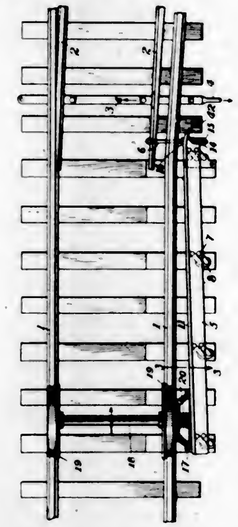
7. A locomotive comprising axles, and driving wheels mounted thereon, in combination with elastic fluid turbines arranged one at each end of each axle, and conduits connecting the turbines in series.

8. A locomotive comprising axles, and driving wheels mounted thereon, in combination with turbines for driving the wheels which are arranged in line with the axles and located adjacent to the outer sides of the wheels.

9. A locomotive comprising axles and wheels mounted thereon, a series of wheel-driving turbines on one side of the locomotive, a series of wheel-driving turbines on the other side of the locomotive, conduits joining the turbines of each series, and a conduit joining the end of one series with the beginning of the other to pass motive fluid in opposite directions through the two series of turbines.

855,437. RAILWAY-SWITCH. URBAN A. WOODBURY, Burlington, Vt. Filed Apr. 23, 1907. Serial No. 369,863.

Claim.—1. In an automatic railway switch, a bar mounted adjacent to the track for movement parallel to itself, in position to be acted upon by a locomotive, a direct connection between said bar and the switch-rails, a switch-rod and a switch-stand-rod and means normally connecting said rods rigidly together but permitting relative movement thereof, when said bar is actuated.



2. In an automatic railway switch, the combination of a switch-rod and a switch-stand-rod, means normally connecting said rods rigidly together but constructed and adapted to yield under pressure and permit a relative movement thereof and means directly connected to the switch-rails and located in position to be actuated by a locomotive to cause said switch-rod to move relatively to said switch-stand-rod to close the switch.

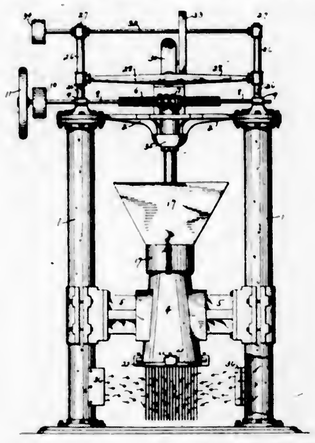
3. In an automatic switch, a bar angularly arranged adjacent to one of the main-line rails in position to be actuated upon by a locomotive, a direct connection from said bar to the switch-rails, a yielding element in said connection, a switch-rod and a switch-stand-rod, means normally rigidly connecting said rods but adapted to yield when said bar is actuated, and means to cause said bar to always maintain the same angle relatively to the main-line rails.

4. In an automatic railway-switch, the combination of a bar mounted on a plurality of vertical crank-shafts in position to be actuated by means carried by a locomotive, connections between said bar and the switch-rails constructed and adapted to yield within certain limits and a breakable connection between the switch-rod and switch-staud rod constructed and adapted to normally connect said rods rigidly together but to permit the former rod to be moved relatively to the latter rod by said bar.

5. In an automatic railway-switch, means located in position to be actuated by a locomotive, direct connections between said means and the switch-rails, a switch-stand rod having a circular aperture near its end, a switch-rod having a rectangular aperture near its end, provided with inclined cam surfaces at its sides, and a narrower slot extending back from said rectangular aperture, a pin connecting said rods having a circular portion to fit said circular aperture, a rectangular portion to fit said rectangular aperture and a narrower rectangular portion to fit said slot, the sides of said wider rectangular portion being beveled off to fit said cam surfaces, a spring surrounding the narrower portion of said pin, a stirrup depending from said switchstand-rod to support said spring, the lower reduced end of said pin being passed through said stirrup and secured below the same.

6. In an automatic railway-switch, means located in position to be actuated by a locomotive, direct connections between said means and the switch-rails, a switch-stand rod and a switch-rod, a pin normally securing said rods rigidly together, coöperating cam-surfaces on said pin and said switch-rod, whereby when said rod is forced toward said switch-stand rod by said means, the pin is raised into position to permit relative movement of said rods.

855,438. MACHINE FOR MANUFACTURING MACARONI, &c. JOHN V. EBEL, Pittsburg, Pa. Filed Sept. 17, 1904. Renewed Nov. 6, 1906. Serial No. 342,293.



Claim.—1. In a machine of the character described, the combination with a pair of hollow supporting columns of a driving means carried thereon, a compressing compartment provided with ribs therein, suspended between the columns, a shaft extending into the compressing compartment and operative through the driving means, an expressing member mounted on the lower end of said shaft, and means for directing an air blast against the macaroni or noodles as the same is expressed from the compressing compartment, substantially as described.

2. In a machine of the type set forth, the combination of hollow supporting columns having openings near the base thereof, a pressing compartment mounted between the columns provided with a die mounted in the bottom thereof, means for expressing the dough from said compartment, and means for forcing an air blast through the openings of the columns against the dough as the same is expressed from the pressing compartment, substantially as described.

3. In a machine for manufacturing macaroni, noodles, etc., the combination with a driving means of a pair of supporting columns, to the tops of which is secured a center bearing casting; a funnel shaped pressing compartment having vertically extended ribs therein suspended midway between the supporting columns; a perpendicular shaft seated in said center bearing casting and extending down nearly to the bottom of said pressing compartment; a wheel mounted on the top of said shaft; means, connected with said wheel, for revolving said shaft; an apertured casting seated on the top of the pressing compartment; a hollow casting, having a plurality of vertical ribs or flutes formed on the inner face thereof, removably mounted on said apertured casting and forming a kneading compartment; and an adjustable hopper or mixing chamber mounted over said latter casting; substantially as described.

4. In a machine for manufacturing macaroni, noodles, etc., the combination with a driving means of a pair of supporting columns, to the tops of which is secured a center bearing casting; a funnel shaped pressing compartment having vertical ribs formed therein suspended midway be-

tween the supporting columns; a perpendicular shaft seated in said center bearing casting and extending down nearly to the bottom of said pressing compartment; means, connected with said wheel, for revolving said shaft; an apertured casting seated on the top of the pressing compartment; a hollow casting, having a plurality of vertical ribs or flutes formed on the inner face thereof, removably mounted on said apertured casting and forming a kneading compartment; an adjustable hopper, or mixing chamber, mounted over said latter casting; a plurality of angled mixing blades adjustably mounted on the perpendicular shaft and designed to operate inside the mixing hopper; a plurality of angled kneading blades adjustably mounted on the perpendicular shaft and designed to operate inside the hollow kneading casting; a double worm screw removably secured to the lower part of the perpendicular shaft and designed to operate inside the pressing compartment; a die keeper adjustably secured to the bottom of the pressing compartment; and a suitable forming die seated in said keeper; substantially as described.

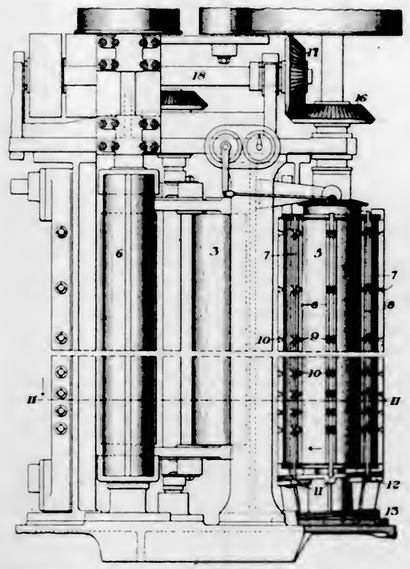
5. In a machine for manufacturing macaroni, noodles, etc., the combination with a driving means of a pair of hollow supporting columns, to the tops of which is secured a center bearing casting; a perpendicular shaft seated in said casting; a worm gear wheel mounted on the top of said shaft; a horizontal shaft mounted in suitable bearings fixed to the top of the supporting columns and designed to be connected with the driving means; a worm mounted on said latter shaft engaging the worm gear wheel; a pair of hollow standards secured to the tops of the supporting columns and communicating with the interior of the same; an air blast pipe connecting said hollow standards and communicating with a pipe leading to a blast fan secured to one side of the center bearing casting; means, mounted on the top of the standards, and connected with the driving means, for operating said fan; a plurality of air openings in the lower part of said hollow supporting columns; and means, connected with said columns, for deflecting the air blast against the products of the machine; substantially as described.

6. In a machine for manufacturing macaroni, noodles, etc., the combination with a driving means of a pair of hollow supporting columns, to the tops of which is secured a center bearing casting; a funnel shaped pressing compartment suspended midway between the supporting columns; a perpendicular shaft seated in said center bearing casting and extending down nearly to the bottom of said pressing compartment; a worm gear wheel mounted on the top of said shaft; a horizontal shaft mounted in suitable bearings fixed to the top of the supporting columns and designed to be connected with the driving means; a worm mounted on said latter shaft engaging the worm gear wheel; an apertured casting seated on the top of the pressing compartment; a hollow casting, having a plurality of vertical ribs or flutes formed on the inner face thereof, mounted on said apertured casting; an adjustable hopper or mixing chamber mounted over said latter casting; a plurality of angled mixing blades adjustably mounted on the perpendicular shaft and designed to operate inside the mixing hopper; a plurality of angled kneading blades adjustably mounted on said perpendicular shaft and designed to operate inside the hollow casting; a double worm screw adjustably secured to the lower part of the perpendicular shaft and designed to operate inside the pressing compartment; a die keeper adjustably secured to the bottom of the pressing compartment; a suitable forming die seated in said keeper; a pair of hollow standards secured to the tops of the supporting columns and communicating with the interior of the same; an air blast pipe connecting said hollow standards and communicating with a pipe leading to a blast fan secured to one side of the center bearing casting; means, mounted on the top of the standards, and connected with the driving means, for operating said fan; a plurality of air openings in the lower part of said hollow supporting columns; and means, connected with said columns, for deflecting the air blast against the products of the machine; substantially as described.

7. In a machine for the manufacture of macaroni, noodles and the like, a mixing chamber, a kneading compartment, a pressing chamber having a die removably secured to the lower end thereof, a shaft extending through said chamber provided with mixing plates and having a pressing member mounted at the lower end thereof, a driving means for said shaft, hollow supporting members provided with openings in their lower portions adjacent to the lower end of the pressing chamber, means for supplying an air blast to said columns, and means carried adjacent to said openings for directing an air blast against the macaroni as it is expressed from the pressing chamber, substantially as described.

REISSUES.

12,656. CRIMPING MECHANISM FOR WIRE-FENCE MACHINES. JOHN A. COCKER, Joliet, Ill., assignor to American Steel & Wire Company, Chicago, Ill., a Corporation of New Jersey. Filed Mar. 13, 1907. Serial No. 362,244. Original No. 837,797, dated Dec. 4, 1906.



Claim.—1. In a wire-crimping device, a rotatable drum, a longitudinally-movable crimping-bar mounted therein, and a rotary member engaging the bar and rotating in a plane which is inclined to the axis of the drum; substantially as described.

2. A wire gripping and crimping device, comprising a rotary drum, a plurality of endwise-movable crimping-bars carried thereby, and a rotary member journaled to rotate in a plane inclined to the axis of the drum and engaging the crimping-bars; substantially as described.

3. In a wire gripping and crimping device, a rotary drum having fixed in its periphery a plurality of notched bars arranged in pairs, a series of longitudinally-movable bars having corresponding notches and arranged one between each pair of the fixed bars, and an actuating device for the movable bars consisting of a rotary member in which the lower ends of the bars are seated, and which is journaled to rotate in a plane inclined to the axis of the drum; substantially as described.

4. In a wire gripping and crimping device, the combination with a drum having a plurality of endwise-movable crimping-bars, of a rotary member journaled to rotate in a plane inclined to the axis of the drum and engaging the said bars; substantially as described.

5. In a wire gripping and crimping device, the combination with a drum having a plurality of endwise-movable gripping and crimping bars, of a fixed base having an upper surface inclined to the axis of the drum, and a ring journaled upon said base to rotate in a plane parallel with such surface, said ring having recesses which engage the end portions of said bars; substantially as described.

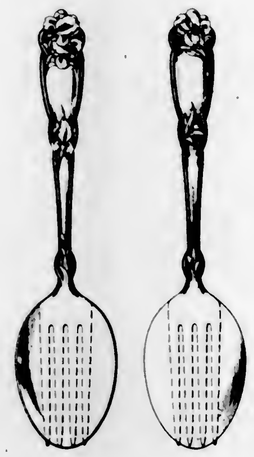
DESIGNS.

38,582. BADGE. MARCELLA HAMILTON GOODRICH, Baltimore, Md., assignor to Anton H. Fetting, Baltimore, Md. Filed Apr. 27, 1907. Serial No. 370,730. Term of patent 14 years.



Claim.—The ornamental design for a badge, as shown.

38,583. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. FREDERICK HABENSACK, Sag Harbor, N. Y., assignor to Fahys Watch Case Company, New York, N. Y., a Corporation of New York. Filed Apr. 25, 1907. Serial No. 370,331. Term of patent 7 years.



Claim.—The ornamental design for the handle of a spoon, fork or similar article, as shown.

38,584. BACK OF HAIR-BRUSHES, HAND-MIRRORS, AND SIMILAR ARTICLES. GUSTAVE F. KOLB, Mount Vernon, N. Y., assignor to The Mauser Manufacturing Co., New York, N. Y., a Corporation of West Virginia. Filed May 4, 1907. Serial No. 371,937. Term of patent 3½ years.



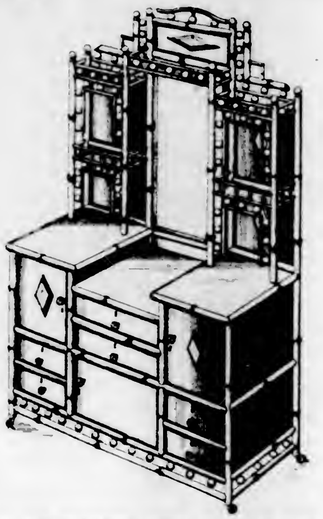
Claim.—The ornamental design for the back of a hair brush, hand mirror and similar articles, as shown.

38,585. PHOTO-MOUNT. HENRY WATERHOUSE SIMPSON, Toronto, Ontario, Canada. Filed Mar. 8, 1907. Serial No. 361,410. Term of patent 7 years.



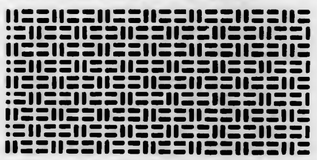
Claim.—The ornamental design for a photo mount, as shown.

38,586. CABINET. ANTON TAMULAITIS, Chicago, Ill. Filed Apr. 19, 1907. Serial No. 369,183. Term of patent 7 years.



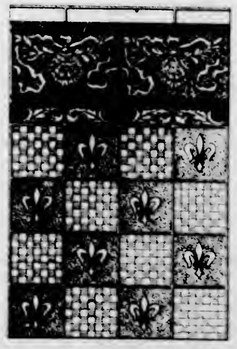
Claim.—The ornamental design for a cabinet, as shown.

38,587. WRITING AND PRINTING PAPER. JOHN P. PHELPS, Holyoke, Mass. Filed Dec. 31, 1906. Serial No. 350,306. Term of patent 14 years.



Claim.—The ornamental design for writing and printing paper, as shown.

38,588. WALL-COVERING. JACOB J. PLUCKER, Philadelphia, Pa. Filed Apr. 19, 1907. Serial No. 369,182. Term of patent 7 years.



Claim.—The ornamental design for a wall covering, as shown.

38,589. PRINTED FABRIC. VICTOR BURSCHEL, Scranton, Pa. Filed May 2, 1907. Serial No. 371,551. Term of patent 7 years.



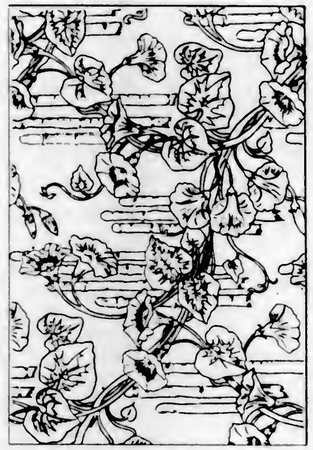
Claim.—The ornamental design for printed fabric, as shown.

38,590. TEXTILE FABRIC. HARRIET WEBSTER FOWLER, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 27, 1907. Serial No. 370,734. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,591. TEXTILE FABRIC. HARRIET WEBSTER FOWLER, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 27, 1907. Serial No. 370,735. Term of patent 3½ years.



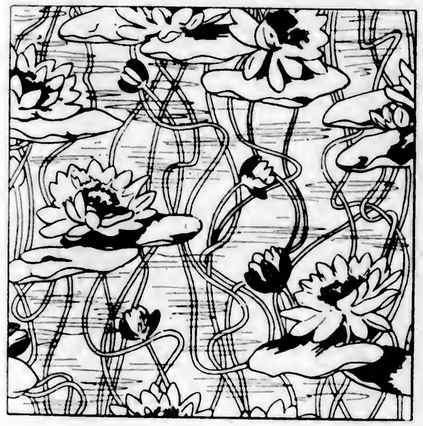
Claim.—The ornamental design for a textile fabric, as shown.

38,592. TEXTILE FABRIC. HARRIET WEBSTER FOWLER, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 27, 1907. Serial No. 370,736. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,593. TEXTILE FABRIC. EMMA HUMPHREYS, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 27, 1907. Serial No. 370,731. Term of patent 3½ years.



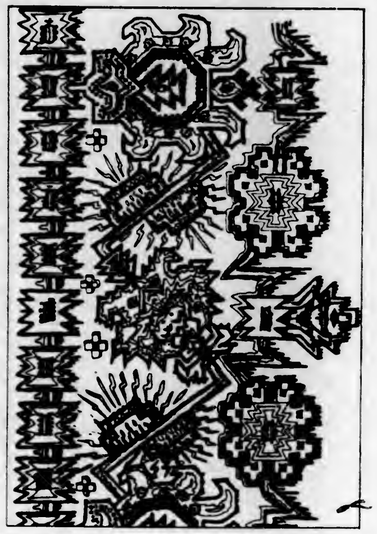
Claim.—The ornamental design for a textile fabric, as shown.

38,594. TEXTILE FABRIC. ALFRED F. PAPIN, Yonkers, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed May 6, 1907. Serial No. 372,287. Term of patent 3½ years.



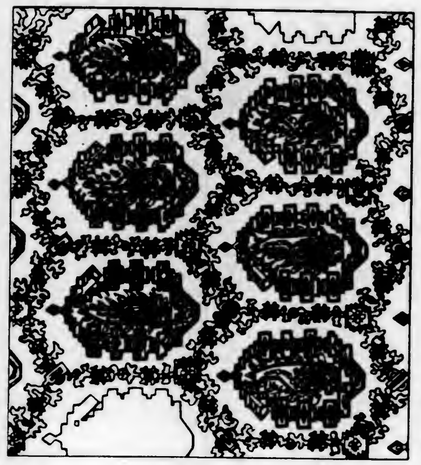
Claim.—The ornamental design for a textile fabric, as shown.

38,595. TEXTILE FABRIC. OSCAR CARL SAUER, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 27, 1907. Serial No. 370,732. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

38,596. TEXTILE FABRIC. OSCAR CARL SAUER, New York, N. Y., assignor to Cheney Brothers, South Manchester, Conn., a Corporation of Connecticut. Filed Apr. 27, 1907. Serial No. 370,733. Term of patent 3½ years.



Claim.—The ornamental design for a textile fabric, as shown.

TRADE-MARKS

PUBLISHED MAY 28, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 3,593. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE A. BURDSAL CO., Indianapolis, Ind., Filed Apr. 29, 1905. Used ten years.



Particular description of goods.—Paste Paint.

Ser. No. 4,895. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) MCKESSON & ROBBINS, New York, N. Y. Filed May 10, 1905.

PYROZONE

Particular description of goods.—Atomizers.

Ser. No. 5,396. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MCKESSON & ROBBINS, New York, N. Y. Filed May 13, 1905. Used ten years.



Particular description of goods.—Remedial Preparations for Treatment of the Blood, Respiratory Organs, Alimentary and Stomach Ailments, Skin Diseases, Eye, Ear, Throat, and Nose Ailments, Anesthetics, and Remedies for the Treatment of the Heart, Kidneys, Liver, and for other Organic Ailments.

Ser. No. 6,089. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) J. B. BROOKS & CO., LIMITED, Birmingham, England. Filed May 19, 1905.



Particular description of goods.—Cigar-Cases, Cigarette and Match Cases, Baggage-Labels, Leather Parts of Cycle-Saddles, Dog-Muzzles, Portmanteaus, Bags, Saddles, Harness, Rug-Straps, Purses, All Made of Leather.

Ser. No. 7,258. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) THE PHOSPHOR-BRONZE SMELTING CO., LIMITED, Philadelphia, Pa. Filed June 2, 1905. Used ten years.

Phosphor-Bronze

Particular description of goods.—Metallic Alloys.

Ser. No. 8,304. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) THE HALE AND KILBURN MANUFACTURING COMPANY, Philadelphia, Pa. Filed June 16, 1905.



Particular description of goods.—Chairs, Beds, and Car-Seats.

Ser. No. 13,028. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THERMOGRADE VALVE CO., Boston, Mass. Filed Sept. 26, 1905.



Particular description of goods.—Graduated Seat-Valves for Steam and Hot-Water Radiators.

Ser. No. 13,357. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) GEORGE WILLIAM HOFFMAN, Indianapolis, Ind. Filed Oct. 6, 1905. Used ten years.



Particular description of goods.—A Compound for Polishing Metals and other Hard Materials.

Ser. No. 14,534. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) ACME HARVESTING MACHINE COMPANY, Peoria, Ill. Filed Nov. 13, 1905. Used ten years.

HODGES

Particular description of goods.—Grain-Headers, Grain-Binders, Mowers, and Parts Thereof.

Ser. No. 15,155. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) MARSHALL FIELD & COMPANY, Chicago, Ill. Filed Dec. 4, 1905.



Particular description of goods.—Laces, Lace Nets, and Lace Curtains.

Ser. No. 15,161. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) MARSHALL FIELD & COMPANY, Chicago, Ill. Filed Dec. 4, 1905.



Particular description of goods.—Cotton and Woolen Dress Goods.

Ser. No. 16,359. (CLASS 55. WINES.) OFFLEY, FORRESTER & CO., London, England. Filed Jan. 20, 1906.

DUKE
OF
OPORTO

Particular description of goods.—Port-Wine.

Ser. No. 17,473. (CLASS 8. DETERGENTS.) CHEMISCHE WERKE HANSA, GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Hemelingen, near Bremen, Germany. Filed Feb. 19, 1906.

Saposilic

Particular description of goods.—Soap.

Ser. No. 18,188. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) THE ARLINGTON COMPANY, New York, N. Y. Filed Mar. 23, 1906.



Particular description of goods.—Rubber Collars and Cuffs.

Ser. No. 19,445. (CLASS 54. SEA FOODS.) JOHS CONRADSEN A/S, Stavanger, Norway. Filed May 11, 1906.

THE KITE BRAND

Particular description of goods.—Canned, Pickled, and Preserved Fish.

Ser. No. 20,689. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) BLACK HAWK COFFEE & SPICE COMPANY, Waterloo, Iowa. Filed July 2, 1906.



Particular description of goods.—Coffee and Tea.

Ser. No. 21,161. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE MONARCH TYPEWRITER COMPANY, Syracuse, N. Y. Filed July 25, 1906.



Particular description of goods.—Type-Writing Machines.

Ser. No. 21,421. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE VAL DUTTENHOFER SONS CO., Cincinnati, Ohio. Filed Aug. 9, 1906.



Particular description of goods.—Leather Shoes.

Ser. No. 21,521. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) JOSEPH L. LEGEIN, Springfield, Mass. Filed Aug. 13, 1906.

CASSATO

Particular description of goods.—Flavorings for Candy, Pastry, Ice-Cream, and Beverages.

Ser. No. 21,755. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE CHEROKEE MILL & ELEVATOR COMPANY, Cherokee, Okla. Filed Aug. 27, 1906.



Particular description of goods.—Wheat-Flour.

Ser. No. 22,089. (CLASS 31. FILTERS AND REFRIGERATORS.) NORTH BROS. M'F'G. CO., Philadelphia, Pa. Filed Sept. 14, 1906.



Particular description of goods.—Ice-Cream Freezers.

Ser. No. 22,094. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) R. E. DIETZ COMPANY, New York, N. Y. Filed Sept. 14, 1906. Used ten years.

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Particular description of goods.—Oil-Burning Lamps.

Ser. No. 22,122. (CLASS 68. PUBLICATIONS.) ELITE STYLES COMPANY, New York, N. Y. Filed Sept. 15, 1906.

ELITE STYLES

Particular description of goods.—A Ladies' Fashion Magazine.

Ser. No. 22,193. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) C. A. FINLEY & CO., Chicago, Ill. Filed Sept. 19, 1906.

THE BRACER

Particular description of goods.—Effervescent Headache Salt.

Ser. No. 22,545. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) W. S. QUINBY COMPANY, Boston, Mass. Filed Oct. 5, 1906.



Particular description of goods.—Coffee.

Ser. No. 23,005. (CLASS 27. RAILWAY EQUIPMENT NOT OTHERWISE CLASSIFIED, AND RAILWAY ROLLING-STOCK.) SANFORD-DAY IRON WORKS, Knoxville, Tenn. Filed Oct. 30, 1906. Used ten years.

WHITNEY

Particular description of goods.—Car-Wheels.

Ser. No. 23,076. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) FRANK W. WHITCHER, Boston, Mass. Filed Nov. 3, 1906.

CLINCHER

Particular description of goods.—Rubber Patching, Repairing-Cloth, Soling, Heels, Soles, and Taps.

Ser. No. 23,159. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MUIRHEAD MEDICAL CO., Providence, R. I. Filed Nov. 7, 1906. Used ten years.

MUIRHEAD'S
Wine of Life

Particular description of goods.—A Remedy for the Cure of Indigestion, Consumption, Asthma, Diabetes, All Kidney and Liver Troubles, Chronic Diarrhea, General Debility, Female Complaints, Headache, Constipation, and Urinary Disorders.

Ser. No. 23,160. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) NEW ORLEANS BREWING COMPANY, New Orleans, La. Filed Nov. 7, 1906.



Particular description of goods.—Malt Extract.

Ser. No. 23,262. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) INTERNATIONAL PATENT CORPORATION, Pierre, S. D., and Jersey City, N. J. Filed Nov. 12, 1906.

F. R. V.

Particular description of goods.—Gas, Air, and Oil Engines.

Ser. No. 23,812. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) GEORGE E. BOOS, Seattle, Wash. Filed Dec. 6, 1906.



Particular description of goods.—Post-Cards.

Ser. No. 24,107. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Dec. 18, 1906.



Particular description of goods.—Dash-Pot Plungers, Bearings, and Pistons.

Ser. No. 24,510. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) COLLINS & COMPANY, New York, N. Y. Filed Jan. 8, 1907. Used ten years.



LION BRAND

Particular description of goods.—Cotton Shrunks.

Ser. No. 24,570. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) H. HACKFELD & CO. LTD., San Francisco, Cal. Filed Jan. 11, 1907.



Particular description of goods.—Coffees.

Ser. No. 24,907. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) LODERS & NUCOLINE, LIMITED, London, England. Filed Jan. 25, 1907.

NUBUR

Particular description of goods.—Butter or Oil Obtained from Cocoanut.

Ser. No. 25,113. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) KALAMAZOO PLAYING CARD CO., Kalamazoo, Mich. Filed Feb. 4, 1907.



Particular description of goods.—Playing-Cards.

Ser. No. 25,176. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) ALF. SCHMIDT, Basel, Switzerland. Filed Feb. 6, 1907.

Fluinol

Particular description of goods.—A Fluorescent Concentrated Liquid Extract of the Needles of Coniferous Trees, Which is Designed to be Added to Water Used for Baths and Inhalations and to be Employed as an Antiseptic.

Ser. No. 25,245. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) SEALSKIN SWATY STROP CO., Ottumwa, Iowa. Filed Feb. 11, 1907.

VELVAC

Particular description of goods.—Razor-Strops.

Ser. No. 25,288. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) RUDOLPH L. IHLENBURG, Greenfield, Tenn. Filed Feb. 13, 1907.



Particular description of goods.—A Non-Intoxicating Beer Made from Malt and Hops.

Ser. No. 25,291. (CLASS 12. MASONRY MATERIALS.) HENRY L. LILIENTHAL, Spokane, Wash. Filed Feb. 13, 1907.

Particular description of goods.—Oil Pavements Composed Chiefly of Liquid Asphalt, Petroleum, Petrolene, Rock, Sand, and Gravel, Such Pavement Being Used as a Wearing-Surface on Streets and Highways.

Ser. No. 25,324. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) PICHER LEAD COMPANY, Joplin, Mo. Filed Feb. 15, 1907. Used ten years.

SUBLIMED
WHITE LEAD

Particular description of goods.—White Pigment Having as Its Principal Constituent Lead Sulfate Formed by Sublimation.

Ser. No. 25,331. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE CHANDLER NURSERY CO., Chandler, Tex. Filed Feb. 16, 1907.



Particular description of goods.—Fresh Peaches.

Ser. No. 25,372. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) AUGUST HOFFMANN, Milwaukee, Wis. Filed Feb. 18, 1907.



Particular description of goods.—Pumpernickel Bread.

Ser. No. 25,448. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.



Particular description of goods.—Canned Fish.

Ser. No. 25,458. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.



Particular description of goods.—Canned Fish.

Ser. No. 25,572. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.

SPALDING

Particular description of goods.—Boots, Shoes, and Slippers of Leather or Canvas, Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golfing, for Running, in Gymnasiums, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,576. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.



Particular description of goods.—Boots, Shoes, and Slippers of Leather or Canvas, Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golfing, for Running, in Gymnasiums, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,580. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. G. SPALDING & BROS., New York, N. Y. Filed Feb. 25, 1907. Used ten years.



Particular description of goods.—Boots, Shoes, and Slippers of Leather or Canvas, Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golfing, for Running, in Gymnasiums, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,588. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) PACIFIC COAST RUBBER CO., Seattle, Wash. Filed Feb. 25, 1907.



Particular description of goods.—Nursing-Bottles, Rubber Urinals, Atomizers, Rubber Bandages, Rubber Bed-Pans, Medicine-Droppers, Nipple-Shields, Syringes, and Clinical Thermometers.

Ser. No. 25,915. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) NORTON COMPANY, Worcester, Mass. Filed Mar. 11, 1907. Used ten years.

NORTON

Particular description of goods.—Abrasive and Polishing Materials, Tools, Implements, and Machinery, Comprising Abrasive Grains and Powders, Polishing Material and Compounds, Grinding Wheels and Stones, Hones, Whetstones, Tool-Sharpeners, Abrasive Cloth and Paper, and Articles Made of or Containing Abrasive Materials.

Ser. No. 25,919. (CLASS 54. SEA FOODS.) BERGENS VARMEBGERI MOLT & Co., Bergen, Norway. Filed Mar. 12, 1907.



Particular description of goods.—Canned Fish and Smoked Fish.

Ser. No. 25,973. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ARCHIBALD P. RIDENOUR, Los Angeles, Cal. Filed Mar. 14, 1907.



Particular description of goods.—A Hair-Tonic.

Ser. No. 26,012. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ECLIPSE SAFETY PAPER COMPANY, LIMITED, Ottawa, Ontario, Canada. Filed Mar. 16, 1907.



Particular description of goods.—Safety-Paper for Checks, Drafts, Bonds, Promissory-Notes, Bills of Exchange, Certificates, Coupons, Legal Forms, Postal Notes, and Money-Orders.

Ser. No. 26,062. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ALART & MCGUIRE, New York, N. Y. Filed Mar. 19, 1907. Used ten years.



Particular description of goods.—Catsup.

Ser. No. 26,110. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EMILY MERKERT, New York, N. Y. Filed Mar. 20, 1907.



Particular description of goods.—Pastes for Whitening the Skin.

Ser. No. 26,116. (CLASS 71. TOBACCO PRODUCTS.) DANIEL A. WOLF, Cincinnati, Ohio. Filed Mar. 20, 1907.



Particular description of goods.—Cigars, Stogies, and Smoking-Tobaccos.

Ser. No. 26,120. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JOHN W. HARRISON, Richmond, Va. Filed Mar. 21, 1907.



Particular description of goods.—Coffee.

Ser. No. 26,148. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) BARTHOLOMAY BREWERY COMPANY, Rochester, N. Y. Filed Mar. 22, 1907.



Particular description of goods.—Ale.

Ser. No. 26,223. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOHN WANAMAKER, Philadelphia, Pa. Filed Mar. 25, 1907.

PRINCESS LOUISE

Particular description of goods.—Kid Gloves.

Ser. No. 26,243. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) AUGUST CLIFF, Chicago, Ill. Filed Mar. 25, 1907.

JACKS

Particular description of goods.—Horse-Radish, Salads, Corn-Relish, East-India Relish, Salad-Dressing, Table-Mustard, Sauces, Sweet and Sour Pickles, Chow-Chow, Piccalilli, Gherkins, Vinegar, and Catsup.

Ser. No. 26,259. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE FLEXIBLE COMPOUND COMPANY, Wilmington, Del., and Philadelphia, Pa. Filed Mar. 26, 1907.



Particular description of goods.—Oil Paints and Varnishes.

Ser. No. 26,302. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) A. J. BATES & CO., INCORPORATED, New York, N. Y. Filed Mar. 28, 1907.

THE
STROLLER

Particular description of goods.—Leather Footwear.

Ser. No. 26,334. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) RAINBOW DYE COMPANY, New York, N. Y. Filed Mar. 29, 1907.

RAINBOW DYES

Particular description of goods.—Dyes.

Ser. No. 26,356. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) LAVALETTE & CO., New York, N. Y., and Paris, France. Filed Mar. 30, 1907.



Particular description of goods.—Magnetos.

Ser. No. 26,400. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) OLIAN BROS. & CO., St. Louis, Mo. Filed Apr. 1, 1907.



Particular description of goods.—Shirt-Waists and Shirt Waist Suits.

Ser. No. 26,413. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) CHARLES PFODENHAUER, New York, N. Y. Filed Apr. 2, 1907.

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Particular description of goods.—Shoe-Polish.

Ser. No. 26,417. (CLASS 12. MASONRY MATERIALS.) THE YORK PORTLAND CEMENT COMPANY, Portsmouth, Ohio. Filed Apr. 2, 1907.

SETTER



"Best of All Setters"

Particular description of goods.—Cement Used in Works of Construction.

Ser. No. 26,514. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) CLARA D. MCKINNON, Rockaway, N. J. Filed Apr. 6, 1907. Used ten years.

The Genuine Rockaway

Particular description of goods.—Axes.

Ser. No. 26,515. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) CLARA D. MCKINNON, Rockaway, N. J. Filed Apr. 6, 1907. Used ten years.

McKINNON

Particular description of goods.—Axes.

Ser. No. 26,526. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE IDEAL AUTOMATIC PUMP GOVERNOR CO., New York, N. Y. Filed Apr. 6, 1907.

"IDEAL"

Particular description of goods.—Packing-Boxes for Pistons, Piston-Rods, and Valve-Rods.

Ser. No. 26,527. (CLASS 59. HOROLOGICAL INSTRUMENTS.) INTERNATIONAL WATCH COMPANY, Jersey City, N. J. Filed Apr. 6, 1907.

Army & Navy

Particular description of goods.—Watches and Watch-Dials.

Ser. No. 26,544. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE AMERICAN NEWS COMPANY, New York, N. Y. Filed Apr. 8, 1907.

PARAGON

Particular description of goods.—Writing and Spelling Tablets.

Ser. No. 26,564. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) HENRY C. METZGER, Meridian, Miss. Filed Apr. 8, 1907.



Particular description of goods.—Flavoring-Syrup for Non-Alcoholic Beverages.

Ser. No. 26,577. (CLASS 45. BEVERAGES, NON-ALCOHOLIC. CHRISTIAN BROS. CO., Richmond, Va. Filed Apr. 8, 1907.



Particular description of goods.—Ginger-Ale.

Ser. No. 26,596. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE RICHFIELD COMPANY, Grand Rapids, Mich. Filed Apr. 9, 1907.

"BUCARA"

Particular description of goods.—A Remedy for Diseases of the Kidneys, Stomach, and Bladder.

Ser. No. 26,599. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) STANDARD MEDICINE CO., Empire, Mich. Filed Apr. 9, 1907.



Particular description of goods.—A Medicinal Compound Used as a Remedy for Cholera, Cholera Morbus, Cramps or Pains in Stomach and Bowels, Diarrhea, Dysentery, Toothache, and Colic.

Ser. No. 26,641. (CLASS 68. PUBLICATIONS.) CRANE COMPANY, Chicago, Ill. Filed Apr. 11, 1907.

THE VALVE WORLD

Particular description of goods.—Magazines.

Ser. No. 26,712. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ESBIE DRUG AND CHEMICAL COMPANY, New York, N. Y. Filed Apr. 15, 1907.

Caramoils.

Particular description of goods.—A Cathartic.

Ser. No. 26,726. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE STAR DISTILLERY CO., Cincinnati, Ohio. Filed Apr. 15, 1907.

STONY CREEK

Particular description of goods.—Whisky.

Ser. No. 26,734. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) AVERY MANUFACTURING COMPANY, Peoria, Ill. Filed Apr. 16, 1907. Used ten years.

AVERY

Particular description of goods.—Threshing and Grain-Separating Machinery.

Ser. No. 26,737. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) BAIRD & CO., New York, N. Y. Filed Apr. 16, 1907.



Particular description of goods.—Gin.

Ser. No. 26,738. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) BAIRD & CO., New York, N. Y. Filed Apr. 16, 1907.

KING JAMES



Particular description of goods.—Scotch Whisky.

Ser. No. 26,753. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ARTHUR W. BOARDMAN, Boston, Mass. Filed Apr. 17, 1907.

BERRIS

Particular description of goods.—Leather Shoes.

Ser. No. 26,767. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) THE DOLAN MERCANTILE COMPANY, Atchison, Kans. Filed Apr. 18, 1907.



Particular description of goods.—Coffee.

Ser. No. 26,768. (CLASS 54. SEA FOODS.) THE DOLAN MERCANTILE COMPANY, Atchison, Kans. Filed Apr. 18, 1907.



Particular description of goods.—Canned Salmon, Canned Lobster, and Canned Oysters.

Ser. No. 26,770. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE BLUING PADDLE CO., Chicago, Ill. Filed Apr. 18, 1907. Used ten years.

BLUING PADDLE

Particular description of goods.—Laundry Bluing.

Ser. No. 26,783. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HARRY F. MILLER, Sherman, Tex. Filed Apr. 18, 1907.



Particular description of goods.—A Blood-Purifier.

Ser. No. 26,785. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) R. P. SMITH & SONS CO., Chicago, Ill. Filed Apr. 19, 1907.

Eusebia

Particular description of goods.—Ladies' and Misses' Leather Shoes.

Ser. No. 26,787. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) R. P. SMITH & SONS CO., Chicago, Ill. Filed Apr. 19, 1907.

Wizard

Particular description of goods.—Men's, Youths', and Boys' Leather Shoes.

Ser. No. 26,788. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) R. P. SMITH & SONS CO., Chicago, Ill. Filed Apr. 19, 1907.

Smithsonian

Particular description of goods.—Men's, Youths', and Boys' Leather Shoes.

Ser. No. 26,793. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) ANDREW M. ANDERSEN, Chicago, Ill. Filed Apr. 19, 1907.



Particular description of goods.—Waffle-Irons.

Ser. No. 26,794. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EVERETT S. ESTLINGEN, Los Angeles, Cal. Filed Apr. 19, 1907.



Particular description of goods.—Tooth-Powder.

Ser. No. 26,802. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) UNITED STATES WHIP COMPANY, Westfield, Mass. Filed Apr. 19, 1907.



Particular description of goods.—Whips.

Ser. No. 26,805. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MARK ZOPFIE, Pittsburg, Pa. Filed Apr. 19, 1907.

Semechonium

Particular description of goods.—Remedy for Typhoid Fever.

Ser. No. 26,833. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM M. AKIN & SON, Evansville, Ind. Filed Apr. 20, 1907.



Particular description of goods.—An Ague-Tonic.

Ser. No. 26,834. (CLASS 12. MASONRY MATERIALS.) AMERICAN SOAPSTONE CO., New York, N. Y., and Arrington, Va. Filed Apr. 20, 1907.



Particular description of goods.—Tubs, Tanks, Sinks, Bowls, and Basins Made of Soapstone.

Ser. No. 26,836. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) CLARENCE L. DAWES, Minneapolis, Minn. Filed Apr. 20, 1907.



Particular description of goods.—Baking-Powder.

Ser. No. 26,839. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE HAUSMAN DRUG COMPANY, Trinidad, Colo. Filed Apr. 20, 1907.

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Particular description of goods.—A Medicinal Compound for Use in Colic, Dysentery, Rheumatism, and Bruises.

Ser. No. 26,848. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) KINSELLA HAT CO., Dallas, Tex. Filed Apr. 22, 1907.



Particular description of goods.—Felt Hats for Men and Boys.

Ser. No. 26,862. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) BAY STATE MILLING CO., Winona, Minn., and Boston, Mass. Filed Apr. 22, 1907.



Particular description of goods.—Wheat-Flour.

Ser. No. 26,882. (CLASS 8. DETERGENTS.) THE HEWITT BROS. SOAP COMPANY, Dayton, Ohio. Filed Apr. 24, 1907.



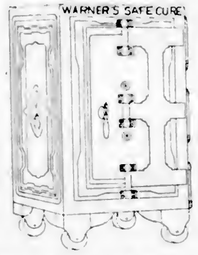
Particular description of goods.—Toilet and Laundry Soap.

Ser. No. 26,906. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) STEARNS' ELECTRIC PASTE CO., Buffalo, N. Y. Filed Apr. 25, 1907. Used ten years.

Drives Them Out of the House to Die

Particular description of goods.—Animal-Poison.

Ser. No. 26,908. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WARNER'S SAFE CURE COMPANY, Rochester, N. Y. Filed Apr. 25, 1907.



Particular description of goods.—A Tonic Remedy for Diseases of the Liver and Kidneys, Dyspepsia, Headache, Rheumatism, and Nervous Disorders.

Ser. No. 26,909. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WARNER'S SAFE CURE COMPANY, Rochester, N. Y. Filed Apr. 25, 1907. Used ten years.

WARNER'S
SAFE
CURE

Particular description of goods.—A Tonic Remedy for Diseases of the Liver and Kidneys, Dyspepsia, Headache, Rheumatism, and Nervous Disorders.

Ser. No. 26,915. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) LEO ECKER, Chicago, Ill. Filed Apr. 25, 1907.

American Lady

Particular description of goods.—Ladies' Dress-Skirts and Waists.

Ser. No. 26,916. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) EVERETT, AUGHENBAUGH & COMPANY, Waseca, Minn. Filed Apr. 25, 1907.



Particular description of goods.—Wheat-Flour, Whole-Wheat Flour, Graham Flour, Breakfast Food Made from Wheat, Rolled Oats, Oatmeal, Rye-Flour, Bran, Shorts, and Mixed Feed Made from Cereals.

Ser. No. 26,919. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) IMPERIAL DISTILLING & CORDIAL CO., Chicago, Ill. Filed Apr. 25, 1907.

ROSE BUD



Particular description of goods.—Cordials.

Ser. No. 26,920. (CLASS 71. TOBACCO PRODUCTS.) MENTOR COMPANY, Boston, Mass. Filed Apr. 25, 1907.

RAMLY

Particular description of goods.—Cigarettes.

Ser. No. 26,930. (CLASS 47. CONFECTIONERY.) THE GINTER GROCERY CO., Boston, Mass. Filed Apr. 25, 1907.



Particular description of goods.—Chocolates.

Ser. No. 26,939. (CLASS 48. DAIRY PRODUCTS.) AMERICAN FARM PRODUCTS COMPANY, Jersey City, N. J., and New York, N. Y. Filed Apr. 26, 1907.



Particular description of goods.—Butter.

Ser. No. 26,944. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PAUL BROTHERS, Philadelphia, Pa. Filed Apr. 26, 1907.

Etonian

Particular description of goods.—Leather Boots, Shoes, and Slippers.

Ser. No. 26,949. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 27, 1907. Used ten years.

DR PIETER'S

Genees-Olie

Particular description of goods.—A Liniment.

Ser. No. 26,950. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 27, 1907. Used ten years.

DR. PIETER'S

Maagversterker

Particular description of goods.—A Preparation for the Treatment of Diseases of the Stomach and Bowels.

Ser. No. 26,951. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) HERRIOTT BROS. & CO., St. Louis, Mo. Filed Apr. 27, 1907.

WINNER

Particular description of goods.—Boot and Shoe Blacking.

Ser. No. 26,952. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) HERRIOTT BROS. & CO., St. Louis, Mo. Filed Apr. 27, 1907.

SUNLIGHT

Particular description of goods.—Boot and Shoe Blacking.

Ser. No. 26,968. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE PATTON MILLING COMPANY, Catlettsburg, Ky. Filed Apr. 27, 1907. Used ten years.

LIMESTONE

Particular description of goods.—Wheat-Flour.

Ser. No. 26,970. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE REGINA COMPANY, Rahway, N. J. Filed Apr. 27, 1907.

CORONA

Particular description of goods.—Automatic Music-Boxes.

Ser. No. 26,978. (CLASS 71. TOBACCO PRODUCTS.) U. KOEN & Co., New Orleans, La. Filed Apr. 29, 1907.



Particular description of goods.—Cigars.

Ser. No. 26,979. (CLASS 71. TOBACCO PRODUCTS.) U. KOEN & Co., New Orleans, La. Filed Apr. 29, 1907.



Particular description of goods.—Cigars.

Ser. No. 26,980. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) BARBUT & GARRO, Nice, France. Filed Apr. 29, 1907.

"Huile d'Olive VICTORIA"

Particular description of goods.—Olive-Oil.

Ser. No. 26,996. (CLASS 2. MINERAL.) THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Apr. 29, 1907. Used ten years.

Mexican

Particular description of goods.—Silver-Lead or Plumbago Foundry-Facings and Pulverized Graphite, (Not Crude.)

Ser. No. 27,000. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 29, 1907. Used ten years.

DRA. PETRA

Léčivý Olej

Particular description of goods.—A Liniment.

Ser. No. 27,002. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 29, 1907. Used ten years.

Olio Risanante
DEL
DOTTOR PIETRO

Particular description of goods.—A Liniment.

Ser. No. 27,003. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 29, 1907. Used ten years.

DRA. PIOTRA

OLEJO

Particular description of goods.—A Liniment.

Ser. No. 27,004. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 29, 1907. Used ten years.

DRA. PIOTRA
LEK
ŻOŁĄDKOWY

Particular description of goods.—A Preparation for the Treatment of Diseases of the Stomach and Bowels.

Ser. No. 27,005. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 29, 1907. Used ten years.

DRA. PETRA
Žaludeční
SILITEL

Particular description of goods.—A Preparation for the Treatment of Diseases of the Stomach and Bowels.

Ser. No. 27,007. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 29, 1907. Used ten years.

RINFORZANTE
DELLO
STOMACO
DEL
DR. PIETRO

Particular description of goods.—A Preparation for the Treatment of Diseases of the Stomach and Bowels.

Ser. No. 27,008. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

No. 4

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,009. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

NO. 5

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,011. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

No 7

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,012. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

No 8

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,015. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

NO. 11

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,016. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

NO. 12

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,017. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

NO. 17

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,031. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) RENFREW M'FG. CO., Adams, Mass. Filed Apr. 30, 1907. Used ten years.

RENFREW

Particular description of goods.—Cotton Piece Goods.

Ser. No. 27,036. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) ALVIN MANUFACTURING CO., New York, N. Y. Filed May 1, 1907.

BRIDAL ROSE

Particular description of goods.—Silver Tableware, Hollow Ware, and Flat Ware.

Ser. No. 27,037. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) ALVIN MANUFACTURING CO., New York, N. Y. Filed May 1, 1907.

ORANGE BLOSSOM

Particular description of goods.—Silver Tableware, Hollow Ware, and Flat Ware.

Ser. No. 27,038. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) ALVIN MANUFACTURING CO., New York, N. Y. Filed May 1, 1907.

WM. PENN

Particular description of goods.—Silver Tableware, Hollow Ware, and Flat Ware.

Ser. No. 27,047. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) CLARKE BROS., Scranton, Pa. Filed May 1, 1907.

Profit Sharing

Particular description of goods.—Leather Shoes.

TRADE-MARKS

REGISTERED MAY 28, 1907.

62,774. SHEATHING-PAPER FOR USE IN THE CONSTRUCTION OF BUILDINGS. BARRETT MANUFACTURING COMPANY, New York, N. Y.
Filed March 2, 1907. Serial No. 25,714. PUBLISHED APRIL 2, 1907.

62,775. UNBLEACHED SHEETINGS, SHIRTINGS, DRILLS, AND FLANNELS. CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y.
Filed March 6, 1907. Serial No. 25,788. PUBLISHED APRIL 2, 1907.

62,776. UNBLEACHED SHEETINGS, SHIRTINGS, DRILLS, AND FLANNELS. CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y.
Filed March 6, 1907. Serial No. 25,789. PUBLISHED APRIL 2, 1907.

62,777. UNBLEACHED SHEETINGS, SHIRTINGS, DRILLS, AND FLANNELS. CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y.
Filed March 6, 1907. Serial No. 25,790. PUBLISHED APRIL 2, 1907.

62,778. SOAPS IN POWDERED AND CAKE FORMS. THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y.
Filed March 2, 1907. Serial No. 25,689. PUBLISHED APRIL 2, 1907.

62,779. STOGIES. HOWARD HAZLETT, Wheeling, W. Va., administrator of Augustus Pollack, deceased.
Filed February 21, 1907. Serial No. 25,497. PUBLISHED APRIL 2, 1907.

62,780. FINGER-RINGS. HEINTZ BROS., Buffalo, N. Y.
Filed February 28, 1907. Serial No. 25,656. PUBLISHED APRIL 2, 1907.

62,781. ALUMINIUM PAINT. HOLZAPFEL'S COMPOSITIONS COMPANY, LIMITED, Newcastle-upon-Tyne, England.
Filed March 8, 1907. Serial No. 25,847. PUBLISHED APRIL 2, 1907.

62,782. YOUTHS', BOYS', AND CHILDREN'S PLAY-SUITS. J. B. PEARSON COMPANY, Boston, Mass.
Filed February 21, 1907. Serial No. 25,505. PUBLISHED APRIL 2, 1907.

62,783. PAINT. JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,721. PUBLISHED APRIL 2, 1907.

62,784. GRAPHITE. JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,723. PUBLISHED APRIL 2, 1907.

62,785. OXIDS OF LEAD. NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y.
Filed March 4, 1907. Serial No. 25,745. PUBLISHED APRIL 2, 1907.

62,786. COMBS AND HAIR-PINS. NEWARK TORTOISE SHELL NOVELTY CO., Newark, N. J.
Filed February 23, 1907. Serial No. 25,557. PUBLISHED APRIL 2, 1907.

62,787. SILK LININGS. WENDT BROTHERS, New York, N. Y.
Filed February 27, 1907. Serial No. 25,643. PUBLISHED APRIL 2, 1907.

62,788. WOOLEN PIECE GOODS. WESTERN RESERVE WOOLEN CO., Cleveland, Ohio.
Filed March 2 1907. Serial No. 25,711. PUBLISHED APRIL 2, 1907.

62,789. WALL-PAPER. ALFRED PEATS CO., New York, N. Y.
Filed July 24, 1905. Serial No. 10,745. PUBLISHED APRIL 2, 1907.

62,790. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,566. PUBLISHED APRIL 2, 1907.

62,791. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,567. PUBLISHED APRIL 2, 1907.

62,792. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,570. PUBLISHED APRIL 2, 1907.

62,793. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906 Serial No. 21,571. PUBLISHED APRIL 2, 1907.

62,794. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,573. PUBLISHED APRIL 2, 1907.

62,795. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,574. PUBLISHED APRIL 2, 1907.

62,796. CHEWING-GUM. ASA M. FITCH, Indianapolis, Ind.
Filed January 17, 1907. Serial No. 24,727. PUBLISHED APRIL 2, 1907.

62,797. STOCK FOOD. HUSTED MILLING & ELEVATOR COMPANY, Buffalo, N. Y.
Filed AUGUST 6, 1906. Serial No. 21,363. PUBLISHED NOVEMBER 27, 1906.

62,798. MEN'S, BOYS', AND YOUTHS' LEATHER BOOTS AND SHOES. LYNCHBURG SHOE CO., Lynchburg, Va.
Filed November 13, 1905. Serial No. 14,542. PUBLISHED APRIL 2, 1907.

62,799. MOTOR-BRUSHES AND BRUSHES FOR DYNAMOS. THE MORGAN CRUCIBLE CO. LIMITED, Battersea, London, England.
Filed January 2, 1906. Serial No. 15,795. PUBLISHED APRIL 2, 1907.

62,800. CERTAIN ARTICLES MADE OF FIRE-CLAY. MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England.
Filed December 18, 1906. Serial No. 24,110. PUBLISHED APRIL 2, 1907.

62,801. CERTAIN MACHINERY. THE ORGAN POWER CORPORATION, Hartford, Conn.
Filed April 26, 1905. Serial No. 3,081. PUBLISHED APRIL 2, 1907.

62,802. CERTAIN PRINTING AND WRITING PAPER. THE PERFECT SAFETY PAPER CO., Franklin, Ohio, and Chicago, Ill.
Filed January 21, 1907. Serial No. 24,814. PUBLISHED APRIL 2 1907.

62,803. BANKERS' DIRECTORY AND LIST OF ATTORNEYS. RAND, MCNALLY & COMPANY, Chicago, Ill.
Filed March 26, 1906. Serial No. 18,262. PUBLISHED APRIL 2, 1907.

62,804. CRACKERS OR BISCUITS. HARRY L. SCHLESINGER, Atlanta, Ga.
Filed July 18, 1905. Serial No. 10,533. PUBLISHED APRIL 2, 1907.

62,805. PICKLES AND VINEGAR. GUSTAV B. GE LERT, Benton Harbor, Mich.
Filed July 6, 1906. Serial No. 20,763. PUBLISHED APRIL 2, 1907.

62,806. MACHINERY PACKING. THE AMERICAN GOETZE-GASKET & PACKING CO., New York, N. Y.
Filed March 4, 1907. Serial No. 25,732. PUBLISHED APRIL 2, 1907.

62,807. CHEWING-GUM. BON-BON COMPANY, New York, N. Y.
Filed March 4, 1907. Serial No. 25,734. PUBLISHED APRIL 2, 1907.

62,808. STOVES, FURNACES, AND PARTS OF STOVES AND FURNACES AND STOVE-REPAIRS. CHARTER OAK STOVE AND RANGE COMPANY, St. Louis, Mo.
Filed May 20, 1905. Serial No. 6,954. PUBLISHED APRIL 2, 1907.

62,809. COLLARS MADE FROM CELLULOID AND OTHER SIMILAR COMPOSITIONS. WILLIAM HEYMANN, New York, N. Y.
Filed January 17, 1907. Serial No. 24,728. PUBLISHED APRIL 2, 1907.

62,810. CERTAIN MEDICINES. HOUCHENS MEDICINE CO., Baltimore, Md.
Filed August 7, 1905. Serial No. 11,401. PUBLISHED APRIL 2, 1907.

62,811. RAZOR-STROPS. KAMPFE BRO'S., New York, N. Y.
Filed April 17, 1905. Serial No. 1,873. PUBLISHED APRIL 2, 1907.

62,812. CORNMEAL. JOHN H. KEATLEY, Minneapolis, Minn.
Filed March 2, 1907. Serial No. 25,699. PUBLISHED APRIL 2, 1907.

62,813. WHEAT, GRAHAM, AND RYE FLOUR. JOHN H. KEATLEY, Minneapolis, Minn.
Filed March 2, 1907. Serial No. 25,700. PUBLISHED APRIL 2, 1907.

62,814. CERTAIN MEDICINES. GEORGE C. KRUSEN, Philadelphia, Pa.
Filed December 31, 1906. Serial No. 24,370. PUBLISHED APRIL 2, 1907.

62,815. STIMULANT FOR EXTERNAL AND INTERNAL USE. H. T. LORD COMPANY, Manchester, N. H.
Filed January 23, 1907. Serial No. 24,855. PUBLISHED APRIL 2, 1907.

62,816. CERTAIN MACHINERY. THE ORGAN POWER CORPORATION, Hartford, Conn.
Filed April 26, 1905. Serial No. 3 682. PUBLISHED APRIL 2, 1907.

62,817. CIGARS. PARK & TILFORD, New York, N. Y
Filed January 26, 1907. Serial No. 24,919. PUBLISHED APRIL 2, 1907.

62,818. DRAG-SCRAPERS, PLOWS, AND ROAD-GRADERS. SMITH & SONS MFG. CO., Kansas City, Mo.
Filed January 2, 1906. Serial No. 15,805. PUBLISHED APRIL 2, 1907.

62,819. BALING-PRESSES. SMITH & SONS MFG. CO., Kansas City, Mo.
Filed January 2, 1906. Serial No. 15,806. PUBLISHED APRIL 2, 1907.

62,820. CERTAIN CULINARY AND COOKING UTENSILS. TROUT HARDWARE COMPANY, Chicago, Ill.
Filed February 14, 1906. Serial No. 17,030. PUBLISHED APRIL 2, 1907.

62,821. CERTAIN OILS AND GREASES. VACUUM OIL COMPANY, Rochester, N. Y.
Filed January 21, 1907. Serial No. 24,811. PUBLISHED APRIL 2, 1907.

62,822. COFFEE. WOOLSON SPICE COMPANY, Toledo, Ohio.
Filed March 4, 1907. Serial No. 25,758. PUBLISHED APRIL 2, 1907.

62,823. COFFEE. WOOLSON SPICE COMPANY, Toledo, Ohio.
Filed March 4, 1907. Serial No. 25,760. PUBLISHED APRIL 2, 1907.

62,824. COFFEE. WOOLSON SPICE COMPANY, Toledo, Ohio.
Filed March 4, 1907. Serial No. 25,761. PUBLISHED APRIL 2, 1907.

62,825. CERTAIN CLEANSING PREPARATION. ALBION MANUFACTURING COMPANY, New York, N. Y.
Filed July 12, 1906. Serial No. 20,885. PUBLISHED APRIL 2, 1907.

62,826. STOGIES. JOHN B. BAIN, New Concord, Ohio.
Filed February 9, 1907. Serial No. 25,217. PUBLISHED APRIL 2, 1907.

62,827. WHISKY. THE BAY VIEW WINE CO., Sandusky, Ohio.
Filed February 21, 1907. Serial No. 25,545. PUBLISHED APRIL 2, 1907.

62,828. CERTAIN DRILLING, PUNCHING, AND SHEARING MACHINES. BUFFALO FORGE COMPANY, Buffalo, N. Y.
Filed December 6, 1906. Serial No. 23,814. PUBLISHED APRIL 2, 1907.

62,829. CIGARS. BUTLER-BUTLER INCORPORATED, New York, N. Y.
Filed February 21, 1907. Serial No. 25,494. PUBLISHED APRIL 2, 1907.

62,830. CARBONATED WATER. LYSANDER D. CHILDS, Chester, S. C.
Filed March 19, 1906. Serial No. 18,016. PUBLISHED APRIL 2, 1907.

62,831. CERTAIN LAUNDRY APPLIANCES AND MACHINES. DOMESTIC MANUFACTURING CO., Racine, Wis.
Filed February 21, 1907. Serial No. 25,510. PUBLISHED APRIL 2, 1907.

62,832. WHISKY, GIN, AND BRANDY. FIGGE-DOYLE CO., Milwaukee, Wis.
Filed March 6, 1907. Serial No. 25,805. PUBLISHED APRIL 2, 1907.

62,833. WHITE LEAD AND ZINC-WHITE. SAMUEL H. FRENCH & CO., Philadelphia, Pa.
Filed November 5, 1906. Serial No. 23,104. PUBLISHED APRIL 2, 1907.

62,834. CALCINED PLASTERS AND CASTING-PLASTERS. SAMUEL H. FRENCH & CO., Philadelphia, Pa.
Filed November 5, 1906. Serial No. 23,105. PUBLISHED APRIL 2, 1907.

62,835. WHITE LEAD AND ZINC-WHITE. SAMUEL H. FRENCH & CO., Philadelphia, Pa.
Filed November 5, 1906. Serial No. 23,106. PUBLISHED APRIL 2, 1907.

62,836. GAME PLAYED WITH CARDS. HARRY J. GOULD, Chicago, Ill.
Filed January 11, 1907. Serial No. 24,586. PUBLISHED APRIL 2, 1907.

62,837. STOGIES. HOWARD HAZLETT, Wheeling, W. Va., administrator of Augustus Pollack, deceased.
Filed January 26, 1907. Serial No. 24,910. PUBLISHED APRIL 2, 1907.

62,838. CERTAIN METAL MANUFACTURES. IMPERIAL BIT & SNAP CO., Racine, Wis.
Filed February 20, 1907. Serial No. 25,478. PUBLISHED APRIL 2, 1907.

62,839. BUILDING BLOCKS AND TILES. INTERLOCKING STONE CO., Oakland, Cal.
Filed February 21, 1907. Serial No. 25,521. PUBLISHED APRIL 2, 1907.

62,840. BITS AND AUGERS. THE IRWIN AUGER BIT CO., Wilmington, Ohio.
Filed February 27, 1907. Serial No. 25,636. PUBLISHED APRIL 2, 1907.

62,841. MISSES', GIRLS', AND CHILDREN'S PLAY-SUITS. J. B. PEARSON COMPANY, Boston, Mass
Filed February 21, 1907. Serial No. 25,506 PUBLISHED APRIL 2, 1907.

62,842. HOSIERY. LORD & TAYLOR, New York, N. Y.
Filed June 21, 1905. Serial No. 8,656 PUBLISHED APRIL 2, 1907.

62,843. HOSIERY. LORD & TAYLOR, New York, N. Y.
Filed June 21, 1905. Serial No. 8,658. PUBLISHED APRIL 2, 1907.

62,844. COAL. JAMES C. MCGREW, Lexington, Mo.
Filed March 7, 1907. Serial No. 25,830. PUBLISHED APRIL 2, 1907.

62,845. OVERALLS AND PANTALOONS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed May 19, 1906. Serial No. 19,692. PUBLISHED APRIL 2, 1907.

62,846. CORSETS. ROSE BINNER SCOGNAMILLO, New York, N. Y.
Filed June 8, 1905. Serial No. 7,620. PUBLISHED APRIL 2, 1907.

62,847. GAS AND GASOLENE ENGINES. ORAH SMITH, Oil City, Pa.
Filed January 26, 1907. Serial No. 24,925. PUBLISHED APRIL 2, 1907.

62,848. LADIES' EMBROIDERED LINEN COLLARS. WILLIAM TREVOR, New York, N. Y.
Filed February 15, 1907. Serial No. 25,312. PUBLISHED APRIL 2, 1907.

62,849. CRAPE. BENEDICTUS, WEILL & COMPANY, New York, N. Y.
Filed September 26, 1906. Serial No. 22,331. PUBLISHED APRIL 2, 1907.

62,850. COAL. BLACK BAND COAL & COKE CO., Springhill W. Va., and Cincinnati, Ohio.
Filed February 11, 1907. Serial No. 25,233. PUBLISHED APRIL 2, 1907.

62,851. CIGARS. BUTLER-BUTLER INCORPORATED, New York, N. Y.
Filed February 21, 1907. Serial No. 25,493. PUBLISHED APRIL 2, 1907.

62,852. PULVERIZING-HARROWS, CLOD-CRUSHERS, AND LEVELERS. DUANE H. NASH INC., Millington, N. J.
Filed March 4, 1907. Serial No. 25,728. PUBLISHED APRIL 2, 1907.

62,853. PULVERIZING-HARROWS, CLOD-CRUSHERS, AND LEVELERS. DUANE H. NASH INC., Millington, N. J.
Filed March 4, 1907. Serial No. 25,729. PUBLISHED APRIL 2, 1907.

62,854. BRATTICE-CLOTH. EDWARD MACBEAN & CO. LIMITED, Glasgow, Scotland.
Filed January 26, 1907. Serial No. 24,935. PUBLISHED APRIL 2, 1907.

62,855. WHISKY. EMINENCE DISTILLERY CO., St. Paul, Minn.
Filed February 16, 1907. Serial No. 25,341. PUBLISHED APRIL 2, 1907.

62,856. ANTIRHEUMATIC AND ANALGESIC. FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld Germany.
Filed January 25, 1907. Serial No. 24,886. PUBLISHED APRIL 2, 1907.

62,857. STRAW PIPES OR TUBES. XAVIER GUSTAVE EDOUARD DE FAUCOMBRÉ, Paris, France.
Filed February 15, 1906. Serial No. 17,043. PUBLISHED APRIL 2, 1907.

62,858. MEDICINE FOR HORSES OR CATTLE. EDWARD E. GRAY, Hinsdale, Ill.
Filed March 12, 1906. Serial No. 17,767. PUBLISHED FEBRUARY 19, 1907.

62,859. CERTAIN CONCRETE ARTICLES. EDW. L. HOLMES, San Francisco, Cal., assignor to Ferrolite Company, San Francisco, Cal., a Corporation of Nevada.
Filed March 6, 1906. Serial No. 17,607. PUBLISHED APRIL 2, 1907.

62,860. OVERALLS, PANTS, AND COATS. JOPLIN OVERALL COMPANY, Joplin, Mo.
Filed October 25, 1906. Serial No. 22,898. PUBLISHED APRIL 2, 1907.

62,861. OVERALLS, PANTS, AND COATS. JOPLIN OVERALL COMPANY, Joplin, Mo.
Filed October 25, 1906. Serial No. 22,899. PUBLISHED APRIL 2, 1907.

62,862. CERTAIN PROPRIETARY MEDICINE. JOSEPH G. KUEHNL, Toledo, Ohio.
Filed February 20, 1907. Serial No. 25,480. PUBLISHED APRIL 2, 1907.

62,863. HOSIERY. LORD & TAYLOR, New York, N. Y.
Filed June 21, 1905. Serial No. 8,660. PUBLISHED APRIL 2, 1907.

62,864. CIGARS. PARK & TILFORD, New York, N. Y.
Filed November 16, 1906. Serial No. 23,394. PUBLISHED APRIL 2, 1907.

62,865. CIGARS. PARK & TILFORD, New York, N. Y.
Filed January 26, 1907. Serial No. 24,920. PUBLISHED APRIL 2, 1907.

62,866. CERTAIN CUTLERY. RADIGAN, RICH & CO., New York, N. Y.
Filed January 14, 1907. Serial No. 24,612. PUBLISHED APRIL 2, 1907.

62,867. KNITTED AND NETTED UNDERWEAR. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed May 19, 1906. Serial No. 19,693. PUBLISHED APRIL 2, 1907.

62,868. BLEACHED MUSLIN. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,094. PUBLISHED APRIL 2, 1907.

62,869. BEER. GABRIEL SEDLMAYR BRAUEREI ZUM SPATEN, Munich, Germany.
Filed August 5, 1905. Serial No. 11,282. PUBLISHED APRIL 2, 1907.

62,870. BEER. GABRIEL SEDLMAYR BRAUEREI ZUM SPATEN, Munich, Germany.
Filed August 5, 1905. Serial No. 11,283. PUBLISHED APRIL 2, 1907.

62,871. LEATHER BOOTS, SHOES, AND SLIPPERS. THE SLATER SHOE COMPANY, Montreal, Quebec, Canada.
Filed February 23, 1907. Serial No. 25,565. PUBLISHED APRIL 2, 1907.

62,872. METAL-POLISH. HARRY E. RUGER, La Fayette, Ind.
Filed June 27, 1906. Serial No. 20,596. PUBLISHED APRIL 2, 1907.

62,873. COLORED PIGMENTS USED FOR PAINT. VANE-CALVERT PAINT CO., St. Louis, Mo.
Filed November 13, 1906. Serial No. 23,324. PUBLISHED APRIL 2, 1907.

62,874. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed March 6, 1906. Serial No. 17,567. PUBLISHED APRIL 2, 1907.

62,875. LICORICE PASTE. DANIEL VINCENT ARGUIMBAU, New York, N. Y.
Filed February 15, 1907. Serial No. 25,314. PUBLISHED APRIL 2, 1907.

62,876. COFFEE. GRACE BENNETT FEARNEY, New Orleans, La.
Filed November 19, 1906. Serial No. 23,450. PUBLISHED APRIL 2, 1907.

62,877. WHEAT-FLOUR. GALLATIN VALLEY MILLING COMPANY, Belgrade, Mont.
Filed October 5, 1906. Serial No. 22,528. PUBLISHED APRIL 2, 1907.

62,878. COTTON SHEETINGS AND DRILLINGS. GREENWOOD COTTON MILLS, Greenwood, S. C.
Filed May 10, 1905. Serial No. 4,926. PUBLISHED AUGUST 21, 1906.

62,879. TYPE-WRITER RIBBONS AND CARBON-PAPERS. H. M. STORMS CO., New York, N. Y.
Filed February 8, 1907. Serial No. 25,211. PUBLISHED APRIL 2, 1907.

62,880. STOGIES. HOWARD HAZLETT, Wheeling, W. Va., administrator of Augustus Pollack, deceased.
Filed January 26, 1907. Serial No. 24,911. PUBLISHED APRIL 2, 1907.

62,881. STOGIES. HOWARD HAZLETT, Wheeling, W. Va., administrator of Augustus Pollack, deceased.
Filed January 26, 1907. Serial No. 24,912. PUBLISHED APRIL 2, 1907.

62,882. STOGIES. HOWARD HAZLETT, Wheeling, W. Va., administrator of Augustus Pollack, deceased.
Filed January 26, 1907. Serial No. 24,913. PUBLISHED APRIL 2, 1907.

62,883. STOGIES. HOWARD HAZLETT, Wheeling, W. Va., administrator of Augustus Pollack, deceased.
Filed January 26, 1907. Serial No. 24,914. PUBLISHED APRIL 2, 1907.

62,884. SPICES AND FLAVORING EXTRACTS. HILLS BROS., San Francisco, Cal.
Filed February 25, 1907. Serial No. 25,584. PUBLISHED APRIL 2, 1907.

62,885. TEA. HILLS BROS., San Francisco, Cal.
Filed February 25, 1907. Serial No. 25,586. PUBLISHED APRIL 2, 1907.

62,886. REMEDY FOR HEADACHE AND NEURALGIA. ROBERT H. HUNSTOCK, St. Louis, Mo.
Filed June 28, 1905. Serial No. 9,361. PUBLISHED APRIL 2, 1907.

62,887. PREPARATION FOR DISEASES OF THE NOSE AND THROAT. THE JOHN C. LINDSAY CO., New York, N. Y.
Filed March 6, 1907. Serial No. 25,801. PUBLISHED APRIL 2, 1907.

62,888. EYE-OINTMENT. WILLIAM M. JUDD, Mexico, Mo.
Filed February 6, 1907. Serial No. 25,163. PUBLISHED APRIL 2, 1907.

62,889. CANNED OVEN-BAKED BEANS AND CANNED PORK AND BEANS. CHARLES C. MCDONALD, Elyria, Ohio.
Filed February 4, 1907. Serial No. 25,131. PUBLISHED APRIL 2, 1907.

62,890. CERTAIN PHARMACEUTICAL PREPARATION. OZOJELL CO., New York, N. Y.
Filed February 2, 1907. Serial No. 25,080. PUBLISHED APRIL 2, 1907.

62,891. UNCTUOUS FOOD PRODUCTS. SCHWARZSCHILD AND SULZBERGER COMPANY, Kansas City, Kans.; Chicago, Ill., and New York, N. Y.
Filed December 18, 1906. Serial No. 24,128. PUBLISHED APRIL 2, 1907.

62,892. EXPECTORANT. T. A. SLOCUM CO., New York, N. Y.
Filed February 2, 1907. Serial No. 25,066. PUBLISHED APRIL 2, 1907.

62,893. CERTAIN MEDICINE. HARRY BURNS VOORHEES, Easton, Pa.
Filed February 28, 1907. Serial No. 25,664. PUBLISHED APRIL 2, 1907.

62,894. EVAPORATED MILK. AMERICAN MILK PRODUCT CO., Chicago, Ill.
Filed January 28, 1907. Serial No. 24,954. PUBLISHED APRIL 2, 1907.

62,895. BLANKETS, COMFORTABLES, AND EIDERDOWN PIECE GOODS. BEACON MANUFACTURING CO., Providence, R. I.
Filed July 27, 1906. Serial No. 21,206. PUBLISHED DECEMBER 25, 1906.

62,896. MEDICINE FOR THE CURE OF RUPTURE. BERRY MEDICAL COMPANY, Stevens Point, Wis.
Filed December 17, 1906. Serial No. 24,084. PUBLISHED APRIL 2, 1907.

62,897. STARCH POLISH. BURRELL L. LENT, Binghamton, N. Y.
Filed June 15, 1906. Serial No. 20,317. PUBLISHED APRIL 2, 1907.

62,898. EMULSIONS OF COD-LIVER OIL. THE CLOFTLIN CHEMICAL COMPANY, New York, N. Y.
Filed November 22, 1906. Serial No. 23,532. PUBLISHED APRIL 2, 1907.

62,899. STORAGE BATTERIES OR ACCUMULATORS. THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia, Pa.
Filed June 27, 1906. Serial No. 20,606. PUBLISHED APRIL 2, 1907.

62,900. SPECIFIC BACTERICIDE, AN ANTIGONORRHEIC AND ANTISYPHILITIC. FARBENFABRIKEN VORM. FRIEDR. BAYER & CO., Elberfeld, Germany.
Filed June 6, 1906. Serial No. 20,092. PUBLISHED APRIL 2, 1907.

62,901. INTERNAL-COMBUSTION ENGINES AND PARTS THEREOF. THE FERRO MACHINE AND FOUNDRY CO., Cleveland, Ohio.
Filed February 9, 1907. Serial No. 25,222. PUBLISHED APRIL 2, 1907.

62,902. ENAMELED STEELWARE. GEO. BORGFELDT & CO., New York, N. Y.
Filed January 17, 1907. Serial No. 24,715. PUBLISHED APRIL 2, 1907.

62,903. MEDICAL PREPARATION FOR THE TREATMENT OF DISEASES OF INFANTS AND CHILDREN. GEORGE HANSON, Independence, Wis.
Filed December 19, 1906. Serial No. 24,142. PUBLISHED APRIL 2, 1907.

62,904. COMBINED WAGON-JACK AND GRAIN-ELEVATORS. J. A. ENGEL & CO., East Peoria, Ill.
Filed February 11, 1907. Serial No. 25,236. PUBLISHED APRIL 2, 1907.

62,905. PERIODICALS. THE JEWELERS CIRCULAR PUBLISHING CO., New York, N. Y.
Filed December 5, 1906. Serial No. 23,778. PUBLISHED APRIL 2, 1907.

62,906. WHISKY. LABROT & GRAHAM, Frankfort, Ky.
Filed May 1, 1905. Serial No. 3,893. PUBLISHED APRIL 2, 1907.

62,907. DRY BATTERIES. MANHATTAN ELECTRICAL SUPPLY COMPANY, Jersey City, N. J., and New York, N. Y.
Filed February 23, 1907. Serial No. 25,538. PUBLISHED APRIL 2, 1907.

62,908. DRY BATTERIES. MANHATTAN ELECTRICAL SUPPLY COMPANY, Jersey City, N. J., and New York, N. Y.
Filed February 23, 1907. Serial No. 25,539. PUBLISHED APRIL 2, 1907.

62,909. PHOTOGRAPHIC PAPERS, PHOTOGRAPHIC CARBON TISSUE AND TRANSFER PAPER. THOMAS MANLY, Kentish Town, England.
Filed November 19, 1906. Serial No. 23,468. PUBLISHED APRIL 2, 1907.

62,910. REMEDIES FOR SKIN DISEASES. AGUSTUS MORGAN, Seattle, Wash.
Filed January 25, 1907. Serial No. 24,902. PUBLISHED APRIL 2, 1907.

62,911. WATER-MOTORS, WATER-MOTOR PUMPS, WATER-LIFTS. THE ORGAN POWER CORPORATION, Hartford, Conn.
Filed November 6, 1906. Serial No. 23,141. PUBLISHED APRIL 2, 1907.

62,912. CURE FOR DYSPEPSIA. PITTMAN MEDICINE CO., Fitzgerald, Ga.
Filed October 1, 1906. Serial No. 22,409. PUBLISHED APRIL 2, 1907.

62,913. COTTON PIECE GOODS. RICE, STIX DRY GOODS COMPANY, St. Louis, Mo.
Filed February 2, 1907. Serial No. 25,098. PUBLISHED APRIL 2, 1907.

62,914. LEATHER BOOTS AND SHOES AND BOOT AND SHOE LEATHER. A. W. SHAW & CO., Freeport, Me.
Filed August 15, 1905. Serial No. 11,608. PUBLISHED APRIL 2, 1907.

62,915. AMMONIA, BLUE, BLUING, WASHING-CRYSTAL, GLOSS-STARCH, SAFFRON, BAKING-POWDER, AND GLYCERIN. SHERER-GILLETT COMPANY, Chicago, Ill.
Filed November 3, 1906. Serial No. 23,066. PUBLISHED APRIL 2, 1907.

62,916. WASHING-CRYSTAL, COMPOUNDS FOR SOFTENING WATER, GLOSS-STARCH, AND SAFFRON. SHERER-GILLETT COMPANY, Chicago, Ill.
Filed November 3, 1906. Serial No. 23,068. PUBLISHED APRIL 2, 1907.

62,917. NON-ALCOHOLIC CARBONATED BEVERAGE. W. C. R. TURNBULL, Aiken, S. C.
Filed December 20, 1906. Serial No. 24,178. PUBLISHED MARCH 5, 1907.

62,918. EYE-OINTMENT. WILLIAM H. WAKEFIELD, Charlotte, N. C.
Filed October 8, 1906. Serial No. 22,606. PUBLISHED APRIL 2, 1907.

62,919. LOTION. JUSTIN H. BURDICK, Milton, Wis.
Filed March 2, 1907. Serial No. 25,701. PUBLISHED APRIL 2, 1907.

62,920. METALLIC PACKING. CHICAGO BAILEY COMPANY, Chicago, Ill.
Filed February 25, 1907. Serial No. 25,606. PUBLISHED APRIL 2, 1907.

62,921. MEAT AND SALAD SAUCES AND DRESSINGS. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.
Filed March 1, 1907. Serial No. 25,671. PUBLISHED APRIL 2, 1907.

62,922. CREAM OF TARTAR. THE CITIZENS' WHOLESALE SUPPLY COMPANY, Columbus, Ohio.
Filed March 1, 1907. Serial No. 25,672. PUBLISHED APRIL 2, 1907.

62,923. PHOTOGRAPHIC PAPERS. CROSS PHOTO PAPER CO., Rochester, N. Y.
Filed July 25, 1906. Serial No. 21,232. PUBLISHED APRIL 2, 1907.

62,924. REMEDIES FOR THE STOMACH, KIDNEYS, AND LIVER. AMEDEE FORTIER, Waterville, Me.
Filed March 2, 1907. Serial No. 25,703. PUBLISHED APRIL 2, 1907.

62,925. HOSE-SUPPORTERS. GEORGE FROST COMPANY, Boston, Mass.
Filed January 3, 1907. Serial No. 24,408. PUBLISHED FEBRUARY 5, 1907.

62,926. CONDENSED MILK, EVAPORATED MILK, AND BUTTER. THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y.
Filed March 2, 1907. Serial No. 25,686. PUBLISHED APRIL 2, 1907.

62,927. CANNED VEGETABLES AND SPICES. THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y.
Filed March 2, 1907. Serial No. 25,687. PUBLISHED APRIL 2, 1907.

62,928. LEATHER SHOES. NELSON H. MARVIN, Boston, Mass.
Filed February 28, 1907. Serial No. 25,659. PUBLISHED APRIL 2, 1907.

62,929. REMEDY FOR DISEASES OF THE LIVER. MOFFITT-WEST DRUG CO., St. Louis, Mo., assignor to Melachol Pharmacal Company, St. Louis, Mo., a Corporation of Missouri.
Filed March 4, 1907. Serial No. 25,744. PUBLISHED APRIL 2, 1907.

62,930. LAUNDRY STARCH. NATIONAL STARCH COMPANY, Jersey City, N. J., and Oswego, N. Y.
Filed March 2, 1907. Serial No. 25,709. PUBLISHED APRIL 2, 1907.

62,931. BANKERS' DIRECTORY AND LIST OF ATTORNEYS. RAND, MCNALLY & COMPANY, Chicago, Ill.
Filed March 26, 1906. Serial No. 18,261. PUBLISHED APRIL 2, 1907.

62,932. LIVER REMEDY. ALVIN P. SAWYER, Chicago, Ill.
Filed March 6, 1907. Serial No. 25,793. PUBLISHED APRIL 2, 1907.

62,933. WHEAT-FLOUR. THE SOUTHWESTERN MILLING COMPANY, Jersey City, N. J., and Kansas City, Mo.
Filed February 27, 1907. Serial No. 25,648. PUBLISHED APRIL 2, 1907.

62,934. WHEAT-FLOUR. THE SOUTHWESTERN MILLING COMPANY, Jersey City, N. J., and Kansas City, Mo.
Filed February 27, 1907. Serial No. 25,649. PUBLISHED APRIL 2, 1907.

62,935. MAGAZINES. THE BUSINESS MAN'S PUBLISHING COMPANY, LIMITED, Detroit, Mich.
Filed February 18, 1907. Serial No. 25,363. PUBLISHED APRIL 2, 1907.

62,936. NEWSPAPER. EMANUEL J. CEVASCO, San Francisco, Cal.
Filed February 21, 1907. Serial No. 25,520. PUBLISHED APRIL 2, 1907.

62,937. WHEAT-FLOUR. THE CONCORDIA MILLING COMPANY, Concordia, Kans.
Filed January 31, 1907. Serial No. 25,023. PUBLISHED APRIL 2, 1907.

62,938. PANCAKE-FLOUR. THE CONCORDIA MILLING COMPANY, Concordia, Kans.
Filed January 31, 1907. Serial No. 25,024. PUBLISHED APRIL 2, 1907.

62,939. SPECTACLE AND EYEGLASS LENSES. FAILING OPTICAL CO., Buffalo, N. Y.
Filed February 18, 1907. Serial No. 25,368. PUBLISHED APRIL 2, 1907.

62,940. LEATHER BOOTS AND SHOES. HAND MADE BOOT & SHOE CO., Chippewa Falls, Wis.
Filed February 16, 1907. Serial No. 25,342. PUBLISHED APRIL 2, 1907.

62,941. SHEET-MUSIC. HELF & HAGER CO., New York, N. Y.
Filed February 15, 1907. Serial No. 25,328. PUBLISHED APRIL 2, 1907.

62,942. WHEAT-FLOUR. KEHLOR FLOUR MILLS COMPANY, St. Louis, Mo.; Kansas City, Kans., and East St. Louis, Ill.
Filed January 28, 1907. Serial No. 24,963. PUBLISHED APRIL 2, 1907.

62,943. BAKING-POWDER. KENTON BAKING POWDER COMPANY, Cincinnati, Ohio.
Filed February 23, 1907. Serial No. 25,534. PUBLISHED APRIL 2, 1907.

62,944. BUTTER-DISHES. LAY AND BALCOM MANUFACTURING CO., Port Allegany, Pa.
Filed February 14, 1907. Serial No. 25,305. PUBLISHED APRIL 2, 1907.

62,945. WHEAT-FLOUR. THE NEW ERA MILLING COMPANY, Arkansas City, Kans.
Filed February 4, 1907. Serial No. 25,115. PUBLISHED MARCH 26, 1907.

62,946. LAUNDRY STARCH. SHERER-GILLETT COMPANY, Chicago, Ill.
Filed November 3, 1906. Serial No. 23,070. PUBLISHED APRIL 2, 1907.

LABELS

REGISTERED MAY 28, 1907.

13,559.—*Title:* "DUKE OF NAVARRE." (For Cigars.) A. M. ZEILINGOLD, New York, N. Y. Filed May 1, 1907.

13,560.—*Title:* "WHITE RIBBON." (For Cigars.) C. B. HENSCHEL MFG. CO., Milwaukee, Wis. Filed May 6, 1907.

13,561.—*Title:* "LADY SLIPPER." (For Chocolates.) W. A. WHITELAW & CO., Minneapolis, Minn. Filed May 4, 1907.

13,562.—*Title:* "NEWLEANS." (For Syrup.) COLUMBIA COFFEE MILLS LTD., New Orleans, La. Filed May 2, 1907.

13,563.—*Title:* "CASWELL'S HIGH GRADE COFFEE, BLUE AND RED PACKAGE." (For Coffee.) GEORGE W. CASWELL CO., San Francisco, Cal. Filed May 6, 1907.

13,564.—*Title:* "CASWELL'S HIGH GRADE COFFEE, GREEN AND RED PACKAGE." (For Coffee.) GEORGE W. CASWELL CO., San Francisco, Cal. Filed May 6, 1907.

13,565.—*Title:* "CASWELL'S HIGH GRADE COFFEE, BLACK AND ORANGE PACKAGE." (For Coffee.) GEORGE W. CASWELL CO., San Francisco, Cal. Filed May 6, 1907.

13,566.—*Title:* "CASWELL'S HIGH GRADE COFFEE, YELLOW AND BLUE PACKAGE." (For Coffee.) GEORGE W. CASWELL CO., San Francisco, Cal. Filed May 6, 1907.

13,567.—*Title:* "LAKEWOOD SPRING WATER." (For Spring-Water.) ELIZA C. FOOT, Lakewood, N. J. Filed April 22, 1907.

13,568.—*Title:* "SILESIA MINERAL WATER." (For a Mineral Water.) SILESIA MINERAL SPRINGS CO., Silesia, Mont. Filed May 4, 1907.

13,569.—*Title.* "LYDIA E. PINKHAM'S BLOOD PURIFIER." (For Medical Compounds for the Purification of the Blood.) LYDIA E. PINKHAM MEDICINE COMPANY, Lynn, Mass. Filed May 6, 1907.

13,570.—*Title:* "LYDIA E. PINKHAM'S BLOOD PURIFIER." (For Medical Compounds for the Purification of the Blood.) LYDIA E. PINKHAM MEDICINE COMPANY, Lynn, Mass. Filed May 6, 1907.

13,571.—*Title:* "ST. PHILIP HAIR TONIC AND DANDRUFF CURE." (For Hair Preparations.) PASQUALE ACETO, Philadelphia, Pa. Filed May 7, 1907.

13,572.—*Title:* "MADAM DE'SAVON'S PONCE DE LEON NEW THOUGHT TOILET ARTICLES." (For Face-Powder, Cream, Cream-Jelly, Foot-Comfort, and Hair-Tonic.) CATHARINE D. SCHUREMAN, Houston, Tex. Filed April 23, 1907.

13,573.—*Title:* "PANAMA ANT POISON." (For an Insecticide.) CHAS. A. WALSDORF, New Orleans, La. Filed May 1, 1907.

13,574.—*Title:* "STEPHENSON THE ORIGINAL UNEED A BAR BELT DRESSING." (For a Belt-Dressing.) GEM MANUFACTURING CO., Albany, N. Y. Filed April 16, 1907.

13,575.—*Title:* "RIVETS." (For Rivets.) EDWIN B. STIMPSON, New York, N. Y. Filed April 30, 1907.

PRINTS

REGISTERED MAY 28, 1907.

1,999.—*Title:* "BLUE BELL." (For Bread.) HAUCK-HOERR BAKERY CO., St. Louis, Mo. Filed May 1, 1907.

2,000.—*Title:* "NESTLÉ'S MILK CHOCOLATE." (For Chocolate.) LAMONT, CORLISS & COMPANY, New York, N. Y. Filed April 30, 1907.

2,001.—*Title:* "SNOWDRIFT." (For Cooking-Fat.) THE SOUTHERN COTTON OIL CO., New York, N. Y. Filed April 22, 1907.

2,002.—*Title:* "MAYER'S WASHABLE HATS." (For Infants' Headwear.) S. MAYER & SONS, New York, N. Y. Filed May 1, 1907.

2,003.—*Title:* "SLEEPY HOLLOW BLANKETS." (For Blankets.) EDSON, MOORE & CO., Detroit, Mich. Filed May 1, 1907

2,004.—*Title:* "BERENICE, THE DANCERS, AND ORANGE BLOSSOMS BACKS CONGRESS PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Norwood, Ohio. Filed May 1, 1907.

2,005.—*Title:* "INLAID BACK, SPORTSMAN'S PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Norwood, Ohio. Filed May 1, 1907.

2,006.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed May 4, 1907.

2,007.—*Title:* "THE INTERLOCKING RUBBER TILE GIRL." (For Interlocking Rubber Tiling.) NEW YORK BELTING & PACKING CO., LTD., New York, N. Y. Filed May 2, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE KNAPP AND CADE.

Decided May 3, 1907.

AMENDMENT AFTER FINAL REJECTION—EXPLANATION BY EXAMINER PRIOR TO FINAL REJECTION.

Where after a rejection by the Primary Examiner an applicant requests a reconsideration and files an argument fully presenting the case upon the merits and the Examiner in view thereof finally rejects the claims, he cannot submit new claims and have them entered and considered thereafter upon the allegation that the letter asking for reconsideration was in fact a request for an explanation of the Examiner's position.

REQUEST for reconsideration.

ELECTRIC-CURRENT REGULATOR.

Mr. Robert D. Kinney for the applicants.

ALLEN, *Commissioner:*

This case is before me upon request for reconsideration of a petition taken from the action of the Examiner adhering to a final rejection and refusing to admit amendments presented thereafter.

The petition has been reconsidered without discovery of any merit therein. A request for explanation of the Examiner's position should be full and specific and should not be confused with the argument upon the merits of the action. No such request was made. The case, on the contrary, was fully presented to the Examiner by the applicants' action of May 5, 1906, for his reconsideration, and such reconsideration was in fact requested by the applicants. That a final rejection might result should have been contemplated by the applicants, and the newly-offered claims should have been earlier presented. Applicants should fully present their cases upon each action. There is nothing in the letter of final rejection to excuse the presentation of the new claims at this time, nor can the alleged insufficiency of the Examiner's prior actions afford such excuse, as the explanation of the Examiner's position, which the applicants contend to be necessary, has not yet been furnished.

As a matter of fact, the Examiner's actions appear to be as complete as need be. The real disagreement between the Examiner and the applicants is one of merits, which should be settled by appeal to the Examiners-in-Chief upon the finally-rejected claims, if the applicants still regard the rejection as improper.

The petition is again denied.

WORCESTER BREWING CORPORATION *v.* RUETER & COMPANY.

Decided May 4, 1907.

1. TRADE-MARKS—TEN-YEAR PROVISO—EXCLUSIVE USE DOES NOT NECESSARILY REQUIRE SOLE USE.

The word "exclusive" in the ten-year proviso is believed to necessarily imply the right to exclude. But provided there is a clear right to exclude it is not thought that there must necessarily have been sole use. Otherwise use by another, no matter how fradulent or trivial, would defeat the right to registration under this proviso of the act.

2. SAME—SAME—SAME.

Where it appears that the opposer at the time of its adoption of the mark was aware of the fact that it had been used for a long time as a trade-mark by the applicant and that said applicant had built up a large business thereon and it further appears that the applicant has not acquiesced in the use of the mark by the opposer and that it has been guilty of no laches in asserting its rights, *Held* that the applicant has established a case of "exclusive use" within the meaning of the last proviso of section 5 and is entitled to register its mark.

3. SAME—SAME—DESCRIPTIVE MARK.

The fact that a mark is descriptive is not in itself a bar to its registration under the ten-year proviso. (Citing the decision of the Court of Appeals of the District of Columbia *in re Cahn, Belt & Company*, 122 O. G., 354.)

4. SAME—SAME—SAME—RIGHT TO EXCLUDE.

It has been repeatedly held by the courts that where a party was the first to apply a certain mark to a particular class of goods and by long and extensive use the mark has become indicative of the origin of the goods he may acquire a property right in the mark, even though it be a descriptive or geographical term, which the courts will uphold by requiring others who use the mark to so qualify it so as to distinguish their goods from those of the original user.

ON APPEAL.

TRADE-MARK FOR ALE.

Messrs. Southgate & Southgate for Worcester Brewing Corporation.

Mr. George H. Maxwell for Rueter & Company.

ALLEN, *Commissioner:*

This is an appeal by the Worcester Brewing Corporation from the decision of the Examiner of Interferences dismissing its opposition and holding that Rueter & Company has a right to register the word "Sterling" as a trade-mark for ale.

The application of Rueter & Company contains all the allegations required for the registration of its mark as a technical trade-mark, and in addition the declaration contains the allegation, required of applicants under the ten-year proviso of section 5 of the Trade-Mark Act of February 20, 1905—

That the trade-mark has been in actual use as a trade-mark of applicant and its predecessors for ten years next preceding

the passage of the act of February 20, 1905, and that to the best of his knowledge and belief such use has been exclusive.

The Examiner of Interferences held that Rueter & Company has the right to register its mark both as a technical trade-mark and also under the ten-year proviso.

The question of the registrability of the mark under the ten-year proviso of the Trade-Mark Act will be first considered. The testimony in this case clearly shows that the applicant has actually, extensively, and continuously used the mark in issue for more than ten years next preceding the passage of the act of February 20, 1905; but the Worcester Brewing Corporation contends that, (p. 36 of brief)—

Of course, Rueter & Company have no right under the ten-year clause because the use by the Worcester Brewing Corporation of the words "Worcester Sterling" as a trade-mark for ale at any time prior to April 1, 1905, would prevent any use by Rueter & Company of the word "Sterling" for being an exclusive use of such words as a trade-mark for the ten years next preceding the passage of the act.

This contention of the Worcester Brewing Corporation is believed to be erroneous. In the case of *ex parte Cahn, Belt & Company* (118 O. G., 1936) I stated concerning the ten-year proviso:

The word "exclusive" in the above-quoted proviso is particularly significant. It necessarily implies the right of the applicant to exclude others from using the mark during the period mentioned, and not merely that he was the *sole* user during that period. He might be the only actual user and at the same time might have no right to prevent others from entering the field and using the mark, and in such case he would not have "exclusive" use.

The word "exclusive" is believed to necessarily imply the right to exclude. But provided there is a clear right to exclude it is not thought that there must necessarily have been sole use. Otherwise use by another, no matter how fraudulent or trivial, would defeat the right to registration under this proviso of the act.

The testimony of Finnigan and Maynard, the only witnesses testifying on behalf of the Worcester Brewing Corporation, shows that Finnigan is president, a director, and the principal owner of the Worcester Brewing Corporation and that he was instrumental in organizing said corporation in 1899, that for a number of years prior thereto he was the exclusive agent in Worcester for the Rueter & Company "Sterling Ale," and that such agency terminated in the summer of 1900. Thereafter he marketed the products of the Worcester Brewing Corporation, including its "Worcester Sterling Ale." Maynard, the secretary and treasurer of the Worcester Brewing Corporation, admitted on cross-examination (X-Q. 182) that so far as he remembers no advertising of the "Worcester Sterling Ale" was done by the Worcester Brewing Corporation at least up to May, 1904. The evidence also shows that the right of the opposer to use the mark in issue was challenged and that suit was brought in the courts of the State of Massachusetts as soon as Rueter & Company became aware of the use of the mark by the Worcester Brewing Corporation. (Reuter's testimony, answer 52.) The above suit at the time of the final hearing in this opposition proceeding was still pending before the courts of Massachusetts. It thus appears that the Worcester Brewing Corporation at the time of its adoption of the mark was aware of the fact that "Sterling" had been used for a long time as a trade-mark by the applicant and that Rueter & Company had extensively advertised and built up a large business in "Sterling Ale."

It further appears that Rueter & Company has not acquiesced in the use of the mark by the Worcester Brewing Corporation and that it has been guilty of no laches in asserting its rights. Under these circumstances the applicant is believed to have established a case of "exclusive use" within the meaning of the last proviso of section 5 and is entitled to register its mark thereunder.

The Worcester Brewing Corporation contends that the word "Sterling" is not registrable because it is descriptive of the goods to which it is applied. It is unnecessary to determine whether the mark is descriptive in considering its registrability under the ten-year proviso, since the fact that a mark is descriptive is not in itself a bar to its registration under said proviso. The Court of Appeals of the District of Columbia *in re Cahn, Belt & Company* (122 O. G., 354) stated:

It is clear that these changes were made for the purpose of permitting the registration of marks which were not trade-marks but which had been actually used as trade-marks by the applicants or their predecessors, from whom they derived title, and in which the user had acquired property rights for more than ten years next preceding the passage of the act.

It has been repeatedly held by the courts that where a party was the first to apply a certain mark to a particular class of goods and by long and extensive use the mark has become indicative of the origin of the goods he may acquire a property right in the mark, even though it be a descriptive or geographical term, which the courts will uphold by requiring others who use the mark to so qualify it so as to distinguish their goods from those of the original user. In *ex parte The Yale & Towne Manufacturing Company* (127 O. G., 3641) I stated:

It is believed that the same reasons and principles apply in many cases of geographical and descriptive terms and names of individuals. Here, as in the case of the name of a patented article, the first adopter may often have the right to exclude others from using the exact term or mark, although no technical trade-mark right could exist. (*Elgin National Watch Company* v. *Illinois Watch Case Company*, C. D., 1901, 273; 94 O. G, 755 179 U. S., 665; *Walter Baker & Company*, v. *Baker*, C. D., 1897, 797; 78 O. G., 1427; 77 Fed. Rep., 884; *Shiver et al.* v. *Heller & Merz Company*, C. D., 1901, 424; 96 O. G., 2229; 108 Fed. Rep., 821; *Gennessee Salt Company* v. *Burnap*, 73 Fed. Rep., 818; *American Waltham Watch Company* v. *Sandman*, 96 Fed. Rep., 330.)

The opposer also contends that Rueter & Company is not entitled to register the word "Sterling" because it used the mark as a grade mark rather than to indicate the origin of the goods. The evidence, on the contrary, is believed to show that the mark as used by Rueter & Company was intended to indicate and does indicate primarily to the purchasing public that "Sterling Ale" is the product of Rueter & Company and that any indication it may possess as to the grade or quality of the ale is secondary and subordinate. This contention cannot be sustained. (*Columbia Mill Company* v. *Alcorn*, 150 U. S., 460.)

It does not appear that the official sign of Rueter & Company and its registration certificate in the State of Massachusetts, under which the Worcester Brewing Corporation claims that applicant is estopped from asserting that the word "Sterling" constitutes an essential feature of its trade-mark, have any connection with the mark of the application. On the contrary, they evidently relate to a different and distinct sign or mark.

Having found that Rueter & Company are entitled to register the word "Sterling" under the ten-year proviso of the Trade-Mark Act, it is unnecessary to consider whether the mark is also registrable as a technical trade-mark. But one application for registration of the mark is before me, and upon that application Rueter & Company is adjudged entitled to registration.

The decision of the Examiner of Interferences is affirmed.

HEWITT *v.* WEINTRAUB *v.* HEWITT AND ROGERS.

Decided April 26, 1907.

INTERFERENCE—TESTIMONY—RIGHT TO MAKE CLAIMS—PRIORITY.

In an interference proceeding where, in addition to the taking of testimony as to who was the first inventor, permission was obtained to take testimony concerning the right of one of the parties to make the claims for use at the first hearing on priority under Rule 130, *Held* that the rule contemplates but one contest, and that leading to an award of priority, and not two distinct contests and two separate proceedings. The taking of testimony on the question of priority should not therefore be suspended until the question of the right to make the claims has been determined.

APPEAL on motion.

GAS OR VAPOR ELECTRIC APPARATUS.

Mr. Charles A. Terry for Hewitt and Hewitt and Rogers. (*Mr. George H. Stockbridge* of counsel.)

Mr. Albert G. Davis for Weintraub. (*Mr. Alexander D. Lunt* of counsel.)

MOORE, *Assistant Commissioner:*

This is an appeal by Hewitt from the decision of the Examiner of Interferences denying his petition that the taking of testimony for Hewitt upon the question of priority be suspended until the question of the right of the senior party, Hewitt and Rogers, to make claims corresponding to the counts of the issue has been determined.

Weintraub's preliminary statement failed to overcome the record date of Hewitt and Rogers. In response to an order to show cause why judgment should not be rendered against him Weintraub moved to dissolve the interference on the ground that Hewitt and Rogers had no right to make claims corresponding to the counts of the issue. This motion was denied; but Weintraub obtained permission to take testimony to show that Hewitt and Rogers had no right to make the claims for use at the final hearing on priority under Rule 130. Times were therefore set by the Examiner of Interferences for the taking of testimony by all parties.

In case Hewitt's petition was granted the first contest would be between Weintraub and the senior party, Hewitt and Rogers. Then the winning party would have to contest priority with the junior party, Hewitt. The judgments in each contest would be by award of priority and in each there would be the statutory right of appeal. Hewitt contends that there are two distinct contests and should therefore be two separate proceedings. This contention is erroneous. If, under Rule 130, Weintraub can establish that Rogers and Hewitt have no right to make the claims, the judgment will be an award of priority in his favor as against the senior party. The rule contemplates but one contest, and that leading to an award of priority. To make the question the subject-matter of two contests, each resulting in an award of priority with the right of appeal to the Court of Appeals of the District of Columbia, would be piecemeal action and unnecessarily prolong the contest.

The decision of the Examiner of Interferences is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

KILBOURN *v.* HIRNER.

Decided February 5, 1907.

INTERFERENCE—PRIORITY—SUFFICIENCY OF DISCLOSURE—CONCLUSIVENESS OF PATENT OFFICE DECISIONS.

The decisions of the expert tribunals of the Patent Office on the question of the sufficiency of the disclosure of a party to an interference will be accepted by the court of appeals as conclusive, except in extreme cases where palpable error has been committed. (*Seeberger* v. *Dodge*, 114 O. G., 2382; 24 App. D. C., 481; *Podlesak* v. *McInnerney*, 120 O. G., 2127; 26 App. D. C., 405.)

Mr. J. H. Whitaker and *Mr. Melville Church* for Kilbourn.

Mr. C. L. Sturtevant and *Mr. H. N. Paul* for Hirner.

ROBB, *J.:*

This is an appeal from a decision of the Commissioner of Patents in an interference case involving an automatic stocking-knitting machine.

The assignment of error relied upon in argument challenges the ruling that appellee has the right to claim in his application in interference the subject-matter in issue. The counts of the issue follow:

Count 1. In a circular-knitting machine having independent needles and means for narrowing and widening the back of the knit tube, means for knitting open-work and plain knitting at any point around the said tube, and means for changing the open-work on the back of the tube to plain knitting.

Count 2. In a circular-knitting machine having independent needles, cam mechanism to coöperate with all of said needles, to produce tubular work, to coöperate with each needle, of a continuous portion of said needles to form narrowed and widened fabric, and to operate certain needles of said portion without causing them to knit, thereby forming drop-stitch work.

Hirner is the senior party, having filed his application July 5, 1901. Kilbourn filed his application December 16, 1902, more than seventeen months later. An interference was declared November 3, 1903, and then involved, in addition to the applications of the parties hereto, the application of Sylvester J. Kutz filed May 1, 1902, the application of John B. Hipwell filed June 3, 1902, and the application of John C. Duemler filed July 19, 1902. Kutz, Hipwell and Duemler took no testimony, and, being junior parties, their failure in that respect resulted in their applications being eliminated from further consideration. Hirner and Kilbourn each proceeded to take testimony on the question of priority. Subsequently a hearing was had before the Examiner of Interferences, who in a carefully considered opinion awarded judgment of priority to Hirner. During the argument before the Examiner counsel for Kilbourn for the first time, as far as the record discloses, raised the question whether Hirner's application contains a sufficient basis for the claims in interference. This question was also carefully considered by the Examiner, and his ruling thereon sustained Hirner. An appeal was taken to the Examiners-in-Chief, who affirmed the decision appealed from. The case was then taken to the Commissioner, who, without deciding the question of priority, remanded the proceeding to the Primary Examiner, saying:

No motion for dissolution was made by Kilbourn and no statement upon the record appears to have been made by the Primary Examiner of his reasons for holding that the issues are properly grounded upon Hirner's disclosure. The machines upon which the issue is drawn and those of the prior art are complex and intricate and their operation involved. The Primary Examiner is the technical expert of this Office as to those arts in which he examines. He should through his special experience be peculiarly fitted to determine the meanings of the terms used in the specification of the parties and to determine the relations of their disclosures to prior devices. I am unwilling to pass upon the question of disclosure by Hirner without the benefit of the opinion and the reasons of the Primary Examiner based upon discussion of the question by the parties in case they desire to be heard. The interference is remanded to the Primary Examiner, who will hear the parties and furnish me with his opinion as to the question raised, together with a statement of the reasons for his conclusion.

Thereupon the Primary Examiner heard counsel for both parties, considered the question submitted to him, and furnished the Commissioner with an elaborate opinion, saying in conclusion:

The Examiner is of the opinion that Hirner's showing is sufficient to support his right to make the claims made the issue of the interference, and it is so held.

Thereupon the Commissioner rendered a final decision in which he said:

The Primary Examiner heard the parties and has rendered his opinion which is now before me. He has given a clear and fair discussion of the facts and concluded, as did the Examiners-in-Chief and Examiner of Interferences, that Hirner's disclosure justified the claims in issue.

After careful consideration, I am convinced that the unanimous conclusion expressed by the three opinions which have been written upon the sufficiency of Hirner's disclosure is sound.

The reasons that impelled the Commissioner to seek the opinion of the Primary Examiner on the question here involved have heretofore impelled this court to announce the rule that the decisions of the expert tribunals of the Patent Office on such a question will be accepted as conclusive, except in extreme cases where palpable error has been committed. (*Seeberger* v. *Dodge*, 114 O. G., 2382; 24 App. D. C., 481; *Podlesak* v. *McInnerney*, 120 O. G., 212; 26 App. D. C., 405.)

We see nothing unusual or extreme in this case unless it be the failure of appellant to discover what he now urges as an obvious and fundamental defect in Hirner's application until more than a year after the declaration of interference. Unless, therefore, a manifest error has been committed, the judgment must be affirmed.

The specific objection to the Hirner application is that it neither shows nor describes narrowing and widening devices for making the heel and toe of the stocking. The record discloses that at the time Hirner made this application he was, and for a long time had been, a prolific inventor as well as a manufacturer of circular-knitting machines. It also discloses that he himself had invented and patented machines containing narrowing and widening devices. It is apparent, therefore, that he was highly skilled in the art when he filed this application. The Examiner of Interferences after quoting from Hirner's application says:

It seems quite apparent from Hirner's specification that the machine described therein is the ordinary stocking-knitting machine in which not only the leg portion but the heel and toe portions of the stocking are made. Of necessity such a machine must comprise narrowing and widening mechanism. This, indeed, is well known in the art. To say that a complete stocking is produced upon a knitting-machine means, to one skilled in the art, that such a machine contains the ordinary narrowing and widening mechanism. It is believed that Hirner's specification contains a sufficient basis for the present claims.

The Examiners-in-Chief—

find that Fig. 10 of the application of Hirner discloses device lettered F, and a shape of the upper portion of device E which are provisions for the guidance of pickers for automatically operating the needles to effect narrowing and widening. In short this figure of the drawings clearly so shows a part of the machine as to make the machine one having automatic narrowing and widening mechanisms.

Also the entire specification of Hirner is drawn to indicate that all of the operations are automatically performed by the machine, excepting in one instance where it states that the cam N may be operated either automatically or by hand.

Furthermore at the date of Hirner's application, Hirner, an inventor and manufacturer of circular-knitting machines, cannot be presumed to have presented an improvement on merely the very old type of machines wherein the narrowing and widening was done by hand operation of needles and the cylinder, but rather on one of the then more modern automatic narrowing and widening machines with which he must have been well acquainted.

The Primary Examiner, to whom the question was then referred, says *inter alia:*

It is fundamental knowledge in this art that the heel, sole and toe of a stocking knit of solid fabric can be produced only upon a continuous series of needles having no omissions therein.

It is also fundamental knowledge in this art that the heel and toe pockets of a stocking can be made upon a circular machine (the product of which is a "seamless" stocking,) only by widening and narrowing the fabric to form said pockets.

* * * * * * *

The showing comprised in Hirner's Fig. 10 appears to the Examiner to be alone sufficient to entitle Hirner to make in this case claims to the combination of the particular devices clearly shown in the application with "means for narrowing and widening the back of the knit tube" or "cams to coöperate with each needle of a continuous portion of said needles to form narrowed and widened fabric."

The cam shown in Fig. 10, apparently an accurate drawing of the inner surface of the cam-cylinder of the actual machine made by Hirner is most distinctive in its design, and would be recognized by any one skilled in this art as belonging to an automatic knitting-machine having narrowing and widening devices. The configuration of the cams D and E, particularly of the upper inwardly-sloping surfaces, which are shown as containing recesses, would be wholly useless in any other type of machine. The recesses mentioned are for the purpose of accommodating the narrowing-pickers when in position for action. See in this connection Fig. 2 of Hirner's prior patent No. 471,220, Mar. 22, 1892, (Knitting and Netting, Circular Machines, Independent Needles, Fashioning,) and his patent No. 753,260, Mar. 1, 1904, (Circular Machines, Independent Needles,) wherein a cam-cylinder is similarly conventionally shown with the same recesses, and his patent No. 686,070, Nov. 5, 1901, wherein see particularly Fig. 2 and Fig. 13, and the narrowing-pickers E^3 shown in said figures.

The Commissioner, as before stated, accepted and approved the finding of the Primary Examiner, saying:

In Hirner's specification as filed, however, reference is made to ordinary stocking-knitters, and to a cam which when controlled by proper mechanism may be used as a pull-down cam to lower the needles after knitting a heel or toe pocket, and also to cams which may be used in conjunction with other mechanism at the commencement of the formation of the heel and toe pockets as needle-raising cams. These references, in view of the general use of pickers upon stocking-knitters would, it is believed, unmistakably inform those skilled in the art that the devices shown by Hirner are to be used in practice with the usual pickers for widening and narrowing.

We have carefully examined and considered this record, and find no sufficient basis therein for disturbing the conclusion thus carefully reached by the successive tribunals of the Patent Office. The parties, Kutz, Hipwell, and Duemler, each senior to Kilbourn, and each presumably skilled in the art, did not question the sufficiency of Hirner's application, and Kilbourn himself failed to discover any defect therein until the testimony had been taken which convinced the Patent Office that Hirner was entitled to a judgment of priority.

Without considering the question further, we affirm the decision of the Commissioner, and it is so ordered.

The clerk of the court will certify this opinion and the proceedings in this court to the Commissioner of Patents, as required by law. Affirmed.

Supreme Court of the United States.

KESSLER v. ELDRED.

Decided May 13, 1907.

1. PATENTS—DECREE OF NON-INFRINGEMENT—QUESTION RES ADJUDICATA THROUGHOUT THE UNITED STATES.

Held that a final decree for the defendant in one circuit in a suit upon a patent upon the ground of non-infringement entitled the defendant to continue the business of making and selling throughout the United States the article which he had theretofore been making and selling without molestation by the complainant through the patent in suit.

2. SAME—SAME—SUBSEQUENT SUIT AGAINST DEFENDANT'S CUSTOMERS—WRONGFUL.

Held that said decree makes a suit by the complainant against any of defendant's customers for alleged infringement of the patent sued upon a wrongful interference with defendant's business.

3. SAME—ASSUMPTION OF DEFENSE OF SUIT AGAINST CUSTOMER—NO ESTOPPEL FROM PROCEEDING DIRECTLY AGAINST COMPLAINANT.

Where a suit upon a patent terminates for the defendant and complainant thereafter sues a customer of the defendant upon the same patent and the aforesaid defendant assumes the defense of his customer's suit, *Held* that he is not thereby estopped from proceeding against the complainant for wrongfully interfering with his business.

4. SAME—SAME—SAME—MAY PROCEED IN EQUITY.

Held that the aforesaid defendant was entitled to proceed against the complainant in equity.

Mr. R. S. Taylor for Kessler.

Mr. C. C. Linthicum for Eldred.

This case comes to this Court from the Circuit Court of Appeals for the Seventh Circuit upon a certificate of that court of questions of law concerning which it desires instructions. Accompanying the certificate is a statement of facts. The statement of the facts and the certificate of the questions of law are as follows:

STATEMENT OF THE CASE.

Kessler, a citizen of Indiana, prior to 1898 had built up an extensive business in the manufacture and sale of electric cigar-lighters, and had customers throughout the United States. Eldred, a citizen of Illinois, and an inhabitant of the Northern District, was the owner of Patent No. 492,913, issued to Chambers on March 7, 1893, for an electric lamp-lighter. Eldred was a competitor of Kessler's and manufactured a similar form of lighter (entirely dissimilar from that described in the Chambers patent), so that it was not a matter of much importance to customers which lighter they bought. In 1898 Eldred began a suit against Kessler in the District of Indiana for the infringement of the Chambers patent. The bill alleged that Kessler's manufacture and sale of the Kessler lighter infringed all the claims. The answer denied that Kessler's lighter infringed any of the Chambers claims. On final hearing the circuit court found for Kessler on the issue of non-infringement and dismissed the bill. That decree was affirmed in 1900 by the Circuit Court of Appeals for the Seventh Circuit. (*Eldred* v. *Kessler*, 106 Fed. Rep., 509.)

Subsequently, Eldred brought suit on the same patent in the Northern District of New York against Kirkland, who was selling a similar lighter, but not of Kessler's make. The circuit court found for Kirkland on the issue of non-infringement and dismissed the bill. The Circuit Court of Appeals for the Second Circuit reversed that decree and held the Kirkland lighter to be an infringement. (*Eldred* v. *Kirkland*, 130 Fed. Rep., 342.)

In June, 1904, Eldred filed a bill for infringement of the same patent in the Western District of New York against Breitwieser, user of Kessler lighters, which were identical with those held in *Eldred* v. *Kessler*, to be no infringement of the Chambers patent. Many of Kessler's customers were intimidated by the Breitwieser suit, so that they ceased to send in further orders for lighters and refused to pay their accounts for lighters already sold and delivered to them. Kessler assumed the defense of the Breitwieser suit, and will be compelled in the proper discharge of his duty to his customers to assume the burden and expense of all suits which may be brought by Eldred against other customers. In this state of affairs Kessler, a citizen of Indiana, in July, 1904, filed a bill against Eldred in the Circuit Court for the Northern District of Illinois, the State and district of Eldred's citizenship and residence, to enjoin Eldred from prosecuting any suit in any court of the United States against any one for alleged infringement of the Chambers patent by purchase, use or sale of any electric cigar-lighter manufactured by Kessler and identical with the lighter in evidence before the Circuit Court for the District of Indiana and the Circuit Court of Appeals for the Seventh Circuit in the trial and adjudication of the suit of Eldred against Kessler. From an adverse decree by the circuit court Kessler perfected an appeal to this Court.

Upon the foregoing facts the questions of law concerning which this court desires the instruction and advice of the Supreme Court are these:

First. Did the decree in Kessler's favor, rendered by the Circuit Court for the District of Indiana in the suit of Eldred against Kessler, have the effect of entitling Kessler to continue the business of manufacturing and selling throughout the United States the same lighter he had theretofore been manufacturing and selling, without molestation by Eldred through the Chambers patent?

Second. Did the decree mentioned in the first question have the effect of making a suit by Eldred against any customer of Kessler's for alleged infringement of the Chambers patent by use or sale of Kessler's lighters a wrongful interference by Eldred with Kessler's business?

Third. Did Kessler's assumption of the defense of Eldred's suit against Breitwieser deprive Kessler of the right, if that right would otherwise exist, of proceeding against Eldred in the State and district of his citizenship and residence for wrongfully interfering with Kessler's business?

Fourth. If Eldred's acts were wrongful, had Kessler an adequate remedy at law?

MR. JUSTICE MOODY delivered the opinion of the Court.

The industry of counsel has not discovered any decision on the exact questions presented by the certificate, and they agree that those questions are not settled by controlling authority. The decision of the case turns upon the effect of the judgment in the suit which Eldred brought against Kessler. Both manufactured and sold electric cigar-lighters. Eldred, being the owner of a patent issued to one Chambers for an electric lamp-lighter, brought a suit against Kessler, in which it was alleged by the plaintiff and denied by the defendant that the cigar-lighters manufactured by Kessler infringed each and all of the claims of the Chambers patent. On the issue thus joined there was final judgment for Kessler. This judgment, whether it proceeds upon good reasons or upon bad reasons, whether it was right or wrong, settled finally and everywhere, and so far as Eldred, by virtue of his ownership of the Chambers patent, was concerned, that Kessler had the right to manufacture, use and sell the electric cigar-lighter before the court. The court, having before it the respective rights and duties on the matter in question of the parties to the litigation, conclusively decreed the right of Kessler to manufacture and sell his manufactures free from all interference from Eldred by virtue of the Chambers patent, and the corresponding duty of Eldred to recognize and yield to that right everywhere and always. After this conclusive determination of the respective rights and duties of the parties, Eldred filed a bill for an infringement of the same patent against Breitwieser, on account of his use of the same kind of Kessler cigar-lighter which had been passed on in the previous case, and Kessler has assumed the defense of that suit. Whether the judgment between

Kessler and Eldred is a bar to the suit of *Eldred* v. *Breitwieser*, either because Breitwieser was a privy to the original judgment, or because the articles themselves were by that judgment freed from the control of that patent, we deem it unnecessary to inquire. We need not stop to consider whether the judgment in the case of *Eldred* v. *Kessler* had any other effect than to fix unalterably the rights and duties of the immediate parties to it, for the reason that only the rights and duties of those parties are necessarily in question here. It may be that the judgment in *Kessler* v. *Eldred* will not afford Breitwieser, a customer of Kessler, a defense to Eldred's suit against him. Upon that question we express no opinion. Neither it nor the case in which it is raised are before us. But the question here is whether, by bringing a suit against one of Kessler's customers, Eldred has violated the right of Kessler. The effect which may reasonably be anticipated of harassing the purchasers of Kessler's manufactures by claims for damages on account of the use of them, would be to diminish Kessler's opportunities for sale. No one wishes to buy anything, if with it he must buy a law-suit. That the effect to be anticipated was the actual effect of the Breitwieser suit is shown by the statement of facts. Kessler's customers ceased to send orders for lighters, and even refused to pay for those which had already been delivered. Any action which has such results is manifestly in violation of the obligation of Eldred, and the corresponding right of Kessler, established by the judgment. Leaving entirely out of view any rights which Kessler's customers have or may have, it is Kessler's right that those customers should, in respect of the articles before the court in the previous judgment, be let alone by Eldred, and it is Eldred's duty to let them alone. The judgment in the previous case fails of the full effect which the law attaches to it if this is not so. If rights between litigants are once established by the final judgment of a court of competent jurisdiction those rights must be recognized in every way, and wherever the judgment is entitled to respect, by those who are bound by it. Having then by virtue of the judgment the right to sell his wares freely without hindrance from Eldred, must Kessler stand by and see that right violated, and then bring an action at law for the resulting damage, or may he prevent the infliction of the unlawful injury by proceedings *in personam* in equity? If Eldred succeeds in his suit against one of Kessler's customers, he will naturally bring suits against others. He may bring suits against others, whether he succeeds in one suit or not. There may be and there is likely to be a multiplicity of suits. It is certain that such suits if unsuccessful would at the same time tend to diminish Kessler's sales and to impose upon him the expense of defending many suits in order to maintain the right which by a judgment has already been declared to exist. If the suits are successful the result will be practically to destroy Kessler's judgment right. Moreover, though the impairment or destruction of Kessler's right would certainly follow from the course of conduct which Eldred has begun, it would be difficult to prove in an action at law the extent of the damage inflicted. An action at law would be entirely inadequate to protect fully Kessler's unquestioned right, and under these circumstances, though there may be no exact precedent, we think that the jurisdiction in equity exists. Nor do we see any good reason why Kessler's interposition for the defense in the suit of *Eldred* v. *Breitwieser* debars him from his remedy in equity.

It follows from the foregoing reasoning that the first and second questions certified should be answered in the affirmative, and the third and fourth in the negative, and *it is so ordered*.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 6, 1907.

The Ohio Chemical Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The Norwich Pharmacal Company, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Ohio Chemical Company, of Columbus, Ohio. The notice of said declaration mailed by the Patent Office in the usual manner to the said Ohio Chemical Company at its known address, 573 North High street, Columbus, Ohio, has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Ohio Chemical Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner*.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 4, 1907.

Ida M. Rew, her assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Otis Company, of Ware, Mass., for registration of a trade-mark and a trade-mark registered to Ida M. Rew, of New York, N. Y., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Ida M. Rew and to her attorney of record having been returned, with the information that the registrant cannot be found and that the attorney of record is dead, notice is hereby given to the said Ida M. Rew, her assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner*.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 23, 1907.

Hardgrove & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Robert Harris & Brother, of Reidsville, N. C., for registration of a trade-mark and a trade-mark registered to Hardgrove & Company, of Richmond, Va. It appears from the record of the case that the firm of Hardgrove & Company is no longer in existence, and the attorneys for said firm can also not be found.

Notice is therefore given to the said Hardgrove & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner*.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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ISSUE OF JUNE 4, 1907.

Patents	758	No. 855,439 to No. 856,196,	inclusive.
Designs	14	No. 38,597 to No. 38,010,	inclusive.
Trade-Marks	190	No. 62,947 to No. 63,136,	inclusive.
Labels	21	No. 13,576 to No. 13,596,	inclusive.
Prints	19	No. 2,008 to No. 2,026,	inclusive.
Reissues	3	No. 12,657 to No. 12,659,	inclusive.
Total issue	1005		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	6	2	New Hampshire	1	1
Alaska, District of			New Jersey	37	11
Arizona Territory	1		New Mexico Ter't'y	1	
Arkansas	1		New York	110	57
California	23	8	North Carolina	4	1
Colorado	13	1	North Dakota	5	
Connecticut	21	5	Ohio	44	19
Delaware			Oklahoma Territ'y	3	1
District of Columbia	4		Oregon	8	
Florida	8		Pennsylvania	59	18
Georgia	6	1	Philippine Islands		
Idaho	1		Porto Rico		
Illinois	87	35	Rhode Island	4	
Indian Territory	4		South Carolina	7	
Indiana	17		South Dakota	2	
Iowa	17	1	Tennessee	2	2
Kansas	8	1	Texas	6	
Kentucky	8	1	Utah	1	
Louisiana	4	2	Vermont	1	
Maine	3	1	Virginia	1	2
Maryland	6	3	Washington	5	11
Massachusetts	41	6	West Virginia	7	
Michigan	29	5	Wisconsin	9	6
Minnesota	18	1	Wyoming		
Mississippi	6		U. S. Army		
Missouri	17	10	U. S. Navy		
Montana	2	1			
Nebraska	11		Total to citizens of the United States	679	213
Nevada					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks, Labels, and Prints.	Countries.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Argentina			Natal		
Austria-Hungary	6		Netherlands	1	
Belgium	2		Newfoundland		
Brazil			New South Wales	1	
British West Indies			New Zealand	1	
Canada	9	1	Norway	1	
Cape Colony			Persia		
Chile			Queensland		
China			Roumania		
Costa Rica			Russia	1	
Cuba	1		Scotland	1	1
Denmark			South Australia		
Ecuador			Spain	1	
England	18	6	Sweden	4	
France	7		Switzerland	4	2
Germany	30	6	Transvaal, South Africa		
Haiti			Victoria	1	
Ireland		1	Western Australia	1	
Italy	1				
Japan	1				
Java	1		Total to citizens of foreign countries	93	17
Mexico	1				

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 15, 1907.

Charles H. Palmer, Jr., his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of The Columbia Carriage Company, of Hamilton, Ohio, for registration of a trade-mark and a trade-mark registered to Charles H. Palmer, Jr., of Amesbury, Mass., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Charles H. Palmer, Jr., and also the copy mailed to his attorney of record, together with the letter setting times for taking testimony, having been returned undelivered, notice is hereby given to the said Charles H. Palmer, Jr., his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner*.

Renewal of Forfeited Cases.

A petition for the renewal of a forfeited application need not be signed by the inventor or assignee, but may be signed by the attorney.

A power of attorney in the original application authorizing an attorney to transact all business in the Patent Office in connection with the application construed to be of sufficient scope to include the signing of a petition for renewal and the subsequent prosecution of the application. (*Ex parte Agee*, 101 O. G., 1609.)

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 28, 1907.

Room No	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	May 20	May 17	154
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 15	May 2	154
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	May 15	Apr. 27	293
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May 14	May 1	296
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 14	Apr. 29	247
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 14	Apr. 8	564
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	May 13	Apr. 29	226
327	XVIII. Steam-Engineering, etc.	May 13	Apr. 18	190
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 10	Apr. 25	123
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 9	Apr. 23	377
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	May 9	Apr. 23	226
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 8	May 10	235
109	XVI. Telegraphy and Telephony.	May 7	Apr. 27	190
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May 6	Apr. 18	262
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 6	Apr. 18	290
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	May 6	Apr. 12	377
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	May 3	Mar. 28	261
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	May 2	May 2	379
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	May 2	Apr. 22	277
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	May 1	Apr. 29	318
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May 1	Apr. 5	412
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Apr. 30	Mar. 16	378
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	Apr. 29	May 1	333
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr. 29	Apr. 16	239

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 26	Mar. 13	711
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 24	Mar. 27	437
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 24	Mar. 26	218
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Apr. 20	Apr. 13	386
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 18	May 2	205
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Apr. 18	Apr. 4	464
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 16	Apr. 10	403
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 16	Apr. 5	408
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Apr. 15	Mar. 25	384
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Apr. 11	Mar. 20	450
332	X. Carriages and Wagons.	Apr. 8	Apr. 11	619
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Apr. 8	Apr. 1	447
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Apr. 6	Apr. 10	343
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Apr. 3	Mar. 25	674
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 1	Mar. 7	433

Total number of applications awaiting action 13,383

159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	May 27	May 20	162
	Designs	May 22	May 21	26
	Labels and Prints			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 30, 1907.

McConnell, Clancey & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of H. F. Webb Company, of Portland, Me., for registration of a trade-mark and a trade-mark registered to McConnell, Clancey & Company, of Chillicothe, Ohio, and the notice of declaration mailed by the Patent Office in the usual manner to the known address of McConnell, Clancey & Company has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said McConnell, Clancey & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

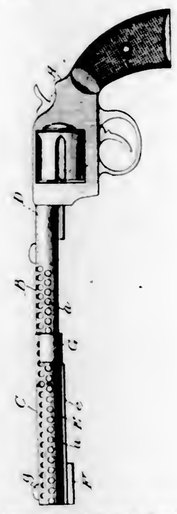
This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

PATENTS

GRANTED JUNE 4, 1907.

855,439. EXTENSIBLE JACKET FOR REVOLVERS. JOHN ADRIANSON, Chicago, Ill. Filed July 26, 1906. Serial No. 327,878.



Claim.—1. A revolver or similar fire-arm provided with a collapsible jacket.

2. A revolver or similar fire-arm provided with a telescopically collapsible jacket.

3. A revolver or similar fire-arm provided with a removable collapsible jacket.

4. The combination with a revolver, of a collapsible jacket consisting of two or more telescopic tubes.

5. The combination with a revolver, of a removable collapsible jacket consisting of two or more perforated telescopic tubes.

6. A revolver or similar fire-arm provided with a perforated collapsible jacket.

7. A revolver or similar fire-arm provided with a perforated removable jacket.

8. A revolver or similar fire-arm provided with a spring-plate on the barrel thereof, and a removable collapsible jacket surrounding the same and engaging said spring-plate.

9. A revolver or similar fire-arm provided with a spring-plate on the barrel thereof, and a removable telescopically collapsible jacket surrounding the same and engaging said spring-plate.

10. The combination with a revolver or similar fire-arm, and a spring-catch secured to the barrel thereof, of an extensible jacket engaging said catch and consisting of a number of telescopic tubes slidably mounted upon each other and provided with a plurality of openings.

11. The combination with a revolver or similar fire-arm, and a spring-catch secured to the barrel thereof, of an extensible jacket engaging said catch and consisting of a number of telescopic tubes slidably mounted upon each other and provided with a plurality of openings.

12. The combination with a revolver or similar fire-arm, and a spring-catch secured to the barrel thereof, of an extensible jacket engaging said catch and consisting of a number of telescopic tubes slidably mounted upon each other, the innermost of said tubes being provided with a longitudinally elongated slot that engages and locks with said spring-catch.

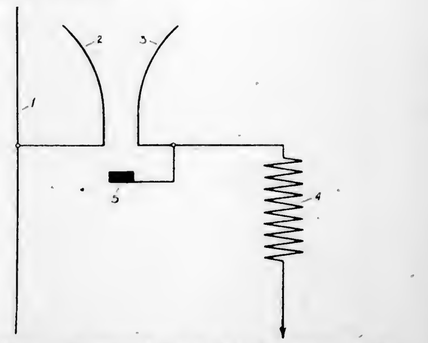
13. The combination with a revolver or similar fire-arm, and a spring-catch secured to the barrel thereof, of an extensible jacket engaging said catch and consisting of a number of telescopic tubes slidably mounted upon each other and provided with a plurality of openings, the innermost of said tubes being provided with a longitudinally elongated slot that engages and locks with said spring-catch.

14. The combination with a revolver or similar fire-arm, and a spring-plate on the barrel thereof that has a cut-out portion, of an extensible jacket consisting of a number of telescopic tubes the innermost of which is provided with a longitudinally elongated slot, and a transverse lug projecting into the same that engages the cut-out portion in said spring-plate and removably secures said jacket to said revolver.

15. The combination with a revolver or similar fire-arm, and a spring-plate on the barrel thereof that has a cut-out portion, of an extensible jacket consisting of a number of perforated telescopic tubes the innermost of which is provided with a longitudinally elongated slot, and a transverse lug projecting into the same that engages the cut-out portion in said spring-plate, and removably secures said jacket to said revolver.

16. The combination with a revolver or similar fire-arm, and a spring-plate in the barrel thereof that has a cut-out portion, of an extensible jacket consisting of a number of telescopic tubes each having a limited movement upon the tube it surrounds, the innermost of which is provided with a longitudinally elongated slot, and a transverse lug projecting into the same that engages the cut-out portion in said spring-plate and removably secures said jacket to said revolver.

855,440. ELECTRICAL SAFETY DEVICE. RICHARD APT, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Aug. 17, 1906. Serial No. 330,975.



Claim.—1. The combination with a line conductor to be protected from abnormal potential, of a spark gap connected thereto to provide a discharge path for abnormal charges, and radio-active material supported in proximity

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business May 28, 1907.

Room No	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
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327	XVIII. Steam-Engineering, etc.	May 13	Apr. 18	190
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 10	Apr. 25	123
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 9	Apr. 23	377
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164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 8	May 10	235
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147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	Apr. 30	Mar. 16	378
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172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	Apr. 29	Apr. 16	239

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
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	Total number of applications awaiting action			13,383
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	May 27	May 20	162
	Designs	May 22	May 21	26
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Interference Notice.

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UNITED STATES PATENT OFFICE,
Washington, D. C., April 30, 1907.

McConnell, Clancey & Company, their assigns or legal representatives, take notice:

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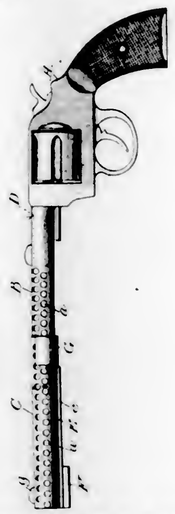
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E. B. MOORE, *Acting Commissioner.*

PATENTS

GRANTED JUNE 4, 1907.

855,439. EXTENSIBLE JACKET FOR REVOLVERS. JOHN ADRIANSON, Chicago, Ill. Filed July 26, 1906. Serial No. 327,878.



Claim.—1. A revolver or similar fire-arm provided with a collapsible jacket.

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12. The combination with a revolver or similar fire-arm, and a spring-catch secured to the barrel thereof, of an extensible jacket engaging said catch and consisting of a number of telescopic tubes slidably mounted upon each other, the innermost of said tubes being provided with a longitudinally elongated slot that engages and locks with said spring-catch.

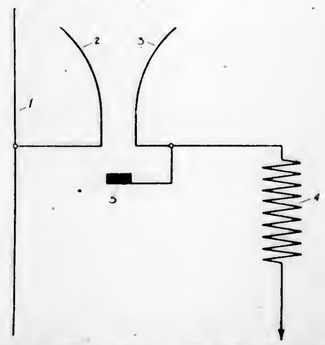
13. The combination with a revolver or similar fire-arm, and a spring-catch secured to the barrel thereof, of an extensible jacket engaging said catch and consisting of a number of telescopic tubes slidably mounted upon each other and provided with a plurality of openings, the innermost of said tubes being provided with a longitudinally elongated slot that engages and locks with said spring-catch.

14. The combination with a revolver or similar fire-arm, and a spring-plate on the barrel thereof that has a cut-out portion, of an extensible jacket consisting of a number of telescopic tubes the innermost of which is provided with a longitudinally elongated slot, and a transverse lug projecting into the same that engages the cut-out portion in said spring-plate and removably secures said jacket to said revolver.

15. The combination with a revolver or similar fire-arm, and a spring-plate on the barrel thereof that has a cut-out portion, of an extensible jacket consisting of a number of perforated telescopic tubes the innermost of which is provided with a longitudinally elongated slot, and a transverse lug projecting into the same that engages the cut-out portion in said spring-plate, and removably secures said jacket to said revolver.

16. The combination with a revolver or similar fire-arm, and a spring-plate in the barrel thereof that has a cut-out portion, of an extensible jacket consisting of a number of telescopic tubes each having a limited movement upon the tube it surrounds, the innermost of which is provided with a longitudinally elongated slot, and a transverse lug projecting into the same that engages the cut-out portion in said spring-plate and removably secures said jacket to said revolver.

855,440. ELECTRICAL SAFETY DEVICE. RICHARD APT, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Aug. 17, 1906. Serial No. 330,975.



Claim.—1. The combination with a line conductor to be protected from abnormal potential, of a spark gap connected thereto to provide a discharge path for abnormal charges, and radio-active material supported in proximity

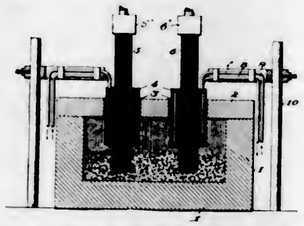
to said spark gap to decrease the break down potential thereof.

2. The combination with a line conductor to be protected, of a path to ground including a spark gap, and means for ionizing said spark gap to decrease the break down potential thereof.

3. The combination with a spark gap having conductors of the horn type, of radio-active material in proximity thereto to ionize the space between said conductors and to decrease the break down potential of said gap.

4. The combination with a spark gap having electrodes, of radio-active material in proximity thereto to ionize the space between said electrodes and to decrease the break down potential of said gap.

855,441. COOLING-JACKET FOR ELECTRIC-FURNACE ELECTRODES. FREDERICK M. BECKET, Niagara Falls, N. Y., assignor to Electro Metallurgical Company, a Corporation of West Virginia. Filed Jan. 30, 1906. Serial No. 298,622.



Claim.—1. In an electric furnace, an electrode, an electrode-support, and a separate cooling jacket surrounding said electrode, said jacket longitudinally and independently adjustable upon the electrode and within the furnace, as set forth.

2. In an electric furnace, an electrode, an electrode-support, and a plurality of separate cooling jackets surrounding said electrode, said jackets longitudinally and independently adjustable upon the electrode and within the furnace, as set forth.

3. In an electric furnace, an electrode, an electrode-support, and a separate sectional cooling jacket surrounding said electrode, said jacket longitudinally and independently adjustable upon the electrode and within the furnace, as set forth.

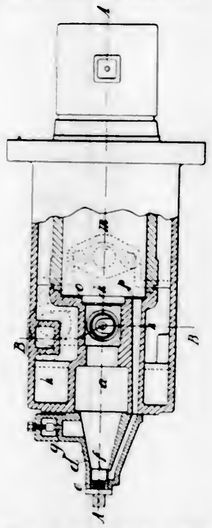
4. In an electric furnace, an electrode, an electrode-support, and a plurality of separate sectional cooling jackets surrounding said electrode, said jackets longitudinally and independently adjustable upon the electrode and within the furnace, as set forth.

5. An electric furnace, comprising a working chamber having a roof, an opening in the roof, a depending electrode within said opening, a separate cooling jacket surrounding said electrode and within said opening, and means for vertically adjusting said jacket independently of said electrode, as set forth.

6. An electric furnace, comprising a working chamber having a roof, an opening in the roof, a depending electrode within said opening, separate cooling jackets surrounding said electrode, one of said jackets within said opening, and means for vertically adjusting said jackets independently of said electrode, as set forth.

855,442. EXPLOSION-ENGINE. HENRY N. BICKERTON and HENRY W. BRADLEY, Ashton-under-Lyne, and DUGALD CLERK, Ewhurst, England. Filed July 6, 1904. Serial No. 215,527.

Claim.—1. In combination in an internal combustion engine, a cooled elongated combustion chamber, and uncooled closing cap of tapered form, a recess in the combustion chamber at the entrance to the cylinder, a projection on the end of the piston adapted to enter the recess so as to form at the end of the compression stroke a local air compression space, a passage of communication between the local compression space and the end of the combustion chamber remote from the piston and exhaust and air supply valves in the combustion chamber near the local compression space, substantially as described.



2. In combination in an internal combustion engine, a cooled elongated combustion chamber, and uncooled closing cap of tapered form, a recess in the combustion chamber at the entrance to the cylinder, a projection on the end of the piston adapted to enter the recess so as to form at the end of the compression stroke a local air compression space, a passage of communication between the local compression space and the end of the combustion chamber remote from the piston, removable igniting surfaces placed at the end of the tapered cap opposite to the opening into the cap of the passage, and exhaust and air supply valves in the combustion chamber near the local compression space, substantially as described.

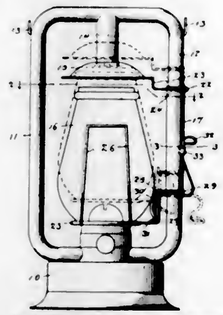
3. In combination in an internal combustion engine using liquid fuel, a cooled elongated combustion chamber closed by a conical vaporizing cap, a recess in the combustion chamber at the entrance to the cylinder, a projection on the end of the piston adapted to enter the recess so as to form at the end of the compression stroke a local air compression space, a passage of communication between the local compression space and the end of the combustion chamber remote from the piston, removable igniting surfaces placed at the end of the tapered cap opposite to the opening into the cap of the passage, and exhaust and air supply valves in the combustion chamber near the local compression space substantially as described.

855,443. TUBULAR LANTERN. ALBERT T. BISHOP, Southington, Conn., assignor to The Hurwood Manufacturing Company, Incorporated, Bridgeport, Conn. Filed Oct. 16, 1906. Serial No. 339,225.

Claim.—1. A lantern including in its construction a globe holder having both a slidable and rotatable connection with a vertical side portion of the frame of the lantern, an operating lever, and connections whereby said lever will first raise the globe holder and then swing it bodily aside on a substantially vertical axis.

2. A lantern including in its construction a sleeve mounted to slide and oscillate on a portion of the frame, a globe holder rigidly connected with the sleeve, an operating lever, and connections whereby said lever will first raise the globe holder and then swing it aside.

3. A lantern including in its construction a sleeve mounted to slide and oscillate on a portion of the frame, a globe holder rigidly connected with the sleeve, an operating lever mounted below the sleeve, and connections whereby said lever will first raise the globe holder and then swing it aside.



4. A lantern including in its construction a sleeve mounted to slide and oscillate on a portion of the frame, a vertically movable canopy connected with the upper end of the sleeve, a globe holder rigidly connected with the lower end of the sleeve, an operating lever, and connections whereby said lever will first raise the sleeve, canopy, and globe holder and then swing the latter aside.

5. A lantern including in its construction a sleeve mounted to slide and oscillate on a portion of the frame, a vertically movable canopy, a globe holder rigidly connected with the lower end of the sleeve, a guide-way at the upper end of the sleeve, an arm extending from said guide-way to support the canopy, an operating lever, and means whereby actuation of the lever will raise the sleeve and canopy and globe.

6. A lantern including in its construction a sleeve mounted to slide on a portion of the frame, a vertically movable canopy connected with the upper end of the sleeve, a globe holder, an arm connecting the lower end of the sleeve with the globe holder, said arm having a vertical guide-way and shoulders, and an operating lever fulcrumed below the sleeve and having a cam portion extending through the vertical guide-way of said arm and provided with a terminal hook to engage one of said shoulders to swing the sleeve and globe holder.

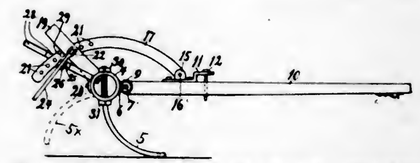
855,444. SPRAYER FOR HOSE-NOZZLES. JOHN A. CARLSON, Chicago, Ill. Filed Sept. 15, 1906. Serial No. 334,760.



Claim.—1. A sprayer attachment for hose nozzles comprising a blade a handle, and an intermediate portion having an opening to receive the end of the nozzle, a retaining band having pivotal connection with said inclined portion of the sprayer and adapted to support the attachment when in position upon the nozzle, a flat spring secured at one end to the handle of the attachment and a retaining band at the opposite end of said spring loosely encircling the nozzle and having a limited movement thereon, and forming a stop to hold the sprayer in a given position.

2. The herein described sprayer attachment for hose nozzles, the same consisting of a blade, a handle, an inclined portion between the blade and handle and formed with an opening and having integral wings at the sides of the opening, the outer edges of the blade and inclined portion being upwardly flanged, a split retaining band provided with trunnions passing through openings in the aforesaid wings and a spring secured at one end to the handle and having a split retaining band at its opposite end to encircle the nozzle and to hold the attachment in a given position when in place upon the hose nozzle.

855,445. MANURE AND STRAW GATHERER. AUGUST DAHLIN, Stockholm, Wis. Filed Apr. 7, 1906. Serial No. 310,555.



Claim.—1. A device of the class described, comprising a transverse frame or body bar with a series of inclined tines projecting normally downwardly and forwardly therefrom, the arm 19 fixed at the middle of the bar and having a slot or hole in it, a T-shaped pole having its cross-bead at the rear end and pivotally secured to the front side of the body bar, a brace pivotally secured to the pole and passing through the slot in the arm 19, and means for locking the brace in said arm in an easily detachable manner.

2. A device of the class described, comprising a transverse frame or body bar with a series of inclined tines projecting normally downwardly and forwardly therefrom, the arm 19 fixed at the middle of the bar and having a slot or hole in it, a T-shaped pole having its crosshead at the rear end and pivotally secured to the front side of the body bar, a brace pivotally secured to the pole and passing through the slot in the arm 19, and means for locking the brace in said arm in an easily detachable manner, said locking means consisting of a pin sliding in the arm and adapted to enter holes in the brace, a spring-pressed lever pivoted to the arm and operating said pin, said brace having holes to receive the pin.

3. A device of the class described, comprising a transverse frame or body bar with a series of inclined tines projecting normally downwardly and forwardly therefrom, the arm 19 fixed at the middle of the bar and having a slot or hole in it, a T-shaped pole having its crosshead at the rear end and pivotally secured to the front side of the body bar, a brace pivotally secured to the pole and passing through the slot in the arm 19, and means for locking the brace in said arm in an easily detachable manner, said locking means consisting of a pin sliding in the arm and adapted to enter holes in the brace, a spring-pressed lever pivoted to the arm and operating said pin, said brace having holes to receive the pin, and means for stopping the arm 17 in different predetermined places on the brace.

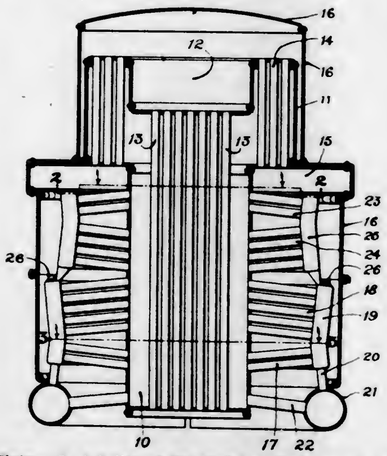
4. A device of the class described, comprising a transverse frame or body bar with a series of inclined tines projecting normally downwardly and forwardly therefrom, the arm 19 fixed at the middle of the bar and having a slot or hole in it, a T-shaped pole having its crosshead at the rear end and pivotally secured to the front side of the body bar, a brace pivotally secured to the pole and passing through the slot in the arm 19, and means for locking the brace in said arm in an easily detachable manner, said tines being curved so as to form runner-like bearings on the ground near their ends.

5. A device of the class described, comprising a transverse frame or body bar with a series of inclined tines projecting normally downwardly and forwardly therefrom, the arm 19 fixed at the middle of the bar and having a slot or hole in it, a T-shaped pole having its crosshead at the rear end and pivotally secured to the front side of the body bar, a brace passing through the slot in the arm 19, and means for locking the brace in said arm in an easily detachable manner, a bracket secured upon the pole and having lugs pivoted to said brace and a goose-neck at its front end with a bolt therein for holding a double-tree.

6. A device of the class described, comprising a transverse frame or body bar with a series of inclined tines projecting normally downwardly and forwardly therefrom, the arm 19 fixed at the middle of the bar and having a slot or hole in it, a T-shaped pole having its crosshead at the rear end and pivotally secured to the front side of the body bar, a brace passing through the slot in the arm 19, and means for locking the brace in said arm in an easily detachable manner, a bracket secured upon the pole and having lugs pivoted to said brace and a goose-neck at its front end, a bolt therein for holding a double-tree, said bracket on the pole being detachably bolted thereto, two brackets on the body bar, a bolt passed therethrough and through said rear end of the pole whereby it is made detachable from the body bar; the distance between said brackets being such that the standard size of transverse heads at the rear end of poles of an ordinary bob-sled will fit between the brackets, substantially as and for the purpose set forth.

7. A device of the class described, comprising a transverse body bar with a series of inclined tines projecting downwardly and forwardly therefrom, a radial arm at the middle of the bar, the same having a hole or slot transversely through it, a T-shaped pole having its crosshead at the rear end and pivotally secured at the front side of the body bar, an arched brace passing through said hole in the arm and being secured to the pole, a locking mechanism carried by the arm and adapted to engage the brace, and one or more handles on the body bar to turn it into locking position.

855,446. BOILER. HARRY DEL MAR, New York, N. Y., assignor to Boiler and Engineering Company, Jersey City, N. J., a Corporation of New Jersey. Filed Jan. 2, 1907. Serial No. 350,501.

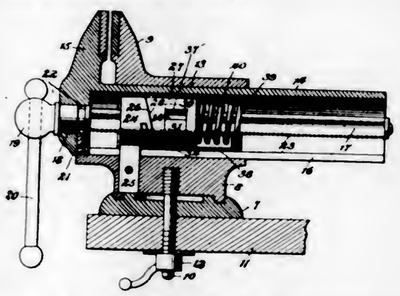


Claim.—1. A boiler of the kind described, comprising a main drum having fire tubes extending longitudinally through it, water headers placed around the main drum, water tubes connecting the headers with the main drum, and mud drums placed around the main drum and connected with the main drum and with the water headers.

2. A boiler of the kind described, comprising a main body portion having an enlarged steam drum, up-take fire tubes leading through the boiler proper, down-take fire tubes leading through the steam drum, upper and lower water headers arranged around the boiler, mud drums below the water headers, and connections between the boiler proper, the headers, and the mud drums.

3. The combination with the fire tube and water tube boiler, of superposed series of water tube headers, arranged around and forming the side walls of the boiler, the said headers connecting by water tubes with the boiler.

855,447. VISE. FLOYD W. DE TRAY, Aurora, Ill. Filed June 26, 1906. Serial No. 323,481.



Claim.—1. In a quick action vise, the combination with a fixed jaw, of a movable jaw coacting therewith, a fixed abutment, a nut element having an inclined bearing against the fixed abutment, a rotatable stem carried by the movable jaw and movable with respect to the nut element, and a clamping device for securing the nut element to the stem, said device being movably associated with the nut element and being moved thereby into engagement with the stem on the rotation of said stem.

2. In a quick action vise, the combination with a fixed jaw, of a movable jaw coacting therewith, a fixed abutment, a nut element having an inclined bearing against the fixed abutment, a rotatable stem carried by the movable jaw and movable with respect to the nut element, and a clamping device for securing the nut element to the stem, said device being rotatable with the stem and movable into and out of interlocking engagement therewith, and said nut element having a bearing that engages the clamping device and effects the movement thereof into interlocking engagement with the stem on the rotation of said stem.

3. In a quick action vise, the combination with a fixed jaw, of a movable jaw coacting therewith, a fixed abutment, a nut element having a screw bearing against the fixed abutment, a rotatable stem carried by the movable jaw and movable with respect to the nut element, a clamping device for securing the nut element to the stem to effect their simultaneous rotation, said device being rotatable with the stem and movable into and out of binding engagement therewith, and said nut element having a bearing that engages the clamping device and effects the movement thereof into binding engagement with the stem on the rotation of said stem, and means for maintaining the nut element against rotation with the stem during the initial rotation of said stem and clamping device.

4. In a quick action vise, the combination with a fixed jaw, of a movable jaw coacting therewith, a fixed abutment, a nut element having a screw bearing at one end against the fixed abutment, a rotatable stem carriel by the movable jaw and movable with respect to the nut element, a clamping device for securing the nut element to the stem to effect their simultaneous rotation, said device being rotatable with the stem and movable into and out of binding engagement therewith, and said nut element having a bearing that engages the clamping device and effects the movement thereof into binding engagement with the stem on the rotation of said stem, and a spring bearing against the opposite end of the nut element to that having the inclined bearing, said spring maintaining the nut element against rotation with the stem during the initial rotation of said stem and clamping device.

5. In a quick action vise, the combination with a fixed jaw, of a movable jaw coöperating therewith, an abutment element, a rotatable nut element having a bearing against the abutment element, a rotatable stem carried by the movable jaw, a clamping device associated with the nut element and movable into binding engagement with the stem on the rotation of the latter, a casing carried by the fixed abutment and extending in rear of the nut element, and a spring located in the casing and bearing against the nut element to yieldingly maintain the same against the abutment element.

6. In a quick action vise, the combination with a fixed jaw, of a movable jaw coöperating therewith, an abutment element, a rotatable nut element having an inclined bearing against the abutment element at one end, a rotatable stem carried by the movable jaw, a clamping device associated with the nut element and movable into binding engagement with the stem, said nut element having a bearing that engages the clamping device to move the same into binding engagement with the stem on the rotation of the latter, a casing secured to the fixed abutment, said casing surrounding the nut element and extending in rear of the same, and a coiled spring located in the casing and bearing against the opposite end of the abutment to the inclined bearing, said spring yieldingly maintaining the nut element against the bearing and constituting means for holding said nut element against rotation upon the initial rotation of the stem and clamping device.

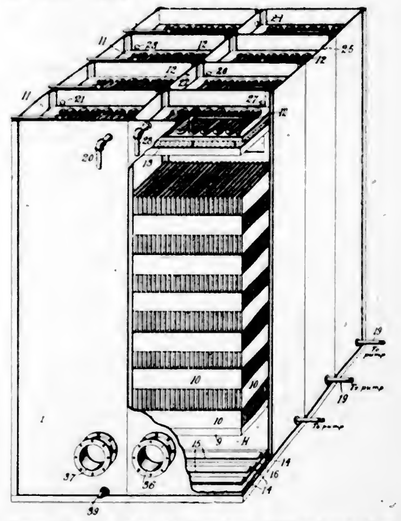
7. In a quick action vise, the combination with relatively movable jaws, of means for holding the same against relative movement, said means including a rotatable stem, a nut element capable of rotation with the stem, a clamping device rotatable with the stem and movable into and out of binding engagement therewith, said rotatable nut element constituting means that engages the clamping device to move the same into said binding engagement, and means for holding the nut element against rotation during the initial rotation of the stem and clamping device to effect the movement of the latter into binding engagement with the former.

8. In a quick action vise, the combination with relatively movable jaws, of means for holding the same against relative movement, said means including a rotatable stem, a nut element mounted on the stem and capable of rotation therewith, said stem being also rotatable in the nut element, a clamping device also mounted on the stem and rotatable therewith, said clamping device being movable into and out of binding engagement with the stem, and said nut element and clamping device being provided one with a bearing disposed eccentric to the axis of rotation of the stem, the other with a portion that engages the eccentric bearing to effect the movement of the clamping device into binding engagement with the stem.

9. In a quick action vise, the combination with relatively movable jaws, of means for holding the same against relative movement, said means including a rotatable stem carried by one jaw and having a rack, a nut element mounted on the stem and rotatable therewith, said stem being slidable through the nut element and capable of a limited rotation with respect thereto, the nut element being furthermore provided with a socket having a bearing face therein at one side of the stem, a clamping yoke mounted on the stem and located in the socket, said clamping yoke being rotatable with the stem and having a sliding movement transversely thereof, a cam carried by the yoke and movable into engagement with the bearing face of the nut element to move said clamping device into interlocking engagement with the rack of the stem, and means for holding the nut element against rotation with the stem during the initial rotation of said stem and clamping device.

10. In a quick action vise, the combination with a body having a fixed jaw, and a guideway, of a movable jaw coacting with the fixed jaw and having a slide arranged in the guideway, a fixed abutment element located in the guideway, within the slide and having an inclined rear face, a stem rotatably mounted in the movable jaw and slide, said stem having a rack on one face, a nut element mounted on the stem and rotatable therewith, said nut element having an inclined front face that bears against the inclined rear face of the abutment element and being provided with an intermediate socket, a cam yoke mounted on the stem and located in the socket, said cam yoke being slidable transversely of the stem and having a serrated portion movable into and out of interlocking engagement with the rack thereof, the cam portion of the yoke being movable into engagement with one wall of the socket to effect the transverse movement of said yoke, and a coiled spring surrounding the stem and bearing against the rear face of the nut element to resist its rotation with the stem and maintain it in engagement with the abutment element.

855,448. APPARATUS FOR WASHING AND COOLING GAS. HENRY L. DOHERTY, Madison, Wis. Filed June 29, 1905. Serial No. 267,504.



Claim—1. In a gas washing and cooling apparatus, in combination, a plurality of chambers in communication with each other whereby the gas may be passed through all the chambers in succession, means for discharging a washing and cooling liquor into the chambers, means in the chambers to receive the liquor, provided with numerous interstices over the surfaces of which the liquor is distributed and through which the gas passes, and means for subjecting the liquor to a cooling medium before discharging it into the chambers, as set forth.

2. In a gas washing and cooling apparatus, in combination, a series of chambers each in communication with the one succeeding it, a gas inlet in the first chamber and an outlet in the last of the series, means in each chamber for delivering a washing and cooling liquor into the same, distributing means in each chamber to receive the liquor and distribute it over a large surface, and means in conjunction with the chambers intermediate to the first and last of the series for withdrawing the liquor collected in the bottoms of the chambers and returning it to the said delivering means, and means for subjecting the liquor to a cooling medium before it is delivered to a chamber, as set forth.

3. In a gas washing and cooling apparatus, in combination, a chamber having an inlet and an outlet for the gas, a distributer in the chamber for dividing the gas into streams, means for delivering washing and cooling liquor upon the distributer, and means for subjecting the liquor to a cooling medium before delivery upon the distributer, as set forth.

4. In a gas washing and cooling apparatus, in combination, a chamber having an inlet and an outlet for the gas, a cooling pipe coiled at the top of the chamber for conveying washing and cooling liquor thereto, means for subjecting the coiled portion of said pipe to a cooling medium, and means for returning to the cooling pipe the liquor collected in the chamber, as set forth.

5. In a gas washing and cooling apparatus, in combination, a chamber having an inlet and an outlet for the gas, means for delivering washing and cooling liquor to the chamber near the top thereof, a baffling device at the bot-

tom of the chamber to receive the liquor and protect from agitation the liquor collected below the baffling device, and means for withdrawing the settlings from the lower level of the liquor collected below the baffling device, as set forth.

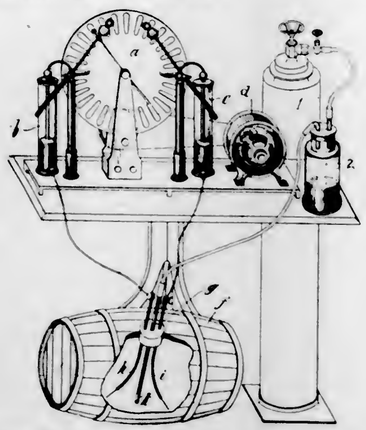
6. In a gas washing and cooling apparatus, in combination, a series of communicating chambers, a cooling compartment above each of the chambers, the compartments being in communication with each other, a cooling pipe arranged in each compartment, means in connection with each chamber for delivering cooling and washing liquor from the cooling pipe above to the chamber below, means for admitting a cooling medium to the first compartment, and means for withdrawing the said medium from the last compartment after it has flowed through the intermediate compartments in succession, as set forth.

7. In a gas washing and cooling apparatus, in combination, a cooling chamber having gas inlet and outlet openings, a horizontal partition across the top of the chamber forming a compartment, the walls of said compartment being provided with openings for the inflow and outflow of a cooling medium, a pipe disposed in the compartment for the circulation of washing and cooling liquor therein and discharging the said medium into the chamber below the compartment, a perforated tray in the chamber and immediately below the partition, to receive the liquor discharged by the cooling pipe, and means for withdrawing the liquor collecting in the bottom of the chamber, as set forth.

8. In a gas washing and cooling apparatus, in combination, a chamber having gas inlet and outlet openings, means for discharging washing and cooling liquor into the chamber at its upper end, a plurality of spaced and staggered plates arranged horizontally in the chamber adjacent to the bottom thereof and constituting a baffle to protect from agitation the liquor collected below the plates, and means for withdrawing the settlings from the lower level of the said liquor, as set forth.

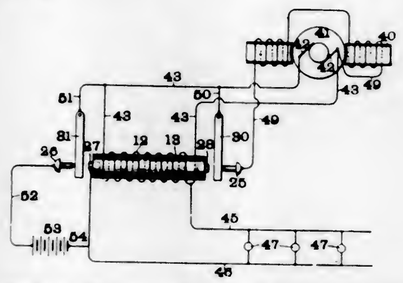
9. In a gas washing and cooling apparatus, a casing having longitudinal and transverse partitions dividing the casing into chambers, and having horizontal partitions near the tops of the chambers, extending entirely across the same and forming a closed compartment at the top of each chamber, as set forth.

855,449. PROCESS OF AMELIORATING WINES AND SPIRITS AND OF STERILIZING LIQUIDS. VICTOR DORN, Wilmersdorf, near Berlin, Germany. Filed Apr. 25, 1904. Serial No. 204,796.



Claim.—The process of sterilizing and aging liquids consisting in saturating the liquid with oxygen and simultaneously passing an electric spark through said liquid.

855,450. POTENTIAL-REGULATOR. JAMES H. DUNCAN, St. Louis, Mo., assignor of one-half to James W. Kaye, St. Louis, Mo. Filed Mar. 22, 1906. Serial No. 307,325.



Claim.—1. The combination with a generator armature, of a field circuit therefor, an armature circuit, a translating device adapted to be connected to said armature, a second source for supplying current to said translating device, and means controlled by the current in said armature circuit for governing the current in said field circuit and from said second source.

2. The combination with a generator armature, of a field circuit therefor, an armature circuit, a translating device adapted to be connected with said armature, a second source for supplying current to said translating device, means controlled by the current in said armature circuit for governing the current in said field circuit, and means also controlled by the current in said armature circuit for controlling the flow of current from said second source.

3. The combination with a generator armature, of a field in series circuit therewith, an armature circuit, translating devices adapted to be connected with said armature circuit, a second source for supplying current to said translating devices, and means controlled by the current in said armature circuit for governing the current in said field circuit and for governing the flow of current to said translating devices from said armature and from said second source.

4. The combination with a generator armature, of a field circuit therefor, an armature circuit, translating devices adapted to be connected to said armature, a governing device for the current in said field, a second source for supplying current to said translating devices, a governing device for simultaneously controlling the currents from said second source and armature, and means governed by the current in said armature circuit for actuating said governing devices.

5. The combination with a generator armature, of a field circuit therefor, an armature circuit, a translating device adapted to be connected with said armature, means actuated by a current of lower potential in said armature circuit for governing the supply of current to said translating devices, and means actuated by a current of higher potential in said armature circuit for governing the current in said field circuit.

6. The combination with a generator armature, of a field circuit therefor, an armature circuit, a translating device adapted to be connected with said armature, a second source for supplying current to said translating device, means actuated by one current in said armature circuit for governing the supply of current from said armature and second source to said translating devices, and means actuated by another current in said armature circuit for governing the current in said field.

7. The combination with a generator armature, of a field current therefor, an armature circuit, a translating device adapted to be energized from said armature circuit, a second source for supplying current to said translating device, an electro-magnet energized from said armature circuit, means controlled by said magnet for governing the current in said field circuit, and means also controlled by said magnet for governing the current in said armature circuit and from said second source.

8. The combination with a generator armature, of a field circuit therefor, an armature circuit of varying potential, a translating device adapted to be energized from said armature circuit, a second source supplying current to said translating device, an electro-magnet energized from said armature circuit, means controlled by said magnet and responsive to a given potential in said armature circuit for governing the current in said field circuit, and separate means also controlled by said magnet and responsive to a lower potential in said armature circuit for governing the current in said armature circuit and from said second source.

9. The combination with a generator armature, of a field circuit therefor, an armature circuit of varying potential, a translating device adapted to be energized from said armature circuit, a second source supplying current to said translating device, an electro-magnet energized from said armature circuit, means controlled by said electromagnet and only responsive to a given potential of said armature circuit for governing the current in said field circuit, and separate means also controlled by said magnet and responsive to a lower potential in said armature circuit for simultaneously governing the current in said armature circuit and from said second source.

855,451. COMPOSITION FOR FURNITURE AND PIANO POLISHING. JESSE R. FITZGERALD, Toronto, Ontario, Canada. Filed Feb. 23, 1907. Serial No. 359,001.

Claim.—1. A composition for furniture and piano polishing purposes, consisting of a mixture of turpentine, black oil, muriatic acid, butter of antimony, oil of cedar, and benzin.

2. A composition for furniture and piano polishing purposes, consisting of a mixture of turpentine, black oil, muriatic acid, butter of antimony, oil of cedar, benzin and oil of citronella.

3. A composition for furniture and piano polishing purposes, consisting of a mixture of forty-one parts of turpentine, ten and one-third parts of black oil, one part of muriatic acid, two-thirds part of butter of antimony, five parts of oil of cedar and forty parts of benzin.

4. A composition for furniture and piano polishing purposes, consisting of a mixture of forty-one parts of turpentine, ten and one-third parts of black oil, one part of muriatic acid, two-thirds part of butter of antimony, five parts of oil of cedar, forty parts of benzin and two parts of oil of citronella.

855,452. APPARATUS FOR RAISING CONCRETE FORMS. RUSSELL H. FOLWELL and WILLIAM R. SINKS, Chicago, Ill. Filed Feb. 4, 1907. Serial No. 355,715.

Claim.—1. In combination, an externally-threaded sleeve, a clutch carried by the sleeve for engaging a rod inserted therethrough, a nut running on the sleeve, a mold, and connection between the nut and mold.

2. In combination, a supporting rod, a rotatable externally-threaded sleeve slidable on the rod, a nut running on the sleeve, a mold, connection between the nut and mold, and a clutch carried by the sleeve for engaging the rod.

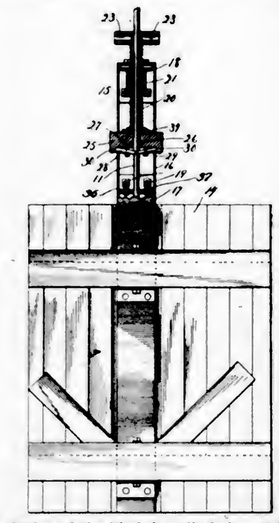
3. In a form for a concrete structure having a stay rod, in combination, a clutch for engaging the rod, an externally-threaded sleeve inclosing the rod and bearing on the clutch, a nut running on the sleeve, a mold carried by the nut, and means for turning the sleeve.

4. In a form for a concrete structure having a continuous stay rod, in combination, a clutch for engaging the rod, a mold, and a lifting jack reacting between the mold and the clutch.

5. In a form for a concrete structure having a continuous stay rod, in combination, a clutch for shiftably engaging the rod, and a mold carried by the clutch.

6. In a form for a concrete structure having a continuous stay rod, in combination, a clutch for engaging the rod, a threaded shaft bearing on the clutch, a nut running on the shaft, and a mold carried by the nut.

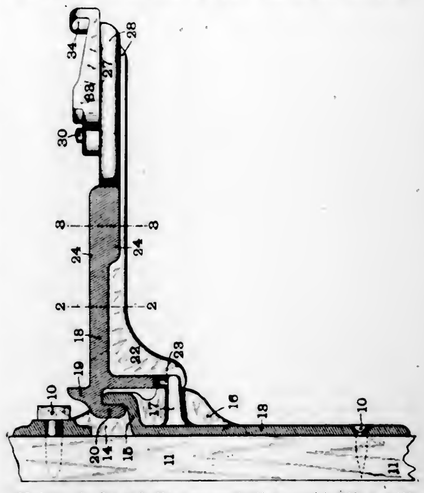
7. In combination, an externally-threaded sleeve, a clutch carried by the sleeve for engaging a rod inserted therethrough, and comprising a block rotatably mounted at the foot of the sleeve and having an opening in register with the opening of the sleeve, and jaws carried by the block to swing over the opening in the form of a toggle, a nut running on the sleeeve, and a mold carried by the nut.



8. In a device of the kind described, in combination, an externally-threaded sleeve, a clutch carried by the sleeve for engaging a rod inserted therethrough, and a load-carrying nut running on the sleeve.

9. In a form for a concrete wall having a stay rod, in combination, a mold frame for straddling the wall, a clutch for engaging the rod, a lifting jack reacting between the clutch and the frame, and a guide for the rod carried by the legs of the frame below the clutch.

855,453. BOILER-SUPPORT. CHARLES H. FOSTER, St. Louis, Mo. Filed Nov. 8, 1905. Serial No. 286,342.



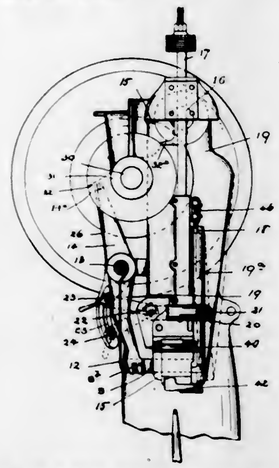
Claim.—1. In a boiler support, the combination with a wall bracket, of an arm carried thereby and provided with

a bearing for the boiler, arms extending laterally from said first named arm, and removable bearing pieces for the boiler carried by said second named arms, the spaces between said arms and bearing pieces forming recesses constituting receptacles for the fastening means for the bracket.

2. In a boiler support, the combination with a wall bracket, of an arm carried thereby and provided with a bearing for the boiler, arms extending laterally from said first named arm, and adjustable bearing pieces for the boiler carried by said second named arms, the spaces between said arms and bearing pieces forming recesses constituting receptacles for the fastening means for the bracket.

3. In a boiler stand, the combination with a wall bracket, of a slotted arm carried by said bracket, a bearing piece for the boiler, means at one end of said bearing piece for movably and detachably securing it to said slotted arm, and an upwardly extending lug at the other end of said bearing piece, the under face of said bearing piece being provided with a recess for receiving the fastening means for said wall bracket.

855,454. NAILING OR RIVETING MACHINE. JOSIAH M. GIMSON, JOSIAH GIMSON, ARTHUR J. GIMSON, and SYDNEY A. GIMSON, Leicester, England. Filed Mar. 3, 1902. Serial No. 96,522.



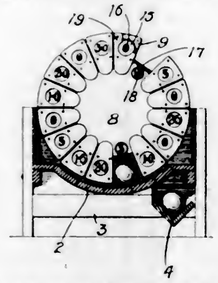
Claim.—1. In a shoe nailing machine the combination with a circular, two-part hopper composed of two similar cups, and a shaft on which said cups are fixed face to face with their edges separated a distance substantially equal to the thickness of a nail to be operated upon, of a slotted race-way below said hopper, a bevel gear on said shaft, a second bevel gear arranged to mesh with said first named gear, and a rock shaft on which said last named gear is mounted.

2. In a shoe nailing machine the combination with a swinging head composed of two independently mounted members, a common pivot on which said members are mounted, an awl bar and driver bar respectively reciprocally mounted in said members, and a link connecting and fixing the relative positions of said members, of a hub rotatably mounted in one of said members, a pin eccentrically mounted on said hub upon which pin said link is pivoted, an arm rigidly connected to said hub, a clamp screw carried by the outer end of said arm, a lever having a slotted end in which said clamp screw is adjustably carried, and means for oscillating said lever.

3. In a shoe nailing machine the combination with a laterally oscillating head, and a tack nozzle pivotally mounted on the lower end of said head, of a work rest pivotally mounted for movement in a vertical plane and provided with a groove adapted to receive the lower end of said nozzle, an adjustable edge guide carried by said work rest, and a spring for normally elevating said work rest.

4. In a shoe nailing machine the combination with a laterally movable tack nozzle having a plane rear face provided with a tack receiving groove, and means for laterally reciprocating said nozzle, of a race way having its end located opposite said rear face of said nozzle, a separator plate arranged to reciprocate across the lower end of said race way, a lever yieldingly connected to said separator plate, and means for oscillating said lever.

855,455. GAME. FRANKLIN M. GREER, Winona, Minn. Filed Sept. 13, 1906. Serial No. 334,373.



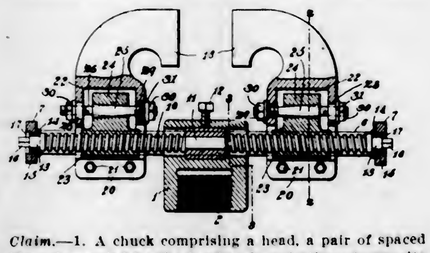
Claim.—1. A game apparatus comprising a suitable alley, a wheel operating transversely with respect thereto, a series of numbered targets carried by said wheel and a corresponding series of numbers provided on said wheel in position to be exposed by the movement of said targets.

2. A game apparatus comprising an alley, a wheel operating transversely with respect thereto, a series of targets carried by said wheel, each of said targets being provided with a number, and means for maintaining the numbers in upright position as said wheel is rotated.

3. A game apparatus comprising an alley, a wheel operating transversely with respect thereto, a series of targets carried by said wheel, a pivoted disk mounted upon each of said targets with one portion of the disk weighted, and numbers provided on said disks.

4. A game apparatus comprising an alley, a wheel operating transversely with respect thereto, targets carried by said wheel, a numbered disk pivotally supported upon each of said targets and provided with means for retaining it in an upright position.

855,456. LATHE-CHUCK. HERMAN A. HILLENBRAND, Louisville, Ky. Filed Feb. 23, 1906. Serial No. 302,567.



Claim.—1. A chuck comprising a head, a pair of spaced guide rods carried by the head and projecting at opposite sides thereof, a reversely threaded adjusting screw journaled upon the head and projecting at opposite sides thereof, jaws slidable upon the guide rods, nuts engaged by the adjusting screw, and adjustable connections between the nuts and jaws.

2. A chuck comprising a head, an adjusting screw carried by the head, a jaw slidable toward and away from the head, a nut carried by the jaw and engaged by the screw, and means independent of the screw to shift the jaw for fine adjustments.

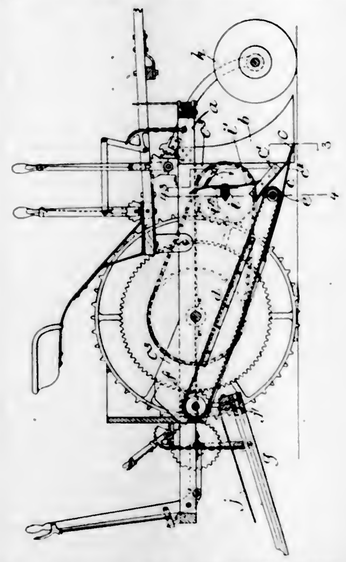
3. A chuck comprising a head, an adjusting screw carried thereby, a jaw, a shiftable nut carried by the jaw and engaging the screw, and means engaging the jaw and the nut to shift the jaw.

4. A chuck comprising a head, an adjusting screw carried thereby, a jaw having a socket in the back thereof, a nut receiving the screw and having a stem portion loose in the socket of the jaw, and an endwise adjustable tapered pin piercing the jaw and the stem of the nut to shift the jaw.

5. In a chuck, the combination of a head having one end formed for connection with a lathe screw and its other end pierced by three substantially parallel openings, guide rods passing through two of the openings, cross bars connecting the ends of the guide rods, a reversely threaded adjusting screw passing through the other opening of the head and terminally journaled in the cross bars, bifurcated jaws straddling the screw and slidably pierced by the guide rods, each jaw having a socket in the back of its bifurcation, nuts receiving the screw and provided with stems loosely received within the respective sockets, and tapered adjusting pins piercing the jaws and stems of the nuts.

6. A chuck comprising a head, an adjusting screw carried thereby, a jaw having a socket, a nut receiving the screw and having a stem portion loose in the socket of the jaw, the stem portion being provided with reversely tapered openings, reversely tapered pins extending through the openings with their small ends threaded and loosely piercing the respective inner and outer sides of the jaw, and nuts fitted to the threaded ends of the pins and bearing against the jaws.

855,457. POTATO-DIGGER. GEORGE N. HOLLAND, Hampden, Me., assignor of one-half to Richard M. Nason, Bangor, Me. Filed Sept. 15, 1906. Serial No. 334,748.



Claim.—1. A potato digger comprising a frame having fixed vertical side plates, an endless conveyer located between said plates, and supported by a lower front roll and an elevated rear roll, an inclined scoop having an inclined extension overhanging the lower roll of the conveyer, and a guard projecting under said lower roll and arranged to support and prevent sagging of the lower portion of the lower stretch of the conveyer, the said scoop and its extension and guard being rigidly attached to the side plates, the latter preventing the escape of material over the edges of the conveyer and over the ends of the scoop-extension.

2. A potato digger comprising a frame having fixed vertical side plates, an endless conveyer located between said plates, and supported by a lower front roll and an elevated rear roll, an inclined scoop having an extension overhanging the lower roll of the conveyer, the said scoop and extension being rigidly attached to the side plates, and a rotary transferring device comprising a shaft journaled in the side plates above the extension, and resilient arms attached to the shaft, and adapted to force the materials raised by the scoop over the extension, the said transferring device and scoop-extension being located between the side plates, so that the latter guide the material moved by the transferring device over the scoop-extension, and prevent said material from escaping laterally.

855,458. MICROPHONE. NEWMAN H. HOLLAND, Chicago, Ill., assignor, by direct and mesne assignments, to Ernest H. Stolz, Chicago, Ill. Filed July 28, 1906. Serial No. 328,175.



Claim.—1. A microphone comprising an electrode arranged to be vibrated by sound waves, a balanced electrode pivotally mounted at its center of gravity and having a part adjacent to the first electrode, a spring normally urging the pivoted electrode toward the other, and granules of conducting material interposed between said electrodes and arranged to normally urge said electrodes apart.

2. A microphone comprising an electrode arranged to be vibrated by sound waves, a balanced electrode pivotally mounted at its center of gravity and having a part adjacent to the first electrode, a spring normally urging the pivoted electrode toward the other, granules of conducting material interposed between said electrodes and arranged to normally urge said electrodes apart, and a stop adapted to limit the pivotal movement of said lever.

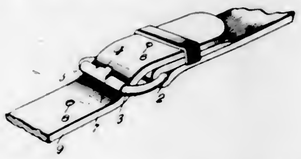
3. A microphone comprising a diaphragm electrode arranged to vibrate for transmitting sound, an arm pivotally mounted and having thereon an electrode adjacent to the first, means normally urging said electrodes toward each other, granules of conducting material interposed between said electrodes and adapted through gravity to urge them apart, and a stop for limiting the pivotal movement of said arm.

4. A microphone comprising a diaphragm electrode; a second electrode adjacent to the first, pivotally mounted at its center of gravity and having a relatively high inertia; a spring normally urging the pivoted electrode toward the other, the adjacent faces of said electrodes being inclined toward each other; granules of conducting material interposed between said electrodes and adapted through gravity to normally urge said electrodes apart; and a stop adapted to limit the separation of said electrodes.

5. A microphone comprising an electrode arranged to transmit sound, a second electrode having a cupped face adjacent to the first and forming a retainer for granular particles, a plurality of granules of conducting material substantially uniform in size seated in said retainer, the cupped face of said electrode having walls inclined toward the first electrode whereby said granules will normally tend through their weight to urge said electrodes apart, a spring normally urging said electrodes toward each other, and a stop adapted to limit the separation of said electrodes to a distance less than the diameter of said granules.

6. A microphone comprising a vertically disposed diaphragm electrode arranged to vibrate for transmitting sound, an electrode pivotally mounted on a horizontal axis substantially parallel with said diaphragm, said pivoted electrode being normally urged toward the diaphragm and having a surface below its axis and converging downwardly toward the diaphragm, and granules of conducting material interposed between said surface and the diaphragm and tending to urge said electrodes apart.

855,459. BUCKLE-SLEEVE. DAVID A. HUFFMAN, Paris, Ill. Filed June 14, 1906. Serial No. 321,746.



Claim.—1. In a device of the character described, the combination of a buckle frame, a tongue mounted on said frame, a strap part applied to the frame and having an opening through which the tongue passes, and a guard member for preventing accidental disengagement of the strap part from the tongue and also arranged so that it passes through the opening of the strap part receiving the tongue.

2. In a device of the character described, the combination of a buckle frame, a swinging tongue mounted upon the frame, a strap passing through the frame and provided with an opening through which the tongue is passed, and a locking arm loosely connected to the frame and adapted to fold over the tongue and enter the before mentioned opening in the strap to hold the tongue in normal position.

3. In a device of the class described, the combination of a buckle frame, a tongue pivoted to an end portion of said frame, a strap part applied to the frame and having an opening receiving the tongue, and a guard member pivoted to the frame for movement in a direction opposite to the movement of the tongue and adapted to snugly fit against the tongue longitudinally thereof, and passing through the opening in the strap part aforesaid.

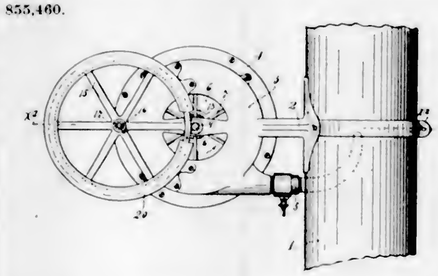
4. In a device of the character described, the combination of a buckle frame, a swinging tongue mounted upon the frame, and a sleeve fitting over a portion of the frame and provided with a lateral arm, the said lateral arm being bent transversely and adapted to be folded over the end of the tongue to hold the latter in normal position.

5. In a device of the character described, the combination of a frame, a swinging tongue mounted upon the frame, and a sleeve fitting over a portion of the frame and provided with a lateral arm which is bent transversely and is adapted to be folded over the end of the tongue to hold the latter in normal position, the portion of the sleeve at the junction of the lateral arm being formed with a socket for the reception of the extremity of the tongue.

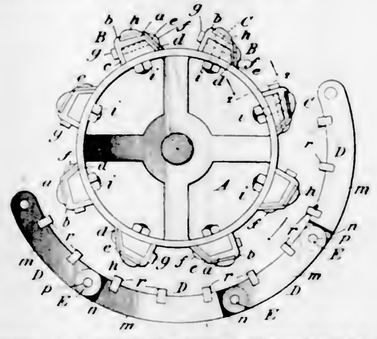
855,460. DRAFT-FORCING DEVICE. JOHN P. JOHNSON, Storden, Minn. Filed Mar. 7, 1906. Serial No. 304,742.

Claim.—In a draft forcing device, the combined fan case and spring case secured to said stack, said fan case having a discharge tube opening into said stack, a shaft journaled in said combined case, a fan secured to said shaft and working within said fan case, a sleeve loose on said shaft within said spring case, a coiled spring attached at one end to said spring case and at the other end to said sleeve, a driving gear loose on said shaft, a ratchet wheel and pawl connecting said gear to said loose sleeve, and a train of gears connecting said driving gear to the said fan shaft, substantially as described.

855,460.



855,461. THRESHING-MACHINE. GEORGE LACZAY, CHARLES FOHN, and CHARLES EKKER, Hammond, La. Filed Dec. 26, 1906. Serial No. 349,410.



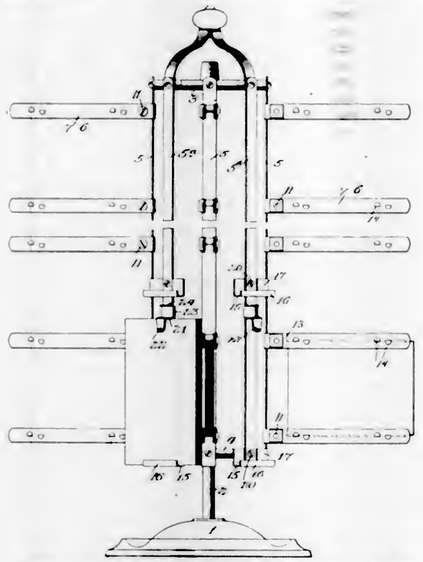
Claim.—1. A threshing machine cylinder having a body and ribs on the body respectively comprising a base fixed to the body and having an undercut lip at one side, a retaining plate arranged at the opposite side of the base and serving in connection with the undercut lip to form a seat of dovetail form in cross-section, means detachably connecting the retaining plate to the base, and a toothed bar, of dovetail form in cross-section, removably arranged on the base and in the dovetail seat formed by the lip thereof and the retaining plate.

2. A threshing machine cylinder having a body and ribs on the body respectively comprising a base fixed to the body and having an undercut lip at one side, a retaining plate arranged at the opposite side of the base and serving in connection with the undercut lip to form a seat of dovetail form in cross-section, means detachably connecting the retaining plate to the base, and bars, of dovetail form in cross-section, removably arranged end to end on the base and in the dovetail seat formed by the lip thereof and the retaining plate and having rib-like teeth extending diagonally across their outer ends.

3. A threshing machine cylinder having a body, in combination with ribs arranged on and extending longitudinally of the body; the said ribs comprising a base having a right angle flange at its rear edge and an obtuse angle flange at its forward edge and also having an under cut lip adjacent to its rear side, a retaining plate arranged at the forward side of the base and serving in combination with the under cut lip to form a seat of dovetail form in cross-section, bolts extending through the retaining plate and both flanges of the base and detachably connecting the base and plate, and a toothed bar, of dovetail form in cross-section, removably arranged in said dovetail seat, and bolts disposed at right angles to the first mentioned bolts and detachably connecting the bases of the ribs to the cylinder body.

4. A threshing machine cylinder having a body and a rib on the body, comprising a seat of dovetail form in cross-section, and a bar of dovetail form in cross-section, removably arranged in said seat and having rib-like teeth.

855,462. DISPLAY-RACK. ARTHUR C. LA MAY, Rochester, N. Y., assignor, by mesne assignments, to American News Company, New York, N. Y., a Joint Stock Association of New York. Filed Nov. 6, 1905. Serial No. 286,010.



Claim.—1. The combination with a revoluble rack having a series of vertically-extending guides thereon, of a plurality of slides extending radially of the rack and adjustable on the guides relatively to one another, said slides having grooves between them for receiving the articles for display.

2. The combination with a revoluble rack, having a series of vertically-extending guides thereon, of slides spaced relatively to one another on one of the guides, and having grooves between them to receive articles for display, and a rest and a slide coöperating therewith to form article holders arranged alternately between those formed by the slides.

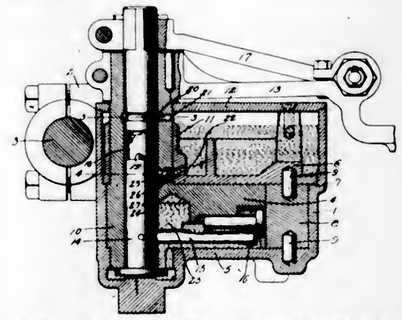
3. In a display rack, the combination with a guide, of two or more slides carried by the guide having pockets extending longitudinally thereof for slidingly receiving articles for display, one of the holders having a pair of clamping jaws for engaging the guide to retain the slide in adjusted position thereon.

4. In a display rack, the combination with a guide, of a pair of slides having longitudinal pockets thereon for receiving the articles for display between them, the slides being made up of a pair of side members having jaws thereon for clamping the guide, and a partition connecting the side members for supporting the articles.

5. In a display rack, the combination with a guide, of a plurality of slides on the guide for receiving the articles for display, the slides being made up of a pair of side members, and a partition connecting the side members and dividing the space between the members into upper and lower pockets extending longitudinally of the slide, one end of the partition being bent to form a stop at one end of the slide.

6. In a display rack, the combination with a guide, of a plurality of card-receiving slides supported by the guide, each slide being made up of a pair of side members having laterally bent portions to form jaws for engaging the guide, clamping means adjacent to the jaws, and a partition secured between the side members and forming longitudinal pockets.

855,463. STEERING-CHECK. HERMANN LEMP, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Sept. 10, 1906. Serial No. 333,924.



Claim.—1. A steering check, comprising a casing, a piston movable therein and provided with a cavity, a hub on said piston containing a passage connecting the upper part of the casing with said cavity, and a check valve in said passage opening toward said cavity.

2. A steering check, comprising a casing, an inner cover having a sleeve containing a duct, a piston movable under said cover and having a cavity, a hub on said piston rotatable in said sleeve and having a passage registering with said duct and communicating with said cavity, and a check valve in said passage.

3. A steering check, comprising a casing, a piston movable therein and containing a cavity, a hub on said piston, a shaft journaled in said hub and entering said cavity, and packing surrounding said shaft above said cavity.

4. A steering check, comprising a casing, a piston movable therein and containing a cavity, a hub on said piston, a shaft journaled in said hub and entering said cavity, and having a reduced portion above said cavity, and packing surrounding said reduced portion of the shaft.

5. A steering check, comprising a casing having upper and lower chambers, a piston in said lower chamber, a hub on said piston extending into the upper chamber, a shaft fitting in said hub, an annular chamber surrounding said shaft, and a radial hole in said hub registering with said chamber and opening into the upper chamber of the casing.

6. In a steering check, the combination with a casing having a draining hole in its bottom, of an inner cover, a holding-bolt therefor passing through said inner cover and protruding through the upper cover.

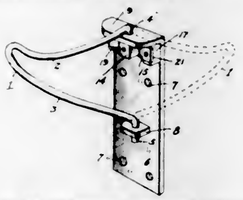
7. In a steering check, the combination with a casing having a tubular boss on its bottom, of an inner cover, a holding-bolt therefor protruding through the upper cover with its lower end tapped into said boss, and a plug for closing said boss from the outside.

855,464. HARNESS-HOOK. CHARLES A. LEONARD, Eve, Mo. Filed Nov. 12, 1906. Serial No. 342,984.

Claim.—1. A device of the character described comprising an attaching plate having apertured bearing lugs, a hook having longitudinally alined downwardly projecting ends or pintles for engagement with said bearing lugs, one of said pintles projecting through and extending beneath its bearing lug, a flat spring mounted upon said plate, and a block removably secured upon said projecting end of the pintle for retaining the latter in its bearing lug, said block having flat faces to engage said spring whereby the hook is held either in its folded or angular position, substantially as described.

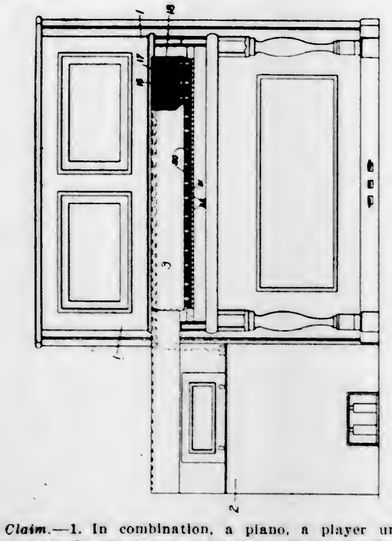
2. A device of the character described comprising an attaching plate having upper and lower vertically alined

apertured bearing lugs, a hook made from a single piece of wire to form an upper longitudinal arm, a lower inclined arm and upper and lower longitudinally alined and downwardly projecting ends or pintles adapted to engage the apertures in said bearing lugs, one of the ends or pintles of said hook projecting entirely through its bearing lug and having a flat face, a block removably secured upon the flat face of said projecting end of the pintle for retaining the latter in its bearing lug, said block being formed with flat faces, and a flat spring mounted upon said plate and adapted to bear against the flat faces of said block for holding the hook in either its folded or angular position, substantially as described.



3. A device of the character described comprising an attaching plate having apertured bearing lugs, a hook having upper and lower ends in longitudinal alinement to engage the apertures in said bearing lugs, one end of said hook having a polygonal shaped portion, a block having flat sides and an opening to receive said polygonal-shaped portion of the hook, a set screw for retaining said block upon the hook, recessed supports upon said plate, and a flat spring mounted in said recessed supports and adapted to engage the flat faces of said block, substantially as shown and for the purposes specified.

855,465. PLAYING ATTACHMENT FOR MUSICAL INSTRUMENTS. FRANK L. MARSHALL, Boston, Mass. Filed Oct. 15, 1904. Renewed Feb. 26, 1906. Serial No. 303,016.



Claim.—1. In combination, a piano, a player unsupported by the piano and so located with respect thereto as to leave the keyboard unobstructed for manual operation, and means acting on top of the outer keyboard of the piano to communicate the action of the player to the piano.

2. In combination, a piano, a player unsupported by the piano and located away from the front thereof so as to leave the keyboard in its normal unobstructed condition for manual operation, and player-operated means disposed above the piano keyboard to communicate the action of the player to said keyboard.

3. In combination, a piano, a player unsupported by the piano and located away from the front thereof so as to leave the keyboard in its normal unobstructed condition for manual operation, and means operatively connecting said player and keyboard to transmit the impulses of the player action to the top of the outer keyboard of the piano.

4. In combination, a piano, a player, unsupported by the piano, and located away from the front thereof so as to leave the keyboard in its normal unobstructed condition for manual operation, and means operatively connecting said player and keyboard and so disposed relative to said keyboard as to transmit the impulses of the player action to the top and rear of the visible keyboard.

5. In combination, a piano, a player unsupported by the piano and located at one side thereof so as to leave the keyboard in its normal unobstructed condition for manual operation, and means extending from said player over the rear portion of the visible keyboard to transmit the impulses of the player action to the top of said keyboard.

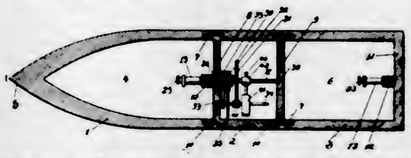
6. In combination, a piano, a player located to the side of said piano, a casing extending lengthwise over the piano key-board, said casing containing means in communication with the player action and with the piano key-board, said means being constructed to receive impulses from the player action and to operate the piano by delivering said impulses to the key-board thereof, and said casing being arranged over the key-board at the rear thereof so as to permit of free access to said board for manual operation of the piano.

7. In combination, a piano, a player located to the side of said piano, a casing extending from said player lengthwise over the piano key-board, said casing containing means in communication with the player action and with the piano key-board, said means being constructed to receive impulses from the player action and to operate the piano by delivering such impulses to the key-board thereof.

8. A player, an arm attached thereto and extending outward therefrom, means within said arm and in communication with the player action to receive impulses therefrom, and constructed to transmit said impulses according to their note to points along the arm increasingly remote from the player action.

9. A player, an arm attached thereto and extending outward therefrom, a bank of levers within said arm and in communication with the player action to receive impulses therefrom, and constructed to transmit said impulses according to their note to points along the arm increasingly remote from the player action.

855,466. PROJECTILE. ALFRED M. MAZER, Jeannette, Pa. Filed May 29, 1906. Serial No. 319,273.



Claim.—1. The combination with a projectile, of means carried therein for increasing the horizontal trajectory, said means being operated by the rotary motion of the projectile.

2. A projectile comprising a plurality of independent chambers or compartments, in combination with mechanism supported within one of said compartments for maintaining the projectile in a horizontal position during flight, said mechanism being operated through the rotary motion of the projectile.

3. The combination with a projectile, of mechanism carried therein for maintaining the projectile in a horizontal position during flight, comprising a movable weight or pendulum, and means operated by the rotary motion of the projectile for moving said weight or pendulum rearward.

4. The combination with a projectile, of a revoluble shaft supported within the projectile, and disposed longitudinally thereof, a weight movable upon said shaft, and means driven through the rotary motion of the projectile for moving said weight.

5. The combination with a projectile comprising a plurality of chambers, of mechanism supported within one of said chambers for maintaining the projectile in horizontal position during flight consisting of a revoluble shaft, a weight suspended therefrom, means for revolving said shaft through the rotary motion of the projectile, and means for effecting the rearward movement of the weight upon said shaft.

6. The combination with a projectile, of mechanism arranged therein comprising a longitudinally disposed revoluble shaft formed with a spirally disposed groove, a weight suspended from said shaft, a device connected with said weight and projecting into said groove, and a train of gearing driven by the rotary motion of the projectile for revolving said shaft.

7. The combination with a projectile comprising a plurality of detachable casings, of mechanism supported within one of said casings and comprising a longitudinally disposed spirally grooved shaft, a weight suspended from said shaft, a fixed trunnion adapted to revolve with the projectile, a gear pinion on said trunnion, and a train of gearing driven by said pinion to revolve said shaft.

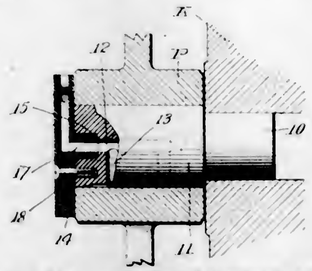
8. The combination with a projectile, of a longitudinally disposed grooved shaft-supported within the projectile, a weight suspended from said shaft, and means driven by the rotary motion of the projectile for moving said weight rearward to tend to elevate the point or nose of the projectile.

9. The combination with a projectile, of a longitudinally disposed grooved shaft supported within the projectile, a weight suspended upon said shaft, means carried by said weight to engage the groove of the shaft, a gear pinion mounted upon a fixed portion of the projectile, a shaft extending through said weight, a gear wheel upon said latter shaft meshing with said pinion, and gearing for revolving said grooved shaft from the shaft which extends through the weight.

10. A projectile having a forward and a rearward powder chamber and a mechanism chamber interposed between said powder chambers, in combination with mechanism operated by the rotary motion of the projectile for maintaining the projectile in horizontal position along its trajectory.

11. The combination with a projectile, of a longitudinally disposed grooved shaft supported therein, means for revolving said shaft from the rotary motion of the projectile, a weight suspended from said shaft and adapted to be moved rearward by the revolution of said shaft, and a supplemental weight supported adjacent to the movable weight.

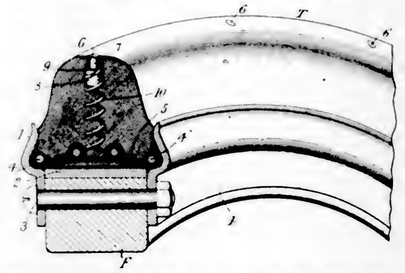
855,467. LUBRICATING DEVICE. FRANCIS MEISEL, Dorchester, Mass. Filed Sept. 29, 1903. Serial No. 175,067.



Claim.—1. The combination of a support, a stud projecting from the support, a wheel journaled upon the stud, a retaining plate for holding the wheel in place, said retaining plate having a threaded part screwed into the end of the stud, and said retaining plate having an oil chamber connected by an oil channel extending through the threaded part to oil channels in the stud, and means for holding said retaining plate from loosening.

2. The combination of a support, a stud extending from said support, a wheel journaled on the stud, an end-plate for holding the wheel in place, said end plate having a projection threaded into the end of the stud with an oil chamber in the upper part of said plate connected by an oil passage extending through the threaded projection to an oil passage in the stud from which channels extend down to the wheel bearing.

855,468. WHEEL-TIRE. THOMAS MIDGLEY, Hartford, Conn. Filed Oct. 6, 1905. Serial No. 281,573.



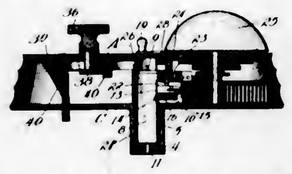
Claim.—1. A solid tire of elastic or resilient material provided at the tread with a plurality of studs of harder material than the body of the tire set in the material of which the tire is formed and mounted on yielding supporting members extending toward the base of the tire and embedded in the resilient material of the tire.

2. A tire of elastic or resilient material provided at its tread surface with studs set in the material of which the tire is composed and mounted on coil springs extending toward the base of the tire.

3. A tire of elastic or resilient material having studs set in the material of which the tire is composed and having their outer ends substantially flush with the tread surface of the tire, said studs being mounted on metallic supports yieldable in all directions.

4. A solid tire of elastic or resilient material provided with a plurality of coiled springs embedded in the material of the tire and extending from the base of the tire toward the tread thereof.

855,469. ALARM-LOCK. OTTO MILLER and PHILIP KUNZINGER, Brooklyn, N. Y. Filed Nov. 25, 1904. Serial No. 234,259.



Claim.—1. In a lock, the combination with an alarm, of a key way having a series of tumblers located in the path of the key when inserted in the lock, and means on the tumblers whereby the alarm will be sounded by the displacement of any one or all the tumblers from their normal position.

2. In a lock, the combination with an alarm of any approved form, of a key way having lock-controlling tumblers located in the path of the key when inserted in the lock, each tumbler having means thereon for setting the

alarm in operation when displaced from its normal position.

3. In a lock, the combination with an alarm, and an operating lever for controlling the alarm, of a key way, lock-controlling tumblers therein located in the path of the key when inserted in the lock, said tumblers each provided with means for actuating the operating lever, when one or more of the tumblers are moved from the normal positions to cause the alarm to sound.

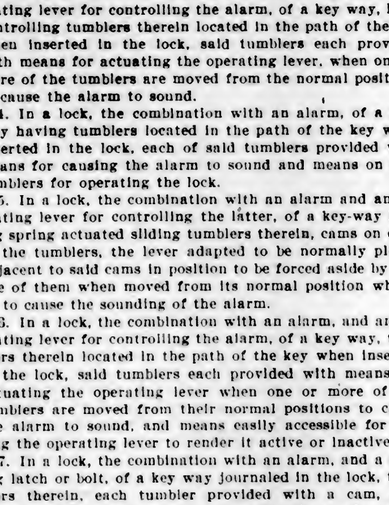
4. In a lock, the combination with an alarm, of a key-way having tumblers located in the path of the key when inserted in the lock, each of said tumblers provided with means for causing the alarm to sound and means on said tumblers for operating the lock.

5. In a lock, the combination with an alarm and an operating lever for controlling the latter, of a key-way having spring actuated sliding tumblers therein, cams on each of the tumblers, the lever adapted to be normally placed adjacent to said cams in position to be forced aside by any one of them when moved from its normal position whereby to cause the sounding of the alarm.

6. In a lock, the combination with an alarm, and an operating lever for controlling the alarm, of a key way, tumblers therein located in the path of the key when inserted in the lock, said tumblers each provided with means for actuating the operating lever when one or more of the tumblers are moved from their normal positions to cause the alarm to sound, and means easily accessible for setting the operating lever to render it active or inactive.

7. In a lock, the combination with an alarm, and a sliding latch or bolt, of a key way journaled in the lock, tumblers therein, each tumbler provided with a cam, said cams normally in alinement, an operating lever adapted to normally rest in the path of said cams, its function being to control the alarm and cause the latter to sound when displaced from its normal position by any one of the tumblers being moved inward and its cam engaging said operating lever, and means on the key way for throwing the latch or bolt.

855,470. MOTOR-CONTROLLING DEVICE. CARL MITTELSTRASS, Hermsdorf, and ALBRECHT FRANK, Berlin, Germany, assignors to General Electric Company, a Corporation of New York. Filed Oct. 17, 1906. Serial No. 339,352.



Claim.—1. The combination with an electric motor circuit of a controlling device therefor comprising an impedance, an auxiliary motor for varying the same, and means controlled by the movement of said device for reversing said auxiliary motor.

2. The combination with an electric motor circuit of means for controlling the same comprising an auxiliary motor, and means for automatically changing the connections thereof upon failure of voltage in the circuit, so as to reverse the auxiliary motor upon the return of voltage.

3. The combination with an electric motor circuit of means for controlling the same comprising an auxiliary motor, an electromagnetic switch in the main motor circuit, and connections whereby said switch automatically reverses said auxiliary motor.

4. The combination with an electric motor circuit of means for controlling the same comprising an impedance, an electric motor for varying the same, and means for automatically changing the connections thereof upon failure of voltage so as to reverse the said motor upon the return of voltage.

5. The combination with an electric motor circuit of means for controlling the same comprising an impedance, an auxiliary motor for varying the same, and electrically controlled means for automatically changing the connections of said motor upon the failure of voltage so as to reverse the same upon the return of voltage.

6. The combination with an electric motor circuit of means for controlling the same comprising an auxiliary motor, an electrically controlled device forclosing the main motor circuit, and means whereby said device changes the connections of said auxiliary motor upon the failure of voltage so as to reverse the same upon the return of voltage.

7. The combination with an electric motor circuit of means for controlling the same comprising an impedance, an auxiliary motor for varying the same, an electromagnetic device for automatically opening said main motor circuit, and means whereby the connections of said auxiliary motor are changed upon the opening of said main motor circuit so as to reverse the motor upon the closing of the main circuit.

8. The combination with an electric motor circuit of means for controlling the same comprising an auxiliary motor, an electromagnetic device for automatically opening said motor circuit, and means controlled by the movement of said device whereby the connections of said auxiliary motor are changed upon the opening of said main motor circuit so as to reverse the motor upon the closing of the main circuit.

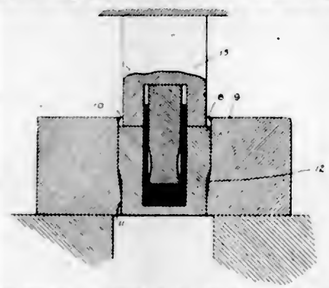
9. The combination with an electric motor circuit of means for controlling the same, comprising an auxiliary motor, an electromagnetic switch for opening and closing said main motor circuit, and connections whereby said auxiliary motor will run in one direction when the switch is open and in the opposite direction when the switch is closed.

10. The combination with an electric motor circuit of means for controlling the same comprising an auxiliary motor, an electromagnetic switch for automatically opening said motor circuit upon the occurrence of abnormal conditions therein, and connections whereby said auxiliary motor will run in one direction when the switch is open and in the opposite direction when the switch is closed.

855,471. INSULATING-STUD AND METHOD OF MAKING THE SAME. EDGAR W. MIX, Paris, France, assignor to General Electric Company, a Corporation of New York. Filed Aug. 1, 1906. Serial No. 328,673.

Claim.—1. The method of making an insulating stud which consists in placing a shouldered portion of one member within a metal socket of the other portion with a cap of insulating material surrounding the shouldered portion, and then causing the metal of the socket member to flow so as to force the insulation against the shoulder on the other member.

2. The method of making a two-part metal insulating stud which consists in placing a shouldered portion of one part within a socket in the other part with a cap of insulating material surrounding the shouldered portion and then forcing the assembled stud through a die so as to cause the metal of the walls of the socket to flow and form a rib interlocking with the shoulder on the other part.



3. The method of making a two-part insulating stud which consists in forming one part with a socket and a portion at one point in the wall of the socket with an enlarged external diameter, forming the other part with a shouldered portion, placing the shouldered portion in the socket with a cap of insulating material between, and then reducing the diameter of the part having the enlarged diameter in such a manner that the metal of that portion is caused to flow and force the insulation against the shoulder on the other part.

4. The method of making a two-part metal insulating stud which consists in forming one part with a socket and a portion at one point in the wall of the socket with an enlarged diameter, forming the other part with a portion having an annular groove, placing the grooved portion in the socket with a layer of insulating material between the grooved portion and the walls of the socket, and then causing the metal of the enlarged socket portion to flow so as to reduce its external diameter and produce an internal rib complementary to the groove in the other part.

5. The method of making a two-part metal insulating stud which consists in forming one part with a socket and a portion at one point in the wall of the socket with an enlarged diameter, forming the other part with a portion having an annular groove, placing the grooved portion in the socket with a layer of insulating material between the grooved portion and the walls of the socket, and then forcing the assembled stud through an opening in a die so as to reduce the external diameter of the enlarged part on the socket portion and produce an internal rib complementary to the groove in the other part.

6. The method of making a two-part metal stud which consists in forming one part with a portion having a shoulder, forming the other part with a socket, placing a cap of micanite about the shouldered portion, assembling the capped portion in the socket, heating the assembled stud, and then forcing the stud through a die so as to cause the metal of the wall of the socket member to flow and form a rib interlocking with the shoulder on the other part.

7. A two-part insulating stud consisting of a part having a shouldered portion, and a part having a socket containing said shouldered portion and a cap of insulating material surrounding said latter portion, said socket having an internal shoulder interlocking with the shoulder on the other part and produced by causing the metal of the socket member to flow inward.

855,472. RAILWAY-RAIL FASTENING. ROBERT G. MUSGROVE, Jackson, Miss. Filed Sept. 5, 1906. Serial No. 333,388.

Claim.—1. In a railway rail fastening, the combination of a rail, an abutment arranged to support the rail at one side thereof, a block arranged to support the rail at the opposite side thereof, and a yoke straddling the abutment and extending through the web of the rail and connecting the abutment and the block.

2. In a railway rail fastening, the combination of a sleeper, a rail, a bar resting between the sleeper and the rail and having an abutment arranged at the outer side of the rail and provided in its outer end with a notch or recess, a block arranged at the inner side of the rail, means connecting the block and bar together and to the sleeper, threaded bolts fixed to the block and extending through the web of the rail, a bar seated in the notch or recess of the abutment and receiving the bolts, and nuts mounted on said bolts.



3. A railway rail fastening comprising a bar arranged to rest under a rail and having an abutment for supporting the rail at one side, a block for supporting the rail at the oposite side thereof, bolts fixed to the block and extending through the web of the rail, a bar arranged on the abutment and receiving said bolts, and nuts mounted on the bolts.

4. The combination in a railway rail fastening, of a wood sleeper, opposite rails having transverse apertures in their webs, a tie-bar, formed of one piece of metal, interposed between the sleeper and the rails and having nail-holes and also having abutments at its ends shaped to conform to and bear against the outer sides of the rails and rest flush with the treads thereof; said abutments being provided in their outer ends with notches, metal blocks arranged on the tie-bar between the rails and having nail holes registered with those of the tie-bar, and longitudinal channels in their undersides receiving the tie-bar and also having their outer ends shaped to occupy the spaces between the heads and the bases of the rails at the inner sides thereof, nails extending through the registered holes of the blocks and tie-bar and connecting the same together and to the sleeper, threaded bolts fixed to the blocks and extending through the apertures in the rail webs, bars arranged in the notches of the abutments and receiving the bolts, and nuts mounted on said bolts.

855,473. METER. ADAM H. MCALPINE, Columbus, Ohio. Filed Jan. 16, 1907. Serial No. 352,573.

Claim.—1. The combination with the body portion of a meter, of a cap adapted to cover the registering mechanism of the meter, a bayonet joint between said body portion and said cap, and a cup adapted to receive a fusible material located adjacent the bayonet joint.

2. The combination with the body portion of a meter, of a cap adapted to cover the registering mechanism of said meter, a heavy convex glass which forms the top of said cap, a bayonet joint between the cap and the body portion of a meter and a cup adapted to receive a fusible material which communicates with one of the slots of the bayonet joint.

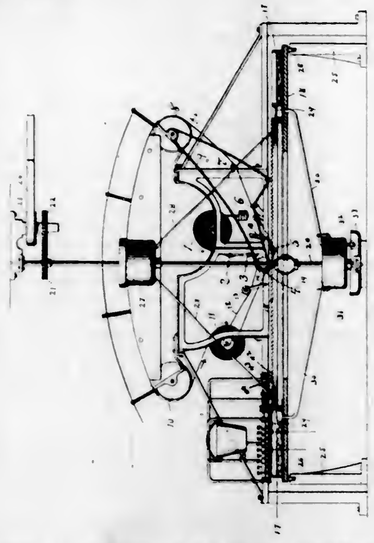
3. The combination with the body portion of a water meter, of an upstanding flange carried by said body portion, bayonet slots formed in said upstanding flange, a cap carrying pins which are adapted to engage in said bayonet slots, and a cup adapted to receive a fusible material, said cup communicating with one of said slots.

4. The combination with the body portion of a water meter, of an upstanding flange carried by said body portion, bayonet slots formed in said upstanding flange, a cap carrying pins which are adapted to engage in said bayonet slots, a cup adapted to receive a fusible material, said cup

communicating with one of said slots, and a heavy convex glass forming the top of said cap.

5. In a device of the character described, the combination with the body portion of a water meter, of an upstanding flange having bayonet slots formed therein, a cap adapted to cover the registering mechanism of a meter and carrying members adapted to engage in said bayonet slots, a cup adapted to receive a fusible material which communicates with one of said slots, and a flange carried by the cap which is adapted to overlie and cover the cup when the parts are in their assembled positions.

855,474. MACHINE FOR MARBLING PAPER. JOHN W. NEWBERY, Brooklyn, N. Y. Filed Feb. 23, 1906. Serial No. 302,424.



Claim.—1. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a carriage adapted to carry the paper to be marbleized, means for revolving said tank in a horizontal plane, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

2. In a marbling machine, in combination, a tank for containing sizing solution, said tank being mounted so as to be revolved in a horizontal plane, about a central point, means for revolving said tank, a carriage adapted to carry the paper to be marbleized, means for distributing coloring matter over said sizing solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

3. In a marbling machine, in combination, a circular tank for containing sizing solution, said tank being mounted so as to be revolved in a horizontal plane, about its center, means for revolving said tank, a carriage adapted to carry the paper to be marbleized, means for distributing coloring matter over said sizing solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

4. In a marbling machine, in combination, a tank for containing sizing solution, said tank being mounted so as to be revolved in a horizontal plane, about a central point, means for revolving said tank, a stationary carriage adapted to carry the paper to be marbleized, means for distributing coloring matter over said sizing solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

5. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, means for maintaining a constant amount of said sizing solution in said tank, a carriage adapted to carry the paper to be marbleized, means for revolving said tank in a horizontal plane, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said solution.

6. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a reservoir adapted to contain surplus solution, a pumping device adapted to transfer said solution to said reservoir, a supply pipe leading from said reservoir for maintaining a constant amount of said sizing solution in said tank, means for revolving said tank, in a horizontal plane, a carriage for carrying the paper to be marbleized, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

7. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a reservoir adapted to contain surplus solution, a pumping device adapted to transfer solution to said reservoir, a plurality of supply pipes leading from said reservoir for maintaining a constant amount of said sizing solution in said tank, means for revolving said tank, in a horizontal plane, a carriage adapted to carry the paper to be marbleized, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

8. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a rack adapted to revolve with said tank, means for revolving said tank and rack, in a horizontal plane, a rotatable brush adapted to distribute coloring matter over said sizing solution having a gear attached thereto adapted to operatively engage said rack, a carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

9. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a rack adapted to revolve with said tank, means for revolving said tank and rack, in a horizontal plane, a rotatable brush and roll driven by means of said rack and adapted to distribute coloring matter over said sizing solution, a carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

10. In a marbling machine, the combination of a circular revoluble tank adapted to contain a sizing solution, a carriage adapted to carry the paper to be marbleized, means for revolving said tank, in a horizontal plane, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

11. In a marbling machine, the combination of a circular revoluble tank adapted to contain a sizing solution, a circular rack adapted to revolve with said tank, means for revolving said tank and rack, in a horizontal plane, a rotatable brush operated by said rack and adapted to distribute coloring matter over said sizing solution, a carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

12. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a receptacle adapted to receive the overflow solution from said tank, means for revolving said tank, in a horizontal plane, means for distributing coloring matter over the solution in said tank, and means for passing the paper successively into contact with the color film carried by said sizing solution.

13. In a marbling machine, the combination of a circular revolving tank adapted to contain a sizing solution, a circular receptacle adapted to receive the overflow solution from said tank, means for revolving said tank, in a horizontal plane, means for distributing coloring matter over the solution in said tank, and means for passing the paper successively into contact with the color film carried by said sizing solution.

14. In a marbling machine, the combination of a circular revoluble tank adapted to contain a sizing solution, a circular receptacle adapted to be revolved with said tank and to receive the overflow solution therefrom, means for revolving said tank and receptacle, means for distributing coloring matter over the solution in said tank, and means for passing the paper successively into contact with the color film carried by said sizing solution.

15. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a carriage adapted to carry the paper to be marbleized, a driving shaft operatively connected with said tank and adapted to revolve the same, in a horizontal plane, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

16. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a vertical driving shaft centrally located and operatively connected with said tank to revolve the same, in a horizontal plane, a carriage adapted to carry the paper to be marbleized, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said sizing solution.

17. In a marbling machine, the combination of a circular revoluble tank adapted to contain a sizing solution, means for revolving said tank, in a horizontal plane, means for distributing coloring matter over said solution, a support positioned under said tank, a carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

18. In a marbling machine, the combination of a circular revoluble tank adapted to contain a sizing solution, means for revolving said tank, in a horizontal plane, means for distributing coloring matter over said solution, a support carrying a roller forming a bearing under said tank, a carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

19. In a marbling machine, the combination of a circular revoluble tank adapted to contain a sizing solution, means for revolving said tank, in a horizontal plane, means for distributing coloring matter over said solution, a plurality of supports positioned under said tank, a carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

20. In a marbling machine, the combination of a circular revoluble tank adapted to contain a sizing solution, means for revolving said tank, in a horizontal plane, means for distributing coloring matter over said solution, a plurality of supports positioned under said tank each provided with a roller forming a bearing for retaining said tank in a level position, carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

21. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a centrally located shaft operatively connected to said tank for revolving the same, in a horizontal plane, a reservoir surrounding said shaft and adapted to supply sizing solution to said tank, means for distributing coloring matter over said solution in said tank, a carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

22. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a support for said tank, means for revolving said support and tank, in a horizontal plane, means for distributing coloring matter over said solution in said tank, a carriage adapted to carry the paper to be marbleized, and means for passing the paper successively into contact with the color film carried by said sizing solution.

23. In a marbling machine, the combination of a revoluble tank adapted to contain a sizing solution, a vertical shaft for revolving said tank, in a horizontal plane, a reservoir carried by said shaft, pipes leading from said reservoir to said tank, an overflow receptacle positioned so as to receive overflow solution from said tank, pipes leading from said overflow receptacle to a receptacle carried by said shaft, means for transferring the solution from said last named receptacle to said reservoir, means for distributing coloring matter over said sizing solution, a carriage for carrying the paper to be marbleized, and means for passing the paper successively into contact with the coloring film carried by said sizing solution.

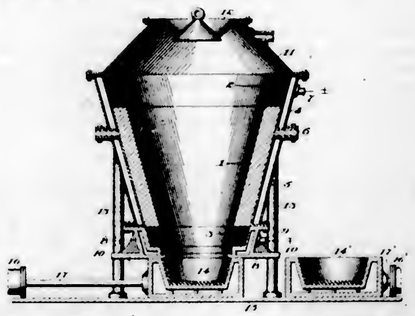
24. A color distributing device adapted for use with a machine for marbling paper, said device having a receptacle for receiving the coloring material, a rotating brush adapted to distribute said coloring material over a sizing solution, a roller adapted to carry the coloring material from said receptacle to said brush, a perforated cover through which said coloring material is strained before entering said receptacle, a regulator for controlling the amount of coloring matter carried to said brush, and means for rotating said brush and roller.

855,475. EARTHENWARE SHINGLE. FRANK ORLIKOWSKI and LOUIS H. KOEHNLE, Cleveland, Ohio. Filed Mar. 29, 1906. Serial No. 308,729.



Claim.—As a new article of manufacture, an earthenware shingle hexagonal in form and having ribs along the top and side edges of the upper half of the shingle and ribs along the sides and bottom of the lower half of the shingle, and a rib formed on the lower side of the top edge of the upper half of the shingle, said rib being tapered from the center toward the ends thereof, forming an edge adapted to engage a rafter and permit of said shingle being slightly rocked thereon.

855,476. PROCESS OF PRODUCING CALCIUM CARBID. EDGAR F. PRICE, Niagara Falls, N. Y., assignor to Union Carbide Company, Niagara Falls, N. Y., a Corporation of Virginia. Filed Nov. 14, 1905. Serial No. 287,340.



Claim.—1. The process of producing calcium carbid, which consists in smelting the charge by an electrically-heated resistance-conductor, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

2. The process of producing calcium carbid, which con-

sists in smelting the charge by interposing it as a resistance-conductor in an electric circuit, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

3. The process of producing calcium carbid, which consists in smelting the charge by interposing it as a resistance-conductor in an electric circuit, increasing the current-density along the path of the current in the charge, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

4. The process of producing calcium carbid, which consists in smelting the charge by an electrically-heated resistance-conductor, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, and moving an empty receptacle into position, as set forth.

5. The process of producing calcium carbid, which consists in progressively smelting the charge by an electrically-heated resistance-conductor, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, and supplying charge-materials as required, as set forth.

6. The process of producing calcium carbid, which consists in progressively smelting the charge by interposing it as a resistance-conductor in an electric circuit, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, and supplying charge-materials as required, as set forth.

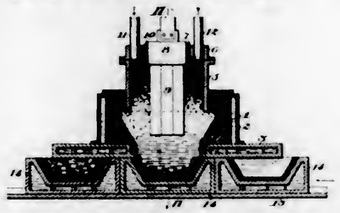
7. The process of producing calcium carbid, which consists in progressively smelting the charge by interposing it as a resistance-conductor in an electric circuit, increasing the current-density along the path of the current in the charge, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, and supplying charge-materials as required, as set forth.

8. The process of producing calcium carbid, which consists in progressively smelting the charge by an electrically-heated resistance-conductor, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

855,477. PROCESS OF PRODUCING CALCIUM CARBID. EDGAR F. PRICE, Niagara Falls, N. Y., assignor to Union Carbide Company, Niagara Falls, N. Y., a Corporation of Virginia. Filed Nov. 14, 1905. Serial No. 287,341.

Claim.—1. The process of producing calcium carbid, which consists in smelting the charge, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

2. The process of producing calcium carbid, which consists in smelting the charge, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, and moving an empty receptacle into position, as set forth.



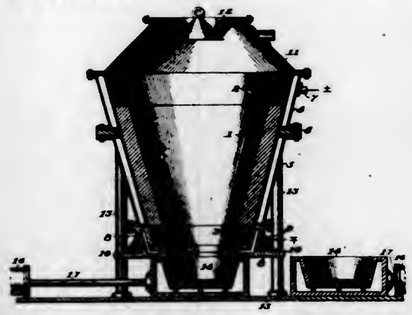
3. The process of producing calcium carbid, which consists in progressively smelting the charge, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

4. The process of producing calcium carbid, which consists in smelting the charge by an electric arc, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

5. The process of producing calcium carbid, which consists in smelting the charge by an electric arc, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, and moving an empty receptacle into position, as set forth.

6. The process of producing calcium carbid, which consists in progressively smelting the charge by an electric arc, accumulating a body of carbid, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

855,478. PROCESS OF SMELTING REFRACTORY ORES AND PRODUCING FERRO-ALLOYS. EDGAR F. PRICE, Niagara Falls, N. Y. Filed Nov. 14, 1905. Serial No. 287,342.



Claim.—1. The process which consists in electrically smelting a charge containing a refractory ore, by means of an electrically-heated resistance-conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

2. The process which consists in progressively smelting

a charge containing a refractory ore, by means of an electrically-heated resistance-conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

3. The process which consists in progressively smelting a charge containing a refractory ore, by passing an electric current through the charge, serving as a resistance-conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

4. The process of producing ferro-alloys, which consists in smelting a charge containing a refractory ore of the alloying metal, a reducing agent and a source of iron, by means of an electrically-heated resistance-conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

5. The process of producing ferro-alloys, which consists in progressively smelting a charge containing a refractory ore of the alloying metal, a reducing agent and a source of iron, by means of an electrically-heated resistance conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

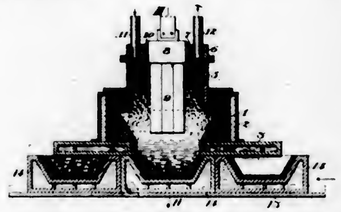
6. The process of producing ferro-alloys, which consists in progressively smelting a charge containing a refractory ore of the alloying metal, a reducing agent and a source of iron, by passing an electric current through the charge, serving as a resistance-conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

7. The process of producing ferrochromium, which consists in smelting a charge containing a chromium compound, carbon and a source of iron, by means of an electrically-heated resistance-conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

8. The process of producing ferrochromium, which consists in progressively smelting a charge containing a chromium compound, carbon and a source of iron, by means of an electrically-heated resistance-conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

9. The process of producing ferrochromium, which consists in electrically smelting a charge containing a chromium compound, carbon and a source of iron, by passing an electric current through the charge, serving as a resistance conductor, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

855,479. PROCESS OF SMELTING REFRACTORY ORES AND PRODUCING FERRO-ALLOYS. EDGAR F. PRICE, Niagara Falls, N. Y. Filed Nov. 14, 1905. Serial No. 287,343.



Claim.—1. The process which consists in smelting a charge containing a refractory ore, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

2. The process which consists in electrically smelting a charge containing a refractory ore, by means of an electric arc, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

3. The process which consists in progressively smelting a charge containing a refractory ore, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

4. The process of producing ferro-alloys, which consists in smelting a charge containing a reducing agent and a source of iron, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

5. The process of producing ferro-alloys, which consists in electrically smelting a charge containing a refractory ore, a reducing agent and a source of iron, by means of an electric arc, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

6. The process of producing ferro-alloys, which consists in progressively smelting a charge containing a refractory ore, a reducing agent and a source of iron, by means of an electric arc, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge-materials as required, as set forth.

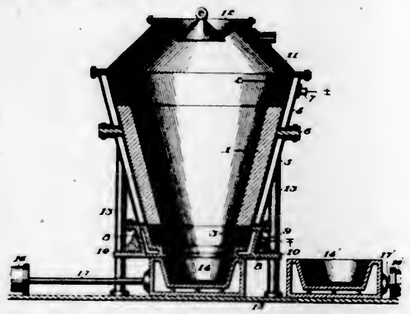
7. The process of producing ferrosilicon, which consists in electrically smelting a charge of silica, carbon and a source of iron, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, as set forth.

8. The process of producing ferrosilicon, which consists in smelting a charge of silica, carbon and a source of iron, by means of an electric arc, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, and shifting the receptacle and thereby withdrawing its con-

tents from the portion remaining in the furnace, as set forth.

9. The process of producing ferrosilicon, which consists in progressively smelting a charge of silica, carbon and a source of iron, by means of an electric arc, accumulating a body of the product, a portion of said body lying within a movable receptacle and a portion within the smelting chamber, shifting the receptacle and thereby withdrawing its contents from the portion remaining in the furnace, moving an empty receptacle into position, and supplying charge materials as required, as set forth.

855,480. ELECTRIC-RESISTANCE FURNACE. EDGAR F. PRICE, Niagara Falls, N. Y. Filed Nov. 14, 1905. Serial No. 287,344.



Claim.—1. An electric furnace, comprising a smelting chamber having a discharge opening, means for heating said chamber by a resistance conductor, and a receptacle movable across said discharge opening and arranged to retain a molten body within said chamber, as set forth.

2. An electric furnace, comprising a smelting chamber having a discharge opening, means for heating said chamber by a resistance conductor, and a plurality of receptacles movable across said discharge opening and arranged to retain a molten body within said chamber, as set forth.

3. An electric furnace, comprising a smelting chamber having a discharge opening, means for heating said chamber by a resistance conductor, and a plurality of abutting receptacles movable across said discharge opening and arranged to retain a molten body within said chamber, as set forth.

4. An electric furnace, comprising a smelting chamber having a discharge opening, means for heating said chamber by passing an electric current through the charge, serving as a resistance conductor, and a receptacle movable across said discharge opening and arranged to retain a molten body within said chamber, as set forth.

5. An electric furnace, comprising a smelting chamber having a discharge opening, means for heating said chamber by passing an electric current through the charge, serving as a resistance conductor, and a plurality of receptacles movable across said discharge opening and arranged to retain a molten body within said chamber, as set forth.

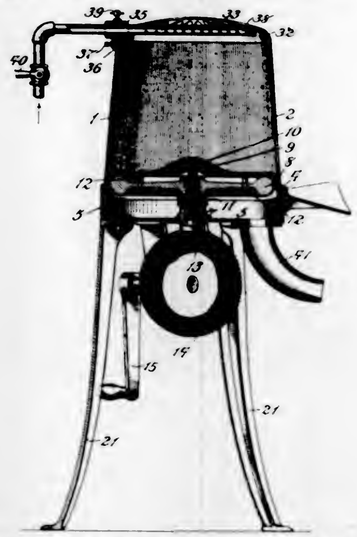
6. An electric furnace, comprising a smelting chamber, having a discharge opening, means for heating said chamber by passing an electric current through the charge, serving as a resistance conductor, and a plurality of abutting receptacles movable across said discharge opening and arranged to retain a molten body within said chamber, as set forth.

7. An electric furnace, comprising a downwardly-converging stack having an open bottom, superposed electrodes in position to contact with the charge and constitute it a resistance conductor, and a receptacle movable transversely beneath said bottom and arranged to retain a molten body within said stack, as set forth.

8. An electric furnace, comprising a downwardly-converging stack having an open bottom, superposed electrodes in position to contact with the charge and constitute it a resistance conductor, and a plurality of receptacles movable transversely beneath said bottom and arranged to retain a molten body within said stack, as set forth.

9. An electric furnace, comprising a downwardly-converging stack having an open bottom, superposed electrodes in position to contact with the charge and constitute it a resistance conductor, and a plurality of abutting receptacles movable transversely beneath said bottom and arranged to retain a molten body within said stack, as set forth.

855,481. MACHINE FOR PEELING VEGETABLES. HENRY ROBINSON, Brooklyn, N. Y. Filed Sept. 30, 1905. Serial No. 280,826.



Claim.—1. In a peeling machine for vegetables the combination of a container, a movable seat adjustably secured to the top edge of said container, a cover for said container hinged to said seat and a sprinkling pipe carried by said seat and projecting under said cover, substantially as described.

2. In a peeling machine for vegetables the combination of a container, a movable seat adjustably secured to the top edge of said container, a cover for said container hinged to said seat a sprinkling pipe passing through a cavity in said seat and means for securing said pipe in different positions in said cavity, substantially as described.

3. In a peeling machine for vegetables the combination of a container, a movable seat adjustably secured to the upper edge of said container a cover for said container hinged to said seat and having an opening extending from near the center of the cover to a point between the cover hinges, and a sprinkling pipe carried by said seat and extending through said opening in said cover, substantially as described.

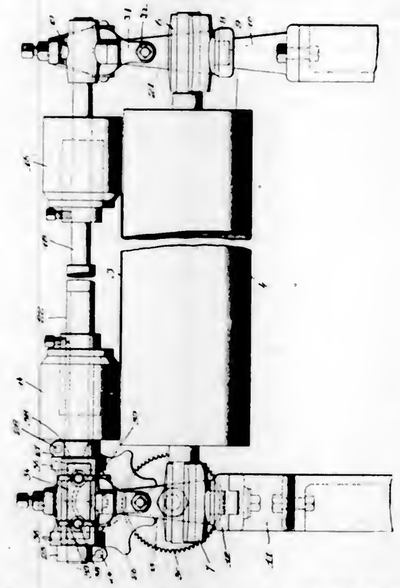
4. In a peeling machine for vegetables, the combination of a container, a seat having a slot fitting the edge of said container, and a sprinkling pipe carried by said seat, substantially as described.

5. In a peeling machine for vegetables, the combination of a container, a seat adjustably secured to said container, a cover for said container hinged to said seat and a sprinkling pipe carried by said container and extending under said cover, substantially as described.

6. In a peeling machine for vegetables, the combination of a container, a seat adjustably secured to said container, a cover having radial openings and hinged to said seat and a sprinkling pipe carried by said seat and passing through

an appropriate opening in said cover, substantially as described.

855,482. MEANS FOR GUIDING A MOVING WEB OR APRON. ERNEST L. SAVAGE, Fairfield, Me. Filed Jan. 8, 1906. Serial No. 294,992.



Claim.—1. In a device for guiding a traveling web or apron, the combination with a supporting roll for said web, of two detecting rolls supported in close proximity to the supporting roll but out of contact therewith, and means operated by the rotation of either detecting roll to swing the supporting roll angularly with reference to the line of movement of the web.

2. In a device for guiding a traveling web, the combination with a supporting roll for said web, of a detecting roll situated in close proximity to but out of contact with said supporting roll, and devices operated by the rotation of said detecting roll to swing the supporting roll angularly with reference to the line of movement of the web.

3. In a device for guiding a traveling web, the combination with a supporting roll for said web, of a normally idle detecting roll separated from the supporting roll a distance less than the thickness of the web whereby when the web crowds in between said detecting roll and supporting roll the detecting roll is set in rotation, and means operated by said detecting roll to swing the supporting roll angularly with reference to the line of movement of the web.

4. In a device for guiding a traveling web, the combination with two normally idle detecting rolls each separated from the supporting roll a distance less than the thickness of the web, and means operated by the rotation of said detecting rolls to swing the supporting roll angularly with reference to the line of movement of the web in one direction or the other according as to which detecting roll is rotated.

5. In a device for guiding a traveling web, the combination with a supporting roll for said web, of roll swinging mechanism comprising a star wheel, two independently mounted detecting rolls adapted to be operated by the web when the latter becomes laterally displaced, and means to turn said star wheel in one direction by one detecting roll and in the other direction by the other detecting roll.

6. In a device for guiding a traveling web, the combination with a supporting roll for the web, of an adjusting screw for swinging said roll angularly with reference to the line of motion of the web, two normally idle detecting rolls in proximity to but out of contact with the supporting roll, a shaft on which one roll is mounted, a sleeve surrounding the shaft on which the other roll is mounted, a star wheel for operating the adjusting screw, and two arms one extending from said shaft and one extending from the sleeve for operating the star wheel.

7. In a device for guiding a traveling web, the combination with a supporting roll for the web, of an adjusting screw for swinging said roll angularly with reference to the line of motion of the web, two normally idle detecting rolls in proximity to but out of contact with the supporting roll, a shaft on which one roll is mounted, a sleeve surrounding the shaft on which the other roll is mounted, a star wheel for operating the adjusting screw, and two arms one extending from said shaft and one extending from the sleeve for operating the star wheel, said arms being situated to engage the star wheel on opposite sides.

8. In a device for guiding a traveling web, the combination with a supporting roll for the web, of an adjusting screw for swinging the roll angularly, a star wheel for operating said adjusting screw, two detecting rolls to be actuated by the web when it becomes laterally displaced, and means operated by said rolls to actuate the star wheel.

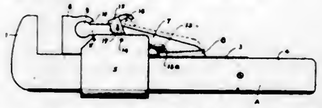
9. In a device for guiding a traveling web, the combination with a supporting roll for the web, of an adjusting screw for swinging the roll angularly, a star wheel for operating said adjusting screw, two detecting rolls to be actuated by the web when it becomes laterally displaced, means operated by said rolls to actuate the star wheel, and means operated by one roll to rotate the star wheel in one direction, and other means operated by the other roll to rotate the star wheel in the opposite direction.

10. In a device for guiding a traveling web, the combination with a support for said web, of means operated by the lateral displacement of said web to move the support angularly, and a brake device to bring said means to rest when the web has resumed its normal position.

11. In a device for guiding a traveling web or apron, the combination with a supporting roll for said web, of two detecting rolls supported in close proximity to the supporting roll but out of contact therewith, means operated by the rotation of either detecting roll to swing the supporting roll angularly with reference to the line of movement of the web, and a brake device to bring said means to rest when the web resumes its normal position.

12. In a device for guiding a traveling web or apron, the combination with a supporting roll for said web, of two detecting rolls supported in close proximity to the supporting roll but out of contact therewith, said detecting rolls being situated either side of said web but out of contact therewith when said web is in its normal position, and means operated by the rotation of either detecting roll to swing the supporting roll angularly with relation to the line of movement of the web.

855,483. WRENCH. HENRY W. SIMMS, Bay City, Mich. Filed June 6, 1906. Serial No. 320,406.



Claim.—1. A wrench comprising a handle and stationary jaw, teeth on the handle, a strap slidingly mounted on the handle, a jaw fixed to the sliding strap, and closing the strap, the jaw being cut away and having a socket formed near its outer end, a pawl received between the projecting ends of the strap, the pawl superposed upon the jaw, one end of the pawl received in the socket, a stop carried by the jaw adjacent the socket to limit movement of the pawl in one direction, teeth on the opposite end of the pawl adapted to mesh with the teeth on the handle, a lever piv-

otally secured to the pawl and bearing on the ends of the strap, to release the teeth of the pawl from the teeth of the handle, and a spring, carried by the pawl and engaging the jaw to normally retain the teeth of the pawl in engagement with the teeth of the handle.

2. A wrench comprising a toothed handle, a movable jaw slidably mounted on the handle, and having a socket formed therein, a pawl, one end of which is pivotally received in the socket, teeth on the opposite end of the pawl adapted to mesh with the teeth on the handle, a spring for yieldingly retaining the teeth in mesh, the pawl lying in alinement with the pressure brought on the outer end of the movable jaw, and bracing the latter and a lever pivotally secured to the pawl and having a rocking engagement with the jaw for releasing the teeth of the pawl from the teeth of the handle against the tension of the spring.

3. In a wrench, the combination with a toothed stock, of a slidable jaw mounted on the stock, a pawl, one end of which pivotally engages the movable jaw, teeth on the opposite end of the pawl meshing with the teeth on the handle, means for yieldingly retaining the teeth in mesh and a lever pivotally secured to the pawl and having a rocking engagement with the jaw for raising the toothed end of the pawl.

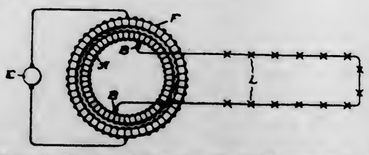
4. A wrench comprising a toothed stock and a fixed jaw, a U-shaped strap slidably inclosing the stock, a jaw cut away throughout a portion of its length and fixedly carried by the strap, the ends of the strap projecting beyond the cut away portion of the jaw, a shoulder formed on the cut away portion of the jaw, a pawl received between the ends of the strap and superposed upon the jaw, one end of the pawl pivotally engaging the jaw, teeth on the opposite end of the pawl meshing with the teeth on the stock, the pawl having a kerf formed therein, a spring, one end of which is seated in the kerf, the opposite end engaging the shoulder on the jaw and a lever pivoted to the pawl, the lever bearing against the end of the strap to raise the toothed end of the pawl.

5. A wrench comprising a toothed stock, a jaw movable thereon, a squared face on the jaw a pawl toothed at one end, the opposite end of the pawl being journaled in the jaw, and a releasing lever pivoted to the pawl adjacent the squared face of the jaw, one end of the lever resting on the jaw and having a squared face corresponding with that of the jaw when the pawl is in locked position relative to the stock.

6. A wrench comprising a toothed stock a jaw slidable on the stock, a pawl, one end of which is pivotally connected to the jaw, teeth on the opposite end of the pawl meshing with the teeth on the stock, a pivot carried by the jaw and engaging the pawl intermediate its ends, a spring passing under the pivot and in contact with the jaw, the opposite ends of the spring engaging the pawl on opposite sides of the pivot, and a lever for moving the pawl on its pivot out of engagement with the teeth on the stock.

7. A wrench comprising a toothed stock and a movable jaw slidable on the stock, a pawl, one end of which is pivotally connected to the movable jaw, teeth on the pawl engaging the teeth on the stock and a lever pivotally secured to the pawl, one end of the lever having a rocking contact with and bearing against the jaw to release the teeth of the pawl from the teeth of the handle.

855,484. CONSTANT-CURRENT GENERATOR. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 7, 1905. Serial No. 272,979.

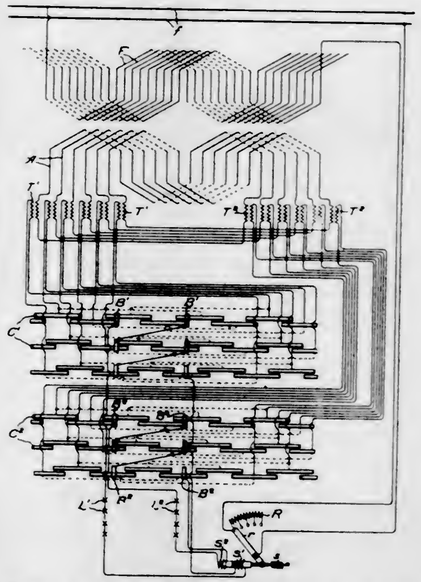


Claim.—1. In a constant-current generator, a field winding, and an armature winding provided with commutator and brushes, said brushes being arranged on a line at an angle of less than forty-five electrical degrees to the line of magnetization of the field winding and connected to the load-circuit, said generator being arranged to be saturated at normal load.

2. In a constant-current generator, a field winding, and an armature winding provided with commutator and brushes, said brushes being connected to the load circuit and so arranged that the resultant of armature and field magneto-motive forces is small as compared with the component magneto-motive forces, said generator being arranged to be saturated by the resultant magneto-motive forces corresponding to normal armature current.

3. In a constant-current generator, field and armature structures arranged with a small air-gap, distributed field and armature windings carried in slots in said structures, a commutator connected to the armature winding, and brushes arranged on the commutator on a line making an angle of less than forty-five electrical degrees with the line of field magnetization and connected to the load circuit, said generator being arranged to be saturated at normal load.

855,485. CONSTANT-CURRENT GENERATOR. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Aug. 7, 1905. Serial No. 272,982.



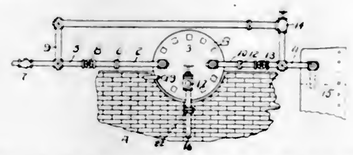
Claim.—1. In a constant-current generator, a plurality of armature windings of the open-coil type, a plurality of sets of series transformers, each of the armature windings being connected in closed circuit through the primaries of one transformer of each set, and a plurality of rectifying commutators connected respectively to the secondaries of the several sets of transformers.

2. In a constant-current generator, a plurality of armature windings of the open-coil type, a plurality of sets of series transformers revolving with the armature, each of the armature coils being connected in closed circuit through the primaries of one transformer of each set, and a plurality of rectifying commutators revolving with the armature and connected respectively to the secondaries of the several sets of transformers.

3. In a constant-current generator, a plurality of armature windings of the open-coil type, a laminated body carried by the armature, a plurality of transformer coils carried by said body, each armature winding being connected in closed circuit through a plurality of transformer primaries in series, and a plurality of rectifying commutators connected to the secondaries of said transformers.

4. In a constant-current generator, a plurality of armature windings of the open-coil type, a laminated ring carried by the armature, a plurality of transformer windings interlinked with said ring, each armature being connected in closed circuit through a plurality of transformer primaries in series, and a plurality of rectifying commutators connected to the secondaries of said transformers.

855,486. FEED-WATER HEATER. ROBERT C. STEVENS, Indianapolis, Ind. Filed June 6, 1906. Serial No. 320,408.



Claim.—1. The combination with a boiler and its setting the setting provided with a seat, of a horizontally disposed cylindrical feed water heater and purifier removably cradled in the setting and exposed to direct contact with the hot furnace gases, means for supplying the feed water heater with water, means connecting the feed water heater and boiler and a bypass around the feed water heater connecting the supply with the boiler.

2. The combination with a boiler, of a feed water heater exposed to the direct heat of the furnace gases, an inlet and an outlet pipe for the feed water heater, a supply connected to the inlet pipe, a header pipe to which the outlet is detachably connected, a bypass directly connecting the supply and header pipes and valves controlling the supply, header and bypass pipes.

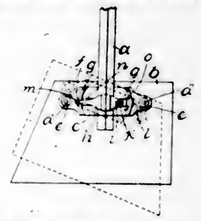
3. The combination with a boiler of a horizontally disposed feed water heater exposed to the direct heat of combustion, the feed water heater comprising an approximate cylinder closed at opposite ends, an inlet pipe extending through the outer end of the cylinder to a point adjacent the inner end, an outlet pipe leading from the outer end of the heater the outlet pipe adapted to receive the water lying at the outer end of the heater, a supply connected with the inlet and a header pipe connected with the outlet.

4. The combination with a boiler, of a horizontally disposed feed water heater exposed to the direct heat of combustion, the heater being approximately cylindrical, inlet and outlet pipes communicating with the heater at its outer end and at points above the bottom thereof and a blowoff pipe communicating with the heater at its outer end at a point approximately at the bottom thereof.

5. The combination with a boiler, of a cylindrical horizontally disposed feed water heater located above the boiler and exposed to the direct heat of combustion after such heat has passed the boiler, means for supplying water to one end of the heater, an outlet pipe communicating with the opposite end of the heater, a header pipe connected to the outlet and forming a continuation thereof, the header pipe leading to the boiler, and a depending section on the discharge end of the header pipe, the depending section passing down into and having its mouth beneath the normal level of water in the boiler, to cause a signal when the water in the boiler drops below the mouth.

855,487. ADJUSTABLE CLAMP FOR CULTIVATOR-SHOVELS. JAMES W. ST. JOHN, Janesville, Iowa. Filed Mar. 5, 1907. Serial No. 360,698.

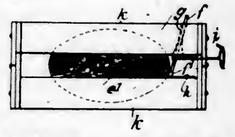
Claim.—1. A device of the character described, composed of the combination with a shovel-blade and a hanger arm, of curved guides removably secured to and spaced away from said blade, and clamping-members removably secured to said hanger-arm and adapted to be removably and adjustably secured about said curved guides.



2. A device of the character described, composed of the combination with a shovel-blade and a hanger arm, of a plate removably secured to said blade, guides formed on arcs of the same circle secured to and spaced away from said plate, and clamping-members adapted to be adjustably secured to said hanger arm and to be adjustably connected to said guides to tilt said blade vertically.

3. A device of the character described, composed of the combination with a shovel-blade and a hanger-arm, of a plate adapted to be secured to said shovel-blade, means for removably securing said plate to said blade, raised guides integral with and spaced away from said plate, clamping-members slidable on said guides and having a seat for said hanger-arm, and means for removably and adjustably securing said clamping-members together and to said hanger-arm.

855,488. FIRE-LIGHTER. HERMANN P. VOGEL, Neukirchen, Crimmitschau, Germany. Filed Dec. 27, 1904. Serial No. 238,554.



Claim.—1. A fire-lighter, comprising four longitudinal bars of wood secured together by end pieces, an internal flammable body of fibrous and resinous substances, and a mechanical igniter as set forth.

2. A fire-lighter, consisting of four longitudinal bars, a cross of metal strips at each end, a central flammable body, a match secured to a wire handle, a slot in one bar for the reception of said match and a striking surface attached to an opposite bar, as set forth.

855,489. MATCH-HOLDER. EDGAR H. WILLIAMS, Indianapolis, Ind. Filed Jan. 5, 1907. Serial No. 350,920.



Claim.—1. A match holder comprising a body having a vertical chamber provided with upper and lower openings, and a bottom plate hingedly mounted in said chamber at a point between its upper and lower openings and dividing it into upper and lower compartments, substantially as shown and for the purpose specified.

2. A match holder comprising a body having a vertical

chamber provided with upper and lower openings, a bottom plate hinged at one of its edges to one wall of said body at a point intermediate the openings in the chamber, and dividing the latter into upper and lower compartments, and a stop projecting from the opposite wall of the body and adapted to support said bottom plate in a horizontal position, said bottom plate being adapted to swing against the wall to which it is hinged when the body is inverted, substantially as shown and for the purpose specified.

3. A match holder comprising a body having the back 1, the sides 2, the three front sections 3, 4, 5, the latter of which being inclined upwardly and forwardly and projecting beyond and having its upper edge arranged in front of the front section 4, the latter being also arranged in front of the front section 3, the bottom plate 10 hingedly mounted within the body adjacent to the back 1 so as to swing inwardly against said back when the body is inverted, and the inwardly projecting stop 10^a arranged upon the front section 4 to limit the downward swinging movement of the bottom plate and hold it normally at right angles to the back 1, substantially as shown and for the purpose set forth.

855,490. EXPLOSIVE-ENGINE GOVERNOR. NATHANIEL YOUNG, Portsmouth, N. H. Filed Feb. 2, 1907. Serial No. 355,420.



Claim.—1. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, an inertia governor reciprocated by the engine, and means operated by the lag of the governor when the speed of the engine exceeds a certain amount for closing said valve.

2. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, a projecting member engaged with said valve, a striker reciprocated by the engine normally in a path out of line with said member, and a weight connected with said striker adapted to be displaced when the speed of the engine increases beyond a certain amount to shift the striker so as to engage said projecting member and close the valve.

3. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, a governor consisting of a weight reciprocated by the engine and a striker controlled by said weight and also reciprocated by the engine; and a projection extending adjacent the normal path of the striker and engaged with the valve, said striker being shifted from its normal path by the lag of the weight so as to strike the projection and cause closing of the valve.

4. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, a pivoted arm engaged with the valve; and a governor comprising a carrier reciprocated by the engine, a weighted arm pivoted to said carrier and yieldingly held in a predetermined relation thereto, and a striker movably attached to the carrier and controlled as to its position by the weighted arm; the latter being caused by its inertia to change its relation with the carrier upon attainment of an excessive speed, thereby moving the striker into position to engage the pivoted arm and cause closing of the valve.

5. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, a carrier reciprocated by the engine, a weighted bell-crank pivoted to said carrier, a spring yieldingly holding the bell-crank in a predetermined position and permitting the same to shift upon attainment of excessive speed, a striker arm pivoted to the carrier and connected with the bell-crank so as to be displaced by shifting of the latter, and a lever engaged with the valve arranged adjacent and out of the normal path of the striker but in position to be struck by the latter, when displaced, to close the valve.

6. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, a flexible arm engaged with the valve, and an inertia-controlled striker reciprocated by the engine so as normally to clear the arm, but adapted to be displaced when the engine speed increases so as to strike the arm and thereby cause the valve to be closed.

7. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, an inertia governor reciprocated by the engine, means operated by the lag of the governor when the speed of the engine exceeds a certain amount for closing said valve, and means for automatically retaining the valve in closed position until released by a subsequent reciprocation of said governor.

8. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, an engine-reciprocated inertia-governed striker arranged to close the valve when the engine speed increases beyond a certain amount, and a latch automatically operative to keep the valve closed, arranged to be released by said striker upon a decrease of speed.

9. In combination with an internal combustion engine, an inlet for admitting fuel into the mixing chamber, a valve for the inlet, means normally holding said inlet valve open, an arm engaged with the valve, a striker reciprocated by the engine toward and from the arm in a path which normally clears the latter, inertia governing means operating when the engine speed becomes excessive to shift said striker so as to engage the arm and close the valve, and a latch adapted to hold the arm in valve-closing position during recession of the striker, said latch having an inclined surface to be engaged by the striker when moving in its normal path and thereby disconnected from the arm.

10. In combination with an internal combustion engine, a fuel inlet, a valve controlling the same, an inertia governor arranged to lag behind its carrier upon increase of the engine speed beyond a predetermined rate, connections operated by the governor when such lag occurs for closing the valve, to shut off the fuel supply, and an electric spark-producing circuit having contacts which are separated to break the circuit whenever the valve is closed.

855,491. PROCESS OF DETINNING. CHARLES E. ACKER, Niagara Falls, N. Y. Filed Feb. 5, 1907. Serial No. 355,840.

Claim.—1. The process of detinning, which consists in subjecting compressed tin scrap to the action of a detinning reagent, and forcing the reagent into the interstices of the scrap by varying the pressure during the detinning.

2. The process of detinning, which consists in subjecting compressed tin-scrap to the action of a detinning reagent, and forcing the reagent into the interstices of the scrap by pressure increased during the detinning.

3. The process of detinning, which consists in subjecting compressed tin-scrap to the action of a detinning reagent, and forcing the reagent into the interstices of the scrap by superatmospheric pressure.

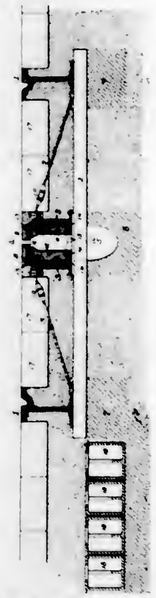
4. The process of detinning, which consists in subjecting compressed tin-scrap in a closed vessel to the action of a detinning reagent, and increasing the pressure in the vessel during the detinning.

5. The process of detinning, which consists in subjecting compressed tin-scrap in a closed vessel to the action of a detinning reagent, increasing the pressure in the vessel during the detinning, and then decreasing the pressure.

6. The process of detinning, which consists in subjecting compressed tin-scrap in a closed vessel to the action of a detinning reagent, and successively decreasing and increasing the pressure in the vessel during the detinning.

7. The process of detinning, which consists in subjecting compressed tin-scrap in a closed vessel to the action of a detinning reagent, successively decreasing and increasing the pressure in the vessel during the detinning, and again decreasing the pressure.

855,492. CONDUIT FOR ELECTRIC RAILWAYS. JOHN S. ALEXANDER, New York, N. Y. Filed Mar. 14, 1904. Serial No. 197,957.



Claim.—1. The combination of an electric conductor, with a conductor conduit or carrier composed of upper and lower members having means placed below the top surface thereof whereby they are secured together, and continuous insulating blocks interposed between the conductor and the upper and lower portions of the carrier and serving to support the conductor within said carrier, substantially as specified.

2. The combination of an electric conductor, a carrier or conduit therefor comprising top members forming a slot, side members secured to said top members, and bars secured to said side members, and forming a grid or lattice-work bottom for the conduit and insulating material interposed between the conductor and the members of the conduit and serving to retain the conductor therein, substantially as specified.

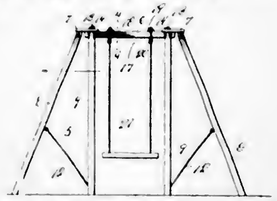
3. The combination of a conductor conduit or carrier, composed of upper and lower members, detachably connected together, a conductor contained within said conduit, and an interposed insulntor also comprising upper and lower members, the lower member being so formed as to provide drainage openings therethrough, substantially as specified.

4. The combination of a conductor conduit or carrier, composed of upper and lower members, means projecting below the surface of the conduit whereby said members are detachably secured together, a conductor having undercut upper and lower portions, and insulating material interposed between the conductor and the conduit or carrier and also comprising upper and lower members adapted to said undercut portions of the conductor whereby the latter is retained in position, substantially as specified.

5. The combination of a railway track, current conductors, a conduit or carrier therefor including two pairs of oppositely disposed upper and lower members having means whereby they are respectively secured together, insulating material interposed between each conductor and the conduit, with retaining means for the conduit members consisting of bars extending respectively from each pair of members to the tracks and held to said members by the retaining means thereof.

6. The combination of a pair of oppositely disposed current conductors, a conduit therefor consisting of two pairs of upper and lower conduit members, insulating material between said members and the conductors, an open-work structure interposed between the lower portions of the device for spacing the members, there being a drainage chamber under said conduit communicating with the interior thereof through said open-work structure, substantially as specified.

855,493. SWING. EVA B. APP, Moorestown, N. J. Filed July 7, 1906. Serial No. 325,181.



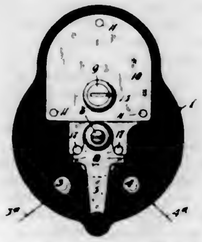
Claim.—1. A swing support comprising end members having top plates and supporting legs, depending yokes engaged in the top plates, a top beam removably engaged in the yokes and including two sections disposed against each other and hinged together at one end for movement into alinement with each other, yokes removably engaged with the top beam between the supporting members and adapted for the connection of ropes therewith, and hooks carried by the first named yokes.

2. A swing comprising end members each including a top plate and three legs hinged at their upper ends thereto, a brace hinged at its ends to the lower ends of two of the legs and including two members hinged together at their inner ends for upward movement to lie between the legs when the legs are moved toward each other, rods detachably connected with the braces at opposite sides of their hinges and pivoted to the other legs of the respective end members, yokes having their legs adjustably engaged in the top plates with their bights below the top plates, nuts engaged with the legs above the top plates, hooks carried by the bights of the yokes, a top beam including hinged members disposed against each other and removably engaged in the yokes, said members being movable in alinement with each other and adapted for engagement of the outer ends of the members when alined in the yokes, yokes with their legs engaged at the opposite sides of the members of the top beam and with their bights below the top beams, straps disposed upon the top beam and in which the second yokes are removably engaged, nuts engaged with the legs of said yokes above the straps, and a swing rope connected with the bights of the second yokes.

855,494. ELECTRICAL SWITCH. JAMES P. APPLEBY, Hopkins, Minn. Filed Apr. 3, 1905. Serial No. 253,432.

Claim.—1. In a device of the character described, the combination with leads having terminal contacts, of a switch lever and a sliding contact plate and having engaging parts coöperatively arranged to close and break the circuit between said contacts, and a key-operated lock having a tumbler arranged to move said sliding plate into an inoperative or circuit breaking position, and to lock the same in such position, and which contact plate, in turn,

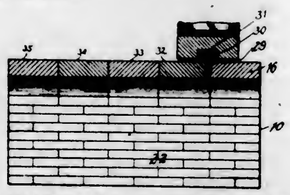
operates on said switch lever, to force the same into an inoperative position, and to lock the same, substantially as described.



2. In a device of the character described, the combination with leads having terminal contacts, of a pivoted switch lever and sliding contact plate coöperatively arranged to close and break the circuit between said contacts, said lever having laterally projecting lugs, and said plate having coöperating lug-engaging projections operating, when said plate is moved into a circuit-breaking position, to force said lever into an inoperative position, and a key-operated lock having a tumbler formed with a projecting cam lug operating on said contact plate, to force the same into a circuit-breaking position, and to lock the same, and said lever, substantially as described.

3. In a device of the character described, the combination with an insulating block and three lead wires having terminal contacts 2, 3, and 4, of a switch lever 5 pivoted to said block and movable into engagement with said contacts 3 and 4, and having laterally projecting lugs 8, the sliding contact plate 16 mounted in said block, movable into and out of engagement with said contact 2, and provided with projections 17 acting on said lugs 8, to force said lever 5 into an intermediate inoperative position, and a key-operated lock having a tumbler 9 formed with a cam lug 14 working in a seat 15 of said contact plate 16, and operating thereon to force said contact plate into a circuit-breaking position, and to lock the same, and said lever, substantially as described.

855,495. ARCH FOR FURNACES AND FIRE-BOXES. MAJOR E. BALDWIN, Chicago, Ill. Filed Nov. 25, 1905. Serial No. 289,112.

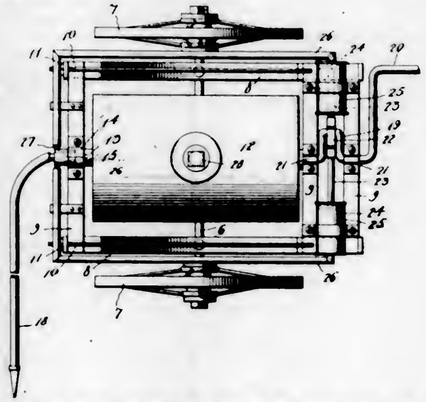


Claim.—In a furnace, the combination of a fire-box arch, a supplemental arch above the fire-box arch, one of said arches being provided with a groove, and a rigid packing member engaging the other of said arches and fitting loosely in said groove, permitting relative movement between said arches and sealing the space between said arches.

855,496. LIQUID-DISTRIBUTING APPARATUS. HERMAN BARBER, Elwood, Ind. Filed Oct. 26, 1906. Serial No. 340,655.

Claim.—1. In a liquid distributing apparatus, in combination, a wheeled frame, a rotatable mixing tank and an air pump mounted on said frame, the pump and tank being connected at the axis of the tank and the tank also having a discharge outlet at said axis, and means independent of the travel of the wheeled frame to rotate the tank and operate the pump.

2. In a liquid distributing apparatus, in combination, a frame, a mixing tank having trunnions mounted in bearings on said frame, one of said trunnions being hollow and the other being extended and provided with a crank, and also with a crank handle, an outlet pipe extending through the hollow trunnion into the tank, and an air pump operatively connected to the crank and having its delivery pipe extending into the hollow trunnion, to force air into the tank.



3. In a liquid distributing apparatus, in combination, a frame, a rotatable tank having trunnions mounted in bearings on the frame, one of the trunnions being hollow and the other having a crank thereon, a coupling connected to the hollow trunnion, a discharge pipe extending through the coupling and trunnion into the tank, oppositely arranged air pumps on the frame, having discharge pipes opening through the coupling into the tank, and having pistons connected to and operated by the crank, and means to rotate the tank.

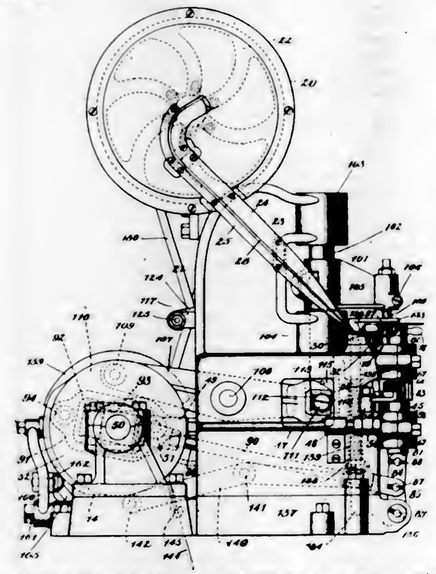
855,497. AUTOMATIC LACING-HOOK-SETTING MACHINE. WILLIAM P. BARTEL, Waltham, and SYDNEY E. TAFT, South Framingham, Mass., assignors to American Lacing Hook Co., a Corporation of New Jersey. Filed Dec. 18, 1905. Serial No. 292,273.

Claim.—1. In a machine for setting lacing hooks in the uppers of boots and shoes, a carrier adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, and mechanism for imparting a rocking movement thereto, a raceway, means adapted to feed hooks along said raceway and from said raceway onto said carrier, mechanism to impart an intermittent rotary motion to said hook-feeding means, and mechanism to coöperate with said carrier in setting said hooks in said uppers.

2. In a lacing hook setting machine, a carrier adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, mechanism for imparting a rocking movement thereto, a raceway, and mechanism for feeding hooks along said raceway and from said raceway onto said carrier; in combination with an anvil, mechanism for imparting a vertical reciprocatory motion to said anvil, and mechanism for moving said anvil laterally into and out of alinement with said lacing hook.

3. In a lacing hook setting machine, a carrier adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, mechanism for imparting a rocking movement thereto, a raceway and mechanism for feeding a lacing hook along said raceway and from said raceway onto said carrier; in combination with an anvil, mechanism for imparting a vertical reciprocatory motion to said anvil, and mechanism for oscillating said anvil laterally into and out of alinement with said lacing hook.

4. In a machine for setting lacing hooks in the uppers of boots and shoes, a carrier adapted to receive a lacing hook, mechanism to impart a vertical reciprocatory motion thereto, mechanism for imparting a rocking movement thereto, a raceway, and an intermittently rotated hook feeding mechanism adapted to feed hooks along said raceway and from said raceway onto said carrier; in combination with an anvil, a feed point fast to said anvil, mechanism to impart a reciprocatory movement to said anvil and feed point, and mechanism to impart an oscillating movement to said anvil and feed point, whereby said uppers may be fed into position to have said lacing hooks set therein.



5. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier mounted upon said sleeve and rotatable relatively thereto, said carrier provided with a recess adapted to receive the head of a lacing hook.

6. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier.

7. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, a carrier rotatably mounted upon said sleeve and a torsional spring, one end fast to said carrier, the other to said sleeve.

8. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, a carrier rotatably mounted upon said sleeve, a torsional spring, one end fast to said carrier, the other to said sleeve, and means to adjust the tension of said spring.

9. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, a carrier rotatably mounted upon said sleeve, a torsional spring, one end fast to said carrier, the other to said sleeve, and a handle fast to said carrier.

10. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier, and a raceway, the lower end of said raceway projecting into said outlet passage adjacent to said recess.

11. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier, and mechanism to impart a rotary motion to said sleeve.

12. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier, mechanism to impart a rotary motion to said sleeve, and mechanism to impart a reciprocatory motion to said plunger.

13. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier, a pinion fast to said sleeve, a segment gear lever meshing into said pinion, and mechanism to impart a rocking movement to said lever.

14. In a lacing hook setting machine, a carrier provided with a recess, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway, and a rotary feed dog adapted to engage the lowermost hook on said raceway and move the same along said extended part of said raceway and into said recess.

15. In a lacing hook setting machine, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway, a rotary shaft, a feed dog pivotally mounted on said shaft, and a guide plate adapted to guide said feed dog between the lowermost hook on said raceway and a hook adjacent thereto, whereby said lowermost hook may be moved by said dog along the extended portion of said raceway.

16. In a lacing hook setting machine, a carrier provided with a recess, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway, a spring stop adapted to engage the lowermost hook on said raceway, and a rotary feed dog adapted to engage said lowermost hook and move the same along said extended part of said raceway and into said recess.

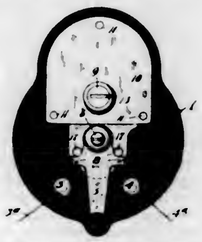
17. In a lacing hook setting machine, a carrier provided with a recess adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, and mechanism for imparting a rocking movement thereto, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway and a rotary feed dog adapted to engage the lowermost hook on said raceway and move the same along said extended part of said raceway and into said recess.

18. In a lacing hook setting machine, a carrier provided with a recess adapted to receive a lacing hook, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway, a rotary shaft, a feed dog pivotally mounted on said shaft adapted to engage the lowermost hook on said raceway and move the same along the extended part of said raceway into the recess provided in said carrier, a segmental gear lever, and a gear rotatably connecting said shaft and said carrier to said lever.

19. In a lacing hook setting machine, a pivotally supported anvil carrier frame, mechanism to impart a vertical sliding reciprocatory movement to said carrier frame, mechanism for imparting a horizontal rocking movement to said carrier frame, and an anvil fast to said carrier frame, said anvil having a projection thereon, constituting a feed point.

20. In a lacing hook setting machine, a vertical shaft,

operates on said switch lever, to force the same into an inoperative position, and to lock the same, substantially as described.



2. In a device of the character described, the combination with leads having terminal contacts, of a pivoted switch lever and sliding contact plate coöperatively arranged to close and break the circuit between said contacts, said lever having laterally projecting lugs, and said plate having coöperating lug-engaging projections operating, when said plate is moved into a circuit-breaking position, to force said lever into an inoperative position, and a key-operated lock having a tumbler formed with a projecting cam lug operating on said contact plate, to force the same into a circuit-breaking position, and to lock the same, and said lever, substantially as described.

3. In a device of the character described, the combination with an insulating block and three lead wires having terminal contacts 2, 3, and 4, of a switch lever 5 pivoted to said block and movable into engagement with said contacts 3 and 4, and having laterally projecting lugs 8, the sliding contact plate 16 mounted in said block, movable into and out of engagement with said contact 2, and provided with projections 17 acting on said lugs 8, to force said lever 5 into an intermediate inoperative position, and a key-operated lock having a tumbler 9 formed with a cam lug 14 working in a sent 15 of said contact plate 16, and operating thereon to force said contact plate into a circuit-breaking position, and to lock the same, and said lever, substantially as described.

855,495. ARCH FOR FURNACES AND FIRE-BOXES. MAJOR E. BALDWIN, Chicago, Ill. Filed Nov. 25, 1905. Serial No. 289,112.

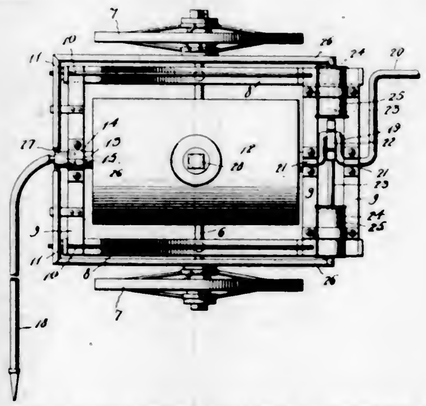


Claim.—In a furnace, the combination of a fire-box arch, a supplemental arch above the fire-box arch, one of said arches being provided with a groove, and a rigid packing member engaging the other of said arches and fitting loosely in said groove, permitting relative movement between said arches and sealing the space between said arches.

855,496. LIQUID-DISTRIBUTING APPARATUS. HERMAN BARBER, Elwood, Ind. Filed Oct. 26, 1906. Serial No. 340,655.

Claim.—1. In a liquid distributing apparatus, in combination, a wheeled frame, a rotatable mixing tank and an air pump mounted on said frame, the pump and tank being connected at the axis of the tank and the tank also having a discharge outlet at said axis, and means independent of the travel of the wheeled frame to rotate the tank and operate the pump.

2. In a liquid distributing apparatus, in combination, a frame, a mixing tank having trunnions mounted in bearings on said frame, one of said trunnions being hollow and the other being extended and provided with a crank, and also with a crank handle, an outlet pipe extending through the hollow trunnion into the tank, and an air pump operatively connected to the crank and having its delivery pipe extending into the hollow trunnion, to force air into the tank.



3. In a liquid distributing apparatus, in combination, a frame, a rotatable tank having trunnions mounted in bearings on the frame, one of the trunnions being hollow and the other having a crank thereon, a coupling connected to the hollow trunnion, a discharge pipe extending through the coupling and trunnion into the tank, oppositely arranged air pumps on the frame, having discharge pipes opening through the coupling into the tank, and having pistons connected to and operated by the crank, and means to rotate the tank.

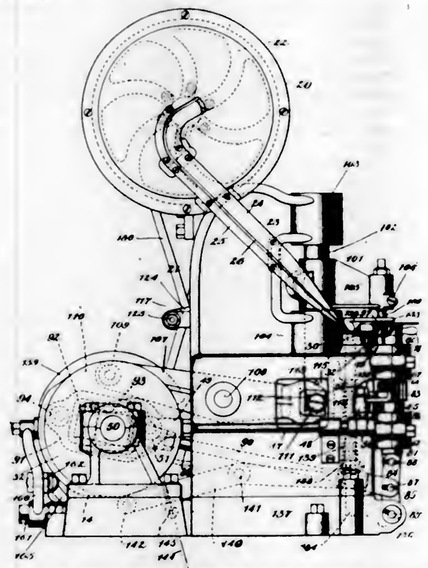
855,497. AUTOMATIC LACING-HOOK-SETTING MACHINE. WILLIAM P. BARTEL, Waltham, and SYDNEY E. TAFT, South Framingham, Mass., assignors to American Lacing Hook Co., a Corporation of New Jersey. Filed Dec. 18, 1905. Serial No. 292,273.

Claim.—1. In a machine for setting lacing hooks in the uppers of boots and shoes, a carrier adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, and mechanism for imparting a rocking movement thereto, a raceway, means adapted to feed hooks along said raceway and from said raceway onto said carrier, mechanism to impart an intermittent rotary motion to said hook-feeding means, and mechanism to coöperate with said carrier in setting said hooks in said uppers.

2. In a lacing hook setting machine, a carrier adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, mechanism for imparting a rocking movement thereto, a raceway, and mechanism for feeding hooks along said raceway and from said raceway onto said carrier; in combination with an anvil, mechanism for imparting a vertical reciprocatory motion to said anvil, and mechanism for moving said anvil laterally into and out of alinement with said lacing hook.

3. In a lacing hook setting machine, a carrier adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, mechanism for imparting a rocking movement thereto, a raceway and mechanism for feeding a lacing hook along said raceway and from said raceway onto said carrier; in combination with an anvil, mechanism for imparting a vertical reciprocatory motion to said anvil, and mechanism for oscillating said anvil laterally into and out of alinement with said lacing hook.

4. In a machine for setting lacing hooks in the uppers of boots and shoes, a carrier adapted to receive a lacing hook, mechanism to impart a vertical reciprocatory motion thereto, mechanism for imparting a rocking movement thereto, a raceway, and an intermittently rotated hook feeding mechanism adapted to feed hooks along said raceway and from said raceway onto said carrier; in combination with an anvil, a feed point fast to said anvil, mechanism to impart a reciprocatory movement to said anvil and feed point, and mechanism to impart an oscillating movement to said anvil and feed point, whereby said uppers may be fed into position to have said lacing hooks set therein.



5. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier mounted upon said sleeve and rotatable relatively thereto, said carrier provided with a recess adapted to receive the head of a lacing hook.

6. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier.

7. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, a carrier rotatably mounted upon said sleeve and a torsional spring, one end fast to said carrier, the other to said sleeve.

8. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, a carrier rotatably mounted upon said sleeve, a torsional spring, one end fast to said carrier, the other to said sleeve, and means to adjust the tension of said spring.

9. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, a carrier rotatably mounted upon said sleeve, a torsional spring, one end fast to said carrier, the other to said sleeve, and a handle fast to said carrier.

10. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier, and a raceway, the lower end of said raceway projecting into said outlet passage adjacent to said recess.

11. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier, and mechanism to impart a rotary motion to said sleeve.

12. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier, mechanism to impart a rotary motion to said sleeve, and mechanism to impart a reciprocatory motion to said plunger.

13. In a lacing hook setting machine, a plunger comprising in its construction a spindle, a sleeve rotatable upon said spindle, and a carrier rotatably mounted upon said sleeve, said carrier provided with a recess adapted to receive the head of a lacing hook, and with an outlet passage adjacent to said recess and leading therefrom out of the upper end of said carrier, a pinion fast to said sleeve, a segment gear lever meshing into said pinion, and mechanism to impart a rocking movement to said lever.

14. In a lacing hook setting machine, a carrier provided with a recess, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway, and a rotary feed dog adapted to engage the lowermost hook on said raceway and move the same along said extended part of said raceway and into said recess.

15. In a lacing hook setting machine, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway, a rotary shaft, a feed dog pivotally mounted on said shaft, and a guide plate adapted to guide said feed dog between the lowermost hook on said raceway and a hook adjacent thereto, whereby said lowermost hook may be moved by said dog along the extended portion of said raceway.

16. In a lacing hook setting machine, a carrier provided with a recess, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway, a spring stop adapted to engage the lowermost hook on said raceway, and a rotary feed dog adapted to engage said lowermost hook and move the same along said extended part of said raceway and into said recess.

17. In a lacing hook setting machine, a carrier provided with a recess adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, and mechanism for imparting a rocking movement thereto, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway and a rotary feed dog adapted to engage the lowermost hook on said raceway and move the same along said extended part of said raceway and into said recess.

18. In a lacing hook setting machine, a carrier provided with a recess adapted to receive a lacing hook, a stationary raceway in two parts, with a passageway between their adjacent edges, one of said parts extending beyond the other at the lower end of said raceway, a rotary shaft, a feed dog pivotally mounted on said shaft adapted to engage the lowermost hook on said raceway and move the same along the extended part of said raceway into the recess provided in said carrier, a segmental gear lever, and a gear rotatably connecting said shaft and said carrier to said lever.

19. In a lacing hook setting machine, a pivotally supported anvil carrier frame, mechanism to impart a vertical sliding reciprocatory movement to said carrier frame, mechanism for imparting a horizontal rocking movement to said carrier frame, and an anvil fast to said carrier frame, said anvil having a projection thereon, constituting a feed point.

20. In a lacing hook setting machine, a vertical shaft,

an arm rigidly attached to said shaft, an anvil fast to said arm, said anvil having a projection thereon constituting a feed point, mechanism to impart a reciprocatory motion to said shaft, and mechanism to impart a rocking movement to said shaft.

21. In a lacing hook setting machine, a vertical shaft, an arm rigidly attached to said shaft, an anvil fast to said arm, said anvil having a projection thereon constituting a feed point, a lever pivotally supported upon the frame of said machine and operatively connected to said shaft, means to impart a rocking movement to said lever, whereby a reciprocatory movement is imparted to said shaft, and mechanism to impart a rocking movement to said shaft.

22. In a lacing hook setting machine, a vertical shaft, an arm rigidly attached to said shaft, an anvil fast to said arm, said anvil having a projection thereon constituting a feed point, mechanism to impart a reciprocatory motion to said shaft, a slide operatively connected to impart a rocking movement to said arm, a lever pivotally supported upon the frame of said machine and operatively connected to said slide, and mechanism to impart a rocking movement to said lever.

23. In a lacing hook setting machine, a vertical shaft, an arm rigidly attached to said shaft, an anvil fast to said arm, said anvil having a projection thereon constituting a feed point, mechanism to impart a reciprocatory motion to said shaft, a slide operatively connected to impart a rocking movement to said arm, a lever pivotally supported upon the frame of said machine, mechanism to impart a rocking movement to said lever, and means connecting said lever to said slide, said connecting means adjustably attached to said lever relatively to the pivot of said lever, whereby the extent of movement of said slide may be varied.

24. In a lacing hook setting machine, a vertical shaft, an arm rigidly attached to said shaft, an anvil fast to said arm, said anvil having a projection thereon constituting a feed point, mechanism to impart a reciprocatory motion to said shaft, a slide operatively connected to impart a rocking movement to said arm, a lever pivotally supported upon the frame of said machine, mechanism to impart a rocking movement to said lever, and a link connecting said lever to said slide, said link adjustably attached to said lever relatively to the pivot of said lever, whereby the extent of movement of said slide may be varied.

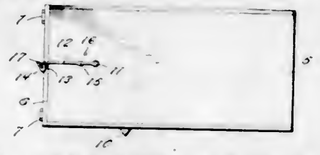
25. In a lacing hook setting machine, a vertical shaft, an arm rigidly attached to said shaft, an anvil fast to said arm, said anvil having a projection thereon constituting a feed point, mechanism to impart a reciprocatory motion to said shaft, a slide operatively connected to impart a rocking movement to said arm, a lever pivotally supported upon the frame of said machine, and mechanism to impart a rocking movement to said lever, a link pivoted at one end thereof to said slide, and a stud to which the other end of said link is pivoted, said stud projecting through a curved slot provided in said lever and adapted to be fastened to said lever.

26. In a machine for setting lacing hooks in the uppers of boots and shoes, a carrier adapted to receive a lacing hook, mechanism for imparting a vertical sliding reciprocatory motion thereto, mechanism for imparting a rocking movement thereto, a raceway, mechanism for feeding a hook along said raceway and from said raceway onto said carrier; in combination with a work-support, a pivotally supported anvil carrier frame, an anvil fast to said carrier frame, said anvil having a projection thereon constituting a feed point, mechanism to impart a vertical sliding reciprocatory movement to said carrier frame toward and away from said work-support and at right angles thereto, and mechanism to impart a horizontal rocking movement to said carrier frame, whereby said feed point is adapted to perforate the upper of a boot or shoe at right angles thereto and feed the same laterally along said work-support until said perforation and anvil aline with said lacing hook.

27. In a machine for setting lacing hooks in the uppers of boots and shoes, a carrier adapted to receive a lacing hook, mechanism for imparting a vertical sliding reciprocatory motion thereto, mechanism for imparting a rocking movement thereto, a raceway, and mechanism for feeding a hook along said raceway and from said raceway onto said carrier; in combination with a work-support, a pivotally supported anvil carrier frame, an anvil fast to said carrier frame, said anvil having a projection thereon constituting a feed point, mechanism to impart a vertical sliding reciprocatory movement to said carrier frame toward and away from said work-support and at right angles thereto, mechanism to impart a horizontal rocking movement to said carrier frame, a presser foot, and mechanism to move said presser foot toward and away from said work-support, whereby said feed point is adapted to perforate the upper of a boot or shoe at right angles thereto and feed the same laterally along said work-support until said perforation and anvil aline with said lacing hook and said upper is held clamped against said work-support during the forward lateral rocking movement of said carrier frame and anvil.

28. In a lacing hook setting machine, an anvil, a carrier adapted to receive a lacing hook, mechanism to impart a reciprocatory motion thereto, whereby said lacing hook is forced against said anvil, mechanism for imparting a rocking movement thereto, a positioning device supported upon a stationary portion of said machine and adapted to be pressed against the neck of a lacking hook located upon said carrier and to hold said lacing hook in position thereon by sliding contact therewith, while said carrier is being reciprocated, said positioning device formed to project across one side of the neck of said lacing hook, whereby when said carrier is rotated, said hook will be removed therefrom.

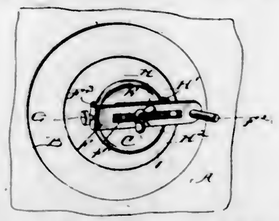
855,498. FASTENER FOR DOORS. ADOLPH L. BERGSTEN, Mount Union, Iowa. Filed Feb. 21, 1906. Serial No. 302,246.



Claim.—1. In a device of the class described, the combination with a box and a door for the box, of a latch pivoted to the said box, a pin carried by the said door and arranged for engagement in the said latch, and a lug carried by the said latch and arranged for engagement in recesses in said box whereby the said latch may be held in and out of position for engagement with said pin.

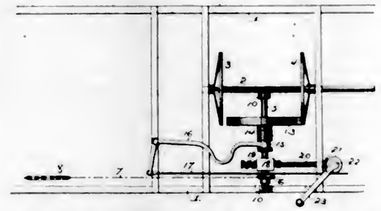
2. In a device of the class described, the combination with a box and a door for the box, of a latch for the door, said latch being formed of a single piece of wire pivoted to the box and having its outer end portion turned downwardly at right angles and thence upwardly at an acute angle, and being provided with a lug intermediate its ends for engagement in recesses in said box.

855,499. ATTACHMENT FOR SAFES. CHARLES W. BURKHEAD, Cincinnati, Ohio. Filed Apr. 30, 1906. Serial No. 314,550.



Claim.—A detachable handle comprising a longitudinal slotted plate having a handle at one end and a hook at the other provided with a threaded opening, a thumb-screw working through said opening, a plate having a hook at one end and a threaded pin extending out at right angles at the other, adapted to work in said plate and a thumb nut working on said pin, for the purpose described.

855,500. FRICTION-GEARING. ALVIN O. CARMAN, Homer, Mich. Filed July 2, 1906. Serial No. 324,386.



Claim.—1. In a power transmitter, the combination with two facing friction disks, of a swinging bracket, a shaft in said bracket, a friction wheel keyed to slide on the shaft between the disks, means for moving the wheel longitudinally of the shaft, a block loose on the shaft, and having a threaded opening, and a screw in said opening adapted to swing the bracket to move the wheel into engagement with either disk or to an intermediate position between them.

2. In a power transmitter, the combination with two facing friction driving disks, of a swinging bracket, a shaft in said bracket, a driven friction wheel keyed to slide on the shaft between the disks, a bell-crank lever engaging the wheel to move it longitudinally of the shaft, a block on the shaft having a threaded opening, a screw in said opening, a shaft carrying said screw, and a crank arm for turning said last-mentioned shaft to move the wheel into engagement with either disk or to an idle position between them.

855,501. CLUTCH DEVICE FOR AUTOMOBILES. CHARLES E. CARPENTER, Cleveland, Ohio. Filed Jan. 5, 1906. Serial No. 294,712.

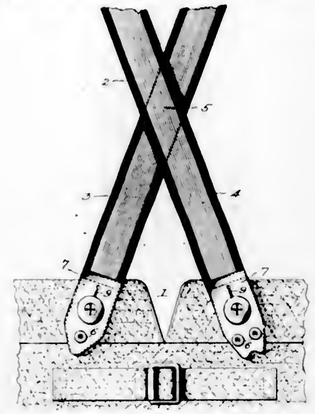


Claim.—1. In a clutch organized to engage a shaft and wheel only when the parts are rotating with equal speed, the combination with the shaft and a cam thereon, of a rotatable part loosely mounted upon the shaft, a rim thereon having an annular toothed inner edge and a radially moving part in which said cam is designed to operate, said radially moving part having toothed edges, organized to alternately engage with the annular toothed edge of said rim, said toothed edges being each an arc of less than one half of the circle of the annular rim, substantially as described.

2. In a clutch for a vehicle having a frame & shaft & wheel and organized to engage the shaft and wheel only when the parts are rotating with equal speed, the combination with the shaft and a rotatable part loosely mounted upon the shaft and a rim thereon having an annularly toothed inner edge, of an eccentrically acting member rotatable with said shaft, said member having toothed edges, adapted to engage alternately with said toothed rim, and instrumentalities for preventing irregular movement of the interlocking parts, comprising a plate or flange upon the eccentrically moving part, a gear thereon, a pinion and pinion shaft, upon the frame, and a friction device for said pinion shaft, substantially as described.

3. In a clutch organized to engage a shaft and wheel only when the parts are rotating with equal speed, the combination with the shaft and a cam thereon comprising parallel linear sides faced in said shaft, of a rotatable part loosely mounted on said shaft, a rim thereon having an annular toothed inner edge, and a radially moving part in which said cam is designed to operate, said radially moving part having toothed edges, organized to alternately engage with the annular toothed edge of said rim, and the said radially moving part provided with a wedge shaped opening in which said faced portion of the shaft is inserted, substantially as described.

855,502. RIGHT AND LEFT HAND DISTINGUISHING SUSPENDERS. CLARENCE K. COLVIN, Denver, Colo. Filed Jan. 16, 1907. Serial No. 352,577.

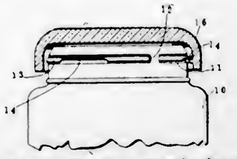


Claim.—1. A new article of manufacture, comprising suspenders provided with right and left hand indicating marks on their right and left hand ends.

2. Right and left hand indicating suspenders, comprising suspenders provided with one indicating element, such as a button, on the left hand ends of said suspenders, and two indicating elements on the right hand ends of said suspenders.

3. Right and left hand indicating suspenders, comprising suspenders, provided with a member adapted to be felt by the touch of the fingers of a wearer, positioned close to the button holes in the ends of said suspender, the indicating element being arranged on the right hand side of the ends of the suspenders in a form easily distinguished by the touch from the form on the left hand side end of the suspenders.

855,503. JAR OR BOTTLE CLOSURE. ALVIN M. CRAIG, New Haven, Conn., assignor to Royal Glass Jar and Bottle Company, New York, N. Y., a Corporation of the District of Columbia. Filed May 29, 1906. Serial No. 319,355.

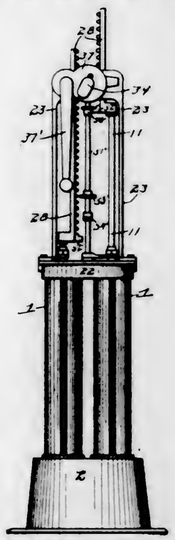


Claim.—1. The combination with the jar or bottle neck having a groove in its outer side, of the spring wire having a plain inner surface to fit continuously against the bottle neck, and projecting lugs on its outer edge.

2. In a structure such as described, the combination with the bottle neck having a groove therein, of a spring

wire having its inner surface plain and continuous, to fit snug against the bottle neck and having at intervals projecting lugs which are thinned.

855,504. SELF-MEASURING OIL-PUMP. JOHN B. DAVIS, Dayton, Ohio. Filed May 3, 1906. Serial No. 314,960.



Claim.—1. In a self-measuring oil pump, the combination of a piston and piston rod, means for imparting reciprocating movement to said piston and piston rod, a discharge register to indicate the oil pumped by the piston in gallons and half gallons, a gallon register to record the total quantity pumped by the piston for any given period, and means interposed between the discharge register and the piston rod extensions whereby said discharge register is actuated at the limit of each elevation of each piston rod.

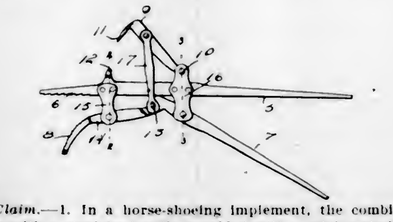
2. In a self-measuring oil pump, a pump cylinder, a piston and piston rod movable in said cylinder, a rack extending from the piston rod, a crank handle, gearing between the crank handle and the rack, a discharge register to indicate the specific quantities of oil delivered from the cylinder, said discharge register being actuated by means on the piston rod and upon the completion of each upward movement of said piston rod, and a total register to record the quantity of oil pumped in any given period, said total register being operated from the crank handle.

3. In a self-measuring oil pump, the combination with duplex cylinders, a piston and piston rod in each cylinder, racks extending from said piston rods, means engaging said racks to operate the pistons in opposite directions, a discharge register to indicate the specific quantities of oil dispensed, means interposed between said discharge register and said racks for actuating said register, said means being out of engagement when the racks are in their lower positions, and a total register to indicate the total quantity of oil dispensed, said total register being operated from the means which actuate the pistons.

4. In a self-measuring oil pump, duplex cylinders, a piston and piston rod for each cylinder, a rack connected to each piston rod, means for driving said racks in reverse directions, a discharge register, to indicate the specific quantities of oil discharged from the cylinders, means comprising a reciprocating slide with ratchet and lever devices for actuating said discharge register from the piston rod extensions, and means on the piston rod extensions for engaging said ratchet and lever devices to actuate the slide.

5. In a self-measuring oil pump, pump cylinders, a piston and a piston rod for each cylinder having rack extensions, means engaging said racks to operate the pistons, a discharge register common to both of said cylinders to register the quantities of oil discharged from each cylinder in each operation, register-actuating devices for operating said register at the limit of the upward movement of each piston, means on each of the rack extensions of the piston rods for engaging said register-actuating devices at the limit of each upward movement of each piston, said means on said racks being otherwise out of engagement with the register-actuating devices.

855,505. HORSESHOE-NAIL CLENCHER. JOHN N. DOSS, Wingate, Ind. Filed June 8, 1906. Serial No. 320,803.



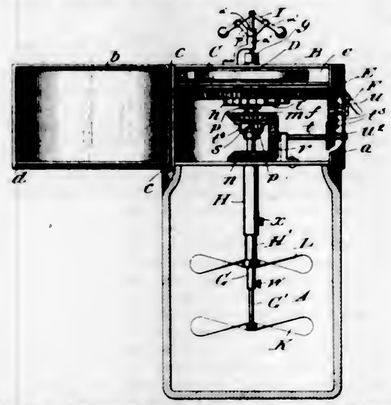
Claim.—1. In a horse-shoeing implement, the combination with a straight handle provided with a cutting stud, of the jointed handle, a support fixed upon the straight handle, a nipper lever pivoted at its rear on the upper end of the fixed support and having its cutter adapted to co-operate with the cutting stud, the jointed handle being pivoted on the lower end of the fixed support, and a support pivoted at its lower end on the jointing pin of the jointed handle and at its upper end to the nipper lever.

2. In a horse-shoeing implement, the combination with the straight handle having a straight jaw, of the jointed handle having a curved jaw, a support fixed to the straight handle and having a part extending above the same and a pendent part extending below the same, the jointed handle to the rear of its joint being pivoted on the pendent part of the support, a pendent piece fixed to the straight handle, the part of the jointed handle forward of its joint being fulcrumed on the lower end of said pendent piece, a cutting stud on the straight handle, a nipper lever pivoted at its rear end on the upper end of the fixed support and having its cutter adapted to co-operate with the cutting stud, and a support pivoted at its lower end on the pivot-pin of the jointed handle and at its upper end pivoted to the nipper lever.

855,506. SPRING-MOTOR APPARATUS. CLAUD B. ELLIOTT, JOHN T. LOGGINS, and WILLIAM B. STRAUGHAN, Hempstead, Tex. Filed Mar. 2, 1907. Serial No. 360,171.

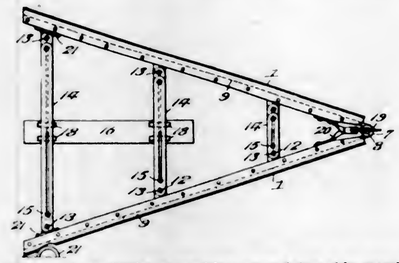
Claim.—1. In an apparatus for the purpose described, the combination of a casing, a spring arranged in the casing and connected therewith, a central vertical, tubular arbor journaled in the casing and extending through and connected with the spring, a shaft journaled in the casing and arranged below and in vertical alinement with the arbor and having an angular socket in its upper end, a miter gear loosely mounted on the arbor and fixedly connected with the said shaft, a tubular shaft loosely surrounding the latter shaft and journaled in the casing and having a miter gear at its upper end, a large miter gear loosely mounted on the arbor, a pawl and ratchet connection intermediate the arbor and said large miter gear, a miter gear arranged between and intermeshed with the miter gears on the shafts and connected through interposed gearing with the large miter gear, a rotary balance device having a rod or shaft extending down through the tubular arbor and terminating in an annular end disposed in the angular socket of the first mentioned shaft.

and means mounted in the casing and arranged to be moved into and out of engagement with one of the gears to control rotation of the first mentioned shaft.



2. In an apparatus for the purpose described, the combination of a casing, a spring arranged in the casing and connected therewith, a central vertical, tubular arbor journaled in the casing and extending through and connected with the spring, a shaft journaled in the casing and arranged below and in vertical alinement with the arbor and having an angular socket in its upper end, a miter gear loosely mounted on the arbor and fixedly connected with the said shaft, a tubular shaft loosely surrounding the latter shaft and journaled in the casing and having a miter gear at its upper end, a large miter gear loosely mounted on the arbor, a pawl and ratchet connection intermediate the arbor and said large miter gear, a miter gear arranged between and intermeshed with the miter gears on the shafts and having a shaft, gears intermeshed with each other and connecting the said shaft and the large miter gear; one of the said gears being provided with a circular series of lateral lugs, a controlling lever fulcrumed in the casing and movable into and out of the path of the said lugs, and a rotary balance device having a rod or shaft extending down through the tubular arbor and terminating in an angular end disposed in the angular socket of the first mentioned shaft.

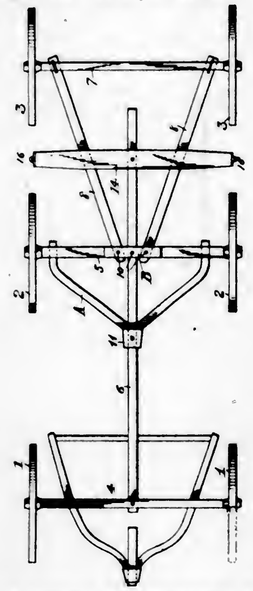
855,507. DITCHING-MACHINE. LAURITZ H. ERICKSON, Gunnison, Utah. Filed Sept. 8, 1906. Serial No. 333,862.



Claim.—1. A ditching machine comprising side members hinged together at their forward end, slotted cross braces connecting the side members, means for holding said cross bars in adjusted position, a centrally disposed vertical guide shoe, clamps on said guide shoe for securing the same centrally upon the cross braces, and outwardly extending deflector plates at the upper edges of the side members, substantially as described.

2. A ditching machine comprising side members hinged together at their forward ends, upright braces inside said side members, adjustable cross braces secured to said upright braces and provided with means for holding the side members in adjusted position, outwardly flaring scraper plates at the lower edges of said members, deflector plates at the upper edges of said members and a centrally disposed vertical guide shoe, substantially as described.

855,508. VEHICLE. SIMEON R. ESTEP, Lake Butler, Fla. Filed Nov. 6, 1906. Serial No. 342,262.



Claim.—1. A vehicle of the character described, comprising a plurality of pairs of wheels and axles, the forward axle having a bolster-member, a reach connected to parts applied to the forward and intermediate axles and extending rearward beyond said intermediate axle and connected to a bolster-member applied to opposite bars having their rear divergent ends connected to the rearmost axle and their forward convergent ends connected to the intermediate axle, said bolster-members having their upper surfaces arranged relatively above the wheels.

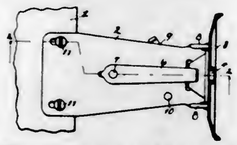
2. A vehicle of the character described, comprising a plurality of pairs of wheels and axles, the forward axle having a bolster-member, a reach connected to parts applied to the forward axle, and passed through a sleeve of hounds-like arms of the intermediate axle, and between and connected to said intermediate axle and a bolster-like member secured to bars having their forward convergent ends connected to parts applied to said intermediate axle, the rear divergent ends of said bars being connected to the rearmost axle, said bolster-members having their upper surfaces arranged relatively above the wheel.

3. A vehicle of the character described, comprising a plurality of pairs of wheels and axles, the forward axle having a bolster-member, a reach connected to parts applied to the forward axle and passed through a sleeve of hounds-like arms of the intermediate axle, and between and connected to said intermediate axle, and a bolster-like member secured to bars having their forward ends connected to parts applied to said intermediate axle, the rear ends of said latter bars being connected to the rearmost axle said reach extending from the forward axle to, and beyond said intermediate axle and still farther rearward to, and beyond the bolster-like member secured in rear of

said intermediate axle thus controlling the two rear pairs of wheels and axles from the front axle.

4. A vehicle of the character described, comprising a plurality of pairs of wheels and axles, the front axle having a bolster member, a reach connected to parts applied to the front axle and passed through a sleeve of hounds-like arms of the intermediate axle and a bolster-like member secured to and between said intermediate axle, bars having their forward ends connected to parts applied to said intermediate axle and having their rear ends connected to the rearmost axle, said bars having central upraised portions, and a bolster-like member carried upon said upraised portions and king-bolt connected to the rear end portion of said reach.

855,509. PAPER CLAMP OR GUIDE FOR FRONT-STRIKE TYPE-WRITING MACHINES. WILLIAM R. FOX, Grand Rapids, Mich. Filed Mar. 16, 1907. Serial No. 362,732.



Claim.—1. The combination with a typewriter frame, of a forwardly extending plate 2 adjustably secured to the said typewriter frame, the same containing a suitable aperture at the front and provided with ears 8—8 at each side; a paper clamp 3 pivoted to the ears 8—8 and suitably slotted opposite the printing point and having a finger 5 extending through the slot in the plate and beneath the same; a spring 6 on the upper side of the plate 2 and contacting with the upper side of the finger 5 to hold the paper clamp yieldingly in position; and an arm 9 pivoted at 10 to the under side of the plate 2 and beveled to strike above the finger 5 and force the clamp or paper guide firmly into position, co-acting for the purpose specified.

2. The combination with a typewriter frame, of a forwardly extending plate 2 adjustably secured to the said typewriter frame, the same containing a suitable aperture at the front and provided with ears 8—8 at each side; a paper clamp 3 pivoted to the ears 8—8, having a finger 5 extending through the slot in the plate and beneath the same; a spring 6 on the upper side of the plate 2 and contacting with the upper side of the finger 5 to hold the paper clamp yieldingly in position; and an arm 9 pivoted at 10 to the under side of the plate 2 and beveled to strike above the finger 5 and force the clamp or paper guide firmly into position, co-acting for the purpose specified.

3. The combination with a typewriter frame, of a forwardly extending plate 2 secured to the said typewriter frame, provided with ears 8—8 at each side; a paper clamp 3 pivoted to the ears 8—8, having a finger 5; a blade spring 6 on the upper side of the plate 2 and contacting with the upper side of the finger 5 to hold the paper clamp yieldingly in position, for the purpose specified.

4. The combination with a typewriter frame, of a forwardly extending plate 2 secured to the said typewriter frame, provided with ears 8—8 at each side; a paper clamp 3 pivoted to the ears 8—8, having a finger 5; a spring 6 on the upper side of the plate 2 and contacting with the upper side of the finger 5 to hold the paper clamp yieldingly in position; and adjustable means for securing the finger 5 in a fixed relation to the plate 2, for the purpose specified.

5. The combination with the typewriter frame of a forwardly extending plate 2 adjustably secured to the said typewriter frame; a paper clamp 3 pivoted to the forward end thereof and suitably slotted opposite the printing point of the platen and having a finger projecting in proximity to the said plate; a spring secured to the said plate and contacting with the said finger to hold the clamp yieldingly in position; and a pivoted arm on the said plate, arranged to swing back of the finger and prevent the action of the spring, thereby affixing the clamp to the plate, co-acting for the purpose specified.

6. The combination with the typewriter frame of a forwardly extending plate 2 secured to the said typewriter frame; a paper clamp 3 pivoted to the forward end thereof and suitably slotted opposite the printing point of the platen, and having a finger projecting in proximity to the said plate; a spring secured to the said plate and contacting with the said finger to hold the clamp yieldingly in position; and a pivoted arm on the said plate, arranged to swing back of the finger and prevent the action of the spring, thereby affixing the clamp to the plate, co-acting for the purpose specified.

7. The combination with the typewriter frame of a forwardly extending plate 2 adjustably secured to the said typewriter frame; a paper clamp 3 pivoted to the forward end thereof and having a finger projecting in proximity to the said plate; a spring secured to the said plate and contacting with the said finger to hold the clamp yieldingly in position; and a pivoted arm on the said plate, arranged to swing back of the finger and prevent the action of the spring, thereby affixing the clamp to the plate, co-acting for the purpose specified.

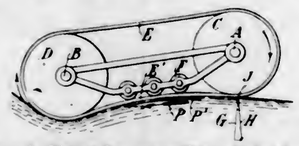
8. The combination with the typewriter frame of a forwardly extending plate 2 secured to the said typewriter frame; a paper clamp 3 pivoted to the forward end thereof and having a finger projecting in proximity to the said plate; a spring secured to the said plate and contacting with the said finger to hold the clamp yieldingly in position; and a pivoted arm on the said plate, arranged to swing back of the finger and prevent the action of the spring, thereby affixing the clamp to the plate, co-acting for the purpose specified.

9. The combination with the typewriter frame of a forwardly extending plate 2 secured to the said typewriter frame; a paper clamp 3 pivoted to the forward end thereof and having a finger projecting in proximity to the said plate; a spring secured to the said plate and contacting with the said finger to hold the clamp yieldingly in position; and adjustable means for securing the finger 5 in a fixed relation to the plate 2, co-acting for the purpose specified.

10. The combination with the typewriter frame of a forwardly extending plate 2 secured to the said typewriter frame; a paper clamp 3 pivoted to the forward end thereof and having a finger projecting in proximity to the said plate; and a blade spring secured to the said plate and contacting with the said finger to hold the clamp yieldingly in position, for the purpose specified.

11. The combination of a typewriter frame; a forwardly extending support secured to the said frame; a paper clamp 3 of elastic material secured to the forward end of said support; a spring arranged to hold said paper clamp against the platen with slight pressure; and means for connecting said clamp rigidly to the support, whereby a stronger pressure will be exerted, co-acting for the purpose specified.

855,510. NAVIGATION. PAUL L. T. HÉROULT, La Praz, France. Filed Sept. 27, 1905. Serial No. 280,311.



Claim.—1. Means for supporting a body above the surface of the water, comprising a belt presenting a large area to the water, and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body.

2. Means for supporting a body above the surface of the water, comprising a belt presenting a large area to the water, and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body, said belt being provided with a number of apertures through which air may enter to permit the water to run off readily at the upgoing end of the belt.

3. Means for supporting a body above the surface of the water, comprising a belt presenting a large area to the water, and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body, said belt being provided with a number of apertures through which air may enter to permit the water to run off readily at the upgoing end of the belt.

4. Means for supporting a body above the surface of the water, comprising a belt presenting a large area to the water, and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body, said belt comprising a series of links pivoted together in staggered positions.

5. Means for supporting a body above the surface of the water, comprising a belt presenting a large area to the water, and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body, said belt comprising a series of links pivoted together in staggered positions and mounted yieldingly upon the pivots.

6. Means for supporting a body above the surface of the water, comprising a belt presenting a large area to the water, and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to supoprt the body, said belt comprising a series of cables M covered with rubber N and forming pivots, and a series of links L arranged in staggered positions upon said pivots.

7. Means for supporting a body above the surface of the water, comprising a belt presenting a large area to the water, and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body, said belt being provided with a number of apertures for permitting the water to run off readily at the upgoing end of the belt, and means for closing said apertures over the lower side of the belt and opening them upon the upgoing end.

8. Means for supporting a body above the surface of the water, comprising a belt presenting a large area to the water, and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body, and additional means for propelling the body.

9. Means for supporting a body above the surface of the water, comprising a belt carried upon pulleys and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body, and means for propelling said body comprising paddles carried by one of said pulleys.

10. Means for supporting a body above the surface of the water, comprising a belt carried upon pulleys and means for moving the belt over the water with velocity and force sufficient to cause the water to react as a solid sufficiently to support the body, and means for propelling said body comprising paddles Q on the end of one of said pulleys, and having shields R for preventing the splashing of the water inward upon the belt.

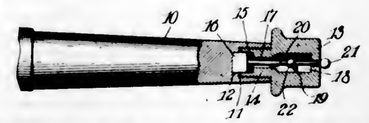
855,511. WEAVING-SHUTTLE. CHARLES C. HOWLAND, Hyde, near Manchester, England. Filed Oct. 22, 1906. Serial No. 340,016.



Claim.—1. A weaving shuttle having a diagonal slot from the cop opening to the outside edge and also having a thread guide eye into which the said slot opens, in combination with a bush, with narrow vertical slit and lateral boring, let into the shuttle along the said slot, and the slit and boring forming part of the slot and guide eye, and the said bush also having a lateral recess on one side opening into the slit and a projection secured to the other side of the bush and extending across the slit and well into the said recess and designed to deflect the weft when laid through the slot out of its course and then allow it to pass into the said horizontal boring and guide eye, the projection being inclined on the edge lying within the recess for about two thirds of its depth and vertical and rounded off for the other portion of its length and lower end and corner, and the projection being solid and non-flexible so that repeated insertions of the weft thread will not bend the projection, and the thread, after being threaded, cannot rise up above the lower part of the projection, substantially as herein set forth.

2. A weaving shuttle having a diagonal slot from the cop opening to the outside edge and also having a thread guide eye into which the said slot opens, in combination with a bush with vertical slit and lateral boring let into the shuttle along the said slot and the slit and boring forming part of the slot and guide eye, and the said bush also having a lateral recess on one side opening into the slit, an inclined projection secured to the other side of the bush and extending across the slit and into the said recess, and such projection having grooves on its under and two sides where it joins the bush, substantially as herein set forth.

855,512. NUT-LOCK. FRANK E. HUTSON and ROBERT H. NEAL, Delancey, N. Y. Filed July 26, 1906. Serial No. 327,927.



Claim.—1. In a nut lock, a nut provided with an axial opening, a block carried by and slidable relative to the nut, a resilient spindle connected with the block and extending through the axial opening and provided with a hand-hold externally of the nut, means carried by the resilient spindle to hold the block at either extreme of its movement, and a spindle arranged for association with the nut and provided with a socket proportioned to receive and engage the block.

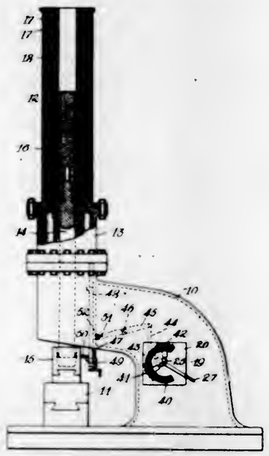
2. In a nut lock, a nut provided with an axial opening, and with the opening enlarged within the body of the nut, a detent extending transversely of the nut and through the enlarged opening, a block mounted within the axial opening of the nut and movable longitudinally thereof, a resilient spindle rigidly secured to the block and extending through the axial opening and without the nut, means carried by the resilient spindle for engaging the detent within the nut and retain the spindle at either extreme of its movement, and a spindle arranged for association with the nut and provided with a socket arranged to receive and engage the sliding block.

855,513. RECIPROCATING ELECTRIC MOTOR. RONALD P. IRVING, Quincy, Mass. Filed Nov. 21, 1906. Serial No. 344,412.

Claim.—1. In combination, a solenoid comprising a plurality of helices, a source of electrical current, and means interposed between said source of electrical current and said helices adapted to limit the magnetic field of said solenoid to a predetermined number of helices, said means also adapted to move said magnetic field longitudinally of said solenoid.

2. In combination, a solenoid comprising a plurality of helices, a controller connected to each of said helices, and a source of electrical current connected to said controller, said controller adapted to direct said current to a predetermined number of said helices.

3. In combination, a plurality of helices, a core adapted to reciprocate therethrough, a plurality of contact plates insulated from one another, each of said helices connected, respectively, to two of said contact plates, and two movable brushes each adapted to contact with a plurality of said contact plates.



4. In combination, a plurality of helices, a core adapted to reciprocate therethrough, a plurality of contact plates insulated from one another, said helices connected to said contact plates in series, a source of electrical current connected to the two of said contact plates which are most remote from each other, and two movable brushes, each adapted to contact with a plurality of said contact plates.

5. In combination, a plurality of helices, a core adapted to reciprocate therethrough, a plurality of contact plates insulated from one another, each of said helices connected, respectively, to two of said contact plates, and two brushes movable in unison across said contact plates.

6. In combination, a solenoid comprising a plurality of helices, a core adapted to reciprocate therethrough, a plurality of contact plates insulated from one another and arranged on an arc of a circle, each of said helices connected, respectively, to two of said contact plates, a rotatable member journaled concentric with said contact plates, and two brushes mounted on said member and insulated therefrom, each of said brushes being adapted to contact with a series of said contact plates.

7. An electrically operated hammer apparatus comprising in its construction a frame, a solenoid comprising a plurality of helices mounted on said frame, a separator formed of non-magnetic material interposed between said solenoid and said frame, a core formed of magnetic material adapted to reciprocate within said solenoid, a plunger formed of non-magnetic material fast to said core, a hammer fast to said plunger, a plurality of contact plates insulated from one another, each of said helices connected, respectively, to two of said contact plates, and two movable brushes each adapted to contact with a plurality of said contact plates.

8. An electrically operated hammer apparatus comprising in its construction a frame, a solenoid comprising a plurality of helices mounted on said frame, a separator formed of non-magnetic material interposed between said solenoid and said frame, a core formed of magnetic material adapted to reciprocate within said solenoid, a plunger formed of non-magnetic material fast to said core, a hammer fast to said plunger, a plurality of contact plates insulated from one another, each of said helices connected, respectively, to two of said contact plates, two movable brushes each adapted to contact with a plurality of said contact plates, and mechanism operatively connected to said brushes adapted to be actuated by said hammer.

9. In combination, a solenoid comprising a plurality of helices, a core adapted to reciprocate therethrough, a source of electrical current means interposed between said source of electrical current and said helices adapted to limit the magnetic field of said solenoid to a predetermined number of said helices and mechanism to actuate said means to move said magnetic field longitudinally of said solenoid.

10. In combination, a solenoid comprising a plurality of helices, a core adapted to reciprocate therethrough, a source of electrical current means interposed between said source of electrical current and said helices adapted to limit the magnetic field of said solenoid to a predetermined number of said helices, said core adapted to actuate said means to move said magnetic field longitudinally of said solenoid, said means also adapted to be operated manually.

11. An electrically operated hammer apparatus comprising in its construction a frame, a solenoid comprising a plurality of helices mounted on said frame, a core formed of magnetic material adapted to reciprocate within said solenoid, a plunger of non-magnetic material fast to said core, a plurality of contact plates insulated one from another, each of said helices connected, respectively, to two of said contact plates, two movable brushes each adapted to contact with a plurality of said contact plates, a reciprocatory slide mounted on said frame, said slide provided with two projections extending therefrom, a projection on said hammer adapted to engage said projections alternately, and mechanism operatively connecting said slide and said brushes.

12. An electrically operated hammer apparatus comprising in its construction a frame, a solenoid comprising a plurality of helices mounted on said frame, a core formed of magnetic material adapted to reciprocate within said solenoid, a plunger of non-magnetic material fast to said core, a plurality of contact plates insulated one from another, each of said helices connected, respectively, to two of said contact plates, two movable brushes each adapted to contact with a plurality of said contact plates, a reciprocatory slide mounted on said frame, said slide provided with two projections extending therefrom, one of said projections being adjustable toward the other, a projection on said hammer adapted to engage said first projections alternately, and mechanism operatively connecting said slide and said brushes.

13. An electrically operated hammer apparatus comprising in its construction a frame, a solenoid comprising a plurality of helices mounted on said frame, a separator formed of non-magnetic material interposed between said solenoid and said frame, a core formed of magnetic material adapted to reciprocate within said solenoid, a plunger formed of non-magnetic material fast to said core, a hammer fast to said plunger, a plurality of contact plates arranged on an arc of a circle, each of said helices connected, respectively, to two of said contact plates, a rotatable member journaled concentric with said contact plates, two brushes mounted on said member and insulated therefrom, each of said brushes being adapted to contact with a series of said contact plates, a handle mounted on said rotatable member, a reciprocatory slide mounted on said frame, said slide provided with two projections extending therefrom, a projection on said hammer adapted to engage said first projections alternately, and mechanism operatively connecting said slide and said rotatable member.

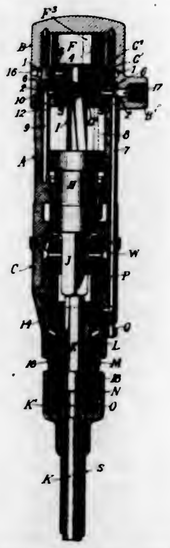
855,514. SHUTTLE FOR LOOMS. ARTHUR J. JACKSON, Ashton-on-Mersey, England. Filed June 27, 1906. Serial No. 323,594.

Claim.—In combination the loom shuttle *d*, a separate shuttle tongue, a head on such shuttle tongue having a ball socket, a chambered block in the shuttle shaped to receive the head on the shuttle tongue, a spring actuated ball in the chambered block to snap into the ball socket of the shuttle tongue head and retain the shuttle tongue in the shuttle substantially as described.

855,514.



855,515. RECIPROCATING TOOL. HENRY J. KIMMAN, Cleveland, Ohio, assignor to Chicago Pneumatic Tool Company, Chicago, Ill., a Corporation of New Jersey. Filed July 27, 1904. Serial No. 218,333.



Claim.—1. A pneumatic tool comprising a casing having a rotary tool, a reciprocating piston coöperating with said tool, means for rotating the tool by the reciprocation of the piston, and an annular valve controlling the piston and encircling the tool-rotating connection.

2. A percussion apparatus comprising a casing having at one end a rotary tool-holder, tool-rotating means at the other end, a reciprocating piston for operating the tool, and an annular valve controlling said piston and traversed by the tool-rotating connection.

3. A reciprocating tool comprising a casing having a rotary tool-holder at one end, a ratchet at the other end, an annular valve, and a connection between the ratchet and the tool-holder including a reciprocating piston controlled by the valve and connected to rotate the tool-holder, and a rifle-bar connecting the piston with the ratchet and traversing the valve.

4. A pneumatic apparatus comprising a casing having a hollow valve-bearing, tool-operating means in said casing, an annular valve mounted externally upon said bearing and having exterior port-controlling portions for controlling the movements of the tool-operating means, and a tool rotating connection passing through said bearing.

5. A reciprocating tool, comprising, in combination, an external casing, a piston therein, a hammer operated by the piston, a concentric valve, a ratchet and a rifle-bar passing through the said valve and connecting the said ratchet with the said piston.

6. A reciprocating tool provided with a hollow cylindrical valve having both internal and external bearings, one of which contains ports controlled by the valve, in combination with a reciprocating piston on one side of the valve and controlled thereby, a ratchet on the opposite side of the valve, and connecting devices between the ratchet and the piston passing through the center of the said valve and adapted to rotate the piston.

7. A reciprocating tool provided with a cylinder and a tool-operating piston therein, in combination with a cylindrical valve above the piston, a ratchet above the valve, a rifle-bar extending to the ratchet through the valve and into the piston, and a seat for the valve traversed by exhaust ducts for the piston controlled by the valve and by an exhaust duct for the valve controlled by the piston.

8. In a reciprocating tool, the combination with an external casing formed in sections, of a piston contained in one section, a valve concentric with the piston contained in another section, an annular valve-seat external to the valve, a ratchet, and a rifle bar extending therefrom through the said valve into the piston, the said valve-seat being traversed by inlet and exhaust ducts controlled by the piston.

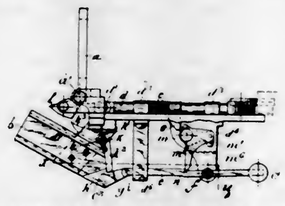
9. A reciprocating tool, comprising, in combination, a piston, a cylindrical valve in line with the piston, a bushing traversing the valve, a ratchet on the opposite side of the valve and a rifle bar passing through said bushing to connect the piston with the ratchet.

10. In a reciprocating tool, the combination with a piston H, a valve G in line therewith and cylindrical in form, a bushing G^2 passing through the valve, a ratchet F, a rifle bar I passing through the said bushing into the piston, an annular valve seat G^1 having ports on its internal surface controlled by the valve, and an external casing comprising the portion A surrounding the piston and the cap portion B surrounding said valve sent and provided with inlet and exhaust ports communicating by radial ducts with the aforesaid ports on the interior of the valve seat.

855,516. AUTOMATIC SALE-MACHINE FOR BREAD AND BUTTER. ERICK W. LINDGREN, Hagalund, near Stockholm, Sweden. Filed Mar. 26, 1906. Serial No. 308,065.

Claim.—1. In an apparatus of the class described, the combination with a door, of a spring actuated plunger for operating said door, a pivotally mounted trigger, a spring actuated catch for said trigger adapted for engagement with said plunger, a coin lever adapted to engage said trigger to retain the catch in locking engagement with the plunger, said lever having a coin receiving and discharging portion, a coin chute delivering to the coin receiving portion of said lever, a coin retaining lever co-operating with a chute and the coin receiving portion of said coin lever, and a cam for said door adapted to swing said retaining lever to release said coin.

2. In an apparatus of the class described, the combination with a door, of a spring actuated plunger for operating said door, trigger mechanism comprising two elements one of which is adapted for engagement with said plunger, a coin lever adapted to lock the other element of said trigger, mechanism and retain said first mentioned element in locking engagement with the plunger, said coin lever having a coin receiving and discharging portion, a coin chute delivering to said receiving portion, a retaining lever coöperating with the chute and with said coin receiving portion, and means associated with said door for swinging said retaining lever to release said coin.



3. In an apparatus of the class described, the combination of a door, of a spring actuated plunger for operating said door, trigger mechanism comprising two elements one of which is adapted for engagement with said plunger, a coin lever adapted for engagement with the remaining element of said mechanism, said lever having a coin receiving and discharging portion, a coin chute delivering to said receiving portion, retaining means co-operating with said chute and receiving portion, and a device associated with said door and actuating said retaining means to release the coin.

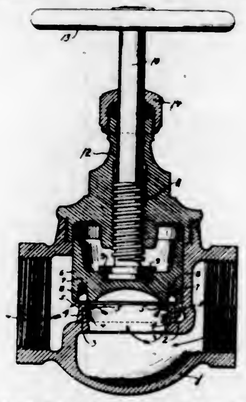
4. In an apparatus of the class described, the combination with a door, means normally tending to open said door, trigger mechanism comprising two elements one of which engages said means to lock said door in a closed position, a coin member adapted for engagement with the remaining element of said trigger mechanism, said coin member having a coin receiving portion, a chute delivering to said coin receiving portion, retaining means co-operating with said chute and receiving portion, and a device carried by said door for operating said retaining means to release the coin.

5. In an apparatus of the class described, the combination with a door, means adapted to normally hold the door in an open position, a coin member, trigger mechanism co-operating with said coin member and said means, a coin chute delivering to said coin member, a retaining device coöperating with said chute and coin member, and a device adapted to operate said coin member subsequent to the release of said trigger mechanism.

855,517. VALVE. DAVID LIPPY and ABRAHAM NICODEMUS, Mansfield, Ohio, assignors of one-third to Albert K. Shauck, Mansfield, Ohio. Filed May 16, 1906. Serial No. 317,079.

Claim.—1. In a valve, a valve body and a valve seat web provided with an annular valve seat flange, said flange provided with a straight faced portion and a tapered portion, a valve provided with an annular groove having straight and tapered walls and the flange of the valve body adapted to be seated in the groove, said straight portion of the flange adapted to be seated against the tapered walls of the groove, and the angled portion of the flange of the valve body seated upon the straight walls of the groove, substantially as and for the purposes specified.

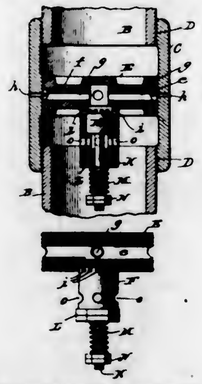
2. In a valve, the combination of a valve body, a valve seat therefor, consisting of an annular valve adapted to be actuated to and from the valve seat, said valve provided with an annular groove, the valve-seat flange adapted to enter the groove, said annular flange and groove provided with tapered and straight portions and the straight portions of the annular valve-seat flange adapted for engagement with the tapered portions of the groove, and the straight faced walls of the annular groove in the valve adapted for contact with the tapered faces of the annular seat flange, substantially as and for the purposes specified.



3. In a valve body, an annular valve-seat flange, said valve-seat flange provided with a tapered base, a valve provided with an annular groove, said groove tapered a portion of its depth, and the annular seat flange adapted to be entered in the groove and adapted for contact at its angle part, substantially as and for the purposes specified.

4. In a valve-seat of the class described, a valve body and an annular valve-seat flange formed integral therewith, said valve seat flange consisting of a tapered base portion and a straight portion and a valve adapted to move to and from the valve-seat flange and the valve provided with a groove its contour corresponding with the shape of the valve-seat flange and the wall of the groove adapted for contact at the angled portion of the flange, substantially as and for the purpose specified.

855,518. APPARATUS FOR ELEVATING WATER BY MEANS OF COMPRESSED AIR. ANDREW M. LOCKETT, New Orleans, La. Filed June 25, 1906. Serial No. 323,253.



Claim.—1. In apparatus for elevating water by means of compressed air, a water discharge pipe, a plurality of means for supplying compressed air thereto at different depths, and automatically controlled means for intercepting the flow through said supply means in succession, beginning with the uppermost.

2. In apparatus for elevating water by means of compressed air, a water discharge pipe, a plurality of means for supplying compressed air thereto at different depths, a normally open valve for intercepting the flow through each of said supply means, and pressure controlled means for successively closing said valves, beginning with the uppermost.

3. In apparatus for elevating water by means of compressed air, a water discharge pipe, a plurality of means for supplying compressed air thereto at different depths, a normally open valve for intercepting the flow through each of said supply means, and means operated by the pressure of the compressed air for successively closing said valves, beginning with the uppermost.

4. In apparatus for elevating water by means of compressed air, a water discharge pipe, a compressed air supply pipe located therein and provided with a plurality of openings adapted to discharge air thereinto at different depths, a normally open valve for intercepting the flow through each of said openings, and automatically controlled means for successively closing said valves, beginning with the uppermost.

5. In apparatus for elevating water by means of compressed air, a water discharge pipe, a compressed air supply pipe located therein and provided with a plurality of openings adapted to discharge air thereinto at different depths, a normally open valve for intercepting the flow through each of said openings, and pressure controlled means for successively closing said valves, beginning with the uppermost.

6. In apparatus for elevating water by means of compressed air, a water discharge pipe, a compressed air supply pipe located therein and provided with a plurality of openings adapted to discharge air thereinto at different depths, a normally open valve located adjacent each of said openings and adapted to intercept the flow therethrough, and means operated by the pressure within said air supply pipe for successively closing said valves, beginning with the uppermost.

7. In apparatus for elevating water by means of compressed air, a water discharge pipe, a compressed air supply pipe located therein and provided with a plurality of nozzles adapted to discharge air thereinto at different depths, a normally open valve for intercepting the flow through each of said nozzles, and pressure controlled means for successively closing said valves, beginning with the uppermost.

8. In apparatus for elevating water by means of compressed air, a water discharge pipe, a compressed air supply pipe located therein and provided with a plurality of nozzles adapted to discharge air thereinto at different depths, each of said nozzles being provided with a normally open valve for intercepting the flow therethrough, and means operated by the pressure within said air supply pipe for successively closing said valves, beginning with the uppermost.

9. In apparatus for elevating water by means of compressed air, a water discharge pipe, a plurality of means for supplying compressed air thereto at different depths, a normally open valve for intercepting the flow through each of said supply means, and means dependent for their operation upon a reduction of the pressure due to the column of water in the discharge pipe above the discharge end of said air supply means for successively closing said valves, beginning with the uppermost.

10. In apparatus for elevating water by means of compressed air, a water discharge pipe, a compressed air supply pipe located therein and provided with a plurality of openings adapted to discharge air thereinto at different depths, a normally open valve for intercepting the flow through each of said openings, and means dependent for their operation upon a reduction of the pressure due to the column of water in the discharge pipe above said openings for successively closing said valves, beginning with the uppermost.

11. In apparatus for elevating water by means of compressed air, a water discharge pipe, a compressed air supply pipe located therein and provided with a plurality of openings adapted to discharge air thereto at different depths, a normally open valve located adjacent each of said openings and adapted to intercept the flow therethrough, and means dependent for their operation upon a reduction of the pressure due to the column of water in the discharge pipe above said valves for successively closing said valves, beginning with the uppermost.

12. In apparatus for elevating water by means of compressed air, a water discharge pipe, a compressed air supply pipe located therein and provided with a plurality of nozzles adapted to discharge air thereinto at different depths, each of said nozzles being provided with a normally open valve for intercepting the flow therethrough, and means dependent for their operation upon a reduction of the pressure due to the column of water in the discharge pipe above said nozzle for successively closing said valves, beginning with the uppermost.

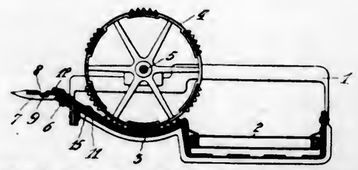
13. In an air discharge nozzle for air lift pumps, a coupling member adapted to be connected with a compressed air supply pipe, a plurality of compressed air conveying passages leading therefrom, a normally open valve for intercepting the flow through said passages, and pressure-controlled means for closing said valve.

14. In an air discharge nozzle for air lift pumps, a coupling member adapted to be connected with a compressed air supply pipe, a plurality of compressed air conveying passages leading therefrom, a normally open valve for intercepting the flow through said passages, and means operated by the pressure of the air in said supply pipe for closing said valve.

15. In an air discharge nozzle for air lift pumps, a coupling member adapted to be connected with a compressed air supply pipe, a valve supporting member located in said coupling member, a cylinder carried by said valve supporting member, a piston valve moving in said cylinder, air conveying passages controlled by said valve, a spring acting upon the valve to hold it normally open, and openings leading into said cylinder and through which compressed air may act upon said valve to close it.

16. In an air discharge nozzle for air lift pumps, a coupling member adapted to be connected with a compressed air supply pipe, a valve supporting member located in said coupling member, a cylinder carried by said valve supporting member, a piston valve moving in said cylinder, air conveying passages adjacent the upper end of said cylinder and controlled by said valve, a stem for said valve extending through a gland at the lower end of said cylinder, nuts on said valve stem, a spring between the nuts and the gland and holding the valve normally open, and openings leading into said cylinder below the valve through which openings compressed air may act to close said valve.

855,519. COMBINED CUTTING-KNIFE AND DISTRIBUTER FOR HARVESTING-THRESHERS. WILLIAM MALONEY, Smith's Falls, Ontario, Canada, assignor of one-half to The Frost and Wood Company Limited, Smith's Falls, Ontario, Canada, a Corporation. Filed May 11, 1905. Serial No. 259,905.



Claim.—1. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting knife, supporting means therefor, threshing means in the rear of the knife, and a reciprocatory plate extending obliquely downward from the knife to the threshing means.

2. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting knife, supporting means therefor, threshing means in the rear of the knife and a reciprocatory plate connected with the knife and extending obliquely downward, and located between the knife and the threshing means.

3. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting knife, supporting means therefor, threshing means in the rear of

the knife, and a reciprocatory plate extending obliquely downward from the knife and located between the knife and the threshing means, and means for reciprocating the knife and the plate.

4. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting knife, supporting means therefor, threshing means relatively in the rear of said knife, and a reciprocatory plate carried with and at a downward and backward angle to said knife, between the knife and threshing means.

5. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting-knife, supporting means therefor, threshing means relatively in the rear of said knife, and a reciprocatory plate connected with said knife and extending rearwardly and downwardly therefrom.

6. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting-knife, supporting means therefor, threshing means relatively in the rear of said knife, and a reciprocatory distributing means extending longitudinally of said knife between said knife and said threshing means.

7. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting-knife, supporting means therefor, threshing means relatively in the rear of said knife and extending substantially parallel therewith, and an inclined reciprocatory plate between said knife and said threshing means.

8. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting knife, supporting means therefor, threshing means in the rear of said knife and extending parallel therewith, and a reciprocatory plate connected with said knife and extending obliquely downward therefrom and located between the knife and the threshing means.

9. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting knife, supporting means therefor, threshing means in the rear of said knife and extending substantially parallel therewith, a reciprocatory plate disposed between said knife and said threshing means and extending obliquely downward from said knife, and means for actuating said plate.

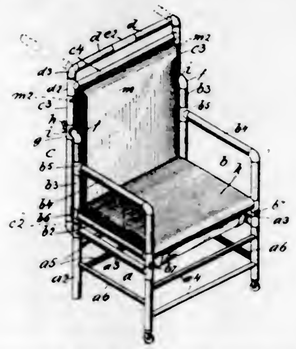
10. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting-knife, supporting means therefor, threshing means relatively in the rear of said knife and extending substantially parallel therewith, and a reciprocatory plate carried at a downward and backward angle to said knife, between the knife and said threshing means.

11. In a combined harvesting and threshing machine, the combination comprising a reciprocatory cutting-knife, supporting means therefor, threshing means relatively in the rear of said knife and extending substantially parallel therewith, and a reciprocatory plate connected with said knife and extending rearwardly and downwardly therefrom.

12. In a combined harvesting and threshing machine, the combination comprising a cutting knife, supporting means for the cutting knife, threshing means disposed adjacent to and at a lower plane than the knife, a plate inclined downward from the knife and adapted to bridge the space between the knife and the threshing means, and means for reciprocating the knife and the plate.

855,520. COMBINATION FURNITURE. MEYER MARGOLIN, and ALEKS KARBON, New York, N. Y. Filed Aug. 4, 1906. Serial No. 329,152.

Claim.—1. A combination article of furniture adapted to be used both as a bed and chair, comprising a main frame, a seat frame hinged to the front top portion of the main frame, and a back frame hinged to the back top portion of the main frame, said seat frame being provided with leg and arm members, said seat frame being adapted to be folded onto the main frame, and the back frame being adapted to be folded into an upright position when the device is used as a chair, means for connecting the leg members of the seat frame with the side members of the back frame when so folded, and said back frame being provided with transverse leg members which form the transverse top of the back of the chair when the device is used as a chair, and leg members for the back frame when the device is used as a bed.



2. A combination article of furniture adapted to be used both as a bed and chair, comprising a main frame, a seat frame hinged to the front top portion of the main frame, and a back frame hinged to the back top portion of the main frame, said seat frame being provided with leg and arm members, said seat frame being adapted to be folded onto the main frame, and the back frame being adapted to be folded into an upright position when the device is used as a chair, means for connecting the leg members of the seat frame with the side members of the back frame when so folded, and said back frame being provided with transverse leg members which form the transverse top of the back of the chair when the device is used as a chair, and leg members for the back frame when the device is used as a bed, said seat frame being also provided with a seat member and the back frame with a back member which is pivoted thereto and adapted to serve as a back for the chair, or as a headrest when the device is used as a bed.

3. A combination article of furniture adapted to be used both as a bed and chair, comprising a main frame, a seat frame hinged to the front top portion of the main frame, and a back frame hinged to the back top portion of the main frame, said seat frame being provided with leg and arm members, said seat frame being adapted to be folded onto the main frame, and the back frame being adapted to be folded into an upright position when the device is used as a chair, means for connecting the leg members of the seat frame with the side members of the back frame when so folded, and said back frame being provided with transverse leg members which form the transverse top of the back of the chair when the device is used as a chair, and leg members for the back frame when the device is used as a bed, said seat frame being also provided with a seat member and the back frame with a back member which is pivoted thereto and adapted to serve as a back for the chair, or as a headrest when the device is used as a bed, and the separate frame members being connected by a flexible bed member which extends longitudinally thereof.

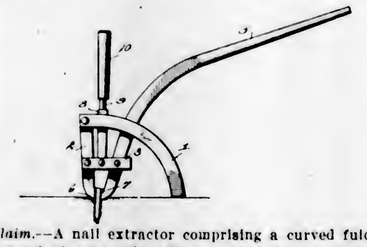
4. A combination article of furniture adapted to be used both as a bed and chair, comprising a main frame, a seat frame and a back frame, said frames being connected by a flexible bed member which extends longitudinally thereof and is connected therewith by springs, said seat member being provided with leg and arm members and adapted to be folded onto the main member, and the back frame being adapted to be folded into an upright position when the device is used as a chair, and means for connecting the leg members with the back frame, and said back frame being also provided with loosely connected leg members which form the top transverse part of the back of a chair when the device is used as a chair, and legs to support the back frame when the device is used as a bed.

855,521. DRAWING-HOOK FOR WARP-THREADS IN WEAVING-LOOMS. KARL MATTAUSCH, Ketzelsdorf, near Königinhof, Austria-Hungary, assignor to Felten & Guilleaume-Lahmeyer-Werke Actien Gesellschaft, Mülheim-on-the-Rhine, Germany. Filed Jan. 4, 1907. Serial No. 350,829.



Claim.—The herein described warp drawing hook comprising a blade, formed with a notch for the reception of the thread, and with projections upon opposite sides of the blade and two side-plates, respectively formed with holes or recesses adapted to engage with said projections; the construction being such as to permit the gradual and automatic advance of the instrument along the successive splits in the reed, substantially as set forth.

855,522. NAIL-EXTRACTOR. HOMER H. MATTOCKS, Stella, N. C. Filed June 28, 1906. Serial No. 323,821.

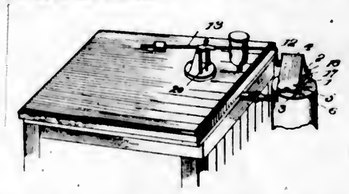


Claim.—A nail extractor comprising a curved fulcrum-bar, a gripping jaw pivotally connected to one end of the bar, the opposite end of the fulcrum-bar serving as a base for the extractor, a lever bar pivotally connected to the jaw, an operating lever connected to the lever bar and extending beyond the fulcrum-bar to provide a handle, a gripping jaw formed on the operating lever to coöperate with the first mentioned gripping jaw, and a hammer supported from the lever bar.

855,523. CAP FOR INCUBATOR-LAMPS. JAMES T. MOLLOY, Albion, Iowa. Filed Mar. 6, 1906. Serial No. 304,588.

Claim.—1. A cap for incubator lamps comprising a framework, a door hinged to the framework so as to control the effective size of the opening therethrough, an arm for swinging the door, and an operating bar slidably mounted upon one side of the framework and engaging with the before mentioned arm to control the movements of the door, said bar being adapted to be engaged and moved by the balance bar upon the incubator.

2. A cap for incubator lamps comprising a framework, a door hinged to the framework and controlling the effective size of the opening therethrough, an operating arm for swinging the door; a stop for limiting the swinging movement of the door, the said stop being supported by an arm projecting from the framework, and an operating bar slidably mounted upon one side of the framework and engaging with the door-operating arm to control the swinging movement of the door, and provided with means whereby it is adapted to be controlled in its movement by the balance bar upon the incubator.



3. A cap for incubator lamps comprising a framework, a door hinged thereto and controlling the effective size of the opening therethrough, an arm for swinging the door, an operating bar slidably mounted upon one side of the casing and engaging with the before mentioned arm to control the swinging movement of the door, an outwardly projecting member upon the operating bar, and a balance bar upon the incubator which engages with the outwardly projecting portion upon the operating bar and controls the swinging movement of the door.

4. A cap for incubator lamps comprising a framework, a pair of oppositely swinging doors hinged to the framework and controlling the effective size of the opening therethrough, inwardly extending arms projecting from the bearings of the two doors, an operating bar slidably mounted upon one side of the framework, oppositely projecting arms upon the operating bar which engage with the before mentioned arms projecting from the bearings of the doors to regulate the swinging movement of the same, a balance bar upon the incubator, and means whereby the sliding movement of the operating bar can be controlled by the said balance bar.

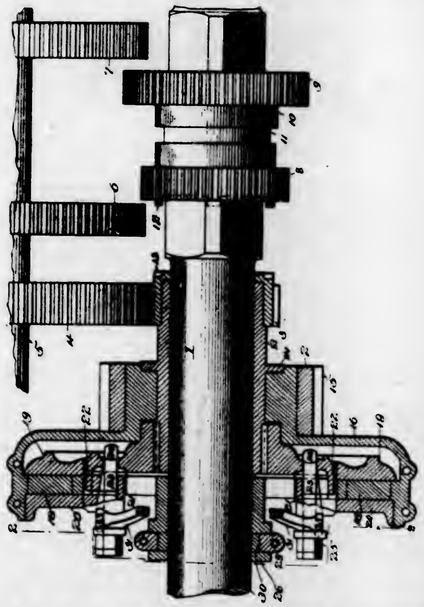
5. A cap for incubator lamps comprising a framework having upwardly extending projections upon opposite sides thereof, doors hinged to the framework and swinging against the extensions to control the effective size of the opening through the framework, an operating bar slidably mounted upon one of the extensions, means whereby the doors are controlled in their swinging movement through the operating bar, a balance bar for the incubator and means whereby the sliding movement of the operating bar is controlled by the balance bar.

6. A cap for incubator lamps comprising a framework having upwardly projecting extensions upon opposite sides thereof, a pair of doors hinged to the framework and swinging against the extensions to control the effective size of the opening through the framework, arms projecting inwardly from the bearings of the doors, an operating bar slidably mounted upon one of the extensions and provided with oppositely projecting arms which engage with the before mentioned inwardly projecting arms from the bearings of the doors to regulate the swinging movement of the latter, and a balance bar upon the incubator which controls the sliding movement of the operating bar.

7. A cap for incubator lamps, comprising a framework, a pair of oppositely swinging doors hinged thereto, inwardly projecting arms secured to the said doors, an operating bar mounted to slide upon one side of the framework, one end of said bar engaging with the inwardly projecting arms and adapted to move the doors in one direction, the opposite end of the operating bar being provided with an outwardly projecting portion, and a balance bar upon the incubator adapted to engage the outwardly projecting portion of the operating bar whereby the latter is moved as the balance bar is moved.

8. A cap for incubator lamps comprising a framework, a

pair of oppositely swinging doors which control the direct draft of the lamp and which normally assume a closed position, stops limiting the swinging movement of the doors, arms secured directly to the pivot portions of the doors and projecting toward each other, an operating bar slidably mounted upon one side of the framework, one end of the operating bar being formed with oppositely projecting portions which engage with the arms upon the doors, while the opposite end of the operating bar is bent outwardly, and the balance bar upon the incubator adapted to operate through the outwardly bent portion of the operating bar to open or close the door.



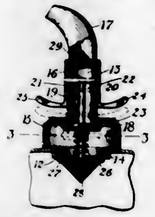
9. A cap for incubator lamps comprising a framework having upwardly projecting extensions upon opposite sides thereof, the sides of each extension converging upwardly, a pair of swinging doors pivoted to the framework and folding against the extensions to control the effective size of the opening through the framework, said doors being secured upon pintles, with which they are movable a pair of inwardly extending arms formed in connection with the pintles and serving as an operating means for the doors, an operating bar slidably mounted upon one of the extensions, oppositely projecting arms at the lower end of the operating bar which engage with the before mentioned inwardly projecting arms extending from the pintles to control the movement of the doors, an outwardly projecting portion at the upper end of the operating bar, and a balance bar upon the incubator which engages with the before mentioned outwardly projecting portion at the upper end of the operating bar to regulate the sliding movement of the same.

855,524. CLUTCH. WILLIAM R. MCKEEN, Jr., Omaha, Nebr. Filed May 16, 1905. Serial No. 260,732.

Claim.—1. In a clutch mechanism, the combination with a shaft, of a sleeve journaled thereon, a carrier journaled on the sleeve intermediate the length thereof and formed into a housing overhanging the end of the sleeve, an annular flange projecting inwardly from the housing, a clutch member slidingly keyed to the surrounded end of the sleeve and extending between the wall of the housing and the flange, a clutch member arranged on the outside of said flange, and means directly engaging the clutch members for producing gripping action thereof.

2. In a clutch mechanism, the combination with a shaft and a carrier rotatably supported by said shaft, said carrier having a flange, of clutch jaws arranged to engage the flange of said carrier, means for producing a clutching operation of said jaws, a sleeve mounted to move longitudinally of the shaft, and arms pivotally engaging the clutch actuating means and extending tangentially with respect to the sleeve and shaft, all said arms lying substantially in the same transverse vertical planes of the shaft, all of said arms being at all times substantially parallel to the flat faces of the carrier.

855,525. SAFETY CAN-NOZZLE. WILLIAM H. MCNUTT, New York, N. Y. Filed Mar. 6, 1907. Serial No. 360,941.



Claim.—1. The combination with a can, of an outlet member secured at an opening in the can and having an intermediate chambered part, the outlet member having a valve closing its admission to the outlet of the chamber, the outlet member having a telescoping portion connecting with said valve, a spring arranged to press the valve against said opening, and apertured diaphragms in the outlet member, one on each side of the chambered part.

2. The combination with a can having an opening therein, of an outlet member comprising a tubular portion having an enlarged chamber at an intermediate part, a valve closing the opening from the chamber into the outlet portion of the member, a spring normally retaining the valve seated, a spout member sliding on the outer end portion of the outlet member and rigidly connected with said valve whereby the valve can be opened, a member with minute openings arranged in the outer portion of the outlet member, and a member with minute openings in the outlet from the opening in the can into the outlet member.

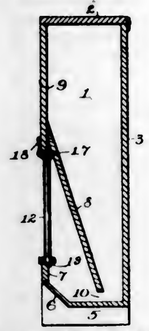
3. The combination with a can having an opening therein, of a tubular member having a chamber at an intermediate portion and fitted into said opening, a valve arranged to close the opening from the chamber into the outlet portion of the tube, a plate with minute openings extending across the opposite portion of the tube, a stem for said valve sliding in a bore in the latter plate, a spout tube sliding on the outlet portion of said tube, a cross bar connecting the spout member with the valve stem, the inner telescoping member having slots through which the cross bar is slidable to permit movement of the telescoping member to open and close the valve, and a coil spring on the valve stem between the apertured plate and the valve to press the valve against its seat.

855,526. FEED-HOPPER FOR POULTRY. HAROLD A. NOURSE, St. Paul, Minn. Filed June 16, 1906. Serial No. 322,059.

Claim.—1. A feed hopper, provided with a guard frame adapted to fit into the front of the hopper and means for removably attaching said frame to the hopper, consisting of a base provided with outer and inner stops, and a top bar having an inner bearing surface, and means for locking said frame in place.

2. A hopper comprising a grain reservoir and a feeding trough connected with the reservoir, in combination with a removable guard frame formed of spindles, and means for detachably connecting the frame with the hopper, substantially as described.

3. A feed hopper divided into a storage compartment and feeding trough, a removable guard frame comprising vertical spindles, and upper and lower cross bars, the lower cross bar being provided with an inner lip and stops and adapted to rest upon the trough.



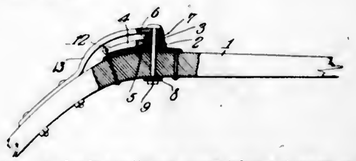
4. A feed hopper, comprising a grain receptacle, feeding trough and slanting partition, said partition being fixed between the receptacle and trough and formed to leave a passageway below its lower extremity, in combination with a removable guard frame consisting of vertical spindles, and upper and lower horizontal cross bars, the lower cross bar being formed with a lip and provided with means for holding the guard frame upon the trough.

855,527. LAWN-MOWER. CHARLES G. OMAN, Jonesboro, Ind. Filed Nov. 28, 1905. Serial No. 289,393.



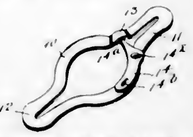
Claim.—A mowing machine comprising ground wheels each having a central inwardly directed integral bearing sleeve and an annular rack formed on its inner face; a disk carried by each ground wheel and provided with a vertical series of bosses formed on its inner face and having alining openings, the central boss of each disk having a reduced extended end adapted to be received in the bearing sleeve of the adjacent ground wheel, to serve as the axle for the latter; a vertically disposed shaft mounted in the openings of each series of bosses; a pinion secured to the upper end of each shaft for operative engagement with the adjacent rack; an eccentric secured to the lower end of each shaft, said eccentrics being oppositely disposed with respect to each other; a tie rod connecting said disks to hold the same stationary; a cutter-bar support disposed transversely between said disks and connected therewith, said support having a longitudinal slot formed therein; a pair of cutter bars mounted upon said support one above the other, each cutter bar having a lug at one end for engagement with the corresponding eccentric, whereby the cutter bars may be reciprocated in opposite directions upon rotation of the ground wheels; and clamps secured to said support and extending forwardly over the cutter bars, to prevent displacement of the latter.

855,528. TRUSS-BRACED TREE. BENJAMIN F. PINSON, Jr., Sklatook, Ind. Ter. Filed Dec. 10, 1906. Serial No. 347,195.



Claim.—A draft appliance comprising a tongue, concentric trunnions of different diameters mounted upon the tongue, a stud having bearings receiving said trunnions, a tree engaging said stud and a truss rod attached at its ends to the tree and engaging said stud.

855,529. GARMENT-SUPPORTER. EDWARD A. RAYMOND and WILLIAM JENSEN, Chicago, Ill. Filed July 25, 1906. Serial No. 327,667.



Claim.—1. A device of the kind stated, comprising a loop having a tapered slot at the end, one side of the loop having a hump forming a keeper, and a catch pivoted to the other side of the loop and having an end extending across the slot and adapted to engage in the keeper.

2. A device of the kind stated, comprising a loop having a tapered slot at the end, one side of the loop having a keeper and the other having a dent, and a catch pivoted to the loop and having at its rear end a boss engageable in the dent, and extending at its front end across the slot and engageable in the keeper.

855,530. KEY-RING. JAMES V. REID, Clarion, Pa. Filed Feb. 2, 1907. Serial No. 355,412.

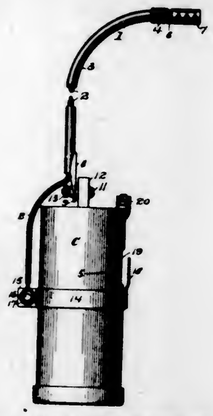


Claim.—1. In a key-ring, the combination of a substantially ring shaped wire having inturned ends adjacent to each other, an inturned shank portion opposite to said ends and partially bi-secting said ring, a slidable keeper embracing said shank and adapted to complete the bi-secting of said ring and engage the aforesaid inturned ends, and a spring catch to lock said keeper, substantially as and for the purposes set forth.

2. In a key-ring, the combination of a substantially ring-shaped wire having its ends adjacent to each other, an inturned shank portion opposite to said ends and partially bi-secting said ring, and inclosing an elongated space within said shank portion substantially closed at both ends, a spring catch within the elongated space in said

shank portion, and a sleeve embracing said shank and adapted to slide thereon to complete the bi-secting of said ring and engage the aforesaid inturned ends, substantially as and for the purpose set forth.

855,531. GAS-LIGHTER ATTACHMENT. WILLIAM ROCHE, Jersey City, N. J. Filed Sept. 21, 1906. Serial No. 335,555.



Claim.—1. In a gas lighter attachment for use with dry cell batteries, the combination of a lighting device, a circuit therefor and means for detachably connecting the terminals thereof with the electrodes of the battery comprising a split band or ring for one terminal adapted to encircle the battery cell and provided with manually operable circuit closing means, substantially as described.

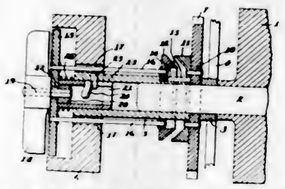
2. In a gas lighter attachment for use with dry cell batteries, the combination of a lighting device, a circuit therefor and means for detachably connecting the terminals thereof with the electrodes of the battery comprising a split band or ring for one terminal adapted to encircle the battery cell and provided with resiliently mounted manually operable circuit closing means, substantially as described.

3. In a gas lighter attachment for use with dry cell batteries, the combination of a lighting device, a metal support therefor, a circuit for said lighting device including said support, means for detachably and rigidly connecting said support with one electrode of the battery, and means for connecting the other terminal of the circuit with the other electrode, said latter means comprising a split band or ring adapted to encircle the battery cell and provided with manually operable circuit closing means, substantially as described.

4. In a gas lighter attachment for use with dry cell batteries, the combination of a lighting device, a metal tube supporting the same, a circuit for said lighting device including said tube, and a wire passing therethrough, means for detachably and rigidly connecting said support with one electrode of the battery, and means for connecting the other terminal of the circuit with the other electrode, comprising a split band or ring adapted to encircle the battery cell and provided with mannally operable circuit closing means, substantially as described.

5. In a gas lighter attachment for use with dry cell batteries, the combination of a lighting device, a metal tube supporting the same, a circuit for said lighting device including said tube, and a wire passing therethrough, a metal piece 8 secured to one side of the tube for detachably and rigidly connecting said support with one electrode of the battery, and means for connecting the other terminal of the circuit with the other electrode, comprising a split band or ring adapted to encircle the battery cell and provided with manually operable circuit closing means, substantially as described.

855,532. PLATEN-RELEASING DEVICE. WILLIAM RUGER, Jr., Janesville Wis., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Aug. 15, 1905. Serial No. 274,259.



Claim.—1. In a typewriting machine, the combination with a revoluble platen, and a platen frame, of an axle to which the platen is secured, a line-space wheel loose on said axle and provided with a clutch member, a sleeve fixed upon the end of said axle and having a longitudinal slot, a co-operative clutch member movable along said sleeve and having a projection to engage said slot, a hand wheel fixed upon said sleeve, rods attached to the last-mentioned clutch member and passing along said sleeve and through said hand wheel, a head connecting said rods upon the outer side of said hand wheel, and means acting upon said head for locking said clutch in closed position.

2. In a typewriting machine, the combination with a revoluble platen, and a platen frame, of an axle to which the platen is secured, a line-space wheel loose on said axle and provided with a clutch member, a sleeve fixed upon the end of said axle and having a longitudinal slot, a co-operative clutch member movable along said sleeve and having a projection to engage said slot, a hand wheel fixed upon said sleeve, rods attached to the last-mentioned clutch member and passing along said sleeve and through said hand wheel, a head connecting said rods upon the outer side of said hand wheel, a finger-piece having an axially movable stem revolubly mounted in the end of said sleeve and having a helical groove, and a pin projecting within said sleeve and engaging said groove.

3. In a typewriting machine, the combination with a revoluble platen, and a platen frame, of an axle to which the platen is secured, a line-space wheel loose on said axle and provided with a cup, a sleeve fixed upon the end of said axle and having a longitudinal slot, a cone movable along said sleeve and having a projection to engage said slot, a hand wheel fixed upon said sleeve, rods attached to the cone and passing along said sleeve and through said hand wheel, a plate connecting said rod upon the outer side of said hand wheel, a finger-piece having an axially movable stem revolubly mounted in the end of said sleeve and having a helical locking groove, said stem being movable axially, and a pin projecting within said sleeve and engaging said groove; said stem projecting through said head between said rods, and said finger-piece being mounted upon said stem at the outer side of said head.

4. In a typewriting machine, the combination with a revoluble platen, and a platen frame, of an axle to which the platen is secured, a line-space wheel loose on said axle and provided with a cup, a sleeve fixed upon the end of said axle and having a longitudinal slot, a cone movable along said sleeve and having a projection to engage said slot, a hand wheel fixed upon said sleeve, rods attached to the cone and passing along said sleeve and through said hand wheel, a plate connecting said rod upon the outer side of said hand wheel, a finger-piece having an axially movable stem revolubly mounted in the end of said sleeve and having a helical locking groove, said stem being movable axially, and a pin projecting within said sleeve and engaging said groove; said stem projecting through said

head between said rods, and said finger-piece being mounted upon said stem at the outer side of said head; and a compression spring coiled around said stem between said head and the tip of said sleeve, and tending to separate said cone from said cup.

5. In a typewriting machine, the combination with a revoluble platen and a platen frame, of an axle to which the platen is secured, a finger-wheel fixed to said axle, a line-space wheel loose on said axle and provided with a clutch member, a co-operating clutch member splined to said axle, and means, including a revoluble finger-piece mounted at the outer side of said finger wheel, for locking said clutching members together.

6. In a typewriting machine, the combination with a revoluble platen and a platen frame, of an axle to which the platen is secured, a finger-wheel fixed to said axle, a line-space wheel loose on said axle and provided with a clutch member, a co-operating clutch member splined to said axle, means, including a revoluble finger-piece mounted at the outer side of said finger wheel, for locking said clutching members together; and a spring tending to open said clutching members.

7. In a typewriting machine, the combination with a revoluble platen and a platen frame, of an axle upon which the platen is mounted, a line-space wheel loose upon said axle, a sleeve secured upon one end of said axle, a finger wheel fixed upon said sleeve, a finger piece at the outer side of said finger-wheel and having a stem mounted within said sleeve, a clutch member splined upon said axle and connected to said finger-piece, and a co-operative clutch member secured to said line-space wheel.

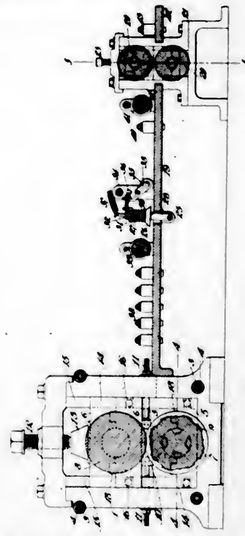
8. In a typewriting machine, the combination with a revoluble platen and a platen frame, of an axle upon which the platen is mounted, a line-space wheel loose upon said axle, a sleeve fixed upon one end of said axle, a finger wheel fixed upon said sleeve, a finger piece at the outer side of said finger-wheel and having a stem mounted within said sleeve, a clutching member splined upon said axle and connected to said finger-piece, and a co-operative clutch member secured to said line-space wheel; said finger-piece being revolubly mounted and capable of axial movement, and having a locking cam-groove, and said sleeve having a projection engaging said groove.

9. In a typewriting machine, the combination with a revoluble platen and a platen frame, of an axle upon which the platen is journaled, a line-space wheel loose upon said axle, a finger-wheel fixedly mounted upon one end of said axle, a finger-piece mounted at the outer side of said wheel and having a stem supported by said axle and revoluble independently of the latter, and clutching members one whereof is connected to said axle and movable by the turning movement of said finger-piece, and the other whereof is secured to said line-space wheel.

10. In a typewriting machine, the combination with a revoluble platen and a platen frame, of an axle upon which the platen is journaled, a line-space wheel loose upon said axle, a finger-wheel fixedly mounted upon one end of said axle, a finger-piece mounted at the outer side of said wheel and having a stem supported by said axle and revoluble independently of the latter, and clutching members one whereof is connected to said axle and movable by the turning movement of said finger-piece, and the other whereof is secured to said line-space wheel; means being provided to enable the movement of said finger-piece to lock said clutching members together.

11. In a typewriting machine, the combination with a revoluble platen and a platen frame, of an axle upon which the platen is journaled, a line-space wheel loose upon said axle, a finger-wheel fixedly mounted upon one end of said axle, a finger-piece mounted at the outer side of said wheel and having a stem supported by said axle and revoluble independently of the latter, and clutching members one whereof is connected to said axle and movable by the turning movement of said finger-piece, and the other whereof is secured to said line-space wheel; means being provided to enable the movement of said finger-piece to lock said clutching members together, and a spring tending to open said clutching members.

855,533. APPARATUS FOR ROLLING BILLETS IN THE MANUFACTURE OF MACHINE-MADE HORSE-SHOES. ARTHUR SMITH, Easton, Pa., assignor to American Horse Shoe Company, Phillipsburg, N. J., a Corporation of New Jersey. Filed Apr. 11, 1903. Serial No. 152,105.



Claim.—1. In apparatus for creasing bars or blanks preparatory to the manufacture of machine-made horseshoes therefrom, the combination with a pair of creasing rolls, of a rotary cutter in the line of movement of the bar and means controlled by the movement of the creased bar for engaging the cutter therewith, substantially as and for the purposes set forth.

2. In apparatus for creasing bars or blanks preparatory to the manufacture of machine-made horseshoes therefrom, the combination with a pair of creasing rolls, of a rotary cutter to which the creased bar is subjected, said cutter being movable toward and away from the bar and a pivoted lever arranged to be engaged by the bar for moving the cutter into operative engagement therewith, substantially as and for the purposes set forth.

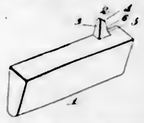
3. In apparatus for creasing bars or blanks preparatory to the manufacture of machine-made horseshoes therefrom, the combination with a pair of creasing rolls, of a rotary cutter to which the creased bar is subjected, said cutter being movable toward and away from the bar, a pivoted lever arranged to be engaged by the bar for moving the cutter into operative engagement therewith, and an adjustable connection between said lever and the cutter, substantially as and for the purposes set forth.

4. In apparatus for creasing bars or blanks preparatory to the manufacture of machine-made horseshoes therefrom, the combination with a pair of rolls having creasing dies thereon, of a pair of finishing rolls to which the creased blank is subjected after leaving the creasing rolls, a cutter arranged between the creasing rolls and the finishing rolls, and to which the creased blank is subjected before reaching the finishing rolls, and means controlled by the movement of the creased bar for engaging the cutter therewith substantially as and for the purposes set forth.

5. In apparatus for creasing bars or blanks preparatory to the manufacture of machine-made horseshoes therefrom, the combination with a pair of rolls having creasing dies thereon, a pair of finishing rolls to which the creased blank is subjected after leaving the creasing rolls, and a

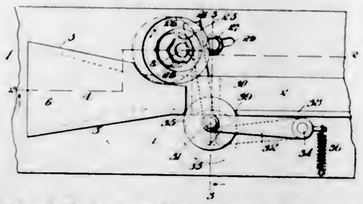
rotary cutter operated by the creased blank arranged between the creasing rolls and the finishing rolls, and to which the creased blank is subjected before reaching the finishing rolls, and means controlled by the movement of the creased blank for engaging the cutter therewith, substantially as and for the purposes set forth.

855,534. HORSESHOE-CALK. ARTHUR SMITH, Easton, Pa., assignor to American Horse Shoe Company, Phillipsburg, N. J., a Corporation of New Jersey. Filed Oct. 26, 1904. Serial No. 230,004.



Claim.—As a new article of manufacture, a horseshoe calk having an integral spur thereon, the said spur having the following characteristics: one of the sides at right angles to the longitudinal axis of the calk is straight and at ninety degrees from the body of the calk, the opposite side is formed in the shape of a double reversed curve, having an upper curved part and a lower curved part connected by a straight portion, which is substantially parallel to the first side, forming a means whereby the spur is securely retained within the metal of the shoe, the two sides parallel to the longitudinal axis of the calk converging, producing an object which, viewed from the end of the calk, is of tapering cross-section, and the upper curved part giving the spur a sharp point permitting it to be driven into the shoe, and the lower curved part giving the spur the necessary metal to impart to it the desired rigidity.

855,535. HORSESHOE-MACHINE. ARTHUR SMITH, Easton, Pa., assignor to American Horse Shoe Company, Phillipsburg, N. J., a Corporation of New Jersey. Filed Dec. 3, 1904. Serial No. 235,336.



Claim.—1. In a horseshoe machine, the combination with means for supporting the billet, means for feeding the billet, a rotary cutter, an inclinable mounting for the cutter, an oscillating device engaging with the side of the billet, and connections between the oscillating device and the cutter for inclining the latter into engagement with the fin.

2. In a horseshoe machine, the combination with means for supporting the billet, means for feeding the billet, a rotary cutter, an inclinable mounting for the cutter, an arm carrying a roller engaging with the side of the billet, and connections between the arm and the cutter for inclining the latter into engagement with the fin.

3. In a horseshoe machine, the combination with means for supporting the billet, means for feeding the billet, a rotary cutter, a movable support therefor, an oscillating device engaging with the side of the billet and a cam plate connected to the oscillating device and engaging with the cutter support.

4. In a horseshoe machine, the combination with means for supporting the billet, means for feeding the billet, a rotary cutter, a movable support therefor, an arm carrying a roller engaging with the side of the billet, and a cam plate connected to the arm and engaging with the cutter support.

5. In a horseshoe machine, the combination with means for supporting the billet, a rotary cutter, a movable support therefor, a cam plate engaging with the cutter, means for moving the cam plate, such means being engaged by the billet, the said cam plate having an inclined and a straight portion engaging with the cutter support.

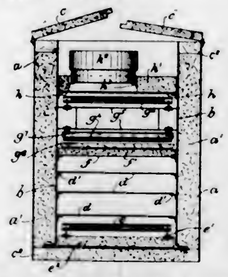
6. In a horseshoe machine, the combination with means for supporting the billet, a rotary cutter, a movable support therefor, means for moving the cam plate, such means being engaged by the billet, the said cam plate having an inclined and a straight portion engaging with the cutter support, and a roller engaging with the opposite face of the cam plate.

7. In a horseshoe machine, the combination with means for supporting the billet, a rotary cutter, a movable support therefor, means for moving the cam plate, such means being engaged by the billet, the said cam plate having an inclined and a straight portion engaging with the cutter support, and a roller engaging with the opposite face of the cam plate, the said roller being adjustable in relation to the cutter.

8. In a horseshoe machine, the combination with means for supporting the billet, means for feeding the billet, a rotary cutter, a spindle supporting the cutter, the said spindle being pivoted so that it may be inclined, a roller on the spindle, and a cam engaging with the roller, and means for moving the cam.

9. In a horseshoe machine, the combination with a spindle, a cone thereon, and a rotary cutter, the said cutter being capable of sliding upon the spindle, a cup turning upon the spindle, balls between the cup and the cone, and a spring between the cup and cutter, a second cone carried by the cutter, and a second cup upon the spindle, and balls between the second cup and the second cone whereby the cutter can be slid along the spindle and the first cup will be rotated by the cutter through the agency of the spring.

855,536. ELECTRIC COOKING-STOVE. DAVID C. SMITH, Kalgoorlie, Western Australia, Australia. Filed Aug. 11, 1906. Serial No. 330,248.

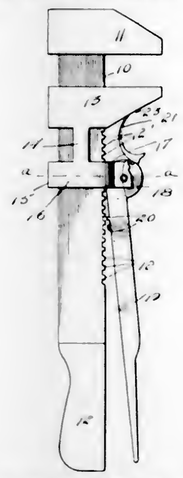


Claim.—1. An electric cooking stove comprising inner and outer walls, wooden frames covered with insulating material located between said walls and heat non-conducting material between said walls.

2. An electric cooking stove having side openings and comprising inner and outer walls insulated from each other and having heat non-conducting material between them, a removable cover for said stove consisting of inner and outer walls insulated from each other and having heat non-conducting material between them, a removable insulated pad *h'* having holes therein and supported at the upper part of the stove, said holes being adapted to receive a receptacle, removable insulated pads sliding in said side openings, heating coils carried by said pads and a removable insulated division pad.

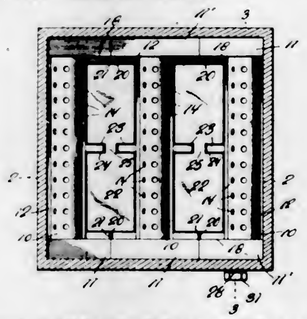
855,537. WRENCH. EDMOND F. SMITH, Shinnston, W. Va. Filed Apr. 19, 1906. Serial No. 312,669.

Claim.—1. A wrench of the class described comprising a rack shank, a fixed jaw carried by the shank, a movable jaw slidably engaged upon the shank, said movable jaw being provided with an extension, a lever pivoted to the extension and having a notched head of substantially circular form, and a spring pawl having an integral portion bearing against the periphery of the head and adapted at times to enter the notch formed therein.



2. A wrench of the class described comprising a rack shank, a fixed jaw carried by the shank, a movable jaw slidably engaged upon the shank, said movable jaw being provided with an extension, a lever pivoted to the extension and having teeth for engagement with the rack teeth upon the shank, said lever being provided with a substantially circular head having a notch formed in its periphery, a spring pawl having one of its ends secured in a recess formed in the sliding jaw proper and having an integral portion normally resting in engagement with the periphery of the head and adapted for engagement at times in the notch formed therein.

855,538. GRATE. HENRY A. SMITH, Gurley, Ala. Filed July 7, 1906. Serial No. 325,099.



Claim.—1. A grate comprising spaced bars, end members carried by the bars, pins carried by the end members, bracket plates having notches in which the pins are engaged and resting upon the pins, said bracket plates having notches in their upper surfaces, and a rocking bar having trunnions engaged in the last named notches of the rocking plates.

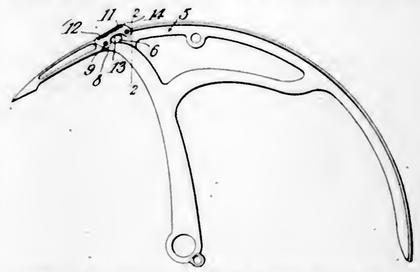
2. A grate comprising spaced bars, alining wings carried one by each bar and extending between the bars, the upper portions of said wings being cut away at their meeting ends to form a recess, and a movable bar journaled between the first named bars and having a reduced portion between its ends movably engaged in the recess.

3. A grate comprising sills, spaced air bars located between the sills, flanged end members carried by the air bars with their flanges resting upon the sills, the end members at each sill being disposed in alinement, a pair of pins located between the mutually adjacent bars at each end thereof, said pins being carried one by each end member, bracket plates engaged with the pins, rocking bars having trunnions journaled in the bracket plates and lying between the mutually adjacent air bars, wings carried by the air bars and extending therebetween and having recesses therein, said rocking bars having reduced intermediate portions movably engaged in the recesses, means for moving the rocking bars, and means for supplying air to the air bars, said bracket and plates being removable from the pins.

4. The combination with a furnace, of a grate therefor having an operating shaft, said furnace having an opening in one of its walls, an operating lever carried by the shaft and having an opening therein, and a pin slidably engaged in the opening of the lever for movement therethrough into and out of engagement in the opening of the wall.

5. A grate comprising sills, bars having flanged end members and disposed with their flanges upon the sills, said bars and end members lying between the sills, a pair of inwardly extending pins carried by each end member adjacent to its opposite ends, bracket plates having notches in their lower edges, said bracket members being disposed each with the pins of separate end members removably engaged in their nothches, and bars pivotally connected with the bracket members and lying between the first named bars.

855,539. HARVESTER-NEEDLE. SAMUEL SMITH, Wabasso, Minn. Filed Oct. 26, 1906. Serial No. 340,749.



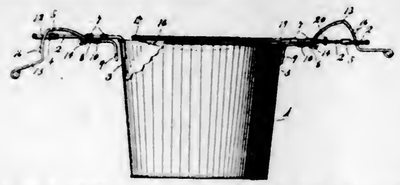
Claim.—The combination with a needle-arm having a twine-receiving opening, of a plate secured to one side of the needle-arm and provided with spaced perforated lugs defining a recess adapted to register with the twine-receiving opening, one longitudinal edge of the plate being extended above the adjacent edge of the needle-arm and serrated transversely to form spaced cutting teeth, and fastening devices passing through the perforations in the lugs for securing the plate to said needle-arm.

855,540. PAIL-CLAMP. JOHN P. STENSTROM, Brunswick, Minn., assignor of one-third to Andrew M. Anderson and one-third to Anton Peterson, Mora, Minn. Filed Aug. 6, 1906. Serial No. 329,289.

Claim.—1. A clamp of the kind described comprising a pair of members having co-operating clamping jaws, the one having a sliding movement on the other, and a crooked cam lever pivotally connected to said sliding member and working with a cam action through a perforation in the other of said members, substantially as described.

2. A clamp of the kind described comprising a pair of members having co-operating clamping jaws, the one having a sliding movement on the other, and a crooked cam

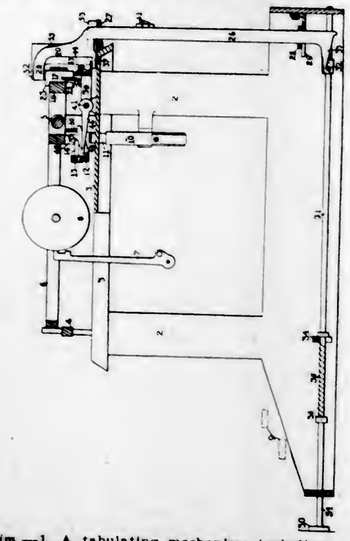
lever pivotally connected to said sliding member and working with a cam action through a perforation in the other member, and having a toothed eccentric portion arranged for interlocking engagement with the said perforated member, substantially as described.



3. In a clamp of the kind described, the combination with the relatively long and relatively short U-shaped rods 2 and 8, having respectively the clamping jaws 3 and 9, of a plate 6 mounted to slide on the legs of said rod 2 and rigidly connected to said rod 8, the bearing plate 4 secured to the bow of said rod 2, and the crooked cam lever 13 pivotally connected to the transverse portion of said rod 8 and having the toothed eccentric portion 12 working through a perforation in said bearing plate 4, substantially as described.

4. The combination with a clamp having co-operating clamping jaws, one of the members of said clamp being in the form of a U-shaped rod, of a strainer having projecting arms 19 formed with hooked ends 20; which arms are adapted to rest upon a portion of said clamp, and which said hooked ends are adapted to engage the legs of the said U-shaped member thereof, substantially as described.

855,541. TYPE-WRITING MACHINE. BURNHAM C. STICKNEY, Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 17, 1903. Serial No. 148,158.



Claim.—1. A tabulating mechanism including a series of denomination stops whereof the first may be actuated independently of the others, but is connected to the second to be actuated therewith; the second being actuable independently of the third, but being connected to the latter to be actuated therewith together with the first, and so on throughout the series; said stops being normally in working position.

2. A tabulating mechanism including a series of denomination stops, a series of denomination keys, and connections from the keys to the stops; one key being connected to one stop, the next key to two stops, including the first-mentioned stop, the next key to the first three stops, the next to the first four stops, and so on throughout the series; said stops being normally in working position.

3. A tabulating mechanism including a series of independently movable denomination stops, a series of independently movable denomination keys, and a connection from each key to the stop of next higher denomination.

4. A tabulating mechanism including a series of independently movable denomination stops, a series of independently movable denomination keys, and connections from each key to all the stops of higher denominations; said stops being normally in working position.

5. The combination with a carriage and a stop normally out of working position, of a set of denomination stops mounted for co-operation with said stops; said denomination stops being normally in working position, and all except one thereof being movable out of working position.

6. The combination with a carriage and a stop, of a set of denomination stops mounted for co-operation with said stop; all of said denomination stops being normally in working position, and all except one thereof being independently movable; and a set of independently movable denomination keys connected to said movable stops.

7. The combination with a carriage and a stop, of a denomination stop normally in position for co-operation with said stop, a key for moving said denomination stop out of working position, and a permanent abutment mounted a letter-space distance from said denomination stop, for co-operation with the first-mentioned stop when the denomination stop is moved out of working position.

8. A tabulating mechanism including a carriage, a stop, a set of denomination stops mounted in position for engagement by said stop, and means for moving all except the last member of said set out of such position.

9. The combination with a carriage and a stop, of a set of denomination stops mounted in stop-engaging position, a series of denomination keys, and means for enabling one of said keys to move the first denomination stop out of engaging position, the next key to move the first two denomination stops, the next key to move the first three denomination stops, and so on; the last denomination stop in the set being inoperable by any of said keys.

10. A tabulating mechanism including a set of denomination stops whereof the first may be actuated independently of the others, and means for connecting said stop to the second so that it may be actuated therewith: the second being actuable independently of the third, but being so connected to the latter as to be actuated therewith together with the first; and so on throughout the set with the exception of the last stop in the set, which is not operatively connected to any of the preceding stops.

11. A tabulating mechanism including a set of denomination stops, a series of denomination keys, and means whereby one key is connected to the first stop, the next key to the first two stops, the next key to the first three stops, and so on throughout the set of stops, with the exception of the last stop in the set, which is not operatively connected to any of said keys; all of said stops being mounted in working position.

12. A tabulating mechanism including a set of denomination stops, a series of denomination keys, and means connecting each key to the stop of the next denomination; one of the terminal stops in the set being unconnected with any of said keys.

13. A tabulating mechanism including a set of denomination stops, a series of independently movable denomination keys, and a connection from each key to the stop of next higher denomination; said stops being mounted in working position, the stop of the lowest denomination being unconnected to any of said keys, and the stops of all denominations except the lowest being independently movable by said keys.

14. A tabulating mechanism including a carriage, a stop, a set of denomination stops for co-operation with said stop, said denomination stops being so mounted that one covers the working face of another throughout the set, key-operated means for withdrawing any desired number of said denomination stops so as to expose the working face of any selected stop and permit it to co-operate with the first-mentioned stop, and means to return the denomination stops to normal positions after actuation.

15. A tabulating mechanism including a set of key-controlled denomination stops, one whereof is fixed and the others of which are independently adjustable; said stops being in contact with one another, and the fixed stop also serving as an abutment for the others.

16. A tabulating mechanism including a carriage, a stop, a set of denomination stops for co-operation with said stop, said denomination stops being so mounted that one contacts with and covers the working face of another throughout the set, and the last member of the set being fixed and serving as an abutment for the others, and key-controlled means connected to all of the denomination stops except said fixed stop, for withdrawing either one or more of them so as to expose the working face of any selected stop in the set and permit it to co-operate with the first-mentioned stop.

17. The combination with a carriage and a stop, of a series of denomination stops normally out of co-operative relation with said stop, means for adjusting any desired number of the denomination stops to ineffective position, and means for enabling the first-mentioned stop to co-operate with the first of the unadjusted denomination stops.

18. The combination with a carriage and a stop, of a series of independently adjustable denomination stops normally out of co-operative relation with said stop, independently movable denomination keys connected to means for moving said denomination stops out of effective position, and means for enabling the first-mentioned stop to co-operate with the first denomination stop not so moved.

19. The combination with a carriage and a stop, of a series of independently movable denomination stops normally out of co-operative relation with said stop, a series of denomination keys, connections between said keys and said stops such that by actuation of different keys different numbers of denomination stops may be moved together out of effective position, one key moving one stop, another key moving two stops, another key moving three stops, and so on, and means for enabling the first-mentioned stop to co-operate with a denomination stop not so moved out of effective position.

20. The combination with a carriage and a stop, of a series of denomination stops normally out of co-operative relation with said stop, one denomination stop covering the working face of another throughout the series, a series of independently movable denomination keys, means connected to one key for moving the first denomination stop to uncover the working face of the second, means controlled by the second key to cause the first two denomination stops to uncover the face of the third, means connected to the remaining keys for uncovering at will any of the remaining stops according to the particular key operated, and means for enabling the first-mentioned stop to co-operate with the denomination stop which is uncovered by the operation of any selected key.

21. The combination with a carriage and a stop, of a series of denomination stops, a series of denomination keys, means for enabling each key to move together to ineffective position all of the denomination stops in advance of the stop having the same denomination as the operated key, and means for enabling the first-mentioned stop to co-operate with the last-mentioned denomination stop; all of said denomination stops being normally out of co-operative relation with said first-mentioned stop.

22. The combination with a carriage and a stop, of a series of denomination stops normally out of co-operative relation with said stop; a series of independently movable denomination keys; one key being connected to one denomination stop, the next key to the first two denomination stops, the next to the first three denomination stops, and so on throughout the series of keys; and means for enabling the first-mentioned stop to co-operate with the first of the unactuated denomination stops.

23. The combination with a carriage and a stop, of a set of denomination stops normally out of co-operating relation with said stop; said set including one stop which is permanently in effective position, and the others in the set being movable to ineffective positions; one denomination stop covering the working face of another throughout the set; means for moving one or more of the movable denomination stops to ineffective position so as to uncover the working face of any selected stop; and means for enabling the first-mentioned stop to co-operate with the uncovered stop.

24. The combination with a carriage and a stop, of a set of denomination stops normally out of co-operative relation with said stop; a set of denomination keys whereof one is unconnected with any denomination stop; means for connecting the remaining keys to the denomination stops so as to move one or more of the latter to ineffective position; and means movable by said unconnected key for enabling the first-mentioned stop to co-operate with the first of the denomination stops; and means movable by the other keys for enabling said first-mentioned stop to co-operate with the remaining denomination stops, whereof the last is unconnected with any of said keys.

25. The combination with a carriage and a stop, of a series of independently adjustable denomination stops normally out of co-operative relation with said stop, independently movable denomination keys connected to means for moving said denomination stops out of effective position, and means common to said keys for enabling the first-mentioned stop to co-operate with the first denomination stop not so moved.

26. The combination with a carriage and a stop, of a series of denomination stops normally out of co-operative relation with said stop, a series of denomination keys, means for enabling each key to move to ineffective position simultaneously all of the denomination stops which are in advance of the stop having the same denomination as the operated key, and means common to the keys for enabling the first-mentioned stop to co-operate with the last-mentioned denomination stop.

27. The combination with a carriage and a stop, of a series of denomination stops normally out of co-operative relation with said stop; a series of denomination keys; one key being connected to one denomination stop, the next key to the first two denomination stops, the next to the first three denomination stops, and so on throughout the series of keys, the connections enabling the keys to move the stops to ineffective positions; and means common to the keys for enabling the first-mentioned stop to co-operate with the denomination stops.

28. The combination with a carriage and a stop, of a set of denomination stops normally out of co-operative relation with said stop; a series of denomination keys; means for enabling said keys to move all except one of said denomination stops to ineffective positions; and means common to said keys for enabling the first-mentioned stop to co-operate with any denomination stop.

29. The combination with a carriage and a stop, of a set of denomination stops normally out of co-operative relation with said stop; a series of denomination keys, each key being disconnected from the stop of the same denomination; means for enabling any key to move all stops of higher denomination to ineffective position; the stop of lowest denomination being disconnected from any of said keys; and means common to said keys for securing co-operative relation between the first-mentioned stop and the denomination stops.

30. The combination with a carriage and a stop, of a plurality of denomination stops normally out of co-operative relation with said stop; a key unconnected with said stops; keys for moving any desired number of members of said plurality out of effective position; and means common to all of said keys for enabling the first-mentioned stop to co-operate with the several denomination stops.

31. The combination with a carriage and a stop, of a series of independently adjustable denomination stops normally out of co-operative relation with said stop, denomi-

nation keys connected to means for moving said denomination stops out of effective position, an additional denomination key unconnected to any denomination stop, and means common to all of the denomination keys for enabling the first-mentioned stop to co-operate with the several denomination stops.

32. The combination with a carriage and a stop, of a series of denomination stops normally out of co-operative relation with said stop, a series of denomination keys, connections between all but one of said keys and all but one of said stops such that one key may move one stop to ineffective position, the next key may move two stops similarly, and so on, the first key being incapable of moving any stop to ineffective position, and the last stop being permanently in effective position, and means common to all of said keys for enabling the first-mentioned stop to co-operate with the several denomination stops.

33. The combination with a carriage and a stop, of a set of denomination stops normally out of co-operative relation with said stop, one denomination stop covering the working face of another throughout the set, a set of denomination keys movable independently of one another, and the first key in the set being incapable of changing the relation of the denomination stops to one another, means for enabling the next key to cause the first denomination stop to uncover the working face of the second, means for enabling the successive remaining keys to uncover similarly the successive remaining stops, the last stop in the series being incapable of movement to an ineffective position by the operation of any denomination key, and means common to all of the keys for enabling the first-mentioned stop to co-operate with the several denomination stops.

34. The combination with a carriage and a stop, of a set of denomination stops normally out of co-operative relation with said stop; a set of denomination keys means operatively connecting each key to the stop of the next denomination, with the exception of one key, which is unprovided with a stop; the stop at the end of the set remote from said excepted key being unprovided with a key; and means common to all of said keys for enabling the first-mentioned stop to co-operate with the stop having the same denomination as the key which is actuated.

35. The combination with a carriage and a stop, of a series of independently movable denomination stops normally out of co-operative relation with said stop; a series of denomination keys; means for enabling each key except the key of highest denomination to move all the stops of higher denomination than the operated key to ineffective position; the key of highest denomination being incapable of moving any stop to ineffective position, and the stop of lowest denomination being unprovided with means for moving it to ineffective position by the operation of any of said keys; and means common to all of the keys for enabling the first-mentioned stop to co-operate with the stop of the same denomination as the key actuated.

36. The combination with a carriage and a stop, of a series of independently movable denomination stop members, means being provided upon the second stop member for actuating the first stop member, means upon the third for actuating the second, and so on throughout the series, each succeeding stop member being capable of actuating all of the preceding stop members together, but incapable of actuating any succeeding stop member.

37. The combination with a carriage and a stop, of a series of independently movable denomination keys, a stop member operable by each key, means being provided upon the second stop member for actuating the first stop member, means upon the third for actuating the second, and so on throughout the series, and a spring common to said stop members for returning them to normal position.

38. The combination with a carriage and a stop, of a series of independently movable rods having stops formed upon their ends for co-operation with said stop, lugs upon said rods having overlapping engagement from rod to rod, so that some of the rods can move others, and keys for moving the rods.

39. The combination with a carriage and a stop, of a series of independently movable denomination keys, stop members operable by the keys, and means upon each stop member for actuating all of the preceding stop members together while their keys remain stationary, the stop members being movable independently of the keys.

40. The combination with a carriage and a stop normally out of working position, of a series of independently movable rods having stops provided upon their ends for co-operation with said stop and normally in working position, and a series of endwise movable key-bearing rods extending transversely of said stop rods and having camming engagement therewith.

41. The combination with a carriage and a stop, of a series of independently movable rods having stops provided upon their ends for co-operation with said stop, inter-engaging lugs upon said rods, a series of endwise movable key-bearing rods extending forwardly from said stop rods and having camming engagement therewith such that the stop rods may move independently of the key rods, and returning springs for the key rods.

42. The combination of a series of denomination stops, means for adjusting either one or more of the denomination stops to ineffective position, a carriage, a stop, and means for moving the last mentioned stop into position for co-operation with the first of the unadjusted denomination stops.

43. The combination with a carriage of a stop thereon, a plurality of stops mounted upon the framework of the machine, a key for moving one member of said plurality out of effective position, and means for projecting said carriage stop into position to co-operate with the next member of said plurality.

44. The combination of a series of independently movable denomination stops, a series of denomination keys, connections between said keys and said stops such that by actuation of different keys different numbers of denomination stops may be moved together out of effective position, one key moving one stop, another key moving two stops, and so on, a carriage, a stop, and means for projecting the last-mentioned stop into effective position.

45. The combination with a carriage of a stop thereon, a series of denomination stops, a series of denomination keys, means for enabling each key to move together to ineffective position all of the denomination stops in advance of the stop having the same denomination as the operated key, and means controlled by said keys for projecting said carriage stop to effective position.

46. The combination with a carriage and a stop thereon, of a series of members carrying denomination stops and having interengaging lugs, and means common to said denomination stop members for projecting said carriage stop into effective position.

47. The combination of a series of denomination stops; a series of denomination keys; means for enabling each of said keys to operate the stop of next denomination; a carriage; and a stop movable by any of said keys into position for co-operation with the denomination stop of the same denomination as the key operated.

48. The combination with a carriage of a stop mounted thereon; a series of independently movable denomination stops mounted in position for stopping the carriage; a series of independently movable denomination keys; means for enabling each key to move all the stops of higher denomination to ineffective position; and means controllable by any of said keys for projecting said carriage stop into position for co-operation with the first unmoved denomination stop.

49. The combination with a carriage of a stop thereon; a set of denomination stops; a set of denomination keys whereof one is unconnected with any denomination stop; means for enabling the remaining keys to move one or more of the denomination stops to ineffective position; and means movable by any of the keys for projecting said carriage stop to effective position.

50. The combination of a series of denomination stops; a series of denomination keys; connections between all but one of said keys and all but one of said stops, the first key being incapable of moving any stop, and the last stop being uncontrolled by any key; a carriage; a stop, and means controlled by all of said keys for projecting the last mentioned stop.

51. The combination of a carriage; a stop; a key connected to means for projecting said stop; a series of denomination stops; and key-operated means for moving any desired number of said denomination stops to ineffective position.

52. The combination of a carriage; a stop thereon; a series of independently movable rods having stops thereon for co-operation with said carriage stop; lugs upon said rods having overlapping engagement from rod to rod; keys for moving said rods; and a bar movable by any of said rods and effective to project said carriage stop.

53. The combination of a series of denomination stops, means for adjusting any desired number of the denomination stops to ineffective position, a power-driven carriage under the control of letter-spacing mechanism, a stop upon the carriage, and means for both releasing the carriage and projecting the last-mentioned stop to effective position.

54. The combination of a series of denomination stops, a power-driven carriage under the control of letter-spacing mechanism, a co-operating stop, and key-controlled means for adjusting any desired number of said denomination stops, releasing the carriage, and effecting a relative projecting movement between said co-operating stop and said series of denomination stops.

55. The combination of a power-driven carriage under the control of letter-spacing mechanism, a series of independently adjustable denomination stops, a series of denomination keys, means controlled by said keys for moving either one or a plurality of the denomination stops out of effective position, a stop, and means also controlled by said keys for releasing the carriage and effecting a relative projecting movement between the last-mentioned stop and the series of denomination stops.

56. The combination of a power-driven carriage under the control of letter-spacing mechanism, a stop upon the carriage, a series of denomination stops, a series of denomination keys, means for enabling each key to move together to ineffective position all of the denomination stops that are in advance of the stop having the same denomination as the operated key, and means controlled by said keys for releasing the carriage and projecting said carriage stop to effective position.

57. The combination of a power-driven carriage under the control of letter-spacing mechanism; a stop upon the carriage; a set of denomination stops; key-controlled means for adjusting all but one of said denomination stops to ineffective positions; releasing the carriage, and projecting said carriage stop to effective position.

58. The combination of a series of denomination stops; a series of denomination keys; movement-transmitting members between all but one of said keys and all but one of said stops, the first key being incapable of moving any stop, and the last stop being uncontrolled by any key; a power-driven carriage under the control of letter-spacing mechanism; a stop, and means controlled by all of said keys for projecting the last mentioned stop and releasing the carriage.

59. The combination of a series of independently movable denomination stops, a series of denomination keys, connections between said keys and said stops such that by actuation of different keys either one or a plurality of denomination stops may be moved out of effective position, a carriage, means thereon for supporting a series of column stops, and means for projecting said column stops to effective position.

60. The combination of a series of independently movable denomination stops, a series of denomination keys, means for enabling said keys to actuate either one or a plurality of denomination stops, one key moving one stop, the next moving two stops, and so on throughout the series, and said stops being moved by said keys to ineffective position, a power-driven carriage, means thereon for supporting a series of column stops, and means controlled by said keys for projecting the column stops to effective position and releasing the carriage.

61. The combination with a carriage of a bar, a series of column stops carried by said bar, a device for projecting said stops, said bar and said projecting device being relatively movable in the direction of the run of the carriage, means for effecting a relative movement in a transverse direction between said bar and said projecting device, and a stop for co-operation with the column stops to arrest the carriage.

62. The combination with a carriage of stops co-operating to arrest the carriage, and a cam mounted for co-operation with one of said stops for projecting the same to a position for co-operation with the other of said stops, said cam and the stop which it projects being relatively movable in the direction of the run of the carriage.

63. The combination with a carriage of a series of stops, a cam, said stops and said cam being relatively movable in the direction of the run of the carriage, a key for effecting relative transverse movement between said cam and said series of stops, and a stop for co-operation with said stops to arrest the carriage; said cam being effective to project said column stops to effective position.

64. The combination with a carriage of a bar, a series of column stops mounted upon said bar and independently movable thereon, a device for projecting said stops singly to effective position, said projecting device and said bar being relatively movable in the direction of the run of the carriage, and a co-operating stop for arresting the carriage.

65. The combination of a carriage, a series of independently movable column stops, a projector for said column stops, said projector and said stops being relatively movable in the direction of the run of the carriage, means for moving said projector to effective position, and a co-operating stop for arresting the carriage; said projector when in working position being effective to move said column stops singly to effective position.

66. The combination with a carriage of a bar, a series of seats upon said bar, a series of column stops movably mounted upon said seats, a cam, said bar and said cam being relatively movable in the direction of the run of the carriage, a key for moving said cam transversely to a position where it is effective to project said column stops singly, and a co-operating stop for arresting the carriage.

67. The combination with a carriage of a bar thereon, a series of column stops upon the bar, a cam mounted in the path of the column stops and operative when engaged by said stops to project them to effective position, and a co-operating stop for arresting the carriage.

68. The combination with a carriage of a bar thereon, a series of seats upon the bar, a series of column stops movably mounted upon the seats, a cam mounted upon the framing of the machine, means for moving said cam into the path of said column stops, said cam being effective when engaged by said stops to move them singly in their seats to effective position, and a co-operating stop for arresting the carriage.

69. The combination with a carriage of a series of column stops, a column-stop projector, said stops and said projector being relatively movable in the direction of the run of the carriage, a series of independently adjustable denomination stops, keys for adjusting said denomination stops, and means controlled by said keys for moving said projector to effective position.

70. The combination with a carriage of a series of column stops, a cam, said stops and said cam being relatively movable in the direction of the run of the carriage, a series of denomination stops, means for adjusting said denomination stops, and means controlled by said adjusting means for moving said cam into the path of said column stops so that during the movement of the carriage the column stops may singly engage said cam and be forced thereby into effective position.

71. The combination with a carriage of a bar thereon, a series of column stops upon said bar, a cam mounted upon the framework of the machine, a series of independently movable denomination stops also mounted upon the framework, a series of keys connected to said column stops, and means for enabling said keys to move said cam into the path of the column stops; said cam being so constructed as to force the column stops singly to effective position during the carriage movement.

72. The combination with a power-driven carriage normally under the control of letter-spacing mechanism, of a

series of column stops, a column-stop projector, a series of denomination stops, means for adjusting said denomination stops, and means controlled by said adjusting means for releasing the carriage and moving said column-stop projector to effective position; said projector being effective to move the column stops singly to effective position during the carriage movements.

73. The combination with a power-driven carriage normally under the control of letter-spacing mechanism, of a series of column stops mounted upon the carriage, a cam and a series of independently movable denomination stops mounted upon the framework of the machine, a series of keys for adjusting said denomination stops, and means controlled by said keys for releasing the carriage and moving said cam into the path of the column stops; said cam being effective to force the column stops singly to effective position during the carriage movements.

74. The combination with a carriage, of a series of column stops mounted upon the carriage, a cam and a series of independently movable denomination stops mounted upon the framework of the machine, said denomination stops being normally in effective position, a series of keys for adjusting said denomination stops to ineffective position, and means controlled by said keys for moving said cam into the path of the column stops; said cam being effective to force the column stops singly to effective position during the carriage movements.

75. The combination with a power-driven carriage normally under the control of letter-feeding mechanism, of a series of column stops mounted upon the carriage, a cam and a series of independently movable denomination stops mounted upon the framework of the machine, said denomination stops being normally in effective position, and means controlled by said keys for releasing the carriage and moving said cam into the path of the column stops; said cam being effective to force the column stops singly to effective position during the carriage movements.

76. The combination with a carriage of a series of column stops, a cam, said stops and said cam being relatively movable in the direction of the run of the carriage, a series of denomination stops, key-operated means for moving said denomination stops to inoperative position, means for moving the cam into the path of the column, stops so that during the movement of the carriage the column stops may singly engage said cam and be forced thereby into effective position, and means for returning said denomination stops to normal position together with said cam, the construction and arrangement being such that the projected column stop is also returned to normal position by said returning means.

77. The combination with a carriage of a series of column stops thereon, a cam member mounted for co-operation with said stops, a series of denomination stops each having a part in position to actuate said cam member so as to enable it to effect the projection of the column stops, and means for actuating said denomination stops.

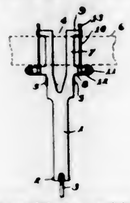
78. The combination with a power-driven carriage normally under the control of letter-feeding mechanism, of a series of column stops mounted on the carriage, a cam member mounted upon the framework for co-operation with said stops, a series of denomination stops also mounted upon the framework and normally in effective position, keys for moving said denomination stops to ineffective position, a part upon each of said denomination stops in position to actuate said cam member so as to enable it to effect the projection of the column stops, and a carriage-releasing arm rigid with said cam member.

79. The combination with a carriage of a rack thereon, and a detachable column stop mounted for a sliding movement in said rack, and having a yielding arm provided with a detent, and means for moving said stop in its seat.

80. The combination with a carriage of a bar thereon, a series of detachable column stops independently movable upon said bar, and a cam for effecting movements of said stops, and a series of denomination stops upon the framework.

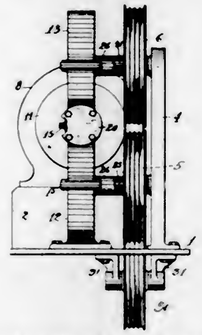
81. The combination of a series of column stops, a series of denomination stops, a series of denomination keys, and means operable by said keys for moving said column stops one by one into position for co-operation with the stop of the same denomination as the key operated.

855,542. TYPE-WRITING MACHINE. FREDERICK I. VAN ANDEN, Washington, D. C., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Aug. 17, 1905. Serial No. 274,561.



Claim.—In a typewriting machine, a ribbon-vibrator comprising a stem having a pair of opposite arms, a pair of upstanding pins, sheet-metal hinge plates or leaves holding said pins and pivoted to said arms, and ears extending from said stem above said arms and formed with catch-portions to receive and retain the pins, the latter being constructed to spring into the catch-portions of said ears, and extending above said ears for convenience of the operator in manipulating the pins.

855,543. ELEVATOR-ENGINE. LE GRAND M. VAN SLYKE, San Francisco, Cal. Filed Apr. 20, 1906. Serial No. 312,820.



Claim.—1. In an elevator engine, a worm shaft, having two worms thereon, three worm wheels in engagement therewith, two above and one below the same, said one wheel being almost directly below one of the others and in engagement with the same worm, a sheave connected to the shaft of each worm wheel, a cable passing upwardly over one of the upper sheaves, then down around the lower sheave and then around the other upper sheave and means for rotating the shaft.

2. In an elevator engine, a base, a three compartment gear case thereon provided with bearings and semi-cylindrical enlargements and formed in sections, a frame on the base adjacent to the case and provided with bearings to register with those of the case, a shaft in each pair of bearings, a worm wheel and a sheave on each shaft, each wheel being within one of the compartments of the case and the sheaves being between the casing and the frame, and a worm shaft in the semi-cylindrical portions of the case for engaging with said wheels and rotating the sheaves at the same peripheral speed.

3. In an elevator engine, a base having a slot therein, a gear case mounted on said base, said case having a lower compartment and two upper compartments, said upper compartments being in the same horizontal plane and the lower compartment being slightly to one side of the vertical plane of the outermost upper compartment, a gear in each compartment, a motor, a shaft therefor passing through the gear case and having two worms thereon, one of which engages with the gear in one of the upper compartments and the other with the other upper gear and with the lower one, a shaft connected to each gear and extending through the gear casing, a frame on the base for supporting the other end of said shafts, a sheave on each shaft between the frame and casing, a guide sheave adjustably mounted on the base and having a portion projecting through the slot, said slot being adjacent to the lower worm gear and a cable passing upwardly over the outermost upper sheave, then around the lower sheave, up over the other upper sheave and down over the guide sheave.

855,544. HANDLE FOR CASKETS. JOHN WADDELL, Grand Rapids, Mich. Filed Nov. 30, 1906. Serial No. 345,744.



Claim.—1. The combination of two relatively movable members with a hinge between them, said hinge comprising a pair of plates having pintle-receiving apertures, a screw-pintle extending through the aperture of one of the plates and screwed into one of the members with its head projecting to engage in the aperture of the other plate, and means for limiting the hinge movement.

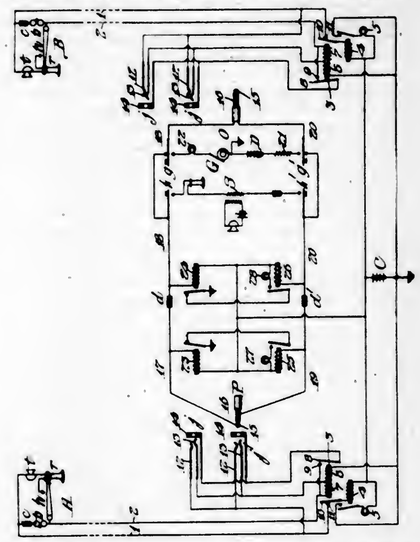
2. A handle comprising two relatively movable members with a hinge between them, said hinge comprising a plate secured to one of the members and having a pintle-receiving aperture, a pintle removably mounted on the other member and projecting therefrom and engaging in the aperture of the plate, a lug on and projecting from one of said members parallel with the pintle, and means on the other member than that carrying the lug for engaging the latter to limit the hinge movement.

3. The combination of two relatively movable members, with a hinge between them, said hinge comprising a pair of plates having pintle receiving apertures, a screw pintle extending through the apertures of one of the plates and screwing into one of the members with its head projecting to engage in the aperture of the other plate, a lug extending from one of the plates, a stop on the opposite plate for engaging the lug to limit the hinge movement, and means for securing the plates to the members.

4. In a device of the class described, a plate having a pintle-receiving aperture and a slot to one side of said aperture, another plate having a pintle-receiving aperture and a lug for engagement in the slot in the other plate, and a pintle-screw extending through the pintle apertures of both plates and having a head for interlocking behind one of the plates.

855,545. TELEPHONE-EXCHANGE SYSTEM. HARRY G. WEBSTER, Chicago, Ill., assignor to Milo G. Kellogg, Chicago, Ill. Filed Dec. 16, 1904. Serial No. 237,144.

Claim.—1. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having contact pieces associated with the limbs of the line, and a third contact piece adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet having a winding connected with a limb of the line, switching mechanism controlled thereby, adapted to connect said third contact piece with a limb of the line at a point between the substation and said magnet winding, and testing means whereby the operator may determine such connected condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.



2. In a telephone exchange system, the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having contact-pieces associated with the limbs of the line, and a third contact-piece adapted to serve as a testing terminal and normally disconnected from said source of current, a cord-circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet having a winding connected with a limb of the line, means actuated thereby to connect said third contact-piece to one pole of said source of current, and testing means whereby an operator may determine the altered electrical condition of said third contact-piece and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

3. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having contact pieces associated with the limbs of the line, and a third contact piece adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet having a winding associated with the line, switching mechanism controlled thereby, adapted to connect said third contact piece with a lim of the line, and testing means whereby the operator may determine such connected condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

4. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having contact pieces associated with the limbs of the line, and a third contact piece adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet having a winding associated with the line, means actuated thereby, adapted to alter the normal electrical condition of said third contact piece, and testing means whereby an operator may determine such altered condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

5. In a telephone exchange system the combination

with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having talking contact pieces associated with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet having a winding connected with a limb of the line, switching mechanism controlled thereby, adapted to connect said third contact piece with a limb of the line at a point between the substation and said magnet winding, and testing means whereby an operator may determine such connected condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

6. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having talking contact pieces associated with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet having a winding connected with a limb of the line, means actuated thereby, adapted to alter the normal electrical condition of said third contact piece, and testing means whereby an operator may determine such altered condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

7. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having talking contact pieces associated with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet having a winding associated with the line, switching mechanism controlled thereby, adapted to connect said third contact piece with a limb of the line, and testing means whereby the operator may determine such connected condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

8. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having talking contact pieces associated with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet having a winding associated with the line, means actuated thereby, adapted to alter the normal electrical condition of said third contact piece, and testing means whereby an operator may determine such altered condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

9. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having talking contact pieces asociated with the two limbs of the line respectively, and a third contact piece normally disconnected from said source, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet having a winding associated with the line, switching mechanism controlled thereby, adapted to connect said third contact piece with said source, and testing means whereby an operator may determine such connected condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

10. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a connection terminal having talking contact pieces associated with the two limbs of the line respectively, and a third contact piece normally disconnected from said source, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet having a winding connected with a limb of the line, switching mechanism controlled thereby, adapted to connect said third contact piece with said source, and testing means whereby an operator may determine such connected condition and means whereby the connection of the plug with the connection terminal causes the energization of the electromagnet.

11. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having contact pieces associated with the limbs of the line, and a third contact piece normally disconnected from said source and adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet associated with a limb of the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to alter the electrical condition of said third contact piece, and testing means whereby an operator may determine such altered condition.

12. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having contact pieces associated with the limbs of the line, and a third contact piece normally disconnected from said source and adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet associated with a limb of the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to cause the establishment of a connection from said third contact piece to a source of current, and testing means whereby an operator may determine the presence of such connection.

13. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having contact pieces permanently connected with the limbs of the line, and a third contact piece adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet associated with a limb of the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to cause the establishment of a connection from said third contact piece to a limb of the line, and testing means whereby an operator may determine the presence of such connection.

14. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having contact pieces associated with the limbs of the line, and a third contact piece adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet associated with the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to alter the electrical condition of said third contact piece, and testing means whereby an operator may determine such altered condition.

15. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having contact pieces associated with the limbs of the line, and a third contact piece adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet associated with the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to cause the establishment of a connection from said third contact piece to a source of current, and testing means whereby an operator may determine the presence of such connection.

16. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having contact pieces associated with the limbs of the line, and a third contact piece adapted to serve as a testing terminal, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet associated with the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to cause the establishment of a connection from said third contact piece to a limb of the line, and testing means whereby an operator may determine the presence of such connection.

17. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having talking contact pieces permanently connected with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet associated with a limb of the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to alter the electrical condition of said third contact piece, and testing means whereby an operator may determine such altered condition.

18. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having talking contact pieces permanently connected with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet associated with a limb of the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to cause the establishment of a connection from said third contact piece to a source of current, and testing means whereby an operator may determine the presence of such connection.

19. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having talking contact pieces permanently connected with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet associated with a limb of the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to cause the establishment of a connection from said third contact piece to a limb of the line, and testing means whereby an operator may determine the presence of such connection.

20. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having talking contact pieces associated with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet associated with the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to alter the electrical condition of said third contact piece, and testing means whereby an operator may determine such altered condition.

21. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having talking contact pieces associated with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet associated with the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to cause the establishment of a connection from said third contact piece to a source of current, and testing means whereby an operator may determine the presence of such connection.

22. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having talking contact pieces associated with the two limbs of the line respectively, and a third contact piece normally disconnected therefrom, a cord circuit provided with a connecting plug adapted to make connection with said terminal, a differentially wound electromagnet associated with the line, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator, means for securing the energization of said electromagnet over a circuit including a portion of a talking strand of the cord circuit and means controlled by said electromagnet to cause the establishment of a connection from said third contact piece to a limb of the line, and testing means whereby an operator may determine the presence of such connection.

23. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connec-

tion terminal having contact pieces associated with the limbs of the line, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet having two opposing windings of substantially equal energizing capacity normally in bridge of the line limbs with said source of current, a third contact piece included in a branch controlled by said electromagnet, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator and means whereby a separate circuit connection is established from a line limb to a point intermediate of the said windings upon the connection of said plug with said terminal.

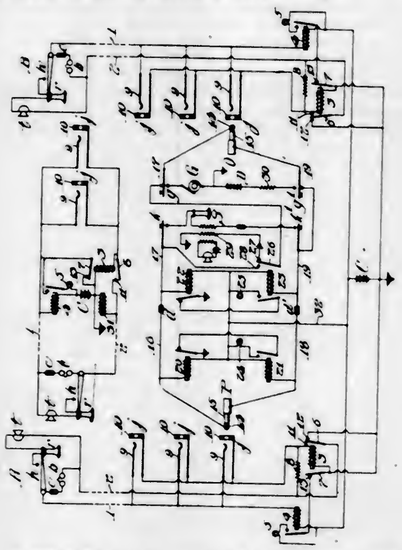
24. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having contact pieces associated with the limbs of the line, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet having two opposing windings of substantially equal energizing capacity normally in bridge of the line limbs with said source of current, a third contact piece included in a branch controlled by said electromagnet, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator and means whereby a direct connection is established from a line limb to a point intermediate of the said windings upon the connection of the said plug with said terminal.

25. In a telephone exchange system the combination with a metallic telephone line extending from a substation to the exchange, of a central source of current, a line indicator normally under control of the substation, a connection terminal having contact pieces associated with the limbs of the line, a cord circuit provided with a connecting plug adapted to make connection with said terminal, an electromagnet having two opposing windings of substantially equal energizing capacity normally in bridge of the line limbs with said source of current, a third contact piece included in a branch controlled by said electromagnet, switching mechanism controlled by the electromagnet adapted upon its energization to destroy the substation control of said indicator and means whereby a low resistance connection is established from a line limb to a point intermediate of the said windings upon the connection of the said plug with said terminal.

855,546. TELEPHONE-EXCHANGE SYSTEM. HARRY G. WEBSTER, Chicago, Ill., assignor to Milo G. Kellogg, Chicago, Ill. Filed Dec. 16, 1904. Serial No. 237,145.

Claim.—1. The combination with a metallic telephone line, of a talking contact forming a part of a connection terminal for the line, said contact being normally connected to earth, a central source of current associated with the line and adapted to be included in the metallic circuit of the line when a connection exists to furnish current to the substation transmitters for talking purposes, means for establishing a direct earth connection intermediate of said contact and its associate line limb when the line is not in use, means operated by current from said source to connect said contact directly with the line when the line is in use and testing apparatus to co-operate with said contact to indicate the condition of the line, substantially as described.

2. A telephone system comprising a telephone line extending in two limbs from a substation to the central office, tip and sleeve terminal contacts in which said line limbs terminate, a cord circuit for making connection to said line, means for holding conversation over said line and cord circuit, a source of current, means under the control of the subscriber for completing a calling circuit including said line and source of current, a signal actuated in response to the completion of said circuit, a controlling electromagnet associated with said telephone line, a resistance, said resistance and an energizing winding of said magnet being connected serially with the sleeve limb of said telephone line and said source of current, a normal short circuit between the line limb and said source of current about said resistance and energizing winding, means under the control of the operator for energizing said magnet, and means operated by said magnet to remove said short circuit, to short circuit said resistance and to place said signal beyond the control of the subscriber.



3. A telephone system comprising a telephone line extending in two limbs from a substation to the central office, tip and sleeve terminal contacts in which said line limbs terminate, a cord circuit and connecting plug for establishing connection through said terminal contacts to said line limbs, means for holding conversation over said line and cord circuit, a source of current, means under the control of the subscriber for completing a calling circuit including said line and source of current, a signal actuated in response to the completion of said circuit, a resistance connected in circuit with the sleeve limb of said line and its terminal contact, a controlling electromagnet having an energizing winding connected in circuit between said terminal contact and said source of current, a normal short circuiting path between said line limb and said source of current about said resistance and energizing winding, means under the control of the operator for energizing said electromagnet, and means operated by said magnet to remove said short circuit, to short circuit said resistance and to place said signal beyond the control of the subscriber.

4. A telephone system comprising a telephone line extending in two limbs from a substation to a central office, a line signal normally under the control of the subscriber, an electromagnet for destroying said normal substation control, a source of current, a connection terminal for said line having a test contact, a resistance, said resistance and an energizing winding of said electromagnet being connected in parallel circuit between said test contact and said source of current, contacts controlled by said electromagnet included in said parallel circuit, means under the control of the operator for operating said electromagnet and for determining the idle or busy condition of the line through the agency of said test contact.

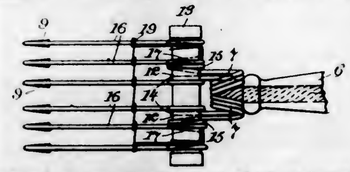
5. A telephone system comprising a telephone line extending in two limbs from a substation to a central office, a line signal normally under the control of the subscriber, an electromagnet for destroying said normal substation control, a source of current, a connection terminal for said line having a test contact, a resistance connected in circuit between said contact and a line limb, means operated by said electromagnet for establishing a connection between said contact and line limb about said resistance, and means under the control of the operator for operating said electromagnet and for determining the idle or busy condition of the line through the agency of said test contact.

6. A telephone system comprising a telephone line extending in two limbs from a substation to a central office, a line signal normally under the control of the subscriber, an electromagnet for destroying said normal substation control, a source of current, a connection terminal for said line having a test contact, a resistance, said resistance and an energizing winding of said electromagnet being connected in parallel circuit between said test contact and said source of current, a normal short circuit about said energizing winding, means operated by said electromagnet for removing said short circuit, and means under the control of the operator for operating said electromagnet and for determining the idle or busy condition of the line through the agency of said test contact.

7. A telephone system comprising a telephone line extending in two limbs from a substation to a central office, a line signal normally under the control of the subscriber, an electromagnet for destroying said normal substation control, a source of current, a connection terminal for said line having a test contact, a resistance connected in circuit with said contact, a portion of said line limb and said source of current, a parallel branch including an energizing winding of said electromagnet and said source of current, means operated by said electromagnet for establishing a connection between said contact and said line limb about said resistance and for interrupting the normal line limb connection to said source of current, and means under the control of the operator for operating said electromagnet and for determining the idle or busy condition of the line through the agency of said test contact.

8. A telephone system comprising a telephone line extending in two limbs from a substation to a central office, a line signal normally under the control of the subscriber, an electromagnet for destroying said normal substation control, a source of current, a resistance, said resistance and source of current being connected serially with an energizing winding of said electromagnet and one limb of said telephone line, a connection terminal for said telephone line having a test contact connected at a point between said resistance and said electromagnet winding, means operated by said electromagnet for establishing a connection between said contact and line limb about said resistance, and means under the control of the operator for operating said electromagnet and for determining the idle or busy condition of the line through the agency of said test contact.

855,547. WEEDER AND HOE. LEWIS E. WHITAKER, Sussex, N. J. Filed Apr. 16, 1906. Serial No. 312,052.

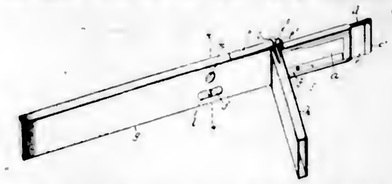


Claim.—1. A tool, the shank of which is formed of a series of wires secured together and having their free ends bent up into obliquely disposed coils, a bar extending transversely of the coils and provided with openings through which the wires project, and a series of tines connected with the shank through the coils.

2. A tool, the shank of which is formed of a series of wires secured together and having their free ends bent up into obliquely disposed coils terminating in tines, and means for spacing the tines.

3. A tool, the shank of which is formed of a series of wires secured together and having their free ends bent up into obliquely disposed coils terminating in tines, and a sliding member co-acting with the tines to vary the spacing thereof.

855,548. PHOTOMETER. CHARLES H. WILLIAMS, Milton, Mass. Filed Nov. 24, 1905. Serial No. 288,898.



Claim.—1. In a photometer, a developed photographic plate provided with a film increasing in density from near one end toward the other; a scale on said plate; a case adapted to hold said plate but allow it to slide in the line of direction of the increase of density in the film, said case being provided with coincident holes in its walls on opposite sides of the plate, and with an opening opposite the scale; a cover adapted to be applied to one end of the case; and a bail or loop extending from the outer end of the cover, and of shape to embrace the case and hold said cover at an angle thereto when the photometer is in use, for the purpose set forth.

2. In a photometer, a developed photographic plate provided with a film increasing in density from near one end toward the other; a scale on said plate; a case adapted to hold said plate but allow it to slide in the line of direction of the increase of density in the film, said case being provided with coincident holes in its walls on opposite sides of the plate, and with an opening opposite the scale; a cover adapted to be slid over the open end of the case; a bail or loop extending from the closed end of the cover and adapted to embrace the case and hold said cover at substantially right angles thereto when the photometer is in use; and a spring secured to the case and extending when the cover is thus applied, between the case and the bail and bearing on the plate, thereby preventing accidental relative movement of the plate and case and of the case and cover, for the purpose set forth.

855,549. FENCE-TOOL. JOHN L. ALBIN, Colorado Springs, Colo. Filed Nov. 15, 1906. Serial No. 343,558.



Claim.—In a fence tool the combination of a lever composed of the handle 1, the curved fulcrum arm 2 and having secured to it the claw block 4 adapted to engage and hold the wire to be stretched, a lever pivoted to the end of the fulcrum arm 2 and having on its end the hook 14 to be driven into the post for the purpose of holding the wire taut until permanently fastened, all substantially as described and for the uses and purposes set forth.

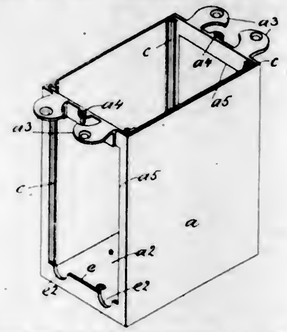
855,550. ELECTRIC SWITCH-BOX. WILLIAM R. ATKINSON, New York, N. Y. Filed July 16, 1906. Serial No. 326,366.

Claim.—1. An electric switch box, the opposite side portions of which are formed separately and detachably connected therewith, said side portions of the box being provided at their inner ends with recesses or openings.

2. An electric switch box, the opposite side portions of which are formed separately and detachably connected therewith, said side portions of the box being provided at their inner ends with recesses or openings, and the corresponding end of the box being provided with stationary side members having corresponding openings or recesses.

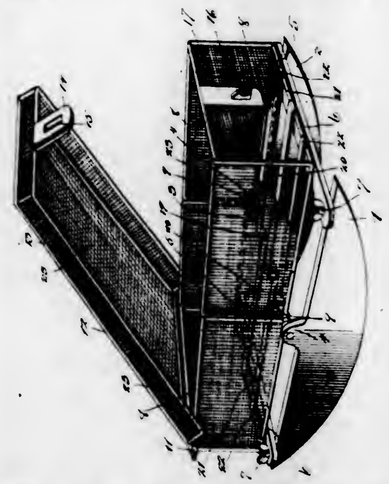
3. An electric switch box, the opposite side portions of which are open, one end of said box being closed, and the closed end of said box being provided with inwardly directed side members having recesses formed therein, and

separate plates designed to close the open opposite side portions of the box, said plates being adapted to be inserted



into the open end of the box and being provided at their inner ends with recesses or openings.

855,551. INFANT-PROTECTOR. THERESA D. AVARA, Rushings Store, Miss. Filed Dec. 22, 1906. Serial No. 349,184.



Claim.—1. A crib or cradle consisting of two halves, each half composed of tubing or rods of rectangular contour, each half being provided with loops, a pair of rockers for the cradle, a central rod connecting said rockers forming a pivot for each half of the cradle.

2. A crib or cradle comprising a pair of rockers, a rod connecting said rockers, a rectangular basket pivotally carried by said rod, and means for supporting each end of said basket.

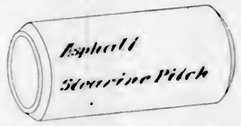
3. A crib or cradle comprising a pair of rockers, a rod connecting them together, a basket pivotally carried by said rod consisting of two halves, each half having loops to engage said rod, and means for supporting the ends of each half.

4. A crib or cradle comprising a pair of rockers, a rod connecting them together, a basket pivotally carried by said rod consisting of two halves, each half having loops to engage said rod, means for supporting the ends of each half, a cover for the basket, a plate carried by the cover having an opening, said basket being provided with a plate having a catch to be received by said opening.

5. A crib or cradle comprising a pair of rockers, a rod connecting them together, a basket pivotally carried by said rod consisting of two halves, a cover for the basket carried by one half, each half having loops to engage said rod, slats for each half of the basket, means for supporting the ends of each half, a plate carried by the cover having an opening, one half of the basket having a plate, said plate having a catch to be received by said opening.

6. A crib or cradle comprising a pair of rockers, a rod connecting them together, a basket pivotally carried by said rod consisting of two halves, a cover for the basket pivotally carried by one half, each half having loops to form the pivots therefor, slats for each half of the basket, bars pivotally carried by one of the rockers for supporting the ends of each half, means for releasing and securely holding the other ends of the bars to the other rocker, said cover having a plate with an opening therein, one-half of the basket having a plate with a catch to be received by said opening.

855,552. COMPOSITION FOR PHONOGRAPHIC RECORDS. JONAS W. AYLSWORTH, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed May 31, 1906. Serial No. 319,421.

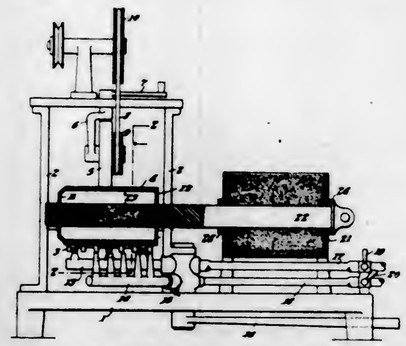


Claim.—1. A composition for phonographic records, consisting of asphalt and stearin pitch, substantially as set forth.

2. A composition for phonographic records, consisting of asphalt and a smaller proportion of stearin pitch, substantially as set forth.

3. A composition for phonographic records, consisting of asphalt, stearic acid and stearin pitch, substantially as set forth.

855,553. PROCESS OF MAKING DUPLICATE PHONOGRAPH-RECORDS. JONAS W. AYLSWORTH, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed May 16, 1906. Renewed Apr. 4, 1907. Serial No. 366,428.



Claim.—1. The process of making duplicate phonograph records, which consists in rotating a heated tubular mold at high speed, and in introducing therein a charge of solid fusible material, whereby the material will be melted by the heat of the mold and distributed uniformly over the record surface thereof, substantially as set forth.

2. The process of making duplicate phonograph records, which consists in rotating a heated tubular mold at high speed, and in introducing therein a charge of solid fusible material, whereby the material will be melted by the heat of the mold and distributed over the record surface thereof, and in then rapidly cooling the mold and its contents to solidify and set the latter, substantially as set forth.

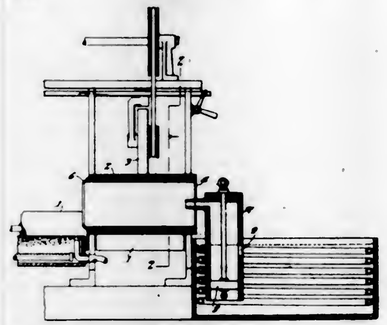
3. The process of making duplicate phonograph records, which consists in rotating a tubular mold at high speed, in heating the mold and in introducing therein a charge of fusible solid material, whereby the latter will be melted by the heat of the mold and distributed over the record surface thereof, substantially as set forth.

4. The process of making duplicate phonograph records, which consists in rotating a tubular mold at high speed, in heating the mold and in introducing therein a charge of fusible solid material, whereby the latter will be melted by the heat of the mold and distributed over the record surface thereof, and then in rapidly cooling the mold and its contents to solidify and set the latter, substantially as set forth.

5. The process of making duplicate phonograph records, which consists in rapidly rotating a heated tubular mold and in introducing therein a charge of powdered fusible material, whereby the latter will be melted by the heat of the mold and distributed over the record surface thereof, substantially as set forth.

6. The process of making duplicate phonograph records, which consists in rapidly rotating a heated tubular mold, in introducing therein a charge of powdered fusible material, whereby the latter will be melted by the heat of the mold and distributed over the record surface thereof, and in rapidly cooling the mold and contents to set and solidify the latter, substantially as set forth.

855,554. PROCESS FOR MAKING DUPLICATE PHONOGRAPH-RECORDS. JONAS W. AYLSWORTH, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed May 16, 1906. Renewed Apr. 4, 1907. Serial No. 366,429.

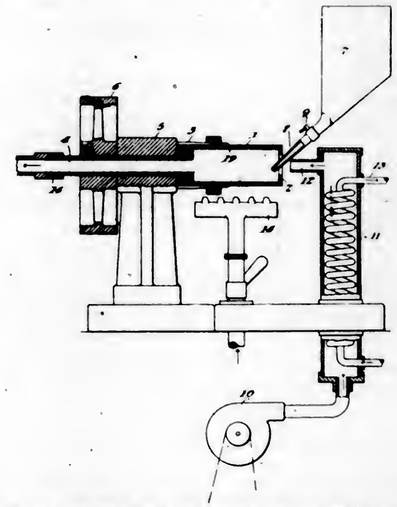


Claim.—1. The process of making duplicate phonograph records, which consists in rapidly rotating a thin tubular mold, and in introducing therein a charge of very hot molten material, whereby the temperature of the mold will be raised to or above the melting point of the material, substantially as set forth.

2. The process of making duplicate phonograph records, which consists in rapidly rotating a thin tubular mold, and in introducing therein a charge of very hot molten material, exceeding the mold in bulk, and presenting sufficient excess heating capacity to raise the temperature of the mold to or above the melting point of the material, substantially as set forth.

855,555. PROCESS OF MAKING DUPLICATE SOUND-RECORDS. JONAS W. AYLSWORTH, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed May 31, 1906. Renewed Apr. 4, 1907. Serial No. 366,430.

Claim.—1. The process of making duplicate phonograph records, which consists in rapidly rotating a matrix, in introducing therein a solution of a solid material, whereby the solution will distribute itself uniformly over the bore of the matrix and in then driving a blast of air through the matrix as it continues to rotate in order to evaporate the solvent from the solid material, substantially as set forth.



2. The process of making duplicate phonograph records, which consists in rapidly rotating a matrix, in introducing therein a solution of a solid material, whereby the solution will distribute itself uniformly over the bore of the matrix and in then driving a blast of warm air through the matrix as it continues to rotate in order to evaporate the solvent from the solid material, substantially as set forth.

3. The process of making duplicate phonograph records, which consists in rapidly rotating a matrix, in introducing therein a solution of a solid material, whereby the solution will distribute itself uniformly over the bore of the matrix, in then driving a blast of air through the matrix as it continues to rotate in order to evaporate the solvent from the solid material, and in finally condensing the evaporated solvent, substantially as set forth.

4. The process of making duplicate phonograph records, which consists in rapidly rotating a matrix, in introducing therein a solution of a solid material, whereby the solution will distribute itself uniformly over the bore of the matrix, in then driving a blast of warm air through the matrix as it continues to rotate in order to evaporate the solvent from the solid material, and in finally condensing the evaporated solvent, substantially as set forth.

5. The process of making duplicate phonograph records, which consists in rapidly rotating the matrix, in introducing therein a solution of the solid material, whereby the latter will be distributed over the bore of the matrix by the centrifugal force developed, and finally in applying heat to the matrix so as to facilitate the evaporation of the solvent, substantially as set forth.

6. The process of making duplicate phonograph records, which consists in rotating the matrix at a high speed, in introducing therein a solution of a solid material, whereby the latter will be distributed over the bore of the matrix by the centrifugal force developed, in then heating the matrix and simultaneously blowing a blast of air through the same so as to evaporate and carry off the solvent, substantially as set forth.

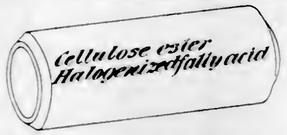
7. The process of making duplicate phonograph records, which consists in rotating the matrix at a high speed, in introducing therein a solution of a solid material, whereby the latter will be distributed over the bore of the matrix by the centrifugal force developed, in then heating the matrix and simultaneously blowing a blast of warm air

through the same so as to evaporate and carry off the solvent, substantially as set forth.

8. The process of making duplicate phonograph records, which consists in rotating the matrix at a high speed, in introducing therein a solution of a solid material, whereby the latter will be distributed over the bore of the matrix by the centrifugal force developed, in then heating the matrix, in simultaneously blowing a blast of air through the same so as to evaporate and carry off the solvent and in condensing and separating the evaporated solvent, substantially as set forth.

9. The process of making duplicate phonograph records, which consists in rotating the matrix at a high speed, in introducing therein a solution of a solid material, whereby the latter will be distributed over the bore of the matrix by the centrifugal force developed, in then heating the matrix, in simultaneously blowing a blast of warm air through the same so as to evaporate and carry off the solvent, and in condensing and separating the evaporated solvent, substantially as set forth.

855,556. DUPLICATE SOUND-RECORD. JONAS W. AYLSWORTH, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed May 31, 1906. Serial No. 319,466.



Claim.—1. A duplicate sound record composed of a composition of a cellulose ester and a halogenized fatty acid or derivative thereof, substantially as set forth.

2. A duplicate sound record composed of a composition of a cellulose ester and a chlorinated fatty acid or derivative thereof, substantially as set forth.

3. A duplicate sound record composed of a composition of a cellulose ester and halogenized stearic acid, substantially as set forth.

4. A duplicate sound record composed of a composition of a cellulose ester and chlorinated stearic acid, substantially as set forth.

5. A duplicate sound record composed of a composition of a cellulose ester of the acetic series and a halogenized fatty acid or derivative thereof, substantially as set forth.

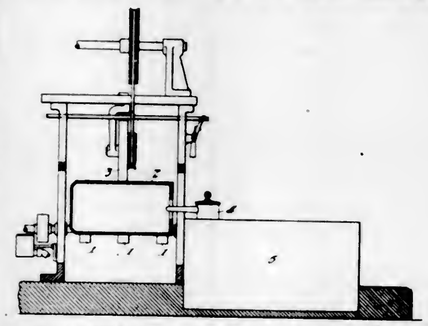
6. A duplicate sound record composed of a composition of a cellulose ester of the acetic series, and halogenized stearic acid, substantially as set forth.

7. A duplicate sound record composed of a composition of a cellulose ester of the acetic series, and chlorinated stearic acid, substantially as set forth.

855,557. PROCESS FOR MAKING PHONOGRAPH-BLANKS. JONAS W. AYLSWORTH, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Jan. 19, 1907. Serial No. 353,007.

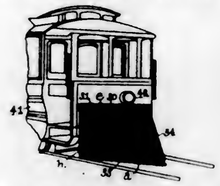
Claim.—1. The process of making cylindrical blank record tablets for talking machines which consists in rotating a hot mold at a high speed containing a charge of molten material within the same, whereby the material therein will be distributed uniformly on its bore and a separation of the impurities from the material will be effected, in then allowing the mold to cool so as to set the material, in then removing the blank from the mold, and in finally shaving off the outer surface of the blank so as to thereby remove any impurities which may be lodged therein, substantially as and for the purposes set forth.

2. The process of making cylindrical blank record tablets for talking machines which consists in rotating a hot mold at a high speed containing a charge of molten material within the same, whereby the material therein will be distributed in molten condition on its bore and a separation of the impurities from the material will be effected, in then allowing the mold to cool so as to set the material, in then removing the blank from the mold, in shaving off the outer surface of the blank so as to thereby remove any



impurities which may be lodged therein, and in finishing the interior of the blank, substantially as and for the purposes set forth.

855,558. CAR-FENDER. ISAAC H. CALIGA, Salem, Mass. Filed Feb. 16, 1907. Serial No. 357,616.



Claim.—1. In a fender of the character described, in combination, a supporting frame, comprising a substantially triangular horizontal member, a substantially vertical member pivotally connected with said horizontal member, an inclined member pivoted to the horizontal member near the front thereof and extended upward toward said upright member, means to secure said inclined member in a stationary position, a netting secured to said upright member and to said horizontal member to form the bottom of a pocket or receptacle, and nettings secured to said upright member and to said horizontal member to form upright sides of said pocket or receptacle, substantially as described.

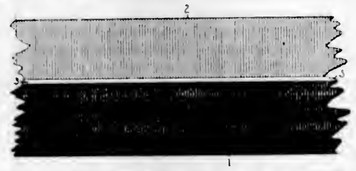
2. In a fender of the character described, in combination, a supporting frame provided with a substantially triangular horizontal member and with an upright member, means secured to said upright member and to said horizontal member to form the bottom of a pocket or receptacle, and means secured to said members to form substantially upright side walls of said pocket or receptacle, substantially as described.

3. In a fender of the character described, in combination, a supporting frame provided with a substantially triangular horizontal member, and with a substantially upright member pivotally connected with said horizontal member, and flexible means secured to said members to form a pocket or receptacle open at its top and substantially closed at its sides and bottom, substantially as described.

4. In a fender of the character described, in combination, a supporting frame, and means secured to said frame to form a substantially triangular pocket open at its top and substantially closed at its sides and bottom, substantially as described.

5. In a fender of the character described, in combination, a supporting frame, and means secured to said frame to form a substantially triangular pocket open at its top and closed at its sides and bottom, said sides having downwardly inclined converging upper edges, substantially as described.

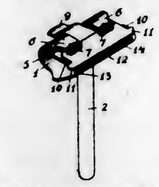
855,559. INKING-RIBBON FOR TYPE-WRITING MACHINES. MURRAY H. CHAPIN, Bridgeport, Conn., assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed Oct. 9, 1905. Serial No. 281,957.



Claim.—1. An inking ribbon of uniform thickness throughout and having longitudinally extending inking fields of different characteristics and having also an intermediate longitudinally extending uninked portion separating said inking fields.

2. An inking ribbon of uniform thickness throughout and having longitudinally extending inking fields of different characteristics and having also an intermediate longitudinally extending uninked portion separating said inking fields; said uninked portion being of the same thickness and weave as the inking fields of the ribbon.

855,560. SAFETY-RAZOR. LYMAN H. COBB, Fitchburg, Mass., assignor to Mary Elizabeth Johnson, trustee, Fitchburg, Mass. Filed Apr. 4, 1907. Serial No. 366,448.



Claim.—1. In a safety razor, a head provided with a spring leaf for the support of a cutting blade, an overlapping arm having its free end substantially in the plane of the leaf, and means for separating said leaf and said arm for the insertion of a blade between them.

2. In a safety razor, a head provided with a spring leaf for the support of a cutting blade, a spring arm in contact with the supporting surface of said leaf, and means for depressing said leaf to provide for the insertion of a blade.

3. In a safety razor, a head provided with a spring leaf for the support of a cutting blade, an arm in contact with the supporting surface of said leaf, and means for depressing said leaf out of contact with said arm.

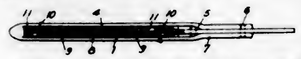
4. In a safety razor, a head provided with a leaf for the support of a cutting blade, a slot in said leaf, an arm having its free end substantially in the plane of the table and above said slot, and means for separating said leaf and said arm.

5. In a safety razor, a head made of a single piece of sheet metal comprising a leaf having a plane surface for the support of a blade, with the sheet metal bent downward at the front edge of said leaf, then rearward and upward to a point near the rear edge of said leaf, and having arms overlapping said leaf and adapted to pinch a blade supported on the leaf.

6. In a safety razor, a head constructed of a single piece of sheet metal, comprising a leaf for the support of a cutting blade, an integral arm overlapping the supporting surface of said leaf, said arm and said leaf being adapted to pinch the blade by the elasticity of the sheet metal, and means for separating said leaf and said arm.

7. In a safety razor, an integral sheet metal head, comprising a leaf for the support of a cutting blade and overlapping arms for pinching the blade, said leaf having openings beneath the ends of said arms.

855,561. RAZOR. THOMAS C. DURHAM, New York, N. Y. Filed Mar. 16, 1907. Serial No. 362,751.

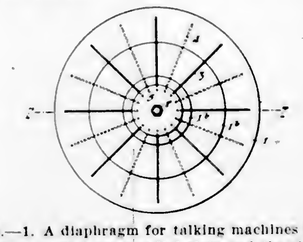


Claim.—1. In a razor, the combination with a support, of a clamp, a detachable blade, means for positioning the blade between the support and clamp, and means carried by the clamp beyond the ends of the blade engaging the support and having a limited sliding movement thereon to lock the blade in position, substantially as described.

2. In a razor, the combination with a support having a plurality of slots, of a clamp, a detachable blade, means for positioning the blade between the support and clamp, and a plurality of headed studs carried by the clamp beyond the ends of the blade and having a limited sliding movement in the slots of the support to lock the blade in position, substantially as described.

3. In a razor, the combination with a support having two countersunk slots, of a clamp, a detachable blade having two perforations, studs carried by the clamp and engaging the perforations to position the blade between the support and clamp, and two headed studs carried by the clamp beyond the ends of the blade and engaging the slots in the support to lock the blade in position, substantially as described.

855,562. DIAPHRAGM FOR TALKING-MACHINES. THOMAS A. EDISON, Llewellyn Park, Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Mar. 6, 1907. Serial No. 360,936.



Claim.—1. A diaphragm for talking machines formed of two sections, each having radial slots and the slots of one section being staggered with relation to the slots of the other section, substantially as and for the purposes set forth.

2. A diaphragm for talking machines comprising two sections cemented together, each section being radially slotted and the slots of one section being staggered with relation to the slots of the other section, substantially as and for the purposes set forth.

3. A diaphragm for talking machines comprising two laminated sections, each formed with radial slots and the slots of one section being staggered with relation to the slots of the other section, substantially as and for the purposes set forth.

4. A diaphragm for talking machines formed with radial slots so as to result in the production of a series of reeds, and means for closing said slots without materially affecting the vibrating capacity of said reeds, substantially as and for the purposes set forth.

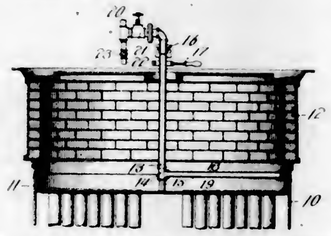
5. A talking machine diaphragm provided with radial slots so as to form a series of reeds and a disk secured to the diaphragm and closing said slots without materially affecting the vibrating capacity of the reeds, substantially as and for the purposes set forth.

6. A talking machine diaphragm provided with a central opening and a series of radial slots, of a disk secured to the diaphragm so as to cover the central opening, substantially as and for the purposes set forth.

7. A talking machine diaphragm provided with a central opening and a series of radial slots, of a disk secured to the diaphragm so as to cover the central opening, said disk being seated on an elastic gasket, substantially as and for the purposes set forth.

8. A talking machine diaphragm formed with a central opening and a series of radial slots, of a pair of metallic disks connected together and engaging the opposite faces of the diaphragm and covering said opening, substantially as and for the purposes set forth.

855,563. BOILER-FLUE CLEANER. WILLIAM EICHELBERGER and DELOS E. HIBNER, DuBois, Pa., assignors to The Vulcan Soot Cleaner Company of Pittsburg, DuBois, Pa., a Corporation of New Jersey. Filed Mar. 22, 1907. Serial No. 363,893.



Claim.—1. The combination with a boiler having vertical flue tubes, of means permanently located with respect to the tube sheet of the boiler for injecting a soot cleaning agent into the outlet ends of the tubes.

2. The combination with a boiler having vertical flue tubes and a smoke box at the outlet end thereof, of means located within the smoke box for injecting a soot-cleaning agent into the outlet ends of the tubes.

3. The combination with a boiler having vertical flue tubes and a smoke box at the outlet end of said tubes, of rotatable means located within the smoke box for injecting a soot-cleaning agent into the outlet ends of the tubes.

4. The combination with a boiler having flue tubes, a tube sheet, and a smoke box at the outlet end of the tubes, of means supported by the tube sheet and the walls of the smoke box and located within the smoke box for injecting a soot-cleaning agent into the outlet ends of the tubes.

5. The combination with a boiler having flue tubes, a tube sheet, and a smoke box at the outlet end of the tubes, of rotatable means supported by the tube sheet and the walls of the smoke box and located within the smoke box, for injecting a soot-cleaning agent into the outlet ends of the tubes, said means being adapted to inject the agent into a plurality of tubes at the same time.

6. The combination with a boiler having vertical flue tubes, of means for injecting a soot-cleaning agent into the tubes in opposition to the natural draft of the boiler, said agent and the natural draft holding the dislodged soot-deposits in suspension pending the discontinuance of the injection of the agent.

7. The combination with a boiler having a plurality of vertical flue tubes, of means located in the smoke box of the boiler for injecting a soot-cleaning agent into a predetermined number of said tubes in opposition to the natural draft through the tubes being operated upon, said agent and the natural draft holding the dislodged soot-deposits in suspension pending the discontinuance of the injection of the agent, the natural draft of adjoining tubes remaining unaffected during the injecting operation.

8. The combination with a boiler having flue tubes, a tube sheet, and a smoke box adjacent the outlet ends of said tubes, of a pipe rotatably supported by said tube sheet and the walls of the smoke box, a perforated pipe secured to and extending at right angles to said pipe, and a series of pipes secured to the sides of the perforated pipe, said series extending in a plane parallel with the rotatable pipe, means being provided for controllably delivering a soot-cleaning agent to said pipes.

9. The combination with a vertical fire tube boiler having flue tubes and a smoke box at the outlet ends of the tubes, of rotatable means supported by the tube sheet of the boiler for injecting a soot cleaning agent into the outlet ends of the tubes.

10. A soot-cleaner for vertical fire tube boilers, comprising a steam injecting pipe rotatably-mounted in the smoke box of the boiler above the outlet ends of the boiler-flues and connected to a suitable steam supply.

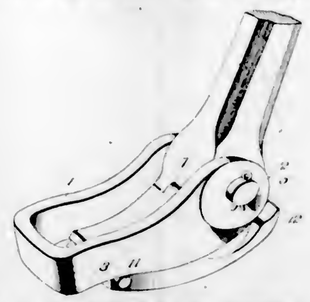
11. A soot-cleaner for vertical fire tube boilers, having a steam injecting pipe arranged for rotation in the smoke box of the boiler being supported and held above the tube sheet of said boiler.

12. A soot-cleaner for vertical fire tube boilers in which the fire tubes cover the entire diameter of the tube-sheet, comprising a steam-injecting pipe arranged in the smoke box of the boiler and rotatably-supported by the tube-sheet of said boiler, and having a range of movement to cover each of the fire tubes.

13. The combination with a boiler having vertically-extending flue tubes, and a smoke box at the upper end of said tubes, of means located within the smoke box and supported by the tube sheet for injecting a soot-cleaning agent into the outlet ends of the tubes, said means being movable in such manner as to permit each of the tubes to be acted upon.

14. The combination with a boiler having vertically-extended flue tubes, and a smoke box at the upper end of said tubes, of rotatable means located within the smoke box and supported by the tube sheet for injecting a soot-cleaning agent into the outlet ends of the tubes, the range of movement of said means covering each of the fine tubes of the boiler.

855,564. SPIKE-PULLER. TONNY C. GATTI, Scranton, Miss. Filed Feb. 25, 1907. Serial No. 359,145.



Claim.—1. In a spike puller, the combination of a U-shaped shackle, an operating lever pivoted at an intermediate point between the arms of the shackle, and a shoe slidable longitudinally of the arms of the shackle and having a pivotal connection with one end of the operating lever, the said operating lever performing the double function of tilting the tool to withdraw the spike and of causing the shoe to coöperate with the cross bar of the shackle to grip the spike.

2. In a spike puller, the combination of a U-shaped shackle, an operating lever pivoted at an intermediate point between the arms of the shackle, and a shoe slidable longitudinally of the arms of the shackle and having a pivotal connection with one end of the operating lever, the lower face of the shoe being curved to form a rocking surface for the tool and the operating lever performing the double function of causing the tool to rock to withdraw the spike and of causing the shoe to coöperate with the cross bar of the shackle to grip the spike.

3. In a spike puller, the combination of a U-shaped shackle, an operating lever pivoted between the arms of the shackle, a shoe pivoted to an end of the operating lever and slidable between the arms of the shackle, the said shoe coöperating with the cross bar of the shackle to grip the spike, and stops projecting from the shoe and having a sliding engagement with the arms of the shackle.

4. In a spike puller, the combination of a U-shaped shackle, the arms of which have their free ends curved upwardly, an operating lever pivoted between the upturned arms of the shackle, a shoe pivoted to the extremity of the operating lever and slidable between the arms of the shackle, the said shoe coöperating with the cross bar of the shackle to grip the spike, and the lower face of the shoe having a curved formation, and stops projecting laterally from the shoe and having a sliding engagement with the arms of the shackle.

5. In a spike puller, the combination of a U-shaped shackle, an operating lever pivoted at an intermediate point between the arms of the shackle, a shoe slidable longitudinally of the arms of the shackle and having a pivotal connection at an intermediate point with an end of the operating lever, one end of the shoe being designed to coöperate with the cross bar of the shackle to grip the spike while the opposite end of the shoe is extended to form a claw.

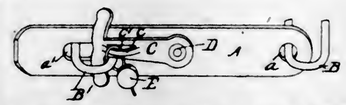
855,565. TRAY. JOHN GREENHOUSE, Cambridge Springs, Pa. Filed Sept. 19, 1906. Serial No. 335,238.



Claim.—1. A reversible tray, comprising two dished plates having flanges at their peripheries, each said plate having a body portion projecting from the middle portion of its said flange, and the said body portions being slidable one within the other and holding the said plates parallel with each other, and one of the said plates being provided with guide openings for articles.

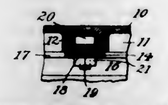
2. A reversible tray, comprising two dished plates having flanges at their peripheries, a body secured to the middle parts of the said flanges and holding the said plates parallel with each other, one of the said plates being provided with guide openings for articles, and a distance piece arranged between the dished portions of the said plates which project toward each other.

855,566. HASP. JAMES C. GRIFFIN, Erie, Pa., assignor to Griffin Manufacturing Company, Erie, Pa., a Corporation of Pennsylvania. Filed Mar. 30, 1906. Serial No. 308,928.



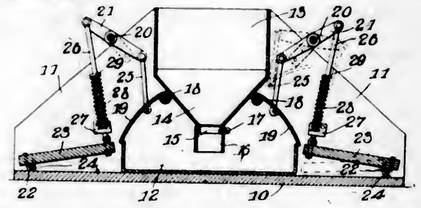
Claim.—In a hasp the combination with a slotted hasp plate of a hook C pivoted on the plate and having the finger piece c pressed up between the edges of the hook and between the pivot of the hook and the hooked end, the edges of the piece being severed from the body forming the opening c' and forming an opening through the hook immediately back of the finger-piece c.

855,567. STOVE-LEG FASTENING. LASSAR J. GRINBERG, New York, N. Y. Filed Mar. 26, 1907. Serial No. 364,593.



Claim.—In a stove leg fastening, a flanged stove plate having a slotted socket and a projection on the socket, combined with a flanged stove leg having a slotted lug adapted to embrace said projection, and with a bolt engaging the socket and lug, substantially as specified.

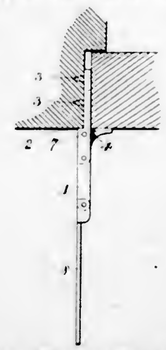
855,568. AUTOMATIC FEED-TROUGH. CHESTER W. GRISWOLD, Milan, Kans. Filed July 3, 1906. Serial No. 324,625.



Claim.—1. In an apparatus of the class described, a supporting base, a plurality of partitions spaced apart and extending transversely of said base and forming a corresponding number of independent compartments open at the sides, a feed trough disposed in each of said compartments and accessible from the open sides of the same, outer tie rods extending through said partitions and transversely of said compartments near their outer sides, inner tie rods extending through said partitions and transversely of said compartments and above said feed troughs, a feed receptacle extending transversely of said compartments and between said inner tie rods and having an independent discharge communicating with each of said feed troughs, platforms swinging upon the outer tie rods in each of said compartments between the open sides of the same and the feed troughs, a closure for each of said feed troughs and swinging from said inner tie rods, means for maintaining said platforms yieldably in elevated position, and connecting means between said platforms and closures whereby the depression of the platforms will elevate the closures.

2. In a stock feeding device, a supporting structure, a feed trough located upon the structure, a feed receptacle provided with a discharge spaced from the bottom of the feed trough, a swinging closure to the feed trough, a pivoted platform mounted upon the structure, a lever pivoted upon the structure, a rod connecting one end of said lever with said closure and a spring actuated rod connecting the opposite end of said lever with the free end of said platform.

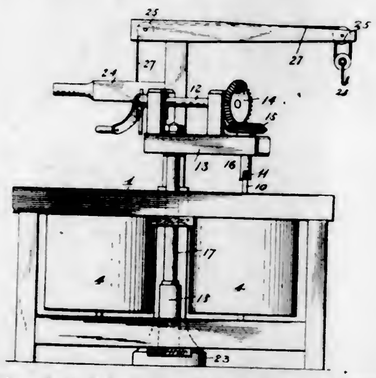
855,569. DOOR-SECURER. JOHN R. HALL, Forest Grove, Oreg., assignor of one-half to Robert J. Ginn, Longbeach, Cal. Filed Sept. 24, 1906. Serial No. 335,969.



Claim.—A device of the character described, comprising two hinged-together plates, one having a portion adapted to be inserted between the door forward edge and its jamb and a portion standing outward therefrom, a right-angled

dog having one arm pivoted at one end, within a slot in the outstanding portion of one of said plates, and having its other arm adapted to be presented against the door and its jamb and crosswise of their meeting edges, said dog having a notch receiving a cross-pin of said outstanding plate-portion as it (the dog) is forced against the door and the casing.

855,570. DISH-WASHING MACHINE. JACOB A. HAMELBACK, Newark, Ohio. Filed Sept. 24, 1906. Serial No. 336,003.



Claim.—1. A device of the character described, combining a dish-holding cage having a yoke at its upper open end, and actuating means for said cage including a pivoted beam, intergeared shafts carried by said beam one having means adapted to effect connection between it and said yoke and vertically adjusting means for said pivoted beam to permit of uncoupling said yoke-connected shaft, said beam being adapted for lateral movement as in applying said actuating means to a second dish-holding cage.

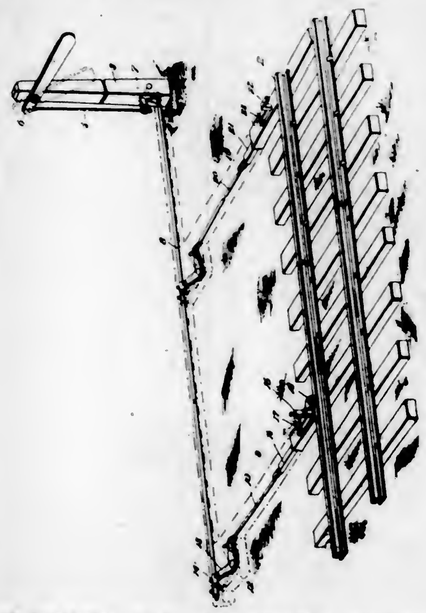
2. A device of the character described, combining a dish-holding cage having a yoke at its upper open end, actuating means for said cage embracing a pivoted beam, intergeared shafts carried by said beam, one of said shafts being equipped for connection with said yoke, a socket receiving the pivoting standard of said beam and a holding screw for the retention of said pivoting standard at the requisite point of adjustment for the disengagement of said yoke-connected shaft.

3. A device of the character described, combining a dish-holding cage having a yoke at its upper open end, actuating means for said cage embracing a beam, intergeared shafts carried by said beam, one of said shafts being equipped for connection with said yoke, a pivoting standard for said beam, a socket receiving said standard, an outstanding arm adapted for the passage through it of said standard, and an adjusting screw operative in connection with said arm for the retention of said standard at the requisite point of adjustment.

855,571. BLOCK SYSTEM. CHARLES C. HARPER, Elmira, N. Y., and JOHN HARPER, Duncannon, Pa. Filed Mar. 23, 1907. Serial No. 364,138.

Claim.—1. In a device of the character described, a visual signal and an audible signal in operative connection, and means adapted to coöperate with means upon a car for effecting positive stoppage thereof, said first-named means being located intermediate the visual and audible signals.

2. In a device of the character described, means moving a torpedo over a rail, means for operating a semaphore arm, said means being operatively connected and means intermediate said other means for acting upon a car to effect positive stoppage of the same, said last-named means being operatively connected to the torpedo and semaphore mechanisms aforesaid.



3. In a device of the character described in combination, a semaphore arm, means for moving a torpedo over a rail, and means intermediate said semaphore and torpedo moving means for effecting positive stoppage of the train, and common means adapted to actuate said semaphore to the danger position, at the same time that the torpedo moving means is adapted to move a torpedo over a rail and a positive stoppage means is brought into operative position.

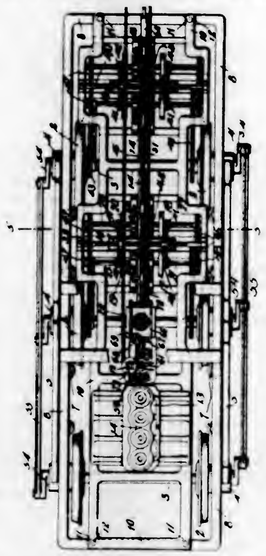
4. A device of the character described, a visual signal and an audible signal in operative connection, a trip block in operative connection with said visual and audible signal and intermediate the two adapted to be moved into position to actuate a depending tappet on a car, and a depending tappet on a car controlling a valve in operative and controlling relation to the air brake system on a train.

5. In a device of the character described, a visual signal and an audible signal and a trip block in operative connection, a tappet controlled valve on a train adapted to actuate by said trip block to permit the exhaust of air from said valve, said valve comprising a casing, a plug within said casing, an arc shaped channel around the greater part of the perimeter of said plug, a port in said shell and an enlargement of said plug between the ends of said arc shaped channel adapted to close said port, substantially as set forth.

855,572. MOTOR-CAR. WALTER D. HAWK, Chicago, Ill. Filed Aug. 23, 1906. Serial No. 331,769.

Claim.—1. In a car, the combination of a frame, axles journaled therein and wheels on the axles, an engine mounted on the frame, a friction disk driven by the engine, rollers adapted to make contact simultaneously with said disk on opposite sides of the disk-axis, shafts for said rollers, a chain connecting one of said shafts with an axle of the truck, and gears connecting the other of said shafts to said axle, substantially as described.

2. In a car, the combination of a frame, axles journaled therein and wheels on the axles, an engine, a transmission mechanism, springs supporting the engine and said mechanism upon the frame, said mechanism including a friction disk driven by the engine, rollers adapted to make contact simultaneously with said disk on opposite sides of the disk-axis and shafts for said rollers, a chain connecting one of said shafts to an axle of the truck, gears connecting the other of said shafts to an axle of the truck, and means for holding said gears in mesh throughout the movements of the spring-supported transmission mechanism relatively to the axles, substantially as described.



3. In a car, the combination of a pivoted truck having a frame, axles and wheels, an auxiliary frame, springs supporting the same upon the truck frame, an engine mounted on said auxiliary frame, a disk driven thereby, two pairs of friction rollers mounted on opposite sides of the disk-axis, the rollers of each pair being on opposite sides of the disk, a shaft for each of said rollers mounted on said auxiliary frame, means for moving said shafts laterally to carry the rollers thereon into and out of engagement with said disk, gearing between the shafts of the rollers of each pair, a chain connecting one of the shafts of said rollers with an axle of the truck, gears connecting the shaft of a roller of the other pair to said axle, and means for holding said gears in mesh throughout the movements of the auxiliary frame relatively to the axles, substantially as described.

4. In a car, the combination of a car-body, a bogie-truck on which the car-body is pivotally mounted, an engine on the truck, a plurality of transmission mechanisms on the truck, each consisting of a disk driven by the engine, pairs of rollers adapted to make contact with the disk on opposite sides of the disk-axis, the rollers of each pair being adapted to engage the disk on opposite sides thereof, and means for moving the rollers radially of and into and out of engagement with said disk, and means for transmitting power from the shafts of said rollers to the axles of the truck, substantially as described.

5. In a car, the combination of a car-body, a bogie-truck on which the car-body is pivotally mounted, an auxiliary frame spring-supported on the truck, an engine and a plurality of transmission mechanisms mounted on said auxiliary frame, each of said mechanisms consisting of a disk driven by the engine, a plurality of rollers, and means for moving said rollers radially of and into and out of contact with said disk, and means for transmitting power from the shafts of said rollers to the axles of the truck throughout the movements of the auxiliary frame relatively to the axles, substantially as described.

6. In a car, the combination of a car-body, a six-wheel bogie-truck on which the car-body is pivotally mounted, an engine upon the truck between two adjacent axles thereof, two transmission mechanisms mounted on the truck one between two adjacent axles thereof and the other adjacent to one of said axles, each of said mechanisms consisting of a disk driven by the engine, a plurality of rollers, and means for moving said rollers radially of and into and out of engagement with said disk, and means for transmitting power from the shafts of said rollers to the axles of the truck, substantially as described.

7. In a car, the combination of a car-body, two bogie-trucks on which the car-body is pivotally mounted, an engine on one of said trucks, a transmission mechanism on said truck comprising a disk driven by the engine and rollers adapted to make contact with said disk on opposite sides of the disk-axis, gearing connecting the shafts of said rollers to the axles of the truck, and means operated from the car-body at either end thereof for moving said rollers radially with respect to the disk, substantially as described.

8. In a car, the combination of a car-body, two bogie-trucks on which the car-body is pivotally mounted, an engine and a transmission mechanism mounted on each of said trucks, said mechanisms each comprising a disk driven by the engine and rollers adapted to make contact with the disk on opposite sides of the disk-axis, gearing connecting the shafts of said rollers to the axles of the trucks, and means operated from the car-body at either end thereof for simultaneously moving the rollers of both said transmission mechanisms radially of their respective disks, substantially as described.

9. In a car, the combination of a car-body, two bogie-trucks on which the car-body is pivotally mounted, an engine on one of said trucks, a transmission mechanism on said truck comprising a disk driven by the engine and rollers adapted to make contact with said disk, gearing connecting the shafts of said rollers with the axles of the truck, and means operated from the car-body at either end thereof for moving said rollers into and out of engagement with said disk, substantially as described.

10. In a car, the combination of a car-body, two bogie-trucks on which said car-body is pivotally mounted, an engine and a transmission mechanism on each of said trucks, said mechanisms each comprising a disk driven by the engine and rollers adapted to make contact with said disk, gearing connecting the shafts of said rollers to the axles of the trucks, and means operated from the car-body at either end thereof for simultaneously moving the rollers of both of said transmission mechanisms into and out of engagement with their respective disks, substantially as described.

11. In a car, the combination of a car-body, two bogie-trucks on which the car-body is pivotally mounted, an engine and a transmission mechanism on each of said trucks, said mechanisms each comprising a disk driven by the engine, rollers adapted to make contact with said disk and an operating means connected to said rollers for moving them into and out of engagement with said disk, gearing between the rollers of said mechanisms and the axles of the trucks and means operated from the car-body at either end thereof and connected to said operating means on both of the trucks for moving them simultaneously in opposite directions, substantially as described.

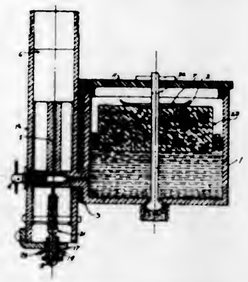
855,573. MEDICAL APPLIANCE. ALBERT C. HEATH, St. Paul, Minn. Filed Oct. 9, 1906. Serial No. 338,100.



Claim.—A medical appliance comprising a bridge or band, and a pair of elliptical ring-like filter members formed of thin bands of smooth metal, one side of each member being approximately flat and the other side arranged on a deep curve, whereby said rings conform to the interior contour of the nostril, the ends of said bridge

or band being secured one to each ring-like member and to the inner face of the flattened portion thereof, whereby the ends of said bridge or band will not lacerate the flesh in placing the rings in the nostril, a filtering fabric extended across each filter member, and a securing ring for each filter member conforming to the contour thereof and fitting over the outer face thereof to surround the same and clamp said fabric in position, said rings being formed of thin bands of smooth metal.

855,574. CARBURETER. FRANK E. HENABRAY, Utica, N. Y. Filed Sept. 10, 1906. Serial No. 333,917.



Claim.—1. In a carbureter, a mixing chamber having a portion thereof formed with opposite side enlargements and lips curved from edge to edge and of a given length and width mounted in the said enlarged portions to swing in and out of the chamber, substantially as described.

2. In a carbureter, a mixing chamber having one section thereof laterally enlarged and lips curved from edge to edge hingedly mounted in said enlarged portions, and a fuel inlet axially mounted in the chamber and between the lips discharging in the direction of the air currents through the chamber, substantially as shown.

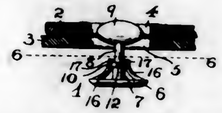
3. In a carbureter, a mixing chamber having its upper end circular in cross-section and the portion therebelow of elongated form in cross-section, lips mounted in said latter portion and against the farthest opposite walls, the said lips consisting of segments of pipe and having means connected therewith normally maintaining and holding the free ends together, and a fuel feed lengthwise of the chamber, the said lips being hingedly mounted each to deflect the air current against the fuel discharge and against the current on the opposite walls of the chamber and the other lip, substantially as described.

4. In a carbureter, a mixing chamber of oblong shape in cross section and having its walls converged at about the outlet into circular form, the combination of a fuel pipe longitudinal of the chamber and lips hingedly mounted at the farther walls of the oblong portion, the said members being constructed and positioned so that the air and the fuel currents are of the same general direction, and the lips are adapted to regulate the amount of air and deflect the currents thereof against the fuel current, substantially as described.

5. In a carbureter, a mixing chamber having lateral enlargements on opposite sides, and a fuel pipe lengthwise of such portion, and lips open at each end, one in each enlargement and having their edges adjacent the side walls hingedly mounted and means normally holding their free ends against the fuel pipe, the said pipe and lips and chamber walls being so positioned relatively that the currents of air and fuel are impinged against each other and against the lips and walls of the chamber, substantially as described.

855,575. BUTTON. OTTO L. HENERLAU, Newark, N. J. Filed Nov. 14, 1906. Serial No. 343,326.

Claim.—1. A button or stud, comprising a base-plate, provided with an upwardly extending tubular member, a shank provided with an elongated button-head or stud, said shank being adapted to revolve in said tubular member, a lock-disk provided with oppositely disposed grooves or notches, secured upon said shank, means adapted to engage with said lock-disk to lock the shank and its button-head or stud against turning, and means for preventing the displacement of the shank from the tubular member of the base-plate, substantially as and for the purposes set forth.



2. A button or stud, comprising a base-plate, provided with an upwardly extending tubular member, a shank provided with an elongated button-head or stud, said shank being adapted to revolve in said tubular member, a lock-disk provided with oppositely disposed grooves or notches, secured upon said shank, means adapted to engage with said lock-disk to lock the shank and its button-head or stud against turning, consisting of a pair of spring-members connected with said base-plate, the free end-portions of said spring-members being adapted to engage with the oppositely disposed grooves or notches of the lock-disk, substantially as and for the purposes set forth.

3. A button or stud, comprising a base-plate, provided with an upwardly extending tubular member, a shank provided with an elongated button-head or stud, said shank being adapted to revolve in said tubular member, a lock-disk provided with oppositely disposed grooves or notches, secured upon said shank, means adapted to engage with said lock-disk to lock the shank and its button-head or stud against turning, consisting of a pair of spring-members connected with said base-plate, the free end-portions of said spring-members being adapted to engage with the oppositely disposed grooves or notches of the lock disk, comprising a ring or washer secured upon the said shank, said ring or washer being adapted to engage with a portion of the base-plate, and turned-over portions upon the said shank to prevent the displacement of the said ring or washer.

855,576. LEATHER-SPLITTING MACHINE. ADAM F. HERTIG, Newark, N. J. Filed May 2, 1906. Serial No. 314,747.

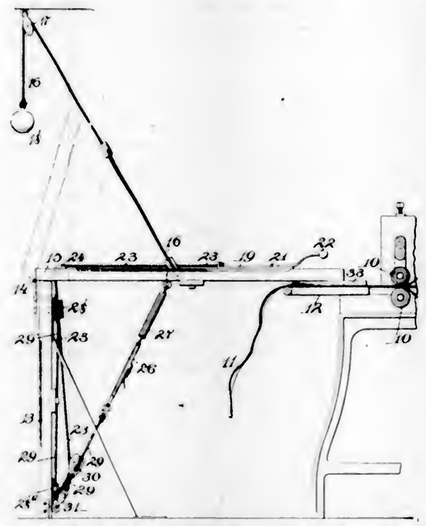
Claim.—1. An attachment for leather splitting machines, comprising suitable supports, a series of bars hinged to the supports, and fingers on the ends of the bars arranged to diverge from the center and away from the supports.

2. An attachment for leather splitting machines, comprising suitable supports, a series of bars hinged to the supports, diverging fingers on the bars, and means to normally draw the hinged bars upward.

3. An attachment for leather splitting machines, comprising suitable supports, a series of bars hinged on the supports, diverging fingers on the ends of the bars and arranged to engage the table of the leather splitting machine, and means on one of the bars to throw the bars downward, and means for pulling the bars upward when released.

4. An attachment for leather splitting machines comprising suitable supports, a series of bars hinged to the supports, diverging fingers on their free ends, ropes attached to the under sides of the bars, pulleys on the supports and the bars over which the ropes pass, means on one of the bars attached to the top for operating the rope, and means for drawing the bars upward when the operating means is released.

5. An attachment for leather splitting machines comprising a series of supports, bars arranged on the supports, diverging fingers on the free ends of the bars and adapted to engage the table of a leather splitting machine, means for normally withdrawing the bars from the machine, means on one of the bars for actuating all the bars, and an elastic connection between the operating means and the bars.

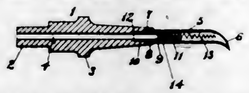


6. An attachment for leather splitting machines comprising a series of supports, bars hinged to the supports, fingers on the free ends of the bars and diverging toward the machine, means for simultaneously operating the bars to bring the fingers in engagement with the table of the machine, an elastic connection between the operating means and the bars, and means for withdrawing the bars from the machine when the operating means is released.

7. An attachment for leather splitting machines comprising suitable supports, bars arranged to be pressed down on the table of a leather splitting machine, and members fixed on the bars to cause the leather to be stretched toward its edges.

8. An attachment for leather splitting machines comprising bars to be yieldingly forced down on a table of a leather splitting machine, and stationary fingers arranged at an angle on the bars for exerting a lateral pressure on material moving on the table of the machine.

855,577. PYROGRAPHIC BURNER. JOHN HETHERINGTON, Belleville, N. J., assignor to New Jersey Screw Works, a Firm. Filed Mar. 30, 1907. Serial No. 365,606

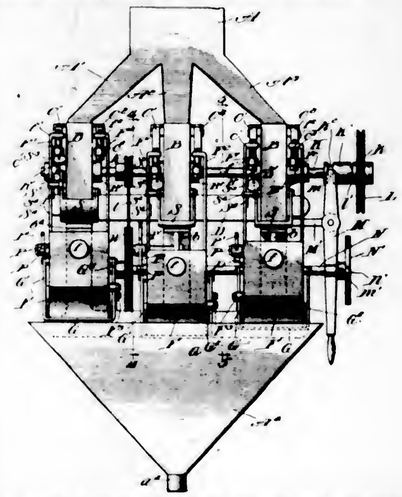


Claim.—In a pyrographic burner, the combination of a lug having a longitudinal passage, said passage having an outer radial enlargement and an inner enlargement of less diameter than the outer, a tip having a base portion fitting said inner enlargement of the lug passage and extending into the outer enlargement, and a shell inserted at its end into the said outer enlargement around the base of the tip.

855,578. AUTOMATIC WEIGHING-MACHINE. GEORGE HOEFNER, Chicago, Ill. Filed June 8, 1906. Serial No. 320,847.

Claim.—1. In an automatic weighing machine, the combination with a plurality of scales, each scale comprising a weighing receptacle, a discharge gate, and a latch for retaining the gate closed, of means successively engaging the several latches for effecting the successive openings of the gates of the several receptacles at pre-determined intervals.

2. In an automatic weighing machine, the combination with a plurality of scales, each scale comprising a weighing receptacle, and a discharge gate therefor, of a rotary shaft extending adjacent all of the discharge gates, and means controlled by said shaft for effecting the successive opening of the gates at pre-determined intervals.



3. In an automatic weighing machine, the combination with a plurality of scales, each scale comprising a weighing receptacle, an outwardly swinging discharge gate, and a latch for retaining the gate closed, of a rotary shaft extending adjacent all of the discharge gates, and projections on said shaft for successively engaging said latches to open the gates at pre-determined intervals.

4. In an automatic weighing machine, the combination with a plurality of stationary scales, each scale comprising a weighing receptacle, and a discharge gate therefor, of means for effecting the successive opening of the gates of the several receptacles at predetermined intervals, and means for controlling the successive rising of the several receptacles at predetermined intervals.

5. In an automatic weighing machine, the combination with a plurality of scales, each scale comprising a weighing receptacle and a discharge gate therefor, of a rotary shaft extending adjacent all of the discharge gates, means controlled by said shaft for effecting the successive opening of the gates at pre-determined intervals, and means actuated by said shaft for controlling the successive rising of the several receptacles at pre-determined intervals.

6. In an automatic weighing machine, the combination with a plurality of scales, each scale comprising a weighing receptacle and a discharge gate therefor, of a rotary shaft extending adjacent all of the discharge gates, a latch for retaining each gate closed, projections on said shaft for successively engaging said latches to permit the gates to open at predetermined intervals, pivoted levers adapted to engage said receptacles to control the successive rising thereof, and projections on said shaft adapted to engage said levers to control the successive rising of the receptacles.

7. In an automatic scale, the combination with a weighing receptacle, of an outwardly swinging discharge gate, means for automatically holding said gate in a closed position, means for automatically holding said gate in a partially closed position, and mechanism for disengaging both of said means from said gate to permit the gate to swing directly from either a closed or partially closed position to an open position.

8. In an automatic scale, the combination with a weighing receptacle, of an outwardly swinging discharge gate, a latch for holding said gate closed, a second latch

for holding said gate in a partially closed position, and mechanism for disengaging said latches from said gate to permit the gate to swing directly from either its closed or partially closed position to its open position.

9. In an automatic scale, the combination with a weighing receptacle, of a gravity closing discharge gate, a gravity latch pivotally mounted upon said receptacle to hold said gate closed, a rotary shaft supported adjacent the said receptacle, and a projection on said shaft adapted to oscillate said latch out of engagement with said gate.

10. In an automatic scale, the combination with a weighing receptacle, of means for delivering material to be weighed to said receptacle, a discharge gate controlling the outlet from said receptacle, a rotary shaft located adjacent said receptacle, a latch for holding said gate closed, a projection on said shaft adapted to oscillate said latch out of engagement with said gate, and means actuated by said shaft for controlling the rising of the receptacle after the discharge of material therefrom.

11. In an automatic scale, the combination with a weighing receptacle, of a main supply passage through which material passes to said receptacle, an inclined supplemental supply passage through which material passes to said receptacle to complete the predetermined quantity of material therein, the lower wall of said supplemental supply passage terminating in a plane below that of the main supply passage and means for controlling both of said passages actuated directly by the falling of the receptacle to close said passages and by the rising of said receptacle to open said passages.

12. In an automatic scale, the combination with a weighing receptacle, of a main supply passage through which material passes to said receptacle, a counterbalanced oscillating gate for opening and closing said passage, a supplemental supply passage through which material passes to said receptacle to complete the pre-determined quantity of material therein, a vertically movable gate for opening and closing said supplemental passage, and means for directly controlling the closing of both of said gates by the sinking of the receptacle and the opening of both of said gates by the rising of said receptacle

13. In an automatic scale, the combination with a weighing receptacle, of a main supply passage through which material passes to said receptacle, an oscillating gate pivotally supported adjacent said passage, a supplemental supply through which material passes to said receptacle to complete the pre-determined quantity of material therein, a gate carried by said receptacle for opening and closing said supplemental supply passage, and means actuated by the rising and sinking of said receptacle for effecting the opening and closing of said main supply gate,

14. In an automatic scale, the combination with a weighing receptacle, a counter-balanced gate for opening and closing said main passage, means for controlling the opening and closing of said gates by the rising and sinking of said receptacle, a supplemental supply passage through which material passes to said receptacle to complete the pre-determined quantity of material therein, and a gate composed of separately movable sections carried by said receptacle for controlling the flow of material through said supplemental passage.

15. In an automatic scale, the combination with a weighing receptacle, of a supply passage through which material passes to said receptacle, a gate supported adjacent said passage to open and close the same, a shifting weight carried by said gate to counter-balance the same and means controlling the opening and closing of said gate by the rising and sinking of said receptacle.

16. In an automatic scale, the combination with a weighing receptacle, of a supply passage through which material passes to said receptacle, a gate supported adjacent said passage to open and close the same, means controlling the opening and closing of said gate by the rising and sinking of said receptacle, and means for counterbalancing said gate to relieve the receptacle when sinking from the weight of said gate.

17. In an automatic scale, the combination with a weighing receptacle, of a supply passage through which material passes to said receptacle, an oscillating gate supported adjacent said passage to open and close the same, a counterbalanced weight carried by said gate, a projection carried by said receptacle and engaging said gate for effecting the opening and closing of the same as the receptacle rises and sinks.

18. In an automatic scale, the combination with a weighing receptacle, of a supply passage through which material passes to said receptacle, and a gate composed of separately movable sections carried by said receptacle, whereby the opening and closing of said passage is controlled by the rising and falling of said receptacle.

19. An automatic scale, the combination with a weighing receptacle, of a passage through which material is supplied to said receptacle, a gate composed of vertically and independently sliding sections controlling said passage, the lower ends of said sections over-lying and adapted to rest upon a wall of said passage-way, and means for raising said gate relatively to said passage to control the flow of material therethrough.

20. In an automatic scale, the combination with a weighing receptacle, of means for supplying a predetermined quantity of material to said receptacle means for normally automatically discharging said receptacle at pre-determined intervals, and means for positively preventing the discharge of said receptacle when the weight of the material therein is greater or less than the pre-determined amount.

21. In a power controlled weighing machine, the combination with a weighing receptacle, a scale beam supporting said receptacle, means for delivering material to said receptacle, a discharge gate, means for effecting the opening of said discharge gate upon the complete sinking of the receptacle, and means for preventing the complete sinking of said receptacle when it has received a greater weight than that of the pre-determined quantity of material.

22. In a power controlled weighing machine, the combination with a weighing receptacle a scale beam supporting said receptacle, means for delivering material to said receptacle, means for interrupting the rising of said beam when the receptacle has received its main load, a rotary shaft adjacent said receptacle, a lever adapted to engage said receptacle, a projection on said shaft for oscillating said lever to force the receptacle to the limit of its downward movement, a discharge gate, and means for effecting the opening of said gate when the receptacle reaches the limit of its downward movement.

23. In an automatic weighing machine, the combination with a plurality of scales, each scale comprising a weighing receptacle and a discharge gate therefor, of a rotary shaft extending adjacent all of the discharge gates, a latch for retaining each gate closed, projections on said shaft for successively engaging said latches to open the gates at pre-determined intervals, pivoted levers adapted to engage said receptacles, projections on said shaft adapted to engage said levers to force the receptacles to the limit of their downward movement, a scale beam supporting each receptacle, and means for interrupting the rising of each scale beam prior to the engagement of the lever with the corresponding receptacle.

24. In an automatic scale, the combination with a weighing receptacle, of a scale beam supporting said receptacle, means for delivering a main supply of material to said receptacle, means for delivering a supplemental supply of material to said receptacle to complete the pre-determined quantity of material, an oscillating frame, having a stop against which the scale beam engages when the receptacle receives its main supply, means for automatically oscillating said frame to remove said stop from above the beam to permit it to further rise upon the receptacle receiving its complete load, and means for automatically oscillating said frame upon the falling of the beam to locate said stop above the beam.

25. In an automatic scale, the combination with a weighing receptacle, of a scale beam supporting said receptacle, means for delivering a main supply of material to said receptacle, means for delivering a supplemental supply of material to said receptacle to complete the pre-determined quantity of material, a frame adapted to oscillate transversely to the path of the beam, a stop on said frame to interrupt the upward movement of the scale beam, means for automatically oscillating said frame to remove said stop from above the beam to permit the further rise of the beam, and a second stop on said frame actuated by the falling of the scale beam to automatically oscillate said frame in position to locate said first stop above the beam.

26. In an automatic scale, the combination with a weighing receptacle, of a scale beam supporting said receptacle, means for delivering a main supply of material to said receptacle, means for delivering a supplemental supply of material to said receptacle to complete the pre-determined quantity of material, a frame adapted to oscillate transversely to the path of the beam, a stop on said frame to interrupt the upward movement of the scale beam, a cam surface on said frame engaged by the beam to shift the center of gravity of the frame whereby the frame will so swing as to remove said stop from above the beam, and a second stop on said frame actuated by the falling of the beam to oscillate said frame and locate said first stop above the beam.

27. In an automatic scale, the combination with a weighing receptacle, of a scale beam supporting said receptacle, means for delivering material to said receptacle, an oscillating frame, a stop on said frame adapted to interrupt the rising of said beam, a chamber containing mercury carried by said frame, means for oscillating said frame to shift said mercury upon the initial rising of said beam, and thereby move said stop to a position to permit the further rising of the scale beam, and means for automatically returning said stop to its initial position upon the falling of the scale beam.

28. In an automatic weighing machine, the combination with a plurality of scales, each scale comprising a weighing receptacle and a discharge gate therefor, of a rotary shaft extending adjacent all of the discharge gates, a latch for retaining each gate closed, projections on said shaft for successively engaging said latches to open the gates at pre-determined intervals, pivoted levers adapted to engage said receptacles to prevent the same from rising, projections on said shaft adapted to engage said levers to control the successive rising of the receptacles, means for rotating said shaft, and means for locking said shaft against rotation when one of said projections is in position to engage the corresponding latch.

29. In an automatic weighing machine the combination with a plurality of scales, each scale comprising a weighing receptacle and a discharge gate therefor, of rotary shaft extending adjacent all of the discharge gates, means actuated by said shaft for successively effecting the opening of the gates of the several receptacles, a power shaft, a driving wheel on said power shaft, a clutch for locking and unlocking said wheel to said power shaft, means for driving said first shaft from the power shaft, and means for unclutching the driving wheel from the power shaft and simultaneously locking said first shaft against rotation.

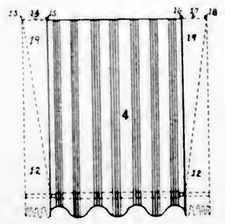
30. In an automatic weighing machine the combination with a plurality of scales, each scale comprising a weighing receptacle and a discharge gate therefor, of a rotary shaft standing adjacent all of the discharge gates, means actuated by said shaft for successively permitting the gates of the several receptacles to open, a power shaft, a driving wheel on said power shaft, a clutch for locking and unlocking said wheel to said power shaft, means for driving said first shaft from the power shaft, a disk fixed to said first shaft and having slots therein, a lever for actuating said clutch, and a pin carried by said lever adapted to engage one of the slots in said disk.

31. In a power controlling scale, the combination with a weighing receptacle, of a main supply passage leading to said receptacle, a gate for controlling the flow of material through said passage, a supplemental supply passage leading to said receptacle, a shaft extending transversely through said supplemental passage, means for rotating said shaft, and projections carried by said shaft and extending within said supplemental passage.

32. In an automatic scale, the combination with a weighing receptacle, of a main supply passage leading to said receptacle, means for opening and closing said passage, a supplemental supply passage through which material passes to said receptacle after the closing of the main passage, a shaft extending transversely through said supplemental passage, means for rotating said shaft, projections carried by said shaft and extending within said supplemental passage, means for closing said supplemental passage when the pre-determined quantity of material has passed to the receptacle, and a reservoir communicating with said supplemental passage in which the material accumulates when the supplemental passage is closed.

33. In an automatic scale, the combination with a weighing receptacle, of a main supply passage leading to said receptacle, means for opening and closing said passage, a supplemental supply passage, a power actuated shaft extending transversely through said supplemental passage, projections carried by said shaft and extending within said supplemental passage for feeding material to said supplemental passage, a gate controlling said supplemental passage, said supplemental passage being enlarged between said projections and said gate to form a reservoir to receive material when said gate is closed.

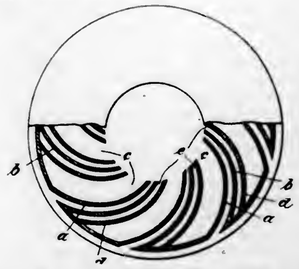
855,579. AWNING. JOHN C. KNABESCHUH, Louisville, Ky. Filed Oct. 11, 1906. Serial No. 338,370.



Claim.—1. An adjustable awning, comprising a frame consisting of swinging side bars having their outer ends bent at right angles, a front bar pivotally connecting the outer ends of said side bars, means for adjusting the angular relation of said front bar and one of said side bars, and a covering for said frame.

2. An adjustable awning, comprising an awning cloth having side wings which are extended to form a part of the cover when the awning is extended and are rolled in when the awning is contracted, and a frame having side bars pivoted to a front cross bar so that the inner ends of the side bars may be spread, or vice versa, and having means at one end of said cross bar for rigidly fastening one of said side bars and said cross bar when the parts of the frame have been placed in symmetrical relation to one another.

855,580. CENTRIFUGAL MACHINE. BIRGER LJUNGSTRÖM, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden, a Company. Filed July 23, 1906. Serial No. 327,410.



Claim.—1. In a centrifugal machine of the character and for the purpose described, in combination, a series of

separating plates, said separating plates being provided with outlets, a series of secondary plates, each enveloped by its corresponding separating plate, and means whereby the drying, dyeing or washing material, admitted on the side of each of said secondary plates remote from the corresponding separating plates, may be led to the opposite side of the secondary plate and through the mass when it is under the action of centrifugal force.

2. In a centrifugal machine of the character and for the purpose described, in combination, a series of separating plates, said separating plates being provided with outlets, perforated secondary plates, each of said separating plates enveloping a corresponding secondary plate, whereby drying, dyeing or washing material admitted to the side of the secondary plate remote from the corresponding separating plate, may be led to the opposite side of the secondary plate and through the mass when it is under the action of centrifugal force.

3. In a centrifugal machine of the character and for the purpose described, in combination, a series of separating plates, said separating plates being provided with outlets, a series of secondary plates, each of which is enveloped by its corresponding separating plate, there being a passage from one side to the other side of said secondary plates whereby the drying, dyeing or washing material admitted on the side of said secondary plate remote from the corresponding separating plate, may be led to the opposite side of the secondary plate and through the mass when it is under the action of centrifugal force, and a solid guiding plate, enveloping each separating plate, to catch and guide the liquid to the periphery.

4. In a centrifugal machine of the character and for the purpose described, in combination, a series of separating plates, said plates being provided with outlets, perforated secondary plates, each of which is enveloped by its corresponding separating plate, whereby drying, dyeing or washing material admitted to the side of the secondary plate remote from the corresponding separating plate, may be led to the opposite side of the secondary plate and through the mass when it is under the action of centrifugal force, and a solid guiding plate, enveloping each of the separating plates to catch and guide the liquid to the periphery.

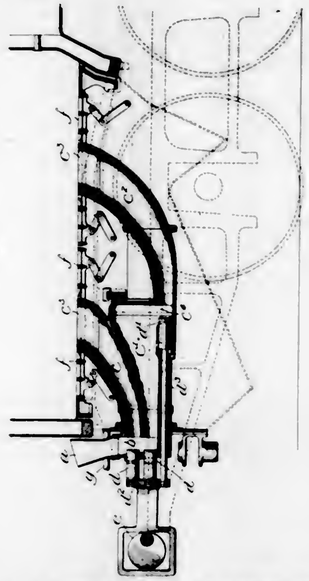
5. In a centrifugal machine of the character and for the purpose described, in combination, a separating plate, said plate being provided with outlets, a secondary plate enveloped by the separating plate and means whereby the drying, dyeing or washing material, admitted on the side of said secondary plate remote from the separating plate, may be led to the opposite side of the secondary plate and through the mass when it is under the action of centrifugal force.

6. In a centrifugal machine of the character and for the purpose described, in combination, a separating plate, said separating plate being provided with outlets, a perforated secondary plate enveloped by said separating plate whereby drying, dyeing or washing material admitted to the side of the secondary plate remote from the separating plate, may be led to the opposite side of the secondary plate and through the mass when it is under the action of centrifugal force.

7. In a centrifugal machine of the character and for the purpose described, in combination, a separating plate, said separating plate being provided with outlets, a secondary plate enveloped by said separating plate there being a passage from one side to the other side of said secondary plate whereby the drying, dyeing or washing material admitted to the side of said secondary plate remote from the separating plate, may be led to the opposite side of the secondary plate and through the mass when it is under the action of centrifugal force, and a solid guiding plate enveloping said separating plate to catch and guide the liquid to the periphery.

8. In a centrifugal machine of the character and for the purpose described, in combination, a separating plate provided with outlets, a perforated secondary plate enveloped by said separating plate whereby drying, dyeing or washing material admitted to the side of the secondary plate remote from the separating plate, may be led to the opposite side of the secondary plate and through the mass when it is under the action of centrifugal force and a solid guiding plate enveloping said separating plate to catch and guide the liquid to the periphery.

855,581. STOKER FOR FURNACES. HARRY A. MACCLYMENT, Burlington, Iowa. Filed Dec. 29, 1905. Serial No. 293,774.



Claim.—1. In combination with a furnace having a grate, a fuel supplying means, magazines leading therefrom to isolated parts of the grate, and means outside such magazines for forcing fuel in equal quantities through the different magazines.

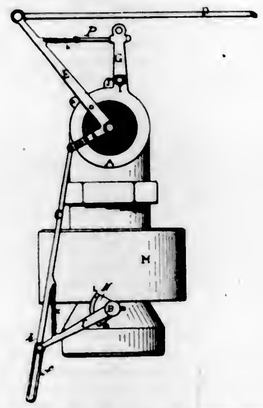
2. A furnace having a grate provided with a plurality of openings, a source of fuel supply, a magazine directly connecting one of the openings with the fuel supply, a magazine connected to another opening, an auxiliary fuel chamber between this last magazine and the fuel supply, and means for moving fuel from the supply to the grate.

3. In combination with a furnace, a source of fuel supply, an auxiliary storage chamber, a tube leading from such source to the auxiliary storage chamber, means outside such tube for forcing fuel into the auxiliary storage chamber, and means for conveying the fuel thence to the furnace grate.

4. In combination with a furnace, a source of fuel supply, an auxiliary storage chamber, a tube leading from such source to the auxiliary storage chamber, means outside such tube for forcing fuel into the auxiliary storage chamber, a second tube leading therefrom to the furnace grate, and means outside the second tube for forcing fuel to the grate.

855,582. SPEED-CONTROLLING MECHANISM FOR EXPLOSIVE-MOTORS. JOHN A. MILLER, Tarrytown, N. Y. Filed June 6, 1906. Serial No. 320,446.

Claim.—1. Apparatus of the character described, employing a carbureter having its throttle-valve provided with an actuating lever adapted to have independent movement thereof and its gasolene jetting or spraying valve provided with an actuating lever, means effecting connection between said levers, and means adapted to retain said gasolene spraying valve at its minimum open position and the throttle-valve at its maximum open position synchronously.



2. A carbureter having a throttle-valve provided with a lever for its actuation and with a gasolene spraying valve also equipped with an actuating lever, and a rod-connection between said levers, fixed to said throttle-valve lever and having a slot and stud connection with said gasolene spraying valve lever, and means for connecting the latter lever, independently of said slot and stud connection, to said throttle-valve lever.

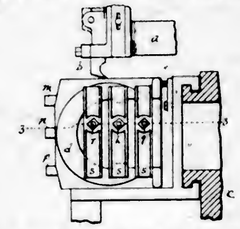
3. A carbureter having a throttle-valve provided with a fixed upstanding arm carrying a stud or stop, a bell-crank lever applied to said valve and having connection with said arm, a gasolene spraying valve having an actuating lever, and a rod fixed at one end to said bell-crank lever and having a slidable connection with the gasolene valve actuating lever, a spring connection between said rod and said gasolene-valve actuating lever, means for controlling or restricting the movement or strokes of said levers.

4. A carbureter having a throttle-valve provided with a fixed upstanding arm equipped with a lateral stud or stop, a lever for actuating said throttle-valve adapted to have engagement with said lateral stud or stop, means of connection between said upstanding arm and said lever, stops arranged for restricting the movements of said arm and said lever as said throttle-valve is moved to its open position, a gasolene spraying valve having an actuating lever, means for limiting the movement of the latter, and means effecting yielding connection between said levers.

5. A carbureter, employing a throttle-valve provided with a fixed upstanding arm, a lever for actuating said valve, means effecting spring-connection between said arm and lever, said lever having attached thereto a spring for its retention in initial position, a gasolene spraying valve, a rod-connection between said levers, the gasolene-valve actuating lever having a spring connection with said rod and said rod having also a slot and stud connection with the latter lever, and means for limiting the movements of said levers.

855,583. WORK-HOLDER FOR SHAPERS OR PLANERS. MATTHEW MORTON and HENRY E. MORTON, Muskegon Heights, Mich. Filed Mar. 10, 1906. Serial No. 305,259.

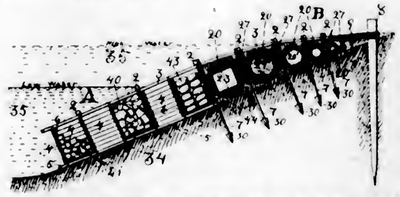
Claim.—1. A work holding device for a draw cut shaper comprising a backing frame, a clamping plate movable upon the base of the shaper and tapered each way from a given point intermediate the ends of the plate on the side adjacent to said frame, oppositely arranged clamping devices to engage the work between said clamping devices and said plate, a central clamping bolt passing transversely through the said point of the clamping plate normally at a right angle to the plate, and additional clamping bolts passing transversely through the plate on either side of said point normally at a right angle to the plate whereby the clamping plate may be drawn around at either side of the point toward the frame for the purpose described.



2. A work holding device for a draw cut shaper comprising a backing frame, a clamping plate movable upon the base of the shaper tapered each way from a point intermediate the ends of the plate on the side thereof toward the frame, oppositely arranged clamping devices to engage the work between the clamping devices and said plate, clamping bolts passing transversely through the said plate, and removable strips located between said plate and backing frame for the purpose described.

3. A work holding device for a draw cut shaper comprising a backing frame, a clamping plate movable upon the base of the shaper, said plate tapered each way from a given point intermediate the ends of the plate on the one side thereof, oppositely arranged clamping devices to engage the work between the clamping devices and said plate, a central clamping bolt passing through the said point of the plate, additional clamping bolts passing through the plate on either side of said point, said plate provided on the tapered face thereof with a central slot intermediate the ends thereof, and with additional slots on either side of the central slot, and removable strips located in said slots for the purpose described.

855,584. ANCHOR-REVETMENT FOR SHORES OR BANKS. DAVID NEALE, near Fort Calhoun, Nebr. Filed Feb. 27, 1906. Serial No. 303,208.



Claim.—1. A revetment consisting of an upper field of anchored fascines and a lower field of weighted cribs.

2. A revetment consisting of a covering of anchored fascines and a weighted crib along its lower edge.

3. A revetment of anchored cellulated fascines having a submerged cellular weighted crib along its lower edge.

4. A revetment having in combination a cellulated fascine with a permeable envelop and a cellular weighted crib having permeable walls.

5. A revetment consisting of a field of anchored fascines having attached to its lower edge a submerged crib of upwardly open cells.

6. A revetment formed of fascines ranged longitudinally along the water edge and an adjoined submerged crib to form the lower edge of the revetment.

7. A revetment consisting of a course of longitudinal tiers of fascines, a bed of loose fibrous materials interposed between said fascines and the bank to be protected, anchor-stakes disposed between said tiers of fascines and anchored in said bank beneath, and poles disposed across said fascines and fastened to said anchor-stakes.

8. A revetment having in combination adjoining tiers of fascines ranged end to end in each tier, anchor-stakes seated in the bank beneath the fascines, binding-poles fastened to the tops of the anchor-stakes, and fenders crossing the

binding-poles and fastened thereto and to said anchor-stakes.

9. A revetment composed of a field of coreless fascines each having a permeable envelop and a central longitudinal chamber cross-partitioned into cells; said fascines disposed in lateral and longitudinal contact with each other throughout said field.

10. A revetment consisting of coreless fascines, each fascine having a central longitudinal chamber cross-partitioned into cells within a permeable envelop; said fascines arranged in longitudinal lateral contact with each other to form the field of revetment; anchor-stakes driven between the fascines and into the bank beneath and binding poles disposed across said fascines and fastened to the tops of said anchor-stakes.

11. A revetment composed of fascines each having a permeable envelop and a longitudinal chamber divided into cells by weighted cross-partitions.

12. A revetment composed of separate fascines ranged parallelly with and against each other, each fascine having a permeable envelop and a longitudinal chamber divided into cells by weighted cross-partitions.

13. A revetment consisting of a covering of permeable cellulated fascines, anchor-stakes driven into the bank beneath, binding-poles disposed across said fascines and fastened to the tops of said anchor-stakes, and fender-poles disposed across the binding-poles and fastened thereto and to the tops of said anchor-stakes.

14. A revetment comprising a crib of open-topped cells, having a permeable floor, a layer of fibrous material in the bottom of the cells, and coarser weighting material on the fibrous layer.

15. A revetment consisting of an open-topped cellular crib having longitudinal fenders disposed and fastened along its open top and weighting material in its cells.

16. A submerged revetment consisting of a crib divided into open-topped cells, an anchor-cable attached to the crib and to a pile driven into the bank, and the cells weighted with rock on a layer of fibrous material in the bottom of said cells.

17. An open-topped cellular crib for revetment consisting of a substructure of poles laid to form a floor under the cells; a superstructure of outside and partition walls composed of superimposed poles flattened and interlapped and cross-lapped at the junctions of said walls and said walls fastened at their bases to said substructure; vertical stakes set in diagonally opposed angles at said junctions and secured by wire lashing interlaced through said walls and around said vertical stakes.

18. An entirely open-topped cellular crib for revetment consisting of a substructure of poles laid to form a floor under the cells; a superstructure of outside and partition walls composed of superimposed poles flattened and interlapped and cross-lapped at the junctions of said walls and said walls fastened at their bases to said substructure; vertical stakes set in diagonally opposed angles at said junctions and secured by wire lashing interlaced through said walls and around said vertical stakes; intermediate supports to walls consisting of uprights secured thereto by wire lashing interlaced through said walls and around said intermediate uprights; and copings of heavier poles or logs fastened on the tops of said walls.

19. A continuous open-topped cellular crib for revetment comprising walls of superimposed poles, wall copings of larger poles fastened to the tops of the walls, and fender-logs or poles fastened across the tops of the wall copings.

20. A bank revetment having in combination an upper field of fascines, anchor-stakes driven into the bank beneath said fascines, a cellular crib anchored against the lower edge of the upper field of fascines, poles fastened to the anchor-stakes to bind across the fascines, said poles continued across and fastened to form copings on the tops of the walls of the cellular crib.

21. A bank revetment comprising an upper field of fascines, a lower field of cellular cribs, binding-poles fastened across the fascines and continued across to form copings on the walls of the cellular cribs, and fenders of poles or logs fastened across the binding and coping poles.

22. A revetment consisting of a bed of loose fibrous materials deposited upon the bank to be protected and then covered with a course of loosely laid hollow fascines having permeable envelops.

23. A revetment consisting of a course of closely laid hollow fascines having permeable envelops; each fascine laid in a bed of loose fibrous materials incorporated with earth and shaped on top to fit the under side of said fascine.

24. A revetment consisting of a finishing course of closely laid hollow fascines having permeable envelops; a bed of loose fibrous materials interposed between said fascines and the bank to be protected; and anchor-stakes disposed between said fascines and into the bank beneath.

25. A revetment consisting of a finishing course of closely laid hollow fascines having permeable envelops, loose fibrous materials incorporated with earth and disposed to fill the angles between said fascines and the bank to be protected, anchor-stakes driven between said fascines into said bank and poles disposed across said fascines and fastened to said anchor-stakes.

26. A revetment consisting of a single course of closely laid hollow fascines having permeable envelops, loose fibrous materials in the angles between said hollow fascines and the bank beneath, small fascines disposed in the angles on top between said hollow fascines and the top leveled up with a dressing of earth.

27. A cellulated fascine consisting of a permeable envelop inclosing a central longitudinal chamber divided into cells by cross partitions which also support said envelop.

28. A coreless fascine consisting of a permeable envelop inclosing a central longitudinal chamber and cross-partitions to support said envelop and divide said chamber into an axial tier of cells.

29. A cellulated fascine having a permeable envelop to inclose a longitudinal chamber and impermeable cross-partitions to divide said chamber into cells and support said envelop.

30. A coreless cellulated fascine having a permeable envelop to inclose a central longitudinal chamber and impermeable cross-partitions to support said envelop and to divide said chamber into an axial tier of cells.

31. A coreless cellulated fascine having a permeable envelop inclosing a central longitudinal chamber and cross-partitions to support said envelop; said cross-partitions disposed in pairs to form small cells; weighting materials in said small cells; and said small cells disposed to cross-divide said central longitudinal chamber into other cells.

32. A cellulated fascine having a permeable envelop inclosing a chamber; cross-partitions to support said envelop and disposed in pairs to form small cells adapted to receive weighting materials; said small cells disposed to divide said chamber into other cells.

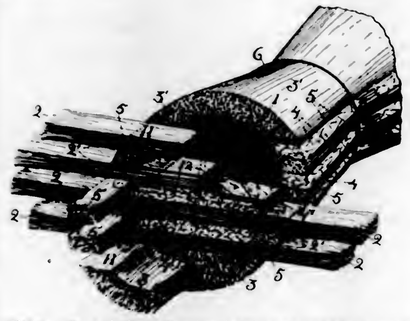
33. A cross-partition to support the envelop of a cellulated fascine, consisting of bars to span the chamber of the fascine with their ends disposed in the envelop, and bundles of fibrous material, as brush, shaped to fit the inner walls of the chamber and fastened to said cross-bars.

34. An impermeable cross-partition to divide the chamber and support the envelop of a hollow coreless fascine, consisting of planking having its edges shaped to fit the inner walls of the chamber and cross-battened by bars having their ends projecting beyond the planking to engage the envelop.

35. A fastening to attach an anchor-cable to a fascine comprising an end portion of the main cable looped around the fascine and tied, a supplemental cable having one end fastened into the loop opposite to its tie, the two cables carried along opposite sides of the fascine to its end and then bent toward each other and fastened together.

36. A combined binding and cable attachment for fascines comprising an end of the cable looped and applied by tying as the second binder from the anchored end of the fascine, a supplemental cable having one end fastened to said binder on the side opposite to said tie, the two cables carried along opposite sides of the fascine to its end binding and fastened thereto, then bent toward each other and fastened together.

855,585. CELLULATED FASCINE. DAVID NEALE, near Fort Calhoun, Nebr. Filed Apr. 5, 1906. Serial No. 310,048.



Claim.—1. A hollow fascine having an envelop consisting of longitudinally ranged brush disposed in layers crosswise through the envelop and lengthwise to the fascine and alternated with layers of short fibrous materials as hay, straw, weeds, bagasse, corn or cotton stalks or short brush.

2. A celled fascine consisting of an envelop having sides and ends of layers of long brush or long bundles of fibrous materials cross-lapped at the corners, the chinks filled with short fibrous materials, and an encompassing binder intermediate its ends.

3. A celled fascine having an envelop consisting of layers of long brush cross-lapped at the corners of the cell and the chinks filled with layers of short fibrous materials.

4. A celled fascine having walls of long brush interlapped at the angles the top ends of the brush free, projecting beyond said angles, and the body of the fascine cross-bound by encompassing binders.

5. A celled fascine having walls of layers of long brush cross-lapped at the angles, the chinks filled with layers of short fibrous materials, overlapping layers of brush to close the cell, and encompassing cross-binders.

6. A cellulated fascine consisting of an envelop of longitudinally ranged brush, cross-partitions or ends of brush cross-lapped with the brush of the envelop, and binders around said envelop.

7. A cellulated fascine consisting of an envelop of longitudinally ranged brush, the interior divided by cross-partitions, and annular binders around the envelop intermediate said partitions.

8. A cellulated fascine having an envelop of longitudinally ranged layers of brush, cross-partitions of brush in layers cross-lapped with the layers of said envelop, and annular binders intermediate said partitions.

9. A cellulated fascine having cross-partitions within an envelop of longitudinally ranged layers or bundles of brush alternated with layers of short fibrous materials as hay, straw, weeds, bagasse, corn or cotton stalks or short brush, and annular binders.

10. A cellulated fascine having an envelop of layers of brush, ends or cross-partitions of layers of brush cross-lapped with the envelop layers, the chinks between said layers filled with short fibrous materials, and annular binders disposed at the spaces intermediate said ends and partitions.

11. A cellulated fascine consisting of an envelop of layers of brush, cross-partitions of layers of brush cross-lapped with the envelop layers to project outward beyond said envelop, and annular binders.

12. A partition or end-wall for cellulated fascines consisting of brush laid across and interlapped with the brush of the envelop, and a frame of timbers or poles fastened against the side of said partition or end-wall by wires interlaced through its component brush.

13. A partition or end wall for cellulated fascines consisting of cross-layers of brush cross-lapped with the longitudinal layers of the envelop, a frame of timbers or poles cross-lapped at the angles the ends disposed in said envelop and the partition layers bound to said timbers.

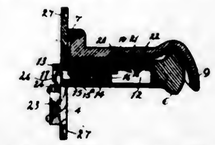
14. A reinforcing frame for the ends and partitions of cellulated fascines consisting of a rectangular frame with diagonal braces to project beyond the angles of the frame and through the envelop of the fascine.

15. An envelop support for coreless hollow fascines consisting of a diagonally braced rectangular frame of bars their ends projecting beyond the angles of the frame to engage the envelop and segments of fibrous material interposed between the sides of the rectangular frame and the adjacent segment of the envelop.

16. A fascine having radial bars with pointed ends projecting beyond the periphery of the fascine to engage other adjacent fascines and the bank or bed of the stream to anchor said fascines thereto and together.

17. A fascine having an end consisting of fibrous material shaped and bound to form a compact conically pointed end independent of any core and having an anchor cable attached to draw from the apex of said conical point.

855,586. COAT-HOOK. JOHN PATTERSON, Aurora, Ill. Filed Apr. 9, 1906. Serial No. 310,702.



Claim.—1. A device of the character described including a base plate, an arm projecting from said plate and having a knob on its outer end, a retaining member adapted to removably engage and overlap the said arm and knob, means for locking said retaining member in apposition with the said arm, and separate key-operated means for releasing said member from its locked position.

2. A device of the character described including a base plate having a tubular projecting arm formed integral therewith, a latch-bolt adapted to be reciprocated within said tubular arm, a spring to extend said latch bolt, a retaining member provided with a lug adapted to automatically engage said latch-bolt, and separate key-operated means for retracting said latch bolt to release said retaining member, said means secured to the rear side of said base-plate.

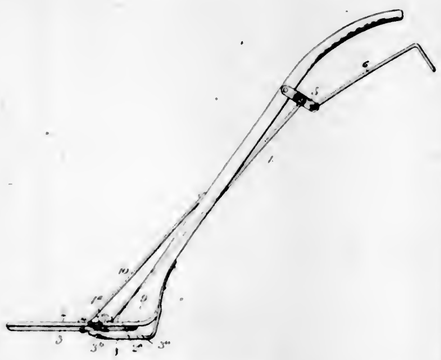
3. A device for the purpose specified including a base-plate, a tubular arm projecting from said base plate and provided with an enlarged head, a latch-bolt adapted to be reciprocated within the tubular arm, a retaining member co-extensive with the said arm and adapted to engage its upper portion and overlap the said enlarged head, a lug secured to said retaining member, a latch-head attached to said latch-bolt and adapted to engage said lug, means for yieldingly retaining said latch-bolt and head in engagement with the said lug, separate key-operated means for releasing the said latch-bolt and head from engagement with the said lug, and means for raising the said retaining member from the said arm when so released.

4. In a coat-hook, a base-plate, a tubular arm extending from said plate, a hollow latch-member slidably mounted in said arm, a spring arranged in said latch and adapted to extend the same, a retaining member pivoted on said base plate and adapted to partly embrace said arm, a lug on said member adapted to engage said latch, and a lock secured to the rear of said base plate, said lock comprising a bolt adapted to engage and hold said latch against the action of said spring.

855,587. LAWN-MOWER. LARS PEDERSON, Manitowoc, Wis. Filed Feb. 17, 1906. Serial No. 301,649.

Claim.—1. A device of the character described, comprising a handle-equipped member having a fixed blade at its

lower end provided with a lateral heel-extension, a second blade having also extensions projecting therefrom, said second blade being pivotally connected to the aforesaid blade by one of its extensions, a pitman or rod connected to the other extension of said pivoted blade, at the side of the line of the cutting action of said blades, and means connected to said handle-equipped member for its convenient actuation.



2. A device of the character described, comprising a handle-member having a fixed blade at its lower end, a movable blade co-operating with the aforesaid blade, each of said blades having an extension projecting from the same side as the extension from the other blade and pivotally connected together, said movable blade also having an extension projecting from its opposite side, a rod or pitman connected to said last named extension at one side of the line of the cutting action of said blades, a link connected to the means forming connection between said blades and between one of said blades and said rod or pitman, and means connected to said rod or pitman for its convenient actuation.

3. A lawn mower, comprising a handle-member provided with a fixed blade equipped with a lateral heel-extension, a movable blade also having a corresponding extension pivoted to the aforesaid extension at one side of the line of the cutting action of said blades, and means for actuating said movable blade, embracing a pitman or rod connected to the heel-end of said movable blade at the opposite side, said handle-member being equipped with a rotary disk or roll adapted to engage the heel-end of said movable blade, and said movable blade actuating means also including a lever fulcrumed upon said handle-member and having connected thereto said pitman, and a hand-lever connected to the aforesaid lever.

855,588. METHOD AND APPARATUS FOR PROTECTING MARINE WOODEN STRUCTURES. THOMAS N. PRUDDEN, San Francisco, Cal. Filed Feb. 19, 1906. Serial No. 301,928.

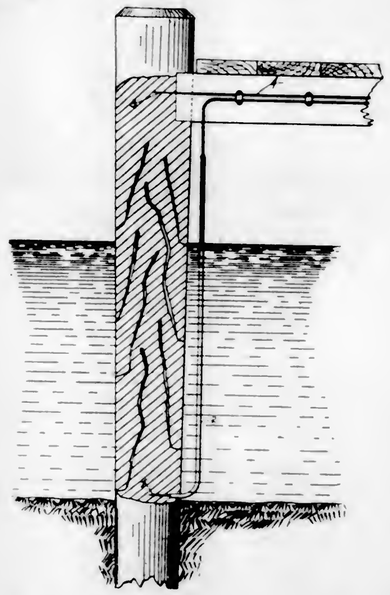
Claim.—1. The process of protecting marine wooden structures from teredos, which consists in subjecting the water-soaked substance thereof to a flow of electricity.

2. The process of protecting marine wooden structures from teredos, which consists in subjecting the water-soaked substance thereof and the bodies of teredos contained therein to a flow of electricity.

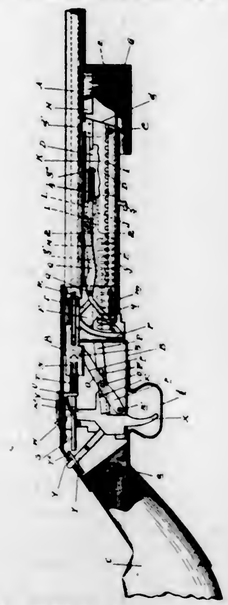
3. Apparatus for protecting marine wooden structures from teredos consisting of means for subjecting the water soaked substance thereof to a flow of electricity.

4. Apparatus for protecting marine wooden structures from teredos consisting of means for subjecting the water soaked substance thereof and the bodies of teredos contained therein to a flow of electricity.

855,588.



855,589. MAGAZINE-RIFLE. BERT W. PUNCHES, Plymouth, Mich. Filed June 13, 1905. Serial No. 265,070.



Claim.—1. A magazine gun comprising a barrel, a magazine adapted to receive a series of cartridges in an upright position arranged side by side shell end downward transversely of the barrel, means for feeding the series

longitudinally and rearwardly of the barrel and for transferring the end cartridge into the barrel.

2. A magazine gun comprising a barrel, a magazine adapted to receive a series of cartridges extending longitudinally of the barrel, the individual cartridges being arranged side by side shell end downward and extending transversely to the barrel, means for feeding the entire series longitudinally rearwardly of the barrel, co-operating means for transferring the end cartridge and inserting the same in the barrel, a breech block, and co-operating mechanism for removing and replacing said breech block respectively in advance and subsequent to the transfer of said cartridge.

3. A magazine gun comprising a barrel, a magazine arranged adjacent to and extending from the breech end of to an intermediate point on said barrel and adapted to receive a series of cartridges in an upright position arranged side by side shell end downward, the series extending longitudinally of the barrel, and a removable closure for said magazine permitting, when removed, the insertion of the cartridges.

4. A magazine gun comprising a barrel, an adjacent magazine adapted to receive a series of cartridges extending longitudinally of the barrel, the individual cartridges being arranged side by side shell end downward and extending transversely of the barrel, means for feeding the entire series rearwardly of the barrel, a guide for the series engaging the cartridge flanges, and means for transferring the end cartridge and inserting the same in the barrel.

5. A magazine gun comprising a barrel, a magazine adjacent thereto and parallel therewith, and having an opening in the side opposite to said barrel for the insertion of cartridges transversely of the barrel in a series longitudinally of the barrel with their points toward the barrel, of means for feeding said series rearwardly, a grooved guide in the magazine in the side opposite to the barrel arranged to engage the base flanges of the cartridges, and means for engaging the base of the end cartridge of the series and transferring the same to the barrel.

6. A magazine gun comprising a barrel, an adjacent magazine in which cartridges are arranged extending transversely of the barrel side by side in a series longitudinally of the barrel, a reciprocatory hand actuated member adapted to move the entire series rearwardly of the barrel, a guide channel at the end of the magazine leading to the breech of the barrel and into which the cartridge is inserted by the movement of the series, and a member actuated by said reciprocatory member adapted in the return movement of the latter to propel the cartridge in said channel into engagement with the breech of the barrel.

7. A magazine gun comprising a barrel, an adjacent magazine containing a longitudinal series of cartridges individually extending transversely of the barrel, a reciprocatory hand actuated member, a follower in said magazine propelled by said member to feed the entire series of cartridges, a guide channel connecting the end of the magazine with the breech of the barrel into which the end cartridge of the series is fed, a transfer member actuated by the return movement of said reciprocatory member for engaging a cartridge in said guide channel and propelling the same into the barrel, a breech block reciprocated by said reciprocatory hand member to be withdrawn and replaced respectively before and after the transfer of the cartridge into the barrel, and means for withdrawing said transfer member from the path of said breech block after the engagement of the cartridge with the barrel.

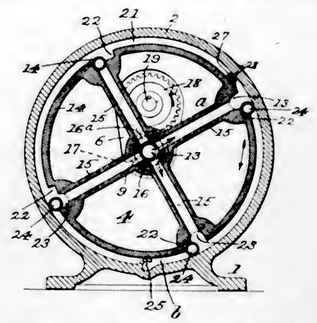
8. A magazine gun comprising a barrel, an adjacent magazine containing a series of cartridges individually extending transversely of the barrel, a guide channel at the end of the magazine leading to the breech of the barrel, means for feeding the series of cartridges to insert the end cartridge in said channel, a reciprocatory hand actuated member, a transfer member operated thereby adapted to engage the cartridge in said channel and propel the same into engagement with the barrel, and a guide for returning said transfer member through a different path to a position for engaging a succeeding cartridge.

9. In a gun the combination with a barrel, of a reciprocatory breech block therefor, a firing pin slidably mounted in said breech block, a spring sleeved upon said pin and bearing against a shoulder thereon, a stationary abutment against which the opposite end of said spring bears, apertured for the passage of said pin, a laterally yielding sear integral with said abutment, a shoulder on said pin adapted to engage with said sear when said breech block is retracted, and to hold said spring under tension, and a trigger for disengaging said sear from said shoulder to release said pin.

10. In a gun the combination with a barrel, of a reciprocatory breech block therefor, a firing pin slidable within said breech block, a spring sleeved upon said pin and bearing against a shoulder thereon, and an integral abutment and sear for said spring and said pin.

11. A magazine gun comprising a barrel, a magazine parallel therewith and adjacent thereto and having an opening in the under side for the insertion of the cartridges transversely of the axis of the barrel, a slide for substantially closing said opening, and means for transferring said cartridges from the magazine to the breech of said barrel.

855,590. ROTARY MOTOR. JACOB RITBERGER, Bellevue, Ky., assignor of one-half to William Raymond Thiem, Newport, Ky. Filed Mar. 14, 1907. Serial No. 362,308.



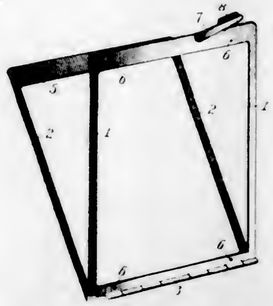
Claim.—1. A rotary motor comprising a cylindrical shell having a removable side, an internal driving-wheel having hollow spokes or arms and recesses or notches in its rim at the outer end of each hollow spoke, a horizontal tubular shaft rigidly mounted in the shell-walls and supporting the driving-wheel, a rotary pinion mounted on the rigid shaft and having a hub-extension on which the driving-wheel is rigidly mounted, suitably registering inlet and exit orifices in the shaft and hub-extension and leading through the hollow wheel-arms to the respective notches in the rim, an internal spur-gear mounted on one side of the shell and meshing with said pinion, a pulley mounted on the outer end of the spur-gear shaft and freely-disposed floats or buckets alternately engaging the several seats of recesses or notches made in the driving-wheel rim for receiving the impact of the water or other pressure-medium.

2. A rotary motor comprising a shell, a hollow shaft having an inlet and an outlet water or pressure-medium passage and rigidly mounted in the side-walls of the shell, a driving-wheel having hollow arms leading to the water passage in said shaft and mounted to turn on the rigid shaft within the shell, notches or recesses in the rim of said wheel at the outer ends of its hollow arms, a pinion mounted on the shaft concentric to and connected with the driving-wheel, a housing-construction on one side-wall of the shell, a spur-gear in the housing and meshing with the pinion and having a shaft provided with an outer driving-pulley, a discharge opening or water outlet at the bottom of the shell, and freely-disposed hollow floats or buckets engaging said notches in the periphery of the driving-wheel for carrying or rotating the latter on the rigid shaft by the impact of the water or pressure-medium passing

through the hollow arms or spokes into an annulus between the respective rims of the wheel and shell.

3. In a device of the character described, a shell, a driving-wheel within the shell, a shaft supporting said driving-wheel and provided with water inlet and outlet passages, passage-ways in said wheel, two-part notches or recesses in the periphery or rim of said wheel, short tubes comprising floats or buckets gravitating in the notches of the wheel-rim and engaging the inner face of the shell-rim for receiving the impact of the pressure-medium, a float or bucket diverter in the shell, a discharge-outlet for the pressure-medium adjacent the diverter, and a backstop in the annulus provided between the rims of the wheel and shell.

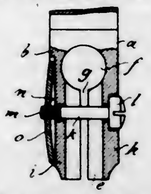
855,591. PHOTOGRAPHIC-FILM HOLDER. ALFRED SCHALEK, Chicago, Ill. Filed Sept. 8, 1906. Serial No. 333,774.



Claim.—1. A photographic film holder comprising a pair of counterpart frames hinged together at one end and provided with a catch at the other end, one of said frames being provided with a series of impaling pins and the other frame with a series of orifices to receive said pins.

2. A photographic film holder comprising a pair of counterpart frames hinged together at one end by a series of knuckles extending the width of the holder and connected by a pintle, and provided with a catch at the opposite end, one of said frames being provided with a series of impaling pins and the other frame with a series of orifices to receive said pins.

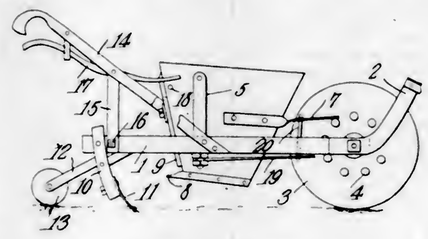
855,592. COMPASSES. GEORG SCHOENNER, Nuremberg, Germany. Filed Nov. 28, 1906. Serial No. 345,542.



Claim.—Means for securing an attachment in compasses comprising a leg having two lugs at its end forming a receiving socket for the attachment, one of said lugs having a recess on its outer face, a curved spring in said recess and a tightening screw passing through both lugs and engaging the middle part of the spring.

855,593. GUANO-DISTRIBUTER. ROBERT W. STARLING, Berrien county, Ga. Filed Mar. 7, 1907. Serial No. 361,085

Claim.—A fertilizer distributer comprising a wheel mounted frame, a hopper pivotally supported upon the frame, an arm attached to the hopper, a series of pins attached to the wheel of the frame, said arm normally lying in the path of said pins, a spring attached at one end to the frame and a link connecting said spring with the said arm.



855,594. VIBRATOR. ALFRED J. STECKER, Detroit, Mich., assignor to Eureka Vibrator Co., Detroit, Mich., a Corporation of Michigan. Filed Oct. 24, 1906. Serial No. 340,276.



Claim.—1. In a massaging apparatus, the combination of a suitable case, a shaft journaled therein, means for rotating said shaft, a vibratory stem in substantially longitudinal alinement with the shaft, means for connecting the meeting ends of the stem and shaft eccentrically, a ball upon the outer end of said stem, bearing cups embracing said ball the outer end of the case having a concaved seat in which the inner bearing cup is seated, a gland screwing onto the outer end of said case and engaging the outer of said cups and an applicator attached to said ball.

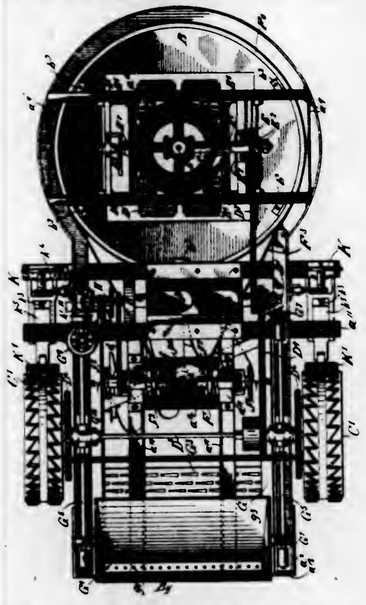
2. In a massaging apparatus, the combination of a case, a longitudinal shaft journaled therein, means for rotating said shaft, a longitudinally extending vibratory stem, means for connecting the ends of the stem and shaft eccentrically, a ball on the outer end of said stem, bearing cups supported in the end of the case and embracing said ball, a gland confining said cups means for preventing a rotation of the ball in said cups but allowing a gyration of said ball therein and an applicator connected with said ball.

3. In a massaging apparatus, the combination of a suitable case, a rotary shaft journaled therein, means for rotating said shaft, a sleeve having in one end a concentric socket in which the end of said shaft is rigidly secured, the other end of said sleeve having an eccentric socket therein, a vibratory stem loosely seated in said eccentric socket and supported to gyrate in the end of the case, and an applicator attached to said stem.

855,595. PROCESS OF MANUFACTURING NITROGLYCERIN EXPLOSIVES OF REDUCED FREEZING-POINT. OSCAR E. W. STÖHRER, Charlottenburg, Germany. Filed Apr. 10, 1906. Serial No. 310,997.

Claim.—The process of preparing a mixture of tetranitrodiglycerin and trinitroglycerin consisting in heating glycerin to its boiling point under normal atmospheric pressure, maintaining the mass at boiling temperature until it contains the desired percentage of diglycerin and nitrating the resultant mixture, substantially as described.

855,596. AGRICULTURAL MACHINE. THOMAS J. THORP, Corvallis, Oreg., assignor to T. J. Thorp Mfg. Company, Corvallis, Oreg., a Corporation of Oregon. Filed May 11, 1906. Serial No. 316,310.



Claim.—1. The combination of a main frame, a wheel-frame on which the front end of the main frame is mounted to turn, a traction-wheel supporting said wheel-frame, a shaft having its axis coincident with the axis of said wheel-frame, means for communicating motion from said shaft to said wheel, a motor supported on the main frame, and means for communicating motion from said motor to said shaft.

2. The combination of a traction-wheel and its frame, a main frame with relation to which the first-named frame may turn, traction wheels supporting the main frame in the rear of the said first-named traction-wheel, a shaft serving to communicate motion to the first-named traction wheel and having its axis coincident with the axis of said traction-wheel frame, a motor mounted on the main frame, and means for communicating motion from said motor to said shaft and from said motor to the rear traction-wheels, for the purpose set forth.

3. The combination of a traction-wheel frame, a pair of traction wheels located on opposite sides of the axis thereof, a main frame having its front end supported on said traction-wheel frame and with relation to which the first-named frame may turn, a pair of rear wheels, a motor mounted on the main frame, and means for communicating motion from the motor to one or both of the front traction-wheels, at will.

4. The combination of a traction-wheel frame, a pair of traction wheels located on opposite sides of the axis thereof, a main frame having its front end supported on said traction-wheel frame and with relation to which the first-named frame may turn, a pair of rear wheels, a motor mounted on the main frame, means for communicating motion from the motor to a rear wheel, and means for communicating motion from the motor to one or both of the front wheels, at will.

5. The combination of a wheel frame, a wheel supporting the same, a main frame having its front end swiveled on said wheel-frame, wheels supporting the main frame in the rear of said wheel-frame, a motor mounted on the main frame, means for transmitting motion from the motor to one of said wheels, and means for transmitting motion from the motor to said wheel-frame for use in steering the machine.

6. The combination of a front wheel, a wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, a motor supported on the main frame, wheels supporting the main frame in the rear of said wheel-frame, means for communicating motion from the motor to one of said wheels, a shaft equipped with a sprocket-wheel and geared to said motor, and a sprocket-chain connected with said sprocket-wheel and with said wheel-frame, whereby the machine may be steered by power from the motor.

7. The combination of a front wheel and a wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, rear wheels for the main frame, and steering mechanism comprising a steering shaft geared to said wheel-frame, a locking device for said steering shaft, and power-actuated means for actuating said steering shaft.

8. The combination of a front wheel, a wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, wheels for the rear portion of the main frame, a motor mounted on the main frame, a shaft actuated therefrom, a steering shaft geared to said wheel-frame, means for locking said steering shaft, and mechanism for releasing the steering shaft and connecting it with said first-named shaft, whereby the machine may be steered by power.

9. The combination of a front wheel, a wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, wheels for the rear portion of the main frame, a motor mounted on the main frame, a shaft driven from said motor, a steering shaft geared to said wheel-frame and equipped with a transmission member, shiftable transmission members on the first-named shaft, a gripping device for the steering shaft, and means for releasing said gripping device and throwing either one of the transmission members on said first-named shaft into engagement with the transmission member on said steering shaft.

10. The combination of a front wheel, a wheel-frame supported thereon, a main frame having swivel connection with said wheel-frame, wheels for the rear portion of the main-frame, a motor mounted on the main frame, a continuously actuated shaft geared to the motor and equipped with shiftable friction disks, a steering shaft geared to said wheel-frame and equipped with a disk located between said first-named disks, a pair of slides, a cable connected with said slides and serving to control the steering shaft, and means for simultaneously actuating one of said first-named disks and one of said slides to release the steering shaft and set it in motion.

11. The combination of a front wheel, a wheel frame supported thereon, a main frame having its front end supported on said wheel-frame and free to turn with relation thereto, a standard supported on said wheel frame, a transverse shaft supported on said standard and geared to said wheel, a standard supported on the main frame and having swivel connection with said first-named standard, a vertical shaft geared to said first-named shaft, a shaft geared to said vertical shaft and supported on the second-named standard, wheels supporting the rear portion of the main frame, and a motor supported on the main frame and geared to said last-named shaft.

12. The combination of a pair of traction-wheels, a wheel-frame supported thereon, a standard supported on said wheel-frame, a transverse shaft above said wheels, clutch-controlled means for transmitting motion from said shaft to each of said wheels, a main frame having its front end swiveled on said wheel-frame, a shaft supported on said main frame and geared to said first-named shaft, wheels supporting the rear portion of the main frame, a motor supported on the main frame, and means for communicating motion from said motor to said second-named shaft, at will, for the purpose set forth.

13. The combination of a front wheel, a wheel-frame supported thereon, a main frame having its front end

swiveled on said wheel-frame, a motor mounted on the main frame immediately in the rear of said wheel-frame, wheels supporting the rear portion of the main frame, a vertically adjustable tool-frame supported on the main frame, means for communicating motion from said motor to one of said wheels, a pair of parallel shafts geared together and connected with the tool-frame, and means for communicating motion from said motor to one of said shafts, at will.

14. The combination of a front wheel, a wheel-frame supported thereon, a main frame swivelly connected with said wheel-frame, wheels supporting the rear portion of the main frame, a vertically adjustable tool-frame, a shaft serving to raise the tool frame, a seeder connected with the tool-frame, a shaft serving to operate the seeder, a motor mounted on the main frame, and means for connecting said motor with either one of said shafts, at will.

15. In a machine of the character set forth, the combination with a main-frame, of a tool-frame, a pair of parallel shafts geared together, suspending means for the tool-frame connected with said shafts, means for actuating one of said shafts to raise the tool-frame, and means for gripping one of said shafts to lock the tool frame in a given position or to lower the tool frame under control, at will.

16. The combination of a front wheel, a wheel-frame supported thereon, a main frame swivelly connected with said wheel-frame, rear wheels supporting said main frame, a vertically adjustable tool-frame, and means carried by the main frame for imparting substantially horizontal draft to the tool-frame, regardless of the position of the tool-frame.

17. The combination of a front wheel, a wheel-frame supported thereon, a main frame swivelly connected with said wheel-frame, a pair of rear wheels for the main frame, a tool-frame, flexible means suspending the tool-frame from the main frame, and a depending member supported on the main frame and slidably engaging the front end portion of the tool-frame, whereby substantially horizontal draft is imparted to the tool-frame, regardless of the adjustment of the tool-frame.

18. The combination of a front wheel, a wheel-frame supported thereon, a main frame swivelly connected with said wheel-frame, wheels supporting the rear portion of the main frame, a bar having longitudinal pivotal connection with said main frame in the rear of said wheel-frame, a depending bracket carried by said bar, a tool-frame engaged by said bracket, flexible means suspending the tool frame from the main frame, and flexible means joining the extremities of said swiveled bar with said tool-frame near the front corners thereof.

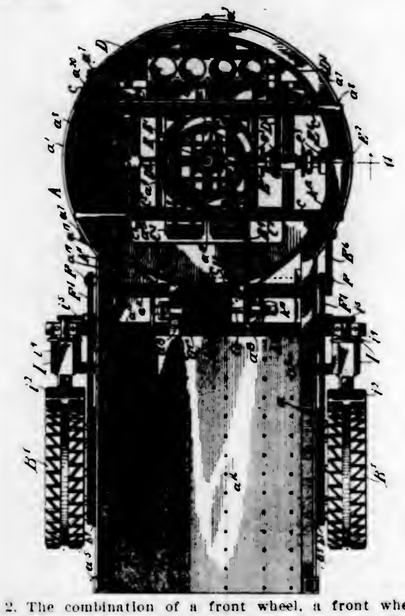
19. The combination with a front wheel, a wheel-frame supported thereon, and a main frame comprising an upper member formed with a portion of a circle at its front end, and a lower member formed with a portion of a circle at its front end, connecting members joining said first-named members at their front ends, and axle brackets joined to said upper and lower members.

20. A main frame for a machine of the character set forth, comprising upper and lower frame members provided at their front ends with circular portions and having rearwardly extending side members joining said circular portions, and axle-brackets interposed between said side members, each axle-bracket having a channel for receiving a vertical portion of a bent axle.

21. The combination of a bent axle having vertical portions, and a main frame comprising upper and lower members, and axle-brackets interposed between said members, each bracket having an opening receiving a spindle of an axle and having on its inner face a channel receiving a vertical portion of the axle, for the purpose set forth.

835,597. MOTOR-VEHICLE. THOMAS J. THORP, Corvallis, Oreg., assignor to T. J. Thorp Mfg. Company, Corvallis, Oreg., a Corporation of Oregon. Filed May 11, 1906. Serial No. 316,311.

Claim.—1. The combination of a front wheel, a front wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, wheels supporting the rear end of the main frame, a motor mounted on said wheel-frame, a vertical shaft co-axial with the axis of said wheel-frame and geared to said motor, and steering mechanism mounted on the main frame and geared to said vertical shaft.



2. The combination of a front wheel, a front wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, wheels supporting the rear end of the main frame, a motor mounted on said wheel-frame, a vertical shaft co-axial with the axis of said wheel-frame and geared to said motor, and means connecting said vertical shaft with one of said last-named wheels.

3. The combination of a front wheel, a front wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, wheels supporting the rear end of the main frame, a motor mounted on said wheel-frame, a vertical shaft co-axial with the axis of said wheel-frame and geared to said motor, steering mechanism mounted on the main frame, and means gearing said vertical shaft to said steering mechanism and to one of said last-named wheels.

4. The combination of a front wheel, a front wheel-frame, a main frame having its front end swiveled on said wheel-frame, wheels supporting the rear end of the main-frame, a motor mounted on said wheel-frame, a horizontal shaft supported on the wheel-frame and geared to said motor, a vertical shaft co-axial with the axis of said wheel-frame and geared to said horizontal shaft, a shaft journaled on the front end of the main-frame and geared to said vertical shaft, and means for transmitting power from said last-named shaft to mechanism on the main frame of the machine.

5. The combination of a front wheel, a front wheel-frame, a main frame having its front end swiveled on said wheel-frame, wheels supporting the rear end of the main frame, a vertical shaft co-axial with the axis of said wheel-frame, a motor mounted on said wheel-frame and geared to said vertical shaft, a horizontal shaft mounted on the front end of the main frame and geared to said vertical shaft, and means for transmitting motion from said horizontal shaft to the rear wheels of the machine.

6. The combination of a front wheel, a front wheel-frame, a main frame having its front end swiveled on said wheel frame, a motor mounted on said wheel-frame, a vertical shaft co-axial with the axis of said wheel-frame and geared to said motor, a steering shaft mounted on the main frame and geared to said vertical shaft, and connecting means between said steering shaft and said wheel-frame, for the purpose set forth.

7. The combination of a front wheel, a front wheel-frame, a main frame having its front end swiveled on said wheel-frame, a motor mounted on said wheel-frame, a vertical shaft co-axial with the axis of said wheel-frame and geared to said motor, means for transmitting motion from the motor to said front wheel, a steering shaft mounted on the main frame in the rear of said wheel frame and geared to said vertical shaft, and means connecting said steering shaft with said wheel-frame.

8. The combination of a pair of front wheels, a front wheel-frame, a main frame having its front end swiveled on said wheel-frame, a motor mounted on said wheel-frame, a vertical shaft in alinement with the axis of said wheel-frame and geared to said motor, means for transmitting motion at will from said motor to said front wheels, a steering shaft mounted on the main frame and connected with said wheel-frame, and means for communicating motion in either direction from said vertical shaft to said steering shaft, for the purpose set forth.

9. The combination of a front wheel, a wheel-frame, a main frame having its front end swiveled on said wheel-frame, a motor mounted on the wheel-frame, a vertical shaft in alinement with the axis of said wheel-frame and geared to said motor, steering mechanism mounted on the main-frame and geared to said wheel-frame, means for communicating motion from said vertical shaft to said steering mechanism, and a hoisting drum actuated from said vertical shaft.

10. The combination of a front wheel, a wheel-frame, a main frame having its front end swiveled on said wheel-frame, a motor mounted on said wheel-frame, a vertical shaft in alinement with the axis of said wheel-frame and geared to said motor, a drum mounted on the main frame, and means for transmitting motion at will from said vertical shaft to said drum.

11. The combination of a front wheel, a wheel-frame, a motor mounted on said wheel-frame, a main frame having its front end swiveled on said wheel-frame, a shaft in vertical alinement with the axis of said wheel-frame and geared to said motor, a shaft supported on the main frame and equipped with a drum, a sleeve journaled on said shaft and geared to said vertical shaft, steering mechanism connected with said wheel-frame, and means for communicating motion from said sleeve to said steering mechanism.

12. The combination of a pair of front wheels, a wheel-frame mounted thereon, a main frame having its front end swiveled on said wheel-frame, rear wheels for the main frame, a motor mounted on the wheel-frame, a vertical shaft co-axial with the axis of said wheel-frame and geared to said motor, a transverse shaft mounted on the front end of the main frame and geared to said vertical shaft, a pair of sprocket-chains actuated by said transverse shaft, steering mechanism mounted on the main frame and actuated by one of said sprocket-chains and connected with said wheel-frame, and means for transmitting motion from the other of said sprocket-chains to the rear wheels of the machine.

13. The combination of a front wheel, a wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, a motor mounted on said wheel-frame, a vertical shaft geared to said motor, and steering mechanism comprising a horizontal shaft actuated from said vertical shaft and equipped with a pair of friction disks, a vertical shaft geared to said wheel-frame and equipped with a friction disk, and means for shifting said first-named disks.

14. The combination of a front wheel, a wheel-frame supported thereon, a main frame having its front end swiveled on said wheel-frame, a motor mounted on said wheel-frame, a vertical shaft geared to said motor, and steering mechanism comprising a horizontal shaft geared to said vertical shaft and equipped with a pair of shiftable friction disks, a steering shaft geared to said wheel-frame and equipped with a friction disk located between said first-named disks, a pair of slides, a gripping cable for said steering shaft connected with said slides, and means for actuating said slides and shifting said first-named friction disks.

15. The combination of a front wheel, a front wheel-frame, a main frame having its front end swiveled on said wheel-frame, a pair of rear wheels, a standard supported on the wheel-frame, a standard supported on the front end of the main frame, anti-friction bearings between said standards, a motor mounted on the wheel-frame, a vertical shaft journaled in the standard carried by the wheel-frame and geared to the motor, a transverse shaft journaled in the standard carried by the front end of the main frame and geared to said vertical shaft, and means for transmitting motion from said last-named shaft.

16. The combination of a front wheel, a wheel-frame, a rear axle having its body portion depressed beneath the plane of its spindles, and a main frame comprising a pair of members having partly circular front-portions, the lower one of said members being swiveled on said wheel-frame, and a bottom comprising bars supported on said axle, and a connecting member joining the front ends of said bars to the lower one of said first-named members, said connecting member serving to complete the circle of the member with which it connects.

17. A frame for the purpose set forth, comprising an upper member curved intermediately to form a partial circle and having rearwardly extending side members, a lower member curved intermediately to form a partial circle and having rearwardly extending side members, a bottom comprising bars and a plate supported on said bars, and a member connecting the front ends of said bars with the lower one of said first-named members, said connecting member serving to complete the circle of the second-named member.

18. A frame for the purpose set forth, comprising an upper member curved intermediately to form a partial circle and having rearwardly extending side members, a lower member curved intermediately to form a partial circle and having rearwardly extending side members, axle-brackets connected with said second-named member and having vertical channels, an axle having its body-portion depressed beneath the plane of its spindles and vertical portions received by the channels of said brackets, and a bottom comprising bars supported on said axle and having their front ends connected with said second-named member.

855,598. RESTRAINING WALL OR LEVEE. GEORGE R. TUTTLE, Sacramento, Cal. Filed Mar. 6, 1907. Serial No. 360,934.

Claim.—1. A restraining wall or levee, the same comprising a base structure composed of vertically disposed supports, and a series of longitudinally disposed tie cables, and an outer wall of concrete within which the said base structure is embedded.

2. A restraining wall or levee comprising a base structure composed of vertically disposed supports, a series of longitudinally disposed tie cables, and bond pieces or extensions on the tie cables, and a wall of concrete within which is embedded the said base structure.

3. A restraining wall or levee, the same comprising a base structure composed of vertically disposed supports, a series of longitudinally disposed tie cables, and bond pieces or extensions adjustably held to the tie cables, and an outer wall of concrete within which the said base structure is embedded.

4. A restraining wall or levee, the same comprising a base structure composed of vertically disposed supports, a series of longitudinally disposed tie cables, a covering of concrete for the base structure, and an outer embankment within which the said base structure and its covering of concrete is embedded.

855,598.



855,599. BREWING MATERIAL. THEODORE B. WAGNER, Chicago, Ill. Continuation of application Serial No. 242,305, filed Jan. 23, 1905. This application filed Jan. 8, 1906. Serial No. 295,052.

Claim.—1. The new product derived from starch chemically intermediate between starch and glucose, practically wholly soluble in water at ordinary temperatures, wholly fermentable and amorphous in that the structure of the starch cells is not recognizable under the microscope.

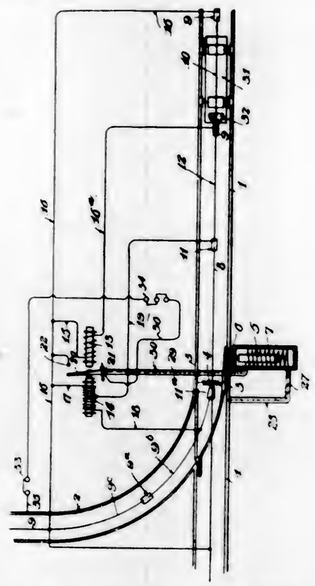
2. The new product made from starch characterized by the facts that it is amorphous, in that the structure of the starch cells is not recognizable under the microscope; gives a perfect mash when acted upon by malt, exhibits a reduction when treated with Fehling's solution; is substantially soluble in water at ordinary temperatures; gives a violet or purple color in its reaction with approximately one eighth its weight of iodin, and a reddish brown color in its reaction with approximately two thirds of its weight of iodin.

855,600. BRUSH-HANDLE SOCKET. ADMIRAL J. WARREN, Kansas City, Mo. Filed Sept. 27, 1906. Serial No. 336,463.



Claim.—The combination with a brush head having a curved upper surface, a transverse groove in said surface, and an aperture, of a socket member having a socket at its upper end and an enlarged lower end shaped to fit the curved surface of the broom head and formed with an aperture to aline with the aperture in the latter, a projection upon the lower end of said member to enter the transverse groove in the brush head, a bolt passed upwardly through the alined apertures in said brush head and member, and a clamping nut engaged with the threaded upper end of said bolt, a handle in the socket of said member, and a lug in said socket to limit the inward movement of the handle therein, substantially as described and for the purpose set forth.

855,601. ELECTRIC RAILWAY-SWITCH. EDWARD F. WINFIELD, Los Angeles, Cal., assignor to Jacob Baum, Los Angeles, Cal., trustee. Filed July 7, 1903. Serial No. 164,564.



Claim.—1. In combination, a track, a switch therefor, a car, electro-magnetic means for closing said switch, means for causing said electro-magnetic means to close said switch when the car is a definite point from said switch, and means intermediate of said point and the switch for causing said switch to open when the car takes more than a definite amount of the electric current.

2. In combination, a track, a switch therefor, a car, electro-magnetic means for closing said switch, means for opening said switch, means for causing said electro-magnetic means to close said switch when the car is a definite point from said switch, and means intermediate of said point and the switch causing said switch to open when the car takes more than a definite amount of the electric current, and means for operating said switch after the car has passed the switch.

3. In combination, a track, a switch therefor, a car, electro-magnetic means for closing said switch, means for causing said electro-magnetic means to close said switch when the car is a definite point from said switch and means intermediate of said point and the switch for causing said switch to open when the car takes more than a definite amount of the electric current, and means for automatically opening said switch after the car has passed the switch.

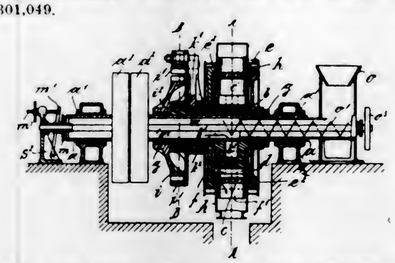
4. In combination, a track, a switch therefor, a car, magnetic means for closing said switch, an electric circuit embracing said magnetic means, a circuit closer in said circuit, a magnet for closing said circuit closer, a magnet for opening said circuit closer, means adapted to be operated by the controller for exciting the first named magnet, means for automatically de-energizing said first named magnet and means for automatically energizing the second named magnet.

5. In combination, a track, a switch therefor, a car, magnetic means for closing said switch an electric circuit embracing said magnetic means, a circuit closer in said circuit, an operating magnet for closing said circuit closer, means adapted to be operated by the controller for energizing the operating magnet when the car is at a definite point from said switch, and automatic means for energizing the release magnet when the car is at another definite point from said switch.

6. In combination, a track, a switch therefor, a car, a main circuit, insulators in the main circuit forming an operating block therein, a solenoid for closing said switch, a shunt from the main circuit through the solenoid, a circuit closer for the shunt circuit, an operating magnet for the circuit closer in circuit with the operating block, a release magnet for the circuit closer in circuit with the main circuit, a safety block in the main circuit intermediate the operating block and switch, the release magnet being stronger than the operating magnet and a section of the release magnet of equal strength with the operating magnet being in series with the safety block.

7. In combination, a track, a switch therefor, a car, a main circuit, insulators in the main circuit forming an operating block therein, a solenoid for said switch, a shunt from the main circuit through the solenoid, a circuit closer for the shunt circuit, an operating magnet for the circuit closer in circuit with the operating block, a release magnet for the circuit closer in circuit with the main circuit, a safety block in the main circuit intermediate the operating block and switch, the release magnet being stronger than the operating magnet and a section of the release magnet of equal strength with the operating magnet being in series with the operating block, a branch circuit from the main circuit embracing a greater number of turns of the release magnet than are in the operating magnet.

855,602. ROLLER-MILL. JULIUS WÜSTENHÖFER, Dortmund, Germany. Filed Feb. 14, 1906. Serial No. 301,049.



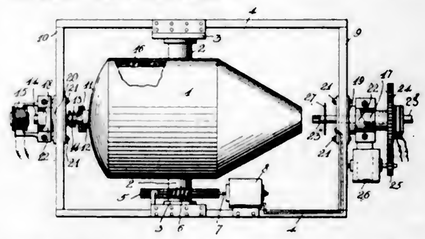
Claim.—1. A roller mill comprising in combination, a driver provided with chambers, a plurality of rollers, in each of said chambers being mounted several rollers, a grinding mantle having a grinding surface, a casing to which said grinding mantle is fixed, floats secured to said casing, means for rotating said casing and grinding mantle, a hollow shaft carrying said driver, a hollow shaft coaxially arranged with said first shaft and supporting said casing, an outer case inclosing said casing and means for feeding the articles to be ground.

2. In a roller mill as described, a hollow shaft for feeding the material to be ground, a plurality of rollers, a driver having chambers for locating several rollers therein, and hollow arms for feeding the material to be ground, and channels lying parallel with said hollow shaft for discharging the ground material, and a grinding mantle cooperating with said rollers and having bores, through which the material passes when ground.

3. In a roller mill as described, a differential mechanism, a casing operated by said differential mechanism, a hollow shaft carrying the latter which consists of a toothed wheel (*i*) firmly attached to said shaft, a wheel (*i'*) eccentrically and freely mounted on said shaft, and being provided with an inner toothed boss engaging with said wheel (*i*), a rod (*k*), a truck crank connected with the wheel (*i'*) by said rod, and firmly attached at said casing.

4. In a roller mill, the combination with a driver, of a hollow shaft, a rod axially arranged in said hollow shaft, a feeding worm carried by said rod, a hopper at one end of said hollow shaft, and discharging therein, a regulating disk at the other end of the hollow shaft mounted on said rod, and means for adjusting the disk.

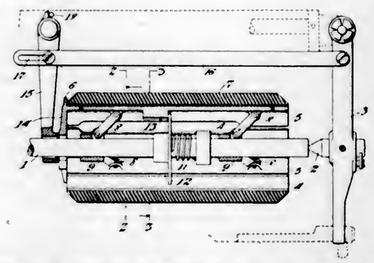
855,603. APPARATUS FOR TREATING MOLTEN STEEL. FRANCIS S. ADAMS, Pueblo, Colo. Filed Mar. 11, 1907. Serial No. 361,814.



Claim.—1. An apparatus for the purpose described, comprising a frame, means for rotating the same, a converter supported for rotary movements within the frame, and an electric controlled locking device for holding the converter against movement relatively to the frame.

2. An apparatus of the character described comprising a supporting frame, a converter, trunnions carried by the converter and engaging bearings on the frame, a worm wheel carried by one of the trunnions, a worm meshing with the worm wheel for swinging the converter through a desired arc, and means for imparting rotary motion to the converter.

855,604. PHONOGRAPH. JONAS W. AYLSWORTH, East Orange, and FRANK L. DYER, Montclair, N. J., assignors to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed May 8, 1906. Serial No. 315,716.



Claim.—1. In a phonograph, the combination with a mandrel shaft and end gate, of an expansible mandrel carried by the mandrel shaft, and connections between the mandrel and end gate for contracting the mandrel when the end gate is opened, substantially as set forth.

2. In a phonograph, the combination with a mandrel shaft and end gate, of a sectional and expansible mandrel carried by said shaft, a lever for contracting the mandrel sections and connections between said lever and end gate, substantially as set forth.

3. In a phonograph, an expansible mandrel composed of a plurality of sections capable of radial movement, a mandrel shaft and inwardly extending arms on the mandrel sections adapted to contact with the mandrel shaft and

limit the motion of the mandrel sections inwardly, substantially as set forth.

4. In a phonograph, an expansible mandrel composed of a plurality of sections capable of radial movement, a mandrel shaft, inwardly extending arms on the mandrel sections adapted to contact with the mandrel shaft and limit the motion of the mandrel sections inwardly, and stops on the mandrel sections to position the record on the mandrel, substantially as set forth.

5. In a phonograph, an expansible mandrel composed of a plurality of sections capable of radial movement, a mandrel shaft, a system of linkages by which the mandrel sections are connected to the mandrel shaft and stops on the mandrel sections to limit the inward movement thereof, substantially as set forth.

6. In a phonograph, an expansible mandrel composed of a plurality of sections capable of radial movement, a mandrel shaft, a system of linkages by which the mandrel sections are connected to the mandrel shaft, stops on the mandrel sections to limit the inward movement thereof and stops on the mandrel sections to position the record on the mandrel, substantially as set forth.

7. In a phonograph, an expansible mandrel composed of a plurality of sections capable of radial expansion, a mandrel shaft, means allowing radial movement of the mandrel sections interposed between the mandrel sections and the mandrel shaft, and means on the mandrel sections for limiting the inward movement thereof, substantially as set forth.

8. In a phonograph, an expansible mandrel composed of a plurality of sections capable of radial movement, a mandrel shaft, pivoted links connecting said sections to the shaft, lugs projecting inwardly on the inner sides of said sections, a slidable collar and a fixed collar on the mandrel shaft the slidable collar being in engagement with said lugs, a spring interposed between said collars, and means for limiting the expansion of said mandrel sections, substantially as set forth.

9. In a phonograph, the combination of a mandrel shaft, an end gate, an expansible mandrel carried by the mandrel shaft, and means under the control of the end gate for contracting the mandrel when the end gate is open, substantially as set forth.

10. In a phonograph, the combination with a mandrel shaft and end gate, of a sectional and expansible mandrel carried by said shaft, a lever for contracting the mandrel sections, connections between said lever and end gate, and means to limit the movement of the lever away from the end gate, substantially as set forth.

11. In a phonograph, the combination with a mandrel shaft and end gate, of a sectional and expansible mandrel carried by said shaft, a lever for contracting the mandrel sections, connections between said lever and end gate, and spring actuated means for expanding said mandrel, substantially as set forth.

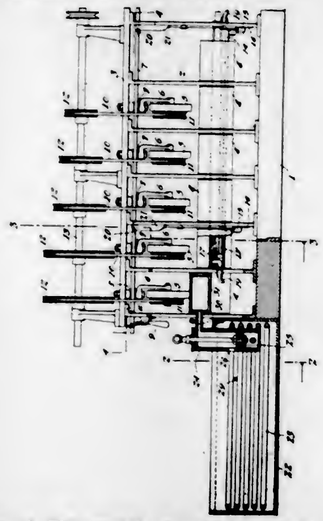
12. In a phonograph, the combination with a mandrel shaft and end gate, of a sectional and expansible mandrel carried by said shaft, a lever for contracting the mandrel sections, connections between said lever and end gate, means to limit the movement of the lever away from the end gate, and spring actuated means for expanding the mandrel, substantially as set forth.

13. In a phonograph, the combination with a mandrel shaft and end gate, of a sectional and expansible mandrel carried by said shaft, a lever for contracting the mandrel sections, and lost motion connecting means between said lever and end gate, substantially as set forth.

14. In a phonograph, the combination with a mandrel shaft and end gate, of an expansible mandrel carried by the mandrel shaft, and lost motion connecting means between the mandrel and end gate for contracting the mandrel when the end gate is open, substantially as set forth.

15. In a phonograph, the combination with a mandrel shaft and end gate, of an expansible mandrel carried by the mandrel shaft and means operated by the end gate for contracting the mandrel, the said means being inoperative during the first movement of the end gate but becoming operative as the end gate is opened more widely, substantially as set forth.

855,605. PROCESS OF MAKING DUPLICATE PHONOGRAPH-RECORDS. JONAS W. AYLSWORTH, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed May 11, 1906. Serial No. 316,250.



Claim.—1. The process of making duplicate records, which consists in rotating a hot mold at a high speed, and in introducing molten material therein, whereby the material will be compressed by centrifugal force against the record surface and be uniformly distributed over the same, substantially as set forth.

2. The process of making duplicate records, which consists in rotating a hot mold at a high speed, in introducing molten material therein, whereby the material will be compressed by centrifugal force into intimate engagement with the record surface, and in cooling the mold and its contents while the mold is being continuously rotated, substantially as set forth.

3. The process of making duplicate records, which consists in rotating a hot mold at a high speed, in introducing molten material therein, whereby the material will be compressed by centrifugal force into engagement with the record surface, in applying successive cooling applications to the mold for chilling its contents, and in successively reducing the speed of rotation of the mold, substantially as set forth.

4. The process of making duplicate records, which consists in rotating a hot mold at a high speed, and in introducing a fixed and definite charge of molten material therein, whereby the material will be compressed by centrifugal force against the record surface and the desired thickness thereof will be defined, substantially as set forth.

5. The process of making duplicate records, which consists in rotating a hot mold at a high speed, in introducing molten material therein, whereby the material will be compressed by centrifugal force into engagement with the record surface, in replacing the filled mold by an empty mold rotated at high speed, in continuing the rotation of the filled mold and simultaneously applying a cooling medium to the same, and in introducing a charge of molten material into the empty mold, substantially as set forth.

6. The process of making duplicate records, which consists in rotating at a high speed, a hot mold having end plates, and in introducing within the mold a charge of molten material, whereby the material will be compressed by centrifugal force into engagement with the record surface to form a duplicate record, whose ends will be simultaneously finished, substantially as set forth.

7. The process of making duplicate records, which consists in rotating at a high speed a hot mold having end plates, and in introducing therein a fixed and definite charge of molten material which will be compressed by centrifugal force against the record surface to form a duplicate record, whose bore and ends will be simultaneously finished, substantially as set forth.

8. The process of making duplicate records which consists in rotating at a high speed a hot mold containing molten material whereby the material will be compressed by centrifugal force against the record surface and be uniformly distributed over the same, substantially as set forth.

9. The process of making duplicate records which consists in rotating at a high speed a hot mold containing molten material whereby the material will be compressed by centrifugal force against the record surface and be uniformly distributed over the same, in cooling the mold and its contents so as to cause the record to shrink with respect to the mold, and in then withdrawing the record from the mold, substantially as set forth.

855,606. PROCESS OF MAKING DUPLICATE SOUND-RECORDS. JONAS W. AYLSWORTH, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed May 31, 1906. Renewed Apr. 23, 1907. Serial No. 369,755.

Claim.—1. A process of making duplicate sound records, which consists in rotating a mold at a high speed, in introducing a charge of an extremely amorphous material therein to form a surfacing layer, in permitting the surfacing layer to set or harden, in then introducing within the mold a larger charge of a cheap molten material, and in continuing the chilling operation until the composite record as a whole has been set or hardened, substantially as set forth.

2. A process for making duplicate sound records, which consists in rapidly rotating a mold, in introducing therein a charge of a very amorphous material to form a surfacing layer, in permitting the surfacing layer to set or harden, in introducing within the mold a larger charge of a cheap molten material, in cooling the mold and its contents until the material has set and in finally tapering the bore of the resulting duplicate record, substantially as set forth.

3. A process of making duplicate sound records, which consists in rapidly rotating a mold, in introducing therein a charge of a very amorphous material to form a surfacing layer, in permitting the surfacing layer to set or harden, in introducing within the mold a larger charge of a cheap molten material, in continuing the cooling operation until the material has been set, and in finally displacing the material while in a more or less plastic state to taper the bore thereof, substantially as set forth.

4. A process of making duplicate sound records, which consists in rotating the mold at a high speed, in introducing therein a charge of a very amorphous material to form a surfacing layer, in permitting the surfacing layer to cool and set, in introducing a cheap molten material within the rotating mold before the surfacing layer has been entirely hardened, and in continuing the rotation of the mold until the duplicate record as a whole has been set and hardened, substantially as set forth.

855,607. VENTILATOR. ARTHUR BAGGALEY, Chicago, Ill. Filed Feb. 23, 1907. Serial No. 358,902.



Claim.—1. In a ventilating device of the kind described the combination with a central tube, of an encircling air duct affixed to the top end of said tube, said air duct consisting of an inner perforated cap, an outer cap spaced from said inner cap, a cylindrical ring affixed to said outer cap, said ring being concentric with and spaced from said tube, a pair of deflecting plates partly encircling said tube and affixed thereto, and to said ring, thereby forming the floor of said air duct, the ends of said plates being the lowest part of said floor and spaced to form the outlets of said air duct as described.

2. In a ventilating device of the kind described the combination with a central perforated tube, and an encircling air duct affixed to the top thereof, said air duct consisting of an inner perforated cap affixed to said tube, an outer cap spaced from the inner cap, a cylindrical ring affixed to said outer cap concentric with and spaced from said tube, and a pair of deflecting plates partly encircling said tube and affixed thereto and to said ring; of a lower air duct affixed on said tube over the perforations therein, said air duct consisting of an inner cylindrical flanged ring encircling and affixed to said tube, the vertical part of said ring being concentric with and spaced from said tube, an outer flanged ring encircling and affixed to said tube, the vertical part of said ring being concentric with and spaced from said inner ring, and deflecting plates partly encircling said inner ring and affixed thereto and affixed to said outer ring, said plates forming the floor of said air duct, the ends of said plates being the lowest part of said floor and spaced to form the outlets of said air ducts, as described.

3. In a ventilating device of the kind described the combination with a central perforated tube; of a plurality of air ducts encircling said tube and affixed thereto, said air ducts being arranged one above the other over the apertures in said tube, said air ducts consisting of cylindrical rings and deflecting plates concentric with said tube, said deflecting plates partly encircling said tube and forming the floors of said ducts, the ends of said deflecting plates being the lowest part of said floors and separated to form the outlets of said ducts as described.

4. A ventilator of the kind described consisting of a main body preferably of cylindrical form having a perforated cap, a flanged top, covering said cap and spaced therefrom, the flange of said top encircling and spaced from said main body, a plurality of deflecting plates affixed between said flange and main body, said plates partly encircling said main body and forming the floor of the air duct thus formed, the ends of said plates being the lowest part of said floor and separated to form the outlets of said air duct, as described.

5. A ventilator of the kind described consisting of a main perforated body, preferably of cylindrical form and having a perforated cap, a flanged top, said top covering and spaced from said cap, and the flange part of said top encircling and spaced from said main body, a plurality of deflecting plates affixed between said flange and main body, said plates partly encircling said main body and forming the floor of an air duct thus formed, the ends of said plates being the lowest part of said floor and separated to form the outlets of said air duct; and an air duct encircling said main body and affixed thereto below said air duct hereinbefore described, said air duct consisting of a lower inner flanged ring, concentric with, spaced from, and affixed to said main body; an upper outer flanged ring concentric with and spaced from said inner ring and affixed to said main body; a plurality of deflecting plates affixed between the vertical parts of said rings, said plates partly encircling said inner ring, and forming the floor of the air duct, the ends of said plates being the lowest part of said floor and separated to form the outlets of said air duct, said air duct covering the apertures in said main body, as described.

6. A ventilator of the kind described consisting of a main perforated body; air ducts encircling said body and affixed thereto, said air ducts being arranged one above the other over the apertures in said main body, said air ducts consisting of deflecting plates and cylindrical rings concentric with said main body, said deflecting plates forming the floors of said ducts, the ends of said plates being the lowest part of said floors and separated to form the outlets of said ducts as described.

7. A ventilator of the kind described consisting of a main perforated body, preferably of cylindrical form, an

encircling air duct attached to the top of said body, consisting of an encircling ring, cover, and deflecting plates said plates connecting said ring and main body; the ends of said plates being the lowest part of the floor of said air duct, the separate ends forming the outlets to said air duct, as described.

8. A ventilator of the kind described, consisting of a main perforated body, preferably of cylindrical form, an encircling deflecting air duct affixed to the top of said main body, and an air duct encircling said main body and affixed thereto covering the apertures in said main body, said air duct consisting of two flanged rings affixed to said main body, the vertical parts of said rings being concentric with and spaced from each other and from said main body, a plurality of deflecting plates affixed to and between the vertical parts of said rings and forming the floor of said air duct, the ends of said plates being the lowest part of said floor and separated to form the outlets of said air duct as described.

9. A ventilator of the kind described, consisting of a main perforated body, preferably of cylindrical form, encircling deflecting air ducts affixed to and covering the top and apertures in said body, said air ducts consisting of deflecting plates and cylindrical rings concentric with said main body, said deflecting plates forming the floors of said ducts, the ends of said plates being the lowest part of said floors and separated to form the outlets of said ducts as described.

10. In a ventilating device of the kind described the combination with the main perforated body; of a plurality of air ducts encircling and secured to said main body; arranged one above the other, the upper duct consisting of deflecting plates and rings concentric with said main body, the lower duct consisting of deflecting plates and inner and outer rings concentric with said main body, said plates forming the floors of said ducts, the ends of said plates being the lowest part of said floors, and separated to form the outlet of said ducts as described.

855,608. SAFETY-RAZOR. CHARLES BALLEEICH, Pueblo, Colo. Filed Mar. 31, 1906. Serial No. 309,102.



Claim.—1. In a safety razor, the combination with a flexible blade, of a holder comprising a handle portion and a supporting plate, said plate having a concaved face whereby two bearing surfaces are provided for the blade in its unflexed state, and lugs on said plate between which and the face of the plate said blade is adapted to be clamped, the bearing faces of said lugs being arranged between the said two bearing surfaces of the plate and closer to the face of said plate than the outer surface of said blade in its unflexed state.

2. In a safety razor, the combination with a flexible blade, of a holder comprising a handle portion and a supporting plate, said plate having a concaved face whereby two bearing surfaces are provided for the blade in its unflexed state, lugs on said plate between which and the face of the plate said blade is adapted to be clamped, the bearing faces of said lugs being arranged between the said two bearing surfaces of the plate and closer to the surface of said plate than the outer surface of said blade in its unflexed state, and guide stops on the rear of said plate.

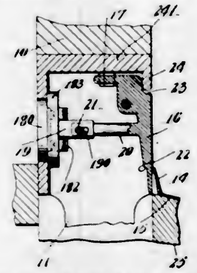
3. In a safety razor, the combination with a flexible blade, of a holder comprising a handle portion and a supporting plate, said plate having guide stops on its rear end, a portion of the plate cut away between the guide stops and said plate having a concaved face whereby two bearing surfaces are provided for the blade in its unflexed state, and lugs on said plate between which and the face of the plate said blade is adapted to be clamped, the bearing faces of said lugs being arranged between the said two bearing surfaces of the plate and closer to the face of said plate than the outer surface of said blade in its unflexed state.

4. In a safety razor, the combination with a flexible blade, of a supporting plate therefor having a face concaved relative to said blade whereby two bearing surfaces are provided for said blade in its unflexed state, and lugs on said plate having bearing faces between said bearing surfaces and closer to the plate than the outer surface of said blade in its unflexed state.

5. In a safety razor, a holder having a handle portion and a yoke or plate portion, said plate portion having a concaved face providing bearing surfaces, a flexible blade, and lugs arranged at the ends of said plate portion between the bearing surfaces and clamping said blade against the concaved face.

6. A safety razor comprising a holder having a handle portion and a supporting and clamping plate concaved on its supporting face providing bearing surfaces and having clamping lugs at its ends between the bearing surfaces, and guide stops on its rear, and its rear portion being cut away between the guide stops, and a flexible blade, whereby the parts are arranged to flex and hold the blade in place on the concaved face of the plate and to permit the blade being pushed from the rear and removed with its cutting edge to the front.

855,609. WINDOW. WILFRID H. BARRIERE, Worcester, Mass. Filed Oct. 24, 1906. Serial No. 340,268.



Claim.—1. The combination with a window casing having an inwardly and an upwardly slanting ledge, of a sash having an outwardly movable holding strip provided with a notch on its inner surface for resting on and fitting the top edge of said ledge, whereby the top of the ledge will support the strip and form a tight joint therewith.

2. The combination with a window casing having an inwardly extending ledge, of a sash having a downwardly extending projection near its outer surface, and an outwardly movable holding strip under said projection provided with a notch for resting on and fitting the top of said ledge and forming a tight joint therewith, said strip also having a notch for fitting and forming a tight joint with said downwardly extending projection on the sash when either in retracted or expanded position.

3. In a window sash, the combination of a pivoted holding strip, a spring for normally holding the strip near the surface of the sash, and a pin movable independently of the strip for forcing the strip beyond the surface of the sash.

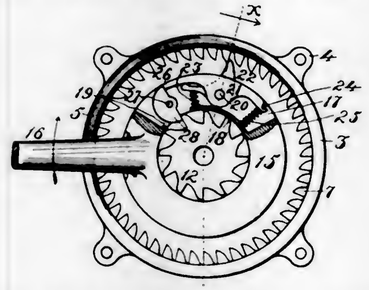
4. In a window sash, the combination of a pivoted holding strip, a spring for normally retaining the strip entirely within the surface of the sash, and an independently reciprocable pin for engaging said strip and forcing it beyond the surface of the sash, said pin having a head normally flush with the inner surface of the sash.

5. In a window sash, the combination of a pivoted holding strip adapted to extend beyond the surface of the sash, a spring for normally retaining the outer side of said strip flush with the corresponding surface of the sash, said strip having an integral projection inside the sash, and a pin having a lost-motion connection with said projection and mounted to slide within the sash, said pin having a head, and a spring for keeping said head normally flush with the inner surface of the sash.

6. In a window sash, having a chamber therein near the bottom and provided with a downwardly extending projection in said chamber flush with the outer surface of the sash, the combination of a holding strip pivotally connected with the sash at a point below and inside of the downwardly extending projection, a spring located above the pivotal point of said strip for normally holding the outer surface of the strip flush with the outer surface of the sash, said strip having a notch in which said projection fits when the strip is held flush with the sash by said spring and with which said projection engages to form a tight joint when the strip is forced outwardly, and means for forcing the strip outwardly with its lower edge beyond the surface of the sash.

7. In a window sash, the combination of a pivoted holding strip located on the outside of the sash and adapted to project from the surface thereof, a spring located above the pivot of the holding strip for normally retaining said holding strip within the surface of the sash, and a push button adapted to engage the holding strip below its pivot to force its lower end outwardly.

855,610. SAFETY DEVICE FOR STARTING EXPLOSIVE-ENGINES. ELLSWORTH R. BATHRICK, Akron, Ohio. Filed Sept. 8, 1905. Serial No. 277,632.



Claim.—1. A device for imparting an initial start to explosive engines, comprising means for attaching said device to a suitable part of an engine, said attaching means being provided with ratchet-teeth, a crank-arm provided with an annularly-formed head arranged to surround said attaching means adjacent said ratchet-teeth, a pawl carried by said annular head arranged to engage said ratchet-teeth, means to lock said pawl whereby said pawl will operatively engage said ratchet-teeth when operated in one direction and inoperatively engage said teeth when the motion thereof is reversed, and means to release said means from engagement with said pawl when a reverse motion is imparted to said connecting means.

2. A device for imparting an initial start to explosive engines, comprising means for connecting said device to a suitable part of an engine, said connecting means being provided with ratchet-teeth, a crank-arm provided with an annularly-formed head to encircle the ratchet-teeth of said connecting means, a pawl carried by said annularly-formed head, said pawl being arranged to operatively engage said ratchet-teeth when said annularly-formed head is revolved in one direction and to inoperatively engage said ratchet-teeth when the motion thereof is reversed, a locking dog arranged to engage said pawl, a second pawl adapted to release said dog from engagement with said first pawl, and means to cause the operation of said second pawl when the motion of said annularly-formed head is reversed.

3. In a device for imparting an initial start to explosive engines, comprising means for connecting said device with a suitable part of an engine, said connecting means being provided with ratchet-teeth, an annularly-formed crank-head adapted to surround the ratchet-teeth on said connecting means, a pawl carried by said crank-head arranged to engage said ratchet-teeth, a dog to lock said pawl whereby a positive engagement is afforded between said crank-head and said ratchet-teeth, a second pawl arranged to trip said dog and release said first pawl when the motion of said crank-head is reversed, an inclosing element to surround said crank-head provided with ratchet-teeth on its inner portion arranged to operatively engage said second pawl when the motion of said crank-head is reversed.

4. A device for imparting an initial start to explosive engines, comprising means for attaching said device to a suitable part of an engine, said connecting means being provided with ratchet-teeth, an annularly-formed crank-head arranged to inclose the ratchet-teeth on said connecting means, a pawl carried by said annularly-formed crank-head to operatively engage said ratchet-teeth, means to normally hold said pawl in a position to engage said ratchet-teeth, a dog to lock said pawl in position, means to keep said dog in a position to engage said pawl, a second pawl adapted to trip said dog and release the same from engagement with said first pawl, and a plurality of encircling ratchet-teeth arranged to operatively engage said second pawl when the motion of said crank-head is reversed whereby said dog is released from engagement with said first pawl, and said first pawl released from operative engagement with the ratchet-teeth on said connecting means.

5. A device for imparting an initial start to explosive engines, comprising means for connecting said device with a suitable part of an engine, an annularly-formed crank-head arranged to encircle said connecting means, means carried by said crank-head to operatively engage said connecting means when said crank-head is operated in one direction, and to be inoperative when the motion thereof is reversed, and means to release said engaging means upon a reversal of the motion of said crank-head.

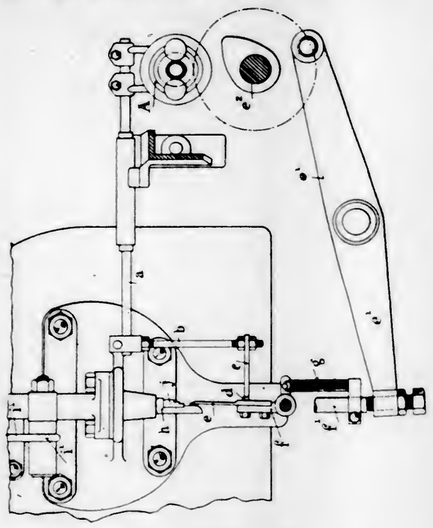
6. A device for imparting an initial start to explosive engines, comprising means for connecting said device with a suitable part of an engine, said connecting means being provided with ratchet-teeth, an annularly-formed crank-head adapted to encircle said ratchet-teeth, a pivoted pawl carried by said crank-head with its lower end in a position to operatively engage said ratchet-teeth, means to maintain said pawl normally in a position to engage said ratchet-teeth, a dog to engage the upper end of said pawl, means to limit the motion of said dog, a second pawl adapted to engage and release said dog from engagement with said first pawl, and a plurality of encircling ratchet-teeth arranged to operatively engage said second pawl when the motion of said crank-head is reversed.

855,611. INTERNAL-COMBUSTION ENGINE. ALFRED R. BELLAMY, Stockport, England. Filed Apr. 3, 1907. Serial No. 366,143.

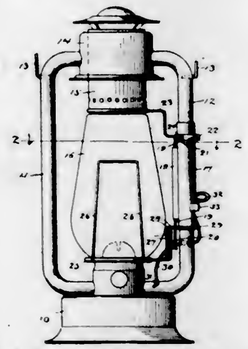
Claim.—1. In internal-combustion engines a rod *b* connected to the rock-shaft of the governor, a part *c* attached to such rod and formed with an inclined surface, a tripper blade and means to maintain such tripper blade against the inclined surface substantially as described.

2. The combination in internal combustion engines of the plunger *f'*, a tripper lever and blade carried by the plunger, means for actuating the plunger, a governor, a governor rocking shaft, a rod carried by the governor rocking shaft, a part *c* attached to the rod having an inclined surface, means to maintain the tripper blade against

such inclined surface, and a stepped contact piece on the valve stem substantially as described.



855,612. TUBULAR LANTERN. ALBERT T. BISHOP, Southington, and JOSEPH L. MCCANN, Bridgeport, Conn., assignors to The Hurwood Manufacturing Company, Incorporated, Bridgeport, Conn. Filed Oct. 16, 1906. Serial No. 339,190.



Claim.—1. A lantern including in its construction a sleeve mounted to slide and oscillate on a portion of the frame, a vertically movable chimney, a globe holder rigidly connected with the sleeve, an operating lever, and connections whereby said lever will first raise the chimney and then raise the globe holder and then swing the latter aside.

2. A lantern including in its construction a vertically and horizontally movable globe holder and globe, a vertically movable chimney, an operating lever, and mechanism between the lever and the other movable parts whereby the movement of said lever in one direction will first raise the chimney and then raise the globe holder and swing it aside, said mechanism including devices to cause the return movement of the lever to restore the parts to normal position and lock the chimney down on the globe.

3. A lantern including in its construction a sleeve mounted to slide and oscillate on a portion of the frame, a vertically movable chimney, a globe holder rigidly connected with the sleeve, an operating lever, and mechanism between the lever and the other movable parts whereby said lever will first raise the chimney and then raise the globe holder and then swing the latter aside, said mechanism including devices to cause the return movement of the lever to restore the parts to normal position and lock the chimney down on the globe.

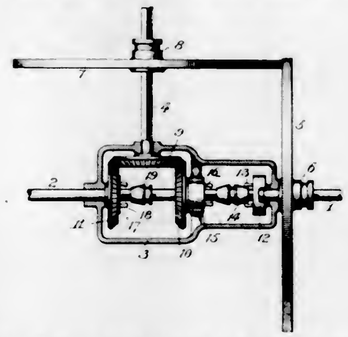
4. A lantern including in its construction a sleeve mounted to slide on a portion of the frame, a vertically movable chimney, a globe holder rigidly connected with the sleeve, a collar movably mounted on the sleeve, an arm extending from said collar to support the chimney, an operating lever, a rod engaged by said lever and also engaged with said collar, and means whereby the raising of the rod by the lever will raise the globe holder and globe.

5. A lantern including in its construction a sleeve mounted to slide on a portion of the frame, a vertically movable chimney, a globe holder rigidly connected with the sleeve, and having a vertical guide-way, an operating lever extending through said guide-way, and connections for raising the chimney while the lever is moved along said guide-way.

6. A lantern including in its construction a sleeve mounted to slide on a portion of the frame, said sleeve having a vertical guide-way, a rod mounted in said guide-way, a vertically movable chimney, connections between said chimney and rod, a globe holder rigidly connected with the sleeve and having a vertical guide-way and a shoulder, and an operating lever engaging the chimney lifting rod and extending through the guide-way of the globe holder and having an end portion adapted to engage the shoulder of the globe holder to swing it aside, the said rod having means whereby it may engage the globe holder to lift it before it is swung aside.

7. A lantern including in its construction a sleeve mounted to slide and oscillate on a portion of the frame, a vertically movable chimney, a globe holder rigidly connected with the sleeve, an operating lever, and connections between said lever and the movable parts specified.

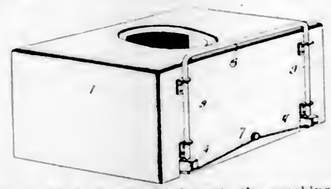
855,613. SPEED VARYING AND REVERSING MECHANISM. LOUIS BLEITZ and ROLLEN BLEITZ, Sandwich, Ill. Filed Mar. 18, 1907. Serial No. 363,144.



Claim.—1. In a speed varying and reversing mechanism, the combination of a driving shaft, a friction driving member carried by said shaft, an adjustable friction driven member, a countershaft carrying the same, a driven shaft in longitudinal alinement with the driving shaft, a clutch between the adjacent ends of the driving and driven shafts, a bevel gear carried by the countershaft, primary and secondary bevel gears mounted loosely on the driven shaft and provided with clutch members, a clutch operating means adapted to alternately engage the clutch between the driving and driven shafts and between the primary bevel gear and the driven shaft, and a clutch operating means adapted to engage the clutch between the secondary bevel gear and the driven shaft, substantially as set forth.

2. In a speed varying and reversing mechanism, the combination of a driving shaft, a driving friction disk carried by the same, a driven friction disk adjustable to and from the axis of the driving disk, a countershaft carrying said driven disk and having a right angle relation to the driving shaft, a driven shaft in longitudinal alinement with the driving shaft, a clutch between the adjacent ends of the driving and driven shafts, a bevel gear carried by the countershaft, primary and secondary bevel gears mounted loosely on the driven shaft and provided with clutch members, a clutch operating means adapted to alternately engage the clutch between the driving and driven shafts and between the primary bevel gear and the driven shaft, and a clutch operating means adapted to engage the clutch between the secondary bevel gear and the driven shaft, substantially as set forth.

855,614. WATER-CLOSET ATTACHMENT. MCDUFFEE BRADFORD, Nocona, Tex. Filed Dec. 10, 1906. Serial No. 347,115.



Claim.—1. In a closet attachment, the combination of a closure, a pivoted operating bar for actuating said closure, a pressure bar for actuating said operating bar when the seat of the closet is occupied, and a bell crank pivoted to said operating bar and having one arm arranged to effect opening of the closure and the other arm normally inclined and adapted to ride upon a portion of the frame when the operating bar is moved, to effect turning of the bell crank upon the operating bar simultaneously with movement of said bar.

2. In a closet attachment, the combination of a closure comprising a pair of wings, an operating bar for each wing pivoted between its ends and having a projecting portion, and a U-shaped frame having its vertical members in contact with the projecting ends of the operating bars and having its horizontal member arranged to be pressed upon by the occupant of the closet seat to effect opening of the said wings.

855,615. CIGAR AND TOBACCO MOISTENER. EMANUEL L. BUXBAUM, Chicago, Ill. Filed June 25, 1906. Serial No. 323,204.

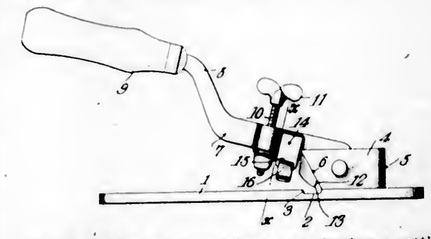


Claim.—1. The combination with a jar, of a ring forming an extension of the jar removably supported around the mouth of the jar, a cover for the jar removably supported upon the upper edge of said ring and absorbent material supported by the inner surface of said cover.

2. The combination with a jar, of a cover, having its inner face counter-sunk, a block of absorbent material placed in said counter-sunk portion, and a separable ring resting on the upper edge of the jar, and on which the cover rests.

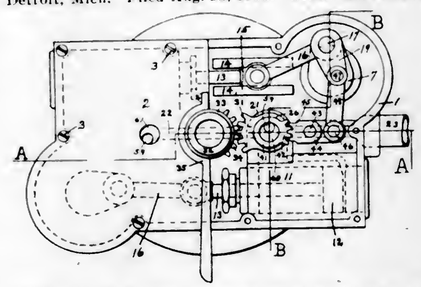
3. The combination with a jar, having a seat at its upper end, of a cover for the jar having a flange adapted to engage the seat on the jar, and a ring adapted to be interposed between the jar and cover having a flange conforming to the seat on the jar, a seat with which the flange on the cover is adapted to engage and absorbent material secured to the inner surface of said cover.

855,616. SAW-SET. WILLIAM H. CLENDENON, Rockville, Md. Filed Nov. 10, 1906. Serial No. 342,870.



Claim.—A saw set comprising a base having a setting shoulder, a setting nose movably mounted above and disposed to co-operate with the shoulder, and a spring saw clamping device movable with the nose and disposed to clamp the blade at two points at opposite sides of the setting nose during the setting operation.

855,617. VALVE MECHANISM. ARTHUR C. CULVER, Detroit, Mich. Filed Aug. 13, 1906. Serial No. 330,378.



Claim.—1. In a reversing valve mechanism for expansion engines, the combination of a crank, a valve lever having one end provided with teeth, a link connecting the other end of said lever to said crank, a cylindrical valve provided with teeth at one end, a sleeve surrounding said valve and provided with ports so positioned that their position will determine the direction of revolution of the engine, and means for positioning the sleeve.

2. The combination in twin engines and crank shafts for the same, of valve mechanism for each engine comprising a valve lever, a valve connected to one end of said lever, a link connecting said lever to the adjacent crank shaft, a sleeve surrounding said valve and provided with ports and with teeth at the upper end thereof, a centrally mounted sleeve having segments of teeth to engage the teeth of the valve sleeves, and a lever to operate said central sleeve and thereby the valve sleeves, whereby by positioning the ports in said valve sleeves the direction of rotation of said engines will be determined.

3. In a reversing valve gear for fluid operated engines, a valve comprising a cylindrical body formed with an annular groove near one end, a longitudinal bore connecting to said groove, admission ports connecting to said bore, a longitudinal exhaust bore extending through one end of the valve, and exhaust ports connecting to said exhaust bore; a sleeve surrounding said valve and provided with a plurality of sets of ports; means for operating said

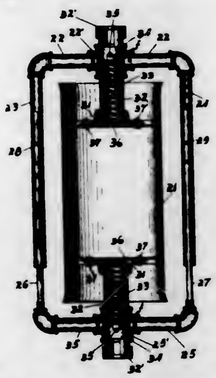
valve and means to position said sleeve to determine the direction of revolution of said engine.

4. In a valve mechanism for reversible engines, the combination of a cylinder, a valve chamber therefor, said cylinder having passages, one for each end, connecting to said chamber at different points in the length of said chamber, a sleeve mounted in said chamber having two ports adapted to alternately connect with one of said passages, and a single port connecting with the other passage, means to position said sleeve, and a valve mounted in said sleeve and provided with oppositely extending longitudinal bores and ports connected thereto so that said bores may alternately connect with the passages in said cylinder.

5. In a valve mechanism for reversible twin engines, the combination of cylinders, valve chambers therefor, a sleeve provided with ports revoluble in each valve chamber, the position of the sleeve determining the direction of rotation of the engine, a valve revolubly mounted in each sleeve, a crank and crank shaft for each cylinder, and connections between the crank of each engine and the valve of the other engine so adjusted that the periodic opening of the ports of each valve shall be in advance of the corresponding movement of the crank of its engine.

6. In a reversible engine, the combination of a cylinder, a valve chamber, passages connecting the ends of the cylinder and the valve chamber, a passage connecting to the lower end of said valve chamber to convey the expansive fluid to the same, a sleeve movably mounted in said chamber and provided with a plurality of sets of ports, each set adapted to connect with the passages to the cylinder, and a valve rotatably mounted in said sleeve, said valve having a longitudinal bore connecting with the passage at the lower end of the valve chamber and having ports to connect with said bore to permit the expansive fluid to flow through the ports in the sleeve to cylinder, and also provided with a second longitudinal bore and ports whereby the expansive fluid may flow from the cylinder.

855,618. APPARATUS FOR TREATING MEATS. JAMES CUNNING, Indianapolis, Ind. Filed Mar. 26, 1906. Serial No. 308,030.



Claim.—1. An apparatus for preparing meat consisting of a cylindrical receptacle, a surrounding telescopic frame, and pistons carried by said frame and entering the ends of said receptacle.

2. An apparatus for preparing meats consisting of a cylindrical open-ended receptacle, pistons entering the ends of said receptacle, a frame carrying said pistons, and compressible springs connected to said pistons and arranged to exert a continuous pressure upon the contents of the cylinder.

3. An apparatus for preparing meats consisting of a cylindrical open-ended receptacle, pistons entering the ends of said receptacle, a telescopic frame carrying said pistons, and springs arranged to exert a continuous pressure upon said pistons and through them upon the contents of the receptacle.

4. An apparatus for preparing meats consisting of an open-ended cylindrical receptacle, pistons entering the ends of said receptacle and having tubular piston rods, a telescopic frame in which said piston rods are mounted, means for engaging the telescopic members of said frame at points to which it may be adjusted, springs within the tubular piston rods, followers for said springs, and means for engaging said followers to hold said springs to compressed position.

5. In an apparatus for preparing meats the combination of a receptacle, a piston entering said receptacle, a frame surrounding said receptacle and carrying said piston, and a spring connected to the piston rod and adapted to be compressed, the arrangement being such that said spring when compressed will exert continuous pressure upon the contents of the receptacle.

6. In an apparatus for preparing meats the combination of a receptacle, a piston entering said receptacle, a tubular piston rod to said piston having slots in its sides, a frame surrounding said receptacle and embodying a bearing for said piston rod, a compression spring arranged within said tubular piston rod and bearing against the piston head, a follower also within said tubular piston rod and resting on said spring, and a device passing through the slots in the sides of the piston rods and arranged to engage with said follower and the frame structure adjacent to the piston rod.

7. In an apparatus for preparing meats the combination of a receptacle, a piston entering said receptacle, a tubular piston rod to said piston having slots in its sides, a frame surrounding said receptacle and embodying a bearing for said piston rod, a compression spring arranged within said tubular piston rod and bearing against the piston head, a follower also within said tubular piston rod and resting on said spring, and a device passing through the slots in the sides of the piston rods and arranged to engage with said follower and the frame structure adjacent to the piston rod, the piston rod bearing and the follower being provided with projections which engage with the slots in the piston rod and prevent relative rotation of the parts.

8. An apparatus for preparing meats consisting of an open-ended receptacle adapted to surround the meat, pistons entering the openings in said receptacle and arranged to bear upon the contents thereof, and automatically-acting means for exerting a continuous pressure upon said pistons during the preparing operation.

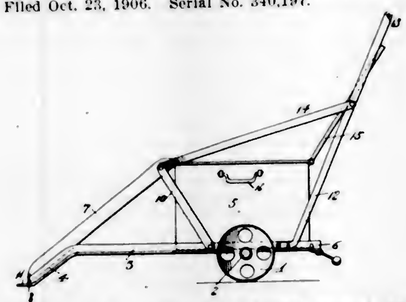
9. An apparatus for preparing meats consisting of a cylindrical open-ended receptacle, pistons fitting said cylindrical receptacle and arranged to enter the same from opposite ends, and automatically-acting means whereby continuous pressure is exerted upon said pistons whereby they are continuously forced toward each other with a constant pressure upon the contents of the receptacle during the process of preparing, whereby a cylindrical well-compressed mass of cooked meat with flattened ends is produced.

10. A meat container comprising a surruonding wall and contained members which are relatively movable toward and from each other and automatically-acting means for exerting a continuous pressure thereon whereby the contents of the container are constantly compressed during the cooking operation.

11. The combination in an apparatus for preparing meats of a stationary surrounding wall, relatively movable receptacle parts contained therein, and automatically-acting means for constantly urging said parts toward each other and diminishing the cubical contents of the receptacle, whereby a continuous pressure is maintained upon the contents of the receptacle during the preparing operation.

12. The combination, in an apparatus of the class described, of a shaping receptacle, followers which bear against the contents of said receptacle, automatically-acting means whereby continuous pressure on said followers shall be maintained, and means for adjustably regulating the pressure, thus keeping said followers constantly and firmly against the contents until the preparing operation is completed.

855,619. TRUCK. WILLARD A. CURTIS, St. Paul, Minn. Filed Oct. 23, 1906. Serial No. 340,197.



Claim.—1. In combination, a wheeled support, guides carried thereby, a receptacle slidable within the guide, means carried by the guide for holding the receptacle against movement, and a scoop carried by the rails to discharge within the receptacle.

2. In combination, a wheeled support, guides carried thereby, a scoop arranged at one end of the guides, braces interposed between an end of the scoop and the guides, a handle engaging the guides, and braces between the handle and the scoop.

3. In combination, a wheeled support, a handle therefor, guides carried thereby, a receptacle slidable within the guides, a catch holding the receptacle in place so arranged as to release the receptacle when the handle is depressed and allowing the receptacle by its gravity to slide rearward out of the grooves.

855,620. FLUID-PRESSURE-REGULATING DEVICE. GUSTAF DALÉN, Stockholm, Sweden, assignor to Aktiebolaget Gasaccumulator, Stockholm, Sweden. Filed May 11, 1906. Serial No. 316,383.



Claim.—1. In a fluid pressure regulating device, a casing having an inlet and an outlet for the fluid, a diaphragm closing the casing, a rocking lever, a connection between one arm of the lever and the diaphragm, a leaf spring, points on the other arm of said lever between which the said spring is inserted, a rocking valve plate and points on which the valve plate rocks.

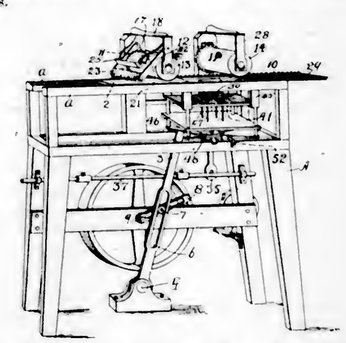
2. In a fluid pressure regulating device, a casing having an inlet and an outlet for the fluid, a diaphragm closing the casing, a rocking lever, a connection between one arm of the lever and the diaphragm, a rocking valve, a bar, points on the other arm of the lever and the valve plate between which the bar is inserted, a leaf spring and points on the said arm of the lever and on the valve plate between which the leaf spring is inserted.

3. In a fluid pressure regulating device, a casing, a rocking valve plate points on which the valve plate rocks, a leaf spring, abutting against one end of the valve plate, a diaphragm, a lever, a bar and points on the other end of the valve plate and on the lever between which the bar is inserted, said lever and diaphragm being connected and said diaphragm closing the casing of the apparatus.

855,621. BOOKBINDER'S LEAF-APPLYING MACHINE. LEROY W. DANIELS, Brooklyn, N. Y. Filed Oct. 25, 1904. Serial No. 229,924.

Claim.—1. In a machine for applying leaf to book-covers, etc., the combination of a to and fro moving carriage provided with a support for book-covers and a support for a pack of leaf, with appliances for taking leaf from the pack and laying it on the covers.

2. In a machine for applying leaf to book-covers, etc., the combination of unitary movable means for supporting book-covers and a stack of leaf, with appliances for taking leaf from the stack and laying it on the covers, and means for causing relative motion of said means and said appliances.



3. In a machine for applying leaf to book-covers, etc., the combination of a carriage provided with a support for the covers and with a vertically movable support for the stack of leaf, with appliances for taking leaf from said stack and laying it on the covers, and means for raising said stack-support.

4. In a machine for applying leaf to book-covers, etc., the combination of a to and fro moving table for supporting the covers, a leaf-support carried thereby and vertically movable thereon, means for moving said support vertically, and a roller geared to said table and provided with means for taking leaf from said leaf-support and laying it on the covers on said table.

5. In a machine for applying leaf to book-covers, etc., the combination of a to and fro movable table for supporting the covers, a leaf-support carried thereby and vertically movable thereon, means for moving said support vertically, a roller geared to said table and provided with means for taking leaf from said leaf-support and laying it on the covers on said table, and means for raising said roller during return strokes of the table.

6. The combination of a reciprocating flat cover-support, means thereon for supporting and raising a stack of leaf, and means for taking leaf from said stack and laying the same on book-covers on said cover-support.

7. The combination with a to and fro moving cover-support, and means for applying adhesive to the covers, of means for supporting and elevating a stack of leaf, and means for taking leaf from said stack and laying the same on covers on said support.

8. The combination with a to and fro moving cover-support, of a leaf-applying roller geared thereto, and a leaf-carrier attached to said support.

9. The combination with a to and fro moving cover-support, of a leaf-applying suction-roller geared thereto.

10. The combination with a to and fro moving cover-support, of a leaf-applying roller geared thereto, means for giving a rising and falling motion to said roller, and a leaf-carrier attached to said support.

11. The combination with a to and fro moving cover-support, of a leaf-applying suction-roller geared thereto, and means for giving a rising and falling motion to said roller.

12. The combination with a to and fro moving cover-support, and a leaf-applying roller geared thereto, of a means for applying adhesive to covers on said support, and means for lifting and lowering said roller and said adhesive-applying means.

13. The combination with a cover-support provided with stack-supporting and stack-raising means and with a moist pad, of a rotary moistener, a rotary leaf-applier, and

means for giving relative motion, in the direction of the length of said cover-support, to said support and the moistener and the leaf-applier.

14. The combination with a support and lifter for a stack of paper and metal leaf, of a leaf-moistener for moistening the top sheet of paper and the metal leaf next thereto to cause adherence between them, and mechanism for taking said adhering paper and leaf and applying the same to covers.

15. The combination with a to and fro moving cover-support, provided with a leaf-support and elevator and a pad, of a leaf-moistener and a leaf-applier both geared to said reciprocating support.

16. The combination with a to and fro moving cover-support provided with a leaf-support and elevator and a pad, of a leaf-moistener and a leaf-applier both geared to said cover-support, and means for raising and lowering said moistener and said applier.

17. The combination with a to and fro moving cover-support carrying a leaf-support and also a pad, of a leaf-moistener and a leaf-applier both geared to said cover-support, and a cover-oiler.

18. The combination of a to and fro moving cover-support, carrying a leaf-support and elevator and also a pad, with a leaf-moistener and a leaf-applier both geared to said support, a fountain for adhesive, a roller or brush for applying adhesive to the covers, and means for raising and lowering said moistener, leaf-applier, and adhesive roller or brush.

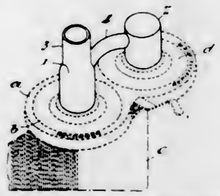
19. The combination with an inclined support for a stack of paper and metal leaf, of a leaf-moistening device for moistening an upper edge of the stack, a cover-support means for taking the upper layer of paper and metal leaf from said stack and laying the same upon a cover, and automatic mechanism for raising said stack and its support.

20. The combination of a grooved support, with stack-retainers detachably connected with said support, and a support for a stack of leaf vertically movable relatively to said grooved support and said retainers.

21. The combination with a roller, of spring-fingers detachably and adjustably connected thereto, a carriage, and a pad on said carriage from which said fingers may take moisture.

22. The combination of a to and fro moving table for supporting book-covers, etc., an inclined support for a stack of paper and metal leaf attached to and vertically movable with relation to said support, a leaf-moistener geared to said table, means for taking the upper layer of paper and metal-leaf from the stack on said inclined support and laying the same upon a cover, and automatic mechanism for raising said inclined support.

855,622. PHONOGRAPH. NELSON C. DURAND, East Orange, and EDWARD L. AIKEN, Orange, N. J., assignors to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Oct. 26, 1906. Serial No. 340,728.



Claim.—1. In a phonograph, the combination of a frame, a recorder and reproducer carried thereby, and a coupling comprising a pair of hollow members communicating with the interiors of said recorder and reproducer and with each other, substantially as set forth.

2. In a phonograph, the combination of a frame, a recorder and reproducer carried thereby, and a coupling comprising a pair of hollow members communicating with the interiors of said recorder and reproducer, and with each other through a valved connection, substantially as set forth.

3. In a phonograph, the combination of a frame, a recorder and reproducer carried thereby, and a coupling comprising a pair of hollow members communicating with the interiors of said recorder and reproducer, and with each other through a valved connection, substantially as set forth.

4. In a phonograph, the combination of a frame, a recorder and reproducer carried thereby, and a coupling comprising a pair of tubular members applied to the necks of said recorder and reproducer and connected to each other by a curved tube having a ball valve, substantially as set forth.

5. As a new article of manufacture, a coupling comprising a pair of tubular members, a connection and a ball valve adapted to close said connection, substantially as set forth.

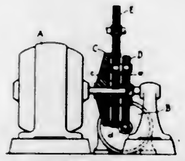
6. As a new article of manufacture, a coupling comprising a pair of tubular members connected by a tube, one of said members being provided with an open ended extension, substantially as set forth.

7. As a new article of manufacture, a coupling comprising a pair of tubular members connected by a valved tube, one of said members being provided with an open ended extension, substantially as set forth.

8. As a new article of manufacture, a coupling comprising a pair of tubular members connected by a tube having a ball valve, one of said members being provided with an open ended extension, substantially as set forth.

9. As a new article of manufacture, a coupling comprising a pair of tubular members adapted to fit upon the necks of a recorder and reproducer, a tube connecting said members and a valve in said tube, one of said members being provided with an open ended extension of slightly reduced diameter, substantially as set forth.

855,623. MOTOR CONTROL. HENRY B. EMERSON, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 17, 1906. Serial No. 339,323.



Claim.—1. In a combination with a load to be driven, two variable-speed electric motors, and a differential gear having two of its members connected to said motors respectively and its third member to the load and arranged to give a load-speed of zero when one motor is operating at its maximum and the other at its minimum speed.

2. In combination with a load to be driven, two variable-speed electric motors of different capacities, and a differential gear having two of its members connected to the two motors respectively and its third member to the load and arranged to give a load-speed of zero when the smaller motor is operating at its maximum and the larger motor at its minimum speed.

3. In combination with a load to be driven, two variable-speed electric motors, a differential gear having two of its members connected to said motors respectively and its third member to the load and arranged to give a load-speed of zero when one motor is operating at its maximum and the other at its minimum speed, and an electrically-controlled brake for one of said gear members.

4. In combination with a load to be driven, two variable-speed electric motors of different capacities, a differential gear having two of its members connected to the two motors respectively and its third member to the load and arranged to give a load-speed of zero when the smaller motor is operating at its maximum and the larger motor at its minimum speed, and an electrically-controlled brake for the gear member connected to the smaller motor.

5. In combination with a load to be driven, two variable-speed electric motors of different capacities, a differential gear having two of its members connected to the two motors respectively and its third member to the load and arranged to give a load-speed of zero when the smaller motor is operating at its maximum and the larger motor at its minimum speed, and controlling means for said motors arranged to bring said motors to their maximum and minimum speeds respectively, then gradually to reduce the speed of the smaller motor and then gradually to increase the speed of the larger motor.

6. In combination with a load to be driven, two variable-speed electric motors of different capacities, a differential gear having two of its members connected to the two motors respectively and its third member to the load, and speed-reducing gearing in the connection between the smaller motor and the differential gear.

7. In combination with a load to be driven, two variable-speed electric motors of different capacities, a differential gear having two of its members connected to the two motors respectively and its third member to the load, speed-reducing gearing in the connection between the smaller motor and the differential gear, and controlling means for said motors arranged to bring the smaller motor to its maximum and the larger motor to its minimum speed, then gradually to reduce the speed of the smaller motor, and then gradually to increase the speed of the larger motor.

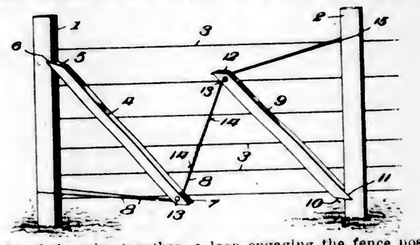
8. In combination with a load to be driven, two electric motors of different capacities, resistances for varying the field-strengths of the motors, a differential gear having two of its members connected to the two motors respectively and its third member to the load, and arranged to give a load-speed of zero when the smaller motor is operating with minimum and the larger motor with maximum field-strength and a controlling switch arranged to bring said motors up to speed simultaneously with minimum and maximum field-strengths respectively, then gradually to increase the field-strength of the smaller motor, and then gradually to decrease the field-strength of the larger motor.

9. In combination with a load to be driven, two electric motors of different capacities, resistances for varying the field-strengths of the motors, a differential gear having two of its members connected to the two motors respectively and its third member to the load, and arranged to give a load-speed of zero when the smaller motor is operating with minimum and the larger motor with maximum field-strength, an electrically-controlled brake for the smaller motor, and a controlling switch arranged to bring said motors up to speed simultaneously with minimum and maximum field-strengths respectively, then gradually to increase the field-strength of the smaller motor, then to apply said brake, and then gradually to decrease the field-strength of the larger motor.

10. In combination with a load to be driven, two electric motors of different capacities, resistances for varying the field-strengths of the motors, a differential gear having two of its members connected to the two motors respectively and its third member to the load, and arranged to give a load-speed of zero when the smaller motor is operating with minimum and the larger motor with maximum field-strength, and a controlling switch arranged to bring said motors up to speed simultaneously with minimum and maximum field-strengths respectively, then gradually to increase the field-strength of the smaller motor, then to short-circuit the armature of the smaller motor, and then gradually to reduce the field-strength of the larger motor.

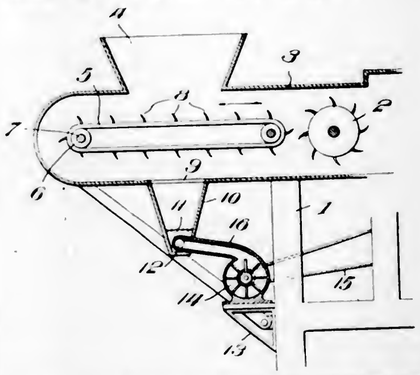
855,624. FENCE-POST BRACE. ALLEN H. FETZER, Galion, Ohio. Filed Nov. 6, 1906. Serial No. 342,212.

Claim.—In a brace of the class described the combination with a fence post having a notch adjacent its upper end and an anchor post having a notch adjacent its lower end; of a pair of oppositely disposed brace arms, one end of each of which is tapered and adapted to enter the notch in its respective post, said arms being at an angle of substantially 45° from the longitudinal axis of the post and having notches in their free ends, said arms being of sufficient length to overlap eath other when the free ends thereof are brought together, a brace wire constructed of one continuous piece of metal and doubled upon itself to form loops, the free ends of the wire being united at a point between the free ends of said arms by twisting the



ends of the wire together, a loop engaging the fence post at a point above the horizontal plane of the lower end of the arm on said post, the opposite loop engaging the anchor post adjacent its upper end, said brace wire extending in a straight line from the fence post to the anchor post.

855,625. STONE AND GRIT SEPARATOR FOR CLOVER-HULLERS. CHARLES M. FOLLETT, Montgomery, Mich. Filed Oct. 4, 1906. Serial No. 337,429.



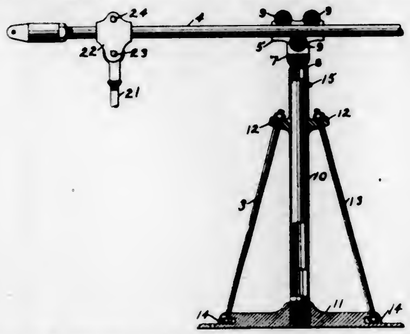
Claim.—1. In a device of the class described the combination with a suitable feeding mechanism having an opening therein, and means to direct the straw over said opening; of a receptacle below said opening, a screen in said receptacle adapted to receive impurities from the straw, a tubular nozzle having a plurality of bores therein disposed in said receptacle and below the screen and means to direct air through said nozzle whereby the straw passing over said opening will be agitated and the chaff and particles of straw removed from the receptacle.

2. In a device of the class described, a receptacle having a screen therein, a tubular nozzle longitudinally disposed in said receptacle and below said screen, said nozzle having a plurality of bores therein, a fan, a pipe connecting said fan and nozzle, means to operate said fan whereby a blast of air will be directed through said nozzle and receptacle and means to dispose straw or the like above said receptacle whereby the straw will be agitated and impurities removed therefrom.

855,626. PUMP-JACK. OLE O. FURRU, St. Paul, Minn., assignor of one-half to Elias Cronstedt, St. Paul, Minn. Filed Mar. 21, 1905. Serial No. 251,213.

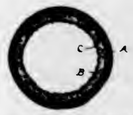
Claim.—1. The combination, with a rod 8 having a fork at its upper end, of a block pivoted in said fork and pro-

vided with a series of anti-friction wheels, there being two of said wheels on substantially the same level in the upper part of said block, and one of said wheels in the lower part of said block and between said upper wheels, a horizontal rod having means at one end for attachment to a pump rod and slidably supported upon said lower anti-friction wheel and guided by said upper wheels, and a pitman having a pivotal connection with said horizontal rod.



2. The combination, with a hollow standard 10 having a base 11 and brace rods 13, of a rod 8 vertically adjustable in said standard, a block 5 pivotally supported on said rod 8 and provided with a series of anti-friction wheels 9, two of said wheels being mounted in the upper part of said block and one of them in the lower part of said block, a horizontal rod having means at one end for attachment to a pump rod and slidably supported upon the lower anti-friction wheel and guided by the upper wheels, and a pitman pivotally connected to said rod.

855,627. AIR-TUBE FOR PNEUMATIC TIRES FOR WHEELS. THOMAS H. B. GAYNER, South Melbourne, Victoria, Australia. Filed Feb. 1, 1906. Serial No. 299,049.

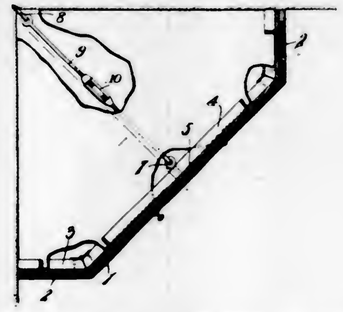


Claim.—1. An air tube for tires having the inside of the tube provided with a layer of Turkish birdlime and a layer of chalk to cover the birdlime.

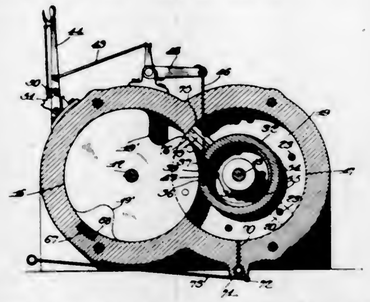
2. The herein described method, consisting in turning the air tube inside out before the two ends of the same are joined together, then expanding the tube and cleaning the exposed surface with naphtha or benzene, then coating said surface with Turkish birdlime which has been disolved in boiling water and allowing the coating of Turkish birdlime thus applied to dry until it becomes viscid, then applying a second and third coating of the same kind in the same manner and finally laying a last layer of thick undiluted Turkish birdlime over the previous coatings, then spreading chalk over the complete layer of birdlime, then returning the tube to its original position and finally joining the ends of the tube.

855,628. CLOTHES-PRESS AND WARDROBE. JAMES L. GIDEON, Haskell, Ind. Ter. Filed Aug. 8, 1906. Serial No. 329,790.

Claim.—A press or wardrobe comprising spaced cross-pieces, each cross piece being made up of sections hinged together and adapted to abut at their ends when extended. Panels attached to said cross-pieces and forming walls which are disposed at obtuse angles to each other when extended. A shelf fitting within the cross-pieces and spacing the walls of the press from the walls of a room and a link located under said shelf and attached at one end to one of the cross-pieces and at its other end to the wall of the room.



855,629. ROTARY ENGINE. OLE O. GOSERUD and OLE GOSERUD, Jr., Summit, S. D. Filed Apr. 18, 1905. Renewed Dec. 5, 1906. Serial No. 346,485.



Claim.—1. In a rotary engine, a pair of cylinders arranged side by side and having communicating steam chests, a piston disk separating the two cylinders and provided with steam passages, a piston wing having portions projecting into said cylinders, abutments coacting with the pistons, steam ports for the admission of steam from the chests to the cylinders, the port of one cylinder being on one side of the active face of said abutment, and the port of the second cylinder being on the opposite side, and valves for controlling said ports.

2. In a rotary engine, a pair of cylinders arranged side by side, a revoluble piston disk forming a division wall between the two cylinders and provided with openings for the passage of steam, a piston wing carried by the disk and having portions projecting into said cylinders, abutments coacting with the wings, and means for controlling the admission of steam into the cylinders, the steam admitted to one passing directly under full pressure to the other and acting on both members of the piston wing.

3. In a rotary engine, a pair of cylinders arranged side by side and communicating with each other, a piston disk forming a division wall between the two cylinders and provided with steam passages extending therethrough, a wing carried by the piston and having portions projecting into both cylinders, a steam chest having valved ports for placing one or other of the cylinders in communication with the steam supply, and an exhaust port leading from one of said cylinders.

4. In a rotary engine, the combination with a pair of cylinders arranged side by side, of a piston disk forming a division wall between the cylinders and provided with openings for the passage of steam, a piston wing having portions projecting into both cylinders, annular ribs arranged centrally within the cylinders and forming a steam chest, abutments arranged to make contact with the annular ribs, ports leading through the ribs and disposed in one

cylinder on one side of the point of contact of the abutment and rib, and in the second cylinder on the opposite side of said point of contact, valves for controlling said ports, and an exhaust port leading from one of the cylinders.

5. In a rotary engine, a pair of cylinders arranged side by side, a piston disk forming a division wall between the cylinders and provided with openings for the passage of steam, a piston wing carried by the disk and having members projecting into both cylinders, and means for admitting steam to one of the cylinders to act on both wing members in revolving the piston in one direction, and for the admission of steam to the second cylinder to act on both wing members in revolving the piston in the opposite direction.

6. In a rotary engine, a plurality of cylinders, a shaft extending therethrough, pistons carried by the shaft and provided with openings for the passage of steam, each of said cylinders having an annular rib, the spaces within the ribs being placed in communication with each other to form a practically continuous steam chest throughout the whole of the cylinders, and valved ports leading through said ribs.

7. In a steam engine, a plurality of sets of cylinders arranged side by side, pistons disposed in said cylinders, a shaft carrying the pistons, a continuous annular steam chest extending centrally through all of the pistons of one set and common to all of the cylinders, and valved ports leading from the steam chest to the several cylinders.

8. In a rotary engine, a plurality of cylinders arranged side by side, a shaft extending through the cylinders, pistons carried by said shaft and provided with openings for the passage of steam, annular ribs formed in each of the cylinders on lines concentric with the center of the shaft and forming a continuous steam chest for all of said cylinders, valved ports leading through the ribs, and abutments coacting with the pistons.

9. The combination in a rotary engine, of a plurality of cylinders arranged side by side, a shaft extending through the cylinders, annular ribs arranged in alinement with each other in the several cylinders and forming a continuous annular steam chest, ports leading through the ribs, wings carried by the pistons, abutments coacting with the pistons and provided with recesses to permit the passage of said wings, exhaust ports, valves controlling the ports, and a valve shifting mechanism common to all of said valves.

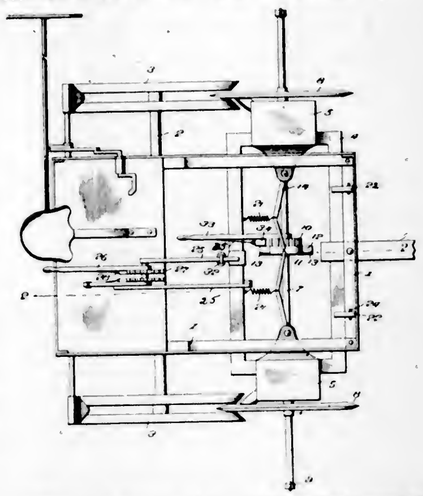
10. In a rotary engine, a plurality of pairs of cylinders arranged side by side, a piston disk forming a division wall between the cylinders of each pair and provided with openings for the passage of steam, annular ribs in each cylinder and forming a continuous annular steam chest, ports leading through the ribs, valves for controlling said ports, piston wings carried by said disks, the wings of one pair being diametrically opposed to the wings of the second pair, and abutments provided with recesses for the passage of said wings.

11. In a rotary engine, a plurality of cylinders arranged side by side, a shaft extending through the cylinders, pistons carried by the shaft, a continuous annular steam chest common to all of the cylinders and provided with ports for the passage of steam, piston wings carried by the disks, escape ports leading from less than the whole number of cylinders, valves controlling the ports from the steam chest and the escape ports, rods or stems connected to the valves, a cross bar to which all of the rods are connected, and means for operating said cross bar to effect simultaneous adjustment of all the valves.

12. In a rotary engine, the combination with a revoluble piston having a radial slot, of a piston wing having a continuous marginal groove, packing strips fitting in the groove at both sides and ends of the wing, packing members carried by the wing and movable in a direction diagonal thereof and provided with end flanges interfitting with correspondingly shaped portions at the ends of the packing strips, and springs tending to urge said members outward from the wing.

13. In a rotary engine, a radially slotted piston disk, a piston wing formed of a pair of plates having grooves for the reception of the walls of the radial slot, said plates being recessed and provided with a continuous marginal groove, packing strips fitting in said groove and provided with flanged end portions, springs seated in the recesses, and slidably mounted packing members bearing at one end on the springs and provided at their opposite ends with flanges interfitting with the flanges on the packing strips.

855,630. SEED-PLANTER. FELIX G. GREEN, Sedalia, Mo. Filed May 3, 1906. Serial No. 315,052.



Claim.—1. A planter of the class described comprising the combination with a main frame, a shaft carrying said frame, and supporting wheels therefor; of an auxiliary frame, means to adjustably secure said auxiliary frame to the main frame, a shaft rotatably secured to said auxiliary frame, furrow making disks secured to said shaft, grain receptacles carried by said frame, feed plates in coöperation with said grain receptacles, arms integral with said plates and extending laterally therefrom, and means carried upon said shaft adapted to simultaneously engage and passed between the free ends of said arms and operate said feed plates.

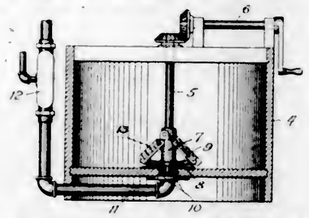
2. A planter of the class described comprising the combination with a main frame and supporting wheels therefor; of an auxiliary frame, a shaft rotatably carried by said auxiliary frame, furrow making disks carried by said shaft, grain receptacles on said frame, feed plates in said receptacles, arms integral with said plates and pivoted to said frame, an actuating wheel on said shaft, means carried by said actuating wheel to simultaneously engage and passed between the free ends of said arms to drop the grain, a pinion on said shaft, and means to engage said pinion whereby said shaft may be rotated in either direction.

3. In a planter of the class described, the combination with a main frame, the axle and supporting wheels, of an auxiliary frame adjustably supported from and beneath the forward end of the main frame, a shaft rotatably mounted in the auxiliary frame, grain receptacles on the auxiliary frame beyond the sides of the main frame, an actuating wheel on said shafts, lugs extending therefrom, feed plates guided in said receptacles, arms extending toward each other from said plates, and springs connecting said arms between their ends with the auxiliary frame, the free ends of said arms being disposed vertically over said lugs to be engaged simultaneously thereby.

4. In a planter of the class described, the combination with a main frame, the axle and supporting wheels, of an auxiliary frame adjustably supported from and beneath the

forward end of the main frame, a shaft rotatably mounted in the auxiliary frame, grain receptacles on the auxiliary frame beyond the sides of the main frame, an actuating wheel on said shafts, lugs extending therefrom, feed plates guided in said receptacles, arms extending toward each other from said plates, springs connecting said arms between their ends with the auxiliary frame, the free ends of said arms being disposed vertically over said lugs to be engaged simultaneously thereby, and rollers on the ends of said lugs adapted to pass between the free ends of said arms.

855,631. MIXING DEVICE. JOHN C. W. GRETH, Pittsburg, Pa., assignor to Wm. B. Scaife & Sons Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Oct. 2, 1906. Serial No. 337,059.



Claim.—1. A mixing device comprising a tank having an outlet opening in its bottom, a series of paddles placed above and covering said opening and means to revolve the paddles, said paddles being inclined so as to throw the fluid both upwardly and outwardly.

2. The combination with a mixing tank and revolving paddles therein, of an outlet and means to grind lumps of material entering the outlet, substantially as described.

3. In a mixer the combination with a tank and bottom plate having outlet openings, of a revolving plate set over and close to the bottom plate to provide a grinder, paddles mounted at an angle to the horizontal and means for revolving them above said openings.

4. In a mixing device the combination with a vertical shaft having paddles thereon set with their blades at an angle to the horizontal, means to revolve the said shaft, an outlet beneath the paddles and a grinding device inclosing the outlet.

5. A mixing device comprising a tank and a plate in the bottom of the tank having outlets, a second plate set above and covering the outlet and means to revolve it whereby to form a grinding mill with the first plate, substantially as described.

6. The combination with a tank having a metallic bottom plate with outlet openings at its center, a slightly conical plate set above said outlet openings, and means to revolve the said plate, whereby lumps of material attempting to escape are ground up, substantially as described.

7. The combination with a tank having a series of revolving paddles arranged to cause vertical currents in the tank, and a grinding device under the paddles to reduce lumps which may settle on the bottom of the tank, substantially as set forth.

855,632. WIRE-STRETCHER. RICHARD B. HARTIN, McCrory, Ark. Filed Oct. 25, 1906. Serial No. 340,559.

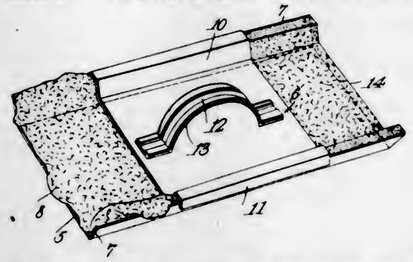
Claim.—1. In a wire stretcher, the combination of a guide frame, an anchoring post secured to the guide frame and projecting above and below the same, a rack frame mounted upon the guide frame and comprising rack bars arranged upon opposite sides of said post, an operating lever mounted upon the aforementioned post, and pawls pivoted to said operating lever upon opposite sides of the post and adapted to engage the teeth of the respective rack bars.

2. In a wire stretcher, the combination of a guide frame, a post fitted thereto and projecting above and below the same, a rack frame comprising spaced rack bars arranged upon opposite sides of the post, a cap plate having the rack frame arranged between it and the guide frame, an operating lever mounted upon the post and resting upon said cap plate, and pawls pivotally connected to the operating lever upon opposite sides of said post and adapted to engage the teeth of the aforementioned rack bars.



3. In a wire stretcher, the combination of a guide frame comprising a base plate having longitudinal retaining flanges and terminal loops, a post fitted to the base plate and projecting above and below the same, a rack frame comprising parallel rack bars and arranged to slide upon the base plate between the longitudinal flanges thereof and through the said loops, the rack bars being upon the opposite sides of the aforementioned post, a cap plate mounted upon the post and having its edge portions flanged to embrace opposite edges of the rack frame, an operating lever mounted upon the post, and pawls pivoted to said operating lever and adapted to coöperate with the teeth of the respective rack bars.

855,633. SHINGLE-MOLD. JAMES C. HERRING, Greensboro, N. C. Filed July 21, 1906. Serial No. 327,205.



Claim.—1. A mold comprising a base having inclined side walls, and a scraper slidably mounted on the longitudinal edges of the side walls and provided with depending guide flanges overhanging said walls.

2. A mold comprising an open ended body portion having a flat base and provided with inclined side walls, and a scraper slidably mounted on the side walls and spaced from the base, said scraper being provided with depending guide flanges adapted to engage said side walls.

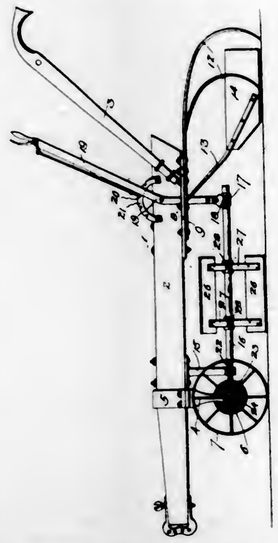
3. A mold comprising an open ended body portion formed of a single piece of metal bent to form a flat base and upstanding inclined side walls, a scraper slidably mounted on said walls and provided with a depression defining inclined shoulders disposed parallel with the inclined walls of the body portion, said depression being spaced from the base of the body portion to form a molding compartment and a handle secured to the scraper.

4. A mold comprising an open ended body portion having a flat base and integral inclined side walls, and a scraper slidably mounted on the longitudinal edges of the side walls and provided with a depression spaced from the base and defining inclined shoulders disposed parallel with the inclined walls of the body portion and terminating in depending guide flanges, said flanges being bent at right angles to the horizontal plane of the scraper and adapted to engage said side walls.

5. A mold comprising an open ended body portion formed of a single piece of metal bent to produce a flat base and oppositely disposed up-standing inclined side walls, a scraper slidably mounted on the longitudinal edges of the side walls and of approximately one-half the length of said body portion, said scraper being provided with a handle and having its opposite ends bent downwardly to form depending guide flanges adapted to engage the side walls of the body-portion.

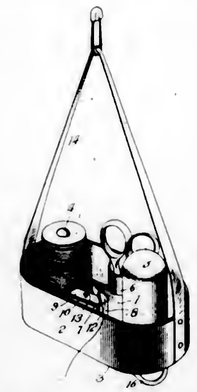
6. A mold comprising an open ended body portion having a flat base and provided with spaced inclined side walls, a scraper slidably mounted on the body portion and provided with a depression defining inclined shoulders disposed parallel with and spaced from the side walls of the body portion and terminating in depending guiding flanges overhanging said side walls, and a handle secured to the scraper and having its intermediate portion spaced from said scraper and its opposite longitudinal edges bent laterally to form reinforcing flanges.

855,634. COMBINED COTTON CHOPPER AND CULTIVATOR. WILLIAM B. HINDMAN, Newman, Ga. Filed Sept. 20, 1906. Serial No. 335,386.



Claim.—A cotton chopper comprising a beam, a vertically depending bracket attached thereto, a shaft journaled in said bracket and equipped with transporting wheels, a differential gear fixed upon the shaft and provided with two concentric rows of teeth, a second bracket attached to and depending from the beam at a point in rear of the first-mentioned bracket and having in its lower end a bearing, a chopper shaft having its forward end journaled in said bearing and also arranged for sliding movement therethrough, a pinion fixed on the forward end of the chopper shaft for engagement with the differential gear, chopping blades fixed to and for rotation with the chopper shaft, the latter being provided near its rear end with a reduced shouldered portion, an operating lever pivoted to the beam and carrying at its lower end a pivoted bearing collar in which the reduced shouldered portion of the shaft is journaled, said lever being operable for moving the chopper shaft to bring the pinion into mesh with either row of teeth or to throw the pinion wholly out of engagement with the gear, and means for fixing the lever against movement.

855,635. WORK-BOX. FRANK T. HOWE, New Bedford, Mass. Filed Nov. 5, 1906. Serial No. 342,131.



Claim.—1. The combination with a work box for seamstresses' use embodying a bottom and side walls which extend below the bottom whereby to produce a depending flange, of a spring clip provided with a shank mounted to turn on the lower face of said bottom and doubled upon itself, the return portion of the clip being adapted to frictionally engage said flange, whereby to maintain the clip while lying against the lower face of the said bottom.

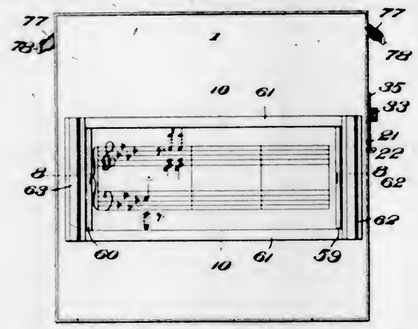
2. A work box for seamstresses' use provided with a spring tension guide and cutter, consisting of a block, upper and lower tension members secured to said block and adapted to grip a thread between them sufficiently to give proper tension on the thread while being drawn from the spool, the block being provided with a headed stud projecting from its upper face and extending through both of said tension members, and also being provided with an upwardly bent extremity constituting a cutting edge.

855,636. CHART-EXHIBITOR. ARLINGTON W. HOWELL, Texico, N. Mex. Filed Jan. 25, 1907. Serial No. 354,103.

Claim.—1. In a device of the class described the combination with a chart having characters thereon and supporting spools for said chart, of means to positively rotate one of said spools and additional means to automatically and intermittently cover the exposed portions of said chart.

2. The combination with a chart, spools for said chart

and a motor to operate said spools, of means disposed between the motor and spools to regulate the speed thereof comprising a movable shaft one end of which is operatively secured to the motor, a disk at the opposite end of said shaft, a stub shaft, a disk on said stub shaft, a friction wheel between said disks and engaging the meeting face thereof, means to raise and lower said friction wheel whereby the speed of one of said disks will be increased or decreased, a gear on the second mentioned disk, a pinion meshing with said gear, a driving shaft supporting said pinion, pulleys at the ends of said driving shaft and means interposed between said pulleys and one of the spools whereby said spools will be rotated.



3. The combination with a chart, spools to support said chart, a housing for said spools, and chart, and a motor to drive one of said spools, of means to connect said motor to the driven spool comprising a movable shaft operatively connected at one end to said motor, a disk fixed to the opposite end thereof, a stub shaft carried by the housing, a disk rotatably mounted on said shaft, a friction wheel disposed between said disks and engaging the meeting faces thereof, a shaft extending through said friction wheel, bearings for said shaft, a rack on the upper end of said shaft, a pinion engaging said rack, a shaft for said pinion extending beyond the casing whereby when said shaft is rotated the friction wheel will be raised or lowered to increase or decrease the speed of the disk on said stub shaft, means to indicate the position of said friction wheel between the disks, a gear on the second mentioned disk, a pinion meshing with said gear, a driving shaft supporting said pinion and means interposed between the ends of said shaft and one of said spools to drive the spool.

4. In a device of the class described the combination with a chart, supporting spools for said chart and means to rotate one of said spools whereby the chart will be wound thereon, of means to regulate the speed of said spools comprising a shaft, a disk at one end of said shaft, a stub shaft, a disk on said stub shaft the axis of said disk being below the axis of the first mentioned disk substantially one-half the diameter of the disk, a friction wheel between said disks and in engagement with the meeting faces thereof and means to raise and lower said friction wheel whereby the speed of the second mentioned disk will be increased or decreased.

5. In a device of the class described the combination with a housing having an opening in one face thereof, of a chart within said housing, spools for said chart, a shutter means to operate said shutter to close said opening, rollers carried by said shutter between which said chart passes, means to prevent rotation of said rollers in one direction, arms to support said shutter and means to intermittently engage said arms and raise the shutter whereby the opening in the housing will be uncovered and a portion of the chart elevated.

6. In a device of the class described the combination with a housing having an opening in one face thereof, a chart in said housing and spools for said chart, of a shutter means to operate said shutter to close said opening, means to elevate said shutter comprising arms, bearings on said shutter to telescopically receive one end of said arms the oposite end of said arms being pivotally secured to the housing, a driving shaft for one of said spools, pulleys at each end of said shaft, cams on said pulleys, pins on said arms extending into the path of said cams, means to rotate said cams whereby said cams will be intermittently directed into engagement with the pins and the shutter elevated and means to rotate said shaft.

7. In a device of the class described the combination with a housing having an opening in one face thereof, of a chart having characters thereon, winding spools for said chart whereby the characters will be successively exposed through said opening a shutter longitudinally mounted in said housing and adapted to close said opening and means to intermittently raise said shutter and expose the characters.

855,637. BUCKLE. ERNEST N. HUMPHREY, New Britain, Conn., assignor to The Traut and Hine Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed May 9, 1904. Serial No. 207,143.



Claim.—1. In a buckle for garment supporters, the combination with the frame having an opening for the passage of the webbing, of a sheet metal locking lever pivotally mounted on the frame at one side of the opening said locking lever being composed of an operating part and integral web penetrating teeth or projections located on the same side of the pivot with said operating part and projecting at substantially right angles to the plane of the latter at each end of the lever and remote from the pivot said teeth when the lever is in closed position, projecting in rear of the pivot, whereby strain upon the webbing will tend to hold the lever in closed position; substantially as described.

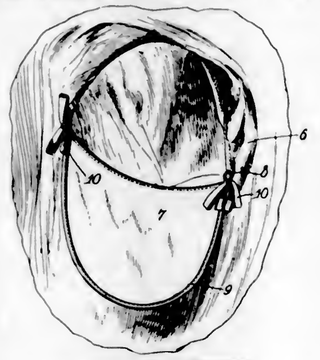
2. In a buckle for garment supporters the combination with the wire frame, of a sheet metal locking lever pivotally mounted upon the top bar of the frame, and having web penetrating teeth formed integral therewith remote from the pivot at each end of the lever and projecting at substantially right angles to the plane of the locking lever, said teeth being so arranged as to project in rear of the pivot of the lever and in proximity to the lower bar of the frame when the lever is in locked position whereby strain on the webbing will tend to hold the lever in closed position; substantially as described.

3. In a buckle for garment supporters the combination with the wire frame of a sheet metal locking lever having ears at each end constituting the pivotal connection with the frame, said ears being extended forwardly and their ends formed into penetrating points projecting at substantially right angles to the plane of the lever, whereby said teeth will be located remote from the pivotal point of connection of the lever and frame.

855,638. DRESS-SHIELD. AMY E. JACKSON, Chicago, Ill. Filed Oct. 29, 1906. Serial No. 341,167.

Claim.—1. A dress shield having binding around its edges, extended at the corners to form strings, in combination with eyes adapted to be attached to a garment and to which the strings may be tied.

2. A dress shield having two sides or flaps joined at the upper edge, and binding around the lower and side edges of each flap, extended at the ends to form strings.



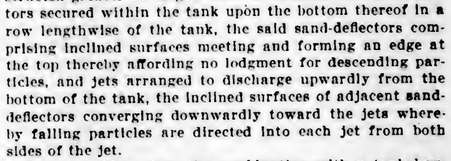
855,639. COMBINED COTTON-CHOPPING AND CORN-HOEING MACHINE. JULIUS JACKSON, Kingfisher, Okla. Filed Mar. 28, 1907. Serial No. 365,004.

Claim.—A machine of the class described comprising a truck having supporting wheels and a tongue, a sprocket wheel driven by one of said supporting wheels, a winding shaft mounted on said truck and having a hand-wheel, whereby it may be revolved, a crank-shaft having its bearing carried by said tongue, said crank-shaft having a brake element for application to said hand-wheel, and a lever whereby it may be operated, a vertically-movable frame in rear of and pivotally connected to the truck frame, a shaft carried by said vertically-movable frame and having a sprocket wheel, an endless sprocket chain connecting the wheel of the shaft to that which is driven by one of the supporting wheels, revoluble hoes carried by said shaft, and a flexible element connecting said vertically-movable frame to the winding shaft and adapted to be wound on and unwound from the latter to raise or lower said vertically-movable frame and the revoluble hoes carried thereby, substantially as described.

855,640. GOLD-WASHER. BENAIAH G. JAYNE, New York, N. Y., assignor to Idanha Machine Company, a Corporation of New York. Filed Apr. 2, 1906. Serial No. 309,366.

Claim.—1. In a gold washer or amalgamator the combination with a tank, of deflecting wings, means constructed to adjust the said wings, blades attached to the said wings and adjustable, also water-serving and jet-forming devices fashioned and disposed to discharge upwardly from the bottom of the tank toward the lower edges of the wings whereby the sand and water are deflected outwardly.

2. In a gold washer or amalgamator, the combination with a tank, of deflecting wings, means constructed to adjust the said wings, inclined blades attached to the said wings with adjustable inclination and water-serving and jet-forming devices fashioned and disposed to discharge upwardly from the bottom of the tank toward the lower edges of the wings whereby the sand and water are deflected outwardly.



3. In a gold washer, the combination with a tank divided by a vertical partition into compartments, of deflecting wings arranged at the sides of the said partition, means constructed to adjust the said wings, vanes attached to the said wings, and water-serving and jet-forming devices fashioned and disposed to discharge upwardly from the bottom of the tank whereby the sand and water are directed upwardly to be deflected outwardly by the wings.

4. In a gold washer, the combination with a tank divided by a vertical partition into compartments, of deflecting wings arranged at the sides of the said partition, means constructed to adjust the said wings, inclined vanes attached to the said wings, and water-serving and jet-forming devices fashioned and disposed to discharge upwardly from the bottom of the tank, whereby the sand and water are directed upwardly and then are deflected outwardly by the wings and forwardly by said vanes.

5. In a gold washer, the combination with a tank, of deflecting wings extending lengthwise within the tank, the said wings being less in length than the tank, means constructed to adjust the said wings, and water-serving and jet-forming devices fashioned and disposed to discharge directly upward from the bottom of the tank below said wings and toward the lower edges of the wings, and jet-forming devices having inclined mouths and arranged in that portion of the tank extending beyond the ends of the wings, whereby the sand and water are directed forwardly and upwardly and deflected outwardly by said wings.

6. In a gold washer, the combination with a tank, of sand deflectors secured within the tank upon the bottom thereof, the said sand deflectors comprising inclined surfaces meeting and forming an edge at the top thereby affording no lodgment for descending particles, and jets arranged to discharge upwardly from the bottom of the tank, the inclined surfaces of adjacent sand-deflectors converging downwardly toward the jets whereby falling particles are directed into each jet from both sides of the jet.

7. In a gold washer, the combination with a tank constructed greater in length than in breadth, of sand-deflectors secured within the tank upon the bottom thereof in a row lengthwise of the tank, the said sand-deflectors comprising inclined surfaces meeting and forming an edge at the top thereby affording no lodgment for descending particles, and jets arranged to discharge upwardly from the bottom of the tank, the inclined surfaces of adjacent sand-deflectors converging downwardly toward the jets whereby falling particles are directed into each jet from both sides of the jet.

8. In a gold washer, the combination with a tank having downwardly converging sides, of sand-deflectors secured within the tank upon the bottom thereof in a row, the said sand-deflectors comprising inclined surfaces meeting and forming an edge at the top thereby affording no lodgment for descending particles, and jets arranged flush with the bottom of the tank and discharging upwardly between the sand-deflectors, the converging surfaces of adjacent sand-deflectors being adapted to direct the falling particles into each jet from both sides of the jet.

9. In a gold washer, the combination with a tank, of water-serving and jet-forming devices arranged to discharge upwardly within the tank, wings constructed and disposed to deflect the sand and water outwardly, and vanes attached to the said wings and having adjustable

portions adapted to deflect the outwardly-moving sand and water.

10. In a gold washer, the combination with a tank, of water-serving and jet-forming devices arranged to discharge upwardly within the tank, wings constructed and disposed to deflect the sand and water outwardly, and inclined vanes attached to said wings and having adjustable portions adapted to deflect the outwardly-moving sand and water.

11. In a gold washer, the combination with a tank, of water-serving and jet-forming devices arranged to discharge upwardly within the tank, wings constructed and disposed to deflect the sand and water outwardly, vanes attached to the said wings and having adjustable portions adapted to deflect the outwardly-moving sand and water, and mechanism constructed and arranged to adjust simultaneously the movable vane portions borne by each wing.

12. In a gold washer, the combination with a tank, of water-serving and jet-forming devices arranged to discharge upwardly within the tank, wings constructed and disposed to deflect the sand and water outwardly, vanes attached to said wings and having adjustably pivotal portions adapted to deflect the outwardly-moving sand and water, and mechanism constructed and arranged to adjust simultaneously the movable vane portions borne by each wing.

13. In a gold washer, the combination with a tank, of water-serving and jet-forming devices arranged to discharge upwardly within the tank, a deflector adapted to deflect the upwardly-flowing sand and water outwardly toward the sides of the tank, and additional deflectors movably supported in the upper part of the tank and arranged breadthwise vertically to act upon the outwardly-flowing sand and water after it has been acted upon by the first mentioned deflector and to deflect the sand and water toward one end of the tank.

14. In a gold washer, the combination with a tank, of water-serving and jet-forming devices arranged to discharge upwardly in the tank, a movable partition, wings attached to the partition, and means for adjusting the said wings, the edge of the said partition being placed directly above the said jet-forming devices whereby the upwardly-moving sand and water is divided and caused to pass on both sides of the partition.

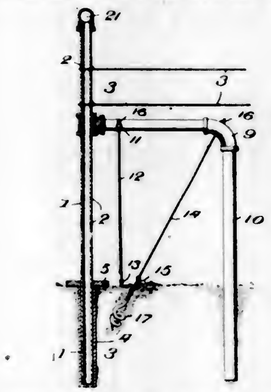
15. In a gold washer, the combination with a tank having sides inclining divergently upward, of a vertical partition arranged to divide the tank into chambers each having a vertical and an inclined side, water-serving and jet-forming devices disposed to discharge vertically next the said partition and on both sides of it whereby gold-bearing sand in each chamber may be carried directly upward along the partition and then outwardly to the inclined sides, substantially as described.

16. In a gold washer, the combination with a tank having a vertical partition, of water-serving and jet-forming devices disposed to discharge vertically next the said partition and on both sides of it, and deflecting wings arranged to project from the partition whereby gold-bearing sand that is carried directly upward along the partition is deflected outwardly to the sides of the tank, substantially as described.

17. In a gold washer, the combination with a tank having a vertical partition, of water-serving and jet-forming devices disposed to discharge vertically next the said partition and on both sides of it, deflecting wings arranged to project from said partition, and means for adjusting the said wings with respect to the said sides and partition, substantially as described.

855,641. COMBINED BRACE AND STRETCHER. WILLIAM JOHNSON, Fremont, Ohio. Filed Dec. 19, 1906. Serial No. 348,564.

Claim.—1. The combination with a post and a socket therefor; of a brace member comprising a coupling disposed around said post and at a point adjacent its upper end, a horizontal portion secured to said coupling, a vertical portion, an elbow connecting said vertical and horizontal portions, an arm disposed through said horizontal portion, rods having their upper ends secured to said arms, anchors disposed within the ground and secured to the opposite ends of said rods, a similar rod disposed through said elbow and an anchor at the lower end of said rod.



2. A combined brace and stretching device comprising a post, a socket for the lower end of said post, said post having a plurality of openings, a coupling surrounding said post, a plurality of notches at the upper end of said coupling, a latch pivotally secured to said post and adapted to engage said notches, means to rotate said post and a brace member for said post comprising a vertical portion, the lower end of which is embedded within the earth, an elbow at the upper end of said vertical portion, a horizontal portion secured to said elbow and coupling, rods secured to said brace member and means to anchor the lower ends of said rods.

3. A device of the class described comprising a post having a plurality of openings therein, a socket adapted to receive the lower end of said post, a T-head at the upper end of said post, a coupling surrounding said post and having a plurality of notches in its upper end, a latch pivotally secured to said post and adapted to engage said notches and a bracing device interposed between said coupling and the earth whereby said post will be held in a vertical position.

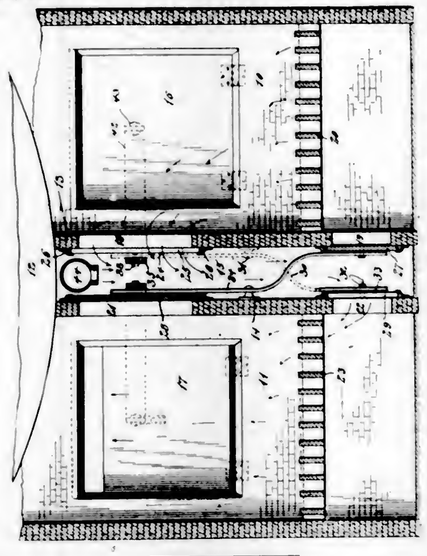
855,642. STEAM-BOILER FURNACE. PIERSON R. KIME, Grand Rapids, Mich. Filed Sept. 11, 1906. Serial No. 334,096.

Claim.—1. The combination with two independent furnaces, of a flue therebetween having openings into each of said furnaces above and below their grates, dampers for said openings, pins projecting from the dampers, and a lever having forked ends to straddle the pins of the upper and lower dampers, respectively, whereby said dampers are caused to move simultaneously in opposite directions.

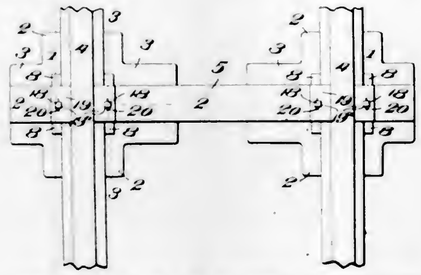
2. The combination with two independent furnaces, of a flue therebetween having openings into each of said furnaces above and below their grates, dampers for said openings, pins projecting from the dampers, a lever having forked ends to straddle the pins of the upper damper of one furnace and the lower damper of the opposite furnace, respectively, whereby said dampers are caused to move simultaneously in opposite directions, dampers for the outlet of each furnace, and a connection between the outlet and the upper dampers of each furnace.

3. The combination with independent furnaces each having a damper for its outlet, of a flue between the furnaces opening into each furnace above and below its grate, dampers for said openings arranged in sets, the upper dampers of each furnace being connected to the lower dampers of the opposite furnace, a rack-bar extending from each set of dampers and connected to one of the outlet dampers, a pinion meshing with the rack, and means for operating the pinion.

855,642.



855,643. ROAD-BED EQUIPMENT. JOHN D. KNEEDLER, Sioux City, Iowa. Filed Feb. 21, 1907. Serial No. 358,586.



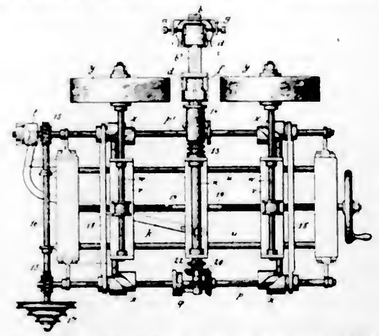
Claim.—1. In a road bed equipment, the combination with bed blocks having a cavity in the central portion thereof and grooves in the lower faces thereof; of a rail chair seated in said cavity, a cushion plate below said chair, posts at each corner of said rail chair forming channels, a tie disposed over said rail chair and between said posts, an auxiliary cushion plate above said tie, a locking plate in one of said grooves, bolts extending through said bed blocks and secured to the locking plate and means at the upper end of said bolts to secure a rail to the bed blocks and on said auxiliary cushion plate.

2. In a device of the class described the combination with a bed block having extensions thereon, a cavity in the upper face of said bed block, intersecting grooves in the lower face thereof and vertically disposed slots through said bed block; of a rail chair adapted to be seated in said cavity, posts at each corner of said chair to form channels on the chair, a rail seated in one of said channels, clamps between said posts adapted to engage the base of the rail, cushioning means for said rail and chair, a locking plate in one of said grooves and partly embedded in the block, said plate having openings therein adapted to register with the slots in the bed block and a bolt removably secured to said plate and extending through the chair and clamps and means to secure the clamps on the bolts whereby the rail will be held in position on the bed block.

3. In a device of the class described the combination with a bed block having vertically disposed slots therethrough; of a rail, a chair for said rail, clamps adapted to engage the base of said rail, a locking plate on the lower face of said bed block and partly embedded therein, said plate having openings registering with the slots in the bed block, bolts extending through said slots and openings in the rail chair and clamps, an angular head on the lower end of said bolts adapted to engage the lower face of the locking plate, lugs on said bolts adapted to engage the upper face of said locking plate and prevent longitudinal movement of the bolt and means to secure the clamps on the upper ends of the bolts and the base of the rail.

4. In a device of the class described the combination with a bed block; of means to secure a rail thereto comprising a locking plate having openings therein, bolts adapted to be disposed through slots in the bed block and openings in the locking plate, an angular head on the lower ends of said bolts adapted to engage the lower face of the locking plate, lugs on said bolts adapted to engage the upper face of said locking plate whereby said bolts will be normally fixed to the plate, clamps disposed over the upper ends of said bolts and onto the base of the rail and means to secure said clamps in position.

855,644. POLISHING-MACHINE. ERNST KRÜGER, Berlin, Germany. Filed Mar. 20, 1906. Serial No. 307,006.



Claim.—1. An automatic polishing machine of the type described, comprising in combination a frame, means for holding a plurality of articles to be polished, a revoluble expansible mandrel mounted on the frame, means for feeding the articles on to said mandrel, means for expanding said mandrel into operative engagement with the article fed thereon and for maintaining the mandrel in its expanded condition during the operation of polishing, and for releasing the same thereafter, means for polishing the article, and means for throwing the article off the mandrel after the release of said operative engagement.

2. An automatic polishing machine of the type described, comprising in combination a frame, means for holding a plurality of articles to be polished, a revoluble expansible mandrel mounted on the frame, means for feeding the articles on to said mandrel, means for expanding said mandrel into operative engagement with the article fed thereon and for maintaining the mandrel in its expanded condition during the operation of polishing, and for releasing the same thereafter, a plurality of revoluble polishing disks arranged around said mandrel, means for moving said polishing disks up against the article on the mandrel and for withdrawing the same therefrom, and means for throwing the article off the mandrel after the release of said operative engagement.

3. An automatic polishing machine of the type described, comprising in combination a frame, means for holding a plurality of articles to be polished, a mandrel

mounted on the frame, means for feeding the articles on to said mandrel, means for operatively interconnecting the mandrel and the article fed thereon, a plurality of revoluble polishing disks arranged around said mandrel, shafts *w* carrying said disks one shaft on each side of and parallel to the mandrel, rectilineally guided slides *v* supporting said shaft, pins attached to said slides, cams *x* engaging said pins and adapted to reciprocate said slides, rectilineally guided cross-bars 18 revolubly supporting said cams, revoluble shafts *p*, p^1 having feathers in sliding engagement with said cams for rotating said cams, a spindle 19 having right-handed and left-handed screws, one screw revolubly engaging one cross-bar and the other screw the other cross-bar, and means for rotating the spindle 19 by hand for the purpose of adjusting said cams on said shaft *p*, p^1 and so adjusting said polishing disks with regard to the article on the mandrel, means for disengaging the operative connection between the mandrel and article, and means for throwing the article off the mandrel after the disengagement of said operative connection.

4. An automatic polishing machine of the type described, comprising in combination a frame, means for holding a plurality of articles to be polished, a revoluble expansible mandrel, a hollow revoluble shaft supporting said mandrel, means for feeding the articles on to said mandrel, a rod in said hollow shaft for expanding said mandrel into operative engagement with the article fed thereon and for maintaining the mandrel in its expanded condition during the operation of polishing, and for releasing the same thereafter, means for driving said rod into said mandrel to expand the same and for withdrawing said rod, means for polishing the article, and means for throwing the article off the mandrel after the release of said operative engagement.

5. An automatic polishing machine of the type described, comprising in combination a frame, means for holding a plurality of articles to be polished, a revoluble expansible mandrel, a hollow revoluble shaft supporting said mandrel, means for feeding the articles on to said mandrel, means for expanding said mandrel into operative engagement with the article fed thereon and for maintaining the mandrel in its expanded condition during the operation of polishing, and for releasing the same thereafter, means for polishing the article, and means for throwing the article off the mandrel after the release of said operative engagement, said means consisting of a sleeve on the mandrel shaft, a spring acting on said sleeve and tending to press it against the article to be polished and means for periodically moving said sleeve against the force exerted by the spring and releasing the same.

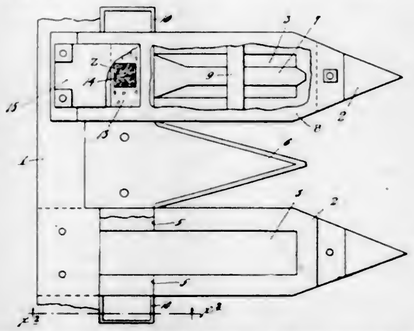
6. An automatic polishing machine of the type described, comprising in combination a frame, a substantially vertical feeding-shaft for holding a plurality of articles to be polished, a mandrel mounted on the frame, a feeder *f* having a slide *e*, a guide b^1 for said slide arranged between the base of said feeding-shaft and said mandrel, means for reciprocating said feeder to and fro on said guide, means for releasing the lowermost article from the feeding-shaft on the return of the feeder into its position under said feeding shaft whereby said article drops into the feeder and is fed on to said mandrel, means for operatively interconnecting the mandrel and the article fed thereon, means for polishing the article while operatively connected with the mandrel means for disengaging the operative connection between the mandrel and article, and means for throwing the article off the mandrel after the disengagement of said operative connection.

7. An automatic polishing machine of the type described, comprising in combination a frame, a substantially vertical feeding-shaft for holding a plurality of articles to be polished, a mandrel mounted on the frame, a feeder *f* having a slide *e*, a guide b^1 for said slide arranged between the base of said feeding-shaft and said mandrel, means for reciprocating said feeder to and fro on said guide, a U-shaped spring *g* immediately under the feeding-shaft said spring having wedge-shaped noses *i* normally adapted to support the lowermost article in said shaft, said spring being arranged in the path of the feeder *f* whereby on the return of the feeder into its position under said shaft said feeder engages the spring and releases said article whereupon the latter drops into the feeder and is subsequently fed on to said mandrel, means for operatively interconnecting the mandrel and the article fed thereon, means for polishing the article while operatively connected with the mandrel, means for disengaging the operative connection between the mandrel and article, and means for throwing the article off the mandrel after the disengagement of the said operative connection.

8. An automatic polishing machine of the type described, comprising in combination a frame, a substantially vertical feeding-shaft for holding a plurality of articles to be polished, a revoluble expansible mandrel mounted on the frame, a feeder *f* having a slide *e*, a guide b^1 for said slide arranged between the base of said feeding-shaft and said mandrel, means for reciprocating said feeder to and fro on said guide, means for releasing the lowermost article from the feeding-shaft on the return of the feeder into its position under said feeding-shaft whereby said article drops into the feeder and is fed on to said mandrel, means for expanding said mandrel into operative engagement with the article fed thereon and for maintaining the mandrel in its expanded condition during the operation of polishing, and for releasing the same thereafter, means for polishing the article, and means for throwing the article off the mandrel after the release of said operative engagement.

9. An automatic polishing machine of the type described, comprising in combination a frame, a substantially vertical feeding-shaft for holding a plurality of articles to be polished, a revoluble mandrel mounted on the frame, a feeder *f* having a slide *e*, a guide b^1 for said slide arranged between the base of said feeding-shaft and said mandrel, means for reciprocating said feeder to and fro on said guide, means for releasing the lowermost article from the feeding-shaft on the return of the feeder into its position under said feeding-shaft whereby said article drops into the feeder and is fed on to said mandrel, means for operatively interconnecting the mandrel and the article fed thereon, a plurality of revoluble polishing disks arranged around said mandrel, means for moving said polishing disks up against the article on the mandrel and for withdrawing the same therefrom, means for disengaging the operative connection between the mandrel and article, and means for throwing the article off the mandrel after the disengagement of said operative connection.

855,645. CUTTING MECHANISM FOR HARVESTERS AND SIMILAR MACHINES. HENRY H. KRYGER, Minneapolis, Minn. Filed Mar. 31, 1906. Serial No. 309,066.



Claim.—1. The combination with a finger-equipped bar, of a co-operating sickle having sickle blades and interposed clearing teeth both co-operating with said fingers, substantially as described.

2. The combination with a finger bar and a plurality of fingers secured thereto and having overlying retaining plates, of a sickle bar having sickle blades and clearing teeth working in the space between the upper surfaces of said fingers and the under surfaces of said retaining plates, substantially as described.

3. The combination with a finger bar and a plurality of fingers secured thereto, said fingers having longitudinal slots and overlying retaining plates, of a sickle bar having alternately arranged sickle blades and clearing teeth working in the space between the upper surfaces of said fingers and the under surfaces of said retaining plates, substantially as described.

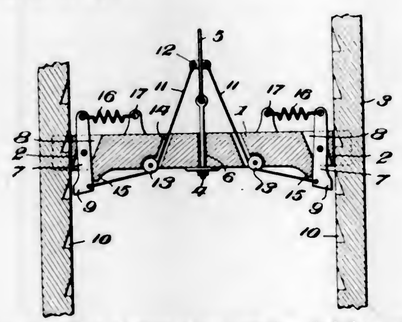
4. The combination with a finger bar and a plurality of fingers secured thereto, of a sickle co-operating therewith, retaining plates secured to each finger and overlying said sickle, lubricating boxes loosely seated in said retaining plates and resting upon the upper surface of said sickle, and springs yieldingly pressing said lubricating box against the sickle, substantially as described.

5. The combination with a finger bar having a plurality of fingers formed with long open slots, said fingers having overlying retaining plates secured thereto at the front and rear portions thereof, of a sickle bar having sickle blades and clearing teeth working in the space between the upper surfaces of said fingers and the under surfaces of said retaining plates, substantially as described.

6. A sickle having sickle blades and interposed clearing teeth, substantially as described.

7. The combination with a finger-equipped bar and a sickle coöperating therewith, of lubricating boxes engaging the upper portion of said sickle, and means yieldingly pressing said lubricating boxes downward onto the said sickle, whereby said sickle will be lubricated and said yieldingly pressed boxes will assist in holding the same seated on said fingers, substantially as described.

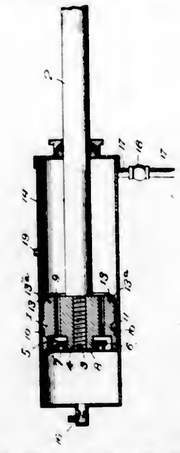
855,646. SAFETY DEVICE FOR ELEVATORS. BERNARD LEHN, Escanaba, Mich. Filed Feb. 13, 1907. Serial No. 357,197.



Claim.—1. In a device of the class described the combination with a supporting beam and guides therefor; of a supporting cable for said beam, levers extending vertically through slots adjacent the ends of said beam and pivotally mounted therein, there being shoulders on the lower face of said supporting beam and at one edge of said slots adapted to limit the inward movement of the lower ends of said levers, said levers having heads on the lower ends thereof adapted to engage notches in the guides, auxiliary cables secured at one end to the lower ends of said levers and at their opposite ends to the supporting cable, means to adjustably secure the auxiliary cables to the supporting cable, there being ears extending upwardly from said supporting beam and tension springs disposed between said ears and the upper ends of said levers adapted to swing the levers and direct the heads into engagement with said notches when the supporting cable becomes broken.

2. In a device of the class described the combination with a supporting beam and guides therefor; of a supporting cable, a bolt extending loosely through an opening in the center of said supporting beam adapted to receive the supporting cable, levers pivotally mounted in slots in said beam, provided with heads at the lower ends thereof adapted to enter notches in the guides, there being depending shoulders on the beam adjacent one edge of the slots adapted to limit the inward movement of the levers, auxiliary cables secured at one end to the lower ends of said levers and at their opposite ends to the supporting cable, a clamp for said auxiliary cables whereby the same may be adjustably secured to the supporting cable, sheaves on said supporting beam around which said auxiliary cables take, there being upwardly extending ears on said supporting beam and tension springs disposed between said ears and the upper ends of the levers whereby when the supporting cable becomes broken the springs will direct the heads into engagement with the notches.

855,647. PUMP-PISTON. JAMES W. MALLONEE, Benedict, Nebr. Filed Apr. 25, 1906. Serial No. 313,643.



Claim.—1. In a device of the class described the combination with a suitable chamber; of a piston slidably mounted in said chamber, a rod secured to said piston, said piston having a channel at one end, a check valve disposed in said channel, said piston also having a plurality of longitudinal openings therethrough adapted to be closed by said check valve, a washer secured to the threaded portion of said piston adapted to retain said check valve in position and adjust the same relative to said openings.

2. A device of the class described comprising a cylinder, a piston slidably mounted in said cylinder, a rod having a reduced end upon which said piston is adapted to take, a packing ring disposed in a channel around said piston, a packing leather secured to and surrounding one end of said piston, said piston having a channel in one end thereof and a plurality of openings through said piston, a check valve disposed in said channel and adapted to close said openings on one stroke of the piston and a washer adapted to adjustably secure said check valve in said channel.

3. In a device of the class described a piston having a channel at one end thereof, and a plurality of longitudinal openings through said piston and registering with the channel, a check valve movably disposed in said channel and a washer adapted to adjustably secure said check valve in said channel.

855,648. RIFLE ATTACHMENT. PETER M. MAYVILLE, Green Bay, Wis. Filed Nov. 16, 1905. Serial No. 287,644.

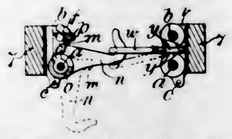
Claim.—1. An attachment for rifles comprising an imperforate, non-contractible casing, the outer surface of which simulates the shell of a cartridge ordinarily used

within the rifle, said casing having an interior shoulder and thickened from said shoulder to the adjoining end of the casing, said end being rigid and unslitted said thickened portion constituting a reinforce, and adapted to surround a miniature cartridge, a rigid, non-yielding tubular, cylindrical breech block of uniform diameter adapted to be loosely seated within the casing and to hold the head of said miniature cartridge against the shoulder, said block and the cartridge adapted to completely fill the casing, and a firing pin slidably mounted within the breech block.



2. An attachment for rifles comprising a hollow casing with one end rigid and unyielding and thickened internally and forming an internal shoulder for contact of the head of a cartridge, a tubular breech block removably inserted within said casing to engage the head of said cartridge, with its other end flush with the butt end of the casing, a firing pin slidably mounted in said breech block and having a longitudinal recess, and means in the breech block entering said recess to guide and limit the movement of the firing pin, said firing pin having a lateral offset adapted for use with a rim-fire cartridge.

855,649. COUPLING FOR RAILWAY AND OTHER VEHICLES. JOSEPH MELLAND-SMITH, London, England. Filed July 12, 1906. Serial No. 325,908.



Claim.—1. Coupling apparatus for railway and other vehicles, comprising a coupling bar mounted to rotate in bearings carried by the draw head of the vehicle, a coupling hook for engaging a corresponding device on an adjacent vehicle, mounted to rotate to a limited extent on such bar, and a device adapted to hold said coupling hook in its coupling position, such device being adapted to be operated by the coupling bar that upon rotating the coupling bar the hook is moved into its operative position and the holding device is brought into operation, to place the hook in its inoperative position rotation of the coupling bar first actuates the catch to release the hook and then moves the hook in the desired manner, substantially as hereinbefore described.

2. A coupling apparatus comprising a coupling bar rotatably mounted, pinions on the bar, a cranked bar rotatably mounted, pinions on the cranked bar engaging the pinions on the coupling bar, and a clutch mechanism on the cranked bar acting in conjunction with the pinions on said cranked bar, said clutch mechanism permitting the pinions on the cranked bar to turn loosely thereon to a limited extent.

3. In a coupling apparatus, in combination a coupling bar rotatably mounted, a coupling hook thereon, and means whereby the coupling bar is locked against rotation in a direction to move the hook out of its operative position.

4. In a coupling apparatus, a coupling bar rotatably mounted therein, a cranked bar rotatably mounted, a coupling hook carried by the coupling bar, and means carried by the coupling bar for preventing the rotation of either the coupling bar or cranked bar.

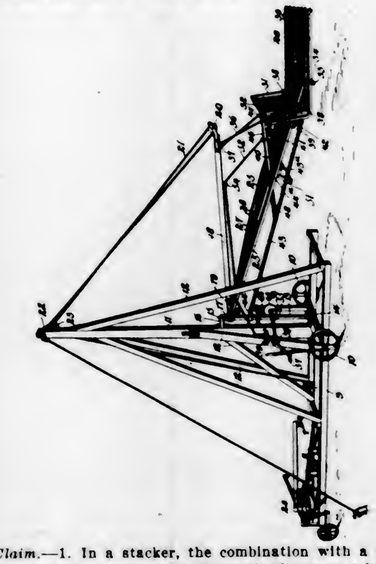
5. Coupling apparatus for railway and other vehicles comprising three transversely arranged bars, mounted to rotate in bearings carried by the draw head of the vehicle, a coupling hook for engaging the corresponding device on an adjacent vehicle, mounted on one of such bars, and adapted to be engaged when in its coupling position by a suitably formed portion of another of such bars, which is connected by gearing with the coupling hook bar, locking means on the third of such bars adapted to engage a part connected to either of the other two bars, and thereby prevent their rotation, operating means for the coupling hook bar and means connected to said coupling bar operating means whereby the third bar is so actuated as to release the locking means, substantially as hereinbefore described.

6. Coupling apparatus comprising a coupling bar, an arm on said coupling bar capable of a limited rotary movement thereon, a coupling hook engaging the arm, a cranked bar, and meshing gears on the coupling bar and cranked bar, said coupling bar and cranked bar being both capable of rotation.

7. Coupling apparatus, comprising three transverse bars mounted to rotate in three bearings fixed to the vehicle draw bars, the coupling hook being mounted on the coupling bar between the middle bearing and an outer one thereof, and the other outer bearing a bracket mounted on two of the transverse bars between the middle and outer bearing, a coupling link that projects away from the vehicle and which is so arranged that it can rise or fall and can move laterally to a desirable limited extent carried by the bracket, substantially as hereinbefore described.

8. In a coupling apparatus, a coupling bar, a lever carried thereby, and a coupling hook on the bar, a spring key carried by the lever, a second bar, a locking means thereon, and a lever carried thereby engaged by the spring key of the coupling bar.

855,650. STACKER. WILSON W. MILLER, Newton, Kans. Filed Jan. 29, 1906. Serial No. 298,529.



Claim.—1. In a stacker, the combination with a mast, of a rotatable post journaled alongside the same, a hanger hingedly connected to the post, a fork also hinged to the post, means connecting the fork to the hanger, and means movably mounted on the mast and connected to the hanger for elevating and lowering the hanger and thereby the fork.

2. In a stacker, the combination with a mast, of a rotatable post journaled alongside the same, a vertically swinging hanger bar hinged to the post, fork arms connected to the fork and hinged to the post, a bail pivoted between its ends to the hanger bar and having said ends connected to the arms, a pulley mounted on the mast, and a cable passing through the pulley and engaging the hanger bar to vertically swing the same, and thereby raise and lower the fork.

3. In a stacker, the combination with a supporting frame including a mast, of a post mounted alongside the mast, a transversely disposed pintle arranged on the upper portion of the post, a hanger bar hinged at one end to the pintle, means connected to the mast and hanger bar for raising and lowering the latter, arms pivoted on the pintle on opposite sides of the hanger bar, a bail connected to the outer portion of the hanger bar and the outer portions of the arms, and a fork pivotally mounted on the outer ends of the arms.

4. In a stacker, the combination with vertically swinging spaced arms, of a fork pivoted to the outer ends of the arms, a cross bar between the arms, braces connecting the cross bar and the arms and disposed between the latter, a locking device pivoted to and between the braces, a holding device connected to the fork and having a detachable interlocking engagement with the locking device, means for effecting the disengagement of the lock and holding device to permit the tilting of the fork, and a swinging link connected to the locking device.

5. In a stacker, the combination with a fork having tines, of a single transverse pivot rod extending across and beneath intermediate portions of all the tines, constituting a support for the same, clips securing the tines to the rod, and spaced vertically swinging arms pivoted to said rod between the tines.

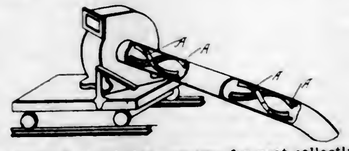
6. In a stacker, the combination with a fork having tines, of a pivot rod extending beneath the tines, and transversely thereof, clips connecting the pivot-rod and the tines, divergently disposed vertically swinging arms composed of angle iron and having their terminals looped about the pivot-rod, truss-rods extending longitudinally of the arms and having their ends secured thereto, spreaders interposed between portions of the truss-rods and arms, braces located between the arms, a locking device, and a holding device pivoted respectively to the braces and to the fork and having a detachable interlocking engagement, a hanger bar located over the arms, a bail connecting the hanger bar and arms, and means connected to the hanger bar for raising and lowering the same, and thereby the fork.

7. In a stacker, the combination with a vertically movable and laterally swinging fork, of means for vertically moving the same, means for laterally swinging the fork, and locking means engaging the laterally swinging means for holding the fork in different lateral positions.

8. In a stacker, the combination with an upright rotatable post, of a vertically swinging fork mounted thereon, a rotatable operating shaft, and gearing connecting the shaft and post.

9. In a stacker, the combination with an upright rotatable post, of a vertically swinging fork mounted thereon, a beveled gear carried by the post, a rotatable operating shaft extending transversely of the post, a beveled gear mounted on the shaft, and a beveled pinion interposed between and meshing with the said beveled gears of the post and shaft.

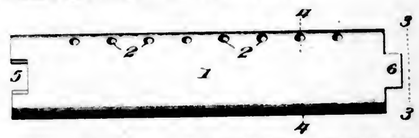
855,651. TUBULAR CONVEYER FOR PEAT-COLLECTING MACHINES. WILLIAM A. MILNE, Brown's Corners, Ontario, Canada. Filed Sept. 24, 1906. Serial No. 336,062.



Claim.—1. In a tubular conveyer for peat collecting machines, the combination with a fan casing and fan and non-rotatable tube extending from the fan casing, of a spiral wing secured to the inner periphery of the tube in such a manner that the pitch of the spiral will be long and extend some distance along the inner periphery as and for the purpose specified.

2. In a tubular conveyer for peat collecting machines, the combination with the tube, of spiral wings L shaped in cross section, said spiral wings being oppositely secured to the inner periphery of the said tube, in such a manner that the pitch of the spiral will be long and extend some distance along the inner periphery of the said tube, substantially as described.

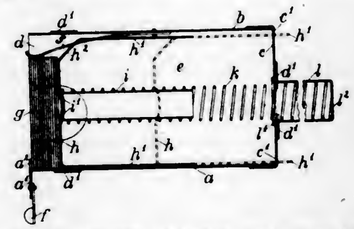
855,652. DRAIN-TILE. HERMAN MORI, Hartville, Ohio. Filed Feb. 19, 1907. Serial No. 358,299.



Claim.—1. The herein described tile for drains having a flattened portion upon its outer surface and a plurality of openings at a point diametrically opposite the flattened portion, a pair of tongues at one end of said tile and a pair of slots at the opposite end thereof, said tongues and slots having tapered walls whereby when the tongues upon one tile are disposed into engagement with slots upon the next succeeding tile, said tongues and slots will be interlocked.

2. The herein described drain tile having a longitudinal opening therethrough, a flattened portion on the outer periphery of the tile and extending longitudinally thereof to form a base, a plurality of bores through the walls of the tile at a point diametrically opposite the flattened portion and projecting means at one end of the tile adapted to interlock with sockets in the next succeeding tile.

855,653. TICKET-CASE. HEINRICH J. MÜLLER, Schaffhausen, Switzerland. Filed Jan. 4, 1906. Serial No. 294,607.



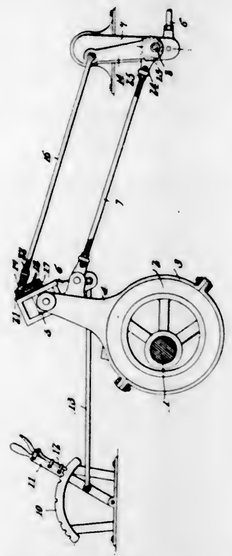
Claim.—A ticket-case comprising rows of compartments in which the tickets are placed on end, the combination of a metal bottom plate, a metal top plate and a metal back, all of which extend over the whole length of the case, metal partitions arranged transversely so as to form the ticket compartments, a movable metal push-plate in each compartment, and a push-spring controlling said plate, one of the said metal plates having a vertically bent flange for bearing checks and whereon the names of the stations may be displayed.

855,654. VALVE-GEAR. JOHN MCDONALD, Blair, Nebr., assignor of one-half to Paul Herpolsheimer, Seward, Nebr. Filed June 30, 1906. Serial No. 324,213.

Claim.—1. In a valve gear, the combination of a valve rod, a rocker, a connection between the rod and the free end of the rocker, an oscillating arm pivoted thereon at a point adjacent its free end, means for oscillating the arm, an eccentric rod for oscillating the rocker, means between the eccentric rod and rocker and connected with the arm for accelerating the movement of the valve rod, and an eccentric for actuating the eccentric rod.

2. In a valve gear, the combination of a valve rod, a rocker connected therewith and having a stationary center of oscillation, an eccentric, an eccentric rod, an adjustable member for controlling the stroke of the eccentric rod, an

eccentric between the eccentric rod and rocker and moving with the latter, and a connection between the member and eccentric last mentioned arranged to oscillate the eccentric independently of the rocker to vary the movement of the valve rod.



3. In a valve gear, the combination of a reciprocating valve rod, a rocking member connected therewith, an eccentric, an eccentric rod between the eccentric and member for actuating the latter, an adjustable oscillating guide for controlling the stroke of the eccentric rod, and means coöperating with the eccentric rod for moving the member, said means including an adjustable connection uniting the guide with the member and arranged to transmit motion from the former to the latter.

4. In a valve gear, the combination of a reciprocating member, an eccentric, an eccentric rod for actuating the member, an adjustable guide for controlling the stroke of the eccentric rod, and means operating simultaneously with the eccentric rod for moving the member, said means comprising an angle iron mounted on the guide, a link adjustably connected therewith, a pitman adjustably connected with the link at one end, and an arm connected with the opposite end of the pitman and with the eccentric rod and member for actuating the latter in conjunction with the eccentric rod.

5. In a valve gear, the combination of a reciprocating member, a rocker connected therewith, an actuating rod for the rocker, means for controlling the length of stroke of the rod, an eccentric device between the eccentric rod and rocker, and means for shifting the eccentric with respect to the rocker, said means comprising an adjustable connection between the guide and eccentric.

6. In a valve gear, the combination of a reciprocating member, a rocker connected therewith, an actuating rod for the rocker, means for controlling the length of stroke of the rod, an eccentric device between the eccentric rod and rocker, and means for shifting the eccentric with respect to the rocker, said means comprising a pitman connected with the eccentric, and a device for adjustably connecting the pitman with the guide.

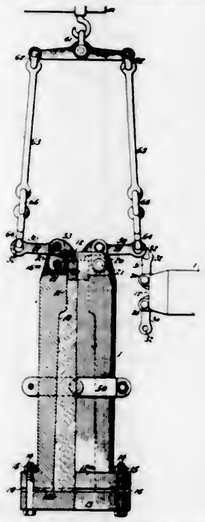
7. In a valve gear, the combination of a reciprocating member, a rocker connected therewith, an actuating rod for the rocker, means for controlling the length of stroke of the rod, an eccentric device between the eccentric rod and rocker, and means for shifting the eccentric with respect to the rocker, the latter comprising an arm for the eccentric, a pitman connected with the arm, an L-shaped link adjustably connected with the pitman, and a device adjustably connecting the link with the guide.

8. In a valve gear, the combination of a valve rod, a rocker arm connected therewith, an eccentric mounted for rotation, an eccentric rod connected therewith, a guide for controlling the stroke of the eccentric rod, a mechanism for controlling the guide, an oscillatory eccentric between the eccentric rod and rocker, a pitman extending substantially parallel with the eccentric rod, means for connecting the pitman with the oscillating eccentric, and means for adjustably connecting the pitman with the guide.

9. In a valve gear, the combination of a valve rod, a rocker, an eccentric rod for actuating the rocker, a strap thereon, an eccentric for the strap, an oscillating arm connected with the eccentric and pivoted on the rocker to oscillate therewith and independently thereof, said rocker and arm forming the sole means for holding the strap on the eccentric, and means for actuating the arm.

10. In a valve gear, the combination of a valve rod, a rocker for reciprocating the same, a reciprocating rod, an arm mounted on the rocker to move therewith, an eccentric disposed between the arm and rocker movable with the arm, a strap connected with the reciprocating rod which is held in position on the eccentric by the arm and rocker, and means for oscillating the arm independently of the rocker and simultaneously with the oscillations of the latter.

855,655. INGOT-MOLD. FRANCIS MCMAHON, Cambridge, Mass. Filed June 23, 1906. Serial No. 323,152.



Claim.—1. A means for forming ingots, comprising a closed bottom mold, mechanism for engaging the mold and lifting the same, and compressing devices operated by the weight of the mold and the ingot for compressing the ingot within the mold.

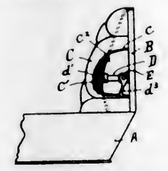
2. A means for forming ingots, comprising a mold, a detachable bottom therefor, mechanism for lifting the mold, and compressing devices operated by the weight of the mold and the ingot adapted to engage the top of the ingot and compress the same while the mold bottom is on, and which act to eject the ingot when the bottom is removed.

3. A means for forming ingots, which comprises a mold open at the top, a bottom therefor detachably connected to the mold, compressing devices for engaging the top of the ingot, lifting devices for detachably connecting with the said compressing devices and arranged to transmit the weight of the mold and ingot to the said compressing devices, and trunnions on the mold substantially midway the ends thereof adapted to detachably connect with the aforesaid lifting devices when they are disconnected from the compression devices, for the purposes described.

4. In an ingot forming means of the character described, in combination with the mold having a transverse socket in its upper end; of oppositely disposed links pivotally mounted in the said socket, levers pivotally mounted on said links, said levers having apertured outer ends and their inner ends formed with cam like portions, a presser block movable in the bore of the mold with which the cam portion engages and a sling having hook portions for engaging the apertured ends of the said levers, as set forth.

5. In an ingot forming means of the character described, the combination with the mold having a transverse socket in its upper end; of oppositely disposed links pivotally mounted in the said socket and adapted to swing outward over the edges of the mold, levers pivotally mounted on the said links, said levers having outwardly extending portions and their inner ends formed with cam like portions adapted to extend down into the bore of the mold and means for applying pressure to the levers, for the purposes stated.

855,656. ADJUSTABLE BACK FOR CUSHION-SEATS. THOMAS J. MCNAMARA, JR., and GEORGE KRUMMEN, Cincinnati, Ohio, assignors to The Phoenix Carriage Co., Cincinnati, Ohio, a Corporation of Ohio. Filed Mar. 11, 1907. Serial No. 361,648.



Claim.—1. In an article of the character indicated a back-frame, a cushion attached to the edges of said frame, and a yoke-frame interposed between said back-frame and cushion, said yoke-frame being pivotally attached to the back-frame and adapted to be shifted so as to lie close against the back-frame, or to be extended therefrom to alter the shape of the cushion.

2. In an article of the character indicated in combination with a back-frame and cushion, a yoke-frame interposed between said cushion and back-frame, said yoke-frame being pivotally attached to said back-frame and adapted to be shifted to varying positions relative thereto to alter the shape of the cushions and an exteriorly located shifting lever.

3. In an article of the character indicated in combination with a back-frame a flexible cushion attached thereto at its edges, a yoke-frame interposed between said back-frame and cushion, said yoke-frame being pivotally attached to the back-frame and provided with a shifting lever.

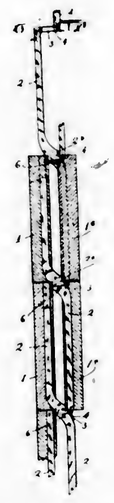
4. In an article of the character indicated in combination with a back-frame and a cushion attached together at their edges, a yoke-frame interposed between said cushion and back-frame and pivotally attached to said back-frame, the central portion of said yoke-frame being yieldingly supported relative to its pivots.

855,657. INTERLOCKING BUILDING-BLOCK. ATHERTON B. NICHOLS, Hastings, Minn. Filed Feb. 8, 1907. Serial No. 356,309.

Claim.—1. A building block made up of two or more laterally and longitudinally offset sections separated from each other, but reinforced and connected by one or more metal tie bars or rods, substantially as described.

2. A concrete building block made up of laterally and longitudinally offset sections separated from each other, and one or more metal bars or rods embedded therein and rigidly connecting the same, substantially as described.

3. A concrete block made up of laterally and longitudinally offset sections, and metal bars or rods embedded therein and rigidly connecting the same, the ends of said bars or rods being formed with interlocking devices engageable with coöperating ends of similar blocks, substantially as described.



4. A wall or similar body made up of a plurality of blocks, each block comprising laterally and longitudinally offset body portions, and embedded metal rods rigidly connecting the sections of said respective blocks, the said reinforcing bars having interlocking end portions whereby continuous metal reinforcements are extended longitudinally of the said wall or body, substantially as described.

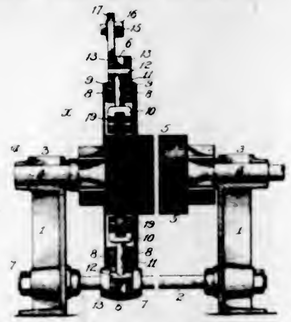
5. A wall or other body having a continuous air space and made up of laterally and longitudinally offset sections, and metal reinforcing bars embedded therein and provided at their ends with interlocking devices, the several layers of blocks having lapped joints, and the alined and interlocked bars of the blocks of said wall constituting continued metal reinforcements, substantially as described.

6. A concrete block made up of the laterally and longitudinally offset sections 1 and 1^a, said sections 1^a having the pockets 5, and the metal reinforcing bars 2 embedded in and rigidly connecting the block sections 1 and 1^a, the said bars at one end being provided with lock hooks 3, at their other ends with projecting lock fingers 4, and at their exposed intermediate portions, with the stop shoulders 2^a, substantially as described.

7. A wall or other body made up of concrete blocks having laterally and longitudinally offset body portions, said blocks being laid with staggered joints, and metal bars embedded in and connecting the sections of the said blocks and provided at their ends and intermediate portions with interlocking devices whereby the alined and interlocked bars constitute an extended truss rigidly connecting the blocks, substantially as described.

8. A wall or other body made up of a plurality of concrete blocks, each block comprising sections 1 and 1^a offset laterally and longitudinally with respect to each other, and the metal bars 2 embedded in said block sections, said bars having lock hooks 3 at one end and lock fingers 4 at their other ends, the sections of said blocks being set in zig zag arrangement in respect to each other, and the hooks 3 being interlocked to abutting lock fingers 4 and to the intermediate portions of a third bar 2, substantially as described.

855,658. APPARATUS FOR NURLING CYLINDERS. EDWARD J. O'BRIEN, St. Louis, Mo., assignor to The Proctor and Gamble Company, a Corporation of Ohio. Filed Nov. 18, 1905. Serial No. 287,950.



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Claim.—1. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, an annular carriage sliding on said frame and encircling the cylinder, a series of nurling rolls mounted on said carriage and adapted to have engagement with the periphery of the cylinder, and means for impartial radial adjustment to said nurling rolls.

2. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, an annular carriage sliding on said frame and formed with a series of radial guidways, a series of yokes having guide stems moving in said guideways, a series of nurling rolls journaled in said yokes, and means for imparting radial adjustment to said yokes.

3. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinder, the combination of a frame in which the cylinder is arranged to rotate, a carriage consisting of a central member having sliding engagement with said frame and formed by a series of separated segments, clamping rings secured at opposite sides of said segments and provided with peripheral flanges, a series of yokes having guide stems sliding between the segments aforesaid, a pair of cam rings turning on the periphery of the aforesaid clamping rings and provided with eccentric slots for operative engagement with the shanks of the yokes, an operating right and left hand screw engaging the cam rings, and a series of nurling rollers journaled in said yokes.

4. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, an annular carriage sliding on said frame and encircling the cylinder, a series of nurling rolls mounted on said carriage and adapted to have engagement with the periphery of the cylinder, means for imparting radial adjustment to said nurling rolls, the same comprising a cam ring turning on said carriage and operatively connected with the nurling rolls and means for imparting circular adjustment to the cam ring.

5. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, an annular carriage sliding on said frame and formed with a series of radial guideways, a series of yokes having guide stems moving in said guideways, a series of nurling rolls journaled in said yokes, and means for imparting radial adjustment to said yokes, the same comprising a cam ring turning on said carriage and operatively connected with the carrying yokes of the nurling rolls.

6. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, a carriage sliding on said frame, a series of nurling rolls mounted on said carriage and adapted to have engagement with the periphery of the cylinder, and means for imparting radial adjustment to said nurling rolls, a part of the series of nurling rolls having circularly ridged peripheries and a part having longitudinally ridged peripheries, the circularly ridged rolls being adapted to hold the parts in alinement while the longitudinally ridged rolls are forming the serrations on the metal cylinder.

7. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, an annular carriage sliding on said frame and encircling the cylinder, a series of nurling rolls mounted on said carriage and adapted to have engagement with the periphery of the cylinder, and means for imparting radial adjustment to said nurling rolls a part of the series of nurling rolls having circularly ridged peripheries and a part having longitudinally ridged peripheries.

8. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, an annular carriage sliding on said frame and formed with a series of radial guideways, a series of yokes having guide stems moving in said guideways, a series of nurling rolls journaled in said yokes, and means for imparting radial adjustment to said yokes, a part of the series of nurling rolls having circularly ridged peripheries and a part having longitudinally ridged peripheries.

9. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, a carriage consisting of a central member having sliding engagement with said frame and formed by a series of separated segments, clamping rings secured at opposite sides of said segments and provided with peripheral flanges, a series of yokes having guide stems sliding between the segments aforesaid, a pair of cam rings turning on the periphery of the aforesaid clamping rings provided with eccentric slots for operative engagement with the shanks of the yokes, an operating right and left hand screw engaging the cam rings, and a series of nurling rollers journaled in said yokes, a part of the series of nurling rolls having circularly ridged peripheries and a part having longitudinally ridged peripheries.

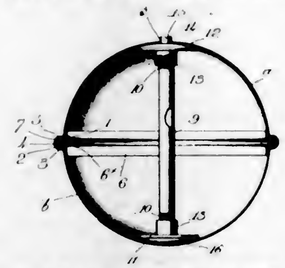
10. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, an annular carriage sliding on said frame and encircling the cylinder, a series of nurling rolls mounted on said carriage and adapted to have engagement with the periphery of the cylinder, means for imparting radial adjustment to said nurling rolls, the same comprising a cam ring turning on said carriage and operatively connected with the nurling rolls, and means for imparting circular adjustment to the cam ring a part of the series of nurling rolls having circularly ridged peripheries and a part having longitudinally ridged peripheries.

11. In an apparatus for nurling abrading teeth upon the initially threaded periphery metal cylinders, the combination of a frame in which the cylinder is arranged to rotate, an annular carriage sliding on said frame and formed with a series of radial guideways, a series of yokes having guide stems moving in said guideways, a series of nurling rolls journaled in said yokes, means for imparting radial adjustment to said yokes, the same comprising a cam ring turning on said carriage and operatively connected with the carrying yokes of the nurling rolls and means for imparting circular adjustment to the cam ring, a part of the series of nurling rolls having circularly ridged peripheries and a part having longitudinally ridged peripheries.

12. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame having means for supporting the cylinder, a carriage supported on said frame, in a manner to permit of independent longitudinal adjustment and circular rotation between the carriage and the cylinder, a series of nurling rolls mounted on said carriage and adapted to have engagement with the periphery of the cylinder, and means for imparting radial adjustment to said nurling rolls, a part of the series of nurling rolls having circularly ridged peripheries and a part having longitudinally ridged peripheries, the circularly ridged rolls being adapted to hold the parts in alinement while the longitudinally ridged rolls are forming the serrations on the metal cylinder.

13. In an apparatus for nurling abrading teeth upon the initially threaded periphery of metal cylinders, the combination of a frame having means for supporting the cylinder, an annular carriage supported on said frame in a manner to permit of independent longitudinal adjustment and circular rotation between the carriage and the cylinder, a series of nurling rolls mounted on said carriage and adapted to have engagement with the periphery of the cylinder, and means for imparting radial adjustment to said nurling rolls, a part of the series of nurling rolls having circularly ridged peripheries and a part having longitudinally ridged peripheries.

855,659. FLOAT. WALTER A. O'BRIEN, Boston, Mass., assignor of one-half to William R. Templeton, Boston, Mass. Filed July 24, 1906. Serial No. 327,574.



Claim.—1. A float comprising two hollow sheet metal sections united at their edges and having an adjacent internal annular seat, and a circular pressure-resisting member sustained in the seat, and abutting against the sections above and below the seat.

2. A float comprising two hollow sections, each provided with an outwardly extending flange having a lateral lip, the lip of one section abutting against the flange of the other section within the lip thereof and united thereto by solder, and a pressure-resisting member held in the internal seat formed by the opposed flanges and the innermost lip and abutting against the sections adjacent the bases of the flanges.

3. A float comprising two hollow sections, each provided with an outwardly extending flange having a lateral lip, the lip of one section abutting against the flange of the other section within the lip thereof and united thereto by solder, and a pressure-resisting ring soldered to the flange of one of the sections before they are united.

4. A float comprising two hollow sections, each provided with an outwardly extending flange having a lateral lip, the lip of one section abutting against the flange of the other section within the lip thereof, the latter lip being of greater depth and bent over the inner lip and united thereto by an intervening layer of solder, and a pressure-resisting ring having an external enlargement to enter and soldered in the seat formed by the opposed flanges and the innermost lip.

5. A float composed of two hollow sheet metal sections, one of which is provided with an outwardly extended flange at its edge, and a lip on the flange, a pressure-resisting ring soldered to the flange within the lip, and an outwardly extended flange on the edge of the other section, provided with a lip overlapping the lip of the first named section and soldered thereto.

6. A float comprising two hollow hemispherical sections united fluid tight at their edges, a longitudinally-adjustable compression-strut interposed between the poles of the sections, and means to effect adjustment of the strut from the exterior of the float after the sections thereof have been united.

7. A float comprising two hollow sections each provided with a lipped flange, the lips being overlapped and united by solder, one section having an axial opening, a longitudinally-adjustable compression-strut having enlarged, convexed ends to abut against the inner surfaces of the float sections at their poles, and a stem on one of the enlarged ends, to project through the axial opening and permit adjustment of the strut after the sections are soldered together, and means to seal the opening when the strut is adjusted.

8. A float comprising two hollow hemispherical sections adapted to be united fluid-tight at their edges, a longitudinally-adjustable, axially arranged compression-strut having enlarged ends placed against the sections and united thereto by an intervening layer of solder, and means to effect such adjustment from the exterior of the float after the edges of the sections are united.

9. A float comprising two hollow sections adapted to be soldered together at their edges, an axially arranged and longitudinally-adjustable compression-strut having enlarged ends faced with a layer of solder, to abut against the inner surfaces of the sections and united thereto by externally applied heat, and means to effect longitudinal adjustment of the strut after the edges of the sections are soldered together.

10. A float comprising two hollow sections united by solder at their edges, a longitudinally-extensible compression-strut axially arranged within the sections and united thereto at its ends and means to adjust the effective length of the strut from the exterior of the float.

11. A float comprising two hollow sections united at their edges, an internal axial brace secured at its ends to the inner surfaces of the sections and having a stem projecting through one of them, straps or bands passing about the float and interlocking with the said stem, and means to connect the free ends of the bands.

12. A float comprising two hollow sections united at their edges, an internal axially arranged compression strut or brace having at one end a stem extended through the adjacent section, crossed straps or bands perforated to interlock with said stem at their crossing, and a spider on the exterior of the other section opposite the adjacent end of the brace, to which the ends of the straps or bands are attached.

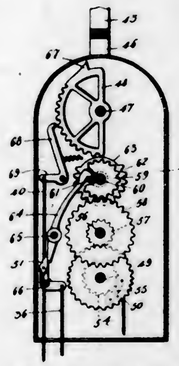
13. A float comprising two hollow sections united at their edges, an internal axially arranged compression strut or brace having at one end a stem extended through the adjacent section, crossed straps or bands perforated to interlock with said stem at their crossing, a spider on the other section opposite the corresponding end of the brace, means to connect the ends of the straps or bands with the spider, and means on the latter to attach the float to an operating arm.

855,660. AUTOMATIC CROSSING-GATE. RICHARD D. PAGE, Howard City, Mich. Filed Oct. 17, 1906. Serial No. 339,386.

Claim.—1. In a device of the character described, a swinging gate, mechanism for automatically raising and lowering said gate, false rails disposed at a suitable distance on both sides of said gate, said false rails being disposed outside the track rails and normally held slightly above said track rails by means of coil springs, cable connections between said false rails and said gate mechanism, a latch bar connected at one end to said cable, a bell crank lever having its vertical arm engaging said latch bar and having its crank portion working in a longitudinal slot within said false rail whereby when said false rail is depressed by an approaching train the said latch bar will pull said cable, and actuate said mechanism to lower said gate, substantially as described.

2. In a device of the character described, a swinging gate, mechanism for automatically raising and lowering said gate, false rails disposed at a suitable distance on

both sides of said gate, said false rails being disposed outside the track rails, and normally held against and slightly above said track rails by means of coil springs, cable connections between said false rails and said gate mechanism, a latch bar connected at one end to said cable, a bell crank lever having its vertical arm engaging said latch bar and having its crank portion working in a longitudinal slot adjacent one end of said false rail, a bell crank lever working in a longitudinal slot adjacent the other end of said rail, and a latch lifting lever connected thereto, whereby when the train is leaving the gate said lever will lift said latch bar to prevent the lowering of the gate, substantially as described.



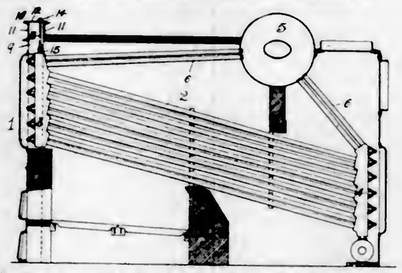
3. In a device of the character described, a gate operating mechanism, comprising a housing, a gate arm mounted on the outer ends of a rotatable shaft in the upper portion of said housing, a half gear mounted on said rotatable shaft, a power shaft in the lower portion of said housing carrying a gear, a drum loosely mounted on the power-shaft a rope having a weight attached thereto, carried by said drum, a shaft provided with a cam lug and geared to the power shaft, a latch lever mounted in said housing and engaging said lug to lock said arm in the vertical position, means for raising said latch, a gear on said locking shaft adapted to engage said half gear to move said arm to a horizontal position, means for locking said arm in the horizontal position, and means for releasing and drawing said arm back to the vertical position, substantially as described.

4. In a device of the character described, a gate operating mechanism, comprising a housing, a gate arm mounted on the outer ends of a rotatable shaft in the upper portion of said housing, a half gear mounted on said rotatable shaft, a power shaft in the lower portion of said housing carrying a gear, a drum loosely mounted on the power shaft, a rope having a weight attached thereto, carried by said drum, a shaft provided with a cam lug and geared to the power shaft, a latch lever mounted in said housing and engaging said lug to lock said arm in the vertical position, means for raising said latch, a gear on said locking shaft adapted to engage said half gear to move said arm to a horizontal position, a lug carried by said half gear, a spring pressed latch lever adapted to engage said lug to lock said arm in the horizontal position, means for releasing said latch lever and weights carried by the lower ends of said gate arm adapted to move said arm to the vertical position when so released, substantially as described.

855,661. WATER-TUBE BOILER. KENNEDY PARK, Toledo, Ohio, assignor to The Toledo Boiler Works Company, Toledo, Ohio, a Corporation of Ohio. Filed Dec. 3, 1906. Serial No. 346,025.

Claim.—1. A water-tube boiler having pendent swingingly mounted headers or manifolds for the tubes, which are free from a subjacent support.

2. The combination with the several headers at one end of a water-tube boiler, of superimposed means supporting the several headers for relative swinging movements, said means serving as the sole support for the headers.



3. A water-tube boiler having pendent swingingly mounted headers or manifolds for the tubes, and rigid means from which the headers or manifolds are suspended.

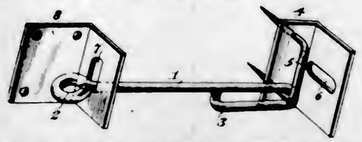
4. The combination in a water-tube boiler, of the water-tubes, fore and aft sets of headers to which the ends of the tubes are connected, a girder superimposing one set of headers, and means for swingingly suspending the several headers of said set from the girder, said means being the sole support for the headers.

5. The combination with the forward headers of a water-tube boiler, of a girder rigidly mounted above said headers, and suspender members coöperating with the girder and headers to maintain the latter in movable suspended position, said members being the sole means of support for the headers.

6. The combination with the several headers at one end of a water-tube-boiler, of a superimposed girder, and a plurality of members suspended from the girder and each swingingly carrying different ones of said headers to permit them to have independent swinging movements.

7. The combination with the boiler tubes, of a plurality of independent headers at the forward ends of the tubes, a girder superimposing the headers, means swingingly suspending the headers from the girder for independent movements, a transverse drum superimposing the tubes at the rear of the girder, and tubes connecting the headers and drum.

835,662. LATCH. JOHN W. PETTIJOHN, Montesano, Wash. Filed Apr. 25, 1906. Serial No. 313,611.



Claim.—1. A latch comprising an attachment member provided with a vertical loop and having an opening arranged at an angle to the loop, a keeper provided with an opening disposed at an angle to the opening of the attachment member, and a hasp member provided with an opening and linked into the said loop and adapted to turn on the latter and capable of moving bodily in a vertical direction to arrange it opposite the opening of the attachment member, said hasp being also provided at its free end with a head adapted to pass through the opening of the keeper, said head engaging the latter when arranged at an angle to the opening thereof.

2. A latch comprising an attachment member provided with an opening and having a loop arranged at an angle to the opening, a keepr having an opening also arranged at an angle to the opening of the attachment member, and a hasp member provided at one end with a head adapted to pass through the opening of the keeper and engage the latter, said hasp member being also provided at its other end with a loop arranged in a plane intersecting that of the head and linked into the loop of the attachment member, said member being capable of turning thereon and of moving bodily in a vertical direction to arrange it opposite the opening of the attachment member.

3. A latch comprising an attachment member having a horizontal slot and provided with a vertical loop, a keeper having a vertical slot, and a hasp member provided at one end with a head and having a loop at the other end arranged in a plane intersecting that of the head and linked into the said loop, whereby the hasp member is hinged to the attachment member, said hasp member being capable of a limited rotary movement and being slidable on the loop of the attachment member to arrange its ends in position to pass through the said openings.

4. A latch comprising an attachment member having two flanges arranged at an angle, one of the flanges being provided with a loop and the other flange having an opening arranged at an angle to the loop, a keeper provided with a projecting flange and provided therein with an opening arranged at an angle to the opening of the attachment member, a hasp member provided at one end with a head for engaging the keeper and having an opening at the other end to receive the loop.

5. A latch comprising an attachment member having two flanges arranged at an angle, one of the flanges being provided with a loop and the other flange having an opening arranged at an angle to the loop, a keeper having a projecting flange and provided therein with an opening arranged at an angle to the opening of the attachment member, and a hasp member provided at one end with an eye forming a head for engaging the keeper and adapted to receive a padlock, the other end of the hasp member being provided with an opening receiving the said loop.

6. A latch comprising an attachment member having a projecting portion provided with an opening, a loop projecting from the attachment member and arranged at an angle to the said opening, a keeper, and a hasp member provided with an elongated loop linked into the said loop, whereby it is hingedly and slidably connected with the attachment member, said hasp member being also provided with means for engaging the keeper.

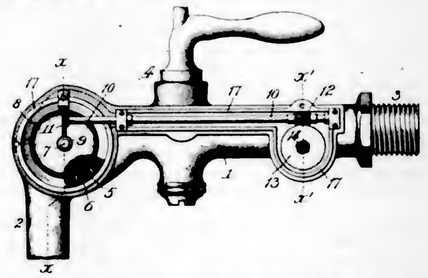
7. A latch comprising an attachment member, a hasp member, and a keeper, and means for connecting the hasp member to the attachment member so as to permit a limited rotary movement, a vertical bodily movement, and a longitudinal sliding movement of the hasp member, and a stop arranged to be engaged by the hasp member when the latter is in its locked position, said hasp member being carried out of engagement with the stop by the said movements.

8. A latch comprising an attachment member provided with a vertical loop, a keeper having an opening, a hasp member having a head at one end to pass through the opening of the keeper and linked at its other end in the loop of the attachment member, whereby the said hasp member has a partial rotary movement, a limited vertical movement and a limited longitudinal movement, and a stop located at one end of the hasp member when the latter is in its locked relation with the keeper to prevent the hasp member from moving longitudinally.

9. A latch comprising an attachment member provided with a vertical loop, a keeper having an opening, a hasp member having one of its ends to pass through the opening of the keeper and linked at its other end in the loop of the attachment member, whereby the hasp member has a partial rotary movement, a limited vertical movement, and a limited longitudinal movement, and a stop located at one end of the hasp member when the latter is in its locked relation with the keeper and at the limit of its downward movement to prevent the hasp member from moving longitudinally.

855,663. ROTARY METER. PAUL POLITOWSKI, Chicago, Ill. Filed Oct. 29, 1906. Serial No. 341,006.

Claim.—1. The combination of a faucet provided with an attaching neck and an outlet neck at its opposite ends, a valve between said necks, an enlarged cavity between the valve and outlet neck and a longitudinal chamber at one side and connected at its forward end with said enlarged cavity, a rotary meter wheel arranged in said enlarged cavity and having at one side an endless screw, a removable head or partition arranged in said cavity between the meter wheel and endles screw, a revoluble stem journaled at the rear end of the longitudinal chamber aforesaid, intermediate gearing between said revoluble stem and the meter wheel and arranged in the longitudinal chamber aforesaid, and a cap piece closing said longitudinal chamber and the open end of the enlarged cavity aforesaid, substantially as set forth.

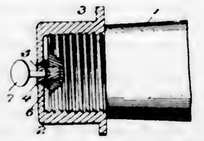


2. The combination of a faucet provided with an attaching neck and an outlet neck at its opposite ends, a valve between said necks, an enlarged cavity between the valve and outlet neck and a longitudinal chamber at one side and connected at its forward end with said enlarged cavity, a rotary meter wheel arranged in said enlarged cavity and having at one side an endless screw, a removable head or partition arranged in said cavity between the meter wheel and endless screw, a revoluble stem journaled at the rear end of the longitudinal chamber aforesaid, intermediate gearing between said revoluble stem and the meter wheel, the same comprising a longitudinal shaft arranged in the longitudinal chamber aforesaid and provided at its forward end with a worm wheel engaging the endless screw of the meter wheel and at its rear end with an endless screw engaging a worm wheel carried by the revoluble stem aforesaid, and a cap piece closing said longitudinal chamber and the open end of the enlarged cavity aforesaid, substantially as set forth.

3. In a transmission mechanism for faucet meters, the combination of a worm wheel having an annular rim on one side, a carrying disk having a marginal flange, a headed attaching screw passing through said carrying disk and means for connecting the worm wheel and carrying disk together.

4. In a transmission mechanism for faucet meters, the combination of a worm wheel having an annular rim on one side, a carrying disk having a marginal flange, a headed attaching screw passing through said carrying disk, and means for connecting the worm wheel and carrying disk together, the same comprising screw bolts possing through the respective parts.

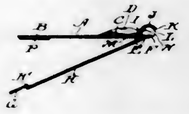
855,664. AXLE-NUT. WILLIAM L. POUNDS, Holt, Ala. Filed Jan. 18, 1907. Serial No. 352,976.



Claim.—1. A nut of the character described, provided with a slot in its outer end, a hinged locking bar adapted to fit in said slot and extend therethrough, and a turn button secured to the said locking bar and adapted to be turned into engagement with the inner face of the outer end of the nut whereby to prevent retraction of the said locking bar.

2. The combination with an axle provided with intersecting grooves in its outer end, of a nut adapted to be screwed upon said spindle, the said nut being provided in its outer end with a slot, a hinged locking bar secured to said outer end of the nut and being adapted to project into and through the latter into engagement with one of the grooves of said spindle, and a turn button secured to the said locking bar at the middle thereof and adapted to be turned into engagement with the inner face of the outer end of the nut, as and for the purpose set forth.

855,665. NAIL-CLIPPER. MATHIAS PROCHASKA, Fulton, Ill. Filed Mar. 28, 1907. Serial No. 364,977.



Claim.—1. A device of the kind described consisting of the main member forming the straight jaw insertible under the finger nail, said member having parallel longitudinal flanges, and a transverse slot between said flanges; the second member having a curved jaw insertible in said slot in said main member; the spring connecting said members; and means for locking said members in a closed position.

2. A device of the kind described, consisting of a main member, said member having a transverse slot and thin straight jaw; a second member the end thereof being insertible in the said slot in said main member, said second member having a curved jaw adapted to register with the straight jaw of the main member; a spring connecting the jaw ends of said members as described; and means for holding said members in a closed position.

3. In a device of the kind described, the combination with a main member, flanged and having a transverse slot, and a thin end forming a jaw; of a second member having a curved jaw, said jaw being insertible in said slot and adapted to register with the jaw of said main member; and a spring connecting said members, said spring being adapted to hold the jaws of said members in the open position; and means for holding said members in the closed position.

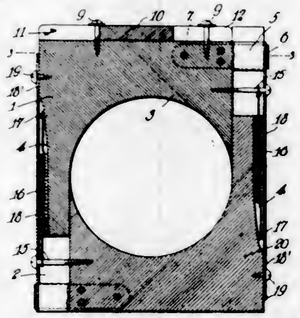
4. In a device of the kind described, the combination with the main member, said member having a transverse slot and thin end forming a jaw; of a second member having a curved jaw, said jaw being insertible in said slot and thereby adapted to register with the jaw of said main member; and a spring connecting said members, said spring being adapted to hold said members together and the said jaws in an open position; and means for holding said members in a closed position.

5. In a device of the kind described, the combination with the main member having a transverse slot and jaw; and a second member having a curved jaw insertible in said slot and adapted to register with the jaw of said main member; of a spring connecting said members and adapted to hold the jaws of said members open; and means for holding said members and jaws in a closed position.

6. In a device of the kind described, the combination with the main member having a transverse slot and jaw, the second member having a curved jaw said jaw being insertible in said slot; and a spring holding said members together; of a locking bar pivotally supported on said main member, said bar being adapted to be moved into engagement with said second member and to lock said members together.

7. In a device of the kind described, the combination of a main member having a transverse slot, and a knife pivotally secured to said member; of a second member having a curved jaw, said jaw being insertible in said slot, and adapted to be moved in contact with said main member and held in a closed position by said knife; and a spring connecting said members adapted to hold said jaw in the open position.

855,666. DUST-GUARD FOR AXLE-BOXES. ROBERT PURDIE, Chicago, Ill. Filed Feb. 4, 1907. Serial No. 355,755.



Claim.—1. A dust guard for journal boxes comprising two members slidable relatively to each other, retracting springs for drawing them together, and means for locking said members in extended position.

2. A dust guard for journal boxes comprising two L-shaped members slidable relatively to each other with the long arm of one member engaging the short arm of the other member, retracting springs for drawing them together, and means for locking said members in extended position.

3. A dust guard for journal boxes comprising two members slidable relatively to each other, retracting springs for drawing them together and a slide mounted on one of said members in position to engage the other member and hold them in extended position.

4. A dust guard for journal boxes comprising two L-shaped members slidable relatively to each other with the inner face of the long arm of one member engaging the outer face of the short arm of the other member, there being a tongue projecting laterally from each of said short arms, and the free ends of the long arms of said members being bifurcated to straddle and slide on said tongues, guards mounted on said members for holding said long arms in sliding engagement with said tongues, and springs for retracting said members.

5. A dust guard for journal boxes comprising two L-shaped members slidable relatively to each other with the inner face of the long arm of one member engaging the outer face of the short arm of the other member, there being a tongue projecting laterally from each of said short arms, and the free ends of the long arms of said members being bifurcated to straddle and slide on said tongues, guards mounted on said members for holding said long arms in sliding engagement with said tongues, a screw projecting from the ends of each of said arms, spiral springs secured at one end to said screws and at their other end to the long arm of the other members, and means for limiting the outward movement of said members against the tension of the springs.

855,667. PROCESS OF ELECTROLYTICALLY REMOVING SCALE AND PRODUCING IRON SULFATE. CHARLES J. REED, Philadelphia, Pa. Filed June 18, 1906. Serial No. 322,270.

Claim.—1. The process of electrolytically dissolving iron-oxid scale from the surface of metal, which consists in passing an electric current to the metal, as cathode, in an electrolyte containing sulfuric acid and a substance capable of yielding sulfuric acid by oxidation, as set forth.

2. The process of electrolytically dissolving iron-oxid scale from the surface of metal, which consists in passing an electric current to the metal, as cathode, in an electrolyte consisting of a strong aqueous solution of sulfuric acid and containing a substance capable of yielding sulfuric acid by oxidation, as set forth.

3. The process of electrolytically dissolving iron-oxid scale from the surface of metal, which consists in passing to the metal as cathode, in an electrolyte consisting of a heated, strong aqueous solution of sulfuric acid, an electric current of sufficient density to rapidly remove the scale, and maintaining an oxidizable sulfur-bearing material at or in proximity to the anode, as set forth.

4. The process of electrolytically dissolving iron-oxid scale from the surface of metal, which consists in passing to the metal as cathode, in an electrolyte consisting of a heated, strong aqueous solution of sulfuric acid, an electric current of sufficient density to rapidly remove the scale, and maintaining a sulfid of a non-alkali metal at or in proximity to the anode, as set forth.

5. The process of electrolytically dissolving iron-oxid scale from the surface of metal, which consists in passing to the metal as cathode, in an electrolyte consisting of a heated, strong aqueous solution of sulfuric acid, an electric current of sufficient density to rapidly remove the scale, and maintaining a sulfid of iron at or in proximity to the anode, as set forth.

6. The process of electrolytically dissolving iron-oxid scale from the surface of metal, which consists in passing an electric current to the metal, as cathode, in an electrolyte contaiping sulfuric acid and a substance capable of yielding sulfuric acid by oxidation, and recovering the iron sulfate from the resulting solution, as set forth.

7. The process of electrolytically dissolving iron-oxid scale from the surface of metal, which consists in interposing a diaphragm between a catholyte and anolyte containing sulfuric acid, passing an electric current to the metal, as cathode, and supplying an oxidizable sulfur-bearing material to the anolyte, as set forth.

8. The process of electrolytically dissolving iron-oxid scale from the surface of metal, which consists in interposing a diaphragm between a catholyte and anolyte consisting of a heated, strong aqueous solution of sulfuric acid, passing an electric current to the metal, as cathode, supplying an oxidizable sulfur-bearing material to the anolyte, removing and cooling the catholyte, thereby precipitating the ferrous sulfate, and returning the residual solution to the anode compartment, as set forth.

855,668. AWNING. THOMAS H. REES, Louisville, Ky. Filed Dec. 28, 1903. Serial No. 186,770.

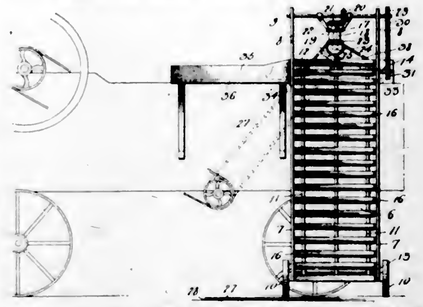


Claim.—1. In an awning, the combustion of a roller for the awning cloth, a swinging awning frame, movable side-wings, securing-hooks attached to the free corners of said side-wings, a ring on the inside of the body of each side-wing at some distance from its edges, a ring at the middle of the front bar of said awning frame, cords attached to said securing-hooks passing through said rings on said side-wings and passing through said ring secured to said front bar of the frame and returning to the window-casing, substantially as specified.

2. In a window awning, the combination of a swinging frame, a journaled roller, a winding-drum on said roller, a hand-rope wound on said drum and adapted to unwind when pulled by the hand of the operator and wind the awning on said roller, a stationary fastening-cleat for said hand-rope, triangular side-wings secured by one edge to the main cover-cloth of the awning and having the other two edges free, securing-hooks attached to the free corner of each side-wing, stationary fastening-eyes for said securing-hooks, a guide-ring on the body of each side-wing at some distance from its edges, a guide-ring or pulley on the middle of the front bar of said swinging frame, a wing-operating cord attached to each of said securing-hooks, passing thence through said guide-rings, thence through said guide-ring or pulley on the middle of the front bar of said swinging frame, and thence to the window-casing, and a fastening cleat for said wing-operating cord on the side-bars of said swinging frame, substantially as specified.

3. In an awning, the combination of a swinging frame, trianguler side-wings free to swing and fold inward, an eye or pulley on the middle of the front bar of said swinging frame, an awning roller, two wing-operating cords, one attached to the free corner of each of said side wings and converging thence to and passing through said eye or pulley on the middle of the front bar, a guide-ring attached to the inner side of the body of each of said side-wings at some distance from its edges adapted to guide said wing-operating cords and coöperate to double and fold the free corners of the wings over to it and fold the wings upon the under side of the main body of the awning when said cord is drawn, substantially as specified.

855,669. BALING-PRESS. EDWARD RHODOVI, Stanford, Ill. Filed Nov. 15, 1906. Serial No. 343,524.



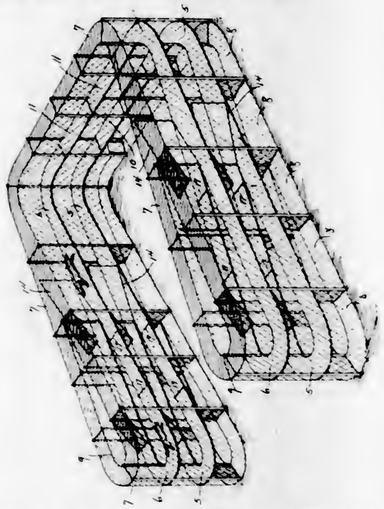
Claim.—1. The combination with a baling press, having a support extending outwardly over the top thereof, a feed table at the side of the press, and a conveyer leading to said table, of a conveyer pivoted to the outer end of said support, to swing horizontally to various angles with respect to the press, and means to operate the conveyer, to deliver material to the first-mentioned conveyer.

2. The combination with a baling press, having a support extending outwardly over the side thereof, a feed table at the side of the press, and a conveyer running lengthwise of the press under said support and leading to the table, of an elevating conveyer having a frame the inner end of which is pivotally mounted upon said support, over the aforesaid conveyer, and transmission gearing between the press and the conveyers.

3. The combination with a baling press having a feed table thereon, of a conveyer extending horizontally along

the side of the press and leading to the table, an inclined conveyer the upper end of which is supported above the said conveyer and the lower end of which extends toward the ground, and means to operate said conveyers.

855,670. LIVE-ANIMAL RACE. FERDINAND C. ROBERTS, Detroit, Mich., and HAZEN J. TITUS, Jackson, Tenn. Filed Mar. 24, 1906. Serial No. 307,932.



Claim.—1. In a device of the class described, a runway provided with a return loop at either end.

2. In a device of the class described, a runway provided with a return loop at either end and a trap door to serve as an approach to and an exit from said runway.

3. In a device of the class described, a runway provided with a return loop at either end and with a gate hinged at the junction of said loop branches to determine the entrance to the loop.

4. In a device of the class described two runways arranged one above the other and provided with return loops at both ends and a trap door in one of said runways to serve as a connecting passage between said runways.

5. In a device of the class described, an inclosed elevated runway provided with a return loop at each end, a series of cages underneath said runway and a trap door in said runway to serve as a portion of the runway and as a connecting passage between said runway and said series of cages.

6. In a device of the class described a runway provided with a return loop at both ends, a pivoted tripping rod and means for moving said tripping rod into an operative position.

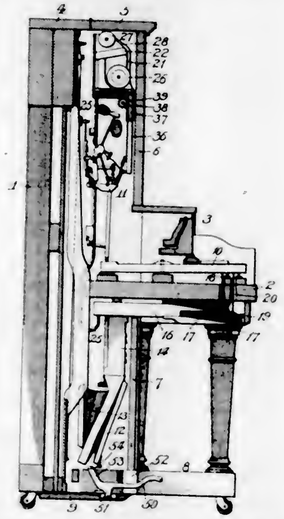
7. In a device of the class described, an inclosed runway provided with a return loop at either end.

8. In a device of the class described, a runway extended in substantially a U shape and provided with a return loop at either end.

9. In a device of the class described, an inclosed runway extended in substantially a U shape and provided with a return loop at either end.

855,671. AUTOMATIC PIANO. ROBERT A. RODESCH, Dixon, Ill., assignor to Rodesch Piano and Player Co., a Corporation of Illinois. Original application filed Sept. 11, 1905, Serial No. 277,814. Divided and this application filed July 30, 1906. Serial No. 328,401.

Claim.—1. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, and a pneumatic action for operating said keys, the said action comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.



2. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, and a pneumatic action for operating said keys, the said action comprising in part a frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action, and a vertically adjustable supporting rail for said frame detachably secured to the piano casing.

3. In an automatic piano, the combination of a piano casing, action keys, a supporting table, motor pneumatics arranged below said table, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part A vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

4. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action, and a vertically adjustable supporting rail for said frame detachably secured to the piano casing.

5. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

6. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action, and a vertically adjustable supporting rail for said frame detachably secured to the piano casing.

7. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

8. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

9. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

10. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically operating said motor pneumatics the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

11. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

12. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

13. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, the fixed members of said motor pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same and above the piano action.

14. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, the fixed members of said motor pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, and above the piano action.

15. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, the fixed members of said motor pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same and above the piano action.

16. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, the fixed members of said motor pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same and above the piano action.

17. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, and a pneumatic action for operating said keys, the said action comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

18. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, and a pneumatic action for operating said keys, the said action comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing, top cover of the same, means for guiding said frame vertically, the same comprising vertical guide racks depending from said frame, a board or rail secured

to the piano casing and having guiding engagement with said racks, a spring roll, and pinions carried by said spring roll and having operative engagement with said racks.

19. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, and a pneumatic action for operating said keys, the said action comprising in part a vertically adjustable frame carrying the tracker board take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, a supporting rail, for said frame detachably secured to the piano casing, means for guiding said frame vertically and means for holding said frame at its vertical adjustment.

20. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, and a pneumatic action for operating said keys, the said action comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, a supporting rail for said frame detachably secured to the piano casing in a detachable manner, guide racks depending from said frame and having guiding engagement with said rail, a spring roll, and pinions carried by said spring roll and having operative engagement with said racks.

21. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

22. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls, and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

23. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics and means for automatically operating said pneumatics, the same comprising in part a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

24. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

25. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

26. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically controlling said pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

27. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

28. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls, and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

29. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, the fixed members of said motor pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

30. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, the fixed members of said motor pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

31. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, the fixed members of said motor pneumatics having an inclined position, pull connections of flexible material extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

32. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, the fixed members of said motor pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

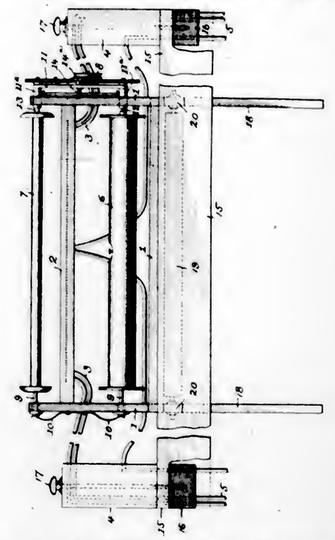
33. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, the fixed members of said motor pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically operating said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

34. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, the fixed members of said motor pneumatics having an inclined position, pull connections extending in a direct manner between the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically controlling said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

35. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table, the fixed members of said motor pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically controlling said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano casing below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

36. In an automatic piano, the combination of a piano casing, action keys, a supporting key table, motor pneumatics arranged below said table and attached to the under side of the same, the fixed members of said motor pneumatics having an inclined position, pull connections of flexible material connecting in a direct manner the outer ends of the keys and the movable members of the motor pneumatics, primary pneumatics controlling the motor pneumatics, and means for automatically controlling said motor pneumatics, the same comprising in part, a vertically adjustable frame carrying the tracker board, take up and rewind rolls and their ordinary accessories, the said frame being arranged in the interior of the piano below the top cover of the same, means for guiding said frame vertically, and means for holding said frame at its vertical adjustment.

855,672. AUTOMATIC PIANO. ROBERT A. RODESCH, Dixon, Ill., assignor to Rodesch Piano and Player Co., a Corporation of Illinois. Original application filed Sept. 11, 1905, Serial No. 277,814. Divided and this application filed July 30, 1906. Serial No. 328,402.

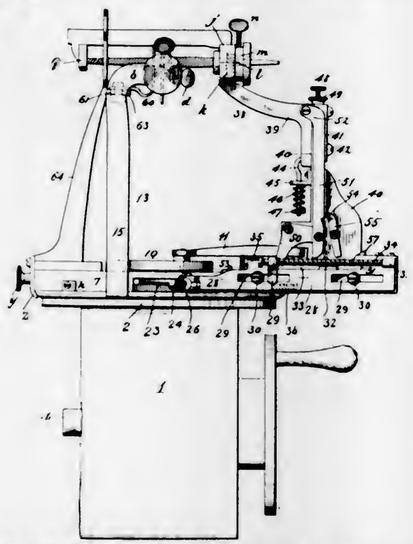


Claim.—In an automatic piano, the combination of a carrying frame, a fixed tracker board secured to the carrying frame, take up and rewind rolls arranged in a longitudinally adjustable relation to the tracker board, holding and sliding centers for the rolls mounted in one end of the carrying frame, a spring secured to the said end and pressing against the holding centers so as to move said rolls in one direction, a slidable yoke member for the rolls having journaled sleeves whereby it is mounted in the other end of the carrying frame, a screw secured to the carrying frame and extending through the yoke member and a nut adjustable upon the screw and bearing against the yoke member for moving said rolls in an opposite direction.

855,673. SAW-FILING MACHINE. OTTOMER SCHMACHTENBERGER, Roodhouse, Ill. Filed May 26, 1906. Serial No. 318,917.

Claim.—1. A machine of the character described, employing a table, a slidable cross-hend arranged thereon, a file-holder having a yielding up and down connection with said cross-head and means for actuating said cross-head, said file-holder having connected thereto a link-member, and said cross-head equipped with an angular lever connected to said link-member and means located in the path of movement of the cross-head for operating said angular lever.

2. A machine of the character described, employing a table, a cross-head arranged to slide upon said table, a file-holder having a yielding up and down connection with said cross-head and means for actuating said cross-head, said file-holder having pivoted thereto a link-bar, an angular lever carried by said cross-head and having one arm connected to said link-bar and its other arm adapted to be engaged by a stud or projection upon said table for effecting the elevation of said file-holder, and a spring actuated latch effective for engagement with a shoulder or projection upon said link-bar, and means for tripping said latch or dog.



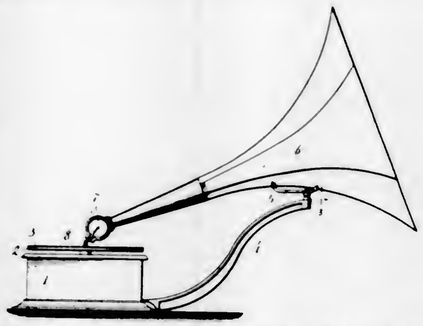
3. A machine of the character described, employing a table, a sliding cross-head equipped with a file-holder having a downward extended arm let into and slidable in an upstanding extension of said cross-head, means effecting connection between said arm and said extension and holding said file-holder in yielding normal position, means for carrying a saw for the action of the file and means for actuating said saw-carrier, and means for actuating said cross-head.

4. A machine of the character described, employing a gage-screw carrying a pointer or index, a saw-carrier, having a rack-bar, a pinion-equipped shaft having its pinion engaging said rack-bar, a ratchet carried by said shaft and a pawl engaging said ratchet, said gage-screw being equipped with a pointer for registering with a scale or indicia upon a sliding bar connected to said pawl, and a sliding cross-head actuated from said shaft and provided with means for actuating said sliding bar.

5. A machine of the character described, employing, in connection with the saw-carrier, an upstanding arm and clamp or guide members equipped with jaws and connected together in parallel position by overhanging bowed springs effective to enable said jaws to embrace the saw-blade, said guide-members having connection with said upstanding arm.

855,674. TALKING-MACHINE. HORACE SHEBLE, Philadelphia, Pa., assignor to Hawthorne & Sheble Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 14, 1907. Serial No. 362,297.

Claim.—1. In a talking-machine, the combination of a motor-box, an arm secured to and extending outwardly from the box, a cradle pivotally mounted upon the outer end of the arm, said cradle having a plurality of outwardly-extending supporting arms, a tapering horn directly overlying said cradle and resting upon the arms thereof said arms extending but a short distance to either side of a vertical plane through the axis of the horn, and means for securing the horn to the cradle, substantially as set forth.



2. In a talking-machine, the combination of a motor-box, a rotatable turn-table mounted thereon, an arm secured to and extending outwardly from the box, a cradle pivotally mounted upon the outer end of the arm having a plurality of integral outwardly-extending supporting arms, a tapering horn directly overlying the cradle and resting upon the arms thereof, said arms extending but a short distance to either side of a vertical plane through the axis of the horn, a sound-box secured to the smaller end of the horn, its stylus adapted to track in the groove of a sound-record supported on said turn-table, and means for securing said horn upon said cradle, substantially as set forth.

3. In a talking-machine, the combination of a motor-box, an arm secured to and extending outwardly from the box, a cradle pivotally mounted upon the outer end of the arm, said cradle having a plurality of outwardly-extending supporting arms and an upwardly-extending pin, a tapering horn resting upon said arms and having an opening therein through which said pin on the cradle extends, and means coacting with said pin to secure the horn upon the cradle, substantially as set forth.

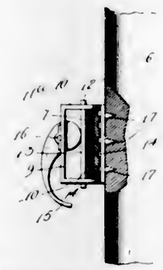
4. In a talking-machine, the combination of a motor-box, an arm secured to and extending outwardly from the box, said arm having an opening through the outer end thereof, a cradle having a plurality of outwardly-extending arms, a downwardly-extending pin received in said opening, and an upwardly-extending pin, a tapering horn having an opening therein through which said upwardly-extending pin extends, and a nut upon said upwardly-extending pin securing the horn upon the cradle, substantially as set forth.

5. In a talking-machine, the combination of a motor-box, an arm secured to and extending outwardly from the box, said arm having an opening through the outer end thereof, a cradle having a pair of outwardly-extending arms at one end thereof and a pair of longer, outwardly-extending arms at the other end thereof, a pin extending through the cradle adjacent to said longer arms, the lower end of the pin being received in said opening, a tapering horn having an opening therein through which the upper end of said pin extends and a nut on said upper end securing the horn upon the arms of the cradle, substantially as set forth.

855,675. HITCHING-STRAP CLAMP. LEWIS C. SKINNER and EBENEZER MYERS, Catawba, N. C. Filed July 23, 1906. Serial No. 327,306.

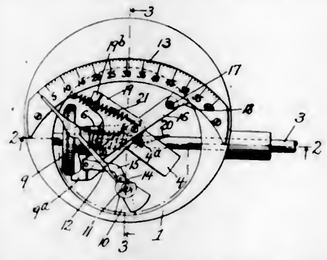
Claim.—1. A clamp comprising front and back plates connected together by side pieces at opposite edges, an intermediate plate movable therebetween and having guides engaging the side pieces, and a cam lever pivoted on the front plate and bearing upon the intermediate plate, to advance the same toward the back plate.

2. A strap clamp comprising front and back plates connected together by side pieces at opposite edges thereof, said side pieces having guide slots, an intermediate plate having lugs slidable in said slots, and a pressure device mounted on the front plate and bearing upon the intermediate plate.



3. A hitching device comprising a looped strap, a frame through which both ends of the loop extend, one upon the other, the frame having a back plate with slots through which one of said ends also extends, and projecting teeth between said slots, and means to clamp the ends in the frame.

855,676. SPEEDOMETER. JOHN K. STEWART, Chicago, Ill. Filed Oct. 22, 1906. Serial No. 339,897.



Claim.—1. In a speedometer, a shaft adapted to be driven by the mechanism whose speed is to be measured; a centrifugally-operated element on the shaft revolving therewith; a sliding element on the shaft connected with said centrifugally-operated element; an index finger and a graduated scale over which it moves; a pivotally mounted cam carrier operatively connected with the index finger, and a cam thereon whose cam edge or surface is acted upon by pressure thereagainst of said sliding element for converting the sliding movement, with modification, into the swinging movement of the index finger.

2. In a speedometer, a shaft adapted to be driven by the mechanism whose speed is to be measured; a centrifugally-operated element carried by the shaft; an element mounted on the shaft for sliding thereon and rotation therewith connected with the centrifugally-operated element; a pivoted indicator and a graduated scale over which it moves; a pivotally mounted cam carrier operatively connected with the indicator, and a cam thereon whose cam edge or surface is acted upon by pressure thereagainst of the sliding element for converting the sliding movement thereof, with modification, into the swinging movement of the indicator.

3. In a speedometer, a shaft adapted to be driven by the mechanism whose speed is to be measured; a centrifugally-operated element pivoted on the shaft and revolving therewith; an element mounted on the shaft for movement longitudinally thereof; means by which the pivoted element communicates such longitudinal movement; an indicator and a graduated scale over which it moves; a pivoted cam carrier operatively connected with the indicator, and a cam thereon whose cam edge is acted upon by pressure thereagainst of said longitudinally moving element for converting said longitudinal movement, with modification, into the movement of the indicator over the scale.

4. In a speedometer, a shaft adapted to be driven by the mechanism whose speed is to be measured; a centrifugally-operated element carried by the shaft; a spring which resists such centrifugal action; an element mounted for movement longitudinally with respect to the shaft; means by which such movement is derived from the centrifugal movement of said centrifugally-operated element; an indicator and a graduated scale over which it moves; a pivoted cam carrier operatively connected with the indicator, and a cam thereon whose cam edge or surface is acted upon by pressure thereagainst of the longitudinally moving element for deriving the movement of the index finger from said longitudinal movement, with modification due to the form of the cam.

5. In a speedometer, a shaft adapted to be driven by the mechanism whose speed is to be measured; a centrifugally-operated element carried by the shaft; a spring which resists such centrifugal movement; an element mounted for movement longitudinally with the shaft; a spring which resists such longitudinal movement; connections for deriving such longitudinal movement from the centrifugal movement of the centrifugally-operated element; an indicator and a graduated scale over which it moves; a pivoted cam carrier operatively connected with the indicator, and a cam thereon whose cam edge or surface is acted upon by pressure thereagainst of the longitudinally moving element for deriving from such longitudinal movement the movement of the indicator over the scale, with modification due to the shape of the cam.

6. In a speedometer, a shaft adapted to be driven by the mechanism whose speed is to be measured; a centrifugally-operated element pivoted on the shaft and revolving therewith; a sliding element mounted on the shaft for rotation therewith connected with said pivoted element; a pivotally mounted index finger and a graduated scale over which the index finger swings; a pivotally mounted cam carrier operatively connected with the index finger, and a cam thereon whose cam edge or surface is acted upon by pressure thereagainst of the sliding element for converting the sliding movement with modification into the swinging movement of the index finger.

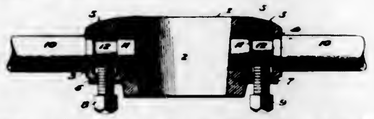
7. In a speedometer, a shaft adapted to be driven by the mechanism whose speed is to be measured; a centrifugally-operated element pivotally mounted on the shaft for rotation therewith and oscillation about its pivot toward and from the axis of the shaft; a circular disk mounted on the shaft for rotation therewith and sliding thereon and connected with the pivoted centrifugal element for such sliding movement; a pivoted cam carrier having its cam edge or face acted upon by the periphery of the disk in the sliding movement of the latter; a spring which resists the centrifugal movement of the pivoted element; an index finger connected with the cam carrier for swinging about its pivot in the swinging movement of the latter, and a graduated dial over which the index finger vibrates.

8. In a speedometer, a shaft adapted to be driven by the mechanism whose speed is to be measured; a centrifugal element pivotally mounted on the shaft for rotation therewith and swinging about its pivot toward and from the axis of the shaft; a disk mounted on the shaft for rotation therewith and sliding thereon and connected for such sliding movement with the pivoted centrifugal element; a cam carrier pivoted for swinging in a plane parallel to the axis of the shaft, the plane of rotation of the pivotal axis of the centrifugal element being intermediate the disk and the pivot of the cam carrier; a cam mounted on such carrier having its cam edge divided and located part at one side and part at the opposite side of the plane containing the axis of the shaft and parallel to the pivot of the cam carrier, the disk having a lateral peripheral flange which at opposite sides encounters successively the two divided portions of the cam edge; an indicator oppositely connected with the cam carrier, and a graduated scale over the indicator which is moved by such connection.

9. In a speedometer, a shaft adapted to be driven by

the mechanism whose speed is to be measured; a centrifugally-operated element carried by the shaft; a spring which resists the centrifugal movement; an element mounted for movement longitudinally with respect to the shaft, and a spring which resists such movement; connections from the centrifugally-operated element for communicating said longitudinal movement; an indicator and a graduated scale over which it moves; a pivoted cam carrier operatively connected with the indicator, and a cam thereon whose cam edge or surface is acted upon by pressure thereagainst of said longitudinally-moving element for converting the latter, with modification, into the movement of the indicator, and a spring which resists the movement of the cam carrier.

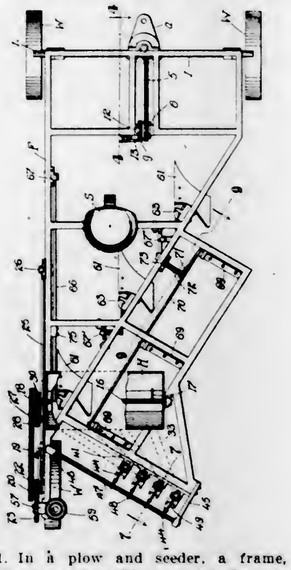
855,677. PICK HAVING DETACHABLE POINTS. ALBERT THOMPSON, Newburgh, N. Y. Filed Apr. 24, 1906. Serial No. 313,456.



Claim.—1. In a pick, the combination with a holder or head having an eye for the handle or helve and cylindrical sockets located in alinement with each other and opening into the eye aforesaid, of pick points having cylindrical shanks received in said sockets, and means for holding the pick points.

2. In a pick, the combination with a pick point holder or head having a cylindrical socket, of a set screw threaded through the holder or head, and a pick point having a cylindrical unthreaded shank received in the socket and provided with an annular groove having a "flat" adapted for engagement by the tip of the screw, said groove being considerably wider than the diameter of the tip of the screw.

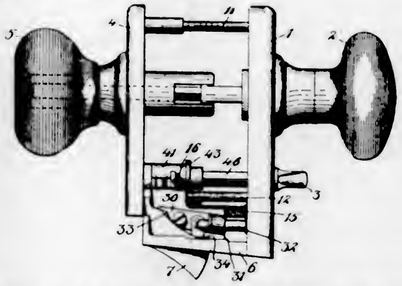
855,678. PLOW AND SEEDER. FRANK THÜRRID, St. Louis, Mo. Filed Feb. 27, 1907. Serial No. 359,593.



Claim.—1. In a plow and seeder, a frame, bearing wheels for the same, a seed-hopper, a series of valve-casings receiving the seed from the hopper and having discharge openings, a series of vertically oscillating seed-spouts communicating with the discharge openings of the valve-casings, a stirrer-shaft in the hopper, stirrer arms on the shaft for impelling the seed into the respective valve-casings, a series of seed-valves having feed sections rotated from the stirrer-shaft, an oscillating arm depending from the frame, a gear and a sprocket wheel at the free end of the arm, a gear on a bearing wheel of the machine meshing with the gear on the oscillating arm, a sprocket wheel on the stirrer-shaft of the seed-hopper, a sprocket chain connecting the said sprocket wheel with the sprocket on the oscillating arm, a vertically oscillating lever, a link connecting the lever with the oscillating arm, a rocker-bar, a series of arms projecting from said bar, chains connecting the arms with the seed-spouts aforesaid, a crank-arm on the rocker-bar, a rigid arm depending from the frame and terminating in a curved slotted portion, a link connecting the crank-arm with the oscillating arm through said slotted portion of the rigid arm, whereby upon tilting of the lever, there follows an upward swing of the oscillating arm, a disengagement of the gearing between the bearing wheel and the stirrer-shaft, and a rocking of the rocker-arm and a consequent lifting of the seed-spouts, substantially as set forth.

2. In a plow and seeder, a front truck comprising a rotatable shaft, terminal arms forming a yoke therewith, bearing wheels at the ends of the arms, a sprocket wheel on the yoke shaft, a ratchet and spindle therefor mounted in proximity to the yoke-shaft, a sprocket wheel on the ratchet-spindle, a sprocket chain connecting the last sprocket wheel with the sprocket wheel on the yoke-shaft, a lever and pawl for actuating the ratchet, and a trigger normally holding the ratchet against rotation, the parts operating substantially as, and for the purpose set forth.

855,679. LOCK AND LATCH MECHANISM. HENRY G. VOIGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 13, 1906. Serial No. 305,758.



Claim.—1. In a lock and latch mechanism, inner and outer side plates adjustable to and fro, knobs carried thereby and adjustable with said plates, an end plate carried by the outer side plate, a latch bolt and a dead bolt carried by and adapted to extend through said end plate, a lock slide and a latch slide carried by and contained in a recess in the inner wall of the inner side plate, and means of connection between said slides and said bolts.

2. In a lock and latch mechanism, inner and outer side plates adjustable to and fro, knobs carried thereby and adjustable therewith, an end plate carried by one side plate, a latch bolt protruding therethrough, a latch slide carried by the other side plate, two independent roll-backs adapted to retract said slide, one of said roll-backs being connected to one knob and the other roll-back having an extended shank, an extended shank carried by the other knob, one of said extended shanks being flattened and the other having a corresponding slot for telescopic connection.

3. In a lock and latch mechanism, inner and outer side plates adjustable to and fro, knobs carried thereby and adjustable therewith, an end plate rigidly carried by the outer side plate, a thumb piece carried by the inner side plate, a dead bolt and a latch bolt carried by the outer side plate, a hub carried by the outer side plate, telescopic spindle connection between said hub and said thumb piece, a latch slide carried by and contained in a recess in the inner wall of the inner side plate, and means of connection between said slide and said latch bolt.

4. In a lock and latch mechanism, inner and outer side plates, knobs carried thereby, an end plate carried by the outer side plate, a latch bolt protruding therethrough, a latch slide carried by the inner side plate, independent means of connection between said knobs and said latch slide, a dogging plate carried by the inner side plate for preventing operation of the outer knob, a pin projecting laterally from said dogging plate, a tilting lever carried by the outer side plate, operating buttons therefor, said tilting lever having a head with a conical recess or passage for said pin.

5. In a latch mechanism, inner and outer side plates, a latch bolt, a slotted latch tail pivotally connected thereto, a stop carried by the outer side plate operating in the slot of the latch tail to limit its inward movement, a latch slide carried by the inner side plate, a lateral extension therefrom engaging said latch tail, knobs carried by said side plates, and means of connection between said knobs and said latch slide.

6. In a latch mechanism, inner and outer side plates adjustable to and fro, knobs carried thereby and adjustable therewith, a latch bolt and a dogging bolt carried by the outer side plate, means for extending the dogging bolt, a latch slide, means of connection with the latch bolt, a lock slide, means of connection with said dead bolt, independent roll-backs for the inner and outer knobs adapted to operate the latch slide, and a spindle-operated roll-back for co-operating with the lock slide to retract the dead bolt and the latch bolt said slides and roll-backs being contained in a recess in the inner wall of the inner side plate.

7. In a lock and latch mechanism, a latch bolt, a dead bolt, inner and outer knobs adjustable to and fro, independent roll-backs therefor, night latch mechanism for dogging the operation of the outer roll-back, a key-operable roll-back centered by the knob roll-backs, and means operable thereby for retracting the latch slide when the outer roll-back is dogged.

8. In a lock and latch mechanism, a latch bolt, a dead bolt, inner and outer knobs adjustable to and fro, means of connection normally operable for retracting the latch bolt by either of said knobs, means for extending the dead bolt, and a key-controlled slide for retracting both the dead bolt and the latch bolt.

9. In a lock and latch mechanism, a latch bolt, a dead bolt, inner and outer knobs, operable means of connection between the knobs and the latch bolt, a key-operable spindle for the outer knob, a roll-back for said spindle, a lock slide adapted to be operated thereby, means of connection between said lock slide and said knob, operable latch retracting means, means of connection between said lock slide and said dead bolt, and means for disconnecting said lock slide from said dead bolt when the dead bolt has been retracted.

10. In a lock and latch mechanism, a latch bolt, a dead bolt, a slide for retracting the latch bolt, a lock slide normally connected to said dead bolt, and key-operable means for disconnecting said slide from said dead bolt.

11. In a lock and latch mechanism, a latch bolt, a dead bolt, knob-operable means for retracting the latch bolt, manually operable means for extending and retracting the dead bolt, a lock slide including a tilting lever, a projection carried thereby, a U-shaped yoke movable with said dead bolt operating means, said projection normally extending into the opening in said yoke, and means for retracting said projection from said yoke to disconnect said lock slide from said dead bolt mechanism.

12. In a lock and latch mechanism, a latch bolt, a dead bolt, a latch slide, a locking slide, means for operating said dead bolt including a U-shaped yoke, and key-operable means for disconnecting said lock slide from said yoke and retracting said slides.

13. In a latch mechanism, a pair of side plates, knobs carried thereby and adjustable to and fro, a latch slide carried by one side plate, means of connection between said knob and latch, a latch bolt carried by the other side plate, a latch tail pivotally connected to said latch bolt, a stationary pin acting in a slot in said latch tail to limit the inward movement of said latch and bolt.

14. In a lock and latch mechanism, inner and outer side plates adjustable to and fro, knobs carried thereby and adjustable therewith, an end plate carried by one of said side plates, a latch bolt carried by said end plate, a slide connection and coöperating roll-backs carried by the side plate adapted to the inner side of the door, and a sliding connection between the outer knob and one of said roll-backs.

15. In a lock and latch mechanism, inner and outer side plates adjustable to and fro, knobs carried thereby and adjustable therewith, an end plate carried by one of said side plates, a latch bolt carried by said end plate, a slide connection and coöperating roll-backs carried by the side plate adapted to the inner side of the door, a sliding connection between the outer knob and one of said roll-backs, a key-controlled spindle concentric with the axis of the outer knob and operatively connected with one of said roll-backs, said key-controlled spindle passing through the spindle of the outer knob and extending across the space between the two side plates.

16. In a lock, an external and internal side plate, an end plate, a latch bolt and a dead bolt therein, independent roll-backs carried by one of said plates, independent knobs carried by said plates and connected respectively with said independent roll-backs, latch slide mechanism operatively connecting the latch bolt with both of said roll-backs, a third roll-back independent of the first two, a key-controlled spindle for operating the same from the outside of the door and through the outer knob, means operatively connecting the third roll-back with said dead bolt, and an operative connection between the last mentioned means and the latch slide for retracting the latter through the medium of the key after the dead bolt has been retracted, said means including a two-part slide, one part reciprocating, the other part being carried thereby and tilting thereon.

17. In a lock and latch mechanism, a latch bolt, a dead bolt, a latch slide for retracting the latch bolt, a lock slide for advancing and retracting the dead bolt, and means for operatively connecting the lock slide with the latch slide when the dead bolt has been retracted for the purpose of retracting the latch slide by the further retraction of the lock slide.

18. In a lock and latch mechanism, a latch bolt, a dead bolt, a latch slide for retracting the latch bolt, a lock slide for advancing and retracting the dead bolt, means for operatively connecting the lock slide with the latch slide when the dead bolt has been retracted for the purpose of retracting the latch slide by the further retraction of the lock slide, and means independent thereof for advancing or retracting the dead bolt from the inner side of the door only.

19. In a lock and latch mechanism, a latch bolt, a dead bolt, a latch slide for retracting the latch bolt, two independent knob-controlled roll-backs coöperating with said latch slide, a lock slide, a key-controlled roll-back independent of but concentric with the first two roll-backs for coöperating with said lock slide, and means to couple the lock slide and the latch slide for the retraction of the latter by the further retraction of the former after the dead bolt is retracted.

20. In a lock and latch mechanism, a latch bolt, a dead bolt, two independent roll-backs for operating the latch slide, independent knobs respectively connected with said roll-backs, a thumb-piece cam for operating the dead bolt from the inner side of the door, a key spindle accessible from the outer side of the door for operating said dead bolt, a third roll-back carried by said spindle, and means of connection between the last mentioned roll-back and the thumb-piece cam for advancing and retracting the dead bolt through the medium of the key spindle and means to connect and disconnect said thumb-piece from said lock slide.

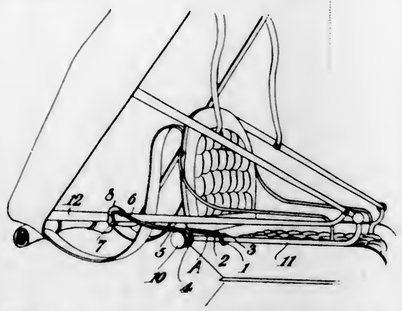
21. In a lock and latch mechanism, a latch bolt, a dead

bolt, two independent roll-backs for operating the latch slide, independent knobs respectively connected with said roll-backs, a thumb-piece cam for operating the dead bolt from the inner side of the door, a key spindle accessible from the outer side of the door for operating said dead bolt, a third roll-back carried by said spindle, means of connection between the last mentioned roll-back and the thumb-piece cam for advancing and retracting the dead bolt through the medium of the key spindle, and means for uncoupling said means of connection from the thumb-piece cam and connecting said means with the latch slide to permit the retraction of the latch bolt by said key spindle after the dead bolt has been retracted.

22. In a lock and latch mechanism, inner and outer side plates, knobs carried thereby, an end plate carried by the outer side plate, a latch bolt protruding therethrough, a latch slide carried by the inner side plate, independent means of connection between said knobs and said latch slide, a dogging plate carried by the inner side plate for preventing operation of the outer knob, a pin projecting laterally from said dogging plate, a tilting lever carried by the outer side plate, operating buttons therefor, and means of connection between said tilting lever and said pin.

23. In a lock and latch mechanism, inner and outer side plates adjustable to and fro, knobs carried thereby and adjustable therewith, an end plate carried by the outer side plate, a latch bolt protruding therethrough, a latch slide carried by the inner side plate, independent means of connection between said knobs and said latch slide, a dogging plate carried by the inner side plate for preventing operation of the outer knob, a pin projecting laterally from said dogging plate, a tilting lever carried by the outer side plate, operating buttons therefor, and adjustable means of connection between said tilting lever and said pin.

855,680. BUGGY-TOP SUPPORTER. ADVIL M. WALTER, Summerton, S. C. Filed June 28, 1906. Serial No. 323,758.

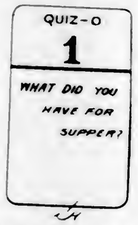


Claim.—1. A buggy-top supporter comprising a bar of metal having an approximately U-shaped side-rail-loop extending laterally from its forward end, a coil in rear of the side-rail-loop, a rearwardly and upwardly curved portion, and an approximately U-shaped bow-loop on the rear end of said bar.

2. A buggy-top supporter comprising a bar of metal having at its forward end an approximately U-shaped laterally extending side-rail-loop, a coil in rear of said side-rail-loop, the diameter of said coil being greater than the length of said loop, a straight intermediate portion between the loop and the coil, said straight portion being disposed in a plane above the upper end of the loop and coil and extending at an angle slightly less than a right angle with respect to said loop, said bar having a downwardly and upwardly curved portion in rear of said loop formed at its end with a U-shaped, laterally extending bow-loop, the lower end of said bow-loop being disposed on a higher level than the straight intermediate portion of said bar, and having a detachable tubular protective covering which covers part of the rear end of said bar.

3. A buggy-top supporter comprising a bar of metal having a laterally extending side-rail-loop at its forward end, an approximately straight intermediate portion in rear of said loop, a depending coil at the rear end of said intermediate portion, a downwardly and upwardly curved portion in rear of said loop, a laterally extending bow-loop at the rear end of said bar, and a detachable tubular protective covering extending along said bow-loop and covering a portion of the rear end of said bar.

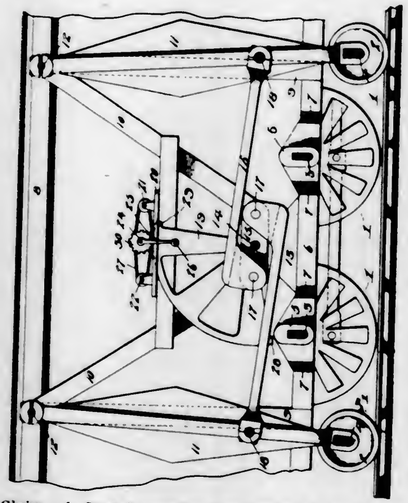
855,681. PLAYING-CARDS. HENRY C. WARD, Chippewa Lake, Mich. Filed Aug. 2, 1906. Serial No. 328,907.



Claim.—1. A deck of playing cards consisting of a plurality of suits, each suit consisting of a plurality of cards, one of said cards being a question card, one a star card and the remaining cards of the suit having answers to questions printed thereon, the said answers being to questions of a suit different from that to which the answer cards belong.

2. A deck of playing cards consisting of a plurality of suits, each suit consisting of one question card, one star card, and four answer cards, the answer cards having thereon answers adapted to fit question cards of a different suit as and for the purpose set forth.

855,682. LOCOMOTIVE-ENGINE. JOHN F. WENTWORTH, Washington, D. C. Filed July 6, 1904. Serial No. 215,525.



Claim.—1. In a locomotive, the combination of a suitable frame, driving wheels secured in the frame by floating boxes, means for moving the said floating boxes in a vertical direction with regard to the frame of the locomotive, auxiliary wheels connected to the frame by floating boxes which are rigidly secured to said frame, and a motive power direct connected to said drivers.

2. In a locomotive, the combination of a suitable frame, driving wheels connected to the frame through suitable bearings, means for moving driving wheels, bearings and axles vertically with regard to the frame of the locomotive, auxiliary trucks suitably connected to the frame in front and behind the driving wheels and a motive power direct connected to the driving wheels.

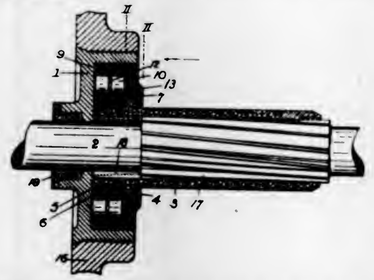
3. In a locomotive, the combination of a suitable frame, driving wheels connected to the frame through suitable bearings, means for moving driving wheels, bearings and axles vertically with regard to the frame, auxiliary trucks suitably connected to the frame in front and behind the driving wheels, and a motive power connected to the auxiliary trucks through the driving axle by sprocket wheels, a chain and suitable mechanism for engaging and disengaging the auxiliary trucks and the driver axles.

4. In a locomotive, the combination of motive power, a rigid body, driving wheels directly connected with the motive power, auxiliary wheels connected to the motive power, means for lifting the driving wheels vertically from the track, gearing for driving the auxiliary wheels, and a friction clutch, whereby the auxiliary wheels may be used to start the locomotive by connecting the gearing with the revolving driver axle through the friction clutch.

5. In a locomotive, the combination of a motive power, driving wheels, a rigid body, auxiliary trucks in front and in rear of the driving wheels, means for depressing said trucks and lifting the driving wheels from the track, said means comprising two levers to each auxiliary truck, said levers being pivoted about shafts supported by the frame of the locomotive, and a source of power arranged between said trucks to move said levers with regard to the frame of the locomotive.

6. In a locomotive, the combination of an internal combustion engine, a rigid body, driving wheels, means for connecting the engine with the driving wheels, auxiliary trucks in front and in rear of said driving wheels, means for moving said trucks vertically, and means for driving the locomotive through said auxiliary trucks said means comprising gearing connecting the axles of the auxiliary trucks with one of the driving wheel axles by a friction clutch.

855,683. CLUTCH MEANS FOR INTERMITTENTLY ROTATING A RECIPROCATING PART. MORRIS C. WHITE, Los Angeles, Cal., and OTHO C. DUBYEA, Brooklyn, N. Y., assignors to National Gas Drill Company, a Corporation of California. Filed June 13, 1904. Serial No. 212,297.



Claim.—1. A stationary internally threaded drum; an externally rifled rotary reciprocating bar therein; an internally rifled rotary sleeve in which the bar reciprocates, said sleeve having an extended flange and a threaded portion in said drum; an internally threaded ratchet wheel screwed on the sleeve and furnished with a circumferential groove and with spring seats in the floor of said groove; an externally threaded ring around said ratchet wheel, screwed into the drum; circumferentially grooved rollers in the notches of the wheel; springs in said seats and roller grooves; a cap screwed into said drum, encircling said sleeve and engaging said flange; and pins to retain the springs in place.

2. In a clutch the combination of a rifle bar; a rifle sleeve around the rifle bar; a circumferentially grooved ratchet wheel mounted on said sleeve to turn therewith; circumferentially grooved rollers in the notches of the ratchet wheel; a ring or circular runway around the ratchet wheel and rollers, and springs seated in the groove of the ratchet wheel and engaging in the grooves of the rollers.

3. In a clutch the combination of a drum, a ratchet wheel and an unbroken circular runway therein, spring pressed rollers in the drum between the ratchet wheel and runway, a cap for retaining the ratchet wheel and rollers in the drum, a rifle sleeve carrying the ratchet wheel and turning therewith, and a rifle bar within said sleeve.

4. The combination of a rifle bar; a flanged rifle sleeve around the rifle bar; a ratchet wheel fixed thereon; spring pressed rollers in the notches of the wheel; a recessed drum and an unbroken circular runway and a cap securing the flanged sleeve, ratchet wheel and rollers in the drum.

5. A recessed drum having an unbroken circular runway therein; a ratchet wheel inside the runway; spring pressed rollers in the notches of the wheel; means for retaining the ratchet wheel and rollers in the drum, a rifle sleeve extending through the drum and turning therewith, and a rifle bar within said sleeve.

6. The combination of a rifle bar, a sleeve around the rifle bar and furnished with projections entering the rifles of said bar, a ratchet wheel fixed on said sleeve, rollers in the notches of the wheel, a recessed drum and an unbroken circular run-way, and a cap securing the sleeve, a ratchet-wheel and rollers in the drum.

7. The combination of a roller clutch having grooved teeth and grooved rollers and springs in the grooves of said teeth and rollers, with a rifled sleeve and a rod having rifles engaging the rifles of said sleeve.

855,684. CUE-REST. GEORGE F. WILLIAMSON, New York, N. Y. Filed Sept. 17, 1906. Serial No. 334,899.



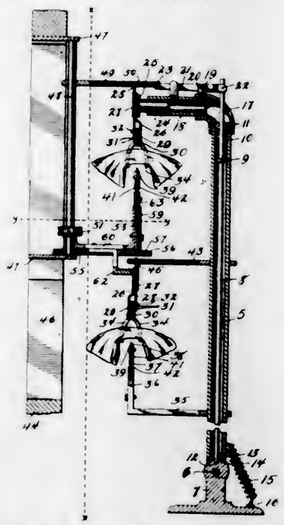
Claim.—1. As an improved article of manufacture, a cue support consisting of a handle, a head block secured to one end of the handle, the head block being provided with a flat base edge and two oppositely extending fingers 3, and also provided with two fingers 4 of right-angle formation spaced from the first named fingers and parallel therewith at their base portions, the other portions of said angular fingers extending upwardly with their outer surfaces flat and in alinement with the ends of the fingers

3 which are also flat, and the said head block also provided with two intermediate upwardly extending fingers 6 parallel with the extremities 4, a grooved roller journaled between each of the first named fingers and the adjacent portions of one of the right-angle fingers, and three other rollers independently journaled in the head block between the upwardly extending extremities of the angular fingers and the said intermediate upwardly extending fingers.

2. A device of the character described, comprising a handle, a head block secured to the handle, a forked bracket provided with a stem swiveled in said block, means for limiting the movement of said stem, and a grooved roller journaled between the arms of said bracket.

3. A device of the character described, comprising a handle, a head block secured to said handle, a forked bracket provided with a stem swiveled in said head block, said stem being provided with oppositely extending arms, pins projecting in said head block in the path of movements of said arms, and designed to limit the movement of the stem in both directions, and a grooved roller journaled between the arms of said bracket.

855,685. MAIL-BAG CATCHING AND DELIVERING DEVICE. THEODORE YOCHUM, Columbus, Ohio. Filed Aug. 13, 1906. Serial No. 330,299.



Claim.—1. In an apparatus of the character described, the combination with a vertical supporting post adapted to support a mail bag, of means normally tending to throw said support away from the train, members which normally lock said support against movement, and means carried by the train for releasing said members.

2. In a device of the character described, the combination with a supporting post, of hooks adapted to grasp a mail bag supported from said post, a cam plate, the movement of which actuates said hooks, and a member carried by a train adapted to actuate said cam plate.

3. In an apparatus of the character described, the combination with bag retaining hooks carried by a car, of a cam plate, the movement of which actuates said hooks, and a stop member adapted to actuate said cam plate to open said hooks.

4. In a device of the character described, the combination with a supporting post made in two sections, the upper of said sections being hinged to the lower of said sections, of locking mechanism for holding the sections of said post in vertical alinement with each other, means carried by a car for actuating said locking mechanism, and means for throwing the upper section of said post away from said car when said locking mechanism is actuated to release said upper section.

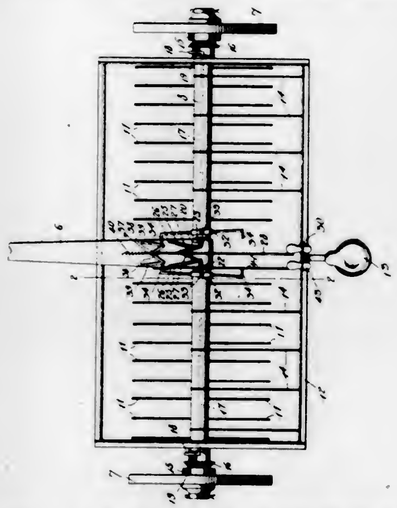
5. In a device of the character described, the combination with a supporting post, of mail bag retaining members carried by said post, an elongated bar carried by a car at such a height as to pass beneath said mail bag retaining members and a yielding member located at the end of said bar which is adapted to lift to permit a mail bag to pass thereunder.

6. In a device of the character described, the combination with a supporting post, of mail bag retaining members carried by said post, an elongated bar carried by a car at such a height as to pass beneath said mail bag retaining members, and yielding members located at each end of said bar and adapted to permit the mail bag to pass thereunder.

7. In a device of the character described, the combination with a fixed support, of mail bag retaining members carried by said support, a member carried by a car adapted to engage and actuate said mail bag retaining members to release a mail bag, a swinging arm carried by a car, an elongated bar mounted upon said swinging arm at such a height as to pass beneath the mail bag retaining members of the fixed support, and means for maintaining said bar parallel with the side of the car as said arm is swung.

8. In a device of the character described, the combination with a shaft, of a swinging arm mounted upon said shaft, a fixed sprocket wheel, a shaft mounted to turn with relation to said swinging arm, a sprocket wheel fixed upon the lower end of the last named shaft and turning therewith, a sprocket chain connecting said sprocket wheels, and an elongated bar adapted to receive a mail bag mounted upon the upper end of the last named shaft.

855,686. HORSE HAY-RAKE. GEORGE W. BACON, Grand Junction, Colo. Filed June 5, 1906. Serial No. 320,277.



Claim.—1. In a revolving rake, the combination of a hollow axle, wheels and rake teeth thereon, clutches between the axle and wheels, and means, having connections extending through the axle, to open the clutches.

2. In a horse rake of the revolving flop-over type, the combination with an axle carrying the rake teeth and means to intermittently turn the axle, of a tongue connected to the axle, pawls carried by the axle and engageable with the tongue to stop the turn of the axle, and means to operate the pawls.

3. In a horse rake of the revolving flop-over type, the combination with an axle carrying opposite sets of rake teeth, and means to intermittently turn the axle, of a tongue connected to the axle, double-ended pawls pivoted to the axle and engageable at either end with the tongue to stop turn of the axle, and means to operate the pawls.

4. In a horse rake of the revolving flop-over type, the combination with wheels, and an axle carrying opposite sets of teeth, of a clutch between the axle and a wheel, engageable to turn the axle, releasable means to prevent turn of the axle, and means to simultaneously operate the clutch and said releasable means.

5. In a horse rake of the revolving flop-over type, the combination with wheels, and an axle carrying opposite sets of teeth, of a clutch between the axle and wheel, a tongue connected to the axle, a pawl pivoted on the axle and normally engaged with the tongue to stop the turning of the axle, and means to simultaneously engage the clutch and release the pawl.

6. In a horse rake of the revolving flop-over type, the combination with wheels, and an axle carrying rake teeth, of a clutch between the axle and a wheel, a rod connected at its outer end to the clutch, to operate the same, and having at its inner end a projection extending through a slot in the axle, a cuff on the axle, connected to the tongue, and having a notch in which the projection is normally engaged, means to shift the rod lengthwise, to engage the clutch and release the projection from the notch.

7. In a horse rake of the revolving flop-over type, the combination with a turning axle carrying teeth, and means to normally stop the turn of the axle when the teeth are in contact with the ground, of means to turn back the axle to a limited extent, to increase the pressure of the teeth on the ground.

8. In a horse rake of the revolving flop-over type, the combination with a turning axle carrying teeth, a pawl carried by the axle, a tongue connected to the axle and with which the pawl is normally engaged to stop the forward turn of the axle when the teeth are in contact with the ground, of means to force back the pawl and thereby turn back the axle, to increase the pressure of the teeth on the ground.

9. In a horse rake of the revolving flop-over type, the combination with a turning axle carrying teeth, a tongue connected to the axle, a lever upon the tongue, a pawl carried by the axle and arranged to strike the lever, to stop the forward turn of the axle when the teeth are in contact with the ground, and means to turn the lever, to force back the pawl and thereby reverse the axle to a limited extent, to increase the pressure of the teeth on the ground.

10. In a horse rake of the revolving flop-over type, the combination with wheels, and an axle carrying opposite sets of rake teeth, and having slots at the ends and in the middle of clutches on the outer ends of the axle and movable to engagement with the wheels, to turn the axle, rods extending lengthwise through the axle and connected through the slots at the outer ends with the clutches, and having projections extending through the slots at the middle, and means engageable with said projections to shift the rods in or out and thereby release or engage the clutches.

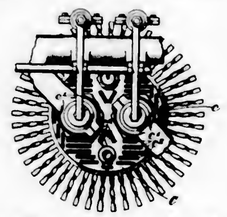
855,687. HEAT-RADIATING RING. IRA S. BARNETT, Louisville, Ky. Filed Feb. 6, 1904. Serial No. 192,409.

Claim.—1. A heat-radiating device consisting of a metal ring adapted to fit over a cylinder or other body and having fingers or elongated projections of twisted shape formed integrally therewith and radiating therefrom, substantially as described.

2. A heat-radiating device comprising in an integral structure an inner thin ring stamped from sheet metal with radiating projections which are twisted.

3. A heat-radiating device comprising in an integral structure stamped from sheet metal an inner ring with elongated radiating projections which are twisted one or more times around and thus provide sharp spiral edges.

4. A heat-radiating device comprising a ring adapted to fit over a cylinder or other body and having elongated radiating fingers or projections of substantially spiral or twisted form.



5. A heat-radiating device comprising in an integral structure a thin ring adapted to fit over a cylinder or other body and having closely-arranged slender elongated projections radiating from its outer edge, the said projections being spirally-twisted from an original angular cross-section.

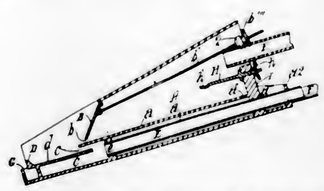
6. A heat-radiating device comprising a metal ring adapted to fit over a cylinder or other body and having closely-arranged thin elongated projections radiating from its outer edge and of spirally twisted form.

7. A heat-radiating device comprising in an integral structure stamped from sheet metal a thin ring with closely-arranged slender radiating projections formed to present a spirally twisted effect out of an original angular cross-section.

8. A heat-radiating device comprising in an integral structure a thin ring having closely-arranged slender elongated fingers projecting out therefrom and bent out of an original angular cross-sectional shape.

9. A heat-radiating device comprising in an integral structure stamped from sheet metal a thin strip adapted for attachment to a cylinder or other body and having closely-arranged slender elongated projections twisted spirally.

855,688. OIL-BURNER. LEEGORA A. BLUBAUGH, San Fernando, Cal., assignor to Blubaugh Burner Company, Los Angeles, Cal., a Corporation of California. Filed Dec. 3, 1897. Renewed May 17, 1901. Serial No. 60,780.



Claim.—1. An oil burner comprising an air-chute closed at the sides and open at the front end and with air-inlet at the rear end, and provided at the front end with an air-deflector arranged with open space between the lower edge of the deflector and the floor of the chute; a chamber with outlet below the level of the lower edge of the deflector; means for temporarily retaining liquid in front of the opening of such chamber; means for feeding oil to said chamber; and means for feeding water to such liquid-retaining device.

2. An oil-burner comprising a chute open at the front end and with air-inlet at the rear end, and provided at its front end with a deflector with open space between the deflector and the floor of the chute; means in front of the deflector for temporarily retaining liquids; means for feeding liquid fuel to the burner; and a basin with open mouth in front of such liquid-retaining device.

3. An air-chute open at the front end and with air-inlet at the rear end, and provided at its front end with a downwardly sloping air-deflector; a water-chamber underneath

the floor of the chute; an oil-chamber at the front end of the chute with outlet therefrom below the level of the deflector; a pipe extending through the water-chamber to feed oil into the oil-chamber; means for feeding water into the water-chamber; and outlet from the water-chamber to the top of the floor of the chute.

4. The air-chute provided with water-chamber under its floor with means to supply water to such chamber and with outlet provided to feed water from such chamber onto the floor of the chute; and means for feeding oil to the chute.

5. The air-chute with water-chamber under its floor, one or more outlets being provided from such chamber to feed water onto the floor of the chute, and means for feeding oil to the burner.

6. An oil-burner comprising a chute, a water-retaining device and an oil-chamber, said chute and chamber communicating with the water-retaining device; means for feeding water to said device; and means for feeding oil either to the chute or to the chamber.

7. An oil-burner comprising a chute, a water retaining device and an oil-chamber, said chute and chamber communicating with the water-retaining device; means for feeding water to said device; an adjustable deflector within the chute; and means for feeding oil either to the chute or to the chamber.

8. An oil-burner comprising a chute, a water-retaining device, an oil-chamber, and a basin in front of the water-retaining device, said chute and chamber communicating with the device; means for feeding water to the device; and means for feeding oil either to the chute or to the chamber and to the basin.

9. An oil-burner comprising a chute, a water-retaining device and an oil-chamber, said chute and chamber communicating with said device; an oil-inlet for said chute and chamber, respectively; a spreader for the inlet to the chute; a water-jacket for the inlet to the chamber; and means for conveying water from the jacket to the water-retaining device.

10. An oil-burner comprising a chute, a water-retaining device, and an oil-chamber, the floor of the chute overlapping the top of the chamber and forming therewith a long narrow outlet for the chamber; an adjustable deflector within the chute adjacent to said outlet; means for feeding water to the water-retaining device; and means for feeding oil either to the chute or to the chamber.

11. An oil-burner comprising a chute, the inner end of which is provided with a basin and an oil-chamber, the top of the chamber projecting at its lower edge partially over the basin and provided with a bead and the upper edge extending under the floor of the chute and forming therewith a long narrow outlet; an adjustable deflector within the chute adjacent to said outlet; means for feeding water to the top of the chamber adjacent to the bead; and means for feeding oil either to the chute or to the chamber and to the basin.

12. The combination of a fire-box having a draft-inlet and a draft-outlet; an open ended oil-and-air chute closed at top, sides and bottom, and inclined downward and opening into the fire-box; means for feeding oil into such chute; a damper at the lower inner end of the chute; and means for supplying water to the oil in the chute.

13. The combination of the fire-box having a draft-inlet and a draft-outlet; an open ended oil-and-air chute closed at top, sides and bottom and inclined downward to discharge into the fire-box and tapering toward the discharge; means for feeding oil to the chute; means for supplying water to the oil; and means at the lower end of the chute for temporarily holding oil and water.

14. The combination of the fire-box having a draft-inlet and a draft-outlet; an open ended oil-and-air chute closed at top, sides and bottom, and inclined downward to introduce oil and air into the fire-box; an oil-distributer arranged in the chute to distribute the oil across the chute; means for feeding oil to the distributer; and means for supplying water to the oil.

15. An oil burner comprising an inclined air chute closed at sides, top and bottom and open at the ends, an adjustable damper in said chute, a shallow receptacle at the lower end of the chute for retaining oil and water, said receptacle having a low wall at its forward end over which air from the chute will intermingle with the vapor arising from the receptacle, a regulable oil supply means for supplying and distributing oil in said chute and a regulable water supply means to supply and distribute water on the floor of the chute.

16. In a burner, a downwardly inclined air-chute open at both ends and having an oil supply means at its upper end, a distributing plate arranged beneath said oil supply means, and water supply means opening into the chute beneath the distributer plate.

17. A burner comprising a downwardly inclined air chute open at both ends, a retaining cup or receptacle at the lower end of the chute, an adjustable deflector in said chute, an oil supply connection at the upper end of the chute above the deflector, a water supply connection at the upper end of the chute and an oil supply connection at the lower end of the chute.

18. A burner comprising a downwardly inclined air chute, a slanting air deflector whose lower front edge is arranged to leave a narrow slot-like opening between it and the floor of the chute, an oil retaining receptacle at the lower end of the chute, having a low front wall and a lip extending rearwardly under the floor of the chute, an oil supply connection to the chute above the deflector and an oil supply connection to the lip of the receptacle.

19. An oil burner comprising a downwardly inclined air chute having at its lower end a narrow slot-like opening, a receptacle at the lower end of the chute having a low retaining wall and a lip extending rearwardly under said opening, means for supplying oil to the chute above said opening, and means for supplying oil to the lip below said opening, and in front of said retaining wall.

20. An oil burner comprising an air chute, pipe connections leading respectively to the rear and forward ends thereof and a water jacket for the pipe connection to the forward end, said water jacket communicating on to the floor of said chute near the rear end thereof.

21. An oil burner comprising a chute provided with a water chamber, and two oil pipe connections, one of which extends through and discharges its oil below the chamber and the other one discharges its oil over the chamber.

22. An oil burner comprising a chute provided with a water-chamber, two oil pipes, one of which projects through and discharges its oil below the chamber and the other delivers its oil over the chamber, a supply pipe common to both of said oil-pipes, and means for directing the oil from the supply-pipe to either one of the oil-pipes.

23. An oil burner comprising a chute provided with two chambers at its bottom, one of which is for water and the other one for oil, one of said chambers communicating with the main portion of the chute, a water supply connection leading to the water chamber, an oil supply connection leading to the oil chamber, and an oil supply connection leading to the chute, and an oil supply pipe having valved connections with each of said oil connections, the top of the oil chamber being provided with a retaining wall and said top being inclined to form with said wall a receptacle for retaining oil and water.

24. An air conduit, a shallow receptacle for liquid fuel, said receptacle having a low wall over which the products from liquid in the receptacle may escape, and means for supplying oil and water to the receptacle; said conduit being constructed and arranged to direct a current of air into products which may escape from the surface of the liquid in the receptacle.

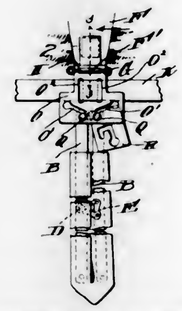
25. An air conduit, a shallow receptacle for liquid fuel, said receptacle having a low wall over which the products from liquid in said receptacle may escape, and means for supplying oil and water to said receptacle, said conduit being tapered toward said wall and constructed and arranged to direct a current of air into the products arising from the liquid in said receptacle.

26. A burner comprising a downwardly inclined air chute open at both ends, a retaining cup or receptacle at the lower end of the chute, an oil supply connection at the upper end of the chute, a water supply connection at the upper end of the chute and an oil supply connection at the lower end of the chute.

27. An oil burner comprising a chute, the bottom of which is hollow and divided into two chambers by means of a transverse partition, each chamber communicating near its upper end with the main portion of the chute, a pipe communicating with each chamber, one of which extends entirely through the chamber with which it does not communicate, and an oil pipe communicating with the main portion of the chute.

28. An oil burner comprising an inclined chute, the bottom of which is hollow and divided into two chambers by means of a transverse partition, the top of the upper chamber being perforated near its upper end and the top of the lower chamber being formed of two overlapping portions, whereby a space is formed which extends transversely across the chute, a pipe communicating with each chamber, one of which extends entirely through the chamber with which it does not communicate, a pipe communicating with the main portion of the chute, and a damper between the space and the perforations.

855,689. PLACKET-CLOSER. JONATHAN L. BRASSINGTON, Mount Carmel, Pa. Filed Mar. 28, 1907. Serial No. 365,121.



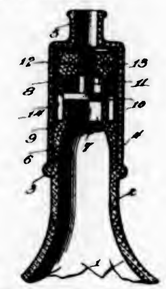
Claim.—1. A placket closing appartus comprising stiffening strips fastened to the meeting edges of a placket, fastening means for holding the strips together, a button fixed to the upper end of each of said strips, a waist, a loop secured thereto, a slotted plate through which said loop passes, a pin passing through said loop and adapted to bear against the face of the plate and hold the plate upon the loop, said plate having inclined slots for the reception of the buttons upon said strips, as set forth.

2. A placket closing apparatus comprising stiffening strips fastened to the meeting edges of a placket, fastening means for holding the strips together, a button fixed to the upper end of each of said strips, a waist, a loop secured thereto, a slotted plate through which said loop passes, a pin passing through said loop and adapted to bear against the face of the plate and hold the plate upon the loop, said plate having inclined slots for the reception of the buttons upon said strips and a belt adapted to be passed through slots in the plate, as set forth.

855,690. NON-REFILLABLE BOTTLE. MARK A. BROWN, Savannah, Ga. Filed July 27, 1906. Serial No. 328,061.

Claim.—1. A device of the class described comprising a receptacle having a neck, the upper edge of which forms a valve seat, a cap or guard secured to the neck and provided with an aperture, which is located contiguous to the valve seat, and a valve operating within the cap or guard and arranged upon the upper edge of the neck when closed, said valve serving to close the neck and being of a size to close the aperture of the cap or guard.

2. A device of the class described comprising a receptacle having a neck, the upper edge of which forms a valve seat, an inner cap or guard arranged on the neck and provided with apertures, which are located contiguous to the valve seat, a valve operating within the cap or guard and closing the neck and the apertures when arranged on the said seat, and an outer cap receiving the said cap or guard and provided with an outlet.



3. A device of the class described comprising a receptacle provided with a neck having a reduced upper portion, the upper edge of the neck forming a valve seat, an inner guard or cap fitted on the exterior of the reduced portion or neck and provided with an outlet aperture, a valve operating within the inner cap or guard for closing the neck of the bottle, and an outer cap secured to the exterior of the neck and receiving the inner cap or guard and provided with an outlet.

4. A device of the class described comprising a receptacle having a neck reduced at the upper portion, an inner cap or guard fitted on the reduced portion of the neck and secured to the same and provided with an outlet aperture, said cap or guard having a thickened upper portion and provided therein with a socket, a valve operating within the cap or guard and having a stem extending into the socket, a spring housed within the socket and engaging the stem, and an outer cap or guard provided with an outlet.

5. A device of the class described comprising a neck provided with a reduced upper portion and having an exterior shoulder at the lower end thereof, an inner cap or guard seated on the exterior shoulder of the neck and receiving the reduced portion thereof within it, a valve operating within the inner guard or cap, and an outer guard or cap fitted on and secured to the exterior of the neck below the reduced portion thereof and receiving the inner cap or guard.

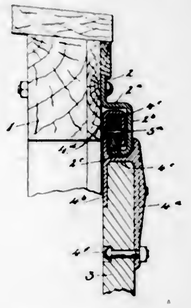
6. In a device of the class described, a receptacle having a neck provided with a valve seat at its upper end, a cap or guard open at the bottom and fitted over the neck, said cap or guard being provided with an aperture contiguous to the valve seat and a central vertical socket, and a spring pressed valve having a stem, the spring and stem being fitted in the socket of the cap or guard, and said valve closing the aperture of said cap or guard when the valve is on its seat.

855,691. COMBINED DOOR HANGER AND TRACK. CYRUS L. BUNDY, Chicago Heights, Ill. Filed Feb. 12, 1907. Serial No. 357,081.

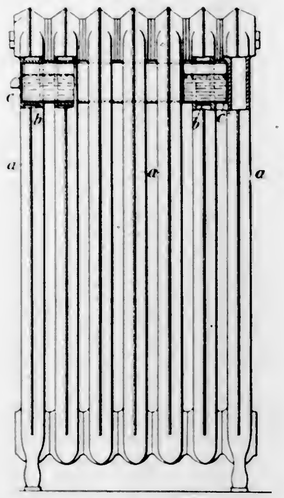
Claim.—1. In a device of the character described, the combination of a door hanger, front and rear door engaging plates thereon, a suspension roller carried by the rear plate, and a track consisting of a continuous strip of sheet metal bent inwardly at its lower end to provide a run-way for said roller and inwardly and upwardly at its upper end to provide a securing means therefor and a cover for said run-way, said front plate extending above said run-way on the outside thereof.

2. In a device of the character described, the combination with a door hanger and a suspension roller carried at one side thereof, of a track consisting of a continuous strip of sheet metal bent inwardly at its lower end to provide a track portion for said roller and inwardly and upwardly at its upper end to provide securing means therefor and a cover for said track, said hanger having an upstanding

flange opposite said roller surrounding the said track portion on the outside thereof.



855,692. RADIATOR FOR HEATING APPARATUS. WILLIAM J. BURROUGHES and WILLIAM J. BURROUGHES, Jr., London, England. Filed Aug. 24, 1906. Serial No. 331,912.



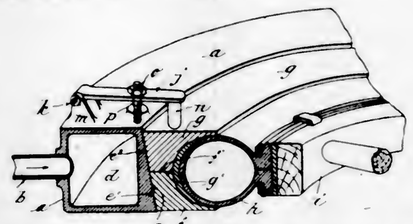
Claim.—The combination with a radiator comprising a series of vertically disposed flat sections arranged side by side, certain of said sections adjacent to one another being provided with horizontally alined openings extending therethrough, of a receptacle fitting within said openings in said sections, said sections being so arranged that said receptacle may be inserted and withdrawn through the section at one end of the radiator while a section at the inner end of said receptacle forms a stop therefor, substantially as described.

855,693. APPARATUS FOR VULCANIZING TIRES. JOHN C. COLE, Chicopee Falls, Mass., assignor to The Fisk Rubber Company, Chicopee Falls, Mass., a Corporation. Filed Nov. 13, 1906. Serial No. 343,294.

Claim.—1. In an improvement of the class described, a ring constructed for receiving a heating element and for supporting mold pieces, said mold pieces being substantially semi-circular in cross sectional contour on their inner surface and adapted to receive the tread portion only of the tire, and means for subjecting the tire to pressure.

2. In an improvement of the class described, a heating ring, means thereon for supporting mold pieces for receiving the tread portion only of a tire, means carried by the heating ring for subjecting the mold pieces to pressure, and means for heating the ring and mold pieces.

3. As an improvement in means for vulcanizing inflatable tires, a hollow ring for receiving a heating element, and for supporting a pair of mold pieces, said mold pieces being shaped to receive the tread portion of the tire, and means on the ring for subjecting the mold pieces and tire to pressure.



4. As an improvement in means for vulcanizing inflatable tires, a hollow ring provided with means for permitting a heating element to enter and escape therefrom, an inclined surface on the inside of said ring, a lower mold piece supported on the inclined surface, an upper mold piece adapted to engage the lower mold piece, said pieces having registering edges for receiving the tread portion of the tire, and means for subjecting the mold pieces for the tire to pressure, as described.

5. An apparatus for vulcanizing the tread portion of an inflatable tire, a ring provided with an inclined surface, a two-part mold supported on the same and each part being provided with a curved registering surface for engaging the tread portion only of the tire.

6. A vulcanizing apparatus having in combination a ring for containing a heating medium, a two-part mold having substantially a semi-circular surface, the mold being supported by the ring and in intimate contact therewith whereby the mold is heated from the ring and whereby when the tire is placed within the mold the tread portion only will be vulcanized.

7. A vulcanizing apparatus having in combination an annular heating element, a mold for receiving an inflated tire and divided in substantially the plane of the wheel, and means for clamping the parts of the mold together, the annular heating element having an inclined surface, the mold also having an inclined surface for engaging the inclined surface of the heating element.

8. A vulcanizing apparatus for inflatable tires, a ring, means for heating the same, a two-part mold carried by the ring and divided substantially in the plane of the wheel, said mold embracing only the tread portion of the inflatable tire, as described.

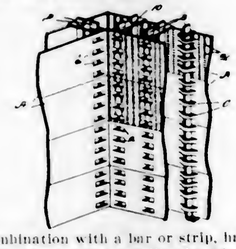
9. A vulcanizing apparatus for tires having in combination with a heating element a two-part mold for engaging the tread portion only of a tire, and means to support the mold in contact with the heating element, said means comprising an inclined surface for the two-part mold, as described.

855,694. FIREPROOF BUILDING CONSTRUCTION. CORNELIUS COLLINS, Niles, Ohio. Filed August 20, 1906. Serial No. 331,266.

Claim.—1. The combination with a skeleton frame work composed of parallel bars or strips, of metallic lathing sheets having loops adapted to slip over said bars to thereby secure the sheets directly to the frame work without additional fastening means.

2. The combination with the upright members of a skeleton frame work, of lathing sheets having loops by which they may be slipped edgewise over the ends of said member whereby the sheets and members are locked one to the other without supplemental fastening means.

3. The combination with a vertical bar or strip of a metallic sheet having loops fixed to and offset therefrom and extending in the direction of the length of the sheet, said loops adapted to receive said bar or strip and thereby directly secure the sheet to the bar.



4. The combination with a bar or strip, having a greater width than thickness, of a metallic sheet having loops offset from one side, said sheet adapted to be slipped over the end of the bar so that the loops will receive the bars flatwise, and said bar adapted to be turned edgewise relative to the sheet whereby the loops are expanded and a tension put upon intermediate parts of the sheet to eliminate fullness or slack in the sheet.

5. A fireproof building construction including sheets or plates adapted to support a plastic composition, said sheets or plates being placed edgewise together and having loops offset from one of their sides, and supporting bars or strips engaging the loops of the several plates and thereby securing the sheets or plates directly to the bars and without additional fastening means.

855,695. CLOSURE FOR JARS, BOTTLES, AND LIKE RECEPTACLES. MASCHIL D. CONVERSE, Newark, N. J., assignor, by mesne assignments, to Howland Metallic Cap Company, New York, N. Y., a Corporation of New York. Filed Jan. 14, 1907. Serial No. 352,201.



Claim.—1. An article of manufacture of the class described, comprising an integral metallic cap, adapted to inclose a sealing medium and to be applied to receptacles as set forth; having an annular non-weakening crease in its depending flange, and provided with a gap from said crease downward, and with an outwardly protruding rounded projection laterally of said gap and below the crease.

2. An article of manufacture of the class described, comprising an integral metallic cap, adapted to inclose a sealing medium and to be applied to receptacles as set forth, having an annular non-weakening crease in its depending flange, and provided with a gap from said crease downward, and with outwardly protruding rounded projections laterally of said gap and below the crease.

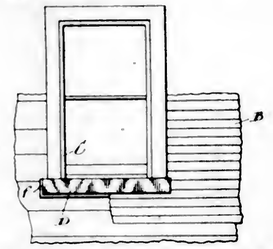
3. An article of manufacture of the class described, comprising an integral metallic cap, adapted to inclose a sealing medium and to be applied to receptacles as set forth, having an annular non-weakening crease in its depending flange, and provided with a dividing cut from said crease downward.

4. An article of manufacture of the class described, comprising an integral metallic cap, adapted to inclose a sealing medium and to be applied to receptacles as set forth, having an annular manually rupturable crease midway the depth of its depending flange, and provided with a dividing cut from said crease downward.

855,696. METALLIC WINDOW-SILL. WILLIAM CORBETT, Smiths Falls, Ontario, Canada. Filed Apr. 2, 1906. Serial No. 309,513.

Claim.—1. A metallic window sill comprising a suitable bed an overhanging outwardly protruding hollow central portion integral therewith and a flange integral with said central portion outwardly extending parallel with the wall of the building and adapted to be used to secure and hold the sill in its required position as and for the purpose specified.

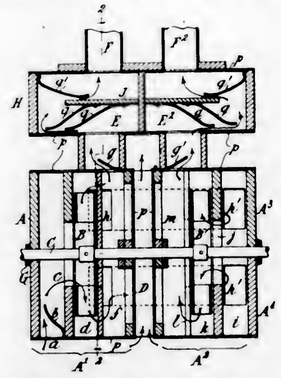
2. In the window sill the combination with a hollow metallic sill comprising a suitable horizontal bed, an overhanging outwardly protruding hollow central portion integral therewith, of a flange outwardly extending parallel with the wall of the building and formed integral with the lower surface and ends of the central portion as and for the purpose specified.



3. In a window sill the combination with the frame of a metallic hollow window sill having the bed thereof adjacent to the underside of the frame, of a board cut to fit the bed of the sill and secured to the underside thereof and to the bottom member of the frame as and for the purpose specified.

4. The combination with a hollow metallic window sill comprising a substantially horizontal bed and an overhanging outwardly protruding hollow central portion integral therewith, of an upwardly extending flange integral with the inner edge of the horizontal bed and a plurality of strengthening angle irons secured to the underside of the sill as and for the purpose specified.

855,697. AIR-COMPRESSOR. LOUIS B. COUSANS, Lincoln, England. Filed Feb. 28, 1905. Serial No. 247,771.



Claim.—1. An air blower comprising two fans, and a casing inclosing them constructed in two parts A′ and A² constructed integrally with each other, with an intervening flue D closed at the sides and open at bottom and top to allow a circulation of outer air between the two parts of the casing for cooling the air within the casing.

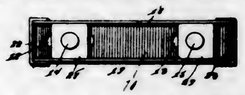
2. An air blower comprising two fans acting serially on the air to raise it to two different pressures, a chamber receiving low pressure air from the first fan and a chamber receiving high pressure air from the second fan, said chambers being separated from each other by a space D which is closed at the sides so as to form a flue and allow a circulation of outer air between said chambers to avoid conduction of heat from one to the other.

3. An air blower combined with a deflection chamber

through which the compressed air from the blower flows, and deflecting plates in said chamber, said chamber constructed in part of metal plates for promoting radiation of heat from the compressed air, and in part of wood separating the metal plates from each other to limit the vibration of the metal plates and the noise therefrom.

4. An air blower combined with a deflection chamber through which the compressed air from the glower flows, said chamber provided with silencing valves for obstructing the passage of sound, said valves being held open by the passage of air from the blower and automatically closed when no air is passing, thereby cutting off the sound of the blower.

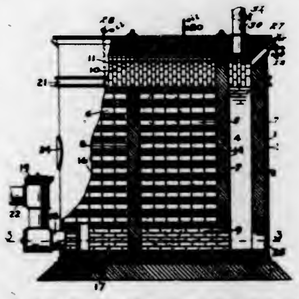
855,698. NUT-LOCK. GEORGE W. DARLING, Marshalltown, Iowa. Filed July 13, 1906. Serial No. 326,504.



Claim.—1. A nut lock, comprising a plate formed with elongated apertures in alinement longitudinally of said plate, said plate also formed with slits transversely of its end portions, both side margins of said plate between said slits adapted to be bent laterally at right angles to the body of the plate and both end margins of said plate outside of said slits adapted to be bent laterally at right angles to the body of the plate and at right angles to and overlapping the side margins of the plate.

2. A nut lock comprising a plate formed with elongated apertures in alinement longitudinally of said plate and also formed with slits extending inward from side margins of the plate and adjacent the ends thereof, the side margins of the plate between said slits adapted to be bent laterally at right angles to the body of the plate and into planes parallel with each other, the end portions of said plate outside the slits adapted to be bent laterally at right angles to the plate and to the side margins, and end portions of the end flanges thus formed adapted to be bent at right angles into contact with the outer faces of the bent side portions of said plate, whereby the side flanges are retained against separation.

855,699. GAS-GENERATOR. ISAAC N. ENRIGHT, San Francisco, Cal. Filed Apr. 21, 1906. Serial No. 312,998.

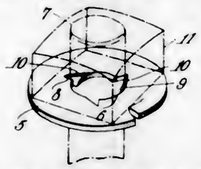


Claim.—1. A gas generator comprising a casing of an elongated closed curve in horizontal contour, and transverse partitions dividing it into a combustion chamber at one end, a heating chamber in the middle and a superheating chamber at the other end, the first partition extending from a point above the bottom of the generator to the extreme top thereof, and the second partition extending from the bottom of the generator to a point below the top thereof, checker work in the heating and superheating chambers, means for admitting oil and air into the combustion chamber, means for shutting off the oil and air, and means for admitting oil directly into the heating chamber, substantially as described.

2. A gas generator comprising a casing of an elongated closed curve in horizontal contour, and transverse partitions dividing it into a combustion chamber at one end, a heating chamber in the middle and a superheating chamber at the other end, the first partition extending from a point above the bottom of the generator to the extreme top thereof, and the second partition extending from the bottom of the generator to a point below the top thereof, checker work in the heating and superheating chambers, piers upon the bottom of the heating and superheating chambers upon which the checker work rests, means for admitting oil and air into the combustion chamber, means for shutting off the oil and air, and means for admitting oil directly into the heating chamber, substantially as described.

3. A gas generator comprising a casing of an elongated closed curve in horizontal contour, and transverse partitions dividing it into a combustion chamber at one end, a heating chamber in the middle and a superheating chamber at the other end, one of said chambers having manholes at the top and bottom thereof, the first partition extending from a point above the bottom of the generator to the extreme top thereof, and the second partition extending from the bottom of the generator to a point below the top thereof, checker work in the heating and superheating chambers, means for admitting oil and air into the combustion chamber, means for shutting off the oil and air, and means for admitting oil directly into the heating chamber, substantially as described.

855,700. NUT-LOCK. FREDERICK W. FRENCH, Oakland, Cal. Filed Mar. 29, 1906. Serial No. 308,756.



Claim.—1. A nut lock comprising a washer having a bolt-receiving opening and provided with a series of radial slits spaced an equal distance apart and defining a plurality of spring locking teeth the free ends of which normally project inwardly beyond the walls of the bolt-receiving opening with their terminals bent downwardly below the lower face of the washer on lines disposed tangentially to the walls of said bolt-receiving opening, and a single integral spring locking tongue struck up from the opposite face of the washer and adapted to engage the walls of the nut for locking the latter against rotation.

2. As a new article of manufacture, a nut lock comprising a washer having a bolt-receiving opening and provided with a series of radial slits communicating with said opening and spaced an equal distance apart to form a plurality of locking teeth the free ends of which normally project inwardly beyond the walls of the bolt-receiving opening with their terminals bent downwardly at an angle to the lower face of the washer on lines connecting the ends of the radial slits with the walls of the bolt-receiving opening, and a single integral spring locking tongue struck up from the upper face of the washer and adapted to engage the walls of the nut for locking the latter against rotation.

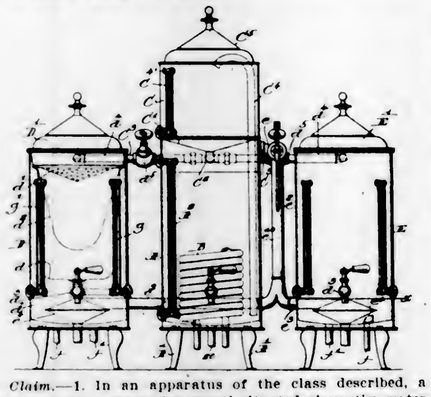
855,701. BELL-HAMMER. CHARLES E. GIERDING, Newark, N. J., assignor to Sterling-Meaker Company, Newark, N. J., a Corporation of New Jersey. Filed June 18, 1906. Serial No. 322,332.

Claim.—In combination with the bell of a register, a swinging bell hammer and a relatively fixed pivotal support for the same provided respectively with stop shoulders normally in contact with each other, a tensile spring connected with the bell hammer and tending to hold the same in its normal position, means whereby said bell hammer is adapted to be moved against the tension of said spring and tripped for its effective return movement, a movable face part provided with a stem extending through the body part of the bell hammer and having a head at its rear end, and a helical spring surrounding said stem be-



tween its head and the body of the hammer, said spring interacting with said stem to permit said face part to be projected into contact with the bell by momentum and to instantaneously retract said face part out of contact with the bell, substantially as hereinbefore specified.

855,702. URN. FRED D. GODDARD, Everett, Mass., assignor to Walker-Pratt Manufacturing Company, Boston, Mass., a Corporation of Massachusetts. Filed Mar. 23, 1904. Serial No. 194,632.

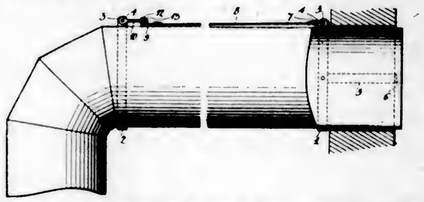


Claim.—1. In an apparatus of the class described, a water vessel, a measuring vessel situated above the water vessel, a pipe discharging into the top of the measuring vessel, said pipe extending nearly to the bottom of the water vessel, an urn separated from the water vessel, connections between the measuring vessel and urn, a steam heater within the urn, a pipe connecting the upper portion of the water vessel to said steam heater, and a valve in said pipe whereby when the valve is open the steam generated in the water vessel passes to the heater and when said valve is closed water is forced into the measuring vessel.

2. In an apparatus of the class described, a water vessel, means to heat the water therein, a measuring vessel, a pipe extending nearly to the bottom of the water vessel and discharging into the measuring vessel, an urn connected to the measuring vessel, a steam heater for the urn, a pipe connecting said heater to the top of the water vessel, and a valve in said pipe.

3. In an apparatus of the class described, a water vessel, means to heat the water therein, a measuring vessel, a pipe extending into the water vessel nearly to the bottom thereof and discharging into the measuring vessel, an urn connected with the measuring vessel, a water jacket about the urn, a steam heater to keep said water hot, a pipe connecting said steam heater with the top of the water vessel, and a valve in said pipe.

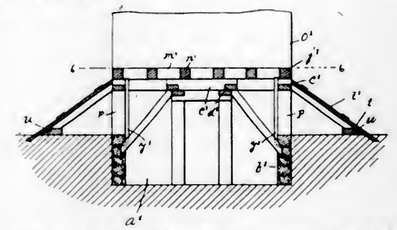
855,703. STOVEPIPE-HOLDER. ARNEST E. GOWIN, Morrisonville, and BENJAMIN F. BROWN, Litchfield, Ill. Filed Apr. 23, 1906. Serial No. 313,280.



Claim.—1. A fastening device of the character described comprising a pair of bands, means to clamp or fasten said bands to the stove pipe, a pair of inwardly-projecting spring fastening arms secured to one of said bands and adapted to be inserted through a stove pipe hole, right angularly bent lugs formed on the inner ends of said arms to engage the inner wall of the flue adjacent to said stove pipe hole, a fastening wire connected to one of said bands, and means whereby the opposite end of said wire is adjustably connected to the other band, substantially as described.

2. A stove pipe holder and fastening device of the character described comprising a pair of clamping bands having right angularly bent apertured lugs formed on their opposite ends, clamping screws arranged in said lugs, a pair of horizontally disposed inwardly-projecting spring fastening arms secured to one of said bands and adapted to project into a stove pipe hole, retaining lugs formed on the ends of said arms to engage the inner wall of the flue, a tongue connected to one of said bands by the clamping nut therein, a fastening wire connected at one end to said tongue, a connecting plate secured to the opposite end of said wire, an eye-bolt connected to the outer clamping band by the clamping bolt therein and engaged with said connecting plate and a nut arranged on the outer end of said eye-bolt to hold said connecting plate in its adjusted position, substantially as described.

855,704. BUILDING CONSTRUCTION. DANA G. HADLEY, West Newbury, Mass. Filed Feb. 8, 1907. Serial No. 356,475.



Claim.—1. A building construction comprising a foundation frame having a chamber therebeneath, an independent building frame resting on said foundation frame, and a structure supported on said building frame, substantially as described.

2. A building construction comprising a foundation frame having a chamber therebeneath and having its upper surface in approximately the same horizontal plane, a foundation frame having a structure built thereon and having an approximately horizontal bearing surface resting on the surface of said foundation frame, substantially as described.

3. A building construction comprising a foundation inclosing an excavation, a foundation frame anchored thereon, and having a series of cross beams extending over the excavation, the upper surface of said frame being in approximately the same horizontal plane, and an independent building supporting frame resting on said foundation

frame and having an approximately horizontal bearing surface to engage the upper surface of said foundation frame, substantially as described.

4. A building construction comprising a foundation inclosing an excavation, a series of sills anchored thereon, a series of cross beams extending over the excavation and connected to said sills, the upper surface of said sills and cross beams being in approximately the same horizontal plane, a series of independent building-supporting sills resting on said foundation sills and having a series of cross beams connected thereto with their under sides approximately in the same horizontal plane, substantially as described.

5. A building having walls extending above the surface of the ground and a wind deflecting shield surrounding said walls and extending obliquely from the upper ends thereof to the ground, said walls and said shield having corresponding openings and said shield having means for closing the openings therein substantially as described.

6. A building having walls extending for a distance above the surface of the ground, a foundation frame secured to the upper ends of said walls, an obliquely disposed wind deflecting shield surrounding said walls, connected at its upper end to said frame and extending to the ground, and an independent structure supported on said foundation frame, substantially as described.

7. A building comprising a foundation frame and means for supporting the same at a suitable distance above the ground, a wind deflecting shield surrounding said frame and extending obliquely therefrom to the ground and an independent structure supported on said frame, substantially as described.

8. A building support comprising a foundation inclosing an excavation having sills thereon, a series of cross beams connected at their ends to said sills and extending at right angles to each other across the excavation and having their upper sides in approximately the same horizontal plane, a series of reinforcing beams arranged beneath the middle portion of said cross beams, a series of uprights arranged at the intersection of said cross beams for supporting said cross beams and said reinforcing beams against the under side thereof, a series of inclined braces engaging the ends of said reinforcing beams at their upper ends and fixed in the foundation at their lower ends, an independent supporting frame on said sills and cross beams, and a building construction on said frame, substantially as described.

9. A building having the opposite portions of its side wall extending obliquely upward from the ground and toward each other to form continuous wind deflecting sides, said sides having openings leading to the inclosed chamber and wind deflecting means for closing said openings, substantially as described.

855,705. PROCESS OF PRINTING IN COLORS. JOSEPH A. H. HATT, Brooklyn, N. Y. Filed May 3, 1906. Serial No. 314,943.

Claim.—1. The process of printing in colors which comprises making a negative of an original by subjecting a sensitive plate to a part of the reflected light rays or colors from the original, then making a second negative by subjecting a second sensitive plate to the substantially complementary light rays or colors from the original, making printing plates from the said negatives, and taking imprints therefrom in superposition.

2. The process of printing in colors which comprises making a negative of an original by subjecting a sensitive plate to a part of the reflected light rays or colors from the original, then making a second negative by subjecting a second sensitive plate to the substantially complementary light rays or colors from the original, making printing plates from the said negatives, and taking imprints therefrom in superposition in substantially correspondingly colored inks.

3. The process of printing in colors which comprises making a negative from an original through a filter adapted to transmit certain colors, then making a second negative from the original using a color filter which transmits substantially the complementary colors to those transmitted by the first filter, making printing plates from the said negatives, and printing therefrom in superposition.

4. The process of printing in colors which comprises making a negative from an original through a color filter adapted to transmit certain colors, then making a second negative from the original using a color filter which transmits substantially the complementary colors to those transmitted by the first filter, making printing plates from the said negatives, and taking imprints therefrom in superposition in substantially correspondingly colored inks.

5. The process of printing in colors which comprises making a negative of an original by subjecting a sensitive plate to a part of the reflected rays or colors from the original, then making a second negative by subjecting a second sensitive plate to the substantially complementary light rays or colors from the original, making printing plates from the said negatives, inking one of the said plates, inking the other of the said plates with an ink substantially complementary to the first ink, and taking impressions in superposition from the said plates.

855,706. SAFE-DOOR. WILL C. HATTERSLEY, Norwood, Ohio, assignor to Victor Safe & Lock Co., Cincinnati, Ohio, a Corporation of Ohio. Filed Feb. 6, 1907. Serial No. 356,110.



Claim.—1. A door for a screw-door safe which has on its inner side a circular recess and equally spaced lugs which project into this recess, a screw-member which has spaced projections extending from its flat side which have outwardly extending lugs at their ends and are adapted to enter the recess in the side of the door when door and screw-member are placed against each other, the spaces between these projections being such that the lugs which they carry on their ends are adapted to pass through the spaces between the lugs in the door-recess and also under them when one of the placed parts is rotatively shifted on the other part and means to hold the lugs in this position.

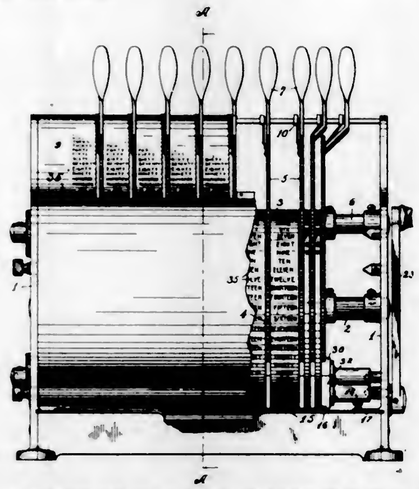
2. A door for a screw-door safe which has on its inner side a recess and spaced lugs which project into the same, a screw-member which has projections on its side adapted to enter the recess in the door mentioned when placed against this latter, and outwardly projecting lugs on these projections adapted to pass through the spaces between the lugs in the door-recess and also under them when one of the placed parts is rotatively shifted with reference to the other part, and bolts seated in the screw-member and in the door to hold the lugs in the interlocking position mentioned.

855,707. PRINTING APPARATUS FOR CHECKS, DRAFTS, &c. GEORGE W. HEENE, Cleveland, Ohio. Filed May 5, 1906. Serial No. 315,284.

Claim.—1. The combination of a series of wheels having on their periphery word type, means for positioning each wheel independently, a movable carrier for the check having an opening through it, an adjustable marginal stop a platen adapted to act against the check through such opening and force it into engagement with the wheels.

2. In a printing apparatus for checks, drafts, etc., the combination of a series of independent wheels, means for positioning the same, an inking roller for type on the wheels, a check carrier slidably mounted below the wheels and having an opening through it, a platen adapted to coöperate with the type through such opening, a pivoted lever carrying the platen, a cam adapted to act on said lever, and an operating lever adapted to rock said cam.

3. In a printing apparatus for checks, drafts, etc. the combination of a series of independent wheels mounted side by side and each provided on one side of its periphery with a series of reading characters and on the other side of its periphery with a series of word printing characters, said word printing characters projecting farther than the reading characters, a pair of inking rollers in the path of the printing characters and out of the path of the reading characters, means for rotating said wheels, and means for printing thereby.



4. The combination in a printing apparatus, a series of independent wheels having type on their faces, means for positioning the same to form a line of type, an impression platen located opposite such line, a check carrier slidable between the platen and wheels in a plane substantially tangential to the wheels and having a slot through it, a spring clip mounted on the carrier for holding a check thereon, an adjustable marginal stop on the carrier, and means for forcing the platen through said slot to press the check against the type.

855,708. PROCESS OF TREATING CLOTH. SEYMOUR HERMANN, New York, N. Y. Filed Jan. 18, 1906. Serial No. 296,609.

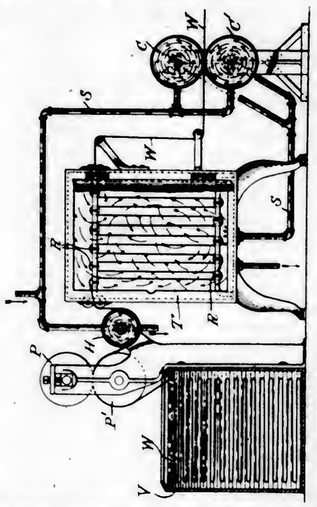
Claim.—1. The process of treating a textile fabric consisting in subjecting it to a bath composed of gum zapota, amyl acetate derived from isomeric amyl alcohol, turpentine, a non-drying oil, oleic acid, and amyl acetate collodion, thereupon removing excess of the bath, and then subjecting the fabric to a finishing process.

2. The process of treating a textile fabric consisting in subjecting it to a bath composed of gum zapota, concentrated amyl acetate, turpentine, a non-drying oil, oleic acid, and amyl acetate collodion, thereupon removing excess of the bath, and then subjecting the fabric to a finishing process.

3. The process of treating a textile fabric consisting in subjecting it to a bath composed of gum zapota, amyl acetate derived from isomeric amyl alcohol, turpentine, a non-drying oil, oleic acid, and amyl acetate collodion, thereupon removing the excess of the bath by pressing means; then drying the fabric; then steaming the fabric; and finally subjecting the fabric to a calendering process.

4. The process of treating a textile fabric consisting in subjecting it to a both composed of gum zapota, concentrated amyl acetate, turpentine, a non-drying oil, oleic acid, and amyl acetate collodion, thereupon removing the excess of the bath by pressing means; then drying the fabric; thereupon steaming the fabric; and finally subjecting the fabric to a calendering process.

5. The process of treating textile fabric consisting in subjecting it to a bath formed by adding 5 grams of gum zapota to 95 grams of amyl acetate derived from isomeric amyl alcohol; thereupon adding 10 grams of such mixture to 40 grams of turpentine; then adding 172 grams of a non-drying oil to 10 grams of oleic acid, which latter mixture is added to the said compound; then adding 730 grams of concentrated solution amyl acetate collodion; thereupon removing excess of the bath from the fabric; and then subjecting the fabric to a finishing process.



6. The process of treating textile fabric consisting in subjecting it to a bath formed by adding 5 grams of gum zapota to 95 grams of concentrated amyl acetate; thereupon adding 10 grams of such mixture to 40 grams of turpentine; then adding 172 grams of a non-drying oil to 10 grams of oleic acid, which latter mixture is added to the said compound; then adding 730 grams of concentrated solution amyl acetate collodion; thereupon removing excess of the bath from the fabric; and then subjecting the fabric to a finishing process.

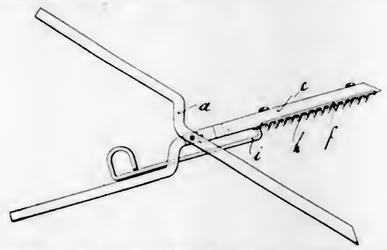
7. The process of treating textile fabric consisting in subjecting the fabric to a bath formed by adding 5 grams gum zapota to 95 grams of amyl acetate derived from isomeric amyl alcohol; then adding to 10 grams of such mixture 40 grams of turpentine and mixing till clear; then adding 172 grams of castor oil to 10 grams of oleic acid, and adding the latter mixture to the above compound; thereupon adding to such compound 730 grams of concentrated solution amyl acetate collodion containing about 16% xylidin or any other nitro-cellulose compound; thereupon removing excess of the bath from the fabric; and finally subjecting the fabric to a finishing process.

8. The process of treating textile fabric consisting in subjecting the fabric to a bath formed by adding 5 grams gum zapota to 95 grams of concentrated amyl acetate, then adding to 10 grams of such mixture 40 grams of turpentine and mixing till clear; then adding 172 grams of castor oil to 10 grams of oleic acid, and adding the latter mixture to the above compound; thereupon adding to such compound 730 grams of concentrated solution amyl acetate collodion containing about 16% xylidin or any other nitro-cellulose compound; thereupon removing excess of the bath from the fabric; and finally subjecting the fabric to a finishing process.

9. The process of treating textile fabric consisting in subjecting the fabric to a bath formed by adding 5 grams gum zapota to 95 grams of concentrated amyl acetate; then adding to 10 grams of such mixture 40 grams of turpentine and mixing till clear; then adding 172 grams of castor oil to 10 grams of oleic acid; and adding the

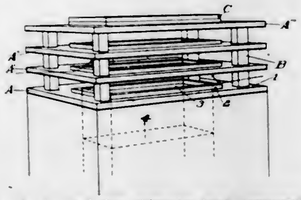
latter mixture to the above compound; thereupon adding to such compound 730 grams of concentrated solution amyl acetate collodion containing about 16% xylidin or any other nitro-cellulose compound; thereupon removing excess of the bath from the fabric by pressing; then drying the fabric; thereupon subjecting the fabric to a steaming process; and finally subjecting the fabric to a calendering treatment.

855,709. MARCEL-WAVING IRON. AUGUST W. KAHLE, Tompkinsville, and LUDWIG RENSMAN, New York, N. Y. Filed Oct. 3, 1906. Serial No. 337,177.



Claim.—In a Marcel waving iron, the combination with curling or waving tongs, one member of said tongs having a longitudinal slot, a metal comb mounted on said member and capable of sliding thereon, a handle secured to said comb, the teeth of the latter being slanting and slightly curved to form the peculiarly wound waves, substantially as and for the purpose specified.

855,710. COWL FOR CHIMNEY-TOPS. JOHN W. KAYSER, Madison, Wis., assignor of one-half to George Nelson, Madison, Wis. Filed Apr. 13, 1906. Serial No. 311,427.

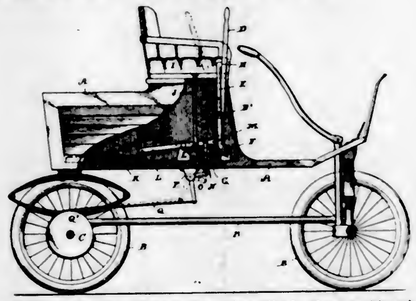


Claim.—1. A cowl for chimney tops composed of concrete, comprising a series of horizontally disposed plates open at their centers and each provided with an upwardly projecting integral flange around the edges of said openings, posts interposed between said plates and located adjacent the corners thereof, and a removable closed plate or cover fitting over the open center of the uppermost plate.

2. The combination with a chimney of an open centered concrete base section projecting into the chimney, and a cowl supported on said base composed of concrete, comprising a series of horizontally disposed plates open at their centers and each provided with an upwardly projecting integral flange around the edges of said openings, posts interposed between said plates and base and located adjacent the corners thereof, and a removable closed plate or cover fitting over the open center of the uppermost plate.

855,711. AUTOMATIC STOP FOR AUTOMOBILES. CHARLES O. LAMBERT, Bridgeport, Conn., assignor, by mesne assignments, to Electric Vehicle Company, Hartford, Conn., a Corporation of New Jersey. Filed Feb. 27, 1900. Serial No. 6,728.

Claim.—1. In a device of the class described, the combination with the controlling lever, of a spring actuated seat, connections thereof whereby said controlling lever is reversed by relieving the weight upon the seat.



2. In a device of the class described, the combination with the operating lever of an automobile, of a spring actuated seat, a movable rod connected therewith, means for reversing said operating lever by the upward movement of said rod and seat.

3. In an automobile, the combination of a movable part subject to the weight of the occupant, a device movable into predetermined position to effect the control of power of the vehicle, connections whereby said device is returned to a cut-off or zero position upon the removal of the weight of the occupant.

4. In an automobile, the combination of a movable seat subject to the weight of the occupant, a device movable into predetermined positions to effect the control of the power of the vehicle, connections whereby said power controlling device is automatically moved, upon the removal of the weight of the occupant.

5. In an automobile, a movable part subject to the weight of the occupant, a device movable to effect the control of power or speed, intermediate connections whereby said device cannot be moved from its zero or cut off position when the vehicle is unoccupied.

6. In an automobile, a movable part subject to the weight of the occupant, a controlling device consisting of a substantially vertical lever movable longitudinally of the vehicle into predetermined positions for regulating the application of power, intermediate connections including a spring and locking bar or lever, all substantially as and for the purpose described.

7. In an automatic stopping device for automobiles, the combination with the operating lever, of a movable seat, a spring for normally retaining said seat in an elevated position, a depending rod operatively connected to said spring and seat, bell crank lever connections between said rod and operating lever whereby the position of the latter is reversed by the action of said spring when the pressure on said seat is relieved.

8. In an automatic stopping device for vehicles, the combination with the starting and stopping levers, of a seat, means for normally retaining the same in an elevated position, an intermediate lever, connections between said seat and intermediate lever, and means for operating the starting and stopping levers from said connections and seat, substantially as described.

9. The combination in a stopping device for automobiles comprising connections with the power controlling levers, whereby the same may be operated when the seat of the vehicle is occupied, which comprises a lever L, connections between said lever and the controlling lever whereby the latter is operated, means for normally holding said lever L out of engagement with the controlling levers, connections with the seat whereby said parts are operated, substantially as described.

10. In an automobile, automatic controlling means including a movable part, spring actuated mechanism and connections acting upon a plurality of controlling levers or devices whereby upon the application of weight to the movable part the controlling levers are free to be operated, and upon the removal of the weight the levers or devices

are returned to their zero or initial position, as and for the purpose described.

11. The combination in a stopping device for automobiles, of a movable seat, means for normally retaining the same in an elevated position, a depending rod attached thereto, a lever connected with said rod, straps between said lever and the controlling levers whereby the latter are operated by the disengagement of the seat.

12. The combination in a stopping device for automobiles the same comprising a movable seat, a spring for normally retaining the same in an elevated position, connections thereof with an intermediate lever whereby the same is swung upon its pivot, and an auxiliary lever with connections whereby the controlling lever is reversed by the operation of said intermediate lever.

13. In an automobile, a movable part subject to the weight of the occupant, a device movable to effect the control of power or speed, a self-tightening or wrap-up brake and connections, intermediate spring operated connections operable upon the removal of the weight of the occupant, whereby the controlling device is locked in zero or cut-off position, or returned to its zero or off position, and the brake connections moved to a position permitting the engaging brake surfaces to contact and co-operate to tighten the brake and effect the stopping of the vehicle.

14. In an automobile, a controlling means including a wrap-up or self-tightening brake, connections to move the braking surfaces out of and into contact with each other, a movable part subject to the weight of the occupant and intermediate connections including a light spring, whereby upon the release of the weight of the occupant the brake connections are released and permit the contacting of the engaging brake surfaces permitting the self operation of the brake and consequent retarding of the vehicles and an electrical switch including a movable switch member subject to operation by means of the aforementioned movable part.

15. In an automatic stopping device for vehicles, the combination of a spring actuated seat having a depending rod, a bell crank lever connected with and operated by said post, connections from said bell crank lever to the controlling levers whereby the latter are operated to stop the machine when the seat is unoccupied, substantially as shown and described.

16. An automatic stopping device for vehicles the same comprising a spring actuated seat having a depending post, a rack upon said post, a bell crank lever bearing a segment to engage said rack, connections from said bell crank lever to the controlling levers whereby the latter are operated by the removal of the weight from the seat, substantially as shown and described.

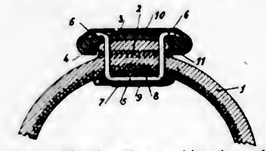
17. The combination with a seat of a vehicle, of a spring actuated rod depending from said seat, a pivoted lever connected with said rod, an auxiliary lever operated by said pivoted lever, controlling levers adapted to be engaged and operated by said auxiliary lever and connections from the pivoted lever to the vehicle brake whereby the latter is applied, substantially as shown and described.

18. In a vehicle provided with a motor and a source of power, the combination of a movable seat, of a lever, cut off devices actuated thereby and a spring adapted to actuate said lever whereby said seat is raised and communication broken between the source of power and the motor.

19. In an automobile, a contact through which electric energy passes for the propulsion of the vehicle, a movable switch member coöperating with said contact, a movable seat on said vehicle operated by the weight of the occupant, normally holding said movable contact member in position to close said electrical circuit, and means coöperating with said movable part to automatically move said contact member and apply the brake.

855,712. PROTECTIVE COVER FOR PNEUMATIC OR ELASTIC TIRES. JEAN J. P. LE GRAND, Paris, France. Filed Nov. 13, 1905. Serial No. 287,198.

Claim.—1. In a pneumatic tire the combination of a cover and of a flat band armed with metal plates with studs passing through the cover and the band and having their ends recurved transversely against the band between the recurved edges of the plates for fixing the cover and the band together and for securing the plates against being pulled off, substantially as set forth.



2. In a pneumatic tire the combination of a cover and of a flat band armed with metal plates with studs passing through the cover and the band and having their ends recurved transversely against the band between the recurved edges of the plates for fixing the cover and the band together and for securing the plates against being pulled off, and with thin strip of leather (8) interposed between the middle of the stud and the canvas of the cover (1) and of a thin strip of leather (9) between the top of the stud and the air chamber and of pieces of canvas (7) folded upon the strip (9) for preventing the wearing of the cover and of the air chamber, substantially as set forth.

3. The combination of a solid elastic tire and of a flat band armed with metal plates with studs traversing the band and the tire so as to fix them together, said studs having their ends recurved transversely upon the band between the recurved edges of the metal plates serving to render these latter secure against detachment, substantially as set forth.

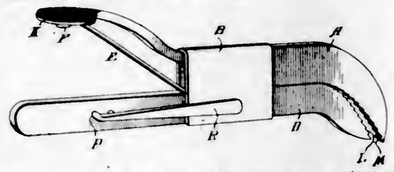
855,713. SELF-EXCITING ALTERNATOR. LEON J. LE PONTOIS, New Rochelle, N. Y., assignor to Poly-Phase Ignition System Company, a Corporation of New York. Filed Dec. 11, 1905. Serial No. 291,262.

Claim.—1. A partially self exciting alternator having a permanent magnetic field, polar projections of soft iron adjacent to the magnetic poles developed by said field, a rotor having dissymmetric polar faces adapted to rotate in close proximity to said poles, a winding on said rotor auxiliary coils wound around said soft iron polar projections said coils being connected in series with each other and in shunt with said rotor winding, whereby the waves of the alternating current generated which have a magnetizing effect on the permanent magnetic field reach a higher value than those which have a demagnetizing effect on said field and the magnetizing effect being increased by the location of the auxiliary windings in the magnetic circuit.

2. A partially self exciting alternator having a permanent magnetic field, polar projections of soft iron adjacent to the magnetic poles developed by said field, a rotor having dissymmetric polar faces adapted to rotate in close proximity to said poles, a winding on said rotor auxiliary coils wound around said soft iron polar projections said

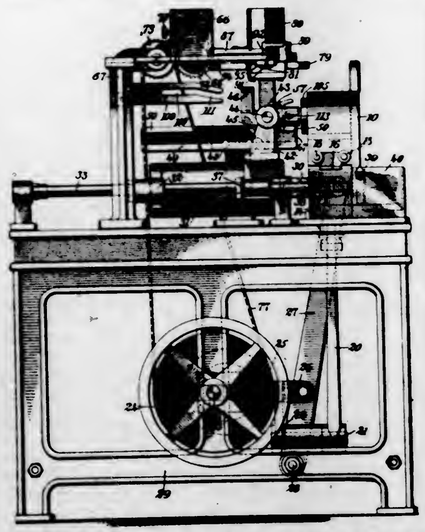
coils being connected in series with each other and in shunt with said rotor windings, and a condenser connected in shunt with said auxiliary coils, whereby the phase of the auxiliary magnetizing current is sufficiently advanced to enable the auxiliary magnetic field thus set up to exert its action on the main field while the rotor by its position in the field presents a path of sufficiently low magnetic reluctance.

855,714. SCREW-WRENCH. WILLIAM H. LITZENBERGER and LUDVIG A. TORNQUIST, New Windsor, Ill. Filed June 4, 1906. Serial No. 320,199.



Claim.—A ratchet wrench with two jaws, a pivot connection between the jaws, an adjustable pivot provided with terminal lugs and a lever arm, a plurality of pivot holes in the wrench shank, said holes provided with oppositely disposed slots adapted to receive the lugs on the adjustable pivot, a plurality of shallow indented depressions on the shank adapted to provide seats for the catch on the lever arm of the adjustable pivot when in its various positions, and means for preventing any lateral movement of the jaws, substantially as described.

855,715. LABELING-MACHINE. FRANK X. MALOCSAY, New York, N. Y., assignor of one-sixth to himself, one-sixth to Edward F. Roos, one-sixth to Louis F. Roos, Jr., one-sixth to Paul Schnitger, one-sixth to Louis F. Roos, Sr., and one-sixth to Edward P. Schnitger, New York, N. Y. Filed Nov. 18, 1905. Serial No. 287,994.



Claim.—1. A labeling machine having a raceway supplied with a slanting portion, a horizontal portion and a portion extending downwardly from the end of the horizontal portion, means for labeling articles resting in the horizontal portion a second raceway adjacent to the first, and a carriage movable from the end of the third portion of the first raceway to the second raceway.

2. A labeling machine having a raceway provided with a downwardly-extending portion, a second raceway located in a plane parallel to the first, a carriage having a plate projecting inwardly from one edge, said plate being adapted to prevent the descent of an article from the first raceway into the carriage when the carriage is directly under the same, the carriage also being provided with a slanting rear surface opposite said plate, and means for moving the carriage from the end of the downwardly-extending portion of the first raceway into registration with the second raceway.

3. A labeling machine having a raceway provided with a downwardly-extending portion at one end, and a carriage movable under the end of said downwardly-extending portion, said carriage being provided with means, in its upper portion, for supporting articles in the downwardly-extending portion of the raceway when the carriage is in position under said portion, the carriage also being provided with an outwardly-slanting surface opposite said means, whereby, when the carriage is moved in one direction to a slight distance from the center of the downwardly-extending portion of the raceway, an article in said portion of the raceway can enter the carriage between said slanting portion and said means for holding articles in the raceway.

4. A labeling machine having two raceways, a carriage, means for moving the carriage across the first raceway and into registration with the second, said carriage having a slanting rear surface means for guiding said carriage to move in a straight line, and a plate projecting into the first race-way over a part of the carriage.

5. In a labeling machine, the combination of a reciprocable carriage, a plunger reciprocable across the path of the carriage, a main shaft, two eccentrics on said shaft, a lever connected with said plunger and with one of said eccentrics, and a lever connected with the carriage and with the other eccentric.

6. A labeling machine comprising a raceway adapted to receive cylindrical articles, means for applying paste to the end of an article supported in the raceway, and means for simultaneously applying a label to an article supported at another point in the raceway, said paste-applying means comprising a reciprocable frame, and a head oscillatably mounted on the frame and adapted to support a pad.

7. A labeling machine comprising a reciprocable frame, a shaft mounted thereon, a head connected with said shaft, means for turning said shaft during the reciprocation of the frame, and means for elevating said head during the stroke of the frame and depressing it during the return stroke.

8. A labeling machine comprising a reciprocable frame, a shaft mounted thereon, a cylinder connected with the shaft, a head adapted to reciprocate in said cylinder and provided with a projection, a projection loosely connected with said shaft and having an eccentric portion adapted to engage said projection on the head, means for forcing said eccentric portion into engagement with the projection on the head at one end of the stroke of the frame, and means for disengaging it therefrom near the other end of the stroke.

9. A labeling machine comprising a movable frame, a shaft mounted thereon, a cylinder secured to the shaft, a headed plunger in the cylinder, the plunger having a roller projecting through the side of the cylinder, a collar loosely mounted on the shaft and having an eccentric projection adapted to engage said roller for holding the plunger in an extended position with respect to the cylinder, means mounted in a stationary position for forcing said eccentric projection into engagement with the roller, and means carried by said frame for forcing the eccentric projection out of engagement with the roller at a different point in the stroke of the frame.

10. A labeling machine comprising a movable frame, a shaft journaled thereon, a gear segment connected with said shaft and having two projections extending therefrom at an angle to each other, means for applying an adhesive connected with said shaft, a stationary guide having a rack for engaging said segment, and means for engaging said projections to prevent the rotation of the shaft during a portion of the stroke of the frame.

11. A labeling machine comprising a movable frame, an adhesive-applying device oscillatably mounted on said frame, a receptacle for an adhesive, a roller mounted in said receptacle and projecting therefrom, and means for moving said adhesive-applying device into engagement with said roller during motion of the frame in one direction and withdrawing the adhesive-applying device from engagement with the roller during motion of the frame in another direction.

12. A labeling machine comprising a movable frame, an adhesive-applying device oscillatably mounted on said frame, a receptacle for an adhesive, a roller mounted in said receptacle and projecting therefrom, means for moving said adhesive-applying device into engagement with said roller, and means for rotating the roller, comprising a shaft on which the roller is mounted, a second shaft, and means for connecting said shafts together.

13. A labeling machine comprising a movable frame, an adhesive-applying device mounted thereon, a receptacle for an adhesive having an open bottom, a roller mounted in said bottom, and an adjustable plate in said receptacle for closing the space between the roller and the wall of the receptacle.

14. A labeling machine comprising a movable frame, an adhesive-applying device mounted thereon, a receptacle for an adhesive having an open bottom, a roller mounted in said bottom, an adjustable plate in said receptacle for closing the space between the roller and the wall of the receptacle, and a labeling device mounted on said frame.

15. A labeling machine comprising a movable frame, an adhesive-applying device mounted thereon, a receptacle for an adhesive having an open bottom, a roller mounted in said bottom, an adjustable plate in said receptacle for closing the space between the roller and the wall of the receptacle, and a labeling device mounted on said frame, said labeling device comprising an oscillatable head adapted to carry labels.

16. A labeling machine comprising a reciprocable cylinder, a stationary piston therein, a shaft mounted in bearings on the cylinder, a tube connecting the cylinder with said shaft, this shaft being provided with a chamber communicating with said tube, a hollow head connected with the shaft and in communication with said chamber, and a perforated pad on the head.

17. A labeling machine comprising a reciprocating cylinder, a stationary piston within the cylinder, a hollow head, means for connecting said head with the cylinder whereby a vacuum is produced in the head during the stroke of the cylinder, a perforated pad mounted on said head for carrying labels, a frame mounted on said cylinder and movable therewith, a receptacle for labels mounted on said frame, and a series of tongues movable into the receptacle for supporting the labels.

18. A labeling machine comprising a movable frame, a receptacle for labels mounted thereon, a stationary guide, a series of tongues adapted to project into the receptacle, and levers for operating said tongues, said levers being provided with an arm engaging said guide.

19. A labeling machine comprising a movable receptacle for labels, two pairs of tongues adapted to be projected into said receptacle for supporting the labels, and means for projecting the tongues on opposite sides into the receptacle and withdrawing the other tongues during the reciprocation of the receptacle.

20. A labeling machine comprising a movable receptacle for labels, two pairs of tongues adapted to be projected into said receptacle for supporting the labels, and means for projecting the tongues on opposite sides into the receptacle and withdrawing the other tongues during the reciprocation of the receptacle, said means comprising a series of levers for operating the tongues, a projection on one of said levers, and a stationary guide for receiving said projection, said guide having a straight portion and an offset portion.

21. In a labeling machine, the combination of a receptacle for labels, a pair of tongues on opposite sides of the receptacle, levers for connecting said tongues together and simultaneously moving them both inwardly and outwardly, a second pair of tongues located at an angle with respect to the first-mentioned tongues, a pair of levers for simultaneously operating the second pair of tongues, and means for operating the first set of levers to force the first set of tongues inwardly and simultaneously operating the second set of levers to force the second set of tongues outwardly.

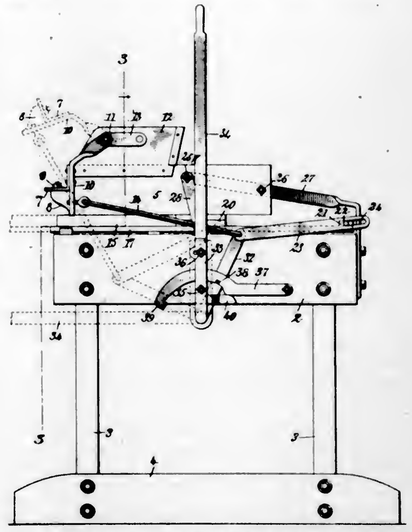
22. In a labeling machine, the combination of a movable receptacle, two sets of tongues adapted to project into the receptacle, and means for simultaneously moving said tongues, said means comprising a guide having a straight portion and an offset portion, and a lever in said guide, said lever being pivoted at a point adjacent to the offset portion and having two arms at an angle to each other, and a spring for drawing one of said arms toward the straight side of the guide.

23. A labeling machine having a stationary raceway, a second stationary raceway adjacent thereto, a carriage movable across said raceways, and mechanism co-acting directly with said second raceway and with said carriage for forcing an article from said carriage into said second raceway.

24. A labeling machine having two stationary raceways located in parallel planes, a carriage, means for moving the carriage from one raceway to the other, and mechanism co-acting directly with said carriage and with one of said raceways for forcing into the latter an article from said carriage.

25. In a labeling machine, the combination of a movable receptacle for labels, a pair of tongues, a second pair of tongues, means for simultaneously projecting the first pair of tongues into the receptacle and for withdrawing the second pair of tongues outwardly from the receptacle, said means comprising a lever connected with the receptacle having a projection, a guide for said projection, said guide having a straight portion and an offset portion, and a pivoted lever for directing said projection from the straight portion into the offset portion.

855,716. BRICKMAKING-MACHINE. EARL L. MARTIN, Woodburn, Iowa. Filed June 29, 1906. Serial No. 324,018.



Claim.—1. A brick making machine comprising a mold having a hinged front wall, slidable bottom and rear walls, and stationary partitions and side walls.

2. A brick making machine, comprising a mold having a hinged front wall, rear and bottom walls laterally slidable toward said hinged wall, and means for moving said walls simultaneously.

3. A brick mold having stationary side walls, a hinged front wall, a slidable rear wall, and means for moving them simultaneously after the front wall has been moved clear of the side walls.

4. A mold having a plurality of partitions and a front wall, said wall comprising a plurality of vertical members adapted to fit between the adjacent pairs of partitions, a connecting member extending across the end of said mold and secured to each of the vertical members, arms secured to the connecting member and pivoted above the same, and means for moving said front wall on said pivot.

5. A brick mold having a movable front wall a plurality of stationary partitions, a removable bottom slidable beneath said partitions, a frame carrying said bottom, a rear wall secured to said frame and comprising a plurality of sections each fitting between two adjacent partitions, and means for simultaneously moving said frame and front wall whereby the bricks are forced from the mold by the rear wall and carried by the bottom wall and the front wall is moved out of the path of the brick.

6. A brick mold having side walls, a front wall pivoted at a point above the top thereof, a rear wall slidable between said side walls, an arm, means for oscillating it, means connecting said arm to the front wall, and means connecting the arm to the rear wall, said last mentioned means including a lost-motion device whereby when the arm is oscillated in one direction the front wall is swung away from the side walls before the rear wall slides between them.

7. A brick making machine comprising a mold having a movable wall, an oscillating shaft, an arm secured to said shaft, means connecting said arm and said movable wall, a handle for oscillating the shaft, means for locking said arm in a given position, and means connected to said handle whereby movement of the handle unlocks the arm and further movement of the handle moves said arm and wall.

8. A receptacle having a movable wall, an oscillating shaft, an arm secured to the shaft and connected to said wall, a second arm secured to said shaft, a handle pivoted to said second arm and having limited movement in relation thereto, a pivoted latch engaging said first mentioned arm for locking it in a predetermined position, and means connected to said handle adapted to contact with the latch and raise it as the handle moves in relation to the arm, whereby upon further movement of the handle it may move the arm.

9. A brick making machine comprising a suitable frame, a mold supported on said frame, partitions in said mold, means for rigidly connecting said partitions and the side walls of the mold to the frame, and means for moving the bottom, front and rear wall.

10. A brick mold having a removable bottom, a plurality of sliding supports carrying said bottom, and a rear wall secured to said supports and moving therewith, said rear wall comprising a plurality of L-shaped members.

11. A mold having a hopper supported above the same, arms pivoted to said hopper, a front wall for said mold carried by said arms, and means for swinging said front wall away from said mold whereby the contents may be removed.

12. A rectangular mold having two opposite walls movable in relation to the other two walls, and means for simultaneously raising one of said walls and ejecting the material from the mold by the action of the opposite movable wall.

13. A mold having a wall, means for advancing said wall to eject the material from the mold, a second wall opposite first mentioned wall, and means for moving said second wall out of the path of the molded material as it is ejected.

14. A mold having a wall, means for advancing said wall to eject the material from the mold, a second wall opposite said first mentioned wall adapted to be moved out of the path of the material as the latter is ejected, and means for simultaneously moving said walls.

855,717. HORSESHOE-CALK. WILLIAM MERRICK, Hartford, Conn. Filed Dec. 26, 1905. Serial No. 293,393.



Claim.—1. A horse shoe provided with a calk having a depthwise opening terminating in a solid bottom and with a wearing surface extending completely about said opening, the wall constituting the wearing surface having a lateral opening extending from the bottom of the depthwise opening to the outer surface of the calk.

2. A removable calk for horse shoes including a body part having a depthwise opening terminating in a solid bottom and with a wearing surface extending completely about said depthwise opening, the wall forming this wearing surface having a lateral opening extending from the bottom of the depthwise opening to the outer surface of the calk.

3. A horse shoe having a calk with a depthwise opening terminating in a solid bottom and providing walls of substantially uniform thickness from top to bottom extending completely around the depthwise opening, the said walls having a lateral recess opening from the bottom of the depthwise recess to the outer surface of the calk.

4. A removable calk for horse shoes including a body part with means for attachment to the shoe, said body part having a depthwise opening terminating in a solid bottom with walls extending completely about said opening and of substantially uniform thickness from top to bottom of the opening, said walls having a lateral opening extending from the bottom of the central opening to the outer surface of the calk.

5. A calk for horse shoes including a body part having a depthwise opening terminating in a solid bottom and forming a wearing surface extending completely about said depthwise opening, the wall forming the wearing surface having a plural number of lateral openings extending from the bottom of the depthwise opening to the outer surface of the calk.

6. A calk for horse-shoes including a body part having a depthwise opening, and lateral openings extending from the depthwise opening to the outer surface of the calk and arranged with a web between the ends of the lateral openings.

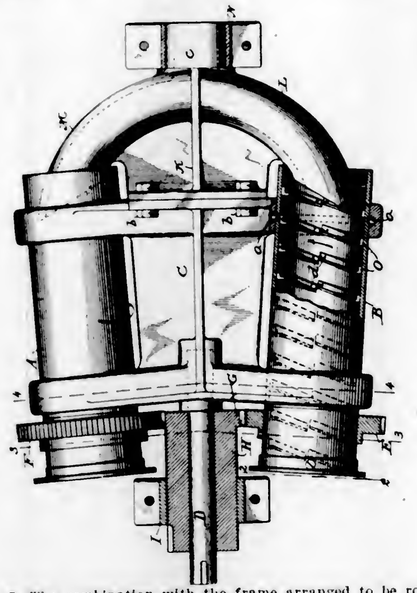
855,718. CENTRIFUGAL MACHINE. THEODORE H. MILLER, Poughkeepsie, N. Y. Filed Mar. 6, 1905. Serial No. 248,407.

Claim.—1. In a machine for separating solids from liquids, the combination with a vessel in which the separation is to take place, the wall of the same being imperforate, of a feeding tube projecting into the liquid discharge end of the vesel which is farthest from the main axis of the machine, the vessel and feeding tube being arranged to revolve together around the said main axis, substantially as and for the purposes set forth.

2. In a machine for separating solids from liquids, the combination with a vesel in which the separation is to be effected, the wall of the same being imperforate, of a feeding tube projecting into the liquid discharge end of the vessel and arranged to revolve together with the vessel around the main axis of the machine, the axis of the vessel being inclined with respect to the main axis of the machine and the vessel having a discharge opening at each end, substantially as explained.

3. In a machine for separating solids from liquids, the combination with a vessel in which the separation is to take place, the wall of the same being imperforate, of a feeding tube projecting into the liquid discharge end of the vessel which is farthest from the main axis of the machine, the vessel and tube being arranged to revolve together around the said main axis of the machine and the vessel arranged to be rotated also around its own axis, substantially as explained.

4. In a machine for separating solids from liquids, the combination with a vessel in which the separation is to take place, the wall of the same being imperforate, of a feeding tube projecting into the liquid discharge end of the vessel, the vessel and tube being arranged to revolve together around the main axis of the machine and the vessel having a discharge opening at each end and arranged to be rotated also around its own axis, the two axes being inclined with respect to each other, substantially as explained.



5. The combination with the frame arranged to be rotated by the main shaft, of a vessel mounted therein, rotatable around its own axis and supplied with an interior spiral conveyer fixed with respect to its wall and interrupted at intervals, the said vessel being open at both ends and its wall being imperforate.

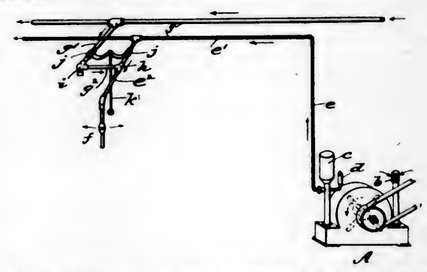
6. The combination with a vessel rotatable around its axis and having an imperforate wall open at both ends, of an interior spiral conveyer fixed upon the interior of said wall, said conveyer being supplied with openings at points in its windings for passage of liquids, substantially as and for the purposes set forth.

7. In a machine of the character herein set forth, one or more vessels having imperforate walls rotatably mounted in bearings in a rotatable frame, means for feeding mixed solids and liquids into one open end of each vessel, each vessel being provided with a spiral conveyer fixed upon its interior for forcing the solid materials to and out at the other open end of the vessel, and means for rotating the frame and the vessels therein whereby the liquid is caused to be discharged at the ends of the vessels nearest the feeding tube, substantially as explained.

8. In a centrifugal machine for separating solids from liquids, one or more vessels in which the separation is to take place, each such vessel having an imperforate wall and a discharge opening at each end and being provided with a spiral conveyer fixed on the interior of its wall and receiving the mixed solids and liquids at a point between the open ends, and discharging the liquid at the end nearest the feeding tube and the solids at the other open end, substantially as and for the purposes explained.

855,719. AIR COOLING AND HUMIDIFYING APPARATUS. JAMES D. MINTO and JAMES KELLY, Providence, R. I. Filed Apr. 3, 1906. Serial No. 309,681.

Claim.—1. In a humidifying apparatus, an air supply and a communicating water supply, means for controlling said air supply and water supply, a distributer communicating with both the air supply and the water supply, comprising two members disposed in longitudinal alinement and with their adjacent faces slightly spaced apart and one of said members having a screw-threaded projecting shank adapted to engage a perforated nut in the interior of the other of said members substantially as described.



2. The combination with a water and air supply, of an atomizer comprising two tubular members, having enlarged contiguous ends with opposed slightly separated faces, one of said members having its one end closed and its other end perforated and provided with a bevel face, a screw-threaded shank projecting centrally from said bevel face, a perforated nut carried by the interior of the other of said members, said screw-threaded shank adapted to engage with said perforated nut, thereby forming means by which the two members of said atomizer are adjustably secured together.

855,720. DITCHING-PLOW. EDWARD W. MOODY, Lewistown, Mont. Filed Sept. 13, 1906. Serial No. 334,473.

Claim.—1. A plow comprising a sled, a plow frame pivotally connected with the front end of said sled and including wings directly connected together at their front ends and extending on opposite sides of the sled; a brace connecting said wings; and an actuating lever pivotally mounted upon said sled and connected with said brace, for bodily raising and lowering said frame.

2. A plow comprising a sled; a plow frame pivotally connected with the front end of said sled and including wings extending on opposite sides thereof; means mounted upon said sled and provided with communicating guide slots disposed at right angles to each other; means connecting said wings and movable in one of said guide slots; and actuating means pivotally mounted upon said sled and attached to said connecting means, for raising and lowering said plow frame, said actuating means being movable in the other of said guide slots.

3. A plow comprising a sled; a standard mounted upon the sled and provided with vertical guide slots disposed longitudinally and transversely of the sled; a plow frame pivotally connected with the sled and including wings extending on opposite sides of the sled; a brace connecting the wings and working in the transverse guide slot in the

standard; and an actuating lever working in the vertical guide slot and connected with the plow frame and brace for raising and lowering the same.

4. A plow comprising a sled; a standard mounted upon the sled and provided with vertical guide slots disposed longitudinally and transversely of the sled; a pair of shoulders secured to the standard and arranged on opposite sides of the longitudinal opening therein, said shoulders having a series of alining openings; a plow frame pivotally connected with said sled, and comprising wings extending on opposite sides of said sled; a brace connecting said wings and working in said transverse guide slot; an actuating lever working in said longitudinal guide slot, and connected with said plow frame and brace for raising and lowering said plow frame, said lever having a longitudinal slot adapted to register with the openings in said shoulders, and means adapted to be passed through said lever slot and said openings, for retaining said lever in adjusted position.

5. A plow comprising a sled; a V-shaped plow frame pivotally connected with the front end of said sled and including wings disposed on opposite sides thereof, the apex of said frame being disposed in advance of said sled; a bar mounted upon the front end of said sled and having its ends connected with said wings; and an actuating lever connected with said bar and brace for bodily raising and lowering said plow frame.

6. A plow comprising a sled; a plow frame pivotally connected with the front end of said sled and including wings extending on opposite sides thereof; means for bodily raising and lowering said plow frame; and means for bodily shifting said plow frame to one side or the other.

7. A plow comprising a sled; a plow frame pivotally connected with the front end of said sled and including wings extending on opposite sides thereof; means for bodily raising and lowering said plow frame; means for retaining said plow frame in its vertically adjusted position; and means for bodily shifting said plow frame laterally when so adjusted.

8. A plow comprising a sled; a plow frame pivotally mounted upon the front end of said sled, and including wings extending on opposite sides thereof; and an actuating lever pivotally mounted upon said sled and connected with said frame for raising and lowering the same; said lever having an independently movable section for bodily shifting said plow frame to one side or the other.

9. A plow comprising a sled; a plow frame pivotally mounted upon the front end of said sled, and including wings extending on opposite sides thereof; a brace connecting said wings; and an actuating lever for raising and lowering said plow frame, said lever comprising a main section connected with said sled and said brace, and an independently movable section pivotally connected with said main section and with said wings, for bodily shifting said plow frame to one side or the other.

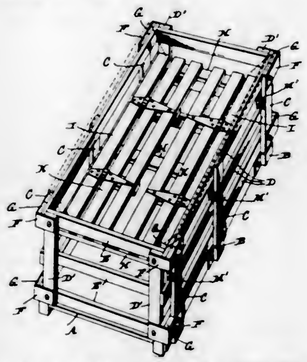
10. A plow comprising a sled; a standard mounted thereon and formed with a vertical guide slot; a plow frame pivotally mounted upon the front end of said sled, and including wings extending on opposite sides thereof; and an actuating lever pivotally mounted upon said sled for raising or lowering said plow frame, said lever working in said guide slot, and having an independently movable section for bodily shifting said plow frame to one side or the other.

11. A plow comprising a sled; a standard mounted thereon, and provided with a vertical guide slot; a pair of shoulders secured to said standard and arranged on opposite sides of said guide slot; said shoulders having a plurality of alining openings; a plow frame pivotally mounted upon the front end of said sled, and including wings extending on opposite sides thereof; and actuating lever pivotally mounted upon said sled for raising or lowering said plow frame, said lever working through the guide slot in said standard, and having a longitudinal slot adapted to register with the openings in said shoulders; a pin adapted to be inserted through said openings and said slot; for retaining the plow frame in adjusted vertical position; and an independently movable section pivotally connected to the rear end of said adjusting lever and to said wings, for bodily shifting said plow frame to one side or the other.

12. A plow comprising a sled; a bar mounted on bearings in the front end of said sled; a plow frame pivotally mounted upon said bar and including wings extending upon opposite sides of said sled, each wing having a longitudinal slot formed therein, through which the adjacent bar end projects; and means for bodily shifting said plow frame to one side or the other of said sled.

13. A plow comprising a sled; a bar mounted on bearings in the front end of said sled; a plow frame pivotally mounted upon said bar and including wings extending upon opposite sides of said sled, each wing having a longitudinal slot formed therein, through which the adjacent bar end projects; and means connected with said bar and plow frame for raising and lowering the latter, said means having an independently movable section for bodily shifting said plow frame to one side or the other of said sled.

855,721. CRATE-BODY FOR WAGONS. JOHN O. MOORE and JOHN I. JOHNSON, Culverton, Ga. Filed July 5, 1906. Serial No. 324,815.

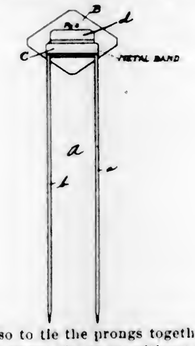


Claim.—1. In a wagon crate, the combination with the sides formed of vertical stakes adapted to enter stake irons at their lower ends and horizontal strips rigidly connecting said stakes, ends formed of vertical supports and horizontal strips rigidly connected thereto and clips connecting said sides and ends at the corners to form a rectangular body, of a horizontal partition or deck mounted in said crate and removably connected to the verticals at an intermediate point, said deck embodying in its construction a central cross piece adapted to rest at its ends on the intermediate horizontal strip of the sides and having upwardly opening doors adapted when closed to be supported intermediate their ends by said central cross piece.

2. In a wagon crate, the combination with the sides and ends formed respectively of verticals supporting horizontal strips, said sides and ends being connected together at the corners, of a horizontal partition mounted in said crate at an intermediate point and connected with the sides of the crate by hook like connections, whereby the spreading of the sides of the crate is prevented and doors extending from end to end of said partition and adapted to open outwardly to permit of access to the lower portion of the crate; substantially as described.

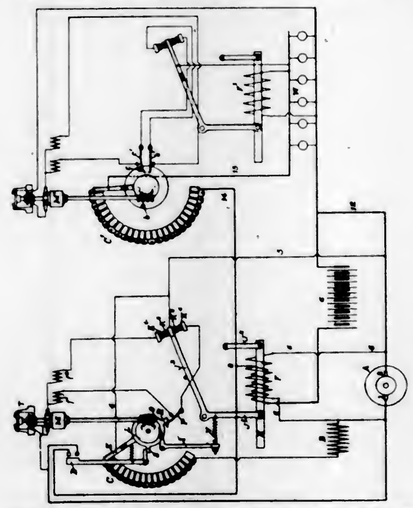
855,722. HAT-FASTENER. BERTHA MULCAHY, San Jose, Cal. Filed Aug. 16, 1906. Serial No. 330,871.

Claim.—As an article of manufacture, a hat fastener comprising a pin formed of one piece of material and having parallel prongs joined at their rear ends by a cross-bar, a head, an attaching plate fixed to the inner side of the head and having a barrel in which the cross-bar of the pin is journaled to pivotally connect the pin with the head, and a band or collar arranged on and snugly receiving the prongs of the pin at a point adjacent to the attaching plate, whereby said band or collar is adapted to serve



as a stop and also to tie the prongs together to strengthen the connection between the same without interfering with the head swinging on the pin.

855,723. ELECTRIC REGULATING DEVICE. JAMES F. MCELROY, Albany, N. Y., assignor to Consolidated Car Heating Company, Albany, N. Y., a Corporation of West Virginia. Filed July 10, 1905. Serial No. 268,925.



Claim.—1. The combination with a dynamo of a regulating device therefor, a motor operating said device, contacts in the motor circuit and an operating magnet for said contacts set to act at a voltage greater than that required by the motor when exerting the maximum torque imposed by the said devices which it operates.

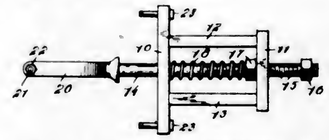
2. The combination with a variable speed dynamo, of a storage battery, a constant-potential lamp circuit, a regulating device for the dynamo, a motor on the said circuit operating said device at a voltage lower than that of the said circuit, controlling contacts in the motor circuit, and a magnet operating the said contacts.

3. The combination with a variable speed dynamo, of a constant-potential circuit, a regulating device for the dynamo, a motor on said circuit having contacts in series therewith and operating the said regulating device at a voltage lower than that of the said circuit by an amount compensating for the contact resistance, and a controlling magnet operating the said contacts.

4. In a potential-regulator the combination with a magnet responding to the potential to be regulated, of contacts operated by said magnet upon a departure of the voltage from its predetermined value, regulating devices, and an operating motor therefor in series with said contacts and adapted to give the maximum torque required by the said devices at a voltage lower than the said predetermined voltage.

5. In a potential regulator, the combination of a regulating device, a constant-potential circuit, a motor on said circuit having contacts in series therewith and operating said regulating device at a voltage lower than that of the said circuit by an amount compensating for contact resistance, and a magnet on the said circuit responding to the potential thereof and operating the said contacts.

855,724. YIELDING DRAFT ATTACHMENT FOR VEHICLES. SAMUEL L. MCREYNOLDS, Boise, Idaho. Filed Sept. 13, 1906. Serial No. 334,525.



Claim.—1. In a spring-draft attachment for vehicles, the combination with a frame having front and rear bars, a Y-shaped draft bolt extended through bush-bearings in said front and rear bars, a spring surrounding the bolt and bearing at its forward end against the forward bar of the frame and at its rear end upon connections with the bolt, and a bolt between the branching arms at the forward end of the draft bolt.

2. In a yielding draft attachment for vehicles, a frame having front and rear bars and bush-bearings therein, a draft bolt having branching arms at its forward end and extended through said bush-bearings, a spring surrounding said draft rod and bearing at its forward end against the forward bar and at its rear end against a connection with the bolt, a vertical bolt arranged between the branching arms at the forward end of the draft bolt, the ends of the forward bar of the frame being extended, and means connected with said extensions to connect the same with the means for pulling on the forward end of the draft bolt.

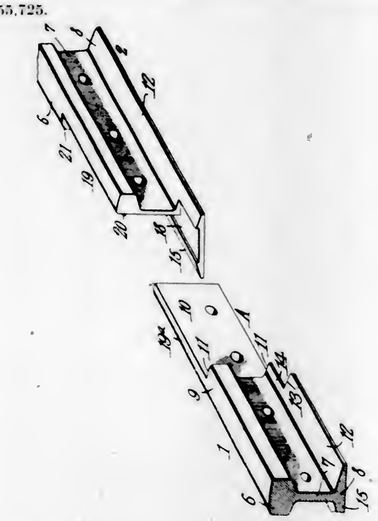
855,725. RAILROAD-RAIL JOINT. SAMUEL A. NEUHARD, Milton, Pa., assignor of one-third to William J. Caldwell and one-third to Harry W. Chamberlin, Milton, Pa. Filed Feb. 16, 1907. Serial No. 357,701.

Claim.—1. In a railway rail joint, the combination of two rails each having a lateral half of its head and web and the base flange of one rail at their adjoining ends removed to permit said ends to overlap, the base flange at the end of one of said rails being channeled to admit the reduced flange on the end of the other rail.

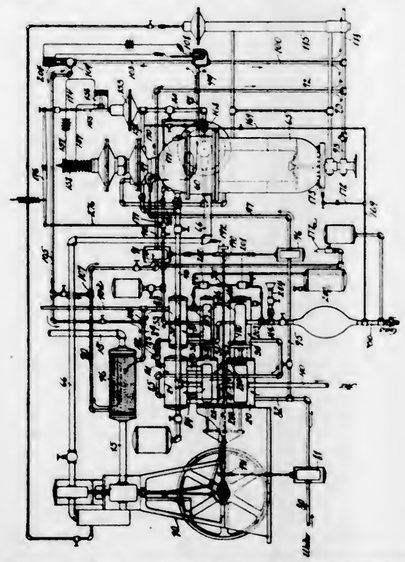
2. In a railway rail joint the combination of two rails each having a lateral half of its head and web and the base flange of one rail at their adjoining ends removed to permit said ends to overlap and fit against each other, the rail which has one half its base flange removed having also a portion of the bottom and edge of the remaining half of the flange cut away to fit a channel formed in the base flange of the other rail.

3. In a railway rail joint, the combination of two rails each having a lateral half of its head and web at their adjoining ends removed, the base flange of one rail projecting beyond the end of the head and web and channeled, the base flange of the other rail being cut away on one side, and partly removed on the other side and bottom to adapt it to fit the channel in the first mentioned rail.

855,725.



855,726. CONTINUOUS-COMBUSTION GENERATING APPARATUS. EDWARD P. NOYES, Winchester, Mass. Filed Mar. 30, 1904. Serial No. 200,700.



Claim.—1. In a continuous-combustion power-generating apparatus, the combination of a combustion-chamber, an ante-chamber, means to supply air and fuel under pressure to said ante-chamber, a perforated partition separating said chambers, and a jacket for said partition adapted to contain a cooling fluid.

2. In continuous-combustion power-generating apparatus, the combination of a pressure-chamber for conducting combustion, an ante-chamber, means for supplying air and fuel under pressure to said ante-chamber, a foraminous partition separating said chambers, a cooling-chamber jacketing said partition, and means to circulate a cooling fluid through said chamber.

3. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a perforated partition separating the same and having a replicate heat-dissipating extension, and a conduit for supplying combustion fluid to said ante-chamber arranged to impinge its flow upon said extension.

4. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two and having a replicate heat-dissipating extension, and conduits for supplying air and fuel to the ante-chamber so directed as to mix their flows and impinge the mixture upon said extension.

5. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, an ante-chamber communicating therewith, conduits to supply air and gas to said ante-chamber so directed as to cross and mix their streams of fluid, and sources of air and gas pressure supplying said conduits.

6. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, and means for supplying crossed streams of air and gas thereto.

7. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply a stream of mixed air and gas thereto, and means to supply a stream of air to said chamber crossing the first-said stream.

8. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply a convergent hollow stream of combustion fluid thereto, and means to supply a divergent hollow stream of combustion fluid from within the first-said stream and crossing the latter.

9. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and gas to said ante-chamber, a foraminous partition separating said chambers, and means to direct a stream of combustion fluid into said combustion-chamber across the stream from the foraminous partition.

10. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition structure separating said chambers and making substantially an inclosure, means to supply air and fuel to the ante-chamber, and means to supply a combustion fluid to the combustion-chamber from within the inclosure formed by said partition structure.

11. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition structure separating said chambers and making substantially an inclosure arranged to direct a convergent hollow stream of mixed fluid into the combustion-chamber, and means for supplying a divergent stream of combustion-fluid to the combustion-chamber from within the said inclosure.

12. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two and having a valve-seat, a valve coöperating with said seat, and means to supply air and fuel to said ante-chamber.

13. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel under pressure to said ante-chamber, a foraminous partition separating said chambers, a valve coöperating with said partition, and means for automatically regulating said valve by the pressure of the system.

14. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means for supplying air and fuel to said ante-chamber, a foraminous partition separating said chambers, a valve coöperating with said partition, and means for automatically regulating said valve differentially by the pressures initial and terminal thereto.

15. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, a foraminous partition separating said chambers and having a valve-seat, and a valve movable toward and from said seat.

16. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, a foraminous partition separating said chambers and having a valve-seat, a valve movable toward and from said seat, a movable partition connected with said valve and having chambers on its opposite sides, and means to supply said chambers respectively with the pressures initial and terminal to said valve.

17. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a partition separating said chambers and having a male valve-seat, and a female valve movable toward and from said seat.

18. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, a foraminous partition separating said chambers and having a male valve-seat, and a female valve movable toward and from said seat.

19. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, a foraminous partition separating said chambers and having a sectional male valve-seat, and a multi-sectioned female valve movable toward and from said seat.

20. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, a foraminous partition separating said chambers and having a male valve-seat, a female valve movable toward and from said seat, and means to automatically control said valve differentially by the pressures initial and terminal thereto.

21. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, a foraminous partition separating said chambers, a cooling jacket for said partition adapted for the circulation of a cooling fluid, and a valve coöperating with said partition.

22. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having coöperating inlets for combustion fluid, valves controlling said inlets, and means controlled by the pressure of the system for simultaneously moving said valves in opposite directions.

23. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having coöperating inlets for the admission of combustion fluid, said inlets being provided respectively with male and female valve-seats, female and male valves coöperating with the respective seats, and pressure-controlled means for simultaneously moving said valves in opposite directions.

24. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, inlets so arranged as to direct crossed streams of combustion fluid into said chamber, and valves automatically controlled by the pressure of the system for controlling said inlets.

25. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, an inlet to the combustion-chamber from said ante-chamber, a second inlet for combustion fluid to the combustion-chamber so arranged as to direct its stream of fluid across the stream from the first-said inlet, and valves controlling said inlets.

26. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said combustion-chamber, a foraminous partition separating said chambers and having a male valve-seat, an inlet for combustion fluid to the combustion-chamber having a female valve-seat embraced by the first-said valve-seat, oppositely-moving valves cooperating with said seat, and means for controlling said valves differentially by the pressures initial and terminal to the valves.

27. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, a foraminous partition separating the chambers and having a male valve-seat, a female valve-seat embraced by the first-said seat, a cooling jacket structure having portions respectively at the base of said partition and at the crest thereof embracing the female valve-seat, and oppositely-seating valves coöperating with said valve-seats.

28. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, cooperating inlets to the combustion-chamber, one of which leads from the ante-chamber, so directed as to cross their flows, said inlets having valve-seats, valves coöperating with said seats, and a cooling jacket structure having portions surrounding the respective seats.

29. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having inlets provided with valve-seats, one within the other, means connected with said inlets for supplying combustion fluids thereto, oppositely-seating valves coöperating with said seats, and means controlled by the pressure of the system for simultaneously moving said valves in opposite directions.

30. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply combustion fluid thereto, oppositely-movable valves controlling the fluid flow, one of which is provided with a hollow stem, the other having a stem occupying said hollow stem, and diaphragms connected with said stems and subject to the pressure of the system.

31. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, a pair of oppositely-seating valves controlling the flow of combustion fluid thereto and having stems, one of which is hollow and incloses the other stem, diaphragms connected with the respective valves and inclosing a chamber between them, a spring interposed between the diaphragms, means to establish in said chamber the pressure of the system terminal to the valves, chambers on the remote sides of the diaphragms, and means to establish in the latter chambers the pressure of the system initial to the valves.

32. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a valve controlling communication between the two and having a hollow stem, means to supply combustion fluid to the chamber through said stem, and a second valve controlling said fluid supply.

33. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a valve controlling communication between the two and having a hollow stem, means to supply combustion fluid to the chamber through said stem, a second valve controlling said fluid supply and having a stem passing through said hollow stem, diaphragms connected with the respective stems, means to establish the system-pressure terminal to the valves on one side of each diaphragm, and initial-pressure chambers on the opposite sides of the diaphragms communicating with each other through said hollow stem.

34. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply combustion fluid thereto, a valve controlling said fluid, means to control said valve differentially by the pressures initial and terminal thereto, yieldingly-acting means to establish a differential pressure on the valve, and means controlled by the pressure of the system for automatically varying the force of said differential.

35. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply combustion fluid thereto, a valve controlling said fluid and differentially controlled by the pressures initial and terminal to the valve, means yieldingly aiding the terminal pressure, and means controlled by the pressure of the system for automatically augmenting said aid as the pressure increases.

36. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply combustion fluid thereto continuously un-

der pressure, a valve for maintaining a velocity flow of said fluid, and electro-magnetic means controlled by the pressure of the system for varying the force exerted on said valve.

37. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, a valve controlling the flow of combustion fluid thereto, an electro-magnet controlling said valve, and a movable partition subject on one side to the pressure of the system and on the other side to a substantially-constant pressure for varying the resistance of the magnet circuit.

38. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply combustion fluid thereto, a valve controlling the fluid flow and differentially controlled by the pressures initial and terminal to the valve, means exerting a yielding pressure on the valve in aid of the terminal pressure, a device for augmenting said aid, and a movable partition subject on one side to the pressure of the system and on the other side to a substantially-constant pressure for controlling said device.

39. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having inlets for combustion fluids, oppositely-seating valves controlling said inlets, an electro-magnet having its coil attached to one of said valves and its armature to the other, and means actuated by the pressure of the system for controlling the circuit of said magnet.

40. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, oppositely-seating valves controlling the flow of combustion fluids thereto, one of said valves having a hollow stem, the other having a stem inclosed thereby, diaphragms connected with said stems and subject on opposite sides to the pressures initial and terminal to the valves, a solenoid having its coil attached to the hollow valve-stem and its core to the other valve-stem, and means controlled by the pressure of the system for varying the resistance of the solenoid circuit.

41. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having an inlet, means to supply air and fuel through said inlet, an independent tangential-inlet to said combustion-chamber, and means to supply a combustion fluid through said tangential-inlet, whereby a whirl of the two flows is established.

42. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means for supplying a combustion fluid continuously under pressure thereto, and means for introducing said fluid tangentially into the chamber.

43. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having a tangential-inlet, means for supplying a combustion fluid through said inlet, a valve controlling said inlet, and means for controlling said valve differentially by the pressures initial and terminal thereto.

44. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having a tangential-inlet, a conduit to supply combustion fluid through said inlet, a valve controlling the inlet, a movable partition connected with the valve and having on one side a chamber connected with said conduit and on the other side a chamber receiving the pressure terminal to the valve, and means yieldingly aiding the terminal pressure on the valve.

45. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, inlets for the supply of combustion fluids thereto so arranged as to cross their flows, and a tangential-inlet for the supply of combustion fluid to said chamber.

46. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, means to supply air and fuel to said ante-chamber, an inlet from the ante-chamber to the combustion-chamber, a second inlet arranged to direct its stream across that of the first-said inlet, means to supply combustion fluid through said second inlet, a tangential-inlet to the combustion-chamber, and means to supply a combustion-fluid through said tangential-inlet.

47. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having two inlets supplying crossed streams, a tangential-inlet, means to supply combustion fluid through said inlets, three valves controlling the respective inlets, and means controlled differentially by the pressures initial and terminal to said valves for controlling all three valves.

48. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having a primary inlet, means to supply air-and-fuel mixture through said inlet, a secondary inlet to the combustion-chamber, and means to supply a single combustion fluid or a mixture of combustion fluids through said secondary inlet at will.

49. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply air and fuel thereto, a tangential-inlet to said chamber, a source of compressed-fuel supply connected with said tangential-inlet, and means to shut off said fuel supply at will.

50. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply a primary flow of air and fuel thereto, an incandescence igniter for said chamber, and means to supply to said chamber a secondary current of combustion fluid whose path intercepts the igniter.

51. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply a primary flow of air and fuel thereto, an ignition-thimble having a salient presentation to the interior of said chamber, means for externally heating said thimble, and means to supply to said combustion-chamber a secondary stream of combustion fluid whose path intercepts the ignition thimble and joins the flow of the primary fluids.

52. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply a primary flow of air and fuel thereto, an incandescence igniter for said chamber, a tangential-inlet to the chamber entering on the igniter, and means to supply combustion fluid through said tangential-inlet.

53. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, means to supply a primary flow of air and fuel thereto, an incandescence igniter for said chamber, a secondary inlet to the chamber entering on said igniter, and means to supply at will through said inlet air or air-and-fuel mixture.

54. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two, means to supply air and fuel to said ante-chamber, a cooling-chamber succeeding the combustion-chamber, a water-jacket for said partition, and means to circulate water in succession through said jacket and cooling-chamber.

55. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two and having a water-jacket, a cooling chamber succeeding the combustion-chamber, a conduit connecting said jacket with the cooling-chamber, and means controlled by the temperature of the output from said jacket for diverting the output from said conduit.

56. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two and having a water-jacket, a cooling chamber succeeding said combustion-chamber, a compressor to supply combustion fluid to said combustion-chamber and having a water-jacket, and means to supply water to said jackets and from said jackets to the cooling-chamber.

57. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two and having a water-jacket, a chamber succeeding the combustion-chamber, a compressor to supply combustion fluid to said combustion-chamber having a water-jacket, and means to conduct a water-supply through said jackets in parallel and into the cooling-chamber.

58. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two and having a water-jacket, a cooling chamber succeeding the combustion-chamber, a compressor to supply combustion fluid to the combustion-chamber having a water-jacket connected with the cooling-chamber, means to conduct the output of the partition water-jacket to the cooling-chamber, a pump to force the compressor jacket-water into the cooling-chamber, and means controlled by the temperature of the output from the partition jacket for diverting said output to the suction of said pump.

59. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, a cooling-chamber succeeding the same, a compressor to supply combustion fluid to said combustion-chamber having a water-jacket, means to conduct the water from said jacket into the cooling-chamber, and an overflow for the disposal of surplus water from said jacket.

60. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two and having a water-jacket, a cooling chamber succeeding the combustion-chamber, a compressor to supply combustion fluid to the combustion-chamber having a water-jacket, pumps for independently forcing the two jacket supplies into the cooling-chamber, an overflow for the compressor-jacket-water, a branch conduit connecting the outlet of the partition jacket with the suction side of the compressor-jacket pump, and means controlled by the temperature of the water in said conduit for controlling the flow therethrough.

61. In continuous-combustion power-generating apparatus, the combination of a combustion-chamber having an inlet, a water-jacket for said inlet, a cooling-chamber, a pump supplied from said jacket for supplying the cooling-chamber and also having an independent supply, means to automatically divert said second supply from the suction of the pump, and means controlled by the temperature of the jacket-water for automatically controlling the supply thereof to the pump.

62. In continuous-combustion power-generating apparatus, the combination of combustion and cooling-chambers, a compressor for supplying combustion fluid to the combustion-chamber having a water-jacket, a chamber heated by the exhaust of the motor, and means to conduct a water-supply in succession through said jacket and chamber to the cooling-chamber.

63. In continuous-combustion power-generating apparatus, the combination of combustion and ante-chambers, a foraminous partition separating the two and having a water jacket, a cooling chamber, a motor supplied by the combustion-chamber, a chamber heated by the exhaust of the motor, means to conduct a water supply through said chamber to the cooling-chamber, and means to conduct the water from said jacket to the cooling-chamber either directly or through said exhaust-heated chamber.

64. In continuous-combustion power-generating apparatus, the combination of a combustion-chamber, air and gas compressors to supply the same, means to effect a mixture of the air and gas before entering the combustion-chamber, means to automatically release an excess of the mixture, and means to return said excess to the suction side of one of the compressors.

65. In continuous-combustion power-generating apparatus, the combination of a combustion-chamber, air and gas compressors for supplying the same, means to effect a mixture of the air and gas prior to the combustion-chamber, means to automatically release an excess of the mixture upon attainment of a predetermined pressure thereof, and means to return the excess to the suction side of the gas-compressor.

66. In continuous-combustion power-generating apparatus, the combination of a combustion-chamber, means to supply fuel and compressed air thereto, means to mix said fluids prior to the combustion-chamber, and means for automatically diluting the fuel-supply with the mixture upon the attainment of a predetermined pressure of said mixture.

67. In continuous-combustion power-generating apparatus, the combination of a combustion-chamber, stage compressors for supplying air and gas thereto having intercoolers, and means for establishing a flow from the air-intercooler to the gas-intercooler.

68. In continuous-combustion power-generating apparatus, the combination of a combustion-chamber, stage compressors for supplying air and gas thereto having intercoolers, means for establishing a flow from the air-intercooler to the gas-intercooler, means to automatically release the excess of mixed fluids, and means to return said excess to the suction side of the gas-compressor.

69. In continuous-combustion power-generating apparatus, the combination of a combustion-chamber, stage compressors for supplying air and gas thereto having intercoolers, means for establishing a flow from the air-intercooler to the gas-intercooler, a branch conduit connecting with the compressed-gas conduit having a device for releasing gas upon the attainment of a predetermined pressure in said branch conduit, and means to conduct the fluid released by said device to the suction side of the gas-compressor.

70. In continuous-combustion power-generating apparatus, the combination of a combustion-chamber, stage compressors for supplying air and gas thereto having intercoolers, a conduit connection between said intercoolers, means for releasing fluid from the compressed-gas conduit to the suction side of the gas-compressor upon the attainment of a predetermined pressure in said conduit, and means for varying the relative capacities of the compressing units of the respective compressors.

71. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber having an inlet, means for supplying a mixture of air and fuel through said inlet, means for artificially cooling said inlet by an extraneous fluid-flow, and a resistance-valve controlling said inlet and differentially controlled by the pressures initial and terminal to itself.

72. In continuous-combustion power-generating apparatus, the combination of a pressure combustion-chamber, a plurality of independently-movable resistance-valves controlling the flow of combustible toward said chamber, means for controlling said valves differentially by the pressures initial and terminal thereto, and yielding means conjointly affecting the two valves in aid of the terminal pressure.

855,727. ELECTRIC SIGNALING SYSTEM. EDWARD L. ORCUTT and RICHARD SHELDON, New York, N. Y., assignors to Railway Electric Signal Company, a Corporation of New Jersey. Filed Sept. 1, 1906. Serial No. 332,994.

Claim.—1. In an electric signaling system for railways, the combination of a train signal; a signal operating circuit on a train; a signal controlling circuit on a train; a track circuit; and a controller on a train for the signal controlling circuit operated and controlled by the track circuit.

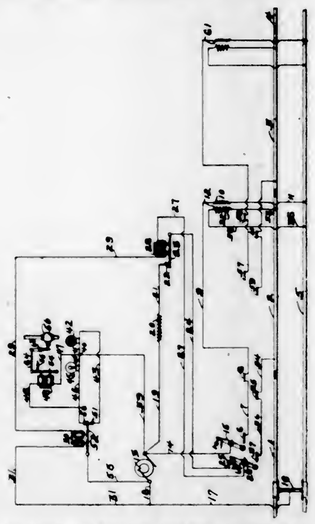
2. In an electric signaling system for railways, the combination of a signal; a train controller; a combined signal and train-controller operating circuit; a controlling circuit; a track circuit; and a controller for the controlling circuit operated and controlled by the track circuit.

3. In an electric signaling system for railways, the combination of a signal on a train; a train-controller on a train; a combined signal and train-controller operating circuit on a train; a controlling circuit on a train; a track circuit; and a controller operated and controlled by the track circuit.

4. In an electric signaling system for railways, the combination of a signal on a train; a train controller on a train; a combined signal and train controller operating circuit on a train; a controlling circuit on a train; a track circuit; and a controller on a train operated and controlled by the track circuit.

5. In an electric signaling system for railways, the combination of a supply circuit; a generator therefor located on the train; a controlling track circuit; a signal; an operating circuit therefor; a signal controlling circuit; and a controller for the signal controlling circuit operated and controlled by the controlling track circuit.

6. In an electric signaling system for railways, the combination of a supply track circuit; a generator therefor located on the train; a controlling track circuit; a signal; an operating circuit therefor; a signal controlling circuit; and a controller for the signal controlling circuit operated and controlled by the controlling track circuit.



7. In an electric signaling system for railways, the combination of a supply track circuit including a transformer; a generator therefor; a controlling track circuit; a signal; an operating circuit therefor; a signal controlling circuit; and a controller for the signal controlling circuit operated and controlled by the controlling track circuit.

8. In an electric signaling system for railways, the combination of a supply track circuit including a transformer; a generator therefor; a controlling track circuit including a transformer; a signal; an operating circuit therefor; a signal controlling circuit; and a controller for the signal controlling circuit operated and controlled by the controlling track circuit.

9. In an electric signaling system for railways, the combination of a supply track circuit including a transformer; a generator therefor on a train; a controlling track circuit including a transformer; a signal; an operating circuit therefor; a signal controlling circuit; and a controller for the signal controlling circuit operated and controlled by the controlling track circuit.

10. In an electric signaling system for railways, the combination of a signal; an operating circuit therefor; a controlling circuit therefor including a controller for the operating circuit; a controller for the controlling circuit; a circuit breaking train contact and a controller circuit closer in the controlling circuit.

11. In an electric signaling system for railways, the combination of a signal; a signal operating circuit; a normally closed signal controlling circuit; a controller for the signal operating circuit; a controller for the signal controlling circuit; a circuit breaking train contact operating to break the normal controlling circuit when the train reaches a predetermined point.

12. In an electric signaling system for railways, the combination of a signaling circuit; a controlling circuit therefor normally including a generator; a controller for the controlling circuit; and a circuit breaking train contact and a circuit closer operated by the controller in the normal controlling circuit.

13. In an electric block signaling system for railways, the combination of a supply track circuit; a generator therefor; a controlling track circuit comprising a track contact at the entrance to the preceding block, a second track contact at the end of the preceding block, one rail of the block, a transformer and a return rail; a signal operating circuit on a train; a signal controlling circuit on a train; a controller for the signal controlling circuit operated and controlled by the controlling track circuit.

14. In an electric signaling system for railways, the combination of a local signal controlling circuit including a controller for said controlling circuit; a circuit closer operated by said controller; an equalizing shunt resistance associated with said circuit closer; and a circuit breaking train contact for said controlling circuit.

15. In an electric signaling system for railways, the combination of a signal controlling circuit on a train normally including a local generator; a track circuit; a circuit breaking train contact operating to cut out the local generator from the controlling circuit and to cut in the track circuit when the train reaches a predetermined point.

16. In an electric block signaling system for railways, the combination of a supply track circuit including a track contact, one coil of a transformer and one rail of the block; a generator therefor on a train; a controlling track circuit including a track contact, the other coil of the transformer and both rails of the block; a signal on the train; a signal operating circuit on the train; a signal controlling circuit on the train normally including and closed through the generator, a signal controller, a controller for the controlling circuit, a circuit breaking train contact, and a circuit closer operated by the said controlling circuit controller; and said circuit breaking train contact, when the train reaches a predetermined point, operating to cut out the generator from the controlling circuit and cut into the controlling circuit the controlling track circuit.

17. In an electric signaling system for railways, the combination of a generator on a train; a transformer in the block arranged to be energized by said train generator; a controlling track circuit including said transformer and a track contact; a signal and a signal operating circuit on the train; a signal controlling circuit on the train normally closed through a signal controller, a magnetic controller for the controlling circuit, a circuit breaking train contact, a circuit closer operated by said magnetic controller, and the generator; said circuit breaking train contact operating, when the train reaches a predetermined point, to cut the controlling track circuit into the said controlling circuit on the train and to break the normal controlling circuit on the train at two points in case of "danger."

18. In an electric signaling system for railways, the combination of a generator on a train; a controlling track circuit operated by said generator, including two separated track contacts; a signal controlling circuit on the train normally including the train generator, a controller for the said controlling circuit on the train, a circuit closer operated by said controller and a circuit breaking train contact; said train contact operatively engaging each of the track contacts when the train reaches predetermined points, then breaking the normal signal controlling circuit on the train and cutting the controlling track circuit into said signal controlling circuit on the train and in case of danger breaking said controlling circuit on the train at two points.

19. In an electric block signaling system for railways, the combination of a controlling track circuit for each block; a normally closed controlling circuit on a train; means in advance of each protected block to break the normal signal controlling circuit on the train at two points and to cut the controlling track circuit into said signal controlling circuit on the train.

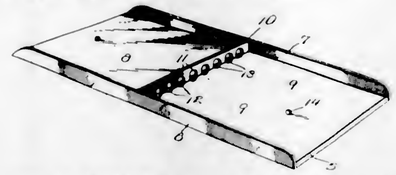
20. In an electric block signaling system for railways, the combination of a controlling track circuit for each block; a normally closed controlling circuit on a train; a plurality of separated means in advance of each protected block each to break the normal signal controlling circuit on the train at two points and to cut the controlling track circuit into said signal controlling circuit on the train.

21. In an electric block signaling system for railways, the combination of a normally closed signal controlling circuit on a train; means on the train to break the normal signal controlling circuit at two points when the train reaches a predetermined position in advance of a protected block; a controlling track circuit at the protected block independently to operate the signal controlling circuit on the train and then cause it to assume its normal condition when and only when the block is safe.

22. In an electric signaling system for railways, the combination of a supply circuit; an alternating generator therefor; a controlling track circuit; a signal; an operating circuit therefor; a signal controlling circuit; and a magnetic controller for the signal controlling circuit operable and controllable by alternating current from the controlling track circuit.

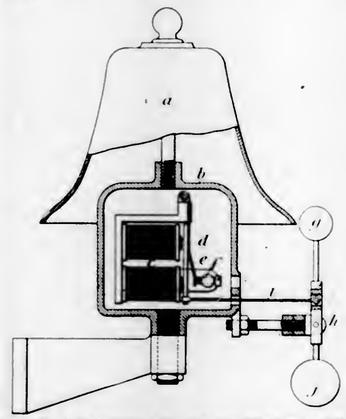
23. In an electric signaling system for railways, the combination of a supply track circuit; an alternating generator therefor on a train; a controlling track circuit; a signal; an operating circuit therefor; a signal controlling circuit; and a magnetic controller for the signal controlling circuit operable and controllable by alternating current from the controlling track circuit.

855,728. GAME. DARIUS C. PINGREY, Janesville, Iowa. Filed Nov. 19, 1904. Serial No. 233,444.



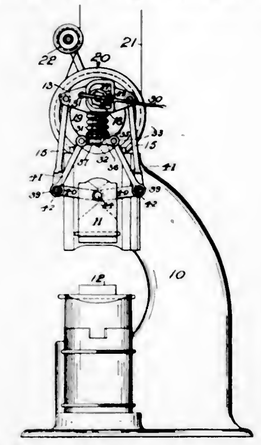
Claim.—A game-board comprising a base-board having a series of concavities located at the transverse middle thereof, vertical sides secured to the edges of said board and extending above the same and throughout the entire length thereof and a division piece secured at its ends to the said sides and resting with its lower edges upon the upper face of said board, said division piece being provided in its lower edge with a series of arch notches in registration with the said concavities in the board, the said board being free of obstructions upon either side of said division piece.

855,729. ELECTRIC BELL. MARCUS PLATO, London, England, assignor of one-half to Arthur William Macleod, London, England. Filed Oct. 6, 1904. Serial No. 227,429.



Claim.—In an electric bell, the combination with a supporting frame, of a trembling mechanism attached thereto and including among its members an electro magnet and a movable armature therefor, a bell supported by said frame, a counter balanced hammer pivotally supported by said frame adjacent to the edge of the bell and a link connecting said hammer with the movable armature of the trembling mechanism, substantially as described.

855,730. POWER-HAMMER. OLIVER B. REYNOLDS, Elgin, Ill. Filed Dec. 11, 1905. Serial No. 291,234.



Claim—1. In a power hammer the combination of a hammer or ram, a driver therefor, hammer suspending means including a pitman head, said head having an open center, and interengaging toothed members between the driver and the pitman head for adjusting the throw of the hammer, said members including a toothed sleeve mounted in the open center of the pitman head, a rack surface on said head engaged by the sleeve, and means for locking the sleeve in position.

2. In a power hammer the combination of a hammer or ram, hammer suspending means, a power-driven wrist-pin member, a sleeve on said member having a toothed surface, a toothed surface on a member of the suspending means engaged by said sleeve, and means whereby the sleeve may be adjusted to vary the throw of the hammer, and means for locking the sleeve in its adjusted position.

3. In a power hammer, the combination with a suspended hammer, of a pitman head having an open center provided with a rack surface, a wrist pin extending through said open center of the head, a sleeve turnable on said pin having teeth to engage said rack surface, and means for locking the sleeve in its adjusted position.

4. In a power hammer, the combination with a suspended hammer, of a pitman head having an open center, provided with a rack surface, a wrist-pin passing through the open center of the head, a sleeve on said pin having teeth to engage the rack surface, said sleeve being turnable on the wrist pin to vary the throw of the hammer, and means for fixedly securing the sleeve in its adjusted position.

5. In a power hammer, the combination with a suspended hammer, of a pitman head having a central opening, a wrist-pin operable in said opening, a sleeve on the pin, said sleeve having teeth and a wall of the opening having a rack surface engaged thereby, said sleeve being adjustable relative to the rack surface to vary the throw of the hammer and means disposed between the sleeve and a wall of said central opening for locking the sleeve to the rack surface after adjustment.

6. In a power hammer, the combination with a suspended hammer, of a pitman head having a central opening provided with a rack surface, a wrist-pin operable in said opening and provided with a loose sleeve, said sleeve

having teeth to engage said rack surface and being adjustable relative thereto to vary the throw of the hammer, a shoe in the opening between the wall thereof and said sleeve, a wedge and a wedge-operating means for locking the sleeve in its adjusted position to said head.

7. In a power hammer, the combination with a suspended hammer, of a pitman head therefor said head having an opening in its central portion, a wrist pin extending through said opening, a sleeve mounted on the pin said sleeve having a portion of its surface provided with teeth and one of the walls of said opening having a rack to be engaged by said teeth, flanges at opposite ends of the sleeve for holding it against longitudinal movement, one of said flanges being rigid with the sleeve and the other flange removably secured, a shoe bearing upon the sleeve, and a wedge and operating lever for moving the shoe to lock the adjusted sleeve to said head.

8. In a power hammer, the combination with the hammer and the hammer operating means, of a pitman head interposed therebetween, a spring contacting with the pitman head, flexible connections between the pitman head and hammer, and other connections including eccentric members and push bars between the first-named connections and the spring, whereby a superior compression of the spring is obtained during the final part of the upward travel of the hammer and an inferior compression is obtained during the final part of the downward travel of said hammer.

9. In a power hammer, the combination of a hammer, hammer operating means, a pitman head, a spring contacting with the pitman head, a flexible connection between the head and the hammer and connections between the hammer and the spring said last-named connections including eccentric members turnable by and in unison with the reciprocations of the hammer and adapted to compress the spring to a lesser extent on the final part of the movement of the hammer in a downward direction than on the corresponding part of the upward movement thereof.

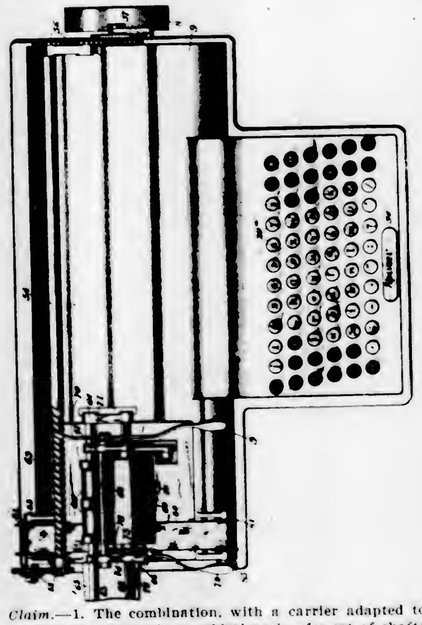
10. In a power hammer the combination with the hammer and hammer operating means, of a pitman head, arms depending therefrom, links connecting with the outer ends of said arms, a single bolt pivotally connecting the inner ends of said links to the hammer whereby said ends move together in the same direction, a slidably mounted head and a spring or cushion between the same and the pitman head, and bars connecting the outer ends of the links with the slidable head said links having eccentric hub portions operating upon the rods to move them in the direction of their length and said hubs adapted to cause the bars to compress the spring to a greater extent on the final portion of the upward movement of the hammer than on the final portion of the downward movement.

11. In a power hammer, the combination of a hammer or ram, oppositely extending links having overlapping inner ends pivoted at a single point to the hammer said links having eccentric hub portions at their outer ends, pivoted arms to which the outer ends of the links are connected, a pitman head connecting the arms, means for operating the pitman head, a post depending from the pitman head, a slidable head guided on the post, a spring surrounding the post and confined between the pitman head and slidable head, and bars connected to the slidable head and extending to and journaled on the eccentric hubs of the links, said hubs, when the links are flexed downward, operating through the bars to compress the spring less on the final portion of the downward movement of the hammer than on the final portion of the upward movement thereof.

12. In a power hammer the combination with the hammer and complementary hammer suspending means including a pitman head, links depending therefrom oppositely extending links having their outer ends pivotally connected to the first-named links, said second links having their inner ends pivoted to the hammer by a single pivot and having eccentric portions on their outer ends, a spring in the hammer connections, a slidably mounted head operating upwardly against said spring, and push bars having lower portions mounted on the eccentric portions of the links and having upper ends connected to the slidable head, said eccentric portions so arranged that the downward flexure of the links will enable the bars to move downwardly and the spring to be compressed less than when the links are flexed upwardly.

13. In a power hammer the combination with the hammer and complementary hammer suspending means including a pitman head, links depending therefrom oppositely extending links having their outer ends pivotally connected to the first-named links, said second links having their inner ends pivoted to the hammer by a single pivot and having eccentric portions on their outer ends, a spring in the hammer connections, a slidably mounted head operating upwardly against said spring, and push bars having lower portions mounted on the eccentric portions of the links and having upper ends connected to the slidable head, said eccentric portions so arranged that the downward flexure of the links will enable the bars to move downwardly and the spring to be compressed less than when the links are flexed upwardly, and means for adjusting the tension of said spring.

835,731. TYPOGRAPHIC MACHINE. FRANCIS H. RICHARDS, Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation, a Corporation of New Jersey. Filed Jan. 9, 1901. Renewed Apr. 28, 1902. Serial No. 104,917.



Claim.—1. The combination, with a carrier adapted to move in a closed circuit or orbital path, of a set of shafts mounted one within the other and which are capable of independent rotation, and means located upon one side of a fixed plane for moving the set of shafts as a unit in opposite directions with respect to said plane.

2. The combination, with a carrier adapted to move in a closed circuit or orbital path, of a set of shafts mounted one within the other and which are capable of independent rotation; impressors attached to said shafts; and means located upon one side of a fixed plane for moving the set of shafts as a unit in opposite directions with respect to said plane.

3. The combination, with a carrier adapted to move in a closed circuit or orbital path, of a set of shafts mounted

one within the other and which are capable of independent rotation; impressors attached to said shafts; and means located upon one side of a fixed plane for moving the set of shafts as a unit axially in opposite directions with respect to said plane and for rotating a particular shaft in the set.

4. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of independent rotation, and means located upon one side of a fixed plane for moving the set of shafts as a unit in opposite directions with respect to said plane.

5. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of independent rotation; impressors attached to said shafts; and means located upon one side of a fixed plane for moving the set of shafts as a unit in opposite directions with respect to said plane.

6. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of independent rotation; impressors attached to said shafts; means located upon one side of a fixed plane for moving the set of shafts as a unit axially in opposite directions with respect to said plane and for rotating a particular shaft in the set.

7. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; and means located upon one side of a fixed plane for moving a gear-wheel axially for the purpose of rotating a shaft.

8. The combination, with a rotary carrier, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; a starting arm moving in unison with each gear-wheel for initiating the rotary movement thereof; and an actuating member and coacting member for shifting a gear-wheel axially to effect its continued rotation.

9. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; and an actuating member and coacting member for shifting each gear-wheel axially into engagement with its driver to effect its continued rotation.

10. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; selective devices for coacting with each arm; and an actuating member and coacting member for shifting a gear-wheel axially into engagement with its driver to effect its continued rotation.

11. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; selective devices for coacting with each starting-arm; an actuating member and coacting member for shifting a gear-wheel axially into engagement with its driver to effect its continued rotation; means comprising a notched disk or wheel; a rock-shaft; and a pin or projection adapted to engage with a notch in the disk and thereby actuate the rock-shaft for causing a feeding movement when a gear-wheel is shifted axially.

12. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; selective devices for coacting with each starting-arm; an actuating member and coacting member for shifting a gear-wheel axially into engagement with its driver to effect its continued rotation; means comprising a series of notches on a gear-wheel; a rock-shaft; and a pin or projection adapted to engage with one of the notches for causing a feeding movement when a gear-wheel is shifted axially.

13. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; selective devices for coacting with each starting-arm; an actuating member and coacting member for shifting a gear-wheel axially into engagement with its driver to effect its continued rotation; means comprising a notched disk or wheel; a rock-shaft; and a pin or projection adapted to engage with a notch in the disk and thereby actuate the rock-shaft for causing a feeding movement when a gear-wheel is shifted axially.

14. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; selective devices for coacting with each starting-arm; an actuating member and coacting member for shifting a gear-wheel axially into engagement with its driver to effect its continued rotation; means comprising a series of notches on a gear-wheel; a rock-shaft; and a pin or projection adapted to engage with one of the notches for causing a feeding movement when a gear-wheel is shifted axially.

15. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; selective devices for coacting with each starting-arm; an actuating member and coacting member for shifting a gear-wheel axially into engagement with its driver to effect its continued rotation; and means comprising a disk or wheel having notches of different radial depths for causing a feeding movement when a gear-wheel is shifted axially.

16. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the others; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; selective devices for coacting with each starting-arm; an actuating member and coacting member for shifting a gear-wheel axially into engagement with its driver to effect its continued rotation; means comprising a disk or wheel having notches of different radial depths; a rock-shaft; and a pin or projection adapted to engage with a notch in the disk and thereby actuate the rock-shaft for causing a feeding movement when a gear-wheel is shifted axially.

17. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of being shifted axially as a unit; impressors attached to said shafts; gear-wheels for rotating each shaft independently of the other; means for driving said gear-wheels; a starting-arm moving in unison with each gear-wheel for initiating the rotary movement thereof; selective devices for coacting with said starting-arm; an actuating member and coacting member for shifting a gear-wheel axially into engagement with its driver to effect its continued rotation; means for shifting the gear-wheel out of engagement with its driver; and means for causing a feeding movement when a gear-wheel is shifted axially in one direction.

18. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are

capable of independent rotation; impressors attached to said shafts and which lie normally to the side of the operative plane and also therein; gear-wheels for rotating said shafts and impressors; and means for shifting an impressor lying on one side of the operative plane thereinto when it is desired that an impression shall be made by said impressor.

19. The combination, with a rotary carrier or turret, of shafts mounted one within the other and which are capable of independent rotation; impressors attached to said shafts which lie normally to the side of the operative plane and also therein; means for shifting an impressor lying outside of said plane thereinto when it is desired that an impression shall be made; and means for causing a feeding movement when an impressor is rotated.

20. The combination, with a rotary carrier or turret, of a set of shafts mounted one within the other and which are capable of independent rotation; impressors attached to said shafts and which lie normally to the side of the operative plane and also therein; means for shifting an impressor lying outside of said plane thereinto when it is desired that an impression shall be made, and for also rotating said impressor when so shifted; and means for rotating an impressor lying normally in the operative plane when it is desired that an impression shall be made by this impressor.

21. A set of assembled shafts having flanges increasing in diameter from the flange of the inmost shaft to the flange of the outer shaft.

22. A set of assembled shafts, in combination with impressors having central openings increasing in diameter from the opening of the impressor attached to the inmost shaft to the opening of the impressor attached to the outer shaft.

23. A set of assembled shafts having grooved or channeled flanges, which flanges increase in diameter from the flange of the inmost shaft to the flange of the outer shaft, in combination, with impressors secured to said flanges.

24. The combination, of an inmost shaft provided with a grooved flange; an intermediate shaft also provided with a grooved flange, said latter flange having a larger diameter than the flange of the inmost shaft; an outer shaft also provided with a grooved flange whose diameter is larger than the diameter of the flange of the inmost shaft; impressors adapted to fit said flanges; and fastening screws for securing them in place.

25. The combination with a plurality of orbitally movable selective devices assembled in a number of sets, of mechanism for shifting the said plurality of devices as a unit, and for shifting that set of said devices in which the selected device is comprised, to bring said selected device, to the exclusion of all others, to its working position.

26. The combination with a plurality of orbitally movable selective devices assembled in a number of sets, of mechanism for simultaneously shifting the said plurality of devices as a unit and that one of said sets in which the selected device is comprised, to bring said selected device, to the exclusion of all others, to its working position.

27. The combination with a plurality of orbitally movable selective devices assembled in a number of sets, of means for shifting the said plurality or devices as a unit, and for shifting the proper one of said sets of devices to bring a selected device to the exclusion of all others, to its working position; and a selective mechanism for controlling the amount of such unital shifting of the devices and the particular one of said sets so shifted.

28. The combination with a plurality of orbitally movable selective devices assembled in a number of sets, of means for simultaneously shifting the said plurality of devices as a unit, and for shifting the proper one of said sets of devices, to bring a selected device to the exclusion of the others to its working position; and a selective mechanism for controlling the amount of such unital shifting of the devices and the particular one of said sets so shifted.

29. The combination with an orbitally movable main carrier comprising a plurality of carrier-sections, of a plurality of selective devices mounted on the main carrier and comprising a plurality of sets of such devices, each set being mounted upon a carrier-section; and mechanism for shifting the main carrier and for shifting that one of said carrier-sections on which the selected device is mounted to thereby bring said selected device to the exclusion of all others to its working position.

30. The combination with an orbitally movable main carrier comprising a plurality of rotatably shiftable carrier-sections, of a plurality of selective devices mounted on the main carrier and comprising a plurality of sets of such devices, each set being mounted upon one of said carrier-sections; and mechanism for shifting said main carrier axially to bring that carrier-section upon which the selected device is mounted into the plane of the working point and for rotatably shifting such carrier-section to bring the selected device to its working position.

31. The combination with a rotatably and orbitally movable impression device carrier, of selective mechanism for shifting said carrier rotatably and axially to bring the selected device into the plane of the working point.

32. The combination with a rotatably and orbitally movable impression device carrier, of selective mechanism for shifting said carrier, rotatably and axially to bring the selected device into the plane of the working point, and a detent for yieldingly holding the carrier in its axial position.

33. The combination with a rotatably and orbitally movable impression device carrier, of a shaft on which the carrier is mounted, a starting arm extending from the shaft, means for rotating the impression device carrier predetermined angular distances and loading the same thereat.

34. The combination with a rotary carrier or turret, of a plurality of sets of shafts carried thereby and mounted one within the other and which are capable of being shifted axially as a unit and also individually and which are also capable of conjoint and individual rotation and revolution, and means to actuate said shafts.

35. The combination with a rotatable and orbitally movable impression device, of selective mechanism carried thereby for shifting said carrier revolubly and axially to bring selected devices into the plane and angular position of the working point and yieldable means to hold the carrier in its axial and angular positions of adjustment.

36. The combination with an orbitally movable impression device carrier shiftable in transverse directions, of selective mechanism for shifting the same in each of said directions for bringing a selected impression device into the plane of the working point.

37. The combination with an impression device carrier, of means for orbitally moving the same, said device being shiftable thereon in two directions transverse to each other, and a selective mechanism for so shifting said carrier upon said means for bringing a selected impression device into the plane of the working point.

38. The combination of a plurality of selective devices, assembled in a plurality of groups and a number of said groups assembled in duplicate sets, mechanism for shifting the devices of each set in unison, and for individually shifting that group of said devices in which the selected device is comprised which first passes said shifting actuator to bring said selected device, to the exclusion of all others, to its working position.

39. The combination of a plurality of selective devices, some of which are duplicates, assembled in a plurality of groups, duplicates assembled in different sets, mechanism for transporting the devices in unison of either sets containing the duplicates, and for transporting either of those groups of said devices in which the selected device is comprised, when passing said transporting actuator to bring one of the duplicates of said selected device, to the exclusion of all others, to its working position.

40. The combination with a plurality of orbitally movable selective devices assembled in a number of sets, and said sets assembled into a number of groups, of means for simultaneously transporting the said devices in a group of sets as a unit from the plane of its orbit, and for transporting the proper one of said sets of devices, to bring a selected device to the exclusion of the others to its working position, and a selective mechanism for controlling the amount of such initial transportation of the devices and the particular one of said sets so transported.

41. The combination of a plurality of selective devices assembled in a number of sets, the sets upon opposite sides being duplicates, one of the other, and a carrier for supporting said sets and passing them through an orbit.

42. The combination with a rotatable carrier, of a plurality of selective devices arranged in a number of sets and carried thereby and whereby the sets will be passed through an orbit, the devices at one portion of such carrier being duplicates of those at another portion thereof, and means for controlling the position of one of the sets containing a selected device for bringing the same to its working point and effective upon the first one of said sets passing said controlling means.

43. The combination with a rotary carrier, of a plurality of dies carried thereby and embodying duplicates, a plurality of disks for carrying said dies and disposed in a number of concentric groups at various points about said carrier, and means for rotating each disk independently of the others, for bringing the selected die into working position from the set containing the same which first passes the point of operation of the said actuator.

44. The combination with a rotary carrier, of a plurality of impression devices, some of which are duplicates one of another, a plurality of shafts mounted upon said carrier in a number of concentric groups, a disk upon each of said shafts, said impression devices being mounted upon said disks, the duplicates being upon disks diametrically disposed to each other, a detent upon each shaft, the detents of duplicates traveling in the same radial plane, a number of latches for engaging the detents and arranged in groups disposed in radial planes, and means for actuating the latches.

45. The combination with a rotatable carrier, of a plurality of impression devices, some of which are duplicates, a plurality of disks upon the perimeter of each of which a set of said dies is mounted, said disks being arranged in a number of groups, shafts for carrying said disks, the shafts for the disks in each group being mounted concentrically one of the other, and the duplicates being disposed in groups on opposite sides of said carrier, detents upon the shafts, the detents upon the shafts carrying the duplicates being arranged to travel in the same orbit, and actuators one for each die and arranged to be interposed in the orbit traveled by the detents upon the shaft which they are intended to actuate.

46. The combination with a rotatable carrier, of a plurality of impression devices, some of which are duplicates, a plurality of disks carried by said carrier and upon the perimeter of each of which disks a set of said dies is mounted, the arrangement of said mounting leaving a portion of the perimeter blank or free of impression devices, said disks being arranged in a number of groups, the disks in each group being in axial alinement, shafts for carrying said disks, the shafts for the disks in each group being mounted concentrically one of the other, and the duplicates of the impression devices being disposed in groups on opposite sides of said carrier, means for normally holding the blank or free portions of said disks in alinement, detents upon the shafts, the detents upon the shafts carrying the duplicates being arranged to travel in the same orbit, and actuators one for each die and arranged to be interposed in the orbit traveled by the detents upon the shaft which they are intended to actuate for shifting the selected device into alinement with the blank portions of the other disks in its group.

47. The combination with a plurality of impression devices, of a number of carriers therefor, arranged in close proximity, one to another, means for severally shifting said carriers to a predetermined uniform position of rest with a free portion adjacent to the working position.

48. The combination with a plurality of impression devices, of a number of carriers therefor, each carrier having a portion free of said impression devices, means for normally maintaining said carriers at a predetermined position of rest with a free portion presented toward the working position, and means for shifting a selected one of the said carriers to bring a selected impression device thereon into the working position.

49. The combination with a plurality of carriers, a number of impression devices arranged upon each of the carriers and each carrier having a space free from said impression devices, means for normally returning said free spaces to position toward the working point, and means for shifting one of said carriers to bring a device thereon opposite to the free spaces from the other carriers.

50. The combination with a number of disks, each having a portion of its perimeter cut away, a number of dies upon the uncut-away portions of the perimeters of said disks, said disks being mounted side by side in axial alinement, means for shifting said disks so that their cut-away portions will normally come adjacent to the working position and means for shifting a selected disk for bringing a selected die thereon to the working position while the cut-away portions of the other disks remain at such working position.

51. The combination with three or more disks arranged in axial alinement and each having a portion of its perimeter cut-away, a series of dies, several of which are arranged upon the uncut-away portion of the perimeter of each disk, means for normally holding the cut-away portions of the disks in alinement, means for shifting said set of disks in an axial direction, for bringing a disk having the selected die above the working position and means for rotating said selected disk for bringing the die thereon into the working position and into the position normally occupied by the cut-away portion of said disk.

52. The combination with a plurality of impression devices, a number of carriers therefor, each of the carriers normally presenting a blank portion at the region of the working point, and means for shifting the carriers for bringing a selected carrier and the selected device thereon to the working position while maintaining the blank portions of the other carriers at such position.

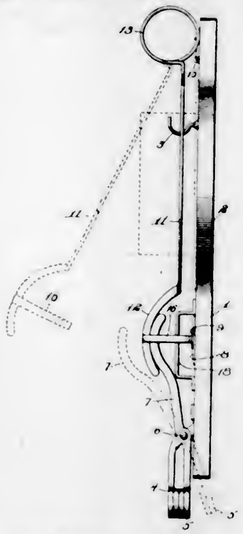
53. The combination with a plurality of impression devices, of a number of carriers therefor, means for normally maintaining said carriers in a position for holding the impression devices in an idle position, means for shifting all of said carriers for bringing the carrier containing the selected device into working position, and means for shifting said carrier for bringing the said selected device into working position.

54. The combination with a plurality of impression devices, of a number of axially and rotarily shiftable carriers therefor, means for normally maintaining said carriers in a position for holding the impression devices in idle positions, means for axially shifting all of said carriers for bringing the carrier containing the selected device into working position, and means for rotarily shifting the said carrier for bringing the said selected device into working position.

55. The combination with a plurality of impression devices, of a number of carriers upon which said impression devices are mounted, the disposition thereof being such that each of the carriers has a blank portion, means for normally holding said carriers with the blank portions at the region of the working point, means for shifting all the carriers for bringing the carrier carrying the selected device into working position, and means for shifting the said carrier for bringing said selected device into working position.

56. The combination with a plurality of impression devices, of a number of carriers upon which said impression devices are mounted, the disposition thereof being such that each of the carriers has a blank portion, means for normally holding said carriers with the blank portion at the region of the working point, means operative upon all the carriers for shifting these for bringing the carrier carrying the selected device into working position, and means individually operative upon said carrier for bringing said selected device into working position.

855,732. HAT AND COAT RACK. RODERICK ROSE, Yonkers, and PHILIP BAADY, North Tarrytown, N. Y. Filed June 20, 1906. Serial No. 322,617.



Claim.—1. In a device of the class described, a base, a hat receiving member carried thereby, a movable guard member adapted to overlie the hat for retaining the same on the member, a pair of relatively movable garment engaging devices attached to the base, means on the guard member for holding the garment engaging members in engaging position, and means for locking the guard against movement.

2. In a device of the class described, a base, a hat supporting member fixed on the base, a movable guard member adapted for retaining the hat in position on the supporting member, said guard member being provided with a bearing portion, a pair of co-operating relatively movable clamping members carried by the base and adapted for engagement with a garment, one of said members having a bearing portion adapted to be acted upon by the bearing portion of the guard member to hold the clamps in engaging position, and means for locking the guard member against movement.

3. In a device of the class described, a base, a hat receiving hook fixed on the base, a movable guard member carried by the base and adapted to maintain the hat in position on the hook, said guard member being provided with a projecting bearing portion, a pair of relatively movable garment clamping members attached to the base, one of said members being provided with a projecting bearing portion adapted to be acted upon by the bearing portion of the guard member to move the members to clamping position, and means for locking the guard against movement in retaining position.

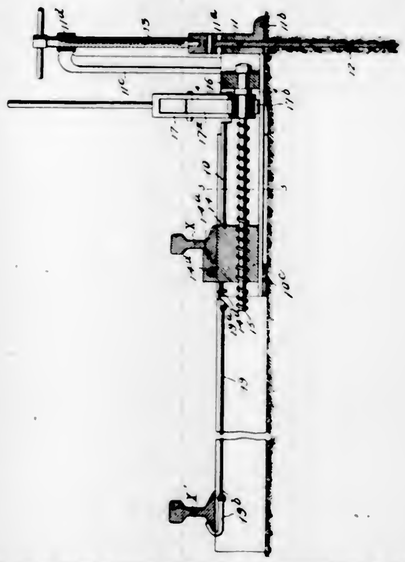
855,733. TRACK-ALINING APPARATUS. FRANK B. SHAW and JOHN M. EBERLE, Warsaw, Ind. Filed Dec. 7, 1906. Serial No. 346,790.

Claim.—1. In a track alining apparatus, in combination, a frame, means thereon to apply pressure to a track, and a concave anchor blade connected to the frame and adapted to be driven into the ground.

2. In a track alining apparatus, in combination, a frame having a curved slot therein, means on the frame to apply pressure to a track, and a curved anchor blade slidable up and down through the slot.

3. In a track alining apparatus, in combination, a frame having at the inner end a pair of guide bars adapted to be placed under a rail of the track and having an anchor at the outer end, a block slidable on the bars and having means to engage the rail base, and means mounted upon the frame to forcibly move the block, to shift the track.

4. In a track alining apparatus, in combination, a frame having guides at the inner end and a bearing at the outer end, means to anchor the frame to the ground, a screw held in the bearing, a ratchet and lever connected to the screw, to turn the same, and a traveling block carried by the screw, in the guides, and having means to engage a rail.



5. In a track alining apparatus, in combination, a pair of guide bars adapted to be inserted under a rail of the track, a ground engaging anchor at the outer ends of the bars, a block slidable between the inner ends of the bars and having means to engage the rail base, a screw extending through the block and having a thrust bearing box secured to the bars, and means to turn the screw.

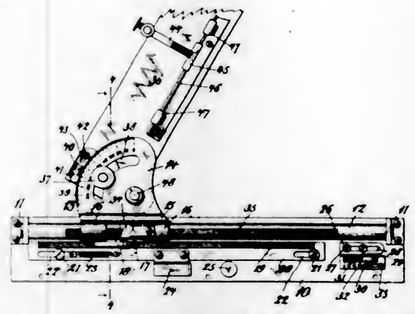
6. In a track alining apparatus, in combination, a pair of guide bars adapted to be inserted between the ties and under the rail of the track, means to anchor the bars to the ground, a block slidable between the bars and having means to engage the rail base and also having lateral projections adapted to rest upon the ties, and a screw connected to the block and having operating means, to move the block.

7. In a track alining apparatus, in combination, a frame, a block slidable thereon and having means to engage one rail, an earth engaging anchor connected to the frame, means to slide the block, and a cable connected to the block and having means to engage the other rail.

855,734. DRAWING INSTRUMENT. COLEMAN A. TERRY, New York, N. Y. Filed July 10, 1906. Serial No. 325,462.

Claim.—1. An instrument of the class described comprising a base plate, a stationary rod or bar arranged longitudinally thereon, a bearing member arranged to slide longitudinally upon said bar from substantially one end to the other, a plate mounted upon said base plate arranged to have a limited longitudinal movement thereon, means connecting said plate and bearing member together when the former is moving in one direction, and a spring for returning said plate to a normal position.

2. An instrument of the class described comprising a base plate, a bearing member arranged to slide longitudinally with respect thereto, a toothed plate mounted upon said base plate arranged to have a limited longitudinal movement thereon, a pawl mounted upon said bearing member and engaging the teeth of said plate, a finger piece by which said plate may be moved in one direction, and a spring for moving the same in the opposite direction.



3. An instrument of the class described comprising a base plate, a bearing member arranged to slide longitudinally with respect thereto, a toothed plate mounted upon said base plate arranged to have a limited longitudinal movement thereon, a pawl mounted upon said bearing member and engaging the teeth of said plate, a finger piece by which said plate may be moved in one direction, an adjustable stop for limiting the movement of said plate in such direction, and a spring for moving the same in the opposite direction.

4. An instrument of the class described comprising a base plate, a stationary rod or bar arranged longitudinally thereon, a bearing member arranged to slide longitudinally upon said bar from substantially one end to the other, a plate mounted upon said base plate arranged to have a limited longitudinal movement thereon, means connecting said plate and bearing member together when the former is moving in one direction, means carried by said member engaging said bar to prevent movement of the bearing member when the plate is moved in the opposite direction, and a spring for moving the said bar in the said opposite direction.

5. An instrument of the class described comprising a base plate, a rod or bar secured longitudinally thereon, a bearing member comprising a flat plate having flanges 16 bent up therefrom and around said rod or bar to accurately fit same, a pawl carried by said bearing member, a plate mounted upon said base plate arranged to have a limited longitudinal movement thereon, the said plate having teeth engaged by the pawl upon said bearing member, a spring for moving the said plate in one direction, and an adjustable stop for limiting the movement of the plate in the other direction.

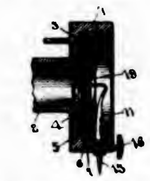
6. In an instrument of the class described, the combination with a reciprocating plate and a bearing member adapted to be operated thereby in one direction, of a stop for said reciprocating plate, said stop comprising two members, one adjustable with respect to a fixed point in the device, and the other adjustable with respect to the first said member.

855,735. FLUE-PLUGGING DEVICE. WILLIAM H. TRACY, Folkston, Ga. Filed Oct. 19 1906. Serial No. 339,592.



Claim.—A device for plugging boiler-flues, consisting of a tube having a forwardly-open enlargement at its forward end for the reception of the butt-end portion of a plug, a plugging rod endwise movable in said tube and having an enlarged forward end, and a stop projecting inward from the wall of the tube in rear of said enlarged forward end and adapted to co-operate therewith to prevent the rod sliding rearward out of the tube.

855,736. SOUND-BOX FOR TALKING-MACHINES. LOUIS P. VALIQUET, New York, N. Y., assignor to The Victor Talking Machine Company, a Corporation of New York. Filed Jan. 12, 1904. Serial No. 188,805.



Claim.—1. In a sound box for talking machines, the combination of a diaphragm and a stylus bar having a double or reversed curve and having its inner end brought into operative relation with said diaphragm.

2. In a sound box for talking machines, the combination with a diaphragm, of a stylus bar gradually tapered toward its inner end, and having a double or reversed curve, said inner end being adapted to be connected to the diaphragm.

3. In a sound box for talking machines, a stylus bar which is gradually tapered toward its inner end, said end being curved outwardly on an arc of comparatively large radius and then curved inwardly on an arc of comparatively small radius to connect with the diaphragm on a line at substantially right angles to the plane thereof.

4. In a sound box for talking machines, the combination of a diaphragm and a stylus bar which is reduced in diameter toward its inner end, said reduced portion being bent out of the direct line first away from and then toward the point where it is connected with the diaphragm to increase its length in relation to the length of the radius of the sound box.

5. In a sound box for talking machines, a stylus bar having a reduced inner end, said end being curved outwardly, and then inwardly to be attached to said diaphragm and to form a resilient or yielding connection therefor.

6. In a sound box for talking machines, a stylus bar having a gradually reduced inner end which is adapted to be attached to the diaphragm, said end being curved outwardly, and then inwardly in a direction substantially at right angles to the axis of the stylus bar to form a resilient connection.

7. In a sound box for talking machines, a stylus bar having a tapering inner end, said inner end being bent outwardly, and then inwardly in a curve of small radius to connect with the diaphragm to form a resilient connection therewith.

8. In a sound box for talking machines, a stylus bar which is tapered toward its inner end, said end being bent outwardly and then curved inwardly to connect with the diaphragm and to form a resilient connection therewith.

9. In a sound box for talking machines, a stylus bar having an integral flange thereon, a fulcrum for said stylus bar comprising a torsion spring having a central collar held frictionally in position against the said flange on the stylus bar, said spring having annular ends adapted to be attached to the sound box casing.

10. In a sound box for talking machines, a stylus bar having an integral flange, a fulcrum for said stylus bar comprising a torsion spring having portions substantially in the plane of the axis of said stylus bar having a central collar adapted to be held frictionally in position against the flange on the stylus bar and having annular ends adapted to be attached to the sound box casing.

11. In a sound box, the combination with a diaphragm and a support for a stylus bar, of a stylus bar having a

double or reversed curve between its support and its point of connection with said diaphragm.

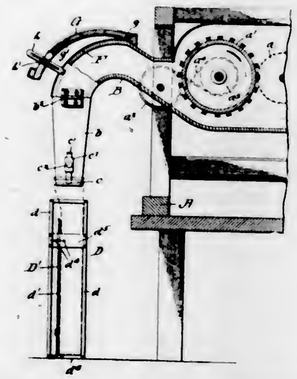
12. In a sound box, the combination with a diaphragm of a stylus bar having a double curve which extends first away from and then toward said diaphragm, the inner end of said stylus bar being adjacent said diaphragm.

13. In a sound box for talking machines the combination of a diaphragm and a stylus bar, said stylus bar having its inner end inclined outwardly away from the diaphragm, and then turned inwardly to be attached to said diaphragm, to form a resilient or yielding connection therefor.

14. In a sound box, a stylus bar having its inner extremity bent outwardly on a curve of relatively large radius and bent inwardly on a curve of relatively small radius.

15. In a sound box, a stylus bar tapered toward its inner extremity, the said stylus bar being bent outwardly on a curve of relatively large radius and being bent inwardly on a curve of relatively small radius.

855,737. MATTRESS-MAKING MACHINE. CHARLES W. WHITE, Waco, Tex. Filed May 26, 1906. Serial No. 318,937.



Claim.—1. In a machine of the character described, the combination of a flue, means for delivering fibrous material to said flue and forcing a blast of air through the same to carry the fibrous material to a mattress tick, and provisions for varying the amount of air passing through the flue to thereby regulate the density of mattress being formed in said tick.

2. In a machine of the character described, the combination of a flue, a tick holder connected thereto, means for delivering fibrous material to said flue and forcing a blast of air through the same to carry the fibrous material to a mattress tick, and provisions for varying the amount of air passing through the flue to thereby regulate the density of mattress being formed in said tick.

3. In a mattress making machine, the combination of means for picking or disintegrating fibrous material, a flue leading therefrom, a tick holder connected to said flue, means for forcing a current of air through said flue to carry the fibrous material into a mattress tick, and devices for varying the amount of air passing through the flue to thereby regulate the density of the mattress being formed.

4. In a mattress making machine, the combination of a flue, means for delivering fibrous material thereto and creating a blast of air therein to carry said fibrous material to a mattress tick, said flue having an opening in one wall thereof, and means for regulating the escape of air through said opening to control the density of the mattress being formed.

5. In a mattress making machine, the combination of a flue, having a screen covered opening in one wall thereof, a cover for said screen opening, means for delivering fibrous material into said flue and forcing a current of air therethrough for carrying the fibrous material into a mattress tick, and provisions for adjusting said cover to control the amount of air passing to the tick and the consequent density of the mattress being formed.

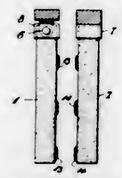
6. In a mattress making machine, the combination of a flue, means for delivering fibrous material thereto and creating a blast of air therein to carry said fibrous material to a mattress tick, a tick holder connected to said flue, said flue having an opening in one wall thereof, and means for regulating the escape of air through said opening to control the density of the mattress being formed.

7. In a mattress making machine, the combination of a flue, means for delivering fibrous material thereto and creating a blast of air therethrough to carry the fibrous material to a mattress tick, a mattress holder disposed adjacent the delivery end of the flue and into which the tick projects, said holder determining the size and character of the mattress being formed.

8. In a mattress making machine, the combination of a flue, means for delivering fibrous material thereto and creating a blast of air therethrough to carry the fibrous material to a mattress tick, a tick holder connected to the said flue, a mattress holder disposed adjacent the delivery end of the flue and into which the tick projects, said holder determining the size and character of the mattress being formed.

9. In a mattress making machine, the combination of a flue, means for delivering fibrous material thereto and creating a blast of air therethrough to carry the material to a mattress tick, and a mattress holder disposed below the flue and into which the tick extends, means for adjusting the size of the mattress holder to accord with the size and shape of mattress desired, so that the material may be blown directly into the closed end of the tick and the formation of lumps or wads be avoided.

855,738. ELECTRODE FOR ARC-LAMPS. SAMUEL P. WILBUR, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Dec. 6, 1902. Serial No. 134,081.



Claim.—1. An arc lamp electrode composed of carbon mixed with materials which form a slag during the operation of the lamp, in combination with a conducting projection forming an integral part of the said electrode and composed of material free from such slag-producing materials.

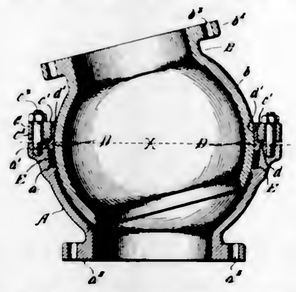
2. In an arc lamp, a pair of electrodes, one of which is adapted to make contact with the other for starting, and both electrodes being composed of carbon mixed with a substance adapted to produce a slag during the operation of the lamp, in combination with projections of conducting material free from such slag producing substances, the said projections being in line with each other on adjacent faces of the electrodes.

3. An arc lamp electrode composed of carbon mixed with materials which form a slag during the operation of the lamp, in combination with a conducting projection of carbon, the said projection forming an integral part of the said electrode.

4. In an arc lamp, a pair of electrodes, one of which is adapted to make contact with the other, and both electrodes being composed of carbon mixed with a substance adapted to produce a slag during the operation of the lamp, in combination with projections of carbon, the said projections being in line with each other on adjacent faces of the electrodes.

5. In an arc lamp, a pair of electrodes designed to be started by contact, the said electrodes being composed of carbon mixed with a substance adapted to produce a slag during the operation of the lamp, provided with conducting projections adapted to form a means of contact, the said projections being free from slag producing substances.

855,739. FLEXIBLE JOINT. GAVIN R. M. WILCOX, Newburgh, N. Y. Filed Nov. 30, 1906. Serial No. 345,818.



Claim.—1. In a flexible joint, the combination with the bowl section having an annular packing recess, a ball section provided with a substantially spherical portion, and a holding ring, of a bearing and packing ring having a portion within the said packing recess, and a portion extending outside of said bowl and lying between said holding ring and said spherical portion, said holding ring and said bearing and packing ring being provided the one with inclined portions constructed to engage the other for forcing the bearing and packing ring laterally into tight engagement with the said spherical portion and adjustable devices for connecting said holding ring to said bowl, substantially as described.

2. In a flexible joint, the combination with a part having a bowl, and provided with an annular packing recess within the bowl, of a part provided with a substantially spherical portion, a bearing and packing ring having portions extending on both sides of a plane perpendicular to the axis of said bowl and passing through the center of said spherical portion, said bearing and packing ring having a portion extending into said packing recess, and portions extending entirely outside of said bowl and having its inner face fitting said spherical portion, a holding ring surrounding the portions of the bearing and packing ring, outside of said bowl, bolts connecting said holding ring and bowl rigidly together, and a soft packing located in said packing recess and serving as a wiper for said bearing and packing ring, substantially as described.

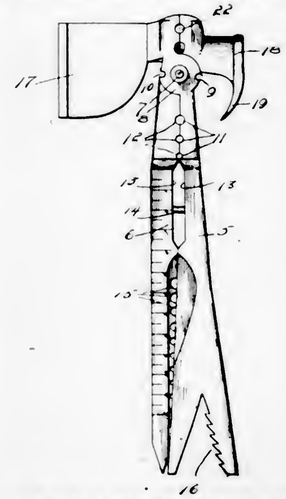
855,740. PLOW-CLEVIS. MAURICE C. ADKINS, Deer Head Cove, Ala. Filed Apr. 13, 1906. Serial No. 311,590.

Claim.—The combination with a plow beam, of a plate supported upon the beam above the same and in spaced relation with respect thereto, a clevis plate slidably disposed between the plate and the beam, the first named plate being provided with a plurality of slots, a block carried by the clevis plate and projecting through one of the slots in the plate with its upper face in a plane with the upper face of the plate, a hammer strap carried by the clevis plate and projecting upwardly through another of the slots in the slotted plate and having its upper end portion bent to extend over the upper face of the block, a whiffle-tree received between the upper face of the block and the bent portion of the hammer strap and supported upon the block and the slotted plate, a shaft journaled upon the beam, a pinion carried by the shaft and meshing with a rack formed in the clevis plate and within the limits of the same, and means for turning the shaft to shift the clevis plate.

855,740.



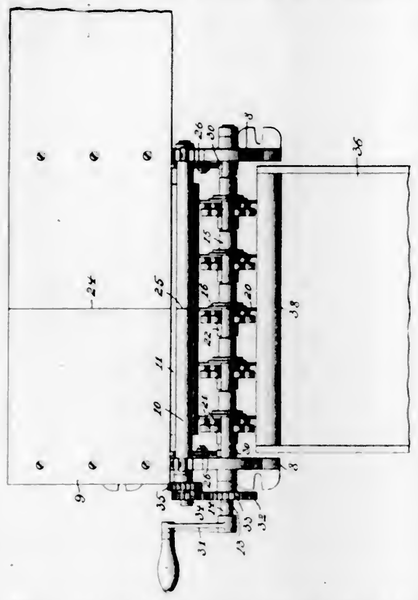
855,741. WIRE-WORKING TOOL. JOHN J. ALBERT, Danvers, Ill. Filed Feb. 14, 1906. Serial No. 301,039.



Claim.—A device of the class described comprising a pair of crossed pivoted handles having headed ends and having registering grooves formed in the opposing faces of their headed ends and opening through the forward end and adjacent the sides of the said headed ends, said grooves being extended rearwardly in diverging planes and opening through the sides of said headed ends, the said opposing faces of the headed ends of the tool being provided with registering grooves extending longitudinally of the tool and opening through the headed end thereof

and with transversely extending grooves which intersect the aforementioned grooves, substantially as described.

855,742. SLITTING-MACHINE. AARON ALLEN, Philadelphia, Pa. Filed Mar. 1, 1907. Serial No. 359,976.

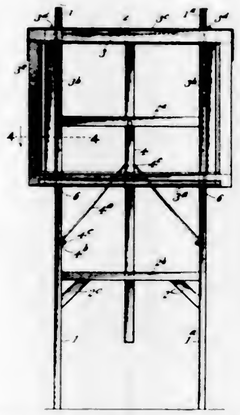


Claim.—In a machine of the character described, a table adapted to receive loose articles in sheet form to be cut and having a guide line, a pair of superposed guide rollers, whereof the upper roller is provided with a guide line arranged in alinement with the guide line of said table, a standard for supporting said table and guide rollers, a pair of superposed rotatable shafts arranged in said standards, cams carried by one of said shafts, a series of pairs of knives arranged on said shaft, one of said pairs of said series of knives arranged in alinement with the guide line of said table and one of said rolls, levers carried by said standards engaging the upper one of said rolls and cams of said shaft and when actuated by said cams adapted to lift the upper one of said guide rollers to permit of introduction of the paper to be cut into the pairs of knives held in alinement with the guide lines of said guide roll and table, and the upper guide roller adapted when lowered upon the lower roller and paper introduced between the same to aid in the proper guiding of the sheet to be cut, after leaving said table.

855,743. EASEL. ROBERT T. ANTHONY, Slatington, Pa. Filed Dec. 27, 1906. Serial No. 349,638.

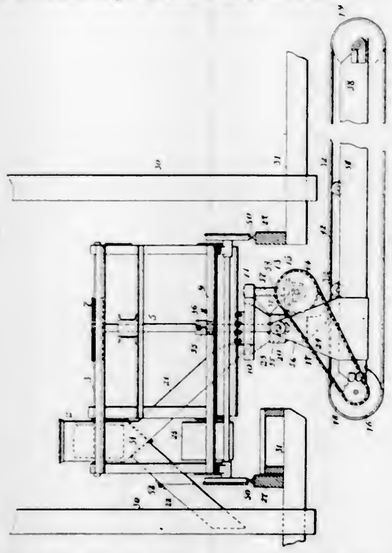
Claim.—1. In an easel, the combination of opposite uprights, transverse bars rigidly connecting the uprights, an adjustable leg, a bail pivotally connected to the leg and to the opposite uprights, and a fastening device connected to one of the transverse bars adapted to engage the upper end of the leg when it is extended, to fasten it in extended position and to also secure the leg in closed position.

2. The combination in an easel, of opposite uprights, transverse bars rigidly connecting the uprights, an adjustable leg, a bail pivotally connected at center to the leg and at its ends to the opposite uprights, and a bolt connected to one of the transverse bars, and adapted to engage a slot in the upper end of the leg, to fasten the leg in extended position, and also to engage another hole in the leg to secure it in closed position, substantially as described.



3. The combination in an easel, of opposite uprights having longitudinal grooves in their outer faces, transverse bars fixedly connected to said uprights, a removable frame having tongued-bars attached to its rear side engaging the grooves in the uprights, an adjustable leg having a slot in its upper end and an opening below the slot, a bail pivotally connected at center to the leg, and having eyes on its ends pivoted to the uprights, a bolt attached to one of the cross-bars and adapted to engage the slot in the upper end of leg to fasten it in extended position, or to engage the hole in the leg to secure it in closed position, substantially as described.

855,744. ORE-DISTRIBUTER. PHILIP ARGALL, Denver, Colo. Filed May 18, 1906. Serial No. 317,485.



Claim.—1. In an ore distributer, means for carrying pulverulent material to a required point, a conveyer mounted to receive said material as discharged, and to rotate angularly in a horizontal plane about said point of discharge, means to rotate said conveyer in said plane, means to cause a longitudinal travel of said conveyer simultaneously with said rotation, whereby the material is moved radially from the center, and means connected with said conveyer for removing material therefrom during its outward travel, substantially as specified.

2. In an ore distributer, a main conveyer for carrying pulverulent material, an endless belt conveyer mounted to receive the discharge from said main conveyer and to rotate angularly in a horizontal plane, means to rotate said belt conveyer in said plane, means to cause a longitudinal travel of said belt conveyer while rotating, and means connected therewith for removing material therefrom during the outward travel of said material, substantially as specified.

3. In an ore distributer, a main conveyer belt, a head wheel over which said belt discharges, a conveyer mounted to receive the discharge from said main conveyer belt and to rotate angularly in a horizontal plane about said point of discharge, means to rotate said conveyer in said plane, means to cause a longitudinal travel of said conveyer radially while rotating, and means connected therewith for removing material therefrom in proportional quantities during its outward travel, substantially as specified.

4. In an ore distributer, a main conveyer belt, a movable tripper carriage, a head wheel for said belt, on said carriage, a vertical rotatory shaft borne on said carriage, with gear connections to said head wheel, a horizontal distributer belt borne by said vertical shaft, at its foot, rotating with the same, mechanism to give progressive radial movement to said distributer belt while rotating with the shaft, and means for removing at intervals portions of the material carried on said distributer belt, substantially as specified.

5. In an ore distributer, a main conveyer belt for the conveyance of pulverulent ore, a tripper carriage mounted movably on track ways, a head wheel on said carriage receiving motion from said conveyer belt, a vertical rotatory shaft on said carriage mechanically connected with said head wheel, a horizontal distributer belt borne by said vertical shaft at its foot, and rotating with it, means for giving progressive radial movement to said distributer belt while rotating with said shaft, means for delivering pulverulent material from said conveyer belt to the distributer belt at a point near to the center of rotation, and means for deflecting portions of said material off from said distributer belt at various points, substantially as specified.

6. In an ore distributer, a tripper carriage mounted movably on trackways, a head wheel on said carriage, a vertical rotatory shaft connected by gearing to said head wheel, borne on said carriage, a horizontal distributer belt carried by said rotatory shaft, means for giving radial movement to said distributer belt as it rotates with the shaft, a main conveyer belt running on said head wheel, for delivering ore to the tripper, a chute for receiving the dumped ore, a hopper near the vertical shaft for delivering the dumped ore to the distributer belt, and means for removing the ore from the distributer belt in portions as it travels radially outward, substantially as specified.

7. In an ore distributer, a main conveyer belt, a tripper carriage mounted movably on trackways, a head wheel on said carriage driven by said conveyer belt, a vertical rotatory shaft on said carriage mechanically connected with said head wheel, clutch mechanism between said head wheel and said vertical shaft for engaging and disengaging the connections between the same, means for locking the vertical rotatory shaft and connections in a fixed position when out of gear with the head wheel, a horizontal radial distributer belt carried by the vertical shaft at its foot, rotating with said shaft, and means for operating said distributer belt as a radial carrier while rotating with said vertical shaft, substantially as specified.

8. In an ore distributer, a main conveyer belt, a tripper carriage mounted movably on trackways, a head wheel on said carriage driven by said belt, a vertical rotatory shaft on said carriage, intervening mechanism between said head wheel and said vertical shaft through which the latter is operated, a radial distributer belt carried on said vertical shaft and rotating with it, means for operating said distributer belt radially while rotating, and antifriction means for supporting the outer end of the radial distributer belt in its travel, substantially as specified.

9. In an ore distributer, a main conveyer belt, a tripper carriage mounted movably on trackways, a head wheel on said carriage over which said belt runs and discharges, a vertical rotatory shaft on said carriage connected operatively with said head wheel, a horizontal distributer belt at the foot of said vertical shaft, rotating with it, means for operating said distributer belt radially while rotating, and adjustable deflectors located near said distributer belt at intervals to remove prescribed portions of the material carried by said belt, substantially as specified.

10. In an ore distributer, a tripper carriage, a horizontal distributer belt mounted thereon, with means for rotating said belt in a horizontal plane, means for operating said distributer belt radially while rotating, deflectors located near said radially moving distributer belt at intervals to remove prescribed portions of the material carried on said belt, and diffusing plates located to intercept the falling material and spread it equably over the surface beneath, substantially as specified.

11. In an ore distributer, in combination with a series of circular tanks in line, a main conveyer belt located over said line, a trackway for a tripper carriage over said line of tanks, a tripper carriage mounted movably on said trackways, a head wheel on said tripper carriage driven by said main belt, a radially movable distributer belt mounted on said carriage to rotate in a horizontal plane, mechanism for rotating the same, connected with said head wheel, means for operating the distributer belt radially while rotating, and means for deflecting prescribed portions of ore carried on said distributer belt, substantially as specified.

12. In an ore distributer, a movable tripper carriage, a vertical rotatory shaft thereon, a fixed gear wheel concentric with said vertical rotatory shaft, a short upright shaft connected with said vertical rotatory shaft so as to be carried around by it as it revolves, a pinion on said short upright shaft meshing with said fixed gear wheel, whereby said short shaft is rotated while revolving, a horizontal distributer belt at the foot of said vertical shaft, revolving around and with it, and intermediate gearing between said short upright shaft and said distributer belt whereby the latter receives radial motion from the former while carried around in a circular sweep by the rotation of said vertical shaft, substantially as specified.

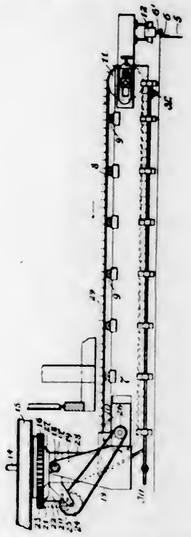
855,745. RADIAL ORE-DISTRIBUTER. PHILIP ARGALL, Denver, Colo. Filed Jan. 5, 1907. Serial No. 350,930.

Claim.—1. In an ore distributer, in combination, a vertical rotatory shaft, a hopper in proximity to said shaft, a horizontal frame pivotally secured at one end to said shaft, an endless conveyer belt mounted on said frame, scrapers on the outer surface of said belt, gearing between said vertical shaft and said belt whereby the latter is caused to travel longitudinally when said shaft is in rotation, and an adjustable slotted bottom to said frame over which said scrapers travel, substantially as specified.

2. In an ore distributer, in combination, a circular tank, a vertical rotatory shaft mounted centrally over said tank, a marginal trackway on the edge of said tank, a horizontal frame pivotally secured at one end to said shaft, sustained at its other end by a wheeled support running on said trackway, an endless conveyer belt mounted on said frame having scrapers at intervals on its outer surface, gearing between said vertical shaft and said belt whereby the latter is caused to travel when said shaft is in rotation, a bottom to said frame having an adjustable angular slot with radial sides, and means for adjusting the angular opening of said slot, substantially as specified.

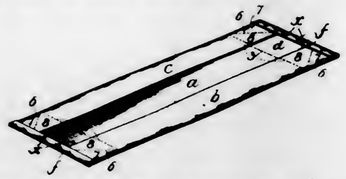
3. In an ore distributer, a conveyer frame, an endless traveling belt mounted on said frame, having scrapers attached at intervals to the outer surface thereof, a bot-

tom to said frame having a sectoral slot therein over which said scrapers pass, and means to adjust the angular opening of said slot, substantially as specified.



4. In an ore distributer, a conveyer frame, horizontally disposed, having the bottom thereof formed with an adjustable sectoral slot, means to adjust the angular opening of said slot, a series of movable scrapers carried on said frame, moving over said slot, a vertical driving shaft for said frame, means for moving the frame around said shaft, and means to simultaneously move the scrapers radially relative to said shaft, substantially as specified.

855,746. BOX. SIEGMUND BACHMANN, Chicago, Ill. Filed Sept. 29, 1905. Serial No. 280,601.



Claim.—1. A collapsed box, comprising a base, a pair of side walls and a pair of end walls hingedly connected to the base along folding lines, one set of walls lying flat on the base with infolded portions at the ends thereof, flaps hingedly secured to the outer sides of the other set of walls, and means securing each flap between its ends to the wall upon which it is folded with the ends of the flaps overlying the infolded portions.

2. A collapsed box, comprising a base, a pair of side walls and a pair of end walls hingedly connected to the base along folding lines, one set of walls lying flat on the base with infolded portions at the ends thereof, said infolded portions being also connected to the ends of the other set of walls, flaps hingedly secured to the outer sides of the other set of walls and means securing each flap between its ends to the wall upon which it is folded with the ends of the flaps overlying the infolded portions.

3. A collapsed box, comprising a base, a pair of side walls and a pair of end walls hingedly connected to the base along folding lines, one set of walls lying flat on the base with infolded portions at the ends thereof, said infolded portions being also connected to the ends of the other set of walls, said infolded portions being provided with a diagonal fold line upon which it folds in the erection of the box, flaps hingedly secured to the outer sides of the other set of walls and means securing each flap between its ends to the wall upon which it is folded with the ends of the flaps overlying the infolded portions.

855,747. SIGN. HARRY L. BEACH, Coshocton, Ohio. Filed Nov. 10, 1906. Serial No. 342,898.



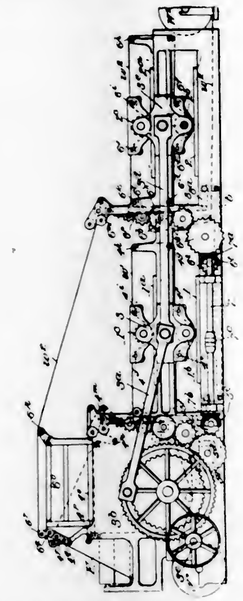
Claim.—As an article of manufacture, a sign comprising a body plate having means for securement to a support, said plate being provided with an opening and notches located on opposite sides of the opening, a rotatable plate operating in the opening and having notches in its opposite sides alined with the notches of the body plate, and journal bearings for the rotatable plate comprising socket elements having heads provided with sockets in their ends and straps projecting from the heads, and pintle elements having tapered heads that engage in the sockets, said tapered heads having straps projecting therefrom, certain of said elements having their heads located in the notches of the body plate and their straps straddling and secured to said plate, the co-acting elements having their heads located in the notches of the rotatable plate and their straps straddling and secured to said rotatable plate.

855,748. PRINTING-PRESS. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich. Filed Aug. 27, 1906. Serial No. 332,170.

Claim.—1. In a printing press, the combination of the side frames, a pair of beds therein arranged end to end in substantially the same plane, a second pair of beds arranged parallel with and substantially in a plane above that of the first beds, impression cylinders co-acting with the beds, a web feeding mechanism at one end of the press, a second web feeding mechanism intermediate the pairs of beds, a web looping mechanism, web delivering mechanism, web guides for directing webs through the press, a folder, and means for directing the webs from the delivery mechanism to the folder.

2. In a flat-bed-web-printing press, the combination of two type beds in substantially the same plane, two additional type beds in a plane above and parallel with that of the first type beds, an impression cylinder co-acting with each type bed, means for reciprocating said cylinders, web feeding, looping and delivering mechanism at the outer end of the first pair of type beds, a similar set of web feeding, looping and delivering mechanism intermediate the pairs of type beds; and web guides whereby webs may be directed between the beds and cylinders to be printed thereby.

3. In a printing press, the combination of the side frames, a pair of beds therein arranged end to end in substantially the same plane, a second pair of beds arranged parallel with and above the first beds, impression cylinders co-acting with the beds, a web feeding mechanism at one end of the press, a second web feeding mechanism intermediate the pairs of beds, a web looping mechanism adjacent each feeding mechanism, web delivering mechanism, web guides for directing webs through the press, a folder, and means for directing the webs from the delivery mechanism to the folder.



4. In a flat-bed-web printing press, the combination of two adjacent type beds in substantially the same plane, two additional type beds above and parallel with the first type beds, an impression cylinder co-acting with each type bed, means for reciprocating said cylinders, web feeding, looping and delivering mechanism at the outer end of the first pair of type beds, a similar set of web feeding, looping and delivering mechanism intermediate the pairs of type beds; and web guides whereby webs may be directed between the beds and cylinders to be printed thereby.

5. In a printing press, the combination of two perfecting mechanisms, each comprising two stationary type beds arranged parallel one above the other, an impression cylinder co-acting with each type bed, means for reciprocating the cylinders over the beds, guides for directing a web of paper between the beds and cylinders, web feeding and delivering mechanism for each pair of beds and cylinders, one set of such mechanism being arranged at the end of the press and the other being arranged intermediate the pairs of beds, a looping mechanism adjacent each feed and delivery mechanism, a cam and connections for operating one looping mechanism, and means for operating the second looping mechanism from the first; a folder at the end of the press, and guides for directing webs of paper from the delivery mechanisms to the folder.

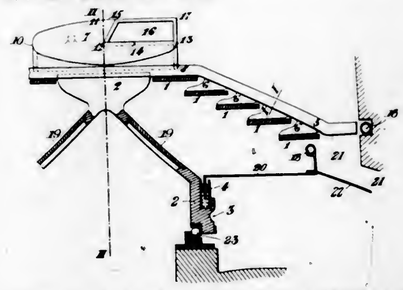
6. In a printing press, the combination of the side frames, a pair of beds therein arranged end to end in substantially the same plane, a second pair of beds arranged parallel with and above the first beds, an impression cylinder co-acting with each bed, a web feeding mechanism at one end of the press, a second web feeding mechanism intermediate the pairs of beds, gearing between the said feeding mechanisms whereby they are driven in unison, a web looping mechanism for each feeding mechanism, a cam for operating all the looping mechanisms in unison, web delivering mechanism adjacent each looping mechanism, means for operating the web delivery mechanisms in unison, guides for directing webs through the press, a folder, and means for directing webs from the delivery mechanisms to the folder.

7. In a flat-bed-printing press, the combination of two adjacent type beds arranged in substantially the same plane, two additional type beds above and parallel with the first type beds, an impression cylinder co-acting with each type bed, means for reciprocating said cylinders, a web feeding, looping and delivering mechanism at the outer end of the first pair of type beds, a similar set of web feeding, looping and delivering mechanism intermediate the pairs of type beds, and connections whereby said web feeding, looping and delivering mechanisms are operated in unison; means for throwing one set of web feeding, looping and delivering mechanism out of operation, and web guides whereby webs may be directed between the beds and cylinders to be printed thereby.

8. In a printing press, the combination of two perfecting mechanisms, each comprising two stationary type beds arranged parallel, one over the other, an impression cylinder co-acting with each type bed, means for reciprocating the cylinders over the bed, guides for directing a web or webs of paper between the beds and cylinders, web feeding and delivering mechanism for each pair of beds and cylinders, one set of said mechanism being arranged at the end of the press and the other being arranged intermediate the pairs of beds, a looping mechanism adjacent each feed and delivery mechanism, a cam and connections for operating one looping mechanism, and connections for operating the second looping mechanism from the first.

9. In a printing press, the combination of two perfecting mechanisms, each comprising two stationary type beds arranged parallel one over the other, an impression cylinder co-acting with each bed, means for reciprocating the cylinders over the beds, guides for directing a web or webs of paper between the beds and cylinders, web feeding and delivering mechanism for each pair of beds and cylinders, one set of such mechanism being arranged at the end of the press and the other set being arranged intermediate the pairs of beds, a looping mechanism adjacent each feed and delivery mechanism, a cam and connections for operating one looping mechanism, and connections for operating the second looping mechanism from the first; a folder at the end of the press, guides for directing a web or webs of paper from the delivery mechanisms to the folder, and means whereby one set of cylinders and its relative feeding, looping and delivering mechanisms may be put out of operation.

855,749. GAS-GENERATOR FURNACE. LEON BEMELMANS, Schaerbeek, near Brussels, Belgium. Filed Oct. 5, 1905. Serial No. 281,465.



Claim.—1. In a gas generator furnace having a fire-grate and a rotatable shaft carrying one or several arms integral with or made integral with the said shaft, the said arms forming an incline in cross section, the said incline ending at its rear extremity in a vertical or hollow face, scrapers on the bottom face of the said arms, traveling above the fire-grate at a small distance from the latter.

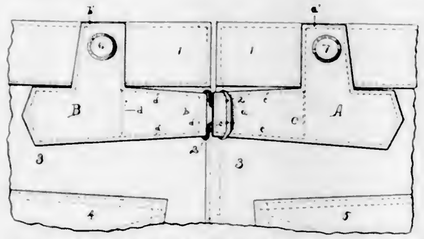
2. In a gas generator furnace having a fire-grate and a rotatable shaft carrying one or several arms integral with or made integral with the said shaft, the said arms forming an incline in cross section, the said incline ending at its rear extremity in a vertical or hollow face, scrapers on

the bottom face of the said arms, traveling above the fire-grate at a small distance from the latter, a cylinder partially encircling the shaft, the said cylinder being provided with recesses engaging the said arms and being bolted on them, or being fixed to the said shaft and carrying the said arms.

3. In a gas generator furnace having a fire-grate and a rotatable shaft carrying one or several arms integral with or made integral with the said shaft, the said arms forming an incline in cross section, the said incline ending at its rear extremity in a vertical or hollow face, scrapers on the bottom face of the said arms, traveling above the fire-grate at a small distance from the latter, a cylinder partially encircling the shaft, the said cylinder being provided with recesses engaging the said arms and being bolted on them, or being fixed to the said shaft and carrying the said arms, an open bottom in the said cylinder, the top of which has an air-hole therein and forms an inclined space, an integral lip over the said hole and a more or less horizontal sector over the said hole a small jointing face connecting the upper edge of the horizontal sector with the inclined face.

4. In a gas generator furnace, the combination with a revoluble shaft, of a series of inclined arms, projecting from the said shaft, substantially at the same height, and a stepped fire-grate; the said arms having scrapers on their face adjacent to the fire-grate.

855,750. REINFORCING BUCKLE-STRAP. ALONZO S. BLOWERS, Portland, Ind. Filed Jan. 18, 1907. Serial No. 352,874.



Claim.—As a new article of manufacture, and in combination with a garment consisting of a body having its rear portion separated vertically and provided with a waist band attached to its upper portion, means for connecting the rear separated portions of the body of the garment and re-inforcing the attachment of the waist band thereto and consisting of members applied to the separated portions of the body of the garment, each of these members consisting of a vertical re-inforcing tongue stitched to the waist band and the body of the garment and formed integrally with a coupling tongue which extends longitudinally in both directions from the lower end of said re-inforcing tongue, the coupling tongue of each member being stitched at its outermost and intermediate portions to the body of the garment the inner end of the coupling tongue being free, and a buckle connecting the free ends of the coupling tongues of said members.

855,751. METHOD OF PREPARING VEGETABLE FIBERS. HOWARD R. BONNY, Brooklyn, N. Y., assignor of one-half to Reuben L. Pritchard, New York, N. Y. Filed June 27, 1906. Serial No. 323,719.

Claim.—1. The method of degumming decorticated vegetable fibers which consists in placing a layer of loose fibers in a warm bath made alkaline by a weak solution of a borate salt and creating pressure between said bath and fibers.

2. The method of degumming decorticated vegetable fibers which consists in placing a layer of loose fibers in a warm bath made alkaline by a weak solution of a borate salt and creating pressure against the side of said fibers by moving them in said bath.

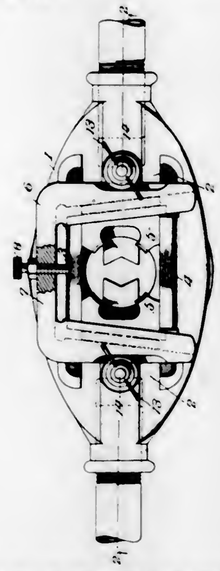
3. The method of degumming and decoloring decorticated vegetable fibers which consists in (1st) placing a layer of loose fibers in a warm bath made alkaline by a weak solution of borate salt, (2nd) creating pressure between said bath and fibers, (3rd) placing the degummed fibers in a saponaceous bath, and (4th) creating a pressure between said bath and fibers.

4. The method of decoloring separated vegetable fibers which consists in (1st) removing the gum therefrom, (2nd) in placing separated parallel layers of loose degummed fibers in a warm saponified bath, and (3rd) creating pressure between said bath and fibers.

5. The method of degumming and decoloring decorticated vegetable fibers which consists in placing a layer of loose fibers in a warm bath made alkaline by a weak solution of a borate salt and saponified; and creating pressure between said bath and fibers.

6. The method of degumming and decoloring decorticated vegetable fibers which consists in placing a layer of loose fibers in a warm bath made alkaline by a weak solution of a borate salt, and saponified; creating pressure between said bath and fibers; then squeezing the dissolved matter from said fibers, and finally washing and drying said fibers.

855,752. ADJUSTABLE DIE-STOCK. BRADFORD BORDEN, Warren, Ohio, assignor to The Borden Company, Warren, Ohio, a Corporation of Ohio. Filed Oct. 31, 1905. Serial No. 285,324.



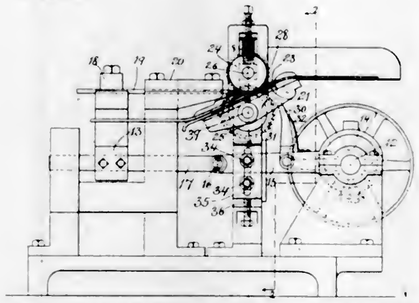
Claim.—1. The combination with a die-stock having an open-front housing, and a work guide at one side thereof, of sectional dies within the housing constructed and arranged to be reversed face for face to enable the threading to be done from the front or rear of the housing, and a free sliding adjuster for said dies fitted within said housing and having means for engaging either face of each die to effect the adjustment thereof by the sliding of the adjuster.

2. The combination with a die-stock having an open-front housing, and a work-guide at one side thereof, of sectional dies within the housing, said dies being reversible face for face, and having corresponding grooves in their inner and outer faces, and an adjuster having portions overlapping the dies provided with tongues for fitting the outer grooves thereof.

3. The combination with a die stock having an open front housing having walls, dies slidable between the walls, a work-guide at the rear side of the die stock, a free sliding adjuster fitted in the housing, there being engaging connections between the dies and the adjuster arranged to cause adjustment of the former, and the engaging parts of the dies being symmetrically arranged, whereby the dies may be reversed, face for face, to enable the threading to be done from the front or rear of the housing.

4. The combination with a die-stock having an open-front housing, and a work-guide at one side thereof, of sectional dies within the housing capable of being reversed face for face to enable the threading to be done from the front or rear of the housing, each die having a groove in each of its faces, and an adjuster for said dies having side members fitted between the dies and the end walls of the housing and also having overlapping portions extended over the faces of the dies, said overlapping portions carrying tongues fitting in said grooves for adjusting the dies, the latter at their sides bearing against the said side members of the adjuster, all side thrust being taken up by the said side members.

855,753. WELT-SLITTING MACHINE. ALBERT G. BREWER, Natick, Mass. Filed Aug. 29, 1906. Serial No. 332,457.



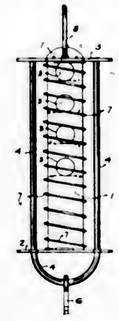
Claim.—1. A welt-slitting machine comprising a slitting knife, means for reciprocating the same, a welt-supporting table extending obliquely across the path of the knife, and having a slot arranged to receive the knife, the said table having welt-supporting portions at opposite sides of the slot, and being so inclined relatively to the path of the knife that it opposes displacement of a welt strip by the forward movement of the knife, and means for imparting a step-by-step movement to a welt supported by the table.

2. A welt-slitting machine comprising a reciprocating welt-slitting knife, a welt-supporting table inclined relatively to the path of the knife, and provided with a knife-receiving slot and with welt-engaging serrations, the inclination of the table and its serrations causing the table to support a welt strip against the pressure of the knife, and thus resist displacement of the welt strip by the knife, and means for moving a welt strip step by step on the table.

3. A welt-slitting machine comprising a welt-slitting knife, means for reciprocating the same, means for supporting a welt strip in the path of the knife, feed rolls adapted to engage the strip and move the same step by step, gears connecting said rolls, a disk attached to the shaft of one of the feed rolls, and an adjustable friction brake engaged with said disk, and acting directly on the shaft of one roll and, through the said gears, on the shaft of the other roll to frictionally resist the rotation of both rolls.

4. A welt-slitting machine comprising a welt-slitting knife, means for reciprocating the same, a welt supporting table intersecting the path of the knife and inclined relatively thereto, said table having a slot located in the path of the knife, and being provided with welt-engaging serrations on its upper surface, feed rolls located at one edge of the table in position to engage an edge portion of a strip bearing on the table, gears connecting said rolls, and means for frictionally resisting the rotation of the rolls, the said frictional resisting means and the corrugations on the inclined table co-operating in preventing displacement of the welt strip by pressure of the knife against it when the knife is advancing.

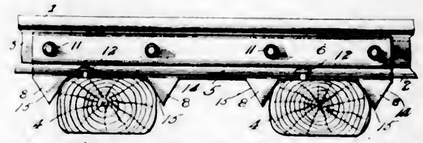
855,754. SCALE. WILLIAM BUSCHMANN, Haledon, N. J. Filed Oct. 11, 1906. Serial No. 338,857.



Claim.—1. In a scale, the combination of an index-member, a plate secured to the lower end thereof and provided with two openings therethrough, a U-shaped frame the arms of which pass through said openings and a plate secured to the top of said U-shaped frame having an opening through which the index member is adapted to pass, with a spring adapted to press the index-plate and the frame-plate apart, substantially as and for the purposes set forth and described.

2. An index-member, a plate secured thereto having openings and a U-shaped frame the arms of which pass through said openings, in combination with a plate secured to the ends of the U-shaped frame and provided with an opening through which the index-member may pass and yielding means adapted to press said plates apart, substantially as set forth.

855,755. RAILROAD-RAIL HOLDER. FIRM B. BYERS, Williamsport, Pa. Filed Oct. 17, 1906. Serial No. 339,328.



Claim.—1. The combination with a track rail, of a plurality of ties; and tie plates; said tie plates being provided at their under surfaces with a plurality of lugs with inclined surfaces which engage the opposite sides of a tie.

2. The combination with a track rail, of a plurality of ties; and tie plates located intermediate the ends of the rail; said plates being provided at their under surfaces with a plurality of lugs with inclined surfaces which engage the opposite sides of each tie; means being provided for securing the plates to the web of the rail and to the ties.

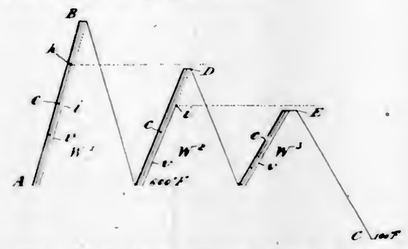
3. The combination with the adjacent ends of two track rails, of a plurality of ties; and tie plates; said tie plates being provided with projecting lugs at their under surfaces which engage opposite sides of each tie, said ties being located at opposite sides of the ends of the two rails.

4. The combination with a track rail, of ties; and two tie plates; each of said plates having a longitudinal recess or groove to receive the flange at the base of the rail, and

also a pair of downwardly projecting lugs with oppositely inclined surfaces, for the purpose specified.

5. The combination with a track rail, of ties; and two tie plates; each of said plates having a longitudinal recess or groove to receive the flanges at the base of a rail, a pair of downwardly projecting lugs and a curved surface 13 at the base where the plate engages the top surface of a tie.

855,756. ART OF HEAT TREATMENTS OF STEEL ALLOYS. JAMES CHURCHWARD, New York, N. Y. Filed Feb. 6, 1907. Serial No. 356,066.



Claim.—1. The herein described method of annealing and heat-treating alloyed steels, which consists in subjecting the mass of metal to a series of heats or heat-waves of successively decreasing maximum temperature designed to affect the alloying metals in the order of their respective retardation points, the first heat or heat-wave being carried to the annealing temperature of the mass of metal and each successive heat or heat-wave to a temperature a little below the retardation point of the corresponding alloying metal, and slowly cooling the mass of metal after each successive heat or heat-wave.

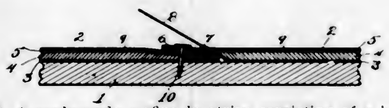
2. The herein described method of heat treatments and annealing alloyed steels, which consists in subjecting the mass of metal to a series of heats or heat-waves of successively decreasing maximum temperatures designed to affect the alloying metals in the order of their respective retardation points, the first heat or heat-wave being carried to the annealing temperature of the mass of metal and each succeeding heat or heat-wave to a temperature within 100° F. below the retardation point of the corresponding alloying metal, and slowly cooling the mass of metal after each successive heat or heat-waves.

3. The herein described method of heat-treating alloyed steels, which consists in subjecting the mass of metal to a series of heats or heat-waves of successively decreasing maximum temperatures designed to affect the alloying metals in the order of their respective retardation points, the first and each successive heat or heat-wave being carried to temperatures a little below the retardation point of the corresponding alloying metal, and slowly cooling the mass of metal after each successive heat or heat-wave.

4. The herein described method of heat-treating alloyed steels, which consists in subjecting the mass of metal to a series of heats or heat-waves of successively decreasing maximum temperatures designed to affect the alloying metals in the order of their respective retardation points, the first and each successive heat or heat-wave being carried to a temperature within 100° F. below the retardation point of the corresponding alloying metal, and slowly cooling the mass of metal after each successive heat or heat-wave.

855,757. READY-MADE ROOFING. GEORGE D. CRABBS, Hartwell, and WILLIAM H. PENDERY, Lockland, Ohio, assignors to The Philip Carey Manufacturing Company, Lockland, Ohio, a Corporation of Ohio. Filed Feb. 12, 1907. Serial No. 357,003.

Claim.—1. A ready-made roofing in strips consisting of a base portion, a cement body portion secured thereupon, a strength giving portion superimposed upon and partly embedded in said body portion, a joint-protecting lap extending along one edge of said strip, and a finishing portion superimposed upon said strength giving portion and forming a surface for the application and retention of suitable refinishing material, substantially as described.



2. A ready-made roofing in strips consisting of a layer of plastic finishing and protecting material superimposed upon a suitable roofing strip and adapted to receive and retain a suitable refinishing material, substantially as described.

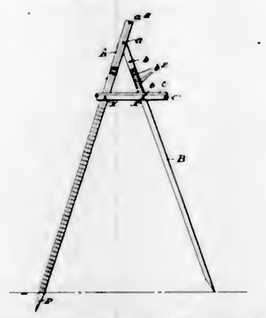
3. A ready-made roofing in strips consisting of a layer of suitable plastic finishing and protecting material superimposed upon a suitable roofing strip, said roofing strip being provided with a joint protecting lap and said finishing and protecting layer being adapted to receive and retain a suitable refinishing material, substantially as described.

855,758. FOUNTAIN-BRUSH. ELMER S. CURRENT, Bristol, R. I. Filed Dec. 14, 1906. Serial No. 347,830.



Claim.—A fountain brush comprising an integral body formed of a molded hollow shell having flat, parallel top and bottom walls united by a surrounding side wall, the latter having at opposite points finger receiving depressions to permit the body to be readily grasped by the hand of the user, said bottom wall having bristle receiving apertures and liquid discharge apertures arranged therebetween, bristles projecting through said bristle receiving apertures, a layer of water proof cement covering the inner face of the bottom wall of the body or shell and entirely covering the projecting inner ends of the bristles to retain the latter in the body or shell, said layer of cement being formed with apertures which aline with the discharge apertures in said bottom wall, and a liquid inlet nipple for the connection of a flexible tube fixed in the body or shell and opening into the chamber between the top wall and the layer of cement in the body or shell, substantially as shown and described.

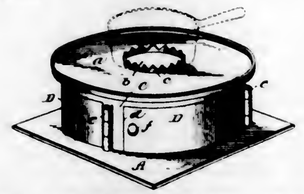
855,759. DEVICE FOR MEASURING STANDING TIMBER. JAMES C. DALRYMPLE, Charleston, S. C. Filed May 26, 1906. Serial No. 318,974.



Claim.—1. In combination, a staff provided with a series of volume scales, a prop pivoted thereto and provided with a height scale, a cross-bar connecting the prop and the staff and carrying a sighting bar whose free end works over the height scale, for the purposes set forth.

2. In a device of the class set forth, the combination of a pair of supporting members one a staff having volume scales on it and the other a prop, the two members being pivotally connected together at their upper ends, a cross-bar pivotally connecting the two members, one of the connections being detachable and one of the members being provided with a supplemental hole for engagement with the said detachable end of the cross-bar, a sighting bar carried by the cross-bar and a height scale adapted to work in conjunction with the sighting bar.

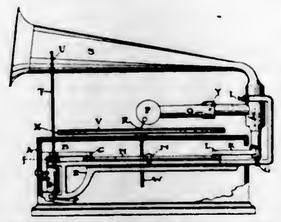
855,760. HEATER FOR SMOOTHING-IRONS. ANNA DU BRAU, Baltimore, Md. Filed June 22, 1906. Serial No. 322,863.



Claim.—1. A device for heating smoothing irons, comprising a base having an open-work central portion designed to be positioned over a source of heat, a hollow body, of circular form in horizontal section, fixed to the base around the open-work portion thereof and having openings at intervals in its circular side wall, horizontally-swinging doors curved in conformity to the circular side wall of the body and hinged to said wall and arranged to close the openings therein, and horizontal, open-work, iron-supporting platforms fixed to the doors to move in and out through the openings in the side wall of the body and arranged immediately above the base, whereby they are supported by said base when the doors are closed and also when said doors are open.

2. A device for heating smoothing irons, comprising a base having an open-work central portion designed to be positioned over a source of heat, a hollow body, of circular form in cross-section, fixed to the base around the open-work portion thereof and having openings at intervals in its circular side wall and also having an opening in its top surrounded by an upwardly extending, serrated flange, horizontally swinging doors curved in conformity to the circular side wall of the body and hinged to said wall and arranged to close the openings therein, and horizontal, open-work, iron-supporting platform fixed to the doors to move in and out through the openings in the side wall of the body and arranged immediately above the base, whereby they are supported by said base when the doors are closed and also when the doors are open.

855,761. TALKING-MACHINE. JOHN H. ELFERING, Camden, N. J., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Filed Sept. 1, 1903. Serial No. 171,485.



Claim.—1. In a talking machine, the combination of a sound box carrying arm, a sound box, means for guiding the stylus in an arc across the record surface and means for maintaining the stylus substantially tangent with the record groove.

2. In a talking machine, the combination with a sound box carrying arm mounted on a pivot the axis of which is perpendicular to the plane of the record and sound box, of means for keeping the stylus of the reproducer substantially tangent with the record groove as the said sound box moves across the record.

3. In a talking machine, the combination with a sound box, of a swinging sound box arm mounted on a pivot the axis of which is perpendicular to the plane of the record, to which said sound box is attached, and means for moving said sound box so as to keep the plane of the stylus substantially tangent to the record groove as the sound box moves across the record.

4. In a talking machine, the combination with a sound box, of a swinging sound box arm mounted on a pivot the axis of which is perpendicular to the plane of the record, to which said sound box is fixed, and means for moving said sound box and carrying arm so as to keep the plane of the sound box stylus substantially tangent to the record groove as the sound box moves across the record.

5. In a talking machine, the combination with a sound box, of a hollow swinging sound box carrying arm mounted on a pivot the axis of which is perpendicular to the plane of the record, communicating with the interior of said sound box and to which said sound box is fixed, and means for moving said sound box and carrying arm so as to keep the plane of the stylus of the sound box substantially tangent to the record groove as the reproducer moves across the record.

6. In a talking machine, the combination of a pivoted arm, a sound box carrying arm pivotally mounted on said first named arm and means connecting the pivot of the sound box arm with a fixed point for keeping the axis of said sound box arm substantially tangent to the record groove as the sound box moves across the record.

7. In a talking machine, the combination of a pivoted supporting arm, a sound box arm pivotally mounted on said arm and means carried by said supporting arm and connecting the pivot of the sound box arm to the pivoted supporting arm for keeping the axis of said sound box arm substantially tangent to the record groove as the sound box moves across the record.

8. In a talking machine, the combination of a pivoted supporting arm, a sound box arm pivotally mounted on said supporting arm, a lever carried by said supporting arm and connection between said lever and the pivot of said supporting arm and a fixed point for keeping the axis of said sound box arm substantially tangent to the record groove as the sound box moves across the record.

9. In a talking machine, the combination of a pivoted supporting arm, a sound box arm pivotally mounted on said supporting arm, a projection connected with said sound box arm, a fixed projection and a lever carried by said supporting arm and connecting said projections for keeping the axis of said supporting arm substantially tangent to the record groove as the sound box moves across the record.

10. In a talking machine, the combination of a hollow sound box arm, a hub with which said hollow arm connects, a pivoted arm upon one end of which said hub is mounted and means connecting said hub and a fixed point for keeping the axis of said hollow arm substantially tangent to the record groove as the sound box moves across the record.

11. In a talking machine, the combination of a hollow sound box arm, a hub communicating with one end thereof, a pivoted arm adjacent the end of which said hub is pivotally mounted, a projection fixed to said hub and a lever connecting said projection with a fixed point for keeping the axis of said hollow arm substantially tangent to the record groove as the sound box moves across the record.

12. In a talking machine, an arm mounted to swing across the record and carrying a sound box on its swinging end in combination with means to maintain the stylus of said sound box in a plane tangent to the groove of the record.

13. In a talking machine, a sound conveying arm mounted to swing across the record and carrying a sound box on its swinging end in combination with means for maintaining the stylus in a plane tangent to the groove of the record.

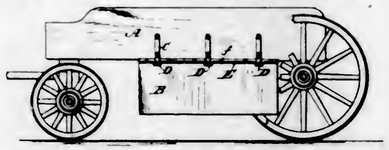
14. In a talking machine, an arm mounted to swing across the surface of the record and carrying a sound box on its swinging end in combination with means for maintaining the engaging extremity of the reproducing needle in a plane tangent to the groove of the record.

15. A talking machine, comprising a vertically and laterally swinging sound conveying arm carrying a sound box on its swinging end in combination with means for maintaining the engaging extremity of the stylus needle tangent to the groove of the record.

16. In a talking machine, the combination with a reproducer and pivoted reproducer arm swinging in a plane parallel to the face of the record, of means for keeping the stylus of said reproducer substantially tangent with the record groove as the said reproducer moves across the record.

17. In a talking machine, the combination with a reproducer, of a swinging reproducer arm to which said reproducer is pivoted, and means for moving said reproducer about its pivot so as to keep the plane of its stylus substantially tangent to the record groove as the reproducer moves across the record.

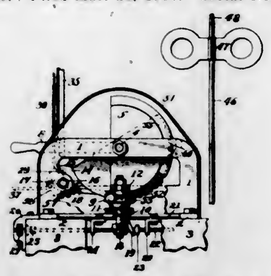
855,762. DUMPING-WAGON. EDWARD K. EMIG, Emigsville, Pa. Filed Feb. 27, 1907. Serial No. 359,617.



Claim.—1. In a dumping wagon, a bottom door, a longitudinal reinforcing tube secured to and bounding the outer edge of the door, eyes formed in the door at points immediately adjoining the reinforcing tube, and hooks secured to the wagon box, engaging the eyes, having their bends curved substantially concentrically with the reinforcing tube, substantially as and for the purposes hereinbefore set forth.

2. The door, the split tube bordering the outer edge of the door, and clasping the inserted portion of said door, and the eyes formed in the door at points immediately adjacent to the tube, in combination with the wagon box, and hooks upon the sides of the box, to engage said eyes, substantially as and for the purposes hereinbefore set forth.

855,763. SWITCH-STAND. FRANK M. FOSTER, Cincinnati, Ohio. Filed Mar. 26, 1907. Serial No. 364,681.



Claim.—1. In a switch stand the combination of a point rail operating crank, mechanism for operating said crank consisting of two members, one of said members having a greater movement than the other and the other of said members being interlocked at a certain point, signal operating mechanism, and a single main operating mechanism for operating said switch stand substantially as described.

2. In a switch stand the combination of a main operating mechanism, intermittent mecbanisms carried thereby, a point rail operating mechanism intermittently operated by said intermittent mechanisms, and intermittent signal operating mechanism operated by said last named intermittent operating mechanism, substantially as described.

3. In a switch stand the combination of a main operating mechanism, intermittent mechanisms carried thereby, a point rail operating mechanism intermittently operated by said intermittent operating mechanism, point rail interlocking mechanism intermittently operated by said intermittent operating mechanism, and signal operating mechanism intermittently operated by said intermittent operating mechanism, substantially as described.

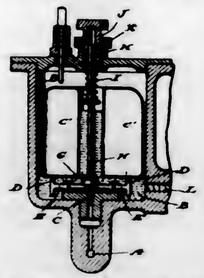
4. In a switch stand the combination of a main operating mechanism, intermittent operating mechanisms carried thereby for performing a plurality of operations, said intermittent operating mechanism having a greater range of movement than that necessary to perform any one of its operations, point rail operating mechanism intermittently operated by said intermittent operating mechanism during part of its operation and locked thereby during part of its operation, and signal operating mechanism, intermittently operated by said intermittent operating mechanism during part of its operation and locked thereby during part of its operation, substantially as described.

5. In a switch stand the combination of a main operating mechanism, intermittent operating mechanism carried thereby for performing a plurality of operations, said intermittent operating mechanism having a greater range of movement than that necessary to perform any one of its operations, point rail operating mechanism intermittently operated by said intermittent operating mechanism during part of its operation and locked thereby during part of its operation, point rail interlocking operating mechanism intermittently operated by said intermittent operating mechanism during part of its operation and locked thereby during part of its operation, and signal operating mechanism operated by said operating mechanism, substantially as described.

6. In a switch stand the combination of a main operating mechanism, point rail operating mechanism, signal operating mechanism, and intermittent interlocking operating mechanism connecting the two last named mechanisms with said main operating mechanism to alternately operate said point rail and said signal operating mechanisms, substantially as described.

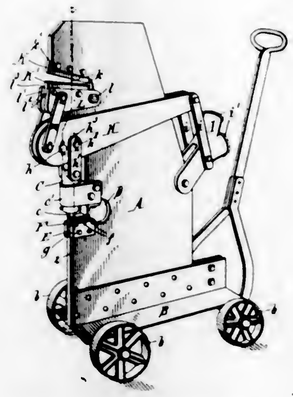
7. In a switch stand the combination of a main operating mechanism, point rail operating mechanism, point rail interlocking mechanism, signal operating mechanism, and intermittent interlocking operating mechanisms connecting said three last named mechanisms with said main operating mechanism to alternately operate said point rail operating mechanism said point rail interlocking mechanism and said signal operating mechanism, substantially as described.

855,764. CARBURETER. LEONARD B. GAYLOR, Boston, Mass. Filed Jan. 17, 1907. Serial No. 352,679.



Claim.—In a carbureter a float chamber, a needle valve consisting of a light wire pointed at the bottom and seated in an underlying corresponding seat, a collar upon the needle at some distance from its end, a spring engaging with the collar at one end and with a movable device at its other end, which supplements the action of gravity in seating the valve, a float and means actuated by the descent of the float and which engage the needle, whereby it is lifted from its seat.

855,765. PUNCHING AND SHEARING MACHINE. ROBERT GERLACH, Buffalo, N. Y., assignor to Buffalo Forge Company, Buffalo, N. Y. Filed June 24, 1905. Serial No. 266,726.



Claim.—1. In a machine of the nature described, the combination of a flat-faced plate standard, a lever consisting of connected plates or bars arranged at opposite sides of said plate standard and fulcrumed thereto, and a tool comprising a stationary member secured on said plate standard substantially in the plane thereof, and a co-operating movable member arranged in a plane between said lever plates and operatively connected thereto, substantially as set forth.

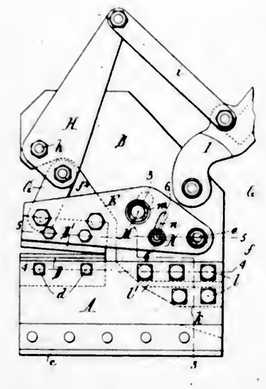
2. In a machine of the nature described, the combination of a plate standard having opposite flat faces, a jaw consisting of two connected bars arranged against the opposite flat faces of said plate standard and movably supported thereon, a stationary cutting member mounted on said standard substantially in the plane thereof, and a movable co-operating cutting member arranged between and secured to the bars of said jaw, substantially as set forth.

3. In a machine of the nature described, the combination of a plate standard having opposite flat faces and provided with an opening, a movable jaw consisting of two connected bars arranged at opposite sides of said standard at one side of said opening, a stationary shear blade mounted on said standard at the opposite side of said opening, and a movable shear blade arranged in said opening between and secured to the bars of said jaw, and means for operating said jaw, substantially as set forth.

4. In a machine of the nature described, the combination of a plate standard, a lever consisting of bars arranged against the opposite faces of said plate standard and fulcrumed thereto, a stationary shear blade secured to said plate standard, a jaw consisting of bars arranged against the opposite faces of said plate standard and movably connected thereto, a movable shear blade secured between said bars of the jaw, and means connecting the jaw and said other lever, substantially as set forth.

5. In a machine of the nature described, the combination of a plate standard, a lever consisting of bars arranged against the opposite faces of said plate standard and fulcrumed thereto, a punch die mounted on said plate standard, a punch slide connected to said lever, a stationary shear blade secured to said plate standard, a movable shear blade, a jaw carrying said movable shear blade and consisting of bars arranged against the opposite faces of said plate standard and fulcrumed thereto, and operating means for said punch lever and shear jaw, substantially as set forth.

855,766. SHEARING-MACHINE. ROBERT GERLACH, Buffalo, N. Y., assignor to Buffalo Forge Company, Buffalo, N. Y. Filed Jan. 11, 1906. Serial No. 295,539.



Claim.—1. In a shearing machine, the combination of a standard composed of separate plates having overlapping connected portions, and a key located between said overlapping portions of the plates and interlocking therewith, co-operating shear blades, one of which is mounted on one of said standard plates, and a lever or jaw mounted on said other standard plate and carrying said other shear blade, substantially as set forth.

2. In a shearing machine, the combinatiou of a standard composed of separate plates having overlapping portions, a thin key plate located between and substantially coextensive with said overlapping portions of the plates and having parts at opposite sides interlocking with said standard plates, and bolts connecting said standard plates and key plate, co-operating shear blades, one of which is mounted on one of said standard plates, and a lever or jaw mounted on said other standard plate and carrying said other shear blade, substantially as set forth.

3. In a shearing machine, the combination of a standard composed of separate plates having overlapping connected portions, and a wedge-shaped plate secured between the connected portions of the standard plates whereby they are held in an angular relation, co-operating shear blades, one of which is mounted on one of said standard plates, and a lever or jaw mounted on said other standard plate and carrying said other shear blade, substantially as set forth.

4. In a shearing machine, the combination of a standard composed of separate plates having overlapping connected portions, and a wedge-shaped plate secured between the connected portions of the standard plates, whereby they are held in an angular relation, said wedge plate and standard plate having interlocking parts, co-operating shear blades, one of which is mounted on one of said standard plates, and a lever or jaw mounted on said other standard plate and carrying said other shear blade, substantially as set forth.

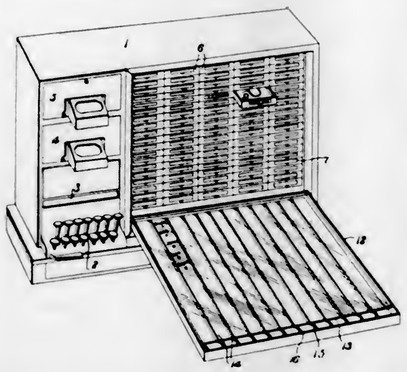
5. In a shearing machine, the combination of a standard composed of separate plates having overlapping connected portions, and a wedge-shaped plate secured between the

connected portions of the standard plates whereby they are held in an angular relation, shear blades arranged with their cutting edges in the plane of the center of said wedge plate, one of said blades being mounted on one of said standard plates, and a lever or jaw mounted on said other standard plate and carrying said other blade, substantially as set forth.

6. In a shearing machine, the combination of a standard composed of separate plates rigidly secured together and arranged in planes at an angle to each other, a shear blade mounted on one of said standard plates, a jaw movably mounted on said other standard plate, and a co-operating shear blade mounted on said jaw, substantially as set forth.

7. In a shearing machine, the combination of a standard composed of separate plates having portions overlapping side by side and secured together and other portions arranged substantially opposite each other edgewise but in planes at an angle to each other, a shear blade mounted on one of said standard plates, a jaw movably mounted on said other standard plate, and a shear blade carried by said jaw, substantially as set forth.

855,767. CREDIT-ACCOUNTING DEVICE. MARION E. GIBSON, Portland, Oreg. Filed Nov. 9, 1906. Serial No. 342,654.

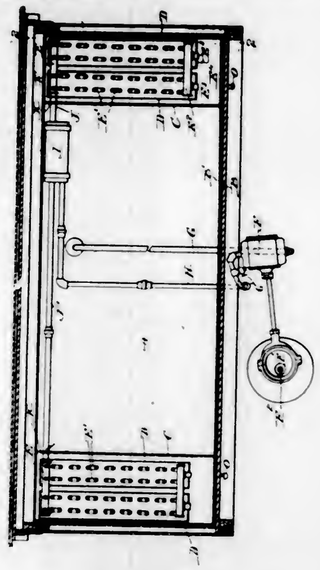


Claim.—1. A credit accounting appliance comprising a casing, a pivoted closure for the casing, a series of endless belts arranged upon said closure and bearing names and ratings, and a series of drawers located in the casing and provided with name plates.

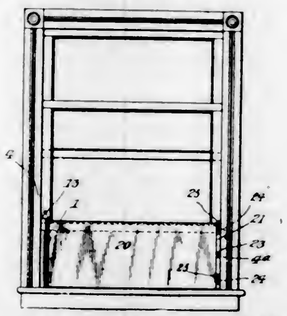
2. A credit accounting device comprising a casing, a closure pivoted thereto, rollers journaled upon the closure, endless ribbons passing around said rollers and having names and ratings, milled nuts carried by the rollers, a transparent plate lying over said ribbons and a series of drawers located in the casing and provided with name plates.

855,768. REFRIGERATING-CAR. FRANK J. GILROY, Buffalo, N. Y., assignor of one-fourth to Alfred H. Smith, New York, N. Y., one-fourth to James H. Southard, Toledo, Ohio, one-eighth to Joseph F. Desmond, New York, N. Y., and one-eighth to Wallace Greene, Washington, D. C. Filed June 19, 1903. Serial No. 162,237.

Claim.—The combination with a car having non-conducting walls and adapted for approximately complete exclusion of air, of an air compressing and cooling device outside the car, exposed to the sweep of air through which the moving car may pass, and arranged to take its full supply of air from the interior of the car, compress it, and restore it to the body of uncompressed air in the car; substantially as set forth.



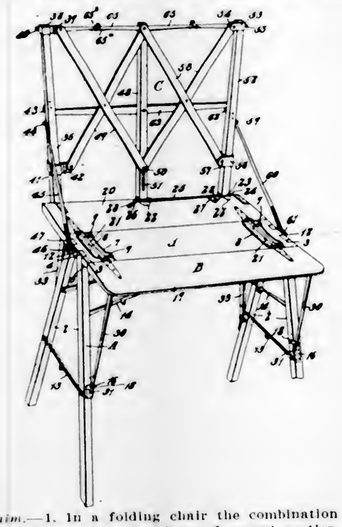
855,769. SCREEN. JOHN A. GRANT, Emerado, N. D. Filed May 3, 1905. Serial No. 258,695.



Claim.—1. In a screen, the combination of a slotted case provided with attaching flanges, a roller disposed in the casing and provided with a recess in its bottom and provided with a recess from its upper end to a point intermediate of its length, a cup disposed in the case, the vertical wall of which surrounds the bottom of the roller, a screen secured to the roller, spring actuated means within the roller for winding the screen thereon, and a block disposed in one end of the casing and adapted to serve both as a closure for the casing and securing means for the winding means.

2. In a screen, the combination of a case, a laterally extending lug and a longitudinally extending lug integral therewith, a cupped bottom portion, a pin, a roller mounted on said pin, said roller being provided with a longitudinal recess and provided with a slot and a reduced upper portion, a perforated cap on said reduced portion, a stem mounted in said recess, said stem having a perforation therein and having non-circular end portion projecting beyond said roller, a spring having one end disposed in said slot and the other end in said perforation, a cap having a non-circular seat by which said stem is held against rotation, and a flexible screen connected with the roller.

855,770. FOLDING CHAIR. WILLIAM GYMER, Boulder Creek, Cal. Filed June 5, 1906. Serial No. 320,318.



Claim.—1. In a folding chair the combination with a collapsible supporting section; of a seat section detachably mounted thereon, said collapsible supporting section constituting a part of the seat of the chair.

2. In a folding chair the combination with a sectional seat, one of said sections being detachable from the others; of supporting foldable devices connected to the detachable section.

3. A folding chair comprising a sectional seat, one of said sections being interposed between and detachable from the other sections, and foldable supporting devices connected to the detachable section.

4. A folding chair comprising a sectional seat, one of said sections being interposed between and detachable from the other sections, and collapsible supporting devices connected to the detachable section.

5. A folding chair comprising a sectional seat, one of said sections being interposed between and detachable from the other sections, supporting devices connected and adapted to fold upon the detachable section, and means for holding said devices projected from the detachable section.

6. A folding chair comprising a sectional seat, one of said sections being interposed between and detachable from the other sections, supporting devices connected and adapted to fold upon the detachable section, and foldable braces for rigidly holding said devices projected from the detachable section.

7. A folding chair comprising collapsible supporting devices, a top strip connected thereto, and connected seat sections extending in opposite directions from and flush with the top strip and detachable therefrom.

8. A folding chair comprising collapsible supporting devices, a top strip connected thereto, connected seat sections extending in opposite directions from and flush with the top strip, and means for detachably securing said sections and top strip together.

9. A folding chair comprising collapsible supporting devices, a top strip connected thereto, connected seat sections extending in opposite directions from and flush with the top strip, and means upon the top strip for detachably securing the seat sections together and holding them against independent longitudinal and lateral movement.

10. A folding chair comprising supporting devices, a top strip connected thereto, connected seat sections extending in opposite directions from and flush with the top strip, and foldable braces connected to the seat sections and detachably engaging the supporting devices.

11. A folding chair comprising supporting devices, a top strip connected thereto, connected seat sections extending in opposite directions from and flush with the top strip, foldable braces connected to the seat sections and detachably engaging the supporting devices, and means upon the seat sections for holding the braces in folded position.

12. A folding chair comprising supporting devices, a top strip connected thereto, seat sections, connecting strips secured to said sections and extending transversely of the top strip, and means for locking the connecting strips upon the top strip.

13. A folding chair comprising supporting devices, a top strip connected thereto and having transverse grooves therein, connecting strips detachably seated within the grooves, seat sections hinged to said strips and disposed in the front and rear of the top strip, and means for detachably securing the connecting strips within the grooves.

14. A folding chair comprising supporting devices, a top strip connected thereto and having transverse grooves therein, connecting strips detachably seated within the grooves, seat sections hinged to said strips and disposed in the front and rear of the top strip, keepers overhanging the grooves, and means for securing the connecting strips beneath the keepers.

15. A folding chair comprising collapsible supporting devices, a top strip secured thereto, foldable seat sections detachable from the top strip and co-operating therewith to form a complete seat, and a collapsible back section pivotally connected to one of the seat sections and adapted to fold thereunder.

16. In a chair the combination with a seat having recesses in one edge, and supporting devices; of sockets movably connected to the seat, means for simultaneously shifting the sockets into or out of the recesses, a collapsible back pivoted at one side to the seat and detachably mounted within the sockets, and means within the back to permit the same to be folded upon the seat.

17. A folding chair comprising a seat having recesses in one edge, supporting devices for the seat, sockets movably connected to the seat, means for simultaneously moving said sockets into or out of the recesses, a standard pivotally connected to the seat, standards detachably mounted within the sockets, lazy tong connection between the standards, and means interposed between the standards for holding them normally spaced apart.

18. The combination with the seat of a chair having recesses therein, and sockets movably mounted within the recesses; of a standard pivotally connected to the seat, standards detachably mounted within the sockets, a lazy tong connection between the standards, a cross strip connected to one of the standards and detachably secured to the other standards, brace arms pivotally connected to the standards and detachably engaging the seat.

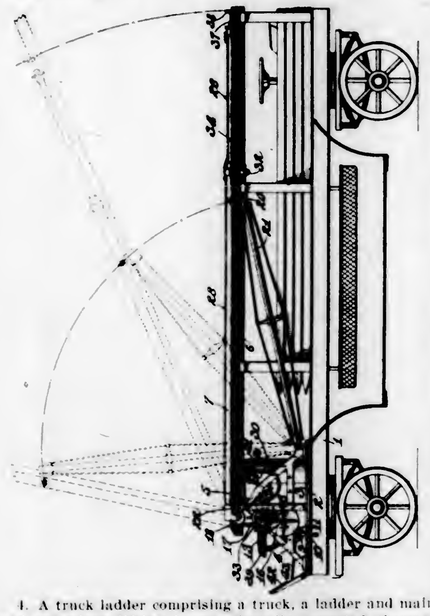
855,771. TRUCK-LADDER. THOMAS HAINES, St. Louis, Mo. Filed Apr. 5, 1906. Serial No. 309,979.

Claim.—1. A truck ladder comprising a truck, a turntable mounted thereon, a ladder and main and secondary lifting booms pivotally mounted on said turntable, said booms having a sliding connection, and means for shifting said sliding connection, said means comprising cylinders mounted at the ends of the main booms and connected with a source of pressure and having pistons connected to said sliding connection.

2. A truck ladder comprising a truck, a ladder and main and secondary lifting booms pivotally mounted thereon, said booms having a sliding connection, means for shifting said sliding connection comprising a cable connected to said sliding connection, and an operating means for said cable, mounted on said truck, and additional means for shifting said connection comprising cylinders mounted on said main lifting boom and connected with a source of

pressure and having pistons connected to said sliding connection.

3. A truck ladder comprising a truck, a ladder pivotally mounted thereon, means for raising and lowering said ladder and a shiftable seat pivotally mounted on said truck and secured to said ladder whereby when said ladder is raised, said seat is moved behind the ladder.



4. A truck ladder comprising a truck, a ladder and main and secondary lifting booms pivotally mounted thereon, said booms having a sliding connection, means for shifting said sliding connection, said means comprising cylinders mounted on said ladder and connected with a source of pressure, pistons connected to said sliding connection and springs arranged within said cylinders.

5. A truck ladder comprising a truck, side frames mounted on said truck, a structure including a ladder pivotally mounted on said side frames, means for raising and lowering said pivotal structure, arms fixedly secured to said pivotal structure, and clamps for releasably holding said arms to said side frames, whereby said pivotal structure can be secured in its elevated position.

6. A truck ladder comprising a truck, a ladder pivotally mounted on said truck, a main lifting boom secured to said ladder, a secondary lifting boom having a sliding connection with said main lifting boom, means for moving said sliding connection, a compression spring carried by said main boom and adapted to exert pressure upon said sliding connection, and an adjustable abutment for said spring.

7. A truck ladder comprising a truck, a ladder pivotally mounted on said truck, a main lifting boom secured to said ladder, a secondary lifting boom, a sliding member on said main lifting boom and having a pivotal connection with said secondary lifting boom, means for moving said sliding member, said means comprising a cylinder having communication with a source of pressure, a piston in said cylinder, said piston being connected to said sliding member, a compression spring between said piston and an adjustable abutment in said cylinder, and an adjusting screw for said abutment extending to the outside of said cylinder, whereby the tension of said spring may be varied.

8. A truck ladder comprising a truck, a frame mounted on said truck, a ladder pivotally mounted on said frame, a tubular main lifting boom secured to said ladder and having an arm near one end, said arm being pivotally secured to said frame with its pivot in axial alinement with the pivot of said ladder, a pulley mounted at the end of said main boom forward of its pivot, a secondary lifting boom pivotally mounted on said frame, a sliding member mounted in said tubular main frame, said sliding member having a pivotal connection with the outer end of said secondary boom, a cable having one end secured to said sliding member, and passing over said pulley at the forward end of said main boom, and having its opposite end secured to a winding drum beneath said pulley, and means for operating said drum.

9. A truck ladder comprising a truck, and a ladder, a tubular main lifting boom connected to said ladder, and a secondary lifting boom, said ladder and said lifting booms being pivotally mounted on said truck, and said tubular main boom being longitudinally slotted and having a slidable member therein, and said secondary boom having a pivotal connection with said slidable member, and means to move said slidable member to raise and lower said ladder.

10. A truck ladder comprising a truck, a turntable mounted on said truck, a ladder, a tubular main lifting boom pivotally mounted on said turntable and connected to said ladder, a secondary lifting boom pivotally mounted on said turntable, said tubular main boom having a longitudinal slot formed therein, a slidable member in said tubular main boom, said slidable member having a pivotal connection with said secondary boom, and a cable having one end secured to said slidable member and its opposite end secured to and adapted to be wound about a winding drum.

11. A truck ladder comprising a truck, a turntable mounted on said truck, side frames mounted on said turntable, a pair of tubular main lifting booms pivotally mounted on said side frames, a ladder carried by said main booms, a secondary lifting boom pivotally mounted on said turntable in operative relation to each of said tubular main booms, slidable members in said tubular main booms, pivotal connections between said slidable members and said secondary booms, cables connecting said slidable members to winding drums, operating means common to said winding drums, whereby said winding drums can be simultaneously operated, to raise and lower said ladder.

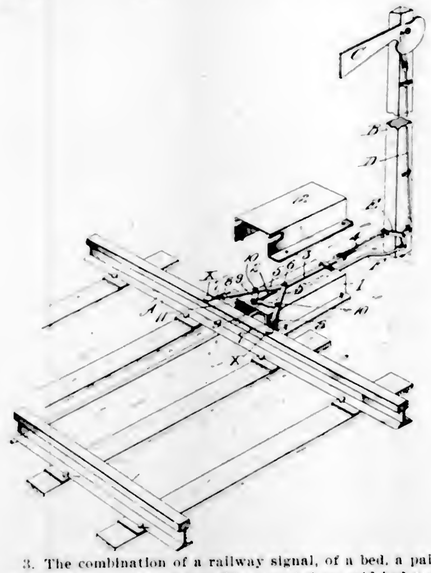
12. A truck ladder comprising a truck, a ladder pivotally mounted thereon, and means for actuating said ladder, said actuating means having a power shaft, and said power shaft having a clutch member secured on its outer end and also a circumferential groove adjacent to said clutch portion, and an operating crank slidably mounted on said shaft, and provided with a clutch portion adapted to engage the clutch member on said shaft, and also having a spring-pressed pin adapted to enter said circumferential groove when said engagement is effected.

13. A truck ladder comprising a truck, a ladder pivotally mounted thereon, and means for raising and lowering said ladder, said means having a power shaft and said power shaft having a clutch member on its outer end portion, a crank slidably mounted on said power shaft, said crank having a clutch portion adapted to engage the clutch member on said power shaft, and means for releasably holding said crank with said clutch portions in locked engagement, said releasable holding means permitting said crank to be moved inwardly on said shaft out of the way.

855,772. TORPEDO-PLACER FOR RAILWAYS. ALEXANDER H. HANDLAN, Jr., St. Louis, Mo. Filed Apr. 1, 1907. Serial No. 365,824.

Claim.—1. The combination with a railway signal, of a pair of movable torpedo carriers having connection with said signal, and means for spreading said carriers away from each other as they are moved in to deliver said torpedoes to a railway rail, substantially as set forth.

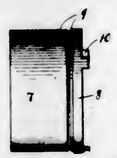
2. The combination with a railway signal, of a pair of torpedo carrier arms having connection with said signal and movable toward and away from a railway rail, and a pair of toggle links connecting said arms and serving to spread them apart as they are moved, substantially as set forth.



3. The combination of a railway signal, of a bed, a pair of torpedo carrier arms movably mounted on said bed and having connection with said signal, and a pair of toggle links slidably fitted to said bed and having connection with said arms, substantially as set forth.

4. The combination with a railway signal, of a bed, provided with a slot, of a torpedo placer comprising a pair of carrier arms having connection with said signal, a pair of toggle links pivoted to said carrier arms, and a guide pin uniting said links and operable in the slot in said bed, substantially as set forth.

855,773. CAM. BENGT M. W. HANSON, Hartford, Conn., assignor to Pratt & Whitney Company, Hartford, Conn., a Corporation of New Jersey. Filed Apr. 25, 1906. Serial No. 313,537.



Claim.—1. A cam having sets of openings, combined with a carrier, and securing-devices on said carrier adapted to be passed through corresponding members of any of said sets of openings.

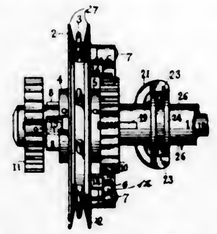
2. A cam having sets of openings, the perforations of each set being spaced a certain number of degrees apart, combined with a carrier having guides, each pair of guides being spaced apart, to a multiple of the degree between the cam-openings of each set; and securing-devices mounted in the guides of the carrier.

3. A cam having sets of openings, the openings of each set spaced a certain number of degrees apart, combined with a carrier having slots, each pair of which is spaced a certain number of degrees apart to constitute a multiple of the degrees between the openings of each set; bolts seated in the slots, and the stems of which will enter any opening of each slot in the cam; and means applied to said bolts for securing the cam in place.

4. The combination, with a carrier having T-slots, of bolts having heads adapted to enter said T-slots; a cam fitted to the carrier, and having separated sets of openings through any of which the stems of the bolts may pass; and devices applied to the bolts for securing the cam to said carrier.

5. The combination, with a drum having T-slots, of T-headed bolts fitted adjustably in said slots, and each having a threaded stem; a cam having separated sets of openings, two to each set; and nuts threaded upon the bolts and bearing against said cam.

855,774. POWER-TRANSMITTING MECHANISM. CHARLES B. HATFIELD, Rochester, N. Y., assignor to Hatfield Motor Vehicle Company, Cortland, N. Y., a Corporation of New York. Filed Mar. 26, 1906. Serial No. 308,046.



Claim.—1. In a power transmitting mechanism, the combination with a driving shaft, of a sprocket wheel loosely mounted thereon, reversely arranged driving connections operated by the driving shaft for operatively connecting the said shaft and the sprocket wheel to rotate said sprocket wheel from the driving shaft and means for shifting the driving connections to connect one of them with the sprocket wheel and to disconnect the other, substantially as described.

2. In a power transmitting mechanism, the combination with a driving shaft, of a sprocket wheel loosely mounted thereon, reversely arranged pawls mounted upon the opposite sides of the sprocket wheel, reversely arranged ratchet wheels slidingly mounted upon the driving shaft and cooperating with the pawls of the sprocket wheel and means for sliding said ratchet wheels longitudinally along the driving shaft whereby to connect one of said pawls and ratchet wheels and to disconnect the other set, substantially as described.

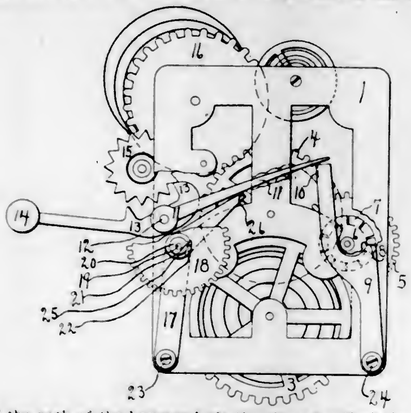
3. In a power transmitting mechanism, the combination with a hollow driving shaft, of a driven member loosely mounted thereon, reversely arranged pawls mounted upon the driven member, reversely arranged ratchet wheels slidingly mounted upon the hollow driving shaft, a shipping rod or shaft located within the hollow driving shaft and fixedly connected to the ratchet wheels and means for reciprocating the shipping rod or shaft to move the respective ratchet wheels into or out of engagement with their co-operating pawls, substantially as described.

855,775. REPEATING ALARM-CLOCK. WILLIAM S. HAWTHORNE, Peru, Ill., assignor to The Western Clock Manufacturing Company, La Salle, Ill., a Corporation of Illinois. Filed May 21, 1906. Serial No. 318,059.

Claim.—1. In a repeating alarm clock, a cam wheel fastened to a shaft of the time train; a spring, one end of which is fastened to the movement plate, said spring having one projection which engages the tripping points of said cam on a shaft of the time train, and an end projection which reciprocates in and out of the path of the hammer lock, thereby respectively locking and releasing the hammer.

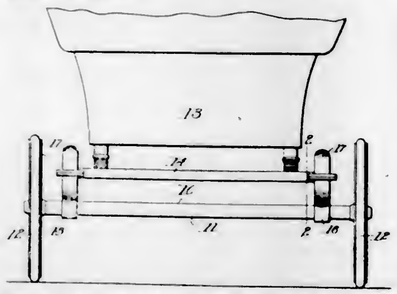
2. In a repeating alarm clock, a sheet metal cam wheel fastened to a shaft of the time train, said cam wheel having tripping points pressed from its side; a spring, one end of which is fastened to the movement plate, having

one projection which engages the tripping points of said cam and an end projection which reciprocates in and out



of the path of the hammer lock, thereby respectively locking and releasing said hammer lock.

855,776. AUTOMOBILE AND OTHER VEHICLE. ALBERT C. HEATH, St. Paul, Minn. Filed Sept. 8, 1906. Serial No. 333,837.



Claim.—1. An improvement in automobiles comprising a vehicle body, arms secured thereto, a pneumatic cushion secured to each of the free ends of said arms, a keeper independent of the arms and embracing each cushion, said keepers being each provided with an outer closed side, and a bracket formed with the lower portion of each keeper and adapted to be rigidly secured to the axle of the vehicle.

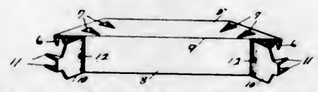
2. An improvement in automobiles comprising a vehicle body, arms secured thereto, a pneumatic cushion secured to each of the free ends of said arms, keepers independent of the arms and embracing each cushion, said keepers being formed in sections and each provided with an outer closed side, a bracket carried by the lower section of each keeper and adapted to be rigidly secured to the axle of the vehicle, and means for uniting said sections.

3. An improvement in automobiles comprising a vehicle body, arms secured thereto, a disk located on each of the free ends of said arms, each disk being provided with a rim having its edge formed as a seat, a pneumatic cushion secured to said rim and filling said seat, and a keeper surrounding each cushion and closely embracing the same, said keepers having their inner walls cut out to permit play of said arms, the outer walls of said keepers being strengthened to resist the end thrust of said arms.

4. An improvement in automobiles comprising a vehicle body, arms secured thereto, a disk located on each of the free ends of said arms, each disk being provided with a rim having its edge formed as a seat, a pneumatic cushion secured to said rim and filling said seat, and keepers surrounding each cushion and closely embracing the same, said keepers being formed in sections and having their inner walls cut out to permit play of said arms, the outer walls of said keepers being closed and provided with coincident securing flanges to strengthen said outer walls against the end thrust of said arms.

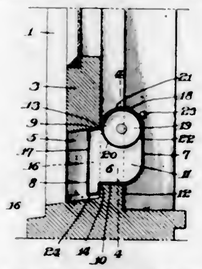
5. An improvement in automobiles comprising a vehicle body, arms secured thereto, a disk located on each of the free ends of said arms, each disk being provided with a rim having its edge formed as a seat, a pneumatic cushion surrounding said rim and filling said seat, keepers formed in sections and surrounding said cushions, flanges extending diametrically across said keepers and arranged opposite the ends of said arms, and brackets carried by the lower sections of the keepers and adapted to embrace the axles of the vehicles.

855,777. CORNER-BRACE FOR CHAIR-SEAT FRAMES. WILLIAM P. HERBERGER, Cincinnati, Ohio. Filed Nov. 7, 1906. Serial No. 342,358.



Claim.—In a chair seat, a corner brace made of sheet metal bent into angle form, and having its opposite ends slit on the line of the fold, one side of the angle being horizontally disposed and having its ends attached to the horizontal portions of the seat rails, the other side of the angle being vertically disposed and having its ends bent out at an angle thereto and secured to the inside vertical sides of the seat rails.

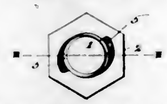
855,778. VENTILATOR. JOSEPH A. HICKEY, Philadelphia, Pa. Filed Dec. 29, 1904. Serial No. 238,701.



Claim.—1. In a device of the class described, the combination with a casing having vertical inner and outer walls, the latter having an inlet for the air, said casing also having its upper portion open for the discharge of the air, and provided in said upper portion with an inset angular portion adapted to receive a corner of a sash, the lower wall of the casing being also provided with an inset angular portion to receive a portion of the window frame, said inset portions serving to maintain the casing in position, of a drum journaled in the upper portion of said casing, said drum having a series of perforations adjacent to the discharge opening of the casing to be moved into and out of register with said opening, whereby the discharge of the air from the casing is regulated, said drum being also provided at a point substantially opposite to said perforations with an opening for the passage of the air into said drum, and having an imperforate portion midway the perforations and said opening.

2. In a device of the class described, the combination with a casing having vertical inner and outer walls, the latter having an inlet for the air, said casing also having its upper portion open for the discharge of the air, and provided in said upper portion with an inset angular portion adapted to receive a corner of a sash, the lower wall of the casing being also provided with an inset angular portion to receive a portion of the window frame, said inset portions serving to maintain the casing in position, of a drum journaled in the upper portion of said casing, said drum having a series of perforations adjacent to the discharge opening of the casing to be moved into and out of register with said opening, whereby the discharge of the air from the casing is regulated, said drum being also provided at a point substantially opposite to said perforations with an opening for the passage of the air into said drum, and having an imperforate portion midway the perforations and said opening, and an extension member telescopically mounted upon the end of said casing for adapting the ventilator to windows of varying widths.

855,779. NUT-LOCK. PARIS R. HINKLE, Mayer, Ariz., assignor of one-half to H. A. Clarke, Mayer, Ariz. Filed Sept. 20, 1906. Serial No. 335,346.



Claim.—1. A means for locking a male and a female threaded member against reverse movement relative to one another, comprising a pellet located in a civity between the members, and an inelastic plug inset in such cavity and contacting with such pellet.

2. A means for locking a male and a female threaded member against reverse movement relative to one another, comprising a pellet located in a cavity between the members, and a plug of soft inelastic material inset in such cavity and contacting with such pellet.

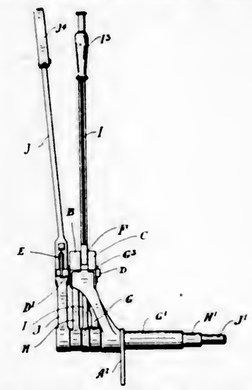
3. A means for locking a male and a female threaded member against reverse movement relative to one another, comprising a pellet located in a cavity between the members, and accessible from the exterior thereof, and a soft inelastic plug inset in such cavity and contacting with such pellet.

4. In combination with a male threaded member, a female threaded member having a wedge shaped recess accessible from the exterior of said member, a pellet in said recess and a soft metal plug inserted in the recess and in contact with said pellet, as and for the purpose set forth.

5. In combination, a bolt, a nut therefor, said nut having a cavity extending inward from one end wall of the nut, a pellet insertible in said cavity from its open end, and a plug also insertible through said open end and adapted to be pressed into position behind said pellet to lock the pellet in engagement with the bolt threads.

855,780. DEVICE FOR CONTROLLING MOTOR-CARS. HARVEY L. HOOKE, Muncie, Ind., assignor to Muncie Auto Parts Company, Muncie, Ind., a Corporation. Filed Feb. 18, 1907. Serial No. 358,041.

Claim.—1. A device of the kind described, comprising a frame, curvilinear guide-bars angle-shaped in cross section secured thereon, the flange of one of said guide-bars having a recess at its central portion on its under side, the opposite guide-bar having a continuous ledge extending concentrically with the flange and apart from it and divided by an opening at its central portion, there being oppositely disposed recesses in the lower edge of each of the said guide bars, a pair of cranks having extended hollow-shafts of different lengths, the shaft of one being journaled in the shaft of the other, the larger shaft being journaled in the frame, a control-lever journaled on the common center of said shafts and between the said cranks and retained slidingly between the said guide-bars, spring-pressed devices in each of the said cranks to maintain the cranks yieldingly and in removable engagement with the control-lever and the guide-bars, a spring-pressed hand-controlled device carried by the control-lever to alternately engage the devices in the cranks to unlock one of the cranks from its engagement with the control-lever and to lock it into engagement with the frame, and to unlock the opposite crank from engagement with the frame, and to lock it into engagement with the control-lever.



2. A device of the kind described, comprising a frame, curvilinear guide-bars angle-shaped in cross section secured thereon, the flange of one of said guide-bars having a recess at its central portion on its under side, the opposite guide-bar having a continuous ledge extending concentrically with the flange and apart from it and divided by an opening at its central portion, there being oppositely disposed recesses in the lower edge of each of said guide-bars, a curvilinear ratchet-bar secured to the said frame apart from, parallel to, and concentrically with the guide-bars thereof, a pair of cranks having extended hollow-shafts of differential lengths, the shaft of one being journaled in the shaft of the other, the larger shaft being journaled in the frame, a brake-lever rigidly secured to a shaft that is journaled in the smaller hollow-shaft and having its end extended beyond the ends of said crank shafts, the said brake-lever having hand-controlled means thereon to hold said lever into and out of engagement with said ratchet-bar, a control-lever journaled on the common center of said shafts and between the said cranks and retained slidingly between the said guide-bars, spring pressed devices in each of the said cranks to maintain the said cranks yieldingly and in removable engagement with the control-lever and the guide-bars, a spring-pressed hand-controlled device carried by the control-lever to alternately engage the devices in the cranks to unlock one of the cranks from its engagement with the control lever and to lock it into engagement with the frame, and to unlock the opposite crank from engagement with the frame and to lock it into engagement with the control-lever.

3. In a device of the kind described, the combination of a frame, a pair of curvilinear guide-bars angle-shaped in cross section secured thereon, the flange on one of the said guide-bars having a recess at its central portion on its under-side, the opposite guide-bar having a continuous ledge extending concentrically with the flange and apart from it divided by an opening at its central portion, there being oppositely disposed recesses in the lower edge of each of the vertical walls of the guide-bars at their central portions, a crank G having a hollow-shaft G^1 integrally connected thereto and journaled in the frame, the head of said crank being bifurcated, a pin secured transversely therein and a slotted detent K having the shoulder K^1, slidingly positioned in the said head, a spring seated in the body of the crank to press the detent K^1 upwardly, a second crank H having a hollow shaft H^1 integrally connected thereto journaled in and of a length exceeding that of the shaft G^1, the head of said crank H being bifurcated and having the protrusions H^4 a pin secured transversely in the said head, a pawl pivotally sustained on said pin, a spring seated in the body of the crank to engage said pawl, a control-lever journaled on the common center of said shafts and between the said cranks and retained slidingly between the said guide-bars there being a slot in

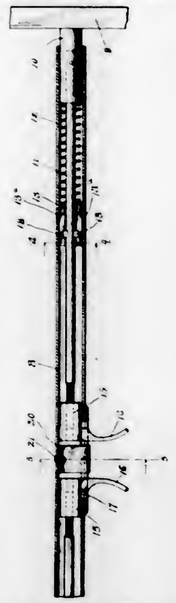
said lever at its portion between the guide-bars, the dog O with the noses O^1 and O^2 adapted to engage the said cranks H and G and to actuate the pawl and detent respectively, slidingly retained in said slot, a bar passing into the head of said control-lever connected to the dog and a spring to normally strain the dog toward the said head and against the guide-bars, substantially as described.

4. In a device of the kind described, the combination of a frame, a pair of curvilinear guide-bars angle-shaped in cross section secured thereon, the flange of one of the said guide-bars having a recess at its central portion on its under-side, the opposite guide-bar having a continuous ledge extending concentrically with the flange and apart from it, divided by an opening at its central portion, there being oppositely disposed recesses in the lower edge of each of the vertical walls of the guide bars at their central portions, a curvilinear ratchet-bar secured to the said frame apart from, parallel to and concentrically with the guide-bar thereof, a crank G having a hollow-shaft G^1 integrally connected thereto and journaled in the frame, the head of said crank being bifurcated, a pin secured transversely thereiu and a slotted detent K having the shoulder K^1, slidingly positioned in the said head, a spring seated in the body of the crank to press the detent K^1 upwardly, a second crank H having a hollow shaft H^1 integrally connected thereto journaled in and of a length exceeding that of the shaft G^1, the head of said crank H being bifurcated and having the protrusions H^4, a pin secured transversely in the said head a pawl pivotally sustained on said pin, a spring seated in the body of the crank to engage said pawl, a brake-lever rigidly secured to a shaft that is journaled in the smaller hollow-shaft and having its end extended beyond the ends of said crank shafts, the said brake-lever having hand-controlled means thereon to hold said lever into or out of engagement with the said ratchet-bar, a control-lever journaled on the common center of said shafts and between the cranks aforesaid and retained slidingly between the said guide-bars, there being a slot in said lever at its portion between the guide-bars, the dog O with the noses O^1 and O^2 adapted to engage the said cranks H and G and to actuate the pawl and detent respectively, slidingly retained in said slot, a bar passing into the head of said control-lever connected to the dog and a spring to normally strain the dog toward said head and against the guide-bars, substantially as described.

5. In a device of the kind described, the combination of a frame, a pair of curvilinear guide bars angle-shaped in cross section secured thereon, the flange of one of said guide-bars having a recess at its central portion on its under-side, the opposite guide-bar having a continuous ledge extending concentrically with the flange and apart from it and divided by an opening at its central portion, there being oppositely disposed recesses in the lower edge of each of said guide-bars, a pair of cranks having extended hollow-shafts of different lengths, the shaft of one being journaled in the shaft of the other, the larger shaft being journaled in the frame, oscillatory cranks being secured, respectively, to these hollow shafts, a control-lever journaled on the common center of said shafts and between said cranks and retained slidingly between the said guide-bars, spring-pressed devices in each of said cranks to maintain the cranks yieldingly and in removable engagement with the control-lever and the guide-bars, a spring-pressed hand-controlled device carried by the control-lever to alternately engage the devices in the cranks to unlock one of the cranks from its engagement with the control-lever and to lock it into engagement with the frame, and to unlock the opposite crank from engagement with the frame and to lock it into engagement with the control-lever, substantially as described.

6. In a device of the kind described, the combination of a frame, a pair of curvilinear guide-bars angle-shaped in cross section secured thereon, the flange of one of said guide-bars having a recess at its central portion on its under side, the opposite guide-bar having a continuous ledge extending concentrically with the flange and apart from it and divided by an opening at its central portion, there being oppositely disposed recesses in the lower edge of each of said guide-bars, a curvilinear ratchet-bar secured to the said frame apart from, parallel to and concentrically with the guide-bars thereof, a pair of cranks having extended hollow-shafts of different lengths, the shaft of one being journaled in the shaft of the other, the larger shaft being journaled in the frame, a brake-lever rigidly secured to a shaft that is journaled in the smaller hollow shaft and having its end extended beyond the ends of said crank shafts, the said brake-lever having hand-controlled means thereon to hold said lever into or out of engagement with said ratchet-bar, oscillatory cranks secured respectively to these hollow-shafts and the brake-lever shaft, a control-lever journaled on the common center of said shafts and between said cranks and retained slidingly between the said guide-bars, spring-pressed devices in each of said cranks to maintain the cranks yieldingly and in removable engagement with the control-lever and the guide-bars, a spring-pressed hand-controlled device carried by the control-lever to alternately engage the devices in the cranks to unlock one of the cranks from its engagement with the control-lever and to lock it into engagement with the frame, and to unlock the opposite crank from engagement with the frame and to lock it into engagement with the control-lever, substantially as described.

855,781. CURTAIN-FIXTURE. CHARLES L. HOPKINS, Chicago, Ill. Filed Mar. 21, 1907. Serial No. 363,551.



Claim.—1. In a curtain fixture, the combination of a tubular stick, a rod within said stick, a spring for thrusting said rod toward the end of the stick, said tube having a slot between its ends, a pinch-handle extending through said slot and having screw-threaded engagement with the inner end of the rod, means normally preventing the rotation of said rod and consequent detachment of the same from the pinch-handle, said means being adapted to permit the rod to be rotated when said rod is thrust into the tube beyond a predetermined point, and means for normally preventing said rod from being thus thrust inward relative to said stick.

2. In a curtain fixture, the combination of a slotted tubular stick, a pinch-handle extending through the slot in said stick, a rod having screw-threaded engagement with said pinch-handle, means normally preventing rotation of said rod, but adapted to permit said rod to be rotated when the latter is thrust into the stick beyond a predetermined point, and removable means in the stick for normally preventing said rod from being moved inward past said predetermined point.

3. In a curtain fixture, the combination of a tubular stick, a spring-actuated rod in said stick, means slidably but non-rotatably arranged in the stick and having screw-threaded engagement with the inner end of said rod, said means being adapted to limit the outward movement of the rod, means within the stick for preventing rotation of said rod, and consequent detachment of the same from said limiting means, but adapted to permit such rotation of the rod when the latter is thrust into the stick beyond a predetermined point, and a removable member adapted to normally limit the inward movement of said rod.

4. In a curtain fixture, the combination of a tubular stick, a rod within said stick, a spring tending to thrust said rod toward the end of the stick, means adapted to normally prevent rotation of said rod, a screw-threaded pinch-handle in said stick adapted to be secured upon the inner end of said rod by the rotation of the latter, means for limiting the outward movement of said pinch-handle, and removable means adapted to limit the inward movement of said pinch-handle.

5. In a curtain fixture, the combination of a tubular stick, a spring-actuated rod within said stick, means located within the stick adapted to normally prevent rotation of said rod, but permitting rotation thereof when said rod is moved longitudinally beyond a given point, means within the stick adapted to limit the movement of the rod in the direction to release said rod, said means having screw-threaded connection with said rod, and means adapted to limit the movement of said rod in the opposite direction.

855,782. CLOSURE FOR BOTTLES, JARS, AND OTHER RECEPTACLES. JOSEPH V. HULL, Brooklyn, N. Y., assignor to Harry C. Blye, New York, N. Y. Filed July 27, 1905. Serial No. 271,406.

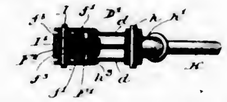


Claim.—1. In combination with a bottle or other receptacle having an annular exterior shoulder about its mouth, a sheet metal cap fitting snugly over the mouth and upper end of said receptacle and comprising a top and depending side walls having at their lower edge an annular hollow beading which extends outwardly at an angle from and beyond the vertical plane of said side walls, and a packing ring held in the groove formed within said beading, said beading being bent downwardly at an angle at its line of junction with the sides of the cap and thereby turned partly under said shoulder for firmly binding the packing against said shoulder and sealing the bottle, said beading not being deformed in said bending operation but turned into an angular position; substantially as set forth.

2. In combination with a bottle or other receptacle having an annular exterior shoulder about its mouth, a sheet metal cap fitting snugly over the mouth and upper end of said receptacle and comprising a top and depending side walls having at their lower edge an annular hollow beading which extends outwardly at an angle from and beyond the vertical plane of said side walls, and a packing ring held in the groove formed within said beading, said beading being partly above and partly below the apex of said shoulder and being bent downwardly at an angle at its line of junction with the sides of the cap and thereby turned partly under said shoulder for firmly binding the packing against said shoulder at its apex and below the same and sealing the bottle, said beading not being deformed in said bending operation but turned into an angular position; substantially as set forth.

3. In combination with a bottle or other receptacle having an annular exterior shoulder about its mouth, a sheet metal cap fitting over the mouth and upper end of said receptacle and comprising a top and depending side walls having at their lower edge an annular hollow beading which extends outwardly at an angle from and beyond the vertical plane of said side walls and the lower wall of which beading is less in width than the upper wall thereof, and a packing ring held in the groove formed within said beading and projecting beyond the lower wall of same, said beading being bent downwardly at an angle along its line of junction with the sides of the cap and thereby turned partly under said shoulder for firmly binding the packing against said shoulder and sealing the bottle, and said lower wall of said beading permitting the packing to squeeze outwardly to some extent from the beading and against said shoulder, said beading not being deformed in said bending operation but turned into an angular position; substantially as set forth.

855,783. PUMP. WILLIAM F. JACOBS, Ottawa, Ill. Filed June 12, 1906. Serial No. 321,381.



Claim.—1. In a pump, the combination with the pump rod adapted for connection at its upper end with a motor and a swinging pump handle, of a hollow rack-bar surrounding and having sliding engagement with the pump rod and provided with means for detachably fixing it to the pump rod, the rack teeth of said bar being located at the side of the bar and a gear segment carried by the handle and meshing with said rack, the pitch line of the rack and gear being located in the plane of the longitudinal axis of the pump rod.

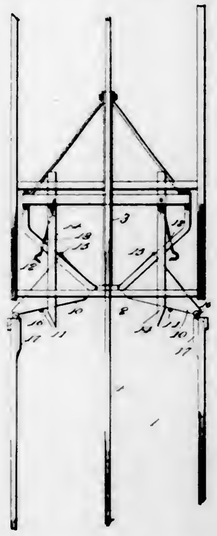
2. In a pump, the combination with the pump rod adapted for connection at its upper end with a motor, and swinging pump handle, of a hollow rack-bar surrounding and adapted for sliding engagement with the pump-rod and provided also with means for detachably fixing it to the pump rod, said rack-bar being provided with two rows of gear teeth, one on each side of the bar, and a gear segment carried by the handle provided with two laterally separated curved series of gear teeth adapted for meshing engagement with the teeth of said rack, the pitch lines of the meshing gear and rack being in the plane of the longitudinal axis of the pump rod.

855,784. CAGE. DAVID W. JONES, Athens, Ohio. Filed Sept. 12, 1906. Serial No. 334,345.

Claim.—1. In combination with a shaft, a support mounted for vertical movement therein, scoops pivoted at the inner portions thereof to said support, hook members pivoted at the upper ends thereof to the support and normally coöperating with the scoops to hold the latter in upright positions, said hooks being provided in the length thereof with lateral offset portions, trip bars arranged in the upper portion of the shaft and adapted to engage the lateral offset portions of the hooks above mentioned to throw the latter out of engaging coöperation with the scoops and permit said scoops to dump, and means for restoring the scoops to their normal positions after the dumping operation.

2. In combination with a shaft, a support mounted therein and adapted to be raised and lowered, brackets attached to said support, a pair of scoops pivoted to said brackets, stop means carried by said scoops for limiting the dumping movement thereof, members for holding the scoops in upright position, and means for tripping the said members to effect automatic dumping of the scoops.

3. In combination with a shaft, a support or cage adapted to be lowered and raised therein, scoops pivoted at the inner portions thereof to said support or cage, means for holding the said scoops in upright positions, means for effecting automatic dumping of the scoops, and members at the outer portions of the scoops arranged to coöperate with the walls of the shaft to effect automatic restoration of the scoops to upright positions when the cage or support moves downwardly in the shaft.



4. In combination with a shaft, a cage or support adapted to be lowered and raised therein, a scoop pivoted at its inner portion to said cage or support, hook members for connection with the scoop to hold the same in an upright position, trip members in the path of movement of the cage or support for tripping the hook members to effect automatic dumping of the scoop, means for limiting the dumping movement of the scoop, and members at the outer portion of the scoop arranged for contact with one of the walls of the shaft to restore the scoop automatically to an upright position when the cage or support lowers after the scoop has been dumped.

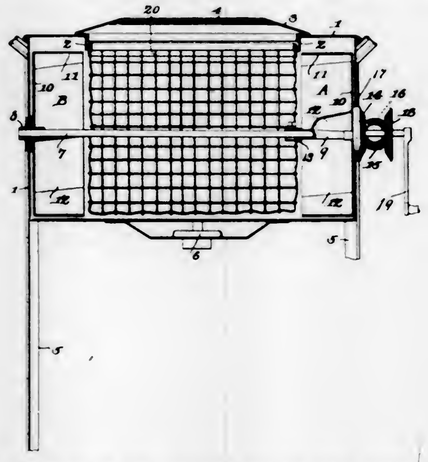
855,785. DISH-WASHER. THOMAS E. JONES, Chicago, Ill., assignor of one-half to Charles P. Arnold, Chicago, Ill. Filed May 14, 1906. Serial No. 316,752.

Claim.—1. In a dish washing machine the combination with a casing; of a dish receptacle supported therein and above the bottom of the casing, said receptacle having openings in the bottom and walls thereof, and oppositely movable water agitating devices within the casing at opposite ends of the receptacle.

2. In a dish washing machine the combination with a casing; of a dish receptacle supported therein above the bottom of the casing said receptacle having openings in the bottom and walls thereof, rotatable agitating devices within the casing at opposite ends of the receptacle, and means for simultaneously rotating the devices in opposite directions.

3. In a dish washing machine the combination with a casing having a drive shaft extending therefrom; of a dish receptacle supported within the casing by said shaft, and oppositely rotatable agitating devices mounted on the shaft at opposite ends of the receptacle.

4. In a dish washing machine the combination with a casing having a drive shaft therein; of a dish receptacle supported by said shaft within the casing, blades radiating from the shaft between one end of the receptacle and casing, said blades being rotatable with the shaft, blades radiating from the shaft between the other end of the receptacle and casing, and means for rotating said blades and the shaft in opposite directions.



5. In a dish washing machine the combination with a casing having a drive shaft therein, of agitating devices mounted on the shaft within the ends of the casing, means for simultaneously rotating said devices in opposite directions, and a dish receptacle within the casing and interposed between the agitating devices.

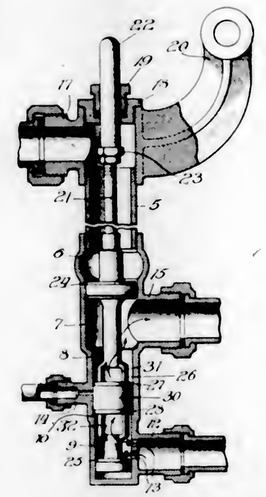
6. In a dish washing machine the combination with a receptacle having a shaft rotatably mounted therein; of agitating blades secured to and rotatable with the shaft within one end of the casing, a disk loosely mounted on the shaft at the other end of the casing, agitating blades rotatable with the disk, and mechanism interposed between the drive shaft and disk for rotating said disk in a direction opposite to that of the shaft.

7. In a dish washing machine the combination with a receptacle having a shaft rotatably mounted therein; of agitating blades secured to and rotatable with the shaft within one end of the casing, a disk loosely mounted on the shaft at the other end of the casing, agitating blades rotatable with the disk, a gear rotatable with the disk, a drive gear upon the shaft, and a gear for transmitting motion from the drive gear to the gear on the disk.

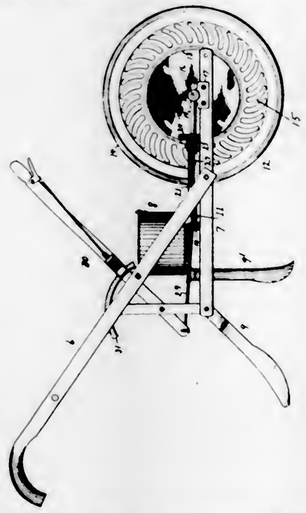
855,786. WATER-CLOSET FLUSH-VALVE DEVICE. JOHN KELLY, Chicago, Ill. Filed Nov. 24, 1906. Serial No. 344,809.

Claim.—In a valve-device of the character described, the combination of a casing containing an inlet near one end adapted to be connected with a water-supply, an opening adapted to be connected with a flush-tank, an outlet adapted to be connected with the flush-rim of a water-closet bowl, and a drain-outlet, a valve-rod reciprocably confined in said casing and provided with valves for controlling said inlet, opening and outlet respectively, and constructed and arranged to be normally upwardly pressed by the water-supply and in such position afford a passage from the tank to the rim, and an adjustable stop on said rod engaging said casing to limit its upward movement under the water-pressure for controlling the flow of water from said tank to the rim.

855,786.



855,787. CORN-DRILL. WILLIAM KIRN, Rossville, Kans. Filed Oct. 4, 1906. Serial No. 337,484.

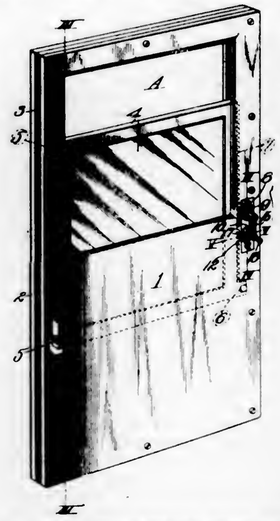


Claim.—1. In a corn-drill, the combination with a frame and seed-dropping mechanism mounted therein, of a main wheel having its middle portion dished that its hub may be mounted to one side and permit its rim to be disposed about the middle of the frame, said wheel having a removable friction plate with its face roughened, and an annular depression outside said plate, a shaft in the frame on which the wheel is mounted, a T coupling mounted on the shaft, a compression spring for the T coupling, and a collar for limiting the movement of the T coupling, a pipe secured to the T coupling, a squared operating rod for the seed-dropping mechanism having a rounded forward end extending loosely into said pipe, a larger pipe mounted on said first-mentioned pipe and having its end squared to engage with the squared portion of the operating rod, a wheel connected with the larger pipe and a removable friction rim therefor, a groove in said larger pipe, a spring-pressed yoke engaging the collar, an operating lever therefor, and a graduated scale for indicating the number of inches apart that the seeds are dropped.

2. In a corn-drill, the combination with the handles, the frame, the main wheel, the seed-dropping mechanism, and the operating rod therefor, of a friction-disk removably secured to said wheel, and an annular depression around the same, a spring-pressed friction-gear engaging said friction-disk and slidably mounted on said operating-rod, and suitable controlling lever and connecting mechanism between said friction-gear and said lever.

3. In a corn-drill, the combination with the handles, the frame, the main wheel, the seed-dropping mechanism and the operating rod therefor, of a roughened friction-disk detachably secured to the wheel, a shaft for the wheel, a bearing for the operating-rod slidably mounted on said shaft, a compression spring for pressing the rod toward the disk, and a collar on the shaft for limiting the movement toward the disk, a friction wheel having a detachable and roughened rim for engaging the friction disk, said wheel being slidably mounted on said operating-rod and being adapted to operate said rod, and an operating lever for controlling the said wheel.

855,788. WINDOW-SASH-OPERATING DEVICE. PHILIPP KNÖCHEL, Hanau, Germany, assignor to Abraham Katz, St. Louis, Mo. Filed Nov. 3, 1906. Serial No. 341,853.

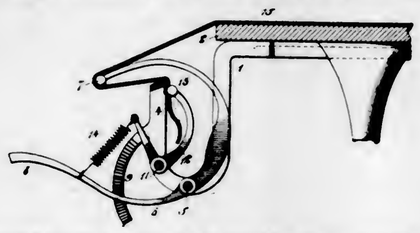


Claim.—A window sash operating device comprising an inner member, an outer member, an intermediate member providing runways, and guide surfaces, a sash having a projection for guiding the sash and a rack at one edge, a plate formed with a journal bearing, a socket and inclines leading to the socket, a shaft mounted in the journal bearing, a pinion fixed to the shaft between the inner and outer members and in mesh with the rack, an operating crank fixed to the shaft and a spring locking bolt having a handle, loosely seated in the end of the crank and adapted to be guided by the inclines so as to engage the socket in the plate.

855,789. BOSOM STRETCHER AND HOLDER. JOHN KONSEL, New York, N. Y. Filed July 18, 1906. Serial No. 326,651.

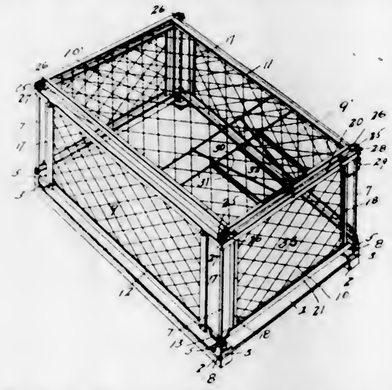
Claim.—A bosom stretcher and holder in which is comprised a yoke provided with a U-shaped extension, said

yoke being adapted for securing to a bosom board or table; a curved member pivoted in the U-shaped extension and having a cross-bar at one extremity, the other extremity constituting a manipulating handle; a rack carried by the U-shaped extension and a tooth by the above mentioned



curved member; a bell-crank pivoted in the U-shaped extension, said crank having at one extremity a cross-bar, and engaging a spring at the other extremity which passes to the curved member, the whole combined and arranged to operate substantially as shown and described.

855,790. COOP OR CRATE. ODELON J. LA BAUVE, Edna, Tex. Filed July 12, 1906. Serial No. 325,826.



Claim.—1. The combination in a crate of a base portion, upright corner posts supported thereon, side and end members of the crate supported on said posts with detachable connections thereto, and a hinged detachable top having supporting connections at the upper ends of said posts.

2. The combination in a crate of a base portion, supporting blocks secured at the corners thereof, upright corner posts pivoted in said blocks, the sides and ends of the crate detachably connected to said posts, and the top detachably connected at the upper end of said posts.

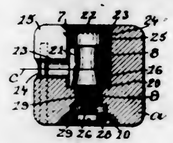
3. The combination in a crate of a base portion, supporting blocks secured thereon, corner posts pivoted in said blocks, the sides and ends of the crate detachably connected to said posts, supporting members having detachable connection at the ends of the corner posts, and the top of the crate detachably connected to said supporting members.

4. The combination in a crate of a base portion, supporting block mounted thereon, upright corner posts supported on said block, side and end members of the crate detachably supported on said posts, said members having locking means at the corners thereof for insuring stability, and a detachable top on the crate.

5. The combination in a crate with a base portion of corner posts pivotally connected thereto, side and end members detachably connected to the posts, top supporting members secured by screw threads at the upper ends of the posts, and the top of the crate having its corners connected by pivots to said supporting members.

6. The combination in a crate with a base portion, of corner posts pivoted thereto, side and end members detachably connected to said posts, a plurality of bars of said side and end members having openings therein adapted to fit over the posts, and a top detachably connected to the corner posts.

855,791. LOOM-SHUTTLE. JOSEPH LACROIX and JOHN V. CUNNIFF, Fall River, Mass. Filed June 28, 1906. Serial No. 323,841.



Claim.—1. In a loom shuttle, a shuttle body having a dished depression in the top, a circular chamber extending down from the depression, intersecting the hole forming the throat and the hole forming the eye of the shuttle, and slits extending down from the depression and the top of the shuttle to the holes forming the throat and eye of the shuttle, a fixed circular post in the chamber, a cap adapted to fit in the depression in the top of the shuttle and close the open end of the chamber, means for holding the cap in the closed position under spring tension, and means by which the cap may be raised against the spring tension.

2. In a loom shuttle, a shuttle body having a dished depression in the top, a circular chamber extending down from the depression, a hole leading from the bobbin cavity into the chamber, a hole leading from the side of the shuttle into the chamber and forming the eye of the shuttle, and slits extending from the depression and the top of the shuttle to the holes leading from the bobbin cavity and the side of the shuttle, a fixed round hollow post in the chamber having a screw threaded lower end, a cap adapted to fit in the depression in the top of the shuttle and close the open upper end of the chamber, a stem on the cap adapted to extend down through the post, a button on the end of the stem in the recess in the bottom of the shuttle, and a coiled spring surrounding the stem in the post, whereby the cap is held in the closed position under spring tension and may be raised by an upward pressure on the button to thread the shuttle, as described.

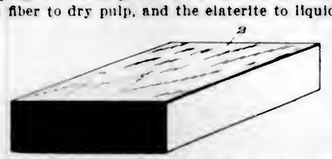
3. In a shuttle, a shuttle body having a circular chamber connected with the bobbin cavity and the shuttle eye, a fixed circular post in said circular chamber, a cap adapted to close the open end of the chamber, means for holding the cap yieldingly in the closed position under spring tension, and means by which the cap may be raised against said spring tension.

4. In a loom shuttle a hand threading device *d* comprising a round hollow concave post 16 having a central hole 17 in the top forming an internal annular shoulder 18, a reduced screw-threaded lower end 19 forming an annular shoulder 20, a vertical lug 21 on the side of the post, a circular cap 22 larger than the chamber 8 and having a slightly convex top, a beveled edge 23 adapted to fit in the depression 6 in the top of the shuttle, a downwardly-extending annular lip 24 adapted to have a sliding fit over the upper end of the post 16, and a central stem 26 having a screw-threaded lower end 27, a nut button 28 on the end 27 of the stem, and a coiled spring 29 surrounding the stem 26 in the post 16 and adapted to engage with the shoulder 18 in the post and the button 28 on the stem, for the purpose as described.

855,792. COMPO-BOARD AND PROCESS OF PRODUCING SAME. JAMES E. LAPPEN, Decorah, Iowa, assignor to L. L. C. Brooks and F. M. Catlin, St. Paul, Minn. Filed Oct. 4, 1904. Serial No. 227,092.

Claim.—1. A compo board composed of fiber and elaterite, and having its outer surface portion impregnated with paraffin, substantially as described.

2. The process of producing a compo board composed of flax fiber and elaterite, and having its outer surface portion impregnated with paraffin, which consists in reducing the flax fiber to dry pulp, and the elaterite to liquid form,



then thoroughly commingling the said ingredients, then molding the same into form, under pressure, and then boiling the product in paraffin, substantially as described.

855,793. HINGE-JOINT FOR REVOLVERS. JAMES C. E. LEACH, Norwich, Conn. Filed May 26, 1905. Renewed Apr. 16, 1907. Serial No. 368,585.



Claim.—1. In combination with the hinge joint, and spring-actuated ejector stem, of a revolver, a lifter disk rotatably mounted on the joint pin, and formed with a radial projection engaging said ejector stem, a cam disk mounted on the joint pin parallel with and pivoted to the said lifter disk and capable of both rotary and lateral movement with respect to the joint pin, a shoulder h^2 on said cam disk, and a spring secured at one end to the cam disk and engaging a stud on the lifter disk for holding said shoulder in engagement with the revolver frame.

2. The combination with the frame, barrel, and cylinder of a revolver, of a joint pin connecting said frame and barrel, a disk, mounted on said pin having radial projection, a cam disk movable parallel with and eccentrically pivoted to the face of said first-mentioned disk and having elongated central opening receiving the joint pin, said cam disk formed also with a shoulder, and diametrically opposite cut-away portion, a flat spring in said cut-away portion held at one end to the cam disk, and a stud projecting from the face of the first-mentioned disk and engaging said spring between its ends.

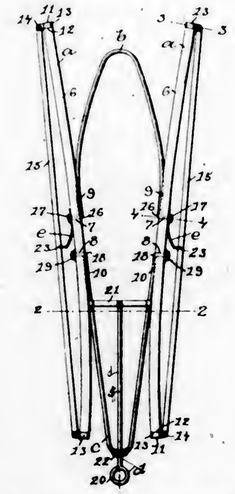
855,794. TROUSERS-STRETCHER. ISAAC B. MACOMBER, Portsmouth, R. I. Filed Nov. 17, 1906. Serial No. 343,873.

Claim.—1. A trousers' stretcher comprising two side arms, each side arm consisting of a spring bar, fittings on the ends of the spring bar and a thin flexible creasing bar secured by bowing the spring bar and securing the ends of the creasing bar to the fittings, intermediate springs secured to the side arms, and means for contracting the side arms against the tension of the intermediate springs.

2. A trousers' stretcher comprising two side arms, each supporting a thin flexible creasing bar under tension, intermediate connecting springs secured to the side arms, and means operatively connected with one of the springs adapted to contract the side arms against the tension of the springs.

3. A trousers' stretcher approximately the shape of a trousers' leg and comprising two side arms, each side arm consisting of a spring bar and a thin flexible creasing bar secured to the spring bar under tension, an intermediate U-shaped spring secured to the side arms, an intermediate V-shaped spring secured to the side arms, and means operatively connected with the V-shaped spring adapted to contract the side arms against the tension of the springs.

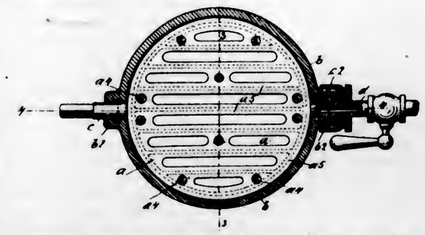
4. A trousers' stretcher comprising two side arms, each side arm consisting of a spring bar and a thin flexible creasing bar secured to the spring bar under tension, an intermediate U-shaped spring secured to the side arms, an intermediate V-shaped spring secured to the side arms, a cross strap extending around the arms of the V-shaped spring, a rod connected to the cross strap, and means for reciprocally supporting the rod on the closed end of the spring, whereby on operating the rod the stretcher is contracted or allowed to expand, as described.



5. A trousers' stretcher comprising two side arms *a a*, each side arm *a* consisting of a bar 6 constructed preferably of wood having a spring tension, fittings 13 13 having the ends 14 14 secured to the ends of the bar, and a thin flexible metal creasing bar 15 secured at each end under tension to the ends 14 14 of the fittings 13 13, intermediate springs secured to the bars 6 6, and means for contracting the side arms *a a* against the tension of the intermediate springs, as described.

6. In trousers' stretcher, the combination of two side arms *a a*, a U-shaped intermediate spring *b* secured to the side arms, a V-shaped intermediate spring *c* secured to the side arms, an operating rod *d* reciprocally supported on the V-shaped spring *c* and secured to a stop 21 extending around the arms of the V-shaped spring *c*, and auxiliary springs *e e* on the side arms, whereby on operating the rod *d* the stretcher is contracted against the tension of the springs *b* and *c* or allowed to expand, as described.

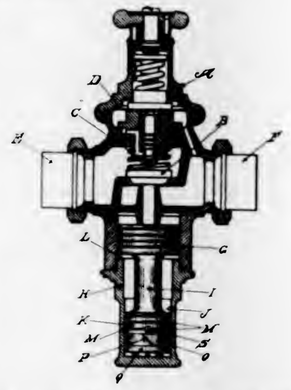
855,795. GRATE. MEYER MARGOLIN and ALEKS KARHON, New York, N. Y. Filed Mar. 14, 1906. Serial No. 305,940.



Claim.—A grate comprising a frame and parallel bars, said frame and bars being composed of top and bottom

members secured together, the bottom members of the bars being hollow to form gas passages and the frame being provided with a passage which communicates with the passages in said bars, the top portions of the bottom members of said bars being provided with side ports or passages which are covered and protected by the top members of said bars, and the inner walls of the frame being also provided with ports or passages which communicate with the spaces therein and which are covered and protected by the top member of the frame.

855,796. REDUCING-VALVE. WILLIAM B. MASON, Boston, Mass., assignor to The Mason Regulator Company, Saco, Me., a Corporation of Maine. Filed Nov. 23, 1905. Serial No. 288,656.



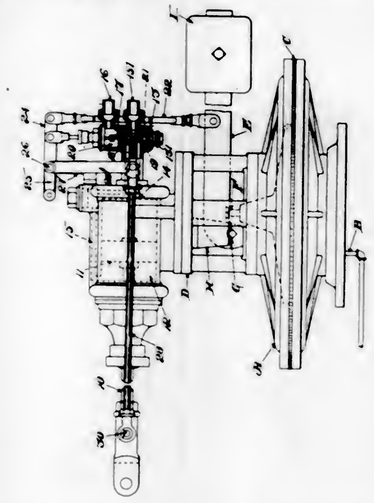
Claim.—1. In a reducing valve, the combination with the main piston, of a dash-pot cylinder, a piston therein rigidly connected with the said main piston, and a friction ring forming a part of the said dash pot piston and adapted to engage the interior walls of the dash pot cylinder and retard the movement of the main piston.

2. In a reducing valve, the combination with the main valve, of a dash pot cylinder, a dash pot piston therein rigidly connected to the main piston, and having a portion of reduced diameter, a friction ring upon the said reduced portion, and a screw cap engaging the said piston and friction ring.

855,797. SLOWING DEVICE FOR RHEOSTATS. WILLIAM B. MASON, Boston, Mass., assignor to The Mason Regulator Company, Boston, Mass., a Corporation of Maine. Filed June 22, 1906. Serial No. 322,865.

Claim.—1. The compensating control device comprising a cylinder and piston, a pilot valve controlling the flow of fluid to the said cylinder, a pressure weighing device movable in response to changes in pressure in the system to be controlled, a floating lever to operate said pilot valve, connections between said pressure weighing device and said floating lever, a movable fulcrum for the said floating lever, and connections to the said piston to move the fulcrum to compensate for the movement of the floating lever caused by the movement of the pressure weighing device.

2. The compensating control device comprising a cylinder and piston, a pilot valve controlling the flow of fluid to the said cylinder, a pressure weighing device movable in response to changes in pressnre in the system to be controlled, a floating lever to operate said pilot valve, connections between said pressure weighing device and said floating lever, a rock shaft, one arm of which affords a movable fulcrum for the said floating lever, and connections between the other arm of the said rock shaft and the said piston to move the rock shaft to compensate for the movement of the floating lever caused by the movement of the pressure weighing device.



855,798. METHOD OF PRODUCING SELF-LIGHTING GAS-MANTLES. FREDERIC W. MAYER, New York, N. Y., assignor to Perfected Self-Lighting Mantle Company, New York, N. Y., a Corporation of New York. Filed Sept. 8, 1906. Serial No. 333,814.

Claim.—1. The process of applying catalytic material to protected gas mantles, which consists in forming the catalytic agent thereof into a paste with a solvent of the protective covering of said mantle, applying the paste to the mantle thereby dissolving such covering at the point of application and allowing said solvent to evaporate.

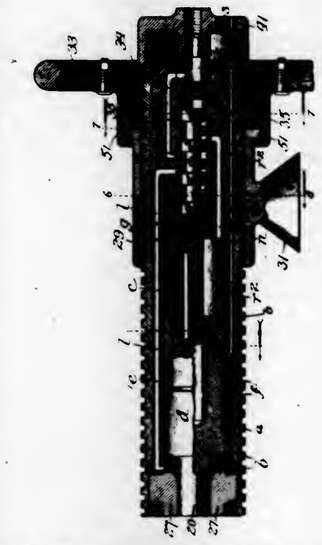
2. The process of applying catalytic material to protected gas mantles, which consists in forming a paste of a catalytic agent and a solvent of the protective covering of said mantle, forming the paste into a semi-liquid pellet, applying the pellet to the protective covering of said mantle, thus dissolving away the said protective covering through the action of said solvent, and allowing said solvent to evaporate, leaving the catalytic agent in intimate contact with the fibers of the mantle.

3. The art of forming self-igniting gas mantles, consisting of preparing a tube of textile mesh, impregnating said tube with salts of certain refractory earths, burning out the textile mesh, and leaving a skeleton of refractory material, covering said skeleton mesh with a protective coating, applying thereto a paste formed of a catalytic agent mixed with a solvent of the protective coating, and thereby dissolving said coating at the point of application and allowing the said solvent to evaporate.

855,799. FLUID-PRESSURE ENGINE. JOHN F. MITCHELL, Topeka, Kans. Filed Feb. 20, 1905. Serial No. 246,546.

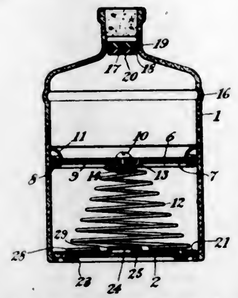
Claim.—1. In an engine, the combination of a cylinder having an operating piston therein, a valve for controlling the fluid supply to the cylinder, means for continually supplying operative fluid to the ends of the valve, a second valve slidable within the first valve to control the exhaust of operative fluid from the first valve chamber, and means depending upon the position of the main piston for controlling said second valve.

2. In an engine, the combination of a cylinder, a piston reciprocatingly mounted in said cylinder, a valve chamber axially arranged with respect to said main cylinder, a main controlling valve in said chamber, continually opened, passages leading from the main fluid supply to the ends of the valve cylinder, a secondary valve within the main valve for controlling the exhaust passages from the ends of the valve chamber, and means depending upon the position of the main piston for operating said secondary valve.



3. In an engine, the combination with a main cylinder of a piston reciprocatingly mounted therein, a valve chamber having a piston valve portion reciprocatingly mounted therein, passageways leading from the forward and rearward ends of the main cylinder to the annular cavities of the valve chamber, a main supply cavity leading to an annular cavity of the valve chamber, passageways connecting the ends of the valve chamber continually with the main supply cavity, a cylindrical bore within said main valve, a secondary valve reciprocatingly mounted within the cylinder of the main valve, means depending upon the position of the main piston for controlling the position of the secondary valve within the main valve, and means depending upon the position of the secondary valve within the main valve for controlling the operation of the main valve.

855,800. NON-REFILLABLE BOTTLE. JOSEPH D. MITCHILL. Apopka, Fla. Filed Sept. 4, 1906. Serial No. 333,051.



Claim.—1. In a non-refillable bottle, a piston underneath the liquid, and actuating means therefor adapted to advance the piston as the liquid is decanted, and means to prevent the downward movement of said piston, substantially as described.

2. In a non-refillable bottle, a piston underneath the liquid, and actuating means therefor adapted to advance the piston as the liquid is decanted, and to maintain the upper surface of the liquid at the top of the bottle, and means to prevent the downward movement of said piston, substantially as described.

3. In a non-refillable bottle, a piston underneath the liquid, and actuating means therefor adapted to advance the piston as the liquid is decanted, and means to prevent the introduction of tools in said bottle, and means to prevent the downward movement of said piston, substantially as described.

4. In a non-refillable bottle, a piston underneath the liquid, and actuating means therefor adapted to advance the piston as the liquid is decanted, and a lock for locking said piston in its uppermost position, substantially as described.

5. In a non-refillable bottle, a piston underneath the liquid, means for maintaining said piston in its effective position, and actuating means therefor adapted to advance the piston as the liquid is decanted, and means to prevent the downward movement of said piston, substantially as described.

6. In a non-refillable bottle, a piston underneath the liquid, and actuating means therefor adapted to advance the piston as the liquid is decanted, a lock for securing said piston in its lowermost position, which is destroyed in releasing said piston, and means to prevent the downward movement of said piston, substantially as described.

7. In a non-refillable bottle, a piston underneath the liquid, means for maintaining said piston in its effective position, actuating means therefor adapted to advance the piston as the liquid is decanted, a lock for locking said piston in its uppermost position, and means to prevent the introduction of tools in said bottle, substantially as described.

8. In a non-refillable bottle, a piston underneath the liquid, means for maintaining said piston in its effective position, actuating means therefor adapted to advance the piston as the liquid is decanted, a lock for securing said piston in its lowermost position, which is destroyed in releasing said piston, a lock for locking said piston in its uppermost position and means for preventing the introduction of tools in said bottle, substantially as described.

9. In a non-refillable bottle, a piston underneath the liquid, means for maintaining said piston in its effective position, actuating means therefor adapted to advance the piston as the liquid is decanted, a separate bottom for said bottle, means for holding same in place which permit the ingress of air beneath said piston, a lock for locking said piston in its uppermost position and means for preventing the introduction of tools in said bottle, substantially as described.

10. In a non-refillable bottle, a piston beneath the liquid, a packing of resilient material surrounding the periphery of said piston, and preventing the downward movement thereof, a spring engaging the under side of said piston and forcing the same upward as the liquid is withdrawn, substantially as described.

11. In a non-refillable bottle, a piston beneath the liquid, a packing of resilient material surrounding the periphery of said piston, and contacting with the bottle and preventing the downward movement of said piston, a spring engaging the under side of said piston and forcing the same upward as the liquid is withdrawn, the said bottle being grooved to receive said packing at the uppermost position of the piston, substantially as described.

12. In a non-refillable bottle, a piston beneath the liquid, a packing of resilient material surrounding the periphery of said piston and preventing the downward movement thereof, a spring engaging the under side of said piston and forcing the same upward as the liquor is withdrawn, and means to prevent the insertion of tools in said bottle, substantially as described.

13. In a non-refillable bottle, a piston beneath the liquid, a packing of resilient material surrounding the pe-

riphery of said piston, and preventing the downward movement thereof, a spring engaging the under side of said piston and forcing the same upward as the liquid is withdrawn, a lock for holding said piston in its lowermost position, and means for destroying said lock upon a release of the piston, substantially as described.

14. In a non-refillable bottle, a piston beneath the liquid, a packing of resilient material surrounding the periphery of said piston, and preventing the downward movement thereof, a spring engaging the under side of said piston and forcing the same upward as the liquid is withdrawn, a separate bottom in said bottle, means for securing the same to the bottle which permit the ingress of air beneath said piston, substantially as described.

15. In a non-refillable bottle, a plurality of disks beneath the liquid, a packing around the edge of one of said disks, means for anchoring the lower disk against rotary movement, a spring interposed between said disks, and raising the upper disk as the liquid is withdrawn, a separate bottom for said bottle, means for securing the same to the bottle which permit the ingress of air beneath said piston, and means for obstructing the bottle neck against the admission of tools, substantially as described.

16. In a non-refillable bottle, a plurality of disks beneath the liquid, a packing around the edge of one of said disks, means for anchoring the lower disk against rotary movement, a spring interposed between said disks and raising the upper disk as the liquid is withdrawn, and means for obstructing the bottle neck against the admission of tools, substantially as described.

17. In a non-refillable bottle, a plurality of disks beneath the liquid, a packing around the edge of one of said disks having its major portion below said disk, whereby it locks said disk against downward movement, means for anchoring the lower disk against rotary movement, a spring interposed between said disks and raising the upper disk as the liquid is withdrawn, and means for obstructing the bottle neck against the admission of tools, substantially as described.

18. In a non-refillable bottle, a plurality of disks beneath the liquid, a packing around the edge of one of said disks, a projection from said upper disk engaging the side of the bottle, whereby the said piston is held in proper position, means for anchoring the lower disk against rotary movement, a spring interposed between said disks and raising the upper disk as the liquid is withdrawn, and means for obstructing the bottle neck against the admission of tools, substantially as described.

19. In a non-refillable bottle, a plurality of disks beneath the liquid, a packing around the edge of one of said disks, means for anchoring the lower disk against rotary movement, a spring interposed between said disks and raising the upper disk as the liquid is withdrawn, said bottle provided with a retaining portion at its upper part which receives said packing and locks said upper disk at its upper position, and means for obstructing the bottle neck against the admission of tools, substantially as described.

20. In a non-refillable bottle, a plurality of disks beneath the liquid, a packing around the edge of one of said disks, means for anchoring the lower disk against rotary movement, a spring interposed between said disks and raising the upper disk as the liquid is withdrawn, a lock for holding said disks together which is destroyed in releasing the upper disk, and means for obstructing the bottle neck against the admission of tools, substantially as described.

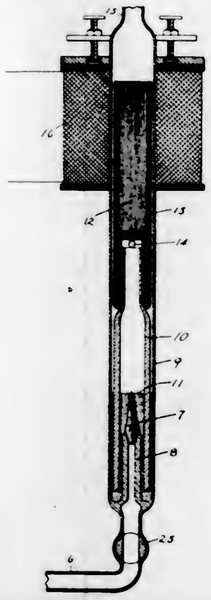
21. In a non-refillable bottle, a plurality of disks beneath the liquid, a packing around the edge of one of said disks, having its major portion below said disk, whereby it locks said disk against downward movement, a projection from said upper disk engaging the side of the bottle, whereby the said piston is held in proper position, means for anchoring the lower disk against rotary movement, a spring interposed between said disks and raising the upper disk as the liquid is withdrawn, said bottle provided with a retaining portion at its upper part which receives said packing and holds said upper disk at its upper position, a lock for holding said disks together which is destroyed in releasing the upper disk, and means for obstructing the bottle neck against the admission of tools, substantially as described.

22. In a non-refillable bottle, a piston beneath the liquid, a packing of resilient material surrounding same, means for forcing the piston upward as the liquid is withdrawn, and means locked in said bottle neck permitting the passage of liquid, but preventing the insertion of tools, substantially as described.

23. In a non-refillable bottle, a piston beneath the liquid, a packing of resilient material surrounding same and constituting a lock against the downward movement of the piston, means for forcing the piston upward as the liquid is withdrawn, the bottle being internally grooved at the upper limit of the piston's movement to receive the packing and lock the piston against downward movement, and means firmly anchored in said bottle neck permitting the passage of liquid, but preventing the insertion of tools, substantially as described.

24. In a non-refillable bottle, a piston beneath the liquid, a packing of resilient material surrounding same, means for forcing said piston upward as the liquid is withdrawn, a separate bottom for said bottle and means for attaching the same to the bottle whereby the ingress of air beneath the piston is permitted, and means securely locked in said bottle neck permitting the passage of liquid, but preventing the insertion of tools, substantially as described.

855,801. GAS-VALVE. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Co., New York, N. Y., a Corporation of New York. Filed Apr. 16, 1906. Serial No. 311,816.



Claim.—1. The combination of a mass of porous material interposed in a gas passage, a sealing liquid and means for varying the exposure of the mass above said liquid to regulate the flow of gas.

2. The combination of a mass of porous material interposed in a gas passage to restrict the flow of gas, a body of liquid in which the mass is immersed and means for varying the height of the liquid relative to the mass to regulate the action.

3. The combination of a mass of porous material interposed in a gas passage and having a pointed terminal, a body of liquid in which the mass is immersed and means for varying the height of the liquid to vary the resistance of the mass to the flow of gas.

4. The combination with a mass of porous material projecting into a gas chamber containing a body of liquid, of a displacing body in said chamber and means for actuating the same to vary the exposure of the terminal of the mass of porous material.

5. The combination in a gas valve, of a mass of porous material adapted to permit the percolation of gas, and a liquid seal therefor consisting of mercury, as and for the purpose described.

6. The combination of a porous plug, a body of mercury in which the same is immersed, a displacer of the mercury and an actuating magnet adjustable for the purpose of adjusting the level of the liquid, and consequently the flow of gas.

7. The combination of a chamber containing mercury and communicating with a source of gas under pressure, a porous plug immersed in the mercury of said chamber and through which the air or gas under pressure may pass from said chamber to the tube, and a liquid displacer working in the mercury and adapted to allow the whole surface of the mercury to be exposed to the gas pressure, as and for the purpose described.

8. The combination in a gas valve, of a mass of carbon, adapted to permit the percolation of gas, and a liquid seal therefor consisting of mercury, as and for the purpose described.

9. In a gas valve, the combination of a mass of porous material interposed in the gas passage way and having a tapered terminal, a body of liquid, and means for varying the exposure of the terminal above the liquid.

10. The combination of a mass of porous material interposing resistance to the flow of gas, a sealing liquid and magnetically actuated means for varying the height of the sealing liquid.

11. The combination in a gas check or valve, of a mass of porous material interposing resistance to the free flow of gas, a sealing liquid, a liquid displacer and an actuating electromagnet connected to said displacer.

12. The combination of a body of porous material interposed in a gas passage, a sealing body of mercury and a displacer for varying the height of the mercury.

13. In a valve, the combination of a mass of porous material interposed in a fluid passage-way, a body of fluid of greater density acting as a seal, and means for changing the exposure of the mass above said fluid of greater density.

14. In a valve, the combination of a mass of porous material interposed in the fluid passage-way and having a tapered terminal, a body of sealing fluid, and means for varying the exposure of the mass above said sealing fluid.

855,802. GARMENT-SUPPORTER CLASP. BION E. G. NOBLE, Baldwin, Me. Filed May 25, 1905. Serial No. 262,110.



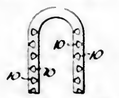
Claim.—1. In a garment supporter clasp, in combination, a suitable base, a leaf spring therein, said leaf spring being provided with a projection or lug, the lower end of said base plate being turned upwardly to form a lip, a clasp slidably and pivotally mounted in said base plate and adapted to bear against said lug and said lip when the clasp is in closed position.

2. In a garment supporter clasp having a suitable base, a spring in said base, said spring having a projection or lug, a depression in said spring causing the free end of said spring to incline upwardly, the lower end of said base plate being bent back upon itself forming a lip, a slot in said lip and a clasp pivotally and slidably mounted on said base and adapted to bear against said lug and said lip when in a closed position.

3. In a garment supporter clasp having a suitable base, a spring in said base, said spring having a projection or lug, a depression in said spring causing the free end of said spring to incline upwardly, the free end of said spring extending above the plane of the base plate, the lower end of said base plate being bent back upon itself to form a lip, a slot in said lip and a clasp pivotally and slidably mounted to bear against said lug and said lip when in closed position.

855,803. THREAD-GUIDE. ISAAC E. PALMER, Middletown, Conn. Filed Dec. 24, 1906. Serial No. 349,240.

Claim.—1. The combination with a finger board, of a thread guide having its shank provided with means for interlocking the shank with the finger board.



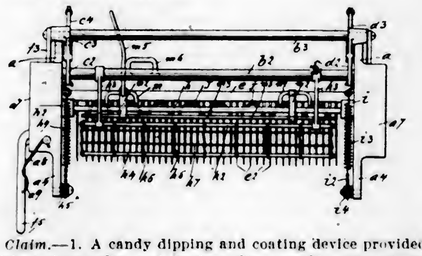
2. The combination with a wooden finger board, of a thread guide having its shank provided with projections for piercing the surface of the finger board and means for fastening the guide to the finger board.

3. The combination with a wooden finger board of a thread guide having its shank turned back along itself, said shank having means on its inner face for interlocking it with the finger board and means for fastening the guide to the finger board.

4. The combination with a wooden finger board, of a thread guide having its shank turned back along itself to form a loop, said loop portion of the shank having means on its inner face for interlocking it with the finger board and means for fastening the guide to the finger board.

5. The combination with a wooden finger board, of a thread guide having its shank turned back along itself to form a loop, said shank having means on its face for interlocking with the finger board, a washer arranged to partially embrace the shank to prevent the loops from spreading and a fastening device for holding the parts in assembled adjustment.

855,804. DIPPING-FRAME FOR COATING CANDIES. PANAYIOTIS PANOULIAS, New York, N. Y. Filed Sept. 7, 1906. Serial No. 333,640.



Claim.—1. A candy dipping and coating device provided with a forwardly and backwardly movable support on which the candies are adapted to be placed, and a pivoted candy holding frame mounted over said support and provided with longitudinally arranged flexible and elastic cords adapted to hold the candies on said support.

2. A candy dipping and coating device provided with a forwardly and backwardly movable support on which the candies are adapted to be placed, and a pivoted candy holding frame mounted over said support and provided with longitudinally arranged flexible and elastic cords adapted to hold the candies on said support, and means for operating said support and said candy holding frame.

3. A candy dipping and coating device provided with a forwardly and backwardly movable support on which the candies are adapted to be placed, an upwardly and forwardly movable scoop member mounted over said support

and longitudinally thereof and provided with equally spaced downwardly directed scoops, a swinging member provided with tongues the points of which normally rest in said scoops, means for operating said candy support and said scoop member, means for raising and lowering the tongue member and holding it in either position, and means for holding the candies on the candy support.

4. A candy dipping and coating device provided with a candy support comprising a forwardly and backwardly movable bar provided with forwardly directed pins, a scoop member mounted over and ranging longitudinally of the candy support and adapted to be moved upwardly and forwardly and provided with equally spaced downwardly directed scoops, a tongue member pivotally supported over the scoop member and provided with downwardly directed tongues adapted to enter said scoops, and a pivoted candy holder frame adapted in one position to rest directly over said pins and provided with flexible and elastic cords which serve to hold the candies on said pins.

5. A candy dipping and coating device, provided with a forwardly and backwardly movable candy support on which the candies are adapted to be placed, an upwardly and forwardly movable scoop member having equally spaced downwardly directed scoops, means for holding an amount of chocolate in said scoops and for discharging the same at a predetermined time, and a pivoted frame provided with elastic devices for holding the candies on the support.

6. A candy dipping and coating device provided with a forwardly and backwardly movable candy support, a movable frame provided with flexible and elastic devices for holding the candies on said support, means for moving the candy support forwardly and backwardly, means for raising and lowering said frame, and means for removing the candies from the support when the latter is moved backwardly and for distributing a portion of chocolate thereover.

7. A candy dipping and coating device provided with a forwardly and backwardly movable candy support on which the candies to be coated are adapted to be placed, a movable device provided with flexible and elastic cords for holding the candies on said support, and means for removing the candies from the support when the latter is moved backwardly and for distributing a portion of chocolate over said candies to mark the same.

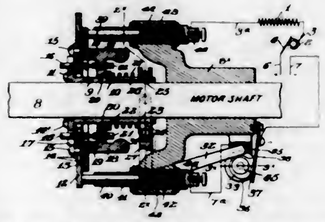
8. A candy dipping and coating device provided with a forwardly and backwardly movable candy support on which the candies to be coated are adapted to be placed, a movable device provided with flexible and elastic cords for holding the candies on said support, and means for removing the candies from the support when the latter is moved backwardly and for distributing a portion of chocolate over said candies to mark the same, comprising an upwardly and forwardly movable scoop member provided with downwardly directed and equally spaced scoops, and a vertically swinging tongue member provided with tongues which normally enter said scoops.

9. A candy dipping and coating device provided with a forwardly and backwardly movable candy support on which the candies to be coated are adapted to be placed, a movable device provided with flexible and elastic cords for holding the candies on said support, and means for removing the candies from the support when the latter is moved backwardly.

855,805. GOVERNOR FOR ELECTRIC MOTORS. ALPHONSE F. PIEPER, Rochester, N. Y. Filed Sept. 16, 1904. Serial No. 224,632.

Claim.—1. The combination with an electric motor comprising a field and an armature and a supply circuit leading to the motor, of a governor operated by the armature, contacts arranged in the generator circuit and controlled by the governor and a switch also located in said circuit, a tension device coöperating with the governor and means for regulating the switch and simultaneously operating the tension device.

2. The combination with an electric motor comprising a field and an armature and a supply circuit leading to the motor, of a governor operated by the armature, contacts arranged in the supply circuit and controlled by the governor and a switch also located in said circuit, a tension device coöperating with the governor and mechanism for opening and closing the switch and also regulating the tension device.



3. The combination with an electric motor comprising a field, an armature and a shaft supporting it and a supply circuit leading to the motor, of a governor embodying insulated plates, contact brushes engaging the separate plates and arranged in the supply circuit, a movable member insulated from the shaft, a contact point carried thereby and connecting the plates and operating connections between the governor and armature shaft.

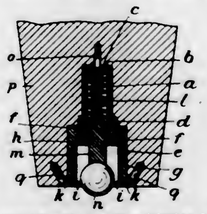
4. The combination with an electric motor comprising a field, an armature, an armature shaft and a supply circuit leading to the motor, of two insulated plates arranged on the shaft, contact brushes engaging the separate plates and arranged in the supply circuit, a movable member supported on one of the plates and a contact point carried by the member and normally engaging the other plate.

5. The combination with an electric motor comprising a field, an armature and a shaft supporting it and a supply circuit leading to the motor, of insulated plates arranged on the shaft, contact brushes engaging the separate plates and arranged in the supply circuit, a plurality of centrifugally operated movable members supported by the shaft and insulated therefrom and contact points carried thereby and normally connecting the plates.

6. The combination with an electric motor comprising a field, an armature and a shaft supporting it and a supply circuit leading to the motor, of insulated contact plates supported on the shaft and insulated therefrom, brushes engaging each of the plates and arranged in the supply circuit and a plurality of movable members supported by the shaft, contacts carried by the member and normally closing the circuit through the plates, a tension device cooperating with said members and means for adjusting it.

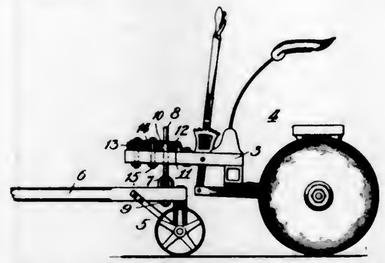
7. The combination with an electric motor comprising a field, an armature and a shaft supporting it and a supply circuit leading to the motor, of a sleeve on the shaft, annular, insulated plates supported on the sleeve and brushes engaging each of the plates and arranged in the supply circuit, a contact point on one of the plates, a movable member pivoted on the other plate and a coöperating contact point carried thereon, a tension device engaging the movable member and means for adjusting it.

855,806. SKITTLE. MATTHIAS PIEPER, Blankenese, Germany. Filed Oct. 15, 1906. Serial No. 339,126.



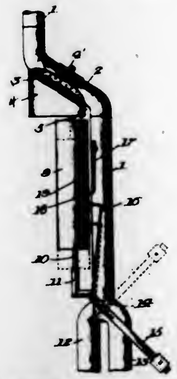
Claim.—The combination with skittles having a spring-influenced ball protruding centrally from their under face, of a bearing for the ball, comprising a cylinder *a*, a boss *e* adapted to be screwed onto the said cylinder *a*, a cup-shaped shell *g* adapted to be received and secured in the aforesaid boss *e*, a spring *l*, a piston *m* acted upon by the spring *l* and rectilineally guided in the cylinder *a*, a ball *n* inside the cup shaped shell *g* acted upon by the spring-influenced piston *m* so as to protrude partially through a central hole in the cup-shaped shell *g*, and means for securing the aforesaid bearing in a central cavity in the underface of the skittles, substantially as described and shown and for the purposes set forth.

855,807. TONGUE-TRUCK FOR AGRICULTURAL IMPLEMENTS. JOHN W. PLATT, Sterling, Ill., assignor to Sterling Manufacturing Company, Rock Falls, Ill., a Corporation of Illinois. Filed Jan. 18, 1907. Serial No. 352,895.



Claim.—In combination with the tongue of an agricultural implement, a tongue-truck and a flexible and adjustable connection between the two tongues, consisting of a pair of eye-bolts linked together at their eyes, with each member of the pair passing through one of said tongues and fastened, the fastening means for the upper member being a collar loosely surrounding it and provided with a set-screw, a hammer-strap on said implement-tongue extending over said collar and through which the upper eye-bolt passes, an evener-bolt passing through said strap and implement tongue near their forward ends, and a re-inforcing collar under said strap behind said evener, bolt with a bolt passing, to secure it in place, through said strap and implement tongue, the hammer-strap being of a length sufficient to extend over and cover the collar surrounding the upper eye-bolt, the evener-bolt and the re-inforcing collar between the two, as set forth.

855,808. AUTOMATIC CUT-OFF. HENRY PRICE, Elizabeth, Ill. Filed Dec. 15, 1906. Serial No. 347,916.



Claim.—1. In a device of the class described, a down-spout having an inclined offset and branched at the lower end, a screen in said offset, a valve operating to alternately divert the water into said branches, a weighted lever connected to said valve to hold the same normally in one position, a receiver connected to said down-spout in position to receive the flow through said screen, a relatively large discharge pipe leading from said receiver, an elbow pipe connected into said down-spout above said valve and with one branch vertical, a tank slidably engaging the discharge pipe of said receptacle, a relatively small discharge pipe leading from said tank and slidably engaging the vertical branch of said elbow pipe, and a connecting rod between said tank and weighted lever.

2. In combination with a down spout having an inclined off-set, and branched at its lower end, a screen located in the off-set, a tank disposed to receive water from said screen, a valve arranged to normally direct the flow of water through the down pipe into one of said branches, a yieldingly mounted tank, an outlet tube carried by the first mentioned tank and extending into said yieldingly mounted tank, a discharge pipe carried by the lower end of said yieldingly mounted tank, an elbow with which said discharge tube slidably engages, and means connecting the yieldingly mounted tank with said valve whereby when the said yieldingly mounted tank is depressed it will overcome the normal inclination of the valve.

3. In combination with a down pipe having an inclined off-set, and branched at its lower end to form a waste discharge and cistern discharge, of a valve carried by the down pipe, means connected to said valve for normally positioning the same to direct the water from the down pipe into the waste discharge, a screen located in said inclined off-set of the down pipe, a tank positioned to receive water from said screen, an outlet tube carried thereby, an elbow pipe connected to and communicating with the down pipe near the valve in the latter, a tank slidable on said outlet tube of the first mentioned tank, a discharge pipe extending from said tank, the said discharge pipe being of less diameter than the outlet tube from the first mentioned tank, and means connecting said tank with said valve whereby when the tank is depressed the position of the valve is changed to permit the flow of water into the cistern.

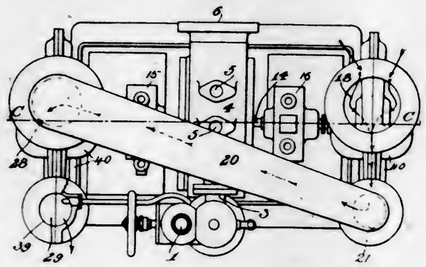
4. In combination with a down spout branched at its lower end to form a waste discharge and a cistern discharge, and having intermediate its ends an inclined off-set, a screen arranged in said off-set, a tank disposed to receive water from said screen, an outlet tube for said tank, a yieldingly mounted tank slidable on said outlet tube, a discharge tube carried by the lower end of said yielding mounted tank and being of less diameter than the outlet tube of said first mentioned tank, an elbow connected to the down pipe adjacent the branch end thereof and receiving said discharge tube of the yielding mounted tank in slidable engagement, a valve disposed in the down pipe to normally direct the flow of water from said down pipe to the waste discharge branch, a weighted lever normally holding said valve so disposed, and a rod pivotally connected to said lever at one end and at its other end connected to the yieldingly mounted tank whereby when the latter is depressed the weighted arm will be actuated and the position of the valve altered to direct the flow of water from the down pipe into the cistern discharge branch.

855,809. TURBINE-DRIVEN BLOWER. AUGUSTE C. E. RATEAU, Paris, France, assignor to Rateau Turbine Company, Chicago, Ill., a Corporation of West Virginia. Original application filed Dec. 24, 1902, Serial No. 136,455. Divided and this application filed June 10, 1904. Serial No. 211,940.

Claim.—1. The combination with a shaft and means for driving the same, of a fluid impeller having an impeller wheel mounted upon said shaft, a peripheral delivery chamber having an air inlet on each side of the impeller wheel, and a housing for said fluid impeller surrounding said air inlets, said housing having a single air inlet.

2. The combination with a shaft and means for driving the same, of centrifugal blowers having their impeller

wheels mounted upon said shaft, a peripheral delivery chamber of gradually increasing cross-section for each impeller wheel, said delivery chambers having air inlets on each side of the impeller wheels, a housing for each impeller wheel said housing having an air inlet, and a pipe connecting the discharge outlet of one blower with the inlet to the housing of a succeeding blower.



3. The combination with a centrifugal blower provided with an impeller wheel and a delivery chamber therefor having an air inlet on each side of said wheel, of a housing for said blower, said housing having an air inlet, a second centrifugal blower, and a pipe connecting the discharge outlet of said second blower with the inlet to the housing of the other.

4. The combination with a steam turbine and its shaft, of blowers having their impeller wheels mounted directly on said shaft, a peripheral delivery chamber of gradually increasing cross-section for each impeller wheel, said chambers having air inlets on each side of said wheels, a housing for each blower having a single air inlet communicating with the air inlets to the corresponding impeller wheel, the delivery outlet of each blower being smaller than the inlet to the housing, and a pipe of gradually-increasing cross-sectional area connecting the discharge outlet of one blower with the inlet of the housing next in the series.

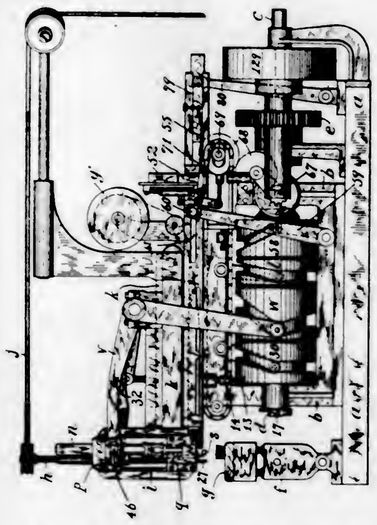
855,810. MACHINE FOR DRILLING AND TUFTING BRUSHES. MARTIN O. REHFUSS, Philadelphia, Pa., and EDWARD F. BUCH, Astoria, N. Y., assignors, by mesne assignments, to Sanitary Sectional Brush Company, a Corporation of New York. Filed Dec. 20, 1905. Serial No. 292,657.

Claim.—1. In a brush machine, the combination, with the vertical rectangular magazine 52 having the notch *y* in its front side, of the inclined bristle support 62 in the bottom, the tuft-hook 55 reciprocated transversely of the bottom through the notch *y*, and the lifter 93 movable vertically adjacent to the support 62, to loosen up the bristles prior to each movement of the tuft-hook 55.

2. In a brush machine, the combination, with a vertically disposed magazine having a tapering bristle-support 62 in the bottom and a notch *y* in its front side, of the tuft-hook 55 reciprocated transversely across the bottom of the magazine and adapted to double the tuft by drawing it through the front notch, a tuft-channel adjacent to the magazine to receive the doubled tuft, and having a vertical groove in the bottom, and a chain having chain-hooks 54 movable in such groove to remove the tufts from such tuft-hook.

3. In a brush machine, the combination, with a vertically disposed bristle-magazine, of a lifter operating through the bottom of the magazine to loosen up the bristles, a slide upon the magazine with presser hinged thereon and having prongs to penetrate the bristles, a cam with connections for reciprocating the slide, and a spring inserted in such connections to press the packer prongs downward and means for removing bristles in tufts from the magazine.

4. In a brush machine, the combination, with a vertically disposed bristle magazine, of a lifter operating through the bottom of the magazine to loosen up the bristles, a slide upon the magazine with presser hinged thereon and having prongs to penetrate the bristles, a cam with connections to oscillate the presser and insert the prongs into the bristles, and a cam with connections having a spring inserted therein to press the prongs elastically downward and means for removing bristles in tufts from the magazine.



5. In a brush machine, the combination, with the rectangular vertically disposed magazine 52 having the notch *y* in its front side, and tapering bristle-support 62 extended wholly across the bottom to support the bristles, and a presser for intermittingly pressing the bristles downward, of the channel 36 extended from the notch *y*, the tuft-hook 55 reciprocated transversely across the bottom of the magazine and into the channel through the notch *y*, and intersecting the middle of the bristles to separate and double a tuft and deposit the looped tuft in the channel, and a chain with hooks movable in the tuft-channel to carry the tuft away from the tuft-hook.

6. In a brush machine, the combination, with the rectangular vertically disposed magazine 52 having the notch *y* in its front side, and tapering bristle support 62 extended wholly across the bottom to support the bristles, and a presser for intermittingly pressing the bristles downward, of the channel 36 extended from the notch *y*, the tuft-hook 55 reciprocated transversely across the bottom of the magazine and into the channel through the notch *y*, and intersecting the middle of the bristles to separate and double a tuft and deposit the looped tuft in the channel, a chain with hooks movable in the channel to carry the tuft away from the tuft-hook, and a tuft-placer operated in the channel to remove the tuft from the chain-hooks and place it beneath a tuft-driver.

7. In a brush machine, the combination, with a rectangular vertically disposed bristle magazine having a notch *y* in the front and the tapering bristle support 62 extended wholly across the bottom to support the bristles, of the channel 36 extended from the notch *y*, the tuft-hook 55 reciprocated transversely across the bottom of the magazine and into the channel through the notch *y*, and intersecting the middle of the bristles to separate and double a tuft and deposit the looped tuft in the channel, a chain 53 with hooks 54 movable in the tuft-channel 36 to carry the tuft away from the tuft-hook, and the tuft-placer 35 movable in the channel to remove the tuft from the chain-hook and place its loop beneath the staple, to be carried with the same through the tuft-guide by the tuft-driver.

8. In a brush machine, the combination, with means for holding the brush-block stationary during the drilling of a hole and insertion of a tuft therein, of a head movable transversely over the brush-block, a drill-spindle and a tuft-driver movable upon such head, and means for automatically shifting the head to bring the drill and tuft-driver alternately over the same point in the brush-block.

9. In a brush machine, the combination, with a head having a tuft-driver movable vertically thereon, of a tuft-guide movable vertically below the tuft-driver, means for placing a staple between the tuft-guide and the retracted end of the tuft-driver, means for delivering a tuft between the staple and the tuft-guide, and means for carrying the tuft-driver, the staple, the tuft and the tuft-guide downward simultaneously.

10. In a brush machine, the combination, with the tuft guiding socket *s*, of means for forming a staple over the same, means for placing a tuft doubled in a horizontal plane and placing the loop of the tuft between the staple and socket, and a tuft-driver to force the staple downwardly with the loop of the tuft into the tuft guiding socket.

11. In a brush machine, the combination, with means for holding the brush-block stationary during the drilling of a hole and insertion of a tuft therein, of the vertical head *i* having a horizontal slide *k* fitted to suitable guides, a drill-spindle and a tuft-driver movable vertically upon the head, a cam for automatically shifting the slide to move the head into two positions with the drill and tuft-driver alternately over the same point in the brush-block, and holding the head in the two positions, and means for alternately depressing the drill and the tuft-driver in the two positions of the head.

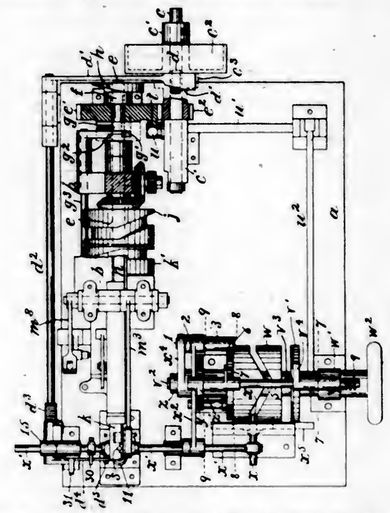
12. In a brush machine, the combination, with the head *i* movable transversely over the brush block, and a tuft-guiding socket movable vertically upon the head, of a plunger movable vertically upon the head with a tuft-driver to pass through the tuft-driving socket, means for placing loops of bristle tufts horizontally between the tuft-driver and the tuft-guiding socket, means for presenting staples over the loops of the bristle-tufts, and means for moving the tuft-driver to depress the staple and engage the loops of the bristle-tufts, and carry both staple and bristle-tuft downward into the tuft-guiding socket.

855,811. APPLIANCE FOR FEEDING BRUSH-BLOCKS. MARTIN O. REHFUSS, Philadelphia, Pa., and EDWARD F. BUCH, Astoria, N. Y., assignors, by mesne assignments, to Sanitary Sectional Brush Company, a Corporation of New York. Filed Dec. 20, 1905. Serial No. 292,658.

Claim.—1. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush-block holder, a rock-shaft journaled adjacent to the same, a carrier for the block-holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft, a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, means to intermittingly shift the rocker-arms to space the rows of tuft-holes, and means to shift the control-shaft endwise to space the tuft-holes in the rows.

2. An appliance for feeding brush-blocks, comprising a brush-block holder, a rock-shaft journaled adjacent to the same, a carrier for the block-holder having a ball-bearing at the axis of the rock-shaft and perforated for the passage of the rock-shaft, rocker-arms carried by the rock-shaft with a control-shaft movable lengthwise therein and extended through the holder, a ball-joint connecting the control-shaft and holder, and means to shift the control-shaft endwise and to shift the rocker-arms laterally for spacing the rows of tuft-holes.

3. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush-block holder, a rock-shaft journaled adjacent to the same, a carrier for the block-holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft, a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, a rocker-cam with connections to intermittingly shift the rocker-arms, a pin having a transverse sliding connection with the end of the control-shaft, and a control-cam operating upon the pin to intermittingly shift the control-shaft endwise.



4. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush-block holder having a carrier mounted to swing in two planes, a control-shaft for moving the carrier to space the holes in the rows upon the brush-block, a pin transverse to the line of the control-shaft the shaft having a transverse sliding connection therewith, a cylindrical control-cam having a doubly inclined groove adapted at intervals to shift the pin and control-shaft to space the tuft-holes in the rows, and a driving-cam with ratchet connections to turn the control-cam as required.

5. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush-block holder, a rock-shaft journaled adjacent to the same, a carrier for the block-holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft with a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, means to intermittingly shift the rocker-arms to space the rows of tuft-holes, a pin having a transverse sliding connection with the end of the control-shaft, and a control-cam with groove upon its periphery having opposed notches at intervals adapted to shift the pin and control-shaft and thereby move the brush-holder to space the holes in the rows, and to lock the pin after each shift of the same.

6. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush block holder, a rock-shaft journaled adjacent to the same, a carrier for the block-holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft with a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, means to intermittingly shift the rocker-arms to space the rows of tuft-holes, a control-cam with groove upon its periphery adjacent to the end of the control-shaft, a slide movable between the control-cam and the control-shaft, and a pin attached rigidly to the slide and having a transverse sliding connection with the end of the control-shaft and projected into the groove of the control-cam, whereby the pin is movable only in a straight line and the control-shaft is enabled to move laterally with the rocker-arms.

7. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush-block holder, a rock-shaft journaled beneath the same, a carrier for the block-holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft with a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, a link jointed at one end

to the control-shaft and having a cam-pin at the opposite end, and a rocker-cam engaging such pin, with means for actuating the same to shift the link and arms intermittingly, to space the rows of tuft-holes upon the brush-block.

8. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush-block holder, a rock-shaft journaled beneath the same, a carrier for the block-holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft with a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, a link jointed at one end to the control-shaft and having a cam-pin at the opposite end, a rocker-cam engaging such pin to shift the link and arms intermittingly, an arbor carrying such rocker-cam with a toothed wheel for driving such cam, a pin having a transverse sliding connection with the control-shaft, a control-cam with groove engaging such pin and mounted upon the same arbor, and means, as the pawl z' and pawl-cam 6 movable with the control-cam, to operate the toothed wheel and rocker-cam twice for each rotation of the control-cam.

9. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush-block holder, a rock-shaft journaled beneath the same, a carrier for the block-holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft with a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, a link jointed at one end to the control-shaft and having a cam-pin at the opposite end, a rocker-cam engaging such pin to shift the link and arms intermittingly, bearings at one side of the control-shaft, an arbor mounted therein with the rocker-cam pivoted thereon, a toothed wheel upon the arbor connected with the rocker-cam, a pin having a transverse sliding connection with the end of the control-shaft, a control-cam journaled upon the arbor and having a groove engaging such pin, a sleeve fitted to the control-cam and provided with a ratchet-wheel and with a hand-wheel, a pawl for intermittingly turning the ratchet-wheel and control-cam, and a driving-cam for actuating the pawl.

10. An appliance for feeding brush-blocks during the drilling and tufting of the same, comprising a brush-block holder, a rock-shaft journaled beneath the same, a carrier for the block-holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft with a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, a link jointed at one end to the control-shaft and having a cam-pin at the opposite end, a rocker-cam engaging such pin to shift the link and arms intermittingly, bearings at one side of the control-shaft, an arbor mounted therein with the rocker-cam pivoted thereon, a toothed wheel upon the arbor connected with the rocker-cam, a pin having a transverse sliding connection with the end of the control-shaft, a control-cam journaled upon the arbor with a groove engaging such pin, a pawl-cam with two projections rotated by the control-cam, a pawl for actuating the toothed wheel, and an arm actuated by the pawl-cam to reciprocate the pawl twice for each rotation of the control-cam.

11. The combination, with means for drilling and tufting brush-blocks, of the cam-shaft e for actuating such means and having the driving-cam t thereon, a brush-holder having a rock-shaft journaled beneath the drilling and tufting devices, a carrier for the holder pivoted at the axis of the rock-shaft, rocker-arms carried by the rock-shaft, a control-shaft movable lengthwise therein and extended through the holder and jointed to the same, a rocker-cam and connections to intermittingly shift the rocker-arms, a control-cam and connections to intermittingly shift the control-shaft endwise, and means actuated by the driving-cam to intermittingly rotate the control-cam, and to actuate the rocker-cam twice for each rotation of the control-cam.

12. In a brush-block feeding device, the hollow block-holder mounted upon the carrier 11 having universal joint at its lower end disposed below the working position of the drill, changeable control and rocker-cams for feeding the holder transversely and longitudinally as described, the gage-plate having holes 24' and secured detachably within the holder to make it interchangeable, an arm projected inside the holder, and a locking-pin supported upon the arm with means for engaging it with the holes in the gage-plate.

13. In a brush-block feeding device, the combination, with a drill operating in a constant position, of a hollow brush-block holder mounted upon a carrier, means for feeding the carrier laterally and longitudinally to space the tuft-holes upon the block, the holder supporting the brush-block upon its outer side, and its inner side being flat with a gage-plate 24 secured detachably thereto and provided with recesses 24' arranged in the design desired for the drilling of the brush block, the arm 26 extended within the hollow holder and having the socket with locking-pin 25 movable therein, the lever 27 and spring g^4 to press the locking-pin normally into the recess 24', the driving-shaft e connected with the drill by the clutch-bolt g', and means actuated by the locking-pin when held outwardly by the face of the gage-plate, for withdrawing the clutch-bolt and stopping the movement of the drill.

14. In a brush-block feeding device, the combination, with a drill operating in a constant position, of a brush-block holder mounted upon a carrier, means for supporting the carrier movable in a lateral and longitudinal direction to space tuft-holes upon the brush-block, a driving-shaft with a clutch and connections for operating such feeding means, an arm for disengaging the clutch to stop such feeding means, a spring to operate the arm normally, a latch mounted adjacent to the carrier for holding the arm inoperative, and a projection upon the carrier adapted, when the carrier is moving in its extreme lateral position at the close of the drilling operation, to engage the latch and release the same to stop the feeding means automatically.

15. In a brush-block feeding-device, the combination, with a drill operating in a constant position, of a brush-block-holder mounted upon the carrier 11, means for feeding the carrier laterally and longitudinally to space the tuft-holes upon the block, the driving-shaft c with a clutch-bolt d and connections for operating such feeding means, the arm d' for disengaging the clutch to stop such feed, the tooth d^5 adjacent to the carrier, the latch d^4 for holding the clutch-arm d' inoperative when the latch is engaged with such tooth, and the projection 30 upon the carrier adapted, when the carrier is moving in its extreme lateral position at the close of the drilling operation, to engage the latch and release the same from the tooth, whereby the feed is automatically stopped when the brush-block is wholly bored.

855,812. PROCESS OF MAKING A DESIGN PAINTING. EDMUND D. ROBERTS, Jr., Detroit, Mich. Filed June 7, 1906. Serial No. 320,630.

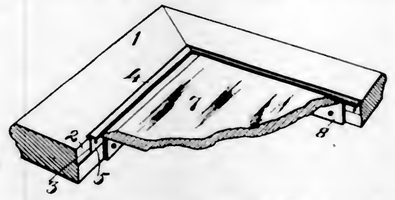


Claim.—1. The method of producing a sketch or painting which consists in photographing a subject, printing from the photograph upon suitable material, mounting the print, painting in oil the surface of the sketch not occupied by the subject, and painting the photographic subject in transparent colors.

2. The process of producing a sketch or drawing for reproduction which consists in photographing a subject, printing from the photograph upon sensitized material, sizing the surface of said material around said subject, painting in oil upon the sized surface, and painting the photographic subject in water colors.

3. A painting consisting of a photographed subject, colored in whole or in part, by the application of transparent pigment, and a back ground surrounding said subject painted in oil.

855,813. DEVICE FOR HOLDING GLASS AND SIMILAR ARTICLES IN PLACE. CHARLES C. ROTH, Barberton, Ohio, assignor of one-half to S. S. Fisher, Doylestown, Ohio. Filed May 22, 1906. Serial No. 318,172.



Claim.—1. The combination with a suitable support and means for securing a body thereto, said means comprising a T-shaped member secured to said support and having one side of the top thereof abutting against the upper face of the support and the other side of the top thereof overlapping and engaging one face of said body, a retaining strip, and means engaging the said support for holding said strip snugly against the other face of said body whereby the other face of said body is brought into close contact with the head of said member.

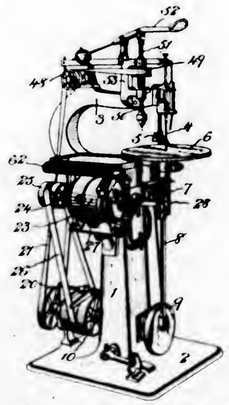
2. A plate glass retaining device comprising a T-shaped member having the vertical portion thereof provided with openings through which is adapted to extend hold-fast devices for securing the member to a suitable support, the horizontal portion of said member adapted to overlap the glass plate and the support, and a retaining strip abutting against the support and vertical portion of said member and adapted to engage the glass plate for holding it snugly against the horizontal portion of the member, said retaining strip provided with openings through which is adapted to extend hold-fast devices for retaining said strip in position.

3. Means for securing a sheet of glass in position comprising a T-shaped member adapted to be detachably secured to the inner side of a suitable support and having one side of its top engaging the upper surface of the sheet of glass and its other side the top of the support, and a vertically-extending flat strip adapted to be secured to one side of the support to which the T-shaped member is secured, abut against one side of the vertically-extending portion of said member and have its top edge bear against the lower surface of the glass sheet, thereby in connection with the T-shaped member connecting the glass sheet to the support.

4. Means for securing a sheet of glass in position comprising a T-shaped member adapted to have the vertical portion thereof abut against the inner side of the support to which the glass is to be secured and further having one side of its top engaging the upper surface of the sheet of glass and the other side thereof the top of the support, and a vertically-extending flat strip adapted to be secured to the inner side of said support and abut against one side of the vertically-extending portion of said member and have its top edge bear against the lower surface of the glass sheet, thereby in connection with said member secure the sheet to the support.

5. Means for securing a sheet of glass in position comprising a member adapted to abut against the inner side of the support to which the glass is to be connected and having one side of its top overlapping the sheet of glass, and a vertically-extending flat strip adapted to be secured to the inner side of the support against which the member abuts, abut against said member, thereby retaining it in position and have its top edge engage the lower face of the glass sheet thereby in connection with the overlapping portion of said member secure the glass in position.

855,814. COMBINED JIG-SAW AND DRILL. VERNON E. ROYLE, Paterson, N. J. Filed Aug. 6, 1904. Serial No. 219,769.



Claim.—1. The combination with the pedestal, the motor supported thereon, a saw frame, a drill frame supported on the saw frame and driving mechanism leading from the motor to the drill, of a combined tool tray and dust guard supported on the pedestal intermediate of the motor and drill.

2. The combination with the pedestal and the G-shaped arm, superposed thereon, for supporting the jig saw, of the G-shaped supplemental frame superposed on the said arm for holding the drill spindle in position.

3. The combination with the pedestal and the G-shaped arm for supporting the jig saw, of the G-shaped supplemental frame superposed on the said arm and means for adjusting the said supplemental frame comprising a short screw having a screw threaded engagement with a hole in the base of the frame and a binding screw extending through the short screw and engaged with the said arm.

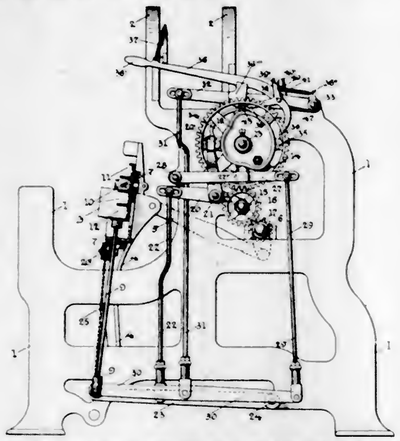
855,815. LOOM. EFFA H. RYON, Worcester, Mass., assignor to Crompton & Knowles Loom Works, a Corporation of Massachusetts. Filed Dec. 6, 1906. Serial No. 346,553.

Claim.—1. In a loom of the class described, drop shuttle boxes having a cell for a spare shuttle, and a cell to receive the shuttle to be exchanged, means to operate said shuttle boxes, and separate means, under manual control, connected to and operated by said first named means, to put out of action the spent shuttle, and put into action the spare shuttle.

2. In a loom of the class described, drop shuttle boxes, having a cell for a spare shuttle, and a cell to receive the shuttle to be exchanged, means, including a cam and gear to operate said shuttle boxes, and separate means, under manual control, connected to and operated by said first named means, to put out of action the spent shuttle, and put into action the spare shuttle.

3. In a loom of the class described, drop shuttle boxes, having a cell for a spare shuttle, and a cell to receive the shuttle to be exchanged, means, including a cam and gear to operate said shuttle boxes, and separate means includ-

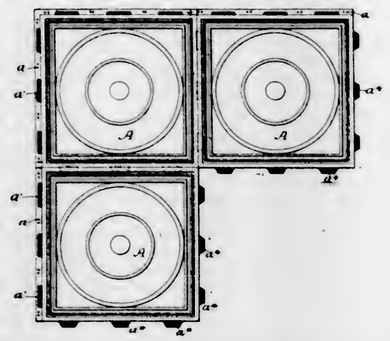
ling a cam and gear connected to and operated by said first named means, to put out of action the spent shuttle, and put into action the spare shuttle.



4. In a shuttle box motion for drop shuttle boxes, a gear having a cam attached thereto, to operate the shuttle boxes, and having a lug or projection adapted to come in contact with a movable lug or projection carried on a second gear, and said second gear, adapted to move the shuttle boxes for a change of shuttles, and means, manually controlled, to operate said movable lug, and bring it in the path of the first named lug.

5. In combination, shuttle boxes, a gear having a cam attached thereto, to operate the shuttle boxes, a second gear having a cam attached thereto, to operate the boxes for a change of shuttles, mechanism, comprising a sliding bar with a starting lug at one end adapted to be struck by a lug on said first named gear, and the other end of said sliding bar adapted to come in contact with a manually controlled stop.

855,816. CEILING CONSTRUCTION. LONGLEY L. SAGENDORPH, Philadelphia, Pa. Filed June 16, 1906. Serial No. 322,066.



Claim.—1. A ceiling consisting of a series of plates of sheet material each provided with a peripheral bead extending around its edges, certain of said edges being provided with a projecting portion for the reception of nails and each of said portions being provided with a slot or slots and others of said edges being provided with a projecting tongue or tongues so spaced as to fit into the slot or slots in the nailing edges of another plate, said nailing edges extending under the peripheral beads of other plates, substantially as described.

2. As a new article of manufacture, a ceiling plate made of sheet material having on a side or sides a projecting tongue or tongues provided with a reinforcing bead and on another side or sides a nailing edge having a slot or slots also provided with a reinforcing bead, substantially as described.

3. As a new article of manufacture, a ceiling plate consisting of sheet material having a projecting tongue or tongues provided with a projecting reinforcing bead and also provided with a nailing edge having a slot for the reception of a tongue, said slot having adjacent to it a reinforcing bead projecting in a direction opposite to that of the bead on the tongue, substantially as described.

4. The combination of a plurality of ceiling plates of sheet material each having a peripheral bead, a portion of said bead on one plate being provided with a projecting nailing edge having elongated slots, and the adjacent portion of the bead of the other plate having projecting tongues placed to respectively fit into said slots, the plates being constructed to be locked together as long as they remain in the same plane, substantially as described.

5. As a new article of manufacture, a ceiling plate having in one side or sides a series of slots each with its cut out piece of metal extended from one side thereof, and on another side or sides a series of projecting tongues formed to fit the slots of another plate, substantially as described.

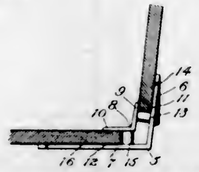
6. As a new article of manufacture, a ceiling plate having in one side or sides a series of slots, each with its cut out piece of metal extended from one side thereof, another side or sides of the plate being provided with a series of projecting tongues formed to fit the slots of another plate, said tongues and the slots each having peripheral reinforcing beads, substantially as described.

7. A ceiling consisting of a number of plates of sheet metal, each having in half of its sides a series of slots, each slot having its cut out piece of metal extended inwardly, the remaining sides of the plate being provided with projecting tongues, the tongues of one plate fitting into the slots of another plate or plates and being supported by the inwardly extended cut out pieces of metal of said slots, substantially as described.

8. As a new article of manufacture, a sheet metal plate having a projecting tongue and a struck up locking tongue on said first tongue, there being a slot in an edge of the plate for the reception of the projecting tongue of another plate, substantially as described.

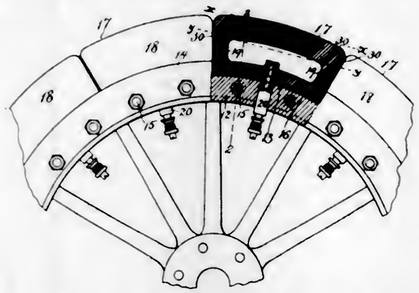
9. The combination of a series of plates each having a number of slots formed in one edge or edges and a number of main tongues along another edge or edges, each of said main tongues having a struck up locking tongue and each fitting in the slot in another plate, each locking tongue being placed to prevent the removal of its main tongue from the slot after it has once been engaged by the same, substantially as described.

855,817. BENCH-BACK-ATTACHING BRACKET. AUGUST J. SCHOENECKE, Chicago, Ill. Filed Feb. 4, 1907. Serial No. 355,622.



Claim.—In combination with a suitably supported bench-seat, of a back and supporting brackets releasably securing the back to the seat and comprising inner and outer L-shaped members with the corresponding arms of the two members extending substantially parallel with each other and forming sockets between them, each of said brackets being releasably secured at one of its sockets to the back edge of a bench-seat to extend upwardly at its opposite end, and the bench-back being seated at its lower edge and releasably held in the upwardly extending sockets of the brackets.

855,818. PNEUMATIC TIRE. WILLIAM R. SMITH, Buffalo, N. Y., assignor of one-half to Herbert H. Hewitt, Buffalo, N. Y. Filed June 1, 1906. Serial No. 319,710.



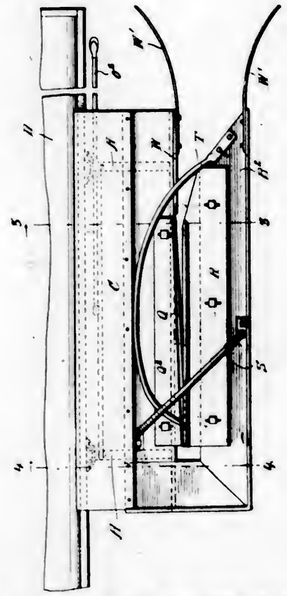
Claim.—1. A resilient pneumatic tire composed of a plurality of segmental air-chambered sections having tread, side, end, and inner or base wall portions, the latter having inner faces conforming to the tire-seat of a wheel-rim, combined with a rigid wheel rim having a seat for said inner faces, and outwardly projecting clamping members or flanges at opposite sides of said seat engaged with the base wall portions of the sections, the end walls of each section and the end walls of the adjacent sections, forming cushions adapted to support the weight of the wheel and its load, the distances between said cushions being such that chords of the arcs of the tread walls between the cushions are outside the corresponding portions of the clamping members, so that in the event of the deflation of any section, its tread will be prevented by the cushions at the opposite ends of the deflated section from coming in contact with the clamping members.

2. An air-chambered tire section having resilient tread, side, end, and inner or base wall portions, the latter having inner faces conforming to the tire face of a wheel rim, and edge faces formed to engage clamping members on the wheel rim, the thickness of the said base wall portion being such as to prevent lateral deflection or buckling of the said portion by movement of its edge faces toward each other, the said end wall portions having wear-resisting facings whereby injurious wear between the end wall portions of abutting sections is prevented.

3. A pneumatic tire composed of a plurality of segmental sections having grooves in their opposite sides adjacent to their bases, combined with a wheel rim having a continuous metallic ring or tire forming a seat for the inner faces of the sections, and provided at one edge with a fixed ribbed flange, and at the opposite edge with an inwardly-projecting rib, a detachable ribbed flange having a hooked inner edge formed to engage said rib, and bolts passing through said flanges and the intermediate portion of the tire, said bolts having heads bearing on one of the flanges, and nuts bearing on the other flange, whereby the detachable flange may be adjusted toward or from the fixed flange to clamp or release the sections.

4. An air-chambered tire section, having tread, side, end, and inner or base wall portions, the latter having a segmental inner face adapted to conform to the tire seat of a wheel rim, the end wall portions being adapted to cooperate with the end wall portions of the adjacent sections to form cushions when the sections are assembled, the distance between the end walls being such that a chord of the arc of the tread wall between the end walls is so far outside the base wall as to prevent contact between the tread portion and rigid parts of the wheel to which the section is adapted to be applied, in the event of deflation of the section.

855,819. APPARATUS FOR HEADING KAFIR CORN. THOMAS H. SPARKS, Wichita, Kans. Filed Dec. 24, 1906. Serial No. 349,348.



Claim.—1. An apparatus for heading Kafir corn comprising, in combination with a wagon-box, a vertically adjustable table mounted upon said box, a cutting blade mounted horizontally upon said table, an adjustable guide plate upon the table with its outer longitudinal edge adjacent to said blade, and a second plate mounted upon said guide plate and adapted to be adjusted relatively to the outer edge of the guide plate, as set forth.

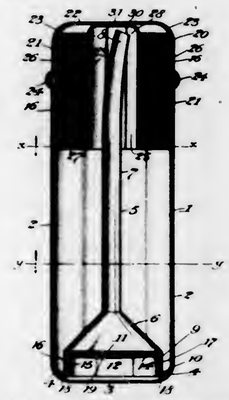
2. An apparatus for heading Kafir corn comprising, in combination with a wagon box having cleats thereon, a rack having uprights movably held between said cleats, an operating lever, connections between the same and said rack, whereby the latter may be raised and lowered, a table upon said rack having an angled flange, a guide plate upon said table, an extension of said table and a slot intermediate the same and the edge of said plate, a cutting blade mounted upon said extension of the table and adjacent to said guide plate, and a bar secured to said extension and curved over the table designed to guide the head upon the latter as it is severed from its stalk, as set forth.

3. An apparatus for heading Kafir corn comprising, in combination with a wagon-box having cleats thereon, a rack having uprights movably held between the cleats, an operating lever, connections between the same and said rack, whereby the latter may be raised and lowered, a table upon said rack having an angle flange, said table having an elongated recess therein open at one end, guide plates adjustably mounted upon said table and having their outer edges adjacent to one of the longitudinal edges of said recess, a cutting blade secured to said table and having its cutting edge positioned adjacent to the outer edges of the guide plates, and a laterally extending curved bar secured to the table and adapted to cause the heads, as they are severed from the stalks, to fall into the wagon-box, as set forth.

4. An apparatus for heading Kafir corn comprising, in combination with a wagon-box having cleats thereon, a rack having uprights movably held between said cleats, an operating lever, connections between the same and said rack, whereby the latter may be raised and lowered, a

table upon said rack having an angled flange, said table having an elongated recess open at one end, guide plates adjustably mounted upon said table and having their outer edges adjacent to one of the longitudinal edges of said recess, a cutting blade secured to the table and having its cutting edge positioned adjacent to the edges of said guide plates, a laterally extending curved bar secured to said table and adapted to cause the heads, as they are severed from the stalks, to fall into the wagon-box, a vertically disposed plate secured to the edge of the table in advance of said guide plates, and outwardly curved arms projecting from the forward end of the table and its extension, as set forth.

855,820. COMBINED DRINKING-CUP AND FILTER. ROSWELL O. STEBBINS, New York, N. Y. Filed June 29, 1906. Serial No. 324,007.



Claim.—1. A device of the class described, comprising a drinking-cup, a filtering device having filtering material and inclosed within the cup, a cap or closure for closing the cup and inclosing the filtering device, and a reservoir for carrying supplementary filtering material, said reservoir being carried by the cap or closure.

2. A device of the class described, comprising a drinking-cup, a filtering device contained therein and having filtering material, a cap or closure for the cup, and a reservoir carrying supplementary filtering material, said reservoir being detachably carried by the cap or closure.

3. A device of the class described, comprising a drinking-cup, a filtering device contained therein and having filtering material, a cap or closure for the cup, and a detachable reservoir carried by the cap or closure and having a space inclosed within the cap or closure and adapted to contain supplementary filtering material.

4. A device of the class described, comprising a drinking-cup, a filtering device contained therein and having filtering material, a cap or closure insertible downwardly within the cup, and a reservoir insertible upwardly in the cap or closure and adapted to contain supplementary filtering material.

5. A device of the class described, comprising a drinking-cup, a filtering device contained therein and having filtering material, a cap or closure for the cup, and a reservoir for carrying supplementary filtering material, said reservoir being carried by the cap or closure and closed against the interior space of the cup structure.

6. A device of the class described, comprising a drinking-cup, a filtering device contained therein and having filtering material, a cap or closure for the cup, and a reservoir for carrying supplementary filtering material, said reservoir being detachably carried by the cap or closure and closed against the interior space of the cup structure.

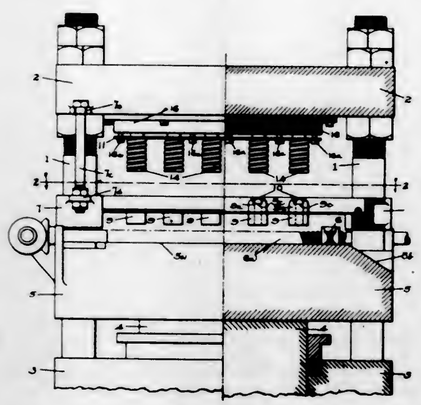
7. A device of the class described, comprising a drinking-cup, a filtering device contained therein and separable therefrom and having filtering material, a detachable cap or closure for the cup, and a reservoir for containing supplementary filtering material, said reservoir being detachably carried and inclosed by the cap or closure.

8. A device of the class described, comprising a drinking-cup, a filtering device contained therein and having filtering material and a projecting tubular stem forming an outlet, a cap or closure for the cup, and a reservoir for containing supplementary filtering material, said reservoir being embodied in the cap or closure and having a chamber or dome for receiving the tubular stem of the filtering device.

9. A device of the class described, comprising a drinking-cup, a filtering device contained therein and having filtering material and a projecting tubular stem forming an outlet, a cap or closure for the cup, and a reservoir for carrying supplementary filtering material, said reservoir being contained interiorly within the cap or closure and having a chamber or dome for receiving the tubular stem of the filtering device.

10. A device of the class described, comprising a drinking-cup, a filtering device contained therein and separable therefrom, said filtering device having filtering material and a projecting tubular stem forming an outlet, a detachable cap or closure insertible downwardly within the cup, and a reservoir for carrying supplementary filtering material, said reservoir being detachably insertible upwardly within the cap or closure and having a chamber or dome for receiving the tubular stem of the filtering device.

855,821. METAL-PUNCHING MACHINE. EDGAR W. SUMMERS, Wilkinsburg, Pa. Filed Feb. 1, 1907. Serial No. 355,219.



Claim.—1. In a metal punching machine, a supporting means, a thin sheet metal templet plate secured detachably thereto, a plurality of punches carried by the templet plate, and a plurality of compressible members interposed between the templet plate and the article punched, and so arranged as to be compressed during the punching action and adapted on the withdrawing action to support the thin templet plate.

2. In a metal punching machine, a removable sheet-metal templet, combined with a plurality of punches, which punches are held in position on the machine by means of the sheet-metal templet by the attachment of the sheet-metal templet to the machine.

3. In a metal punching machine, a vertically acting ram, a die-supporting-frame above the ram, a punch-supporting-frame above the die, the die-supporting-frame being adapted to move upward with the ram until the punch enters the die, to recede with the ram for a part of its travel, the ram continuing its downward movement away from the die-supporting-frame.

4. In a metal punching machine, a die, a ram, and a punch, the said die being movably supported in an intermediate position between the said punch and ram, the ram being adapted to move toward the punch, engaging the die and moving it to engagement with the punch, and to back off, leaving the die in the intermediate position, the ram moving away from the die, for the purpose set forth.

5. In a metal punching machine, a die, a ram and a punch, the said die being movably supported in an intermediate position above the ram and below the punch, the said ram being adapted to move upward, picking up the die and carrying it to engagement with the punch and back again to its intermediate position, the ram leaving the die; for the purpose set forth.

6. In a punching machine, a plurality of dies, a means of resistance backing-up the dies against the force caused by the action of punching through metal into the die, and provision for separating the dies from the backing-up means for the purpose of removing the punchings.

7. In a metal punching machine, a sheet-metal templet for supporting a plurality of dies on the machine, a ram or head for backing up the dies against the action of punching through metal into the dies, and provision for separating or drawing away the ram or head from the backs of the dies for the purpose of removing the punchings.

8. In a metal punching machine, a sheet-metal templet for supporting and locating a plurality of dies on the machine, a ram for backing up the dies against the action of punching, a scraper which is adapted to pass over the surface of the ram for the purpose of removing the punchings.

9. In a metal punching machine, a sheet-metal templet for holding a plurality of dies on the machine, a backing up device for the dies, the said sheet-metal templet being adapted to suspend the dies in an intermediate position in the machine during the operation of removing the punchings from between the dies and the backing up device.

10. In combination, a punch carrying member, an opposing die carrying sheet metal templet plate movably and adjustably mounted, and a backing up means adapted to engage and support the backs of the dies during the punching action and to be disengaged therefrom to permit of a removal of the punchings behind the dies.

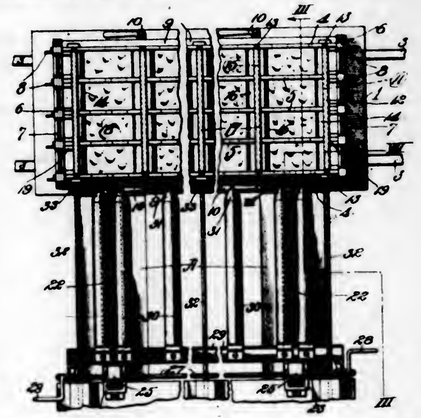
11. In a metal punching machine, a thin sheet-metal templet which is adapted to hold a plurality of dies by means of inserting the said plurality of dies through a corresponding plurality of holes in the said sheet-metal templet, means for clamping the dies in position, and means for securing the templet plate removably in the machine.

12. In a metal punching machine, a sheet-metal templet, combined with a plurality of dies and die-holders, which dies and die-holders are held in position on the machine by means of the sheet-metal templet, and with a backing up device which intermittently supports the dies against the action of punching the metal, and at other times is separated from the dies to permit of the removal of the punchings.

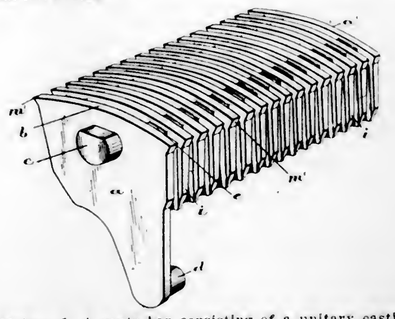
855,822. APPARATUS FOR MOLDING CEMENT BLOCKS. JAMES B. TALBOT, Edwardsville, Ill. Filed May 16, 1906. Serial No. 317,061.

Claim.—1. In a mold box, the combination of a platform, perforated side walls mounted on said platform, perforated partitions mounted on said platform and arranged parallel to said side walls, inverted U-shaped yokes permanently secured to said platform and adapted to receive said side walls and partitions, tie rods extending through said yokes and the members therein, and means for subdividing the spaces between said side walls and partitions, substantially as set forth.

2. In a mold box, the combination of a platform, two series of inverted U-shaped yokes secured to said platform, perforated side walls and partitions seated in said yokes, means for securing said walls and partitions in said yokes, end boards removably seated between said partitions and between said walls and partitions, carrying bars detachably secured to said side walls and to which said end boards are attached, and stop blocks located between said end boards and said yokes, substantially as set forth.



855,823. GRATE-BAR. HENRY TRUESDELL, Toronto, Ontario, Canada, assignor to The Cyclone Grate Bar Company, Limited, Toronto, Canada, a Corporation of Ontario. Filed Oct. 5, 1905. Renewed May 2, 1907. Serial No. 371,472.



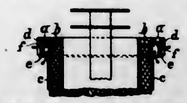
Claim.—1. A grate bar consisting of a unitary casting comprising two ends, trunnions formed on the outer faces thereof, a depending lug from the lower portion of one of the ends, so that a series of the grate bars may be secured to be rocked in unison, and a pair of side bars connecting the ends together and having their top surfaces below the plane of the top surfaces of the ends, transverse sections parallel with the ends and having their top surfaces to correspond with the top surfaces of the ends and in the same plane therewith so that the top surfaces of the side bars will be the same distance below the top surfaces of the transverse sections as they are below the top surfaces of the ends to form air courses all of equal capacity between the top surfaces of the side bars and those of the transverse sections and ends, the ends and the transverse sections projecting equally beyond the outer faces of both side bars, the projecting ends of the transverse sections strengthened by brace webs extending from near their top surfaces to the outer faces of the side bars, the middle parts of the transverse sections strengthened by brace webs extending to the inner faces of the side bars, channels formed in the inner and outer faces of the

side bars at the intervals between the transverse sections and extending to the bottom of the brace webs, and other channels formed in the inner faces of the side bars extending from the brace webs to the lower edges of the side bars.

2. A grate bar consisting of a unitary casting comprising two ends, trunnions formed on the outer faces thereof, a depending lug from the lower portion of one of the ends, so that a series of the grate bars may be secured to be rocked in unison, and a pair of bars connecting the ends together and having their top surfaces below the plane of the top surface thereof, transverse sections supported by the side bars and having their top surfaces to correspond with the top surfaces of the ends and in the same plane therewith so that the top surfaces of the side bars will be the same distance below the top surfaces of the transverse sections as they are below the top surfaces of the ends to form air courses, all of equal capacity, between the top surfaces of the side bars and those of the transverse sections and ends, the ends and the transverse sections projecting equally beyond the outer faces of both side bars, the projecting ends of the transverse sections strengthened by brace webs extending from near their top surfaces to the outer faces of the parallel bars, the middle parts of the transverse sections strengthened by brace webs extending to the inner faces of the parallel bars, channels formed in the inner and outer faces of the side bars at the intervals between the transverse sections and extending to the bottom of the brace webs, other channels formed in the inner faces of the side bars extending from the brace webs to the lower edges of the side bars, and clinker breakers formed on the projecting ends of the transverse sections.

3. A grate bar consisting of a unitary casting comprising two ends, trunnions formed on the outer faces thereof, a depending lug from the lower portion of one of the ends, so that a series of the grate bars may be secured to be rocked in unison, and a pair of side bars connecting the ends together, transverse sections supported by the side bars and parallel with the ends and projecting beyond the outer faces of the side bars, brace webs forming an integral part of the transverse sections and extending to the outer faces of the side bars, other brace webs extending from the middle parts of the transverse sections to the inner faces of the side bars, channels formed in the inner and outer faces of the side bars at the intervals between the transverse sections and extending to the bottom of the brace webs, and other channels formed in the inner faces of the side bars extending from the brace webs to the lower edges of the side bars.

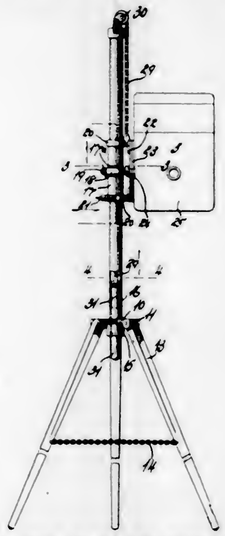
855,824. INCANDESCENT BURNER FOR LIQUID HYDROCARBONS. ROBERT E. WALTHER, Werdau, Germany. Filed Jan. 22, 1907. Serial No. 353,428.



Claim.—1. In an atmospheric burner for liquid combustibles for lighting and heating purposes the combination with a wick, of a wick tube externally surrounding the wick of a hollow open ring of metal closed and sloped at the top and provided on the wick tube thus forming a wick tube head of a second ring drawn onto the hollow ring and ending with its top edge in the same horizontal plane as the top edge of said hollow ring of air entrance openings in said second ring for conducting air in definite quantities to the sloped off upper edge of the hollow ring and of means for preventing the second ring from slipping off the hollow ring, substantially as described and specified.

2. In an atmospheric burner for liquid combustibles for lighting and heating purposes the combination with a wick, of a wick tube externally surrounding the wick of a hollow open ring of metal closed and sloped at the top and provided on the wick tube thus forming a wick tube head, of a corrugated ring drawn onto the hollow ring and ending with its top edge in the same horizontal plane as the top edge of said hollow ring of air entrance openings provided within the corrugations of said ring for conducting air in definite quantities and in the form of jets to the sloped off upper edge of the hollow ring, and of a projecting flange provided on the hollow ring and preventing the corrugated ring from slipping off the same, substantially as described and specified.

855,825. CAMERA-STAND. PIERRE V. W. WELSH, New York, N. Y. Filed Dec. 8, 1906. Serial No. 346,846.



Claim.—1. A stand of the kind described, comprising a hollow post, supporting legs therefor, a casing slidable up and down on the post, a counter-balance sliding in the post and connected over the post top to the casing, means for permitting the turning of the casing on both a horizontal and vertical axis, and means for securing the casing in the desired position.

2. A stand of the kind described, comprising a hollow supporting post, legs pivotally connected to the post, a casing slidably mounted on the post and also arranged to tip on a horizontal axis, and a counter-balance running in the post and connecting over the post top to the casing.

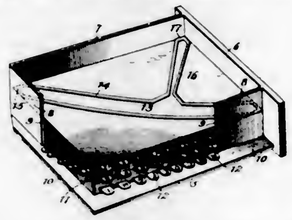
3. The combination of the supporting post, the sleeve slidable thereon and secured thereto, the rings turning on the sleeve, the flat plate carried by the rings, and a second flat plate turning in relation to the first and adapted to support a casing.

4. The combination of the post, the flat plate secured to the post so as to slide in relation thereto, the second flat plate turning in relation to the first and adapted to be secured to a casing, and friction devices between the two plates.

5. A structure of the kind described, comprising a stand having legs pivoted thereto and adapted to fold upward, a post supported on the stand, a sleeve sliding on the post, a fastening device to fix the position of the sleeve, rings turning on the sleeve, fastening devices to secure the rings, a plate carried by the rings, a second plate adapted to be secured to a casing, and the two plates turning in relation to each other, and a fastening device to fix the relative positions of the plates.

6. A structure of the kind described, comprising a hollow post, supporting legs therefor, a casing slidable up and down on the post, a counter-balance sliding in the post, an operative connection between the casing and the counter-balance, means for permitting the turning of the casing on both a horizontal and vertical axis, and means for securing the casing in the desired position.

855,826. FILE. FRANCIS A. WILLIAMS, Jacksonville, Fla., assignor of one-fourth to Chas. S. Adams, Jacksonville, Fla. Filed Dec. 28, 1905. Serial No. 293,640.



Claim.—1. A file of the character described, comprising a rectangular base, continuous angularly disposed side walls located on two sides of the base at the edges thereof and having their adjacent ends disposed together, forming a closed corner, and other angularly disposed side walls located on the other two sides of the base and inset from the edges thereof, leaving outstanding margins outside the same, said latter side walls extending from the outer ends of the continuous walls, forming two closed corners and terminating short of each other, leaving an open corner through which oppositely disposed index tabs may project and be protected by the outstanding margins of the base.

2. A file of the character described, comprising a base, and angularly disposed walls carried by the base, said walls having joined ends forming three closed corners, certain of said walls having spaced ends forming an open corner, in combination with a detachable retaining device that frictionally and detachably engages in said closed corners and is movable toward and from the base.

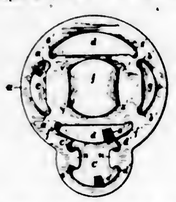
3. In a file of the character described, the combination with a receptacle comprising a base, and side walls forming diagonally opposite corners, of a removable yieldable retaining device movable in the receptacle toward and from the base and having ends that fit in the corners, said device being longer than the distance between said corners.

4. In a file of the character described, the combination with a receptacle comprising a base and side walls forming a plurality of corners, of a removable yieldable retaining device movable in the receptacle towsrd and from the base and comprising connected angularly disposed arms, the free ends of which frictionally engage in the corners, said device being longer than the distance between certain of said corners.

5. In a file of the character described, the combination with a receptacle having angularly disposed walls, of a removable yielding retaining device comprising angularly disposed arms having terminals that frictionally engage in the corners of the receptacle, one of said arms being of a length greater than the distance between the diagonally opposite corners in which the ends are engaged and the other arm being carried by an intermediate portion of the first mentioned arm.

6. In a file of the character described, a receptacle comprising a base and angularly disposed walls, certain of said angularly disposed walls being located inside the edges of the base and having their adjacent ends spaced apart, leaving an open side to the receptacle, in combination with a retaining device that removably and frictionally engages in the receptacle, said device comprising angularly disposed arms, the terminals of which frictionally engages in certain corners of the receptacle, one of said arms having a length greater than the distance between the diagonally opposite corners in which it engages, the other being carried by an intermediate portion of said arm and having a free end that engages in a corner between the said diagonally opposite corners.

855,827. COUNTER. EDWARD T. WILLSON, Plainfield, N. J. Filed Sept. 22, 1906. Serial No. 335,688.



Claim.—1. A counter, comprising a body of resilient material provided with apertures; a plurality of adjustable circular indices movably secured in said apertures, said indices being so arranged as to co-operate with each other, and a shield also fitting into said apertures and provided with apertures in itself, through which the indices may be observed.

2. A counter consisting of a body provided with apertures, a plurality of indices lying in said apertures, a part of each index being exposed in the rear, by which they may be revolved in said body, and a shield provided with apertures through which the indices may be observed, fitting into the apertures of the body and securing the indices therein.

3. A counter, comprising a frame provided with apertures extending through the same; a plurality of adjustable plates provided with characters and each secured in two or more of said apertures so as to be retained in place by the frame, and arranged so that the characters thereon can be brought in such mutual relation as to produce various combinations of characters.

4. The combination of a frame provided with apertures extending through the same, and a plurality of adjustable indices held between the edges of the apertures and overlapped by the remaining portions of the frame.

5. The combination of a body provided with apertures, a plurality of adjustable indices movably retained therein by the remaining portions of the frame, parts of which indices are exposed in the front and parts of which are exposed in the rear for the purpose of rotation.

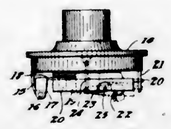
6. A counter comprising a frame provided with apertures extending through the same; and an adjustable plate provided with characters and held between the edges of the apertures by the edges of the frame.

7. The combination of a frame provided with apertures, and a plurality of adjustable indices retained in said apertures and overlapped by adjacent portions of the frame.

8. The combination of a frame provided with apertures, a plurality of adjustable indices held therein, a part of each index being in front and a part in rear of the frame.

9. The combination of a frame provided with apertures in its surface, a plurality of adjustable indices larger than the apertures, the outside edges of which bear against the inside edges of the apertures and lie partly in rear and partly in front of adjacent portions of the frame.

855,828. PHONOGRAPH RECORDER AND REPRODUCER. EDWARD L. AIKEN, East Orange, N. J., assignor to New Jersey Patent Company, West Orange, N. J., a Corporation of New Jersey. Filed Feb. 5, 1906. Serial No. 299,483.



Claim.—1. In a device of the character described, the combination of a body, a weight pivoted thereto on a horizontal axis, and a stylus carried by said weight, said axis lying between planes tangential to the record surface

at the points of contact of the stylus in its extreme operative positions, substantially as set forth.

2. In a device of the character described, the combination of a body, a weight pivoted thereto on a horizontal axis and a stylus carried by said weight, said horizontal axis lying in a plane tangential to the record surface at the point of contact of the stylus when occupying a medial position, substantially as set forth.

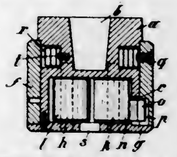
3. In a device of the character described, the combination of a body, a plate or disk pivoted thereto on a horizontal axis and a stylus carried by said plate, the said horizontal axis being below the plane of the weight when the latter is in its highest operative position, substantially as set forth.

4. In a device of the character described, the combination of a body and a stylus carrying plate or disk pivoted thereto on a horizontal axis situated below the plane of the weight, substantially as set forth.

5. In a device of the character described, the combination of a body, a pivot plate pivoted to said body on a horizontal axis situated below the plane of the pivot plate, a weight pivoted to said pivot plate on a vertical axis and a stylus carried by said weight, substantially as set forth.

6. In a device of the character described, the combination of a body, a diaphragm carried thereby, a pivot plate pivoted to said body on a horizontal axis situated below the plane of the pivot plate, a weight pivoted to said pivot plate on a vertical axis, a stylus lever pivoted to said weight and connected to said diaphragm and a stylus carried by said lever, substantially as set forth.

855,829. DRILL AND LIKE CLAMPING CHUCK. JOSEPH ALBRECHT, Esslingen, Germany. Filed Mar. 19, 1906. Serial No. 306,876.



Claim.—1. A drill chuck having a recessed body portion, pivoted gripping jaws arranged in the recesses and having arms projecting through openings in the wall of said recess, a ring mounted on the body and having recesses in which the arms engage, said body portion having an annular groove, and a spiral spring arranged in the groove and having one end secured to the body and the other end to the ring; substantially as described.

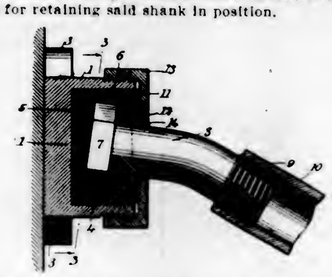
2. A drill chuck body having a recess at one end, and an annular groove in its periphery, a cap closing the mouth of the recess, a series of pins extending across the recess and secured at one end to the body and the other end to the cap, gripping jaws mounted on the pins and having projecting arms, a knurled ring mounted on the body and held in place by the cap, said ring having recesses to receive said arms, and a spiral spring arranged in the groove and secured at one end to the chuck body and at the opposite end to the ring; substantially as described.

855,830. ADJUSTABLE FIXTURE-SUPPORT. THEODORE C. J. ANDERSEN, New York, N. Y., assignor to The Macallen Company, Boston, Mass. Filed Dec. 22, 1906. Serial No. 349,075.

Claim.—1. In a device of the class described, in combination, a main socket adapted to be attached to a support, a skew insulating socket mounted therein and adapted to be applied thereto in a plurality of positions, and a shank mounted in said skew socket.

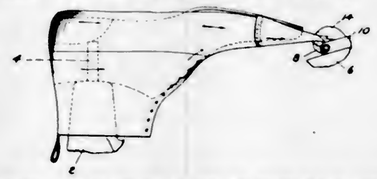
2. In a device of the class described, in combination, a main socket adapted to be attached to a support, an insulating skew socket mounted therein and having a plurality of adjusted positions, a bent shank having a head received in said skew socket, and means for retaining said head in said skew socket.

3. In a device of the class described, in combination, a main socket adapted to be attached to a support and having a chamber in the outer side thereof, of polygonal form, a molding skew socket fitting said chamber and adapted to be applied therein in a plurality of adjusted angular positions, a shank having a head received in said socket, and means for retaining said shank in position.



4. In a device of the class described, in combination, a main socket adapted to be attached to a support and having a polygonal chamber in the outer side thereof, an insulating skew socket received in said main socket, fitting the same and adapted to be applied thereto in a plurality of adjusted angular positions, said skew socket having a polygonal chamber therein, a shank having a polygonal head received in said skew socket, the said shank being bent a keeper received in said skew socket and retaining said head therein, and a nut retaining said keeper.

855,831. METHOD OF MAKING SHOES. EMERY BAYARD, Rochester, N. Y., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed Oct. 8, 1906. Serial No. 338,001.



Claim.—1. The method of making shoes which consists in engaging the forward portion of an upper, pulling it lengthwise of a last and holding it under lengthwise strain; and adjusting and securing parts of the shoe at the heel end of the last while the upper is so held under lengthwise strain.

2. The method of making shoes which consists in straining an upper in a lengthwise direction along a last in a substantially right line, and securing parts of the upper at the heel end of the last while the upper is held under such lengthwise strain.

3. The method of making shoes which consists in straining an upper forwardly to conform its rear portion to the end and side faces and the edge of the heel portion of a last, and securing the rear portion of the upper at the sides of the heel while the upper is held under such strain.

4. The method of making shoes which consists in engaging the forward portion of the upper, pulling the upper forwardly and thereby straining it lengthwise of the last, holding the upper with its marginal portion under lengthwise strain, and bending the edge of the rear portion of the upper over the last bottom and securing it while the upper is held under such strain.

5. The method of making shoes which consists in engaging the toe portion of the upper, pulling the upper lengthwise of the last, holding it with its marginal portion under lengthwise strain, and lasting the heel portion of the shoe while the upper is under such strain.

6. The method of making shoes which consists in applying an upper to a last, straining the upper forwardly along the edge of the last and upwardly along the instep of the last, forcing the upper inwardly over the innersole at the sides of the heel, and securing the upper to the innersole while the upper is so held under strain.

7. The method of making shoes which consists in positioning an upper on a last, engaging the fore part of the upper, pulling the upper lengthwise of the last and upwardly but without bending it over the toe of the last, and securing the upper at the heel end of the last while it is held under such lengthwise strain.

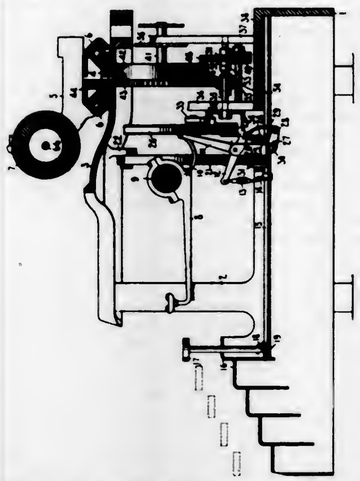
8. The method of making shoes which consists in engaging the forward portion of an upper; pulling it lengthwise of a last; securing parts of the shoe at the heel end of the last while the upper is held under such lengthwise strain; and then releasing the forward portion of the upper.

9. The method of making shoes which consists in straining an upper lengthwise of a last, and securing the upper and heel stiffener to the innersole at the sides of the heel portion of the last and also fastening the upper and stiffener to the rear end face of the last while the upper is held under such lengthwise strain.

10. The method of making shoes which consists in engaging the forward portion of an upper and pulling it lengthwise of a last, relatively moving the last and upper to adjust the upper longitudinally about the last, and securing the upper at opposite sides of the heel of the last while the upper is held under such lengthwise strain.

11. The method of making shoes which consists in engaging the forward portion of an upper and pulling it lengthwise of a last, positioning the toe tip seam with relation to a gage and securing the upper at the heel end of the last while the upper is held under such lengthwise strain.

855,832. TYPE-WRITING MACHINE. ALEXANDER T. BROWN, Syracuse, N. Y. Original application filed June 29, 1904, Serial No. 214,624. Divided and this application filed Aug. 8, 1905. Serial No. 273,298.



Claim.—1. In a typewriting machine, the combination of a carriage; a reversibly mounted driving spring for said carriage; an escapement; and changeable gearing connecting said escapement and carriage.

2. In a typewriting machine, the combination of a carriage; a reversibly mounted driving spring geared to said carriage; a rotary escapement member; and gearing between said rotary escapement member and carriage, such that said gearing may be changed when the spring is reversed so as to drive the escapement member in the same direction when the spring is used to drive the carriage toward the right as when said spring is used to drive the carriage toward the left.

3. In a typewriting machine, the combination of a carriage; a spring drum geared to said carriage; a driving spring reversibly mounted in said drum so as to drive the carriage either toward the right or toward the left; a rotary escapement member mounted on a shaft having a pinion; and interchangeable gearing including said pinion whereby said shaft may be geared to turn in the same direction whether the spring is arranged to drive the carriage toward the right or toward the left.

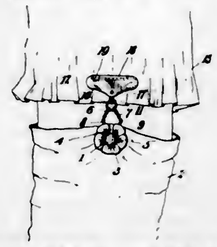
4. In a typewriting machine, the combination of a carriage; a spring drum geared to said carriage; a driving spring reversibly mounted in said drum so as to drive the carriage either toward the right or toward the left; a rotary escapement member mounted on a shaft having a pinion; interchangeable gearing including said pinion whereby said shaft may be geared to turn in the same direction whether the spring is arranged to drive the carriage toward the right or toward the left; and a ratchet device between said escapement member and said pinion, whereby the carriage may be turned to initial position without turning said escapement member, whether the parts are arranged for a left-hand or a right-hand feed.

5. In a typewriting machine, the combination of a carriage; a reversibly mounted driving spring geared to said carriage; a rotary escapement member; and a framework having gearing mounted therein, the construction and arrangement of the parts being such that said escapement member may be geared to said carriage by a train of gearing including an idle gear, when the spring is arranged to drive the carriage in one direction, or said idle gear may be omitted when the spring is arranged to drive the carriage in the other direction.

6. In a typewriting machine, the combination of a carriage; a feed rack mounted on said carriage; a spring drum geared to said feed rack at or near the middle of the machine; a driving spring reversibly mounted in said spring drum; a rotary escapement member and feed dogs co-operating therewith; a frame; and interchangeable gearng mounted in said frame and connecting said feed rack with said escapement member, the construction and arrangement being such that said driving spring may be caused to feed said carriage in either direction and said escapement member may be geared to turn in the same direction, when the spring is arranged to drive one way as when said spring is arranged to drive the other way.

7. In a typewriting machine, the combination of a spring drum geared to the carriage and having a driving spring mounted therein so that said spring drum will drive the carriage in one direction or the other according to the manner in which the spring is mounted in the drum, escapement mechanism including a rotary escapement member, and interchangeable gearing between said carriage and said rotary escapement member, the construction and arrangement being such that said rotary escapement member may be geared to turn in the same direction whether the driving spring operates to feed the carriage from right to left or from left to right.

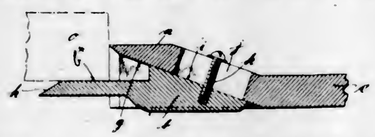
855,833. GLOVE-SUSTAINER. LAURA L. BROWN, Brooklyn, N. Y. Filed Oct. 17, 1906. Serial No. 339,360.



Claim.—A glove sustainer comprising an attaching device for suspending the sustainer from the garment sleeve,

a plate or disk having an open slot extending inwardly from its upper edge and adapted to engage a button or stud on the glove, flexible suspending devices extending from the said attaching device and connected at their lower ends to said plate at opposite sides of its slot.

855,834. CARPENTER'S TOOL. WILLIAM T. BUBB, Montoursville, Pa. Filed Jan. 7, 1907. Serial No. 351,065.



Claim.—1. In a device of the class described, the combination of a cutting member; with a gage formed with a gage surface and slidably mounted on said member, the plane of sliding contact between said member and gage being oblique to said gage surface, whereby longitudinal displacement of said gage on said member separates said gage surface from the plane of the cutting edge of said member; and means for securing said gage and member in adjusted position.

2. In a device of the class described, the combination of a gage formed with a gage surface; with a cutter formed with a face oblique to said gage surface and provided with graduations, said gage being mounted free to slide on said oblique face, whereby said gage surface is moved toward and from the plane of the cutting edge of said cutter; and means for securing said gage and cutter in adjusted position.

3. In a device of the class described, the combination of a cutter formed with a plurality of cutting edges; with a gage formed with a gage surface and slidably mounted on said cutter, the plane of sliding contact between said cutter and gage being oblique to said gage surface, whereby longitudinal displacement of said gage on said cutter varies the distance between said gage surface and the plane of one of said cutting edges; and means for securing said gage and cutter in adjusted position.

4. The combination in a device of the class described of a gage provided with a gage surface; with a cutter formed with a plurality of cutting edges and with a face oblique to said gage surface, said gage being free to slide on said oblique face to vary the distance between said gage surface and the plane of one of said cutting edges and said cutter being graduated to indicate said distance; and means for securing said gage and cutter in adjusted relation.

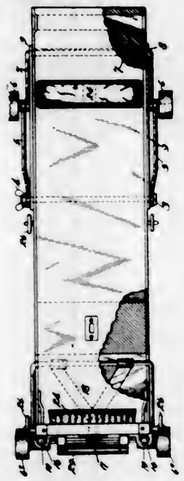
5. The combination in a device of the class described of a gage provided with a gage surface and with a face oblique thereto; with a cutter upon which said gage is slidably mounted and which is formed with a face oblique to said gage surface, said oblique faces being in sliding contact; and means for securing said gage and cutter in adjusted relation.

6. The combination in a device of the class described of a gage-chisel formed with a gage-surface; with a cutter upon which said gage-chisel is slidably mounted, the plane of sliding contact between said cutter and gage-chisel being oblique to said gage surface; and means for securing said gage-chisel and cutter in adjusted relation.

7. The combination in a device of the class described of a cutter formed with a plurality of cutting edges; a gage-chisel formed with a gage surface and slidably mounted on said cutter, the plane of sliding contact between said cutter and gage-chisel being oblique to said gage surface; and means for securing said cutter and gage-chisel in adjusted relation.

855,835. EXPRESSMAN'S TRUCK. FREDERICK W. CLAYTON, San Jose, Cal., assignor of one-third to Enoch E. Rogers and one-third to Albert N. Sims, San Jose, Cal. Filed Dec. 31, 1906. Serial No. 350,298.

Claim.—1. In a movable truck, a platform having a horizontal longitudinal slot made therethrough, plates slidably fitting upon each side of the platform having slots registering with that of the platform, arms pivoted together, and bearing-wheels journaled at the junction of said arms, one pair of said arms being fulcrumed to the ends of the slotted plates, the other pair having a rod and locking device passing through the slots of the plates and platform, whereby the plates and the wheels may be moved from the end toward the center of the platform, and the latter raised and locked with relation to the surface upon which the wheels travel.



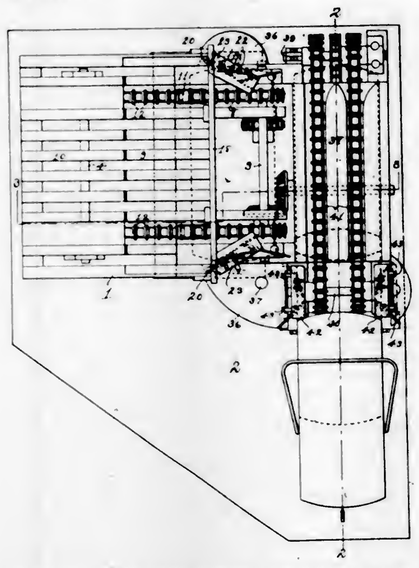
2. In a traveling truck, a platform having a horizontal passage there-through near one end, slotted plates slidably mounted on the sides of the platform and, registering with the edges of the platform and the open space, toggle-jointed arms, one pair of which are pivoted to the plate, and the other pivoted to a rod extending through the slot in the plate and the open space of the platform, said rod being slidable to change the angle of the toggle levers, wheels journaled at the angle of said levers, movable arms connected with the opposite end of the platform, and capable of extension to raise and lower said end, and wheels journaled at the junction of said arms.

3. In a wheeled truck, a platform, toggle jointed levers, wheels journaled at the meeting angle of said levers, slotted plates, said plates being slidably mounted on the sides of the platform, to one end of which plates one pair of the levers is pivoted, a rod extending through the slot in the plates and connecting the other pair of levers, a corresponding slot made in the platfrom, with which the slotted plate registers, and within which it is slidable, means for extending or contracting the toggle levers to raise and lower the platform upon the wheels, and to move said levers nearer to or farther from the center, and means for locking the wheels and plates in position.

4. In a wheeled truck, a horizontal platform, an adjustable wheeled support for one end of the platform, an extension hinged to the opposite end of the first named platform, means for locking said extension at right angles, arms having one end slidable and pivotally connected with the platform, wheels journaled at the opposite ends of said arms, a vertically slidable rod connected with each end of the wheel shaft and slidable in guides disposed vertically on the side edges of the second extension, means for locking said arms to adjustably support this end of the platform upon its wheels.

5. In a wheeled truck, a bearer composed of hinged foldable sections with locking bolts, pivoted angular bars slidably connected with said sections, wheels journaled at the contiguous pivoted ends of the bars whereby they may be independently adjusted with relation to the bearer, and links for the attachment of straps, said links detachably interlocking with the bearer.

855,836. OIL-CAKE TRIMMER. JOSEPH DION and JOHN D. BELANGER, Chicago, Ill. Filed June 3, 1901. Serial No. 62,951.



Claim.—1. An oil cake trimmer, comprising a table, a carrier adapted to move the oil cake over said table, vertical crank shafts mounted on said table on each side of said carrier, a plane pivotally mounted on the crank of each of said crank shafts and swinging in a horizontal plane, and springs actuating said crank shafts to hold said planes in the path of the edges of the oil cake.

2. An oil cake trimmer, comprising a carrier adapted to transport the oil cake, planes movably mounted on the frame of the machine on each side of the carrier, and springs for holding the said planes in the path of the oil cake, said planes being provided with guard-plates adapted to be engaged by the edges of the cake to determine the depth of the cut effected by said planes, said planes mounted so as to have a long bearing against the side of the cake on both sides of the cutting edge.

3. In an oil cake trimmer, the combination with a carrier and cutters on each side thereof adapted to trim the edges of the cake as same is carried between the same, of hooks on said carrier, adapted to engage the edge of the cake to force same through between said cutting devices, and means for forcing said cake into proper position on said carrier, comprising a spring-actuated gate depending into the path of the cake in advance of said cutters and adapted to be engaged by said cake to force the rear edge thereof firmly against said hooks, said gate being pivotally moved by the cake as same passes and pressing upon said cake as the latter passes between said cutters to prevent same from springing out of engagement with the latter.

4. In an oil cake trimmer, the combination with a carrier and cutters on each side thereof adapted to trim the edges of the cake as same is carried between the same, of hooks on said carrier, adapted to engage the edge of the cake to force same through between said cutting devices, and means for forcing said cake into proper position on said carrier, comprising a spring-actuated gate depending into the path of the cake in advance of said cutters and adapted to be engaged by said cake to force the rear edge thereof firmly against said hooks, said gate being pivotally moved by the cake as same passes.

5. In an oil cake trimmer, the combination of a suitable table for receiving the cakes, with carriers for moving them along the table, a plane-like cutter at the side of such table, consisting of a knife set at an inclination to the line of travel of the cake, and a device for elastically pressing such knife against the edge of the cake said cutter adapted to continuously engage the edge of the cake from end to end as the cake passes on.

6. In an oil cake trimmer, the combination of a suitable table for receiving the cakes, with carriers for moving them along the table, a plane-like cutter at the side of such table, consisting of a knife set at an inclination to the line of travel of the cake and mounted on an arm pivoted so as to oscillate to and from the edge of the cake, and an elastic device to force the arm and knife elastically toward the edge of the cake said cutter adapted to continuously engage the edge of the cake from end to end as the cake passes on.

7. In an oil cake trimmer, the combination of a suitable table for receiving the cakes, with carriers for moving them along the table, a plane-like cutter at the side of such table, consisting of a knife set at an inclination to the line of travel of the cake, said knife pivoted on its support, and an elastic device to press the knife and its support toward the edge of the cake said cutter adapted to continuously engage the edge of the cake from end to end as the cake passes on.

8. In an oil cake trimmer, the combination of a suitable table for receiving the cakes, with carriers for moving them along the table, a plane-like cutter at the side of such table, consisting of a knife set at an inclination to the line of travel of the cake, pivoted on its support and provided with an elastic device, which tends to move it about its pivot said cutter adapted to continuously engage the edge of the cake from end to end as the cake passes on.

9. In an oil cake trimmer, the combination of a suitable table for receiving the cakes, with carriers for moving them along the table, a cutter at the side of such table, consisting of a knife set at an inclination to the line of travel of the cake, pivoted on its support and provided with an elastic device, which tends to move it about its pivot, and an elastic device which tends to move the knife and its support toward the edge of the cake.

10. In an oil cake trimmer, the combination of a table on which the cakes are received, with traveling conveyer chains, provided with hooking devices, each of said devices consisting of a part adapted to engage the rear edge of the cake and a forwardly projecting part adapted to receive the lower side of the cake near its rear edge, said hooking device secured on the traveling chain by loose pivotal connections and being longer than two sections or links of the chain.

11. In an oil cake trimmer, the combination with a table and a carrier adapted to move oil cakes over said table, of devices for trimming the rounded edges of said cake, comprising vertical crank shafts mounted on said table on each side of said carrier, a plane pivotally mounted on the crank of each of said crank shafts and adapted to turn horizontally, and springs actuating said crank shafts for holding said planes in the path of the cake, said planes being thereby adapted to follow the contour of the edges of said cake and trim the same.

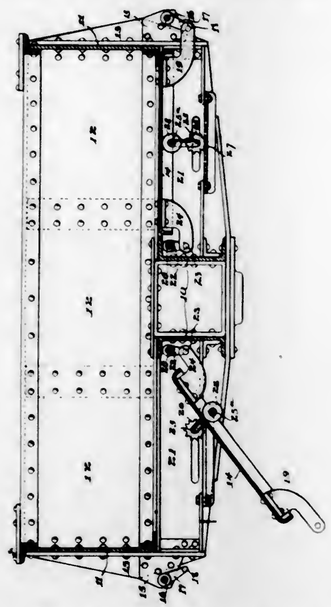
12. The combination of a feed table, means for moving the cakes over the table, a cutter associated with the table and means for controlling the position of the cutter so as to vary the cut, such means comprising a surface against which the cake presses in passing the cutter so as to move such cutter in accordance with the contour of such surface and the shape of the cake being trimmed.

13. In an oil cake trimmer, the combination of a feed table, means for moving the cake to be trimmed over the table, a plane like cutting tool normally idle against which the cake is pressed to make the cut, and a tension device to hold the edge of the cutting tool yieldingly in the cake.

14. In an oil cake trimmer, the combination of a feed

table, means for moving the cake to be trimmed over the table, a cutter comprising a normally stationary knife or blade against which the cake is pressed so as to cut a slice from its edge, and a tension device to hold such blade or knife in the cake so that it follows the edge of the hard part thereof.

855,837. DOOR-OPERATING MECHANISM FOR GONDOLA CARS. ETHAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 28, 1905. Serial No. 257,879.



Claim.—1. In a railway car having center sills, the combination of one or more dumping doors on each side of said center sills, and separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, substantially as described.

2. In a railway car having center sills, the combination of one or more dumping doors on each side of said center sills, separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and means to control the movements of said doors, substantially as described.

3. In a railway car having center sills, the combination of one or more dumping doors on each side of said center sills, separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and means to close said doors, substantially as described.

4. In a railway car having center sills, the combination of one or more dumping doors on each side of said center sills, separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and means to close said doors when opened in either direction, substantially as described.

5. In a railway car having center sills, the combination of one or more dumping doors on each side of said center sills, separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and means to control the opening of said doors when the hinge mechanisms at either edge are separated, such means being adapted to close said doors when opened in either direction, substantially as described.

6. In a railway car having center sills, the combination of one or more dumping doors on each side of said center sills, separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and door-operating means each including a rotatable cranked or offset shaft, substantially as described.

7. In a railway car having center sills, the combination of one or more dumping doors on each side of said center sills, separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and door-operating means each including a rotatable cranked or offset shaft, said doors resting upon and supported by the cranked or offset portions of said shafts, substantially as described.

8. In a railway car having center sills, the combination of one or more dumping doors on each side of said center sills, separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and door-operating means each including a rotatable cranked or offset shaft, said doors resting upon and supported by the cranked or offset portions of said shafts, the cranked or offset portions of said shafts being in vertical planes when the doors are in closed position, substantially as described.

9. In a railway car having center sills and a flat or flush bottom, the combination of one or more dumping doors on opposite sides of said sills, said doors forming parts of said flat or flush bottom, and separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, substantially as described.

10. In a railway car having center sills and a flat or flush bottom, the combination of one or more dumping doors on opposite sides of said sills, said doors forming parts of said flat or flush bottom, separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and door-operating means, substantially as described.

11. In a railway car, the combination of one or more dumping doors disposed on each side of the longitudinal center of the car, and separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, substantially as described.

12. In a railway car, the combination of a car-body having a substantially flush and horizontal bottom, two sets of dumping floor doors arranged in two longitudinal series and forming portions of said bottom, and means supporting said doors permitting either longitudinal edge of each to be dropped, substantially as described.

13. In a railway car, the combination of a car-body having a substantially flush and horizontal bottom, one or more dumping floor doors on each side of the longitudinal center of the car forming portions of said bottom, and means supporting said doors permitting either longitudinal edge of each to be dropped, substantially as described.

14. In a railway car, the combination of a car-body having a substantially flush and horizontal bottom, one or more dumping floor doors on each side of the longitudinal center of the car forming portions of said bottom, and separable hinge mechanisms supporting each of said doors at both of its longitudinal edges, whereby the hinge mechanism on either edge of any of said doors may be separated to permit the door to turn on the unseparable hinge mechanism at its opposite edge, substantially as described.

15. In a railway car, the combination of a car-body having a dumping floor door, separable hinge mechanisms supporting said door at opposite edges, whereby the hinge mechanism at either edge may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, and a door-operating means including a shaft bodily movable toward and from the hinge edges of said door, substantially as described.

16. In a railway car, the combination of a car-body having a dumping floor door, separable hinge mechanisms supporting said door at opposite edges, whereby the hinge mechanism at either edge may be separated and permit the door to open turning on the unseparated hinge mechanism at its opposite edge, a shaft upon which said door rests, said shaft being bodily movable toward and from the hinge edges of said door, and means to bodily move said shaft, substantially as described.

17. The combination with a car-body having a dumping floor section, of separable hinge mechanisms supporting said floor section on both of its longitudinal edges whereby either edge may be dropped, and a longitudinally extending shaft mounted b neath said floor section and bodily movable laterally of the car, said shaft having one or more offset portions engaging the under side of said floor section, and means for turning said shaft, substantially as described.

18. The combination with a car-body having a dumping floor section, of separable hinge mechanisms supporting said floor section on both of its longitudinal edges whereby either edge may be dropped, and a longitudinally extending shaft mounted beneath said floor section, said shaft having one or more offset portions engaging the under side of said floor section, and means for turning said shaft and causing the same to move bodily to and from either side of its normal central position wherein said floor section is closed whereby to open and close said floor section when the latter is swung from either hinge mechanism, substantially as described.

19. The combination with a car-body having a plurality of dumping floor sections on either side of the car, of separable hinge mechanisms supporting said floor sections on both their inner and outer longitudinal edges whereby either edge may be dropped, and a longitudinally extending shaft mounted beneath the series of floor sections on each side of the car, each of said shafts having an eccentric member engaging the under side of each floor section, and means for imparting a combined rotary and bodily lateral movement to said shaft on either side of its normal central position wherein said floor sections are closed, substantially as described.

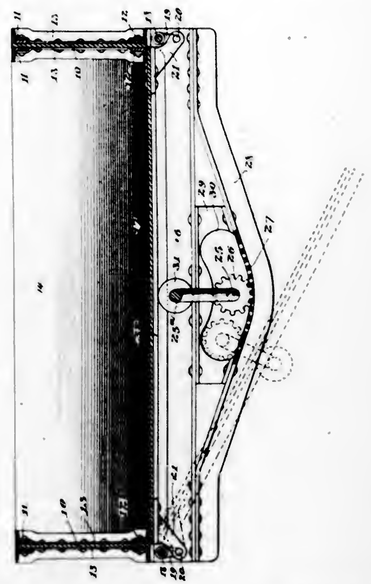
20. In a railway car having center sills and sides, the combination of a dumping floor section comprising one or more doors on each side of said center sills, and separable hinge mechanisms supporting said doors on both of their longitudinal edges adjacent to said center sills and said sides whereby either edge of the doors may be dropped, substantially as described.

21. In a railway car having center sills and sides, the combination of a dumping floor section comprising one or more doors on each side of said center sills, separable hinge mechanisms supporting said doors on both of their longitudinal edges adjacent to said center sills and said sides whereby either side of the door may be dropped, and actuating means for said doors, substantially as described.

22. In a railway car having center sills and sides, the combination of a dumping floor section comprising one or more doors on each side of said center sills, separable hinge mechanisms supporting said doors on both of their longitudinal edges adjacent to said center sills and said sides whereby either side of the door may be dropped, and actuating means serving to operate said doors when opening in either direction, substantially as described.

23. The combination with a car body having a door hinged at its opposite longitudinal edges, means for locking the hinged edges of the door in the closed position, means for releasing the locking devices to allow the door to open at either edge, a crank shaft journaled at the opposite ends of the door, its crank being arranged to act on the door to close the latter when swung in either direction and forming a supporting stirrup for the door when open, substantially as described.

855,838. CAR CONSTRUCTION. ETHAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed May 8, 1905. Serial No. 259,377.



Claim.—1. In a railway car the combination of a car-body having side walls each provided with longitudinal reinforcing strips on both sides of its upper and lower margins, and vertical reinforcing strips on both sides between said horizontal strips, and a hinged load-discharging floor section co-extensive with the width of the car body, substantially as described.

2. In a railway car the combination of a car-body having side walls each provided with longitudinal reinforcing strips on both sides of its upper and lower margins, and vertical reinforcing strips on both sides between and secured to said horizontal strips, and a hinged load-discharging floor section co-extensive with the width of the car body, substantially as described.

3. In a railway car the combination of a car-body having side walls each provided with angle irons disposed longitudinally of and secured to both sides of its upper and lower margins, and other angle irons disposed vertically at intervals on both sides between said longitudinal angle irons, and a hinged load-discharging floor section co-

extensive with the width of the car body, substantially as described.

4. The combination with a car-body having a hinged load-discharging floor section substantially co-extensive with the width of the car, of a longitudinally extending shaft mounted beneath said floor section, said shaft having one or more offset portions engaging the under side of said floor section, and means for turning said shaft, substantially as described.

5. The combination with a car-body having a dumping floor section substantially co-extensive with the width of the car, of separable hinge mechanisms supporting said floor section on both of its longitudinal edges whereby either edge may be dropped, and a longitudinally extending shaft mounted beneath said floor section, said shaft having one or more offset portions engaging the under side of said floor section, and means for turning said shaft, substantially as described.

6. The combination with a car-body having a hinged load-discharging floor section substantially co-extensive with the width of the car, of an operating mechanism therefor comprising a longitudinally extending shaft disposed substantially centrally therebeneath and having one or more offset portions engaging the under side of said section, and means for turning said shaft, substantially as described.

7. The combination with a car-body having a hinged load-discharging floor section substantially co-extensive with the width of the car, of an operating mechanism therefor comprising a longitudinally extending shaft mounted beneath said floor-section and having one or more offset portions engaging the under side of the latter, gears carried by said shaft, racks disposed transversely of and beneath the car-body engaging and supporting said gears, and means for turning said shaft, substantially as described.

8. The combination with a car-body having a hinged load-discharging floor section, of an operating mechanism therefor comprising a longitudinally extending shaft disposed beneath said floor section and having one or more offset portions engaging the under side of the latter, gears carried by said shaft, curved racks disposed transversely of and beneath said car-body engaging and supporting said gears, and means for turning said shaft, substantially as described.

9. The combination with a car-body having a hinged load-discharging floor section, of an operating mechanism therefor comprising a longitudinally extending shaft disposed beneath said floor section and having one or more offset portions engaging the under side of said floor section, and means for turning said shaft, concave racks disposed transversely of and beneath said car-body engaging and supporting said gears, and means for turning said shaft, substantially as described.

855,839. COMBINATION METAL AND WOOD CAR. ETHAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed July 6, 1905. Serial No. 268,305.

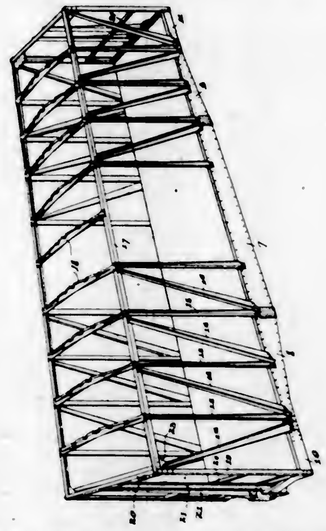
Claim.—1. A frame for the superstructure of a railway car having diagonal side stakes or braces, each having a flange of uniform width and a tapered flange, substantially as described.

2. A frame for the superstructure of a railway car, including on each side a longitudinal sill, a top longitudinal angle bar, and diagonal braces connecting said sill and bar, each brace having an outwardly-extended flange of uniform width and a tapered flange lying against said sill and bar, substantially as described.

3. A car frame comprising a side sill, an upper bar, vertical and diagonal side stakes with tapering flanges secured to the side sill and upper bar, substantially as described.

4. A car frame comprising a side sill, an upper bar, vertical and diagonal side stakes secured to said side sill and upper bar, said vertical stakes having outwardly extended tapered flanges, and said diagonal stakes having tapered flanges parallel to said side sill and upper bar, substantially as described.

5. A car frame comprising a spliced side sill, an upper longitudinal angle bar, vertical and diagonal side stakes secured to said side sill and upper bar, said vertical stakes having outwardly extended tapered flanges, and said diagonal stakes having tapered flanges lying against said sill and bar, substantially as described.



6. In a car frame the combination of a cross-bearer, a side sill, an angle plate securing the cross-bearer and side sill together, a longitudinal angle bar, a side stake, rivets fastening said stake, sill and longitudinal angle bar together, substantially as described.

7. In a railway car, the combination of a transverse cross-bearer, a longitudinal side sill, an upright side stake, an angle plate fastened to the outer end of said cross-bearer, one or more rivets securing together said side sill, side stake and angle plate, a longitudinal angle bar, and rivets fastening together said bar, sill and stake, substantially as described.

8. In a railway car, the combination of a transverse cross-bearer, a longitudinal side sill, an upright side stake, an angle plate fastened to the outer end of said cross-bearer, one or more rivets securing together said side sill, side stake and angle plate, a longitudinal angle bar, rivets fastening together said bar, sill and stake, and a longitudinal nailing strip fastened to said side sill, substantially as described.

9. In a railway car, the combination of longitudinal side sills on opposite sides of the car, cross-bearers having their outer ends secured to said side sills, side stakes connected to said side sills and partially overlapping the latter and the ends of said cross-bearers, means to tie together the upper ends of said stakes on opposite sides of the car, and nailing strips secured to said side sills below the ends of said side stakes.

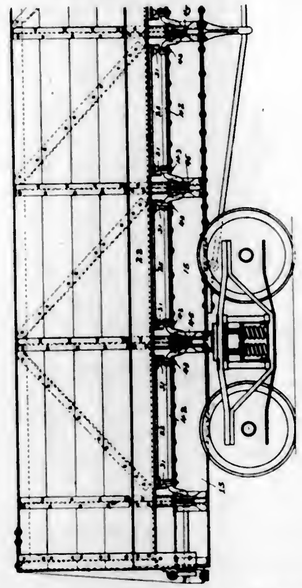
10. In a car frame, the combination of center sills, a spacing member for the same, said spacer extending beyond said sills, a side sill and a needle bar connecting said side sill and spacing member.

11. In a car frame the combination of center sills, a channel spacer for said sills extending beyond said sills, side sills and a needle beam connected to said side sills and to the web of said channel spacer, substantially as described.

12. In a car frame, the combination of an upper side longitudinal bar, a transverse end bar, an upright corner bar, a diagonal bar and a gusset plate to which the bars are secured, substantially as described.

13. In a car frame, the combination of a longitudinal angle bar, a transverse end angle bar, an upright corner angle bar, a diagonal angle bar and a gusset plate to which the bars are secured, substantially as described.

855,840. RAILWAY DUMPING-CAR. ETHAN I. DODDS, Pullman, Ill., assignor to The Pullman Company, Chicago, Ill., a Corporation of Illinois. Filed May 26, 1906. Serial No. 318,955.



Claim.—1. In a railway car having a hinged dumping door, a door operating mechanism comprising the combination of a support, a shaft mounted to move bodily on said support from and toward the hinges of said door to open and close the same, a gear on said shaft, a stationary rack above the axis of said shaft with which the teeth of said gear mesh, and means to turn said shaft to cause it to revolve and travel toward or from the hinges of the door, substantially as described.

2. In a railway car having a hinged dumping door, a door operating mechanism comprising the combination of a support, a shaft mounted to move bodily on said support from and toward the hinge of said door to open and close the same, a gear on said shaft, a rack above said gear with which the teeth of the latter mesh, and means to turn said shaft to cause it to revolve and travel toward or from the hinge of the door, substantially as described.

3. In a railway car having a hinged dumping door, a door operating mechanism comprising the combination of a support, a shaft, one or more rollers on said shaft adapted to travel on said support, said shaft being bodily movable on said support to open and close said door, a gear on said shaft, a rack above said gear with which the teeth of the latter mesh, and means to turn said shaft, substantially as described.

4. In a railway car having a hinged dumping door, a door-operating mechanism comprising the combination of a car underframe having slotted supporting members, a shaft extended through said slots and bodily movable lengthwise said slots to open and close said door, a gear fixed on said shaft, a stationary rack above said gear with which the teeth of said gear mesh, and means to turn said shaft, substantially as described.

5. In a railway car having a hinged dumping door, a door operating mechanism comprising the combination of a car underframe, a cranked shaft mounted on said underframe and adapted to move bodily toward and from the hinge of said door, the offset or cranked portion of said shaft being adapted to engage and open and close said door, a gear on said shaft, a rack mounted on said underframe above said gear, the teeth of said gear and rack co-operating, and means to turn said shaft, substantially as described.

6. In a railway car having a hinged dumping floor door, the combination of a car underframe having a plurality of slotted shaft-supporting members, a shaft extended through said slots and adapted to move bodily lengthwise said slots, said shaft having a cranked or offset portion to engage the under side of said door and control its opening and closing, rollers on said shaft adapted to travel on the margins of said slots, a gear on said shaft, a rack fixed on said underframe above said gear, the teeth of said gear and rack co-operating, and means to turn said shaft, substantially as described.

7. In a railway car, the combination of a hinged dumping door, a shaft, a support for said shaft permitting bodily movement thereof toward and from the hinge of said door, a stationary rack, a gear mounted on said shaft to turn therewith, the teeth thereof meshing with those of said rack, a worm wheel on said shaft, and a worm to turn said worm wheel and shaft, substantially as described.

8. In a railway car having a hinged load-discharging door, the combination of a cranked shaft, the cranked or offset portion thereof engaging the under surface of said door and sustaining the weight thereof, a support for said shaft permitting bodily movement thereof toward and from the hinges of said door, a gear mounted on said shaft to turn therewith, a stationary rack, the teeth of said gear and rack meshing with each other, a worm wheel fixed to said shaft; and an operating worm meshing with said worm wheel, substantially as described.

9. In a railway car having a hinged load discharging door, the combination of a cranked shaft, the cranked or offset portion thereof being below and bearing the weight of said door and the load above it, slotted supports for said shaft permitting bodily movement thereof toward and from the hinges of said door, a gear on said shaft rotatable therewith, a stationary rack above said gear, the teeth of said gear and rack meshing together, a worm wheel fixed to said shaft, and a worm rotatably mounted on the car meshing with said worm wheel and adapted to rotate the same during the whole of its bodily movement, substantially as described.

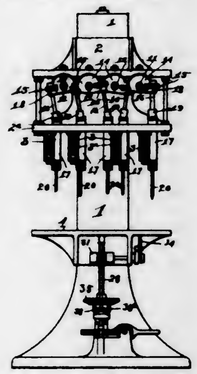
10. In a railway car, the combination of a shaft, a split gear adapted to be fixed to said shaft, said gear having a pair of spaced ears or lugs and a central aperture of substantially the same diameter as the shaft, the space between said lugs also being substantially equal to the diameter of said shaft and communicating with said central aperture whereby said gear may be attached to said shaft without removing the latter from its bearings, a filler block adapted to be placed between said ears or lugs, and a bolt adapted to pass through said lugs and filler block to fasten said gear to said shaft, substantially as described.

11. In a railway car, the combination of a shaft, a split gear adapted to be fixed to said shaft, said gear having a pair of spaced ears or lugs and a central aperture of substantially the same diameter as said shaft, the space between said lugs also being substantially equal to the diameter of said shaft and communicating with said aperture whereby said gear may be attached to said shaft without removing the latter from its bearings, a filler block with an inner flat end adapted to be placed between said lugs, said shaft being flattened at one side for the engagement of the flat end of said filled block, and a bolt adapted to pass through said ears or lugs and filler block to fasten said gear to said shaft, substantially as described.

12. A support for a door-operating shaft of a railway car, comprising two spaced slotted members connected together, and a rack between said members, substantially as described.

13. A cast metal support for a door-operating shaft of a railway car having top and bottom marginal flanges, two spaced slotted webs at one end of said support which merge into a single web, as they extend toward the opposite end of said support, said single web being divided into two other spaced webs at the other end of the support, and a rack between said spaced slotted webs, substantially as described.

855,841. DRILL-PRESS. OLIVER L. DOSCH, Dayton, Ohio. Filed Dec. 16, 1905. Serial No. 291,992.



Claim.—1. In a drill press, the combination with a series of spindles and holders therefor, means for permitting said holders to be laterally adjusted, of a series of driving spindles each connected respectively to said spindles by a universal joint, a gear on each driving spindle a gear in mesh with each spindle gear, an oscillating bearing concentric with each driving gear and in which said spindle gear is mounted, permitting said driving spindles to be moved out of perpendicular position, and means for rotating the driving gears supported in said oscillating bearings.

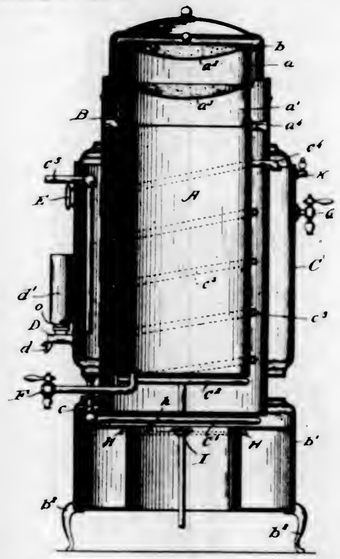
2. In a drill press, the combination with a series of spindles and holders therefor, means for permitting said holders to be laterally adjusted, of a series of driving spindles connected to said holders by universal couplings, a driving gear on each of said driving spindles, a gear in mesh with each of the driving spindle gears, an oscillating bearing in which each of said driving gears is mounted and by means of which the driving spindles are movable out of perpendicular positions, a shaft supporting each oscillating bearing and along which each bearing is movable, and means for rotating the gears supported in said oscillating bearings.

3. In a drill press, the combination with a series of spindles and holders therefor, means for adjusting said holders laterally, of a series of driving spindles connected to said holders by universal joints, a driving gear on each of said driving spindles, an oscillating bearing supporting each of said driving gears, and by means of which the driving spindles are movable out of perpendicular positions, horizontal shafts upon which said oscillating bearings are slidingly mounted, and a series of shiftable rails engaging the spindle holders to adjust the positions thereof laterally.

855,842. COFFEE-URN. DANIEL O. DOWE, Montgomery, Ala. Filed Feb. 25, 1907. Serial No. 359,262.

Claim.—1. In an urn of the class described, the combination of a coffee-crock, a main body-portion inclosing said crock and adapted to contain hot water and to be placed over a burner, a water tank or reservoir surrounding said body-portion, and a circulation pipe connected at both ends to said reservoir and being formed into an intermediate coil beneath said body-portion and also into a second coil surrounding said crock.

2. In an urn of the class described, the combination of a coffee-crock, a main body-portion inclosing said crock and adapted to contain hot water and to be placed over a burner, a water tank or reservoir surrounding said body-portion, and a circulation pipe connected at both ends to said reservoir and including one coil beneath said body-portion, a second coil beneath said crock and a helical coil surrounding the latter.



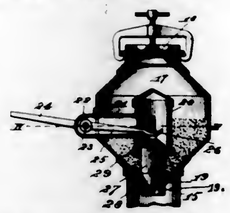
3. In an urn of the class described, the combination of a coffee-crock, a main body-portion, inclosing said crock and adapted to contain hot water and to be placed over a burner, a water tank or reservoir surrounding said body-portion, a supply-pipe for said reservoir, a coil of pipe beneath said body portion and connected to said reservoir, a second coil of pipe beneath said crock and connected to said first coil and a helical coil of pipe surrounding said crock and connected to said second coil and also to said reservoir.

4. In an urn of the class described, the combination of a coffee-crock, a main body-portion inclosing said crock and adapted to contain hot water and to be placed over a burner, a water tank or reservoir surrounding said body-portion, a supply pipe for said reservoir, a coil of pipe beneath said body portion and connected to said reservoir, a second coil of pipe beneath said crock and connected to said first coil, a helical coil of pipe surrounding said crock and connected to said second coil and also to said reservoir, receptacles for rolls arranged beneath said first-mentioned coil and sprayer pipes connected to said coil and leading into said receptacles.

5. In an urn of the class described, the combination of a main body-portion provided with a base-section, a coffee-crock supported within said body portion, a water reservoir surrounding said body-portion, a burner in said base-section, receptacles for rolls or the like, surrounding said burner, a coil of pipe adjacent said burner and connected to said reservoir, sprayer pipes in said receptacles and connected to said coil, a second coil adjacent to said crock and connections therefrom to said reservoir, means to supply cold water to said reservoir and means to withdraw the hot water therefrom.

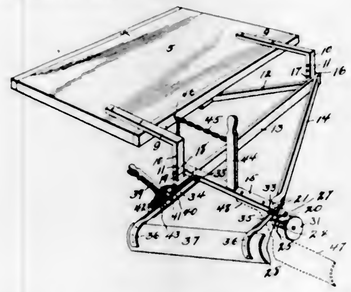
6. In an urn of the class described, the combination of a coffee-crock, a main body-portion inclosing said crock and adapted to contain hot water and to be placed over a burner, a water tank or reservoir surrounding said body-portion, a circulation pipe connected at both ends to said reservoir and being formed into an intermediate coil beneath said body-portion and also into a second coil surrounding said crock, and a support attached to the outside of said reservoir to hold an inverted bottle in close proximity to the wall of said reservoir, and constructed and adapted to enable the contents of the bottle to be drawn off as desired.

855,843. ACETYLENE-GAS-GENERATING APPARATUS. ALFRED C. EINSTEIN, St. Louis, Mo., assignor to The Eagle Generator Company, a Corporation of Missouri. Filed Aug. 1, 1903. Serial No. 167,827.



Claim.—In an acetylene gas apparatus, the combination of a generator tank, a carbid hopper having an outlet at its lower end, a freely suspended gravity valve located above said outlet for controlling the flow of carbid therethrough and having an apertured stem at its upper end, a hood of greater diameter than the valve and surrounding the upper end of the valve and free of connection therewith, a tubular arm secured to the hopper and integral with said hood, a valve lifting arm extending through said tubular arm and having a free end fitting loosely in the aperture of the valve stem, a lever having connection with said lifting arm and extending outside of the hopper, a gas bell, and a dog carried by said bell and adapted to engage the free end of the lever to lift said valve.

855,844. SOD TRIMMING AND MARKING DEVICE. WILLIAM FOSTER, Higby, Ohio. Filed Dec. 17, 1906. Serial No. 348,159.



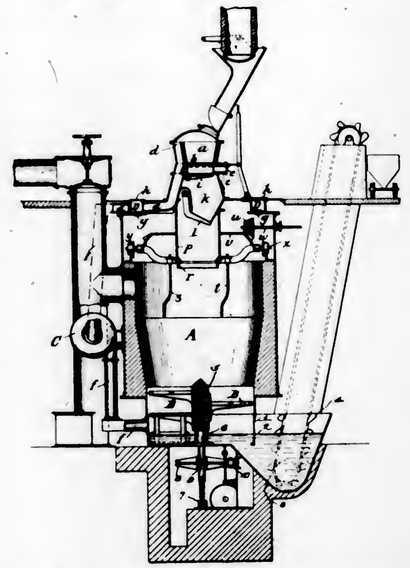
Claim.—1. In a sod trimming and marking device, the combination with a car, of supports carried by said car, a frame hinged to said supports, means for vertically adjusting said frame at said hinged connection, and a scraping blade hinged to said frame which lies at an angle to the car.

2. In a sod trimming and marking device, the combination with a car, of supports carried by said car, a frame hinged to said supports, means for vertically adjusting said frame at said hinged connection, a scraping blade hinged to said frame which lies at an angle to the car, and a sod trimming disk carried by said frame.

3. In a sod trimming and marking device, the combination with a car, of supports carried by said car, a frame hinged to said supports, means for vertically adjusting said frame at said hinged connection, a scraping blade hinged to said frame which lies at an angle to the car, a sod trimming disk carried by said frame, and a sod line leveling blade carried by the hinged frame which projects beyond the cutting disk, the scraping blade being adapted to scrape earth toward the ends of the device and the sod line leveling blade being adapted to scrape earth in the opposite direction.

4. In a device of the character described, the combination with a car, of supports carried by said car, a triangular frame hingedly connected to said supports, means for vertically adjusting said triangular frame at its point of connection with said supports, a pair of arms hingedly connected to the rear of said frame, means for elevating said arms, and a scraper blade connected to the free ends of said arms.

855,845. GAS-PRODUCER. ÁRPÁD DE GÁLOCSY, LADISLAS DE BÁNÓ, and JOHN TERÉNY, Budapest, Austria-Hungary. Filed Feb. 7, 1905. Serial No. 244,617.



Claim.—1. In gas producers, a main generator chamber, a helical grate and water seal at the bottom of said generator chamber, a rotary stirrer within said generator chamber, a distillation chamber having a movable grate above said generator chamber, a door below said distillation chamber, air inlets between said door and said grate, a receiving chamber below said distillation chamber provided with a movable door, a fan connected to said distillation chamber and main generator chamber by a pipe having openings and supplying gases from said distillation chamber below said helical grate to convert and fix the distillation gases of the fuel.

2. In gas producers, a generator chamber, a helical grate, and water seal below said chamber, a distillation chamber having a movable grate above said generator chamber, a fan connected with said distillation chamber and generator chamber through a pipe having adjustable inlets and discharging the gases of distillation below the helical grate of said generator chamber.

3. In gas producers, a main generator chamber, a distillation chamber above said generator chamber, means to intermittingly feed the coked fuel from the distillation chamber to the main generator chamber means to admit air to the distillation chamber and means to exhaust the

gases from said distillation chamber and pasa them through the main generator chamber to convert and fix the distillation gases.

4. In gas producers, a generator chamber, a distillation chamber having a grate and air inleta below said grate, means to cause a circulation of distillation gases from said distillation chamber through said generator chamber and means to discharge the coked fuel from said distillation chamber into said generator chamber.

5. In gas producers, a distillation chamber, a generator chamber, a fan to supply air to the said generator chamber, a suction pipe for said fan located adjacent said generator chamber and connecting the distillation chamber with the generating chamber, valved alined holes through said pipe and into said generator chamber to allow the insertion of operating tools through said holes into said chamber without permitting the escape of gas from said chamber into the outer air.

6. In gas producers, a generator chamber, a separate distillation chamber, means to cause a circulation of distillation gases from said distillation chamber through said generator chamber, means to discharge the coke fuel from said distillation chamber into said generator chamber, a rotary grate, and means to rotate the same in either direction.

7. In gas producers, a generator chamber, a distillation chamber, means to cause a circulation of distillation gases from said distillation chamber through said generator chamber, means to discharge the coke fuel from said distillation chamber into said generator chamber, a rotary grate, a water seal, a basin, means for automatically allowing the ashes and clinkers to fall into the basin and a conveyer for removing the same.

8. In gas producers, a generator chamber, a distillation chamber, means to cause a circulation of distillation gases from said distillation chamber through said generator chamber, separate means to discharge the coke fuel from said distillation chamber into said generator chamber, and means for stirring the charge within the main generator chamber.

9. In gas producers, a generator chamber, a distillation chamber, means to cause a circulation of distillation gases from said distillation chamber through said generator chamber, means to discharge the coke fuel from said distillation chamber into said generator chamber, means for stirring the charge within the main generator chamber and a helical grate and means to rotate the same.

10. In gas producers, a generator chamber, a separate distillation chamber, means to cause a circulation of distillation gases from said distillation chamber through said generator chamber and means to discharge the coked fuel from said distillation chamber into said generator chamber.

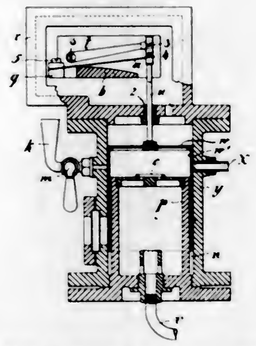
11. In gas producers, a generator chamber, a separate distillation chamber, means to separate the distillation chamber from the main generator chamber, means to cause a circulation of distillation gases from said distillation chamber through said generator chamber and means to discharge the coked fuel from said distillation chamber into said generator chamber.

12. In gas producers, a generator chamber, a distillation chamber, means to discharge the coked fuel from the said distillation chamber in the said generator chamber, a helical grate and means to rotate the same.

855,846. CONSTRUCTION OF MEASURING APPARATUS. MAX GEHRE, Rath, near Düsseldorf, Germany. Filed Sept. 29, 1905. Serial No. 280,626.

Claim.—1. In a gage for indicating volume measurements a spring rigidly supported at one end, a support beneath such spring such support forming a continuous curve whereby the effective length of said spring becomes continuously shortened as it is bent over said support, a piston acting on the free end of said spring, a cylinder containing such piston, two tubes respectively connected to the ends of the cylinder and adapted to lead fluid into such cylinder, as set forth.

2. In a gage for indicating volume measurements a flat spring rigidly fixed at one end, a support beneath such spring such support forming a continuous curve whereby the effective length of said spring becomes continuously shortened as it is bent over said support, a piston acting on the free end of said spring, a cylinder containing such piston, two tubes respectively connected to the ends of the cylinder and adapted to lead fluid into such cylinder, as set forth.



3. In a gage for indicating volume measurements, a spring, rigidly fixed at one end, a support beneath such spring, such support forming a continuous curve whereby the effective length of said spring becomes continuously shortened as it is bent over said support, a piston having a bell-shaped lower side and acting on the free end of said spring, a cylinder containing such piston, another cylinder engaging the bell-shaped lower side of said piston and being fixedly connected to the outer cylinder, a tube containing fluid of high pressure and arranged to lead such fluid against the upper side of said piston, another tube arranged to lead fluid of lower pressure against the lower side of said piston, said outer cylinder having a fluid contained therein and adapted to fill the narrow space between the bell-shaped part of the piston and the outer and inner cylinder, as set forth.

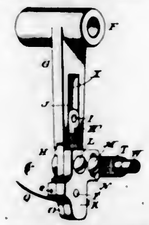
4. In a gage for indicating volume measurements, a flat spring rigidly supported at one end, a support beneath such spring, such support forming a continuous curve whereby the effective length of said spring becomes continuously shortened as it is bent over said support, a piston having a bell-shaped lower side and acting on the free end of said spring, an outer cylinder containing such piston, an inner cylinder engaging the bell-shaped lower side of said piston and being fixedly connected to the outer cylinder, a tube containing fluid of high pressure and arranged to lead such fluid against the upper side of said piston, another tube arranged to lead fluid of lower pressure against the lower side of said piston, said outer cylinder having a fluid contained therein and adapted to fill the narrow space between the bell-shaped part of the piston and the outer and inner cylinder, as set forth.

855,847. NEEDLE-ARM FOR LOOPING-MACHINES. ROBERT W. GORMLY, Troy, N. Y. Filed Apr. 28, 1906. Serial No. 314,192.

Claim.—1. In a looping machine, a vibratory needle arm provided with a radially adjustable extension piece, a needle clamp pivoted on said extension piece, susceptible of circumferential adjustment about said pivot, and means for securing said adjustment, substantially as specified.

2. In a looping machine, the combination of a rotary driver, a vibratory needle arm, an arm-extension adjustably connected with said needle arm, a pitman connecting said driver and extension piece, and means connected therewith for varying the length of said connection, substantially as specified.

3. In a looping machine, the vibratory needle arm, extension piece and needle clamp attached thereto, and means connected therewith for varying the position of the needle clamp in relation to the arm so as to accommodate the point of the needle vertically to the looper points on the looper wheel, substantially as specified.



4. In a looping machine, the combination with a rotary driver and a vibratory needle arm, of means for varying the length of said arm, a connecting member between said driver and arm and means for varying its length, a needle clamp and means connected therewith for adjusting the point of the needle with relation to the looper points, combined and arranged to operate substantially in the manner described and for the purposes set forth.

5. The described needle clamp, consisting of two jaws, one of which is adapted to be pivotally attached to a vibratory needle arm, and the other is provided with a back stop against which the rear end of the needle may abut to secure correct adjustment of the needle in process of setting the same, and binding means for holding the jaws in their clamped position, substantially as specified.

855,848. RIBBON-HOLDER. EDGAR S. GRAY, Greenfield, Ohio. Filed June 27, 1906. Serial No. 323,675.

Claim.—1. A spring-holder for ribbon-spools comprising a wire spring-yoke adapted to be applied astraddle of the spool and having an intermediate straight portion and angularly bent legs, a locking-strip on said intermediate straight portion consisting of a roller having a protruding edge, and disks pivotally-attached to the ends of said legs and having spear-head prongs or spurs adapted to be inserted in the sides of the spool, the tension of the legs of said spring-yoke adapted to cause the said locking-strip to clasp the ribbon wound upon the spool.

2. A spring-holder for ribbon-spools comprising a yoke adapted for application astraddle of the spool and having an intermediate transverse portion to clasp the ribbon on said spool and having opposite spring-acting legs and sheet-metal disks arranged at the inner sides of said legs and provided with peripheral spear-head prongs or spurs adapted to be bent inward and inserted in the opposite sides of the spool, the ends of said legs being positively but pivotally attached to the centers of said disks.

3. A spring-holder for ribbon-spools comprising a yoke adapted for application astraddle of the spool and having opposite spring-acting legs adapted for attachment to the opposite sides of the spool and having an intermediate straight locking-strip consisting of a revoluble roller with a curved protruding edge, said legs adapted to cause the said locking-strip to clasp the ribbon on the periphery of the spool.

855,849. GRAIN-SAMPLER. HUBERT M. GRAY, Minneapolis, Minn. Filed Feb. 23, 1906. Serial No. 302,407.

Claim.—1. A grain sampler, having inner and outer tubes formed with ports that are adapted to be moved into and out of registration by the rotation of one of said tubes with respect to the other, and which tubes are formed in sections, the sections of the outer tube being capable of separation and the sections of the inner tube having locking engagement one with the other, so that they may be rotated together, substantially as described.

2. A grain sampler, having inner and outer tubes formed with ports that are adapted to be moved into and out of registration by the rotation of one of said tubes with respect to the other, said tubes being formed in sections, a hinge joint connecting the section of the outer tube, and the sections of the inner tube having locking engagement one with the other, so that they may be rotated together, substantially as described.



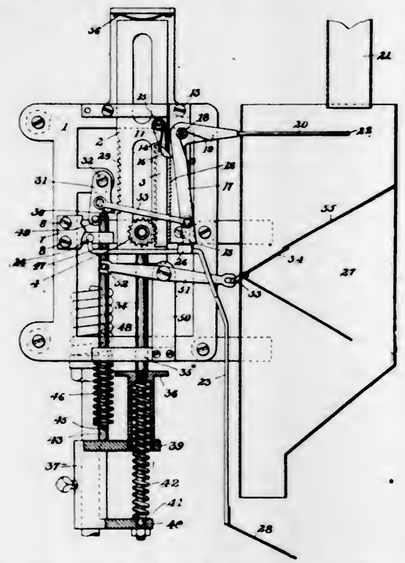
3. A grain sampler, having inner and outer tubes formed with ports, that are adapted to be moved into and out of registration by the rotation of one of said tubes with respect to the other, said tubes being formed in sections, a hinged joint connecting the sections of the outer tube means for locking said sections in an alined position, and the section of the inner tube having locking engagement one with the other, so that they may be rotated together, substantially as described.

4. A grain sampler, having inner and outer tubes formed with ports that are adapted to be moved into and out of registration by the rotation of one of said tubes with respect to the other, said tubes being formed in sections, a hinged joint connecting the sections of the outer tube, means of locking said section in an alined position, the sections of the inner tube having locking engagement one with the other, so that they may be rotated together, and means for preventing said inner and outer tubes from moving endwise with respect to each other, substantially as described.

5. A grain sampler, made up of outer and inner tubes, having ports adapted to be moved into and out of registration by the rotation of one of the tubes with respect to each other, and one of which tubes is provided with a longitudinal clearance groove adapted to catch and discharge flax seed, and other small particles, substantially as described.

6. A grain sampler, having an inner tube formed with ports and grooves, and an outer tube formed with ports that are adapted to be moved into and out of registration with the ports and grooves of its inner tube, by the rotation of the said tubes with respect to each other, substantially as described.

855,850. COIN-OPERATED REGISTERING MECHANISM. ALBERT D. GROVER, Malden, and EARL E. BARBER, Boston, Mass. Filed Mar. 2, 1905. Serial No. 248,004.



Claim.—1. In a registering mechanism, a registering device; an operating slide to operate said registering device; a locking pawl mounted on the operating slide; a locking pawl mounted on the frame of the mechanism; a releasing lever adapted to unlock both said locking pawls; a coin chute, one end of said releasing lever projecting into said coin chute in such manner as to unlock both locking pawls by a coin falling in said coin chute; means for locking said releasing lever in its releasing position to permit free vertical movement of the operating slide; said locking means comprising a lever pivoted in the frame of the registering device; a lug mounted thereon adapted to contact with the releasing lever and a downwardly projecting portion normally located below the lower end of the coin chute so that a coin on dropping will contact with its lower end and unlock the releasing lever.

2. In a registering mechanism, a registering device; an operating slide adapted to operate said registering device; a locking pawl; a second locking pawl; a releasing lever adapted to release both locking pawls; a coin chute into which one end of said releasing lever projects; means for locking said releasing lever in its operative position; means whereby a falling coin will unlock said locking means; and means in said coin chute for retarding the fall of a coin inserted therein.

3. In a registering mechanism, a rotative registering member; an operating slide for rotating said registering member; means for locking said operating slide against downward movement; means for locking said slide against upward movement; coin operated means for disengaging both locking means at the same time to permit free vertical movement of said operating slide; coin operated means for keeping the operating slide unlocked a given length of time; a coin chute; means for retarding the fall of a coin in said coin chute for a determined length of time; and a vertical rod operated through the platform of a weighing scale for unlocking the locking means to permit the operating slide to move upwardly to its normal position.

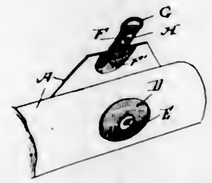
4. In a coin operated registering mechanism, having a registering member; an operating slide for operating said registering member; locking means for preventing the upward and downward movement of said operating slide; coin operated means to unlock both said locking means; coin operated means for retaining said unlocking means in its operative position; a trap door in the coin chute for preventing the fall of a coin therefrom; and means operated by the platform of a weighing scale to open said trap door when weight is placed upon the platform of the scale to permit the coin to fall downward in the chute.

5. In a coin-operated registering mechanism, means for indicating the work accomplished put in operative condition by the weight of a coin; a coin chute; means for retaining the coin in the coin chute until the work is accomplished; a spring operated sliding shaft for releasing the coin from the coin chute; means whereby the fall of the coin releases the indicating slide locking mechanism; and said slide locking mechanism.

6. In a coin operated registering mechanism, a frame; indicating means mounted in said frame; an operating slide mounted in said frame; a locking pawl mounted on said slide; a rack having ratchet teeth mounted on the frame; ratchet teeth formed in said operating slide; a locking pawl mounted on the frame and adapted to engage said teeth; spring operated means mounted in the frame adapted to disengage said pawl; a coin operated releasing lever mounted on said frame and arranged to unlock both said pawls; and spring operated means for returning the operating slide to its normal position.

7. In a coin operated registering mechanism, a frame; indicating means mounted in said frame; an operating slide; ratchet teeth in said operating slide; a pawl mounted on the frame arranged to engage said ratchet teeth; a rack having ratchet teeth mounted on the frame; a pawl mounted on the operating slide arranged to engage the ratchet teeth in said rack; and means for causing both said pawls to engage and be disengaged from said ratchet teeth.

855,851. MUSIC-ROLL FASTENER. MICHAEL R. HAGETER, Cranford, N. J. Filed Apr. 15, 1905. Serial No. 255,836.

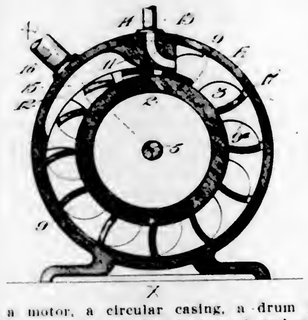


Claim.—1. A music sheet provided with a fastening device comprising a tab upon the free end of the sheet, a ring carried upon the end of the tab, one member of a spring clasp arranged upon the tab between said ring and the end of the music sheet, re-inforcing disks upon each side of the music sheet adjacent its end, and the other member of the spring clasp carried by said disks adapted to engage the member carried by said tab, as set forth.

2. A music sheet provided with a re-inforcing disk secured to the sheet adjacent one end of the sheet, one member of a spring clasp arranged upon said disk, a tab carried by the free end of the music sheet, a spring clasp member carried by the tab and co-acting with the first mentioned member, the said co-acting member being placed intermediate the ends of the tab, the said tab extending diametrically across the re-inforcing disk when the sheet is rolled and a ring carried by the free end of the tab, as and for the purpose set forth.

855,852. ROTARY ENGINE. EDGAR T. HAUN, Sacramento, Cal. Filed Dec. 24, 1906. Serial No. 349,279.

Claim.—1. In a motor, a cylindrical casing, a drum journaled within said casing having disk-like flanges at each side, quadrant shaped depressions made at intervals in the disks, buckets pivoted at the center of curvature of the quadrants and turnable therein, and curved guides engaging the peripheral edges of the buckets during their revolution whereby the buckets are folded down upon the drum.



2. In a motor, a circular casing, a drum journaled within the casing having flanges at each end with quadrant-shaped depressions, buckets having pivots at the center of curvature of the quadrants about which said buckets are turnable, substantially radial front walls against which the buckets are arrested when projected, an abutment, and converging guides by which the buckets are folded to pass beneath the abutment.

3. In a motor, an outer casing, a drum having disks at the ends with depressed quadrant-shaped channels around their peripheries and turnable within the casing, buckets pivoted in the channels and capable of extension around their pivot points, an abutment extending from the casing to a point contiguous to the periphery of the drum, and thereby forming a space through which the buckets may pass when folded upon the drum, fixed guides adapted to engage the outer edges of the buckets, said guides curving inwardly and substantially continuous with the inner face of the abutment.

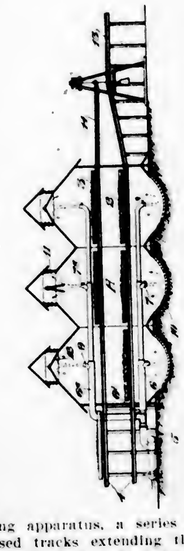
4. In an apparatus of the character described, an exterior circular casing, an interior drum carrying buckets which are extensible, to be impelled by a medium under pressure and foldable to pass an abutment, said drum being journaled eccentrically within the casing whereby open passages for the impelling medium are left between the casing and the bucket edges upon one side, said passages gradually closing upon the opposite side.

5. In an apparatus of the character described, an exterior casing having an abutment, and an inlet passage through one side of the abutment, an exhaust chamber at the opposite side of the abutment, a drum journaled eccentrically within the casing and having disk like flanges at the ends with quadrant shaped depressions, buckets pivoted in said chambers, and means by which they are folded upon the drum to pass beneath the abutment and extensible radially within the space between the casing and drum after passing the abutment, said eccentricity of the drum being so disposed as to allow the impelling fluid to pass the buckets contiguous to the admission passage, and to substantially close said spaces upon the opposite side of the apparatus, and an exhaust chamber through which the buckets pass at the rear of the abutment.

855,853. DRYING APPARATUS. EMIL C. HORST, San Francisco, Cal. Filed Sept. 14, 1905. Serial No. 278,381.

Claim.—1. In a drying apparatus, a series of compartments having perforated traveling floors, an air-forcing mechanism and ducts disposed respectively above and below said floors, with upwardly and downwardly discharging passages, and concaved floor and dome-shaped ceilings into which the heated air is discharged said concavities serving to distribute and return the heated air through the floors.

2. In a drying apparatus, a series of compartments having superposed perforated traveling floors, an air-heating and forcing mechanism, ducts leading therefrom respectively below and above the superposed floors, and having downwardly and upwardly discharging passages, concaved floors in the bottom of the compartments, and dome-shaped ceilings above the upper floors into which the heated air is respectively delivered, and by which it is distributed and returned through the floors and dampers by which the discharge of the air through said passages is controlled.



3. In a drying apparatus, a series of compartments having superposed tracks extending through the lower and upper part thereof, cars adapted to move upon said tracks having the bodies formed with perforated bottoms adapted to receive the product to be dried, and forming drying floors movable from one compartment to another, air-heating and forcing mechanism and conveying ducts leading therefrom below and above the respective tracks and cars, said ducts having discharge passages with controlling and directing gates or dampers, concaved floors in the lower parts of the compartments, and convexed or dome-shaped ceilings above the upper portions into which the air is directed from the discharge passages, and adjustable outlet gates disposed at the bottom and top of the drying compartments.

4. In a drying apparatus, a series of compartments having superposed tracks, an air-forcing mechanism and ducts leading therefrom through the upper and lower parts of the compartments, with upwardly and downwardly opening valve-controlled discharge passages, concaved bottoms and dome-shaped ceilings to the compartments into which the air is discharged and from which it is returned upwardly and downwardly, cars movable upon the tracks through the compartments, said cars having perforated floors to receive the product to be dried and transferable successively from one compartment to another upon each level, and means by which the cars may be transferred from one level to the other.

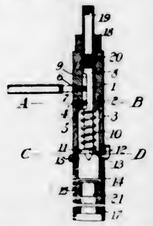
5. In a drying apparatus, a series of compartments having superposed tracks, means for delivering heated air above and below said tracks and controlling its delivery, a series of perforated floors mounted upon wheels and adapted to contain the product to be dried, said floors being movable through the compartments upon each level, means for transferring the floors from one level to the other, said means comprising a track extending outwardly from the lower level, a hinged tiltable track extending from the upper level and normally connecting with the lower track, said upper track being movable to allow cars to pass beneath it to transfer from one level to the other.

6. The combination in a drying apparatus of drying compartments in successive series, each of said compartments having superposed tracks, means for introducing a drying medium to said compartments, foraminous floors

supported and movable from one compartment to another, and means for transferring the floors from one to the other of said tracks.

7. The combination in a drying apparatus of drying compartments in successive series upon the same plane, said compartments being provided with superposed tracks, means for distributing and controlling a heating medium within the compartments, foraminous floors mounted upon wheels and movable thereon from one compartment to another, and means for transferring the floors from one to the other of said tracks.

855,854. LOCKING APPARATUS TO PREVENT THEFT AND UNAUTHORIZED USE OF BICYCLES AND THE LIKE. THEODOR B. JANSSEN, Hanover, Germany. Filed Apr. 9, 1906. Serial No. 310,834.



Claim.—1. Locking apparatus to prevent theft and unauthorized use of bicycles and other vehicles, comprising a cartridge holder, means for automatically firing the cartridge when the vehicle is moved, and means for attaching the cartridge holder to the vehicle, substantially as set forth.

2. Locking apparatus to prevent theft and unauthorized use of bicycles and other vehicles comprising a casing, a firing pin housed and guided in said casing, means for locking the firing pin in its cocked position, means for automatically liberating the firing pin, when the vehicle is moved, a cartridge carrier attached to the aforesaid casing and removable only by extracting the locking means of the firing pin, and means for attaching the casing to the vehicle, substantially as set forth.

3. Locking apparatus to prevent theft and unauthorized use of bicycles and other vehicles comprising a casing, a firing pin housed and guided in said casing, means for locking the firing pin in its cocked position, means for automatically liberating the firing pin, when the vehicle is moved, a cartridge carrier attached to the aforesaid casing and removable only by extracting the locking means of the firing pin and a clip for attaching the casing to the vehicle, said clip carrying the locking means of the firing pin, substantially as set forth.

4. Locking apparatus to prevent theft and unauthorized use of bicycles and other vehicles comprising a casing constructed of two tubular members 1 and 3 connected together so as to be capable of rotary movement only, a firing pin 8 housed and guided in said casing means for locking the firing pin in its cocked position means for causing the firing pin to partake of the rotary movement of the top tubular member 1 of the casing, a bolt 7 attached to the top tubular member 1 adapted to pass beneath the spokes of the wheel, a cartridge carrier attached to the lower tubular member 3 of the casing and removable only by extracting the locking means of the firing pin, and means for attaching the device to the vehicle, substantially as set forth.

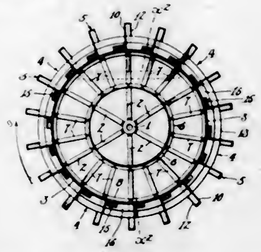
5. In combination with a locking apparatus to prevent theft and unauthorized use of a bicycle and other vehicle of the kind referred to, a locking stud for the firing pin adapted to engage under a tooth of the latter, said locking stud penetrating through a hole in the shell of the cartridge carrier into the casing to prevent the cartridge carrier from being detached without previously liberating the firing pin, substantially as set forth.

6. In combination with a locking apparatus to prevent theft and unauthorized use of a bicycle and other vehicle of the kind referred to, a clip for attachment of the device to the vehicle, a two armed lever pivoted on said clip, a locking stud for the firing pin at one extremity of the aforesaid lever, said locking stud penetrating through a hole in the shell of the cartridge carrier into the casing to prevent the cartridge carrier from being detached without previously liberating the firing pin, and a spring acting on the two armed lever and forcing the locking stud into the casing, substantially as set forth.

7. In combination with a locking apparatus to prevent theft and unauthorized use of a bicycle and other vehicle of the kind referred to, a cartridge carrier opening outward in such a manner, that the insertion of a cork screw for the removal or destruction of the detonating cartridge is rendered impossible, substantially as described.

8. In combination with a locking apparatus to prevent theft and unauthorized use of a bicycle and other vehicle of the kind referred to, a hook to be attached to the bolt 7 after the latter has been passed between the spokes of the wheel, said hook adapted to engage a stationary member of the vehicle frame, substantially as described and for the purpose set forth.

855,855. CURRENT-OPERATED WATER-ELEVATOR. ALEXANDER N. JONES, San Diego, Cal. Filed Oct. 29, 1906. Serial No. 341,191.



Claim.—1. A current operated water elevator comprising a wheel having a cylindrical rim, buckets on said rim having lateral outlets, and pockets extending outwardly of the buckets and opening thereunto.

2. A current operated water elevator comprising a wheel having a cylindrical rim forming the bottoms of the buckets, side walls forming the ends of the buckets, back plates separating the buckets, and pockets in front of said back plates and opening into the buckets.

3. A current operated water elevator comprising a wheel having a cylindrical rim, buckets on said rim having lateral outlets on each side, and closure means on the wheel for closing the outlets on either side.

4. A current operated water elevator comprising a wheel having a cylindrical rim, buckets on said rim having lateral outlets, pockets extending outwardly from the buckets and opening inwardly thereunto, and means for closing said outlets.

5. A current operated water elevator comprising a wheel having a cylindrical rim, buckets on said rim having lateral outlets on each side, pockets extending outwardly from the buckets and opening inwardly thereunto, and means for closing the outlets on either side.

855,856. MUZZLE. MITCHELL LARAMIE, Willimantic, Conn. Filed Jan. 16, 1907. Serial No. 352,604.

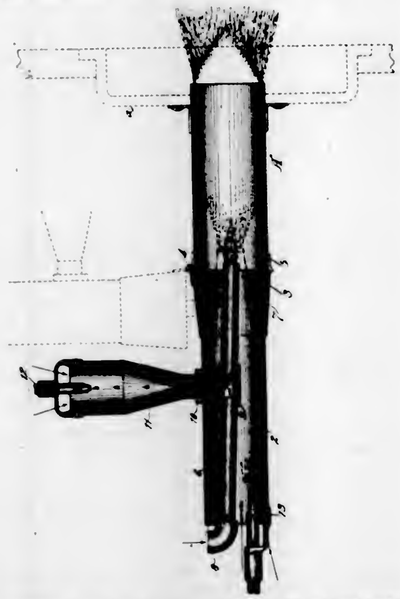
Claim.—1. A muzzle of the character described, formed of a single piece of wire having a loop formed therein intermediate its ends, and the ends of the wire extending rearwardly and having coils formed therein, and the ends of the wire extending forwardly and bent around the loop, and a securing strap formed of a piece of wire having one end secured to one coil and the opposite end adapted to interlock with the other coil.

2. A muzzle of the character described, formed of a single piece of wire having a loop formed therein intermediate its ends, and the ends of the wire bent around each other at the lower end of the loop and extending rearwardly and having coils formed therein, and the ends of the wire extending forwardly and bent around the loop adjacent its upper end.

3. A muzzle of the character described, formed of a single piece of wire having a loop formed therein intermediate its ends and the ends of the wire bent around each other at the lower end of the loop, and extending rearwardly and having coils formed therein, and the ends of the wire beyond the coils extending forward and bent around the loop adjacent the upper end, a curved wire swingingly supported by one of the coils, and the opposite end having a hook adapted to pass through the other coil and interlock therewith.

4. A muzzle of the character described, formed of a single piece of wire having a loop formed therein, an equal distance from the ends, said ends twisted upon each other at right angles to the loop and extending outwardly and upwardly, and having coils formed therein, and the ends of the wire extending forward and bent around opposite sides of the loop adjacent the upper end, and a curved piece of wire swingingly supported by one of the coils and the opposite end having a hook adapted to pass through the other coil and interlock therewith.

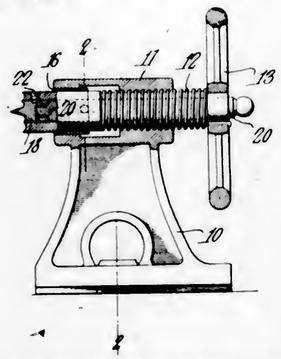
855,857. OIL-BURNER. GEORGE LARSEN, San Leandro, Cal. Filed Jan. 26, 1907. Serial No. 354,303.



Claim.—1. An oil burner comprising an oil pipe open at both ends and having a suitable oil inlet between its ends, an air pipe surrounding the oil pipe extending parallel therewith and substantially the full length thereof, and inclosing an annular space between it and the oil pipe, said air pipe open at its outer end, a tubular section of relatively larger diameter than the air pipe connected with the front end of the latter and inclosing a mixing chamber, said air pipe and oil pipe both discharging into this mixing chamber, said mixing chamber open at its front end, and means for discharging air or steam under pressure exterior to the oil pipe and into the space inclosed between the air pipe and the oil pipe and at a point between the ends of the oil pipe and the air pipe and in the direction of the forward end of the oil pipe.

2. In an oil burner, the combination of an air pipe open at the ends, provided with a reduced nozzle portion at its front end, an oil pipe open at both ends disposed within the air pipe and inclined slightly downward and forward, said oil pipe having its front end substantially flush, and concentric with the nozzle of said air pipe, said oil pipe having an oil inlet between its ends, and means for admitting air under pressure into the air pipe to induce a current of air through the oil pipe.

855,858. TAIL-STOCK FOR WOOD-TURNING LATHES. OLOF LARSON, Portland, Oreg. Filed Mar. 12, 1907. Serial No. 361,943.



Claim.—1. A tail stock having a stand or base provided with an internally threaded opening, a threaded sleeve arranged therein, the work engaging end of the sleeve being concaved to present sharp engaging surfaces, said sleeve being hollow its entire length to permit the introduction of a centering or boring tool, a friction holding sleeve encircling the tail stock sleeve, and a clamping screw engaging said holding sleeve.

2. In a tail stock, a base or stand having an internally threaded opening, a tail stock sleeve arranged therein and having a transversely concaved work engaging end, the sleeve being hollow for its entire length to permit the introduction of a centering or boring tool, a split sleeve embracing the tail stock sleeve, and a clamping screw for engaging said split sleeve.

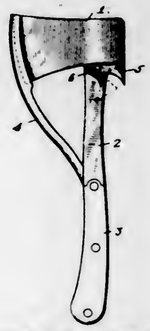
855,859. PIVOTED NAIL-CLAW FOR AXES. WEBSTER L. MARBLE, Gladstone, Mich. Filed Aug. 3, 1906. Serial No. 329,112.

Claim.—1. The combination with an ax, of a nail-pulling claw pivoted to the handle adjacent to the ax head and adapted to abut against the poll of the ax.

2. The combination with an ax, of a nail-pulling claw pivoted to the handle adjacent to the poll and having its notch adapted to receive the handle when folded down thereon.

3. The combination with an ax, of a nail-pulling claw composed of a notched piece of sheet metal having integral legs which clip the handle of the ax and are pivoted thereto.

4. The combination with an ax whose handle is thinner than its head, of a nail-pulling claw composed of a piece



of sheet metal doubled to form legs which lie flush with the sides of the ax-head and are adapted to bear against it, and a transverse pivot passing through said legs and handle.

855,860. MANUFACTURING MEANS FROM WOOD-TAR FOR PREVENTING DUST ON STREETS, ROADS, AND THE LIKE. STEPHAN MATTAR, Leipzig, and ROBERT FUNCKE, Lorch, Germany. Filed Sept. 1, 1906. Serial No. 333,030.

Claim.—1. A method of manufacturing means for the prevention of dust, consisting in heating wood-tar to about 200° C. and driving off the more volatile constituents, and in adding less volatile products of the dry distillation of natural carbon compounds, substantially as described.

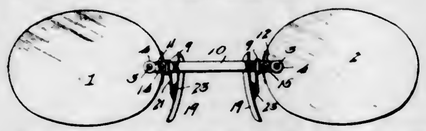
2. A method of manufacturing means for the prevention of dust, consisting in heating wood-tar to about 200° C. and driving off the more volatile constituents, and adding creosote oil, substantially as described.

3. A method of manufacturing means for the prevention of dust, consisting in heating wood-tar to about 200° C. and driving off the more volatile constituents, and adding anthracene oil, substantially as described.

4. A method of manufacturing means for the prevention of dust, consisting in heating wood-tar to about 200° C. and driving off the more volatile constituents, and adding creosote oil and anthracene oil, substantially as described.

5. A method of manufacturing means for the prevention of dust, consisting in heating wood-tar to about 200° C. and driving off the more volatile constituents, and adding distillates of petroleum, substantially as described.

855,861. EYEGLASSES. LOUIS L. MINCER, Rochester, N. Y. Filed Dec. 1, 1905. Serial No. 289,806.



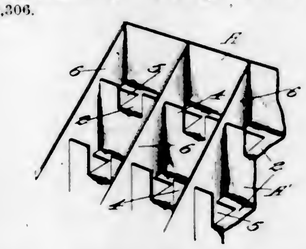
Claim.—1. As an improvement in eye-glasses, the combination with a pair of lens-frame-pieces adapted, respectively, to support lenses and provided with boxes, of a spring provided with bent portions adapted to enter the boxes respectively, screws passing through the boxes and the bent portions of the spring, respectively, and additional means for securing the spring to the lens-frame-pieces, respectively.

2. As an improvement in eye-glasses, the combination with a guard, of a guard-support comprising a true spiral spring and a spring support, and means for securing the guard-support to the lens-frame-piece of an eye-glass.

3. As an improvement in eye-glasses, the combination with a pair of lens-frame-pieces provided with boxes, of a spring provided with resilient coils adapted to enter said boxes respectively, securing means passing through the boxes and the resilient coils, respectively, and additional means for securing the spring to the lens-frame-pieces.

4. As an improvement in eye-glasses, the combination with a lens-frame-piece and a guard, of a guard-support provided at one end with means for securing it to the lens-frame-piece and at the other with a true spiral spring secured to the guard.

855,862. SEED-DISPLAY RACK. LESTER L. MORSE, San Francisco, Cal. Filed Apr. 4, 1907. Serial No. 366,306.



Claim.—1. A display rack formed of a plate bent in the direction of its width and slitted at points to form a series of horizontal shelves with vertical backs rising and receding from the bottom, the slitted portions forming upturned fronts, intermediate vertical partitions between said upturned fronts, and a supporting brace at the rear, said upturned fronts having openings for the removal of the accumulations from the shelves.

2. In a display rack of the character described, a series of horizontal shelves in the form of upwardly receding steps having vertical backs, sectional upturned strips upon each side of the shelf fronts, forming intermediate open vertical spaces between them, vertical partitions by which the shelves are subdivided in the direction of their length, and openings for removing accumulations from the shelves.

3. In a display rack of the character described, a series of shelves formed by bending a sheet of metal to form alternate shelves and intermediate vertical backs extending upwardly and backwardly, said shelves having openings formed by cutting through them contiguous to the front edges, and upturned sections formed by the parts thus cut out, and remaining attached substantially in line with the front edges of the shelves, vertical inclined partitions fitting between the contiguous upturned portions to separate the shelves into lengths, and a support for the rear of the device.

4. In a display rack of the character described, shelves formed by bending a single sheet of metal to form horizontal bottoms and vertical backs, said sheets having upturned portions or tongues formed by making cuts so that the tongues adherent upon one side of the cuts will project upwardly in line with the vertical backs forming intermediate open spaces at the front of each shelf, vertical inclined partitions extending from top to bottom between the tongues and means for supporting the rack in an inclined position.

855,863. AIR-BRAKE-LOCKING DEVICE. VERNE C. ORANGE and FRED M. BOWERS, Pueblo, Colo. Filed Jan. 26, 1906. Serial No. 297,995.

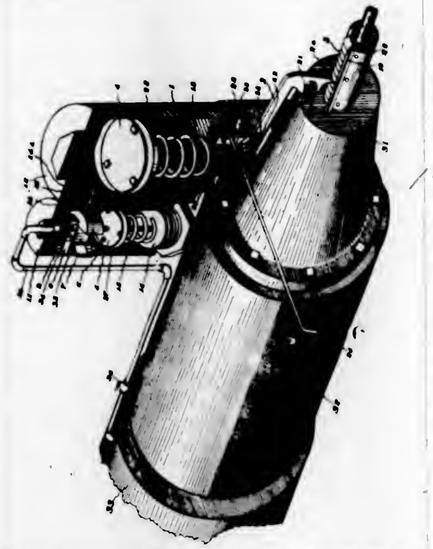
Claim.—1. In combination with a reservoir and brake cylinder, of an air brake and its push rod, means carried by the brake cylinder locking the push rod against movement said means being made operative by a decrease of pressure within the reservoir.

2. In combination with a reservoir and brake cylinder, of an air brake and its push rod, means carried by the brake cylinder locking the push rod against movement, said means being made operative by a decrease of pressure

within the reservoir, and means for releasing the lock on the push rod.

3. In combination with a brake cylinder, an air brake and its push rod, and spring means carried by the brake cylinder normally locking the push rod against movement.

4. In combination with a brake cylinder of an air brake and its push rod, spring means carried by the brake cylinder for locking the push rod against movement, and means for overcoming the tension of the spring locking means for releasing the push rod.



5. The combination with a brake cylinder of an air brake and its push rod, a removable rack acting in conjunction with the push rod, and means carried by the brake cylinder engaging the rack for locking the push rod against movement.

6. The combination with a brake cylinder of an air brake and its push rod, a rack acting in conjunction with the push rod, means carried by the brake cylinder engaging the rack for locking the push rod against movement, and means carried by the rack acting in conjunction with the brake cylinder for holding the rack against displacement.

7. In combination with a brake cylinder of an air brake and its push rod, a rack acting in conjunction with the push rod, means carried by the brake cylinder engaging the rack for locking the push rod against movement, and a tongue on the rack passing through a groove in the brake cylinder for holding the rack agninst displacement.

8. The combination with a brake cylinder of an air brake and its push rod, a removable rack acting in conjunction with the push rod, and a lever pivoted to the brake cylinder engaging the rack for holding the push rod against movement.

9. The combination with a brake cylinder of an air brake and its push rod, a removable rack acting in conjunction with the push rod, a lever pivoted intermediate its length to the brake cylinder, one end of the lever being adapted to engage the rack for holding the push rod against movement, and means engaging the opposite end portion of the lever for oscillating the same.

10. The combination with a reservoir and brake cylinder of an air brake and its push rod, an oscillating means carried by the brake cylinder for holding the push rod against movement said means being made operative by a decrease of pressure within the reservoir.

11. In combination with the brake cylinder of an air brake and its push rod, spring means carried by the brake cylinder for locking the push rod against movement, and a fluid means for overcoming the tension of the spring locking means for releasing the push rod.

12. In combination with the brake cylinder of an air brake and its push rod, spring means carried by the brake cylinder for locking the push rod against movement, a fluid means for overcoming the tension of the spring locking means for releasing the push rod, and mechanism for controlling the fluid means.

13. In combination with the brake cylinder of an air brake and its push rod, a cylinder carried by the brake cylinder, a piston within the cylinder, a rod for the piston, means carried by the brake cylinder for engaging the push rod, said means being connected to the piston rod, a spring within the cylinder bearing against the piston to hold said locking means in engagement with the push rod, and means for operating the piston against the action of the spring.

14. In combination with the reservoir and the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, and connections between the second named cylinder and the reservoir, a means within the second named cylinder for controlling the communication between the two cylinders.

15. In combination with the reservoir and the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, connections between the second named cylinder and the reservoir, means within the second named cylinder for controlling the communication between the two cylinders, and putting one of the cylinders in communication with the atmosphere.

16. In combination with the reservoir and the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, connections between the second named cylinder and the reservoir, a valve slidable in the second named cylinder and means for imparting movement to the valve.

17. In combination with the reservoir and the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, connections between the second named cylinder and the reservoir, a valve slidable in the second named cylinder, means for imparting movement to the valve, and guiding means for the valve.

18. In combination with the reservoir and the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, connections between the second named cylinder and the reservoir, a valve slidable in the second named cylinder, means for imparting movement to the valve, and means for limiting the movement of the valve.

19. In combination with the reservoir and the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, connections between the second named cylinder and the reservoir a valve slidable in the second named cylinder, means for imparting movement to the valve, and means for both guiding the valve and limiting the movement thereof.

20. In combination with the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the said cylinder, a second cylinder in communication with the first named cylinder, a valve slidable in the second named cylinder, fluid means for imparting movement to the valve in

one direction, and means for imparting movement to the valve in an opposite direction.

21. In combination with the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod; said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, a valve slidable in the first named cylinder, spring means for imparting movement to the valve in one direction, and means for imparting movement to the valve in an opposite direction.

22. In combination with the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, a valve slidable in the second named cylinder, means for imparting movement to the valve, and means for giving the valve a movement at an angle to the first mentioned movement.

23. In combination with the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, means for imparting movement to the valve, and a spring for giving the valve a movement at an angle to the first named movement.

24. In combination with the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, a valve slidable in the second named cylinder and means for imparting movement to the valve, said cylinder being provided with a groove engaged by the valve.

25. In combination with the brake cylinder of an air brake and its push rod, a cylinder, means for engaging the push rod, said means being operative within the cylinder, a second cylinder in communication with the first named cylinder, a piston within the second named cylinder, a rod for the piston, a valve within the cylinder on the rod, and a spring engaging the piston to give movement thereto in one direction.

26. In combination with a reservoir and brake cylinder of an air brake and its push rod, means for locking the push rod against movement, said means being made operative by decrease of pressure within the reservoir.

27. In combination with the reservoir and brake cylinder of an air brake and its push rod, means for locking the push rod against movement, said means being made operative by a decrease of pressure within the reservoir and means for releasing the lock on the push rod.

28. The combination with the reservoir and brake cylinder of an air brake and its push rod, an oscillating means for normally holding the push rod against movement, said means being made operative by a decrease of pressure within the reservoir.

29. The combination with a brake cylinder of an air brake and its push rod, a rack acting in conjunction with the push rod, means engaging the rack for locking the push rod against movement, and means acting in conjunction with the brake cylinder for holding the rack against displacement.

30. In combination with a brake cylinder of an air brake and its push rod, a rack acting in conjunction with the push rod, means engaging the rack for locking the push rod against movement, and a tongue on the rack passing through a groove in the brake cylinder for holding the rack against displacement.

31. In combination with the brake cylinder of an air brake and its push rod and a fluid supplying means, means carried by the brake cylinder for locking the push rod against movement, said means being made operative by a decrease of pressure within the fluid supplying means, and means for releasing the lock on the push rod.

32. The combination with an air brake including an auxiliary reservoir and brake cylinder, of a locking cylinder having air communication with the auxiliary reservoir and provided with a piston and piston rod, a spring means engaging the piston and inclosed within the cylinder, and a locking device depending from the piston rod to engage and lock the brake cylinder rod against movement.

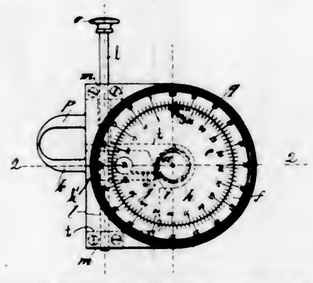
855,864. JOINT FOR FOLDING BUGGY-TOPS. HENRY H. ROBINSON, Des Moines, Iowa. Filed June 5, 1906. Serial No. 320,629.



Claim.—1. A bearer device for pivotally connecting the jointed braces of a folding buggy top with the bows consisting of a plate having notches in one edge and a rivet hole and screw holes, a flange around the rivet hole and a shoulder in concentric position with the rivet hole and the part between the notches projected as a flat bearing surface for the end of a brace, for the purposes stated.

2. A bearer adapted to be fixed to the bow of a folding buggy top provided with a flat semi-circular bearing surface for the end of a jointed brace, extraneous at its corners to overlie a bow a rivet hole at the center of said bearing, a flange around the rivet hole and a shoulder in concentric position with the rivet hole, for the purposes stated.

855,865. MEASURING INSTRUMENT. HERMANN ROOST, Le Locle, Switzerland. Filed Aug. 10, 1904. Serial No. 220,245.



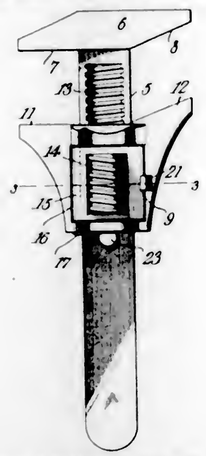
Claim.—1. A measuring instrument comprising two concentric members, one member having movement in relation to the other one of said members having a plurality of equally spaced graduations around its circumference, the other member having two graduations or marks spaced apart a distance equal to the distance between the graduations of the first member, the remainder of the circumference of said second part being divided by graduations into spaces equal in number to the entire number of the first part, substantially as described.

2. A measuring instrument consisting of a frame, a stationary touch or arm secured thereto, a movable touch sliding in said frame, an axle, a connection from said axle to the movable touch, means on said axle for normally keeping the touches in contact, a disk connected with said axle, a fixed ring surrounding said disk, said ring having a plurality of equally spaced graduations around its circumference, and said disk having its circumference divided into an equal number of spaces plus one, said one being equal to one of the spaces of the ring, and means for moving the movable touch to make a measurement, substantially as described.

855,866. WRENCH. JOHN A. SCOTT, Marinette, Wis. Filed Sept. 10, 1906. Serial No. 333,996.

Claim.—1. In a wrench, a shank having a threaded portion and provided with relatively stationary and movable jaws, a frame pivotally mounted for swinging movement on one of the jaws, an adjusting screw carried by the frame and adapted to engage the threads on the shank, means mounted on said jaw and engaging the frame for locking the adjusting screw in operative position, and means for moving the frame automatically to inoperative position when the locking means is released.

2. In a wrench, a shank having a relatively stationary jaw and provided with a threaded portion, a movable jaw slidably mounted for longitudinal movement on the shank, a frame pivotally mounted for lateral movement on the movable jaw, an adjusting screw mounted for rotation in the frame and adapted to engage the threaded portion of the shank, means for locking the pivoted frame in closed position, and a spring for moving the frame automatically to open position when the locking means is released.



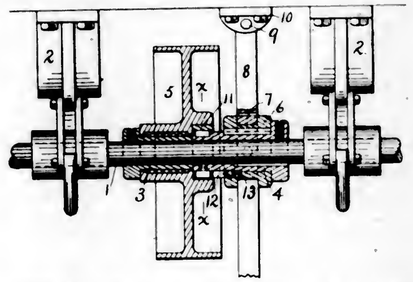
3. In a wrench, a shank provided with a stationary jaw and having a threaded portion, a movable jaw slidably mounted for longitudinal movement on the shank and provided with a recess, a frame pivotally mounted on the movable jaw and seated in said recess, an adjusting screw mounted for rotation in the frame and adapted to engage the threaded portion of the shank, a catch for locking the frame in closed position, and a spring bearing against the frame for moving the latter automatically to open position when the catch is released.

4. In a wrench, a shank having a threaded portion and provided with a stationary jaw, a movable jaw slidably mounted for longitudinal movement on the shank and having a recess formed in one face thereof defining a shoulder, a frame pivotally mounted for swinging movement on the movable jaw and seated in said recess, an adjusting screw carried by the frame and adapted to engage the threaded portion of the shank, a catch secured to the movable jaw for locking the frame in closed position, and a spring bearing against the shoulder for moving the frame automatically to open position when the catch is released.

5. In a wrench, a shank provided with a stationary jaw and having a longitudinal depression formed in one face thereof the walls of which are threaded, a movable jaw slidably mounted for longitudinal movement on the shank, a frame pivotally mounted for lateral movement on the movable jaw, an adjusting screw mounted for rotation in the frame and adapted to engage the threads on the shank, means for locking the frame in closed position, and means for moving the frame automatically to open position when the locking means is released.

6. In a wrench, a shank provided with a stationary jaw having a threaded portion, a movable jaw slidably mounted on the shank and having a recess formed in one side thereof, there being an opening communicating with said recess, a frame pivotally mounted for swinging movement on the movable jaw and seated within said recess, an adjusting screw mounted for rotation in the frame and adapted to engage the threads on the shank, a catch seated in the opening in the movable jaw for locking the frame in closed position, a spring for moving the frame automatically to open position when the catch is released, and a lug extending laterally from the shank for limiting the longitudinal movement of the movable jaw.

855,867. CLUTCH. CHARLES W. SPONSEL, Hartford, Conn., assignor to William H. Brodie Company, New York, N. Y., a Corporation of New York. Original application filed May 25, 1903, Serial No. 158,592. Divided and this application filed Sept. 8, 1904. Serial No. 223,735.



Claim.—1. The combination, in a clutch, with a shaft, a sleeve tight on such shaft, a collar mounted on such sleeve and rotatably held thereto but permitted to reciprocate thereon, such collar being provided with an interior abutment, a split-ring also mounted on said shaft and rotatably held thereto, and an expanding member for such split-ring pivotally mounted between the ends of the latter on the sleeve and extending parallel with said shaft into the path of said abutment, of a rotary member loosely mounted on the shaft and having an internal friction face for engagement by said split-ring, substantially as shown.

2. The combination, in a clutch, with a shaft, a sleeve tight on such shaft, a collar mounted on such sleeve and rotatably held thereto but permitted to reciprocate thereon, such collar having a recess therein between its periphery and the bore for the sleeve and being provided with an abutment projecting into such recess, a split-ring also mounted on said sleeve and rotatably held thereto, and an expanding member for such split-ring pivotally mounted between the ends of the latter on the sleeve and extending into the path of said abutment, of a rotary member loosely mounted on the shaft and having an internal friction face for engagement by said split-ring, substantially as shown.

3. The combination, in a clutch, with a shaft, a sleeve tight on such shaft, a collar mounted on such sleeve and rotatably held thereto but permitted to reciprocate thereon, such collar being provided with an adjustable abutment screw, a split-ring also mounted on said sleeve and rotatably held thereto, and an expanding member for such split-ring pivotally mounted between the ends of the latter on the sleeve and extending parallel with said sleeve into the path of said screw, of a rotary member loosely mounted on the shaft and having an internal friction face for engagement by said split-ring, substantially as shown.

4. The combination, in a clutch, with a shaft, a sleeve tight on such shaft, a collar mounted on such sleeve and rotatably held thereto but permitted to reciprocate thereon, such collar being provided with an interior abutment, a split-ring also mounted on said sleeve and rotatably held thereto, and an expanding member for such split-ring pivotally mounted between the ends of the latter on the sleeve and extending parallel with said shaft into the path of said abutment, of a second shaft, and a rotary member connecting both shafts but being tight on said second shaft, said rotary member having an internal friction face for engagement by said split-ring, substantially as shown.

855,868. CEMENT COMPOSITION AND PROCESS OF MAKING THE SAME. ANDREW THOMA, Cambridge, Mass., assignor to Thoma Corporation, Portland, Me., a Corporation of Maine. Original application filed Oct. 2, 1905, Serial No. 280,957. Divided and this application filed Oct. 24, 1906. Serial No. 340,337.

Claim.—1. A cement, consisting of an atmospherically resistant, permanently adhesive mass, short when hot,

low-melting, and quick-setting when allowed to cool quickly.

2. A cement, consisting of a non-volatile, non-oxidizing, permanently adhesive and binding body thinly fluid when heated, low melting, and permanently cementitious under all conditions.

3. A cement, consisting of a non-volatile, non-oxidizing, non-inflammable, permanently adhesive and binding body, thinly fluid when heated, low melting, and permanently waterproof when applied in use.

4. A cement, consisting of a non-oxidizing, permanently sticky base combined with an elastic gum and permanently sticky when cold.

5. A cement, consisting of a non-oxidizing, permanently tacky base combined with an elastic gum and a hardening and toughening medium.

6. A cement, consisting of a non-oxidizing, permanently sticky base combined with a hardening and toughening medium, the whole being normally semi-solid or in a substantially self-sustaining state when cold.

7. A cement, consisting of a non-oxidizing, permanently adhesive, odorless mass, short when hot, low-melting, and quick-setting when allowed to cool quickly.

8. A cement, consisting of a non-oxidizing, odorless, permanently sticky base, combined with an elastic gum, and a hardening and toughening medium.

9. A cement, consisting of wax tailings combined with a vegetable elastic gum.

10. A cement, consisting of wax tailings combined with stearin pitch and a vegetable elastic gum.

11. A cement, consisting of wax tailings combined with a hardening and toughening agent and a vegetable elastic gum.

12. A cement, consisting of wax tailings combined with rosin and a vegetable elastic gum.

13. A cement, consisting of wax tailings combined with rosin and boiled gutta percha.

14. A cement, consisting of wax tailings, stearin pitch, and gutta percha boiled together.

15. The process, consisting of combining a gummy elastic mass with a non-oxidizing adhesive mass by so intimately and thoroughly mixing and incorporating one into the other as to overcome the oxidizing tendency of the gummy mass and impart thereto a permanent workable stickiness.

16. The process, consisting of thoroughly mixing together a non-oxidizing, adhesive, low-melting mass and a gummy elastic mass by commingling the one with the other until the natural tough consistency of the gummy mass has been neutralized by the low-melting softening influence of the non-oxidizing mass and the oxidizing tendency of the gummy mass has been neutralized and a permanent workable stickiness imparted thereto.

17. The process, consisting of taking a base of non-oxidizing adhesive material in preponderating amount and combining it by heat with a gummy elastic mass, and maintaining the heat until any oxidizing tendency of the latter is permanently overcome and a permanent stickiness imparted thereto.

18. The process, consisting of taking a base of non-oxidizing adhesive material, and combining it by heat with a hardening and toughening mass, and with a gummy elastic mass, and maintaining the heat until any oxidizing tendency of the latter is permanently overcome.

19. The process, consisting of taking a base of non-oxidizing adhesive material, and combining it by heat with a resinous hardening mass, and a gummy elastic mass, and maintaining the heat until any oxidizing tendency of the latter is permanently overcome and a permanent stickiness imparted thereto.

20. The process, consisting of taking a base of non-oxidizing adhesive material, and combining it by heat with a mineral tar and rosin, and a gummy elastic mass, and maintaining the heat until any oxidizing tendency of the latter is permanently overcome and a permanent stickiness imparted thereto.

21. The process, consisting of taking a predominating quantity of wax tailings, and reinforcing the same under heat with a vegetable elastic gum.

22. The process, consisting of taking a predominating quantity of wax tailings, and stearin pitch, and reinforcing the same under heat with a vegetable elastic gum.

23. The process, consisting of taking a base of non-oxidizing adhesive material, combining it by heat with a gummy elastic mass, and maintaining the heat until a thorough disintegration of the gummy mass is effected, whereby any oxidizing tendency of such mass is removed or overcome and consequently permanent stickiness is imparted thereto.

24. The process, consisting of taking a base of non-oxidizing adhesive material, combining it by heat with a gummy elastic mass, and maintaining the heat until a thorough disintegration of the gummy mass is effected, whereby a permanent stickiness is imparted to said gummy mass.

25. The process, consisting of taking a base of non-oxidizing adhesive material, combining it by heat with a resinous hardening mass and a gummy elastic mass, and maintaining the heat until the gummy mass has become thoroughly disintegrated whereby any oxidizing tendency of such mass is permanently overcome and a permanent stickiness imparted thereto.

855,869. PROCESS OF NITRATING CELLULOSE. ADOLF VOIGT, Hamm-on-the-Sieg, Germany. Original application filed Mar. 28, 1904, Serial No. 200,348. Divided and this application filed Sept. 24, 1906. Serial No. 335,978.

Claim.—1. Process of nitrating cellulose, consisting in treating cellulose fibers with a mixture of concentrated sulfuric acid and of nitric acid, the latter amounting to about 3 per cent in weight of the sulfuric acid, leaving the cellulose fibers in this mixture till the disintegration of the fibers has taken place, so as to form a pulpy mass, in introducing this mass into concentrated nitric acid for its nitrification and rendering it solid, and then in washing the solid mass in water.

2. Process of nitrating cellulose, consisting in treating cellulose fibers with a mixture of concentrated sulfuric acid and of nitric acid, the latter amounting to about 3 per cent in weight of the sulfuric acid and the temperature of the mixture being about 2 to 3 degrees centigrade, leaving the cellulose fibers in this mixture till the disintegration of the fibers has taken place, and introducing the whole in concentrated nitric acid for its nitrification and rendering it solid, and then washing the mass in water.

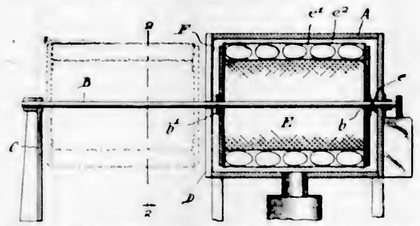
855,870. METHOD OF WATERPROOF UNITING PIECES OF WOOD. CARL WITTKOWSKY, Berlin, Germany. Filed Jan. 4, 1907. Serial No. 350,808.



Claim.—1. The method of waterproof uniting veneers in the least possible time for seats, panels and the like, consisting in firstly the application of a cementing medium of a pasty consistency composed of casein, lime and water-glass, the application being done by mechanical operation and resulting in a coating of the veneers with a thin and even layer of cement, secondly a placing of another non-coated veneer on each of the cemented sides of the coated veneer and thirdly the subjecting of the veneers put upon each other immediately afterward to a hot pressure.

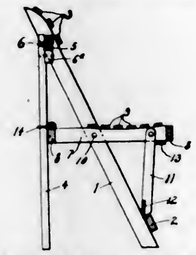
2. The method of waterproof uniting veneers in the least possible time for seats, panels and the like, consisting in firstly the application of a cementing medium of a pasty consistency composed of casein, lime and water-glass, the application being done by means of a pair of rollers resulting in a coating of the veneer with a thin and even layer of cement, secondly a placing of another non-coated veneer on each of the cemented sides of a coated veneer, and thirdly the subjecting of the veneers put upon each other immediately afterward to a hot pressure.

855,871. INCUBATOR. HARRIS W. AXFORD, Chicago, Ill. Filed Mar. 12, 1906. Serial No. 305,487.



Claim.—The combination with an incubating chamber, of a shaft passing therethrough and a drum carried by the shaft and adapted to be shifted along the shaft outside the chamber, and means for closing the incubating chamber after the removal of the drum to retain its heat.

855,872. FOLDING CHAIR. MILTON T. BEDFORD, Sidney, Ohio, assignor of one-half to Robert V. Jones, Sidney, Ohio. Filed Jan. 25, 1907. Serial No. 353,946.



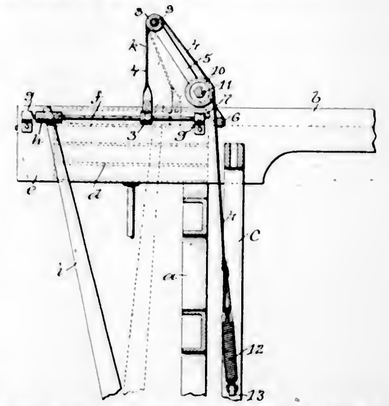
Claim.—1. A folding-chair, comprising a pair of main supporting-bars connected at their lower ends by a cross-bar, a seat pivotally-secured and provided at its rear with a clevis, supporting-arms carried by the front end of said seat and provided with a second cross-bar sliding upon the front portion of said supporting-bars when the chair is moved to its folded position and resting upon said cross-bar when in its normal position, and a pivotally-mounted brace-bar carried by said main supporting-bars and taking through said clevis.

2. A folding-chair, comprising side supporting-bars carrying a cross-bar near their base ends, a seat pivotally-secured thereto and provided with a clevis at its rear and at its front with means for normally supporting the same in a horizontal position upon said cross-bar, and a cross-member pivotally-secured to said side supporting-bars and provided with a depending brace-member slidably-connected to said seat by passing through said clevis.

3. In a folding-chair, the combination with rearwardly-inclined brace-members provided at their lower ends with a cross-bar and carrying at their upper ends a pivotally-mounted T-shaped brace-member; of a seat pivotally-secured to said brace-members and slidably-connected to said brace-member by means of a clevis, depending brace-members pivotally-secured to said seat and normally engaging said cross-bar, and means secured to the under side of said seat for preventing said depending brace-members from swinging outwardly beyond said cross-bar.

855,873. PICKER-STICK CHECK FOR LOOMS. JOHN B. BERNIER, Manville, R. I., assignor of one-half to Frederick H. Roche, Manville, R. I. Filed June 12, 1906. Serial No. 321,370.

Claim.—1. In a loom, a picker stick check comprising a picker rod, a buffer slide 3 adapted to slide on the picker rod, a flexible strap 4 secured at one end at one end to the buffer slide 3, an arm 5 rigidly secured in the lay sword, the strap 4 passing upward over the pulley 8 and then downward over the pulley 10, and a coiled spring 12 secured to the lower end of the strap and to the pin 13 on the lay sword, whereby the buffer slide 3 receives the blow of the picker and gradually brings the picker and picker stick to a stop through the gradually increasing tension of the coiled spring 12, as described.



2. The combination with the lay *b*, the lay sword *c*, the picker rod *f*, the picker *h* and the picker stick *i* of a loom, of a picker stick check *k* consisting of a buffer slide 3 of rawhide or similar material adapted to slide on the picker rod *f* intermediate the picker *h* and the inner end of the picker rod, a flexible strap 4 secured at one end to the buffer slide 3, an arm 5 rigidly secured to the back of the lay by a bolt 6 at an angle over the picker rod, a grooved pulley 8 rotatably secured to the upper end of the arm 5 by a bolt stud 9, a larger grooved pulley 10 rotatably secured to the arm 5 adjacent its lower end by a bolt stud 11, the pin 13, the strap 4 passing upward over the pulley 8 and then downward over the pulley 10, and a coiled spring 12 secured to the lower end of the strap 4 and to the pin 13 on the lay sword *c*, whereby the buffer slide 3 receives the blow of the picker *h* and gradually brings the picker *h* and the picker stick *i* to a stop through the gradually increasing tension of the coiled spring 12, as described.

855,874. CLIP FOR TURNING OVER MUSIC-SHEETS, &c. OSCAR BLOBEL, Villach, Austria-Hungary. Filed June 23, 1906. Serial No. 323,140.



Claim.—1. A leaf turning clip comprising two members having flat elongated portions pivoted together at one end and having separated portions extending beyond the pivot, said elongated portions having rounded ends and one being longer than the other and the separated portions being of cup-shape with a spring between such cup-shaped portions for holding the elongated flat portions in juxtaposition for grasping a leaf between them, substantially as described.

2. A leaf turning clip comprising two members having flat elongated portions pivoted together at one end and having separated portions extending beyond the pivot, with a spring between such portions for holding the elongated flat portions in juxtaposition for grasping a leaf

between them, one of said flat elongated portions extending beyond the other to facilitate the entrance between the leaves, substantially as described.

855,875. DENTIMETER. JOSEPH BODE, Philadelphia, Pa., assignor to James W. Ivory, Philadelphia, Pa. Filed Jan. 18, 1907. Serial No. 352,865.



Claim.—1. A dentimeter having a loop of pliable material connected therewith, the same being adapted to be fitted on a tooth, and means for tightening said loop thereon said means being adapted to have the adjacent length of said piece and the ends thereof, and the fastenings of the latter, on the exterior of the device.

2. A dentimeter composed of a movable member, a casing therefor, means for operating said member in opposite directions, and openings in said member and casing for attaching a loop-forming piece of material thereto, whereby the resultant loop may be fitted on a tooth and tightened thereon and portions of the wire may occupy the exterior of said stock and be secured on the exterior of said casing.

3. A dentimeter composed of a movable member, a casing therefor, means for attaching a piece of loop-forming material to said casing and member, and a recess in the end of said member where said material is crossed for preventing the resultant loop from slipping on said member and placing the latter close to a tooth.

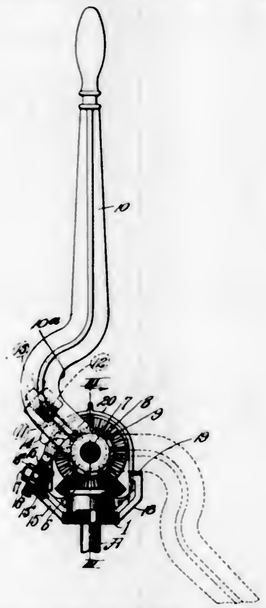
855,876. RATCHET BRAKE MECHANISM. JOSEPH M. ROSENBURY, Decatur, Ill., assignor to St. Louis Car Company, St. Louis, Mo., a Corporation. Filed Aug. 25, 1906. Serial No. 331,987.

Claim.—1. In a ratchet brake mechanism, the combination with a vertical brake staff, of a horizontal bevel gear wheel fixed to said staff, a vertical bevel gear wheel cooperating with said horizontal bevel gear wheel, a support for said vertical bevel gear wheel, a ratchet wheel associated with said vertical bevel gear wheel, a loosely supported hand-lever located adjacent to said ratchet wheel and adapted to extend downwardly beneath the horizontal plane of its axis, and a spring pawl carried by said hand lever and arranged for engagement with said ratchet wheel, substantially as set forth.

2. In a ratchet brake mechanism, the combination with a vertical brake staff, of a horizontal bevel gear wheel fixed to said staff, a vertical bevel gear wheel coöperating with said horizontal bevel gear wheel, a support for said vertical bevel gear wheel, a ratchet wheel associated with said vertical bevel gear wheel, a loosely supported hand lever having a bend near its inner end, located adjacent to said ratchet wheel and adapted to extend downwardly beneath the horizontal plane of its axis, and a spring pawl carried by said hand-lever and arranged for engagement with said ratchet wheel, substantially as set forth.

3. In a ratchet brake mechanism, the combination with a vertical brake staff of a horizontal bevel gear wheel fixed to said staff, a vertical bevel gear wheel coöperating with said horizontal bevel gear wheel, a support for said vertical bevel gear wheel, a ratchet wheel associated with said vertical bevel gear wheel, a loosely supported hand-lever located adjacent to said ratchet wheel, and adapted to extend downwardly beneath the horizontal plane of its axis, a spring pawl having a heel and carried by said hand-lever and arranged for engagement with said ratchet wheel, and a trip finger adapted to engage the heel for withdrawing said pawl from said ratchet wheel, substantially as set forth.

4. In a ratchet brake mechanism, the combination with a vertical brake staff, of a horizontal bevel gear wheel fixed to said staff, a vertical bevel gear wheel coöperating with said horizontal bevel gear wheel, a support for said vertical bevel gear wheel, a ratchet wheel associated with said vertical bevel gear wheel, a loosely supported hand-lever located adjacent to said ratchet wheel and adapted to extend downwardly beneath the horizontal plane of its axis, a spring pawl carried by said hand-lever and arranged for engagement with said ratchet wheel, and an adjustable trip finger adapted to engage the heel for withdrawing said pawl from said ratchet wheel, substantially as set forth.



5. In a ratchet brake mechanism, the combination with a vertical brake staff, of a horizontal bevel gear wheel fixed to said staff, a vertical bevel gear wheel coöperating with said horizontal bevel gear wheel, a support for said vertical bevel gear wheel, a ratchet wheel associated with said vertical bevel gear wheel, a loosely supported hand-lever located adjacent to said ratchet wheel, a spring pawl carried by said hand-lever and arranged for engagement with said ratchet wheel, and a stop-arm for limiting the downward movement of said hand-lever, substantially as set forth.

6. In a ratchet brake mechanism, the combination with a vertical brake staff, of a horizontal bracket surrounding said staff, a horizontal bevel gear wheel fixed to the upper end of said staff and loosely seated in said bracket, a horizontal shaft mounted in said bracket, a vertical bevel gear wheel meshing with said horizontal bevel gear wheel and fixed to said shaft, and having a ratchet wheel associated therewith, a hand-lever loosely mounted on said shaft and adapted to extend downwardly beneath the horizontal plane of its axis, and a spring pawl carried by said hand-lever and arranged for engagement with said ratchet wheel, substantially as set forth.

7. In a ratchet brake mechanism, the combination with a vertical brake staff, of a horizontal bracket surrounding said staff, a horizontal bevel gear wheel fixed to the upper end of said staff and loosely seated in said bracket, a horizontal shaft mounted in said bracket, a vertical bevel gear wheel meshing with said horizontal bevel gear wheel and fixed to said shaft, and having a ratchet wheel associated therewith, a hand-lever loosely mounted on said shaft, a spring pawl having a heel and carried by said hand-lever and arranged for engagement with said ratchet wheel, and a trip finger supported by said bracket and adapted to engage the heel so as to retract said pawl, substantially as set forth.

8. A ratchet brake mechanism comprising a vertical brake staff a horizontal bracket surrounding said staff and having an arm formed with serrations upon its upper face, a horizontal bevel gear wheel fixed to the upper end of said staff and loosely seated in said bracket, a horizontal shaft mounted in said bracket, a vertical bevel gear wheel meshing with said horizontal bevel gear wheel and fixed to said shaft, and having a ratchet wheel associated therewith, a hand-lever loosely mounted on said shaft, a spring pawl having a heel and carried by said hand-lever and arranged for engagement with said ratchet wheel, an adjustable trip finger having serrations upon its lower face and a longitudinal slot and adapted to engage the heel so as to retract said pawl and a clamp-screw passing through the slot and the face of the arm for holding the trip finger to its adjustment.

9. In a brake mechanism, an oscillating lever, a spring controlled rectilinearly reciprocating pawl carried thereby, a shaft, a ratchet keyed thereto, a brake staff, intermediate gearing between the staff and shaft for imparting rotation to the staff upon oscillation of the lever in one direction, and means for disengaging the pawl from the ratchet upon an abnormal throw of the lever in the opposite direction, substantially as set forth.

10. In a brake mechanism, an oscillating lever, a spring controlled rectilinearly reciprocating pawl carried thereby, a shaft, a ratchet keyed thereto, a brake staff, intermediate gearing between the staff and shaft for imparting rotation to the staff upon oscillation of the lever in one direction, a stationary disengaging member located in proximity to the pawl, and an arm or lug on the latter adapted to ride over the surface of said disengaging member, and move the pawl out of engagement with the ratchet for an abnormal throw of the lever in the opposite direction, substantially as set forth.

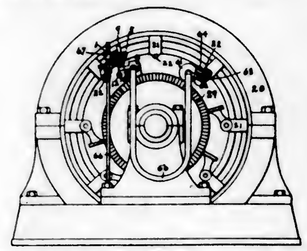
11. In combination with a rotatable brake staff having a terminal bevel gear, a rotatable adjustable bearing surmounting the staff, a shaft in said bearing, a bevel gear keyed to said shaft and meshing with the staff gear, a ratchet keyed to the shaft, a lever loosely embracing the shaft, a spring controlled rectilinearly reciprocating pawl carried by the lever and engaging the ratchet, and a member or cam interposed in the path of the oscillation of the pawl and adapted to disengage said pawl from its ratchet for an abnormal throw of the lever in proper direction, substantially as set forth.

12. In combination with a rotatable brake staff having a terminal bevel gear, a rotatably adjustable bearing surmounting the staff, a shaft in said bearing, a bevel gear keyed to said shaft and meshing with the staff gear, a ratchet keyed to the shaft, a lever loosely embracing the shaft, a spring controlled rectilinearly reciprocating pawl carried by the lever and engaging the ratchet, a vertically adjustable cam member secured to the bearing, and an arm or lug on the pawl disposed in the path of the cam member, the latter being adapted to move the arm of the pawl and elevate the latter out of engagement with its ratchet for an abnormal throw of the lever toward the cam member, substantially as set forth.

855,877. COMMUTATOR-GRINDER. ELLSWORTH S. BRYANT and HENRY J. BERY, Detroit, Mich. Filed Apr. 7, 1906. Serial No. 310,400.

Claim.—1. In a commutator grinder, the combination of a frame, means to rigidly secure the same to an electric machine, a second frame, means to relatively adjust the frames, a longitudinally slidable tubular sleeve, a rotary arbor carried thereby, a grinding wheel mounted on the arbor at one end of the sleeves, and an electric motor to revolve the arbor connected to the same at the other end of the sleeve.

2. In a commutator grinder, the combination of a frame, means to rigidly secure the same to the brush holders of an electric machine, a second frame, bearings carried thereby, one being yieldable, means to relatively adjust the frames, a longitudinally slidable sleeve, a rotary arbor carried thereby, a grinding wheel mounted on one end of the arbor, and an electric motor carried on one end of the sleeve to drive said arbor.



3. In a commutator grinder, the combination of a frame, means to rigidly secure the same to an electric machine, a second frame, means to relatively adjust the frames, guide rollers carried by the second frame, a longitudinally slidable sleeve carried by said rollers, a rotary arbor mounted in said sleeve, and grinding means mounted on said shaft.

4. In a commutator grinder, the combination of a plurality of rods rigidly connected parallel to each other, means for securing the same to an electric machine, a plurality of rods mounted for movement relative to the first, bearings comprising rollers carried by said rods, and grinding means mounted on said rollers.

5. In a commutator grinder, the combination of a plurality of parallel rods rigidly connected together, means for securing the same to an electric machine, guide rods mounted at right angles to the first, frames movably mounted on said guide rods, bearing rollers mounted on said frames, a sleeve longitudinally movable on said rollers, and grinding means mounted in said sleeve.

6. In a commutator grinder, the combination of parallel rods rigidly connected to an electric machine, guide rods mounted at right angles to the first, frames movably mounted on said guide rods, bearings carried by said frames, a sleeve longitudinally movable on said bearings, and an emery-wheel-arbor mounted in said sleeve.

7. In a commutator grinder, the combination of an adjustable frame, bearings carried thereby, a tubular sleeve slidable longitudinally in said bearings, an arbor journaled in said sleeve, a grinding wheel mounted at one end of the arbor at one end of the sleeve, a case connected to the other end of the sleeve, and an electric motor mounted in said case and operatively connected to said arbor.

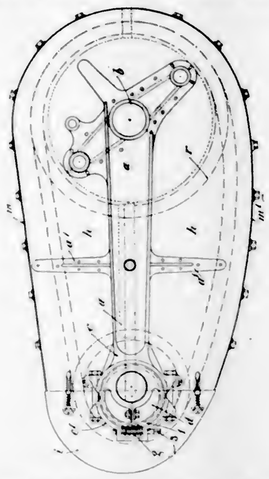
8. In a commutator grinder, the combination of a frame, a bearing comprising a grooved roller at one end of said frame, a bearing comprising a rigid grooved roller and a spring-held roller at the other end thereof, a sleeve movable longitudinally in said bearings, and an arbor mounted in said sleeve.

9. In a commutator grinder, the combination of a frame, a clamp adapted to secure one end of the same to the brush holder of an electric machine, means to support the free end of the same, a second frame, guides secured to the first frame to support the second, a screw to provide relative adjustment of the frames, bearings provided on the second frame, a cylindrical tube longitudinally slidable in the bearings, an arbor mounted in the tube, and a grinding wheel mounted on one end of the arbor.

855,878. CHAIN-DRIVING-GEAR CASE FOR AUTOMOBILES. FERDINAND CHARRON, Puteaux, France. Filed Mar. 6, 1907. Serial No. 360,937.

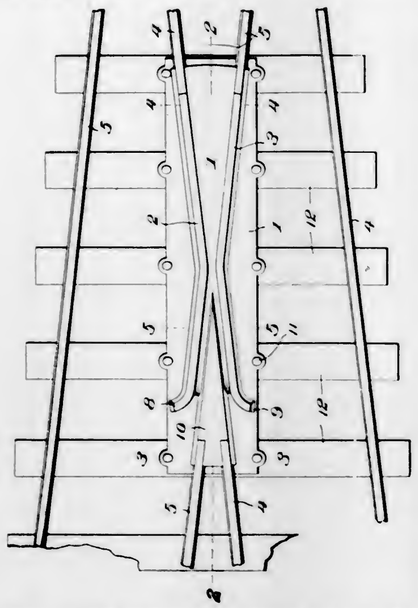
Claim.—In a chain driving gear for automobile road vehicles, a gear-case *h i m m'* in combination with a chain tensioning rod *a* to which is fixed the gear-case, a bearing provided at one end of the rod and adapted to rotate on the car-axle in a plane perpendicular thereto, a head *c c'* provided at the other end of the rod, a collar *d* located in the head *c c'* and capable of rotating therein, there being

an eccentric spherical eye formed in the collar *d*, and a spherical bearing surface *f* provided on the axle of the chain pinion and adapted to be fitted in the spherical eye of the collar *d*, there being a crown with helicoidal teeth 1 provided on the periphery of the collar *d*, and an endless



screw 2 lodged in the head *c c'* of the rod, meshing with the helicoidal teeth 1 of the crown and provided with a prismatic end 3, substantially as described and for the purpose set forth.

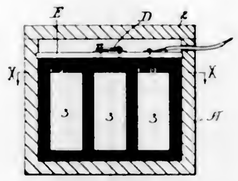
855,879. FROG. MIKE CHILA, Whiting, Ind. Filed Nov. 15, 1906. Serial No. 343,580.



Claim.—1. The herein described switch frog comprising a body, ribs extending upwardly from said body, said ribs having their free ends curved to form guards, a V-shaped section extending between said guards, each end of said body having slots therein to receive the ends of the track rails and means to secure the base in position upon the track way.

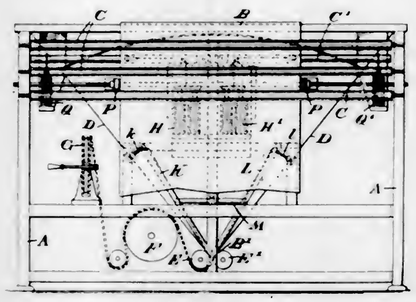
2. A switch frog of the class described comprising the combination with track rails; of a base, ribs extending from the upper face of said base, said ribs converging from one end of the base to a point adjacent its center and having their free ends diverging and curved to form guards, a substantially V-shaped section integral with the base and extending between said diverged sections of said ribs, said base having slots at each end thereof to receive and partially inclose said rails and means to secure the frog in position upon the track way.

855,880. BATTERY. BERTRAM B. DOWNS, St. Paul, Minn. Filed Apr. 2, 1906. Serial No. 309,348.



Claim.—A new article of manufacture, comprising a battery of dry cells suitably connected and having their outer electrodes separated from each other, a suitable inclosure common to all of said cells, a layer of solid insulating compound in said inclosure on which said cells rest, and a solid insulating compound adapted to melt at a lower temperature than said layer and covering said cells and their connections.

855,881. APPARATUS FOR DOUBLING CLOTH, &c. JOHN FISH, Manchester, England. Filed Mar. 16, 1906. Serial No. 306,370.

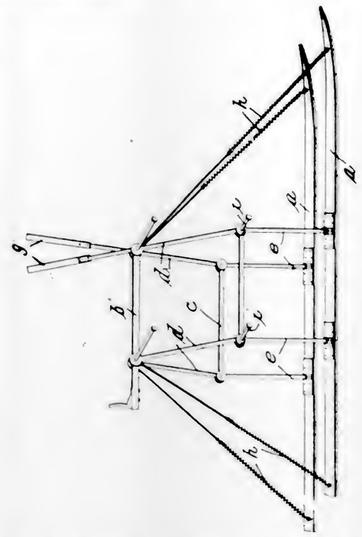


Claim.—1. Apparatus for accurately guiding and controlling the passage of cloth for the purpose hereinbefore set forth, comprising a triangular frame over which the cloth passes and is folded, and electro-magnetic means controlled by the cloth for automatically moving said triangular frame toward the side at which the cloth runs out to one edge or the other, in order to restore said cloth to its true position.

2. Apparatus for accurately guiding and controlling the passage of cloth for the purpose hereinbefore described, comprising converging members oblique to the line of movement of the cloth and over which said cloth passes, suitable electro-mechanical devices connected with said oblique members, and a circuit closer in proximity to an edge of the cloth, whereby the movement of an edge beyond its normal position will actuate said circuit closer and thereby effect a movement of the oblique member toward the side at which the cloth is moving off.

3. Apparatus for accurately guiding and controlling the passage of cloth for the purpose hereinbefore set forth, comprising a triangular frame pivoted at its apex, electromagnets for moving it laterally, a circuit closer consisting of a switch lever arranged to bear against the edges of the cloth and pivoted at a point between said edges, and stationary contacts co-operating with said switch lever.

855,882. MACHINE FOR TRAVELING ON SNOW. ADOLF J. GOLD, Helena, Mont. Filed Aug. 30, 1905. Serial No. 276,481.

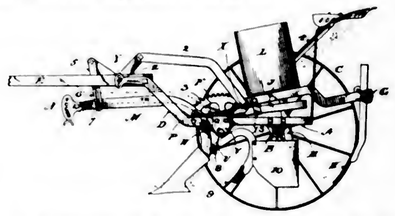


Claim.—In a device of the character described, a pair of runners, or shoes, a seat support, a supporting and propelling mechanism between the runners and said support, comprising pairs of links, the upper members of which are pivoted to the front and rear ends of the seat support, corresponding pairs of links secured to the runners and a pivotal connection between the adjacent ends of the links.

855,883. COTTON AND CORN PLANTER. FRANK H. GOODNIGHT, Dallas, Tex., and JAMES F. DUFFIN, Peoria, Ill., assignors to Kingman Plow Company, Peoria, Ill., a Corporation of Illinois. Filed Aug. 26, 1905. Serial No. 275,031.

Claim.—1. The combination with a main, wheel-supported planter frame having a guiding tongue, of a plow supported by said frame and swinging freely upon a horizontal pivotal axis and arranged to transmit the entire tractional force of the horses, a covering shovel frame pivoted to said main frame, a seed-box frame pivoted to the shovel frame, and a single means for at will raising the plow, bodily, the shovels and the seed-box out of operative positions.

2. The combination with a main, wheel-supported planter frame provided with a rigidly attached guiding tongue, of a plow support pivoted to said frame, a plow having its beam pivoted to said support and swinging freely in a vertical plane upon its pivot, a rearwardly extending shovel frame pivoted to the main frame, a seed-box frame pivoted to the shovel frame, and a single means for at will swinging upward the plow, bodily, the shovel frame, and the seed-box frame, substantially as set forth.



3. The combination with a main, wheel supported, plow carrying frame having a rigidly attached guiding tongue, an arm pivoted to the main frame to swing on a horizontal pivot, a plow beam pivoted to the free end of said arm and rocking freely in a vertical plane upon its pivot, draft devices attached to the forward end of the plow beam, a stop in the rear of the beam pivot to arrest the upward movement of the rear end of the beam at a predetermined point when it is lifted by said arm, a shovel frame pivoted to the main frame and extending to the rear of the axle, a seed-box frame pivoted to the shovel frame, and a single means for swinging said arm, the shovel frame and the seed box frame upward upon their pivots, respectively.

4. The combination with a main, wheel-supported frame having a guiding tongue free from traction devices, of a shovel frame pivoted near its forward end to the main frame, a seed-box frame pivoted near its forward end to the shovel frame, a plow pivotally supported from the main frame and transmitting the entire tractional force, means for at will raising the plow, bodily, and the shovel frame, and means whereby the shovel frame in rising engages and lifts the seed-box frame at a predetermined point.

5. A planter of the class described comprising a wheel-supported carrying frame and its guiding tongue, a plow beam carried by the frame in front of the axle and provided with draft attaching devices, a shovel frame pivoted near its forward end to the carrying frame and extending to the rear of the axle, a seed-box frame pivoted near its forward end to the shovel frame and also extending in rear of the axle, a seat, borne by the carrying frame, in the rear of the axle and seed dropping devices, and a single lever arranged for at will raising the shovel frame and seed box frame, substantially as set forth.

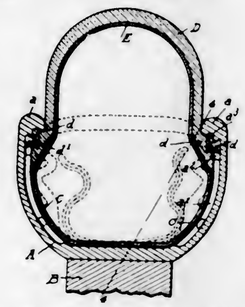
6. A planter of the character described comprising the carrying frame, a rock shaft journaled thereon, a plow-beam, devices on the shaft for pivotal connection with said beam, the planter tongue, a device pivoted thereon for supporting the forward end of the beam, a connection between the devices on the shaft and the device on the tongue, a shovel carrying frame pivoted to the carrying frame, a seed-box frame pivoted to the shovel frame, and means for simultaneously raising the plow-beam and the two pivoted frames.

855,884. PNEUMATIC TIRE. JOHN H. GREEN, Springfield, Ill. Filed Dec. 28, 1906. Serial No. 349,886.

Claim.—1. In a tire the combination of a rim having a trough adapted to house the outer casing of a deflated tire, also having transverse channels; an outer casing slidable radially within the rim and having pins slidable in the transverse channels of the rim; an inflatable tube fitting within the outer casing and the trough of the rim; and a protector situated between the inflatable tube and the rim and movable by the radially moving outer casing to uncover the transverse channels of the rim in advance of the pins on the outer casing, and also adapted to exclude the inflatable tube from the channels in the rim.

2. In a tire, the combination of a rim adapted to house the outer casing of a deflated tire and having transverse

dove-tail channels, an outer casing fitting within the rim, and dove-tail pins on the outer casing slidable in the channels of the rim.



3. In a tire, the combination of a rim having a trough with transverse channels and abutments; an outer casing movable radially within the trough of the rim and provided with stops fitting in the channels of the rim and engaging on the abutments to prevent outward radial displacement of the outer casing, also adapted to guide inward movement of the outer casing, also adapted to prevent creeping of the outer casing and also adapted to prevent crosswise movement of the outer casing within the trough of the rim; and an inflatable tube within the outer casing and the trough of the rim.

4. In a tire, a rim adapted to house the outer casing of a deflated tire and having transverse channels adapted to accommodate headed pins, also having enlarged openings near one end of said channels respectively; in combination with an outer casing fitting within the rim and provided with headed pins adapted to enter the enlarged openings and slidable in the transverse channels of the rim.

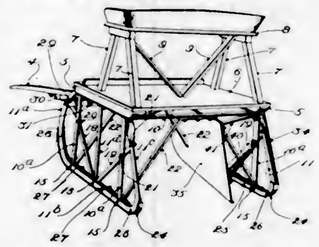
855,885. LADY'S SKIRT. JACOB GREENWALD, Philadelphia, Pa., assignor to himself, Theodore Greenwald, and Max Greenwald, trading as Greenwald Bros., Philadelphia, Pa. Filed Jan. 25, 1907. Serial No. 354,091.



Claim.—In a garment having an upper portion of relatively non-elastic material, a pair of inserted gore pieces of relatively elastic and pliable material, arranged at each side of the waist line, and in the rear half of the circumference thereof; and strips of more elastic material extending freely across the regions of said gores, and beyond the same to points at the extreme rear of the waist line, substantially as set forth.

855,886. SNOW-PLOW. PAUL HANNAGAN, Lawrence, Mass. Filed Nov. 28, 1906. Serial No. 345,474.

Claim.—1. In a snow-plow, the combination with the main frame comprising the cross-irons having connected therewith the upright stanchions at opposite sides, the side-irons comprising the side-bars, the cutters or noses, and the runners, the runners being connected with the lower ends of the said stanchions, and the braces secured to the said cross irons with the downwardly and outwardly diverging legs thereof connected at their extremities with the lateral elements of the main frame, the mold-board frame located intermediate the said runners, and inclined with respect thereto, the braces intermediate the mold-board frame and the adjacent lateral elements of the frame, and the mold-board carried by the said mold-board frame.



2. In a snow-plow, the combination with the main frame comprising the cross-irons having connected therewith the upright stanchions at opposite sides, and the side-irons each comprising the connected side-bar, cutter or nose, runner, and section intermediate the rear ends of the side-bar and runner, having the runners connected with the lower ends of the said stanchions, of the mold-board frame located intermediate the said runners; the braces intermediate the mold-board frame and the adjacent lateral elements of the main frame, and the mold-board carried by the said mold-board frame.

3. In a snow-plow, the combination with the main frame comprising the cross-irons having connected therewith the upright stanchions at opposite sides, the side-irons each comprising the connected side-bar, cutter or nose, runner, and section intermediate the rear ends of the side-bar and runner, having the runners connected with the lower ends of the said stanchions, and the braces secured to the said cross-irons with the downwardly and outwardly diverging legs thereof connected at their extremities with the lateral elements of the main frame, of the mold-board frame located intermediate the said runners, the braces intermediate the mold-board frame and the adjacent lateral elements of the main frame, and the mold-board carried by the said mold-board frame.

4. In a snow-plow, the combination with the main frame comprising the cross-irons having connected therewith the upright stanchions at opposite sides, the side-irons each comprising the side-bar, the cutter or nose, and the runner, having the runners connected with the lower ends of the said stanchions, and the diagonal cross-ties crossing each other transversely of the frame, of the mold-board, the mold-board frame located intermediate the said runners, and the braces intermediate the mold-board frame and the adjacent lateral elements of the main frame.

5. The combination with the sled-frame comprising the cross-irons having connected therewith the upright stanchions at the opposite sides of the frame, and the side-irons each comprising the side-bar, the cutter or nose, and the runner, having the runners connected with the lower ends of the said stanchions, of the mold-board, the mold-board frame located intermediate the said runners, and the braces intermediate the mold-board frame and the adjacent lateral elements of the sled-frame.

6. The combination with the sled-frame comprising the cross-irons having connected therewith the upright stanchions at the opposite sides of the frame, and the side-irons each comprising the side-bar, the cutter or nose, and the runner, having the runners connected with the lower ends of the said stanchions, of the mold-board, the mold-board frame comprising the runner like member connected at its front with one of the side-irons, and the braces intermediate the said mold-board frame and the adjacent lateral elements of the side-frame.

7. In a snow-plow, the combination with the main frame comprising the cross-irons having connected therewith the upright stanchions at opposite sides, the side-irons each comprising the side-bar, the cutter or nose, and the runner, having the runners connected with the lower ends of the said stanchions, and the shoes secured to the said runners, of the mold-board, the mold-board frame located intermediate the said runners, and the braces intermediate the mold-board frame and the adjacent lateral elements of the main frame.

8. In a snow-plow, the combination with the main frame comprising the cross-irons having connected therewith the upright stanchions at opposite sides, and the side-irons each comprising the side-bar, the cutter or nose, and the runner, having the runners connected with the lower ends of the said stanchions, the auxiliary runners secured to said runners, a shoe applied to each pair comprising a runner and auxiliary runner, and shoe-securing bolts passing between the said runner and auxiliary runner, of the mold-board, the mold-board frame located intermediate the said runners, and the braces intermediate the mold-board frame and the adjacent lateral elements of the main frame.

9. The combination with the frame provided with the opposite parallel runners, of the intermediate runner, and the mold-board secured thereto.

10. In a snow-plow, the combination with the side-iron comprising the cutter or nose and the runner, of the skeleton mold-board frame secured at its forward end to the said cutter or nose and diverging from the said side-iron rearwardly, and the mold-board facing secured to the said skeleton frame.

11. In a snow-plow, the combination with the side-iron comprising the cutter or nose and the runner, of the skeleton mold-board secured at its forward end to the said cutter or nose and diverging from the said side-iron rearwardly, the lower bar of the said skeleton frame serving as a runner, and the mold-board facing secured to the said skeleton frame.

12. In a snow-plow, the combination with the opposite side-irons, each comprising a cutter or nose and a runner, and cross-irons secured at opposite sides of the framework to the said side-irons and provided with vertical stanchions which are connected to the runners, of the mold-board frame secured at its forward end to the cutter or nose of one of the side-irons and diverging from such side-iron rearwardly, and the facing secured to the said mold-board frame.

13. In a snow-plow, the combination with the opposite side-irons, each comprising a side-bar, a cutter or nose, and a runner, and the cross-irons connected with the opposite side-bars and provided with vertical stanchions attached at the lower ends thereof to the runners, of the mold-board frame secured at its forward end to the cutter or nose of one of the said side-irons and diverging from such side-iron rearwardly, and the facing secured to the said frame.

14. In a snow-plow, the combination with the opposite side-irons, each comprising a side-bar, a cutter or nose, and a runner, the cross-irons connected with the opposite side-bars and provided with vertical stanchions attached at the lower ends thereof to the runners, and the diagonal braces connecting with opposite corners of the frame and crossing each other, of the mold-board frame secured at its forward end to the cutter or nose of one of the said side-irons and diverging from such side-iron rearwardly, and the facing secured to the said mold-board frame.

15. In a snow-plow, the combination with the opposite side-irons, each comprising a side-bar, a cutter or nose, and a runner, and provided with draft-bar supports, of the mold-board frame secured at its forward end to the cutter or nose of one of the said side-irons and diverging from such side-iron rearwardly, the facing secured to the said frame, and the draft-bar mounted on the said supports.

16. In a snow-plow, the combination with the opposite side-irons, each comprising a side-bar, a cutter or nose, and a runner, and provided with draft-bar supports, and the cross-irons connected with the opposite side-bars and provided with vertical stanchions attached at the lower ends thereof to the runners, of the mold-board frame secured at its forward end to the cutter or nose of one of the said side-irons and diverging from such side-iron rearwardly, the facing secured to the said mold-board frame, and the draft-bar mounted on the said supports.

17. In a snow-plow, the combination with the opposite side-irons, each comprising a side-bar, a cutter or nose, and a runner, the cross-irons connected with the opposite side-bars and provided with vertical stanchions attached at the lower ends thereof to the runners, and the braces attached by their middle portions to the said cross-irons and having the side-portions thereof bent downwardly and attached to the runners, of the mold-board frame secured at its forward end to the cutter or nose of one of the side-irons and diverging from such side-iron rearwardly, and the facing secured to the said frame.

18. A snow plow constructed with an obliquely-disposed mold-board frame, braces by which said frame is sustained in place, and a facing applied to the mold-board frame.

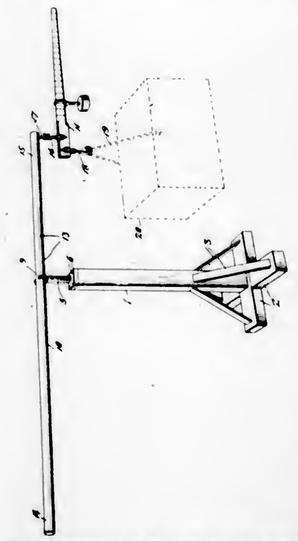
19. A snow-plow constructed with an obliquely-disposed skeleton mold-board frame, braces retaining said frame in place, and a sheet-metal facing applied to the mold-board frame.

20. In a snow-plow, in combination, opposite runners extending parallel with each other, and a laterally inclined mold-board located between the said runners.

21. In a snow-plow, in combination, opposite runners extending parallel with each other, and a mold-board located between the said runners, meeting or joining in advance with one of the said runners and diverging rearwardly toward the other thereof.

22. In a snow-plow, in combination, opposite runners extending parallel with each other, and a mold-board located between the said runners, meeting or joining in advance with one of the said runners, such runner constituting a cutter which precedes the said mold-board, the mold-board diverging rearwardly toward the other runner.

855,887. WEIGHING APPARATUS. ANTHONY HARRINGTON, Custer, Ky. Filed Feb. 11, 1907. Serial No. 356,793.



Claim.—1. A support for a sweep comprising an upright, a nut thereon, a vertically extending screw in said nut, and a fulcrum piece upon said screw.

2. A support for a sweep comprising an upright, a nut thereon, a vertically extending screw in said nut, and a

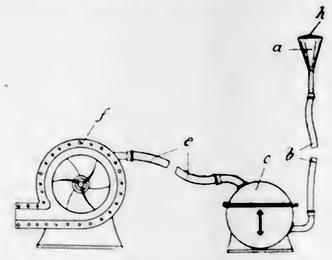
fulcrum cross bar swiveled upon the upper end of said screw.

3. A portable support for a sweep comprising an upright, a base at the lower end of the latter, a nut upon the upper end of said upright, a vertically extending screw in said nut and a fulcrum cross bar upon the upper end of said screw and having at its ends upwardly projecting stop arms.

4. A portable support for a sweep comprising an upright having a socket in its upper end, a base at the lower end of said upright, a cap nut upon the upper end of said upright, a screw arranged in said nut and in the socket in said upright and a fulcrum cross bar pivoted upon the upper end of said screw and having its ends bent upwardly and inwardly, substantially as shown and described.

5. A device of the character described comprising a portable upright having a supporting base at its lower end, a screw vertically adjustable in the upper end of said upright, a fulcrum piece upon the upper end of said screw and a sweep detachably engaged with said fulcrum piece, said sweep having means at one end to support a steelyard or the like and also having intermediate its ends seats to engage said fulcrum piece, substantially as described.

855,888. SUCTION-MOUTHPIECE FOR EXHAUST DEVICES. FRIEDRICH HECKER, Munich, Germany. Filed Nov. 19, 1906. Serial No. 344,124.



Claim.—1. In an exhaust device, the combination, with a pipe, of a mouthpiece comprising a plurality of tubes having their inner ends converging to form a connection with the pipe, and means for producing suction upon said pipe.

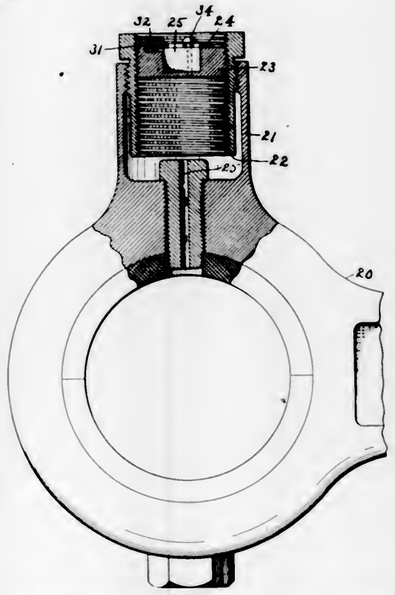
2. In an exhaust device, the combination, with a pipe, and a funnel-shaped casing connecting therewith at its smaller end, of a plurality of converging tubes within said casing having their ends grouped at the smaller ends thereof, and means for producing an air current through the pipe by way of the tubes.

3. In an exhaust device, the combination, with a pipe, and a funnel shaped casing capped at its larger end and connecting at it smaller end with the pipe, of a plurality of tubes arranged within said casing with their inner ends grouped at the smaller end thereof and with their outer ends tapped through the cap, and an exhaust device coupled to said pipe.

855,889. GREASE-CUP. FREDERICK G. HUNTER, Moncton, New Brunswick, Canada. Filed Jan. 14, 1907. Serial No. 352,138.

Claim.—1. A grease-cup having a female thread on its inner cylindrical wall, a screw plug to enter the cup and engage said thread and provided with means for receiving a tool to operate it, and a spring-pressed locking piece carried by the plug and having a projecting portion normally engaging the wall of the cup for locking said plug against movement therefrom, said locking piece having a part to be engaged by said tool for moving said piece to its inoperative position; substantially as set forth.

2. A grease-cup having a female thread on its inner cylindrical wall, a screw plug to enter the cup and engage said thread and provided with means for receiving a tool to operate it, and a spring-pressed locking piece pivotally secured to said plug and having an eccentrically disposed projecting portion normally engaging the wall of the cup for locking said plug against movement therefrom, said locking piece having a part to be engaged by said tool for moving said piece to its inoperative position; substantially as set forth.



3. A grease-cup having a female thread on its inner cylindrical wall, a screw plug to enter the cup and engage said thread and provided with means for receiving a tool to operate it, and a spring pressed locking piece pivotally secured to said plug and having an eccentrically disposed projecting portion normally engaging the wall of the cup for locking said plug against movement therefrom, said locking piece having a part to be engaged by said tool for moving said piece to its inoperative position; substantially as set forth.

4. A grease-cup having a female thread on its inner cylindrical wall, a screw-plug to enter the cup and engage said thread and having polygonally shaped means for receiving a tool to operate it, and an eccentrically mounted spring pressed locking piece carried by the plug and having a projecting portion normally engaging the wall of the cup for locking the plug against movement therefrom, said locking-piece being in the form of an open frame and normally obstructing the application of the said tool to the plug and being adapted to be moved to its inoperative position by the act of applying the tool to the plug; substantially as set forth.

5. A grease cup having a female thread on its inner cylindrical wall, a screw-plug to enter the cup and engage said thread and having a socket to receive a tool for operating it, and an eccentrically mounted spring-pressed locking-piece carried by the plug and having a projecting portion normally engaging the wall of the cup for locking the plug against movement therefrom, said locking-piece being in the form of an open frame and normally obstructing the application of the said tool to the plug and being adapted to be moved to its inoperative position by the act of applying the tool to the plug; substantially as set forth.

6. A grease-cup having a female thread on its inner cylindrical wall, a screw-plug to enter the cup and engage said thread, and a spring-pressed locking piece carried by the plug and having a projecting portion normally engaging the wall of the cup for locking the plug against movement therefrom; said locking-piece being an eccentric and by reason thereof normally positively preventing any reverse movement of said plug; substantially as set forth.

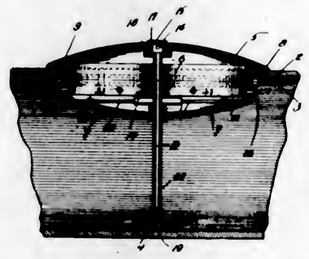
7. A grease-cup having a female thread on its inner cylindrical wall, a screw-plug to enter the cup and engage said thread, and an eccentrically mounted spring-pressed locking piece carried by the plug and having a projecting portion normally engaging the wall of the cup for locking the plug against movement therefrom, said plug having a lip extending over a part of said locking-piece in position to resist upward strains against the same; substantially as set forth.

8. A grease-cup having a female thread on its inner cylindrical wall, a screw-plug to enter the cup and engage said thread, and an eccentrically mounted spring-pressed locking piece carried by the plug and having a projecting portion normally engaging the wall of the cup for locking the plug against movement therefrom, said locking-piece having an elongated recess (33) near said projecting portion and said plug having a pin (34) within the outline of said recess and whose head extends partly over said piece; substantially as set forth.

9. A grease-cup having a female thread on its inner cylindrical wall, a screw-plug to enter the cup and engage said thread, and a spring-pressed locking plate pivotally secured at one point to said plug and at a diagonal point having a tooth to engage the wall of the cup for locking the plug against movement therefrom; substantially as set forth.

10. A grease-cup having a female thread on its inner cylindrical wall, a screw-plug to enter the cup and engage said thread, and a spring-pressed locking plate pivotally secured at one point to said plug and at a diagonal point having a tooth to engage the wall of the cup for locking the plug against movement therefrom, said plug having a seat for an operating tool and said plate normally obstructing the application of the tool to said seat but adapted to yield to the pressure of said tool; substantially as set forth.

855,890. LIFE-SAVING DEVICE FOR BOATS. JULES HUSSER, Pittsburg, Pa. Filed Mar. 20, 1907. Serial No. 363,370.

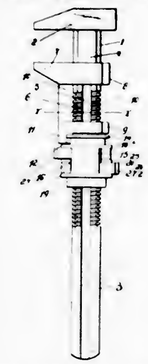


Claim.—1. A life saving device comprising an auxiliary vessel adapted to be mounted in the deck of a boat, said vessel consisting of a cap, plates detachably secured to said cap, a pneumatic tube surrounding said cap, a vertically disposed pipe mounted for rotation in said vessel and adapted to detachably hold said vessel in engagement with a boat, an enlarged head carried by said pipe and having openings formed therein communicating with said pipe, said openings being normally closed by said cap, and means within said vessel for rotating said pipe and simultaneously releasing said vessel and flooding the boat.

2. The combination with a boat, of an auxiliary vessel detachably secured thereto, said vessel consisting of a cap, bottom plates carried thereby, a pneumatic tube surrounding said cap, a pipe mounted in said vessel and detachably connected to said boat, means to rotate said pipe and simultaneously release said vessel and flood said boat.

3. The combination with a boat, of an auxiliary vessel detachably secured thereto, said vessel consisting of a cap, bottom plates carried thereby, a pipe mounted in said vessel and detachably connected to said boat, means to rotate said pipe and simultaneously release said vessel and flood said boat.

855,891. WRENCH. DORSEY P. KAHLE, Venus, Pa. Filed Nov. 17, 1906. Serial No. 343,835.



Claim.—1. In a wrench, the combination with a threaded shank having a fixed jaw, and longitudinally disposed groove formed therein, of an adjustable jaw slidably mounted upon said shank and having lugs engaging in the grooves of said shank, a revoluble sleeve detachably connected to said jaw, movable locking washers mounted in said sleeve and having threads to engage the threads of said shank, a retaining ring mounted between said washers, pins carried by said ring, and extending into said washers, springs arranged in said washers and engaging said pins for normally holding the threads of said washers in engagement with said shank, and protuberances carried by said washers, substantially as described.

2. In a wrench, the combination with a threaded shank having a fixed jaw, of an adjustable jaw slidably mounted upon said shank, a revoluble sleeve detachably connected to said jaw, movable locking washers mounted in said sleeve and having threads to engage the threads of said shank, a retaining ring mounted between said washers, pins carried by said ring and extending into said washers, springs arranged in said washers and engaging said pins for normally holding the threads of said washers in engagement with said shank, and protuberances carried by said washers, and means to prevent said jaw from rotating, substantially as described.

3. In a wrench, the combination with a threaded shank having a fixed jaw, of an adjustable jaw slidably mounted upon said shank, a revoluble sleeve carried by said jaw, locking washers mounted in said sleeve and having threads to engage said shank, a retaining ring interposed between said washers, means carried by said washers and egaging said ring for normally holding said washers in engagement with said shank, and means to prevent the rotation of said jaw.

4. In a wrench, the combination with a threaded shank having a fixed jaw, of an adjustable jaw slidably mounted upon said shank, a revoluble sleeve carried by said jaw, spring held locking washers mounted in said sleeve and normally engaging said shank, and means to retain said washers within said sleeve.

5. A wrench embodying a threaded shank, a fixed jaw, an adjustable jaw slidably mounted upon said shank, a revoluble sleeve connecting with said jaw, and spring held locking washers movably mounted in said sleeve and having threads to engage said threaded shank.

6. A wrench embodying a threaded shank, a jaw, an adjustable jaw slidably mounted upon said shank, a sleeve revolubly connected to said adjustable jaw, oppositely mov-

ing locking washers mounted in said sleeve and means for normally holding said washers in engagement with said shank.

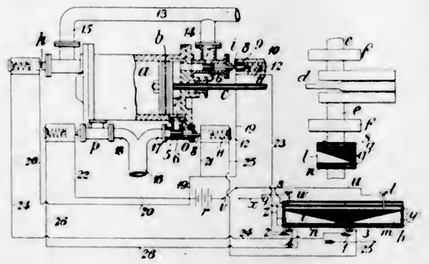
7. A wrench embodying a threaded shank, a jaw, an adjustable jaw slidably mounted upon said shank, oppositely moving, locking washers revolubly supported from said adjustable jaw and adapted to engage said shank, and means for normally holding said washers in engagement with said shank.

8. A gripping mechanism consisting of a sleeve, oppositely moving locking washers mounted in said sleeve, a retaining ring interposed between said washers, and means carried by said washers and engaging said ring to maintain said washers out of alinement with one another.

9. A gripping mechanism consisting of a sleeve, oppositely moving locking washers mounted in said sleeve, and means interposed between said washers and in said washers for normally holding said washers out of alinement.

10. A gripping mechanism consisting of oppositely moving locking washers suitably housed, and means interposed between said washers and in said washers for normally holding said washers out of alinement.

855,892. MEANS FOR OPERATING THE VALVES OF MOTIVE-POWER ENGINES. RAMSEY KENDAL, Darlington, England, assignor of one-half to J. Stone and Company, Limited, Deptford, England. Filed Sept. 18, 1905. Serial No. 278,951.

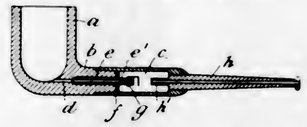


Claim.—1. A valve gear for motive power engines comprising in combination, a plurality of inlet valves, a plurality of exhaust valves, a plurality of electro-magnets each operatively connected with its respective inlet valve, a plurality of electro-magnets each operatively connected with its respective exhaust valve, a rotary cylinder, a supply contact device, a contact device for controlling the inlet valves, a stepped rear edge on said contract device, a contact device for controlling the exhaust valves, said devices being grouped and connected together on one half of the cylinder, a supply contact device, a contact device for controlling the inlet valves, a stepped rear edge on the last named contact device, a contact device for controlling the exhaust valves, the three last named devices being grouped and connected together on the other half of the said cylinder, sliding contact breakers for engaging the contact devices for the inlet valves, non-sliding contact breakers for engaging the various other contact devices, and means for alternately connecting the said supply devices with a source of electric energy, substantially as and for the purpose set forth.

2. A valve gear for motive power engines, comprising in combination, a plurality of inlet valves, a plurality of exhaust valves, a plurality of electro-magnets each operatively connected with its respective inlet valve, a plurality of electro-magnets each operatively connected with its respective exhaust valve, a rotary cylinder, two semi-cylindrical conductors around said cylinder, insulators between said conductors, a supply contact ring in contact with one of said conductors, a supply contact ring in contact with the other of said conductors, a contact device on one of said conductors for controlling inlet valves, a stepped rear edge on said contact device, a companion contact device for controlling exhaust valves, a contact device on the other of said conductors for controlling inlet valves, a stepped rear edge on the last named contact device, a companion contact device for controlling exhaust valves, sliding circuit breakers for engaging the contact devices for the inlet valves, non-sliding circuit breakers for engaging the various other contact devices, means for alternately connecting the said supply rings with a source of electric energy and means for producing relative movement between said sliding contact devices controlling the inlet valves and their respective circuit breakers, substantially as set forth.

3. A valve gear for motive power engines comprising in combination a plurality of inlet valves, a plurality of exhaust valves, a plurality of electro-magnets each operatively connected with its respective inlet valve, a plurality of electro-magnets each operatively connected with its respective exhaust valve, a rotary cylinder, contact devices on said cylinder for governing the circuits of the first named magnets, a stepped rear edge on said contact devices, contact devices on said cylinder for governing the circuits of the secondly named magnets, circuit breakers engaging the first named contact devices, a toothed gear for producing relative movement between said circuit breaker and said first named device, a shaft for driving said toothed gear, a hand wheel for operating said shaft, a scale for indicating the movement of said handle and graduated in a manner corresponding to said stepped edge, and circuit breakers engaging the secondly named contact devices, substantially as and for the purpose set forth.

855,893. TOBACCO-PIPE. PATRICK A. KENNA, Sydney, New South Wales, Australia. Filed Feb. 26, 1906. Renewed May 2, 1907. Serial No. 371,470.

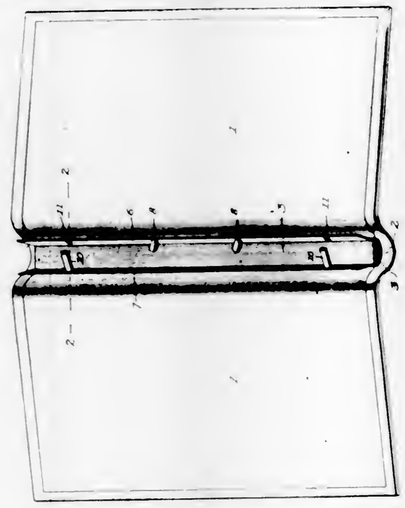


Claim.—A tobacco pipe comprising a bowl, a stem for the bowl having a bore there through communicating with the chamber of the bowl, a tube fitted into the bore of the stem, a collar for the tube intermediate the ends thereof engaging the end of the stem, a baffle supported on the outer end of the tube and overhanging the bore thereof to deflect the current of the smoke, a saliva chamber fitted on the stem and inclosing the tube and baffle and a mouth piece fitted to the saliva chamber having a tube projecting thereinto.

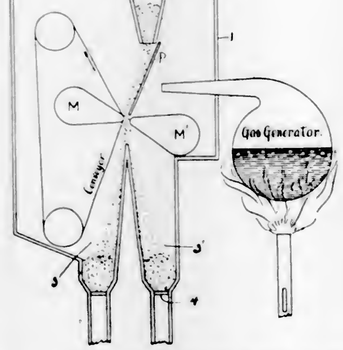
855,894. ADJUSTABLE BOOKBINDER. MAHLON Z. KIRK, Denver, Colo., assignor to The John C. Winston Company, Philadelphia, Pa. Filed June 18, 1906. Serial No. 322,239.

Claim.—1. In an adjustable binder for books, the combination with the covers, of the back strip; the clamping strips; the pins on one of said strips, the interiorly threaded stems on the other strip, in line with perforations in the strip having the pins; clamping screws which pass through said perforations into said threaded stems, and rings connecting said clamping strips with said back strip.

2. In an adjustable binder for books, the combination with the cover adapted to hold a plurality of perforated leaves, of a back strip secured to the said cover, clamping strips hinged to said back strip; hollow posts on one of said clamping strips, which are interiorly threaded; screws which pass through perforations in the opposite strip and into the threaded posts whereby said strips may be held adjacent to and away from each other, said posts passing through the perforated leaves, and pins on the perforated clamping strip of less length than the threaded pins, which also enter perforations in the leaves and prevent movement of the leaves, when the threaded posts are out of contact with the opposite binding strip.



855,895. METHOD OF SEPARATING MINERALS. ADOLPHE F. KIRSCHNER, Pittsburg, Pa. Filed Jan. 17, 1907. Serial No. 352,769.

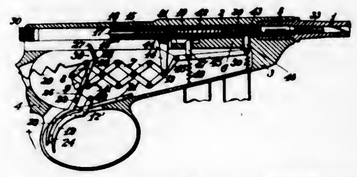


Claim.—1. The herein described method of separating minerals from their ores, which consists in suspending the ore within an air-tight space charged with a gaseous medium having lower permeability than atmospheric air, and subjecting the ore while in suspension within said charged space to electro-magnetic action.

2. The herein described process for separating minerals from their ores, which consists in charging an air-tight chamber with a gaseous medium having a lower permeability than atmospheric air, suspending the ore within the charged chamber, and subjecting the ore while in suspension to electro-magnetic action.

3. The herein described process for separating minerals from their ores, which consists in maintaining the ores in suspension within a chamber sealed from the atmosphere, charging the said chamber with a gaseous medium having lower permeability than atmospheric air, and subjecting the ore while in suspension in said medium to electromagentic action.

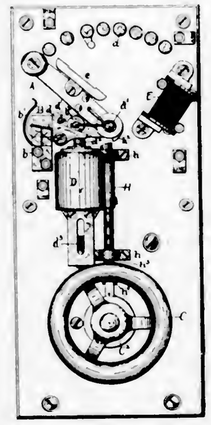
855,896. MAGAZINE-RIFLE. JOSEF LAUBER, Vienna, Austria-Hungary. Filed Apr. 19, 1906. Serial No. 312,545.



Claim.—1. In a magazine fire-arm having lateral cartridge feed trigger mechanism and a sliding breech block, the combination of an arm on the breech block extending into the casing containing the trigger mechanism, a lazy tongs connection from said arm to the trigger mechanism and a spring to return the parts to their initial position after the trigger has been released.

2. In a magazine fire-arm having lateral cartridge feed, a trigger mechanism and sliding breech block, the combination of means for forcing the breech block forward when the trigger is pulled back, means for arresting the firing pin before the breech block has attained its forward position, means for locking the breech block in its forward position consisting of vertically movable bolts springs to normally retain them out of engagement, and a bell crank lever operated by the forward movement of the block to force said bolts up to engage the breech block and lock the same, means for releasing the firing pin when the breech block has been locked and means for returning the parts to their initial position as soon as the trigger has been released.

855,897. CONTROLLER FOR ELECTRIC MOTORS AND SIMILAR DEVICES. HARRY W. LEONARD, Bronxville, N. Y. Filed July 11, 1903. Serial No. 165,061.



Claim.—1. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position and which arm is designed to be held in its final position, an automatic release for said arm, which responds when the supply voltage falls below a certain amount, and means for preventing the starting of the motor when the field rheostat is in a position to cause a weakened field.

2. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position and which arm is designed to be held in its final position, an automatic release for said arm which responds when the supply voltage falls below a certain amount, and mechanical means for preventing the starting of the motor when the field rheostat is in a position to cause a weakened field.

3. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, and which arm is designed to be held in its final position, an automatic release for said arm which responds when the supply voltage falls below a certain amount, and means for holding said arm against movement from the initial position when the field rheostat is in a position to cause a weakened field.

4. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position and which arm is designed to be held in its final position, an automatic release for said arm which responds when the supply voltage falls below a certain amount, and interlocking means between said arm and the operating device of the field rheostat, whereby said arm is held at the initial position when the field rheostat is in a position to cause a weakened field.

5. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, electro-magnetically controlled means for holding said arm in its final position, and which means responds to abnormal variations in the motor circuit to effect the release of said arm, and means for preventing the starting of the motor when the field rheostat is in a position to cause a weakened field.

6. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, electro-magnetically controlled means for holding said arm in its final position, and which means responds to abnormal variations in the motor circuit to effect the release of said arm, and mechanical means for preventing the starting of the motor when the field rheostat is in a position to cause a weakened field.

7. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, electro-magnetically controlled means for holding said arm in its final position, and which means responds to abnormal variations in the motor circuit to effect the release of said arm, and means for holding said arm against movement from the initial position when the field rheostat is in a position to cause a weakened field.

8. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, electro-magnetically controlled means for holding said arm in its final position, and which means responds to abnormal variations in the motor circuit to effect the release of said arm, and interlocking means between said arm and the operating device of the field rheostat, whereby said arm is held at the initial position when the field rheostat is in a position to cause a weakened field.

9. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, an electro-magnet for holding said arm in its final position, and which magnet releases said arm when the supply voltage falls below a certain amount, and means for preventing the starting of the motor when the field rheostat is in a position to cause a weakened field.

10. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, an electro-magnet for holding said arm in its final position and which magnet releases said arm when the supply voltage falls below a certain amount, and mechanical means for preventing the starting of the motor when the field rheostat is in a position to cause a weakened field.

11. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, an electro-magnet for holding said arm in its final position, and which magnet releases said arm when the supply voltage falls below a certain amount, and means for holding said arm against movement from the initial position when the field rheostat is in a position to cause a weakened field.

12. The combination with a motor having a shunt field winding, a rheostat in series with such field winding, a starting rheostat, means tending to move the contact arm thereof toward the initial position, an electro-magnet for holding said arm in its final position, and which magnet releases said arm when the supply voltage falls below a certain amount, and interlocking means between said arm and the operating device of the field rheostat, whereby said arm is held at the initial position when the field rheostat is in a position to cause a weakened field.

13. The combination of a motor starting switch and a motor field rheostat with means whereby the starting switch cannot be operated to start the motor except when the field rheostat is in certain positions.

14. The combination of a motor starting switch and a motor field rheostat with mechanical means whereby the starting switch cannot be operated to start the motor except when substantially all the resistance of the field rheostat is out of circuit.

15. The combination of a motor starting switch and a motor field rheostat with interlocking means between the contact arm of the former and the operating device of the latter, whereby the starting switch cannot be operated to start the motor except when substantially all the resistance of the field rheostat is out of circuit.

16. The combination of a motor starting rheostat and a motor field rheostat with means for holding the contact arm of the starter against movement from the initial position when the field rheostat is in a position to cause a weakened field.

17. The combination of a motor starting rheostat and a motor field rheostat with mechanical means for holding the contact arm of the starter against movement from the initial position when the field rheostat is in a position to cause a weakened field.

18. The combination of a motor starting rheostat and a motor field rheostat with interlocking means between the contact arm of the former and the operating device of the latter for holding the contact arm of the starter against movement from the initial position when the field rheostat is in a position to cause a weakened field.

19. The combination with an electric motor having a field winding supplied from a constant electro-motive force source, of a rheostat for varying the field strength of the motor to vary the speed, a rheostat in series with the armature for starting the motor, and means whereby the starting current cannot be passed through the armature except when the resistance in the field circuit is practically all cut out, so that the motor field is fully excited when the motor starts.

20. The combination with an electric motor having a field winding supplied from a source of electro-motive force, of a field rheostat for varying the strength of the field, a rheostat in series with the armature, a no-voltage release device for protecting the armature circuit in case of no-voltage, an overload circuit breaker for protecting the armature circuit in case of excessive current, means for preventing the closure of the circuit breaker when there is no resistance in the armature circuit, and means for preventing the starting up of the motor armature except when the motor field is at a proper strength.

21. The combination of a field rheostat for varying the speed of a motor upon a constant electromotive force circuit, and means for preventing the passage of the starting current through the motor armature when the motor field rheostat is in a certain position.

22. The combination with a motor operating upon a constant electromotive force circuit, means for weakening the field strength of the motor for the purpose of increasing its speed, and means for preventing the starting up of the motor when the field is in the weakened condition.

23. The combination with a direct current motor operating upon a constant electromotive circuit, means for varying the speed of the motor, separate means for starting the motor, and means for preventing the starting of the motor when the speed varying means is in the position corresponding to the maximum speed.

24. In a motor controller, the combination of a rheostat designed to control the armature circuit, a rheostat designed to control the field circuit, and means whereby the armature rheostat is held to prevent the closure of the armature circuit under certain predetermined conditions.

25. In a motor controller, the combination of a rheostat designed to control the armature circuit, a rheostat designed to control the field circuit, and interlocking means between the two rheostats whereby the armature rheostat is held to prevent the closure of the armature circuit when the field rheostat is in a certain predetermined position.

26. In a motor controller, the combination of a rheostat designed to control the armature circuit, a rheostat designed to control the field circuit, an automatic circuit breaker responding to abnormal conditions in the circuit, and means whereby the circuit breaker is held against closure until the field rheostat is adjusted so as to give the motor a field of proper strength to produce the starting torque without undue sparking.

27. In a motor controller, the combination of a rheostat designed to control the armature circuit, a rheostat designed to control the field circuit, an automatic circuit breaker responding to abnormal conditions in the circuit, and interlocking means between the circuit breaker and the field rheostat whereby the circuit breaker is held against closure until the field rheostat is adjusted so as to give the motor a field of proper strength to produce the starting torque without undue sparking.

28. The combination of a motor having a field winding energized by a current independent of its armature current, means for controlling the current in said winding, and means adapted to start, stop and vary the speed of the motor, said two means being independently movable but functionally connected mechanically.

29. The combination with motor having a shunt field winding, of means for controlling the field circuit, means for controlling the armature circuit, and means so arranged that the armature circuit cannot be made until the field circuit controlling means is in a certain position.

30. The combination with a motor having a shunt field winding, of a variable resistance in the field circuit, means for varying the said resistance, means for controlling the armature circuit, and interlocking means so arranged that the armature circuit cannot be made until the field is at its strongest.

31. The combination with a motor having a shunt field winding, of a resistance in the field circuit, said resistance being capable of variation, a regulating handle adapted to vary said resistance, means for controlling the armature circuit, and means for interlocking said handle and armature circuit controlling means and preventing the closing of the armature circuit until the motor shunt field has its greatest field strength.

32. The combination with a motor having a field winding energized by a current independent of the armature current, means for affecting the current in said field circuit, means for affecting the current in the armature circuit, and means so arranged that the armature starting current cannot be passed through the armature until the field circuit controlling means are in a desired position.

33. The combination of a motor having a shunt field winding, an overload magnetic circuit breaker, a spring actuated resistance controlling arm, a no-voltage device, said device being responsive solely to the line voltage and independent of the current through the motor armature or field, and a field rheostat so arranged that the motor cannot be started in a weak field.

34. The combination with a motor and a circuit controller comprising means responsive to no voltage which is not in series with the armature current, and means responsive to overload current, of field controlling means functionally related to said circuit controller.

35. The combination with a motor and a circuit controller comprising means responsive to no voltage which is not in series with the armature current, and means responsive to overload current, of field controlling means functionally related to said controller mechanically.

36. The combination of an electric motor and a constant electromotive force supply circuit, said motor having a field winding energized by a current independent of the current through its armature, a no-voltage protective device responsive to the line voltage solely and independent of the current through the motor field or armature and which upon no voltage responds and protects the armature against the re-establishment of the line electromotive force, and an independent overload circuit breaker functionally related mechanically to the no-voltage device so that the circuit breaker can be closed only when the no-voltage device is in a protective position.

37. The combination of an electric motor and a constant electromotive force supply circuit, said motor having a field winding energized by a current independent of the armature current, a circuit in parallel with the motor, said circuit containing an electro-responsive device and a relatively high resistance, said electro-responsive device responding to no voltage to release a spring actuated device which when released, moves and protects the motor armature circuit against excessive current when the line electromotive force is re-established, and an independently acting protective device responsive to overload current in the armature circuit.

38. The combination of an electric motor and a constant electromotive force supply circuit, said motor having a field winding energized by a current independent of the armature current, a circuit in parallel with the motor, said circuit containing an electro-responsive device and a relatively high resistance, said electro-responsive device responding to no voltage to release a spring actuated device which when released, moves and protects the motor armature circuit against excessive current when the line electromotive force is re-established, and functionally related means for varying the motor field current.

39. The combination of an electric motor and a constant electromotive force supply circuit, said motor having a field winding energized by a current independent of the armature current, a circuit in parallel with the motor, said circuit containing an electro-responsive device responding to no voltage to release a spring actuated device which when released, moves and protects the motor armature circuit against excessive current when the line electromotive force is re-established, means for varying the field strength, and means which insures starting the motor under a field of predetermined strength.

40. The combination of an electric motor having a shunt field winding, an electro-responsive circuit controlling device responsive to overload current, an electro-responsive circuit controlling device responsive to no voltage, and a device for varying the field strength of the motor, said latter device being functionally related to at least one of said controlling devices.

41. The combination of an electric motor having a field winding energized by a current which is independent of the armature current, mutually independent means for protecting the motor against occurrence of no voltage and overload respectively, and means for varying the current in said field winding, said latter means being functionally related mechanically to said protecting means.

42. The combination of an electric motor, a no-voltage protective device responsive to the line voltage solely and independent of the current in the motor field or armature, an overload device responsive to predetermined overload current through the motor, and a speed controlling rheostat for affecting the field strength of the motor functionally related to at least one of said devices.

43. The combination of an electric motor, a no-voltage protective device responsive to the line voltage solely and independent of the current in the motor field or armature, and functionally related means for varying the speed of the motor by varying the field strength of the motor.

44. The combination of an electric motor, an electromagnetic circuit breaker in series with the armature of the motor, a rheostat for controlling the field strength of the motor, said circuit breaker and rheostat being functionally related mechanically.

45. The combination with an electric motor, of means for affecting the current in one element thereof, means for affecting the current in the other element thereof, said two means being correlated and each being independently movable of the other under certain conditions, and a device for controlling one of said means under certain conditions, said device being responsive to a current other than the motor armature current.

46. The combination of a device comprising a resistance for controlling the energy in one element of an electric motor, a second device comprising a different resistance for controlling the energy in the other element of the motor, said devices being functionally related to prevent their improper operation, and electro-magnetic means for protecting one element of the motor against two different abnormal conditions.

47. The combination of an electric motor and a constant electromotive force supply circuit, said motor having a field winding energized by a current independent of the armature current, and means for protecting the motor against no-voltage and overload current, said no-voltage means comprising a circuit in parallel with the motor, and said circuit containing an electro-responsive device and a relatively high resistance, and said overload means comprising a device in series with the armature current.

48. The combination of an electric motor having a field winding energized by current which is independent of the armature current, a controlling device in series with the motor armature, mutually independent means for protecting the motor against occurrence of no-voltage and overload respectively, and field varying means for speed variation, said latter means being protectively related to the said device in series with the motor armature.

49. The combination of supply mains, a circuit across said mains containing one element of an electric motor and a controlling device, a second circuit across said mains containing the other element of the motor and a controlling device therefor, and a third circuit across said mains containing a protective device for the motor, said protective device being functionally related to one of said controlling devices and said controlling devices being functionally related to each other.

50. The combination of a motor having a field winding energized independently of its armature current, controlling means for varying the effective electromotive force on the motor armature, independently movable correlated means for varying the effective electromotive force on said field winding, and means for protecting the motor armature against no-voltage and against overload current.

51. The combination of an electric motor, means for varying the speed of the motor by varying the effective electromotive force on the motor armature and on a field winding of the motor, and an electro-responsive protective device, said device being energized by a current independent of the current in the motor armature or field.

52. The combination of an electric motor, means for varying the speed of the motor by varying the effective electromotive force on the motor armature and on a field winding of the motor, an electro-responsive protective device, said device being energized by a current independent of the current in the armature or field, and an electro-responsive protective device in series with the motor armature.

53. The combination of an electric motor, speed controlling means affecting the armature winding, speed controlling means affecting the field winding, and electro-responsive means for protecting the motor upon occurrence of overload and no-voltage, said no-voltage means being responsive to a current other than that passing through the motor armature winding or that passing through the motor field winding.

54. The combination of an electric motor, means for varying the speed of the motor by varying the effective electromotive force on its armature winding, cor-related independently acting means for varying the speed by varying the effective electromotive force on its field winding, and protective means responsive to abnormal electromotive force on the motor armature and to abnormal current through the motor armature.

55. The combination of an electric motor, a no-voltage protective electro-responsive winding, a high resistance in series therewith and not in series with the motor armature, and an electro-responsive winding in series with the motor armature which acts independently of the no-voltage winding to protect the motor armature against overload current.

56. The combination of an electric motor, means for varying a resistance in series with the motor armature, functionally related means for varying the field strength of the motor, and independently movable functionally related means for protecting the motor armature circuit against overload current.

57. The combination of an electric motor, means for varying a resistance in series with the motor armature, functionally related means for varying the field strength of the motor, and independently movable functionally related means for protecting the armature against overload current and against no-voltage.

58. The combination of an electric motor, means for varying the effective electromotive force upon the terminals of one element of the motor, electro-responsive means not in series with either element of the motor for protecting the motor against conditions due to failure of supply electromotive force, and an independent electro-responsive means for protecting the motor against overload.

59. The combination of a translating device, a controlling resistance having a movable element, two independently movable functionally related switches in series with each other, and means whereby the said element must be in a proper position before the circuit can be closed through said two switches.

60. In combination, a movable member, a resistance controlled thereby, a second movable member, a resistance controlled by the latter member, means rendering the former member ineffective in controlling the resistance thereof while the latter member occupies predetermined positions, and a protective electro-responsive winding in series with the latter member.

61. In hand operated motor controlling apparatus, the combination of two movable switch elements in series with each other and with the motor armature, means protectively related to said elements for preventing a damaging current to flow through the armature due to improper manipulation by the operator, at least one of said elements being automatically and protectively moved in response to overload current through the motor armature, a third movable element for controlling the strength of the magnetic field of the motor, and means for functionally relating said field controlling element and at least one of said armature controlling elements for insuring the movement of the field controlling element to a proper position before the starting current can be passed through the motor armature.

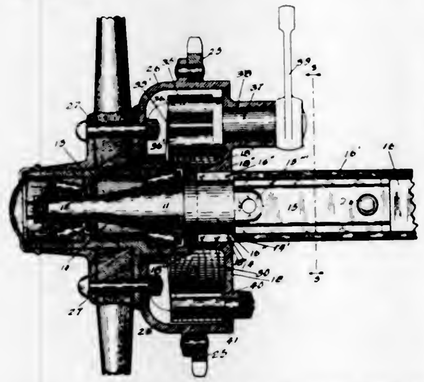
62. In hand operated motor controlling apparatus, the combination of two movable elements, one of said elements being adapted to control the armature circuit and the other the field circuit of the motor, means for protectively cor-relating said elements for insuring proper field strength before the armature starting current can be passed through the motor, and a no-voltage protective means comprising a magnetic winding connected in a circuit independent of the armature or field circuit of the motor.

63. In hand operated motor controlling apparatus, the combination of two movable elements, one of said elements being adapted to control the armature circuit and the other the field circuit of the motor, means for protectively cor-relating said elements for insuring proper field strength before the motor armature starting current can be passed through the motor, and a no-voltage protective means comprising a magnetic winding connected in a circuit independent of the armature or field circuit of the motor, the armature circuit, field circuit and the circuit containing the no-voltage winding being all in parallel with each other and the current to all three circuits being controlled by at least one of said elements.

64. The combination of an electric motor having a field winding energized independently of its armature current, a no-voltage protective device for the motor armature energized independently of the armature or field current of the motor, and two resistance controlling movable elements, one adapted to control the motor armature and the other adapted to control the motor field, said two elements being protectively cor-related.

65. The combination with an electric motor, of means for gradually increasing the electromotive force upon the armature while maintaining practically the full electromotive force upon the field winding and for gradually decreasing the electromotive force upon the field winding while maintaining practically the full electromotive force upon the armature, and means for protecting the armature upon occurrence of overload current, said latter means comprising an automatic switch in series with the armature and protectively related as to its closure to the first named means, and a no-voltage device in which the restraining means is unaffected by operative variations in the electromotive force on the motor field winding.

855,898. WHEEL SPINDLE AND AXLE. THOMAS J. LINDSAY, Indianapolis, Ind. Filed Apr. 9, 1906. Serial No. 310,729.



Claim.—1. The combination, with an I-beam axle having its web projected at the end, of a wheel spindle having a bifurcated inner end adapted to embrace the web of the axle and projected between the flanges thereof, a brake-supporting member mounted upon the spindle and provided with keyways adapted to receive the projected web of the axle, means for securing the spindle and brake-support against axial displacement, and a brake carried by said brake support.

2. The combination, with an axle structure having a medial web and overhanging flanges, of a wheel spindle having an inner end fitted between said overhanging flanges, a brake-support mounted on the spindle, means for securing the spindle and brake-support against axial displacement, and a brake carried by said brake-support.

3. The combination, with an axle structure having a medial web and overhanging flanges, of a wheel-spindle having an inner end fitted between said overhanging flanges, and the projected end of the medial web of the axle structure projected radially from the spindle, a brake support mounted on the spindle and having a keyway adapted to receive the radially projecting portion of the axial web, means for securing the spindle and brake support against axial displacement, and a brake carried by said brake support.

4. The combination, with an axle structure having a medial web and overhanging flanges, of a wheel spindle having a spindle portion at one end, an intermediate body, and a pair of parallel fingers adapted to embrace the medial web of the axial structure, means for holding the spindle structure on the axle structure against longitudinal displacement, a brake-supporting member mounted on the medial portion of the spindle structure, and a brake carried by said brake-support.

5. The combination, with an axle structure having a medial web and overhanging flanges, of a wheel spindle having a spindle portion at one end, an intermediate body, and a pair of parallel fingers adapted to embrace the medial web of the axle structure and lie between the overhanging flanges of the axle structure, means for holding the spindle structure on the axle structure against longitudinal displacement, a brake-supporting member mounted on the medial portion of the spindle structure and having an ear projecting alongside one of the web embracing fingers, and a brake carried by said brake support.

6. The combination, with an axle structure having a medial web and overhanging flanges, of a wheel spindle having a spindle portion at one end, an intermediate body, and a pair of parallel fingers adapted to embrace the medial web of the axial structure and lie between the overhanging flanges of the axle structure, means for holding the spindle structure on the axle structure against longitudinal displacement, a brake-supporting member mounted on the medial portion of the spindle structure, a brake carried by said brake-support, a rock shaft journaled in the brake support and provided with a pair of pins parallel with the rock shaft, a split brake ring having its end journaled upon said parallel pins and supported thereby, and interengaging means between the brake ring and brake-support for holding the brake ring against swing but permitting radial movement thereof.

7. The combination, with an I-beam axle structure having the flanges removed from its end to form a projecting web, of a spindle structure having a spindle at one end, an intermediate body, and a pair of parallel fingers adapted to embrace the web of the I-beam and lie between the overhanging flanges thereof, the intermediate portion of the spindle structure being slit in alinement with the space between the fingers to receive the projecting web of the I-beam; a brake-support mounted on the intermediate portion of the spindle structure, and a brake carried by said brake-support.

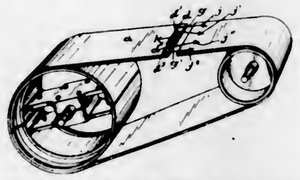
8. The combination, with an I-beam axle structure having the flanges removed from its end to form a projecting web, of a spindle structure having a spindle at one end, an intermediate body of less diameter than the width of the projecting web of the axle structure, and a pair of parallel fingers adapted to embrace the web of the I-beam and lie between the overhanging flanges thereof, the intermediate portion of the spindle structure and provided with keyways to receive the projecting edges of the web of the I-beam, and a brake carried by said brake support.

9. The combination, with an I-beam axle structure having the flanges removed from its end to form a projecting web, of a spindle structure having a spindle at one end, an intermediate body, and a pair of parallel fingers adapted to embrace the web of the I-beam and lie between the overhanging flanges thereof, the intermediate portion of the spindle structure being slit in alinement with the space between the fingers to receive the projecting web of the I-beam; a brake-support mounted on the intermediate portion of the spindle structure, a rockshaft journaled in said brake support and provided on its inner end with a pair of parallel fingers, a split brake ring provided with journals in its ends adapted to receive said parallel pins, and a pin carried by the brake support and extending into a radial slot formed in the brake ring opposite the pin bearings.

10. The combination, with an I-beam axle structure having the flanges removed from its end to form a projecting web, of a spindle structure having a spindle at one end, an

intermediate body of less diameter than the width of the projecting web of the axle structure, and a pair of parallel fingers adapted to embrace the web of the I-beam and lie between the overhanging flanges thereof, the intermediate portion of the spindle structure being slit in alinement with the space between the fingers to receive the projecting web of the I beam; a brake-support mounted on the intermediate portion of the spindle structure and provided with keyways to receive the projecting edges of the web of the I-beam, a rockshaft journaled in said brake support and provided on its inner end with a pair of parallel fingers, a split brake ring provided with journals in its ends adapted to receive said parallel pins, and a pin carried by the brake support and extending into a radial slot formed in the brake ring opposite the pin bearings.

855,899. TENSION-REGULATING MEANS FOR BELTS. FREDERICK D. MERCER, Toronto Junction, Ontario, Canada. Filed Dec. 14, 1904. Renewed May 2, 1907. Serial No. 371,511.



Claim.—1. A tension regulating means comprising a belt, a tension regulator, means connected with the tension regulator and connecting one part of the belt to another part, means for attaching the connecting means at one place to the belt, and other means for slidably attaching the connecting means at another place disposed with regard to the first mentioned place lengthwise of the belt, and located between the tension regulator and the first mentioned means of attachment.

2. A tension regulating means comprising a belt, a tension regulator, means connected with the tension regulator and connecting one part of the belt to another part, said connecting means being attached at one place to the belt, and slidably attached to the belt at another place disposed with regard to the first mentioned place lengthwise of the belt, said last mentioned place being intermediate the tension regulator and the first mentioned place of attachment.

3. A tension regulating means comprising a belt, a tension regulator, means connected with the tension regulator and connecting one part of the belt to another part, means for attaching the connecting means at one place to the belt and arranged to adjust the length of the connecting means, other means for slidably attaching the connecting means to the belt at another place disposed with regard to the first mentioned place lengthwise of the belt, said last mentioned means being located between the tension regulator and the first mentioned means of attachment, and means for limiting the extending movements of the tension regulator.

4. A tension regulating means comprising a belt, an extensible and contractile member, means connected with the extensile and contractile member and connecting one part of the belt to another part, means for attaching the connecting means at one place to the belt, other means for slidably attaching the connecting means to the belt at another place disposed with regard to the first mentioned place lengthwise of the belt, said last mentioned means being located between the extensile and contractile member and the first mentioned means of attachment, and means for adjusting the connecting means.

5. A tension regulating means comprising a belt, a tension regulator, means connected with the tension regulator and connecting one part of the belt to another part, means for attaching the connecting means at one place to the belt, and other means for slidably attaching the connecting means to the belt at another place disposed with regard to the first mentioned place lengthwise of the belt, and located between the tension regulator and the first mentioned means of attachment, and means for limiting the extending movements of the tension regulator.

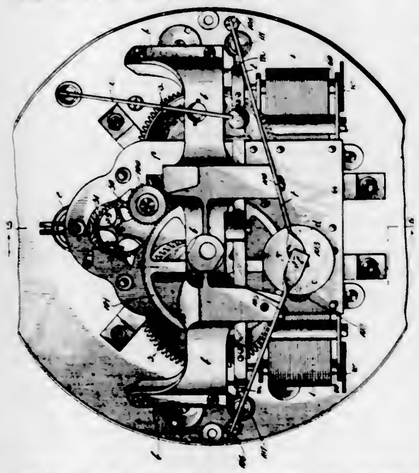
6. A tension regulating means comprising a belt, a tension regulator, means connected with the tension regulator and connecting one part of said belt to another part, means for attaching the connecting means at one place to the belt and arranged to adjust the length of the connecting means, other means for slidably attaching the connecting means to the belt at another place disposed with regard to the first mentioned place lengthwise of the belt, said last mentioned means being located between the tension regulator and the first mentioned means of attachment, and means for limiting the extending movements of the tension regulator.

7. A tension regulating means comprising a belt, a tension regulator disposed transversely to the length of the belt and intermediate its side edges, connecting means connected with the tension regulator, fastening means for adjustably attaching the connecting means at one place to the belt, and other means for slidably attaching the connecting means to the belt, said last mentioned means of attachment being located intermediate the tension regulator and first mentioned means of attachment.

8. A tension regulating means comprising a belt, a tension regulator disposed transversely to the length of the belt, connecting means connected with the ends of the tension regulator, fastening means for attaching the connecting means at one place to the belt and other means for slidably attaching the connecting means to the belt intermediate the tension regulator and the first mentioned means of attachment, said last mentioned means of attachment being arranged to limit the extending movement of the tension regulator.

9. A tension regulating means comprising a belt, a tension regulator disposed transversely to the length of the belt, connecting means connected with the ends of the tension regulator, fastening means for attaching the connecting means at one place to the belt and other means for slidably attaching the connecting means to the belt intermediate the tension regulator and the first mentioned means of attachment, said last mentioned means of attachment being arranged to limit the extending movement of the tension regulator, and means for adjusting the length of the connecting means.

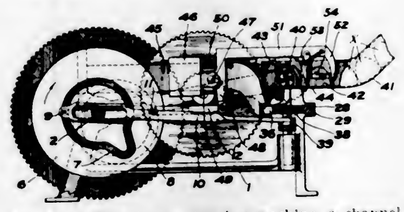
855,900. ELAPSED-TIME STAMP. BENJAMIN F. MERRITT, East Orange, N. J., assignor to New York Telephone Company, a Corporation of New York. Filed Aug. 23, 1905. Serial No. 275,359.



Claim.—1. In an elapsed time stamp, the combination with a spring driven, escapement controlled, multiplying time train, of a rotary time stamp, a substantially non-multiplying gear train transmitting the rotary movement of a rapidly moving element of the time train to said stamp, a spring connection interposed in the last mentioned train to prevent momentary retardation of the stamp from affecting the time train, and means for causing impressions to be made by the stamp.

2. In an elapsed time stamp, the combination with a motor driven time train controlled by an escapement, of two pairs of independently revolnble type wheels, a pad in position for printing from either pair, a substantially non-multiplying gear train driving said type wheels from a rapidly rotating element of said time train, and a spring connection in said non-multiplying train to permit constant movement of the preceding gears and interrupted movement of the stamps.

855,901. BUTTON-TURNING MACHINERY. SAMUEL O. MCMASTER, Rochester, N. Y. Filed Apr. 24, 1906. Serial No. 313,407.



Claim.—1. In a button turning machine, a channel for guiding a series of button blanks to a chucking position, a feeding arm having a jaw, means for oscillating said arm to pass said jaw over a blank in said channel and to place it behind the blank, and means for reciprocating said arm for moving the blank along the channel to the chucking position and for returning the arm to engage another blank.

2. In a button turning machine, a channel for guiding a series of button blanks to a chucking position, a feeding arm having a fixed jaw for engaging a blank on one edge and an automatically adjusted jaw for engaging the blank on the other edge and for pressing said blank against said fixed jaw, means for oscillating said arm to pass said fixed jaw over a blank in said channel and to place it behind the blank and simultaneously to place said automatically adjusted jaw in front of said blank, and means for reciprocating said arm for moving the blank along the channel to the chucking position and for returning the arm to engage another blank.

3. In a button turning machine, a channel for guiding a series of button blanks to a chucking position, a feeding arm having a fixed jaw for engaging a blank on one edge and a spring actuated jaw for engaging the blank on the other edge for pressing said blank against said fixed jaw, means for oscillating said arm to pass said fixed jaw over a blank in said channel and to place it behind the blank and simultaneously to place said spring jaw in front of said blank, and means for reciprocating said arm for moving the blank along the channel to the chucking position and for returning the arm to engage another blank.

4. In a button turning machine, a channel for the button blanks, chucking means for said blanks, a reciprocatable support, a feeding arm pivoted to said support having means for engaging a blank on opposite edges, and means for oscillating said arm with reference to said support for engaging one blank at a time, and for reciprocating said arm and support together, for feeding the blanks one by one along the channel to the chucking position.

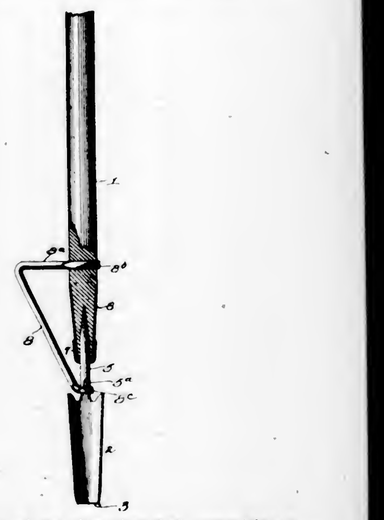
5. In a button turning machine, a channel for the button blanks, chucking means for said blanks, a reciprocatable support, a feeding arm pivoted to said support having means for engaging a blank on opposite edges, stops for said arm on each side of its pivot for limiting the oscillation of said arm upon the pivot, and means for oscillating said arm with reference to said support and for reciprocating said arm and support together, for feeding the blanks one by one along the channel to the chucking position.

6. In a button turning machine, a channel for the blanks having, at the delivery end, only a bottom and one side, a movable chuck part adapted to clamp a blank against said side of the channel, and a feeding arm having means for engaging a blank on opposite edges, means for oscillating said arm, and for reciprocating said arm for moving the blanks one by one along the channel to the chucking position, and means for operating said movable chuck part.

7. In a button turning machine, a channel for the blanks having, at the delivery end, only a bottom and one side, a movable chuck part adapted to clamp a blank against said side of the channel, a reciprocatable support, a feeding arm pivoted to said support having means for engaging a blank on opposite edges, and means for oscillating said arm with reference to said support and for reciprocating said arm and support together, for feeding the blanks one by one along the channel to the chucking position.

8. In a button turning machine, a channel for guiding a series of button blanks to a chucking position, a support, a feeding arm pivoted to said support having a jaw, means for oscillating said arm with reference to said support to pass the jaw over a blank in said channel and to place it behind the blank, and for reciprocating said support for moving the blank along the channel to the chucking positfon and for returning the arm to engage another blank and an adjustable stop for said arm for limiting its oscillations upon its pivot.

855,902. AGRICULTURAL IMPLEMENT. WILLIAM J. ORR, Westplains, Mo. Filed July 14, 1906. Serial No. 326,290.



Claim.—1. A tool of the class described, comprising a handle, a cutter mounted on the lower end thereof, and a foot-piece connecting the handle and cutter.

2. A tool of the class described, comprising a handle, a downwardly tapered metallic cylinder mounted on the handle, and a foot-piece connecting the handle and cylinder.

3. A tool of the class described, comprising a handle, an open-ended cylinder located at the lower end thereof, and an angular-shaped foot-piece engaging the handle and the cylinder.

4. A tool of the class described, comprising a handle, a metallic cylinder having a tang integral therewith and engaging the handle, and a foot-piece, one end of which engages the handle by being passed therethrough and clenched, and the other end thereof is secured to the tang.

5. A tool of the class described, comprising a handle, a split metallic cylinder, a tang integral with the cylinder and secured to the handle, and a foot-piece having one end thereof engaging the handle, and the other end flattened and tapered and bent around the tang.

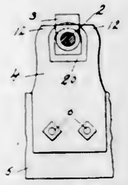
6. A tool of the class described, comprising a handle, a cutting cylinder attached to the handle, and a foot-piece mounted on the handle and the cylinder, so that both longitudinal and lateral movement of the cylinder with respect to the handle is prevented.

7. In a weeder, a handle, a cutter secured to the handle, and a foot-piece engaging both the cutter and the handle, the upper portion of the foot-piece passing through the handle, and the lower portion thereof engaging the tang directly over the cylinder.

8. In a tool of the class described, a handle, an open-ended cylinder arranged eccentrically to the handle and having a tang connected to the handle, and a foot-piece connected to the handle and the tang and arranged at one side of both.

9. In a device of the class described, the handle, in combination with the open-ended cylinder having its lower end constituting a cutting edge and a portion of its upper end terminating in a tang, said cylinder being connected to the handle by means of the tang so as to be disposed in eccentric relation thereto, and a foot-piece attached to the handle and the tang and arranged at right angles to the cylinder.

855,903. JOURNAL-BEARING. JAMES W. PACKER, Glens Falls, N. Y., assignor to The Sandy Hill Iron and Brass Works, Sandy Hill, N. Y., a Corporation of New York. Filed Aug. 22, 1906. Serial No. 331,616.



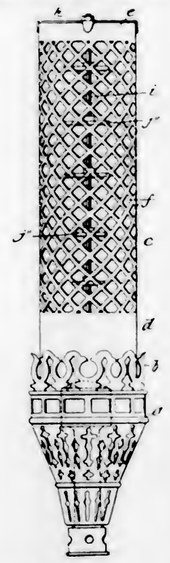
Claim.—1. The combination with a detachable bearing box having oppositely disposed trunnions; of a journal-bearing support having oppositely disposed uprights, each provided with a trunnion-groove, closed at one end and parallel with the axial line of the journal-bearing box; and means for locking the box upon its support.

2. The combination with a journal-bearing support; of a journal-bearing box insertible therein provided with a transverse external groove near its inner end; and a locking ring adapted to hang in the box-groove and bear against the box-support thereby locking the box within the support.

3. As an improved article of manufacture, a journal-bearing box having a pair of supporting trunnions located respectively on opposite sides of the journal-aperture and adapted to be inserted in supporting grooves; and a transverse locking groove.

855,904. HEATER. TRUMAN G. PALMER, Chicago, Ill. Filed Apr. 7, 1905. Serial No. 254,367.

Claim.—1. The combination with a gas fixture comprising a Bunsen burner, of a chimney-like heater consisting of an elongated metallic shell or cylinder supported by the fixture so as to surround the flame from the burner, the walls of the cylinder being perforated as described and provided with fins or flanges adjacent to the perforations, and the heater being provided with a baffle or flame deflector located centrally within and supported by the shell to cause the flame to burn in the outer part of the same adjacent the flanged and perforated walls.



2. The combination with a gas fixture comprising a Bunsen burner, of a chimney-like heater consisting of an elongated metallic cylinder or shell supported by the fixture so as to surround the flame from the burner, the shell having a series of longitudinal perforations, and inwardly projecting fins or flanges adjacent to said perforations, and a baffle or deflector having a series of radiating wings located within the shell.

3. The combination with a gas fixture comprising a Bunsen burner, of a chimney-like heater consisting of an elongated metallic cylinder or shell supported by the fixture so as to surround the flame from the burner, the shell having a series of longitudinal perforations, and inwardly projecting fins or flanges adjacent to said perforations, and a baffle or deflector having a series of longitudinally disposed radiating wings located within the shell.

855,905. SCREW-EYE DRIVER. HILBERT C. RHOADS, Chester, Pa. Filed July 14, 1906. Serial No. 326,293.



Claim.—1. A screw gripping and driving tool, comprising a pair of jaws, an adjustable clamping device operating in conjunction with said jaws to lock the jaws firmly in position, and separate means for holding the jaws together by a yielding pressure.

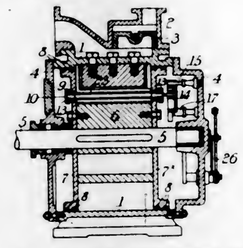
2. A screw gripping and driving tool, comprising a pair of clamping jaws having their clamping ends held yieldingly together, an adjusting bolt carried by said jaws, and a clamping lever mounted on said bolt and adapted to hold the clamping jaws rigid when operated.

3. A screw gripping and driving tool, comprising a pair of jaws having seats at their clamping ends, a spring bearing on one of the said jaws to normally hold them closed, an adjusting bolt connecting said jaws, and means for clamping the jaws together, said means being mounted on the bolt.

4. A screw gripping and driving device comprising the rigid jaw having a seat in its outer end, the resilient jaw having a corresponding seat in its outer end, means for holding the resilient jaw against the rigid jaw by a yielding pressure to admit of the temporary holding of an article in the seats of the jaws, and clamping means for locking the jaws together while the article is so held.

5. A screw gripping and driving tool, comprising a rigid jaw having a handle at one end a shoulder intermediate of its ends, a flexible jaw bowed outwardly from the rigid jaw and having one end seated against the shoulder of the other jaw, the outer ends of both jaws having corresponding seats, a spring yieldingly holding the jaws in engagement, and clamping means including a bolt passed through both jaws, a nut adjustable on one end of the bolt and engaging the flexible jaw, and a cam mounted on the opposite end of the bolt and engaging the other jaw.

855,906. ROTARY ENGINE. MAX SCHMIDT, on board of the hulk "Kronprinz," in Kiel-Wik, Germany. Filed Jan. 25, 1907. Serial No. 354,127.

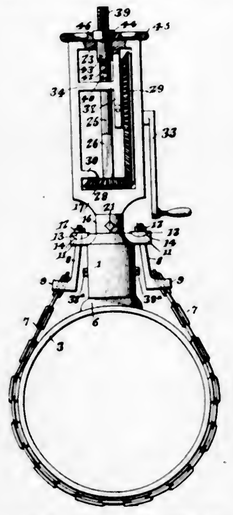


Claim.—1. A rotary engine comprising in combination a cylindrical casing, a drive shaft concentric in the aforesaid casing, head plates for closing the casing at its two ends affording bearings for the aforesaid drive shaft, a piston drum keyed on the drive shaft inside the cylinder casing leaving an annular space, disks fixed at the two ends of the piston drum laterally inclosing the aforesaid annular space, packing means at the peripheral edges of the drum disks adapted to insure a steam-tight joint at the inner surface of the cylinder casing, a plurality of piston wings pivotally connected at the periphery of the piston drum, reversible means for the supply and escape of the driving medium, a stationary transverse wall fixed at the inside of the cylinder casing insuring the action of the driving medium in the required direction of rotation, and means for governing the rotary movement of the aforesaid piston wings, substantially as set forth.

2. A rotary engine comprising in combination a cylindrical casing, a drive shaft concentric in the aforesaid casing, head plates for closing the casing at its two ends affording bearings for the aforesaid drive shaft, a piston drum keyed on the drive shaft inside the cylinder casing leaving an annular space, disks fixed at the two ends of the piston drum laterally inclosing the aforesaid annular space, packing means at the peripheral edges of the drum disks adapted to insure a steam-tight joint at the inner surface of the cylinder casing, a plurality of piston wings pivotally connected at the periphery of the piston drum, each pair of piston wings assuming in cross section a V-shape, or approximately so, reversible means for the supply and escape of the driving medium, a stationary transverse wall fixed at the inside of the cylinder casing insuring the action of the driving medium in the required direction of rotation, and means for governing the rotary movement of the aforesaid pivoted piston wings, substantially as set forth.

3. A rotary engine comprising in combination a cylindrical casing, a drive shaft concentric in the aforesaid casing, head plates for closing the casing at its two ends affording bearings for the aforesaid drive shaft, a piston drum keyed on the drive shaft inside the cylinder casing leaving an annular space, disks fixed at the two ends of the piston drum laterally inclosing the aforesaid annular space, packing means at the peripheral edges of the drum disks adapted to insure a steam-tight joint at the inner surface of the cylinder casing, a plurality of piston wings rotatable at the periphery of the piston drum, each pair of piston wings keyed on an axle suitably supported in bearings in the end plates of the piston drum, each axle of the piston wings penetrating through one of the said end plates, a cam on each projecting extremity of the axles, means, consisting of stationary and movable bolts, for governing the rotary movement of the aforesaid pivoted piston wings, reversible means for the supply and escape of the driving medium and a stationary transverse wall fixed at the inside of the cylinder casing insuring the action of the driving medium in the required direction of rotation, substantially as set forth.

855,907. TAPPING-MACHINE. IRA C. SHAW, Mount Pleasant, Pa., assignor of one-third to Charles Sandusky and one-third to William Price, Mount Pleasant, Pa. Filed June 30, 1906. Serial No. 324,237.

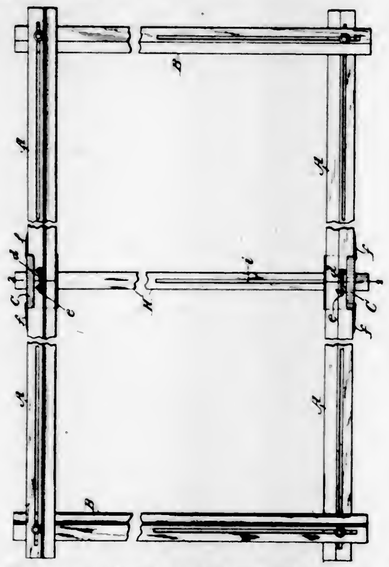


Claim.—A machine of the class described comprising a casing provided at the top with a vertical tubular extension having projecting studs, a vertical frame provided with a depending tubular neck fitted on the extension of the casing and provided with slots having longitudinal and transverse branches to receive the studs, and adjustable clamping means for locking the studs in the transverse branches of the slots, a shaft or stem slidable through the neck and the extension of the casing and provided with means for holding a tool, and means for rotating the shaft or stem.

855,908. CURTAIN-STRETCHER. HENRY E. SOUTHWORTH, Colchester, Vt., assignor to Porter Screen Manufacturing Company, Burlington, Vt. Filed Mar. 22, 1907. Serial No. 363,845.

Claim.—1. A curtain stretcher comprising a center brace; short sleeve-like sockets C secured to and carried by the center brace, adjustable one to and from the other thereon, and having each a longitudinal slot or opening on top adjoining the inner edge; sectional side rails com-

posed each of two separate and independent sections fitted and detachably held together end to end in said sockets and individually removable therefrom; and end rails adjustably secured to the side rails—as and for the purposes hereinbefore set forth.



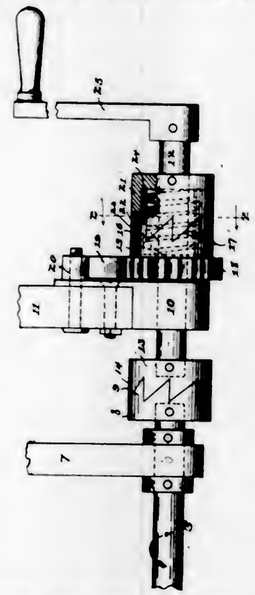
2. The center brace, and the sleeve-like sockets C secured to the same and provided with flanges *l* between which the ends of the center brace are received, substantially as hereinbefore set forth.

855,909. STARTING MECHANISM FOR HYDROCARBON-ENGINES. JACOB STAUB, Hinsdale, Ill., assignor of one-half to William Robbins, Hinsdale, Ill. Filed Aug. 28, 1905. Serial No. 276,147.

Claim.—1. In a starting mechanism for hydrocarbon engines, the combination with a clutch member fast on the engine shaft, of a rotatably mounted endwise movable starting shaft carrying a co-operating clutch member, and a pair of shaft-separating members mounted on said starting shaft and provided with co-operating cam surfaces whereby they are separated by a relative turning movement between them, one of said shaft-separating members being secured against both rotary and sliding movement on said starting shaft and the other being rotatably mounted on said starting shaft and provided with means preventing its rotation in one direction, substantially as described.

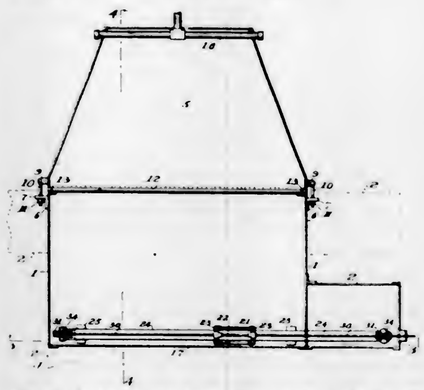
2. In a starting mechanism for hydrocarbon engines, the combination with a clutch member fast on one end of the engine shaft, of a rotatably mounted endwise movable starting shaft disposed in longitudinal alinement with said engine shaft and carrying a co-operating clutch member, a pair of shaft-separating collars mounted on said starting shaft and provided with co-operating cam surfaces whereby they are separated by a relative turning movement between them, one of said collars being secured against both rotary and sliding movement on the starting shaft and the other being rotatably mounted on said starting shaft and provided with means preventing its rotation in one direction, and a spring normally tending to disengage said collars, substantially as described.

3. In a starting mechanism for hydrocarbon engines, the combination with a clutch member fast on one end of the engine shaft, of a rotatably mounted endwise movable starting shaft disposed in longitudinal alinement with said engine shaft and carrying a co-operating clutch member, a shaft-separating clutch member loosely mounted on said starting shaft, an annular ratchet carried by said



shaft-separating clutch member, a detent co-operating with said annular ratchet to permit rotation of said shaft-separating clutch member in the forward direction of rotation of the engine shaft, but preventing its turning movement in the opposite direction, another shaft-separating clutch member fast on said starting shaft, and a spring normally tending to disengage said shaft-separating clutch members, substantially as described.

855,910. APPLIANCE FOR THEATRICAL AND SIMILAR PURPOSES. JOHN F. SULLIVAN, New York, N. Y. Filed Jan. 8, 1907. Serial No. 351,316.



Claim.—1. An appliance for theatrical and like purposes, comprising a water tank, a means of egress from said tank, and means positioned in the tank for guiding and assisting a person on entering or leaving the tank, said egress and tank being suitably masked so as to permit a person to enter or leave the tank without being seen by an audience.

2. An appliance for theatrical and like purposes, comprising a water tank, a means of egress from said tank, a movable carrier in the tank for guiding and assisting a person entering or leaving the tank, said egress and tank being suitably masked so as to permit a person to enter or leave the tank without being seen by an audience.

3. An appliance for theatrical and like purposes, comprising a water tank, said tank being provided with an extension forming a means of egress therefrom, said extension being suitably masked to permit a person to enter or leave the tank without being seen by an audience.

4. An appliance for theatrical and like purposes, comprising a water tank, an extension projecting laterally beyond the main portion of the tank and forming a means of egress therefrom, said extension being suitably masked to permit a person to enter or leave the tank without being seen by an audience.

5. An appliance for theatrical and like purposes, comprising a water tank, said tank being provided with a plurality of extensions forming a means of egress therefrom, said extensions being suitably masked to permit a person to enter or leave the tank without being seen by an audience.

6. An appliance for theatrical and like purposes, comprising a water tank, said tank being provided with a plurality of extensions projecting laterally beyond the main portion of the tank, said extensions being suitably masked to permit a person to enter or leave the tank without being seen by an audience.

7. An appliance for theatrical and like purposes, comprising a water containing tank, a mask for use in connection therewith, an extension projecting from the main portion of the tank having an upwardly curved bottom and concealed by the masking so as to permit a person to enter or leave the tank by the extension without being seen by an audience.

8. An appliance for theatrical and like purposes, comprising a water tank, a second supplemental tank shallower than the first tank, means for detachably securing the two tanks together, and means for preventing leakage between the tanks, so that the water in both tanks may mingle to form one continuous sheet.

9. An appliance for theatrical and like purposes, comprising a water tank, a second supplemental tank shallower than the first tank, a support for the second tank, means for detachably securing the tanks together, and means for preventing leakage between the tanks so that the water in both tanks may mingle to form one continuous sheet.

10. An appliance for theatrical and like purposes, comprising a water tank, a second tank shallower than the first tank, a swinging support therefor, means for detachably securing the tanks together, and means for preventing leakage between the tanks so that the water in both tanks may mingle to form one continuous sheet.

11. In an appliance for theatrical and like purposes, the combination of a water tank, a movable carrier located therein for guiding and assisting a person entering or leaving the tank, and means whereby the carrier may be given to and fro movements in the tank.

12. In an appliance for theatrical and like purposes, the combination of a water tank provided with an extension extending laterally from one side thereof, a carrier located in the tank, and means for moving the carrier into and out of the extension.

13. In an appliance for theatrical and like purposes, the combination of a water tank provided with an extension pocket extending laterally from one side thereof, a track positioned in the tank and extending into the extension, a carrier positioned on the track, and means for moving the carrier on the track into and out of the extension.

14. In an appliance for theatrical and like purposes, the combination of a water tank provided with an extension having an upwardly curved bottom extending laterally from one side thereof, a carrier located in the tank, and means for moving the carrier into and out of the extension.

15. In an appliance for theatrical and like purposes, the combination of a water tank provided with an extension having an upwardly curved bottom extending laterally from one side thereof, a carrier located in the tank, means for moving the carrier into and out of the extension, and means for preventing the carrier from being moved entirely out of the extension.

16. In an appliance for theatrical and like purposes, the combination of a water tank provided with an extension having an upwardly curved bottom at one side thereof, a track positioned in the tank and extending into the extension, that portion of the track extending into the extension being also upwardly curved, a carrier positioned on the track, and means for moving the carrier into and out of the extension.

17. In an appliance for theatrical and like purposes, the combination of a water tank, and I-shaped track located in said tank, a wheeled carrier positioned on the track, the wheels of the carrier running between the upper and lower flanges thereof, and means for giving the carrier to and fro movements on the track.

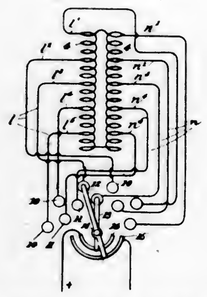
18. In an appliance for theatrical and like purposes, the combination of a water tank, an I-shaped track located in the tank, a wheeled carrier positioned on the track, the wheels of the carrier running between the upper and lower flanges thereof, means for giving the carrier to and fro movements in the tank, and stops provided at each end of the track for limiting the movement of the carrier.

19. In an appliance for theatrical and like purposes, the combination of a water tank, a track located therein, a carrier positioned on the track and provided with a hand-grip to which a person may hold and be guided in entering or leaving the tank, and means whereby the carrier may be given to and fro movements on the track.

20. In an appliance for theatrical and like purposes, the combination of a water tank, a movable carrier located therein for guiding and assisting a person entering or leaving the tank, means whereby the carrier may be given to and fro movements in the tank, and guiding and retaining means for holding the carrier in position while it is being moved to and fro.

21. In an appliance for theatrical and like purposes, the combination of a water tank provided with an extension extending laterally from one side thereof, the bottom of said extension being sharply inclined, a carrier located in the tank, and means for moving the carrier into and out of the extension.

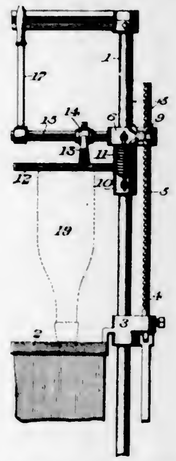
855,911. TELEPHONE-RECEIVER. KELLEY M. TUBNER, New York, N. Y., assignor to General Acoustic Company, a Corporation of New York. Filed Feb. 5, 1907. Serial No. 355,866.



Claim.—In a telephone receiver having two bobbins each sectionally wound with corresponding leads extending from the respective bobbins, a circuit controller having two rows of contacts respectively connected with said leads, a pair of spring blades adapted to make contact simultaneously with a pair of corresponding contacts of the respective rows, and means projecting through the casing of the receiver for angularly moving said blades to make connection with different pairs of contacts, whereby the number

of turns in the telephone circuit of the two bobbins is simultaneously varied, and the sensitiveness of the receiver varied.

855,912. BOTTLE-WASHER. HENRY C. VOGEL, Philadelphia, Pa. Filed Sept. 29, 1906. Serial No. 336,712.



Claim.—1. In a device of the character described, a standard, a collar movable thereon, one portion of a bottle-holding means in suitable connection with said collar, a rack, the remaining portion of the bottle-clamping means connected with said rack, and means carried by said collar engaging with said rack whereby said collar can be adjusted on said standard.

2. In a device of the character described, a standard, a collar movable thereon, one portion of a bottle holding means in suitable connection with said collar, a rack, the remaining portion of the bottle-clamping means connected with said rack, a pinion carried by said collar engaging with said rack whereby said collar can be adjusted on said standard and means carried by said collar for engaging the portion of the bottle clamping means carried by said collar.

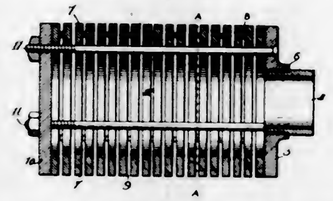
3. In a device of the character described, a standard, a collar movable on said standard, a rack, means carried thereby adjustable on said standard and serving as the bottom portion of the clamping means, a pinion carried by said collar meshing with said rack, whereby said collar can be adjusted, a sleeve, a plate carried by said sleeve serving as one portion of a bottle clamping means and a yielding device connecting said collar and sleeve.

4. In a device of the character described, a standard, a collar movable on said standard, a rack, means carried thereby adjustable on said standard and serving as the bottom of the clamping means, a pinion carried by said collar meshing with said rack, whereby said collar can be adjusted, a sleeve yieldingly connected with said collar, a plate carried by said sleeve serving as one portion of a bottle clamping means, and means connected with the collar and contacting with said plate for moving the same.

5. In a device of the character described, a standard, a collar movable on said standard, a rack, means carried thereby adjustable on said standard and serving as the bottom portion of the clamping means, a pinion carried by said collar meshing with said rack, whereby said collar can be adjusted, a sleeve yieldingly connected with said collar, a plate carried by said sleeve serving as one portion of a bottle clamping means, and a cam connected with the collar and contacting with said plate for moving the same.

6. In a device of the character described, a standard, a collar movable on said standard, a rack, means carried thereby adjustable on said standard and serving as the bottom portion of the clamping means, a pinion carried by said collar meshing with said rack, whereby said collar can be adjusted, a sleeve yieldingly connected with said collar, a plate carried by said sleeve serving as one portion of a bottle clamping means, a cam connected with the collar and contacting with said plate for moving the same and a lever for operating said cam.

855,913. MUFFLER FOR ENGINES OR MOTORS. WILLIAM A. WEBSTER, Monmouth, Ill. Filed Mar. 23, 1906. Serial No. 307,754.



Claim.—1. In a muffler, a casing having a circumferential wall formed of a plurality of rings, each ring having fixed projections on one face with the projections of uniform height, for the projections to definitely and entirely separate the rings one from the other, the separated rings forming a casing having uniform spaces from end to end, and inclosing a pressure-receiving and expanding chamber for educting pressure from the chamber through the spaces between the rings, substantially as described.

2. In a muffler, a casing having its circumferential wall formed of a plurality of flat faced rings, each ring having fixed projections on one face with the projections of uniform height for the projections to definitely and entirely separate the rings one from the other, the separated rings forming a casing having uniform spaces from end to end and inclosing a pressure-receiving and expanding chamber for educting pressure from the chamber through the spaces between the rings, substantially as described.

3. In a muffler, a casing having its circumferential wall formed of a plurality of flat faced rings, each ring having on one face a series of projections with the projections of uniform height and arranged at regular intervals apart for the projections to act and definitely and entirely separate the rings one from the other and furnish a complete clearance between the rings, the separated rings forming a casing having uniform spaces from end to end and inclosing a pressure-receiving and expanding chamber for educting pressure from the chamber through the defined spaces between the rings, substantially as described.

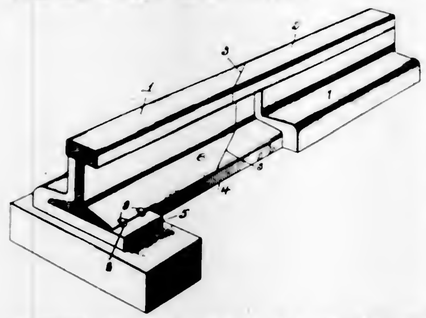
4. In a muffler, a casing having its circumferential wall formed of a plurality of flat faced rings, each ring having on one face a series of projections with the projections of uniform height and arranged at regular intervals apart for the projections to act and definitely and entirely separate the rings one from the other and furnish a complete clearance between the rings, the separated rings forming a casing having uniform spaces from end to end and inclosing a pressure-receiving and expanding chamber for educting pressure from the chamber through the defined spaces between the rings, a closing head for one end of the casing, a head for the opposite end of the casing and having a hole for attaching the muffler in position, and clamping means retaining the rings and two heads in position, substantially as described.

5. In a muffler, a casing having its circumferential wall formed of a plurality of rings, each ring having on one face a series of projections with the projections of uniform height and arranged at regular intervals apart for the projections to act and definitely and entirely separate the rings one from the other and furnish a complete clearance between the rings, the separated rings forming a casing having uniform spaces from end to end and inclosing a pressure-receiving and expanding chamber for educting pressure from the chamber through the defined spaces between the rings, substantially as described.

6. In a muffler, a casing having its circumferential wall formed of a plurality of flat faced rings, each ring having on one face a series of projections with the projections of uniform height and arranged at regular intervals apart for the projections to act and definitely and entirely separate the rings one from the other and furnish a complete clearance between the rings, the separated rings forming a casing having uniform spaces from end to end and inclosing a pressure-receiving and expanding chamber for educting pressure from the chamber through the defined spaces between the rings, a closing head for one end of the casing, a head for the opposite end of the casing and having a hole for attaching the muffler in position, and clamping rods extending from head to head for retaining the rings and the heads of the casing in position, substantially as described.

7. In a muffler, a casing having its circumferential wall formed of a plurality of rings, each ring having on one face a series of projections with the projections of uniform height and arranged at regular intervals apart for the projections to act and definitely and entirely separate the rings one from the other and furnish a complete clearance between the rings, the separated rings forming a casing having uniform spaces from end to end and inclosing a pressure-receiving and expanding chamber for educting pressure from the chamber through the defined spaces between the rings, a closing head for one end of the casing, a head for the opposite end of the casing and having a hole for attaching the muffler in position, and clamping rods extending from head to head for retaining the rings and the heads of the casing in position, substantially as described.

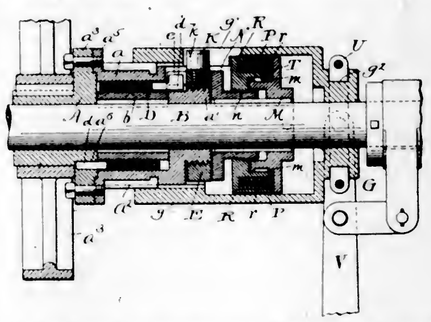
855,914. RAIL-JOINT. SAMUEL G. WEIR, Economy, Pa. Filed Sept. 4, 1906. Serial No. 333,250.



Claim.—A rail joint consisting of a tie plate corresponding in width throughout with the tie flanges of the rails and extending over two ties and with laterally extending lugs provided with spike apertures at its diagonally opposite corners and with rail clamp plates extending from its opposite edges and at opposite sides of the center of the plate and likewise opposite said apertured lugs, the inner ends of the clamp plates being spaced apart, in combination with rails bearing upon the tie plate and with their abutting ends beveled opposite the space between the clamp plates.

855,915. CLUTCH. PARK E. WELTON, Akron, Ohio, assignor to Edwin J. Caulfield, Akron, Ohio. Filed May 25, 1906. Serial No. 318,616.

Claim.—1. In a clutch, the combination of a rotatable driving member, the independently rotatable driven member, a ring supported by and adapted to be turned upon the driven member, a spiral around the driving member having one end connected with the driven member and one end with said ring, and means for turning said ring upon the driven member.



2. In a clutch, the combination of a rotatable driving member, the independently rotatable driven member, a ring supported by and adapted to be turned upon the driven member, and means for turning said ring upon the driven member a spiral around the driving member having one end connected with the driven member and one end with said ring, a friction disk rotatable with the driving member and means for yieldingly pressing the disk and ring together after the ring has been turned for the purpose specified.

3. In a clutch, the combination of the rotatable driving member, the independently rotatable driven member, a ring which is screwed upon the driven member, a spiral around the driving member having one end connected with the driven member and one end with said ring, a friction disk rotatable with but movable endwise upon the driving member, means for yieldingly pressing said disk toward said ring, and means for turning said ring upon the driven member.

4. In a clutch, the combination of the rotatable driving member, an independently rotatable driven member, a ring supported by and capable of being turned upon the driven member, a spiral around the driving member having one end connected with the driven member and one end with said ring, a sliding sleeve having a tongue and groove connection with the driven member and being provided with a diagonal slot, a projection secured to the ring and extending into said slot, and means for moving said sliding sleeve endwise.

5. In a clutch, the combination of a rotatable shaft, a driven member rotatably mounted upon said shaft and consisting of two separated sleeves and an intermediate drum of larger internal diameter, a ring rotatable upon said driven member, a spiral arranged around the shaft within the drum of said driven member and having one of its ends connected with the driven member and its other end connected with said ring, and means for turning said ring upon the driven member.

6. In a clutch, the combination of a rotatable shaft, a driven member rotatably mounted upon said shaft and consisting of two separated sleeves and an intermediate drum of larger internal diameter, a ring concentric with said driven member and screwed on to the same, a spiral around the shaft within the drum and having one of its ends connected with the driven member and the other end with said ring, a disk having a tongue and groove connection with the shaft, means for yieldingly pressing said disk toward said ring, and means for turning said ring upon said driven member.

7. In a clutch, the combination of a rotatable shaft, and a driven member rotatably mounted upon the shaft and comprising two sleeves and an intermediate drum of larger diameter, a ring concentric with said driven member and screwed on to one of the sleeves thereof, said ring having two shoulders, a spiral spring around the shaft within said drum having one end bent and inserted in a hole in the driven member, and having its other end bent

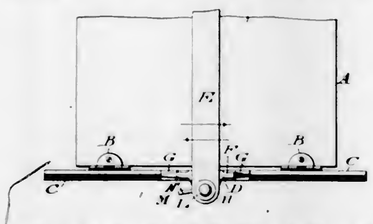
and inserted between said shoulders on the ring, means for turning said ring, a disk having a tongue and groove connection with the shaft and means for yieldingly pressing said disk toward said ring.

8. In a clutch, the combination of a shaft, a driven member rotatable thereon, a ring concentric with said member and screwed on to the same, a spiral embracing the shaft and having one of its ends connected with said driven member and the other with said ring, a disk having a tongue and groove connection with the shaft, a spring acting to move said disk toward said ring and means for adjusting the tension of the spring and means for turning said ring on the driven member.

9. In a friction clutch, a collar fixed to the shaft, a sleeve *n* having a tongue and groove connection with the shaft,—said sleeve being externally threaded,—a sleeve R screwed upon said threaded portion, a spring confined between said sleeve R and collar and exerting its force to thrust them apart and a ring E against which the end of sleeve *n* may be pressed by the action of said spring.

10. In a friction clutch, a collar fixed to the shaft, a sleeve *n* having a tongue and groove connection with the shaft,—said sleeve being externally threaded,—a sleeve R screwed upon said threaded portion, a spring confined between said sleeve R and collar and exerting its force to thrust them apart, said collar having an annular groove—, a pin secured to said sleeve R in said groove and a ring E against which the spring may press the end of sleeve *n*.

855,916. T-SQUARE. EMIL WERNER, Philadelphia, Pa., assignor of one-half to Adrian St. Clair Garman, Philadelphia, Pa. Filed Jan. 7, 1907. Serial No. 351,133.



Claim.—1. A carrier for a square, a hinge on the latter for connection with a drawing board, and a square embodying a runner pivotally connected with its blade independent of said hinge and outside of said carrier and a hanger depending from said runner and having a portion beneath said tongue.

2. A square having a pivoted blade, a carrier therefor a tongue beneath said carrier and means connecting said carrier with a drawing board between said board and the pivot of the blade and independent of said pivot, whereby the blade of the square is permitted to automatically lower said board.

3. A square embodying a removably supported runner having a depending member, and a pivoted part, a guide beneath said runner and on which the latter is adapted to move in lateral directions, a hinge carried by said guide and adapted for connection with a drawing board, and a spring carried by the depending member of said runner and acting on the under side of said guide.

4. A square, a guide on which a member of said square is adapted to be removably supported and run in lateral directions, and a hinge on said guide independent of the pivot of the square adapted to connect the latter with a drawing board, permitting the blade of the square to automatically lower on the board and a resilient device on a depending member and bearing against said guide.

5. A square, a hinged guide, the limb of said square being adapted to run laterally on said guide, said limb being composed of end pieces which frictionally engage said guide, and a connecting bar intermediate of said end pieces, said bar being elevated above said guide.

6. In a square, a hinged support, a runner removably mounted thereon, a blade and a pivot connecting said blade and runner, said runner being provided about its pivot with an elevated collar on which the adjacent portion of the blade is seated and with which it may be tightly engaged.

7. A square embodying a limb and a connecting and tightening pivot, a sleeve on said pivot adapted to engage said limb, and a support for said sleeve, the contact faces of said sleeve and adjacent member of said limb being spiral and a nut on said pivot bearing against said sleeve.

8. A square, a guide on which said square is adapted to be movably supported, a runner, a hinging device on said guide, and an attachment with the support of a drawing board, said device being connected with said attachment and means resiliently holding said runner down upon said guide.

855,917. BOTTLE-STOPPER. ALBERT WESTLAKE, New York, N. Y. Filed Apr. 17, 1906. Serial No. 312,079.



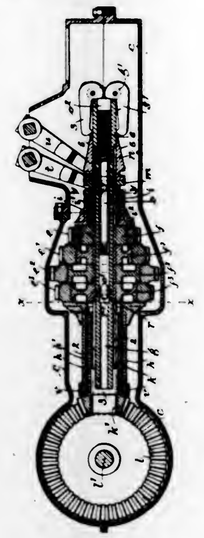
Claim.—A bottle stopper consisting of a thin cap provided on its under side with a shallow groove adapted to receive and inclose the upper smooth edge of the neck of a bottle or other article to which it is to be applied and of sufficient depth to be held in place on the smooth neck by suction.

855,918. REGULATABLE POWER-TRANSMISSION DEVICE. FRANK V. WHYLAND and CLARENCE P. HOLLISTER, Pittsfield, Mass. Filed Dec. 19, 1906. Serial No. 348,522.

Claim.—1. In a power transmission device, the combination with a longitudinally movable tubular shaft having longitudinal grooves in its surface on opposite sides and manually operated devices for effecting said movement, of a plurality of two part segmental collars surrounding said shaft and having splines formed therewith in the grooves of said shaft, a ring gear closely surrounding each of said collars, a series of wedge blocks extending through apertures in the said tubular shaft, with their outer surfaces adapted to come against the inner surfaces of the said segmental collars and means also manually operated for imparting an outward or radial movement to said wedge blocks.

2. In a power transmission device, the combination with a longitudinally movable tubular shaft having longitudinal grooves in its surface on opposite sides and manually operated devices for effecting said movement, of a plurality of two part segmental collars surrounding said shaft and having splines formed therewith in the grooves of said shaft, a ring gear closely surrounding each of said collars, a series of wedge blocks extending through apertures in the said tubular shaft, with their outer surfaces adapted to come against the inner surfaces of the said segmental collars, a bar having a wedge-end connected therewith, provided with a series of inclined faces agreeing in number with the number of the wedge blocks, a spring for moving the said bar and wedge end in one direction, a cone and bent levers for moving the same in the opposite direction.

3. In a power transmission device, the combination with a series of ring gears, a series of segmental collars fitting within the same, a power shaft and gears thereon meshing with and for revolving the said ring gears, of a longitudinally movable tubular shaft having a series of spaced apart radially placed apertures, a series of wedge blocks in said apertures, means for moving the said wedge blocks outwardly to bring their outer ends in contact with the inner surfaces of the said segmental collars and means for manually actuating the tubular shaft and moving the same together with the devices for actuating the wedge blocks to predetermined extents so as to bring the said wedge blocks into engagement with either one of the said segmental collars and ring gears.

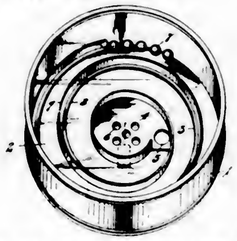


4. In a power transmission device, the combination with a series of ring gears, and a series of segmental collars within the same, of a longitudinally movable tubular shaft fitting within the said segmental collars and fixed bearing sleeves coming at the opposite ends of the series of ring gears and collars for maintaining the same in position and a case for surrounding the parts and to which said bearings are connected for support.

5. In a power transmission device, the combination with a series of ring gears, and a series of internal segmental collars, of a longitudinally movable tubular shaft, a sleeve and bevel pinion connected therewith and in part surrounding the tubular shaft and internally grooved at opposite points, a U shaped spline key secured centrally in the end of the tubular shaft and engaging the grooves of the said sleeve and bevel pinion, a bevel wheel and a transmission shaft connected therewith, to which the rotation of of the level pinion is communicated.

6. In a power transmission device, the combination with a series of ring gears, segmental collars within the same and means for actuating the collars, of a longitudinally movable tubular shaft within the collars, bearing sleeves coming against opposite ends of said series of gears and collars, supports for the said sleeves, Babbitt metal linings to the said sleeves, a steel sleeve lining for one sleeve within the Babbitt metal lining and within which the tubular shaft moves, a sleeve within the Babbitt lining of the other bearing sleeve and surrounding the said longitudinally movable tubular shaft and a U-shaped spline key secured in the end of the shaft and engaging internal grooves in the latter sleeve, substantially as set forth.

855,919. TOY. HERBERT J. WOOD, Mount Clemens, Mich. Filed Aug. 4, 1906. Serial No. 329,145.

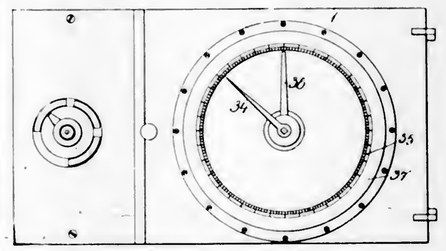


Claim.—1. A toy, having in combination a containing receptacle, a spiral track having a protecting outer wall and a horizontal flange and a central tablet terminating the track, said tablet having a trap hole near its point of union with the track, substantially as described.

2. In combination with a containing receptacle, a spiral track starting from the bottom of the receptacle and terminating at a higher plane with a central tablet, and a central tablet provided with a trap hole near the entrance thereto from said spiral track, substantially as described.

3. In combination with an inclosed receptacle, an upwardly inclined spiral track therewithin, a perforated tablet terminating the same, and a plurality of balls adapted to travel on said track and to find lodgment in the smaller of said perforations, being of a size to pass through a perforation of larger size therein, substantially as described.

855,920. SIGNAL-INDICATING DEVICE FOR LOCOMOTIVES. FERDINAND V. ZEPPELIN, Berlin, Germany. Filed Feb. 7, 1905. Serial No. 244,652.



Claim.—1. Signal-indicating apparatus for locomotives, consisting of a disk, a shaft driven by the locomotive-wheels connections from the shaft to the disk, said disk completing one entire revolution while a certain distance between two terminal stations is traveled, cams on the disk at intervals corresponding proportionally to the distances between the signal stations, and indicating apparatus operated by said cams, said apparatus consisting of a lever operated by the cams, a coupling device on the shaft, an alarm and a spring-arrangement serving at once to operate the alarm-bell and to throw in gear the coupling device thus causing said shaft to replace the parts in their initial position, said spring arrangement being operated by the lever.

2. Signal indicating means for locomotives, consisting of a main shaft driven from the locomotive wheels, a disk, a shaft carrying the same connections from the shaft to the disk, shaft cams on the disk, an alarm, a coupling device on the main shaft, means operated by the cams for actuating the alarm and for actuating the coupling device to return the parts to their initial position and means for indicating temporarily installed signals, said means consisting of an adjustable lever placed on the disk shaft and a second lever connected with the alarm and

coupling device operating means so that said means may be operated at any desired point by adjusting the adjustable lever.

855,921. SPINNING-FRAME. JOSEPH APPLEBY, Aston, England. Filed Oct. 26, 1906. Serial No. 340,719.



Claim.—1. In a spinning frame, a yarn controller comprising a plurality of brackets, a rotary sleeve mounted in each such bracket, a finger head or flap loosely mounted on each said sleeve, a thread guide carried thereby, means carried by each said sleeve adapted to engage said head or flap and rotate it with said sleeve, and means whereby a plurality of said sleeves may be simultaneously rotated.

2. In a spinning frame, a yarn controller comprising a plurality of brackets each having forwardly and upwardly projected arms and a circular way on the top of each said arm and a substantially horizontal shoulder thereon, a rotary sleeve mounted between said arms, a finger head or flap loosely mounted on each said sleeve adapted to engage said shoulder said finger head having extensions thereon projecting into said way, a thread guide carried thereby, means carried by said sleeve adapted to engage said head or flap and rotate it with said sleeve, and means whereby a plurality of said sleeves may be simultaneously rotated.

3. In a spinning frame, a yarn controller comprising a plurality of brackets each having forwardly and upwardly projected arms and a circular way on the top of each said arm and a substantially horizontal and a substantially vertical shoulder thereon, a rotary sleeve mounted between said arms, a finger head or flap loosely mounted on each said sleeve adapted to engage said shoulders respectively said finger head having extensions thereon projecting into said way, a thread guide carried thereby, means carried by said sleeve adapted to engage said head or flap and rotate it with said sleeve, and means whereby a plurality of said sleeves may be simultaneously rotated.

4. In a spinning frame, a yarn controller comprising a plurality of brackets, a tubular irregular rotary sleeve mounted in each such bracket, a finger head or flap loosely mounted on each said sleeve, a thread guide carried thereby, means carried by each said sleeve adapted to engage said head or flap and rotate it with said sleeve, and means whereby a plurality of said sleeves may be simultaneously rotated comprising rod of cross section similar to that of said sleeves adapted to pass through the opening in said sleeves respectively.

5. In a spinning frame, a yarn controller comprising a plurality of brackets, a tubular D-shaped rotary sleeve mounted in each such bracket, a finger head or flap loosely mounted on each said sleeve, a thread guide carried thereby, means carried by each said sleeve adapted to engage said head or flap and rotate it with said sleeve, and a D-rod adapted to pass through a plurality of said tubular sleeves whereby a plurality thereof may be simultaneously rotated.

6. In a spinning frame, a yarn controller comprising a plurality of brackets, a rotary sleeve mounted in each such bracket, cam blanks thereon adapted to engage said bracket arms respectively, a finger head or flap loosely mounted on said sleeve between said blanks, a thread guide carried thereby, projections on said blanks whereby said head or flap may be rotated with said sleeve and means whereby a plurality of said sleeves may be simultaneously rotated.

7. In a spinning frame, a yarn controller comprising a plurality of brackets, a rotary sleeve mounted in each such bracket, cam blanks thereon adapted to engage said bracket arms respectively, a finger head or flap having a hinge socket formed thereon adapted to engage said sleeve between said blanks, a thread guide carried thereby, projections on said blanks whereby said head or flap may be rotated with said sleeve and means whereby a plurality of said sleeves may be simultaneously rotated.

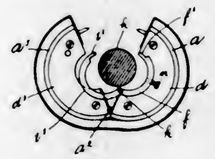
8. In a spinning frame, a yarn controller comprising a plurality of brackets, a tubular sleeve of irregular configuration rotatably mounted in each said bracket, a finger head or flap loosely mounted on each said sleeve, a thread guide carried thereby, means carried by each said sleeve adapted to engage said head or flap and rotate it with said sleeve, a rod similar in configuration to the opening in said sleeves and adapted to pass therethrough, a connecting arm carried by said rod, means whereby said connecting arm may be connected to a similar connecting arm on a similar rod on the other side of a frame, and means rotating said first-mentioned rod.

9. In a spinning frame, a yarn controller comprising a plurality of brackets, a rotary sleeve mounted in each such bracket, a finger head or flap loosely mounted on each said sleeve, a thread guide carried thereby, means carried by each said sleeve adapted to engage said head or flap and rotate it with said sleeve, a shoulder or stop limiting the movement of said head or flap independently of said sleeve, and means whereby a plurality of said sleeves may be simultaneously rotated.

10. In a spinning frame, a yarn controller comprising a plurality of brackets each adjustably mounted below the roller beam of a frame, a rotary sleeve mounted in each such bracket a finger head or flap loosely mounted on each said sleeve, a thread guide carried thereby, means carried by each said sleeve adapted to engage said head or flap and rotate it with said sleeve, and means whereby a plurality of said sleeves may be simultaneously rotated.

11. In a spinning frame, a yarn controller comprising brackets adapted to be mounted on the thread rail, a rotatable finger head or flap, a hollow sleeve rotatably mounted in said brackets, means carried by said sleeve whereby said flap may be raised through the rotation of said sleeve, said flap being movable independently of said means and a key rod adapted to engage a plurality of said sleeves whereby a series of said flaps may be simultaneously raised.

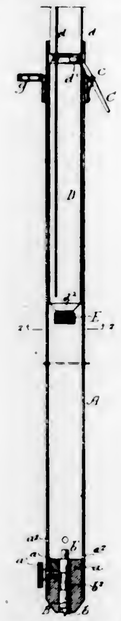
855,922. BUFFING-ROLL. PETER BACIGALUPO, Haverhill, Mass. Filed Apr. 30, 1906. Serial No. 314,464.



Claim.—1. A buffing roll comprising two roll-sections having a hinge connection, a two section collar adapted to fit the shaft, one collar section being permanently connected to one of said roll sections, and means for connecting the other collar section to the permanently connected collar section whereby said collar sections may be relatively moved to permit transverse removal thereof from the shaft, substantially as described.

2. In a buffing roll comprising two roll sections having a hinge connection at one side thereof, adapted to be locked together about a shaft, a pair of two-section collars adapted to fit the shaft, one section of each collar being rigidly connected to the respective ends of one of said roll-sections and the other sections of said collar extending through half a circle and each being pivotally connected at one end to its corresponding section adjacent said hinge connection, and removably connected thereto at its opposite end, substantially as described.

855,923. PROCESS OF TESTING THE HARDNESS AND DENSITY OF METALS AND OTHER MATERIALS. WILLIAM I. BALLENTINE, Philadelphia, Pa. Filed Oct. 18, 1906. Serial No. 339,441.



Claim.—1. The process of testing the hardness or density of materials which consists in transmitting a predetermined testing force to the material under test through two bodies, of which one is softer and the other is harder than the material to be tested, and then measuring the resulting deformation of the softer of said two bodies, substantially as described.

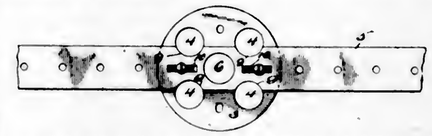
2. The process herein described of testing metals and other materials, said process consisting in transmitting a definite pressure to the material tested through a body of material softer than that under test and thereby recording the effect of such pressure by compressing said softer material, and measuring the amount of compression of the soft material, substantially as described.

3. The method of testing the hardness of materials, which consists in delivering a blow of predetermined force to the materials under test, said blow being transmitted through two bodies, of which one is softer than that tested, and then measuring the amount of deformation of said softer body, substantially as described.

4. The method of testing the hardness of materials, which consists in transmitting the force of a body falling freely through a predetermined distance under the influence of gravity, through a piece of relatively soft material, and then measuring the resulting deformation of said soft piece, substantially as described.

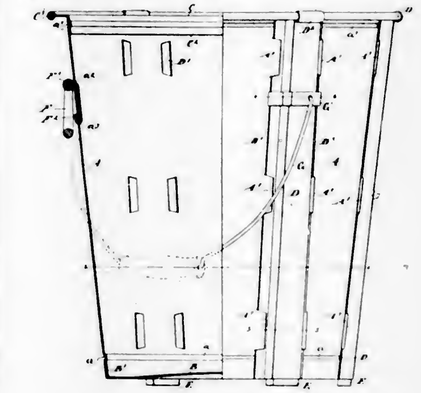
855,924. FASTENER FOR PIPE AND CONDUIT SUPPORTS. ROBERT W. BEATON, Chicago, Ill. Filed June 30, 1906. Serial No. 324,211.

Claim.—1. In a device of the character described, the combination with a box formed in its top with a central opening and with a plurality of similar openings arranged around the central opening, of a fastening strip separate from the box and formed throughout its length with spaced openings and having a centrally arranged opening registering with the central opening of the box, the said strip having notched side edges registering with the openings arranged around the central opening in the box top, said strip having a longitudinally-extending slot at each side of the central opening in said strip, and bolts passed through said slots and through the box top for securing said box to said strip and permitting its adjustment longitudinally of the strip.



2. In a device of the character described a supporting box formed in its top with a plurality of pipe receiving openings, combined with a securing strip resting on the box top, said securing strip having slots extending longitudinally of the strip, and bolts passed through said slots and through the box top for securing the box to the strip and permitting the adjustment of the box longitudinally of the strip.

855,925. SHEET-METAL RECEPTACLE. LEWIS F. BETTS, New York, N. Y., assignor of one-fourth to H. Blake Gilmore and one-fourth to Joseph A. Kennedy, Brooklyn, N. Y. Filed Sept. 13, 1906. Serial No. 334,397.



Claim.—1. In a receptacle of the character set forth, a tapered body, a top-ring having a dependent annular flange received in and matching to the upper portion of said body, a bottom inserted through the upper portion of said body, an upturned annular flange on said bottom matching the taper of said body and engaged with the lower portion thereof, and annular beads in said body engaging said flanges and holding said top-ring and bottom.

2. In a receptacle of the character set forth, a sheet-metal body having tongues formed thereon and integral therewith, a top-ring extending beyond the periphery of said body at the top and having slots therein, stiffening-ribs of sheet-metal having flanges engaged by said tongues, and a lug at the upper end of each of said ribs received in one of said slots and joined to said top-ring by partially inclosing the edge thereof.

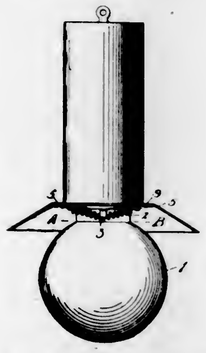
3. In a receptacle of the character set forth, a sheet-metal body having tongues formed thereon and integral therewith, a top-ring secured to the top of said body and extending beyond the periphery thereof, a stiffening-wire in said top-ring, a slot in the latter, a stiffening-rib of sheet-metal having flanges thereon engaged by said tongues, and a lug at the upper end of said rib extending through said slot and joined to said top-ring by partially inclosing the edge thereof and said stiffening-wire.

4. In a receptacle of the character set forth, a sheet-metal body having tongues formed thereon and integral therewith, a top-ring secured to the top of said body and extending beyond the periphery thereof; and having slots in such extended portions, hollow stiffening-ribs having flanges engaged by said tongues, and lugs on said ribs extending through said slots and secured to said top-ring, and strips of wood received in said ribs and abutting against the under face of said top-ring and projecting below said body.

5. In a receptacle of the character set forth, a sheet-metal body having tongues formed thereon and integral therewith, a stiffening-rib having a flange on each side thereof engaged by said tongues, and a bail-ear comprising a strip of metal having its ends folded and partially inclosing said flanges.

6. In a receptacle of the character set forth, a sheet-metal body having two laterally-extending cuts therein one above the other, a strip of sheet-metal folded upon itself to form a bight, a handle received in said bight and secured to said body by passing the ends of said strip through one of said cuts from the exterior of said body to the interior and thence through the other of said cuts from the interior to the exterior, and folding the extremities of said ends against the exterior face of said body.

855,926. GLOBE-CLOSURE FOR ELECTRIC-ARC LAMPS. ERNEST BONNET, St. Croix, Switzerland, assignor to Louis Phillipe Mermod, Gustave Alfred Mermod, and Leon Marcel Mermod, copartners, trading as Mermod Frères, St. Croix, Switzerland. Filed Dec. 18, 1906. Serial No. 348,413.



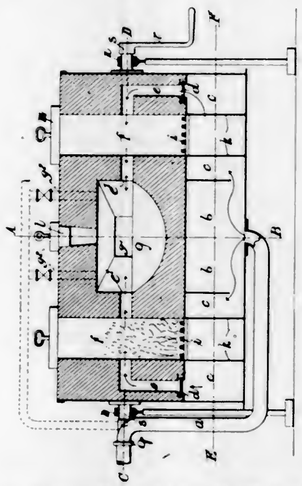
Claim.—1. In an arc lamp, the combination of a lamp body, an extensible spring member secured thereto and carried thereby, a globe having a single opening whose edges are adapted to engage said lamp body and carrying an outwardly extending projection adjacent to said opening, said projection being adapted to be engaged by said spring member, and when so engaged to extend said spring member.

2. In an arc lamp, the combination of a lamp body, a spiral spring having both ends connected to said lamp body, a globe having an opening whose edges are adapted to engage said lamp body and carrying a projection adjacent to said opening, said projection being adapted to be engaged by the middle portion of said spring, and when so engaged to extend said spring and maintain its central portion out of alinement with said ends.

3. In an arc lamp, the combination of a lamp body, a plurality of spiral springs having both ends connected with said lamp body, a globe having a single opening whose edges are adapted to engage said lamp body and carrying outwardly extending projections adjacent to said opening, said projections being adapted to be engaged by the central portions of said spiral springs and when so engaged to extend said springs and maintain their central portions out of alinement with their ends.

4. In a lamp, the combination of a lamp body, an extensible spring member secured thereto and carried thereby, a globe having a single opening whose edges are adapted to engage said lamp body, and carrying adjacent to said opening a metal band having outwardly extending projections, said band being secured to said globe and said projections being adapted to be engaged by said spring member, and when so engaged to extend said spring member.

855,927. SMELTING-FURNACE. EDWIN BOSSHARDT, Cologne, Germany, assignor of one-half to Henry Garda, Leipzig, Germany. Filed May 21, 1906. Serial No. 317,960.



Claim.—1. In combination, a smelting hearth, a furnace on each side of and communicating with said hearth, a central chamber beneath the hearth, other chambers connected therewith and surrounding the ash-pits of the furnaces, the latter chambers being in communication with the furnaces above the grates for the purpose of conducting the heated air thereto and thence to the hearth.

2. In combination, a smelting hearth, a furnace on each side of and communicating with said hearth, air chambers beneath the hearth and surrounding the ash-pits of the furnaces, main distributing conduits from said chambers to the furnaces above the grates, and by-pass passages from the chambers to the hearth.

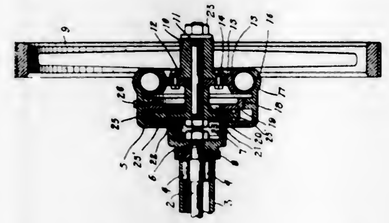
3. The combination of a hearth, a furnace on each side of and communicating with the said hearth, air chambers beneath the hearth and surrounding the ash-pits of the furnaces, passages from the said chambers to the furnace, and a metallic shell incasing the whole structure and mounted on trunnions to enable the hearth to be tilted and discharged.

4. The combination of a smelting hearth having a charging opening at the top and an outlet at one side, furnaces at each side of the hearth, a casing for holding the hearth and furnaces in an organized structure so as to cause them to move together, supports forming bearings, and pivots mounted in the bearings and carried by the casing, whereby the hearth may be tilted and discharged.

855,928. PROCESS OF MANUFACTURING A SUGARLESS FOOD PRODUCT. JACOB BOUMA, The Hague, Netherlands, assignor of one-half to Sikko Berend Selhorst, The Hague, Netherlands. Filed Sept. 26, 1904. Serial No. 226,045.

Claim.—A process of manufacturing a sugarless food product derived from milk consisting in separating the cream from the milk, then diluting the cream with water and separating the fat therefrom by centrifugal action, precipitating the casein from the residue and removing the liquid containing the sugar, then washing and diluting the casein with water, then adding to the casein a solution of soda lye, common salt, crystallose, phosphate of soda, and a lime salt, and then combining with the solution the sugar freed fat, substantially in the proportions specified.

855,929. PNEUMATIC CUSHION FOR VEHICLE-WHEELS. HERBERT E. BRADLEY, Hillsboro, N. D. Filed Dec. 21, 1905. Serial No. 292,688.



Claim.—1. The combination with a vehicle axle and its wheel, of a pneumatic ring interposed between the wheel hub and its support on said axle and concentric with said hub and outside the vertical plane of the wheel, substantially as described.

2. The combination with an axle, of a wheel having a hub, a disk secured on said hub having a channel or way in its periphery, a housing mounted on said axle and also having a channel or way and outside the vertical plane of the wheel, and a pneumatic ring interposed between said channeled disk and housing, for the purpose specified.

3. The combination with an axle, of a housing mounted thereon, a wheel having a hub and shaft, a disk mounted on said shaft and having an antifriction bearing in said housing, and a pneumatic ring interposed between said hub and housing, substantially as described.

4. The combination with a vehicle axle and its wheel, of a disk having an annular way secured to said wheel, a bearing on said axle and a pneumatic ring fitting said way and between it and said bearing and outside the vertical plane of the wheel, substantially as described.

5. The combination, with an axle, of a wheel having a hub and shaft, the latter having a connection with said axle slidable in a vertical plane, a member mounted on said axle and inclosing said shaft, and a pneumatic ring interposed between said shaft and member, substantially as described.

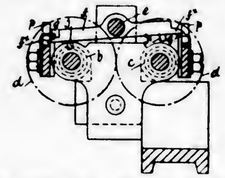
6. The combination, with an axle, of a housing mounted thereon, a wheel having a hub and a shaft, said shaft having a disk at its inner end provided with an anti-friction bearing in said housing and a pneumatic ring inclosing said shaft and yieldingly resisting the tilting of said wheel and shaft, substantially as described.

7. The combination, with an axle, of a wheel and hub, having an oscillating movement independent of said axle, and a pneumatic ring inclosing said hub and located between said wheel and axle and arranged to yieldingly resist the tilting movement of said wheel, substantially as described.

8. The combination with an axle, of a wheel and hub having a movement independent of said axle, and a pneumatic ring arranged to yieldingly resist the tilting movement of said wheel.

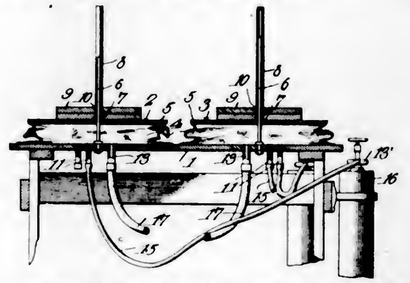
9. The combination with an axle, of a wheel and hub, and a pneumatic ring outside the vertical plane of the wheel and arranged to yieldingly resist the tilting movement of said wheel.

855,930. WINDING-MACHINE. JAMES E. BROADBENT and JOSEPH BROADBENT, Staleybridge, England, assignors to Robert Broadbent & Son Limited, Staleybridge, England. Filed Nov. 2, 1904. Serial No. 231,134.



Claim.—In combination with two parallel right or left hand screws rotating in opposite directions, a rocking bar provided with means at its ends to engage the screw threads, two angular side bars adapted to keep one end of said rocking bar engaged with a screw and means for rocking the bar.

855,931. APPARATUS FOR ADMINISTERING ANESTHETICS. FREDERICK V. BROOKING, Macomb, Ill. Filed Aug. 29, 1906. Serial No. 332,500.



Claim.—1. An anesthetic administering apparatus comprising a base, a plurality of pressure regulators mounted on said base and each consisting of a flexible wall and a head having a perforation, a guide mounted within each of said pressure regulators and extending through the perforation in the head thereof, a tube connected with the head of each regulator and surrounding the guide, and removable weights held upon the head of each regulator by the tube thereof.

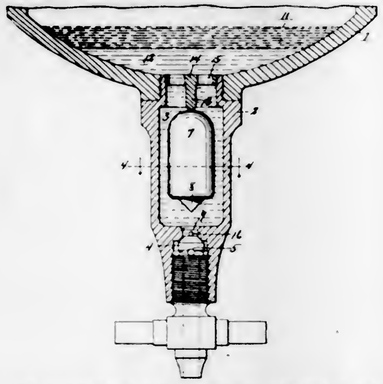
2. An anesthetic administering apparatus comprising a base, a plurality of pressure regulators mounted on said base and each having a valve controlled inlet pipe and a valve controlled outlet pipe, each of said regulators comprising a flexible wall, a head, a guide extending through said head, a tube connected with said head and surrounding said guide, and weights adapted to be removably held upon said head by means of said tube.

3. An anesthetic administering apparatus comprising a base, a plurality of pressure regulators mounted on said base and each having a plurality of inlet pipes and an outlet pipe, each of said regulators comprising a flexible wall, a head, a guide extending through said head, a tube connected with said head and surrounding said guide, and weights adapted to be removably held upon said head by means of said tube.

855,932. FLOAT-VALVE FOR DRAIN-COCK PLUGS. WILLIAM E. BRYANT, Detroit, Mich., assignor to Michigan Lubricator Co., Detroit, Mich., a Corporation of Michigan. Filed Oct. 22, 1906. Serial No. 339,962.

Claim.—1. The combination with a reservoir adapted to contain liquids of different specific gravity and having a drain passage leading therefrom, of a float valve adapted to close said drain passage when immersed in the lighter liquid.

2. The combination with a reservoir adapted to contain oil and water in superimposed relation, and having a discharge opening leading therefrom, of a float valve in said discharge opening buoyant in water but precipitable in oil, said valve automatically seating to close the discharge opening when immersed in oil.



3. The combination with a reservoir adapted to contain oil and water in superimposed relation, and having a discharge opening leading therefrom, of a float valve in said discharge opening adapted to seat therein to prevent an outward flow of fluid therethrough, said valve being buoyant in water but precipitable in oil.

4. The combination with a reservoir, of a drain plug communicating therewith, having a valve chamber therein, and having a drain opening leading therefrom, a float valve in said chamber adapted to seat and close said opening, and a drain cock in said plug communicating with said chamber.

855,933. CAR-WINDOW. EZRA S. BUCKNAM, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed May 24, 1906. Serial No. 318,458.

Claim.—1. In a car, stanchions, guiding-straps secured near said stanchions, a sash suspended from said strap, flanges on said sash, a lower sash below said upper sash means on said lower sash for causing the same to move inwardly before it is raised and means on said lower sash to cause it to engage said flanges.

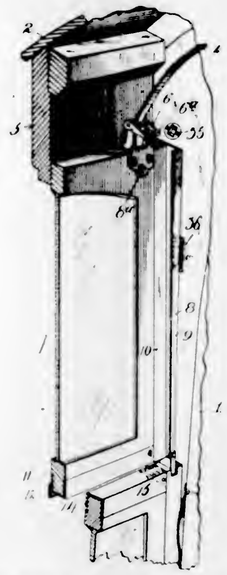
2. In a car, upper and lower sashes, stanchions and a window sill supporting said sashes so that one is immediately below the other, means for causing the lower sash to move laterally of the upper before being raised and means for causing the engagement of the sashes when the lower sash is raised.

3. In a car, upper and lower sashes and stanchions supporting the same so that one is below the other and the upper rests on the lower, a spring which normally holds the lower sash in this position, means for forcing the lower sash to move laterally of the upper sash against the tension of this spring before being raised and interengaging means on said sashes for holding them in fixed relationship when moving together.

4. In a car, upper and lower sashes and means for supporting the same, one below the other flanges on the upper sash adapted to receive and guide the lower sash, grooved sides on said lower sash and means for moving the grooves in said sides of the lower sash into alinement with the flanges on the upper sash before the window is opened.

5. In a car, upper and lower sashes and means for supporting the same, a spring for holding the lower sash immediately under the upper sash, a slide with an inclined face in the upper edge of said lower sash, and means for forcing said slide upwardly so that the lower sash is moved from under the upper sash against the tension of said spring before the window is opened.

6. In a car, sashes and means for supporting the same so that one is under the other, slides on said lower sash adapted to move it from under the upper sash, bolts on said lower sash and means for withdrawing the bolts and simultaneously, raising the slides so that when the bolt is with drawn the lower sash is moved from under the upper sash.



7. In a car, upper and lower sashes and means for supporting the same so that one is immediately under the other, a spring which normally holds the lower sash immediately under the upper, a slide with an inclined face which is adapted to move the upper end of the lower sash from under the lower end of the upper sash when the slide is raised, a bolt for securing the lower sash, and means for simultaneously forcing the slide upward and withdrawing the bolt.

855,934. STEAM-BOILER. ELMER E. CARR, Chicago, Ill. Filed Sept. 10, 1906. Serial No. 334,023.

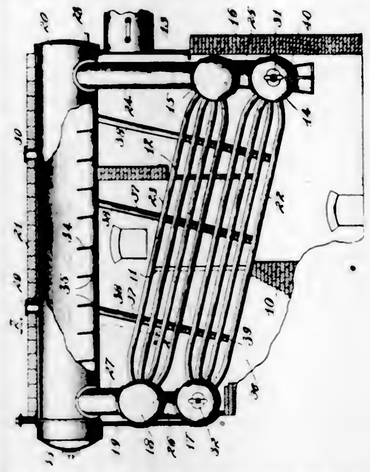
Claim.—1. In combination, two pairs of drums, the members of each pair being vertically alined, water tubes connecting the pairs of drums, one of said drums having a man hole and its companion being joined to it by a hollow saddle adapted to afford access for cleaning purposes from one drum to the other.

2. In combination, in a steam boiler, drums united by inclined water tubes, a steam drum, water legs connecting the steam drum with the first-named drums, and baffle plates crossing the lower portion of the steam drum between the water legs.

3. In combination, in a steam boiler, drums united by inclined water tubes, a steam drum, water legs connecting the steam drum with the first-named drums, baffle plates crossing the lower portion of the steam drum between the water legs and being inclined backwardly with reference to the direction of flow of water.

4. In combination, in a steam boiler, drums united by inclined water tubes, a steam drum, water legs connecting the steam drum with the first-named drums, and apertured baffle plates crossing the lower portion of the steam drum between the water legs and being inclined backwardly with reference to the direction of flow of water.

5. In a steam boiler, in combination, a setting having a discharge flue and containing a fire box, flue passages, and a dome in the form of a self-supporting arch, its chamber being above but open to the main chamber of the setting and being independent of the flue passages and discharge flue; and a steam drum located within the dome and spaced apart from the walls thereof, whereby a dead-vapor space is provided around the drum.



6. In a steam boiler, in combination, two sets of drums spaced apart horizontally and vertically, the drums of each set being vertically alined connection between the drums of each set, tubes connecting the sets of drums, a steam drum, and a water leg connecting each of the first-named sets of drums with the steam drum.

7. In a steam boiler, in combination, two sets of drums spaced apart horizontally and vertically, the drums of each set being vertically alined connection between the drums of each set, tubes connecting the sets of drums, a steam drum, and a water leg connecting each of the first-named sets of drums with the steam drum, the water legs having substantially the same carrying capacity as the inclined tubes.

8. In a steam boiler, in combination, a cylindrical steam drum, a plurality of cylindrical water drums below the steam drum, the water drums being spaced apart horizontally and vertically and each having its axis extending transverse to the axis of the steam drum, tubes connecting the water drums, and water legs connecting the water drums with the steam drum.

9. In a steam boiler, in combination, a cylindrical steam drum, two sets of vertically-alined cylindrical water drums arranged below the steam drum, each of such drums having its axis extending transverse to the axis of the steam drum and the two sets of drums being spaced apart horizontally and vertically, tubes connecting the sets of water drums, a hollow saddle connecting the water drums of each set, and a water leg connecting the uppermost drum of each set with the steam drum.

10. In a steam boiler, in combination, two sets of drums spaced apart horizontally and vertically, connection between the drums of each set, tubes connecting the sets of drums, a steam drum, and a water leg connecting each of the first-named sets of drums with the steam drum.

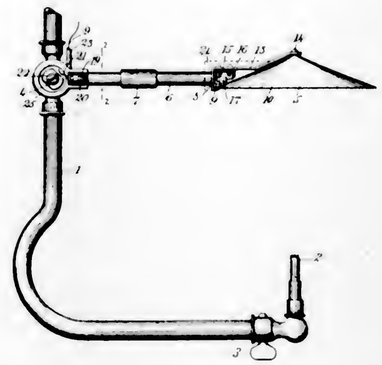
855,935. PICTURE-FRAME. EDWARD CHRISTIAN, Waterbury, Conn. Filed Feb. 25, 1907. Serial No. 359,247.



Claim.—1. The herein described picture frame comprising a frame proper, a housing secured to the back thereof, the housing open at one side, a door secured over said opening, means for holding the door in a closed position, and longitudinal strips hinged to the inner face of said housing, substantially as described.

2. The herein described picture frame comprising a frame proper, said frame formed with a rabbet, a glass located in said frame, a recess formed around said glass, a housing having a flange extending into said recess and secured to the back of said frame, said housing open at one end, a door adapted to close said open end, means for holding the door in a closed position, and longitudinal strips hinged to the inner face of said housing and extending toward said glass, substantially as described.

855,936. SAFETY DEVICE FOR GAS-BURNERS. ARTHUR A. CHURCHILL, Portland, Oreg. Filed July 18, 1906. Serial No. 326,695.



Claim.—1. A gas supply pipe, a burner, a combined thermostat and smoke bell supported above the burner and comprising a slitted plate having overlapping portions, one of which is adapted to be moved in relation to the other as the plate becomes heated, and electrical connections secured to the thermostat and adapted to be broken when the gas is lighted.

2. A gas supply pipe, a gas burner, a thermostat supported above the burner, said thermostat comprising a slitted plate adapted to expand as it becomes heated, and means whereby the expansion of said plate breaks an electric circuit.

3. A gas supply pipe, a burner, a thermostat supported above the burner and comprising a conical slitted plate adapted to expand upon being heated, means whereby the expansion of said plate breaks an electric circuit, and means whereby the circuit is broken when the supply of gas is shut off from the burner.

4. A gas burner, a combined thermostat and smoke bell supported above said burner and comprising a conical-shaped plate having overlapping portions, means secured to one of said portions for supporting the bell, electrical contacts on said support and the bell adapted to be separated as the bell becomes heated.

5. A combined thermostat and smoke bell comprising a substantially circular plate having a slit cut from the center to the edge thereof, and the plate bent to form a cone with one edge adjacent the slit overlapping the other edge, means constituting electrical contacts connected to said plate adjacent each of the edges and adapted to be separated as the plate becomes heated.

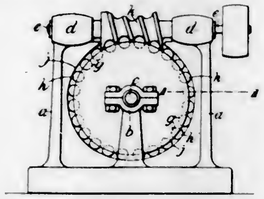
6. A combined thermostat and smoke bell comprising a conical plate adapted to be flattened by an increase in temperature, and electrical contacts adapted to be separated as the cone flattens.

7. A combined thermostat and smoke bell comprising a conical plate adapted to be flattened by an increase in temperature, electrical contacts adapted to be separated as

the cone flattens, an arm supporting said plate and having a non-conducting section, and wires within said arm.

8. A gas supply pipe, a burner, a cock in said pipe, an arm extending from said pipe adjacent the cock, a thermostat comprising a plate having the center thereof rigidly supported adapted to act as a smoke bell at the end of the arm and above the burner, electric wires within said arm and connected to the thermostat, and means connected to said cock for making and breaking the connections to one of said wires as the gas is turned on and off.

855,937. WORM-GEARING. ARTHUR T. COLLIER, St. Albans, England. Filed Sept. 22, 1906. Serial No. 335,712.



Claim.—1. Worm-gearing comprising a worm wheel having in its periphery a series of recesses each adapted to coact with substantially a hemisphere of a ball-tooth, ball-teeth turning freely in all directions in said recesses, a worm engaging with substantially the other hemispheres of said teeth successively, and means for retaining said teeth in said recesses when out of engagement with said worm.

2. Worm-gearing comprising a worm wheel having in its periphery a series of recesses each adapted to coact with substantially a hemisphere of a ball-tooth, ball-teeth turning freely in all directions in said recesses, a worm engaging with substantially the other hemispheres of said teeth successively, and a guide concentric with said worm-wheel for supporting said teeth when they are out of engagement with said worm.

3. Worm-gearing comprising a worm-wheel having in its periphery a series of recesses each adapted to coact with substantially a hemisphere of a ball-tooth, ball-teeth turning freely in all directions in said recesses, a globoid worm having a thread which engages substantially the other hemispheres of said teeth successively and which has an arc-shaped edge substantially fitting the periphery of said worm-wheel between said recesses, and means for retaining said teeth in said recesses when out of engagement with said worm.

4. Worm-gearing comprising a worm wheel having in its periphery a series of recesses each adapted to coact with substantially a hemisphere of a ball-tooth, ball-teeth turning freely in all directions in said recesses, a globoid worm having a groove of substantially semicircular cross-section for engaging the other hemispheres of said teeth successively and which has an arc-shaped edge substantially fitting the periphery of said worm-wheel between said recesses, and an annular guide for supporting said teeth when out of engagement with said worm.

855,938. CAR-FENDER. SHERMAN CONCANNON, Lenexa, Kans., assignor of one-half to Ephraim C. Sooy, Kansas City, Mo. Filed Jan. 29, 1907. Serial No. 354,713.

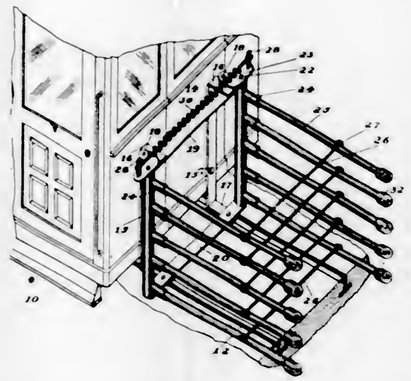
Claim.—1. In a car fender a series of fender cords or ropes and means for supporting the ends of said ropes forwardly in position upon the end of the car.

2. In a car fender a series of fender cords or ropes and outwardly extended supporting devices in series upon the ends of the car supporting the ends of said fender ropes.

3. In a car fender having upwardly and forwardly extended supporting posts the combination of fender ropes spanning the space between said parts of the fender.

4. In a car fender the combination with folding members of said fender of fender ropes connected with said members.

5. In a car fender the combination with the yielding arms of loops forming connecting devices connected with said arms.



6. In a car fender the combination with the pivoted supports and arms upon said supports fender ropes connected with said arms and spring actuated controlling means for controlling the movements of said pivoted supports.

7. In a car fender the combination with forwardly extended fender arms and pivoted supports for said arms of contracting springs adapted to draw the ends of said arms apart.

8. In a car fender the combination with separate pivoted supports and folding fender arms upon the respective supports of fender ropes or cords connected at the ends with said folding arms and means acting automatically to draw the said arms toward each other into a folding position.

9. In a car fender a series of forwardly extended arms upon the forward end of the car air cushions upon the ends of said arms.

10. In a car fender the combination with pivoted supporting posts and fender arms connected with said posts and resilient fender devices upon the forward ends of said arms.

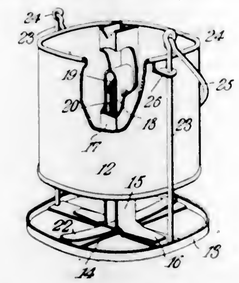
11. In a car fender the combination with separate pivoted supporting posts upon the end of the car and with forwardly extended arms upon said posts, means acting to draw the arms toward each other and fender ropes connected at the ends with said arms.

12. In a car fender the combination with pivoted supporting posts and sockets upon said posts of fender arms within said sockets.

13. A car fender comprising separate supporting brackets transverse upper and lower supporting bars upon said brackets posts pivotally connected with the ends of the respective upper and lower transverse bars, fender arms connected with and extending outwardly from said posts eccentric crank plates connected with the pivots to said posts, a coiled spring connected at its ends to the respective plates and means for stopping the movement of said plates in one direction of rotation.

14. A car fender comprising separate brackets upper and lower transverse plates supported thereby posts at the ends of said plates pivotally connected folding fender arms connected with said posts and extending outwardly in position fender ropes connected at the ends with the arms on the separate posts crank plates connected eccentrically with said pivots on said posts pins upon the upper surfaces of said eccentric plates coiled spring connected at its ends to the respective pins on said eccentric crank plates and stop pins upon the lower surfaces of said plates adapted to come into contact with the said brackets when the arms are in an open position.

855,939. EGG-CARRIER. CHARLES H. CRONK, Curtis, Nebr. Filed Oct. 19, 1906. Serial No. 339,697.



Claim.—1. In a device of the class described, a base, a standard rising therefrom, a receptacle having a centrally arranged guiding tube for the reception of the standard, and springs forming a connection between the standard and the receptacle and forming a cushioning means to prevent the transmission of shock from the base to the receptacle.

2. In a device of the class described, the combination of a receptacle having a central tubular member rising from the base thereof and of angular cross section, a standard extending through the sleeve and coöperating with the latter for preventing relative rotation between the receptacle and standard, and means for cushioning the receptacle with respect to the standard.

3. In a device of the class described, the combination of a receptacle having a vertically extending sleeve, a standard extending through the sleeve, means arranged to prevent the receptacle from drawing off the standard, and a cushioning means disposed within the sleeve for elastically supporting the receptacle on the standard.

4. In a device of the class described, the combination of a receptacle having a vertically extending sleeve open at both ends, a standard extending upwardly through the sleeve and forming a guide for the sleeve and receptacle, and an extension spring in the sleeve and arranged to yieldingly support the receptacle.

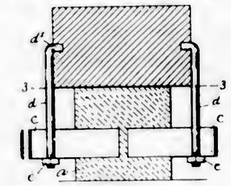
5. In a device of the class described, the combination of a receptacle having an opening in its bottom, a sleeve of angular cross section rising from the bottom of the receptacle at the opening thereof, a supporting frame having a standard of angular cross section extending through the sleeve and coöperating therewith for preventing relative rotary movement between the receptacle and frame, a cushioning device for elastically suspending the receptacle on the standard, and an auxiliary cushioning device on the base of the frame.

6. In a device of the class described, a supporting frame comprising a base, vertically disposed rods attached to the base, a bail hingedly connected to the upper ends of the rods, and a cushioning device on the said base, in combination with a receptacle disposed over the said device and between the rods, and means on the receptacle engaging the rods for guiding the movement of the receptacle.

7. In a device of the class described, a supporting frame comprising a base, a central post thereon composed of a strip bent into the shape of an inverted U, and a cushioning means on the post, in combination with a receptacle through which the post extends, and means for attaching the receptacle to the cushioning means.

8. In a device of the class described, a supporting frame comprising a circular base, a central post thereon, a cushioning device on the post, a second cushioning device on the base, upright members on opposite sides of the post and secured to the base, and a bail attached to the said members, in combination with a receptacle, a sleeve thereon through which the post extends, means on the exterior of the receptacle for engaging the said members, and means for attaching the receptacle to the cushioning device on the post.

855,940. CUTTING-BLOCK. GEORGE E. DANIELS, Rowley, Mass. Filed Mar. 25, 1907. Serial No. 364,416.



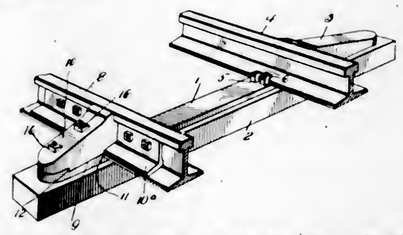
Claim.—1. The combination of a wooden die-block, a base on which said block is mounted, a pair of oppositely disposed, laterally projecting lugs rigidly connected to said base and a series of dogs respectively connected to said lugs and said block for clamping the block upon the base, substantially as described.

2. The combination of a wooden die-block, a base on which said block is mounted, a pair of oppositely disposed, laterally projecting lugs rigidly connected to said base and a series of dogs detachably connected to said block and said lugs respectively, said lugs having means permitting connection of said dogs thereto at different longitudinal points thereof, whereby blocks of different diameters may be clamped on said base, substantially as described.

3. The combination of a wooden die-block, a base on which said block is mounted, a pair of oppositely disposed, laterally projecting lugs rigidly connected to said base, and having longitudinal slots therein, a pair of dogs detachably connected to said block and extending through the slots of said lugs respectively, and means engaging said dogs and said lugs at different positions thereof in said slots to clamp said block onto said base, substantially as described.

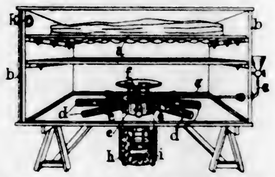
4. The combination of a wooden die-block, a base of relatively heavy material on which said block is mounted to provide a solid support therefor, a pair of lugs embedded in said base and projecting laterally therefrom, and means for detachably connecting said block and said lugs to clamp the block upon the base, substantially as described.

855,941. TIE-PLATE AND RAIL-FASTENER. JOHN J. DAVIS, Bucyrus, Ohio. Filed Mar. 6, 1907. Serial No. 360,854.



Claim.—In combination, a railway tie, a tie plate mounted thereon to receive rails, a fastener and rail brace formed integral with one end of said plate to engage and brace the outer side of one of the rails on the tie plate, the said tie plate being formed adjacent its other end with a rail seat having a transverse shoulder against which the outer edge of the base flange of one of the rails engages, and also having an inclined rail-brace seat having a shoulder extending transversely thereof, a rail brace removably mounted on said rail-brace seat engaging near its outer end with the shoulder of said seat and at its inner end engaging the outer face of one of the rails, means passed through the tie plate and said removable rail-brace for securing the latter in position, and securing spikes passed through the tie plate into the tie and engaging the base flanges of the rails for securing the rails in position and also securing the tie plate to the tie.

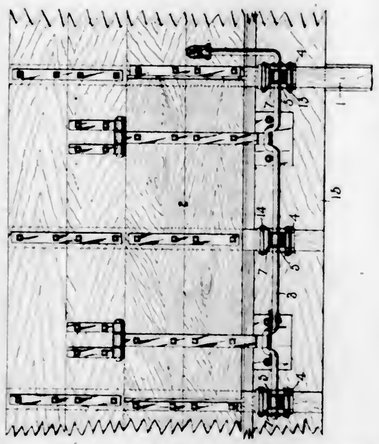
855,942. PROCESS OF DISINFECTION. FRANCOIS DURET, Paris, France. Filed May 21, 1906. Serial No. 317,859.



Claim.—1. The hereinbefore described process of disinfection which consists in subjecting the articles to be disinfected in a chamber first to the action of dry heat, second to the action of vapors of a mixture of water, formic aldehyde and ethylic aldehyde with a very slight addition of eosine and third to action of vapors of pure formic aldehyde, ethylic aldehyde and a slight addition of eosine substantially as described.

2. The hereinbefore described process of disinfection, which consists in subjecting the articles to be disinfected in a chamber first to the action of dry heat, second of the vapors of a mixture of water and 5% of a disinfecting fluid composed of formic aldehyde, ethylic aldehyde and a very slight addition of eosine and third to the vapors of pure formic aldehyde, ethylic aldehyde and a slight addition of eosine substantially as described.

855,943. COMBINED STAKE-POCKET AND SHAFT-BEARING. ROBERT E. FRAME, St. Louis, Mo., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Apr. 4, 1907. Serial No. 366,343.



Claim.—1. A combined stake pocket and shaft bearing, consisting of a member for receiving a stake, and a shaft bearing member detachably connected to the stake pocket member; substantially as described.

2. A combined stake pocket and shaft bearing, consisting of a member for receiving a stake, and a shaft bearing member pivotally connected to the stake pocket member; substantially as described.

3. A combined stake pocket and shaft bearing, consisting of a member for receiving a stake, and a movable shaft bearing member carried by said stake pocket member; substantially as described.

4. A device of the charncter described, comprising a stake pocket member, a movable shaft bearing member carried by said stake pocket member, and means for securing said shaft bearing member in position; substantially as described.

5. A device of the character described, comprising a stake pocket member, a shaft bearing member carried by the stake pocket member and adapted to swing upon a horizontal axis, and means for securing said shaft bearing member in position; substantially as described.

6. A device of the character described, comprising a take pocket member, a shaft bearing member arranged on the outer face of said stake pocket member and movable relatively thereto, and means for securing said shaft bearing member in position; substantially as described.

7. A device of the character described, comprising a stake pocket member provided in its front wall with an opening, a shaft bearing member having a portion which enters said opening and engages the inside face of the front wall of the stake pocket member, and means for securing said shaft bearing member in position; substantially as described.

8. A device of the character described, comprising a stake pocket member, a movable shaft bearing member carried by the stake pocket member, and means on the stake pocket member for preventing lateral movement of the shaft bearing member; substantially as described.

9. A device of the character described, comprising a stake pocket member, a shaft bearing member pivotally connected at one end to the front wall of the stake pocket member, and lugs on said stake pocket member between which the shaft carrying member is arranged; substantially as described.

10. A device of the character described, comprising a stake pocket member provided in its front wall with a transversely extending opening, a shaft bearing member having a portion which projects into said opening, and means for securing said shaft bearing member in position; substantially as described.

11. A device of the character described, comprising a stake pocket member provided in its front wall with an opening, a shaft bearing member provided at one end with a hook which enters said opening and engages a rib on the inside of the front wall of the stake pocket member, and means engaging the opposite end of said shaft bearing member for securing it in position; substantially as described.

12. A device of the character described, comprising a stake pocket member, means for securing said member to the frame of a car, a movable shaft carrying member connected at its upper end to the front wall of the stake pocket member, and a device extending across said shaft carrying member and secured to the frame of the car for locking said shaft carrying member in position; substantially as described.

13. A device of the character described, comprising a stake pocket member provided at its upper end with a groove to receive a U bolt which connects it to the frame of a car, a shaft bearing member provided at its upper end with a portion that projects into an opening in the front wall of the stake pocket member, grooved lugs on the stake pocket member between which the lower end portion of the shaft bearing member is arranged, and a U bolt extending across the shaft bearing member and arranged in the grooves of said lug and provided at its ends with nuts for securing it to the frame of the car; substantially as described.

14. A device of the character described, comprising a stake pocket member, and a movable shaft bearing member arranged on the front wall of the stake pocket member and secured in position by one of the devices which connects the stake pocket member to the frame of the car; substantially as described.

15. A car comprising side stakes, a hinged side door, stake pockets for securing said side stakes to the frame of the car, movable shaft bearing members mounted on the front walls of said stake pockets, a longitudinally extending door-operating shaft mounted in said shaft bearings, and means for retaining said shaft bearing members in position; substantially as described.

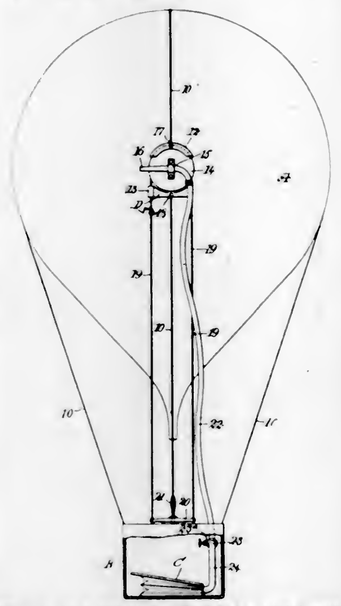
855,944. TRANSFORMABLE TOY. MARY A. GLEN, Elizabeth, N. J. Filed Jan. 2, 1907. Serial No. 350,338.



Claim.—1. A transformable toy of sheet material, comprising a plurality of sheets joined at their ends and having their central portions folded upon themselves, whereby to cover or conceal either end portion, each of said sheets having upon its outer face oppositely arranged representations of different subjects, the corresponding representations of the two sheets being of the same subject.

2. A transformable toy consisting of two body members, each representing the face of one subject and the back of another subject, which body members are connected to fold one upon the other in two directions and extension members from the point of unity between the body members one of which extension members represents the front and rear head portion of one of the subjects depicted upon the body members, and the other the front and rear head portion of the other subject.

855,945. SUSTAINING DEVICE FOR AERIAL VESSELS. IGNACE GRUBER, New York, N. Y. Filed Feb. 23, 1907. Serial No. 358,935.



Claim.—1. In a sustaining device for aerial vessels, the combination with the gas bag of the vessel, of nozzles pivotally mounted at opposite sides of the gas bag, a pneumatic connected with said nozzles, and means for rotatably adjusting the nozzles.

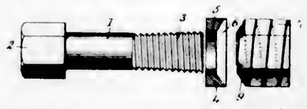
2. In a sustaining device for aerial vessels, plates secured to opposite sides of the gas bag, a nozzle pivoted upon each plate, devices for turning the said nozzles and a pneumatic connected with said nozzles.

3. In a sustaining device for aerial vessels, a gas bag, a basket attached to, plates suspended from the gas bag and located at opposite sides thereof, a wheel pivotally mounted on each plate, a nozzle carried by each wheel, means for rotating the wheels from the basket, and a pneumatic carried by the basket adapted to supply air to the said nozzles.

4. In a sustaining device for aerial vessels, a gas bag, a car or basket suspended therefrom, rotatable members located at opposite sides of the gas bag, a nozzle carried by each member, stops limiting the movement of the nozzles, means for operating the said rotatable objects, and a pneumatic within the car connected with the said nozzles.

5. In a sustaining device for aerial vessels, the combination with the gas bag and connected car of the vessel and a bellows located within the said car, of wheels located at opposite sides of the gas bag, means for supporting the said wheels, a nozzle carried by each of the said wheels, a pipe connected with the said bellows, connections between the said pipe and the said nozzles, and valves controlling the supply of air from the bellows to each of the said nozzles, as described.

855,946. NUT-LOCK. CHARLES C. HALGREN, New York, N. Y. Filed Jan. 7, 1907. Serial No. 351,136.



Claim.—1. A nut lock comprising a threaded bolt, a washer having a conical seat arranged on said bolt, and a helical nut having a conical end to fit said seat, with the convolutions thereof running oppositely to the threads on the bolt, whereby said nut will tend to coil up when forced to its seat.

2. A nut lock comprising a bolt having an inwardly-tapered, threaded end, and a helical nut having a threaded bore likewise but reversely tapered, screwed on said bolt, the convolutions of said nut running oppositely from the threads of the bolt, whereby said nut will tend to coil up when forced to its seat.

3. A nut lock comprising a bolt having an inwardly-tapered, threaded end, a washer having a conical seat arranged on said bolt, and a helical nut having a conical end and a reversely tapered bore, threaded on said bolt with the conical end thereof engaged with the conical seat of the washer.

4. A nut lock comprising a bolt having a tapered thread, and an expansible nut having a threaded bore reversely tapered screwed on said bolt.

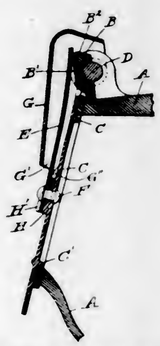
5. A nut lock comprising a bolt having a tapered thread, and a helical nut having a threaded bore reversely tapered screwed on said bolt.

855,947. JOURNAL-BOX AND LID. CHARLES G. HAWLEY, Chicago, Ill. Filed Oct. 26, 1906. Serial No. 340,684.

Claim.—1. A journal box having a hinged lug on its top, in combination with a hinge pin in said lug, a flat imperforate lid hinged upon said pin, a slightly curved leaf spring presenting its concaved side to said lid, a projection upon the outer face of said lid means permanently securing the lower end of the spring thereto, whereby the spring is placed and held under tension at all times substantially as described.

2. A journal box having a hinge lug, a hinge pin in said lug, in combination with a flat imperforate lid hinged on said pin and provided with a projection upon its outer face, and a curved leaf spring having its lower end pressed and riveted upon said projection and having its upper end engaged with the lug on the box, substantially as described.

3. A journal box lid comprising an imperforate plate having hinge lugs on its upper edge, in combination with a single leaf spring, a thickness of metal between the lower end of said spring and said lid, and a rivet securing the spring thereon and initially causing the spring to press against the upper edge of the lid, substantially as described.



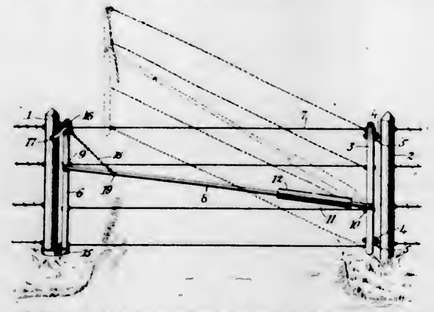
4. A journal box lid comprising an imperforate plate, having hinge lugs on its upper edge, in combination with a single leaf spring, a thickness of metal between the lower end of said spring and said lid, a rivet securing the spring thereon and causing the spring to press against the upper edge of the lid and a spring hood or protector covering the upper part of said spring and open at top and bottom, the lower end of the spring and said rivet being exposed below the end of the hood substantially as described.

5. A journal box lid comprising a flat imperforate plate having hinge lugs on its upper edge and provided with a projection, H, upon its outer surface, in combination with a curved spring presenting its concave side to the outer face of said lid and riveted upon said projection, substantially as described.

6. A journal box lid comprising a flat imperforate plate having hinge lugs on its upper edge and provided with projections, H and H', upon its outer surface, in combination with a curved spring presenting its concave side to the outer face of said lid and riveted upon said projection H, between said projections, H', substantially as described.

7. A journal box having a hinge lug on its top, in combination with a hinge pin in said lug, a flat imperforate lid hinged upon said pin, and a flat leaf spring having its lower end secured upon the outer face of said lid and its upper end engaged with the lug on said box, said spring being adapted to press on the edge of the lid when the latter is removed from the box, substantially as described.

855,948. GATE. JAMES M. HIGBE, Manson, Iowa. Filed Feb. 18, 1907. Serial No. 357,883.



Claim.—A gate consisting of a pair of vertical end bars connected by wires and a brace pivotally attached to said end bars, the end of said brace attached to the free end bar being elevated with respect to the other end of said brace, and an expansion joint formed in said brace and maintaining said wires taut.

855,949. SNAPPING DEVICE FOR MARBLES. WILLIS L. HOFFMAN, Jersey City, N. J. Filed Jan. 29, 1907. Serial No. 354,631.



Claim.—1. A device of the class described having a pair of oppositely disposed blades tending to separate, said blades presenting unbroken faces on their outer sides adapted to be pressed by the fingers to force said blades together, and a member disposed entirely between said blades and holding them in position.

2. A device of the class described having a pair of oppositely disposed blades adapted to hold a marble therebetween, and a block between said blades and attached thereto, one of said blades being flexible whereby the marble may be snapped from said device by pressing the blades together with the fingers.

3. A device of the class described consisting of a bent spring having a bow and blades extending from said bow, a block connecting said blades near said bow, the ends of said blades being disposed substantially opposite to each other and formed into lips adapted to hold a marble therebetween.

4. A device of the class described having a blade with a curved lip formed at the forward end thereof forming a seat for a marble, a transverse bar disposed near said seat and forming a stop to limit the rearward movement of said marble, and a second blade engaging the side of the marble opposite said first blade, one of said blades being flexible whereby the marble may be projected from said device by pressure thereupon.

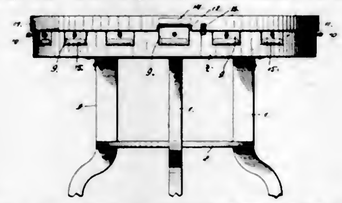
855,950. LEVER-ESCAPEMENT FOR WATCHES AND CLOCKS. ERNEST H. HORN, Waterbury, Conn., assignor to The Waterbury Clock Co., Waterbury, Conn., a Corporation. Filed Jan. 31, 1907. Serial No. 355,108.



Claim.—1. In a lever-escapement, the combination with the balance-wheel and the balance-staff, of an impulse-pin carried by the balance-wheel, an impulse-lever provided with an impulse fork coacting with the said impulse pin, a safety-roller mounted upon the balance-staff, and a safety-lever made independently of the said impulse-lever and extending alongside of the same into position to co-act with the said safety-roller and mounted independently of the said impulse lever but oscillating upon the same center as the same.

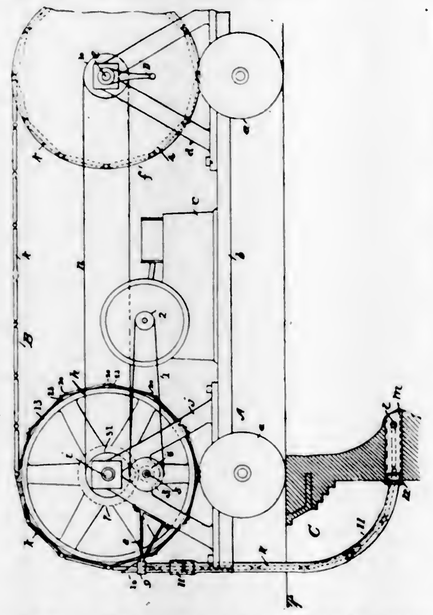
2. In a lever-escapement, the combination with the balance-wheel and balance-staff thereof, of an impulse-pin carried by the balance-wheel, an impulse-lever having an impulse-fork coacting with the said pin, a pallet staff or arbor on which the said impulse-lever is mounted, a safety-roller mounted upon the balance-staff, and a safety-lever coacting with the said roller and made independent of the impulse-lever and mounted upon the pallet staff or arbor.

855,951. REVOLVING TABLE. JOHN W. HULL, East Brady, Pa. Filed Sept. 25, 1906. Serial No. 336,184.



Claim.—In a table, a plurality of supporting legs cut away on their outer faces at the upper ends thereof to form shoulders, bearing blocks mounted on said shoulders, anti-friction balls carried by said bearing blocks, an annulus constituting a drawer supporting shelf provided with a bearing ring resting on said anti-friction balls, and having a plurality of radially-disposed recesses in its upper face; drawers slidably mounted in said recesses, a table top resting on the upper ends of said legs, a block secured to the underneath face of said table top and engaging the inner faces of said legs at their inner ends, and a band secured to the periphery of said table top overlying the upper edge of said drawers, and having a cut away portion whereby the drawers may be withdrawn when brought into registry with said cut away portion.

855,952. APPARATUS FOR FEEDING CABLES INTO CONDUITS. EDWARD J. HUTCHINS, New Haven, Conn. Filed Aug. 3, 1906. Serial No. 329,021.



Claim.—1. The combination in a machine for the purpose described, of a reel, a driving wheel, means for rotating the driving wheel, a flexible rod secured to and adapted to be wound upon the reel its opposite end portion passing over the driving wheel, with means upon the driving wheel coinciding with means upon the rod, whereby the movement of the driving wheel will be communicated to the rod.

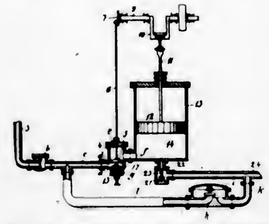
2. The combination in a machine for the purpose described, of a carriage, a reel and a driving wheel upon separate shafts supported on said carriage means for rotating the driving wheel, a flexible rod secured to and adapted to be wound upon the reel its opposite end portion passing over the driving wheel, with means upon the driving wheel coinciding with means upon the rod by means of which the rod may be carried in either direction.

3. The combination in a machine for the purpose described, of a carriage, a reel and a driving wheel upon separate shafts supported on said carriage, a motor connected with said wheel, a flexible rod secured to and adapted to be wound upon the reel its opposite end portion passing over the driving wheel, with teeth or members upon the driving wheel adapted to engage notches in the rod and carry the same along.

4. The combination in a machine for the purpose described, of a reel, a driving wheel, means for rotating the driving wheel, an articulated rod composed of separate pieces or links secured to each by ball-and-socket joints, connected with and adapted to be wound upon the reel, its opposite end portion passing over the driving wheel, with means upon the driving wheel adapted to engage means upon the rod and communicate motion thereto.

5. The combination in a machine for the purpose described, of a carriage, a reel and a driving wheel upon separate shafts supported upon said carriage, a motor connected with said wheel, means for rotating the said reel in either direction, an articulated rod composed of separated pieces or links secured to each other by ball-and-socket joints connected with and adapted to be wound upon the reel, its opposite end portion passing over the driving wheel, with teeth or members upon the driving wheel adapted to engage the ends of the links, as set forth.

855,953. APPARATUS FOR PRODUCING MIXTURES OF GASES OR OF GAS AND AIR FOR ILLUMINATING PURPOSES. HEINRICH L. KARGER, Berlin, Germany, assignor to Selas Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Filed July 6, 1903. Serial No. 164,327.

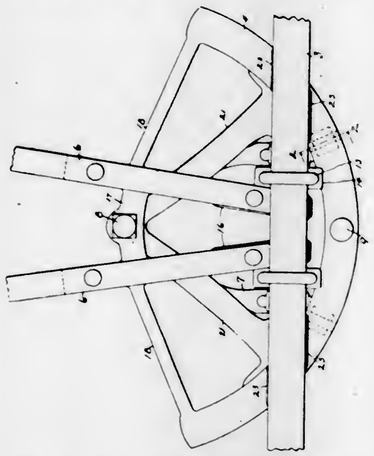


Claim.—In an apparatus of the character described, the combination of pumping mechanism provided with a mixing chamber, said mixing chamber having two inlets arranged successively, one for admitting air and the other for admitting gas, one inlet being disposed at an angle to the path of the aeriform body flowing from the other inlet so as to thoroughly commingle the air and gas, and mechanism connected with a pressure main and controllable by pressure therefrom for governing the flow of aeriform bodies through said inlets.

855,954. FIFTH-WHEEL. HENRY B. KNIGHT, Battle Creek, and GEORGE M. COGSWELL, Dowagiac, Mich. Filed Jan. 16, 1907. Serial No. 352,663.

Claim.—1. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; rearwardly-diverging reaches; an upper member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, having a central downwardly-projecting lug thereon, a cross-piece adapted to receive said head block having upwardly-projecting flange-like lips adapted to engage the same and having perforated ears thereon, a pair of rearwardly-diverging

arms on which said reaches are arranged and secured, said arms having upwardly-projecting flange-like lips at their inner ends to assist in retaining said reaches, brace arms extending from the ends of said bearing segment to said arms, a cross piece connecting said arms at their rear ends having a king bolt bearing thereon; clips arranged over said springs and head block and through the perforated ears on said cross piece securing the parts together; a lower member, comprising a bearing segment arranged to project into the said upper bearing segment having a longitudinal slot therein adapted to receive the said downwardly-projecting lug on said upper bearing segment, a cross piece for said lower member adapted to rest on the axle, rearwardly projecting converging arms having a king bolt bearing at their rear ends; a brace extended to the under side of the axle, said brace having a king bolt bearing thereon; clips for securing the parts together and to the axle arranged over the said cross piece of said lower member and through said brace; a king bolt; bearing rollers journaled on said upper bearing segment in front of said head block; and a bolt arranged through the said central lug of said upper bearing segment adapted to retain said lower bearing segment thereon, for the purpose specified.



2. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; rearwardly-diverging reaches; an upper member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, having a central downwardly-projecting lug thereon, a cross-piece adapted to receive said head block and having perforated ears thereon, a pair of rearwardly-diverging arms on which said reaches are arranged and secured, brace arms extending from the ends of said bearing segment to said arms, a cross piece connecting said arms at their rear ends having a king bolt bearing thereon; clips arranged over said springs and head block and through the perforated ears on said cross piece securing the parts together; a lower member, comprising a bearing segment arranged to project into the said upper bearing segment having a longitudinal slot therein adapted to receive the said downwardly-projecting lug on said upper bearing segment, a cross piece for said lower member adapted to rest on the axle, rearwardly projecting converging arms having a king bolt bearing at their rear ends; a brace extended to the under side of the axle, said brace having a king bolt bearing thereon; clips for securing the parts together and to the axle arranged over the said cross piece of said lower member and through said brace; a king bolt; bearing rollers journaled on said upper bearing segment in front of said head block; and a bolt arranged through the said central lug of said upper bearing segment adapted to retain said lower bearing segment thereon, for the purpose specified.

3. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; rearwardly-diverging reaches; an upper member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, having a central downwardly-projecting lug thereon, a cross-piece adapted to receive said head block and having perforated ears thereon, a pair of rearwardly-diverging arms on which said reaches are arranged and secured, a cross piece connecting said arms at their rear ends having a king bolt bearing thereon; clips arranged over said springs and head block and through the perforated ears on said cross piece securing the parts together; a lower member, comprising a bearing segment arranged to project into the said upper bearing segment having a longitudinal slot therein adapted to receive the said downwardly-projecting lug on said upper bearing segment, a cross piece for said lower member adapted to rest on the axle, rearwardly projecting converging arms having a king bolt bearing at their rear ends; a brace extending to the under side of the axle, said brace having a king bolt bearing thereon; clips for securing the parts together and to the axle arranged over the said cross piece of said lower member and through said brace; a king bolt; bearing rollers journaled on said upper bearing segment in front of said head block; and a bolt arranged through the said central lug of said upper bearing segment adapted to retain said lower bearing segment thereon, for the purpose specified.

4. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; rearwardly-diverging reaches; an upper member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, a cross-piece adapted to receive said head block and having perforated ears thereon, a pair of rearwardly diverging arms on which said reaches are arranged and secured, a cross piece connecting said arms at their rear ends having a king bolt bearing thereon; clips arranged over said springs and head block and through the perforated ears on said cross piece securing the parts together; a lower member, comprising a bearing segment arranged to project into the said upper bearing segment, a cross piece for said lower member adapted to rest on the axle, rearwardly projecting converging arms having a king bolt bearing at their rear ends; a brace extended to the under side of the axle, said brace having a king bolt bearing thereon; clips for securing the parts together and to the axle arranged over the said cross piece of said lower member and through said brace; a king bolt; and bearing rollers journaled on said upper bearing segment, for the purpose specified.

5. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; a reach; an upper fifth wheel member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, having a central downwardly-projecting lug thereon, and having a rearwardly projecting arm having a king bolt bearing thereon, secured to said reach and head block; a lower member, comprising a bearing segment arranged to project into the said upper bearing segment having a longitudinal slot therein adapted to receive the said downwardly-projecting lug on said upper bearing segment, and a rearwardly projecting arm having a king bolt bearing secured to the axle; a brace, having a king bolt bearing thereon extending to the under side of the axle; a king bolt; bearing rollers journaled on said upper bearing segment in front of said head block, and a bolt arranged through the said central lug of said upper bearing segment adapted to retain said lower bearing segment thereon, for the purpose specified.

6. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; a reach; an upper fifth wheel member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, having a central downwardly-projecting lug thereon, and having a rearwardly projecting arm having a king bolt bearing thereon, secured to said reach and head block; a lower member, comprising a bearing segment adapted to retain said lower bearing segment thereon, for the purpose specified.

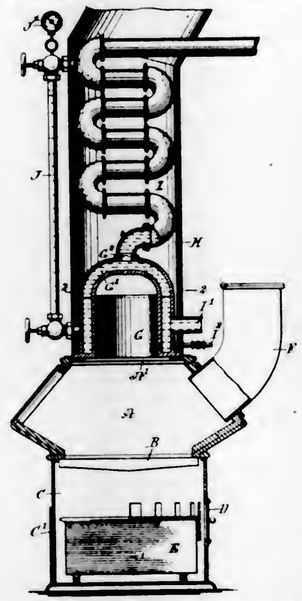
3. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; rearwardly-diverging reaches; an upper member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, having a central downwarly-projecting lug thereon, a cross-piece adapted to receive said head block and having perforated ears thereon, a pair of rearwardly-diverging arms on which said reaches are arranged and secured, a cross piece connecting said arms at their rear ends having a king bolt bearing thereon; clips arranged over said springs and head block and through the perforated ears on said cross piece securing the parts together; a lower member, comprising a bearing segment arranged to project into the said upper bearing segment having a longitudinal slot therein adapted to receive the said downwardly-projecting lug on said upper bearing segment, a cross piece for said lower member adapted to rest on the axle, rearwardly projecting converging arms having a king bolt bearing at their rear ends; a brace extending to the under side of the axle, said brace having a king bolt bearing thereon; clips for securing the parts together and to the axle arranged over the said cross piece of said lower member and through said brace; a king bolt; bearing rollers journaled on said upper bearing segment in front of said head block; and a bolt arranged through the said central lug of said upper bearing segment adapted to retain said lower bearing segment thereon, for the purpose specified.

4. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; rearwardly-diverging reaches; an upper member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, a cross-piece adapted to receive said head block and having perforated ears thereon, a pair of rearwardly diverging arms on which said reaches are arranged and secured, a cross piece connecting said arms at their rear ends having a king bolt bearing thereon; clips arranged over said springs and head block and through the perforated ears on said cross piece securing the parts together; a lower member, comprising a bearing segment arranged to project into the said upper bearing segment, a cross piece for said lower member adapted to rest on the axle, rearwardly projecting converging arms having a king bolt bearing at their rear ends; a brace extended to the under side of the axle, said brace having a king bolt bearing thereon; clips for securing the parts together and to the axle arranged over the said cross piece of said lower member and through said brace; a king bolt; and bearing rollers journaled on said upper bearing segment, for the purpose specified.

5. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; a reach; an upper fifth wheel member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, having a central downwardly-projecting lug thereon, and having a rearwardly projecting arm having a king bolt bearing secured to the axle; a brace, having a king bolt bearing thereon extending to the under side of the axle; a king bolt; bearing rollers journaled on said upper bearing segment in front of said head block, and a bolt arranged through the said central lug of said upper bearing segment adapted to retain said lower bearing segment thereon, for the purpose specified.

6. In a structure of the class described, the combination with an axle, of a head block; a spring arranged thereon; a reach; an upper fifth wheel member, consisting of a bearing segment channel-shaped in cross-section, opening downwardly, having a central downwardly-projecting lug thereon, and having a rearwardly projecting arm having a king bolt bearing thereon, secured to said reach and head block; a lower member, comprising a bearing segment arranged to project into the said upper bearing segment having a longitudinal slot therein adapted to receive the said downwardly-projecting lug on said upper bearing segment, and a rearwardly projecting arm secured to the axle, said arm having a king bolt bearing thereon; bearing rollers journaled on said upper bearing segment in front of said head block, and a bolt arranged through the said central lug of said upper bearing segment adapted to retain said lower bearing segment thereon, for the purpose specified.

855,955. HEATER. HERMAN F. LANGENHOP, New York, N. Y. Filed Feb. 1, 1905. Serial No. 243,651.



Claim.—1. A heater, comprising a fire box having an enlarged opening in its top, a smoke flue surrounding the said opening, an annular chamber having an external flange at its lower end, said chamber resting upon the top of the fire box with its bottom extending over the opening of the fire box to expose the same to the direct action of the products of combustion, an inverted U-shape pipe connected with the top of the said chamber, a coil in the smoke flue and having its lower end connected with the U-shape pipe, the upper end of the coil extending out through the smoke flue and adapted for connection with a radiator, and a return pipe leading from the annular chamber out through the flue.

2. A heater, comprising a fire box having an opening in its top, a smoke flue on the top of the fire box, a heat controller in the form of an annular chamber and arranged on the top of the fire box within the smoke flue, said chamber being of less diameter than the smoke flue and through the opening of which passes the smoke and gases from the fire box to said flue, an inverted U-shaped pipe connected with the top of the annular chamber, a coil in the smoke flue, said coil having its lower end connected with the U-shaped pipe and its upper end extending out through the smoke flue for connection with a radiator, and a return pipe leading from the lower portion of the annular chamber out through the smoke flue.

3. A heater comprising a fire box formed of two conical sections united at their bases, the fire box having an enlarged opening in its top, an upwardly extending filling tube connected with the upper section of the fire box, a smoke flue on the top of the fire box, an annular water chamber on the top of the fire box within the smoke flue with its bottom extending over the opening of the fire box, a coil in the smoke flue and having its lower end connected with the annular chamber and its upper end leading out through the smoke flue for connection with a radiator, and a return pipe leading from the lower portion of the annular chamber out through the smoke flue.

855,956. GARMENT-HOLDER. SIMON LEVY, Youngstown, Ohio. Filed Apr. 4, 1907. Serial No. 366,399.



Claim.—1. In a garment holder, a bust-like body frame having supporting means at the top and garment hanging means at the bottom, and adjustable forms for the front and shoulder portions of the frame.

2. In a garment holder, a bust-like body frame provided with a swelled front, sloping shoulder portions, and a centrally arranged collar flange, a supporting device connected with the collar flange of the frame, hanger clasps supported from the lower end of the frame, and adjustable forms carried by the front and shoulder portions of the frame.

3. In a garment holder, a skeleton bust-like body frame provided with a swelled front, sloping shoulder portions, and a centrally arranged upstanding collar flange, said frame being further provided at the bottom with a hanger rod, a plurality of hanger clasps supported by said hanger rod, a supporting device connected with the collar flange, and adjustable forms carried by the front and shoulder portions of the frame.

4. In a garment holder, a body frame provided with a front section and circular shoulder portions, and similar expansible and contractible circular forms fitted respectively to said front section and shoulder portions of the frame.

5. In a garment holder, a body frame having front and shoulder portions, an expansible and contractible bust and shoulder forms respectively fitted to the front and shoulder portions of the frame, each of said forms comprising a plurality of hinged members.

6. In a garment holder, a body frame having front and shoulder portions, and expansible and contractible bust and shoulder forms respectively fitted to the front and shoulder portions of the frame, each of said forms comprising a plurality of loosely interlaced hinged members.

7. In a garment holder, a body frame having front and shoulder portions, and expansible and contractible bust and shoulder forms respectively fitted to the front and shoulder portions of the frame, each of said forms comprising a circular series of loosely interlaced hinged elements.

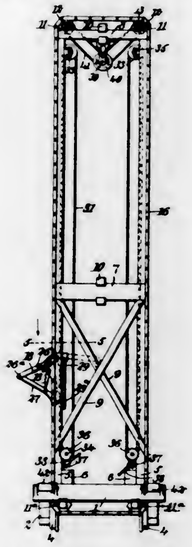
8. In a garment holder, a body frame having front and shoulder portions, and expansible and contractible bust and shoulder forms respectively fitted to the front and shoulder portions of the frame, each of said forms comprising a circular series of loosely interlaced loops having a hinged support at their extremities.

9. In a garment holder, a body frame having front and shoulder portions, and expansible and contractible bust

and shoulder forms fitted respectively to the front and shoulder portions of the frame, each of said forms comprising a base ring supported from the body frame, and a circular series of loosely interlaced U-shaped loops having hinged connections at the extremities of their legs with the base rings thereof.

10. In a garment holder, a sectional bust-like body frame comprising separate detachably connected sections, and adjustable bust and shoulder forms detachably supported respectively upon the front and shoulder portions of the body frame.

855,957. ELEVATOR. CARL A. LINDSTROM, Seattle, Wash. Filed Nov. 13, 1906. Serial No. 343,188.



Claim.—1. Oppositely disposed endless carriers provided with brackets supported upon pivoted heads, in combination with an intermediate vertically adjustable skid.

2. The combination with oppositely arranged endless carriers provided with brackets supported on pivoted heads, of a series of rollers arranged in a line transversely of the path of said carriers, and a vertically adjustable skid.

3. The combination with oppositely disposed endless carriers provided with pivoted brackets supported on pivoted heads, of a vertically adjustable skid frame intermediate said conveyers adapted to move transversely of the path of said carriers.

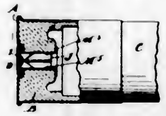
4. The combination with oppositely arranged endless conveyers provided with brackets supported on pivoted heads, of a vertically adjustable skid intermediate said conveyers adapted to move transversely of the path of said conveyers, and mechanism connected with said brackets adapted to trip the supporting heads of said conveyer brackets.

5. The combination of oppositely disposed endless conveyers, a vertically adjustable skid adapted to move transversely of the path of said conveyers, brackets pivoted to said conveyers and provided with a retaining notch, a bracket head pivoted to said conveyer adapted to engage said notch, and a spring connected with said head adapted to hold the end of said head normally in engagement with the notch of said bracket.

6. The combination with oppositely disposed endless carriers provided with brackets reversely arranged and oppositely disposed to each other, of an intermediately pivoted head adapted to support the bracket arranged above said head.

7. The combination with oppositely disposed endless conveyers provided with brackets supported upon pivoted heads, a vertically adjustable skid frame, a skid pivotally mounted on said frame and adapted to move transversely of the path of said conveyers, and means for rotating said conveyers to the right or left.

855,958. CARTRIDGE. GOTTLOB E. LOEBLE, New York, N. Y. Filed Jan. 30, 1906. Serial No. 298,589.



Claim.—1. In a cartridge, a base having an opening therein, a primer received in said opening, and means directly coöperating with said base for holding said primer directly to said base and forming a gas-tight joint between them.

2. In a cartridge, a base having an opening, a flange around said opening, a primer received directly in said opening, and means covering the rear of said primer and engaged directly with said flange to hold said primer to the base and to form a gas-tight joint between them.

3. In a cartridge, a base having an opening therein, a flange around said opening, a primer received in said opening, a flange on said primer inclosed by and interlocked directly with said base-flange to form a gas-tight joint.

4. In a cartridge, a base having an opening, a flange around said opening, a primer received in said opening, a cap covering the rear of said primer only and interlocked with said flange to hold said primer to said base and form a gas-tight joint between them.

5. In a cartridge, a base, a base-wad, a primer secured to said base and constructed to engage and hold the base-wad therein, and a cap extending over the rear of said primer and engaging a flange thereof to form a gas-tight joint.

6. In a cartridge, a base having an opening, a base-wad, a primer received in said opening and secured at the rear directly to said base, said primer extending through said base wad and constructed to engage the latter at the front and a cap extending over and holding the rear end of said primer.

7. In a cartridge, a base having an opening, a base-wad, a primer received in said opening and secured at the rear to said base, said primer extending through said base-wad and curled outwardly at the front to engage said base-wad and a cap extending over and holding the rear end of said primer.

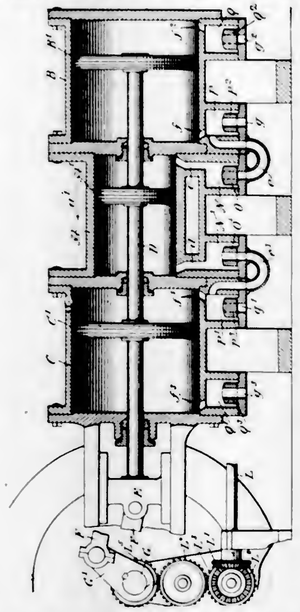
8. In a cartridge, a base, a base-wad, an opening in said base, a flange around said opening, a primer received in said opening and extending through said base-wad, a cap covering the rear of said primer and engaged with said flange to form a gas-tight joint, and means for engaging the front end of said primer with said base-wad.

855,959. TRIPLE-EXPANSION ENGINE. WILLIAM S. LYCAN, Marshall, Ill. Filed Oct. 20, 1906. Serial No. 339,740.

Claim.—1. A triple expansion engine comprising a high pressure cylinder, low pressure cylinders on opposite ends of the high pressure cylinder and in axial alinement therewith, connected pistons moving in unison in the said cylinders, admission valves for controlling the admission of the motive agent to the said high pressure cylinder, exhaust valves controlling the exhaust motive agent from the high pressure cylinder to the adjacent or inner ends of the said low pressure cylinders, a reservoir, and valves for connecting the exhaust side of the high pressure cylinder with the said reservoir.

2. A triple expansion engine comprising a high pressure

cylinder, low pressure cylinders on opposite ends of the high pressure cylinder and in axial alinement therewith, connected pistons moving in unison in the said cylinders, admission valves for controlling the admission of the motive agent to the said high pressure cylinder, exhaust valves controlling the exhaust motive agent from the high pressure cylinder to the adjacent or inner ends of the said low pressure cylinders, a reservoir, valves for connecting the exhaust side of the high pressure cylinder with the said reservoir, and valves connecting the reservoir with the outer ends of the said low pressure cylinders.



3. A triple expansion engine comprising a high pressure cylinder, low pressure cylinders on opposite ends of the high pressure cylinder and in axial alinement therewith, connected pistons moving in unison in the said cylinders, admission valves for controlling the admission of the motive agent to the said high pressure cylinder, exhaust valves controlling the exhaust motive agent from the high pressure cylinder to the adjacent or inner ends of the said low pressure cylinders, a reservoir, and valves for connecting the exhaust side of the high pressure cylinder with the said reservoir at the time the pistons in the cylinders are in an approximately two-third stroke position.

4. A triple expansion engine comprising a high pressure cylinder, low pressure cylinders on opposite ends of the high pressure cylinder and in axial alinement therewith, connected pistons moving in unison in the said cylinders, admission valves for controlling the admission of the motive agent to the said high pressure cylinder, exhaust valves controlling the exhaust motive agent from the high pressure cylinder to the adjacent or inner ends of the said low pressure cylinders, a reservoir, and valves operating in unison with the admission valves for connecting the reservoir with the outer ends of the low pressure cylinders.

5. A triple expansion engine comprising a high pressure cylinder, low pressure cylinders on opposite ends of the high pressure cylinder and in axial alinement therewith, connected pistons moving in unison in the said cylinders, admission valves for controlling the admission of the motive agent to the said high pressure cylinder, exhaust valves controlling the exhaust motive agent from the high pressure cylinder to the adjacent or inner ends of the said low pressure cylinders, a reservoir, valves for connecting the exhaust side of the high pressure cylinder with the said reservoir at the time the pistons in the cylinders are in an approximately two third stroke position, and valves operating in unison with the said admission valves for connecting the said reservoir with the outer ends of the low pressure cylinders.

6. A triple expansion engine comprising a high pressure cylinder, low pressure cylinders on opposite ends of the high pressure cylinder and in axial alinement therewith, connected pistons moving in unison in the said cylinders, admission valves for controlling the admission of the motive agent to the said high pressure cylinder, exhaust valves controlling the exhaust motive agent from the high pressure cylinder to the adjacent or inner ends of the said low pressure cylinders, a reservoir, valves for connecting the exhaust side of the high pressure cylinder with the said reservoir at the time the pistons in the cylinders are in an approximately two-third stroke position, valves operating in unison with the said admission valves for connecting the said reservoir with the outer ends of the low pressure cylinders, and exhaust valves controlling the exhaust motive agent from the outer ends of the said low pressure cylinders.

7. A triple expansion engine comprising a high pressure cylinder, low pressure cylinders on opposite ends of the high pressure cylinder and in axial alinement therewith, connected pistons moving in unison in the said cylinders, admission valves for controlling the admission of the motive agent to the said high pressure cylinder, exhaust valves controlling the exhaust motive agent from the high pressure cylinder to the adjacent or inner ends of the said low pressure cylinders, a reservoir, valves for connecting the exhaust side of the high pressure cylinder with the said reservoir at the time the pistons in the cylinders are in an approximately two-third stroke position, valves operating in unison with the said admission valves for connecting the said reservoir with the outer ends of the low pressure cylinders, exhaust valves controlling the exhaust motive agent from the outer ends of the said low pressure cylinders, a main driving shaft connected with the said pistons, a cam shaft driven from the said driving shaft, cams on the said cam shaft, and connections between the said cams and the said valves for actuating the same.

8. In a triple expansion engine, low pressure cylinders, a high pressure cylinder between the low pressure cylinders, connected pistons moving in unison in the cylinders, a steam chest having ports leading into the high pressure cylinder, valves in the steam chest and controlling the ports thereof, and valve mechanisms for alternately opening and closing the valves, each valve mechanism closing its valve suddenly at the time the piston of the high pressure cylinder is near the end of its stroke.

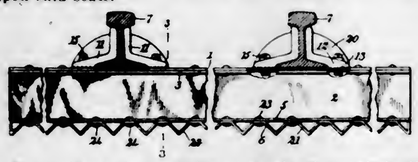
9. In a triple expansion engine, low pressure cylinders, a high pressure cylinder between the low pressure cylinders, connected pistons moving in unison in the cylinders, a main drive shaft, a cam shaft driven from the main shaft, a steam chest having ports leading into the high pressure cylinder, valves in the steam chest and controlling the ports thereof, and valve mechanisms for the valves, operated by the cam shaft, said valve mechanisms alternately opening and closing the valves and each suddenly closing its valve at the time the piston of the high pressure cylinder is near the end of its stroke.

10. In a triple expansion engine, low pressure cylinders, a high pressure cylinder between the low pressure cylinders, connected pistons moving in unison in the cylinders, a main drive shaft, a cam shaft operating in unison with the main shaft, a live steam chest having ports leading into the high pressure cylinder, valves in the steam chest and controlling the ports thereof, and exhaust steam chest having ports leading into the high pressure cylinder, valves in the exhaust steam chest and controlling its ports, and means for operating the said valves from the cam shaft.

855,960. RAILWAY-TIE. HENRY E. MATTHEWS, Salida, Colo. Filed Feb. 9, 1907. Serial No. 356,538.

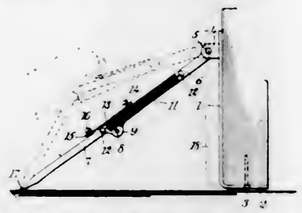
Claim.—1. A railway tie having a face-plate with seats for the rails, said seats consisting of a plurality of py-

ramidal projections, and chairs bolted to said seats and adapted to clamp the rails therebetween, said chairs having under faces with pyramidal projections engaging said first projections and preventing the shifting of said chairs upon said seats.



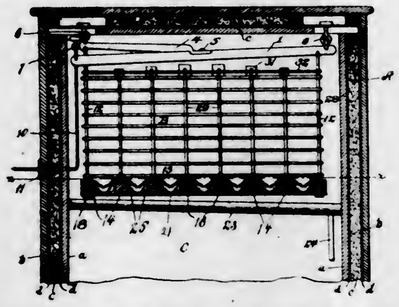
2. A railway tie consisting of a pair of oppositely disposed channel irons, a base-plate riveted to said channel irons and having transversely disposed corrugations formed therein, said base-plate being attached to said channel irons between said corrugations, a face-plate attached to said channel irons at the upper edges thereof and having seats formed on the upper face thereof, said seats having a plurality of pyramidal projections thereupon, and chairs being adapted to grasp the rail and having pyramidal projections on the under faces thereof engaging said first projections, said chairs being bolted to said face-plate.

855,961. DOOR-FASTENER. MANNING D. MERRING, East Stroudsburg, Pa. Filed Jan. 14, 1907. Serial No. 352,160.



Claim.—A door fastener comprising brace sections, a hinged joint connecting said sections, and a spring having its ends attached to said sections and arranged at the edge thereof.

855,962. REFRIGERATOR. CHARLES H. MITCHELL and JOHN F. WINELAND, Crafton, Pa. Filed Aug. 30, 1905. Serial No. 276,383.

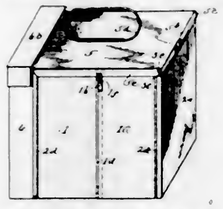


Claim.—1. In a refrigerator, an ice receptacle comprising corner posts which project above the sides of the receptacle for suspending the latter, a bottom secured to the corner posts and serving as an ice rack, sides for said receptacle formed of horizontally disposed slats secured to the corner posts, vertically disposed braces secured at their upper ends to the upper slats of the sides by securing devices projecting from the upper ends of said braces and resting on the upper slats, and a supplemental brace connecting said securing devices.

2. In a refrigerator, an ice receptacle embodying corner posts and sides, the corner posts rising above the sides for suspending the receptacle in the refrigerator, said sides formed of horizontal slats secured to said corner posts, vertical braces secured at their upper ends to the upper slats of the sides, a bottom consisting of spaced beams, drip troughs between said beams spaced away from the beams to provide air spaces, and deflector plates above said troughs.

3. In a refrigerator, a suspended ice receptacle embodying corner posts and sides, the posts rising above the sides, and the sides formed of horizontally disposed slats secured to the corner posts, vertical braces extending through eyes carried by the upper slats of the sides, heads of graduated size secured to the upper ends of said braces, a bottom forming an ice rack secured to the corner posts and consisting of parallel beams, drip troughs, and deflector plates, and a discharge trough disposed to receive the drippings from said drip troughs.

855,963. COLLAPSIBLE PAIL. JOHN L. MORRISON, Joliet, Ill. Filed Aug. 14, 1905. Serial No. 274,014.



Claim.—1. In a collapsible receptacle, a plurality of sections hinged together to form the sides, ends, bottom and top of the receptacle, means detachably holding the bottom section in position, means detachably holding the top section locked on one of the end sections, and means detachably connecting the free edges of two of the side sections together for the purpose set forth.

2. In a collapsible receptacle, a plurality of sections hinged together to form the sides, ends, bottom and top of the receptacle, said bottom and one of the end sections adapted to be interlocked, means for detachably holding the bottom section in place, means detachably holding the top section locked on one of the end sections, said means consisting of slidable latches mounted on said section and engaging suitable keepers on the end section, and means detachably connecting two of the side sections together said means consisting of a latch slidably mounted on one of said sections and suitable keepers on the complementary section.

3. In a collapsible receptacle, a plurality of sections hinged together to form the sides, ends, bottom and top of the receptacle, means for detachably supporting, and means for locking the bottom section in place when the parts are assembled, means detachably locking the top section in place when the parts are assembled, means detachably locking two of the side sections together when the parts are assembled, a shelf, and means for detachably supporting said shelf.

4. In a collapsible receptacle, a plurality of metal sections foldably hinged together to form a complete box one of said sections having an integral projecting bead along two of its corners formed by bending the metal, means for detachably locking the sections together when assembled in receptacle form, and a cup slidably mounted on the beaded portions of said section, said cup having a suitable cover and adapted to hold the parts of the receptacle when folded into compact form.

5. In a collapsible receptacle having hinged side sections, means for detachably connecting two of said sections together, said means consisting of a vertical latch slidably mounted on one of said sections and provided with a

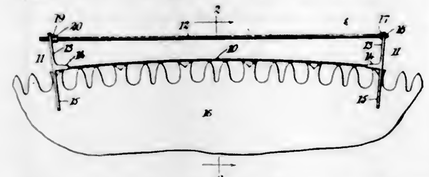
grasping portion and engaging ends, and keepers arranged on the complementary section and adapted to receive the ends of the latch.

6. In a collapsible receptacle having hinged side sections, means for detachably connecting two of said sections together, said means consisting of a vertical latch consisting of a rod bent to form a grasping portion 1f, and having its ends bent to form hooks substantially as shown, and keepers adapted to receive said hooks, said keepers consisting of a socket and a tubular catch arranged on the complementary section.

7. A collapsible receptacle consisting of foldably hinged sides, end, bottom and top sections, pivoted latches for holding the bottom section in its assembled portion, rockable and slidable latches adapted to detachably engage suitable openings in the top and adjacent end section, a latch and keepers adapted to detachably connect two of the side sections together, a box slidably mounted on one of the end sections, and a tray detachably connected with the inner sides of the end sections.

8. A metal box composed of two end pieces each bent near its vertical edges to form flanges, two pairs of side pieces hinged on said flanges, the members of one pair being hinged together, and the members of the other pair being detachably connected together, a cover hinged to one of the end pieces, a bottom hinged to one of the end pieces, means for locking the cover in position and means for locking the bottom in position, said sides, ends, cover and bottom adapted to fold compactly, substantially as described.

855,964. GAGE. GEORGE W. MCLAUGHLIN, Hoquiam, Wash. Filed Jan. 22, 1907. Serial No. 353,432.



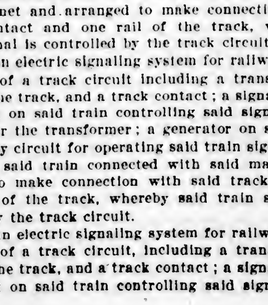
Claim.—1. In a gage for saws, a resilient gage plate, two end pieces, one at each end of said plate secured rigidly thereto, each end piece being formed with a member projecting at an angle to the face of said plate, each member being formed with an aperture, a rod adapted to enter said apertures, said rod being formed with a threaded portion at one end, a pin projecting from said rod at the other end thereof and adapted to engage one side of one of said members, a collar on said rod adapted to engage the other side of said last-mentioned member, a set nut on said threaded portion of said rod adapted to bear against the other of said members, and a lock nut adapted to engage said set nut.

2. In a gage for saws, a resilient gage plate, two members rigidly secured to said plate one at each end thereof and each member being formed with a portion projecting above said plate and a portion projecting below said plate, a rod attached at one end to the upper portion of one of said members, said rod being threaded at the other end, and a nut mounted on said threaded end of said rod and adapted to bear against the upper portion of the other of said members on the inner side thereof, the lower portions of said members being offset to serve as guides for a saw blade.

855,965. WRITING-TABLET. JOHN B. MCPEEK, Pine Grove, W. Va. Filed June 2, 1906. Serial No. 319,919.

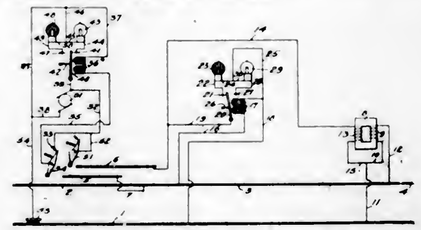
Claim.—1. In a writing tablet, the combination with a base-board formed with an opening at its front, of a casing secured to the upper end of the board, means for supporting sheets of paper upon the board, and a transparent protecing cover for said opening.

2. In a writing tablet, the combination with a base board, of a casing secured to the upper end thereof, said casing being closed at one end and open at the other and having a front opening, means for clamping sheets of paper upon said board, a transparent protecting closure for said opening, and an adjustable slide for concealing the lines of writing.



3. In a writing tablet, the combination with a base board, of a casing secured to the upper end thereof and formed with longitudinally disposed slots, and a slide extending through said slots and adapted to conceal the lines of writing.

855,966. ELECTRIC SIGNALING DEVICE. EDWARD L. ORCUTT, New York, N. Y., assignor to Railway Safety Signal Company, a Corporation of New Jersey. Filed Sept. 1, 1906. Serial No. 333,003.



Claim.—1. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator for the supply circuit; and contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit.

2. In an electric railway signaling system, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit; and contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit.

3. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit for operating said train signal; and contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit.

4. In an electric signaling system for railways, the combination of a track circuit, including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply

circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal; and a magnet in the track circuit controlling said track signal.

5. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal; and a magnet in the track circuit controlling said track signal.

6. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit and for operating said train signal; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal; and a magnet in the track circuit controlling said track signal.

7. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal operated by the supply circuit; and a magnet in the track circuit controlling said track signal.

8. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal operated by the supply circuit; and a magnet in the track circuit controlling said track signal.

9. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit and for operating said train signal; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal operated by the supply circuit; and a magnet in the track circuit controlling said track signal.

10. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal; a plurality of track signals; and a magnet in the track circuit controlling said track signals.

11. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal; a plurality of track signals operated by the supply circuit; and a magnet in the track circuit controlling said track signals.

12. In an electric railway signaling system, the combination of a track circuit including a transformer; both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a plurality of track signals; and a magnet in the track circuit controlling said track signals.

13. In an electric railway signaling system, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a plurality of track signals operated by the supply circuit; and a magnet in the track circuit controlling said track signals.

14. In an electric signaling system for railways, the combination of a track circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; a track signal controlled by said magnet of the track circuit; a train signal; and means operated by the track circuit for controlling said train signal.

15. In an electric signaling system for railways, the combination of a track circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; a plurality of track signals controlled by said magnet of the track circuit; a train signal; and means operated by the track circuit for controlling said train signal.

16. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a brake applying device on a train; a magnet on said train controlling said brake applying device; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said brake applying device is controlled by the track circuit; a track signal; and a magnet in the track circuit controlling said track signal.

17. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a brake applying device on a train; a magnet on said train controlling said brake applying device; a supply circuit for the transformer; a generator on said train for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said brake applying device is controlled by the track circuit; a track signal; and a magnet in the track circuit controlling said track signal.

18. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; and a brake applying device on said train controlled by said track circuit.

19. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a brake applying device on said train; a magnet on said train controlling said signal and said brake applying device; a supply circuit for the transformer; a generator for the supply circuit; and contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; and said brake applying device are controlled by the track circuit.

20. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a brake applying device on said train controlled by said track circuit; and a track signal controlled by said track circuit.

21. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a brake applying device on said train; a magnet on said train controlling said signal and said brake applying device; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal and said brake applying device are controlled by the track circuit; and a track signal controlled by said track circuit.

22. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a brake applying device on said train controlled by said track circuit; a track signal controlled by said track circuit and operated by the supply circuit.

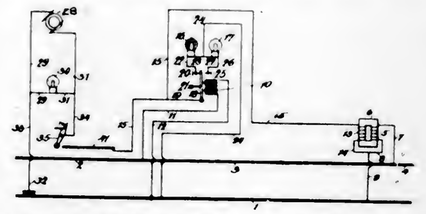
23. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a brake applying device on said train; a magnet on said train controlling said signal and said brake applying device; a supply circuit for the transformer; a generator on said train for the supply circuit; and contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal and said brake applying device are controlled by the track circuit and operated by the supply circuit.

24. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal consisting of danger and safety electric lamps; and a magnet in the track circuit controlling said track signal.

25. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal consisting of danger and safety electric lamps operated by the supply circuit; and a magnet in the track circuit controlling said track signal.

26. In an electric signaling system for railways, the combination of a track circuit including a transformer, both rails of the track, and a track contact; a signal on a train; a magnet on said train controlling said signal; a supply circuit for the transformer; a generator on said train for the supply circuit; contacts on said train connected with said magnet and arranged to make connection with said track contact and one rail of the track, whereby said train signal is controlled by the track circuit; a track signal consisting of danger and safety electric lamps operated by the supply circuit; a magnet in the track circuit controlling said track signal; and a brake applying device on said train controlled by the track circuit.

855,967. ELECTRIC SIGNALING DEVICE. EDWARD L. ORCUTT, New York, N. Y., assignor to Railway Safety Signal Company, a Corporation of New Jersey. Filed Sept. 1, 1906. Serial No. 333,004.



Claim.—1. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a signal controlled by said magnet.

2. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train; contacts on said train connected with the generator and arranged to make connection with the supply circuit; and a signal controlled by said magnet.

3. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer, the rails on one side of the track, and a track contact; a generator on a train; contacts on the train connected with said generator and arranged to make connection with said track contact and track rails of the supply circuit; and a signal controlled by said magnet.

4. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a track signal controlled by said magnet.

5. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train; contacts on said train connected with the generator and arranged to make connection with the supply circuit; and a track signal controlled by said magnet.

6. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer, the rails on one side of the track, and a track contact; a generator on a train; contacts on the train connected with said generator and arranged to make con-

nection with said track contact and track rails of the supply circuit; and a track signal controlled by said magnet.

7. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a signal controlled by said magnet and operated by the current in the supply circuit.

8. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train; contacts on said train connected with the generator and arranged to make connection with the supply circuit; and a signal controlled by said magnet and operated by the current in the supply circuit.

9. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer, the rails on one side of the track, and a track contact; a generator on a train; contacts on the train connected with said generator and arranged to make connection with said track contact and track rails of the supply circuit; and a signal controlled by said magnet and operated by the current in the supply circuit.

10. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a track signal controlled by said magnet and operated by the current in the supply circuit.

11. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train; contacts on said train connected with the generator and arranged to make connection with the supply circuit; and a track signal controlled by said magnet and operated by the current in the supply circuit.

12. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer, the rails on one side of the track, and a track contact; a generator on a train; contacts on the train connected with said generator and arranged to make connection with said track contact and track rails of the snupply circuit; and a track signal controlled by said magnet and operated by the current in the supply circuit.

13. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a plurality of signals controlled by said magnet.

14. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer, the rails on one side of the track, and a track contact; a generator on a train; contacts on the train connected with said generator and arranged to make connection with said track contact and track rails of the supply circuit; and a plurality of track signals controlled by said magnet.

15. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a plurality of signals controlled by said magnet and operated by the current in the supply circuit.

16. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer, the rails on one side of the track, and a track contact; a generator on a train; contacts on the train connected with said generator and arranged to make connection with said track contact and track rails of the supply circuit; and a plurality of track signals controlled by said magnet and operated by the current in the supply circuit.

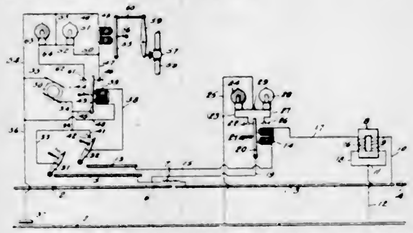
17. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a signal consisting of a danger electric lamp and a safety electric lamp arranged to be cut into and out of circuit by said magnet.

18. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a track signal consisting of a plurality of danger electric lamps and a plurality of safety electric lamps arranged to be cut into and out of circuit by said magnet.

19. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a signal consisting of a danger electric lamp and a safety electric lamp arranged to be cut into and out of circuit by said magnet and operated by the current in the supply circuit.

20. In an electric signaling system for railways, the combination of a rail circuit including both rails of the track, a transformer, and a magnet arranged to be shunted by a passing train; a supply circuit including said transformer; a generator on a train arranged to be connected with the supply circuit to energize the transformer; and a track signal consisting of a plurality of danger electric lamps and a plurality of safety electric lamps arranged to be cut into and out of circuit by said magnet and operated by the current in the supply circuit.

855,968. ELECTRIC SIGNALING DEVICE. EDWARD L. ORCUTT, New York, N. Y., assignor to Railway Safety Signal Company, a Corporation of New Jersey. Filed Sept. 1, 1906. Serial No. 333,005.



Claim.—1. In an electric signaling system for railways, the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal comprising danger and safety lamps and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; and a generator on a train arranged to be connected with the rail circuit.

2. In an electric signaling system for railways, the combination of a circuit including a transformer and a magnet; a signal circuit operating a track signal comprising danger and safety lamps and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a generator on a train; and contacts on said train arranged to connect the generator in said signal circuit.

3. In an electric signaling system for railways, the combination of a circuit including a transformer and a magnet; a signal circuit operating a track signal comprising danger and safety lamps and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a generator on a train; and contacts on said train arranged to connect the generator in both the rail and signal circuits.

4. In an electric signaling system for railways, the combination of a circuit including a transformer and a magnet; a signal circuit operating a track signal comprising danger and safety lamps and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer, said signal circuit and said rail circuit being connected together in multiple; a generator on a train; and contacts on said train arranged to connect the generator in said signal circuit.

5. In an electric signaling system for railways, the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a generator on a train arranged to be connected with the rail circuit; a signal on the train; a magnet on the train controlling said signal; and contacts on the train connected with said train magnet and arranged to be connected with the controlling circuit.

6. In an electric signaling system for railways, the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a generator on a train arranged to be connected with the rail circuit; a signal on the train; a magnet on the train controlling said signal and included in a normally closed train circuit; contacts on the train connected with said train magnet and arranged to be connected with the controlling circuit; and a circuit breaker in said train circuit arranged to be opened when the train magnet is connected with the controlling circuit.

7. In an electric signaling system for railways, the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a generator on a train arranged to be connected with the rail circuit; a train stopping device on the train; a magnet on the train controlling said train stopping device; and contacts on the train connected with said train magnet and arranged to be connected with the controlling circuit.

8. In an electric signaling system for railways, the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a generator on a train arranged to be connected with the rail circuit; a train stopping device on the train; a magnet on the train controlling said train stopping device and included in a normally closed train circuit; contacts on the train connected with said train magnet, and arranged to be connected with the controlling circuit; and a circuit breaker in said train circuit arranged to be opened when the train magnet is connected with the controlling circuit.

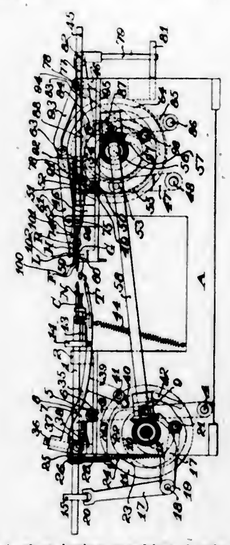
9. In an electric signaling system for railways the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a signal on the train; a magnet on the train controlling said signal; and contacts on the train connected with said train magnet and arranged to be connected with the controlling circuit.

10. In an electric signaling system for railways, the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a signal on the train; a magnet on the train controlling said signal and included in a normally closed train circuit; contacts on the train connected with said train magnet and arranged to be connected with the controlling circuit; and a circuit breaker in said train circuit arranged to be opened when the train magnet is connected with the controlling circuit.

11. In an electric signaling system for railways, the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a train stopping device on the train; a magnet on the train controlling said train stopping device; and contacts on the train connected with said train magnet and arranged to be connected with the controlling circuit.

12. In an electric signaling system for railways, the combination of a controlling circuit including a transformer and a magnet; a signal circuit operating a track signal and controlled by said magnet; a rail circuit for energizing the transformer and including both rails of the track and said transformer; a train stopping device on the train; a magnet on the train controlling said train stopping device and included in a normally closed train circuit; contacts on the train connected with said train magnet, and arranged to be connected with the controlling circuit; and a circuit breaker in said train circuit arranged to be opened when the train magnet is connected with the controlling circuit.

855,969. MACHINE FOR LACING THE UPPERS OF SHOES. JOHN S. PAINE, Brockton, and EBASTUS E. WINKLEY, Lynn, Mass., assignors of one-third to Benjamin Phillips, Lynn, Mass. Filed Aug. 29, 1902. Serial No. 121,436.



Claim.—1. A shoe lacing machine, having, in combination, means for engaging and locating pairs of eyelet holes

of an upper and independent means for forming chain stitches therein, substantially as described.

2. A shoe lacing machine, having, in combination, means for engaging and locating pairs of eyelet holes of an upper and independent means for forming chain stitches therein, each of a length greater than sufficient to extend around the materials, substantially as described.

3. A shoe lacing machine, having, in combination, means for engaging and locating pairs of eyelet holes of an upper, and means for forming chain stitches therein and tying the end of the thread, substantially as described.

4. A shoe lacing machine, having, in combination, means for engaging and locating pairs of eyelet holes of an upper and means for forming a series of chain stitches therein having one or more of the loops formed with the thread doubled to hold one end of the thread, substantially as described.

5. A shoe lacing machine, having, in combination, means for engaging pairs of eyelet holes of an upper and means for forming a series of chain stitches therein having one or more of the loops formed with the thread doubled to hold one end of the thread and a stitch formed outside of the materials to hold the other end, substantially as described.

6. A shoe lacing machine, having, in combination, a hook needle, a looper, means for retaining slack thread in the loop drawn back by the needle, means for transferring such slack thread to the opposite side of the materials, and means for retaining the slack thread on the opposite side of the materials from the needle, substantially as described.

7. A shoe lacing machine, having, in combination, a hook needle, a looper, a cast-off, and means for retaining slack thread on the needle side of the work, substantially as described.

8. A shoe lacing machine, having, in combination, stitch forming mechanism and a rotating loop retainer acting to retain each loop until the completion of the lacing operation, substantially as described.

9. A shoe lacing machine, having, in combination, stitch forming mechanism, a loop retainer, and a thread hook for engaging the thread on the side of the work opposite the needle and carrying it to the loop retainer, substantially as described.

10. A shoe lacing machine, having, in combination, stitch forming mechanism, a thread finger for engaging the loop of thread drawn out by the needle, a loop retainer, and a thread hook for engaging the thread on the side of the work opposite the needle and carrying it to the loop retainer, substantially as described.

11. A machine for forming chain stitches, having, in combination, a hook needle, a looper, a cast-off, and means for moving the cast-off with relation to the needle to enter the loop on the side opposite the hook while the needle is back and to turn to a position over the hook when the needle is drawing the next loop of thread through the previously formed loop supported by the cast-off, substantially as described.

12. A shoe lacing machine, having, in combination, means for engaging and positioning pairs of eyelet holes of an upper, and independent mechanism for passing thread through the eyelet holes to tie the sides of the upper together, substantially as described.

13. A shoe lacing machine, having, in combination, means for engaging and positioning pairs of eyelet holes of an upper, and independent mechanism for passing thread through the eyelet holes to tie the sides of the upper together, and a thread retainer to retain long loops on one side of the upper, substantially as described.

14. A shoe lacing machine, having, in combination, means for engaging and positioning pairs of eyelet holes of an upper, and independent means for passing thread through the eyelet holes to tie the sides of the upper together, and to tie the last end of the thread to prevent unraveling, substantially as described.

15. A shoe lacing machine, having, in combination, means for engaging pairs of eyelet holes of an upper, and independent mechanism for passing thread through the eyelet holes to tie the sides of the upper together acting to secure both ends of the thread from unraveling or slackening, substantially as described.

16. A shoe lacing machine, having, in combination, means for engaging pairs of eyelet holes of an upper, and mechanism for passing thread through the eyelet holes to tie the sides of the upper together acting to secure both ends of the thread from unraveling or slackening and a loop retainer to retain long loops on one side of the material, substantially as described.

17. A shoe lacing machine, having, in combination, a hook needle, a looper and a thread finger for engaging the loop drawn back by the needle to form slack thread on the needle side of the work, substantially as described.

18. A machine for forming chain stitches, having, in combination, a hook needle, a looper, a thread finger for engaging the loop drawn back by the needle, and an oscillating and reciprocating cast-off, substantially as described.

19. A shoe lacing machine, having, in combination, a hook needle, a looper, a reciprocating thread hook for forming a bight of thread on the side of the work opposite the needle, and means for retaining such loops so formed by the thread hook, substantially as described.

20. A shoe lacing machine, having, in combination, a looper, a reciprocating thread hook for forming a bight of thread on the side of the work opposite the needle, and a rotatable loop retainer for retaining such loops so formed by the thread hook, substantially as described.

21. A shoe lacing machine, having, in combination, a hook needle, a looper, a reciprocating thread hook for forming a bight of thread on the side of the work opposite the needle, and a rotatable loop retainer for retaining such loops so formed by the thread hook having a screw point to take the successive loops from the thread hook and draw them onto the loop retainer, substantially as described.

22. A shoe lacing machine, having, in combination means for engaging and positioning the eyelets, a hook needle, and a looper formed to lay two threads in the hook of the needle, substantially as described.

23. A shoe lacing machine, having, in combination, a hook needle, a thread hook, a looper having surfaces to guide the thread during the retracting stroke of the thread hook into position to thread the needle, substantially as described.

24. A shoe lacing machine, having, in combination, stitch forming mechanism, a rotatable loop retainer, and means for supporting the loop retainer adjacent to the work permitting movement of the loop retainer to remove the work from the machine, substantially as described.

25. A shoe lacing machine, having, in combination, stitch forming mechanism, and a loop retainer consisting of a bar supported at one end so as to receive successive loops over the other end, substantially as described.

26. A shoe lacing machine, having, in combination, stitch forming mechanism, a loop retainer consisting of a movable bar to receive successive loops over its end, and means for supporting the loop retainer having provision for moving it away from its operative position to take work out of the machine, substantially as described.

27. A shoe lacing machine having in combination means for engaging pairs of eyelet holes of an upper successively presented thereto, and means for forming chain stitches in the eyelet holes, substantially as described.

28. A shoe lacing machine having in combination means for engaging pairs of eyelet holes of an upper successively presented thereto, and means for forming chain stitches in the eyelet holes, each of a length greater than sufficient to extend around the materials, substantially as described.

29. A shoe lacing machine having in combination means for engaging pairs of eyelet holes of an upper successively presented thereto, and means for forming chain stitches in the eyelet holes, and tying the end of the thread, substantially as described.

30. A shoe lacing machine having in combination means for engaging pairs of eyelet holes of an upper successively presented thereto, and means for forming chain stitches in the eyelet holes, having one or more of the loops formed with the thread doubled to hold one end of the thread, substantially as described.

31. A shoe lacing machine having in combination means for engaging pairs of eyelet holes of an upper successively presented thereto, and means for forming chain stitches in the eyelet holes, having one or more of the loops formed with the thread doubled to hold one end of the thread, and a stitch formed outside of the materials to hold the other end, substantially as described.

32. A shoe lacing machine having in combination means for locating an upper in position to be operated on, and means for forming stitches in the eyelet holes of the upper and for securing the ends of the thread, substantially as described.

33. A shoe lacing machine, having, in combination, a needle and suitable thread-handling devices co-operating therewith to form stitches in the eyelets of an upper, and a laterally fixed device for engaging the eyelets and positioning them properly to be engaged by the needle, substantially as described.

34. A shoe lacing machine, having, in combination, means for forming in the eyelet holes of an upper a continuous series of stitches to form a lacing connecting the sides of the upper together and for securing the ends of the lacing, and means for producing a predetermined amount of slack in said lacing to permit the edges of the lacing slit to be positioned properly on the last.

35. A shoe lacing machine, having, in combination, means for passing a continuous thread through the eyelet holes of an upper to form a lacing and for securing the ends thereof, and means for producing a predetermined amount of slack in said lacing to permit the edges of the lacing slit to be positioned properly on the last.

36. A shoe lacing machine, having, in combination, means for passing a continuous thread through the eyelet holes of an upper to form a lacing and for securing the ends thereof, and means for maintaining a predetermined amount of slack in said lacing between each pair of eyelet holes until the lacing operation has been completed to permit the edges of the lacing slit to be positioned properly on the last.

37. A shoe lacing machine, having, in combination, means including a hook needle and a looper for forming in the eyelet holes of an upper a continuous series of stitches from a single thread to form a lacing connecting the sides of the upper together, and means for producing a predetermined amount of slack in said lacing to permit the edges of the lacing slit to be positioned properly on the last.

38. A shoe lacing machine, having, in combination, a thread supply, means for holding the free end of the thread, and means for passing a continuous thread from said supply through the eyelet holes of an upper to form a lacing and for securing the ends thereof.

39. A shoe lacing machine, having in combination, a thread supply, means for holding the free end of the thread, means for passing a continuous thread from said supply through the eyelet holes of an upper to form a lacing and for securing the ends thereof, and means for producing a predetermined amount of slack in said lacing to permit the edges of the lacing slit to be positioned properly on the last.

40. A shoe lacing machine, having, in combination, means for forming in the eyelet holes of an upper a continuous series of stitches to form a lacing connecting the sides of the upper together, means to locate the eyelet holes in position, to receive the lacing and means for producing a predetermined amount of slack in said lacing to permit the edges of the lacing slit to be positioned properly on the last.

41. A shoe lacing machine, having, in combination, means for passing a continuous thread through the eyelet holes of an upper to form a lacing, means to locate the eyelet holes in position to receive the lacing and means for producing a predetermined amount of slack in said lacing to permit the edges of the lacing slit to be positioned properly on the last.

42. A shoe lacing machine, having, in combination, means for passing a continuous thread through the eyelet holes of an upper to form a lacing, means to locate the eyelet holes in position to receive the lacing and means for maintaining a predetermined amount of slack in said lacing between each pair of eyelet holes until the lacing operation has been completed, to permit the edges of the lacing slit to be positioned properly on the last.

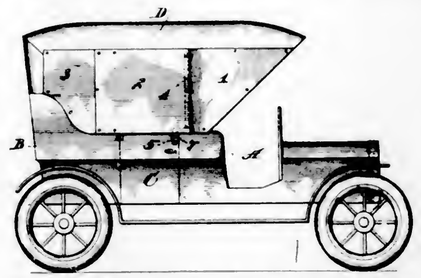
43. A shoe lacing machine, having, in combination, means for forming in the eyelet holes of an upper a lacing to connect the sides of the upper together, and means operating in substantially a horizontal plane and passing through alined eyelet holes in opposite sides of the upper to support the upper during the lacing operation.

44. A shoe lacing machine, having, in combination, devices co-operating to form in the eyelet holes of an upper a lacing connecting the sides of the upper together, said devices comprising means operating in substantially a horizontal plane and passing through alined eyelet holes in opposite sides of the upper to support the upper.

45. A shoe lacing machine, having, in combination, means for passing a continuous thread through the eyelet holes of an upper to form a lacing, and means passing through alined eyelet holes in opposite sides of the upper to locate the eyelet holes in position to receive the lacing.

46. A shoe lacing machine, having, in combination, means for passing a continuous thread through the eyelet holes of an upper to form a lacing, and means for locating pairs of eyelet holes in opposite sides of the upper in proper position with relation to said means.

555,970. SIDE-CURTAIN SUPPORT. WALTER B. PEARSON, Detroit, Mich. Filed Apr. 2, 1906. Renewed Apr. 11, 1907. Serial No. 367,590.



Claim.—1. The combination with a vehicle body comprising an inclosed portion provided with a suitable entrance, a door for said entrance, a canopy for said vehicle body and side curtains comprising a door section secured to a canopy or other support at one edge beyond the line of the door hinge and a support for the opposite edge of said door section consisting of a rod or standard secured to said door so as to be movable therewith.

2. The combination with a vehicle body comprising an inclosed portion provided with a suitable entrance, a door for said entrance, a canopy for said vehicle body and curtains comprising a door section secured to a canopy or other support at one edge beyond the line of the door hinge and a support for the opposite edge of said door section consisting of a rod or standard detachably secured to said door so as to be movable therewith and removable therefrom.

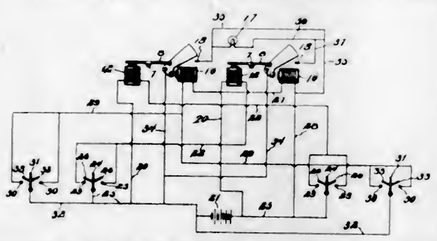
3. The combination with a vehicle body comprising an inclosed portion provided with a suitable entrance, a door for said entrance, a canopy for said vehicle body and side curtains comprising a door section secured to a canopy or other support at one edge beyond the line of the door hinge and a support for the opposite edge of said door section consisting of a rod or standard secured to said door so as to be movable therewith, said rod or standard being off-set at its lower end to bring the same in desired relative position.

4. The combination with a vehicle body comprising an inclosed portion provided with a suitable entrance, a door for said entrance, a canopy for said vehicle body and side curtains comprising a door section secured to a canopy or other support at one edge beyond the line of the door hinge and a support for the opposite edge of said door section

consisting of a rod or standard, a plate secured to said door and which projects beyond the outer side of said door, said plate being provided with a hole or opening to receive the lower end of said rod or standard and means for removably securing said rod or standard against rotation in said hole or opening.

3. The combination with a vehicle body comprising an inclosed portion provided with a suitable entrance, a door for said entrance, a canopy for said vehicle body and side curtains comprising a door section secured to a canopy or other support at one edge beyond the line of the door hinge and a support for the opposite edge of said door section consisting of a rod or standard, an angle plate or bracket, one side of which is secured to the inner side of the door and the other side of which projects outwardly over and beyond the upper edge of the door, said outwardly projecting side of said angle plate or bracket being provided with a hole or opening to receive the lower end of said rod or standard and means for removably securing said rod or standard against rotation in said hole or opening.

855,971. RAILWAY-SIGNAL. CHARLES C. PHILLIPS, Owensboro, Ky. Filed Aug. 6, 1906. Serial No. 329,470.



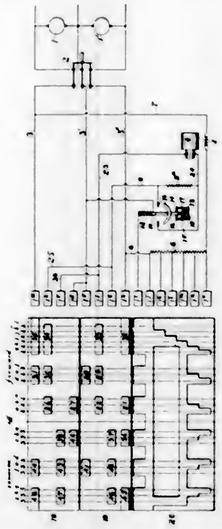
Claim.—1. A signaling system comprising a pair of normally open circuits, a pair of independently movable signaling blades included respectively in said circuits, magnet controlled means for holding the members in normal position, track devices for closing the circuits to separately energize the magnets and release the blades, a normally open duplex lamp circuit adapted to be closed through the medium of either of the blades when released, a third open circuit including magnets for resetting the blades, and track devices for closing the third circuit.

2. A signaling system of the type described comprising a normally open circuit including a lamp and a movable contact member for completing the circuit to light the lamp, a latch member arranged for holding the contact member in normal position with the circuit open, a second normally open circuit including a magnet adapted to be energized, said magnet when energized being adapted to operate the latch member for releasing the movable contact and permitting the latter to close the first named circuit, automatically operable track devices for closing the second circuit, a third normally open circuit including a magnet adapted when said third circuit is closed to be energized and reset the movable contact member, and automatically operable track devices for closing the third circuit.

855,972. CONTROLLER FOR ELECTRIC MOTORS. WILLIAM D. POMEROY, Norwood, Ohio, assignor, by mesne assignments, to The Bullock Electric Company, a Corporation of Ohio. Filed Dec. 1, 1903. Renewed Nov. 26, 1906. Serial No. 345,177.

Claim.—1. The combination of a multiple voltage system, a motor having an armature resistance, a shunt about said resistance, an electro-magnetically operated switch in said shunt, a controller and connecting leads, said controller having contacts adapted to vary the voltage applied to the armature circuit and to control said electro-magnetically operated switch.

2. The combination of a multiple voltage system, a motor having an armature resistance, a shunt about said resistance, a switch in said shunt which normally tends to open, electro-magnetic means for closing said switch, a controller and connecting leads, said controller having contacts adapted to vary the voltage applied to the armature circuit and to open and close the circuit of said electro-magnetic means upon changing the voltage of the armature circuit.



3. The combination of a multiple voltage system, a motor having armature resistance, a shunt about said resistance, a switch in said shunt which normally tends to open, electro-magnetic means for closing said switch, means for retarding the closing of said switch, a controller and connecting leads, said controller having contacts adapted to vary the voltage applied to the armature circuit and to open and close the circuit of said electro-magnetic means upon changing the voltage of the armature circuit.

4. The combination of a multiple voltage system, a motor arranged to be variably connected to said system, a resistance for the motor armature circuit, a shunt about said resistance, and a remotely controlled switch in said shunt.

5. The combination of a multiple-voltage system, a motor arranged to be connected across different sets of the mains of the system, a resistance in the motor armature circuit, an electromagnetically operated switch in shunt to said resistance, and a controller for said switch.

6. The combination of a multiple-voltage system, a motor arranged to be connected across different sets of the mains of the system, resistance in the motor armature circuit, a switch in shunt to said resistance, and a master controller for said switch from which said switch is separate.

7. The combination of a multiple-voltage system, a motor, a controller arranged to connect the armature of said motor across different sets of the mains of the system, a resistance in the circuit of said armature, and a switch separate from said controller but controlled thereby and in shunt to said resistance.

8. The combination of a multiple-voltage system, a motor, a controller arranged to connect the armature of said motor across different sets of the mains of the system, a resistance in the circuit of said armature, and a switch separate from said controller but controlled thereby and in shunt to said resistance.

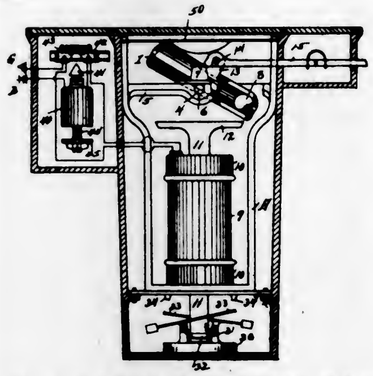
9. In a switch for dynamo-electric machinery, the combination with a motor, a circuit therefor, and resistance for the circuit, of means for effecting changes in the potential on the leads of the armature circuit of the motor, and means remote from the aforesaid means for cutting said resistance into and out of said circuit.

10. In a switch for dynamo-electric machinery, the combination with a motor, field and armature circuits therefor, of a controller for effecting an increase in potential of the armature circuit, and an automatic time device remote from the controller for delaying the increase in potential at the armature terminals.

11. In a switch for dynamo-electric machinery, the combination with a motor, field and armature circuits therefor, and resistance for the armature circuit, of a controller for varying the potential on the leads of the armature circuit, and a switch away from said controller for cutting said resistance into said armature circuit for a predetermined time whenever the controller varies said potential.

12. In a switch for dynamo-electric machinery, the combination with a motor, field and armature circuits therefor, and resistance for the armature circuit, of a controller for varying the potential on the leads of the armature circuit, and an electromagnetically operated switch for cutting said resistance into said armature circuit for a predetermined time whenever said potential is varied.

855,973. MECHANICAL MOVEMENT. JOSEPH Y. PORTER, Detroit, Mich. Filed May 21, 1906. Serial No. 317,947.



Claim.—1. In a mechanical movement and as a means of producing a complete reciprocation of a driven member, with two reciprocations of a driving member, the combination of a reciprocating driving member and a reciprocating driven member, a rocking cage engaged to the driven member, said driving member being adapted to pass by said cage without contacting the same and a movable part upon said cage adapted to move thereon by gravity and to interpose itself to constitute a lug between the driving member and the cage, substantially as described.

2. In a mechanical movement, having in combination as a means for changing the direction of motion, a driving member, a driven member, and an intervening rocking member, a catch on the rocking member adapted to engage the driving member to restrain the motion of the same, substantially as described.

3. In a mechanical movement for changing the direction of rectilinear movement, in combination with a driving member and a driven member, and a rocking member interposed between the driving and driven members, a hanger depending from the rocking member adapted to engage under a projection on the driving member, substantially as described.

4. In a safety appliance for electrically actuated solenoids, in combination with a member adapted to be actuated, an electrical motor for actuating the same, a safety switch adapted to be brought into action by the actuated part at the close of its stroke, and means for retaining the actuated member at its assumed position, substantially as described.

5. In an electric switch thrower, in combination with an actuating lever, and a solenoid core adapted to actuate the same, a weight, and means for attaching said weight to the solenoid core during the first part of its movement and before its engagement with said lever, means for detaching the weight automatically, substantially as described.

6. In a switch throwing device, in combination with a rocking lever, and a solenoid adapted to actuate said lever, a weight adapted to be engaged with said solenoid core during its initial movement and to be detached therefrom during its period of engagement with said lever, substantially as described.

7. A safety appliance for electrically actuated solenoids, having in combination with the switch throwing solenoid a second solenoid interposed in the electric circuit in series with the first named solenoid, and means whereby upon increasing the current beyond a predetermined limit the second solenoid produces a short circuit of the current, substantially as described.

8. In a device for throwing a switch by an electric motor, in combination with the motor, a second motor interposed in the electric circuit in series with the first named solenoid and adapted to close a contact and short circuit said circuit, when the current thereof rises above a predetermined amount, substantially as described.

9. In a device for throwing switches, by an electric motor, in combination with a motor wound to have efficient action upon a current smaller than that to which it may be exposed, a second motor in the line of the current wound to be actuated with a larger current and when actuated to close a short circuit thereby cutting out from the main motor circuits of dangerously high voltage, substantially as described.

855,974. BAG-LOCK. LOUIS B. PRAHAR, New York, N. Y. Filed July 10, 1906. Serial No. 325,501.



Claim.—1. A lock for the frame of a bag or the like, comprising two flat members secured on edge to the frame and having their inner ends bent in opposite directions, to form curved locking portions.

2. A lock for the frame of a bag or the like, comprising two flat members having their inner ends bent in opposite directions to form curved locking portions and provided with lugs on their lower edges for securing them to the frame.

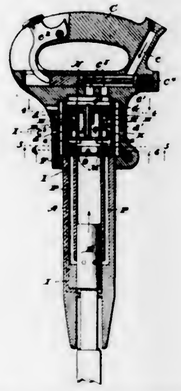
3. A lock for the frame of a bag or the like, comprising two members secured to the frame and having their inner ends bent laterally in opposite directions to form curved locking portions, said locking portions terminating in upwardly projecting and spaced finger pieces.

4. A lock for the frame of a bag or the like, comprising two flat members secured on edge to the frame and having their inner ends bent in opposite directions to form curved locking portions and provided with enlarged and upwardly projecting terminals forming spaced finger pieces.

855,975. PNEUMATIC TOOL. HAROLD R. PRINDLE, Philadelphia, Pa. Filed Feb. 26, 1906. Serial No. 303,072.

Claim.—1. In a pneumatic tool, the combination of a valve box, a chambered valve therein communicating at its ends with the interior of the valve box, an exhaust port leading from within the valve box at each end of the box, a piston-containing cylinder, and an exhaust port or ports leading therefrom to the valve box, and being in communication with the interior of the valve, air from said exhaust port passing to the atmosphere, in part directly through one of the exhaust ports at the end of the valve box, and in part through the valve to the exhaust port at the other end of the valve box.

2. In a pneumatic tool, the combination of a valve box, a valve having an internal passage, having at one end an annular flange, and intermediate its ends an annular flange fitting the valve box, and an annular flange in the valve box at the end of the valve opposite that having the flange, a live air passage leading to the space between the two valve flanges when the valve is in one position, a live air passage leading from such space when the valve is in its other position, a piston-containing cylinder to which said last-named passage leads, and an exhaust port in communication with the interior of the valve.



3. In a pneumatic tool, the combination of a cylinder, a piston therein, a valve, passages controlled by the valve leading to opposite ends of the cylinder, a passage from the cylinder to the valve adapted to be closed by the piston before completing its travel in one direction, two exhaust passages from the cylinder at or near the same end thereof, but opening thereinto at different points along its length, and an exhaust passage from the other end of the cylinder.

4. In a pneumatic tool, the combination of a valve box, a hollow valve, the interior of the valve having a passage for exhaust, a pressure receiving surface on the exterior of the valve, a live air port leading to such surface to deliver fluid under pressure thereto, and means for applying power to the interior of the valve to move it in the opposite direction to that in which it is moved by pressure applied to said pressure-receiving surface.

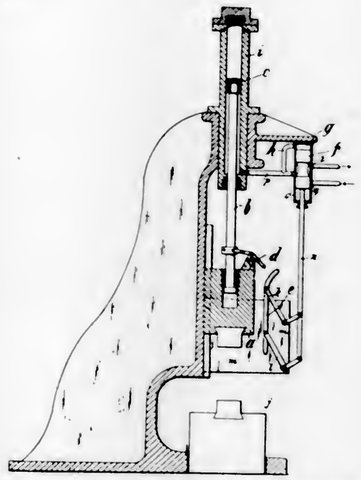
5. In a pneumatic tool, the combination of a valve, a pressure-receiving surface for moving the valve in one direction, a port for delivering live air to such surface, and means for moving the valve in the opposite direction comprising a pin acting on the valve and having one end constantly exposed to air under pressure.

6. In a pneumatic tool, the combination of a hollow valve, a pressure-receiving surface on the exterior of the valve, a port for delivering live air to said surface, and a pin having one end in engagement with the valve on the inside thereof, and the other end exposed to air under pressure.

855,976. DROP-HAMMER. CARL PRÖTT, Hagen, Germany. Filed June 9, 1906. Serial No. 321,020.

Claim.—1. In a drop-hammer apparatus, the combination with a hammer, of a piston-rod carrying the hammer and adapted to move downwardly therein, a pressure cylinder for the piston, a valve controlling the flow of the pressure fluid in the pressure cylinder, means coacting with the piston-rod hammer and valve whereby the movement of the piston rod within the hammer when the latter is stopped by the impact of striking a blow, shifts the valve.

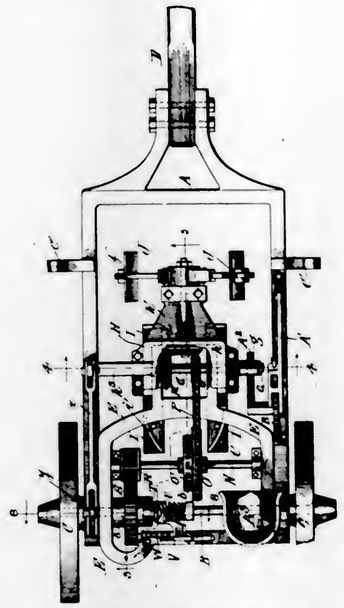
2. In a drop-hammer apparatus, the combination with a pressure cylinder, of a piston and its rod, a hammer carried by the piston-rod, the hammer being recessed to permit the downward movement of the piston-rod within the hammer when the latter is stopped in striking a blow, a valve and its stem, a valve chest having inlet and exhaust ports, a passage connecting the valve chest with the pressure cylinder, bell-crank levers pivoted to the frame each having one of its arms connected to the valve stem, a rod pivotally suspended by the other arms of the bell-crank levers, a lever fulcrumed on the hammer and pivotally connected to the piston-rod and adapted to engage the pivotally suspended rod to shift the valve as the piston-rod moves downwardly within the hammer, and means whereby the valve may be returned to the position from which it was shifted.



3. In a drop-hammer apparatus, the combination with a pressure cylinder, of a piston and its rod, a hammer carried by the piston-rod the hammer being recessed to permit the downward movement therein of the piston-rod when the hammer is stopped in striking a blow, a valve chest having inlet and exhaust ports, a pipe connecting the valve chest with the pressure cylinder, a branch leading from the pipe to the exhaust end of the valve-chest, a valve having a stem and mounted to slide in the valve chest, and timed to permit the pressure fluid to exhaust as the hammer descends, bell-crank levers pivoted to the frame each having one of its arms connected to the valve-stem, a rod pivotally suspended by the other arms of the bell-crank levers, a lever fulcrumed to the hammer and pivotally connected to the piston-rod and adapted by the continued downward movement of the piston-rod when the hammer is stopped in striking a blow, to press back the bell-crank-suspended rod thereby initially moving the valve to a position closing both the inlet and exhaust ports the final movement of the valve to a position opening the inlet-port being accomplished by the column of pressure fluid thus impounded under the piston and pressing upon the end of the valve through the branch pipe.

855,977. COMBINED COTTON CHOPPER AND CULTIVATOR. RICHARD H. PERNELL, Rosedale, Miss. Filed Dec. 1, 1906. Serial No. 345,870.

Claim.—1. The improved cotton chopper and cultivator, comprising a frame having a tongue rigidly attached, a rear axle upon which the frame is mounted, running wheels keyed on said axle, a supplemental frame arranged within the main frame and journaled upon the axle, a third vertically swinging frame pivoted to the supplemental frame, a rotary chopper having a shaft which is journaled in the swinging frame, means for holding such swinging frame practically vertical, runners attached to the swinging frame and adapted to slide upon the ground, and means for imparting rotation from the axle to the chopper, substantially as described.



2. The improved cotton chopper and cultivator, comprising a main frame having a rigid tongue, an axle upon which the said frame is supported at its rear, running wheels keyed on the axle, a spur gear mounted loose on the axle, a splined clutch member arranged for locking the spur gear with the axle, a supplemental frame pivoted within the main frame, and adapted to swing vertically, a third frame which is pivoted to such supplemental frame and swinging vertically independent thereof, means connecting the swinging frame with the main frame, whereby it is held practically vertical whatever be the elevation of the supplemental frame, a rotary chopper and its shaft journaled in the swinging frame, a transverse shaft journaled in the swinging frame, bevel gearing connecting it with the chopper shaft, a driving shaft which is geared with the gear on the axle, and sprocket mechanism for imparting rotation from the driving shaft to the shaft which drives the chopper, substantially as described.

3. In a combined cotton chopper and cultivator, the combination, with the main frame, and a supplemental frame, both mounted upon an axle having wheels keyed thereon, of a third frame which is pivoted to the front portion of the supplemental frame, a connecting bar pivoted to rigid portions of the main frame and the said swinging frame, whereby the latter is held practically vertical when the supplemental frame is raised or lowered, a rotary cotton chopper, and the shaft thereof journaled in the swinging frame, means for imparting rotation to the chopper from the axle, and runners adapted to travel on the ground and forming an attachment of the swinging frame, substantially as described.

4. The combination, with the main frame, the rear axle and running wheels keyed thereon, of the supplemental frame journaled within the main frame, a third swinging frame journaled on the front portion of such supplemental frame, and means for connecting it with the main frame whereby to preserve a practically vertical position in any adjustment of the supplemental frame, a rotary chopper having a shaft journaled in the swinging frame, and means connecting it with the axle, whereby, as the machine advances, rotation is imparted to the chopper, substantially as described.

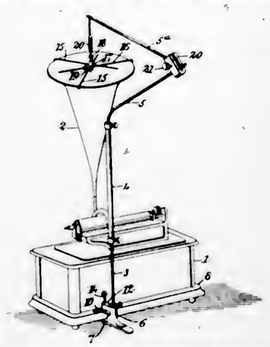
5. The combination, with the main frame, the rear axle, and a supplemental frame journaled thereon, and adapted to swing vertically at its free end, a frame pivoted to and carried by the front end of the supplemental frame, and devices connected with the lower end of the same, which are adapted to throw dirt laterally as the machine advances, substantially as described.

6. The combination, with a main frame, the rear axle having wheels keyed thereon, and a supplemental frame journaled on said axle, runners secured to pendent portions of the supplemental frame and adapted to travel on the ground, and plates pivoted to the rear portions of said runners and having vertical, inwardly curved flanges, and means for securing the plates in any lateral adjustment, whereby the distance between the flanges may be increased or lessened as conditions require, substantially as described.

7. The combination, with a main frame, the axle, and wheels keyed thereon, of a supplemental frame journaled on the axle and arranged within the main frame, a swinging frame attached to the front portion of said supplemental frame, a shaft passing through the two and thus forming the pivot of the swinging frame, means connecting the latter with the main frame whereby it is held normally vertical in different vertical adjustments, a rotary chopper arranged on the front of the swinging frame and having a shaft extending backward therein, means for operatively connecting such shaft with the axle, whereby the chopper may be rotated, clutch mechanism on the axle and supplemental frame for engaging such mechanism with and disengaging it from the axle, runners attached to the pendent portions of the swinging frame, a lever pivoted on the main frame and having an arm extended downward and engaging a part projecting from the swinging frame, and a segment with which said lever may be locked, as shown and described.

8. The combination, with a main frame and pivoted supplemental frame, of the swinging frame H formed of two parts bolted together, a transverse shaft which pivots the swinging frame on the supplemental frame, the boxes for such shaft being arranged between the two parts of the swinging frame, a rotary chopper which is geared with such shaft, and means connected with the axle for driving said shaft, substantially as described.

855,978. HORN-SUPPORT. VICTOR H. RAPKE, New York, N. Y. Filed Apr. 12, 1906. Serial No. 311,281.



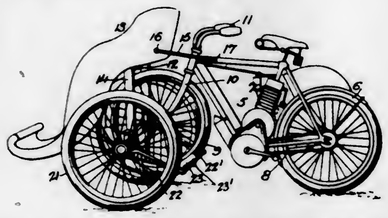
Claim.—1. The combination with a phonograph horn supporting rod, of a socket member for receiving the lower end of said rod, a lower fixed jaw on the socket member, an upper jaw having swinging relation to the socket member and provided with a rib at its free end and means for swinging said upper jaw to clamping position.

2. A phonograph horn-support, comprising a horn sup-

porting rod, a socket member for receiving the lower end of said rod, a lower jaw extended from said socket member, the said socket member having a forward projection at its upper end, provided with a tapped opening, an upper jaw having vertical and lateral swinging relation to said socket member, and a clamping screw engaging in said tapped opening and impinging upon said upper jaw.

3. In a phonograph horn support, the combination with a supporting rod of a spider comprising a block supported from said rod, a plurality of rods adjustably mounted in the block, a clamping screw for said rods, a screw threaded rod also adjustably mounted in the block, and a nut for engagement with the screw threaded rod, and bearing against the block, each of the several spider rods having a hook-shaped end.

855,979. ATTACHMENT FOR BICYCLES AND MOTORCYCLES. THEODORE W. RAZOUX, Brooklyn, N. Y. Filed May 5, 1906. Serial No. 315,368.



Claim.—1. In an attachment for bicycles and motorcycles, the combination with a frame carrying one or more seats, of means for supporting and carrying a wheel of the machine and means for bracing the attachment to the frame of the machine.

2. In an attachment for bicycles and motorcycles, the combination with a frame carrying seats, of means for suspending and holding the front wheel of the machine in said frame and means for rigidly connecting the frame to the machine.

3. In an attachment for bicycles and motorcycles, the combination with a frame having a seat and rigidly braced to the frame of the bicycle, of braces, pivoted axle studs, means for carrying the front wheel of the bicycle and means connecting the front wheel with the pivoted axle studs.

4. In an attachment for bicycles and motorcycles, the combination with a frame rigidly braced to the bicycle, of a frame adapted to carry the front wheel of the bicycle and pivoted in the first frame, pivoted studs for the wheels carried by the first frame and connected with the pivoted frame so that they will turn in unison with the front wheel of said bicycle.

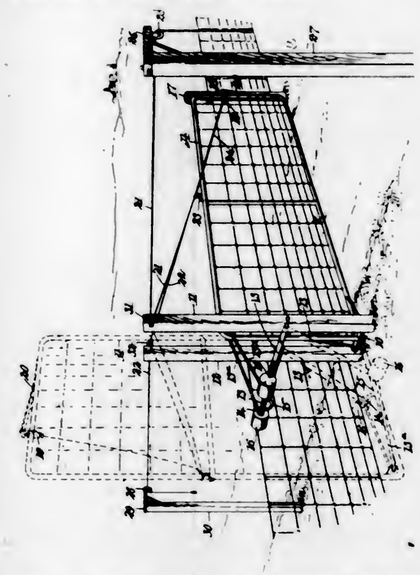
5. An attachment for bicycles, comprising a seat carrying frame connected with the bicycle and mounted upon a wheel, and means connected with the handle bars of the bicycle for directing said wheel.

6. An attachment for bicycles, comprising a seat carrying frame having connection with the bicycle, a wheel journaled upon the frame, means carried by the frame and adapted to receive and support the steering wheel of the bicycle, and a connection between said means and the wheel of the frame, whereby the wheel of the frame may be directed from the handle bars of the bicycle.

7. An attachment for bicycles, comprising a seat carrying frame, wheels journaled upon the frame, means carried by the frame and adapted to receive and support the steering wheel of the bicycle, and connection between the wheels and said means, whereby the wheels of the frame may be directed from the handle bars of the bicycle.

8. An attachment for bicycles, comprising a seat carrying frame, a wheel journaled upon the frame, and means carried by the frame for the reception of the front wheel of a bicycle.

855,980. GATE. ERNEST J. A. RICE, Harvard, Nebr. Filed Feb. 27, 1907. Serial No. 359,651.



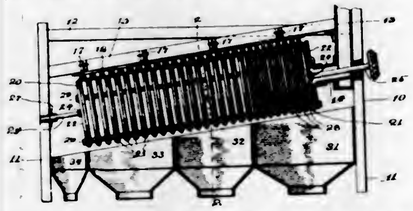
Claim.—1. The combination with uprights, a gate pivoted at its lower portion to the said uprights, links connected with the uprights extending rearwardly therefrom, a connection between the said links and the upper rear portion of the gate, a weight at the rear ends of the links, and means for opening and closing the gate from either side thereof.

2. Uprights, a gate pivoted at its lower portion to the said uprights, links connected with the uprights extending rearwardly therefrom, a connecting medium between the said links and the upper rear portion of the gate, a shaft carried by said medium and said links, a weight at each end of the said shaft, and means for opening and closing the gate from either side thereof.

3. The combination with uprights, a keeper post, a gate pivoted at the lower rear end portion between the said uprights, rearwardly extending links pivotally attached to the said uprights, a shaft passed through the outer end of the said links, a weight at each end of the shaft, and an angular arm pivotally connected with the said shaft and with the upper rear portion of the gate, of a keeper on a keeper post, a sliding latch carried by the gate for engagement with the said keeper, cables having guided support and extending in opposite directions from the upper central portion of the gate whereby to raise and lower the same from either side, and an auxiliary cable connected with the said operating cables and with the said latch for the purpose of withdrawing the latch from the keeper when the gate is elevated.

4. The combination with parallel uprights, a gate the rear end of which is located between the said uprights, the lower rear portion of the gate being pivoted to said uprights, links extending rearwardly from the said uprights, a shaft loosely passed through the said links and provided with a central crank section, a weight at each end of the shaft, a triangular arm the members whereof are pivotally received by the said shaft, the said arm at the junction of its members being pivotally attached to the upper rear portion of the gate, of a keeper post, a keeper attached thereto, a sliding latch carried by the gate for engagement with the keeper, a spring normally tending to hold the latch in position to engage the said keeper, operating cables connected with the upper central portion of the gate, and an auxiliary cable connected with the operating cables and with the said latch for the purpose described.

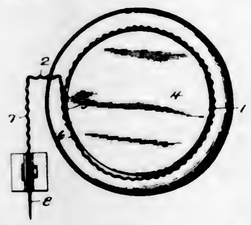
855,981. GRAIN-GRADER. GEORGE H. RICH, Chicago, Ill. Filed Sept. 24, 1906. Serial No. 335,853.



Claim.—1. In a grain grader, the combination with a cylinder comprising a series of separating rings, having V shaped rims and inwardly extending spacing lugs, and connecting rods extending through said lugs, of a brush mounted adjacent to the cylinder and having its bristles crowded down through the slots between the rings by the inclined exterior faces thereof.

2. In a grain grader the combination with a cylinder, comprising a series of separating rings having V-shaped rims and unobstructed channels between the rim portions, of means for connecting the rings together and a suitably mounted brush, the bristles of which are crowded down into the unobstructed channels by the inclined faces of the ring portions.

855,982. COMBINATION WRENCH AND CAN-OPENER. WILLIAM A. RICH, Pittsburg, Pa. Filed Oct. 11, 1906. Serial No. 338,511.

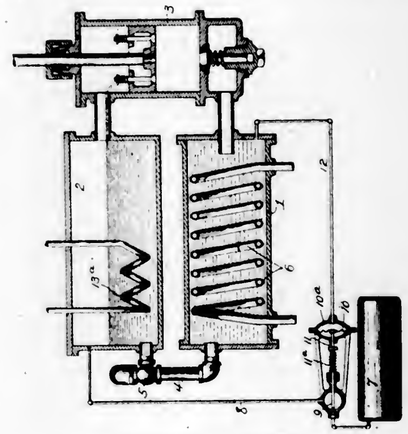


Claim.—A wrench comprising a strip of metal, bent to circular form and having its ends overlapping and said strip being formed with oppositely disposed rows of corrugations.

855,983. REFRIGERATING APPARATUS. FRANK A. RIDER, Pittsburg, Pa. Filed Nov. 10, 1906. Serial No. 342,849.

Claim.—1. In a refrigerating machine, the combination with a pressure chamber, of an expansion chamber, a pipe connecting said chambers, and a loaded valve in said pipe, a pump taking water and gas from the expansion chamber and forcing them into the pressure chamber, a cooling coil in the pressure chamber, and means for automatically supplying gas to make up for losses in the system.

2. In a refrigerating machine, the combination with a pressure chamber, of an expansion chamber, a pipe connecting said chambers, a weighted valve in said pipe, a pump taking gas from the expansion chamber and forcing it into the pressure chamber and into water contained therein, a gas supply tank, a pipe connecting said tank with a part of the apparatus, a valve in said pipe, a diaphragm controlling said valve and located in a chamber, and a pipe connecting said chamber with the pressure chamber to control the operation of the diaphragm and valve.



855,984. MEDICINE-RECEPTACLE. FRED J. RUSSELL, Newberry, S. C. Filed Sept. 2, 1905. Serial No. 276,805.



Claim.—The herein described medicine receptacle consisting of a body portion and a cover therefor, openings provided in the cover and body portion, said openings being covered by reticulated material, an absorbent pad comprising two layers of sponge disposed in the body of the receptacle, and lying in contact with the reticulated material in the body and cover, and a ring for suspending the receptacle from the person, secured to the body portion of the receptacle, essentially as described.

855,985. CONDUIT. GEORGE RUSSELL, McKeesport, Pa. Filed Aug. 22, 1906. Serial No. 331,661.



Claim.—1. A conduit for electric wires comprising a metal pipe having a flexible metallic lining within the same and a flexible enamel coating on the inner surface of said lining.

2. A conduit for electric wires comprising a metal pipe having a thin flexible sheet metal lining within the same and a flexible enamel coating on the inner surface of said lining.

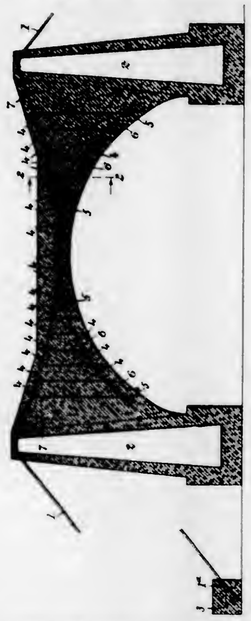
3. A conduit for electric wires comprising a metal pipe having a flexible metallic lining secured within the same and a flexible enamel coating on the inner surface of said lining.

4. A conduit for electric wires comprising a metal pipe having a thin flexible sheet metal lining secured within the same and a flexible enamel coating on the inner surface of said lining.

855,986. CONCRETE STEEL SUSPENSION-ARCH. EDGAR J. SCHAUWECKER, Clay City, Ind. Filed Nov. 3, 1906. Serial No. 341,844.

Claim.—1. An arch comprising concrete columns, an arch ring connected therewith, and parapets formed on the

sides of said ring, metallic columns embedded within the concrete columns, longitudinal metallic cables supported on said metallic columns and provided with pendent cables embedded in said parapets, and transverse bars connected with said pendent cables and embedded in said arch ring.



2. An arch comprising concrete columns having an arch ring connected therewith, and parapets formed on the sides of said ring, metallic longitudinal cables embedded in said parapets, metallic columns supporting the ends of said cables, pendent cables secured to said main cables, a plurality of curved reinforcing rods, and a series of transverse beams supporting said rods, all being embedded within the concrete columns, ring and parapets.

3. An arch comprising concrete columns, an arch ring and parapets formed on said arch ring, in combination with curved metallic longitudinal main cables and pendent cables secured thereto embedded within said parapets, and a plurality of longitudinal rods curved oppositely to the curvature of the main cables, and a series of transverse bars arranged below said reinforcing bars and connected with said pendent cables.

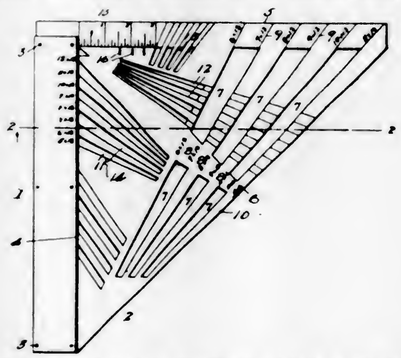
4. An arch comprising concrete columns, ring and parapets, in combination with metallic columns embedded within said concrete columns, longitudinal cables supported on said metallic columns, extending outward from said columns at their ends and curved between said columns, metallic hangers secured to said main cables embedded within said parapets, and a plurality of curved reinforcing bars embedded in said arch ring.

5. A concrete arch having embedded therein metallic longitudinal main cables, pendent cables secured thereto, a plurality of curved longitudinal rods, and a series of transverse bars connected with said pendent cables.

855,987. COMBINATION-SQUARE. ANDREW B. SCHLAGETER, Ottumwa, Iowa. Filed Aug. 8, 1906. Serial No. 329,717.

Claim.—1. A try-square comprising a blade having a plurality of series of tapering slots therein, and a sheet metal straight-edge secured to one edge of the blade.

2. A try-square comprising a blade having several series of slots, each series radiating from a common point and different series from different points thereon and the slots of each series tapering toward the point of radiation thereof, indications on several of the different slots, a



sheet metal straight-edge embracing one edge of the blade and provided at its edges with right angle flanges, and fastenings passing through the straight-edge and blade.

855,988. LOOSE-LEAF BOOK. HARRY I. SEDDON, Syracuse, N. Y. Filed Dec. 17, 1906. Serial No. 348,339.



Claim.—1. The combination of a pair of covers, a binding flexibly connecting them, a hinge member secured to one cover and extending along the inner edge thereof, said member having a guideway provided with recesses, a rod located in said guideway and provided with projections extending substantially in the direction of the rod, binding bars provided with apertures to receive said projections and adapted to enter the recesses in said hinge member, and means for pivotally connecting said binding bars with the other cover.

2. The combination of hinge members provided with guideways and having pockets communicating with said guideways and also provided with recesses communicating with said pockets, with rods located in said guideways and having projections extending in the direction of the rods and located in said pockets, and binding bars adapted to enter said recesses and provided with apertures to receive said projections.

3. The combination of hinge members having guideways and pockets communicating therewith, and abutments at the ends of the pockets, with rods located in the guideways and provided with projections extending in the direction of the rods and located in said pockets, said hinge pieces having recesses communicating with the pockets, and binding bars adapted to enter said recesses and provided with apertures adapted to receive said projections.

4. The combination of a pair of covers, and a binding connecting them, with hinge members provided with guideways and having pockets communicating therewith, said hinge members having recesses communicating with said pockets, rods in said guideways having projections located in said pockets and extending in the direction of the rods adapted to cross said recesses, and binding bars provided with apertures adapted to receive said projections.

5. The combination of a pair of covers, and a binding connecting them, with hinge members provided with guideways and having pockets communicating therewith, said hinge members having recesses communicating with the pockets, rods in said guideways having projections located

in said pockets and extending in the direction of the rods adapted to cross said recesses, and binding bars provided with apertures adapted to receive said projections, said hinge members having abutments at the ends of said pockets to limit the movement of said projections and rods.

6. The combination of covers, and a binding connecting them, with hinge members comprising plates folded upon each other and bent to form guideways and pockets communicating with said guideways between the corresponding edges of the hinge members and said guideways, rods located in said guideways and provided with projections located in said pockets and extending in the direction of the rods, said hinge members having recesses communicating with said pockets, and binding bars adapted to enter said recesses and provided with apertures to receive said projections.

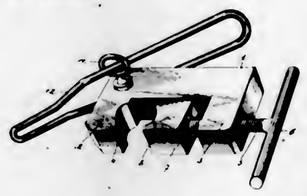
7. The combination of covers, and a binding connecting them, with hinge members comprising plates folded upon each other and bent to form guideways and pockets communicating with said guideways, rods located in said guideways and provided with projections located in said pockets and extending in the direction of the rods, said hinge members having recesses communicating with said pockets, and binding bars adapted to enter said recesses and provided with apertures to receive said projections, said plates having depressions adjacent the pockets forming abutments for said projections.

8. The combination of covers, and a binding connecting them, with hinge members attached to the covers and having guideways and pockets communicating therewith, and also provided with recesses connecting with said pockets, with rods having projections extending outwardly and bent substantially parallel with the rods and located in said pockets adapted to cross said recesses, and binding bars adapted to enter said recesses and provided with apertures to receive said projections.

9. A hinge member comprising a strip of metal folded upon itself and bent to form guideways, and having pockets communicating with said guideways between the latter and the folded edge of the member, and also having recesses, and a rod located in the guideways and provided with projections located in the pockets and extending in the direction of the rod.

10. A hinge member comprising a strip of metal folded upon itself and bent to form guideways and pockets communicating with said guideways between the latter and the folded edge of the member, and also having recesses, a rod located in the guideways and provided with projections located in the pockets and extending in the direction of the rod, said metal being depressed between the pockets forming abutments for the projections.

855,989. CLAMP. HARRY D. SHEAR and ULYSSES S. RHODABARGER, Mannington, W. Va. Filed Nov. 16, 1906. Serial No. 343,691.



Claim.—1. In a hoisting means, a gripping clamp adapted to be removably secured to the article to be hoisted, an eye swiveled in said clamp adjacent to the gripping jaws, the shank of said eye extending in a plane parallel with the axis of the article being hoisted, and a link loosely mounted in said eye, whereby the weight stress will be on lines approximate the axis of the article being hoisted.

2. A clamp of the type described, comprising a substantially rectangular body cut-away in one edge intermediate its ends to form a rigid jaw-member and a bearing-member, the jaw-member having a recess in its inner face and the bearing-member having a threaded opening extending parallel with the longitudinal axis of the block, a screw mounted in said threaded opening having a handle on its outer end, a jaw loosely-mounted on the inner end of said screw and lying in the recess in the block between the rigid jaw-member and the bearing-member, said loosely-mounted jaw having a recess in its inner face, an eye swiveled in the block adjacent one corner thereof, the axis of the shank of the eye extending in a plane parallel with the axis of the article being carried by the clamp and an oblong link carried in said eye.

855,990. LIFTING APPARATUS. LEVI R. SHELDEN, Cestos, Okla. Filed Mar. 6, 1907. Serial No. 360,994.



Claim.—1. In an apparatus for the purpose described, side sections comprising fixed frames, vertically and longitudinally movable bars, and vertically-swinging levers pivotally connected to the said frames and bars, sheaves connected with the rear portions of the frames, and cables passed around the sheaves and having forwardly extending portions for connection to the levers and other forwardly extending portions for connection to a wagon.

2. In an apparatus for the purpose described, side sections comprising fixed frames, vertically and longitudinally movable bars, and vertically-swinging levers pivotally connected to the said frames and bars, sheaves connected with the rear portions of the frames, and cables passed around the sheaves and having eyes at one end of a size to loosely receive the lower ends of the levers; said cables being arranged to be connected at their opposite ends to a wagon.

3. In an apparatus for the purpose described, side sections comprising fixed frames, vertically and longitudinally movable bars, and vertically-swinging levers pivotally connected to the said frames and bars, sheaves connected with the rear portions of the frames, and cables passed around the sheaves and having eyes at one end of a size to loosely receive the lower ends of the levers and also having hooks at their opposite ends.

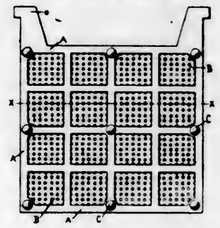
4. In an apparatus for the purpose described, side sections comprising fixed frames formed of posts and lower and upper bars fixed thereto, vertically and longitudinally movable bars arranged above the upper bars of the frames, links connecting the movable bars and the upper bars of the frame, and vertically-swinging levers pivotally connected to the said upper frame bars and the movable bar and extending below the former and above the latter, sheaves connected with the rear portions of the frames, cables passed around the sheaves and having eyes at one end and hooks at their opposite ends, and a lever fulcrumed on the frame of one side section and connected through a link with the movable bar thereof.

855,991. PROCESS OF MAKING STORAGE-BATTERY PLATES. WILLIAM L. SILVEY, Dayton, Ohio. Filed Apr. 2, 1906. Serial No. 309,478.

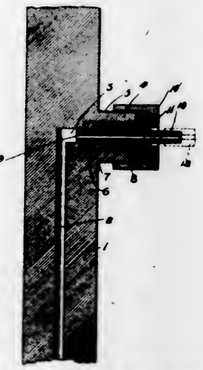
Claim.—1. The art of making storage battery plates which consists in providing a battery grid and a perforated sheet, putting them in contact in parallel relation, and pressing the sheet into the openings of the grid and thereby fixing the grid and perforated sheet in contact and operative situation.

2. The art of making storage battery plates which consists in providing a battery grid and a perforated sheet, putting them in contact in parallel relation, and pressing the sheet by a platen of rubber or equivalent material

into the openings of the grid and thereby fixing the grid and perforated sheet in contact and operative situation.



855,992. NIPPLE ATTACHMENT FOR POINTS. ENOCH SKELTON, Tacoma, Wash. Filed Jan. 17, 1907. Serial No. 352,842.



Claim.—1. In a device of the character described, the combination with a point and a hose, of a nipple formed of yieldable material connecting said hose to said point.

2. In a device of the character described, the combination with a point, of a removable nipple formed of yieldable material carried by said point, and means for normally securing said nipple to said point.

3. In a device of the character described, the combination with a point, of a removable nipple formed of yieldable material positioned in said point, and removable locking means for fastening said nipple upon said point.

4. In a device of the character described, the combination with a point, of a nipple formed of yieldable material positioned in a portion of said point, and means for compressing said nipple in said point whereby a tight-joint is formed by and between said point and nipple.

5. In a device of the character described, the combination of a point provided with a longitudinally-extending passage and with a laterally-extending passage communicating with said longitudinally-extending passage, an extension integral with said point and the inner diameter of said extension greater than the dimension of the laterally-extending passage of the point, said point provided with a passage of the same dimension as the inner diameter of said extension and said last-mentioned passage connecting said laterally-extending passage of the point and the interior of said extension and a nipple positioned within said extension, laterally-extending passages of said point, said extension screw-threaded upon its outer face, and a revoluble cap screw-threaded upon its inner face and provided with a partly closed end having a central opening, said cap threaded upon the said extension and capable of compressing said nipple for forming a tight-joint between the sides of the nipple and the extension.

6. In a device of the character described, the combination of a point provided with a longitudinally-extending passage and with laterally-extending passages of different dimensions, an extension secured to the side of said point and its interior opening upon said laterally-extending passages of said point, said extension provided with screw-threads upon its outer surface, a nipple formed of yieldable material and provided with a comparatively large body portion and with a reduced extension formed upon its outer end, positioned within said first-mentioned extension, the outer end of the enlarged body portion extending beyond the outer end of said first-mentioned extension, a cap provided with a partly closed outer end threaded upon said extension, the extension of said nipple extending through the outer end of said cap and the partly closed end of said cap engaging directly the outer end of the enlarged body portion of said nipple.

7. In a device of the character described, the combination of a point provided with an integral, lateral extension, a revoluble cap provided with a partly closed end and a central aperture, detachably mounted upon said extension and surrounding a portion of the same, and a nipple formed of yieldable material and provided with an enlarged body portion and an outer reduced extension, the enlarged body portion partly positioned within said first-mentioned extension and partly projecting beyond the outer end of said extension, the extension of said nipple extending through the aperture of said cap, and the partly closed end of said cap engaging directly the enlarged body portion of said nipple, whereby when said cap is adjusted upon said first-mentioned extension toward the point, said enlarged body portion of the nipple will be compressed within said extension.

8. As a new article of manufacture, a point provided with a lateral extension, said extension provided with a screw-threaded outer surface, a cap provided with a partly closed outer end and with an aperture formed in said end, said cap threaded upon the extension, a nipple formed of yieldable material and provided with an enlarged body portion and with an extension extending through the aperture of the outer end of said cap, said cap adapted to engage directly the enlarged body portion of said nipple for retaining said nipple within said extension and compressing said nipple for forming a tight-joint between the sides of the nipple and said extension.

9. In a device of the character described, the combination of a point provided with a longitudinally-extending passage, said point provided with a laterally-extending extension, a cap provided with a partly closed outer end, positioned upon said extension, a nipple formed of yieldable material positioned within said extension, said nipple provided with an enlarged body portion and an outer, reduced extension, engaging said cap, the enlarged body portion engaging said cap and the reduced extension extending through and spaced from the partly closed end of said cap, the extension of said nipple projecting beyond the outer face of said cap, whereby a hose may be attached to the outer end of said extension without engaging said cap.

855,993. MATCH-BOX. ALBERT G. SLATER, Viele, Iowa. Filed Sept. 29, 1906. Serial No. 336,715. (Model.)

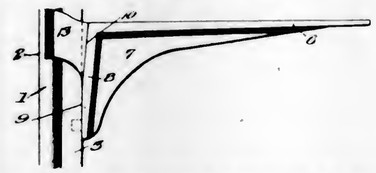


Claim.—1. A match box comprising a hollow box or casing for containing matches, an extension formed on the box and provided with a recess adapted to contain a single match, a spring secured in said extension and having its upper end bent to close the outlet to said extension, a match slide mounted to slide upon said spring, and a button on said slide for moving the same upward to carry a match.

2. A match box provided with an extension, a spring secured in the extended portion, a match deliverer mounted to slide on said spring, and an angular extension on said spring for covering the match outlet.

3. A match box comprising a hollow casing provided with a slotted extension, a curved spring secured in said extension and provided with an angular upper end which normally covers the outlet for the matches, said upper end being provided with a curved recess and a notch, said notch adapted to engage a projection on the box to hold the spring in position to close the match opening, and means for delivering a match.

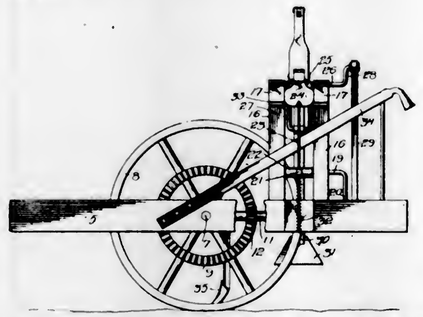
855,994. SHELF-BRACKET. HENRY T. SORRELL, Baltimore, Md. Filed Jan. 3, 1907. Serial No. 350,566.



Claim.—1. A shelf bracket provided with an inclined portion upon its bearing face, a stud projecting from the bearing face of the bracket, and oppositely disposed lugs extending inward from arms projecting backward from the bracket, said arms being disposed above the upper face of the bracket, in combination with a supporting bar having laterally extending flanges and sockets in its front face to accommodate the stud on the bracket.

2. A shelf supporting bracket, comprising a supporting flange, a centrally disposed brace rib under said flange, said rib having a bearing face provided with an inclined upper surface, a stud formed on the inner surface of the lower end of said bracket, upwardly projecting arms provided with inwardly extending lugs, the upper portions of said arms extending above the surface of the bracket flange, and a supporting bar for said bracket.

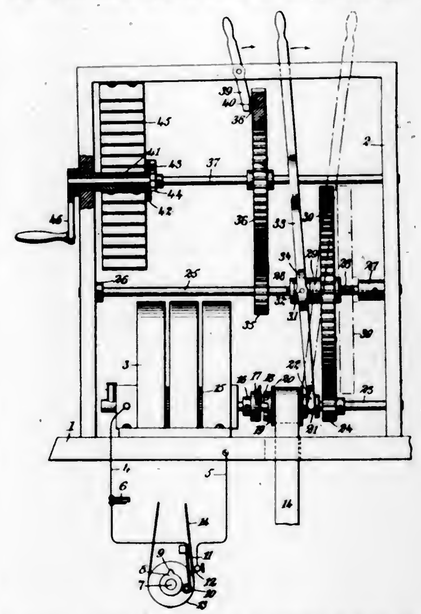
855,995. COTTON-CHOPPER. SAMUEL STALLINGS, Fountain Inn, S. C. Filed Oct. 30, 1906. Serial No. 341,262.



Claim.—1. In a cotton chopper, the combination with an open frame and a traction wheel mounted therewithin, of a gear located upon the wheel axle; a pair of vertical standards mounted upon the frame in spaced relation with each other; a transverse shaft journaled upon said standards having a crank portion intermediate its ends adapted for movement in the space between said standards, said shaft extending beyond said standards at one end, and having a second crank formed on said extension; a shaft mounted upon the inner face of one of the side members of said frame and having a gear secured to one end in mesh with said first mentioned gear and a crank wheel secured to its opposite end and including a pin; a pitman connecting said pin and extended crank end of said transverse shaft; and a hoe connected intermediate its ends to the intermediate crank portion of said transverse shaft and adapted to be reciprocated transversely of said frame upon movement of said shaft.

2. A cotton chopper comprising in combination with an open frame and a traction wheel mounted therewithin, a pair of spaced vertical standards mounted upon the frame and disposed transversely with respect thereto; a shaft mounted upon the inner face of one of the side members of the frame; means for driving said shaft from said traction wheel; a crank wheel secured to one end of said shaft; a transversely reciprocatory hoe mounted intermediate its ends between said standards; a driving connection between said hoe and crank wheel for actuating the former; a rock shaft secured transversely between said standards above said first mentioned shaft; a connection between the rear end of said hoe and said rock shaft; and means carried by said crank wheel for actuating said rock shaft imparting an independent upward movement of said hoe upon its backward stroke.

855,996. SPARK-PRODUCING MECHANISM FOR EXPLOSIVE-ENGINES. LORENZO D. STAMPS, Anahuac, Tex., assignor to himself and John W. Hamilton, Anahuac, Tex. Filed Mar. 6, 1906. Serial No. 304,498.

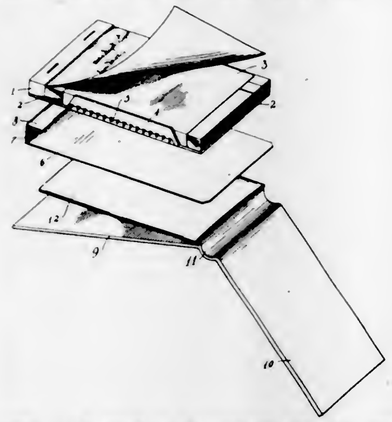


Claim.—1. The combination of a dynamo provided with an armature, a sparking circuit connected with said dynamo and with an engine, a revoluble member also connected with said engine for turning said armature of said dynamo, clutch mechanism controllable at will for disconnecting said armature from said revoluble member, auxiliary means for turning said armature, gearing connecting said auxiliary means with said armature, and means controllable at will for disconnecting said gearing.

2. The combination of a dynamo provided with a revoluble armature and adapted to generate alternating currents, a circuit connected with said dynamo and associated with an engine for the purpose of utilizing said alternating currents in producing sparks, a pulley or the like for enabling

said armature to be turned by power from the engine to be driven, clutch mechanism for connecting said armature to said pulley and for disconnecting the same therefrom, auxiliary motor mechanism for turning said armature while temporarily disconnected, and means controllable at will for connecting said auxiliary motor mechanism with said armature, and for disconnecting the same therefrom.

855,997. MANIFOLDING BOOK OR PAD. ALBERT F. STAPLES, Brockton, Mass., assignor to The McCaskey Register Company, Alliance, Ohio, a Corporation of Ohio. Filed Sept. 8, 1905. Serial No. 277,566.



Claim.—1. A device of the character described, consisting of a plurality of sheets of paper secured together and forming a pad, a plate bent so as to form a clamp, said clamp being adapted to receive and hold the pad, a cover for the pad, and a pocket carried by the cover, said pocket being adapted to receive the said plate, whereby the pad is secured to the cover.

2. A device of the character described, comprising a plurality of sheets of paper secured together and forming a pad, a plate bent so as to form a clamp, said clamp being adapted to receive and hold the pad, a cover for the pad, and a pocket pivotally secured to the cover, said pocket being adapted to receive the said plate, whereby the pad is pivotally secured to the cover.

3. A device of the character described, comprising a plurality of sheets of paper secured together and forming a pad, a plate bent so as to form a clamp, said clamp being adapted to receive and hold the pad, a cover for the pad composed of side boards hinged together, and a pocket pivoted to the cover adjacent the hinge thereof, said pocket being adapted to receive the said plate, whereby the pad is pivotally secured to the cover.

4. A device of the character described, comprising a plurality of sheets of paper secured together at one of their ends, a stiffening back therefor secured to the paper, a carbon sheet secured to said back below the paper, the free portion of said sheet being adapted to be inserted between the sheets of paper, a flange secured to said back and projecting alongside one edge of the paper so as to protect the carbon sheet, a plate bent so as to form a clamp, said clamp being adapted to receive and hold the paper and the back therefor, a cover for the paper, and a pocket carried by the cover, said pocket being adapted to receive the said plate, whereby the paper is secured to the cover.

5. In a device of the character described, a plurality of sheets of paper secured together at one of their ends, a stiffening back therefor secured to the paper, the free portion of said sheet being adapted to be inserted between the sheets of paper, a flange secured to said back and projecting alongside one edge of the paper so as to protect the carbon sheet, a corner stay attached to said back and said flange for stiffening the latter, a plate bent so as to form a clamp, said clamp being adapted to receive and hold the paper and the back therefor, a cover for the paper, and a pocket carried by the cover, said pocket being adapted to receive the said plate, whereby the paper is secured to the cover.

855,998. DRAFT-RIGGING FOR FREIGHT-CARS. HARRY C. STICKEL, Star Junction, Pa. Filed Oct. 9, 1906. Serial No. 338,140.



Claim.—1. The combination with a car provided with recesses and having a body bolster, draft beams passing through and extended in advance and in rear of the body bolster and provided with a recess receiving a portion of the same, whereby they are interlocked with the body bolster, said draft beams being also provided in advance and in rear of the body bolster with recesses, and check blocks secured in the latter recesses and engaging those of the car.

2. The combination with a car having at its front end a transverse block, of spaced draft beams having outwardly tapered portions presenting angularly disposed inwardly converging inner faces, said draft beams being provided beyond the tapered portions with reduced outer ends having upper and lower recesses, the upper recesses receiving the said block, vertical eyes located between and formed integral with the reduced ends of the draft beams, a carrier iron having its terminals fitted in the lower recesses of the reduced ends of the draft beams, and fastening devices passing through the eyes and piercing the carrier iron and the block.

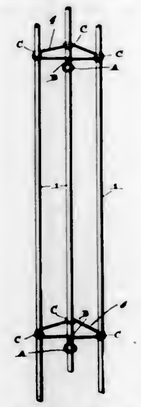
3. As a new article of manufacture, a metallic draft beam consisting of a vertical web and laterally projecting upper and lower flanges, said beam being provided in its upper face with an intermediate body bolster receiving recess, and having check block receiving recesses located in advance and in rear of the bolster receiving recess.

4. As a new article of manufacture, a metallic draft beam provided at its inner side with a recess and consisting of a web having lateral enlargements and inner and outer top and bottom flanges, the inner flanges terminating at the said recess and the outer flanges being extended in advance of the same.

5. As a new article of manufacture, a metallic draft beam provided at its front end with an upper recess and having a side recess at its inner face and consisting of a vertical web and laterally projecting flanges, said draft beam being provided at its upper face with a body bolster receiving recess and having check block receiving recesses in advance and in rear of the same.

6. As an article of manufacture, a metallic draft beam consisting of a vertical web and laterally projecting upper and lower flanges extending from opposite sides of the web, the outer flange being extended along the web in advance of the inner flange, said draft beam being provided in its upper face with a series of recesses, and lateral enlargements or bosses extending from the web between the upper and lower flanges, some of the said bosses or enlargements being on the outside and some on the inside, and certain of the recesses having said enlargements or bosses located beneath the same.

855,999. REINFORCEMENT FOR CEMENT FENCE-POSTS. EDWARD R. STOWELL, Adams county, Ind. Filed Aug. 31, 1905. Serial No. 273,848.



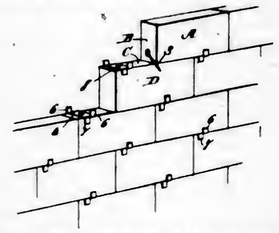
Claim.—1. A metallic core for posts comprising a plurality of triangular ties, each tie having an integral coil at each apex and an outwardly extending loop at a point between two of its apexes, and parallel rods extending through the coils to hold the loops in alinement.

2. A fence post comprising a triangular body and a metallic skeleton core embedded therein and comprising a plurality of triangular ties having their sides substantially parallel with the faces of the body, each tie having an integral coil at each apex, and a loop extending from each tie at a point between two of its apexes, said loops extending beyond one face of the body at points removed from its edges, and rods embedded within the body and extending through the coils, the projecting loops being disposed in alinement.

3. A fence post comprising a triangular body, a plurality of triangular ties embedded therein, coils integral with the ties and formed at the apexes thereof, alining loops extending from the ties at the center of one side thereof, two of said loops being disposed in close proximity to receive a single fence wire therebetween, parallel rods extending through the coils and embedded within the body, and a key rod removably mounted within the loops and parallel with the post.

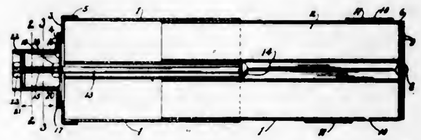
856,000. CONSTRUCTION OF BUILDINGS. JOHN A. STRANSKY, Pukwana, S. D., and HIRAM RILEY, Viroqua, Wis. Filed Feb. 5, 1907. Serial No. 355,914.

Claim.—1. A building wall consisting of a plurality of courses of impervious fire-proof composite blocks, each of the blocks of the courses consisting of a rectangular body portion formed from a solid mass of compressed straw and a thin coating of impervious material extending entirely around the body portion, means extending through one lower corner of a block of one course and engaging in the top of the block of another course for locking the blocks together, a tie interposed between a block of one course and a block of another course, secured to one of the blocks and provided with means overlapping both blocks, an anchor secured to the face of the wall, and a coating of cement retained in position by said anchor.



2. A building wall consisting of a plurality of courses of impervious fire-proof composite blocks, each of the blocks of the courses consisting of a rectangular body portion formed from a solid mass of compressed straw and a thin coating of impervious material extending entirely around the body portion and directly engaging the straw throughout the face of the body portion, means extending through one lower corner of a block of one course and engaging in the top of a block of another course for locking the blocks together, a tie interposed between a block of one course and a block of another course, secured to one of the blocks and provided with means for overlapping both blocks, and a coating of plastic material for the wall.

856,001. AUTOMOBILE-HORN. IRA E. STUMP, CHARLES HOLLMAN, and GEORGE E. NICHOLAS, Cleveland, Ohio. Filed Sept. 18, 1906. Serial No. 335,107.



Claim.—1. A horn, comprising two sets of telescoping tubes, one set being provided with a head-plate having a central opening, a second head-plate concentrically-mounted and provided with a series of radially-extending deflector-arms abutting against said first mentioned head-plate, and a receiving-tube mounted and abutting against said deflector arms, and the other set being provided with two concentric end plates provided with a series of vent-openings adapted to register with each other.

2. A horn, consisting of a main body portion comprising a series of telescoping tubes forming separate compartment, a head-plate provided with an opening communicating with said compartments, a series of radially-extending deflector-arms mounted against said head-plate and providing a series of inlet-openings, and a receiving-tube mounted against said deflector-arms.

3. A horn, comprising a series of telescoping tubes having substantially V-shaped sides and convex-faces and arranged in sets, a head-plate secured to one of said sets and provided with an opening communicating with all of said tubes, a second plate concentrically-mounted and provided with deflector-arms abutting against said head-plate and extending across said opening, and an inlet-tube mounted against said deflector-arms.

4. In a horn, a main body portion made up of a series of longitudinally-extending telescoping tubes having substantially V-shaped inwardly-extending side walls and convex-faces.

5. In a horn, the combination with a set of longitudinally-extending tubes forming separate compartments, and a second set of longitudinally-extending tubes telescoping therein and provided with closed outer ends and vent-

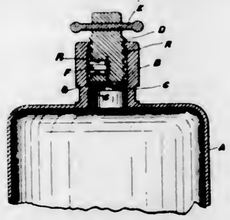
openings and valves; of a head-plate secured to said first mentioned set of tubes and having a central opening communicating with said compartments, a second plate provided with radially-extending arms mounted against said head-plate, and an inlet-tube concentrically-mounted against said second plate and provided with inlet-openings between said radially-extending arms.

6. A horn, comprising a series of front and rear telescoping tubes forming compartments, a head-plate secured to said rear telescoping tubes and provided with an opening communicating with said compartments, a central bolt secured to said rear tubes along the angled edges thereof and provided with a rear threaded portion carrying a disk-plate abutting against said head-plate and provided with radially-extending deflector-arms registering with the ends of the sides of said rear tubes, and an inlet-pipe impinging against said deflector-arms and secured in position by a cross-arm taking over said threaded portion of said bolt.

7. A horn, comprising front and rear telescoping tubes forming separate compartments, a head-plate secured to said rear telescoping tubes and provided with an opening communicating with said compartments, a central bolt secured to said rear tubes and carrying a disk-plate abutting against said head-plate and provided with deflector-arms extending over the opening of said head-plate, and an inlet-pipe impinging against said deflector-arms and secured in position by said bolt.

8. A horn, comprising a set of tubes normally closed at one end and provided with vent-openings and valves for closing said openings, a second set of tubes taking over the open ends of said first mentioned set of tubes, a head-plate secured to said second set of tubes and provided with an opening communicating with all of said tubes, a second plate provided with deflector-arms abutting against said head-plate, and an inlet-pipe abutting against said deflector-arms and communicating with said opening of said head-plate.

856,002. BOTTLE. TOM TAYLOR, Devonport, near Auckland, New Zealand. Filed May 9, 1906. Serial No. 315,990.



Claim.—1. In a bottle of the class described having its neck internally screw threaded and provided with slots formed therein, a flange at the terminal of the slots, an exteriorly screw threaded plug for engagement with the screw threads of the neck, and a pivotal pawl carried by the plug for engagement with the slots to fracture the neck of the bottle.

2. In a bottle of the class described having a neck portion, said neck having internal screw threads, and further provided with oppositely disposed slots arranged in parallelism, a hand operable plug having screw threads for engagement with the threads of the neck, said plug having a recess, and movable means mounted within the recess for engagement with the slots when the plug is being unscrewed from the neck to fracture the latter.

3. In a bottle having a neck portion provided with internal screw threads, an annular flange arranged below said screw threads, a cork supported by said flange, said neck further provided with slots, a plug having screw threads for engagement with the threads of the neck of the bottle, and means coöperative with the plug for engagement with the slots to fracture the bottle neck upon the unscrewing of said plug.

4. A bottle of the class described, comprising a neck portion having internal screw threads, a screw threaded plug for engagement with the screw threads in the neck of the bottle, said neck having off-set portions forming slots at its interior surface thereof, and means movably mounted in the plug for engagement with the said slots to fracture the neck of the bottle upon the unscrewing of the plug.

5. A bottle of the class described, comprising a neck portion having internal screw threads, a screw threaded plug for engagement with the screw threads in the neck of the bottle, said neck having off-set portions forming slots at its interior surface thereof, means movably mounted in the plug for engagement with the said slots to fracture the neck of the bottle upon the unscrewing of the plug, an annular flange within the neck below the screw threads thereof, and a cork mounted on the flange below the plug.

6. A bottle of the class described, comprising a neck portion having internal screw threads, a screw threaded plug for engagement with the screw threads in the neck of the bottle, said neck having off-set portions forming slots at its interior surface thereof, means movably mounted in the plug for engagement with the said slots to fracture the neck of the bottle upon the unscrewing of the plug, an annular flange within the neck below the screw threads thereof, a cork mounted on the flange below the plug, and a gauze covering for the bottle neck.

856,003. ANCHOR FOR AIR-SHIPS. DAVID THOMAS, San Francisco, Cal. Filed May 16, 1906. Serial No. 317,099.

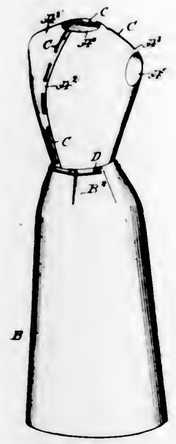


Claim.—1. A device of the class described, comprising a stock for driving into the ground, being provided with transverse openings, anchor members means whereby traction on the stock will protrude said anchor laterally through said openings, a device for locking the anchor members, in protruded position and means operated exteriorly of the stock for operating said locking device to lock or release said members.

2. A device of the class described, comprising a stock for driving into the ground, which stock is provided with transverse openings, a striking block within the stock at the bottom of said openings, the sides of said block facing said openings being upwardly tapered, tapering anchor members mounted for protrusion through the said openings, a wedge block slidable in the stock above the anchor members, adapted to be passed between them and lock them in their spread position, and externally-operated means for withdrawing the wedge block and permitting the anchor members to drop within the stock to an engagement with the tapering faces of the striking block.

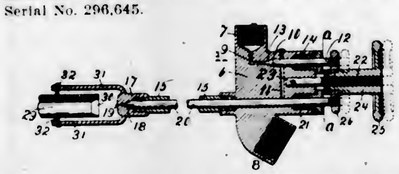
3. A device of the character described, comprising a stock for driving into the ground, being provided with transverse openings, a striking block within the stock at the bottom of its openings, anchor members pivoted in the stock for protrusion through said openings, which anchor members have their outer members flat and their inner members inclined in opposite directions from their pivots, a wedge block held to slide in the stock above the anchor members, the wedge block being adapted to enter the spaces between the inner ends of the anchor members to hold them in spread position, and to be withdrawn from engagement with said members to permit said members to drop downward within the stock, a cable attached to the said wedge block, being passed out through the stock, and a supporting cable secured to the upper portion of the stock.

856,004. GARMENT-FORM. ANNA L. TRAVISS, Virginia, Minn. Filed May 26, 1906. Serial No. 318,842.



Claim.—A garment form comprising a waist and a skirt pattern, each composed of a sheet of flexible material cut to the proper contour, the upper ends of the waist pattern being cut to form overlapping shoulder portions and the upper edge of the skirt pattern being slitted to form a waist portion, the side edges of the waist pattern and the skirt pattern being provided with eyes for receiving a lacing whereby to secure said edges together after the sheet is bent into proper form, and the adjacent ends of the skirt and waist patterns being provided with registering openings for receiving a lacing whereby to secure said patterns together.

856,005. VALVE. JACOB WAMBSGANS, Peoria, and WILLIAM H. WAMBSGANS, Aurora, Ill. Filed Jan. 18, 1906. Serial No. 296,645.



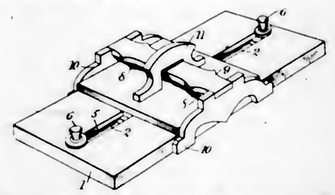
Claim.—1. In a device of the class described, the combination of a single integral part provided with two valve openings therein, a tubular retort extending from one of said openings and provided with a capillary outlet at the end thereof, a needle valve extending through the last mentioned opening in the single integral part into the retort for controlling the outlet therefrom, an inlet to the other opening in the single integral part controlled by a valve in said opening, a passageway connecting both of said valve openings in the single integral part, a stationary threaded pin on the single integral part intermediate of the valve openings therein projecting outwardly from said part, a manually operable member screwed on said pin and supported thereby, a non-rotary disk on said manually operable member connected with portions of the valve stems protruding from the aforesaid single integral part, for simultaneously imparting a direct in and out movement to both of said valves by the spiral movement of said manually operable member.

2. A valve embodying a body formed with two parallel passages arranged in side by side relation and of unequal length, the longer of said passages extending through opposite ends of said body and the shorter through but one of said ends, said body having a channel communicating with the inner end of said shorter passage and further having a second vertical channel intermediate the length of each of said passages and connecting the latter, a valve in each of said passages, a valve seat formed at the juncture of the shorter passage and said first named channel and means for operating said valves in unison.

3. In a device of the class described, a valve casing a pair of valves operable in the casing and provided with stems which project without the casing, a threaded pin disposed between said valve stems and having its inner end projecting in and rigidly secured to the casing, a sleeve threaded on said threaded portion of said pin and having a hand wheel on its outer end, the forward end of said sleeve having a reduced threaded portion forming a shoulder, a plate loosely received over said reduced portion and abutting against said shoulder, and a threaded ring secured over said threaded portion of the sleeve and abutting against said plate, the outer ends of each of the valve stems being threaded and projecting in threaded openings provided therefor in said plate.

4. A valve comprising a casing having two parallel valves each having a stem slidably supported in bores provided therefor in said casing and each having one end of its stem projecting beyond the casing, a member rigidly secured at one end to said casing, and at its opposite end extending beyond said ends of the valve stems and being threaded, a sleeve on the threaded part of said member, said sleeve being wholly disposed within the casing and having its inner end spaced from the exterior of the casing when the valves are in closed position, and means supported from the sleeve and located exterior of the casing for actuating said valve stems in unison.

856,006. POWDER-COMPACTING DEVICE FOR DRUGGISTS. ORA WARE, Muskogee, Ind. Ter. Filed Aug. 11, 1906. Serial No. 330,225.



Claim.—1. A powder compacting device comprising a frame having an open bottom and a substantially closed top, two compacting members mounted in said frame and movable toward and away from each other and means for guiding the frame in a vertical direction.

2. A powder compacting device comprising a rectangular frame having an open bottom and a substantially closed top, two compacting members of substantially the same width as the inner side of said frame and mounted therein for movement toward and away from each other, a

handle secured to the upper side of said frame, and means for guiding the frame in a vertical direction.

3. A powder compacting device comprising a rectangular frame having an open bottom and a substantially closed top, the under side of the top being provided with a recess at the center and two slots extending through the top adjacent the ends thereof, a handle secured to the upper side of said frame, two compacting members mounted in the ends of said frame and movable toward each other, knobs secured to said compacting members and extending upward through said slots, and a plate mounted in the recess in the under side of the frame.

4. A powder compacting device comprising a rectangular frame having an open bottom and a substantially closed top, two compacting members mounted in the ends of said frame and movable toward each other, a plate mounted in a recess in the under side of the frame, means for supporting said plate independent of the frame, and means whereby the frame may be raised a short distance before the said plate is moved.

5. In combination, a rectangular frame, compacting members mounted in the ends of said frame, means whereby said members may be moved toward each other, a plate mounted in said frame and adapted to move between said members when the latter are in their extreme outer position, a handle secured to said frame, and means whereby the sides of the frame and the edges of the compacting members are withdrawn from the material being operated upon before the plate is moved.

856,007. JEWELED BEARING FOR ELECTRICAL AND OTHER INSTRUMENTS. JOHN WENNSTROM, Suffern, N. Y. Filed Feb. 7, 1907. Serial No. 356,264.



Claim.—1. A jeweled bearing, comprising a hollow screw with a jewel stub removably held in the mouth of the screw, and a supporting spring, the screw having means for frictionally holding the stub in place.

2. A jeweled bearing, comprising a hollow screw with spring jaws at the open end, a jewel stub frictionally held by the spring jaws and a supporting spring.

3. A jeweled bearing, comprising a hollow screw with a jewel stub removably held in the mouth of the screw and a supporting spring, the screw having means for frictionally holding the stub in place, and also having a hole through the screw head for the insertion of an ejecting pin.

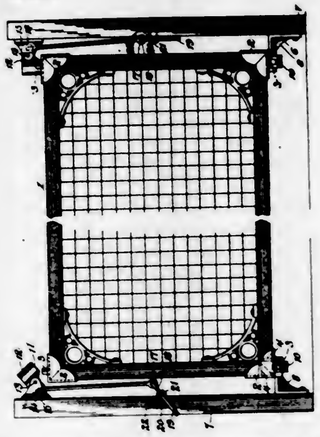
4. The combination of a hollow bearing screw with a jewel-carrying stub mounted therein but readily removable from the open front end of the screw, and means for frictionally holding the stub in place.

856,008. FOUR-WAY GATE-HINGE. CARL W. WESTERBERG, De Kalb, Ill., assignor of one-half to Alfred E. Westerberg, De Kalb, Ill. Filed June 30, 1905. Serial No. 267,828.

Claim.—1. The combination with a gate, of a lower hinge composed of separable members, an upper hinge composed of interfitting members, one of such interfitting members being pivoted and forming a latch, and operating mechanism located at an intermediate point between the upper and lower hinges and connected with the said pivoted member.

2. The combination with a gate, of a hinge located at the upper portion of the gate and composed of interfitting members, one of such interfitting members being pivoted and constituting a latch, and operating mechanism located at a point between the top and bottom of the gate and connected with the said pivoted member.

3. The combination with a gate member, of a hinge provided with a pivoted member detachably engaging the gate member, operating mechanism connected with the pivoted member and engaging the same and forming a lock to retain the pivoted member of the hinge in engagement with the gate member.



4. The combination with a gate member, of a hinge provided with a pivoted member arranged to swing into and out of engagement with the gate member, a rod connected with the pivoted member of the hinge, and an operating lever connected with the rod for swinging the pivoted member.

5. The combination with a gate member, of a hinge provided with a pivoted member arranged at the upper portion of and engaging the gate member, an operating device located below the pivoted member of the hinge, and a connecting rod extending from the operating device to the hinge member and forming in connection with said operating device a lock for the latter.

6. The combination with a gate member, of a hinge provided with a pivotally mounted member detachably engaging the gate member, a rod connected with the pivoted member of the hinge, and an operating device having opposite handles and connected at an intermediate portion with the rod.

7. The combination with a gate provided with a projecting pintle, of a pivoted lever having an eye receiving the pintle of the gate, said pivoted member forming a latch and being weighted, whereby it is normally maintained in engagement with the pintle, and operating mechanism located at a point between the top and bottom of the gate and connected with the said lever to swing the same out of engagement with the pintle.

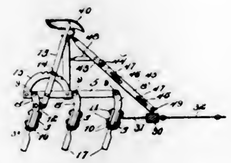
8. The combination with a gate, and a hinge post, of a bracket mounted on the hinge post, a hinge member pivoted at an intermediate point to the bracket and detachably engaging the gate, means carried by the gate and co-operating with the said member to form a hinge, an operating device connected with the hinge post, and means for connecting the operating device with the hinge member.

9. The combination with a hinge post, and a gate, of a corner cap fitted on the gate and having a socket to receive the corner thereof and provided with a pintle, and means mounted on the hinge post and provided with an eye detachably receiving the pintle.

10. The combination with opposite hinge posts or supports, and a swinging gate provided with upper and lower pintles, of lower supporting brackets having eyes receiving the lower pintles, pivoted hinge members mounted on the posts or supports and provided with eyes detachably receiving the upper pintles of the gate, and operating mechanism mounted on the posts or supports and connected with the pivoted hinge members for swinging the same into and out of engagement with the gate.

11. The combination with a gate provided with a rigid projecting pintle, of an upwardly movable pivoted member formed with a socket to receive the pintle and co-operating with the same to form a hinge for the gate, a support for the pivoted member, said support being mounted on the gate post, and operating means for the pivoted member to disconnect it from the pintle.

856,009. HARROW. JOHN E. WHEATON, Geneseo, Ill. Filed Sept. 22, 1906. Serial No. 335,755.



Claim.—1. A harrow comprising a plurality of angular bars, each presenting vertical and horizontal webs, end and intermediate links pivotally connected to the vertical webs, harrow teeth supported by the horizontal webs, and means associated with the intermediate link for adjusting the bars to set at different angles.

2. A harrow comprising a plurality of drag bars of angular form, each presenting vertical and horizontal webs, the vertical web being longer than the horizontal web to form an earth-barrier, and the horizontal web extending rearwardly from the lower edge of the vertical web, whereby the corner angle of said webs is disposed to form a breaking surface at the lower front portion of the bar, links arranged above the bars, means pendent from the links and pivotally connecting the vertical webs therewith, harrow teeth supported by the horizontal webs and adapted to penetrate fully into the soil to bring the breaking angles of the bars into contact therewith, and means associated with one of said links for adjusting the bars to set at different angles.

3. A harrow comprising a plurality of parallel bars corresponding in construction and in the relative arrangement of the parts thereof, said bars being of angular form, each presenting a vertical and a horizontal web, the vertical web being longer than the horizontal web to form an earth-barrier, and the horizontal web extending rearwardly from the lower edge of the vertical web, whereby the corner angle of said webs is disposed to form a breaking surface at the lower front portion of the bar, links arranged above the bars, harrow teeth supported by the horizontal webs and adapted to penetrate fully into the soil to bring the breaking angles of the bars into contact therewith, links arranged above the bars, means pendent from the links and pivotally connecting the vertical webs of the bars therewith, and means for simultaneously adjusting said bars.

4. A harrow comprising a plurality of angular bars, each presenting vertical and horizontal webs, the vertical webs being provided with lugs, harrow teeth supported by the horizontal webs, links having down-turned portions pivoted to the lugs, and means for adjusting the bars to set at different working angles.

5. A harrow comprising a plurality of drag bars, harrow teeth supported by the bars, end links having down-turned portions pivotally connected with the bars, an intermediate link, hangers pivoted to the intermediate link and attached to the bars, and means associated with the intermediate link for adjusting the bars to set at different angles.

6. A harrow comprising a plurality of angular drag bars, each presenting vertical and horizontal webs, harrow teeth carried by the horizontal webs, end links having down-turned portions pivotally connected with the vertical webs, an intermediate link, brackets pivoted to the intermediate link and secured to the vertical webs, and means associated with the intermediate link for adjusting the bars to set at different angles.

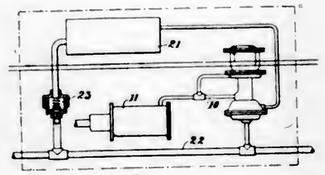
7. A harrow comprising a plurality of angular drag bars, each presenting vertical and horizontal webs, the former being provided with lugs, end links having down-turned portions pivotally connected with the lugs, harrow teeth supported by the horizontal webs, an intermediate link, hangers pivoted to the intermediate link and depending therefrom and secured to the vertical webs, and means associated with the intermediate link for adjusting the bars to set at different angles.

8. A harrow comprising a plurality of angular drag bars, each presenting vertical and horizontal webs, harrow teeth supported by the horizontal webs, end links directly pivoted to the vertical webs, an intermediate link indirectly pivoted to the vertical webs, and means associated with the intermediate link for adjusting the bars to set at different angles.

9. A harrow comprising a plurality of L-shaped drag bars, each presenting vertical and horizontal webs, the vertical webs being longer than the horizontal webs and having the latter extending rearwardly from the lower edges thereof, teeth supported by the horizontal webs, the corner angles of the webs being arranged to provide breaking surfaces at the lower front portions of the bars to co-operate with the teeth, end links directly pivoted to the vertical webs, an intermediate link indirectly pivoted to the vertical webs, and means associated with the intermediate link for adjusting the bars to set at different angles.

10. A harrow comprising a plurality of angular drag bars, each presenting vertical and horizontal webs, the latter extending rearwardly from the lower edges of the former, lugs upon the vertical webs, end links having down-turned portions pivoted to said lugs, an intermediate link, hangers depending from and pivoted to said link, clips engaging the lower ends of the hangers and securing the same to the vertical webs, and means associated with the intermediate link for adjusting the bars to set at different angles.

856,010. ELECTROPNEUMATIC BRAKING DEVICE FOR RAILWAY-CARS. RAGNAR WIKANDER, Westerås, Sweden. Filed Dec. 26, 1906. Serial No. 349,409.



Claim.—1. An air-brake-apparatus for electric railway-cars, and the like, in which the brakes are applied or released by means of the variable air-pressure in a train-pipe or by means of an electric controlling-circuit, characterized by the fact that the valve-body, which controls the communication between an auxiliary reservoir and the braking-cylinder and between the latter and the atmosphere, is controlled both by the train-pipe and by the said electric circuit in such a manner that the displacing of the said valve-body into desired positions may be accomplished by changing either the pressure in the train-pipe or the strength of current in the said controlling circuit or both simultaneously.

2. An air brake apparatus for electric cars, and the like, in which the brakes are applied or released by means of the variable air pressure in a train pipe or by means of an electric controlling circuit, characterized by the fact that the valve body, which controls the communication between an auxiliary reservoir and the braking cylinder and between the latter and the atmosphere, is controlled both by the train pipe and by the said electric circuit in

such a manner that the displacing of the said valve body into desired positions may be accomplished by changing either the pressure in the train pipe or the strength of current in the said controlling circuit of both simultaneously, and in which the valve body is operated on the one side by the electric controlling circuit against the action of the pressure in the braking cylinder, and on the other side by the pressure in the train pipe against the action of the pressure in the auxiliary reservoir by means of diaphragms, pistons, or the like, connected to the said valve body.

3. An air brake apparatus for electric railway cars, and the like, in which the brakes are applied or released by means of the variable air pressure in a train pipe or by means of an electric controlling circuit, characterized by the fact that the valve body, which controls the communication between an auxiliary reservoir and the braking cylinder and between the latter and the atmosphere, is controlled both by the train pipe and by the said electric circuit in such a manner that the displacing of the said valve body into desired positions may be accomplished by changing either the pressure in the train pipe or the strength of current in the said controlling circuit or both simultaneously, and in which the valve body is operated on the one side by the electric controlling circuit against the action of the pressure in the braking cylinder, and on the other side by the pressure in the train pipe against the action of the pressure in the auxiliary reservoir by means of diaphragms, pistons, or the like, connected to the said valve body, and further characterized by the fact that for operating the valve body the electric controlling circuit and the pressure in the braking cylinder work in one and the same direction and are compensated by a constant or yielding resistance which in equilibrium keeps the valve body in a middle position in which the braking cylinder is cut off both from the auxiliary reservoir and from the atmosphere, while destruction of the equilibrium in the one direction or the other will cause a displacing of the valve body so as to put the braking cylinder in communication with the auxiliary reservoir or with the atmosphere.

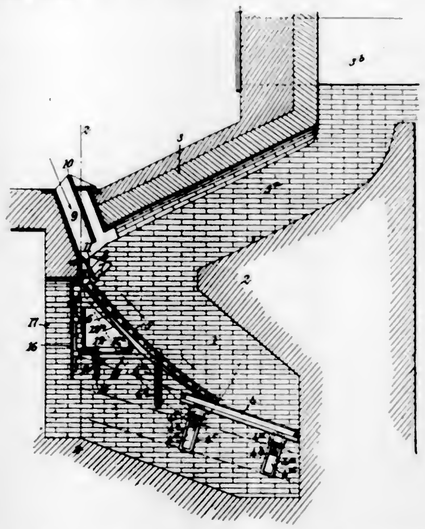
4. An air brake apparatus for electric railway cars, and the like, in which the brakes are applied or released by means of the variable air pressure in a train pipe or by means of an electric controlling circuit, characterized by the fact that the valve body, which controls the communication between an auxiliary reservoir and the braking cylinder and between the latter and the atmosphere, is controlled both by the train pipe and by the said electric circuit in such a manner that the displacing of the said valve body into desired positions may be accomplished by changing either the pressure in the train pipe or the strength of current in the said controlling circuit or both simultaneously, and further characterized by the fact that the triple valve body in a pneumatic brake apparatus is placed under the influence of an electromagnet inserted in an electric controlling circuit in such a manner that the said valve body by changing the strength of current in the said electric controlling circuit will be caused to make the same movement as are caused by changing the pressure in the train pipe, while the electric operation device when in zero position has no influence on the pneumatic device.

856,011. BAGASSE-FURNACE. FRANS F. WILLEMS, Delanggoe, Java. Filed Oct. 31, 1906. Serial No. 341,434.

Claim.—1. An apparatus of the class described, comprising an inclined grate, a second substantially horizontal grate, means for varying the position of one of said grates and an auxiliary or drying furnace beneath the upper end of the inclined grate.

2. An apparatus of the class described, comprising a grate, a second grate having one end thereof pivotally supported and having the opposite end resting upon the first mentioned grate, and means beneath the upper end of the first mentioned grate for drying the material thereon.

3. In an apparatus of the class described, a grate, an inclined curved grate having one end thereof adjacent the first mentioned grate and at an angle thereto, means beneath the upper end of the curved grate for drying the material thereon, and means for varying the position of both grates.



4. In an apparatus of the class described, a substantially horizontal grate, a curved inclined grate having the upper end thereof pivoted and the lower end thereof adjacent the first mentioned grate, and a furnace beneath the upper end of the curved grate for drying the material thereon.

5. In an apparatus of the class described, a grate, means for varying the elevation thereof, a second inclined grate having one end thereof pivoted and the opposite end thereof terminating adjacent the first mentioned grate, means for varying the position of said inclined grate, and means beneath the upper end of said inclined grate for drying the material thereon.

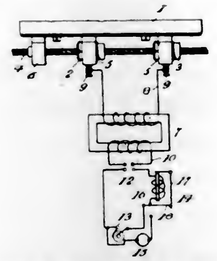
6. In an apparatus of the class described, a grate having longitudinal grate bars, a second curved inclined grate having one end thereof pivoted and the bars thereof arranged transversely in a parabolic curve, means beneath the upper end of said inclined grate for drying the material thereon, and means for admitting material to the upper end of said last mentioned grate.

856,012. MEANS OF TESTING INSULATED WIRES. NEWTON A. WOLCOTT, Warren, Ohio, assignor to The Packard Electric Company, Warren, Ohio, a Corporation of Ohio. Filed May 5, 1906. Serial No. 315,359.

Claim.—1. In an insulated cable tester, two dielectric contacts with which the cable engages, and means for supplying to such contacts a current of a potential less than the voltage of the two dielectrics in series but sufficient to energize one contact when the other contact energizes the core of the cable.

2. In an insulated cable tester, two dielectric contacts with which the cable engages, a source of electrical supply, and primary and secondary windings, the former being connected to a source of supply, and the latter to the contacts for supplying thereto a voltage less than the puncture voltage of the two dielectrics in series.

3. In an insulated cable tester, two dielectric contacts with which the cable engages, a source of electrical supply, primary and secondary windings, the latter being connected to said contacts and the former to the source of supply, and an alarm connected to the primary winding, such alarm being actuated when there is a marked variation or failure in the dielectric strength of the secondary.



4. In an insulated cable tester, two dielectric contacts with which the cable engages, a source of electrical supply, primary and secondary windings, the latter being connected to said contacts and the former to the source of supply, and means for cutting out the primary when there is a marked variation or failure in the dielectric strength of the secondary.

5. In an insulated cable tester, two dielectric contacts with which the cable engages, a source of electrical supply, primary and secondary windings, the latter being connected to said contacts and the former to the source of supply, an alarm connected to the primary winding, and means for causing such alarm to be actuated and cut out the primary when there is a marked variation or failure in the dielectric strength of the secondary.

6. In an insulated cable tester, two dielectric contacts with which the cable engages, a source of electrical supply, and a transformer or induction coil, the secondary winding of which is connected to said contacts, the potential being less than the voltage of the two contacts in series, but sufficient to close the secondary circuit when either contact energizes the core of the cable through a point of insufficient insulation.

7. An insulated cable tester having two dielectric contacts, and means for supplying an electric current to said contacts of such potentiality that the contacts in series are quiescent, either being thrown in circuit with the other through the core of a cable when an insufficiently insulated portion thereof engages such other contact.

8. The herein-described tester for insulated cables, comprising two contacts with which the cables have a wiping contact, a transformer, having its secondary winding connected to said contacts, and a source of electrical supply connected to the primary winding of such transformer, the secondary circuit being closed through the cable core and either of the contacts when the other contact is engaged by a defective section of insulation.

9. The herein-described tester for insulated cables, comprising a base, two contacts having openings for a cable, terminal posts mounted on said contacts, a transformer, having its secondary winding connected to said terminal posts, a source of electrical supply to which the primary winding is connected, a bell, a switch therefor, a solenoid coil, and an armature for normally holding such switch open.

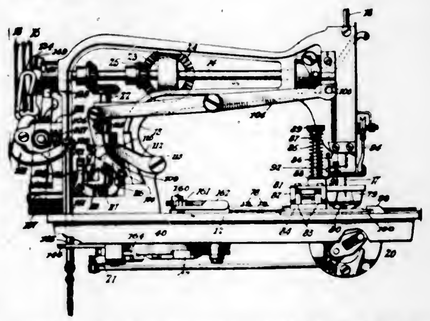
856,013. ARMORED CEMENT OR CONCRETE CONSTRUCTION. GAETAN AJELLO, New York, N. Y. Filed Aug. 29, 1906. Serial No. 332,413.



Claim.—1. In an invention of the class described, a flooring comprising hollow blocks and tension bars, a stirrup consisting of a bar, provided with a central loop supporting said tension bars, said stirrup having outwardly and downwardly diverging arms resting upon the upper surfaces of the blocks, and cement incasing the whole substantially as specified.

2. In an invention of the class described, a flooring comprising a series of hollow blocks, tension bars intermediate said blocks, a stirrup supporting said tension bars, said stirrup having outwardly and downwardly diverging arms the free ends of which engage the upper surfaces of the said blocks, and cement incasing the whole, substantially as specified.

856,014. BUTTONHOLE-SEWING MACHINE. EDWARD B. ALLEN, Elizabeth, and WILLIAM E. GOODYEAR, Newark, N. J., assignors to The Singer Manufacturing Company, a Corporation of New Jersey. Filed Jan. 8, 1906. Serial No. 295,077.



Claim.—1. In a button-hole stitching machine, the combination with a stitch-forming mechanism, a work-clamp and feeding mechanism for said clamp, of a button-hole cutting mechanism comprising a reciprocating cutter-bar located in the head or forward part of the machine and provided with a knife or cutter, and operating mechanism for said cutter-bar comprising a constantly moving part or lever, a vertical shaft located at the rear part of the machine, and from which said constantly moving part or lever is actuated, a cutter-bar operating lever extending lengthwise of the machine from said cutter-bar to said constantly moving part or lever, and automatic coupling means for connecting said operating lever with said constantly moving part or lever when a button-hole is to be cut.

2. In a button-hole stitching machine, the combination with a stitch-forming mechanism, a work-clamp and feeding mechanism for said clamp, of a button-hole cutting mechanism comprising a reciprocating cutter-bar located in the head or forward part of the machine and provided with a knife or cutter, and operating mechanism for said cutter-bar comprising a constantly moving part or lever, a vertical shaft located at the rear part of the machine and from which said constantly moving part or lever is actuated, a cutter-bar operating lever extending lengthwise of the machine from said cutter-bar to said constantly moving part or lever, and automatic coupling means for connecting said operating lever with said constantly moving part or lever when a button-hole is to be cut, said automatic coupling means comprising a swinging latch-lever means for holding said latch-lever out of engagement with said constantly moving lever, and automatic means for tripping or releasing said holding means.

3. In a button-hole stitching machine, the combination with a stitch-forming mechanism, a work-clamp and feeding mechanism for said clamp, of a button-hole cutting mechanism comprising a reciprocating cutter-bar provided with a knife or cutter, and operating mechanism for said cutter-bar comprising a constantly moving part or lever, a cutter-bar operating-lever, and automatic coupling means for connecting said operating lever with said constantly moving part or lever when a button-hole is to be cut, said automatic coupling means comprising a spring-pressed

latch-lever having a hook, an oscillatory fork for holding said latch-lever out of engagement with said holding lever, and tripping means for moving said fork to release said latch-lever when the coupling operation is to be effected.

4. In a button-hole stitching machine, the combination with a stitch-forming mechanism, a work-clamp, and feeding mechanism for said clamp, of a button-hole cutting mechanism comprising a reciprocating cutter-bar provided with a knife or cutter, and operating mechanism for said cutter-bar comprising a constantly moving part or lever, a cutter-bar operating-lever, and automatic coupling means for connecting said lever with said constantly moving part or lever when a button-hole is to be cut, said automatic coupling means comprising a spring-pressed latch-lever having a hook, an oscillatory fork for holding said latch-lever out of engagement with said holding lever, an endwise movable rock-shaft by which said fork is carried, a torsional and depressing spring co-operating with said rock-shaft, and tripping means for moving said rock-shaft to release said latch-lever when the coupling operation is to be effected.

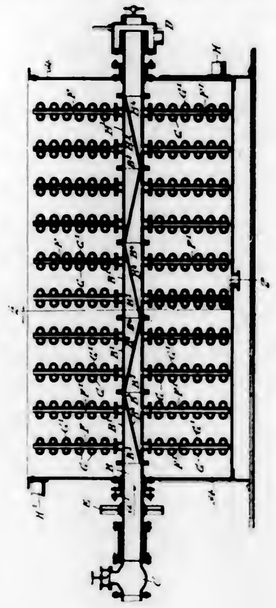
5. In a button-hole stitching machine, the combination with stitch-forming, work-holding and work-feeding devices, of a button-hole cutting mechanism comprising a cutter-bar and knife or cutter, an operating lever for said cutter-bar, a spring-pressed depending latch-lever at the rear end of said operating lever and provided with a hook, a rotating cam, a lever connected with said cam, so as to be in constant motion when the machine is running, said lever having a pin or projection to be engaged by said hook, an oscillatory fork by which said latch-lever is normally held out of engagement with said pin or projection, and automatic means for tripping said fork to release said latch lever, to couple the latter with the said pin or projection of the constantly moving lever when a button-hole is to be cut.

6. In a button-hole stitching machine, the combination with stitch-forming, work-holding and work-feeding devices, of a button-hole cutting mechanism comprising a cutter-bar and knife or cutter, an operating lever for said cutter bar, a spring-pressed depending latch-lever, at the rear end of said operating lever and provided with a hook, a rotating cam, a lever connected with said cam, so as to be in constant motion when the machine is running, said lever having a pin or projection to be engaged by said hook, an oscillatory fork by which said latch-lever is normally held out of engagement with said pin or projection, an endwise movable rock-shaft by which said fork is carried and which rock-shaft is provided with a lower arm, a torsional and depressing spring co-operating with said rock-shaft, and automatic means for tripping said arm to release said latch-lever, to couple the latter with the said pin or projection of the constantly moving lever when a button-hole is to be cut.

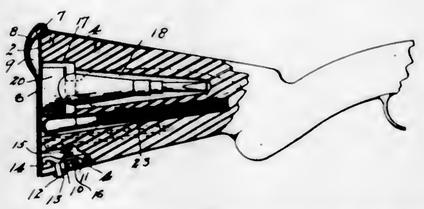
856,015. APPARATUS FOR COOLING OR HEATING BEER. EDWARD A. APPELL, New York, N. Y. Filed Jan. 22, 1907. Serial No. 353,411.

Claim.—1. An apparatus of the class described comprising a tank having an inlet and an outlet, a shaft journaled longitudinally of the tank, said shaft comprising a plurality of hollow sections, each section being divided into an inlet and an outlet chamber, the outlet chamber of one section opening into the inlet chamber of the succeeding section, spiral tubes encircling the shaft, the inlet chambers being connected with the entrance ends of said spiral tubes, and the outlet chambers with the outlet ends, and means for supplying fluid to one end of the shaft and delivering it from the other end of the shaft.

2. An apparatus of the class described, comprising a tank for receiving a cooling fluid, a shaft journaled longitudinally of the tank, said shaft comprising a plurality of hollow sections, each section being divided into an inlet and an outlet chamber, the outlet chamber of one section opening into the inlet chamber of the succeeding section, and spiral tubes encircling the shafts and connecting the inlet chamber of each section of the shaft with the outlet chamber of the other section, and means for supplying fluid to the shaft and discharging it therefrom.



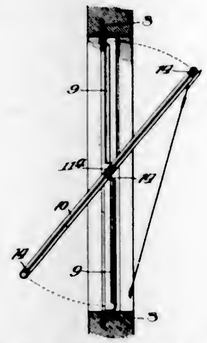
856,016. GUN-STOCK. FRANK BALSON, Omaha, Nebr. Filed Nov. 12, 1906. Serial No. 343,000.



Claim.—1. A gun stock having openings in the butt end thereof, a butt plate having integral attaching lugs secured to said end and formed with openings corresponding to the openings in the stock, a pair of ears at one edge of the plate, a spring secured adjacent the ears, a cover plate having a lug hinged between said ears formed with a swelled portion to receive the spring and at its opposite end with a hooked lug, and a spring pressed keeper pivoted in the stock to engage the hooked lug and having an extension for operating the same.

2. A gun stock having openings in the butt end thereof, a butt plate having integral attaching straps engaging the sides of the stock, and formed with openings in alinement with the openings in the stock, a pair of ears formed on one side edge of the butt plate, a cover plate hinged between said ears, a spring secured at the hinge connection to force the plate open, a hooked lug on the cover plate opposite the hinge connection, a pivoted keeper in the stock to engage the lug, and a spring to normally hold the keeper in engagement with the lug.

856,017. WINDOW FRAME AND SASH. WALTER H. BARRY, Chicago, Ill. Filed July 16, 1906. Serial No. 326,374.



Claim.—1. In combination, a window frame, a swinging sash, and a retaining strip having one edge secured to the frame intermediate the sash and frame, and the other at an angle to the first edge and arranged to embrace a portion of the sash when the window is closed.

2. In combination, a window frame composed of iron of ordinary commercial shapes, a sash pivoted to swing therein, and retaining strips interposed between the frame and sash, said strips being attached to the frame and adapted to partially surround the sash, the strips on opposite sides of the pivot being reversely turned to surround opposite sides of the sash and permit it to swing open in one direction.

3. In combination, a window sash, and an independent sash retaining member secured thereto and comprising a member having a projecting grooved portion for the reception of the glass, and a body portion at an angle to the grooved portion and fitting the sash.

4. In combination, a window sash, and a pair of holding members having their inner ends overlapping and secured to the sash, and their other ends bent at an angle and spaced apart for the reception of the glass.

5. In combination in a window sash, an outside member composed of sections of pipe, and a pair of holding members, said holding members being curved at one end to fit the outside member, and having their other ends turned out to bear on opposite sides of the glass.

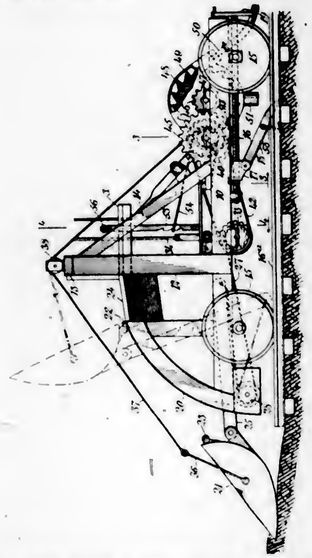
6. In combination in a window sash, a pair of adjoining tubular members, a connecting member therebetween, said connecting member having reduced end portions adapted to fit the interior of the tubular sections and a middle section of the same diameter as the tubular sections, whereby a flush joint is secured.

856,018. POWER-SHOVEL. ROBERT BELDEN, Spanish Ranch, Cal. Filed Nov. 20, 1906. Serial No. 344,252.

Claim.—1. In a power shovel, a wheel-mounted frame, a shovel carried by the frame, a motor on the frame, means actuated by said motor for moving the shovel forward, and means actuated by the motor for swinging the shovel upward a track on the frame for guiding the shovel in its upward movement, and means at the end of the track for dumping the shovel.

2. In a power shovel, a wheel-mounted frame, a curved track at the forward end of the frame, a pair of drums mounted in the frame, arms having pivotal connection with the shovel, rollers at the forward end of the frame, cables extending from the inner ends of said arms around said pulleys to said drums, a motor on the frame for operating said drums, and means actuated from the motor for swinging the shovel upward over said curved track.

3. In a power shovel, a wheel-mounted frame, a curved track at the forward end of the frame and having a stop at its upper end, a shovel, a roller carried by said shovel for engaging with said track and with said stop, means for moving the shovel upward on said track, and means for moving the shovel forward with relation to the track when in lowered position.



4. In a power shovel, a wheel-mounted frame, standards on said frame, a curved track at the forward end of the frame and having slots, a shovel, arms extended from the shovel through said slots of the track, winding drums mounted in the frame, rollers at the forward end of the frame, cables connected at one end of said arms and extended around said rollers to connection with the drums, a shovel lifting drum mounted in the frame, a cable extended from the lifting drum over said standards to connection with the shovel, and a motor carried by the frame for operating the drums.

5. In a power shovel, a wheel-mounted frame, a curved track at the forward end of the frame, a laterally extended and downwardly inclined chute at the upper end of the track, a shovel, means for moving the shovel along the track, means for tilting the shovel at the upper end of the track, and means for causing forward movement of the shovel relatively to the track.

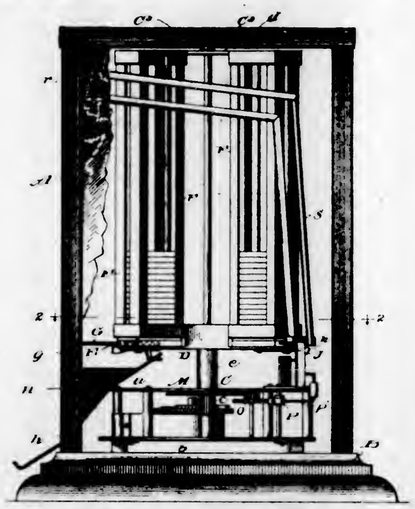
6. In a power shovel, a wheel-mounted frame, uprights on said frame, an upwardly and rearwardly curved plate-like track at the forward end of the frame and having slots, arms movable in said slots, a shovel having swinging connection with the arms, a drum mounted in the frame, a shaft on which the drum is loosely mounted, a clutch mechanism for engaging the drum with the shaft, a motor on the frame for driving said shaft, a cable connection extended from said drum over the upright and connected with the shovel, a pair of drums forward of the first-named drum, cable connections between said pair of drums and said arms, a shaft on which said pair of drums is mounted, a clutch member on said last-named shaft, a clutch member movable on said last-named shaft for engaging with the first-named clutch member, driving connections between the two shafts, and a motor for operating the shafts.

7. In a power shovel, a wheel-mounted frame, a winding drum carried by the frame, a motor on the frame for operating said drum in one direction, a vertically swinging shovel carried by the frame, a cable connection between the shovel and said drum, and a brake having connection with the drum.

8. A power shovel, comprising a wheel-mounted frame, a hydraulic motor mounted on the frame, a shovel having

vertical swinging movement with relation to the frame and also having horizontal movement with relation to the frame, means operated by the motor for causing the upward swinging movement of the shovel, and means operated by the motor for causing the forward movement of the shovel a track at the front of the frame for guiding the shovel, and dumping means for the shovel in connection with the track.

856,019. COIN-OPERATED VENDING-MACHINE. CLAUDE BIGELOW, Chicago, Ill., assignor to Ripley J. White, Chicago, Ill. Filed Aug. 1, 1903. Serial No. 167,840.



Claim.—1. A coin-operated vending machine comprising a plurality of hoppers, movable *seriatim* past a fixed point always in the same direction around the same center a distance corresponding to the interval between them; a motor for imparting motion thereto; and a coin actuated device which releases said motor, and is then automatically reset to arrest the operation of the same, at the end of each intermittent movement of said hoppers.

2. A coin operated vending machine comprising a plurality of hoppers movable *seriatim* past a fixed point always in the same direction around the same center a distance corresponding to the interval between them; a motor for imparting motion thereto; and a single coin-actuated device which releases said motor, and is then automatically reset to arrest the operation of the same at the end of each intermittent movement of said hoppers.

3. A coin-operated vending machine comprising a single coin-chute or way; a plurality of vertical hoppers having a movement *seriatim* past a fixed point always in the same direction around the same center a distance corresponding to the interval between them; and a coin-operated device connected to and carried by each of said hoppers that releases the motor and is then automatically reset to arrest the operation thereof at the end of each intermittent movement of said hoppers.

4. A coin-operated vending machine comprising two or more vertical hoppers having an intermittent rotating movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which as said hoppers rotate passes between said hoppers and their respective trays, a motor for actuating said hoppers, and a coin-actuated device which releases said motor and is then automatically reset to arrest the operation thereof at the end of each intermittent movement of said hoppers.

5. A coin-operated vending machine comprising two or more vertical hoppers having an intermittent rotating movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which as said hoppers rotate passes between said hoppers and their respective trays, a motor for actuating said hoppers and a single coin-actuated device which releases said motor and is then automatically reset to arrest the operation thereof at the end of each intermittent movement of said hoppers.

6. A coin-operated vending machine comprising a single coin-chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which as said hoppers rotate passes between the hoppers and their respective trays, and a motor for actuating said hoppers and a coin-actuated device connected to and carried by each of said hoppers which releases the motor and is then automatically reset to arrest the operation thereof at the end of each intermittent movement of said hoppers.

7. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a coin-actuated trip pivotally connected to the underside of and carried by each of said hoppers, and a motor for actuating said hoppers and means engaging said trips in succession which releases the motor and is then automatically reset to arrest the operation thereof at the end of each intermittent movement of said hoppers.

8. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a coin-actuated trip pivotally connected to the underside of and carried by each of said hoppers, and a motor for actuating said hoppers and means operatively connected to said motor and engaging said trips in succession which releases the motor and is then automatically reset to arrest the operation thereof at the end of each intermittent movement of said hoppers.

9. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a coin-actuated trip pivotally connected to the underside of and carried by each of said hoppers, and a motor for actuating said hoppers and vibratory means operatively connected to said motor and engaged by said trips in succession which releases the motor and is then automatically reset to arrest the operation thereof at the end of each intermittent movement of said hoppers.

10. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a coin-actuated trip pivotally connected to the underside of and carried by each of said hoppers, comprising arms projecting from said pivot at right angles to each other, one of which extends in the direction of the movement of said hoppers and the other outward at right angles thereto, and means engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

11. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a coin-actuated trip pivotally connected to the underside of and carried by each of said hoppers comprising arms projecting from said pivot at right angles to each other, one of which extends in the direction of the movement of said hoppers and the other outward at right angles thereto, and

means operatively connected to said motor and engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

12. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a coin-actuated trip pivotally connected to the underside of and carried by each of said hoppers comprising arms projecting from said pivot at right angles to each other, one of which extends in the direction of the movement of said hoppers and the other outward at right angles thereto, and vibratory means engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

13. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which, as said hoppers rotate, passes between said hoppers and their respective trays, a coin-actuated trip pivotally connected to the underside of and carried by each of said trays, and means engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

14. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which, as said hoppers rotate, passes between said hoppers and their respective trays, a coin-actuated trip pivotally connected to the underside of and carried by each of said trays, and means operatively connected to said motor and engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

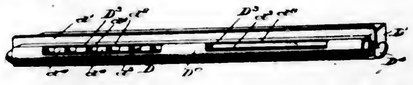
15. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which, as said hoppers rotate, passes between said hoppers and their respective trays, a coin-actuated trip pivotally connected to the underside of and carried by each of said trays, and vibratory means operatively connected to said motor and engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

16. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which, as said hoppers rotate, passes between said hoppers and their respective trays, a coin actuated trip pivotally connected to the underside of and carried by each of said trays, comprising arms projecting from said pivot at right angles to each other, one of which extends in the direction of the movement of said hoppers and the other outward at right angles thereto, and means engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

17. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which, as said hoppers rotate, passes between said hoppers and their respective trays, a coin-actuated trip pivotally connected to the underside of and carried by each of said trays comprising arms projecting from said pivot at right angles to each other, one of which extends in the direction of the movement of said hoppers and the other outward at right angles thereto, and means operatively connected to said motor and engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

18. A coin-operated vending machine comprising a single chute or way, two or more vertical hoppers having an intermittent movement around the same center a distance corresponding to the interval between them, a tray for each of said hoppers located a suitable distance below the same and movable therewith, a stationary horizontal sweep which, as said hoppers rotate, passes between said hoppers and their respective trays, a coin-actuated trip pivotally connected to the underside of and carried by each of said trays comprising arms projecting from said pivot at right angles to each other, one of which extends in the direction of the movement of said hoppers and the other outward at right angles thereto, and vibratory means engaged by said trips in succession whereby the action of said motor is alternately released and arrested.

856,020. VENTILATOR. WESLEY BIGELOW, New York, N. Y., assignor of forty-nine one-hundredths to John Hadcock, New York, N. Y. Filed July 3, 1906. Serial No. 324,684.

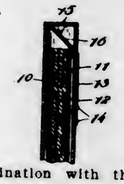


Claim.—1. In a ventilator, an elongated hollow member adapted to fit in an elongated opening in a rail of a window sash, said member being open at one of its longer sides for the entry of air and at another side for the exit of air, a second hollow elongated member connected to and communicating with the first member at the side having the exit opening and extending substantially the full length of the first member, said second member having an opening therein for the exit of air, and means for controlling the extent of said opening and causing the air to strike the sash at an angle as it leaves the second member, as and for the purpose set forth.

2. In a ventilator, an elongated hollow member adapted to fit into an elongated opening in a rail of a window sash, said member being open at one of its longer sides for the entry of air, and at another of its long sides for the exit of air, a tube secured to said member at the side having the exit opening and extending substantially the full length thereof and connected therewith, said tube having an opening in the wall thereof for the exit of air, another tube telescopically fitted into the first tube and having in its wall an opening which registers with the opening in the wall of the outer tube, one end of the inner tube being closed and the other end of the inner or outer tube being also closed so that air can pass out of the tubes only through the opening in the wall of the two tubes, said inner tube being adapted to turn axially in the outer tube to control the extent of opening in the wall of said outer tube.

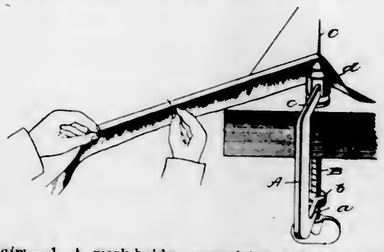
3. In a ventilator, an elongated hollow rectangular member adapted to fit into a similar opening in a rail of a window sash, said member being open at one of its long sides for the entry of air and at its opposite side for the exit of air, a tube secured to said member at the side having the exit opening therein and extending substantially the full length thereof and communicating therewith, said tube being closed at one end and open at the other and having an opening in the wall thereof for the exit of air, and so located that the air upon leaving the said tube will strike the shah at an angle, another tube telescopically fitted into the first tube and having in its wall an opening which registers with the opening in the wall of the outer tube and the opening in said member, the outer end of the inner tube being closed so that air can pass out of the tube only through the walls of the two tubes, said inner tube being adapted to be turned axially to control the extent of opening in the wall of the outer tube and the exit opening in said member.

856,021. LAMP-BURNER. WILLIAM A. BLAUVELT, Mount Vernon, N. Y. Filed June 27, 1906. Serial No. 323,649.



Claim.—The combination with the wick tube of a burner, of a tube-closing member connected therewith and forming a portion of one of the side walls of the tube, said member having its upper end bent inwardly to abut the opposite side wall of the tube and thence downwardly at an angle to said side walls and secured at its lower edge to the body portion of the member, and a resilient means for holding the closing member in position to close the tube.

856,022. WORK-HOLDER. ALICE E. BOOTH, Logansport, Ind. Filed Oct. 9, 1905. Serial No. 281,994.



Claim.—1. A work-holder comprising a body having a rigid needle holder provided with a vertical tapering bore, means for fixing said body to a table-top or the like, and a needle removably arranged in and extending upward from said bore of the needle holder, and when in operative position the needle is held rigidly in place by being wedged in the tapering bore of said holder.

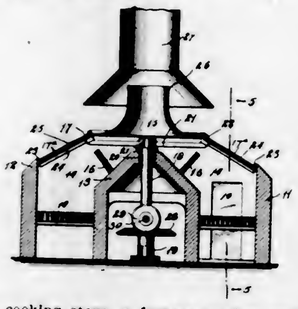
2. A work-holder comprising a U-shaped body adapted to straddle the edge of a table top or the like, and having a vertically disposed, threaded aperture at the extremity of its lower arm and a needle holder provided with a vertical central bore at the extremity of its upper arm, a needle removably arranged in said bore of the needle holder and extending above the upper end of the same, and a screw bearing in the threaded aperture of the body and arranged to exert pressure against the underside of a table top or the like.

856,023. COOKING-STOVE. VICTOT M. BRASCHI, Mexico, Mexico. Filed Aug. 29, 1905. Serial No. 276,218.

Claim.—1. In a cooking stove, a furnace portion comprising oppositely arranged combustion chambers and intermediate cool spaces, combined with a rotatable carrier supported above said combustion chambers and cool spaces, said carrier comprising a skeleton frame and a plurality of trays removably supported on the skeleton frame and adapted to carry the articles to be cooked.

2. In a cooking stove, a furnace portion comprising oppositely arranged combustion chambers and intermediate cool spaces, combined with a carrier supported to rotate above the combustion chambers and cool spaces, said carrier comprising a skeleton frame and a plurality of trays removably supported on said frame and adapted to carry the articles to be cooked, and a gearing for imparting intermittent rotary movement to the said carrier.

3. In a cooking stove, a furnace portion comprising two combustion chambers and intermediate cool spaces, combined with a carrier supported to rotate above the combustion chambers and cool spaces, said carrier comprising a skeleton frame and a plurality of trays removably supported on the frame, said trays being exposed to the direct heat from the combustion chambers and adapted to carry the articles to be cooked.



4. In a cooking stove, a furnace portion comprising a plurality of combustion chambers and intermediate cool spaces, combined with a carrier supported to rotate above said combustion chambers and cool spaces, said carrier comprising a skeleton frame and a plurality of trays removably supported thereon and adapted to carry the articles to be cooked, and a flue supported upon said carrier to rotate therewith and with which all of said combustion chambers communicate.

5. In a cooking stove, a furnace portion comprising a plurality of combustion chambers and intermediate cool spaces, combined with a carrier supported to rotate above said combustion chambers and cool spaces, said carrier comprising a skeleton frame generally of conical form, and a plurality of trays removably supported on said frame.

6. In a cooking stove, a furnace portion comprising a plurality of combustion chambers and intermediate cool spaces, combined with a carrier supported to rotate above said combustion chambers and cool spaces, said carrier comprising a skeleton frame and a plurality of trays removably supported thereon, said trays being exposed to the direct heat from the combustion chambers, a flue supported by said carrier to rotate therewith and having communication with all of said combustion chambers, and a hood supported above the flue for carrying away the products of combustion.

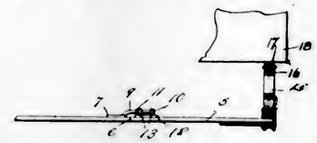
7. In a stove, the combination with a vertical shaft and a substantially conical carrier frame supported thereby, two combustion chambers arranged one on each side of the said shaft beneath the carrier frame, cool spaces intermediate the combustion chambers, a central flue supported and carried by the said carrier, arranged in open communication with the combustion chambers, removable trays supported by the framework, gearing for intermittently rotating the carrier framework, and a hood for carrying away the products of combustion, arranged above the central flue.

8. In a stove, the combination with a vertical shaft and two combustion chambers arranged one upon either side of the said shaft, a carrier framework carried by the shaft, having tray supporting portions arranged at an angle to the horizontal, whereby the trays will be supported at an angle above the combustion chambers, a central flue carried by the said carrier, said combustion chambers communicating with the said flue, but occupying a portion only of the space around the shaft, whereby intermediate cool spaces are left between the combustion chambers, gearing for imparting intermittent rotary movement to the said shaft, and for holding the same in a rest position for periods intermediate the periods of movement, and a plurality of removable trays for the said carrier, substantially as set forth.

856,024. WAGON RUNNING-GEAR. ALLEN D. BROONER, Pomona, Mo. Filed Mar. 22, 1906. Serial No. 307,483.

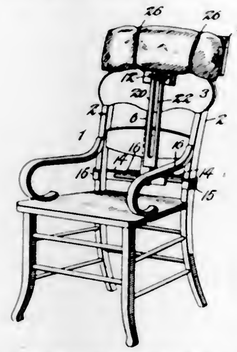
Claim.—In a vehicle, in combination, a bed, front and rear axles, a rocking connection between the bed and the front axle, a perch pole formed in sections and connecting said front and rear axles, a plate secured to one of the sections, a pintle member formed integral with the plate and projecting thereb

front axle, a perch pole formed in sections and connecting said front and rear axles, a plate secured to one of the sections, a pintle member formed integral with the plate and projecting thereb



section, perforated ears carried by the plate, the said pintle being engaged through the ears, a head formed at the extreme end of the pintle and abutting one of the ears, and a collar formed on the pintle intermediate its head and attaching plate and abutting the other ear.

856,025. HEAD-REST. ALICE H. BROWN, Ludlow, Ky. Filed Nov. 24, 1906. Serial No. 344,910.



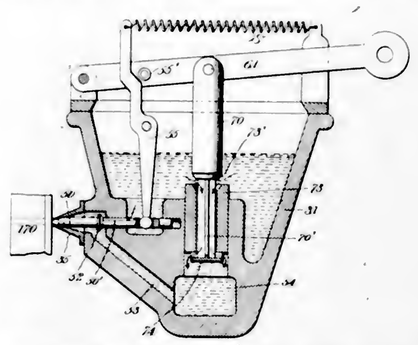
Claim.—1. A head rest attachment for chairs comprising an attaching frame embodying a bracket having a hooked upper end to engage the upper edge of the chair back and attaching arms having hooked portions to engage the sides of the chair back, and a pillow supporting bracket embodying a head piece having a depending standard vertically adjustable upon the hooked portion of the attaching bracket.

2. A head rest attachment for chairs comprising an attaching bracket having a hook to engage over the upper edge of the chair back, horizontal attaching arms adjustably secured to the bracket and having hooked ends to engage the sides of the chair back, and a rest supporting bracket adjustably mounted upon the hooked portion of the attaching bracket.

3. A head rest attachment for chairs comprising an attaching bracket having a hooked upper end to engage over the upper edge of the chair back, slotted horizontal attaching arms having hooked outer ends to engage the sides of the chair back, a clamping device engaging the slotted portions of the arms and securing the same to the bracket, and a head rest supporting bracket adjustably mounted upon the hooked portion of the attaching bracket.

4. A head rest attachment for chairs comprising an attaching bracket having a hooked upper end to engage the upper edge of the chair back, attaching arms adjustably connected with said bracket and having hooked ends to engage the side edges of the chair back, a head rest supporting bracket having a transverse head piece and a depending standard adjustably connected with the hooked portion of the attaching bracket, a curved backing plate carried by said head piece, and a cushion or pillow applied to the backing plate.

856,026. PUMP MECHANISM FOR TYPE-CASTING MACHINES. FRANK H. BROWN and JOHN E. HANRAHAN, Baltimore, and GEORGE A. BOYDEN, Mount Washington, Md., assignors to National Compositype Company, Baltimore, Md., a Corporation of Delaware. Filed May 24, 1904. Serial No. 209,523.



Claim.—1. Pump mechanism for type casting machines comprising a pump plunger having a central bore, a valve for closing said bore and moving said plunger against pressure generated in the pump well, said valve being provided with a stem passed through said bore and cut away at its sides, and a spider on the lower end of said stem and provided with means for permitting molten metal to pass out of said bore when said valve is unseated.

2. Pump mechanism for type casting machines comprising a pump plunger having a central bore, a valve for closing said bore and moving said plunger against pressure generated in the pump well, said valve being provided with a stem passed through said bore and cut away at its sides, and a spider on the lower end of said stem and provided with raised portions, the spaces betwen said raised portions forming channels for the passage of molten metal when said valve is unseated.

3. Pump mechanism for type casting machines comprising a pump plunger having a central bore, a valve for closing said bore and moving said plunger against pressure generated in the pump well, said valve being provided with a stem passed through said bore, means for permitting metal to flow through said bore around said stem, and a spider on the lower end of said stem and provided with means for permitting molten metal to flow out of said bore when said valve is unseated.

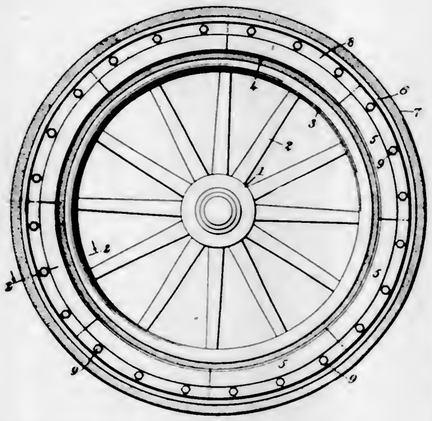
856,027. AUXILIARY FELLY AND TIRE. CHARLES BUCKLAND, Habana, Cuba. Filed Nov. 2, 1906. Serial No. 341,717.

Claim.—1. A vehicle wheel having a pneumatic tire mounted upon a felly, an auxiliary felly composed of segmental sections curved transversely on their inner sides to receive the outer portion of said tire, and provided on their outer sides with arc recesses, clamping rings secured in said recesses by means of transverse bolts, a rim shrunk on the periphery of said sections, and a solid tire narrower than said segmental sections secured to said rim, substantially as shown and described.

2. An auxiliary felly composed of segmental sections curved transversely on their inner sides, and provided on their outer sides with arc recesses, clamping rings secured in said recesses by means of transverse bolts, a rim shrunk on the periphery of said sections, and a solid tire narrower than said segmental sections secured to said rim, substantially as shown and described.

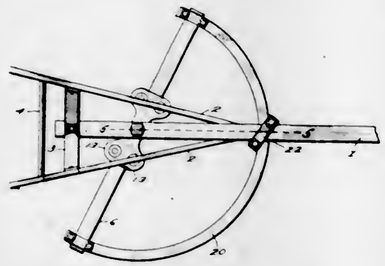
3. A vehicle wheel having a pneumatic tire mounted upon a felly, an auxiliary felly composed of segmental sections curved transversely on their inner surface, and provided with flanges adapted to bear against the opposite

sides of the pneumatic tire, clamping rings secured to the sides of said sections, and connected together by means of transverse bolts, a rim narrower than said sections shrunk onto the periphery thereof, and a solid tire secured to said rim, substantially as shown and described.



4. An auxiliary felly comprising a series of segmental sections curved longitudinally and transversely on their inner surface, provided with lateral flanges adapted to bear against the sides of a pneumatic tire, and with arc recesses, clamping rings secured in said recesses by means of transverse bolts, a rim shrunk on the periphery of said sections, and a solid tire narrower than said segmental sections secured to said rim, substantially as shown and described.

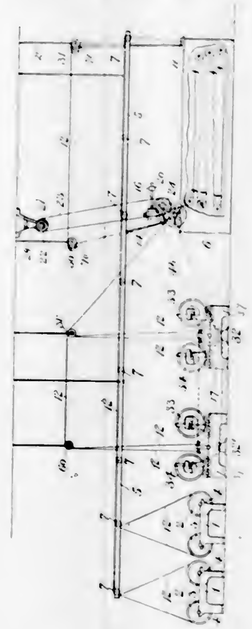
856,028. HARROW AND CULTIVATOR. SAMUEL G. CALAWAY, Centerville, Miss. Filed Mar. 8, 1907. Serial No. 361,316.



Claim.—1. A cultivating instrument of the class described comprising a beam and bolt extending therethrough, a bar pivoted upon the bolt and having downturned ends forming blade carrying standards, an auxiliary bar pivotally engaging the bolt and having downturned ends forming blade carrying standards, a clip plate mounted upon the bolt intermediate the upper bar and the beam and having bolts extending therethrough and connected in pairs by clip bars adjacent to the auxiliary bar, an arcuate adjusting bar clipped upon the ends of the upper standard carrying bar and a clip adjustably connecting the adjusting bar with the beam.

2. A cultivating instrument of the class described comprising a beam and bolt extending therethrough, a bar pivoted upon the bolt and having downturned ends forming blade carrying standards, an auxiliary bar pivotally engaging the bolt and having downturned ends forming blade carrying standards, a clip plate mounted upon the bolt intermediate the upper bar and the beam and having bolts extending therethrough and connected in pairs by clip bars adjacent to the auxiliary bar, an arcuate adjusting bar clipped upon the ends of the upper standard carrying bar and a brace bar mounted upon the lower end of the pivotal bolt and provided at its forward end with a downturned hook engaging the front side of the arcuate adjusting bar.

856,029. APPARATUS FOR TREATING TEXTILE FIBERS. ROBERT G. CAMPBELL, Greensboro, N. C. Filed Feb. 16, 1906. Serial No. 301,484.



Claim.—1. Apparatus for treating warp, comprising warp beams, and two vats side by side carrying drawing rolls whose operating shaft extends over both vats, separate sheaves mounted in series on shafts within the vats whereby the strands of warp move independently through the vats, both vats being similar in construction and the entrance series of sheaves in one vat and the final series of the second vat so arranged that the warp travels continuously from its entrance into the first vat to its exit from the second vat.

2. Apparatus for treating warp, comprising a primary and a supplemental vat arranged side by side, drawing rolls at the same end of each vat, a shaft for operating said rolls and extending over both vats, elevated and separate sheaves arranged in series on a shaft above one end of the primary vat, live sheaves above the opposite end of the supplemental vat for conducting the warp from one end of the first vat to the opposite end of the second vat and exposing the warp to the atmosphere to oxidize the dye in the warp while in transit from one vat to the other, means for keeping separate the set of strands of warp, and means connected to the shaft for operating the drawing rolls for rewinding or balling the strands of warp separately.

3. Apparatus for treating warp, comprising a primary and a supplemental vat arranged side by side, separate sheaves mounted in series on shafts within the vats, warp drawing rolls at the same end of each vat, a shaft for operating said rolls and extending over both vats, elevated separate sheaves mounted in series on shafts above one end of the primary vat; like sheaves above the opposite end of the supplemental vat for conducting the warp in separate strands from one end of the former vat to the opposite end of the latter vat and exposing the warp to the atmosphere to oxidize the dye therein while in transit, like elevated sheaves for supporting and keeping separate the set of strands of warp, and again exposing the warp to the atmosphere for further oxidation of the dye in the warp, and means operated from the shaft driving the drawing rolls for winding or balling the strands of warp separately and maintaining uniform tension on the warp until wound.

4. Apparatus for treating warp, comprising a primary vat, revoluble warp beams supported in frames in line with said vat, a plurality of separate revoluble sheaves mounted on shafts within and at each end of the vat and forming separated bearing surfaces for the several strands of warp, rolls at the inner end of the vat for drawing the warp from the beams and through the vat and expelling liquor therefrom, a supplemental vat by the side of the primary vat, provided with like revoluble sheaves within the vat, elevated sheaves forming separated bearing surfaces for the several strands of the warp above the inner end of the vat, like elevated sheaves above the rear end of the supplemental vat for conducting the warp from one vat to the other and exposing the warp to the atmosphere to oxidize the dye therein while in transit, rolls at the inner end of the supplemental vat for drawing the warp, a shaft extending across both the vats, connections therewith for operating the rolls of both vats, elevated sheaves for supporting and exposing the warp in separate strands to the atmosphere for further oxidation of the dye in the warp, and means operated by the driving shaft of the drawing rolls for winding the set of warp in separate strands and maintaining uniform tension on the warp until wound.

856,030. CIGARETTE. JOSEPH CAVARGNA, Birmingham, England. Filed Aug. 13, 1906. Serial No. 330,395.



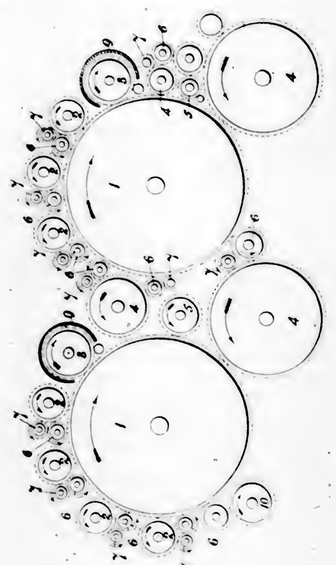
Claim.—1. As a new article of manufacture, a cigarette having a plug of medicated absorbent material with an external flexible binding.

2. As a new article of manufacture, a cigarette having a plug of medicated absorbent material with an external flexible binding of mucilage.

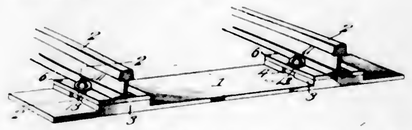
856,031. CARDING-MACHINE. SAMUEL CORDINGLEY, Pudsey, England. Filed Oct. 25, 1906. Serial No. 340,591.

Claim.—In a carding machine, the combination, with a cylinder, of a series of workers 2, strippers 6 arranged in the angles formed in front of and between each said worker and the said cylinder, cleaners 7 arranged in the angles formed between each said worker and its stripper, a fancy roller 3 arranged to the rear of the said series of workers, two doffers 4 arranged to the rear of and below the said fancy roller, and a cleaner 5 arranged intermediate of the two said doffers.

856,031.



856,032. RAIL-TIE. LYLE L. COWEN, Aitkin, Minn. Filed Nov. 14, 1906. Serial No. 343,399.



Claim.—1. A rail tie having an enlargement over which the rail seats, said enlargement being provided with nut receiving recesses and a face plate attached to the enlargement over the recesses and having bolt receiving openings adapted for alinement with the openings in the nuts.

2. A rail tie having an enlargement on which the rail seats, nut receiving recesses formed in the enlargement, a face plate attached to the enlargement over the recesses, said face plate and tie being provided with openings adapted to register with the openings in the nuts and rail fastening bolts designed for entrance through said openings to engage the nuts.

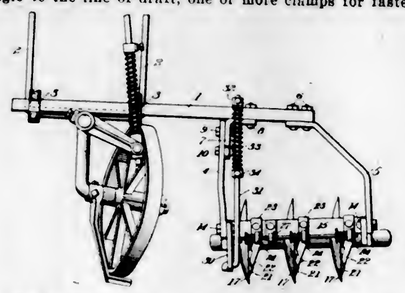
3. A rail tie provided with a pair of recesses, a face plate applied to the tie over the recesses, a rail seated on the plate, fastening bolts extended through the face plate and tie and adapted for holding the rail in place, and nuts disposed in the recesses for engagement with the bolts.

856,033. HARROW ATTACHMENT FOR PLOWS. JOSEPH L. CHISLER, Perth, Kans. Filed Apr. 23, 1906. Serial No. 313,307.

Claim.—1. The combination with a plow frame, of a harrow supporting extension arm or bar having a general oblique disposition relatively to the line of draft and an outer end portion which is disposed at an angle to the line of draft, a clamp for fastening said extension arm to the plow beam, and a tilting harrow mounted on the angular end portion of said extension arm or bar.

2. The combination with a plow frame, of one or more harrow supporting extension arms or bars having a gen-

eral oblique disposition relatively to the line of draft and each having an outer end portion which is disposed at an angle to the line of draft, one or more clamps for fastening said extension arm or arms to the plow frame, and a tilting harrow mounted on the angular end portion or portions of said extension arm or arms.



856,034. PROCESS OF MANUFACTURING FUSIBLE DENTAL FILLINGS, INLAYS, AND CROWNS. JOHN N. CROUSE, Chicago, Ill. Filed Mar. 14, 1906. Serial No. 306,081.

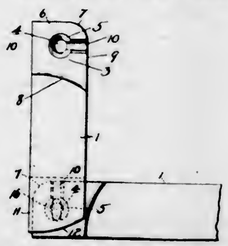


Claim.—1. A process of manufacturing dental filling and crowning material which consists in mixing ground feldspar, silex, and one or more metal oxids; reducing them to a plastic condition by the addition of phosphoric acid and water; molding the paste thus formed to the tooth, and then baking and fusing the same.

2. A process of manufacturing dental filling and crowning material, which consists in mixing ground feldspar, silex, and one or more metal oxids; reducing them to a plastic condition by the addition of phosphoric acid and water; molding the paste thus formed to the tooth; then baking and fusing the same; then applying a thin coating of the same plastic material; then refitting the coated filling to the tooth; and finally rebaking the same to less than a fusing heat.

3. A process of manufacturing dental filling and crowning material, which consists in preliminarily subjecting silex and one or more metal oxids to a temperature of from 2200 to 2800 Fahrenheit; then mixing the same with ground feldspar; then reducing the mixture to a plastic condition by the addition of phosphoric acid and water; then molding the mixture to the tooth; and then baking and fusing the same.

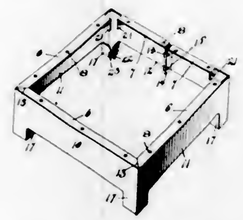
856,035. SASH-WEIGHT. JAMES R. N. CURTIN, Alexandria, Va. Filed Feb. 26, 1906. Serial No. 302,941.



Claim.—1. A sash weight made in sections, one section provided with a depression on each side thereof and recesses leading to said depressions, and the other section provided with lugs having elongated vertical projections designed to be slid along said recesses and enter and engage said depressions and be held at an angle to said recesses, substantially as described.

2. A sash weight made in sections, one section provided with a neck having recesses with beveled sides and an eye with beveled edges, and the other section provided with lugs having elongated vertical projections with ends beveled to conform to the beveled edges of the recesses of the first named section, said projections designed to be slid along said recesses and engage said eye and be held at an angle to said recesses, substantially as described.

856,036. KNOCKDOWN FURNITURE. WILLIAM R. DEAN, McKeesport, Pa. Filed June 22, 1906. Serial No. 322,837.



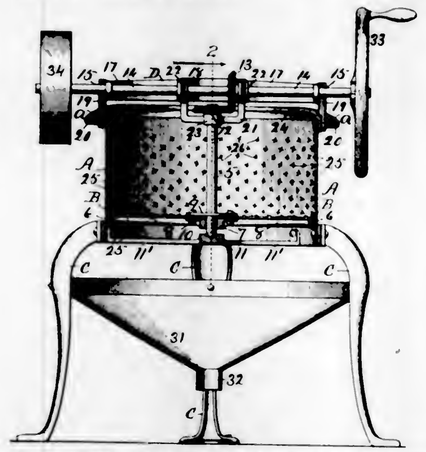
Claim.—1. As a new article of manufacture, a base for furniture formed from a strip of sheet metal reduced at the ends and adapted to be bent to form lateral flanges and with a plurality of spaced depending portions at one side with oppositely extending clefts between the depending portions and the body of the strip and with intermediate angular notches in the opposite edges of the strip and with spaced longitudinal clefts between said notches and the end of said strip and transverse clefts centrally of the longitudinal clefts, said strip adapted to be bent at right angles and centrally of each of said depending portions and united by the end flanges and with the material between the longitudinal clefts and the end flanges and between the longitudinal clefts and the angular notches and between the angular notches bent at right angles longitudinally of the strip to form seat supporting flanges, and the tongues released by the several clefts bent to form sockets for the legs of the structure.

2. As a new article of manufacture, a base for furniture formed from a strip of sheet metal with spaced angular notches in one side edge and longitudinal clefts between said notches and the ends of the strip and transverse clefts centrally of the longitudinal cleft, said strip adapted to be bent at right angles centrally of the longitudinal clefts and centrally of the angular notches and united at the ends and with the material between the longitudinal clefts and the ends of the strip and between the longitudinal strips and angular notches and between the angular notches bent at right angles to form seat forming flanges and the tongues released by the several clefts bent at right angles to the flanges to form leg supporting sockets.

3. A securing frame for furniture, formed from a sheet metal blank provided along one edge with perforated securing flanges notched and slitted to provide beveled surfaces, and depending lugs, and cut away and slitted along its under edge to provide sockets for the supporting legs of the furniture.

4. The combination with a chair seat, of a frame formed from a single piece of sheet metal, and comprising front side and rear sections, flanges projecting therefrom and secured to the underside of the seat, depending straps bent to form corner sockets and clamping lugs, said flanges being slitted adjacent to the rear corners of the seat for the passage through the frame of the rear legs.

856,037. VEGETABLE WASHING AND PEELING MACHINE. FIRMIN DELPIRE, Chicago, Ill. Filed Mar. 26, 1906. Serial No. 308,047.



Claim.—A vegetable cleaning and peeling machine comprising a stationary interiorly roughened cylindrical receptacle, a rotatable roughened bottom therefor, an annular guard and strengthening flange rim projecting outward and inward from the upper edge of the receptacle and having a depending flange and opposed vertical apertures, a shaft supporting frame spanning the top of the receptacle and having depending ends passing through and secured to said depending flange, said flange being itself secured to the top of the receptacle, a horizontal driving shaft journaled in said frame, and a vertical shaft secured to the rotatable bottom and geared to said driving shaft.

856,038. PHONOGRAPH-REPRODUCER. LOUIS DEVINEAU, Cleveland, Ohio. Filed June 18, 1906. Serial No. 322,242.



Claim.—1. In a phonographic reproducer, the combination of a casing, a diaphragm, a retaining member secured to the casing and having spring arms holding the diaphragm in position, and a vibration member coöperating with said diaphragm.

2. The combination of the casing having a recess, providing a seat for the diaphragm; a diaphragm occupying said recess, a spring retaining member secured to said casing and having arms bearing against the diaphragm opposite said seat to hold the diaphragm in its recess.

3. The combination of the casing having a recess, a diaphragm occupying the said recess, a member secured to said casing and having spring arms bearing against the diaphragm near its periphery to hold it in its recess, and a vibration bar mounted on the casing and coöperating with the diaphragm.

4. The combination of a casing having a recess, a diaphragm, a rubber band around the same, the diaphragm and band seating in the recess, and a clamping member secured to the casing and having spring arms bearing on the rubber on the outer face of the diaphragm near its periphery to hold it in its place.

5. The combination of a casing, a diaphragm, a retaining spider secured to the casing and having spring arms bearing against the diaphragm to hold it in place, and a vibration member coöperating with said diaphragm.

6. The combination of a casing, a diaphragm, a sheet metal spider having spring arms with arc-shaped heads adapted to bear against the diaphragm, and a longer arm, and means for removably securing such long arm to the casing.

7. The combination of a casing having a recess, a diaphragm, a rubber ring surrounding the periphery of the diaphragm and extending onto opposite sides of the diaphragm, said diaphragm and ring occupying said recess, and the spider secured to the casing and having arms bearing against the rubber on the outer side of the diaphragm.

8. The combination of the casing, a diaphragm, an elastic ring surrounding the periphery of the diaphragm and extending onto opposite sides of the diaphragm, a spider secured to the casing and having arms bearing against the rubber on the outer side of the diaphragm, and a vibration bar supported by the casing and secured at the inner end of the diaphragm and carrying at its outer end a sleeve, and a reproducing needle occupying such sleeve.

9. The combination of a casing, a diaphragm, a vibration bar, mounted on the casing and secured to the diaphragm, and a spider mounted on the casing for holding the diaphragm, said spider comprising a central head and arms leading outward therefrom diagonally toward the diaphragm and adapted to bear against the outer side of the diaphragm, and a longer arm extending from said head onto the casing and furnishing means whereby the spider is held to the casing.

10. The combination of a casing, a diaphragm, an elastic band surrounding the edge of the diaphragm and extending onto each side thereof near the periphery, a clamping member having spring arms bearing against said band on the outer face of the diaphragm, and a vibration member coöperating with the diaphragm.

11. In a phonographic reproducer, the combination of a casing, a diaphragm, a retaining member secured to the casing and having spring arms bearing against the diaphragm, a vibration bar mounted on the casing and cooperating with the diaphragm and having a sleeve at its free end, and means for clamping in said sleeve either a straight or bent needle.

856,039. WIRE FENCE. WASHINGTON M. DILLON, Sterling, Ill. Filed Mar. 31, 1906. Serial No. 309,081.



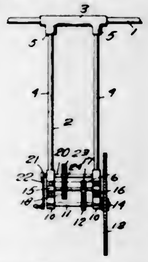
Claim.—1. A wire fence comprising a series of longitudinal strand wires and a plurality of transverse stay wires, each of said stay wires being bent to form a pair of loops at the points of intersection with the strand wires, the loops of each pair being bent toward each other in opposite directions about a strand wire, for the purpose set forth.

2. A wire fence comprising a series of longitudinal strand wires and a plurality of transverse stay wires, each of said stay wires being bent to cross itself twice, thereby forming a pair of loops at the points of intersection with the strand wires, the loops of each pair being bent toward each other in opposite directions about a strand wire.

3. In a wire fence, a strand wire, a stay wire formed into a straight section transverse of the strand wire, having a loop at one end at the far side of the strand wire, a continuation of said loop forming a second loop at the opposite side of said strand from the first loop, and a continuation of said second loop, forming a second straight section upon the same side of the strand wire as, and extending in the general direction of the first straight section, said loops being bent toward each other in opposite

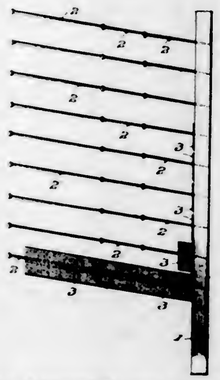
directions about the strand wire, substantially as and for the purposes set forth.

856,040. ICE-CUTTING MACHINE. DANA A. DORSEY and AUGUSTUS R. MITCHELL, Miami, Fla. Filed Mar. 23, 1907. Serial No. 364,123.



Claim.—A machine of the type set forth, comprising a horizontal bar, a frame loosely suspended therefrom for slidable and pivotal movement with relation to said bar, said frame comprising a sleeve loosely surrounding said bar and parallel vertical bars depending from said sleeve, a transverse shaft journaled between the ends of said vertical bars and having an end projecting therebeyond, a cutter fixed on said projecting end, a second shaft journaled between said bars above said first named shaft, gearing between said shafts, a U-shaped frame having its legs fixed at their ends to said vertical bars, a transverse shaft mounted between the legs of said U-shaped frame, a crank handle carried by said last named shaft, and gearing between said last named shaft and said second named shaft.

856,041. COUNTING-BOARD. AUGUSTA D. DUNN, Sanford, Fla. Filed Jan. 31, 1907. Serial No. 355,030.

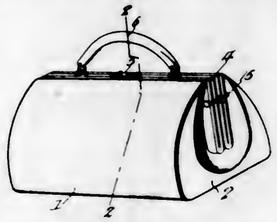


Claim.—1. An arithmetical device comprising an approximately vertically disposed base, a plurality of rows of pegs projecting forwardly therefrom on a slightly inclined plane, each row representing a different value, and removable members designed to be held by said pegs, the number of such members for each peg of each row corresponding to the value of the respective row of pegs.

2. An arithmetical device comprising a base having a plurality of rows of holding devices, each row being composed of nine such devices, and each row of a different value from the others, and removable members designed to be held by said holding devices, the number of such members for each holding device of each row corresponding to the value of the respective row of holding devices.

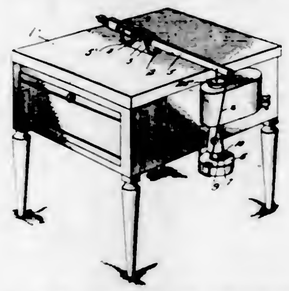
3. An arithmetical device comprising a base having a series of rows of pegs, each row being of a different value, said pegs being set at an angle to the base, and disks having openings to accommodate said pegs, the number of disks for each peg of each row corresponding to the value of the respective row of pegs.

856,042. SATCHEL. MARY DUPLESSIS, New Orleans, La. Filed Oct. 27, 1906. Serial No. 340,875.



Claim.—A satchel comprising side and end walls and a top wall, the latter consisting of a pair of sections, a horizontal frame arranged in the satchel at the upper edges of its side and end walls and comprising a pair of members, pintles connecting the meeting ends of said frame members, and a pair of vertical frame members having their lower ends pivotally engaged with said pintles, said vertical frames being attached to the adjacent edges of the covering material and forming a mouth for the satchel.

856,043. INCUBATOR. MARTIN FANDERS, Diller, Nebr. Filed Nov. 12, 1906. Serial No. 343,002.

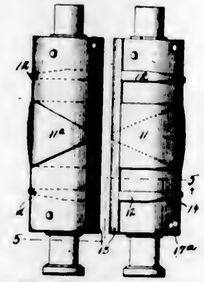


Claim.—1. In an incubator, the combination with a thermostat consisting of a series of independent air cells adjustably secured together and arranged in the incubator, of an operating lever pivoted upon the top of the incubator, a plate pivoted to the side of the lever and capable of angular adjustment with respect thereto, a series of openings in said plate, and a connecting rod secured to the thermostat and having engagement with one of the openings in the plate.

2. In an incubator, the combination with a thermostat mounted therein, an operating lever pivoted upon the top of the incubator, a threaded rod extending from the rear end of the lever, and a weight having threaded engagement thereon, of a plate pivoted to the side of the lever and capable of angular adjustment with respect thereto, a series of openings formed in the plate, and a connecting rod secured to the thermostat and having engagement with one of the openings in the plate.

3. The combination with a thermostat, of a pivotal lever, a plate capable of angular adjustment on the lever, connection between said plate and the thermostat, means for adjusting the balance of the pivotal lever, an adjustable clamping lever, and connection between said clamping lever and the end of the pivotal lever.

856,044. ROLLING-MILL. EDWARD R. FELLOWS and ALFRED HUBBARD, Youngstown, Ohio. Filed Nov. 14, 1905. Serial No. 287,298.



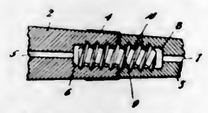
Claim.—1. A rolling die having a raised working die portion which gradually tapers in width and in thickness from its initial point and merges into a portion which is of uniform width and thickness to its termination, substantially as described.

2. A rolling die having a raised working die portion which gradually tapers in width and in thickness from its initial point and merges into a portion which is of uniform width and thickness to its termination, the tapered part of the die portion having a transversely curved working surface.

3. In a rolling mill, a die roll provided with a central raised die element which gradually tapers in width and in thickness from its initial point and merges into a portion which is of uniform width and thickness to its termination, the tapered part of said die portion having a transversely curved working surface; and raised end die elements spaced from the uniform part of the central die element and each of which end die elements tapers in width and in thickness from its initial point and merges into a portion which is of uniform width and thickness to its termination, the initial or starting points of the end die elements being arranged to engage the work after the maximum compression and spreading have been effected by the central die element.

4. A die carrying roll having an angular body, a sectional semi-cylindrical working die matching said angular body and having holding elements interlocking with complemental elements carried by the body, and supplemental fastening means engaging said die and the roll body.

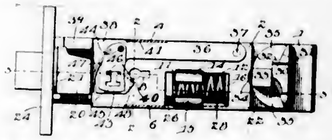
856,045. SMOKING-PIPE. ROBERT G. FLING, St. Paul, Minn., assignor of one-half to Godfrey L. Mohrbacher, Cologne, Minn. Filed May 31, 1906. Serial No. 319,553.



Claim.—The combination with a pipe having a detachable mouth-piece, of a spiral plug having threaded engagement with the said mouth-piece and with the stem of the pipe, the threads of said plug being much deeper than the internal threads in the said mouth piece and pipe stem, thereby forming a spiral draft passage, and the said threads serving to positively secure together the said pipe stem and mouth-piece, substantially as described.

856,046. COMBINED LOCK AND LATCH. WALTER L. FRAZER, National City, Cal. Filed Feb. 28, 1906. Serial No. 303,483.

Claim.—1. A lock including a case divided into compartments, the walls of the compartments being pierced by key holes and forming ward guards, a bolt working in one of the compartments, and a locking detent working in another compartment in co-operative relation with the bolt to lock the same.



2. A lock including a case divided into compartments, one of the walls having wings struck therefrom and producing an opening therein, a shoulder struck up from one end of the opening, a bolt working in one of the compartments and having a shoulder working in the opening, and a helical spring interposed between and bearing against the shoulders of the bolt and the case, the guards embracing the spring to prevent lateral displacement thereof.

3. A lock including a case, a bolt working therein, and a swinging detent the front end of which engages a projection on the bolt, said detent having a recess, the case being provided with a portion to enter the recess and relieve strain from the pivotal support of the detent when the latter is locking the bolt.

4. A lock including a case formed from a blank which is bent back and forth to form compartments, the wall of one of the compartments being bent transversely across the next compartment to enlarge the first mentioned compartment, and a bolt working in the first mentioned compartment and having a laterally enlarged head working in the enlargement of said compartment, the rear wall of the enlarged portion of the compartment forming a stop for engagement by the head of the bolt to limit rearward movement of the latter.

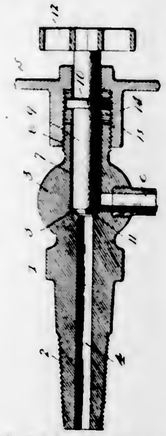
5. A lock including a case formed of a blank which is bent back and forth to form compartments, a wall of one of the compartments being bent laterally across the adjacent compartment to form an enlargement of the first mentioned compartment, a bolt working in the first mentioned compartment and having a laterally enlarged head working in the enlargement of the compartment, the rear wall of the compartment enlargement forming a stop for engagement by the head of the bolt to limit rearward movement of the latter, the bolt being provided with a shoulder projecting into the compartment having the enlargement, and a detent working in the adjacent compartment in co-operative relation with the shoulder upon the bolt to lock the latter.

6. A lock including a case formed of a blank which is bent back and forth to form two compartments, the intermediate wall of the case having offset longitudinal wings and a transverse ear bent therefrom into one of the compartments and producing an opening in the wall, a bolt working in the other compartment and having a shoulder working in the opening in said wall, a helical spring interposed between the shoulder and the ear, the wings embracing the spring and forming guards therefor, a swinging detent mounted in the first mentioned compartment, a shoulder upon the bolt in co-operative relation with the detent, the case being pierced by a key hole to give access to the detent, a knob spindle piercing the case and the bolt, the bolt having a slot to accommodate the spindle, a cam upon the spindle, and a shoulder upon the bolt in co-operative relation with the same.

856,047. GAGE-COCK. ADOLF FREDRIKSON, Soudan, Minn., assignor of one-half to Andrew Malm, Soudan, Minn. Filed June 30, 1906. Serial No. 324,235.

Claim.—1. In a gage cock, the combination with a tapered threaded plug having an outlet passage and a valve seat at the end thereof, an enlarged valve chamber contiguous to said seat provided with a relief spout, a valve stem opening formed in the outer portion of the plug larger than and in alinement with the outlet passage, of a valve stem fitting in said opening formed with a valve on its inner end for engagement with the valve seat, a rigid collar on the stem substantially midlength, a handle on the

onter end of the stem, and an interiorly threaded thimble engaging the outer threaded end of the plug, the inner face of the cavity in the thimble adapted to form an abutment for engagement with the collar on the stem, the thimble having a wide annular knurled flange for manipulation thereof.

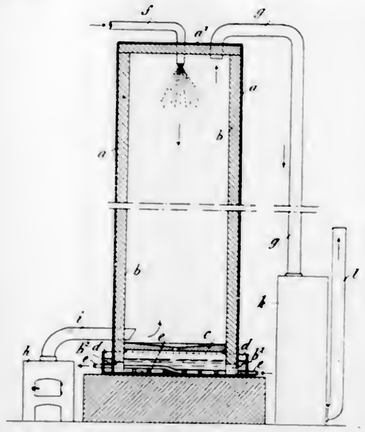


2. In a gage cock, the combination with a threaded plug having an outlet passage and a valve seat at the end thereof, an enlarged valve chamber contiguous to said seat provided with a relief spout, a valve stem opening formed in the outer portion of the plug in alinement with the outlet passage, of a valve stem fitting in said opening formed with a valve on its inner end for engagement with the valve seat, a rigid collar on the stem, a handle on the outer end of the stem, an interiorly threaded thimble engaging the outer threaded end of the plug, the inner face of the cavity in the thimble adapted to form an abutment for engagement with the collar on the stem, the thimble having a wide annular knurled flange to afford a grasping portion, the thimble being further provided with an outer threaded extension, and an interiorly threaded packing nut mounted thereon and encompassing the valve stem.

3. The gage cock herein described, comprising a plug having a tapered screw-threaded end for engagement with the boiler plate and having an outlet passage therein, a valve seat at the end of said passage, the plug being enlarged to form a valve chamber adjacent the valve seat, a relief spout in communication with the valve chamber, an enlarged valve stem passage leading from the valve seat to the outer end of the plug, the outer end of the plug being externally threaded, a valve stem of slightly less diameter fitting in the valve stem passage having on its inner end a valve for engagement with the valve seat, said stem formed with an integral collar about midlength and outside of the end of the plug, a wheel handle on the outer end of the stem, a thimble surrounding the stem and having internal screw threads for engagement with the threaded outer end of the plug, the inner wall of the thimble adapted to act as an abutment to engage the collar on the stem and hold the valve closed, the thimble formed with an integral wide annular flange having a knurled edge to provide a handhold, the thimble being further provided with an outer threaded neck extension encompassing the stem, and a packing nut secured thereon to prevent any leakage of steam from around the stem.

856,048. APPARATUS FOR CONCENTRATING SULFURIC ACID. ANTONIO GAILLARD, Barcelona, Spain. Filed Jan. 24, 1906. Serial No. 297,695.

Claim.—1. In an apparatus for the concentration of sulfuric acid, the combination of a tower provided with a perforated bottom, the main portion of the interior of the tower being entirely unobstructed, means for filling said tower from the top with sulfuric acid mist, means for delivering a current of hot gas into said tower near its lower end and above the perforated bottom thereof, and means for cooling the acid in the lower part of said tower after it has passed through said bottom, substantially as described.



2. In an apparatus for the concentration of sulfuric acid, the combination of a vertically constructed tower, the main portion of the body of which is entirely unobstructed, a pipe entering said tower at the top and terminating in a nozzle, a perforated bottom for said tower located near the lower end thereof, a hot air pipe entering said tower just above said perforated bottom, and a receptacle in which said tower is supported, said tower being provided with perforations underneath said bottom, whereby the acid is delivered from said tower into said receptacle, substantially as described.

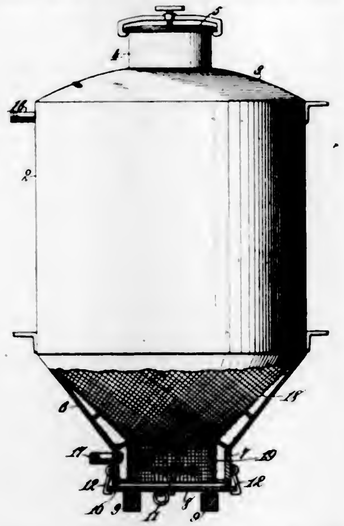
3. In an apparatus for the concentration of sulfuric acid, the combination of a tower, a pipe terminating in a nozzle entering the upper end of said tower, a perforated bottom for said tower located near the lower end thereof, a hot air pipe entering said tower just above said perforated bottom, a receptacle in which said tower is supported, said tower being provided with perforations at its base, and a cooling pipe located in said receptacle, substantially as described.

856,049. EXTRACTING-RETORT. JOSHUA G. GARDNER, Lake Butler, Fla. Filed Jan. 17, 1906. Renewed Dec. 17, 1906. Serial No. 348,254.

Claim.—1. The combination of a retort having a substantially conical lower portion and a flange pendent from the conical portion, a foraminous body in the retort having a conical portion fitted in the first mentioned conical portion and a pendent portion surrounded by the flange, the foraminous body being spaced from the retort below its upper edge, and a discharge pipe leading from the retort and opening directly into the space between the foraminous body and the retort.

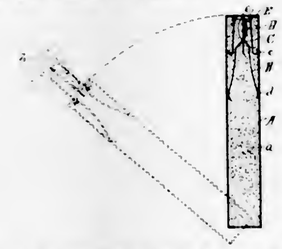
2. The combination of a retort having a substantially conical lower portion, a flange pendent from the conical portion and a discharge opening in said flange, a door to cover said opening, a foraminous body in the retort having a conical portion fitted in the first mentioned conical portion and a pendent portion surrounded by said flange, the foraminous body being spaced from the retort below its upper edge and extending toward said door, and a discharge pipe leading from the retort and opening directly into the space between the foraminous body and the retort.

3. The combination of a retort having a substantially conical lower portion, a flange pendent from the lower portion, and a discharge opening in said flange, a sliding door to cover said opening, a foraminous body having a conical portion fitted in the first-mentioned conical portion, and a pendent portion surrounded by said flange, the foraminous body being spaced from the retort below its upper edge,



extending toward but short of said door, whereby when said door is opened and closed it will not engage said foraminous body, and a discharge pipe leading from the retort and opening directly into the space between the foraminous body and the retort.

856,050. FIRE-EXTINGUISHER. HENRY M. GILLETT, Grand Rapids, Mich. Filed July 21, 1904. Renewed Nov. 9, 1906. Serial No. 342,703.

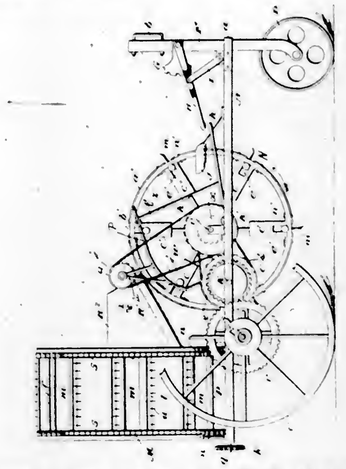


Claim.—1. In combination with a dry powder fire extinguishing tube and powder, a diffuser consisting of a weight smaller diametrically than the opening in the end of the tube, arms radiating from the upper end of the weight, bent back and having hooks formed at the ends, and arms projecting down from the lower end of the weight and curved, substantially as and for the purpose set forth.

2. In combination with a dry powder fire extinguisher tube and powder, a diffuser consisting of a conical weight having spring arms bent back and provided with hooks at the lower ends, and spring arms extending down from the lower end and pressing outward, substantially as and for the purpose set forth.

3. In combination with the tube of a dry powder fire extinguisher, one end of the tube having a central opening and the walls bent down around the opening forming an inwardly projecting flange c; a weight having radiating spring-wire arms bent back and hooks formed at the ends, and spring-wire arms projecting down from the lower end of the weight and pressing against the walls of the tube, substantially as and for the purpose set forth.

856,051. SHEAF-LOADING MACHINE. JAMES GRAHAM, Roseberry, Manitoba, Canada. Filed June 8, 1905. Serial No. 264,345.



Claim.—1. The combination in a sheaf loading machine, of a frame, a rotary cylinder, means for rotating the cylinder, spring-pressed toothed-bars carried by the cylinder and movable in and out, fixed cam bars for moving the toothed bars in, an elevator extending in the direction of the width of the machine, a deck which inclines from the upper rear portion of the cylinder to the elevator, a roller arranged to engage the sheaves when the latter are released from the toothed bars and assist the passage of the said sheaves to the deck, and means for rotating said roller.

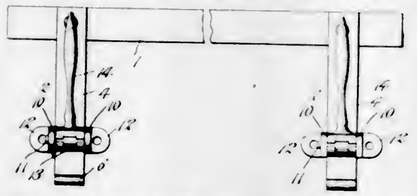
2. In a sheaf loader, a rotary cylinder comprising hubs having threaded sockets in their peripheries, rims, cover sections arranged on the rims, casings having threaded apertures in their inner ends and slots in their outer portions and also having apertured lugs at their outer ends, bolts detachably connecting said lugs to the rims and cover sections, spokes having threaded portions arranged in and engaging the threaded sockets in the hubs and the threaded apertures in the inner ends of the casings, toothed bars having reduced portions movable in and out in the slots of the casings, and springs contained in the casings and pressing said toothed bars outward.

3. In a sheaf loader, a rotary cylinder comprising hubs having threaded sockets in their peripheries, rims, cover sections arranged on the rims, casings having threaded apertures in their inner ends and slots in their outer portions and also having apertured lugs at their outer ends, bolts detachably connecting said lugs to the rims and cover sections, spokes having threaded portions arranged in and engaging the threaded sockets in the hubs and the threaded apertures in the inner ends of the casings, toothed bars having reduced portions movable in and out in the slots of the casings, and rollers on said reduced portions, and springs contained in the casings and pressing said toothed bars outward; in combination with the frame in which the cylinder is mounted, means for rotating the cylinder, and cam bars fixed with respect to the frame and arranged to engage the rollers on the toothed bars.

4. The combination in a sheaf loader, of a main frame, a rotary cylinder mounted in the frame so as to turn ad-

jacent to the ground, bars carried by and movable in and out in the cylinder and having teeth arranged to project beyond the periphery of the cylinder, springs for pressing and yieldingly holding the bars out, and cam bars supported on the frame and arranged to engage the ends of the bars and move the same in.

856,052. BEDCLOTHES-CLAMP. ARTHUR GRANDJEAN, San Diego, Cal. Filed Oct. 17, 1906. Serial No. 339,416.



Claim.—1. A bed clothes clamp comprising coöperating clamping jaws, provided with retaining fingers, clamping bars held by said fingers and slidably removable therefrom, and means for adjusting the jaws to move the bars into and out of clamping position.

2. A bed clothes clamp comprising coöperating jaws, clamping bars carried by the jaws and having outer curved faces, retaining fingers on the jaws engaging said faces and forming keepers for the bars on which the latter are slidably removable, and means for adjusting the jaws to move the bars into and out of clamping position.

3. A bed clothes clamp comprising coöperating jaws, one of said jaws being provided with means for fastening the clamp to a bedstead, a pivot pin supported by said jaw, and an eccentric having a groove engaging said pin and arranged to operate on the other jaw, said eccentric being provided with projections extending across the groove to retain the pin therein.

4. A bed clothes clamp comprising a pair of clamping devices, each consisting of a stationary and a movable jaw, the stationary jaw of each device being provided with means for securing the same to a frame of a bed, means for adjusting the movable jaws of each clamping device, and clamping bars carried by said clamping devices, said bars being slidably connected with the jaws.

5. A bed clothes clamp comprising a relatively stationary jaw having means for securing the same to a bed, said jaw being provided at its lower end with a supporting projection and above the same with supporting lugs, a pivot pin carried by said supporting lugs, a movable jaw substantially coextensive in length with the stationary jaw, said movable jaw being arranged between the supporting lugs and held at its lower end by said projection, and an eccentric journaled on said pivot pin outside of said adjustable jaw and operative to force said jaw toward the stationary jaw.

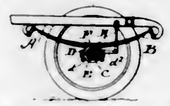
6. A bed clothes clamp comprising relatively stationary and movable jaws, the former being provided with attaching means and having at its lower end a supporting hook, lugs upon said jaw above the hook, a stationary jaw arranged between the lugs and held at its lower end by the hook, a pivot pin carried by said supporting lugs, and an eccentric journaled on said pin and arranged to hold the movable jaw from outward movement, said eccentric being adjustable to force said jaw toward the stationary jaw.

7. A bed clothes clamp comprising relatively stationary and movable jaws, the former having at its lower end a supporting hook projecting in one direction and an extension projecting in the opposite direction, a clamping screw supported by said extension and extending upwardly parallel with the stationary jaw, supporting lugs upon the stationary jaw above the hook, a pivot pin carried by said lugs, a movable jaw held at its lower end by said hook and arranged between the supporting lugs on the inner side of the pivot pin, and an eccentric pivoted to said pin and arranged to bear against the movable jaw to force the same toward the stationary jaw.

8. In a device of the class described, a clamping device comprising a pair of spaced clamping jaws adapted for movement toward and from each other, one of said jaws being provided with a fastening wholly mounted thereon to engage a bedstead rail, clamping bars carried by the jaws for engagement with the bed clothes, a bracket embracing the jaws and comprising a pair of spaced side portions, said bracket being attached to one of the jaws and having a pair of projecting perforated attaching lugs, and a compression device on the bracket for acting upon the adjacent jaw to move the same to clamping position, said adjacent jaw being independent of fixed connection with the other jaw and removably mounted upon the same and between the attaching lugs.

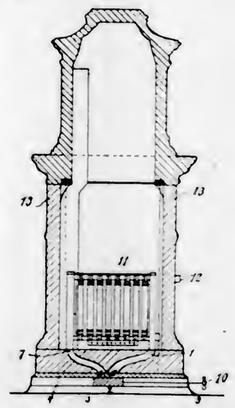
9. A clamping device for the purpose described comprising a stationary clamping jaw provided with attaching means and having at its lower end a supporting hook, spaced lugs upon said jaw above the hook, a pin carried by said lugs, a movable jaw held at its lower end by the hook and extending upwardly between the supporting lugs, and an eccentric having a groove engaging said pin and arranged to operate upon the adjustable jaw, said eccentric being provided with projections extending across the groove to retain the pin therein.

856,053. SHOCK-REDUCER FOR AUTOMOBILES. WALTER GROTHE, Cleveland, Ohio, assignor to The White Sewing Machine Company, Cleveland, Ohio, a Corporation of Ohio. Filed Nov. 22, 1905. Serial No. 288,512.



Claim.—The combination, with frame and the dead-axle of an automobile, of two substantially semi-cylindrical clamping members having laterally projecting ears, screws passing loosely through the ears of one of said members and screwing into the ears of the other member, springs compressed between the heads of said screws and the ears of the first named clamp member, an arm rigid with the last named clamp member, and a link pivotally connected with said arm and with the automobile frame.

856,054. ELECTRICALLY-HEATED STOVE. FRITZ GUTJAHR, Berlin, Germany. Filed June 13, 1906. Serial No. 321,527.



Claim.—1. A stove comprising a hollow outer portion composed of a material adapted to store and to insulate heat; within said outer portion, a partition whereby the cavity thereof is divided into two compartments that at their upper portions are in communication with each other, and that at their lower portions are each in communication with the outer air; within one of said compartments, a heating device adapted to be electrically energized.

2. A stove comprising a hollow outer portion composed of a material adapted to store and radiate heat; within said outer portion—a partition that, by cutting off a corner of the interior thereof divides the said interior into two unequal compartments; within the larger of said compartments, an electric heating device; a stove base wherein there are formed passages; pipes or conduits whereby said passages are placed in communication with the said compartments; and means adapted to close said passages.

856,055. FLY-TRAP. GILBERT T. HAAN, Holland, Mich.; assignor of one-half to Henry W. Melenbacker, Grand Rapids, Mich. Filed Oct. 8, 1906. Serial No. 338,085.



Claim.—1. In a fly trap, a series of sections in a vertical tier, each upper section larger than the next lower and having an upwardly inclined connecting wall, between adjacent sections, provided with openings for the passage of flies, substantially as shown and described.

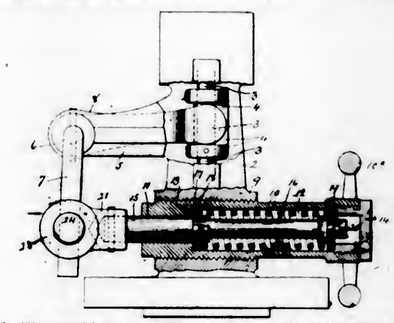
2. In a fly trap, a series of sections in vertical tier, each upper section larger than the next lower, an upwardly inclined wall connecting the same and having openings for the passage of flies, a detachable receptacle above the tier of variable sections, and means for detachably supporting the lower sections therewith.

3. In a fly trap, a series of sections placed in vertical tier, each upper section larger in diameter than the next lower, an upwardly inclined wall connecting the same and having openings for the passage of flies, the upper of said sections having a conical cover, a tube projecting upward from said cover, a detachable receptacle above said cover, and a tube in position to engage the tube on the cover and hold the sections to place, and means for supporting said receptacle and said sections suspended, substantially as and for the purpose set forth.

856,056. ENGINE-GOVERNOR. STEPHEN S. HALL, Portland, Conn., assignor to The Pickering Governor Co., Portland, Conn., a Corporation. Filed Jan. 11, 1907. Serial No. 351,759.

Claim.—1. In a governor, the combination with a bracket and a valve stem entering the same, of a collar mounted thereon, a speeder toe piece engaging therewith and mounted upon a lever, a lever arm in engagement with a speeder shaft, a spring chamber mounted in said bracket into which said speeder shaft extends, a spring within said chamber around said shaft, washers on said shaft at opposite ends of said spring, substantially as described.

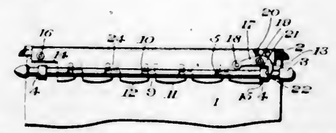
2. In a governor, the combination with a bracket, of a valve stem and a collar thereon, a bearing formed integral with the bracket, a spring holder mounted therein, a speeder shaft extending into said spring holder, connections between the speeder shaft and the collar, washers mounted on said shaft within the spring holder, and a spiral spring surrounding said shaft and bearing against said washers, substantially as described.



3. The combination with a governor, of a valve stem and a collar thereon, and an internally threaded bearing and an externally threaded spring holder mounted therein, a speeder shaft extending into said spring holder, connections between the speeder shaft and the collar, washers mounted on said shaft within the spring holder, and a spiral spring surrounding said shaft and bearing against said washers, substantially as described.

4. The combination with a governor including a valve stem, a collar mounted thereon, a bracket arm, a lever mounted therein, a toe piece mounted on said lever and extending into connection with said collar, said lever formed with a lever arm, a yoke, a stud mounted in said yoke, a passage through said stud through which said lever arm extends, a spring holder in the bracket, a speeder shaft extending into said holder and connected with said yoke, washers on said shaft within said spring holder, and a spiral spring surrounding said shaft within said holder and bearing against the said washers, substantially as described.

856,057. VALVE-GUARD FOR GAS-STOVES. THOMAS HALEY, Philadelphia, Pa. Filed Mar. 26, 1907. Serial No. 364,742.



Claim.—1. A valve guard for gas stoves comprising an integral piece of metal having angular shaped slots in the bottom thereof, and means carried by said member for preventing improper movement thereof when in assembled position.

2. A valve guard comprising an integral member having its upper end deflected and its lower end provided with a series of angular shaped slots, and means carried by said member for preventing improper movement thereof when in assembled position.

3. A valve guard for gas stoves comprising a plate having its upper end deflected and having at its lower end a series of angular shaped slots, a pawl pivoted to said plate, said plate having a cam slot therein, and means carried by said pawl and co-acting with said slot to guide the movement of said pawl.

4. In a device of the character described, the combination with a main feed pipe and valved feed pipes leading therefrom, of a valve guard comprising a plate having angular shaped slots in its lower portion adapted to co-act with said valved feed pipes to conceal the valves thereof.

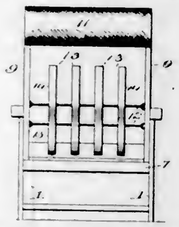
5. In a device of the character described, the combination with a main feed pipe and valved feed pipes leading therefrom, of a valve guard comprising a plate having angular shaped slots in its lower portion adapted to co-act

with said valved feed pipes to conceal the valves thereof, and means carried by said plate for preventing its improper movement with respect to said feed pipes.

6. In a device of the character described, the combination with a main feed pipe and valved feed pipes leading therefrom, of a valve guard comprising a plate having angular shaped slots in its lower portion adapted to co-act with said valved feed pipes to conceal the valves thereof, and handles carried by said plate for manually actuating the same.

7. In a device of the character described, the combination with a gas stove, the main feed pipe thereof, hangers supporting said feed pipe, and valved feed pipes leading from said main feed pipe, of a valve guard comprising a plate having angular shaped slots adapted to co-act with said valve feed pipes, said plate having its ends recessed to permit longitudinal movement thereof with respect to said hangers, and locking means carried by said plate and co-acting with one of said hangers to prevent improper relative movement of said plate and hangers.

856,058. CHAIR. JAMES E. HANGER, Washington, D. C. Filed Feb. 16, 1906. Serial No. 301,379.



Claim.—1. In a chair back, the combination with the frame, a transverse spring, a plurality of independent slats secured to said spring, substantially as specified.

2. In a chair back, the combination with the frame, transverse springs secured upon the frame, a plurality of independent slats secured to the springs, substantially as specified.

3. In a chair back, the combination with the frame, a series of transverse springs secured to the sides of the frame, a plurality of independent slats clamped to the springs, substantially as specified.

4. In a chair back, the combination with the frame, a transverse spring connecting the sides of the frame, a plurality of independent slats secured upon the spring, the upper ends of the slats being straight and the lower ends curved, substantially as specified.

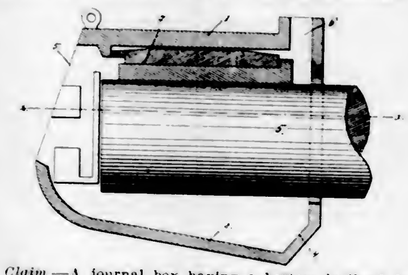
5. In a chair back, the combination with the frame, a series of transverse springs connecting the sides of the frame, a plurality of independent slats curved at their lower ends, means for securing the slats to the springs, substantially as specified.

6. In a chair back, the combination with the frame, two transverse springs composed of a series of loops connecting the sides of the frame, a plurality of independent slats curved at their lower ends, means for securing the slats to the loops, substantially as specified.

7. In a chair back, the combination with the frame, two transverse springs composed of a series of U-shaped loops the ends of which are secured to the sides of the frame, a plurality of independent slats being straight throughout a portion of their length and the other portion curved, and means for securing the slats to the said loops, substantially as specified.

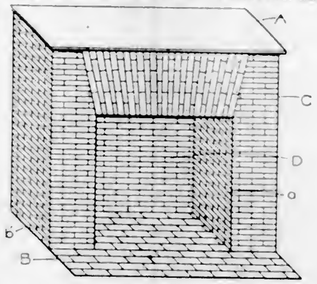
8. In a chair back, in combination with the frame, a plurality of transverse springs, the respective ends of the springs being secured to the sides of the frame, each spring being composed of a series of loops, a plurality of slats, each slat being straight throughout a portion of its length, and curved throughout the remaining portion, and means for securing the slats to the loops, substantially as specified.

856,059. JOURNAL-BOX. PATRICK J. HARRIGAN, McKeesport, Pa. Filed Dec. 15, 1906. Serial No. 348,055.



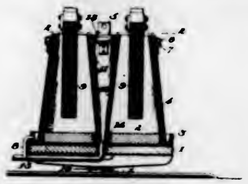
Claim.—A journal box having a bottom inclined from the front end to the rear end wall, and having its side walls flaring outwardly from a point intermediate the ends to the rear end, and having a part of the rear wall inclined upwardly and rearwardly, as and for the purpose described.

856,060. TOY FIREPLACE. RUFUS I. HEPBURN, Portland, Oreg. Filed Mar. 4, 1907. Serial No. 360,559.



Claim.—A toy fire-place comprising folding, vertical front and back parts C, D, inner side walls *a a'*, outer side-walls *b b'*, a flue piece E, provided with a flue opening *e*, a mantle piece A and bottom piece B, all of suitable light material, having means to secure the same in fire place form, and having suitable fire-place decoration thereon, all substantially as described.

856,061. ELECTRIC FURNACE. ALDUS C. HIGGINS, Worcester, Mass. Filed Apr. 6, 1906. Serial No. 310,359.



Claim.—1. An electric furnace comprising a relatively long and narrow furnace chamber, a plurality of electrodes of each polarity depending into the same, and means for cooling the furnace walls, substantially as described.

2. An electric furnace comprising a relatively long and narrow furnace chamber, the dimensions of said chamber being such as to permit the effective cooling of all portions of the charge and the production of a commercially uniform product by means of a cooling medium applied to the furnace walls, a plurality of electrodes of each polarity depending into the same, and means for cooling the furnace walls, substantially as described.

3. An electric furnace comprising a hearth, a casing separable therefrom and having inclined exterior and interior walls, and means for cooling said walls, substantially as described.

4. An electric furnace comprising a furnace chamber having exterior walls, electrodes of opposite polarity within said chamber a plurality of interior walls between said electrodes, and means for cooling said interior walls, substantially as described.

5. An electric furnace comprising a furnace chamber, spaced electrodes of opposite polarity therein providing an intermediate heating zone, an open well between said electrodes, and means for cooling the walls of said well, whereby a comparatively uniform temperature is obtained throughout the furnace chamber, substantially as described.

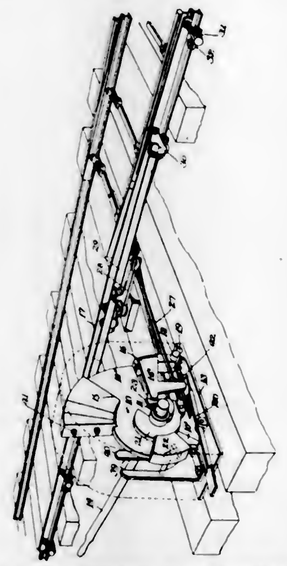
6. An electric furnace comprising a furnace chamber having exterior and interior walls, said walls being exposed on one side to the charge and on the other side to the atmosphere, substantially as described.

7. An electric furnace comprising a furnace chamber having exterior and interior walls, said walls being exposed on one side to the charge and on the other side to the atmosphere, and means for cooling said interior walls, substantially as described.

8. An electric furnace comprising a furnace chamber having exterior and interior walls, said walls being exposed on one side to the charge and on the other side to the atmosphere electrodes oppositely disposed with respect to said interior walls, and means for cooling said interior walls, substantially as described.

9. An electric furnace comprising a furnace chamber having exterior and interior walls, said walls being exposed on one side to the charge and on the other side to the atmosphere, and means for cooling said exterior and interior walls.

856,062. AUTOMATIC SWITCH-STAND. GEORGE M. HOWE, Chicago, Ill. Filed July 5, 1902. Serial No. 114,390.



Claim.—1. The combination of the railroad switch and rails with an automatic lever connected with the switch points, means for holding the same in the open position, a latch rail and an automatic latch lever operable therewith when depressed and having attached thereto a pawl adapted when said rail is free to liberate said automatic lever, as and for the purpose specified.

2. The combination of the railroad rails and switch with a switch closing weight, means for opening the switch and elevating said weight, means for holding the weight elevated, a device depressible by a passing train, an automatic latch or trip operable by said device when depressed and when said device is released operable to release said weight and said latch device being restored by the fall of said weight and by such movement depressing said depressible device.

3. The combination of the railroad rails and switch with the automatic switch closing lever connected to the switch points, the pawl for said lever, the latch rail and the pawl tripping lever connected with said latch rail, said pawl tripping lever being operable in one direction by said automatic lever.

4. The combination of the railroad rails and switch with the automatic switch closing lever connected to the switch points, the pawl for said lever, the latch rail and the pawl tripping lever connected with said latch rail, said pawl trip lever being operable in one direction by said automatic lever and said latch tripping lever being operable in both directions by said automatic lever, substantially as described.

5. The combination of the railroad rails and switch with the automatic switch closing lever connected to the switch points, the pawl for said lever, the latch rail and the pawl tripping lever connected with said latch rail, said pawl tripping lever being operable in one direction by said automatic lever, said latch tripping lever being operable in both directions by said automatic lever and means for liberating said tripping lever from said automatic lever when the latter has been raised or set, substantially as described.

6. The combination of the railroad rails and switch with the trip rail vertically and longitudinally movable for depression by a train entering or moving from the side track, the switch closing lever connected with the switch points, means for elevating the same to open the switch, the pawl for said lever, the trip or latch lever connected with said latch rail and operable to trip said pawl and free said switch closing lever, substantially as described.

7. The combination of the railroad rails and switch with the weighted lever connected with the switch points, the pawl for said lever, the latch rail arranged alongside the continuous main and side rail and depressible by a passing train, the latch or trip lever for operating said pawl and means connecting said latch rail and latch lever for operation one by the other, substantially as described.

8. The combination of the railroad rails and switch with the gravity operated lever connected with the switch points, the pawl for said lever, the latch rail arranged alongside the continuous main and side rail and depressible by a passing train, the gravity operated latch or trip lever for operating said pawl, means connecting said latch rail and gravity operated latch lever for operation one by the other and means whereby upon the fall of said gravity switch lever it raises the said latch lever, substantially as described.

9. The combination of the railroad rails and switch with the latch rail 17, the parallel links supporting the same, the bar 29, the bell crank connections between said bar and latch rail and levers for operating said bar, substantially as described.

10. The combination of the railroad rails and switch with the latch rail 17, the parallel links supporting the same, the bar 29, the bell crank connections between said bar and latch rail, the horizontally arranged lever 28 for operating said bar, a weighted lever elevated and femporarily locked when the switch is opened and automatic means actuated by said bell crank 28 for freeing said weighted lever, substantially as described.

11. The automatic switch stand comprising the weighted lever 10 in combination with the gravity pawl 16, the

weighted latch lever 21 having a pawl to engage and operate said pawl 16, said lever being operable in one direction by said lever 10 and means for raising said lever 10, substantially as described.

12. In an automatic switch stand, the combination with the weighted switch operating lever 10, and means for raising the same with means for holding said lever in an elevated position, the pawl 16, the latch lever 21 for operating said pawl, the engaging projections upon said levers and the automatic locking device carried by said lever 10 for engagement with said lever 21 to depress the latter, substantially as described.

13. The automatic switch stand comprising the shaft 11, having suitable bearings, in combination with the weighted lever 10 upon said shaft, the hand lever for operating the same, the latch lever journaled upon said shaft and having a shoulder for operation by said lever 10 and the pawl 16 having an arm for operation by said latch lever, substantially as described.

14. The automatic switch stand comprising the base plate 13, the pawl 16 having a socket pivot therein, the shaft 11 supported above said plate, the automatic lever 10 on said shaft for engagement by said pawl and the automatic latch or trip lever 21 journaled on said shaft for operating said pawl, substantially as described.

15. In an automatic switch stand, the disk-like lever 10 and the disk-like lever 21, both weighted, in combination with the common shaft therefor, the pawl 23 held in said lever 21 and between the same and the lever 10, the pawl 16 suitably pivoted and having an arm for engagement by said pawl 23 and the switch and latch rods 9 and 27 connected with said levers 10 and 21, respectively, substantially as described.

16. In an automatic switch stand, the lever 10 having a plurality of weights, in combination with the shaft for said lever, means for raising the lever, the pawl 16 having an arm 16', the weighted latch lever 21 having a pawl 23 to engage said arm 16', the switch rod 9 connected with the lever 10 and the latch rod 27 connected with the lever 21, substantially as described.

17. In an automatic switch stand the combination of the suitably pivoted weighted lever 10, the latch rod 9 having a lost motion connection with said lever 10, means for holding said lever 10 in an elevated position, the latch rod 27 and means connected therewith for releasing said lever 10, substantially as described.

18. The combination of the continuous main and side rails 3, 5 and the switch point 7 with the latch rail 17 arranged alongside of said rail 3, 5 and extending in both directions from said switch point, the parallel links 31 for said rail 17, the bar 29, the bell cranks 30 having arms parallel with said links 31 and having substantially vertical arms connected with said bar 29 and means for moving said bar 29 longitudinally, substantially as described.

19. The combination of the railroad rails and switch with the switch operating lever connected with the switch, a pawl for said lever, a latch rail and a latch lever connected therewith and adapted to engage said pawl to prevent the movement thereof when said rail is depressed by a passing train and also adapted to operate said pawl when the train has passed, substantially as described.

20. An automatic switch-stand, comprising a weighted switch-lever, in combination with a gravity-pawl, a weighted latch-lever, for operating said gravity-pawl, having a pawl attached thereto, said latch-lever being operable in one direction by gravity and in the other by said weighted lever, a latch-rail, means connecting said latch-lever with said rail, and means for raising said weighted lever, substantially as described.

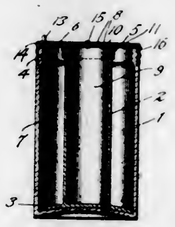
21. In combination with the railroad and switch-rails, an automatic switch-stand, comprising a weighted lever for operating said switch, a gravity-pawl for said lever but unattached thereto, an automatic trip-lever having a pawl thereto attached and adapted to operate said gravity-pawl, means for releasing said gravity-pawl independent of said trip-lever, and means for raising said weighted lever, substantially as described.

856,063. EXPANSIBLE PIPE-CLEANER. LEWIS O. HOWELL, Philadelphia, Pa., assignor, by mesne assignments, to Sanitary Appliance Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Mar. 30, 1904. Serial No. 200,697.



Claim.—As a new article of manufacture, an expansible pipe cleaner in which is comprised a hollow, corrugated body of rubber, or equivalent material, a handle extending therethrough bearing a nut or head at its outer extremity, a screwthread at 2 on the handle, and an adjusting nut engaging with said thread, substantially as shown and described.

856,064. COMBINATION SALT AND PEPPER SHAKER. HARVEY W. JACKSON, Weed, Cal. Filed Jan. 9, 1907. Serial No. 351,548.



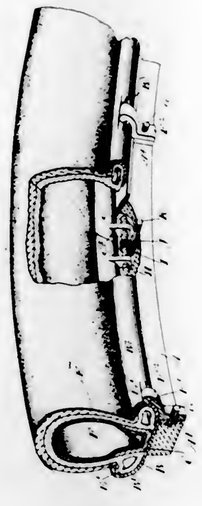
Claim.—1. A combined salt and pepper shaker comprising a salt receptacle, an interiorly disposed pepper receptacle provided with a flange to center said pepper receptacle within the salt receptacle, a disk provided with salt and pepper perforations, and a flange to fit the pepper receptacle, and a cap or cover pivotally connected to said disk and provided with perforations, and means whereby one of said disks may be rotated to bring into coincidence the salt perforations or the pepper perforations alternately, substantially as described.

2. In a salt and pepper shaker, a salt receptacle, a pepper receptacle provided with a base flange to fit within the salt receptacle and center said pepper receptacle therein, a disk provided with a flange to fit the pepper receptacle, and a series of perforations, a knob formed on or secured to said disk, a cap or cover secured to the salt receptacle and provided with perforations, said cap and disk being centrally pivoted and said cap provided with a slot through which said knob projects, substantially as described.

856,065. PNEUMATIC TIRE. ARTHUR J. JACKSON, Toronto, Ontario, Canada. Filed Oct. 30, 1905. Serial No. 285,096.

Claim.—1. In a pneumatic tire, the combination with the rim having one permanent retaining edge and the tire and the retaining ring, of a detachable edge ring for the rim and the clips provided with teats extending laterally

into recesses in the detachable ring and an inwardly extending portion fitting on the side face of the felly and the bolts extending through the clips laterally into the felly or rim as and for the purpose specified.

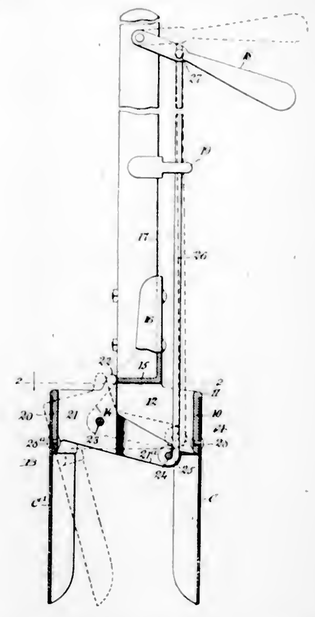


2. The combination with the rim having one permanent edge and the tire and the retaining ring divided as shown and provided with lugs on each side of the division extending into a recess in the felly, the right and left hand screw spindle extending through the correspondingly threaded holes in the lugs, the worm wheel secured in the center of the spindle and the worm meshing therewith and provided with a turning spindle extending laterally through the outside of the side face of the felly, of a detachable edge ring for the rim and means for holding the detachable ring in position as and for the purpose specified.

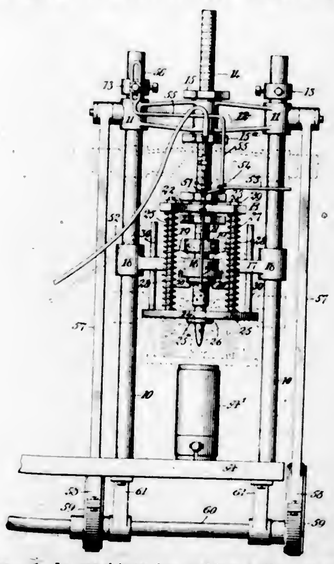
856,066. POST-HOLE DIGGER. ROBERT T. JENNEY, De Pere, Wis. Filed Sept. 13, 1906. Serial No. 334,415.

Claim.—In a post hole digger, the combination with a body constructed in opposing sections, each section comprising a face plate having its outer face convexed, arms extending inwardly from each face plate at each side of the center, the arms of one face plate entering the space between the arms of the opposing face plate, a pivotal connection between the arms of the two sections, a socket member secured to the outer arms of the series of arms, lugs carried by the inner arms of the series of arms and adapted for engagement with the said socket member to limit the outward movement of the sections relative to each other, the said face plates being provided with ribs upon their outer faces at their upper edges, of blades corresponding in shape to the shape of the face plates, which blades are secured to the outer surfaces of the face plates, the upper edges of said blades engaging with flanges of the said face plates, a handle secured in the said socket, a guide device secured to the handle, a lever pivotally connected with the handle above the guide device, and a shifting rod pivotally connected to the inner ends of the inner arms of the series and to the said lever.

856,066.



856,067. PLUNGER FOR BOTTLE-MACHINES. ROBERT JOHNS, Fairmont, W. Va., assignor of one-third to John B. Johns and one-third to William C. Johns, Fairmont, W. Va. Filed Oct. 12, 1906. Serial No. 338,579.



Claim.—1. In machines for making hollow glass ware, a plunger having an inlet and an outlet for liquid, and means for turning on the liquid supplied at the working

stroke of the plunger and cutting off such supply on the return stroke of the plunger.

2. In machines for making hollow glass ware, a sliding support, a plunger carried thereby, provided with a cooling finger, means for supplying liquid to and discharging liquid from the plunger through its cooling finger, and devices for automatically turning on the supply of liquid on the working stroke of the plunger and cutting off such supply at the return stroke.

3. In a machine for making hollow glass ware, guides, a carriage mounted to slide on the guides, means for moving said carriage up and down, a plunger supported by the carriage, for supplying liquid to the plunger and discharging liquid therefrom, a valve located in the supply medium, an arm extending from said valve, a stationary receiver for the said arm, through which the arm loosely passes, which receiver is independent of the carriage, whereby on the down stroke of the carriage and plunger water is automatically supplied to the latter and is automatically cut off at the up or return stroke of the carriage and the plunger.

4. In a machine for making hollow glass ware, the combination with stationary guides, a cross head mounted to slide on the guides, means for raising and lowering the cross head, a plunger supported by the carriage, provided with a cooling finger having inlet and outlet channels for liquid in its cooling finger, and liquid receiving cooling chambers in the body of the plunger beneath said fingers, the receiving channel being provided with an added tube which extends therefrom centrally into said cooling chamber, and means for supplying liquid to the plunger at its downward stroke and cutting off said supply at its upward stroke.

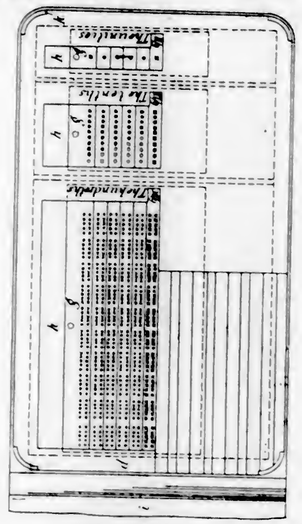
5. In machines for making hollow glass ware, a plunger consisting of a head, a cooling finger integral with the head, and a main body having screw connection with said cooling finger, the said body or main section being provided near its lower end with a metal gasket, upon which gasket the lower end of the cooling finger bears when the parts of the plunger are assembled, the main or body portion of the plunger being provided with a cooling chamber below the said gasket, constructed in two diameters, its upper portion being of the greatest diameter, the head being provided with a liquid-receiving chamber and a liquid discharging chamber, the cooling finger being provided with a liquid-receiving channel and a liquid-discharging channel, both in communication with said cooling chamber of the main or body section of the plunger, and a tube which extends from the outlet of the receiving channel into the cooling chamber of the body of the plunger, occupying a central position at its outlet end within said cooling chamber.

856,068. APPARATUS FOR TEACHING AND LEARNING ARITHMETIC. JOSEF JUHÁSZ, Szemlak, Austria-Hungary. Filed May 25, 1906. Serial No. 318,745.

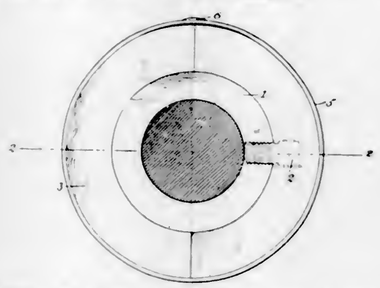
Claim.—1. In a device for facilitating the teaching of arithmetic, the combination of a frame having slides therein, each slide being divided into ten partitions from top to bottom and having numerals arranged down the side thereof: a plate covering said slide, and having recesses therein with lateral extensions, in which the numeral indicating the number of spots visible in the whole recess becomes visible when the slide is adjusted to any desired position.

2. In a device for facilitating the teaching of arithmetic, the combination of a frame having a top plate with recesses therein, the latter having lateral enlargements, a series of slides having ten spaces from top to bottom, spots in said spaces to indicate tens, hundreds and units and figures adjacent each space to appear in the lateral enlargement and indicate the number of spots visible in each recess.

3. In a device of the kind specified, the combination of a frame having outer plates with recesses therein each having a lower lateral extension, a series of slides mounted behind said recesses and guided in said frame, a series of spots on said slides, and figures on the said slides to indicate the number of spots and multiples of said spots visible in the said recess.



856,069. COLLAR. DAVID J. KELLY, Aberdeen, Wash. Filed May 25, 1906. Serial No. 318,666.



Claim.—1. In combination with a collar, a set-screw passing transversely therethrough, a divided ring embracing the collar, said ring having a recess in one member thereof placed at substantially 90 degrees from its ends and loosely fitting the head of the set-screw, and a leather band having its ends laced together to tightly embrace the periphery of the ring for holding the members thereof in close engagement with the collar.

2. In combination with a collar, a set-screw passing therethrough, a divided ring embracing the collar and inclosing the head of the set-screw, and a continuous band tightly drawn about the ring for the purpose described.

856,070. WEATHER-STRIP. HUGH E. KENNY, Detroit, Mich., assignor to Chamberlin Metal Weather Strip Company, Detroit, Mich. Filed May 14, 1906. Serial No. 316,801.

Claim.—1. The combination with a frame and swinging sash, of a stop-strip at the bottom of said frame, the bottom of the sash being rabbeted to fit against and over said stop-strip, and a weather strip adapted to seal the space between the upper surface of said stop-strip and the adjoining surface of the sash comprising interfitting metallic sections, one on the sash adjacent to its rabbeted portion and another on the frame facing said rabbeted portion, and one of said sections being resilient whereby to yieldably engage the other to create a sealing contact therebetween when the sash is closed.



2. The combination with a frame and swinging sash, of a stop-strip at the bottom of said frame, the bottom of the sash being rabbeted to fit against and over said stop-strip, and a weather strip adapted to seal the space between the upper surface of said stop-strip and the adjoining surface of the sash comprising interfitting sections one on the sash adjacent to its rabbeted portion, and another on the frame facing said rabbeted portion, and one of said sections being resilient whereby to yieldably engage the other to create a sealing contact therebetween when the sash is closed and having a securing flange lying flat and rigidly fastened to the bottom of the frame, an intermediate portion spanning the space between said flange and the adjacent edge of said stop-strip, and a free edge normally projecting above the upper surface of the stop-strip into a position to be engaged by the sash when closing.

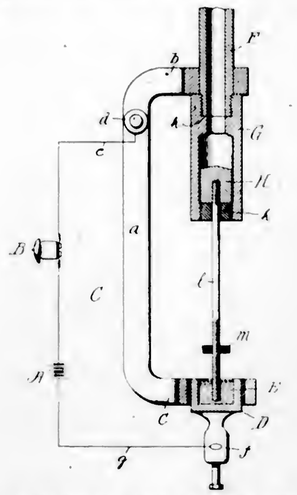
3. The combination with a frame and a sash, said frame having a stop-strip, the sash being rabbeted at a point adjacent to said stop-strip, of a weather strip adapted to seal the space between the stop-strip and the adjoining surface of the sash comprising interfitting metallic sections, one on the sash adjacent to its rabbeted portion, and another on the frame facing said rabbeted portion.

4. The combination with a frame and a sash, said frame having a stop-strip, the sash being rabbeted at a point adjacent to said stop strip, of a weather strip adapted to seal the space between the stop strip and the adjoining surface of the sash comprising interfitting metallic sections, one on the sash adjacent to its rabbeted portion and another on the frame facing said rabbeted portion, one of said sections being resilient whereby to yieldably engage the other to create a sealing contact therebetween.

5. The combination with a frame and swinging sash, of a weather strip adapted to seal the space between one edge of the sash and its frame comprising interfitting members one constituting a spring flange and the other formed of a part bent upon itself to provide substantially parallel relatively broad and narrow flanges with a groove therebetween for the reception of said spring flange, the relatively broad flange and the spring flange occupying intersecting planes whereby in the closing movement of the sash the spring flange will initially pass beneath the narrow flange in a direction toward the broad flange and subsequently contact with and be deflected by the latter into the groove while maintaining a sealing engagement therebetween, the broad flange constituting a smooth contacting surface for the spring flange over which the latter may ride in the closing movement of the sash.

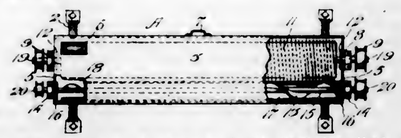
6. In combination with a frame, and swinging sash, of a weather strip adapted to seal the space between one edge of the sash and its frame comprising interfitting members one constituting a spring flange and the other formed of a part bent upon itself to provide substantially parallel flanges with a groove therebetween for the reception of said spring flange, the innermost flange of the bent member, and the spring flange occupying intersecting planes whereby in the closing movement of the sash the spring flange will contact therewith and be deflected thereby into the groove while maintaining sealing engagement therebetween.

856,071. ELECTRIC SIGNAL. GEORGE LANGLUMÉ, New Orleans, La., assignor of one-half to Hyman Hirsch, New Orleans, La. Filed Oct. 6, 1906. Serial No. 337,783.



Claim.—In an electric signal, a circuit closer for the purpose described comprising a bracket having upper and lower apertured arms, a cup containing mercury secured in the lower apertured arm of the bracket and separated therefrom by insulating material and having an integral, depending binding post, a pipe extending through the upper apertured arm of the bracket and provided below said arm with an exterior thread, a cylinder interiorly threaded at its upper end and receiving the said threaded end of the pipe and having an interior abutment and also having an apertured head at its lower end, and a plunger movable in said cylinder, between the abutment and apertured head thereof, and having a depending stem and a non-conducting finger piece on the stem; the lower end of the said stem being arranged when the plunger is permitted to move downward, to enter the mercury in the cup.

856,072. CARD-GRINDING MACHINE. JOHN F. LEHMAN, Huntsville, Ala. Filed Mar. 22, 1907. Serial No. 363,884.



Claim.—1. In an apparatus of the class described, the combination of a cylinder, bearings at the ends thereof for

receiving a licker-in, a hopper for supplying abrasive material to the cylinder, and a conveyer for returning the abrasive material with the receiving end of the cylinder.

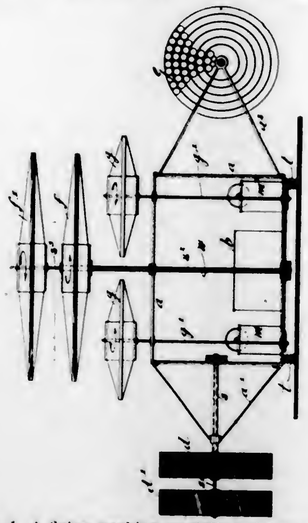
2. In an apparatus of the class described, the combination of a casing, a cover therefor, bearings for receiving a licker-in, and a conveyer arranged to receive the abrasive material that is crowded to one end of the casing by the licker-in and arranged to convey the abrasive material to the opposite end of the casing to act again on the licker-in.

3. In an apparatus of the class described, the combination of a body, a hinged cover therefor, bearings at the ends of the body, a trough in the cover, and a screw conveyer in the trough.

4. In an apparatus of the class described, the combination of a semi-cylindrical body, a semi-cylindrical cover for the body, bearings at the end of the body, a hopper in the cover, a trough on the cover extending short of the end having the hopper, and a screw conveyer in the trough, and means for driving the conveyer.

5. In an apparatus of the class described, the combination of a casing containing abrasive material, bearings for rotatably mounting a card roll within the casing, and a device adapted to operate simultaneously with the grinding of the teeth of the roll for conveying the abrasive material from one end of the casing to the other to prevent the said material from accumulating at the said end under the action of the card roll.

856,073. FLYING-MACHINE. REINHOLD LEWITZ, New York, N. Y. Filed June 13, 1906. Serial No. 321,428.

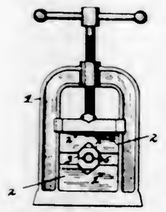


Claim.—1. A flying machine consisting of a supporting-frame with tapering front and rear brace-frames, two large-sized lifting and lowering wheels above the supporting-frame rotating in opposite direction to each other, two pairs of balancing-wheels, the wheels of each pair rotating in opposite direction to each other, a pair of front driving-wheels rotating in opposite direction to each other, a rear steering-wheel, motors on the supporting frame, and motion-transmitting mechanism between the motors and the shafts of the different wheels.

2. A flying machine consisting of a supporting-frame with tapering front and rear brace-frames, two large-sized lifting and lowering wheels above the supporting-frame rotating in opposite direction to each other, two pairs of balancing-wheels, the wheels of each pair rotating in opposite direction to each other, a pair of front driving-wheels rotating in opposite direction to each other, a rear steering-wheel, motors on the supporting-frame, motion-transmitting mechanism between the motors and the shafts of the different wheels, steering-wings attached to opposite sides of the supporting-frame, and means for setting the same at suitable angles to the transverse center-plane of the machine in connection with the motion of the steering-wheel.

3. In a flying machine, a wheel constructed of a number of groups of air-cutting tubes, an inner central vertical group, an intermediate inclined set of tubes, and a set of circumferential nearly horizontal tubes arranged with overlapping ends around the intermediate group.

856,074. ATTACHMENT FOR VISES. RICHARD J. LOCKHART, Pittsburg, Pa. Filed Apr. 13, 1906. Serial No. 311,466.



Claim.—1. An attachment for removably fitting within the jaws of a vise, consisting of a pair of pipe-holding jaws pivoted together and having their inner surfaces correspondingly curved to fit the periphery of the pipe, said inner faces being provided with a woven fabric thereon for engaging with the pipe, and their outer surfaces being adapted to form an octagon in cross-section when closed for engaging with the jaws of the vise and the pivotal point thereof being substantially at the intersection of the planes of two sides.

2. An attachment for removably fitting within the jaws of a vise, consisting of a pair of pipe-holding jaws pivoted together and having their inner faces correspondingly curved to fit the periphery of the pipe, said inner faces being provided with a woven fabric thereon for engaging with the pipe, and their outer faces being adapted to form an octagon in cross-section, when closed, for engaging with the jaws of the vise, and the pivotal point thereof being substantially at the intersection of the planes of two sides, and longitudinally extending rods for holding said fabric in place and for permitting its removal from said inner faces.

3. An attachment for removably fitting within the jaws of a vise, consisting of a pair of pipe-holding jaws connected together and having their inner faces correspondingly curved to fit the periphery of the pipe, said inner faces being provided with a flexible or yielding material thereon for engaging with the pipe, and rods engaging with said yielding material and removably connected to said pipe-holding jaws to hold said material in place and for permitting its removal from said inner faces.

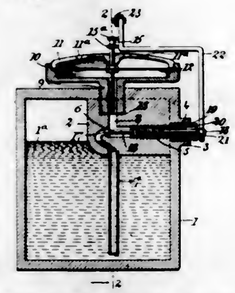
856,075. DEVICE FOR PROTECTING SAFE-VAULTS. EMANUEL V. LORIG and ULYSSES G. GRAHAM, South Omaha, Nebr. Filed Mar. 16, 1906. Serial No. 306,455.

Claim.—1. The combination with a casing, a cup secured therein, a signal secured to the cup, a diaphragm in the cup, a needle carried by the diaphragm, a membrane at one end of the needle, a pin at the other end, a valve for closing the passage in the casing, a lever, pins carried by the lever, and means for operating the lever for closing the valve and engaging its pin with the pin of the needle.

2. The combination with a casing, a signal, a vibratory needle, and means adapted to be penetrated by the needle acting to introduce a fire extinguishing medium and sound the signal.

3. The combination with a casing, a cup secured thereto, a signal carried by the cup, a vibratory needle carried in the cup, and means adapted to be penetrated by the needle and controlling the sounding medium of the signal.

4. The combination with a casing, a cup secured therein, a signal secured thereto, a diaphragm in the cup, and a needle carried by the diaphragm for controlling the sounding of the signal.



5. The combination with a casing, a cup secured therein, a signal carried by the cup, a diaphragm in the casing, a needle secured to the diaphragm, and a membrane at the bottom of the cup adapted to be punctured by the needle to operate the signal.

6. The combination with a casing, a cup secured therein, a signal secured thereto, a diaphragm in the cup, a cap over the cup, a membrane at the lower end of the cup, and a vibratory needle secured to the diaphragm and passing through the cap and adapted to puncture the membrane for sounding the signal.

7. The combination with a casing, a cup secured therein, a signal secured thereto, a diaphragm in the cup, a cap over the cup, a membrane at the lower end of the cup, a vibratory needle secured to the diaphragm and adapted to puncture the membrane for sounding the signal, and means for locking the needle in inoperative relation.

8. The combination with a casing, a signal carried thereby, a vibratory needle intermediate the casing and signal, a membrane at the lower end of the needle, a valve controlling the passage between the needle and the interior of the casing, and means for simultaneously closing the valve and locking the needle.

9. The combination with a casing, a signal carried thereon, a vibratory needle intermediate the casing, a membrane at one end of the needle, a valve, a screw for operating the valve, and unitary means for operating the screw to close the valve and lock the needle in place.

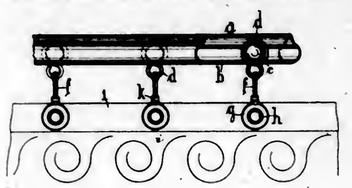
10. In combination with a casing, a cup secured therein, a signal secured to the cup, a diaphragm in the cup, a needle carried by the diaphragm, a membrane at one end of the needle, a pin at its other end, a valve for closing the passage of the casing, a lever, pins carried by the lever, a door, and a link connecting the lever to the door, said door being adapted to operate the lever through the link for closing the valve, and engaging the pins for locking the needle in position.

856,076. SUSPENSION DEVICE PARTICULARLY ADAPTED FOR CURTAINS. THOMAS LUDWIG, Barmen, Germany. Filed Sept. 7, 1906. Serial No. 333,631.

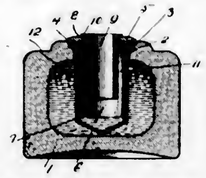
Claim.—1. A device of the character described, comprising a tube having a lower slot, balls traveling in the tube, downwardly projecting rings embracing the balls, and means forming part of the tube diametrically above the slot for guiding the rings, substantially as specified.

2. Supporting rod for longitudinal suspension devices, consisting of a tube with a longitudinal slot, a hollow bead opposite this longitudinal slot, balls in the tube, and rings over the balls passing outside through the slot and guided in the hollow bead.

3. Supporting rod for longitudinally displaceable suspension devices, consisting of two tubes with longitudinal slots, hollow beads on the opposite sides of the same, balls in the tubes and rings over the balls, the tubes mutually overlapping, and clips fast on one side and loose on the other, and being relatively displaceable.



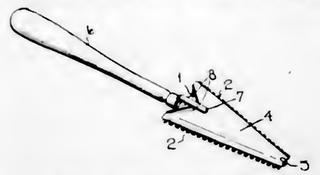
856,077. INK-WELL. HENRY MALICK, Belmont, W. Va. Filed Jan. 15, 1907. Serial No. 352,357.



Claim.—1. In an ink well the combination with a receptacle, of a dip-well extending into the receptacle having a conical lower end resting on the bottom of the receptacle and having a feed opening in its side wall above the conical end, and a tube extending into the dip-well having an annular flange on its upper end resting on the dip-well.

2. In combination with a receptacle a dip-well centrally mounted in the receptacle having a closed lower end cone-shaped in form with its apex resting upon the bottom of the receptacle, and having an opening in its side above said cone-shaped end, an annular flange on the upper end of the dip-well resting on the top of said receptacle, and a tube extending into the receptacle and having an annular flange on its upper end resting on the top of said dip-well substantially as described.

856,078. SAFETY-RAZOR. ROSS MARTIN, Fairmont, W. Va. Filed Oct. 23, 1906. Serial No. 340,239.



Claim.—1. A safety razor consisting of a guard plate, a spring overlying the guard plate and a blade lying between the spring and guard plate, said blade having a notch in its end adjacent the spring, and flanges carried by the blade positioned along the edges of the notch.

2. A safety razor consisting of a guard plate, a spring overlying the guard plate, a blade lying between the spring and guard plate, said blade having a V-shaped notch in its end adjacent the spring and flanges carried by the blade positioned along the edges of the notch, said flanges being separated at the apex of the notch.

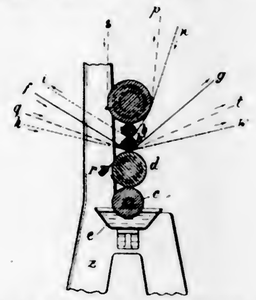
3. In a safety razor, a guard plate having a longitudinal corrugation terminating in a socket, a handle in the socket, a collar on the handle, a spring integral with the collar and adapted to overlie the guard plate, the said guard plate terminating at its outer end in a lug overlying the guard plate and a blade having a notch to receive the lug, said blade being engaged by the spring to retain the blade in engagement with the lug.

4. In a safety razor, a guard plate having a corruga-

tion terminating in a socket, a handle in the socket, a blade, and means for holding the blade to the guard plate.

5. In a safety razor, a guard plate, a handle carried thereby, a collar on the handle, a spring carried by the collar and adapted to overlie the guard plate, said plate being provided with a lug, and a blade having a notch to receive the lug, said blade being also engaged by the spring.

856,079. ROTARY PRINTING-MACHINE. EDUARD MERTENS, Gross-Lichterfelde, near Berlin, Germany. Filed Jan. 26, 1907. Serial No. 354,202.



Claim.—1. In a rotary printing machine, the combination of a frame, a rotary printing cylinder mounted thereon, a rotary press-roll, and a secondary rotary resilient press roller of smaller diameter intermediate said printing cylinder and said press-roll, for the purpose specified.

2. In a rotary printing machine, the combination of a frame, a rotary printing cylinder mounted thereon, a rotary press-roll, and a secondary rotary press roller of smaller diameter provided with a resilient cover intermediate said printing cylinder and said press-roll, for the purpose specified.

3. In a rotary printing machine, the combination of a frame, a rotary printing cylinder mounted thereon, a rotary press-roll, and a plurality of secondary rotary press rollers of smaller diameter intermediate said printing cylinder and said press-roll, for the purpose specified.

856,080. EYEGLASSES. EMIL B. MEYROWITZ, New York, N. Y. Filed Oct. 3, 1905. Serial No. 281,110.

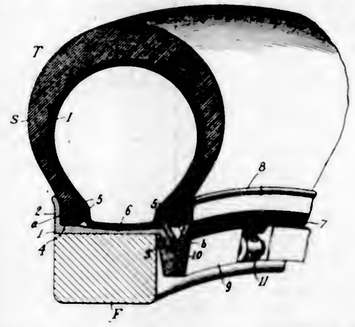


Claim.—1. A pair of eyeglasses comprising the usual lenses having holes, a spring connecting said lenses, said spring being formed with two curves or volutes at the outer extremities of the bridge portion, said curves or volutes leading downward, then forward and upward and then backward to form a loop whose sides are in a plane substantially vertical and at right angles to the plane of the lenses, said curves or volutes terminating in straps which embrace the lenses from both sides and have perforations which register with the holes of the lenses, and screws passed through said perforated straps and the holes in the lenses for securing the parts together.

2. A pair of eyeglasses comprising the usual lenses, a spring connecting said lenses and having curves or volutes therein, wings at the extremities of said spring extending perpendicularly to the planes of the lenses, said wings being notched, and a pair of guards pivoted at points on the lenses and held in rigid relation by said notched wings.

3. A pair of eyeglasses comprising the usual lenses, each having a hole, a spring connecting said lenses and having curves or volutes therein and also having straps at its extremities adapted to embrace the lenses, said spring also having notched wings extending perpendicularly to the plane of the lenses and adapted to embrace the same, bolts passed through said straps and through the holes in the lenses, and guards secured by said bolts and passed through said notched wings by which they are securely held in place.

856,081. VEHICLE-WHEEL. THOMAS MIDGLEY, Hartford, Conn. Filed Aug. 25, 1905. Serial No. 275,739.



Claim.—1. In a vehicle wheel, the combination with a rim having a lip or bead at one margin thereof, of a tire having an incompressible edge portion adapted to seat against said bead, and a channeled member adapted to receive both said bead and the incompressible edge of said tire and hold the tire in place.

2. In a vehicle wheel, the combination with a wheel rim having a bead or lip projecting inwardly from the wheel face thereof at one margin, of a tire having an incompressible edge adapted to sent against said bear or rim, and a channeled member adapted to receive said bead or lip and the edge of the tire seating thereagainst and secure them in place.

3. In a vehicle wheel, the combination with a wheel rim having a lateral portion adapted to form a seat for one margin of the wheel tire, of a tire having an incompressible and inextensible edge portion adapted to seat against said lateral portion of the wheel rim, and an expansible and contractible locking ring by the expansion of which the edge portion of the tire is secured in position against the lateral portion of the wheel rim.

4. In a vehicle wheel, the combination with a wheel rim having at one margin an inwardly and laterally inclined bead or lip, of a tire provided with an incompressible and inextensible edge portion of substantially V-shaped cross-section adapted to seat against said bead or lip, and means for wedging said edge portion into close engagement with said bead or lip.

5. In a vehicle wheel, the combination with a wheel rim presenting at one edge a lateral face adapted to serve as a seat for one edge of a tire, of a tire provided with an inextensible edge portion seated against said face, and an expansible locking ring adapted to engage said rim and the inextensible edge of the tire to secure them in proper relation.

6. In a vehicle wheel, the combination with a wheel rim presenting a lateral face serving as a tire-seating surface, of a tire having an edge adapted to seat upon said lateral face, and a channeled locking ring adapted to receive the edge of the tire and a portion of the rim and hold them in proper relation.

856,082. FOUNTAIN-PEN. MORRIS W. MOORE, Everett, Mass., assignor to Atlantis Fountain Pen Company, Everett, Mass., a Corporation of Massachusetts. Filed Feb. 23, 1907. Serial No. 358,805.

Claim.—1. A pen of the class described, having a tubular chamber of uniform diameter throughout, a pen bar slidably mounted therein, a valve on the said bar fitting said chamber, said chamber having a longitudinally disposed slot in its wall of greater length than said valve so that when the pen is retracted the slot and valve form a by-pass.



2. A pen of the class described, having a tubular chamber of uniform diameter throughout, a bar having a pen at one end and slidably mounted in said chamber, a valve on said bar in the rear of the pen and fitting said chamber, said chamber having a longitudinally disposed slot in its wall terminating near the mouth thereof and of greater length than said valve so that the slot and valve form a by-pass, when the pen is retracted.

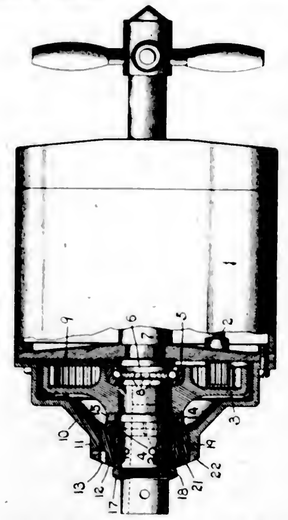
3. A pen of the class described, having a tubular chamber of uniform diameter throughout, a pen supported therein, a valve mounted in the rear of said pen and fitting said chamber, said chamber having a longitudinally disposed slot in its wall of greater length than said valve, and means for relatively positioning said chamber and said valve, so that said slot and valve form a by-pass when the pen is positioned within the chamber.

856,083. PNEUMATIC DRILL. PETER H. MURPHY, St. Louis, Mo. Filed June 16, 1905. Serial No. 265,506.

Claim.—1. A pneumatic drill comprising a main frame, a main spindle, a thrust bar in alinement with said spindle, and a bearing interposed between said spindle and said thrust bar, a threaded hub supported by said main frame, a threaded sleeve working in said hub, and a flanged bearing sleeve inside of said hub and having its flange interposed between the end of said adjusting sleeve and a shoulder on said spindle.

2. A pneumatic drill comprising a main frame, a spindle, a thrust bar in alinement with said spindle, a ball bearing interposed between said spindle and said thrust bar, a threaded hub supported by said main frame, a threaded sleeve working on said hub, and a flanged bearing sleeve inside of said hub and having its flange interposed between the end of said adjusting sleeve and a shoulder on said spindle, the adjusting sleeve having an oil hole extending therethrough and having its bore enlarged at its rear end to constitute with the flanged bearing sleeve an oil chamber, and the bearing sleeve having holes opening into said oil chamber.

3. A pneumatic drill comprising a main frame, a spindle, a thrust bar in alinement with said spindle, a ball bearing interposed between said spindle and said thrust bar, a threaded hub supported by said main frame, a threaded sleeve working in said hub, and a flanged bearing sleeve inside of said hub and having its flange interposed between the end of said adjusting sleeve and a shoulder on said spindle, the adjusting sleeve having an oil hole extending therethrough and having its inner rear edge beveled to constitute with the flanged bearing sleeve an oil chamber, and the bearing sleeve having holes opening into said oil chamber.



4. A pneumatic drill comprising a main frame, a main spindle, a thrust bar in alinement with said spindle, a ball bearing interposed between said spindle and said thrust bar, a shell mounted on the main frame and arranged to constitute a hub for said spindle, and an oil tube arranged inside of said shell and extending from a hole in the surface thereof to said ball bearing.

5. A pneumatic drill comprising a main frame, a main spindle, a thrust bar in alinement with said spindle, a rear bearing interposed between said spindle and said thrust bar, a threaded hub supported by said main frame, a threaded sleeve working in said hub and a flanged sleeve inside of said first mentioned sleeve and constituting the front bearing for said spindle, said bearing sleeve having its flange interposed between the end of said adjusting sleeve and the shoulder of said spindle.

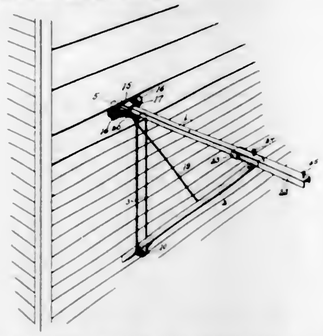
856,084. SCAFFOLD-SUPPORT. ELIJAH MCCOY and CHARLES H. H. WHEELER, Detroit, Mich.; said McCoy assignor to Nelson S. Praigg, Detroit, Mich. Filed May 28, 1906. Serial No. 319,008.

Claim.—1. In a scaffold support, the combination with a supporting member having a hook at one end and a brace member pivotally attached at one end to the supporting member near its opposite end, of a loop pivotally attached at one end to the supporting member near said hook and adapted to receive the brace member at its lower end, a hook on the brace member to engage the loop, and a brace pivotally attached to the supporting member near its hook and adapted to engage the brace member at its opposite end and force the same into engagement with the loop.

2. In a scaffold support, the combination with a supporting member, a hook on said member, a brace member pivotally attached to said member and a connecting member connecting the said members, of means adjustably supported upon the supporting member adjacent to said hook for engaging the outer surface of a wall, and a brace extending between said means and the brace member to hold said means in contact with the wall.

3. In a scaffold support, the combination with a sup-

porting member, a hook on one end of said member, and a brace member pivotally attached at one end to the opposite end of said member, of a connecting member pivotally attached at its upper end to the supporting member and detachably engaging the free end of the brace member at its lower end, an adjustable foot on the supporting member, and a brace pivotally attached at one end to said foot and adapted to engage the brace member intermediate the ends thereof at its opposite end.



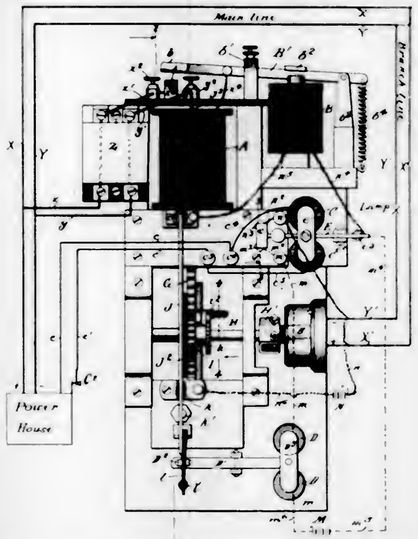
4. In a scaffold support, the combination with a supporting member, a hook on one end of said member, and a brace member pivotally attached at one end to said member near its opposite end, of a loop formed of a continuous wire pivotally attached at one end to the supporting member by passing through an eye on said member and adapted to receive the free end of the brace member, a foot adjustable longitudinally on the supporting member toward and from the hook, and a brace pivotally attached at one end to the foot and adapted to extend through the loop to engage the brace member intermediate the ends thereof at its opposite end.

5. In a scaffold support, the combination with a supporting member formed of channel iron, of a hook secured to one end of said member within the channel, a brace member pivotally attached to the supporting member at one end, a connecting member connecting the free end of the brace member with the supporting member, a foot member consisting of a sleeve portion slidable on the supporting member and a laterally extending flange on one end of said sleeve, and a brace pivotally attached at one end to the foot and adapted to engage the brace member at its opposite end.

6. In a scaffold support, the combination with a supporting member formed of channel iron, of a hook secured to one end of said member within the channel and provided with a spur on its contact face, a casting forming an ear secured within the channel of the supporting member near the opposite end thereof, a brace member formed of channel iron pivotally attached to said ear at one end, a loop pivotally attached at one end to the supporting member, a hook on the brace member to engage the loop, a block in the free end of the channel bar forming the brace member and projecting beyond the end thereof, a foot sleeved on the supporting member and provided with a spur on its contact face, a rod pivotally attached at one end to the foot and having a sharpened end, and teeth on the brace member adapted to be engaged by the sharpened end of the said rod.

856,085. ELECTRICAL CUT-OUT. PHILIP T. MCNALLY, Mandan, N. D. Filed May 25, 1906. Serial No. 318,765.

Claim.—1. An electrical cut-out, comprising an electro-mechanical device for turning a switch, an electro-magnet with local battery circuit for cutting-in said electro-mechanical device to the main line, a controlling electro-magnet with an individual circuit extending to the control station, a circuit closer placed in the cut-in magnet circuit and operated by the control magnet, and means for making one impulse of the control circuit produce one movement only of the electro-mechanical switch moving device.



2. An electrical cut-out, comprising an electro-mechanical device for turning a switch, an electro-magnet with local battery circuit for cutting-in the said electro-mechanical device to the main line, a controlling electro-magnet with an individual circuit extending to the control station, a circuit closer placed in the cut-in magnet circuit and operated by the control magnet, a detent electro magnet with local battery circuit for checking the electro-mechanical cut-in device after its first movement and circuit closer for this last named circuit also operated by the control magnet simultaneously with the cut-in magnet closer.

3. An electrical cut-out, comprising a solenoid with circuit contacts arranged in a main line lead, a rack bar attached to the plunger of the solenoid, a shaft for turning the switch and having a loose pinion thereon engaged by the rack bar and bearing a pawl, a ratchet wheel rigidly fixed to the shaft and engaged by the pawl, a cut-in electro-magnet operating the contacts of the solenoid, a local battery circuit for the cut-in magnet with circuit closer therein and a control electro-magnet arranged to adjust said last named circuit closer and having an individual circuit extending to the control station.

4. An electrical cut-out, comprising a solenoid with circuit contacts arranged in a main line lead, a rack bar attached to the plunger of the solenoid, a shaft for turning the switch and having a loose pinion thereon engaged by the rack bar and bearing a pawl, a ratchet wheel rigidly fixed to the shaft and engaged by the pawl, a cut-in electro-magnet operating the contacts of the solenoid, a local battery circuit for the cut-in magnet with circuit closer therein, a circuit breaking switch for the cut-in circuit opened by the switch turning devices, a detent circuit with an electro-magnet and stop device for holding open the circuit breaker of the cut-in magnet after its initial movement, and a control magnet and circuit extended to the control station, said control magnet being arranged to close the circuit closers of both the cut-in magnet and the detent magnet.

5. An electrical cut-out, comprising a solenoid with circuit contacts arranged in a main line lead, a rack bar attached to the plunger of the solenoid, a shaft for turning the switch and having a loose pinion thereon meshing with the rack and provided with a cam and a pawl, a ratchet wheel rigidly attached to the shaft and engaged by the pawl, a pivoted bar arranged in the plane of the cam and moved laterally by the same and forming a part of the circuit breaker, a cut-in electro-magnet for the solenoid having its circuit completed through said bar and circuit breaker, and a control magnet operating a circuit closer of the cut-in circuit, and means for holding the pivoted bar circuit breaker in an open position after its initial movement.

6. An electrical cut-out, comprising a solenoid with circuit contacts arranged in the main line lead, a rack bar attached to the plunger of the solenoid, a shaft for turning the switch and having a loose pinion thereon meshing with the rack and provided with a cam and a pawl, a ratchet wheel rigidly attached to the shaft and engaged by the pawl, a pivoted bar arranged in the plane of the cam and moved laterally by the same and forming a part of a circuit breaker, a cut-in electro-magnet for the solenoid having its circuit completed through said bar and circuit breaker, a control magnet and circuit operating a circuit closer of the cut-in circuit, a detent magnet and circuit having a circuit closer also operated by the control magnet and an armature lever and spring for said detent magnet, said lever being arranged to hold the circuit breaking bar of the cut-in magnet in its open position whenever the detent magnet clasps its armature.

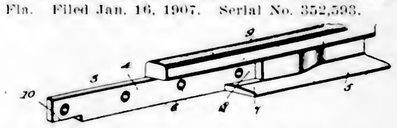
7. An electrical cut-out, comprising a main line with a lead for the cut-out device and a branch line for the lamps to be operated, a solenoid with circuit contacts arranged in said lead, a rack bar attached to the plunger of the solenoid, a shaft with a clasp on its end engaging the snap switch of the branch circuit, a loose pinion on said shaft meshing with the rack and provided with a cam and a pawl, a ratchet wheel rigidly attached to the shaft and engaged by the pawl, a pivoted bar arranged in the plane of the cam and moved laterally by the same and forming a part of a circuit breaker, a cut-in electro-magnet for the solenoid having its circuit completed through said bar and circuit breaker, a control magnet and circuit operating a circuit closer of the cut-in circuit, a detent magnet and circuit having a circuit closer operated by the control magnet and an armature lever and spring for said detent magnet, said lever being arranged to hold the circuit breaking bar in an open position whenever the detent magnet clasps its armature.

856,086. RAIL-JOINT. CHARLES L. MCVOY, Pensacola, Fla. Filed Jan. 16, 1907. Serial No. 352,592.



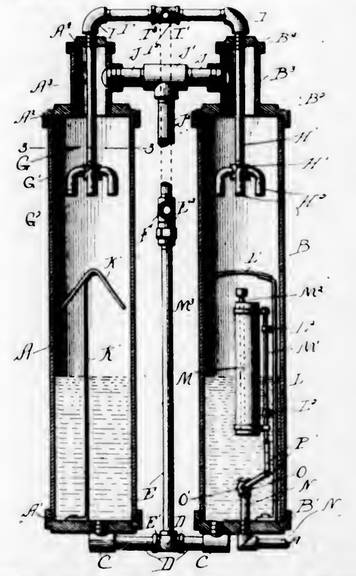
Claim.—A rail provided at one end with a tongue, the inner face of which lies in a vertical plane extending longitudinally through the center of the tread, the vertical web and a portion of the flanged base; said tongue terminating in an angular-shaped member inclining downwardly from a position at the bottom of said tread to a position in alinement with the top of said flanged base; said tread portion being cut away above and said flanged base being cut away below said angular shaped member; and the cut away portion forming said tongue terminating inwardly in an angular recess formed in the vertical web of said rail above said base flange, the said rail being adapted to coöperate with a similarly formed reversed rail to make a rigid scarf joint, substantially as described.

856,087. RAIL-JOINT. CHARLES L. MCVOY, Pensacola, Fla. Filed Jan. 16, 1907. Serial No. 352,593.



Claim.—A rail provided at one end with a tongue, the inner face of which lies in a vertical plane extending longitudinally through the center of the vertical web and a portion of the flanged base of the rail; the tread portion of said rail being cut away above the end portion of said tongue and the lower outer edge of said tongue being notched out above the line of the top of the flange; and the cutaway portion of said vertical web forming said tongue terminating inwardly in a rectangular recess formed in the vertical web of said rail above said base flange, the said rail being adapted to coöperate with a similarly formed reversed rail to make a rigid scarf joint, substantially as described.

856,088. WATER AND GAS SEPARATOR. ALBERT T. NEWMAN, Greeley, Kans., assignor of one-half to Ernest McClure, Greeley, Kans. Filed Aug. 28, 1906. Serial No. 332,366.



Claim.—1. The combination with a pair of tanks connected together by pipes at their top and bottom, of an inlet pipe connected to said pipes, outlet pipes connected to said tanks and a discharge pipe connected to one of said tanks, for the purpose described.

2. The combination with a pair of tanks, of inlet pipes connected to the top and bottom of said tanks, and an outlet pipe connected to the top of said tanks.

3. The combination with a pair of tanks, of inlet pipes connected to the top and bottom of said tanks, outlet pipes connected to the top of said tanks, a discharge pipe secured in the bottom of one of said tanks provided with a valve and a float connected to said valve, for the purpose described.

4. The combination with a pair of tanks, of pipes connecting the top and bottom of said tank, an inlet pipe connected to said pipes, outlet pipes connected to said tanks, and a discharge pipe provided with a valve arranged in one of said tanks, for the purpose described.

5. The combination with a pair of tanks, connected together at their lower ends, of pipes extending down into said tanks provided with distributers, pipes connected to said pipes and the connecting pipes, an inlet pipe connected to said pipes, and outlet pipes connected to said tanks, for the purpose described.

6. In a device of the kind described, the combination with a pair of tanks, of inlet pipes connected to the top and bottom of said tanks, reflectors arranged in said tanks, outlet pipes connected to said tanks, and a valve controlled discharge pipe, connected to one of said tanks, for the purpose described.

7. In a device of the kind described, the combination with a pair of tanks, of inlet pipes connected to said tanks at their top and bottom, distributers connected to the upper inlet pipes, and reflectors arranged under said distributers, for the purpose described.

8. In a device of the kind described, the combination with a pair of tanks, of inlet pipes connected to the top and bottom of said tanks, distributers connected to the upper inlet pipes in said tanks, reflectors arranged in said tanks under said distributers, outlet pipes connected to said tanks, and a discharge pipe connected to one of said tanks provided with a float operated valve, for the purpose described.

9. In a device of the kind described, the combination with a pair of tanks, provided with reduced upper portions, of inlet pipes connected to the bottom of said tanks, inlet pipes connected to said reduced portion having distributers on their ends, outlet pipes connected to the reduced portion, reflectors arranged in said tanks under said distributers, a discharge pipe connected to one of said tanks, provided with a valve, and a float connected to said valve, for the purpose set forth.

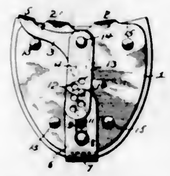
10. In a device of the kind described, the combination with a pair of tanks provided with reduced upper portions, of pipes connecting the lower ends of said tanks, pipes extending down into said tank through the tops of the reduced portions, and inlet pipes connected to said pipes and to the pipes connecting the lower end of the tanks, outlet pipes connected to the reduced portion of said tanks, and a valve controlled discharge-pipe connected to one of said tanks, for the purpose described.

11. In a device of the kind described, the combination with a pair of tanks of inlet pipes connected to the top and bottom of said tanks, outlet pipes connected to the top of the said tanks, a discharge pipe extending up into one of said tanks, provided with a valve, and a float slidably mounted in said tank connected to the stem of said valve by links, for the purpose described.

12. In a device of the kind described, the combination with a pair of tanks, of inlet pipes connected to the top and bottom of said tanks, distributers connected to the upper inlet pipes, brackets mounted in said tanks provided with deflectors, apertured lugs secured to one of said brackets, a rod slidably mounted in said lugs carrying a float, a valve controlled discharge pipe connected to said tank and links connecting the stem of said valve to said rod for the purpose described.

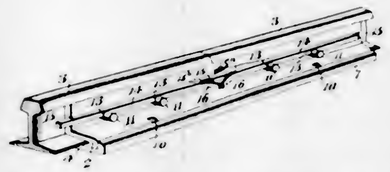
13. In a device of the kind described, the combination with a pair of tanks, of inlet pipes connected to the top and bottom of said tanks, distributers connected to the upper inlet pipes, brackets carrying deflectors arranged under said distributers in said tanks, outlet pipes connected to said tanks, a discharge pipe connected to one of said tanks provided with a valve, a float slidably mounted on one of said brackets and links connecting said float to the stem of the valve of the discharge pipe, for the purpose described.

856,089. ICE-CREEPER. OLOF A. NORLUND, Williamsport, Pa. Filed Jan. 14, 1905. Serial No. 241,083.



Claim.—In an ice creeper, the combination of a plate having a fixed prong at its forward edge, a movable bar mounted on the plate and having a prong at its rear end to engage the rear end of the heel, a lever pivoted to the plate, a link connecting said lever with the movable plate, said lever projecting from its connection with the plate forwardly beyond the front edge of said plate, and an upward projection on the free end of said lever permanently located forwardly of the forward edge of the plate, said upward projection adapted to lie against the front wall of a heel when the device is secured to the latter the direction of locking movement being from front to rear of the heel, whereby engagement of any obstruction with said upward projection tends to insure the retention of the device in locked position.

856,090. RAIL-JOINT. JOHN R. NORRIS, Savannah, Ga. Filed Jan. 25, 1907. Serial No. 354,097.



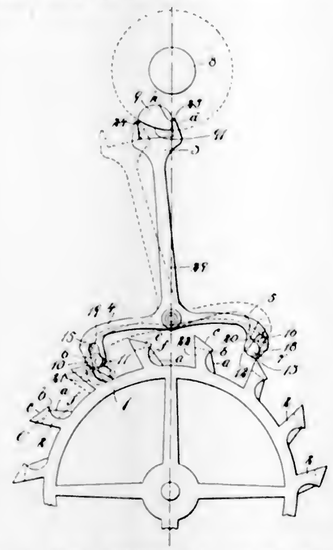
Claim.—1. In a rail joint, the combination with two rail-engaging members, of transverse fastening devices piercing the said members and provided with recesses, and keys extending longitudinally of the rail joint and interlocked with the recesses of the fastening devices, said keys being provided at their inner ends with resilient portions engaging each other.

2. In a rail joint, the combination with two rail-engaging members, one of which is provided with a groove having upper and lower oppositely inclined extensions, of transverse fastening devices piercing the said members and provided with recesses, and keys slidable in the said groove and interlocked with the recesses of the fastening devices, said keys being provided at their inner ends with resilient portions engaging each other, adapted to be pressed into the extensions of the groove to permit the keys to pass each other.

3. In a rail joint, the combination of two rail-engaging members, fastening devices piercing the members and having alined recesses, and tapering keys extending longitudinally of the rail joint and engaging the notches of the fastening devices, said keys being provided at their inner ends with reduced resilient arms curved outwardly and engaging each other for holding the keys in engagement with the fastening devices.

4. In a rail joint, the combination with two rail-engaging members, of transverse fastening devices piercing the said members and provided with recesses, and outwardly tapered keys extending longitudinally of the rail joint and interlocked with the recesses of the fastening devices, the inner ends of the keys being in locking engagement with each other and being movable out of such engagement to permit the removal of the keys.

856,091. ESCAPEMENT. OLOF OHLSON, Newton, Mass., assignor, by mesne assignments, to Waltham Watch Company, a Corporation of Massachusetts. Filed Apr. 24, 1905. Serial No. 257,154.



Claim.—1. In an escapement, an escape wheel having teeth formed each with an upwardly and rearwardly inclined face, and a forwardly inclined holding face, the first-named face being laterally displaced from the holding face, a pallet having arms and jewels carried by said arms to co-operate with said faces, each of said jewels having a plane surface located and inclined so as to lock with the holding face.

2. In an escapement, an escape wheel having teeth formed each with an upwardly and rearwardly inclined face, and a forwardly inclined holding face, the first-named face being laterally displaced from the holding face, and a pallet having arms each provided with portions arranged to engage with said faces and adapted to bear against said first-named face and force said escape wheel backward.

3. An escapement comprising a toothed escape wheel and a pallet having an engaging portion co-operating therewith, each tooth having a face inclined rearwardly to its line of motion at such an angle that pressure thereon by the engaging portion of the pallet will force the wheel backward, and having a forwardly inclined face for engaging and holding the pallet, said faces being located on opposite sides of a plane parallel to a side face of the tooth.

4. An escapement comprising a toothed escape wheel and a pallet having an engaging portion co-operating therewith, each tooth having a face inclined rearwardly to its line of motion at such an angle that pressure thereon by the engaging portion of the pallet will force the wheel backward, and having a forwardly inclined face adjacent the end and at one side of said rearwardly inclined face for engaging and holding the pallet.

5. A pallet for an escapement having an arm, a pair of jaws on said arm, one jaw of said pair being rigid and the other being yielding and resilient and provided with an offset inclined relatively to the rigid jaw so as to produce a space of less width between the jaws adjacent their ends than at a slight distance therefrom; and a member adapted to engage an escape-wheel grasped between said jaws and retained between them by said offset.

6. A pallet for an escapement having a pair of arms, a rigid and a yielding jaw mounted on each of said arms, the rigid jaw of one arm being further than the yielding jaw away from the pivot of the pallet, and the rigid jaw of the other arm being nearer than the corresponding yielding jaw to the pivot, and escape-wheel-engaging members grasped between said jaws.

7. An escapement comprising a pallet having two laterally-extending arms, an escape-wheel provided with teeth having locking portions, a pair of jaws, one rigid and one yielding, on each of said arms, and jewels grasped and held by said jaws, each jewel having a locking side adapted to engage with the locking portions of the escape-wheel teeth, and the rigid jaw of each pair being on the locking side of the jewel held thereby.

8. A pallet for an escapement having an arm, a pair of jaws on said arm, one jaw of said pair being yielding and resilient and the other rigid, the rigid arm having a plane jewel-engaging surface and the yielding jaw a recess, and a jewel adapted to be held between said jaws and having on one side a flat surface and on the other inclined surfaces for engagement with the plane surface and the recess of said jaws respectively.

9. A pallet for an escapement constructed with faces arranged for accurately positioning its jewels angularly, and with integral holding projections located to engage and hold the jewels against said faces and retain the portions of the jewels which engage the escape wheel in a definite, predetermined position with respect to their distance from said wheel.

10. A pallet for an escapement constructed with a surface having a predetermined definite inclination for accurately positioning angularly the locking face of an escape-wheel-engaging member, and with an integral resilient holding projection adjacent said surface and out of parallelism therewith located and arranged to receive said member between itself and the surface, and, by reason of its non-parallelism therewith, to place and retain said member in a fixed, predetermined position relatively to the end of said surface.

11. A pallet for an escapement having an arm and jewel-holding jaws thereon, one jaw being rigid and having a surface formed at a predetermined angle with the arm and adapted to engage the jewel and position angularly the holding face thereof, and a co-operating resilient jaw adapted to hold the jewel against the rigid jaw and having provisions for positioning the jewel bodily by its engagement therewith.

12. A pallet for an escapement having an arm and jewel-holding jaws thereon, one jaw being rigid and having a surface formed at a predetermined angle with the arm and adapted to engage the jewel and position angularly the holding face thereof, and a co-operating resilient jaw adapted to hold the jewel against the rigid jaw and having a notch arranged to receive a portion of the jewel and determine the position of the jewel as a whole.

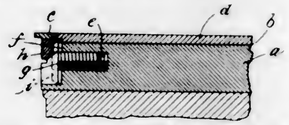
13. A pallet for an escapement having arms, jaws arranged on each arm in pairs side by side and separated by a width as great as that of an escape-wheel tooth, one jaw of each pair being resilient and inclined between its ends convergently toward the opposing jaw; and an escape-wheel-engaging member extending across such space and having its ends grasped by said jaws.

14. A pallet for an escapement having on one of its arms jaws arranged in pairs side by side and separated by a space as wide as the thickness of an escape-wheel tooth, one jaw of each pair having a plane surface and the other a notch, and a jewel having a flat surface on one side and inclined surfaces on the other side extended across such space and grasped at its ends by said jaws, its flat side bearing against the plane surfaces and its inclined surfaces being engaged by the notches of the respective jaws.

15. A pallet comprising a jewel of generally cylindrical form having a flat surface parallel with its axis, and relatively yieldable jaws embracing the jewel, one of the jaws having a flat surface fitting against the flat surface of the jewel.

16. An escape wheel having its teeth formed on the forward side with two surfaces inclined to each other and located on different sides of a plane perpendicular to the axis of the wheel.

856,092. DIAL-HOLDER. OLOF OHLSON, Newton, Mass., assignor, by mesne assignments, to Waltham Watch Company, a Corporation of Massachusetts. Filed Jan. 9, 1906. Serial No. 295,237.



Claim.—1. The combination with a plate for a time-piece having a flat dial-supporting surface and a fixed dial-positioning rim rising from said plate around the supporting surface, of a dial bearing against said surface, and holding screws arranged at intervals to project through said rim and engage the edges of the dial, the rim having an opening or openings through which the screw-head may project.

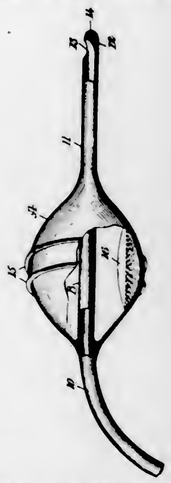
2. The combination of a plate for a time-piece having a circular recess in its outer face and holes in its sides opening partially into said recess, a dial fitting in said recess, and screws set in said holes, the heads of the screws partially overlapping and bearing against the edges of the dial.

3. The combination of a plate for a time-piece having a recess in its outer side, a dial fitting in said recess, and screws set in the sides of the plate, the heads of said screws bearing against the edges of the dial and being formed with a sharp annular edge to bite into the dial and hold the same with a positive grip.

4. The combination of a plate for a time-piece having a depression in the outer face to receive a dial, and a screw set into the side or edge of the plate with its head projecting somewhat beyond the bottom of said depression, the screw head having a sharp-edged annular flange to indent and positively hold a dial placed in said depression.

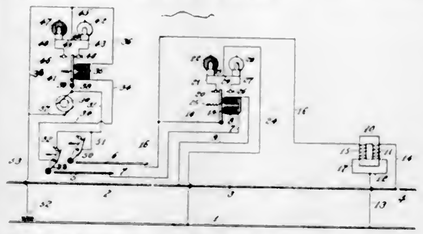
5. The combination of a plate for a time-piece, and a screw set into the side or edge of the plate with its head projecting somewhat beyond the bottom of said depression, the screw-head being annularly recessed on the side adjacent the shank to form a sharp-edged peripheral flange for engaging the edge of a dial placed in the recess.

856,093. SYRINGE-NOZZLE. HARLON F. ONG, Portland, Oreg. Filed Apr. 3, 1906. Serial No. 309,598.



Claim.—A syringe point having a catheter extremity adapted to enter a cavity, a tube forming a continuation of the catheter extremity, a bulb encircling and constituting an integral portion of the tube, the cavity of said bulb being closed and having no communication with the tube opening, said cavity containing gas and liquid for the purpose set forth.

856,094. ELECTRICAL SIGNALING DEVICE FOR RAILROADS. EDWARD L. ORCUTT, New York, N. Y., assignor to Railway Safety Signal Company, a Corporation of New Jersey. Filed Oct. 13, 1905. Renewed Sept. 1, 1906. Serial No. 332,996.



Claim.—1. In an electric signaling system, the combination of a track circuit including a transformer, both rails of the track, a magnet and a track contact, said magnet and track contact being arranged in series; a supply circuit for the transformer; a generator for the supply circuit; a track signal controlled by said magnet of the track circuit; a signal on a train; a magnet on said train controlling the train signal; contacts on said train connected with said magnet on the train and arranged to make connection with said track contact and one rail of the track.

2. In an electric signaling system, the combination of a track circuit including a transformer, both rails of the track, a magnet and a track contact, said magnet and track contact being arranged in series; a supply circuit for the transformer; a generator for the supply circuit a plurality of track signals controlled by said magnet of the track circuit; a signal on a train; a magnet on said train controlling the train signal; contacts on said train connected with said magnet on the train and arranged to make connection with said track contact and one rail of the track.

3. In an electric signaling system, the combination of a track circuit including a transformer, both rails of the track, a magnet and a track contact, said magnet and track contact being arranged in series; a supply circuit for the transformer; a generator on a train for the supply circuit; a track signal controlled by said magnet of the track circuit; a signal on said train; a magnet on said train controlling the train signal; contacts on said train connected with said magnet on the train and arranged to make connection with said track contact and one rail of the track.

4. In an electric signaling system, the combination of a track circuit including a transformer, both rails of the track, a magnet and a track contact, said magnet and track contact being arranged in series; a supply circuit for the transformer; a generator on a train for the supply circuit; a plurality of track signals controlled by said magnet of the track circuit; a signal on said train; a magnet on said train controlling the train signal; contacts on said train connected with said magnet on the train and arranged to make connection with said track contact and one rail of the track.

5. In an electric signaling system, the combination of a track circuit including a transformer, both rails of the track, a magnet and a track contact, said magnet and track contact being arranged in series; a supply circuit for the transformer; a generator for the supply circuit; a track signal controlled by said magnet of the track circuit and operated by the current in the supply circuit; a signal on a train; a magnet on said train controlling the train signal; contacts on said train connected with said magnet on the train and arranged to make connection with said track contact and one rail of the track.

6. In an electric signaling system, the combination of a track circuit including a transformer, both rails of the track, a magnet and a track contact, said magnet and track contact being arranged in series; a supply circuit for the transformer; a generator for the supply circuit; a plurality of track signals controlled by said magnet of the track circuit and operated by the current in the supply circuit; a signal on a train; a magnet on said train controlling the train signal; contacts on said train connected with said magnet on the train and arranged to make connection with said track contact and one rail of the track.

7. In an electric signaling system, the combination of a track circuit including a transformer, both rails of the track, a magnet and a track contact, said magnet and track contact being arranged in series; a supply circuit for the transformer; a generator on a train for the supply circuit; a track signal controlled by said magnet of the track circuit and operated by the current in the supply circuit; a signal on said train; a magnet on said train controlling the train signal; contacts on said train connected with said magnet on the train and arranged to make connection with said track contact and one rail of the track.

8. In an electric signaling system, the combination of a track circuit including a transformer, both rails of the track, a magnet and a track contact, said magnet and track contact being arranged in series; a supply circuit for the transformer; a generator on a train for the supply circuit; a plurality of track signals controlled by said magnet of the track circuit and operated by the current in the supply circuit; a signal on said train; a magnet on said train controlling the train signal; contacts on said train connected with said magnet on the train and arranged to make connection with said track contact and one rail of the track.

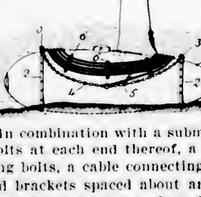
9. In an electric signaling system for railways, the combination of a track circuit including a transformer, a track magnet, both rails of the track, and a track contact, said track magnet and track contact being arranged in series; a track signal consisting of electric lamps controlled by said track magnet; a signal on a train; a magnet on said train controlling said train signal; a supply circuit for the transformer; a generator for the supply circuit; contacts on said train connected with said train magnet and arranged to make connection with said track contact and one rail of the track, whereby said track magnet and said train magnet will be connected in series for controlling the track and train signals; and a brake applying device on said train controlled by said track circuit.

10. In an electric signaling system for railways, the combination of a track circuit including a transformer, a track magnet, both rails of the track, and a track contact, said track magnet and track contact being arranged in series; a signal on a train; a brake applying device on said train; a magnet on said train controlling said train signal and brake applying device; a supply circuit for the transformer; a generator on said train for the supply circuit; a track signal operated by the supply circuit and controlled by said track magnet; contacts on said train connected with said train magnet and arranged to make connection with said track contact and one rail of the track, whereby said track magnet and said train magnet will be connected in series for controlling said track and train signals.

856,095. ELECTRIC SEMAPHORE. EDWARD L. ORCUTT, New York, N. Y., assignor to Railway Safety Signal Company, a Corporation of New Jersey. Filed Sept. 1, 1906. Serial No. 333,006.

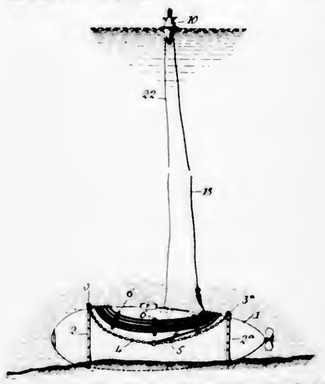
Claim.—1. In a semaphore, a standard or support, a plurality of permanently fixed arms mounted thereon and extending at different signaling positions, lamps giving different signaling colors on said arms corresponding in color to the signaling positions of the arms, an independent electric signal circuit entering each arm and containing the lamps on the arm it enters, a source of supply of electricity, and a switching device to switch said supply of electricity into any one of said signal circuits to light the lamps contained therein.

2. In a semaphore, a standard or support, a plurality of permanently fixed arms mounted thereon and extending at different signaling positions, lamps giving different signaling colors on said arms corresponding in color to the position of the arms upon which they are mounted, an independent electric signal circuit for each arm entering the arm and containing the lamps thereon, a source of supply of electricity, an electrically operated switch to switch the supply of electricity into the signal circuit on any desired arm of the semaphore, a controlling circuit controlling the electrically operated switch, and a switch to control said controlling circuit.



3. In a semaphore, a standard or support, a fixed arm mounted thereon and extending in a position to indicate danger, lamps giving a color indicating danger mounted on said arm, a fixed arm mounted on the support and extending in a position to indicate safety, lamps giving a color to indicate safety mounted on this latter arm, a signal circuit entering each of said arms, and containing the lamps in the arm it enters, a source of supply of electricity, an electrically operated switch to control the supply of electricity to said signal circuit, and a controlling device to control said switch, combined with a fixed arm mounted on said standard and extending in a position to indicate the necessity of caution, lamps giving color to indicate the necessity for caution mounted on this latter arm, a signal circuit entering this latter arm and containing the lamps thereon, an electrically operated switch controlling this latter signal circuit and cutting off the supply of electricity to the other signal circuits, and a controlling device to control this latter switch.

856,096. MEANS FOR RECOVERING SUBMARINE BOATS. EUGENE OSWALD, U. S. Navy. Filed May 18, 1906. Serial No. 317,478.



Claim.—1. In combination with a submarine boat, bands having ring bolts at each end thereof, a chain bridle connecting the ring bolts, a cable connecting the bridle at its center, notched brackets spaced about and secured to the deck of the boat, said cable being adapted to be loosely engaged in the notches of said brackets, a receptacle in the boat, a buoy seated over the receptacle, a line connecting the buoy and cable adapted to be coiled in the receptacle, a screw passing through the receptacle and engaged in the buoy for releasing it from its seat, telephone connections

and an electric light carried by the buoy, and wires connecting them carried in a recess in the boat and passing therein.

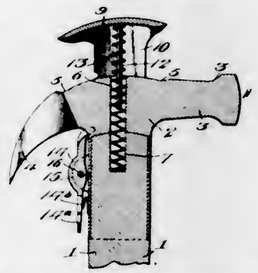
2. In combination with a submarine boat, a buoy adapted to be released therefrom, a line connected to the buoy, a cable connected to the line, a bridle connecting the cable with the submarine, and means on the submarine for carrying the line and cable.

3. In combination with a submarine boat, a buoy adapted to be released therefrom to rise to the surface of the water, an electric light and telephone connections carried by the buoy, wiring for connecting the light and telephone connections to the interior of the submarine, a line connected to the buoy, a cable connected to the line, means connecting the cable to the submarine, and means for holding the cable in coiled relation to the deck of the submarine, for the purpose described.

4. In combination with a submarine boat, a receptacle therein, a buoy seated over the receptacle, means operable from the interior of the submarine for releasing the buoy from the sent, a line connecting the buoy adapted to be stowed in the recepatcle, and brackets spaced about the couning tower of the submarine having notches therein, and a cable connecting the line with the submarine and coiled about in the notches of the brackets, for the purpose described.

5. In combination with a submarine boat, a bridle attached thereto, a buoy seated on the boat and adapted to be released therefrom, and means connecting the buoy and bridle together.

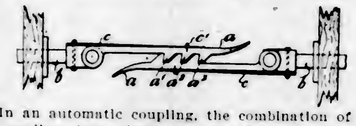
856,097. CLAW-HAMMER. OLE E. PALMER, Osgood, N. D. Filed Nov. 21, 1905. Renewed May 6, 1907. Serial No. 372,032.



Claim.—The combination with a handle provided with a socket in the upper end thereof, a hammer head secured to the handle and having its upper edge recessed and its opposite side edges provided with under-cut grooves opening out through the upper edge thereof, said hammer head being provided with an opening extending transversely therethrough and communicating with the socket in the handle, a curved fulcrum member adapted to occupy the recess when not in use, notched arms depending from the fulcrum member and having beveled edges, a rod depending from the fulcrum member for engagement in the opening and the socket, a spring located in the opening and the socket and surrounding the rod, ears formed integrally with the hammer head, a latch finger pivotally secured between the ears and having its upper end bifurcated to position its notch engaging portions for engagement with the notches in the arms of the fulcrum member, and a spring interposed between the hammer head and latch finger to normally retain the engaging portions of the latch finger in engagement with the notches of the arms.

856,098. AUTOMATIC COUPLING FOR RAILWAY-VEHICLES. REGINALD B. PARSONS, Hull, England. Filed Jan. 18, 1907. Serial No. 352,989.

Claim.—1. In an automatic coupling, the combination of draw bars provided with vertical pivot pins, coupling plates pivotally mounted on said pins so as to swing in a horizontal plane, said coupling plates being each provided with rack teeth, and springs secured to said coupling plates for returning them to their normal position after displacement in either direction, substantially as described.



2. In an automatic coupling, the combination of draw bars, coupling plates pivotally mounted on said draw bars, said coupling plates being provided with rack teeth and with projecting ribs in the rear of said rack teeth, and springs for restoring said coupling plates to their normal positions after they have been displaced, substantially as described.

3. In an automatic coupling, the combination of draw bars, coupling plates pivotally attached thereto, said coupling plates being provided with rack teeth and with projecting ribs located in the rear of said rack teeth, a spring attached to each of said draw bars and to one of said coupling plates by a slot and stud connection, said springs acting to restore said coupling plates to their normal position, and means for limiting the displacement of said coupling plates, substantially as described.

856,099. CABLE-HANGER. CHARLES L. PEIRCE, Jr., Chicago, Ill., assignor to The W. G. Nagel Electric Company, Toledo, Ohio, a Corporation of Ohio. Filed Sept. 13, 1906. Serial No. 334,379.



Claim.—1. A cable-hanger consisting of a hook member formed at its ends with coöperating securing means, and a loop member for engaging said securing means, said loop member having an opening through which one of its ends is passed preparatory to being engaged to the hook.

2. A cable-hanger consisting of a hook having coöperating securing means on its ends, and a flat flexible suspender having an opening intermediate its ends through which one end is passed in forming a loop and its ends engaged to the securing means on the hook.

3. A cable-hanger consisting of a hook having coöperating securing means on its ends, and a stamped flexible loop member having a portion near one end thereof broadened and provided with an opening for receiving the opposite end as it is passed around the supported cable said opening falling beneath the cable.

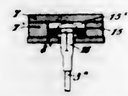
4. A cable-hanger consisting of a clip, and a flat pliant suspender for passing entirely around the cable and having an expanded slit which falls substantially on the under side of the cable and through which one end of the suspender passes, the ends of the suspender being secured to the clip.

5. A cable-hanger consisting of a stamped metal saddle member having tongues pressed from its ends to form coöperating securing means, and a pliant cable engaging member attached to said securing means.

6. A cable-hanger consisting of a stamped metal hook having its ends stepped and securing tongues pressed therefrom, and a suspender engaging said tongues and prevented from accidental displacement therefrom by the shoulders formed by said stepped portions.

856,100. ELASTIC WHEEL. GEORGES PERRUCHON, Epernay, France. Filed Feb. 27, 1905. Serial No. 247,616.

Claim.—A wheel of the class set forth having a resilient felly, a hub structure, normally straight spokes connecting the hub structure and felly, each spoke having a terminally disposed flanged head and carrying disks, and elastic washers interposed between the disks and the felloes and adapted to distend the said spokes after the pressure has been removed.



856,101. ARTIFICIAL FUEL. BENJAMIN H. REED, Chicago, Ill., assignor of one-half to John H. Roy, Chicago, Ill. Filed June 4, 1906. Serial No. 320,056.

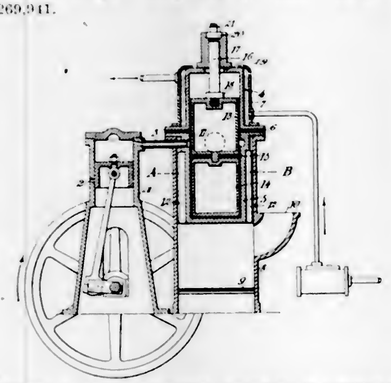
Claim.—1. An artificial fuel comprising pulverized coal, kaolin and a binder substance combined in substantially the proportions set forth and molded to form.

2. An artificial fuel comprising pulverized coal, kaolin, a binder substance and crude petroleum combined in substantially the proportions herein set forth and molded to form.

3. An artificial fuel consisting of pulverized coal, kaolin, a binder substance, crude petroleum oil and sodium chlorid, combined in substantially the proportions herein set forth and molded to form.

4. An artificial fuel comprising the following ingredients mixed and molded to form, to wit.—pulverized coal 85½%, kaolin 10%, rye flour 2%, crude petroleum oil ½% and sodium chlorid 2%.

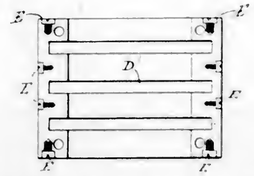
856,102. HOT-AIR ENGINE. OSSIAN RINGBOM, Borgå, Russia, assignor to Anders Gustaf Adlercreutz, Skuru, Finland, Russia. Filed July 17, 1905. Serial No. 269,941.



Claim.—1. A hot air engine, including, in combination, an air displacer and a working piston disconnected mechanically from each other, a pressure generating chamber in which said displacer works, a working cylinder in which said piston travels, and a conduit for transmitting the excess of pressure in the generator to the working piston to drive the same, said working cylinder being provided with an orifice at a suitable height such that air is sucked in through said orifice at the end of the driven movement of the working piston and said piston during its return stroke serves to compress air for the generator.

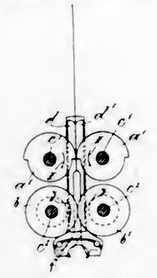
2. A hot air engine, including, in combination, an air displacer and a working piston disconnected mechanically from each other, a cylindrical pressure generating chamber in which said displacer works, a working cylinder in which said piston travels, and a conduit for transmitting the excess of pressure in the generator to the working piston to drive the same, said displacer comprising a piston fitting loosely in the cylindrical pressure generator and guided by a rod 16 extending outside of said generator, and a nut 21 on said rod for determining the height of the lowest position of the displacer.

856,103. METALLIC PACKING. GEORGE D. ROLLINS, Philadelphia, Pa. Filed Sept. 10, 1906. Serial No. 333,925.



Claim.—In combination with the two sections of the casing of a metallic packing, cylindrical headed screws threaded into one or both sections of the casing, the heads of said screws seated in counterbores formed in both sections of the casing and engaging said sections, as and for the purpose set forth.

856,104. POST-STAMP-VENDING APPARATUS. MAX SIELAFF, Berlin, Germany. Original application filed Aug. 22, 1904. Serial No. 221,763. Divided and this application filed Aug. 13, 1906. Serial No. 330,509.



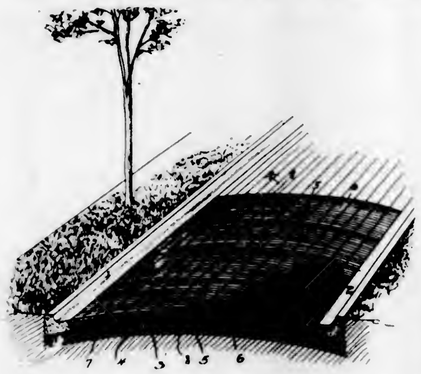
Claim.—1. Vending apparatus for stamps, tickets and other paper strips which are to be separated, consisting of a primary feeding device for feeding the paper strip, a second feeding device, to which the paper strip is delivered by said primary feeding device, both the feeding devices coöperated and being constructed for separating part of the paper strip, substantially and for the purpose as described.

2. Vending apparatus for stamps, tickets and other paper strips which are to be separated, consisting of four rollers a' a^2 for feeding the paper strip and provided with recesses, cylindrical rollers b b' to which the paper strip is delivered, four rollers g' g^2 having peripheral recesses and rotating in the direction opposite the rollers a' a^2, substantially as described.

3. Vending apparatus for stamps, tickets and other paper strips, which are to be separated, consisting of four rollers $a'a^2$ having recesses, axles c' upon which the rollers a' a^2 are fixedly mounted, cylindrical rollers b b' to which the paper strip is delivered by the aforementioned rollers, rollers g' g^2 having peripheral recesses and loosely mounted upon the axles c' and rotating in a direction opposite the roller a' a^2 and tongs for leading and adjusting the paper strip.

4. The tongs having an up and down motion and consisting of the jaws d d', the bearing h^3 provided with a passage h^4 for the paper strip, arms i i', axles carrying the jaws and a spring holding resiliently the jaws in contact with each other, in combination with stops for limiting the up and down-motion of the tongs.

856,105. PAVEMENT AND METHOD OF MAKING THE SAME. WILLIAM J. SINEK and RUDOLPH S. BLOME, Chicago, Ill. Filed Nov. 17, 1906. Serial No. 343,894.



Claim.—1. A pavement having a facing or top wearing surface composed of cement and crushed stone from which all dust and fine particles have been eliminated, substantially as described.

2. A pavement having a facing or top wearing surface composed of cement and crushed granite from which all dust and fine particles have been eliminated, substantially as described.

3. A pavement having a facing or top wearing surface composed of cement and crushed granite, the latter consisting of approximately 60% of ¾ inch size, 20% of ½ inch size, and 20% of ¼ inch size, said crushed granite being free from all dust and particles smaller than ¼ inch caliber, substantially as described.

4. A pavement consisting of a layer of concrete and a superposed top wearing surface composed of cement and crushed granite from which all dust and extremely small particles have been eliminated, substantially as described.

5. A pavement consisting of a suitable foundation, an intermediate layer of concrete, and a top wearing surface composed of cement and crushed granite from which all dust and extremely small particles have been eliminated, substantially as described.

6. A pavement consisting of a foundation of macadam, an intermediate layer of concrete, and a top wearing surface composed of cement and crushed granite from which all dust and extremely small particles have been eliminated, substantially as described.

7. A pavement made in sections to allow for expansion and contraction due to changes of temperature, and having a suitable foundation, a layer of concrete above said foundation, and a face or wearing surface composed of cement and crushed granite from which all dust has been screened or otherwise removed, substantially as described.

8. A pavement composed of sections to allow for expansion and contraction due to changes of temperature, and having a foundation or bed of macadam suitably rolled into compact condition, a layer of concrete above said macadam foundation, and a face or wearing surface composed of cement and crushed granite from which all dust has been screened, the upper surface of said face being grooved to afford footholds for horses, substantially as described.

9. A pavement made in sections to allow for expansion and contraction and having a suitable foundation, a layer of concrete above said foundation, said concrete consisting of substantially one part of Portland cement, two parts of crushed granite or sand, and four parts of crushed stone, and a top face or wearing surface consisting of cement and very hard crushed granite of substantially ¼ inch to ¾ inch caliber, all fine dust having been eliminated therefrom, substantially as described.

10. A pavement composed of sections to allow for expansion and contraction due to changes of temperature, and having a foundation or bed of macadam suitably rolled into compact condition, said macadam including crushed stone or gravel, a layer of concrete above said macadam foundation, said concrete consisting of substantially one part of Portland cement, two parts of crushed granite or sand, and four parts of crushed stone, and a top face or wearing surface consisting of cement and very hard crushed granite of substantially ¼ inch to ¾ inch caliber, all fine dust having been screened or otherwise removed from said crushed granite, the surface of said face being grooved both longitudinally and laterally to afford footholds for horses, substantially as described.

11. A pavement, parts of which are separated to a small extent, the gap being filled with a composition of ground rubber and asphalt, substantially as described.

12. A pavement, parts of which are separated to a small extent, the gap being filled with a composition consisting of approximately 15 to 20% of ground rubber, the remainder being rock asphalt containing about 20% of bitumen, substantially as described.

13. The method of making a pavement which consists in first constructing on opposite sides of the roadway combined gutters and curbs, allowing the same to harden, then forming a sectional pavement between said gutters and curbs, and grooving the top surface of said pavement before it has hardened, substantially as described.

14. The method of making a pavement which consists in constructing on opposite sides of the roadway combined gutters and curbs, allowing the same to harden, laying and rolling into compact condition a macadam bed between said gutters and curbs, constructing on top of said macadam bed and between said gutters and curbs a layer of concrete, providing the latter with a top face or wearing surface composed of cement and crushed granite from which all dust and extremely small particles have been removed, and scoring or grooving the face of said wearing surface before it hardens, substantially as described.

15. The method of making a pavement which consists in constructing on opposite sides of the roadway combined gutters and curbs, allowing the same to harden, laying and rolling into compact condition a macadam bed between said gutters and curbs, constructing on top of said macadam bed and between said gutters and curbs a layer of concrete, providing the latter with a top face or wearing surface composed of cement and crushed granite from which all dust and extremely small particles have been removed, and scoring or grooving and brushing the face of said wearing surface before it hardens, substantially as described.

856,106. MEANS FOR CALKING PIPE-JOINTS. PETER E. SNOW, Denver, Colo., assignor to Ada E. Snow, Denver, Colo. Filed Apr. 2, 1906. Serial No. 309,453.



Claim.—1. A calking ring having a cylindrical base and an expanded upper portion provided with longitudinally disposed grooves.

2. A calking ring having a cylindrical portion and an enlarged portion having the shape of a frustum of a cone, the frustum-shaped part being provided with exteriorly and interiorly alternating V-shaped longitudinally disposed grooves.

3. A calking ring having one portion larger than the other portion, the larger portion being provided with longitudinally disposed grooves to facilitate the reduction of the ring's diameter by inward pressure or hammering.

4. A calking ring composed of lead having a plain base portion and a frustum-shaped grooved portion for the purpose set forth.

5. In means for forming pipe joints, the combination of the pipe sections to be joined, one having a bell end and the other a reduced end adapted to enter the bell end, and an interposed soft metal calking ring, provided with grooves to facilitate expansion and contraction.

6. In a pipe joint, the combination of the two pipe sections to be joined, and an interposed soft metal calking ring which forms the exclusive packing for the joint, said ring having grooves for the purpose set forth.

7. A pipe joint composed of the two pipe sections, one having an enlarged or bell extremity and the other a shouldered extremity adapted to enter the bell extremity, and a cold soft metal calking ring interposed between the pipe ends to be joined and packed tightly in place, the said ring having grooves for the purpose set forth.

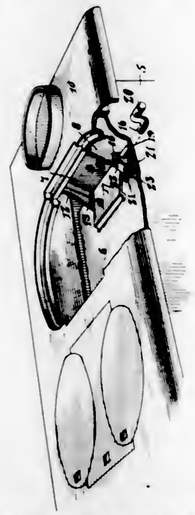
8. A soft metal calking ring provided with grooves for the purpose set forth.

9. A soft metal calking ring provided with longitudinally disposed grooves.

10. A soft metal calking ring provided with interior and exterior longitudinally disposed grooves.

11. A soft metal calking ring provided with longitudinally disposed grooves arranged both interiorly and exteriorlly, but in staggered relation on the two opposite surfaces.

856,107. DAMPER MECHANISM. HILLYARD A. STARR, East Chattanooga, Tenn. Filed Aug. 1, 1906. Serial No. 328,768.



Claim.—1. In a structure of the character described, the combination with a stove having a side plate, of an inner bearing mounted in the stove, a swinging damper having a portion engaged with the inner bearing and longitudinally movable outwardly out of engagement therewith, an actuating shaft connected to the damper and journaled in the side plate, said actuating shaft being longitudinally movable therein on the disengagement of the damper from the bearing, and being longitudinally movable inwardly to disengage it from the side plate after the disengagement of the damper from the bearing and removable means detachably engaging the damper for preventing such longitudinal movements.

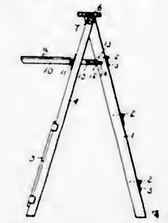
2. In a structure of the character described, the combination with a stove having a side plate, an outlet flue, and an oven top, of an inner bearing mounted in the stove at one side of the flue, a swinging damper having an inner portion engaged with the inner bearing and longitudinally movable out of engagement therewith, an actuating shaft connected to the damper and journaled in the side plate, said shaft being longitudinally movable outwardly in the plate on the detachment of the damper from the bearing, and a device detachably mounted on the oven top and engaging the other end of the damper to that engaged by the bearing for preventing the outward longitudinal movement of the damper and its consequent detachment from said bearing.

3. In a structure of the character described, the combination with an inner, an outer, and an intermediate bearing, the last mentioned having an open side, of a damper having a pintle engaged in the inner bearing and detachable on the outward longitudinal movement of the damper, a rock shaft connected to the damper and journaled in the intermediate and outer bearings, being longitudinally movable in the latter in both directions and a keeper device detachably mounted over the open side of the intermediate bearing and engaging the damper for preventing its outward longitudinal movement.

4. In a structure of the character described, the combination with a stove having an outer flue plate, an inner flue plate, and an intermediate flue plate located between the outer and inner plates, said plates having alined bearings, the bearing of the intermediate plate having an open side, and the others being entirely inclosed, of a damper located between the flue plates and having a pintle journaled in the bearing of the inner flue plate and removable therefrom on the longitudinal outward movement of the damper, a rock shaft journaled in the bearings of the intermediate and outer plates and removable from the latter on the inward longitudinal movement of the damper, and a keeper device detachably secured over the open side of the bearing of the intermediate plate and arranged at the outer end of the damper.

5. In a structure of the character described, the combination with an oven top, of an outer flue plate, an inner flue plate located at the rear end of the oven top and overlapping the same, the overlapping portion being provided with an inclosed bearing, an intermediate flue plate located between the inner flue plate and the outer plate and having an open sided bearing portion disposed over the inner end of the oven top, a swinging damper operating between the plates and having a pintle at its inner end that detachably engages in the bearing of the inner flue plate and is detachable therefrom on the outward longitudinal movement of the damper, a rock shaft carried by the outer end of the damper and journaled in the bearings of the intermediate flue plate and the outer plate, said shaft being detachable from the outer plate on the longitudinal inward movement of the damper after the disengagement of the pintle from the inner flue plate, a retaining device detachably secured to the oven top and closing the open end of the bearing of the intermediate flue plate, said device engaging the outer end of the damper to prevent its longitudinal movement, and means for preventing the rotation of the retaining device.

856,108. STEP-LADDER. WILLIAM F. STEVENS, Saginaw, Mich. Filed Aug. 29, 1906. Serial No. 332,478.



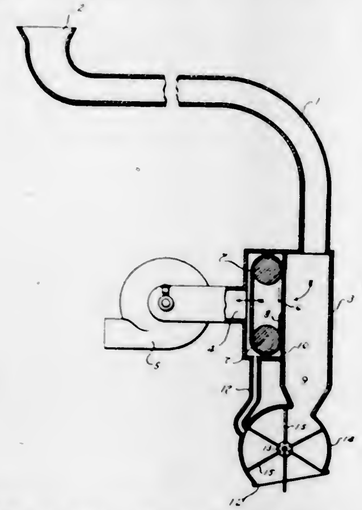
Claim.—1. A step ladder comprising ladder and prop sections pivotally secured together, and a link connecting the sections, one member of the link being pivotally connected to the prop section and extending forwardly to engage the ladder section when the step ladder is extended, the remaining member of the link being pivotally connect-

ed to the ladder section and extending rearwardly to overlap the first named member, the members being pivotally connected to each other, the entire forward end of the first named member adapted to squarely engage the inclined edge of the ladder section when the step ladder is extended.

2. A step ladder comprising a ladder section composed of side rails and steps, a prop section pivotally connected to the ladder section, arms pivotally secured to the prop section and projecting forwardly, the forward ends of the arms being beveled and adapted to take squarely throughout their lengths against the inclined rear edges of the side rails, and straps pivotally secured to the side rails and to the arms, the pivotal points of connection of the arms with the straps being above the pivotal points of connection of the straps and rails and of the arms and prop section, respectively when the ladder and prop sections are at their farthest distance apart.

3. A step ladder consisting of a ladder section, a prop section, a shouldered cross rod reduced at its ends, and pivotally connecting the sections, and links, one member of each link being pivotally connected to the prop section, and extending forwardly to engage the ladder section when the step ladder is extended, the remaining members of each link being pivotally connected at their forward ends to the ladder section, the second named link members extending rearwardly and overlapping the first named link members, to which they are pivotally connected at points on a plane above the pivotal points of connection of the link members with the prop and ladder sections respectively.

856,109. PNEUMATIC TRANSMISSION SYSTEM. JOSEPH J. STOETZEL, Chicago, Ill. Filed Mar. 14, 1906. Serial No. 305,960.



Claim.—1. A pneumatic transmission device, comprising a transit tube having receiving and delivery terminals, means for causing a current of air to flow along said tube toward the delivery terminal for conveying loose sheets and packages through said tube, a pocket at said delivery terminal adapted to receive the sheets and packages after the same have been transmitted through said tube, means for discharging the sheets and packages from said pocket without admitting adverse air currents, a screened outlet for air at one side of the path of the packages along the tube, and mechanism for conveying loose sheets past said outlet while air is flowing therethrough.

2. In a pneumatic transmission system, the combination of a transit tube having a delivery terminal, means for causing a current of air to flow along said transit tube for carrying loose sheets and miscellaneous packages through said tube to the delivery terminal, said delivery terminal having a receiving pocket out of the normal path of the air current and having an outlet for the air current at one side of said pocket, and a movable screen extending across said outlet and adapted to convey out of the path of the air current any loose sheets or packages held against the screen by the air current, whereby said sheets and packages will be delivered to said pocket.

3. In a pneumatic transmission system, the combination of a transit tube having a delivery terminal, means for causing a current of air to flow along said transit tube whereby loose sheets and miscellaneous packages will be conveyed through said tube to the delivery terminal, said delivery terminal having a receiving pocket out of the normal path of the air current and having an outlet for the air current at one side of said pocket, a movable screen extending across said outlet and adapted to carry along any loose sheets or packages which strike said screen, whereby said sheets and packages will be delivered to said pocket, and means for discharging the contents of said pocket without permitting an inflowing air current to pass through such contents.

4. In a pneumatic transmission system, the combination of a transit tube having a delivery terminal, means for causing a current of air to flow along said transit tube for carrying loose sheets and miscellaneous packages along said tube to the delivery terminal, said delivery terminal having a receiving pocket out of the normal path of the air current and having an outlet for the air current at one side of said pocket, a movable screen extending across said outlet and adapted to carry along any loose sheets or packages which adhere to said screen, whereby said sheets and packages will be carried out of the air current and delivered to said pocket, and rotating means for discharging the contents of said pocket.

5. A pneumatic transmission device comprising a transit tube having receiving and delivery terminals, means for causing a current of air to flow along said tube toward the delivery terminal for conveying packages through the tube, separate outlets for air and packages at the delivery terminal, and mechanism adapted to convey loose sheets of paper or the like away from said air outlet and discharge the same at the package outlet.

6. In a pneumatic transmission device, the combination of a transit tube having longitudinally corrugated walls, and means for causing a current of air to flow along said tube and adapted to carry loose sheets of paper and the like along said tube.

7. A pneumatic transmission device, comprising a transit tube having a flattened transverse cross section, and means for causing a current of air to flow along said tube, said tube having its inner surface grooved or ribbed longitudinally and adapted to prevent loose sheets of paper or the like from adhering thereto, substantially as described.

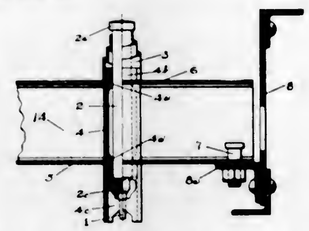
8. A pneumatic transmission device comprising a transit tube and means for causing a current of air to flow along said tube, said tube having a horizontally flattened transverse cross section, and having one or more longitudinal ribs or grooves extending along the bottom thereof, and adapted to admit air below packages within the tube and insure their transmission.

9. In a pneumatic transmission system, the combination of a transit tube having a delivery terminal, means for causing a current of air to flow along said tube toward said terminal, means for discharging packages from the tube at the delivery terminal, an outlet passage for air at one side of said package discharging means, and an endless perforated belt stretched across the mouth of said air outlet passage and adapted to be continuously driven for preventing loose sheets or packages from entering said outlet passage.

10. In a pneumatic transmission system, the combination of a transit tube having a delivery terminal, means for causing a current of air to flow along said tube toward said terminal, means for discharging packages from the tube at the delivery terminal, an outlet passage for air at one side of said package discharging means, an endless perforated belt stretched across the mouth of said air outlet passage and adapted to be continuously driven for preventing loose sheets or packages from being carried by the air current into said air outlet passage, said belt being longitudinally grooved, and a comb having teeth extending into the groove of said belt and adapted to remove sheets adhering to the belt after such sheets have been carried beyond said outlet passage.

11. A pneumatic transmission device comprising a transit tube having a delivery terminal, means for causing a current of air to flow along the tube and adapted to convey loose sheets of paper and the like toward said terminal, and mechanism at said terminal for continuously separating such sheets from the conveying air current and discharging the sheets from the terminal.

856,110. METAL-PUNCHING MACHINE. EDGAR W. SUMMERS, Wilkinsburg, Pa. Filed Feb. 1, 1907. Serial No. 355,220.



Claim.—1. In a metal punching machine, a templet for locating dies, punches, and the like for punching holes in metal plates, beams, etc., the said templet comprising a plurality of relatively fixed sheets of metal spaced apart, which have a series of holes therethrough, the said series of holes being duplicates of each other in their arrangement and location over the plurality of sheets of metal, comprising the templet.

2. A templet composed of two sheet metal plates spaced apart with means for holding them in fixed relation to each other, and a plurality of punches carried by the templet, and detachable therefrom.

3. In a metal punching machine, a punch-carrying-templet, the said templet being composed of a pair of metallic plates, which plates are held apart by separators, the separators acting as guides for punch carriers.

4. In a metal punching machine, a punch-carrying-templet, the said templet being composed of a pair of metallic plates, which plates are held apart by separators, which separators have sleeve-nuts on one end and which sleeve-nuts are adapted to act as pull-offs, by means of their projecting beyond the end of the punches, the punches receding within the sleeve-nuts after the punching operation.

5. In a metal punching machine, a punch-holding-templet, which templet is composed of a pair of metallic plates, which plates are held apart in fixed relation by separators and which templet is supported on side-girders for the purpose of handling in the punching-press.

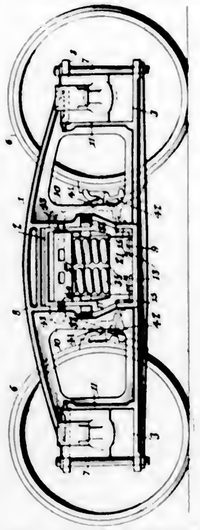
6. A templet composed of two plates spaced apart, and die carrying members extending transversely thereof and secured rigidly to both plates, whereby such plates are held in fixed relation with respect to each other.

7. In a metal punching machine, a pair of templets, each templet comprising a pair of metallic plates, which are held apart by separators, and which have a stiffener beam transversely of the templet, for the purpose of preventing sagging.

8. A die holding and templet spacing member, comprising a body portion 10 having means for spacing apart in fixed relation a pair of templet plates and provided at one end with means for carrying a die.

9. In a metal punching machine, a pair of metal templet plates spaced apart, the said metal plates having each a series of holes, and die-holding-separator-blocks that are interchangeable and fit in the holes of the said metal plates.

856,111. CAR TRUCK. WILSON E. SYMONS, Chicago, Ill. Filed Sept. 7, 1906. Serial No. 333,675.



Claim.—1. A truck, including side members, a connecting cross member, and end members, the cross and end members having interlocked connection with each other, and means for securing the end members to the side members, whereby each contributes to the retention of the other in its proper relative position.

2. A truck including side members having openings, cross members extended into said openings, and end members located in said openings in the side members, each end member being interlocked with the adjacent ends of the cross members and secured to the adjacent side member.

3. A truck including side members having openings, cross members having their ends located in the openings and constituting spring seats, end members having interlocked engagements with the cross members, and means for securing the end members to the side members.

4. A truck including side members having openings, a cross member, and end members engaging the side and cross members and interlocked with the latter, said end members being provided with seats for the bolster supporting springs.

5. A truck including side members, angle bars engaged with the side members, and end members secured to the side members and interlocked with the angle bars.

6. A truck including side members, angle bars engaged with the side members, and end members secured to the side members and interlocked with the angle bars, said end members having seats for the bolster supporting springs.

7. A truck including a side member having an opening provided with a substantially upright side wall, an end member located in the opening and having a substantially upright side wall, a cross member having its end fitted between said upright walls and having an interlocking engagement with one of the same.

8. A truck including a side member having an opening provided with a bottom and a side wall, an end member located in the opening and having a side wall, a cross bar comprising an angle iron fitted upon the bottom of the opening and between the said side walls, the side wall of the end member being interlocked with the flange that is fitted between said side walls.

9. A truck comprising spaced side members having openings, upstanding dowels projecting from the bottom of the openings, cross members connecting the side members and comprising angle bars engaged in the openings, the horizontal flanges of the angle bars having sockets that receive the dowels, end members located in the openings and constituting spring seats, and interlocking connections between the end members and the upright flanges of the cross member.

10. A truck including side members, a connecting cross member, and end members connecting the side and cross members.

11. A truck including side members, a connecting cross member, and end members, the side, cross and end members having interlocked connection, whereby each contributes to the retention of the other in its proper relative position.

12. A truck including side members, a plurality of cross members interlocked with the same, and end members each associated with a side member and engaging the cross members to maintain the said interlocked engagement.

13. A truck including side members having openings, cross members extended into said openings, and end members located in the openings in the side members and interlocked with the adjacent ends of the cross members to maintain their position in the side members.

14. A truck including side members having openings, angle bars connecting the side members and extended into the openings thereof, and end members retained in said openings and having their lower portions located between the vertical flanges of the angle bars, and interlocked therewith said members constituting retaining means for the angle bars.

15. A truck including side members having openings, cross members extended into said openings and interlocked with the side members, and end members retained in the openings and imposed upon the cross members to retain the latter in interlocked relation with the side members.

16. A truck including side members having openings, cross members extended into said openings, and end members located in said openings in the side members, each side member and the adjacent end member being interlocked with each other and with the adjacent ends of the cross members.

17. A truck including side members having openings, a cross member extended into the openings, end members located in the openings and constituting retaining means for the cross member, and means for keying the end members to the side members.

18. A truck including side members having openings, a cross member extended into said openings, and spring seats located above the cross member and adapted to support the bolster supporting springs, said seats having means for retaining the cross member in the openings.

19. A truck including side members having openings, a cross member, and end members engaging the side and cross members and interlocked with both, being provided with seats for the bolster supporting springs.

20. A truck including side members having openings, a cross member extended into said openings and having direct connection with the side members, and end members located in the openings and constituting seats for the bolster supporting springs, said seats being interlocked with the cross member.

21. A truck including side members having openings, a cross member extended into said openings and having direct interlocking engagement with the side members, and end members retained in the openings in the side members and constituting retaining means for the cross member and also constituting seats for the bolster supporting springs.

22. A truck including side members having spaced struts, forming openings, parallel cross members extended into said openings between them, and end members each located between the struts of one of the side members to constitute a spring seat and interlocked with the adjacent ends of the cross members.

23. A truck including side members, angle bars detachably engaged with the side members, and spring seats supported by said bars and maintaining their engagement with the side members.

24. A truck including side members, angle bars extending between said members, and end members supported by said bars and keyed to the side members and provided with seats for the bolster supporting springs.

25. A truck including side members having openings, angle bars extended into said openings, and end members provided with spring seats, said angle bars and end members having interlocking engagement with the side members.

26. A truck including side members having openings and dowels extending therein, angle bars extended into said openings and engaging the dowels, and end members located in the openings in the side members and imposed upon the angle bars, said end members likewise engaging the dowels.

27. A truck including side members having openings and dowels extended therein, angle bars extended into said openings and engaging the dowels, and end members located in the openings in the side members and imposed upon the angle bars, said end members likewise engaging the dowels and having seats for the bolster supporting springs.

28. A truck including a side member having an opening and an end member detachably interlocked in said opening and constituting a combined spring seat and brake-beam-hanger support.

29. A truck including a side member, a cross member, and a combined spring seat and brake-beam-hanger support engaging the side and cross members and interlocked with both.

30. A truck including side members having openings, cross members extended into said openings and interlocked with the side members, and end members located in said openings in the side members and each having lugs for the attachment of brake-beam-hangers and a seat for the bolster supporting springs, said end members constituting securing means for the cross members.

31. A truck including side members, a cross member, end members interlocked both with the side and cross members and having spring seats, springs supported by said seats, and a bolster extended through the end members and carried by the springs.

32. A truck including a side member having an opening, a cross member interlocked with the side member, and an end member located in the opening and engaging the side member at both the top and bottom of the opening, said end member being interlocked with the side member and constituting retaining means for the cross member, springs supported by the end member, and a bolster having its end extended through the end member and carried by the springs.

33. A truck including a side member having an opening, a cross member, an end member located in the opening, bolster supporting springs mounted in the end member, and a bolster having its end extended through the side member and provided with a thrust flange engaging the end member.

34. A truck including side members having openings, a cross member connecting the bottom portions of the side members, a bolster extended through the side members, and means carried by the bolster to prevent spreading of the upper portions of the side members.

35. A truck including side members, a cross member connecting the bottom portions thereof, a bolster extended through the side members and provided with thrust flanges at the inner sides of said members, and means carried by the bolster at the outer sides of the side members to prevent spreading of the upper portions of the latter.

36. A truck including side members having openings, a cross member, end members located in said openings and constituting seats for the bolster supporting springs, a bolster extended through the end members and having thrust flanges engaging the same, and keys carried by the ends of the bolster to prevent spreading of the upper portions of the side members.

37. A truck including a side frame and a cross member adapted to be brought into interlocking engagement by relative movement of said members in a vertical direction, and means including a key for opposing relative vertical movement of the side and cross members to prevent the same from moving out of interlocking relation.

38. A truck including a side member and a cross member one of which is movable in a vertical direction to engage the other, the engagement being such as to prevent relative movement of said members in a horizontal direction, and a member keyed to the side member and disposed to prevent the disengagement of the side and cross members.

39. A truck including a side member, an end member movable vertically into interlocking engagement with the side member, and a key coöperating with the side and end members to prevent disengagement thereof.

40. A truck including side and cross members having interlocking engagement, an end member also having interlocking engagement with the side member and serving to prevent disengagement of the side and cross members, and means including a key for preventing disengagement of the side and end members.

41. A truck including a side member, a cross member movable vertically into interlocking engagement with the side member, an end member movable vertically into interlocking engagement with the side member and disposed to prevent disengagement of the side and cross members, and means including a key for preventing the end member from moving vertically out of interlocking engagement with the side member.

42. A truck including a side member having an opening provided with a notch, an end member having a projection extended into the notch, and a key extended into the notch to prevent relative movement of the side and end members in a vertical direction.

43. A side member having an opening provided with a notch in one side wall thereof, a vertical projection extending upwardly from the bottom of the opening, an end member movable vertically to engage the projection of the side member and having a lug extended into the notch in said side member, and a key inserted in the notch above the lug to prevent the end member from moving vertically out of engagement with the projection of the side member.

44. A truck including a side member having an opening, dowels extended vertically into the opening from the lower side thereof, and notches in the opposite side walls of the opening, angle bars extended into the opening in the side member and engaging the dowels, an end member located in the opening in the side member above the angle bars and likewise engaging the dowels, lugs extending in opposite directions from the end member, and keys inserted in the notches in the side member above the lugs of the end member to prevent said end member from rising out of engagement with the dowels.

45. A truck including a side member, a cross member, and an end member, the cross and end members being interlocked with each other and with the side member.

46. A truck including a side member having a dowel, a cross member engaging said dowel, and an end member imposed upon the cross member and provided with a projection engaging an opening in the cross member.

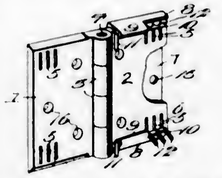
47. A truck including a side member, cross members supported thereby, and an end member having oppositely extending projections engaging said cross members.

48. A truck including a side member, a pair of angle bars constituting cross members and supported by the side member, and means for securing the cross members to the side member including a spring seat interposed between the vertical flanges of the angle bars and interlocked with said flanges.

49. A truck including a side member, a cross member interlocked with the same, and an end member secured to the side member and engaging the cross member to maintain the said interlocked relation between the members.

50. A truck including a side member, a cross member engaged therewith, and means for securing the cross member to the side member, including a spring seat interlocked with the cross member and secured to the side member.

856,112. HINGE. MAX A. TIECK, Denver, Colo. Filed Sept. 29, 1906. Serial No. 336,672.



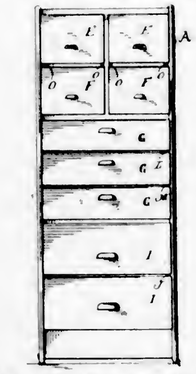
Claim.—1. The combination with a hinge having leaves of identical structure, of a keeper arranged to receive either of said leaves, and spring operated locking means carried by the keeper to engage the leaf therein.

2. The combination with a hinge having a leaf formed with a series of parallel arranged slots, of a keeper arranged to receive said leaf, and a locking pin carried by the keeper and formed to engage the slots in the leaf.

3. The combination with a hinge having a leaf formed with a series of spaced slots, of a keeper designed to receive said leaf, and a locking rod revolubly supported by the keeper, said rod being provided with a plurality of pins to enter the slots in the leaf.

4. The combination with a hinge having a leaf formed with a series of spaced slots, a keeper arranged to receive the leaf, a locking rod revolubly supported by the keeper, said rod being provided with a plurality of pins to engage the slots in the leaf, and means for normally maintaining said rod in locking position.

856,113. FILING-CABINET. FRED W. TOBEY, Grand Rapids, Mich. Filed Jan. 12, 1905. Serial No. 240,813.



Claim.—1. The combination of a filing cabinet comprising a complete permanent frame divided into two or more equal compartments and crates interchangeable in these compartments, each crate containing and carrying filing receptacles.

2. A filing cabinet comprising a complete permanent frame, a series of supporting members permanently attached thereto and spaced uniformly with reference to each other, a series of interchangeable elements adapted to be carried by the supporting members and interchangeable within the frame, guides carried by said interchangeable elements and filing devices mounted upon said guides.

3. The combination with a filing cabinet comprising a complete permanent frame divided into a plurality of compartments, of interchangeable crates mounted in each of said compartments and each having side, top and bottom walls, and filing trays mounted in each of the crates.

4. The combination with a filing cabinet comprising a complete permanent frame divided into a plurality of com-

9. A truck comprising spaced side members having openings, upstanding dowels projecting from the bottom of the openings, cross members connecting the side members and comprising angle bars engaged in the openings, the horizontal flanges of the angle bars having sockets that receive the dowels, end members located in the openings and constituting spring seats, and interlocking connections between the end members and the upright flanges of the cross member.

10. A truck including side members, a connecting cross member, and end members connecting the side and cross members.

11. A truck including side members, a connecting cross member, and end members, the side, cross and end members having interlocked connection, whereby each contributes to the retention of the other in its proper relative position.

12. A truck including side members, a plurality of cross members interlocked with the same, and end members each associated with a side member and engaging the cross members to maintain the said interlocked engagement.

13. A truck including side members having openings, cross members extended into said openings, and end members located in the openings in the side members and interlocked with the adjacent ends of the cross members to maintain their position in the side members.

14. A truck including side members having openings, angle bars connecting the side members and extended into the openings thereof, and end members retained in said openings and having their lower portions located between the vertical flanges of the angle bars, and interlocked therewith said members constituting retaining means for the angle bars.

15. A truck including side members having openings, cross members extended into said openings and interlocked with the side members, and end members retained in the openings and imposed upon the cross members to retain the latter in interlocked relation with the side members.

16. A truck including side members having openings, cross members extended into said openings, and end members located in said openings in the side members, each side member and the adjacent end member being interlocked with each other and with the adjacent ends of the cross members.

17. A truck including side members having openings, a cross member extended into the openings, end members located in the openings and constituting retaining means for the cross member, and means for keying the end members to the side members.

18. A truck including side members having openings, a cross member extended into said openings, and spring seats located above the cross member and adapted to support the bolster supporting springs, said seats having means for retaining the cross member in the openings.

19. A truck including side members having openings, a cross member, and end members engaging the side and cross members and interlocked with both, being provided with seats for the bolster supporting springs.

20. A truck including side members having openings, a cross member extended into said openings and having direct connection with the side members, and end members located in the openings and constituting seats for the bolster supporting springs, said seats being interlocked with the cross member.

21. A truck including side members having openings, a cross member extended into said openings and having direct interolcking engagement with the side members, and end members retained in the openings in the side members and constituting retaining means for the cross member and also constituting seats for the bolster supporting springs.

22. A truck including side members having spaced struts, forming openings, parallel cross members extended into said openings between them, and end members each located between the struts of one of the side members to constitute a spring seat and interlocked with the adjacent ends of the cross members.

23. A truck including side members, angle bars detachably engaged with the side members, and spring seats supported by said bars and maintaining their engagement with the side members.

24. A truck including side members, angle bars extending between said members, and end members supported by said bars and keyed to the side members and provided with seats for the bolster supporting springs.

25. A truck including side members having openings, angle bars extended into said openings, and end members provided with spring seats, said angle bars and end members having interlocking engagement with the side members.

26. A truck including side members having openings and dowels extending therein, angle bars extended into said openings and engaging the dowels, and end members located in the openings in the side members and imposed upon the angle bars, said end members likewise engaging the dowels.

27. A truck including side members having openings and dowels extended therein, angle bars extended into said openings and engaging the dowels, and end members located in the openings in the side members and imposed upon the angle bars, said end members likewise engaging the dowels and having seats for the bolster supporting springs.

28. A truck including a side member having an opening and an end member detachably interlocked in said opening and constituting a combined spring seat and brake-beam-hanger support.

29. A truck including a side member, a cross member, and a combined spring seat and brake-beam-hanger support engaging the side and cross members and interlocked with both.

30. A truck including side members having openings, cross members extended into said openings and interlocked with the side members, and end members located in said openings in the side members and each having lugs for the attachment of brake-beam-hangers and a seat for the bolster supporting springs, said end members constituting securing means for the cross members.

31. A truck including side members, a cross member, end members interlocked both with the side and cross members and having spring seats, springs supported by said seats, and a bolster extended through the end members and carried by the springs.

32. A truck including a side member having an opening, a cross member interlocked with the side member, and an end member located in the opening and engaging the side member at both the top and bottom of the opening, said end member being interlocked with the side member and constituting retaining means for the cross member, springs supported by the end member, and a bolster having its end extended through the end member and carried by the springs.

33. A truck including a side member having an opening, a cross member, an end member located in the opening, bolster supporting springs mounted in the end member, and a bolster having its end extended through the side member and provided with a thrust flange engaging the end member.

34. A truck including side members having openings, a cross member connecting the bottom portions of the side members, a bolster extended through the side members, and means carried by the bolster to prevent spreading of the upper portions of the side members.

35. A truck including side members, a cross member connecting the bottom portions thereof, a bolster extended through the side members and provided with thrust flanges at the inner sides of said members, and means carried by the bolster at the outer sides of the side members to prevent spreading of the upper portions of the latter.

36. A truck including side members having openings, a cross member, end members located in said openings and constituting seats for the bolster supporting springs, a bolster extended through the end members and having thrust flanges engaging the same, and keys carried by the ends of the bolster to prevent spreading of the upper portions of the side members.

37. A truck including a side frame and a cross member adapted to be brought into interlocking engagement by relative movement of said members in a vertical direction, and means including a key for opposing relative vertical movement of the side and cross members to prevent the same from moving out of interlocking relation.

38. A truck including a side member and a cross member one of which is movable in a vertical direction to engage the other, the engagement being such as to prevent relative movement of said members in a horizontal direction, and a member keyed to the side member and disposed to prevent the disengagement of the side and cross members.

39. A truck including a side member, an end member movable vertically into interlocking engagement with the side member, and a key cooperating with the side and end members to prevent disengagement thereof.

40. A truck including side and cross members having interlocking engagement, an end member also having interlocking engagement with the side member and serving to prevent disengagement of the side and cross members, and means including a key for preventing disengagement of the side and end members.

41. A truck including a side member, a cross member movable vertically into interlocking engagement with the side member, an end member movable vertically into interlocking engagement with the side member and disposed to prevent disengagement of the side and cross members, and means including a key for preventing the end member from moving vertically out of interlocking engagement with the side member.

42. A truck including a side member having an opening provided with a notch, an end member having a projection extended into the notch, and a key extended into the notch to prevent relative movement of the side and end members in a vertical direction.

43. A side member having an opening provided with a notch in one side wall thereof, a vertical projection extending upwardly from the bottom of the opening, an end member movable vertically to engage the projection of the side member and having a lug extended into the notch in said side member, and a key inserted in the notch above the lug to prevent the end member from moving vertically out of engagement with the projection of the side member.

44. A truck including a side member having an opening, dowels extended vertically into the opening from the lower side thereof, and notches in the opposite side walls of the opening, angle bars extended into the opening in the side member and engaging the dowels, an end member located in the opening in the side member above the angle bars and likewise engaging the dowels, lugs extending in opposite directions from the end member, and keys inserted in the notches in the side member above the lugs of the end member to prevent said end member from rising out of engagement with the dowels.

45. A truck including a side member, a cross member, and an end member, the cross and end members being interlocked with each other and with the side member.

46. A truck including a side member having a dowel, a cross member engaging said dowel, and an end member imposed upon the cross member and provided with a projection engaging an opening in the cross member.

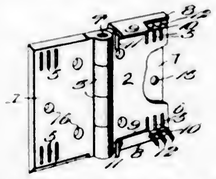
47. A truck including a side member, cross members supported thereby, and an end member having oppositely extending projections engaging said cross members.

48. A truck including a side member, a pair of angle bars constituting cross members and supported by the side member, and means for securing the cross members to the side member including a spring seat interposed between the vertical flanges of the angle bars and interlocked with said flanges.

49. A truck including a side member, a cross member interlocked with the same, and an end member secured to the side member and engaging the cross member to maintain the said interlocked relation between the members.

50. A truck including a side member, a cross member engaged therewith, and means for securing the cross member to the side member, including a spring seat interlocked with the cross member and secured to the side member.

856,112. HINGE. MAX A. TIECK, Denver, Colo. Filed Sept. 29, 1906. Serial No. 336,672.



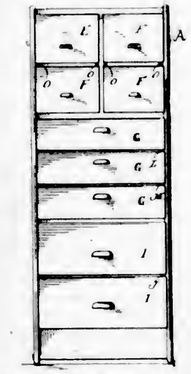
Claim.—1. The combination with a hinge having leaves of identical structure, of a keeper arranged to receive either of said leaves, and spring operated locking means carried by the keeper to engage the leaf therein.

2. The combination with a hinge having a leaf formed with a series of parallel arranged slots, of a keeper arranged to receive said leaf, and a locking pin carried by the keeper and formed to engage the slots in the leaf.

3. The combination with a hinge having a leaf formed with a series of spaced slots, of a keeper designed to receive said leaf, and a locking rod revolubly supported by the keeper, said rod being provided with a plurality of pins to enter the slots in the leaf.

4. The combination with a hinge having a leaf formed with a series of spaced slots, a keeper arranged to receive the leaf, a locking rod revolubly supported by the keeper, said rod being provided with a plurality of pins to engage the slots in the leaf, and means for normally maintaining said rod in locking position.

856,113. FILING-CABINET. FRED W. TOBEY, Grand Rapids, Mich. Filed Jan. 12, 1905. Serial No. 240,813.



Claim.—1. The combination of a filing cabinet comprising a complete permanent frame divided into two or more equal compartments and crates interchangeable in these compartments, each crate containing and carrying filing receptacles.

2. A filing cabinet comprising a complete permanent frame, a series of supporting members permanently attached thereto and spaced uniformly with reference to each other, a series of interchangeable elements adapted to be carried by the supporting members and interchangeable within the frame, guides carried by said interchangeable elements and filing devices mounted upon said guides.

3. The combination with a filing cabinet comprising a complete permanent frame divided into a plurality of compartments, of interchangeable crates mounted in each of said compartments and each having side, top and bottom walls, and filing trays mounted in each of the crates.

4. The combination with a filing cabinet comprising a complete permanent frame divided into a plurality of com-

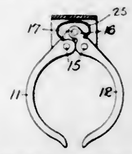
partments, of interchangeable crates mounted in said compartments and each comprising bottom, top and side walls and guides for filing receptacles, and filing receptacles mounted in the crates.

5. A filing cabinet comprising a complete permanent frame divided into a plurality of compartments, interchangeable crates mounted in each of said compartments and each having side, top and bottom walls, one of said crates having the interior thereof different from that of the other of said crates, and filing receptacles mounted in each of the crates.

6. A filing cabinet comprising a complete permanent frame, a series of primary slideways permanently attached thereto and spaced uniformly in reference to each other, a series of interchangeable crates mounted upon said primary slideways, and filing devices carried by said crates.

7. A filing cabinet, comprising a complete permanent frame, a series of primary slideways permanently attached thereto and spaced uniformly with reference to each other, a series of removable secondary slideways adapted to be carried by the primary slideways, and to be interchangeable therein, and filing devices carried by such secondary slideways.

856,114. BOTTLE-HOLDER. JULIUS VAN HALL, New York, N. Y. Filed Sept. 8, 1906. Serial No. 333,850.



Claim.—1. In a holder for bottles and similar articles the combination with a frame adapted to be permanently located against a wall or door frame and having a stationary ring, of pivoted jaws with perforated rear ends, a bolt with a lateral pin, a cam adapted to engage the pin and lift the bolt and a housing or box inclosing the cam, bolt and ends of the jaws.

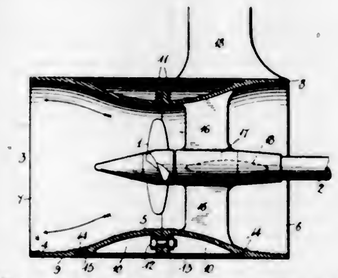
2. A holder of the character described, comprising a ring, a box provided with a keyhole, jaws pivotally mounted upon the box at points between their ends, those ends of the jaws disposed within the box being provided with perforations adapted to aline when the jaws are closed, a bolt mounted within the box and adapted to pass through the perforations in the jaws to lock them in closed position, and means by which the bolt may be withdrawn.

3. A holder of the character described, comprising a ring, a box, jaws pivotally mounted upon the box at points between their ends, those ends of the jaws disposed within the box being provided with perforations adapted to aline when the jaws are closed, a bolt mounted within the box and adapted to pass through the perforations of the jaws to lock them in closed position, means by which the bolt may be withdrawn, and means adapted to swing the jaws into opened position when the bolt is withdrawn.

4. A holder of the character described, comprising a ring, a box, jaws pivotally mounted upon the box between their ends, those ends of the jaws disposed within the box being provided with perforations adapted to aline when the jaws are closed, a bolt mounted within the box and adapted to pass through the perforations in the jaws to lock them in closed position, and means by which the bolt may be withdrawn from one of the perforations to permit the jaws to be opened.

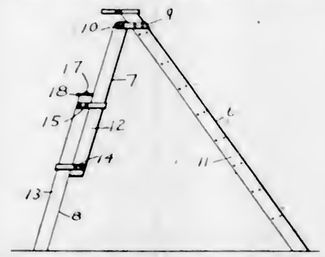
856,115. MARINE PROPULSION. YASUZO WADAGAKI, Sasebo, Japan. Filed Oct. 29, 1906. Serial No. 341,137.

Claim.—1. The combination with a screw propeller, of an elongated casing surrounding said propeller and having outwardly flared inlet and discharge ends gradually converging toward the middle with a smooth running curve, the propeller being disposed in said contracted middle portion with the flared ends extended on opposite sides thereof and gradually converging from said propeller in opposite directions in a smooth running curve whereby the velocity of the water is gradually reduced in proportion in its passage through the rear end of the channel so formed to prevent the true slip of the propeller from becoming excessively high when operating at a high rate of revolutions.



2. The combination with a screw propeller, of a casing having a channel provided with a contracted central portion in which the propeller rotates, said casing comprising sections formed with annular channels and annular radially extending apertured flanges, bolts passed through the apertures in said flanges and uniting said sections, a sectional plate secured in seats upon the exterior faces of said casing sections and closing the annular channels therein, a bearing for the propeller shaft supported concentrically in one of said sections by webs formed integral therewith, and integral attaching brackets formed upon the last-mentioned casing section, substantially as shown and described.

856,116. STEP-LADDER. PETER F. WAGNER, Greensburg, Ind. Filed Jan. 12, 1907. Serial No. 352,030.

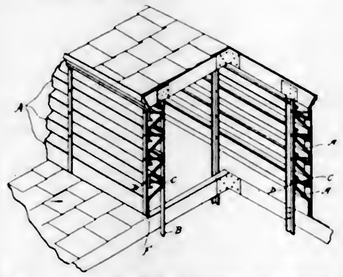


Claim.—A ladder comprising a pair of sections each including side rails and rungs connecting the rails, the rails of one section being notched diagonally in opposing sides of corresponding edges, and latch plates swiveled upon the upper ends of the side rails of the other ladder section, said plates each including an extended portion having a diagonal edge and a straight edge, said plates being adapted to be turned to bring their said portions into engagement in the said notches in the said rails of the first mentioned ladder section, said plates also including portions which extend beyond the side rails of the second mentioned ladder section whereby the plates may be swung as stated.

856,117. LOUVER. HARRY W. WALDMIRE, Philadelphia, Pa. Filed June 4, 1906. Serial No. 320,001.

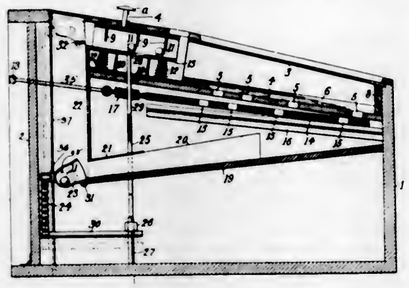
Claim.—1. The combination of a series of louvers formed of strips of metal, each having an angular body, two vertical sections and flanges projecting inward from said sections, and a series of stay posts through which the securing bolts are passed, as specified.

2. As a new article of manufacture, a louver formed from a single strip of metal, so bent as to provide an angular body, two vertical sections, and a flange projecting from each section, as specified.



3. The herein described combination of a series of louvers, each made of sheet metal, a series of stay posts interposed between each louver, bolts connecting the louvers and adapted to secure the same to the building, and a tie strip connecting the outer edges of the louvers, as specified.

856,118. GAME APPARATUS. JOHN W. WALLACE, Jersey City, N. J. Filed June 1, 1903. Serial No. 159,502.



Claim.—1. Game apparatus comprising game bodies, a game board inclined to impel such game bodies by gravity from their initial position, such game board having a plurality of holes to arrest in one of a plurality of positions the movement of the game body, retaining means at the top of the inclined game board for holding the game body normally in its initial position, common releasing means for releasing the game body from any one of its arrested positions, return mechanism for replacing the game body in its initial position, means for releasing the game body from its initial position maintained by the retaining means, and a common manually operative device for actuating the means for releasing the game body from its initial position and the return mechanism.

2. Game apparatus comprising a plurality of game bodies movable by gravity, an inclined game board upon which the game bodies are moved by gravity, a magazine for retaining game bodies in initial position at the top of the inclined game board, and common manually operatable mechanism for releasing the game bodies from the magazine and for returning them to the magazine.

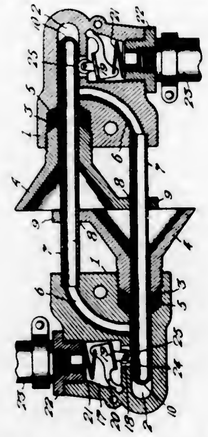
3. Game apparatus comprising movable game bodies, a magazine therefor, means for discharging the game bodies from such magazine, a game board having arresting means for the game bodies, collecting means, means for carrying the game bodies from the lowermost position upward to the magazine, such means including a lazy tongs mechanism operated by the game body discharging means.

4. Game apparatus comprising a game body movable by gravity from an initial position to a lowermost position means for retaining a plurality of game bodies in the initial position, means for releasing the game bodies with short intermissions therefrom, means for conducting the game body from such initial position to such lowermost position through any one of various paths, and common manually operatable mechanism for returning the game body to its initial position and starting it from such initial position.

5. Game apparatus comprising movable game bodies, a game board having designated lodgment perforations, a spring-controlled false bottom for said game board having perforations corresponding to the perforations in the game board a magazine located at the upper portion of said game board, means within the magazine whereby only one game body is permitted to be released at a time, and commonly actuatable mechanism for operating the magazine to release a game body and for returning the game body to the magazine.

6. Game apparatus comprising movable game bodies, a magazine therefor, a game board having lodgment perforations, delodgment means, collecting means, a game body receiving part to receive the game body from the collecting means and a lazy tongs mechanism carrying such receiving part and operatable by the downward, game body releasing movement of the magazine to return the game body to the magazine.

856,119. AIR-PIPE COUPLING. ROBERT S. WHITE, Jr., Osceola, Okla. Filed Mar. 29, 1907. Serial No. 365,384.



Claim.—1. In an air pipe coupling a pivotally supported body member, a tension spring engaging the same to take up slack upon the pivotal supporting member, a hanger disposed adjacent to the body member, and a spring connecting the hanger with the body member to sustain the latter in proper alinement for operation.

2. In an air pipe coupling a body member having a longitudinal pocket enlarged at its forward end and a duct extending from the pocket to the forward end of the body member, a nipple connected with said duct, a funnel shaped guide mounted in the enlarged forward end of the pocket and an elastic washer seated in the enlarged forward end of the pocket adjacent to the inner end of the funnel shaped guide.

3. In an air pipe coupling a body member having a longitudinal pocket and a duct connecting said pocket with the forward end of the body member, a funnel shaped guide mounted in the forward end of the pocket and having a laterally extending apertured flange, and a nipple connected with the forward end of the duct and guided through the apertured flange.

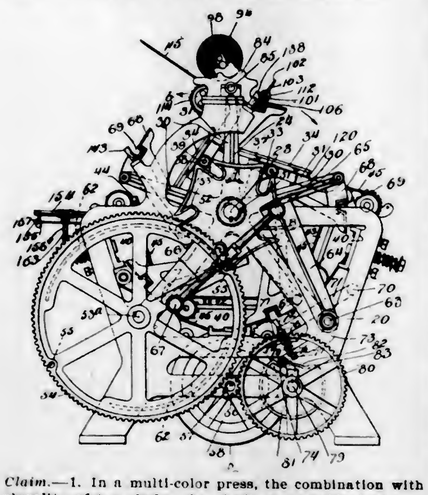
4. In an air pipe coupling a body member having a longitudinal pocket and a lateral duct connecting the pocket with the forward end of the body member, a fun-

nel shaped guide at the forward end of the pocket, an air pipe opening into a recess or chamber in the body member adjacent to the inner end of the pocket, and communicating therewith through a port or passage, and a spring actuated valve seated upon said port or passage and having an engaging member projecting therethrough.

5. In an air pipe coupling a body member having a longitudinal pocket and a duct connecting said pocket with the forward end of the body member, a funnel shaped guide at the front end of the pocket, a nipple connected with the duct and of less diameter than the inner end of the pocket, an air pipe opening into a recess or chamber in the body member adjacent to the pocket and communicating therewith through a port or passage, a spring pressed lever pivoted in the chamber, a valve carried by said lever and operating to close the port or passage and an anti-friction member carried by the valve and projecting through the port or passage.

6. In an air pipe coupling a body member having a longitudinal pocket and a recess or chamber adjacent thereto, the partition between said pocket and chamber being provided with a port, a lever pivoted in the recess or chamber, a valve carried by said lever and having an anti-friction member extending through the port or passage, a reducing plug at the outer end of the chamber, an air pipe connected with the reducing member, and a spring seated upon the reducing member and operatively engaging the valve carrying lever to close the port or passage.

856,120. MULTICOLOR-PRESS. CHARLES WILLIAMS, Chicago, Ill., assignor of three-fourths to William H. Cowles and one-eighth to John F. Young, Spokane, Wash. Filed Sept. 17, 1904. Serial No. 224,788.



Claim.—1. In a multi-color press, the combination with a plurality of type beds, of a shaft, a rotatable frame on the shaft, a plurality of platens carried by the frame, a disk fixed to the frame, a cam wheel coöperating with the disk to move the frame intermittently so as to bring the platens successively into register with the type beds, means for rocking the shaft, and connections between the shaft and the platens whereby when the platens are in register and the shaft is rocked they are moved outwardly and then withdrawn.

2. In a multi-color press, the combination with a plurality of type beds, of a rotating frame carrying a plurality of platens, a disk fixed on the rotating frame and having equi-distant slots at its edge, a driving wheel provided with diametrically disposed cams adapted to engage the slots successively to move the frame intermittently and bring the platens successively into register with the beds, and means for moving the platens to take an impression when the platens are in register.

3. In a multi-color press, the combination with a plurality of type beds, of a shaft, a frame rotatably mounted on the shaft and carrying a plurality of platens, means for rotating the frame independently of the shaft to bring the platens successively into register with the type beds, connections between the shaft and the platens, and means for turning the shaft, whereby through the medium of the connections the platens are moved to take an impression when in register with the type beds.

4. In a multi-color press, the combination with a shaft having type beds grouped about the same, of a frame coaxial with the shaft, platens movably mounted on the frame, a positive driving connection for moving the frame intermittently to advance the platens successively into register with the type beds, means for moving the shaft between the intermittent movements of the frame and while the platens are in register with the type beds, and means controlled by the movement of the shaft for moving the platens to take an impression from the type beds.

5. In a multi-color press, the combination with a shaft having type beds grouped about the same, of a rotating frame carrying a plurality of platens, a driving connection for moving the frame intermittently to bring the platens successively into register with the type beds, means controlled by the movement of the shaft for moving the platens to take an impression from the type beds when in register therewith, and an independent driving connection for rotating the shaft between the intermittent movements of the frame.

6. In a multi-color press, the combination with a shaft having type beds grouped about the same, of a frame coaxial with the shaft, platens pivotally mounted on the frame, means for driving the frame intermittently to bring the platens successively into register with the type beds, toggle connections between the shaft and the platens, and independent driving means for rotating the shaft between the intermittent movements of the frame.

7. In a multi-color press, the combination with a shaft having type beds grouped about the same, of a frame coaxial with the shaft, platens pivoted on the frame, a disk fixed to the frame and provided with slots, a wheel provided with a pin adapted to engage the slots to rotate the frame intermittently to bring the platens successively into register with the type beds, toggle connections between the shaft and the platens, and means for rotating the shaft between the intermittent movements of the frame to straighten the toggle connections and move the platens into contact with the type beds with which they are in register.

8. In a multi-color press, the combination with a shaft having type beds grouped about the same, of a frame coaxial with the shaft, platens pivoted on the frame, a disk rigid with the frame and having a plurality of tangential slots, a driving wheel provided with a pair of diametrically disposed pins adapted to coöperate in succession with alternate slots to impart a rotary intermittent movement to the frame and bring the platens successively into register with the type beds, toggle connections between the shaft and the platens, a pinion on the shaft, and a reciprocating rack adapted to move into and out of engagement with the pinion between the intermittent movements of the frame.

9. In a multi-color press, the combination with a plurality of type beds, of a shaft, a frame rotatably mounted on the shaft and carrying a plurality of platens, means for rotating the frame independently of the shaft to bring the platens successively into register with the type beds, means for then locking the frame against movement, toggle connections between the shaft and the platens, and a driving connection for turning the shaft independently of the rotating frame to operate the toggle connections and move the platens to take an impression when the latter are in register with the type beds and the frame is locked.

10. In a multi-color press, the combination with a shaft having type beds grouped about the same, of a frame coaxial with the shaft, platens movably mounted on the frame, a positive driving connection for moving the frame intermittently to bring the platens successively into register with the type beds, a spring pressed bar for locking the frame between the intermittent movements thereof, means controlled by the movement of the shaft for moving the platens to take an impression from the type beds when in register therewith, and means for rotating the shaft while the frame is locked.

11. In a multi-color press, the combination with a shaft having type beds grouped about the same, of a frame coaxial with the shaft, platens pivoted on the frame, a disk rigid with the frame and having a plurality of slots, a driving wheel provided with means coöperating with the slots to impart a rotary intermittent movement to the frame to bring the platens successively into register with the type beds, a locking bar, a lever having a spring connection with the locking bar, a cam reacting against the lever to press the locking bar into engagement with the frame between the intermittent movements of the latter, toggle connections between the shaft and the platens, a pinion on the shaft, and a reciprocating rack adapted to engage the pinion and rock the same while the frame is locked to move the platens into and then out of contact with the type beds.

12. In a multi-color press, the combination with stationary type beds, of a frame provided with a plurality of platens, means for moving the frame intermittently to bring the platens successively into register with the beds, a pivoted locking toe, and means for yieldingly forcing the locking toe into engagement with the frame and holding it there between the intermittent movements of the frame, and means for moving the platens while the frame is locked to take an impression from the beds with which they are in register.

13. In a multi-color press, the combination with stationary type beds, of a frame provided with a plurality of platens, means for moving the frame intermittently to bring the platens successively into register with the beds, a pivoted locking bar provided with a toe adapted to engage the frame, a pivoted lever having a spring connection with the locking bar, and a cam reacting against the lever to press the locking bar into engagement with the frame to hold the latter between the intermittent movements thereof, and means for moving the platens while the frame is locked to take an impression from the beds with which they are in register.

14. In a multi-color press, the combination with a frame carrying a plurality of type beds grouped at equal radial distances from a common center, of a shaft concentric with the general outline of the beds, a frame coaxial with the shaft and carrying a plurality of pivoted platens, a disk fixed on the platen frame and having equi-distant slots at its edge, a driving wheel provided with cams adapted to engage the slots to turn the platen frame intermittently and bring the platens successively into register with the beds, toggle connections between the shaft and the platens, a pinion fixed on the shaft, and a reciprocating rack engaging the pinion in alternation with the intermittent movement of the platen frame to rock the shaft, and whereby the direction of the rotation of the shaft is reversed after each movement of the frame and the platens moved outwardly to take an impression and then withdrawn.

15. In a press, the combination with a type bed and a platen, one of which elements is movable, means for feeding paper from a strip to the movable element, and means actuated by the movable element to sever into a blank the paper delivered to such element before the printing operation.

16. In a press, the combination with a type bed, of a plurality of coöperating platens movable successively into register with the type bed, means for feeding paper in a strip to each platen at a certain point in its movement, and a cutter actuated by the platen before it reaches its position of register to sever the paper fed thereto.

17. In a press, the combination with a type bed, of a plurality of coöperating platens, means for moving the platens forward and successively into register with the type bed, means for feeding paper in a strip to each platen at a certain point of its movement, and a cutter actuated by the platen during its printing movement at such point to sever the paper fed thereto.

18. In a press, the combination with a type bed and a platen, one of which elements is movable, of means for feeding paper in a strip to the platen, a pivoted cutter blade, and a finger engaged by the movable element to move the cutter blade to sever the strip.

19. In a press, the combination with a type bed, of a coöperating platen, means for moving the platen to bring it into register with the type bed, paper feeding mechanism for automatically supplying the platen with a strip of paper as it passes a certain point in its movement to register, a cutter blade, and a finger adapted to be engaged by the platen during its printing movement at such point and after the strip is delivered thereto to sever such strip.

20. In a press, the combination with a plurality of type beds, of a plurality of coöperating platens, means for moving the platens to bring them successively into register with the type beds, a common paper feeding mechanism for automatically supplying each platen with paper from a strip as it passes a certain point in its movement, a pivoted cutter, a finger provided with an arm to move the cutter and engaged by each platen after the paper is delivered thereto to sever the strip, and means for moving the platens to take an impression from the type beds.

21. In a press, the combination with a type bed, of a coöperating platen provided with paper gripping means, means for feeding paper from a strip to the platen, means for severing the paper delivered to the platen, and a clamp for holding the rear edge of the severed sheet until the latter is taken by the platen gripping means.

22. In a press, the combination with a type bed, of a coöperating platen provided with paper gripping means, means for feeding paper from a strip to the platen, a cutter blade actuated by the platen to sever from the strip the paper delivered to the platen, and a clamping member for holding the rear edge of the severed sheet until the latter is taken by the platen gripping means.

23. In a multi-color press, the combination with a plurality of type beds, of a plurality of coöperating platens provided with paper gripping means, means for moving the platens to bring them successively into register with the type beds, paper feeding mechanism common to the platens for automatically supplying each platen with a sheet of paper from a strip as it passes a certain point in its movement, a pivoted cutter, a finger provided with an arm to actuate the cutter and engaged by each platen successively during its movement and after the paper is delivered thereto to sever such paper from the strip, a clamp actuated by the movement of the cutter to hold the severed sheet until it is taken by the platen gripping means, and means for moving the platens to take an impression from the type beds.

24. In a press, the combination with a type bed, of a coöperating platen provided with grippers, intermittently operating paper feeding means, a reciprocating paper support, means for advancing the support across the face of the platen during the operation of the paper feeding means and with the paper delivered by the latter thereon and then retracting the support while the paper feeding means are at rest, and means for actuating the platen grippers.

25. In a press, the combination with a plurality of type beds, of a plurality of coöperating platens, means for moving platens to bring them successively into register with the type beds, paper feeding mechanism common to the platens for automatically supplying each platen with a sheet of paper from a continuous strip as it passes a certain point in its movement, a reciprocating carrier adapted to be advanced with the paper as the latter is fed to the platen and then withdrawn, a cutter for severing the sheet upon the withdrawal of the carrier, and means for moving the platens to take an impression from the type beds.

26. In a printing press, the combination with a movable platen, a type bed, and means for moving the platen into register with the type bed and then to a discharge position, of means mounted on the platen and on which the paper rests and which when moved is adapted to lift the pa-

per from the platen to free the same, and a trip for moving such means when the platen reaches its discharge position.

27. In a printing press, the combination with a movable platen and a type bed, means for moving the platen in register with the type bed and then to a discharge position, of plates loosely pivoted on the ends of the platen and normally resting upon the platen and under the blank carried by the platen, and means for moving the plates to free the blank from the platen at the discharge position.

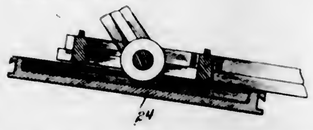
28. In a printing press, the combination with movable platens, and a type bed with which they are successively brought into register by a movement continuously forward, means for moving the platens outwardly into coöperation with the type bed at each registration, of grippers pivoted on the ends of the platens, a pivoted plate associated with each gripper and normally resting on the platen and under the blank carried by the platen, and cams so located that when each platen reaches its discharge position and is moved outwardly the grippers thereof will be opened to release the blank and thereafter the plates will be moved to free the blank from the platen.

29. In a printing press, the combination with a movable platen, of a type form with which the platen coöperates and which is provided with a clamp adapted, when the platen is moved against the form, to engage the blank on the platen.

30. In a printing press, the combination with a movable platen provided with paper clamps at its ends, of a type form provided at its sides with clamps having fingers adapted to be engaged by the platen when the latter is moved against the form to press the clamps against the edges of the blank carried by the platen.

31. In a printing press, the combination with a movable platen provided with adjustable paper clamps at its ends, of a type form provided at its sides with pivoted adjustable clamps having fingers adapted to be engaged by the platen when the latter is moved against the form to press the clamps against the side edges of the blank carried by the platen.

856,121. INK-FEEDING MECHANISM. CHARLES WILLIAMS, Chicago, Ill., assignor of three-fourths to William H. Cowles and one-eighth to John F. Young, Spokane, Wash. Filed June 27, 1904. Renewed Apr. 15, 1907. Serial No. 368,241.



Claim.—1. In an inking mechanism, the combination with the inking cylinder and the inking rollers receiving ink from the said cylinder, of a rotating longitudinally reciprocating carriage provided with a plurality of rollers moving successively into contact with the cylinder for delivering ink thereto.

2. In an inking mechanism, the combination with the inking cylinder and the inking rollers receiving ink from the said cylinder, of a trough, and a rotating longitudinally reciprocating carriage provided with a plurality of rollers for working out the ink in the trough and delivering it to the cylinder.

3. In an inking mechanism, the combination with the inking cylinder and the inking rollers receiving ink from the cylinder, of a distributing concave, and a rotating longitudinally reciprocating carriage provided with a plurality of spring pressed rollers for working out the ink in the concave and delivering it to the cylinder.

4. In an inking mechanism, the combination with the inking cylinder, and the inking rollers receiving ink from the cylinder and delivering it to the type, of a distributing concave, a shaft mounted on the concave, a carriage rotatable with and slidable longitudinally on the shaft and provided with a plurality of rollers for working out ink in the concave and delivering it to the cylinder, means for rotating the shaft, and means for reciprocating the carriage during the rotation of the same.

5. In an inking mechanism, the combination with the inking cylinder and the inking rollers associated therewith to receive ink from the cylinder and deliver it to the type, of a distributing concave, a shaft mounted on the concave, a carriage rotatable with and slidable longitudinally on the shaft and provided with a plurality of rollers for working out ink in the concave and delivering it to the cylinder, means for rotating the shaft, and cams for reciprocating the carriage during its rotation with the shaft.

6. In an inking mechanism, the combination with the inking cylinder and the inking rollers receiving ink from the cylinder and delivering it to the type, an ink chest, a feed roller mounted on the chest, a distributing concave and a rotating longitudinally reciprocating carriage provided with a plurality of rollers for receiving ink from the feed roller, working it out in the concave and then delivering it to the cylinder.

7. In an inking mechanism, the combination with a type bed, of an inking cylinder located adjacent one end thereof, inking rollers adapted to reciprocate over said type bed and around said inking cylinder, of an ink chest, a feed roller mounted in the chest, a distributing concave, a shaft extending longitudinally of the concave, a carriage rotating with but movable longitudinally of the shaft and provided with a plurality of rollers movable into engagement with the feed roller and the cylinder, means for reciprocating the carriage during the rotation of the same, and a connection between the shaft and the feed roller for imparting intermittent rotary motion to the latter roller.

8. In an inking mechanism, the combination with a type bed, of an inking cylinder located adjacent one end thereof, inking rollers adapted to reciprocate over said type bed and around the inking cylinder, of an ink chest, a feed roller mounted in the chest, a distributing concave, a shaft extending longitudinally of the concave, a carriage mounted on and rotating with and movable longitudinally of the shaft, a plurality of rollers mounted on the carriage and movable into engagement with the feed roller, the concave and the cylinder, cams for moving the carriage longitudinally during the rotation of the same, and a connection for imparting intermittent rotary motion to the feed roller.

9. In an inking mechanism, the combination with a type bed, of an inking cylinder located adjacent one end thereof, inking rollers adapted to reciprocate over said type bed and around the inking cylinder, of an ink chest, a feed roller mounted in the chest, a distributing concave, a shaft extending longitudinally of the concave, a carriage mounted on and rotating with the shaft and movable longitudinally of the shaft, a plurality of rollers carried by the carriage and movable into contact with the feed roller, the concave and the cylinder, cams for moving the carriage longitudinally during the rotation of the same, a ratchet wheel fixed on the feed roller, a pivoted arm provided with a spring controlled pawl engaging the ratchet wheel, a dog for holding the ratchet wheel against backward movement, and a link operated by the shaft and adjustably connected to the arm.

10. In an inking mechanism, the combination with a type bed, of sprocket wheels mounted at the sides and ends thereof, a pair of sprocket chains coöperating with said wheels and moving parallel to the type bed, a carriage attached at its ends to the chain and provided with inking rollers, guides located at opposite sides of the chains, and rollers on the carriage engaging opposite faces of the guides.

11. In an inking mechanism, the combination with a type bed, of sprocket wheels mounted at the sides and ends thereof, a pair of sprocket chains coöperating with said wheels and moving parallel to the type bed, adjustable guides parallel to the type bed, a carriage attached at its ends to the chains and comprising a pair of end plates connected by a cross bar, a roller on each plate coöperating with the one surface of the guide, a retaining plate associated with each bottom plate, inking rollers having rollers adapted to the other surface of the guide and journaled between each pair of end and retaining plates, and means for yieldingly holding the retaining plates to the end plates.

12. In an inking mechanism, the combination with a type bed, of sprocket wheels mounted at the sides and ends thereof, a pair of sprocket chains coöperating with said wheels and moving parallel to the type bed and around said cylinder during a portion of their course, guides parallel to the type bed and curved at their ends to correspond to the deflection of the chains while moving around the cylinder, a carriage attached at its ends to the chain and provided at each end with a pair of bearing plates, springs for holding the plates yieldingly together, inking rollers journaled at the ends thereof between the plates and having rollers on the ends thereof adapted to one surface of the guides, and a roller on one of the plates coöperating with the opposite surface of the guides.

13. In an inking mechanism, the combination with the ink chest and a feed roller associated therewith, of a pair of parallel shafts, an inking cylinder fixed on one of said shafts, a carriage on the other shaft rotating therewith but capable of longitudinal movement thereon, a sprocket wheel loose on the cylinder shaft, a sprocket wheel on the other shaft and associated with the former sprocket wheel and having fixed thereto a gear, a gear fixed on the cylinder shaft and with which the other gear meshes, a sprocket wheel located at the opposite end of the bed, a sprocket chain at one side of the bed meshing with the said sprockets, a second sprocket chain located at the opposite side of the bed, sprocket wheels carrying the second chain, and a carriage attached to the chains and provided with inking rollers to receive ink from the cylinder and deliver it to the type.

14. In an inking mechanism, the combination with the ink chest and feed roller associated therewith, of a pair of parallel shafts, an inking cylinder fixed on one of said shafts, a carriage on the other shaft rotating therewith but capable of movement longitudinally thereon, a pair of associated sprocket wheels at opposite ends of the shafts, one of the sprocket wheels on each shaft having fixed thereto a gear, a gear fixed on the other shaft with which said former gear meshes, sprocket wheels at the opposite ends of the bed, a sprocket chain meshing with each of said sprocket wheels and also meshing with the associated sprocket wheels are the corresponding side of the other end of the bed, and a carriage attached to the chains and provided with inking rollers to receive ink from the cylinder and deliver it to the type.

15. In an inking mechanism, the combination with an ink chest and feed roller associated therewith, of a pair of parallel shafts, a inking cylinder fixed on one of said shafts, a carriage on the other shaft rotating therewith but capable of movement longitudinally thereon, a pair of associated sprocket wheels at opposite sides of the shafts, one of the sprocket wheels on each shaft having fixed thereto a gear, a gear fixed on the other shaft with which said former gear meshes, sprocket wheels at the opposite ends of the bed, a sprocket chain meshing with each of said sprocket wheels and also meshing with the associated sprocket wheel at the corresponding side at the other end of the bed, and a carriage attached to the chains and provided with inking rollers to receive ink from the cylinder and deliver it to the type, the gearing being so related as to move the cylinder in the opposite direction from and at a faster rate of speed than the sprocket chain.

16. In an inking mechanism, the combination with the inking cylinder, and the traveling inking rollers receiving ink from the said cylinder, of a distributing concave, a shaft journaled on the concave, a carriage mounted on and rotatable with the shaft, rollers journaled on the carriage, and means for pressing the rollers yieldingly into engagement with the surface of the concave.

17. In an inking mechanism, the combination with the inking cylinder, and the inking roller receiving ink from the said cylinder, of a distributing concave, a shaft journaled on the concave, a carriage mounted on and rotatable with the shaft, a pair of radial arms at opposite ends of the carriage and provided with slots, a roller having its ends extending into the slots of the arms, a finger pivoted on each arm and having an aperture through which the adjacent end of the roller extends, a stop for limiting the outward movement of the finger, and a spring engaging the finger and normally tending to hold the finger in engagement with the stop.

18. In an inking mechanism, the combination with the inking cylinder and the inking rollers associated therewith, of a distributing concave, a shaft journaled on the concave, a carriage on the shaft having radial arms arranged in pairs at the opposite ends of the carriage, each of said arms being provided with a slot, a roller associated with each opposite pair of arms and having a shaft the ends of which project through the slots of such arms, fingers pivoted to the arms and having apertures at which the ends of the shaft are journaled, springs reacting against the fingers to press the rollers outwardly, and adjustable stops on the arms for limiting the outward movement of the rollers.

19. In an inking mechanism, the combination with the inking cylinder and inking roller associated therewith, of a distributing concave, a shaft journaled on the concave, a carriage rotatable with and slidable longitudinally of the shaft and having a plurality of pairs of radial arms at opposite ends of the carriage, each of said arms having a radial slot, a roller provided with a shaft having its ends extending through the slots of each associated end pair of arms, a finger pivoted on each arm and having an aperture into which the adjacent end of the roller shaft extends, a spring reacting against the finger normally tending to move the roller outwardly, and an adjustable stop limiting the movement of the finger.

20. In an inking mechanism, the combination with the inking cylinder and the inking roller to receive ink from the cylinder and deliver it to the type, of a distributing concave, a shaft, a frame rotatable with and slidable longitudinally on the shaft, and provided with a plurality of rollers for working out the ink in the concave and delivering it to the cylinder, means for rotating the shaft, and cam tracks located at opposite ends of the frame for reciprocating the frame during the rotation thereof.

21. In an inking mechanism, the combination with the inking cylinder and the inking rollers associated therewith, of a distributing concave, a shaft journaled on the concave and having a longitudinal slot, means for rotating the shaft, a carriage consisting of a pair of end members connected by a pair of cross bars, plus connecting the cross bars and extending through the slot in the shaft, rollers mounted on the end members, a pair of cam tracks located at the ends of the frame, and rollers on the end members engaging the tracks, whereby the carriage is reciprocated during the rotation of the shaft.

22. In combination with the distributing concave and associated distributing devices of an inking mechanism, of a supporting plate, a concave plate mounted on the supporting plate, adjusting screws passing through the supporting plate and on which the concave plate rests, and a roller mounted over the concave plate for delivering ink from the latter to the distributing devices.

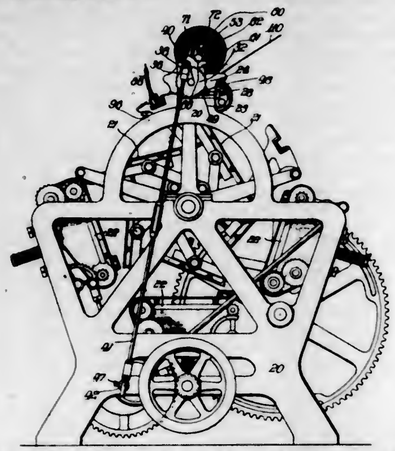
23. In an inking mechanism, the combination with an inking cylinder, of a feed roller, and a plurality of longitudinally reciprocating rollers moving successively into contact with the feed roller and the cylinder.

24. In an inking mechanism, the combination with an inking cylinder, a feed roller and a distributing concave, of a plurality of longitudinally reciprocating rollers moving in succession into contact with the feed roller, the distributing concave and the inking cylinder.

856,122. PAPER-FEEDING MECHANISM. CHARLES WILLIAMS, Chicago, Ill., assignor of three-fourths to William H. Cowles and one-eighth to John F. Young, Spokane, Wash. Filed June 27, 1904. Renewed Apr. 15, 1907. Serial No. 368,242.

Claim.—1. In a device of the class described, the combination with intermittently operating paper feeding means, of a cutter, a reciprocating paper support, means for advancing the support with the paper and beyond the cutter during the operation of the feeding means, and means for operating the cutter while the feeding means are at rest.

2. In a device of the class described, the combination with paper feeding means, of a cutter, a support movable with respect to the cutter for supporting the paper delivered beyond the cutter by the feeding means, and means for operating the cutter.



3. In a device of the class described, the combination with paper feeding means, of a cutter, a reciprocating support movable with the paper to support the same beyond the cutter, means to retract the support, and means for operating the cutter after the retraction of the support.

4. In a device of the class described, the combination with paper feeding means, of a cutter, a reciprocating paper support, and means for advancing the support with the paper beyond the cutter and then for retracting the support upon the delivery of the paper and before the operation of the cutter.

5. In a device of the class described, the combination with paper feeding means, of a reciprocating paper support, means for advancing the support with the paper and then for retracting the support upon the delivery of the paper at a higher rate of speed than upon its advance, and a cutter for severing the paper upon the retraction of the support.

6. In a device of the class described, the combination with a pair of intermittently rotating feed rollers, of a reciprocating support for supporting the paper during its delivery, means for advancing the support during the rotation of the feed rollers and then retracting the support while the feed rollers are at rest, and a cutter for severing the paper.

7. In a device of the class described, the combination with a frame, and a pair of feed rollers mounted on the frame, of a pair of toothed plates for supporting the paper during its delivery, a shaft journaled on the frame, gears on the shaft for reciprocating the plates, intermeshing elliptical gears for driving the shaft, and a driving connection for oscillating the gears.

8. The combination with paper feeding means and an associated machine to which the paper is fed, a cutter, a lever for actuating the cutter, and a trip connected to the lever and actuated by the associated machine.

9. The combination with paper feeding means and an associated machine to which the paper is fed, a pivoted cutter, a lever for slidingly engaging the cutter to actuate the same, an oscillating spindle to which the lever is fixed, and a trip on the spindle and actuated by the associated machine.

10. In a device of the class described, the combination with a paper roll support and a pair of feed rollers, a stationary blade, a pivoted cutter blade, an oscillating spindle, a trip on the spindle, a lever fixed to the spindle and engaging the pivoted cutter blade, a guide arm, a spring attached to the guide arm and the cutter blade, and a roller on the free end of the cutter blade moving on the guide arm.

11. In a device of the class described, the combination with paper feeding means and a cutter for severing into sheets the paper delivered by such means, of means located in front of the cutter for holding the severed sheets against movement during the retraction of the cutter.

12. In a device of the class described, the combination with paper feeding means and a cutter for severing into sheets the paper delivered by such means, of a clamp located in front of and controlled by the cutter for holding the severed sheets.

13. In a device of the class described, the combination with paper feeding means and a cutter for severing into sheets the paper delivered by such means, of a clamp located in front of the cutter for holding the rear edge of each sheet.

14. In a device of the class described, the combination with paper feeding means and a cutter for severing into sheets the paper delivered by such means, of a clamp in front of the cutter for holding the rear edge of each sheet, and an arm carried by the cutter and adapted to actuate the clamp.

15. In a device of the class described, the combination with a pivoted cutter and means for operating the cutter, of means for holding the severed sheets until after the completion of the cutting operation and consisting of a pair of clamping members located in front of the cutter and one of which members is movable and moved into engagement with the other member by the cutter.

16. In a device of the class described, the combination with paper feeding means, and a pivoted cutter, of means for holding the severed sheets until after the completion of the cutting operation and comprising stationary and movable members, and a spring arm on the cutter adapted upon the advance of the latter to engage the movable member and press the same against the stationary member.

17. In a device of the class described, the combination with feed rollers, of a pivoted cutter, a pair of paper holding clamps, a flexible arm by which one of the clamping members is carried, and a spring arm attached to the cutter and adapted upon the advance of the latter to engage the movable clamping member and press the same against the other member of the clamp.

18. In a device of the class described, the combination with feed rollers, a cutter, a paper holding clamp controlled by the cutter, a paper support movable with the paper beyond the cutter to support the paper upon its delivery, mechanism for advancing and then retracting the paper support, and means for operating the cutter.

19. In a device of the class described, the combination with paper feeding rollers, of a pivoted cutter, a paper holding clamp comprising a stationary and a movable member, a spring arm fixed to the cutter and adapted to engage the movable clamping member, a reciprocating support to support the paper as delivered, mechanism for operating the feed rollers and advancing the support simultaneously and then retracting the carrier, and means for operating the cutter upon the retraction of the support.

20. In a device of the class described, the combination with a frame, a paper roll support mounted on the frame, a main shaft journaled on the frame, a pair of feed rolls driven from the shaft, a pivoted cutter, a paper holding clamp controlled by the cutter, means for actuating the cutter, a pair of reciprocating plates adapted to advance with and support the paper fed by the rolls, a shaft, gears on the shaft and engaging the reciprocating plates, a sleeve loosely mounted on the main shaft, a ratchet wheel on said shaft, a pawl carrier provided with a pawl engaging the ratchet wheel and an arm fixed to the sleeve, means for oscillating the yoke, and gear connections between the sleeve and the gear shaft.

21. In a device of the class described, the combination with a frame, a paper roll support mounted on the frame, a main shaft journaled on the frame, a pair of feed rollers driven from the shaft, a cutter, a reciprocating paper support adapted to advance with and support the paper fed by the rolls, a second shaft journaled on the frame, gears on the shaft and engaging the reciprocating support, a sleeve loosely mounted on the main shaft, a ratchet wheel on the shaft, a pawl carrier having a pawl engaging the ratchet wheel and an arm fixed to the sleeve, a connection for oscillating the pawl carrier, and a gear connection between the sleeve and the gear shaft.

22. In a device of the class described, the combination with paper feeding means and a cutter, of a support movable beyond the cutter to support the paper delivered by the paper feeding means and adapted to be thrown out of operation independently of the said feeding means.

23. In a device of the class described, the combination with an intermittently driven feed roll and a cutter, of a reciprocating support movable beyond the cutter to support the paper delivered by the feeding roll and adapted to be thrown out of operation independently of the feed roll.

24. In a device of the class described, the combination with a frame, a paper roll support mounted on the frame, a main shaft journaled on the frame, a pair of feed rollers driven from the shaft, a cutter, a reciprocating paper support adapted to advance with and support the paper fed by the rolls, a second shaft journaled on the frame, gears on the shaft and engaging the reciprocating support, a sleeve loosely mounted on the main shaft, a ratchet wheel on the shaft, a pawl carrier having a pawl engaging the ratchet wheel and an arm fixed to the sleeve, a connection for oscillating the pawl carrier, a gear rotating with but slidable longitudinally of the main shaft, a stub shaft, a pinion on such stub shaft into and out of engagement with which the said gear is movable, and a gear connection between the stub shaft and the shaft upon which the paper support driving gears are mounted.

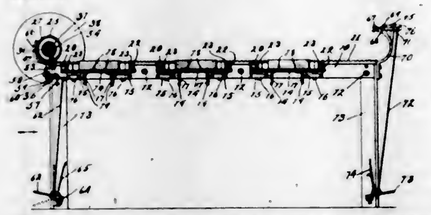
25. In a device of the class described, the combination with a frame, a paper roll support mounted on the frame, a main shaft journaled on the frame, feed rollers driven from the main shaft, a cutter for severing the paper delivered by the feed rollers, a sleeve loose on the main shaft, and adjustable guide collars on the sleeve.

26. In a device of the class described, a support for paper rolls consisting of a shaft, a seat, a bearing block in the seat and in which one end of the shaft is mounted, means for moving the block to adjust the shaft longitudinally and transversely, a retarding spring seated in the bearing and frictionally engaging the shaft, and means for adjusting the spring.

27. A paper support for paper feeding mechanisms, comprising a pair of flexible strips having apertures, and gears having teeth terminating at the pitch line and entering the apertures of the strips to reciprocate the latter.

28. A paper support for paper feeding mechanisms, comprising a strip having openings providing teeth, of a wheel cooperating therewith and having teeth terminating at the pitch line and entering the openings of the strip to engage the teeth of the latter.

856,123. PROOF-PRESS. CHARLES WILLIAMS, Chicago, Ill., assignor of three-fourths to William H. Cowles and one-eighth to John F. Young, Spokane, Wash. Filed Sept. 23, 1904. Renewed Apr. 15, 1907. Serial No. 368,243.



Claim.—1. In a device of the class described, the combination with a hollow cylinder adapted to contain a supply of paper, of a gripper co-operating with the cylinder for holding about the latter a strip of paper drawn from the cylinder.

2. In a device of the class described, the combination with a hollow cylinder adapted to contain a roll of paper and having a slot through which paper from the roll passes, and a spring pressed gripper to engage the end of the paper to hold the latter about the cylinder.

3. In a device of the class described, the combination with a hollow cylinder provided with a roll carrying sleeve located therein and having a longitudinal slot through which paper from the roll passes, a clamp for engaging the paper at the point where it passes out of the hollow cylinder, and a spring pressed gripper for engaging the free end of the paper after it passes around the cylinder.

4. In a printing press, the combination with a stationary bed, of a hollow impression cylinder provided with means for carrying a roll of paper therein, and a gripper engaging the free end of the paper to hold the latter about the cylinder.

5. In a device of the class described, the combination with a hollow cylinder adapted to contain a supply of paper and having a slot, a roller at the slot, a spring pressed clamp coöperating with the roller, and a spring pressed gripper-plate engaging the cylinder at one side of the slot.

6. In a device of the class described, the combination with a hollow cylinder adapted to contain a supply of paper and having a longitudinal slot, a roller at the slot, a slidable clamp plate operating with the roller, studs on the cylinder, a spring pressed gripper-plate slidably mounted on the studs and engaging the cylinder at one side of the slot, and springs reacting between the clamp and gripper plates.

7. In a device of the class described, the combination with a hollow paper containing cylinder having a slot, of a gripper adjacent the slot and co-operating with the cylinder and having a knife edge.

8. In a device of the class described, the combination with a hollow cylinder having a slot, of a spring pressed clamp at the slot, a gripper plate over the clamp co-operating at one edge with the cylinder at one side of the slot and having a knife edge at its opposite edge.

9. In a device of the class described, the combination with a hollow cylinder having a slot, ends closing the cylinder, and a rod in the cylinder loosely engaging the removable end and mounted on the other end.

10. In a device of the class described, the combination with a hollow cylinder having a slot, ends closing the cylinder and one of which is removable, a rod located in the cylinder loosely engaging the removable end and passing through the other end, and a rod in extension of the first rod carried by the removable end.

11. In a device of the class described, the combination with a hollow cylinder having a slot, pinions closing the ends of the cylinder and one of which is removable and provided with an inner recess, a rod passing through the other pinion and entering the recess, a rod in extension of the first rod and mounted on the removable pinion, disks and weighted rolls on the ends of the rods, handles adapted to the ends of the rods and securing the disks and rolls in position, and a sleeve on the rod in the cylinder.

12. In a printing press, the combination with a stationary bed, of a hollow impression cylinder adapted to contain a roll of paper and having a slot through which the paper passes from the roll, of a gripper engaging the end of the paper to hold the latter about the cylinder, and a gripper releaser.

13. In a printing press, the combination with a frame, a bed, an impression cylinder movable over the bed and provided with a gripper, gripping fingers at the end of the frame to release the gripper, and connections for actuating the gripping fingers.

14. In a printing press, the combination with a stationary bed, of a hollow cylinder provided with means for carrying a roll of paper and having a slot through which the paper from the cylinder passes, a clamp for engaging the paper at a point where it passes out of the cylinder, a spring pressed gripper to engage the free end of the paper to hold the latter on the cylinder, and means for releasing the gripper.

15. In a printing press, the combination with a station-

ary bed, of a hollow cylinder provided with means for carrying a roll of paper and having a slot through which the paper passes from the cylinder, a spring pressed gripper to hold the paper on the cylinder, a pair of fingers to engage the gripper to release the paper, and a connection for operating the fingers.

16. In a printing press, the combination with a plurality of stationary beds, of a hollow cylinder movable over the beds and adapted to contain a roll of paper, and a gripper for holding a strip of paper drawn from the roll about the cylinder.

17. In a printing press, the combination with a plurality of equi-distant stationary beds, of a hollow cylinder adapted to be moved over the beds and provided with means therein for carrying a roll of paper, and a spring pressed gripper for holding a strip of paper drawn from the roll about the cylinder.

18. In a printing press, the combination with a plurality of equi-distant stationary beds, of a hollow cylinder adapted to be moved over the beds and provided with means therein for carrying a roll of paper and a slot through which such paper passes from the roll, a clamp for holding the paper at the point where it passes out of the cylinder, and a spring pressed gripper engaging the free end of the paper.

19. In a printing press, the combination with a chase supporting bed, means for adjusting the bed, and springs acting in opposition to the adjusting means.

20. In a n printing press, the combination with a frame, a bed, adjusting screws on which the bed rests, and springs acting in opposition to the screws.

21. In a printing press, the combination with a frame, a plurality of equi-distant beds, adjusting screws by which the beds are carried, springs for holding the beds against the screws, of a cylinder adapted to be moved over the beds and provided with a clamp and a gripper for holding the paper about the cylinder.

22. In a printing press, the combination with a frame, a bed, an impression cylinder movable over the bed and provided with a gripper and a clamp, a rock shaft provided with gripping fingers for releasing the gripper and clamp, and a connection for rocking the shaft.

23. In a printing press, the combination with a frame, a plurality of equi-distant beds mounted thereon, of a hollow cylinder adapted to be moved over the beds and provided with means thereon for carrying a roll of paper and a slot through which such paper passes from the roll, a clamp for holding the paper at the point where it passes out of the cylinder, a spring pressed gripper engaging the free end of the paper to hold the latter about the cylinder, means located at opposite ends of the frame adapted to co-operate with the gripper to release the paper, and connections for operating such means.

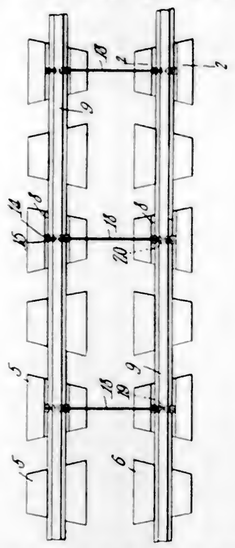
24. In a printing press, the combination with a frame provided with parallel racks, a plurality of equi-distant beds mounted on the frame, of a cylinder provided with pinions co-operating with the racks, a gripper carried by the cylinder, and having headed projections thereon, gripping fingers located at opposite ends of the frame and adapted to engage the projections to release the gripper, a rock shaft at each end of the frame by which the gripping fingers thereat are carried, and a connection to turn each rock shaft.

856,124. METHOD OF DRESSING ORES. OTTO WITT. Kaafjord, Finmarken, Norway. Filed Oct. 24, 1904. Serial No. 229,785.

Claim.—1. The process of treating or dressing ores, which comprises the crushing of the ores to suitably sized grains, removing the slimes and mixing the crushed ore with a material intermediate in hardness between the gangue and the ore particles, causing the particles to be rubbed together to reduce the more friable ore particles to be reduced to slimes, removing the material of intermediate hardness and separating the slimes from the gangue.

2. The process of treating or dressing ores, which consists in crushing the ore to suitably sized grains, washing out the slimes with water, treating the residue with iron filings to cause the filings and gangue to reduce the softer ore to slimes, magnetically separating the filings and separating the slimes and gangue.

856,125. CONCRETE TIE. MANLEY E. WOODBURY, Bowling Green, Ohio. Filed Mar. 11, 1907. Serial No. 361,748.



Claim.—1. A rail-way tie including a plurality of trapezoidal sections having their adjacent ends spaced apart and their upper faces formed with seating grooves for the reception of the rails, and brace rods connecting the rails and serving to maintain the tie sections in spaced relation.

2. A rail-way tie including a plurality of trapezoidal concrete sections having their inner ends spaced apart and each having a flat base and provided with a transverse seating groove for the reception of the adjacent rail, and braces connecting said rails and serving to maintain the tie sections in spaced relation.

3. A rail-way tie including a plurality of trapezoidal concrete sections reinforced by diagonal strengthening rods and having seating grooves formed in their upper faces for the reception of the adjacent rails, and transverse braces connecting the rails and serving to maintain the tie sections in spaced relation.

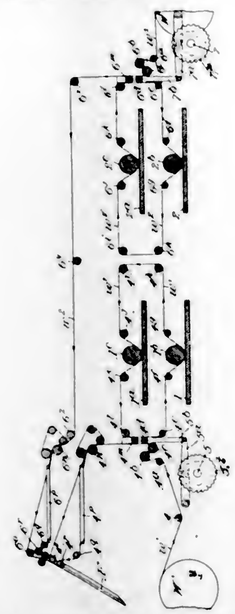
4. A rail-way tie including a plurality of trapezoidal concrete sections having transverse grooves formed in their upper faces for the reception of adjacent rails, intersecting reinforcing rods embedded in each section and having their opposite ends bent downwardly and thence extended inwardly to form laterally projecting anchoring members, transverse brace rods extending through openings formed in the web of the rail and having their opposite ends threaded, and clamping nuts engaging the threads on the braces and bearing against the rails for maintaining the tie sections in spaced relation.

5. A rail-way tie including trapezoidal concrete sections each having a seating groove formed in its upper face and intersected by vertically disposed bolt-receiving openings, said grooves being adapted to receive the rails, intersecting reinforcing rods embedded in each section, bolts passing through the openings and engaging the base of the adjacent rail, and brace rods connecting the rails and serving to maintain the tie sections in spaced relation.

6. A rond construction including a plurality of cross ties each formed of trapezoidal sections spaced apart and provided with seating recesses for the reception of the rails, said tie sections being laid with the enlarged end of one section disposed in alinement with the reduced end of an adjacent section, and transverse braces connecting the rails and serving to maintain the sections of the several ties in spaced relation.

7. A road construction including a plurality of cross ties each formed of trapezoidal sections spaced transversely and provided with seating grooves for the reception of the rails, some of the seating grooves being wider than other and intersected by vertical openings, said tie sections being laid with the enlarged end of one section disposed in alinement with the reduced end of an adjacent section, brace rods connecting the rails and serving to maintain the sections of each tie in spaced relation, and fastening devices passing through the openings in some of the tie sections and engaging the base of an adjacent rail for locking said rail in the adjacent seating groove.

856,126. PRINTING-PRESS. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich., a Corporation of Michigan. Filed Aug. 27, 1906. Serial No. 332,169.



Claim.—1. In a printing press, the combination of two adjacent sets of printing mechanisms each comprising two parallel stationary beds and two co-acting impression cylinders; with web feeding mechanism at each end of the press, a web looping mechanism at each end of the press, delivery mechanism at one end of the press, and a folder whereat all the webs are assembled.

2. In a printing press, the combination of two adjacent sets of printing mechanisms each composing two parallel stationary beds and two co-acting impression cylinders, the upper beds of said printing mechanisms being substantially in the same plane, and the lower beds being in substantially the same plane, and the adjacent beds and mechanisms being arranged end to end,—with web feeding mechanism at each end of the press, a web looping mechanism at each end of the press, delivery mechanism at one end of the press, and a folder whereat all the webs are assembled.

3. In a printing press, the combination of two web perfecting mechanisms, each comprising a pair of parallel stationary beds arranged one over the other and impressing devices co-acting with the beds, the beds in adjacent mechanisms being arranged end to end and closely adjacent, web feeding devices at the outermost end of each perfecting mechanism, web looping devices adjacent to each feeding mechanism, a pair of web delivery mechanisms, guides for directing webs through the printing mechanisms to the delivery mechanisms, and a folder.

4. In a printing press, the combination of two web perfecting mechanisms each comprising a pair of parallel beds arranged one over the other and impressing devices co-acting with the beds, the beds in adjacent mechanisms being arranged end to end and closely adjacent, web feeding devices at the outermost end of each perfecting mechanism, and web looping devices adjacent to each feeding mechanism, and a pair of web delivery mechanisms at one end of the press, guides for directing webs through the printing mechanisms, a folder at the end of the press adjacent to the delivery mechanisms, and means for assembling the webs at the folder.

5. In a printing press, the combination of two web perfecting mechanisms, each comprising a pair of parallel beds arranged one over the other and cylinders co-acting with the beds, the beds in adjacent mechanisms being arranged end to end and closely adjacent, web feeding devices at the outermost end of each perfecting mechanism, web looping devices adjacent to each feeding mechanism, a pair of web delivery mechanisms, guides for directing webs through the printing mechanisms to the delivery mechanisms, and a folder; with means whereby two cylinders and their co-acting, feeding, looping and delivery mechanisms can be put out of operation.

6. In a printing press, the combination of two web perfecting mechanisms each comprising a pair of parallel stationary beds arranged one over the other and cylinders co-acting with the beds, the beds in adjacent mechanisms being arranged end to end and closely adjacent, web feeding devices at the outermost end of each perfecting mechanism, and web looping devices adjacent to each feeding mechanism, a pair of web delivery mechanisms at one end of the press, guides for directing webs through the printing mechanisms, a folder at the end of the press adjacent to the delivery mechanisms, and means for assembling the webs at the folder; with means for simultaneously operating all the cylinders, gearing for driving the feeding mechanisms, the looping mechanism, and the delivery mechanisms in unison; and means whereby one pair of cylinders and their co-acting, feeding, looping and delivery machanisms can be put out of operation.

7. In a printing press, the combination of two web perfecting mechanisms, each comprising a pair of parallel beds and co-acting cylinders arranged one over the other, the beds in adjacent mechanisms being arranged end to end and closely adjacent, web feeding devices at the outermost end of each perfecting mechanism, and web looping devices adjacent to each feeding mechanism, a pair of web delivery mechanisms at one end of the press, guides for directing webs through the printing mechanisms, a folder at the end of the press adjacent to the delivery mechanisms, and means for assembling the webs at the folder; with means for operating the feeding, looping and delivery mechanisms in unison, and means whereby one pair of cylinders and their co-acting feeding, looping and delivery mechanisms may be put out of operation

8. The combination, in a printing press, of two adjacent stationary beds arranged substantially in the same plane, two superposed stationary beds above and parallel with the first beds, a reciprocating cylinder co-acting with each bed, guides for directing a web or webs between the beds and cylinders, a web-feeding mechanism at each end of the press, gearing between said feed mechanisms, a web looping mechanism at each end of the press, gearing between the looping mechanisms and the respective feed mechanisms, web delivery mechanisms, and a folder.

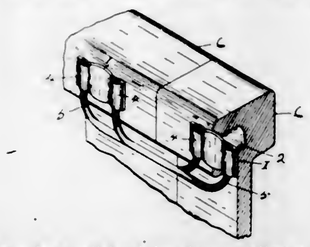
9. The combination, in a printing press, of two adjacent stationary beds arranged substantially in the same plane, two superposed stationary beds above and parallel with the first beds, a reciprocating cylinder co-acting with each bed, web guides, a web-feeding mechanism at each end of the press, a web looping mechanism at each end

of the press, a pair of delivery mechanisms at one end of the press, gearing for operating said web feeding, looping and delivery mechanisms synchronously, a folder adjacent to the delivery mechanisms; and means for directing the webs from the delivery mechanisms to the folder.

10. The combination, in a printing press, of two adjacent stationary beds arranged substantially in the same plane, two superposed stationary beds above and parallel with the first beds, a reciprocating cylinder co-acting with each bed, web guides, a web-feeding mechanism at each end of the press, a web looping mechanism at each end of the press, a pair of delivery mechanisms at one end of the press, gearing for operating said web feeding, looping and delivery mechanisms synchronously, a folder adjacent to the delivery mechanisms; and means for directing webs from the delivery mechanisms to the folder; guides whereby one or more webs may be directed through the press and printed by said beds, means whereby one set of cylinders can be thrown out of operation, and means whereby the corresponding web feeding and looping mechanisms can be put out of operation.

11. The combination in a printing press, of two adjacent stationary beds arranged substantially in the same plane, two superposed stationary beds above and parallel with the first beds, a reciprocating cylinder co-acting with each bed, guides for directing a web or webs between the beds and cylinders, a web-feeding mechanism at each end of the press, genring between said feed mechanisms, a web looping mechanism at each end of the press, gearing between the looping mechanisms and the respective feed mechanisms, web delivery mechanisms, and a folder; guides whereby one or more webs may be directed over said beds, means whereby one set of cylinders can be thrown out of operation, and means whereby the corresponding web feeding and looping mechanisms can be put out of operation.

856,127. RAIL-BOND. JAMES J. BRENNAN, Fort Wayne, Ind. Filed Sept. 24, 1906. Serial No. 335,868.

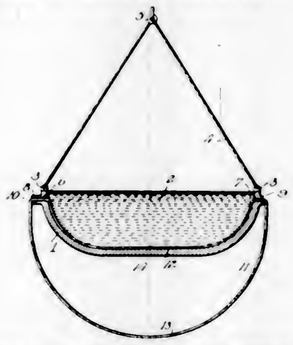


Claim.—1. A rail bond for electric railways, consisting of a pair of terminals having upon their inner face a lateral cylindrical lug provided with a central longitudinal rift-pin recess, and provided upon their outer face with a plurality of sockets adapted to receive and secure the ends of the connecting medium; a rift pin adapted to be forced into said recess and expanded by contact with the bottom thereof; and a flexible connecting means whose opposite ends are secured in said sockets by soldering.

2. In a rail bond two terminals provided upon their inner face with a longitudinally recessed lug adapted to receive a rift pin; a rift pin for the said recessed lug adapted to be expanded by contact with the bottom thereof; and a flexible connector or body portion connecting the said terminals and secured thereto by soldering.

856,128. FLY-TRAP. LUDWIG BRUGEL and OTTO PASSMANN, Baltimore, Md. Filed Jan. 23, 1907. Serial No. 353,674.

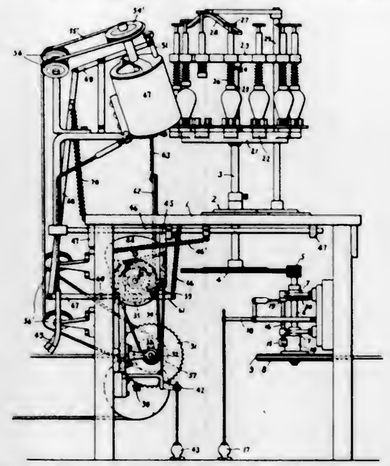
Claim.—1. A device of the character described, comprising a vessel having guides at opposite sides thereof, said vessel being adapted to contain a sticky substance, one of the guides being provided with a stripper, means for supporting the vessel, and an endless tape movable through said guides and having a portion submerged in the sticky substance and extending across the interior of the vessel and a portion disposed without and hanging dependent from the vessel, said tape being adapted to be propelled through the guides, whereby, in the operation of propelling the strip, the same will be coated with the adhesive substance and the caught flies stripped from the used portion thereof by the action of the stripper.



2. A device of the character described comprising a vessel having guides at opposite sides thereof, means for supporting the vessel, an endless strip movable through said guides having one portion extending within and across the vessel and another portion hanging pendent therefrom, and means for guiding the interior portion of the tape in its movement across the vessel.

3. A device of the character described, comprising a vessel having guide slots at opposite sides thereof, a guide member centrally disposed within the vessel, means for supporting the vessel, and an endless strip or tape extending through said guide slots and having an exterior portion pendent from the vessel and an interior portion extending across the same, said interior portion being maintained in guided contact with the interior of the vessel by said guiding member.

856,129. MACHINE FOR BASING INCANDESCENT LAMPS. WILLIAM R. BURROWS, Newark, N. J., assignor to General Electric Company, a Corporation of New York. Filed May 11, 1906. Serial No. 316,294.



Claim.—1. A machine for basing incandescent lamps having a support for a base, means for delivering a cementing material to a base in said support, and devices for pressing the base and a bulb together.

2. A machine for basing incandescent lamps having a support for a base, means for delivering a charge of a cementing material to a base in said support, a heater to soften the material, and devices for pressing the base and a bulb together.

3. A machine for basing incandescent lamps having a support for a base, a reservoir for a cementing material, means for maintaining the material therein in a molten state, means for delivering a charge of the material from said reservoir to a base in said support, and devices for pressing the base and a bulb together.

4. A machine for basing incandescent lamps having a support for a base, means for supplying a predetermined quantity of a cementing material to a base in said support, and devices for pressing the base and a bulb together.

5. A basing machine for incandescent lamps having a plurality of supports for lamp bases, means for delivering a cementing material to a base in each of said supports, and devices for pressing each of the bases in said supports and a lamp-bulb together.

6. A basing machine for incandescent lamps having a rotatable frame, a plurality of receptacles for bases carried thereby, means for supplying a charge of a cementing material to a base in each of said receptacles, a heater to soften the material, and devices for pressing each of the bases in said receptacles and a bulb together.

7. A basing machine for incandescent lamps having a plurality of supports for lamp bases, a reservoir for a cementing material, means for maintaining the material therein in a fluid state, means for delivering a charge of the material from said reservoir to each of the bases in said supports, and devices for pressing each of the bases in said supports and a lamp-bulb together.

8. A basing machine for incandescent lamps having a rotatable frame, a plurality of receptacles for bases carried thereby, means for delivering a predetermined quantity of a cementing material to a base in each of said receptacles, and devices for pressing each of the bases in said receptacles and a lamp-bulb together.

9. A basing machine for incandescent lamps comprising a rotatable frame, a plurality of receptacles for bases carried thereby, a power-shaft, means for causing the same to actuate said rotatable frame, means for supplying a cementing material to the bases in said receptacles successively, and means for pressing each of the bases and a bulb together.

10. A basing machine for incandescent lamps comprising a rotatable frame, a plurality of receptacles for bases carried thereby, means controlled by the operator for rotating said frame intermittently, means for delivering a charge of a cementing material to the base in each of said receptacles when it reaches a definite position, and devices for pressing each of the bases and a bulb together.

11. A basing machine for incandescent lamps, comprising a support for a base, devices for delivering cementing material, means for moving said devices into and out of coöperative relation to a base in said support, and means for pressing the base and a bulb together.

12. A basing machine for incandescent lamps, comprising a receptacle to receive and support a lamp base, devices for supplying a charge of a cementing material, means for moving said devices into and out of a position in which the outlet for said charge overlies the base in said receptacle, and means for pressing the base and a bulb together.

13. A basing machine for incandescent lamps, comprising a rotatable frame, a plurality of receptacles for bases carried thereby, a power shaft, means for causing the same to actuate said rotatable frame, devices for supplying charges of a cementing material, means for moving said devices into and out of coöperative reintion to the base in each of said receptacles as the bases are brought around by said frame, and means for pressing each of the bases and a bulb together.

14. A basing machine for incandescent lamps, comprising a rotatable frame, a plurality of receptacles for bases carried thereby, means controlled by the operator for rotating said frame intermittently, devices for delivering charges of a cementing material, means for moving said devices into and out of coöperative relation to the base in each of said receptacles as the base is brought to a definite position by said frame, and means for pressing each of the bases and a bulb together.

15. A basing machine for incandescent lamps having a support for a lamp base, a reservoir for a cementing material, means for withdrawing a predetermined quantity of the material from said reservoir, means for supplying the material withdrawn to the base in said support, and devices for pressing the base and a lamp-bulb together.

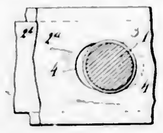
16. A basing machine for incandescent lamps, comprising a rotatable frame, a plurality of receptacles for bases carried thereby, means for rotating said frame, a reservoir for a cementing material, a cam for moving the reservoir toward and away from a receptacle on said frame, a power shaft, means for causing the power shaft to actuate said cam, means for delivering charges of said material from the reservoir to the bases in said receptacles, and devices for pressing each of said bases and a bulb together.

17. A basing machine for incandescent lamps, comprising a rotatable frame, a plurality of receptacles for bases carried thereby, means for rotating said frame, a reservoir for cementing material, means for withdrawing predetermined quantities of said material from the reservoir, a cam to actuate said means, a power shaft, means for causing the power shaft to actuate said cam, means for supplying the charges of material withdrawn to the bases in said receptacles, and devices for pressing each of the bases and a bulb together.

18. A basing machine for incandescent lamps, comprising a rotatable frame, a plurality of receptacles for bases carried thereby, means for rotating said frame, a reservoir for a cementing compound, a valve therefor, a cam to actuate the valve, a power shaft, means for causing the power shaft to actuate said cam, and devices for pressing each of the bases in said receptacles and a bulb together.

19. A basing machine for incandescent lamps, comprising a rotatable frame, a plurality of receptacles for bases carried thereby, means controlled by the operator for rotating said frame intermittently, a reservoir for a cementing material, means for moving the reservoir toward and away from each of said receptacles as the receptacle is brought to a definite position by said frame, means for withdrawing a predetermined quantity of the material from said reservoir, means for supplying the material withdrawn to the base in a receptacle, and devices for pressing each of the bases and a bulb together.

856,130. GRATING. FERDINAND E. CANDA, New York, N. Y. Filed Mar. 22, 1907. Serial No. 363,928.



Claim.—1. A grating comprising in combination two intersecting series of members, certain of the members of one said series notched at intervals for engagement by the members of the other series, the members of such second series consisting of sub-members longitudinally movable and provided with apertures which, when in registry, permit the passage of the notched members of the first series, relative longitudinal movement of said sub-members causing said second series of grating members to enter the notches of said first series and lock the two series of grating members, and means holding such sub-members in such locking position.

2. A grating comprising in combination two intersecting series of members, certain of the members of one said series notched at intervals for engagement by the members of the other series, the members of such second series con-

sisting of sub-members longitudinally movable and provided with apertures which, when in registry, permit the passage of the notched members of the first series, relative longitudinal movement of said sub-members causing said second series of grating members to enter the notches of said first series and lock the two series of grating members, said sub-members having also other apertures, in registry when said sub-members are in such locking position, through which pass other members of the first series.

3. A grating comprising in combination two intersecting series of members, the members of one series comprising longitudinally movable sub-members having apertures which, when in registry, permit the passage of members of the other series, said apertures elongated, relatively to the section of the members passing therethrough, to permit longitudinal motion of such sub-members, the members of said second series so passing through said elongated apertures having notches which said sub-members enter when so moved longitudinally relative to each other, and means holding the sub-members of said first series in such locking position.

4. A grating comprising in combination two intersecting series of members, the members of one series comprising longitudinally movable sub-members having apertures which, when in registry, permit the passage of members of the other series, said apertures elongated, relatively to the section of the members passing therethrough, to permit longitudinal motion of such sub-members, the members of said second series so passing through said elongated apertures having notches which said sub-members enter when so moved longitudinally relative to each other, said sub-members having also other apertures, in registry when said sub-members are in such locking position, through which pass other members of the second series.

5. A grating comprising in combination two intersecting series of bars, the bars of one series consisting each of longitudinally movable sub-bars, one a channel bar and the other a bar fitting within the channel of such first sub-bar, said bars having apertures therein, registering in one position of each set of sub-bars, for the passage of the bars of the other series, and elongated to permit relative movement, the bars of the other series so passing through said apertures having notches which said sub-bars engage when so moved longitudinally, and means holding each set of sub-bars in locking position.

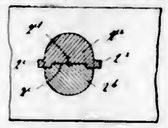
6. A grating comprising in combination two intersecting series of bars, the bars of one series consisting each of longitudinally movable sub-bars, one a channel bar and the other a bar fitting within the channel of such first sub-bar, said bars having apertures therein, registering in one position of each set of sub-bars, for the passage of the bars of the other series, and elongated to permit relative movement, the bars of the other series so passing through said apertures having notches which said sub-bars engage when so moved longitudinally, said sub-bars having also other openings which are in registry when said sub-bars are in locking position, through which other bars of the first series pass.

7. A composite grating bar comprising two longitudinal members relatively movable one to the other and provided with elongated apertures which are in registry in one position of said members, and provided with other apertures which are in registry only when said first apertures are not in registry.

8. A composite grating bar comprising two longitudinal members, one a channel bar and the other a bar fitting within such channel, said members provided with elongated apertures which are in registry in one position of said members, and provided with other apertures which are in registry only when said first apertures are not in registry.

9. A composite grating bar comprising two members, one a channel bar and the other a bar fitting within said channel, said bars provided with means for permitting the passage therethrough, and for locking them to, intersecting bars, said channel bar of relatively hard material and the bar within said channel of relatively softer material the flanges of the channel bar protecting the bar of softer material.

856,131. GRATING. FERDINAND E. CANDA, New York, N. Y. Filed Mar. 22, 1907. Serial No. 363,929.



Claim.—1. A grating comprising in combination two intersecting series of members, one of said series having apertures of non-circular section for the passage of the members of the other series, the members of such second series consisting of sub-members longitudinally movable, one sub-member of each such composite member provided with one or more longitudinal ribs interrupted at intervals, the joint section of the sub-members of each such composite member at the points of interruption of the ribs being non-circular and corresponding substantially in shape and size to said apertures in the first series of members.

2. A grating comprising in combination two intersecting series of bars, one of said series having apertures of non-circular section for the passage of the bars of the other series, the bars of such second series consisting each of sub-bars longitudinally movable, and having a tongue-and-groove connection with each other, one sub-member of each such composite bar provided with one or more longitudinal ribs interrupted at intervals corresponding to the distance between the bars of the first series, the section of each such composite bar at the points of interruption of its ribs being non-circular and corresponding substantially in shape and size to said apertures in the first series of bars.

3. A composite grating bar comprising two longitudinal members, one provided with one or more longitudinal ribs interrupted at intervals, the section of such composite bar at the points of interruption of the ribs being non-circular.

4. A composite grating bar comprising two longitudinal members having a tongue-and-groove connection, one of said members provided with one or more longitudinal ribs interrupted at intervals, the section of such composite bar at the points of interruption of the ribs being non-circular.

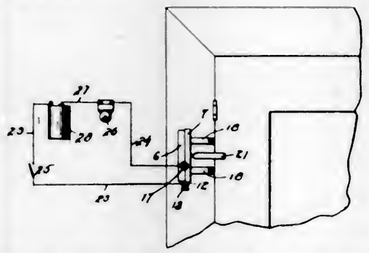
5. A sub-member of a grating bar consisting of a bar provided with one or more ribs interrupted at intervals, one longitudinal face of said bar being provided with a longitudinal channel for the reception of a tongue of a coacting sub-member.

6. In a grating, the combination with a series of bars having non-circular apertures for the passage of intersecting bars, of a series of intersecting bars passing through said apertures and provided each with one or more ribs, interrupted at intervals, corresponding to the distance between the bars of the first series, said ribbed bars of a size and shape adapting them to pass through said apertures when turned into one position, and to be held by said ribs against such passage when turned into another position, and locking bars adjacent to said ribbed bars and filling said apertures in the bars of the first series.

7. In a grating, the combination with a series of bars having non-circular apertures for the passage of intersecting bars, of a series of intersecting bars passing through said apertures and provided each with one or more ribs, interrupted at intervals, corresponding to the distance between the bars of the first series, said ribbed bars of a size and shape adapting them to pass through said apertures when turned into one position, and to be held by said ribs against such passage when turned into another position, and locking bars adjacent to said ribbed bars and filling said apertures in the bars of the first series, and having a tongue-and-groove engagement with said ribbed bars.

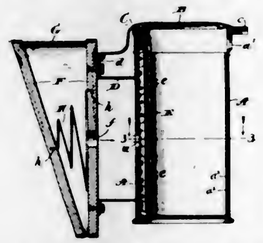
8. A composite grating bar comprising two longitudinal members, one of said members provided with one or more longitudinal ribs interrupted at intervals, and having also a longitudinal groove, the other member having a tongue fitting into said groove, said ribbed and grooved member of relatively hard material, and the tongued member of relatively softer material, the edges of the hard material preventing complete severing of the tongued bar.

856,132. ELECTRIC BURGLAR-ALARM. BERT J. CIZKOVSKY, Chicago, Ill. Filed Aug. 22, 1906. Serial No. 331,636.



Claim.—A circuit closer of the class described comprising a support, a binding post arranged upon the support, a shaft mounted for rocking movement upon the support, fixed arms carried by the support and designed for attachment to a fixed element, an arm carried by the shaft and designed for engagement with a movable element whereby the shaft will be rocked when the said element is moved, and a contact finger carried by the shaft and designed to contact with the binding post, substantially as described.

856,133. BEE-SMOKER. FRANCIS DANZENBAKER, Washington, D. C. Filed Mar. 14, 1904. Serial No. 198,055.



Claim.—1. A bee-smoker comprising a fire cup having a channel, one side of which is formed by a perforated plate extending vertically through the cup, and having an air inlet that opens into said channel at the vertical center of the channel and means for forcing air into and through the smoker.

2. A bee-smoker, comprising a fire cup having a channel, one side of which is formed by a perforated plate extending vertically through the cup and having an air inlet that opens into said channel at the vertical center of the channel, and an air forcing device having an air outlet opposite said air inlet.

3. A bee-smoker, comprising a fire cup having a channel, one side of which is formed by a perforated plate extending vertically through the cup and having an air inlet that opens into said channel at the vertical center of the channel, and an air forcing device having an air outlet opposite said air inlet, said plate being imperforate in line with said air inlet.

4. A bee-smoker comprising a cylindrical fire cup having a channel, one side of which is formed by a perforated plate extending vertically through the cup, and having an air inlet that opens into said channel, said plate having flanges on its opposite sides, and a lining for said fire cup that extends around the same from one flange to the other and means for forcing air into and through the smoker.

5. A bee-smoker comprising a fire cup having a channel, one side of which is formed by a perforated plate extending vertically through the cup, and having an air inlet that opens into said channel at the vertical center of the channel, and said channel opening at the bottom of the fire cup and means for forcing air into and through the smoker.

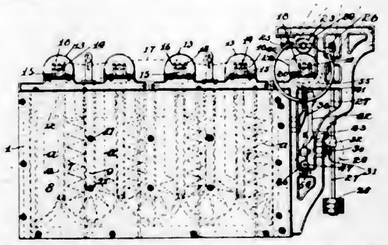
6. A bee-smoker comprising a cylindrical fire cup having a channel, one side of which is formed by a perforated plate extending vertically through the cup, and having an air inlet that opens into said channel, said plate having flanges on its opposite sides, and means for forcing air into and through the smoker and a lining for said fire cup that extends around the same from one flange to the other, said lining consisting of a sheet of non-conducting material and a sheet of metal whose edges are crimped upon the edges of the non-conducting material.

7. A bee-smoker comprising a fire cup having an air inlet, and a bellows having a single, constantly open passage for the inlet of air to the bellows and its exit to the fire cup.

8. A bee-smoker comprising a cylindrical fire cup, a channel at one side thereof, formed by a longitudinally extending plate and a portion of the fire cup, means for introducing air into said channel, a lining of incombustible material for the bottom of the cup, and a removable lid or cover for the top of the cup.

9. A bee-smoker comprising a fire cup a removable lining therefor of non-conducting material and means for forcing air into and through the smoker.

856,134. DYEING APPARATUS. LOUIS DESTRÉE, Haren, Belgium. Filed Aug. 11, 1906. Serial No. 330,219.



Claim.—1. The combination of a dyeing-tank having partitions therein forming a plurality of compartments, a guide-roll of a diameter equal to the combined width of a compartment and a partition mounted co-axially on each partition, and means for simultaneously actuating said rolls, substantially as described.

2. In a dyeing-tank, the combination of partitions forming a plurality of communicating compartments therein, partial partitions sub-dividing the upper portion of each compartment, and concave bottoms merging into the vertical walls of said compartments, substantially as described.

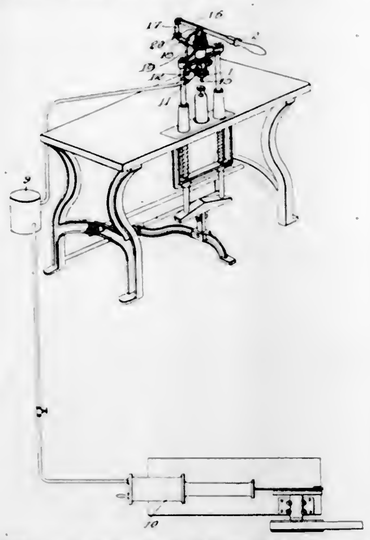
3. In a dyeing-tank, the combination of a plurality of communicating compartments having semi-circular bottoms, partial transverse partitions sub-dividing the upper portion of said compartments, and transversely projecting guide-blocks, intermediate the upper ends of said partial partitions and the walls of the respective compartments, substantially as described.

4. The combination of a dyeing-tank, guide-rolls supported thereby and in gear with each other, a fast pulley and two idle pulleys mounted upon a shaft in gear with said guide-rolls, two oppositely acting transmission belts reeving over two of said pulleys, a pair of balance-levers arranged to oscillate in a vertical plane, belt-shifting-levers connected to the upper ends of said balance-levers, a horizontal graduated rail pivotally connected to the opposite end of said balance-levers, adjustable stop-lugs thereon, a horizontal partially screw-threaded spindle, distinct from said rail, and a traveler sleeved thereon adapted to engage the said lugs and actuate the said levers, substantially as described.

5. The combination of a dyeing tank, guide-rolls supported thereby and in gear with each other, a fast and a

loose pulley mounted upon a common shaft, said shaft being operatively geared with said guide rolls, a transmission belt reeving over one of said pulleys, a belt-shifter therefor, a balanced lever connected with said belt shifter and adapted to actuate the same longitudinally with respect to said shaft, a screw spindle capable of bi-directional feeding, a traveler in gear therewith and arranged to periodically actuate the balanced lever, substantially as described.

856,135. BOTTLING-MACHINE. CHARLES W. ELLIOTT, Northfork, W. Va. Filed Dec. 26, 1905. Renewed Feb. 25, 1907. Serial No. 359,126.



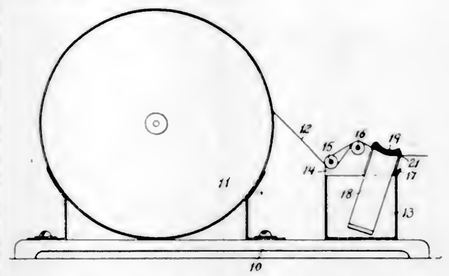
Claim.—1. In combination, a filler head, a bottle closer operating therethrough, an air exhausting pipe connected with the filler head, a self closing valve arranged in the length of the exhaust pipe adjacent to the filler head, an operating lever and an arm independent of and exterior to the filler head for operating the exhaust valve upon actuating the operating lever and connected with the latter and with the bottle closer.

2. In combination, a filler head, a bottle closer operating therethrough, an air exhausting pipe connected with the filler head, a self closing valve arranged in the length of the exhaust pipe adjacent to the filler head, and operating across said pipe parallel with the bottle closer, an operating lever for the bottle closer, and an arm independent of and exterior to the filler head for opening the exhaust valve upon actuating the operating lever and connected with the latter and with the bottle closer and serving as connecting means between the said lever and bottle closer.

856,136. STRIP-SERVING DEVICE. STERLING ELLIOTT, Newton, Mass., assignor to National Binding Machine Company, Boston, Mass., a Corporation of Maine. Filed Oct. 12, 1905. Serial No. 282,389.

Claim.—1. An apparatus of the character specified, comprising a tank or reservoir, a horizontal moistener elevated above the top of the tank and having a space whereby the strip may be led beneath said moistener, and between it and the tank and a support for the strip to serve as a guide against which the strip may be drawn when raised in contact with the moistener.

2. An apparatus of the character described comprising a support or casing 11 for a strip of paper or the like, a reservoir 13 supported in operative relation thereto, a guide 15 for the strip, a moistener 18 supported in operative relation to the reservoir, and strip severing means 17 located in proximity to the moistener, the location of the strip severing means and the construction of the parts being such that the strip is out of contact with the moistener during the severing action.



3. An apparatus of the character specified, comprising a tank or reservoir, and an inverted moistening device having an exposed surface above the liquid in the tank or reservoir, means being provided whereby a strip may be drawn in contact with the under surface of the moistener and whereby said strip, when released, will drop away from said surface.

4. An apparatus of the character specified comprising a tank, a moistener having an end therein, and a portion intermediate its ends exposed to a strip to be moistened, the strip passing during the moistening action between such intermediate portion of the moistener and the tank.

5. An apparatus of the character specified comprising a tank or reservoir, a moistening strip having ends therein, and a portion intermediate the ends exposed for application of a strip to be moistened thereto, the strip passing during the moistening action between such intermediate portion and the tank.

6. An apparatus of the character specified comprising a tank or reservoir, and a moistening device operatively connected thereto and having a face exposed for engagement therewith of the strip to be moistened and a reinforcing or backing piece for the moistener to support the same in the proper moistening position the strip when not being drawn upon, being supported out of contact with the moistener.

7. An apparatus of the character specified comprising a tank or reservoir, a moistening device operatively connected to the tank and having an exposed strip moistening portion, and a supporting bridge piece for the moistener the strip when not being drawn upon, being supported out of contact with the moistener.

8. An apparatus of the character specified comprising a tank or reservoir, a moistener operatively connected to said tank, means to guide the strip to said moistener, and a strip severing means located in proximity to the moistener the construction and location of parts being such that during the severing action the strip is out of contact with the moistener.

9. An apparatus of the character specified comprising a tank or reservoir, a moistener operatively connected thereto, a strip support at one side of the moistener, and a strip severing means adjacent the other side of the moistener the construction of parts being such that during the severing action the strip is out of contact with the moistener.

10. An apparatus of the character specified comprising a frame, a tank or reservoir mounted thereon, a moistener operatively connected to the tank, means to guide a strip to the moistener, and a strip severing means supported by the frame, the construction of parts being such that during the severing action the strip is out of contact with the moistener.

11. An apparatus of the character specified comprising a tank or reservoir, a moistener having a moisture receiving portion depending therefrom and in said tank or reservoir and having an exposed strip moistening surface the strip passing in operation between the moistener and the tank.

12. An apparatus of the character specified comprising a tank or reservoir, a moistener having a moisture receiving portion depending therefrom and in said tank or reservoir and having an exposed strip moistening surface, and a severing means upon the tank the strip passing in operation between the moistener and the tank.

13. An apparatus of the character specified comprising a tank or reservoir, a moistener having a moisture receiving portion depending therefrom and in said tank or reservoir and having an exposed strip moistening surface, and a severing means in close proximity to the moistener the strip passing in operation between the moistener and the tank.

14. An apparatus of the character described comprising a tank or reservoir and a moistening device having an exposed surface above the liquid in the tank or reservoir, means being provided whereby a strip may be drawn in contact with the under surface of the moistener and whereby the moistener and strip may be separated after the moistening of the strip.

15. An apparatus of the character specified comprising a tank or reservoir, a moistener operatively connected to the tank, means to guide the strip to the moistener, and a strip severing means located in proximity to the moistener, the location of the strip severing means and construction of the parts being such that the strip is out of contact with the moistener during the severing action.

16. An apparatus of the character specified comprising a tank or reservoir, a moistener operatively connected thereto, a strip support at one side of the moistener, and a strip severing means adjacent the other side of the moistener, the construction and relation of parts being such that the strip is out of contact with the moistener during the severing action.

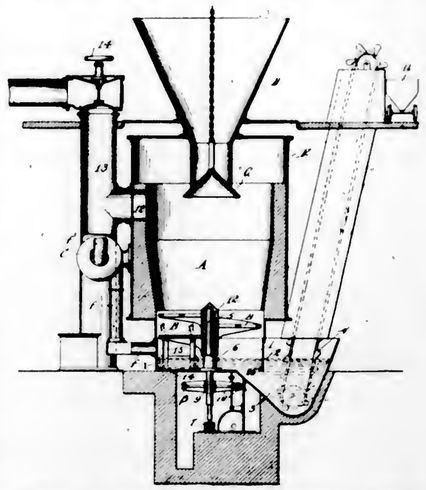
17. An apparatus of the character specified comprising a support for a strip of paper or the like, a tank or reservoir in operative relation thereto, a moistener operatively connected to the tank, guiding means for the strip between the support therefor and the moistener, and a strip severing means located in proximity to the moistener but spaced therefrom, the relative location of the moistener and the strip severing means being such that the operative pulls the strip in one direction to draw it across the moistener and then swings it in an arc to remove it from the moistener and to bring it into operative engagement with the severing means while removed from the moistener.

18. An apparatus of the character specified comprising strip supporting means, a tank or reservoir in operative relation thereto, a strip moistener operatively connected to the tank, guiding means for the strip between the strip supporting means and the tank, strip severing means carried by the tank and in proximity to the moistener but spaced therefrom, the relative location of the moistener and the strip severing means being such that the operative pulls the strip in one direction to draw it across the moistener and then swings it in an arc to remove it from the moistener and to bring it into operative engagement with the severing means while removed from the moistener.

19. An apparatus of the character specified comprising strip supporting means, a tank or reservoir adjacent thereto, a moistener operatively connected to the tank, guiding means for the strip between the supporting means and the moistener, strip severing means formed upon an edge of the tank or reservoir and spaced from the moistener, the relative location of the moistener and the strip severing means being such that the operative pulls the strip in one direction to draw it across the moistener and then swings it in an arc to remove it from the moistener and to bring it into operative engagement with the severing means while removed from the moistener.

20. An apparatus of the character specified comprising strip supporting means, a tank or reservoir mounted in proximity thereto, a moistener operatively related to said tank or reservoir, strip guiding means between the strip supporting means and the moistener, a back or bridge piece supporting the moistener with a portion thereof exposed, and a strip severing means mounted upon a wall of the tank or reservoir and spaced from the moistening means, the relative location of the moistener and the strip severing means being such that the operative pulls the strip in one direction to draw it across the moistener and then swings it in an arc to remove it from the moistener and to bring it into operative engagement with the severing means while removed from the moistener.

856,137. GAS-PRODUCER. ÁRPÁD DE GÁLOCSY, LADISLAS DE BÁNÓ, and JOHN TERÉNY, Budapest, Austria-Hungary. Original application filed Feb. 7, 1905, Serial No. 244,617. Divided and this application filed Feb. 19, 1906. Serial No. 301,730.



Claim.—1. In gas producers, a generator chamber, means for feeding material into the upper portion of the chamber, a helical grate closing the lower portion of the chamber, and means for rotating the grate in either direction for the purpose specified.

2. In gas producers, a generator chamber, means for feeding material to the upper portion of the generator chamber, a helical grate mounted beneath the chamber, an ash pit beneath the helical grate, having an ash receiving basin and a paddle secured to the grate adapted to force the ashes from the higher portion of the ash pit into the discharge basin for the purpose specified.

3. In gas producers, a generator chamber, means for feeding material to the upper portion of the chamber, a helical grate mounted beneath the chamber and of substantially the same cross-section, a ring connected to and extending downward from the chamber forming a water seal, for the purpose specified.

4. In gas producers, a generator chamber, a ring upon which it is mounted and which is adapted to form a water seal for the generator chamber, means for feeding material into the upper portion of the generator chamber, a helical grate mounted beneath the chamber and within the ring and of substantially the same cross-section as the chamber, an ash receiving basin, a vertical shaft upon which the helical grate is mounted, and means for rotating the same in either direction for the purpose specified.

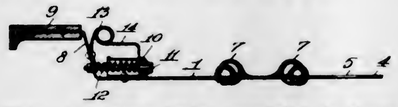
856,138. FENCE-POST. JOHN S. GRASSFIELD, Rogers, Iowa. Filed Dec. 21, 1906. Serial No. 348,997.

Claim.—A fence-post, comprising a concrete base, guy-wires fixed therein, a corrugated plate on said base, a wooden post resting thereon, an iron cap for said post, and

hook-bolts passing through said cap at the sides of the post, and connecting with said guy-wires.



856,139. CARPET-BEATER. ROBERT J. GREEN, St. Louis, Mo. Filed Feb. 15, 1907. Serial No. 357,590.



Claim.—1. A carpet beater, comprising an elongated plate, a handle arranged at one end of the plate, and a series of spring coils carried by said plate, and portions of which coils extend below the bottom surface thereof.

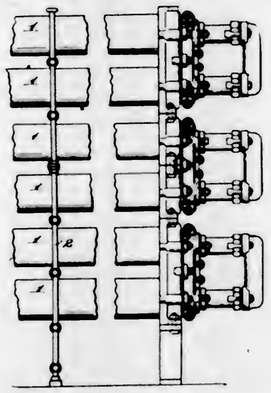
2. A carpet beater, comprising an elongated plate, a handle fixed at one end thereof, there being openings formed through the plate, and spring coils fixed to the plate and extending through said openings.

3. A carpet beater, comprising an elongated plate, a handle fixed at one end thereof, there being openings formed through the plate, spring coils fixed to the plate and extending through said openings, and a yielding member arranged between the handle and the plate.

856,140. TRIPLE-PIPE BEER-COOLER. WILHELM GRIESSER, Joplin, Mo., assignor to Olga Koehn, doing business under the name of Brewery Equipment & Supply Co., New York, N. Y. Filed Feb. 19, 1906. Serial No. 301,887.

Claim.—1. In a beer cooling apparatus, in combination with a series of pipe-units each of which comprises a plurality of pipes concentrically arranged one within the other in spaced relation, a series of hollow heads, each of said heads having the ends of two adjacent outermost pipes secured in its near wall and the ends of two adjacent intermediate pipes secured in its far wall, sectional caps secured to each of said heads and affording communication between the intermediate pipes thereof, the innermost pipes of two adjacent units continuing through and being supported by said caps, collars secured on the outer ends of the innermost pipes and of a diameter less than said intermediate pipes, and return-bends connecting the ends of adjacent innermost pipes and coöperating with said collars to form gas-tight joints.

2. In a beer cooling apparatus, in combination with a series of pipe-units each of which comprises a plurality of pipes concentrically arranged one within the other in spaced relation, a series of hollow heads, each of said heads having the ends of two adjacent outermost pipes secured in its near wall and the ends of two adjacent intermediate pipes secured in its far wall, sectional caps secured to each of said heads and affording communication between the intermediate pipes thereof, the innermost pipes of two adjacent units continuing through and being supported by said caps, collars secured on the outer ends of the innermost pipes and of a diameter less than said intermediate pipes, return-bends connecting the ends of adjacent innermost pipes and coöperating with said collars to form gas-tight joints, and bolts having hooked ends engaging said collars and screw-threaded ends passed through the apertures in said lugs and having nuts applied thereto.

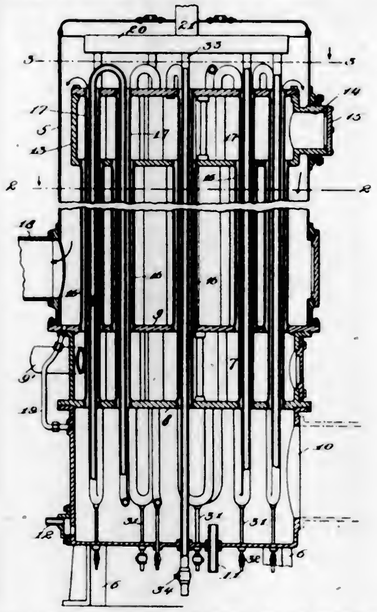


3. In a beer cooling apparatus, in combination with a series of pipe-units each of which comprises a plurality of pipes concentrically arranged one with the other in spaced relation, a series of hollow heads, each of said heads having the ends of two adjacent outermost pipes secured in its near wall and the ends of two intermediate pipes secured in its far wall, sectional caps secured to said heads and affording communication between said intermediate pipes, each of said caps having two innermost pipes continuing therethrough and affording annular seats surrounding said pipes, split sleeves surrounding each of said innermost pipes and having adjustable connection with said caps and provided with annular tongues engaging in said seats, collars secured on the ends of said innermost pipes, each of said collars being of a diameter to pass through said intermediate pipes, and return-bends removably secured to the ends of adjacent innermost pipes and coöperating with said collars to form gas-tight joints.

4. In a beer cooling apparatus, in combination with a series of pipe-units each of which comprises a plurality of pipes concentrically arranged one within the other in spaced relation, a series of hollow heads each of said heads having the ends of the outermost pipes of two adjacent units secured in its near wall and the intermediate pipes of such units secured in its far wall, said head having a grooved seat provided on its outer face, sectional caps secured to said heads and having tongues engaging in said seats, means for connecting the meeting edges of each cap together involving a tongue-and-groove joint, each of said caps providing a chamber affording communication between adjacent intermediate pipes and having the innermost pipes of adjacent units continuing therethrough, split sleeves surrounding said innermost pipes and secured to said caps, and return-bends removably secured to the outer ends of adjacent innermost pipes.

856,141. FEED-WATER HEATER. WILHELM GRIESSER, Pittsburg, Pa., assignor to Olga Koehn, doing business under the name of Brewery Equipment & Supply Co., New York, N. Y. Filed Mar. 9, 1907. Serial No. 361,541.

Claim.—1. In a feed water heater, a casing, cold water and hot water chambers in said casing, the casing having a steam inlet at one side of the cold water chamber and a compartment to receive said steam, pipes for conducting water from the cold water to the hot water chamber, other pipes for conducting steam from said compartment and extending entirely through the first mentioned pipes but of less diameter than the latter, and coil-pipe means connected with the hot water chamber for conducting hot water therefrom, said coil-pipe means extending through and being of less diameter than the second series of pipes and being also extended into said compartment.



2. In a feed water heater, a casing, a cold water chamber in said casing separated from the bottom thereof to provide a lower space, the casing having an inlet for steam opening into said lower space, a hot water chamber in said casing separated from the top thereof to provide an upper space, pipes for conducting cold water from the cold water to the hot water chamber, a second series of pipes extending through the first mentioned series of pipes for conducting steam from the lower space to the upper space, said second series of pipes being of less diameter than the first mentioned series of pipes, and coil-pipe means connected with the hot water chamber, extending through the second mentioned series of pipes, and of less diameter than the latter, said coil-pipe means having portions disposed in said lower space.

3. In a feed water heater, a casing, cold water and hot water chamber in said casing, pipes for conducting water from the cold water to the hot water chamber, steam pipes extending through and of less diameter than said other pipes, and coil-pipe means of less diameter than and extending through said second series of pipes.

4. In a feed water heater, a casing, a cold water chamber in said casing separated from the bottom thereof to provide a lower space, the casing having a steam inlet opening into said lower space, a hot water chamber in the casing separated from the top thereof to provide an upper space, pipes for conducting the cold water from the cold water chamber to the hot water chamber, a second series of pipes extending through the first mentioned series of pipes and through the two chambers for conducting steam from the lower space to the upper space, said second series of pipes being of less diameter than the first series, a manifold in said upper space, and coil-pipe means connected with the hot water chamber and also with the manifold, said coil-pipe means extending through and being of less diameter than the second series of pipes and being disposed in part of said lower space.

5. In a feed water heater, a casing, a cold water chamber in said casing separated from the bottom thereof to provide a lower space, the casing having a steam inlet opening into said lower space, a hot water chamber in the casing separated from the top thereof to provide an upper space, pipes for conducting the cold water from the cold water chamber to the hot water chamber, a second series of pipes extending through the first mentioned series of pipes and through the two chambers for conducting steam from the lower space to the upper space, said second series of pipes being of less diameter than the first series, a manifold in said upper space, and coil-pipe means connected with the hot water chamber and also with the manifold, said coil-pipe means extending through and being of less diameter than the second series of pipes and being disposed in part of said lower space, said coil-pipe means having valved blow-off pipes extending therefrom and to a point outside the casing.

6. In a feed water heater, a casing, a cold water chamber in said casing separated from the bottom thereof to provide a lower space, the casing having a steam inlet opening into said space, a hot water chamber in said casing separated from the top thereof to provide an upper space, the external portion of the hot water chamber being separated from the casing, pipes for conducting water from the cold water to the hot water chamber, steam pipes leading from said lower space to said upper space, extending through the two chambers and through the first mentioned pipes, the second series of pipes being of less diameter than the first mentioned pipes, and coil-pipe means connected with the hot water chamber, extending through and of less diameter than the said steam pipes and being disposed in part of said lower space.

7. In a feed water heater, a casing, a cold water chamber in said casing, said chamber being separated from the bottom of the casing to provide a lower space, an oil skimming pipe extending through the bottom of the casing up into said space, a hot water chamber in said casing separated from the top thereof to provide an upper space, pipes for conducting cold water from the cold water to the hot water chamber, steam pipes extending from the lower to the upper space, through the two chambers, and through the first mentioned series of pipes; said second series of pipes being of less diameter than the first series, a manifold in the upper space, and coil-pipe means connected with the hot water chamber and with the manifold, extending through, and of less diameter than the said second series of pipes and disposed in part of said lower spaces.

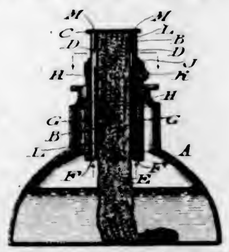
8. In a feed water heater, a casing, a cold water chamber in said casing separated from the bottom thereof to provide a lower space, a hot water chamber in the casing separated from the top thereof to provide an upper space, pipes for conducting water from the cold water to the hot water chamber, steam pipes extending through and of less diameter than the first mentioned series of pipes for conducting steam from the lower to the upper space, a manifold in the upper space, and a plurality of coiled pipe members each connected at one end with the hot water chamber and at the other end with said manifold, the coiled pipe members between their ends extending into said lower space and through said second series of pipes but of less diameter than the latter.

9. In a feed water heater, a casing, a cold water chamber in said casing separated from the bottom thereof to provide a lower space, a hot water chamber in the casing separated from the top thereof to provide an upper space, pipes for conducting water from the cold water to the hot water chamber, steam pipes extending through and of less diameter than the first mentioned series of pipes for conducting steam from the lower to the upper space, a manifold in the upper space, a plurality of coiled pipe members each connected at one end with the hot water chamber and at the other end with said manifold, the coiled pipe members between their ends extending into

said lower space and through said second series of pipes but of less diameter than the latter, and means for conducting condensates from the space between the two chambers.

10. In a feed water heater, a casing, a cold water chamber in said casing separated from the bottom thereof to provide a lower space, a hot water chamber in the casing separated from the top thereof to provide an upper space, pipes for conducting water from the cold water to the hot water chamber, steam pipes extending through and of less diameter than the first mentioned series of pipes for conducting steam from the lower to the upper space, a manifold in the upper space, a plurality of coiled pipe members each connected at one end with the hot water chamber and at the other end with said manifold, the coiled pipe members between their ends extending into said lower space and through said second series of pipes but of less diameter than the latter, and a pipe connecting the space between the two chambers with the lower space for conducting condensates from the former to the latter.

856,142. ALCOHOL-LAMP. CHARLES HALSTEAD, New York, N. Y. Filed Jan. 5, 1907. Serial No. 350,899.



Claim.—1. In an alcohol or similar lamp, a wick tube formed upon its interior with re-entrant walls, there being passages upon the inside and the outside of said tube, the same being in communication with the interior of the font and the place of consumption of the alcohol on said tube.

2. In an alcohol or similar lamp, a wick tube formed upon its interior with re-entrant walls, there being passages upon the inside and the outside of said tube, the same being in communication with the interior of the font and the place of consumption of the alcohol on said tube, and a cap for said tube having a vent therein.

3. In an alcohol or similar lamp, a wick tube formed upon its interior with re-entrant walls, there being passages upon the inside and the outside of said tube, the same being in communication with the interior of the font and the place of consumption of the alcohol on said tube, and a cap for said tube having a vent therein, said tube having a lateral opening beneath said cap.

4. In an alcohol or similar lamp, a wick tube formed upon its interior with re-entrant walls, there being passages upon the inside and outside of said tube, the same being in communication with the interior of the font and the place of consumption of the alcohol on said tube, said tube having a lateral opening, a vent on the top closure of said tube in communication with said passages and the atmosphere, and a shutter removably fitted on said tube and adapted to cover said opening.

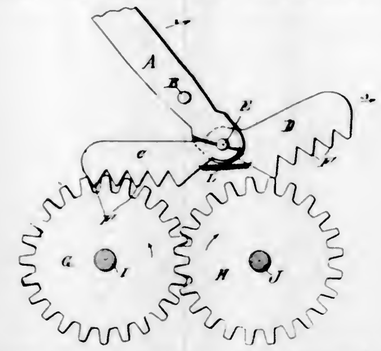
5. In an alcohol or similar lamp, a font, a corrugated wick tube formed with re-entrant walls, a sleeve adapted to be supported on said font and enter the same, and a movable shutter interposed between said wick tube and sleeve, there being passages inside and outside of said tube in communication with the font, a relative passage adapted to communicate with the atmosphere when the lamp is extinguished, and an opening at the place of consumption of the alcohol, said shutter being adapted to close said opening.

6. In an alcohol or similar lamp, a font, a corrugated wick tube formed with re-entrant walls, a sleeve adapted to be supported on said font and enter the same, and a movable shutter interposed between said wick tube and sleeve, there being passages inside and outside of said tube in communication with the font, and an opening at the place of consumption of the alcohol, said shutter being adapted to close said opening, a relative passage being adapted to communicate with the atmosphere when the lamp is extinguished, said tube having an auxiliary vent which is in communication with the font by said passage.

7. In an alcohol or similar lamp, a wick tube formed with re-entrant walls, and a shutter, there being an auxiliary passage formed by said wick tube and shutter, the same being in communication with and leading to the place of consumption of the alcohol on said tube.

8. In an alcohol or similar lamp, a wick tube formed with re-entrant walls and, with the wick and shutter, forming exterior and interior vertical passages with openings communicating with the former at the place of consumption of the alcohol on said tube, a shutter, and a sleeve having means for supporting said wick tube, whereby the said tube and shutter are bodily removable with the sleeve.

856,143. RATCHET-POWER. JAMES H. HARDEN, Anniston, Ala. Filed Aug. 8, 1906. Serial No. 329,748.

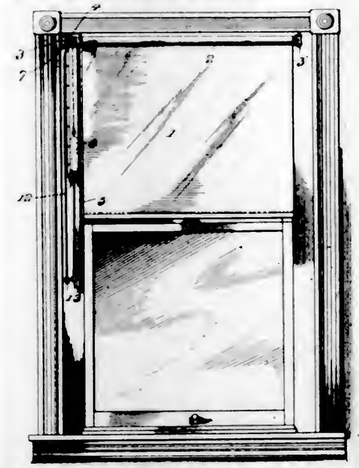


Claim.—A ratchet power comprising a fulcrumed lever, oppositely projecting arms having pivotal attachment to the lower or short end of the lever, there being a series of ratchet teeth on each of the pivoted arms, a spring extending from one to the other of said arms, the spring being connected and operating to turn the arms on their pivotal support, intermeshing gear wheels on rotatable shafts, one of said arms being arranged with its teeth adapted to engage the teeth of one gear wheel, and the oppositely projecting arm being arranged with its teeth to engage the teeth of the other gear wheel, the arms being held in contact with the gear wheels by tension of said spring.

856,144. CURTAIN RAISER AND CONTROLLER. EDWARD HARRIS, Wapanucka, Ind. Ter., assignor of one-third to Albert Leet, McAlester, Ind. Ter., and one-third to William R. Belt, Wapanucka, Ind. Ter. Filed Aug. 18, 1906. Serial No. 331,174.

Claim.—1. In a rolled curtain or shade, the combination of a roller upon which the curtain is to be wound adapted to unwind by the weight of the curtain and having a winding pulley, a cord having one end free to be pulled, wound upon said pulley, in a direction to cause winding of the curtain when the cord is pulled and having its other end provided with means imposing a yielding resistance to said pull, and means independent of said pull cord for arresting the pull resisting means, relieving the grip of the winding cord when the free end is released and permitting the curtain to gravitate downward.

2. In a rolled curtain or shade, the combination of a roller upon which the curtain is to be wound adapted to unwind by the weight of the curtain and having a winding pulley, a cord having one end free to be pulled, wound upon said pulley, in a direction to cause winding of the curtain when the cord is pulled and having its other end provided with means imposing a yielding resistance to said pull, and means arresting the pull resisting means, relieving the grip of the winding cord when the free end is released and permitting the curtain to gravitate downward; said winding cord and pull resisting means being adapted to develop a slight frictional resistance to the unwinding movement of the roller by a slight pull on the free end of the winding cord and thereby permit the descent of the curtain to be controlled.



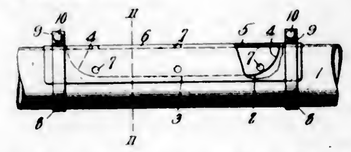
3. In a roller curtain raising means, the combination of a cylindrical pulley, a cord having one end connected to a yielding resistance and having its intermediate portion wound upon said pulley in a direction to cause winding of the curtain when the cord is pulled in opposition to said resistance and having a free end presented in position to receive the winding pull; said pulley being rigidly connected with the roller whereby the winding cord may serve as a retarding brake in the unwinding movement.

4. In a roller curtain raising means, the combination of a cylindrical pulley, a cord having one end connected to a yielding resistance and having its intermediate portion wound upon said pulley in a direction to cause winding of the curtain when the cord is pulled in opposition to said resistance and having a free end presented in position to receive the winding pull; said pulley being rigidly connected with the roller whereby the winding cord may serve as a retarding brake in the unwinding movement and a releasable dogging device normally preventing unwinding movement of the roller.

5. The combination of the curtain roller, the cylindrical pulley rigidly connected therewith, the cord having a free pulling end and wound upon said pulley in a direction to cause winding of the curtain when the cord is pulled, and a weight connected with the end of the cord opposite to the pulling end, and means for limiting the downward movement of the weight so that when said weight is arrested, the frictional driving connection between the cord and the pulley may be regulated at will to control the unwinding movement of the curtain.

856,145. HAND-HOLE FOR PNEUMATIC-TUBE SYSTEMS. WALTER V. HART, Maywood, and FRANK J. NOVAK, Chicago, Ill. Filed Oct. 25, 1906. Serial No. 340,504.

Claim.—1. In a device of the class described, in combination, an apertured tube, a plate closely fitting said aperture, and an outer resilient member secured to said plate, said member being constructed and arranged to span said tube and by its resilience retain the plate in position; substantially as described.



2. In a device of the class described, in combination, an apertured tube, an inner plate closely fitting said aperture, and an outer resilient plate of greater area than the inner plate and attached thereto, said outer plate being constructed and arranged to span said tube and by its resilience retain the inner plate in position in said aperture; substantially as described.

3. In a hand-hole construction for despatch tubes, in combination, an apertured tube, an inner plate closely fitting said aperture, an outer plate of greater area than said aperture attached to said inner plate, and means for securing said plates to said tube; substantially as described.

4. In a hand-hole construction for despatch tubes, in combination, an apertured tube, a plate closely fitting said aperture, a resilient member for temporarily retaining said plate in position in said aperture, and means for securing said plate and member to said tube; substantially as described.

5. In a hand-hole construction for despatch tubes, in combination, an apertured tube, an inner plate closely fitting said aperture, an outer plate of greater dimensions than said inner plate and secured thereto, and clamp rings for securing said plates to said tube; substantially as described.

6. In a hand-hole construction for despatch tubes, in combination, a tube having an aperture comprising a semi-circumference of said tube, an inner plate closely fitting said aperture, an outer resilient plate comprising an arc greater than a semi-circumference of the tube and attached to said inner plate, and split clamping rings for securing said plates upon said tube; substantially as described.

7. In a hand-hole construction for permitting the removal of carriers from despatch tubes, in combination, a tube-section having an aperture of greater length than the carrier and comprising a semi-circumference of said tube, a curved inner plate closely fitting said aperture, a curved resilient outer plate of greater dimensions than said inner plate and secured thereto, a plurality of split rings adapted to embrace said tube and outer plate, and means for clamping the ends of said split rings; substantially as described.

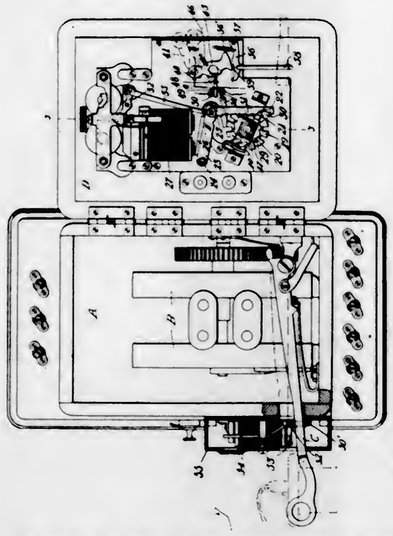
856,146. LOCK-OUT DEVICE FOR TELEPHONES. RUBEN C. M. HASTINGS and THURSTON MATHENY, Athens, Ohio. Filed May 7, 1906. Serial No. 315,712.

Claim.—1. In party line telephone systems, a call bell arranged at each station, a locking device engaging the clapper rod of the bell, an electro-magnetically actuated means for releasing said locking device, a normally closed deënergized selecting circuit in which all of the electro-magnets are connected, a local battery at each station, means for connecting the batteries in the selecting circuit, an auxiliary battery, and means for automatically connecting the battery in the circuit whenever the local battery is thrown on the line.

2. In party line telephone systems, a call bell at each station, a pivoted lever having a notch for the reception of the clapper rod of the bell, an electro-magnet, an armature disposed within the field of force of the electro-magnet, a pivoted armature carrying lever, a pawl carried by said lever, a ratchet wheel with which said pawl engages, a cam lever movable with the ratchet wheel, a cam actuated lever, means for connecting the same to the clapper

rod locking member, and a manually operable means at each station for making and breaking the circuit.

3. In party line telephone systems, a call bell at each station, a clapper rod locking lever, an electro-magnet, an armature arranged within the field of force of the electro-magnet, an armature carried lever, a pawl operated thereby, a ratchet wheel with which the pawl engages, a revolubie disk having a notched periphery, a cam block adjustable into any one of the notches, a cam actuated lever adjacent to the disk, means for connecting the cam lever to the locking lever, a selecting line in which all of the electro-magnets are connected, and means at each station for energizing and deënergizing the line.



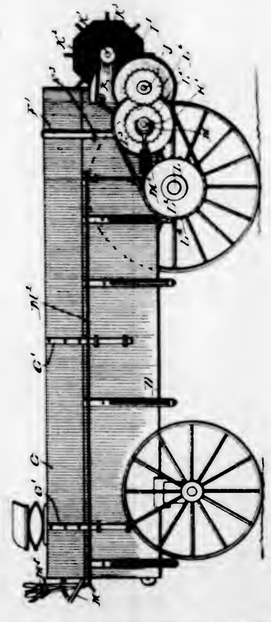
4. In party line telephone systems, a receiver hook at each station, a receiver hook locking device, an electro-magnet for operating the same, a normally closed deënergized circuit in which all of the electro-magnets are connected, a local battery at each station, a manually operable means for connecting the battery in the circuit, and means under the control of each receiver hook for retaining the line closed and energized.

5. In party line telephone systems, a receiver hook at each station, an electro-magnetically operated receiver hook locking device, a normally closed deënergized circuit in which all of the electro-magnets are connected, a local battery at each station, a switch for connecting the battery in the line, a switch operating arm having a shouldered end, a spring elevated lever movable in the path of the shoulder to hold the circuit closed and energized, and a hook depending from the lever and arranged to extend under the receiver hook.

6. In a party line telephone system, a selecting line, selecting mechanism at each station, said line being normally closed and deënergized, a local battery at each of the stations, means at each station for connecting the battery in the line, a main line battery normally disconnected from the line, and an electro-magnetically actuated means connected in the line and adapted when energized by the local battery to connect the main battery in series in the line.

856,147. FERTILIZER-SPREADER. WINFIELD S. HAYDEN, Palmyra, Mo. Filed Aug. 25, 1906. Serial No. 332,046.

Claim.—1. In a device of the kind described a frame consisting of side and end members, members adjacent to the side members parallel central members, corner boxes adapted to receive the ends of the side and end members, and angled plates adapted to connect the central members and the members adjacent the side members to the end members.

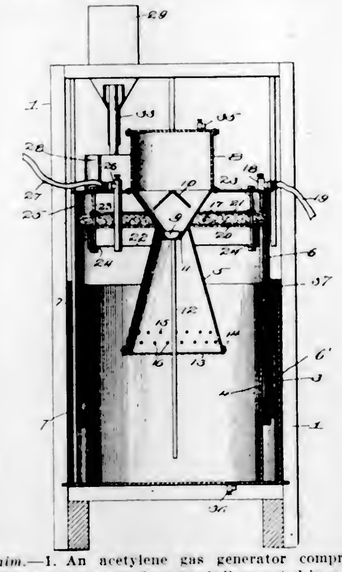


2. In a device of the kind described a frame consisting of side and end members, members parallel to and adjacent the side members, parallel centrally arranged members, boxes each divided into two compartments by a partition and provided with a perforated lug, the end portions of the side and end members resting in said boxes, angled plates connecting the central members of the frame to the end members, rollers mounted between adjacent parallel members, bearings formed in said last mentioned members, a shaft journaled therein, shafts carried by the lugs of the boxes, sprocket wheels upon the last mentioned shafts, sprocket chains running over said wheels, an apron carried by said wheels traveling upon the rollers, means for driving the shaft journaled in the bearings of the frame, and means for transmitting rotation of said shaft to one of the shafts having the sprocket wheels.

3. A fertilizer distributer comprising a traveling apron, a frame supporting said apron, rollers upon which the apron rests journaled in said frames, a shaft journaled in said frame, means for driving said shaft, gearing arranged upon opposite sides of the apron and adapted to drive the said apron, and means for throwing either or both of said gearings into or out of engagement with the shaft journaled in the frame.

4. In combination with a running gear a frame carried thereby, rollers journaled in the frame, a shaft journaled in the frame, boxes connecting the sides and end portions of the frame and provided with forwardly and rearwardly extending lugs respectively, shafts journaled in said lugs, sprocket wheels mounted upon said last mentioned shafts, chains running over said shafts, an apron traveling with said chains and resting upon the rollers, a sprocket wheel upon the wagon axle driven by rotation of the wagon wheel, a sprocket wheel upon the shaft journaled in the frame, sprocket chains connecting the two last mentioned sprocket wheels, a beater, a sprocket wheel upon the rear shaft carried by lugs, a sprocket wheel upon the beater, a sprocket chain running over the two last mentioned sprocket wheels, a gear wheel fixed upon the last mentioned shaft, a gear wheel loose upon the shaft journaled in the frame and meshing with the last mentioned gear wheel, and a clutch mechanism adapted to lock the loose gear wheel to its shaft, as and for the purpose set forth.

856,148. ACETYLENE-GAS GENERATOR. PARK O. HAYS, Gainesville, Tex. Filed Oct. 25, 1906. Serial No. 340,587.



Claim.—1. An acetylene gas generator comprising a tank, a gas-bell, a secondary gas-bell mounted in said first-mentioned gas-bell, means for feeding carbid to said secondary gas-bell, a wire netting removably secured to said secondary gas-bell for supporting said carbid in the upper strata of water contained in said tank, said secondary bell being formed with apertures below the water line for forcing the gas generated therein to pass through part of the water contained in said receptacle, and a strainer and drier in said first-mentioned bell positioned above said secondary bell for drying and cleaning the gas generated in said secondary bell, said strainer and drier being spaced from the top of said first mentioned bell for forming a gas chamber.

2. An acetylene gas generator comprising a receptacle, a gas-bell, a carbid receptacle, means for feeding said carbid and means for straining the gas generated from said carbid, said means comprising a wire mesh, a layer of fibrous material, a rod for holding said material in compact form, and means for sustaining said wire mesh and said fibrous material in position a short distance from the top of said gas bell for forming a gas chamber.

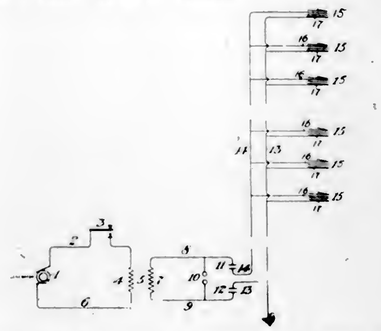
3. An acetylene gas generator comprising a receptacle containing water, a gas-bell, a carbid chamber mounted upon said bell, means for feeding carbid to said water containing chamber and a gas strainer positioned within said gas-bell below the top thereof, and means for holding said strainer out of contact with the top of said gas-bell for creating a receptacle for the strained gas.

4. An acetylene gas generator, comprising a receptacle, a gas-bell, a carbid chamber mounted on said gas-bell, means for feeding carbid from said carbid chamber, a tank positioned above said bell and out of contact therewith containing loose material, a plunger secured to the top of the gas-bell, said plunger being adapted to force material from said chamber at each reciprocation of said bell and means secured to the top of said bell for receiving the material forced from the receptacle positioned above said bell.

5. An acetylene gas generator comprising a tank, a gas-bell therefor, a carbid receptacle positioned upon said gas-bell, means for feeding carbid therefrom, a receptacle positioned above said bell and out of contact therewith, said receptacle comprising a tank, a hopper, and plunger receiving sleeves, and a plunger secured to the top of said bell for forcing material from said hopper upon the top of said bell.

6. An acetylene gas generator comprising a generator having a stationary and a movable member, a receptacle carrying loose material positioned out of contact with said movable member, said movable member carrying a carbid receptacle and means for feeding carbid therefrom and a reciprocating plunger secured to said movable member for feeding loose material to the top of said movable member from first said receptacle as the carbid is fed from said carbid receptacle.

856,149. AERIAL RADIATING-CIRCUIT. PETER C. HEWITT, New York, N. Y., assignor to Cooper Hewitt Electric Company, New York, N. Y., a Corporation of New York. Original application filed Jan. 20, 1904, Serial No. 189,796. Divided and this application filed Mar. 7, 1904. Serial No. 196,841.



Claim.—1. A radiator for electromagnetic waves consisting of a step-up auto converter, in combination with means for energizing the same.

2. A radiator for electromagnetic waves consisting of an auto converter having its winding substantially parallel with the ground in combination with means for energizing the same.

3. A radiating circuit comprising a series of solenoids axially arranged, and means for supplying currents thereto, said solenoids being wound and energized to produce magnetic flux in the same direction.

4. A radiating circuit comprising a series of solenoids axially arranged and means for supplying oscillatory currents thereto, said solenoids being wound and energized to oscillate in substantially the same phase.

5. A radiating circuit comprising a series of solenoids axially arranged, and means for exciting oscillations in each, said oscillations being substantially in phase and cooperating to produce magnetic flux in the same direction.

6. A radiating circuit comprising a series of solenoids having a common axis, and supply conductors between which they are connected in multiple, said solenoids and their connection to the supply conductors being such that their magnetic fluxes are substantially synchronous and in the same direction.

7. A radiating circuit comprising a series of solenoids having a common axis, in combination with means for supplying rapidly varying electric currents thereto, said rapidly varying electrical currents being in substantially the same phase in all the solenoids of said series.

8. A series of turns or windings about a common axis and means for causing rapidly varying synchronous oscillations or impulses to said turns or windings by plurality of parallel connections each supplying one or more of said windings or turns independently of the others.

9. A series of turns or windings about a common axis, in combination with a source of high frequency oscillations or impulses energizing said turns or windings in parallel and in the same direction, the natural electrical time period of each winding being substantially the same.

10. An aerial radiating circuit comprising a vertically arranged series of coils of like polarity having a common axis in combination with supply conductors between which they are connected in multiple.

11. A radiating circuit comprising a series of auto-converters axially arranged, and means for supplying currents thereto, said auto-converters being wound and energized to produce magnetic flux in the same direction.

12. A radiating circuit comprising a series of auto-converters axially arranged and means for supplying oscillatory currents thereto, said auto-converters being wound and energized to oscillate substantially in phase.

13. A radiating circuit comprising a series of auto-converters axially arranged, and means for exciting oscillations in each, said oscillations being in phase and coöperating to produce flux in the same direction.

14. A radiating circuit comprising a series of auto-converters having a common axis, and supply conductors between which they are connected in multiple, said solenoids and their connection to the supply conductors being such that their magnetic fluxes are substantially synchronous and in the same direction.

15. A radiating circuit consisting of a plurality of auto-converter coils having substantially the same time period and arranged along a common axis.

16. A radiating circuit comprising a series of auto-converters having a common axis, in combination with means for supplying rapidly varying electric currents thereto, said rapidly varying electrical currents being in substantially the same phase, in all the auto-converters of said series.

17. A series of coils having a common axis, and means for supplying varying electric currents thereto, said varying electrical currents being in substantially the same phase in all coils of said series.

18. An aerial radiating circuit comprising a series of coils proportioned to have the same time period of free oscillation, arranged to have a common magnetic axis and connected to oscillate synchronously and in proper phase for the purpose described.

19. In a system for radiating electro-magnetic waves the combination with a source of oscillatory electric currents of a series of similar coils connected in series with said source and in parallel with each other and arranged to have a common magnetic axis.

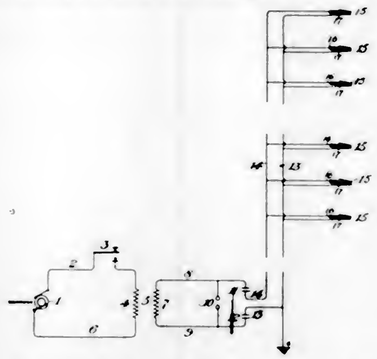
20. In a system for transmitting electro-magnetic waves, the combination with coils having a common axis, of means for causing therein electric currents varying in proper phase to produce synchronously varying similar magnetic fields for the purpose described.

21. In a system for transmitting electro-magnetic waves, the combination with coils having a common axis, of means for causing therein electric currents alternating in proper phase to produce synchronously alternating similar magnetic fields for the purpose described.

856,150. METHOD OF RADIATING ELECTROMAGNETIC WAVES. PETER C. HEWITT, New York, N. Y., assignor to Cooper Hewitt Electric Company, New York, N. Y., a Corporation of New York. Filed Jan. 20, 1904. Renewed Feb. 21, 1907. Serial No. 358,725.

Claim.—1. The method of radiating energy by means of electromagnetic waves, which method consists in generating by separate circuits, a series of magnetic fluxes, in the same direction, along a common axis forming one field.

2. The method of radiating energy by means of electromagnetic waves, which method consists in generating by parallel circuits, a series of magnetic fluxes in the same direction, along a common axis forming one field.



3. The method of transmitting signal waves, which method consists in generating a series of vibratory electric currents, transmitting the same through a series of separate circuits, producing thereby synchronous fluxes in the same direction, along an axis common to all the circuits and radiating the energy thereof.

4. The method of transmitting signals by means of electromagnetic waves, which method consists in generating waves having their electromagnetic lines lying in radial planes having the linear axis of a longitudinally extending radiator, as their line of intersection.

5. The method of transmitting signals by means of electromagnetic waves, which method consists in generating waves having their electromagnetic lines lying in radial planes having the linear axis of a vertically extending radiator, as their line of intersection.

6. The method of transmitting energy by means of electromagnetic waves, which method consists in causing electric currents to traverse circular or spiral paths having a common axis and causing said currents to alternate in proper phase to produce synchronously alternating, similar, magnetic fields, substantially as and for the purpose described.

7. The method of transmitting energy by means of electromagnetic waves, which method consists in exciting free electrical oscillations in circular or spiral paths having a common axis and causing said oscillations to alternate in proper phase to produce synchronously alternating similar, magnetic fluxes in the same direction, substantially as and for the purpose described.

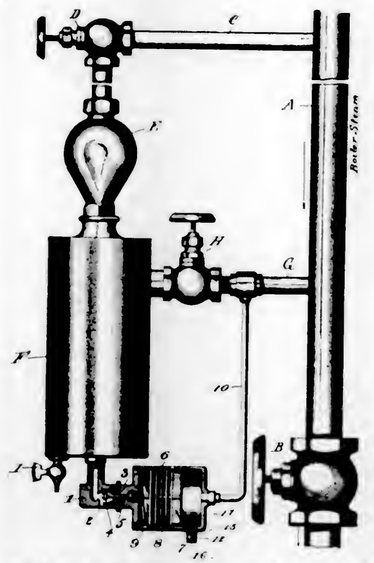
856,151. AUTOMATIC DRAINAGE ATTACHMENT FOR LUBRICATORS. JOSEPH C. HUBBARD, Georgetown, S. C. Filed Oct. 13, 1906. Serial No. 338,763.

Claim.—1. A drainage attachment for a lubricator, comprising a valve controlling an outlet from the lubricator, means for holding the valve closed by the normal steam pressure and means for automatically opening the valve when the steam pressure falls.

2. A drainage attachment for a lubricator, comprising a valve controlling an outlet from the lubricator, a cylinder with piston connected to said valve, a live steam connection on one side of the piston, and a spring arranged upon the other side.

3. A drainage attachment for a lubricator, comprising a valve controlling an outlet from the lubricator, a cylinder with piston connected to said valve, a live steam connection on one side of the piston, and a spring arranged upon the other side, said cylinder having also a vent outlet in the same located on the same side of the piston with the spring to prevent steam pressure on this side.

4. A drainage attachment for a lubricator, comprising a valve controlling an outlet from the lubricator, a cylinder with piston connected to said valve, a live steam connection on one side of the piston, a spring arranged upon the other side, and an inwardly opening check valve located in the steam space of the cylinder beyond the travel of the piston and arranged to be held closed by the normal steam pressure and to be opened by the reduction of such pressure.



5. A drainage attachment for a lubricator, comprising a valve controlling an outlet from the lubricator, a cylinder with piston connected to said valve, a live steam connection on one side of the piston, a spring arranged upon the other side and a drainage valve for the steam side of the cylinder consisting of a tube, a stem sliding in said tube and having a valve cap on its end seating upon the tube and a spring wound around the stem and opening the valve when the steam pressure is reduced.

6. A drainage attachment for a lubricator, comprising a valve controlling an outlet from the lubricator, a cylinder with piston connected to said valve, a live steam connection on one side of the piston, a spring arranged upon the other side, an automatic drainage valve for the steam side of the cylinder, and means for adjusting this valve.

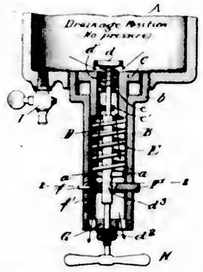
7. A drainage attachment for a lubricator, comprising a valve chamber having a channel and offset portion for connection with the lubricator, a valve seat and a drainage outlet, a valve mounted upon a stem and having a rigidly attached piston, a bonnet, and cylinder head inclosing the valve stem and having a screw connection both with the valve chamber and the cylinder, and a live steam connection for the other end of the cylinder.

8. An automatic steam actuated drainage valve combined with a steam actuated lubricator.

856,152. AUTOMATIC DRAINAGE ATTACHMENT FOR LUBRICATORS. JOSEPH C. HUBBARD, Georgetown, S. C. Filed Dec. 24, 1906. Serial No. 349,244.

Claim.—1. An automatic drainage attachment, comprising a tubular case, a piston with the case having a passageway through it, a spring acting against the piston for forcing it inwardly, a valve controlling the passageway in the piston, a spring acting upon this valve to force it inwardly to open the same, and a locking catch for holding this valve closed, said locking catch being arranged to be released by the outward movement of the piston.

2. An automatic drainage attachment, comprising a two-diameter tubular case having an enlarged inner end, a two-diameter piston fitting the case and having a passageway through it, a spring acting against the piston for forcing it inwardly, a valve controlling the passageway in the piston, a spring acting upon this valve to force it inwardly to open the same, and a locking catch for holding this valve closed, said locking catch being arranged to be released by the outward movement of the piston.



3. An automatic drainage attachment, comprising a tubular case, a piston within the case having a passageway through it, a valve stem having a valve on its inner end controlling said passageway and extending entirely through the case and having a stop projection on it limiting the inward movement of the valve, a spring between the piston and case for forcing the piston inwardly, a weaker spring between the valve and piston for forcing the valve inwardly, and a locking catch for locking the valve closed, said locking catch being released by the outward movement of the piston.

4. An automatic drainage attachment, comprising a tubular case, a piston within the case having a passageway through it, a valve stem having a valve on its inner end controlling said passageway and extending entirely through the case and having a handle on the outside, a spring forcing the piston inwardly, a separate spring forcing the valve inwardly, and a locking catch for holding the valve closed, said locking catch being arranged to be released by the outward movement of the piston.

5. In an automatic drainage attachment having a movable piston and a central valve in the same with independent springs; the locking and releasing device for the valve stem, consisting of one or more locking projections on the valve stem, a transverse locking catch for the same and a spring for the locking catch arranged to release the locking catch from the valve stem.

6. In an automatic drainage attachment having a movable piston and a central valve in the same with independent springs; the locking and releasing device for the valve, consisting of a flat sided valve stem with one or more teeth on its side, and a transverse locking catch consisting of a yoke embracing the flattened sides of the valve stem and extending through the side wall of the case and a spring for forcing the catch outwardly.

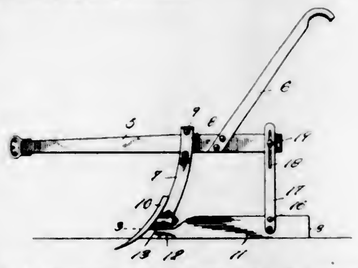
7. In an automatic drainage attachment having a movable piston and a central valve on the same with independent springs; the locking and releasing device for the valve, consisting of a flat-sided valve stem with one or more teeth on its side, and a transverse locking catch consisting of a yoke embracing the flattened sides of the valve stem and extending through the side wall of the case, a pin on the opposite side of the yoke also extending through the case and a spring on said pin arranged between the yoke and case.

8. An automatic drainage attachment, comprising a case, a perforated piston with valve for the same, a spring interposed between the valve and piston, a spring interposed between the piston and case, a valve stem with one or more locking teeth, a transverse locking catch, and a stop and handle on the valve stem outside of the case.

856,153. LANDSIDE. ALEXANDER A. HUGHES, Gunn, Miss., assignor of one-half to T. J. Walker, Magee, Miss. Filed Aug. 13, 1906. Serial No. 330,359.

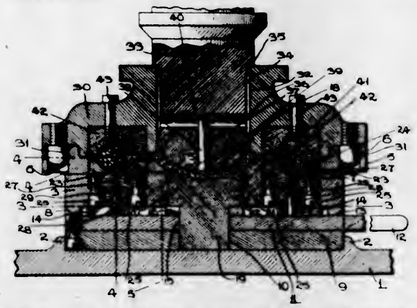
Claim.—1. In a device of the class described, the combination with a plow beam and a standard secured to the

beam and provided adjacent its lower end with an opening, of a standard adjustably carried by the beam, and a land side having a reduced end engaged through the opening in the plow standard and pivoted to the lower end of the adjustable standard.



2. In a device of the class described the combination with a plow beam and its standard, of a standard adjustably carried by the beam, and a landside pivotally connected with the adjustable standard and having one of its ends reduced and turned laterally and engaged through an opening in the plow standard.

856,154. GLASS-MOLD. DALLAS D. HUGHEY, Upper Alton, Ill., assignor to Illinois Glass Company, Alton, Ill., a Corporation of Illinois. Filed Mar. 12, 1907. Serial No. 362,052.



Claim.—1. A glass mold, constructed with a separable mold frame, a plurality of coinciding segmental auxiliary molds carried by each part of the separable mold frame, means whereby molten glass is simultaneously forced into all of the auxiliary molds, and means whereby the glass is simultaneously discharged from all of the auxiliary molds after having been pressed therein.

2. A glass mold, constructed with a separable mold frame, pairs of coinciding auxiliary molds detachably fixed in said frames, means whereby glass is simultaneously forced into all of the auxiliary molds, and means operating through the series of auxiliary molds carried by the lower half of the frame for elevating the glass after the same has been forced into the auxiliary molds and the upper half of the mold frame has been elevated.

3. A glass mold, comprising a separable mold frame, there being an opening in the upper portion of said frame, pairs of coinciding auxiliary molds detachably fixed in the upper frame, a plunger operating through the opening in the upper portion of the mold frame for simultaneously forcing molten glass into all of the auxiliary molds, and means whereby the molded glass is simultaneously discharged from all of the auxiliary molds.

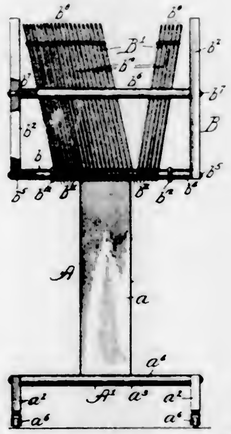
4. A glass mold, constructed with a separable mold frame, a plurality of pairs of coinciding auxiliary molds arranged in the frame, a block arranged for vertical movement through the center of the lower portion of the mold frame, there being an opening in the center of the upper portion of the mold frame, ejecting fingers operating through the auxiliary molds carried by the lower portion of the mold frame, and means whereby the vertically moving block and the ejecting fingers are simultaneously elevated to discharge the molded glass.

5. A glass mold, constructed with a separable mold frame, a plurality of pairs of coinciding auxiliary molds arranged in the frame, a block arranged for vertical movement through the center of the lower portion of the mold frame, there being an opening in the center of the upper portion of the mold frame, ejecting fingers operating through the auxiliary molds carried by the lower portion of the mold frame, means whereby the vertically moving block and the ejecting fingers are simultaneously elevated to discharge the molded glass, and a plunger operating through the opening in the upper portion of the mold frame for simultaneously forcing molten glass into all of the auxiliary molds.

6. In a glass mold, a series of separable auxiliary molds arranged in pairs, means whereby said series of auxiliary molds are brought into juxtaposition, means whereby molten glass is simultaneously forced into all of the auxiliary molds, means whereby the upper series of auxiliary molds is elevated, and means whereby the glass forced into the auxiliary molds is elevated after the upper series of auxiliary molds has been elevated.

7. A glass mold, constructed with a separable mold frame, a plurality of pairs of coinciding auxiliary molds arranged in the frame, a block arranged for vertical movement through the center of the lower portion of the mold frame, there being an opening in the center of the upper portion of the mold frame, ejecting fingers operating through the auxiliary molds carried by the lower portion of the mold frame, and means arranged for operation in the lower portion of the separable mold frame for engaging the lower ends of the vertically moving block and ejecting fingers for elevating the same to discharge the molded glass from the auxiliary molds.

856,155. CABINET. OZELLO R. HUNT, Kenosha, Wis. Filed Aug. 1, 1906. Serial No. 328,683.



Claim.—1. A cabinet of the character set forth, comprising a pedestal, and an open-top rigid reversible chamber supported thereon and equipped with shiftable partition elements, said chamber, upon reversal, receiving therein the upper portion of the pedestal for the purpose set forth.

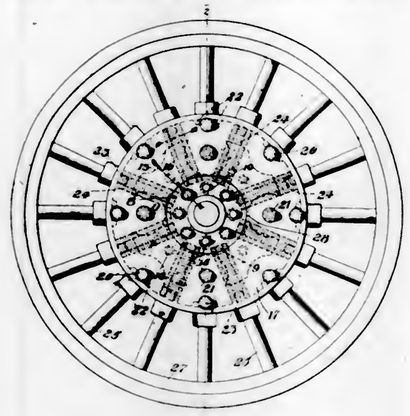
2. A cabinet comprising a pedestal equipped with a reversible base, and a reversible chamber supported on the pedestal and equipped with shiftable partition elements.

3. A cabinet comprising supporting means, a surmounting chamber equipped at its base with guide-rods, index-elements having eyes loosely receiving said rods to permit tilting of the index-elements, and resilient rings encircling said rods and confining said index-elements between them.

4. A cabinet comprising a pedestal, a surmounting chamber comprising a shelf-board supported on the pedestal, end panels connected with said shelf-board, a pair of rods flanking the shelf-board and connected with said end panels, a pair of rods connecting the lateral edges of the end panels at a distance above the base of the chamber, and shiftable index-elements mounted on said first-named rods.

5. A cabinet of the character set forth comprising a pedestal having a base and an opening through the pedestal for receiving books, a surmounting chamber accessible from above and equipped at its base with guides, and shiftable index-elements connected with said guides, for the purpose set forth.

856,156. VEHICLE-WHEEL. JOHN B. HUNTER, Pittsburg, Pa. Filed Mar. 6, 1906. Serial No. 304,474.



Claim.—1. A spring wheel having in combination a hub, annular side plates fixed to the ends of the hub and having recesses in their outer edges, outer annular side plates, the inner edges of which lap the said plates and which are connected by bolts extending across through said recesses, a ring supported upon the outer edges of said outer side plates, a rim at the periphery of the wheel, spokes between the rim and the ring, and springs between the ring and the hub.

2. A spring wheel having an inner structure comprising a hub and outwardly extending plates at each side, in combination with an outer structure having a ring with inwardly projecting plates at each side which lap the said plates, and radial springs between the ring and hub, the ring having cross ribs on its inner face, and the said inwardly projecting plates being clamped to the ring by cross bolts which extend between the ribs.

3. A spring wheel having an inner structure comprising a hub and outwardly extending recessed plates at each side secured to the ends of the hub, the plates being spaced apart by spacing bolts, and an outer structure spring-supported on the hub and having inwardly extending side plates which lap said plates on the outer faces thereof, said inwardly extending plates being connected and spaced by cross bolts which extend through said recesses.

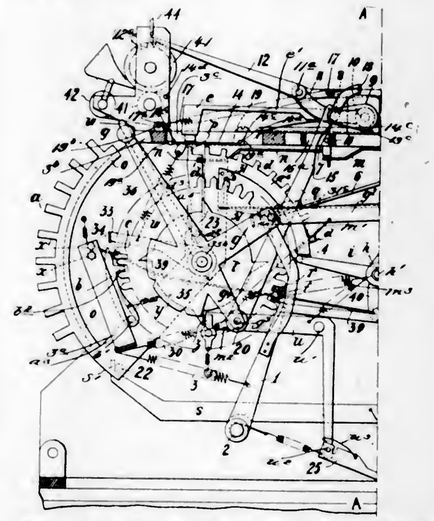
4. A spring wheel comprising a hub, annular side plates fixed to the hub, and having recesses in their outer edges, annular side plates having a turning movement independent of the hub, a ring carried by said independently turning plates, springs supporting the ring and cross bolts between said independently turning side plates and operating in the recesses of the side plates fixed to the hub.

5. A spring wheel having a hub, side plates held to the hub and recessed in their outer edges, cross bolts operating in said recesses, side plates connected with said cross bolts, a ring carried by the side plates, and springs supporting the ring and arranged to cushion the cross bolts with the side walls of the recesses in the hub plates, substantially as set forth.

6. A spring wheel having a hub provided in its ends with sockets and with bolt holes leading transversely therefrom through the hub, the side plates having inwardly projecting bosses fitting in said sockets of the hub and having bolt holes, bolts passing through said holes and openings in the hub and securing the side plates in place, a ring, plates projecting inwardly from the ring and lapping along the side plates of the hub, and springs bearing between the hub and ring, substantially as set forth.

7. The combination in a spring wheel with parts comprising one a hub and the other a ring surrounding the same, of the side plates projecting in pairs from said parts and lapping alongside each other, bolts extending between the opposite plates of one pair and engaging with the plates of the other pair to limit the torsional movement of the ring, and springs between the hub and ring, substantially as set forth.

856,157. ADDING-MACHINE. ANDREW R. JENNINGS, London, England. Filed Feb. 10, 1906. Serial No. 300,512.



Claim.—1. An adding machine comprising a pair of type quadrants, one of said quadrants embodying a cipher-carrying element, means for moving said quadrants in unison in the same plane for each column of figures, combined with key quadrants connected to the type quadrants.

2. An adding machine comprising a plurality of key quadrants for setting the items, a plurality of type quadrants, means for permanently connecting a type quadrant to a key quadrant, each of said type quadrants embodying a cipher-carrying element shiftable independently of its quadrant, and means for operating the key and type quadrants.

3. An adding machine comprising a plurality of key quadrants for setting the items, a plurality of type quadrants, said type quadrants arranged in pairs, one of the

type quadrants of each pair having a cipher-carrying element shiftable independently of the other quadrant of the pair, means for operating the key and type quadrants, levers for shifting the type quadrants having the cipher-carrying elements, and operating means for said levers.

4. In an adding machine, toothed wheels, a tensioned locking bar and detent for the toothed wheels, and a total lever having a spring connection with said bar and adapted, when swung in one direction, to release the tension upon the bar and when moved in the opposite direction to apply tension to the bar for the purpose set forth.

5. An adding machine comprising a plurality of toothed wheels, pawls associating with said wheels, key quadrants, type quadrants connected to the key quadrants, a bar associating with said wheels for the purpose set forth, a clearing lever and a clearing lever arm.

6. An adding machine comprising an operating handle, a printing mechanism, a connection between the handle and the printing mechanism for operating the lever, a paper-feeding mechanism, connections between the handle and the paper-feeding mechanism for operating the lever, an inking ribbon, mechanism for shifting the ribbon and a connection between said shifting mechanism, and the handle for operating the shifting mechanism.

7. An adding machine comprising the combination with a plurality of type quadrants embodying cipher-carrying elements, of means for shifting said cipher-carrying elements, said means consisting of a sliding arm adapted to be moved in the direction of its length at right angles to the plane of the quadrants for shifting the cipher-carrying elements from normal position with regard to the other type quadrants when the cipher-carrying elements are not required to be printed from.

8. An adding machine comprising the combination with a plurality of type quadrants embodying cipher-carrying elements, of means for shifting said cipher-carrying elements said means consisting of a sliding arm adapted to be moved in the direction of its length at right angles to the plane of the quadrants for shifting the cipher-carrying elements from normal position with regard to the other type quadrants when the cipher-carrying elements are not required to be printed from, a record mechanism embodying an inking ribbon and a recording sheet associating with said quadrants, and a common operating means for said quadrants, sliding arm and recording mechanism.

9. An adding machine comprising a plurality of toothed wheels, type quadrants, a tensioned device for locking the quadrants to the wheels when the tension is released, a total lever, and means for releasing the tension upon said device when said lever is operated.

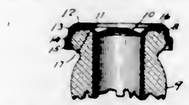
10. An adding machine comprising a plurality of key quadrants for setting the items, a plurality of type quadrants, a shiftable cipher-carrying element connected to each of the type quadrants and shiftable independently of the type quadrants, a connection between the type quadrants and the key quadrants for operating the type quadrants when the key quadrants are operated, means for shifting the cipher carrying elements independently of the type quadrants, and operating means for the means for operating the cipher-carrying elements.

11. An adding machine comprising a plurality of key quadrants for setting the items, a plurality of type quadrants, a shiftable cipher-carrying element connected to each of the key quadrants and shiftable independently of the type quadrants, a connection between the type quadrants and the key quadrants when the key quadrants are operated, means for shifting the cipher-carrying elements independently of the type quadrants, operating means for the means for operating the cipher-carrying elements, and a recording mechanism associating with the type quadrants.

12. An adding machine comprising a plurality of key quadrants for setting the items, a plurality of type quadrants, a shiftable cipher-carrying element connected to each of the type quadrants and shiftable independently of the type quadrants, a connection between the type quadrants and the key quadrants for operating the type quadrants when the key quadrants are operated, a plurality of toothed wheels, means for shifting the cipher-carrying elements independently of the type quadrants, operating means for the means for operating the cipher-carrying elements, a recording mechanism associating with the type quadrants and means for carrying forward figures when a wheel passes a ninth tooth from a zero point.

13. An adding machine comprising a plurality of key quadrants for setting the items, a plurality of type quadrants, a shiftable cipher-carrying element connected to each of the type quadrants, a connection between the type quadrants and the key quadrants for operating the type quadrants when the key quadrants are operated, a plurality of toothed wheels, means for shifting the cipher-carrying elements independently of the type quadrants, operating means for the means for operating the cipher-carrying elements, a recording mechanism associating with the type quadrants, means for carrying forward figures when a wheel passes a ninth tooth from a zero point, a total lever, a tension-releasing means operated by said lever, and a clearing lever.

856,158. BOTTLE-SEAL. ADOLPH G. KAUFMAN, New York, N. Y., assignor of one-fourth to Benjamin L. Well and one-fourth to Berthold Well, New York, N. Y. Filed Mar. 29, 1907. Serial No. 365,325.



Claim.—1. A bottle seal comprising a cap and gasket, said cap being provided with a concaved part adapted to contact with the lip of a bottle, and an elevated gasket seat and skirt adapted to be brought into a locking position after said part is in contact with the lip of a bottle.

2. A bottle seal comprising a cap and gasket, said cap being provided with a central part, a concave part adapted to engage the lip of a bottle, and an elevated gasket seat and skirt adapted to be brought into a locking position after said concave part is in contact with the lip of a bottle, substantially as described.

3. A bottle seal comprising a cap and gasket, said cap being provided with a concaved part adapted to contact with the lip of a bottle, an elevated gasket seat and skirt adapted to be brought into a locking position by the bending of said concaved part in contact with the lip of a bottle, said skirt being stepped, as and for the purpose described.

4. In a bottle seal, a cap having a concaved annular part adapted to contact with the lip of a bottle, and a gasket seat elevated above said concaved part, as and for the purpose set forth.

5. In a bottle seal, a cap having a concaved annular part adapted to contact with the lip of a bottle, a gasket seat elevated above said concaved part, and a stepped skirt, as and for the purpose set forth.

6. In a bottle seal, a cap having a concaved annular part adapted to contact with the lip of a bottle, a gasket seat elevated above said concaved part, a stepped skirt, and a tongue, or lip projecting from the edge of said skirt, as and for the purpose set forth.

7. In a bottle seal, a cap having a concaved annular part adapted to contact with the lip of a bottle, a gasket seat elevated above said concaved part, a stepped skirt, and a tongue, or lip projecting from the edge of said skirt, the metal adjacent to said lip being slotted, as and for the purpose set forth.

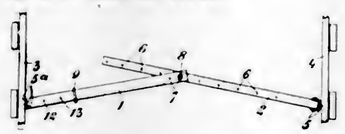
8. In a bottle seal, a cap having a concaved annular part adapted to contact with the lip of a bottle, a gasket seat elevated above said concaved part, a stepped skirt, and a tongue, or lip projecting from the edge of said skirt, the metal adjacent to said lip being slotted, said slot extending adjacent to said step, as and for the purpose set forth.

9. In a bottle seal, a cap having a dome-shaped central part, a concaved annular part adapted to contact with the lip of a bottle, and a gasket seat elevated above said concaved part, as and for the purpose set forth.

10. In a bottle seal, a cap having a dome-shaped central part, a concaved annular part adapted to contact with the lip of a bottle, a gasket seat elevated above said concaved part, and a stepped skirt, as and for the purpose set forth.

11. In a bottle seal, a cap having a dome-shaped central part, a concaved annular part adapted to contact with the lip of a bottle, a gasket seat elevated above said concaved part, a stepped skirt, and a tongue, or lip projecting from the edge of said skirt, as and for the purpose set forth.

856,159. ADJUSTABLE STRUT WITH TOGGLE ACTION. GUSTAV KELLER, Eisenach, Germany. Filed Dec. 22, 1906. Serial No. 349,150.



Claim.—1. An adjustable strut with toggle action, comprising two oppositely facing yoke formed interfitting bars detachably pivoted together, one of said bars having a series of perforations, and the other having two series of perforations, the distance between the perforations comprising one of the series of the latter bar being one-half as long as the distance between the perforations in the former bar, and means for securing the bars together.

2. An adjustable strut with toggle action, comprising two oppositely facing yoke formed interfitting bars detachably pivoted together, one of said bars having a series of perforations, and the other having two series of perforations, the perforations of one of the latter series being adapted to register with the series of perforations in the first mentioned bar, and means for securing the bars together.

3. An adjustable strut with toggle action, comprising two oppositely facing yoke formed interfitting bars, one of said bars having a series of perforations, and the other having two series of perforations, each of which is located adjacent the terminals of the bar, the perforations of one of the latter series being adapted to register with the series of perforations in the first mentioned bar, and means for securing the bars together.

4. An adjustable strut with toggle action, comprising two oppositely facing yoke formed interfitting bars detachably pivoted together, each of said bars being provided with means whereby a plurality of bars may be connected thereto to form a single rigid bar.

5. An adjustable strut with toggle action, comprising two oppositely facing yoke formed interfitting bars detachably pivoted together, each of said bars being provided with means whereby a plurality of bars may be connected thereto to form a single rigid bar, one of said bars having a series of perforations, the other having two series of perforations, the distance between the perforations comprising one of the series of the latter bar being one-half as long as the distance between the perforations in the former bar.

6. An adjustable strut with toggle action, comprising two oppositely facing yoke formed interfitting bars detachably pivoted together, each of said bars being provided with means whereby a plurality of bars may be connected thereto to form a single rigid bar, one of said bars having a series of perforations and the other having two series of perforations, the perforations of one of the latter series being adapted to register with the series of perforations in the first mentioned bar.

7. An adjustable strut with toggle action, comprising two oppositely facing yoke formed interfitting bars detachably pivoted together, each of said bars being provided with means whereby a plurality of bars may be connected thereto to form a single rigid bar, one of said bars having a series of perforations and the other having two series of perforations, each of which is located adjacent the terminals of the bar, the perforations of the latter series being adapted to register with the series of perforations in the first mentioned bar.

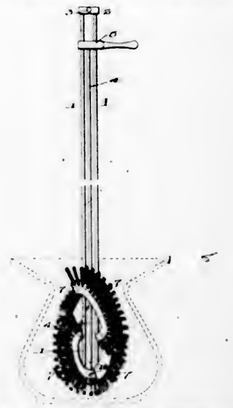
8. An adjustable strut with toggle action, comprising two bars detachably pivoted together, the pivoted end of one of the bars being bent upwardly, and provided with a stop pin against which the other bar is adapted to engage, one of said bars having a series of perforations and the other having two series of perforations, the distance between the perforations comprising one of the series of the latter bar being one-half as long as the distance between the perforations in the former bar, each of said bars being provided with means whereby a plurality of bars may be connected thereto to form a single rigid bar.

9. An adjustable strut with toggle action, comprising two bars detachably pivoted together, the pivoted end of one bar being bent upwardly and provided with a stop pin against which the other bar is adapted to engage, one of said bars having a series of perforations and the other having two series of perforations, the perforations of one of the latter series being adapted to register with the series of perforations in the first mentioned bar, each of said bars being provided with means whereby a plurality of bars may be connected thereto to form a single rigid bar.

10. An adjustable strut with toggle action, comprising two bars detachably pivoted together, the pivoted end of one bar being bent upwardly and provided with a stop pin against which the other bar is adapted to engage, one of said bars having a series of perforations and the other having two series of perforations, each of which is located adjacent the terminal of the bar, the perforations of one of the latter series being adapted to register with the series of perforations in the first mentioned bar, each of said bars being provided with means whereby a plurality of bars may be connected thereto to form a single rigid bar.

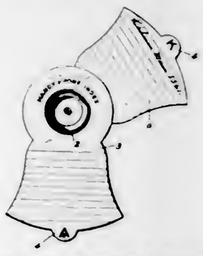
11. An adjustable strut with toggle action, comprising two oppositely facing yoke formed interfitting bars detachably pivoted together, and means for securing the bars in their adjusted position.

856,160. CUSPIDOR-CLEANER. OTTO KEROUSE, San Francisco, Cal. Filed Aug. 31, 1906. Serial No. 332,881.



Claim.—The improved cleaning implement comprising a handle formed of two parallel rods, a third rod which is arranged slidably between the others, and a head connected with the third rod and arranged slidably on the handle, two lower brushes pivoted to the lower end of the handle on opposite sides, two upper brushes pivoted to the said head on opposite sides, the outer ends of the two pairs of brushes being pivotally connected and also spaced apart, as shown and described.

856,161. TELEPHONE-INDEX. SAMUEL A. KITCHENER, Los Angeles, Cal. Filed Jan. 14, 1907. Serial No. 352,095



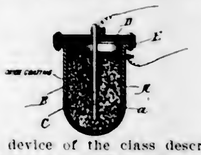
Claim.—1. In a device of the kind described a plurality of index cards, a letter of the alphabet being arranged on each of said cards, that letter on the front card being arranged upright on said card and those on the remaining cards being inverted, as and for the purpose specified.

2. In a device of the kind described a telephone, a mouthpiece therefor, a plurality of cards encircling said mouth piece and an elastic band encircling said mouthpiece and bearing against said cards as set forth.

3. In a device of the character described a telephone, a mouth piece therefor, a plurality of cards provided with interior orifices receiving the said mouthpiece, and an elastic band completely encircling the said mouth piece and bearing against the foremost of said cards, as set forth.

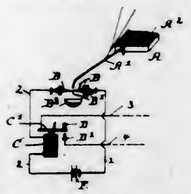
4. In a device of the character described a telephone, a mouth piece therefor, a plurality of index cards completely encircling the said mouth piece, an elastic band encircling said mouth piece and bearing against foremost of said cards, a letter of the alphabet arranged on each card, that letter on the front card being arranged upright on said card and those on the remaining cards being inverted, as and for the purpose set forth.

856,162. FIRE-ALARM CIRCUIT. ISIDOR KITSEE, Philadelphia, Pa. Filed Oct. 31, 1902. Serial No. 129,613.



Claim.—In a device of the class described, a circuit, an annunciating device in said circuit, a series of devices in multiple arc at different points of said circuit, each of said devices normally non-conducting to the flow of a straight or voltaic current, but conductive in the presence of high temperature, said devices also acting as generators of electricity.

856,163. ELECTRIC RELAY. ISIDOR KITSEE, Philadelphia, Pa. Filed June 8, 1905. Serial No. 264,279.



Claim.—1. In telegraphy, a receiving device, a source of liquid therefor, in combination with a localized circuit comprising two conductors insulated by an air-space, and electro-magnetic device in said circuit; the movable part of the receiving device adapted to allow the liquid to overbridge said air-space and to deflect said liquid from said air-space in accordance with the characters transmitted.

2. Means to relay received telegraphic impulses, said means comprising a source of liquid, a receiving device and a localized circuit containing translating device and an air-space, and means for said receiving device to allow the flow of the liquid through said air-space or deflect the same from said air-space in accordance with the impulses transmitted.

3. In combination with a receiving device inserted in the receiving circuit, a siphon and liquid therefor, a localized circuit embracing electro-magnet and air-gap, and means integral with said receiving device to cause the liquid to overbridge said air-gap or cause said liquid to flow out of the region of said air-gap.

4. A telegraphic relaying device comprising a localized circuit, two air-spaces for same, said circuit embracing a source of current and electro-magnetic device, in combination with a receiving device inserted in the line of transmission, a source of liquid for said device, and means related to said receiving device to overbridge with said liquid one or the other of said spaces, in accordance with the impulses received.

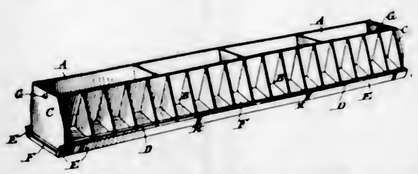
5. In combination with a telegraphic receiving device, a localized relay comprising two conductors separated from each other by an air-space, a source of current and electromagnet, means integral with said electro-magnetic device to actuate said two conductors, a liquid for the receiving device and means at said receiving device to overbridge with said liquid the air-space between said conductors in accordance with the impulses received.

6. In combination with a receiving device embracing a siphon and liquid therefor, and means at said receiving device to deflect said siphon to the right or left, a localized circuit comprising two air-gaps, one of said air-gaps adapted to be closed through the liquid from the siphon when deflected to the right and the other of said air-gaps adapted to be closed through the liquid when deflected to the left.

7. In combination, a line of transmission, a receiving device connected to said line, a local circuit embracing an air-space and containing a translating device, a continuous flowing and conducting fluid adapted to bridge the air-space and means operatively related to the receiving device to vary the flow of the liquid through said air-space in accordance with the impulses received.

8. In combination with a receiving device connected to a line of transmission, a relay embracing two conductors separated by an air-gap and secured to the movable part of an electro-magnet, a local circuit comprising a source of current, the coil of said electro-magnet and said two conductors, said receiving device adapted to bridge the air-space of said two conductors with a conducting liquid in accordance with the incoming impulses.

856,164. FEED-TROUGH. GEORGE D. KOEHLER, Macedonia, Iowa, assignor of one-half to A. Robert Koehler, Macedonia, Iowa. Filed Nov. 8, 1906. Serial No. 342,591.

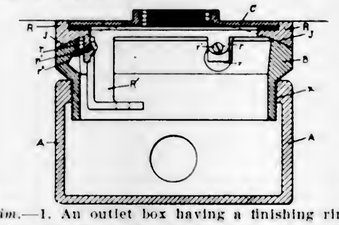


Claim.—1. The improved feeder comprising a trough proper having vertical end portions and a part which is hinged thereto, the same consisting of a hopper which is open at the bottom and provided with a series of side partitions which are only separated from each other to divide the trough into feeding spaces, a side rail connecting the lower outer corners of the several partitions, the same being hinged to the side of the trough, and means for fastening the movable part detachably to the trough, as described.

2. The improved feeder comprising the base constructed as a trough having outwardly inclined sides, a movable part, which is hinged to the trough on one side of the same, and comprising a hopper that is open at the bottom and side partitions attached to the side of the hopper and dividing the feeding space in the manner described, a rail connecting the lower outer corners of the several partitions and arranged at an inclination corresponding with the side of the trough, and hinges connecting said rail with the trough proper, substantially as described.

3. The improved feeder comprising a base portion formed as a trough, and a movable portion which is hinged thereto on one side, the same consisting of a hopper having outwardly inclined sides and made open at the bottom, triangular partitions arranged on opposite sides of the hopper and rigidly attached thereto, side rails connecting the lower corners of the partitions and one of them hinged to the adjacent side of the trough, and fastenings for securing the movable part to the base for use substantially as described.

856,165. FLOOR-BOX FOR ELECTRIC WIRING. HUBERT KRANTZ, New York, N. Y. Filed Sept. 22, 1905. Serial No. 279,740.



Claim.—1. An outlet box having a finishing ring R, a ball joint adjustment between the ring and the box, and means conveniently accessible for operating said adjustment after the surface into which the box is set is finished at the box.

2. An outlet box having a finishing ring R, a ball joint between the box and the finishing ring and screws and inclined surfaces to adjust the ball joint connection.

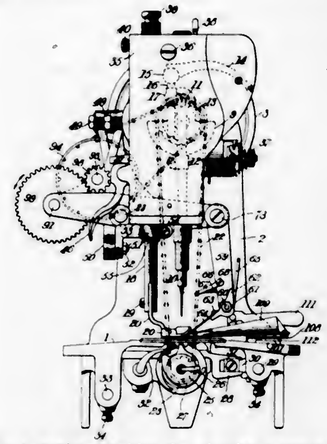
3. An outlet box having two parts adjustable vertically with reference to each other, a finishing ring R, a ball joint adjustment between said ring and the upper part of the box proper, and means for operating such adjustments after the surface into which the box is set has been finished at the box.

4. The combination of the lower and upper parts of an outlet box adjustable vertically with reference to each other, with a top finishing ring, a ball joint between the ring and the upper part of the box and screws and inclined surfaces by which the ball joint may be adjusted after the surface into which the box is set has been finished at the box.

5. The combination of the lower and upper parts of an outlet box adjustable vertically with reference to each other, with a top finishing ring having means to carry the receptacle, with a ball joint adjustment between the ring and the upper part of the box, and means to operate such adjustment after the surface into which the box is set has been finished at the box.

856,166. SEWING-MACHINE FOR CIRCULAR HEMMING. ALEXANDER LAUBSCHER, Bridgeport, Conn., assignor, by mesne assignments, to The Singer Manufacturing Company, a Corporation of New Jersey. Filed June 20, 1905. Serial No. 266,146.

Claim.—1. In a sewing machine for circular hemming, the combination of stitch-forming and cloth-feeding mechanisms, a hem-folder having upper and lower cloth-guiding portions, a crimping-blade and a separator, said separator located between the upper and lower cloth-guiding portions of said hem-folder, and connections between said crimping-blade and stitch-forming mechanism for forming plaits in the hem-fold at predetermined intervals separated by a multiple of stitches.



2. In a sewing machine for circular hemming, stitch-forming mechanism, including a needle-actuating shaft, a cloth-feeding mechanism, a hem-folder having upper and lower cloth-guiding portions, and a ruffling mechanism having a separator arranged between the upper and lower cloth-guiding portions of the hem-folder, and a crimping-blade arranged to work over and upon the separator combined with horizontally mounted rock-shafts, levers projecting radially from said rock-shafts, means for adjustably coupling said levers between their ends, and a cam and connections for driving said cam from the needle-actuating shaft.

3. In a sewing machine for circular hemming, the combination of a needle-actuating shaft, a cam, a cam-shaft, and means connecting said needle-actuating shaft and cam-shaft for actuating said cam, a crimping-blade and coacting separator, said crimping-blade, through suitable connections, controlled by said cam to effect a fold of the material at predetermined intervals in the stitching intermediate certain multiples of stitches, and a hemmer adjustably secured to the sewing machine bed plate for presenting the hem-fold to the action of the stitch-forming mechanism and having an upper and a lower cloth-guiding portion between which the separator is arranged.

4. In a sewing machine for circular hemming, the combination of a stitch-forming mechanism including a needle-actuating shaft, a cloth-feeding mechanism, a hemmer, a crimping-blade, a depending lever to which said crimping-blade is secured, a rock-shaft on which said lever is adjustably secured and which rock-shaft is provided with a projecting lever, a second parallel rock-shaft provided with a projecting lever, an adjustable coupling for said projecting levers, a cam, with which the second projecting lever is connected for controlling the action and inaction of said crimping-blade, and connections between said cam and the needle-actuating shaft comprising a cam-shaft and an intermediate shaft for effecting rotary movements of said cam.

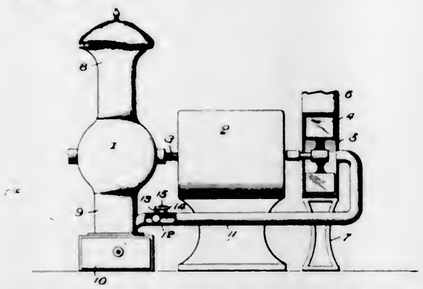
5. In a sewing machine for circular hemming, the combination of a stitch-forming mechanism including a needle-actuating shaft, a cloth-feeding mechanism, a hemmer, a ruffling mechanism including radially projecting levers adjustably connected between their ends, a crimping-blade and connections including a rock-shaft for connecting said crimping-blade and projecting levers, a cam-shaft, a cam connected with said projecting levers for effecting movements of said levers at predetermined intervals, an intermediate shaft, and connections for coupling said interme-

diate shaft with its driving needle-actuating shaft and driven cam-shaft.

6. In a sewing machine for circular hemming, stitch-forming and cloth-feeding mechanisms, a hemmer having upper and lower cloth-guiding portions, and a ruffling mechanism including a crimping-blade, and a separator lying between the upper and lower cloth-guiding portions of the hemmer, said ruffling mechanism having means, including adjustably coupled levers, for controlling the width of the plaits or gathers formed thereby, and means, including a cam, for effecting the operation of the ruffling mechanism for the formation in the hem-fold of single plaits or folds at predetermined intervals.

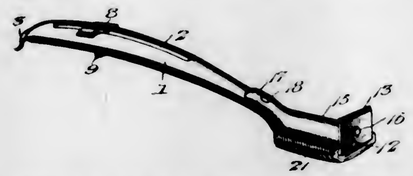
7. In a sewing machine for circular hemming, the combination of stitch-forming and cloth-feeding mechanisms, a hemmer having upper and lower cloth-guiding portions, a separator lying between the cloth-guiding portions of the hemmer, a crimping-blade and connections between said crimping-blade and stitch-forming mechanism for forming plaits in the hem-fold at predetermined intervals.

856,167. GRINDER. JULIUS N. LISK and NELSON J. LISK, Troy, Ohio. Filed July 7, 1906. Serial No. 325,120.



Claim.—The herein described attachment for grinding mills comprising the combination with a mill having grinding mechanism therein, a shaft extending through said mill and grinding mechanism, a tubular member below said grinding mechanism, a receptacle at the lower end of said tubular member; of a fan secured to one end of said shaft, a housing for said fan, a discharge chute for said housing, a pipe, one end of which is directed into engagement with said tubular member and below the grinding mechanism while the opposite end thereof enters said housing at its axial center, a rotatable valve in said pipe, means to hold said valve in its adjusted position and additional means to rotate said shaft.

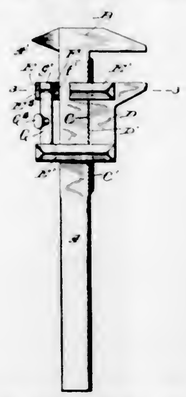
856,168. CLEANING IMPLEMENT. HENRY G. LYKKEN, University, N. D. Filed Apr. 17, 1906. Serial No. 312,162.



Claim.—1. A tool of the type described comprising a handle having a head, a plate attached to the head and having a perpendicularly disposed portion, a clamping jaw engaged at one end with the said portion and a screw for detachably engaging the other end of the jaw with the tool, said jaw being adapted for clamping a fabric to the head.

2. A tool of the type described comprising a handle having a head, a plate attached to the head and having a perpendicularly disposed portion provided with an opening, a clamping jaw having a trunnion seated in said opening, and a screw entered through the handle and jaw for detachably securing the latter in place, said jaw being adapted for clamping a piece of fabric in place on the head.

856,169. WRENCH. FRANKLIN C. MAGENHEIMER, Evansville, Ind. Filed Mar. 5, 1907. Serial No. 360,667.



Claim.—1. The wrench herein described, comprising the handle bar having the jaw and provided on its front face with serrations and with a longitudinal rib or bead crossing the same, a sliding jaw having on its inner face serrations to engage with those on the handle bar, and a longitudinal groove to receive the rib on said handle bar, loop frames projecting rearwardly from said sliding jaw at its upper and lower ends, and embracing the handle bar, and provided with the side bars and with the rear cross bars, the latter having bearings for an operating shaft and the side bars being provided in their inner faces with longitudinal recesses, springs in said recesses and bearing against the front walls thereof, blocks in rear of the handle bar and projecting at their ends into the recesses in the side bars in rear of the springs in said recesses, such blocks being provided on their rear faces with beads or projections to enter grooves in an operating shaft, and an operating shaft journaled in the bearings of the upper and lower cross bars, and provided with eccentric portions operating upon the blocks and having circumferentially extending grooves in said eccentric portions to receive the ribs or projections on the blocks, substantially as set forth.

2. A wrench comprising a handle bar, a jaw sliding thereon, and having rearwardly projecting loop frames embracing the handle bar, and provided in rear thereof with cross bars having bearings for an operating shaft, an operating shaft journaled in said bearings having eccentric portions, and blocks between said eccentric portions and the handle bar, substantially as and for the purposes set forth.

3. The combination of a handle bar, a jaw sliding thereon and having a rearwardly projecting loop frame, embracing the handle bar; an operating shaft journaled in the rear cross bar of said loop frame, and having a cam, a block operated by said cam and arranged between the same and the rear face of the handle bar, and a spring operating upon said block, substantially as set forth.

4. A wrench comprising a handle bar, a jaw sliding along the same, and provided with upper and lower loop frames embracing the handle bar, and having rear cross bars provided with bearings for an operating shaft, an

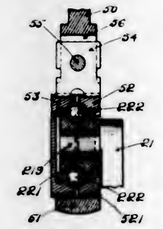
operating shaft journaled in said bearings and having cam portions, and spring actuated blocks operating between said cam portions of the operating shaft and the rear face of the handle, substantially as set forth.

5. A wrench having a handle provided with serrations, and with a longitudinal bead or rib crossing the same, a sliding jaw having in its inner face serrations to engage with those of the handle, and a groove to receive the bead or rib on the handle, and means for holding the sliding jaw with its serrations in engagement with those of the handle bar, substantially as set forth.

6. The combination in a wrench, of a handle bar, a jaw sliding along the same and having loop frames embracing the handle bar, and provided with cross bars having bearings for an operating shaft, an operating shaft journaled in said bearings in rear of the handle bar, and having eccentric portions and circumferentially extending grooves in said eccentric portions, and spring actuated blocks between said eccentric portions and the handle bar of the wrench, and provided with ribs or projections entering the circumferentially extending grooves of the said operating shaft, substantially as set forth.

7. A wrench comprising a handle bar, a jaw sliding along the same and having upper and lower loop frames embracing the handle bar and provided in rear thereof with cross bars having bearings for an operating shaft, an operating shaft journaled at its opposite ends in said bearings, and intermediate devices between the operating shaft and the handle bar, whereby the said shaft may be operated to draw the sliding jaw into engagement with the handle bar, substantially as set forth.

856,170. ENGINE-BEARING. WILLIAM B. MASON, Boston, Mass., assignor to The Mason Regulator Company, Saco, Me., a Corporation of Maine. Original application filed Dec. 28, 1903, Serial No. 186,784. Divided and this application filed Nov. 8, 1905. Serial No. 286,404.

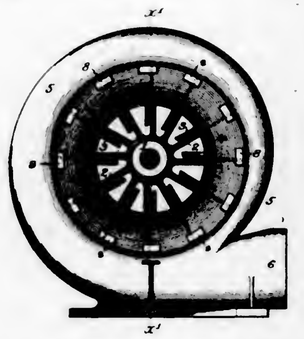


Claim.—1. In a ball bearing for the connecting rod and crank-pin of an engine, the combination of a ball-track fast upon the crank-pin, balls therefor, a ball-cup threaded upon its peripheral surface and forming a cap over the end of the crank-pin and bearing, a second ball-cup similarly threaded upon its peripheral surface, both said ball-cups being provided with notches for the reception of a locking-plate, a locking-plate engaging the said notches and an interiorly threaded casing for the reception of the said ball-cups.

2. The improved ball bearing for the connecting rod and crank-pin of an engine comprising, essentially, a ball-track fast upon the crank-pin, balls therefor, an exterior ball-cup threaded upon its peripheral surface and forming a cap over the end of the crank-pin and bearing, an interior ball-cup next the crank, screw threaded upon its peripheral surface and forming a cap for the side of the bearing next the crank, said ball-cups having notches at convenient intervals extending transversely of the threaded peripheral surface, a bearing casing formed in the end of the connecting rod, screw threaded upon its interior surface for the reception of the said ball-cups, and having a slot therein for the reception of the locking piece, and a locking piece extending through a slot in the bearing casing and engaging the notches in the said ball-cups whereby the said ball-cups are prevented from rotation with relation to the connecting rod, substantially as described.

3. An improved ball bearing for the conecting rod of a crank-pin of an engine, comprising, essentially, a ball-track fast upon the crank-pin, balls therefor, ball-cups threaded upon their peripheral surface and provided with notches extending only part way across the said peripheral surface, a casing formed in the end of the connecting rod and threaded upon its interior surface for the reception of said ball-cups, and a locking plate provided with two prongs each of which engages a notch in one of the said ball-cups, whereby the said ball-cups are prevented from rotation relative to the connecting rod.

856,171. PRESSURE-BLOWER. AUGUST MATHIS, Chicago, Ill., assignor to The Mathis Brothers Company, a Corporation of Indiana. Filed Nov. 21, 1904. Serial No. 233,607.

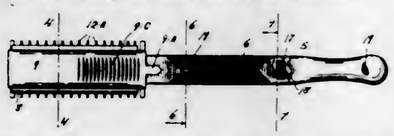


Claim.—1. A pressure blower of the type herein described comprising a fan casing having flanges concentric with the axis of rotation of the fan, and separated so as to leave an annular space between them, a fan having a series of vanes, whose outer ends are flush with the inner wall of the casing, and a pair of opposed conical annular disks having their outer edges flush with the outer ends of the vanes and the inner wall of the casing, and series of angular segmental plates located upon the sides of the conical angular disks adjacent to the outer edges of the flanges and providing angular recesses which receive the flanges within the periphery of the conical annular disks.

2. A pressure blower of the type herein described comprising a flange casing having inturned flanges concentric with the axis of rotation of the fan, and separated so as to leave an annular space between them, a fan having a series of vanes, whose outer ends are flush with the inner wall of the inturned flanges, and a pair of opposed conical annular disks having their outward edges flush with the outer ends of the vanes and the inner wall of the inturned flanges, and series of angular segmental plates located upon the sides of the conical annular disks adjacent to the outer edges of the inturned flanges and providing angular recesses which receive the flanges within the periphery of the conical annular disks.

3. A pressure blower of the type herein described comprising a fan casing having flanges concentric with the axis of rotation of the fan, and separated so as to leave an annular space between them, a fan having a series of vanes of rounded concave horseshoe form, whose outer ends are flush with the inner wall of the casing, and a pair of opposed conical annular disks having their outer edges flush with the outer ends of the vanes and the inner wall of the casing, and series of angular segmental plates located upon the sides of the conical annular disks adjacent to the outer edges of the flanges and providing angular recesses which receive the flanges within the periphery of the conical annular disks.

856,172. SAFETY-RAZOR. JOHN J. MEEHAN, Denver, Colo. Filed Aug. 10, 1906. Serial No. 329,965.



Claim.—1. A razor provided with a handle member having pins, and a guard composed of two members having slots inclined to the direction of the length of the guard, the said slots being engaged by the pins of the handle member, and means for moving the guard members longitudinally, whereby they are given a lateral movement toward or away from each other, as may be desired.

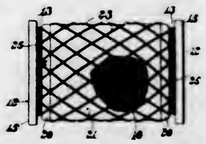
2. In a razor the combination with a holder, of a blade, a guard, one of the last named elements being composed of two laterally movable members and the other element being stationary, the two members of the one element being disposed on opposite sides of the longitudinal axis of the holder, one of the said elements being provided with pins and the other element with slots engaged by pins, the said slots being inclined to the longitudinal axis of the holder, and means for moving one of said elements in the direction of the longitudinal axis of the holder, for the purpose set forth.

3. In a safety razor the combination with a holder, of a blade, a guard, one of the last named elements being composed of two laterally movable members, and the other element being stationary, the two members of the one element being disposed on opposite sides of the longitudinal axis of the holder, one of the said elements being provided with pins and the other element with slots engaged by the pins, the said slots being inclined to the longitudinal axis of the holder, a screw whose head is connected with the element to be moved, and an adjusting nut applied to the screw, the said nut protruding through a recess in the holder, whereby it is locked against longitudinal movement on the screw.

4. A razor comprising a handle, a guard, a blade engaging the guard, and a backing plate engaging the blade on the opposite side from the guard, the backing plate being detachable by a movement in the direction of the longitudinal axis of the handle, the said plate having a projection at one extremity engaging a recess on one side of the handle, and a hook at the opposite extremity engaging a recess on the opposite side of the holder.

5. A razor comprising a handle, a guard, a blade engaging the guard, and a backing plate engaging the blade on the opposite side from the guard, the backing plate being detachable by a movement in the direction of the longitudinal axis of the handle, the said plate having a projection at one extremity engaging a recess in one side of the handle and a hook at the opposite extremity engaging a recess on the opposite side of the handle, the projection and hook of the backing plate having oppositely beveled edges with which the recesses of the handle are made to conform.

856,173. PACKAGE. CHARLES P. MITCHELL, Arlington Heights, Mass. Filed July 18, 1906. Serial No. 326,716.

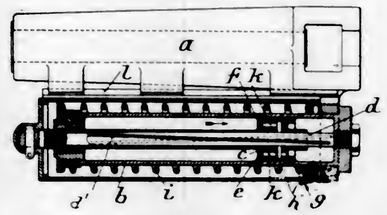


Claim.—1. The combination of a coil of material; an annular head therefor at each end of said coil consisting of a central eye and a plurality of surrounding segments; and a plurality of connectors extending from one head to the other to secure the entire package together.

2. The combination of a coil of material; an annular grooved head therefor at each end of said coil consisting of a central eye and a plurality of surrounding segments; and a plurality of connectors extending from the groove of one head to the groove of the other to secure the entire package together.

3. The combination of a coil of material having a central opening extending therethrough; an annular head at either end thereof the inner face of which is entirely outside of the end of said coil; and means extending from the edge of one head to the edge of the other head outside of the periphery of said coil to secure the entire package together.

856,174. FLUID-RECOIL BRAKE FOR GUNS. HEINRICH MOTZ and EMIL MÜLLER, Düsseldorf, Germany, assignors to Rheinische Metallwaren-und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Filed Jan. 18, 1906. Serial No. 296,671.



Claim.—1. In a recoil brake, the combination, with a cylinder having a substantially unbroken inner surface, and a piston movable therein, of a guiding surface directly connected with the piston to control the braking effect.

2. In a recoil brake, the combination, with a cylinder having a substantially unbroken inner surface, and a piston movable therein, of a guide rod having a guiding connection direct with the piston to control the braking effect.

3. In a recoil brake, the combination, with a cylinder having a substantially unbroken inner surface, and a valved piston movable therein, of a guiding surface directly connected with the piston to control the valves therein.

4. In a recoil brake, the combination, with a cylinder having a substantially unbroken inner surface, and a valved piston movable therein, of a guide rod having a guiding connection direct with the piston to control the valves therein.

5. In a recoil brake, the combination, with a cylinder, and a piston movable therein, of guiding means arranged independent of the cylinder and having a guiding engagement with the piston to control the braking effect.

6. In a recoil brake, the combination, with a cylinder, and a valved piston, of a guide rod having an engagement with the piston to control the valves therein.

7. In a fluid recoil brake for guns, the combination, with a cylinder and a valved piston movable therein, of a guide rod having a helical feather and groove connection with the piston.

8. In a fluid recoil brake for guns, the combination, with a cylinder, and a valved piston movable therein, of a guide rod fixed to the cylinder and having a helical feather and groove connection axially with the piston.

9. In a fluid recoil brake for guns, the combination, with a cylinder, and a valved piston mounted on a hollow piston rod for movement within the cylinder, of a guide rod slidably movable within the piston rod, and a feather and groove connection between the guide rod and the piston.

10. In a fluid recoil brake for guns, the combination, with a cylinder, and a piston mounted on a hollow piston rod for movement within the cylinder, of a guide rod fixed to the cylinder and slidably movable within the piston rod, and a feather and groove connection between the guide rod and piston.

11. In a recoil brake, the combination, with a cylinder, and a piston comprising two parts provided with ports and mounted on a piston rod to provide for relative movement, of guiding means independent of the cylinder and directly connected with one of said parts for imparting relative movement to the parts.

12. In a recoil brake, the combination, with a cylinder, and a piston comprising two parts provided with ports and mounted on a piston rod to provide for relative movement, of a guide rod directly connected with one of said parts for imparting relative movement to the parts.

13. In a recoil brake, the combination, with a cylinder, and a piston comprising two parts provided with ports and mounted one within the other upon a piston rod to provide for relative movement, of guiding means independent of the cylinder acting directly to impart relative movement to the parts.

14. In a recoil brake, the combination, with a cylinder, and a piston comprising two parts provided with cooperating ports and mounted on a piston rod to provide for relative rotary movement, of guiding means independent of the cylinder and directly connected with one of said parts for imparting relative rotary movement to the parts.

15. In a recoil brake, the combination, with a cylinder, and a piston and a head provided with coöperating ports and mounted one within the other to provide for relative rotary and axial movement, of guiding means independent of the cylinder for imparting relative movement to the piston and head to control the valves therein.

16. In a recoil brake, the combination, with a cylinder, and a piston and a head provided with coöperating ports and mounted one within the other to provide for relative rotary and axial movement, of a guide rod arranged axially of the piston and head to impart relative movement thereto to control the valves therein.

17. In a fluid recoil brake for guns, the combination, with a cylinder, a piston having ports therein and mounted on a piston rod to provide for a rotary and a slight axial movement relative thereto, and a head fixed to the piston rod and provided with ports co-operating with the ports in the piston, of a guide rod having a feather and groove connection with the piston.

18. In a fluid recoil brake for guns, the combination, with a cylinder, a piston and a piston head arranged one within the other and provided with co-operating ports, the said piston and head mounted on a hollow piston rod to provide for a relative rotary and slight axial movement, of a fixed guide rod slidably movable within the piston rod, said guide rod provided with guiding means for imparting relative rotary movement to the piston and head.

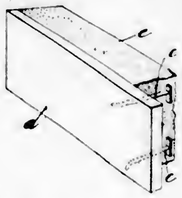
19. In a fluid recoil brake for guns, the combination, with a cylinder, a hollow piston having ports therethrough and mounted on a piston head to provide for a rotary and a slight axial movement relative thereto, and a head fixed to the piston rod within the hollow piston, of a fixed guide rod having a helical feather and groove connection with the piston.

20. In a fluid recoil brake for guns, the combination, with a cylinder, a hollow piston having ports therethrough and mounted on a hollow piston rod to provide for a rotary and slight axial movement relative thereto, and a head fixed to the piston rod within the hollow piston and provided with ports co-operating with those in the piston, of a guide rod fixed to the cylinder and having a helical feather and groove connection with the piston.

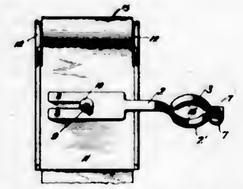
856,175. WITHDRAWN.

856,176. COMPOSITE BUILDING-BLOCK. JAMES MUIR, Springfield, Mass. Filed Dec. 5, 1904. Serial No. 235,613.

Claim.—A building block comprising a facing of stone or the like for one or more sides thereof, a body of concrete molded onto the back side of said facing and adherent thereto, said concrete body comprising a layer of finishing or surfacing plastic forming a part thereof, located on one or more of the sides of the block opposite the stone facings, the whole constituting, in its completed state, a monolithic block.

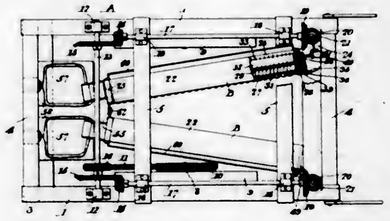


856,177. MEMORANDUM-TABLET FOR TELEPHONES. HARRY H. MYERS, Hoboken, N. J., assignor of one-half to Robert C. Macke. Filed Feb. 11, 1905. Serial No. 245,205.



Claim.—In combination, a bed, and a holder secured thereto, said holder being formed of a single piece of wire bent into an approximate U-shape, the free end portions of the wire each being coiled on itself and terminating in offsets to engage a roll, the base of the U being bent in such a manner as to embrace an end of the bed.

856,178. COTTON-PICKER. JOSEPH B. NEIL, Filbert, S. C., assignor of one-half to Harry E. Neil, Filbert, S. C. Filed May 26, 1906. Serial No. 318,938.



Claim.—1. In a machine of the character described the combination with a portable frame; of swinging frames mounted upon vertical pivots within said portable frame, a resilient connection between the swinging frames, picking rollers carried by the swinging frames, and guard rollers carried by the swinging frames and projecting beyond the picking rollers.

2. In a machine of the character described the combination with a portable frame; of swinging frames mounted upon vertical pivots within said portable frame, a resilient connection between the swinging frames, picking rollers carried by the swinging frames, and means carried by the frames for moving the plants opposite to the direction of travel of the machine.

3. In a machine of the character described the combination with a portable frame; of swinging frames mounted upon vertical pivots within said portable frame, a resilient connection between the swinging frames, picking rollers carried by the swinging frames, and rotatable worms carried by the frames and projecting beyond the picking rollers.

4. In a machine of the character described the combi-

nation with a portable frame; of swinging frames mounted upon vertical pivots within said portable frame, a resilient connection between the swinging frames, picking rollers carried by the swinging frames, rotatable worms carried by the frames and projecting beyond the picking rollers, and cleaning rollers adjacent the picking rollers.

5. In a machine of the character described the combination with a portable frame; of swinging frames mounted upon vertical pivots within said portable frame, a resilient connection between the swinging frames, picking rollers carried by the swinging frames, rotatable worms carried by the frames and projecting beyond the picking rollers, cleaning devices adjacent the picking rollers, and means operated by the movement of the machine for actuating the rollers, worms, and cleaning devices.

6. In a machine of the character described the combination with a spirally grooved roller and an adhesive partly filling the groove; of cockle burs partly embedded within the adhesive and extending from the groove.

7. In a machine of the character described the combination with a portable frame; of swinging frames mounted upon vertical pivots within said portable frame, a resilient connection between the swinging frames, picking rollers carried by the swinging frames, rotatable worms parallel with and interposed between and extending beyond the peripheries of the picking rollers, and means operated by the movement of the portable frame for simultaneously rotating the picking rollers and worms.

8. In a machine of the chacacter described the combination with a portable frame; of revoluble picking devices carried by the frame, and substantially horizontal revoluble guard devices upon the frame and parallel with and partly interposed between the picking devices, said guard devices extending beyond the peripheries of the picking devices and in the direction of movement of the frame for maintaining plants in an upright position during the picking operation, the axes of the picking and the guard devices being substantially parallel.

9. In a machine of the character described the combination with a portable frame; of picking devices carried by the frame and horizontally disposed rotatable guard devices upon the frame and between and parallel with the picking devices, said guard devices projecting beyond the peripheries of the picking devices and in the direction of the movement of the frame for maintaining plants in an upright position during said movement of the frame.

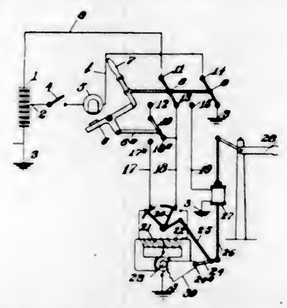
10. In a machine of the character described the combination with a portable frame; of picking devices carried by the frame, horizontally disposed guard devices upon the frame and between and parallel with the picking devices, said guard devices extending beyond the peripheries of the picking devices and in the direction of the movement of the frame for maintaining plants in upright positions during the picking operation, and cleaning devices parallel with and partly interposed between the picking devices.

11. In a machine of the character described the combination with resiliently connected portable frames constituting plant compressing devices; of picking rollers carried by the frames, worms parallel with and interposed between said rollers, said worms extending beyond the peripheries of the picking rollers and into the direction of movement of the machine and constituting means for supporting compressed plants in upright positions during the picking operation, and means operated by the movement of the machine for actuating the worms and picking rollers.

856,179. ELECTRIC SIGNAL. ROBERT PFEIL, Grunewald, Berlin, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Filed Jan. 19, 1906. Serial No. 296,839.

Claim.—1. In an electric signal apparatus, the combination with a signal, a motor for operating the same, and manually operated means for controlling the setting of the signal, of means dependent upon the condition to be indicated by the signal for causing the motor to return the signal to corresponding position.

2. An electric signal apparatus, the combination of a signal, a motor for operating the same, energizing circuits and connections for the motor, one of said circuits causing the motor to set the signal, another of said circuits causing the motor to return the signal to normal position, and a switch controlling said circuits, said switch automatically controlled by the conditions to be indicated by the signal.



3. In an electric signal apparatus, the combination of a signal, a motor for operating the signal, a source of current for the motor, connections from the source of current to the motor, one of said connections causing the motor to move the signal to safety position, another of said connections causing the motor to move the signal to danger position, and a switch controlling said connections and means dependent upon the conditions to be indicated by the signal for operating said switch to cause the motor to return the signal from safety to danger position.

4. In an electric signal apparatus, the combination of a signal, a motor for operating the same circuits and connections for energizing the motor, one of said circuits causing the motor, to set the signal, another of said circuits causing the motor to return the signal to normal position, two switches for controlling said circuits, manually operated means for operating one of said switches, and means automatically operated by changes of the conditions to be indicated by the signal for operating the other switch.

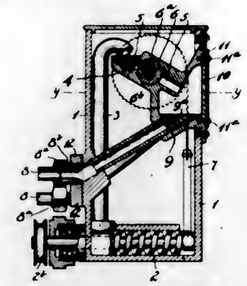
5. In an electric signal apparatus, the combination of a signal, a motor for operating the same, circuits and connections for energizing the motor, one of said circuits causing the motor to set the signal, another of said circuits causing the motor to return the signal to normal position, a switch dependent upon the conditions to be indicated by the signal for controlling said circuits, a manually operated switch for controlling said circuits, and a locking device for the manually operated switch controlled by the first named switch.

6. In an electrical signal apparatus, the combination of a signal, a motor for operating the signal, a circuit for controlling the operation of the motor, a source of current, manually operated means for connecting the motor circuit with the source of current to operate the signal, and means responsive to the condition to be indicated by the signal and acting on the motor circuit to return the signal from its set position to normal independently of the manually operated means.

7. In an electrical signal apparatus, the combination of a signal, a motor for operating the signal, circuits for controlling the motor to operate the signal in either direction, a manually operated switch for connecting the motor circuits with the source of current, an automatically operated switch for connecting the motor circuit with the source of current, and means dependent upon the conditions to be indicated by the signal for operating the latter switch independently of the manually operated switch.

8. In an electrical signal apparatus, the combination of a signal, a motor for operating the signal, and an electromagnetic coupling device between the motor and the signal, two energizing circuits for the motor, one of said circuits for setting the signal and the other of said circuits for returning the signal to normal position, a circuit for the electro-magnetic coupling device, manually operated switches for all of said circuits, an automatically operated switch for the motor circuits, a locking device controlled by the position of the automatically operated switch, said locking device locking the manually operated switches, and means dependent upon the conditions to be indicated by the signal for operating said locking device, and an automatic switch whereby the motor is connected in circuit to return the signal to normal position independently of the manually operated switch.

856,180. MECHANICAL OILER. CARLTON R. RADCLIFFE, New York, N. Y., assignor, by mesne assignments, to International Patent Corporation, Jersey City, N. J., a Corporation of South Dakota. Filed May 5, 1905. Serial No. 258,974.



Claim.—1. In a mechanical oiler, a trough for oil, means to supply oil thereto, power driven distributing means to deliver definite quantities therefrom, a plurality of distributing pipes arranged to receive the oil delivered from said trough, there being a gap or space between said delivery means and the ends of said distributing pipes to permit the oil to drop, with a sight glass adjacent to said gap.

2. In a mechanical oiler, a trough for oil, means to supply oil thereto, power driven distributing means to deliver definite quantities therefrom, a plurality of distributing pipes arranged to receive the oil delivered from said trough, there being a gap or space between said delivery means and the ends of said distributing pipes to permit the oil to drop, with a sight glass adjacent to said gap, said sight glass being removable to afford access to said distributing pipes.

3. In a mechanical oiler, a plurality of distributing pipes, power driven distributing means to intermittently supply oil thereto in definite independently controllable quantities, there being a gap or space between said supply means and the ends of said distributing pipes through which space or gap the oil drops, and a sight glass adjacent to said gap or space.

4. In a mechanical oiler, a tank or receptacle, a removable perforated plate secured thereto, a plurality of outlet passages through the wall of said receptacle and through said plate, means for securing distributing pipes to said plate, all arranged whereby said receptacle may be detached from said plate without detaching said distributing pipes from the latter.

5. In a lubricator, the combination with an inclosed chamber provided with a suitable inlet and with a series of oil receptacles or pockets each of which has an outlet, of a movable distributer within said chamber, operating means, also within said chamber, for said distributer, and means for feeding oil to said distributer.

6. A lubricating device comprising a reservoir adapted to contain a lubricant, a trough member having a plurality of pockets, a distributing outlet pipe connected with each pocket, a sight plate for said trough member through which the pockets are visible, and means for lifting the lubricant from the bottom of the reservoir and depositing it in said pockets.

7. A lubricating device comprising a reservoir adapted to contain a lubricant, a trough member having a plurality of pockets, means for removably securing said trough member to said reservoir, a distributing outlet pipe connected with each pocket, a sight plate for said trough member through which the pockets are visible, and means for lifting the lubricant from the bottom of said reservoir and depositing it in said pockets.

8. A lubricating device comprising a trough member having a plurality of open pockets, a distributing pipe connected to each pocket, means for feeding a lubricant to said pockets, and a removable sight plate or front for said trough member through which said pockets are visible, all of said pockets being accessible for cleaning when the sight plate is removed.

9. A lubricating device comprising a trough member having a plurality of open pockets, means for feeding lubricant to said pockets, a distributing pipe leading downward diagonally from each of said pockets, and a removable sight plate for said trough member, through which said pockets are visible, said distributing pipes being accessible when said sight plate is removed.

10. A lubricating device including an open receiving trough, a partitioned distributing trough, means for regulating the passage of the lubricant from said receiving to said distributing trough, and a removable sight plate for said distributing trough.

11. A lubricating device comprising a reservoir adapted to contain a lubricant, a removable cover for said reservoir, a receiving trough, means for feeding lubricant from the bottom of said reservoir to said trough, a distributing trough having a series of pockets, distributing outlets leading from said pockets, said receiving trough and the interior of said reservoir being accessible when said cover is removed.

12. A lubricating device including a plurality of independent distributing pockets, distributing pipes leading therefrom, means for feeding lubricant in small quantities to each of said pockets individually, and a single removable sight plate through which said pockets are all visible.

13. In a lubricating device, a reservoir for the lubricant, a series of pockets contained therein inclosed in a common chamber, distributing pipes leading from said pockets, means for feeding lubricant in small quantities to each of said pockets individually, and power-driven means for controlling the feed to said pockets.

14. In a lubricator, the combination of an inclosed member having a suitable inlet and a series of oil distributing receptacles or pockets each having an outlet, means for controlling the distribution of oil to said receptacles, and power-driven means for feeding oil to said controlling mechanism.

15. In a lubricating device, a series of pockets having distributing outlets, a receiving trough above said pockets, means for allowing the delivery of oil from said trough to said pockets, and means for feeding oil to said trough.

16. In a lubricating device, a series of pockets having distributing outlets, a receiving trough above said pockets, means for controlling the delivery of oil from said trough to said pockets, and power-driven means for feeding oil to said trough.

17. A lubricating device comprising a trough member having a plurality of open pockets, a distributing pipe connected to each pocket, means for feeding a lubricant to said pockets, and a removable front plate for said trough member, all of said pockets being accessible for cleaning when the front plate is removed.

18. A lubricating device comprising a trough member having a plurality of open pockets, means for feeding lubricant to said pockets, a distributing pipe leading downward diagonally from each of said pockets, and a removable front plate for said trough member, said distributing pipes being accessible when said front plate is removed.

19. A lubricating device comprising a reservoir adapted to contain a lubricant, a removable cover therefor, a receiving trough accessible when said cover is removed, a series of distributing pockets, movable means for controlling the feed of oil from said receiving trough to said distributing pockets, and a removable front plate for said

pockets, all of said pockets being accessible when said front plate is removed.

20. A lubricating device comprising a reservoir for the lubricant, a receiving trough, power-driven means located within said reservoir for feeding lubricant into said trough, a series of distributing pockets, conduits connecting said receiving trough and said pockets, and a rotary controller shaft always closing said conduits and having pockets with adjustable partitions corresponding to said conduits for conveying lubricant intermittently through said conduits.

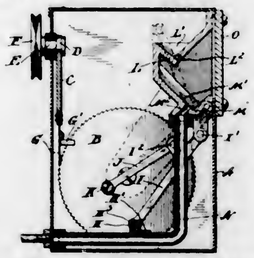
21. A lubricating device including a main reservoir for containing lubricant, a receiving trough, means for feeding lubricant into said trough, a distributing trough forming an inclosed chamber and having a series of distributing pockets, and means for intermittently conveying lubricant from said receiving trough to said distributing pockets.

22. A lubricating device comprising a reservoir for containing the lubricant, a removable member having a receiving trough and a series of distributing pockets, and means carried by said member for controlling the feed of lubricant from said receiving trough to said distributing pockets.

23. In a lubricating device, an open shallow receiving trough, means for slowly feeding a lubricant to said trough, distributing pipes, and means for controlling the passage of lubricant from said receiving trough to said pipes.

24. In a lubricating device, an open shallow receiving trough, means for slowly feeding a lubricant to said trough, distributing pipes, and a rotary shaft having pockets for controlling the passage of lubricant from said receiving trough to said pipes.

856,181. MECHANICAL OILER. CARLTON R. RADCLIFFE, New York, N. Y., assignor, by direct and mesne assignments, to International Patent Corporation, Jersey City, N. J., a Corporation of South Dakota. Filed Sept. 13, 1905. Serial No. 278,206.



Claim.—1. In a mechanical oiler, a reservoir, distributing means comprising two troughs therein, one located above the other, there being an outlet from the upper trough into the lower trough, a pipe leading from the lower trough, a bucket and means for moving said bucket from the lower part of the receptacle to the upper part thereof and over said upper trough.

2. A lubricator comprising, a reservoir, a plurality of receiving pockets having unobstructed outlets, a plurality of distributing pockets below said receiving pockets, and means for lifting predetermined quantities of lubricant from the bottom of said reservoir and depositing them in said receiving pockets.

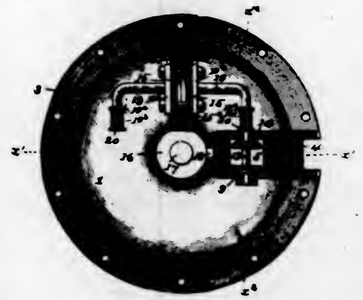
3. A lubricator comprising, a reservoir, a plurality of receiving pockets, independently adjustable means for lifting predetermined quantities of oil from the bottom of said reservoir and depositing them in said pockets, and a plurality of distributing pockets spaced apart but fed from said receiving pockets.

4. A lubricator comprising, a casing serving as a reservoir for the lubricant, a receiving trough therein, a plurality of distributing pockets fed therefrom and power driven means for lifting lubricant from the bottom of said reservoir and depositing it in said receiving trough, said means including a driving shaft entering said casing above the normal level of lubricant contained therein.

5. In a lubricator, a casing, a series of distributing pockets, means in said casing for lifting lubricant and depositing it into said pockets, comprising a rotating wheel, a pivoted arm, a link connecting said arm and said wheel, and a series of buckets carried by said arm.

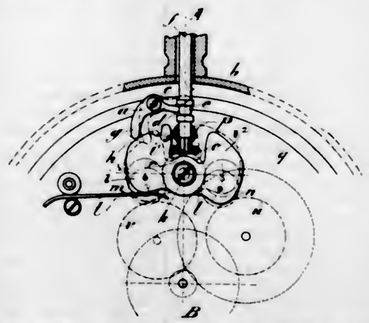
6. In a lubricator, a casing forming an oil containing reservoir, a series of distributing pockets, a removable sight plate in front of said pockets, all of said pockets being accessible when said sight plate is removed, a series of receiving pockets having outlets above said distributing pockets and means for lifting individual quantities of oil from the bottom of said reservoir and depositing them in said receiving pockets.

856,182. SEMIROTARY MOTOR. JACOB E. REMPE, Kankakee, Ill., assignor, by direct and mesne assignments, to Rempe-Shidler Manufacturing Company, Kankakee, Ill., a Corporation of Illinois. Filed July 11, 1906. Serial No. 325,590.



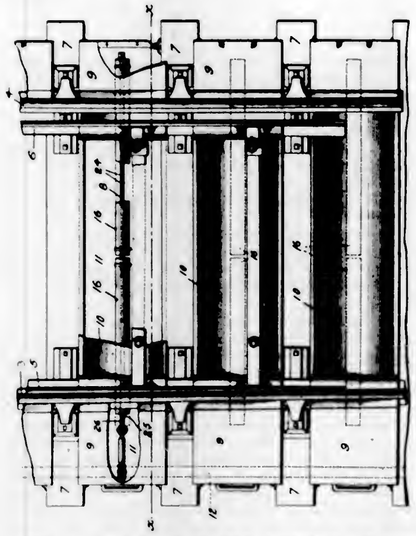
Claim.—A semi-rotary motor comprising a radial abutment having transverse induction and eduction valves, a piston, plates secured to opposite sides of the piston, pairs of right angle arms carried by each plate, each right angle arm having its inner part located perpendicularly of the piston and its outer part parallel with the piston, collars located near the extremities of the right angle arms, coiled springs secured at their inner ends to said extremities and heads secured to the outer ends of the coiled springs; the outer parts of the right angle arms, the springs and the heads being adapted to assume a position in line with the transverse valves so as to push positively and directly upon the latter.

856,183. WINDING AND SETTING MECHANISM FOR WATCHES. HENRI SANDOZ, Tavannes, Switzerland. Filed Sept. 5, 1905. Serial No. 277,125.



Claim.—An improved winding and setting mechanism comprising in combination a rocking yoke provided with rocking and locking cam surfaces and stop projections, pinions mounted on said yoke and adapted to be alternately thrust into mesh with winding and dial wheels, a crown wheel meshing with said pinions, a stem pinion meshing with said crown wheel, a slidably mounted stem nonrotatively and slidably engaging said stem pinion, a bearing for said stem adapted to be engaged by said stop projections, means normally holding said yoke in a winding position, and a rocking lever coöperating with said rocking and locking cam surfaces to rock and lock the yoke into a setting position.

856,184. MEANS FOR KEEPING SWITCH AND SIGNAL APPARATUS FREE FROM SNOW AND ICE. FRANCIS G. SHAW, Boston, Mass., assignor to The International Switch and Signal Company, Boston, Mass., a Corporation of Maine. Filed Nov. 8, 1906. Serial No. 342,467.



Claim.—1. In a switch or signal apparatus, the combination with a chamber adjacent the vulnerable parts of said apparatus, and a gas burner in said chamber, of a deflector above the burner for assisting in distributing the heat throughout the chamber.

2. In a switch or signal apparatus, the combination with a chamber adjacent the vulnerable parts of said apparatus, and a gas burner within said chamber, of means within the chamber to distribute the heat evenly throughout the chamber.

3. In a switch or signal apparatus, the combination with a chamber beneath the vulnerable parts of said apparatus, and a gas burner in said chamber, of a deflector above the burner having a concaved deflecting surface.

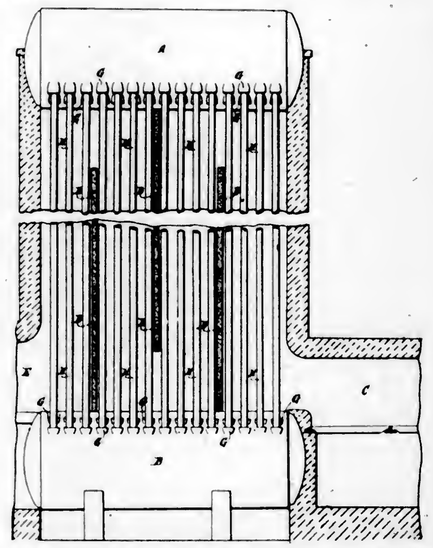
4. In a switch or signal apparatus, the combination with a chamber beneath the vulnerable parts of said apparatus, and a gas burner in said chamber, of a member above the burner supported thereby and having a concaved under face to deflect the heat and distribute it through the burner and to form a gas chamber for assisting in igniting the burner.

5. In a switch apparatus, the combination with a chamber beneath the vulnerable parts of said apparatus, and a gas burner in said chamber, of a deflector having a concaved under surface supported above said burner, and automatic gas-igniting means.

6. In a switch apparatus, the combination with means forming with the ties a chamber beneath the rails adjacent the ties, and a burner extending transversely of the track in each chamber, of a plate sustained above each burner and provided with a concave under face.

7. In a switch apparatus, the combination with means forming with the ties a chamber beneath the rails adjacent the ties, and a burner extending transversely of the track in each chamber, of a plate sustained above each burner and provided with a concave under face, and automatic gas-lighting means associated with each burner.

856,185. WATER-TUBE BOILER. ROBERT SINCLAIR, Edinburgh, ALEXANDER SINCLAIR and GEORGE SINCLAIR, Leith, and JAMES C. SINCLAIR and WILLIAM SINCLAIR, Edinburgh, Scotland, trustees and executors of George Sinclair, deceased. Filed Oct. 23, 1906. Serial No. 340,131.



Claim.—1. In a water tube boiler, a plain drum having separate tube landings formed therein, in parallel rows, and so arranged as to leave sufficient space between the adjacent transverse rows for the insertion or withdrawal of the tubes from either side of a row without the use of manholes, as described.

2. In a water tube boiler, a plain drum having parallel rows of separate circular tube landings formed partially above and partially below the drum face, and so arranged as to leave sufficient space between the adjacent transverse rows for the insertion or withdrawal of the tubes from either side of a row without the use of manholes, as described.

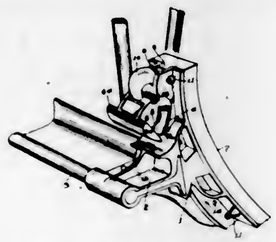
856,186. BRAKE HEAD AND SHOE. CHARLES P. SMITH, Canton, Ohio. Filed Mar. 16, 1907. Serial No. 362,758.

Claim.—1. In a brake-head and shoe consisting of a brake-head provided with a rearward extending flange, said rearward extending flange provided with lateral lugs, brake beam connecting flanges spaced from the rearward extending flange and a hanger adapted to be connected to the rearward extending flange and a shoe detachably connected to the brake head, substantially as and for the purpose specified.

2. In a brake-head and shoe, the combination of a brake beam and a brake head means for attaching the brake-head to the brake-beam, said head provided with a slot or way, a brake shoe provided with notched flanges, said notched flanges adapted to be seated in the groove or way of the brake-head, said brake head provided with a rear-

ward and downward extending arm, said rearward and downward extending arm provided with lateral lugs, substantially as and for the purpose specified.

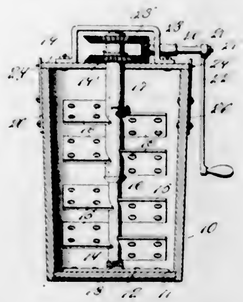
3. In a brake-head and shoe, a brake head and a brake beam, a brake shoe detachably connected to the brake head, said brake head provided with a rearward and downward



extending arm, said arm adapted to receive a hanger, said hanger provided with a rounded contact portion for engagement with the rearward extending arm and the rearward extending arm provided with curved portions upon its bottom or under side, substantially as and for the purpose specified.

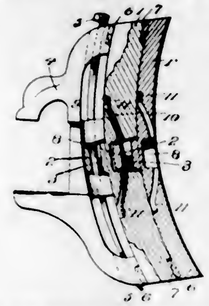
4. In a brake-head and shoe, the combination of a brake-head, a brake shoe provided with notched flanges, cotters adapted to connect the brake-head and shoe together, said brake-head provided with a rearward extended arm, said rearward extended arm provided with lateral flanges, a hanger adapted to support the brake-head and the lower portion of the hanger located under the rearward extended arm and intermediate the lateral flanges and the body of the brake-head, substantially as and for the purpose specified.

856,187. CHURN. JOSEPH SMITH, Loami, Ill., assignor to John W. Grey, Maxwell township, Sangamon county, Ill. Filed July 12, 1906. Serial No. 325,873.



Claim.—A churn embodying in its construction a cylindrical body, a centrally disposed shaft provided with a collar, a step upon which the shaft rests, a sleeve shaft surrounding the first-mentioned shaft and resting at its bottom on the said collar, each of the said shafts being provided with a plurality of pairs of paddles or dashers the paddles of each pair being set obliquely to the axes of the shaft and sleeve and arranged at regular intervals on the shaft and sleeve from the top to the bottom thereof and on diametrically opposite sides of the said shafts, whereby one plural set of dashers may tend to force the cream downward and the other plural set will tend to force it upward or in a reverse direction creating counter currents meeting at the longitudinal center of the churn, and means for operating the said shafts, substantially as set forth.

856,188. BRAKE-SHOE. JOHN J. TATUM, Baltimore, Md., assignor of one-half to Alois P. Prendergast, Baltimore, Md. Filed Sept. 11, 1906. Serial No. 334,152.



Claim.—1. A brake-shoe provided in its wearing face with recesses adapted to receive the attaching and guide lugs upon the back of another shoe, and a locking means at the rear of said first-mentioned shoe for securing the latter thereto.

2. A brake-shoe provided in its wearing face with recesses adapted to receive the attaching and guide lugs upon the back of another shoe, and a key passing through the body of said first-mentioned shoe for securing the latter thereto.

3. A brake-shoe provided in its wearing face with recesses adapted to receive the attaching and guide lugs upon the back of another shoe, and a key passing into the rear face of said first-mentioned shoe for securing the latter thereto.

4. A brake-shoe provided in its wearing face with recesses adapted to receive the attaching and guide lugs upon the back of another shoe and provided with a channel or keyway opening from the back of the shoe and a key adapted to engage in said channel or keyway to secure the two shoes together.

5. A brake-shoe provided in its wearing face with recesses adapted to receive the attaching and guide lugs upon the back of another shoe and provided with a channel or keyway opening from the back of the shoe and intercepting said attaching recess, and a key adapted to pass through said keyway and through the lug in said attaching recess.

6. A brake-shoe provided in its wearing face with recesses adapted to receive the attaching and guide lugs upon the back of another shoe and provided with a channel or keyway intercepting said attaching recess and having openings in the rear face of the shoe, and a key adapted to pass through said keyway and through the lug in said attaching recess, the ends of said key being adapted to be bent into contact with a land or straight part arranged in said keyway.

856,189. CASH AND PARCEL CARRIER. JAMES L. BALDWIN, Chicago, Ill. Filed Jan. 25, 1906. Serial No. 297,869.

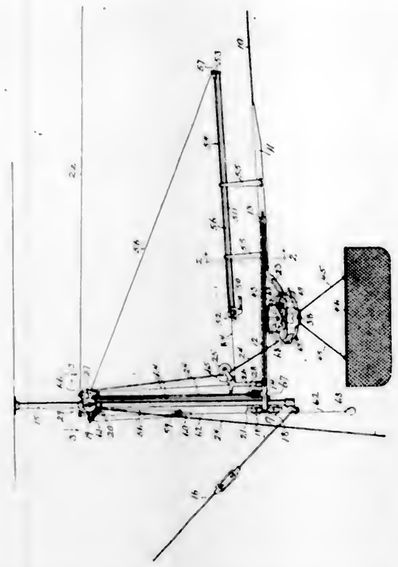
Claim.—1. In a parcel carrier, a basket, a track arranged to be raised and lowered for said basket to travel on, a propelling mechanism for propelling said basket along the track and means for lowering the basket.

2. In a parcel carrier, a car, a track arranged to be raised and lowered for said car to travel on, a short pivoted track connected to the end of said first named track arranged to be locked to form a continuation of said first named track and a rope connected to the free end of said second named track serving as a flexible track for said car.

3. In a parcel carrier, a track arranged to be raised and lowered and a governor for controlling the lowering of said track comprising a pulley loosely mounted on a shaft, a rope to travel over said pulley, governor balls pivoted to said pulley and a rope tightening mechanism whereby the

speed of said pulley will be checked and the rope will be pressed tightly against said pulley by the action of said balls.

4. In a parcel carrier, a car, a track arranged to be raised and lowered, a rod supported above and parallel



with the end of said track, a propelling fork mounted to slide on said rod and a pull cord attached to said propelling fork for moving said fork to propel said car.

5. In a parcel carrier, a car, a track for said car to travel on, a rope connected to the end of said track to serve as a flexible track for said car and to lower and elevate said car, means for propelling said car along on said track, and means for retaining said car in an unmoved position on the track until the propelling means is brought into action.

6. In a parcel carrier, a track, a car to travel on said track provided with stationary fingers above the track and on either side thereof and with spring pressed fingers below the track on either side thereof, said upper and lower fingers arranged to have their ends meet to prevent the car from leaving the track.

7. In a parcel carrier, a track for a car to travel on and a short track flexibly secured to the end of said track and arranged to automatically lock to be in alinement with said first named track.

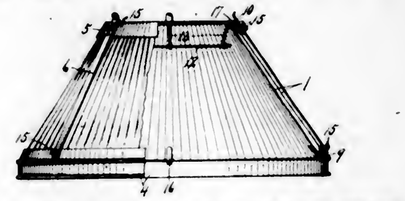
8. In a parcel carrier, a car, a track arranged to be raised and lowered, a rod supported parallel with the end of said track, a propeller mounted on said rod and a pull cord to actuate said propeller to propel said car.

9. In a parcel carrier, a basket attached to a car, a track arranged to be raised and lowered for said car to travel on, a propelling mechanism for propelling said car along said track and means for lowering said basket and car.

10. In a parcel carrier, a car, a track arranged to be raised and lowered, a rod supported by above and parallel with, the end of said track, a propelling fork mounted to slide on said rod and a pull cord attached to said propelling fork for moving said fork to propel said car.

11. In a parcel carrier, a car, a track arranged to be raised and lowered, a rod supported by and parallel with the end of said track, a propeller mounted on said rod and a pull cord for operating said propeller to propel the car.

856,190. LAMP-SHADE. FRANCIS BAUMER, Syracuse, N. Y., assignor to The Will & Baumer Company, Syracuse, N. Y., a Corporation of New York. Filed July 17, 1906. Serial No. 326,617.



Claim.—1. A lamp shade comprising an outer skeleton frame, an inner frame, a tubular screen fitted upon the inner frame and movable means for locking the inner frame within the outer frame.

2. In a lampshade, two metal rings of unequal diameters spaced apart one above the other with the smaller ring at the top, tie bars connecting said rings and holding them in fixed relation to each other, an inner skeleton frame fitted within the rings, but separable therefrom, a conical screen fitted upon the inner frame and movable members on one of the rings for engaging and holding the inner frame in place.

3. A lampshade comprising an outer frame consisting of metal rings spaced apart one above the other and tie-bars holding the rings in fixed relation to each other, a conical screen tube consisting of an inner skeleton frame, and a covering of fabric, the screen being fitted within the outer frame, but separable therefrom, and means for retaining the screen in the frame.

4. In a lampshade, a skeleton frame consisting of two metal rings of unequal diameter arranged about a common axis with the smaller ring some distance above the larger one, a separate fabric covered frame fitted within the first named frame, tie-bars connecting said rings and bendable metal retainers attached to the lower ring and folded under the lower edge of the fabric covered frame.

5. In a lampshade, two separable metal skeleton frames conical in general outline and fitting one within the other, a screen interposed between the frames, one of said frames being, provided with a series of inwardly foldable attaching members for holding the other frame in operative position.

6. A lampshade comprising separate inner and outer skeleton frames conical in general outline, each frame comprising a lower ring of comparatively large diameter and an upper ring of smaller diameter, with tie bars connecting said rings, in combination with a screen interposed between the frames, and means for locking the frames together.

7. A lamp-shade comprising an outer skeleton frame conical in general outline, and an inner conical frame fitted within the outer frame, a conical screen fitted upon the inner frame and bendable retaining elements attached to the lower end of the outer frame and foldable inwardly and upwardly under the lower edge of the inner frame.

856,191. BRUSH FOR BOTTLE-WASHING MACHINES. PHILIPP BOCH, New York, N. Y. Filed Mar. 28, 1906. Serial No. 308,567.



Claim.—1. In a bottle-cleaning device, in combination, a spindle, a tubular end-section carried thereby, a plate disposed within said end-section and extending longitu-

dinally thereof, wipers pivoted to said plate, and a wiper-actuating device.

2. In a bottle-cleaning device, in combination, a tubular section, a plate disposed diametrically and longitudinally of said section and extending beyond the same at one end, wipers pivoted to the outwardly-extending portion of said plate, and a wiper-actuating device.

3. In a bottle-cleaning device, in combination, a tubular section, a plate within the same and extending longitudinally thereof, wipers pivoted to said plate at opposite faces of the same, and a wiper-actuating device.

4. In a bottle-cleaning device, a tubular section, a plate extending longitudinally thereof and disposed within the same, pivoted wipers, and a wiper-actuating device guided on said plate.

5. In a bottle-cleaning device, the combination of a tubular member, a guide-plate disposed within said member, pivoted wipers, and a wiper-actuating shank guided longitudinally on said guide-plate.

6. In a bottle-cleaning device, in combination, a spindle, a tubular end-section carried thereby, a plate within and extending longitudinally of said section, wipers pivoted to said plate, and a wiper-actuating device guided on said plate.

7. In a bottle-cleaning device, a spindle, a tubular end-section carried thereby, a plate within and extending longitudinally of said member, wipers pivoted to said plate at one end, and a wiper-actuating device guided longitudinally of said section on said plate.

8. In a bottle-cleaning device, in combination, a spindle, a hollow end-section carried thereby, a plate within and extending longitudinally to said section, wipers pivoted to said plate at one end of the same, said wipers being located at opposite faces of said plate, and a wiper-actuating shank guided longitudinally of said plate and engaging both of said wipers.

9. In a bottle-cleaning device, a tubular member *d*, a plate *e* within and extending longitudinally of said member, wipers, and a wiper-actuating shank *g* straddling said plate and guided therealong.

10. In a bottle-cleaning device, a tubular member, a guide-plate disposed within and extending longitudinally of said member, wipers pivoted to said plate, and a wiper-actuating shank straddling said plate and guided therealong.

11. In a bottle-cleaning device, in combination, a tubular section, a plate disposed within said section and extending diametrically thereof, pivoted wipers, and a wiper-actuating shank embodying parallel legs guided longitudinally on opposite faces of said plate.

12. In a bottle-cleaning device, a guide-plate, wipers pivoted thereto at either face of the same, and a wiper-actuating shank embodying parallel legs straddling said guide-plate and engaging at their ends with said wipers.

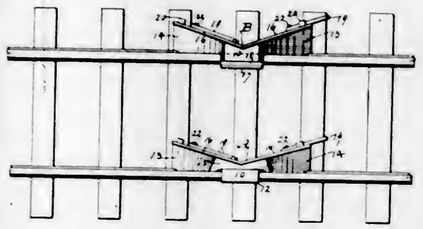
13. In a bottle-cleaning device, in combination, a tubular member, a guide-plate extending longitudinally and diametrically of said member, pivoted wipers, and a U-shaped wiper-actuating shank guided on said guide-plate.

14. In a bottle-cleaning device, the combination, with a spindle, of a tubular end-section carried thereby, a guide-plate within said section, pivoted wipers, and a U-shaped wiper-actuating shank straddling said guide-plate and guided longitudinally along the same.

15. In a bottle-cleaning device, the combination, with a spindle, of a tubular end-section carried thereby, a guide-plate extending longitudinally and diametrically of said section, wipers pivoted to said guide-plate at one end and at either face of the same, and a wiper-actuating shank embodying legs which straddle said guide-plate and are guided longitudinally therealong, said legs engaging at their ends with said wipers.

856,192. CAR-REPLACER. WILLIAM F. BRANN, Des Moines, Iowa. Filed Mar. 7, 1907. Serial No. 361,622.

Claim.—1. A block for replacing a derailed car comprising a center portion having a flat top, inclined planes extending downward from the top and wider at their lower ends than at their tops, flanges projecting upward at the outside edges of the inclined planes, a lateral extension at the top and inside face of the block having a flange projecting downward at the end of the extension and means for detachably fastening the block to a cross tie.



2. A block for replacing a derailed car comprising a center portion having a flat top, inclined planes extending downward from the top and wider at their lower ends than at their tops, a flange projecting upward at the outside edges of the inclined planes, a lateral extension at the top and inside face of the block, a flange projecting downward at the edge of the extension and means to fasten the block on a cross tie and a rail.

3. A block for replacing a derailed car comprising a center portion having a flat top, inclined planes extending downward from the top and wider at their lower ends than at their tops, a flange projecting upward at the outside edges of the inclined planes, a lateral extension at the top and inside face of the block having a flange projecting downward at the edge of the extension, a hook pivoted to the outside face of the block to fasten the block on a railway track aside of a rail.

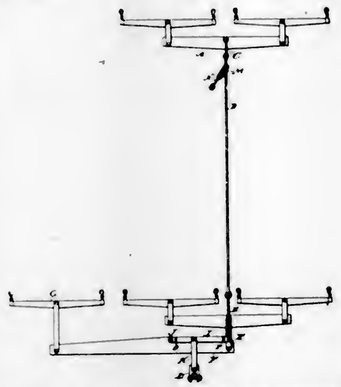
4. A block for replacing derailed cars comprising a center portion having a flat top, inclined planes extending downward from the top and wider at their lower ends than at their upper ends, a flange projecting upward at their outside edges, a lateral extension at the top having a vertical flange at its edge and a groove in the top surface of the extension at the side of the flange and a hook pivotally connected with the block, to operate as set forth.

5. A block for replacing derailed cars comprising a center portion having a flat top, inclined planes extending downward from the top and wider at their lower ends than at their upper ends, a flange projecting upward at the outside edge of the inclined planes, a lateral extension at the top of the block having a vertical flange at its edge and a groove in the top surface of the extension at the side of said flange and adjustable means to fasten the block to a cross tie and a track rail.

6. A block for replacing derailed cars comprising a center portion having a flat top, inclined planes extending downward from the top and wider at their lower ends than at their upper ends, a flange projecting upward at the outside edges of the inclined planes, a lateral extension at the top having a vertical flange at its edge and a groove in the top surface of the extension at the side of the flange, a stud on the outside face of the end portion of the block, a second stud at some distance from the end provided with a bolt hole, a screw extended through the hole and seated in the block and a hook pivoted under the stud by means of the screw to fasten the block at the side of a track rail.

7. A car replacer comprising a block having an outward extension at its top and central portion and provided with a flange at the edge of the extension projecting downward, an inclined plane extending downward from each end of the central top portion and wider at its lower end than at its top and provided with a vertical flange at its edge, a corresponding block having a lateral extension at its top and center having a vertical flange at the edge of the extension and a groove in the top face of the extension, and means for detachably fastening the blocks to cross ties in a railway track at the sides of the track rails, to operate as set forth.

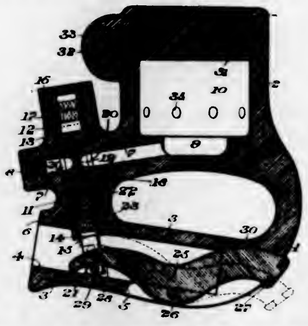
856,193. FIVE-HORSE EQUALIZER. EGBERT O. DOAK, Cedar Rapids, Iowa, assignor to William T. Jones, Cedar Rapids, Iowa. Filed June 27, 1906. Serial No. 323,711.



Claim.—1. In a five-horse equalizer, the combination of a three-horse evener, a pair of levers pivoted thereto at the fulcrum point, links pivoted to said levers at two fifths their length, and means for connecting said links with the load, a stirrup connecting with the longer arms of said links a draft-rod extending forward from said stirrup, and a pair of whiffletrees attached to the front end thereof.

2. In a five-horse equalizer, the combination of a three-horse evener, a pair of levers pivoted thereto, with offset ends, double links connecting with each lever, a clevis at the other end of said links, a stirrup attached to the free ends of said levers, a draft-rod connecting with the stirrup, a supporting link for the draft-rod, adapted for attachment to a tongue, and a pair of whiffletrees coupled to the front end of the draft-rod.

856,194. PNEUMATIC-TOOL HANDLE. FREDERICK S. GRAHAM, Philadelphia, Pa., assignor of one-third to Ralph M. Seaman and one-third to Charles A. Struntz. Filed Nov. 9, 1906. Serial No. 342,713.



Claim.—1. In a pneumatic tool handle, the combination of a grasping portion and a chambered head block integral therewith, an inlet passage communicating with the chamber of said head block, a valve angularly inclined thereto and having a slotted stem, a passage through said grasping portion into which said stem extends, yielding means for normally maintaining said valve in closed position, a lever pivoted in the aperture of said grasping portion, one end of which extends through the slot in said stem and is provided with a cam face, the other end of which is adapted to be manually actuated, and means carried by said slotted stem adapted to coact with the cam face of said lever.

2. In a pneumatic tool handle, the combination of a grasping portion, and a chambered head block secured thereto, an inlet passage communicating with said chamber, a valve angularly inclined thereto adapted to control said passage, said valve having a slotted stem, a pin carried by said stem, resilient means for maintaining said valve normally closed, and a manually actuated lever passing through said slot and having a cam face adapted to coact with said pin to open said valve.

3. In a pneumatic tool handle, the combination of a grasping portion, a head block secured thereto, an inlet passage extending into said head block, a passage angularly inclined thereto, a bushing having a flange at its outer end, engaging said passage and extending into the passage in said grasping portion, a valve having a slotted stem within said bushing and provided with a shoulder, said stem extending through said bushing, a spring interposed between said shoulder and the flange of said bushing to maintain said valve normally closed, a pin carried by said stem, and manually actuated means coacting with said pin to open said valve.

4. In a pneumatic tool handle, the combination of a grasping portion and a head block secured thereto, a passage extending through said grasping portion, a differential passage communicating therewith and angularly inclined thereto and extending through a projection from said head block and said grasping portion, an inlet passage traversing said last mentioned passage and angularly inclined thereto, a bushing having differential diameters adapted to be seated in said differential passage and having ports communicating with said inlet passage, the upper end of said bushing being apertured and having an inwardly projecting flange, a valve having a slotted stem within said bushing and provided with a shoulder, a spring interposed between said shoulder and said flange, a pin carried by said stem and a lever pivoted in the passage of said grasping portion, one end of which extends through said slot and is provided with a cam face coacting with said pin, and the opposite end of said lever being provided with a presser piece whereby the same may be manually actuated.

5. In a pneumatic tool handle, the combination of a grasping portion and a chambered head block with an inlet passage communicating with the chamber of the head block, a valve angularly inclined to said inlet passage, there being a passage through the grasping portion into which the stem of the valve extends, yielding means for normally holding the valve in closed position, and means pivoted in the passage of the grasping portion and having one end formed with a cam face for actuating said valve in opposition to said yielding means.

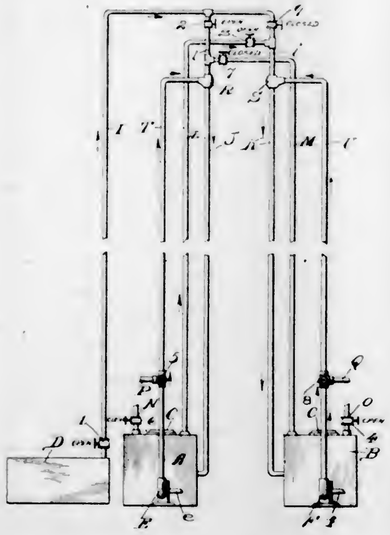
6. In a pneumatic tool handle, the combination of a grasping portion and a chambered head block with an inlet passage communicating with the chamber of the head block, a valve angularly inclined to said inlet passage there being a passage through the grasping portion into which the stem of the valve extends, yielding means for normally holding the valve in closed position, means pivoted in the passage of the grasping portion and having one end formed with a cam face for actuating said valve in opposition to said yielding means, and a bushing for said valve having ports in alinement with said inlet passage.

7. In a pneumatic tool handle, the combination of a grasping portion and a chambered head block with an inlet passage communicating with the chamber of the head block, a valve angularly inclined to said inlet passage, there being a passage through the grasping portion into which the stem of the valve extends, yielding means for normally holding the valve in closed position, means pivoted in the passage of the grasping portion and having one end formed with a cam face for actuating said valve in opposition to said yielding means, a bushing for said valve having ports in alinement with said inlet passage, and a closure engaging said bushing to prevent improper movement thereof.

8. In a pneumatic tool handle, a grasping portion formed with a passage, a head block on said grasping portion and having a chamber and a supplemental chamber, an inlet opening communicating with said supplemental chamber, a valve disposed angularly to the inlet opening and means in the said passage of the grasping portion having cam means for actuating the valve.

9. In a pneumatic tool handle, a grasping portion formed with a passage, a head block on said grasping portion and having a chamber and a supplemental chamber, an inlet opening communicating with said supplemental chamber, a valve disposed angularly to the inlet opening and means in the said passage of the grasping portion having cam means for actuating the valve, said head block being threaded and provided with lugs as and for the purpose specified.

856,195. APPARATUS FOR MAKING BISULFITE LIQUOR. NOBLE HEATH, Antioch, Cal., assignor of one-fourth to Walter S. Wright and one-fourth to James W. Stewart, Chicago, Ill., and one-fourth to John H. Winslow, Glencoe, Ill. Original application filed Oct. 19, 1905, Serial No. 283,186. Patent No. 830,996. Divided and this application filed July 2, 1906. Serial No. 324,396.



Claim.—1. The combination with a tank provided with a vent at the top thereof to carry off fumes, of a sulfur furnace, a mixing pipe leading into said tank, means for conducting fumes from said furnace to said mixing pipe, a pump arranged to draw fluid from said tank, a riser leading from said pump to said mixing pipe, a discharge pipe communicating with said riser, and control valves for said discharge pipe and said vent.

2. The combination with a sulfur furnace, of two tanks each provided with a vent; mixing pipes leading into said tanks, respectively; a pump connected with each of said tanks; risers or fluid pipes leading from said pumps, respectively, to said mixing pipes; discharge pipes connected with said fluid pipes, respectively; a fumes pipe leading from said furnace; branch fumes pipes leading from said fumes pipe to said mixing pipes, respectively; exhaust fumes pipes connecting each tank with the mixing pipe of the opposite tank; and control valves for said branch fumes pipes, exhaust fumes pipes, discharge pipes and vents.

3. The combination with a fumes generating furnace, of two tanks, a mixing pipe rising from each of said tanks, respectively, means for conducting fumes from said furnace to said mixing pipes, means for controlling the flow of fumes from said furnace into said mixing pipes, means for conducting exhaust fumes from each tank to the mixing pipe of the other tank, means for controlling the flow of such exhaust fumes, means for conducting a fluid from said tanks into said mixing pipes, valve controlled means connected therewith for conducting the contents of said tanks to a suitable receptacle, and valve controlled vents connected with said tanks.

4. An apparatus of the class described comprising means for generating fumes, and a fumes and fluid circulating system comprising two tanks, a mixing pipe leading into each tank, valve controlled means for conducting fumes from said generator to said mixing pipes, means for conducting a fluid from said tanks to said mixing pipes, valve controlled fumes vents opening from said system, and valve controlled means for conducting the fluid contents of said tanks out of said system.

5. The combination with a fumes generating device, of a fluid tank, a circulatory system connected with the tank and comprising a pump and a mixing pipe, a conduit from the fumes generating device to the mixing pipe whereby the fumes are drawn into the mixing pipe by means of the circulation created by the pump, a valve to cut off the fumes from the circulatory system, and a discharge pipe leading from the circulatory system, whereby the tank may be emptied through the operation of the same pump used to promote the circulation of the fluid during the process of saturating the same with the fumes.

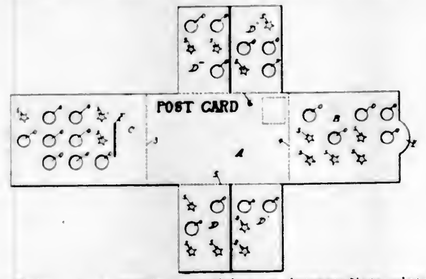
6. The combination with a fumes generating device, of a tank, a circulatory system connected with the tank and comprising a pump and a mixing pipe, a conduit from the fumes generating device to the mixing pipe, whereby the fumes are drawn into the mixing pipe by means of the circulation created by the pump, a second fluid circulatory system, and a fumes exhaust pipe leading from the tank to the second fluid circulatory system, whereby the exhaust fumes from the first circulatory system are drawn into the second circulatory system.

7. The combination with a fumes generating device, of a fluid tank, a circulatory system connected therewith and comprising a pump and a mixing pipe, a conduit leading from the fumes generating device to the mixing pipe, a second circulatory system comprising a pump, a valve-controlled discharge pipe leading from the first circulatory system and a valve to shut off the fumes from the mixing pipe, whereby the fluid in the first circulatory system may first be saturated with the fumes while the exhaust fumes are conducted to the second system and then pumped out of the tank by the continuous operation of the same pump.

8. The combination of a fumes generating device, with two fluid tanks, a circulatory system connected with each of said tanks and comprising a pump and a mixing pipe, conduits from the fumes generating device to each of the mixing pipes, an exhaust fumes pipe leadng from each of said tanks to the mixing pipe of the other system, and valves for shutting off the fumes conduits from the mixing tubes, whereby each of said circulatory systems may be supplied with fumes in alternation directly from the fumes generator and then indirectly through the exhaust fumes pipe of the other circulatory system.

9. The combination of a fumes generating device, with two fluid tanks, a circulatory system connected with each of said tanks and comprising a pump and a mixing pipe, conduits from the fumes generating device to each of the mixing pipes, an exhaust fumes pipe leading from each of said tanks to the mixing pipe of the other system, valves for shutting off the fumes conduits from the mixing tubes, and valve controlled discharge pipes leading from each of the circulatory systems, whereby in alternation the fluid in each circulatory system may receive fumes from the exhaust of the other system, then direct from the fumes generator and then be pumped out from the tank by a continuous operation of said pumps.

856,196. PUZZLE. FRANK H. LEHMAN, Lebanon, Pa., assignor to The Ullman Manufacturing Company, New York, N. Y. Filed Oct. 3, 1906. Serial No. 337,196.



Claim.—1. A puzzle comprising an intermediate plate, auxiliary plates attached thereto and adapted to be folded in and superimposed, one upon another, thereon, a plurality of perforations in said auxiliary plates and a plurality of figures or pictorial representations thereon, as and for the purpose described.

2. A puzzle comprising an intermediate plate, auxiliary plates revolubly attached thereto and adapted to be folded in and superimposed, one upon another, thereon, in a variety of ways, a plurality of perforations in said auxiliary plates and a plurality of figures or pictorial representations on the outside faces thereof, as and for the purpose described.

3. A puzzle comprising an intermediate plate, auxiliary plates attached thereto and adapted to be folded in and superimposed, one upon another, thereon, a plurality of perforations in said auxiliary plates and a plurality of figures or pictorial representations on the faces thereof which lie uppermost when said auxiliary plates are folded in upon said intermediate plate, as and for the purpose described.

4. A puzzle comprising an intermediate plate, auxiliary plates attached thereto and adapted to be folded in and superimposed, one upon another, in a variety of ways thereon, a plurality of perforations in said auxiliary plates and a plurality of figures or pictorial representations thereon, said perforations being so located and arranged with respect to said figures that when said auxiliary plates are superimposed in a predetermined order a fixed or given number of said figures appear and when said plates are superimposed in any other order said fixed or given number of said figures do not appear.

5. A puzzle comprising an intermediate plate, a plurality of auxiliary plates revolubly attached to the sides or edges thereof and adapted to be turned or folded in and superimposed, one upon another, in a variety of ways, thereon, a plurality of perforations in said auxiliary plates and a plurality of figures or pictorial representations thereon, said perforations being so located and arranged with respect to said figures that when said auxiliary plates are folded in and superimposed one upon another in a predetermined order, a certain given or fixed number of said figures become visible, and when said plates are superimposed in any other order, a less number of said figures become visible.

6. The herein described puzzle, which comprises the intermediate plate A, auxiliary plates B C and D D′ D″ D‴ revolubly secured to the sides or edges thereof, a plurality of openings or perforations in said auxiliary plates and a plurality of figures or pictorial representations on the outside faces thereof, as and for the purpose described.

7. In a puzzle, the combination of the intermediate plate A, auxiliary plates B C and D D′ D″ D‴ attached thereto, a plurality of openings or perforations in said auxiliary plates and a plurality of figures or pictorial representations thereon, said perforations being so located with reference to said figures that when said auxiliary plates are folded in and superimposed one upon another in a predetermined order, a certain fixed or given number of said figures will appear, and when said auxiliary plates are superimposed in any other order, said certain fixed or given number of said figures will not appear.

8. In a puzzle, the combination of the intermediate plate A, auxiliary plates B C and D D′ D″ D‴ a plurality of openings or perforations in said auxiliary plates and a plurality of figures or pictorial representations thereon, and lip E formed on plate B and a slot F for the reception of said lip formed in plate C, substantially as specified.

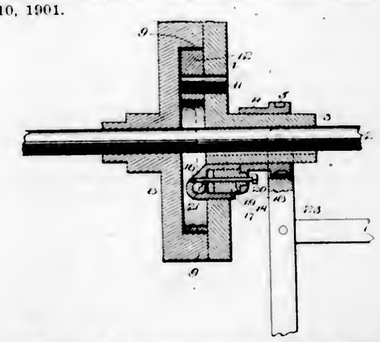
9. A puzzle adapted to be used as a postal card, comprising an intermediate plate, a plurality of auxiliary plates foldably attached to the edges thereof, a plurality of openings or perforations in said auxiliary plates and a plurality of figures or pictorial representations thereon, and a blank space on the inner face of said intermediate plate adapted for the inscription of a message thereon.

10. A puzzle adapted to be used as a postal card, comprising an intermediate plate, a plurality of auxiliary plates foldably attached thereto and adapted to be turned in and superimposed one upon another thereon in a variety of ways, a plurality of perforations in said auxiliary plates and a plurality of figures or pictorial representations thereon, a blank space on the inner face of said intermediate plate adapted for the inscription of a message thereon and capable of being hidden from general view by the superimposition of said auxiliary plates thereon, and a suitable clasp for holding said auxiliary plates in folded or closed positions.

11. In a puzzle adapted to be used as a postal card, the combination of an intermediate plate A having an inner blank face adapted for the inscription of a message, auxiliary plates D D′ D″ D‴ foldably attached to the edges thereof, and auxiliary plates B C adapted to be folded in and superimposed upon said inner face of said intermediate plate A and held in position by a clasp formed by a lip E on plate B and a slot or elongated perforation F in plate C.

REISSUES.

12,657. FRICTION-CLUTCH. CHARLES C. JACOBS, Akron, Ohio, assignor, by direct and mesne assignments, to Homer D. Wells, Akron, Ohio. Filed Feb. 24, 1904. Serial No. 195,131. Original No. 688,309, dated Dec. 10, 1901.



Claim.—1. In a friction-clutch, the combination of a fast member and a loose member, having an annular flange, a lever pivotally connected to said fast member, an expansible friction-ring within said annular flange and engaged, and adapted to be expanded by said lever, a pair of communicating cylinders, plungers therein, one of said plungers engaging and adapted to operate said lever, means to move the other plunger mechanically, and a valve to establish and cut off communication between the said cylinders at will, whereby fluid under compression may be caused to circulate between the said cylinders, for the purpose set forth, substantially as described.

2. In a friction-clutch, the combination of the members, one fast and the other loose, a friction mechanism to lock

said members together, a pair of communicating cylinders, plungers therein, one of said plungers being adapted to operate said friction mechanism, means to move the other plunger mechanically, and a valve to establish and cut off communication between the said cylinders at will, whereby fluid under compression may be caused to circulate between the said cylinders, for the purpose set forth, substantially as described.

3. In a friction-clutch, the combination of a fast member, a lever pivoted thereon and carried thereby, a stop to limit the movement of said lever in one direction, an expansible friction-ring loosely disposed on said fast member, said ring and said lever being so constructed that the latter, when moved on its pivot, will expand said friction-ring, a loose member adapted to be engaged by said friction-ring, when the latter is expanded, and means to maintain said lever in engagement with said stop and to release it therefrom at will, for the purpose set forth, substantially as described.

4. In a friction-clutch, the combination of a fast member, a lever pivoted thereon and carried thereby, a stop to limit the movement of said lever in one direction, an expansible friction-ring loosely disposed on said fast member, said ring and said lever being so constructed that the latter, when moved on its pivot, will expand said friction-ring, a loose member adapted to be engaged by said friction-ring when the latter is expanded and a fluid-pressure mechanism carried by said fast member to maintain said lever in engagement with said stop and release it therefrom at will, for the purpose set forth, substantially as described.

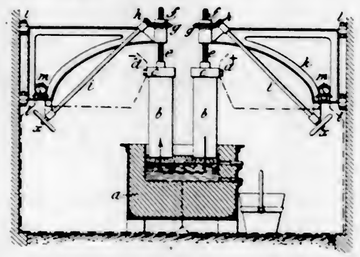
5. In a friction-clutch, the combination of a fast member, a lever pivoted thereon, and carried thereby, a stop to limit the movement of said lever in one direction, an expansible friction-ring, loosely disposed on said fast member, said ring and said lever being so constructed that the latter when moved on its pivot will expand said friction-ring, a loose member adapted to be engaged by said friction-ring when the latter is expanded and a fluid-pressure mechanism carried by said fast member, said fluid-pressure mechanism comprising a pair of fluid-containing cylinders having a contracted passage between them, plungers in said cylinders, one of said plungers engaging said lever, and means to move the other plunger mechanically, said fluid-pressure mechanism maintaining said lever in engagement with said stop and serving to release it therefrom at will, for the purpose set forth, substantially as described.

6. In a friction clutch, the combination with a fast member, of a loose member, an expansible friction ring loosely disposed between the two and having slight frictional engagement with one of said members, a ring expanding lever pivoted to the other member and serving to transmit rotative movement to the ring, said ring when retarded by friction moving the lever to effect expansion of the ring and the frictional locking of the two members, and means for maintaining the lever in inoperative position and movable from engagement with the lever to permit operation of the latter.

7. In a friction clutch, the combination with a fast member, of a loose member, an expansible friction ring loosely disposed between the said members and having slight frictional engagement with one of them, a ring expanding lever pivoted to the other member, means for holding said lever from turning on its pivot during transmission of rotative movement to the ring and movable from engagement with the lever to permit operative movement of the latter, said ring when retarded by friction moving the lever to effect expansion of the ring and frictional locking of the two members.

12,658. ELECTRIC FURNACE AND PROCESS. PAUL L. T. HÉROULT, La Praz, France, assignor to Sté. Electro Metallurgique Francaise, Froges, Isère, France. Filed Sept. 16, 1905. Serial No. 278,794. Original No. 721,703, dated Mar. 3, 1903.

Claim.—1. In the manufacture of soft metals such as chromium, manganese or iron by means of an electric furnace, the method which consists in playing two separate arcs in series through an insulating layer of slag between the metal on the one hand, and the two carbon electrodes on the other hand.



2. In the manufacture of metals having a strong affinity for carbon, such as chromium, manganese, iron, or the like, by means of an electric furnace with carbon electrodes, the method which consists in submitting the charge to the heat of electric arcs between the electrodes and the metal itself, and regulating the arcs so as to avoid contact of the electrodes with the metal.

3. In the manufacture of metals having a strong affinity for carbon, such as chromium, manganese, iron, or the like, by means of an electric furnace with carbon electrodes, the method which consists in passing the current from one electrode into and through the metal, thence through another electrode, and regulating the position of each electrode separately, so as to avoid contact thereof with the metal.

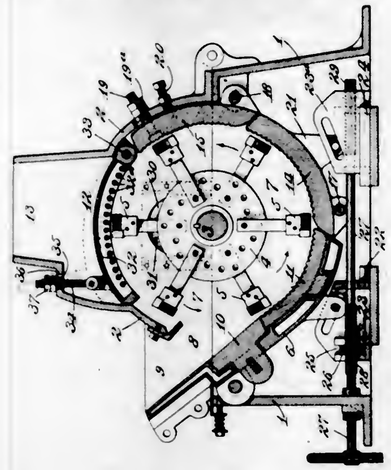
4. In the manufacture of metals having a strong affinity for carbon, such as chromium, manganese, iron, or the like, by means of an electric furnace with carbon electrodes, the method which consists in maintaining a layer of non-conducting slag between the end of an electrode and the molten metal, so as to avoid the combining of the carbon of the electrode with the metal.

5. In an electric furnace, the combination of a crucible adapted to carry a bath of molten material, two electrodes supported above it and connected in series, a conductor in position to effect contact with material contained in the crucible and a voltmeter in shunt between one of said electrodes and said conductor, said conductor consisting of a rod passing through the refractory material of the crucible and projecting outside and inside of the same whereby the portion of the rod which is melted is replaced by molten material which fills up the space and thus insures good conductivity.

6. An apparatus for the manufacture of metals having a strong affinity for carbon, such as chromium, manganese, iron or the like, consisting of an electric furnace with carbon electrodes arranged to form arcs in series by passing the current from one electrode through an arc into and through the metal and then through another arc to another electrode, a voltmeter in shunt between each electrode and the metal in the furnace for indicating the length of each arc separately, and means for regulating the position of each electrode separately so as to avoid contact thereof with the metal.

12,659. CRUSHER AND PULVERIZER. MILTON F. WILLIAMS, St. Louis, Mo., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo., a Corporation of Missouri. Filed Sept. 14, 1904. Serial No. 224,480. Original No. 758,288, dated Apr. 26, 1904.

Claim.—1. In a machine of the character indicated, the combination with rotatable beaters, of a breaker-plate, an imperforate grinding-surface, and a perforated grinding-surface, said breaker-plate and said grinding-surfaces being arranged in the order named in the direction of travel of said beaters, whereby a beater commencing its travel in co-operative relation to said breaker-plate first passes said breaker-plate, then said imperforate grinding-surface and then said perforated grinding-surface, and a screen upon the outer side of said perforated grinding-surface and spaced therefrom, there being an exit-opening for tailings from the space between said perforated grinding-surface and screen; substantially as described.



2. In a machine of the character indicated, a casing provided with an operating-chamber having a peripheral grinding-surface provided with openings, rotatable beaters co-operating with said grinding-surface, and a screen upon the outer side of said grinding-surface and spaced therefrom, said grinding-surface and screen being pivotally adjustable; substantially as described.

3. In a machine of the character indicated, a plate, a grinding-plate having a part engaging a shoulder on said first-mentioned plate, a breaker-plate having an edge engaging the edge of said grinding-plate upon the side opposite said shoulder, whereby said breaker-plate locks said grinding-plate in position, and means for securing said breaker-plate upon said first-mentioned plates; substantially as described.

4. In a machine of the character indicated, a plate having an opening therein, a grinding-plate having a lug entering said opening, and a breaker-plate secured to said first-mentioned plate and having an edge engaging said grinding-plate and locking the same in position; substantially as described.

5. In a machine of the character indicated, a plate having a shoulder, a grinding-plate supported upon said first-mentioned plate and engaging said shoulder, a beveled shoulder upon said first-mentioned plate, a breaker-plate between said shoulder and said grinding-plate and having an overhanging beveled edge engaging said grinding-plate, and means for securing said breaker-plate upon said first-mentioned plate; substantially as described.

6. In a machine of the character indicated, a plate having two openings therein, a grinding-plate having a lug entering one of said openings, an outwardly and upwardly beveled shoulder upon said first-mentioned plate and upon the side of its second opening opposite the said grinding-plate, a breaker-plate having outwardly and upwardly beveled opposite edges which respectively engage said shoulder and the edge of said grinding-plate, a perforated lug upon said breaker-plate extending through the second opening in said first-mentioned plate, and a wedge-key in the perforation of said lug; substantially as described.

7. In a machine of the character indicated, a frame, a casing-plate pivotally movable with relation thereto, a guard-plate spanning the space between said frame and casing-plate and abutting against said casing-plate, and means for yieldingly forcing said guard-plate against said casing-plate; substantially as described.

8. In a machine of the character indicated, a frame, a casing-plate movable with relation thereto, a guard-plate spanning the space between said frame and said casing-plate, a lip upon said guard-plate, a stud upon said frame and loosely passing through said lip, and a spring between said lip and a stop member upon said stud; substantially as described.

9. The combination of a housing, a rotatable shaft provided with pivotal hammers, a concave cage pivoted at one end and clear of the housing at the other end, whereby it has an unrestricted inward movement relatively to the hammers, and adjustable means consisting of a support for the free end of the cage to hold the same against such inward movement, whereby the cage can be adjusted toward the hammers to compensate for wear upon both the cage and the hammer ends, substantially as described.

DESIGNS.

38,597. BADGE. LOUIS H. BRUNNER, Lakewood, Ohio. Filed Mar. 19, 1907. Serial No. 363,325. Term of patent 3½ years.



Claim.—The ornamental design of a badge, as shown.

38,598. BADGE. CHARLES J. DIEGES, New York, N. Y. Filed May 9, 1907. Serial No. 372,832. Term of patent 7 years.



Claim.—The ornamental design for a badge, as shown.

38,599. BADGE. CHARLES J. DIEGES, New York, N. Y. Filed May 9, 1907. Serial No. 372,833. Term of patent 7 years.



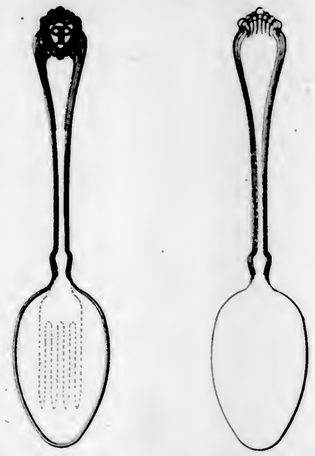
Claim.—The ornamental design for a badge, as shown.

38,600. BADGE. CHARLES J. DIEGES, New York, N. Y. Filed May 9, 1907. Serial No. 372,834. Term of patent 7 years.



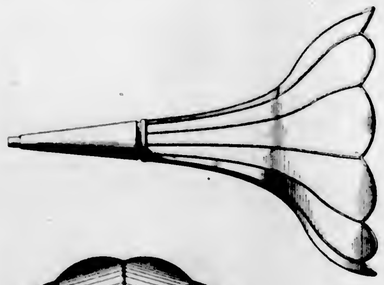
Claim.—The ornamental design for a badge, as shown.

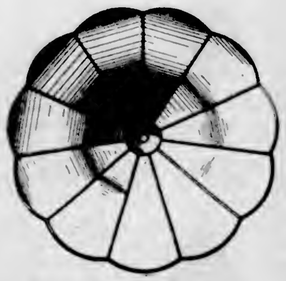
38,601. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. GILBERT L. CROWELL, Jr., Arlington, N. J., assignor to Dominick & Haff, a Joint Stock Company, of New York, N. Y. Filed May 10, 1907. Serial No. 373,017. Term of patent 7 years.



Claim.—The ornamental design for a handle for a spoon, fork or similar article as shown.

38,602. PHONOGRAPH-HORN. MAX STEINER, Newark, N. J., assignor to The New Jersey Sheet Metal Co., Newark, N. J., a Corporation of New Jersey. Filed May 6, 1907. Serial No. 372,290. Term of patent 7 years.





Claim.—The ornamental design for a phonograph horn, as shown.

38,603. CIGAR BAND OR WRAPPER. LOUIS C. WAGNER, New York, N. Y. Filed May 8, 1907. Serial No. 372,641. Term of patent 7 years.



Claim.—The ornamental design for a cigar band or wrapper as shown.

38,604. CIGAR BAND OR WRAPPER. LOUIS C. WAGNER, New York, N. Y. Filed May 8, 1907. Serial No. 372,642. Term of patent 7 years.



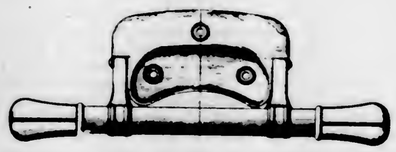
Claim.—The ornamental design for a cigar band or wrapper as shown.

38,605. ICE-TUB. JOSEPH E. STRAKER, Jr., Attleboro, Mass. Filed Nov. 20, 1906. Serial No. 344,339. Term of patent 7 years.



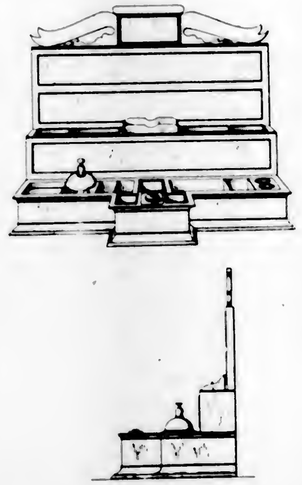
Claim.—The ornamental design for an ice tub as shown.

38,606. CASKET OR SIMILAR HANDLE. NATHANIEL L. BARMORE, Chicago, Ill. Filed Mar. 11, 1907. Serial No. 361,869. Term of patent 14 years.



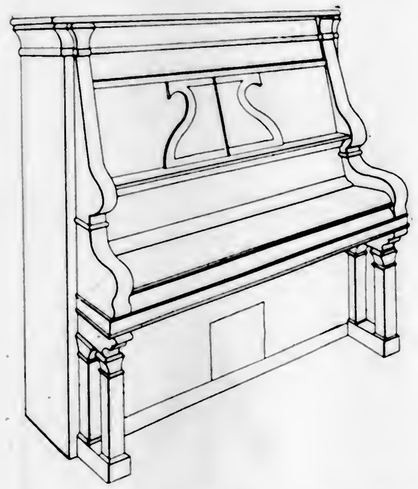
Claim.—The ornamental design for a casket or similar handle as shown.

38,607. HOTEL-CABINET. JOHN Q. ADAMS, Omaha, Nebr. Filed Feb. 16, 1907. Serial No. 357,600. Term of patent 7 years.



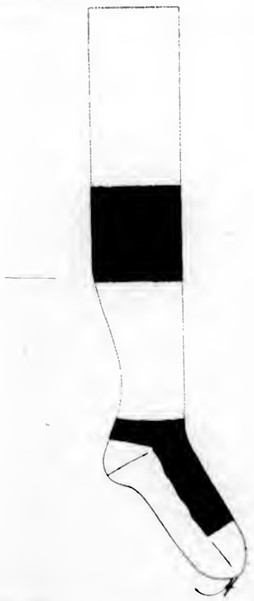
Claim.—The ornamental design for a hotel cabinet as shown.

38,608. PIANO-CASE. JOHN H. LUDWIG, New York, N. Y. Filed May 2, 1907. Serial No. 371,549. Term of patent 3½ years.



Claim.—The ornamental design for a piano case, as shown.

38,609. STOCKING. JOSEPH J. CURRY, Philadelphia, Pa. Filed Mar. 9, 1907. Serial No. 361,630. Term of patent 7 years.



Claim.—The ornamental design for a stocking, as shown.

38,610. PILE FABRIC. FREDERIC E. KIP, Montclair, N. J. Filed May 7, 1907. Serial No. 372,445. Term of patent 7 years.



Claim.—The ornamental design for a pile fabric, as shown.

TRADE-MARKS

PUBLISHED JUNE 4, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

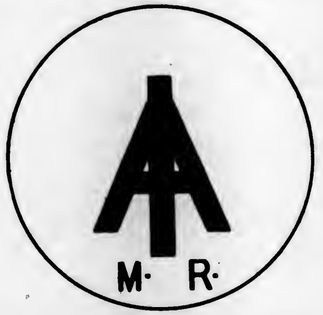
"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 69. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) K K K MEDICINE COMPANY, Keokuk, Iowa. Filed Apr. 1, 1905.

KKK

Particular description of goods.—Condition-Powders.

Ser. No. 6,523. (CLASS 2. MINERAL.) GEO. A. ALDEN & CO., Boston, Mass. Filed May 24, 1905.



Particular description of goods.—Mineral-Rubber or Asphaltum Compound.

Ser. No. 6,590. (CLASS 8. DETERGENTS.) DAVID BROWN & SON LIMITED, Donaghmore, Ireland. Filed May 25, 1905.

McCLINTON'S

Particular description of goods.—Soap.

Ser. No. 9,777. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) ANHEUSER-BUSCH BREWING ASSOCIATION, St. Louis, Mo. Filed July 3, 1905.

Black & Tan

Particular description of goods.—Porter.

Ser. No. 9,977. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY & COMPANY, Chicago, Ill. Filed July 10, 1905.

TITAN

Particular description of goods.—Eyeglass-Guards.

Ser. No. 11,445. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE FRANCIS HOOK & EYE & FASTENER COMPANY, Niagara Falls, N. Y. Filed Aug. 9, 1905.

VICI

Particular description of goods.—Hooks and Eyes.

Ser. No. 11,509. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) CLARKE BROS., Scranton, Pa. Filed Aug. 10, 1905.

WM·PENN

Particular description of goods.—Leather Shoes.

Ser. No. 12,253. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE FRANKFORT DISTILLERY, Frankfort, Ky. Filed Sept. 5, 1905. Used ten years.

HAND MADE SOUR MASH HINDE FRANKLIN CO. KY.

Particular description of goods.—Whisky.

Ser. No. 12,545. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) JAMES DIXON & SONS, Sheffield, England. Filed Sept. 14, 1905. Used ten years.



Particular description of goods.—Plated Goods of All Descriptions, Silver, Nickel-Silver, Britannia-Metal, and Electroplated Goods.

Ser. No. 12,619. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) JONAS & COLVER LIMITED, Sheffield, England. Filed Sept. 14, 1905. Used ten years.



Particular description of goods.—Cutlery in General and other Hand-Tools Having a Cutting Edge.

Ser. No. 13,381. (CLASS 8. VEGETABLE.) W. W. WALLACE, Harriman, Tenn. Filed Oct. 6, 1905.

3W

Particular description of goods.—Strawberry-Plants.

Ser. No. 14,553. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) AITKEN, SON & Co., New York, N. Y. Filed Nov. 13, 1905.



Particular description of goods.—Laces.

Ser. No. 14,805. (CLASS 55. WINES.) GEO. G. SANDEMAN SONS & CO. LIMITED, London, England. Filed Nov. 20, 1905. Used ten years.

ANDEMAN

Particular description of goods.—Port and Sherry Wines.

Ser. No. 14,897. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) THE ABERDEEN COMB WORKS COMPANY, LIMITED, Aberdeen, Scotland. Filed Nov. 22, 1905.



Particular description of goods.—Tortoise-Shell and Horn Combs.

Ser. No. 16,232. (CLASS 8. DETERGENTS.) A. & F. PEARS LIMD., London, England. Filed Jan. 17, 1906.



Particular description of goods.—Perfumed Soap.

Ser. No. 16,295. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) EDWARD HENRY BROWN, London, England. Filed Jan. 18, 1906.

ROLLEDGE

Particular description of goods.—Polishes for Cleaning, Preserving, and Polishing Leather.

Ser. No. 16,940. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) JOSEPH ROGERS & SONS, LIMITED, Sheffield, England. Filed Feb. 12, 1906. Used ten years.

E R
JOSEPH ROGERS & SONS
CUTLERS TO HIS MAJESTY

Particular description of goods.—Cutlery in General.

Ser. No. 18,491. (CLASS 8. DETERGENTS.) KATHAIRO CHEMICAL CO., New York, N. Y. Filed Apr. 4, 1906.

SPARROW

Particular description of goods.—Detergent Cleaning and Polishing Preparations.

Ser. No. 18,728. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) FRANK WEDEHASE, Sebastopol, Cal. Filed Apr. 12, 1906. Used ten years.

FIG BREAD

Particular description of goods.—Bread.

Ser. No. 18,896. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALBERT WESTLAKE, New York, N. Y. Filed Apr. 18, 1906.



Particular description of goods.—Dentifrice in Tablet Form for Cleaning the Teeth and Mouth.

Ser. No. 19,391. (CLASS 37. PAPER AND PAPER MANUFACTURERS NOT OTHERWISE CLASSIFIED.) MCEWAN BROTHERS, New York, N. Y. Filed May 9, 1906.



Particular description of goods.—Pasteboard.

Ser. No. 19,723. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) WM. M. HABIRSHAW, Yonkers, N. Y. Filed May 21, 1906. Used ten years.

HABIRSHAW

Particular description of goods.—Insulated Wires, Cables, and Cords.

Ser. No. 19,765. (CLASS 52. PACKING-HOUSE PRODUCTS.) M. ZIMMERMANN COMPANY, New York, N. Y. Filed May 22, 1906.



Particular description of goods.—Bologna-Sausage and Animal Fats Used for Cooking Purposes.

Ser. No. 19,933. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) MORRIS ROSENBAUM'S SONS, New York, N. Y. Filed May 29, 1906.



HELMET

Particular description of goods.—Cloth and Piece Goods, Consisting of Woolens, Silks, and Velvets Available for Use in Manufacturing Men's, Ladies', and Children's Garments and Wraps.

Ser. No. 20,218. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) MINNA J. PETERSEN, Chicago, Ill., administratrix of the estate of Edward A. C. Petersen, deceased. Filed June 11, 1906. Used ten years.

PETERSEN OVENS

Particular description of goods.—Bakers' Ovens.

Ser. No. 22,926. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SAMUEL POLLAK, New York, N. Y. Filed Oct. 26, 1906. Used ten years.

BAY HAZEL

Particular description of goods.—Hair-Tonic.

Ser. No. 23,122. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HENRY LOUIS STEINECKE, Kansas City, Mo. Filed Nov. 5, 1906. Used ten years.

APEX.

Particular description of goods.—Salve.

Ser. No. 23,344. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) MARK M. DECKER, Washington, Pa. Filed Nov. 14, 1906.



Particular description of goods.—Puzzles.

Ser. No. 23,455. (CLASS 48. DAIRY PRODUCTS.) AMERICAN FARM PRODUCTS COMPANY, Jersey City, N. J., and New York, N. Y. Filed Nov. 19, 1906.



Particular description of goods.—Process Butter.

Ser. No. 23,575. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) GRACE BROTHERS & CO. LTD., London, England. Filed Nov. 24, 1906.

RATANPÜRO

Particular description of goods.—Tea.

Ser. No. 23,632. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GREENWOOD MEDICINE CO., Greenwood, Ark. Filed Nov. 27, 1906.

SWAMPINE

Particular description of goods.—A Remedy for Chills and Fever and Billousness.

Ser. No. 23,745. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) JAMES L. EDWARDS & CO., New York, N. Y. Filed Dec. 3, 1906.



Particular description of goods.—Coffees and Teas.

Ser. No. 24,079. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) BARTHOLOMAY BREWERY COMPANY, Rochester, N. Y. Filed Dec. 17, 1906.

FAUGH-A-BALLAGH

Particular description of goods.—Beer and Ale.

Ser. No. 24,116. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM E. LEWIS, Joplin, Mo. Filed Dec. 18, 1906.

"Lewisine"

Particular description of goods.—An Ointment, and for Remedies for Diseases of the Stomach and Kidneys.

Ser. No. 24,215. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) STARKWEATHER & WILLIAMS CO., Providence, R. I. Filed Dec. 22, 1906. Used ten years.



Particular description of goods.—Mixed Paint.

Ser. No. 24,302. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) THE MAZAWATTEE TEA COMPANY, LIMITED, London, England. Filed Dec. 27, 1906.



Particular description of goods.—Tea.

Ser. No. 24,603. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) PITTSBURGH VALVE FOUNDRY AND CONSTRUCTION CO., Pittsburg, Pa. Filed Jan. 12, 1907.



Particular description of goods.—Valves, Steam-Separators, Elbows, T's, Y's, Expansion-Joints, Twyer-Cocks, Pipe-Joints, and Hydraulic Pulpits.

Ser. No. 24,871. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) A. W. WILLS & SON, Birmingham, England. Filed Jan. 24, 1907.



Particular description of goods.—Hoes, Spades, Shovels, Picks, Agricultural Forks, and Hammers.

Ser. No. 24,949. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) FRANK MOSSBERG COMPANY, Attleboro, Mass. Filed Jan. 28, 1907.



Particular description of goods.—Wrenches.

Ser. No. 24,973. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) NOXIT CHEMICAL CO., Chattanooga, Tenn. Filed Jan. 28, 1907.

NOXIT

Particular description of goods.—A Breath-Perfume Mixture.

Ser. No. 24,985. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) C. E. FULFORD LIMITED, Leeds, England. Filed Jan. 29, 1907.

Peps

Particular description of goods.—Pine-Extract Pastiles for Coughs, Colds, and Bronchitis.

Ser. No. 25,198. (CLASS 12. MASONRY MATERIALS.) ASBESTOS SHINGLE, SLATE & SHEATHING COMPANY, Ambler, Pa. Filed Feb. 8, 1907.



Particular description of goods.—Artificial Slate and Artificial Lumber.

Ser. No. 25,251. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) WILLIAM E. LEWIS, Joplin, Mo. Filed Feb. 11, 1907.

"Lewisine"

Particular description of goods.—An Antiseptic Wash.

Ser. No. 25,303. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE HUNTER MILLING CO., Wellington, Kans. Filed Feb. 14, 1907.



Particular description of goods.—Wheat-Flour.

Ser. No. 25,332. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE CHANDLER NURSERY CO., Chandler, Tex. Filed Feb. 16, 1907.



Particular description of goods.—Fresh Peaches.

Ser. No. 25,561. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) PAPENDICK & CO., St. Louis, Mo. Filed Feb. 23, 1907.



Particular description of goods.—Bread.

Ser. No. 25,603. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) WRIGHT & DITSON, Jersey City, N. J. Filed Feb. 25, 1907.



Particular description of goods.—Boots, Shoes, and Slippers of Leather or Canvas, Commonly Used in the Sports of Base-Ball, Tennis, Foot-Ball, and Golf, for Running, in the Gymnasium, in Riding Bicycles, and for Outing Purposes, and Moccasins.

Ser. No. 25,633. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) JOHN B. BERNBROCK, Quincy, Ill. Filed Feb. 27, 1907.



Particular description of goods.—Flavoring Extracts.

Ser. No. 25,638. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE RAMSFELDER-ERLICK COMPANY, Cincinnati, Ohio. Filed Feb. 27, 1907.

"Restshu"

FOR WOMEN WITH TENDER FEET

Particular description of goods.—Ladies' and Misses' Shoes of Leather or Cloth.

Ser. No. 25,673. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) MORSE TWIST DRILL & MACHINE COMPANY, New Bedford, Mass. Filed Mar. 1, 1907. Used ten years.

BEACH

Particular description of goods.—Chucks.

Ser. No. 25,674. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) MORSE TWIST DRILL & MACHINE COMPANY, New Bedford, Mass. Filed Mar. 1, 1907. Used ten years.

STETSON

Particular description of goods.—Chucks.

Ser. No. 25,860. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOHN WANAMAKER, Philadelphia, Pa. Filed Mar. 8, 1907.

SQUARE W DEAL

Particular description of goods.—Textile Collars and Cuffs.

Ser. No. 25,916. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) GEO. ROCKWOOD & CO., Bennington, Vt. Filed Mar. 11, 1907.



Particular description of goods.—Knitted Underwear.

Ser. No. 25,948. (CLASS 71. TOBACCO PRODUCTS.) AXTON FISHER TOBACCO COMPANY, Louisville, Ky. Filed Mar. 13, 1907.

Hillside

Particular description of goods.—Twist-Tobacco for Smoking and Chewing.

Ser. No. 26,037. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) GIESECKE-D'OENCH-HAYS SHOE COMPANY, St. Louis, Mo. Filed Mar. 18, 1907.



Particular description of goods.—Youths', Misses', Boys', Girls', and Children's Leather Shoes.

Ser. No. 26,095. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) WM. B. RIKER & SON CO., New York, N. Y. Filed Mar. 20, 1907.

BROOKHATTAN

Particular description of goods.—Carbonated Drinking-Water.

Ser. No. 26,096. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) WM. B. RIKER & SON CO., New York, N. Y. Filed Mar. 20, 1907.

BROOKHATTAN

Particular description of goods.—Mixed Drinks.

Ser. No. 26,100. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) JULIA E. CAMERON, New York, N. Y. Filed Mar. 20, 1907. Used ten years.

CAMERON

Particular description of goods.—Pumps.

Ser. No. 26,101. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) CANTRELL & COCHRANE, LIMITED, Dublin, Ireland, and New York, N. Y. Filed Mar. 20, 1907.

TANA

Particular description of goods.—Mineral and Aerated Waters.

Ser. No. 26,118. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) CALIFORNIA FRUIT SYRUP COMPANY, Oakland, Cal. Filed Mar. 20, 1907.

FRUTIN

Particular description of goods.—Fruit-Syrups for Table and Cooking Purposes.

Ser. No. 26,121. (CLASS 35. BELTING, HOSE, AND MACHINERY-PACKING.) HENRY J. M. HOWARD, Washington, D. C. Filed Mar. 21, 1907.

HERCULES

Particular description of goods.—Woven Hose.

Ser. No. 26,123. (CLASS 35. BELTING, HOSE, AND MACHINERY-PACKING.) HENRY J. M. HOWARD, Washington, D. C. Filed Mar. 21, 1907.

AJAX

Particular description of goods.—Fire-Hose.

Ser. No. 26,144. (CLASS 54. SEA FOODS.) A/S. THE BERGEN CANNING CO., Bergen, Norway. Filed Mar. 21, 1907.

QUEEN MAUD BRAND

Particular description of goods.—Smoked, Canned, Pickled, and Preserved Fish.

Ser. No. 26,190. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) H. R. MELSTER, Whitewater, Wis. Filed Mar. 23, 1907.



Particular description of goods.—Mineral Water.

Ser. No. 26,224. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOHN WANAMAKER, Philadelphia, Pa. Filed Mar. 25, 1907.

PRINCESS MAY

Particular description of goods.—Kid Gloves.

Ser. No. 26,229. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) JOHN WANAMAKER, Philadelphia, Pa. Filed Mar. 25, 1907.

Thematolian

Particular description of goods.—Organs That Are Self-Playing or Automatic or Partly Automatic.

Ser. No. 26,376. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ON-RIAH CO., Cincinnati, Ohio. Filed Mar. 30, 1907.



Particular description of goods.—A Depilatory.

Ser. No. 26,415. (CLASS 8. DETERGENTS.) JOEL F. SHIPLEY, Boggy Depot, Ind. Ter. Filed Apr. 2, 1907.

May Flower

Particular description of goods.—Washing-Powder.

Ser. No. 26,455. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALVIN P. SAWYER, Chicago, Ill. Filed Apr. 4, 1907. Used ten years.

SQUAW ROOT

Particular description of goods.—A Remedy for Diseases Peculiar to Women.

Ser. No. 26,484. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) SCHONEBERGER & NOBLE, New York, N. Y. Filed Apr. 5, 1907. Used ten years.

"ONE AND ONLY ONE" DR. BROWN'S CELERY TONIC

Particular description of goods.—A Celery Tonic Beverage.

Ser. No. 26,552. (CLASS 48. DAIRY PRODUCTS.) THE S. J. STEVENS COMPANY, Cincinnati, Ohio. Filed Apr. 8, 1907.

MAYFLOWER.

Particular description of goods.—Cheese.

Ser. No. 26,553. (CLASS 48. DAIRY PRODUCTS.) THE S. J. STEVENS COMPANY, Cincinnati, Ohio. Filed Apr. 8, 1907.

SWEET LITTLE BUTTER-CUP



Particular description of goods.—Butter.

Ser. No. 26,607. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOSEPH A. BEGY, Rochester, N. Y. Filed Apr. 10, 1907.



Particular description of goods.—Remedies for Diseases Peculiar to Women.

Ser. No. 26,614. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) FRANK M. LINDERMAN, Chicago, Ill. Filed Apr. 10, 1907.

Motorline

Particular description of goods.—Lubricating Compounds.

Ser. No. 26,622. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) PIEDMONT MANUFACTURING CO., Piedmont, S. C. Filed Apr. 10, 1907.



Particular description of goods.—Sheetings.

Ser. No. 26,631. (CLASS 2. MINERAL.) CARNEY COAL COMPANY, Chicago, Ill. Filed Apr. 11, 1907.



The shield is red.

Particular description of goods.—Coal.

Ser. No. 26,650. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed Apr. 12, 1907. Used ten years.

GULLIVER

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 26,677. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) ALFRED ANDRESEN & Co., Minneapolis, Minn. Filed Apr. 13, 1907.

KORNU KOPIA RIPING KAKE

Particular description of goods.—Iron Cake-Molds.

Ser. No. 26,681. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) BRILL BROTHERS, New York, N. Y. Filed Apr. 13, 1907.

KOOLSKIN

Particular description of goods.—Knit Underwear.

Ser. No. 26,691. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) HENRY HERZ, Brooklyn, N. Y. Filed Apr. 13, 1907.



Particular description of goods.—Laces.

Ser. No. 26,735. (CLASS 18. AGRICULTURAL AND DAIRY MACHINERY AND PARTS OF SUCH MACHINERY.) AVERY MANUFACTURING COMPANY, Peoria, Ill. Filed Apr. 16, 1907.



Particular description of goods.—Threshing and Grain-Separating Machines.

Ser. No. 26,736. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) AVERY MANUFACTURING COMPANY, Peoria, Ill. Filed Apr. 16, 1907.



Particular description of goods.—Portable Engines and Traction-Engines.

Ser. No. 26,746. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) STANDARD HORSE SHOE COMPANY, Boston, Mass. Filed Apr. 16, 1907.



Particular description of goods.—Horse and Mules' Shoes.

Ser. No. 26,771. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) CHIC APRON CO., Peoria, Ill. Filed Apr. 18, 1907.

CHIC APRON CO.

Particular description of goods.—Cloth Aprons.

Ser. No. 26,774. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) KEYSTONE MEDICAL COMPANY, Pottsville, Pa. Filed Apr. 18, 1907.



Particular description of goods.—Cathartic Tablets.

Ser. No. 26,784. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) EAGLE PENCIL COMPANY, New York, N. Y. Filed Apr. 16, 1907.



The band of the tip being of silver color and the body purple.

Particular description of goods.—Lead-Pencils.

Ser. No. 26,800. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) BARNETT L. PRICE & Co., New York, N. Y. Filed Apr. 19, 1907.

PHOENIX

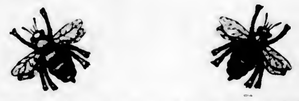
Particular description of goods.—Fur Coats.

Ser. No. 26,808. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907.

EAGLE

Particular description of goods.—Letter and Document Files.

Ser. No. 26,809. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907.



Particular description of goods.—Letter and Document Files.

Ser. No. 26,810. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907.

MAMMOTH

Particular description of goods.—Letter and Document Files.

Ser. No. 26,811. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907.

BOSS

Particular description of goods.—Letter and Document Files.

Ser. No. 26,812. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907.

EMPEROR

Particular description of goods.—Letter and Document Files.

Ser. No. 26,813. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907.

EUREKA

Particular description of goods.—Letter and Document Files.

Ser. No. 26,815. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907. Used ten years.

GARDEN CITY

Particular description of goods.—Letter and Document Files.

Ser. No. 26,816. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907. Used ten years.

CHICAGO

Particular description of goods.—Letter and Document Files.

Ser. No. 26,817. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) CHARLES H. BESLY, Chicago, Ill. Filed Apr. 20, 1907.

LIBERTY

Particular description of goods.—Letter and Document Files.

Ser. No. 26,844. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) UPHAM BRO'S. New York, N. Y. Filed Apr. 20, 1907.



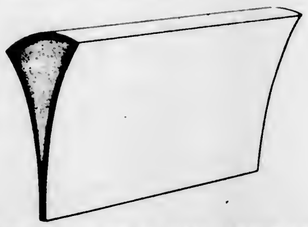
Particular description of goods.—Teas and Coffees.

Ser. No. 26,861. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE DAMPICIDE COMPANY, Owego, N. Y. Filed Apr. 22, 1907.

DAMPICIDE

Particular description of goods.—A Chemical Preparation to Prevent the Accumulation of Moisture in Pianos.

Ser. No. 26,869. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) KAMPFE BRO'S., New York, N. Y. Filed Apr. 23, 1907.



Particular description of goods.—Razors and Safety-Razor Blades.

Ser. No. 26,888. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) STERLING OIL COMPANY, Emlenton, Pa. Filed Apr. 24, 1907.

CROWN

Particular description of goods.—Oils and Greases Used in Stuffing and Finishing Leather.

Ser. No. 26,890. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) WORTHY PAPER COMPANY, Agawam, Mass. Filed Apr. 24, 1907.

Particular description of goods.—Paper for Writing and Printing.

Ser. No. 26,892. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) A. G. HYDE & SONS, New York, N. Y. Filed Apr. 25, 1907.

RESPLENDR

Particular description of goods.—Bleached, Unbleached, Dyed, and Printed Textile Fabrics.

Ser. No. 26,893. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) A. G. HYDE & SONS, New York, N. Y. Filed Apr. 25, 1907.

Meteora

Particular description of goods.—Bleached, Unbleached, Dyed, and Printed Textile Fabrics.

Ser. No. 26,894. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) A. G. HYDE & SONS, New York, N. Y. Filed Apr. 25, 1907.

Lumino

Particular description of goods.—Bleached, Unbleached, Dyed, and Printed Textile Fabrics.

Ser. No. 26,895. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) A. G. HYDE & SONS, New York, N. Y. Filed Apr. 25, 1907.

Glintaline

Particular description of goods.—Bleached, Unbleached, Dyed, and Printed Textile Fabrics.

Ser. No. 26,918. (CLASS 43. THREAD AND YARN.) HOWARD MANUFACTURING CO., Boston, Mass. Filed Apr. 25, 1907.

Silkrochu

Particular description of goods.—Cotton Yarn.

Ser. No. 26,922. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE PHILLIPS & CLARK STOVE CO., Geneva, N. Y. Filed Apr. 25, 1907.



Particular description of goods.—Stoves and Ranges, Their Parts and Attachments.

Ser. No. 26,936. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) T. N. FOSTER & CO., New York, N. Y. Filed Apr. 26, 1907.



Particular description of goods.—Kid Gloves.

Ser. No. 26,945. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EDWARD REYER, Scranton, Pa. Filed Apr. 26, 1907.

CO-ARDA

Particular description of goods.—A Medicinal Preparation for the Treatment of Abscesses.

Ser. No. 26,964. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) LESHER-RAIG KNITTING COMPANY, LIMITED, Reamstown, Pa. Filed Apr. 27, 1907.

Cinderella

Particular description of goods.—Knitted Underwear.

Ser. No. 26,985. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) GILBERT MANUFACTURING COMPANY, New York, N. Y. Filed Apr. 29, 1907.

Marguerite

Particular description of goods.—Women's Petticoats and Outer Skirts other than of Knit Goods.

Ser. No. 26,989. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) MORTEN & COMPANY, New York, N. Y. Filed Apr. 29, 1907.

Clubland

Particular description of goods.—Whisky.

Ser. No. 26,993. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) SCHUMANN PIANO COMPANY, Rockford, Ill. Filed Apr. 29, 1907.

Schumann.

Particular description of goods.—Pianos.

Ser. No. 26,994. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) SEATTLE BREWING & MALTING COMPANY, Georgetown, Wash. Filed Apr. 29, 1907. Used ten years.

Rainier

Particular description of goods.—Beer.

Ser. No. 26,997. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) WILSON ELECTRIC MFG. CO., Newark and Belleville, N. J. Filed Apr. 29, 1907.



Particular description of goods.—Dry-Cell Batteries.

Ser. No. 27,021. (CLASS 9. EXPLOSIVES.) EDWARD H. WAGNER, New York, N. Y. Filed Apr. 30, 1907.

Condensed

Particular description of goods.—Matches.

Ser. No. 27,022. (CLASS 9. EXPLOSIVES.) EDWARD H. WAGNER, New York, N. Y. Filed Apr. 30, 1907.

Shooting

Particular description of goods.—Matches.

Ser. No. 27,023. (CLASS 9. EXPLOSIVES.) EDWARD H. WAGNER, New York, N. Y. Filed Apr. 30, 1907.



Particular description of goods.—Matches.

Ser. No. 27,029. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) LAWRENCE & HAMILTON, New Orleans, La. Filed Apr. 30, 1907.

STAFOLIFE

Particular description of goods.—Mixed Feed, Composed of Oats and Corn.

Ser. No. 27,032. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) SOLOMON P. SMITH, Denver, Colo. Filed Apr. 30, 1907. Used ten years.

Automatic Air Current

GOVERNOR

Particular description of goods.—Draft-Regulators.

Ser. No. 27,043. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) HILLS BROS., San Francisco, Cal. Filed May 1, 1907. Used ten years.

HILLS BROS.

ARABIAN

ROAST

Particular description of goods.—Coffee.

Ser. No. 27,049. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) JOHN FLINDALL, Chicago, Ill. Filed May 1, 1907.

KYNDU

Particular description of goods.—Couches, Chairs, and Lounges.

Ser. No. 27,062. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) CALLARD, STEWART AND WATT, LIMITED, London, England. Filed May 2, 1907.

KALARI

Particular description of goods.—Bread and Biscuits.

Ser. No. 27,063. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ENDICOTT-JOHNSON CO., Endicott, N. Y. Filed May 2, 1907.

HIDE TO WEARER

Particular description of goods.—Boots and Shoes of Leather.

Ser. No. 27,075. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FREDERICK STEARNS & CO., Detroit, Mich. Filed May 2, 1907.

PNEUMOLYTIC

Particular description of goods.—Serums and Antitoxins.

Ser. No. 27,087. (CLASS 35. BELTING, HOSE, AND MACHINERY-PACKING.) THE REPUBLIC BELTING & SUPPLY CO., Cleveland, Ohio. Filed May 3, 1907.

APOLLO

Particular description of goods.—Rubber Belting, Hose, and Packing.

Ser. No. 27,090. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SABBATI E. ULLMAN, Jersey City, N. J. Filed May 3, 1907.

Royal

Particular description of goods.—Pepsin.

Ser. No. 27,091. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) THE WEST HAVEN MFG. CO., West Haven, Conn. Filed May 3, 1907.

UNIVERSAL

Particular description of goods.—Hacksaw-Frames.

Ser. No. 27,098. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed May 4, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 27,099. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed May 4, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 27,100. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed May 4, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 27,101. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed May 4, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 27,102. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) THE GOODYEAR TIRE AND RUBBER COMPANY, Akron, Ohio. Filed May 4, 1907.



Particular description of goods.—Elastic Vehicle-Tires.

Ser. No. 27,108. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) DOWELL, WOOD & COOPER, Walnut Ridge, Ark. Filed May 4, 1907.

TRUTH

Particular description of goods.—Chill-Tonic.

Ser. No. 27,110. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) A. ETHRIDGE & CO., Rome, N. Y. Filed May 4, 1907.

HONEYSUCKLE

Particular description of goods.—Coffee and Tea.

Ser. No. 27,111. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) A. ETHRIDGE & CO., Rome, N. Y. Filed May 4, 1907.

HONEYSUCKLE

Particular description of goods.—Spices and Olives.

Ser. No. 27,112. (CLASS 48. DAIRY PRODUCTS.) A ETHRIDGE & CO., Rome, N. Y. Filed May 4, 1907.

Meadow Brook Brand

Particular description of goods.—Cheese.

Ser. No. 27,114. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) FRED. BUTTERFIELD & CO., New York, N. Y. Filed May 4, 1907.

Estrella Finish

Particular description of goods.—Cotton Linings in the Piece.

Ser. No. 27,127. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) E. MARTIN & CO., San Francisco, Cal. Filed May 4, 1907.

Argonaut

Particular description of goods.—Whisky.

Ser. No. 27,134. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) C. M. & R. TOMPKINS, Elmira, N. Y. Filed May 4, 1907.

SANCUTA

Particular description of goods.—Coffee.

Ser. No. 27,135. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) C. M. & R. TOMPKINS, Elmira, N. Y. Filed May 4, 1907.

IVY BLEND

Particular description of goods.—Coffee.

Ser. No. 27,136. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) C. M. & R. TOMPKINS, Elmira, N. Y. Filed May 4, 1907.

IVY BRAND

Particular description of goods.—Dried Fruits.

Ser. No. 27,162. (CLASS 52. PACKING-HOUSE PRODUCTS.) CHARLES ROESCH AND SONS COMPANY, Philadelphia, Pa. Filed May 6, 1907.

O

Particular description of goods.—Fresh, Smoked, and Cured Meats

Ser. No. 27,164. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ERNST BISCHOFF, New York, N. Y. Filed May 6, 1907.

THEOLACTIN

Particular description of goods.—A Diuretic.

Ser. No. 27,169. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) THE GERMAN-AMERICAN COFFEE CO., New York, N. Y. Filed May 6, 1907.

Bird Chop

Particular description of goods.—Tea.

Ser. No. 27,173. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) EVERETT, AUGHENBAUGH & COMPANY, Waseca, Minn. Filed May 6, 1907.

FLYING HORSE

Particular description of goods.—Wheat-Flour, Bran, Shorts, and Mixed Feed Made from Cereals.

Ser. No. 27,183. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed May 7, 1907. Used ten years.

KERR'S

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 27,184. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed May 7, 1907.

DE LUXE

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 27,185. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed May 7, 1907.

CLEOPATRA

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 27,186. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed May 7, 1907.

N.M.T.

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 27,187. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed May 7, 1907.

ELECTRIC

Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 27,189. (CLASS 43. THREAD AND YARN.) THE AMERICAN THREAD COMPANY, Jersey City, N. J. Filed May 7, 1907.

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Particular description of goods.—Spool-Cotton, Sewing-Silk, and Thread.

Ser. No. 27,198. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) CHARLES G. MORTIMER, Brooklyn, N. Y. Filed May 7, 1907.

RED SEAL

Particular description of goods.—Toilet-Paper.

Ser. No. 27,205. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) STEARNS & CURTIUS, New York, N. Y. Filed May 7, 1907.

"PAM"

Particular description of goods.—Remedy for Disorders of the Stomach and Bowels.

Ser. No. 27,207. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed May 7, 1907.

QUINTO

Particular description of goods.—Playing-Cards.

Ser. No. 27,208. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) THE UNITED STATES PLAYING CARD CO., Cincinnati, Ohio. Filed May 7, 1907.

BIKE

Particular description of goods.—Playing-Cards.

Ser. No. 27,225. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) THE VAPO-CRESOLENE COMPANY, Stanley, N. J., and New York, N. Y. Filed May 8, 1907.



Particular description of goods.—Censers, Vaporizers, and Volatilizers for Medical Compounds.

Ser. No. 27,227. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) WAPLES-PLATTER GROCER COMPANY, Denison, Fort Worth, and Dallas, Tex. Filed May 8, 1907.

CONCHO

Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 27,248. (CLASS 71. TOBACCO PRODUCTS.) AFRICAN CIGARETTE COMPANY, LIMITED, London, England. Filed May 9, 1907.

SHADOW

Particular description of goods.—Cigarettes, Cigars, Smoking-Tobacco, and Chewing-Tobacco.

Ser. No. 27,252. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) A. ETHRIDGE & CO., Rome, N. Y. Filed May 9, 1907.

PANSY



Particular description of goods.—Tea.

TRADE-MARKS

REGISTERED JUNE 4, 1907.

62,947. ASPHALTIC AND COMPOSITE PAINTS. AMALGAMATED PAINT COMPANY, Jersey City, N. J.
Filed April 12, 1906. Serial No. 18,730. PUBLISHED APRIL 9, 1907.

62,948. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,720. PUBLISHED APRIL 9, 1907.

62,949. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 6, 1907. Serial No. 25,785. PUBLISHED APRIL 9, 1907.

62,950. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 6, 1907. Serial No. 25,786. PUBLISHED APRIL 9, 1907.

62,951. SOAP. THE CINCINNATI SOAP COMPANY, Cincinnati, Ohio.
Filed July 3, 1906. Serial No. 20,722. PUBLISHED APRIL 9, 1907.

62,952. PAINT. WILLIAM D. CRAIG, Kansas City, Mo.
Filed April 17, 1906. Serial No. 18,886. PUBLISHED APRIL 9, 1907.

62,953. HARDWOOD AND FURNITURE POLISH. SAMUEL B. CRALL, Collingswood, N. J.
Filed December 12, 1906. Serial No. 23,959. PUBLISHED APRIL 9, 1907.

62,954. SOAP. DAVID BROWN & SON LIMITED, Donaghmore, Ireland.
Filed May 25, 1905. Serial No. 6,589. PUBLISHED APRIL 9, 1907.

62,955. SPECIAL PAINTS FOR STEEL STRUCTURES, METAL, WOOD, COMPOSITION ROOFS, &c. GILLESPIE-BENEDICT COMPANY, Chicago, Ill.
Filed March 8, 1907. Serial No. 25,837. PUBLISHED APRIL 9, 1907.

62,956. SPECIAL PAINTS FOR STEEL STRUCTURES, METAL, WOOD, COMPOSITION ROOFS, &c. GILLESPIE-BENEDICT COMPANY, Chicago, Ill.
Filed March 8, 1907. Serial No. 25,838. PUBLISHED APRIL 9, 1907.

62,957. CERTAIN DENTAL SUPPLIES. JOHN T. NOLDE, St. Louis, Mo.
Filed April 24, 1906. Serial No. 19,040. PUBLISHED APRIL 9, 1907.

62,958. GOLF-CLUBS AND IMPLEMENTS AND PARTS THEREOF. THE P. G. MANUFACTURING COMPANY, Homewood, Ill.
Filed March 11, 1907. Serial No. 25,907. PUBLISHED APRIL 9, 1907.

62,959. LEATHER DRESSINGS, BLACKINGS, AND POLISHES. PARKER HOLMES AND COMPANY, Boston, Mass.
Filed July 28, 1906. Serial No. 21,240. PUBLISHED APRIL 9, 1907.

62,960. CERTAIN PAINTERS' MATERIALS. PENINSULAR PAINT AND VARNISH COMPANY, LTD., Detroit, Mich.
Filed September 24, 1906. Serial No. 22,301. PUBLISHED APRIL 9, 1907.

62,961. LEATHER AND SHOE BLACKINGS, PASTE, POLISH, AND LEATHER AND SHOE VARNISH. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,229. PUBLISHED APRIL 9, 1907.

62,962. LEATHER AND SHOE BLACKINGS, PASTE, POLISH, AND LEATHER AND SHOE VARNISH. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,230. PUBLISHED APRIL 9, 1907.

62,963. CERTAIN CLEANING AND WHITENING COMPOUNDS. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,232. PUBLISHED APRIL 9, 1907.

62,964. CERTAIN CLEANING AND WHITENING COMPOUNDS. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,233. PUBLISHED APRIL 9, 1907.

62,965. CERTAIN CLEANING AND WHITENING COMPOUNDS. S. M. BIXBY & Co., New York, N. Y
Filed November 10, 1906. Serial No. 23,234. PUBLISHED APRIL 9, 1907.

62,966. CERTAIN CLEANING AND WHITENING COMPOUNDS. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,235. PUBLISHED APRIL 9, 1907.

62,967. CERTAIN CLEANING AND WHITENING COMPOUNDS. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,236. PUBLISHED APRIL 9, 1907.

62,968. STOVE DRESSINGS AND POLISH. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,238. PUBLISHED APRIL 9, 1907.

62,969. STOVE DRESSINGS AND POLISH. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,240. PUBLISHED APRIL 9, 1907.

62,970. SCENIC AND FRESCO COLORS. TOCH BROTHERS, New York, N. Y.
Filed March 13, 1907. Serial No. 25,944. PUBLISHED APRIL 9, 1907.

62,971. GRAPHITE PAINT AND PIPE-CEMENT. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.
Filed January 19, 1907. Serial No. 24,762. PUBLISHED APRIL 9, 1907.

62,972. STOVE-POLISH. BLACK SILK STOVE POLISH WORKS, Sterling, Ill.
Filed January 23, 1907. Serial No. 24,846. PUBLISHED APRIL 9, 1907.

62,973. STOVE-POLISH. BLACK SILK STOVE POLISH WORKS, Sterling, Ill.
Filed January 23, 1907. Serial No. 24,847. PUBLISHED APRIL 9, 1907.

62,974. COAL. THE CONSUMERS COAL CO., Springfield, Ohio.
Filed March 4, 1907. Serial No. 25,735. PUBLISHED APRIL 9, 1907.

62,975. CLEANSER FOR ALL ARTICLES OF CANVAS AND DUCK. ECLIPSE CEMENT & BLACKING CO., Philadelphia, Pa.
Filed March 7, 1907. Serial No. 25,826. PUBLISHED APRIL 9, 1907.

62,976. STOVE-POLISH. JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,724. PUBLISHED APRIL 9, 1907.

62,977. GRAPHITE. JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
Filed March 11, 1907. Serial No. 25,887. PUBLISHED APRIL 9, 1907.

62,978. SILVER-LEAD OR PLUMBAGO FOUNDRY-FACINGS AND PULVERIZED GRAPHITE. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.
Filed January 19, 1907. Serial No. 24,766. PUBLISHED APRIL 9, 1907.

62,979. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,563. PUBLISHED APRIL 9, 1907.

62,980. WASHBOARDS. THE AMERICAN WASHBOARD COMPANY, Cleveland, Ohio.
Filed August 15, 1906. Serial No. 21,569. PUBLISHED APRIL 9, 1907.

62,981. TABLET REMEDY FOR MALARIA, CHILLS, AND FEVER. CHARLES E. CONGDON, Jamestown, Cal.
Filed October 16, 1906. Serial No. 22,725. PUBLISHED APRIL 9, 1907.

62,982. PERFUMES. THE HOLDEN DRUG CO., Stockton, Cal.
Filed December 13, 1905. Serial No. 15,381. PUBLISHED APRIL 9, 1907.

62,983. LINIMENTS. THE HOLDEN DRUG CO., Stockton, Cal.
Filed January 24, 1906. Serial No. 16,465. PUBLISHED APRIL 9, 1907.

62,984. MEDICINAL SOLUTION OF IRON CHLORID. JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa
Filed August 15, 1906. Serial No. 21,557. PUBLISHED APRIL 9, 1907.

62,985. MEDICINAL PENCILS OR CONES. JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia Pa.
Filed August 15, 1906. Serial No. 21,561. PUBLISHED APRIL 9, 1907.

62,986. REMEDY FOR CHILDREN'S DISEASES. THE JOY CASTORIA COMPANY, Mineola and New York, N. Y.
Filed July 18, 1906. Serial No. 21,003. PUBLISHED APRIL 9, 1907.

62,987. WILD-HONEY OINTMENT. K K K MEDICINE COMPANY, Keokuk, Iowa.
Filed April 1, 1905. Serial No. 64. PUBLISHED APRIL 9, 1907.

62,988. DRIVE-CHAINS, CONVEYER-CHAINS, AND CHAIN-CABLES. LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind.
Filed November 3, 1906. Serial No. 23,060. PUBLISHED APRIL 9, 1907.

62,989. POCKET-KNIVES, SCISSORS, AND RAZORS. C. LÜTTERS & CIE., Solingen, Germany.
Filed September 11, 1905. Serial No. 12,460. PUBLISHED APRIL 9, 1907.

62,990. INLAY-SOLES OF PASTEBOARD. ADOLF MAASS, FABRIK ANTISEPTISCHER ARTIKEL, Berlin, Germany.
Filed June 6, 1906. Serial No. 20,087. PUBLISHED APRIL 9, 1907.

62,991. REMEDY FOR CERTAIN DISEASES. FRIEDRICH ADOLF RICHTER, Rudolstadt, Germany, and New York, N. Y.
Filed April 26, 1905. Serial No. 3,066. PUBLISHED NOVEMBER 13, 1906.

62,992. ESSENTIAL OILS. CLAYTON ROCKHILL, New York, N. Y.
Filed April 4, 1905. Serial No. 386. PUBLISHED APRIL 9, 1907.

62,993. BATH-SPRAYS AND OVERHEAD SHOWERS. S. STERNAU & CO., Brooklyn, N. Y.
Filed August 7, 1906. Serial No. 21,373. PUBLISHED APRIL 9, 1907.

62,994. WHISKY, BRANDY, GIN, AND CORDIALS. JACOB CARTUN, Philadelphia, Pa.
Filed June 28, 1905. Serial No. 9,336. PUBLISHED OCTOBER 9, 1906.

62,995. SALVE. KAREL CINYBURG & SON, New York, N. Y.
Filed January 25, 1907. Serial No. 24,896. PUBLISHED APRIL 9, 1907.

62,996. ASTRINGENT AND HEMOSTATIC. FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, Höchst-on-the-Main, Germany.
Filed January 28, 1907. Serial No. 24,958. PUBLISHED APRIL 9, 1907.

62,997. PLIERS WITHOUT CUTTING EDGES. HAMMEL, RIGLANDER & CO., New York, N. Y.
Filed March 1, 1907. Serial No. 25,680. PUBLISHED APRIL 9, 1907.

62,998. BAKING-POWDER AND BICARBONATE OF SODA. HILLS BROS., San Francisco, Cal.
Filed February 25, 1907. Serial No. 25,585. PUBLISHED APRIL 9, 1907.

62,999. RUBBER BOOTS AND SHOES. HOOD RUBBER COMPANY, East Watertown and Boston, Mass.
Filed March 14, 1907. Serial No. 25,975. PUBLISHED APRIL 9, 1907.

63,000. COMPLEXION-POWDER. THE J. A. POZZONI PHARMACAL CO., St. Louis, Mo.
Filed December 6, 1906. Serial No. 23,793. PUBLISHED APRIL 9, 1907.

63,001. COMPLEXION-POWDER. THE J. A. POZZONI PHARMACAL CO., St. Louis, Mo.
Filed December 6, 1906. Serial No. 23,795. PUBLISHED APRIL 9, 1907.

63,002. CLOCKS. AUGUSTA Y. JANSEN, Chicago, Ill.
Filed March 9, 1907. Serial No. 25,879. PUBLISHED APRIL 9, 1907.

63,003. DRIVE-CHAINS AND CONVEYER-CHAINS. LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind.
Filed November 3, 1906. Serial No. 23,064. PUBLISHED APRIL 9, 1907.

63,004. DRIVE-CHAINS AND CONVEYER-CHAINS. LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind.
Filed November 3, 1906. Serial No. 23,065. PUBLISHED APRIL 9, 1907.

63,005. HOSIERY. FREDERICK LOESER & CO., New York N. Y.
Filed October 27, 1906. Serial No. 22,945. PUBLISHED APRIL 9, 1907.

63,006. INTERNAL REMEDY FOR DIARRHEA, FLUX, AND DYSENTERY. MACK & GILMORE, Berwick, La.
Filed December 7, 1906. Serial No. 23,857. PUBLISHED APRIL 9, 1907

63,007. FURNACES (EXPERIMENTAL), ASSAYERS' FURNACES, AND MUFFLES. MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England.
Filed December 18, 1906. Serial No. 24,108. PUBLISHED APRIL 9, 1907.

63,008. HAND-DRILLS AND DRILL-BITS. NORTH BRO'S MF'G CO., Philadelphia, Pa.
Filed February 28, 1907. Serial No. 25,662. PUBLISHED APRIL 9, 1907.

63,009. CERTAIN PRINTING AND WRITING PAPER. THE PERFECT SAFETY PAPER CO., Franklin, Ohio, and Chicago, Ill.
Filed January 21, 1907. Serial No. 24,815. PUBLISHED APRIL 9, 1907.

63,010. CERTAIN SURGICAL DRESSING. PEROXIDENT MANUFACTURING COMPANY, St. Louis, Mo.
Filed January 16, 1907. Serial No. 24,667. PUBLISHED APRIL 9, 1907.

63,011. UTERINE TONICS. RIO CHEMICAL CO., New York, N. Y.
Filed December 7, 1906. Serial No. 23,861. PUBLISHED APRIL 9, 1907.

63,012. MUCOUS ASTRINGENT FOR INTERNAL AND EXTERNAL USE. RIO CHEMICAL CO., New York, N. Y.
Filed December 8, 1906. Serial No. 23,886. PUBLISHED APRIL 9, 1907.

63,013. PLANT-FENDERS. F. I. STONE & COMPANY, Atlanta, Ga.
Filed January 11, 1907. Serial No. 24,579. PUBLISHED APRIL 9, 1907.

63,014. TOILET POWDER. JEAN CARRINGTON COMPANY, New York, N. Y.
Filed January 9, 1907. Serial No. 24,545. PUBLISHED APRIL 9, 1907.

63,015. MACHETES AND TERCADOS. THE COLLINS COMPANY, Collinsville, Conn.
Filed March 7, 1907. Serial No. 25,810. PUBLISHED APRIL 9, 1907.

63,016. MACHETES AND TERCADOS. THE COLLINS COMPANY, Collinsville, Conn.
Filed March 7, 1907. Serial No. 25,811. PUBLISHED APRIL 9, 1907.

63,017. MACHETES AND TERCADOS. THE COLLINS COMPANY, Collinsville, Conn.
Filed March 7, 1907. Serial No. 25,812. PUBLISHED APRIL 9, 1907.

63,018. LEATHER SHOES. FLEISHMAN, MORRIS & CO., Richmond, Va.
Filed March 12, 1907. Serial No. 25,922. PUBLISHED APRIL 9, 1907.

63,019. SHEET-PACKING. THE GARLOCK PACKING COMPANY, Palmyra, N. Y.
Filed March 7, 1907. Serial No. 25,827. PUBLISHED APRIL 9, 1907.

63,020. SAWS. THE GEORGE WORTHINGTON COMPANY, Cleveland, Ohio.
Filed March 11, 1907. Serial No. 25,883. PUBLISHED APRIL 9, 1907.

63,021. CERTAIN HAND-TOOLS. THE KEYSTONE MFG. CO., Buffalo, N. Y.
Filed February 21, 1907. Serial No. 25,513. PUBLISHED APRIL 9, 1907.

63,022. CERTAIN HAND-TOOLS. THE KEYSTONE MFG. CO., Buffalo, N. Y.
Filed February 23, 1907. Serial No. 25,536. PUBLISHED APRIL 9, 1907.

63,023. CERTAIN EDGE-TOOLS. SARAH C. MORRILL, New York, N. Y.
Filed March 8, 1907. Serial No. 25,854. PUBLISHED APRIL 9, 1907.

63,024. CERTAIN METAL MANUFACTURES. ROBERT ALBERT MORRISON, Denver, Colo.
Filed February 18, 1907. Serial No. 25,377. PUBLISHED APRIL 9, 1907.

63,025. LEATHER BOOTS, SHOES, AND SLIPPERS. PAUL BROTHERS, Philadelphia, Pa.
Filed March 8, 1907. Serial No. 25,856. PUBLISHED APRIL 9, 1907.

63,026. SPECIFIC MEDICINES FOR COUGH, COLD, AND GRIPPE. WILLIAM MYRON REYNOLDS, New York, N. Y.
Filed February 27, 1907. Serial No. 25,639. PUBLISHED APRIL 9, 1907.

63,027. BOOTS AND SHOES OF LEATHER. SPEAR BROTHERS CO., Baltimore, Md.
Filed February 16, 1907. Serial No. 25,350. PUBLISHED APRIL 9, 1907.

63,028. REFRIGERATORS. WHITE ENAMEL REFRIGERATOR COMPANY, St. Paul, Minn.
Filed March 8, 1907. Serial No. 25,863. PUBLISHED APRIL 9, 1907.

63,029. GARTERS. THE AMERICAN GARTER CO., New York, N. Y.
Filed March 11, 1907. Serial No. 25,895. PUBLISHED APRIL 9, 1907.

63,030. CORSETS. AMERICAN LADY CORSET CO., Detroit, Mich.
Filed March 9, 1907. Serial No. 25,870. PUBLISHED APRIL 9, 1907.

63,031. CORSETS. AMERICAN LADY CORSET CO., Detroit, Mich.
Filed March 9, 1907. Serial No. 25,871. PUBLISHED APRIL 9, 1907.

63,032. WHISKY. FREIBERG & WORKUM, Cincinnati, Ohio.
Filed April 17, 1905. Serial No. 1,880. PUBLISHED APRIL 9, 1907.

63,033. CARBONATED BEVERAGE. HOUPPERT & WORCESTER, Birmingham, Ala.
Filed May 11, 1905. Serial No. 5,197. PUBLISHED APRIL 9, 1907.

63,034. LUBRICATORS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio.
Filed March 14, 1907. Serial No. 25,976. PUBLISHED APRIL 9, 1907.

63,035. LUBRICATORS. THE LUNKENHEIMER COMPANY, Cincinnati, Ohio.
Filed March 14, 1907. Serial No. 25,977. PUBLISHED APRIL 9, 1907.

63,036. CORDIALS, RUMS, BRANDIES, AND WHISKIES. HERMAN C. MYERS, New York, N. Y.
Filed January 21, 1907. Serial No. 24,805. PUBLISHED APRIL 9, 1907.

63,037. ELASTIC WEBBING. THE NARROW FABRIC CORPORATION, Orange, Conn.
Filed March 8, 1907. Serial No. 25,855. PUBLISHED APRIL 9, 1907.

63,038. BRANDY, RUM, AND GIN. THE ULLMAN-EINSTEIN CO., Cleveland, Ohio.
Filed March 12, 1907. Serial No. 25,935. PUBLISHED APRIL 9, 1907.

63,039. ROPE, CORD, LINES, AND TWINE MANUFACTURED FROM VEGETABLE FIBER. THE AMERICAN MANUFACTURING COMPANY, New York, N. Y.
Filed December 1, 1905. Serial No. 15,093. PUBLISHED APRIL 9, 1907.

63,040. STOUT. ARTHUR GUINNESS SON & CO. LIMD., London, England.
Filed September 22, 1905. Serial No. 12,916. PUBLISHED APRIL 9, 1907.

63,041. STOUT. ARTHUR GUINNESS SON & CO. LIMD., London, England.
Filed September 22, 1905. Serial No. 12,917. PUBLISHED APRIL 9, 1907.

63,042. MALINES AND NETTED FABRICS. BENEDICTUS, WEILL & COMPANY, New York, N. Y.
Filed September 26, 1906. Serial No. 22,330. PUBLISHED APRIL 9, 1907.

63,043. NET VEILINGS. BENEDICTUS, WEILL & COMPANY, New York, N. Y.
Filed September 26, 1906. Serial No. 22,333. PUBLISHED APRIL 9, 1907.

63,044. CERTAIN FOOTWEAR. DOLGEVILLE FELT SHOE CO., Dolgeville, N. Y.
Filed March 5, 1907. Serial No. 25,709. PUBLISHED APRIL 9, 1907.

63,045. CALICOES, PRINTED AND DYED, PERCALES, PRINTED AND DYED. GARNER & CO. New York, N. Y.
Filed December 26, 1906. Serial No. 24,269. PUBLISHED APRIL 9, 1907.

63,046. TYPE-WRITER RIBBONS. H. M. STORMS CO., New York, N. Y.
Filed February 8, 1907. Serial No. 25,210. PUBLISHED APRIL 9, 1907.

63,047. COTTON PIECE GOODS. JACKSON COMPANY, Nashua, N. H.
Filed August 31, 1906. Serial No. 21,828. PUBLISHED APRIL 9, 1907.

63,048. TABLE-CLOTHS, NAPKINS, AND DOILIES. JAPANESE IMPORTING COMPANY, Los Angeles, Cal.
Filed May 7, 1906. Serial No. 19,353. PUBLISHED APRIL 9, 1907.

63,049. WHISKY. JESSE MOORE HUNT CO., San Francisco, Cal.
Filed June 24, 1905. Serial No. 8,927. PUBLISHED APRIL 9, 1907.

63,050. WHISKY. JOHN ROBERTSON & SON, LIMITED, Dundee, Scotland.
Filed June 13, 1905. Serial No. 8,054. PUBLISHED APRIL 9 1907.

63,051. MANUFACTURES OF SILVER. JOSEPH RODGERS & SONS, LIMITED, Sheffield, England.
Filed February 12, 1906. Serial No. 16,937. PUBLISHED APRIL 9, 1907.

63,052. DRIVE-CHAINS AND CONVEYER-CHAINS. LINK BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind.
Filed November 3, 1906. Serial No. 23,062. PUBLISHED APRIL 9, 1907.

63,053. WHISKY. M. SHAUGHNESSY DISTILLING COMPANY, St. Louis, Mo.
Filed May 5, 1905. Serial No. 4,340. PUBLISHED DECEMBER 5, 1905.

63,054. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,454. PUBLISHED APRIL 9, 1907.

63,055. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,456. PUBLISHED APRIL 9, 1907.

63,056. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,460. PUBLISHED APRIL 9, 1907.

63,057. KNIT UNDERWEAR. ROSENBAUM COMPANY, Pittsburg, Pa.
Filed February 8, 1906. Serial No. 16,821. PUBLISHED OCTOBER 23, 1906.

63,058. WHISKY. SCHMIDT & ZIEGLER LTD., New Orleans, La.
Filed February 8, 1906. Serial No. 16,839 PUBLISHED APRIL 9, 1907.

63,059. RAIN-COATS. MORRIS SILBERMAN, New York, N. Y.
Filed November 21, 1906. Serial No. 23,520. PUBLISHED APRIL 9, 1907.

63,060. SILK PIECE GOODS. SUSQUEHANNA SILK MILLS, New York, N. Y.
Filed August 9, 1906. Serial No. 21,419. PUBLISHED APRIL 9, 1907.

63,061. SILK PIECE GOODS. SUSQUEHANNA SILK MILLS, New York, N. Y.
Filed August 9, 1906. Serial No. 21,420. PUBLISHED APRIL 9, 1907.

63,062. WHISKY. TANQUERAY GORDON & CO. LIMITED, London, England.
Filed November 13, 1906. Serial No. 14,539. PUBLISHED APRIL 9, 1907.

63,063. RYE-FLOUR. WEEKS & PARR, New York, N. Y.
Filed February 23, 1907. Serial No. 25,567. PUBLISHED APRIL 9, 1907.

63,064. WHEAT-FLOUR. ARMS & KIDDER, Rosedale, Kans.
Filed March 11, 1907. Serial No. 25,896. PUBLISHED APRIL 9, 1907.

63,065. CANDY. THE CATAWBA CANDY CO., Sandusky, Ohio.
Filed February 25, 1907. Serial No. 25,611. PUBLISHED APRIL 9, 1907.

63,066. CERTAIN MEDICINES. THE T. L. COOK MEDICINE CO., Winston Salem, N. C.
Filed July 17, 1905. Serial No. 10,405. PUBLISHED APRIL 9, 1907.

63,067. COCOA, CHOCOLATE, AND PREPARATIONS THEREOF. BALDUIN EMIL ENGE, Oberlössnitz, near Dresden, Germany.
Filed March 13, 1907. Serial No. 25,947. PUBLISHED APRIL 9, 1907.

63,068. MEDICINAL COMPOUND. GEORGE E. FAIRBANKS, Worcester, Mass.
Filed January 30, 1907. Serial No. 25,015. PUBLISHED APRIL 9, 1907.

63,069. OINTMENT AND MEDICINAL POWDER. HARRY BENTLEY GARRIGUES, Massillon, Ohio.
Filed February 9, 1907. Serial No. 25,223. PUBLISHED APRIL 9, 1907.

63,070. CERTAIN POULTRY APPARATUS. EDWARD H. GRAESZEL, Watertown, Wis.
Filed January 28, 1907. Serial No. 24,961. PUBLISHED APRIL 9, 1907.

63,071. COCOA AND CHOCOLATE. THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y.
Filed March 2, 1907. Serial No. 25,688. PUBLISHED APRIL 9, 1907.

63,072. REMEDIES FOR CERTAIN DISEASES. H. E. BUCKLEN & COMPANY, Chicago, Ill.
Filed February 12, 1907. Serial No. 25,264. PUBLISHED APRIL 9, 1907.

63,073. MECHANICAL DEVICE FOR THE PURPOSE OF BURNING COMMINUTED OR PULVERIZED FUEL. INTERNATIONAL COMBUSTION CORPORATION, Buffalo, N. Y.
Filed October 10, 1906. Serial No. 22,628. PUBLISHED APRIL 9, 1907.

63,074. CERTAIN FOODS. JAMISON BROS. & JOHNTZ BAKERS' SUPPLY CO., Kansas City, Mo.
Filed March 14, 1907. Serial No. 25,969. PUBLISHED APRIL 9, 1907.

63,075. CERTAIN MEDICINAL PREPARATIONS. JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa.
Filed August 15, 1906. Serial No. 21,544. PUBLISHED APRIL 9, 1907.

63,076. PASTILS. JOHN WYETH AND BROTHER, INCORPORATED, Philadelphia, Pa.
Filed August 15, 1906. Serial No. 21,558. PUBLISHED APRIL 9, 1907.

63,077. HAIR, TOOTH, AND NAIL BRUSHES. WM. L. MARTIN, New York, N. Y., assignor to Deitsch Brothers, of New York, N. Y., a Firm.
Filed January 26, 1907. Serial No. 24,928. PUBLISHED APRIL 9, 1907.

63,078. ARTICLE FOR HOLDING SHIRTS IN PLACE WHILE ACTING AS A SUSPENSORY. GEO. P. MORGAN, New York, N. Y.
Filed February 25, 1907. Serial No. 25,597. PUBLISHED APRIL 9, 1907.

63,079. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,461. PUBLISHED APRIL 9, 1907.

63,080. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,463. PUBLISHED APRIL 9, 1907.

63,081. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,468. PUBLISHED APRIL 9, 1907.

63,082. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,470. PUBLISHED APRIL 9, 1907

63,083. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,473. PUBLISHED APRIL 9, 1907.

63,084. TOOTH-POWDERS. FRANCIS N. ROSE, San Francisco, Cal.
Filed February 4, 1907. Serial No. 25,134. PUBLISHED APRIL 9, 1907.

63,085. SOFT AND STIFF FELT HATS. MAX ROSENWALD, New York, N. Y.
Filed December 10, 1906. Serial No. 23,918. PUBLISHED APRIL 9, 1907.

63,086. CANNED SALMON. SPRAGUE, WARNER & COMPANY, Chicago, Ill.
Filed March 13, 1907. Serial No. 25,959. PUBLISHED APRIL 9, 1907.

63,087. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed November 27, 1906. Serial No. 23,623. PUBLISHED APRIL 9, 1907.

63,088. FERTILIZERS. VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn.
Filed November 27, 1906. Serial No. 23,624. PUBLISHED APRIL 9, 1907.

63,089. SYRUPS. ALABAMA-GEORGIA SYRUP COMPANY, Montgomery, Ala.
Filed February 4, 1907. Serial No. 25,119. PUBLISHED APRIL 9, 1907.

63,090. EXTRACTS AND ESSENCES OF MEAT. BOVRIL LIMITED, London, England.
Filed January 22, 1906. Serial No. 16,398. PUBLISHED APRIL 9, 1907.

63,091. PIANOS, AUTOMATIC PIANO-PLAYERS, AND SELF-PLAYING PIANOS. THE CABLE COMPANY, Chicago, Ill.
Filed March 5, 1907. Serial No. 25,780. PUBLISHED APRIL 9, 1907.

63,092. PIANOS, AUTOMATIC PIANO-PLAYERS, AND SELF-PLAYING PIANOS. THE CABLE COMPANY, Chicago, Ill.
Filed March 5, 1907. Serial No. 25,781. PUBLISHED APRIL 9, 1907.

63,093. DRIED FRUIT. CASTLE BROTHERS, INCORPORATED, San Francisco, Cal.
Filed February 2, 1907. Serial No. 25,071. PUBLISHED APRIL 9, 1907.

63,094. WEEKLY MAGAZINE DEVOTED TO HORSES AND LIKE SUBJECTS. CHICAGO HORSEMAN NEWSPAPER COMPANY, Chicago, Ill.
Filed January 16, 1907. Serial No. 24,685. PUBLISHED APRIL 9, 1907.

63,095. CEMENT FOR MENDING CROCKERY AND HOUSEHOLD ARTICLES. CROSS & COMPANY, New York, N. Y.
Filed December 8, 1906. Serial No. 23,878. PUBLISHED APRIL 9, 1907.

63,096. LEATHER BOOTS AND SHOES. GUTHMANN CARPENTER & TELLING, Chicago, Ill.
Filed June 10, 1905. Serial No. 7,812. PUBLISHED APRIL 9, 1907.

63,097. SHEET-MUSIC. HELF & HAGER CO., New York, N. Y.
Filed February 15, 1907. Serial No. 25,329. PUBLISHED APRIL 9, 1907.

63,098. CEREAL FLOUR FOR BINDING AND BLENDING SAUSAGE-MEAT. B. HELLER & CO., Chicago, Ill.
Filed June 15, 1905. Serial No. 8,239. PUBLISHED APRIL 9, 1907.

63,099. NEWSPAPER. L'OPINIONE ITALIAN PUBLISHING CO., Philadelphia, Pa.
Filed March 4, 1907. Serial No. 25,747. PUBLISHED APRIL 9, 1907.

63,100. CHOCOLATE AND COCOA. "LUCERNA" ANGLO-SWISS MILK CHOCOLATE CO., Hochdorf, Switzerland.
Filed October 11, 1905. Serial No. 13,496. PUBLISHED APRIL 9, 1907.

63,101. CHOCOLATE AND COCOA. "LUCERNA" ANGLO-SWISS MILK CHOCOLATE CO., Hochdorf, Switzerland.
Filed October 11, 1905. Serial No. 13,499. PUBLISHED APRIL 9, 1907.

63,102. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,442. PUBLISHED APRIL 9, 1907.

63,103. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,443. PUBLISHED APRIL 9, 1907.

63,104. STOCKS FOR SOUPS AND BOUILLONS IN LIQUID OR PASTE FORM. PATTERSON-CABELL CO., New York, N. Y.
Filed January 16, 1907. Serial No. 24,673. PUBLISHED APRIL 9, 1907.

63,105. CANNED CORN. PORTLAND PACKING COMPANY, Portland, Me.
Filed June 27, 1905. Serial No. 9,186. PUBLISHED APRIL 9, 1907.

63,106. PRUNE-JUICE. RHEINSTROM, BETTMAN, JOHNSON & CO., Cincinnati, Ohio.
Filed June 19, 1905. Serial No. 8,480. PUBLISHED APRIL 9, 1907.

63,107. PRESERVED PINEAPPLE AND MARASCHINO CHERRIES. RHEINSTROM, BETTMAN, JOHNSON & CO., Cincinnati, Ohio.
Filed June 19, 1905. Serial No. 8,483. PUBLISHED APRIL 9, 1907.

63,108. OLIVES AND OLIVE-OIL. SIEGEL COOPER & CO., Chicago, Ill.
Filed May 13, 1905. Serial No. 5,430. PUBLISHED APRIL 9, 1907.

63,109. RIBBONS. L. & E. STIRN, New York, N. Y.
Filed March 14, 1907. Serial No. 25,965. PUBLISHED APRIL 9, 1907.

63,110. RIBBONS. L. & E. STIRN, New York, N. Y.
Filed March 14, 1907. Serial No. 25,966. PUBLISHED APRIL 9, 1907.

63,111. SHEETINGS, SHIRTINGS, AND DRILLS. ROBERT A. SUFFERN, New York, N. Y.
Filed October 31, 1906. Serial No. 23,017. PUBLISHED APRIL 9, 1907.

63,112. COMPOUND PEPPER. JOHN D. TASH, Chicago, Ill.
Filed October 20, 1906. Serial No. 22,810. PUBLISHED APRIL 9, 1907.

63,113. CREAM-SEPARATORS. ALBAUGH BROS. DOVER & CO., Chicago, Ill.
Filed September 21, 1906. Serial No. 22,218. PUBLISHED APRIL 9, 1907.

63,114. LEATHER BOOTS AND SHOES. B. A. CORBIN & SON COMPANY, Webster, Mass.
Filed May 29, 1905. Serial No. 7,032. PUBLISHED APRIL 9, 1907.

63,115. CERTAIN OVENS, AND STOVES, AND BURNERS. JAMES CLAREY, New York, N. Y.
Filed February 12, 1907. Serial No. 25,266. PUBLISHED APRIL 9, 1907.

63,116. MINERAL WATERS AND CARBONATED NON-ALCOHOLIC BEVERAGES. PRESTON CLARK, Peoria, Ill.
Filed February 16, 1907. Serial No. 25,340. PUBLISHED APRIL 9, 1907.

63,117. CATCHUP. EASTERN IMPORTING & MANUFACTURING COMPANY, Boston, Mass.
Filed May 16, 1905. Serial No. 5,832. PUBLISHED APRIL 9, 1907.

63,118. MEN'S KNITTED UNDERWEAR. FRANK BROS. & CO., New York, N. Y.
Filed March 1, 1907. Serial No. 25,678. PUBLISHED APRIL 9, 1907.

63,119. PENCILS. JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,722. PUBLISHED APRIL 9, 1907.

63,120. SAFETY-RAZORS AND SAFETY-RAZOR BLADES. KAMPFE BROS., New York, N. Y.
Filed May 2, 1905. Serial No. 4,037. PUBLISHED APRIL 9, 1907.

63,121. SOAP. MORITZ W. KLAFF, Milwaukee, Wis.
Filed April 7, 1906. Serial No. 18,599. PUBLISHED SEPTEMBER 11, 1906.

63,122. CERTAIN HEATING AND VENTILATING APPARATUS. A. LOTZES SONS & COMPANY, Cincinnati, Ohio.
Filed May 31, 1906. Serial No. 19,960. PUBLISHED APRIL 9, 1907.

63,123. BICYCLES AND AUTOMOBILES. THE MCINTOSH HARDWARE CORPN., Cleveland, Ohio.
Filed December 10, 1906. Serial No. 23,897. PUBLISHED APRIL 9, 1907.

63,124. COIN-CONTROLLED VENDING-MACHINE. THOMAS R. MCQUILLAN, Guymon, Okla. Ter.
Filed January 11, 1907. Serial No. 24,573. PUBLISHED APRIL 9, 1907.

63,125. SEAMLESS RUBBER GLOVES AND MITTENS. THE MILLER RUBBER MANUFACTURING CO., Akron, Ohio.
Filed August 25, 1905. Serial No. 11,991. PUBLISHED APRIL 9, 1907.

63,126. BRICKMAKING MACHINERY. MORRIS SHERMAN MANUFACTURING COMPANY, Chattanooga, Tenn.
Filed October 3, 1906. Serial No. 22,464. PUBLISHED APRIL 9, 1907.

63,127. BRICKMAKING MACHINERY. MORRIS SHERMAN MANUFACTURING COMPANY, Chattanooga, Tenn.
Filed October 16, 1906. Serial No. 22,730. PUBLISHED APRIL 9, 1907.

63,128. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,441. PUBLISHED APRIL 9, 1907.

63,129. COFFEE. THE OHIO COFFEE & SPICE COMPANY. Columbus, Ohio.
Filed April 15, 1905. Serial No. 1,713. PUBLISHED APRIL 9, 1907.

63,130. WOMEN'S, MISSES', AND CHILDREN'S LEATHER BOOTS AND SHOES. ROBERTS, JOHNSON & RAND SHOE COMPANY, St. Louis, Mo.
Filed October 18, 1906. Serial No. 22,761. PUBLISHED APRIL 9, 1907.

63,131. SAUCES, CATSUPS, AND PICKLES. SIEGEL COOPER & Co., Chicago, Ill.
Filed May 13, 1905. Serial No. 5,412. PUBLISHED APRIL 9, 1907.

63,132. WHISKY. WHITE, HENTZ & Co., Philadelphia, Pa.
Filed May 19, 1905. Serial No. 6,070. PUBLISHED APRIL 9, 1907.

63,133. SPECTACLES AND EYEGLASSES. THOMAS A. WILLSON, Reading, Pa.
Filed March 7, 1907. Serial No. 25,836. PUBLISHED APRIL 9, 1907.

63,134. PHOTOGRAPHIC FILM. EASTMAN KODAK CO., Rochester, N. Y.
Filed July 25, 1906. Serial No. 21,141. PUBLISHED SEPTEMBER 25, 1906.

63,135. CORSETS. WEINGARTEN BROS., INCORPORATED, New York, N. Y.
Filed March 8, 1907. Serial No. 25,862. PUBLISHED APRIL 9, 1907.

63,136. CERTAIN LEATHER. CHAS. T. WILT, Chicago, Ill.
Filed October 30, 1906. Serial No. 23,009. PUBLISHED FEBRUARY 5, 1907.

LABELS

REGISTERED JUNE 4, 1907.

13,576.—*Title:* "UNEEDA WEEDA." (For Cigars, Cheroots, Cigarettes, and Smoking-Tabacco.) HAASE-SCHAID CIGAR Co., St. Louis, Mo. Filed May 1, 1907.

13,577.—*Title:* "THE BEER WITHOUT A PEER." (For Beer.) THE CONSUMERS' BREWING Co., Norfolk, Va. Filed May 9, 1907.

13,578.—*Title:* "JARVIS' VITALITY COCKTAIL." (For Cocktails.) HARRY C. JARVIS, Baltimore, Md. Filed May 4, 1907.

13,579.—*Title:* "AMO WHEAT FIBRE." (For a Breakfast Food of Cereal Grain.) WILLIAM E. WILLIAMS, Chicago, Ill. Filed May 13, 1907.

13,580.—*Title:* "AMO WHEAT FIBRE BISCUIT." (For a Breakfast Food of Cereal Grain.) WILLIAM E. WILLIAMS, Chicago, Ill. Filed May 13, 1907.

13,581.—*Title:* "POP'S CORN STARCH." (For Corn-Starch.) J. C. HUBINGER BROS. Co., New Haven, Conn. Filed May 6, 1907.

13,582.—*Title:* "VEVO." (For Massage-Cream.) MOSCO MFG. Co., Union, N. J. Filed April 13, 1907.

13,583.—*Title:* "EMULSICOL." (For a Medicated Emulsion of Fats.) C. E. GATES Co., (LTD.,) New York, N.Y. Filed May 9, 1907.

13,584.—*Title:* "TRUMAN'S ENGLISH EMBROCATION." (For an Embrocation.) JOHN G. TRUMAN, Bushnell, Ill. Filed May 9, 1907.

13,585.—*Title:* "MAGICURE." (For Ointment for Stock.) C. A. MCINTOSH, Galt, Ontario, Canada. Filed May 15, 1907.

13,586.—*Title:* "TRUMAN'S ENGLISH COLIC CURE." (For a Colic Cure.) JOHN G. TRUMAN, Bushnell, Ill. Filed May 9, 1907.

13,587.—*Title:* "TRUMAN'S ENGLISH FEVER CURE." (For a Fever Cure.) JOHN G. TRUMAN, Bushnell, Ill. Filed May 9, 1907.

13,588.—*Title:* "DR. PERRIN'S GRIPPE, COLD AND PNEUMONIA CURE." (For Medicine.) C. A. PERRIN, Helena, Mont. Filed January 12, 1907.

13,589.—*Title:* "MARVELLO." (For a Medicine.) THE MARVELLO Co., Leominster, Mass. Filed April 6, 1907.

13,590.—*Title:* "ASTHMAOL." (For a Medicinal Preparation.) LUTHER E. MOORE, Chicago, Ill. Filed April 22, 1907.

13,591.—*Title:* "AM-OR-OU—." (For a Proprietary Medical Remedy.) PENN DRUG COMPANY, Philadelphia, Pa. Filed May 15, 1907.

13,592.—*Title:* "JAP KOTE STAIN." (For Stains.) C. STERNSCHUSS & Co., New York, N. Y. Filed May 3, 1907.

13,593.—*Title:* "SNOW-DRIFT." (For Tissue.) THE JOHN HOBERG Co., Green Bay, Wis. Filed May 13, 1907.

13,594.—*Title:* "WHITE RABBIT." (For Toilet-Tissue.) THE JOHN HOBERG Co., Green Bay, Wis. Filed May 13, 1907.

13,595.—*Title:* "MYOMY." (For Toilet-Tissue.) THE JOHN HOBERG Co., Green Bay, Wis. Filed May 13, 1907.

13,596.—*Title:* "USEEIT." (For Toilet-Paper.) THE JOHN HOBERG Co., Green Bay, Wis. Filed May 13, 1907.

PRINTS

REGISTERED JUNE 4, 1907.

2,008.—*Title:* "LIFE SAVER." (For Beer.) FALLS CITY BREWING Co., INC., Louisville, Ky. Filed February 19, 1907.

2,009.—*Title:* "LEMP EXTRA PALE." (For Beer.) WM. J. LEMP BREWING Co., St. Louis, Mo. Filed May 8, 1907.

2,010.—*Title:* "SEVEN-UP." (For Lubricants.) LOUIS MENDEL, Philadelphia, Pa. Filed May 13, 1907.

2,011.—*Title:* "WHEEL AND TANGENT BACKS, BICYCLE PLAYING CARDS." (For Playing-Cards.) THE UNITED STATES PLAYING CARD COMPANY, Norwood, Ohio. Filed May 10, 1907.

2,012.—*Title:* "COLLEGE BRAND HATS." (For Hats.) SAMUEL MUNDHEIM Co., Brooklyn N. Y. Filed May 2, 1907.

2,013.—*Title:* "VEST CHART." (For Men's and Boys' Vests.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed October 17, 1906.

2,014.—*Title:* "COAT CHART." (For Men's and Boys' Coats.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed October 17, 1906.

2,015.—*Title:* "EXHIBITING TAILOR." (For Men's and Boys' Coats, Vests, and Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed May 10, 1907.

2,016.—*Title:* "OUR CLERK." (For Men's and Boys' Coats, Vests, and Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed May 10, 1907.

2,017.—*Title:* "PRESSING TAILOR." (For Men's and Boys' Coats, Vests, and Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill Filed May 10, 1907.

2,018.—*Title:* "OUR PRESIDENT." (For Men's and Boys' Coats, Vests, and Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed May 11, 1907.

2,019.—*Title:* "OUR SALESMAN." (For Men's and Boys' Coats, Vests, and Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed May 11, 1907.

2,020.—*Title:* "GREETING TAILOR." (For Men's and Boys' Coats, Vests, and Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed May 13, 1907.

2,021.—*Title:* "MEASUREMENTS CHART." (For Men's and Boys' Coats and Vests.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed May 13, 1907.

2,022.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed May 11, 1907.

2,023.—*Title:* "GORDON FURS." (For Furs.) SEITER & KAPPES LITHOGRAPHING Co., New York, N. Y. Filed May 10, 1907.

2,024.—*Title:* "TWINCO STAMPING WORKS." (For Stamped Metal Goods.) EMPIRE STATE ENGINEERING Co., New York, N. Y. Filed May 8, 1907.

2,025.—*Title:* "MAGNESIUM CANDLES." (For Fireworks.) ERSTE THÜRINGER CHRISTBAUMSCHMUCK-FABRIK GEBR. WEINRICH, Worbis, Germany. Filed February 19, 1907.

2,026.—*Title:* "THE KNOX." (For Automobiles.) LOWELL PERCY BREINING, Baltimore, Md. Filed May 8, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

MUNSTER *v.* ASHWORTH.

Decided July 23, 1906.

1. INTERFERENCE—EVIDENCE—CONSIDERATION OF DEPOSITION—FAILURE TO AFFORD OPPORTUNITY FOR CROSS-EXAMINATION.

Where the direct examination of a witness is completed and after answering certain questions upon cross-examination he is withdrawn from the stand on account of sickness and his counsel refuses to take any steps to produce him again, in order that the cross-examination may be completed, on the ground that he had been sick for over a year, had undergone several operations, and that there was no probability that he would be able to testify at any definite time in the future, if at all, *Held* that in so far as the answers given on direct examination were not tested by cross-examination the deposition should not be considered.

2. SAME—DEPOSITIONS—NOTICE OF TAKING—NOTICE WAIVED.

Where a record as made up by the officer before whom testimony is taken in an interference proceeding shows that counsel for one of the parties desired to examine certain witnesses as to whom no notice had been given by opposing counsel and the latter stated that while he had no objection to their direct examination he did not care to cross-examine and thereupon went away, *Held* that the depositions of such witnesses will not upon motion be stricken out because of lack of notice, notwithstanding an affidavit by counsel stating that he had refused to take the testimony of such witnesses.

APPEAL from Examiners-in-Chief.

COÖPERATING DOORS.

Mr. Robert Klotz and *Mr. J. W. Beckstrom* for Munster.

Mr. Charles W. La Porte for Ashworth.

ALLEN, *Commissioner:*

This is an appeal by Ashworth from a decision of the Examiners-in-Chief reversing the decision of the Examiner of Interferences and awarding priority of invention to Munster.

The issue is stated in three counts, which are as follows:

1. The combination, with a door-opening, of a swinging door and a pair of slide-doors arranged to close said opening and connections between all of said doors whereby same are caused to open and close simultaneously.

2. The combination, with a door-opening, of an angularly-movable door and a pair of slide-doors for closing said opening, and means between all of said doors for opening and closing them together.

3. The combination with a single door-opening, of a swinging door, a pair of superposed sliding doors movable toward and from each other, a lever, means for moving said sliding doors in opposite directions by said lever and means for actuating said lever by said swinging door.

Ashworth's application was filed March 21, 1904, and Munster's application was filed on May 27, 1904. The burden is upon Munster to establish his case by a preponderance of evidence.

Munster alleges conception, disclosure, and the making of sketches and a model about September 1, 1902, and reduction to practice on May 1, 1903. Ashworth claims conception on January 1, 1903, disclosure in April, 1903, the making of drawings and a model in February and March, respectively, of 1904, and no reduction to practice other than his constructive reduction to practice of March 21, 1904.

Both parties took testimony. The Examiner of Interferences found that Munster failed to establish either a conception or reduction to practice prior to Ashworth's date of filing and awarded priority to Ashworth. On the other hand, the Examiners-in-Chief found that Munster's record established both a conception and reduction to practice prior to the filing of Ashworth's application and reversed the decision of the Examiner of Interferences. I am of the opinion that the evidence shows Munster to have been the first to conceive, but the last to reduce to practice, and that he was lacking in diligence.

Ashworth has raised the question whether the testimony of Munster or any of his witnesses can be considered in the disposition of this case. It appears that in taking the testimony on behalf of Munster the inventor was produced as a witness and his testimony-in-chief was taken, and witness was then tendered to the opposite party for cross-examination, and he was cross-examined at some length. Before the cross-examination was completed a recess was taken.

The witness and counsel for the opposing parties having met pursuant to the adjournment, the witness declared that he was too ill to proceed with the cross-examination and went home to go to bed. Thereupon, it appears from the record, counsel for Ashworth stated that he was willing that cross-examination should be suspended and asked counsel for Munster to have the time for the taking of testimony extended and to give him due notice thereof. Counsel for Munster refused to make any attempt to produce the witness again for cross-examination, on the ground that the witness had been sick for over a year, had undergone three operations, and that there was no probability of witness being able to testify at any definite time or of his ever being able to testify. Counsel for Munster has made no attempt to reproduce him in order that the cross-examination may be completed. It is now urged on behalf of Ashworth, as it was urged before the Examiner

of Interferences and the Examiners-in-Chief, that the deposition of Munster can be given no consideration, as he did not submit himself to complete cross-examination.

In so far as the answers given on direct examination were not tested by cross-examination, it is believed that the point is well taken. That the direct testimony of a witness cannot be considered where there has been no opportunity to cross-examine seems to be well settled. (*The People* v. *Cole*, 43 N. Y., 508; *Heath* v. *Waters*, 40 Mich., 457; *Clements* v. *Benjamin*, 12 Johns, 299; *Wigmore on Evidence*, Vol. II, sec. 1390.) In a few cases where the direct examination has been completed and cross-examination has been prevented by circumstances beyond the control of the witness or the party in whose behalf he testified the testimony has been admitted. (*Arundel* v. *Arundel*, 1 Chand., Wis., 90; *Forrest* v. *Kissam*, 7 Hill, N. Y., 463.) But the circumstances present in this case are not so extraordinary as to constitute an exception to the general rule. While the record indicates that the witness was too ill to undergo further cross-examination at that time, there seems to be no justification for the refusal of his counsel to make every reasonable effort to produce the witness for further cross-examination at some future time, even at the expense of some delay in the final disposition of the case. For these reasons those parts of Munster's deposition relating to conception and reduction to practice of the invention will not be considered.

The question is also presented whether or not the testimony of the other witnesses produced on behalf of Munster is entitled to consideration, it being urged by appellant that it is not, on the ground of lack of proper notice of the taking of such testimony. It appears that the notice of taking testimony stated simply that at a certain time and place—

I shall proceed to take Munster's testimony.

At the time and place stated counsel for the opposing parties met and proceeded to take the testimony of Munster. Prior to the completion of his testimony the proceedings were interrupted, as above pointed out. With regard to subsequent proceedings the record as made by the officer taking the deposition states as follows:

Counsel for A. P. Munster then offered to very briefly examine the other witnesses present and turn them over to counsel for Ashworth for cross-examination. Counsel for Ashworth announced that while he had no objection to the direct examination of other witnesses present, he would not care to cross-examine them and went away.

Thereupon the testimony of three other witnesses was taken—Nicholas M. Munster, son of the inventor and an assignee of a part interest in the invention, Bernard Heinig, also assignee of a part interest in the invention, and Robert Klotz, Munster's attorney of record. Attorney for Ashworth had left, and hence these witnesses were not cross-examined. Prior to final hearing Ashworth gave notice that at the final hearing he would move that the testimony of all of these witnesses be stricken out. This notice was accompanied by an affidavit of counsel for Ashworth stating that he had refused to take the testimony of these witnesses under the circumstances and went away. From a comparison of this statement with the statement on the record of the officer taking the deposition quoted above it is at once apparent that they do not agree. Under these circumstances the statement in the record will be accepted as correct. The statement made by an officer charged with the duty of correctly recording the testimony of a witness and such events as counsel may desire to have recorded cannot be overcome by the oath of a single witness. Moreover, an affidavit filed by counsel for Munster in opposition to the affidavit of Ashworth denies the accuracy of such affidavit and avers the facts to be as stated in the record. The statement by counsel for Ashworth that he had no objection to the direct examination of these witnesses and that "he would not care to cross-examine them" must be considered as an express waiver of notice and of the right to cross-examine, and for this reason the depositions of the witnesses will be received and given full weight.

With the inventor's testimony out of consideration Munster's conception and reduction to practice must be established, if at all, by the testimony of his son and Bernard Heinig.

A single model has been introduced in evidence on behalf of Munster which is relied upon to establish conception. An examination of this model discloses the fact that it embodies all the elements of the issue. The testimony shows that Munster made this model and that it was in existence at least as early as September or October, 1902. Without a discussion of the testimony in detail it may be said that it is believed to show a conception of the invention of Munster in September or October, 1902.

The testimony tending to establish an actual reduction to practice by Munster is as follows:

By Nicholas M. Munster:

Q. 12. A. P. Munster's preliminary statement says that he built some 33 doors for Armour and Co., in 1903; is this model exactly like those doors?
A. Yes, sir.
Q. 13. When were these doors put up, if you know?
A. He began to build them in May, 1903.
Q. 14. About when were they completed, to your knowledge?
A. Some time in October, 1903.
* * * * * * *
Q. 41. Did you show him this model that you have brought here and offered in evidence, which you say is exactly like the doors put up at Armour & Co.'s plant in October, 1903?
A. Yes, sir.

By Bernard Heinig:

Q. 16. Have you seen the doors put up at Armour & Co.'s plant?
A. Yes.
Q. 17. When did you first see those doors?
A. When I went down to label them.
Q. 18. What do you mean by "label them."
A. I mean, I put "Patent applied for" upon the doors.
Q. 19. How many doors did you label?
A. Thirty-three.
Q. 20. About what time did you go down to label those 33 doors?
A. After the application for patent was made out.
Q. 21. Had you seen the doors before that time?
A. No, I hadn't seen them before, but I heard they had been there about a year.

The deficiencies in this testimony are apparent. Question 12 propounded to Nicholas M. Munster assumes the truth of the preliminary statement regarding the building of thirty-three doors for Armour & Company and asks if those doors were exactly like the model. He answered that they were; but the form of the question is grossly leading and tends to lessen its weight. The succeeding questions proceed on the same assumption and ask when those thirty-three doors were begun and completed, to which answer is made that his father began to make the doors in May, 1903,

and that they were completed some time in October, 1903. It does not appear anywhere in the testimony that Nicholas M. Munster ever saw any of these thirty-three doors, and for this reason his statement that they were like the model can be given little weight. The testimony of Heinig appears to add nothing of consequence on the question of reduction to practice. While he states that he saw thirty-three doors at Armour & Company's plant and labeled them "Patent applied for," this took place after Munster's application was made out in the latter part of May, 1904. He makes no statement regarding the construction of these doors. He does not know when they were built or anything about them, except that he "heard they had been there about a year." This hearsay testimony can be given no weight.

The testimony is deficient in another respect. It fails to show that the doors put up at Armour's plant, assuming it to be proved that they were constructed as claimed, were ever operated or subjected to any tests to show that they were capable of successful operation. Neither of the witnesses saw these doors at any time previous to the date of execution of Munster's application, and while Heinig saw them about this time he makes no statement relative to their construction or condition. It is therefore concluded that the testimony fails to show a reduction to practice by Munster prior to the filing of his application. Munster was therefore the last to reduce to practice.

Ashworth does not claim to have conceived the invention prior to January, 1903. For the purpose of this decision we may accept this date as his date of conception. Munster's evidence having established a date of conception as early as September or October, 1902, he is thus the first to conceive and the last to reduce to practice. In order for him to prevail, he must therefore show that he was exercising diligence when Ashworth entered the field and up to the time of the filing of his application.

The evidence does not show that anything whatever was done by Munster after October, 1903, up to the filing of his application in May, 1904, and there appears to be no excuse for the inaction. In answer to question 15 Heinig states the delay was caused by Munster's desire to—

demonstrate the utility of the invention in actual service * * * and in the meantime he also became sick.

With regard to appellee's sickness it appears that he did not become sick before March, 1904, which was four or five months after the thirty-three doors were alleged to have been completed. With regard to demonstrating the utility of the invention it is to be said that the record does not show that the doors were ever actually subjected to any tests. For these reasons the excuses for the delay are insufficient, and it must be found that Munster was lacking in diligence in reducing his invention to practice.

The conclusion is that Munster's evidence does not sustain his claim to prior reduction to practice, that while he was the first to conceive he was the last to reduce to practice, and that he was lacking in diligence.

The decision of the Examiners-in-Chief is reversed, and priority of invention is awarded to Ashworth.

DUNBAR *v.* SCHELLENGER.

Decided May 17, 1907.

FILING OF BILL IN EQUITY BY DEFEATED PARTY TO INTERFERENCE WILL NOT STAY ISSUE OF PATENT TO SUCCESSFUL PARTY.

The filing of a bill in equity under section 4915, Revised Statutes, by the defeated party to an interference will not operate to stay the issue of a patent to the successful party, nor will it justify the Commissioner of Patents in withholding it until the equity proceeding is terminated, (citing case of *Sargent*, 12 O. G., 475, and *Wells* v. *Boyle*, 43 O. G., 753.)

ON PETITION.

TELEPHONE SYSTEM.

Messrs. Jones & Addington and *Mr. Robert L. Ames* for Dunbar.

Mr. Charles A. Brown for Schellenger.

MOORE, *Acting Commissioner:*

This is a petition by Francis W. Dunbar and his assignee, the Kellogg Switchboard & Supply Company, that the application of Schellenger be withheld from issue until a bill in equity pending in the United States Circuit Court for the Western District of New York has been heard, determined, and disposed of.

The applications of Dunbar and Schellenger have been in interference, in which contest Schellenger was successful both in the Patent Office and on appeal to the Court of Appeals of the District of Columbia. Dunbar then filed the bill in equity noted above, under the provisions of section 4915, Revised Statutes, for the purpose of having the court pass upon his right to receive a patent. He requests that in the meantime no patent be granted on the application of Schellenger.

The question raised in this petition was considered by the Secretary of the Interior on appeal from the decision of the Commissioner of Patents in the case of *Sargent*, (12 O. G., 475; 1877, C. D., 125.) In ordering the issue of the patent in that case the Secretary said:

If the decision in your office is erroneous, Mr. Burge has his remedy in the court, but pending that inquiry executive action cannot be stayed. Due regard must always be given to the rights of all parties in interest in any proceeding, but if, after a fair consideration of all the questions affecting them, you are compelled, in obedience to law and the facts presented, to decide in favor of one and against the other, so that your judicial functions are exhausted, it is neither equitable nor just that the party who has established his right to the claim in controversy, should be delayed in the enjoyment of it, so far as it depends upon your action, because it is possible that another tribunal, not appellate, may determine the same question otherwise.

If the filing a bill in equity by parties asserting adverse claims, to retry questions already decided by your Office, could be permitted to stay final action on your part, very few patents for really valuable inventions would, in my opinion, hereafter be issued, and the injurious results which would necessarily follow would be beyond calculation.

This ruling of the Secretary of the Interior has since been followed by this Office, as appears from the decision of the Commissioner of Patents in *Wells* v. *Boyle*, (43 O. G., 753; 1888, C. D., 36,) and it is still considered controlling. The act of February 9, 1893, establishing the Court of Appeals of the District of Columbia and providing for an appeal to said court from the decision of the Commissioner of Patents in interference cases did not change the provisions of section 4915 with respect to bills in equity. The ruling made in the above decisions are therefore applicable, notwithstanding the act of 1893, and the provision for a review by said court of the Commissioner's decision as to the award of priority is all the more reason why the issue of a patent to the successful party should not be withheld after the court's decision.

In view of the ruling of the Secretary noted above and for reasons similar to those stated in the decision of the Commissioner, *supra*, the petition is denied.

MAGIC CURLER COMPANY *v.* PORTER.

Decided May 23, 1907.

1. TRADE-MARK—CANCELATION—REGISTRANT'S RIGHT TO THE USE OF THE MARK.

The right registered is a supposed right to exclusive use. The evident intention of Congress was to permit any person deeming himself to be injured by a registration to question the validity in the Patent Office and to obtain cancelation thereof if the registrant had no trade-mark right therein at the time of his application for registration, or if, having had such a right at that time, he has subsequently lost the same.

2. SAME—SAME—NEED NOT SHOW WHY OPPOSITION WAS NOT FILED.

The applicant for cancelation need not show why an opposition was not filed. The question as to the registrability of a mark is not *res adjudicata* by reason of its registration.

3. SAME—SAME—ALLEGATION OF CONTINUOUS USE.

The allegation of continuous use of the mark by the applicant for cancelation is immaterial, as the applicant is not seeking registration and may establish a case for cancelation without such use.

ON APPEAL.

HAIR-WAVER.

Messrs. Wiedersheim & Fairbanks for Magic Curler Company.

Messrs. Louis Bagger & Co. for Porter.

MOORE, *Acting Commissioner:*

This is an appeal by the Magic Curler Company from the decision of the Examiner of Interferences dismissing its application for cancelation of the trade-mark registration of Charles F. Porter.

The Magic Curler Company has applied for cancelation upon the ground that the registered mark is the name of an individual whose consent to registration has not been given and that the mark is descriptive and that the Magic Curler Company and its predecessors had been using the registered mark in business prior to the alleged adoption thereof by the registrant and have not abandoned it. The Examiner of Interferences held, upon motion by the registrant, treated as a demurrer to the application for cancelation, that none of these allegations, if proved, would affect the registrant's right to the use of the mark. He did not consider the use alleged by the Magic Curler Company to be used as a trade-mark and held that the case does not therefore fall within the provisions of section 13 of the Trade-Mark Act for the cancelation of registrations through proceedings in the Patent Office.

Section 13 is as follows:

That whenever any person shall deem himself injured by the registration of a trade-mark in the Patent Office he may at any time apply to the Commissioner of Patents to cancel the registration thereof. The Commissioner shall refer such application to the Examiner in charge of interferences, who is empowered to hear and determine this question and who shall give notice thereof to the registrant. If it appear after a hearing before the Examiner that the registrant was not entitled to the use of the mark at the date of his application for registration thereof, or that the mark is not used by the registrant, or has been abandoned, and the Examiner shall so decide, the Commissioner shall cancel the registration. Appeal may be taken to the Commissioner in person from the decision of Examiner of Interferences.

The question is, Does the provision of this section for cancelation, when—

the registrant was not entitled to the use of the mark at the date of his application for registration thereon—

authorize cancelation generally where it appears that the registrant was not entitled to the registration obtained, or whether cancelation under this provision is limited to those cases where a trade-mark right resided in another party? This question was decided by the Commissioner in *Pioneer Suspender Company* v. *Lewis Oppenheimer's Sons*, (128 O. G., 1293,) where it was held that the right to use referred to in this section means a right to exclusive use. There seems to be no reason why the consideration of the right to registration upon an application for cancelation should be restricted to a determination of the registrant's right to use the mark. The right registered is a supposed right to exclusive use. The evident intention of Congress was to permit any person deeming himself injured by a registration to question the validity thereof in the Patent Office and to obtain cancelation thereof if the registrant had no trade-mark right therein at the time of his application for registration, or if, having had such a right at that time, he has subsequently lost the same. There is more reason why a party who has himself no trade-mark right, but who is harassed in his business through an improper registration, should be permitted to overthrow that registration than there is for according this relief to one who is the possessor of a trade-mark right. The latter party may obtain relief against injury through the invalid registration by interference proceedings, registration to himself, and suit thereon. The former party, though liable to the same injury, has not the same opportunity for combating it. In the face of these reasons the meaning which the statute appears to have when construed strictly in accordance with the exact definitions of the words used is believed to be accidental and not controlling.

As the conclusion reached herein is contrary to that reached by the Examiner of Interferences on the point upon which the case turned before him, his conclusions unfavorable to the appellee on other points have been reviewed and the appellee's arguments thereon considered. The conclusion that the applicant for cancelation need not show why an opposition was not filed and that the registrability of the mark is not *res adjudicata* by reason of the registration are considered to be right. The matter of allegations by the applicant of continuous use is immaterial, as the applicant is not seeking registration and may establish a case for cancelation without such use.

The decision of the Examiner of Interferences is reversed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

MUNSTER *v.* ASHWORTH.

Decided February 5, 1907.

1. INTERFERENCE—EVIDENCE—CONSIDERATION OF DEPOSITION—FAILURE TO AFFORD OPPORTUNITY FOR CROSS-EXAMINATION.

Where a witness after testifying on his own behalf and after answering a few questions on cross-examination states that he is unable to withstand the strain of cross-examination and leaves the stand and his counsel refuses to ask for an extension of time for taking testimony in order that the witness may be cross-examined at some time in the future, alleging that the witness is in such bad physical condition that there is no prospect of his being able to testify within a year, if at all, *Held* that counsel, knowing the condition of the witness, should either have refrained from offering him as a witness in his own behalf or, having done so, should have consented to some reasonable postponement. Under such circumstances the direct examination should have been excluded upon motion.

2. SAME—SAME—AFFIDAVIT ATTACHED TO DEPOSITION.

An affidavit of a physician attached to a deposition, setting forth the physical condition of a witness who has left the stand during cross-examination because of inability to stand the strain of cross-examination, forms no part of such deposition. The affiant should have been called and sworn to testify as a witness.

Mr. Wm. Small for the appellant.

Mr. F. J. Kent and *Mr. Samuel Herrick* for the appellee.

SHEPARD, *J.:*

This is an interference proceeding involving priority of invention of the following issue:

1. The combination, with a door-opening, of a swinging door and a pair of slide-doors arranged to close said opening, and connections between all of said doors whereby same are caused to open and close simultaneously.

2. The combination, with a door-opening, of an angularly-movable door and a pair of slide-doors for closing said opening, and means between all of said doors for opening and closing them together.

3. The combination with a single door-opening, of a swinging door, a pair of superposed sliding doors movable toward and from each other, a lever, means for moving said sliding doors in opposite directions by said lever and means for actuating said lever by said swinging door.

The invention of this issue is an arrangement of certain elements which coöperate to close at the same time two openings in a smoke-house or a refrigerator. The larger opening is closed by a swinging door. A smaller opening immediately above is closed by a pair of sliding doors which are caused to move into position by the swinging of the larger door.

Munster, the junior party, claims to have conceived the invention September 1, 1902, and to have reduced it to practice May 1, 1903. His application was filed May 27, 1904. Ashworth, who filed March 21, 1904, claims conception January 1, 1903, the making of a model March 1, 1903, but no actual reduction to practice.

The Examiner of Interferences decided in favor of Ashworth. His decision was reversed on appeal to the Examiners-in-Chief; and they, in turn, were reversed by the Commissioner who awarded priority to Ashworth. From his decision, Munster has prosecuted this appeal.

The burden was upon Munster, as the later applicant, to show that he conceived the invention before Ashworth, and that he reduced it to actual practice, or was exercising due diligence in prosecuting his invention when Ashworth entered the field.

It seems sufficiently clear that unless he reduced to actual practice, as claimed, he was lacking in the required diligence. His case turns, therefore, upon the proof of reduction to practice.

We confess embarrassment in the determination of this question. The difficulty lies in the meagerness of the testimony and the manner in which it was taken. In the first place, Munster, having testified on his own behalf, was not subjected to cross-examination. He was undoubtedly in bad health, but we are not satisfied that he could not have been cross-examined later. After answering a few questions of opposing counsel, he announced that he was not well and was unable to stand the strain of cross-examination. Counsel for Ashworth expressed willingness to suspend, and asked Munster's counsel to extend the time of taking the testimony. The record shows that Munster's counsel refused—

to delay indefinitely the determination of the issue of this interference, especially in view of the aimless trend of cross-examination.

He further announced that Munster's mental and physical condition is such that he is unable to stand the strain imposed upon him as a witness; that he has been sick for over a year, has spent most of his time in a hospital; has undergone three different operations; has come to the hearing in a plainly-emaciated condition without appreciating what is required of him; and that the prospect of his being able to testify within a year, if at all, is very slight. As these conditions were so well known to his counsel, he should either have refrained from offering him as a witness on his own behalf, or, having done so, should have consented to some reasonable postponement. There was no testimony tending to show that Munster might not be able to appear for cross-examination within some reasonable period. The examination of other witnesses heard at the same time was concluded on June 14, 1905. An affidavit of a physician is attached to the record of the deposition as made July 20, 1905, to the effect that he had treated Munster from time to time for a year last past; that three different surgical operations had been performed on him to remove gall-stones; that he has not been for many months past in a condition to withstand the strain imposed upon a witness; and that his present condition does not hold out any hope that he will be able to resume active mental and physical labors for perhaps years to come, if at all. An affidavit of this kind forms no part of the deposition. The affiant should have been called and sworn to testify as a witness. Under the circumstances, the direct examination ought to have been excluded on motion, and is entitled to no weight. That his testimony, if considered, is entitled to little or no weight is shown in the direct examination of his son Nicholas Munster who testified on the same day. The question of appellant's counsel, and witness's answer thereto are as follows:

Q. 28. In your father's testimony he appears to have dates badly mixed. How did you manage to get the data for the preliminary statement, and how does it happen that your father today seems utterly unable to remember what he has heretofore done? A. When the preliminary statement was made up I was at home with my father, he was rested and mentally collected. We went over the matter together at that time, and I assisted him to refresh his memory. To-day the trip weakened and confused him, apparently, so that his mind is in a muddle.

The notice to take testimony for Munster at that time recites the name of Munster only as the witness to be examined. After Munster retired, three other witnesses were produced. The record recites that Ashworth's counsel stated that he had no objection to the examination of the other witnesses and did not care to cross-examine them; and then left. Ashworth moved to suppress these depositions because taken without notice, and filed an affidavit of his counsel denying the correctness of the recital that he had waived objections to the examination of witnesses not named in the notice. This motion was overruled. The testimony was therefore considered as properly in the case. It is to be observed of this testimony that the important facts were stated in answer to leading questions propounded to the witnesses. The following question to Nicholas Munster is an example:

Q. 36. Are you positive that your father conceived the invention set forth in this declaration of interference on or about the

1st day of September, 1902, according to the preliminary statement, which you helped your father prepare? A. Yes, sir.

(See also question 12 and answer hereafter.)

Questions asked this witness, who is also one of the assignees of his father's invention, relating to the construction of doors in accordance with the model of his father, together with his answers, are as follows:

Q. 12. A. P. Munster's preliminary statement says that he built some 33 doors for Armour and Co. in 1903; is this model exactly like those doors? A. Yes, sir.
Q. 13. When were these doors put up, if you know? A. He began to build them in May, 1903.
Q. 14. About when were they completed, to your knowledge? A. Some time in October, 1903.

The witness did not describe the construction of the doors, or undertake to say where or how they had been made. To the question asking if they were exactly like the model, he simply answered yes.

The next witness, Heinig, is also an assignee of Munster's invention. He said that he first heard of the invention in September, 1902, at which time Munster's son, Nicholas, showed him a partly-completed model. He did not see this model in a completed state until the application for patent had been made. As regards the completion of this model, Heinig differs from Nicholas Munster who said it was completed in September, 1902. Heinig also testified that he was not interested in the invention prior to the time of filing the application for patent, and gives that as his reason for not having then seen the doors of which he had heard of the construction. He said that after the application had been filed he went to Armour's plant in Chicago, where Munster and his witnesses lived, and labeled thirty-three doors "Patent applied for." He was not asked to describe the construction of these doors, or their mode of operation. He says he had heard that they had been used there about a year; and all that he did was to "label them." The testimony of the remaining witness, Klotz, who was Munster's attorney, had no relation to this question; it was introduced for an entirely different purpose.

Assuming that thirty-three doors were erected in the Armour plant of a construction designed by Munster, the testimony does not show, save by inference derived in part from hearsay, that these doors were constructed from the completed model of Munster, and embodied the elements of the issue. It does not appear how they worked. If these doors were constructed by Munster for the Armour Company in accordance with the requirements of the issue, and then used by them as answering the purpose, we cannot understand why some member, or competent employee of that company was not called to testify. The plant was situated in Chicago, and such witness or witnesses could have proved the necessary facts, if they existed, beyond the shadow of a doubt. Yet none were called, and no reason was suggested for the omission. In this connection it is pertinent to call attention to the fact that in the cross-examination of Ashworth he was asked if he had seen or heard of the doors put by Munster in the Armour plant. His answer was that he had heard of them after the declaration of interference, and had visited the plant for the purpose of seeing them; but that after being shown through the visitors' department he had asked if he could see the smoke-house where they had rails running through an opening in the smoke-house door, and that his request had been politely denied. He also said that he had shown the invention to the Armour Company immediately after applying for a patent, and had not been informed by them that they were already supplied. No effort was made to contradict these statements.

Though not without some apprehension that Munster may have made the invention and reduced it to practice, we are constrained to affirm the decision of the Commissioner. We are not warranted in reversing his decision because of a mere doubt of its correctness. As before suggested, all doubt might have been removed, if the doors erected in the Armour plant were in fact successful reductions to practice of the invention of the issue, by the production of witnesses who could not be mistaken. The failure to do this was the fault of the appellant.

The decision awarding priority to Ashworth will therefore be affirmed. The clerk will certify this decision to the Commissioner of Patents as required by the law. Affirmed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 6, 1907.

The Ohio Chemical Company, its assigns or legal representatives take notice:

An interference has been declared by this Office between an application of The Norwich Pharmacal Company, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Ohio Chemical Company, of Columbus, Ohio. The notice of said declaration mailed by the Patent Office in the usual manner to the said Ohio Chemical Company at its known address, 573 North High street, Columbus, Ohio, has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Ohio Chemical Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN *Commissioner*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 4, 1907.

Ida M. Rew, her assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Otis Company, of Ware, Mass., for registration of a trade-mark and a trade-mark registered to Ida M. Rew, of New York, N. Y., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Ida M. Rew and to her attorney of record having been returned, with the information that the registrant cannot be found and that the attorney of record is dead, notice is hereby given to the said Ida M. Rew, her assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 23, 1907.

Hardgrove & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Robert Harris & Brother, of Reidsville, N. C., for registration of a trade-mark and a trade-mark registered to Hardgrove & Company, of Richmond, Va. It appears from the record of the case that the firm of Hardgrove & Company is no longer in existence, and the attorneys for said firm can also not be found.

Notice is therefore given to the said Hardgrove & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

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Total issue	1028	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	2	....	New Hampshire	....	2
Arizona Territory	1	....	New Jersey	30	12
Arkansas	5	....	New Mexico Ter'ty.	....	....
California	31	4	New York	103	51
Colorado	15	1	North Carolina	4	2
Connecticut	16	8	North Dakota	1	....
Delaware	2	....	Ohio	62	16
District of Columbia	6	....	Oklahoma Territ'y.	1	....
Florida	....	....	Oregon	7	1
Georgia	5	2	Panama	1	....
Hawaii Territory	1	....	Pennsylvania	73	14
Idaho	3	....	Porto Rico	....	....
Illinois	83	13	Rhode Island	2	1
Indian Territory	....	....	South Carolina	....	1
Indiana	27	....	South Dakota	3	....
Iowa	18	2	Tennessee	13	2
Kansas	10	1	Texas	17	4
Kentucky	7	1	Utah	4	1
Louisiana	2	1	Vermont	1	1
Maine	3	1	Virginia	4	1
Maryland	7	2	Washington	8	10
Massachusetts	52	10	West Virginia	4	2
Michigan	27	1	Wisconsin	28	3
Minnesota	7	4	Wyoming	....	....
Mississippi	1	....	U. S. Army	....	....
Missouri	25	5	U. S. Navy	1	....
Montana	4	....			
Nebraska	11	4	Total to citizens of the United States	738	184
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	....	....	Natal	....	....
Austria-Hungary	5	....	Netherlands	....	2
Belgium	....	....	Newfoundland	1	....
Brazil	....	....	New South Wales	1	....
British West Indies	....	....	New Zealand	3	....
Canada	13	....	Norway	1	....
Cape Colony	1	....	Persia	....	....
Chile	....	....	Queensland	....	....
China	....	....	Roumania	....	....
Costa Rica	....	....	Russia	....	....
Cuba	....	....	Scotland	....	1
Denmark	1	....	South Australia	....	....
Ecuador	....	....	Spain	....	....
England	33	3	Switzerland	2	1
France	4	4	Trinidad	....	1
Germany	16	9	Transvaal, South Africa	2	....
Haiti	....	....	Victoria	....	....
Ireland	....	....	Western Australia	....	....
Italy	1	....	Total to citizens of foreign countries	84	21
Japan	....	....			
Java	....	....			
Mexico	....	....			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 16, 1907.

Charles H. Palmer, Jr., his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of The Columbia Carriage Company, of Hamilton, Ohio, for registration of a trade-mark and a trade-mark registered to Charles H. Palmer, Jr., of Amesbury, Mass., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Charles H. Palmer, Jr., and also the copy mailed to his attorney of record, together with the letter setting times for taking testimony, having been returned undelivered, notice is hereby given to the said Charles H. Palmer, Jr., his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

Renewal of Forfeited Cases.

RULE 175. When the patent has been withheld by reason of non-payment of the final fee, any person, whether inventor or assignee, who has an interest in the invention for which such patent was ordered to issue may file a renewal of the application for the same invention; but such second application must be made within two years after the allowance of the original application. * * *

RULE 176. In such renewal the oath, petition, specification, drawing, and model of the original application may be used or the second application; but a new fee ($15) will be required. * * *

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business June 4, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 22	May 9	158
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	May 22	Apr. 29	287
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 21	May 6	247
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	May 20	May 22	144
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May 20	May 8	309
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	May 20	May 4	221
327	XVIII. Steam-Engineering, etc ...	May 20	Apr. 20	178
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 17	Apr. 30	404
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 17	Apr. 15	528
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 15	May 16	196
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 14	May 4	138
109	XVI. Telegraphy and Telephony..	May 13	May 4	238
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	May 13	May 1	265
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May 13	Apr. 20	246
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	May 11	May 1	349
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	May 11	Apr. 5	258
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	May 10	Apr. 13	380
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	May 9	May 1	267
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	May 9	Apr. 30	229
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 9	Apr. 24	281
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	May 7	May 7	363
378	XXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May 6	Apr. 12	426
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	May 6	Mar. 27	374
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	May 2	May 6	345

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	May 2	Apr. 10	342
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	Apr. 29	Mar. 27	437
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	Apr. 27	May 2	214
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	Apr. 26	Apr. 8	245
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Apr. 22	Apr. 13	416
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 22	Apr. 12	414
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Apr. 22	Apr. 10	472
175	III. Annealing and Tempering, Coating with Metal, Electro-chemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	Apr. 22	Apr. 8	374
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Apr. 18	Mar. 20	456
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Apr. 15	Mar. 25	380
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 15	Mar. 20	717
329	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Apr. 13	Apr. 1	407
332	X. Carriages and Wagons.....	Apr. 12	Apr. 15	614
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 8	Mar. 12	433
345	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Apr. 4	Mar. 30	698

Total number of applications awaiting action 13,450

Room No.		Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	May 28	May 27	203
	Designs	May 31	May 28	29
	Labels and Prints	.....	.....	....

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., April 30, 1907.

McConnell, Clancey & Company, their assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of H. F. Webb Company, of Portland, Me., for registration of a trade-mark and a trade-mark registered to McConnell, Clancey & Company, of Chillicothe, Ohio, and the notice of declaration mailed by the Patent Office in the usual manner to the known address of McConnell, Clancey & Company has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said McConnell, Clancey & Company, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

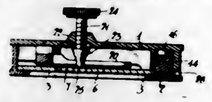
This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

PATENTS

GRANTED JUNE 11, 1907.

856,197. SEAL-PADLOCK. FREDERIC ABRAMS, Ennis, Tex. Filed Jan. 14, 1907. Serial No. 352,166.



Claim.—1. A lock casing provided with a shackle, a tumbler disposed in said casing, a frangible seal, and a conical tumbler-releasing and seal-breaking member carried by the casing and operative transversely thereof at right angles to the seal.

2. A lock casing, a tumbler therein, a frangible seal, and a screw-threaded bolt having a conical tumbler-releasing and seal-breaking head.

3. A lock casing, a tumbler therein, a frangible seal, and a screw-threaded bolt having a tumbler-releasing and seal-breaking head of greater cross diameter than the bolt to prevent disconnection of the bolt from the casing.

4. A lock casing, a shackle, a shackle locking tumbler within the casing, and a threaded bolt having a conical head to release the tumbler from engagement with the shackle.

856,198. INTERCHANGEABLE PARTITION-SECTION. ALFRED ADAMS, Brooklyn, N. Y. Filed Dec. 5, 1906. Serial No. 346,363.



Claim.—1. As a new article of manufacture, interchangeable partition sections provided each with an attached section of cornice *h* and each partition section having at one edge pilaster projections *a* to overlap the edge of an adjacent section, and the cornice provided with corresponding overlapping cornice blocks *i* having internal contour corresponding to the profile of the cornice so as to snugly engage the same, the pilasters and cornice blocks *i* thus serving to wholly conceal the joint between the sections when erected.

2. As a new article of manufacture, interchangeable partition sections provided each with an attached section of cornice *h* and each section having at one edge pilaster projections *a* to overlap the edge of an adjacent section and conceal the joint therewith, and means projecting from the edge of the section between the pilaster projections for locking to the edge of the adjacent section.

3. As a new article of manufacture, interchangeable partition sections provided each with an attached section of cornice *h* and each partition section having at one edge pilaster projections *a* to overlap the edge of an adjacent section and conceal the joint therewith, a latch projecting from the edge of the section between the pilaster projections for engaging the edge of the adjacent section, and means concealed by the pilaster projection for disengaging such latch, to permit the separation of the sections when required.

4. As a new article of manufacture, interchangeable partition sections provided with a cornice, each section having one edge provided with pilaster projections to overlap the edge of an adjacent section, and the cornice provided at opposite ends respectively with dowels and with complemental dowel holes to engage the adjacent sections together.

5. In a partition unsupported at the top, the combination, with interchangeable partition sections, of the strip A' secured vertically upon the wall with groove to receive the edge of a section, and the sections provided each with an attached section of cornice *h* and formed upon one edge to fit the groove in such wall-strip interchangeably, and upon the opposite edge with cornice blocks *i*, and with pilaster projections *a* forming a groove corresponding to that in the wall-strip, whereby the sections are adapted interchangeably to engage one another or the groove in the wall-strip.

6. In a partition extending from floor to ceiling, the combination, with the floor-strip C' having groove *b*, of interchangeable partition sections fitted each at the bottom to such groove and provided each with an attached section of cornice *h* and upon one edge with cornice blocks *i* and with pilaster projections *a* to engage the edges of opposed sections, a grooved cap G' secured over the tops of all of the cornices, top sections G set in the said groove and provided each at one edge with overlapping pilaster projections to engage the adjacent top section, and the ceiling-strip H having groove fitted to the upper edge of the top sections, with depth sufficient to compensate for variations in the height of the apartment and retain engagement with the sections G.

7. In a partition unsupported at the top, the combination, with interchangeable partition sections provided each upon one edge with pilaster projections forming a groove, and the opposite edges of the section adapted to fit such grooves, of a floor-plate having a groove adapted to fit the bottoms of the sections, and a door-frame having door hung therein and provided with pilaster projections to engage the opposite edges of the adjacent sections, and having at the bottom a tie-bar adapted to fill the groove of the floor-plate, whereby the floor-plate serves as a door sill for the door.

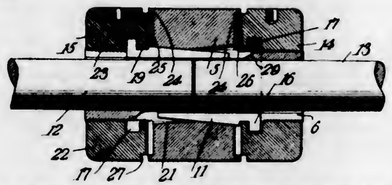
8. In a partition unsupported at the top, the combination, with interchangeable partition sections provided each with a section of cornice *h* and with pilaster projections *a* and cornice blocks *i* to engage the edge of an opposed section, and the tops of the cornices having the coincident grooves *n*, of the strip *m* extended through such grooves, to hold the sections in line with one another.

9. In a partition, the combination, with interchangeable partition sections provided each with a section of cornice *h* and with pilaster projections *a* and cornice blocks *i* to engage the edge of an opposed section, of a corner section having wings projected at an angle to one another and provided with attached sections of cornice jointed at the same angle as the wings, and pilasters and cornice blocks projected from the edges of the wings to engage the edges of opposed sections.

856,199. SHAFT-COUPLING. JAMES W. ALBERT, Oneida, N. Y. Filed Aug. 17, 1906. Serial No. 331,073.

Claim.—1. A shaft-coupling including a sleeve, a bushing secured to the sleeve and having its opposite ends threaded, clutch-members slidably mounted in the bushing and adapted to engage the shaft sections to be coupled, and collars engaging the threaded ends of the bushing for mov-

ing the clutch members to operative and inoperative positions.



2. A shaft-coupling including a sleeve, a bushing secured to the sleeve and provided with spaced elongated slots, clutch members slidably mounted in said slots and adapted to engage the shaft sections to be united, and collars mounted for rotation on the bushing and operatively connected with the clutch members for moving the latter to operative and inoperative positions.

3. A shaft-coupling including a sleeve, a bushing secured to the sleeve and provided with a plurality of spaced slots disposed in staggered relation and opening through the opposite ends of the bushing, clutch members slidably mounted in said slots and adapted to engage the shaft sections to be united, and means operatively connected with the clutch members for moving the latter to operative and inoperative positions.

4. A shaft-coupling including a sleeve having its interior walls inclined in opposite directions, a bushing disposed within the sleeve and provided with a plurality of spaced slots arranged in staggered relation and opening through the opposite ends of the bushing, clutch members slidably mounted for longitudinal movement in said slots and adapted to engage the shaft-sections, and collars mounted for rotation on the bushing and operatively connected with the clutch members for moving the latter to operative and inoperative positions.

5. A shaft-coupling including a sleeve provided with a central opening the walls of which are inclined in opposite directions, a bushing seated within the opening and having its opposite ends threaded, said bushing being provided with a plurality of spaced slots disposed in staggered relation and opening through the opposite ends of the bushing, clutch members mounted for longitudinal movement within the slots and provided with inclined faces adapted to engage the inclined faces of the sleeve, and collars threaded on the bushing and connected with the clutch-members for moving the latter to operative position in engagement with the shaft sections to be coupled.

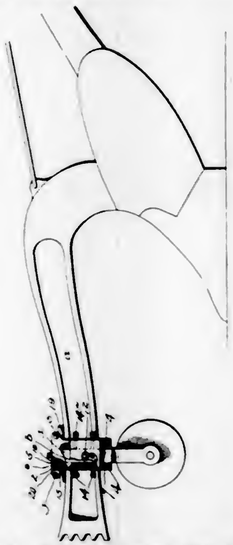
6. A shaft-coupling including a sleeve having a central opening formed therein the walls of which are inclined in opposite directions, a bushing rigidly secured to the sleeve and having its opposite ends threaded, there being a plurality of longitudinal slots formed in the walls of the bushing and opening through the opposite ends thereof, clutch members mounted for longitudinal movement in said slots and each having one face thereof inclined for engagement with the adjacent inclined walls of the sleeve and its opposite face provided with a biting edge adapted to bear against shaft sections to be coupled, and collars threaded on the bushing and connected with the clutch members for moving the latter to operative and inoperative positions.

7. A shaft-coupling including a sleeve provided with oppositely disposed recesses defining annular flanges and pierced by a central transversely disposed opening the walls of which are inclined or beveled, a threaded bushing seated in said opening and provided with a plurality of spaced slots disposed in staggered relation and opening through the opposite ends of said bushing, collars threaded on the bushing and provided with annular grooves, clutch members slidably mounted for longitudinal movement in said slots and adapted to engage the shaft sections to be coupled, said clutch-members being each provided with a lateral extension seated within the annular groove of the adjacent collar, and a screw carried by the sleeve and engaging the bushing for preventing independent rotation of the same, there being a plurality of openings formed in the peripheries of the collars for the reception of an operating tool.

8. A shaft coupling including a bushing provided with spaced elongated slots the walls of which are provided with inwardly extending retaining flanges, clutch members slidably mounted on said flanges and adapted to engage the shaft sections to be united, and means operatively connected with the clutch members for moving the latter to operative and inoperative positions.

9. A shaft coupling including a sleeve, a threaded bushing secured to the sleeve and provided with spaced elongated slots the walls of which are formed with inwardly extending retaining flanges, clutch members slidably mounted on said flanges and extending through the slots for engagement with the shaft sections to be united and collars threaded on the bushing and operatively connected with the clutch members for moving the latter to operative and inoperative positions when said collars are rotated.

856,200. ADJUSTABLE COLTER-CLAMP. JOSEPH H. ALLIN and ROBERT L. ALLIN, Pecan Gap, Tex. Filed Dec. 3, 1906. Serial No. 346,172.

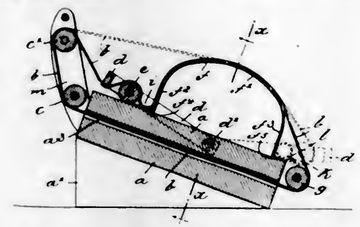


Claim.—1. A colter clamp of the class described comprising a pair of members to engage opposite sides of a beam and provided with overlapping bars, one of said bars having a transverse slot and the other having a transverse shoulder to engage said slot, means to adjustably secure said members together and clamp them on opposite sides of the beam, one of said members having means, independent of the said securing and clamping means, to adjustably secure a colter standard to said member.

2. A colter clamp of the class described comprising a pair of members to engage opposite sides of a beam, one of said members having a vertical opening to receive the standard of a colter, and further provided with means to receive said standard at any desired adjustment, and means independent of said standard receiving means, to clamp the said members on opposite sides of the beam.

856,201. CIGAR BUNCHING AND WRAPPING MACHINE. JOHN A. BACH, Philadelphia, Pa. Filed June 16, 1906. Serial No. 321,966.

Claim.—1. In a cigar bunching and wrapping machine, a base, a table having an arched top and substantially straight ends consisting of a sheet of metal carried by said base, said table adapted when subjected to pressure to change the outline of the arched top and of the straight ends of said table.



2. In a cigar bunching and wrapping machine, a base, a table having an arched top and substantially straight ends, consisting of a sheet of metal carried by said base, said table adapted when subjected to pressure to yield in vertical and swing in horizontal planes on said base.

3. In a cigar bunching and wrapping machine, a base, a table having an arched top and substantially straight ends consisting of a sheet of metal carried by said base, and an endless wrapping apron held in position on said table by said base.

4. In a cigar bunching and wrapping machine, a base, a bunching roller, means for supporting said roller, a table ble having an arched top and substantially straight ends carried by said base, an endless wrapping apron held in position on said table and roller by said base, and said apron adapted to be shifted during the movement of said roller in one direction.

5. In a cigar bunching and wrapping machine, a base, a bunching roller, means for supporting said roller, a table yielding in vertical and horizontal planes carried by said base, a wrapping apron passing over said roller and table, said apron adapted to form between said roller and table a pocket for the reception of tobacco to be bunched, and said table adapted when the arched top is swung rearward to close said pocket.

6. In a cigar bunching and wrapping machine, a base, a bunching roller, means for supporting and actuating said roller, a table having an arched top and substantially straight ends and adapted to yield in vertical and horizontal planes carried by said base, an apron passing over said roller and said table and adapted to form in conjunction therewith, a pocket for tobacco to be bunched, and said table adapted when yielding in a horizontal plane to move rearward so as to close the pocket prior to the closing thereof by the arched portion of said table.

7. In a cigar bunching and wrapping machine, a base, a table having an arched top and substantially straight ends consisting of a sheet of metal carried by said base, a bunching roller, means for supporting and actuating said roller, an apron held in position by said base and passing over said roller and table, and means for holding said base and by the same said table in an inclined position.

8. In a cigar bunching and wrapping machine, a base, a table having an arched top and substantially straight ends, consisting of a sheet of metal carried by said base, a bunching roller, means for supporting and connecting said roller with said base, an endless apron held in position by said base and adapted to form a pocket for loose tobacco between said roller and table, and means adjustably connected with said base and partially supporting said apron, said means adapted when adjusted to tighten and loosen said apron so as to increase or decrease the size of the pocket to be formed by said apron.

9. In a cigar bunching and wrapping machine, a base, a table carried by said base, a bunching roller, means for supporting and moving said roller over said table, a guide roller carried by said base, an apron connected with said base and passing over said table and bunching and guide rollers, said rollers adapted, when occupying a position in proximity to each other, to permit of the formation of a receiving pocket for a cigar by said apron and said bunching roller adapted when returned to an inoperative position to gradually open the pocket and to impart to the cigar, during its discharge, a slight rolling movement by the apron.

10. In a cigar bunching and wrapping machine, a base, a table having an arched top and arranged to yield in horizontal and vertical planes, carried by said base, a guide-roller supported by said base, a bunching roller, means for supporting and holding said bunching roller in proximity to the arched top of said table, when moved over the same, an apron connected with said base and passing over said table and bunching and guide roller, said apron adapted to form in the inoperative position of said bunching roller between the same and table a pocket for tobacco to be bunched, said table when subjected to manual pressure adapted to close said pocket in conjunction with said bunching roller prior to the closing of the same by the arched top of said table, to increase the length of travel of said bunching roller over the same, said bunching roller when shifted into proximity and away from said guide-roller adapted to permit of the formation of a receiving pocket for the bunched tobacco by said apron and to impart a rolling movement to the same during the opening of the pocket.

11. In a cigar bunching and wrapping machine, a base, a table having an arched top and substantially straight ends, consisting of a sheet of metal carried by said base, an endless wrapping apron passing over said table and adapted to form pockets for the reception of loose and bunched tobacco and a bunching roller for shifting said apron for a predetermined distance in one direction and for rolling the tobacco by the apron over said table.

12. In a cigar bunching and wrapping machine, a base, a table, consisting of a sheet of metal carried by said base, an endless wrapping apron passing over said table and adapted to form pockets for the reception of loose and bunched tobacco and a bunching roller for shifting said apron for a predetermined distance in one direction and for rolling the tobacco by the apron over said table, and said apron when shifted adapted to present successive portions of the surface thereof to said bunching roller.

13. In a cigar bunching and wrapping machine, a stationary base, a table, consisting of a sheet of metal bent so as to form arched and substantially straight portions, carried by said base, an endless wrapping apron held in proper position on said table by said base, and means carried by said base and adapted to guide the apron over the ends of said base and certain of said means adapted when adjusted in their position with respect to said base, to increase or decrease the length of the portion of said apron passing over the base and table.

14. In a cigar bunching and wrapping machine, a stationary base, a table consisting of a sheet of metal bent to form an arched top carried by said base, an endless wrapping apron passing over said table and adapted to be held in position thereon by said base, a bunching roller adapted in conjunction with said table to permit of the formation of pockets by said apron, and said table adapted when subjected to manual pressure and to pressure by said roller to yield in vertical and horizontal planes.

15. In a cigar bunching and wrapping machine, a stationary base having a slot, rollers carried by said base, a table having an arched top supported by said base, an endless apron passing through the slot of said base and over said rollers and table, certain of said rollers adapted when shifted as to their position, with respect to said base, to tighten or loosen said apron.

16. In a cigar bunching and wrapping machine, a stationary base having a slot, a yielding shiftable table having an arched top and substantially straight ends carried by said base, guide rollers secured to each end of said base, means for holding said base and by the same said table in an inclined position, an endless apron passing through the slot of said base and over said guide rollers and table, certain of said guide rollers adapted when shifted, as to their position with respect to said base, to tighten or loosen said apron.

17. In a cigar bunching and wrapping machine, a base having a slot, a table, consisting of a sheet of metal bent

to form an arched top and substantially straight end portions carried by said base, guide rollers secured to said base, a bunching roller, means for movably connecting said roller with said base, an endless apron passing through the slot of said base and over said guide and bunching rollers and table, said bunching roller and one of the straight ends of said table adapted to permit of the formation of a pocket for tobacco in said apron, and said table adapted when subjected to manual pressure to swing rearward to close said pocket.

18. In a cigar bunching and wrapping machine, a base having a slot, a table consisting of a sheet of metal bent to form an arched top and substantially straight ends carried by said base, guide rollers secured to said base, a bunching roller, a bail for movably connecting said roller with said base, and for holding the same in engagement with the arched top of said table when moved over the same, an endless apron passing through the slot of said base and between said bail and said guide and bunching roller and table, said apron adapted to permit of the formation of a pocket for tobacco in the same and said table adapted when subjected to manual pressure to swing rearward to close the pocket in said apron prior to the closing of the same by the arched top thereof.

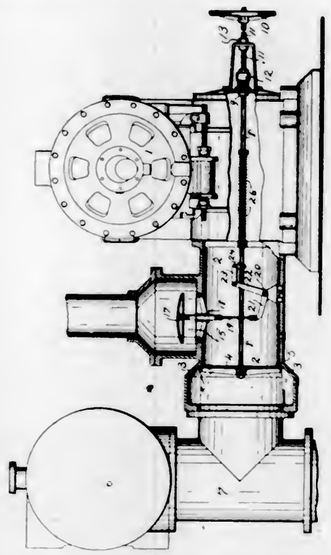
19. In a cigar bunching and wrapping machine, a base having a slot, a table consisting of a sheet of metal bent to form an arched top and substantially straight ends carried by said base, guide rollers secured to said base, a bunching roller, a bill for movably connecting said roller with said base, and for holding the same in engagement with the arched top of said table when moved over the same, an endless apron passing through a slot formed in said base and said bail and over said guide and bunching roller and table, said apron adapted to permit of the formation of a pocket for tobacco in the same and said table adapted when subjected to manual pressure to swing rearward to close the pocket in said apron prior to the closing of the same by the arched top thereof, and means for holding said base and by the same said table in an inclined position.

856,202. AUTOMATIC EXHAUST RELIEF-VALVE. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Mar. 28, 1904. Renewed Apr. 22, 1907. Serial No. 369,571.

Claim.—1. The combination with a fluid actuated motor; of a vacuum chamber arranged to receive fluid from the exhaust port of the motor; a valve controlling the delivery of fluid from the motor to said vacuum chamber; an auxiliary valve located at one side of the path of the motive fluid leading to said vacuum chamber and controlling the delivery of said motive fluid in another direction; said valves being connected to open and close in alternation; and means for closing said first mentioned valve when the fluid accumulates to a predetermined degree in the vacuum chamber.

2. The combination with a fluid actuated motor provided with an exhaust passage; of a main valve controlling the delivery of motive fluid through the exhaust passage in one direction; and an auxiliary valve located at one side of the path of the motive fluid leading to said vacuum chamber and controlling the delivery of such fluid in another direction; said valves being connected to open and close in alternation; a light tension valve closing device connected to close the main valve when the pressure upon both sides of such valve is nearly balanced; said main valve being adapted to be opened when the pressure beyond the main valve is reduced substantially below the pressure of the motive fluid discharged from said motor.

3. The combination with a fluid actuated motor provided with an exhaust passage, of a main valve controlling the delivery of motive fluid through the exhaust passage in one direction; an auxiliary valve controlling the delivery of such fluid in another direction; said valves being connected to open and close in alternation; a valve closing device operative with light tension to close the main valve against the pressure of motive fluid in the exhaust passage when the pressure on both sides thereof is nearly balanced; and means for reducing the pressure on the outer face of the valve.

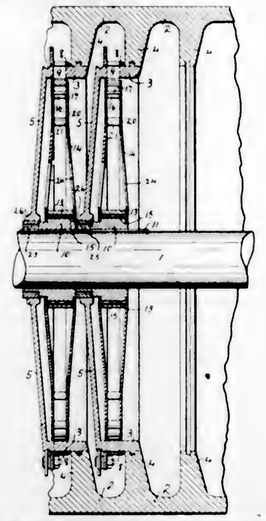


4. The combination with a vacuum chamber provided with a connecting inlet passage; a self closing main valve controlling the delivery of motive fluid through said passage to the vacuum chamber; an auxiliary valve controlling the delivery of such fluid from the connecting passage to a point exterior to the vacuum chamber; and elbow crank connections between the valves arranged to transmit motion from one to the other to open and close them in alternation; said main valve being adapted to be opened by the pressure of the fluid, when the pressure in the vacuum chamber is materially below the normal atmospheric pressure.

5. The combination with a fluid actuated motor provided with a vacuum chamber, and a passage connecting its exhaust port with the vacuum chamber; a main valve arranged to close against the pressure and controlling the delivery of motive fluid to the vacuum chamber; an auxiliary valve connected to open and close alternately with the main valve and controlling the delivery of motive fluid to a point exterior to the vacuum chamber; a valve stem connected with the main valve; and a spring connected with the stem and arranged to draw the valve in the direction of its seat; said spring being adapted to yield when the pressure on the inner face of the main valve is in excess of that on its outer face.

6. The combination with a fluid actuated motor provided with a vacuum chamber and a passage connecting its exhaust port with the vacuum chamber; a main valve arranged to close against the pressure and controlling the delivery of motive fluid to the vacuum chamber; an auxiliary valve connected to open and close alternately with the main valve and controlling the delivery of motive fluid to a point exterior to the vacuum chamber; a valve stem connected with the main valve; and a spring connected with the stem and arranged to draw the valve in the direction of its seat; said spring being adapted to yield when the pressure on the inner face of the main valve is in excess of that on its outer face; together with means for manually operating the valves.

856,203. TURBINE RUNNING-WHEEL. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Apr. 13, 1904. Renewed Apr. 19, 1907. Serial No. 369,116.



Claim.—1. A turbine running wheel, comprising a central hub, disks connected therewith, and provided with a series of vanes at their outer edges arranged to deliver motive fluid to the space between the disks, said disks having side walls converging from the hub to an intermediate point and extending therefrom in substantially parallel planes to the vanes.

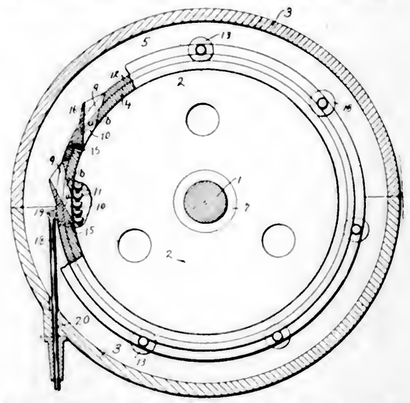
2. A turbine running wheel comprising a central hub, disks connected therewith, vanes secured between the outer portions of the disks and arranged for an inward delivery of motive fluid to the space between the disks, and spacing devices located at an intermediate point between the vanes and the hub, said disks being apertured and arranged to converge from the head to the spacing devices and being substantially parallel from the spacing devices to the vanes.

3. In a turbine, a set of running wheels, each having a hub provided with a reduced end; a nozzle partition having an aperture into which said reduced end portion of the hub extends; a split packing ring fitted to the reduced portion of the hub and arranged to bear against the partition, each of said packing rings being held in position abutting the larger portion of the corresponding hub, by the hub of adjacent running wheel.

4. A turbine running wheel having disks composing its side walls; a set of vanes located between the outer portions of the disks, and having converging front and rear walls, holding devices passing through the disks and between the said converging walls of the vanes in contact with both the front and rear walls on opposite sides respectively, of the central space between the walls.

856,204. TURBINE NOZZLE-VALVE. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Apr. 1, 1904. Renewed Apr. 22, 1907. Serial No. 369,572.

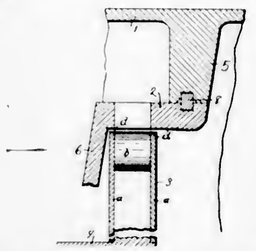
Claim.—1. In a turbine, the combination of a nozzle ring provided with nozzle apertures; of a valve ring encircling the nozzle ring and provided with apertures adapted to register with the nozzle apertures; and projections extending inwardly from the valve ring into each nozzle aperture and constituting one wall of the nozzle; together with a set of rollers mounted on the valve ring and arranged to support the valve ring from the nozzle ring.



2. In a turbine, the combination of a nozzle ring provided with nozzle apertures; a valve ring having apertures adapted to register with those of the nozzle ring and provided with inwardly and outwardly extending projections at one side of such apertures, each such aperture having a diagonal face adapted to form one wall of the nozzle.

3. In a turbine, the combination of a nozzle ring provided with nozzle apertures; a valve controlling delivery of fluid through the nozzle apertures; and rollers connected with the valve and supporting the latter from the nozzle ring.

856,205. TURBINE NOZZLE-PARTITION AND RUNNING-WHEEL. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Apr. 1, 1904. Renewed Apr. 22, 1907. Serial No. 369,575.



Claim.—1. In a turbine, the combination of a nozzle ring provided with a slot, and a plate subdividing said slot and provided with converging edge surfaces fitting corresponding channels in the side walls of the slot.

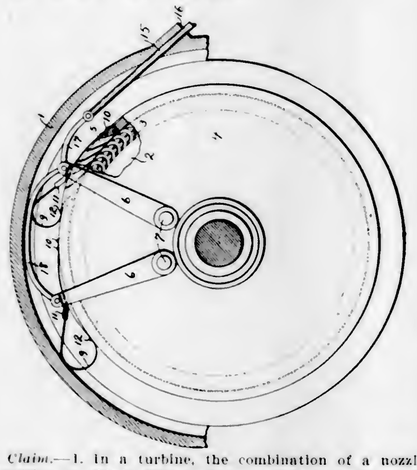
2. In a turbine a nozzle partition, having one member projecting inwardly from the outer casing, a cylindrical nozzle ring keyed to said member, and an inner member connected with the nozzle ring and having a bearing on the hub of the running wheel.

3. In a turbine, a nozzle partition, having one member projecting inwardly from the outer casing, a cylindrical nozzle ring keyed to said member, and an inner member connected with the nozzle ring and having a bearing on the hub of the running wheel; said inner member having a conical rearward slope from the hub to the nozzle ring.

4. In a turbine, the combination of a running wheel having side disks and vanes secured between the disks; said disks having their outer edges beveled inwardly in the di-

rection of the vanes; and a nozzle ring encircling said running wheel and provided with nozzles arranged for an inward delivery of motive fluid to the vanes.

856,206. TURBINE NOZZLE-VALVE. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Oct. 3, 1904. Renewed Apr. 22, 1907. Serial No. 369,573.



Claim.—1. In a turbine, the combination of a nozzle partition provided with apertures, each arranged to constitute an independent nozzle adapted for a separate delivery of motive fluid to the movable member of the turbine; flexible material adapted to cover and close the nozzle apertures; and means for progressively bending the flexible material outwardly from the partition to successively uncover said apertures.

2. In a turbine, the combination of a nozzle partition provided with nozzle apertures; flexible material adapted to cover and close said apertures; a movable device for bending said flexible material toward and away from the partition; and means for maintaining a uniformly varying relation between said device and the nozzle apertures.

3. In a turbine, the combination of a nozzle partition provided with nozzle apertures; flexible material adapted to cover and close said apertures; a movable device for bending said flexible material outwardly and away from the nozzle partition to successively uncover said apertures; a swinging connection pivotally secured to said device and to a fixed point of support; and means for actuating said device; said nozzle apertures being grouped in an arc corresponding substantially with that described by the outer end portion of the swing connection.

4. In a turbine, the combination of a nozzle partition provided with nozzle apertures arranged in groups; a strip of flexible material secured to the partition adjacent to the nozzles of each group and extended over the nozzle apertures in a position to close the same; and means for progressively bending the strip away from the partition.

5. In a turbine, the combination of a nozzle partition provided with a group of nozzle apertures comprising a strip of flexible material extended across said apertures, with one end secured to the partition, and the other end looped inwardly beyond the nozzles and secured to the partition in reversed position; and means for progressively adjusting the intermediate portion of said strip to and from the apertured portion of the partition to successively open or close said nozzle apertures.

6. In a turbine, the combination of a nozzle partition provided with an off set apertured portion constituting a nozzle ring; a strip of flexible material secured to the nozzle ring and extended over nozzle apertures therein; a lever pivotally connected with a suitable support and provided with a guide loosely engaging said strip, the inner portion of said guide being arranged in close proximity to the nozzle ring extending therefrom outwardly; and means for swinging said lever: the outer surface of said nozzle ring being curved in correspondence with the arc described by said guide.

856,207. TURBINE RUNNING-WHEEL. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed Oct. 3, 1904. Renewed Apr. 22, 1907. Serial No. 369,574.



Claim.—1. In a turbine running wheel, a set of rim walls, one of which is provided with a recessed inner face; a series of vanes, each having an end wall, notched in its outer portion and formed to project into the recessed portion of the rim and fitting the recess; and means for binding the rim walls together; said end wall of the vane having its inner surface inclined from the fluid receiving side toward the side of fluid discharge and the adjacent rim wall.

2. In a turbine running wheel; a set of rim walls; an annular series of vanes located between said walls and arranged to interlock with the rim walls; and means for binding said walls together comprising rivets extending through longitudinal apertures in the vanes.

3. In a turbine running wheel; a set of rim walls; an annular series of vanes located between said walls and arranged to interlock with the rim walls; and means for binding said walls together comprising rivets extending through longitudinal apertures in the vanes of greater diameter than the rivets.

4. In a turbine running wheel, a set of rim walls and a series of vanes secured between said walls; each of said vanes having a projection at one end fitting the next succeeding vane, and each such projection being tapered from the fluid receiving side of the vane to the side of fluid discharge.

856,208. TURBINE NOZZLE-PARTITION AND NOZZLE. CHARLES A. BACKSTROM, Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company, a Corporation of Wisconsin. Filed May 29, 1905. Renewed Apr. 22, 1907. Serial No. 369,576.



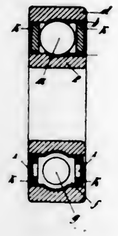
Claim.—1. A nozzle partition member, comprising a cast metal body having a nozzle structure of different material, with its sides and ends embedded in the cast metal, and forming one or more nozzle apertures in the partition member.

2. A nozzle partition member, comprising a cast metal body having a nozzle structure of different material with some of its wall faces embedded and cast in the body, said structure being arranged to form one or more nozzle apertures in the partition member.

3. A nozzle structure comprising a set of side walls and cross walls; said side walls and intermediate walls being provided with interlocking parts; and a body of metal cast on the outer surface of the side walls.

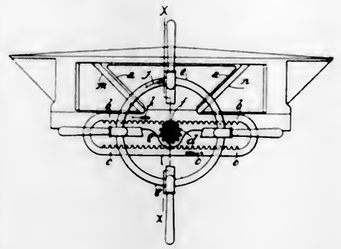
4. A nozzle structure comprising a set of side walls and cross walls; said side walls and intermediate walls being provided with interlocking parts; and a body of metal cast on the outer surface of the side walls, and on the outer surfaces of the cross walls at the ends of the structure.

856,209. BALL-BEARING. HERMANN BARTHEL, Schweinfurt, Germany. Filed Jan. 2, 1907. Serial No. 350,351.



Claim.—A ring ball-bearing, comprising in combination with the ball-bearing proper (*d*, *e*) and balls (*a*) inserted in said ball-bearing, intermediary pieces (*f*) provided with cavities (*g*) shaped corresponding to the contours of the balls and arranged between each two balls so as to receive the latter in its cavities and to offer them a proportionately large supporting surface but to possess a very small wall thickness at the tangent points between each two balls and thus to present a very small distance from ball to ball, rivet-bolts (*i*) provided at the outer faces of said intermediary pieces, and annuli (*k*) disposed at the outer faces of said ball-bearing and adapted, after the bearing is filled with balls and intermediary pieces, to be connected with said rivet-bolts and thus to form together with said intermediary pieces a rigid case for the balls, substantially as described and shown.

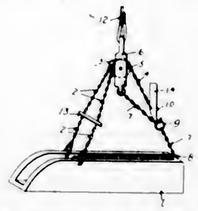
856,210. MITERING-MACHINE. WILLIAM BATTENSBY, Gateshead, England, assignor to The Lumsden Machine Company, Limited, Gateshead, England. Filed Jan. 30, 1906. Serial No. 298,636.



Claim.—1. A hand-operated mitering machine or wood trimmer, comprising the combination with the cutter or knife carriage of mangle-rack mechanism for operating it, said mechanism comprising two inversely disposed racks and means for bringing one or other of the racks into operation.

2. In a mitering machine or wood trimmer, the combination of a frame, a cutter or knife carriage adapted to be reciprocated in said frame, lateral and oppositely inclined knives or cutters on said carriage, an operating handle adapted for manual use, and mangle rack mechanism connected with such handle for operating said knife or cutter carriage, said mechanism comprising two inversely disposed racks and means for bringing one or other of said racks into operation whereby said cutter carriage can be moved in either direction by a movement of said handle in a single direction.

856,211. SELF-DUMPING BUCKET. BURTON A. BAUS, Gloversville, N. Y. Filed Apr. 9, 1907. Serial No. 367,260.



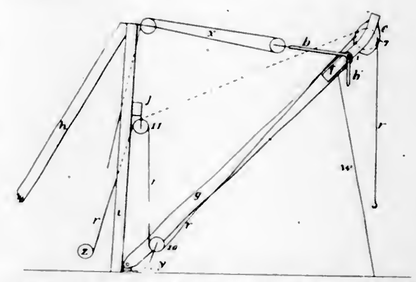
Claim.—1. The combination with a dumping-bucket; and a hoisting pulley-block and pulley; of a chain connecting said pulley-block with the rear end of said bucket; an automatically releasing hook adapted to connect with an intermediate portion of said chain; and a chain-connection between the front end of said bucket and said hook passing over said pulley.

2. The combination with a dumping-bucket; and a hoisting pulley-block and pulley; of a chain connecting said pulley-block with the rear end of said bucket; an automatically releasing hook adapted to connect with an intermediate portion of said chain; and a chain-connection between the front end of said bucket and said hook passing over said pulley, and having stops adapted to engage the opposite sides of the pulley-block whereby the movement of said chain-connection is limited.

3. The combination with a dumping-bucket; and a hoisting pulley-block and pulley; of a chain connecting said pulley-block with the rear end of said bucket; an automatically releasing hook adapted to connect with an intermediate portion of said chain; a pair of chains connecting the front end of said bucket with a common ring; and a chain passing over said pulley and connected at one end to said ring and at the other end to said hook.

4. The combination with a dumping-bucket; and a hoisting pulley-block and pulley; of a chain connecting said pulley-block with the rear end of said bucket; a hook-member having on one end an open hook adapted to engage an intermediate portion of said chain, and its other end over balanced; and a chain-connection between an intermediate portion of said hook-member and the front end of said bucket passing over said pulley.

856,212. BOOM-POINT FOR DERRICKS. RAYMOND F. BENNETT, Portland, Me. Filed Jan. 2, 1907. Serial No. 350,343.



Claim.—1. The herein described boom point for derricks having a block loosely hung or pivoted at the end of the boom so as to be capable of movement about two or more axes to conform to a limited side lead of the fall with the upper edge of the sheave above the line of the upper side of the boom.

2. The herein described boom point for derricks having an extension end for the boom extending above the general line of the boom and a sheave loosely hung or pivoted to

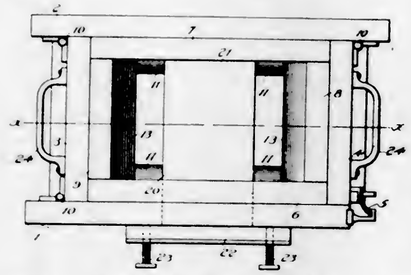
said extension and disposed between the end of the same and the end of the boom so as to be capable of movement about two or more axes with the upper edge of the sheave above the line of the upper surface of the boom.

3. The herein described boom point for derricks having a boom extension composed of two side plates and an end plate terminating beyond and above the center line of the boom and a block loosely hung from said end plate so as to be capable of movement about two or more axes with the upper edge of its sheave above the line of the upper side of the boom.

4. The herein described boom point for derricks having a boom extension composed of two side plates and an end plate terminating beyond and above the center line of the boom, an eye bolt in said end plate and a block hung loosely in said eye bolt having the upper edge of sheave above the line of the upper side of the boom.

5. The herein described boom point for derricks having a boom extension composed of two side plates and an end plate terminating beyond and above the center line of the boom, an eye bolt in said end plate and a block having its two side plates united by a pin which passes loosely through said eye bolt and has a recess on its under side.

856,213. MOLD FOR MAKING CONCRETE BLOCKS AND ARTIFICIAL STONE. WILLIAM A. BENTON, Fort Worth, Tex. Filed Apr. 30, 1906. Serial No. 314,497.

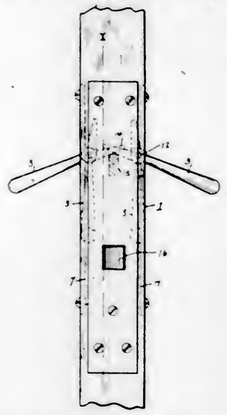


Claim.—1. A mold having side and end frame pieces connected together and capable of outward movement, molding pieces carried by said frame pieces, configurating blocks carried by said molding pieces, a core inserted horizontally through one of said sides and through the molding piece on that side and intercepting the configurating blocks on both sides, a draw bar attached to said core and resting against the outside frame piece, hand-screws in the plane of said core operating through said draw-bar and bearing against the outside frame piece in close proximity to the opening in said frame piece for said core and causing a gradual outward thrust of said core, and a facing mold of suitable design for forming the weather face of blocks.

2. A mold having a weather face molding piece of suitable design forming the bottom of the mold, side and end frame pieces hinged together at three corners, suitable latches for connecting the frame pieces together at the fourth corner, side and end molding pieces carried by said frame pieces, a core inserted horizontally through one side of said mold and abutting against the inside of the other side of said mold, a draw-bar attached to said core and resting against the outside of the frame piece on that side, and hand screws operating through said draw-bar in the plane of said core and bearing against the outside frame piece in close proximity to said core for causing a gradual thrust of said core in removing the same from said mold.

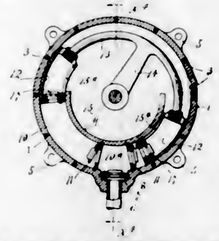
856,214. DOOR-LOCK. ANTON J. BERGER, Milwaukee, Wis. Filed Jan. 28, 1907. Serial No. 354,447.

Claim.—In a door lock the combination of a bolt inclosing case, a reciprocating bolt inclosed in said case, an elbow crank lever pivotally supported at the angle of its respective arms from said inclosing case, means for pivotally connecting one of the arms of said lever with one end of said reciprocating bolt, spring actuated means for normally retaining said bolt in its extended locking position, two door operating handles pivotally supported from the respective walls to said bolt inclosing case at right



angles to said elbow crank lever, the inner pivotally supported ends of said handles being adapted as their outer ends are raised to contact with the free arm of said elbow crank lever, whereby said lever is turned upon its supporting pivot and said bolt is withdrawn from its locking position, all substantially as and for the purpose specified.

856,215. PUMP. JOHN BERGSTROM and CARL A. WAHLEEN, Washburn, Wis. Filed Sept. 27, 1906. Serial No. 336,442.

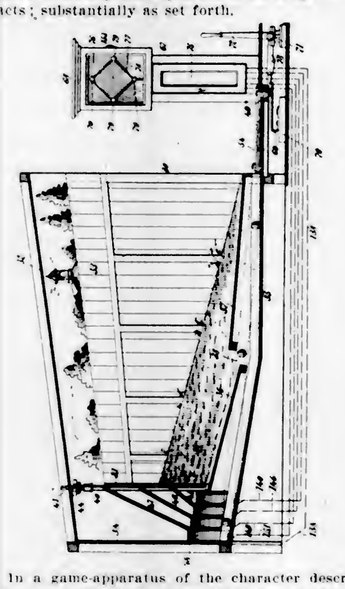


Claim.—In a pump, the combination with a casing having a segmental piston seat 10, of a valved water inlet passage opening into the intermediate portion of said piston seat, a water outlet passage opening from the main chamber of said casing, reversely acting check valves in said piston seat on the opposite sides of said inlet passage, segmental pistons working in the opposite extremities of said piston seat and provided with slots 15ª, check valves in said pistons, a rock shaft journaled in the said casing and provided at its outer end with a cooperating lever, and an arm secured to said rock shaft within said casing, and having reversely extended stems connected to said two pistons, substantially as described.

856,216. GAME APPARATUS. DAVID G. BLACK, Brooklyn, N. Y. Filed Feb. 15, 1907. Serial No. 357,475.

Claim.—1. In a game-apparatus of the character described, a chamber into which balls are to be driven, a target composed of strips of webbing secured in edge to edge relation at the inner end of said chamber and

through which target the balls are to pass, independent chutes beyond said target to receive the balls, and electric contacts on which the balls fall upon descending within said chutes, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot from base to base, means within said indicator for carrying said buttons along said slot, a device for actuating said button-carrying means, a stop to normally hold said button-carrying means stationary, and electrical means including a circuit for rendering said stop inoperative for a limited period upon a ball striking one of said contacts; substantially as set forth.



2. In a game-apparatus of the character described, a chamber into which balls are to be driven, a target composed of strips of webbing secured in edge to edge relation at the inner end of said chamber and through which target the balls are to pass, posts to which the ends of said strip are secured and one of which is capable of rotation for drawing said strips taut, independent chutes beyond said target to receive the balls, and electric contacts on which the balls fall upon descending within said chutes, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot from base to base, means within said indicator for carrying said buttons along said slot, a device for actuating said button-carrying means, a stop to normally hold said button-carrying means stationary, and electrical means including a circuit for rendering said stop inoperative for a limited period upon a ball striking one of said contacts; substantially as set forth.

3. In a game-apparatus of the character described, a chamber into which balls are to be driven, independent chutes at the inner end of said chamber to respectively receive the balls of different game-values, and electric contacts to be acted upon by the balls entering said chutes, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot from base to base, means within said indicator for carrying said buttons along said slot, a device for actuating said button-carrying means, a stop to normally hold said button-carrying means stationary, and electrical means including a circuit for rendering said stop inoperative for a limited period upon a ball striking one of said contacts; substantially as set forth.

4. In a game-apparatus of the character described, a chamber into which balls are to be driven, independent chutes at the inner end of said chamber to respectively receive the balls of different game-values, electric contacts to be acted upon by the balls entering said chutes, and inclined troughs leading from said chutes for directing the balls therefrom back to the batter's position, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot from base to base, means within said indicator for carrying said buttons along said slot, a device for actuating said button-carrying means, a stop to normally hold said button-carrying means stationary, and electrical means including a circuit for rendering said stop inoperative for a limited period upon a ball striking one of said contacts; substantially as set forth.

5. In a game-apparatus of the character described, a chamber into which balls are to be driven, independent chutes at the inner end of said chamber to respectively receive the balls of different game-values, electric contacts to be acted upon by the balls entering said chutes, inclined troughs extending from said chutes toward the front of said chamber, a general receiving trough 54 into which said troughs lead, a receiver 49 for the balls rolling down said trough 54 and being open at one end of its bottom to permit one ball to settle down somewhat below the floor of said receiver, a spring below the open end of said receiver, and means for actuating said spring to eject upwardly the ball over it so that said ball may be batted, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot from base to base, means within said indicator for carrying said buttons along said slot, a device for actuating said button-carrying means, a stop to normally hold said button-carrying means stationary, and electrical means including a circuit for rendering said stop inoperative for a limited period upon a ball striking one of said contacts; substantially as set forth.

6. In a game-apparatus of the character described, a chamber into which balls are to be driven, means for returning the balls to the front of said chamber, a general trough 54 to receive the balls returned, a receiver 49 connected therewith and into which the balls roll and which is open at one end of its bottom to permit one ball to settle down somewhat below the floor of said receiver, a spring below the open end of said receiver, and means for actuating said spring to eject upwardly the ball over it so that said ball may be batted; substantially as set forth.

7. In a game-apparatus of the character described, a chamber into which balls are to be driven, and electric contacts to be respectively engaged by the balls of different game-values, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot from base to base, means within said indicator for carrying said buttons along said slot, a device for actuating said button-carrying means, a stop to normally hold said button-carrying means stationary, and electrical means including a circuit for rendering said stop inoperative for a limited period upon a ball striking one of said contacts; substantially as set forth.

8. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game values, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot from base to base, means for carrying said buttons along said slot, a device for actuating said button-carrying means, a stop to normally hold said button-carrying means stationary, electrical means for rendering said stop inoperative upon a ball striking one of said contacts, and means for varying the periods during which said stop shall remain inoperative in accordance with the game values of the balls; substantially as set forth.

9. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game-values, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot from base to base, means for carrying said buttons along said slot, a device for actuating said button-carrying means, a stop to normally hold said button-carrying means stationary, electrical means for rendering said stop inoperative upon

a ball striking one of said contacts, means acting in opposition to said actuating device for controlling the speed of said button-carrying means, and means for varying the periods during which said stop shall remain inoperative in accordance with the game-values of the balls; substantially as set forth.

10. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game-values, combined with an indicator having a face-plate possessing a diamond-slot, buttons to traverse said slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, a stop to normally hold said wheel stationary, electrical means for rendering said stop inoperative upon a ball striking one of said contacts, and means for varying the period during which said stop shall remain inoperative in accordance with the game-values of the balls; substantially as set forth.

11. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game-values, combined with an indicator having a face-plate possessing a diamond-slot, buttons to traverse said slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, a stop to normally hold said wheel stationary, electrical means for rendering said stop inoperative upon a ball striking one of said contacts, means acting in opposition to said wheel for controlling its speed, and means for varying the period during which said stop shall remain inoperative in accordance with the game-values of the balls; substantially as set forth.

12. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game-values, combined with an indicator having a face-plate possessing a diamond-slot, buttons to traverse said slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, a stop to normally hold said wheel stationary, electrical means for rendering said stop inoperative upon a ball striking one of said contacts, means for delivering one of said buttons into said diamond-slot at the home-base position each time said wheel actuating means is reset after an operation of said wheel, and means for varying the period during which said stop shall remain inoperative in accordance with the game-values of the balls; substantially as set forth.

13. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game-values, combined with an indicator having a face-plate possessing a diamond-slot, buttons to traverse said slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, a stop to normally hold said wheel stationary, electrical means for rendering said stop inoperative upon a ball striking one of said contacts, means for delivering one of said buttons into said diamond-slot at the home-base position each time said wheel actuating means is reset after an operation of said wheel, and means for varying the period during which said stop shall remain inoperative in accordance with the game-values of the balls; substantially as set forth.

14. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game-values, combined with an indicator having a face-plate possessing a diamond-slot and a home-slot leading thereto at the home-base position, buttons to traverse said diamond-slot and to initially lie within said home-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, means for actuating said wheel, spring actuated means normally pressing the buttons in said home-slot toward said diamond-slot, a stop to normally hold said wheel stationary, electrical means for rendering said stop inoperative upon a ball striking one of said contacts so that said wheel may be rotated by its actuating means, means in operative connection with said wheel actuating means for releasing the spring pressure from said buttons in the home-slot while said wheel is in motion, and means for varying the period during which said wheel may remain in motion; substantially as set forth.

15. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game-values, combined with an indicator having a face-plate possessing a diamond-slot and a home-slot leading thereto at the home-base position, buttons to traverse said diamond-slot and to initially lie within said home-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, a shaft on which said wheel is loosely mounted, a driving shaft, a ratchet wheel and gear wheel connected together and freely mounted on said driving shaft, a pinion wheel connected with said button-carrying wheel and engaged by said gear wheel, a pawl connected with said driving shaft for imparting motion through said ratchet wheel and gearing to said button-carrying wheel, a weight connected with and projected from one side of said driving shaft for operating the same and said wheel, spring-actuated means normally pressing the buttons in said home-slot toward said diamond-slot, a stop to normally hold said wheel stationary, electrical means for rendering said stop inoperative upon a ball striking one of said contacts so that said wheel may be rotated by its actuating means, means in operative connection with said wheel actuating means for releasing the spring pressure from said buttons in the home-slot while said wheel is in motion, and means for varying the period during which said wheel may remain in motion; substantially as set forth.

16. In a game apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective game-values, combined with an indicator having a face-plate possessing a diamond-slot and a home-slot leading thereto at the home-base position, buttons to traverse said diamond-slot and to initially lie within said home-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, a shaft on which said wheel is loosely mounted, a driving-shaft, a ratchet wheel and gear wheel connected together and freely mounted on said driving shaft, a pinion wheel connected with said button-carrying wheel and engaged by said gear wheel, a pawl connected with said driving shaft for imparting motion through said ratchet wheel and gearing to said button-carrying wheel, a weight connected with and projected from one side of said driving-shaft for operating the same and said wheel, an arm (111) secured to said shaft, a follower rod (118) to press the buttons from said home-slot into said diamond-slot, spring mechanism for acting against said rod comprising a coiled spring, an arm connected therewith and with said rod and another arm connected with said spring and with said arm (111) so that upon the latter arm moving in one direction it may place a tension in said spring and in the opposite direction it may relieve said tension, a stop to normally hold said wheel stationary, electrical means for rendering said stop inoperative upon a ball striking one of said contacts, and means for varying the period during which said stop shall remain inoperative in accordance with the game-values of the balls; substantially as set forth.

17. In a game-apparatus of the character described, an indicator having a face-plate possessing a diamond-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, a stop to normally hold said wheel stationary, means to be rendered active by driven balls for effecting the release of said stop, means for restoring said stop to its operative position, and means for varying the period during which said stop may remain inoperative in accordance with the game-values of the balls; substantially as set forth.

18. In a game-apparatus of the character described, an indicator having a face-plate possessing a diamond-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, a stop to normally hold said wheel stationary, means to be rendered active by driven balls for effecting the release of said stop, means for restoring said stop to its operative position, means for varying the period during which said stop may remain inoperative in accordance with the game-values of the balls, and means for acting in opposition to said wheel for controlling the speed of the latter; substantially as set forth.

19. In a game-apparatus of the character described, an indicator having a face-plate possessing a diamond-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, a stop to normally hold said wheel stationary, means to be rendered active by driven balls for effecting the release of said stop, means for restoring said stop to its operative position, means for varying the period during which said stop may remain inoperative in accordance with the game-values of the balls, a rotary shaft (87) geared to said wheel and adapted to rotate oppositely thereto, a rotary disk (100) mounted on said shaft, pawl and ratchet mechanism normally connecting said disk with said shaft and adapted to impart motion to the same when said shaft is in motion and to permit the momentum of said disk to continue it in motion independently of said shaft when the latter stops and a magnet in whose field said disk rotates; substantially as set forth.

20. In a game-apparatus of the character described, an indicator having a face-plate possessing a diamond-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, a stop to normally hold said wheel stationary, means to be rendered active by driven balls for effecting the release of said stop, means for restoring said stop to its operative position, means for varying the period during which said stop may remain inoperative in accordance with the game-values of the balls, and means for delivering one of said buttons into said diamond-slot at the home-base position each time said wheel actuating means is reset after an operation of said wheel; substantially as set forth.

21. In a game-apparatus of the character described, an indicator having a face-plate possessing a diamond-slot and a home-slot leading thereto at the home-base position, buttons to traverse said diamond-slot and to initially lie within said home-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond-slot, said radial slots permitting the buttons to slide back and forth in them to meet the requirements of said diamond-slot, means for actuating said wheel, spring actuated means normally pressing the buttons in said home-slot toward said diamond-slot, a stop to normally hold said wheel stationary, means to be rendered active by driven balls for effecting the release of said stop, means for restoring said stop to its operative position, means for varying the period during which said stop may remain inoperative, and means in operative connection with said wheel actuating means for holding said spring pressure released from said buttons in the home-slot while said wheel is in motion; substantially as set forth.

22. In a game-apparatus of the character described, an indicator having a face-plate possessing a diamond-slot and a home-slot leading thereto at the home-base position, buttons to traverse said diamond-slot and to initially lie within said home-slot, a wheel behind said face-plate and having in it radial slots for carrying said buttons along said diamond slot, a shaft on which said wheel is loosely mounted, a driving shaft, a ratchet wheel and gear wheel connected together and freely mounted on said driving shaft, a pinion wheel connected with said button carrying wheel and engaged by said gear wheel, a pawl connected with said driving shaft for imparting motion through said ratchet wheel and gearing to said button carrying wheel, a weight connected with and projected from one side of said driving shaft for operating the same and said wheel, an arm (111) secured to said shaft, a follower rod (118) to press the buttons from said home-slot into said diamond-slot, spring mechanism for acting against said rod comprising a coiled spring, an arm connected therewith and with said rod and another arm connected with said spring and with said arm 111 so that upon the latter arm moving in one direction it may place a tension in said spring and in the opposite direction it may relieve said tension, a stop to normally hold said wheel stationary, means to be rendered active by driven balls for effecting the release of said stop, means for restoring said stop to its operative position, and means for varying the period during which said stop shall remain inoperative; substantially as set forth.

23. In a game-apparatus of the character described, a series of electric contacts to be respectively engaged by driven balls in accordance with their respective values, combined with an indicator having a face possessing a diamond-slot, buttons to traverse said slot, means for carrying said buttons along said slot, a device normally exerted to actuate said button-carrying means, a stop to normally hold said button-carrying means stationary, an electro-magnet with circuit conductors leading from said contacts for rendering said stop inoperative by a ball striking one of said contacts, relays and conductors for respectively maintaining a local circuit through said electro-magnet after the balls leave said contacts, and means operable with said button-carrying means for breaking said local circuits and thereby deënergizing said electro-magnets at varying points in accordance with the game-values of the driven balls and the distance said buttons are to travel; substantially as set forth.

856,217. FOLDING PARTITION. THOMAS R. BOONE, Rochester, N. Y. Filed Sept. 7, 1906. Serial No. 333,653.

Claim.—1. A folding partition consisting of a pair of arms with pivotal bearings upon a rigid holding body and a rod joined with flexible joints at the ends of the arms, said arms and the rod being adapted to swing together in a plane.

2. A folding partition having a pair of parallel swing-arms supported by a holding body in a plane, a rod with bend at the middle joined pivotally to the free ends of the swing-arms, the latter being adapted to occupy alternately horizontal and vertical positions.

3. A metallic folding partition having a pair of similar swing-arms supported by a holding body, a rod having a pair of loops rigidly fixed thereto joined pivotally to the free ends of the swing-arms, said rod being adapted to occupy a position at right angles with the arms or parallel with said arms.

4. A cabinet for holding goods, provided with a series of folding partitions each having a pair of swing-arms held pivotally to the cabinet, and a connecting rod joined pivotally to the free ends of the swing-arms, said arms and the rod being adapted to project from the back portion of

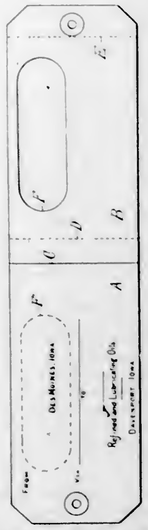
the cabinet to divide the space therein or be folded against said back portion out of the way.



5. A cabinet for holding goods, provided with a series of holding partitions each having a pair of swing-arms held pivotally to the cabinet, and a connecting rod joined pivotally to the free ends of the swing-arms, said rod having a part projecting beyond one swing-arm to pierce the floor of the cabinet.

6. A cabinet for holding goods provided with a series of holding partitions each formed of a pair of similar arms, rests for pivotally holding one end of each arm said rests being secured respectively to the back portion and to the floor of the cabinet, and a rod joined pivotally to the free ends of the arms, said arms and the rod together constituting a jointed folding frame to divide the space of the cabinet or be turned out of action.

856,218. SHIPPING-TAG. WILLIS N. BRAGG, Davenport, Iowa. Filed Feb. 7, 1907. Serial No. 356,185.

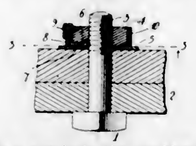


Claim.—1. The combination of a shipping tag and a return tag formed integral therewith, folded one upon the other, the shipping tag carrying an opening through which a portion of the contents of the return tag may be read.

2. The combination of a shipping tag having a return tag formed integral therewith, and folded one upon the other, the shipping tag thereof carrying an opening through which a portion of the contents of the return tag may be read, and perforated lines upon the shipping tag near each end.

3. The combination of a shipping tag having a return tag formed integral therewith, and folded one upon the other, the shipping tag thereof carrying an opening through which a portion of the contents of the return tag may be read, and a perforated line upon the shipping tag near the fold.

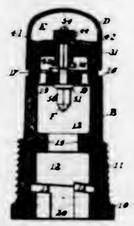
856,219. NUT-LOCK. JACOB O. BROADFOOT, Gordon, Tex. Filed Sept. 13, 1906. Serial No. 334,496.



Claim.—1. In a nut lock, the combination with a bolt, of a nut screwed thereon and having a groove or channel extending from one of its faces to the central threaded opening therein, a locking key engaged with one face of the nut and having a portion to enter said groove and engage the threads of the bolt, and a band to fit over the nut and said key to retain the latter upon the nut and force it into engagement with the threads of the bolt, said key having its projecting end bent over upon said band to retain the latter upon said nut.

2. In a nut lock, the combination with a bolt, of a nut screwed thereon and having in its bottom face a tangentially-extending groove opening into the threaded aperture in the nut and upon one side face of the nut, an angular locking key having a short end seated in said groove and a long end engaged with said side face of the nut, and a band to fit over the nut and the long end of said key to retain the latter upon the nut and to force its short end into engagement with the threads of the bolt, the long end of said locking key being bent over said band to retain the latter upon the nut, substantially as shown and described.

856,220. BEER-FAUCET. FRIEDRICH E. BRUECKNER, Lawrence, Mass. Filed Mar. 24, 1906. Serial No. 307,948.



Claim.—1. In a beer faucet, a hollow cylinder comprising a closed inner end provided with a central circular aperture and passages for the liquid, a plunger provided with sectional end cams and legs adapted to pass through said passages and to serve as guides, a screw cap carried by the plunger, a stem adapted to pass through the central aperture in the cylinder and the center of the plunger, wings carried by the stem and adapted to coöperate with the end cams, a spring adapted to open the valve, and a spigot adapted to fit inside the cylinder and to turn the stem.

2. In a beer faucet, a hollow cylinder with a closed inner end provided with a central aperture and passages, a valve comprising a plunger provided with guides and end cams and a stem with wings adapted to operate the end cams, a spring adapted to keep the valve open, a cap carried by the valve, and a spigot adapted to turn its stem and so operate the valve.

3. In a beer faucet, a hollow cylinder comprising a closed inner end provided with apertures for the passage of liquid together with an annular shoulder and an annular channel, combined with a cam actuated spring valve adapted to slide to and from the end of said cylinder, an elastic washer adapted to engage said shoulder and carried by the valve, a screw cap carried by the valve and adapted to enter and close the annular recess in the cylinder, and a spigot adapted to operate the valve as described.

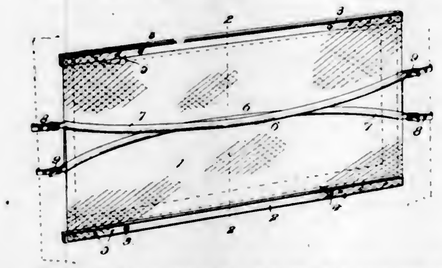
4. In a beer faucet, a hollow cylinder comprising a closed inner end provided with a central orifice and passages for the liquid, a stem adapted to pass through said central orifice and having a shoulder to hold it in place, wings carried by the stem, a plunger comprising sectional end cams and a ring from which project guide legs, a helical spring located between the plunger and cylinder end, and an elastic washer carried by the ring of the plunger, combined with a screw cap carried by the plunger, and a spigot adapted to turn the stem as described.

5. In a beer faucet, a hollow cylinder comprising a closed inner end provided with a central orifice and passages for the liquid, a stem adapted to pass through said central orifice and having a shoulder to hold it in place, wings carried by the stem, a plunger comprising sectional end cams and a ring from which project guide legs, a helical spring located between the plunger and cylinder end, an elastic washer carried by the ring of the plunger, and a spigot adapted to turn the stem as described.

6. In a beer faucet, a hollow cylinder comprising a closed inner end provided with a central orifice and passages for the liquid together with an annular shoulder and an annular channel, a stem adapted to pass through said central orifice and having a shoulder to hold it in place, wings carried by the stem, a plunger comprising sectional end cams and a ring from which project guide legs, a helical spring located between the plunger and the cylinder end, and an elastic washer carried by the ring of the plunger, combined with a screw cap carried by the plunger, and a spigot adapted to turn the stem as described.

7. In a faucet valve for beer barrels, a valve seat, a stem comprising a shoulder and adapted to pass through said seat, wings carried by the stem, a plunger comprising sectional end cams and a ring from which project guide legs, a helical coiled band spring interposed between the plunger and valve seat, and an elastic washer carried by the ring of the plunger.

856,221. SCREEN. ARNO BUFE, Moline, Ill. Filed Feb. 6, 1907. Serial No. 356,104.

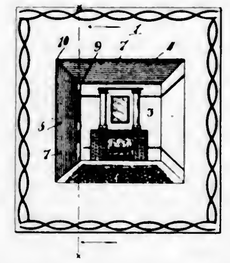


Claim.—1. A device of the character described comprising a pair of flaps the inner edges of which overlap and are curved inwardly, elastic bands extending along the overlapping edges of the flaps, and means carried by the flaps for securing the same in position.

2. A device of the character described comprising a pair of flaps the inner edges of which overlap and are curved inwardly, elastic bands extending along the overlapping edges of the flaps, and fastening members carried by the extremities of the elastic bands.

3. A device of the character described, comprising a pair of flaps, the inner edges of which overlap and are curved inwardly at an intermediate point, bars extending along the outer edges of the flaps, elastic bands extending along the inner edges of the flaps, and hook members detachably and adjustably connected to the extremities of the elastic bands.

856,222. EXHIBITING DEVICE TO SHOW HARMONIOUS COLOR COMBINATIONS IN ROOMS. WILLIAM CHURCH, Chicago, Ill. Filed Dec. 20, 1906. Serial No. 348,804.



Claim.—1. In a device of the character described, the combination of a folder formed of a front and rear fold, there being a representation of a room upon the outer surface of the folder, one of the side walls and the ceiling in said representation being cut away, a plurality of color cards mounted upon the inside of the said folder, the said cards being cut so as to present, when placed at right angles to each other, a mitered line coinciding to a line drawn from the inner to the outer corner of the room at the point where the ceiling and side wall meet, for the purpose set forth, substantially as described.

2. A color exhibiting device formed with a top and bottom, there being a representation of a room upon the outer surface of the top, there being openings in the top where the ceiling and one of the side walls would appear in said representation, a plurality of color cards mounted upon the inside of the device said cards being cut so as to present, when placed at right angles to each other, a mitered line coinciding to a line drawn from the inner to the outer corner of the room at the point where the ceiling and side wall meet, for the purpose set forth, substantially as described.

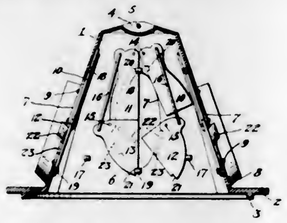
3. A color exhibiting device formed with a top and bottom, there being a representation of a room upon the outer surface of the top, a plurality of color cards mounted upon the inside of the said device, there being openings in the pictured room to permit the colors upon the said cards to show from the exterior of the device, the whole presenting a complete room showing the actual colors in combination, for the purpose set forth, substantially as described.

856,223. SAD-IRON HEATER. ANNA M. CLARKE, Scranton, Pa. Filed Sept. 19, 1906. Serial No. 335,272.

Claim.—1. A heater of the character described, comprising a hollow body having an opening in one of its sides, means for supporting a sad iron upon the outer face of said side above said opening, and a self-closing door located upon the inner face of said side for closing said opening.

2. A heater of the character described comprising a hollow body having flat inclined sides formed with openings of less size than the bottom of a sad iron, a sad iron supporting flange projecting outwardly from each of said sides and arranged around the bottom and sides of each of said openings, projections arranged upon the outer faces of said sides between the edges of said openings and said iron supporting flanges for spacing the bottoms of sad irons above

the sides of the heater body and doors located on the inner faces of said sides for closing said openings, substantially as shown and for the purpose set forth.



3. A heater of the character described comprising a hollow body formed with flat inwardly and upwardly-inclined sides each of which is provided with a centrally-arranged opening of less size than the bottom of a sad iron, said body also having a closed top formed with a depression, a rigid cross-bar arranged across said depression and formed integral with said body, a base flange projecting from the open bottom of said body, and formed upon its bottom with an annular shoulder to enter the opening in a stove top, a sad iron supporting flange projecting outwardly from each of the sides of the heater body and arranged around the bottom and sides of the openings in the sides of the heater body, and projections arranged upon the sides of the heater body between the edges of their openings and said iron supporting flanges for spacing the bottoms of sad irons above the sides of the heater body, substantially as shown and for the purposes set forth.

4. A heater of the character described comprising a hollow body formed with flat inwardly and upwardly-inclined sides each of which is provided with a centrally-arranged opening of less size than the bottom of a sad iron, said body also having a closed top formed with a depression, a cross-bar arranged in said depression, a base flange projecting from the open bottom of said body, and formed upon its bottom with an annular shoulder to enter the opening in a stove top, a sad iron supporting flange projecting outwardly from each of the sides of the heater body and arranged around the bottom and sides of the openings in the sides of the heater body, projections arranged upon the sides of the heater body between the edges of their openings and said iron supporting flanges for spacing the bottoms of sad irons above the sides of the heater body, and movable doors located upon the inner faces of said sides for closing the openings in the sides of the heater body.

5. A heater of the character described comprising a hollow body having an opening in one of its sides, means for supporting a sad iron above the opening in said side, and a door located within the body for closing said opening.

6. A heater of the character described comprising a hollow body having an opening in one of its sides of less size than the bottom of a sad iron, means for supporting a sad iron above the opening in said side, and movable doors located upon the inner face of said side for closing said opening.

7. A heater of the character described, comprising a hollow body having an opening in one of its sides, means for supporting a sad iron above the opening in said side, a swinging door mounted upon the inner face of said side and adapted to close said opening, and a projection upon said door extending through the opening in said side of the body and adapted to be engaged by a sad iron for opening said door, substantially as described.

8. A heater of the character described, comprising a hollow body having an opening in one of its sides, means for supporting a sad iron above the opening in said side, a door pivoted upon the inner face of said side and adapted to swing downwardly by gravity to close said opening, a stop for limiting the swinging movement of said door, and a projection upon said door extending through the opening in the side of said body and adapted to be engaged by a sad iron for opening said door, substantially as described.

9. A heater of the character described, comprising a hollow body having an opening in one of its sides, means for supporting a sad iron above the opening in said side, pairs of door sections pivoted upon the inner face of said side and adapted to swing downwardly by gravity to close the opening in said side, links connecting the door sections of each pair to cause them to swing simultaneously, and projections upon certain of said door sections extending through the opening in said side and adapted to be engaged by a sad iron for opening said door sections, substantially as described.

10. A heater of the character described, comprising a hollow body having an opening in one of its sides, means for supporting a sad iron above the opening in said side, a pair of oppositely swinging doors pivoted upon the inner face of said side and adapted to close the opening therein, and oppositely inclined projections upon said doors extending through the opening in said side of the body and adapted to be engaged and move apart by a sad iron for opening said doors, substantially as described.

11. A heater of the character described comprising a hollow body having an opening in one of its sides, and a self-closing door for said opening adapted to be held open by an iron supported upon said side of the body and above said opening.

12. A heater of the character described comprising a hollow body having an opening in one of its sides, and a gravity closing door adapted to be held open by a sad iron supported upon said side of the body and above said opening.

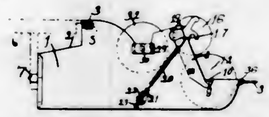
13. A heater of the characted described comprising a hollow body having an opening in one of its sides, a swinging door for said opening mounted to swing normally to its closed position, and means upon said door to be engaged by a sad iron for opening said door and for supporting said iron above the opening in the side of the body.

14. A heater of the character described comprising a hollow body having an opening in one of its sides, gravity closing doors located upon the inner faces of said side for closing said opening, and means upon said doors for engagement by a sad iron for opening said doors and supporting said iron above the opening in the side of said body.

15. A heater of the character described comprising a hollow body having an opening in one of its sides, gravity closing doors for closing said opening, and projections upon said doors for engagement by a sad iron for opening said doors and supporting said iron above the opening in the side of said body.

16. A heater of the character described comprising a hollow body having an opening in one of its sides, pairs of pivotally mounted door sections connected for simultaneous swinging movement and adapted to swing to their closed position by gravity, and inclined projections upon certain of said door sections adapted to be engaged by and to support a sad iron, substantially as shown and described.

856,224. PASTE-APPLYING MACHINE. ARCHER D. CLINGMAN, Oakdale, Nebr. Filed Dec. 31, 1906. Serial No. 350,167.



Claim.—1. A paste applying machine comprising a tank, means to support said tank upon the end of a paste board, means to regulate the position of the same thereon, a paste applying roller revolubly-mounted in said tank, a paper roll shaft, means to guide and hold the paper in position when being unwound from said shaft, and a pressing roller to hold the paper in engagement with said paste applying roller, substantially as described.

2. A paste applying machine comprising a tank, means to support said tank on the end of the paste board, a paste applying roller revolubly-mounted in the forward side of said tank, means to remove the surplus paste from the ends of said roller, a revolubly-mounted paper roll shaft, a spring-projected guide disk on said shaft to engage the end of the roll thereon, a pressing roller, and means to hold the same in yielding engagement with said paste applying roller, substantially as described.

3. A paste applying machine comprising a tank, a paste applying roller revolubly-mounted therein, spring-projected scraper plates adapted to be engaged with said roller adjacent to its opposite ends, a paper roll shaft revolubly-mounted in said tank, means to hold and guide the paper when drawn from said roller, a pressing roll, pivotally-mounted holding devices to engage the journals of said pressing roller to hold the same into engagement with said paste roll, an adjustably-mounted spring connected to said roll holding devices, and means arranged on one end of said pressing roll to turn said paste roll in a direction opposite to that in which the pressing roll is turned by the paper drawn over the same, substantially as described.

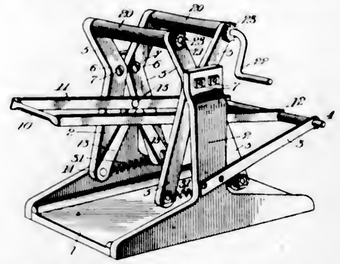
4. A paste applying machine comprising a tank, a paste applying roller revolubly-mounted in said tank, a gear wheel on one end of said roller, a paper roll shaft journaled in said tank, a pressing roller, pivotally-mounted hooks adapted to hold said pressing roller into engagement with bearing recesses formed in the end of said tank, springs connected to said hooks to hold said pressing roller in yielding engagement with said paste roller, adjusting bolts connected to said springs to regulate the tension thereof, and a gear wheel arranged on one end of said pressing roller to engage the gear wheel on the adjacent end of said paste roller whereby the latter is driven, substantially as described.

5. A paste applying machine comprising a tank covered or inclosed at one side to form a paste receptacle, a paste applying roller journaled in the opposite side of said tank, a gear wheel arranged on one end of the shaft of said roller, a revolubly-mounted paper roll shaft, a pressing roller, pivotally-mounted hooks adapted to be removably engaged with the ends of said pressing roller shaft to hold the same into engagement with the opposite ends of the tank and to hold said roller into engagement with the paste roller, adjustable presser springs connected to said hooks to force said pressing roller into engagement with the paste roller, a gear wheel mounted on the end of said pressure roll shaft to engage the gear on the adjacent end of the paste roller, the arrangement of said pressing roller and its gear being such that the gear wheel on the paste roller shaft will be turned one revolution for each foot of paper drawn over the pressing roller, and means on said paste roller gear to indicate each foot of paper pulled from the machine, substantially as described.

6. A paste applying machine comprising a tank covered or inclosed at one side to form a paste receptacle, a paste applying roller journaled in the opposite side of said tank, a gear wheel arranged on one end of the shaft of said roller, a revolubly-mounted paper roll shaft, a pressing roller, pivotally-mounted hooks adapted to be removably-engaged with the ends of said pressing roller shaft to hold the same into engagement with the opposite ends of the tank and to hold said roller into engagement with the paste roller, adjustable presser springs connected to said hooks to force said pressing roller into engagement with the paste roller, a gear wheel mounted on the end of said pressure roll shaft to engage the gear on the adjacent end of the paste roller, the arrangement of said pressing roller and its gear being such that the gear wheel on the paste roller shaft will be turned one revolution for each foot of paper drawn over the pressing roller, a projection on the end of said tank and a click spring on the inner side of said paste roller gear adapted to be brought into engagement with said projection at each complete revolution of said gear, thereby indicating to the operator when each foot of paper is drawn through the machine, substantially as described.

7. A paste applying machine comprising a tank closed or covered at one side to form a paste receptacle, a supporting rod, means on said tank whereby the same is supported upon hooks on the end of a paste board, a pivoted adjusting block on the inner side of said tank whereby the position of the same may be adjusted to regulate the flow of paste therein, a carrying rod arranged in the outer side of the tank, a handle formed on said rod whereby the tank may be carried in the hand, a fabric covered paste applying roller removably-mounted to revolve in said tank, a paper roll shaft revolubly-mounted in said tank, a spring projected guide disk to hold and guide the paper in position on said roll shaft, means formed in the opposite ends of the tank to hold the adjacent end of the roll out of engagement with the inner wall of said end of the tank, a pressing roller removably mounted on the ends of said tank, adjustable means to forcibly hold said roller into engagement with the paste roller, whereby the paper drawn from said paper roll shaft between said pressing roller and the paste roller will be evenly supplied with paste from the latter, means on the end of said pressing roller to turn said paste applying roller in the opposite direction, and means whereby each foot of paper pulled from the machine will be indicated to the operator, substantially as described.

856,225. MOP-WRINGER. HAROLD COLBY, Spokane, Wash. Filed June 7, 1906. Serial No. 320,616.

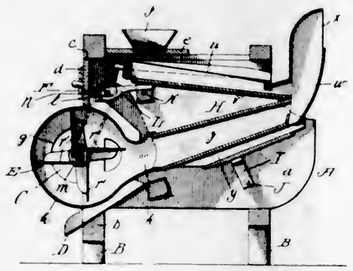


Claim.—The herein described wringer, the same comprising a base having spaced uprights, duplicate pairs of main levers of which each lever is bent at an obtuse angle and pivoted at its bend to one of said uprights, two rollers connecting the upper ends of the levers, gears on the ends of said rollers a crank handle on the shaft of one roller, toggle levers connecting the lower ends of the levers of each pair, contractile springs drawing said lower ends normally toward each other; rigid supports projecting to the rear from said uprights, a transverse rod connecting the outer end of said supports, and a U-shaped bail whose ends are pivoted on said rod, whose sides are pivoted to the central pivots of said toggles and whose transverse central piece forms a foot-lever, the position of said rod being such that when said foot-lever is completely depressed the central pivots of the toggles are below a line through their end pivots, for the purpose set forth.

856,226. FANNING-MILL. MARINA D. COLLIS, Orangeburg, Ky. Filed Aug. 30, 1906. Serial No. 332,663.

Claim.—In a fanning mill, the combination of a casing open at its forward end and having an opening in the upper portion of its rear wall and a door controlling said opening, a fan casing fixed in the lower rear portion of the casing and having a forwardly disposed discharge spout, a rotary fan mounted in the fan casing, a chute for cleaned grain inclined downward and reaward, below the fan casing, a hopper on the upper rear portion of the casing, a transverse shaft journaled in the upper, rear portion of the casing in front of said door and having a crank, a driving connection intermediate the rotary fan and the shaft, a trunk removable through the forward open end of the casing and having a rearwardly extending

arm detachably connected to the crank of the shaft in front of said door and also having depending arms; said trunk comprising a screen arranged to receive uncleaned grain from the hopper, a forwardly declined board arranged to receive grain from the screen, a forward boot arranged to receive grain from the board and having a discharge opening in its upper portion, a conduit for air



connecting the discharge spout of the fan casing and the lower portion of the boot, and a conduit disposed below the air conduit and arranged to receive cleaned grain from the boot, and removable pintles pivotally connecting the depending arms of the trunk to the side walls of the casing.

856,227. SIGN. GEORGE L. CRABB, Champaign, Ill. Filed Oct. 27, 1906. Serial No. 340,919.



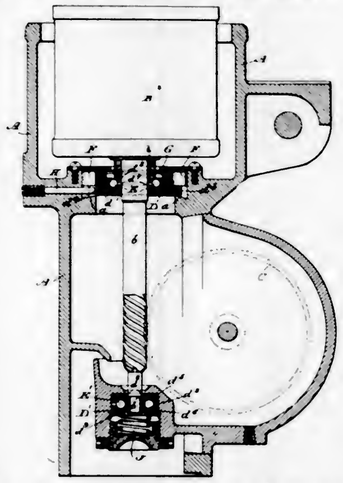
Claim.—1. A universal sign comprising a body plate provided with a display opening, a series of display disks mounted at the back of said display opening, one disk overlapping the next adjacent disk, a portion of each overlapped disk projecting, each disk being provided with display matter at its margin, a series of overlapping strips free at one end, the disks being mounted to rotate in the free ends of the strips, and a back support to which the other ends of said strips are secured.

2. A universal sign comprising a body plate provided with a longitudinal display slot, a back, a series of longitudinally extending strips secured to the back at one end and having their other ends free, and a series of display disks pivotally secured at their centers to the free ends of said strips, said strips serving as spacing devices between every two disks, substantially as described.

3. A universal sign consisting of a body plate provided with a longitudinal display opening, a back, a series of longitudinally extending strips, each of which is secured at one end to the front face of said back, the said strips overlapping each other and of substantially the same length, and a series of display disks pivotally secured to the free ends of the respective strips, said disks overlapping each other, a portion of each overlapped disk projecting substantially as described.

4. A universal sign consisting of a body plate provided with a longitudinal display opening, a back of less height than the said body plate and located at the rear thereof, a series of longitudinally extending strips secured between the body plate and the back near the upper edge of the latter and secured at one end only, the said strips overlapping each other and of substantially the same length, a series of display disks pivotally secured to the free ends of the respective strips, said disks overlapping each other, a portion of each overlapped disk projecting, and a portion of all of the disks projecting above the upper edge of the back, as and for the purpose set forth.

856,228. BEARING. JOHN C. CROMWELL, Cleveland, Ohio. Filed July 7, 1905. Serial No. 268,613.



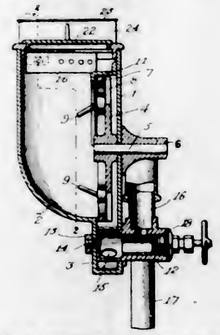
Claim.—1. In combination a journal and two independent members forming a ball race, balls in said race, said members being adapted to be moved away from each other by lateral pressure of the journal.

2. In combination a journal and two independent members forming a ball race, balls in said race, said members being adapted to be moved away from each other by lateral pressure of the journal and means tending to oppose such movement.

3. In combination a journal and two independent members forming a ball race, one of said members being movable toward and away from the other member, balls disposed in said race, the race being so constructed that lateral pressure of the journal will cause the balls to separate the said members.

4. In combination a journal and two members forming a ball race, one of said members being movable to and from the other, balls in said race, the race faces of said members being so shaped that movement of one toward the other tends to thrust the balls against the journal and yielding means tending to cause one of said members to approach the other.

856,229. WASHING-MACHINE. PETER CUNNEEN, New Rochelle, N. Y. Filed Apr. 14, 1905. Renewed Nov. 12, 1906. Serial No. 343,116.



Claim.—1. In a washing machine, a casing or tub, a water supply thereto, and means for charging said water supply with a cleansing medium, or for causing said water to be discharged into said tub uncharged with said cleansing medium.

2. In a washing apparatus, a casing or tub, a water supply thereto, and a chamber intermediate said water supply and tub adapted to contain a cleansing medium, said water supply and chamber being adjustable relatively either to discharge the water through said chamber in its passage to the tub or to permit the water to discharge directly into said tub.

3. In a washing machine, a casing or tub, a water supply pipe projecting thereinto, and a chamber in said tub adapted to contain a cleansing medium, and adjustable either to encompass the discharge end of said pipe or to uncover said discharge end to permit the latter to discharge directly into said tub.

4. In a washing machine, a casing or tub, a water supply pipe projected thereinto, and a chamber adapted to contain a cleansing medium, and movable in said tub, said pipe lying in the path of movement of said chamber, and said chamber being apertured to receive and encompass the discharge end of said pipe when in one position, and to uncover said discharge end when in its opposite position.

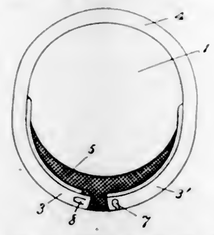
5. In a washing machine, a casing or tub, a water supply pipe projected thereinto, a box or chamber adapted to contain a cleansing medium, intermediate said pipe and said casing or tub, and an auxiliary chamber in said box or chamber adapted to receive the discharge of water from said pipe, said auxiliary chamber being formed to check the force of the flow of the water thereinto and to permit its passage into said box or chamber.

6. In a washing machine, a casing or tub having one vertical wall thereof curved inward at its base, a rotatable disk mounted vertically in said casing or tub and flanged peripherally toward said curved wall to form in conjunction with the lower edge of the latter a substantial closure, and means projecting from the vertical face of said disk to engage and agitate the articles within said casing or tub.

7. In a washing machine, a casing or tub merging into a contracted lower end, a discharge pipe communicating with said contracted lower end, and a rotatable disk mounted in said casing or tub and forming in conjunction with one wall of said casing or tub a substantial closure to prevent access of articles being washed to said contracted lower end.

8. In a washing machine, a casing or tub, means for affording a continuous supply of water thereto, a siphon connected with the lower end of said casing or tub for intermittently and automatically exhausting the water therefrom, and a vent or relief pipe connecting the long leg of the siphon with the casing or tub intermediate the height of the latter.

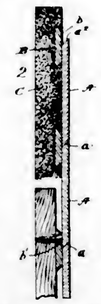
856,230. COVER OR CAP FOR JARS, CANS, BOTTLES, &c. WILLIAM H. DODGE, Montclair, N. J. Filed Aug. 16, 1905. Serial No. 274,367.



Claim.—1. A cap or cover for bottles, jars, cans, etc., made in one piece and having a top plate and a depending locking band, formed integrally with each other, said band being separated from the top plate substantially one half its circumferential length, the separated part of the band having an inwardly projecting lip, said separated part and its lip being severed or divided at a point intermediate their length to form free movable ends, one of said movable ends having a tongue formed therein and the other having a slot extending transversely partway across the same from one edge thereof and adapted to receive said tongue to lock said ends together.

2. A cap or cover for bottles, jars, cans, etc., made in one piece and having a top plate and a depending locking band formed integrally with each other, said band being separated from the top plate substantially one half its circumferential length, the separated part of the band having an inwardly projecting lip, said separated part and its lip being severed or divided at a point intermediate their length to form free movable ends, one of said movable ends having a tongue punched out of the same intermediate the edges thereof, and the other movable end having a slot extending transversely part way across the same from the lower edge thereof and adapted to engage over the said tongue to form a lock for said ends.

856,231. TILE. OTTO M. DE BEAU, Baltimore, Md. Filed Mar. 3, 1906. Serial No. 304,060.



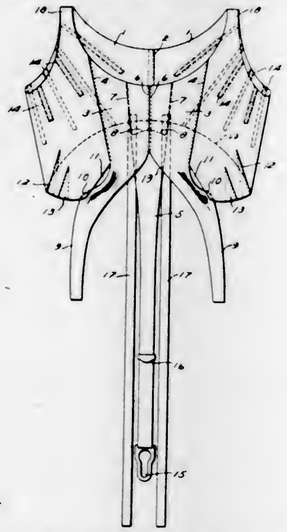
Claim.—1. A tile of the character described having one of its ends and one of its sides beveled outwardly and one of its ends and one of its sides beveled inwardly, and a projecting piece having upwardly beveled edges on the bottom of the tile extending outwardly beyond one of the inwardly beveled edges thereof, said piece being substantially co-extensive with said edge whereby to constitute a support for the edge portion of the tile as also a support for the adjoining edge of an adjacent tile, and co-operating with the inwardly beveled edge thereabove to constitute a receiving and under-cut groove to interlock with a complementary outwardly beveled edge of said adjacent tile.

2. A tile of the character described having one of its edges beveled inwardly and an opposite edge beveled upwardly, and a projecting piece on the bottom of the tile formed to permit part of a cement base to overlie the same and extending outwardly beyond the inwardly beveled edge thereof, said piece being substantially co-extensive with said edge whereby to constitute a support for the edge portion of the tile as also a support for the adjoining edge of an adjacent tile, and co-operating with the inwardly beveled edge thereabove to constitute a receiving and under-cut groove to interlock with a complementary outwardly beveled edge of said adjacent tile.

3. A tile of the character described having one of its edges cut away inwardly and the opposite edge cut away outwardly, and a narrow projecting piece on the bottom of the tile extending outwardly beyond the inwardly cut-away edge thereof, said piece being substantially co-extensive with said edge whereby to constitute a support for the edge portion of the tile as also a support for the adjoining edge of an adjacent tile and co-operating with the inwardly cut-away edge thereabove to constitute a receiving and undercut groove to interlock with a complementary outwardly cut-away edge of said adjacent tile,

and the inner edge of the projecting piece terminating at a point beneath the body of the tile and sufficiently removed from the outwardly cut-away edge thereof to provide a space beneath the body of the tile and between said inner edge of the projecting piece and the outer edge of the projecting piece of an adjoining tile.

856,232. BUST-GIRDLE. NORA DUNLAP, Chicago, Ill. Filed July 5, 1906. Serial No. 324,838.



Claim.—1. A bust girdle comprising a body part having shoulder straps formed thereon and having a tie strap at each side of the lower front edge of the body part, said tie straps being suitably spaced to permit of adjusting the width of the girdle, and a strap extending downwardly from the front of the girdle and provided with attaching means adapted to engage the front of a corset.

2. A bust girdle comprising a body part having shoulder straps formed thereon and having a tie strap at each side of the lower front part of the body part, said straps being suitably spaced to permit of adjusting the width of the girdle therewith, each of said straps being so secured to the front and lower edge of the body part as to leave an opening between said strap and body part for retaining the opposite strap, and an additional strap extending downwardly from the front of the girdle for its vertical adjustment.

3. A bust girdle comprising a body part having shoulder straps formed thereon and having a tie strap at each side of the lower front part of the body part, said straps being suitably spaced to permit of adjusting the width of the girdle therewith, each of said straps being so secured to the front and lower edge of the body part as to leave an opening between said strap and body part for retaining the opposite strap.

4. A bust girdle comprising a body part forming a continuous band adapted to surround the bust of the wearer, and having shoulder straps thereon, said girdle being cut out at the middle part of its lower front edge, a strap secured at each side of said cut-out portion, said straps being adapted to be secured together for adjusting the width of the girdle, and an additional strap extending downwardly and secured above said cut-out portion for adjusting the girdle vertically.

5. A bust girdle comprising a body part, permanently closed across the front having shoulder-straps thereon, said body part having secured to the upper front edge thereof, and extending downwardly below said body part, a pair of straps which are widened at their upper parts to extend from the middle toward said shoulder-straps, and having their lower ends adapted to be secured together for adjusting the width of the girdle.

6. A bust girdle comprising a body part having shoulder-straps thereon, said body part having secured to the upper front edge thereof, and extending downwardly below said body part, a pair of straps which are widened at their upper parts to extend from the middle toward said shoulder-straps, and having their lower ends adapted to be secured together for adjusting the width of the girdle, and an additional strap secured at the upper middle part of said pair of straps and extending downwardly and adapted for vertical adjustment of the girdle.

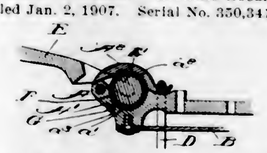
7. A bust girdle comprising a body part having shoulder-straps thereon and being cut out at the lower front edge, a strap secured to said lower edge at each side of said cut-out portion, said straps being adapted to be secured together for adjusting the width of the girdle, and a pair of tapes secured to the lower back edge of the girdle and adapted to extend around the waist for adjusting the back vertically on the wearer.

8. A bust girdle comprising a body part, permanently closed across the front having shoulder-straps formed thereon, said body part being cut out at the middle part of its front lower edge, a pair of straps each being widened at their upper ends, secured together and to said body part so as to form the front upper edge of the girdle, and being extended downwardly at each side of said cut-out portion and adapted to be tied together for adjusting the width of the girdle.

9. A bust girdle comprising a body part having shoulder-straps formed thereon, said body part being cut out at the middle part of its front lower edge, a pair of straps each being widened at their upper ends, secured together and to said body part so as to form the front upper edge of the girdle, and being extended downwardly at each side of said cut-out portion and adapted to be tied together for adjusting the width of the girdle, and an additional strap secured to said pair of straps at their middle connected part, being adjustable in length and having a buttoning loop at its lower part.

10. A bust girdle comprising a body part having shoulder straps formed thereon and having a tie strap at each side of the lower front part of the body part, said straps being suitably spaced to permit of adjusting the width of the girdle therewith, a loop at each side of the lower front part of the body part adapted to receive the opposite strap, and an additional strap extending downwardly from the front of the girdle for its vertical adjustment.

856,233. THILL-COUPLING. RICHARD ECCLES, Auburn, N. Y. Filed Jan. 2, 1907. Serial No. 350,341.

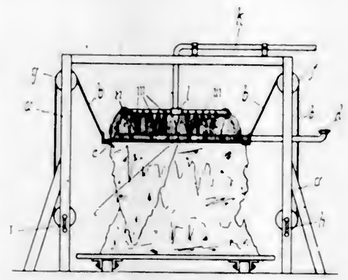


Claim.—In a thill coupling, a draft-eye having a spherical recess therein and an opening passing through one part of the draft-eye, a one-piece washer in said recess, and a pin passing through said opening in the draft-eye and through the washer to hold the washer in place in the recess.

856,234. FREEZING APPARATUS. FRIEDRICH ECKART, Rommerode, Germany. Filed Dec. 29, 1906. Serial No. 350,053.

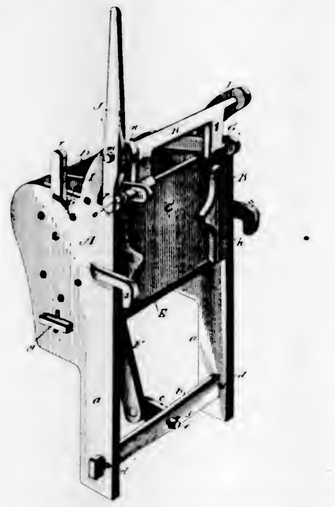
Claim.—A freezing apparatus comprising in combination a trestle (*a*), a serpentine tube (*c*) arranged on said trestle and provided with an outlet opening (*e*) and an inlet opening (*d*) disposed beyond the reach of the water and through which hot water can be poured into said tube (*c*),

rollers (*f*, *g*) provided on said trestle, cords (*b*) attached to said tube (*c*) and guided over said rollers and designed to suspend said tube (*c*) from said trestle, cranks (*h*, *i*) provided on said trestle and adapted to wind said cords up so as to bring said tube (*c*) eventually into an inclined



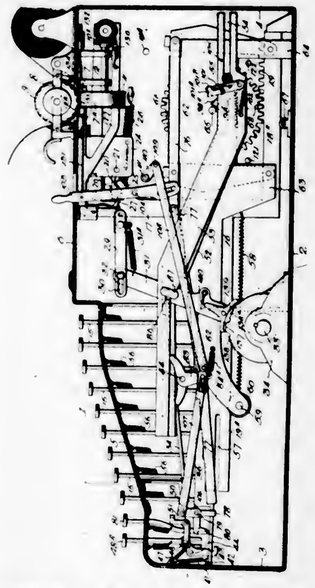
position toward its outlet, a water supply pipe (*k*) arranged above said tube (*c*), a double-armed and rotatable branch pipe (*l*) of said supply pipe (*k*) provided with oppositely directed orifices and holes (*m*) in its arms; for the purpose set forth.

856,235. MOP-WRINGING MACHINE. MILO A. ELLIOTT, Waterville, Me. Filed Feb. 23, 1906. Serial No. 302,550.



Claim.—A mop wringer comprising a back, sides with depending legs, and upwardly extended curved arms, a bottom, a presser board, a brace connecting said legs, a bearing arm on said brace, an arm pivoted to said bearing arm and connected with the presser board a crank bar having crank arms mounted in the upper ends of said curved arms, links disposed above the top of said back and pivotally connected to the presser board, arms depending from said crank bar and pivotally connected to said links, an operating lever pivotally mounted on one of said curved arms above the top of the back and connected to the extended end of one of the pivots joining the link levers and depending arms of the crank bar, and a stop projecting upwardly from one of the sides in the path of said operating lever.

856,236. ADDING AND SUBTRACTING MACHINE. JOHN C. EPENETER, Denver, Colo. Filed July 14, 1906. Serial No. 326,248.



Claim.—1. In an adding and subtracting machine, the combination with a casing, a key-board of depressible keys, and a type-writing and recording mechanism, of a series of sliding racks spring-controlled to move into engagement with said keys of said key-board, means connected with said keys for locking and releasing said sliding racks, a shaft in said casing, a manually reciprocating lever secured to said shaft, a pair of vertical rock arms secured to said shaft, a cross-bar extending across said sliding racks and connected to said rock arms by a pivotal connection, spring tripping dogs connected to said cross-bar arranged to engage the hook end of said type bars to tilt them away from said printing mechanism, as the racks recede; spring-actuated arms for normally holding said dogs out of engagement with said type-bars, and springs for throwing said type-bars into printing relation with said recording mechanism when said type bars are released by said spring tripping dogs.

2. In an adding machine, the combination with a supporting casing, a key board, having a plurality of rows of keys embracing the numerals from one to nine in each row, a type-writing mechanism co-operatively arranged with said key-board in said casing, each key having a notch in one side, a projecting stop on the other side, a reduced terminal end forming a shoulder, and a spring arranged to hold it in its normal position; a support for the keys, a hinged U-shaped tilting plate having one of its limbs arranged to lock a key of any of said rows of keys when it is depressed, and to lock the remaining keys of said row against depression, a spring for holding said U-shaped plate in and for returning it to its nominal position, when released from said key, a latch arranged to catch and lock said U-shaped plate in its key locking position when it is tilted down by the depression of said key, a spring arranged to control the locking movement of said latch, means for tilting said latch to release it from said key locking plate, a rock shaft mounted in said casing, a reciprocating operating lever secured to said rock shaft, a pair of rock arms secured to said shaft, laterally extending pins secured to the sides of said rock arms, pull and push levers arranged to be connected to said pins,

and having their forward ends extending into contacting relation to said latch-tilting means, and means for simultaneously lifting one set of levers out of engagement with the pins of the rock arms, and for dropping the other set of levers into engagement with the said pins.

3. In an adding and subtracting machine, the combination with the casing, the type-writing mechanism, and the key-board, having the keys arranged in successive step order, of sliding racks having stepped edges arranged to engage the keys of said key board; locking plates for said racks; latches for said locking plates; a rod for swinging said latches, and means for depressing said rod; a reciprocating operating lever; rock arms operated by said levers; pull and push levers arranged to be connected with or disconnected from said rock arms and extended into engaging relation with the rod depressing means for said latches; a shaft having gear wheels, which are engaged by the sliding racks, and means connected with the push and pull levers for lifting the said shaft to disengage the gears from the racks.

4. In an adding machine, the combination with the casing, the numeral key-board, and a recording mechanism, of sliding racks, each comprising a vertical arm, an upper horizontal arm, a lower horizontal arm extending rearward in said casing and having gear teeth, and a horizontal arm extending forward into the operative field of said key board, one edge of which is provided with a series of steps; rollers arranged beneath said sliding racks, said keys being provided with stops arranged in operative engaging relation to the shoulders of said steps on said sliding racks, stops arranged to normally prevent the engagement of said sliding racks with said keys, means for releasing said sliding racks from said stops when a key is depressed, and means for locking the keys in a depressed position and for releasing them; a cross bar in normal engagement with the sliding racks; springs arranged to normally hold said sliding rack against said cross bar, means including a reciprocating operating lever for releasing said cross bar to allow the said sliding rack to move forward by its spring, so that one of its stepped shoulders may engage a depressed key, type-bars pivoted to said sliding racks; and means connected to said sliding racks and cross bar for causing said type-bars to print the numerals corresponding to the depressed keys.

5. In an adding and subtracting machine, the combination with a casing, a key-board, and a type-printing mechanism, of a plurality of sliding racks co-operating with said key-board, and with said printing mechanism, a spring for drawing each sliding rack toward each key of said key board, means including a lever mechanism for releasing said sliding racks, means including a key locking device comprising a hinged tilting plate with said keys for preventing the forward movement of said sliding racks when said keys are not depressed, and means for releasing said sliding rack when a key is depressed, and for locking said key in a depressed position, means including a reciprocating lever connected to said operating lever for releasing said keys and for restoring said key-board and sliding racks to their normal positions, numeral type carrying bars on said sliding racks arranged in operative relation to said printing mechanism, a spring controlled trip lever supported to said casing arranged to normally hold each of said type bars in a position of disuse, a spring arranged to actuate said type bars to print a numeral, and means including a trip spring connected with said operating lever mechanism for releasing said trip-lever and for actuating said type bars to print a numeral.

6. In an adding and subtracting machine, the combination with the casing, and the numeral key-board, comprising a plurality of rows of keys, of a tilting frame, a shaft rotatably mounted in said frame, a plurality of gears rotatably mounted on said shaft, a pair of levers, arranged adjacent to the opposite ends of said shaft, each pair comprising a pull and a push lever, arms on said levers spring controlled in one direction of their movement, arranged to engage said shaft on the operating movements of said lever and lift the same; sliding racks, which engage said gears; a shaft having rock arms which operate the pull and push levers, and a crank handle for operating the said shaft.

7. In an adding and subtracting machine, the combination with the casing, a printing mechanism, a key-board, and a plurality of sliding racks each having a type bar pivoted thereto, of a shaft mounted across said casing, a frame comprising two side plates pivotally mounted at their forward ends to the opposite ends of said shaft; a shaft mounted in the opposite ends of said frame, gears loosely mounted on said shaft corresponding in number to the number of rows of keys on said key board, said gears being normally in engagement with the sliding racks, means including pull and push levers for lifting said gears out of engagement with the racks, a shaft having rock arms which operate said levers, and a crank handle for operating said shaft.

8. In an adding and subtracting machine, the combination with the casing and key-board mounted on said casing, of a plurality of sliding toothed racks, a type-bar operatively supported on each sliding rack, each type-bar being provided with a row of numeral types arranged in successive order from zero to nine, a gear carrying frame consisting of two side plates arranged on opposite sides of said casing, pivotally secured at one end to said casing, and resting on said casing at their opposite or free ends, a shaft extending across the free ends of said side plates and extending beyond them, a row of gears rotatably mounted on said shaft, which are normally in engagement with the toothed racks, springs for operating said racks in one direction; a cross bar for operating the racks in an opposite direction, and a hand operating reciprocating lever for operating the cross-bar.

9. In an adding and subtracting machine, the combination of the casing, the key-board, the type-printing mechanism, and the hand operating lever, with a pair of rock arms within said casing arranged to be actuated by said operating lever, a pair of arms slotted at one end and pivotally connected at their slotted ends to said rock arms; a cross bar pivotally connected at its ends to the opposite ends of said slotted arms, sliding racks, spring-operated in one direction, and operated in the opposite direction by the said cross bar, contraction springs arranged to normally hold said cross bars against said racks; gears engaged by the racks; means connected with the rock arms for lifting the gears from the racks; the slots in said slotted arms permitting a sufficient movement of the lifting means, to lift the gears from the racks before the said racks are moved.

10. In an adding and subtracting machine, the combination of the casing, the key-board, the type-writing mechanism, and the actuating rock arms having projecting pins, of a pair of push levers arranged one on each side of said casing on one side of each of said actuating rock arms, a pair of pull levers arranged one on each side of said casing on the opposite side of each of said rock arms, each of said levers being provided with a recess adapted to engage the projecting pins of said actuating levers, means for slidingly supporting the rear ends of said push and pull levers, a shaft having a plurality of gears; sliding racks normally in engagement with the gears, means connected with each pair of push and pull levers for engaging the ends of said gear-shaft and for raising said gear supporting frame and gears out of engagement with said toothed racks at a predetermined movement of said levers.

11. In an adding and subtracting machine, the combination of the casing, the key-board, the type-writing mechanism, the sliding racks, the operating lever, the actuating rock arms, having lateral pins, the cross-bar, the gears, and the pull and push rods, which engage the pins of said rock arms, with a pair of gear operating frames mounted on opposite sides of said gears, a tilting frame secured and arranged to support said frames, a pair of connecting rods connecting said frames together, a rocking lever for engaging the under side of said pull and push levers, to raise or lower them out of or into engagement with the pins of the rock arms, a shaft extending across said casing adjacent to its rear end, and secured in the sides of said casing, a pair of crank-arms secured to said shaft, a pair of levers connected at one end to the free ends of said cranks and at their opposite ends to an arm connected at one end to said pull and push levers' rock-lever; a rock arm at the forward end of said casing pivotally connected to the opposite end of said arm, a slot in said second named arm pivotally connected to a connecting pin of said pull and push lever's rock-arm, a push lever connected at one end to one of said connecting rods of said frames and pivotally connected intermediate of its ends to said pull and push lever rock arm, and having its free end extended to and arranged to engage the free end of a depending arm on the said forward rock arm shaft.

12. In an adding and subtracting machine, the combination of the casing, the key-board, the type-writing mechanism, the hand operating and actuating lever mechanism, the subtracting mechanism operating lever, and the pull and push rods and the gears supporting tilting frame and shaft, the gear operating frames, and the gears, with a plurality of vertically sliding plates in each of said gear operating frames, a plurality of four pins secured at the quarter joints of each of said gears, a swinging pawl on each sliding plate arranged to be engaged by said pins as said gears are rotated, a vertically impulse action lever spring-controlled in one direction of its movement, arranged to be normally locked to said frames and adapted to be released by said swinging pawl plates, and the rotative movement of said gears, and to be impinged against said crank-shaft by their springs when released, by the movement of said gears and said swinging pawl-plate, and a swinging pawl pivotally secured to each of said impulse levers of each gear operating frame arranged to engage the teeth of said gears, arranged to be normally locked out of engagement with said gear teeth.

13. In an adding and subtracting machine, the combination of the casing, the numeral key-board, the type-printing mechanism, the sliding racks, the operating lever, the actuating lever and cross bar, the adding mechanism, comprising the gears, the gears supporting shaft, the tilting frame, and the pull and push rods, with the two opposing gear operating frames arranged on opposite sides of said gears, the connecting rods arranged to connect said frames together, the subtracting mechanism operating lever connected to said connecting rods, a laterally projecting pin on one side of each gear, and an operative gear rotating mechanism arranged to rotate each gear one or more teeth in alternate order by either of said gear operating frames as either one of said gear operating frames is moved into operative relation to said gears and the other is moved out of operative relation to said gears by said subtracting lever.

14. In an adding and subtracting machine, the combination with the casing, the key-board, the type-writing mechanism, the sliding-racks, the gears engaging said slinding racks, and type-bars, and the operating and actuating lever mechanism, of the subtracting mechanism comprising the gear operating frames arranged on opposite sides of said gears, the connecting rods, the subtracting lever, said frames being provided with a plurality of slots at their upper end, a rod across their lower ends, a group of sliding levers slidably supported in said slide-ways, and by said rods, a group of swinging plate-levers pivoted to said levers, a laterally projecting pin on each quarter point of one side of each gear arranged to engage said plate-levers, a group of levers each carrying a right angled arm extending into the path of the lever plate of the adjacent sliding lever, and each provided with a gear tooth engaging pawl arm, arranged to be normally held out of engagement with the teeth of said gears, a spring for raising said pawl carrying levers and pawls into operative position, and an engaging abutment adapted to hold said levers and pawls and cause them to engage said gears operatively and rotate them as said gears and their supporting frames are raised by said operating lever.

15. In an adding and subtracting machine, the combination with the key-board, the type writing mechanism, the sliding racks, the numeral type carrying bars supported by said sliding-racks, the operating lever, the sliding racks actuating mechanism, the tilting frame, and shaft, the gears mounted on said shaft and normally in engagement with said sliding racks, the actuating levers, and the push and pull levers operatively arranged to be actuated by said operating lever to raise said gears out of engagement with said racks on either its forward or rearward stroke, of the two gear operating frames comprising the numeral adding and subtracting mechanism arranged on opposite sides of said gears, pivotally hinged to said tilting frame to be tilted therein, and a hand operating lever arranged to tilt either of said frames either into or out of engagement with said gears, as it is desired to add or subtract.

16. In an adding or subtracting machine, the combination with the casing, the gear supporting frame, its shaft, and the seven gears mounted on said shaft, of a numeral adding frame and mechanism arranged on the front side of said gears and pivoted in said gear supporting frame, the numeral subtracting frame, and mechanism pivotally hinged in said gear supporting frame on the rear side of said gears, said frames being connected together to be tilted toward and from said gears, a lever connected to said frames and arranged to tilt them toward and from either the front or rear side edges of said gears, projections at the four quarters of one side of said gears, and means including a system of sliding levers and swinging levers and pawls mounted in and carried by said frame and arranged to be actuated by the projections on said gears for operatively rotating said gears to add or subtract, as desired.

17. In an adding or subtracting machine, the combination with the casing, the operating lever and sliding-racks, the actuating levers, the gears and their supporting shaft and tilting frame, and the key-board and printing mechanism, with a pair of gear operating frames arranged on opposite sides of said gears and tiltingly supported in said gear tilting and supporting frame, a sliding lever slidingly mounted in each frame opposite each gear, a swinging pawl pivotally connected to one side of each sliding lever, and projecting along the side of each gear, projections at the four quarter points of each of said gears adapted to engage one surface of said swinging levers and to move them out of their path, on one direction of said gear's rotary movement, and to abut against another surface of said swinging levers in the opposite direction of said gear's rotary movement, a trip lever arranged in each of said frames in operative relation to each of said gears and spring-controlled in one direction of its movement, a swinging pawl pivotally connected to each of said trip levers in operative relation to the teeth of each of said gears, and arranged to be normally locked out of engagement with the teeth of each gear, an arm on each trip lever projecting from the predetermined or units side of said frames or trip lever into the path of the next trip lever, and arranged to trip the same and all of said trip levers in successive order, an abutment against which said trip levers strike when released from said frames, and a spring arranged to throw each trip lever against said abutment.

18. In an adding and subtracting machine, the combination with the casing, the gear supporting and tilting frame, the shaft extending there-through, and the gears mounted on said shaft representing units, tens, hundreds, and higher orders from one end of them to the other, with the numeral adding and subtracting mechanism, comprising a pair of supporting frames pivotally attached to said gear supporting and tilting frame, and arranged on opposite sides of said gears, and connected with each other, a hand operating lever arranged to tilt said frames toward and from said gears in alternate order, a plurality of sliding levers opposite each of said gears arranged to slide vertically in said frames a predetermined distance and representing units, tens, hundreds, and higher orders from one end of said levers to the opposite end, projections on the one side edge face of each gear at its quarter points, a swinging plate lever on said sliding bars having terminal ends extending in opposite directions, one end of which is beveled downward and is spring-controlled to lie in the path of said gear's projections, and is adapted to be engaged by said gear's projections, and be moved a predetermined distance in one direction of said gear's rotative movement, and the terminal end of which forms a stop for said gear's projection on the opposite rotative movement of said gears, and the opposite terminal end of said lever extends in an opposite direction from said gear engaging end and is provided with a right-angled offset arm, a vertically arranged trip lever pivotally connected at its lower

end to the lever side of each vertical sliding lever, having its upper ends arranged to said supporting frame, each of said trip levers being arranged in the path of said swinging gear rotating plate lever's right angled arm end, a contraction spring arranged to hold said trip levers under a vertical moving tension, a swinging pawl lever pivotally connected to each having a right-angled extending pawl arm arranged in tooth engaging relation to the gear teeth of each gear, means including an extending arm on each pawl lever for normally holding all of said pawls out of engagement with said gear teeth, a right-angled arm on each of said trip levers extending from said unit trip arm to the tenths trip arm and from the tenths trip lever to the next trip lever and so on to the end of said row of trip levers, said arms being arranged between the adjacent trip lever and the angled arm of said spring controlled swinging gear operating lever of each sliding lever, an abutment in the vertical path of said sliding levers adapted to receive their vertical impulse when said trip levers are released, and adapted to hold said sliding levers and the swinging gear operating levers and the pawl levers in gear wheel rotative relation to said gears when said gears are raised in the supporting tilting frame to carry one or more numerals from the units or tenths or other gears or to subtract them from said gears, as specified.

19. In an adding and subtracting machine, the combination of the casing, the key-board, the printing mechanism, the sliding racks, the tilting gear supporting frame and gears and the two operating levers, with the tilting numeral carrying and subtracting mechanism comprising the tilting frames pivotally and tiltingly supported in said gear supporting and tilting frame, the vertically sliding levers, the trip levers pivotally secured to said sliding levers and spring controlled to vertically raise said sliding and trip levers, an abutment shaft extending across said casing arranged to receive the upward impulse movement of said sliding levers, the gear teeth engaging pawls on said trip levers, the spring controlled swinging levers on said sliding levers, the projecting pins on each of said gears, the curved depending extensions on said pawl levers, and the shafts across said casing arranged to be engaged by said curved extensions and to normally hold said pawls out of engagement with said gear teeth, and means for tilting said adding or subtracting mechanism and its supporting frames to throw either one of them out of or into engagement with the opposite sides of said gears as desired, and means for raising said gears' supporting frame out of said sliding racks to cause said adding or subtracting mechanism to operatively rotate said gears to carry or subtract a number as desired, and for lowering said gears into said racks.

20. In an adding and subtracting machine, the combination of the casing, the units, tens, and higher orders of gears, the supporting and tilting frame for said gears, with the numeral carrying mechanism, comprising a frame consisting of end pieces pivotally secured at their lower ends to said gear supporting frame, a cross shaft extending from one end piece to the other having a plurality of reduced neck portions arranged at a predetermined distance apart, and two side pieces at their top end arranged at a short space apart, a plurality of slots in said side pieces, a plurality of vertically sliding levers slidingly arranged in said slots and having a slot in their lower ends adapted to fit the neck portions of said shaft, said sliding levers designating units, tens, hundreds, and so on to their end lever, arranged opposite side units, tens, hundreds, and higher order of gears, a trip lever pivotally secured at its lower end to each sliding lever and having a shouldered step at its upper end arranged to fit under the adjacent side piece of the top of said frame, a contraction spring arranged to hold said trip lever's shoulder up against the side piece of said frame thereby normally locking said trip levers, and said sliding levers, under a vertical movement tension to said frame, the swinging plate levers pivotally secured to said sliding levers, the projecting pins on said gears, the pawl levers on said trip levers adapted to engage said gear teeth, the shafts and projecting curved ends on said pawl levers for normally locking said pawls out of engagement with said gear teeth, the abutment shaft arranged to receive the vertical impulse movement of said sliding levers and trip plates, and the angled arms on said trip levers arranged to trip all of the remaining trip levers of a higher order in said frame.

21. In an adding and subtracting machine, the combination with the casing, of a shaft mounted transversely thereon, a frame comprising two plates pivotally connected at one end to said shaft at opposite portions of said casing, and arranged to rest loosely at their opposite ends on said casing, a shaft extending across the rear ends of said plates, a plurality of gears loosely mounted on said shaft representing in succession the numeral orders of units, tens, hundreds, and so on to as high an order as desired, from one side of said shaft to the other, a plurality of sliding racks corresponding in number to the number of gears in which said gears are in operative mesh, means including a hand operating lever for raising said gears out of mesh with said sliding racks when desired, an operative gear tooth engaging pawl mechanism on opposite sides of each of said gears arranged to coöperate with said sliding racks to rotate said gears one or more teeth as desired, means for normally holding one of said pawl mechanisms in engagement with one side of each of said gears, and means including a hand operating lever for moving said normally engaged pawl mechanism out of engagement with said gears and for throwing the opposite pawl mechanism into engagement with the opposite side of each of said gears.

22. In an adding and subtracting machine, the combination with the casing, of the key-board provided with a key-board of preferably seven rows of numeral keys, each row containing keys from one to nine, a plurality of sliding-racks corresponding in number to the number of rows of keys, a plurality of preferably seven type-bars positioned one on each sliding rack, a plurality of preferably seven gears representing in successive order units, tens, hundreds, thousands, tens of thousands, hundreds of thousands, and millions, arranged to stand normally in mesh with said sliding racks, means including an operating lever and a supporting tilting frame for raising said gears out of engagement with said sliding racks, when desired, a gear tooth pawl engaging mechanism arranged in operative relation to each side of each of said gears, one pawl mechanism of which is arranged to stand normally in engagement with one side of said gears, and the other pawl mechanism to stand normally out of engagement with the opposite side of said gears, means including a tilting supporting frame for said pawl mechanism and a hand operating lever for moving the normally gear engaging pawl mechanism out of engagement and for moving the opposite pawl mechanism into engagement with said gears, and projections on each gear at predetermined points arranged to coöperate with said pawl mechanism to carry or subtract numerals or numbers on said gears.

23. In an adding and subtracting machine, the combination with the casing, and a fixed numeral key-board, with a plurality of sliding rack levers actuated by the keys of said key-board a hand operating lever arranged to operate said rack levers, and type bars, each provided with a set of numerals from 0 to 9, inclusive, said type-bars being arranged relative to the printing point of said printing mechanism so that the 0 of each type-bar stands normally at the printing point, and means including operating lever and a spring-controlled trip mechanism for causing said type-bars to move into printing relation to print any numeral desired when its numeral key is depressed.

24. In an adding and subtracting machine, the combination with the casing, the key-board, the printing mechanism, the sliding racks, the type-bars actuated by said sliding racks, the hand operating lever, the actuating lever, and the mechanism connecting this actuating lever with said sliding rack and coöperating with the keys of said key-board to actuate said type bars and printing mechanism with the pull and push levers, the tilting numeral carrying and subtracting gears arranged to normally stand in engagement with said sliding racks, and its supporting and tilting frame, and the gear supporting shaft, the oppositely arranged spring-controlled arms arranged on said pull and push rods to engage said gear supporting shaft and to raise said shaft and gears and their supporting frame out of engagement with said racks.

25. In an adding and subtracting machine, the combination with the casing of the type-writing mechanism, and the key-board, comprising a plurality of rows of numeral keys containing numerals from one to nine, and a totaling key and a correcting key, a support for said keys, resilient means for holding each key in a vertical position of disuse, a shoulder in one side of each of said numeral keys adjacent to its terminal end, a notch in said side of each key adjacent to said shoulder, a projecting lug on the opposite side of said key adjacent to its terminal end, a hinged tilting open-sided box-shaped lock plate arranged to support against its lower side member the terminal ends of said keys and arranged so that when tilted its upper side member will extend into the slot of any one key of each row that is depressed and thereby lock said key in a depressed position, and also arranged to extend under the shoulders of all of the remaining keys of each row of keys in which a key has been depressed, and means including a rock arm spring controlled in one direction of its movement for locking said tilting plate in a depressed position and for releasing all of said keys, and for returning all of said depressed keys to their nominal operative position.

26. In an adding and subtracting machine, the combination with the casing of the operating levers, the actuating levers having lateral projecting pins on each side of each lever intermediate of their ends, the gear tilting and supporting frame, of a pair of pull levers containing a slot adapted to fit on the pins, of one side of said actuating levers, said pull levers extending to the rear end of said casing and containing in their rear ends a slot, pin containing neck grooves arranged to receive the slots and support the rear ends of said levers, a tilting frame pivotally secured in said casing, a shaft in said frame, a plurality of numeral carrying gears rotatably mounted on said frame, a plurality of sliding racks normally in engagement with said gears in said casing, a lever pivotally connected to each of said pull rods, arranged to stand normally at an angle, and with its free end adjacent to the opposite ends of said gear supporting shaft, each of said levers being provided with a beveled top level with the top of said levers, a stop for defining the operative shaft engaging position of said shaft engaging lever, a spring for returning said lever to its operative slot engaging position, after operative use, a clip pivoted to said lever at one end and extending above said lever and having a concaved terminal end adapted to engage said shaft, and an angled clip extending around said lever, a spring for moving said clip back into its shaft engaging position after operative use, said shaft engaging levers and clips being adapted when said hand operating lever is moved toward the operator to draw said pull levers toward the front of the machine and in doing so to cause said shaft levers and clips to engage the opposite end portions of said shaft and to lift said gears out of engagement with said racks, and as the pull levers move onward said levers and clips pass under said shaft and slip off of it allowing said shaft and gears to drop back into engagement with said sliding racks.

27. In an adding and subtracting machine, the combination with the casing, the sliding racks, the operating lever, the actuating levers, the tilting gear supporting frame, the gear supporting shaft and the gears, of the pull rods, removably connected to said actuating levers, the shaft lifting levers pivotally secured to said pull rods, and the shaft lifting clip arranged to engage said shaft on the forward movement of said levers and to lift it and slip off of it as they pass under said shaft, and stops and springs arranged to return said levers and clips to their normal shaft engaging position.

28. In an adding and subtracting machine, the combination with the casing, the key-board, the sliding rack having a stepped extension, of as many steps as there are keys in each row of keys on said key-board, arranged to coöperate with the keys of said key-board, a hand operating lever for releasing said sliding rack, a spring on each sliding rack, a cross-bar arranged to hold said sliding racks in alinement, a lock plate for locking said keys in a depressed position and for preventing the remaining keys from being depressed, a stop on each key arranged to receive the corresponding step of its sliding rack, and means for instantaneously releasing all of said keys and returning them to their natural positions.

29. In an adding and subtracting machine, the combination with the key-board, the type-printing mechanism, the totaling key, the correcting key, the operating levers, the sliding rack, the numeral carrying gears normally in engagement with said sliding-rack and arranged to be moved out of engagement with said sliding racks, means including the pull and push levers and said actuating levers for operating said gears, the oppositely arranged pawl mechanism for rotating said gears to add or subtract a numeral, means including levers arranged in operative relation to said totaling key, a tilting frame arranged to support the said gear adding and subtracting pawl actuating mechanism, a hand operating mechanism for throwing said numeral adding mechanism or said subtracting mechanism into engagement with said gears as desired, rock-arms operatively connected to said pull and push levers and with said gear rotating pawl mechanisms tilting and supporting frames, and also with said totaling keys operating mechanism for totaling amounts registered by said gears, a plurality of type-bars operatively controlled by said sliding racks, a continuously feeding paper in said printing mechanism, and means including a swinging rod for correcting all of the keys of said key-board.

30. In an adding and subtracting machine, the combination with the key-board, the lock plate, the operating lever, and the pull rods, of a correcting key operatively positioned therein, and spring-controlled on its operative movement and provided with an oblong slot at its lower terminal end, a rod extending transversely across said casing and extending through said oblong slot, angled arms secured at one end to said rod and secured at their opposite ends to a shaft journaled in the sides of said casing, and a plate on the opposite end of said angled arms arranged in the path of and adapted to be struck by the adjacent ends of said pull rods on their forward stroke, and means connected with said rod and correcting key and including an angled rock-arm adapted to engage said lock-plate for correcting said key-board.

31. In an adding and subtracting machine, the combination with the casing, the key board, the sliding racks, and the type bars, of an operative ink feeding ribbon, a type-striking roller, a continuous roll of paper, and means for feeding said paper continuously from said roll of paper between said ink ribbon and said type-striking roller.

32. In an adding and subtracting machine, the combination with the casing, the key-board, the type-writing mechanism, the series of seven sliding-racks, the operating lever and the actuating levers, of a series of seven type-bars pivotally secured to said sliding racks, each of which is provided with a row of numerals from 0 to 9, a spring secured at one end to each sliding rack and at its opposite end to each type bar, and adapted to throw each type bar against said printing mechanism, a hook at the rear end of each type bar, a series of seven rock-arms, one for each type-bar, pivotally supported on a shaft in said casing, having one arm normally in engagement with the hook of each type-bar and having its opposite arm connected to a contraction spring, a shoulder in the type-bar hook engaging end of said rock-arm, a projecting lug on each sliding rack normally in engagement with said shoulder, a cross bar extending across said casing, connecting rods extending from the opposite ends of said cross bars to said actuating levers and having a slotted pivotal connection with said actuating levers, a contraction spring between said cross bar and each of said actuating levers, and a spring hook for each type bar, each of which is connected at one end to said cross-bar and extending into engagement with the type bar hook engaging end of said rock-arm and in engaging relation to the hook of each type-bar, and a right angled arm on each rock-arm extending from the units rock-arm or from the rock-arm farthest to the right hand in the casing to lap over and on top of the end of the next or tens or adjacent rock-arms hook engaging end of this tens rock arm, and so on to the last or millions rock-arm of the series.

33. In an adding machine, the combination with the

casing of the key-board and the type-writing mechanism, of the sliding racks, the spring-controlled trip rock-arm, the cross bar, the actuating levers, the connecting rods extending from said actuating levers to said cross bar, and having a compensating moving pivotal connection with said actuating levers, the hand operating lever, the spring hooks on said cross bars arranged to engage said type-writing mechanism, and the lugs on said sliding racks arranged to engage said trip rock-arms.

34. In an adding and subtracting machine, the combination with a platen roll, and a type-ribbon beneath said record sheet, of spring-actuated racks having pivoted type-bars thereon; springs for normally holding said type-bars out of engagement with the type-ribbon; a cross bar in normal engagement with the racks; spring dogs carried by the cross bar for engaging depending ends of the type bars, spring-actuated arms which normally prevent said dogs from engaging the type-bars; fingers on said racks which lift said arms as the racks recede and permit the dogs to engage the type-bars; means for stopping said racks at a predetermined point, whereby a further movement of said cross bar causes said dogs to trip the type bars and imprint numerals on the record sheet; means in connection with the cross bar for rotating said platen roll and ribbon step by step simultaneously, and a hand lever for operating the cross bar.

35. In an adding and subtracting machine, a plurality of sliding racks; gears engaged by said racks, having laterally projecting pins; adding and subtracting mechanisms interchangeably engaged by said gears; type-bars carried by said racks; a platen roll and record sheet in operative relation to said type bars; a type-ribbon beneath the record sheet; means for tripping said type-bars when the racks recede; a lever for simultaneously throwing the adding mechanism into engagement with the gears, and the subtracting mechanism out; a sliding support for said type-ribbon, and means connected with the lever and with the sliding support, for moving said support at right angles to the length of the ribbon.

36. In an adding and subtracting machine, the combination with a platen roll, a record, and a type-ribbon beneath said sheet, of a plurality of sliding racks, each having a type-bar pivoted thereto; springs for holding said type-bars in a predetermined position relative to the ribbon; a cross-bar, spring-controlled in one direction of its movement, which normally rests against said racks; spring dogs upon said cross bar adjacent to depending ends of said type-bars; spring-actuated arms above said dogs which normally prevent them from engaging the depending end of the type bars; a projection on each of the spring-actuated arms, which overlies and rests upon the adjacent arm, fingers upon the racks which lift the said arms as the racks recede, and permit the dogs to engage the depending ends of the type-bars; a lever for moving the cross bar away from said racks; springs for moving the racks in the direction of the cross bar, and means for stopping the racks at predetermined points, whereby a further movement of said cross-bar will cause its dog to trip the type-bars and imprint numerals upon the record sheet.

37. In an adding and subtracting machine, a plurality of sliding racks having pivoted type-bars, and springs for holding said bars in a predetermined position; a cross-bar, spring-controlled in one direction, which abuts against the racks; spring dogs upon said cross bar, which lie adjacent to depending ends of the type-bars; spring-actuated arms, which normally prevent the dogs from engaging the depending ends of the type-bars; fingers on the racks which lift the arms as the racks recede, and permit the dogs to engage the depending ends of the type-bars; means for lifting one or more arms on one side of an arm raised by one of the racks, comprising projections, one of which is formed on each arm so as to overlie and rest upon the adjacent arm; a lever for moving the cross-bar and springs for moving the racks in the direction of the cross-bar.

38. In an adding and subtracting machine, a cross-bar, spring-controlled in one direction; a plurality of sliding racks abutting against said cross-bar and spring-controlled in an opposite direction, the tension on said cross-bar being greater than that exerted upon the racks; pivoted type-bars carried by the racks, spring dogs carried by the cross-bar for engaging depending ends of the type-bars; arms which normally prevent the dogs from engaging the type-bars; fingers carried by the racks for lifting the arms as the racks recede, to permit the dogs to engage the type bars, and means for lifting one or more arms on one side of a predetermined arm which has been lifted by the movement of its operating rack, when the operating racks of said one or more arms remain stationary, consisting of a projection on each of said arms, each of which overlies and rests upon the adjacent arm.

39. In an adding and subtracting machine, a plurality of sliding racks; a like number of gear wheels operated by said racks, having laterally projecting pins; adding and subtracting mechanisms which are interchangeably operated by said gears, each comprising a plurality of vertically movable, spring-operated bars, carrying a trip lever, a latch, and a pawl lever, the pins of said gears, in their initial positions, being beneath the trip levers, when the adding mechanism is in operative position, while the diametrically opposite pins are above the trip levers of the subtracting mechanism, when it is in operative position.

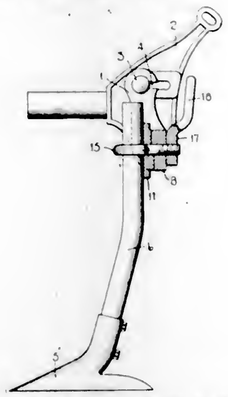
40. In an adding and subtracting machine, a plurality of gear wheels, having projecting pins spaced ten teeth apart; adding and subtracting mechanisms, interchangeably operated by said gears, each comprising a plurality of vertically movable spring-actuated bars; a trip lever on each of said bars in the path of the gear wheel pins; a latch on each bar, in position to be tripped by its trip lever and release the bar; a pawl lever on each bar in position to engage the next gear wheel; an arm on each latch which extends between the trip lever and latch of the adjacent bar; racks for rotating the gears; means for lifting said gears and mechanisms, to free said gears from said racks; and means for returning the released bars to their normal positions when said gears and mechanisms are lifted, thereby causing the pawl lever of each released bar to engage the next gear wheel, and move it one tooth.

41. In an adding and subtracting machine, a plurality of gear wheels; adding and subtracting mechanisms, interchangeably operated by said gears; racks spring-operated in one direction for rotating the gears; lock plates for holding said racks in their initial positions; keys for depressing the lock plates to release the racks; stops on said keys for limiting the movement of the racks; a platen roll, a record sheet, a type ribbon, and means for moving said roll and ribbon simultaneously step by step; type-bars carried by the racks, and means for tripping them, when racks are stopped, causing them to imprint numerals upon the record sheet; a spring-actuated cross-bar for restoring the racks to their normal positions; a lever for moving the cross-bar in a counter direction, and means for disengaging the gears from the racks during either movement of the lever.

856,237. CULTIVATOR-FOOT. CHARLES L. FERRIOTT, Temple, Tex. Filed Jan. 17, 1907. Serial No. 352,755.

Claim.—1. In an attachment for cultivators, a base provided with a laterally-extending perforated projection at one end and with an opening at the other, the forward face of said projection being provided with a corrugated seat, an elongated, perforated plate adjustably-mounted on said seat, the forward face of the plate being grooved longitudinally and the rear face being provided with a corrugated seat around said opening, and an eye-bolt through said plate and projection having its forward end provided with an eye for engaging with the standard of the cultivator, and a nut upon its rear end.

2. In a cultivator attachment, a base provided at its lower end with a laterally-extending perforated projection, the forward face of which is provided with a seat at a distance from the main portion of the base, an elongated, perforated plate having its forward end provided with a longitudinal groove and its rear face with a seat around said perforation, and an eye-bolt through said perforations having its forward end provided with an eye for the reception of the cultivator standard, and a winged nut upon the rear end of the bolt for rigidly securing said parts in an adjusted position.



3. In an attachment for cultivators, a base having its upper end slotted and its lower end provided with a laterally extending projection upon one side and a pivot connection upon the opposite side, a perforated plate against the forward face of said projection, an eye-bolt through said perforation, the forward end of which is provided with an eye for the reception of the cultivator standard and the rear end with a handled nut for rigidly securing the standard in position, and a bolt through the slot in the upper end of the base.

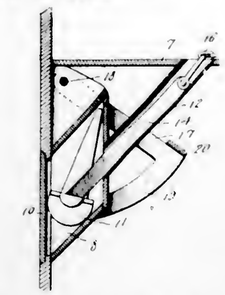
856,238. COMBINED BRUSH AND MOP HOLDER. GEORGE A. FRASER, Winnipeg, Manitoba, Canada. Filed July 2, 1906. Serial No. 324,523.



Claim.—1. In a device of the class described, in combination, a central tube having a cap at one end and an internal annular shoulder at the other, an inner and an outer tube connected together and slidably connected with the central tube, the inner tube having longitudinal slots therein, a winged washer extending into the slots and therebeyond, an annular cap having a threaded opening at the forward end of the inner tube, a spiral spring bearing between the inner face of the cap and the wings, a threaded rod rotatably supported from the winged washer and passing forwardly through the opening and without the central tube, a collar on the rod, an arm carrying a brush clamp extending from the central tube, and a clamp on the free extremity of the rod, substantially as described.

2. In a device of the class described, in combination a tube having a cap at one end and an internal annular shoulder at the other, an inner tube slidable within the aforesaid tube, said inner tube having longitudinal slots, a winged washer extending into the slots and therebeyond, an annular cap having a threaded opening at the forward end of the inner tube, a spiral spring bearing between the inner face of the latter cap and the wings, a threaded rod rotatably supported from the winged washer and passing forwardly through the opening and without the first mentioned tube, a collar and a clamp on the rod, an arm extending from the first named tube, and means for securing a brush and mop to the forward end of the arm, as and for the purpose specified.

856,239. ANCHOR-COMPARTMENT. SIMON A. FRASER and MATHEW JACKSON, Lorain, Ohio. Filed Nov. 24, 1906. Serial No. 344,947.



Claim.—1. An anchor housing for ships, comprising a casing built within the hull and opening through the same, and a closure for said opening comprising a lid swinging outwardly, and bent supporting arms hung within the hull and extending through the same to connection with the lid.

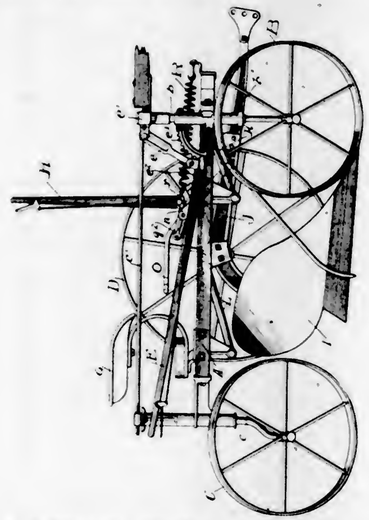
2. An anchor housing for ships, comprising a casing built within the hull and opening through the same, a lid for said opening fitting within the same, supporting arms pivoted at the top within the hull above said opening and having segmental lower parts extending outwardly through the hull to connection with the lid, and means connected to said arms to swing the lid.

3. An anchor housing for ships, comprising a casing within the hull and opening through the same, a lid for said opening, constructed to move to and from the same and to fit snugly therein substantially flush with the outside of the hull, and means located within the hull to support and operate said lid.

856,240. WHEELED PLOW. ALBERT B. FRENIER, Davenport, Iowa. Filed Dec. 17, 1903. Renewed Nov. 10, 1906. Serial No. 342,906.

Claim.—1. A wheeled-plow comprising a body frame, supporting wheels, a plow and beam movably supported from the body-frame, a bracket bearing mounted on the body-frame, lifting and depressing foot-levers separately mounted on said bearing and adapted for some movement independently of each other, and a toggle-connection between the said lifting lever and the plow-beam, the two

associated foot-levers being axially alined and having a lost-motion connection between them, whereby a portion rigid with the lifting foot-lever constitutes medium of connection through which motion is communicated from the depressing foot-lever to the plow.



2. A wheeled plow comprising a body-frame, supporting wheels, a plow and beam movably supported from the body-frame, a housing rigidly mounted upon the body-frame, a rock-shaft mounted to turn in said housing, a lifting foot-lever rigid with said rock-shaft, a toggle-like connection between said rock-shaft and the plow-beam, and a depressing foot-lever mounted on said housing and adapted for some movement independently of said lifting lever, the two associated foot-levers being axially alined and having a lost-motion connection between them, whereby a portion rigid with the lifting foot-lever constitutes medium of connection through which motion is communicated from the depressing foot-lever to the plow.

3. A wheeled-plow comprising a body-frame, supporting wheels, a plow and beam movably supported from the body-frame, a housing or bracket rigidly mounted upon the body-frame, a rock-shaft mounted to turn in said housing, a lifting foot-lever mounted on the housing or bracket and rigid with said rock-shaft, a toggle-like connection between said rock-shaft and the plow-beam, a depressing foot-lever also mounted on said housing or bracket and adapted for some movement independently of the lifting lever, said depressing lever being loose relatively to the rock shaft, and a locking device for locking the plow-beam in an elevated position, the said locking device being adapted to be unlocked by movement of the depressing lever the two associated foot-levers being axially alined and having a lost-motion connection between them, whereby a portion rigid with the lifting foot-lever constitutes medium of connection through which motion is communicated from the depressing foot-lever to the plow.

4. A wheeled-plow comprising a body-frame, supporting wheels, a bearing rigid with the body-frame, a plow and beam, a rock-shaft mounted in said bearing, a toggle-connection between the rock-shaft and the plow-beam, a lifting foot-lever rigid with the rock-shaft, a depressing foot-lever mounted on the bearing and adapted for some movement independently of the lifting lever, and a combined lifting and depressing spring connected to exert a pull upon a part rigid with the depressing lever, said spring being adapted to be shifted from lifting to depressing position, and vice versa, through the medium of the independent movement of the depressing lever the two associated foot-levers being axially alined and having a lost-motion connection between them, whereby a portion rigid with the lifting foot-lever constitutes medium of connection through which motion is communicated from the depressing foot-lever to the plow.

5. A wheeled-plow comprising a body-frame, supporting wheels, a plow and beam, a bearing mounted on the body frame, lifting and depressing levers separately mounted on said bearing and adapted for some movement independently of each other, a toggle-connection between the lifting lever and the plow-beam, a combined lifting and depressing spring connected to exert a pull upon a portion rigid with the depressing lever, such spring being adapted to be shifted from lifting to depressing position, and vice versa, through the medium of the independent movement of the depressing lever, and a hand-lever located nt the left of said foot-levers and adapted for manipulating or controlling one of said wheels relatively to the body-frame the two associated foot-levers being axially alined and having a lost-motion connection between them, whereby a portion rigid with the lifting foot-lever constitutes medium of connection through which motion is communicated from the depressing foot-lever to the plow.

6. A wheeled-plow comprising a body-frame, a bracket on the left side of the frame a plow and beam, supporting wheels including a land-side wheel, separated and suitably mounted lifting and depressing foot-levers carried by the bracket on the body-frame, a connection between the plow-beam and the said lifting lever, a lost-motion connection between the two foot-levers, and a hand lever adapted for manipulating said land-side wheel, the hand-lever being mounted between the land-side wheel and the foot-levers the two associated foot-levers being axially alined, and a portion rigid with the lifting foot-lever constituting medium of connection through which motion is communicated from the depressing foot-lever to the plow.

7. A wheeled-plow comprising a body-frame, supporting wheels including a land-side wheel, a plow and beam, a bearing mounted on the body-frame, lifting and depressing foot-levers separately mounted on said bearing, a lost-motion connection between said foot-levers, a toggle-connection between the lifting lever and the plow-beam, a combined lifting and depressing spring connected to exert a pull upon a portion rigid with said depressing lever, and a hand-lever adapted for controlling the land-side wheel relatively to the body-frame, the said hand lever being mounted between the land-side wheel and the foot levers the two associated foot-levers being axially alined, and a portion rigid with the lifting foot-lever constituting medium of connection through which motion is communicated from the depressing foot-lever to the plow.

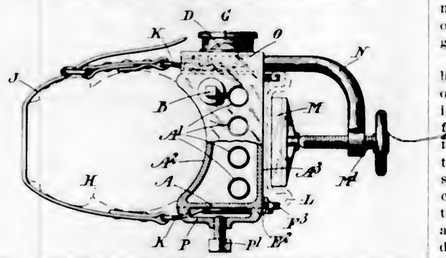
8. The improved wheeled plow with lifting and depressing foot levers mounted separately upon a bracket bearing secured rigidly to the frame of said plow the two associated foot-levers being axially alined and having a lost-motion connection between them, whereby a portion rigid with the lifting foot-lever constitutes medium of connection through which motion is communicated from the depressing foot-lever to the plow.

9. The improved wheeled plow comprising a plow and beam, supporting wheels, a rigid bracket and two levers mounted for more or less separate and independent operation, and supported separately upon the said bracket, substantially as described.

856,241. PORTABLE SELF-CONTAINED VULCANIZING APPARATUS. HENRY H. FROST, London, England. Filed June 7, 1906. Serial No. 320,641.

Claim.—1. A portable self-contained vulcanizer having, in combination, a steam generator provided with a lateral vulcanizing surface formed to conform to the surface of a tire, means for clamping the generator to a tire in place on a wheel, a burner located beneath the generator, and a plurality of flues passing vertically through the water space of the generator from the burner to the upper end of the generator.

2. A portable self-contained vulcanizer having, in combination, a steam generator provided with a vulcanizing surface, a burner connected with the generator and provided with a curved upper surface, and a shield curved to conform to the upper surface of the burner and movable over the burner to cover more or less of its surface.

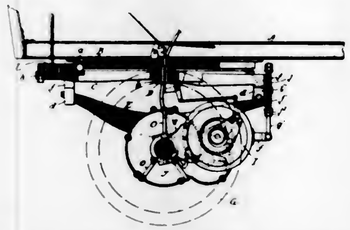


3. A portable self-contained vulcanizer having, in combination, a steam generator provided with a vulcanizing surface, a cylindrical burner connected with the generator, and a cylindrical shield surrounding the burner and movable longitudinally to cover more or less of the burner.

4. A portable self-contained vulcanizer having, in combination, a steam generator provided with a vulcanizing surface, a cylindrical burner located beneath the generator, and a burner casing inclosing the bottom of the burner but spaced therefrom to form an air passage and provided with an air-inlet opening beneath the burner.

5. A portable self-contained vulcanizer having, in combination, a steam generator provided with a vulcanizing surface, a burner casing located beneath the generator, a cylindrical burner mounted horizontally in the burner casing and removable lengthwise therefrom, and a cylindrical shield inclosing a portion of the burner and movable lengthwise to cover more or less of the burner.

856,242. SELF-PROPELLED VEHICLE-TRUCK. RODOLPHUS FULLER, Detroit, Mich. Filed July 2, 1906. Serial No. 324,397.



Claim.—1. In a truck for electrically propelled vehicle, the combination of a divided driving axle having drive wheels secured thereon, journal boxes carrying the supporting springs of the truck, a differential gear having a gear casing provided with laterally extending axle sleeve members, connections uniting said members with the journal boxes and permitting relative rotation between them, an electric motor adjacent to one of the axle sleeve members and having its casing secured thereto, means yieldingly suspending the casing of the motor upon its farther side from a suitable part carried by the springs of the truck, and a journal bearing formed in an enlargement of the gear casing adjacent to one end of the motor and into which said motor shaft projects.

2. In a truck for electrically propelled vehicle, the combination of a differentially driven driving axle carrying the drive wheels, journal boxes thereon carrying the supporting springs of the truck, a casing inclosing the differential gear and having laterally extending axle sleeve-members, pivotal connections uniting the journal boxes to the outer ends of said members and permitting relative rotation between them, an electric motor adjacent to one of said axle sleeve members, connections detachably securing the motor to said member, a suspension device yieldingly suspending the motor upon its opposite side from a part of the truck or vehicle supported by the springs of the truck, an enlargement on the gear casing formed with a bearing into which one end of the motor shaft projects and intermediate drive gear inclosed within the enlargement of the gear casing.

3. In a truck for electrically propelled vehicle, the combination of a divided driving axle carrying the two wheels of the truck, journal boxes thereon carrying the supporting springs of the truck, a differential gear, a casing therefor having laterally extending axle sleeve members journaled at their outer ends in bearings in the inner ends of the journal boxes and held against endwise displacement, said members positioning the gear casing to one side of the center of the truck, an electric motor located adjacent to the axle sleeve member upon the opposite side of the center and in rigid supporting connection therewith, a suspension device yieldingly supporting the motor upon the side farthest from the axle from a part of the vehicle or truck carried by the springs of the truck, a bearing formed in an enlargement of the gear casing adjacent to one end of the motor and in which the motor shaft is journaled, and intermediate drive gear between said end and the differential gear.

4. In a truck for electrically propelled vehicle, the combination of a divided driving axle carrying the two wheels of the truck, journal boxes thereon carrying the supporting springs of the truck, a differential gear, a casing therefor having laterally extending axle sleeve members journaled at their outer ends in the inner ends of the journal boxes and endwise united thereto, said members being of a relative length to position the gear casing to one side of the center of the truck, an electric motor located adjacent to the axle sleeve member on the opposite side of the center and in rigid supporting connection with said member, a suspension device yieldingly supporting the motor on the side farthest from the axle from a part of the truck or vehicle supported by the springs of the truck, a bearing formed in an enlargement of the gear casing adjacent to the motor and into which the motor shaft extends, intermediate gear between the motor shaft and the differential gear inclosed in said enlargement, and a brake device carried by the motor shaft between said enlargement and the casing of the motor.

5. In a truck for electrically propelled vehicle, the combination of a divided driving axle carrying the two wheels of the truck, journal boxes thereon carrying the supporting springs of the truck, a differential gear having a gear casing provided with laterally extending axle sleeve members, flanged collars at the outer ends of said members journaled in bearings in the inner ends of the journal boxes and held therein against lateral displacement, truss rods connecting said collars with the gear casing and forming in connection therewith and with the axle sleeve members a rigid supporting truss and an electric motor in rigid suporting connection with said truss.

6. In a truck for electrically propelled vehicle, the combination of a divided driving axle carrying the two wheels of the truck, journal boxes thereon, a differential gear located to one side of the center of the truck, a casing therefor having laterally extending axle sleeve members journaled in the inner ends of the journal boxes and held against endwise displacement therein, and an electric motor located adjacent to the axle sleeve member on the other side of the center of the truck in relation to the gear casing, an enlargement of the gear casing inclosing the intermediate drive mechanism and formed with a bearing in which the motor shaft is journaled, a rigid supporting connection between the motor and the adjacent axle sleeve member, and a suspension device yieldingly supporting the motor from a suitable part of the truck or vehicle carried by the springs.

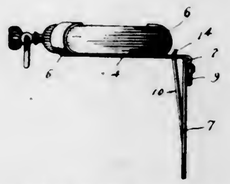
7. In a front truck for electrically propelled vehicle, the combination of a driving axle carrying the two wheels of the truck, journal boxes thereon, springs mounted upon the journal boxes, a lower circle formed with outwardly extending brackets, stirrups interposed between the ends of

the springs and the outer ends of said brackets, an upper circle formed with a ball bearing groove upon its under side, balls interposed in said groove between the upper and lower circle, said lower circle having a plain upper face upon which the balls travel, and a hollow king pin pivotally uniting the upper and lower circles together.

8. In a front truck for electrically propelled vehicle, the combination of a divided driving axle carrying the two wheels of the truck, a differential gear having a gear casing in which the inner ends of the driving axle are journaled, axle sleeve members extending laterally from the gear casing, journal boxes upon the driving axle at the outer ends of the axle sleeve members, connections uniting said journal boxes and the axle sleeve members endwise and permitting relative rotation between them, springs mounted upon the journal boxes, a lower circle mounted upon the springs, an upper circle supported upon the lower circle, a ball bearing between the circles, a hollow king pin pivotally uniting the circles, an electric motor adjacent to and in rigid supporting connection with the axle sleeve member on one side of the gear casing and a suspension device yieldingly supporting the motor from the lower circle said motor having one end of its shaft extending into an enlargement of the gear casing and journaled therein.

9. In a front truck for electrically propelled vehicle, the combination of a divided driving axle carrying the two wheels of the truck, a differential gear having a gear casing in which the inner ends of the driving shaft are journaled, axle sleeve members laterally extending from the gear casing, journal boxes upon the driving axle at the outer ends of the axle sleeve members, connections uniting the journal boxes and axle sleeve member endwise together free to permit relative rotation between them, springs mounted upon the journal boxes, a lower circle formed with brackets extending outwardly therefrom over the ends of the springs, stirrups interposed between the ends of the springs and brackets, an upper circle, a ball bearing between the two circles, a hollow king pin uniting the circles together, an electric motor adjacent to and in rigid supporting connection with the axle sleeve member on one side of the gear casing, a suspension device yieldingly supporting the motor from the lower circle, an enlargement on the gear casing adjacent to one end of the motor and formed with a journal bearing into which the motor shaft projects, intermediate drive mechanism inclosed within said enlargement, a brake on the motor shaft intermediate between the gear casing and the body of the motor—the body of the motor being on one side of the center of the truck and the gear casing upon the other side—and brake connection extending from the brake through the hollow king pin to a suitable part on the vehicle platform.

856,243. WATCH-HOLDER. ALEXANDER W. FUNK, Cleveland, Ohio. Filed Aug. 9, 1906. Serial No. 329,865.

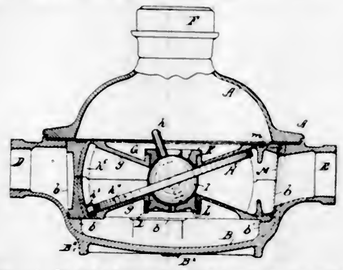


Claim.—1. A watch holder comprising a slotted plate having means to attach the same to a support, another plate hinged to said plate and having means to hold a watch, and also having a spring arm provided with a tongue at the end, extending into the slot and arranged to hold the plates at an angle to each other.

2. A watch holder comprising a plate having attaching means, another plate hinged thereto and having means to hold a watch, and a spring arm projecting from one plate and engageable with the other to hold the plates extended at an angle to each other.

3. A watch holder comprising a plate having a spring arm projecting therefrom and also having means for attachment to a support, and another plate hinged to the top of said plate and arranged to swing up and down, and having means to hold a watch, and engaged and supported by said arm when in raised position.

856,244. DISK METER. ERNEST E. GAMON, Long Island City, N. Y., assignor to Neptune Meter Company, Long Island City, N. Y., a Corporation of New Jersey. Filed Sept. 12, 1906. Serial No. 334,208.



Claim.—1. In a water meter, the combination of a main casing having inlet and discharge orifices, an angularly adjustable measuring chamber within said main casing having inlet and discharge orifices, said orifices being in circumferentially adjustable registry with each other.

2. In a water meter, the combination of a main casing, a measuring chamber within said main casing, said chamber and casing having communicating inlet and discharge orifices and means for adjusting said chamber within said casing, to vary the communication between one pair of said orifices to correspond with the varying pressures to which the meter may be subjected.

3. In a water meter, the combination of a main casing, a measuring chamber within said main casing, said chamber and casing having communicating orifices and means for adjusting said chamber within said casing, to vary the communication between said orifices to correspond with the varying pressures to which said meter may be subjected.

4. In a water meter, the combination of a main casing, a measuring chamber within said main casing, said chamber and casing having communicating inlet and discharge orifices and means for setting said chamber with respect to said casing whereby the size of one of said orifices may be adjusted to correspond to the varying pressures to which the meter may be subjected.

5. In a water meter, the combination of a main casing, a measuring chamber within said main casing, said chamber and casing having communicating inlet and discharge orifices and adjustable means for setting said chamber within the main casing whereby one of said orifices may be adjusted in cross-section to correspond to the varying pressures to which the meter may be subjected.

6. In a water meter, the combination of a meter casing and a rotatably adjustable measuring chamber within said casing.

7. In a water meter, the combination of a meter casing, a measuring chamber within said casing and means for rotatably adjusting said chamber within said casing.

8. In a water meter, the combination of a meter casing and a measuring chamber rotatably adjustable within said casing, said chamber and casing having communicating ports in adjustable registry according to the rotatably adjusted position of said chamber.

9. In a water meter, the combination of a meter casing and a measuring chamber within said casing, said parts having registering inlet and discharge orifices, means for rotating said measuring chamber to vary the registry of said inlet and discharge orifices.

10. In a water meter, the combination of a main casing having a discharge orifice, an angularly adjustable measuring chamber within said main casing having a delivery port in circumferentially adjustable communication with said discharge orifice.

11. In a water meter, the combination of a main casing having a discharge orifice, an angularly adjustable measuring chamber within said main casing, said chamber having a delivery port normally in open communication with said discharge orifice, means for adjusting said measuring chamber within said main casing to vary the size of the opening between said delivery port and said discharge orifice.

12. In a water meter, the combination of a main casing, a rotatably adjustable measuring chamber within said main casing, a series of interior bearing faces within said main casing, a series of bearing faces located upon the exterior of said measuring chamber, said chamber having a delivery port leading from the interior of said measuring chamber through one of its bearing faces, said casing having a discharge passage leading from within through one of its bearing faces, said delivery port and discharge passage being normally in registry and means for rotatably adjusting said measuring chamber to vary the registry of said port and passage.

13. In a water meter, the combination of a main casing having inlet and discharge orifices, a measuring chamber within said main casing, and having an inlet in communication with said main casing and a delivery port in substantial registry with said discharge orifice and means for rotatably adjusting said measuring chamber within said main casing to vary the discharge opening between said delivery port and said discharge orifice.

14. In a water meter, the combination of a main casing having inlet and discharge orifices, an angularly adjustable measuring chamber within said main casing having inlet and delivery ports, said delivery ports being in circumferentially adjustable registry with said discharge orifice.

15. In a water meter, the combination of a main casing having inlet and discharge orifices, an angularly adjustable measuring chamber within said main casing, bearing faces in said main casing, corresponding bearing faces upon the outer side of said measuring chamber, said chamber having inlet and delivery ports, said delivery port being in circumferentially adjustable registry with said discharge orifice.

16. In a water meter, the combination of a main casing having a broad bearing face upon its interior and a discharge orifice leading from said bearing face, a measuring chamber within said main casing, a broad bearing face upon the exterior of said measuring chamber, said chamber having a delivery port leading from the interior through said latter bearing face, means for adjusting said chamber to vary the opening between said delivery port and discharge orifice.

17. In a water meter, the combination of a main casing having a discharge orifice, a rotatably adjustable measuring chamber within said main casing, said chamber having a delivery port leading from within to said discharge orifice, means for setting said measuring chamber in various adjusted fixed positions within said main casing to vary the opening between said delivery port and said discharge orifice.

856,245. BEARING FOR WATER-METERS. ERNEST E. GAMON, Long Island City, N. Y., assignor to Neptune Meter Company, Long Island City, N. Y., a Corporation of New Jersey. Filed Sept. 12, 1906. Serial No. 334,232.



Claim.—1. In a bearing member for water meters, the combination of a cylindrical block having a spherical socket in its end, and an agate ball fitted into said socket and fixedly held in position therein by the spun margin of the socket overlapping the upper surface of said ball.

2. A bearing for water meters comprising a shaft having a cylindrical socket in its end, a hard rubber block fitted into said socket and a fixed agate ball against which said hard rubber block bears.

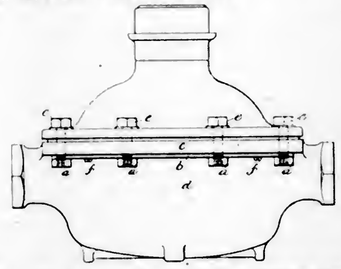
3. A bearing for water meters comprising a shaft having a hard rubber bearing surface at its end, and a fixed block of agate having a spherical surface against which said rubber bearing surface rests.

4. A bearing for water meters and the like, comprising a vertical shaft or spindle having a cylindrical socket in its lower end, a cylindrical block of hard rubber secured in said socket leaving an exposed end bearing surface, and a fixed agate bearing having a spherical surface upon which said rubber rests.

5. In a bearing, the combination of a vertical shaft having a flat rubber bearing at its end, with a spherical bearing surface upon which said rubber bearing rests.

6. In a bearing of the type specified, the combination of a block of hard rubber having a flat bearing surface, and a hard non-oxidizable substance having a spherical bearing surface against which said flat rubber surface rests.

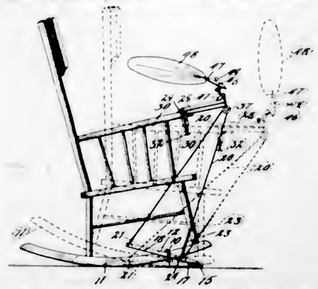
856,246. NUT-RING. ERNEST E. GAMON, Long Island City, N. Y., assignor to Neptune Meter Company, Long Island City, N. Y., a Corporation of New Jersey. Filed Sept. 12, 1906. Serial No. 334,234.



Claim.—1. As a new article of manufacture, the combination of a plurality of nuts spaced apart and connected together by means of a thin and frangible supporting plate.

2. As a new article of manufacture, the combination of a plurality of nuts spaced apart and connected together by means of a thin and frangible curved supporting plate.

856,247. FAN ATTACHMENT FOR ROCKING-CHAIRS. JAMES E. GILBERT, Chicago, Ill., assignor to Gilbert, Harris & Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 25, 1907. Serial No. 359,283.



Claim.—1. In mechanism of the class described in combination with an object to be rocked mounted on rockers, a member detachably secured to the object to be rocked carrying a bell crank adjacent to the position of the person to be fanned, a fan connected to one arm of the bell crank, a wheel pivotally mounted adjacent to the other

bell crank arm, a connecting rod between the second bell crank arm and the wheel and means connected to the rocker for turning said wheel in opposite directions to oscillate the fan as the rocker oscillates.

2. In mechanism of the class described in combination with an object to be rocked mounted on rockers, a lever pivotally mounted to one rocker, a bell crank mounted upon the object to be rocked adjacent to the position of the person to be fanned, a fan connected to one arm of the bell crank, a wheel pivotally mounted adjacent to the other bell crank arm, a connecting rod between the second bell crank arm and the wheel and means connected to the rocker for turning said wheel in opposite directions to oscillate the fan as the rocker oscillates.

3. In mechanism of the class described, a lever adjustably pivoted upon one rocker of the object to be rocked, one end of said lever being adapted to engage the floor and there being a plurality of means for connecting a belt to said lever throughout its length, a fan pivotally mounted upon the upper portion of the object to be rocked a wheel journaled nearby, means whereby rotating said wheel reciprocates the fan and a belt passing over said wheel having one end detachably secured in a selected-connecting means in one end of said lever and its other end secured to one end of a spring whose opposite end is selectively secured to the said lever by a connecting means at its opposite end for the purposes set forth.

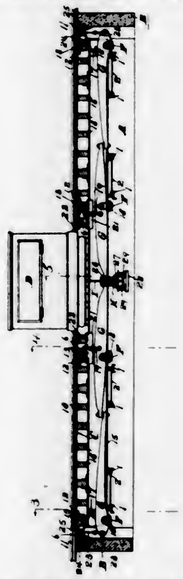
4. In a fan attachment for rocking chairs the combination of a supporting mechanism, means for securing the same to the arm of the rocker, a bell crank pivotally mounted thereon, means for securing the fan to said crank arm in proper position to fan the person in the rocking chair, a wheel, pivotally mounted adjacent to the second bell crank arm means for connecting said wheel and the last mentioned bell crank arm whereby when said wheel is partially or wholly rotated it rocks said bell crank arm, a lever pivotally mounted upon the rocker of the chair and a belt secured to said lever on opposite sides of its pivotal bearing passing over said wheel, a roller upon one end of said lever engaging the floor on which the chair stands the whole so arranged that rocking the chair rocks the lever and causes the belt to oscillate the wheel with the result that the fan is reciprocated in the manner described.

5. In a fan attachment for rocking chairs the combination of a supporting mechanism, means for securing the same to the arm of the rocker, a bell crank pivotally mounted thereon, a universal joint in one arm of the bell crank, means for securing the fan to said crank arm in proper position to fan the person in the rocking chair, a wheel pivotally mounted adjacent to the second bell crank arm, means for connecting said wheel and the last mentioned bell crank arm whereby when said wheel is partially or wholly rotated it rocks said bell crank arm, a lever pivotally mounted upon the rocker of the chair and a belt secured to said lever on opposite sides of its pivotal bearing passing over said wheel, a roller upon one end of said lever engaging the floor on which the chair stands the whole so arranged that rocking the chair rocks the lever and causes the belt to oscillate the wheel with the result that the fan is reciprocated in the manner described.

856,248. RAILWAY-TRACK SCALE. WILLIAM N. GILBERT, Binghamton, N. Y., assignor to Osgood Scale Company, Binghamton, N. Y., a Corporation of New York. Filed July 6, 1906. Serial No. 324,958.

Claim.—1. In a weighing scale having longitudinal and side walls forming a scale pit, the combination with supports extending across the scale and supported at their ends by the side walls, of main levers supporting the scale platform, and extension levers extending longitudinally of the scale through which the motion of the main levers is transmitted, said main and extension levers being suspended from and below said supports.

2. In a weighing scale having longitudinal and side walls forming a scale pit, the combination with supports extending across the scale and supported at their ends by the side walls, of main levers supporting the scale platform and extending from opposite sides of the scale to the center, and central extension levers extending longitudinally of the scale and through which the motion of the main levers is transmitted, said main and extension levers being suspended from and below said supports.



3. In a weighing scale having longitudinal and side walls forming a scale pit, the combination with supports extending across the scale and supported at their ends by the side walls, of main levers supporting the scale platform, extension levers extending longitudinally of the scale and through which the motion of the main levers is transmitted, said main and extension levers being suspended from and below said supports, and suspension devices for said main and extension levers by which the main and extension levers may be adjusted independently of each other.

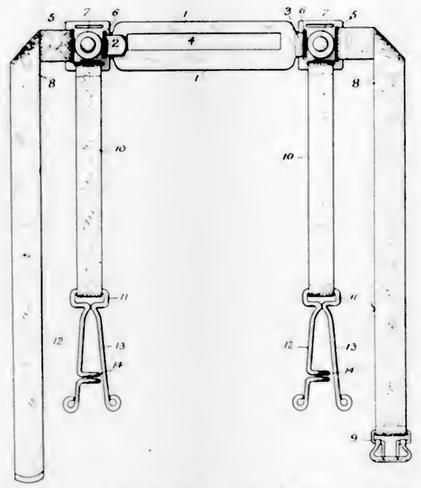
4. In a weighing scale having longitudinal and side walls forming a scale pit, the combination with supports extending across the scale and supported at their ends by the side walls, of levers supporting the scale platform and suspended from and below said supports.

5. In a weighing scale having longitudinal and side walls forming a scale pit, the combination with supports extending across the scale and supported at their ends by the side walls, of main levers supporting the scale platform, and extension levers extending longitudinally of the scale through which the motion of the main levers is transmitted, said extension levers being suspended from and below said supports.

6. In a weighing scale having longitudinal and side walls forming a scale pit, the combination with supports extending across the scale and supported at their ends by the side walls, of main levers supporting the scale platform and extending from opposite sides of the scale to the center, and central extension levers extending longitudinally of the scale and through which the motion of the main levers is transmitted, said extension levers being suspended from and below said supports.

7. In a weighing scale, the combination with the platform and the main levers supporting the platform, of extension levers through which the motion of the main levers is transmitted, supports below the scale platform and above the extension levers, and means for pivotally suspending said extension levers from and below said supports.

856,249. GARMENT-SUPPORTER. CHARLES B. GOLDSMITH, Waterbury, Conn. Filed Mar. 22, 1907. Serial No. 363,880.



Claim.—1. A device of the character described, comprising a metallic back strip, metal plates hinged to the ends of said strip and carrying studs projecting from one face of said plates, flexible tapes secured to the outer edges of said plates whereby the device may be secured around the waist of the wearer, and clamping members depending by flexible connections from the lower edges of said plates and adapted to co-operate with said studs to clamp the interposed shirt waist.

2. A device of the character described, comprising a metallic back strip, metal plates attached to the ends of said strip and carrying studs one of said plates being capable of detachment from said strip, flexible tapes secured to the outer edges of said plates whereby the device may be secured around the waist of the wearer, tapes depending from the lower edges of said plates, and clamping members secured at their upper ends to these last mentioned tapes and terminating in diverging legs one of which carries a hook, whereby said clamping members may be placed around said studs with the fabric of the shirt waist interposed and secured in this position by engaging said hooks with the opposite legs of said clamping members.

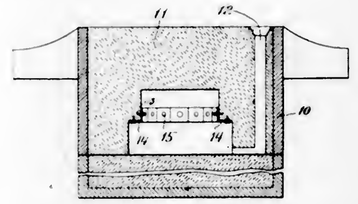
3. A device of the character described, comprising a metallic back strip having in its central portion an elongated horizontally disposed slot and terminating at its ends in hooks, metal plates having in their sides vertically disposed slots with which said hooks are engaged in hinged connections, studs projecting from the inner faces of said plates, tapes secured to said plates and capable of attachment around the person of the wearer, tapes depending from said plates, and clamping members having loops at their inner ends through which said last mentioned tapes are secured the lower ends of said members terminating in diverging legs one of which carries a hook.

856,250. HIGH-MANGANESE STEEL WITH LOW CARBON. ROBERT A. HADFIELD, Sheffield, England. Filed Apr. 16, 1907. Serial No. 368,533.

Claim.—1. The herein-described steel containing less than 1.0% of carbon and from 10% to 14% of manganese, capable of being readily heat-treated and toughened in the mass without cracking, and distinguished by its relatively strong magnetic character.

2. The herein-described steel containing less than 1.0% of carbon and a high percentage of manganese, distinguished by its relatively strong magnetic character, and capable of being readily heat-treated and toughened in the mass without cracking.

856,251. MOLD FOR MAKING STEEL CASTINGS. CARL HAGSTROM, Lynn, Mass. Filed Aug. 28, 1906. Serial No. 332,381.



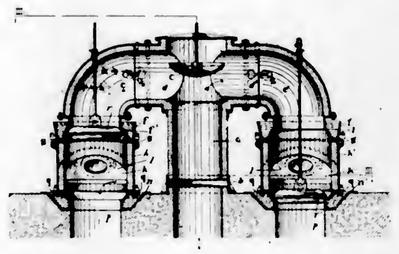
Claim.—1. A mold for casting, which comprises a sand matrix, and a lining consisting of a solid which will be liquefied by the heat of the substance cast.

2. A mold for metal founding, comprising a matrix of finely divided refractory material, and a lining consisting of a metal which will be liquefied by the heat of the metal cast.

3. A mold for metal founding, comprising a matrix of finely divided refractory material, a lining consisting of sheet metal generally conforming to the surface of the matrix, and means for securing the lining to the matrix, said lining being composed of a metal which will be liquefied by the heat of the metal cast.

4. A mold for metal founding, comprising a matrix of sand, a lining of sheet metal generally conforming to the surface of the matrix, and securing means passing through the sheet metal into the sand, said lining being composed of a metal which will be liquefied by the heat of the metal cast.

856,252. GAS-VALVE. ARNDT L. HAMMARBERG, Youngstown, Ohio. Filed Sept. 20, 1906. Serial No. 335,374.

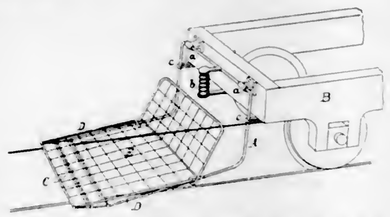


Claim.—1. In a gas-valve for gas-mains, the combination of a casing, a valve seat, and an externally open water-trough on the outer face of said valve seat, the wall of the valve seat constituting the inner wall of the water-trough and forming a portion of the gas-main.

2. In a gas-valve for gas-mains, the combination of a casing, a valve, an upper valve seat, a lower valve seat, a water-trough on the outer face of each valve seat, said water-trough being open exteriorly and closed to the interior of the casing, the walls of the valve seats constituting the inner walls of the water-troughs and forming portions of the gas-main.

3. In a gas-valve, the combination of a casing, an elbow, a valve-seat secured to the lower portion of the elbow, and a hinged joint on the elbow whereby the elbow may be swung clear of the casing for the purpose of renewing the valve.

856,253. SAFETY GUARD OR FENDER FOR TRAMWAY-CARS AND THE LIKE. GUSTAV HAUFF, Kimberley, Cape Colony. Filed Oct. 15, 1906. Serial No. 339,093.



Claim.—1. The combination with a vehicle of a guard attached to and projecting forwardly from the vehicle and a forwardly projecting extension hinged or pivoted to the forward end of such guard and so disposed as to be turned upward and backward relatively thereto by contact with an obstacle.

2. The combination with a vehicle of a guard attached to and projecting forwardly from the vehicle, a forwardly projecting extension hinged or pivoted to the forward end of such guard and so disposed as to turn upward and backward relatively thereto when an obstacle is encountered and a frame pivotally connected to the extension and adapted to slide upon the guard.

3. The combination with a vehicle of a guard attached to and projecting forwardly from the vehicle, a forwardly projecting extension hinged or pivoted to the forward end of said guard and so disposed as to turn upward and backward relatively thereto when an obstacle is encountered, a frame pivotally connected to the extension and adapted to slide upon the guard, and a net upon said frame.

4. The combination with a vehicle of a guard pivoted to and projecting forwardly from the vehicle, a spring tending to keep the front portion of the guard slightly above the rail level, stops to limit the movement of the guard, a forwardly projecting extension hinged or pivoted to the forward end of the guard and so disposed as to fold upward and backward when an obstacle is encountered.

5. The combination with a vehicle of a guard pivoted to and projecting forwardly from the vehicle, a spring tending to keep the front portion of the guard slightly above the rail level, and a forwardly projecting extension comprising a plurality of hinged plates pivotally connected to the forward end of such guard and so disposed as to fold upward and backward when an obstacle is encountered.

6. The combination with a vehicle of a guard pivoted to and projecting forwardly from the vehicle, a spring tending to keep the front portion of the guard slightly above the rail level, a forwardly projecting extension comprising a plurality of hinged plates pivotally connected to the forward end of such guard and so disposed as to fold upward and backward when an obstacle is encountered, and a frame hinged or pivoted to the forward plate and adapted to slide upon the guard.

7. The combination with a vehicle of a guard pivoted to and projecting forwardly from the vehicle, a spring tending to keep the front portion of the guard slightly above the rail level, a forwardly projecting extension comprising a plurality of hinged plates pivotally connected to the forward end of such guard and so disposed as to fold upward and backward when an obstacle is encountered, a frame hinged or pivoted to the forward plate and adapted to slide upon the guard and a net on the frame.

8. The combination with a vehicle of a guard pivoted to and projecting forwardly from the vehicle, a spring tending to keep the front portion of the guard slightly above the rail level, stops to limit the movement of the guard, a forwardly projecting extension comprising a plurality of hinged plates pivotally connected to the forward end of such guard and so disposed as to fold upward and backward when an obstacle is encountered, a frame hinged or pivoted to the forward plate and adapted to slide upon the guard and a net on the frame.

856,254. TYPE-WRITING MACHINE. WILLIAM F. HELMOND, Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 12, 1907. Serial No. 367,778.



Claim.—1. In a typewriting machine, the combination of a ribbon spool comprising two flanges, a core uniting said flanges, and a ribbon-holding pin or bitt fixed in one flange and extending toward the other flange but sufficiently short to permit to be caught thereover a loop of ribbon introduced between the flanges.

2. In a typewriting machine, the combination of a ribbon spool comprising two flanges, a core uniting said flanges, and a ribbon-holding pin or bitt fixed in one flange and extending toward the other flange but sufficiently short to permit to be caught thereover a loop of ribbon introduced between the flanges, an ink ribbon having its end folded back to form a loop, and caught upon said pin, and means securing said folded end to the body of the ribbon and forming an obstruction upon the ribbon for operating a ribbon-reversing mechanism.

3. In a typewriting machine, the combination of a ribbon spool comprising two flanges, a core uniting said flanges, and a ribbon-holding pin or bitt fixed in one flange and extending toward the other flange but sufficiently short to permit to be caught thereover a loop of ribbon introduced between the flanges, an ink ribbon having its end folded back to form a loop caught upon said pin, and means securing said loop end to the body of the ribbon and forming an obstruction upon the ribbon for operating a ribbon-reversing mechanism; said securing means being in the form of a sheet metal clip, each end of which is folded over the ribbon plies.

4. The combination with a ribbon spool comprising a pair of flanges united by a core, of a ribbon of such width as to nearly fill the space between said flanges, the end of said ribbon folded back to form a loop, and a pin extending from one of said flanges toward the other and sufficiently short to permit the loop to be readily disconnected from or caught upon the pin.

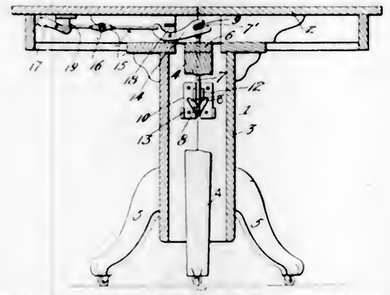
5. The combination with a ribbon spool comprising a pair of flanges united by a core, of a ribbon of such width as to nearly fill the space between said flanges, the end of said ribbon folded back to form a loop, and a pin extending from one of said flanges toward the other and sufficiently short to permit the loop to be readily disconnected from or caught upon the pin, the end of the folded back part of the ribbon being connected to the body of the ribbon in a manner to form an obstruction for operating a ribbon-reversing mechanism.

6. In a typewriting machine, the combination of a ribbon spool comprising two flanges, a core uniting said flanges, and a ribbon-holding pin or bitt fixed in one flange and extending toward the other flange but sufficiently short to permit to be caught thereover a loop of ribbon introduced between the flanges; said pin formed with a barb to catch the ribbon.

856,255. FASTENING DEVICE FOR TABLES. CHARLES HEPP, Shelbyville, Ind. Filed Apr. 23, 1906. Serial No. 313,278.

Claim.—1. A fastening device for pedestal extension tables having hollow pedestal sections adapted to be brought together in the closed position of the table to form a complete pedestal comprising a V-shaped fastening head, a supporting rod connected to said head and adapted to be slidably mounted in the framework of the table, keeper plates secured adjacent to the opposite meeting edges on the inner side of the table pedestal in position to

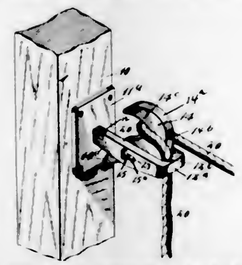
contact with the arms of the V-shaped head at the closed position of the pedestal, a lifting bar adjustably connected with said supporting rod and means for actuating said lifting ball to cause said V-shaped fastening head to engage said keepers and to release it therefrom.



2. A fastening device for pedestal extension tables having hollow pedestal sections adapted to be brought together at the closed position of the table to form a complete pedestal comprising a pair of fastening heads having upwardly-inclined and diverging arms, supporting rods connected at their lower ends to said fastening heads and adapted to be slidably mounted in the framework of a table, apertured heads adapted to be secured onto the upper ends of said rods, a lifting bar connecting the heads on said rods, keeper plates adapted to be secured adjacent the meeting edges of the sections of the pedestal of a table at opposite points on the inner walls of the said sections, and means adapted to be engaged with said lifting bar to raise and lower said fastening heads into and out of engagement with said keeper plates, whereby the sections of said pedestal will be drawn into and held in close engagement.

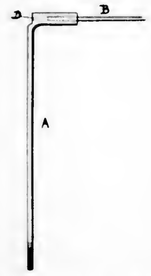
3. A fastening device for pedestal tables having hollow pedestal sections adapted to be brought together at the closed position of the table to form a complete pedestal comprising a pair of fastening heads having upwardly-inclined diverging engaging edges, supporting rods connected at their lower ends to said fastening heads and adapted to be slidably mounted in the frame-work of the table, apertured heads secured on the upper ends of said rods, a lifting bar connecting the heads on said rods, keeper plates adapted to be secured adjacent to the meeting edges of the sections of the pedestal at opposite points on the inner walls thereof, said keeper plates having formed on their inner edges at their upper ends laterally-projecting lugs adapted to be engaged by the upper diverging edges of said fastening heads, and retaining lugs formed on the outer edges of and at the lower ends of said plates to hold said heads in proper position when the table is being closed.

856,256. ROPE-HOLDER. CHARLES H. HERBERT, Chicago, Ill. Filed Nov. 28, 1905. Serial No. 289,455.



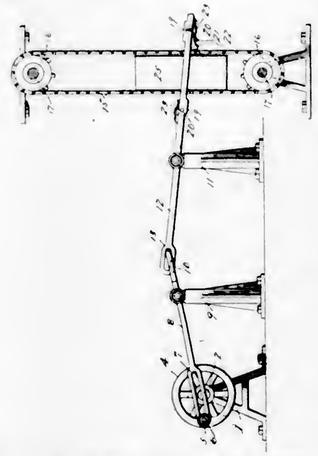
Claim.—A rope holder comprising an attaching plate, a slotted arm projecting at an angle therefrom and having a hook at its outer end, and a cam connected by a sliding pivot in the slot to the side of the arm between the hook and the plate and adapted to swing in a plane parallel to the arm behind the hook and to clamp a rope in said hook, said cam having an upwardly and rearwardly extending horn at its front end, projecting above the arm.

856,257. TONGUE-DEPRESSOR. GEORGE H. HILL, Worcester, Mass. Filed Aug. 22, 1905. Serial No. 275,323.



Claim.—In tongue depressors, combining a holder and tool, a holder having a flat bearing surface, set at substantially a right angle with the handle and two parallel ears thereon so constructed as to form, with the flat bearing surface, a tapering socket, to grip the tool when it is inserted in the holder, substantially as described.

856,258. POWER MECHANISM. EMERY C. HODGES, Bloomington, Ill. Filed May 3, 1906. Serial No. 315,080.



Claim.—1. In a power mechanism, the combination with a driven crank, and a slotted lever operated thereby, of a second lever having sliding connection with the first lever, a sprocket chain and wheels, said second lever being provided with pawls having connection with the sprocket chain.

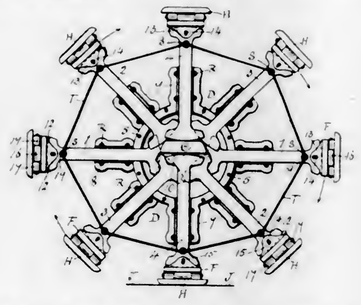
2. The combination with a driven crank, of a lever having sliding connection therewith, a second lever having sliding connection with the first lever, a sprocket chain and sprocket wheels, pawls carried by the second lever to engage said sprocket chain and means for spacing the opposite sides of the chain.

3. The combination with a driven crank, of a slotted lever in connection therewith, a second lever having slid-

ing connection with the first lever, a sprocket chain passing through an opening in the second lever, and pawls in the lever adjacent said opening adapted to engage opposite sides of the chain to operate the sprocket chain.

4. The combination with a driven crank disk, a slotted lever having its long arm connected thereto, the short arm of said lever formed with a loop, a second lever having its long arm formed with a corresponding loop in engagement with said first loop, the opposite end of the second lever having a longitudinal opening near the end thereof, there being recesses on the upper and lower faces at the opposite ends of the openings, pawls pivoted in said recesses, springs engaging the upper faces of said pawls, a sprocket chain passing through the opening and engaged by said pawls, and a spacing block between the opposite sides of said chain.

856,259. AMBULATORY WHEEL. WILLIAM T. JONES, Hamilton, Ontario, Canada. Filed Nov. 23, 1905. Serial No. 288,658.



Claim.—1. In an ambulatory wheel, a stationary axle, a cam on the end of the axle, a casing, capable of revolving on said axle and around said cam, radial legs in the casing and extending through the same and adapted to slide therein, the ends of the legs curved and in contact with the cam, resilient means on the legs to produce said contact, and shoes loosely connected to the opposite ends of the legs.

2. In an ambulatory traction wheel, the combination with legs having curved end faces, of feet having a loose connection with the legs and on which the curved end faces bear.

3. In an ambulatory wheel, a stationary axle, a cam on the axle, a casing adapted to revolve on the axle, slidable legs in the casing and extending through the casing; radial seatings on the casing to support the legs, rollers in the seatings in contact with the legs, the inner ends of the legs in contact with the cam, means on the legs to produce said contact, and covers on the casing and seatings to confine the legs.

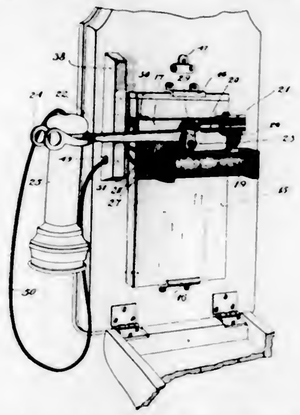
4. In an ambulatory traction wheel, the combination with legs having curved end faces, of ankle brackets loosely connected to the legs and on which the curved end faces bear, and feet hinged to the ankle brackets.

5. In an ambulatory traction wheel, the combination with a cam having flattened upper and lower surfaces and curved ends, of a rotary casing having leg-guides, and legs slidable in the leg-guides and provided with curved rocker ends bearing on said cam.

6. In an ambulatory traction wheel, the combination with a cam, of a rotary casing having leg-guides, legs slidable in the leg-guides and provided with curved rocker ends bearing on said cam, and a taut flexible connection between all of the legs.

7. In a wheel for a vehicle, an outer casing adapted to revolve, radial legs adapted to slide in and beyond the casing, a cam on the vehicle, curves on the ends of the legs to roll against the cam, studs on the legs, sheaves on the studs, and a band around the sheaves to contact the legs with the cam.

856,260. TELEPHONE APPARATUS. WILLIAM KAISLING, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Apr. 9, 1903. Serial No. 151,718.



Claim.—1. In a subscriber's telephone set, the combination with a backboard, of a hook switch mounted thereon, an inclosing case for said switch hook having an opening in one of the side walls thereof to accommodate the projecting switch hook, the case being divided on a line through said opening, the front part of said case being hinged at its lower end to said backboard, a screw threaded bolt extending through said case from front to rear and engaging a nut portion secured to said backboard to retain said case in position, and means for supporting said bolt in position to aline with said nut upon closing said case into position.

2. In a subscriber's telephone set, the combination with a backboard, of a hook switch mounted thereon, an inclosing casing for said hook switch having an opening in one of the side walls thereof to accommodate the projecting switch hook, the case being divided on the line of said opening, one portion of said case having hinged connection with said backboard and bodily removable therefrom, the other portion of said case being rigidly secured to said backboard and forming a side of the opening in the said wall to accommodate said switch hook, a screw threaded bolt extending through said case from front to rear and engaging a nut portion secured to said backboard to retain said case in position, and means for supporting said bolt in position to aline with said nut portion upon closing said case in position.

3. In a subscriber's telephone set, the combination with a backboard, of an inclosing case having hinged connection with said backboard, a screw threaded bolt extending through said case from front to rear and engaging a nut portion secured to said backboard to retain said case in position, and means for supporting said bolt in position to aline with said nut portion upon closing said case into position.

4. In a subscriber's telephone set, the combination with a backboard, of a condenser mounted thereon, a bridge secured to said backboard and spanning said condenser, a hook switch mounted on said bridge, an induction coil mounted on said bridge, an inclosing case for said condenser, bridge, hook switch and induction coil having an opening in one of the side walls thereof to accommodate the projecting switch hook, the case being divided on the line of said opening, the front portion of said case being hinged at its lower end to said backboard and bodily removable therefrom, the other portion of said case being rigidly secured to said backboard, a screw threaded bolt extending through said case from front to rear and engaging a nut portion secured to said backboard to retain said case in position, and means for supporting said bolt

in position to aline with said nut portion upon closing said case into position.

5. In a subscriber's telephone set, the combination with a backboard, of a condenser mounted thereon, a bridge secured to said backboard spanning said condenser, switch springs secured to a projection from said bridge, a switch hook pivoted to said bridge for controlling said switch springs, an induction coil secured to said bridge, a terminal block secured to said bridge, and a stop extending from said bridge, the travel of the switch hook being limited by said stop and said terminal block.

6. In a subscriber's telephone set, the combination with a backboard, of a metallic mounting plate secured thereto, switch springs secured to a projection integral with said plate, an induction coil secured to said plate, a terminal block secured to said plate, and a stop integral with said plate and extending therefrom above said terminal block, the travel of said switch hook being limited by said stop and said terminal block.

856,261. HORSESHOE. THOMAS R. KILEY, Chicago, Ill. Filed Feb. 7, 1906. Serial No. 299,928.



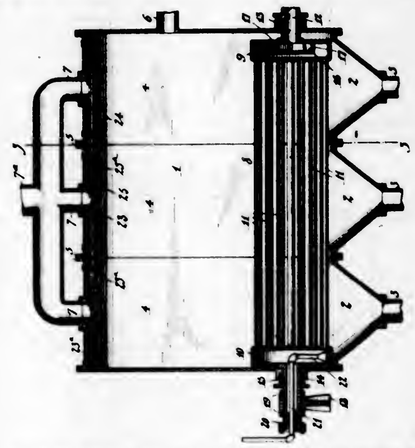
Claim.—A horse shoe comprising a base plate for attachment to the hoof, flanges on the under side thereof forming a groove for the reception of a pad or cushion, a web or webs which extend across said grooves, the ends of which are rigidly connected to the inner surfaces of the flanges forming said groove, thus rendering it impossible for said webs to work through said flanges so as to project at the sides thereof, said web or webs being provided with an opening or openings and a pad molded into said groove comprising integral portions thereof which extend through the opening or openings in said web or webs and connect the sections of said pad on opposite sides of said web or webs.

856,262. EVAPORATOR. FRANK KLEINSCHMIDT, Doyle, N. Y. Filed Feb. 27, 1906. Serial No. 303,295.

Claim.—1. In an evaporator, the combination of a chamber, and a heating-apparatus within the chamber comprising a hollow inlet-head, a hollow outlet-head, and a series of heating-pipes connecting said heads, said inlet-head having a steam-inlet and a steam-distributer into which said inlet opens and which serves to distribute the steam to said heating-pipes, and said outlet head having a steam-outlet.

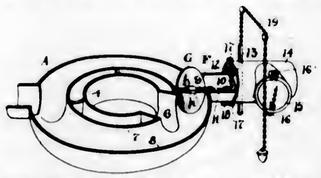
2. In an evaporator, the combination of a chamber, and a heating-apparatus within the chamber comprising a hollow inlet-head, a hollow outlet-head, and a series of heating-pipes connecting said heads, said inlet-head having a steam-inlet and a perforated chamber into which said inlet opens and which serves to distribute the steam to said heating-pipes, and said outlet head having a steam-outlet.

3. In an evaporator, the combination of a chamber, and a heating apparatus within the chamber comprising a hollow inlet-head, a hollow outlet-head, and a series of heating-pipes connecting said heads, said inlet-head having a steam-inlet and also a chamber therein into which said inlet opens and which has peripheral apertures for the escape of steam into said head, and said outlet head having a steam-outlet.



4. In an evaporator, the combination of a chamber, and a heating apparatus within said chamber comprising hollow cylindrical heads connected by parallel pipes, one of said heads having an inlet-tube and a steam-distributer in the form of a chamber extending into said hollow head from one wall of the latter, said chamber having its peripheral wall provided with perforations and the said inlet-tube opening therein to, and the other head having a steam-outlet.

856,263. HOT-AIR FURNACE. JOHN P. KOLLA, Holland, Mich., assignor to The Holland Furnace Company, Holland, Mich. Filed Nov. 19, 1906. Serial No. 343,979.



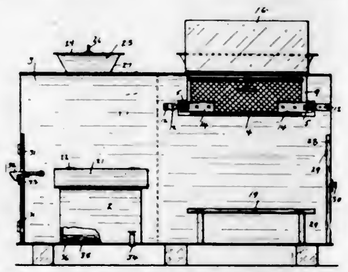
Claim.—1. A furnace having an exhaust flue joint provided with a separate check damper opening having opposite lugs at its edge, in combination with a reversible check lid for said opening, whereby the check damper opening may be reversed as to sides.

2. A furnace having an exhaust flue and a damper therefor, an extension joint for said flue detachably and rotatably connected thereto, and a check draft opening and lid for said opening on said extension joint, and means mounted within and upon said exhaust flue and said extension joint, respectively, adapted to operate said damper, said joint constructed to operate said means in either of its positions.

856,264. COMBINED ASH AND GARBAGE RECEPTACLE. JOSEPH KOLOUCH, Milwaukee, Wis. Filed Nov. 1, 1906. Serial No. 341,526.

Claim.—1. In a device of the described class the combination with an ash receptacle of a screen basket, a pair of horizontal basket supporting rods, said rods being connected at one end to the rear walls of said ash receptacle and extending forwardly therefrom through an aperture formed in the wall of said receptacle for the passage of said screen basket, said front ends being respectively curved toward the right and left and secured to the ver-

tical front walls of said ash receptacle upon the respective sides of said aperture, said screen basket being provided at its rear end with a pair of eyebolts engaging said horizontal supporting rods and at its front end with a pair of brackets provided with open recesses for engagement with said supporting rods, whereby the front end of said basket may be drawn forward past the front end of said rods and inclined downward for the purpose of discharging its contents.



2. The combination of an ash receptacle, a garbage receptacle and a receptacle for dry refuse material, a platform common to all of said receptacles, a faucet connected with said garbage receptacle, a reciprocating screen basket located in said ash receptacle, means for operating said screen basket from the exterior, means for drawing forward and disengaging the front end of said screen basket from its supporting rods, inlet hoppers connected with the covers of said ash receptacle and dry refuse receptacle, doors for closing the end of said ash receptacle and a receptacle for dry refuse material and covers for closing the mouths of said hoppers and said garbage receptacle, all substantially as and for the purpose specified.

856,265. KEYBOARD-TRANSMITTER. JOHN C. KUNKLE, Brooklyn, N. Y. Filed June 21, 1905. Serial No. 266,215.



Claim.—1. The combination of a reciprocating and rocking type or character bar adapted to rock on an axis parallel to the longitudinal axis of the bar, means for rocking the same, a driving power, a latch for holding the bar in position to retain connection with the driving power, and means for automatically disengaging the bar and catch to allow the bar to turn on said axis and become disengaged from the driving power, as and for the purpose described.

2. The combination of a reciprocating and rocking type or character bar adapted to rock on a longitudinal axis, a driving shaft and gear adapted to be coupled by rocking the bar and a guide adapted to hold the parts in gear during transmission and provided with a step or offset for freeing the bar to permit it to rock and become uncoupled from the driving power.

3. The combination of a series of type or character bars, a jockey roller contact device common to the same, a bar mounted independently of the jockey roller contact device and arranged transverse to the character bars and adapted to be engaged by the character teeth or projections of all of them and an arm connected with said bar for engaging an arm of the jockey roller contact device.

4. The combination with a reciprocating and rocking character bar adapted to rock on a longitudinal axis and a contact device actuated thereby, of means for rocking the bar to connect it to a driving mechanism, a spring for returning the bar to normal position, a guide for holding the bar connected to the driving mechanism and means for freeing the bar to permit it to become disengaged from the driving mechanism and to return to normal position under the action of the spring.

5. The combination of a jockey roller contact, a controlling arm, a series of type bars acting on said arm, rocker bearings for said bar, a series of keys for said type bars mounted independently of said bars and adapted to engage and rock the same and a driving power constantly operating and adapted to actuate any bar to effect the transmission when said bar is geared thereto by the depression of the appropriate key.

6. A self-contained keyboard transmitter comprising a series of longitudinally reciprocating type or character bars mounted in suitable guides, means for reciprocating said bars to effect the transmissions and a series of controlling devices for said bars, each having its appropriate key, in combination with a self-contained typewriter mounted over the transmitter and means disconnected from the typewriter levers for coupling the keys of the transmitter with the key levers of the typewriter at will, as and for the purpose described.

7. A keyboard transmitter comprising in combination a series of reciprocating type or character bars, a common driving shaft normally disconnected from said bars, rocker bearings for said bars arranged in line parallel to the longitudinal axis of the bars, a series of keys adapted to engage the sides of said bars and rock them into gear with the driving shaft, a spring applied to each bar to give the same a rocking bias which tends to disengage it from the driving shaft, means for retaining the bar in engagement and permitting it to become disengaged after a transmission has been effected, a contact making and breaking device, and a cross-arm or bar arranged transversely to the series of type bars and controlling the position of the contact device.

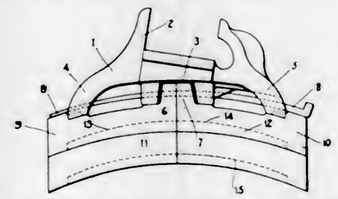
8. The combination with a transmitter character bar, having two or more characters, of a transmitter arm adapted to be brought into operative relation with either of said characters, and means for shifting the arm to permit the transmission of the desired character.

9. The combination of a character bar, having two or more groups of character projections, a circuit closer, a controlling arm therefor arranged to be engaged by said groups of character projections and means for shifting the arm into operative relation with either of said groups.

10. The combination of a series of character bars, a contact maker, a controlling arm, arranged transverse to said bars, and operatively connected with said contact maker, and means for shifting the arm in the direction of the longitudinal axis of the bars to bring it into operative relation with different groups of characters on one or more of said bars.

11. The combination of a typewriter space key, a transmitter character bar, having two groups of character projections, a contact maker, a controlling arm therefor, adapted to be engaged by the character projections and arranged transversely to the character bar, and a supporting lever for said arm provided with a slidable collar to which the arm is attached.

856,266. BRAKE CONSTRUCTION. VAN BUREN LAMB, New Haven, Conn., assignor to Keystone Brake Shoe Company, New York, N. Y., a Corporation of New York. Filed Oct. 28, 1905. Serial No. 284,921.



Claim.—1. In brake construction, in combination, a brake-head, a brake-shoe having upon its rear surface a projecting part of decreasing thickness toward its ends and provided with undercut lateral surfaces converging toward the ends of the shoe, a supporting member adapted to fit said projecting part and be connected thereby to said shoe, and dissimilar connecting means adapted to secure said member to said head.

2. In brake construction, in combination, a brake-head, a brake-shoe having upon its rear surface a projecting part provided with undercut surfaces, and a two-part supporting member, the parts of which are respectively adapted to fit the corresponding halves of said projecting part and in assembled condition to abut against one another, the abutting ends being provided with lugs adapted to co-act with lugs upon said brake-head and secure the same thereon.

3. In brake construction, in combination, a brake-head provided with a pair of forwardly extending projections, a brake-shoe provided upon its rear surface with a projecting part, and a two-part supporting member, the parts of which are adapted to fit said projecting part and the inner ends of which are each provided with a lug, said lugs being adapted with the parts in assembled condition to abut against one another and rest between the projecting portions of said head and maintain said supporting member in operative relation to said head.

4. In brake construction, in combination, a shoe, a projecting part upon the rear of said shoe, the lateral surfaces of which converge toward the ends of the shoe, and a two-part supporting member, each part of which embraces a portion of said projecting part upon said shoe.

5. In brake construction, in combination, a shoe, a projecting part upon the rear surface of said shoe having undercut lateral surfaces converging toward the ends of the shoe, and a two-part supporting member, each part of which embraces a portion of said projecting part.

6. In brake construction, in combination, a two-part shoe, each part of which is provided upon its rear surface with a projecting part the lateral surfaces of which converge toward the ends of the shoe, and a two-part supporting member, each part of which is adapted to embrace the projecting portion of the corresponding part of said shoe.

7. In brake construction, in combination, a brake-head having a recess in its forward surface, a brake-shoe having upon its rear surface a projecting part the lateral surfaces of which converge toward the ends of the shoe, and a two-part member, the parts of which are adapted to embrace portions of said projecting part and are provided with perforated lugs adapted to be secured within said recess in said head.

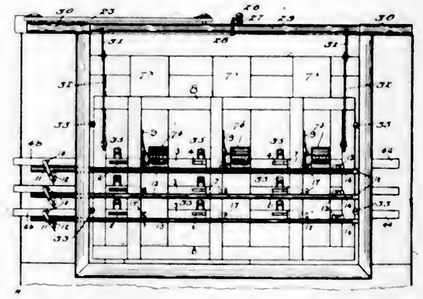
8. In brake construction, in combination, a brake-head, a brake-shoe having upon said rear surface a projecting part the lateral surfaces of which converge toward the ends of the shoe, a two-part supporting member provided with connecting means adapted to co-act with said projecting part, and dissimilar connecting means adapted to secure said two-part member to said head.

9. In brake construction, in combination, a brake-head provided with a recess, a brake-shoe having upon its rear surface a projecting part the lateral surfaces of which are undercut and converge toward the ends of the shoe, an intermediate two-part member, the parts of which are adapted to embrace portions of said projecting part and are each provided with perforated lugs adapted to rest within said recess in said head, and means adapted to pass through portions of said head and said perforated lugs and secure said two-part member upon said head.

10. In brake construction, in combination, a brake-head, a two-part brake-shoe each part of which is provided upon its surface with a projecting part the lateral surfaces of which are undercut and converge toward the ends of the shoe, a two-part supporting member adapted to embrace said projecting parts upon the parts of said shoe and be connected by the same thereto, and dissimilar connecting means between said head and the parts of said member.

11. In brake construction, in combination, a brake-head, a two-part brake-shoe each part of which is provided upon its surface with a projecting part the lateral surfaces of which are undercut and converge toward the ends of the shoe, a two-part supporting member adapted to embrace said projecting parts upon the parts of said shoe and be connected to the same thereto, and dissimilar connecting means between said head and the parts of said member, said means comprising a perforated lug upon each part of said member adapted to be secured within a recess in said head.

856,267. AUXILIARY RESETTING MECHANISM. WILLIAM LANGRILL, Bay City, Mich. Filed June 6, 1906. Serial No. 320,417.



Claim.—1. The combination in a voting machine, with a horizontal row of depressible keys, of a single series of locking sections, the series adapted to be actuated by the depression of any one of the keys to prevent the depression of any of the other keys in the same row, a stationary registering mechanism, a movable sash, trips movably mounted on the sash and normally lying in the paths of movement of the respective keys, the depression of one key adapted to throw its trip into alinement with the registering mechanism, means for reciprocating the sash, to cause the trip to engage the registering mechanism, a resetting wing, into engagement with which the trip is brought subsequent to its engagement with the registering mechanism and an auxiliary resetting device for resetting the actuated trip and the locking sections prior to the movement of the sash.

2. A voting machine comprising depressible selective mechanism, registers stationarily mounted on the machine, movable trips normally lying in the paths of movement of and actuated by the selective mechanism to assume positions in alinement with the registers, a pivotally supported lever, a slidingly supported rod engaged by the lever and projections carried by the rod and adapted to engage and reset the trips subsequent to the return of a depressed member of the selective mechanism.

3. In a voting machine, the combination with a row of selective members, of a series of locking sections actuated by the operation of any one selective member in the row, stationary registering mechanisms, a member independent of the selective members and movable past the registering mechanisms, trips movably mounted on the member, the trips normally lying in the paths of movement of the respective selective members and adapted to be moved thereby into alinement with their corresponding registering mechanism, a main resetting mechanism adapted to replace the actuated selective member and reciprocate the movable trip-carrying member to register the vote and reset the trips and locking sections, and an auxiliary resetting mechanism operable by the voter prior to the actuation of the main resetting mechanism, for replacing the locking sections and trips in their normal positions subsequently to the return of an accidentally operated selective member.

4. A voting machine comprising a series of individual selective members arranged in rows, stationary registering members, means normally lying in the paths of movement of the individual selective members and moved thereby

into alinement with the registering members, a movable element supporting the first named means and actuated past the registering devices, for registering the vote, locking members interposed between the individual selective members and the first named means, the actuation of one selective member in a row adapted to actuate the locking members to prevent the actuation of additional selective members in the same row, resetting mechanism for actuating the movable member to register the vote, replace the first named means and the selective members and auxiliary resetting mechanism adapted to replace the first named means and the locking members subsequent to the return of an actuated selective member to normal position and prior to the actuation of the resetting mechanism.

5. The combination in a voting machine comprising a series of keys, a slotted guide, any one of the keys adapted to pass through the slots in the guide, a series of sections in the guide, the adjacent ends of the sections being reduced and normally registering with the slots, the entrance of a key into a slot adapted to crowd the sections apart to close the remaining slots of an auxiliary means for resetting the sections, said means comprising a pivotally supported lever connected with one end section, a slidable rod actuated by the lever, a finger on the rod, a lever pivotally secured intermediate its ends to the casing, one end of the lever lying in the path of movement of the finger, a pin carried by the opposite end section, the free end of the last named lever adapted to engage the pin on the end section.

6. The combination in a voting machine comprising a series of selective keys, a slotted guide, the keys receivable in the slots, and a series of sections slidingly received in the guide, the sections adapted to be crowded apart when any one of the keys passes into a slot in the guide, of a lever connected to one end section, a rod actuated by the lever, a suitably supported side lever adapted to actuate the opposite end section and a finger on the rod for operating the side lever.

7. A voting machine comprising a row of selective members, a row of stationary registers, a series of locking sections actuated by the operation of any selective member to prevent the actuation of the remaining selective members in the row, a trip-carrying member movable independently of the selective members, a series of trips movably supported on the trip-carrying member, and normally lying in the paths of movement of the respective selective members, the trips adapted to be crowded into alinement with their respective registers by the operation of their respective selective members, resetting mechanism for registering the vote, and resetting the trips, selective members and locking sections and auxiliary resetting mechanism operable by the voter prior to the actuation of the main resetting mechanism, for replacing the locking sections and trips subsequently to the return of an accidentally actuated selective member.

8. The combination with a voting machine comprising a series of keys, a slotted guide, any one of the keys adapted to pass through the slots, in the guide, and a series of sections in the guide, the adjacent ends of the sections being reduced and normally registering with the slots, the entrance of a key into a slot adapted to crowd the sections apart to close the remaining slots of auxiliary means for resetting the sections, said means comprising a pivotally supported lever connected with one end section, a slidable rod actuated by the lever, and means actuated by the rod for operating the opposite end section whereby the sections are moved toward each other.

9. The combination with a voting machine comprising a row of keys, and a series of sections spread apart by the actuation of a single key, of a trip also adapted to be set by the actuation of a key, a stationarily supported lever pivoted intermediate its ends, the lever engaging one end section, a slidably supported rod actuated by the lever, and a pin on the rod adapted to engage and reset the trip to prevent registering the vote.

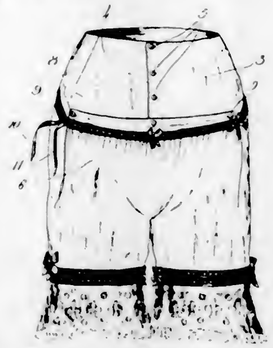
10. The combination with a voting machine comprising a row of keys and a series of sections spread apart by the actuation of a single key, of a suitably supported lever pivoted intermediate its ends, one end of the lever passing through one end section of the series, a slidably supported rod actuated by the lever, a finger carried by the rod, a side lever actuated by the finger, and a pin on the opposite end section engaged by the side lever to move both end sections toward each other simultaneously upon the withdrawal of an accidentally actuated key.

11. The combination with a voting machine comprising a row of keys and a series of sections, the ends of which normally lie adjacent each other, the actuation of a single key adapted to spread the adjacent sections engaged by the key, of an auxiliary resetting mechanism comprising a slidable rod, a lever engaging one end section of the series and the rod and means connecting one end of the rod and the opposite end section to permit a movement of the lever to return the series of sections to normal position subsequent to the withdrawal of the actuated key.

12. In a voting machine, the combination with a row of keys and a series of stationary registers, of a movable trip carrier independent of the keys, trips movably mounted on the carrier and normally lying in the paths of movement of the keys, the trips adapted to be moved into alinement with their respective registers by the operation of the keys, a main resetting mechanism for resetting the keys and for moving the carrier to register the vote and to reset the trips, and an auxiliary resetting means operable by the voter prior to the actuation of the main resetting mechanism, for replacing the trips subsequently to the return of an accidentally actuated key.

13. The combination in a voting machine with a row of keys, and a series of registers, of a movable member, means for actuating the movable member relative to the registers, trips carried by the movable member and normally lying in the paths of movement of the keys, whereby the trips are moved into alinement with the registers, and an auxiliary resetting means for the trips, such means comprising a slidable rod, means for enabling the voter to actuate the rod subsequent to the return of a key to normal position and pins on the rod for returning the trip to normal position.

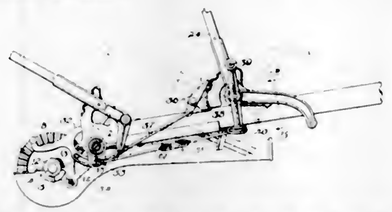
856,268. DRAWERS. EDITH LANOUETTE, Boston, Mass. Filed Sept. 24, 1904. Serial No. 225,731.



Claim.—1. In a garment of the class described, a yoke extending completely around the waist and divided at the back, means to detachably secure together the meeting edges of the yoke, and leg portions secured to the bottom edge of the yoke, said garment having a flap at its rear provided with a yoke at its upper edge to which the upper edge of the material of the flap is gathered, the flap being fuller than the yoke, means to detachably secure said latter yoke to the lower edge of the rear of the first-named yoke, a drawing string extending around the lower edge of the yoke from one edge of the flap to the other, and another drawing string extending across the flap, whereby by tying the ends of the drawing strings the yoke may be adjusted to snugly fit the wearer.

2. In a nether garment, the combination with a yoke adapted to extend completely around the waist, with leg portions secured to the bottom of the yoke and provided with a rear flap, means to detachably secure the upper edge of the flap to the lower edge of the yoke, a drawing string extending around the lower edge of the yoke, and another drawing string extending across the flap, whereby by tying together the ends of the drawing strings the yoke may be adjusted in size to snugly fit the hips of the wearer.

856,269. MOWING-MACHINE. JOHN W. LATIMER, Chicago, Ill., assignor to International Harvester Company, a Corporation of New Jersey. Filed Mar. 22, 1907. Serial No. 363,818.



Claim.—1. A mowing machine comprising, in combination, a main frame, a cutting apparatus, motion transmitting means adapted to communicate motion to said cutting apparatus, a clutch mechanism forming part of said motion transmitting means, means for operating said clutch mechanism, a lifting lever mounted upon the main frame and flexibly connected with the cutting apparatus and operative in a manner to elevate it to a substantially vertical position, a movable stop-member arranged in the path of movement of said lifting lever and adapted to engage with said lever in a manner to limit its movement in a direction to elevate said cutting apparatus, said stop-member being connected with said clutch operating mechanism in a manner to be disengaged from said lifting lever when said clutch operating mechanism is moved in one direction.

2. A mowing machine comprising, in combination, a main frame, a cutting apparatus, motion transmitting means adapted to communicate motion to said cutting apparatus, a clutch mechanism forming part of said motion transmitting means, means for operating said clutch mechanism, a lifting lever mounted upon the main frame and flexibly connected with said cutting apparatus and operative in a manner to elevate it to a substantially vertical position, a swinging stop-member mounted upon a fixed part of said frame, having one end adapted to engage with said lifting lever in a manner to limit its movement in a direction to elevate said cutting apparatus, and its opposite end connected with said clutch operating mechanism in a manner to swing said stop-member out of the path of said lifting lever when said clutch operating mechanism is moved in one direction.

3. A mowing machine comprising, in combination, a main frame, a cutting apparatus, motion transmitting means adapted to communicate motion to said cutting apparatus, a clutch mechanism forming part of said motion transmitting means, means for operating said clutch mechanism comprising a bell crank lever pivotally mounted upon the main frame, a lifting lever mounted upon the main frame and having flexible connection with said cutting apparatus and operative to elevate it to substantially a vertical position, a swinging stop-member mounted upon a fixed part of said frame, having one end adapted to engage with said lifting lever in a manner to limit its movement in a direction to elevate said cutting apparatus, and its opposite end connected with one arm of said bell crank lever.

4. A mowing machine comprising, in combination, a main frame, a cutting apparatus, motion transmitting means adapted to communicate motion to said cutting apparatus, a clutch mechanism forming part of said motion transmitting means, means for operating said clutch mechanism comprising a longitudinally movable rod mounted on the main frame and having one end connected with said clutch mechanism, a foot lever pivotally mounted on said frame and having a slotted cam engaging with said rod in a manner to move it longitudinally to disengage said clutch mechanism when said foot lever is moved in one direction, a lifting lever mounted on the main frame and having flexible connection with said cutting apparatus and operative to elevate it to a substantially vertical position, a swinging stop-member mounted upon a fixed part of said frame, having one end adapted to engage with said lifting lever in a manner to limit its movement in a direction to elevate said cutting apparatus, and its opposite end connected with said foot lever.

5. A mowing machine comprising, in combination, a main frame, a cutting apparatus, motion transmitting means adapted to communicate motion to said cutting apparatus, a clutch mechanism forming part of said motion transmitting means, means for operating said clutch mechanism, said means comprising a longitudinally movable rod mounted on the main frame and having one end connected with said clutch mechanism, a foot lever pivotally mounted on said frame and having a slotted cam engaging with said rod in a manner to move it longitudinally to disengage said clutch mechanism when said lever is moved in one direction, a lifting lever mounted on the main frame and having flexible connection with said cutting apparatus, a supplemental lever pivoted coaxially with said lifting lever and releasably connected therewith, and an adjustable link connection between said foot lever and said supplemental lever.

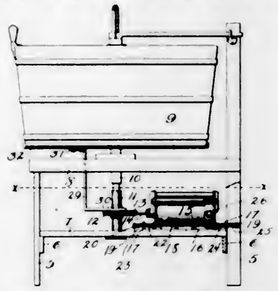
6. A mowing machine comprising, in combination, a main frame, a cutting apparatus, motion transmitting means adapted to communicate motion to said cutting apparatus, a clutch mechanism forming part of said motion transmitting means, means for operating said clutch mechanism, a lifting lever mounted on the main frame, an operative connection between said lifting lever and said clutch operating mechanism adapted to disengage said clutch mechanism when said lever has reached a predetermined limit, a flexible connection between said lifting lever and said cutting mechanism, said connection comprising a three armed swinging fulcrum pivotally mounted intermediate said lever and the cutting apparatus by means of one of its arms, oppositely disposed links having their inner ends pivotally connected with said fulcrum intermediate its other arms and adapted to engage with said arms in a manner to limit a relative movement of the links and fulcrum, and having their outer ends connected respectively with said lifting lever and said cutting apparatus.

7. A mowing machine comprising, in combination, a main frame, a cutting apparatus, motion transmitting means adapted to communicate motion to said cutting apparatus, a clutch mechanism forming part of said motion transmitting means, means for operating said clutch mechanism, a lifting lever mounted on the main frame, an operative connection between said lifting lever and said clutch operating mechanism adapted to disengage said clutch mechanism when said lever has reached a predetermined limit, a flexible connection between said lifting lever and said cutting mechanism, said connection comprising a three armed swinging fulcrum pivotally mounted intermediate said lever and the cutting apparatus by means of one of its arms, oppositely disposed links having their inner ends coaxially pivoted on said fulcrum intermediate its other arms and adapted to engage with said arms in a manner to limit a relative movement of the links and fulcrum, and having their outer ends connected respectively with said lifting lever and said cutting apparatus.

8. A mowing machine comprising, in combination, a main frame, a cutting apparatus, a lifting lever mounted on the main frame, a flexible connection between said lifting lever and said cutting apparatus, said connection comprising a three armed swinging fulcrum pivotally mounted intermediate said lever and said cutting apparatus by means of one of its arms, oppositely disposed links having their inner ends pivotally connected with said fulcrum intermediate its other arms and adapted to engage with

said arms in a manner to limit a relative movement of the links and fulcrum, and having their outer ends connected respectively with said lifting lever and said cutting apparatus.

856,270. MOTOR FOR WASHING-MACHINES. LEWIS C. LEWIS, Columbus, Ohio, assignor to The Monarch Manufacturing Company, Columbus, Ohio, a Corporation of Ohio. Filed Aug. 6, 1906. Serial No. 329,322.



Claim.—1. The combination with a washing machine, of a motor for driving said washing machine, said motor being mounted for bodily cushioned movement.

2. The combination with a washing machine, of a motor for driving said washing machine, said motor being mounted for bodily cushioned movement in either direction.

3. In a washing machine, the combination with an oscillatory tub, of a motor for imparting oscillatory movement to said tub, said motor being mounted for bodily cushioned movement.

4. In a washing machine, the combination with an oscillatory tub, of a motor for imparting oscillatory movement to said tub, said motor being mounted for bodily cushioned movement in either direction.

5. In a washing machine, the combination with a tub, of a motor comprising a reciprocatory piston rod for imparting movement to said tub, said motor being mounted for bodily cushioned movement in either direction.

6. In a washing machine, the combination with an oscillatory tub, of a shaft secured to said tub, a pinion mounted upon said shaft, and a motor comprising a reciprocatory piston rod, said piston rod having a rack formed thereon which meshes with said pinion, and said motor being mounted for bodily cushioned movement in either direction.

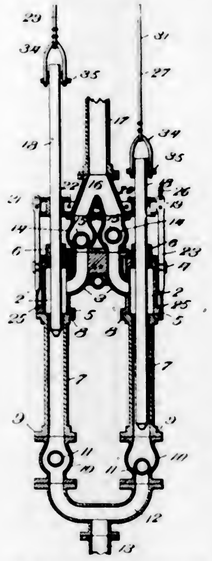
7. In a washing machine, the combination with an oscillatory tub, of a shaft secured to said tub, a pinion mounted upon said shaft, a motor comprising a reciprocatory piston rod, said piston rod having a rack formed thereon which meshes with said pinion and said motor being mounted for bodily cushioned movement in either direction, and means for maintaining said rack in engagement with said pinion.

8. In a washing machine, the combination with a support, of a motor body slidably mounted with relation to said support, and means for cushioning the movement of said motor body in either direction.

856,271. PUMP. FRANK LINTHICUM, Aurora, Mo. Filed Nov. 6, 1905. Serial No. 286,134.

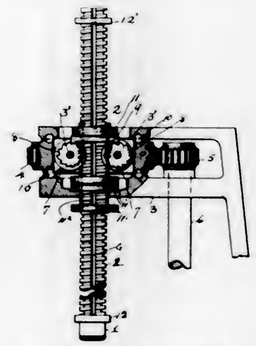
Claim.—1. A pump having a pair of barrels, a coupling between and at the upper ends thereof, plungers operating in and extending through the upper ends of the barrels, guides for the said plungers, a clamp on the coupling and engaging and holding the plunger guides, links having their lower ends connected to the upper portions of the pump barrels and connected near their upper ends to the ends of the said clamp, and suspending means for the pump attached to the upper ends of the said links.

2. A pump having a pair of barrels, a coupling between and at the upper ends thereof and having a bearing, plungers operating in and extending through the upper ends of the barrels, guides for the said plungers, a clamp on the coupling and engaging and holding the plunger guides, a pulley having its shaft mounted in the bearing of the coupling, links having their lower ends connected to the upper ends of the barrels and connected near their



upper ends to the said clamp, suspending means for the pump attached to the upper ends of the said links, operating cables for the plungers attached to the upper ends thereof, a cable connecting said operating cables and engaging the lower side of the said pulley, and means to operate the said operating cables.

856,272. TRANSMISSION MECHANISM. SAMUEL LIPPERT, Cleveland, Ohio, assignor to The Reciprocating Power and Pump Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 22, 1905. Serial No. 266,526.



Claim.—1. In a device for imparting a longitudinal movement in one direction to a shaft, the return movement of which is automatically accomplished, the combination with a shaft having a screw threaded extremity, of a rotatable member thereon, worm rollers pivotally mounted on said rotatable member, and in continuous engagement with said screw threaded shaft, a locking device arranged to prevent the rollers from turning during the non-automatic movement of the shaft, means for rotating the said rotatable member and rollers about the shaft while in the locked position and automatic means for releasing said rollers to turn freely on their pivots at the limit of the aforesaid non-automatic movement of the shaft.

2. In a transmission device adapted to give a longitudinal movement in one direction to a screw threaded rod or shaft, in combination with said shaft, a gear and driving pinion, the said gear encircling said shaft, worm rollers mounted upon said gear and engaging said shaft on its sides, means for locking said rollers whereby they serve as a nut to give longitudinal movement to said shaft in one direction, and means for releasing said rollers to permit the shaft to move in the opposite direction substantially as described.

3. In a device for the purpose of giving longitudinal movement in one direction to a vertical shaft, the combination with the shaft, of a frame through which said shaft passes, a spur gear on said frame encircling said shaft, a screw threaded extremity to said shaft passing through a central opening in said gear, rollers mounted upon said gear having diagonal teeth engaging said screw threaded shaft and means for locking said rollers from movement on the upward movement of the shaft and for releasing them to permit the shaft to fall by gravity, and for limiting the length of stroke of the shaft.

4. An instrumentality for obtaining longitudinal pressure in one direction upon a screw threaded shaft, consisting of the combination with the shaft, of worm rollers pivotally supported adjacent thereto, and engaging said screw threaded shaft, a support for said rollers through which said shaft passes, one of said portions, viz, said shaft and support being rotatable, in relation to the other, and means for securing said rollers from turning on their axes, and for releasing the same, substantially as described.

5. In a device for the purpose set forth, the combination with a screw threaded shaft, of roller worms engaging the shaft, a support for said worms, means for revolving said support and roller worms about said shaft, and means for locking and for releasing said roller worms, substantially as described.

6. The combination in a power device, of a shaft or rod, said shaft being screw threaded, a wheel through which said shaft passes, and revoluble around the shaft, worm rollers pivotally mounted in said wheel and engaging said shaft, means for revolving said wheel, a locking device for said rollers, and means for releasing the same, substantially as described.

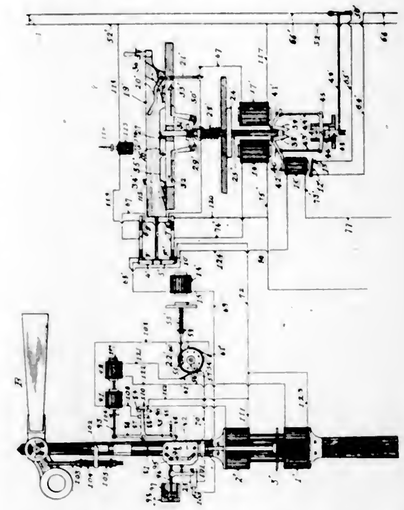
7. The combination with a screw threaded shaft, of a divisional nut therefor, comprising roller worms engaging said shaft, substantially as described.

8. The combination with a screw threaded shaft, of roller worms engaging said shaft, and a support for said roller worms, substantially as described.

9. The combination with a screw threaded shaft, of a divisional nut thereon, consisting of worm rollers, and a support therefor, one of said elements being rotatable in relation to the other.

10. In a device for imparting a longitudinal movement in one direction to a shaft, the return movement of which is automatically accomplished, the combination with a shaft having a screw threaded extremity, of a rotatable member thereon, worm rollers pivotally mounted on said rotatable member, and in continuous engagement with said screw threaded shaft, a locking device arranged to prevent the rollers from turning during the non-automatic movement of the shaft, means for rotating the said rotatable member and rollers about the shaft while in the locked position and automatic means controlled by said shaft for releasing said rollers to turn freely on their pivots at the limit of the aforesaid non-automatic movement of the shaft.

856,273. RAILWAY SWITCHING SYSTEM. WILLIAM MACOMBER, Buffalo, N. Y., assignor to General Railway Signal Company, Buffalo, N. Y., a Corporation of New York. Filed Feb. 20, 1905. Serial No. 246,538.



Claim.—1. A system for operating a rail switch, in which indication is given by opening the circuit adjacent to the rail switch, comprising, a source of energy, a motor, mechanism for moving a rail switch, a circuit, a controller, an electric switch in said circuit, means energized by the operating current for producing indication, and means for opening said electric switch after the rail switch movement.

2. A system for operating a signal, in which indication is given by opening the circuit adjacent to the signal, comprising, a source of energy, solenoids, mechanism for moving a signal, a circuit, a controller, an electric switch in said circuit, means energized by the operating current for producing indication, and means for opening the same after a signal movement.

3. A two-wire system for operating a rail switch, in which the indication is given by opening the circuit adjacent to the rail switch and verification is given by closing the circuit adjacent to the rail switch.

4. A two-wire system for operating a signal, in which the indication is given by opening the circuit adjacent to the signal and verification of indication is given by closing the circuit adjacent to the rail signal.

5. A system for operating a rail switch and producing indication of movement by the employment of a single circuit between controller and motor, a motor and mechanism for moving the rail switch, a controller, an indicator, and means for opening the circuit adjacent to the rail switch to produce indication.

6. A system for operating a signal and producing indication of movement by the employment of a single circuit between controller and solenoids, solenoids and mechanism for moving the signal, a controller, an indicator, and means for opening the circuit adjacent to the signal to produce indication.

7. A system for operating a rail switch and producing indication of movement with a single circuit between controller and motor, wherein indication is produced by breaking the circuit adjacent to the rail switch and restoring the circuit for the next movement, comprising, a source of energy, a motor, a circuit, a controller, an electric switch in said circuit, and means for opening and closing the same.

8. A system for operating a signal and producing indi-

cation of movement with a single circuit between controller and motor, wherein indication is produced by breaking the circuit adjacent to the signal and restoring the circuit for the next movement, comprising, a source of energy, solenoids, a circuit, a controller, an electric switch in said circuit, and means for opening and closing the same.

9. A system of operating a switch and producing indication of movement with a single circuit between controller and motor, wherein indication is produced by breaking the circuit adjacent to the rail switch to produce indication proper, and reëstablishing the circuit adjacent to the rail switch to produce verification of indication.

10. A system of operating a signal and producing indication of movement with a single circuit between controller and solenoids, wherein indication is produced by breaking the circuit adjacent to the signal to produce indication proper, and reëstablishing the circuit adjacent to the signal to produce verification of indication.

11. A source of energy, a motor, conductors connecting said motor with said source of energy, a controller, means for automatically breaking and reëstablishing the circuit of said conductors adjacent to the rail switch or signal, an indicator, and means for breaking said circuit at the controller by the energization of said indicator.

12. A source of energy, solenoids, conductors connecting the solenoids with said source of energy, a controller, means for automatically making and breaking the circuit of said conductors adjacent to the rail switch or signal, an indicator, and means for breaking said circuit at the controller by the energization of said indicator.

13. A system of electric signaling in which a source of energy, a controller, motor or solenoid, and a single circuit is employed between cabin and signal, in which indication is given by breaking the circuit adjacent to the signal, and in which verification of indication is given by re-establishing the circuit adjacent to the signal.

14. A system of electric signaling in which a source of energy, a controller, motor or solenoid, and a single circuit is employed between cabin and signal, and in which indication is given by breaking the circuit adjacent to the signal.

15. A two-wire system for operating a rail switch, in which indication is given by opening the circuit adjacent to the rail switch, and verification given by closing the circuit adjacent to the rail switch; and in which the closing of the circuit adjacent to the rail switch and opening the circuit at the controller actuates electromagnetic means which change the connections through the motor to reverse it for the next movement.

16. A two-wire system for operating a signal, in which the indication is given by opening the circuit adjacent to the signal, and verification of indication given by closing the circuit adjacent to the signal, and in which the closing of the circuit adjacent to the signal and the opening of the circuit at the controller actuates electro-magnetic means which changes the connections through the solenoids to reverse the direction of application of energy to the signal on the next movement.

17. In a railway signaling apparatus, a source of energy, solenoids for producing the two movements of the signal, a controller, electro-magnetic means for switching the current from one set of solenoids to the other set of solenoids, according to the direction of movement of the signal, electro-magnetic means for locking the signal at reverse and means for returning the signal to normal by energizing the second set of solenoids.

18. A source of energy, a motor, a circuit, a controller, an indicator, means for closing the circuit including the said motor to move an object, means for automatically breaking said circuit at the end of a movement to produce indication, means for automatically restoring said circuit to verify indication, and means for breaking the circuit at the controller after indication.

19. A source of energy, solenoids, a circuit, an indicator, a signal to be moved, means for closing the circuit including one set of said solenoids to move a signal, means for automatically breaking said circuit at the end of a signal movement to produce indication, means for automatically restoring said circuit to verify indication, means for breaking the circuit at the controller after indication, and means for closing the other set of solenoids in said circuit to move the signal, in the opposite direction when the circuit is next closed at the controller.

20. A source of energy, a motor, a circuit, an indicator, an object to be moved, means for closing the circuit including the said motor to move an object, means for automatically breaking said circuit at the end of a movement to produce indication, means for automatically restoring said circuit to verify indication, means for breaking the circuit at the controller after indication, and means for reversing the connections of the motor to cause it to move in reverse direction when energized for the next movement.

21. A system for operating a switch and producing indication of movement with a single circuit between controller and motor, wherein indication is produced by breaking the circuit adjacent to the rail switch to produce indication proper, re-establishing the circuit adjacent to the rail switch to cause the final movement of the controller to give verification of indication, and reversing the connections through the motor so that it will revolve in reverse direction on the next movement.

22. A system for operating a signal and producing indication of movement with a single circuit between controller and field, wherein indication is produced by breaking the circuit adjacent to the signal to produce indication proper, re-establishing the circuit adjacent to the signal to cause the final movement of the controller and give verification of indication, and closing the solenoids in said circuit so that the signal will move in the opposite direction upon the next application of energy.

23. In a railway switching apparatus, a source of energy, a motor, a controller, a circuit, an electric switch, means for opening said electric switch and means for closing said electric switch, a rotary pole-changing switch, a magnet is said circuit actuating said pole-changing switch, whereby mechanism is set up by the energization of said magnet in said circuit governing said pole-changing switch and whereby said mechanism is released to actuate said pole-changing switch when the circuit is broken at the controller.

24. In a railway signaling apparatus, a source of energy, solenoids, a controller, a single circuit, an electric switch, means for opening said electric switch and means for closing said electric switch, a reversing switch for shifting the current from one set of said solenoids to the other, a magnet actuating said switch, whereby mechanism is set up by the energization of said magnet in said circuit governing said switch for shifting the current from one set of solenoids to the other, and whereby said mechanism is released to actuate said switch when the circuit is broken at the controller.

25. In combination with a source of energy, a controller, solenoids, mechanism for moving a signal, an indicator, a single electric circuit for energizing said solenoids and said indicating device, means for producing indication automatically by opening the operating circuit at the signal end when the signal movement is complete, means for automatically closing the circuit adjacent to the signal and means for automatically opening the circuit at the controller.

26. In combination with a source of energy, a controller, a motor, mechanism for moving the rail switch, an indicator, a single electric circuit for energizing said motor and said indicating device, means for producing indication automatically by the opening of the operating circuit adjacent to the rail switch when the switch movement is complete, means for automatically closing the circuit adjacent to the rail switch, and means for automatically opening the circuit at the controller.

27. In a railway switching apparatus, a source of energy, a motor, mechanism for moving the rail switch, a controller, an indicator, a single circuit including said motor, controller and indicator, means for temporarily breaking said circuit adjacent to the rail switch after movement of the rail switch to produce indication in the cabin, means for restoring said circuit adjacent to said rail switch to produce verification of said indication, means for breaking said circuit at the controller after indication, and means for reversing the connections through the motor so that it will move in the opposite direction upon the next movement.

28. In a railway signaling apparatus, a source of energy, solenoids, mechanism for moving the signal, a controller, an indicator, a single circuit including said solenoids, controller and indicator, means for temporarily breaking the circuit adjacent to the signal after each movement of the signal to produce indication, means for making said circuit adjacent to the signal to produce verification of indication, means for shunting the current around the indicator after indication when the signal goes to reverse, means for breaking said circuit at the controller after indication when the signal goes to normal, and means for shifting the connections through said solenoids so that they will move the signal in the opposite direction upon the next movement.

29. A source of energy, a motor, a controller, an indicator, a circuit including said motor, controller and indicator with said source of energy, means for automatically and temporarily breaking said circuit at the motor, means for automatically re-establishing said circuit at the motor, means for automatically breaking the circuit at the controller after it is re-established at the motor, and means for automatically reversing the connections through the motor to reverse the direction of rotation of said motor.

30. A source of energy, solenoids, a controller, an indicator, a circuit including said solenoids, controller and indicator with said source of energy, means for automatically and temporarily breaking said circuit adjacent to the signal, means for automatically re-establishing said circuit at that point, and means for automatically breaking the circuit at the controller after it has been re-established adjacent to the signal, and means for automatically shifting the connections through said solenoids so that the signal will be moved in the reverse direction upon the next movement.

31. In a railway switching apparatus, a source of energy, a motor, mechanism for moving the rail switch, a controller, an indicator, a single circuit including said motor, controller and indicator, means for temporarily breaking said circuit adjacent to the rail switch after each movement of the rail switch to produce indication in the cabin, means for restoring said circuit adjacent to the rail switch to produce verification of said indication, and means for breaking said circuit at the controller after indication.

32. In a railway signaling apparatus, a source of energy, solenoids, mechanism for moving the signal, a controller, an indicator, a single circuit including said solenoids, controller and indicator, means for temporarily breaking the circuit adjacent to the signal after each movement of the signal to produce indication, means for making said circuit adjacent to the signal to produce verification of indication, means for shunting the current around the indicating device after indication when the signal goes to reverse, and means for breaking said circuit at the controller after indication when said signal goes to normal.

33. In a railway signaling apparatus, a source of energy, solenoids, a controller, a circuit, means for moving the signal to reverse by the energization of said solenoids, means for locking the signal at reverse, and means for giving indication of the reversal and locking of the signal by opening the circuit and re-establishing the same adjacent to the signal.

34. In a railway signaling apparatus, a source of energy, solenoids, a controller, means for moving the signal to reverse by the energization of one set of solenoids, means for locking said signal at reverse, means for producing the indication when said signal is at reverse and locked, means for shifting the current from the set of solenoids for moving said signal to reverse to a set of solenoids for moving said signal to normal, whereby, when the circuit is closed, the signal will be returned positively to the normal position, and means, when the signal is so returned to normal position, for giving positive indication of that fact.

35. In a railway signaling apparatus, a source of energy, a controller, solenoids for moving the signal to reverse, electro-magnetic means for locking the signal at reverse, indicating magnets and means for producing indication when said signal is at reverse and locked in that position, and means for shunting the current around said indicating device to negative, whereby said signal is held at reverse so long as the circuit remains intact the current flowing therein, and means for breaking said circuit when it is desired to return the signal to normal, a second set of solenoids for returning the signal and means for producing indication from the full return to danger.

36. In a railway signaling apparatus, a source of energy, solenoids, mechanism for moving the signal, a controller, an indicator, a circuit including said solenoids, controller and indicator, means for temporarily breaking the circuit adjacent to the signal after movement of the signal to produce indication, means for making said circuit adjacent to the signal to produce verification of indication, means for shunting the current around the indicator after indication when the signal goes to reverse, means for breaking said circuit at the controller after indication when the signal goes to normal, means for shifting the connections through said solenoids so that they will move the signal in the opposite direction on the next movement; and a magnet in a wire leading around said indicator, an armature and an armature rod governed by said magnet, a lug on the bar of said controller, and said armature rod of said magnet and said lug being so positioned that, when the controller is at full reverse, movement toward normal by said controller is limited to a position where the current will be cut off from all parts, and hold said controller in that position until all electro-magnetically governed apparatus have gone to normal, and then releasing said controller.

37. In a railway switching and signaling apparatus, a circuit controller in which the initial movement is made manually, and in which the middle and final movements are made automatically by a mechanism actuated by a magnet in the wire leading to the switch moving mechanism and a magnet in the wire leading from said switch-moving mechanism to battery, whereby indication that the circuit is intact is given by the energization of said magnets to produce said middle movement, whereby indication of switch or signal movement is given by the de-energization of said magnets, whereby verification of indication is given by the reënergization of said magnets, and whereby the operating circuit is broken after verification by the final movement of said controller produced by said re-energizing of said magnets.

38. In a railway switching and signaling system in which operation and indication is produced by a single circuit between cabin and to switch or signal mechanism, magnets in said circuit for producing indication, a cut-out magnet for breaking the circuit in the event of a cross, and means governed either by said cut-off magnet or by said indicating magnets to open the operating wire in the event of a cross of any active wire with any other wire of the system.

39. In combination with a source of electric energy, a motor, a controller, a circuit, magnets in said circuit for moving said controller, and means for opening the operating wire if but one of said magnets is energized.

40. In combination with a source of energy, solenoids, a controller, a circuit, magnets in said circuit for moving said controller, and means for opening the operating wire in case but one of said magnets is energized.

41. In a railway switching and signaling system, in combination with a source of energy, a controller, a motor or solenoids for moving a switch or signal, a single circuit, means for producing indication, means for opening the operating common of the system in the event of a cross between any active wire with any wire of the unit, comprising wires connecting both wires leading from controller to field with a wire leading to negative when the controller is either at normal or at reverse, an electric switch in the operating common, a cut-out magnet cut into said wire leading to negative, whereby the operating

common is opened upon the energization of said cut-out magnet.

42. In a railway switching and signaling system, a source of energy, motors and controllers, an operating common, an electric switch cut in to said common for each unit of the system, wires connecting all of the operating wires of switches to negative when at normal or full reverse, and connecting the operating wires of all signal circuits to negative when the signal is at normal, electromagnets in said wires, indicating magnets, an armature governed by said cut-out magnet, whereby, if attempt is made to move the controller of a unit while a cross exists between any active wire and any wire of the system, the armature of said controller will be held against movement by the hook end of said armature engaging under the armature rod of said controller to prevent movement.

43. In a railway switching and signaling system, a source of energy, motors and controllers, an operating common, an electric switch cut in to said common for each unit of the system, wires connecting all of the operating wires of switches to negative when at normal or full reverse, and connecting the operating wires of all signal circuits to negative when the signal is at normal, electromagnets in said wires governing said switch and said operating common, whereby, in the event of a cross with any wire of another unit not in operation, the operating common will be opened by the energization of one of said switches in the common wire leading to negative, thus preventing the movement of all units of the system until such cross is removed.

44. A source of energy, a motor and mechanism for moving the rail switch, a controller, a magnet in one of said wires leading from one pole of the source of energy to one contact piece on said controller, a magnet in the other wire leading from the opposite pole of said battery to a contact piece on said controller, a common armature governed by said magnets, an electric switch in the operating common, a rod pivoted to said switch, a three-armed lever pivoted to a reciprocatory block, one of said arms being connected to said rod by a vertical slot taking over a pin in said rod, bell crank levers pivoted as to their longer arms to rods pivoted to the two arms of said three-armed lever, hooked ends on the shorter arms of said bell crank levers so positioned that when said magnets are not energized, said hooked ends engage underneath the armature rod of the armature of said magnet, and so that the longer arms of said bell crank levers will be attracted by the cores of said magnets to remove the hooked ends from underneath armature rod to permit it to be moved downwardly, and whereby, in the event of failure to energize both of said magnets, one or the other of said hooked ends of said bell crank levers will engage said armature rod, and with the pivotal connections with the three-armed lever, will open the electric switch in the operating common.

45. In a railway switching and signaling system, a source of energy, a controller, a circuit, a motor or solenoid, magnets in the lead and return wire of said circuit, an electric switch in said circuit, armatures governed by said magnets, mechanism actuated by said armatures for opening said switch when either one of said magnets is energized, and so arranged that it will have no effect upon said switch when both magnets are simultaneously energized.

46. In combination with a source of electric energy, a motor, a controller, a circuit, a magnet in each of the wires leading from battery, an electric switch in said circuit, an armature common to said magnets, an armature to each of said magnets, arms on said armatures capable of engaging the armature rod of said common armature, rods pivoted to said armatures, which are, in turn, pivoted to levers, which are capable of acting upon said electric switch, and so arranged that, when only one of said magnets is energized, said magnet so energized will act upon said armature connected mediately to said electric switch to open the same.

47. In a railway switching and signaling system, a source of energy, a controller, a circuit, a motor or solenoid, magnets in the lead and return wire of said circuit, an electric switch in said circuit, armatures governed by said magnets, mechanism actuated by said armatures when both armatures are energized to merely reciprocate said mechanism; but to cause said mechanism to open said switch when only one of said magnets is energized, a cut-out magnet in a wire leading to negative, an extension on one of said armatures to rest in contact with the core of said cut-out magnet when said magnets are not energized, whereby a cross external to the unit to be operated will energize said cut-out magnet to hold one of said armatures against movement, whereby the circuit is opened.

48. A source of energy, a motor or solenoids, mechanism for moving the switch or signal, a controller, a manet in the wire leading from the positive pole of the battery to a contact on the controller to connect it with one operating wire, a magnet in the wire leading from the contact on the controller to connect battery with the other operating wire to the negative pole of the battery, a common armature governed by said magnets, an electric switch in one of said wires leading from battery to controller or switch or signal, a rod pivoted to said switch, a three-armed lever pivoted to a sliding block in a frame, one of said arms being bifurcated and taking over a pin in said rod pivoted to said electric switch, rods pivoted to the other two arms of said lever, bell crank levers, one arm of each being pivoted to said last mentioned rods, and one arm of each acting respectively as an armature.

49. In a railway switching and signaling system, a source of energy, a motor or solenoids, mechanism for moving a switch or a signal, a controller, a wire leading from one pole of the battery to switch mechanism through the controller, a magnet in said wire, a second wire leading from said switch mechanism through the controller to the opposite pole of the battery, a magnet in said wire, a common armature governed by said magnets, an electric switch in one of said wires, bell crank levers pivoted adjacent to each of said magnets, one arm of each lever constituting an armature governed by its respective magnet, and one end of each of said levers arranged to engage the armature rod of said common armature when said magnets are not energized, and to release it when said magnets are both energized, a three-armed lever, two of said arms pivoted by connecting rods to said bell crank levers, the other arm of said three-armed lever being so connected to a rod pivoted to said switch that, when both of said magnets are energized no movement of the electric switch will occur; but when one of said magnets is energized and the other is not, the movement of the one lever will cause said arm to open said switch.

50. In a railway switching and signaling system, a source of energy, a plurality of units, a motor or solenoid and a controller in each unit, a circuit to each unit, an operating common, an electric switch to each unit in said operating common, a cut-out magnet to each unit governing its electric switch, wires connecting all inactive wires of the system to negative through said cut-out magnets, whereby one of said switches in the operating common is opened by the energization of one of said cut-out magnets in the event of a cross between any inactive wire with any active wire.

51. In a railway switching and signaling system, a source of energy, a plurality of units, a motor or solenoid and a controller in each unit, a circuit to each unit, an operating common, an electric switch to each unit in said operating common, magnets in each circuit, armatures governed by said magnets and governing said switches, cut-out magnets in each unit, wires connecting all inactive wires of the system to negative through said cut-out magnets, said cut-out magnets governing the armature of one of said magnets in the circuit of each unit, whereby, in the event of a cross of insufficient strength to open the operating common by moving the switch directly governed by the cut-out magnet, a switch mediately governed by said magnets in the circuit of a unit will be opened.

52. In a railway switching and signaling system, in combination with a source of energy, a circuit, and a motor or solenoid, a magnet in the positive wire, a magnet in the negative wire, a common armature governed thereby, a controller bar, an armature rod actuated by said common armature, a stop for limiting the hand movement of the controller bar, arms actuated by said armature rod, whereby, when the circuit is closed by making the initial movement of the controller by hand, an initial movement of the bar will be made evidencing the fact that the circuit is intact; when the circuit is opened adjacent to the switch or signal, the armature will return to normal and said arms will disengage said bar, thus giving indication of movement; and whereby, when the circuit is again made adjacent to the switch or signal, said armature will cause final movement of the controller bar, to produce verification of indication, in addition to causing the final movement.

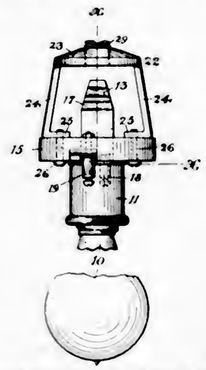
53. In a railway switching and signaling system, in combination with a source of energy, a circuit, and a motor or solenoid, a magnet in the positive wire, a magnet in the negative wire, a common armature governed thereby, a controller bar, an armature rod actuated by said common armature, a stop for limiting the hand movement of the controller bar, arms actuated by said armature rod, whereby, when the circuit is closed by making the initial movement of the controller by hand, an initial movement of the bar will be made, evidencing the fact that the circuit is intact; when the circuit is opened adjacent to the switch or signal, the armature will return to normal and said arms will disengage said bar, thus giving indication of movement; and whereby, when the circuit is again made adjacent to the switch or signal, said armature will cause final movement of the controller bar, to produce verification of indication, in addition to causing the final movement, and a switch in the circuit and mechanism actuated by said magnets to open a switch in the circuit, when or in case said magnets are not coincidently energized, or only one magnet energized.

856,274. DERAILING-SWITCH. MATTHEW H. MAHAR, Bay City, Mich. Filed Aug. 30, 1906. Serial No. 332,698.



Claim.—In combination with a railway rail, a derailing switch point at one side thereof, bearing against the same, pivoted at one end, movable toward and from the rail, and having an inclined tread rising from its pivoted point and provided with a longitudinal groove laterally inclined on the side next the rail, that portion of the tread at the free end of the derailing switch point being higher than and curved laterally to extend over and to project beyond one side of the tread of the first-mentioned rail, substantially as described.

856,275. HIGH-TENSION ELECTRIC FIXTURE. ALBERT S. MARTEN, East Orange, N. J., assignor to The Tea Tray Company, Newark, N. J., a Corporation of New Jersey. Filed Nov. 27, 1903. Serial No. 182,763.



Claim.—1. In an electric lamp fixture, the combination with exteriorly threaded supporting means, of a yoke comprising a centrally thickened disk-like body part with a central opening clear through itself interiorly threaded from top to bottom and adapted to receive into itself said exteriorly threaded supporting means, arms depending from said body part outside said central opening, and a lamp socket supported between said arms at their lower ends.

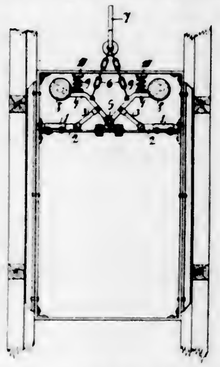
2. In an electric lamp fixture, the combination with exteriorly threaded supporting means and a conically beveled shade or reflector apertured at its top, of a yoke comprising a disk-like body part with a central opening interiorly threaded and adapted to receive into itself said exteriorly threaded supporting means, said body part having an outwardly beveled or conical top to fit inside the said top of the shade and arms depending from its periphery, and a lamp socket supported between said arms at their lower ends.

3. In an electric lamp fixture, the combination with a conically beveled shade or reflector apertured at its top, of a yoke comprising a disk-like body part with an interiorly threaded central opening, said body part having an outwardly beveled or conical top to fit inside the said top of the shade and arms depending from its periphery, a lamp socket support between said arms at their lower ends, an exteriorly threaded nipple passing through said aperture of the top of the shade and screwed into the said central interiorly threaded opening of the yoke, and a sleeve screwed onto the top of said nipple and holding said shade against said yoke.

856,276. MINER'S CAGE. WILHELM MASSING, Borbeck, Germany. Filed Feb. 15, 1907. Serial No. 357,562.

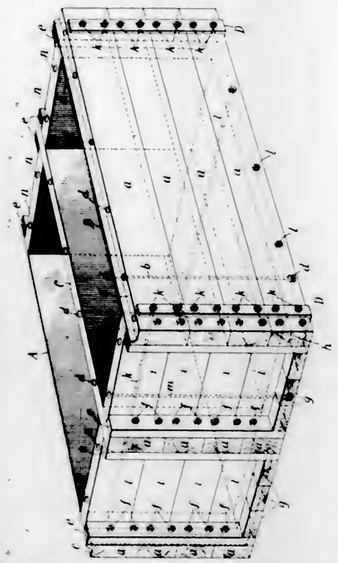
Claim.—A device for automatically and instantly arresting miners cages upon the breaking of the hoisting rope, comprising in combination with the cage, the hoisting rope, and the track ledges for said cage; shells (1) provided on the top plate of said cage at both sides of the latter facing said track ledges, arresting catches or bars (2) movably mounted in said shells and provided with upwardly directed sharp-pointed outer ends, links (3) pivoted with one end to the inner ends of said catches (2), a bearing (5) fixed on the top plate of said cage, levers

(4) commonly centered in said bearing (5) and pivotally connected with the free ends of said links, chains (6) connected with one end to said levers (4) and with the other end to said hoisting rope, heavy weights (8) attached to the outer ends of said levers, an upper frame member (10) of said cage, and strong spiral springs (9) placed between



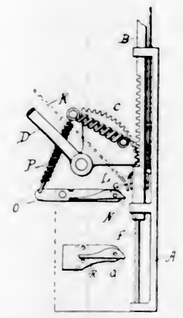
said frame member (10) and said levers (4) and adapted together with said weights (8) to press, upon the breaking of said hoisting rope, said levers (4) downward and consequently said arresting catches (2) outward into said track ledges, substantially as described and shown.

856,277. ELECTROLYTIC TANK. JOHN F. MILLER, Trail, British Columbia, Canada. Filed Feb. 6, 1906. Serial No. 299,690.



Claim.—A tank for electrolytic work comprising side walls built up of a plurality of longitudinal sections placed edge to edge and formed with registering vertical openings; tie rods passing through said openings; a bottom composed of longitudinal sections between the side walls and formed with alining transverse openings; tie rods extending through said openings and projecting through the side walls; end walls located between said sides and abutting the same, and composed of transverse sections having vertical alining openings and horizontal openings; a U-shaped stay-iron at each end of the tank; horizontal tie rods extending through the horizontal openings in the end sections, the ends of the side walls and the vertical portions of the stay-irons; and vertical tie rods extending through the vertical openings in the end sections, the bottom, and the horizontal portions of the stay-irons.

856,278. VENDING-MACHINE. WILLIAM MOONEY, Philadelphia, Pa. Filed May 4, 1906. Serial No. 315,159.



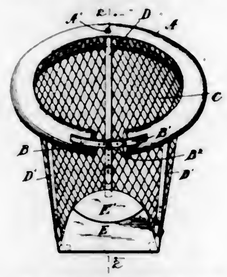
Claim.—1. In a coin controlled vending machine, a vertically reciprocating coin holder, a chute for conveying the coin to said holder, a rod adapted to pass through holes formed in said holder, means for depressing the rod, said rod adapted to depress the holder to the limit of its downward movement when the proper coin is within said holder, means for ejecting the coin from the holder after the latter has reached the limit of its downward movement, means for depressing the holder through a part of its downward movement when it does not contain a coin or does contain a washer, and means for ejecting a washer, as specified.

2. In combination with a vending machine, coin controlled mechanism consisting of a coin holder having holes through its top and bottom, a rod adapted to pass through said holes, means carried by the rod for depressing the holder through a part of its downward movement, a dog for engaging a washer when contained in the coin holder when said coin holder is depressed whereby said washer will be ejected upon the upward movement of the holder, a chute for conveying the coin to the holder, and mechanism for depressing the rod as specified.

3. In a coin controlled mechanism, a coin holder adapted to slide vertically, a rod adapted to pass through said holder, a rack bar to which the rod is attached, a segmental gear meshing with the rack bar whereby the latter may be moved up and down, a handle secured to the segmental gear, said handle being upon the outside of the machine, a chute for conveying the coin to the coin holder, a pivoted dog the nose of which lies in the path of travel of a washer when moving with the holder for ejecting washers from the holder, and a second pivoted dog located in the path of the coin when carried by the holder for ejecting said coin from the holder, as specified.

4. The herein described combination of a segmental gear, a handle for operating said gear, a rack bar with which said gear meshes and by which it is moved up and down, a rod carried by the rack bar, a frame adapted to slide vertically, a coin holder carried by the frame said holder having holes therethrough for the passage of the rod, a chute for delivering coin to the coin holder, a pivoted lever O, a spring for holding said lever in its normally horizontal position, a dog N pivoted to the lever, said dog being adapted to eject washers from the holder, and a pivoted dog Q adapted to eject coin from the holder as and for the purpose set forth.

856,279. BATHING-CHAIR. GEORGE N. MOORE, New York, N. Y., assignor to Joseph Nathan, New York, N. Y. Filed Sept. 15, 1906. Serial No. 334,793.



Claim.—1. In a device of the character described, the combination of a buoy, a seat flexibly secured to and adapted to be supported by said buoy and a web or netting adapted to partially inclose the body and having an open portion between the buoy and seat.

2. In a device of the character described, the combination of a buoy, a seat secured to and adapted to be supported by said buoy, a web or netting adapted to partially inclose the body and having an open portion between the buoy and seat and means for adjusting the distance between the said seat and buoy.

3. In a device of the character described, the combination of a buoy, a seat secured to and adapted to be supported by said buoy, a web or netting adapted to partially inclose the body and having an open portion between the buoy and seat and means for opening and closing a part of said buoy to allow the body to pass therethrough.

4. In a device of the character described, the combination of a buoy, a seat suspended from and adapted to be supported by said buoy, a web or netting adapted to partially inclose the body and having an open portion between the buoy and seat, and ballast supported on said seat.

5. In a device of the character described, the combination of a buoy, a seat flexibly connected with and adapted to be supported by said buoy, a web or netting adapted to partially inclose the body and having an open portion between the buoy and seat the buoy having an opening co-incident therewith, and a pocket on said seat adapted to receive suitable ballast.

6. In a device of the character described, the combination of a buoy of substantially circular form adapted to surround the body, a seat below the same and supported thereby, connecting portions between the seat and buoy and a side opening in the seat-connecting portions.

856,280. RECEPTACLE-OPENER. FRANK H. G. MORSE, Malden, Mass. Filed Feb. 1, 1906. Serial No. 299,056.



Claim.—1. In a receptacle the combination of the body of the receptacle and the cover of the receptacle, the said body of the receptacle having a beading, the said cover having a flange adapted to extend down and around the outside of the receptacle, the said flange having a beading located along its edge and slidable means located within the said beading and having a portion extending outward from the beading and adapted to press against the edge of the cover, the edge of the cover having an inclined portion.

2. In a receptacle the combination of the body of the receptacle and the cover of the receptacle, the said body of the receptacle having a beading, the said cover having a flange adapted to extend down and around the outside of the receptacle, the said flange having a beading located along its edge and a means located in the said beading and secured to the body of the receptacle and adapted to slide along the beading and thereby to lift the cover from the receptacle the edge of the cover being inclined.

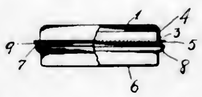
3. In a receptacle the combination of the body of the receptacle and the cover of the receptacle, the said body of the receptacle having a beading, the said cover having a beading located along its edge opposite the beading located in the body of the receptacle, a wire located in the said beading of the body of the box and the cover of the box and adapted to clasp the body of the receptacle and having a right angular portion extending outward under the edge of the cover and adapted to slide around the body of the receptacle, the said edge having an inclined portion located in the path of the said right angular portion of the said wire whereby the cover may be removed from the body of the receptacle.

4. In a receptacle the combination of the body of the receptacle and the cover of the receptacle, the said body of the receptacle having a beading, the said cover having an inclined portion and a wire clamped to the body of the receptacle and located in the said beading, the said wire having an outwardly extending portion and adapted to press upward on the edge of the cover and against the wall of the said beading as the said wire is slid around the body of the receptacle and wedge the cover from the body of the box.

5. In a receptacle the combination of the body of the receptacle and the cover of the receptacle, the said body of the receptacle having a beading, the said cover having a flange adapted to extend down and around the outside of the receptacle, the said flange having a beading located along its edge and opposite the beading located in the body of the receptacle, a notch located in the flange of the cover having slanting sides and a means slidably located in said opposite beads and having a projection lying in said notch, said means being adapted to slide along the edge of the said notch and edge of the said flange and in the beading to lift the cover from the receptacle.

6. In a receptacle the combination of the body of the receptacle and the cover of the receptacle, the said body of the receptacle having a beading, the said cover having a flange adapted to extend down and around the outside of the receptacle, the said flange having a beading located along its edge opposite the beading in the body of the receptacle, a notch located in the flange of the cover of the receptacle and having slanting curvilinear sides, a wire located in said opposite beads having an enlarged end located in and adapted to slide along the sides of the notch and under and along the edge of the cover.

856,281. BOX. FRANK H. G. MORSE, Cambridge, Mass. Filed Jan. 26, 1907. Serial No. 354,193.



Claim.—1. In a sheet metal stamped box the combination of a cover and the body of the box, the cover having a flange consisting of two portions, one of said portions adapted to fit tightly around the outside of the body of the box and the other portion of the said flange extending outward and at right angles to the first mentioned portion, the body of the box having an enlarged portion, the said enlarged portion having an inclined surface, the upper edge of the said inclined surface adapted to make contact with the first mentioned portions of the said flange and to limit the position of the cover on the box, the said enlarged portion also having a circular cross-section of ninety degrees whereby the lower edge of the said inclined portion is strengthened.

2. In a box the combination of a cover and the body of the box, the cover having a flange consisting of two portions, one of said portions adapted to tightly fit around

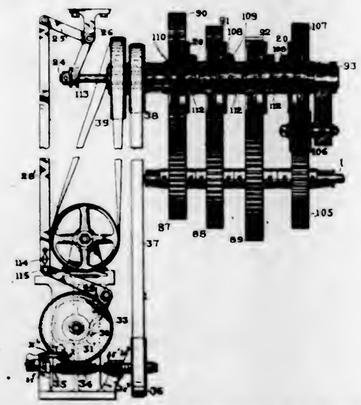
the outside of the body of the box and the other portion of the said flange extending outward and at right angles to the first mentioned portion, the body of the box having an enlarged portion, the said enlarged portion having a conical surface extending from the outer edge of the said enlarged portion inward and upward to the body portion of the box and a rounded surface having a cross-section of substantially 90 degrees extending from the lower edge of the said conical surface to the body portion, the upper edge of the said conical surface adapted to limit the position of the cover on the said box, the said conical surface adapted to form a V shaped space with the right angular portion of the said flange.

856,282. WRIST-PROTECTOR. MYER MOSS, Lunenburg, Nova Scotia, Canada, assignor to Adam Knickle, Lunenburg, Nova Scotia, Canada. Filed Nov. 2, 1905. Serial No. 285,510.



Claim.—In a wrist protector, a pair of semi-cylindrical members provided with turned flanges at their ends, means pivoting said members together at one side, a bar carried by the opposite side of one of said members and provided with a flange, and a tongue integral with the opposite side of the other member and provided with a resilient bent end adapted to engage against said flange.

856,283. POWER-TRANSMITTER. FRIEDERICH MÜLLER, Elizabeth, N. J. Filed Aug. 17, 1904. Serial No. 221,004.



Claim.—1. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same, each comprising a single clutch having a driving and a driven part each of which is positively connected with its respective member, said connections being constructed and arranged to communicate independently from the one to the other of said members different relative speeds and to maintain a continuous driving relation between the same through all changes of speed, and means whereby said clutches are controlled for changing the speed of the driven member or for wholly disconnecting the driving from the driven member.

2. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate independently from the one to the other of said members different relative speeds and at least one of said connections comprising a clutch operative in one direction only of which the operative members are in active engagement when the connection or connections having the higher speed are not in driving relation, and means for controlling the clutch or clutches for producing changes in the speed of the driven member or for wholly disconnecting the driving from the driven member.

3. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate independently from the one to the other of said members diverse movements, in respect of speed or direction, each including a clutch comprising self-acting frictionally engaging parts normally in contact relation but operative in one direction only, and means for successively disengaging and maintaining disengaged the coacting parts of said clutches.

4. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate independently from the one to the other of said members diverse movements in respect of speed or direction, each including a clutch comprising self-acting frictionally engaging parts, one only of said clutches being operative at a time and the component parts of the others driven at lower speed resting in contact relation and in readiness for active engagement, and common means for successively disengaging the coacting parts of said clutches.

5. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate independently from one to the other of said members diverse movements in respect of speed or direction, each including a clutch comprising self-acting frictionally engaging parts, and means for controlling said clutches whereby one only is operative while the operative parts of those driven at higher speeds are wholly disengaged and those of lower speeds remain in contact relation in readiness for positive engagement.

6. In a power transmitter, the combination with a driving and a driven member, of a series of connections between the same proportioned and arranged to communicate independently from the one to the other of said members diverse movements, in respect of speed or direction, each including a clutch comprising self-acting frictionally engaging parts, and a common disengaging device for successively interrupting engagement of the coacting parts of said clutches beginning with that driven at the highest speed while permitting those of lower speed to remain in either actual driving relation or in contact relation in readiness for operative engagement.

7. In a power transmitter, the combination with a driving and a driven member, of a series of connections between the same constructed and arranged to communicate from the one to the other of said members diverse movements, in respect of speed and direction, and each comprising a clutch-wheel and spring-actuated clutch-levers normally engaging the same, a radially movable controlling device adapted to be shifted in opposite directions whereby the action and inaction of said clutch may be controlled, and a common actuating rod arranged and operated to successively operate said controlling devices.

8. In a power transmitter, the combination with a driving and a driven member, of a series of connections between the same constructed and arranged to communicate from the one to the other of said members diverse movements, in respect of speed and direction, and each comprising a clutch-wheel and clutch-levers normally engaging the same, a radially movable controlling device adapted to be shifted in opposite directions, whereby the action and inaction of said clutch may be controlled, and a common axially-reciprocating actuating rod provided with spaced cam-pieces adapted for successive engagement with said controlling devices.

9. In a power transmitter, the combination with a driving and a driven member, of a series of connections between the same constructed and arranged to communicate from the one to the other of said members diverse movements, in respect of speed and direction, and each comprising a clutch-wheel and clutch-levers with connected spring-pressed operating lever normally engaging said clutch wheel, a pivoted angular clutch-controlling dog movable radially of said clutch-wheel and having its angular portion engaging said operating lever in opposition to its spring, and a common actuating rod provided with spaced cam-pieces adapted for successive engagement with the free ends of the clutch-controlling dogs.

10. A power transmitter comprising a driving and a driven member, a plurality of connections between the same constructed and arranged to communicate independently from one to the other of said members different relative speeds and each comprising a clutch of which the operative members are in active engagement when those of the next higher speed connection are not in driving relation, means for controlling the effective operation of said clutches, and a driving connection between said means and the said driven member of the transmitter.

11. The combination with a power transmitter comprising a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate independently from one to the other of said members different relative speeds and each comprising a clutch of which the operative members are in active engagement when those of the next higher speed connection are not in driving relation, means for controlling the effective operation of said clutches, a cam, a connection with the driven member from which said cam receives its movements, a follower engaging said cam, and a connection between said follower and the controlling means for operating the latter.

12. In a power transmitter, the combination with a driving and a driven member, and a plurality of connections between the same each comprising a single clutch including self-acting frictionally-engaging parts, of common manually controlling means for operating said clutches whereby the disengagement of the coacting parts of one of said clutches causes the automatic active engagement of the coacting parts of another of said clutches unaffected directly by said controlling means.

13. In a power transmitter, the combination with a plurality of clutches each comprising self-acting frictionally engaging parts normally in contact relation but operative in one direction only, of a common controller therefor acting to successively force said engaging parts out of engagement.

14. In a power transmitter, the combination with a plurality of clutches, each comprising interengaging parts normally in contact relation but operative in one direction only, and a common controller for said clutches arranged and adapted to successively throw the interengaging parts of each of said clutches into inactive relation and to maintain them in said relation.

15. In a power transmitter, the combination with a plurality of clutches each comprising self-engaging coacting parts and a common shaft upon which said clutches are mounted, and a common controlling rod disposed longitudinally of said shaft and provided with a series of spaced operative portions each adapted to control the operation of its respective clutch.

16. In a power transmitter, the combination with a plurality of clutches each including self-acting frictionally engaging parts, a common shaft upon which said clutches are mounted, and a common controlling rod disposed longitudinally of said shaft and provided with a series of spaced operative portions each adapted to forcibly disengage the coacting parts of its respective clutch.

17. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate independently from the one to the other of said members diverse movements in respect of speed or direction, each including a single clutch comprising self-engaging parts, one only of said clutches being operative at a time and the component parts of the others driven at lower speed resting in contact relation and in readiness for active engagement, and common means for successively disengaging the coacting parts of said clutches.

18. A power transmitter comprising a driving and a driven member, a plurality of connections between the same constructed and arranged to communicate independently from one to the other of said members different relative speeds, and at least one of said connections comprising a clutch of which the operative members are in active engagement when the connection or connections having higher speed are not in driving relation, automatically acting means for controlling the effective operation of said connections, and a driving connection between said means and said driven member of the transmitter.

19. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and adapted to communicate independently from the one to the other of said members different relative speeds in the same direction and to maintain a continuous driving relation between said members through all changes of speed in the same direction, an additional connection between said driving and driven members constructed and adapted to transmit motion between said members in the opposite direction, and common means for controlling said connections for effecting changes of speed and direction of movement of the driven member, and for wholly disconnecting the driving from the driven member.

20. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate from one to the other of said members diverse movements, one of said connections being arranged to transmit motion to the driven member in one direction and another of said connections to transmit motion to the driven member in the opposite direction, and each of said connections comprising a clutch-wheel and self-acting frictionally-engaging clutch-levers normally engaging the same, and a common actuating device arranged and operated to successively withdraw each of said clutch-levers from engagement with its respective clutch-wheel.

21. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate independently from one to the other of said members different relative speeds, at least one of said connections comprising a clutch having self-cramping parts operative in one direction only, and means for disengaging the self-cramping clutch-parts to render them inoperative in both directions of relative movement of said members.

22. In a power transmitter, the combination with a driving and a driven member, of a plurality of connections between the same constructed and arranged to communicate from one to the other of said members different relative speeds, at least one of said connections comprising a transmitting drum positively connected with one of said members, a transmitting part positively connected with the other of said members, a frictionally engaging part normally in contact relation with said drum, a rocker carried by said transmitting part and having a connection with said engaging part whereby the latter may be forced into operative engagement with said drum when actuated in one direction only, and means for forcibly moving said rocker in the opposite direction for preventing the operative action of said engaging part with said drum in either direction of relative movement of said driving and driven members.

23. In combination, a driving and a driven member, a series of connections for communicating from one to the other of said members different relative speeds, each of said connections comprising a drum, a frictionally engaging part normally in contact relation with said drum and an operating lever or rocker pivotally connected with said engaging part at different distances from the axis of rotation of said drum, and means for shifting said lever or rocker to withdraw said engaging part from operative relation with said drum and thereby permit the relative movement of said driving and driven members in either direction.

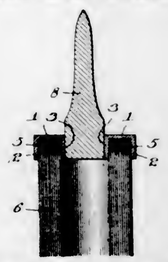
24. In a power transmitter, the combination with two shafts, and a stepped series of gears having positive connections with one of said shafts, of a second stepped series

of gears mounted loosely upon the other of said shafts and meshing with those of the first series, connections involving a one-way acting clutch intermediate each gear of the second series with its shaft, and means including an independently operated device for controlling the relation of the component members of two adjacent clutches whereby the control of the one by means of said device causes the simultaneous automatic actuation of the other.

25. In a power transmitter, the combination with a driven shaft, a series of driving members loosely mounted thereon and means for rotating the same at different speeds, of a series of driven members fixed upon said driven shaft, automatically acting clutch parts intermediate each driving member and its respective driven member and operative in one direction only, and independently controlled means for forcibly interrupting the operative relation of the clutch parts of the lower speed member or members whereby those of the next higher speed are caused to simultaneously assume driving relation.

26. The combination with a driving shaft and a driven shaft, of a plurality of trains of gearing of different speeds, each having a member mounted on and positively connected with said driving shaft and an interengaging member loosely mounted upon said driven shaft, means whereby each train of gearing is adapted to be automatically connected to the driven shaft, but only one at a time may remain in actual driving relation therewith, and means for forcibly controlling the connecting means of lower speed or speeds whereby those of the next higher speed are caused to automatically establish driving relation between the driving and driven shafts.

856,284. BRUSH. JOSEPH F. MUMFORD, Philadelphia, Pa. Filed June 30, 1903. Serial No. 163,815.



Claim.—1. A brush comprising a member provided with an endless channel and a brush knot secured between the side walls of the channel.

2. A brush comprising a member provided with a channel, a brush knot extending into the channel, and means commingled with the bristles of the brush knot for securing the brush knot within the channel.

3. A brush comprising a handle, a member provided with an endless channel surrounding the handle, and a brush knot secured between the side walls of the channel.

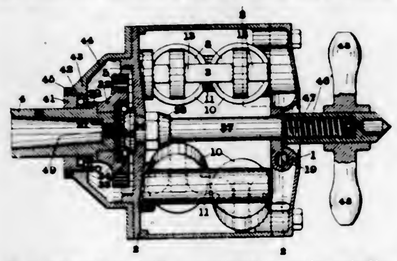
4. A brush comprising a handle, a member provided with an endless channel surrounding the handle, a brush knot extending into the channel, and means commingled with the bristles of the brush knot for securing the brush knot within the channel.

5. A brush comprising a single piece of sheet metal forming an endless channel and a brush knot secured between the side walls of the channel.

6. A brush comprising a single piece of sheet metal forming an endless channel, a brush knot extending into said channel, and means commingled with the bristles of the brush knot for securing the brush knot within the channel.

856,285. PNEUMATIC DRILL. ALBERT C. MURPHY, East St. Louis, Ill., assignor to Standard Railway Equipment Company, East St. Louis, Ill., a Corporation. Filed July 20, 1903. Serial No. 166,281.

Claim.—1. A pneumatic drill comprising a main spindle having a gear wheel thereon, a plurality of crank shafts parallel with said spindle and arranged symmetrically with respect thereto, a plurality of oscillating engines for each of said crank shafts the engines connected to one shaft being journaled on the same trunnion, and gear wheels on the respective crank shafts meshing with the gear wheel on the main spindle at equidistant points.



2. A pneumatic drill comprising a main spindle, two crank shafts for actuating said spindle arranged diametrically opposite each other and geared to said spindle at diametrically opposite points, and oscillating engines for actuating said crank shafts, the middle position of the engines operating on one crank shaft being substantially parallel with the middle position of the engines operating upon the other crank shaft.

3. A pneumatic drill comprising a main frame, a main spindle having a gear wheel fixed on its rear end and a ball-race countersunk in said gear wheel, and a thrust bar in alinement with said spindle and comprising a bearing cone at its forward end forward of said main frame to coöperate with said ball-race, balls in said ball-race, and a bracket forwardly projecting from said main frame and provided with a bearing for said main spindle.

4. A pneumatic drill comprising a main frame, a main spindle having a gear wheel fixed on its rear end and a ball-race countersunk in said gear wheel, and a thrust bar in alinement with said spindle and comprising a bearing cone at its front end forward of said main frame to coöperate with said ball-race, balls in said ball-race, the rear end of said thrust bar being screw-threaded and having a feed nut thereon, and a bracket projecting forwardly from said main frame and provided with a bearing for said main spindle.

5. A pneumatic drill comprising a main spindle, a plurality of crank shafts and trunnions parallel with said spindle and arranged symmetrically with respect thereto, a plurality of symmetrically arranged oscillating engines on each of said trunnions for actuating said crank shafts, a casing for the moving parts, and a thrust rod extending entirely through said casing in alinement with said spindle and arranged to take up the thrust thereon.

6. A pneumatic drill comprising a main spindle and having a gear wheel fixed on its rear end and a ball-race countersunk in said gear wheel, and a thrust bar in alinement with said spindle, and a bearing cone secured to said thrust bar to coöperate with said ball-race, and balls in said ball race, the rear end of said thrust bar being screw-threaded and having a feed nut thereon, and a drive rod extending through said thrust bar and the parts in alinement therewith, and said feed nut having a closed end arranged to bear against said drive rod when near one extremity of its movement.

7. A pneumatic drill comprising a main frame, a main spindle, a thrust bar in alinement with said spindle and extending through said main frame and a ball bearing interposed between said spindle and said thrust bar, said spindle having a bearing piece forward of said last mentioned bearing, and a second bearing piece mounted in a hub supported by said main frame, and balls between said bearing pieces.

8. A pneumatic drill comprising a main frame, a main spindle having a gear wheel fixed on the rear end thereof, a ball-race countersunk in said gear wheel, a thrust bar extending through said main frame in alinement with said spindle and having a bearing cone at the forward end thereof and balls between said bearing cone and said ball race, said spindle also having a beveled bearing ring thereon forward of said gear wheel, and a ball-race mounted in a hub supported by said main frame forward of said beveled ring, and balls between said ring and said ball race.

9. A pneumatic drill comprising a main frame, a main spindle having a gear wheel fixed on the rear end thereof, a ball-race countersunk in said gear wheel, a thrust bar extending through said main frame in alinement with said spindle and having a bearing cone at the forward end thereof and balls between said bearing cone and said ball race, said spindle also having a beveled bearing ring thereon forward of said gear wheel, and an adjustable nut, constituting a ball race mounted in a hub supported by said main frame forward of said beveled ring, and balls between said ring and said ball race.

10. A drill comprising a main casing two hollow trunnions rigidly mounted therein, oscillating engines journaled thereon, parallel crank shafts actuated by said engines, a centrally located main spindle actuated by said crank shafts, and a thrust bar in alinement with said spindle and midway between said crank shafts.

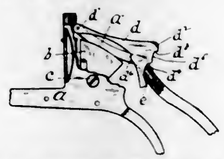
11. A drill comprising two hollow trunnions, oscillating engines journaled thereon, parallel crank shafts actuated by said engines, a main spindle actuated by said crank shafts, and a thrust bar in alinement with said spindle and midway between said crank shafts, and a casing constituting the main frame of said drill, the top casting of said casing having a chamber communicating with said hollow trunnions and with the source of pressure.

12. A pneumatic drill comprising a main frame, a forwardly extending bracket thereon provided with a ball bearing, a main spindle journaled in said bearing and arranged outside of said main casing, said spindle having a ball-race and balls therein, and a thrust bar projecting through said main casing in alinement with said spindle and provided with a bearing cone forward of said main casing to coöperate with said ball race and balls in said main spindle.

13. A drill comprising a main casing, parallel hollow trunnions fixed therein at diametrically opposite points, parallel crank shafts mounted in said casing at diametrically opposite points, oscillating engines mounted on said trunnions to operate said crank shafts, a main spindle centrally located with respect to said casing and geared to said crank shafts and a thrust bar parallel to said trunnions and crank shafts and in alinement with said spindle, whereby said drill is balanced about said thrust bar.

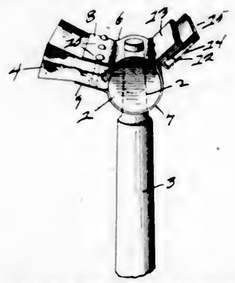
14. In a portable motor, a tool spindle having a bore extending throughout its length, and adapted to receive a tool, a feed screw in line therewith, a slidable pin arranged in line with the feed screw and bore of the spindle and adapted to be forced by the feed screw against the shank of the tool to eject the tool.

856,286. FIREARM. JOHN J. MURPHY, Norwich, Conn., assignor to The Hopkins & Allen Arms Co., Norwich, Conn., a Corporation of Connecticut. Filed Apr. 9, 1906. Serial No. 310,629.



Claim.—In a hammerless fire arm, a breech-frame formed with an opening in its upper portion to receive the hammer, a closure pivoted at its front end to the breech-frame and located normally in said opening, said closure formed with an abutment upon its under side to lie in the path of the hammer when the closure is closed, and at its rear end formed with a thumb piece and stop, and with depressions, and a spring-pressed device adapted to directly engage said projections to hold the closure in its open or closed position.

856,287. WINDOW-CLEANER. CHARLES C. MCCRACKEN, McComb, Ohio. Filed Mar. 4, 1907. Serial No. 360,347.



Claim.—1. In a window cleaner, a central wooden body, a swab of absorbent material, a series of tacks driven through the material into the body, the swab being doubled along the series of tacks, a sheet metal clamp inclosing the body and provided with marginal jaws to press the material of the swab between them, means for connecting the jaws together, and a handle extending through the body and the clamp, substantially as described.

2. In a window cleaner, a central cylindrical body, a swab fastened upon the body and doubled upon itself along the line of fastening, a sheet metal section 7 having opposite margins bent directly outward from the body, the one margin to serve as a jaw for the swab and the other to connect with the section 6, the said section 6 provided with an outwardly extending jaw and having a doubled portion 13 to receive the margin of the section 7, and a wiper along the portion 13 and supported thereby, substantially as described.

856,288. TRANSOM-LIFTER. HEMAN OSBORNE, Springfield, Mass. Filed Aug. 27, 1906. Serial No. 332,117.

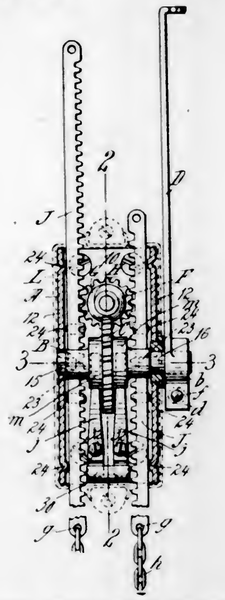
Claim.—1. In a transom operating device, the combination with a suitable supporting frame or casing having worm wheel rotatably mounted therein which is provided with a transom operating element, of a shaft, rotatably mounted in said casing having a worm in engagement with the worm wheel, and having a spur gear wheel thereon, and a rack bar slidable in the casing and in mesh with the said gear wheel.

2. In a transom operating device, the combination with a supporting frame having, rotatably mounted therein, a worm wheel provided with a transom operating element, of a shaft, rotatably mounted in said casing, having a worm in engagement with the worm wheel and having a spur gear wheel thereon, and oppositely located rack bars slidable in the casing and both in mesh with the said gear wheel.

3. In a transom operating device, the combination with a supporting frame having, rotatably mounted therein, a worm wheel provided with a transom operating element, of a shaft, rotatably mounted in said casing, having a worm in engagement with the worm wheel and having a spur gear wheel thereon, oppositely located rack bars slidable in the casing and both in mesh with the said gear wheel, and flexible operating connections secured to, and depending below, the rack bars.

4. In a transom operating device, the combination with a supporting frame having, rotatably mounted therein, a shaft having a worm wheel thereon, also provided with a transom operating element, and having oppositely located cams, of a shaft, rotatably mounted in said casing, having a worm in engagement with the worm wheel and having a spur gear wheel thereon, oppositely located rack bars, slidable in the casing and both in mesh with the

said gear wheel, and a pair of springs applied in resistance against said cams.

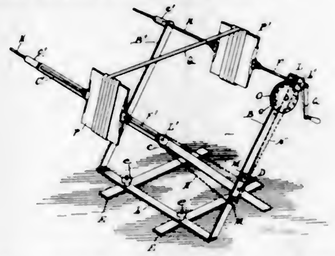


5. In a transom operating device, the combination with a frame having a back and opposite vertical side walls constructed with inturned lugs or lips adjacent but separated from the back and constituting rack bar guides, and a shaft rotatably mounted in said frame, having a worm wheel thereon, and having an extremity thereof projecting outwardly beyond the frame and provided with a transom operating arm, of another shaft rotatably mounted in the frame at right angles to the worm wheel shaft, having a worm in mesh with the said worm wheel and having a spur gear wheel thereon, oppositely located rack bars slidable vertically through the frame, and both thereof in mesh with said spur gear, and flexible operating connections secured to, and depending below, the lower ends of both said rack bars.

6. In a transom operating device, the combination with a frame having a back wall and opposite vertical side walls constructed with inturned lugs or lips adjacent but separated from the back wall and constituting rack bar guides, and the frame walls having inwardly located bosses to constitute separated rack bar bearings, and a shaft rotatably mounted in said frame, having a worm wheel thereon, and having an extremity thereof projecting outwardly beyond the frame and provided with a transom operating arm, of another shaft rotatably mounted in the frame at right angles to the worm wheel shaft, having a worm in mesh with the said worm wheel and having a spur gear wheel thereon, oppositely located rack bars slidable vertically through the frame, and both thereof in mesh with said spur gear, and flexible operating connections secured to, and depending below, the lower ends of both said rack bars.

856,289. WINDING AND MEASURING DEVICE. STEPHEN E. PARRISH, Hilladale, Mich. Filed Nov. 24, 1906. Serial No. 344,869.

Claim.—1. In a computing reel, the combination with supporting standards, of spindles journaled therein, reel members carried by said spindles, means for rotating one of said spindles, a sprocket on each of said spindles, a pair of idlers journaled on said standards out of the horizontal plane of said sprockets, an endless chain connecting said sprockets and engaging said idlers, and registering means operated by one of said spindles.



2. In a computing reel, the combination with supporting standards, of spindles journaled therein, laterally projecting clamps on said spindles, spring members bearing upon said clamps, reel members detachably held in said clamps, means for simultaneously rotating said spindles, and means for registering the number of rotations thereof.

3. In a computing reel, the combination with a foldable supporting frame comprising pairs of spaced arms, the arms of one pair being respectively pivoted to the arms of the other pair, a rotatable spindle carried by each pair of arms, each of said spindles comprising a longitudinally adjustable and a stationary section, a reel member detachably carried by each of said spindles, means for rotating one of said spindles, and means for registering the number of rotations thereof.

4. In a computing reel, the combination with a foldable supporting frame comprising normally spaced pivoted members, of spindles journaled therein, reel members carried by said spindles, sprockets on said spindles, a pair of idlers on one of said members equidistant from the folding axis, means for rotating one of said spindles, an endless chain engaging said sprockets and idlers, whereby said chain is held taut in all positions of the folding frame, and means for registering the number of rotations of one of said spindles, for the purpose described.

5. In a computing reel, the combination with a foldable supporting frame comprising normally spaced members pivoted to each other, of spindles journaled in said members, means for rotating one of said spindles, and a drive connection between said spindles outside of the horizontal plane thereof, for the purpose described.

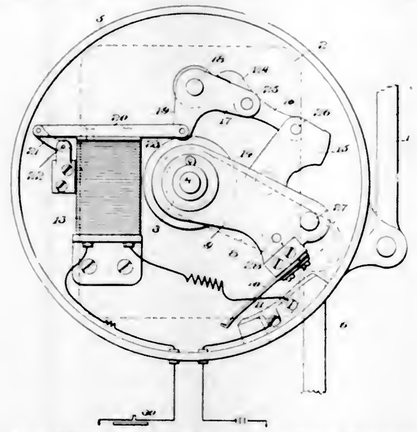
6. In a computing reel, the combination with a foldable supporting frame, of complementary rotatable reel members on said frame, means for rotating one of said members, and drive connections directly connecting the members, for the purpose described.

7. The combination with a supporting standard, of spindle sections rotatably carried thereby, relatively long resilient clamps laterally projecting from and carried by said sections and adapted to engage a device on which materials are to be wound, and means for rotating one of said spindle sections.

8. The combination with a supporting standard, of complementary spindle sections journaled in said standard, one of said sections being longitudinally adjustable, spring clamping members pivoted on said sections, and projecting laterally therefrom, a reel detachably engaged by said clamps, and means for rotating said sections and reel.

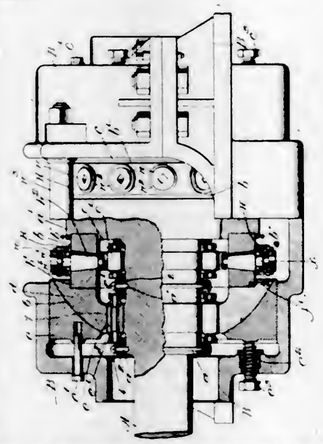
856,290. SIGNALING MECHANISM. WALTER A. PEARCE, London, England. Filed Nov. 28, 1906. Serial No. 345,536.

Claim.—1. In a signaling mechanism, the combination with a signal rod and an operating rod, of electrically controlled means comprising a magnet interposed between said rods for transmitting motion from one to the other, and a circuit controller for said electrically controlled means connected to said operating means whereby upon a preliminary movement of the operating rod the circuit controller is moved to close a circuit through the magnet of the electrically controlled means.



2. In signaling mechanism the combination with a box pivoted on a fixed support, a signal rod connected to said box, an operating arm pivoted within said box to move independently thereof, an operating rod connected to said arm, an electro-magnet, a circuit controller carried by said operating arm for controlling the circuit through said magnet, an arm pivoted on said box, a pivoted lever carrying the armature of the magnet, and a toggle connected to the pivoted lever and the arm pivoted to the box.

856,291. ROLLER-BEARING. JULIUS A. PERKINS, Omaha, Nebr., assignor, by mesne assignments, to United States Roller Bearing Company, Jersey City, N. J., a Corporation of New Jersey. Filed Aug. 5, 1903. Serial No. 168,261.



Claim.—1. In a roller-bearing, a shaft having a collar presenting at one side a track, two cages surrounding said shaft at one side said collar, one of said cages containing a series of bearing-rollers and the other a series of conical end-thrust-rollers, and a tipping ring-shaped-track over which travel both said bearing-rollers and said end-thrust rollers.

2. In a roller-bearing, a rigid casing, a shaft having a collar presenting at one side a track, two cages surrounding said shaft at one side said collar, one of said cages containing a series of bearing-rollers and the other a series of conical end-thrust-rollers, and a double-faced ring-shaped track over which both said sets of rollers travel, said track being movable in a curve intersecting the longitudinal axis of said bearing rollers, because of any displacement of the longitudinal axis of said shaft.

3. In a roller bearing, a set of bearing rollers, a set of end thrust rollers, a shaft having a fixed collar, a casing surrounding said shaft and having a convex seat, and a double-faced ring shaped track presenting a convexed back entering said seat loosely, said track being acted upon by both said bearing rollers and said end thrust rollers said tracks being free to turn in said seat with said rollers to accommodate for any displacement of the longitudinal axis of the shaft.

4. In a roller bearing, a shaft provided with a collar, a rigid, separable casing, a detachable backing ring therein having a concaved seat, a ring shaped track having a convexed side seated in the concavity of said backing ring, means to adjust said backing ring in said casing and with it said ring shaped track longitudinally of said shaft, and rollers interposed between said ring shaped track and the collar on the shaft, said ring-shaped track and rollers being movable together to accommodate for any displacement of the longitudinal axis of the shaft.

5. In a roller bearing, a shaft provided with a collar, a casing, a detachable backing ring having a seat, means for adjusting longitudinally of the shaft and maintaining said backing ring in its adjusted position, a ring shaped-track seated in said backing ring, and roller cages having sets of rollers interposed directly between said ring-shaped track and the periphery of said shaft, and between said track and the side of the collar.

6. In a roller-bearing, a shaft having a collar provided at its sides with an annular groove presenting an external flange, a track composed of a plurality of parts inserted in said groove, and means to secure said track in said groove against movement in the direction of the length of said shaft said flange preventing movement of said track parts at right angles to said shaft.

7. In a roller-bearing, a shaft having a collar, two tracks at one side of said collar, one track having a relief represented by a space and beveled points entering the space, and a cage having conical end-thrust-rollers interposed between said tracks.

8. In a roller bearing, a shaft having a collar, two tracks at one side of said collar, one track having a relief presenting two points and a space, the latter being gradually widened toward the inner and outer edges of the track from said point.

9. In a roller bearing, a cage having a series of spaces, end thrust rollers mounted in said spaces and having ball sustaining shoulders at right angles to the longitudinal axis of said rollers, loose ball tracks and balls to travel over said shoulders and contact with the journals of said rollers, and means to insure parallelism between the inner face of the outermost ball track and the shoulder at the outer end of said end thrust roller.

10. In a roller bearing, an end thrust cage having a series of spaces, end thrust conical rollers mounted in said spaces and having ball sustaining shoulders at right angles to the longitudinal axis of said rollers, loosely sustained ball tracks and balls therein contacting with the shoulders and journals of said rollers, a screw, and a device interposed between said screw and the outer side of said ball track, said screw and device presenting one a convex, and the other a concave, surface to operate substantially as described.

11. In a roller bearing, a cage having a series of spaces, end thrust rollers mounted in said spaces and having shoulders at right angles to the longitudinal axis of said rollers, the journals of said rollers projecting beyond said shoulders, but being maintained within the periphery of said cage, loosely sustained ball tracks and balls therein contacting with the shoulder of said rollers, a hollow screw, and a hollow device, both carried by said cage, the hollow device being interposed between the inner end of

said hollow screw and the outer side of said ball track, said screw and device presenting one a convex and the other a concave surface, said device being automatically movable to insure parallelism between the face of the outermost ball track and the shoulder at the outer end of said end thrust roller, the openings in the nut and said device permitting the journal of the roller to be engaged when it is desired to turn the roller without turning the cage.

12. In a roller bearing, a cage having roller spaces, a series of conical end thrust rollers located in said spaces, and having shoulders at right angles to the longitudinal axis of said rollers, loosely sustained ball tracks, and balls interposed between said tracks and the journals of said rollers, and a series of screws, said screws being hollow to receive a device by which to engage and turn the rollers.

13. In a roller-bearing, a cage composed of a plurality of segments having roller-receiving-spaces, each segment having at its ends interlocking projections, and radial wedge shaped keys entering spaces in said projections and confining the cage segments rigidly together.

14. In a roller-bearing, a cage composed of a plurality of segments having roller-receiving-spaces, each segment having at its ends interlocking projections, and radial wedge shaped keys entering spaces in said projections and confining the cage segments rigidly together, and means to secure said keys in their operative position.

15. In a roller-bearing, a shaft having a collar presenting at one side a track, two cages surrounding said shaft at one side said collar, a series of bearing rollers in one of said cages and a series of conical end-thrust rollers in the other of said cages, and a tipping ring-shaped-track interposed between said bearing-rollers and said end-thrust-rollers, and a series of bearing-rollers interposed between the shaft and the interior of the cage carrying the end-thrust-rollers.

16. In a roller bearing, a cage composed of segments having at each end a plurality of projections provided with holes, the holes in all the projections when interlocked occupying a position in line one with the other, and a radial key inserted in all the holes of all the projections.

17. In a roller bearing, a cage composed of segments having at each end a plurality of projections provided with holes, the holes in all the projections when interlocked occupying a position in line one with the other, and a radial key inserted in all the holes of all the projections, and means to lock the key in its operative position.

856,292. SAFETY-FUSE. WILLIAM J. PHELPS, Detroit, Mich. Filed May 4, 1903. Serial No. 155,658.



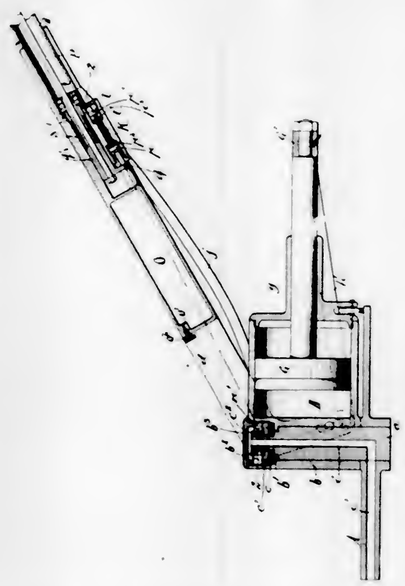
Claim.—1. In a safety fuse, the combination with a casing closed throughout, of a fuse strip inclosed therewithin, and means connected to the inner surface of the casing and acting automatically upon the disruption of the fuse for indicating the disrupted condition of the strip.

2. In a safety fuse, the combination with a fuse plug constituting a casing sealed throughout, of a fusible conductor therein, the top of said plug being formed of transparent material and constituting an inspection opening, and a coating of indicating material mounted directly upon the inner surface of said top adapted to discolor upon the disruption of the indicator.

3. In a safety fuse, the combination with a fuse plug constituting an inclosing casing, a portion of the inclosing casing being transparent, of a fuse strip within the casing, and means within the plug connected directly to the inner surface of said inclosing casing and acting automatically upon the disruption of the fuse for indicating the disrupted condition of the strip.

4. In a safety fuse, the combination with a fuse plug comprising sides and a bottom, of a transparent top therefor, a fuse strip within the plug, and said top having a coating of indicating material applied directly upon its inner surface and separated from the strip for indicating the disruption of the fuse.

856,293. TROLLEY-POLE CONTROLLER. ANDREW L. PRENTISS, Buffalo, N. Y. Filed Sept. 24, 1906. Serial No. 335,862.



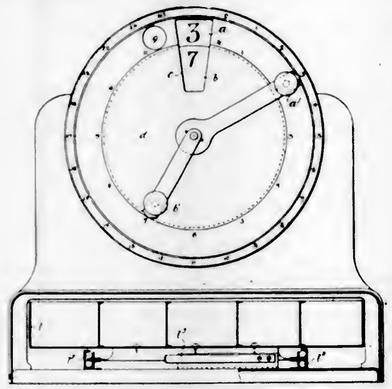
Claim.—1. The combination of a trolley pole, a pressure cylinder containing a piston, means for connecting the pole with the piston, valve mechanism controlling the passage of the pressure fluid to and from the cylinder, and a pneumatic cushioning chamber arranged to receive the air exhausted from the cylinder, substantially as set forth.

2. The combination of a trolley pole, a pressure cylinder containing a piston, means for connecting the pole with the piston, valve mechanism controlling the passage of the pressure fluid to and from the cylinder, and a pneumatic cushioning chamber arranged to receive the air exhaust from the cylinder and having a valved relief opening, substantially as set forth.

3. The combination of a trolley pole, a pressure cylinder containing a piston, means for connecting the pole with the piston, valve mechanism mounted on the pole and controlling the passage of the pressure fluid to and from the cylinder, and a cushioning chamber also mounted on the pole and arranged to receive the air exhausted from the cylinder, substantially as set forth.

4. The combination of a trolley pole, a pressure cylinder containing a piston, means for connecting the pole with the piston, a cushioning chamber mounted on the pole, a valve case also mounted on the pole and having an inlet, a discharge port connected with the cylinder and an exhaust port leading to said cushioning chamber, and valve mechanism arranged in said case and controlled by the movements of the pole and operating to cut off communication between the cylinder and the cushioning chamber in the operative position of the pole and to establish communication between the cylinder and said chamber when the trolley wheel leaves the wire, substantially as set forth.

856,294. CASH-REGISTERING TILL. JOHN A. PRESTWICH, London, England. Filed Nov. 9, 1906. Serial No. 342,707.



Claim.—1. A cash registering till having a plurality of moving indicating disks mounted on the same axis said disks being of different diameters and having characters on both sides the larger disks having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both the back and the front of the apparatus.

2. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, an indicating window, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate register of the indicating characters on the disks with such indicating window and the type on the type wheels with the printing position, a money drawer and means for releasing the said money drawer when the said notched wheels are moved.

3. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, an indicating window, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate register of the indicating characters on the disks with such indicating window and type on the type wheels with the printing position, a money drawer and means for releasing said money drawer when the said notched wheels are moved, an indicator also released by the initial movement of said notched wheels for showing when the till is being operated, means for returning said indicator to initial position only by the closing of the money drawer.

4. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, an indicating window, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate register of the indicating characters on the disk with such indicating window and the type on the type wheels with the printing position, a money drawer and means for releasing the said money drawer when the said notched wheels are moved, a spring roller over which the record strip passes, said roller being disposed beneath the printing type wheels and having a resilient movement diametrically in regard to its spindle, means for moving said spring roller to and from the type wheels when the money drawer is returned to closed position and means for traveling the record strip, an inking ribbon for the type wheels and means for traveling same.

5. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate movement of the indicating disks and the type wheels, a money drawer and means for releasing the said money drawer when the said notched wheels are moved, an indicator also released by said notched wheels and showing when the till is in use means whereby said indicator is only returned to initial position by the closing of the money drawer, a record strip, a spring roller over which the record strip passes, said roller being disposed beneath the printing type wheels and having a resilient movement diametrically in regard to its spindle, means for moving said spring roller to and from the type wheels when the money drawer is returned to closed position and means for traveling the record strip, an inking ribbon for the type wheels and means for traveling same.

6. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk and mounted on the same axis, notched wheels, one for each disk, pawls engaging said notched wheels serving to secure the accurate registering movements of the indicating disks and the type wheels, a money drawer and means for releasing same when the said notched wheels are moved, an inking ribbon disposed between the record strip and the type wheels, a bell crank lever, a cam upon the money drawer adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a print to be obtained from the type wheels upon the recording strip and resets the indicator controlled by the notched wheels.

7. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate movement of the indicating disks and the type wheels, a money drawer and means for releasing same when the said notched wheels are moved, an indicator also released by said notched wheels, means for returning said indicator to initial position only by the closing of the money drawer, an inking ribbon, a bell crank lever, a cam upon the money drawer adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a print to be obtained from the type wheels upon the recording strip and resets the indicator controlled by the notched wheels.

8. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk, and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate movement of the in-

dicating disks and the type wheels, a money drawer and means for releasing same when the said notched wheels are moved, an inking ribbon, a bell crank lever, a cam upon the money drawer adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a print to be obtained from the type wheels upon the recording strip and resets the indicator controlled by the notched wheels, two spools placed adjacent to one another upon which the opposite ends of the ink ribbon are wound, ratchet wheels on said spools, a double ratchet pawl disposed between said spools and the ratchet wheels thereon, a reciprocating plate upon which said ratchet pawl is pivotally mounted, means whereby the pressure of the ribbon when fully wound on one spool causes the double pawls to turn upon its pivot and engage the ratchet wheel of the empty spool and wind the ribbon in the reverse direction.

9. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate movement of the indicating disks and type wheels, a money drawer and means for releasing same when the said notched wheels are moved, an indicator also released by said notched wheels and showing when the till is operated, means for returning said indicator to initial position only by closing of the money drawer, an inking ribbon, a bell crank lever, a cam upon the money drawer adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a print to be obtained from the type wheels upon the recording strip and resets the indicator controlled by the notched wheels, two spools placed adjacent to one another upon which the opposite ends of the ink ribbon are wound, ratchet wheels on said spools a double ratchet pawl disposed between said spools and the ratchet wheels thereon, a reciprocating plate upon which said ratchet pawl is pivotally mounted, means whereby the pressure of the ribbon when fully wound on one spool causes the double pawl to turn upon its pivot and engage the ratchet wheels at the empty spool and wind the ribbon in the reverse direction.

10. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels to secure accurate movement of the indicating disks and the type wheels, a money drawer and means for releasing the said money drawer when the said notched wheels are moved, an adding mechanism and means for operating said adding mechanism from the indicating disks.

11. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate movement of the indicating disks and the type wheels a money drawer and means for releasing the said money drawer when the said notched wheels are moved, an adding mechanism and means for operating said adding mechanism from the indicating disks, cam disks one for each indicating disk and corresponding type wheel and actuated therewith, said cam disks having a number of steps upon their peripheries corresponding to the fractions of each denomination of coin, an adding mechanism rods for operating said adding mechanism and means for reciprocating said rods at each operation of the till, the movement of said rods being determined by the position of the said stepped cams.

12. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels, one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate movement of the indicating disks and the type wheels, a money drawer and means for releasing same when the said notched wheels are moved, an inking ribbon, a bell crank lever, a cam upon the money drawer adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a print to be obtained from the type wheels upon the recording strip and resets the indicator controlled by the notched wheels, cam disks, one for each indicating disk and corresponding type wheels and actuated therewith, said cam disks having a number of steps upon their peripheries corresponding to the fractions of each denomination of coin, an adding mechanism, rods for operating said adding mechanism, means for operating said reciprocating rods from said bell crank lever by the closing of the money drawer.

13. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, means for insuring that the disks come to rest in registering position, a money drawer and means for releasing same at initial movement of the indicating disks, an indicator also released by said initial movement, means for returning said indicator to initial position only by the closing of the money drawer, a bell crank lever, a cam upon the money drawer adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of the said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a print to be obtained from the type wheels upon the recording strip and resets the said indicator, cam disks one for each indicating disk, and corresponding type wheel and actuated therewith, said cam disks having a number of steps upon their peripheries corresponding to the fractions of each denomination of coin, an adding mechanism, rods capable of being reciprocated for operating said adding mechanism, means for operating said reciprocating rods from said bell crank lever by the closing of the money drawer.

14. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk and mounted on the same axis, means for securing accurate movements of the indicating disks and type wheels, a money drawer and means for releasing same at the initial movement of the indicating disks, an adding mechanism and means for operating same from the indicating disks, cam disks one for each indicating disk and corresponding type wheel and actuated therewith, said cam disks having a number of steps upon their peripheries corresponding to the fractions of each denomination of coin, an adding mechanism rods for operating said adding mechanism, teeth upon said rods adapted to engage toothed wheels mounted adjacent to the adding wheels of the adding mechanisms and adapted to drive same through ratchet and pawl connections pins upon said adding wheels, a pivoted arm engaged by said pins at each complete revolution of the respective adding wheels, a step on the adjacent reciprocated rod normally engaged by said pivoted arm whereby the rod is only reciprocated to the extent determined by the cam until said step when released by said pivoted arm allows of an additional movement to record an additional amount equal to the sum of the pin carrying wheel which releases the said pivoted arm.

15. A cash registering till having a plurality of indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, an additional indicator for high values comprising a hand operated arm carrying a flag like extension visible through windows, together with the indications on the indicator disks, means for locking said additional indicator in position to which it is moved, means for releasing said additional indicator.

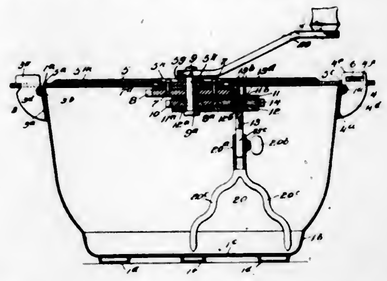
16. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, type wheels one for each disk and mounted on the same axis, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate movements of the disks and type wheels, a money drawer and means for releasing same when the said notched wheels are moved, an additional indicator for high values comprising a hand operated arm carrying a flag like extension visible at the indicating position, together with the indications on the indicator disks, means for locking said additional indicator in position to which it is moved, means for releasing said additional indicator by the opening of the money drawer.

17. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible from both sides, type wheels one for each disk, pawls engaging notched wheels one for each disk, said notched wheels serving to secure the accurate movements of the disks and the type wheels, a money drawer and means for releasing same when the said notched wheels are moved, an inking ribbon disposed between the record strip and type wheels, a bell crank lever, a cam upon the money drawer and adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a print to be obtained from the type wheels upon the recording strip and resets the indicator controlled by the notched wheels, an additional indicator for high values comprising a hand operated arm carrying a flag like extension visible at the indicating position together with the characters on the indicator disks means for locking said additional indicator in position to which it is moved, means for releasing said additional indicator.

18. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, printing means coupled to each disk, pawls engaging notched wheels one for each disk, said notched wheels serving to secure the accurate movements of the indicating disks and type wheels, a money drawer and means for releasing same when the said notched wheels are moved, an indicator showing when the till is operated and also released by the initial movement of said notched wheels, means for returning said indicator to initial position only by the closing of the money drawer, a bell crank lever, a cam upon the money drawer adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a record to be printed on the recording strip and resets the indicator controlled by the notched wheels, an additional indicator for high values comprising a hand operated arm carrying a flag like extension visible at the indicating position together with the characters on the indicator disks, means for locking said additional indicator in position to which it is moved means for releasing said additional indicator by the opening of the money drawer.

19. A cash registering till having a plurality of hand operated indicating disks mounted on the same axis, said disks being of different diameters the larger ones having apertures therein through which the characters on the smaller disks are visible thus enabling the characters on all the disks to be visible from both sides, printing means coupled to said indicator disks, notched wheels one for each disk, pawls engaging said notched wheels serving to secure the accurate movements of the indicator disks, a money drawer and means for releasing same when the said notched wheels are moved, an indicator shown when the till is operated and also released by said notched wheels, means for returning said indicator to initial position only by the closing of the money drawer, a bell crank lever, a cam upon the money drawer adapted to move said bell crank lever in one direction and then release same, a spring for effecting the return of said bell crank lever, means whereby the movement of the bell crank lever in one direction causes a print to be obtained upon the recording strip and releases the indicator controlled by the notched wheels, an additional indicator for high values comprising a hand operated arm carrying a flag like extension visible at the indicating position together with the characters on the indicator disks, means for locking said additional indicator in position to which it is moved, means for releasing said additional indicator by the opening of the money drawer, cam disks one for each indicating disk and actuated therewith, said cam disks having a number of steps upon their peripheries corresponding to the fractions of each denomination of coin, an adding mechanism, rods for operating said adding mechanism and means for reciprocating said rods at each operation of the cash register, the movement of said rods being determined by the position of the said stepped cams, means for operating said reciprocating rods from said bell crank lever by the closing of the money drawer.

856,295. CUTTING AND MIXING MILL. HENRY U. PRINDLE, San Francisco, Cal., assignor to The Rotary Machine Company, San Francisco, Cal., a Corporation. Filed June 26, 1905. Serial No. 267,048.



Claim.—1. An apparatus of the character stated, comprising a bowl or receptacle, a bridge member secured across the top thereof, means coöperating with the bridge member and the bowl for locking the bridge member to the bowl, a fixed gear and a spacing disk secured to the bridge member centrally thereof, a drive shaft passing through said bridge member and said fixed gear, a pair of yoke plates mounted on said drive shaft, a drive gear

mounted on said drive shaft between said yoke plates, a supplemental shaft mounted in bearing apertures in said yoke plates, a planetary gear mounted on said supplemental shaft between said yoke plates and meshing with said drive gear, said supplemental shaft having a disk head held in the bearing aperture in the upper yoke plate, gear engaging lugs passing through said disk head into said planetary gear to secure the planetary gear to rotate with the supplemental shaft, said lugs adapted to mesh with the fixed gear, and means detachably secured to said supplemental shaft for operating upon the material within the receptacle.

2. An apparatus of the character stated, comprising a bowl or receptacle, a bridge member secured across the top thereof, means coöperating with the bridge member and the bowl for locking the bridge member to the bowl, a fixed gear and a spacing disk secured to the bridge member centrally thereof, a drive shaft passing through said bridge member and said fixed gear, a pair of yoke plates mounted on said drive shaft, a drive gear mounted on said drive shaft between said yoke plates, a supplemental shaft mounted in bearing apertures in said yoke plates, a planetary gear mounted on said supplemental shaft between said yoke plates and meshing with said drive gear, said supplemental shaft having a disk head held in the bearing aperture in the upper yoke, gear engaging lugs passing through said disk head into said planetary gear to secure the planetary gear to rotate with the supplemental shaft, said lugs adapted to mesh with the fixed gear means detachably secured to said supplemental shaft for operating upon the material within the receptacle, said last named means including a socketed member adapted to receive the end of said supplemental shaft and a set screw for securing the same to the supplemental shaft.

3. An apparatus of the class described, comprising a sheet metal bowl or receptacle having a reduced portion at its bottom, button legs on the bottom of said receptacle, a clamp receiving eye on the bottom of said receptacle, said receptacle having its upper edge provided with a turned over bead, a securing device consisting of a base plate riveted to the side of the receptacle and having a bead for entering the bead of the receptacle, said securing device including a radial web having a T-head, a second securing device consisting of a base plate secured to the receptacle wall, and having a bead for entering the bead of the receptacle and a radial web having a projecting head portion provided with a slot, a bridge member having its ends slotted to pass over the head portion of said securing devices and having fingers for locking over the bead of the receptacle adjacent the vertical webs of the securing devices, a latch pivoted to said bridge member and adapted to enter the slot in the second securing member radial web, said bridge member consisting of a sheet metal body having a longitudinal rib or bead formed therein, and a central apertured button portion, said bridge member having a circular rib or bead surrounding said central apertured button portion, a fixed gear and a spacing plate riveted to said bridge member, a main shaft passing centrally through the aperture in the bridge member and through the fixed gear and spacing plate, a pair of yoke plates mounted on said fixed shaft a drive gear mounted on said fixed shaft between said yoke plates and secured to said fixed shaft to rotate therewith, a planetary gear mounted between said fixed gears and meshing with said drive gear, a supplemental shaft passing through bearing apertures in the yoke plates and carrying said planetary gear, said supplemental shaft having a head disk held in the bearing aperture of one of said yoke plates, fixed gear engaging lugs passing through said disk head of the supplemental shaft into the planetary gear for securing the planetary gear to rotate with the supplemental shaft, and means for operating upon the material within the receptacle, detachably secured to said supplemental shaft substantially as shown and for the purposes specified.

4. An apparatus of the class described, comprising a sheet metal bowl or receptacle having a reduced portion at its bottom, button legs on the bottom of said receptacle, a clamp receiving eye on the bottom of said receptacle, said receptacle having its upper edge provided with a turned over bead, a securing device consisting of a base plate riveted to the side of the receptacle and having a bead for entering the bead of the receptacle, said securing device including a radial web having a T head, a second securing device consisting of a base plate secured to the receptacle wall, and having a bead for entering the bead of the receptacle and a radial web having a projecting head portion provided with a slot, a bridge member having its ends slotted to pass over the head portion of said securing devices and having fingers for locking over the bead of the receptacle adjacent the vertical webs of the securing devices, a latch pivoted to said bridge member and adapted to enter the slot of the second securing member radial web, said bridge member consisting of a sheet metal body having a longitudinal rib or bead formed therein and a central apertured button portion, said bridge member having a circular rib or bead surrounding said central apertured button portion, a fixed gear and a spacing plate riveted to said bridge member, a main shaft passing centrally through the aperture in the bridge member and through the fixed gear and spacing plate, a pair of yoke plates mounted on said fixed shaft, a drive gear mounted on said fixed shaft between said yoke plates, a supplemental shaft mounted in bearing apertures in said yoke plates, a planetary gear mounted on said supplemental shaft between said yoke plates and meshing with said drive gear, said supplemental shaft having a head disk held in the bearing aperture of one of said yoke plates, fixed gear engaging lugs passing through said disk head of the supplemental shaft into the planetary gear for securing the planetary gear to rotate with the supplemental shaft, said attachment containing a socket and having a set screw for securing it to the supplemental shaft, a pair of plates straddling said socket, said plates having their ends apertured, supplemental plates in said last named apertures and having their ends bent into a U-shape, said U-shaped ends having bearing apertures, stud shafts held in said last named bearing apertures, cutting disks held on said shafts, and buffer springs mounted between said socket straddling plate ends for pressing the cutter members downwardly, and a false bottom for said receptacle against which the cutter members are pressed.

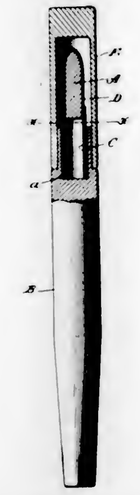
5. In an apparatus of the class described, a cutter member comprising a socket, a pair of plates adapted to straddle said socket and secured thereto, said plates having parallel ends spaced apart, said ends of said plates being apertured, supplemental plates passing through said apertures, buffer springs surrounding said supplemental plates between the ends of said straddling plates for pressing the supplemental plates in one direction, said supplemental plates having U-shaped ends provided with bearing apertures, radial cutting disks, and stud shafts secured to said radial cutting disks to pass through the bearing apertures in the U-shaped ends of said supplemental plates, substantially as shown and described.

856,296. CAUSTIC-PENCIL HOLDER. JOHN J. REQUA, New York, N. Y. Filed Nov. 16, 1905. Serial No. 287,573.

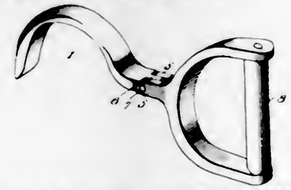
Claim.—1. In a holder for a caustic-pencil, the combination of a handle, a caustic-pencil point, and a flexible holder for said point, the handle being provided with a cavity in its end, and the flexible holder being secured in place in the lower part of said cavity and capable of vibrating therein, substantially as and for the purposes set forth.

2. The herein described holder for a caustic-pencil, comprising a handle provided with a cavity, a yielding holder connected with said handle, a caustic-pencil point mounted in the end of the yielding holder, and the removable cap or cover, all being combined and arranged substantially as and for the purposes set forth.

856,296.



856,297. TUG-HOLDER. ORLIE A. RICE, Eldred, Pa. Filed Aug. 7, 1906. Serial No. 329,607.



Claim.—1. A tug holder comprising a tang adapted to be secured to a shaft or thill, and a tug supporting member consisting of a yoke movably mounted upon the tang as specified.

2. In combination, a shaft or thill, a tug holder comprising a tang applied thereto, and a yoke member pivoted at one end to the tang aforesaid and adapted to receive a trace.

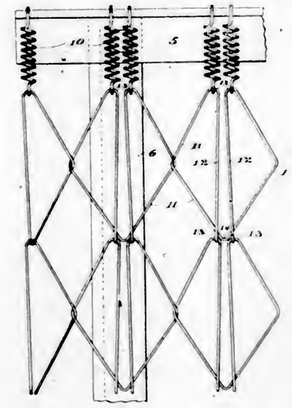
3. In combination, a shaft or a thill, a tang secured thereto, and a yoke member adapted to support a trace and pivotally connected at one end with the tang, the opposite end portion of the yoke member having a roller mounted therein for the purpose specified.

4. In combination, a thill or shaft, a tug holder therefor comprising a tang secured thereto, a yoke member arranged to support a trace and pivotally connected with the tang for movement in a vertical plane, and a roller journaled in the sides of the yoke member and movable about a vertical axis.

856,298. WIRE BED-BOTTOM FABRIC. HENRY RICHARDSON and ARTHUR L. SENESAC, Chicago, Ill.; said Senesac assignor to said Richardson. Filed Apr. 9, 1906. Serial No. 310,828.

Claim.—1. A wire bed bottom fabric including a series of connected individual units each consisting of a single length of bent wire having a tension member extending longitudinally from end to end of the unit and a laterally disposed space-filling member continuous with said tension member and disposed wholly within and between the longitudinal limits of the latter, substantially as described.

2. A wire bed bottom fabric including a series of connected individual units each consisting of a single length of bent wire having a pair of tension members extending longitudinally from end to end of the unit and laterally bowed space-filling members continuous with said tension members, said space-filling members also extending across said tension members and being disposed wholly within and between the longitudinal limits of the latter, substantially as described.



3. A wire bed bottom fabric including a series of connected individual units each consisting of a single length of wire bent to present a transverse member, inwardly inclined members extending from the ends of said transverse member to one end of the unit, and substantially parallel straight tension members extending lengthwise of the unit, substantially as described.

4. A wire bed-bottom fabric including a series of connected individual units each consisting of a single length of bent wire having a straight tension member extending longitudinally of the fabric and laterally disposed space-filling members, adjacent units in the same longitudinal rows being directly interhooked with each other and adjacent units in the same transverse rows being directly interlinked with each other, substantially as described.

5. A wire bed-bottom fabric including a series of connected individual units each consisting of a single length of wire bent to present laterally bowed sides and a pair of intermediate straight longitudinal sections, these latter adapted to sustain the longitudinal tension of the fabric and terminating in hooks engaging the adjacent ends of longitudinally adjacent units, the laterally bowed sides of adjacent units in the same transverse rows being directly interlinked with each other, substantially as described.

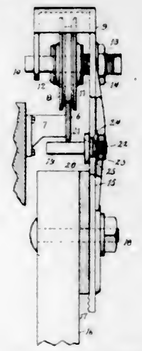
856,299. DOOR-HANGER. ADOLPH J. RICKER, South Milwaukee, Wis., assignor to Stowell Manufacturing and Foundry Company, South Milwaukee, Wis., a Corporation of Wisconsin. Filed May 2, 1906. Serial No. 314,750.

Claim.—1. A door hanger, comprising a frame portion, an axle secured to the frame and having a wheel mounted thereon, and an adjustable guard extending from the frame and provided with means for securing the adjustable guard adjustably to the frame without changing the relative position, vertically, of the securing means to the frame.

2. A door hanger, comprising a frame portion, a wheel rotatably mounted on the frame, and a cranked guard extending from the frame, and provided with means for securing it adjustably to the frame without changing the relative position vertically of the securing means with respect to the frame.

3. A door hanger, comprising a frame portion, a wheel rotatably mounted on the frame, and a cranked guard ad-

justably secured to the frame and adapted to be adjusted vertically by rotation.



4. A door hanger comprising a frame portion provided with a depending arm, an axle secured to the frame, a wheel on said axle and resting on a track, an adjustable guard extending from the depending arm of the frame, and means eccentric to the adjustable guard for securing it to the depending arm.

5. A door hanger comprising a frame portion, an axle secured to the frame and having a wheel mounted thereon, an adjustable guard extending from the frame, said adjustable guard provided with a squared portion, and said frame portion provided with a recess, and means for securing the squared portion when inserted within the recess.

6. A door hanger comprising a frame portion, an exle secured to the frame and having a wheel mounted thereon, an adjustable guard extending from the frame, said adjustable guard provided with a squared portion and a stud, and said frame portion provided with a recess and with an opening, and means for securing the stud, when the squared portion thereof is inserted within the recess, and the stud is passed through the opening.

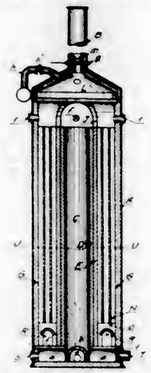
7. A door hanger, comprising a frame portion, an axle secured to the frame and having a wheel mounted thereon, an adjustable guard extending from the frame, said guard provided with a portion eccentric thereto, and said frame provided with a recess, and means for securing the eccentrically disposed portion of the guard, when said portion is inserted within the recess.

8. A door hanger, comprising a frame portion, an axle secured to the frame and having a wheel mounted thereon, an adjustable guard extending from the frame, said guard provided with a squared portion and a threaded stud eccentric thereto, and said frame provided with a recess and with an opening, and a nut for engaging the threaded stud, when the squared portion thereof is inserted within the recess, and the threaded stud passed through the opening.

9. A door hanger, comprising a frame portion, an axle secured to the frame and having a wheel mounted thereon, an adjustable guard extending from the frame, said guard provided with an enlargement, a squared portion, and with a threaded stud, said squared portion and threaded stud being positioned eccentrically to the adjustable guard, and said frame provided with a squared recess and with an opening, and a nut for engaging the threaded stud, when the squared portion thereof is inserted within the squared recess and the threaded stud is passed through the opening.

856,300. REGENERATIVE HOT-BLAST STOVE. FRANK C. ROBERTS, Philadelphia, Pa. Filed Feb. 25, 1907. Serial No. 359,321.

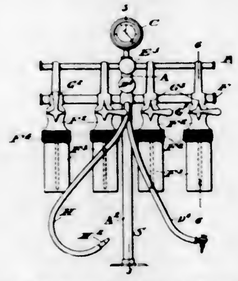
Claim.—1. In a hot blast stove, the combination of an outside wall, a central combustion chamber surrounded by a wall, four down-pass regenerators communicating with the top of said combustion chamber, four up-pass regenerators communicating with the bottom of said down-pass regenerators, a chimney arranged above and communicating with said up-pass regenerators, said eight regenerators being placed in compartments surrounding the combustion chamber and extending to said outside wall and formed by walls extending from said outside wall to said wall surrounding the combustion chamber.



2. In a hot blast stove, the combination of an outside wall, a central combustion chamber surrounded by a wall, one or more down-pass regenerators communicating with the top of said combustion chamber, one or more up-pass regenerators communicating with the bottom of said down-pass regenerators, a chimney arranged above and communicating with said up-pass regenerators, said down-pass and up-pass regenerators being placed in compartments surrounding said combustion chamber and extending to said outside wall and formed by walls extending from said outside wall to said wall surrounding the combustion chamber.

3. In a hot blast stove, the combination of an outside wall, a central combustion chamber surrounded by a wall, a series of two or more regenerators surrounding said combustion chamber and extending to said outside wall and located in compartments formed by walls extending from said outside walls to said wall surrounding the combustion chamber, means of communication between the top of the combustion chamber and the down-pass regenerators, means of communication between the bottoms of the down-pass regenerators and the up-pass regenerators and a chimney arranged above and communicating with said up-pass regenrators.

856,301. APPARATUS FOR ATOMIZATION. WILBER L. ROOT, Cincinnati, Ohio. Filed Jan. 22, 1900. Serial No. 2,300.



Claim.—1. In an apparatus for inhalation having the air tube E and nebulized vapor tube F, an air chamber and layers alternate of absorbent cotton and gauze, and a conduit connected to the chamber for supplying air thereto, and an air exit conduit at another part whereby the incoming air is compelled to pass through the absorbent material, and a perforated guard around said outlet for keeping the absorbent material from the exit tube, substantially as and for the purposes specified.

2. In an apparatus for inhalation, an air chamber containing absorbent material, an inlet conduit to said chamber, an outlet conduit provided with a valve seat, a valve, a diaphragm connected to said valve, and elastic means for keeping the valve open when allowed to do so, an adjusting device for changing the elastic pressure upon said valve, and a pressure gage, the air space for operating the latter being also in contact with the diaphragm aforementioned, and in communication with the rest of the apparatus, substantially as and for the purposes specified.

3. In an apparatus for inhalation, an air chamber containing absorbent material, an inlet conduit to said chamber, an outlet conduit provided with a valve seat, a valve, a perforated guard between said valve and the absorbent material, a diaphragm connected to said valve, and elastic means for keeping the valve open when allowed to do so, an adjusting device for changing the elastic pressure upon said valve, and a pressure gage, the air space for operating the latter being also in contact with the diaphragm aforementioned, and in communication with the rest of the apparatus, substantially as and for the purposes specified.

4. In an apparatus for inhalation, the combination of the air chamber provided with the two inlet entrances, absorbent chamber, exit orifice located as shown and a supporting standard as S carrying the conduit of air supply to the chamber A, substantially as and for the purposes specified.

5. In an inhalation apparatus, a vessel provided with an air inlet whose conduit extends down into the liquid in the vessel, a tube surrounding the first named tube and an air space between the same, an air exit passage E^7 inclined upward and outward, and in the outer tube a larger passage J^4 axially opposite the first named exit passage, and an exit conduit from such vessel a screw-stem being present and adapted to control the said outlet E^7 of the first named tube substantially as and for the purposes specified.

6. In an inhalation apparatus, a vessel provided with an air inlet whose conduit extends down into the liquid to be nebulized, and provided with a second space J^2 formed by an outer wall, an exit through the wall of the conduit and through this outer wall, both passages inclined upward and outward, and a valve inclined as shown and screwed through one wall of the conduit and seated at the begining of the passage through this wall, substantially as and for the purposes specified.

7. In an inhalation apparatus, a vessel provided with an air inlet whose conduit extends down into the liquid in the vessel, a tube surrounding the first named tube and an air space between the same, an air exit passage E^7 inclined upward and outward, and in the outer tube a larger passage J^4, axially opposite the first named passage, and a valve E^8, for closing the first named exit passage, and an exit conduit from such vessel, the outer surface of the tube E^4 being of a reduced diameter at its lower portion for enabling the greatest diameter of the tube J^2 to also be of a reduced diameter, substantially as and for the purposes specified.

8. In an inhalation apparatus, a vessel provided with an air-inlet whose conduit extends down into the liquid to be nebulized and provided with a second space J^2 formed by an outer tube, an exit through the wall of this conduit and through this outer wall both passages inclined upward and outward, and a valve controlling the exit passage through the inner tube, and inclined as shown and screwed through the walls of each tube, and supporting the outer tube, substantially as and for the purposes specified.

9. In an inhalation apparatus, a vessel, an inlet air tube E^4, closed at bottom, and containing two or more inclined exit passages E^7, and an outer tube J^3 having two or more passages J^4 respectively alining with said passage E^7, and valves each having screw threaded shanks, respectively to control the exit passages E^7, and screwed through the wall of tube E^4 and the wall of tube J^3, and engaged screw threads in said walls, substantially as and for the purposes specified.

10. In an inhalation apparatus, a vessel for containing the liquid and the exit conduit tube F and the inlet conduit tube E, and the conduit extending from tube E, and passing around tube F, and connected with conduit extended down into the atomizing chamber, and the exit conduit from the vessel communicating with the tube F, all the conduits excepting tubes F and E the tube extending into the atomizing chamber and the valves being formed within the single piece of metal in which the tubes E and F are respectively inserted, as shown, a valve being present in the conduit between inlet tube E and the vessel, and a valve being present in the conduit F between the vessel and the said tube F, substantially as and for the purposes specified.

11. In an inhalation apparatus, a vessel for containing the liquid and the exit conduit F and the inlet conduit tube E, and the conduit extending from tube E and passing around tube F, and passing down and is connected with conduit extended down into the atomizing chamber, the conduit tube E and the portion of tubing around tube F being of large diameter and thereafter reduced in size, for a certain distance, and exit conduit from the vessel, and a valve for controlling the inlet and exit passages, all of the conduits except E, F and the one extending into the atomizing chamber, and the valve, being in one piece, substantially as and for the purposes specified.

12. In an inhalation apparatus, a vessel for containing the liquid, and an inlet conduit tube E, and the exit conduit from the vessel, and the valve having a shank inclined and provided with the two transverse passages F^7 and E^5, each angulated relatively to the axis of the shank and to each other, the shank provided at its outside surface with the channel E^6, and the tubular portion or extension F^2, containing the passage, F^6, and the air passage E^3, the passage F^6 adapted to aline with the opening F^7 of the key-shank G, and the air passage E^3 adapted to aline with the passage E^5 of the key-shank G, and the channel or passage E^6 adapted to connect the passage F^6 with the air passage E^3, according as the key-shank G of the valve is rotated, substantially as and for the purposes specified.

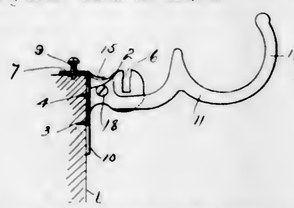
13. In an inhalation apparatus, a vessel for containing the liquid and the exit conduit tube F and the inlet tube E, and the conduit extending from tube E and passing around tube F, and passing down and connected with conduit extended down into the atomizing chamber, the conduit tube E and the portion of tubing around tube F being of large diameter and thereafter reduced in size, for a certain distance, and exit conduit from the vessel, and a valve for controlling the inlet and exit passages, all of the conduits except E, F and the one extending into the vessel, and the valve, being in one piece, the shank being provided at points other than the terminals of passages F^7 and F^5 with a lengthwise passage E^6, for enabling the inlet and exit tubes to be connected when all connection between the vessel and these tubes is closed, substantially as and for the purposes specified.

14. In an inhalation apparatus, a vessel for containing the liquid and the exit conduit tube F and the inlet tube E, and the conduit extending from tube E and passing around tube F, and passing down and connected with conduit extended down into the atomizing chamber, the conduit tube E and the portion of tubing around the tube F being of large diameter and thereafter reduced in size, for a certain distance, and exit conduit from the vessel, and a valve for controlling the inlet and exit passages, all of the conduits except E, F and the one extending into the vessel, and the valve, being in one piece, the shank being provided at points other than the terminals of passages F^7 and F^5 with a lengthwise passage E^6, for enabling the inlet and exit tubes to be connected when all connection between the vessel and these tubes is closed, and index G^2, and on the valve shank a handle and three-pointed index, whose fingers are respectively marked to indicate the position of the valves relatively to the inlet and exit passages, substantially as and for the purposes specified.

15. In an inhalation apparatus, a vessel for containing the liquid and the exit conduit tube F and the inlet tube E, and the conduit extending from tube E and passing

around tube F, and passing down and connected with conduit extended down into the atomizing chamber, the conduit tube E and the portion of tubing around tube F being of large diameter and thereafter reduced in size, for a certain distance, and exit conduit from the vessel, and a valve for controlling the inlet and exit passages, all of the conduits except E, F and the one extending into the vessel, and the valve, being in one piece, the shank being provided at points other than the terminals of passages F^7 and F^8 with a lengthwise passage E^8, for enabling the inlet and exit tubes to be connected when all connection between the vessel and these tubes is closed, and index G^3, and on the valve shank, a handle and three-pointed index whose fingers are respectively marked "On," "Off," "Air," substantially as and for the purposes specified.

856,302. WINDOW-SHADE FIXTURE. DAVID ROSENBERG and JOHN B. HARTNETT, Providence, R. I. Filed July 30, 1906. Serial No. 328,345.



Claim.—1. A shade roller bracket struck up from sheet metal, inwardly extending integral spurs adapted to be driven into the casing, a rearwardly extending integral flange on the upper edge of said bracket, a screw threaded through said flange and provided with a pointed end whereby the same may be caused to engage the top of the casing and exert an upward gripping tension on said spurs to hold the bracket firmly in the casing.

2. A combination window shade and drapery support, comprising a shade roller bracket struck up from sheet metal, inwardly extending integral spurs adapted to be driven into the casing, a rearwardly extending integral flange on the upper edge of said bracket, a screw threaded through said flange and provided with a pointed end whereby the same may be caused to engage the top of the casing and exert an upward gripping tension on said spurs to hold the bracket firmly in the casing, and a drapery support detachably connected to said bracket.

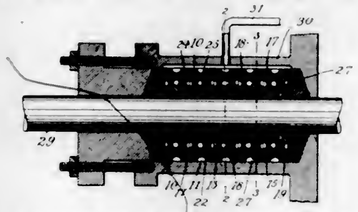
3. A combination window shade and drapery support, comprising a shade roller bracket struck up from sheet metal, spurs extending inward from the body of the bracket and adapted to be driven into the casing, a flange on the upper edge of said bracket, adapted to extend over the upper edges of the casing, a screw threaded through said flange whereby a tension is exerted on said spurs causing them to grip or bind in the wood to firmly retain the bracket in position, a drapery pole support, the inner end of said support being adapted to rest against the face of said bracket, a lip on said support adapted to engage said bracket and a screw to further secure said support to said bracket.

856,303. PISTON-ROD PACKING. GEORGE ROTHENBUCHER, New York, N. Y. Filed Jan. 26, 1907. Serial No. 354,197.

Claim.—1. A piston rod packing comprising a ring having a groove in its inner face, an oil duct communicating with said groove, and an absorbent swab seated within the groove, substantially as specified.

2. A piston rod packing comprising an outer ring having a perforation, an inner ring having a communicating perforation and a groove into which its perforation opens, and an absorbent swab seated within said groove, substantially as specified.

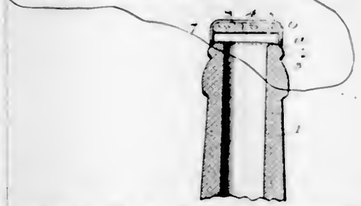
3. In a piston rod packing, an outer ring-section substantially triangular in cross section and having a groove in each of its three sides, and ducts for connecting said grooves with each other, substantially as specified.



4. In a piston rod packing, an inner ring-section substantially triangular in cross section and having a groove in each of its three sides, and ducts for connecting said grooves with each other, substantially as specified.

5. A piston rod packing comprising an outer ring substantially triangular in cross section and having communicating grooves in each of its sides, an inner ring substantially triangular in cross section and having communicating grooves in each of its sides, which grooves also communicate with the grooves of the outer ring, and a swab fitted into one of the grooves of the inner ring, substantially as specified.

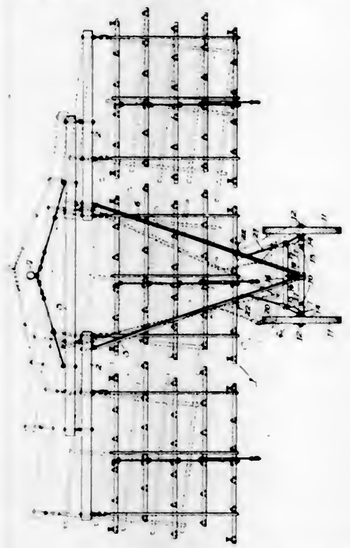
856,304. BOTTLE-SEAL. EDWARD D. SCHMITT, Brooklyn, N. Y., assignor to Monarch Seal Company, New York, N. Y., a Corporation of New York. Filed Oct. 3, 1906. Serial No. 337,249.



Claim.—1. In a bottle seal, the combination with a bottle having an annular external bead or locking shoulder adjacent to its mouth, a sealing member of compressible material, a hard metal cap or securing member having a flange of normally smaller internal diameter than the bead or locking shoulder upon the bottle, said cap or securing member adapted when it is applied to the bottle to confine the sealing member upon the edge of the bottle and to directly engage the bead or locking shoulder to form an auxiliary seal, and thereby remove further sealing pressure from the compressible sealing member to prevent cutting thereof, the flanges of the cap being adapted to be pinched or crimped into locking engagement with the locking surface of the bead or locking shoulder upon the bottle.

2 In a bottle seal, the combination with a bottle having an annular external bead or locking shoulder adjacent to its mouth and verging into the upper edge of the bottle, a sealing member of compressible material, a hard metal cap or securing member having a flange of normally smaller internal diameter than the bead or locking shoulder upon the bottle, said cap or securing member adapted when it is applied to the bottle, to confine the sealing member upon the edge of the bottle slightly beyond the central point of said edge to effect a seal, and adjacent to the edge of said sealing member and directly engage the bead or locking shoulder to form an auxiliary seal, and thereby remove a portion of the sealing pressure from the compressible sealing member to prevent cutting thereof, the flanges of the cap being adapted to be pinched or crimped into locking engagement with the locking surface of the bead or locking shoulder upon the bottle.

856,305. RIDING ATTACHMENT FOR HARROWS. CHARLES S. SHARP, Auburn, N. Y., assignor to International Harvester Company, a Corporation of New Jersey. Filed Feb. 6, 1907. Serial No. 355,998.



Claim.—1. A riding attachment for harrows comprising, in combination, harrow draft devices, an axle, carrying wheels, journals for said wheels pivotally mounted at opposite ends of said axle and provided with forwardly projecting arms, a draft member pivotally connected at its forward end with said harrow draft devices and having its rear end overhanging the harrow and in sliding engagement with said axle, a cross-bar rigidly secured to said draft member forward of said axle and parallel therewith when the harrow and its draft devices and the riding attachment are in normal position, and having the forwardly projecting arms of said wheel journals pivotally connected with opposite ends thereof, the distance between the pivotal axes of the journals with the axle being greater than that of the arms with said cross-bar.

2. A riding attachment for harrows comprising, in combination, harrow draft devices, an axle, carrying wheels, journals for said wheels pivotally mounted at opposite ends of said axle and provided with forwardly projecting arms, a draft member pivotally connected at its forward end with said harrow draft devices and having its rear end overhanging the harrow and in sliding engagement with said axle, a cross-bar rigidly secured to said draft member forward of said axle, said journals having their forwardly projecting arms pivotally connected with opposite ends of said cross-bar, and stops on said axle to limit the swinging movement of the arms.

3. A riding attachment for harrows comprising, in combination, harrow draft devices, an axle and carrying wheels, journals for said wheels pivotally mounted at opposite ends of said axle and provided with forwardly projecting arms, a draft member comprising two rearwardly converging bars having their forward ends pivotally connected with the harrow draft devices and their rear ends overhanging the harrow and slidably connected with said axle, a cross-bar rigidly secured to said bars forward of said axle, said forwardly projecting arms being pivotally connected with opposite ends of said cross-bars, and braces having their rear ends secured to opposite ends of said cross-bars and their forward ends to the converging bars of the draft member.

4. A riding attachment for harrows comprising, in combination, harrow draft devices, an axle and carrying wheels, journals for said wheels pivotally mounted at opposite ends of said axle and provided with forwardly projecting arms, a draft member comprising two rearwardly converging bars having their forward ends pivotally connected with the harrow draft devices and their rear ends overhanging the harrow and slidably connected with said axle, a cross-bar rigidly secured to said converging bars forward of the axle, said forwardly projecting arms being pivotally connected with opposite ends of said cross-bar, braces having their rear ends secured to opposite ends of said cross-bar and their forward ends secured to said converging bars and bent laterally in a manner to form foot rests.

5. A riding attachment for harrows comprising, in combination, harrow draft devices, an axle and carrying wheels, said axle comprising two bars spaced apart in a vertical plane and secured together by spacing and securing means intermediate their ends, journals for said wheels pivotally mounted between opposite ends of said axle bars and having forwardly projecting arms, a draft member pivotally connected at its forward end with said harrow draft devices and having its rear end slidably supported between said axle bars, a cross-bar rigidly secured to said draft member forward of said axle, the forwardly projecting arms of said wheel journals being pivotally connected with opposite ends of said cross-bar, and said spacing and securing means being operative to limit the swing of said wheel journals about their pivotal axes.

6. A riding attachment for harrows comprising, in combination, harrow draft devices, an axle and carrying wheels, said axle comprising two bars spaced apart in a vertical plane and secured together by spacing and securing means intermediate their ends, journals for said wheels pivotally mounted between opposite ends of said bars and having forwardly projecting arms, a draft member having its forward end pivotally connected with said harrow draft devices and its rear end overhanging the harrow and slidably supported between said axle bars, a cross-bar rigidly secured to said draft member forward of said axle, the forwardly projecting arms of said wheel journals being pivotally connected with opposite ends of said cross-bar, an arched seat support having the lower ends of its legs secured to said axle by means of the securing means engaging with said spacing means, and a link connection between the crown of the arch and said cross-bar.

856,306. CUTTER-HEAD FOR MILLING-MACHINES. FRANK D. SMITH, Springfield, Mass. Filed July 27, 1906. Serial No. 328,041.

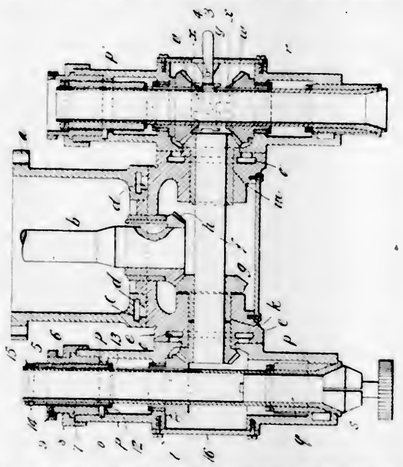
Claim.—1. The combination with a suitable head rotatable in a fixed plane, two spindles on said head rotatably mounted thereon to swing in parallel planes and at right angles to the plane of rotation of the head, a driving-shaft in said head, and suitable driving connections between said shaft and said spindles, and feeding devices associated with the spindles to move them axially.

2. The combination with a head rotatable in a fixed plane, a shaft rotatably mounted in said head, spindle-casings rotatably mounted on opposite ends of the head concentrically with said shaft and capable of adjustment in parallel planes, spindles in said casings, driving-gears for the spindles in mesh with other gears on said shaft, feeding devices to move the spindles axially, and means to rotate said shaft.

3. The combination with a head rotatable in a fixed plane, a shaft rotatably mounted in said head, spindle-casings rotatably mounted on opposite ends of the head concentrically with said shaft and at right angles thereto, and capable of adjustment in parallel planes, driving-gears in said casings in mesh with other gears on said shaft, spindles in the casings having a rotative engagement with the gears therein and having endwise movement relative to said gears, together with feeding devices for the spindles to move them axially in either direction, and means to rotate said shaft.

4. The combination with a milling machine or like tool, of a suitable head rotatable in a fixed plane, a spindle

on each end of said head rotatably mounted thereon to swing in parallel planes and at right angles to the plane of rotation of the head, a driving-shaft in said head, and suitable driving connections between said shaft and said spindles whereby the latter may be rotated in the same, or in opposite directions, independently, and feeding devices associated with each spindle to move the latter axially.



5. The combination with a milling machine or like tool, of a suitable head rotatable in a fixed plane, a spindle on each end of said head, rotatably mounted thereon to swing in parallel planes and at right angles to the plane of rotation of the head, a driving-shaft in said head, and a driving connection for said shaft located on the axis of rotation of the head, gears to rotate the spindles, and other gears on the driving-shaft meshing with those on the spindles, and independent means to feed the spindles axially, together with means to rotate one of said spindles in an opposite direction to the other.

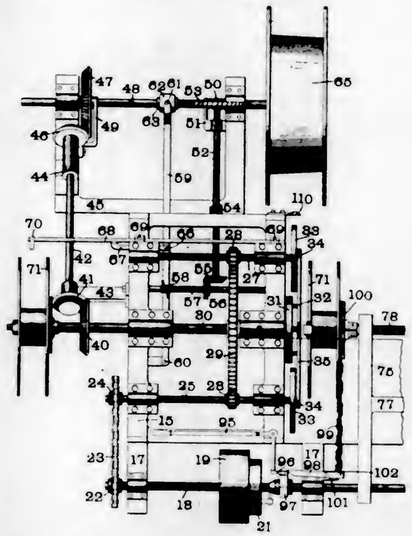
6. The combination with a milling machine or like tool, of a suitable head rotatable in a fixed plane, two spindles on said head rotatably mounted thereon to swing in parallel planes and at right angles to the plane of rotation of the head, a driving-shaft in said head, a beveled gear thereon engaging another beveled gear on one of said spindles to rotate it in one direction, a beveled gear on the opposite end of said shaft, and two beveled gears on the spindle adjacent thereto in mesh with the gear on the driving-shaft, and a clutch-collar on the spindle between said gears having a rotative engagement with the spindle whereby the shifting of the collar into clutch with the gears on the spindle will effect the rotation of the latter in opposite directions, together with independent feeding devices for the spindles.

856,307. WIRE-WORKING MACHINE. JOHN G. SMITH, Chicago Heights, Ill. Filed July 25, 1904. Serial No. 217,960.

Claim.—1. In a wire working machine, the combination with a wire reel normally remaining in the same center of rotation, of a pin situated approximately in line with the axis of said wire reel, and means for wrapping the wire upon said reel around said pin to form loops.

2. In a wire working machine, the combination with a pin, of a guide-plate for wrapping wire around said pin to form a loop and prevent the premature displacement of the loop from said pin, and means for feeding the wire to said plate.

3. In a wire working machine, the combination with a wire reel normally remaining in the same center of rotation, of a pin situated approximately in line with the axis of said reel, and a guide-plate for wrapping the wire from said reel around said pin to form loops.



4. In a wire working machine, the combination with a plurality of pins, of a wire wrapping device adapted to wrap wire around said pins to form complete loops, means for bringing said pins successively into co-operation with said wire wrapping device, and feeding devices for supplying wire to said wire wrapping device.

5. In a wire working machine, the combination with a guide-plate for wrapping the wire, of a plurality of pins, means for bringing said pins successively into co-operation with said guide-plate, and means for feeding wire to said guide-plate.

6. In a wire working machine, the combination with a wire reel normally remaining in the same center of rotation, of a plurality of pins, means for successively bringing said pins approximately in line with the axis of said reel, and means for wrapping the wire from said reel around said pins to form loops.

7. In a wire working machine, the combination with a wire reel normally remaining in the same center of rotation, of a plurality of pins, means for successively bringing said pins approximately in line with the axis of said reel, and a guide-plate for wrapping the wire around said pins.

8. In a wire working machine, the combination with a wire wrapping device, of a rotary member, a plurality of pins carried by said rotary member, gearing for rotating said rotary member to bring said pins successively into co-operation with said wire wrapping device, and a feeding device for supplying wire to said wire wrapping device.

9. In a wire working machine, the combination with a guide-plate for wrapping the wire, a rotary member, a plurality of pins carried by said rotary member, gearing for rotating said member to bring said pins successively into co-operation with said plate, and means for feeding wire to said plate.

10. In a wire working machine, the combination with a wire reel normally remaining in the same center of rotation of a rotary member, a plurality of pins carried by said rotary member, gearing for rotating said member to bring said pins successively into co-operation with said wire reel, and means for wrapping the wire from said reel around said pins to form loops.

11. In a wire working machine, the combination with a wire reel normally remaining in the same center of rotation, of a rotary member, a plurality of pins carried by said rotary member, gearing for rotating said member to successively bring said pins approximately in line with the axis of said reel, and a guide-plate for wrapping the wire from said reel around said pins.

12. In a wire working machine, the combination with a pin, of a guide-plate for the wire, means for imparting to said guide-plate a translatory movement around said pin, and means for supplying wire to said guide plate.

13. In a wire working machine, the combination with a pin, of a guide-plate for the wire, means for imparting to said guide-plate a translatory movement around said pin, and a wire reel normally remaining in the same center of rotation and supplying wire to said guide plate.

14. In a wire working machine, the combination with a guide-plate for the wire, of means for imparting to said plate a translatory movement, a plurality of pins, means for bringing said pins successively into co-operation with said guide-plate, and a feeding device for supplying wire to said guide-plate.

15. In a wire working machine, the combination with a guide-plate for the wire, of means for imparting to said guide-plate a translatory movement, a rotary member, a plurality of pins carried by said rotary member, gearing for rotating said rotary member to bring said pins successively into co-operation with said guide-plate, and a feeding device for supplying wire to said guide-plate.

16. In a wire working machine, the combination with a rotary member, of a plurality of pins carried by said member, gearing for rotating said member, a guide for wrapping the wire around said pins to form loops, and means for imparting to said guide-plate a translatory movement contrary in direction to the movement of said rotary member.

17. In a wire working machine, the combination with a pin, of a guide-plate for wrapping the wire around said pin, a wire reel normally remaining in the same center of rotation, and a guide-arm moving in harmony with said guide-plate and guiding the wire in said reel to said plate.

18. In a wire working machine, the combination with a pin, of a guide-plate for wrapping the wire around said pin, a wire supply, a guide-arm for guiding the wire from said supply to said guide-plate, and gearing for positively moving said arm in harmony with said guide-plate.

19. In a wire working machine, the combination with a pin, of a guide-plate for wrapping the wire around said pin, a shaft, a guide-arm carried by said shaft, means for rotating said shaft in harmony with said guide-plate, and a wire reel frictionally mounted on said shaft.

20. In a wire working machine, the combination with a rotary member, of a plurality of pins carried by said rotary member, gearing for rotating said rotary member, a guide-plate for wrapping the wire around said pins to form loops, means for imparting to said guide-plate a translatory movement contrary in direction to the movement of said rotary member, a shaft, a guide-arm carried by said shaft, and gearing for rotating said shaft to move said arm in harmony with said plate.

21. In a wire working machine, the combination with a rotary member, of a plurality of pins carried by said rotary member, gearing for rotating said rotary member, a guide-plate for wrapping the wire around said pins to form loops, means for imparting to said guide-plate a translatory movement contrary in direction to the movement of said rotary member, a shaft, a guide-arm carried by said shaft, gearing for rotating said shaft to move said arm in unison with said plate, and a wire reel frictionally mounted on said shaft.

22. In a wire working machine, the combination with a pin, of a guide-plate for wrapping the wire around said pin, a shaft, a guide-arm carried by said shaft, means for rotating said shaft in harmony with said guide-plate, a wire reel frictionally mounted on said shaft, and a brake for said wire reel.

23. In a wire working machine, the combination with a pin, of wire wrapping devices for wrapping the wire around said pin to form loops, a shaft, gearing for rotating said shaft, a wire reel frictionally mounted on said shaft for supplying wire to said wire wrapping devices, power controlling devices for the machine, and a brake for said wire reel operated by said power controlling devices.

24. In a wire working machine, the combination with a pin, of wire wrapping devices for wrapping the wire around said pin to form loops, a swinging frame, and a wire reel carried by said frame for supplying the wire to said wire wrapping devices.

25. In a wire working machine, the combination with a pin, of wire wrapping devices for wrapping the wire around said pin to form loops, a swinging frame, a shaft carried by said frame and adapted to swing approximately in line with said pin, and a wire reel mounted on said shaft to supply wire to said wire wrapping devices.

26. In a wire working machine, the combination with a pin, of a guide-plate for wrapping wire around said pin to form loops, and a guide for removing said loops when said pin is uncovered by said guide-plate.

27. In a wire working machine, the combination with a plurality of pins adapted to have loops formed thereon, means for moving said pins, means for covering said pins during part of their movement, and a wire guide for removing the loops from the uncovered pins.

28. In a wire working machine, the combination with a plurality of pins, of a guide-plate for wrapping the wire around said pins, means for moving said pins to bring them successively into co-operation with said guide-plate, and a wire guide for removing the loops from said pins when they are uncovered by said guide-plate.

856,308. ROPE AND BUCKET COUPLING. WESLEY F. SMITH, Bandana, Ky. Filed May 8, 1906. Serial No. 315,826.



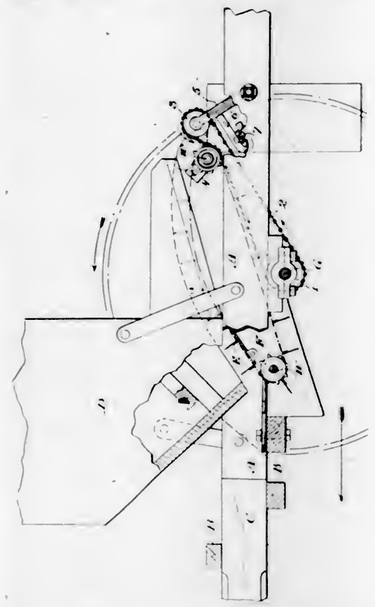
Claim.—1. In a device of the class described, the combination of a clip having an eye and a pair of parallel arms of arc-shaped cross section which are smooth on their outside and adapted to be sprung apart or toward each other through the resiliency of the eye, inwardly extending barbs fixed to the arms for biting into a rope inserted between the latter, and a cylindrical sleeve slotted longitudinally at one side to permit it to be expanded to engage over the arms and grip the same with a radially acting pressure at all points on the arms, said sleeve having a smooth internal surface engaging substantially the entire external surface of the arms to be held frictionally in place thereby.

2. In a device of the class described, a pair of connected parallel arms of arc-shaped cross section which are adapted to be spread apart or drawn together for adjustment to ropes of different sizes, projections upon the arms arranged to pierce the rope, and a single piece spring clamping device engaging around the arms with a tension constantly urging the latter together and arranged to cover the gaps between the adjacent edges of the arms, said device comprising a sleeve of a length coextensive with the arms and split at one side longitudinally for permitting the same to be assembled over the arms.

856,309. POTATO-PLANTER. JACOB R. STEITZ, Lake, Wis. Filed Nov. 5, 1906. Serial No. 341,973.

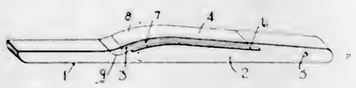
Claim.—1. In a potato-planter comprising a hopper having a conveyer located thereunder, sprockets for the conveyer, and shafts for the sprockets, the combination of a conveyer-drive consisting of a sprocket secured to the wheel-axle of the potato-planter, and another sprocket secured to one of the conveyer-shafts, an arm pivoted to the machine-frame, a sprocket carried by the arm at its free

end, an endless chain-belt in connection with the sprocket carried by the arm and the wheel-axle sprocket, and means for adjusting said arm with relation to the aforesaid conveyer shaft sprocket, whereby the link-belt is thrown into engagement with said last named sprocket.



2. In a potato-planter comprising a hopper having a conveyer located thereunder, sprockets for the conveyer, and shafts for the sprockets, the combination of a conveyer-drive consisting of a sprocket secured to the wheel-axle of the potato-planter, and another sprocket secured to one of the conveyer-shafts, an arm pivoted to the machine frame, a sprocket carried by the arm at its free end, an endless-chain belt in connection with the sprocket carried by the arm and the wheel-axle sprocket, and a bracket for engagement with the arm, whereby the latter is adjusted to throw the link-belt into engagement with said last named sprocket.

856,310. BINDER FOR LOOMS. FREDERICK B. STONE, Salem, Mass., assignor of one-half to Orin F. Bennett, Salem, Mass. Filed Dec. 22, 1906. Serial No. 349,187.

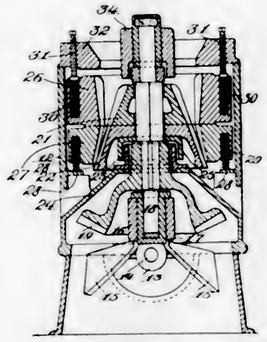


Claim.—1. A binder for looms comprising an elongated body, the intermediate portion of which is provided with a curved slot adjacent to its inner face and a shoulder, said slot extending from said shoulder toward the rear end, whereby a flexible strip is formed having a shoulder near its forward end.

2. A binder for looms comprising an elongated body, the intermediate portion of which is slotted longitudinally adjacent to its inner face, the forward end of the slot communicating with said inner face on a curve, whereby a flexible strip is formed upon the inner face of the body, the free end of said strip being rounded and resting against the shoulder formed by the curved extension of said slot.

3. A binder for looms comprising an elongated body, the intermediate portion of which is shouldered on its inner face and slotted longitudinally adjacent thereto, the forward end of the slot communicating with said inner face on a curve, whereby a flexible strip is formed upon the inner face of the body, the free end of said strip being rounded and normally resting against the shoulder formed by the curved extension of said slot, the inner face of said strip being recessed intermediate its ends, and a buffer in said recess.

856,311. VERTICAL CRUSHING AND GRINDING MILL. THOMAS L. STURTEVANT, Quincy, and THOMAS J. STURTEVANT, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed June 29, 1906. Serial No. 324,017.



Claim.—1. In a crushing machine, the combination with a casing having an open top, of a vertical shaft and rotary crushing elements carried thereby, non-rotating or normally stationary crushing elements elastically supported by said casing for vertical movement relative thereto, said latter elements presenting an interior surface which converges downwardly for a portion of its length and diverges downwardly for another portion of its length, said normally stationary crushing elements being adapted to be inserted or removed through the open top of said casing, and a removable cap for said open top.

2. In a crushing machine, the combination with a suitable casing, of a vertical shaft and rotary crushing elements carried thereby, and non-rotating or normally stationary crushing elements surrounding said rotary crushing elements and elastically supported from below on said casing for vertical movement relative thereto.

3. In a crushing machine, the combination with a suitable casing, of a vertical shaft and rotary crushing elements carried thereby, non rotating or normally stationary crushing elements, elastic supports below said last-named elements interposed between the same and said casing and constructed to permit said elements to move away from said rotary crushing elements, and means for adjusting said normally stationary crushing elements vertically for regulating the output of the mill.

4. In a crushing machine, the combination with a vertical shaft and rotary crushing elements carried thereby, of normally stationary crushing elements surrounding said rotary crushing elements and having inclined inner faces which form an angle with one another, a casing surrounding said parts, and yielding means for supporting said normally stationary crushing elements, said means permitting vertical movement of said last-named elements relative to said casing.

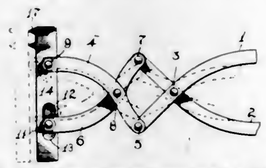
5. In a crushing machine, the combination with the open-topped casing 12 having internal supports, the removable cap 32, a vertical shaft having an upper bearing supported by said cap, rotary crushing elements carried by said shaft, non-rotating or stationary crushing elements surrounding said rotary crushing elements and of proper size to pass through the open top of said casing, springs interposed between said supports and the lowermost of said stationary crushing elements so as to sustain the latter elastically from below, screws tapped in said cap, for adjusting the said stationary crushing elements vertically, and springs interposed between said screws and the uppermost of said stationary crushing elements.

6. In a crushing machine, the combination with a casing, of a vertical shaft within said casing, rotary crushing elements carried by said shaft, non-rotating or normally stationary, vertically adjustable crushing elements within said casing, springs by which said normally stationary crushing elements are elastically supported, from beneath, and means, operable entirely from above, and interposed between said stationary crushing elements and said casing, for adjusting said stationary crushing elements and for holding the same in adjusted position.

7. In a crushing machine, the combination with a suitable casing, of a vertical shaft within the same, rotary crushing elements carried by said shaft, non-rotating or normally stationary crushing elements surrounding said rotary crushing elements, springs interposed between the lowermost of said normally stationary crushing elements and said casing by which said normally stationary crushing elements are elastically supported, from beneath, and screws by which said springs may be compressed to vary the vertical positions of said normally stationary crushing elements and thereby regulate the output of the mill.

8. In a crushing machine, the combination with a suitable casing, of rotary crushing elements within said casing, non-rotating or normally stationary crushing elements surrounding said rotary crushing elements, springs interposed between said casing and said normally stationary crushing elements for elastically supporting the latter, adjusting means for forcing said normally stationary crushing elements downwardly in opposition to said springs, and springs interposed between said adjusting means and the uppermost of said normally stationary crushing elements.

856,312. HEDGE-TRIMMER. HUBERT W. SYKES, Norfolk, Va. Filed Oct. 26, 1906. Serial No. 340,712.



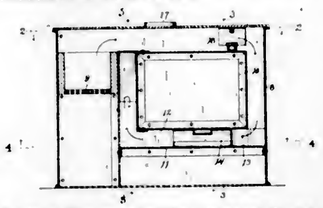
Claim.—1. A hedge trimmer comprising blades having a slot near one end of the same, a bolt having a square shoulder fastened to each blade to guide the other, a flange on one of the blades, lazy tong levers attached to the blades, and means for advancing and retracting the blades when said blades are reciprocated.

2. A hedge trimmer comprising double reciprocating toothed cutting blades, a guide flange on one of the blades, said blades being slightly bent to form concave surfaces, spring pressed clamping means acting on the blades, and a lazy tong adapted to actuate said blades.

3. A hedge trimmer comprising a pair of arched blades having a slot at each end a flange on one of the blades, a square shouldered bolt adapted to move with the blades in said slot, spring pressed clamping means acting on the blades, handles for the blades, disposed at an angle with the plane of the blades, and a series of curved power multiplying levers connecting said handle and the blades.

856,313. FLUE CONSTRUCTION FOR RANGES. ALBERT C. TERRELL, Beaver Dam, Wis. Filed Jan. 25, 1906. Serial No. 297,727.

Claim.—1. In a range flue construction, a range frame containing a fire box and an oven with a flue space extending from the fire box entirely around the oven and back to the wall of the fire box and then beneath a portion of the oven and around the back thereof, whereby the hot air and gases are caused to become reheated after having spent a portion of their heat in warming the oven in order that they may produce a greater heating effect throughout the remainder of their course.



2. In a range flue construction, a range frame containing a fire box and an oven spaced therefrom with a flue space extending from the fire box over the oven, around the end of the oven, beneath a portion of the oven to the space between the oven and the fire box, beneath the remainder of the oven and along the back of the oven to the outlet, whereby the hot air and gases are caused to travel entirely around the top and bottom and ends of the oven and around the back of the oven.

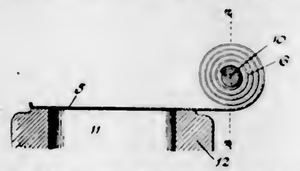
3. In a range flue construction, a range frame containing a fire box and an oven spaced therefrom and from the range frame at the top and one end to form flue spaces, a false bottom in the range frame beneath the oven and spaced therefrom to form a flue space therebetween, and partition means between the oven and the false bottom and the wall of the fire box for dividing the flue space beneath the oven so that only one section of said flue space is in communication with the flue space between the end of the oven and the range frame, the flue space between the end of the oven and the fire box wall being closed at its upper end and divided partway by the partition means, a supplemental back secured to the range frame behind the oven and forming a flue space therebetween having connection with the other section of the flue space beneath the oven at the end thereof which is farther from the fire box, the flue space of the supplemental back having an outlet.

4. In a range flue construction, a range frame containing a fire box and an oven spaced therefrom and from the range frame at the top and one end to form flue spaces, a false bottom in the range frame beneath the oven and spaced therefrom to form a flue space therebetween, partition means between the oven and the false bottom and the wall of the fire box for dividing the flue space beneath the oven so that only one section of said flue space is in communication with the flue space between the end of the oven and the range frame, a hinged door in said partition means, a door on the range front through which said hinged door is accessible for cleaning the flue space beneath the oven, the flue space between the end of the oven and the fire box wall being closed at its upper end and divided partway by the partition means, a supplemental back secured to the range frame behind the oven and forming a flue space therebetween having communication with the other section of the flue space beneath the oven at the end thereof which is farther from the fire box, a direct draft door in the range frame between the flue space above the oven and the flue space behind the oven with operating means therefor, and a stove pipe collar on the top of the range frame forming an outlet for the flue space behind the oven.

856,314. SINGLE-PIECE SPRING-VALVE. MARTIN A. THIEL, Milwaukee, Wis. Filed May 31, 1904. Serial No. 210,612.

Claim.—1. In a valve, a plane valve portion and a coil spring support therefor having a central longitudinal part cut away in increasing amount at increasing distance from the valve portion.

2. A spring valve comprising an integrally formed valve portion, a spring portion provided with a longitudinally extending and tapered slot and a mounting portion.



3. A spring valve comprising an integrally formed valve portion, spring portion and mounting portion of equal thicknesses, the spring portion being cut away longitudinally and increasingly from the valve portion to compensate the variations in the distorting strains.

4. A spring valve comprising an integrally formed valve portion, spring portion and mounting portion, the spring portion being cut away longitudinally and increasingly from the valve portion to compensate the variations in the distorting strains.

5. A blank for a single piece valve comprising a substantially rectangular strip of sheet metal, a valve portion at one end, a mounting portion at the other end and an intermediate spring portion which is cut away longitudinally and increasingly from the valve portion toward the mounting portion.

6. A blank for a single piece valve comprising a substantially rectilinear strip of metal, a valve portion at one end, a mounting portion at the other end and an intermediate spring portion which is cut away centrally, longitudinally and increasingly from the valve portion toward the mounting portion.

7. A blank for a single piece valve comprising a substantially rectilinear strip of sheet metal, a valve portion at one end, a mounting portion at the other end and an intermediate spring portion which is provided with a longitudinally-extending and tapered slot.

856,315. PORTABLE STRETCHER, COUCH, HAMMOCK, OR CHAIR. HEDLEY J. THOMSON, Lincoln, England. Filed Aug. 9, 1906. Serial No. 329,850.



Claim.—1. In a folding support applicable for a hammock, couch, lounge, chair, table or the like, the combination of a base frame, a pair of folding frames pivoted to said base frame, an attaching member arranged beneath said base frame adapted to hold one end of a hammock cloth, a hammock cloth longer than said frame attached to it at one end and at the other end to said attaching member and adapted to pass from one end of said base frame over the ends of said pivoted frames and around the other end of said base frame to said attaching member and to lock said pivoted frames in the set position when a weight rests upon said cloth on the portion between the ends of said pivoted frames, substantially as described.

2. In a folding support applicable for a hammock, couch, lounge, chair, table or the like, the combination of a base frame, a pair of frames pivoted respectively on each side of said base frame and adapted to fold respectively outside and within said base frame, an attaching member arranged beneath said base frame adapted to hold one end of a hammock cloth, a hammock cloth adapted to pass from one end of said frame over the ends of said pivoted frames and around the other end of said base frame to said attaching member and to lock said pivoted frames in the set position when a weight rests upon said cloth on the portion between the ends of said pivoted frames, substantially as described.

3. In a folding support applicable for a hammock, couch, lounge, chair, table or the like, the combination of a base frame, a pair of folding frames pivoted respectively on each side of said base frame and adapted respectively to fold outside and within said frame, locking slots arranged in the cross-bars of said pivoted frames, an attaching member arranged beneath said base frame adapted to hold one end of a hammock cloth, a hammock cloth longer than the base frame attached at one end to said base frame and at the other end to said attaching member and adapted to pass from the end of said base frame through the locking slots in the cross-bars of said pivoted frames and around the other end of said base frame to said attaching member and to lock said pivoted frame in the set position when a weight rests upon said cloth on the portion between the ends of said pivoted frames, substantially as described.

4. In a folding support applicable for a hammock, couch, lounge, chair, table or the like, the combination of a base frame, a pair of folding frames pivoted to said base frame, a spar arranged beneath said base frame adjustably fastened by means of cords to the sides of said base frame, a flexible hammock cloth longer than the base frame attached at one end to said frame and at the other to said spar and adapted to pass from one end of said base frame over the ends of said pivoted frames and around the other end of said base frame to said spar and to lock said pivoted frames in the set position when a weight rests upon said cloth on the portion between the ends of said pivoted frames, substantially as described.

5. In a folding support applicable for a hammock, couch, lounge, chair, table or the like, the combination of a base frame, a pair of folding frames, pivoted respectively on each side of said base frame and adapted respectively to fold outside and within said frame, locking slots arranged in the cross-bars of said pivoted frames, a spar arranged beneath said base frame adjustably fastened by means of cords to the sides of said base frame, a flexible hammock cloth longer than the base frame attached at one end to said base frame and at the other to said spar, and adapted to pass from the end of said base frame through the locking slots in the cross-bars of said pivoted frames and around the other end of said base frame to said spar and to lock said pivoted frames in the set position when a weight rests upon said cloth on the portion between the ends of said pivoted frames, substantially as described.

856,316. EXTENSIBLE CURTAIN-ROD AND METHOD OF MAKING. CHAS. H. THURSTON, Worcester, Mass., assignor to Henry A. Fowler, Worcester, Mass. Filed Feb. 25, 1905. Serial No. 247,268.

Claim.—1. As an article of manufacture, an extensible curtain rod comprising a tubular section, provided with a series of indentations on one side thereof, the top of said tubular section remaining smooth, and an adjustable rod fitted to telescope within said tubular section and having a screw threaded section to engage said series of indentations.



2. As an article of manufacture, an extensible curtain rod comprising a tubular section provided with a series of indentations in length less than one half the circumference of the tubular section, and a screw threaded rod fitted to telescope within said tubular section and engage said series of indentations.

3. As an article of manufacture, an extensible curtain rod, comprising a tubular section provided with a series of indentations on one side thereof and about midway its length, and a rod fitted to telescope within said tubular section and provided with screw threads from the end of said rod for a distance slightly greater than one half the length of said tubular section to engage said indentations.

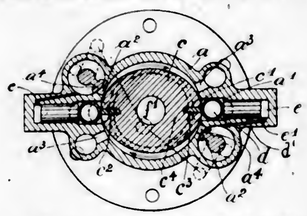
4. As an article of manufacture, an extensible curtain rod comprising a tubular section having an indenation in its side in length less than one half the circumference of the tubular section, and a screw threaded rod telescoping with said tubular section and fitted to engage said indentation.

5. In a curtain rod, the combination of a tubular section having a series of indentations in its side in length less than one half of the circumference of said tubular section, said indentations placed midway the length of said tubular section, and a screw threaded rod telescoping with said tubular section and engaging said series of indentations.

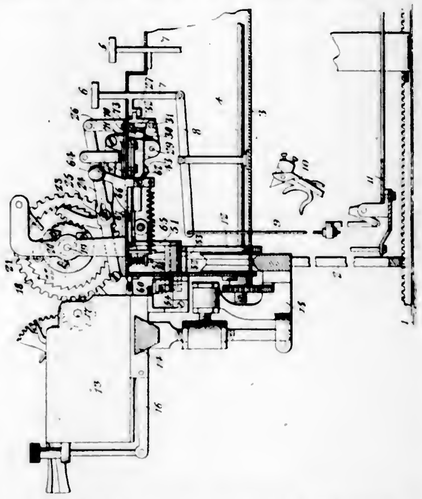
856,317. ROTARY MOTOR. EDWARD TOWLSON, Chatteris, England. Filed Jan. 2, 1907. Serial No. 350,407.

Claim.—1. In rotary fluid pressure motors, and the like, a movable abutment consisting of a roll located in a groove in the cylinder, a small piston acting to hold the roll in contact with the rotary piston, a cylinder in which such small piston is located, and an inlet in the end of said cylinder to admit steam or other fluid under pressure thereto, substantially as herein set forth.

2. In rotary fluid pressure motors, and the like, a movable abutment consisting of a hollow roll, a disk to close each end of said roll, a spring acting to force the disks outward, a small piston acting to hold said roll in contact with the rotary piston, a cylinder in which such small piston is located, and an inlet in the end of said cylinder to admit steam or other fluid under pressure thereto, substantially as herein set forth.



856,318. AUTOMATIC KEY-CONNECTING MEANS FOR A COMBINED TYPE-WRITER AND ADDER. PATRICK H. TURLEY, Harrisburg, Pa., assignor to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Dec. 31, 1906. Serial No. 350,180.



Claim.—1. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of a computing device, key-operated actuating mechanism for the computing device, said mechanism including a member movable into and out of operative position, means operated by the movement of the carriage and controlling the position of said member, said means including a movable element, a second element operated thereby, and an abutment movable into and out of operative position independently of both elements and arranged when in operative position to establish a coöperative relation between said elements.

2. In a combined typewriting and adding machine, the combination with a carriage, keys, and printing mechanism, of adding mechanism normally disconnected from the keys, automatic mechanism connecting the keys and adding mechanism, said automatic mechanism including a slide, an abutment movably mounted on the slide, and a slide-operating member disposed to engage the abutment, and means for moving the abutment to an inoperative position to prevent the operation of the slide by the operating member.

3. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally

disconnected from the keys, a slide movable to connect the adding mechanism and keys, a movable abutment carried by the slide, an operating member engaging the abutment to move the slide, and a key for moving the abutment to an inoperative position.

4. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally disconnected from the keys, a swinging yoke movable to connect the keys and adding mechanism, a cam-operated member, a plurality of motion transmitting elements between the cam-operated member and the yoke, one of said elements being independently movable to an inoperative position, and means for moving said element to its inoperative position to prevent the transmission of motion from the cam-operated member to the yoke.

5. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally disconnected from the keys, a slide movable to effect a connection between the adding mechanism and keys, a swinging abutment carried by the slide, a lever disposed to engage the abutment to move the slide, mechanism brought into action by the movement of the carriage to move the lever, and means for moving the abutment out of coöperative relation with the lever.

6. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally disconnected from the keys, means including a slide movable to connect the keys and adding mechanism, a lever arranged to operate the slide, a bell crank lever arranged to operate the lever first named, a rock shaft for moving the bell crank lever, and cam-operated means for rocking said shaft.

7. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally disconnected from the keys, and automatic means for causing the connection of the keys and adding mechanism, said means including a cam, and an arm arranged to travel under the cam in one direction and over the cam in the opposite direction.

8. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally disconnected from the keys, an element movable to cause the connection of the keys and adding mechanism, automatic means for moving said element, and means movable to render said element inoperative by the automatic means and to lock said element against accidental movement.

9. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of means operative to cause the keys and adding mechanism to be connected, an automatic device for operating said means, and a key-operated device for rendering the automatic device inoperative to operate said means, and for locking said means against accidental movement.

10. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally disconnected from the keys, means operative to cause the keys and adding mechanism to be connected, an automatic device for operating said means, and means for positively locking the first named means against movement in a direction to cause the operative connection of the keys and adding mechanism.

11. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally disconnected from the keys, a member movable to cause the keys and adding mechanism to be connected, a movable abutment carried by said member, means for operating the member through the abutment, and means operative to move the abutment to an inoperative position and to lock the connecting member against accidental movement in a direction to cause the connection of the keys.

12. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism disconnected from the keys, means including a slide movable to cause the connection of the keys and adding mechanism, said slide being provided with a shoulder, and a key-operated locking device movable into engagement with said shoulder.

13. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism disconnected from the keys, a slide provided with a movable abutment and with a shoulder, means for operating the slide through the abutment, means operated by the slide to connect the adding mechanism with the keys, and a member operative to move the abutment to an inoperative position and to lock the slide by coöperation with the shoulder thereof.

14. In a combined typewriting and adding machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of a computing device, key-operated actuating mechanism for the computing device, said mechanism including a member movable into and out of operative position, means operated by the movement of the typewriter carriage and controlling the position of said member, said means including a cam, an element operated thereby, a second element through which the movable member of the actuating mechanism is controlled by the cam-operated element, and an abutment movable into and out of operative position independently of both elements and arranged when in operative position to establish a coöperative relation between said elements.

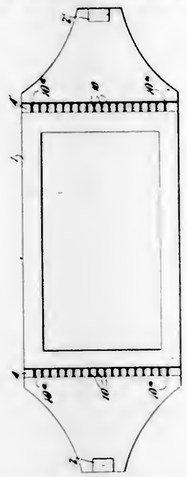
15. In a combined typewriting and adding machine, the combination with a typewriter, including a frame, a carriage, keys, and printing mechanism, of a computing device, key-operated actuating mechanism for the computing device, said mechanism including a member movable into and out of operative position, means operated by the movement of the carriage to move said member from one position to the other, said means including elements which are movable and fixed respectively, and carried respectively by the frame and carriage of the typewriter, and connecting means between the movable element and the movable member of the actuating mechanism, said connecting means including a device which is movable into and out of operative position independently of the movable element and which, when in operative position, serves to transmit motion from said movable element to the movable member of the actuating mechanism.

16. In a combined typewriting and calculating machine, the combination with a typewriter including a carriage, keys, and printing mechanism, of a computing device, key-operated actuating mechanism for the computing device, said actuating mechanism including a member occupying a normally inoperative position, and means for moving said member into operative position, said means including coöperating devices mounted on the frame and carriage respectively of the typewriter, one of said devices being movable when engaged by the other, and connecting means whereby the movable device serves, when operated, to shift the movable member of the actuating mechanism into operative position, said connecting means including an element movable independently of the movable device to disconnect said device from the movable member of the actuating mechanism and to thus prevent the automatic connection of the keys with the computing device.

856,319. KINDERGARTEN-LOOM. JESSIE C. TYNDALL, St. Louis, Mo. Filed Jan. 8, 1906. Serial No. 295,115.

Claim.—1. A loom comprising a frame provided with combs to receive the warp of the mesh, retaining bars 11 mounted on the upper edges of said combs to prevent the warp from being accidentally displaced, and spring catches on said bars for engaging said combs to hold the retaining bars in operative position; substantially as described.

2. A loom comprising a frame having warp combs which are provided with openings to receive the body portion of weft bars and with second openings to receive a portion on said bars to hold them in position, and weft bars provided with an eye 9 and an end 8; substantially as described.



3. A loom comprising a frame having mounted at its opposite ends blocks provided with notches, warp combs connected to said frame intermediate said blocks, weft bars carried by said combs, and retaining bars mounted on the upper edges of said combs; substantially as described.

856,320. KINDERGARTEN-LOOM. JESSIE C. TYNDALL, St. Louis, Mo. Filed Nov. 23, 1906. Serial No. 344,771.



Claim.—A loom comprising an oblong-shaped flat piece provided with supporting legs, warp combs mortised into said flat piece and provided with slots for receiving weft bars, the teeth of said combs being beveled, headed pins projecting outwardly from said combs underneath said slots, end sections hinged to the ends of the flat piece, buttons for sustaining the end sections in elevated position, and notched projections on said end sections located in alinement with the center of the warp combs; substantially as described.

856,321. ELECTRICAL CONTACT-JOINT. REINHOLD H. WAPPLER, New York, N. Y. Filed June 21, 1906. Serial No. 322,732.



Claim.—1. In an electrical contact joint, the combination of a plurality of members flexibly connected together, and provided with electrical fittings, one of said members being provided with a boss, and a plurality of independent supports of different character each provided with a sleeve for engaging said boss for the purpose of rendering said supports interchangeable relatively to each other.

2. An electrical contact joint, comprising pressure plates, electrical connections therefor, a substantially spherical member mounted intermediate of said pressure plates, said member being provided upon opposite sides with contact surfaces insulated from each other, and electrical connections for said contact surfaces.

3. An electrical contact joint, comprising a pair of contact members, means for adjusting the same relatively toward each other, a substantially spherical member disposed intermediate of said contact members and provided with contact faces insulated from each other, and electrical connections for said contact faces.

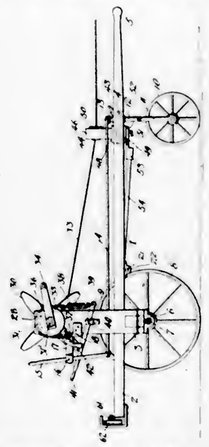
4. The combination of a pair of pressure plates, means for supporting the same, a ball of insulating material disposed intermediate of said pressure plates, hemispherical metallic shells mounted upon opposite sides of said ball of insulating material, said shells being insulated from each other, and electrical connections for said hemispherical shells.

5. The combination of a ball of insulating material, metallic contact members of substantially hemispherical form mounted thereupon and insulated from each other, members connected with said metallic contact members and projecting therefrom so as to engage said pressure plates and serve as limiting stops for said ball and said contact members, electrical connections for said contact members, and electrical connections for said pressure plates.

6. The combination of a ball of insulating material, a metallic stem passing axially therethrough and serving as an electrical connection, a contact member of substantially hemispherical form mounted upon said ball and engaging said metallic stem, another contact member of substantially hemispherical form mounted upon said ball and disposed oppositely to said contact member first mentioned, an electrical connection for said second-mentioned contact member, pressure plates disposed upon opposite sides of said ball and engaging respectively said contact members, and electrical connections for said pressure plates.

7. The combination of a revoluble member of rotund form provided with contact members, pressure plates engaging said contact members, means for adjusting said pressure plates relatively to each other so as to exert a greater or lesser pressure upon said contact members, electrical connections for said pressure plates, and electrical connections for said contact members.

856,322. WIRE-REEL. MARTIN J. WEIRICH, Baraboo, Wis. Filed Oct. 29, 1906. Serial No. 341,164.



Claim.—1. A machine of the character described comprising a portable supporting frame, wire reeling means thereon, a guide upon said frame, a head slidably mounted in said guide, a wire guide upon said head, a pin upon said head, and a lever mounted upon said frame and having a forked end to engage said pin.

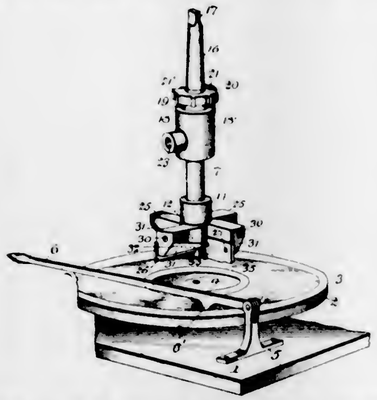
2. A machine of the character described comprising a portable supporting frame, wire reeling means thereon, a guide upon said frame, a head slidably mounted in said guide, a wire guide upon said head, a pin upon said head, a lever pivoted intermediate its ends upon said frame and having a forked end to engage said pin, an operating lever pivoted upon the opposite end of the first mentioned lever, a rack upon said frame, and a pin upon said operating lever for engagement with said rack.

3. A machine of the character described comprising a frame having side bars connected by front and rear cross bars, an axle mounted upon said rear cross bar, supporting wheels upon said axle, a steering wheel carried by said front cross bar, a rock shaft having a crank and a crank arm, a brake-shoe upon said crank arm for engagement with one of said supporting wheels, a pin projecting vertically from said rear cross bar, a brake operating lever pivoted to said crank and formed with a series of apertures for engagement with said pin, and wire reeling and unreeling means mounted upon said frame.

4. A machine of the character described comprising a frame, wheels for supporting the same, a reel, a shaft therefor, a rotary element upon said shaft and provided with a friction surface, driving connections between said elements and one of said wheels, a lever having a portion to engage said friction surface, and means for adjusting said lever.

5. A machine of the character described, comprising a frame, wheels for supporting the same, a reel, a shaft therefor, a rotary element upon said shaft and provided with a friction surface, driving connections between said element and one of said wheels, a pair of levers having portions to engage said friction surface, a screw rod arranged between said levers, a spring upon said rod, and a nut upon said rod for adjnsting said spring.

856,323. APPARATUS FOR REMOVING LABELS FROM RECORDS FOR TALKING-MACHINES. CLARENCE S. WICKES, Camden, N. J., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Filed Oct. 6, 1905. Serial No. 281,598.



Claim.—1. In a device for removing labels impressed into a medium, means for softening the label without substantially affecting the supporting medium and means for cutting away the said label.

2. In a device for removing labels from sound records a medium which is easily affected by heat, the combination of means for successively and rapidly softening the surface of the label without substantially softening the supporting medium, and for cutting away the softened portion of said label.

3. In an apparatus for removing labels impressed into a medium which is easily affected by heat, the combination of means for projecting a jet of steam against the surface of a label only, and means for paring away the steamed portion.

4. In a device for removing labels, a series of cutters, and means for projecting steam immediately in advance of the edge of each cutter.

5. In a device for removing labels, a series of cutters, and means for projecting steam from one cutter immediately in advance of the edge of the succeeding cutter.

6. A device for removing labels, a cutter means for rotating said cutter, and means for projecting steam immediately in advance of the edge of said cutter.

7. In a device for removing labels, a series of cutters, means for rotating said cutters, and means for projecting steam from one cutter immediately in advance of the edge of the succeeding cutter.

8. In a device for removing labels, a series of cutting blades, arms supporting said blades, each arm being provided with a steam chamber, means for supplying steam to said chambers, and means for projecting steam from the chamber of one arm immediately in advance of the cutting blade carried by the succeeding arm.

9. In a device for removing labels, a series of cutting blades, arms supporting said blades, each arm being provided with a steam chamber, means for supplying steam to said chambers, and means for projecting steam from the chamber of one arm immediately in advance of the cutting edge of the blade carried by the succeeding arm, and means for rotating said arms.

10. In a device for removing labels, a series of cutter blades, each arm being provided with a steam chamber, means for projecting steam from the chamber in one arm, immediately in advance of the cutting edge of the blade carried by the succeeding arm, means for rotating said arms, and means for clamping the record subjected to the action of said blades.

11. In a cutting head, the combination of a blade and arm for supporting said blade, said arm being provided with a chamber and with a series of openings communicating with said chamber, and means for supplying steam to said chamber.

12. In a cutting head, the combination of a blade and arm for supporting said blade, said arm being provided with a steam chamber and with a series of openings communicating with said chamber, and means for equalizing the amount of steam delivered through said openings.

13. In a cutting head, the combination of a blade, an arm for supporting said blade, said arm being provided with a chamber and with a series of openings, communicating with said chamber, means for supplying steam to said chamber from one end, and means for equalizing the amount of steam delivered through said openings.

14. In a cutting head, the combination of a blade and arm for supporting said blade, said arm being provided with a chamber and with a series of openings communicating with said chamber, means for supplying steam to said chamber, means for holding a record operated on by said blade and means for producing a relative motion of rotation between said head and said record.

15. A cutting head, provided with radial extended arms, blades secured to said arms, a hollow spindle, said arms being provided with steam chambers communicating with the center of said spindle and being further provided with a series of openings leading out of said chamber, means for supplying the steam to said chamber, and means for equalizing the amount of steam delivered from said opening.

16. In a cutter head, an arm provided with a steam chamber and with a series of jet openings communicating with said chamber, the length of the said jet passages being progressively shorter as the distance from the source of steam supply increases, and means for supplying steam to said chamber.

17. In a cutter head, a hollow spindle, a series of arms provided with chambers communicating with the center of said spindle, blades secured to said arms, a series of jet openings communicating with said chambers and adapted to project steam immediately in advance of the succeeding cutter blade, a stuffing box in said spindle above said head, and means for supplying steam through said stuffing box, and spindle to said chamber.

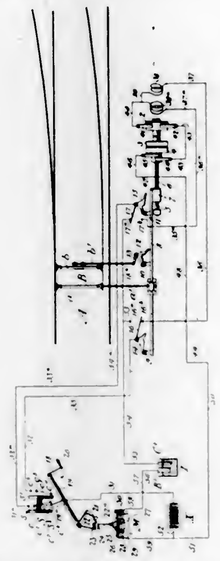
18. In a device for removing labels impressed into a medium susceptible to the action of heat, means for softening the label without substantially softening the supporting medium and means for cutting away the said label.

19. In a device for removing labels adhering to a medium an element mounted to move over the surface of the same, the said element carrying means for softening the label and cutting the same away from the medium.

20. In a device for removing labels adhering to a medium comprising an element mounted to move over the surface of the label, the said element carrying a cutter blade and means for projecting a softening fluid upon said label immediately in advance of said blade.

21. In a device for removing labels adhering to a medium comprising an element mounted to move over the surface of the label, the said element carrying a cutter blade, means for projecting a softening fluid upon said label immediately in advance of said blade, and means for holding the medium in position while the label is being removed.

856,324. RAILWAY SWITCH-OPERATING AND SIGNALING SYSTEM. ASBURY G. WILSON, Wilkinsburg, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Sept. 6, 1905. Serial No. 277,279.

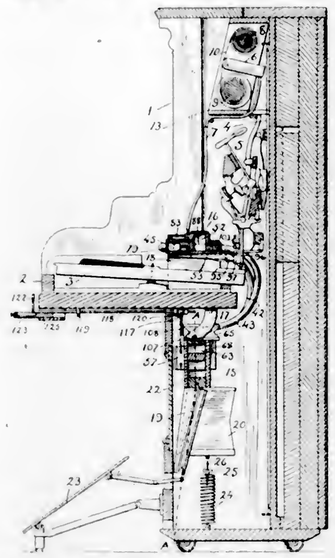


Claim.—1. An apparatus for moving a part or appliance for controlling the passage of cars or vehicles along a railway which includes an electric motor, a lever, a mechanism for indicating that the apparatus has operated, comprising an electro-magnetic device which is not responsive to the current to the motor to release the lever, a source of current supply common to both the motor and indicating mechanisms, and an interrupter for changing the character of the current to have it operate the electro-magnetic device.

2. An apparatus for moving a part or appliance for for controlling the passage of cars or vehicles along a railway which includes an electric motor, a lever, a mechanism for indicating that the apparatus has operated, comprising an electro-magnetic device which is not responsive to the current to the motor to release the lever, a source of current supply common to both the motor and indicating mechanisms, and a liquid interrupter for changing the character of the current to have it operate the electro-magnetic device.

3. An apparatus for moving a part or appliance for controlling the passage of cars or vehicles along a railway which includes an electric motor, a lever, a mechanism for indicating that the apparatus has operated, comprising an electro-magnetic device which is not responsive to the current to the motor to release the lever, a liquid interrupter in circuit with both the motor and electro-magnetic device for changing the character of the current to have it operate the electro-magnetic device, a source of current supply common to both the motor and electro-magnetic device, and a controller operated by the lever for controlling the supply of current.

856,325. PIANO-PLAYER. FREDERICK W. WINTER, San Francisco, Cal., assignor of one-fourth to Gustave Behning, New York, N. Y., and one-fourth to R. George Green and one-fourth to David C. Spence, San Francisco, Cal. Filed Aug. 11, 1905. Serial No. 273,810.



Claim.—1. A piano-player comprising a secondary wind-chest, suitable pumping mechanism, an exhaust-chest connected therewith and located transversely of the player below said wind-chest, motor pneumatics lying in a single row across and beneath and all supported directly from and adjacent said wind-chest and operated through the same from the pumping mechanism, a rigid arm extended from each pneumatic, an actuating rod for each of said arms, means on said rod coöperating with said arm, said means embodying a saddle, and a cushioning device, carried by and movably mounted in said saddle and operating in conjunction with said actuating rod, adapted for severally connecting said pneumatics with a piano-action.

2. A piano-player comprising a wind-chest, motor pneumatics disposed in a single horizontal row across the player below the wind-chest and to which their fixed boards are attached and all supported directly therefrom, and operating connections, serving as guides for the pneumatics, a saddle constructed to prevent lateral displacement of the pneumatics and cushioning means coöperating with said saddle.

3. A piano-player comprising a wind-chest, motor pneumatics placed in a single row across the player below said wind-chest and supported therefrom, arms on said pneu-

matics, actuating rods, means for loosely interconnecting said rods, and pneumatics, and for confining said arms whereby the actuating rods are independently operable and the action can be operated either manually or pneumatically, at will, and lateral displacement of the pneumatics prevented.

4. A piano-player comprising actuating rods, and motor pneumatics arranged in a single row below the player and having each a rigid arm extended toward one actuating rod thereof, said rod being provided with a saddle straddling said arm.

5. A piano-player comprising actuating rods, motor pneumatics arranged in a single row below the player and each having a rigid arm extended toward one actuating rod thereof, a saddle on said rod straddling said arms, and a cushioning device coöperating with said arm and saddle.

6. A piano player comprising actuating rods, motor pneumatics arranged in a single row below the player and each having a rigid arm extended toward one actuating rod thereof, a saddle on said rod straddling said arm, a cushioning device coöperating with said arm and saddle, adjustable means acting to throw off or repel the pneumatics after each stroke, said saddle constructed to prevent lateral displacement of the pneumatics.

7. A piano-player comprising actuating rods, pneumatics provided each with an arm for operating one of said rods, a saddle on the rod lying astride said arm, a stop, and cushions above and below said saddle respectively adapted for engagement with said arm and said stop.

8. A piano-player comprising independently operable actuating rods, a row of pneumatics arranged in a single horizontal row in juxtaposition to each other and placed each opposite one of the said actuating rods, arms operatively connecting said pneumatics with said rods, a rail suitably supported across the rods and above the arms, a saddle on each rod lying astride each arm and independently mounted adjustable stops suspended from said rails.

9. A piano-player comprising pneumatics arranged in a horizontal plane, a member rigid with each pneumatic, a vertically movable actuating rod, a member fixed relatively to said movable rod, cushions upon opposite sides of said fixed member, means connecting said cushions and passed through said fixed member, and a stop disposed above and in the path of the uppermost of said cushions to be engaged thereby.

10. A piano-player comprising pneumatics arranged in a horizontal plane, a member rigid with each pneumatic, a vertically movable member for each of said rigid members, a saddle carried thereby, cushions above and below said saddle, a fixed rail, vertically adjustable members carried thereby, and stops on said members in the path of the uppermost of said cushions to be engaged thereby.

11. The combination with a piano, of a piano-player comprising a main exhaust-chest laid longitudinally under the key-bed and horizontally inside the piano-case, an action exhaust chest above the keyboard in the same vertical plane with said main chest and communicating therewith, motor pneumatics, each having an arm, a member carrying a saddle straddling said arm, a tracker-board and a pneumatic motor supported in a plane above the action exhaust-chest respectively communicating one with one of said chests, and the other with the other, a perforated music-sheet adapted to be passed before said tracker-board through the agency of said motor, independently operable actuating rods, a loose connection between the same and the motor pneumatics, a cushioning device coöperating with the arms of the pneumatics, and pumping mechanism located below said parts.

12. The combination with a piano, of a piano-player comprising pneumatics, rigid arms extending from said pneumatics for coöperation with a saddle independent exhaust-chests, one above and the other below said pneumatics, connections between said chests, means for operating the piano action embodying an adjustable cushion device interposed in each of said means, and comprising simultaneously-movable cushions and a saddle interposed between said cushions.

13. A piano-player comprising pneumatics, rigid arms extending from said pneumatics for coöperation with a saddle independent exhaust chests one above and the other below the pneumatics, connections between said chests, actuating rods, and connections between said rods and pneumatics each embodying an adjustable cushion device, and comprising simultaneously-movable cushions and a saddle interposed between said cushions.

14. A piano-player comprising pneumatics, independent exhaust chests, one above and the other below the pneumatics, connections between said chests, actuating rods, and connections between said rods and pneumatics embodying a saddle and a cushion device, a stop coöperating with one side of said cushion device, and means carrying the cushion device, guided in said saddle.

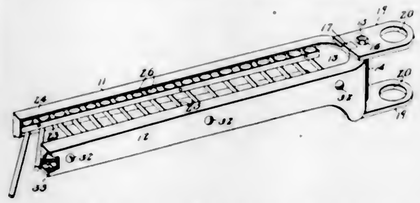
15. A piano-player comprising pneumatics, independent exhaust chests, one above and the other below the pneumatics, connections between said chests, actuating rods, connections between said rods and pneumatics embodying a saddle on the rods, a cushion device and a stop coöperating with said cushion device, cushion-carrying means guided in said saddle, and means for adjusting said stop.

16. A piano-player comprising pneumatics, independent exhaust chests, one above and the other below the pneumatics, connections between said chests, actuating rods, connections between said rods and pneumatics embodying a saddle and a cushion device, a stop coöperating with the cushion device for each rod, and means for adjusting said stops, each independently of the other.

17. A piano-player comprising pneumatics, independent exhaust chests, one above and the other below the pneumatics, connections between said chests, actuating rods, connections between said rods and pneumatics embodying a cushion device, a saddle carried by each rod, stops cooperating with said cushion device, and means for adjusting said stops, each independently of the other, said actuating rods being independently operable, and a carrier for the cushion device, guided in said saddle.

18. A piano-player comprising pneumatics, independent exhaust chests, one above and the other below the pneumatics, connections between said chest, actuating rods, connections between said rods and pneumatics embodying a cushion device, a saddle carried by each rod, stops cooperating with said cushion device, an adjustable rod for each cushion device held in said saddle, means for adjusting said stops, each independently of the other, said actuating rods being independently operable, and a loose connection between said rods and the pneumatics.

856,326. HOSE-RACK. REUBEN D. WIRT, Philadelphia, Pa. Filed Nov. 29, 1905. Serial No. 289,676.



Claim.—1. A hose rack comprising a pair of arms, one of said arms being provided with a plurality of elongated openings, hose supporting pins having upturned end portions extending through the openings and provided with heads of a diameter greater than the narrowest portions of the openings, the pins being free to turn through a horizontal arc, and the elongated openings permitting the falling of the pins to angular position to free the hose, the second arm forming a loose support for the free ends of said pins.

2. A hose rack having a pair of spaced arms, one of which is provided with a horizontal flange, a bar carried by said arm at a point below the flange and provided with a plurality of elongated openings, hose supporting pins having upturned end portions extending through the openings and provided with heads free to play between the bar and the flange, the second arm forming a loose support for the free ends of the pins, said pins when disengaged from the second arm being free to fall to a position to form inclined planes for the descent of the hose, and being free to revolve through a horizontal arc to a position clear of the hose, substantially as specified.

3. A hose rack having a pair of flaring arms, one of which is provided with a horizontal flange, a bar carried by said arm at a point below the flange and provided with a plurality of spaced elongated openings, hose supporting pins having upturned end portions extending through the openings and held in spaced relation thereby, the end portions of the pins being provided with heads free to play between the bar and the flange, the second arm forming a continuous rigid support for the free ends of the pins and from which such pins are consecutively displaced during the withdrawal of the hose, said second arm having a recess for receiving the outermost pin and forming an impositive lock therefor.

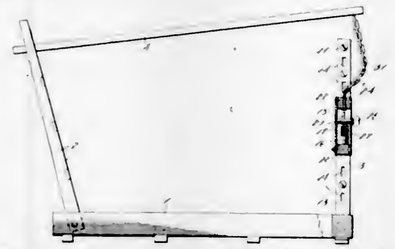
4. A hose rack comprising a pair of arms and a plurality of hose supporting pins, each having an upturned end portion extending loosely through an elongated opening in one of the arms and provided with a head of a diameter greater than the narrowest portion of the opening, the pins being thus free to turn through a horizontal arc, and to fall to angular position to free the hose, the second arm forming a support for the free ends of said pins.

5. A hose rack comprising a frame having hose supporting members, and provided at its rear end with a bolt receiving opening, and with lugs adjacent to said opening for interchangeable connection with fixed or pivoted supporting brackets.

6. The combination with a hose rack having a bolt receiving opening, of a pair of plates forming a supporting bracket for the rack, a bolt extending through said opening and through corresponding openings in the plates, and auxiliary means for interlocking the rack in place.

7. A hose rack having at its rear end a vertically arranged bolt receiving opening and provided with lugs adjacent to said opening, a pair of plates arranged to form a supporting bracket, said plates having recesses for the reception of the lugs, and a bolt extending through said opening and through corresponding openings formed in said plates.

856,327. LOAD-BINDING DEVICE. WILLIAM T. WITHERS, Evansville, Ind. Filed Sept. 13, 1906. Serial No. 334,516.

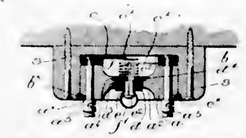


Claim.—1. The combination with a hay wagon frame having a horizontal body, an upright section at one end thereof, and a load binding element, of an upright section at the other end of said body and comprising parallel members, racks upon the opposing faces of said parallel members, a slide mounted for longitudinal movement upon said members, pawls carried by said slide to engage said racks, and means for connecting said slide to said binding element.

2. The combination with a hay wagon frame having a horizontal body, an upright section at one end thereof, and a load binding element, of an upright section at the other end of said body and comprising parallel members, racks upon the opposing faces of said parallel members, a slide mounted for longitudinal movement upon said members, crossed pawls pivoted in said slide and adapted to engage said racks, springs for projecting said pawls, a shaft in said slide, flexible connections between said shaft and said pawls for retracting the latter, and means for connecting said slide to said binding element.

3. The combination with a hay wagon frame having an upright section at one end, and a load binding element, of a pivotally mounted upright section at the other end of said frame, the latter section comprising a horizontal base bar, spaced, parallel-uprights projecting therefrom, inwardly-inclined uprights connecting the parallel uprights and the base bar, and tie rods connecting said uprights and forming steps, racks upon the opposing faces of said parallel uprights, a slide mounted upon said parallel uprights and carrying pawls to engage said racks, and means connecting said slide to said binding element.

856,328. THERMOSTATIC APPARATUS. EDWARD F. WOODMAN, Boston, Mass. Filed Nov. 17, 1906. Serial No. 343,871.



Claim.—1. In a thermostatic circuit-controlling device, a circuit-changer, a controller therefor including a member of fusible material operatively connected with the circuit-changer, an apertured base of insulating material on which the latter is mounted, and a casing having a tubular reduced portion inserted in the aperture of the base, the casing having a shouldered portion against the interior of which the fusible member loosely abuts under normal conditions, to be held thereby in position to maintain the circuit-changer inactive, said fusible member in turn acting to maintain the casing in position on and external to the base.

2. In a thermostatic circuit-controlling device, a chambered base of insulating material provided with an aperture, a circuit-changer within the chamber and adapted to be included in an electric circuit, a controller for and operatively connected with said circuit-changer and including a member of fusible material external to the base, and a bulb-like glass casing having a neck to enter the aperture in the base, the fusible member of the controller being inclosed within the bulb and held thereby in position to prevent, through its connection with the circuit-changer, any operation of the latter until fusion of said member.

3. In a thermostatic circuit-controlling device, circuit-changing means adapted to be included in an electric circuit, a controller therefor comprising a button-like member of fusible material, and a connected shank to co-operate with said means, and an exposed glass casing for and having a contracted portion loosely engaged by said member to maintain it in position to maintain the circuit-changing means inactive until the shank and fusible member are separated by fusion of the latter, said fusible member acting to retain the casing in position until the said member and shank are separated.

4. A thermostatic circuit-controlling device comprising circuit-changing means adapted to be included in an electric circuit, a controller therefor comprising a button of fusible material and an attached shank operatively connected with said means, an apertured support on which the circuit-changing means is mounted, and an exposed globular casing in which the button is inclosed and loosely engaged and held in position under tensile strain to act through the shank and maintain the circuit-changing means inactive until fusion of the button, said casing having a tubular neck inserted in the support and held therein by engagement of the button with the interior of the casing.

5. In a thermostatic circuit-controlling device, a circuit-changer adapted to be included in an electric circuit, a controller therefor having at its outer end a fusible enlargement, a support for and on which the circuit-changer

is mounted, and a thin-walled, exposed globular casing of vitreous material loosely engaging and inclosing said enlargement and normally maintaining it in position to retain the circuit-changer inactive, the controller acting reciprocally upon the casing to normally maintain it in position upon the support for the circuit-changer.

6. A thermostatic controlling device, comprising a chambered base provided with an aperture, an insulating bushing in the aperture, a spring-actuated circuit-changer within the chamber and adapted to be included in an electric circuit, a controller for said circuit-changer, comprising a shank operatively connected therewith and having a fusible enlargement at its outer end, the shank passing loosely through the bushing, and a globular glass casing having a cylindrical neck to receive the shank and inserted in the bushing, the fusible enlargement being loosely inclosed within the external globular portion of the casing and normally maintained by it in position to retain the circuit-changer inactive, the spring action of the latter acting through the controller to retain the casing in place with its globular portion pressing against the outer end of the bushing, to close the entrance to the chamber of the base.

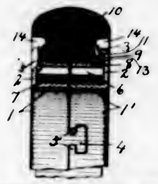
7. A thermostatic controlling device, comprising a chambered base provided with an aperture, co-operating circuit-terminals within the chamber, one of said terminals being spring-actuated to change its position relatively to the other terminal, a controller comprising a shank operatively connected with the spring-actuated terminal and having a fusible enlargement at its outer end, the shank passing through the aperture of the base, and a thin glass bulb having its neck inserted in the aperture and receiving the shank of the controller, the fusible enlargement of the latter being loosely inclosed within the exposed globular portion of the bulb and normally maintained thereby in position to prevent any movement of the connected circuit-terminal, the spring action of the latter pressing the globular portion of the bulb against the outer end of the aperture in the base to close the chamber thereof.

8. A thermostatic circuit-controlling device comprising a chambered base of insulating material provided with an aperture, circuit-terminals within the chamber, one of the terminals being shaped to form a spiral spring at its free end, supported on the base concentric with the aperture, a controller comprising a shank operatively connected with the terminal and extended through the spiral and the aperture and having a fusible button on its outer end external to the base, and a globular casing loosely including and unconnected with the button and having an opening through which the shank extends, the button abutting against and being held by loose engagement with the casing in position to cause the shank to compress the spiral spring and maintain the circuit-terminals separated, the tension of the spring at the same time acting through the shank and button to retain the casing pressed against the exterior of the base to close the aperture thereof.

9. In a thermostatic circuit-controlling device, a base having a chamber and an aperture opening thereinto, a circuit-changer within the chamber and adapted to be included in an electric circuit, a controller therefor having at its outer end a fusible enlargement, a glass bulb loosely inclosing said enlargement and normally maintaining it in position to retain the circuit-changer inactive, the neck of the bulb passing through the aperture in the base, said aperture being closed by the adjacent globular portion of the bulb, and a guard on the base encircling the bulb to protect the same from breakage.

856,329. VEHICLE-WHEEL. EDWARD D. WOODS, Syracuse, N. Y., assignor of one-third to Harriet Adell Slack, Waterloo, N. Y., one-third to William A. Hyle, Syracuse, N. Y., and one-third to Edward A. Paul, New York, N. Y., and Christian Ecker, Syracuse, N. Y. Filed Oct. 30, 1905. Renewed Apr. 29, 1907. Serial No. 370,837.

Claim.—1. In a vehicle wheel a rim, a continuous circular two-part spring-band encircling and of greater diameter than the rim leaving an intervening space for the radial compression of all portions of the band flanges carried by said band, means carried by said flanges for locking the band against circumferential movement around the rim and an elastic tire applied to the periphery of the band.



2. In a vehicle wheel, a rim composed of circular sections arranged end to end, a two-part circular spring metal band encircling and of greater diameter than the periphery of the rim leaving an intervening annular space for radial action of all parts of the band, a circular elastic buffer-band interposed between the spring-band and periphery of the rim and an elastic tire applied to the periphery of the spring metal band.

3. In a vehicle wheel, a rim composed of circular sections arranged end to end and interlocked with each other against independent movement, said rim sections having outturned flanges terminating in lateral annular shoulders, a two-part circular spring-band fitted between the flanges of the rim, but of greater diameter than the portion of the rim which it surrounds forming an intervening annular space for radial action of all the parts of the spring-band, said band extending beyond and within the adjacent edges of said annular shoulders and an elastic tire fitted upon the periphery of the band and having opposite annular shoulders interposed between the spring-band and annular shoulders of the rim sections.

4. In a vehicle wheel, a rim composed of circular sections arranged end to end, and interlocked with each other against independent movement, the tire having annular flanges, said flanges being provided at regular intervals with recesses, a two-part spring band of larger diameter than said rim sections and adapted to closely fit within the flanges of said rim sections, said spring band having upturned annular flanges, said flanges adapted to be engaged with the recesses in the flanges of the tire, and the flanges of the rim sections adapted to be engaged with the flanges of the spring-band at a point where the flanges of the spring band engage the recesses in the flanges of the tire, substantially as described.

856,330. GARMENT-HOOK. LUTHER A. YEISER, Philadelphia, Pa. Filed Sept. 5, 1905. Serial No. 277,084.



Claim.—1. A garment hook having a base portion formed by three substantially parallel sections of the same wire, certain portions of said wire being bent to form thread eyelets and one of its ends being engaged with a plurality of said parallel sections to prevent separation of the same, substantially as described.

2. A garment hook made of a single piece of wire having two adjacent thread eyelets and three substantially parallel portions extending therefrom, the end of the wire forming one of the eyelets being extended around two of said parallel portions so as to prevent separation of said eyelets, substantially as described.

3. A garment hook having a base portion formed by three substantially parallel sections of the same wire, certain portions of said wire being bent to form thread eyelets, and one of its ends being engaged with a plurality of said parallel sections to prevent separation of the same, a portion of the wire comprising the hook being bent to form a hump, substantially as described.

4. A garment hook consisting of a piece of wire bent to form a thread holding eyelet, said wire being extended from said eyelet and then curved upwardly and forwardly and again to the rear to form a bill, being then extended from the rear of said bill downwardly and forwardly, then curved to form a second thread holding eyelet, and being finally extended rearwardly intermediate its other two sections, the first end of said wire being engaged with said intermediate extending portion, and one of the sections parallel therewith, to lock together said parts, substantially as described.

5. A garment hook consisting of a piece of wire bent to form a thread holding eyelet, said wire being extended from said eyelet and then curved upwardly and forwardly and again to the rear to form a bill, extended from the rear of said bill downwardly and forwardly, being then curved to form a second thread holding eyelet and extended rearwardly intermediate its two side sections, said intermediate section being curved outwardly between one side section and the bill, and then bent around the rear of the hook to a position between the other side section and the bill to form an auxiliary thread holding eyelet, with means for locking together the two thread holding eyelets, substantially as described.

6. A garment hook consisting of a piece of wire bent to form a thread holding eyelet, said wire being extended from said eyelet and then curved upwardly and forwardly and again to the rear to form a bill, being then extended from the rear of said bill downwardly and forwardly, then curved to form a second thread holding eyelet, and being finally extended rearwardly intermediate its other two sections, the first end of said wire being caused to tie together parts of the two thread holding eyelets, substantially as described.

7. A garment hook consisting of a piece of wire bent to form a thread holding eyelet, said wire being extended from said eyelet and then curved upwardly and forwardly and again to the rear to form a bill, extended from the rear of said bill downwardly and forwardly, being then curved to form a second thread holding eyelet and extended rearwardly intermediate its two side sections, said intermediate section being curved outwardly between one side section and the bill, and then bent around the rear of the hook to a position between the other side section and the bill to form an auxiliary thread holding eyelet, with means for locking together the two thread holding eyelets, substantially as described.

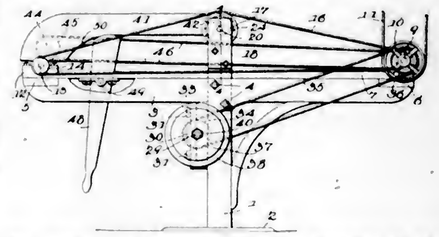
8. A garment hook consisting of a piece of wire bent to form a thread holding eyelet, said wire being extended from said eyelet and then curved upwardly and forwardly and again to the rear to form a bill, extended from the rear of said bill downwardly and forwardly, being then curved to form a second thread holding eyelet and extended rearwardly intermediate its two side sections, said intermediate section being curved outwardly between one side section and the bill, and then bent around the rear of the hook to a position between the other side section and the bill to form an auxiliary thread holding eyelet, substantially as described.

9. A garment hook constructed of a single piece of wire bent to form a shank having at one end attaching eyes and at its opposite end a bill, an integral spring tongue having therein an offset forming a detent, and an attaching eye formed on the end of said tongue, said eye being bent around and encircling the bill of the hook, the end of the eye terminating between the bill and the shank of the hook, substantially as described.

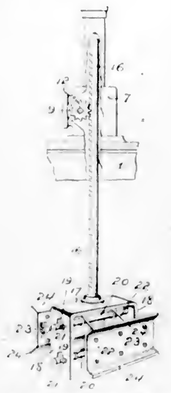
856,331. POLISHING-MACHINE. DAVID F. ARBURN, Evansville, Ind. Filed May 2, 1906. Serial No. 314,881.

Claim.—1. The combination with a standard having a recess; of a bracket detachably secured within the recess and having an inner socket, a former secured within the socket and consisting of a body portion, a padded sheath extending over the working face thereof, and an endless abrading belt supported by the former.

2. The combination with a standard having a recess and a bracket secured within the recess and having a socket in its inner face; of a former secured within the socket and comprising a body portion and a padded sheath thereon, the standard and bracket being cut away adjacent opposite faces of the former, and an abrading belt supported upon and movable over the former.



856,332. FILTER. EMILE BENDIX and FREDERICK O. BENDIX, New Orleans, La. Filed Aug. 20, 1906. Serial No. 331,416.



Claim.—1. In a filter, the combination with a casing, and a pair of filtering stones therein, of a reciprocating frame between the stones, and spring pressed scrapers carried by the frame and bearing against the stones.

2. In a filter, the combination with a casing and a pair of filtering stones therein, of a reciprocating frame between the stones, and perforated spring pressed scrapers carried by the frame and bearing against the stones.

3. In a filter, the combination with a casing having water inlet and discharge openings, and a gear casing communicating with the filter casing, of filtering stones in the filter casing, a pinion in the gear casing, a rack bar in mesh with the pinion and projecting into the filter casing, a frame secured on the rack bar having elongated alined slots, shafts in said slots, springs coiled about the shafts, scrapers secured to the ends of the springs, and bearing against the stones, and means for oscillating the pinion.

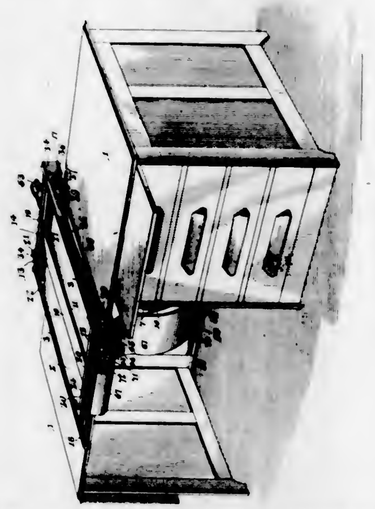
4. In a filter, the combination with a casing having a water inlet and a dirty water discharge, and a gear casing communicating with the filter casing, of filtering stones in the filter casing, a pinion in the gear casing, a rack bar in mesh with the pinion and projecting into the filter casing, a frame secured on the rack bar having elongated alined slots, shafts in said slots, springs coiled about the shafts, scrapers secured to the ends of the springs and bearing against the stones, a tubular bearing communicating with the gear casing, a gate valve in said tube, and a crank shaft to enter the tube and constructed to lock with the pinion to turn the latter.

5. In a filter, the combination with a pair of filtering stones, of a reciprocating frame between the stones, scrapers comprising metal plates having their edges bent to form scrapers to engage the stones, and springs cou-

necting both scrapers with the frame and forcing them away from the frame and against the filtering stones.

6. In a filter, the combination of two parallel flat filtering stones, a reciprocating frame between the stones, scraper plates having parallel scraping edges, and springs connecting the scraper plates and frame and pressing the scraping edges against the stones.

856,333. MANIFOLDING MECHANISM. HERBERT D. BOLTON, New York, N. Y., assignor to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Apr. 10, 1905. Serial No. 254,877.



Claim.—1. In a manifolding means, a support or platen for a plurality of superposed paper webs, a typewriter mounted to travel over the platen longitudinally of the paper webs and including printing devices and inking means, and a transfer web interposed between the paper webs and movable longitudinally of said webs with the typewriter.

2. In a manifolding means, a support or platen for a plurality of paper webs, a plurality of transfer webs, the paper and transfer webs being interwoven, and means supporting the transfer webs and movable longitudinally of the paper webs.

3. In a manifolding means, a support or platen for a plurality of superposed paper webs, a plurality of transfer webs disposed at right angles to the paper webs, the paper and transfer webs being interwoven, and spools rotatable to feed the transfer webs longitudinally and movable to shift the transfer webs longitudinally of the paper webs.

4. In a manifolding means, a platen and a typewriting machine, relatively movable, and a plurality of ink ribbons carried by the machine, and interwoven with a plurality of paper webs led over the platen.

5. In a manifolding means, a platen and a typewriting machine relatively movable, and a plurality of ink ribbons mounted on the typewriting machine and disposed at right angles to and in alternating arrangement with a plurality of paper webs led over the platen.

6. In a manifolding means, a platen supporting a plurality of superposed paper webs, a typewriting machine, a plurality of inking ribbons disposed transverse to the paper webs and alternating therewith, and ribbon spools carried by the typewriting machine to retain the ribbons and shiftable longitudinally of the paper webs.

7. In a manifolding means, a flat platen for a plurality of paper webs led over the platen, recording mechanism movable over the platen, and a plurality of inking ribbons movable with the recording mechanism and alternating with the paper webs.

8. In a manifolding means, a flat platen supporting a plurality of paper webs, a typewriting machine mounted to travel thereover, ribbon spools mounted on and movable with the typewriting machine, and a plurality of inking ribbons extending between the spools and arranged one above another at right angles to the paper webs and in alternating arrangement therewith, said ribbon spools being rotatable to feed the ribbons endwise and also having movement relative to the typewriting machine as well as with the latter to shift the ribbons longitudinally of the paper webs.

9. In a manifolding means, a flat platen, printing mechanism mounted to travel thereover, means for retaining a plurality of superposed paper webs on the platen, and a plurality of inking ribbons supported by and movable with the traveling printing mechanism and disposed at right angles to and in alternating arrangement with the paper webs, whereby the ribbons will be shifted longitudinally of the paper webs as the printing mechanism advances for line spacing.

10. In a manifolding means, a typewriting machine including a platen serving as a backing for a plurality of paper webs, a movable carriage and a machine frame, said machine being equipped with an inking ribbon, and a transfer element interposed between the paper webs and movable longitudinally thereof with the carriage.

11. In a manifolding means, a flat platen, tracks or guides, a typewriting machine mounted to travel thereon and including a transversely movable carriage, means for retaining a plurality of paper webs led over the platen, ribbon spools mounted on the carriage and capable of both endwise and rotary movement, and a plurality of inking ribbons extending between the spools and having alternating arrangement with the paper webs.

12. In combination, a stationary flat platen, a feed device located at the rear end thereof to engage a paper web and draw the same rearwardly over the platen, and operating means located at the front end of the platen within convenient reach of the operator and having operative connection with the feed device.

13. In combination, a stationary flat platen, a paper roll located below the plane of the platen and having a paper web led around the front end of the platen and thence rearwardly over said platen, paper feeding means located at the rear end of the platen to engage the web and draw the same rearwardly over the platen from the paper roll, typewriting mechanism disposed above the platen to print on the web, and operating means located at the front end of the platen and having connection with the paper feeding means located at the rear end thereof.

14. In combination, a stationary flat platen serving as a backing for a plurality of paper webs, typewriting mechanism mounted to travel over the platen, a transfer element interposed between the paper webs and movable longitudinally thereof with the typewriting machine to transfer the type impression to an underlying web as the upper or outer web is printed upon, paper feeding means located at the rear end of the platen to draw the paper webs rearwardly thereover to present unused portions of said webs in the printing area, and means located at the front end of the platen, for operating the paper feeding means located at the rear end thereof.

15. In combination, a stationary flat platen, a paper feeding roll located at the rear end thereof to engage a paper web and draw the same rearwardly over the platen, an operating crank located at the front end of the platen within convenient reach of the operator, a feed shaft extending along one side edge of the platen from the crank and geared to the feed roll, and stop mechanism for arresting the crank after predetermined movement thereof, said stop mechanism including cooperating members one of which is movable out of interfering relation with the other to permit continued movement of the crank after the same has been arrested at the proper point by the stop mechanism.

16. In combination, a platen, a feed roll disposed at one end thereof, a feed shaft geared to the roll and extended to the other end of the platen, a crank carried by the shaft, a spring-urged stop plunger mounted in the crank, and a stationary plate provided with a series of openings disposed to be engaged by the stop plunger to lock the crank in either of several positions.

17. In combination, a platen, a paper feeding roll at one end thereof, operating means for said roll at the other end of the platen, a bodily movable pressure roll disposed to clamp the paper against the paper feeding roll, and means for moving the pressure roll to release the paper.

18. In combination, a platen, a pair of paper guiding devices located at each end of the platen and adjustable transversely thereof, and scale bars disposed transversely of the platen adjacent to said devices to facilitate the adjustment thereof.

19. In combination, a stationary flat platen, a paper roll disposed below the rear end thereof, a paper web extended from the roll to the front end of the platen and thence rearwardly over the latter, and paper feeding means disposed to engage the web beyond the rear end of the platen and an operating device located at the front end of the platen and operatively connected to the paper feeding means.

20. In combination, a horizontal flat platen, a vertically disposed roll supporting frame below the rear end of the platen, paper rolls carried by the frame, paper webs extended to the front end of the platen and thence rearwardly over the platen from said rolls, paper guiding means disposed to maintain the paper webs in superposed relation, means located at the rear end of the platen for engaging and feeding the web and an operating device located at the front end of the platen and operatively connected to the paper feeding means.

21. In combination, a stationary flat platen, a plurality of paper rolls disposed one above another below the rear end of the platen, paper webs extended to the front end of the platen and thence rearwardly over the platen from said rolls, a guard located in advance of the rolls and webs, and a pair of transverse bars along which the guard is adjustable.

22. In combination, a desk having an open portion, a platen on top of the desk, a plurality of paper rolls mounted in the open portion of the desk below the end of the platen, paper webs led rearwardly over the platen from the rolls, and paper feeding mechanism arranged to engage the webs at the rear end of the platen.

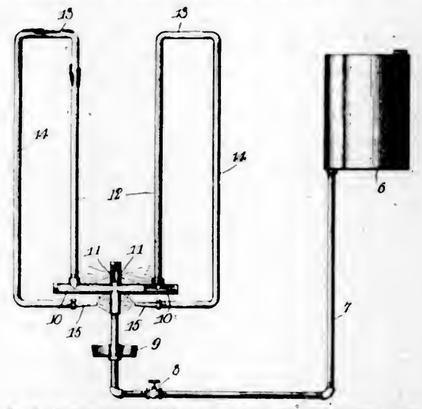
23. In combination, a desk having an open portion, a paper roll supporting frame secured to the desk and mounted at the rear side of the open portion thereof, a platen supported upon the top of the desk, paper rolls mounted in the frame, and having paper webs led rearwardly over the platen from said rolls paper feeding means located at the rear end of the platen, and an operating device therefor located at the front end of the platen.

24. In combination, a desk having an open portion, a platen mounted on the desk, a paper roll supporting frame mounted in the open portion of the desk adjacent to the rear side of the latter, paper rolls mounted in the frame, paper webs led rearwardly over the platen from said rolls, and a guard disposed to prevent the knees of the operator from contacting with the rolls or webs and movable to different positions transversely of the desk.

856,334. FLUID AND OIL BURNER. LEVI B. BULLINGTON, Dexter, Kans. Filed Apr. 2, 1907. Serial No. 365,919.

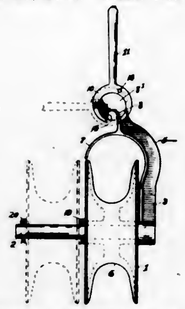
Claim.—1. A burner comprising a supply pipe having external ignition jet holes at the upper end, and a looped tube extending upwardly from the pipe and returned downwardly and having a burner nozzle directed toward the same below said holes.

2. A burner comprising an upwardly projecting supply pipe having a laterally extending branch pipe, and external ignition jet holes, and a looped tube extending upwardly from said branch and above the jet holes, and terminating in a nozzle under said branch.



3. A burner comprising an upwardly projecting pipe having a T head and external ignition jet holes above said head, and looped tubes extending upwardly from said branches, above the level of the jet holes, and then downwardly, and terminating in nozzles under said branches and directed toward the pipe.

856,335. CABLE-ROLLER. WILLIAM CALLAHAN, Quincy, Ill. Filed Mar. 28, 1906. Serial No. 308,589.



Claim.—1. A cable roller comprising a frame including a head having a longitudinal groove therein, an arm secured to the head and depending therefrom, an axis mounted at the lower end of the arm, a roller mounted upon the axis, a guard mounted above the roller and a clamping lever mounted at each end of the head and provided with a slot adapted to be thrown into and out of registration with the aforesaid groove of the head.

2. A cable roller comprising a frame including a head having a groove therein, an arm secured to the head and depending therefrom, an axis mounted at the lower end of the arm a roller mounted upon the axis, a guard mounted above the roller, a clamping lever mounted at each end of the head and provided with a slot to be thrown into and out of registration with the aforesaid groove according to the position of the levers, and means of limiting the downward movement of the lever.

3. A cable roller comprising a frame including a head having a groove carried therein and engaged with a suspension wire, an arm secured to the head and depending therefrom, an axis mounted at the lower end of the arm, a roller mounted upon the axis, the axis being of greater length than the width of the roller, means whereby the roller may be shifted for rotation upon different parts of the axis, a guard mounted above the roller, and means

whereby the head of the frame may be clamped upon the suspension wire.

4. A cable roller comprising a frame including a head and an arm, an axis secured to the arm, a roller mounted upon the axis, and means whereby the roller may be shifted for rotation upon different parts of the axis.

5. A cable roller comprising a frame including a head, an arm secured to the head and depending therefrom, an axis secured to the lower end of the arm, a roller mounted upon the axis and means whereby the roller may be shifted for rotation upon different parts of the axis.

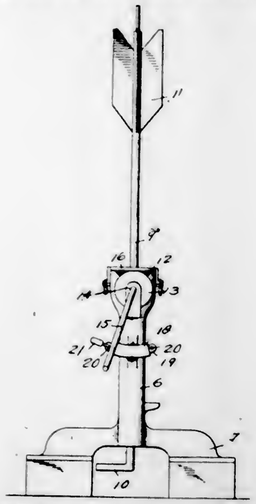
6. A cable roller comprising a frame for support upon a suspension wire, the frame including a head and an arm, and an axis carried by the arm, a roller mounted upon the axis, means whereby the roller may be shifted for rotation upon different parts of the axis, and means for securing the frame upon the suspension wire.

7. A cable roller comprising a frame including a head and an arm, an axis secured to the arm, a roller mounted upon the axis, means whereby the roller may be shifted for rotation upon different parts of the axis, and a guard cooperating with the roller in one of its positions upon the axis.

8. A cable roller comprising a frame including a head having a groove of irregular depth for engagement upon a suspension wire, a roller mounted beneath the head, levers mounted upon the head for detachably clamping the frame to the suspension wire, and means passed through the head for action upon the suspension wire.

9. A cable roller comprising a frame including a head and an arm, the head having a groove of irregular depth, an axis carried by the arm, a roller mounted upon the axis, means whereby the roller may be shifted for rotation upon different parts of the axis, and a guard coöperating with the roller in one of its positions.

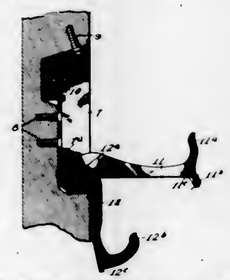
856,336. SWITCH-STAND. WILLIAM CARTER, Clinton, Ky. Filed Apr. 10, 1907. Serial No. 367,443.



Claim.—1. A switch-stand comprising a stand proper, a signal and switch operating shaft journaled vertically in the stand, a gear carried by the shaft, a shaft journaled in the stand at right angles to the signal and switch operating shaft, a gear carried by the last named shaft and meshing with the gear upon the signal and switch operating shaft, a crank handle carried by the second named shaft, a block extension formed upon the stand against which the handle is adapted to rest when at either limit of its movement, the said handles being slotted, and apertured ears formed upon the extension and adapted to project through the slot in the handle, said ears being designed for the connection of a lock therewith.

2. A switch-stand comprising a stand proper, a signal and switch operating shaft journaled vertically in the stand, a gear carried by the shaft, a shaft journaled in the stand at right angles to the signal and switch operating shaft, a gear carried by the last named shaft and meshing with the gear upon the signal and switch operating shaft, a crank handle carried by the second named shaft, a block extension formed upon the stand against which the handle is adapted to rest when at either limit of its movement, the said handles being slotted, apertured ears formed upon the extension and adapted to project through the slot in the handle, said ears being designed for the connection of a lock therewith, and a hinged casing for the gears.

856,337. GARMENT-HANGER. CHRISTOPHER CLIFT, New York, N. Y., assignor to The Clift Company, Cleveland, Ohio, a Corporation of Ohio. Filed Aug. 23, 1906. Serial No. 331,692.



Claim.—1. A hanger comprising a box adapted to be secured to a suitable support, hanger members pivotally mounted in said box said members having intergaging portions when in inoperative positions, means engaging one of said members to hold it in inoperative position, and means for limiting the downward movement of the other member.

2. A hanger comprising a box adapted to be secured to a suitable support, hanger members pivotally mounted in said box, one of said members adapted to move between the sides of the other member, means for holding said members in their inoperative positions, and respective means for limiting said members in their operative positions.

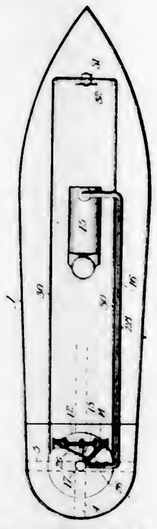
3. A hanger comprising a box, hanger members mounted on the same pivot in said box, one of said members adapted to hang horizontally when in operative position, and the other member to hang vertically, and said last named member adapted to move between the sides of the other member, means on said members whereby the movements of one will be communicated to the other, substantially as set forth.

4. A hanger comprising a housing, a spring secured within said housing, a hook pivotally mounted in said housing and adapted to be engaged by said spring, a second hook pivotally mounted in said box and adapted to be engaged and held in inoperative position by said first named hook, and means in said housing for limiting the outward movement of said last named hook.

856,338. MEANS FOR PROPELLING AND STEERING VESSELS. ALBERT L. CROSBY, Portland, Oreg. Filed June 30, 1906. Serial No. 324,249.

Claim.—1. The combination with a vibratory propeller shaft, and a propeller carried thereby, of a shiftable motor, connection between the shaft and the motor to cause the motor to vibrate the shaft and to shift the shaft with the motor and steering mechanism connected to the motor to shift it and consequently steer the vessel.

2. The combination with a vibrating propeller shaft and a propeller carried thereby, of a motor, means permitting the motor to be revolved about the shaft, and connection between the motor and the shaft to transmit motion from the motor to the shaft.



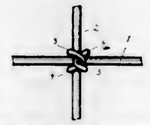
3. The combination with a vibratory propeller shaft, and a propeller carried thereby, of a reciprocating motor, a shiftable platform or turret for the motor, and an arm on the shaft, connected to the motor.

4. The combination with the vibratory propeller shaft, and the propeller carried thereby, of a rotatable platform surrounding the shaft, a motor carried by the platform, connections between the motor and the shaft, and a steering wheel connected to the platform.

5. The combination with the vibratory propeller shaft and the propeller carried thereby, of a steam engine connected to the shaft, a shiftable platform on which the engine is mounted, a steam boiler, and a connection between the boiler piping and the engine permitting the engine to be shifted.

6. The combination with the propeller shaft, and the steam engine mounted to shift about the shaft, of a boiler, a piping connecting the boiler and the engine, a piping surrounding the first mentioned piping to provide a dead air space, and an exhaust piping connected to the boiler and surrounding the dead air space piping.

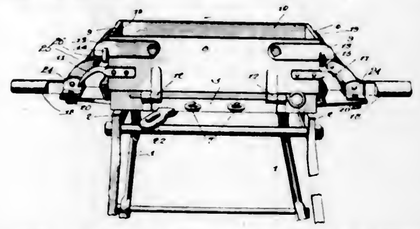
856,339. WIRE-FENCE TIE. WASHINGTON M. DILLON, Sterling, Ill. Filed Aug. 11, 1906. Serial No. 330,105.



Claim.—1. A wire fence tie, comprising a loop-shaped body member, diagonally encircling one of the strand wires and one of the stay wires of the fence, at the point of intersection of such wires, and two end-pieces, interlocking with each other on one side of the fence, and disposed in opposite directions at a right angle to said body member, the ends thereof being bent into engagement with the fence wires, in the angles formed by the intersection of such fence wires which are not occupied by said body member, substantially as shown and described.

2. In a device of the class named, the combination with the strand wire of a fence, and stay wire intersecting therewith, of the member 3, diagonally encircling said wires at the point of intersection thereof; the ends 4, interlocking on one side of the fence, and oppositely projected at a right angle to the part 3, such ends being further bent into engagement with the fence wires at or near the point of intersection thereof, substantially as shown and set forth.

856,340. MACHINE FOR MOLDING CONCRETE BUILDING-BLOCKS AND ARTIFICIAL STONE. ROBERT EDMONDSON, South Bend, Ind. Filed Sept. 8, 1906. Serial No. 333,855.



Claim.—1. A mold box comprising a front side having a rigid outer member, and a removable inner block facing member; end sides hinged to the front side; a top side; and a removable side opposed to the top side.

2. A mold box comprising a front side having a rigid outer member, a removable inner member and rods securing the inner to the outer member; end sides hinged to the front side; a top side; and a removable side opposed to the top side.

3. The combination with a frame, of a mold box mounted to turn and to slide on the frame, and means carried by the mold box and limiting the turning movement.

4. The combination with the frame side bars, of a mold box adapted to turn and slide on the side bars, and arms extending from the mold box and carrying means to engage the under side of the side bars.

5. A mold box having hinged sides, knuckle joints holding the sides closed, and bell crank levers pivoted to the mold box and connected to the knuckle joints for opening the hinged sides.

6. A mold box provided with spring extensions on one of its sides, hinged sides, and knuckle joints pivoted to the spring extensions and to the hinged sides.

7. A mold box provided with extensions, hinged sides, knuckle joints connecting the hinged sides and the extensions, and bell crank levers pivoted to the extensions, and each provided with handles at one of its ends and connected to a knuckle joint at the other of its ends.

8. A mold box provided with spring extensions having slots, bearings adjustable in the slots, hinged sides, knuckle joints connecting the bearings and the hinged sides, and operating handles secured to the bearings and to the knuckle joints.

9. A mold box having hinged sides, knuckle joints connected at one of their ends to the sides, adjustable bearings for the other ends of the knuckle joints, and handles for operating the joints, secured to the bearings.

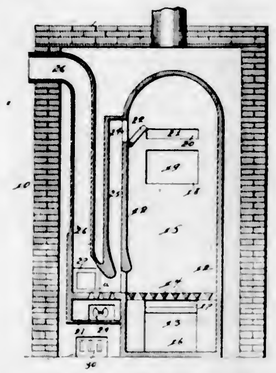
10. A mold box having hinged end sides, a hinged top side, a removable side opposed to the hinged top side, means for opening the hinged end sides and connection between the hinged top side and the hinged end sides causing the opening of the top side when the end sides are opened.

11. A mold box having a front side, end and top sides hinged to the front side, a removable side opposed to the hinged top side, and adjustable lugs on the end sides and the front side for securing the removable side in place.

12. The combination with a frame, of a mold box mounted on the frame to turn thereon and having a removable side, and a completed block receiver vertically adjustable on the frame.

13. The combination with a frame, of a mold box mounted to turn and slide on the frame and provided with a removable side.

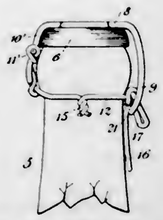
856,341. SMOKE-CONSUMING FURNACE. FRANK FISHER, Des Moines, Iowa. Filed Apr. 11, 1906. Serial No. 311,200.



Claim.—1. The combination of a main combustion chamber, an escape flue communicating therewith at the lower end thereof, an auxiliary combustion chamber communicating with the main combustion chamber at the upper portion thereof and with said escape flue, means for supplying air to said escape flue where said flue communicates with said combustion chambers and a damper for controlling the communication between said combustion chambers whereby the products of combustion may be caused to pass directly to the escape flue or indirectly thereto through said auxiliary combustion chamber.

2. A furnace comprising an outer wall, a hot air chamber, an ash chamber, a grate over the ash chamber, a combustion chamber above the grate open at its rear lower end, an auxiliary combustion chamber in rear of the main combustion chamber and provided with an opening communicating with the main combustion chamber and a damper in the opening, an escape flue within the hot air chamber communicating at its lower end with the lower ends of the two combustion chambers, an air chamber under the auxiliary combustion chamber provided with a register to admit air from without the furnace and vents in its top to admit air to mingle with the products of combustion at the lower open ends of the auxiliary combustion chamber and the escape flue within the hot air chamber and a doorway and door at the lower end of the escape flue in a plane above the grate, as set forth.

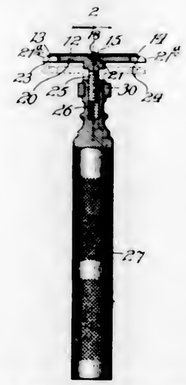
856,342. BOTTLE-CLOSURE. VILHELM J. G. FREUND, Brooklyn, N. Y. Filed Jan. 27, 1906. Serial No. 298,172.



Claim.—1. A three-piece wire clamp for bottle stoppers comprising a neck-band provided with two oppositely-located pairs of eye-loops, a bail consisting of an elongated loop having its ends pivoted in one pair of said eye-loops and bent to pass over the bottle mouth, and a clamping lever consisting of an elongated loop having its ends pivoted in the other pair of eye-loops, the legs of said lever-loop being bent to form a pair of hooks adapted to engage and clamp said bail.

2. The combination, with a bottle and stopper, of a wire neck-band, said band being provided with two oppositely-located pairs of eye-loops, a bail comprising an open elongated wire loop having its ends outwardly bent to provide pivot lugs entering one pair of eye-loops, and a bail-clamping lever pivoted in the other pair of loops, said lever comprising an open loop having its longitudinally disposed legs bent to provide a pair of hooks adapted to engage the end of said bail-loop.

856,343. SAFETY-RAZOR. DAVID E. GOE, Madison, Wis., assignor, by mesne assignments, of three-fifths to The Steel Products Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 16, 1904. Serial No. 237,096.



Claim.—1. In a safety razor the combination of a thin blade formed with a longitudinal arch, groove, or corrugation, a guard plate or table constituting a part of the main frame upon which said blade rests provided with an arch, groove, projection or the like registering with the corresponding part upon the blade to position and hold it, and means to clamp the parts together.

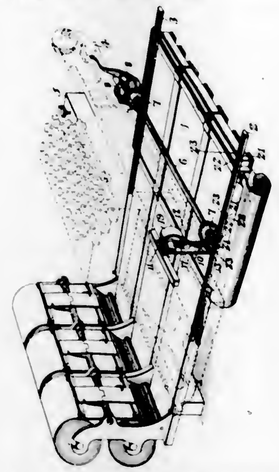
2. In a safety razor the combination of a thin blade formed with a longitudinal arch projection groove or corrugation, a guard plate or table constituting a part of the main frame upon which said blade rests provided with an arch, projection, groove or corrugation, registering with a corresponding part upon the blade to position and hold it in place manually adjustable means to clamp and hold the blade and guard plate firmly together.

3. In a safety razor the combination of a thin blade formed with a longitudinal arch projection groove or corrugation, a guard plate or table constituting a part of the main frame upon which said blade rests provided with an arch projection groove or corrugation registering with a corresponding part on the blade to position and hold it in place means for detachably holding said blade upon the guard plate or table, and means for adjustably controlling the blade holding means.

4. In mechanism of the class described, the combination of a handle, a blade table or head supporting a razor blade, a mechanism for moving said blade table to and from said handle, a rectangular member rotatably mounted upon said handle, having its upper bar fitting over said head and a blade mounted upon said holding device or head under the upper bar of said rectangular member, substantially as described.

5. In mechanism of the class described, the combination of a handle, a blade table mounted over said handle, a shank upon one of said members threaded into the other whereby rotating one with reference to the other will cause said blade table or head and handle to be moved toward or from each other, a rectangular member easily rotatably mounted upon said handle and fitting over said head, and a blade mounted upon said blade table under a portion of said rectangular member whereby moving the head and handle away from each other, clamps the blade upon the blade table under the upper bar of the rectangular member substantially as described.

856,344. TYPE-WRITING MACHINE. HIRAM J. HALLE, New York, N. Y., assignor to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Sept. 11, 1905. Serial No. 277,960.



Claim.—1. In a typewriter, the combination with a platen and printing mechanism relatively movable in the direction of line spacing, of line spacing mechanism, and line space tabulating mechanism for arresting the relative movement of the platen and printing mechanism in the direction of line spacing to facilitate the printing of separated records or entries.

2. The combination with a typewriter including a flat platen and a machine frame which are relatively movable for line spacing, and printing mechanism mounted on the frame and movable for letter spacing, of line spacing mechanism, and line space tabulating mechanism arranged to arrest the relative movement of the machine frame and platen in the direction of line spacing at predetermined points, to facilitate the printing of separated records or entries.

3. The combination with a typewriter including a flat platen, a machine frame mounted to travel thereover in the direction of line spacing, and printing mechanism movable on said frame in the direction of letter spacing, of line space tabulating mechanism including stops and a coöperating catch, carried respectively by the platen and machine frame and arranged to be brought into engagement by the travel of said frame in the direction of line spacing.

4. The combination with a typewriting machine including a flat platen, a machine frame movable thereover for line spacing, and a carriage movable on the frame for letter spacing, of a series of stops associated with the platen, and a catch mounted on the machine frame and movable into and out of a path obstructed by the stops in the free movement of the frame in the direction of line spacing.

5. The combination with a typewriting machine including a flat platen, a machine frame mounted to travel thereon, a carriage movable on the frame, a stop bar associated with the platen and equipped with a series of stops, and a catch movable with the machine frame and also movable into and out of position to be engaged by a stop and thus arrest the movement of the frame in the direction of line spacing.

6. The combination with a typewriting machine including a flat platen and a machine mounted to travel thereover for line spacing, of a notched bar associated with the platen, and a catch movable with the machine and arranged to enter one of the notches to arrest the machine in position for the printing of a record or entry.

7. The combination with a typewriting machine including a flat platen and a machine frame mounted to travel in the direction of line spacing, of line spacing mechanism for said machine, a series of stops disposed along one longitudinal edge of the platen, and a depressible catch carried by the machine and coöperating with the stops to arrest the movement of the frame in the direction of line spacing.

8. The combination with a typewriting machine including a flat platen, tracks or guides, and a machine mounted to travel on said tracks or guides in the direction of line spacing, of a series of stops carried by one of said tracks or guides, and a catch carried by the machine and disposed to coöperate with said stops to arrest the machine at different points when said machine is advanced freely in the direction of line spacing.

9. The combination with a typewriting machine including a flat platen, tracks or guides one of which is provided with a series of notches, and a machine mounted to travel on said tracks or guides in the direction of line spacing, of a catch mounted on the machine and depressible into engagement with the notches in the track or guide.

10. The combination with a typewriting machine including a flat platen, tracks or guides, and a machine mounted to travel on said tracks or guides in the direction of line spacing, of line spacing mechanism for the machine, and line space tabulating mechanism including means carried by the machine frame and coöperating with one of the tracks or guides to arrest the machine at predetermined points as said machine is advanced freely independently of the line spacing mechanism in the direction of line spacing.

11. The combination with a flat platen and tracks one of which is provided with stops located at intervals, of a machine frame mounted to travel on the tracks, printing mechanism mounted to travel on the frame, and a vertically disposed catch mounted on the machine frame adjacent to one end thereof and longitudinally movable into position to engage the stops with which one of the tracks is provided, a finger piece for the manipulation of the catch, and a spring normally retaining the catch in an inoperative position.

12. The combination with a flat platen and toothed tracks, of a machine frame mounted to travel on the toothed tracks to line space the writing, a carriage mounted to travel on the frame to letter space the writing, line spacing mechanism carried by the traveling frame and engaging the teeth of the tracks to advance the frame step-by-step for line spacing, and line space tabulating mechanism separate from and independent of the line spacing mechanism and including a series of stops carried by one of the toothed tracks and a vertically movable catch mounted on the frame and depressible into interfering relation with a stop to arrest the frame when the latter is advanced freely and independently of the line spacing mechanism.

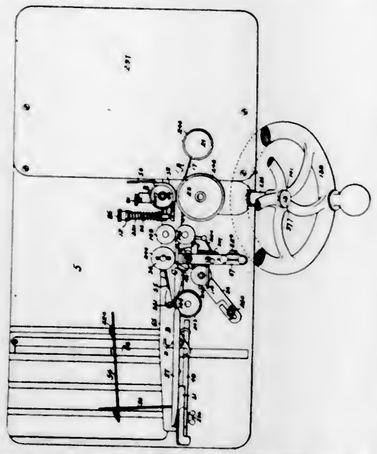
13. In a typewriting machine, the combination with a flat platen, a machine frame mounted to travel thereover for line spacing, and printing mechanism movable on the frame for letter spacing, of line spacing mechanism operative to advance the frame step-by-step to line space the writing, and line space tabulating mechanism arranged to arrest the free forward advance of the machine when the latter is freely moved or skipped from one writing area to the next independently of the line spacing mechanism, said line space tabulating mechanism including a series of stops, disposed longitudinally of the platen adjacent to one side edge thereof, and a manually operated catch mounted on the machine frame, at the front side thereof, and movable from its normal inoperative position to a position in which the free forward movement of the

machine will present said catch to one of the stops and thus arrest the machine frame opposite a new printing area of a work sheet supported by the platen.

14. In combination, a typewriting machine including a flat platen and a machine frame, relatively movable longitudinally of the platen for line spacing, a carriage movable on the frame for letter spacing, printing mechanism on the carriage, line spacing mechanism including a manually operated actuator, a normally inoperative line-space-tabulator catch movable to its operative position, the line space actuator and the tabulator catch being disposed adjacent to opposite ends of the frame to permit one to be operated by the right hand and the other by the left hand of the operator, and a series of stops disposed longitudinally of the platen and arranged to cooperate with the catch to arrest the relative movement of the platen and frame in the direction of line spacing.

15. The combination with a flat platen and toothed tracks, of a machine frame mounted to travel on the toothed tracks to line space the writing, a carriage mounted to travel on the frame to letter space the writing, line spacing mechanism carried by the traveling frame and engaging the teeth of the tracks to advance the frame step by step for line spacing, a line-space-tabulating mechanism separate from and independent of the line spacing mechanism and including a series of stops mounted independently of the machine frame, and a vertically movable catch mounted on a frame and depressible into interfering relation with a stop to arrest the frame when the latter is advanced freely and independently of the line spacing mechanism in the direction of line spacing.

856,345. MAIL-MARKING MACHINE. FREDERICK G. JAHN, New York, N. Y., assignor to The International Postal Supply Company of New York, Brooklyn, N. Y., a Corporation of New York. Filed Feb. 24, 1905. Serial No. 247,198.



Claim.—1. A mail marking machine comprising a machine table, feeding and marking instrumentalities mounted to rotate in vertical bearings formed in said table, and a driving spindle therefor mounted in an inclined bearing formed in said table, said spindle having at one end, below the table, bevel gearing for transmitting motion to said instrumentalities and at its other end a handwheel partially overlying the table and in propinquity to the feeding instrumentalities.

2. A mail marking machine comprising a machine table, a feed roller the spindle of which is mounted to rotate in vertical bearings in said table and a driving spindle therefor mounted in an inclined bearing formed in the table, said driving spindle having at one end below the table bevel gearing connected to the feed roller spindle and at its other end a hand wheel partially overlying the table and in propinquity to the feed roller.

3. The combination with the feeding and marking instrumentalities, of an inclined driving spindle therefor carrying one of a train of bevel gears, a bracket frictionally mounted concentric with the longitudinal axis of the spindle and supporting another of said train of gears, whereby on excessive strain to the gearing sufficient to overcome the frictional mounting of the bracket, the bracket will rotatively turn with respect to the driving spindle and thereby move its gear from mesh with another gear of the train.

4. The combination with the feeding and marking instrumentalities, of an inclined driving spindle therefor carrying one of a train of bevel gears, a sleeve forming a bearing for said spindle, and a bracket mounted on and clamped to said sleeve and carrying another of said train of bevel gears, whereby on excessive strain to the gearing sufficient to overcome the friction of the clamp the bracket will rotatively turn on the sleeve and thereby disconnect a portion of said gearing.

5. The combination with the feeding and marking instrumentalities, of an inclined driving spindle therefor carrying one of a train of gears, a bracket mounted concentric with the longitudinal axis of said spindle and having a support for one of said train of gears and a shearable pin holding the bracket in position whereby on excessive strain to the gearing the bracket will rotatively turn on the sleeve and disconnect the gearing.

6. The combination with a feed roller, its spindle and gear secured thereto, of a driving spindle therefor having a gear secured thereto, a fixed sleeve supporting said spindle, a bracket frictionally clamped to said sleeve and carrying a stud and a gear mounted on said stud intermediate between said other two gears, whereby on excessive strain to the gearing sufficient to overcome the friction of the clamp the bracket will rotatively turn on the sleeve and thereby disconnect a portion of the gearing.

7. The combination with a feed roller, its spindle and bevel gear secured therto, of a driving spindle therefor having a bevel gear secured thereto, a fixed sleeve supporting said spindle and mounted in an inclined bearing, a bracket frictionally clamped to said sleeve and carrying a stud and a bevel gear mounted on said stud intermediate between said other two bevel gears, whereby on excessive strain to the gearing sufficient to overcome the friction of the clamp the bracket will rotatively turn on the sleeve and thereby disconnect a portion of the gearing.

8. The combination with a feed roller, its spindle and gear secured thereto, of a driving spindle therefor having a gear secured thereto, a sleeve on said spindle fixed with respect thereto, a bracket supported on said sleeve and carrying a stud, a gear mounted on said stud intermediate between said other two gears and a shearable pin connecting the sleeves and bracket together whereby on excessive strain to the gearing the bracket will rotatively turn on the sleeve and disconnect the gearing.

9. The combination of the rotatable printing die, an impression roller therefor, a yieldingly mounted rock-arm supporting the roller, a gear secured to the roller, a gear mounted concentric with the pivot of the rock-arm and another gear intermediate of said two gears and supported by said rock-arm.

10. The combination of the rotatable printing die, an impression roller therefor, a rock-arm supporting the roller, a gear secured to the roller, a gear mounted concentric with the pivot of the rock-arm, another gear intermediate of said two gears and supported by said rock-arm, an adjustably connected spring for the rock-arm and an adjustable stop-screw carried by and limiting the inner position of the rock-arm.

11. The combination of the positively driven stacker feed roller, the pivotally mounted idler roller coacting therewith and a spring adapted to hold said idler roller both toward and away from the feed roller.

12. The combination of the positively rotated stacker feed roller, an idler roller coacting therewith, a pivot supporting said idler roller, an arm secured to the pivot and a spring coacting with the arm to hold the idler roller both toward and away from the feed roller.

13. The combination of the stacker feed roller, an idler roller coacting therewith, a pivoted guard plate supporting said idler roller and a spring acting on said guard plate to hold the idler roller toward the feed roller.

14. The combination with the feed and marking instrumentalities, of a driving spindle geared to rotate the same, a hand wheel loosely mounted on said spindle, a yielding clutch member carried by said hand wheel and a cap piece confining the hand wheel in place and forming the coacting clutch member secured to the spindle.

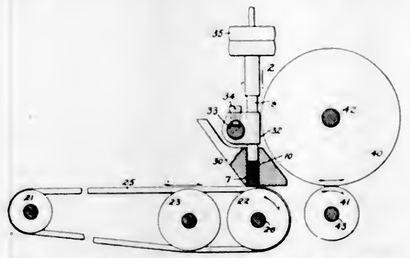
15. In a machine of the class described the combination of a rotating spindle, a die hub loosely mounted thereon and seated against bottom disks, a plurality of clutch disks encircling the die hub and connected alternatively to the spindle and die hub and a removable stop engaging the die hub.

16. The combination of a rotating spindle, clutch disks connected to rotate therewith, a die hub loosely mounted on said spindle and seated against bottom disks, other clutch disks connected to the die hub and alternating with those of the spindle, and a removable stop engaging said die hub.

17. The machine table carrying the operating mechanism and capable of being tilted with respect to its support, posts projecting from the table to provide rests for the table when tilted, and a table brace post also projecting from the table.

18. The machine table carrying the operating mechanism, a hollow base carrying the machine table and with respect to which the table may be tilted, posts projecting from the table to form rests therefor when tilted, a table brace post also projecting from the table, and said hollow base provided with the other member of the table brace.

856,346. FEEDING MECHANISM. FREDERICK G. JAHN, New York, N. Y., assignor to The International Postal Supply Company of New York, Brooklyn, N. Y., a Corporation of New York. Filed Aug. 16, 1905. Serial No. 274,447.



Claim.—1. The combination with a feed mechanism, of an opposed flexible ended strip of adhesive material fixed relatively to the feed movement and arranged with its end flexed or bent in bearing against the forwardly moving surface of the feed mechanism, and a support for said strip permitting a bodily yielding movement of the strip with respect to said feed mechanism.

2. The combination with a feed mechanism, of an opposed separator strip of abrasive material fixed relatively to the feed movement, and a support therefor forming a bearer against the feed mechanism in addition to the strip and adapted to permit a yielding movement of the strip.

3. The combination with a feed mechanism, of an opposed separator strip and bearer both mounted in surface alinement and fixed relatively to the feed movement and each adapted to independently yield with respect to the feed mechanism.

4. The combination with a feed mechanism of an opposed bearer mounted relatively fixed with respect to the feed movement, and a separator strip of flexible material confined in position within the compass of the bearer with their active surfaces in alinement and said strip adapted to yield independent of said bearer.

5. The combination with a feeding device, of a coacting flexible ended wiper of adhesive material its said end flexed or bent in bearing against the moving surface of the feeding device and extending away from said device in a direction at an angle to the feed movement.

6. The combination with a forwardly rotating feed roller, of a coacting flexible wiper of adhesive material flexed or bent in bearing against said roller and extending away therefrom at an angle to the feed movement, and a support for said wiper connected thereto at a point removed from its forward bearing end.

7. The combination of a feed device, a flexible wiper coacting therewith and a bearer impinging against the feed device in advance of the wiper.

8. The combination of a feed device, a wiper coacting therewith, a bearer and a separator strip each impinging against said device.

9. The combination of a feed device, a coacting wiper of adhesive material flexed or bent in bearing against said feed device and extending in an inclined direction to the feed movement, and a laterally yielding support for the wiper.

10. The combination of a continuously rotating feed roller, a coacting wiper of adhesive material flexed or bent in bearing against said feed roller, and a laterally yielding support for the wiper.

11. The combination of a continuously rotating feed roller, a coacting flexible ended wiper of adhesive material flexed or bent in bearing against said feed roller, and a spring pressed support for the wiper.

12. The combination of a feed device, a laterally yielding wiper and a laterally yielding bearer in advance of the wiper and both impinging against the feed device.

13. The combination of a feed device, a laterally yielding wiper, a laterally yielding bearer and a strip or plug supported by the bearer.

14. The combination of a feed roller, and an opposed flexible wiper adapted to impinge on the surface of the roller and be thereby flexed or bent and fixed relative to the surface travel of said roller to prevent the feed of more than one piece at a time.

15. The combination of a feed roller, an opposed flexible wiper adapted to impinge on the surface of the roller and be thereby flexed or bent and fixed relative to the surface travel of said roller to prevent the feed of more than one piece at a time, and a supplemental feed roller for advancing the pieces of matter toward the wiper and the first named feed roller.

16. The combination of a feed roller, a flexible wiper and a bearer each adapted to impinge against the surface of said roller in advance of the articles being fed.

17. The combination of a feed roller, a spring pressed bearer and a spring pressed flexible wiper each adapted to impinge against the surface of the roller in advance of the articles being fed.

18. The combination of a feed roller, a spring pressed bearer and a spring pressed strip or plug guided by the bearer and both adapted to impinge against the surface of the roller.

19. The combination of a feed roller, a yielding wiper, a spring pressed bearer mounted in advance of the wiper, and a yielding strip or plug guided by the bearer, the wiper, bearer and strip each adapted to bear against said roller.

20. The combination of a feed roller, a wiper, a bearer and a strip or plug each mounted to yield independently of the others.

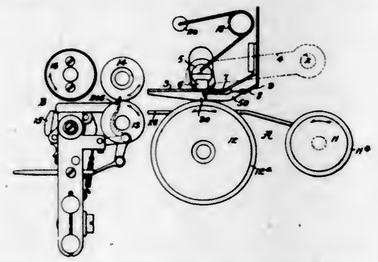
21. The combination of a feeding device, a wiper and a bearer in advance of the wiper, the bearer having a flared entrance.

22. The combination of a feeding device, a wiper, a bearer in advance of the wiper and a resistance piece mounted in propinquity to the bearer.

23. The combination of a feeding device, a wiper, a bearer mounted immediately in advance of the wiper, both forming a substantially continuous bearer against the

feeding device and adapted to yield independently of one another.

856,347. FEEDING MECHANISM. FREDERICK G. JAHN, New York, N. Y., assignor to The International Postal Supply Company of New York, Brooklyn, N. Y., a Corporation of New York. Filed Oct. 25, 1905. Serial No. 284,292.



Claim.—1. The combination with a feed device, of a yieldingly mounted guide providing an inclined seat and a bearing block, and a flexible wiper supported on said seat with its free end and the bearing block arranged to impinge against a moving surface of the feed device.

2. The combination with a feed device, of a yieldingly mounted guide providing a bearing block and an inclined seat with a stud, and a flexible wiper supported on said seat and mounted on said stud with its free end and the bearing block arranged to impinge against a moving surface of the feed device.

3. The combination with a feed device, of a yieldingly mounted guide providing an inclined seat and pocket or guard and a bearing block, a flexible wiper supported on said sent and extending into said pocket with its free end and the bearing block arranged to impinge against a moving surface of the feed device.

4. The combination with a feed device, of a yieldingly mounted guide providing a bearing block and an inclined seat with a stud, and a flexible wiper having a centrally arranged hole adapting it for reversal on said sent and stud with the free end of the wiper and the bearing block arranged to impinge against a moving surface of the feed device.

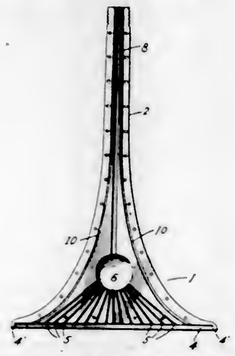
5. The combination with a feed device, of a guide providing an inclined seat and a bearing block, a flexible wiper supported on seat with its free end and the bearing block arranged to impinge against a moving surface of the feed device, and a spring carried by the guide and reinforcing the free end of the wiper.

856,348. STEAM ICE-CUTTER. HENRY P. JOSEWSKI, Seattle, Wash. Filed Dec. 13, 1906. Serial No. 347,726.

Claim.—1. An ice cutter embodying a body formed with an elongated outer edge and a gradually tapered portion forming a handle, said elongated edge being formed with an elongated mouth which is disposed inwardly of said outer edge, said body having a main fluid conduit extending lengthwise thereof and terminating in an enlarged portion above the mouth, and means for conducting the fluid from said enlarged portion to a plurality of points along the length of said mouth.

2. An ice cutter formed of a body having an elongated mouth at the lower end thereof which is disposed inwardly of the outer edge of said end and having a fluid conduit, and means for conducting the fluid from said conduit to a plurality of points along the length of said mouth.

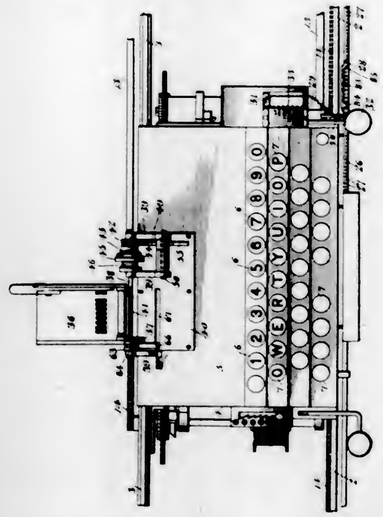
3. A steam ice cutter embodying a body formed with an enlarged steam chamber intermediate its ends and with an elongated mouth at the outer end of said body, said body having a steam conduit extending through the inner end thereof, and terminating in said chamber, said body also being formed with a plurality of divergent conduits leading from said chamber into said mouth.



4. An ice cutter embodying a body formed with an enlarged steam chamber and an elongated mouth, having closed sides and ends, means for conducting heated fluid to said chamber, and a plurality of fluid conducting means terminating at one end in said chamber, and at their opposite ends at points along the length of said mouth.

5. An ice cutter embodying a head formed in two longitudinal sections provided in its lower portion with an elongated inwardly extending mouth, means extending through the head for supplying a heated fluid to said mouth, packing carried by each section, the packing of one section being in engagement with that of the other, said packing extending lengthwise of the head from end to end, and being disposed on opposite sides of said means, and means beyond the packing for securing said sections in engagement with one another.

856,349. CALCULATING-MACHINE. LOUIS G. JULIHN, Washington, D. C., assignor to Elliott-Fisher Company, New York, N. Y., a Corporation of Delaware. Filed Oct. 7, 1904. Serial No. 227,571.



Claim.—1. In combination, a computing device, operating mechanism therefor, and a carriage supporting both the computing device and its operating mechanism and movable to change their denominational relation.

2. In combination, a computing device, operating keys therefor, and a carriage supporting said computing device and keys and movable to change the denominational relation thereof.

3. In combination, a movable carriage, a computing device and printing mechanism, both mounted on the carriage, and operating keys for the computing device, the movement of the carriage serving to effect denominational spacing of the digits printed.

4. In combination, a movable carriage, keys movable therewith, a computing device also movable with the carriage and operated by the keys, and key operated printing mechanism, arranged to print digits in denominational positions determined by the position of the carriage.

5. In combination, a movable carriage, a computing device and printing mechanism both movable with the carriage, and keys constituting operating means common to the computing device and printing mechanism and controlling the movement of the carriage.

6. In combination, a computing device, printing mechanism, operating keys common to both, and a carriage supporting the several recited elements and movable to different denominational positions.

7. In combination, a carriage, keys and a computing device, both mounted on the carriage, and key-operated actuating mechanism for the computing device, said carriage being movable to change the denominational relation of the computing device and its actuating mechanism.

8. In combination, a movable carriage, a computing device, and an actuator, the computing device and actuator being mounted on the carriage and having relative movement to present them in or out of co-operative relation, the position of said carriage determining the denominations of the digits included in the computation.

9. In combination, a movable carriage, a computing device including a series of denominational members, and an actuator, said computing device and actuator being movable with the carriage, but at different speeds, to cause the presentation of the actuator to successive denominational members.

10. In combination with a movable carriage, a computing device and an actuator, both mounted on the carriage and relatively movable by the advance of the carriage to present the actuator in operative relation with successive denominational members of the computing device.

11. In combination, a movable carriage, propelling mechanism therefor, a computing device including a series of denominational members, and an actuator advanced to successive members by the carriage propelling mechanism and movable at greater speed than the carriage.

12. In combination, a movable carriage, propelling mechanism therefor, a computing device, and an actuator, movable by the carriage propelling mechanism, to present the actuator in co-operative relation with successive denominational members of the computing device, said computing device being mounted on the carriage.

13. In combination, a computing device, operating mechanism therefor, a movable carriage supporting both the computing device and its operating mechanism and having its movement controlled by the latter.

14. In combination, a computing device, operating keys therefor, and a movable carriage supporting the computing device and keys and having its movement controlled by said keys.

15. In combination, a key-controlled carriage, and a computing device and printing mechanism mounted thereon.

16. In combination, a movable carriage, a computing device mounted thereon, and keys also mounted on the carriage and controlling the movement thereof, certain only of said keys being adapted to operate the computing device.

17. In combination, a movable carriage, a computing device and an actuator, both movable with the carriage and having relative movement to present the actuator in operative relation with successive denominational members, and keys controlling said relative movement.

18. In combination, a movable carriage, a computing device and an actuator, both movable therewith and having relative movement to present said actuator in operative relation to the successive denominational members of the computing device, and keys controlling such relative movement and also the operating movement of the actuator.

19. The combination with a typewriting machine, including a traveling carriage, printing mechanism, and keys for operating the printing mechanism and controlling the movement of the carriage, of a computing device movable as the carriage advances, and an actuator movable to successive denominational members of the computing device and operated by the keys.

20. The combination with a typewriting machine, including as primary elements thereof a frame and movable carriage, of a computing device and an actuator both mounted on one of said primary elements of the typewriter, and means mounted on the carriage for operating the actuator.

21. The combination with a typewriting machine, including as primary elements thereof a frame and movable carriage, of a computing device and an actuator both mounted on one of said primary elements of the typewriter, and actuator operating keys mounted on the carriage.

22. The combination with a flat platen typewriter including a movable carriage and key-operated printing mechanism mounted thereon, of a computing device mounted on the carriage, and an operating connection between the keys of the printing mechanism and the computing device.

23. The combination with a flat platen typewriter including a movable carriage, printing mechanism mounted on the carriage, and keys arranged to control the movement of the carriage and to operate the printing mechanism, of a computing device mounted on the carriage, an actuator also mounted on the carriage and movable to successive denominational members of the computing device, and an operating connection between the keys and the actuator.

24. The combination with a flat platen typewriter including a movable carriage, carriage propelling mechanism, printing mechanism and keys mounted on the carriage, and a key-operated escapement controlling the movement of the carriage, of a computing device mounted on the carriage and including a series of denominational members, a master wheel, means operated by the movement of the carriage for advancing the master wheel to successive denominational members of the computing device, and means operated by certain of the keys for rotating the master wheel.

25. The combination with a typewriting machine including a stationary flat platen, a traveling machine frame, a carriage movable on the frame, and printing mechanism mounted on the carriage and including numeral keys, of a computing device mounted on the carriage, and means for operating the computing device from the keys.

26. The combination with a flat platen typewriter including a stationary, flat platen, a machine frame mounted to travel thereover, a carriage movable on said frame, and printing mechanism including letter and numeral keys movable with and controlling the movement of the carriage, of a computing device mounted on the carriage and including a series of denominational members, an actuator movable by the advance of the carriage to engage successive members and differential connection between the numeral keys and the actuator, whereby the movement of said actuator will correspond in extent to the value of the key depressed.

27. The combination with a frame, a traveling carriage, printing mechanism, and numeral keys, of a computing device mounted on the carriage, an actuator for the computing device, and means movable with the carriage for transmitting a different degree of movement from each numeral key to the actuator.

28. The combination with a laterally movable carriage, of a computing device movable therewith, printing mech-

anism including letter and numeral keys also movable with the carriage, and actuating mechanism for the computing device including the numeral keys.

29. The combination with a stationary platen for the reception of a work sheet, and printing mechanism, of a carriage mounted to travel over the platen, a computing device movable with the carriage, and keys for moving the printing mechanism to the platen and for operating the computing device.

30. In combination, a platen and relatively movable printing mechanism, of a computing device, and a master operating means both movable with the printing mechanism, the denominational relation of the computing device and its master means being controlled by the movement of the printing mechanism, tabulating mechanism adapted to arrest such movement at any desired point within the limits thereof, and means whereby the computing device may be rendered operative by the master means at any desired point in the relative movement of the platen and printing mechanism.

31. The combination with a platen and printing mechanism, relatively movable, of tabulating mechanism including a stop and a coöperating catch for arresting said relative movement at a predetermined point, a computing device, operating mechanism therefor and means associated with the stop for determining that point in the relative movement of the platen and printing mechanism at which the computing device will be rendered operative.

32. The combination with a platen and printing mechanism, relatively movable, of an adjustable stop for arresting such movement at any desired point, a trip adjustable with the stop, a computing device and means operated by the trip for automatically bringing the computing device into action.

33. The combination with a platen and printing mechanism, relatively movable, of a computing device, an actuator normally out of coöperative relation therewith, a trip adjustable independently of the computing device to different column positions, and means controlled by the trip for establishing an operative relation between the computing device and its operating mechanism when the printing mechanism is disposed to print in a given column and for automatically establishing an inoperative relation of said parts to permit digits to be printed beyond the column without operating the computing device.

34. The combination with a stationary platen and printing mechanism mounted to travel thereover, of a computing device and a normally disengaged actuator therefor, relatively movable to present successive digit carriers of the computing device in operative relation with the operating mechanism, an adjustable trip and mean operated by the trip at the proper point in the movement of the printing mechanism to inaugurate relative movement of the computing device and its actuator.

35. The combination with a platen and printing mechanism, relatively movable, of a computing device and an actuator therefor, also relatively movable, a trip adjustable independently of the computing device, means operated by the relative movement of the platen and printing mechanism for effecting the relative movement of the computing device and its actuator, and means operated by the trip for determining that point in the relative movement of the platen and printing mechanism at which the relative movement of the computing device and its actuator will be inaugurated by said first named means.

36. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movable on the frame, of a computing device, and means adjustable on the frame for determining that point in the advance of the carriage at which the computing device will be operative.

37. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movable on the frame, of a trip device adjustable on the frame, a computing device and means presented to the trip device by the movement of the carriage and arranged to render the computing device operative.

38. The combination with a typewriting machine, including printing mechanism, a frame, and a traveling carriage, of a scale bar carried by the frame, a trip adapted to be located at any desired point on the scale bar, a computing device, and means mounted on the carriage and co-operating with the trip to render the computing device operative at the proper time.

39. The combination with a typewriting machine, including printing mechanism, a frame, and a movable carriage, of a computing device mounted on the carriage, a trip mounted on the frame, a trigger mounted on the carriage and presentable to the trip, and means controlled by the trigger for rendering the computing device operative.

40. The combination with a typewriting machine, including printing mechanism, a frame, a movable carriage, and carriage propelling mechanism, of a computing device and an actuator therefor, means for causing the carriage propelling mechanism to effect relative movement of the computing device and its actuator, and means mounted on the machine frame for determining that point in the movement of the carriage at which the relative movement of the computing device and its actuntor will be inaugurated.

41. The combination with a typewriting machine, including printing mechanism, a frame, a movable carriage, and carriage propelling mechanism, of a computing device, an actuator therefor, actuator advancing mechanism, a trigger and a trip presentable in co-operative relation by the movement of the carriage, and means controlled by the trigger for operatively connecting the actuator advancing mechanism with the carriage propelling mechanism.

42. The combination with a typewriting machine, including printing mechanism, a frame, a movable carriage, and carriage propelling mechanism, of a computing device, a master wheel therefor, master wheel advancing mechanism, a trip mounted on the frame, a trigger mounted on the carriage and presentable to the trip, and means controlled by the trigger for operatively connecting the master wheel advancing mechanism with the carriage propelling mechanism.

43. The combination with a platen and printing mechanism movable thereover, of a computing device movable with the printing mechanism, operating mechanism therefor, and means adjustable independently of the computing device for determining that point in the travel of the printing mechanism at which the computing device may be operated.

44. The combination with a platen and printing mechanism movable thereover, of a computing device movable with the printing mechanism, operating mechanism therefor, and means adjustable independently of the computing device and of the printing mechanism to determine that point in the travel of the printing mechanism at which the computing device may be operated.

45. The combination with a platen and printing mechanism mounted to travel thereover, of a computing device, an actuator normally out of operative relation therewith, means for moving the actuator into operative relation with the computing device, and means mounted independently of the movable printing mechanism and of the computing device for determining the point in the travel of the printing mechanism at which the computing device and its actuator will be disposed in co-operative relation.

46. The combination with a platen, a carriage movable thereover, and a computing device and printing mechanism mounted on the carriage, of a computing device, a trip adjustable independently of the carriage and computing device, and means controlled by the trip for establishing an operative relation between the printing mechanism and the computing device.

47. The combination with a platen, a carriage movable thereover, and printing mechanism mounted on the carriage, of a computing device, an actuator therefor, said device and actuator being relatively movable but normally stationary relative to each other during the travel of the carriage, and means mounted independently of the carriage for determining that point in the carriage advance at which the relative movement of the computing device and its actuator will be inaugurated.

48. In a typewriting machine, the combination with a platen, a machine frame, a carriage movable on the frame, and printing mechanism mounted on the carriage, of a computing device, an actuator therefor, which is normally stationary relative to the computing device during the movement of the carriage, actuator advancing mechanism, and means mounted on the machine frame to determine the point in the advance of the carriage at which the actuator advancing mechanism will be brought into action.

49. The combination with a typewriting machine, including a platen, a machine frame, a carriage movable on the frame, and printing mechanism mounted on the carriage, of a computing device, a master wheel therefor, master wheel advancing mechanism, a trip mounted on the machine frame, and means presented to the trip by the movement of the carriage and arranged to bring the master wheel advancing mechanism into operation at the proper time.

50. The combination with a typewriting machine, including a platen, a frame, and traveling printing mechanism, of a stop for arresting the movement of the printing mechanism, a computing device, operating mechanism therefor, and means associated with the stop for determining the point in the travel of the printing mechanism at which the computing device may be operated.

51. The combination with a typewriting machine, including a platen, a frame, a movable carriage, printing mechanism mounted on the carriage, and tabulating mechanism including a stop mounted on the frame to arrest the carriage at a predetermined point, of a trip associated with the stop, a computing device, operating mechanism therefor, and trip controlled means for establishing a co-operative relation between the computing device and its operating mechanism.

52. The combination with a typewriting machine, including a platen, a frame, a traveling carriage movable on the frame, and tabulating mechanism comprising a column stop bar mounted on the frame, a catch mounted on the carriage, and a column stop designed to be positioned at various points on the bar, of a computing device, and means adjustable along the column stop bar with the stop to determine that point in the travel of the carriage at which the computing device may be operated.

53. The combination with a typewriting machine, including a platen, a machine frame, a carriage movable on the frame, printing mechanism movable with the carriage, and tabulating mechanism comprising a column stop bar on the frame, a catch on the carriage, and a stop adapted to be located at various points on the column stop bar, of a trip adjustable along the bar with the stop, a computing device, operating mechanism therefor, which operating mechanism is normally out of operative relation with the computing device, and trip controlled means mounted on the carriage and arranged to effect an operative relation between the computing device and its operating mechanism.

54. The combination with a typewriting machine, including a platen, a machine frame, a carriage movable on the frame, printing mechanism mounted on the carriage, and tabulating mechanism comprising a column stop mounted on the frame and disposed to arrest the carriage at a predetermined point, of a computing device, an actuator therefor, actuator advancing means, and means associated with the stop and controlling the operation of the actuator advancing means.

55. The combination with a typewriter, including a platen, a frame, a carriage mounted to travel on the frame, printing mechanism movable with the carriage, and tabulating mechanism, including a column stop and a catch co-operating to arrest the carriage at a predetermined point, of a trip associated with one of said elements of the tabulating mechanism, a computing device, a master wheel, master wheel advancing means, and trip controlled means mounted on the carriage and arranged to bring the master wheel advancing means into action at the proper time.

56. The combination with a typewriter, including a platen, a frame, a traveling carriage, carriage propelling mechanism, and printing mechanism mounted on the carriage, of a computing device also mounted on the carriage, a master wheel therefor, master wheel advancing mechanism, and automatic means for connecting the master wheel advancing mechanism with the carriage propelling mechanism.

57. The combination with a typewriting machine, including a platen, a frame, a movable carriage, carriage propelling mechanism, and printing mechanism mounted on the carriage, of a computing device, a master wheel therefor, master wheel advancing mechanism, a trip mounted independently of the carriage, and trip controlled means for connecting the master wheel advancing mechanism with the carriage propelling mechanism.

58. The combination with a traveling carriage and printing mechanism mounted thereon, of a computing device also mounted on the carriage, a master wheel which is normally stationary relative to the computing device during the advance of the carriage, and means for inaugurating the advance of the master wheel at a proper point in the movement of the carriage.

59. The combination with a traveling carriage and printing mechanism movable therewith, of a computing device mounted on the carriage, an actuator normally out of operative relation with the computing device, and automatic means for establishing an operative relation between the computing device and the actuator at a predetermined point in the advance of the carriage.

60. The combination with a traveling carriage, printing mechanism mounted thereon and a support for the sheet to be written upon, of a computing device also mounted on the carriage, and automatic means controlling the operation of the computing device.

61. The combination with a traveling carriage, of printing mechanism and a computing device both mounted thereon, and means mounted on the carriage for making and breaking an operative connection between the printing mechanism and the computing device.

62. The combination with a typewriting machine, including a traveling carriage and carriage propelling mechanism, of a computing device and printing mechanism, both mounted on the carriage, an actuator also mounted on the carriage and arranged to be advanced relative to the computing device by the carriage propelling mechanism, and means mounted on the carriage and controlling the connection between the actuator and the carriage propelling mechanism.

63. The combination with a typewriting machine, including a frame, a carriage movable on the frame, and a computing device, an actuator therefor, and printing mechanism, all mounted on the carriage, of a trip mounted on the frame and controlling the relative movement of the computing device and its actuator.

64. The combination with a movable carriage, of a computing device, an actuator therefor, and printing mechanism, all mounted on the carriage, a trip mounted on the frame, a trigger mounted on the carriage and presentable to the trip, and means controlled by the trigger for effecting the relative movement of the computing device and its actuator.

65. The combination with a movable carriage, of a computing device, an actuator therefor, and printing mechanism, all mounted on the carriage, a trip mounted independently of the carriage, and means mounted on the carriage and controlled by the trip for causing the advance of the actuator across the computing device.

66. The combination with a typewriting machine, including a platen, a frame, a carriage movable on the frame, and carriage propelling mechanism, of a computing device, an actuator therefor, and printing mechanism, all mounted on the carriage, means operated by the movement of the carriage for advancing the actuator across the computing device, said means being normally inactive, and means for automatically inaugurating the advance of the actuator at a predetermined point in the advance of the carriage.

67. The combination with a typewriter, including a frame, a traveling carriage, and carriage propelling mechanism, of a computing device, an actuator therefor, and printing mechanism, all mounted on the carriage, normally inactive means for advancing the actuator across

the computing device, a trip, and a co-operating trigger for bringing the actuator advancing means into action at the proper time.

68. The combination with a computing device and an actuator therefor, relatively movable to change their denominational relation, of means for effecting such relative movement, and a clutch controlling the operation of said means.

69. The combination with a computing device and an actuator therefor, relatively movable to change their denominational relation, of means for effecting such relative movement, a clutch controlling the operation of said means, and automatic clutch operating means.

70. The combination with a computing device and an actuator, relatively movable, of mechanism for effecting such relative movement, a clutch controlling the operation of said mechanism, a trigger controlling the operation of the clutch, and a trip co-operating with the trigger.

71. The combination with a computing device and an actuator therefor, of a movable carriage, normally inactive mechanism operated by the movement of the carriage to effect the relative movement of the computing device and its actuator, a clutch controlling the operation of said mechanism, and automatic clutch operating means including an adjustable trip.

72. The combination with a computing device and an actuator therefor, of a movable carriage, normally inactive mechanism operated by the movement of the carriage to effect the relative movement of the computing device and its actuator, a clutch controlling the operation of said mechanism, and a trigger operated by the movement of the carriage and controlling the operation of the clutch.

73. The combination with a computing device and an actuator therefor, of a movable carriage, normally inactive mechanism operated by the movement of the carriage for effecting the relative movement of the computing device and its actuator, a clutch controlling the operation of said mechanism, a trigger controlling the operation of the clutch, and an adjustable trip for operating the trigger through the movement of the carriage.

74. The combination with a traveling carriage, of a computing device and an actuator, both mounted on the carriage, mechanism for advancing the actuator across the computing device, a clutch controlling the operation of said mechanism, and automatic clutch operating mechanism.

75. The combination with a typewriting machine, including as primary elements thereof a frame and a traveling carriage, of a computing device and an actuator, both mounted on one of said primary elements of the typewriter, mechanism for advancing the actuator across the computing device, a clutch controlling the operation of said mechanism, and automatic clutch operating means.

76. The combination with a typewriting machine, including as primary elements thereof a frame and a traveling carriage, of a computing device and an actuator, both mounted on one of said primary elements of the typewriting machine, normally inactive mechanism for advancing the actuator across the computing device, a clutch controlling the operation of said mechanism, a trip mounted on one primary element of the typewriter, and a co-operating trigger mounted on the other primary element of the machine and controlling the operation of the clutch.

77. The combination with a typewriting machine, including a frame, a traveling carriage, and printing mechanism mounted on the carriage, of a computing device and an actuator, both mounted on the carriage, mechanism for advancing the actuator across the computing device, a clutch controlling the operation of said means, a trigger mounted on the carriage and controlling the operation of the clutch, and a trip mounted on the frame in the path of the trigger.

78. The combination with a typewriting machine, including a frame, a movable carriage, and a feed spindle for said carriage, of a computing device and an actuator, and mechanism operated by the feed spindle of the typewriter carriage for effecting relative movement of the computing device and its actuator.

79. The combination with a typewriter, including a frame, a movable carriage, and a feed spindle movable with the carriage, of a computing device, an actuator therefor, and means operated by the feed spindle for advancing the actuator across the computing device.

80. The combination with a movable carriage, and a feed spindle therefor, of a computing device, an actuator therefor, actuator advancing mechanism adapted to be intermittently connected with the feed spindle, and automatic means controlling such connection.

81. The combination with a movable carriage, and a carriage feed spindle, of a computing device, an actuator therefor, an actuator advancing rack, a loose gear on the spindle and engaging the rack, and a clutch for connecting said gear to the spindle.

82. The combination with a movable carriage, and a carriage feed spindle, of a computing device, an actuator therefor, an actuator advancing rack, a loose gear on the spindle and engaging the rack, a clutch for connecting said gear to the spindle, and means for automatically operating the clutch.

83. The combination with a typewriting machine, including a frame, a movable carriage, and a feed spindle, of a computing device and an actuator therefor, both mounted on the carriage, normally inactive mechanism adapted to be operated by the feed spindle to effect relative movement of the computing device and its actuator, and a clutch for intermittently connecting said mechanism with the feed spindle.

84. The combination with a typewriting machine, including a frame, a movable carriage, and a feed spindle, of a computing device and an actuator therefor, both mounted on the carriage, normally inactive mechanism adapted to be operated by the feed spindle to effect relative movement of the computing device and its actuator, a clutch for intermittently connecting said mechanism with the feed spindle, a trigger controlling the clutch, and a trip disposed to engage and operate the trigger.

85. The combination with a typewriter, including a frame, a traveling carriage, and a feed spindle, of a computing device and an actuator therefor, both mounted on the carriage, an actuator advancing rack, a gear wheel loose on the spindle and engaging the rack, a clutch for connecting the gear and spindle, a trigger mounted on the carriage and controlling the clutch, and a trip mounted on the frame in the path of the trigger.

86. The combination with a platen and printing mechanism movable over the platen to print several columns of numbers on a work sheet, of a computing device movable with the printing mechanism and including a series of denominational members, and means for imparting movement to the denominational member corresponding in order to the order of the numeral printed in any one of several columns, such movement corresponding in extent to the value of the numeral printed.

87. The combination with a platen and printing mechanism movable thereover to print several columns of numbers, of a grand totalizer movable with the printing mechanism and including a series of denominational members, and keys for operating the members of said grand totalizer to compute the grand total of several columns.

88. The combination with paper supporting means and movable printing mechanism designed to print several columns of numbers on a work sheet, of a computing device common to several columns and movable with the printing mechanism, and means whereby the computing device will be automatically connected with the printing mechanism whenever the printing mechanism is disposed to print in any one of the several columns to be included in the computation.

89. The combination with paper supporting means and printing mechanism movable opposite said means to print several columns of numbers on a work sheet, of a computing device common to several columns and movable with the printing mechanism, means whereby the computing device will be operatively connected with the printing mechanism whenever the printing mechanism is disposed to print in any one of several colums to be included in the computation, and keys constituting actuating means for the printing mechanism and computing device.

90. The combination with a platen and printing mechanism movable thereover to print several columns of numbers on a work sheet, of a computing device movable with the printing mechanism and adapted to effect a computation including the numbers in several columns, and operating connections for the computing device, said connections being adjustable by the movement of the printing mechanism and arranged to insure a co-operative relation between the computing device and the printing mechanism as the latter is disposed to print in different columns.

91. The combination with printing mechanism and means for effecting the relative step-by-step advance thereof to permit the printing of several columns on a work sheet, of a computing device movable with the printing mechanism, and means for operating said device to effect a computation including numbers in several columns.

92. The combination with printing mechanism movable to permit the printing of several columns on a work sheet, of a computing device movable with the printing mechanism as the latter advances from column to column, and means for operating said computing device when the printing mechanism is operated to print in either column, said means also serving to control the movement of the printing mechanism.

93. The combination with printing mechanism movable to permit several columns of numbers to be printed on a work sheet, of a computing device movable with the printing mechanism, and means for operating said computing device to compute a result with numbers in different columns included in the computation, said means also controlling the movement of the printing mechanism from column to column.

94. The combination with a movable carriage, of printing mechanism and a grand computing device, both mounted on the carriage and movable therewith, and means for operating said grand computing device to compute the result of the combined operations of the printing mechanism in connection with different columns, said means controlling the movement of the carriage.

95. The combination with a typewriter, including a platen, and printing mechanism movable thereover to permit the printing of columns at different points on a work sheet, of keys for operating said printing mechanism, a computing device movable with the printing mechanism as the latter advances from column to column, and means for operating the computing device to effect a computation embracing numbers in several columns.

96. The combination with a typewriter, including a stationary flat platen, printing mechanism mounted to travel thereover and adapted to print several columns of numbers on a work sheet supported by the platen, and operating keys for the printing mechanism, of a computing device movable with the printing mechanism, and means actuated by the keys for operating the computing device when a digit is printed in any one of several columns.

97. The combination with a typewriter, including a stationary flat platen, a machine frame mounted to travel thereover, a carriage movable on the frame, and printing mechanism mounted on the carriage and including letter and numeral keys, of a computing device movable with the carriage, and an actuator therefor disposed for operation by the numeral keys when the latter are moved to print a digit in any one of several parallel columns of numbers.

98. The combination with a typewriter including a stationary platen, a traveling machine frame, a carriage movable on the frame, and printing mechanism mounted on the carriage and including operating keys controlling the step-by-step advance of the carriage, of a computing device mounted on the carriage and including a series of denominational members, actuating means therefor, means for advancing the actuating means to successive members of the computing when the printing mechanism is advanced to successive orders of any one of several columns of numbers, and means operated by the keys to move the actuator to an extent corresponding to the value of the digit printed in any of said columns.

99. The combination with two primary elements, to-wit, paper supporting means and printing mechanism, one of said elements being relatively stationary and the other movable to permit several columns of numbers to be printed on a work sheet, of a computing device adapted to effect a computation including digits in several of the columns and movable with one of the primary elements, and means adjustable on the stationary element to determine the location of the columns to be included in the computation and to render the computing device operative at the proper time.

100. The combination with two primary elements, to-wit, paper supporting means and printing mechanism, one of said elements being movable and the other relatively stationary, whereby a plurality of columns may be printed on a work sheet, of a computing device having denominational members and adapted to effect a computation embracing digits in several columns, an actuator adapted for presentation to said members and a plurality of relatively variable devices carried by the stationary element to automatically cause an operative relation to be established between the actuator and the printing mechanism and to inaugurate relative movement of the computing device and actuator.

101. The combination with two primary elements, to-wit, a platen and printing mechanism including keys, one of said elements being movable and the other relatively stationary to permit several columns to be printed on a work sheet, of a computing device having denominational members adapted to effect a computation embracing numbers printed in several columns, trips mounted on the stationary element, an actuator for the computing device and means operated by the trips through the relative movement of the primary elements, to cause an operative connection to be established between the keys and the computing device whenever the printing mechanism is in position to print in any one of the columns to be embraced in the computation, and to cause relative movement of the computing device and its actuator for the purpose of presenting the actuator and various denominational members in coöperative relation.

102. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movable on the frame to permit several columns of numbers to be printed on a work sheet, of a computing device adapted to effect a computation embracing numbers in several columns, and means mounted on the frame and arranged to cause said computing device to be brought into action whenever the printing mechanism moves to a position opposite any denominational position of any one of the columns to be embraced in the computation.

103. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movable on the frame to permit several columns of numbers to be printed on a work sheet, of a computing device having denominational members and adapted to effect a computation embracing numbers printed in several columns, and means mounted on the machine frame for causing an operative relation to be established between the printing mechanism and any appropriate member of the computing device whenever the printing mechanism is disposed to print in any one of the several columns to be embraced in the computation.

104. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movable on the frame to permit several columns of numbers to be printed on a work sheet, of a computing device movable with the carriage and adapted to effect a computation embracing numbers in several columns, and means spaced at intervals on the frame for causing an operative relation to be established between the printing mechanism and the computing device whenever the printing mechanism is disposed to print in one of the columns to be included in the computation.

105. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movable on the frame to permit several columns of numbers to be printed on a work sheet, of a computing device having denominational members and adapted to effect a computation embracing numbers printed in several columns, a plurality of trips, and means controlled by said trips for establishing an operative relation between the printing

mechanism and the computing device whenever the printing mechanism is disposed to print in one of the columns to be included in the computation and for causing successive denominational members to be rendered operative.

106. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movable on the frame to permit several columns of numbers to be printed on a work sheet, of a computing device having denominational members and adapted to effect a computation including numbers printed in several columns, a plurality of trips mounted on the frame, and means operated by said trips for causing an operative relation to be established between the printing mechanism and the computing device whenever said printing mechanism is disposed to print in any of the columns to be included in the computation and for causing different denominational members to be rendered operative.

107. The combination with a typewriting machine, including printing mechanism, a frame, and a traveling carriage, of a computing device having denominational members, a plurality of trips mounted on the frame, a trigger mounted on the carriage and disposed to be operated by the trips, and means, controlled by said trigger, for establishing an operative relation between the computing device and the printing mechanism and for causing successive denominational members to be rendered operative by the advance of the carriage.

108. The combination with a typewriting machine, including a frame, printing mechanism, and a traveling carriage, of a computing device mounted on the carriage and adapted to effect a computation embracing numbers printed in several columns, and means for effecting an operative connection between the computing device and printing mechanism whenever the printing mechanism is disposed to print in one of the columns to be embraced in the computation, said means including a plurality of devices at least one of which is adjustable independently of the computing device to different column positions.

109. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movable on the frame to permit numbers to be printed in several columns, of a computing device mounted on the carriage and adapted to effect a computation embracing numbers printed in several columns, and automatic means for establishing an operative relation between the computing device and printing mechanism whenever said printing mechanism is disposed to print in one of the columns to be embraced in the computation, said means including a plurality of devices adjustable to different column positions.

110. The combination with a typewriting machine, including a frame, printing mechanism, and a carriage movable on the frame to permit several columns of numbers to be printed on a work sheet, of a computing device mounted on the carriage and adapted to effect a computation embracing numbers printed in several columns, whether said columns are closely or widely spaced apart and means including a plurality of relatively adjustable devices located at intervals and serving successively to cause an operative relation to be established between the computing device and the printing mechanism regardless of the relative locations of the columns.

111. The combination with a typewriting machine, including a frame, printing mechanism, and a carriage movabel on the frame, of a computing device mounted on the carriage, and relatively adjustable devices spaced at intervals on the frame to successively cause an operative relation to be established between the computing device and the printing mechanism.

112. The combination with a typewriting machine, including a frame, printing mechanism, and a traveling carriage, of a computing device mounted on the carriage, a plurality of trips spaced at intervals on the frame and relatively adjustable to different column positions, and trip controlled means for establishing an operative relation between the printing mechanism and the computing device.

113. The combination with a typewriting machine, including printing mechanism, a frame, and a carriage movabel on the frame, of a computing device mounted on the carriage, a plurality of trips mounted on the frame, a trigger mounted on the carriage and disposed for actuation by the trips, and means controlled by said trigger for establishing an operative relation between the printing mechanism and the computing device.

114. The combination with a typewriting machine, including a frame, printing mechanism, and a traveling carriage, of a computing device and an actuator therefor, both mounted on the carriage, normally inactive mechanism for effecting the relative movement of the computing device and its actuator to cause the presentation of the actuator to successive digit carriers, and automatic means for bringing said mechanism into action at a plurality of points in a single traverse of the frame by the carriage.

115. The combination with a typewriting machine, including a frame, printing mechanism, and a movable carriage, of a computing device mounted on the carriage, an actuator therefor, actuator advancing mechanism, and a plurality of spaced devices for causing successive operations of the actuator advancing mechanism.

116. The combination with a typewriting machine, including a frame, printing mechanism, and a carriage movable on the frame, of a computing device and an actuator therefor, both mounted on the carriage, normally inactive actuator advancing mechanism, a plurality of trips mounted on the frame, and means operated by said trips for causing the actuator advancing mechanism to be brought into action at a plurality of points in the traverse of the frame by the carriage.

117. The combination with a computing device and its actuator, relatively movable, of mechanism for effecting such relative movement, a clutch controlling said mechanism, a plurality of devices for successively causing the automatic actuation of the clutch, and means for operating the actuator.

118. The combination with a frame, a traveling carriage, and printing mechanism, of a computing device, a plurality of stops for arresting the carriage at different points, and means associated with said stops for successively causing an operative relation to be established between the computing device and the printing mechanism.

119. The combination with a typewriting machine, including a frame, printing mechanism, a movable carriage, and tabulating mechanism for arresting the carriage at a plurality of points in a single traverse of the frame by said carriage, of a computing device, and means associated with the tabulating mechanism for successively establishing an operative relation between the computing device and the printing mechanism.

120. The combination with a typewriting machine, including a frame, printing mechanism, and a traveling carriage, of tabulating mechanism including a plurality of column stops mounted on the frame, trips associated with said stops, and trip controlled means for establishing an operative relation between the printing mechanism and the computing device.

121. The combination with a typewriting machine, including a frame, printing mechanism, and a movable carriage, of a computing device, tabulating mechanism including a plurality of column stops, trips associated with said stops, a trigger operated by said trips, and trigger controlled means for operatively connecting the printing mechanism with the computing device.

122. In a typewriting machine, the combination with a frame, printing mechanism, and a movable carriage, of a computing device mounted on the carriage, tabulating mechanism including a plurality of column stops, and means associated with said stops and controlling the operative relation between the printing mechanism and the computing device.

123. The combination with a movable carriage, of a plurality of computing devices, and operating mechanism for the computing devices, said computing devices and their operating mechanism being movable with the carriage.

124. The combination with a movable carriage, of a plurality of computing devices and operating mechanism therefor, all movable with the carriage, said operating mechanism including keys.

125. The combination with a plurality of computing devices, of a traveling carriage supporting the same, and operating mechanism for said computing devices including numeral keys movable with and controlling the movement of the carriage.

126. The combination with a plurality of computing devices, each including a series of digit carriers, of a traveling carriage supporting the computing devices, operating mechanism for the computing devices, presentable through the movement of the carriage into operative relation with successive digit carriers, said operating mechanism including numeral keys movable with the carriage.

127. The combination with a movable carriage, of a plurality of computing devices movable with the carriage and each including a series of digit carriers, numeral keys movable with and controlling the movement of the carriage, and connections whereby said keys, when operated, effect the differential movement of the digit carriers.

128. The combination with a flat platen and printing mechanism movable thereover, of keys for operating the printing mechanism, a plurality of computing devices movable with the printing mechanism, and means for operating one of said computing devices upon the depression of a key of the printing mechanism.

129. The combination with a typewriting machine, comprising a machine frame having carriage guides and a carriage mounted to travel on said guides, and printing mechanism mounted on the carriage and including letter and numeral keys, of a plurality of computing devices, one of which is mounted on the carriage, and mechanism for operating the computing devices from the numeral keys.

130. The combination with a typewriting machine, comprising a machine frame, a carriage mounted to travel thereon, and printing mechanism mounted on the carriage, of a plurality of computing devices also mounted on the carriage, and mechanism for operating said computing devices from the numeral keys.

131. The combination with a stationary platen and printing mechanism movable to permit a plurality of columns to be printed on a work sheet, of a plurality of computing devices movable with the printing mechanism and designed for use with reference to different columns.

132. The combination with a platen and movable printing mechanism, and keys, of a plurality of computing devices, at least one of which is movable with the printing mechanism and independent mechanisms for operatively connecting the keys with the respective computing devices.

133. The combination with a typewriter, including a frame, printing mechanism, and a movable carriage, of a plurality of computing devices mounted on the carriage, a plurality of independently adjustable trips arranged on the frame, and trip controlled means for establishing a coöperative relation between the printing mechanism and either computing device.

134. The combination with a typewriter, including a frame, printing mechanism, and a movable carriage, of a plurality of computing devices, each including a series of denominational members and carrying means tabulating mechanism for arresting the carriage at different points, and means adjustable with an element of the tabulating mechanism to determine those points in the travel of the carriage at which the computing devices may be operated.

135. The combination with a typewriting machine, including a frame, printing mechanism, and a movable carriage, of a plurality of computing devices, a plurality of trips located in different planes and appropriate to the respective computing devices, triggers located in different planes to engage the trips, and trigger controlled means for connecting the computing devices with the printing mechanism.

136. The combination with a typewriting machine, including a frame, printing mechanism, and a traveling carriage, of a plurality of computing devices mounted on the carriage, a plurality of column stops mounted on the frame, means engaging the stops to arrest the carriage, trips associated with the stops, and trip controlled means for bringing the computing devices into operation.

137. The combination with a plurality of computing devices, of independent actuators therefor, operating means common to the actuators, trip mechanism and independent trip controlled actuator advancing mechanisms.

138. The combination with a platen and printing mechanism movable relative thereto, of two computing devices, one of which is adapted to effect a computation including the computation effected by the other, one of said computing devices being movable with the printing mechanism in the direction of letter spacing.

139. The combination with a platen and printing mechanism movable relative thereto, of two computing devices movable with the printing mechanism in the direction of letter spacing, one of said devices being adapted to effect a computation embracing the computation effected by the other.

140. The combination with a platen and printing mechanism movable relative thereto, of two computing devices movable with the printing mechanism in the direction of letter spacing, one of said computing devices being adapted to effect a computation embracing the computation effected by the other, and numeral keys constituting operating means common to both computing devices.

141. The combination with a typewriter, including a flat platen, printing mechanism movable thereover, and letter and numeral keys, of two computing devices movable with the printing mechanism, one of said devices being adapted to effect a computation embracing the computation effected by the other, and provision whereby corresponding digit carriers of the computing devices may be operatively connected to the numeral keys.

142. The combination with a typewriter, including a flat platen, a traveling machine frame, a carriage movable on said frame, and printing mechanism including letter and numeral keys movable with, and controlling the movement of the carriage, of two computing devices mounted on the carriage and each including a series of digit carriers, and provision whereby corresponding digit carriers of the computing devices may be operatively connected with a numeral key for simultaneous actuation thereby.

143. The combination with a frame, a movable carriage, and printing mechanism whereby a plurality of parallel columns of numbers may be printed on a work sheet, of a computing device movable with the carriage, and means for automatically establishing a coöperative relation between the printing mechanism and the computing device when said printing mechanism is disposed to print numbers in any one of several columns whereby the grand total of said columns will be computed and registered as said columns are printed.

144. The combination with a platen and printing mechanism movable thereover to permit the printing of several columns of numbers, of a column totalizer adapted to compute the total of the numbers printed in a column, and a grand totalizer movable with the printing mechanism and adapted to compute the grand total of several columns.

145. The combination with a platen and printing mechanism movable thereover to permit several columns of numbers to be printed on a work sheet, of a column totalizer movable with the printing mechanism and adapted to compute the total of a column, and a grand totalizer arranged to compute the grand total of several columns.

146. The combination with a frame, a movable carriage, and printing mechanism, whereby a plurality of columns may be printed on a work sheet, of a column totalizer arranged to compute the total of one of the columns, and a grand computing device arranged to compute the grand total of a plurality of columns, one of said computing devices being mounted on the carriage.

147. The combination with a frame, a movable carriage, and printing mechanism, whereby a plurality of columns may be printed on a work sheet, of a column totalizer arranged to compute the total of a column, a grand totalizer arranged to compute the grand total of several columns, keys operatively related to the printing mechanism and arranged to actuate the column totalizer, and means for actuating the grand totalizer whenever a digit is printed in any one of the several columns to be included in the grand total, at least one of said totalizers being movable with the carriage.

148. The combination with a typewriting mechanism movable to permit the printing of several columns of numbers, of a column computing device and a grand computing device, means for operating the typewriting mechanism, mechanism operated by said means for operating the column computing device and the grand computing device, and means adjustable independently of the computing devices to determine the location of the columns to be embraced in the computation to be effected by said devices.

140. The combination with a frame, a movable carriage, and printing mechanism whereby a plurality of columns may be printed on a work sheet, of a plurality of totalizers each adapted to effect a computation embracing digits printed on the sheet, and at least one of which is movable with the carriage and means spaced at intervals on the frame to cause an operative relation to be established between the printing mechanism and one of said computing devices whenever said printing mechanism is disposed to print in any one of several columns.

150. The combination with a frame, a movable carriage, and printing mechanism, of a plurality of computing devices, each including a plurality of denominational members and carrying means, a trip controlling the operation of the several denominational members of one computing device, and a plurality of trips controlling the operation of the other computing device.

151. The combination with a frame, a movable carriage, and printing mechanism, of a plurality of computing devices, each including a plurality of denominational members and carrying means, a trip mounted on the frame, means controlled by said trip for establishing a co-operative relation between the printing mechanism and the several denominational members of one of the computing devices at a predetermined point in the advance of the carriage, a plurality of additional trips, and means controlled thereby for establishing a co-operative relation between the printing mechanism and another computing device at a plurality of points in the advance of the carriage.

152. The combination with a frame, a movable carriage, and printing mechanism, of tabulating mechanism for arresting the carriage at predetermined points in its advance to facilitate the printing of several columns, a column computing device, a grand computing device, and means associated with the tabulating mechanism to cause a co-operative relation to be automatically established between the printing mechanism and the column computing device when said printing mechanism is disposed to print in one column, and to cause a co-operative relation to be automatically established between the printing mechanism and another computing device whenever said printing mechanism is disposed to print in any one of several columns.

153. The combination with a frame, a traveling carriage, and printing mechanism of tabulating mechanism for arresting the carriage at different points to facilitate the printing of several columns, a column computing device and a grand computing device, spaced trips associated with the tabulating mechanism, means controlled by one of said trips for operatively connecting the printing mechanism with the column computing device, and mechanism controlled by a plurality of said trips for successively establishing a co-operative relation between the printing mechanism and the grand computing device.

154. The combination with a frame, a traveling carriage, and printing mechanism, of tabulating mechanism including column stops arranged to arrest the carriage at different points, a column computing device, a grand computing device, a plurality of trips associated with the column stops, mechanism controlled by a single trip for connecting the column computing device with the printing mechanism, and mechanism controlled by a plurality of the trips for successively effecting the operative connection of the printing mechanism with the grand computing device.

155. The combination with a frame, a movable carriage, and printing mechanism, of a column computing device and a grand computing device, a trigger controlling the operation of each computing device, a trip located in the path of one trigger, and a plurality of trips located in the path of the other trigger.

156. The combination with a typewriting machine, including a flat platen, a carriage movable thereover, and printing mechanism movable with the carriage, of a column computing device and a grand computing device, both mounted on the carriage, a trip mounted on the frame and controlling the operation of the column computing device, and a plurality of trips mounted on the frame and controlling the operation of the grand computing device.

157. The combination with a typewriting machine, including a frame, a movable carriage, and printing mechanism, of a column stop bar, a combined column stop and trip arranged to be located at any desired point on the bar, a catch arranged to engage the column stop to arrest the carriage, and a computing device the operation of which is controlled by the trip.

158. The combination with a platen, and printing mechanism mounted to travel thereover, of a computing device, an actuator normally out of operative relation therewith, means for moving the actuator into operative relation with the computing device, and a trip for determining the point in the travel of the printing mechanism at which the computing device and its actuator will be disposed in co-operative relation.

159. The combination with a typewriting machine including a platen, a frame, a carriage movable on the frame, and tabulating mechanism including a column stop bar mounted on the frame, a catch mounted on the carriage and a column stop designed to be positioned at various points on the bar, of a computing device, and means adjustable along the column stop bar to determine that point in the travel of the carriage at which the computing device will be rendered operative.

160. The combination with a typewriting machine comprising a machine frame having carriage guides, a carriage mounted to travel on said guides, and printing mechanism mounted on the carriage and including numeral keys, of a plurality of computing devices one of which is mounted on the carriage, and mechanism for operating the computing devices.

161. The combination with a laterally movable carriage, of a plurality of computing devices, at least one of which is movable with the carriage, and computing device operating mechanism movable laterally with the carriage.

162. The combination with a frame and a series of depressible keys, mounted to travel relative to the frame, of two computing devices, one of which is adapted to effect a computation including the computation effected by the other, one of said computing devices being mounted to travel with the keys and operated upon the depression thereof.

163. The combination with a frame, a movable carriage, and printing mechanism, whereby a plurality of columns may be printed on a work sheet, of a column totalizer arranged to compute the total of one of the columns, and a grand computing device arranged to compute the grand total of a plurality of columns simultaneously with the printing of the digits in such columns, both the column totalizer and the grand computing device being movable with the carriage.

164. The combination with a traveling series of depressible keys, of a plurality of totalizers traveling with the keys and arranged to be operated upon the depression thereof.

165. The combination with a frame, and a traveling series of keys, of tabulating mechanism for arresting the keys at predetermined points in the advance thereof, a column computing device, a grand computing device, and means associated with the tabulating mechanism to cause a coöperative relation to be automatically established between the keys and both computing devices.

166. In combination, a computing device including denominational members, an actuator therefor, means for operating the actuator, and a carriage supporting the computing device and actuator and movable to cause an operative relation to be established between the actuator and successive denominational members of the computing device.

167. In combination, a computing device including a series of denominational members, an actuator therefor, a carriage supporting both the computing device and the actuator and movable to cause an operative relation to be established between the actuator and successive denominational members, and keys arranged to operate the actuator and to control the movement of the carriage.

168. In combination, a computing device including a series of denominational members, common operating keys therefor, and a carriage supporting the computing device and keys and movable to cause an operative rotation to be established between the keys and successive denominational members.

169. In combination, a computing device including a series of denominational members, operating keys common to said members, and a carriage supporting the computing device and the keys and movable to cause an operative relation to be established between the keys and successive denominational members, such movement of the carriage being controlled by the keys.

170. In combination, a movable carriage, printing mechanism and a computing device including a series of denominational members, both mounted on the carriage, and operating means for the computing device, the movement of the carriage serving to effect denominational spacing of the digits printed and to cause an operative relation to be established between the operating means and successive denominational members of the computing device.

171. In combination, a computing device including a series of denominational members and an actuator common to said members, both the computing device and its actuator being bodily movable and having relative movement to change their denominational relation.

172. In combination, printing mechanism movable to different denominational positions, a computing device movable with the printing mechanism, and an actuator for the computing device, the computing device and its actuator having relative movement to change their denominational relation as the denominational position of the printing mechanism is changed.

173. In combination, a computing device and an actuator, both movable in the same direction, but at different speeds to change their denominational relation.

174. In combination, a computing device, operating mechanism therefor, a movable carriage supporting both the computing device and its operating mechanism and having its movement controlled by the latter, and means whereby the movement of the carriage will change the denominational relation of the computing device and its operating mechanism.

175. In combination, a key controlled carriage, a computing device and printing mechanism mounted on the carriage, and an actuator for the computing device, the movement of the carriage serving to change the denominational position of the printing mechanism and to effect a corresponding change in the denominational relation of the computing device and its actuator.

176. The combination with a typewriting machine including a traveling carriage, of a computing device mounted on the carriage and having denominational members, adjustable means for rendering the computing device operative during a predetermined period within the limits of the carriage travel, and means for arresting the movement of the carriage to permit the printing of a digit in the desired denominational position and the actuation of the corresponding denominational member of the computing device.

177. In combination, printing mechanism movable to space the characters printed in a line, a computing device movable with the printing mechanism and having denominational members, adjustable column selective means for rendering the computing device operative during a given period within the limits of travel of the printing mechanism, and denominational selective means for arresting the printing mechanism opposite any desired denominational order and for simultaneously rendering operative the corresponding denominational member of the computing device.

178. In combination, traveling printing mechanism, propelling mechanism therefor, an escapement controlling the travel of the printing mechanism, a computing device mounted to travel with the printing mechanism and having denominational members, operating mechanism for the computing device, adjustable column selective means for determining the location of the column to be computed, and denominational selective means arranged to release the printing mechanism and to subsequently arrest the latter opposite the desired denominational order of the column and to cause the establishment of a co-operative relation between the operating mechanism and the corresponding denominational member of the computing device.

179. In combination, a platen a movable carriage and printing mechanism, of a computing device having a series of denominational members, a master actuator therefor movable with the carriage, a series of keys, means whereby the computing device may be rendered operative by the keys through the medium of the actuator at any desired point within the limits of the relative movement of the platen and printing mechanism, and tabulating mechanism for arresting the movement of the carriage at the proper point to permit the printing of a digit in any desired denominational position and the operation of the corresponding denominational member of the computing device upon the depression of a key.

180. In combination, a key controlled carriage, a computing device movable with the carriage and having a series of denominational members, and a master means also movable with the carriage and arranged to operate the denominational members in succession.

181. In combination, a power propelled and escapement controlled carriage, and a computing device and operating means therefor, both movable with the carriage.

182. In combination, a stationary platen, a carriage movable both longitudinally and laterally of the platen, keys controlling the movement of the carriage in one direction, printing mechanism mounted on the carriage, and a computing device movable with the carriage and arranged to be operated upon the movement of a key.

183. In combination, paper supporting means, printing mechanism movable opposite the paper supporting means to effect denominational spacing of the digits printed, and a counter operatively related to the printing mechanism and movable therewith.

184. In combination, paper supporting means, printing mechanism movable opposite said means to print a line, a computing device movable with the printing mechanism, but normally inoperative thereby, and means for automatically rendering the computing device operative by the printing mechanism at a given point in the travel of the latter.

185. In combination, paper supporting means, printing mechanism movable to print a line of characters, a computing device movable with the printing mechanism and including a series of denominational members, and means for establishing a coöperative relation between the printing mechanism and successive denominational members of the computing device.

186. In combination, a series of keys and a computing device mounted to travel together in one direction, and means operated during the travel of said parts to effect a coöperative relation between the keys and the computing device.

187. In combination, a computing device and a series of keys mounted to travel together, said computing device including a series of denominational members, and a key-operated master means presentable to the successive denominational members as the computing device and keys advance.

188. The combination with a platen and printing mechanism, relatively movable, of a plurality of computing devices each including a plurality of denominational members, a plurality of relatively variable trips, and a plurality of trip controlled mechanisms each arranged to cause an operative relation to be established between the printing mechanism and the several denominational members of a computing device.

189. The combination with a plurality of computing devices each including a series of denominational members, of operating keys common to said devices, and a plu-

rality of separate automatically operated mechanisms each including a trip adjustable to different column positions independently of the computing devices and each arranged to establish a coöperative relation between the keys and the several denominational members of a computing service.

190. The combination with two primary elements, to-wit, paper supporting means and printing mechanism, one of said elements being relatively stationary and the other movable to permit several columns of numbers to be printed on a work sheet, of a computing device movable with one of the primary elements in the direction of letter spacing and common to several columns, and means carried by one of the primary elements to cause the computing device to be rendered operative whenever the printing mechanism is disposed to print in any one of the several columns to which the computing device is common, said means being adjustable to different column positions independently of the computing device.

191. In combination, a computing device having denominational members, operating mechanism for the computing device, digit printing mechanism, and a traveling carriage supporting both the computing device and its operating mechanism and movable to change the denominational relation thereof and to effect denominational spacing of the printed digits.

192. In combination, a computing device having denominational members and carrying means, a master actuator for the denominational members, and a carriage supporting both the computing device and its master actuator and movable to cause any denominational member of the computing device to be rendered operative by the actuator.

193. In combination, a computing device having denominational members and carrying means, digit printing mechanism, operating keys common to the computing device and printing mechanism and all adapted to be operatively related to any given denominational member at the same time to enable said member to be operated by any one of said keys, and a carriage supporting the computing device, printing mechanism and keys, and movable under the control of said keys to effect denominational spacing of the digits printed and to render the proper denominational members operative upon the depression of the keys.

194. The combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally wholly disconnected from the keys, and mechanism arranged to automatically connect and disconnect the keys and adding mechanism during the advance movement of the carriage and also during the retractile movement thereof, said mechanism including two members brought into engagement by the movement of the carriage, one of said members being displaced from its normal plane by the other and held back thereby as one member moves past the other, and means for returning the displaced member to its normal plane immediately upon the disengagement of the members.

195. The combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally wholly disconnected from the keys, and mechanism arranged to automatically connect the keys and adding mechanism when the carriage moves into the adding field from either side thereof and to automatically disconnect the keys and adding mechanism when the carriage moves out of the adding field in either direction, said mechanism including members brought into engagement by the carriage at a given point in its travel to cause the displacement of one member from its normal plane and the consequent connection of the keys and adding mechanism as the carriage reaches the adding field, and means for returning the displaced member to its normal plane to disconnect the keys and adding mechanism when the carriage moves beyond the adding field.

196. The combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism including an actuator normally disconnected from the keys, and means for automatically connecting the actuator and keys when the carriage moves into the adding field from either side thereof, said means including two members brought into engagement by the movement of the carriage in either direction to cause one of said members to be displaced from its normal plane by the other, one of said members being substantially coincident with the width of the adding field, means operated by the displaceable member to cause automatic connection of the keys and adding mechanism whenever said member is displaced, and means for moving the displaced member in the reverse direction to restore the same to its normal plane and thus effect the disconnection of the keys and adding mechanism when the carriage moves out of the adding field in either direction.

197. The combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally wholly disconnected from the keys, two members arranged to be brought into engagement by the movement of the carriage in either direction and to travel one past the other, one of said members being approximately coincident in length with the width of the adding field and one of said members being displaceable from its normal plane by movement in the same direction when engaged by either end of the other member during the movement of the carriage in either direction, and means operated by the displaceable member to connect the keys and adding mechanism whenever said member is displaced.

198. The combination with a typewriter including a carriage, keys, and printing mechanism, of adding mechanism normally wholly disconnected from the keys, two members arranged to be brought into engagement by the movement of the carriage in either direction and to travel one past the other, one of said members being approximately coincident in length with the width of the adding field and one of said members being displaceable from its normal plane by movement in the same direction when engaged by either end of the other member during the movement of the carriage in either direction, means operated by the displaceable member to connect the keys and adding mechanism whenever said member is displaced, and means for moving the displaceable member back to its normal plane when said members are moved out of engagement by the carriage.

199. The combination with a typewriter including a reciprocatory carriage, keys, and printing mechanism, of adding mechanism including an actuator and operating connections therefor normally disconnected from the keys, means including a member movable in one direction only from its normal plane to connect the keys and the actuator operating connections, and means whereby the movement of the carriage in either direction will operate said member to effect such connection as the carriage moves into the adding field from either side thereof.

200. The combination with a typewriter including a reciprocatory carriage, keys, and printing mechanism, of adding mechanism including an actuator and actuator operating connections normally disconnected from the keys, means including a member movable in one direction only from its normal plane to connect the keys and the actuator operating connections, means whereby the movement of the carriage in either direction will operate said member to effect such connection as the carriage moves into the adding field from either side thereof, and means brought into action by the movement of the carriage in either direction to restore said member to its normal position and thus cause the disconnection of the keys and actuator when the carriage moves out of the adding field.

201. The combination with a typewriter including a frame, a carriage, keys, and printing mechanism, of means for causing the establishment of a coöperative relation between the keys and adding mechanism when the carriage moves into the adding field from either side thereof and for destroying such coöperative relation between the keys and adding mechanism when the carriage moves out of the adding field in either direction, said means including a member movable with the carriage and also movable relative to the carriage to control the coöperative relation between the keys and adding mechanism, and a second member mounted on the frame of the typewriter, the movement of the carriage serving to move said members into and out of coöperative relation.

202. In combination, a carriage, a series of denominational members and operating means, both the members and their operating means being movable with the carriage, and means whereby the movement of the carriage will cause a coöperative relation to be established between the operating means and a denominational member.

203. In combination, a carriage, a series of denominational members and operating means therefor, both movable with the carriage, and means whereby the movement of the carriage will cause a coöperative relation to be established between the operating mechanism and successive denominational members.

204. In combination, a carriage, a series of denominational members, and a master actuator therefor, both the denominational members and actuator being movable with the carriage, and means whereby the movement of the carriage will cause a coöperative relation to be established between the keys and the master means during a portion only of the carriage travel.

205. The combination with a typewriter including keys, printing mechanism and a movable carriage, of a register mounted on the carriage, register operating mechanism normally wholly disconnected from the keys, and means for automatically effecting an operative relation between the keys and the register operating mechanism at a given point in the travel of the typewriter carriage.

206. The combination with a typewriter including keys, printing mechanism and a movable carriage, of a register mounted on the carriage, register operating means normally disconnected from the keys, and means for effecting an operative relation between the register operating means and the keys at a given point in the forward movement of the carriage and also at a given point in the backward or retractile movement of said carriage.

207. The combination with a typewriter including keys, printing mechanism, and a carriage movable to permit printing within the limits of a column or adding field and also at opposite sides of said field, of a register movable with the carriage, register operating mechanism normally disconnected from the keys to avoid burdening of the latter when printing outside of the adding field or column, and mechanism brought into action by the movement of the typewriter carriage in either direction to effect a coöperative relation between the register operating mechanism and the keys when the printing mechanism and the adding field are brought opposite one another by the movement of the carriage.

856,350. CHAIN. JAMES KINGSTON, Columbus, Ohio, assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed May 24, 1904. Serial No. 209,517.



Claim.—1. A chain comprising a series of loop-shaped links, the adjacent ends of adjoining links being looped through each other, detachable wearing pieces arranged to be freely interposed between and freely removable from the looped ends of the links, and means for preventing the said wearing pieces from displacement longitudinally relative to the links when the latter are in working positions.

2. A chain comprising alternate links of flat metal loop-shaped in form connected together by loop-shaped links, wearing blocks interposed between the adjacent ends of adjoining links there being inward projections carried by each flat link adapted to prevent the longitudinal movement of its wearing blocks relative thereto.

3. A chain comprising alternate loop-shaped links of flat metal connected together by loop-shaped links and wearing blocks interposed between the adjacent ends of adjoining links, the side bars of said flat links having tongues 4 which serve to prevent the longitudinal movement of said wearing blocks relative to said links.

4. A chain comprising alternate loop-shaped links of flat bar metal connected together by loop-shaped links rectangular in cross section and wearing blocks interposed between the ends of adjoining links with recesses therein rectangular in cross section and adapted to receive the looped ends of said last described links.

5. A chain comprising a series of loop-shaped links, the adjacent ends of adjoining links being looped through each other, and detachable wearing pieces, 3, each interposed between and directly engaged by the looped ends of two links, the wearing pieces being cylindrical in shape and of a length to be situated entirely between the planes that include the opposite edges of one of the links with which it engages, and being longitudinally grooved to receive and fit the end of the other link with which it engages.

6. A chain comprising alternate loop-shaped links of flat bar metal connected together by other loop-shaped links and wearing blocks interposed between the ends of adjoining links, the said wearing blocks being of such length as to be situated entirely between the planes that include the opposite edges of the said flat links and being provided with recesses shaped to receive the links that are united with the said flat links, substantially as set forth.

856,351. PROCESS OF REDUCING IRON OXIDS. HORACE W. LASH, Cleveland, Ohio. Filed Oct. 13, 1905. Renewed Apr. 8, 1907. Serial No. 367,072.

Claim.—1. The method of reducing iron oxids comprising intimately mixing finely divided oxid of iron with finely divided cast iron and carbonaceous material, charging the same into an electric furnace and subjecting the mixture to a smelting heat.

2. The method of reducing iron oxids consisting in forming a charge of intimately mixed, finely divided cast iron and oxid of iron with additional carbonaceous material and fluxes, charging the same into an electric furnace, and subjecting the charge to a smelting heat in a non-oxidizing atmosphere.

3. The method of reducing iron oxids comprising subjecting a mixture of finely divided oxid of iron and finely divided cast iron and carbonaceous material to a smelting heat in a non-oxidizing atmosphere.

4. The method of reducing iron oxids consisting in forming a charge comprising a mixture of finely divided oxid, finely divided cast iron, carbon, and finely ground, readily combustible material, charging the same into an electric furnace, and subjecting the same to a smelting temperature.

856,352. MOUTH-PROP. ROY L. MAGOON, Graceville, Minn. Filed Oct. 11, 1906. Serial No. 338,520.

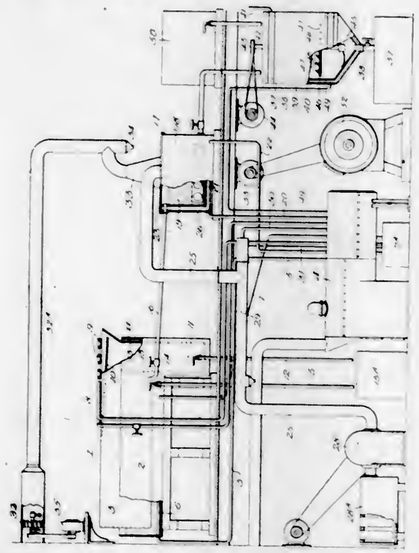
Claim.—A mouth prop comprising two arms, one of which is provided with a shank portion having ratchet teeth upon the edge thereof and provided with a longitudinal groove, the other provided with a hollow shank in which the shank with teeth thereon is adapted to telescope, the edge of the hollow shank designed to engage said teeth whereby the arms may be held from moving toward the other, a spring bearing yieldingly between said

arms, designed to normally hold the latter at their farthest limit from each other, a pin upon said hollow shank



adapted to engage a longitudinal groove in the shank having teeth thereon, as set forth.

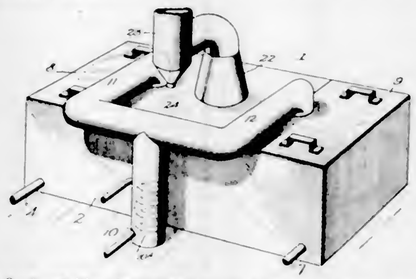
856,353. PROCESS FOR RENOVATING AND REFINING BUTTER. CHARLES C. MARTIN and WILLIAM D. JONES, Denver, Colo.; said Jones assignor to said Martin. Filed Aug. 27, 1906. Serial No. 332,263.



Claim.—A process for renovating butter, which consists of first melting and separating the curds from the butter and of keeping said butter oil in a melted condition, then confining a shallow quantity of said melted butter oil in a shallow mass in a melted state, and free from contact with milk or any other emulsifying fluid, and from water, and treating said melted butter oil to innumerable jets of hot air under pressure enough to keep said quantity of melted butter oil in an agitated condition, and until the impurities have been driven out of it, then removing said impurities by air suction, then keeping said butter oil in a heated condition but free from the presence of air under pressure, and mixing it with properly prepared milk or cream or butter-milk or sour milk until it has become an emulsified butter oil, then cooling and congealing said emulsified butter oil, and then reworking said congealed, emulsified, and purified butter oil to a perfected commercial and consumable state.

856,354. PNEUMATIC AGITATING-TANK FOR BUTTER-OILS. CHARLES C. MARTIN and WILLIAM D. JONES, Denver, Colo.; said Jones assignor to said Martin. Filed Sept. 4, 1906. Serial No. 333,171.

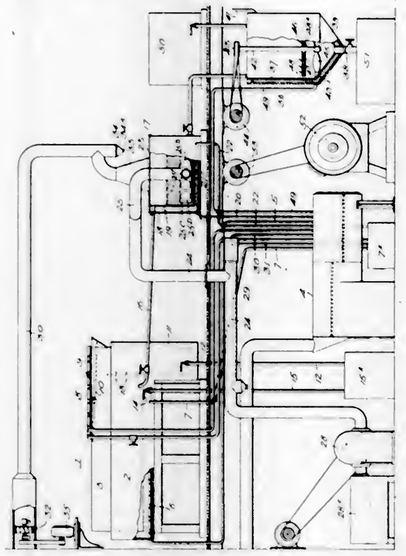
Claim.—1. A machine for treating melted butter oil with hot air, comprising a double receptacle, vessel, or tank one within the other, the outer tank being provided with a supply of water, a steam coil operatively connected to a supply of steam within said outer tank and arranged to heat said water, an inner closed tank adapted to contain a shallow supply of melted butter oil, and arranged to set within said outer hot water tank, an inlet cover at each end of said tank, a main air supply pipe connected to a supply of hot air under pressure, branch air supply pipes leading from said main air supply pipe, extending into said tank, groups of pipes connected to said air supply pipes and extending along the bottom of said inner closed tank and provided at their outer ends with removable caps and provided throughout their lengths with innumerable air jet discharging apertures arranged to discharge said hot oxygen in any predetermined direction, and arranged and adapted to discharge an innumerable number of needle-like jets of hot air into and through the entire mass of melted butter oil, an exhaust pipe connected at one end between said branch air inlet pipes to said closed tank above the butter oil and extending to the atmosphere, a drip trap in said exhaust pipe provided with a discharge aperture, a removable plug in said aperture, and a suction fan or blower operatively connected to said exhaust pipe and to a source of power, and arranged to draw by air suction superinduced by the force of the pressure of the hot air flowing into said tank, the impurities liberated, separated, and removed from said butter oil by said hot air jets.



2. A machine for treating melted butter oil with percolating needle-like jets of hot air for removing its impurities, which consists of a tank adapted to confine a body of melted butter at a shallow depth, a hot water holding jacket connected to said tank, a steam coil within said jacket, an air supply pipe connected to a supply of hot air under pressure and leading into said tank, air discharging pipes connecting with said hot air supply pipe, said supply pipes being provided with several thousand small perforations arranged and adapted to discharge needle-like hot-air jets into said supply of said melted butter oil downwardly against the bottom of said tank, and lying in said tank below said pipes on the bottom of said tank, thereby forcing the settlings of deleterious matter that may settle out of and accumulate on the bottom of said tank up through and out of the body of butter oil in said tank, an air suction pipe connected to the top of said tank, having capacity enough to receive the volume of air flowing into said pipe, a depending drip pipe in said suction pipe provided with a discharge aperture, a removable plug in said drip pipe, and a suction fan or blower in said suction pipe of capacity and suction power enough to lift and draw from the top surface of said body of butter oil such deleterious material as is forced up through the body of butter oil by said hot air jets, as specified.

3. A machine for treating butter oil with hot oxygen to remove its impurities and refine it, which consists of a tank, having a central integral top portion and cover at each end of said tank, and adapted to hold a shallow supply of melted butter oil, a pipe connected at one end to a supply of hot air under pressure, and extending at its opposite end to said tank, branch pipes leading into the opposite ends of said tank, a cross pipe in said tank at the ends of said branch pipes, a plurality of independent pipes connected at one end to said branch pipes and extending in parallel rows across said tank at a short distance above its floor, and provided throughout their surfaces with small perforations arranged to discharge downwardly, removable caps on the outer ends of said pipes, a suction pipe connected centrally to the integral top portion of said tank, a suction fan within said pipe, a depending butter oil catching drip trap in said suction pipe, provided with a discharge aperture and a removable plug in said aperture, substantially as described.

856,355. APPARATUS FOR RENOVATING AND REFINING BUTTER, OILS, LARD, AND FATS. CHARLES C. MARTIN and WILLIAM D. JONES, Denver, Colo.; said Jones assignor to said Martin. Filed Sept. 4, 1906. Serial No. 333,172.



Claim.—1. An apparatus for renovating and refining butter, which consists of a double tank, one part being provided with means for keeping the other part hot, the other part being provided with a heated platform arranged to receive and melt butter, and with a partitioned compartment arranged to separate the curds from the melted butter oil, and provided with a conveyer, a machine at the end of said conveyer arranged to receive and confine said resulting butter oil in charges of a predetermined amount, and in an area of surface of shallow depth, and provided with pipe provided with innumerable needle-like apertures connected to a supply of hot air under sufficient pressure to keep the whole area of the charge of butter oil in boiling agitated condition until the impurities and deleterious and mucilaginous substances have been dissolved, separated, and driven up through said butter oil by the force of said air jets to the surface of said butter oil, and above the surface of said butter oil, and a pipe operatively connected to a power operating motor arranged on said machine and adapted to remove said impurities from the surface of and from above said butter oil by air suction.

2. An apparatus for renovating and refining butter, which consists of a double tank, one part being provided with means for keeping the other part hot, the other part being provided with a heated platform arranged to receive and melt butter and with a partitioned compartment arranged to separate the curds from the melted butter oil and provided with a conveyer, a machine at the end of said conveyer arranged to receive and confine said resulting butter oil in charges of a predetermined amount, and in an area of surface of shallow depth, and provided with pipe provided with innumerable needle-like apertures connected to a supply of hot air under sufficient pressure to keep the whole area of the charge of butter oil in boiling agitated condition until the impurities and deleterious and mucilaginous substances have been dissolved, separated, and driven up through said butter oil by the force of said air jets to the surface of said butter oil, and above the surface of said butter oil, and a pipe operatively connected to a power operating motor arranged on said machine and adapted to remove said impurities by air suction, a conveyer arranged to convey said refined oil from said oil percolating machine, an emulsifying machine connected to said conveyer, adapted to receive said refined butter oil from said pneumatic percolator and to receive a suitable emulsifying fluid, a rotary stirring device in said emulsifying machine operatively connected to a motor and arranged and adapted to mix said refined butter oil and emulsifying fluid by mechanical means, and without the use of or in the presence of air in any form, means connected with said emulsifying machine for keeping said butter oil in a liquid condition, and a valve controlled means for discharging said emulsified butter oil from said emulsifying machine.

3. An apparatus for renovating butter, which comprises the following instrumentalities, a butter melting and curd separating machine, comprising a tank arranged to melt and separate the curds from the butter, and to keep said butter oil in a melted condition, a conveyer arranged to convey the melted butter oil from the melter and separator to a pneumatic percolating and refining machine arranged to receive said butter oil from said conveyer, and comprising a tank arranged and adapted to hold and confine a shallow quantity of said melted butter oil in a shallow mass in a melted state, and free from contact with milk or any other emulsifying fluid, and from water, and that is provided with thousands of air discharging apertures connected to a supply of hot air under pressure enough to keep said quantity of melted butter oil in a violently agitated condition until the impurities have been carried to the surface of or above said butter oil, and that is arranged and provided with a pipe operatively connected to a suction adapted to remove said impurities by air suction, a conveyer connected to said pneumatic percolating and refining machine, an emulsifying machine connected to said pneumatic percolator and refiner, consisting of a tank provided with means for keeping the butter oil in a melted condition, and having a butter oil stirring device rotatably mounted therein, adapted to mechanically stir said refined butter oil and a suitable emulsifying fluid together, a conveyer connected to said emulsifying tank, a cooling and congealing tank connected to said conveyer adapted to congeal said emulsified butter oil, and an operative emulsified butter oil reworking tank in operative relation to said cooling and congealing tank.

4. An apparatus for renovating and refining butter, which consists of the following instrumentalities, a butter melting and curd separating machine, having a heated platform, on which the butter is melted, partitioned compartments in which the butter curds are separated from said melted butter oil, means including heat for keeping the melted butter oil in a fluid state in said machine, a pneumatic percolating refining machine connected to said butter melting and curd separating machine, and adapted to receive predetermined charges of melted butter oil therefrom, and means including innumerable small air jet apertures in said pneumatic percolating refining machine, operatively connected to a supply of hot oxygen under pressure for subjecting said melted butter oil to innumerable jets of hot oxygen until its impurities and moisture are removed, and it has been renovated to a perfectly pure and refined butter oil.

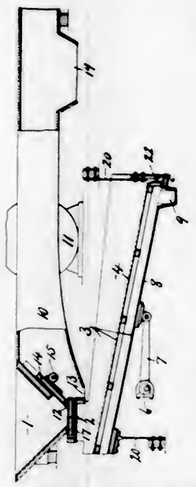
5. An apparatus for renovating and refining butter, which consists of the following instrumentalities, a butter melting and curd separating machine, having a heated platform, on which the butter is melted, partitioned compartments in which the butter curds are separated from said melted butter oil, means including heat for keeping the melted butter oil in a fluid state in said machine, a pneumatic percolating refining machine connected to said

butter melting and curd separating machine and adapted to receive predetermined charges of melted butter oil therefrom, an air supply pipe leading into said pneumatic percolating machine operatively connected to a supply of hot oxygen under pressure, a group of pipes extending from said air supply pipe over the bottom of said percolating machine, thousands of small perforations in said group of pipes arranged close together, and in any predetermined order, and arranged to discharge needle-like jets of hot oxygen into and through said melted butter oil until its impurities are removed, and means including heat for holding said melted butter oil in a suitable melted fluid condition.

6. An apparatus for renovating and refining butter, which consists of the following instrumentalities, a butter melting and curd separating machine, having a heated platform, on which the butter is melted, partitioned compartments in which the butter curds are separated from said melted butter oil, means including heat for keeping the melted butter oil in a fluid state in said machine, a pneumatic percolating refining machine connected to said butter melting and curd separating machine, and adapted to receive predetermined charges of melted butter oil therefrom, an air supply pipe leading into said pneumatic percolating machine operatively connected to a supply of hot oxygen under pressure, a group of pipes extending from said air supply pipe over the bottom of said percolating machine, thousands of small perforations in said group of pipes arranged close together and in any predetermined order and arranged to discharge needle-like jets of hot oxygen into and through said melted butter oil until its impurities are removed, means including heat for holding said melted butter oil in a suitable melted fluid condition, and means including an air suction apparatus operatively connected to said percolating machine for removing the impurities that are separated from said butter oil by said hot oxygen from said pneumatic percolating and refining machine.

7. An apparatus for renovating and refining butter, which consists of the following instrumentalities, a butter melting and curd separating machine, having a heated platform on which the butter is melted, partitioned compartments in which the butter curds are separated from said melted butter oil, means including heat for keeping the melted butter oil in a fluid state in said machine, a pneumatic percolating refining machine connected to said butter melting and curd separating machine and adapted to receive predetermined charges of melted butter oil therefrom, an air supply pipe leading into said pneumatic percolating machine operatively connected to a supply of hot oxygen under pressure, a group of pipes extending from said air supply pipe over the bottom of said percolating machine, thousands of small perforations in said group of pipes arranged close together and in any predetermined order and arranged to discharge needle-like jets of hot oxygen into and through said melted butter oil until its impurities are removed, means including heat for holding said melted butter oil in a suitable melted fluid condition, means including an air suction apparatus operatively connected to said percolating machine for removing the impurities that are separated from said butter oil by said hot oxygen from said pneumatic percolating and refining machine, an emulsifying machine connected to said pneumatic percolating and refining machine, adapted to hold said refined butter oil and a suitable charge of a suitable emulsifying fluid, as milk or cream, said emulsifying machine being arranged and adapted to prevent its charges of refined butter oil and milk from contacting with air under pressure, a rotatable stirring device in said emulsifying machine, a perforated diaphragm in said emulsifying machine, arranged and adapted to break the swirling actions of said stirring device, an emulsified butter oil cooling and congealing machine operatively connected to said emulsifying machine to receive the emulsified butter oil therefrom, and a congealed emulsified butter oil reworking machine arranged in operative relation to said cooling and congealing machine, and adapted to rework said refined emulsified and congealed butter into a commercially salable and consumable commodity.

856,356. PEA-SEPARATING MACHINE. IRVING S. MERRELL, Syracuse, N. Y., assignor to Merrell-Soule Company, Syracuse, N. Y., a Corporation of New York. Filed Aug. 10, 1905. Serial No. 273,650.



Claim.—1. In a machine of the class described, a screen supporting frame and screen thereon, means to reciprocate the frame, a hopper above one end of the screen and having a movable bottom mounted upon one end of the frame and moving therewith across the open lower side of the hopper, a series of inclined plates arranged one above the other below the opposite end of the hopper and having their lower edges disposed in different vertical planes one in advance of the other from the top down, and a series of partitions one in front of the lower edge of each plate and spaced apart therefrom, each partition projecting above the horizontal plane of the low edge of its plate.

2. In a machine of the class described, a series of inclined plates having their low edges disposed in different vertical planes one in advance of the other from the top down, a bar flexibly connected to the higher ends of the plates and adjustable vertically to vary the inclination of said plates, each connection having a vertical adjustment along the bar whereby each plate may be separately adjusted.

3. In a machine of the class described, a series of inclined plates arranged one above the other with their low edges in different vertical planes one in advance of the other from the top downward, a vertically adjustable bar, connections between said bar and plates, a toothed rack on the bar and a pinion meshing with the toothed rack whereby the bar may be adjusted vertically.

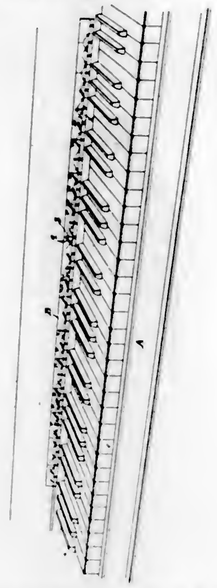
856,357. PROCESS OF BLEACHING OILS AND FATS. HERMAN A. METZ, Brooklyn, N. Y., and PHILIP S. CLARKSON, Beverly, N. J. Filed Sept. 27, 1905. Serial No. 280,365.

Claim.—1. The method of bleaching oils and fats which consists in subjecting them to the action of a formaldehyde hydrosulfite, substantially as described.

2. The method of bleaching oils and fats which consists in subjecting them to the action of sodium formaldehyde hydrosulfite, substantially as described.

856,358. MUSIC-CHART. WILLIAM J. MORRIS, Waurika, Okla. Filed June 8, 1906. Serial No. 320,816.

Claim.—1. A chart comprising a strip having a column of spaces along one edge adapted to register with the spaces between the black keys of a keyboard, said spaces containing note indicating letters, and a pointer pivotally mounted adjacent each letter, any one of said pointers adapted to be adjusted to either side of its letter to indicate the sharp or flat of said letter.



2. A chart comprising a strip having a column of spaces thereon adapted to register with the spaces between the black keys of a keyboard, each space containing a letter or letters indicating notes of the scale, the division lines between the spaces being disposed above the black keys when the strip is in position and designating the sharps or flats of the letters, certain of said letters having arranged adjacent thereto the signatures of the keys in which said letters designate the key notes, and pointers movably mounted adjacent, and normally indicating the letters, said pointers adapted to be adjusted in the direction of the adjoining division lines.

3. A chart comprising a strip having a column of spaces thereon adapted to register with the spaces between the black keys of a keyboard, each space containing a letter or letters indicating notes of the scale, the division lines between the spaces being disposed above the black keys when the strip is in position and designating the sharps or flats of the letters, certain of said letters having arranged adjacent thereto the signatures of the keys in which said letters designate the key notes, pointers movably mounted adjacent, and normally indicating the letters, said pointers adapted to be adjusted in the direction of the adjoining division lines, and a proof chart comprising a strip having a column of spaces thereon corresponding with the spaces in the first mentioned chart, said spaces being indicated by the syllables of the diatonic scale.

4. A chart comprising a strip having a column of spaces thereon adapted to register with the spaces between the black keys of a keyboard; each space containing a letter or letters indicating notes of the scale, the division lines between the spaces being disposed above the black keys when the strip is in position and designating the sharps or flats of the letters, certain of said letters having arranged adjacent thereto the signatures of the keys in which said letters designate the key notes, pointers movably mounted adjacent, and normally indicating the letters, said pointers adapted to be adjusted in the direction of the adjoining division lines, and a proof chart adjustably mounted upon the first mentioned chart and having a column of spaces corresponding with the spaces of the first mentioned chart, said spaces being designated by the syllables of the diatonic scale, said proof chart having openings adapted to register with the signature, on the first mentioned chart, of the key to which the chart is adjusted.

5. A chart comprising a strip having a column of spaces thereon adapted to register with the spaces between the black keys of a keyboard, each space containing a letter or letters indicating notes of the scale, the division lines between the spaces being disposed above the black keys when the strip is in position and designating the sharps or flats of the letters, certain of said letters having arranged adjacent thereto the signatures of the keys in which said letters designate the key notes, pointers movably mounted adjacent, and normally indicating the letters, said pointers adapted to be adjusted in the direction of the adjoining division lines, a proof strip having a column of spaces indicated thereon and similar to the spaces on the first mentioned chart, said spaces being designated by the syllables of the diatonic scale, and certain of said spaces being designated by characters for indicating the notes to be played when the dominant, subdominant or tonic harmony predominates, and means upon the proof strip for slidably engaging the chart.

6. A chart comprising a strip having a column of spaces thereon adapted to register with the spaces between the black keys of a keyboard, each space containing a letter or letters indicating notes of the scale, the division lines between the spaces being disposed above the black keys when the strip is in position and designating the sharps or flats of the letters, certain of said letters having arranged adjacent thereto the signatures of the keys in which said letters designate the key notes, pointers movably mounted adjacent, and normally indicating the letters, said pointers adapted to be adjusted in the direction of the adjoining division lines, a proof strip having a column of spaces indicated thereon and similar to the spaces on the first mentioned chart, said spaces being designated by the syllables of the diatonic scale, and certain of said spaces being designated by characters for indicating the notes to be played when the dominant, subdominant or tonic harmony predominates, means upon the proof strip for slidably engaging the chart, said proof strip having openings adapted to register with the signatures of the key designated by the chart.

7. A music chart comprising a strip having a column of spaces along one edge adapted to register with the spaces between the black keys of a keyboard, said spaces containing note indicating characters, said strip being also provided with a plurality of lines and spaces for indicating the relative positions of the notes upon the staff, and pointers movably mounted adjacent the letters and adapted to be swung to either side thereof to indicate the sharps and flats.

8. The combination with a strip having a plurality of key indicating spaces thereon and key designating letters within the spaces; the division lines between said spaces indicating the sharps or flats of the designated keys, and pointers movably mounted adjacent the letters for designating said letters or the adjoining division lines; of a proof strip having a series of spaces thereon corresponding with the spaces on the first mentioned strip, said spaces being designated by the syllables of the diatonic scale, and means upon the proof strip for slidably engaging the first mentioned strip.

9. The combination with a strip having a plurality of key indicating spaces thereon and key designating letters within the spaces, the division lines between said spaces indicating the sharps or flats of the designated keys, and pointers movably mounted adjacent the letters for designating said letters or the adjoining division lines, said strip having indicated thereon adjacent some of the letters the signatures of the keys in which said letters indicate the key notes; of a proof strip having a series of spaces thereon corresponding with the spaces on the first mentioned strip, said spaces being designated by the syllables of the diatonic scale, and means upon the proof strip for slidably engaging the first mentioned strip.

10. The combination with a strip having a plurality of

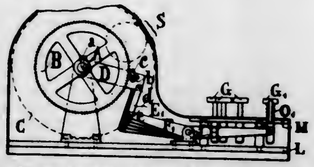
key indicating spaces thereon and key designating letters within the spaces, the division lines between said spaces indicating the sharps or flats of the designated keys, and pointers movably mounted adjacent the letters for designating said letters or the adjoining division lines, said strip having indicated thereon adjacent some of the letters the signatures of the keys in which said letters indicate the key notes; of a proof strip having spaces thereon corresponding with the spaces on the first mentioned strip, said spaces being designated by the syllables of the diatonic scale, and means upon the proof strip for slidably engaging the first mentioned strip, said strip having openings therein adapted to register with the signatue of the key indicated by the proof strip.

856,359. LAMP-BURNER. EDMUND S. MCLEAN, Tower Hill, Ill. Filed Oct. 25, 1906. Serial No. 340,590.



Claim.—A lamp burner comprising a section having a central opening in its base and a wick tube carried thereby and registering with said central opening, a second section superimposed upon said first named section and being formed with a plurality of inclined perforated walls inclosing said wick tube, the walls of said second section being bent at their upper ends to form a closure slightly above the upper edge of said wick tube and provided with a central wick opening.

856,360. APPARATUS FOR ADDITION. GEORG NAHLIK, Budapest, Austria-Hungary. Filed Dec. 24, 1906. Serial No. 349,339.



Claim.—In an apparatus for making addition, the combination of an axle A turnably mounted on brackets K, K¹; the five toothed wheels B and a cipher wheel C all rigidly mounted on the axle A and attached by screws *a*; levers D turnably arranged on said axle, and ratchets *b* on said levers controlled by springs *c*; an axle *j* rigidly mounted on brackets H; levers F on the said axle connected with the levers D by members E; keys G, having the respective order of numerals, attached to the ends of the levers F; two plates M and L for limiting the strokes of the keys; springs o^1 between the keys and the plate M; plates O and P rigidly attached on the frame K¹; axles *k* and *n* turnably mounted on the said plates; a ten toothed wheel R and a cipher wheel Q with ciphers 0—9 fixed on the axle *n*; the lever U having a tooth V fixed to the said axle; the arm W joined to the said lever, and the arm *t* having a ratchet wheel R fixed on the axle *k* joined to the arm W; the pawl *f* and spring *g* for engaging with the ratchet wheel R; the pawl I and the spring *h* for detaining the wheel R; disk Z having a tooth *x* rigidly attached on the axle A; knobs I and II fixed to the ends of the axles A and *k* respectively, and the spring Y for guiding the lever U into position, substantially as shown, and for the purpose described.

856,361. APPARATUS FOR ELECTROCHEMICALLY AND MECHANICALLY PURIFYING LIQUIDS. GUSTAVE L. NEIBURG, Westpoint, Nebr. Filed May 25, 1906. Serial No. 318,685.



Claim.—1. A liquid purifying means comprising an electrolytic device and strainer composed of two tubular members located one within the other and one of which is formed of zinc, each of said members having perforations leading to the interior of the electrolytic device to thereby adapt said device to break the liquid up into a series of small subdivisions.

2. In a device of the character described, the combination with a receptacle provided with an outlet aperture, of an electrolyte purifying device arranged in the path of the liquid flowing to said aperture, said purifying device comprising an outer, perforated, zinc element, a copper wire-mesh element positioned within said outer element, insulating means between said outer and inner elements, and means positioned outside of said receptacle and electrically connecting said elements.

3. In a device of the character described, the combination with a receptacle provided with an outlet aperture, of an electrolyte purifying device arranged in the path of the liquid flowing to said aperture, said purifying device comprising a tubular, apertured zinc element, a tubular copper element formed of wire-mesh and positioned within said zinc element, a wire positioned outside of said receptacle and connected near its ends to said elements, and means insulating said elements from each other.

4. In a device of the character described, the combination with a receptacle provided with an outlet aperture, of an electrolyte purifying device positioned within said receptacle and arranged in the path of the liquid flowing to said aperture, said purifying device comprising a hollow, tubular zinc element, a copper wire-mesh, tubular element positioned within said zinc element and arranged across the apertures thereof.

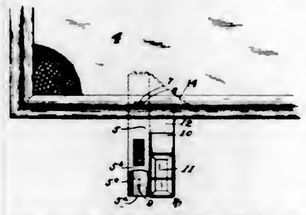
5. An electrolyte purifying device, comprising an outer zinc tubular element, an inner copper element, each element provided with apertures, the apertures of the copper element smaller than the apertures of the zinc element, and said purifying device adapted to break the liquid up into a series of small sub-divisions.

856,362. CIGAR-HOLDING ATTACHMENT. WILBUR C. OLIVER, Bath, Me. Filed Feb. 26, 1907. Serial No. 359,455.

Claim.—1. An attachment for tables, counters and the like, comprising a cigar receiving trough having a flat protecting plate or cover, and means for movably connecting the said plate or cover to the underside of the top of a table or counter, substantially as described.

2. An attachment of the class described, comprising an elongated cigar receiving trough open at one end, a covering plate therefor extending part way to said open end, and means for removably connecting said plate or cover

to the underside of a table or counter top, substantially as described.



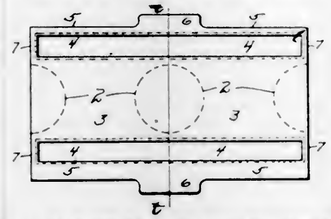
3. An attachment of the class described, comprising an elongated cigar receiving trough having an integral cover, and open at one end, said cover having an opening near the rear end for the reception of an attaching screw and the trough having an opening in line with the opening of the cover, substantially as described.

4. An attachment of the class described, comprising a sheet metal trough open at one end, a match receptacle at one side integral therewith, and a cover plate integral with the trough and extending in part over both the trough and match box, substantially as described.

5. An attachment of the class described, comprising a trough open at one end, a match receptacle at the side of the trough, a bar or strip extending from the side of the match box to the front end of the trough forming with the corresponding sides of the trough and match box an open frame, and an ash receptacle removably supported by said frame, substantially as described.

6. In combination with a table top or the like, an elongated trough open at the end for the insertion of a lighted cigar, said trough having a cover designed for protecting the wood from the heat of the cigar, and being pivotally connected to the table, and a spring interposed between the table and trough for automatically swinging the trough under the table top after the cigar has been placed therein, substantially as described.

856,363. MORTAR-GAGE. GEORGE S. ORMSBY, Xenia, Ohio. Filed Apr. 4, 1907. Serial No. 366,376.



Claim.—1. As a new article of manufacture, a gage for spreading mortar on building blocks in the construction of walls, the same consisting of a plate having a longitudinal mortar opening therethrough to admit mortar to the block at desirable points, the boundary of said mortar opening being beveled downwardly and outwardly, a marginal flange extending downwardly from the under side of the gage and adapted to engage a vertical side of the block, the said gage having its upper side in a uniform plane throughout.

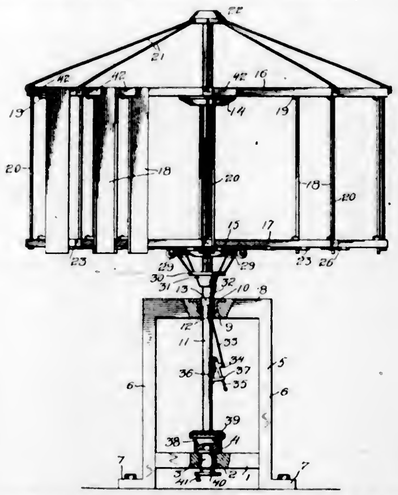
2. A mortar gage for spreading mortar upon building blocks in the construction of walls, the same consisting of a plate having suitable longitudinal openings therethrough to admit mortar to the block, the boundaries of said openings being beveled downwardly and outwardly, a marginal flange extending downwardly from the outer margin of one of said openings, and handles projecting from opposite sides of the gage.

3. A mortar gage for spreading mortar on building blocks in the construction of a wall, the same having its upper surface in a uniform plane throughout and consisting of a central longitudinal plate having a longitudinal mortar opening on one side, the boundaries of which are beveled downwardly and outwardly from the upper surface of the gage, and a downwardly extending flange adapted to embrace the upper vertical side of a block when the gage is placed in position thereon, and handle portions extending from said gage by means of which it is manipulated.

4. In a gage for spreading mortar on building blocks in the construction of a wall, the same consisting of plate having a longitudinal mortar opening on one side and extending approximately the length of the plate, the boundaries of said opening being beveled downwardly and outwardly and extending in the form of ribs to obtain the desired thickness of the mortar joint, a flange extending downwardly from the underside of the gage, and handles projecting from the gage.

5. A gage for spreading mortar on building blocks, the same comprising a plate having longitudinal mortar openings on its sides, and the upper surface of which is of a uniform plane throughout, the boundaries of said mortar openings being beveled downwardly and outwardly and forming underlying ribs which rest upon the surface of the block and by which the desired thickness of mortar joint is obtained, a flange extending downwardly from the under side of the gage, and handles extending from opposite sides of the gage.

856,364. WINDMILL. CHARLES D. PLYMPTON, Needles, Cal. Filed Nov. 28, 1905. Serial No. 289,397.

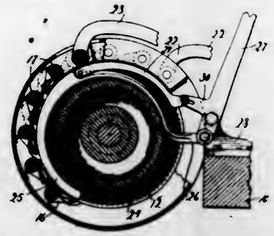


Claim.—1. A windmill comprising a frame and a base block, a vertical shaft journaled in the frame and base block, upper and lower collars arranged in spaced relation upon the shaft above the frame, radiating arms secured to each of the collars, a pair of wings hingedly connected to the outer ends of said arms, a pair of spring-actuated catches pivotally mounted upon each of the lower radiating arms for engagement with the corresponding wings of the latter to hold the same against swinging movement, a sheave secured to each of said lower arms, a collar slidably mounted upon said shaft below said lower arms, a flexible connection between each of said catches and said last mentioned collar, said connections each passing over the corresponding sheave, and means for moving said sleeve to simultaneously release all of said catches from engagement with said wings.

2. A wind mill comprising a base block and a frame, a vertical shaft journaled in the base block and frame, upper

and lower radiating arms secured to the shaft above the frame, a pair of wings hingedly connected to the outer end of the respective upper and lower arms, bolts between the corresponding upper and lower arms for bracing them, a plate secured to the upper end of the vertical shaft, tie rods connecting the said plate to the upper radiating arms, the aforesaid shaft having a groove in one of its sides, a sleeve embracing the shaft adjacent said groove, a second sleeve mounted for sliding movement above the first named sleeve, a pair of spring actuated catches pivotally secured upon each of the lower radiating arms for engagement with the corresponding wings of the latter to lock the wings against swinging movement, a sheave mounted upon each of the lower arms, a connection between the respective pairs of catches and the said slidable sleeve, the corresponding connections passing over the corresponding sheaves, a lever pivotally mounted upon the vertical shaft, and a connection between the lever and the slidable sleeve for moving the latter, the last named connection passing inwardly of the first named sleeve and lying in the groove of the shaft, and means secured upon the shaft for transmitting power to distant points.

856,365. PAWL-AND-RATCHET MECHANISM. DE WITT C. PRESCOTT, Chicago, Ill. Filed Aug. 27, 1906. Serial No. 332,198.



Claim.—1. In combination, a ratchet-wheel, a pawl carrier, a rigid segmental pawl lifter movable in a path substantially parallel with a diameter of the ratchet wheel and across the circumferential line thereof, and a pawl mounted on the carrier and crossing the path of the lifter.

2. In combination, a ratchet-wheel, a pawl carrier, a rigid segmental pawl lifter movable across the circumferential line of the ratchet teeth, there being a shank projecting radially from the lifter diametrically opposite its effective portion, and a pawl mounted on the carrier and crossing the path of the lifter.

3. In combination, a ratchet-wheel, a pawl carrier, a rigid segmental pawl lifter movable across the circumferential line of the ratchet teeth, there being a shank projecting radially from the lifter diametrically opposite its effective portion, a lever attached to the shank, and a pawl mounted on the carrier and crossing the path of the lifter.

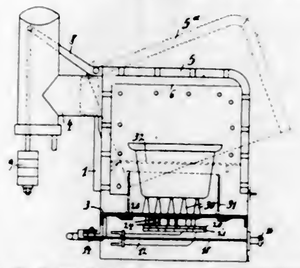
4. In combination, a ratchet wheel, a pawl carrier, a rigid segmental pawl lifter movable across the circumferential line of the ratchet teeth, a segmental arm pivotally attached to the first-named segment, there being a shank projecting radially from the lifter diametrically opposite its effective portion, a lever attached to the shank and segmental arm, and a pawl mounted on the carrier and crossing the path of the lifter.

5. In combination, a ratchet wheel, a pawl carrier, a rigid segmental pawl lifter movable across the circumferential line of the ratchet teeth, a segmental arm pivotally attached to the first-named segment, there being a shank projecting radially from the lifter diametrically opposite its effective portion, a lever attached to the shank, a link connecting the segmental arm with the lever above its fulcrum, and a pawl mounted on the carrier and crossing the path of the lifter.

6. In combination, a ratchet wheel, a pawl carrier, pawls mounted on the carrier and coacting with the wheel, a jointed pawl lifter housed within the circumferential line of the ratchet teeth, means for moving the lifter outward and flexing it to approximately the curvature of the line of the apexes of the teeth.

7. In combination, a ratchet wheel, a pawl carrier, pawls mounted on the carrier and coacting with the wheel, a jointed pawl lifter housed within the circumferential line of the ratchet teeth, and means for moving the lifter outward.

856,366. GAS-STOVE. EDUARD QUACK, Elberfeld, Germany. Filed Dec. 29, 1906. Serial No. 350,050.



Claim.—1. A gas stove comprising in combination with a cooking vessel or the like, a double-wall casing (1) with conical holes in its base plate, a cover hinged to said casing and integral with the front wall of the latter, a flue-pipe attached to the rear wall of said casing, a burner arrangement placed below the base plate of said casing so as to project with its burner tubes into the conical holes of said base plate and adapted to be regulated to any desired degree, small pillars (30) provided on the base plate of said casing and adapted to support said cooking vessel, and an envelop (31) placed around the lower part of said cooking vessel and adapted to be adjusted so as to suit any width of cooking vessel, substantially as described and shown.

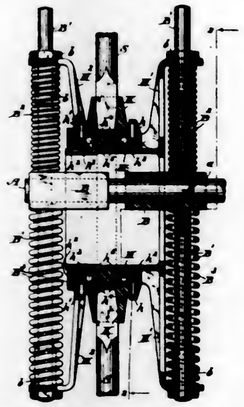
2. A gas stove comprising in combination a double-wall casing (1) with conical holes in its base plate, a cover hinged to said casing and integral with the front wall of the latter, a flue-pipe attached to the rear wall of said casing, a burner arrangement placed below the base plate of said casing so as to project with its burner tubes into the conical holes of said base plate and adapted to be regulated to any desired degree, and a detachable partition (32) placed in said casing and adapted to close the whole upper part of said casing toward the burner compartment, so as to use the stove as baking oven, substantially as described and shown.

856,367. VEHICLE-WHEEL. CHRISTIAN A. RITTMAN, Sandusky, Ohio, assignor of one-fourth to Leverett L. Curtis and one-fourth to John Whitworth, Sandusky, Ohio. Filed Sept. 1, 1905. Serial No. 276,696.

Claim.—1. In a vehicle wheel, the combination of a vehicle spindle provided with two guide-members, an inner hub located between said guide-members, means exterior to said hub resiliently connecting the same with said spindle, and an outer hub revolubly mounted upon said inner hub.

2. In a vehicle wheel, the combination of a vehicle spindle provided with two spaced vertically disposed guide-members, an inner hub located between said guide-members and slidably mounted thereon, resilient means interposed between said spindle and the portions of said inner hub mounted on said guide-members, and an outer hub revolubly mounted upon said inner hub.

3. In a vehicle wheel, the combination of a vehicle spindle provided with vertically disposed guide-members, an inner hub surrounding said spindle and provided with radially extending arms bearing lateral projections at their ends, respectively, such projections being slidably mounted upon said guide-members, resilient means interposed between said spindle and said inner hub, and an outer hub revolubly mounted upon said inner hub.



1. In a vehicle wheel, the combination of a vehicle spindle, an inner hub surrounding the same and provided with projecting brackets, resilient means interposed between said spindle and said brackets and an outer hub revolubly mounted upon said inner hub.

5. In a vehicle wheel, the combination of a vehicle spindle, an inner hub surrounding said spindle and vertically movable with reference thereto, said inner hub being provided with projecting brackets, resilient means interposed between said spindle and said brackets and an outer hub revolubly mounted upon said inner hub.

6. In a vehicle wheel, the combination of a vehicle spindle provided with two spaced vertically disposed guide-members, an inner hub surrounding said spindle between said guide-members and provided with brackets slidably mounted thereon, resilient means interposed between said spindle and said brackets, and an outer hub revolubly mounted upon said inner hub.

7. In a vehicle wheel, the combination of a member provided with guides and adapted to receive a vehicle spindle, an inner hub slidably mounted on said guides, resilient means interposed between said member and said inner hub and an outer hub revolubly mounted upon said inner hub.

8. In a vehicle wheel, the combination of an axle-box provided with guide-members and adapted to be secured on a vehicle spindle, an inner hub slidably mounted on said guide members, resilient means interposed between said axle-box and said inner hub, and an outer hub revolubly mounted upon said inner hub.

9. In a vehicle wheel, the combination of an axle-box provided with oppositely disposed guide-members and adapted to be secured on a vehicle spindle so as to maintain said guide-members vertical, an inner hub slidably mounted on said guide members, resilient means interposed between said axle-box and said inner hub, and an outer hub revolubly mounted upon said inner hub.

10. In a vehicle wheel, the combination of an axle-box comprising two parts each provided with oppositely disposed guide-members and adapted to be secured on a vehicle spindle so as to maintain said guide-members vertical, an inner hub slidably mounted on said guide members, resilient means interposed between said axle-box and said inner hub, and an outer hub revolubly mounted upon said inner hub.

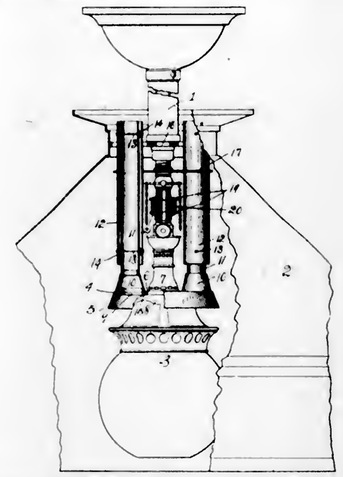
11. In a vehicle wheel, the combination with a vehicle spindle, of an inner hub having projecting brackets, an axle-box adapted to receive and be keyed to said vehicle spindle and provided with oppositely disposed rods slidably mounted in said brackets, resilient members interposed between said axle-box and said brackets, and an outer hub revolubly mounted on said inner hub.

12. In a vehicle wheel, the combination with a vehicle spindle, of an inner hub having projecting brackets, an axle-box adapted to receive and be keyed to said vehicle spindle and provided with oppositely disposed rods slidably mounted in said brackets, springs interposed between said axle-box and said brackets, and an outer hub revolubly mounted on said inner hub.

13. In a vehicle wheel, the combination with a vehicle spindle, of an inner hub having a pair of oppositely disposed brackets on each side, two separate axle-boxes keyed to said vehicle spindle and respectively provided with vertically disposed rods slidably mounted in said brackets, resilient members interposed between said axle-boxes and said brackets, and an outer hub revolubly mounted on said inner hub.

14. In a vehicle wheel, the combination with a vehicle spindle, of an inner hub composed of two separable members each provided with a pair of oppositely disposed brackets, two axle-boxes keyed to said vehicle spindle and respectively provided with a pair of vertically disposed rods adapted to be slidably mounted in the corresponding pair of brackets, helical springs mounted on said rods between said axle-boxes and said brackets, and an outer hub revolubly mounted upon said inner hub.

856,368. HEAT-CONDUCTOR FOR DROP-LIGHT FIXTURES. ALFRED W. REISER, Toledo, Ohio. Filed Nov. 28, 1906. Serial No. 345,444.



Claim.—1. The combination with a dining-room drop-light fixture, and the burner having a contracted neck, of a hood provided with a central opening which closely embraces the contracted neck of the burner, and with oblong openings at the sides of said central opening, and having its periphery formed with a depending flange, a conductor pipe disposed above each oblong opening and provided with a flared mouth-piece which conforms at its inlet end to the shape of the opening and communicates therewith, and means carried by the fixture for bracing the conductor-pipes.

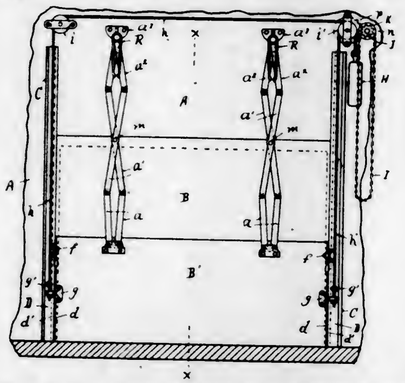
2. The combination with a drop-light fixture, and the burner, of a hood surmounting the burner and having openings therein, heat conductor tubes leading upwardly from the openings, and means adjustable relative to the fixture for bracing the tubes.

3. The combination with a drop-light fixture, and the burner, of a hood surmounting the burner and having a central opening embracing the fixture, whereby it is supported, and openings in its top, flared mouth-pieces communicating with said latter openings and terminating in

upwardly extending tubes, and means adjustable relative to the fixture for bracing the tubes.

4. The combination with a drop light fixture, of a hood surmounting the burner and having openings therein, heat conductor tubes leading upwardly from the openings, and means for bracing the tubes relative to the fixture, said means being adapted to permit a lateral adjustment of the tubes.

856,369. DOOR. ADAM RITTER, Cincinnati, Ohio. Filed Sept. 11, 1905. Serial No. 277,825.



Claim.—1. In a door, a series of door sections, links pivoted at one end to the door frame, links similarly pivoted to the end door section, crossed links pivoted near their centers to the intermediate door section with their ends pivoted to the projecting ends of said links attached to the door frame and end door section, so that the door sections move in unison but at varying speeds, guides directing the door sections into one plane when closed and into parallel planes overlapping each other at one side of the opening when opened.

2. In a door, a series of door sections, a series of links pivoted to one face of said door sections and comprising links centrally pivoted to the intermediate door section and pivoted at their ends to links pivoted respectively to the door frame and to the end door section.

3. In a door, a series of door sections, link mechanism attached to one face of said door sections securing said doors together and to the frame, guides to direct the sections into one vertical plane when closed and into parallel vertical planes when opened, a counter-balance, flexible connections between the counter-balance and one of the door sections and movable supports for said flexible connections.

4. In a door, a series of door sections secured together and to the frame by links, guides to direct the sections into one vertical plane to close the opening, and into parallel vertical planes side by side when the door is open, a counter-balance, flexible connections leading from one door section to the counter-balance, wheels supporting said flexible connections, and means for moving said flexible connections over the wheels to shift the door sections.

5. In a door, a series of door sections secured together and to the frame by crossed links pivotally attached to one face of the door sections so that the several sections move in unison but at varying rates of travel, guides directing the sections into position to close the door, and into parallel planes when the door is opened, and means for shifting the sections from one position to the other.

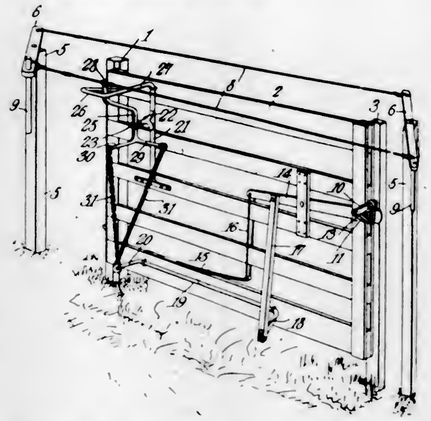
6. In a door, a series of door sections, a series of links pivoted to one face of said door sections and comprising links centrally pivoted to the intermediate door section and pivoted at their ends to links pivoted respectively to the door frame and to the end door section, and pivot studs for said centrally pivoted links projecting from the intermediate or overlapped door section.

7. In a door, a series of door sections, a series of links pivoted to one face of said door sections and comprising links centrally pivoted to the intermediate door section and pivoted at their ends to links pivoted respectively to the door frame and to the end door section, and springs engaging the links attached to the door frame to counterbalance the weight of the door sections.

8. In a door, a series of door sections, a series of links occupying a plane parallel with the door sections and pivotally connected to one face of said door sections, connecting said door sections together and to the door frame, guides at the edges of said door sections directing the door sections into one vertical plane when closed and into parallel vertical planes at one side of the opening when opened.

9. In a door, a series of door sections, a series of links occupying a plane parallel with said door sections and pivotally connected to one face of said door sections, connecting said door sections together and to the door frame above the opening, so that the movements of one door section necessitates the movement of the other door sections, guides at the edges of said door sections directing the door sections into one vertical plane when closed and into parallel vertical planes at the side of the opening when opened.

856,370. GATE. FREDERICK S. ROGERS, Kyle, Tex. Filed Feb. 23, 1907. Serial No. 358,883.



Claim.—1. The combination with a hinged gate; of a lever fulcrumed upon the gate and movable at right angles thereto or parallel therewith, a latch upon the gate, means operated by either movement of the gate lever for actuating the latch, and means for actuating said lever in either direction to successively actuate the latch and gate.

2. The combination with a hinged gate; of an element upon the gate and movable at right angles thereto or in a plane parallel therewith, means for limiting the movement of said element, a latch, means operated by either movement of the element for actuating the latch, and means for moving the element in either direction in relation to the gate for successively actuating the latch and gate.

3. The combination with a hinged gate; of a bracket thereon, a stop loop integral with the bracket, a lever fulcrumed upon the bracket and projecting into the loop, said lever being movable at right angles to or in a plane parallel with the gate, a latch, means operated by either movement of the lever for actuating the latch, and means for moving the lever in either direction to successively actuate the latch and gate.

4. The combination with a hinged gate; of a bracket upon the gate, a lever fulcrumed on the bracket and movable at right angles thereto or in a plane parallel therewith, a latch, yielding means for holding said latch normally in a predetermined position, means operated by either movement of the lever for actuating the latch, and means for moving the lever in either direction to successively actuate the latch and gate.

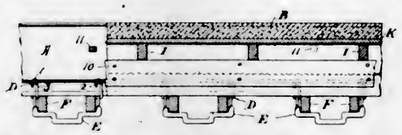
5. The combination with a hinged gate; of a lever fulcrumed thereon and disposed to swing at right angles to or in a plane parallel with the gate, means for limiting either movement of the lever, a spring pressed latch upon the gate, connected rocker arms upon the gate, a connection between one of said arms and the latch, flexible connections between the other arm and the lever, and means for moving the lever in either direction to successively actuate the latch and gate.

6. As an article of manufacture a gate and latch actuating device comprising a bracket, a stop loop extending therefrom, a lever fulcrumed upon the bracket and extending into the loop, said lever being disposed to swing at right angles to or in a plane parallel with a gate to which the bracket may be connected, a latch adapted to be fulcrumed upon the gate, connected rocker arms adapted to be connected to the gate, angularly disposed arms upon the lever, flexible connections between said arms and the rocker arms, and means for actuating the lever.

7. The combination with a hinged gate; of a lever fulcrumed upon the gate and disposed to move at right angles to or in a plane parallel with the gate, angularly disposed arms extending from the lever in the directions of its movements, a latch, rocker arms upon the gate, a connection between one of said arms and the latch, flexible connections between the other rocker arm and the arms on the lever, and means for moving the lever in either direction to successively actuate the latch and gate.

8. The combination with a hinged gate; of a latch upon the gate, a lever fulcrumed upon the gate and disposed to move at right angles thereto or in a plane parallel therewith, arms extending from the lever in the directions of its movements, means connected to said arms for transmitting motion from either of said arms to the latch, and means at opposite sides of the gate for moving the lever in either direction to successively actuate the latch and gate.

856,371. CENTERING CONSTRUCTION. CHARLES H. SCAMMELL, New York, N. Y., assignor to The New Jersey Wire Cloth Company, Trenton, N. J., a Corporation of New Jersey. Filed July 7, 1906. Serial No. 325,073.



Claim.—1. The combination with flanged beams, of clips engaging the bottom flanges of the beams and having depending arms, metal hangers extending between and supported by the depending arms of adjacent clips, and centering supported by said hangers.

2. The combination with flanged beams, of clips engaging the bottom flanges on both sides of the beams and having depending hooked arms, metal hangers extending between and supported by the depending arms of adjacent clips, and centering supported by said hangers.

3. The combination with flanged beams, of clips engaging the bottom flanges of the beams and having depending hooked arms, soffit boards through which the arms extend, metal hangers extending between and supported by the depending arms of adjacent clips, centering joists extending transversely of the beams and supported by said hangers, haunch boards on said joists, and centering supported by said haunch boards.

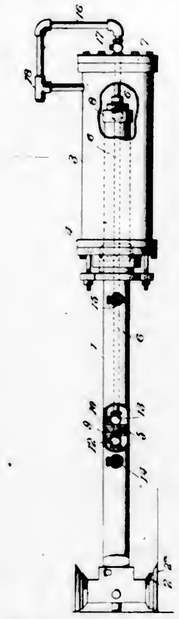
4. The combination with flanged beams, of clips engaging the bottom flanges on both sides of the beams and having arms extending below the beams for supporting the concrete beam protection, depending hooked arms on the clips extending below the line of beam protection, metal hangers extending between and supported by the depending arms of adjacent clips, and centering supported by said hangers.

5. The combination with beams A, of clips D on the bottom flanges having the depending hooked arms 3, and metal centering hangers E extending between and supported by the arms 3 of adjacent clips.

6. The combination with beams A, of clips D on the bottom flanges having the depending hooked arms 3, and metal centering hangers E, said hangers E having the suspending arms 5, an upper surface or surfaces 8 for support of the centering when in use, and a lower surface 7 for lowering the centering.

7. The combination with beam A, of clips D on the bottom flanges having the depending hooked arms 3, centering hanger E having the suspending arms 5, and supporting surfaces 7, 8, at different elevations, substantially as and for the purposes described.

856,372. AIR-PUMP. GEORGE H. SCHUH and THOMAS W. HINTON, Earl Park, Ind. Filed Aug. 10, 1905. Serial No. 273,665.



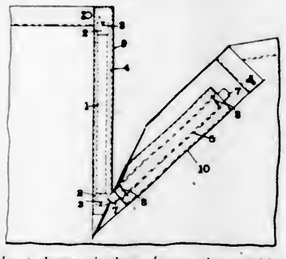
Claim.—1. In an air pump, the combination with the reciprocating cylinder and the stationary piston therein, said cylinder having inlet valves, and a tubular piston rod having inlet valves on both sides of said piston, of a relatively stationary compartment having a bearing in which said cylinder is designed to reciprocate, means for rigidly mounting said piston rod in said stationary compartment, and means for reciprocating said cylinder.

2. In an air pump, the combination with the reciprocating cylinder and the stationary piston therein, said cylinder having inlet valves, and a tubular piston rod having inlet valves on both sides of said piston, of a relatively stationary storage tank having a bearing in which said cylinder is designed to reciprocate, means for rigidly mounting said piston rod in said storage tank, a pipe leading from the outlet end of said piston rod to said storage tank, and means for reciprocating said cylinder.

3. In an air pump, the combination with the reciprocating cylinder and the stationary piston therein, said cyl-

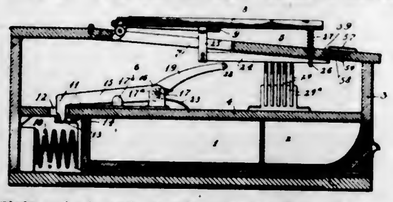
inder having inlet valves, and a tubular piston rod having inlet valves on both sides of said piston, of a relatively stationary storage tank having a bearing in its inner head in which said cylinder is designed to reciprocate, said tubular piston rod being mounted in the outer head of said storage tank, a bearing on the end of said cylinder within said storage tank, a pipe establishing communication between said piston rod and said storage tank, a valve controlling the passage through said pipe, and means for reciprocating said cylinder.

856,373. DRESS-PLACKET CLOSER. AUGUSTUS W. SHANK, Detroit, Mich., assignor to Clarence E. Walker, Windsor, Ontario, Canada. Filed June 5, 1905. Serial No. 263,702.



Claim.—In a dress placket closer, the combination of a straight, thin blade, keepers embracing the ends of said blade and having terminal portions pressed into contact therewith to close the ends of the keepers, there being an aperture through each end of the blade and the terminal portion of the keeper lying contiguous thereto, a casing embracing the keepers and blade having a projecting margin for stitching to a garment, a second blade, a casing embracing said second blade also having a projecting margin for stitching to a garment, the ends of the last mentioned blade projecting beyond the ends of its casing, means for securing said last mentioned blade against longitudinal movement in its casing, the projecting ends of the last mentioned blade being adapted to enter the keepers of the first mentioned blade, the closed ends of which hold the last mentioned blade against longitudinal movement.

856,374. CASH-RECORDER. ALBERT F. STAPLES, Brockton, Mass. Filed Mar. 19, 1906. Serial No. 306,700.



Claim.—1. A cash recorder, having, in combination, a cash receptacle, locking means for normally retaining the receptacle in closed condition, a vertically movable support for a record sheet, and connections between the locking means and the support acting to release the cash receptacle when the support is given a single movement from its normal position, substantially as described.

2. A cash recorder, having, in combination, a cash receptacle, locking means for normally retaining the receptacle in closed condition, a vertically movable support for a record sheet arranged in convenient position for writing thereon, and connections between the support and the retaining means acting to release the cash receptacle when the support is depressed from its normal position, substantially as described.

3. A cash recorder, having, in combination, a cash drawer, a latch normally retaining the drawer in closed position, a vertically movable support for a record sheet, and connections between the support and the latch operating to release the drawer when the support is given a single movement from its normal position by the hand of the operator, substantially as described.

4. A cash recorder, having, in combination, a cash drawer, a latch normally retaining the drawer in closed position, a vertically movable support for a record sheet, and connections between the support and the latch operating to release the drawer when the support is depressed from its normal position, substantially as described.

5. A cash recorder, having, in combination, a cash receptacle, a movable support for a record sheet, combination-lock mechanism, a single means for normally retaining the cash receptacle in closed condition connected with the movable support and the combination-lock mechanism so as to be unlocked only by the movement of the movable support and operation of the combination-lock mechanism, substantially as described.

6. A cash recorder, having, in combination, a cash receptacle, a vertically movable support for a record sheet, combination-lock mechanism, means for normally retaining the cash receptacle in closed condition connected with the support and the combination-lock mechanism so as to be unlocked only by the single movement of the support from its normal position and operation of the combination lock mechanism, substantially as described.

7. A cash recorder, having, in combination, a cash receptacle, a movable support for a record sheet, combination-lock mechanism, means for normally retaining the cash receptacle in closed condition connected with the support and the combination-lock mechanism so as to be unlocked only by the single depression of the support from its normal position and operation of the combination-lock mechanism, substantially as described.

8. A cash recorder, having, in combination, a cash receptacle, means for retaining the cash receptacle in closed condition, a movable support for a record sheet, connections between the retaining means and the support for releasing the cash receptacle when the support is moved, and independently operable combination-lock mechanism to prevent releasing movement of the support, substantially as described.

9. A cash recorder, having, in combination, a cash receptacle, means for retaining the cash receptacle in closed condition, a vertically movable support for a record sheet, connections between the retaining means and the support for releasing the cash receptacle when the support is moved, and independently operable combination-lock mechanism to prevent releasing movement of the support, substantially as described.

10. A cash recorder, having, in combination, a cash receptacle, means for retaining the cash receptacle in closed condition, a vertically movable support for a record sheet, connections between the retaining means and the support for releasing the cash receptacle when the support is depressed, and independently operable combination-lock mechanism to prevent releasing movement of the support, substantially as described.

11. A cash recorder, having, in combination, a recording device, a normally locked cash receptacle and mechanism co-operating with the recording device for unlocking the cash receptacle, comprising combination-lock mechanism, and means for holding the combination-lock mechanism "off," substantially as described.

12. A cash recorder, having, in combination, a recording device, a normally locked cash receptacle and mechanism co-operating with the recording device for unlocking the cash receptacle comprising combination-lock mechanism and means for locking the combination-lock mechanism in locked position, substantially as described.

13. A cash recorder, having, in combination, a recording device, a cash receptacle, combination-lock mechanism (co-operating with the recording device in the unlocking operation) for locking the receptacle, and an alarm device connected with the combination-lock mechanism operating to give an alarm upon an unsuccessful attempt to operate the combination-lock mechanism, substantially as described.

14. A cash recorder, having, in combination, a recording device, a cash receptacle, combination-lock mechanism (co-operating with the recording device in the unlocking operation) for locking the cash receptacle comprising a plurality of tumblers, an alarm device and connections between the combination-lock mechanism and the alarm device operating to give an alarm upon a movement of wrong tumblers, substantially as described.

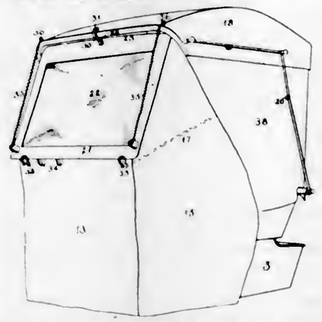
15. A cash recorder, having, in combination, a recording device, a cash receptacle, combination-lock mechanism (co-operating with the recording device in the unlocking operation) for locking the cash receptacle, means for holding the combination-lock mechanism "off," and an alarm device operated by an attempt to operate the combination-lock mechanism, substantially as described.

16. A cash recorder, having, in combination, a recording device, a cash receptacle, combination-lock mechanism (co-operating with the recording device in the unlocking operation) for locking the cash receptacle, means for locking the combination-lock mechanism in locked position, and an alarm device and connections between the combination-lock mechanism and the alarm device operating to give the alarm upon an attempt to operate the combination-lock mechanism, substantially as described.

17. A cash recorder, having, in combination, a cash receptacle, a pad holder, a device for retaining the cash drawer closed, and connections between the pad holder and the retaining device operating to release the drawer upon a depression of the pad holder from its normal position, substantially as described.

18. A cash recorder, having, in combination, a cash drawer, a pad holder, a device for retaining the cash drawer closed, combination-lock mechanism, and connections between the pad holder, the combination-lock mechanism and the drawer retaining device operating to release the drawer upon a simultaneous operation of the combination-lock mechanism and a depression of the pad holder, substantially as described.

856,375. STORM PROTECTION FOR CARRIAGES. MILTON D. STOCKING, Lindenwood, Ill. Filed Aug. 1, 1906. Serial No. 328,809.



Claim.—1. In a storm front for vehicles, the combination of a folding front constructed to be hinged to a vehicle top, means for holding the storm front in place when the vehicle top is up, and means for automatically throwing the front outward and upward when the vehicle top is thrown back.

2. In a storm front for vehicles, the combination of a folding front constructed to be hinged to a vehicle top, side curtains independent of the front and adapted to be connected to the vehicle body, means for holding the storm front and side curtains in place when the vehicle top is up and means for automatically dropping the side curtains and throwing the front outward and upward when the vehicle top is thrown back.

3. In a storm front for vehicles, the combination of a support constructed to be connected with the front portion of the top of a vehicle, a folding front hinged to the support in a manner to allow it to fold outward and upward, a section adapted to be connected to a vehicle body adjacent to the dash, a self detachable engagement between the front and section, and means for throwing the folding front outward and upward.

4. In a storm front for vehicles, the combination of a support constructed to be connected with the front portion of the top of a vehicle, a folding front hinged to the support in a manner to allow it to fold outward and upward, a section adapted to be connected to a vehicle body adjacent to the dash, a self detachable engagement between the front and section, and means for throwing the folding front outward and upward when disengaged from the section.

5. In a storm front for vehicles, the combination of a folding front constructed to be hinged to the front portion of the top of a vehicle in a manner to allow it to fold outward and upward, means for forming a self detachable engagement between the front and the body of a vehicle, and means for throwing the folding front outward and upward when disengaged from the vehicle body by the action of throwing back the vehicle top.

6. In a storm front for vehicles, the combination of a folding front constructed to be hinged to the front portion of the top of a vehicle in a manner to allow it to fold outward and upward, means for forming a self detachable engagement between the front and the body of a vehicle, means for throwing the folding front outward and upward when disengaged from the vehicle body by the action of throwing back the vehicle top and side curtains detachably connected with the vehicle top and permitted to drop when the top is thrown back.

7. In a storm front for vehicles, the combination of a folding front constructed to be hinged to the front portion of the top of a vehicle in a manner to allow it to fold outward, inward and upward, means for forming a self detachable engagement between the front and the body of a vehicle, means for throwing the folding front outward and upward when disengaged from the vehicle body by the action of throwing back the vehicle top, and means for holding the folding front within the vehicle top.

856,376. NAVAL LANDING GUN AND CARRIAGE. ROBERT P. STOUT and FREDERICK G. HUGHES, South Bethlehem, Pa., assignors to The Bethlehem Steel Company, South Bethlehem, Pa., a Corporation of Pennsylvania. Filed Sept. 29, 1903. Serial No. 175,055.

Claim.—1. In a gun, a gun-tube or barrel, parallel recoil cylinders and webs or connecting portions between said tube or barrel and said cylinders, all of said parts consisting of an integral piece of metal.

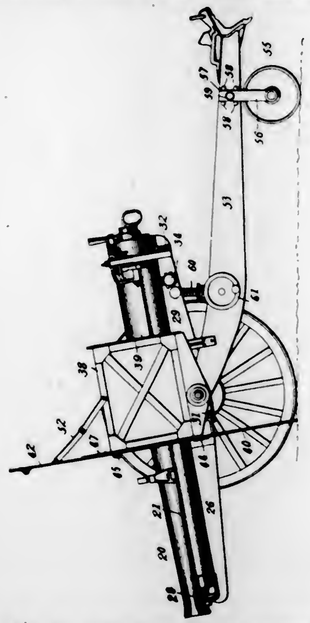
2. In a gun, the combination with a slide having guide flanges, of a gun barrel and a pair of recoil cylinders consisting of a single piece of metal, said recoil cylinders being provided with projections between which are guide grooves adapted to coöperate with the guide flanges of said slide.

3. In a gun, the combination with the gun tube and recoil cylinders, of the slide upon which the gun is adapted to recoil, and a turn table upon which the slide is mounted to turn, said slide and turn table having depending flanges and being connected end to end by a vertical series of interlocking tongues and grooves, whereby they form a substantially continuous beam for the support of the gun.

4. In a gun, the combination with the gun tube and recoil cylinders, of the slide upon which the gun is adapted to recoil, and a turn table upon which the slide is mounted to turn, said slide and turn table having depending flanges and being connected end to end by a vertical series of interlocking tongues and grooves, whereby they form a substantially continuous beam for the support of the gun, and an axle passing through the turn table and supporting said beam.

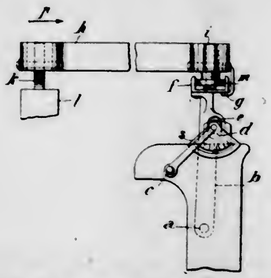
5. In a gun, the combination with the gun tube and recoil cylinders, of an axle and wheels for supporting the gun, a turn table pivotally mounted on the axle and extending rearwardly therefrom, a slide extending length-

wise of said turn table and adapted to turn thereon about a pivot at the center of the turn table, said slide having a flange or truss extending forward from the turn table and said turn table having a flange or truss extending rearwardly from the slide, the trusses of said slide and turn table being interlocked at their abutting ends and forming a common support for the gun.



6. In a gun, the combination with the wheels and axle of a turn table having its forward end mounted on the axle and having a central pivot in the rear of the axle, and a slide engaging said pivot and extending over the turn table, said slide being interlocked with the turn table at the rear end thereof and having its forward portion sustained by a depending flange or truss which is interlocked with the forward end of the turn table, the said slide and turn table together forming a trussed beam to support the gun.

856,377. TYPE-WRITER. JEAN VÖLKER, Neu-Isenburg, near Frankfort-on-the-Main, Germany, assignor to The Firm of Peter Weil & Co., Rodelheim, near Frankfort-on-the-Main, Germany. Filed Feb. 12, 1906. Serial No. 300,676.



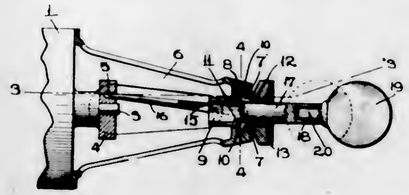
Claim.—1. In a typewriter the combination with the carriage and the platen of a flat front rail adapted to receive the front wheel of the carriage and to allow of the latter running in parallel paths on it, of an U shaped rear rail, of vertical wheels mounted on the carriage and adapted to run on the rear rail, of horizontal guide rollers mounted on vertical studs of the said carriage and adapted to move in the channel of the said guide rail and means for imparting and controlling forward or rearward adjustment of the carriage, substantially as and for the purpose described.

2. In a typewriter the combination with the carriage and the platen of a flat front rail adapted to receive the front wheel of the carriage and to allow of the latter running in parallel paths on it, of an U-shaped rear rail, of vertical wheels mounted on the carriage and adapted to run on the rear rail, of horizontal guide rollers mounted on vertical studs of the said carriage and adapted to move in the channel of the said guide rail, of arms pivoted to the frame work of the machine and supporting the said guide rail and means for causing the said arms to swing on the frame work and for adjusting same substantially as and for the purpose set forth.

3. In a typewriter the combination with the carriage, the front rail and the rear guide rail of the latter, the swinging arms supporting the said guide rail, of a slot arranged in one of the said arms, an eccentric stud working in the said slot and a crank handle adapted to operate the said stud substantially as and for the purpose set forth.

4. In a typewriter the combination with the carriage, the front rail and the rear guide rail of the latter, the swinging arms supporting the said guide rail, of a slot arranged in one of the said arms, an eccentric stud working in the said slot and a crank handle adapted to operate the said stud, of a scale mounted on the frame work of the machine under the said operating arm substantially as and for the purpose set forth.

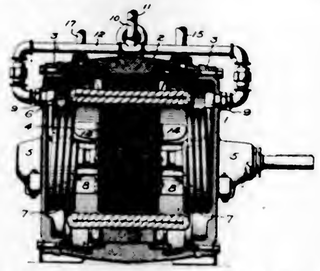
856,378. MECHANICAL VIBRATOR. EDGAR P. WARD and AL H. HERRON, St. Louis, Mo. Filed Apr. 16, 1906. Serial No. 312,000.



Claim.—1. In a mechanical vibrator, a frame, a motor arranged therein, a disk mounted on the motor shaft within the frame, there being an eccentrically arranged aperture formed in said disk, a tubular socket arranged for oscillation in the forward end of the frame, a yoke pivotally connected to the socket at right angles to the line of oscillation thereof, a stem integral with said yoke and projecting rearwardly therefrom into the recess in the disk, a stem adjustably arranged in the forward end of the socket, means arranged on the socket for locking the stem therein and an applicator carried by said stem; substantially as specified.

2. In a mechanical vibrator, a frame, a motor arranged therein, a disk fixed on the motor shaft within the frame, there being an eccentrically arranged aperture formed in the face of said disk, a tubular socket journaled for oscillation in the forward end of the frame the outer end of which socket is longitudinally slotted and exteriorly screw threaded, a yoke pivotally connected to the socket at right angles to the line of oscillation thereof, a stem integral with said yoke and projecting rearwardly therefrom into the aperture in the disk, a stem arranged in the forward end of the socket, an applicator carried by said stem, and a lock nut arranged on the screw threaded end of the socket; substantially as specified.

856,379. MEANS FOR COOLING ELECTRIC MOTORS. JOHN B. WIARD, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 16, 1906. Serial No. 339,156.



Claim.—1. In a motor, a stator or field ring, bonnets secured to the ends of said ring, a rotor or armature mounted in bearings in said bonnets, and a tubular coil for receiving a cooling fluid nested within one of said bonnets.

2. In a motor, a stator or field ring, bonnets secured to the ends of said ring, a rotor or armature mounted in bearings in said bonnets, and a tubular coil for receiving a cooling fluid nested within each of said bonnets connected with said bearings.

3. In a motor, a bonnet having a tubular coil for receiving a cooling fluid mounted on its inner side.

4. In a motor, a bonnet having a tubular coil for receiving a cooling fluid detachably secured to and supported on its inner side.

5. In a motor, a bonnet having a tubular helical coil for receiving a cooling fluid supported therefrom on its inner side.

6. In a motor, a bonnet having a bearing, and a tubular helical coil for receiving a cooling fluid, said coil being mounted on the inner side of the bonnet concentric with said bearing.

7. In a motor, a bonnet having a tubular coil for receiving a cooling fluid nested therein and having its ends extending through the bonnet, and nuts on said ends without the bonnet for holding the coil in position.

8. In a motor, a bonnet having a bearing, a helical tubular coil nested therein concentric with said bearing and having its ends passing through the bonnet, and screw-threaded members on said ends without the bonnet for holding the coil in position.

9. In a motor, a stator or field ring, bonnets secured to the ends thereof and forming therewith a closed casing, a rotor or armature mounted in bearings in said bonnets, and helical tubular coils for receiving a cooling fluid nested within said bonnets and concentric with said bearings.

10. In a motor, a stator or field ring, bonnets secured to the ends thereof and forming therewith a closed casing, a rotor or armature mounted in bearings in the bonnets, tubular coils arranged to receive cooling fluid nested within said bonnets, and a fan device on said rotor or armature for creating a circulation of the air within the casing.

11. In a motor, a stator or field ring, bonnets secured to the ends thereof and forming therewith a closed casing, a rotor or armature mounted in bearings in said bonnets, helical tubular coils nested within said bonnet and concentric with said bearings, and a fan device carried by said rotor or armature for creating a circulation of the air within the casing.

12. In a motor, a stator or field ring, bonnets secured to the ends thereof and forming therewith a closed casing, a tubular coil nested within each of said bonnets, and inlet and outlet pipes to which said coils are connected in parallel with each other.

13. In a motor, a stator or field ring, bonnets secured to the ends thereof and forming therewith a closed casing, a rotor mounted in bearings in said bonnets, tubular coils for receiving a cooling fluid nested within said bonnets, and a fan at each end of said rotor for creating a circulation of the air in said casing.

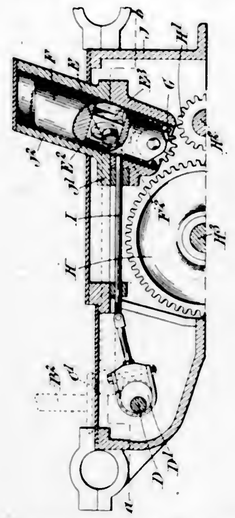
14. In a motor having an inclosed casing, a coil for receiving a cooling fluid arranged within the casing at each end of the rotor or armature member of the motor, and a fan device on the rotor or armature for creating a circulation of the air within the casing.

15. In a motor having an inclosed casing and a rotor member within said casing, a helical tubular coil for receiving a cooling fluid arranged within the casing at each end of the rotor and having its axis coincident with the axis of the rotor, and fan devices on the rotor for creating a circulation of the air within the casing.

16. In a motor having an inclosed casing and a rotor mounted within the casing, a helical tubular coil for receiving a cooling fluid arranged within the casing at each end of the rotor and having its ends extending through and secured to the wall of the casing, and fan devices on the rotor for creating a circulation of the air in the casing.

17. In a motor having an inclosed casing and a rotor mounted within the casing, an annular hollow member for receiving a cooling fluid nested within the casing at each end of the rotor, and fan devices on the rotor for creating a circulation of the air within the casing.

856,380. CONTROLLING MECHANISM FOR SPEED-GEARS. CHARLES WICKSTEED, Kettering, England. Filed Apr. 2, 1907. Serial No. 365,994.



Claim.—1. In controlling mechanism for speed gear the combination of, a controlling member (D) rotatable for the purpose of changing the speeds, a sliding member separately operated for controlling the reverse and having in it a locking recess, a detent alined to enter the recess in the sliding member when the latter is in one position, an eccentric body carried by the controlling member and operatively connected with the detent so that it advances it into the recess in the sliding member or withdraws it therefrom according to the position of the controlling member, and a fixed guide for the detent, substantially as set forth.

2. In controlling mechanism for speed gear the combination of, a controlling member (D) rotatable for the purpose of changing the speeds, a sliding member separately operated for controlling the reverse and having in it a locking recess, a detent alined to enter the recess in the sliding member when the latter is in one position, an

eccentric body carried by the controlling member and operatively connected with the detent so that it advances it into the recess in the sliding member or withdraws it therefrom according to the position of the controlling member, a fixed guide for the detent, a gear wheel carried by a driving element, a second gear-wheel opposed to the first but not in mesh therewith and carried by an element to be driven, and a third gear-wheel carried by the sliding member aforesaid and adapted to mesh with both of these gear-wheels and thereby operatively connect them together when the sliding member is in such position that its recess does not aline with the aforesaid detent, substantially as set forth.

3. In controlling mechanism for speed gear the combination of, a controlling member (D) rotatable for the purpose of changing the speeds, a sliding member for controlling the reverse and having in it a locking recess, an eccentric body operatively engaging the sliding member for the purpose of advancing or withdrawing it, means independent of the controlling member (D) for imparting rotary movement to this eccentric, a detent alined to enter the recess in the sliding member when the latter is in one position, an eccentric body carried by the controlling member and operatively connected with the detent so that it advances it into the recess in the sliding member or withdraws it therefrom according to the position of the controlling member, and a fixed guide for the detent, substantially as set forth.

4. In controlling mechanism for speed gear the combination of, a controlling member (D) rotatable for the purpose of changing the speeds, a sliding member for controlling the reverse and having in it a locking recess, a block mounted in and free to slide but not to rotate in a recess in the sliding member disposed transversely to the direction of movement of the same, an eccentric body engaging this block, means independent of the controlling member (D) for imparting rotary movement to this eccentric body, whereby the sliding member is advanced or withdrawn, a detent alined to enter the locking recess in the sliding member when the latter is in one position, an eccentric body carried by the controlling member and operatively connected with the detent so that it advances it into the locking recess in the sliding member or withdraws it therefrom according to the position of the controlling member, and a fixed guide for the detent, substantially as set forth.

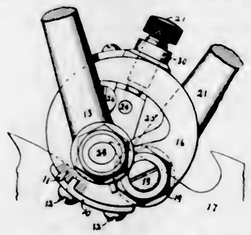
5. In controlling mechanism for speed gear the combination of, a controlling member (D) rotatable for the purpose of changing the speeds, a sliding member for controlling the reverse and having in it a locking recess, a block mounted in and free to slide but not to rotate in a way cut through the sliding member transversely to the direction of its movement, a second way transverse to the first and intersecting the same, an operating spindle (E) alined with this intersecting way, an eccentric on this spindle adapted to engage a corresponding orifice in the block, the intersecting way being of sufficient dimensions to admit the eccentric for the purpose of entering the same in the block, means independent of the controlling member (D) for imparting rotary movement to the spindle (E) so that its eccentric advances or withdraws the sliding member, a detent alined to enter the locking recess in the sliding member when the latter is in one position, an eccentric body carried by the controlling member and operatively connected with the detent so that it advances it into the locking recess in the sliding member or withdraws it therefrom according to the position of the controlling member, and a fixed guide for the detent, substantially as set forth.

6. In controlling mechanism for speed gear the combination of, a controlling member (D) rotatable for the purpose of changing the speeds, a sliding member for controlling the reverse and having in it a locking recess, a spindle (E) operatively connected with this sliding member so that when the spindle is rotated endwise movement is imparted to the member, a controlling shaft (C^2) for imparting rotary movement to this spindle, a controlling shaft (B^2) concentric with the shaft (C^2) and operatively connected with the controlling member (D) for the purpose of rotating the latter, a detent alined to enter the locking recess in the sliding member when the latter is in one position, an eccentric body carried by the controlling member and operatively connected with the detent so that it advances it into the locking recess in the sliding member or withdraws it therefrom according to the position of the controlling member, and a fixed guide for the detent, substantially as set forth.

7. In controlling mechanism for speed gear the combination of, a controlling member (D) rotatable for the purpose of changing the speeds, a sliding member for controlling the reverse and having in it a locking recess, a spindle (E) set obliquely to the controlling member (D) and operatively connected with the sliding member so that when rotated it moves this member endwise, a controlling shaft B^2 situated approximately at right angles to the controlling member (D) and operatively connected therewith so that rotary movement of the shaft imparts rotary movement to the member, a tubular shaft (C^2) concentric with the shaft (B^2) and operatively connected with the spindle (E) so that rotary movement of this shaft imparts rotary movement to the spindle, an operating handle for each of the controlling shafts, a detent alined to enter the locking recess in the sliding member when the latter is in one position, an eccentric body carried by the controlling member and operatively connected with the detent so that it advances it into the locking recess in the sliding member or withdraws it therefrom according to the position of the controlling member, and a fixed guide for the detent, substantially as set forth.

8. In controlling mechanism for speed gear the combination of, a casing for the change-speed wheels, a controlling member (D) rotatably mounted therein for the purpose of changing the speeds, a barrel (J^2) secured thereto and opening into the casing, a member slidably mounted in this barrel for controlling the reverse and having in it a locking recess, a transverse spindle (E) mounted at one end in the barrel and operatively engaged with the sliding member so that rotary movement of the spindle imparts endwise movement to the member, the other end of this spindle extending beyond the casing, a bracket secured to the casing and receiving the free end of the spindle (E) and one end of the controlling member (D), a vertical shaft (B^2) mounted in this bracket and operatively engaged with the controlling member (D) so that rotary movement of one member imparts rotary movement to the other, a tubular shaft (C^2) concentric with the shaft (B^2) and also carried by the bracket such shaft being operatively connected with the spindle (E) so that rotary movement of the shaft imparts rotary movement to the spindle, an operating handle on the shaft (B^2), an operating handle on the shaft (C^2), a detent alined to enter the locking recess in the sliding member when the latter is in one position, an eccentric body carried by the controlling member and operatively connected with the detent so that it advances it into the locking recess in the sliding member or withdraws it therefrom according to the position of the controlling member, and a fixed guide for the detent, substantially as set forth.

856,381. SAW-SWAGE. ALEXANDER R. WILSON, Spokane, Wash. Filed Oct. 3, 1905. Serial No. 281,193.



Claim.—1. In a saw swage, a head, a die member pivotally mounted therein, a casing having a pivotal bearing mounted upon the die member, means for securing said casing in position, and an anvil supported by said casing.

2. In a saw swage, a slotted head, a die member pivotally mounted therein, a casing having a pivotal bearing upon the die member, means for securing said casing in position, an anvil supported by said casing, and a rotatable retaining member mounted upon said casing to engage the outer face of said anvil.

3. In a saw swage, a head, a die member mounted therein, an anvil, and means for mounting said anvil upon the die to swing in an arc concentric with the center of the die.

4. In a saw swage, a slotted head provided with a curved adjusting slot in one of its side walls, a saw swage die mounted in the lower portion of said head, an anvil casing pivotally supported upon said die and provided with a securing member extending therefrom through the curved slot of the head, and an anvil slidingly mounted upon said casing.

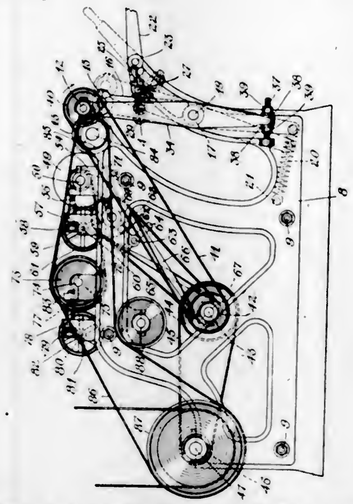
5. In a saw swage, a slotted head, an anvil slidingly mounted therein, and a flat guiding spring disposed beneath the upper wall of said slot and contacting with the face of said anvil to support the same above the tooth of a saw.

6. In a saw swage, a head, an anvil casing provided with a channel therein, an anvil mounted for longitudinal movement in said channel, and a retaining screw mounted in the casing and projecting through a slot in said head to permit a lateral adjustment of the anvil and its casing.

7. In a saw swage, a head, an anvil mounted therein, an adjusting screw mounted in said head and bearing on said anvil, and a graduating disk surrounding said screw and slidingly mounted therewith for relative rotation.

8. In a saw swage, a head, an anvil mounted therein, an adjusting screw mounted in said head and bearing on said anvil, a graduating disk surrounding said screw and slidingly connected therewith for relative rotation, and a clamping device disposed upon said head to engage said disk to retain the same against longitudinal movement with the screw.

856,382. LEATHER-SHAVING MACHINE. CHARLES A. WOODS, Lynn, Mass. Filed July 2, 1906. Serial No. 324,325.



Claim.—1. A machine for shaving leather comprising in its construction a rotary cylindrical cutter, a pair of feed rolls adjacent to said cutter, and two rocker frames having a common median axial line, each of said feed rolls journaled to rotate, respectively, on one of said rocker frames.

2. A machine for shaving leather comprising in its construction a rotary cylindrical cutter, a pair of feed rolls adjacent to said cutter, two rocker frames having a common median axial line, each of said feed rolls journaled to rotate, respectively, on one of said rocker frames, and means to adjust one of said rocker frames to regulate the location of its respective feed roll relatively to said cutter.

3. A machine for shaving leather comprising in its construction a rotary cylindrical cutter, a pair of feed rolls adjacent to said cutter, two rocker frames having a common median axial line, each of said feed rolls journaled to rotate, respectively, on one of said rocker frames, and means to rock one of said frames to move its respective feed roll toward or away from said cutter, and to lock said frame when its roll is in position, to feed said leather against said cutter.

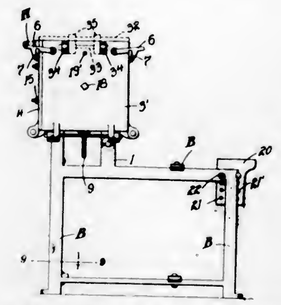
4. A machine for shaving leather comprising in its construction a rotary cylindrical cutter, a pair of feed rolls adjacent to said cutter, two rocker frames having a common median axial line, each of said feed rolls journaled to rotate, respectively, on one of said rocker frames, and means to rock one of said frames to move its respective feed roll toward or away from said cutter and to yieldingly lock said frame when its roll is in position to feed said leather against said cutter.

5. A machine for shaving leather comprising in its construction a rotary cutter, a pair of feed rolls, one above the other, adjacent to said cutter, a rocker frame upon which the lower of said feed rolls is journaled, a rock-shaft, an arm fast to said rock-shaft, a block pivoted to said arm, and a link pivoted to said rocker frame projecting through said block and adapted to slide therein.

6. A machine for shaving leather comprising in its construction a rotary cutter, a pair of feed rolls, one above the other, adjacent to said cutter, a rocker frame upon which the lower of said feed rolls is journaled, a rock shaft, an arm fast to said rock-shaft, a block pivoted to said arm, a link pivoted to said rocker frame projecting through said block and adapted to slide therein, a collar on said link, and a spring encircling said link between said collar and block.

7. A machine for shaving leather comprising in its construction a rotary cutter, a pair of feed rolls, one above the other, adjacent to said cutter, a rocker frame upon which the lower of said feed rolls is journaled, a rock-shaft, an arm fast to said rock-shaft, a block pivoted to said arm, a link pivoted to said rocker frame projecting through said block and adapted to slide therein, a collar on said link, a spring encircling said link between said collar and block, and a nut having screw-threaded engagement with said link on the opposite side of said block to that upon which said spring is located.

856,383. BUILDING-BLOCK MACHINE. WILLIAM J. ARMBRUSTER, St. Louis, Mo. Filed Nov. 25, 1905. Serial No. 289,114.



Claim.—1. A building-block machine comprising a mold having a bottom, and side and end walls hinged thereto, and oscillating about a hinge-axis disposed adjacent to the bottom, means for securing a face-plate to said bottom, a

pallet removably inserted into the mold adjacent to one of the side walls thereof, means for spacing the pallet a suitable distance from said side wall, means for supporting the mold when oscillated to its discharging position, and means for supporting the pallet upon its withdrawal from the mold, substantially as set forth.

2. A building-block machine comprising a mold having a bottom, and side and end walls hinged thereto, and oscillating about a hinge axis disposed adjacent to one edge of the bottom, means on one of the side walls for adjustably disposing suitable cores for the block to be molded, means on the opposite side wall for supporting a pallet and spacing the same from said wall, a removable end plate secured to one of the end walls, means for supporting the mold with its bottom rocked to substantially a horizontal plane, means for supporting the mold with its bottom rocker to a vertical plane, and devices for affording support for the pallet when withdrawn from the mold, substantially as set forth.

3. In a building-block machine, a mold having a bottom, side and end walls hinged thereto, a pallet disposed adjacent to one of the side walls, means for spacing the pallet from said side wall, and devices carried by two opposite hinged walls for securing a cover plate to the mold, substantially as set forth.

4. In a building-block machine, a mold having a bottom, side and end walls hinged thereto, a pallet for one of the side walls, spacing devices interposed between the pallet and its contiguous side wall, suitable ribs or tongues disposed along the inner face of the hinged wall opposite the pallet, and a core or cores having corresponding grooves for receiving the tongues, substantially as set forth.

5. In a building-block machine, a mold having a bottom, side and end walls hinged thereto, suitable ribs or tongues removably and adjustably disposed along the inner face of one of the hinged walls, and secured in position along the opposite face of the wall and a core or cores having corresponding grooves for receiving said tongues, substantially as set forth.

6. In a building-block machine, a mold having a bottom, side and end walls hinged thereto, suitable ribs or tongues removably and adjustably disposed along the inner face of one of the hinged walls, a core or cores having corresponding grooves for receiving said tongues, suitable ribs disposed along the inner face of the opposite hinged wall for supporting a pallet, and devices serving as supports for the pallet located in front of the mold and disposed substantially in the plane of withdrawal of the pallet from the mold, substantially as set forth.

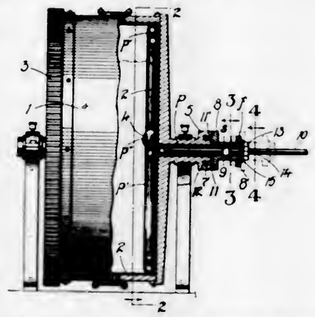
7. In a building-block machine, a hollow core having a brace spanning the space between two opposite walls thereof and having a longitudinal groove formed in said brace, substantially as set forth.

8. In a building-block machine, a mold having a bottom, side and end walls hinged thereto, an end plate secured to the inner face of one of the end walls and spaced therefrom, a face plate secured to the bottom, means carried by one of the side walls for adjusting the position of the core or cores for the block to be molded, a series of ribs formed on the inner face of the opposite side wall for the support of a suitable pallet, a supporting base on which the mold is adapted to oscillate, means for supporting the mold when tilted with its bottom in a horizontal plane, means for supporting the mold with its bottom oscillated to a vertical plane, and brackets carried by the frame in front of the mold for serving as supports for the pallet in its withdrawn position from the mold, substantially as set forth.

9. In a building-block machine, a mold having a bottom, side and end walls respectively hinged thereto, a face plate adjustable to and from said bottom, a pallet adjustable to and from one of the side walls, an end plate secured to one of the end walls, latches for locking the hinged walls together, and adjustable brackets serving as supports for the pallet upon its withdrawal from the mold, substantially as set forth.

10. A building-block machine comprising a mold having a bottom, and side and end walls hinged thereto, and oscillating about a hinge axis disposed adjacent to the bottom, means for securing a face-plate to said bottom, a pallet removably inserted into the mold adjacent to one of the side walls, means for spacing the pallet a suitable distance from said side wall, means for supporting the mold when oscillated to bring the pallet into substantially a horizontal plane, and means for supporting the pallet upon its withdrawal from the mold, substantially as set forth.

856,384. CHLORINATION-BARREL. WILLIAM J. ARMBRUSTER, St. Louis, Mo. Filed Nov. 30, 1903. Renewed Jan. 24, 1907. Serial No. 353,906.



Claim.—1. A chlorination barrel having a pulp chamber, a delivery pipe carried by, and rotatable with the barrel, and discharging thereinto, a section of the pipe being above the level of the pulp in the pulp chamber during the rotation of the barrel, and a feed-pipe discharging into the outer end of the delivery pipe, substantially as set forth.

2. A chlorination barrel having a pulp chamber, a delivery pipe located within and rotatable with the barrel and having an intake or fixed end in the head of the barrel disposed about the axis of rotation of the latter, and a series of branches disposed along the inner walls of the barrel and continued each virtually 360 degrees along said walls, the delivery ends of the respective branches, being substantially diametrically opposite one another, and means for supplying gas to said delivery pipe, substantially as set forth.

3. A chlorination barrel having a pulp chamber and a hollow trunnion, a stationary feed-pipe having a discharge end opposite said trunnion, a delivery pipe located within and rotatable with the barrel, and having a fixed or intake end secured in said trunnion and projecting a suitable distance beyond it, a stationary sleeve mounted slidingly on the feed-pipe and adapted to simultaneously envelop the adjacent ends of the respective pipes, substantially as set forth.

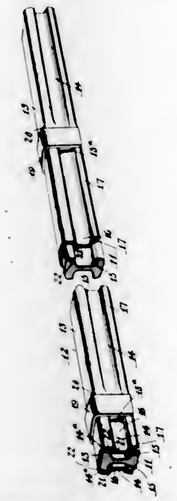
4. A chlorination barrel having a pulp chamber and a hollow trunnion, a stationary feed-pipe having a discharge end opposite said trunnion, a delivery pipe located within and rotatable with the barrel, and having a fixed or intake end secured in said trunnion and projecting a suitable distance beyond it, and separated by a space from the discharge end of the feed-pipe, a stationary sleeve mounted slidingly on the feed pipe and adapted to simultaneously envelop the adjacent ends of the respective pipes, and bear against the outer end of the hollow trunnion, and suitable packing rings interposed between the abutting surfaces of the trunnion and sleeve respectively, substantially as set forth.

5. A chlorination barrel having a pulp chamber, and a hollow trunnion, a stationary feed-pipe having a discharge end opposite said trunnion, a delivery pipe located within and rotatable with the barrel and having a fixed or intake end secured in said trunnion and projecting a suitable distance beyond it, and separated by a space from the discharge end of the feed-pipe, a terminal head formed in the trunnion having an annular groove, a flanged sleeve capable only of longitudinal movement on the feed-pipe, having an annular wall or ring adapted to enter said groove, the sleeve simultaneously enveloping the adjacent ends of the feed and delivery pipes, a nut on the feed-pipe for forcing the sleeve against the trunnion, and suitable packing rings interposed between the sleeve and trunnion, and between the sleeve and nut, substantially as set forth.

6. A chlorination barrel having a pulp chamber, a delivery pipe carried by and rotatable with the barrel, and freely discharging thereinto, a section of the pipe being constantly above the level of the pulp in the pulp-chamber during the rotation of the barrel, and a feed-pipe discharging into the outer end of the delivery-pipe, substantially as set forth.

7. A chlorination barrel having a pulp chamber, a hollow trunnion opening thereinto, a stationary feed-pipe having a discharge end opposite the trunnion, a sleeve fixed to and enveloping the feed-pipe and bearing with one end against the adjacent end of the trunnion, and suitable packing rings interposed between the adjacent ends of the trunnion and sleeve respectively, substantially as set forth.

856,385. INSULATING COVERING OR SHEATHING FOR CONTACT-RAIL CONDUCTORS. WILLIAM H. BAKER, Lockport, N. Y., assignor of three-fifths to Jesse Peterson, Lockport, N. Y. Filed Mar. 21, 1906. Serial No. 307,254.



Claim.—1. An insulating covering or sheathing for contact rail-conductors formed of sections having yielding sides adapted to bear against the conductor by their inherent elasticity and having the ends thereof in overlapping relation with the sides of the overlapping portions clasping the adjacent overlapped portion of the adjoining sections.

2. A covering or sheathing for contact rail-conductors consisting of sections inclosing all but the contact side of the conductor and having the ends of the sections applied to the conductor in overlapping relation, said sections being formed of resilient insulating material adapted to clasp or embrace a portion of the conductor and be retained in position thereon by their inherent elasticity, and the overlapping portions in like manner clasping the overlapped portions.

3. An insulating covering or sheathing for contact-rail conductors formed in sections and each section having its upper wall at one end flared outward and said end covered by the adjacent end of the adjoining section.

4. An insulating covering or sheathing for contact-rail conductors formed in sections and each section having the walls at one end flared outward and said end covered by the adjacent end of the adjoining section.

5. An insulating covering or sheathing for contact-rail conductors formed in sections, and each of said sections having its top wall bulged outward near one end and tapered to said end and adapted to overlap the adjacent end of the adjoining section.

6. An insulating covering or sheathing for contact-rail conductors formed in sections, and each of said sections having its walls near one end bulged outward and tapered to said end and adapted to overlap the adjacent end of the adjoining section.

7. An insulating covering or sheathing for contact-rail conductors formed in sections and each of said sections having one end flared and its other end enlarged and tapered to overlap the adjacent flared end of the adjoining section.

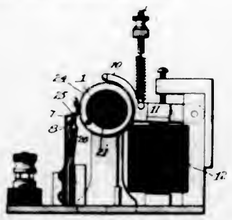
8. An insulating covering or sheathing for contact-rail conductors comprising a top wall, and side walls measurably yielding to impinge against the sides of the conductor, each section having its walls at one end flared outward and the walls thereof near its other end bulged outward to form an enlargement, the walls of said enlarged end tapering to the end edge and overlapping the flared adjacent end of the adjoining section.

9. An insulating covering or sheathing for contact rail-conductors comprising lineal sections formed of yielding material and each section having opposed clasping walls and an enlarged end overlapping the adjacent end of the adjoining section, the sections being retained by the yielding opposed walls impinging against the conductor and the overlapped ends of the adjoining sections.

10. An insulating covering or sheathing for contact-rail conductors of I-formation in cross-section, comprising sections of U-formation in cross-section, the parallel walls of said sections having longitudinal depressions adapted to enter the longitudinal grooves in the sides of the I-shaped conductor, one end of each section being flared, and the other end enlarged and tapered to the end edge, the enlarged and tapered ends of the sections overlapping the flared ends thereof.

11. An insulating covering or sheathing for contact-rail conductors being substantially of U-formation in cross-section with the opposite parallel walls thereof measurably yielding so that the covering may be applied to the rail and retain itself in any position, the covering consisting of sections having each a flared end and an enlarged end tapering to the end edge, the enlarged and tapered ends of the sections overlapping the flared ends thereof.

856,386. AUTOMATIC CALLING DEVICE. WILLIAM O. BECK, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed June 4, 1906. Serial No. 320,034.



Claim.—1. The combination with controlling mechanism, of means adapted to set the same, mechanism for operating said controlling mechanism after the same is set, and a device for rendering said means inoperative until the operation of said controlling mechanism is completed.

2. The combination with a circuit controller, of manually-operated means adapted to set the same, mechanism for operating said controller after the same is set, and means for rendering said manually-operated setting means

inoperative until the operation of said controller is completed.

3. The combination with circuit controlling mechanism, of manually-operated means adapted to set the same, electromagnetic mechanism for operating said controlling mechanism after the same is set, and means, operated as said manually-operated means is withdrawn from said circuit controlling mechanism, for rendering said controlling mechanism inaccessible to said manually-operated means until after the operation of said mechanism.

4. The combination with a circuit controller, of manually-operated means adapted to set the same, electromagnetic mechanism for operating said controller after the same is set, and switching mechanism, operated when said manual means is restored, for rendering operative said electromagnetic mechanism.

5. In an automatic calling device the combination with a circuit controlling ratchet, of a lever and means controlled thereby for setting the ratchet, means actuated after the ratchet is set, to render said lever ineffective to further manipulate the ratchet until the same is restored to its initial position, and means for operating said ratchet and restoring the same to normal position.

6. In an automatic call device, the combination with a circuit-controlling ratchet, of a lever and means controlled thereby for setting the ratchet, means actuated after the ratchet is set, to render said lever ineffective to further manipulate the ratchet until the same is restored to initial position, electromagnetic mechanism for operating said ratchet, and restoring the same to normal position, means for restoring said lever to normal position, and switching mechanism controlling said electromagnetic mechanism, operated by said lever when it reaches normal position.

7. In an automatic calling device, the combination with a circuit-controlling ratchet, of a lever, a pawl operated thereby to set said ratchet, means for withdrawing said pawl from the ratchet after the same is set, means for operating the ratchet, and means for restoring the operative relation of said pawl to the ratchet when said lever and ratchet are restored to initial position.

8. In an automatic calling device, the combination with a circuit-controlling ratchet, of a lever, a pawl operated thereby, a pin on said ratchet with which said pawl is adapted to engage to set the ratchet, a spring for withdrawing said pawl from said pin when the ratchet is set, means for operating the ratchet after the same is set to restore the same to normal position, and a deflecting finger adapted to engage said pawl when the lever is restored to initial position to move said pawl into position to engage said pin when the ratchet reaches normal position.

9. In an automatic calling device, the combination with a circuit-controlling ratchet, of a lever, a pawl operated thereby to set said ratchet, means for restoring said lever, an electromagnet for operating said ratchet, a circuit for said magnet, a switch controlling said circuit and means for closing said switch operated when said lever is returned to initial position.

10. In an automatic calling device, the combination with a circuit controlling ratchet, of a lever, a pawl operated thereby to set said ratchet, means for withdrawing said pawl after the ratchet is set, a spring for restoring said lever, an electromagnet and a circuit therefor controlling the operation of said ratchet, a switch controlling said circuit, an insulating wheel operated by said lever and adapted while the lever is away from normal position to open said switch and to close the same when the lever is restored, and means for restoring the operative relation of said pawl to the ratchet when the lever and ratchet are restored to initial position.

11. The combination with a ratchet wheel, of a lever for setting said ratchet, a spring for restoring said lever, a spring for restoring the ratchet, an escapement for said ratchet, an electromagnet and its armature for operating said escapement, a circuit for said magnet, a source of current in said circuit adapted to vibrate the armature of said magnet, and a pair of switches controlling said circuit, one switch being closed when the lever reaches normal position, and the other switch being opened when the ratchet reaches normal position.

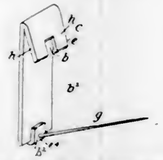
12. The combination with a circuit controller, of manually operated means for setting said controller, a device for restoring said manual means independent of the controller, electromagnetic mechanism for operating said controller after the same is set, and switching mechanism operated after said manual means is restored, for governing said electromagnetic mechanism.

856,387. INNERSOLE FOR SHOES. JOSEPH BELANGER, Springfield, Mass., assignor to J. Belanger, Labine & Company, Springfield, Mass., a Firm. Filed Jan. 25, 1906. Serial No. 297,749.



Claim.—In an inner sole for shoes, a heel portion comprising a layer of rubber sponge having a tapered end, a metallic plate beneath the rubber layer, a body portion comprising a layer of cork one end of which extends underneath the tapered end portion of the rubber layer, a layer of fabric on the lower side of said heel and body portions, a layer of leather provided with extended securing tabs on the upper side of said heel and body portions adapted to be inserted beneath the common insole of a shoe, and a plurality of eyelets extending through the body of cork and the layers of fabric and leather, substantially as described.

856,388. TAG. CHARLES C. BLAKE, Brookline, Mass. Filed Jan. 6, 1906. Renewed Nov. 21, 1906. Serial No. 344,498.



Claim.—1. As an article of manufacture, a tag made from thin flat resilient material, folded over at each end and having an outer surface adapted to receive ink or pencil marks, and a pin secured to one end and of a length to extend parallel with the tag and engage the opposite end, the folded end which engages the end of the pin being substantially parallel with the body of the tag.

2. As an article of manufacture, a tag made from resilient material having flat folded ends adapted to lie substantially parallel with the body of the tag, and a pin in one of said ends and of a length to extend parallel with the tag and engage the opposite end.

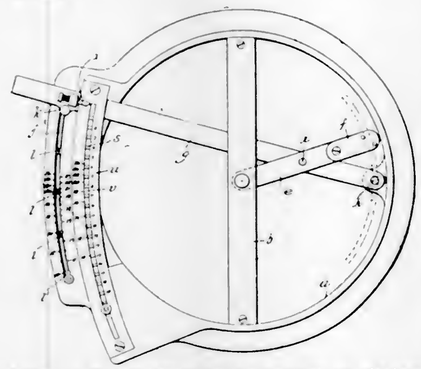
3. As an article of manufacture, a tag made from paper, having its ends folded inward one with a slot as set forth, said tag having an outer surface adapted to receive ink or pencil marks, and a pin secured to one end and of a length to extend parallel with the tag and engage the opposite end, the inwardly folded ends being adapted to lie flat against the fabric to which the tag is applied.

4. As an article of manufacture, a tag made from resilient paper having its ends folded inward, one with a slot at its extremity, said tag having an outer surface adapted to receive ink or pencil marks, and a pin secured to one end and of a length to extend parallel with the tag and engage the opposite end, the inwardly folded ends being adapted to lie flat against the fabric to which the tag is applied.

5. As an article of manufacture, a tag made from a ribbon of resilient material having its ends folded inward

one with a slot at its extremity, with a pin in the end opposite the said slot resting in the abutment formed by the fold at that end and its body extending through the paper and adapted to become substantially parallel with said end when its point rests in the slotted end, said tag having an outer surface adapted to receive ink or pencil marks, the said pin being secured to one folded end and of a length to extend parallel with the tag and engage the opposite end, the inwardly folded ends being adapted to lie flat against the fabric to which the tag is applied.

856,389. COMPUTING CHEESE-CUTTER. THOMAS C. BRASKETT, Anderson, Ind., assignor to The Anderson Computing Scale Company, Anderson, Ind., a Corporation of Indiana. Filed Mar. 22, 1905. Serial No. 251,486.



Claim.—1. In a cheese cutter, the combination of a base, a rotatable table thereon, an operating device and means actuated by it to engage and turn the table, a series of stops working in an arcuate slot in the base to regulate and vary the throw of the operating device, and means for proportionately and simultaneously adjusting these stops, for the purpose set forth.

2. In a computing cheese-cutter, the combination of a base and a table rotatably mounted thereon, a vibrating lever and means actuated thereby for turning the table, a movable final stop for limiting the throw of the lever, a series of intermediate stops, and means connecting all the stops whereby the shifting of the final stop alone will proportionately and simultaneously shift the intermediate stops, said connecting means being attached to the base at one end and to the final stop at its other end.

3. The combination with a base and a table rotatably mounted thereon, of a vibrating lever and means actuated thereby for turning the table, a movable stop for limiting the throw of the lever, a series of intermediate stops and means whereby the shifting of the final stop will proportionately and simultaneously shift the intermediate stops, said means consisting of lazy-tongs carrying the stops, for the purpose set forth.

4. The combination with a base and a table rotatably mounted thereon, of a vibrating lever and means actuated thereby for turning the table, a movable stop for limiting the throw of the lever, a series of intermediate stops and means whereby the shifting of the final stop will proportionately shift the intermediate stops, said means consisting of a lazy tongs carrying the stops and supported underneath the base, said base being provided with a guide slot in which said stops work.

5. In a cheese cutter, the combination of a support for the cheese, a knife adapted to move in a plane radial to the cheese when on said support, an oscillating part adapted to change the relative angular position of said knife and support in proportion to the extent of its travel, a stop upon each side of said oscillating part, means for varying the position of one of said stops to limit the motion of the oscillating part, a series of stops for limiting proportional parts of the travel of the oscillating part at all positions of the movable stop, and a curved guide slot in which said stop works.

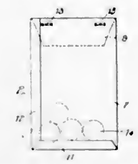
6. In a cheese cutter, the combination of a base, a rotatable table thereon, a vibrating lever and means actuated by it to engage and turn the table, a weight scale on the base embodying a series of stops and means for proportionately shifting them, means on the lever for engaging any one of these stops, a price scale on the base and also embodying a series of stops and means for proportionately adjusting them with reference to the stops of the weight scale, and means on the lever for engaging any one of the stops of the total value scale.

7. In a computing cheese-cutter, the combination of a base and a rotatable table mounted thereon, an arm pivoted, to the base concentrically with the table and carrying means at its free end for intermittently engaging the table, an actuating lever having a pivotal connection with said arm and being fulcrumed to the base, said fulcrum consisting of a pivot stationarily carried by the lever and a radial slot in the base in which said pivot slides and turns, and scale-controlled means for limiting the movement of the lever.

8. In a computing cheese-cutter, the combination with a base and a rotatable table mounted thereon, of a vibrating lever and means actuated thereby for turning the table, a movable stop for limiting the throw of the lever, a series of intermediate stops, and means whereby the stops may be shifted proportionately, said means consisting of a series of pivotally connected links and means for guiding the stops in their movements.

9. In a computing cheese cutter, the combination of a base and a rotatable table thereon, a vibratable lever and means actuated thereby to engage and turn the table, a total weight scale on the base, a final stop shiftable along this scale to vary the maximum throw of the lever in accordance with the different weights of cheeses, a price scale on the base adjacent to the total weight scale, this price scale embodying a series of stops, and means for proportionately shifting these stops with reference to the final stop of the total weight scale, substantially as set forth.

856,390. ENVELOP. EDWIN F. BROWN, Chicago, Ill. Filed Apr. 6, 1903. Serial No. 151,265.

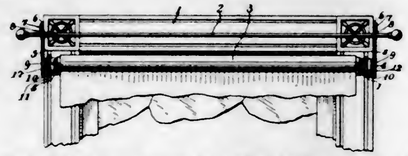


Claim.—An envelop cut and folded from a single piece of paper, comprising front and rear walls, flaps on the side and bottom of said front wall adapted to be folded over said rear wall, whereby the sides and bottom of said envelop may be closed, a tongue extending from the upper end of each wall and adapted to be folded on the line of the top of the envelop and to extend downwardly into the envelop, thus leaving the top of the envelop open, said tongues forming means whereby coins may enter but are prevented from being withdrawn from said envelop, and metal clips passing through said front and rear walls and through said tongues, near the top of said envelop, the distance between said clips being just large enough for the passage therebetween of coins of ordinary size.

856,391. CURTAIN-SUPPORTING BRACKET. ELVAH O. BULMAN, Grand Rapids, Mich. Filed Oct. 2, 1906. Serial No. 337,084.

Claim.—1. A bracket comprising a spur to insert in a casing, an arm extending outward at substantially right angles therefrom and terminating in a coil to surround a

curtain rod, a brace extending from the coil diagonally downward to a point below the spur and thence extended outward and laterally to fit around the vertical angle of a casing.



2. A bracket comprising a wire having a laterally turned spur at one end, thence extending outward and coiled to surround a curtain rod, thence extended downward and inward to a point below the supr; thence extending outward and laterally around the vertical angle of a casing, and thence extended outward and upward to support a bar.

3. A bracket comprising a wire having a laterally turned spur at one end, thence extended outward and coiled to surround a curtain rod, thence extended inward and downward to form a brace, thence extended vertically downward to engage the edge of a casing, and thence extended outward and upward to engage and support a bar.

4. A bracket comprising a wire having a laterally projecting spur at one end, said wire extending outward to form an arm and coiled to surround a curtain rod, thence extended downward and inward to beneath the spur, thence extended vertically downward to engage the edge of a casing, thence extended outward and laterally to pass around the vertical angle of a casing, and thence extended outward and upward to support a bar.

5. In combination with a window casing, a curtain rod and a shade roller; a bar on which the shade roller is mounted, a bracket comprising a single piece of wire having a laterally bent spur at the upper end and inserted in the edge of the casing, thence extended outward to support the rod and coiled around the same, thence extended inward and downward to form a brace, thence extended downward along the edge of the casing and behind the bar, and thence extending outward and upward to engage and support the bar.

6. In combination with a window casing, a curtain rod and a shade roller, a bracket comprising a single piece of wire having a laterally bent spur at one end and inserted in the edge of the casing, thence extended outward and coiled around the rod, thence extended downward and inward to form a brace and engaging the edge of the casing, thence extended outward and laterally around the outer angle of the casing, and thence extended outward from the casing to form a support for the shade roller.

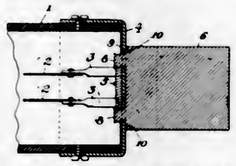
7. In combination with a window casing, a curtain rod and a shade roller, a bar on which the shade roller is mounted, and brackets supporting the rod and bar, each bracket comprising a single piece of wire having a lateral spur at the upper end inserted in the edge of the casing, thence extended outward and coiled around the rod, thence extended downward and inward to below the spur, thence extended downward vertically along the edge of the casing and in contact therewith, thence extended outward and laterally around the vertical angle of the casing and upon the front of the same, and thence extended outward and upward to engage and support the bar.

856,392. ALUMINIUM ALLOY. ALEXANDRE CHAMBAUD, Paris, France. Filed Jan. 12, 1907. Serial No. 351,985.

Claim.—1. An aluminium alloy having the following proportions. Aluminium about 99,020%, iron 0,310%, zinc 0,010%, magnesium 0,041%, copper 0,610%, substantially as described.

2. The process of manufacture of aluminium alloy consisting in first melting about 20% of the aluminium to be employed and when the temperature has reached about 750° C., in adding copper and when the fusion of this last metal is complete in adding zinc and afterward iron and after the complete fusion of this mixture, in adding the remaining 80% of the aluminium and finally in incorporating magnesium when the fluid mass is withdrawn from the fire as substantially described.

856,393. INCLOSED FUSE. ROBERT C. COLE, Hartford, Conn., assignor to The Johns-Pratt Company, Hartford, Conn., a Corporation of Connecticut. Filed Dec. 10, 1906. Serial No. 347,058.



Claim.—1. An inclosed fuse having a tubular casing and a metallic terminal therefor comprising an end closure for said casing, a projecting contact member fastened by its end to said closure and a backing plate reinforcing the joint between said member and end closure.

2. An inclosed fuse having a tubular casing and a terminal therefor comprising an end closure for said casing, a backing plate laid against the end wall of said closure and a projecting contact member adapted to bind the said plate and closure together.

3. An inclosed fuse comprising a tubular casing, a fuse-link therein and an end ferrule closing the end of said casing, in combination with a plate adjacent the end wall of said ferrule and perforated to receive a terminal of said fuse-link, and a projecting contact member adapted to bind said plate to the ferrule.

4. A metallic terminal for the tubular casings of inclosed fuses comprising a perforated end closure for said casing and a backing plate therefor having a fuse-link perforation therein which registers with the perforation in said end closure and a projecting contact member adapted to secure said plate and closure together.

5. An inclosed fuse having a tubular casing, a ferrule fitting the end of said casing, a backing plate adjacent the end wall of said ferrule and a contact blade abutting against said end wall and provided with a prong projecting through said end wall and upset upon said backing plate.

6. An inclosed fuse having a tubular casing, a ferrule fitting the end of said casing, a backing plate laid against the end wall of said ferrule, and a contact member abutting against said end wall and having prongs passing through said end wall and upset in a recess in said backing plate.

7. An inclosed fuse having a tubular casing, an interior fuse-link, and an end closure for the casing, in combination with a backing plate adapted to support the interior fuse-link, laid against the end wall of said closure, and a projecting contact member adapted to bind said plate to said end closure.

8. An inclosed fuse having a tubular casing and an end closure therefor comprising a ferrule, a projecting contact blade abutting against said ferrule and having prongs formed on its end intermediate the side edges thereof and secured in corresponding apertures in the said ferrule.

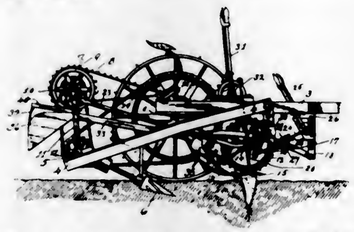
9. An inclosed fuse comprising a casing, an interior fuse-link and an end ferrule for said casing, in combination with a backing plate adapted to support the fuse-link, and a contact blade abutting against said ferrule and having prongs formed on its end intermediate of the side edges thereof, said prongs being located in apertures in the ferrule and upset upon said backing plate.

10. In an inclosed fuse, a tubular casing having an end closure and a projecting contact blade fastened by its end to said closure, said blade and closure being provided respectively with a longitudinal recess and an aperture, in registry, and a fuse-link terminal contained within said recess and aperture.

11. In an inclosed fuse, a tubular casing provided with an end closure and a projecting contact blade formed with prongs at its end riveted to said end closure, the said contact blade being provided with a longitudinal recess between its prongs and a fuse-link terminal secured in said recess.

12. An inclosed fuse comprising a casing, an interior fuse-link and an end ferrule for said casing, in combination with a backing plate laid against said ferrule, said ferrule and backing plate being formed with registering apertures for connection with the fuse-link, and a contact blade secured by its end to said ferrule and provided with means for securing said backing plate in position.

856,394. BEET-HARVESTING MACHINE. GEORGE F. CONNER, Port Huron, Mich. Filed Mar. 24, 1905. Serial No. 251,904.



Claim.—1. A beet topper comprising a main frame, a pair of cradle arms pivoted at their corresponding ends to the main frame, a knife cradle secured to their free ends, a knife secured to the cradle, a pair of wheel levers pivoted to the cradle arms in alinement, a link pivoted at one end to the wheel levers and at the other to the main frame, and a gauge wheel rotatively secured to the wheel levers.

2. A beet topper comprising a main frame, a pair of similarly disposed cradle arms pivoted at one end to the main frame, a knife cradle secured between the free ends of the levers, a pair of similarly disposed bell cranks pivoted to the cradle arms, a gauge wheel rotatively secured between the corresponding arms of the bell cranks, an adjusting lever pivoted to the main frame, and link and pin connections between the adjusting lever and the other arms of the bell cranks.

3. In a beet topper, a vertically movable knife, a conveyer chute whose receiving end is operatively connected to the knife, a gauge wheel for the knife, and an endless carrier for the chute passing around the gauge wheel, whose lower flight assumes different angular relations to the chute, said chute being longitudinally crowned near its receiving end so that it passes through the path of motion of the flight.

4. In a beet topper, a vertically movable knife, a conveyer whose chute is secured near its mouth to the knife and whose carrier comprises an endless sprocket chain driven by a sprocket near the discharge end of the chute and passing over a sprocket above the knife, said forward sprocket and chain being operatively connected to the knife as a gauge therefor.

5. A beet topper comprising a main frame, a vertically movable knife, a gauge wheel for the knife differentially connected thereto, a conveyer whose delivery end is carried by the main frame and whose receiving end is carried by the knife, and whose flight comprises an endless carrier running over and driving the gauge wheel, and means for maintaining a constant tension on the flight in all positions assumed by the carrier.

6. A beet topper comprising a main frame, a vertically movable knife, therein, a gauge wheel for the knife differentially connected thereto, and a conveyer whose flight comprises an endless carrier running over and driving the gauge wheel, the delivery end of the conveyer being supported by the main frame and the receiving end by the knife, and a drive wheel for the carrier movably supported in fixed relation to the gauge wheel.

7. A beet topper comprising a main frame, a vertically movable knife therein, a gauge wheel differentially connected to the knife, a conveyer whose receiving end is operatively connected to and moves with the knife and whose flight comprises an endless carrier driving the gauge wheel and having the differential vertical movements of the gauge wheel in relation to the knife, and means articulating the carrier driving mechanism and the discharge end of the conveyer to the main frame and maintaining the driving mechanism and gauge wheel in fixed relation.

8. A beet topper comprising a main frame, a vertically movable knife therein, and a conveyer articulated at its rear end to the main frame, whose flight comprises an endless carrier passing over and acting as gauge for the knife, differentially connected thereto, the receiving end of the conveyer being carried by the knife.

9. A beet topper comprising a main frame, a vertically movable knife therein a gauge wheel for the knife, a conveyer whose chute moves vertically with the knife and whose flight moves vertically with and drives the gauge wheel, and a frame carrying the rear sprocket of the flight and the discharge end of the conveyer, oscillatory in the main frame.

10. A beet topper comprising a main frame, a topper frame pivoted at its forward end to the main frame, a knife secured in the free, rear end of the topper frame, a conveyer whose chute is carried at its forward end by the topper frame and at its rear end by the main frame, and whose flight comprises an endless carrier sweeping the chute whose forward sprocket is journaled in the topper frame, and acts as a gauge for the knife.

11. A beet topper comprising a main frame, a topper frame whose forward end is pivoted to the main frame, a knife secured in the free, rear end of the topper frame, a conveyer whose chute is articulated at the rear end to the main frame and whose forward end is carried by the free end of the topper frame, and whose flight comprises an endless carrier sweeping the chute, whose rear wheel is journaled on the main frame and whose forward wheel is journaled in the topper frame, and acts as a gauge for the knife.

12. A beet topper comprising a main frame, a topper frame pivoted at its forward end to the main frame a knife secured in the free, rear end of the topper frame, a conveyer whose chute is carried at its forward end by the topper frame and at its rear end by the main frame, and whose flight comprises an endless carrier sweeping the chute whose forward wheel is journaled in differential connections with the topper frame, and acts as a gauge for the knife.

13. A beet topper comprising a main frame, a topper frame pivoted at its forward end to the main frame, a knife secured in the rear free end of the topper frame, a conveyer frame oscillatory in the main frame, a conveyer chute whose forward end is supported by the topper frame and whose rear end is articulated to the conveyer frame, and an endless carrier sweeping the chute, whose forward end carries the free end of the topper frame and acts as a gauge for the knife, and whose rear wheel is journaled in the conveyer frame.

14. A beet topper comprising a main frame, a topper frame pivoted at its forward end to the main frame, a knife fixed in the topper frame, a conveyer frame pivoted at one end to the main frame, a conveyer chute carried at its forward end by the free end of the topper frame and at its rear end by the free end of the conveyer frame, an endless carrier sweeping the chute whose forward wheel shaft is journaled in bearings yieldingly secured on the free end of the topper frame, and whose forward wheel acts as a support for the free end of the topper frame and as a gauge for the knife, and whose rear wheel shaft is journaled in the free end of the conveyer frame, and links pivoted at each end to the forward and rear carrier wheel shafts.

15. In a beet topper, a vertically movable knife and a conveyer whose endless carrier is differentially connected to and acts as a gauge for the knife.

16. In a beet topper having a topping frame and a knife secured therein, a gauge secured by lever connections to the topping frame, and a spring-pressed, yielding link con-

necting the gauge levers and main frame, and affording yielding relation between the gauge and knife.

17. In a beet topper, a vertically movable knife, a gauge therefor, differential connections between the gauge and knife controlling their relative vertical movements, a conveyer chute moving vertically with the knife and a conveyer flight sweeping the chute, moving vertically with the gauge, said chute being adapted to co-operate with the flight throughout the range of their relative movements.

18. A beet topper comprising a vertically movable knife, a gauge therefor, and connections affording differential vertical movement in the knife and gauge, yieldingly maintaining them in operative relation to each other.

19. In a beet topper, a vertically movable knife, a gauge therefor, differential connections between the gauge and knife and a spring in the differential connections permitting limited movement of the gauge independent of the movement of the knife.

20. A beet topper comprising a main frame, a topper frame oscillatory therein, a knife secured in the topper frame, a gauge for the knife swinging in and supporting the free end of the topper frame, a link pivoted at one end to a lever adjustably locked with the main frame and at the other end to the gauge, and a spring in the link permitting limited movement of the gauge in the topper frame.

21. A beet topper comprising a main frame, a topper frame swinging therefrom, a knife secured in the free end of the topper frame, a pair of levers swinging in alinement in the topper frame, a gauge for the knife mounted on the levers, a link pivoted at one end to the gauge levers, and at the other articulated to the main frame, and an adjustably secured lever on the main frame for rocking the gauge levers on the topper frame.

22. A beet topper comprising a main frame, a knife vertically movable in relation to the main frame, a gauge for the knife, differential connections between the gauge and knife controlling their relative vertical movements, and an adjustably secured lever on the main frame for setting the knife.

23. A beet topper comprising a main frame, a topper frame pivoted at its forward end to the main frame, a knife secured in the rear, free end of the topping frame, a conveyer whose chute is carried at its forward end by the topper frame and at its rear end by the main frame, and whose flight comprises an endless carrier sweeping the chute whose forward sprocket is journaled in the topper frame and acts as a gauge for the knife, the sides of the chute at its receiving end being outwardly curved to form lateral top-compressing means.

24. A beet topper comprising a main frame, a vertically movable knife therein, a positively driven gauge for the knife, coacting therewith to shear off beet crowns passing between them, and differential connections between the knife and the gauge yieldingly maintaining them in operative relation.

25. A beet topper comprising a main frame, a topper frame vertically movable therein, a knife rigidly secured in the topper frame, a rotatable gauge whose bearings swing in a vertical arc centered in the topper frame, a link articulated to the bearings, controlling motion in their arc, and a lever pivoted to the link, adjustably interlocked with the main frame, adapted to shift the center of rotation of the link.

26. In a beet topper, a vertically movable knife, a sprocket wheel resting on the ground in advance of the knife, and carrying the knife, and a conveyer whose carrier consists of a sprocket chain passing over the sprocket wheel and between the wheel and the knife and driving the wheel.

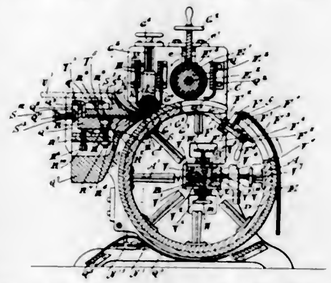
27. A beet topper comprising a main frame, a vertically movable knife therein, a gauge for the knife, differential connections between the knife and gauge controlling their relative vertical movements, and adjusting means for varying the ratio of the respective movements of the knife and gauge.

28. A beet topper comprising a vertically movable knife, a gauge therefor, connections affording differential vertical movements in the knife and gauge, yieldingly maintaining them in operative relation to each other, and adjusting means for varying the ratio of the respective movements of the gauge and knife.

29. A beet topper comprising a main frame, a topper frame movable therein, a knife in the topper frame, a gauge for the knife, connections between the frames, the knife and gauge affording differential vertical movements in the knife and gauge, yieldingly maintaining them in operative relation, and adjusting means for varying the ratio of the differential movements of the knife and gauge.

30. A beet topper comprising a main frame, a vertically movable knife therein, a positively driven gauge for the knife, coacting therewith to shear off beet crowns passing between them, and connections between the gauge and the knife, yieldingly maintaining them in operative relation.

856,395. MACHINE FOR SPLITTING RAW HIDES AND SKINS. JAMES W. DECKERT, Oakville, Ontario, Canada. Filed Sept. 5, 1905. Serial No. 276,987.



Claim.—1. In a machine of the class described, the combination with a belt-knife, and means for operating same, of means for feeding the tanned work through the medium of its two surfaces to the knife, consisting of a rotary member carrying the work, and a member, operating above and in advance of said knife and upon said rotary member, constructed of a plurality of disks or rings having a common axis of rotation and having independent movement of each other in substantially parallel planes so as to conform to the thickness of the work under manufacture, and means for causing said rings or disks to positively rotate in the same direction as said rotary member and at the same peripheral speed thereof so as to positively feed the work through the medium of its two surfaces to said belt-knife.

2. In a machine of the class described, the combination with a belt-knife, and means for operating same, of a member, operating above and in advance of said knife and comprising a revolving shaft; a plurality of abutting disks or rings upon said shaft; resilient means interposed between said rings or disks and said shaft so that said rings or disks will have independent movement of each other substantially at right angles to the shaft and in conformity with the thickness of the work under manufacture; means for causing said rings or disks to positively rotate with said shaft and yet not interfere with their movement in conformity with the thickness of the work under manufacture, and a rotary drum; the said drum and member positively rotating in the same direction and at the same peripheral speed so as to positively feed the work through the medium of its two surfaces to said belt-knife; the said member releasing the work just about at point of spliting.

3. In a machine of the class described, the combination with the jaw-bed provided at its upper forward edge with a rib circular in cross-section, of a knife-jaw comprising a lower member provided near its lower front portion with a socket—in which rests said ball-shaped rib so that the lower member may have tilting movement on said jaw-bed, and being further provided with a slot having a socket-shaped upper portion; an adjusting screw held in said jaw-bed and operating against said lower member; a screw provided with a socket-shaped head operating in the socket-shaped top of the slot in said lower member and held in said jaw-bed whereby said lower member is held in its adjusted position; the upper member of said knife-jaw; means for holding it in relation to said lower member, and a belt-knife operated between the members of said knife-jaw.

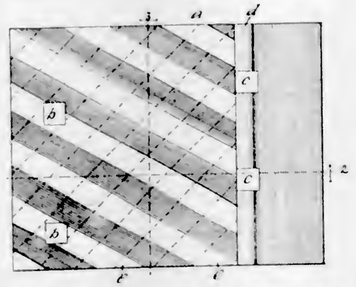
4. A member for hide-working machinery comprising a shaft; a plurality of disks secured to or forming part of said shaft and each provided with a serrated perimeter; a ring for each of said disks the inner perimeter of which is serrated, and a layer of resilient material interposed between said disks and rings so that said rings may have independent movement of each other and in conformity with the thickness of the work under manufacture.

5. In a machine of the class described, the combination with a horizontally-adjustable jaw-bed provided with a rib circular in cross-section, of a knife-jaw constructed of an upper and a lower member; said lower member being provided with a slot in which operates the rib of said jaw-bed; means for adjusting the members of said knife-jaw in relation to each other, and means for adjusting said knife-jaw in relation to said jaw-bed through the medium of the lower member of said knife-jaw, and the belt-knife operating between the members of said knife-jaw.

6. In a machine of the class described, the combination with a member, of a knife-jaw designed to have tilting movement upon said member and comprising an upper and a lower member; means for adjusting the members of said knife-jaw in relation to each other so as to provide for wear; means for adjusting said knife-jaw in relation to said member through the medium of the lower member of said knife-jaw; the belt-knife operating between the members of said knife-jaw, and means for horizontally adjusting said belt-knife so as to maintain its edge substantially in a fixed path of movement.

7. In a machine of the class described, the combination with a horizontally-adjustable member, of a knife-jaw designed to have tilting movement upon said member and comprising an upper and a lower member; means for adjusting the members of said knife-jaw in relation to each other so as to provide for wear; means for adjusting said knife-jaw in relation to said member through the medium of the lower member of said knife-jaw, and means for horizontally adjusting said belt-knife so as to maintain its edge substantially in a fixed path of movement.

856,396. TIE-PLATE. WILLIAM L. DE REMER, Chicago, Ill. Filed Feb. 23, 1907. Serial No. 358,904.



Claim.—1. A tie-plate having on its upper side a series of ribs, and having on its under side a series of retaining ribs extending at an angle with relation to the upper ribs.

2. A tie-plate having on its upper side a series of ribs extending lengthwise of the plate at an oblique angle with relation to its longitudinal center, and having on its under side a series of ribs extending at an angle with relation to such upper ribs.

3. A tie-plate having on its upper side a series of ribs, and having on its under side a series of retaining ribs extending obliquely with relation to such upper ribs.

4. A tie-plate provided with spike holes therethrough and having on its upper side a series of ribs extending obliquely of the plate between the spike holes, and on its under side a series of ribs extending obliquely with relation to such upper ribs.

5. A tie-plate having on its upper side a transverse shoulder and a series of ribs extending obliquely with relation to such shoulder, and having on its under side a series of ribs extending at an angle with relation to the upper ribs.

6. A tie-plate provided with spike holes therethrough and having on its upper side a transverse shoulder and a series of upper ribs extending at an angle with relation to such shoulder, and having on its under side a series of retaining ribs extending at an angle with relation to the upper ribs.

7. A tie-plate having on its under side a series of retaining ribs extending obliquely of the plate and each having an upright side face in the direction of one end of the plate and a bottom surface portion extending upward and at an incline in the direction of the opposite end of the plate.

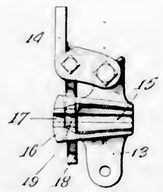
8. A tie-plate having ribs on its upper side, and provided with a series of retaining ribs on its under side extending at an angle with relation to such upper ribs and each having an inclined bottom surface portion.

9. A tie-plate having on its upper side a transverse shoulder and a series of ribs extending obliquely with relation to such shoulder, and having on its under side a series of ribs each provided with an inclined bottom surface portion and extending obliquely with relation to such upper ribs.

10. A tie-plate having on its upper side a transverse shoulder and ribs extending at an angle with relation to such shoulder, and provided on its under side with a series of retaining ribs extending at an angle with relation to the upper ribs and each having an inclined bottom surface portion and an upright side face.

11. A tie-plate having spike holes therethrough, and provided with a series of ribs on its upper side, and having on its under side a series of ribs the bottom surface portions of which form the entire load bearing bottom surface portion of the plate between the spike holes.

856,397. SHAKING MECHANISM FOR GRATES. FREDERICK N. DILLON, Fitchburg, Mass. Filed Nov. 10, 1904. Serial No. 232,202.



Claim.—1. The combination of the rocking grate-bars, a pivoted socket-piece, means for connecting the socket-piece and grate-bars, and an independently pivoted cover-piece fitting over the socket-piece, said socket-piece and cover-plate having slots or keyways which are in alinement when the grate-bars are in horizontal position and which are out of alinement when the grate-bars are tilted.

2. The combination of the rocking grate-bars, and connections having means for preventing the removal of a shaking-handle except when the grate-bars are in horizontal position, comprising a pivotally supported socket-piece, and a cover-plate pivotally supported upon a different center from the socket-piece, said socket-piece and cover-plate having key-ways or slots which are in alinement when the parts are in normal position and out of alinement when the grate-bars are tilted.

3. The combination of rocking grate-bars, and connections having means for preventing the removal of a shaking handle except when the grate-bars are horizontal,

comprising a pivotally supported socket-piece with cheek-pieces extending forward therefrom said socket-piece and said cheek-pieces having keyways or slots therein, and a cover-plate held in place by the cheek-pieces and pivotally supported upon a different center from the socket-piece, said cover-plate having a key-way or slot which is in alinement with the key-ways or slots in the socket-piece and the cheek-pieces when the parts are in normal position and out of alinement when the grate bars are tilted.

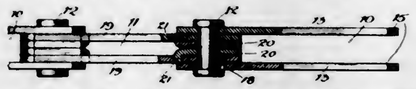
4. The combination of rocking grate-bars each having a downwardly extending arm, a connecting bar pivoted to said arms, a pivotally supported socket-piece, a link connecting the socket-piece and connecting bar, and an independently pivoted cover-plate, said socket-piece and cover-plate having key-ways or slots which when the parts are in normal position are in alinement to receive the rib or projection of a shaking-handle, and out of alinement when the grate-bars are tilted.

5. The combination of rocking grate-bars, a pivoted socket-piece, connections from the pivoted socket-piece to the rocking grate-bars, cheek-pieces formed on the socket-piece, the opposing faces of the cheek-pieces and the socket piece being rounded, an independently pivoted cover-plate fitting between the cheek-pieces and socket-piece, said cover-plate, cheek-pieces, and socket-piece having keyways or slots which when the grate-bars are in horizontal position are in alinement to receive the rib or projection of a shaking handle.

6. The combination with movable grate-bars, of a pivoted socket-piece, means for connecting the socket piece and grate-bars to move the grate-bars when the socket-piece is moved, and an independently pivoted cover-piece, said socket-piece and cover piece having slots or keyways adapted to register with each other when the grate-bars are in horizontal position, and to be out of registration when the grate-bars are tilted, whereby a shaking handle having a projection adapted to pass through said slots or keyways can be withdrawn only when the grate-bars are in normal horizontal position.

7. The combination with movable grate-bars, of a pivoted socket piece, means for connecting the socket-piece and grate-bars for moving the latter when the socket piece is moved, and an independently pivoted cover piece fitting over the socket piece, said socket piece and cover piece having means for preventing the withdrawal of a shaking handle when the grate bars are tilted, and permitting its withdrawal when they are in normal horizontal position.

856,398. CHAIN. RAYMOND W. DULL, Aurora, Ill., assignor to Stephens-Adamson Mfg. Co., a Corporation of Illinois. Filed Oct. 15, 1906. Serial No. 339,006.



Claim.—1. In a chain, in combination, a link comprising a pair of parallel bars each apertured adjacent one end, a second link fitting over the apertured ends of the bars, a pivot pin fixed against rotation in the last named link and passing through the apertures of the bars of the first named link, and a filler fitting over the pivot pin and anchored to one of the bars.

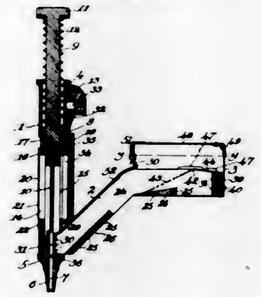
2. In a chain, in combination, two links having an overlapping end to end relation, a pin uniting the links and being fixed against rotation in one of them, and a filling piece having an aperture to receive the pin and being anchored to the other link.

3. In a chain, in combination, an open link comprising a pair of parallel side bars and a filling piece separating the bars adjacent one end of the link, such filling piece being anchored to one of the bars and all of such parts having a pivot aperture, a pivot pin passing through the apertures, and a second link engaging the pivot pin.

4. In a chain, in combination, a link comprising a pair of parallel bars each apertured adjacent one end, a second link fitting over the apertured ends of the bars, a pivot pin fixed against rotation in the last-named link and passing through the apertures of the bars of the first named link, a roller mounted on the pivot pin between the bars of such link, and a filler fitting over the pivot pin at each side of the roller and being anchored to the adjacent link bar.

5. In a chain, in combination, an open link comprising a pair of parallel side bars and a pair of filling pieces separating the bars adjacent one end of the link, one of such fillers being anchored to each of the bars and all of such parts having a pivot aperture, a pivot pin passing through the apertures, and a second link engaging the pivot pin.

856,399. HAND-TACKER. ARTHUR W. EATON, Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J., a Corporation of New Jersey. Filed June 18, 1900. Serial No. 20,693.



Claim.—1. In a hand tacker, the combination with the tack driver and raceway, of a hopper supported by said raceway, said hopper having at one end inclined pockets upon opposite sides of the raceway and at the opposite end a guide plate provided with converging guide ribs, upon which plate the tacks are discharged from the inclined pockets, substantially as described.

2. In a hand tacker, the combination with an inclined raceway, of a hopper supported thereby, said hopper having at one end thereof a slotted guide plate inclined in the opposite direction to the raceway and provided with converging guide ribs, substantially as described.

3. In a hand tacker, the combination with an inclined raceway, of a hopper supported thereby, a slotted guide plate provided with guide ribs, the ribs converging for one portion of their length and extending substantially parallel for another portion of their length, substantially as described.

4. In a hand tacker, the combination with the tack driver and raceway, of a separating gate acting to withdraw from in front of the raceway when the driver is depressed to permit the tacks to advance along said raceway until the leading tack contacts with the driver, and to return to its first position in two movements with a dwell between to permit the driver to rise above the tack, and means for actuating the gate, substantially as described.

5. In a hand tacker, the combination of a driver, a hopper, and a raceway extending into the hopper and terminating intermediate the ends thereof, the bottom of the hopper being divided near the end of the raceway into two portions inclining oppositely, so that when the driver is in its normal position the forward part of the said bottom is inclined toward the driver and the latter part away therefrom, and guiding means on the latter part to guide the tacks into the raceway, substantially as described.

856,400. BOTTLE-SEAL. KING C. GILLETTE, Boston, Mass. Filed Mar. 9, 1906. Serial No. 305,111.

Claim.—1. A bottle seal comprising a cap having a portion thereof depressed to form a seat for the gasket, a gasket mounted in said seat, said depressed part being greater in diameter than the mouth of the bottle whereby it will rest upon a part of the bottle lip.



2. A bottle seal comprising a cap having a portion thereof depressed to form a seat, a gasket clamped in said seat, said depressed portion being greater in diameter than the mouth of the bottle on which it is mounted.

3. A bottle seal comprising a cap having the central part depressed and returned upon itself to form a seat for the gasket, said depressed portion being greater in diameter than the mouth of the bottle on which it is mounted and adapted to rest upon a part of the bottle lip.

4. A bottle seal comprising a cap having a depressed portion returned upon itself to form a seat, a gasket clamped in said seat, and water proof material covering said depressed portion.

5. A bottle seal comprising a cap having a depressed portion, a gasket mounted on said depressed portion, and a sheet of water-proofed material covering said depressed portion, said depressed portion being greater in dinmeter than the mouth of the bottle on which it is mounted and adapted to rest upon a part of the bottle lip.

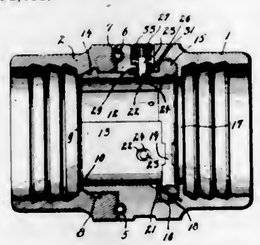
6. A bottle seal comprising a cap having a depressed portion returned upon itself to form a seat, a gasket clamped in said seat, and a sheet of paraffined material clamped between said gasket and seat and covering said depressed portion.

7. A bottle seal comprising a cap having a depressed center returned upon itself to form a seat, a gasket secured in said seat, said cap having a flange, or skirt with the edge thereof formed into an open loop, the free end of said loop being adapted to engage the shoulder of the bottle and to be conformed thereto in being clamped upon the bottle.

8. A bottle seal comprising a suitable cap and gasket, said cap having a flange or skirt with the edge thereof formed into an open loop, said loop being proportioned in size with referene to the bottle so that it will be engaged by the shoulder of the bottle and partially closed when the cap is being secured to the bottle.

9. A bottle seal comprising a suitable cap and gasket clamped upon a bottle, said cap having a flange or skirt with the edge thereof formed into a loop, said loop having the free edge thereof conformed to the shoulder of the bottle substantially as described.

856,401. HOSE-COUPLING. ED J. HANNOLD, Mexico, Mo., assignor, by mesne assignments, to C. A. Witherspoon, trustee, Mexico, Mo. Filed Dec. 19, 1905. Serial No. 292,481.



Claim.—1. A coupling comprising a cylindrical section, integral segmental flanges arranged at equal distances apart around the opening in said section; locking members arranged between said flanges and having their inner ends pivoted in sockets, and having hooked outer ends adapted to interlock with the internal face of an adjoining section, substantially as described.

2. A coupling comprising a cylindrical section, an annular groove and flange within same, locking members having their inner ends seated in said groove and abutting said flange, and a block adapted to lock said members therein, substantially as described.

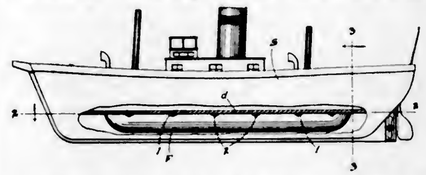
3. A coupling comprising a cylindrical section, locking members carried therein having their inner ends pivoted in sockets and having hooked outer ends, inwardly extending pins swiveled to said locking members intermediate of their ends passing through said section and adapted to be forced inwardly and forcing the locking members inwardly, substantially as described.

4. A coupling comprising a cylindrical section, an annular groove and flange within same, locking members carried therein, rounded shoulder carried on their inner ends and seated in the annular groove and abutting the annular flange, rounded blocks carried in said groove between the locking members having laterally extending projections adapted to secure the said locking members within the groove, substantially as described.

5. A coupling comprising a cylindrical section, having an enlarged lateral bearing face locking members carried therein having their inner ends pivoted in sockets and having hooked outer ends extending beyond the said bearing face and adapted to interlock with an adjoining section, an annular gasket carried in the bearing face of the first mentioned section, inwardly extending pins swiveled to said locking members intermediate of their ends passing through said section, nuts carried on the outer end of said pins, a spring surrounding said pin interposed between the nut and shoulder in the opening in the wall of the section, and a gasket surrounding said pin between the face of the locking member and the wall of said section, substantially as described.

6. A coupling comprising a cylindrical section, having an enlarged lateral bearing face, and a central opening through same, segmental flanges adjacent to said opening extending beyond said bearing face, and adapted to extend into an adjoining section, locking members carried in said section between the said segmental flanges, having hooked outer ends flush with the outer ends of said flanges, adapted to enter and interlock with an adjoining section, and their inner ends pivoted in sockets, inwardly-extending pins swiveled to said locking members intermediate of their ends, springs surrounding same adapted to normally hold said locking member against the inner wall of the section and in locking coaction with the opposite section, substantially as described.

856,402. SAFETY-FLOAT FOR SHIPS. ROBERT HELD, St. Louis, Mo. Filed Aug. 30, 1906. Serial No. 332,614.

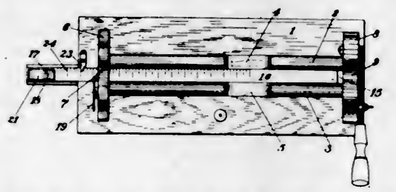


Claim.—In combination with a ship, suitable vertically disposed floats interposed and occupying the vertical space between the keel and lower deck thereof on each side of the vessel, means for securing the floats to the lower deck, and means located below the lower deck for bracing and mechanically connecting the floats against shifting or displacement, substantially as set forth.

856,403. SHADE-CUTTING DEVICE. FRED W. HUBBARD and THOMAS A. MORTON, Columbus, Ohio. Filed Dec. 28, 1906. Serial No. 349,789.

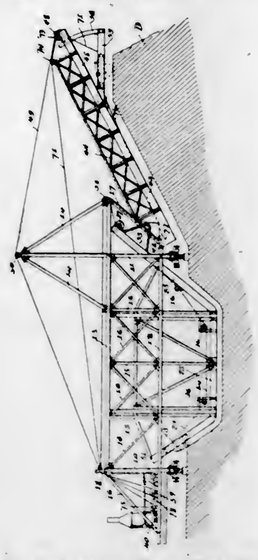
Claim.—1. A shade cutting device having a base, parallel supports fixed rigidly thereon for supporting a shade upon their upper faces, and having depressions therein to receive the hand of the operator when grasping the shade to manipulate the same, the upper faces of said rigid

supports being curved oppositely from the curve of the shade, standards adjacent the ends of the supports having depressions therein to fit the curve of the shade, a gage, a pivoted knife adjacent one end of said supports, and adjustable means for limiting the vertical swing of said knife.



2. A shade cutting device having a base, non-rotatable supports mounted thereon to receive a shade upon their upper faces, and having depressions therein to receive the hand of the operator for grasping the shade in manipulating the same, the upper faces of said supports being curved oppositely from the curve of the shade, standards adjacent the ends of the supports having depressions therein to receive the shade and being curved to fit the same, an adjustable gage, a standard thereon having an opening therein to receive an end of the shade roller, to permit the adjacent edges of the rolled shade to abut against said standard adjacent said opening whereby the folds of said edge may be properly alined, and a knife pivoted adjacent one end of said supports for cutting said shade.

856,404. COMBINED TRENCH-EXCAVATOR AND LEVEE-BUILDER. CHARLES C. JACOBS, Chicago, Ill., assignor to The F. C. Austin Drainage Excavator Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 14, 1906. Serial No. 311,773.



Claim.—1. In an excavator, the combination of a track section, an excavating bucket adapted to travel thereon, a discharge track section, and a dumping bucket adapted to travel thereon, said excavating bucket being adapted to empty its contents into said dumping bucket which discharges the same upon the dike, substantially as described.

2. In an excavator, the combination of a ditch track section, an excavating bucket traveling thereon, a hinged discharge track section, and a dumping bucket traveling thereon, said latter bucket being adapted to receive the contents of said excavating bucket, convey the same along said discharge track section, and dump the same, substantially as described.

3. In an excavator, the combination of a ditch track section, an excavating bucket adapted to travel thereon, a hinged boom discharge track section, a supplemental track section hinged to said boom track section and adapted to extend over the dike, and a dumping bucket adapted to travel on said boom and supplemental track sections to receive the contents of said excavating bucket, convey the same along said discharge and supplemental track sections, and dump the same, substantially as described.

4. In an excavator, the combination of a ditch track section shaped to conform to the cross-sectional profile of the ditch to be dug, an excavating bucket adapted to travel on said ditch track section, means to reciprocate said bucket to and fro on said ditch track section, an adjustable hinged boom track section, a supplemental track section hinged to said boom track section, a dumping bucket adapted to travel on said boom and supplemental track sections, and means to reciprocate said dumping bucket on said boom and supplemental track sections, the movements of said buckets being such that said excavating bucket discharges its contents into said dumping bucket, the latter conveying the same along the boom and supplemental track sections, and dumping the same, substantially as described.

5. In an excavator, the combination of a main frame adapted to extend over and travel longitudinally of the ditch to be dug, a vertically adjustable frame mounted in said main frame, a ditch track section conforming to the cross-sectional profile of the trench mounted on and movable with said vertically adjustable frame, an excavating bucket adapted to travel on said ditch track section, means to reciprocate said bucket on said track section, a discharge track section, a dumping bucket adapted to travel thereon, and means to reciprocate said dumping bucket on said discharge track section, the forward end of said ditch track section extending over the rear end of said discharge track section and being provided with means to cause its excavating bucket to dump its contents, whereby said excavating bucket may remove dirt from the ditch and drop the same into said dumping bucket, the latter carrying the same to the dike and dumping it, substantially as described.

6. In a dike building machine, the combination of a support, a bucket adapted to travel thereon and dress a face of said dike, and means to operate said bucket substantially as described.

7. In a dike building machine, the combination of an adjustable hinged track section, a bucket adapted to travel thereon and dress a face of said dike, and means to operate said bucket substantially as described.

8. In a dike building machine a vertically adjustable hinged track section, a supplemental adjustable track section hinged to said first mentioned track section, and a bucket adapted to travel on said track sections and dress a plurality of faces of the dike, substantially as described.

9. In a dike building machine, the combination of a track section, a scraper adapted to travel thereon and dress a face of said dike, and means to operate said scraper substantially as described.

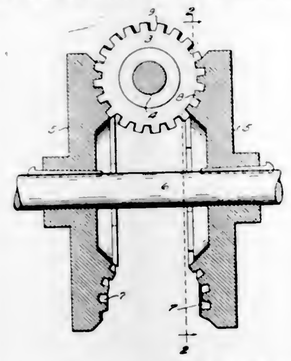
10. In a dike building machine a track section, a bucket, and a scraper both adapted to travel on said track section and dress a face of said dike, substantially as described.

11. In a machine of the character described, the combination of a ditch track section, a bucket adapted to travel thereon and remove dirt from the ditch, means to dump the contents of said bucket on the adjacent bank, a second track section, a scraper adapted to travel thereon, distribute the dirt so dumped to form a dike, and smooth off one or more faces thereof, substantially as described.

12. A dike building machine having one or more scrapers to smooth off all the faces of the dike, and means to operate said scraper or scrapers substantially as described.

13. In a dike building machine, the combination of a track section over the front face of the dike, a supplemental track section across the top of the dike, and a third track section over the back face of the dike, and means adapted to travel on said track sections to smooth off the faces of the dike, substantially as described.

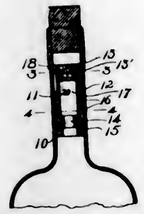
856,405. SPIRAL GEARING. CARL A. JANSON, Chicago, Ill. Filed Mar. 14, 1906. Serial No. 305,964.



Claim.—1. The combination of a wheel having gear teeth on its periphery, a shaft journaled on an axis which is at right angles to the axis of said wheel and lies in the plane of said wheel at one side of its axis, two members rigidly mounted on said shaft at opposite sides of said wheel and each having one face adjacent to the periphery of the wheel and having on said face a spiral ride meshing with the teeth on said wheel, the ridges on said members being alike and being adapted to cause said wheel to rotate through the rotation of said shaft.

2. The combination of a wheel having gear teeth on its periphery, a shaft journaled on an axis which is at right angles to the axis of said wheel and lies in the plane of said wheel at one side of its axis, two members rigidly mounted on said shaft at opposite sides of said wheel and each having one face adjacent to the periphery of the wheel and having on said face a series of spiral ridges meshing with the teeth on said wheel, the ridges on each member being spaced to mesh with the spaces between the teeth of said wheel and the pitch of said ridges being a multiple of the pitch of teeth.

856,406. NON-REFILLABLE BOTTLE. FREDERICK W. JOHNSON, Waltham, Mass. Filed Sept. 24, 1906. Serial No. 335,866.



Claim.—1. The combination with a bottle neck of a cylindrical sleeve fast thereto, said sleeve having an interior chamber opening through the inner end of said sleeve and having an exterior chamber connected to said interior chamber by ports arranged in a single straight line on one side only of said sleeve, said sleeve provided with an outlet passage leading from the outer end of said exterior chamber to the outer end of said sleeve, and with an air passage leading from the outer end of said sleeve to the inner end of said exterior chamber, and a valve slidable longitudinally within said interior chamber and adapted to rest normally upon a seat provided therein.

2. The combination with a bottle neck of a cylindrical sleeve fast thereto, said sleeve having an interior chamber opening through the inner end of said sleeve, a plug fast to said sleeve at the outer end thereof and within said interior chamber, said sleeve having an exterior chamber connected to said inner chamber by ports arranged in a single straight line extending longitudinally of said sleeve on one side only thereof, said sleeve provided with an outlet passage leading from the outer end of said exterior chamber to the outer end of said sleeve, and with an air passage leading from the outer end of said sleeve to the inner end of said exterior chamber, and a valve slidable longitudinally within said interior chamber and adapted to rest normally upon a seat provided therein.

3. The combination with a bottle neck of a cylindrical sleeve fast thereto, said sleeve having an interior chamber opening through the inner end thereof and within said interior chamber, said sleeve having an exterior chamber connected to said inner chamber by ports arranged in a single straight line extending longitudinally of said sleeve on one side only thereof, said sleeve provided with an outlet passage leading from the outer end of said exterior chamber to the outer end of said sleeve, and with an air passage leading from the outer end of said sleeve to the inner end of said exterior chamber, and a valve slidable longitudinally within said interior chamber and adapted to rest normally upon a seat provided therein, said sleeve provided with a vent passage extending from the lower end of said plug to the outer end of said sleeve and opening into said interior chamber.

4. The combination with a bottle neck of a cylindrical sleeve fast thereto, said sleeve having an interior chamber opening through the inner end of said sleeve and having an exterior chamber connected to said interior chamber by a port, said sleeve provided with an outlet passage leading from the outer end of said exterior chamber to the outer end of said sleeve, and with an air passage leading from the outer end of said sleeve to the inner end of said exterior chamber, and a valve slidable longitudinally within said interior chamber and adapted to rest normally upon a seat provided therein.

856,407. MAIL-BAG CATCHING AND DELIVERING MECHANISM. JAMES T. JONES, Columbus, Ohio. Filed Apr. 19, 1907. Serial No. 369,073.

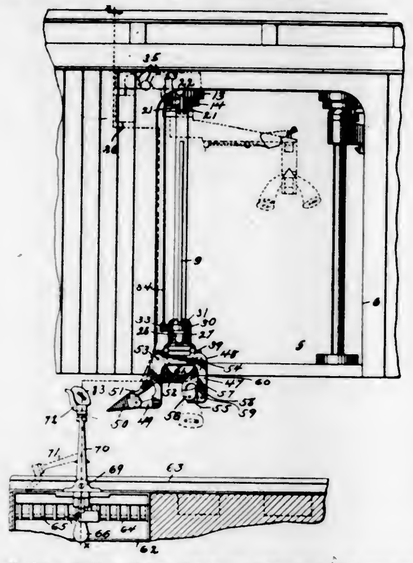
Claim.—1. In a device of the character described, the combination with a mail bag catching mechanism, of automatic means for bodily elevating said mechanism, and automatic means for swinging said mechanism inside of a car when it reaches its upper limit of movement.

2. In a device of the character described, the combination with a fixed shaft, of a mail bag catching mechanism mounted for vertical bodily movement upon said shaft, means for holding said mechanism in a rigid position outside of the car, means for releasing said mechanism when a mail bag is caught, means for elevating said mechanism when released, and means for swinging said mechanism bodily through a car door.

3. In a device of the character described, the combination with a mail bag catching mechanism, of automatic means for bodily elevating said mechanism, automatic means for swinging said mechanism inside of a car when it reaches its upper limit of movement, and a trap located alongside of the track and adapted to receive a mail bag from the car.

4. In a device of the character described, the combination with a fixed shaft, of a mail bag catching mechanism mounted for vertical bodily movement upon said shaft, means for holding said mechanism in a rigid position outside of the car, means for releasing said mechanism when a mail bag is caught, means for elevating said

mechanism when released, means for swinging said mechanism bodily through a car door, and a trap located alongside of the track and adapted to receive and retain a mail bag, said trap comprising retaining members which are actuated by the weight of the mail bag.



5. In a device of the character described, the combination with a car, of a vertical shaft located adjacent the car door, an arm mounted to travel vertically upon said shaft, means for locking said arm in its lowermost position, mail bag catching and retaining members carried by said arm, said locking mechanism being actuated by the mail bag catching mechanism, means normally tending to elevate said arm, and means for automatically swinging said arm bodily through the door of the car and about said shaft when said arm reaches its upper limit of movement.

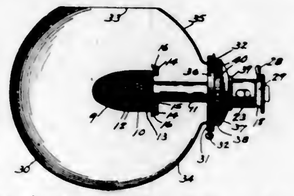
6. In a device of the character described, the combination with a car, of a fixed shaft located adjacent the car door, an arm mounted to travel vertically upon said shaft, locking mechanism for locking said arm in its lowermost position, mail bag catching and retaining members mounted upon the outer end of the arm, said locking mechanism being controlled by the movement of said mail bag catching members, a rotative member mounted at the upper end of the shaft, a spring normally tending to rotate said member, a latch for holding said member against rotation, means for releasing said latch when the arm reaches its upper limit of movement, and means for causing said arm to turn with said rotative member.

856,408. HORIZONTAL LIGHT. ADOLPH G. KAUFMAN, New York, N. Y. Filed Nov. 5, 1906. Serial No. 342,111.

Claim.—1. In an incandescent light, a substantially horizontal Bunsen tube, a mantle attached thereto and projecting in a substantially horizontally position, and means to distribute the flame over the interior of said mantle whereby the light may be radiated directly downward.

2. In an incandescent light, a substantially horizontal Bunsen tube, a mantle attached thereto, and projecting in a substantially horizontal position whereby the light may be radiated directly downward, and a flame shield intervening between the air mixer on said tube and said mantle.

3. In an incandescent light a Bunsen tube, a mantle attached thereto and projecting therefrom in a substantially horizontal position, and means to distribute the flame over the interior thereof, whereby the light may be radiated directly downward.



4. In an incandescent light, a discharge nozzle, a mantle surrounding said nozzle, said mantle being in a substantially horizontal position, and means to hold said mantle firmly in position free from said nozzle.

5. In an incandescent light, a substantially horizontal Bunsen tube, a mantle attached thereto, and extending in substantially the same direction, a flame shield mounted between the air mixer on said tube and said mantle, and a discharge nozzle having an enlarged end provided with perforations, and means to hold said mantle firmly in position free from said nozzle.

6. In an incandescent light having the mantle in substantially horizontal position, a mantle holder comprising a ring provided with legs, and a spider having spokes and flexible arms provided with projections forming humps adapted to engage the legs of said ring, and draw the edge thereof tightly against said spokes.

7. In an incandescent light, a mantle in a substantially horizontal position, a discharge nozzle within said mantle having a closed top and an enlarged end provided with openings in the sides and bottom thereof whereby the gas flame is driven downward and also laterally against said mantle.

8. In an incandescent light, a substantially horizontal Bunsen tube, a mantle attached thereto, and extending in substantially the same direction, a shield between the air mixer on said tube and the mantle having an annular horizontal part provided with ports, a discharge nozzle within said mantle having an enlarged end with a closed top and openings in the sides and bottom thereof whereby the gas flame is directed evenly over said mantle, and means to hold the mantle firmly in position.

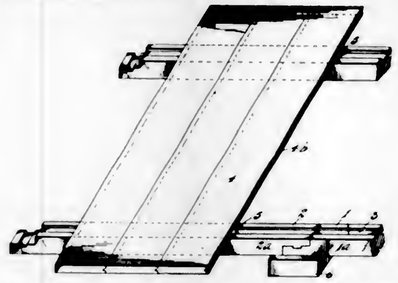
9. In a horizontal light having the mantle and the air mixer in a horizontal position, a flame shield and globe holder having an annular horizontal part with the air ports in said annular part, and a globe supported by said combined shield and globe holder having an opening in the top thereof, and a slot extending from said opening to said globe holder, and having an opening at one side of the bottom thereof.

10. In an incandescent light having the air mixer and the mantle in a substantially horizontal position, a globe holder and flame shield mounted between the air mixer and the mantle, said shield having an unbroken part as 37, an annular part, as 38, provided with perforations forming air ports, and a globe holding flange, as 31, said annular part 38 being interposed between the unbroken part 37, and said globe holding flange, for the purpose set forth.

856,409. CONCRETE SIDEWALK. DONALD G. MACDONALD, Detroit, Mich. Filed Nov. 19, 1906. Serial No. 344,013.

Claim.—1. In a concrete sidewalk, the combination of a tread member having integral projecting holding strips near each end of its under surface, a plurality of rows of stringers having their upper surfaces grooved for the reception of said holding strips, and having the end portions of each stringer formed to interlock with the complementary ends of adjoining stringers, and supporting blocks whereon the meeting ends of the stringers rest, substantially as described.

2. A concrete sidewalk, having in combination with unitary stringer members of said material provided with a groove in their upper surfaces and adapted to interlock at their ends with those adjoining, blocks whereon said stringers rest at their ends, and concrete tread members provided with longitudinally extending reinforcing strips and having projecting from their under surface shoulders adapted to engage within the grooves in said stringers, substantially as described.



3. In a concrete sidewalk, the combination of molded stringer members having ends adapted to interlock with those adjacent, their upper surfaces being indented for the reception of complementary projections, blocks beneath the meeting ends of said stringer members, and concrete tread members having projecting portions on their under surfaces adapted to engage in said indentations, each having a complementary rib on one lateral edge and a recessed portion in the other lateral edge, substantially as described.

856,410. HOLDER FOR TICKETS, CHECKS, &c. MURDOCH MACDONALD, Cleveland, Ohio, assignor to The Macdonald Ticket and Ticket Box Company, a Corporation of Ohio. Filed Mar. 27, 1905. Renewed Apr. 10, 1906. Serial No. 310,966.



Claim.—1. In a device of the character described, the combination of a casing arranged to receive a pad composed of flexible sheets, one portion being within the casing, the other exposed, a severing edge, and a means which retains the pad within the casing and places all of the sheets under initial stress so that the stubs of the severed sheets have a tendency at all times to retreat from the severing edge.

2. In a device of the charactered described, the combination of a casing having an opening and arranged to receive a pad composed of flexible sheets, the stub portion of the pad being within the casing and the portion to be severed extending through the opening, a severing edge against which the sheets are pressed one after the other as the portions outside of the casing are severed, and a holder which retains the stub portion within the casing, bends the pad to put the sheets under initial stress and holds the surface of the sheets in engagement with the severing edge, the holder, severing edge and pad being so constructed and arranged that a bodily movement of the pad after a sheet is severed frees the stub portion of the sheet from said severing edge and causes it to disappear from view.

3. In a device of the character described, the combination of a casing arranged to receive a pad composed of flexible sheets, concealing one portion and exposing the remainder, a severing edge, one or more cutters adjustable with respect to said edge, and a means for retaining the pad within the casing, the said means being so constructed and arranged that it tends at all times to withdraw the stubs of the sheets from the severing edge and from view.

4. In a device of the character described, the combination of a casing having an opening and arranged to receive a pad composed of flexible sheets, concealing one portion and exposing the other through the opening, a severing edge against which the sheets are pressed one after the other as the exposed portions are severed, a removable holder which forms one wall of the casing, holds the sheets in a bent position against the severing edge and thus places them individually under initial stress to cause them to spring away from said edge, and means for attaching the pad to the holder to facilitate its insertion and removal from the casing.

5. In a device of the character described, the combination of a casing, arranged to receive a pad composed of flexible material, concealing one portion and exposing the other, means for holding the pad in a bent position within the casing so that the sheets are placed under individual stress, to cause them to move away from the severing edge when released, one or more devices for making indications or records on the successive sheets, and a severing edge arranged to successively engage the sheets and retain the stub portion against the severing edge until released by a relative movement of the main body of the pad and said severing edge.

6. In a device of the character described, a casing having a back portion rounded transversely and provided with a severing edge along the front and top thereof and a series of cutters slidably engaged on the top of said casing and provided with points extending beyond said severing edge at an angle thereto, in combination with a pad-confining plate removably attached over the front and top of said case, means confining the sheets of said pad in the casing connected with said plate, and a spring-pressed wing on one edge of said plate to hold the tickets to the severing edge.

7. A device of the character described consisting of a casing having its front edge constructed to form a severing edge for the sheets and open across its front beneath said edge, in combination with a plate removably secured over said front, a spring-pressed wing having its edge opposite said severing edge, and indenting cutters slidably mounted along said severing edge projecting outward at an angle to said edge.

8. A device of the character described, comprising a casing with a rounded back portion and a severing edge along its front and top, a series of pointers slidably mounted on the top of said casing and having points in line with said severing edge, in combination with a retaining mechanism for a pad comprising a plate removably locked in the top of said casing, and a spring-pressed wing engaged on the edge of said plate and adapted to press the pad against the said severing edge.

9. A device of the character described comprising a sheet-metal casing with a severing edge at its top front, in combination with a pad-retaining mechanism consisting of a plate adapted to overlap a portion of the pad, means to lock said plate in the said casing, means to engage the pad and prevent its being drawn out, and means to hold the pad up against said severing edge.

10. A device of the character described, comprising a severing edge for the pad sheets along its front and top, and open at its front to insert the pad, in combination with means to confine said pad comprising a plate constructed along its front edge to be locked upon said casing, a spring-pressed wing hinged on the inner edge of said plate, and cutters slidably mounted on the said casing and having points bent to an inclination and operatively related to said severing edge.

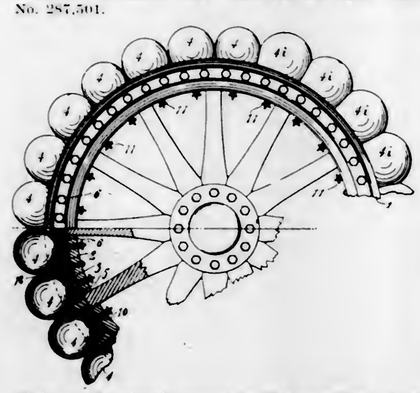
11. In a device of the character described, a casing adapted to hold a pad and to conceal the auditor's stub when the exposed portion has been removed, said casing having an opening lengthwise across its front bordered by a severing edge for the pad sheets, a yielding plate to hold the pad against said severing edge, and means to fix

the pad in the casing, comprising a support on which the pad rests, and means holding the pad upon said support, the said casing having a rounded back behind said severing edge to conceal the sheets of the pad after the tickets have been detached.

12. In a device of the character described, a case adapted to receive a pad composed of flexible sheets having a rounded back and top portion terminating at its front in a severing edge for the sheets, said severing edge being on a plane below the highest point in the top of the case, whereby when the exposed portion of a sheet is torn off of the stub it has room to spring back and be concealed within the upper portion of the case, in combination with means to confine the pad comprising a plate removably secured over the front of said case and extending inward at its rear to a plane substantially beneath the highest point in the top of the case, whereby when the pad is confined beneath said plate the angle of bend for the pad is made acute to facilitate the springing of the stubs back into the case.

13. In a device of the character described, a casing to hold a pad and to conceal the auditor's stub when the ticket proper has been severed, said casing having an opening lengthwise across its front bordered by a severing edge for the ticket, a yielding plate to hold the pad against said severing edge, and means to fix the pad in the casing comprising a support on which the pad rests, and means holding the pad upon said support, the said casing having a rounded back behind said severing edge to conceal the sheets of the pad after the tickets have been detached.

856,411. SECTIONAL PNEUMATIC TIRE. CLAUDE P. MAINS, Cincinnati, Ohio, assignor of one-half to George Deddens, Cincinnati, Ohio. Filed Nov. 15, 1905. Serial No. 287,501.

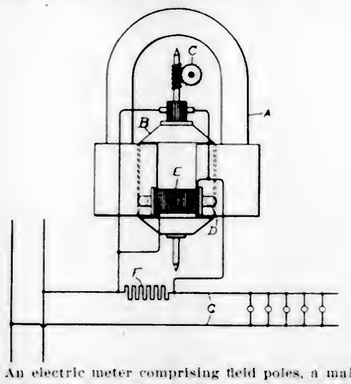


Claim.—A sectional pneumatic tire comprising a plurality of spherical chambers 4 each provided with a lug 3 and laterally projecting ribs 17 in combination with pockets 2 and flanges 18 adapted to receive said lugs 3 and ribs 17, respectively, and a bolt 6 having a taper 8 under its head adapted to enter hole 5 and nut 7 screwed thereon whereby said parts are securely held in fixed relation to each other, substantially as and for the purposes set forth.

856,412. ELECTRIC METER. ARTHUR J. MARTIN, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed Nov. 2, 1906. Serial No. 341,777.

Claim.—1. An electric meter comprising a field of substantially constant strength on full load, a rotatable armature, connections for supplying to said armature a voltage proportional to the load-current, a registering train driven by said armature, and means for producing a decrease in the strength of said field on light load.

2. An electric meter comprising field-poles, a main yoke of constant magnetization joining said poles, an armature rotatably mounted between said poles, connections for supplying to said armature a voltage proportional to the load-current, a registering train driven by said armature, an auxiliary yoke joining said field-poles, and means for applying to said auxiliary yoke a magneto-motive force proportional to the load-current, said yoke being arranged to be saturated at a fraction of full load.



3. An electric meter comprising field poles, a main yoke of constant magnetization joining said poles, an armature rotatably mounted between said poles, a registering train driven by said armature, an auxiliary yoke joining said field-poles, a magnetizing winding for said auxiliary yoke, and connections for supplying both to the armature and to said magnetizing winding voltage proportional to the load-current, said yoke being arranged to be saturated at a fraction of full load.

4. In combination with an electric circuit and a resistance in series therewith, a meter for said circuit comprising a field magnet of substantially constant strength on full load, a rotatable armature connected in shunt to said resistance, a registering train driven by said armature, and means for producing a decrease in strength of said field magnet on light load.

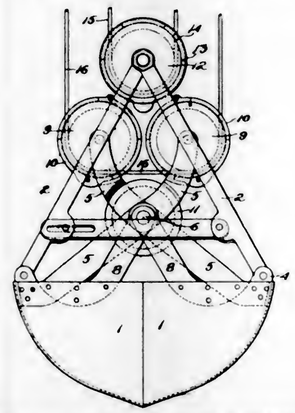
5. In combination with an electric circuit and a resistance in series therewith, a meter for said circuit comprising field-poles, a main yoke of constant magnetization joining said poles, an armature rotatably mounted between said poles and connected in shunt to said resistance, a registering train driven by said armature, an auxiliary yoke joining said field-poles, and a magnetizing winding for said auxiliary yoke connected in circuit with the armature, said auxiliary yoke being arranged to be saturated at a fraction of full load.

6. An electric meter comprising a field magnet of substantially constant strength, a rotatable armature, connections for supplying to said armature a voltage proportional to the load current, a registering train driven by said armature, a field winding supplied with current proportional to the load-current, and a magnetic circuit for said field winding acting upon said armature and arranged to be saturated at a fraction of full load.

856,413. GRAB. ARCHIBALD G. MONKS, Brookline, Mass. Filed Nov. 2, 1906. Serial No. 341,676.

Claim.—1. A grab comprising the pair of separable shells, a pair of closing levers crossed and pivotally connected together, each secured at its lower end to one of the shells and provided at its upper end with a closing sheave, a sheave mounted at the axis of the closing levers, and a closing fall passing under the closing sheaves and above the sheave at the axis of the levers.

2. A grab comprising a pair of separable shells, a holding sheave, supporting arms connecting the holding sheave and the shells, a pair of closing levers crossed and pivotally connected together, each secured at its lower end to one of the shells and provided at its upper end with a closing sheave, and a closing fall passing under the closing sheaves, all of said sheaves being in the same plane.



3. A grab comprising a pair of separable shells, a holding sheave, supporting arms connecting the holding sheave and the shells, a pair of closing levers crossed and pivotally connected together, each secured at its lower end to one of the shells and provided at its upper end with a closing sheave, a sheave mounted at the axis of the closing levers, and a closing fall passing under the closing sheaves and above the sheave at the axis of the levers, all of said sheaves being in the same plane.

4. A grab comprising a pair of separable shells, a holding sheave, supporting arms between the axis of the holding sheave and the outer corners of the shells, a pair of closing levers crossed and pivotally connected together, each secured at its lower end to one of the shells and provided at its upper end with a closing sheave, and a closing fall passing under the closing sheaves, all of said sheaves being in the same plane.

5. A grab comprising a pair of separable shells, a holding sheave, supporting arms connecting the holding sheave and the shells, a pair of closing levers crossed and pivotally connected together, each secured at its lower end to one of the shells, and provided at its upper end with a closing sheave, a sheave mounted at the axis of the operating levers, and a closing fall passing under the closing sheaves and above the sheave at the axis of levers, the parts being organized and arranged so that the closing fall between the closing sheaves will not be deflected by the sheave at the axis of the levers when the grab is closed, but will be deflected thereby when the grab is open.

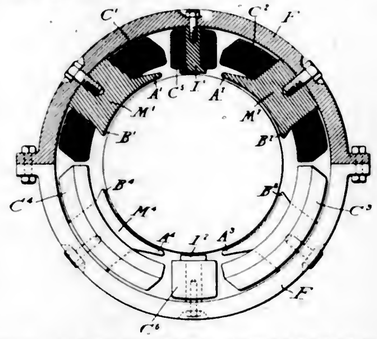
6. In a grab, a top head comprising a top head shaft, supporting arms pivotally connected therewith, a holding sheave mounted on the top head shaft and a guard upon said top head shaft projecting above the sheave and adapted to act as a buffer when the grab is hoisted.

7. In a grab, a top head comprising a top head shaft, supporting arms pivotally connected therewith, a holding sheave mounted on the top head shaft, and a guard rotatably mounted upon said top head shaft, projecting above the sheave, and adapted to act as a buffer when the grab is hoisted.

8. In a grab, a top head comprising a top head shaft, supporting arms pivotally connected therewith, a holding sheave mounted on the top head shaft, and a guard consisting of a pair of disks, one mounted on either side of the sheave, and having a greater diameter than the sheave.

9. A grab comprising a pair of separable shells, a holding sheave, supporting arms between the axis of the holding sheave and the outer corners of the shells, a pair of forked closing levers crossed and pivotally connected together, each rigidly secured at its lower end to one of the shells and provided at its upper end with a closing sheave, a sheave mounted at the axis of the closing levers, a closing fall passing under the closing sheaves and above the sheave at the axis of the levers, all of said sheaves being in the same plane, and a pair of guard disks rotatably mounted one on either side of the holding sheave, substantially as described.

856,414. DYNAMO-ELECTRIC MACHINE. CHARLES A. MUDGE, New York, N. Y., assignor to Electro-Dynamic Company, Bayonne, N. J., a Corporation of New Jersey. Filed Aug. 24, 1906. Serial No. 331,822.



Claim.—1. A dynamo electric machine having main and interpoles, the main pole faces being symmetrically spaced about the periphery of the armature while their cores are unsymmetrically spaced, thereby allowing space for the coils of the interpoles.

2. A dynamo electric machine having spaces of different extent between the cores of the main field poles, and an interpole located in the larger inter-core space.

3. A dynamo electric machine having a plurality of main poles with unsymmetrically spaced cores, half as many interpoles located in alternate intercore spaces, the intercore spaces containing interpoles being larger than the spaces which do not contain interpoles, and the polar tips of the main poles being extended in the direction of the adjacent interpole to secure a symmetrical arrangement of the polar faces, substantially as described.

4. A dynamo electric machine having a plurality of main poles and half as many interpoles, the main pole faces being symmetrically spaced about the armature, and the inter-core spaces containing interpoles being larger than the inter-core spaces which do not contain interpoles.

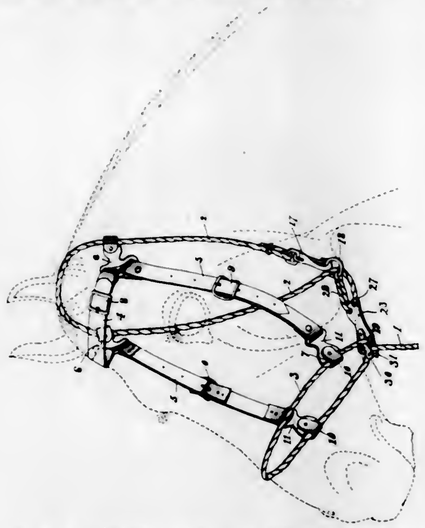
5. A dynamo electric machine having a plurality of main poles and half as many interpoles located in alternate spaces between the main poles, the field frame being split through the interpolar spaces which do not contain interpoles, the windings of the main poles being unsymmetrically arranged so that these windings and the windings of the inter-poles substantially fill the frame, substantially as described.

6. A dynamo electric machine having a plurality of main poles with unsymmetrically spaced cores, half as many interpoles located in alternate intercore spaces, and the field frame being split through the interpolar spaces which do not contain interpoles, the intercore spaces containing interpoles being larger than the spaces which do not contain interpoles, and the polar tips of the main poles being extended in the direction of the adjacent interpole to secure a symmetrical arrangement of the polar faces, substantially as described.

856,415. CONVERTIBLE HALTER AND TWITCH. CHARLES MCCLINTOCK, Elwood, Ind. Filed Jan. 19, 1907. Serial No. 353,031.

Claim.—1. In a convertible halter and twitch, a single length halter rope arranged to form an extensible neck

loop and an extensible nose loop, a brow band and cheek straps having adjustable clamp connections with the neck loop, adjustable clamp connections between the cheek straps and the nose loop, and a throat clutch having a clamp for the rope between the two loops and a guide for the free end of the rope from the nose loop.



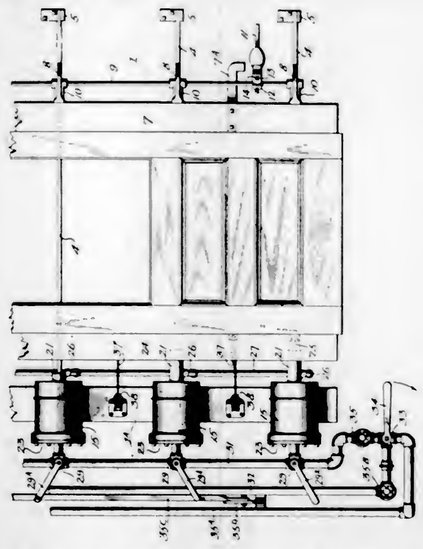
2. In a convertible halter and twitch, a single length halter rope arranged to form an extensible neck loop and an extensible nose loop, an adjustable brow band, adjustable cheek straps, rope clamps connecting the ends of the brow band and the upper ends of the cheek straps with the neck loop, and other rope clamps connecting the lower ends of the cheek straps with the nose loop, said rope clamps consisting of relatively shiftable and tiltable cuff and lever members, the former having a fixed fulcrum pin and the latter having a cam head provided with a transverse clearance slot receiving said pin, and a throat clutch having a clamp for the rope between the two loops and a guide for the free end of the rope.

3. In a convertible halter and twitch, a single length halter rope arranged to form an extensible neck loop and an extensible nose loop, and an adjustable throat clutch having a lever clamp for the rope between the two loops and also having a combined guide and lock for the free end of the rope from the nose loop.

4. In a convertible halter and twitch, a single length halter rope arranged to form an extensible neck loop and an extensible nose loop, a guide ring receiving the free run of the neck loop, an adjustable throat clutch having a clamp lever for the portion of the rope between the two loops and a combined guide and lock for the free end of the rope from the nose loop, a link connecting said clamp lever with the guide ring, and a coupling snap carried by one terminal of the neck loop and adapted to engage either said guide ring or said guide lever.

856,416. HYDRAULIC CLAMP. ARCHIE P. MCLARTY, Denver, Colo. Filed Dec. 11, 1905. Serial No. 291,367.

Claim.—1. In a clamp of the character described, a frame having notched members; an adjustable abutment on the frame; stops which limit the movement of the abutment in one direction, and means which connect the stops with the notched members; a support at one end of the frame, and a plurality of hydraulic cylinders secured to said support; a follower operated in one direction by the cylinders, and in the opposite direction by a counter-balancing weight, and means for admitting water to all of the cylinders or to any one or more of the cylinders independently of the others.



2. In a clamp of the character described, a supporting frame consisting of notched bars; a follower at one end of the frame; an adjustable abutment beyond the follower; yokes which engage the notched bars to hold the abutment at a desired point, and a lever for disengaging the yokes from the notches; a series of hydraulic cylinders for operating the follower; a valve for controlling the supply of water for the cylinders; independent valves for cutting out any one of the cylinders, and pipes for permitting the escape of air and of any water at the forward end of the cylinder.

3. In a clamp of the character described, a frame composed of horizontal strips having notches upon their edges; stops having pivoted yokes adapted to engage the notches, a lever for disengaging the yokes from the notches, and an abutment which is held at a desired point by the stops; a follower; a plurality of hydraulic cylinders, having plungers which operate the follower in one direction, and a counter-balancing weight for returning the follower to its normal position; inlet pipes for the cylinders which connect with a common supply pipe; a three-way valve connected with the common supply pipe, and with a general supply pipe, and a return pipe; and an independent cut-off valve for each cylinder inlet pipe, whereby one or more cylinders may be rendered inoperative.

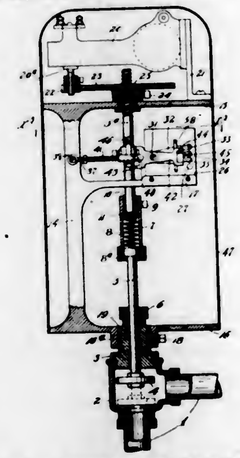
4. In a clamp of the character described, a frame made up of horizontal bars which are notched upon their under sides and supported above the floor at each end; a movable stop upon each bar and a rod connecting the stops; yokes which straddle the stops and are rigidly secured to the rod at their upper ends, their lower ends being joined by pins which engage the notches of the bars; a lever for turning the rod to disengage the yokes from the notches, and an abutment which rests against the stops; a follower at the opposite end of the frame; a series of hydraulic cylinders having plungers which operate said follower in one direction, and a weight for returning it to its normal position, and means for delivering water under pressure to each cylinder independently of the others or to all the cylinders in unison.

5. In a clamp for the purpose specified, a series of horizontal bars supported at each end, and provided with notches upon their under edges; movable stops upon the bars, yokes which straddle the stops and bars and engage the notches; a rod which passes through the several stops and yokes and is rigidly secured to the yokes; a lever secured to the rod by which the rod may be turned to disengage the yokes from the notches, and an abutment which rests against the stops; a follower; a series of hydraulic cylinders having plungers for operating the follower, two or more of which are secured to the follower while the remaining plungers are not secured thereto; valved inlet pipes for the cylinders, which are connected with a valved supply pipe, and means whereby the water may be admitted to all the cylinders at once, or to one or more cylinders independently of the others.

6. In a clamp for the purpose specified, the combination with a frame; an adjustable abutment on the frame; a follower; a series of hydraulic cylinders having plungers which move the follower in one direction, and valved inlet pipes which are connected with a common supply pipe, of means for supplying the cylinders independently or in unison, comprising a general supply pipe, a return pipe, and a three-way valve, which is connected with the cylinder supply pipe, the general supply pipe, and the return pipe; independent levers connected to one or more of the cylinder inlet pipe valves, a rod connecting the said levers, and a hand lever for operating the said rod, whereby one or more of the cylinders may be cut out, and cords attached at one end to the follower, and which extend back over pulleys and connect to a counter-balancing weight.

7. In a clamp for the purpose specified, the combination of a frame, having notched bars; a follower; a series of hydraulic cylinders having plungers which operate the follower in one direction, and a weight for returning it to its normal position; means for operating the cylinders independently or in unison; an adjustable abutment; stops which limit the movement of the abutment; yokes which straddle the notched bars and normally engage the notches thereof; a rod which passes through the stops and yokes and is rigidly secured to the yokes; a weighted lever, rigid upon the rod axially, but adapted to have a lateral swinging movement thereon, and an arm secured to the abutment adjacent to the weighted lever, the said lever being adapted to be lifted to turn the rod to free the yokes from the notches, and to be swung to one side so as to rest upon the said arm when it is desired to hold the yokes in an inoperative position.

856,417. ELECTRICAL CONTROLLER FOR STEAM PLANTS, &c. JOHN A. OLSON, Minneapolis, Minn. Filed Mar. 20, 1905. Serial No. 251,028.



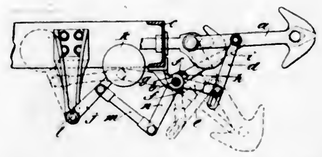
Claim.—1. In a device of the character described, the combination with a reversible motor and circuit connections thereto involving an automatic circuit maker-and-breaker and a motor reversing switch, of a reciprocating stem or plunger driven from said motor, and a spring-actuated "kicker" independent of said switch and operative on said switch, when thrown to either side of a dead center, itself arranged to be operated by said plunger, substantially as described.

2. In a device of the character described, the combination with a reversible electric motor, of a two part operating plunger, receiving reciprocating movements from said motor, the sections thereof being yieldingly connected, circuit connections to said motor involving a circuit-maker-and-breaker and a reversing switch, a tappet lever, operative on said switch, and a spring actuated "kicker" arranged to be thrown from one side to the other of a dead center, by said operating plunger, and operating in turn on said tappet lever, substantially as described.

3. In a device of the character described, the combination with a reversible motor and electrical connections thereto involving a circuit maker-and-breaker and a reversing switch, of a tappet lever operative on the said reversing switch, at the limits of its movement, an oscillating bolt having a spring pressed "kicker" head, operating on said tappet lever, when thrown to either side of a dead center, a threaded stem or plunger connected to a controller, such as a valve, a motor driven sleeve, operating as a nut on said stem, and tappets on said stem operating on the head of said bolt, to force the same first to one side and then to another of dead center, substantially as described.

4. In a device of the character described, the combination with a reversible electric motor and circuit connections thereto involving a motor reversing switch, of a pivoted tappet lever having a limited movement with respect to but operative on said reversing switch lever at the limits of its movement, and a spring pressed "kicker" operated by said motor and operating on said tappet lever when moved to either side of a dead center, substantially as described.

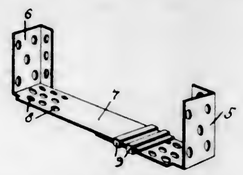
856,418. AUTOMATIC COUPLING FOR RAILWAY-VEHICLES. LUDWIG M. OROSZ, Arad, Austria-Hungary, assignor of one-half to Daniel Neuman, Arad, Austria-Hungary. Filed Jan. 13, 1906. Serial No. 295,940.



Claim.—1. In a coupling for railway and like vehicles the combination with the draw-beam, of an operating shaft a handle to rotate same, a weighted lever pivoted to the wagon independently of the operating shaft, a lever on the operating shaft, a link connecting said lever and said weighted lever, a draw-hook mounted on the draw beam, a second lever on the operating shaft a link connecting said second lever with the draw-hook and stops to restrict the rotation of the operating lever substantially as hereinbefore described.

2. In a coupling for railway and like vehicles the combination with the draw-beam, of an operating shaft, a handle to rotate same, a lever pivoted at its lower end to the frame of the wagon, a weight upon the upper end of said lever, a lever on the operating shaft, a link connecting said lever and said weighted lever, and adapted on the rotation of the operating shaft to move said weighted lever from one side to the other of its dead center, a draw-hook mounted on the draw beam, a second lever on the operating shaft a link connecting said second lever with the draw-hook and stops to restrict the rotation of the operating lever substantially as hereinbefore described.

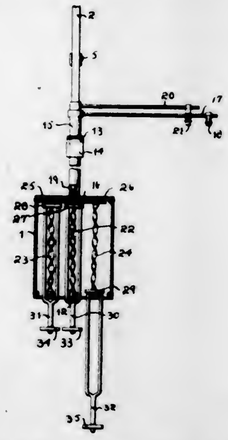
856,419. WINDOW-SASH. EDWARD J. ORR, Nodaway, Iowa. Filed Feb. 25, 1907. Serial No. 359,084.



Claim.—1. In a ventilating attachment for windows, a frame provided with a glass and adapted to be secured in a window casing, of an inwardly extending perforated strip, the ends of which are provided with L-shaped flanges, one arm of each flange being adapted to be secured to the frame and the other arm to the window casing.

2. In a ventilating attachment for windows, a frame provided with a glass and adapted to be secured in a window casing, a two-part attachment secured to the lower end thereof, each part comprising a perforated strip with upwardly extending flanges at one end, the other ends of said strips being adapted to overlap each other and one of them provided with loops for securing the strips together, said flanges being adapted to be secured to said frame and casing respectively.

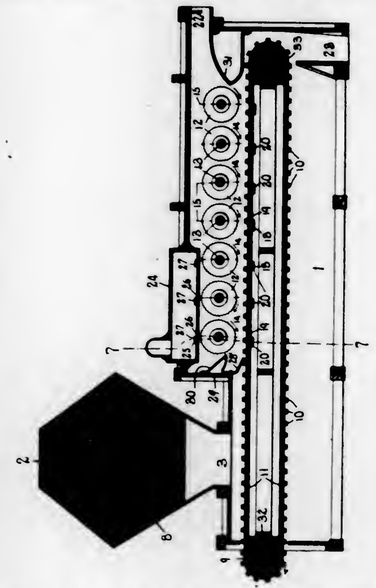
856,420. MUSIC-LEAF TURNER. FRANKLEN P. PARKER, Chicago, Ill. Filed Mar. 22, 1906. Serial No. 307,507.



Claim.—1. A music leaf turner having a revolving shaft provided with a screw, a traveler on said screw, means to operate said traveler to rotate said screw and shaft, a tubular shaft on the first-mentioned shaft and provided with a gear, a screw mounted for rotation and having a gear engaging the gear of the tubular shaft, a traveler on the last-mentioned screw, and means to operate said traveler, substantially as described.

2. The herein-described music leaf turner comprising a casing, a tubular shaft mounted for rotation, projecting from the casing and having a spur gear and a music leaf turning arm, a shaft revoluble in, and projecting from said shaft, provided with a music leaf turning arm, and also provided with a screw, screws mounted for rotation on opposite sides of the first-mentioned screw, and each having a spur gear engaging that of the tabular shaft, a traveler on each of the said screws, and means to operate said travelers.

856,421. COTTON-SEPARATOR. WARREN A. PATTERSON, St. Louis, Mo., assignor to American Cotton Separator Company, St. Louis, Mo., a Corporation of Oklahoma. Filed June 25, 1906. Serial No. 323,296.



Claim.—1. A machine for separating cotton from bolls comprising a plurality of rotating members arranged adjacent to each other and provided with unyielding teeth, pneumatic means for forcing the bolls and cotton onto said members whereby a portion of the teeth of each member operates to move the cotton in one direction while the other portion of the teeth of said member operates to strip the bolls from the cotton that is being carried by the teeth of the member adjacent thereto; substantially as described.

2. A machine for separing cotton from bolls comprising a plurality of members arranged adjacent to each other and provided with rigid teeth that coöperate with each other to strip the bolls from the cotton, means for feeding the bolls adjacent said members, and pneumatic means for forcing the bolls into engagement with the teeth of said members and for removing the separated cotton therefrom; substantially as described.

3. A machine for separating cotton from bolls comprising a plurality of rotating members arranged adjacent each other and provided with rigid teeth that coöperate with each other to strip the bolls from the cotton, pneumatic means for feeding the bolls into engagement with the teeth of said members and for conveying the separated cotton out of the machine, and means for conveying the stripped bolls out of the machine; substantially as described.

4. In a machine of the character described, a casing having a plurality of rotatable members mounted therein, said members being provided with rigid teeth which coöperate with each other to strip the bolls from the cotton, an air chamber located under said members and provided with air ports through which jets of air are blown for forcing the bolls into engagement with said members, and means for supplying air to said chamber; substantially as described.

5. In a machine of the class described, a plurality of members for stripping bolls from cotton, an air chamber located adjacent said members and provided with ports through which jets of air are blown to force the bolls into engagement with said members, means for supplying air to said chamber, and means for controlling the passage of the air through said ports; substantially as described.

6. In a machine of the class described, a plurality of members for stripping bolls from cotton, an air chamber located adjacent said members and provided with inclined ports, through which jets of air are blown to force the bolls into engagement with said members, means for supplying air to said chamber, and means for controlling the passage of the air through said ports; substantially as described.

7. In a machine of the class described, a casing having a plurality of members mounted therein for stripping bolls from the cotton incased in said bolls, an air chamber arranged under said members and provided with ports through which jets of air are blown to force the bolls into engagement with said members, an air chamber arranged above some of said members and provided in its bottom wall with ports through which jets of air are blown, and means for supplying air to said chambers; substantially as described.

8. In a machine of the class described, a casing having a plurality of rigid toothed members rotatably mounted therein and adapted to coöperate with each other to strip the bolls from the cotton, an air chamber arranged under said members and provided in its top wall with air ports, and a movable conveyer arranged between said members and the air chamber; substantially as described.

9. In a machine of the class described, a casing, a plurality of toothed members arranged in said casing and adapted to co-operate with each other to strip the bolls from the cotton, an air chamber arranged below said members and plrovided with air ports, an air chamber arranged above said members and provided with air ports and a conduit connecting said chambers; substantially as described.

10. In a machine of the class described, a casing provided with discharge openings through which the cotton and the bolls pass, a plurality of rotatable members arranged in said casing and adapted to co-operate with each other to strip the bolls from the cotton which the bolls incase, each of said members consisting of a plurality of toothed disks mounted on a shaft and being spaced away from each other, an air chamber arranged under said members and provided with ports through which jets of air are blown to force the bolls into engagement with said members and also carry the separated cotton through the discharge opening therefor, means for supplying air to said chamber, and a conveyer for carrying the stripped bolls to the discharge opening therefor; substantially as described.

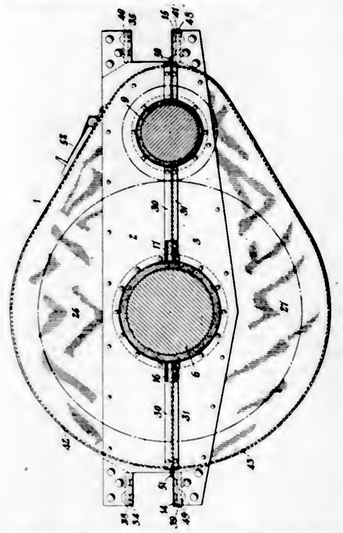
11. In a machine of the class described, means for breaking open cotton bolls, a plurality of members rotating in the same direction and provided with rigid teeth that co-operate with each other to strip the bolls from the cotton, means for conveying the broken bolls to said members, and pneumatic means for forcing said bolls into contact with said members; substantially as described.

12. In a machine of the class described, a vacuum box, a tube communicating with said box and having beaters mounted therein, an endless conveyer traveling under the discharge opening of said vacuum box, a plurality of toothed members arranged above said conveyer and co-operating with each other to strip the bolls from the cotton, said members being constructed to permit air to pass therethrough; substantially as described.

856,422. GEAR-CASE. WILLIAM J. REICH, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed June 2, 1905. Serial No. 263,495.

Claim.—1. A gear case for railway motors comprising a body portion, made up of thin metal plates, having their meeting edges folded together and side plates of heavier metal riveted to the thin side plates.

2. A gear case for electric railway motors comprising side and edge plates of thin sheet metal, suitably fastened together at their edges and re-inforcing side plates of thicker metal riveted to the thin side plates.



3. A gear case for electric railway motors comprising side and edge plates of thin sheet metal, fastened together at their meeting edges and side plates of heavier metal riveted to the thin side plates and having bent-over end sections and re-inforcing bars or plates therefor.

4. A gear casing for electric railway motors comprising thin sheet metal sides and edge plates, having their meeting edges folded together and side plates of heavier metal riveted to the thin side plates and having re-inforcing plates riveted to their ends.

5. A gear casing comprising side plates and top, bottom and end plates of thin, sheet metal, and side plates of relatively thick material riveted to the thin side plates.

6. A gear casing comprising four plane side plates and two curved plates for the top, bottom and ends, all of thin sheet metal, and four re-inforcing side plates of relatively thick material that are riveted to the thin side plates.

7. A gear casing composed of thin metal plates the meeting edges of which are folded together and re-inforcing plates of relatively thick material that are riveted to the side plates of thin material.

8. A gear casing comprising side and peripheral plates of sheet metal and re-inforcing and supporting plates of relatively thick material that are riveted to the thin side plates and project beyond the ends thereof.

9. A gear casing comprising side and peripheral plates of sheet metal and a relatively thick re-inforcing plate riveted to each thin side plate along both of its edges.

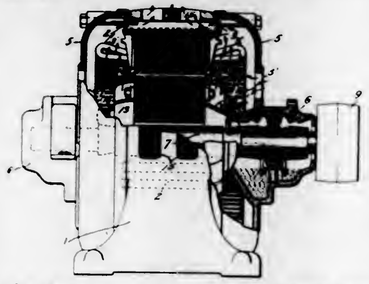
10. A gear casing comprising side and peripheral plates of sheet metal and relatively thick and rigid re-inforcing plates that extend along the adjacent edges of each pair of side plates and both edges of which are riveted thereto.

11. A gear casing comprising edge plates of thin sheet metal and four side plates of thin sheet metal provided with a corresponding number of relatively narrow re-inforcing plates of thick, rigid material that are riveted to the respective thin plates adjacent to their contiguous edges.

856,423. VENTILATING DYNAMO-ELECTRIC MACHINES. HENRY G. REIST, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Mar. 1, 1905. Serial No. 247,851.

Claim.—1. In a dynamo electric machine, a rotating body, fan blades carried by the ends thereof, bearings for

the body, and guards or shields extending from the body to the bearings.



2. In a dynamo electric machine, a rotating shaft, a bearing therefor, a core or body carried by the shaft, fan blades secured to the end of the core or body adjacent the bearing, and a shield carried by the core and extending to the bearing.

3. In a dynamo electric machine, a rotating shaft, a core or body carried thereby, a member secured thereto provided with fan blades or vanes, and a barrier integrally connected thereto and extending from the core to the bearing.

4. In a dynamo electric machine, an external stationary core, an internal rotating core or body, a shaft carrying said rotating core or body, bearings for the shaft and members secured to each end of the core body, each of said members comprising fan blades or vanes, and a guard or barrier portion which extends to the bearing to prevent the air currents produced by the fan blades from drawing oil out of the bearings.

5. In an induction motor, a stationary core, end members in fixed relation thereto, each of said end members being provided with an inwardly projecting bearing box, a rotating shaft and bearings therefor in said bearing boxes, a rotating core carried by the shaft in co-operative relation with the stationary core, shell-like members projecting from each end of the core which extend over the ends of the corresponding bearing boxes, and fan blades carried by the rotating core without the shell members.

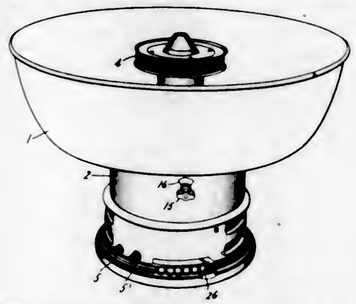
6. In a dynamo electric machine, a rotating shaft, a bearing therefor, a core or body carried by the shaft, fan blades secured to said body adjacent the bearing, and a shield carried by the core and overhanging the bearing.

7. In a dynamo electric machine, a casing, bearing boxes projecting therein and carried by the ends of said casing, a shaft journaled in said bearing boxes, a core body carried by the shaft, shells in the form of truncated cones secured one to each end of the core body, the base end of each cone being adjacent the core and the smaller end of each shell surrounding the inner end of the corresponding bearing box, and fan blades secured to each end of the core body externally of the shell members.

8. In an induction motor, a frame member, a stationary core supported thereby, end members secured to opposite ends of said frame member, each of said end members being provided with an inwardly projecting bearing box, a rotating shaft journaled in said bearing boxes, a rotor core carried by the shaft in co-operative relation with the stationary core, shell-like projections or members from each end of the core, which project over the ends of the corresponding bearing boxes, conductors carried by the rotor core and end connections therefor engaging said shell members, and fan blades carried by the rotor core externally of the shell members.

856,424. CONTROLLING AN ELECTRIC CANDY-SPINNING MACHINE. ALBERT D. ROBINSON, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed Sept. 6, 1905. Serial No. 277,149.

Claim.—1. The combination with a power circuit and a heating circuit, of connected means for first closing the power circuit and holding the heating circuit open until after the power circuit is closed, then closing the heating circuit, and then opening both circuits simultaneously.



2. The combination with a rotatable receptacle, of an electric motor for driving it, an electric heater for heating it, and means for insuring the starting of the motor before the heating circuit can be closed

3. The combination with a rotatable receptacle, of an electric heater therein, an electric motor for driving said receptacle, and a single device for first starting the motor, then closing the heater circuit, and then opening both circuits simultaneously.

4. In a candy spinner, the combination with the driving motor and the heater, of means for insuring the starting of the motor before the circuit of the heater can be closed.

5. In a candy spinner, the combination with the driving motor and the heater, of a single means for first turning the current on the motor and then turning it on to the heater.

6. The combination with a power circuit and a heating circuit of a controlling switch therefor having a position wherein both circuits are interrupted, a second position wherein the power circuit is closed and the heating circuit open and a final position wherein both circuits are closed.

7. In a candy spinner, the combination with the driving motor and the heater, of a single switch controlling both, and operating to start the motor before the heater is cut into circuit.

8. In a candy spinner, the combination with the driving motor and the heater, of a switch and circuit connections whereby said motor must be started first, and then the heater cut into parallel circuit therewith.

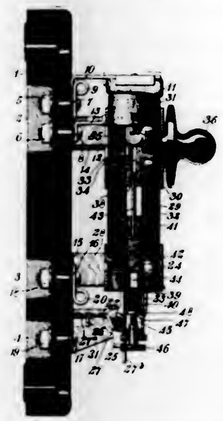
9. In a candy spinner, the combination with the driving motor and the heater, of a switch and circuit connections whereby current must be supplied first to the motor and afterward to the heater, but the circuits of both will be opened simultaneously.

856,425. CIRCUIT-BREAKER. BENJAMIN P. RUCKER, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Sept. 22, 1904. Serial No. 225,481.

Claim.—1. In a circuit-breaker, the combination with a base and stationary contact terminal jaws projecting laterally therfrom, of a movable member mounted to operate in a plane perpendicular to said base and comprising an insulating body portion, and terminal pieces surrounding the ends thereof to engage the terminal jaws, means for locking said member in closed-circuit position, means for releasing said member when the current carried by it exceeds a predetermined limit, and means for throwing the member to open-circuit position when released.

2. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted member comprising an insulating tube, terminal bands surrounding said tube and a tripping coil electrically connecting said terminal bands.

3. In a circuit-breaker, the combination with two pairs of contact terminal jaws, of a pivotally mounted member comprising an insulating body portion and electrically connected terminal pieces surrounding the ends thereof in position to engage the respective pairs of jaws, means for locking said member in closed-circuit position, means for releasing said member when the current carried by it exceeds a predetermined limit and means for throwing the member to open-circuit position when released.



4. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted member comprising an insulating tube, terminal bands mounted on said tube, a tripping coil connecting said terminal bands, and stationary and movable iron cores for said tripping coil.

5. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted member comprising an insulating tube, terminal bands mounted thereon, a tripping coil electrically connecting said terminal bands, stationary and movable iron cores and means for adjusting the air gap between the said cores.

6. In a circuit-breaker, the combination with stationary contact terminal jaws, of a pivotally mounted member comprising an insulating portion and electrically connected ferrules on the ends thereof, means for locking said member in closed-circuit position, means for releasing said member when the current carried by it exceeds a predetermined limit and means for throwing the member to open-circuit position when released.

7. In a circuit-breaker, the combination with stationary contact terminal jaws, of a pivotally mounted member comprising an insulating body portion and electrically connected ferrules adapted to engage the said stationary terminal jaws, means for locking said member in closed-circuit position, means for releasing said member when the current carried by it exceeds a predetermined limit and means for throwing the member to open-circuit position when released.

8. In a circuit-breaker, the combination with stationary contact terminal jaws, of a pivotally mounted member comprising an insulating body portion, and electrically connected terminal ferrules mounted thereon and adapted to engage the said stationary terminal jaws, means for locking said member in closed-circuit position, means for releasing said member when the current carried by it exceeds a predetermined limit and means for throwing the member to open-circuit position when released.

9. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted member comprising an insulating tube and electrically connected ferrules therefor, means for locking said member in closed-circuit position, means for releasing said member when the current carried by it exceeds a predetermined limit and means for throwing the member to open-circuit position when released.

10. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted member comprising an insulating tube and electrically connected terminal pieces mounted thereon, means for locking said member in closed-circuit position, means for releasing said member when the current carried by it exceeds a predetermined limit and means for throwing the member to open-circuit position when released.

11. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted member comprising an insulating tube, terminal pieces mounted thereon and a helical coil electrically connecting said terminal pieces.

12. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted member comprising an insulating tube, terminal pieces mounted thereon and a helical coil within the tube and electrically connecting the said terminal pieces.

13. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted member coming an insulating tube, conducting ferrules therefor which are adapted to engage the stationary contact terminals and a helical coil within the insulating tube which electrically connects the said ferrules.

14. In a circuit-breaker, the combination with stationary contact terminal jaws, of a pivotally mounted, tubular member comprising an insulating body portion and contact terminal bands which are electrically connected by means of the circuit-breaker tripping-coil and are adapted to engage said jaws.

15. In a circuit-breaker, the combination with stationary contact terminals, of a pivotally mounted, tubular member comprising an insulating portion, contact terminal bands mounted thereon which are adapted to engage the stationary contact terminals and which are electrically connected by means of the circuit-breaker tripping coil.

16. In a circuit-breaker, the combination with a base having stationary contact terminals, of a spring arm projecting outwardly from the base, a tubular movable member provided with contact ferrules and with a locking pin to be engaged by said spring arm, and having a longitudinally-movable core provided with a tripping rod to engage the outer end of the spring arm and deflect it from the locking pin.

17. In a circuit-breaker, the combination with stationary contact-terminals, of a spring catch, a pivotally mounted, tubular member, external contact bands and a locking pin which is adapted to engage the said spring catch, an internal coil, stationary and movable iron cores therefor and means connected with the movable iron core for disengaging the said spring catch from the said locking pin.

18. The combination with a solenoid and its core, of a calibrating tube into which the core is adapted to pass, an adjustable stop located in said tube, and adjusting means for said stop extending below said tube a distance constant for all adjustments of said stop.

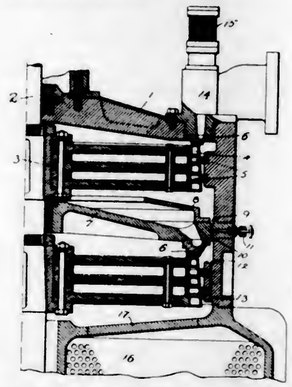
19. The combination with a solenoid and its core, of a calibrating device comprising a stop and operating means therefor free from movement in the direction of said core.

20. The combination with a solenoid and its core, of a calibrating tube into which the core is adapted to pass, a stop for said core in said tube, and means for moving said stop, said means having a longitudinal fixed position relative to said tube.

21. An electric switch having means for controlling it comprising a solenoid including a winding, a hollow core in the solenoid, a slotted tubular projection having a screw mounted to operate therein, and a nut within the tubular projection and provided with a part fitting in the slot of said tubular projection for preventing the nut from turning when the screw is rotated to adjust the position of the nut which forms a limiting stop for the core of the solenoid, substantially as described.

22. An electric switch having means for actuating it, comprising a solenoid including a winding, a slotted guide, an adjusting screw mounted in the guide, a nut on the screw and a tubular, reciprocating core co-operating with the nut in the guide and excitable by the winding to actuate the switch, substantially as described.

856,426. ELASTIC-FLUID TURBINE. FREDERICK SAMUELSON, Rugby, England, assignor to General Electric Company, a Corporation of New York. Filed Dec. 22, 1905. Serial No. 292,902.



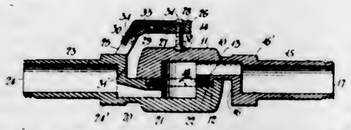
Claim.—1. In an elastic-fluid turbine which is divided into stages, the combination of fluid-discharging devices, wheel buckets acted upon by the fluid from said devices, and an annular device which causes the fluid exhausting from one stage to flow inwardly toward the shaft to discharge moisture in so doing, and to flow outwardly to the fluid-discharging devices of a lower-pressure stage.

2. An elastic-fluid turbine of the multi-stage type having means for preventing moisture from passing with the fluid from one stage to the next comprising an annular inclined partition overhanging the inlet nozzles of a stage so that the fluid has to pass inward toward the axis of the turbine and then outward to the nozzles, the liquid being thrown outward while the elastic fluid is passing inward, substantially as described.

3. In an elastic-fluid turbine of the multi-stage type, the combination of inlet nozzles, an inclined annular plate overhanging the inlet nozzles between one stage and the next succeeding stage, an annular channel surrounding said plate, and passages leading from said annular channel to the succeeding stage, substantially as and for the purposes described.

4. In an elastic-fluid turbine which is divided into stages of expansion, fluid-discharging devices and wheel buckets for each stage, and a means for separating moisture from the fluid as it flows from one stage to another, comprising a plate for suddenly changing the direction of flow, one or more passages receiving the liquid discharged from the fluid and that flowing over the plate, and a means in a stage of lower pressure for collecting the liquid and discharging it at a point or points out of the normal path of the entering fluid.

856,427. FLEXIBLE METALLIC HOSE. WILHELM SCHULZ, Houston, Tex. Filed Nov. 12, 1906. Serial No. 343,088.



Claim.—1. A flexible metallic hose composed of a plurality of connected sections or links, each section comprising two members, one member having an annular recess in its face and the other member having an annular projection to fit in said recess, a gasket disposed between the meeting faces of said members, a screw-bolt engaging one of said members, a lever pivotally connected with said screw-bolt, and means for locking said lever in closed position to hold said members together.

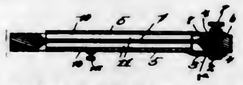
2. A flexible metallic hose composed of a plurality of connected sections or links, each section comprising two members, one member having an annular recess in its flat face and the other member having an annular projection to fit in said recess, a gasket disposed between the meeting faces of said members, a screw-bolt engaging one of said members, a lever pivotally connected with said screw-bolt, and a link for engaging said lever to lock said members together.

3. A flexible metallic hose composed of a plurality of connected sections or links, each section comprising two members, one member having an annular recess therein and the other member having an annular projection to fit in said recess, a gasket disposed between the meeting faces of said members, a bracket disposed on one of said members and extending over the other member, a screw-bolt mounted in said bracket and engaging one of said members, a lever pivoted to said screw-bolt, and a link carried by said bracket and adapted to engage said lever to lock the members together.

4. A flexible metallic hose composed of a plurality of connected sections or links, each section comprising two members, one member having an annular recess therein and the other member having an annular projection to fit in said recess, a gasket disposed between the meeting faces of said members, a bracket disposed on one of said members and extending over the other member, a screw-bolt mounted in said bracket and engaging one of said members, a lever pivoted to said screw-bolt, said bracket having a recess to receive said lever, and a link carried by said bracket adapted to engage said lever.

5. A flexible metallic hose composed of a plurality of connected sections or links, each section comprising two members, one member having an annular recess therein and the other member having an annular projection to fit in said recess, a gasket disposed between the meeting faces of said members, a bracket disposed on one of said members and extending over the other member, a screw-bolt mounted in said bracket and engaging one of said members, a lever pivoted to said screw bolt, said bracket having a recess to receive said lever, a spring in said recess, and a link on said bracket to engage said lever.

856,428. CLEANER FOR CAR-WINDOWS. THOMAS J. SHORT, Danville, Ill. Filed June 16, 1906. Serial No. 322,064.

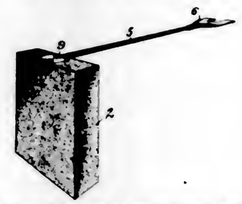


Claim.—A window cleaning device, comprising a pair of levers, having wipers, arms each having a square outlined aperture, extending from said levers, a bushing having a square outlined aperture disposed between the arms, said bushing being provided with an outer cylindrical circumference to allow the levers to have free and easy movements, said bushing being disposed in a bearing of the window, a bolt and thumb nut for fastening the parts together, said bolt having a partly square outlined shank to cause the levers and bushing to rotate together.

856,429. COMMUTATOR-BRUSH. ROBERT SIEGFRIED, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Jan. 3, 1905. Serial No. 239,537.

Claim.—1. The combination with a brush or terminal which is provided with a hole, of a double-web conducting cable having one end inserted into said hole and a pin which pierces one side of the cable and is forced into said hole so as to distend the end of the cable.

2. The combination with a brush which is provided with a hole, of a flattened, double-web conducting cable having one end inserted into said hole, and a pin which pierces one side of the cable and forces the cable into close contact with the walls of the hole.



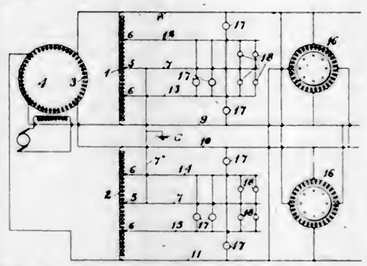
3. A carbon brush having a cylindrical hole in its outer end and a double-web, woven conductor, one end of which projects into said hole at an angle to its body portion, and a pin that projects into the bent end of the woven conductor to clamp it in position.

4. A carbon brush having a cylindrical hole in its outer end and a double-web, woven conductor, one end of which is inserted in said hole, and a pin that is driven into the hole through one side of the web and through the interior of the portion that is beyond the point of insertion.

5. A carbon brush having a hole in its outer end and a double-web, flexible conductor, one end of which projects into said hole at an angle to its body portion, and a pin that projects through one side of the web adjacent to the end of the brush and distends the web within the hole.

6. A contact member having a cavity formed therein, a double-web, flexible conductor, one end of which is inserted into said cavity and a wedge that projects through one side of the flexible conductor into the cavity and forces the conductor into close contact with the walls thereof.

856,430. SYSTEM OF ELECTRICAL DISTRIBUTION. SIMON B. STORER, Syracuse, N. Y., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Nov. 23, 1904. Serial No. 234,066.



Claim.—1. A system of electrical distribution comprising a two-phase generator, auto-transformers having their terminals connected to the maximum potential armature points corresponding to the respective phases and having their middle points connected together and grounded, and distributing conductors connected to the middle points, to the extremities and to points intermediate the middle points and the extremities of the auto-transformer windings.

2. A system of electrical distribution comprising a two-phase generator, auto-transformers connected to maximum potential armature points corresponding to the respective phases and having their middle points connected together and grounded, and distributing conductors respectively connected to the extremities, to the middle points and to intermediate points of the halves of said auto-transformer windings.

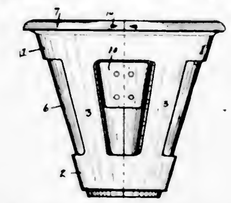
3. The combination with a two-phase generator and distributing conductors leading therefrom, of auto-transformers having their middle points connected together and grounded and having their extremities connected to the maximum potential armature points corresponding to the respective phases, and additional distributing conductors which are connected to the middle points and to the middle points of the halves of the auto-transformer windings.

4. A system of electrical distribution comprising a polyphase generator, auto-transformers connected to maximum potential armature points corresponding to the respective phases and having their middle points connected together and grounded, and distributing conductors respectively connected to the extremities and to a plurality of intermediate points in said auto-transformer windings.

5. A system of electrical distribution comprising a source of two-phase electrical energy, sets of translating devices adapted for different voltages, and two sets of supply conductors that are respectively connected to the middle points, the extremities and intermediate points of two-phase windings with which the said source of energy is provided, the middle points of the windings being connected together and grounded.

6. A system of electrical distribution comprising a source of polyphase electrical energy and distributing conductors that are respectively connected to the middle points, to the extremities and to intermediate points in windings with which the said source of energy is provided, the middle points of the generator windings being connected together and grounded.

856,431. BOTTLE-HOLDER. ARTHUR J. SUHM and EDGAR A. SUHM, Milwaukee, Wis. Filed Oct. 12, 1906. Serial No. 338,559.



Claim.—1. A bottle holder comprising a downwardly tapered metallic frame having side openings and a tapered shell of comparatively inelastic but yielding fibrous material, extending through the frame with its upper margin curved outwardly and downwardly over the upper end of the frame and its lower margin extending below the frame; said shell having a retaining member connected therewith in the frame opening.

2. A bottle holder comprising a downwardly tapered metallic frame having side openings and a tapered shell of comparatively inelastic but yielding fibrous material, extending through the frame with its upper margin curved outwardly and downwardly over the upper end of the frame and its lower margin extending below the frame; said shell having a retaining member connected therewith in the frame opening, and serving also as a connecting member for the meeting side edges of the shell.

3. A bottle holder comprising a downwardly tapered metallic frame having side openings and a tapered shell of comparatively inelastic but yielding fibrous material, extending through the frame with its upper margin curved outwardly and downwardly over the upper end of the frame and its lower margin extending below the frame; said shell having a retaining member connected therewith in the frame opening, and serving also as a connecting member for the meeting side edges of the shell, the turned down edges of the upper margin being also secured together at the meeting edges.

856,432. DEVICE FOR DEVELOPING THE LUNGS. GEORGE M. THOMSON, London, England. Filed Dec. 7, 1905. Serial No. 290,764.

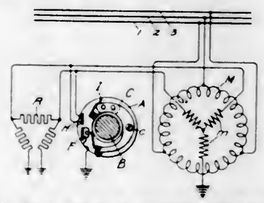
Claim.—The hereindescribed device for developing the lungs, consisting of the glass tube formed with the integral flattened mouth piece at one end and the contracted

neck and integral bulb at the opposite end, said bulb being of greater diameter than the tube and said bulb and tube being provided with openings, and the inwardly tapering



tube *i* extending into the bulb through the opening therein and having the flange bearing on the bulb, substantially as described.

856,433. CENTRIFUGAL SWITCH FOR ELECTRIC MOTORS. KNUT TORNBERG, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed July 10, 1905. Serial No. 268,951.



Claim.—1. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a switch contact operated by said member, a connection between said contact and said member adapted to move said contact in a substantially circumferential direction when said member is moved centrifugally and to permit a centrifugal movement of said contact relative to said member, a slide adapted to be traversed by said contact when moved circumferentially and to restrain it against centrifugal force, and a switch contact connected to the armature winding of the motor and forming a portion of said slide.

2. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a leaf spring secured at one end to said member and extending in a substantially circumferential direction, a contact carried at the free end of said spring, a slide adapted to be traversed by said contact and to restrain it against centrifugal force, and a contact connected to the armature winding of the motor and forming a portion of said slide.

3. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a leaf spring secured at one end to said member and extending substantially at right angles to a centrifugal direction, a contact carried at the free end of said spring, a slide adapted to be traversed by said contact and to restrain it against centrifugal force, and a contact connected to the armature winding of the motor and forming a portion of said slide.

4. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a self-alining contact carried by said member, a connection between said contact and said member adapted to permit a centrifugal movement of said contact relative to said member and to move said contact substantially at right angles to a centrifugal direction when said member is moved, a slide adapted to be traversed by said contact when moved, and a contact connected to the armature winding of said motor and forming a portion of said slide.

5. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a leaf spring secured at one end to said member and extending substantially at right angles to a centrifugal direction, a self-alining contact carried at the free end of said spring, a slide adapted to be traversed by said contact and to restrain it against centrifugal force, and a contact connected to the armature winding of the motor and forming a portion of said slide.

6. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a contact block carried by said member and adapted to be moved by said member in a substantially circumferential direction, and a pair of axially-alined contacts adapted to be bridged by said contact block.

7. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a pivotally-mounted contact block carried by said member and adapted to be moved by said member in a substantially circumferential direction, and a pair of axially-alined contacts connected to the armature winding of the motor and adapted to be bridged by said contact block.

8. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a self-alining contact block carried by said member, a connection between said contact and said member adapted to permit a centrifugal movement of said contact relative to said member and to move said contact substantially at right angles to a centrifugal direction when said member is moved, a slide adapted to be traversed by said contact when moved, and a pair of alined contacts connected to the armature winding of the motor and adapted to be bridged by said contact block.

9. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a catch adapted to engage said member at starting only and to restrain it from movement until the centrifugal force of said member reaches a predetermined amount, a contact carried by said member, and a second contact connected to the armature winding of the motor and adapted to be engaged by the first contact.

10. In a motor, a centrifugally-actuated switch carried by the motor armature comprising a centrifugally-movable member, a spring secured to said member and opposing its centrifugal movement, a spring catch engaging said member at starting only and adapted to restrain it from movement until the centrifugal force of said member reaches a predetermined amount, a contact carried by said member, and a second contact connected to the armature winding of the motor and adapted to be engaged by the first contact.

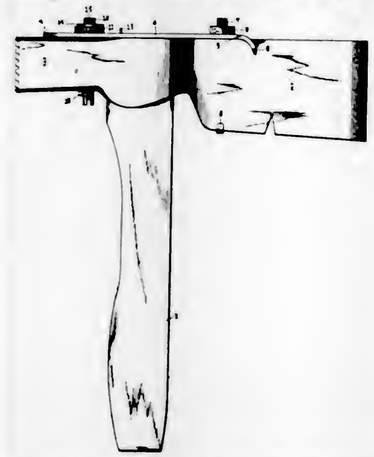
11. In an induction motor, a resistance connected in series with the motor winding, a centrifugally-movable member carried by the rotor, a contact block carried by said member, a connection between said contact block and said member adapted to permit a centrifugal movement of said contact block relative to said member and to move said contact block substantially at right angles to a centrifugal direction when said member is moved, a slide adapted to be transversed by said contact block when moved, and a pair of short-circuiting contacts connected to said resistance and forming a portion of said slide.

12. In an induction motor, a resistance connected in series with the rotor winding, a centrifugally-movable member carried by the rotor, a contact block carried by said member and adapted to be moved by said member in a substantially circumferential direction, and a pair of axially-alined short-circuiting contacts connected to said resistance and adapted to be bridged by said contact block.

856,434. SHINGLING-GAGE FOR HATCHETS. CHARLES VOLLMER, Dunnigan, Cal. Filed Nov. 19, 1906. Serial No. 344,178.

Claim.—1. The combination with a hatchet having an aperture through its head portion, of a gage device comprising a plate bearing upon the outer end of the hatchet body and with a recess at one end bearing over the hatchet blade and with lateral shoulders extending beyond the recessed end of the same, a clamping device operating to hold the plate upon the blade portion of the hatchet, a bolt operating through the aperture in the hatchet body, and with an eccentric thereon operating in a cavity in the blade, a serrated disk carried by said eccentric and adapted to engage a pin extending from said plate, whereby the plate may be adjusted longitudinally of the hatchet body.

2. The combination with a hatchet having an aperture through its body portion, of a gage plate bearing upon the outer end of the hatchet body and provided with a plurality of spaced apertures near one end, and with a recess at the other end for bearing over the blade of the hatchet and with lateral shoulders adjacent to the recessed end, a clip device operating to adjustably connect the plate to the hatchet blade, a bolt operating through the aperture in the hatchet body and adapted to be consecutively engaged by the apertures in the blade, and means for adjustably securing said blade to said bolt.



3. The combination with a hatchet having an aperture through its body portion, of a gage plate bearing upon the outer end of the hatchet body and provided with a plurality of spaced apertures near one end and with a stop pin adjacent to each aperture and with a recess at the other end for bearing over the blade of the hatchet and with lateral shoulders adjacent to the recessed end, a clip device operating to adjustably connect the plate to the hatchet blade, a bolt operating through the aperture in the hatchet body and adapted to be consecutively engaged by the apertures in the blade, said bolt having a cam for operating in one of said gage plate apertures, and with a serrated disk adapted to be engaged by said stop pins, whereby the gage plate may be adjustably disposed longitudinally of the hatchet body.

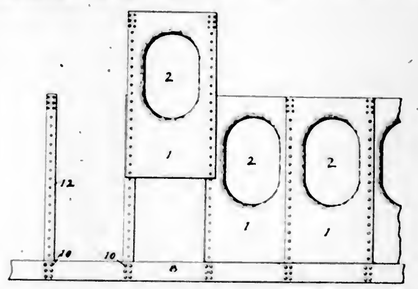
4. As a new article of manufacture, an attachment for shingling hatchets consisting of a gage plate adapted to bear upon the outer end of a hatchet body with a recess at one end for bearing over the blade of the hatchet and with lateral shoulders adjacent to the recessed end and with a plurality of apertures near the other end, stop pins spaced from said apertures, an eccentric plate adapted to be rotatively disposed in one of said apertures and with a serrated disk concentric with said eccentric plate and adapted to be engaged with said stop pins.

856,435. PRESSED-STEEL CAR. WILLIAM G. WAGENHALS, St. Louis, Mo. Filed Apr. 16, 1906. Serial No. 311,956.

Claim.—1. In a steel car construction, plates for the side walls, consisting of an inside and an outside plate, with flanged window openings, said plates being secured together by rivets through the flanges, substantially as described.

2. In a steel car construction, plates for the side walls, consisting of an inside and an outside plate, with flanged window openings, the flange of one plate overlapping the flange of its corresponding plate, and rivets for securing the overlapping flanges together, substantially as described.

3. In a steel car construction, plates for the side walls, consisting of an inside and an outside plate, with flanged window openings formed oval in shape, the flange of one plate overlapping the flange of its corresponding plate, with rivets for securing the overlapping flanges together, substantially as described.



4. In a steel car construction, plates for the side walls, consisting of an inside and an outside plate, with flanged window openings, said plates being secured together by rivets through the flanges, and window frame castings to serve as frames for the window sashes, and to cover the rivets at the window openings.

5. In a steel car construction, plates for the walls, and beams for holding the same, said beams provided with a vertical row of rivets formed integral therewith, with the plates passed over said rivets and secured thereon.

6. In a steel car construction, side beams for the framework having a vertical row of rivets formed integral therewith on each side edge, and inside and outside plates secured together and passed over said rivets, said plates overlapping each other, with the overlapping edges secured to said beams, and to each other by said rivets.

7. In a steel car construction, side beams for the framework having a vertical row of rivets formed integral therewith, and side plates consisting of an inside and an outside plate, with flanged window openings, said plates being secured together by rivets through the flanges, and with their side edges overlapping and secured to said beams, and to each other, by said integral rivets on the beams.

8. In a steel car construction, beams for securing the plates to the framework of the car, consisting of I-beams with central longitudinal flanges, having sections cut therefrom to form rivets for the plates.

9. In a steel car construction, beams for securing the plates to the framework of the car, consisting of I-beams with central longitudinal flanges having sections cut therefrom to form rivets, and plates overlapping each other with the overlapping edges secured on said rivets, substantially as described.

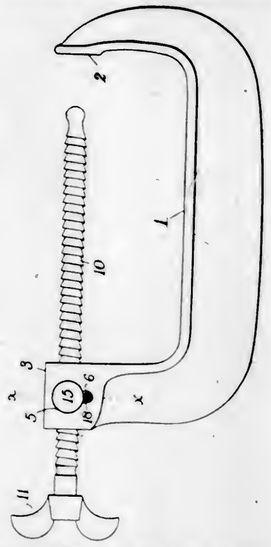
10. In a steel car construction, a casting provided with wings or lugs, with curved beams, secured thereto, extending radially therefrom to form a frame for the roof hood.

11. In a steel car construction, in combination with a transverse car line, a casting provided with radial wings or lugs, said casting secured at the medial portion of said car line, with curved beams secured to said radial wings and extending radially to the top of the side walls to form the framework for the hood.

856,436. RATCHET-CLAMP. FREDERICK E. WALDEN, Worcester, Mass. Filed Mar. 5, 1906. Serial No. 304,219.

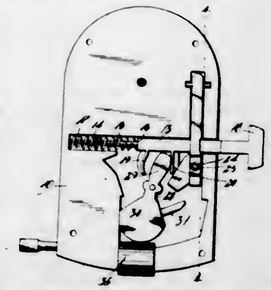
Claim.—A clamp formed at one end with a pair of cylindrical recesses of unequal diameter extending transverse of the length of the clamp and arranged so that the larger recess communicates with the smaller, a cylindrical nut fitting slidably in the larger recess and having the upper half of its threads cut away, a screw engaging the threads of said nut, an outwardly projecting pin on one side of said nut extending in said smaller recess, said nut

constituting a closing wall for said smaller recess, a coil spring seating on the wall at the lower end of said smaller recess and engaging said pin, said projecting pin of the nut being located at a point adjacent the upper end of



said smaller recess and at a point at a distance from the point of engagement between the screw and the threads of the nut, whereby said spring will tend to tilt said nut.

856,437. SWITCH-LOCK. WILLIAM ANDERSON, Memphis, Tenn., assignor of five-eighths to A. A. Strange and three-eighths to W. O. White, Memphis, Tenn. Filed Sept. 24, 1906. Serial No. 335,942.



Claim.—1. A switch lock comprising a casing, a segmentnl locking plate, a spring-pressed member bearing against one end of said locking plate, a lever pivoted to the casing and having one end engaged by one end of the locking plate, a lock bar pivoted within the casing and adapted to engage the spring-pressed member to lock the same against movement, and a key to lift said lock bar to release said spring-pressed member and locking plate.

2. A switch lock comprising a casing, a lever pivoted to said casing and having one end extending thereinto, a spring-pressed bolt, a locking plate engaging said bolt and projecting normally into the path of said lever, a lock bar for holding said bolt against the tension of its spring, and means to release said bar to release said bolt and locking plate.

3. A switch lock comprising a casing, a lever pivoted to said casing, a spring-pressed bolt mounted to slide in said casing and having spaced laterally projecting arms, a locking member mounted to turn in said casing and having an arm projecting between said lateral arms, an arm carried by said locking member and adapted to project into the path of said lever, a lock bar for holding said bolt in retracted position, and means to raise said bar to release said bolt to permit the locking member arm to be moved out of the path of the lever.

4. A switch lock comprising a casing, a lever pivoted to said casing, a spring pressed bolt mounted to slide in said casing and having spaced laterally projecting arms and a notch in its upper face, a locking member mounted to turn in said casing and having an arm extending between said lateral arms and an arm adapted to project into the path of said lever, a lock bar pivoted at one end and adapted to fit in the notch in said bolt, and means for raising said bar to release said bolt and permit the locking member to be moved out of the path of the lever.

5. A switch lock comprising a casing, a lever pivoted to said casing, a bolt mounted to slide in said casing and having spaced laterally projecting arms and a notch in its upper face, a locking member mounted to turn in said casing and having an arm extending between said lateral bolt arms, a segmental plate carried by said member and adapted to extend into the path of said lever, an arm extending from said plate and having its free end beveled to engage the side wall of the casing, means for locking said bolt against movement, and means for releasing said locking means.

856,438. SAFETY-RAZOR. PIETRO BELTRAME and PIETRO FALCHI, Terni, Italy. Filed Mar. 2, 1903. Serial No. 146,430.

Claim.—1. A flat safety razor comprising in combination a sheath of flattened tube form having one end slightly curved upward, a correspondingly shaped blade adapted to fit into said sheath, and provided with holes as described a guard on the upwardly curved end of the sheath at a point where the cutting edge of the positioned blade projects, and a clamping screw adapted to engage in the holes in the blade.

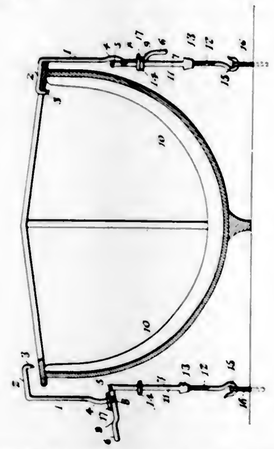
2. A flat folding safety razor comprising in combination a sheath in the form of a split flattened tube having an end slightly curved upward, a correspondingly shaped blade adapted to fit into said sheath, a guard on the upwardly curved end of the sheath, folded over edges of the adjacent portions of the split tube formed into hinge parts and two handles connected to said hinge parts.

856,439. BOAT-LASHING DEVICE. HAROLD BERG, Jacobsville, Mich. Filed Mar. 15, 1906. Serial No. 306,180.

Claim.—1. A device of the class described comprising two members, one of which is provided with means for engaging a boat, means for anchoring the other member, an operating lever pivoted to each of the said members and thereby permanently connecting the same and adapted to draw the said members together to clamp a boat, and means for locking the lever.

2. A device of the class described comprising two members, one of which is provided with means for engaging a boat, means for anchoring the other member, an operating lever pivoted at one end to one of the said members and also pivoted at an intermediate point to the other member and adapted to draw the members together to clamp a boat, and a gravity locking device for the said lever.

3. A device of the class described comprising two members, one of which is composed of two sections adjustable on each other to vary the length of the device, an operating lever pivoted to each of the said members and adapted to draw the same together to clamp a boat, and means for locking the lever for retaining the device in engagement with the boat.



4. A device of the class described, comprising two members, one of which consists of a turn-buckle for varying the length of the device, and a lever pivoted to each of the members for drawing the same together and for locking them in such position to clamp a boat.

5. A device of the class described comprising an upper member having boat engaging means, a turn-buckle comprising a screw, and a section having a nut for engaging the screw and provided with spaced sides, and a lever pivoted at one end between the said sides and connected at an intermediate point with the upper member and adapted to swing downward between the said sides to cause the upper member to clamp a boat.

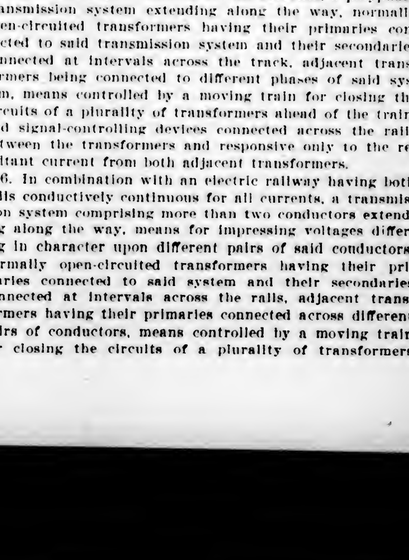
6. A device of the class described comprising an upper member, a turn-buckle provided with spaced rods, a cross piece connecting the rods at an intermediate point, a lever pivoted between the rods and connected with the upper member and arranged to swing downward between the rods, the movement of the lever being limited by the said cross-piece, and means for locking the lever contiguous to the cross-piece.

7. A device of the class described comprising an upper member, a turn-buckle provided with spaced rods, a cross-piece connecting the rods at an intermediate point, a lever pivoted between the rods and connected with the upper member and arranged to swing downward between the rods, the movement of the lever being limited by the said cross-piece, and a ring embracing the lever and the said rods and supported by the cross-piece.

856,440. BLOCK-SIGNAL SYSTEM. ELMER F. BLISS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 5, 1906. Serial No. 346,422.

Claim.—1. In combination with an electric railway having both rails conductively continuous for all currents, normally open-circuited sources of alternating-current connected at intervals across the rails, adjacent sources being of different character, means controlled by a moving train for closing the circuits of a plurality of said sources ahead of the train, and signal-controlling devices responsive to the currents supplied to the rails by said sources.

2. In combination with an electric railway having both rails conductively continuous for all currents, normally open-circuited sources of alternating-current connected at intervals across the rails, adjacent sources being of different character, electromagnets for closing the circuits of said sources, means controlled by a moving train for closing the circuits of a plurality of said magnets, and signal-controlling devices responsive to the currents supplied to the rails by said sources.



3. In combination with an electric railway having both rails conductively continuous for all currents, normally open-circuited sources of alternating-current connected at intervals across the rails, adjacent sources being of different character, electromagnets for closing the circuits of said sources, a normally open contact in series with a plurality of said magnets arranged to be closed by a moving train, and signal-controlling devices responsive to the currents supplied to the rails by said sources.

4. In combination with an electric railway having both rails conductively continuous for all currents, normally open-circuited sources of alternating-current connected at intervals across the rails, adjacent sources being of different character, means controlled by a moving train for closing the circuits of a plurality of said sources ahead of the train, signals normally at danger, and signal-controlling devices connected across the rails between adjacent sources and operative to close a signal only when supplied with current from both adjacent sources.

5. In combination with an electric railway having both rails conductively continuous for all currents, a polyphase transmission system extending along the way, normally open-circuited transformers having their primaries connected to said transmission system and their secondaries connected at intervals across the track, adjacent transformers being connected to different phases of said system, means controlled by a moving train for closing the circuits of a plurality of transformers ahead of the train, and signal-controlling devices connected across the rails between the transformers and responsive only to the resultant current from both adjacent transformers.

6. In combination with an electric railway having both rails conductively continuous for all currents, a transmission system comprising more than two conductors extending along the way, means for impressing voltages differing in character upon different pairs of said conductors, normally open-circuited transformers having their primaries connected to said system and their secondaries connected at intervals across the rails, adjacent transformers having their primaries connected across different pairs of conductors, means controlled by a moving train for closing the circuits of a plurality of transformers

ahead of the train, signals normally at danger, and signal-controlling devices connected across the rails at points between the transformers and operative to clear a signal only when supplied with current from both adjacent transformers.

7. In combination with an electric railway having both rails conductively continuous for all currents, means controlled by a moving train for impressing on the rails at intervals ahead of the train a plurality of voltages differing in character, and signal-controlling devices connected across the rails and responsive only to alternating-current of a predetermined character.

8. In combination with an electrically-operated railway having both rails conductively continuous for all currents, normally open-circuited transformers having their secondaries connected at intervals across the rails, connections for impressing voltages differing in character on adjacent transformer primaries, means controlled by a moving train from closing the circuits of a plurality of transformers ahead of the train, and signal-controlling devices connected across the rails at points between the transformers and responsive only to alternating-current of a predetermined character.

9. In combination with an electric railway having both rails conductively continuous for all currents, means controlled by a moving train for impressing on the rails at intervals ahead of the train a plurality of voltages of different phase, and signal-controlling devices connected across the rails and responsive only to alternating current of a certain phase.

10. In combination with an electric railway employing the rails as return conductor for the power-current, normally open-circuited transformers having their secondaries connected at intervals across the rails for supplying current thereto, electromagnets for closing the circuits of the several transformers, a circuit extending along the way comprising conductors of appreciable resistance, means controlled by a moving train for connecting said circuit to a source of current, and connections from said electromagnets to said circuit whereby a predetermined number of said electromagnets adjacent to said source are energized.

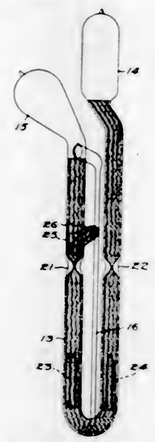
11. In combination with an electric railway employing the rails as return conductor for the power-current, normally open-circuited transformers having their secondaries connected at intervals across the rails for supplying signal current thereto, electromagnets for closing the circuits of the several transformers, a circuit extending along the way to which said electromagnates are connected in parallel, said circuit being of appreciable resistance between said electromagnets, and means controlled by a moving train for impressing a voltage on said circuit adjacent to said train.

12. In combination with an electric railway employing the rails as return conductor for the power-current, normally open-circuited transformers having their secondaries connected at intervals across the rails for supplying signal current thereto, electromagnets for closing the circuits of the several transformers, a circuit extending along the way comprising conductors of appreciable resistance, means controlled by a moving train for breaking said circuit adjacent to the train and connecting the portion of the circuit ahead of the train to a source of current, and connections from said electromagnets to said circuit whereby a predetermined number of said electromagnets adjacent to said source are energized.

856,441. MAXIMUM-DEMAND INDICATOR. FRANCIS H. BOWMAN, Pittsfield, Mass., assignor to Stanley-G. I. Electric Manufacturing Company, a Corporation of New Jersey. Filed Nov. 13, 1906. Serial No. 343,208.

Claim.—1. In a maximum demand indicator, a main tube containing a liquid and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with the main tube, and a liquid seal in the main tube for preventing the gas in a bulb from passing into the main tube.

2. In a maximum demand indicator, a main tube containing a liquid and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with said main tube, a gas trap in said main tube, and a liquid seal in said main tube for preventing the gas in a bulb from passing into the main tube.



3. In a maximum demand indicator, a main tube containing a liquid and having constrictions therein and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with said main tube, and a liquid seal in the main tube for preventing the gas in a bulb from passing into the main tube.

4. In a maximum demand indicator, a main tube containing a liquid and having constrictions therein and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with said main tube, a gas trap in said main tube, and a liquid seal in the main tube for preventing the gas in a bulb from passing into the main tube.

5. In a maximum demand indicator, a U-shaped tube containing a liquid and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, and a liquid seal in the U-tube for preventing the gas in one bulb from passing into the U-tube.

6. In a maximum demand indicator, a U-shaped tube containing a liquid and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, and a liquid seal in the U-tube on the compression side thereof for preventing the gas on that side from passing into the U-tube.

7. In a maximum demand indicator, a U-shaped tube containing a liquid and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, a gas trap in each arm of said U-tube, and a liquid seal in said U-tube for preventing the gas in one bulb from passing into the U-tube.

8. In a maximum demand indicator, a U-shaped tube containing a liquid and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, a gas trap in each arm of said U-tube, and a liquid seal in the U-tube for preventing the gas in one bulb from passing into the U-tube.

9. In a maximum demand indicator, a U-shaped tube containing a liquid and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, a gas trap in each arm of said U-tube, and a liquid seal in the arm of the U-tube on the compression side thereof for preventing the gas on that side from passing into the U-tube.

10. In a maximum demand indicator, a U-shaped tube containing a liquid and having constrictions therein and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, and a liquid seal in the U-tube for preventing the gas in one bulb from passing into the U-tube.

11. In a maximum demand indicator, a U-shaped tube containing a liquid and having constrictions therein and terminating at each end in a bulb, a current-carrying conductor located adjacent to one of said bulbs, a gage tube connected with one arm of the U-tube, a gas trap in each arm of said U-tube, and a liquid seal in the U-tube for preventing the gas in one bulb from passing into the U-tube.

12. In a maximum demand indicator, a U-shaped tube containing a liquid and having a constriction in each arm thereof and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, a gas trap in each arm of said U-tube, and a liquid seal in the U-tube for preventing the gas in one bulb from passing into the U-tube.

13. In a maximum demand indicator, a U-shaped tube containing a liquid and having constrictions therein and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, and a liquid seal located in the arm of the U-tube on the compression side thereof for preventing the gas in the compression bulb from passing into the U-tube.

14. In a maximum demand indicator, a U-shaped tube containing a liquid and having constrictions therein and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, a gas trap in each arm of said U-tube, and a liquid seal in the arm of the U-tube on the compression side thereof for preventing the gas in the compression bulb from passing into the U-tube.

15. In a maximum demand indicator, a U-shaped tube containing a liquid and having constrictions therein and terminating at each end in a bulb, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of the U-tube, and a liquid seal located above the constricted portion in the arm of the U-tube on the compression side thereof for preventing the gas in the compression bulb from passing into the U-tube.

16. In a maximum demand indicator, a U-shaped tube having a bore of alternate large and small diameter and terminating at each end in a bulb and containing a liquid, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of said U-tube, and a liquid seal in the U-tube for preventing the gas in one bulb from passing into the U-tube.

17. In a maximum demand indicator, a U-shaped tube having a bore of alternate large and small diameter and terminating at each end in a bulb and containing a liquid, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of said U-tube, and a liquid seal in the U-tube on the compression side thereof for preventing the gas in the compression bulb from passing into the U-tube.

18. In a maximum demand indicator, a U-shaped tube having a bore of alternate large and small diameter and terminating at each end in a bulb and containing a liquid, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of said U-tube, a gas trap in said U-tube, and a liquid seal for preventing the gas in one bulb from passing into the U-tube.

19. In a maximum demand indicator, a U-shaped tube having a bore of alternate large and small diameter and terminating at each end in a bulb and containing a liquid, a current-carrying conductor located adjacent one of said bulbs, a gage tube connecting with one arm of said U-tube, a gas trap in each arm of said U-tube, and a liquid seal in said U-tube for preventing the gas in one bulb from passing into the U-tube.

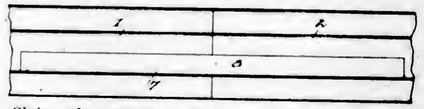
20. In a maximum demand indicator, a U-shaped tube having a bore of alternate large and small diameter and terminating at each end in a bulb and containing a liquid, a current-carrying conductor located adjacent one of said bulbs, a gage tube connected with one arm of said U-tube, a gas trap in each arm of said U-tube, and a liquid seal in the arm of the U-tube on the compression side thereof for preventing the gas in the compression bulb from passing into the U-tube.

856,442. TRACK-FASTENING DEVICE. LEWIS H. BOWMAN, Los Angeles, Cal. Filed Aug. 3, 1906. Serial No. 329,064.



Claim.—The combination with a wooden cross tie, of a continuous flat tie-protecting and rail-connecting plate constructed of a single piece of metal and arranged on and secured to the upper face of the cross tie at the central portion thereof, said plate being extended beyond the outer side of each of the rails and provided at its ends with integral clamping jaws formed by slitting the end portions of the plate, said jaws being arranged in pairs and adapted to be bent downward into engagement with the bottom flanges of the rails at the inner and outer edges thereof, and spikes located at the opposite side edges of the jaws for securing both the rails and the plate to the ends of the cross tie.

856,443. RAIL-JOINT. SAMUEL W. BOWSER, Junction City, Oreg. Filed Sept. 8, 1906. Serial No. 333,861.



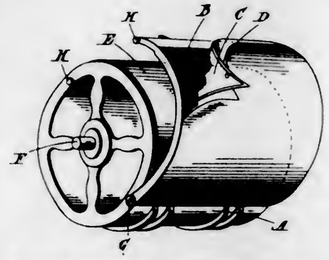
Claim.—In a rail joint, the combination of two rail sections of generally commercial form, said sections being provided at their meeting ends with recesses formed on one side thereof and occupying approximately one half of the thickness of each rail, each recess extending from the base through the head of the rail and being produced by the omission of one half of the head and web thereof, and a joint plate fitting in said recesses and completing the formation of the commercial shape across the joint, said plate having its outer surface lying flush with the sides of the rails, and suitable connections uniting the parts, substantially as described.

856,444. ROTARY DUPLICATOR. MELON J. D. CARTER, London, England. Filed Mar. 12, 1907. Serial No. 361,989.

Claim.—1. In a rotary duplicator the combination of a stencil carrying cylinder, a removable segment thereon, an inking pad on the outer surface of the segment, and a stencil sheet stretched over the pad whereby the back of the stencil pad can be rendered accessible for inking purposes without removing the stencil from its seating.

2. In a rotary duplicator the combination of a stencil carrying cylinder, a removable segment thereon of porous material, an inking pad on the outer surface of the segment, and a stencil sheet stretched over the pad whereby

the back of the stencil pad can be rendered accessible for inking purposes without removing the stencil from its seating.



3. In a rotary duplicator the combination of a stencil carrying cylinder, a removable segment thereon of porous material, secured when in operative position to the cylinder by catches, an inking pad on the upper surface of the segment, and a stencil sheet stretched over the pad whereby the back of the stencil pad can be rendered accessible for inking purposes without removing the stencil from its seating.

4. In a rotary duplicator the combination of a stencil carrying cylinder, a removable segment thereon of porous material, hinged to the cylinder, and secured when in operative position to the cylinder by catches, an inking pad on the outer surface of the segment, and a stencil sheet stretched over the pad whereby the back of the stencil pad can be rendered accessible for inking purposes without removing the stencil from its seating.

5. In a rotary duplicator the combination of a stencil carrying cylinder, an ink absorbing pad attached thereto, a removable segment thereon of porous material, an inking pad on the outer surface of the segment, and a stencil sheet stretched over the pad whereby the pad at the back of the stencil can be rendered accessible for inking purposes without removing the stencil from its seating.

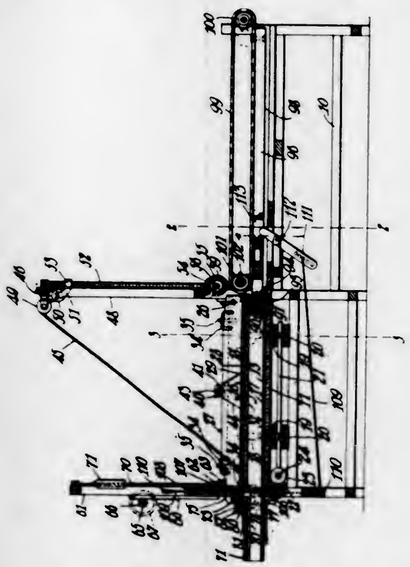
6. In a rotary duplicator the combination of a stencil carrying cylinder, an ink absorbing pad attached thereto, a removable segment thereon of porous material, hinged to the cylinder, and secured when in operative position to the cylinder by catches, an inking pad on the outer surface of the segment, and a stencil sheet stretched over the pad whereby the pad at the back of the stencil can be rendered accessible for inking purposes without removing the stencil from its seating.

856,445. MATTRESS-STUFFING MACHINE. SAMUEL A. COFFMAN, Marietta, Ohio. Filed Oct. 2, 1906. Serial No. 337,080.

Claim.—1. In a mattress stuffing machine, a compression chamber including side bars adjustable from and toward each other to vary the width of the compression chamber, a plunger having a sectional head, and adapted to reciprocate independently of any portion of said compression chamber and means for connecting the head to the side bars to permit lateral adjustment of the sectional head with the side bars.

2. In a mattress stuffing machine, a compression chamber having a bottom formed of overlapping plates, side bars connected to the side plates, means for simultaneously moving said side bars toward and from each other to vary the width of the chamber, the forward ends of all of the overlapping plates being extended to form the bottom portion of a spout, a pivotally mounted sectional cover the side members of which are adapted to be connected to the side bars, a separate series of overlapping plates forming the top of the spout, and means for positively connecting the side members of the top and bottom of the spout to insure adjustment of the latter as the side bars are adjusted, whereby the pivotally mounted sectional cover may be raised without disturbing the top of the spout.

3. In a mattress stuffing machine, a compression chamber having laterally adjustable side bars, a plunger, the compression face of which is formed of a pair of overlapping sections, the outer ends of which are bent to form rearwardly extending flanges, and means carried by the side bars for engaging said flanges, and thereby effecting adjustment of the width of the compression face of the plunger as said side bars are adjusted.



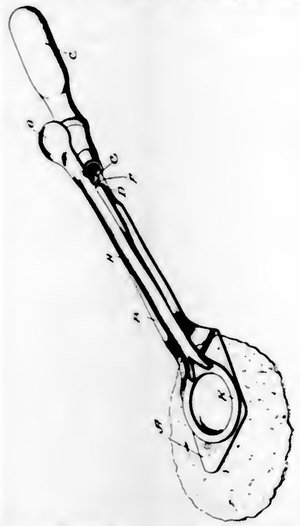
4. In a mattress stuffing machine, a compression chamber, a pivoted cover therefor, a spout formed of a plurality of sections, the uppermost sections being vertically adjustable with respect to the lowermost, a cross bar carrying the uppermost sections, vertically adjusted slotted blocks carrying the said cross bar, and means for locking said blocks in adjusted position.

5. In a mattress stuffing machine, the combination with a compression chamber, of a pivotally mounted cover, a frame, a vertically disposed screw supported by the frame, a bracket guided by the frame and having a threaded opening for the passage of the screw, means for preventing rotative movement of the bracket, a sheave carried by the bracket, a cable connected to the cover and extending over said sheave, one end of the cable being connected to a fixed part of the frame, and means for turning the screw to effect raising or lowering of the cover.

6. In a mattress stuffing machine, the combination with a frame, of a vertically disposed screw supported thereby, a cover, a cable having one end connected to the cover and the other end to a fixed point, a bracket having a threaded opening for the reception of the screw, a pair of cable guiding sheaves carried one by the frame and the other by the bracket, a bevel gear at the lower end of the screw, a shaft, a pair of bevel gears mounted loosely thereon and intermeshing with the screw gear, and means for turning one or other of said bevel gears to effect raising or lowering of the cover.

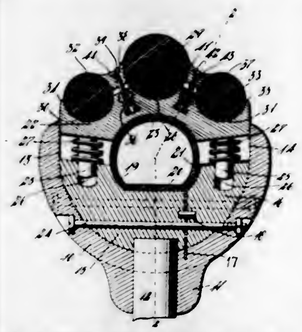
7. In a mattress stuffing machine, a compression chamber, a spout, a vertically movable gate between the two, vertical guides for said gate, a plunger, a plunger rod having a short slot, a pivotally mounted lever under the plunger rod, the upper end of said lever being ararnged to enter the slot and to be moved therefrom by the plunger as the latter advances, flexible cables connecting the lever to the gate, and guiding means for said cables.

856,446. CULINARY UTENSIL. JAMES H. COLLINS, Harrisburg, Pa. Filed Oct. 22, 1906. Serial No. 340,053.



Claim.—In a culinary utensil, a blade having a flat portion, a support thereon integral with the blade and having upright posts constituting a fork, and a holding lever pivoted in said support and comprising holding means, operating means, and a flattened portion comprising depending posts and filling the space between the upright posts on the blade so as to guide the lever and prevent its lateral displacement said holding means consisting of a flat sheet metal loop normally in substantially the same plane as the flat portion of the blade, substantially as described.

856,447. ANTOMOBILE-TIRE. FREDERICK D. G. COOK, Chippewa Falls, Wis. Filed Oct. 8, 1906. Serial No. 338,040.



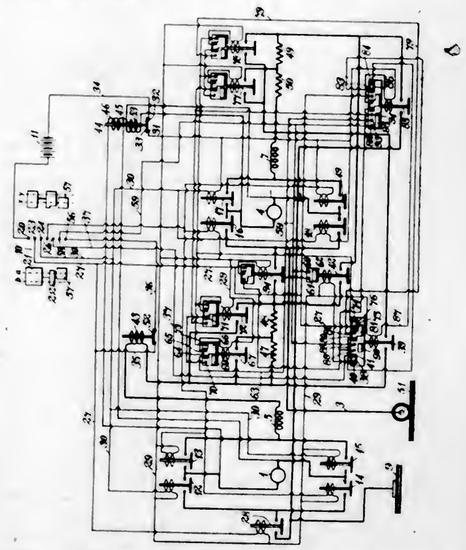
Claim.—1. A vehicle wheel comprising a channeled rim, an intermediate rim member seated in the channeled rim and provided with a peripheral groove and with sockets disposed at intervals on opposite sides of said groove, an outer rim member encircling and spaced from the intermediate rim member and provided on its inner face with a groove extending parallel with the first-named groove, an inflatable elastic tube arranged between the outer and intermediate rim members and seated in the grooves, studs projecting inwardly from the inner face of the outer rim member and slidably disposed in the several sockets, compressible springs arranged on the studs between the rim members, and a tire applied to the outer face of the outer rim member.

2. In a vehicle wheel, a channeled rim, an outer rim member encircling said rim and spaced from the bottom wall of the latter, cushioning means interposed between the rim and outer rim member, a plurality of spaced tires applied to the outer face of the latter, threaded sockets embedded in the rim member at intervals and on lines between the spaced tires, retaining blocks fitted between and engaging the opposing walls of the spaced tires at points in line with the sockets, and clamping screws entered through the retaining blocks and engaged with the several sockets.

3. In a vehicle wheel, a channeled rim having a filling, an outer rim member applied around said rim and spaced at its inner face from the periphery of the filling, cushioning members interposed between the filling and rim member for yieldably supporting the latter, a main central tire applied to the rim member and forming the thread thereof, and auxiliary tires applied to the rim member respectively at opposite sides of the main tire, said auxiliary tires being disposed in the plane of a circle of smaller diameter than that of the main tire.

4. In a vehicle wheel, a channeled rim, an inner rim member seated in said channel and comprising a pair of separable sections, transversely-projecting pins carried by one of the sections and entering sockets provided in the other to fix the sections against relative creeping movement, a tie bolt extended transversely through the rim in engagement with the rim member, sockets provided in the outer face of the latter, an outer rim member spaced from the intermediate rim member and having studs movably arranged in said socket, springs coiled upon the studs between the opposing faces of the rim members for yieldably sustaining the outer rim member, and a tire applied around the outer face of the latter.

856,448. CONTROL SYSTEM FOR ELECTRIC VEHICLES. WILLIAM COOPER, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Oct. 3, 1906. Serial No. 337,289.



Claim.—1. In a vehicle, the combination with driving motors therefor, of means dependent upon a material difference in the motor speeds for automatically interrupting the supply of energy to the motors.

2. In a control system for electric vehicle motors, the combination with a plurality of electrically governed switches, of means dependent upon a material difference in the motor speeds for automatically opening said switches.

3. In an electric vehicle, the combination with a plurality of driving motors, of means dependent upon a material difference in the electromotive forces existing across the motor armatures for automatically interrupting the supply of energy to the motors.

4. In a central system for electric vehicles, the combination with a plurality of motors and governing switches therefor, of means dependent upon a material difference in the speed of the motors for automatically opening the switches.

5. In an electric vehicle, the combination with electric driving motors, and a plurality of governing switches for the motors, of a differential relay which is adapted to effect the opening of the switches and is provided with similar opposing coils that are severally connected to the motor armatures.

6. In a control system for electric vehicles, the combination with a plurality of electric driving motors, a plurality of governing switches therefor, a master switch for controlling the governing switches, and a plurality of actuating magnets for said switches, of a differential relay that comprises a core member, a plurality of similar opposing coils which are severally connected across the armatures of said driving motors, and means dependent upon a material difference in the speeds of the motors for automatically interrupting the supply of energy to the actuating coils of the governing switches.

7. In a control system for electric vehicles, the combination with a plurality of electric driving motors, a plurality of governing switches therefor, a master switch for controlling the governing switches, and a plurality of actuating magnets for said switches, of a differential relay that comprises a core member, a plurality of similar opposing coils which are severally connected across the armatures of said driving motors, and means dependent upon a material difference in the energizing currents for the coils of the differential relay for automatically interrupting the supply of energy to the actuating coils of the governing switches.

8. In an electric vehicle, the combination with electric driving motors and control switches therefor that are adapted to be closed in the predetermined sequence, of a differential relay adapted to effect the opening of the switches and comprising similar magnet windings which are severally connected in multiple circuit with the motor armature to normally act in opposition to each other.

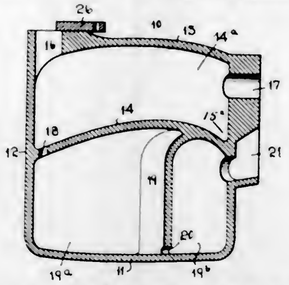
9. In an electric vehicle, the combination with electric driving motors, a plurality of electrically operated governing switches therefor which are adapted to close in sequence, and an auxiliary source of energy for effecting the closure of the switches, of means dependent upon a material difference in the motor speeds for automatically interrupting the supply of energy to the switches from said auxiliary source.

10. In an electric vehicle, the combination with electric driving motors, a plurality of electrically operated governing switches therefor which are adapted to close in sequence, and an auxiliary source of energy for effecting the closure of the switches, of means dependent upon a material difference in the electromotive force existing across the motor armatures for automatically interrupting the supply of energy to the switches from said auxiliary source.

11. In an electric vehicle, the combination with electric driving motors, a plurality of electrically operated governing switches therefor which are adapted to close in a predetermined sequence, and an auxiliary source of energy for effecting the closure of the switches, of a differential relay adapted to interrupt the supply of energy to the governing switches and comprising similar magnet windings which are severally connected in multiple circuit with the motor armatures to act in opposition to each other.

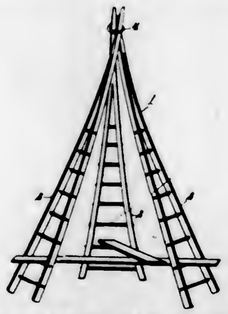
12. In an electric vehicle, the combination with electric driving motors, a plurality of electrically operated governing switches therefor adapted to close in sequence, and an auxiliary source of energy for effecting the closure of the switches, of means dependent upon a material difference in the motor speeds for automatically interrupting the supply of energy to the switches from said auxiliary source comprising an electrically operated relay switch having two similar windings that are connected in multiple circuit with the motor armatures and act in opposition to each other, and a movable core member which normally bridges the auxiliary control circuits of the governing switches.

856,449. CONTINUOUS GLASS-MELTING POT. CLARENCE J. CRITES and JOSEPH H. BREESE, Washington, Pa. Filed Oct. 18, 1906. Serial No. 339,529.



Claim.—A one-piece glass melting pot of substantially ovoidal form in horizontal section having an arched top, a concaved bottom and an intermediate arched partition forming within the pot an upper fusing chamber, the space below said partition being subdivided by a vertical transversely curved partition into a rear gathering chamber and a front working chamber, said intermediate partition having at its rear end a discharge opening leading from the fusing to the gathering chamber, and the vertical partition having at its lower edge openings leading from the gathering to the working chamber, said pot being provided at its front with a charging opening leading to the fusing chamber, and a gas escape opening leading therefrom and with a pair of hooded openings communicating respectively with the gathering and working chambers, there being formed in the top wall of the pot a heat inlet flue entering the fusing chamber, and a movable closure for wholly or partially closing said inlet flue.

856,450. COMBINATION-LADDER. CLEVELAND G. DAVIS, Manistee, Mich. Filed Aug. 16, 1906. Serial No. 330,813.

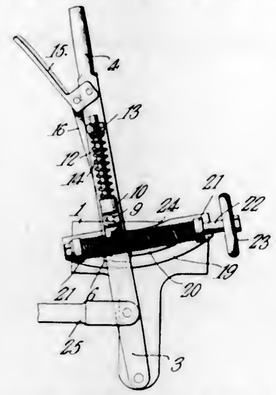


Claim.—1. A combination ladder comprising a plurality of sections each of which are an independent ladder, a connecting ring loosely connected to the upper end of one of said sections and adapted to receive the upper ends

of the other sections to hold the same together when the ladder is arranged in tripod form and hooks arranged on said other sections to engage said ring, substantially as described.

2. A ladder comprising a plurality of independent sections each of said sections being in the form of an independent ladder which preferably tapers from its lower toward its upper end to form a tapering support, a connecting ring loosely secured to the upper end of one of said sections and adapted to receive the upper ends with the other sections when the same are arranged in tripod form, and hooks arranged on the upper ends of said other sections to engage said ring, substantially as described.

856,451. HAND-LEVER. HAYNE M. DODD, Moultrie, Ga. Filed Apr. 12, 1907. Serial No. 367,795.



Claim.—1. The combination with a base, a lever fulcrumed thereon, and a guide block pivotally connected to and movable with the lever; of a guide plate pivotally connected to the base, said block slidably engaging the plate, and means upon the lever and plate for locking the same against independent movement.

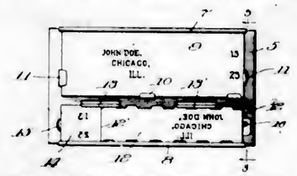
2. The combination with a base; of a lever fulcrumed thereon, a guide block pivotally connected to the lever, a spring pressed latch block slidably mounted upon the lever, a guide plate pivotally mounted on the base, said guide block slidably engaging the plate and disposed to rock it during the actuation of the lever, and a revoluble adjusting screw supported by and movable with the plate and normally engaged by the latch block.

3. The combination with a lever, a guide block pivotally connected thereto, a spring pressed latch block slidably mounted on the lever, and means for actuating the latch block; of a guide plate pivotally mounted adjacent the lever, a longitudinally extending guide rib upon the plate and slidably engaged by the guide block, said guide block being disposed to rock the plate during the movement of the lever, a revoluble adjusting screw connected to and movable with the guide plate and normally engaged by the latch block.

4. The combination with a lever; of a pivotally supported guide plate adjacent the lever, a guide member pivotally connected to the lever and slidably engaging and disposed to rock the guide plate, a spring pressed latch block movably mounted upon the lever, and an adjusting screw revolubly mounted upon and movable with the guide plate and normally engaged by the latch block.

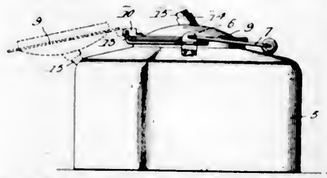
856,452. PRINTING-DEVICE. JOSEPH S. DUNCAN, Chicago, Ill., assignor to Addressograph Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 9, 1906. Serial No. 310,637.

Claim.—A printing device comprising a frame, an address printing plate and a suplemental printing plate arranged end to end, means at the lower edge of the frame for holding the lower edge of said plates, and two separate lips on the frame to engage the upper edge of said plates, said supplemental printing plate being shorter



in length than the distance between said lips to permit the removal of said supplemental plate from the frame when it is slid to position between said lips.

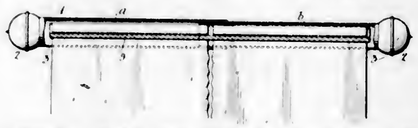
856,453. KETTLE-LID. HARRY T. DUNSTONE, Hubbell, Mich. Filed Mar. 12, 1907. Serial No. 361,904.



Claim.—1. The combination with a vessel having projections, of a wire extending around the outside of the vessel, and having clamps engageable with the projections and a lid for the vessel hinged on the wire.

2. The combination with a vessel having projections, of a spring wire clamped around the outside of the vessel and having clamps engageable with the projections, a portion of the wire being offset from the vessel, and a lid hinged on the offset portion of the wire.

856,454. CURTAIN-ROLLER. HARRY F. EVANS, Hynes, Iowa. Filed June 7, 1906. Serial No. 320,576.



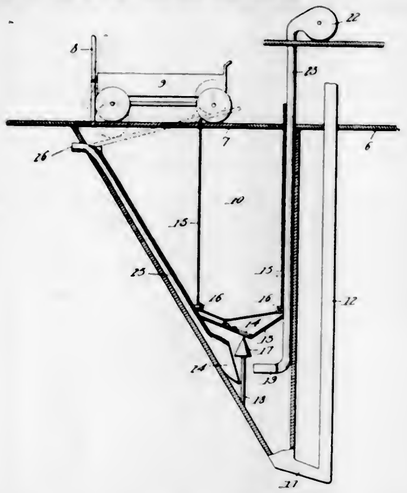
Claim.—A curtain pole formed of two telescopic sections, each provided with a longitudinal slot that are adapted to register when the sections are assembled, means for supporting said sections, and a curtain securing member wholly housed within the pole and of substantially the same width as the cross diameter of the bore thereof and being approximately wedge-shaped in cross section with the thin edge disposed toward the slot to bear against the curtain.

856,455. GRAIN-SEPARATOR. JOHN FEEHERY, Campus, Ill. Filed Feb. 16, 1907. Serial No. 357,729.

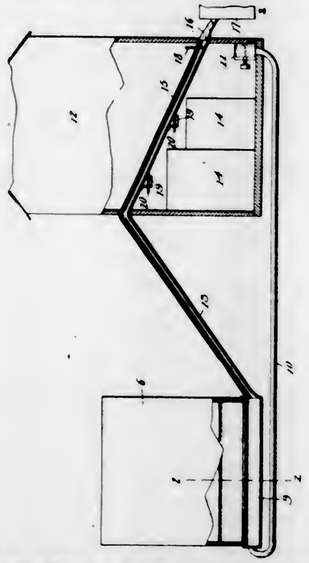
Claim.—1. In a grain separator, in combination, a hopper having sides which converge to an outlet at the lower end, a false bottom provided with a valve and extending between the side of the hopper at a distance above said outlet, forming a space in the lower part of the hopper under said false bottom, a spreader standing in said space under the valve, a blower head projecting in said space below the spreader, on one side, and a waste pipe having an enlarged mouth projecting into said space opposite the head.

2. In a grain separator, in combination, a hopper having a valve at the bottom, a conical spreader standing under the valve, a blower head located below and on one side of the spreader, and having a perforated face curved to

extend partly around the stream of grain falling from the spreader, and a waste pipe the mouth of which is opposite to the head, on the other side of the spreader.



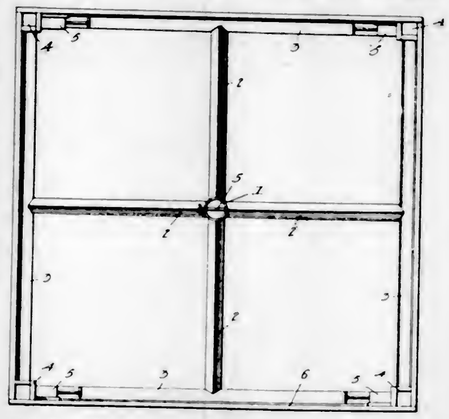
856,456. GRAIN-CONVEYER. JOHN FEEHERY, Campus, Ill. Filed Feb. 16, 1907. Serial No. 357,730.



Claim.—1. The combination with an elevator building having bins therein, of a grain-receiving bin located beside said building, an air pressure conveyer pipe leading from said latter bin upwardly into the building above the bins therein, and having discharge valves into said bins, and means to force air through said pipe.

2. The combination with an elevator building having bins therein, of a grain-receiving bin located beside said building, an air pressure conveyer pipe leading from said latter bin upwardly into the building and then downwardly over the bins and through the building and having a discharge nozzle at the end outside the building, and also having valved outlets into the bins in the building.

856,457. GRAIN-BIN VENTILATOR. JOHN FEEHERY, Campus, Ill. Filed Mar. 1, 1907. Serial No. 359,961.

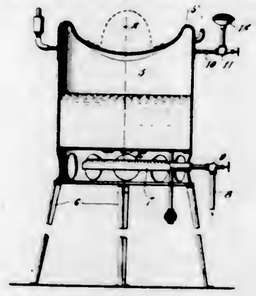


Claim.—1. A ventilator for bins, comprising an upright pipe at the middle of the bin, upright shafts at the sides of the bin, horizontal side conduits extending around the walls of the bin and connected and opening into the shafts, and cross conduits extending from the middle pipe to the side conduits, all of said conduits being open on the under side.

2. A ventilator for bins, comprising a system of vertical and horizontal conduits connected together and located within the bin, the horizontal conduits having openings on the under side thereof, and the vertical conduits having dampers at the top and bottom thereof, and an air blast pipe leading into the conduits and arranged to deliver a blast therefrom into the grain in the bin when said dampers are closed.

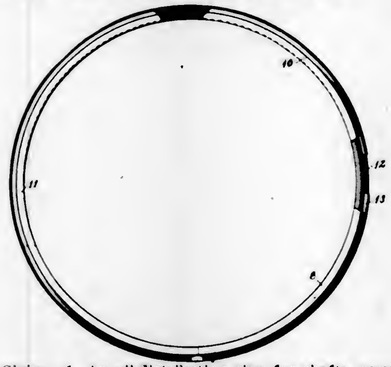
3. A ventilator for bins, comprising an upright air pipe at the middle of the bin, upright shafts in the corners of the bin, a series of horizontal conduits extending along the sides of the bin and opening into the shafts and consisting of flared plates secured at their upper edge to the side walls and spaced therefrom at their lower edge, and diametrical conduits open on the under side and extending from the air pipe to the side conduits.

856,458. DEVICE FOR SETTING, SHAPING, AND RENOVATING HATS. LOUIS FLICKER, Los Angeles, Cal. Filed Aug. 27, 1906. Serial No. 332,138.



Claim.—A device of the class described, comprising a cylindrical boiler having a top of the configuration of a hat shaping and setting board; a steam sprayer having muffling means, secured to said boiler; and a gas burner connected to a suitable source of supply secured beneath said boiler.

856,459. OIL-DISTRIBUTING RING. GEORGE H. FOLLOWS, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Oct. 3, 1904. Serial No. 227,071.



Claim.—1. An oil-distributing ring for shafts, comprising two segments having squarely abutting ends and a spring-ring that surrounds and holds the segments in position.

2. An oil-distributing ring for shafts, comprising two circumferentially grooved segments having squarely abutting ends and a spring-ring seated in the segment grooves.

3. An oil-distributing ring for shafts, comprising a plurality of segments each having a V-shaped groove and a clamping ring removably seated in the segment grooves.

4. An oil-distributing ring for shafts, comprising a plurality of squarely abutting segments having circumferentially alined V-shaped grooves and a spring clamping ring removably seated in said grooves.

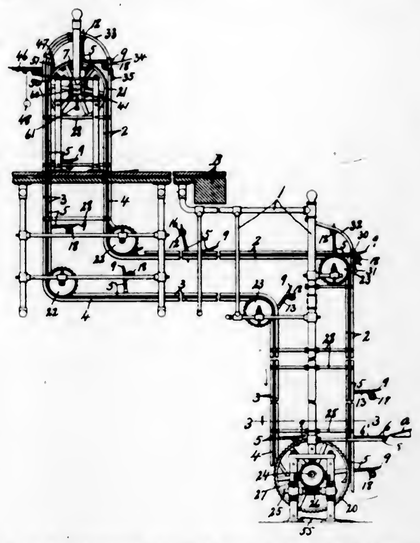
856,460. APPARATUS FOR HANDLING NEWSPAPERS. GEORGE W. FRICK, Syracuse, N. Y. Filed Oct. 14, 1905. Serial No. 282,841.

Claim.—1. In an apparatus for handling newspapers, a track having portions thereof disposed at an angle to each other and provided with a swinging section near said angle, an endless conveyer traveling along said track, and a car attached to the conveyer and provided with bearings riding on said track, one of the bearings operating to tilt and to ride upon the swinging track section when the car is turning the angle.

2. An apparatus for handling newspapers comprising receiving and delivery stations, a table at the receiving station having a plurality of arms spaced apart for supporting a bunch of papers, an endless belt traveling from one station to the other and return, cars attached at intervals to the belt and having portions thereof traveling between said arms a movable support receiving the papers from the cars at the delivery station, and means on the belt for actuating said support as the papers are deposited thereon.

3. In an apparatus for handling newspapers, a track having upright and horiontally extending portions, an endless, conveyer belt traveling along said track, a car having a bottom and back disposed at an angle to each other, said car being pivotally attached to the conveyer at the junction of said bottom and back, bearings on the bottom and back of the car, and additional bearings on the center of the car, the central and back bearings riding in the upright portions, and the central and bottom portions riding in the horizontally extending portions of the track.

4. In an apparatus for handling newspapers, a track having upright and horizontally extending portions, an endless conveyer belt traveling along said track, a car pivotally attached to said conveyer and provided with horizontal arms spaced apart and forming the bottom, said car having upright arms rigidly connected to the horizontal arms and forming the back of the car, and a system of roller bearings on the bottom, back and at the junction of the bottom with the back of the car and adapted to ride on said track to keep the car in operative position to carry its load.



5. In a newspaper handling apparatus, a track, an endless conveyer traveling along said track, a rod attached to said conveyer, angle bars mounted on the rod and a system of roller bearings mounted on the rod and angle bars respectively some distance apart and riding on said track.

6. In an apparatus for handling newspapers, a track having an upright portion and a horizontal portion, an endless conveyer running along the track, a paper supporting car attached to and moving with the conveyer, said car having a horizontal bottom and an upright back, bearings on the back engaging the upright portion of the track to hold the bottom of the car horizontally while traveling vertically, and additional bearings on the bottom to engage the horizontal portion of the track for holding the bottom horizontally while traveling along said horizontal portion of the track, and means for engaging said bearings and holding the car with its bottom in a horizontal position while passing from the upright to the horizontal portions of the track.

7. In an apparatus for handling newspapers, a track having an upright portion and a horizontal portion, said track having a movable section at the junction of the upright with the horizontal portion, an endless conveyer traveling along said track, a paper supporting car attached to and moving with the conveyer along said track, said car having a horizontal bottom and an upright back, separate bearings on the bottom and back of the car, the movable section of the track being normally alined with the upright portion of the track to engage the bearing on the back of the car for holding said car with its bottom in a horizontal position while traveling from the upright to the horizontal portion of the track, said movable section being also engaged and moved from its normal position by the bearing on the bottom of the car to cause the latter bearing to travel from the upright into the horizontal portion of the track.

8. In an apparatus of the class described, an endless conveyer and its supporting drums, portions of the con-

veyer being supported in horizontal planes, means for transmitting motion to the conveyer, guides following the line of travel of the conveyer, the outgoing guide having a swinging section at the junction of the vertical with the horizontal portion of the guide, paper-carrying cars attached to the conveyer and guided in said guides, and means on each car for engaging and swinging the movable section of the guide as the car travels from the vertical to the horizontal portion of the guide, said movable guide-section normally forming a guide for a portion of the car when entering the horizontal portion of the guide, and means to support the papers in the path of the moving cars.

9. In an apparatus of the class described, an endless conveyer and its supporting drums, means for transmitting motion to one of the drums, paper-carriers attached to the conveyer, means for supporting the papers in the path of said carriers, a paper-supporting table in proximity to the delivery terminal of the conveyer and located in the path of the carriers, whereby the papers on the carriers are deposited on said table, and means on each carrier for engaging and forcing the papers from said table.

10. In an apparatus of the class described, an endless conveyer and its supporting drums, means for transmitting motion to one of the drums, paper-carriers attached to the conveyer, means for supporting the papers in the path of said carriers, whereby the papers on the carriers are deposited on the table, means on each carrier for engaging and forcing the papers from said table, additional means for receiving the papers discharged from the table, said additional means being actuated by the carrier away from the table, and means to return the last named means to its normal position.

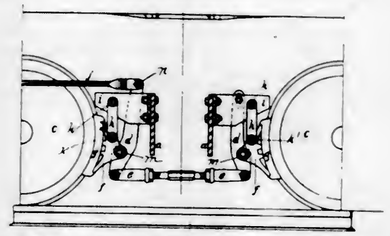
11. In an apparatus of the class described, an endless conveyer and rotary supports therefor, one at the receiving station and one at the delivery station, paper-supporting arms attached to the conveyer and spaced apart, means for holding said arms in a substantially horizontal position during their transit from the receiving to the delivery station, additional means for supporting the papers in the path of said arms, stationary arms at the delivery station arranged in a plane intersecting the path of the traveling conveyer arms, whereby said conveyer arms are caused to travel past the stationary arms to transfer their papers upon said stationary arms, sliding bars movable relatively to the stationary arms, means on the traveling paper carriers for engaging and forcing the papers from the stationary arms onto the sliding bars and for engaging and actuating said sliding bars away from the stationary arms, and additional means for automatically returning the sliding bars to their normal positions.

12. In an apparatus of the class described, an endless conveyer and paper-carrying cars attached thereto, and each provided with substantially horizontal arms spaced apart, a stationary table also having arms spaced apart, the arms of the cars moving between the arms of the stationary table, a second stationary table, sliding bars between said tables and means on each car to force the papers from the first named table onto the sliding bars, and for actuating said bars to transfer the papers therefrom onto the second stationary table.

856,461. RAILWAY-BRAKE. CORNELIUS FURMAN, Decatur, Ill. Filed Mar. 18, 1907. Serial No. 363,002.

Claim.—1. In a railway truck brake, the combination with the wheel, the shoe, and the transom; of a bracket comprising two members with parallel bodies and outturned feet, the latter bolted to said transom, the brake lever guided between said bodies and connected with the shoe, the spreader, links pivotally connecting the bracket and shoe, and anti-rattling springs on the pivots of the links.

2. In a railway truck brake, the combination with the wheel, the shoe, and the transom; of a bracket comprising two parallel members supported by the transom, the brake lever guided between them and connected with the shoe, the spreader, links on the outer sides of the bracket and shoe, a bolt through the latter and the lower ends of the links, a bolt having its head countersunk in each bracket member and its body projecting through the upper end of one link, and anti-rattling springs on the bolts next outside both ends of each link.

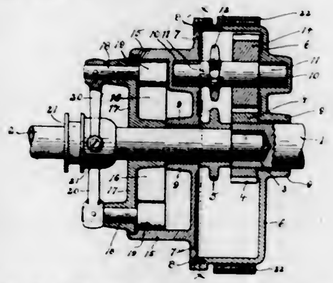


3. In a railway truck brake, the combination with the wheel, the shoe, and the transom; of a bracket comprising two parallel members supported by the transom, the brake lever guided between them and connected with the shoe, the spreader, and links pivotally connecting the bracket and shoe and supporting the latter and connected parts on their center of gravity.

4. In a railway truck brake, the combination with the wheel, the shoe, the brake lever connected thereto, and the spreader; of brake rods spanning the wheel and connected to the lever, a bracket comprising parallel members forming a guide for the lever, and links connecting the bracket and shoe.

5. In the railway truck brake, the combination with the wheel, the brake head and its connected parts, and the brake lever; of a bracket, links pivotally connecting the bracket and head and standing on their outer faces, and springs on all the pivots of the links holding them in frictional contact with the bracket and head and tending to maintain the latter on its center of gravity with its shoe parallel to the face of the wheel.

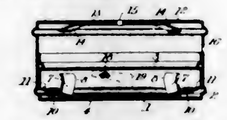
856,462. REVERSING-GEAR. FRANK G. GIES, Detroit, Mich., assignor to Gies Gear Company, Detroit, Mich., a Corporation of Michigan. Filed May 29, 1905. Serial No. 262,778.



Claim.—In a reversing gear, the combination of a driving and a driven shaft, a pinion on one and a sprocket on the other, a casing inclosing the pinion and sprocket and turning about said shafts and provided with an annular flange, a combined sprocket and pinion carried by said casing, the pinion carried by the casing engaging that carried by the shaft, a sprocket chain engaging the two sprockets a brake band encircling the said annular flange, and means for contracting the brake band to clamp the said flange.

856,463. BOX FOR WATCH-MOVEMENTS. JOHN H. GOSS and ADRIAN F. WOLFF, Waterbury, Conn., assignors to Scovill Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed May 28, 1906. Serial No. 319,227.

Claim.—1. A box for watch movements, composed of telescoping members, the lower member provided with a spring having parts rigidly fixed to the bottom of said member and provided with springy outer ends to grip the movement box, said spring having other parts freely movable to support the movement box yieldingly, and the upper member provided with a spring bearing upon the upper portion of the movement box.



2. A box for watch movements, composed of telescoping members, the lower member having a many-armed spring constructed with box-grasping arms rigidly fixed to the bottom of the said lower member and having resilient outer ends, and yielding box-supporting arms serving to force the box into the grip of the grasping arms, and the upper member having a spring to bear upon the upper portion of the movement box, these two springs serving to center the movement box within the casing.

3. A box for containing a watch movement box, consisting essentially of a casing composed of telescoping members, the lower member having a many-armed spring constructed with box-grasping arms rigidly fixed to the bottom of the said lower member and having resilient outer ends, and yielding box-supporting arms serving to force the box into the grip of the grasping arms, and the upper member having a spring to bear upon the upper portion of the movement box, these two springs serving to center the movement box within the casing, and the two casing members provided with interlocking means to positively unite them about the movement box.

4. A watch movement box casing, comprising a body portion containing a many-armed spring, some of the arms riveted to the body portion and provided with grips and the others free and utilized as springs, respectively to grip and yieldingly support a watch movement box, and a cover member provided with a spring having downwardly deflecting ends to yieldingly engage the watch movement box, and means to lock the two parts together.

5. A watch movement box casing, having a body portion containing a many-armed spring, some of the arms provided with grips and riveted to the body portion and the others free and utilized as springs, respectively to grip and yieldingly support a watch movement box, and a cover coöperating with the body portion.

6. A watch movement box casing, having a body portion containing a many-armed spring, some of the arms provided with grips and the others utilized as springs, respectively to grip and yieldingly support a watch movement box, a guard bead located in said body portion adjacent to the upper ends of the grips and covering the said ends of the grips to shield them from injury by an incoming box, and a cover for the body portion.

7. A watch movement box casing, having a body portion containing a many-armed spring, some of the arms provided with grips and the others utilized as springs, respectively to grip and yieldingly support a watch movement box, an inwardly projecting guard bead located immediately above the grips, and a cover for the body portion.

856,464. LAWN-RAKE. ROBERT H. HAVEN and FRANK ROCKWELL, Grand Rapids, Mich. Filed Mar. 4, 1907. Serial No. 360,611.

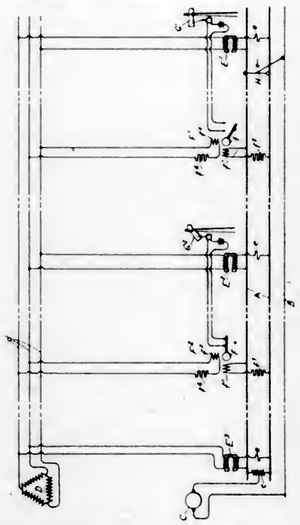
Claim.—1. The combination in a lawn rake, of a sheet metal plate having slots for the passage of portions of teeth, an outwardly curved set of partitions between the slots, bifurcated teeth having curved bearings passed through the slots in the plate and short ends projecting beyond the slots and resting on the plate, and a wire rod passed through the opening formed by the curves in the plate and the ends of the teeth, substantially as and for the purpose set forth.

2. In combination, a plate having slots through it and outwardly curved partitions between the slots, the edges of the plate turned practically at right angles with the plate, bifurcated teeth having curved portions passed through the slots forming a round hole with the curved partitions of the plate, and short ends extending back therefrom and bearing on the surface of the plate, and a wire rod passed through said round holes, substantially as and for the purpose set forth.



3. In combination, a plate having slots through it and outwardly curved partitions between them and the outer edges of the plate turned at right angles with the plate, teeth having curves at one end to engage with the plate and form round holes with the curved partitions of the plate, and having short ends projecting over onto the plate, and a wire rod passed through the holes formed by the curves in the teeth and in the plate, substantially as and for the purpose set forth.

856,465. BLOCK-SIGNAL SYSTEM. LAURENCE A. HAWKINS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 3, 1906. Serial No. 346,034.



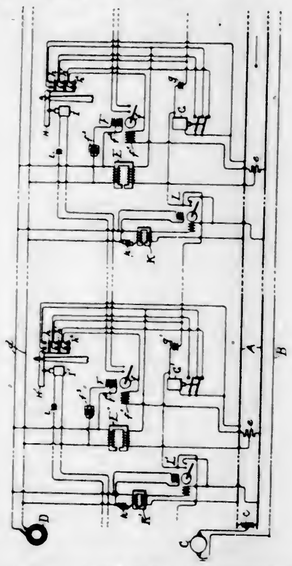
Claim.—1. In combination with an electric railway having both rails conductively continuous for all currents, sources of alternating-current connected across the rails at intervals, adjacent sources being of different phase, and signal-controlling relays connected singly across the rails between the sources, each relay being responsive to control a signal only when supplied with current from both adjacent sources.

2. In combination with an electric railway having both rails conductively continuous for all currents, sources of alternating-current connected across the rails at intervals, adjacent sources being of different phase, and signal controlling relays connected singly across the rails between the sources, each relay having two coöperating windings, one connected across the track-rails and the other supplied

independently of the rails with alternating current of proper phase for effectively operating the relay only when the track winding is traversed by a current corresponding in phase to the resultant current delivered by the two adjacent sources.

3. In combination with an electric railway having both rails conductively continuous for all currents, sources of alternating-current connected across the rails at intervals, adjacent sources being of different phase, and signal-controlling relays connected singly across the rails between the sources, each relay comprising a short-circuited secondary member and two primary windings, one connected across the track-rails and the other supplied independently of the rails with current substantially ninety degrees out of phase with the resultant current delivered by the two adjacent sources.

856,466. BLOCK-SIGNAL SYSTEM. LAURENCE A. HAWKINS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 11, 1907. Serial No. 351,834.



Claim.—1. In combination with an electrically operated road having both rails conductively continuous for all currents, normally open-circuited transformers adapted to impress an alternating voltage in the track rails, normally closed circuited sources of voltage connected across said rails, means in circuit with said sources responsive to the approach of a train to close the circuit of a transformer ahead of the train, and signal controlling devices responsive to the alternating voltage impressed on the rails by the transformers when their circuits are closed.

2. In combination with an electrically operated road having both rails conductively continuous for all currents, transformers adapted to impress an alternating voltage on the track rails, normally closed circuited sources of voltage connected across said rails, relays in circuit with said sources controlling the circuits of said transformers, and signal controlling devices responsive to the voltage impressed on the rails by the transformers when their circuits are closed.

3. In combination with an electrically operated road having both rails conductively continuous for all currents, transformers and signal controlling relays connected at intervals across said rails, said transformers being normally open-circuited, and means connected across said continuous rails at points between the transformers and relays responsive to the approach of a train for closing the circuit of a transformer ahead of the train.

4. In combination with an electrically operated road having both rails conductively continuous for all currents, transformers and signal controlling relays connected at intervals across said rails, said transformers being normally open-circuited, normally closed-circuited sources of voltage connected across said rails at points between the transformers and relays, and devices in circuit with said sources controlling the circuits of said transformers.

5. In combination with an electrically operated road having both rails conductively continuous for all currents, transformers and signal controlling relays connected at intervals across said rails, said transformers being normally open-circuited, normally closed circuited sources of voltage connected across said rails at points between the transformers and relays, and devices in circuit with said sources controlling the circuits of said transformers, the voltage impressed on the rails by said sources being different in character from that of said transformers and ineffective for operating said signal controlling relays.

6. In combination with an electrically operated road having both rails conductively continuous for all currents, transformers and signal controlling relays connected at intervals across said rails, said transformers being normally open-circuited, normally closed circuited sources of voltage connected across and relays, and devices in circuit with said rails at points between the transformers sources controlling the circuits of said transformers, the signal controlling relays being responsive only to current from said transformers.

7. In combination with an electrically operated road having both rails conductively continuous for all currents, sources of low voltage high-frequency current connected across said rails at intervals, normally open-circuited transformers connected to the rails, means in circuit with said sources for closing the circuits of said transformers, and signal controlling relays responsive to the alternating voltage impressed on the rails by the transformers when their circuits are closed.

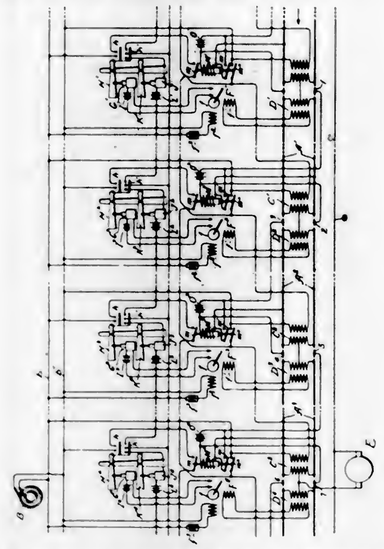
8. In combination with an electrically operated road having both rails conductively continuous for all currents, transformers connected at intervals across the rails, normally open contacts in series with said transformers, electromagnets controlling said contacts, sources of low-voltage high-frequency current connected across the rails, relays in circuit with said sources controlling said electromagnets, and signal controlling relays responsive to the voltage impressed on the rails by said transformers when said contacts are closed.

856,467. BLOCK-SIGNAL SYSTEM. LAURENCE A. HAWKINS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Jan. 10, 1907. Serial No. 351,605.

Claim.—1. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the rails a permanently-closed track-circuit for each block, connections between the circuits of adjacent blocks adapted to form a return-path for the power-current, means controlled by a moving train for producing an alternating-current in a track-circuit ahead of the train, signals normally at danger, and a signal-controlling device for each track-circuit responsive to the alternating-current when supplied thereto.

2. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the track-rails a permanently-closed track-circuit for each block, connections between the track-circuits of adjacent blocks adapted to form a return-path for the power-current, normally-open circuits for supplying alternating-current to the several track-circuits, means controlled by a moving train for closing the supply-circuit for a track-circuit ahead of the train, signals normally at danger, and

a signal-controlling device for each track-circuit responsive to the alternating-current when supplied thereto.



3. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the track-rails a permanently-closed track-circuit for each block, connections between the track-circuits of adjacent blocks adapted to form a return-path for the power-current, circuits for supplying alternating-current to the several track-circuits, normally-open contacts included in said supply-circuits, electromagnets for closing said contacts controlled by an approaching train, signals normally at danger, and a signal-controlling device for each track-circuit responsive to the alternating-current when supplied thereto.

4. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the track-rails a permanently-closed track-circuit for each block, connections between the track-circuits of adjacent blocks adapted to form a return-path for the power-current, circuits for supplying alternating-current to the several track-circuits, normally-open contacts included in said supply-circuits, electromagnets for closing said contacts, circuit-connections for said magnets arranged to be closed momentarily by an approaching train, a maintaining-circuit for each magnet arranged to be closed when the magnet is energized, signals normally at danger, and a signal-controlling device for each track-circuit responsive to the alternating-current when supplied thereto.

5. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the track-rails a permanently-closed track-circuit for each block, connections between the track-circuits of adjacent blocks adapted to form a return-path for the power-current, circuits for supplying alternating-current to the several track-circuits, normally-open contacts included in said supply-circuits, electromagnets for closing said contacts, connections arranged to be closed by a train for momentarily energizing a magnet to close the supply-circuit for a block ahead of the train, a maintaining-circuit for the magnet arranged to be closed when the magnet is energized, connections for de-energizing the magnet when the train enters said block, a signal for the block normally at danger, and a device controlling the signal and responsive to the alternating-current when supplied to the track-circuit of the block.

6. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the track-rails a permanently-closed track-circuit for each block, connections between the track-circuits of adjacent blocks adapted to form a return path for the power-current, normally-open circuits for supplying alternating-current to the several track-circuits, means controlled by a moving train for closing the supply-circuit for a track-circuit ahead of the train, signals normally at danger, and a signal-controlling relay for each track-circuit having two co-operating windings, one supplied with current from the track-circuit when its supply-circuit is closed and the other normally energized by alternating-current supplied independently of the track-circuit.

7. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the rails a permanently closed track-circuit for each block, connections between the track-circuits of adjacent blocks adapted to form a return path for the power-current, normally-open circuits for supplying alternating-current to the several track-circuits, signals normally at danger adapted to give caution and clear indications, means controlled by a moving train for closing the supply-circuit for a block ahead of the train, and means controlled by the signal mechanism of a block for closing the supply-circuit of a second block ahead.

8. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the rails a permanently-closed track-circuit for each block, connections between adjacent blocks adapted to form a return path for the power-current, normally-open circuits for supplying alternating-current to the several track-circuits, means controlled by a moving train for closing the supply-circuit for a track-circuit ahead of the train, a device responsive to the alternating-current supplied to the track-circuit, a signal controlled by said device, and means controlled by the signal for closing the supply-circuit for the track-circuit next in advance.

9. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting its primary normally open-circuited and its secondary connected across the rails at one end of a block, a second transformer for each block having its primary connected across the track-rails at the other end of the block, a signal-controlling relay for each block connected to the secondary of the second transformer, connections between the transformer-windings at adjacent ends of adjacent blocks adapted to form a path for the power-current, and means controlled by an approaching train for closing the primary circuit of the first transformer of a block ahead of the train.

10. In an electrically-operated railway, track-rails divided to form signal-blocks, a transformer for each block having its primary normally open-circuited and its secondary connected across the rails at one end of a block, a second transformer for each block having its primary connected across the track-rails at the other end of the block, a signal-controlling relay for each block connected to the secondary of the second transformer, connections between the transformer windings at adjacent ends of adjacent blocks adapted to form a path for the power-current, means controlled by an approaching train for closing the primary circuit of the first transformer of a block ahead of the train, a signal for each block controlled by the relay, and means controlled by the signal for closing the primary circuit of the first transformer of the block next in advance.

11. In an electrically-operated railway, track-rails divided to form signal-blocks, a transformer for each block having its primary normally open-circuited and its secondary connected across the rails at one end of a block, a second transformer for each block having its primary connected across the track-rails at the other end of the block, a signal-controlling relay for each block connected to the

secondary of the second transformer, connections between the transformer windings at adjacent ends of adjacent blocks, adapted to form a path for the power-current, an electromagnet for each block arranged when energized to close the primary circuit of the first transformer, and circuit connections for said magnet arranged to be closed by an approaching train.

12. In an electrically-operated railway, track-rails divided to form signal-blocks, inductive windings cross-connecting the rails at both ends of each block and forming with the track-rails a permanently-closed track-circuit for each block, connections between the track-circuits of adjacent blocks adapted to form a return-path for the power-current, circuits for supplying alternating-current to the several track-circuits, normally-open contacts included in said supply-circuits, electromagnets for closing said contacts, short insulated sections inserted in the track-rails and connected to said magnets, and a signal-controlling device for each track-circuit responsive to the alternating-current when supplied thereto.

856,468. ATTACHMENT FOR CLOSETS. FRANCIS M. JACOB, Columbus, Miss. Filed Sept. 20, 1906. Serial No. 335,440.



Claim.—1. A closet attachment comprising a pipe having a fixture thereon and a cup and nozzle removably secured to the fixture, said cup surrounding the nozzle.

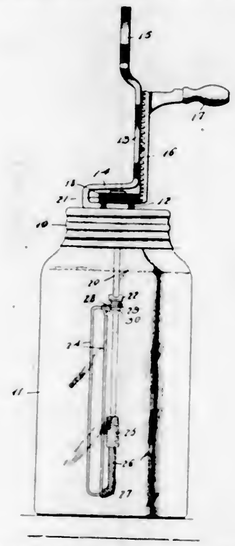
2. A closet attachment comprising a pipe having a fixture thereon, and a cup and nozzle removably secured to the fixture, said fixture having an open drain duct in its lower end, and the cup surrounding the nozzle.

3. A closet attachment comprising a pipe, a fixture secured thereon, said fixture having a threaded nipple, a cup removably mounted on the nipple and a nozzle removably screwed to the threads of the nipple, whereby the nozzle and cup are held thereon.

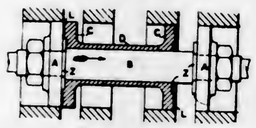
4. The combination with a main pipe, a branch pipe and coupling, said branch pipe adapted to enter between a bowl and seat, the branch pipe having a dip therein at or near its free end and provided with a nozzle and a cup surrounding the nozzle.

856,469. MIXING APPARATUS. FREDERICK W. KAPHEIM, Milwaukee, Wis. Filed Dec. 28, 1906. Serial No. 349,823.

Claim.—A mixing apparatus compriaing a cap, a shaft monnted in the cap, and extending below the same, a loose pinion on the shaft, a driving gear meshing with said pinion, laterally extending arms at the lower end of the shaft, and having openings, beater shafts mounted in the cap, and extending through said openings, and pinions on the beater shafts meshing with the aforesaid pinion.



856,470. VALVE. HENRY C. KING, Swindon, England. Filed Oct. 13, 1900. Serial No. 32,991.

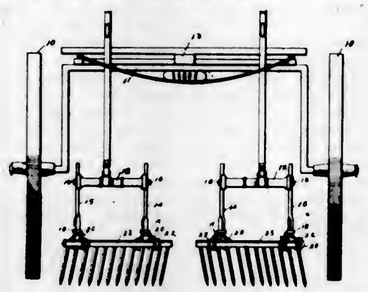


Claim.—1. A distributing valve for fluid pressure engines, consisting of a valve seat having two outer admission ports and a central exhaust port, a main positive operated valve part and a secondary valve part movable with respect to the main valve part and having the usual exhaust cavity, chambers at each end between the valve parts and communicating with ports so situated that when the valve is in position to admit steam to an admission port, said chambers open to communicate with the admission ports.

2. A distributing valve for fluid pressure engines, consisting of a valve seat having two outer admission ports and a central exhaust port, a main body, a jumper or secondary body adapted to slide between stops on the main body and provided with the usual exhaust cavity and two heads or ends that make a sliding joint with the main body, and of chambers at each end between the parts and communicating with ports so situated that when the valve is in position to admit steam to an admission port said chambers communicate with the admission ports.

3. A distributing valve for fluid pressure engines, consisting of a cylindrical valve seat having outer admission ports and a central exhaust, two main heads of less width than the width of the admission port and connected by a spindle and positively operated so that the heads cover and uncover the admission ports, a jumper consisting of two heads a connecting piece sliding between the two main heads, the cavity between the two jumper heads forming the usual exhaust cavity, the chambers between the heads being so situated that when the valve is in position to admit steam to an admission port said chambers communicate with the admission ports.

856,471. HARROW ATTACHMENT FOR CORN-CULTIVATORS. CARL J. KIRKEBERG, Eagle Grove, Iowa. Filed Jan. 19, 1904. Serial No. 189,774.



Claim.—1. In a cultivator frame, a harrow attachment connected with said frame, comprising shells, teeth pivotally attached to the shells, an adjusting rod extending longitudinally of each of the shells through which each tooth passes, means for moving each of said adjusting rods longitudinally of each shell, means for rotatably supporting the shells relative to the frame, means for maintaining the shells in position against rotation, and a hiller connected with the shells.

2. In a device of the class described, the combination of two teeth bearing portions arranged diagonally across the line of advance of the machine to which it is attached, teeth pivoted to said portions, adjusting rods extending longitudinally of the teeth bearing portions for inclining said teeth forwardly and rearwardly relative to their pivotal points of attachment to the teeth bearing portions, adjustable means for maintaining the teeth at various inclinations to the right or left of their pivotal points of attachments, and supporting bars detachably connected with the teeth bearing portions and capable of being connected with the frame of the cultivator.

856,472. BOTTLE-STOPPER. GEORG KIRKEGAARD, New York, N. Y. Filed Oct. 1, 1906. Serial No. 336,830.



Claim.—1. A bottle stopper comprising a disk having an annular depending flange, fingers extending downward beyond the flange and strengthening lugs between the sides of the fingers and the lower edge of the flange.

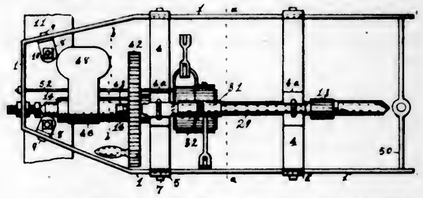
2. A bottle stopper comprising a disk having an annular depending flange, fingers extending downward beyond the flange, said fingers having holding lugs on their inner surfaces, and stiffening ribs on their outer surfaces; and strengthening lugs between the sides of the fingers and the lower edge of the flange.

3. A bottle stopper comprising a disk having an annular depending flange, fingers extending downward beyond the flange, strengthening lugs between the sides of the fingers and the lower edge of the flange, and a handle or tail-piece extending from one of the fingers.

4. A bottle stopper comprising a metallic cap containing packing material and having a number of depending fingers around its periphery, each finger having an inwardly extending lug for engaging the neck of the bottle and also stiffening ribs surrounding said lugs and extending upward to the cap; and strengthening lugs between the sides of the fingers and the lower edge of the flange.

5. A bottle stopper comprising a sheet metal cap containing packing material and having a depending flange, fingers extending from the lower end of said flange and provided with a reinforcement extending from the lower ends upward through the width or depth of the flange, one of said fingers having a handle or tail-piece provided with a reinforcement extending through its length and continuing through the length of the finger to which it is attached and the width of the flange; and strengthening lugs between the sides of the fingers and the lower edge of the flange.

856,473. DRILLING-MACHINE. DANIEL E. KRAUSE, Chase, Wis. Filed May 21, 1906. Serial No. 317,851.



Claim.—1. A frame for a drilling machine formed of three pieces of bar steel, comprising first, two longitudinal side sills placed on edge, a rear traverse sill, and a hook adapted to be hooked over a rail road rail at the forward end of each side sill, all in one piece, second, two similar continuous bands, bent flatwise, forming each a cross sill, two uprights and a top rail, the two uprights of each band having a crimp, or bend, near their cross sills adapted to receive between said crimps and the cross sills, the side sills of said first named piece, and suitable bolts through said uprights and side sills at the four connecting points thereof, substantially as described.

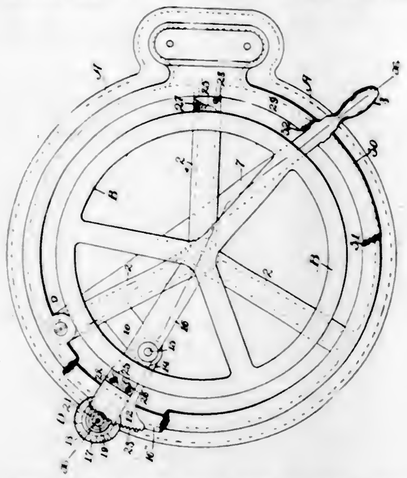
2. In a rail drilling machine, the combination of a frame therefor, a drill shaft arranged lengthwise of said frame, a bearing upon said frame for supporting the forward end of said shaft and in which it revolves, a second bearing arranged on said frame between the first named bearing and the rear end of said shaft, in which the shaft is supported, a screw thread upon said shaft extending from near its mid-length to its rear end, a nut mounted upon said threads, its forward end being round and revoluble in said second bearing and the rear one round for the action of a feed controlling means thereon, it extending beyond the rear end of said threads, a thrust bearing arranged to bear against said rear end, a pinion upon and revoluble with said nut intermediate its ends and arranged to hold said nut from endwise movement between said second named and the thrust bearing aforesaid, a brake band mounted for action upon the rear end of said nut for controlling the feed of the drill, and a gear wheel mounted for revolution above said pinion and in mesh therewith for setting the drill up to and its quick withdrawal from the work in hand, substantially as described.

3. In a rail drilling machine, the combination of a frame therefor, a drill shaft arranged lengthwise of said frame, a bearing upon said frame for supporting the forward end of said shaft and in which it revolves, a second bearing arranged on said frame between the first named bearing and the rear end of said shaft, in which the shaft is supported, a screw thread upon said shaft, extending from near its mid-length to its rear end, a nut mounted upon said threads, its forward end being round and revoluble in said second bearing, and the rear one round for receiving a feed controlling brake band and extending beyond the rear end of said threads, a thrust bearing arranged to bear against said rear end, a pinion upon and revoluble with said nut, between said round ends and adapted to hold said nut between said second named and thrust bearings aforesaid from endwise movement, mechanism engaging said pinion for setting the drill up to and for its quick withdrawal from the work in hand, and a brake band partially encircling a portion of the rear end of said nut and being arranged in a suitable position for being pressed downward by the foot of the operator for governing the rate of feed of the drill shaft, substantially as set forth.

4. In a drilling machine, a drill holding shaft mounted for revolution upon a suitable frame, and having mechanism for revolving said shaft, a screw thread formed upon

the rear portion of said shaft, a nut, round upon the outside of each end, mounted upon said threads, a bearing arranged upon the frame in which the forward end of said nut is arranged for revolution, a thrust bearing arranged at the rear end of the frame with which the rear end of said nut engages, and a brake for governing the rate of feed of the drill shaft comprising a band of spring metal partially encircling a portion of the rear end of said nut, one end of the band being secured in a fixed position, and the other free end being arranged in position for being pressed downward by the foot of the operator, and thereby clasping the band around a portion of the circumference of said nut.

856,474. CHEESE-CUTTER. GUSTAVE F. KRIESEL, Minneapolis, Minn. Filed Oct. 8, 1906. Serial No. 337,859.



Claim.—1. In a cheese cutter, the combination with a rotary carrier, of a system of levers provided with a friction clutch for engaging the carrier, and a graduated dial, said dial being geared to the levers and adapted to fix the thrust of the same upon the rotary carrier.

2. In a cheese cutter, the combination with a rotary carrier, of an operating lever, fixed stops for limiting the movement of said lever, a graduated adjusting dial, a clutch lever in sliding connection with the operating lever, said clutch lever being provided with an arm having a toothed segment for engaging the dial and a friction clutch for engaging the rotary carrier.

3. In a cheese cutter the combination of a rotary carrier, an operating lever having a fixed stroke, a clutch lever having sliding engagement with the operating lever and provided with a clutch for the carrier, said clutch lever being jointed for the purpose of varying the thrust of the clutch on the carrier.

4. In a cheese cutter, the combination of a rotary cheese carrier, an operating lever, adjusting means consisting of a centrally journaled lever frictionally engaging the carrier and provided with a pivoted arm, a slidable connection between the operating lever and said arm, and a graduated dial geared to said pivoted arm and adapted to regulate and fix the thrust of the operating lever.

5. In a cheese cutter, the combination of a rotary cheese carrier, a reciprocating operating lever having a constant thrust, means for connecting said lever with the carrier consisting of a centrally journaled lever carrying an adjusting arm and frictionally engaging the carrier, a slidable connection between the operating lever and said arm, and a graduated dial geared to the arm and adapted to regulate and fix the thrust of the centrally journaled lever.

6. A cheese cutter, comprising a revolving carrier, a dial upon which the gross value of the cheese is indicated, a jointed lever, one member of which engages the cheese carrier while the other is provided with teeth adapted to engage the dial by which its thrust is regulated, means for setting the dial to indicate varying aliquot segments of the cheese, an operating lever having a fixed thrust, and means for slidably connecting said levers.

7. A cheese cutter, comprising, a circular frame, a knife vertically pivoted in said frame, a rotary carrier horizontally pivoted in said frame, an operating lever, a clutch lever, means for slidably connecting said levers, an adjusting arm pivoted on the clutch lever at one end and formed with a toothed segment at the other, means for fixing the angle of the arm to the clutch lever, a scale dial geared to said toothed segment and fixed stops for limiting the movement of the operating lever at both ends of the stroke.

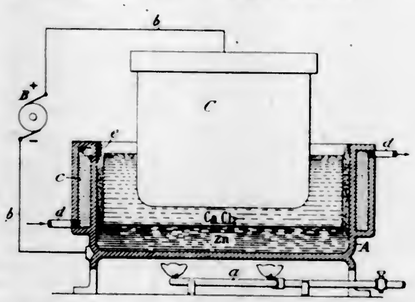
8. A cheese cutter, comprising a frame, a rotary carrier in frictional contact with the frame, and means for revolving said carrier step by step, said means comprising an operating lever having a fixed stroke, a ball clutch adapted to frictionally engage the carrier, a jointed clutch lever upon one member of which said clutch is mounted, and slidable connections between the operating lever and second member of the clutch lever.

9. A cheese cutter, comprising a frame, a carrier pivoted upon the frame and in spring contact therewith, an operating lever, adjusting means consisting of a centrally journaled lever engaging the carrier and provided with a pivoted arm, a sliding connection between the operating lever and said arm, and a graduated dial pivoted upon the outer end of the adjusting lever, geared to the arm and adapted to regulate and fix the thrust of the operating lever.

10. A cheese cutter, comprising, a circular frame, a knife vertically pivoted in said frame, a rotary carrier horizontally pivoted in said frame, an operating lever, a clutch lever, means for slidably connecting said levers, an adjusting arm pivoted on the clutch lever, a scale dial to which said arm is geared, for determining the angle between the adjusting arm and clutch lever and means for securing said dial in position when adjusted, whereby the degree of revolution of the carrier at each stroke of the operating lever may be determined.

11. A cheese knife, in combination with a rotary carrier, an operating lever, fixed stops for limiting the movement of said lever and a graduated adjusting dial adapted to predetermine the thrust of the operating lever upon the carrier by the following means, viz.: a clutch lever, slidably connected with the operating lever, said clutch lever being provided with a pivoted arm formed with a toothed segment for engaging the dial and a clutch for engaging the rotary carrier.

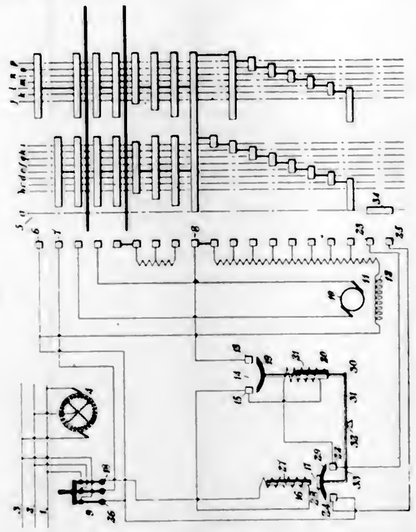
856,475. PRODUCTION OF CALCIUM ALLOYS. FRANZ VON KÜGELGEN and GEORGE O. SEWARD, Holcombs Rock, Va. Filed Mar. 30, 1905. Serial No. 252,798.



Claim.—1. The process which consists in electrolyzing a molten calcium salt in the presence of a cathode of fused zinc whereby is produced an alloy of calcium and zinc.

2. The process which consists in electrolyzing molten calcium chlorid in the presence of a cathode of fused zinc whereby the separated calcium alloys with such metal.

856,476. ELECTRICAL CONTROLLER. GEORGE LAIRD and JOHN P. TODD, Manchester, England, assignors to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 4, 1905. Serial No. 244,180.



Claim.—1. The combination with a source of electrical energy, a translating device and a circuit controller therefor, of a circuit-breaking means comprising a main switch, an actuating coil therefor, an auxiliary switch in the circuit of said coil, an actuating coil for said auxiliary switch that is in circuit with the main switch, and a third switch that is mechanically operated by the circuit controller to close the circuit of the actuating coil of the main switch only when the circuit controller is in its initial position.

2. The combination with a source of electrical energy, a translating device and a circuit controller therefor, of a circuit breaking means comprising a main switch, an actuating coil therefor, an auxiliary switch in the circuit of said coil, an actuating coil for said auxiliary switch that is in circuit with the main switch, and a governing switch for the circuit of the main switch actuating coil, said governing switch constituting part of the circuit controller and being closed only when said controller is in its initial position.

3. The combination with a source of electrical energy, a translating device and a circuit controller therefor, of a circuit breaking device comprising a main circuit switch, an operating coil therefor, an auxiliary switch in the circuit thereof, an operating coil therefor which is in circuit with the main switch, means connecting the two switches that causes the auxiliary switch to open when the main switch is opened and which also permits the auxiliary switch to open independently of the main switch, and a manually operated switch in the circuit of the operating coil of the main switch.

4. The combination with a source of electrical energy and a translating device, of a main switch that is normally closed and is opened when the voltage applied to the translating device falls below a predetermined limiting value, and an auxiliary switch which is interlocked with the main switch to be opened thereby and is independently opened when the current traversing the circuit exceeds a predetermined limiting value.

5. The combination with a source of electrical energy and a translating device, of a main switch that is normally closed and is opened when the voltage applied to the translating device falls below a predetermined limiting value, an auxiliary switch which is interlocked with the main switch to be opened thereby and is independently opened when the current traversing the circuit exceeds a predetermined limiting value, and a manually-operated switch which controls the operation of the main switch.

6. The combination with a source of electrical energy and a translating device, of a main circuit switch, an auxiliary circuit switch and means for causing the two switches to open when the voltage applied to the translating device falls below a predetermined limiting value.

7. The combination with a source of electrical energy and a translating device, of a main switch having an actuating coil, an auxiliary switch, a coil and mechanism under the influence thereof for opening the auxiliary switch when the current in the main circuit exceeds a predetermined limiting value, and mechanism between the two switches that opens the auxiliary switch when the main switch opens and permits the former to open independently of the latter.

8. The combination with a source of electrical energy, a translating device and a circuit controller therefor, of an electro-magnetically-actuated switch that is normally closed and is opened when the voltage applied to the translating device falls below a predetermined limiting value, an auxiliary switch that is mechanically interlocked with the main switch to be actuated thereby but is independently opened when the current traversing the main circuit exceeds a predetermined limiting value, and a third switch that is operated by the controller and serves to effect closure of the main switch only when the controller occupies its first position.

9. The combination with a source of electrical energy, a translating device and a circuit controller therefor, of a main switch that is normally closed and is opened when the voltage applied to the translating device falls below a predetermined limiting value, an auxiliary switch that is opened by the opening of the main switch and is independently opened when the current traversing the main circuit exceeds a predetermined limiting value, and a switch that is opened and closed by the controller to control the operation of the main switch.

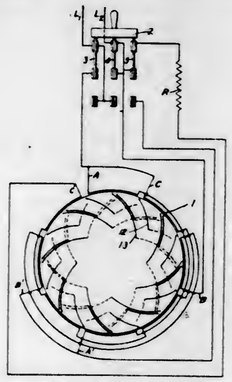
10. The combination with a source of electrical energy, a translating device and a circuit controller therefor, of a main circuit switch that is normally closed and is opened when the voltage applied to the translating device falls below a predetermined limiting value, an auxiliary switch which is normally closed and is opened when the current traversing the main circuit exceeds a predetermined limiting value, and means for preventing closure of the said switches except when the controller occupies its first position.

856,477. ALTERNATING-CURRENT MOTOR. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 27, 1904. Serial No. 195,685.

Claim.—1. In an alternating current motor, the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number to another, of a secondary member having a plurality of windings of different resistance that are respectively effective for different numbers of poles in the primary member.

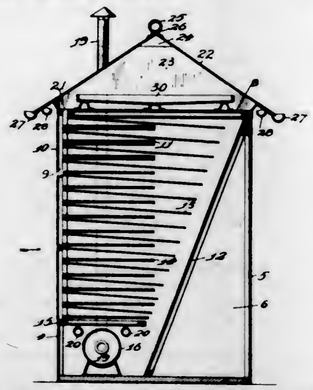
2. In an alternating current motor, the combination with a primary member having a winding adapted to produce a plurality of numbers of magnetic poles and means for changing from one number of poles to another, of a secondary member having a plurality of separate windings, one of relatively high resistance which is effective when a large number of magnetic poles is induced in the primary member and the other of which becomes effective when the smaller number of magnetic poles is induced in the primary member.

3. An induction motor having two rotor windings or sets of short-circuited rotor windings, one of high resistance and the other of low resistance, and means connected with the stator winding for suppressing the generation of currents in the low resistance winding at starting and for permitting the creation of currents when running, substantially as described.



4. An induction motor having a rotor with a short circuited winding or windings of low resistance and another short circuited winding or windings of high resistance, and a stator having a switch connected to rearrange the polarity of its poles at starting in a manner to cause the sum total of electrical pressures in the low resistance windings to be zero, substantially as described.

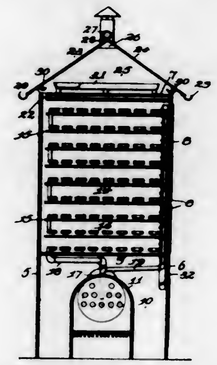
856,478. EVAPORATING APPARATUS. SYLVESTER G. LEWIS, St. Louis, Mo., assignor to Banana Food Products Company, a Corporation of Arizona. Filed July 16, 1906. Serial No. 326,426.



Claim.—1. An evaporating apparatus comprising a casing, a hot-air chamber formed within said casing, an inclined partition wall located in said casing, a plurality of plates located in the heating-chamber, the ends extending at an equal distance from the inclined partition wall, and a condenser located upon the top of the casing whereby the vapors are condensed, substantially as specified.

2. A device of the class described comprising a casing, a heating apparatus located in said casing, an inclined partition wall located in said casing, a cover located in the casing and extending over the heating device, inclined plates located in the casing, their ends projecting an equal distance from the inclined partition wall, a condenser located upon the top of the casing, the end walls of said condenser provided with openings at the apex for the circulation of air, and a basin located upon the casing beneath the condenser, substantially as specified.

856,479. EVAPORATOR. SYLVESTER G. LEWIS, St. Louis, Mo., assignor to Banana Food Products Company, a Corporation of Arizona. Filed July 16, 1906. Serial No. 326,427.



Claim.—1. A device of the class described comprising a housing, partitions located in the housing forming separate compartments, a heating coil located in each of the compartments on which the material to be evaporated is placed, said partitions and wall of the housing forming a pasage-way on one side for the discharge of the vapors, a condenser located upon the housing, a pan located on the housing and a water supply for cooling the condenser, substantially as specified.

2. A device of the class described comprising a housing, a heating device located within the housing, partitions located within the housing above the heating device, heating coils located within each of the compartments, and separately heating each compartment, a condenser located upon the housing to condense the vapors, and receptacle for catching the condensation, substantially as specified.

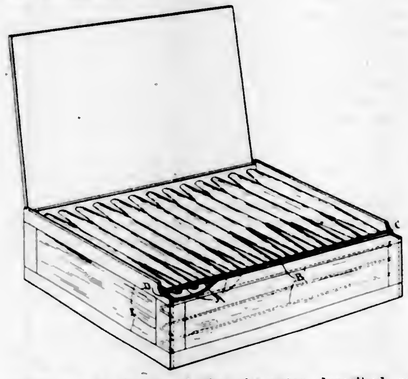
3. An evaporator comprising a rectangular housing, a boiler compartment located in said housing, a plurality of partitions located in said housing into which the material to be evaporated is placed, a hollow wall forming the top of said housing, heating coils located in each of the compartments and communicating with the boiler in the boiler compartment, a condenser located above the housing, and a pan located on top of the housing beneath the condenser, and an air pipe leading from the exterior of the housing to each of the several compartments, substantially as specified.

856,480. FASTENER. PHILIP H. LONG, Newark, N. J., assignor to Long & Koch, Newark, N. J., a Corporation of New Jersey. Filed Sept. 22, 1906. Serial No. 335,707.



Claim.—A fastener of the character described, consisting of a strip of metal bent backwardly upon itself forming a body portion and a spring tongue, said spring tongue being provided with a stamped up recess portion, and having a thumb piece secured thereto, the sides of said body portion being bent to form lugs, whereby the fastener may be attached to the article with which it is employed, substantially as described.

856,481. DEVICE FOR PREVENTING THE FRAUDULENT REFILLING OF CIGAR-BOXES. THOMAS M. LOSIE, Jr., Elmira, N. Y. Filed Oct. 5, 1905. Serial No. 281,435.

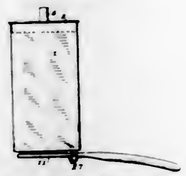


Claim.—1. A device of the character described comprising the combination, with a cigar box, of a bar inserted in the box in position to lie adjacent the ends of a layer of cigars when placed in the box, means for preventing the removal and reinsertion of said bar without detection, and strips of suitable material threaded upon the bar when it is inserted in the box, each of said strips being previously attached to a cigar in such manner that the connection between the strip and the bar or between the strip and the cigar must be broken when removing a cigar from the box.

2. A device of the character described comprising the combination, with a cigar box, of bars passing across between the ends of the box in position to lie adjacent the ends of each layer of cigars when placed in a box, means for preventing the removal and reinsertion of said bars without detection, and strips of suitable material threaded upon the bars when the latter are inserted in the box, the free ends of said strips being slashed or frayed out for the purpose set forth and each of said strips to be inserted in the end of a cigar before threading them upon the rods.

3. A device of the character described comprising the combination, with a cigar box, of a plurality of strips of suitable material secured to the box and each passed through the end of a cigar when placed in the box, the severance of the cigars from which strips will cause the removal of an original cigar from the box to be detected.

856,482. TOILET DEVICE. ALBERT K. LOVELL, New York, N. Y. Filed June 19, 1900. Renewed Oct. 25, 1906. Serial No. 340,592.



Claim.—1. The combination, in a device of the character described, of a receptacle for holding powdered material adapted to be discharged therefrom in predetermined quantities, cylindrical rolls having flat faces adapted to be presented to the powdered material in the said receptacle when in their normal position, means for rotating said rolls so that the powdered material within said faces will be carried without the receptacle, for the purpose set forth.

2. The combination, in a device of the character described, of a receptacle for holding powdered material adapted to be discharged therefrom in predetermined quantities, a base therefor having an opening therein, cylindrical rolls journaled over such opening and having flat faces adapted to form an angle for the reception of the powdered material when said rolls are in their normal position, said rolls adapted, when rotated, to gather a portion of said powdered material and deposit the same outside the receptacle, for the purpose set forth.

3. The combination, in a device of the character described, of a receptacle for holding powdered material, a base having an aperture therein, cylindrical rolls having flat faces journaled over said aperture, said flat faces set at an angle within said receptacle to receive the powdered material, a push rod, means for connecting said push rod with said rolls so that, when said push rod is actuated the rolls will be rotated so as to gather in a portion of such material between said flat faces and deposit the same outside the receptacle, for the purpose set forth.

4. The combination, in a device of the character described, of a receptacle for holding powdered material adapted to be discharged therefrom in predetermined quantities, cylindrical rolls having flat faces for the purpose described, a base having an opening therein said rolls journaled in close proximity to said aperture, a push rod for operating said rolls, an agitator connected with said push rod, for the purpose set forth.

5. The combination, in a device of the character described, of a receptacle for holding powdered material adapted to be discharged therefrom in predetermined quantities, cylindrical rolls registering together and provided with flat faces, for the purpose described, a base having an opening therein, said rolls journaled in close proximity to such opening, a push rod adapted to actuate said rolls, means on the said push rod for locating a tooth brush or other like article with respect to such opening, for the purpose set forth.

6. The combination, in a device of the character described, of a receptacle for holding powdered material adapted to be discharged therefrom in predetermined quantities, cylindrical rolls registering together, flat faces on said rolls for the purpose described, a base having an opening therein, said rolls in close proximity to such opening, said base set within the said receptacle far enough to form a skirt below said base, a push rod connected with said rolls and adapted to actuate the same, means on the lower end of said push rod for locating a tooth brush or other like article with respect to said opening, for the purpose set forth.

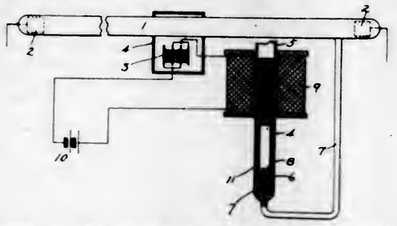
7. The combination, in a device of the character described, of a receptacle for holding powdered material adapted to be discharged therefrom in predetermined quantities, cylindrical rolls having flat faces for the purpose described, a base set within said receptacle so as to form an open skirt below said base, an opening in said base for the discharge of powder, a push rod adapted to actuate said rolls which rolls are placed in close proximity to said opening, means at the lower end of said rod for locating a tooth brush or other like article with respect to such opening, an agitator connected with said rod, for the purpose set forth.

8. The combination, in a device of the character described, of a receptacle for holding powdered material adapted to be discharged therefrom, discharge rolls transversely located within said receptacle, a push rod adapted to actuate said rolls, a base located within said receptacle far enough to form a well-defined skirt below such base, an opening in said base, said rolls in close proximity therewith, means on the lower end of said rod for locating a tooth brush with respect to said opening, means for limiting the upward movement of said push rod so that the brush will avoid contact with said base, for the purpose set forth.

9. In a device of the character described, the combination, with a receptacle adapted to hold powdered material, of a pair of reciprocating discharge-rolls located at or near

the bottom of said receptacle, flat or substantially flat faces on said rolls, said rolls adapted to reciprocate between the extreme outer edges of said flat faces so that, when said flat faces are within the receptacle they will form a pocket to receive the loose powder, and when brought to a vertical position they wil exert sufficient pressure on the powder to cause it to be discharged in a semi-compact form, for the purpose set forth.

856,483. AUTOMATIC GAS-FEED FOR VACUUM-TUBE LAMPS. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Co., New York, N. Y., a Corporation of New York. Filed May 8, 1906. Serial No. 315,729.



Claim.—1. The method of maintaining a gas tension or density of a vacuum tube lamp at normal by supplying gas thereto in accordance with variations in the intensity of the light of said tube.

2. The method of maintaining the luminous condition of a vacuum tube lamp at its normal by regulating the admission of gas to said lamp through variations in the intensity of the light of said lamp.

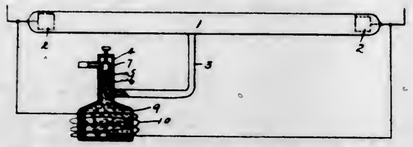
3. The combination of a vacuum tube lamp, a selenium cell exposed to the light of said lamp and means responsive to variations in the resistance of said cell for supplying gas to the lamp.

4. The combination of a vacuum tube lamp, a selenium cell exposed to the light of said lamp, and means responsive to variations in the resistance of said cell for feeding gas to the lamp from a body of gas of greater density than that in the lamp.

5. The combination of a vacuum tube lamp, a selenium cell exposed to the action of the light of said lamp, a valve through which gas may be fed to the lamp, and means responsive to variations in the resistance of said cell for controlling the action of the valve, as and for the purpose described.

6. The combination of a vacuum tube lamp, and means for feeding gas to the lamp responsive to variations in the intensity of the light.

856,484. AUTOMATIC GAS-FEED FOR VACUUM-TUBES. DANIEL M. MOORE, Newark, N. J., assignor to Moore Electrical Co., New York, N. Y., a Corporation of New York. Filed May 8, 1906. Serial No. 315,730.



Claim.—1. The combination of a vacuum tube, a thermostat heated by current varying in amount with the resistance of the gas in the tube, and means controlled by said thermostat for supplying gas to the tube in regulated amounts so as to maintain the gas tension or density therein at substantially normal degree.

2. The combination with a vacuum tube, of an electrically heated thermostat connected to the circuit of the tube, and means controlled in their action by said thermostat for supplying gas to the tube.

3. The combination of a vacuum tube, a valve for admitting gas to the tube, and a thermostat controlling the action of said valve and heated by a current taken from the current supply for said tube and varying in amount with the resistance of the gas within the tube.

4. The combination of a vacuum tube, a valve having a liquid by whose changes of height the flow of gas to the tube is controlled, and a thermostat controlling the action of a valve and heated by a current varying in amount with the resistance of the gas in the tube.

5. The combination of a vacuum tube, a mercury thermostat heated by current varying in amount with the resistance of the gas and a gas passage opened and closed by variations in the level of the mercury of the thermostat and controlling in turn the passage of a gas to the tube.

6. The combination of a vacuum tube lamp, a valve consisting substantially of a mass of porous material and a sealing liquid, a thermostat responsive to variations in the resistance of the gas in the tube, and means controlled by said thermostat for varying the height of the liquid and thereby controlling the flow of gas to the tube.

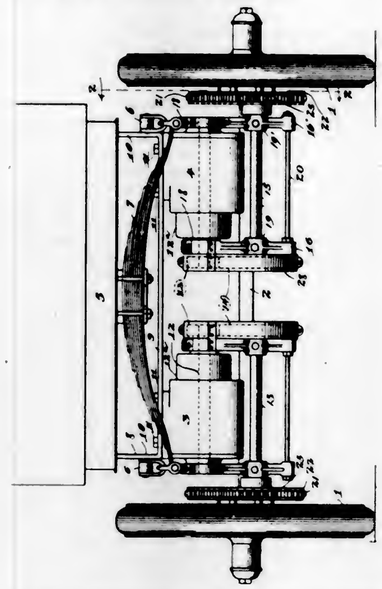
856,485. HAND FERTILIZER-DISTRIBUTER. WINDFREY S. MORGAN, Lewisville, Ark. Filed Feb. 25, 1907. Serial No. 359,207.



Claim.—A hand fertilizer distributer comprising a hopper provided with a depending tube, an operating rod extending through the tube and having agitating means for engaging the fertilizer, a flat plate connected to the lower end of the operating rod and arranged to fit against the lower end of the discharge tube to form a closure for the same, and combined bracing rods and guides connecting the opposite portions of the plate with the operating rod and consisting of upper converging portions and lower parallel portions, the latter being adapted to engage the interior of the discharge tube for holding the plate against lateral movement when the discharge tube is closed.

856,486. DRIVING MECHANISM FOR AUTOMOBILES. FREDERICK J. NEWMAN, Chicago, Ill., assignor to Woods Motor Vehicle Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 9, 1905. Serial No. 240,302.

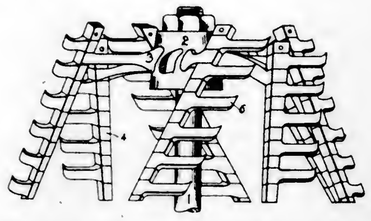
Claim.—1. A driving mechanism for automobiles comprising a vehicle running gear provided with a main axle, a traction wheel mounted upon said axle, a spring-supported vehicle body carried by the running gear, a motor carried by said vehicle body at a point longitudinally removed from the axle, a driving shaft directly driven by said motor and mounted upon the vehicle body to extend parallel with the axis of rotation of the traction wheel, a pair of planet links journaled concentrically with said driving shaft and located at separated points longitudinally of the driving shaft, a shaft journaled intermediate the free ends of said links and arranged parallel with the axis of the driving shaft, a stay rod connecting the free ends of said links, a transmission element mounted upon the shaft carried by the links, driving connections between said transmission element and driving shaft, a driving element rigidly mounted concentrically upon the traction wheel, driving connections between said latter element and the transmission element, and a distance member connected with the link construction and with the vehicle axle, substantially as described.



2. A driving mechanism for automobiles comprising a vehicle running gear provided with a main axle, a traction wheel mounted upon said axle, a spring-supported vehicle body carried by the running gear, a motor carried by said vehicle body at a point longitudinally removed from the axle, a driving shaft directly driven by said motor and mounted upon the vehicle body to extend parallel with the axis of rotation of the traction wheel, a pair of planet links having extended ends journaled concentrically with said driving shaft and located at separated points longitudinally of the driving shaft, a shaft journaled substantially intermediate of said links and arranged parallel with the axis of the driving shaft, said links connected at their extended ends with a stay rod, a transmission element mounted upon the shaft carried by the links, driving connections between said transmission element and driving shaft, a driving element rigidly mounted concentrically upon the traction wheel, driving connections between said latter element and the transmission element, a distance member provided intermediate its length with a turn-buckle and connected with the link construction and with the vehicle axle, respectively, and a connection bar extending between the outer ends of said links and rigidly connecting the same, substantially as described.

3. A driving mechanism for automobiles, comprising a vehicle running gear provided with a main axle, traction wheels rotatably mounted on the ends of said axle, a spring-supported vehicle body carried by the running gear, a pair of independent motors carried by said vehicle body at points longitudinally removed from the axle, a pair of independent driving shafts directly driven by said motors, respectively, and mounted upon the vehicle body to extend parallel with the axis of rotation of the traction wheels, a pair of planet links pivotally mounted concentrically with each of said driving shafts, respectively, shafts carried by said links arranged parallel with the axis of the driving shafts, and journaled above the free ends thereof, stay rods connecting the free ends of said links, transmission elements mounted upon the shafts carried by the links, driving connections between the motors and said last-named shafts, driving elements rigidly mounted concentrically upon the traction wheels, driving connections between the latter and said transmission elements, and longitudinally adjustable distance members connected with said links and vehicle axle, substantially as described.

856,487. DREDGER-CUTTER. JOHN F. OLLRICH, San Francisco, Cal. Filed Aug. 21, 1906. Serial No. 331,475.



Claim.—1. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes in planes oblique to that through the shaft, and cutting device having parts formed integral therewith and resting over and in contact with opposite sides of the bar to protect the same from wear, substantially as described.

2. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes in planes oblique to that through the shaft, and cutting device having parts formed integral therewith and resting over and in contact with opposite sides of the bar to protect the same from wear, said parts being also conformed to coact with the bar to secure the cutting device thereon, substantially as described.

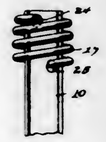
3. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes in planes oblique to that through the shaft, and cutting device spaced on the bars, and arranged thereon, so that on any two adjacent bars, the cutting device alternate or break ranks, substantially as described.

4. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes in planes oblique to that through the shaft, and cutting device having parts formed integral therewith and resting over and in contact with opposite sides of the bar to protect the same from wear, said cutting device being spaced on the bars, and arranged thereon, so that, on any two adjacent bars, the cutting device alternate or break ranks, substantially as described.

5. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes in planes oblique to that through the shaft, and cutting device having parts formed integral therewith and resting over and in con-

tact with opposite sides of the bar to protect the same from wear, said parts being also conformed to coact with the bars to secure the cutting device thereon, said device being spaced on the bars, and arranged thereon, so that, on any two adjacent bars, the device alternate or break ranks, substantially as described.

856,488. INSULATOR. CHARLES L. PEIRCE, Jr., Chicago, Ill., assignor to Peirce Specialty Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 29, 1906. Serial No. 298,474.



Claim.—1. In combination with an insulator, a bracket formed of a strip provided with an elongated aperture in one of its sides, and a tapered spring coiled around said bracket having one of its ends in said aperture and its sides in contact with the edges of said bracket, substantially as described.

2. In combination with an insulator, a bracket formed of a channel strip and provided with an elongated aperture in one of its sides, and a tapered spring coiled around said bracket having one of its ends in said aperture and its sides in contact with the edges of said bracket, substantially as described.

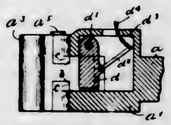
3. In combination with an insulator, a bracket formed of a channel strip and provided with a slot open at one end, and a tapered spring coiled around said bracket, having its ends within said aperture, and retained therein by swaging over the ends of said bracket, substantially as described.

4. In combination with an insulator, a bracket formed of a channel strip and provided with an elongated aperture in one of its sides, and a tapered spring coiled around said bracket and having its ends bent to substantially bisect the interior space of said spring, said ends being adapted to slide within said aperture, and retained therein by swaging over the ends of said bracket, substantially as described.

5. In combination with an insulator, a bracket formed of a channel strip and provided with an elongated aperture in one of its sides, and with cut away portions in the sides of said bracket to form ears, and a tapered spring coiled around said bracket, having its ends within said aperture, and retained therein by swaging over the ears on said bracket, substantially as described.

6. In combination with an insulator, a bracket formed of a channel strip and provided with an elongated aperture in one of its sides, open at one end, a tapered spring coiled around said bracket and provided with inturned ends, said ends being adapted to slide within said aperture and retained therein by swaging over the outer end of said bracket, substantially as described.

856,489. CAR-COUPLING. EDWARD F. PENDEXTER, Milford, Mass. Filed July 16, 1906. Serial No. 326,351.



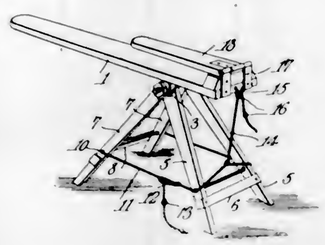
Claim.—1. In a car coupling of the class described, a pivoted knuckle having abutting shoulders back of its pivot extending upward and downward, and having a slot for the pivot pin, a pivot pin for the knuckle, a draw-head to which the knuckle is pivoted, having its knuckle-receiving recess formed with bosses, above and below, through which the pivot pin extends, which occupy positions in front of the abutting shoulders on the knuckle and which are formed with abutments against which the shoulders on the knuckle abut, substantially as described.

2. In a car coupling of the class described, a pivoted knuckle having abutting shoulders back of its pivot, extending upward and downward, the engaging faces of which are made straight from the outer side of the knuckle to a point near the inner side thereof, and then curved at the inner side of the knuckle, a pivot pin for the knuckle, a draw-head to which the knuckle is pivoted, having its knuckle-receiving recess formed with abutments above and below, the engaging faces of which, against which the shoulders on the knuckle abut, being shaped to correspond with the shape of the engaging faces of said shoulders, substantially as described.

3. In a car coupling of the class described, a pivoted knuckle on the drawhead, a pivoted gravitating latch for said knuckle contained in a recess in the drawhead, a locking device for said latch comprising a pin or link pivoted to the rear side thereof and extending upward, and its upper end designed to engage a shoulder on the drawhead, said pin or link being entirely within the drawhead, and means for lifting said latch, substantially as described.

4. In a car coupling of the class described, a pivoted knuckle on the drawhead, a pivoted gravitating latch for said knuckle contained in a recess in the drawhead, a locking device for said latch extending upwardly from the rear side thereof and situated entirely within the drawhead and means for releasing said locking device and lifting the latch, substantially as described.

856,490. IRONING-BOARD. WILLIAM PICKFORD and EDWARD DERR, Segundo, Colo. Filed Mar. 8, 1907. Serial No. 361,360.



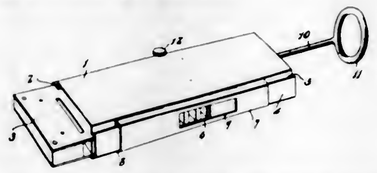
Claim.—1. An ironing board comprising pivotally connected supports, a flexible adjusting and holding device loosely engaging the supports, said device having means at the ends thereof for holding said ends together, a board pivotally mounted on the supports, and a flexible device for adjustably connecting the board with one of the supports.

2. An ironing board comprising foldable supports, flexible means loosely engaging the supports and having its ends adjustably connected for holding the supports in predetermined positions, a board pivotally mounted on the supports, a flexible holding device connected to one of the supports, and means upon the board for adjustably engaging said device.

3. The combination with a board having depending ears; of supports pivotally mounted upon the inner and outer faces of the ears respectively, one of said supports being foldable into the other support, flexible means loosely engaging the supports and having its ends adjustably connected for limiting the movement of the supports away from each other, and a flexible holding device upon one of the supports and adjustably engaging the board.

856,491. HARMONICA. MATTHEW J. REIDY, Mechanicsville, Iowa. Filed June 2, 1906. Serial No. 319,853.

Claim.—1. A harmonica provided with a closure for a predetermined number of air passages of the harmonica body, the body and the closure being assembled to permit reciprocation of the body upon the closure, and a mouth piece adjustably carried by the closure for closing certain of the other air passages and provided with an opening to expose the remaining air passages.



2. A harmonica provided with a case entirely surrounding the body of the harmonica and through which the harmonica body is capable of being reciprocated, the front of the case being provided with an opening exposing certain of the air passages of the harmonica body.

3. A harmonica provided with a case entirely surrounding the body of the harmonica and through which the harmonica body is capable of being reciprocated, the front of the case having an opening to expose certain of the air passages of the harmonica body, and a handle carried by one end of the body and projecting externally of the case.

4. A harmonica provided with a case entirely surrounding the body of the harmonica and through which the harmonica body is capable of being reciprocated, the front of the case having an opening to expose certain of the air passages of the harmonica body, and a handle carried by one end of the harmonica body and provided with a loop for the reception of a thumb or finger of a player.

5. A harmonica provided with a case through which the harmonica body is capable of being reciprocated, the front of the case having an opening exposing certain of the air passages of the harmonica body, and a mouth piece carried by the front of the case and provided with an opening for alinement with the opening of the case, the mouth piece being adjustable upon the case to vary the size of the opening in the latter.

6. A harmonica attachment comprising a closure member provided with an opening to expose certain of the air passages of a harmonica body and also having means to connect the closure with the body and permit reciprocation of the latter upon the closure, and a mouth piece carried by the closure and provided with an opening for registration with the opening of the closure, said mouth piece being adjustable upon the closure to vary the size of the opening thereof.

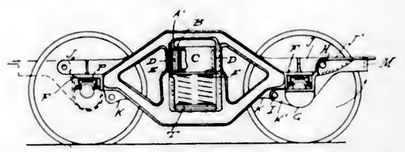
7. A harmonica attachment comprising a case in which a harmonica body is adapted to reciprocate, the front of the case having an opening to expose a predetermined number of the air passages of the harmonica body, and a mouth piece having an opening for registration with the opening in the front of the case, said mouth piece being adjustable upon the case to vary the size of the opening thereof.

8. A harmonica attachment comprising a case having front and rear longitudinal guideways for the reception of the front and rear portions of a harmonica body and in which said body is capable of reciprocation, the front guideway of the case having an opening to expose a predetermined number of the air passages of the harmonica body, and a mouth piece upon the front guideway and provided with an opening for registration with the opening therein, said mouth piece capable of adjustment upon the guideway to vary the size of the opening therein.

9. A harmonica having its reeds exposed and provided with a case through which the harmonica body is capable of being reciprocated, and which forms a housing for the reeds the front of the case having an opening to expose certain of the air passages of the harmonica body, and means to hold the harmonica body against movement through the case when not in use.

10. A harmonica provided with a case entirely surrounding the body of the harmonica and through which the harmonica body is capable of being reciprocated, the front of the case having an opening to expose certain of the air passages of the harmonica body, and a set screw carried by the case for engagement of the harmonica body to prevent movement of the latter through the case when not in use.

856,492. RAILWAY-TRUCK. JOHN M. ROHLFING, St. Louis, Mo. Filed Mar. 6, 1907. Serial No. 360,859.



Claim.—1. A railway truck comprising side frames and journal boxes,—the latter being divided and cast partly with said frames and part separately,—and means to secure said divided boxes in matching position to said frames.

2. A railway truck comprising side frames and journal boxes,—the latter being divided and the upper portion of each box being cast with said frame, and pivot fastenings to secure said divided boxes together, and allow of opening by swinging the lower portion about one pivot, substantially as and for the purpose described.

3. A railway truck comprising side frames and journal boxes,—the latter being divided and the upper portion of each box being cast with said frame, and the lower portion of each pair of boxes on the same axle being connected by a cross bar, and fastening means for said boxes when assembled.

4. A railway truck comprising side frames and journal boxes,—the latter being divided diagonally and provided with hinge lugs,—and pivot pins connecting said lugs in matching position, but allowing of opening said boxes, substantially as described.

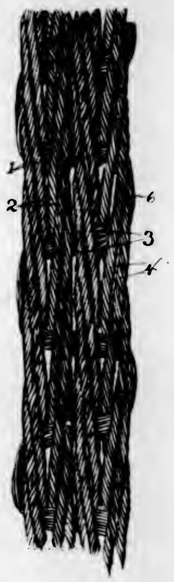
5. A railway truck comprising side frames and journal boxes,—the latter being divided and part of each box being integral with said frame,—intermatching lugs on each box portion in the plane of the side frame, and pivot bolts through said lugs securing said boxes in their matching position, and providing a hinge effect for opening the same.

6. A railway truck comprising side frames having divided journal boxes,—one portion F of each box comprising the top and part of the side with the brass stop L being cast integral with the frame, and the other portion G comprising the brass stop L' with side and bottom of the box being cast separately, and intermatching lugs JJ' and KK', and pivot pins therefor, substantially as shown and described.

856,493. METHOD OF SPLICING WIRE CABLES. FLORIO SEPERAK, Lead, S. D. Filed Oct. 22, 1906. Serial No. 340,043.

Claim.—That method of splicing flat wire cables which consists in opening out the several round cables of which the cable is formed, separating the strands of each round cable, opening the wires of which each strand is composed, and connecting the wires of meeting strands by long splicing at such points that no two splices are in line transversely of the cable, twisting the strands to form the round cables, and then sewing the round cables together.

856,943.



nular compression band and co-acting means integral respectively with the band and the wheel rim for contracting the band when the tire is inflated, and means for securing the band in the contracted position.

5. A clip for a tire casing comprising an annular compression band having upwardly and outwardly inclined edges adapted to lie between the casing edges and, when the band is contracted, to force said edges against the flanges upon the rim; and co-acting means upon the rim and band for contracting said band when downward pressure is applied.

6. In combination with a tire casing, a retaining clip comprising an annular compression band having its edges formed to seat against the inner surface of the tire casing, co-acting contracting means upon the band and rim respectively, and integral therewith, adapted to draw said band downwardly between the tire casing walls, and means for securing the said band in the contracted position.

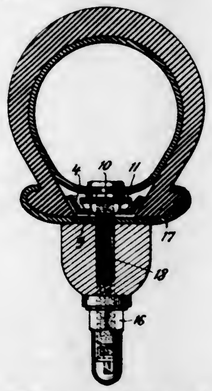
7. A clip for clencher tire casings comprising an annular band, a binding plate slidably connected to the terminals of said band, and means formed upon said band for causing its terminals to approach each other when the binding plate is forced downward, substantially as described.

8. A retaining band for tire casings comprising a flexible annular plate adapted to lie between the casing edges, upwardly and outwardly projecting flanges upon the edges of said plate adapted to contact with the inner surfaces of the casing edges, a binding plate slidably connected to the terminals of said plate, wedges extending downwardly from said plate, slots in the wheel rim adapted to engage said wedges and to force the plate terminals toward each other when the plate is forced downward, and means for forcing said plate downward toward the channel-iron, substantially as described.

9. A continuous clip for tire casings comprising an annular compression band adapted to lie between the edges of a tire casing, outwardly and upwardly projecting flanges upon the edges of the said band adapted to contact with the inner surfaces of the casing walls, a binding plate slidably connected to the terminals of said band, a valve-stem passing through said binding plate and provided with a nut seating against the upper surface of said plate, and a threaded cap adapted to draw said stem and said binding plate downward.

10. A continuous clip for pneumatic tire casings comprising the flexible band 1, the flanges 2 and 3 upon its edges, the binding plate 4 slidably connected to the terminals of said band, the triangular wedges 12 and 13 extending downwardly from said band, the slots 14 and 15 in the channel-iron adapted to receive said wedges, the valve-stem 18 carrying the nut 10 adapted to seat within the slot 9 in said binding plate, and the cap 16 adapted to engage the extremity of the valve-stem and to draw said stem and said binding plate downward.

856,494. PNEUMATIC-TIRE CLIP. EDWIN C. SHAW, Akron, Ohio, assignor to The B. F. Goodrich Company, Akron, Ohio, a Corporation of Ohio. Filed Jan. 6, 1906. Serial No. 294,833.



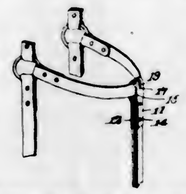
Claim.—1. A clip for pneumatic tire casings comprising an annular split band adapted to be contracted circumferentially by the inflation of said casing and means for effecting such contraction integral with said band, adapted to co-act with means integral with the tire seating channel.

2. A retaining clip for pneumatic tire casings comprising an annular compression band and contracting means integral with said band adapted to co-act with means integral with the wheel rim and to be actuated by inflation of the tire.

3. A clip for pneumatic tire casings comprising a flexible annular band and means for engagement between the band and the rim for contracting the said band when downward pressure is exerted upon it.

4. A retaining clip for tire casings comprising an an-

856,495. HARNESS ATTACHMENT. NEWTON C. SIKES, Dallas City, Ill. Filed Apr. 23, 1906. Serial No. 313,304.



Claim.—1. A device of the class described comprising a body-portion having an intermediate portion thereof provided with a longitudinal slot and bent to form a pair of clamping arms adapted to engage a strap, a ring seated in said slot, a pin passing through the ring and bearing against the arms at the juncture of the latter, and means

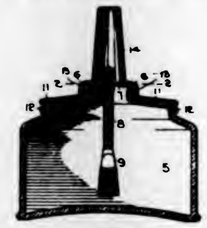
carried by the arms and engaging the opposite ends of the pin for preventing accidental displacement of said pin.

2. A device of the class described comprising a body-portion having an intermediate portion thereof provided with a longitudinal slot and bent to form a pair of clamping arms adapted to engage a strap, a ring seated in the slot, a pin piercing the ring and lugs extending laterally from the clamping arm on each side of the slot and adapted to engage the opposite ends of the pin.

3. A device of the class described comprising a body-portion having an intermediate portion thereof bent to form a pair of clamping arms adapted to engage a strap, said arms being provided with a longitudinal slot disposed at the juncture of the arms, a pin interposed between the arms and bearing against the interior walls thereof at said slot, a ring seated in the slot and engaging the pin, and lugs projecting from the arms and bent laterally into engagement with the opposite ends of the pin.

4. A device of the class described comprising a pair of clamping arms adapted to engage a strap and having their united ends formed with a longitudinal slot, flanges extending inwardly from the opposite longitudinal edges of said arms, a yieldable packing interposed between the arms and locked in position by engagement with the flanges, there being an opening formed in the packing at said slot, a ring seated in the slot and bearing against the packing, a pin interposed between the arms and passing through the ring, and lugs projecting from the arms on each side of the slot and bent laterally into engagement with the opposite ends of the pin.

856,496. MUCILAGE-BOTTLE. LAMBERT H. SMITH, Denver, Colo. Filed Jan. 22, 1906. Serial No. 297,209.



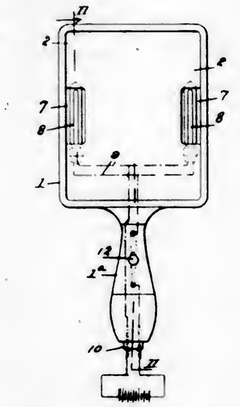
Claim.—1. A receptacle of the class named, comprising in combination, a bottle having a threaded, diametrically reduced, upper portion and a plain central neck, a flanged disk engaging and surrounding the upper edge of the said neck, a brush vertically adjustably held therein, and a screw cap arranged to simultaneously engage the screw thread and the upper surface of the said disk and having a central hood to admit the upper portion of the brush stem.

2. A receptacle of the class named comprising in combination, a bottle having a plain neck and a peripheral screw thread on its body portion, a flanged disk engaging and surrounding the upper edge of the said neck and having a central, threaded sleeve, a brush having a threaded stem within the said sleeve, and a screw cap arranged to simultaneously engage the thread on the said body portion and the upper surface of the said disk and having a central hood to admit the upper portion of the brush stem.

856,497. ILLUMINATING-MIRROR. ARTHUR D. SOUTHAM and HORACE C. HIDES, Hartford, Conn. Filed Dec. 21, 1905. Serial No. 292,699.

Claim.—1. An illuminating mirror comprising an opaque mirror glass, a frame for said glass, a lamp chamber formed in the rear of said glass, said glass forming an opaque closure for the greater portion of said chamber and being adapted to prevent the passage of light rays therethrough except at certain points at the side edges thereof, an electric lamp supported in said chamber, circuit wires connected to said lamp, a battery arranged in the frame and connected to the circuit wires, and means for making and breaking the circuit through said wires.

2. An illuminating mirror comprising a mirror glass, a frame for said glass said glass being opaque to prevent the passage of light rays, except at certain points within the frame, a handle part connected to said frame, a lamp chamber, an electric lamp supported in said chamber, circuit wires connected to said lamp, and means for making and breaking the circuit.



3. An illuminating mirror comprising a mirror glass, a frame for said glass, a handle part connected to said frame, a lamp chamber formed in said frame, an electric lamp supported in said chamber, circuit wires connected to said lamp, means for making and breaking the circuit, and a battery arranged in the frame and connected to the circuit wires, a part of the mirror glass being unsilvered to permit the light from the lamp to pass through said glass, the mirror glass being otherwise opaque to prevent the passage of light rays.

4. An illuminating mirror comprising a mirror glass opaque throughout except at two points on opposite edges thereof, a frame for said glass, a lamp chamber formed in said frame in the rear of the mirror glass, electric lamps supported in said chamber, circuit wires connected to said lamps, means for making and breaking said circuit, and a reflector back of said lamps and adapted to throw the light forward through the mirror glass at opposite edges thereof.

5. An illuminating mirror comprising a mirror glass opaque throughout except at two points on opposite edges thereof, said glass being transparent at said two points, a frame for said glass, a lamp chamber formed in said frame in the rear of the mirror glass, electric lamps supported in said chamber, one of said lamps being in the rear of each transparent portion of the mirror glass, circuit wires connected to said lamps, means for making and breaking the circuit, and a reflector back of said lamps and adapted to throw the light forward through the transparent portions of the mirror glass.

6. An illuminating mirror comprising a mirror glass opaque throughout except at two points on opposite edges thereof, said glass being transparent at said two points, a frame for said glass and provided with a handle, a lamp chamber formed in said frame in the rear of the mirror glass, electric lamps supported in said chamber, one of said lamps being in the rear of each transparent portion of the mirror glass, circuit wires connected to said lamps, means within the handle for making and breaking the circuit, and a reflector back of said lamps and adapted to throw the light forward through the transparent portions of the mirror glass.

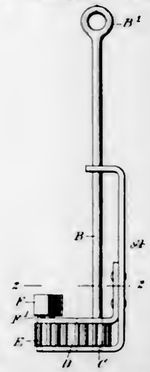
7. An illuminating mirror comprising a mirror glass, a frame for said glass, a handle part connected to said frame, a lamp chamber formed in said frame, the rear wall of said chamber being formed by a hinged plate concave

on its inner side and adapted to act as a reflector, said mirror glass forming an opaque closure for the greater portion of said chamber and being adapted to prevent the passage of light rays therethrough, except at certain points at the side edges thereof, an electric lamp or lamps supported in said chamber, circuit wires connected to said lamp or lamps, and means for making and breaking the circuit.

8. An illuminating mirror comprising a mirror glass, a frame for said glass, a handle connected to said frame, a lamp chamber formed in said frame, the rear wall of said chamber being concave on its inner side and adapted to act as a reflector, said mirror glass forming an opaque closure for the greater portion of said chamber and being adapted to prevent the passage of light rays therethrough, except at certain points at the side edges thereof, an electric lamp supported in said chamber, circuit wires connected to said lamp, and means for making and breaking the circuit.

9. An illuminating mirror comprising a mirror glass, a frame for said glass, a handle connected to said frame, a lamp chamber being formed in said frame in the rear of the glass, said mirror glass forming an opaque closure for the greater portion of said chamber and being adapted to prevent the passage of light rays therethrough except at certain points at the side edges thereof, an electric lamp supported in said chamber, circuit wires connected to said lamp, and means for making and breaking the circuit.

856,498. WRENCH. GEORGE H. TATGE, Randolph, Nebr. Filed Aug. 29, 1906. Serial No. 332,476.

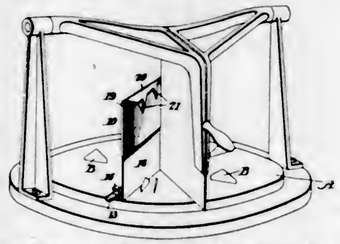


Claim.—A wrench comprising a frame composed of a plurality of plates, each of said plates being arranged in parallelism and spaced apart from each other, and each being provided with an angular portion, said angular portions being secured together, a shaft journaled in the plates and provided with a gear therebetween, a second shaft journaled in the plates, said second shaft having a socket outside of the plates, and a gear wheel therebetween, an idler gear journaled between the plates and meshing with both of said first named gears, said first named shaft being extended outside of the plates to form a handle, and one of said plates having its angular portion extended to form a bearing for the handle.

856,499. CHEESE-CUTTER. WILLIAM G. TEMPLETON, Colorado Springs, Colo. Filed June 30, 1906. Serial No. 324,232.

Claim.—1. A follower plate or shield for use in connection with cheese cutters, said follower plate being provided with reinforced impaling spurs presenting broad surfaces to prevent movement of the cheese in a direction radial of the cutter board.

2. A follower plate or shield having reinforced cheese impaling spurs, presenting broad surface for resisting movement of the cheese in a direction radially of the cutter board.



3. A follower or shield formed of sections, the upper of said sections having an approximately horizontal flange, and cheese impaling spurs depending from the flange, said spurs being formed of sheet metal each bent to form wings that are approximately at a right angle to each other, said wings serving to prevent circumferential and radial movement of the cheese.

4. A follower or shield formed of sections, the upper of said sections having an approximately horizontal flange, cheese impaling spurs formed integral with the flange and bent downward approximately at a right angle thereto, each of said spurs being bent to form wings that are approximately at a right angle to each other.

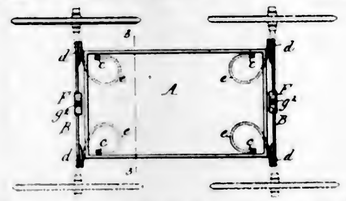
856,500. TOILET ARTICLE. LOUIS VAN GALE, Newark, N. J. Filed Mar. 21, 1906. Serial No. 307,168.



Claim.—1. In a toilet article, a frame comprising a main body-portion provided with an elongated or handle-extension and a handle-plate or portion secured thereto, an annular marginal extension around the periphery of the said main body-portion, and a rim or bead upon said annular marginal extension adapted to provide a receiving socket or opening, an element provided with a marginal ring or binding adapted to be inserted in said receiving socket or opening, means upon said marginal ring or binding adapted to secure the said marginal ring or binding upon said element, consisting of holding lugs or tongues turned or curled down from the marginal edge of the said marginal ring or binding, and means upon the said marginal ring or binding adapted to engage with the rim or bead upon the said main body-portion of the frame, said means consisting of raised or pressed-out portions or lugs adapted to be pressed or snapped under the rim or bead upon the main body-portion of the frame, substantially as and for the purposes set forth.

2. In a toilet article, a frame comprising a main body-portion provided with an elongated or handle-extension and a handle-plate or portion secured thereto, an annular marginal extension around the periphery of the said main body-portion, and a rim or bead upon said annular marginal extension adapted to provide a receiving socket or opening, an element provided with a marginal ring or binding adapted to be inserted in said receiving socket or opening, means upon said marginal ring or binding adapted to secure the said marginal ring or binding upon said element, consisting of holding lugs or tongues turned or curled down from the marginal edge of the said marginal ring or binding, and means upon the said marginal ring or binding adapted to engage with the rim or bead upon the said main body-portion of the frame, said means consisting of raised or pressed-out portions or lugs adapted to be pressed or snapped under the rim or bead upon the main body-portion of the frame, and said main body-portion being formed with an open space or cutaway portion, adapted to disclose a backing substantially as and for the purposes set forth.

856,501. VEHICLE-SPRING. CHRISTIAN WESP, Buffalo, N. Y. Filed Oct. 15, 1906. Serial No. 338,947.



Claim.—1. A vehicle spring which has a central portion for attachment to the running gear, substantially horizontal torsion coils or loops at its opposite ends for attachment to the vehicle body, and substantially upright coils between said torsion coils or loops, substantially as set forth.

2. A vehicle spring which is attached at its central portion to the vehicle running gear and at opposite ends to the vehicle body, and is provided between said points of attachment with substantially upright coils and with torsion coils or loops, substantially as set forth.

3. The combination with the body and running gear of a vehicle, of springs arranged crosswise of the vehicle, said springs having central portions secured to the running gear, torsion coils or loops below the body and secured thereto, and substantially upright coils in front and rear of the body, substantially as set forth.

4. The combination with the body and running gear of a vehicle, of springs arranged crosswise of the vehicle and secured between their ends to the running gear and at their ends to the body, each spring consisting of two separate sections and connecting means, and each spring section having a torsion coil or loop located beneath the vehicle body and a substantially upright coil between said torsion coil or loop and the attachment of the spring to the running gear, substantially as set forth.

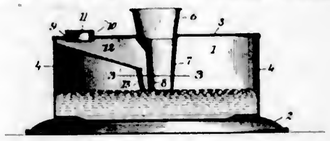
5. A vehicle spring composed of two separate sections, and means connecting said sections at the central portion of the spring, said spring having torsion coils or loops at its ends, and substantially upright coils between said torsion coils or loops and said connecting means, substantially as set forth.

6. The combination with the body and running gear of a vehicle, of springs arranged crosswise of the vehicle at either end thereof, said springs having central portions secured to the running gear, torsion coils secured to the body, and substantially upright coils arranged between said central portions and said torsion coils and in the vertical plane of said central portions, substantially as set forth.

856,502. OIL-RESERVOIR FOR LAMPS. CLAYTON T. WHIPPLE, Glens Falls, N. Y. Filed July 3, 1906. Serial No. 324,579.

Claim.—1. In a device of the class described, a body having a wick tube projecting thereinto, an opening remote from said wick tube, and a filling tube communicating with said opening, said wick tube having an exterior channel, said filling tube having a wall disposed adjacent to said channel and forming a tube therewith.

2. In a device of the class described, a body having a burner collar mounted thereon and projecting above said body, a wick tube in communication with said collar and projecting into said body, said wick tube having an exterior channel in the side thereof, an opening, a filling chamber having an extension laterally disposed to lie adjacent to said channel and form a tube therewith, and means for closing said opening.



856,503. TROLLEY-WHEEL. CHARLES F. WILSON, Brooklyn, N. Y. Filed May 18, 1906. Serial No. 317,525.



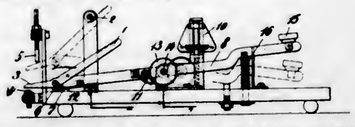
Claim.—1. In a trolley-wheel having a chamber for lubricating material, the combination with the hub and the side plates of the wheel, of a disk clamped between the side plates and arranged to convey lubricating material from the outer portion of the chamber to and in contact with the hub, said hub being perforated, substantially as and for the purposes set forth.

2. In a trolley-wheel having a chamber for lubricating material, the combination with the hub and the side plates of the wheel, of a disk clamped between the side plates and provided with fingers and arranged to convey lubricating material from the outer portion of the chamber to and in contact with the hub, the fingers being bent and the hub being perforated, substantially as and for the purposes set forth.

3. In a trolley-wheel having a chamber for lubricating material, the combination with the perforated hub having beveled ends, of the side plates of the wheel, said side plates being arranged to be clamped together and to receive the ends of the hub and to confine the lubricating material at the joints between the hub and side plates and at the joint between the two plates, substantially as and for the purposes set forth.

4. In a trolley-wheel having a chamber for lubricating material, the combination with the perforated hub having beveled ends, of the side plates of the wheel, said hub having a continuous, narrow opening through it for the passage of lubricating material, substantially as and for the purposes set forth.

856,504. KEYBOARD TELEGRAPH-TRANSMITTER. RICHARD WOLTERS, Düsseldorf, Germany. Filed Dec. 5, 1906. Serial No. 346,373.



Claim.—1. In a device of the character described, a spring-influenced key, a contact rail, a contact slide piv-

oted to the key and adapted to engage said rail, and a pair of stops adapted to be engaged by the slide, substantially as specified.

2. In a device of the character described, a spring-influenced key, a contact rail, a contact slide pivoted to the key and adapted to engage said rail, a tappet on the slide, and a pair of stops adapted to be engaged by the tappet, substantially as specified.

3. In a device of the character described, a spring-influenced key, a contact rail, a contact slide pivoted to the key and adapted to engage said rail, a tappet on the slide, a pair of stops adapted to be engaged by the tappet, and means for locking the slide in position, substantially as specified.

4. In a device of the character described, a spring-influenced key, a contact rail, a contact slide pivoted to the key and adapted to engage said rail, a nose on the slide, and a spring on the key adapted to engage the nose, substantially as specified.

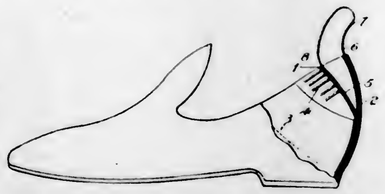
5. In a device of the character described, a spring-influenced key, a contact rail, a contact slide operatively connected to the key and adapted to engage said rail, and a pair of stops adapted to operatively engage the slide, combined with a governor, and means for operatively connecting said governor to the key, substantially as specified.

6. In a device of the character described, an arbor, a key and a ratchet wheel rotatable in the arbor, a contact rail, a contact slide pivoted to the key and adapted to engage said rail, a pawl pivoted to the key and adapted to engage the ratchet wheel, and retarding means operatively connected to the ratchet wheel, substantially as specified.

7. In a device of the character described, an arbor, a key composed of two spring-influenced sections, both rotatable on the arbor, a contact rail, a contact slide pivoted to the first key-section and adapted to engage the rail, means on the second key-section for locking the same in its depressed position, and means on the first key-section for unlocking said locking means, substantially as specified.

8. In a device of the character described, an arbor, a key composed of two spring-influenced sections, both rotatable on the arbor, a contact rail, a contact slide pivoted to the first key-section and adapted to engage the rail, a catch pivoted to the second key-section, and a shoulder on the first key-section adapted to engage the catch, substantially as specified.

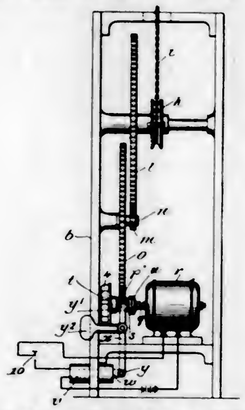
856,505. OVERSHOE-RETAINER. GEORGE E. ZEIGLER, Economy, Pa. Filed May 23, 1906. Serial No. 318,337.



Claim.—1. A rubber overshoe having a heel retainer molded of soft rubber, its lower part conforming to the inner wall of the heel and cemented thereto, its upper part standing inward from the cemented part and conforming to the receding part of the heel above the ball thereof, whereby when the shoe is applied the said inward standing part is caused to conform to the inner wall of the overshoe and having a holding function upon the heel of the wearer's shoe within the overshoe.

2. A rubber overshoe having a heel-retainer consisting of a sheet of soft rubber molded to conform to the inner wall of the heel, its sides and lower edge cemented to the wall, the part between the cemented ends being unattached to the wall and projecting therefrom inward and upward at an angle, a loop having one leg cemented to the heel-wall, and its other leg cemented to the unattached retainer part.

856,506. RAILWAY SEMAPHORE-SIGNAL. HARRY M. ABERNETHY, Cleveland, Ohio, assignor to The American Railway Signal Company, Cleveland, Ohio, a Corporation of Ohio. Filed July 23, 1906. Serial No. 327,427.



Claim.—1. In a semaphore signal, a folding fan, the blades of which fold or lap over each other, while being driven in one direction, against the wind, and which open out and catch the wind while being driven in the opposite direction.

2. In a semaphore signal, a fan, the blades of which fold to offer no resistance to the wind while the semaphore blade is moved in one direction, and which open out to catch the wind when the semaphore blade is moved in the opposite direction.

3. In a semaphore signal, a fan comprising a hub or disk, a series of arms secured to said hub, and a fan blade pivoted to each arm.

4. In a signal, a fan provided with pivotally mounted blades adapted to fold when the fan is moved in one direction and to be thrown out to catch the wind when moved in the opposite direction.

5. In a signal, a fan comprising a hub or disk, a series of arms projecting tangentially from said hub or disk, fan blades pivotally mounted on said arms, and a stop on the arms for holding the blades in extended or open position.

6. In a signal, a fan provided with pivoted blades, means whereby said fan is revolved at each operation of the signal, and means whereby the blades of the fan are thrown out to catch the wind when the signal is operated in one direction.

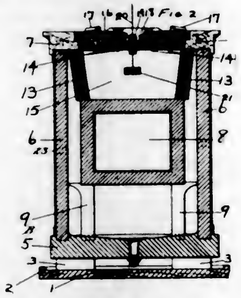
856,507. GUN-STOCK. WALTER S. ALVES, Henderson, Ky. Filed Oct. 13, 1906. Serial No. 338,786.



Claim.—1. A gunstock having a butt comprising a comb constructed with a straight portion arranged parallel to the line of sight of the gun and below the heel of the butt, the said comb rising rearwardly from the said straight portion to the said heel, and the said butt having a cheek rest adjacent to and below the comb, the said cheek rest being constructed substantially the same length as the said straight portion of the comb and parallel thereto and to the line of sight, as described.

2. A gunstock having a butt comprising a comb provided with a cushion constructed with a straight portion arranged parallel to the line of sight of the gun and below the heel of the butt, the said comb rising rearwardly from the said straight portion of the said cushion to the said heel, and the said butt having a cheek rest adjacent to and below the comb, the said cheek rest being constructed substantially the same length as the said straight portion of the comb and parallel thereto and to the line of sight, as described.

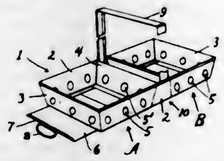
856,508. COMBINED REFRIGERATOR AND FILTER. JOHN Y. ARNOT, Oakland, Cal. Filed June 26, 1905. Serial No. 267,300.



Claim.—1. An apparatus of the character described, comprising a suitable casing, porous walls within the casing inclosing a water chamber, a food box within the casing the top of which forms the bottom of said chamber, means for supporting said food box at a distance from the interior walls of the casing, said casing being constructed to collect the water filtered through said porous walls, a stopper for closing the aperture to said water chamber, said stopper being centrally perforated, a float having a stem loosely passing through said perforation, and means for drawing off the water filtered through said porous walls, substantially as described.

2. An apparatus of the character described, comprising a suitable casing, porous walls within the casing inclosing a water chamber, a food box within the casing the top of which forms the bottom of said chamber, means for supporting said food box at a distance from the interior walls of the casing, said casing being constructed to collect the water filtered through said porous walls, a centrally perforated stopper for closing the supply opening to said water chamber, the walls having lateral openings at their tops to permit air to pass therethrough, and means for drawing off the water filtered through said porous walls, substantially as described.

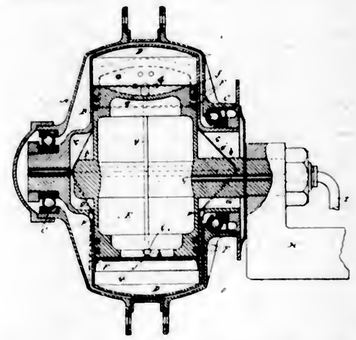
856,509. COOKING UTENSIL. MARY C. BACON and MAY BALDRIDGE, Los Angeles, Cal. Filed Oct. 17, 1905. Serial No. 283,086.



Claim.—1. A cooking utensil comprising a two-part receptacle each part having a slidable bottom movable in a direction opposite from the other part, there being a laterally inclosed intermediate space between each part of the receptacle and openings leading from said space into each part of the receptacle.

2. A cooking utensil comprising a plurality of receptacles, each receptacle having a horizontally-movable bottom, there being a laterally-inclosed intermediate space between the said receptacles, and openings leading from said space into said receptacles adjacent the bottom thereof.

856,510. PNEUMATIC VEHICLE-SPRING. GEORGE W. BELL, Liverpool, England. Filed June 22, 1906. Serial No. 322,810.



Claim.—1. The combination with the piston and cylinder of a pneumatic vehicle spring having air chambers above and below the piston one of which is provided with means for supplying it with compressed air and forms the load supporting spring and the other one forms a check spring therefor, of an oil packing formed between the working faces of the piston and cylinder and means for automatically supplying it with oil under pressure by the operation of the spring.

2. The combination with the piston and cylinder of a pneumatic vehicle spring having air chambers above and below the piston, one adapted to form the supporting spring for the load and the other operating as a check spring, the combination of an oil reservoir in which the oil is subjected to the variations of pressure in the chamber forming the check spring and an oil duct leading from said chamber to the part of the piston working in the other chamber and adapted to lubricate the same.

3. The combination with the cylinder and piston of a pneumatic vehicle spring having air chambers above and below the piston one adapted to form the supporting spring and the other operating as a check spring, the combination of an oil reservoir within the air chamber forming the check spring and subjected to the variation of pressure therein and an oil duct leading therefrom to the part of the piston working in the other chamber and adapted to lubricate the same.

4. The combination with the piston and cylinder of a pneumatic vehicle spring having air chambers above and below the piston one adapted to form the supporting spring for the load and the other to form a check spring, the combination of an oil reservoir subjected to the varying pressures of the air in the chamber forming the check spring, an oil duct leading therefrom to the part of the piston working in the other chamber and adapted to lubricate the same and a check valve in said conduit.

5. The combination with the piston and cylinder of a pneumatic vehicle spring having an air chamber below the piston forming the load supporting spring and an air chamber above the piston forming a check spring for the same, the combination of an oil reservoir in the last mentioned chamber and exposed to the varying pressure of air in said chamber and an oil duct leading therefrom to the part of the piston working in the other chamber and adapted to lubricate the same.

6. The combination with the piston and cylinder of a pneumatic vehicle spring having an air chamber below the piston forming the load supporting spring and an air chamber above the piston forming a check spring therefor, the combination of an oil reservoir formed on the upper end of the piston, an oil duct in the piston leading from the bottom of the oil reservoir to the lower end of the piston and adapted to deliver the oil to the part of the piston working in the lower air chamber and means whereby the oil forms a packing for the same.

7. The combination with the piston and cylinder of a pneumatic vehicle spring having upper and lower air chambers, the lower one of which forms the load supporting spring and the upper one of which forms a check spring, of an oil reservoir on the upper end of the piston, an oil duct leading therefrom to the lower end of the piston, a cup leather at the lower end of the piston behind which said oil duct discharges, and an oil supply reservoir on the outer wall of the cylinder adjacent to the oil reservoir on the upper end of the piston and communicating therewith through holes in the walls of the cylinder.

8. The combination with the piston and cylinder of a pneumatic vehicle spring in which the piston works between two air chambers the lower one of which forms the load supporting spring and the upper one of which forms a check spring, of an oil reservoir formed at the top of the piston, an oil duct leading therefrom to the lower end of the piston, said lower end provided with a cup leather forming an annular groove around the piston into which the oil is discharged from said oil duct and a check valve in said oil duct.

9. The combination with the piston and cylinder of a pneumatic vehicle spring in which the piston works between two air chambers, the lower one of which is adapted to support the load and the upper one of which forms a check spring, of an oil reservoir carried on the upper end of the cylinder and communicating with the air chamber above the piston through holes in the wall of the cylinder, the upper end of the piston being centrally recessed and peripherally beveled to form oil pockets adapted to receive oil from the aforesaid oil reservoir and an oil duct leading from the bottom of the recessed portion to the part of the piston working in the lower chamber.

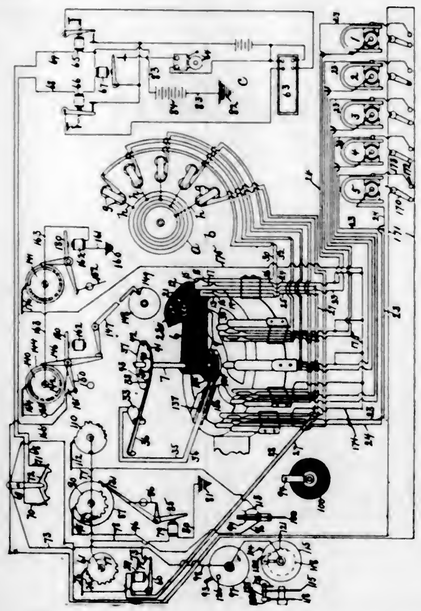
10. The combination with the cylinder and piston of a pneumatic vehicle spring, of an axle carrying the piston and passing through openings in the wall of the cylinder, a cup leather secured to one end of the piston and forming an annular channel around the piston at the base of the cup leather, means for forcing oil under pressure into said channel by the operation of the spring and a piston ring above the cup leather adapted to retard the flow of the oil past the piston.

11. The combination with the cylinder and piston of a pneumatic vehicle spring, of an axle carrying the piston and passing through an opening in the wall of the cylinder, the piston extending above and below it, self contained means for lubricating the parts of the piston working in the opposite ends of the cylinder, a wheel having a hollow hub inclosing a pneumatic spring and revolving around it and means for collecting the oil which is forced past the piston in the hub of said wheel.

12. The combination with the cylinder and piston of a pneumatic vehicle spring interposed between the axle and a vehicle wheel, the wheel having a hollow hub wholly inclosing the pneumatic spring and revolving around it, of self contained means in the pneumatic spring for lubricating the parts of the piston working in opposite ends of the cylinder, means for collecting the oil which passes the piston in the hub of the wheel and means operated by the movement of the wheel for returning the oil to the pneumatic spring.

856,511. SIGNALING SYSTEM. GEORGE H. BOWEN, Boston, Mass., assignor to Boston Automatic Fire Alarm Company, Boston, Mass., a Corporation of Maine. Filed Dec. 26, 1905. Serial No. 293,187.

Claim.—1. In a signaling system of the class described, in combination, a central office, a sub-station, an electric circuit connecting said stations, a recording clock in said sub-station, a plurality of transmitting stations in said sub-station, a plurality of circuit terminals in circuit with said recording clock, a motor-operated circuit controller co-operating with said circuit terminals, a motor to move said circuit controller step by step, an electromagnet controlling the operation of said motor, a signal mechanism adapted to be connected in circuit with said central office, an electromagnet governing the operation of said signal mechanism, a circuit controller for the last mentioned electromagnet, an electromagnet governing the operation of the circuit controller for the signal circuit-operating magnet and adapted to be connected in circuit with a transmitting station by the motor-operated circuit controller, for the purpose specified.



2. In a signaling system of the class described, in combination, a central office, a sub-station, an electric circuit connecting said stations, a recording clock in said sub-station, a plurality of transmitting stations in said sub-station, a plurality of circuit terminals in circuit with said recording clock, a motor-operated circuit controller co-operating with said circuit terminals, a motor to move said circuit controller step by step, an electromagnet controlling the operation of said motor, a signal mechanism adapted to be connected in circuit with said central office, an electromagnet governing the operation of said signal mechanism, a circuit controller for the last mentioned electromagnet, an electromagnet governing the operation of the circuit controller for the signal circuit-operating magnet and adapted to be connected in circuit with a transmitting station by the motor-operated circuit controller, a time movement, a circuit controller movable thereby, a second motor-operated circuit controller co-operating with the circuit controller operated by the time movement, and a signal mechanism governed by the circuit controller operated by said time movement, for the purpose specified.

3. In a signaling system of the class described, in combination, a central office, a sub-station, an electric circuit connecting said stations, a recording clock in said sub-station, a plurality of transmitting stations in said sub-station, a plurality of circuit terminals in circuit with said recording clock, a motor-operated circuit controller co-operating with said circuit terminals, a motor to move said circuit controller step by step, an electromagnet controlling the operation of said motor, a signal mechanism adapted to be connected in circuit with said central office, an electromagnet governing the operation of said signal mechanism, a circuit controller for the last mentioned electromagnet, an electromagnet governing the operation of the circuit controller for the signal circuit-operating magnet and adapted to be connected in circuit with a transmitting station by the motor operated circuit controller, a time movement, a circuit controller movable thereby, a second motor-operated circuit controller co-operating with the circuit controller operated by the time movement, a signal mechanism governed by the circuit controller operated by said time movement, a third motor-operated circuit controller, an auxiliary motor, a circuit controller co-operating with said third motor-operated circuit controller and operated by said auxiliary motor, means operated by the time movement for releasing the auxiliary motor to permit it to move its circuit controller in unison with the third motor-operated circuit controller, and a signal mechanism governed by the third motor-operated circuit controller and the circuit controller operated by said auxiliary motor, substantially as described.

4. In a signaling system of the class described, in combination, a central station, a sub-station electrically connected with said central station and provided with a plurality of transmitting and receiving instruments, electric circuits in which said instruments are included, a motor-operated circuit controller governing the operation in sequence of said receiving instruments by said transmitting instruments, and a signal mechanism rendered effective to transmit to the central station a signal that the transmitting instruments are operated out of sequence, substantially as described.

5. In a signaling system of the class described, in combination, a central office, a sub-station electrically connected therewith and provided with a plurality of transmitting and receiving instruments, electric circuits in which said instruments are included, a motor-operated circuit controller governing the operation in sequence of said receiving instruments by said transmitting instruments, a second motor-operated circuit controller, a time movement, a circuit controller actuated by said time movement and co-operating with said second motor-operated circuit controller, and a signal mechanism governed by said time-operated circuit controller and said second motor-operated circuit controller to transmit to the central office a signal when the time movement stops, substantially as described.

6. In a signaling system of the class described, in combination, a central office, a substation electrically connected therewith and provided with a plurality of transmitting and receiving instruments, electric circuits in which said instruments are included, a motor-operated circuit controller governing the operation in sequence of said receiving instruments by said transmitting instruments, a second motor-operated circuit controller, a time movement, an auxiliary motor, a circuit controller operated by said auxiliary motor and co-operating with the second motor-operated circuit controller, means for holding the auxiliary motor and the circuit controller operated by it to prevent its movement until released, means operated by said time movement for releasing said holding means, and a signal mechanism governed by the second motor-operated circuit controller and the circuit controller operated by the auxiliary motor, to transmit a signal to the central office in case the second motor-operated circuit controller is not operated at the proper time to indicate failure of the operator to perform his duty, substantially as described.

7. In a signaling system of the class described, in combination, a transmitting device, circuit terminals connected therewith, a watchman's recording mechanism, an electromagnet to operate the same, circuit terminals connected with said electromagnet, a second electromagnet, circuit terminals connected with said second electromagnet, the circuit terminals of said transmitter normally engaging the circuit terminals of the second mentioned electromagnet to connect the second electromagnet in circuit with the transmitter, and means co operating with said circuit terminals to disconnect the second electromagnet from said transmitter and connect the first mentioned electromagnet with said transmitter.

8. In a signaling system of the class described, in combination, a transmitting device, circuit terminals connected therewith, an electromagnet, circuit terminals connected with said electromagnet, a second electromagnet, circuit terminals connected with said second electromagnet, the circuit terminals of said transmitter normally engaging the circuit terminals of the second mentioned electromagnet to connect the second electromagnet in circuit with the transmitter, a movable arm co-operating with said circuit terminals, a motor to move it, contacts carried by said movable arm, an electromagnet controlling the operation of said motor and connected in circuit with said contacts, whereby the electromagnet controlling the movement of the said arm may be included in circuit with the transmitter and the first mentioned electromagnet, and the second mentioned electromagnet disconnected from said transmitter in one position of said arm, substantially as described.

9. In a signaling system, in combination, a central office, a sub-station electrically connected with said central station, a watchman's recording mechanism in said sub-station, including a plurality of transmitters and receivers, a signal mechanism, and means rendered effective by the operation of the transmitters out of sequence, for operating said signal mechanism to transmit to the central office a signal indicative of the fact that the wrong transmitter is operated, substantially as described.

10. In a signaling system, in combination, a central office, a sub-station electrically connected with said central office, a watchman's recording mechanism in said sub-station including a transmitter and a receiver, a time movement, a signal mechanism, and means rendered effective by the stopping of the time movement to transmit to the central office by said signal mechanism a signal indicative of the fact that the time movement has stopped and that the watchman is performing his duty, substantially as described.

11. In a signaling system, in combination, a central office, a sub-station electrically connected with said central office a watchman's recording mechanism in said sub-station including a transmitter and a receiver, a time movement, a signal mechanism including a break wheel, a motor to rotate said break wheel, and means rendered effective by the failure of the watchman to operate the transmitter, to release said motor and transmit to the central office by said break wheel a signal characterizing the fact that the watchman has failed to operate the transmitter, substantially as described.

12. In a signaling system, in combination, a central office, a sub-station electrically connected with said central office, a watchman's recording mechanism in said sub-station including a plurality of transmitters and receivers, circuit terminals for said transmitters, a circuit controller co-operating with said circuit terminals, means to move said circuit controller step by step, and means movable with said circuit controller for engaging some of the terminals of one transmitter while engaged with a circuit terminal of another transmitter, substantially as described.

13. In a signaling system, in combination, a rotatable circuit controller, a motor to rotate said circuit controller step by step, a second circuit controller operated by said motor, a time movement, a circuit controller operated by said time movement, an electromagnet controlled by the time-operated circuit controller and said second motor-operated circuit controller a signal mechanism including a break wheel, and a motor to rotate said break wheel and released by said electromagnet when the latter is energized by the closing of its circuit, substantially as described.

14. In a signaling system of the class described, in combination, a central office, a sub-station, an electric circuit connecting said stations, a continuous motor or time movement in said sub-station, a signal mechanism in said sub-station adapted to be connected in said electric circuit, a circuit controller at predetermined intervals of time to by said time movement for effecting the operation of said circuit controller at predetermined intervals of time to effect the transmisison of said signal to the central station, and means actuated by said time movement for rendering said signal mechanism inoperative for a predeterminel length of time, substantially as described.

15. In a signaling system, in combination, a movable circuit controller, a motor to move it step by step, a second circuit controller operated by said motor, a time movement, an auxiliary motor, a circuit controller operated by said auxiliary motor, and means operated by said time movement to cause the auxiliary motor to move its circuit controller in unison with the second motor-operated circuit controller, substantially as described.

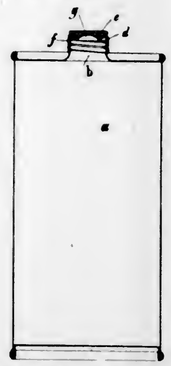
856,512. WIRE-CLAMP. JAMES BOWERS, Caldwell, N. J. Filed Mar. 22, 1906. Serial No. 307,366.



Claim.—1. A wire clamp comprising a bolt member having a head and a screw-threaded shank, the bolt having a slot arranged which splits the shank and extends part way into the head, a nut member having a threaded perforation to fit the shank, of the bolt, and a compressible washer under the nut and adapted to be forced over a wire in the slot of the bolt and be indented thereby to cause a better clamping.

2. A wire clamp comprising a bolt member having a head and a screw threaded shank, the bolt having a slot arranged which splits the shank and extends part way into the head, a nut member having a screw-threaded perforation to fit the shank of the bolt, the face of the nut being corrugated, and a compressible washer arranged between the corrugated face of the nut and a wire in the slot and adapted to be indented by each to cause a locking of the elements in their clamping position.

856,513. METAL RECEPTACLE FOR HOLDING LIQUIDS. ALFRED P. CRABB, London, England. Filed Apr. 11, 1905. Serial No. 255,060.

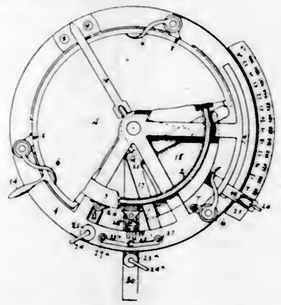


Claim.—A receptacle having a neck through which the receptacle may be filled, said neck being externally screw threaded and having its upper edge bent inwardly and then downwardly to form a cylindrical flange aronnd the opening in the neck, a closing perforated cover *g* having its periphery bent to form a cylindrical flange which is adapted to engage the cylindrical flange on the neck and a screw threaded cap *d* adapted to engage with the screw threads on the neck, and a packing disk *e* located in the screw cap and bearing against the bent over portion of the neck when the cap is screwed down on the neck.

856,514. CHEESE-CUTTER. JOHN W. CULMER, Cleveland, Ohio, assignor to William T. Adams, Corinth, Miss. Filed Mar. 15, 1907. Serial No. 362,453.

Claim.—1. In a cheese cutter having a base, a table revolnble npon the base, a knife for cutting the cheese, and an equally spaced scale for indicating the weight or value of the cheese upon the table, a lever having a cam operable clamp adapted to clasp or release the table, and a stop device controlled by said equal spaced scale for limiting the movement of said lever whereby said table may be moved to any fixed point as shown and described.

2. In a cheese cutter, a base, a revoluble table concentric with the base, a lever adapted to move the table upon the base, an equally spaced scale of weight concentric with the table on the base, an adjustable stop device controlling the lever in proportion to said movement, a proportional adjusting device operable in registry with the scale and connected with the adjustable stop, a means for centering a cheese upon the table, and means for locking and unlocking the table to the lever, and of locking and unlocking the table to the base, and a knife for cutting the cheese upon the table, as shown and described.



3. A cheese cutter comprising a base, a table concentric with and revoluble upon the base, an equally spaced scale of weights concentric with the table upon the base, a parabolic arc revoluble about the common center and indicating upon the scale, an adjustable stop device upon the base, a lever within the base connecting the parabolic arc with said stop device, a handle lever extending from the center to the exterior of the base, between the stops, a clutch upon the handle lever for clamping or releasing the table, a clutch upon the base for clamping or releasing the table, a means for centering a cheese upon the table and a knife for cutting the cheese as shown and described.

4. In a cheese cutter, the combination with a base, a table revoluble upon the base, a knife for cutting the cheese, and a means for centering the cheese upon the table, of a stop device comprising a centrally jointed collapsible scale in two sections, whereof one section is pivotally fixed upon the base, and the other section movable thereon, the pivots of both sections being extended within the base to form stops limiting the movement of the table, proportional space marks on said sections, and a centrally slotted member inovable upon said marks for indicating fixed subdivisions of the table revolution, and a means for moving the stop device to increase or diminish the proportional cut indicated with said subdivisions, as shown and described.

5. A cheese cutter comprising a base, a table revoluble upon the base, a band lever adapted to clamp upon or release the table, a collapsible stop device adjustably limiting the movement of the hand lever, an equally graduated scale concentric with the base spaced in weights and money values, a parabolic arc concentric with the scale and indicating thereon the weight or value of a cheese upon the table, a lever pivoted upon the base and having one end movable by the parabolic arc and the other end pivoted upon the collapsible stop, a means for centering the cheese upon the table, a clamp upon the base for locking the table thereto, and a knife for cutting the cheese upon the table as shown and described.

6. In a cheese cutter of the type described, a scale graduated in equal divisions in two series thereof one indicates weights and the other mopey values, a collapsible stop for limiting the rotation of the table having subdivisional graduations indicating submultiples of its entire opening, and a parabolic arc adapted to be moved upon the scale to any desired graduation thereon, and thereby close or open the said collapsible stop to a corresponding extent, as shown and described.

7. A cheese cutter, comprising a base, a revoluble table mounted upon the base, a knife supported upon the base and adapted to cut to the center of the table, a hand lever extending from the center to the exterior of the base and

adapted to clamp and move the table, a collapsible stop upon the base its stops extending within on either side of said handle, a concentric scale of weights upon the base, a parabolic arc adapted to rotate about the center of the base and indicate upon said scale having radii corresponding to the divisions thereon, and a lever pivoted within the base having one end in contact with the edge of said arc and the other end connected with the movable end of the collapsible stop, whereby the stop is adjusted to correspond with the scale indications, as shown and described.

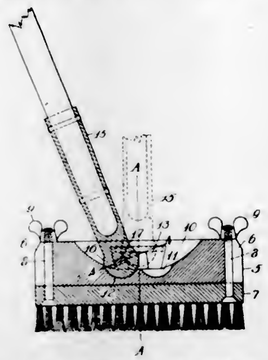
8. A cheese cutter comprising a base, an equally graduated scale concentric with the base provided with a series of weight graduations and a series of money graduations, a table revoluble upon the base, a series of bell crank levers rotatable upon the base outside of the table to move one arm of each toward the center of the table, a ring rotatable upon the base connected with said levers whereby they are simultaneously operated, a clamp upon the base adapted to impinge upon and lock the table, a hand lever extending to the exterior of the base and provided with a clamp for locking the table to said lever, an adjustable stop upon the base limiting the movement of the hand lever, a parabolic arc within the base having an arm extending across the scale and adapted to indicate thereon, a spring supported lever pivoted within the base and having one end in contact with the arc and the other end connected with the adjustable stop, and a knife mounted upon the base and adapted to cut to the center of the table as shown and described.

9. In a cheese cutter as described, a clamp for retaining the cheese in place upon the table, comprising oppositely placed uprights fitted to embrace the edge of the table, a plate fitting upon said uprights, and thumb nuts to hold said plate in place upon the cheese as shown and described.

10. In a cheese cutter, a base, a revoluble table on the base, a lever for rotating the table upon the base, a collapsible stop device comprising two centrally jointed counterpart halves having projecting stop blocks at its outer ends, whereof one end is pivoted in place on the base and the other is adapted to be moved in an arc slot in the base, and a series of fractional space marks and numerals upon the reading edge of the device, as shown and described.

11. In a cheese cutter as described, a collapsible graduated stop device upon the base, stops at either end limiting the movement of the hand lever, and a slotted indicating plate upon the hand lever through which the graduations may be read at any point of closure of the stop device, as shown and described.

856,515. BRUSH-HOLDER. WILLIAM O. CUTTER, Natick, Mass. Filed Feb. 19, 1906. Serial No. 301,781.



Claim.—1. In a device of the character described, a brush, a holder therefor provided with a hemispherical depression located at one side of the transverse vertical median plane of said brush, a handle having a spherical end adapted to enter said depression, and two projections on said spherical end adapted to enter recesses in said holder upon opposite sides of said depression.

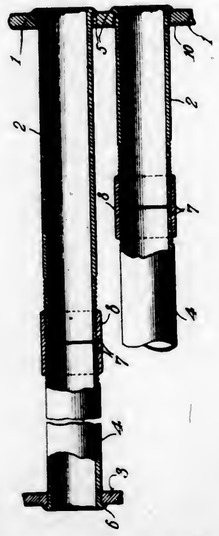
2. In a device of the character described, a brush, a holder therefor provided with two hemispherical depressions located on opposite sides of the transverse vertical median plane of said brush, a handle having a spherical end adapted to enter either of said depressions, and two projections on said spherical end adapted to enter recesses in said holder upon opposite sides of said depressions.

3. In a device of the character described, a handle having one end formed substantially spherical and provided with two diametrically opposite projections from said spherical portion, and a holder adapted to hold a brush, said holder provided with a deep depression, two substantially hemispherical depressions leading from said deep depression, and two inverted U-shaped lateral recesses leading from said deep depression, either of said hemispherical depressions adapted to receive said spherical portion, and said recesses adapted to receive said projections.

4. In a device of the character described, a handle having one end formed substantially spherical and provided with two diametrically opposite lateral projections from said spherical portion, and a holder adapted to hold a brush, said holder provided with a deep depression, two substantially hemispherical depressions leading from said deep depression, and two lateral recesses leading from said deep depression, either of said hemispherical depressions adapted to receive said spherical portion, and said recesses adapted to receive said projections.

5. In a device of the character described, a handle provided at one end with two diametrically opposite lateral projections, and a holder adapted to hold a brush, said holder provided with a depression therein, and two inverted U-shaped lateral recesses leading from said depression, said depression adapted to receive said end, and said recesses adapted to receive said projections.

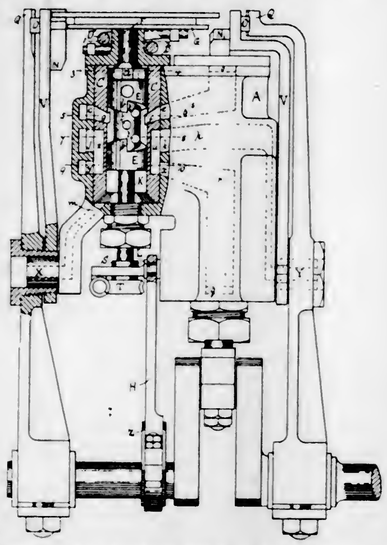
856,516. BOILER-FLUE. JOHN H. DAVENPORT, Grand Island, Nebr. Filed Aug. 20, 1906. Serial No. 331,338.



Claim.—A boiler comprising front and rear flue sheets, stubs extending through the rear flue sheet, the outer ends of said stubs having beads thereon overlapping the walls of the openings in the flue sheet, a layer of non-corrodible

metal disposed upon and covering the inner face of the rear flue sheet and surrounding the stubs and constituting a solder, main flue sections within the front flue sheet, and means between and spaced from the flue sheets for coupling together the inner face of the main flue sections and the stubs.

856,517. OSCILLATING STEAM OR AIR ENGINE. CHARLES DAWE, Plymouth, England. Filed Feb. 12, 1906. Serial No. 300,815.

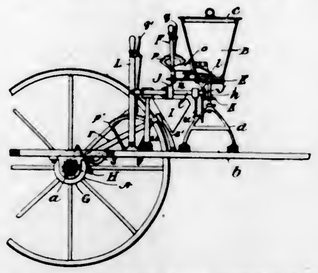


Claim.—1. An oscillating steam or air engine comprising a cylindrical slide casing, a balanced sleeve piece, a combination of cam spring and guide bar whereby the oscillation of the cylinder on its trunnions oscillates this sleeve piece as required for forward motion of the engine, a hollow cut off valve mounted to vibrate lengthwise within the sleeve piece, a pin controlled by an eccentric on the engine shaft to vibrate the same cut off valve, a worm wheel on the cut off valve spindle for altering grade of expansion, a combination of cam and spring with a second cam guide bar whereby the sleeve piece may be so oscillated as to work the engine in a reverse direction, and a reversing frame movable around the cylinder trunnions carrying both those guide bars so arranged that movement of the frame into one position insures one bar working correctly with the cam, movement of the frame into a second position insures the second bar working correctly with the cam, and movement of the frame into a third and intermediate position allows the cylinder to oscillate without turning the cam, substantially as shown and described.

2. The combination of a sleeve piece C with an internal cut off valve E, the said sleeve piece being open at its top and bottom ends, formed with side openings diametrically opposite to each other, one or both of which side openings are used for supply passages to end of cylinder, and formed with ports in its exterior surface diametrically opposite to each other, one or both of which are used for exhaust ports from end of cylinder, and these diametrically opposite exhaust ports connected with each other either directly and always by a circumferential passage or groove in the sleeve piece or indirectly at such times as the port is open to exhaust by a passage formed in the cylinder body, the said sleeve piece being placed in a slide valve casing so constructed that steam or air enters the slide casing through the center of the sleeve piece, and the said internal cut off valve being hollow, provided with radial holes in the middle of its length, and being so formed and so placed in the sleeve piece that all steam or air supply takes place through the annular space between the valve spindle and valve body, and being so mounted as to cut off steam or air supply by the solid part of the valve sliding lengthwise over the port in sleeve piece, substantially as shown and described.

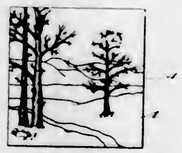
3. A combination comprising a cam a spring and a cam guide bar, the said cam being fixed on a spindle which is furnished with projections fitting into grooves in the sleeve piece, the said spring having one end attached to the cam and the other end attached to the slide valve cover and being so fitted that there is no strain on the spring when the sleeve piece is in the middle of its arc of oscillation, and the said cam guide bar being so shaped and so placed as to transmit the oscillation of the cylinder on its trunnions into the required degree of oscillation of the sleeve piece in the slide casing, substantially as shown and described.

856,518. DROPPING DEVICE. WHITNEY DEAN, Greenwood, Nebr. Filed Nov. 17, 1905. Serial No. 287,791.



Claim.—A dropping device which consists of a hopper provided with a perforated plate mounted upon a vertical shaft, a beveled gear upon said shaft, a sliding shaft carrying a beveled gear and adapted to be thrown into and out of engagement with said first mentioned gear, a friction roller slidingly mounted on said sliding shaft, and a friction cone engaging therewith rotated from the main axle.

856,519. COLORED PICTURE AND PROCESS OF MAKING SAME. HIRAM C. J. DEEKS, Paterson, N. J. Filed Sept. 24, 1906. Serial No. 335,947.



Claim.—1. The process of producing a colored picture which consists in first forming upon the surface of the picture minute corrugations and, second, spraying with a pigment the sides of the corrugations which face in one direction.

2. The process of producing a colored picture which consists in first forming upon the surface of the picture minute corrugations, second, spraying with a pigment the sides of the corrugations which face in one direction and, third, spraying with a pigment of a different color the opposite sides of the corrugations.

3. The process of coloring pictures which consists in first forming minute corrugations with consecutive sections of the picture upon parallel sides thereof and, second, spraying said parallel consecutive sections of the picture with a pigment.

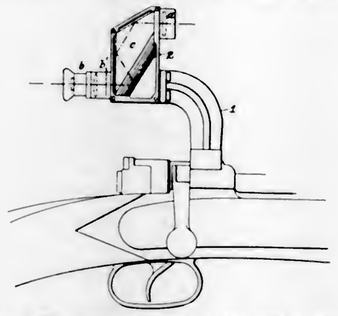
4. The process of producing a colored picture which consists in first forming upon the surface of the picture minute corrugations and, second, spraying with a multiplicity of different pigments different portions of the picture as displayed upon the sides of the corrugations facing in one direction.

5. The process of producing a picture having two different color effects according to the side from which the picture is observed, which consists in first forming the surface of the picture into minute parallel corrugations, second, spraying with one or more pigments the sides of the corrugations facing in one direction and, third, spraying with a different pigment or a different distribution of pigment the sides of the corrugations facing in the other direction.

6. The process of producing a picture having three color effects, each different as the picture is viewed from the front or either side, which consists in first producing a picture whose surface is formed into minute corrugations, second, spraying with one or more pigments the sides of the corrugations facing in one direction and, third, spraying with a different pigment, or a different distribution of pigment, the sides of the corrugations facing in the other direction.

7. A changeable picture having minute corrugations in its surface, the sides of the corrugations which face in one direction being colored differently from the sides of the corrugations which face in the other direction.

856,520. GUN-SIGHT TELESCOPE. EMIL DÖNITZ, Jena, Germany, assignor to The Firm of Carl Zeiss, Jena, Germany. Filed Dec. 14, 1904. Serial No. 236,836.



Claim.—1. The combination of a gun and a sighting telescope comprising an objective, a single-piece image-erecting prism and an astronomical eye-piece all of which lie in the path of the rays from the target to the eye, substantially as described.

2. The combination of a gun and a frame rigidly secured to the gun; and an objective, a single-piece image-erecting prism and an astronomical eye-piece rigidly supported in the frame through which the light rays from the target pass in the order named, substantially as described.

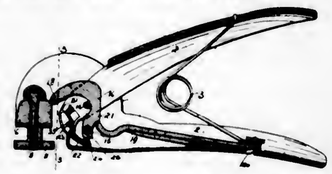
3. The combination of a gun and a frame inclosing and rigidly supporting a single-piece image-erecting prism, an objective, an astronomical eye-piece, and a reticule, all of which lie in the path of the rays from the target to the eye, substantially as described.

856,521. SHADE-ROLLER SUPPORT. AMOS DUPONT, Champlain, N. Y. Filed Dec. 22, 1906. Serial No. 349,044.



Claim.—An adjustable support for shade rollers and the like, comprising a base having an upper, longitudinal, downwardly-extending flange and a lower, longitudinal, upwardly-extending flange, a slide block carrying an ear at its outer end and having longitudinal grooves in its upper and lower edges receiving the flanges of the base, whereby the major portion of the slide block is positioned in front of and serves to hide the flanges of the base, and also having a longitudinal slot, and a screw extending through the slot of the slide block and bearing in the base and having a head arranged to be set against the outer side of the slide-block to adjustably fix the same with respect to the base.

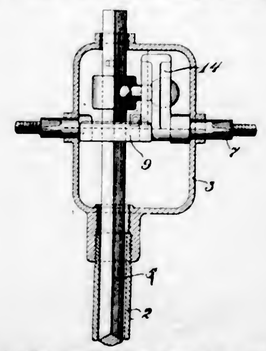
856,522. SAW-SET. JOHN FAIX, San Francisco, Cal. Filed Dec. 24, 1906. Serial No. 349,714.



Claim.—1. A saw set comprising pivoted arms, an anvil carried by one of said arms, a hammer pivoted on the latter arm and having a notch and a shoulder, a plate spring secured to said latter arm and adapted to engage said shoulder, a hook carried by the other arm and adapted to engage said notch, whereby when said arms are pressed together the hook carried by the one arm retracts the hammer carried by the other arm, said hook-carrying arm having a front rounded surface conformed to engage the side of a saw inserted between said surface and the anvil, the pivots of said arm and the hammer being so located that the continued movement of said arm on retracting the hammer withdraws the hook from said notch, substantially as described.

2. A saw set comprising two arms, a pivot pin by which said arms are pivoted together, an anvil carried by one of said arms, a hammer pivoted on said latter arm and being curved to pass behind the pivot of the two arms, its free end passing in front of said pivot toward said anvil, said hammer having a shoulder at its rear edge and being extended beyond its pivot, and having a notch in said extended end, a plate spring secured to the hammer-carrying arm, the free end of said spring being adapted to engage said shoulder, and a hook lever secured to the other arm, the hook thereof engaging said notch, substantially as described.

856,523. SWITCH AND SEMAPHORE MECHANISM. JOHN J. GARD, Harvey, Ill., assignor to Buda Foundry & Manufacturing Company, Chicago, Ill., organized in Illinois. Filed Oct. 8, 1906. Serial No. 337,893.



Claim.—1. The combination with an operating shaft and a semaphore shaft at substantially right angles there-

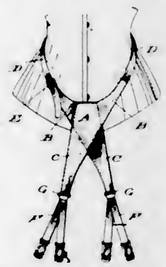
to and adapted to carry a semaphore at one end and a counterweight at the other, one of which shafts has an offset portion whereby the two shafts pass each other without interference, of an arm on each member projecting at substantially right angles to such members and adapted to contact whereby the rotation of the operating shaft causes the rotation of the semaphore shaft.

2. In combination with an operating shaft and a semaphore shaft at substantially right angles thereto and adapted to carry a semaphore at one end and a counterweight at the other, one of which shafts has a yoke for the reception of the other shaft, of an arm on each member projecting at substantially right angles to such members and adapted to contact whereby the rotation of the operating shaft causes the rotation of the semaphore shaft.

3. In combination with an operating shaft and a semaphore shaft at substantially right angles thereto and adapted to carry a semaphore at one end and a counterweight at the other, one of which shafts has a yoke for the reception of the other shaft, of a fork on one of the shafts at substantially right angles to such shaft, and an arm on the other shaft at substantially right angles thereto adapted to fit such fork whereby the rotation of the operating shaft causes the rotation of the semaphore shaft.

4. In combination, with an operating shaft and a semaphore shaft at substantially right angles thereto and adapted to carry a semaphore at one end and a counterweight at the other, one of which shafts has a yoke for the reception of the other shaft, of a fork on one of the shafts at substantially right angles to such shaft, and an arm on the other shaft provided with a ball adapted to fit such fork whereby the rotation of the operating shaft causes the rotation of the semaphore shaft.

856,524. GARMENT-SUPPORTER. ROBERT GORTON, Newton, Mass. Filed May 1, 1905. Serial No. 258,262.

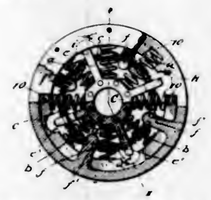


Claim.—1. A front pad hose supporter comprising two overlapping pad sections of relatively large area where they overlap and permanently secured together around the edges of the overlapping portions, a belt permanently attached to the upper portion of the pad on one side and detachably connected with the pad on the opposite side and clasp supporting straps connected with the lower portion of the pad.

2. A front pad hose supporter comprising two pad sections having overlapping portions of relatively large area permanently secured together around the edges of the overlapping portions and having also upwardly projecting arms and downwardly projecting legs, a belt permanently attached to one of the arms and detachably connected with the other arm and clasp supporting straps attached to the legs.

856,525. SHOCK-ABSORBING HUB. CHARLES C. GRIGGS and JENS C. JENSEN, Eureka, Utah. Filed Apr. 10, 1906. Serial No. 310,957.

Claim.—1. A shock absorbing hub comprising a rim portion provided with inwardly projecting lugs, said rim having, also, recesses or sockets in its inner circumference and leading through the outer side of the rim, a ring or cover plate fitting against said outer side of the rim and closing the open sides of the sockets, a hub having radial projections arranged to enter the interspaces between the lugs of the outer rim, radial springs between the rim and hub and having one end seated in said sockets, and cushions interposed between the lugs of rim and hub respectively and compressible when the rim is moved relatively to the hub.



2. A shock absorbing hub comprising an outer rim having radial lugs spaced around its inner periphery and projecting inwardly, an inner hub having arms extending outwardly into the interspaces between adjacent lugs on the rim, rods extending across said interspaces and having their intermediate portions substantially embraced by the outer ends of the radial arms of the inner hub, and springs on said rods one upon each side of the arms and compressible between the latter and the lugs, substantially as described.

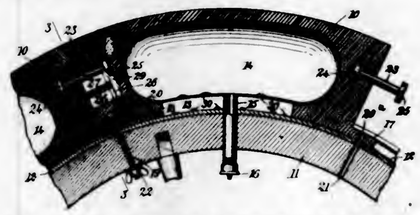
3. A shock absorbing hub comprising an outer rim having lugs projecting radially inward from the central portion; an inner hub having arms extending radially outward and into the interspaces between adjacent lugs, said arms having their outer ends slotted; rods fixed in place between the faces of adjacent lugs said rods passing through the slots in said arms; radial springs interposed between the rim and inner hub; and supplemental springs on the rods one upon each side of the arms, and compressible between the latter and the lugs, substantially as described.

4. A shock absorbing hub having in combination an outer rim provided with spaced inwardly projecting lugs, said rim having, also, recesses or sockets in its inner circumference and leading through the outer side of the rim, an inner hub having projections on its outer circumference and having arms extending radially outward into the interspaces between adjacent lugs on the rim, radial springs having one end seated on the said lugs of the inner hub and the opposite end fitting the recesses or sockets in the rim, supplemental springs interposed between the arms of the hub and the lugs on the rim, and a ring fitting flatwise against the outer side of the rim and closing the open sides of the sockets whereby the radial springs are removably confined in place.

5. In a shock absorbing hub the rim portion, the inner hub portion, and the radial springs therebetween, said hub having seats for the inner ends of the springs and said rim having sockets around its inner circumference, and opening through the outer sides of the rim, a ring fitting over and closing the open outer sides of the sockets, and disks or plates bolted to the hub and covering the outer sides of the rim and the internal parts and thereby protecting them from dirt and dust.

856,526. TIRE FOR VEHICLE-WHEELS. THOMAS F. HAMILTON, Chicago, Ill. Filed Feb. 23, 1906. Serial No. 302,437.

Claim.—1. A wheel tire comprising a plurality of tire segments, each of said segments being formed at one end with a tongue having a hole therein, and at the opposite end with a recess, said recess on one of said tire segments being adapted to receive said tongue on an adjacent tire segment, a bolt secured to each of said segments, the shank of said bolt projecting from said recess, said shank in one of said tire segments being adapted to pass through said hole in the tongue of an adjacent tire segment, said shank being also adapted to pass through the felly of a wheel, and a nut adapted to be threaded onto said shank, so as to secure said tire segment to said felly.



2. A wheel tire comprising a plurality of tire segments, a tie-piece secured to and projecting from one end of each of said segments, said tie-piece being formed with a shank and a head, the opposite end of said tire segment being formed with a passageway constricted at one side thereof, and with a recess at the inner end of said passageway, said recess serving to receive the head of said tie-piece of an adjacent tire segment, and said constricted portion of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment.

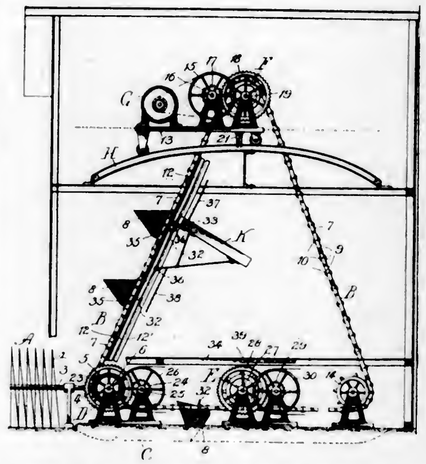
3. A wheel tire comprising a plurality of tire segments, a tie-piece secured to and projecting from the end of each of said segments, said tie-piece being formed with a shank and a head, the opposite end of said tire segment being formed with a passageway constricted at one side thereof, a metal plate at the inner end of said passageway lying transversely thereto, a recess at the inner side of said plate, and an opening in said plate coinciding with said passageway and communicating with said recess, said recess serving to receive the head of said tie-piece of an adjacent tire segment and said constricted portions of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment.

4. A wheel tire comprising a plurality of tire segments, a tie-piece secured to and projecting from the end of each of said segments, said tie-piece being formed with a shank and a head, the opposite end of said tire segment being formed with a passageway constricted at one side thereof, a metal plate at the inner end of said passageway lying transversely thereto, a recess at the inner side of said plate, an opening in said plate coinciding with said passageway and communicating with said recess, said recess serving to receive the head of said tie-piece of an adjacent tire segment and said constricted portions of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment, and means for securing said segments to the felly of a wheel.

5. A wheel tire comprising a plurality of tire segments, each of said segments being formed at one end with a tongue having a hole therein and at the opposite end with a recess, said recess on one of said tire segments being adapted to receive said tongue on an adjacent tire segment, a bolt secured to each of said segments, the shank of said bolt projecting from said recess, said shank on one of said tire segments being adapted to pass through said hole in said tongue of an adjacent tire segment, said shank being also adapted to pass through the felly of a wheel, a nut adapted to be threaded onto said shank so as to secure said tire segments to said felly, a tie-piece secured to and projecting from the end of each of said segments, said tie-piece being formed with a shank and a head, the opposite end of said tire segments being formed with a passagway constricted at one side thereof, a metal plate at the inner end of said passageway lying transversely thereto, a recess at the inner side of said plate, and an opening in said plate coinciding with said passageway and communicating with said recess, said recess serving to receive the head of said tie-piece of an adjacent tire segment, and said constricted portion of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment.

6. A wheel tire comprising a plurality of air sacks, means for inflating said air sacks, a plurality of hollow tire segments adapted to receive said air sacks, each of said segments being formed at one end with a tongue having a hole therein, and at the opposite end with a recess, said recess on one of said tire segments being adapted to receive said tongue on an adjacent tire segment, a bolt secured to each of said segments, the shank of said bolt projecting from said recess, said shank on one of said tire segments being adapted to pass through said hole in said tongue of an adjacent tire segment, said shank being also adapted to pass through the felly of a wheel, a nut adapted to be threaded onto said shank so as to secure said tire segments to said felly, a tie-piece secured to and projecting from the end of each of said segments, each of said segments being formed at the opposite end with a passageway constricted at one side thereof, a metal plate at the inner end of said passageway lying transversely thereto, a recess at the inner side of said plate, and an opening in said plate coinciding with said passageway and communicating with said recess, said recess serving to receive the head of said tie-piece of an adjacent tire segment, and said constricted portion of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment.

856,527. CONVEYER. WILLIAM T. JAMES, Chicago, Ill. Filed Aug. 27, 1906. Serial No. 332,149.



Claim.—1. In combination, conveying mechanism comprising a trough, a triangular elevating conveyer provided with scoop buckets and having a lower substantially horizontal run in the trough, and means for conveying the material to the end of the trough, in a direction opposite to the movement of the buckets.

2. In combination, conveying mechanism comprising a trough, an elevating conveyer provided with a plurality of runs with scoop buckets and having its lower run in the trough, and means for forcing the material into the end of the trough in a direction opposite to the movement of the buckets.

3. In combination, conveying mechanism comprising a receptacle, an elevating conveyer having a portion thereof in the receptacle, a chute adjustably mounted for movement longitudinally of one of the vertical runs of the conveyer, buckets on the conveyer, and automatic means for dumping the buckets into the chute.

4. In combination, conveying mechanism comprising a receptacle, an elevating conveyer having a portion thereof in the receptacle, a chute adjustably mounted for movement longitudinally of one of the vertical runs of the conveyer, buckets pivoted to the conveyer and having projections whereby they may be tilted, and means on the

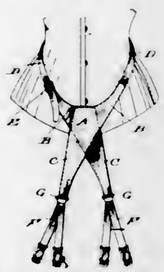
to and adapted to carry a semaphore at one end and a counterweight at the other, one of which shafts has an offset portion whereby the two shafts pass each other without interference, of an arm on each member projecting at substantially right angles to such members and adapted to contact whereby the rotation of the operating shaft causes the rotation of the semaphore shaft.

2. In combination with an operating shaft and a semaphore shaft at substantially right angles thereto and adapted to carry a semaphore at one end and a counterweight at the other, one of which shafts has a yoke for the reception of the other shaft, of an arm on each member projecting at substantially right angles to such members and adapted to contact whereby the rotation of the operating shaft causes the rotation of the semaphore shaft.

3. In combination with an operating shaft and a semaphore shaft at substantially right angles thereto and adapted to carry a semaphore at one end and a counterweight at the other, one of which shafts has a yoke for the reception of the other shaft, of a fork on one of the shafts at substantially right angles to such shaft, and an arm on the other shaft at substantially right angles thereto adapted to fit such fork whereby the rotation of the operating shaft causes the rotation of the semaphore shaft.

4. In combination, with an operating shaft and a semaphore shaft at substantially right angles thereto and adapted to carry a semaphore at one end and a counterweight at the other, one of which shafts has a yoke for the reception of the other shaft, of a fork on one of the shafts at substantially right angles to such shaft, and an arm on the other shaft provided with a ball adapted to fit such fork whereby the rotation of the operating shaft causes the rotation of the semaphore shaft.

856,524. GARMENT-SUPPORTER. ROBERT GORTON, Newton, Mass. Filed May 1, 1905. Serial No. 258,262.

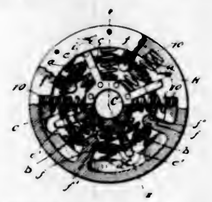


Claim.—1. A front pad hose supporter comprising two overlapping pad sections of relatively large area where they overlap and permanently secured together around the edges of the overlapping portions, a belt permanently attached to the upper portion of the pad on one side and detachably connected with the pad on the opposite side and clasp supporting straps connected with the lower portion of the pad.

2. A front pad hose supporter comprising two pad sections having overlapping portions of relatively large area permanently secured together around the edges of the overlapping portions and having also upwardly projecting arms and downwardly projecting legs, a belt permanently attached to one of the arms and detachably connected with the other arm and clasp supporting straps attached to the legs.

856,525. SHOCK-ABSORBING HUB. CHARLES C. GRIGGS and JENS C. JENSEN, Eureka, Utah. Filed Apr. 10, 1906. Serial No. 310,957.

Claim.—1. A shock absorbing hub comprising a rim portion provided with inwardly projecting lugs, said rim having, also, recesses or sockets in its inner circumference and leading through the outer side of the rim, a ring or cover plate fitting against said outer side of the rim and closing the open sides of the sockets, a hub having radial projections arranged to enter the interspaces between the lugs of the outer rim, radial springs between the rim and hub and having one end seated in said sockets, and cushions interposed between the lugs of rim and hub respectively and compressible when the rim is moved relatively to the hub.



2. A shock absorbing hub comprising an outer rim having radial lugs spaced around its inner periphery and projecting inwardly, an inner hub having arms extending outwardly into the interspaces between adjacent lugs on the rim, rods extending across said interspaces and having their intermediate portions substantially embraced by the outer ends of the radial arms of the inner hub, and springs on said rods one upon each side of the arms and compressible between the latter and the lugs, substantially as described.

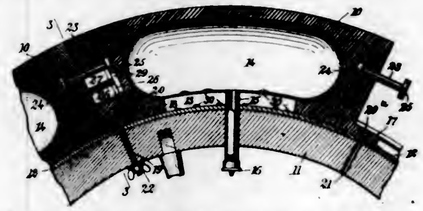
3. A shock absorbing hub comprising an outer rim having lugs projecting radially inward from the central portion; an inner hub having arms extending radially outward and into the interspaces between adjacent lugs, said arms having their outer ends slotted; rods fixed in place between the faces of adjacent lugs said rods passing through the slots in said arms; radial springs interposed between the rim and inner hub; and supplemental springs on the rods one upon each side of the arms, and compressible between the latter and the lugs, substantially as described.

4. A shock absorbing hub having in combination an outer rim provided with spaced inwardly projecting lugs, said rim having, also, recesses or sockets in its inner circumference and leading through the outer side of the rim, an inner hub having projections on its outer circumference and having arms extending radially outward into the interspaces between adjacent lugs on the rim, radial springs having one end seated on the said lugs of the inner hub and the opposite end fitting the recesses or sockets in the rim, supplemental springs interposed between the arms of the hub and the lugs on the rim, and a ring fitting flatwise against the outer side of the rim and closing the open sides of the sockets whereby the radial springs are removably confined in place.

5. In a shock absorbing hub the rim portion, the inner hub portion, and the radial springs therebetween, said hub having seats for the inner ends of the springs and said rim having sockets around its inner circumference, and opening through the outer sides of the rim, a ring fitting over and closing the open outer sides of the sockets, and disks or plates bolted to the hub and covering the outer sides of the rim and the internal parts and thereby protecting them from dirt and dust.

856,526. TIRE FOR VEHICLE-WHEELS. THOMAS F. HAMILTON, Chicago, Ill. Filed Feb. 23, 1906. Serial No. 302,437.

Claim.—1. A wheel tire comprising a plurality of tire segments, each of said segments being formed at one end with a tongue having a hole therein, and at the opposite end with a recess, said recess on one of said tire segments being adapted to receive said tongue on an adjacent tire segment, a bolt secured to each of said segments, the shank of said bolt projecting from said recess, said shank in one of said tire segments being adapted to pass through said hole in the tongue of an adjacent tire segment, said shank being also adapted to pass through the felly of a wheel, and a nut adapted to be threaded onto said shank, so as to secure said tire segment to said felly.



2. A wheel tire comprising a plurality of tire segments, a tie-piece secured to and projecting from one end of each of said segments, said tie-piece being formed with a shank and a head, the opposite end of said tire segment being formed with a passageway constricted at one side thereof, and with a recess at the inner end of said passageway, said recess serving to receive the head of said tie-piece of an adjacent tire segment, and said constricted portion of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment.

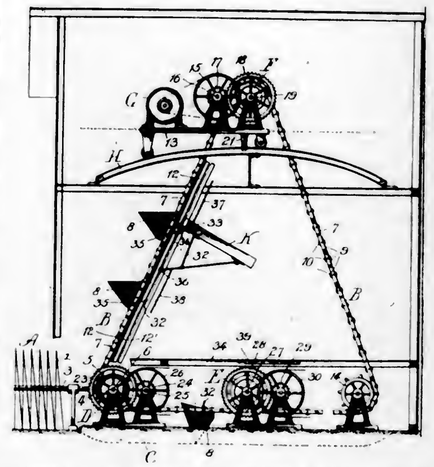
3. A wheel tire comprising a plurality of tire segments, a tie-piece secured to and projecting from the end of each of said segments, said tie-piece being formed with a shank and a head, the opposite end of said tire segment being formed with a passageway constricted at one side thereof, a metal plate at the inner end of said passageway lying transversely thereto, a recess at the inner side of said plate, and an opening in said plate coinciding with said passageway and communicating with said recess, said recess serving to receive the head of said tie-piece of an adjacent tire segment and said constricted portions of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment.

4. A wheel tire comprising a plurality of tire segments, a tie-piece secured to and projecting from the end of each of said segments, said tie-piece being formed with a shank and a head, the opposite end of said tire segment being formed with a passageway constricted at one side thereof, a metal plate at the inner end of said passageway lying transversely thereto, a recess at the inner side of said plate, an opening in said plate coinciding with said passageway and communicating with said recess, said recess serving to receive the head of said tie-piece of an adjacent tire segment and said constricted portions of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment, and means for securing said segments to the felly of a wheel.

5. A wheel tire comprising a plurality of tire segments, each of said segments being formed at one end with a tongue having a hole therein and at the opposite end with a recess, said recess on one of said tire segments being adapted to receive said tongue on an adjacent tire segment, a bolt secured to each of said segments, the shank of said bolt projecting from said recess, said shank on one of said tire segments being adapted to pass through said hole in said tongue of an adjacent tire segment, said shank being also adapted to pass through the felly of a wheel, a nut adapted to be threaded onto said shank so as to secure said tire segments to said felly, a tie-piece secured to and projecting from the end of each of said segments, said tie-piece being formed with a shank and a head, the opposite end of said tire segments being formed with a passagway constricted at one side thereof, a metal plate at the inner end of said passageway lying transversely thereto, a recess at the inner side of said plate, and an opening in said plate coinciding with said passageway and communicating with said recess, said recess serving to receive the head of said tie-piece of an adjacent tire segment, and said constricted portion of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment.

6. A wheel tire comprising a plurality of air sacks, means for inflating said air sacks, a plurality of hollow tire segments adapted to receive said air sacks, each of said segments being formed at one end with a tongue having a hole therein, and at the opposite end with a recess, said recess on one of said tire segments being adapted to receive said tongue on an adjacent tire segment, a bolt secured to each of said segments, the shank of said bolt projecting from said recess, said shank on one of said tire segments being adapted to pass through said hole in said tongue of an adjacent tire segment, said shank being also adapted to pass through the felly of a wheel, a nut adapted to be threaded onto said shank so as to secure said tire segments to said felly, a tie-piece secured to and projecting from the end of each of said segments, each of said segments being formed at the opposite end with a passageway constricted at one side thereof, a metal plate at the inner end of said passageway lying transversely thereto, a recess at the inner side of said plate, and an opening in said plate coinciding with said passageway and communicating with said recess, said recess serving to receive the head of said tie-piece of an adjacent tire segment, and said constricted portion of said passageway adapted to receive the shank of said tie-piece of said adjacent tire segment.

856,527. CONVEYER. WILLIAM T. JAMES, Chicago, Ill. Filed Aug. 27, 1906. Serial No. 332,149.



Claim.—1. In combination, conveying mechanism comprising a trough, a triangular elevating conveyer provided with scoop buckets and having a lower substantially horizontal run in the trough, and means for conveying the material to the end of the trough, in a direction opposite to the movement of the buckets.

2. In combination, conveying mechanism comprising a trough, an elevating conveyer provided with a plurality of runs with scoop buckets and having its lower run in the trough, and means for forcing the material into the end of the trough in a direction opposite to the movement of the buckets.

3. In combination, conveying mechanism comprising a receptacle, an elevating conveyer having a portion thereof in the receptacle, a chute adjustably mounted for movement longitudinally of one of the vertical runs of the conveyer, buckets on the conveyer, and automatic means for dumping the buckets into the chute.

4. In combination, conveying mechanism comprising a receptacle, an elevating conveyer having a portion thereof in the receptacle, a chute adjustably mounted for movement longitudinally of one of the vertical runs of the conveyer, buckets pivoted to the conveyer and having projections whereby they may be tilted, and means on the

chute for engaging the projections to dump the buckets into the chute.

5. In combination in conveyer mechanism, opposing flexible bucket supports, buckets pivoted therebetween at the sides, tilting projections on such sides and a longitudinally adjustable projection adjacent one of the runs of the flexible supports for engaging the tilting projections for dumping the buckets.

6. In combination in conveyer mechanism, opposing flexible bucket supports, buckets pivoted therebetween at the sides, tilting projections on such sides and a longitudinally adjustable chute provided with means adjacent one of the runs of the flexible supports for engaging the tilting projections for dumping the buckets.

7. In combination in conveyer mechanism, opposing sprocket chains, buckets pivoted therebetween at the sides, tilting projections on the pivoted sides, stops on the buckets for engaging the chains to prevent backward tilting of the buckets, and means adjacent one of the vertical runs for engaging the tilting projections to dump the buckets.

8. In combination in conveyer mechanism, a chain bucket carrier in substantially the form of a triangle, buckets thereon, and three sets of driving means arranged along the course of the carrier.

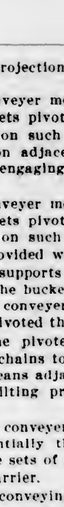
9. In combination in conveying mechanism, a receptacle, a triangular elevating conveyer provided with buckets and having its lower run in the receptacle, and a plurality of driving means for the lower run.

10. In combination in conveying mechanism, a receptacle, a triangular elevating conveyer provided with buckets and having its lower run in the receptacle, driving means at the upper apex of the triangle, and a plurality of driving means for the lower run.

11. In combination in conveying mechanism, an endless chain conveyer provided with buckets, a sprocket at the upper end of the conveyer and a curved track carrying the sprocket whereby it may be adjusted laterally in the plane of the conveyer.

12. In combination in conveying mechanism, an endless triangular chain conveyer provided with buckets, a curved track at the top of the conveyer, and a sprocket drive and motor mounted for movement along the track.

856,528. CHAIN. WILLIAM T. JAMES, Chicago, Ill. Filed Sept. 4, 1906. Serial No. 333,037.



Claim.—1. In combination in a chain, a pair of links having substantially flat coacting bearing surfaces, and means to prevent the bearing surfaces from sliding laterally on each other.

2. In combination in a chain, a pair of links having coacting bearing members adapted to engage at separated points on each member when the links are in alinement but at only one point when at an angle to each other, and means to prevent the bearing members from sliding laterally on each other.

3. In combination in a chain, a pair of links and a pivot block secured to one of the links and having a bearing engagement with the other link, such block having separated bearing points lying in the same plane at right angles to the axis of the chain.

4. In combination in a chain, a pair of links and a pivot block secured to one of the links and having a bearing engagement with the other link, such block having a substantially flat bearing face.

5. In combination in a chain, a pair of links and a pair of engaging members for such links comprising a pivot block secured to one member and having a two-point bearing face and a bearing block in the other member having a face adapted to coact with such two-point bearing face.

6. In combination in a chain, a pair of links and a pair of engaging members for such links comprising a pivot block secured to one member and having a substantially flat bearing face and a bearing block on the other member having a face adapted to coact with such flat bearing face, the parts being provided with clearance spaces adapted to permit of the oscillation of the bearing members but to prevent relative lateral movement of such members.

7. In combination in a chain, an inside link comprising opposing side members with a substantially flat faced bearing member secured therein and having clearance spaces opposite the bearing member and an outside link comprising opposing side members with a substantially flat faced bearing member secured thereto and adapted to oscillate in the clearance spaces, and means for preventing the bearing members from sliding laterally on each other.

8. In combination in a chain, an inside link comprising opposing side members with a bearing member having a two-point bearing face secured therein and having clearance spaces opposite the bearing member, and an outside link comprising opposing side members with a bearing member secured thereto and adapted to coact with the two-point bearing face and oscillate in the clearance spaces, the clearance spaces being shaped to permit oscillatory motion but to prevent relative lateral motion of the bearing members.

9. In combination in a chain, engaging links provided with opposing bearing members each of which engages the other at two points when the links are in alinement and pivots on one of such points when the links are at an angle, and means to prevent the bearing members from sliding laterally on each other.

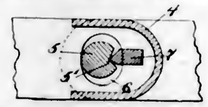
10. In combination in a chain, an inside link member comprising side links, a bearing member secured transversely of the ends of such side links, a shield extending around the end of such side links, and an outside link member comprising side links and a bearing member secured to such side links and adapted to coact with the other bearing member.

11. In combination, a pair of links having bearing surfaces adapted to contact on a limited area when the links are at an angle to each other, and to contact on an increased surface when the links are in alinement, and means to prevent the bearing surfaces from sliding laterally on each other.

12. In combination, a pair of links having primary bearing surfaces adapted to contact when the links are in alinement and secondary bearing surfaces adapted to contact when the links are at an angle to each other, and means to prevent the bearing surfaces from sliding laterally on each other.

13. In combination in a chain, a pair of links having coacting bearing surfaces and a pivot point therefor lying in a plane to one side of the plane of the axis of the chain, and means to prevent the bearing surfaces from sliding laterally on each other.

856,529. CHAIN. WILLIAM T. JAMES, Chicago, Ill. Filed Sept. 4, 1906. Serial No. 333,038.



Claim.—1. In combination in a chain, a link comprising side members and a bearing member having a V shaped recess longitudinally thereof, and a second link comprising side members and a bearing member having a V shaped projection for engaging the V shaped recess in the first bearing member, the angle of the projection being more acute than that of the recess and the recess of such depth that the sides thereof constitute a stop for limiting the relative rotative movement of the links.

2. In combination, a link comprising a side member provided at one end with a pivot block and at the other end with a hollow bearing block, and a second side member adapted to engage the pivot block and bearing block.

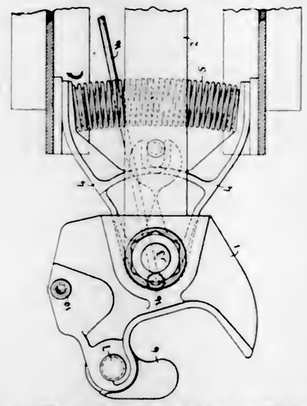
3. In combination, a link comprising a side member having rigidly secured to one end a pivot block and to the other end a hollow bearing block, and a second side member adapted to engage the pivot block and bearing block.

4. In combination, a link comprising a pair of side members and a pivot block rigidly secured to one member and removably secured to the other member, and a second link comprising a pair of side members and a hollow bearing block adapted to coact with the pivot block secured rigidly to one member and removably to the other member.

5. In combination in a chain, a link comprising side members and a bearing member having a recessed portion provided with a bearing insert, and a second link comprising side members and a bearing member having an edge provided with a bearing insert for engaging the insert in the first bearing member.

6. In combination in a chain, a link comprising side members and a bearing member having a V shaped recess longitudinal thereof provided at the apex with a bearing insert and a second link comprising side members and a bearing member having a V shaped projection provided with a bearing insert at its point for engaging the insert in the first bearing member.

856,530. CAR-COUPLING. WILLIAM F. KIESEL, Jr., Altoona, Pa. Filed Oct. 1, 1906. Serial No. 336,857.



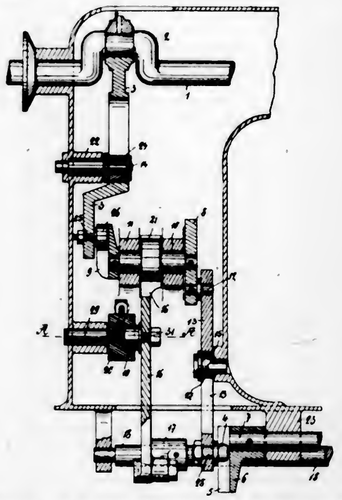
Claim.—1. The combination, with an oscillating coupler head, of a knuckle catch provided with an operating arm which terminates at a point in or near the axis of oscillation, and means for coupling said arm at said point to a release rigging.

2. The combination, with a coupler head pivotally mounted upon the end of a draw-bar, of a knuckle catch pivotally mounted in a chamber provided therefor within the coupler head, an operating arm projecting from the catch through an opening in the under side of the coupler head and extending to a point below the coupler head pivot pin and in or near the pivotal axis, and means for coupling said arm at said point to a release rigging.

3. The combination, with a coupler head having a knuckle pivotally mounted thereon, of a knuckle catch pivotally mounted in the head and adapted at its free end to engage the knuckle when in coupling position, the catch at its free end being provided with a vertical projection which passes out through an opening provided therefor in the head, said projection being provided outside the head with a laterally extending operating arm.

4. A coupler head having a knuckle pivotally mounted at the outer end thereof, said knuckle being provided with a rearwardly extending locking arm, and a knuckle catch pivotally mounted in the head at the rear of the knuckle in position to engage said arm, the head being chambered to receive the knuckle arm and catch and the outer side wall of said chamber being carried forward unbrokenly from the back of the head to the knuckle hinge to inclose the catch and its pivot pin and the locking arm.

856,531. SHUTTLE AND FEEDER DRIVING MECHANISM FOR SEWING-MACHINES. HERMANN KÖHLER, Altenburg, Germany. Filed Nov. 28, 1906. Serial No. 345,499.



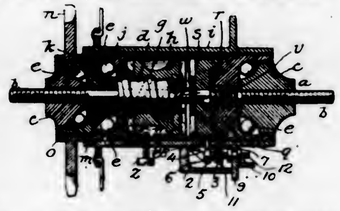
Claim.—1. In a shuttle-driving mechanism for sewing machines, the combination with a needle-bar-operating shaft having a crank and journaled in the arm of the machine, of a shuttle-operating shaft journaled in the base of the machine and provided with a slotted crank, an intermediate shaft journaled in the standard of the machine and provided with a slotted crank and a crank set at an angle thereto, a connecting rod pivotally connected with the crank of said needle-bar-operating shaft and provided with a slot and adapted to engage with its other end the slotted crank of said intermediate shaft, a pin fastened in the standard of the machine and adapted to engage in the slot of said connecting rod for guiding the latter, a second connecting rod pivotally connected with the crank of said intermediate shaft and provided with a slot and adapted to engage with its other end the slotted crank of said shuttle-operating shaft, and a second pin fastened in the standard of the machine and adapted to engage in the slot of said second connecting rod for guiding the latter.

2. In a shuttle-driving mechanism for sewing machines, the combination with a needle-bar-operating shaft having a crank and journaled in the arm of the machine, of a shuttle-operating shaft journaled in the base of the machine and provided with a slotted crank, an intermediate shaft journaled in the standard of the machine and provided with a slotted crank and a crank set at an angle thereto, a connecting rod pivotally connected with the crank of said needle-bar-operating shaft and provided with a longitudinal slot and with a pin at the other end, a part mounted to turn on the pin of said connecting rod and adapted to engage in the slotted crank of said intermediate shaft, a stationary pin fastened in the standard of the machine, a part mounted to rock on said stationary pin and adapted to engage in the longitudinal slot of said connecting rod for guiding the latter, a second connecting rod pivotally connected with the crank of said intermediate shaft and provided with a longitudinal slot and with a pin at the other end, a part mounted to turn on the pin of said second connecting rod and adapted to engage in the slotted crank of said shuttle-operating shaft, and a second stationary pin fastened in the standard of the machine and adapted to engage in the longitudinal slot of said second connecting rod for guiding the latter.

3. In a shuttle-and feeder-driving mechanism for sewing machines, the combination with a needle-bar-operating shaft having a crank and journaled in the arm of the machine, of a shuttle-operating shaft journaled in the base of the machine and provided with a slotted crank, an intermediate shaft journaled in the standard of the machine and provided with a slotted crank and a crank set at an angle thereto and also with a cam, a connecting rod pivotally connected with the crank of said needle-bar-operating shaft and provided with a slot and adapted to engage with its other end the slotted crank of said intermediate shaft, a pin fastened in the standard of the machine and adapted to engage in the slot of said connecting rod for guiding the latter, a second connecting rod pivotally connected with the crank of said intermediate shaft and provided with a slot and adapted to engage with its other end the slotted crank of said shuttle-operating shaft, a second pin fastened in the standard of the machine and adapted to engage in the slot of said second connecting rod for guiding the latter, a feeder-operating shaft mounted to turn in the base of the machine and provided with an arm, a forked lever pivotally connected with the arm of said feeder-operating shaft and adapted to work with the cam of said intermediate shaft and provided between its two ends with a pin, and means for vertically adjusting and horizontally guiding the pin of said forked lever.

4. In a shuttle- and feeder-driving mechanism for sewing machines, the combination with a needle-bar-operating shaft having a crank and journaled in the arm of the machine, of a shuttle-operating shaft journaled in the base of the machine and provided with a slotted crank, an intermediate shaft journaled in the standard of the machine and provided with a slotted crank and a crank set at an angle thereto and also with a cam, a connecting rod pivotally connected with the crank of said needle-bar-operating shaft and provided with a longitudinal slot and with a pin at the other end, a part mounted to turn on the pin of said connecting rod and adapted to engage in the slotted crank of said intermediate shaft, a stationary pin fastened in the standard of the machine, a part mounted to rock on said stationary pin and adapted to engage in the longitudinal slot of said connecting rod for guiding the latter, a second connecting rod pivotally connected with the crank of said intermediate shaft and provided with a longitudinal slot and with a pin at the other end, a part mounted to turn on the pin of said second connecting rod and adapted to engage in the slotted crank of said shuttle-operating shaft, a second stationary pin fastened in the standard of the machine and adapted to engage in the longitudinal slot of said second connecting rod for guiding the latter, a feeder-operating shaft mounted to turn in the base of the machine and provided with an arm, a forked lever pivotally connected with the arm of said feeder-operating shaft and adapted to work with the cam of said intermediate shaft and provided between its two ends with a pin, and means for vertically adjusting and horizontally guiding the pin of said forked lever.

856,532. COASTER-BRAKE. ANDERS LARSEN, Odense, Denmark, assignor to James Peter Larson, Baldwin, Wis. Filed July 10, 1906. Serial No. 325,432.



Claim.—1. The combination in a coaster-brake of an axle-bar formed with a squared portion; a hub-shell free to rotate therearound; a clutch member secured to said hub-shell at one end thereof; a brake-disk secured to said hub-shell at the other end thereof; a driving screw extending within said hub-shell and mounted free to rotate upon said axle-bar; a second clutch member formed with threads which engage the threads upon said driving screw and mounted thereon between the first-named clutch member and said brake-disk; a non-rotary brake-disk mounted upon the squared portion of said axle-bar free to slide along the same and interposed between said second clutch member and said hub-carried brake-disk; a stop key upon said axle-bar; yielding means which tend to force said brake-disks apart, said slidable non-rotary brake-disk being mounted between said yielding means and stop key; and a pair of similar axle adjusting cones, one at each end of said axle-bar.

2. The combination in a coaster brake of an axle-bar; a driving screw mounted thereon; a hub-shell free to rotate relatively to said driving screw; a pair of clutch members, one of which is mounted fast upon said hub-shell and the other of which is mounted upon said screw; and means operable from outside said hub-shell for holding said clutch members in engagement with each other, said means being independent of said screw.

3. The combination in a coaster brake of a stationary axle-bar; a hub-shell mounted free to rotate therearound; a non-rotary disk mounted on said axle-bar; a locking-pin carried by said hub-shell; and mechanism carried by said hub-shell and operable from without the same for forcing said locking-pin into engagement with said non-rotary disk.

856,533. COMPOSITION OF MATTER FOR IMPROVING THE TONE OF A VIOLIN. LOUIS LAWRENCE, Dallas, Tex. Filed Sept. 22, 1906. Serial No. 335,839.

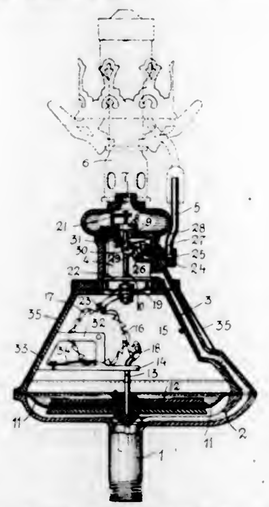
Claim.—1. The hereinabove described composition of matter, consisting of alcohol (absolute) 1 gallon; gum of guaiac, 1 pound; peel of three oranges, and ether (sulfuric purified) 2 ounces, substantially as described and for the purposes specified.

2. A composition for improving the tone of violins and other stringed instruments consisting of alcohol, gum of guaiac, orange peel, and ether.

856,534. IGNITING AND EXTINGUISHING DEVICE FOR GAS-BURNERS. OLE S. LIED, Christiania, Norway. Filed Jan. 2, 1907. Serial No. 350,495.

Claim.—1. In an igniting and extinguishing device for gas burners, a casing provided with a flexible diaphragm, a stem provided with a pawl and secured to said diaphragm and a wheel having ratchet teeth for engagement by said pawl and having peripheral curved projections less in number than said ratchet teeth, in combination with a main valve for opening and closing an orifice leading to a main jet, and a stem connected with said valve and provided with a part engaged by the aforesaid peripheral curved projections of the ratchet wheel.

2. In an igniting and extinguishing device for gas burners, a casing provided with a flexible diaphragm, a pawl and ratchet mechanism operatively connected with said diaphragm and a wheel connected with said ratchet and having peripheral curved projections less in number than the teeth of said ratchet, in combination with a main valve for opening and closing an orifice leading to a main jet, and a stem connected with said valve and provided with a part engaged by the aforesaid peripheral projections of the ratchet wheel.

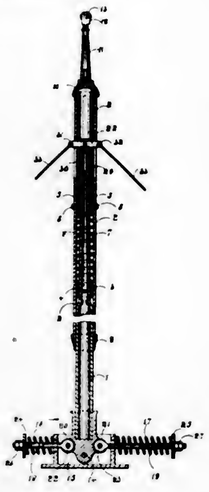


3. In an igniting and extinguishing device for gas burners, a casing having a chamber open to atmosphere and with upper and lower flexible diaphragms, a ratchet wheel in said chamber and having peripheral curved projections less in number than the teeth of said ratchet, a pawl, carried by the lower diaphragm referred to, for engagement with the ratchet wheel, and a main valve for opening and closing an orifice leading to a main jet, said valve connected with the upper diaphragm and in operative relation with said wheel.

4. In an igniting and extinguishing device for gas burners, a casing having a chamber open to atmosphere and with upper and lower flexible diaphragms, a ratchet wheel in said chamber and having peripheral curved projections less in number than the teeth of said wheel, a pawl, carried by the lower diaphragm referred to, for engagement with the ratchet wheel, a closed chamber constantly supplied with gas, a main valve for opening and closing an orifice from said closed chamber to a main burner, a second valve for opening and closing an orifice from said chamber to a pilot burner, and a stem connected with the upper diaphragm referred to, and in operative relation with said wheel, for operating both of said valves.

856,535. TROLLEY-POLE FOR CONDUCTING ELECTRIC CURRENT TO VEHICLES. ROBERT LINDSAY and JOHN LINDSAY, Dunedin, New Zealand. Filed June 26, 1905. Serial No. 267,159.

Claim.—In apparatus for the purpose indicated in combination, a trolley pole pivoted in a bracket upon the top of a car, and having an outer casing telescoping upon an inner tube, a spring supporting the outer casing upon the inner tube, a bar secured to the top of the inner tube and having holes, a rope attached at one end to one end of the bar, a pulley sheave upon the front of the car around which the rope passes, pulleys upon the top of the car over which the rope passes, a pulley sheave upon the rear of the car around which the rope passes, the rope having its other end attached to the other end of the bar, substantially as specified.



856,536. LEUCO DERIVATIVE FROM GALLOCYANIN. WILHELM LOMMEL, Elberfeld, Germany, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed Mar. 18, 1907. Serial No. 363,008.

Claim.—The herein-described new leuco-compound of gallocyanin, obtainable by treating gallocyanin with alkaline reducing agents until a test portion of the product after oxidation is insoluble in sodium carbonate solution and dissolves in hydrochloric acid of 20° Bé. with a pure blue color, which new leuco-compound forms in the shape of its hydrochlorid, after drying and powdering, a greenish-black powder easily soluble in water with a yellowish-green color soon turning blue in consequence of oxidation; dissolving in concentrated sulfuric acid with a yellow color; the free base being separated by the addition of sodium carbonate to the aqueous solution of the hydrochlorid; substantially as hereinbefore described.

856,537. GALLOCYANIN DYE. WILHELM LOMMEL, Elberfeld, Germany, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed Mar. 18, 1907. Serial No. 363,009.

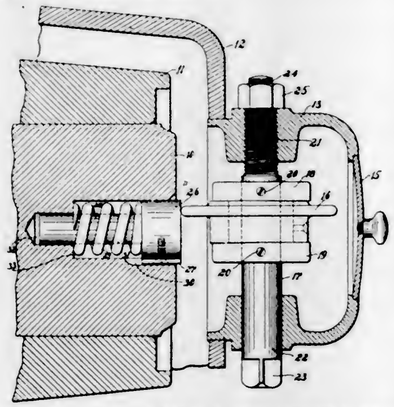
Claim.—The herein-described new dyestuff obtainable from gallocyanin, which dyestuff is in the shape of its hydrochlorid after dyeing a dark green powder soluble in water with a reddish-violet color, being distinguished from gallocyanin by the greater solubility of its hydrochlorid and by giving in printing redder and purer shades than gallocyanin; being soluble in hydrochloric acid of 20° Bé with a pure blue color; and being insoluble in sodium carbonate solution, substantially as described.

856,538. SHAFT-OSCILLATOR. CHARLES E. LORD and WILLIAM F. BOUCHÉ, Norwood, Ohio, assignors to The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Jan. 25, 1905. Serial No. 242,699.

Claim.—1. In combination, a shaft, a yielding member mounted upon the end of said shaft, and a shaft oscillator comprising a member eccentrically mounted adjacent the end of the shaft, and having its periphery in engagement with said yielding member.

2. In combination, a shaft, a member yieldingly mounted upon the end of said shaft, and a shaft oscillator com-

prising a disk eccentrically mounted adjacent the end of said shaft, and having its periphery in engagement with said yieldingly mounted member.



3. In combination, a shaft, a plate yieldingly mounted upon the end of said shaft, and a shaft oscillator comprising a rotatable member eccentrically mounted on a relatively fixed spindle at right angles to said shaft, and having its periphery in engagement with said plate.

4. In combination, a shaft, a plate yieldingly mounted upon the end of said shaft and rotatable therewith, an eccentric member rotatably mounted upon a relatively fixed spindle, and having its periphery engaging said plate in such a manner that the rotation of the latter will cause said eccentric member to rotate and oscillate said shaft.

5. In combination, a shaft, a spring-pressed plate operatively related to said shaft and constrained to rotate therewith, an eccentrically mounted member having its periphery engaging said plate at a point out of alinement with the axis of rotation of said shaft so as to oscillate the shaft as it rotates, and means for adjusting the position of said member so that the period of oscillation of the shaft may be varied.

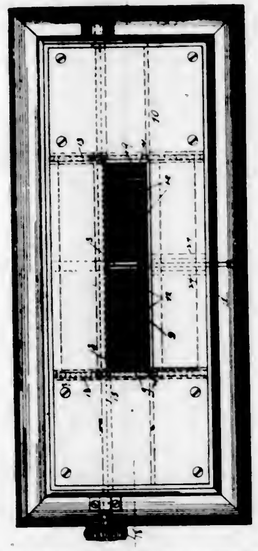
6. In combination, a shaft, a spring-pressed plate operatively related to said shaft and constrained to rotate therewith an eccentrically mounted member having its periphery engaging said plate at a point out of alinement with the axis of rotation of said shaft so as to oscillate the shaft as it rotates, means for adjusting the position of said member so that the period of oscillation of the shaft may be varied, a protecting casing for the oscillator, and a removable cover for said casing.

7. In combination, a shaft, a spring-pressed plate operatively related to said shaft and constrained to rotate therewith, an eccentrically mounted member having its periphery engaging said plate at a point out of alinement with the axis of rotation of said shaft so as to oscillate the shaft as it rotates, and a spindle on which said member is rotatably mounted, said spindle being so constructed and arranged that a movement of same longitudinally in its bearings will change the position of said member relative to said plate, thus varying the period of oscillation of the shaft.

8. The combination of a shaft having a normal endwise bias, with means for shifting said shaft against said bias, comprising a plate yieldingly mounted in the end of said shaft, and an eccentric disk rotatably mounted upon a relatively fixed spindle and bearing against said plate.

9. The combination of a shaft having a normal endwise bias, with means for shifting said shaft against said bias, comprising a plate yieldingly mounted in the end of said shaft, an eccentric disk rotatably mounted upon a relatively fixed spindle and bearing against said plate, and means for adjusting said spindle longitudinally in its supports to change the position of said disk relative to the axis of rotation of said plate.

856,539. TYPOGRAPH. WASHINGTON I. LUDLOW, Cleveland, Ohio, assignor, by mesne assignments, to The Ludlow Typograph Company, Pittsburg, Pa., a Corporation of Maine. Filed Jan. 27, 1905. Serial No. 242,897.



Claim.—1. A matrix bar for the purpose described, provided with a complete series of matrices, formed in one edge thereof and both ends of the bar being tapered in opposite directions, from, the center.

2. A matrix bar provided with a series of matrices in one edge thereof, and with transverse recesses in said edge between the matrices, the said bar being provided with oppositely tapered extremities, substantially as described.

3. In combination with a bed plate, matrix bars supported thereon, the said matrix bars being each provided with a series of matrices formed in one edge thereof, adjacent to the bed plate, and with transverse recesses between the matrices, a vertically movable mold slot lining provided with ridges adapted to engage with said recesses.

4. The combination with a series of adjacent matrix bars and pins secured thereto, of a composing device provided with slots arranged to receive, retain, and assemble said pins, and thereby aline the adjacent matrices upon the bars, substantially as described.

5. In combination with a frame or bed plate, a trough placed therein, a series of matrix bars arranged longitudinally of the trough to move freely therein, a plate covering said trough, an opening therein over the trough, a pin secured to each matrix bar projecting vertically through said opening, a composer provided with slots as many in number as there are characters on the matrix bars, into which slots the pins are adapted to be inserted, and means for moving said composer transversely across said opening and matrix bars inclosed therein, whereby the pins will be inclosed in the several slots, substantially as described.

6. The combination with a frame or bed plate, of a trough therein facing upward, a plate over said trough provided with a central opening, duplicate matrix bars each provided with a consecutive series of characters formed on the lower edge thereof arranged closely adjacent and longitudinally of the trough, a pin for each bar vertically projecting through said opening, and a composer for said bars provided with a corresponding number of slots to the characters in each matrix bar, in which said pins are adapted to be inserted, a slotted opening underneath the center of the composer over which the matrices are alined, and means for justifying the matrices, substantially as described.

7. In combination, a trough, a plate thereon provided with a central opening, duplicate flexible matrix bars placed closely adjacent in said trough longitudinally adjustable therein, and provided each with a consecutive series of matrices in its lower edge, and with indicating characters therefor arranged to register therewith, said trough having a slot transversely across its bottom, into which the metal is injected to the matrices, and means for composing said matrices into line above said slot to form a printing slug, consisting of pins projecting from the upper edges of the bars, and a slotted composer, transversely movable across said bars and trough, subtsantially as described.

8. In combination with a trough, a plate thereon provided with an opening above the trough, matrix bars longitudinally movable in said trough, a pin on each bar serving as a stop for the bar against the end walls of the opening, a transverse slot in the bottom of the trough through which metal is injected to the line of the matrices, means for composing and alining the matrices above said slot, consisting of a composer arranged to move across said opening and transversely over the bars, slots in said composer in which said pins are severally inserted, and means for securing the extremities of the teeth separating the slots from movement when they have passed the opening, substantially as described.

9. The combination with an elongated matrix bar provided with a series of matrices formed in one of its edges, of a combined stop and handle pin in the opposite edge, centrally placed in said bar, substantially as described.

10. In combination with a trough and matrix bars longitudinally movable therein, of a plate above said trough provided with a central opening, pins on said bars projecting through said opening, a transverse opening in the bottom of the trough through which liquid metal is injected to the matrices when in alinement, a slotted composer in which the pins are assembled to aline the matrices, and means for justifying the matrix bars consisting of a stop arranged to engage the completed line of bars, and wedge shaped extremities of the said bars, susbtantially as described.

11. A composer for the purpose described, consisting of, a toothed body portion, a supporting frame therefor having, divisions or slots between said teeth, and having a consecutive series of characters upon the extremities of the teeth, substantially as described.

12. The combination with a series of adjacent duplicate matrix bars, each bar provided with a consecutive series of matrices in its lower edge, and a corresponding series of characters registering with the matrices upon its upper edge, a pin projecting from the upper edge of each matrix bar and a composer comprising a slotted plate arranged to move transversely over the bars and in the slots of which the pins can be assembled and having a corresponding series of characters to those on the bars, upon the divisions between the slots of the composer, substantially as and for the purpose set forth.

13. In combination, a series of matrix bars provided each with a series of matrices in its lower edge, and a corresponding series of characters on its upper edge, a pin projecting from the upper surface of each matrix bar, a slotted composer arranged to move transversely over said bars, in the slots of which the said pins are adapted to be inserted, a mold box underneath the central tooth of the composer, and characters upon the teeth or divisions of the composer between the slots corresponding in number and order with the characters upon the matrices, so arranged that when a pin on one of the matrix bars is inserted in the slot indicated by any one character, the corresponding matrix will be located underneath the central tooth over the mold box, substantially as and for the purpose set forth.

14. A matrix bar, having duplicate & oppositely tapered extremities, substantially as and for the purpose set forth.

15. The combination with a series of adjacent reversible matrix bars, each bar having duplicate tapered extremities, of a receptacle therefor having a mold slot, in which receptacle said matrix bars are interchangeably located, substantially as described.

16. The combination with a receptacle provided with stops at both extremities, of a series of matrix bars therein, the said bars being provided with suitable projections to engage said stops.

17. The combination with a receptacle provided with stops at both extremities, and an opening in the bottom, of matrix bars therein, said matrix bars being provided with projections adapted to engage said stops, substantially as and for the purpose described.

18. The combination with a receptacle provided with stops at both extremities and an opening in the bottom, of a series of matrix bars therein, said matrix bars being provided with projections, and with wedge shaped extremities.

19. In a matrix bar, comprising a body portion, and tapered extremities, a series of matrices formed in one edge thereof, recesses upon the lower edge between the matrices, wedge shaped extremities, and a projection on the edge opposite the matrices.

20. The combination with a trough provided with a narrow opening or casting slot in its bottom, of a series of matrix bars placed side by side in said trough, said bars being pointed at each end whereby the same matrices which combine to form words can be placed with their extremities overlapping to form justifiers, substantially as described.

21. The combination with a series of matrix bars, each provided with a series of matrices in one edge thereof, and wedge shaped extremities, of a receptacle for said matrices provided with an opening in its bottom, over which the matrices are alined to form words and adapted to receive the nozzle of a mold box, the extremities of the matrices between the words being interwedged and forced together, substantially as described.

22. The combination with a receptacle provided with a large opening in its upper face and a narrow opening in its bottom adapted to receive the nozzle of a mold box, of a series of matrix bars within the receptacle provided with projections adapted to engage the walls of the said large opening in the receptacle, and limit their movement.

23. A combined justifier and matrix bar, comprising a tapered bar having matrices in the casting edge, and corresponding indicating characters in the opposite edge, the said bar being oppositely tapered at each extremity, and a central stop pin on one edge which edge has indicating characters.

24. The combination with a series of closely engaging matrix bars, each provided with a series of matrices in one edge thereof, of a slotted composing device, a mold box adjacent to said matrices and means for justifying the matrix bars consisting of the tapered and interwedged extremities of the said bars.

25. A series of duplicate matrix bars provided each with a series of matrices upon one edge thereof and means for making the matrices self justifying, consisting of tapered extremities to the matrix bars, both extremities being tapered, substantially as described.

26. In a typograph machine, the combination with a trough shaped receptacle, and cover therefor, said cover being provided with a rectangular opening, of a series of longitudinally disposed matrix bars stored in said receptacle, each of said matrix bars having a complete series of matrices in its lower surface and a vertical pin in its upper surface, and pointed extremities, a slotted composer over said matrix bars, in the slots of which said pins are inserted to compose the line, a transversely movable detent in one side of the receptacle adapted to engage the outer matrix bar and fix the width of the column, the said receptacle having a casting slot in its bottom over which said matrices are alined to form words and spaces when the pins are suitably assembled, in the composer slots, substantially as described.

27. The combination with a trough shaped receptacle provided with a casting slot in its bottom, of matrix bars longitudinally movable in said receptacle, and approxi-

mately filling said receptacle, said matrix bars being duplicates and pointed at each end, and provided each with a series of matrices on its lower edge, a pin in the upper edge of each matrix bar, a composer transversely movable across said receptacle and provided with slots in which a portion of said pins are assembled to compose said matrices in line over said casting slot, a transversely movable detent in one side of said receptacle adapted to fix the width of the column, and matrices the pins of which are not inserted in the composer slots, and which are arranged with overlapping points to form the spaces and to justify the line, substantially as described.

28. A matrix bar comprising a body portion, a pin centrally inserted therein, on one edge, a series of matrices on the lower edge, a corresponding series of characters on the upper edge, and pointed extremities for the body portion, and grooves on the upper and lower edges between said characters and matrices, substantially as described.

29. In a typograph machine, the combination with a trough shaped receptacle, of elongated matrix bars longitudinally movable therein and provided with matrices on their lower edges, a transversely movable detent in one wall of the receptacle, adapted to fix the width of the column, and pointed extremities for said matrix bars, whereby oppositely placed bars with overlapping points can be utilized as spacers and justifiers, substantially as described.

30. The combination with a trough shaped receptacle provided with a casting slot in its bottom, and matrix bars therein, said bars being provided with transverse grooves on their upper and lower edges, of a composer, adapted to move transversely across said bars and provided with ridges adapted to engage the grooves on the upper edges of said bars, and ridges on the edges of said casting slot adapted to engage the grooves in the lower edges of said bars, substantially as described.

31. A typograph bar of elongated shape, provided with flexible pointed extremities, and with a series of matrices upon its lower surface and a corresponding series of characters upon its upper surface, a central projection upon its upper edge, and blank surfaces on the lower edge underneath said central projection and tapered extremities.

32. A series of duplicate matrix bars, provided with duplicate series of matrices, and blank spaces on their lower surfaces, and corresponding characters upon their upper surfaces, and with pointed extremities at each end, whereby said matrix bars can be employed interchangeably to form lines of letters, or spaces when arranged side by side, or to form spaces or for justifying when arranged with overlapping ends, substantially as described.

33. A matrix bar, tapering from the center toward each end, substantially as and for the purpose described.

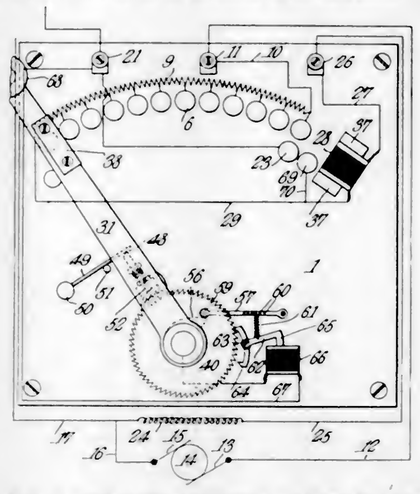
34. A matrix bar, tapering toward each end from the center, and upon opposite sides, and provided with matrices upon one edge thereof, substantially as described.

35. A matrix bar, tapering on two sides, from the center, to each end, and provided with matrices on one edge, and a central pin upon the other edge, substantially as described.

36. The combination with a rectangular matrix receptacle having a bottom plate and central casting slot therein, of duplicate matrix bars resting upon said bottom plate, and having duplicate pointed extremities at each end, whereby said matrix bars when arranged at each end of the receptacle, may be brought together over the casting slot to form a line of type, the said duplicate tapered extremities being adapted interchangeably to form justifying devices for said line.

856,540. STARTER FOR ELECTRIC MOTORS. WILLIAM C. MAYO and JOHN HOULEHAN, El Paso, Tex., assignors of one-third to George E. Briggs, El Paso, Tex. Filed Feb. 11, 1907. Serial No. 356,821.

Claim.—1. In a motor starter, a propelling means for the starting switch having a constant tendency to move it across the steps of the starting resistance in succession, and means controlled by the variation of current strength due to the cutting out of the successive groups of resistances of the starter for controlling the movement of the starting switch across the terminals of the resistances.



2. In a motor starter, a propelling means for the starting switch having a constant tendency to move it across the steps of the starting resistance in succession, a detent controlling the movement of the switch arm, and an electro-magnetic controlling device for the detent sensitive to variations in the starting current to permit a movement of the switch arm in accordance with said variations of the starting current.

3. In a motor starter, a series of resistance coils, a switch arm engaging the terminals of said coils, another arm connected to the switch arm by a spring connection, means for holding said arm in a position to put the spring connection under stress, an escapement for controlling the movement of the switch arm, and an electro-magnetic control for said escapement sensitive to variations in the starting current.

4. In a motor starter, a series of resistance coils, a switch arm arranged to engage the terminals of said coils, another arm having a spring connection with the switch arm and movable to put the spring connection under stress, a ratchet wheel mounted upon the axis of the switch arm, a toothed lock or pawl connecting said switch arm to said ratchet wheel, a detent for said ratchet wheel, and an electro-magnetic actuating device for said detent sensitive to variations in the starting current.

5. In a motor starter a series of resistances, a switch arm arranged to make contact in succession with the terminals of said resistances, another arm, a spring connection between the two arms put under stress by the movement of the said other arm, a ratchet wheel having its axis of rotation coincident with the axis of the switch arm, a spring-actuated pawl movable into and out of engagement with the ratchet wheel, a fixed detent for engaging the pawl when out of engagement with the ratchet wheel and for then holding the switch arm from movement under the stress of the spring, an escapement for the ratchet wheel, and an electro-magnetic controlling device for the escapement sensitive to variations in the starting current.

6. In a motor starter, a series of resistances, a switch arm movable over the terminals of said resistances in succession, another arm, a spring connection therefrom to the switch arm, a ratchet wheel mounted on the axis of the switch arm, a pawl on the switch arm engaging the ratchet wheel, a spring-retained detent for the ratchet wheel, an electro-magnetic controlling mechanism for the detent sensitive to variations in the starting current, and means for varying the tension of the spring connected with the detent in direct ratio to the power of the detent operating mechanism.

7. In a motor starter, a series of resistances, a switch arm movable in succession over the resistance terminals, another arm, a spring connection therefrom to the switch arm, a ratchet wheel mounted to turn upon the same axis as the switch arm, a spring-actuated pawl connection between the switch-arm and the ratchet wheel, a cam upon the other arm engaging said spring-actuated pawl to move it out of engagement with the ratchet wheel, a detent for the ratchet wheel, and electro-magnetic controlling means for the detent sensitive to variations in the starting current.

8. In a motor starter, a series of resistances, a switch arm movable over the resistance terminals in succession, a ratchet wheel mounted to turn upon the same axis as the switch arm, a spring-actuated toothed pawl on the switch arm for engaging the teeth of the ratchet wheel, a fixed detent in the path of said pawl for holding the latter out of engagement with the ratchet wheel and at the same time holding the switch arm against movement, another arm mounted upon the same axis as the switch arm, a cam upon said arm for operating said pawl, a detent for said ratchet wheel, electro-magnetic means sensitive to variations in the starting current for controlling said detent, a spring acting on said detent in opposition to the electro-magnetic controlling means, a lever carrying said spring, and a cam movable with said switch arm and controlling said lever to vary the pull of the spring attached to the detent.

9. In a motor starter for shunt wound motors, a series of resistances included in the armature circuit of the motor, a switch arm for successively cutting out said resistances, electro-magnetic means sensitive to variations in the starting current for controlling the movement of the switch arm step by step and included in the motor circuit when the resistances are included therein, and means for shunting said electro-magnetic controlling devices when the resistances are cut out of the motor circuit.

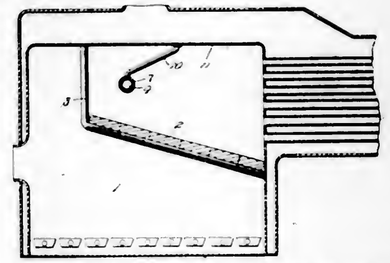
10. In a motor starter, a series of resistances, a switch arm arranged for successive engagement with the terminals of said resistances, another arm, springs put under tension thereby, one of said springs connecting the two arms, an electro-magnetic retaining device for the last-named arm included in the motor circuit, electro-magnetically controlled means sensitive to variations in the power circuit for permitting the switch arm to move under the stress of the spring, a coupling mechanism connecting the switch arm to the said electro-magnetically controlled means, and means carried by the other arm for uncoupling the said switch arm and returning it to the initial position.

11. In a motor starter, a series of resistance coils, a spring-actuated switch-arm movable across the terminals of the resistance coils in succession under the action of the spring, a detent for controlling the movement of the switch-arm, and an electro-magnetic controlling device for the detent sensitive to variations in the starting current to permit the movement of the switch-arm under the impulse of its spring in accordance with said variations of the starting current.

856,541. DEVICE FOR FEEDING AIR TO LOCOMOTIVE AND OTHER FURNACES. JOHN MILTON, Washington, D. C. Filed Jan. 15, 1907. Serial No. 352,427.

Claim.—1. The combination with a boiler furnace of the locomotive type having an arch, of a perforated air supply pipe extending across the furnace and located between the arch and the crown sheet and behind the forward edge of the arch, whereby the products of combustion after passing over the forward edge of the arch entirely surround the air supply pipe and are divided thereby, the perforations in the air supply pipe being so located as to feed air into the space above and below the pipe across the paths of the products of combustion.

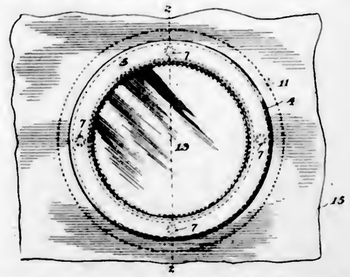
2. The combination with a boiler furnace of the locomotive type having an arch, of a perforated air supply pipe extending across the furnace and located between the arch and the crown sheet and behind the forward edge of the arch, whereby the products of combustion after passing over the forward edge of the arch entirely surround the air supply pipe and are divided thereby, the perforations in the air supply pipe being so located as to feed air into the space above and below the pipe across the paths of the products of combustion, said air supply pipe being provided with a water jacket.



3. The combination with a boiler furnace of the locomotive type having an arch, of a perforated air supply pipe extending across the furnace and located between the arch and the crown sheet and behind the forward edge of the arch, whereby the products of combustion after passing over the forward edge of the arch entirely surround the air supply pipe and are divided thereby, the perforations in the air supply pipe being so located as to feed air into the space above and below the pipe across the paths of the products of combustion, a water pipe surrounding said air supply pipe, said water pipe extending into the water space of the boiler at each side of the furnace.

4. The combination with a boiler furnace of the locomotive type having an arch, of a perforated air supply pipe extending across the furnace and located between the arch and the crown sheet and behind the forward edge of the arch, whereby the products of combustion after passing over the forward edge of the arch entirely surround the air supply pipe and are divided thereby, the perforations in the air supply pipe being so located as to feed air into the space above and below the pipe across the paths of the products of combustion, a water pipe surrounding the air supply pipe, said water pipe extending into the water space of the boiler at each side of the furnace, and a pipe connecting the water pipe with the crown sheet.

856,542. WINDOW-FRAME FOR FLEXIBLE CURTAINS. FREDERICK J. NEWMAN, Chicago, Ill. Filed Dec. 15, 1906. Serial No. 348,013.



Claim.—1. A window frame adapted to be secured to a flexible support consisting of two separated parts, said frame comprising two side frames and an intermediate member, and means for drawing said frames together whereby the two parts of said flexible support are clamped on opposite sides of said intermediate member, substantially as described.

2. A window frame adapted to be secured to a flexible support consisting of two separated parts, said frame com-

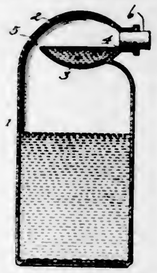
prising two side frames and an intermediate member, each of said side frames being adapted to hold a transparent and a flexible material against said intermediate member, on opposite sides thereof, respectively, substantially as described.

3. A window frame adapted to be secured to a flexible support comprising two side frames and an intermediate filling member, a transparent material seated within said intermediate filling member, a flange on one of said side frames, and means for drawing said frames together whereby the transparent material is confined within its seat and the flexible support clamped against said intermediate filling member, substantially as described.

4. A window frame adapted to be secured to a flexible support consisting of two parts separated by a certain distance, said frame comprising two side frames and a filling member of substantially the same thickness as the distance between said two parts, and means for drawing said side frames together whereby a transparent material and the two parts of said support are drawn against said filling member, substantially as described.

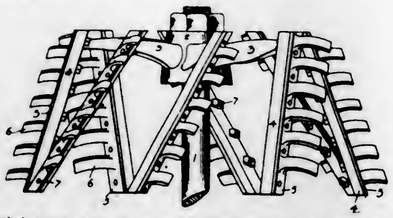
5. A window frame adapted to be secured to a flexible support consisting of two separated parts, said frame comprising two side frames and an intermediate filling member of substantially the same thickness as the distance between said two parts, each of said side frames being adapted to clamp one of said parts against said filling member, a transparent material confined against said filling member by one of said side frames, and means for clamping said side frames and filling member together, substantially as described.

856,543. BOTTLE. GEORGE E. NOLAN, Chehalis, Wash. Filed Mar. 8, 1906. Serial No. 304,961.



Claim.—A bottle having a closed top a side discharge opening and a dose measuring receptacle within the bottle integral with the side wall thereof, the top of which is in line with the lowermost line of the discharge opening.

856,544. DREDGER-CUTTER. JOHN F. OLLRICH, San Francisco, Cal. Filed Aug. 21, 1906. Serial No. 331,476.



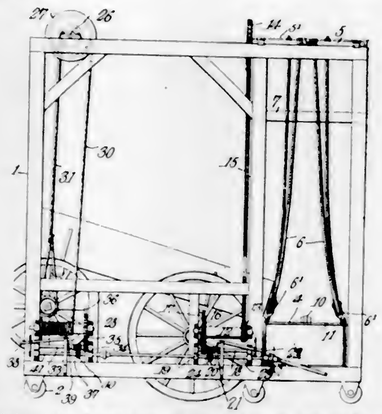
Claim.—1. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes, and teeth having enlarged bases resting upon the bars, and protecting them from wear by abrasion, said teeth and bars being provided with means for removably securing them together, substantially as described.

2. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes, and teeth having enlarged bases resting upon the bars, and protecting them from wear by abrasion, said teeth and bars being provided with means removably securing them together, said teeth being uniformly spaced on the bars and the numbers of teeth on adjacent bars differing by one, substantially as described.

3. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes, and teeth having enlarged bases resting upon the bars, and protecting them from wear by abrasion, and also having sockets, and the bars having posts or projections engaging said sockets, substantially as described.

4. A cutter head comprising a shaft, a hub thereon, arms or spokes radiating from said hub, bars extending from the ends of said arms or spokes, and teeth having enlarged bases resting upon the bars, and protecting them from wear by abrasion, and also having sockets, and the bars having posts or projections engaging said sockets, and having also apertures behind said plates or bases, substantially as described.

856,545. GRAIN ELEVATOR AND DUMP. JAMES PETERSON, Glenrock, Nebr. Filed Feb. 8, 1907. Serial No. 356,471.

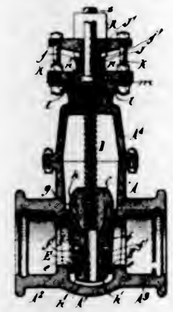


Claim.—An apparatus of the character indicated comprising a frame, a box extending transversely of the frame being arranged for movement therein, a shaft journaled at the top of the frame and extending longitudinally thereof, a flexible element winding about said shaft and being connected with the sides of the box at intermediate points thereof, means for rotating the said shaft, said frame having a portion for the reception of a wagon body, a shaft journaled at the top of the frame over the last said portion thereof, slings winding upon the last said shaft and having wheel receiving loops at their lower ends and means for rotating the last said shaft.

856,546. GATE-VALVE. FREDERICK C. PFEIL, Buffalo, N. Y., assignor of one-fourth to Edward Sperry, Buffalo, N. Y. Filed Dec. 5, 1905. Serial No. 290,387.

Claim.—1. The combination with the valve-case, the gate and its operating spindle, of a stuffing box for the spindle removably mounted on the case, a coupling device connecting the stuffing-box with the case, and means for automatically moving the coupling device to its uncoupled position when loosened, substantially as set forth.

2. The combination with the valve-case, the gate and its operating spindle, of a stuffing box for the spindle removably mounted on the case, a coupling device carried by the stuffing box and engaging the case, said coupling device having means for automatically disengaging it from the case when loosened, and means carried by the stuffing box for tightening the coupling device, substantially as set forth.



3. The combination with the valve-casing, the gate or valve and the operating spindle of the gate, of a stuffing box for the spindle removably mounted on the casing and comprising a base, a gland and bolts connecting the base and gland but disconnected from the casing, and coupling means independent of said bolts for detachably securing the stuffing box to the casing, substantially as set forth.

4. The combination with the valve-casing, the gate or valve and the operating spindle of the gate, of a stuffing box for the spindle removably mounted on the casing, vertically-movable slides or followers mounted on the stuffing-box, coupling hooks carried by said slides and engaging with the top of the casing, and means for swinging the hooks out of engagement with the casing when said slides are lowered, substantially as set forth.

5. The combination with the valve-casing, the gate or valve and the operating spindle of the gate, of a stuffing box for the spindle removably mounted on the casing, vertically-movable slides or followers guided on the stuffing-box, and coupling hooks pivoted at their upper ends to said slides and engaging with the casing, the hooks and the stuffing box having co-operating faces constructed and arranged to swing the hooks laterally out of engagement with the casing when the slides are lowered, substantially as set forth.

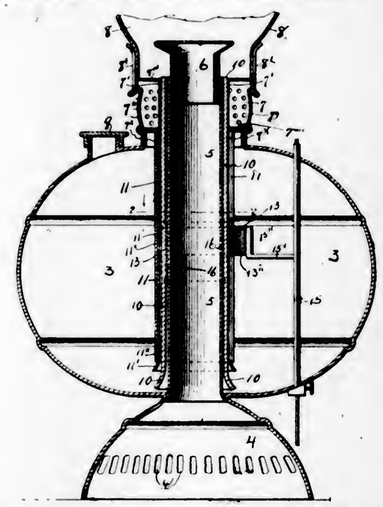
6. The combination with the valve-casing, the gate or valve and the operating spindle of the gate, of a stuffing box for the spindle removably mounted on the casing, vertically-movable slides or followers guided on the stuffing-box, operating screws for the slides accessible from the top of the stuffing box, and laterally-swinging hooks pivoted at their upper ends to said slides and engaging with the top of the casing, substantially as set forth.

7. The combination with the valve-casing, the gate or valve and the operating spindle of the gate, of a stuffing box for the spindle removably seated on the casing and having standards provided with perforated lugs, vertically movable slides guided on said standards, vertical bolts passing through said perforated lugs and engaging screw threaded openings in the slides, and laterally-swinging hooks pivoted at their upper ends to the slides and engaging with the top of the casing, substantially as set forth.

8. The combination with the valve casing, the gate or valve and the operating spindle of the gate, of a stuffing box for the spindle removably mounted on the casing and provided on its underside with centering bars or cleats arranged on opposite sides of the casing, coupling hooks carried by the stuffing box and engaging with the casing, and means for tightening and releasing said hooks, substantially as set forth.

856,547. OIL-BURNER. CHARLES W. PHELPS, University Place, Nebr. Filed Mar. 27, 1906. Serial No. 308,231.

Claim.—1. In an apparatus for burning liquid fuel, a fluid reservoir, a burner mounted on said reservoir, a wick sheath extending downward from said burner into the reservoir, said sheath being composed of an inner and an outer layer of different metals having electromotive relation to each other, said sheath being slotted along its length, and the outer member of the sheath being provided with a conductor crossing said slot and contacting with the two edges of the sheath on either side thereof.



2. In an apparatus for burning liquid fuel, a fluid reservoir, a burner mounted on said reservoir, a wick sheath extending downward from said burner into the reservoir, said sheath being composed of an inner and an outer layer of different metals having electromotive relation to each other, and being slotted along its length, a wick raising device adapted to engage the wick and projecting out of said slot, and a conductor crossing said slot and contacting with the two edges of the sheath on either side of the cell, said conductor being shiftable upward and downward in conformity with the movement of the wick raising device.

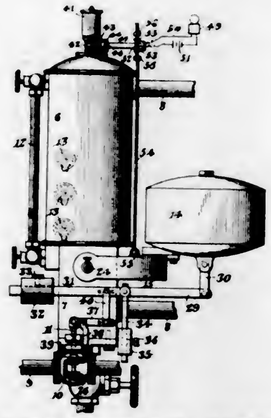
3. In an apparatus for burning liquid fuel, a fluid reservoir, a burner mounted on said reservoir, a tubular wick sheath extending downward from said burner into said reservoir and nearly to the bottom thereof, said sheath being composed of an inner and an outer layer of different metals having electromotive relation to each other, said sheath being slotted along its length, and a wick clasp embracing said wick and projecting outward through the slot in the said sheath, said clasp carrying a conductor which contacts with the two edges of the sheath on either side of said slot, substantially as described.

4. In an apparatus for burning liquid fuel, a fluid reservoir, a burner mounted on said reservoir, a central wick tube extending through said reservoir; a tubular wick sheath extending downward from said burner and into said reservoir and nearly to the bottom thereof, having a longitudinal slot along it, an inner ring surrounding the central tube and movable therealong having outwardly projecting teeth for engaging the wick and a longitudinally movable wick clasp adapted to surround and embrace the wick inside of said tubular wick sheath and having a lug extending outwardly through the slot, and means on the reservoir for engaging said lug to move the wick clasp and wick up or down, substantially as described.

5. In an apparatus for burning liquid fuel, a fluid reservoir, a burner mounted on said reservoir having air inlets, a central air tube extending from said burner and downward through said reservoir and having air inlet openings thereto and air outlet openings to the flame, a tubular wick sheath extending downward from said burner and into said reservoir and nearly to the bottom thereof, said sheath being composed of an inner layer of zinc and an

outer layer of copper, and having a longitudinal slot therealong, a wick clasp adapted to engage the wick and movable upwardly and downwardly between the inner tube and the said sheath and having a lug projecting outward through the said slot in the sheath, a copper connecting strip mounted on said clasp and contacting with the sheath along the edges of the slot, and means on the reservoir for engaging with said lug for moving the wick clasp upward or downward, substantially as described.

856,548. BOILER-FEEDER. JOHN F. SENTER, Chattanooga, Tenn., assignor of one-half to Morgan Llewellyn, Michael G. Weidner, and J. Harry Street, Chattanooga, Tenn. Filed Mar. 16, 1906. Serial No. 306,362.



Claim.—1. In a structure of the character described, the combination with a casing, of a movable gravity receptacle having communication therewith, a counterbalance for the receptacle, a movement equalizing device connected to the receptacle, and a valve connected to and operated upon by the receptacle.

2. In a structure of the class described, the combination with a casing, of a movable gravity receptacle having communication therewith, a lever connected to the gravity receptacle, a counterbalancing weight, a movement equalizing weight mounted on the lever, and a valve operated by the receptacle.

3. In a structure of the character described, the combination with a casing, of a movable gravity receptacle, spaced conduits connecting the receptacle and casing and having communications with different portions thereof, a lever connected to the receptacle and having angularly disposed arms, a counterweight mounted on one of the arms, a movement equalizing weight mounted on another of the arms, a supply pipe, a valve located therein, a lever connected to the valve, and a connection between the levers.

4. In a structure of the class described, the combination with a reservoir, of swinging conduits located on opposite sides of the lower portion of the reservoir and pivoted thereto, one of said conduits having communication with the lower portion of the reservoir, a stand pipe located in the casing and connected to the other conduit, said stand pipe having an open upper end communicating with the upper portion of the reservoir, a swinging receptacle mounted on the outer ends of the conduits and supported by the same, a stand pipe located in the receptacle and connected to the conduit to which the first mentioned stand pipe is connected, the other conduit communicating with the lower portion of said receptacle, a valve disposed exteriorly of the reservoir, and actuating means for the valve connected to the reservoir and controlled by the movement of the same.

5. In a structure of the class described, the combination with a casing, of a pivot rod extending across the casing and having oppositely extending independent passageways therein, one of said passageways communicating with the lower portion of the casing, a stand pipe connected to the other passageway and having an open upper end communicating with the upper portion of the casing, swinging conduit arms located on opposite sides of the casing and connected to the ends of the pivot rod, being respectively in communication with the passageways therein, a swinging receptacle mounted on the outer ends of the arms, a stand pipe located in the receptacle and connected to the arm with which the first mentioned stand pipe is in communication, the other arm communicating with the lower portion of said receptacle, a valve disposed exteriorly of the casing, and actuating means for the valve controlled by the movement of the receptacle.

6. In a structure of the class described, the combination with a reservoir, of a valve located outside the reservoir, a swinging receptacle, actuating means for the valve operated by the receptacle and disposed outside the reservoir and receptacle, a pivot rod extending across the lower portion of the reservoir and journaled in the opposite walls thereof, conduits secured to the rod on opposite sides and exteriorly of the reservoir and connected to the receptacle, said conduits and rod having separate passageways, one of which communicates directly with the lower portions of the receptacle and reservoir, and stand pipes connected to the other passageway and located respectively in the reservoir and receptacle, said pipes having open upper ends communicating respectively with the interiors of the casing and receptacle.

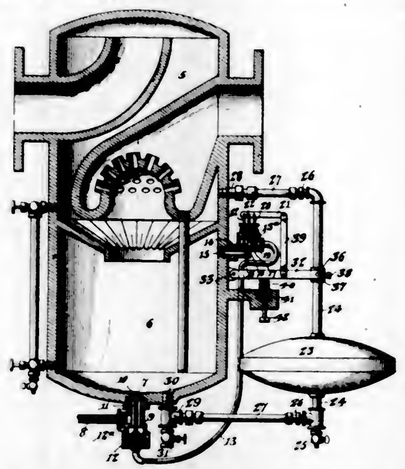
7. In a structure of the class described, the combination with a casing, of stuffing boxes mounted in the opposite walls of the casing, a pivot rod journaled in the stuffing boxes, said rod extending across the casing and projecting beyond the ends thereof, arms secured to said ends, a receptacle mounted on the arms, said arms and pivot rod having independent passageways, one of which communicates with the lower portion of the receptacle and the lower portion of the casing, stand pipes connected to the other passageway and having open upper ends located in the upper portions of the casing and receptacle, a lever fulcrumed between its ends on the casing at one side of the pivot rod, a link connection between the lever and receptacle, a counter weight slidably mounted on the lever, a valve including a stem, another lever connected to the stem, and a link connection between the levers.

856,549. VALVE-OPERATING MECHANISM. JOHN F. SENTER, Chattanooga, Tenn., assignor of one-half to Morgan Llewellyn, Michael G. Weidner, and J. Harry Street, Chattanooga, Tenn. Filed July 21, 1906. Serial No. 327,217.

Claim.—1. In mechanism of the character described, the combination with a motor valve, of means for supplying motive fluid to and exhausting it from the motor valve, said means having an inlet and an exhaust, valves controlling the inlet and exhaust and having spaced exposed stems, a gravity tank, and a device operated by the gravity tank and coacting with the exposed stems for effecting the alternate movements of the valves upon the movements of the gravity tank.

2. In an apparatus of the character described, the combination with a water container, of a motor valve having a supply and an exhaust, valves controlling the supply and exhaust and having upstanding valve stems a lever pivotally connected to and supported by both stems, a gravity tank having a pivotal connection with and supported from the lever, and a conduit connecting the container and tank and permitting the movement of the latter.

3. In mechanism of the character described, the combination with a water container, of a movable gravity tank located exteriorly thereof and having communication therewith, a motor valve having an inlet and an exhaust, valve elements for controlling the inlet and exhaust, an actuating device for the elements connected thereto, one of said elements constituting a support for the device when the other is operated and vice versa, a single spring connected to the device for urging both valve elements to closed position, and a connection between the actuating device and the gravity tank.



4. In mechanism of the character described, the combination with a water container, of a movable gravity tank located exteriorly thereof, a flexible conduit having one end connected to the container and its other end connected to the tank, a motor valve having an inlet and an exhaust, separate valve elements for controlling the inlet and the exhaust, an actuating lever pivoted to both elements for alternately moving the same, said lever also having a pivotal connection with the gravity tank and being operated thereby, one of the elements constituting a fulcrum support for the lever when the other is moved, and vice versa, and yielding means connected to the lever for urging both valve elements to closed position.

5. In mechanism of the character described, the combination with a water container, of a movable gravity tank located exteriorly thereof and having communication therewith, a motor valve, a common supply and exhaust conduit connected to the valve, a valve casing connected to the conduit and having inlet and exhaust ports, valves controlling the ports and having stems projecting from the casing, a lever pivoted to both stems for moving them in opposite directions, one of said stems constituting a fulcrum on the opening movement of the other valve, and vice versa, a pivotal connection between the lever and the gravity tank, and a spring engaging the lever for urging both valves to closed position.

6. In mechanism of the character described, the combination with a motor valve, of means for supplying motive fluid to and exhausting it from the motor valve, said means including a valve casing having an inlet and an exhaust, valves located in the casing and controlling the inlet and exhaust, said valves having stems projecting from the casing, a gravity tank, and a lever connected to the gravity tank and engaging both of the projecting stems for effecting the alternate movements of the valves upon the movements of the gravity tank.

7. In mechanism of the character described, the combination with a reservoir member, of a motor valve, a common supply, an exhaust conduit connected to the valve for supplying motive fluid thereto and exhausting it therefrom, a valve casing connected to the conduit and having inlet and exhaust ports, valves controlling the ports and having stems projecting from the casing, a lever fulcrumed on the ends of the stems, a gravity tank, conduit connections between the gravity tank and reservoir member, and connections between said tank and the actuating lever of the valves.

8. In mechanism of the character described, the combination with a reservoir member, of a motor valve including a casing, and a reciprocatory piston operating therein, a common supply and exhaust conduit connected to the casing for supplying motive fluid against and exhausting it from the piston, a valve casing connected to the conduit, and having inlet and exhaust ports, valves controlling the ports and having stems projecting from the casing, a lever fulcrumed on the ends of the stems, a spring engaging the lever, a gravity tank, flexible connections between the tank and reservoir member, and a link connection between said tank and the actuating lever of the valves.

9. In a boiler feeder of the character described, with a cut-off valve normally tending to open, and means whereby said valve is held closed when the water line is at or above normal, said means embodying a stationary reservoir, a gravitating tank above the water level of the reservoir, and flexible pipe connections between the tank and said stationary reservoir, and means for raising the gravitating tank when the water runs out of the same, a conduit connecting said stationary reservoir with the cut-off, and a valve arrangement in said conduit, whereby when the movable tank rises, communication is cut off between the stationary reservoir and the cut-off, thereby preventing either water or steam reaching the cut-off, and communication is established between the pipe leading to the cut-off and the exhaust passage to thereby release the cut off and permit it to open.

10. In a boiler feeder of the character described, the combination with a stationary reservoir, a gravitating tank, and means keeping it in constant communication with said stationary reservoir, whereby this gravitating tank will be kept filled with water while the stationary reservoir is filled and will be emptied of water when the stationary reservoir is emptied, means for normally raising the gravitating tank, a cut-off, a conduit connecting the stationary reservoir to this cut-off and serving to normally hold the cut off closed while said stationary reservoir is filled with water, an inlet valve in said conduit, an exhaust or outlet in said conduit, and means connected to the gravitating tank, whereby when said tank is lowered by the water in it, the outlet valve will be closed and the inlet valve opened, and vice versa.

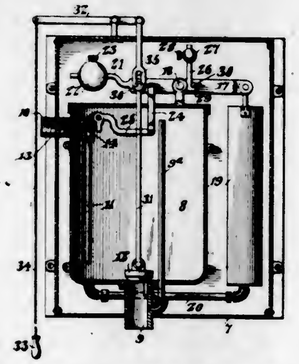
11. In combination with a stationary reservoir, a gravitating tank, and means keeping it in constant communication with said stationary reservoir, whereby this gravitating tank will be kept filled with water while the stationary reservoir is filled and will be emptied of water when the stationary reservoir is emptied, means for normally raising the gravitating tank, a cut-off, a conduit connecting the stationary reservoir to this cut-off, and serving to normally hold the cut off closed while said stationary reservoir is filled with water, an inlet valve in said conduit, an exhaust or outlet in said conduit, and means connected to the gravitating tank, whereby when said tank is lowered by the water in it, the outlet valve will be closed and the inlet valve will be opened, and vice versa, said means embodying a lever pivotally connected to the gravitating tank and to both the stems of the valves, and a spring connecting the lever to the stationary reservoir and normally tending to close both valves.

856,550. VALVE MECHANISM FOR TANKS AND RESERVOIRS. JOHN F. SENTER, Chattanooga, Tenn., assignor of one-half to Morgan Llewellyn, Michael G. Weidner, and Joshua Harry Street, Chattanooga, Tenn. Filed Sept 4, 1906. Serial No. 333,109.

Claim.—1. In apparatus of the character described, the combination with a reservoir having an inlet and an outlet, of valve mechanism associated with one, a movable gravity tank, a flexible conduit having one end secured to and communicating with the lower portion of the tank and its other end secured to and communicating with the lower portion of the reservoir, and operating means for the valve mechansim connected to the tank and movable with the same.

2. In apparatus of the character described, the combination with a reservoir having an inlet and an outlet, of

valve mechanism associated with one, a movable gravity tank located exteriorly of the reservoir, a flexible conduit connecting the lower portion of the tank with the reservoir, and a lever fulcrumed between its ends, one arm of the lever being connected to the tank, the other being connected to the valve mechanism.



3. In apparatus of the character described, the combination with a reservoir having an inlet and an outlet, of valve mechanism controlling the inlet and outlet, a lever fulcrumed between its ends above the top of the reservoir, connections between one arm of the lever and the valve mechanism, a movable gravity tank suspended from the other arm of the lever and located exteriorly thereof and alongside the reservoir, and a flexible conduit connecting the lower portion of the tank with the lower portion of the reservoir.

4. In apparatus of the character described, the combination with a reservoir having an upper inlet, and a lower outlet, of a movable gravity tank having a flexible connection with the reservoir, a lever fulcrumed above the tank and between its ends, said gravity tank being suspended from one arm of the lever, a valve controlling the inlet and having a connection with the other arm of the lever, a valve controlling the outlet and having a stem that slidably engages said latter arm of the lever, and an actuating handle connected to the stem for opening the discharge controlling valve.

5. In apparatus of the character described, the combination with a reservoir having an inlet and an outlet, of valve mechanism associated with one, a lever having a connection with the valve mechanism, a movable gravity tank having communication with the reservoir and constituting operating means for the valve mechanism, a movable arm associated with the lever and disposed to angular relation thereto, and overbalancing means connected to said arm.

6. In apparatus of the character described, the combination with a reservoir having an inlet and an outlet, of valve mechanism associated with one, a lever having a connection with the valve mechanism, a movable gravity tank having communication with the reservoir and constituting operating means for the valve mechanism, a swinging arm associated with a lever and disposed in angular relation thereto, said arm being movable to positions on opposite sides of a vertical plane passing through the fulcrum of the lever, and an overbalancing weight connected to said arm.

7. In apparatus of the character described, the combination with a reservoir having an inlet and an outlet, of valve mechanism associated with one, a lever fulcrumed between its ends and having one arm connected to the valve mechanism, a gravity tank suspended from the other arm of the lever and having communication with the reservoir, an upright arm pivoted on the fulcrum of the lever and engaged with said lever, said arm being movable to positions on opposite sides of a vertical plane passing through the fulcrum, and overbalancing means connected to said arm.

8. In apparatus of the character described, the combination with a reservoir having a discharge, of a lever fulcrumed between its ends, a movable gravity tank suspended from one arm of the lever and having a flexible pipe connection with the reservoir, a valve controlling the discharge and connected to the other arm, of the lever, an upstanding swinging overbalancing arm mounted on the fulcrum of the lever and having an engagement with said lever, a weight adjustably mounted on the same, and a counterbalancing weight mounted on the arm of the lever to which the valve is connected.

9. In apparatus of the character described, the combination with a reservoir having an outlet, of a valve controlling the outlet, manually actuated means for moving the valve to open position, a device connected to the valve for closing the same and having a limited movement independently thereof to permit the actuation of the valve independently of the movement of said device, and a movable gravity tank having communication with the reservoir, said tank being connected to the valve closing device and holding it inactive as long as there is a predetermined amount of water in the reservoir but permitting said device to move the valve to closed position when the water level falls below said predetermined amount.

10. In apparatus of the character described, the combination with a reservoir having an outlet, of a valve controlling the outlet, manually actuated means having a connection with the valve for moving the same to open position, a weighted lever having a limited sliding engagement with the connection and constituting means for moving the valve to closed position, and a gravity tank hung from said lever and having communication with said reservoir, said tank holding the lever inactive as long as there is a predetermined amount of water in the reservoir, but permitting said lever to move the valve to closed position when the water level falls, the slidable engagements of the lever with the connection permitting the opening movement of the valve independently of the movement of the lever.

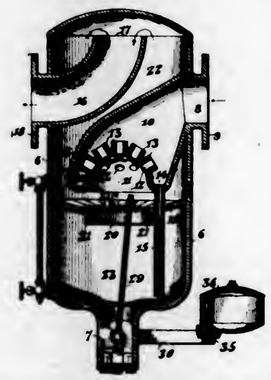
11. In apparatus of the character described, the combination with a reservoir having a lower discharge, of a lever fulcrumed between its ends, a gravity tank having a flexible conduit connection with the reservoir and suspended from one arm of the lever, a counterbalancing weight adjustably mounted on the other arm of the lever, an overbalancing device associated with the lever, a valve controlling the discharge, a stem connected to the valve and having a slidable connection with the lever, and an actuating handle connected to the stem.

12. In apparatus of the character described, the combination with a reservoir having an inlet, of a lever fulcrumed between its ends, a gravity tank suspended from one arm of the lever, a flexible conduit having one end connected to the lower portion of the tank and the other connected to the lower portion of the reservoir, a valve controlling the inlet, and a bell crank lever, one arm of which is connected to the valve, the other arm being connected to the opposite arm of the lever to that from which the tank is suspended.

13. In apparatus of the character described, the combination with a reservoir having an inlet, of a lever fulcrumed between its ends on the top of the reservoir, a gravity tank, a flexible conduit connecting the lower portion of the gravity tank with the lower portion of the reservoir, said tank being suspended from one arm of the lever, a valve controlling the inlet, a bell crank lever associated with the valve, a link connection between the bell crank lever and the other arm of the first mentioned lever, and a counterweight adjustably mounted on said other arm.

856,551. SEPARATOR. JOHN F. SENTER, Chattanooga, Tenn., assignor of one-half to Morgan Llewellyn, Michael G. Weidner, and J. Harry Street, Chattanooga, Tenn. Filed Mar. 16, 1906. Serial No. 306,361.

Claim.—1. In a separator of the class described, the combination with a casing, of a supply conduit extending into the casing and having a discharge nozzle located within and inclosed by the casing, said nozzle having an outlet opening within the casing, and a rearwardly extending nipple surrounding the opening and located within the casing.



2. In a separator of the class described, the combination with a casing, of a supply conduit extending into the casing and having a discharge nozzle located within and inclosed by the casing, said nozzle having an outlet opening within the casing, a rearwardly extending nipple surrounding the opening and located within the casing, and a liquid drain communicating with the interior of the nozzle.

3. In a separator of the class described, the combination with a casing, of a supply conduit extending into the casing and having a discharge nozzle located within and inclosed by the casing, said nozzle having a plurality of outlet openings within the casing, and a plurality of rearwardly extending nipples surrounding the openings and located within the casing.

4. In a separator of the class described, the combination with a casing, of a supply conduit extending into the casing and having a discharge nozzle located within and inclosed by the casing, said nozzle having a plurality of outlet openings within the casing, a plurality of rearwardly extending nipples surrounding the openings and located within the casing, and a liquid drain pipe communicating with the interior of the nozzle within the casing and discharging into the lower portion of said casing.

5. In a separator of the class described, the combination with a casing, of a nozzle located within and inclosed by the casing, said nozzle extending downwardly and having openings in its lower wall, the nozzle furthermore having a channel surrounding the openings, and a drain pipe communicating with the channel and discharging into the casing.

6. In a separator of the class described, the combination with a casing, of a supply conduit extending into the casing at one side and having a downwardly extending flared nozzle, said nozzle being provided in its lower wall with a plurality of openings, and a channel surrounding the openings, rearwardly extending nipples each surrounding an opening and located within the nozzle, a depending drain pipe communicating with the channel and having its lower end disposed within the lower portion of the casing, and an outlet conduit having an inlet end arranged within the casing above the nozzle.

7. In a separator of the class described, the combination with a casing, of a discharge nozzle located within and surrounded by the casing, said nozzle having an inwardly dished end wall provided with an outlet opening.

8. In a separator of the character described, a discharge nozzle having an inwardly dished end wall provided with a series of outlet openings.

9. In a separator of the character described, a discharge nozzle having an inwardly dished end wall provided with a series of outlet openings, and nipples surrounding the openings and projecting rearwardly within the nozzle.

10. In a separator of the character described, the combination with a casing having an outlet, of a supply conduit connected to the casing and having a discharge nozzle projecting thereinto, said nozzle having an inwardly dished end wall provided with a series of outlet openings, nipples carried by the end wall, said nipples surrounding the openings and extending inwardly within the nozzle, and a drain outlet communicating with the interior of the nozzle at one side of the nipples.

11. In a separator of the character described, the combination with a casing, of an outlet conduit communicating with one portion thereof, and a supply conduit having a discharge nozzle projecting into the casing and having its inner end inwardly concaved and provided with outlet openings.

12. In a separator of the character described, the combination with a casing, of an outlet conduit extending into the casing from one side and having an inlet end projecting toward one end of said casing, a supply conduit extending into the opposite side of the casing and having a discharge nozzle projecting toward the other end of the same, said nozzle being provided with an inwardly dished end wall having openings therethrough, nipples surrounding the openings and projecting rearwardly within the nozzle, and a drain outlet communicating with the interior of the nozzle at one side of the nipples and with the interior of the casing.

13. In a separator of the character described, the combination with a casing, of a supply conduit having a downwardly extending discharge nozzle located within the casing and provided with an upwardly dished end wall having openings, nipples surrounding the openings and projecting rearwardly within the nozzle, a depending drain pipe connected to the nozzle and having a discharge end disposed in the lower portion of the casing, and an outlet conduit having an inlet end arranged within the casing above the nozzle.

14. In a separator of the class described, the combination with a casing, of an inclined apron located in an intermediate portion of the casing and forming an upper separating compartment, and a lower liquid reservoir, separating means located in the compartment and including a discharge nozzle, and a drain pipe extending from the nozzle downwardly through the apron into the reservoir.

15. In a separator of the class described, the combination with a casing, of a downwardly inclined apron located in an intermediate portion of the casing and forming an upper separating compartment, and a lower liquid reservoir, said apron having a central opening, a nozzle projecting into the upper portion of the reservoir above the opening, and liquid conducting means leading from the interior of the nozzle downwardly through the apron at one side of the central opening.

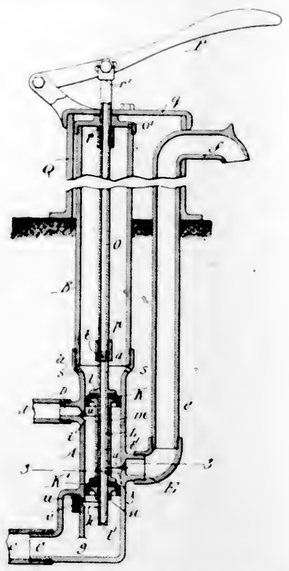
16. In a separator of the character described, the combination with a casing, of an apron arranged across an intermediate portion of the same and having a central opening, said apron having channels in its upper side leading to the opening, a supply conduit having a discharge nozzle arranged over the apron, said nozzle being provided with an end wall having an inwardly dished portion provided with openings, and nipples surrounding the same, a drain pipe connected to the nozzle and extending through the apron, and an outlet conduit having an inlet end arranged within the casing.

856,552. VALVE. BENJAMIN F. SIEGRIST, Buffalo, N. Y., assignor of one-half to Joseph G. Morith, Buffalo, N. Y. Filed Dec. 19, 1906. Serial No. 348,568.

Claim.—1. A valve comprising a casing having a lower supply port, an upper waste port and an intermediate service port, upper and lower valve pistons arranged in said casing and engaging the bore thereof only at their peripheries, and means for reciprocating said pistons so that when raised the lower piston is arranged between the lower and intermediate ports and the upper piston is arranged above the upper port and when depressed the lower piston is arranged below the supply port and the upper piston is arranged between the upper and intermediate ports, substantially as set forth.

2. A valve comprising a casing having a lower supply port, an upper waste port and an intermediate service

port, upper and lower valve pistons arranged in said casing and engaging the bore thereof only at their peripheries, means for reciprocating said pistons so that when raised the lower piston is arranged between the lower and intermediate ports and the upper piston is arranged above the upper port and when depressed the lower piston is arranged below the supply port and the upper piston is arranged between the upper and intermediate ports, and a tube which extends upwardly from the valve casing and through which the valve pistons are adapted to be inserted or removed from the valve casing, substantially as set forth.



3. A valve comprising a casing having a lower supply port, an upper waste port and an intermediate service port, upper and lower valve pistons arranged in said casing and engaging the bore thereof only at their peripheries, means for reciprocating said pistons so that when raised the lower piston is arranged between the lower and intermediate ports and the upper piston is arranged above the upper port and when depressed the lower piston is arranged below the supply port and the upper piston is arranged between the upper and intermediate ports, and a tube which extends upwardly from the upper end of the valve casing and has a bore of larger diameter than said casing and through which said valve pistons are adapted to be inserted and removed from said casing, substantially as set forth.

4. A valve comprising a casing having its bore flaring or beveled upwardly at its upper end, a lower supply port, an upper waste port and an intermediate service port, upper and lower valve pistons arranged in said casing and engaging the bore thereof only at their peripheries, means for reciprocating said pistons so that when raised the lower piston is arranged between the lower and intermediate ports and the upper piston is arranged above the upper port and when depressed the lower piston is arranged below the supply port and the upper piston is arranged between the upper and intermediate ports, a tube which extends upwardly from the upper flaring end of the valve casing and has a bore of larger diameter than said casing and through which said valve pistons are adapted to be inserted or removed from said casing, substantially as set forth.

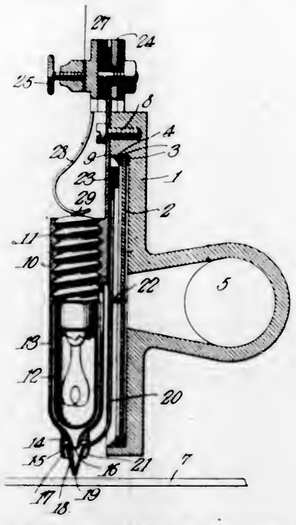
5. A valve comprising a casing having an inlet port and an outlet port, a piston arranged in said casing and controlling said ports, means for compressing a body of air during the opening movement of said piston, substantially as set forth.

6. A valve comprising a casing having a lower supply port, an upper waste port and an intermediate service port, upper and lower pistons arranged in said casing and controlling said ports, and a hollow stem connecting said pistons and having its upper end closed and its lower end opening into the lower end of the casing, whereby a body of air is imprisoned in said stem and compressed upon depressing said stem and pistons, substantially as set forth.

7. A valve comprising a casing having a lower supply port, an upper waste port and an intermediate service port, upper and lower cup-shaped pistons arranged in said casing and controlling said ports, and means for connecting and operating said pistons consisting of a reciprocating stem arranged in central openings in said pistons, a collar arranged on the stem and engaging the upper side of the upper piston, a spacing sleeve mounted on the stem and engaging its upper end with the under side of the upper piston and its lower end with the upper side of the lower piston, and a screw nut arranged on the lower end of the stem and engaging with the under side of the lower piston, substantially as set forth.

8. A valve comprising a casing having a lower supply port, an upper waste port, a service port between the supply and waste ports and a relief port above the waste port, an upper valve piston movable past said waste port, a lower valve piston movable past said supply port, and means for operating said valve pistons, substantially as set forth.

856,553. MEANS FOR RECORDING SOUNDS. WAYNE L. STILWELL, Millersburg, Ohio. Filed Feb. 19, 1907. Serial No. 358,221.



Claim.—1. In a sound-recording mechanism, a sound box, a source of actinic light carried thereby, means for directing said light against a photo-sensitive surface, and means for causing said light to move in a sinuous path along said photo-sensitive surface in accordance with sound waves.

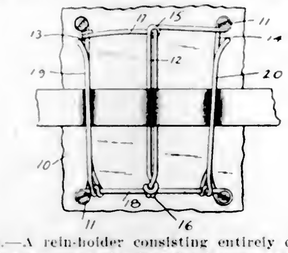
2. In a sound-recording mechanism, a sound box a source of actinic light carried thereby, a sound-receiving diaphragm, and means for directing said light against a photographically-sensitive surface in a direction at right angles to the plane of said diaphragm and for causing said light to move along said photo-sensitive surface in a sinuous path in a plane parallel with the plane of vibration of said diaphragm under the action of sound waves.

3. In a sound recording mechanism, a sound box, a diaphragm carried thereby, a source of actinic light carried by the sound box, and a light directing member coacting with the source of light and connected to and constrained by the diaphragm to direct light beams upon a photographic surface in accordance with sound waves impinging on said diaphragm.

4. In a sound recording mechanism, a sound box, a diaphragm carried thereby, an electric lamp carried by said sound box, an opaque casing for the electric lamp having a light passage, an arm attached to the sound box, and a light conveyer in line with said light passage and carried by said arm.

5. In a sound recording mechanism, a sound box, a diaphragm carried thereby, an electric lamp carried by said sound box, electric circuit terminals carried by said sound box and connected with said lamp, an opaque shield for said lamp having a light opening, an arm attached to said diaphragm, and a light directing member having an opening for projecting a beam of light upon a photo-sensitive surface and carried by said arm, said light projecting member being constrained by the movement of the diaphragm to move with relation to the photo sensitive surface to cause the light beam to travel in a sinuous path corresponding to sound waves.

856,554. REIN-HOLDER. GEORGE STOCKHILL, Fort Keogh, Mont. Filed Mar. 4, 1907. Serial No. 360,407.



Claim.—A rein-holder consisting entirely of wire, and comprising a rectangular base having eyes at its corners, a central bar offset from the base and connected therewith at both ends, and spring fingers connected with the base at their lower ends, and extended up on the opposite sides of the central bar on a plane nearer the base than the central bar, the upper ends of the fingers being free.

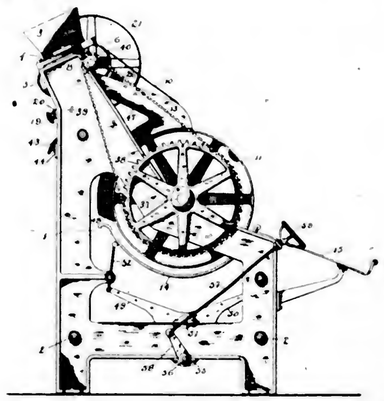
856,555. DOUGH-MOLDING MACHINE. CHARLES A. THOMSON, Belleville, N. J. Filed July 25, 1906. Serial No. 327,641.

Claim.—1. In a dough molding machine, the combination with means for rolling a sheet of dough, curling the same, and kneading it into a loaf, of a rotatable drum and a compression plate forming with said drum a space open at or toward the ends of the drum, said space being adapted to receive the loaf from the shaping means.

2. In a dough molding machine, the combination with means for shaping a cylindrical loaf, of a drum, a compression plate forming with said drum a space which is not limited laterally, the said compression plate being adjustable toward and away from the drum and being located to receive the dough from said shaping means.

3. In a dough molding machine, the combination with means for rolling dough into a sheet and curling said sheet spirally, of a rotatable drum, shaping means forming with said drum a closed passage way for the dough, and a compression plate forming with said drum a passage way for the dough which is open at its sides, said compression plate being adapted to receive the dough from the shaping means.

4. In a dough molding machine, the combination with means for rolling dough into a sheet and means for curling said sheet spirally, of a rotatable drum, means forming with said drum a closed passage way adapted to receive the dough from the said curling means, and a compression plate forming with the drum a passage way for dough adjacent at one end to the said shaping means and being without lateral restrictions for the dough, said compression plate being adjustable toward and away from the drum.



5. In a dough molding machine, the combination with means for rolling dough into a sheet and curling the same spirally, of a rotatable drum, a pressure plate adjustable toward and away from the drum and adapted to receive the dough between itself and said drum, guards at the sides of said pressure plate adapted to shape the ends of the loaf, and a compression plate beyond said pressure plate and adjustable independently of the same to form with the drum a continued passage for the dough, said last mentioned passage being devoid of lateral walls or restrictions and the compression plate being adjustable toward and away from the drum.

6. In a dough molding machine, the combination with means for shaping a loaf, of a drum, a compression plate adjacent to the lower peripheral part of said drum, a shaft centrally disposed beneath said drum and compression plate, levers fulcrumed on said shaft and projecting oppositely therefrom, pivoted boxes on the frame of the machine, slide bars extending through said boxes and connecting the outer ends of said levers to the compression plate, and means simultaneously engaging the inner ends of said levers to swing the same.

7. In a dough molding machine, the combination with means for shaping a loaf, of a drum, a compression plate adjacent to the lower part of the periphery of said drum, a shaft centrally disposed beneath said drum and compression plate in fixed relation to the drum, levers fulcrumed on said shaft and projecting one on each side thereof and being pivotally connected at their outer ends to said compression plate, means adapted to simultaneously engage the inner ends of said levers or ends opposite those connected to the compression plate to swing said levers, and means for rotating said drum.

8. In a dough molding machine, the combination with means for shaping a loaf, said means including a rotatable drum, of a compression plate adjacent to the lower part of the periphery of said drum, a shaft centrally disposed beneath said drum and compression plate, levers mounted on said shaft and connected at their outer ends to said compression plate, a second shaft, cams upon said second shaft adapted to engage the inner ends of the said levers to swing the same, and means for turning said second shaft.

9. In a dough molding machine, the combination with side plates 1, 1, of a drum mounted between said side plates, a shaping plate adjustable toward and away from said drum at one side and being narrow in comparison

with said drum, guards at the sides of said pressure plate whereby a closed passage is provided, a compression plate adjacent to the drum at a point beyond and adjacent to said pressure plate, said compression plate being of greater width than the pressure plate and forming with the drum a passage which allows lateral extension of the dough, and means for adjusting said compression plate.

10. In a dough molding machine, the combination with means for rolling a piece of dough flat and curling the same spirally, of a single drum, fixed guards forming for a circumferential portion of the drum a narrow passage way, a pressure plate adjustable between said guards toward and away from the drum, and a compression plate beyond and adjacent to said pressure plate, forming with the drum a passage wider than that between the said guards and having no lateral walls.

11. In a dough molding machine, the combination with a hopper, of gaging rollers to receive between themselves the dough from said hopper and roll the same into a sheet, an inclined plate to receive said sheet of dough and a yielding belt parallel to said plate and providing a moving surface which forms with the plate a passage-way between themselves for the dough.

12. In a dough molding machine, the combination with means for rolling the dough into a sheet, of a fixed inclined curling plate adapted to receive the sheet of dough, a belt contiguous to said plate and adapted to engage the dough thereon, a frame carrying said belt and being hinged at one end to swing with respect to said belt, and means for driving said belt in the direction of travel of the dough.

13. In a dough molding machine, the combination with a hopper and gaging rollers, of a curling-plate, a frame above said curling plate hinged at one end and adapted to swing downward at the other end by gravity, and a traveling belt carried on said frame and forming with the curling plate a passageway for the dough.

14. In a dough molding machine, the combination of rollers adapted to form the dough into a sheet, a curling plate, a belt traveling around one of said rollers and forming with the said plate a passageway to receive the dough from the rollers, and means for driving said parts.

15. In a dough molding machine, the combination with a curling plate, of a belt running over two pulleys and forming with said plate a passageway for dough, an arm pivoted concentrically with one of said pulleys and supporting the other, whereby said last mentioned pulley is automatically adjustable with respect to the curling plate under the pressure of the dough.

16. In a dough molding machine, the combination with a curling plate, of a belt running over two pulleys and forming with said plate a passage way for dough, and arm pivoted concentrically with one of said rollers and supporting the other, and a plate carried by said arm to lie against the opposite face of said belt from the curling plate.

17. In a dough molding machine, the combination with shafts and rollers thereon, of an arm upon one of said shafts comprising adjustable sections and carrying a third roller in alinement with the others, a belt around the two rollers thus supported upon the same shaft, and a curling plate extending from a point adjacent to the other roller and forming with the said belt a passage for dough.

18. In a dough molding machine, the combination with shafts, rollers mounted on said shafts to coöperate in rolling dough into a sheet, an arm upon one of said shafts in adjustable sections and bent to have its extremity in alinement with the roller on said shaft, a third roller carried at the end of said arm, a belt around said rollers thus mounted on the same shaft, and a pressure plate extending from the other roller to form with said belt a passage way for dough.

19. In a dough molding machine, the combination with a hopper, of a curling plate, a frame above said curling plate hinged at its end next the said hopper, and a traveling belt carried on said frame and forming with the curling-plate a passageway for the dough.

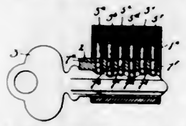
20. In a dough molding machine, the combination with an adjustable pressure plate and an adjustable compression plate, of a single drum forming with said pressure plate and said compression plate independent passages for shaping a loaf, and means for suppiying dough.

21. In a dough molding machine, the combination with a pair of rollers, of a belt running around one of said rollers, a curling plate extending from a point adjacent to the other roller to form with said belt a passage way for dough, and a scraper between said last mentioned roller and the curling plate, said scraper being pivoted upon an axis parallel to that of the roller and adapted at one side of said axis to bear against the roller, and a spring connecting said scraper on the opposite side of its axis to the curling plate.

22. In a dough molding machine, the combination with a curling plate and a traveling belt forming with said plate a passageway for dough, and a drum adjacent to the end of said passageway, of means located at the junction of said passageway and drum for guiding the dough over the circumference of said drum when the drum is stationary.

23. In a dough molding machine, the combination of a hopper, gaging rollers, means forming an inclined passage for the dough and adapted to roll or curl the same, and a drum located adjacent to the ends of said passage, of means for stopping the rotation of said drum independent of the other said parts, a guide located at the end of said passage adjacent to the drum and adapted to direct the dough in one direction around said drum or be removed to permit the dough to pass in the other direction, and means coöperating with said drum to form a loaf.

856,556. LOCK. HARRY P. TOWNSEND and WILBUR R. CORBIN, New Britain, Conn., assignors to Corbin Cabinet Lock Company, New Britain, Conn., a Corporation of Connecticut. Filed Jan. 31, 1907. Serial No. 354,973.



Claim.—1. In a pin tumbler lock, a hub, pin tumbler sections therein, a casing, two independent series of pin tumbler sections therein arranged to coöperate alternately with the pin sections in said hub each series of pin sections adapted to be operated by separate keys for rotating the hub in the same direction.

2. In a pin tumbler lock, a hub, pin tumbler sections therein, a casing, two independent series of pin tumbler sections therein arranged to coöperate alternately with the pin sections in said hub, and separate means to operate each of said series of pin sections to free the hub in the same direction.

3. In a pin tumbler lock, a hub, pin tumbler sections therein, a casing, two independent series of pin tumbler sections therein arranged to coöperate alternately with the pin sections in said hub, one series of independent pin sections adapted to be operated by a key for partially rotating the hub, and the other series of independent pin sections adapted to be operated by a different key for further rotating the hub in the same direction.

4. In a pin tumbler block, a hub, pin tumbler sections therein, a casing, a series of pin tumbler sections therein adapted to coöperate with the pin sections in said hub, said pin sections adapted to be operated by a key for rotating said hub, an additional series of pin tumbler sections carried by said casing adapted to engage said hub when freed from said first series, and said latter series of pin sections adapted to be operated by a different key for further rotating said hub in the same direction.

5. In a pin tumbler lock, a hub, pin tumbler sections therein, a casing, two independent series of pin tumbler sections therein arranged to coöperate alternately with the pin sections in said hub, the first independent series of pin sections adapted to be operated by a key for releasing and rotating said hub until engaged by the other independent series of sections, said hub being cut away on one side to allow the return thereof to the first position, and means carried by the casing preventing the hub when engaged by the first independent series of pin sections from being turned away from said second independent series of pin sections.

6. In a pin tumbler lock, a hub, pin tumbler sections carried in cavities therein, a casing, a series of pin tumbler sections carried in cavities therein adapted to coöperate with the pin sections in said hub, some of said pin sections provided with heads engaging shoulders in the cavities in which they are mounted to prevent said pins from entering the corresponding cavities in the hub, the headless pin sections adapted to be operated by a key for breaking joints with the pin sections in the hub and turning the same, additional series of pin tumbler sections carried in cavities in the casing adapted to coöperate with the pin sections in said hub, said last mentioned series of pin sections adapted to be operated by a different key for freeing the hub.

7. In a pin tumbler lock, a hub, pin tumbler sections carried in cavities therein, a casing, a series of pin tumbler sections carried in cavities therein and adapted to cooperate with the pin sections in the hub, said series of pin sections adapted to be operated by a key for freeing and turning said hub, a second series of pin tumbler sections carried in cavities in the casing adapted to coöperate with the pin sections in said hub, some of said pin sections having heads engaging shoulders in the cavities in which they are mounted to prevent said pins from entering the corresponding cavities in the hub, and additional means to operate the headless pin sections to break joints with the sections in the hub to free and turn the same.

8. In a pin tumbler lock, a hub, pin tumbler sections carried in cavities therein, a casing, two independent series of pin tumbler sections carried in cavities in said casing adapted to coöperate alternately with the pin sections in said hub, some of said pin sections in each of said independent series having heads engaging shoulders in the cavities in which they are mounted to prevent said pin sections from entering the corresponding cavities in the hub when alined therewith, and the headless pin sections in said casing adapted to be operated by separate keys for breaking joints with the pin sections in the hub and freeing the same from first one and then the other of said independent series of pin sections.

9. In a pin tumbler lock, a hub, pin tumbler sections carried in cavities therein, a casing, two independent series of pin tumbler sections carried in cavities in said casing adapted to coöperate alternately with the pin sections in said hub, some of said pin sections alternating in said series having heads engaging shoulders in the cavities in which they are mounted to prevent said pin sections from entering the corresponding cavities in the hub when alined therewith, the headless pin sections in said casing adapted to be operated by separate keys for breaking joints with the pin sections in the hub and freeing the same from first one and then the other of said independent series of pin sections.

10. In a pin tumbler lock, a hub, pin tumbler sections carried in cavities therein, a casing, a series of pin tumbler sections carried in cavities therein adapted to coöperate with the cavities in said hub, the said pin sections adapted to be operated by a key for breaking joints with the pin sections in the hub and turning the same, a second series of pin tumbler sections carried in cavities in the casing adapted to engage in the corresponding cavities in said hub when alined therewith to prevent further rotation, the hub being cut away on one side of the cavities engaged thereby to allow reverse rotation of said hub, and said last named series of pin sections adapted to be operated by a different key for breaking joints with the pin sections in the hub and freeing the same.

11. In a pin tumbler lock, a hub, pin tumbler sections movable therein, a hub casing, and two independent series of pin tumbler sections mounted in cavities therein arranged to coöperate independently with the pin sections in the hub the pin sections of the two series adapted to be operated by separate keys for rotating the hub in the same direction.

12. In a pin tumbler lock, a hub, pin tumbler sections movable therein, a hub casing, and two independent series of pin tumbler sections mounted in cavities therein arranged to coöperate independently with the pin sections in the hub, some of said pin sections in each series in the casing being provided with means preventing them from extending into the corresponding cavities in the hub when alined therewith.

13. In a pin tumbler lock, a hub, pin tumbler sections mounted in cavities therein, a casing, two independent series of pin tumbler sections therein arranged to coöperate independently with the pin sections in the hub, and a plurality of pin sections in each series in the casing provided with means preventing said pin sections from entering the corresponding cavities in the hub when alined therewith, said pin sections so positioned that no two pin sections in the two series correspond.

14. In a pin tumbler lock, a hub, pin tumbler sections mounted in the cavities therein, a casing, two independent series of pin tumbler sections mounted in the cavities therein arranged to coöperate alternately with the pin sections in the hub, some of said pin sections in each series in the casing being provided with means coacting with the cavities in which they are mounted preventing them from extending into the corresponding cavities in the hub when alined therewith.

15. In a pin tumbler lock, a hub, pin tumbler sections mounted in cavities therein, a casing, two independent series of corresponding pin tumbler sections mounted in cavities therein arranged to coöperate alternately with the pin sections in the hub, and alternating pin sections in each series in the casing provided with means preventing said pin sections from entering the corresponding cavities in the hub when alined therewith.

16. In a pin tumbler lock, a hub, pin tumbler sections mounted in cavities therein, a casing, two independent series of corresponding pin tumbler sections mounted in cavities therein arranged to coöperate alternately with the pin sections in the hub, and alternate pin sections in each series in the casing provided with means restricting them from entering the corresponding cavities in the hub when alined therewith, the said restricted pin sections in one series alternating with the restricted pin sections in the other series.

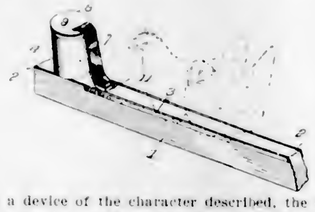
17. In a pin and tumbler lock, a hub, pin tumbler sections therein, a casing, a series of pin tumbler sections therein arranged to coöperate with the pin sections in the hub and adapted to be operated by a key for rotating said hub, and a second series of pin sections in the casing arranged to coöperate with the pin sections in the hub to lock the same from further rotation in one direction, said second series of pin sections adapted to be operated by a different key for further rotating the hub.

18. In a pin and tumbler lock, a hub, pin tumbler sections therein, a casing, a series of pin tumbler sections therein arranged to coöperate with the pin sections in the hub and adapted to be operated by a key for rotating said hub, a second series of pin sections in the casing arranged to coöperate with the pin sections in the hub to lock the same from further rotation in one direction, said second series of pin sections adapted to be operated by a different key for further rotating the hub in both directions, and means securing the hub against counter-rotation beyond the first of said series of pin sections.

856,557. VERMIN-EXTERMINATOR. ROSELLA W. TOWNSEND, Salem, Ohio. Filed May 24, 1906. Serial No. 318,590.

Claim.—1. In a device of the character described, the combination of a perch, a strip of absorbent material extending along the perch, a tank located adjacent the perch and containing a liquid insecticide, a cover for the tank provided with a cut away portion, a wick passing through the cut away portion in the cover and leading from the tank, the said wick being adapted to be brought into contact with the absorbent strip, whereby the latter can be saturated with the insecticide, and enlargements at the extremities of the wick which engage with the cut away

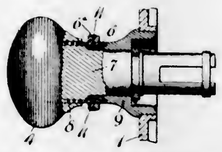
portion of the cover and prevent the wick from sliding out of position.



2. In a device of the character described, the combination of a perch, a strip of absorbent material extending along the perch, a tank having a threaded projection upon one side thereof by means of which it is secured to the perch, and a wick leading from the tank and adapted to be brought into contact with the absorbent strip whereby the latter can be saturated with the insecticide.

3. In a device of the character described, the combination of a perch, a strip of absorbent material extending along the perch, a tank having a screw secured thereto by means of which it is connected to the perch, the said tank containing a liquid insecticide, a cover for the tank provided with a cut away portion, a wick passing through the cut away portion of the cover and connecting the liquid insecticide within the tank and the absorbent strip extending along the perch, and enlargements at the extremities of the wick which engage with the cut away portion of the cover and prevent the wick from slipping within the tank or falling out of position.

856,558. SECRET-LATCH MECHANISM. HENRY G. VOIGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Jan. 23, 1907. Serial No. 353,592.



Claim.—1. In a device of the character described, a knob having a shank, a non-rotatable rose plate or bearing for said shank, a retractable coupling device between said shank and said bearing, the said coupling device in one position interlocking the knob with said non-rotatable bearing and when in another position freeing said parts, said shank having a concealed groove or recess, a locking lug, and a knob shank bearing having a concealed groove or recess for a locking lug, and locking lugs carried by said coupling device and adapted to said grooves or recesses.

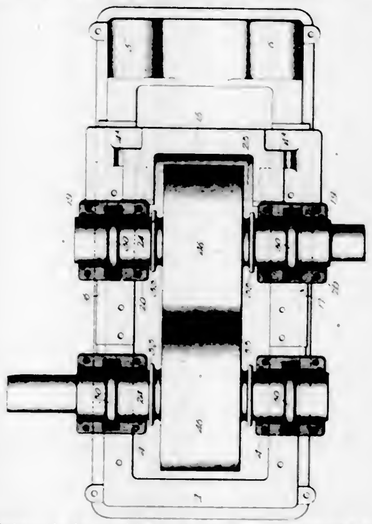
2. In a device of the character described, a knob having a shank and non-rotatable rose plate or bearing for said shank and retractable coupling device between said shank and said bearing, said shank having a groove or recess and concealed lug on the inner side of said coupling device, adapted for movement in said groove, said bearing having a notch to receive said lug in one position to lock the bearing and shank.

3. In a device of the character described, a knob having a shank and non-rotatable rose plate or bearing for said shank, a locking ring slidably mounted on said shank, said bearing provided with a reduced portion extending under said ring, and lug depending from the interior of said ring, and groove or recess in said shank receiving and guiding said lug and a notch in the reduced portion of said bearing, adapted to be engaged by said lug.

4. In a device of the character described, a knob having a shank and non-rotatable rose plate or bearing for said shank, a locking ring slidably mounted on said shank, said bearing provided with a reduced portion entering under said ring, said knob having a groove adapted to receive and conceal said ring, a spring in said groove normally pressing against said ring, a lug depending from the interior of said ring, a groove or recess in said shank receiving and guiding said lug, and a notch in the reduced portion of said bearing adapted to be engaged by said lug.

5. In a device of the character described, a knob having a shank and a groove extending into said knob, and rose plate or bearing for said shank having a reduced extremity, a ring adapted to slide upon both shank and reduced portion of said bearing and partially contained within said groove, a spring within said groove pressing upon said ring, a lug carried on the inner side of said ring, a groove provided in the shank to receive and guide said lug, and a notch provided in the reduced portion of the bearing adapted to be engaged by said lug in one position to lock the said parts.

856,559. CRUSHING-ROLLS FOR ORE, ROCK, AND OTHER MATERIAL. THOMAS C. WALKER, Jr., Denver, Colo. Filed May 18, 1906. Serial No. 317,650.

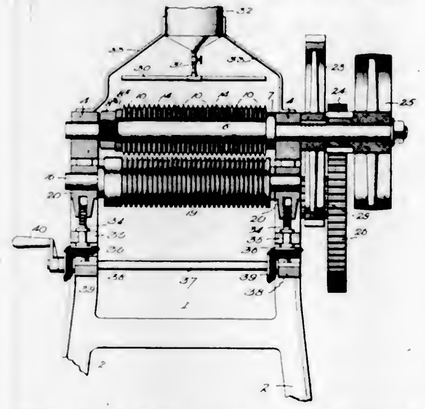


Claim.—1. In crushing rolls, the combination of a girder box frame, having a guideway, a fixed roll, a saddle slidably mounted in said frame and guideway, an adjustable resilient buffer device for said saddle, and a roll mounted in said saddle in crushing relation to said fixed roll, with shafts forming a part of said rolls and provided with journal collars, journal boxes adapted to support said shafts, recesses in said boxes adapted to receive the journal collars of said shafts, and a lining of Babbitt metal in said boxes and recesses around said shafts and their journal collars, as specified.

2. In crushing rolls, the combination with the frame and the sliding saddle, journal boxes on said frame and saddle, a raised band portion on the central portion of each of said boxes, a circumferential recess in each box within said bands, a roll carrying shaft babbitted in each pair of boxes, and a tapering collar on each shaft babbitted in the recess of each band, as specified.

3. In crushing rolls, the combination with the frame, the saddle slidably mounted thereon and provided with a resilient buffer device, and journal boxes on said frame and saddle, provided with circumferential recesses, of the shafts and crushing rolls journaled in said journal boxes, the tapering wedge-shaped collars on said shafts extending into said circumferential recesses, said recesses acting as abutments for said collars and being adapted to prevent lateral thrust of said rolls and shafts, a housing surrounding the sides of said rolls and collars on each side of each roll under said housing arranged and adapted to prevent material falling from said rolls from working to and into said journal boxes, as specified.

856,560. ROTARY-DIE MACHINE FOR MAKING SLOTTED SCREENS. THOMAS C. WALKER, Jr., Denver, Colo. Filed Nov. 14, 1906. Serial No. 343,393.

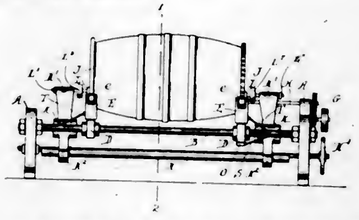


Claim.—In a slotted screen manufacturing machine, the combination of the supporting frame, with a pair of rotary and coöperating slot cutting die rollers mounted and journaled on said frame in vertical alinement to automatically feed sheet metal plates between and through them, gears arranged to rotate one of said rollers, a pulley arranged to drive said gears and roller, sliding boxes arranged to support one of said die rollers, guide ways in which said sliding boxes are seated, threaded rods arranged to raise or lower said sliding boxes and roller to or from said other die roller, means including gearing for rotating said threaded rods to raise or lower the opposite ends of said die roller simultaneously and in parallel alinement with said other die roller, and a plurality of independent and removable wedge-shaped toothed disks arranged to taper equally from the sides of said disk to a short centrally positioned cutting edge, a clearance space in the flanks of each tooth of each disk, said slot cutting teeth being arranged in any predetermined order and distance apart, both circumferentially and longitudinally of said roller's axis, a table on said supporting frame arranged in a horizontal plane tangent to the peripheries of said coöperating rollers when in operative slot-cutting relation, a sheet metal supporting roller at the opposite ends of said table, and a guide line on said rollers and table arranged and adapted to squarely start each sheet metal plate into said die rollers.

856,561. MACHINE FOR USE IN CHIMING AND CROZING BARRELS. CHARLES J. ALLEY, Farndon, New Zealand. Filed Nov. 1, 1905. Serial No. 285,385.

Claim.—1. In machines for use in chiming, crozing and howeling barrels, a pair of barrel-carrying heads mounted on parallel horizontal bars and capable of sliding movement thereon, a pair of upwardly extending frames secured upon the top face of each head and supporting rollers on horizontal axes at their upper ends, and the front one of which frames is pivoted so as to be capable of turning in a horizontal plane and means for rotating a barrel supported on the rollers, substantially as specified.

2. In machines for use in chiming, crozing, and howeling barrels, a pair of barrel-carrying heads mounted on parallel horizontal bars and capable of sliding movement thereon, a pair of upwardly extending frames secured upon the top face of each head and supporting rollers on horizontal axes at their upper ends, and the front one of which frames is pivoted so as to be capable of turning in a horizontal plane and means for rotating a barrel supported on the rollers, in combination with cutter carriers mounted on one of the horizontal bars, one at each end of the machine, and capable of sliding movement thereon, substantially as specified.



3. In machines for use in chiming, crozing, and howeling barrels, a pair of barrel-carrying heads mounted on parallel horizontal bars and capable of sliding movement thereon, a pair of upwardly extending frames secured upon the top face of each head and supporting rollers on horizontal axes at their upper ends, and the front one of which frames is pivoted so as to be capable of turning in a horizontal plane and means for rotating a barrel supported on the rollers, in combination with cutter carriers mounted on one of the horizontal bars, one at each end of the machine, and capable of sliding movement thereon, and means whereby the cutter carriers may be moved in an outward direction simultaneously with the outward turning of the pivoted frames and moved in a reverse direction upon the closing of such frames, substantially as specified.

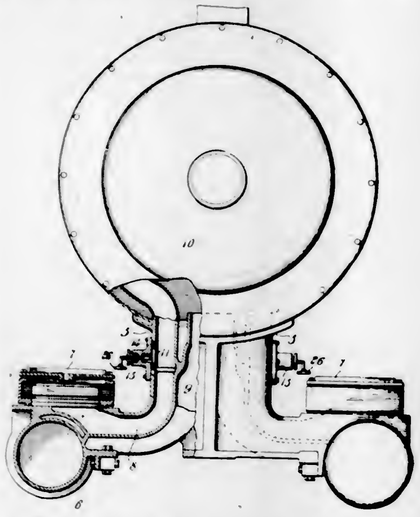
4. In machines for use in chiming, crozing and howeling barrels, a pair of barrel-carrying heads mounted on parallel horizontal bars and capable of sliding movement thereon, a pair of upwardly extending frames secured upon the top face of each head and supporting rollers on horizontal axes at their upper ends, and the front one of which frames is pivoted so as to be capable of turning in a horizontal plane, and means for rotating a barrel supported on the rollers in combination with cutter carriers mounted on one of the horizontal bars, one at each end of the machine, and capable of sliding movement thereon, rods connecting the cutter carriers and pivoted frames at each end together, a lever arm pivoted on the machine and rods connecting the respective cutter carriers to the lever on opposite sides of its pivot, substantially as specified.

5. In machines for use in chiming, crozing and howeling barrels, a pair of barrel-carrying heads mounted on parallel horizontal bars and capable of sliding movement thereon, a pair of upwardly extending frames secured upon the top face of each head and supporting rollers on horizontal axes at their upper ends, and the front one of which frames is pivoted so as to be capable of turning in a horizontal plane, and means for rotating a barrel supported on the rollers, in combination with cutter carriers mounted on one of the horizontal bars, one at each end of the machine, and capable of sliding movement thereon, such cutter carriers being each formed with an upwardly extending portion adapted to support a cutter head and with a downwardly extending portion formed with a slot therein, and an eccentric shaft passing through such slots and provided with means whereby it may be turned, substantially as specified.

856,562. SAFETY-VALVE FOR LOCOMOTIVES. ROY ANDERSON, Charleston, Ill. Filed Jan. 31, 1907. Serial No. 355,121.

Claim.—1. In a locomotive, the combination with the steam chests, of a cylinder saddle having independent steam passages communicating with the steam chests, respectively, and a cut off valve extending through the walls

of the saddle at each steam passage for controlling the supply of steam to the steam-chests.



2. In a locomotive, the combination with the steam chest, of a cylinder saddle having a steam passage communicating with the steam chest, a valve mounted in the passage for controlling the supply of steam to the steam chest, a stem extending through the walls of the saddle for moving the valve to operative and inoperative position and an operating member pivotally connected with the valve stem and supported in alinement with said valve stem when the valve is in closed position.

3. In a locomotive, the combination with the steam chest, of a saddle having a steam passage communicating with the steam chest, a valve pivotally mounted for swinging movement within the passage for controlling the supply of steam to the steam chest, a valve stem extending through the walls of the saddle, and a pivotal connection between the valve and valve stem.

4. In a locomotive, the combination with the steam chest, of a cylinder saddle having a steam passage communicating with the steam chest there being an opening formed in the walls of the saddle at said steam passage, a cap secured to the saddle and normally closing the opening, a valve arranged within the steam passage and seated within the opening when the valve is moved to open position, and a valve stem threaded in the cap and pivotally connected with the valve for moving the latter to open and closed position.

5. In a locomotive, the combination with the steam chest, of a cylinder saddle having a steam passage, there being an opening formed in the walls of the saddle and communicating with the steam passage, a cap secured to the saddle at said opening, a valve, a valve stem mounted for rotation in the cap, a collar secured to one end of the valve, and a link forming a pivotal connection between the collar and valve.

6. In a locomotive, the combination with the steam chest, of a cylinder saddle having a steam passage, there being an opening in the walls of the saddle and communicating with the steam passage, a cap secured to the saddle at said opening and provided with a seating recess, a valve stem threaded in the cap, a valve arranged within the steam passage, a collar secured to the inner end of the valve stem and adapted to enter the recess in the cap when the valve is moved to open position, and a pivotal connection between the collar and the valve.

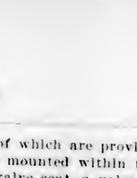
7. In a locomotive, the combination with the steam chest, of a cylinder saddle having a steam passage, the interior walls of which are provided with a valve seat, a valve pivotally mounted within the passage and adapted to engage the valve seat, a valve stem extending through the walls of the saddle, and a pivotal connection between the valve and valve stem.

8. In a locomotive, the combination with the steam chest, of a cylinder saddle having a steam passage, the walls of which are provided with a valve seat, a valve pivotally mounted for swinging movement within the steam passage and adapted to engage the valve seat, a cap secured to the walls of the saddle and provided with a seating recess, a valve stem mounted for rotation in the cap, a collar secured to the inner end of the valve stem, a ring loosely mounted on the collar, and a pivotal connection between the ring and valve.

9. In a locomotive, the combination with the steam chest, of a cylinder saddle having a steam passage, the interior walls of which are provided with a valve seat, a valve pivotally mounted for swinging movement within the steam passage and adapted to engage said seat, a valve stem extending through the walls of the saddle and provided with a pivoted section, and a pivotal connection between the inner end of the valve stem and the valve.

10. In a locomotive, the combination with the steam chest, of a cylinder saddle having a steam passage, the interior walls of which are provided with a valve seat, there being an opening formed in the walls of the saddle and communicating with the passage, said opening being adapted to receive the valve when the latter is in open position, a cap secured to the saddle at said opening, a gland seated in one end of the cap, a valve stem threaded in the cap and extending through said gland, a collar secured to the inner end of the valve stem, a ring loosely mounted on the collar and provided with oppositely disposed trunnions, links forming a pivotal connection between the trunnions and the valve, and an operating handle pivotally connected with the valve stem and movable into alinement with the valve stem when said valve is moved to closed position.

856,563. FRICTION DEVICE. VINCENT G. APPLE, Dayton, Ohio, assignor to National Brake and Clutch Company, Boston, Mass., a Corporation. Filed Apr. 3, 1907. Serial No. 366,167.



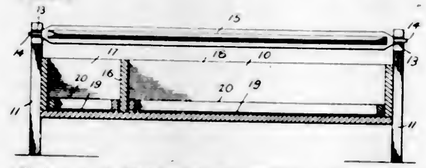
Claim.—1. As an improved article of manufacture, a composite pulley having metallic side pieces, an intermediate portion of compressed cork projecting beyond the edge of the metallic side pieces, and non-metallic pieces interposed between the metallic side pieces and the cork and extended beyond said metallic side pieces, and means to secure said metallic pieces together, substantially as described.

2. As an improved article of manufacture, a composite pulley having side pieces of rigid material, and a rigid piece intermediate said side pieces, a compressed cork portion between said rigid piece and said side pieces and projecting beyond the latter, non-metallic pieces interposed between said side pieces and said cork portion and supporting the latter beyond the said side pieces, substantially as described.

3. As an improved article of manufacture, a composite friction device having side pieces of rigid material, a compressed cork portion between said side pieces and projecting beyond the same, and non-metallic supporting pieces for the projecting portions of said cork interposed between the same and said side pieces.

4. As an improved article of manufacture, a composite friction device having side pieces of rigid material, a compressed cork portion between said side pieces and projecting beyond the same, and pieces of firm leather interposed between said cork portion and said side pieces and projecting beyond said side pieces to re-inforce or support the projecting cork portion, substantially as described.

856,564. FEED-TROUGH FOR POULTRY. CHARLES E. BAESE, Wilmington, Ill. Filed Dec. 5, 1906. Serial No. 346,489.



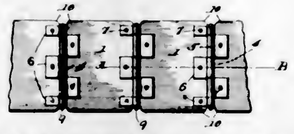
Claim.—1. A feed-trough for poultry provided with a rotary rail supported above the trough, intermediate of the plane of its sides.

2. A trough-feed for poultry provided with a rotary and longitudinally tinted rail supported above the trough intermediate of the plane of its sides.

3. A feed-trough for poultry provided with a screen-like follower adapted to be placed on top of the food in the trough, the openings through the screen being sufficiently large to permit the fowls to peck the food therethrough.

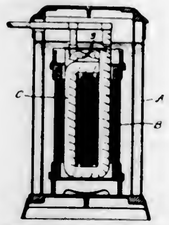
4. A feed-trough for poultry comprising the trough proper, legs of inverted V form secured to the ends thereof, the apexes of said legs extending above the top of the box, and a rotary rail having journaled ends supported in bearings in said apexes.

856,565. STEEL METALLIC BELTING. ULIN S. BALCH, Carterville, Mo. Filed Mar. 19, 1906. Serial No. 306,918.



Claim.—A driving belt for plane face pulleys, constructed of a series of flat metallic links having complemental hinge members connecting pintles for said hinged members the corners of said links being rounded and the said hinge members and their connecting pintles being arranged upon the outer face of the belt, the pintles being shorter than the width of the belt and the inner faces of the links forming a continuous uninterrupted active surface for engagement with the plane face of the pulley.

856,566. WINDINGS FOR ELECTRICAL APPARATUS. MINER BARCUS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Oct. 31, 1906. Serial No. 341,408.



Claim.—1. A winding for electrical apparatus comprising a plurality of sections each composed of a plurality of insulated strands arranged one outside the other, a portion of the strands of each section being connected to form a stranded conductor common to all of said sections and the remaining strands being connected to form a plurality of conductors each common to a portion only of said sections.

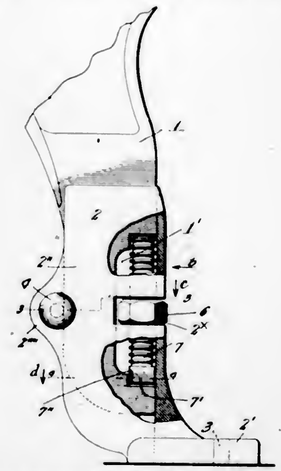
2. A winding for electrical apparatus comprising a plurality of sections each composed of a plurality of insulated strands arranged one outside the other, a portion of the strands of each section being connected to form a stranded conductor common to all of said sections and the remaining strands being connected to form a plurality of conductors each common to a portion only of said sections, said last mentioned conductors being connected in parallel with each other and in series with the first mentioned conductor.

3. A winding for electrical apparatus comprising a plurality of sections each composed of a plurality of insulated strands of equal cross-section arranged one outside the other, the greater portion of the strands of each section being connected to form a stranded conductor common to all of said sections and the remaining strands being connected to form a plurality of conductors each common to a portion only of said sections, said last mentioned conductors being connected in parallel with each other and in series with the first mentioned conductor.

4. A winding for electrical apparatus comprising a plurality of sections each composed of a plurality of insulated strands arranged one outside the other, the inner strands of each section being connected to form a stranded conductor common to all of said sections and the outer strands being connected to form a plurality of conductors each common to a portion only of said sections.

5. A winding for electrical apparatus comprising a plurality of sections each composed of a plurality of insulated strands arranged one outside the other, the inner strands of each section being connected to form a stranded conductor common to all of said sections and the outer strands being connected to form a plurality of conductors each common to a portion only of said sections, the first mentioned conductor being twisted intermediate its ends so that the outside strand on one side of the twist is the inside strand on the other side of the twist.

856,567. ADJUSTING DEVICE. HERBERT G. BERDE, Pawtucket, R. I. Filed Dec. 1, 1905. Serial No. 289,784.



Claim.—1. An adjusting device adapted to be attached to a leg or support for adjusting the same, and comprising a base or shoe portion, a leg portion, and an adjusting screw made separate therefrom and held from rotating, a nut on said screw extending in a recess in the leg portion

to move said screw longitudinally, and with it the leg or support to be adjusted.

2. The combination with a leg or support, of an adjusting device, comprising a base or shoe portion to be secured in a stationary position, and a leg portion recessed to receive the leg or support to be adjusted, and an adjusting screw made separate from said shoe and leg portion, and engaging the leg or support to be adjusted, and held from rotating, a nut on said screw having a bearing on the leg portion of the adjusting device, to move said screw longitudinally and with it the leg or support to be adjusted.

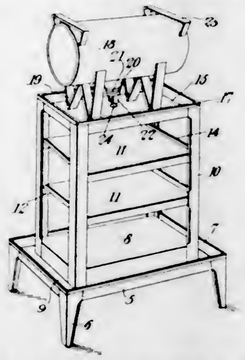
3. An adjusting device adapted to be attached to a leg or support for the adjustment thereof, and comprising a base or leg portion, and an adjusting screw made separate therefrom and held from rotating, a nut on said screw extending in a recess in the leg portion to move said screw longitudinally, and with it the leg or support to be adjusted.

4. An adjusting device adapted to be attached to a leg or support for the adjustment thereof, and comprising a base or shoe portion, a leg portion, and an adjusting screw made separate therefrom and held from rotating, a nut on said screw extending in a recess in the leg portion, to move said screw longitudinally and with it the leg or support to be adjusted, and means independent of the adjusting screw for securing the leg or support to the adjusting device after the adjustment of said leg or support.

5. An adjusting device adapted to be attached to a leg or support for the adjustment thereof, and comprising a base or shoe portion, a leg portion, and an adjusting screw made separate therefrom and held from rotating, a nut on said screw extending in a recess in the leg portion, to move said screw longitudinally and with it the leg or support to be adjusted, and a bolt and nut for securing the leg or support to the adjusting device after the adjustment of said leg or support.

6. The combination with a leg or support, of an adjusting device, comprising a base or shoe portion to be secured in a stationary position, and a leg portion recessed to receive the leg or support to be adjusted, an adjusting screw made separate from said shoe and leg portion, and engaging the leg or support to be adjusted, and held from rotating, a nut on said screw having a bearing on the leg portion of the adjusting device, to move said screw longitudinally, and with it the leg or support to be adjusted, and means independent of the adjusting screw for securing the leg and support rigidly to the adjusting device after the adjustment of said leg or support.

856,568. REFRIGERATOR. MARCELLUS J. BUNNELL, Taylor, Tex. Filed Aug. 11, 1906. Serial No. 330,194.

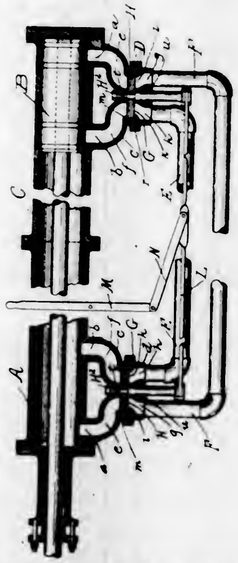


Claim.—1. A refrigerator comprising a base provided with a trough and having a central rectangular projection the upper face of which constitutes a stationary supporting shelf, angle bars secured to the corners of the projections and forming standards, horizontally disposed bars connecting said standards, removable shelves supported by the horizontal bars and provided with oppositely projecting longitudinal and transverse flanges, a liquid containing pan mounted on the free ends of the standards, a fabric jacket surrounding the walls of the refrigerator and having its lower edge seated in the trough, and a drain spout communicating with the interior of the trough.

2. A refrigerator comprising a base having a central up-struck portion defining a marginal trough, standards secured to the base of said up-struck portion, horizontally disposed angle bars connecting the standards, removable shelves supported on the angle bars and having their longitudinal edges bent downwardly to form flanges for engagement with the horizontal angle bars and their opposite ends bent upwardly to form terminal flanges, a liquid containing pan mounted on the free ends of the standards, a tank resting on the bottom of the pan for automatically supplying the latter with liquid, and a fabric jacket surrounding the walls of the refrigerator and having its upper edge immersed in the liquid in the pan and its lower edge disposed at said trough.

3. A refrigerator comprising a base formed of a single sheet of metal having its central portion up-struck to form a central rectangular projection and provided with an integral marginal rim defining a trough, angle bars secured to the base at the corners of said projection and forming standards, horizontal angle bars connecting the standards, shelves resting on the horizontal bars and having their opposite ends bent upwardly and their longitudinal edges bent downwardly to form depending flanges for engagement with said horizontal angle bars, a liquid containing pan having a terminal flange for engagement with the free ends of the standards, and a fabric jacket surrounding the walls of the refrigerator and having its upper end immersed in the liquid in said pan.

856,569. STEAM-FEED VALVE. ABEL D. CATLIN, Chattanooga, Tenn., assignor to Chattanooga Machinery Company, a Corporation of Tennessee. Filed Oct. 5, 1906. Serial No. 337,601.

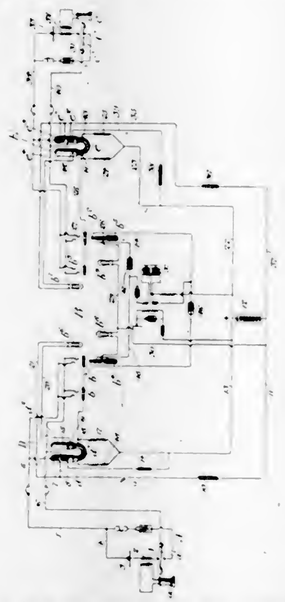


Claim.—1. In a steam feed valve mechanism, the combination of a cylinder having an inlet port adjacent each end and an exhaust port considerably in advance of each end, means for supplying live steam to and receiving spent steam from said ports, respectively, an oscillating disk valve for each pair of cylinder ports having two ports adapted to communicate alternately with said cylinder ports, and connection between the valves for synchronizing the movement thereof.

2. In a steam feed valve mechanism, the combination of a cylinder having an inlet port adjacent each end and an exhaust port considerably in advance of such end, a valve chest at each end of the cylinder constituted of two separable sections forming between them a circular valve chamber, one section having two passages communicating with the cylinder ports and the other section having continuation passages, steam supply and exhaust pipes connected to said continuation passages, an oscillating disk valve disposed in each valve chamber and provided with a pair of ports disposed to open the passages alternately, and connection between the valves for synchronizing the movement thereof.

3. In a steam feed valve mechanism, the combination of a cylinder having an inlet port adjacent each end and an exhaust port considerably in advance of such end, a valve chest at each end of the cylinder constituted of two separable sections forming between them a circular valve chamber, one section having two passages passing through the top of the valve chamber and communicating with the cylinder ports and the other section having continuation passages passing through the bottom of the chamber, steam supply and exhaust means connected with said continuation passages, layers of packing interposed between the abutting faces of the two valve chest sections, an oscillating disk valve disposed in each valve chamber and provided with a pair of ports disposed to open the two sets of passages alternately, and connection between the valves for synchronizing the movement thereof.

856,570. TELEPHONE SYSTEM. FRANK B. COOK and JAMES G. NOLEN, Chicago, Ill.; said Nolen assignor to said Cook. Filed Feb. 2, 1903. Renewed May 17, 1905. Serial No. 260,857.



Claim.—1. In a telephone system, the combination of a subscriber's line, a line lamp signal, a centralized source of current connected with the line, a subscriber's hook-switch for opening and closing the line circuit, a normally open circuit including said lamp signal and source of current, and a non-inductive switch associated with the line at the central station and so connected with the line as to be controlled by said hook-switch, said local circuit also including the normally open contacts of said non-inductive switch.

2. In a telephone system, the combination of a subscriber's line circuit, means for supplying current to said circuit, a line lamp signal associated with the line at the central station, a normally open local circuit including said lamp and source of current, and a non-inductive circuit-closing device adapted to be operated by current flowing through said line circuit and adapted for closing said local circuit.

3. In a telephone system, the combination of a subscriber's line circuit, a centralized battery for supplying current to said line circuit, means at the subscriber's station for opening and closing the line circuit, an electro-thermal switch associated with the line at the central station and adapted to be controlled by the subscriber, and a line signal connected and arranged to be controlled by said switch.

4. In a telephone system, the combination of a subscriber's line circuit, means under the control of the subscriber for causing a flow of current in said line circuit, a visual signal associated with the line at the central station, and a thermal device for controlling the display of said signal, said device being in turn under the control of the subscriber.

5. In a telephone system, the combination of a subscriber's line circuit, means under the control of the subscriber for supplying current to said circuit, line and supervisory signals located at the central station, and a single non-inductive and non-magnetic electro-thermal circuit-closing device connected and arranged for controlling both of said signals, and adapted to be controlled by means located at the subscriber's station.

6. A telephone system comprising substations equipped with suitable substation apparatus, a central station equipped with suitable switchboard apparatus, suitable line connection between the switchboard apparatus and the substations, said switchboard apparatus including line and supervisory visual signals, and also including a plurality of electro-thermal switches, one for each line, adapted to be controlled by means located at the substations, and adapted in turn to control the display of said signals.

7. In a telephone system, and in combination with subscriber's telephones and operator's plugs and connecting cords and with a visual signal and a battery for operating the same at the central station, a circuit-closing device for said signal consisting of a hermetically sealed receptacle, and of a suitable heat concentrating member and expansive medium, together with suitable contacts and a conducting medium inclosed within said receptacle.

8. In a telephone system, and in combination with subscriber's telephone and operator's plugs and connecting cords and with a visual signal and a battery for operating the same at the central station, a circuit-closing device consisting of a hermetically sealed receptacle, and of a heat-coil and expansive medium, together with suitable contacts and a conducting medium, included within said receptacle.

9. In a telephone system, the combination of a subscriber's line circuit, a line lamp signal, a centralized source of current supply, a circuit-closing device for controlling the display of said signal, said device being under the control of means located at the subscriber's station, and including normally open contacts, an expansible medium and means for expanding the same, and a shiftable quantity of conductive liquid for closing said contacts.

10. In a telephone system, the combination of a subscriber's line circuit, centralized means under the control of the subscriber for supplying current to the line circuit, a line lamp signal, and a non-inductive, non-magnetic circuit-closing device for controlling the display of said signal, said device including normally open contacts an expansible medium and means for expanding the same and a conductive liquid for closing said contacts.

11. In a telephone system, the combination of a subscriber's line circuit, centralized means under the control

of the subscriber for supplying current to the line circuit, line and supervisory signals at the central station, and a non-inductive and non-magnetic electro-thermal circuit-closing device associated with the line at the central station, adapted for controlling the display of both the said signals, said device being arranged and connected to remain operated while the line circuit is closed.

12. In a telephone system, the combination of a subscriber's line circuit, a line lamp signal, a battery for supplying current for lighting said lamp, a circuit closing device for controlling the display of said signal also operated by current from said battery, said device including a shiftable quantity of conductive liquid, and a normally open local circuit including said lamp and battery, and also including said liquid.

13. In a telephone system, the combination of a subscriber's line circuit, centralized means under the control of the subscriber for supplying current to the line circuit, a line lamp signal, an electro-thermal switch under the control of the subscriber and adapted for controlling the display of said signal, said switch including a quantity of conductive liquid, an operator's cord-circuit having a receiver or head telephone connected with said means for supplying current, a jack connected with the subscriber's line provided with a test ring, and a normally open test circuit which includes said operator's head telephone, and which also includes said liquid.

14. In a telephone system, the combination of a plurality of subscribers' lines, means for supplying current, a line signal associated with each subscriber's line, electro-thermal switches for controlling the flow of current through said line signals, subscriber's manually operated switches for controlling the flow of current through said electro-thermal switches, and means for connecting the subscriber's lines one with the other, said electro-thermal switches each comprising a suitable resistance for generating heat, a confined body of gas associated with said resistance, suitable switch contacts, and means actuated by the expansion of said gas for operating said contacts.

15. In a telephone system, the combination of a plurality of subscribers' lines, means for connecting said lines one with the other, suitable circuit connections and means for supplying current, signaling devices for the said lines, and a self-restoring electro-thermally operated switch associated with each of said lines for operating the said signaling devices.

16. In a telephone system, the combination of a telephone line extending from a subscriber's station to a connection terminal at a central station, an electro-thermal switch and a source of electricity in circuit with a portion of the said line, a signaling device associated with the line and arranged to be operated by the said switch, a suitable connecting circuit for the line, and means for rendering the said signaling device inert while connection is made with the line.

17. In a telephone system, the combination of a telephone line extending from a sub-station to connection terminals at a central station, an electro-thermal switch and a source of electricity in a branch from the said line, a signaling device associated with the line and arranged to be operated by the said switch, a suitable connecting circuit for the line, and means for rendering the said signaling device inert when connection is made with the line.

18. In a telephone system, the combination of a metallic telephone line extending from a subscriber's station to a central station where each limb of the line terminates in a number of connection terminals in multiple, a branch from the said metallic line, an electro-thermal switch and a source of electricity in the said branch, a signaling device associated with the line and arranged to be operated by the said switch, a suitable plug-cord circuit for connecting the lines of the system, and means for rendering the said signaling device inert when connection is made with the line.

19. In a telephone system, a metallic line extending from a sub-station to a central station, an electro-thermal switch and a source of electricity bridged across the line, a signaling device arranged to be operated by the said switch, suitable connecting means for the line, and means for rendering the said signaling device inert when connection is made with the line.

20. In a telephone system, a metallic line extending from a substation to a central station, an electro-thermal switch and a source of electricity bridged across the line, a line signaling device arranged to be operated by the said switch, a plug-cord connecting circuit for the line, a supervisory signaling device associated with the plug-cord circuit, and circuit connections whereby one said signaling device shunts the other out when connection is made with the line and the line is in use.

21. A telephone line, an electro-thermal switch associated therewith, a line lamp associated with the line and connected in circuit with a source of electricity and normally open contacts of the switch, connecting means for the line, a supervisory lamp associated with the connecting means, the said switch being adapted and arranged to close the circuit of the said source through the line lamp when the line circuit is closed, and circuit connections whereby the supervisory lamp shunts the line lamp out and the line lamp shunts the supervisory lamp to keep it from displaying a signal, when connection is made with the line and the line is in use.

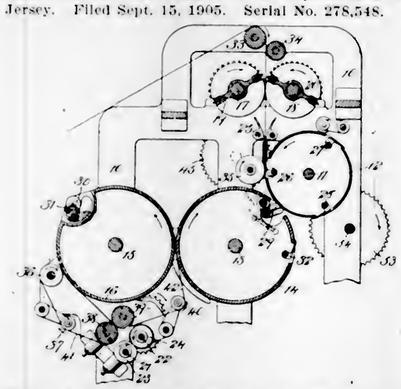
22. In a telephone system, a line extending from a subscriber's station to suitable spring jacks at a central station, an electro-thermal switch and a source of electricity bridged across the said line at the central station, a manually-operable switch at the subscriber's station, a line signaling device in circuit with a source of electricity and normally open contacts of the electro-thermal switch, a plug-cord connecting circuit for the line, a supervisory signaling device associated with the plug-cord circuit, the closing of the switch at the subscriber's station causing the electro-thermal switch to close the said normally open contacts and thereby cause the line signaling device to display a signal, and suitable circuit connections whereby the supervisory signaling device shunts the line signaling device and renders same inactive, and whereby the line signaling device shunts the supervisory signaling device and renders same inactive, substantially as described.

23. In a telephone system, a metallic line extending from a subscriber's station to suitable spring jacks at a central station, a transmitter, receiver, bell, and normally open switch at the subscriber's station, an electro-thermal switch and a source of electricity bridged across the limbs of the line at the central station, a line lamp in circuit with the said source of electricity and normally open contacts of the electro-thermal switch, a metallic plug-cord circuit for the line, terminating in suitable connecting plugs adapted to coöperate with the spring jacks, a test ring for each jack and all connected together and through a suitable resistance to the source of electricity, a third strand for each connecting cord, terminating in a third contact of its connecting plug and adapted to be connected with the test ring of a spring jack when connection is made with the line, a supervisory lamp in circuit with a said third strand and the source of electricity, and a suitable operator's circuit and busy-test arrangement for the plug-cord circuit, the closing of the normally open switch at the subscriber's station closing the circuit of the said source through the electro-thermal switch and thereby heating same and closing the said normally open contacts therein to light the line lamp, the connecting plug, when connected with a spring jack of the line, placing the line lamp and supervisory lamp in multiple whereby the supervisory lamp shunts the line lamp out and the line lamp shunts the supervisory lamp out, the opening of the switch at the subscriber's station restoring the electro-thermal switch to its normal condition and opening the circuit of the line lamp shunt about the supervisory lamp to allow the latter to glow.

24. The combination with a telephone line circuit, of an electro-thermally-operable device associated therewith and comprising a sealed chamber, heat-producing means within the said chamber, a gas within the said chamber arranged to be expanded by heat from the heat-producing means, a conducting liquid in the said chamber arranged to be moved by the expansion and contraction of the said gas, suitable circuit terminals within the said chamber arranged to be connected or disconnected by the conducting liquid, and suitable circuit connections to the said terminals; a line signaling device arranged to be operated by the said electro-thermally-operable device when the latter is heated by current over the line, and means for shunting the line signal out when connection is made with the line.

25. In a telephone system, the combination of a metallic line extending from a substation to the central station, a switch at the substation for closing and opening the circuit of the metallic line, an electro-thermally-operable device associated with the line at the central station and comprising a sealed chamber, heat-producing coils in circuit with the respective limbs of the metallic line and within the sealed chamber, a gas within the said chamber suitably disposed to be expanded by heat from the heat-producing coils, a conducting liquid in the said chamber suitably disposed to be shifted by the expansion and contraction of the said gas, suitable circuit terminals within the said chamber arranged to be connected or disconnected by the conducting liquid, and suitable circuit connections to the said terminals; impedance coils in circuit with the respective heat-producing coils, a source of electricity in circuit with the said impedance coils, the heat-producing coils, and the limbs of the metallic line, suitable connection terminals connected in multiple to the limbs of the line, a test ring for each connection terminal all connected together and through a resistance to the said source, a line signal lamp connected in circuit with normally disconnected terminals of the electro-thermally-operable device, the said source, and the said resistance; closing the switch at the substation causing the said device to close the last mentioned disconnected terminals and light the line lamp, a second resistance normally connected in multiple with the other said resistance and cut out of circuit with the said test rings by the said device when the latter is heated, a metallic plug-cord connecting circuit for the line, a third strand of a cord and plug, containing a supervisory signal lamp connected in circuit with the said source and arranged to be connected with the said test rings when connection is made with the line, the supervisory lamp now being connected in multiple with the line lamp and shunting the latter out, the line lamp also shunting the supervisory lamp to render it inert, and the electro-thermally-operable device opening the circuit of the line lamp and again placing the two said resistances in multiple in the supervisory lamp circuit to light the supervisory lamp, when the switch at the substation is again opened.

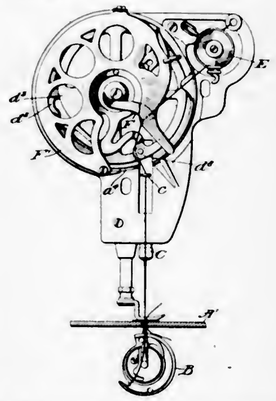
856,571. MACHINERY FOR CUTTING AND FOLDING PAPER AND OTHER MATERIAL. EDGAR H. COTTRELL, Stonington, Conn., assignor to C. B. Cottrell & Sons Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 15, 1905. Serial No. 278,548.



Claim.—1. In a folding machine, cutters for cutting sheets from a running web, a collecting cylinder, a plurality of sets of grippers thereon each set arranged to collect a plurality of sheets one at a time and one upon another directly from the cutters, a tucking cylinder, a single set of grippers thereon arranged to receive a single group of collected sheets from one of the sets of collecting cylinder grippers and a folding cylinder arranged to co-operate with the tucking cylinder for folding said single group of collected sheets as it is delivered from the tucking cylinder to the folding cylinder.

2. In a folding machine, cutters for cutting sheets from a running web, a collecting cylinder, three sets of grippers thereon each arranged to collect a plurality of sheets one at a time and one upon another directly from the said cutters, a tucking cylinder, a single set of grippers thereon arranged to receive a single group of collected sheets from one of the three sets of collecting cylinder grippers and a folding cylinder arranged to co-act with the tucking cylinder for folding said single group of collected sheets as it is delivered from the tucking cylinder to the folding cylinder.

856,572. ROTARY TAKE-UP FOR SEWING-MACHINES. JACOB DIEHL, Cleveland, Ohio, assignor to The Standard Sewing Machine Company, Cleveland, Ohio, a Corporation of Ohio. Filed June 16, 1903. Serial No. 161,667.



Claim.—1. In a sewing machine, the combination with stitch-forming devices including a needle and a looper, of a rotary take-up having means operative to cast the thread therefrom at certain predetermined times, and a thread controller independent of the take-up and being operative to engage the thread as it is cast off by the take-up and control the slack therein during the descent of the needle and thereafter release said thread, the said controller being located in front of the take-up and having a thread guiding arm extending inwardly toward the take-up to receive the thread therefrom.

2. In a sewing machine, the combination with a rotary take-up comprising two separated disks having an intermediate take-up pin, of a stationary slack-thread controller supported in a position adjacent to said take-up and having a thread-guiding arm extending into the space between the disks of the take-up, for the purpose set forth.

3. In a sewing machine, the combination with a rotary take-up device comprising two separated disks having an intermediate take-up pin, of a stationary slack thread controller supported in a position adjacent to said take-up and having a thread-guiding arm extending into the space between the disks of the take-up and at an angle with respect to the axis of the latter, for the purpose set forth.

4. In a sewing machine, the combination with a rotary take-up comprising two separated disks or wheels having an intermediate take-up pin, of a stationary guard-plate supported in a position in front of the said take-up an

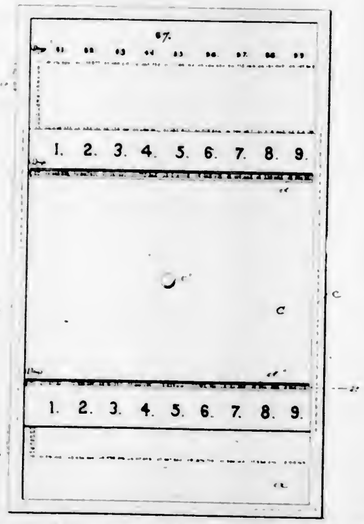
provided with an arm extending into the space between the disks or wheels of the take-up, for the purpose set forth.

5. In a sewing machine, the combination with the stitch-forming devices, of a rotary take-up comprising two separated disks having an intermediate take-up pin, means co-operative with said take-up for casting or disengaging the thread therefrom at certain predetermined times, and two thread controllers coöperative with said take-up to hold the thread in a position to be engaged thereby, one of said controllers having an arm extending across the path of movement of the take-up, for the purpose set forth.

6. In a sewing machine, the combination with stitch-forming devices, of a rotary take-up, two thread controllers co-operative with said take-up to hold the thread in a position to be engaged thereby, one of said controllers being stationary and the other being reciprocatory, and a guard supported in a position in front of the take-up and carrying the said stationary thread controller.

7. In a sewing machine, the combination with a rotary take-up comprising two separated disks having an intermediate take-up pin, of means supported in a position in front of the said take-up and provided with an arm extending into the space between the disks of the take-up, for the purpose set forth.

856,573. COMPUTING DEVICE. CHARLES W. DRAPER, Washington, D. C. Filed Apr. 28, 1904. Serial No. 205,378.



Claim.—1. A computing device consisting of a table bearing numbers representing many results disposed in longitudinal and transverse columns or rows, said table also bearing two longitudinal marginal rows of characters indicating factors of the results, and a finder extending across said table and having therethrough a transverse slot and an opening through which results numbers and a character in each of the two factor character rows may be simultaneously observed, said finder and table being relatively movable longitudinally only.

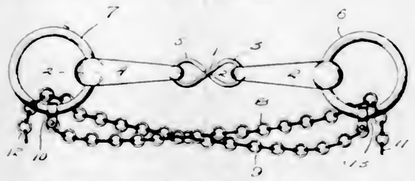
2. A computing device consisting of a table bearing numbers representing many results disposed in longitudinal and transverse columns or rows, said table also bearing two longitudinal marginal rows of characters indicating factors of the results, a finder extending across said table and having therethrough two relatively distant transverse parallel slots and an opening at the end of each slot through which results numbers and a character in each of the two factor character rows may be observed, said finder bearing adjacent to each slot a transverse row of other factor characters disposed in line with longitudinal rows of the results numbers on the table, and said table and finder being relatively movable longitudinally only.

3. A computing device consisting of a table bearing numbers representing many results disposed in longitudinal and transverse columns or rows, said table also bearing two longitudinal marginal rows of factor characters, each factor character of one row having a coefficient also inscribed upon the table, a finder extending across said table and having therethrough a transverse slot and an opening through which results numbers and a character in each of the two factor character rows may be simultaneously observed, said finder and table being relatively movable longitudinally only.

4. A computing device consisting of a table bearing numbers representing many results disposed in longitudinal and transverse columns or rows, said table also bearing two longitudinal marginal rows of factor characters, each factor character of one row having a coefficient also inscribed upon the table, a finder extending across said table and having therethrough two relatively distant transverse parallel slots and an opening at the end of each slot through which results numbers and a character in each of the two factor character rows may be observed, said finder bearing adjacent to each slot a transverse row of other factor characters disposed in line with longitudinal rows of the results numbers on the table, and said table and finder being relatively movable longitudinally only.

5. A computing device consisting of a table bearing numbers representing many results disposed in longitudinal and transverse columns or rows, said table also bearing two longitudinal marginal rows of characters indicating factors of the results, one row at each side of the table, and a wide finder extending across said table and having therethrough two relatively distant transverse parallel slots separated by a continuous solid portion of the finder obscuring the table between said slots, said slots in the finder being of such size as to simultaneously expose a transverse line of results characters and corresponding factor characters in each of the two marginal factor character rows, said finder bearing adjacent to each slot a transverse row of other factor characters disposed in line with longitudinal rows of the results numbers on the table, and said table and finder being relatively movable longitudinally only.

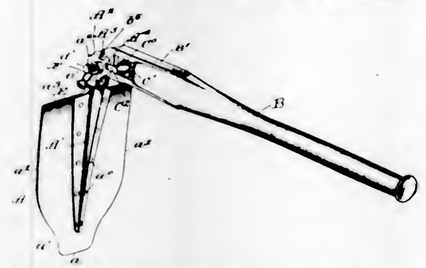
856,574. BIT. JESSE C. DUNKS, Boulder, Mont. Filed Feb. 28, 1906. Serial No. 303,425.



Claim.—The combination of a snaffle consisting of a pair of sections, a link connecting the inner ends of said sections, and a ring hinged to the outer end of each section, and means connected with the driving reins and the rings for positively breaking the snaffle to force the link against the roof of the horse's mouth, said means comprising a chain having one end secured to each ring and its opposite end passed loosely through the other ring and connected with a rein.

856,575. INTRENCHING-TOOL. GEORGE F. ELLIOTT, U. S. Marine Corps, assignor to Annie M. Elliott, Washington, D. C. Filed Oct. 15, 1906. Serial No. 339,013.

Claim.—1. In an implement of the character described, the combination with a blade and a handle, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the head of the blade, the said notches being provided with holding side walls and with an inclined plane at the base thereof, whereby the dirt that might have accumulated in said notches is automatically wedged out when the lock is sprung into engagement, substantially as described.



2. In an implement of the character described, the combination with a blade provided with a pivot plate at its head, and a handle, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the head of the blade, the said notches being provided with holding side walls and with an inclined plane at the base thereof, whereby the dirt that might have accumulated in said notches is atuomatically wedged out when the lock is sprung into engagement, with a notch across the pivot plate of the handle adapted to register with one or more of the notches on the head of the blade, and to constitute therewith a wire cutter, substantially as described.

3. In an implement of the character described, the combination with a blade having a straight sharp cutting edge and curved side edges with flat shoulders near its top, and a handle, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the head of the blade, the said notches being provided with holding side walls and with an inclined plane at the base thereof whereby the dirt that might have accumulated in said notches is automatically wedged out when the lock is sprung into engagement, substantially as described.

4. In an implement of the character described, the combination with a blade and a handle, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the head of the blade and adapted to engage said lock, with a notch across the pivot plate of the handle adapted to register with one or more of the notches on the head of the blade, and to constitute therewith a wire cutter, substantially as described.

5. The combination with a blade having a straight sharp cutting edge and curved side edges with flat shoulders near its top, and a handle, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the head of the blade and adapted to engage said lock, with a notch across the pivot plate of the handle adapted to register with one or more of the notches on the head of the blade, and to constitute therewith a wire cutter, substantially as described.

6. In an implement of the character described, the combination with a blade having a strengthening piece secured to or integral therewith, said piece being provided with jaws in its head with oppositely disposed pairs of notches in the periphery of said jaws, of a handle having a pivot plate hinged between said jaws, and a spring impressed lock provided with two lugs forming a fork, adapted to engage in any pair of said notches in said jaws, substantially as described.

7. In an implement of the character described, the combination with a blade having a strengthening piece secured to or integral therewith, said piece being provided with jaws in its head with oppositely disposed pairs of notches in the periphery of said jaws, with an inclined plane at the base of said notches, of a handle having a pivot plate hinged between said jaws, and a spring impressed lock provided with two lugs forming a fork, adapted to engage in any pair of said notches in said jaws, substantially as described.

8. In an implement of the character described, the combination with a blade having a strengthening piece secured to or integral therewith, said piece being provided with jaws in its head with oppositely disposed pairs of notches in the periphery of said jaws, of a handle having a pivot plate hinged between said jaws, with a notch across the pivot plate of the handle, forming with one of the pairs of notches in the jaws a wire cutter, and a spring impressed lock provided with two lugs forming a fork, adapted to engage in any pair of said notches in said jaws, substantially as described.

9. In an implement of the character described, the combination with a blade and a removable hinge bolt connecting the two, and a handle, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the head of the blade, the said notches being provided with holding side walls and with an inclined plane at the base thereof, whereby the dirt that might have accumulated in said notches is automatically wedged out when the lock is sprung into engagement, substantially as described.

10. In an implement of the character described, the combination with a blade having jaws on its head; a handle having a pivot plate adapted to fit thereon and jaws, and a removable hinge bolt connecting the two, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the head of the blade, the said notches being provided with holding side walls and with an inclined plane at the base thereof, whereby the dirt that might have accumulated in said notches is automatically wedged out when the lock is sprung into engagement, with a notch across the pivot plate of the handle adapted to register with one or more of the notches on the head of the blade, and to constitute therewith a wire cutter, substantially as described.

11. In an implement of the character described, the combination with a blade having a straight sharp cutting edge and curved side edges with flat shoulders near its top, and having jaws in its head, a handle having a pivot piece adapted to fit between said jaws, and a hinge bolt connecting said blade and handle, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the jaws of the blade, the said notches being provided with holding side walls and with an inclined plane at the base thereof whereby the dirt that may have accumulated in said notches is automatically wedged out when the lock is sprung into engagement, substantially as described.

12. In an implement of the character described, the combination with a blade and a handle, and a removable hinge bolt connecting the two, with means for locking said hinge bolt to said blade in either the engaging or the disengaging position, of means for locking the said blade to the handle in a plurality of operative positions, comprising a spring impressed lock carried by the handle, and a series of notches provided in the head of the blade and adapted to engage said lock, with a notch across the pivot plate of the handle adapted to register with one or more of the notches on the head of the blade, and to constitute therewith a wire cutter, substantially as described.

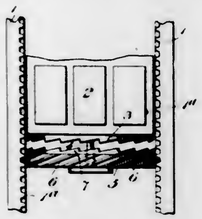
13. In an implement of the character described, the combination with a blade having a strengthening piece secured to or integral therewith, said piece being provided with jaws in its head with oppositely disposed pairs of notches in the periphery of said jaws, of a handle having

a pivot plate mounted between said jaws, a removable hinge bolt connecting said pivot plate and said jaws, means for automatically holding said hinge bolt in said jaws in either the position engaging said pivot plate, or in the disengaged position for removing or inserting said pivot plate, and a spring impressed lock provided with two lugs forming a fork, adapted to engage in any pair of said notches in said jaws, substantially as described.

14. In an implement of the character described, the combination with a blade having a strengthening piece secured to or integral therewith, said piece being provided with jaws in its head with oppositely disposed pairs of notches in the periphery of said jaws, with an inclined plane at the base of said notches, of a handle having a pivot plate mounted between said jaws, a removable hinge bolt connecting said pivot plate and said jaws, means for automatically holding said hinge bolt in said jaws in either the position engaging said pivot plate, or in the disengaged position for removing or inserting said pivot plate, and a spring impressed lock provided with two lugs forming a fork adapted to engage in any pair of said notches in said jaws, substantially as described.

15. In an implement of the character described, the combination with a blade having a strengthening piece secured to or integral therewith, said piece being provided with jaws in its head with oppositely disposed pairs of notches in the periphery of said jaws, of a handle having a pivot plate mounted between said jaws, with a notch across the pivot plate of the handle, forming with one of the pairs of notches in the jaws a wire cutter, a removable hinge bolt connecting said pivot plate and said jaws, means for automatically holding said hinge bolt in said jaws in either the position engaging said pivot plate, or in the disengaged position for removing or inserting said pivot plate, and a spring impressed lock provided with two lugs forming a fork, adapted to engage in any pair of said notches in said jaws, substantially as described.

856,576. ELEVATOR-BRAKE. McCLELLAN FULLENLOVE, Louisville, Ky., assignor to The Fullenlove Elevator Company, Louisville, Ky., a Corporation of Kentucky. Filed Mar. 13, 1905. Serial No. 249,858.

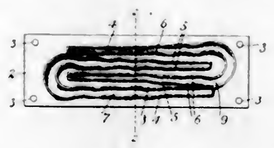


Claim.—1. In an elevator brake, the combination with a cage and a fixed rack, of a gear moving with the cage, movable axially relatively to the cage and having braking teeth on one face thereof, and a toothed braking surface moving with the cage and against which the braking teeth on the gear may move.

2. In an elevator brake, the combination with the cage and a fixed rack, of a gear moving with the cage, having a toothed braking surface and movable axially relatively to the cage, and a toothed braking surface moving with the cage and positioned to engage the teeth on the gear when the gear moves relatively to the cage due to excessive speed, the teeth being formed to cause the braking surfaces to separate when the cage is moved in the other direction.

3. In an elevator brake, a cage, a pair of fixed racks, one on each side of the cage, a gear carried by the cage movable axially relatively thereto, meshing with both racks, and having a braking surface, and braking surface on the cage against which the braking surface on the gear contacts when the gear moves axially in one direction.

856,577. HAIR-PIN CUTTER. WARREN H. GOODALE and ALSTON L. PRESTON, Leominster, Mass. Filed May 15, 1906. Serial No. 317,039.



Claim.—1. In combination, a base, an outer cutter carried thereby, and nested cutters arranged within the outer cutter, the interior or nested cutters being sigmoidal in form, the members of the sigmoidal cutters intermeshing.

2. In combination, a base, an outer cutter carried thereby, and nested cutters arranged within the outer cutter, said cutters having their blades separated one from the other each of said nested cutters being sigmoidal, the members of the sigmoidal cutters intermeshing.

856,578. SELF-LIGHTING INCANDESCENT MANTLE. GEORGE GOTTY, New York, N. Y. Filed Sept. 11, 1906. Serial No. 334,119.



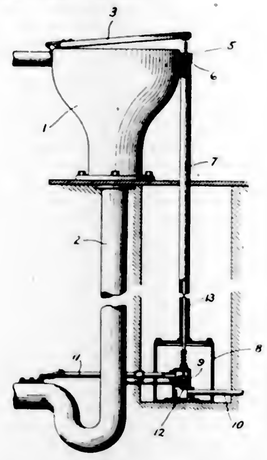
Claim.—1. A self lighting incandescent mantle comprising the mantle having an inturned end, a band of plastic catalytic substance arranged on the outside of the mantle near the upper edge of the latter, said band being reinforced at one point with the same material to form a pellet, and a streak of catalytic substance leading from the pellet.

2. A self lighting incandescent mantle comprising the mantle, a band of plastic catalytic substance surrounding one end of the mantle, a catalytic pellet forming part of the band, and a platinum wire surrounding the mantle, embedded in the catalytic band and projecting from the pellet.

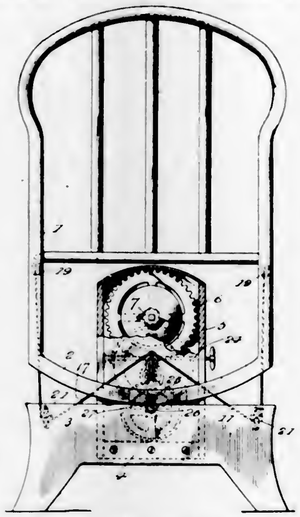
856,579. VALVE-SUPPORT FOR OUTDOOR WATER CLOSETS. WILLIAM U. GRIFFITHS, Philadelphia, Pa. Filed Dec. 21, 1905. Serial No. 292,766.

Claim.—1. In combination, a water closet hopper having a lug or projection thereon, a tube having screw-threaded connection at its upper end to the said lug or projection, and the said tube having a support for the valve mechanism at its lower end, valve mechanism supported upon the said support, the said valve mechanism including a valve for permitting or preventing the flow of water to the flush tank of the water closet apparatus, and a rod connected to the said valve and being movably located within the said tube.

2. In combination, a water closet hopper having a lug or projection thereon, a tube having screw-threaded connection at its upper end to the said lug or projection, and the said tube having a chamber at its lower end, valve mechanism located within and supported upon the bottom of the said chamber, the said valve mechanism including a valve for permitting or preventing the flow of water to the flush tank of the water closet apparatus, a rod connected to the said valve and being movably located within the said tube, and a spring for normally holding the said rod in its uppermost position.



856,580. SELF-ROCKING CRADLE. LEO C. HANTSKE, Baltimore, Md. Filed Oct. 2, 1906. Serial No. 337,151.

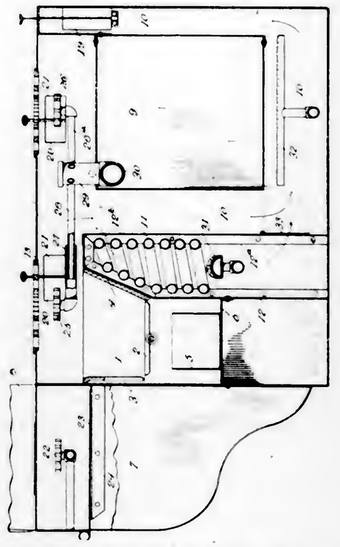


Claim.—1. A device of the character described, comprising a supporting framework, a cradle mounted to rock on said framework, a motor driven crank shaft in said framework, pulleys mounted in the framework below one of the rockers of the cradle, and an actuating strap connected at an intermediate point to the crank of said shaft, said crank extending in opposite directions from said shaft and underneath said pulleys and thence extending upwardly, the ends of said strap being connected to the opposite sides of said cradle at points substantially vertical to the pulleys whereby as the crank turns a direct downward pull will be exerted first upon one side of the cradle and then upon the other.

2. A device of the character described, comprising a supporting frame work, a cradle mounted to rock on said frame work, a motor driven crank shaft mounted in said frame work, pulleys mounted in the frame work below one of the rockers of the cradle, and an actuating strap connected at an intermediate point to the crank of said shaft, said strap extending in opposite directions from said crank and underneath said pulleys and thence extending upwardly, the ends of said strap being connected to opposite sides of the cradle.

3. A device of the character described, comprising a supporting frame work, a cradle mounted to rock on said framework, a motor driven crank shaft mounted in said frame work, pulleys mounted in the frame work below one of the rockers of the cradle, and an actuating strap having an eye at an intermediate point designed to receive one end of the crank of said shaft, said strap extending in opposite directions from the eye and underneath said pulleys and thence upwardly, the ends of said strap being connected to the opposite sides of the cradle.

856,581. COOKING-STOVE. FRANK HARPER, Jackson, Ohio. Filed Mar. 2, 1906. Serial No. 303,888.



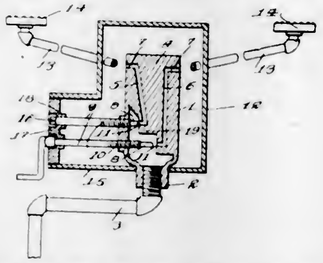
Claim.—1. A cook stove provided with a fire box, a water coil located with its upper end contiguous to the fire box, spaced apart partition walls inclosing said water coil, one of said partition walls being provided near its upper end with an opening in communication with the upper end of the water coil and in communication with the fire box and with another opening near its lower end, an oven spaced from the walls of the stove and from the last named partition, whereby to provide a flue passage, one end of which is in communication with the fire box and with the upper opening of the partition wall, and a damper arranged to close the lower opening in the said partition wall and also to be swung up therefrom and across the flue passage above the said lower opening so as to cut-off the flue passage above said opening, whereby the draft from the fire box may be directed around the oven, or first through the water coil and out through the lower opening in the partition wall so as to extend across the bottom of the oven and up around the far side thereof.

2. A cook stove provided with a fire box, spaced apart partition walls contiguous to said fire box, an oven spaced from the walls of the stove and from one of the partition walls whereby to provide a flue passage, one of said partition walls being provided with an opening in its upper end in communication with the fire box and one end of the flue

passage, and said wall being provided with another opening near its lower end, a damper hinged to the said partition wall and adapted to close the lower opening therein and to be swung up away from said opening into contact with the oven, so as to close that portion of the flue passage above the bottom of the oven and on one side of the latter, a hood connected to the back of the stove, dampers adapted to establish communication between said hood and the far end of the flue passage and also between said hood and the interior of the stove at points intermediate of the fire box and the adjacent end of the flue passage, a boiler in said hood, and a water coil between said partition walls with its upper end in communication with the upper opening of the said partition wall, whereby the heat from the fire box may be directed immediately out of the same into the hood, or around through the upper opening in the partition wall through the coil, and out across the bottom of the oven, or around through the entire extent of the flue passage, after being materially directed through the upper opening of the partition wall into the water coil.

3. A cooking stove provided with a fire box, a water coil adjacent the fire box and in communication therewith, the upper end of said coil being located contiguous to and underneath the back plate of the fire box, a pair of partition walls inclosing said water coil, an oven spaced from the walls of the stove whereby to provide a flue passage with the walls of the stove and with the adjacent partition wall, said latter being provided with an opening near its upper end and also with an opening near its lower end, a damper designed to close said last named opening and also arranged to be swung up against the adjacent corner of the oven whereby to cut off that portion of the flue passage above it, and a gas burner mounted between the partition walls in position to directly heat said coil, as and for the purpose set forth.

856,582. VALVE MECHANISM. FRANK HARPER, Jackson, Ohio. Filed Mar. 23, 1906. Serial No. 307,700.

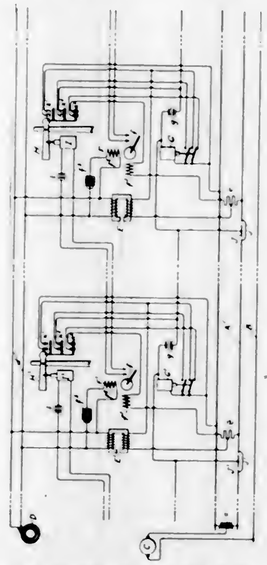


Claim.—1. In valve mechanism of the type described, the combination of a valve casing having a plurality of vertically arranged fuel ducts, said casing being provided with a fuel inlet opening in its lower end so as to supply said ducts, the lower extremities of the ducts terminating in lateral valve seats, a plurality of valve stems threaded into openings in a side of the casing and provided at their inner ends with valves to close against the sides aforesaid, an air chamber inclosing the valve casing, a plurality of branch fuel pipes leading off from the air chamber and terminating at one end at points adjacent to the outlets of the ducts aforesaid, and burners for said branch fuel pipes.

2. In valve mechanism of the type described, the combination of a valve casing having a plurality of vertically arranged fuel ducts, said casing being provided with a fuel inlet opening in its lower end so as to supply said ducts, the lower extremities of the ducts terminating in lateral valve seats, a plurality of valve stems threaded into openings in a side of the casing and provided at their inner ends with valves to close against the side aforesaid, an air chamber inclosing the valve casing, a plurality of branch fuel pipes leading off from the air chamber and terminating at one end at points adjacent to the outlets of the ducts aforesaid, burners for said branch fuel pipes, and a lateral tubular extension projecting from the air chamber and inclosing the valve stems.

3. In combination with air chamber, a plurality of branch fuel pipes leading therefrom, burners for said fuel pipes, a lateral tubular extension projecting from the lower portion of the air chamber, valve mechanism in the mixing chamber embodying a valve casing provided with a plurality of vertically arranged ducts having lateral outlets at their upper extremities and terminating in spaced relation to the inner ends of the branch fuel pipes, the lower extremities of the ducts being formed with lateral valve seats, a plurality of valve stems mounted in the tubular extension of the air chamber and threaded into openings in a side of the valve casing, valves at the inner ends of said stems adapted to close against the valve seats aforesaid, and a spider attached to the tubular extension and having the arms thereof provided with openings receiving the outer extremities of the valve stems, the lower extremity of the valve casing being provided with a fuel inlet.

856,583. BLOCK-SIGNAL SYSTEM. LAURENCE A. HAWKINS, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Nov. 8, 1906. Serial No. 342,455.



Claim.—1. In combination with an electrically-operated road having both rails conductively continuous for all currents, normally open-circuited transformers adapted to impress an alternating voltage on the rails, means controlled by a moving train for closing the circuit of a transformer ahead of the train, and signal controlling means responsive to the voltage impressed on the rails by the transformers.

2. In combination with an electrically-operated road having both rails conductively continuous for all currents, transformers and signal-controlling relays connected at intervals to the rails, said transformers being normally open-circuited, and means controlled by a moving train for closing the circuit of a transformer ahead of the train.

3. In combination with an electrically-operated road having both rails conductively continuous for all currents, transformers and signal-controlling relays connected to the rails, and normally open switch contacts in circuit with said transformers arranged to be closed by an approaching train.

4. In combination with an electrically-operated road having both rails conductively-continuous for all currents, normally open-circuited transformers connected at intervals across the rails, means controlled by a moving train for closing the circuit of a transformer ahead of the train, a relay responsive to alternating-current connected to the rails ahead of the transformer, and a signal controlled by said relay guarding the portion of track between said transformer and relay.

5. In combination with an electrically-operated road having both rails conductively continuous for all currents normally open-circuited transformers connected at intervals across the rails, relays having normally closed connections to the rails at intervals and responsive to alternating-current, and means controlled by a moving train for closing the circuit of a transformer ahead of the train and opening the circuit of an adjacent relay.

6. In combination with an electrically-operated road having both rails conductively continuous for all currents, transformers connected at intervals across the rails, normally open contacts in series with said transformers, means operated by an approaching train for closing one of said contacts and connections whereby said contact is opened when the train enters the succeeding block.

7. In combination with an electrically-operated road having both rails conductively continuous for all currents, transformers connected at intervals across the rails, normally open contacts in series with said transformers, electro-magnets for closing said contacts, connections whereby a magnet is energized by an approaching train, and connections whereby said magnet is deënergized when the train enters the succeeding block.

8. In combination with an electrically-operated road having both rails conductively continuous for all currents, transformers connected at intervals across the rails, normally-open contacts in series with said transformers, electro-magnets for closing said contacts, connections whereby an electro-magnet is momentarily energized by an approaching train, a maintaining circuit for the electro-magnet arranged to be closed when the electro-magnet is energized, and connections whereby the electro-magnet is deenergized when the train enters the succeeding block.

9. In combination with an electrically-operated road having both rails conductively continuous for all currents, transformers connected at intervals across the rails, normally-open contacts in series with said transformers, electro-magnets for closing said contacts, connections whereby an electro-magnet is momentarily energized by an approaching train, a maintaining circuit for the electro-magnet arranged to be closed when the electro-magnet is energized, a signal, and contacts controlled by the signal for closing a shunt circuit for the transformer around the normally-open contact controlled by said electro-magnet and breaking said maintaining circuit.

10. In combination with an electrically-operated road having both rails conductively continuous for all currents, a transformer connected across the rails, a normally-open contact in series with said transformer, an electro-magnet controlling said contact arranged to be energized by an approaching train, a track relay responsive to current from said transformer, a signal controlled by said relay, and contacts controlled by said signal controlling said electro-magnet.

11. In combination with an electrically-operated road having both rails conductively continuous for all currents, normally open-circuited transformers connected at intervals across the rails, and means controlled by a moving train for closing the circuit of a transformer ahead of the train and opening said circuit when the train reaches said transformer.

12. In combination with an electrically-operated road having both rails conductively continuous for all currents, normally open-circuited transformers connected across the rails at intervals, relays connected across the rails adjacent to said transformers having normally closed connections to the rails, and means controlled by a moving train for closing the circuit of a transformer ahead of the train and opening the circuit of the adjacent relay.

13. In combination with an electrically-operated road having both rails conductively continuous for all currents, normally open-circuited transformers connected across the rails at intervals, relays having normally closed connections to the rails adjacent to said transformers, means controlled by a moving train for closing the circuit of a transformer ahead of the train and opening the circuit of the adjacent relay, and a signal near said transformer controlled by a relay ahead of the transformer.

14. In combination with an electrically-operated road having both rails conductively-continuous for all currents, normally open-circuited transformers connected at intervals across the rails, means controlled by a moving train for closing the circuit of a transformer ahead of the train, a relay responsive to alternating-current connected to the rails ahead of the transformer, a signal guarding the portion of track between said transformer and relay controlled by said relay, and means for opening the circuit of the transformer when the train enters the portion of track guarded by said signal.

15. In combination with an electrically-operated road having both rails conductively continuous for all currents, normally open-circuited transformers connected across the rails, means controlled by a moving train for closing the circuit of a transformer ahead of the train, track relays responsive to alternating-current, and signals controlled by said relays adapted to give clear, caution, and danger indications.

16. In combination with an electrically-operated road having both rails conductively continuous for all currents, normally open-circuited transformers connected across the rails, means controlled by a moving train for closing the circuit of a transformer ahead of the train, track relays responsive to alternating current, each transformer being adapted to energize a plurality or relays, and signals controlled by said relays adapted to give clear, caution and danger indications.

17. In combination with an electrically-operated road having both rails conductively-continuous for all currents, normally deënergized track relays responsive to alternating current only, and means controlled by a moving train for energizing a track relay ahead of the train.

18. In combination with an electrically-operated road having both rails conductively-continuous for all currents normally deënergized track relays responsive to alternating current only, means controlled by a moving train for energizing a plurality of relays ahead of the train, and signals controlled by said relays adapted to give clear, caution and danger indications.

19. In combination with an electrically-operated road, a short insulated section interposed in a rail of the track, a conductor bridging said section to preserve the continuity of the rail for the power-current, a transformer for supplying signal current to the track, normally-open contacts in series with the transformer, and an electro-magnet connected to said insulated section controlling said contacts.

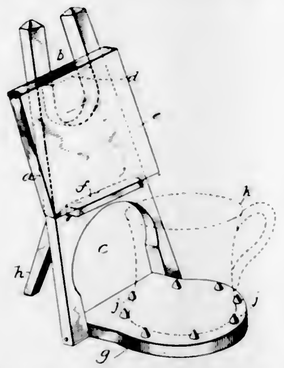
20. In combination with an electrically-operated road, a short insulated section interposed in a rail of the track, a conductor bridging said section to preserve the continuity of the rail for the power-current, a transformer for supplying signal-current to the track, normally-open contacts in series with the transformer, an electro-magnet connected to said insulated section controlling said contacts, and a maintaining circuit for said magnet arranged to be closed when said magnet is energized.

856,584. RACK. CHARLES F. HOFFMAN, Lansing, Mich. Filed Oct. 23, 1906. Serial No. 340,141.

Claim.—1. In a support of the character described, the combination of a back formed with an opening; and a base, said base being pivotally mounted in the walls of said opening and thereby adapted to fold up into said opening.

2. In a support of the character described, the combination of a back formed with an opening; and a pad provided with a block, said block fitting snugly into said opening to secure said pad in place upon said back.

3. In a support of the character described, the combination of a back formed with an opening which narrows from bottom to top; and a pad provided with a block; said block being pressed into said opening from the front and fitting snugly therein to secure said pad in place upon said back.

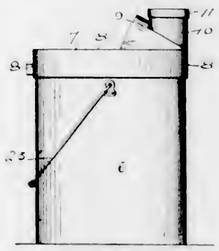


4. In a support of the character described, the combination of a back provided with an opening; a pad provided with a block which interlocks with the walls of said opening; and a shelf secured to said back for the support of the lower edge of said pad.

5. In a support of the character described, the combination of a back formed with an opening; a prop hinged to said back; and a base pivotally mounted in the walls of said opening and thereby adapted to fold up into said opening.

6. The combination in a support of the class described of a back; a base for the support of a mug or like article; and a pad; said pad and back being formed with co-operating locking elements, whereby said pad is secured in place upon said back.

856,585. MILK-PAIL. THOMAS J. HOPKINS, Soda Springs, Idaho. Filed Nov. 20, 1906. Serial No. 344,298.

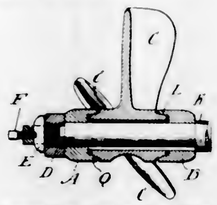


Claim.—1. A device of the kind described comprising in combination, a pail and a pail top; and a double valve connected to the under side of said top, the members of said valve having weighted lower ends and being loosely movable in their bearings in said valve to automatically close communication between said top and pail when the pail is moved from its normal position with reference to its vertical axis.

2. A milk pail having a top; a strainer removably carried in said top; and a double valve connected to the under side of said top, and affording a communication between said pail and top, the members of said valve being located at right angles to each other and provided with weighted lower ends, said members being loosely movable in their bearings in said valve to automatically close communication between said top and pail whenever the pail is moved from its normal position with reference to its vertical axis.

3. In a device of the kind described in combination, a pail and a pail top; a vertical flange extending entirely around said top; a plate carried by said top and partially closing the same; a strainer carried by said top above said plate; a vertical plate connected to said flange and first mentioned plate; a spout carried on said flange adjacent said vertical plate and forming an outlet from the pail; a cap for said spout; and a double valve connected to the under side of said first mentioned plate and extending downwardly into said pail to afford a communication between said top and pail, the members of said valve being located at right angles to each other and provided with weighted lower ends, said members being loosely movable in their bearings in said valve to automatically close communication between said top and pail whenever the pail is moved from its normal position with reference to its vertical axis.

856,586. SECTIONAL PROPELLER. EDGAR HUMPHREY and MAURICE R. WILLIAMS, Cordova, Ill. Filed Mar. 12, 1907. Serial No. 361,948.

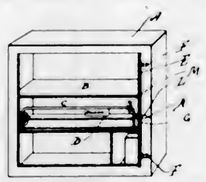


Claim.—1. A propelling device for ships comprising a rotatable shaft a sectional hub provided with blades, each end of the outer periphery of the assembled hub having the form of the frustum of a cone, collars provided with frusto-conical recesses, mounted on said shaft and engaging the ends of said hub, locking means for securing said parts in place.

2. A propelling device for ships comprising a rotatable shaft having a seat of reduced section, a fixed collar at the shouldered end of said seat, a spline on said seat, a screw propeller mounted on said seat and held from rotation by said spline, a loose collar mounted on the outer end of said shaft and engaging the propeller hub, a threaded portion on said shaft adjacent to the outer end of said reduced section, a locking nut for engaging said threaded portion an extended end of said shaft of further reduced section, provided with a transverse slot adjacent to the threaded section and an axially threaded aperture intersecting said slot, a notched cotter adapted to be received into said slot and engaging said nut, and a set screw in said axial aperture engaging said cotter.

3. A propelling device for ships comprising a rotary shaft propeller blades mounted thereon said blades having a hub with frusto-conical ends, a pair of collars each having frusto-conical recesses engaging the ends of said hub, a clamping means for forcing said parts together.

856,587. MEDICINE-CABINET. OTTO JAEGER, Ogontz, Pa. Filed Sept. 24, 1906. Serial No. 335,946.



Claim.—In a medicine cabinet, a series of compartments, a frame hinged in front of one of said compartments, a

labeled sign carried by the frame, a warning glass disk also carried by the frame, a door hinged to the cabinet, an electric lamp carried by said door, a battery located within a compartment formed in the cabinet, a contact point connected with one terminal of the battery, a contact spring carried by the door and connected with the other terminal of the battery whereby the circuit will be closed and the lamp lighted when the door is swung to a certain point, as and for the purpose set forth.

856,588. GUARD FOR PLANERS OR JOINTERS. JAMES M. JONES, Dundas, Ontario, Canada. Filed Feb. 26, 1906. Serial No. 302,977.



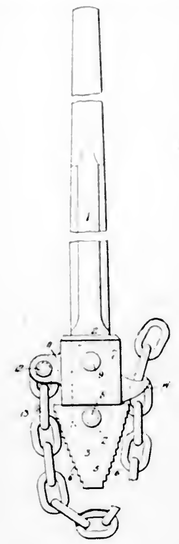
Claim.—A protecting guard for buzz planers or jointers comprising a vertical adjustable rod, the top bent horizontally, a plate attached to the top of the rod and constructed with dovetail grooves, a second similarly constructed plate made to slide in said dovetail grooves of the first plate, a third plate with dovetail grooves made to slide in the second plate, and a fourth plate similarly constructed made to slide in the third plate, a slot in the second plate, and in the fourth plate, and pins in the slots to prevent them from coming apart, and the first, second and third plates formed with notches to receive a pull pin attached to the outer end of the fourth plate, all arranged substantially as and for the purpose specified.

856,589. CHAIN WRENCH. HENRY J. KAHNE, Ashland, Ky. Filed Apr. 18, 1907. Serial No. 368,958.

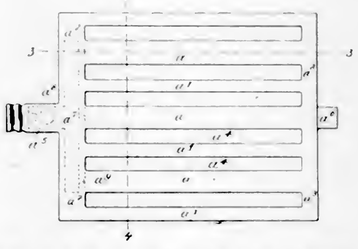
Claim.—1. In a chain wrench, the combination of a handle having one of its ends formed with flat opposing faces, jaw plates having shanks engaged with said opposing faces, a sleeve surrounding said end of the handle and said shanks, a fastening passed through said sleeve, said shanks and said handle and a chain connected to one side of said sleeve and adapted to be adjustably connected to the other side of the same.

2. In a chain wrench, the combination of a handle having a flat end, jaw plates having shanks arranged upon the opposite faces of said squared end of the handle, a rectangular sleeve surrounding said squared end of the handle and said shanks and having at its inner end inwardly projecting ribs to engage the inner ends of said shanks, a fastening pin passed transversely through said sleeve, said shanks and said handle, a second fastening pin passed transversely through said jaw plates and said handle, a chain connected to one side of said sleeve and means upon the other side of said sleeve for engagement with said chain, substantially as described.

856,589.



856,590. GRATE. FELIX KOST, New York, N. Y. Filed Jan. 9, 1906. Serial No. 295,234.



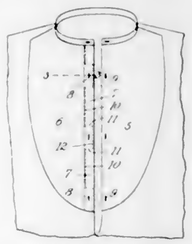
Claim.—A grate provided with a series of spaced longitudinal bars, a front cross bar formed hollow throughout the greater portion of its length, a rear cross bar, a hollow gudgeon communicating with the front cross bar and provided with an opening in its bottom for communication with the atmosphere and with the interior of the gudgeon, the said hollow cross bar having a series of openings therein, gas ducts extending along alternate longitudinal bars and communicating with the aforesaid openings of the hollow cross bar, the upper edges of the ducts being notched to provide gas outlets, and means for removably securing the ducts to the integral casting.

856,591. SHIRT. PAUL KRAEMER, Jersey City, N. J. Filed Feb. 7, 1907. Serial No. 356,170.

Claim.—1. In a shirt, a first bosom-section composed of a lining, a facing and a double perforated fly integral with the facing, combined with a second perforated bosom-section adapted to overlap the fly, substantially as specified.

2. In a shirt, a first bosom-section composed of a lining, a facing and a double perforated fly integral with the facing and folded around the lining, combined with a second perforated bosom-section adapted to overlap the fly, substantially as specified.

856,591.



856,592. TRACK-RAIL. HOMER LAUGHLIN, Jr., Los Angeles, Cal., and DANIEL SCHUYLER, Bridgeport, Conn., assignors to The Perfect Sliding Door Company, Los Angeles, Cal., a Corporation of California. Filed June 18, 1904. Serial No. 213,121.



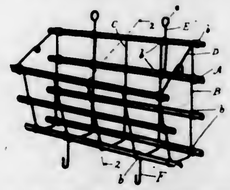
Claim.—1. An open bottom sheet metal track-rail constructed with a crown and with side walls having lower free edges and extending downward from the crown, each wall, throughout its width from crown to free edge, diverging acutely from the other wall and from the vertical of the rail to its free edge.

2. A longitudinally arched, open bottom sheet metal track-rail constructed with a crown and with side walls having lower free edges and extending downward from the crown, each wall, throughout its width from crown to free edge, diverging acutely from the other wall and from the vertical of the rail to its free edge; the middle of said crown being higher than the ends thereof.

3. An open bottom sheet metal track-rail constructed with a crown and with side walls having lower free edges and extending downward from the crown, each wall, throughout its width from crown to free edge, diverging acutely from the other wall and from the vertical of the rail to its other edge; said free edges being obtusely bent, substantially as and for the purpose set forth and described.

4. A sheet metal rail having a planished bearing surface coated with a soft ductile metal.

856,593. RACK OR HOLDER. ANNIE LEE, Three Oaks, Mich., assignor of one-half to George Edgar Pooler, Burr Oak, Mich. Filed Apr. 25, 1906. Serial No. 313,625.



Claim.—1. In a rack or holder, the combination of a plurality of longitudinal bars of wood for the front and rear of the rack; intermediate U-shaped cross-pieces formed of wire, arranged through said longitudinal bars; U-shaped end cross pieces formed of wire, having loops or eyes formed therein, adapted to receive the ends of said longitudinal bars, said cross-pieces forming the bottom of said rack; and detachable end pieces having loops or eyes therein adapted to receive one of the front and one of the rear longitudinal bars, for the purpose specified.

2. In a rack or holder, the combination of a plurality of longitudinal bars of wood for the front and rear of the rack; intermediate U-shaped cross-pieces formed of wire, arranged through said longitudinal bars; U-shaped end cross-pieces formed of wire, having loops or eyes formed therein, adapted to receive the ends of said longitudinal bars, said cross-pieces forming the bottom of said rack; end pieces having loops or eyes adapted to receive one of the front and one of the rear longitudinal bars; hangers formed of wire having eyes therein to receive the upper pair of rear longitudinal bars; and hooks having eyes therein to receive the lower longitudinal bar of the front of the rack, for the purpose specified.

3. In a rack or holder, the combination of a plurality of longitudinal bars of wood for the front and rear of the rack; intermediate U-shaped cross-pieces formed of wire, arranged through said longitudinal bars; U-shaped end cross-pieces formed of wire having loops or eyes formed therein, adapted to receive the ends of said longitudinal bars, said cross-pieces forming the bottom of said rack; end pieces having loops or eyes therein adapted to receive one of the front and one of the rear longitudinal bars; and hangers formed of wire having eyes therein to receive the upper pair of rear longitudinal bars, for the purpose specified.

4. In a rack or holder, the combination of a plurality of longitudinal bars of wood for the front and rear of the rack; intermediate U-shaped cross-pieces formed of wire, arranged through said longitudinal bars; U-shaped end cross-pieces formed of wire, having loops or eyes formed therein, adapted to receive the ends of said longitudinal bars, said cross-pieces forming the bottom of said rack; hangers formed of wire having eyes therein adapted to receive the upper pair of rear longitudinal bars; and hooks having eyes therein to receive the lower longitudinal bars of the front of the rack, for the purpose specified.

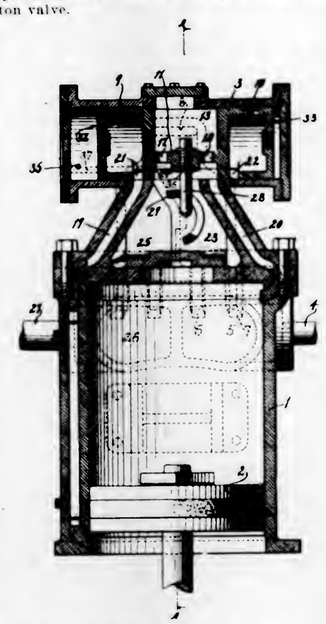
5. In a rack or holder, the combination of longitudinal bars of wood, there being a plurality of bars arranged at the front and rear of the rack; U-shaped end cross pieces having a plurality of loops or eyes formed therein adapted to receive the ends of said longitudinal bars, said cross pieces forming the supports for said longitudinal bars and coacting therewith to form a rigid frame; and intermediate U-shaped cross pieces formed of wire arranged through said longitudinal bars, said cross pieces forming the bottom of the rack.

6. In a rack or holder, the combination of longitudinal bars of wood, there being a plurality of bars arranged at the front and rear of the top; U-shaped end cross pieces having a plurality of loops or eyes formed therein adapted to receive the ends of said longitudinal bars, said cross pieces forming the supports for said longitudinal bars and coacting therewith to form a rigid frame.

856,594. VALVE MECHANISM FOR ENGINES. LUTHER D. LOVEKIN, Philadelphia, Pa., assignor to Marshall T. Davidson, Brooklyn, N. Y. Filed July 6, 1906. Serial No. 324,995.

Claim.—1. A valve comprising hollow piston heads separated by a web or diaphragm, the interiors of the said piston heads being in communication with one another by passage-ways located on opposite sides of the valve and spaced apart by an exhaust chamber.

2. A valve comprising hollow piston heads connected by a perforated diaphragm, a valve casing within which the valve is seated, an exhaust chamber below the said perforated diaphragm, an exhaust chamber between the hollow piston heads of the valve and above the said perforated diaphragm and means for admitting live steam to the hollow piston heads at one side of the exhaust chamber in the piston valve.



3. A valve comprising hollow piston heads connected by webs or diaphragms spaced apart and connected by a perforated cross web or diaphragm, a valve casing, means for reciprocating the valve longitudinally within the casing and means for rocking the valve during its reciprocating movement, the said diaphragms forming exhaust chambers between the hollow piston heads of the valves above and below the said perforated diaphragm.

856,595. COMBINATION TABLE AND RACK FOR CLOTHING. WALDO H. LOWE, Urbana, Ohio. Filed Feb. 19, 1906. Serial No. 301,855.

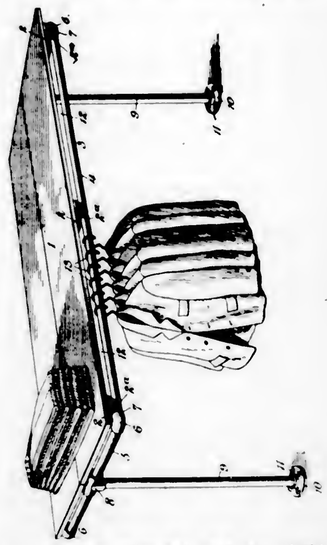
Claim.—1. A device of the class described, comprising a supporting frame having hanger receiving portions at opposite sides and provided with legs, and a table top removably supported by and on the said frame, and extending over but spaced from the hanger receiving portions.

2. A device of the class described, comprising a horizontal supporting frame having opposite hanger receiving portions and provided with legs, and a table top removably arranged on and spaced from the supporting frame to expose the hanger receiving portions and enable the frame to serve as a rack for garment hangers.

3. A combination table and rack for clothing, comprising a horizontal supporting frame having hanger receiving portions and provided with legs, and a table top arranged on and spaced from the supporting frame to expose the hanger receiving portions and enable the frame to serve as a rack for garment hangers, said table top being detachable to enable it and its contents to be removed from the frame.

4. A combination table and rack for clothing, comprising a frame provided with legs and having hanger supporting bars, a removable table top also supported by the said bars and spaced therefrom to provide hanger receiving portions, and means carried by the said supporting bars for holding the table top against movement on the same.

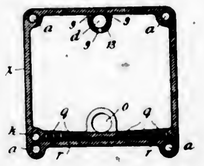
5. A combination table and rack for clothing, comprising a frame having hanger supporting bars and provided with legs, and a removable table top provided with cleats having notches or recesses to receive the said supporting bars and spacing the table top from the same to permit the hangers to be placed on and removed from the said bars.



6. A combination table and rack for clothing, comprising a frame having hanger supporting bars and provided with legs, a removable table top provided with cleats having notches or recesses to receive the said supporting bars and spacing the table top from the same to permit hangers to be placed on and removed from the said bars, and means carried by the supporting bars for engaging the cleats to prevent endwise movement of the table top.

7. A device of the class described, comprising a substantially oblong frame provided with opposite hanger receiving portions and having legs, said frame being also provided at its ends with couplings forming shoulders, and a table top having cleats arranged on the supporting frame and engaging the said shoulders and spacing the table top from the hanger receiving portions.

856,596. CONTAINER FOR PRESSURE-FILTERS. CHARLES W. MERRILL, Lead, S. D. Filed Apr. 14, 1906. Serial No. 311,650.



Claim.—1. A container for use in filter presses, provided with a passage having openings therefrom into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, and a suitable opening through which the unfilterable component is washed out.

2. A container for use in filter presses, provided with a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, and a suitable opening through which the unfilterable component is washed out.

3. A container for use in filter presses, provided with a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, and a plurality of suitable openings through which the unfilterable component is washed out.

4. A container for use in filter presses, provided with a passage having openings therefrom into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, a suitable opening through which the unfilterable component is washed out, and a channel through which liquid gas or vapor is introduced into the plates for treating the material in place.

5. A container for use in filter presses, provided with a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, a suitable opening through which the unfilterable component is washed out, and a channel through which liquid gas or vapor is introduced into the plates for treating the material in place.

6. A container for use in filter presses, provided with a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, and a plurality of suitable openings through which the unfilterable component is washed out, and a channel through which liquid gas or vapor is introduced into the plates for treating the material in place.

7. In a container for use in filter presses, the combination of a feed inlet through which the material to be treated is admitted, a passage having openings therefrom into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, a suitable opening through which the unfilterable component is washed out, and a channel through which liquid gas or vapor is introduced into the plates, for treating the material in place.

8. In a container for use in filter presses, the combination of a plurality of feed inlets through which the material to be treated is admitted, a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, a suitable opening through which the unfilterable component is washed out, and a channel through which liquid gas or vapor is introduced into the plates for treating the material in place.

9. In a container for use in filter presses, the combination of a feed inlet through which the material to be treated is admitted, a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, and a plurality of suitable openings through which the unfilterable component is washed out, and a channel through which liquid gas or vapor is introduced into the plates for treating the material in place.

10. A container for use in filter presses, provided with a passage having openings generally upward, whereby a suitable cleansing medium may be so introduced into its interior, and an independent outlet from the lower part of said container, through which the unfilterable component is washed out.

11. A container for use in filter presses, provided with a passage having a series of openings generally upward, whereby a suitable cleansing material may be so introduced into its interior, and an independent outlet from the lower part of the said container, through which the unfilterable component is washed out.

12. A container for use in filter presses, provided with a passage having openings generally upward, whereby a suitable cleansing medium may be so introduced into its interior, and a series of independent outlets from the lower part of said container, through which the unfilterable component is washed out.

13. A container for use in filter presses, provided with a passage having a series of openings generally upward, whereby a suitable cleansing medium may be so introduced into its interior, and a series of independent outlets from the lower part of said container, through which the unfilterable component is washed out.

14. A container for use in filter presses, provided with a passage having openings therefrom into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, a suitable opening through which the unfilterable component is washed out, and a plurality of inlets through which liquid gas or vapor is introduced into the plates behind the filtering medium for treating the material in place.

15. A container for use in filter presses, provided with a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, a suitable opening through which the unfilterable component is washed out, and a plurality of inlets through which liquid gas or vapor is introduced into the plates behind the filtering medium for treating the material in place.

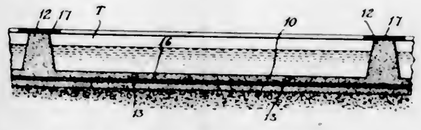
16. A container for use in filter presses, provided with a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, and a plurality of suitable openings through which the unfilterable component is washed out, and a plurality of inlets through which liquid gas or vapor is introduced into the plates behind the filtering medium for treating the material in place.

17. In a container for use in filter presses, the combination of a feed inlet through which the material to be treated is admitted, a passage having openings therefrom into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, a suitable opening through which the unfilterable component is washed out, and a plurality of inlets through which liquid gas or vapor is introduced into the plates behind the filtering medium for treating the material in place.

18. In a container for use in filter presses, the combination of a plurality of feed inlets through which the material to be treated is admitted, a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, a suitable opening through which the unfilterable component is washed out, and a plurality of inlets through which liquid gas or vapor is introduced into the plates behind the filtering medium for treating the material in place.

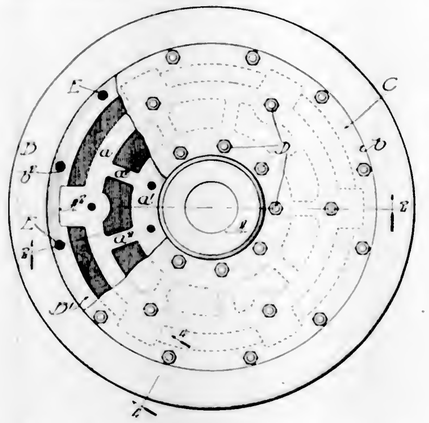
19. In a container for use in filter presses, the combination of a feed inlet through which the material to be treated is admitted, a plurality of passages having openings from each into its interior, whereby a suitable cleansing medium is so projected as to flush the entire interior of the container, and a plurality of suitable openings through which the unfilterable component is washed out, and a plurality of inlets through which liquid gas or vapor is introduced into the plates behind the filtering medium for treating the material in place.

856,597. ART OF MAKING SALT. ANDREW E. MCCLAIN, Syracuse, N. Y., assignor of five-eighths to T. M. Dix, Chelmsford, Mass. Filed Aug. 22, 1906. Serial No. 331,583.



Claim.—The process of making salt which consists in subjecting saturated brine in a protected tank to the continuously and uniformly applied evaporating action of artificial heat to maintain the brine at a temperature of approximately 90 degrees F, and removing the salt as required.

856,598. STEEL-TIRED WHEEL. ISAAC E. MCCRACKEN, Wilkinsburg, Pa., and EDWIN S. WOODS, Chicago, Ill., assignors to John L. Woods, Chicago, Ill. Filed Feb. 25, 1907. Serial No. 359,263.



Claim.—1. A wheel comprising an inner frame and a tire, interlockng parts on said frame and tire preventing relative rotation thereof, and means not piercing the frame and tire at said interlocking parts for fastening the tire to the inner frame.

2. A wheel comprising an inner frame and a tire, lugs on one of said parts which fit in interlocking connection with notches in the other part to prevent relative rotation thereof, and means not piercing said lugs for fastening the tire to the inner frame.

3. A wheel comprising an inner frame and tire, said frame having a part which fits in overlapping engagement with the tire, interlocking connections between the frame and tire preventing relative rotation thereof, and means located intermediate said interlocking connections for fastening said tire to the inner frame.

4. A wheel comprising an inner frame and tire, said frame having a part which fits in overlapping engagement with the tire, said tire being provided with a plurality of radial notches, lugs on the frame engaging said notches, and bolts extending through apertures in said overlapping parts intermediate said interlocking lugs and notches.

5. A wheel comprising an inner frame and tire, plates attached to the sides of the frame and overlapping the tire at their peripheral margins, bolts extending through openings in the overlapping parts of the plates and tire, and interlocking connections between the frame and tire acting to prevent relative rotation of the parts.

6. A wheel comprising an inner frame and a surrounding tire, plates attached to the sides of said frame and overlapping the tire at their peripheral margins, bolts extending through openings in the overlapping parts of said plates and tire, said tire being provided with a plurality of radial notches, and lugs on the frame engaging said notches.

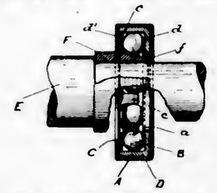
7. A wheel comprising an inner frame and a tire, said frame having overlapping engagement with the tire, and bolts extending through openings in said overlapping parts, the bolt openings in one of said parts being of larger cross-sectional area than the bolts, said bolts being so disposed relatively to the margins of said openings, radially of the wheel, as to permit expansion of the tire without exerting shearing stress on the bolts.

8. A wheel comprising an inner frame and a tire, said frame having overlapping engagement with the tire, and bolts extending through openings in said overlapping parts, the bolt openings in one of said parts being of larger cross-sectional area than the bolts, and said bolts being so arranged, relatively to each other and to the sides of the bolt openings circumferentially of the wheel, as to prevent relative rotation of the tire to the frame.

9. A wheel comprising an inner frame and a tire, plates attached to the sides of said frame and overlapping at their peripheral margins said tire, bolts extending through openings in said overlapping parts, the bolt openings in one of said parts, to wit,—the plates or the tire, being made of larger cross-sectional area than the bolts, said bolts being so disposed relatively to the margins of said openings, radially of the wheel, as to permit expansion of the tire without exerting shearing stress on the bolts.

10. A wheel comprising an inner frame and a tire, said frame having overlapping engagement with the tire, bolts extending through openings in said overlapping parts, the bolt openings in one of said parts being of larger cross-sectional area than the bolts, and parts on said frame having interlocking engagement with said tire to prevent relative rotation thereof.

856,599. BALL-BEARING. WILLIAM NICE, Jr., Ogontz, Pa. Filed June 15, 1906. Serial No. 321,850.



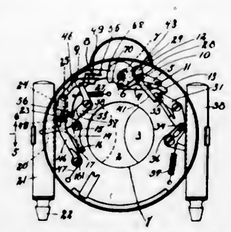
Claim.—1. A ball bearing comprising a race, balls carried thereby, a floating device resting upon said balls and having fingers separating them, and means for securing said floating device in operative relation to said race and balls said fingers being flexible and said parts disposed to permit the removal and insertion of said balls in the assembled relation of said parts.

2. A ball bearing comprising a circular race of substantially L-shaped cross section, balls supported by said race, a separator pressed to shape from sheet metal and having fingers disposed between said balls, and a jacket having flanges which hold said race and separator together.

3. A ball bearing comprising a race, in combination with balls, a separator having a body resting upon said balls and fingers bent at an obtuse angle thereto for retaining and separating said balls, and a jacket having parallel flanges for holding said race and separator together.

4. A ball bearing comprising a race, balls bearing upon said race, a pressed sheet metal separator having a body resting upon said balls and fingers disposed at an obtuse angle to said body for retaining and separating said balls, and a soft metal jacket having parallel flanges thereon which hold said separator and race together.

856,600. PHOTOGRAPHIC SHUTTER. EDWIN W. PARKER, Rochester, N. Y. Filed Nov. 26, 1904. Serial No. 234,381.



Claim.—1. In a photographic shutter, a lever arranged to open and close the light-admitting aperture of the shutter by movements in opposite directions of rotation, and a member arranged to engage said lever on opposite sides

of its fulcrum during a movement in one direction to move the lever first in one and then in the other direction.

2. In a photographic shutter, a lever, means for advancing said lever, means for returning the same to its original position, and a pivoted arm having connections for opening and closing the shutter by movement in opposite directions, the lever being arranged to engage the arm first on one and then on the other side of its pivot to move the same in opposite directions by a single movement in one direction.

3. In a photographic shutter, a lever, means for advancing and automatically releasing said lever, and means for returning the same to its original position, the lever being arranged to both open and close the light-admitting aperture of the shutter during its return movement.

4. A photographic shutter comprising means adapted to extend over the light-admitting aperture, an opening lever engaged with said means to operate the same, and a main lever formed and arranged to engage said opening lever on opposite sides of its fulcrum to move the latter in opposite directions, and thereby operate said means to open and close the aperture of the shutter, by a single movement in one direction.

5. A photographic shutter having an aperture, light-excluding means adapted to extend across the aperture, an opening lever engaged with said means to withdraw the same by a movement in one direction and advance the same across the aperture by a movement in the opposite direction, and a main lever formed with projections arranged to engage the said opening lever first on one side of its fulcrum and then on the other during a single movement in one direction to oscillate the opening lever and thereby retract and advance the light-excluding means to open and close the aperture.

6. A photographic shutter having an aperture, light-excluding means adapted to extend across the aperture, an opening lever engaged with said means to withdraw the same by a movement in one direction and advance the same across the aperture by a movement in the opposite direction, projections formed on said opening lever on opposite sides of its fulcrum, and a main lever having a projection arranged to engage one of said projections to move the opening lever in the direction to withdraw said means, and having a second projection arranged to subsequently engage another projection on the opening lever to move the latter in the opposite direction during a single movement in one direction of the main lever.

7. A photographic shutter comprising shutter-blades, a lever engaged with said blades and adapted to be oscillated to open and close said blades, projecting studs mounted on said lever on opposite sides of its fulcrum, a main lever overlying said opening lever, means for advancing and for retracting said main lever, the main lever being formed with a cam projection having an upturned edge adapted to ride over one of said studs on its advancing movement and formed to engage said stud on its return movement to move the latter and the opening lever in a direction to open the shutter-blades, the projection being of such length as to cause it to slip by said stud after the opening lever has been fully turned, and a second projection formed on the main lever arranged to engage the second stud on said opening lever after the first projection has passed by the first stud.

8. A photographic shutter having an aperture, light-excluding means adapted to extend over the aperture, connections arranged to move said means in opposite directions to open and close the aperture, and a single spring connected to operate said connections.

9. A photographic shutter having an aperture, light-excluding means adapted to extend over the aperture, connections constructed and arranged to operate said means to open and close the aperture, a single spring arranged to operate said connections by exerting a pull in one direction, and means for moving said connections in a direction to put said spring under tension and tripping the connections by a single movement.

10. A photographic shutter having an aperture, light-excluding means adapted to extend over the aperture, connections constructed and arranged to operate said means first in one and then in the opposite direction to open and close the aperture, a single spring arranged to operate said connections by exerting a pull in one direction, and separate mechanism for putting said spring under tension.

11. A photographic shutter having an aperture, light-excluding means adapted to extend over the aperture, a member arranged to operate said means to open and close the aperture, a single spring engaged with said member and arranged to move the latter to open and close the aperture, and mechanism for putting said spring under tension and releasing said member by a single movement.

12. A photographic shutter having an aperture, oscillating light-excluding means adapted to extend over the aperture, a movable member connected to operate said means, a spring engaged with said member arranged to move the same in one direction for oscillating the light-excluding means each in two opposite directions to both open and close the same, and separate mechanism for moving the said member in the opposite direction to put said member in operative position and place the spring under tension.

13. A photographic shutter having an aperture, light-excluding means adapted to close the aperture, a main lever connected to operate said means in opposite directions to both open and close said means, and an operating and tripping member mounted to engage said main lever to move the same in one direction.

14. A photographic shutter having an aperture, light-excluding means adapted to close the aperture, a main lever connected to operate said means in opposite directions to both open and close said means, an operating lever mounted to engage said main lever to move the same in one direction, and means for returning the main lever to its original position.

15. A photographic shutter having an aperture, light-excluding means adapted to close the aperture, a main lever connected to operate said means, an operating lever mounted to engage said main lever to move the same in one direction, and means for returning the main lever to its original position, the main lever being arranged to operate the light-excluding means both to open and close the aperture on its return movement.

16. A photographic shutter comprising means adapted to cover the aperture of the shutter, a main lever arranged to operate said means in opposite directions to both open and close the same and having a projecting lug, an operating lever having an arm arranged to engage said lug to move the main lever in one direction, and yielding means connected to said main lever for moving it in the opposite direction.

17. A photographic shutter comprising light-excluding members, a main lever formed with a projecting lug having a shoulder on one side and an inclined surface on the other, an operating lever provided with an arm arranged to engage the shoulder on said lug to move the main lever when rotated in one direction and formed of such a length as to slip by said shoulder when turned a predetermined distance and adapted to ride over the inclined surface of said lug in returning to its original position, yielding means for returning said main lever to its original position, and connections arranged to be operated by said main lever in its returning movement to both open and close said light-excluding members.

18. A photographic shutter comprising light-excluding members, an opening and closing device engaged therewith, a main lever having portions arranged to engage said device to open and close said members during its movement in one direction, means adapted to act with a uniform force on said lever to move the latter in a direction to engage said device, and a retarding device arranged to engage a portion of said main lever and resist the pressure of said means.

19. A photographic shutter comprising light-excluding members, an opening and closing device engaged therewith, a main lever having portions arranged to engage said device to open and close said members during its movement in one direction, means adapted to act with a uniform force on said lever to move the latter in a direction to engage said device, and a retarding device comprising a movable projection mounted to extend into the path of a portion of said main lever and be engaged thereby, and means connected to said projection adapted to exert a uniform resistance to movement of the lever.

20. In a photographic shutter having an actuator for both opening and closing the light-admitting orifice thereof by a single movement in one direction, means for retarding the action of said actuator comprising a projecting member arranged to extend into the path of motion of a portion of said actuator, and a yielding member connected to said projecting member and adapted to resist movement of the latter.

21. In a photographic shutter having an actuator for both opening and closing the light-admitting orifice thereof by a single movement in one direction, means for retarding the action of said actuator comprising a projecting member arranged to extend into the path of motion of a portion of said actuator, and means adapted to exert a resistance of uniform force connected to said projecting member.

22. In a photographic shutter having an actuator for both opening and closing the light-admitting orifice thereof by a single movement in one direction, means for retarding the action of said actuator comprising a projecting member arranged to extend into the path of motion of a portion of said actuator, a chamber containing fluid, a plunger movable in said chamber, its motion being resisted by the fluid contained therein, and connections between said plunger and said projecting member.

23. In a photographic shutter having mechanism for opening and closing the light-admitting orifice thereof, means for retarding the action of said mechanism comprising a projecting member arranged to extend into the path of motion of a portion of said mechanism, a yielding member connected to said projecting member and adapted to resist movement of the latter, and means for rendering said retarding device inoperative.

24. In a photographic shutter having mechanism for opening and closing the light-admitting orifice thereof, means for retarding the action of said mechanism comprising a projecting member arranged to extend into the path of motion of a portion of said mechanism, a yielding member connected to said projecting member and adapted to resist movement of the latter, an arm pivoted to engage a portion of said retarding means, and a cam adapted to engage said arm, whereby the latter may be actuated to move the projecting member out of the path of the shutter-operating mechanism.

25. In a photographic shutter, a main lever adapted to open and close the light-admitting aperture of the shutter by a single movement in one direction, and mechanism for retarding the action of said lever comprising a member having a projection extended into the path of motion of a portion of the lever and positioned to be engaged by the latter after it has opened the aperture and before it has closed the same, and yielding means connected to said member to resist movement thereof.

26. A photographic shutter having a light-admitting aperture, members adapted to close said aperture, a main lever arranged to actuate said members by a single movement in one direction to open and close the aperture, a retarding device for delaying the closing of the aperture comprising a projection arranged to extend into the path of motion of a portion of said main lever and be engaged by the same after it has caused the opening and before causing the closing of the aperture, and a member adapted to offer a constant resistance connected to said projection, thereby resisting the pressure of the main lever tending to move the projection out of its path, positive means arranged to move the projection away from said main lever, and yielding means tending to move the projection toward the main lever.

27. A photographic shutter having a light-admitting aperture, means for closing said aperture, an actuator for said means arranged to cause the latter both to open and close the aperture, manually-controlled connections displaceable to operate said actuator, and means independently movable into position to engage said actuator for retaining the aperture open while said operating connections are displaced.

28. A photographic shutter having a light-admitting aperture, means for closing said aperture, an actuator for said means arranged to cause the latter both to open and close the aperture, manually-controlled connections displaceable to operate said actuator, independent means governed by said connections for retaining the aperture open while said operating connections are displaced, and a stop independent of said connections movable into and out of position to render said retaining means inoperative.

29. A photographic shutter having a light-admitting aperture, means for closing said aperture, an actuator for said means arranged to cause the latter to open and close the aperture, manually-controlled operating connections for said actuator, independent means controlled by said manually-controlled operating connections adapted to retain the aperture open while said connections are displaced, a yielding member tending to move and hold said independent means into position for holding open the aperture-closing means, and a displaceable stop adapted to hold said independent means out of such position.

30. A photographic shutter having a light-admitting aperture, means for closing said aperture, an actuator arranged by a single movement in one direction to operate said means to cause both the opening and closing of said aperture, manually-controlled means connected to operate said actuator by a movement in one direction, and means arranged to move independently into position to engage said actuator and maintain the aperture open while said manually-controlled means is displaced.

31. A photographic shutter having a light-admitting aperture, means for closing said aperture, an actuator arranged by a single movement in one direction to operate said means to cause both the opening and closing of said aperture, manually-controlled means connected to operate said actuator by a movement in one direction, and means arranged to maintain the aperture open while said manually-controlled means is displaced, comprising a member under the control of said manually-controlled means constructed and arranged to move independently and automatically into position to engage and hold the actuator after it has caused the opening and before it has caused the closing of said aperture-closing means.

32. A photographic shutter having an aperture, means adapted to extend over and close said aperture, a lever having portions arranged to operate said means by a movement in one direction to both open and close said aperture, a manually-controlled member arranged to displace said lever, yielding means connected to said lever to return the same to its original position, the lever being adapted to operate the aperture-closing means on its return motion, a movable member having a projection, yielding means tending to move said projection into position to engage a portion of the lever, and a projection on said manually-controlled member arranged to engage said movable member and move it away from the lever.

33. A photographic shutter having an aperture, means adapted to extend over and close said aperture, a lever having portions arranged to operate said means by a movement in one direction to both open and close said aperture, a manually-controlled member arranged to displace said lever, yielding means connected to said lever to return the same to its original position, the lever being adapted to operate the aperture-closing means on its return motion, a movable member having a projection, yielding means tending to move said projection into position to engage a portion of the lever, a projection on said manually-controlled member arranged to engage said movable member and move it away from the lever, and an auxiliary movable piece arranged to engage said movable member and hold it away from said lever.

34. A photographic shutter comprising a main lever, a manually-controlled operating lever having a portion arranged to engage and displace said main lever and to release the same after displacing it by a predetermined amount, yielding means connected to the main lever for returning it to its original position, mechanism for opening and closing the light-admitting opening of the shutter, projections on the main lever arranged to engage and operate said mechanism on its return movement to both open and close said aperture, a lug mounted on said lever, a

movable arm having a projection adapted to engage said lug and arrest the motion of the main lever after it has caused the opening of the aperture-closing mechanism, yielding means connected to said arm tending to move the projection on the latter into position to engage the lug, and a projection on the manually-controlled operating lever adapted to engage a portion of the arm.

35. A photographic shutter comprising mechanism adapted to close the light-admitting aperture thereof, an actuator therefor, manually-controlled means for operating said actuator, and means rendered operative by one actuation of said manually-controlled means to lock said actuator to hold the aperture-closing mechanism open, and caused to release said actuator to permit the latter to positively close said mechanism by a second actuation of said manually-controlled means.

36. A photographic shutter comprising mechanism adapted to close the light-admitting aperture thereof, an actuator arranged by one movement to operate said mechanism to open and close the aperture, manually-controlled means for operating said actuator, a member rendered operative on one actuation of said manually-controlled means to arrest said actuator during its operative movement after it has caused the opening of the aperture-closing mechanism and before closing the same, and connections on said manually-controlled means arranged to engage said member on a second actuation of the means and actuate the same to release said actuator, whereby the latter is enabled to continue its motion and close the shutter-closing mechanism.

37. A photographic shutter comprising mechanism adapted to close the light-admitting aperture thereof, a main lever constructed and arranged to engage said mechanism on an operative stroke in one direction and cause the latter to both open and close the aperture, an operating lever under the control of the operator for actuating said main lever, a locking lever having a portion adapted to extend into the path of movement of and engage a portion of said main lever after the latter has actuated the aforesaid mechanism to operate the shutter-aperture, and a projection on said operating lever arranged to engage a portion of said locking lever on a second actuation of the operating lever and move the locking lever out of engagement with the main lever.

38. A photographic shutter comprising mechanism adapted to close the light-admitting aperture thereof, an actuator arranged by one movement to operate said mechanism to open and close the aperture, manually-controlled means for operating said actuator, a member rendered operative on one actuation of said manually-controlled means to arrest said actuator during its operative movement after it has caused the opening of the aperture-closing mechanism and before closing the same, connections on said manually-controlled means arranged to engage said member on a second actuation of the means and actuate the same to release said actuator, and a device adapted to positively hold said member away from the actuator.

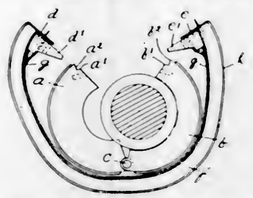
39. A photographic shutter comprising mechanism adapted to close the light-admitting aperture thereof, an actuator arranged by one movement to operate said mechanism to open and close the aperture, manually-controlled means for operating said actuator, a member rendered operative on one actuation of said manually-controlled means to arrest said actuator during its operative movement after it has caused the opening of the aperture-closing mechanism and before closing the same, connections on said manually-controlled means arranged to engage said member on a second actuation of the means and actuate the same to release said actuator, and a device adapted to positively hold said member away from the actuator comprising a projection movable into and out of contact with a portion of the said member.

40. A photographic shutter having aperture-closing mechanism an actuator therefor arranged to operate said mechanism to open and close the same, yielding means adapted to engage a portion of said actuator to retard its action in closing the aperture, positive means adapted to rigidly arrest the action of said actuator while the aperture is open, and mechanism for rendering said yielding and positive means inoperative.

41. A photographic shutter having aperture-closing mechanism, an actuator therefor arranged to operate said mechanism to open and close the same, yielding means adapted to engage a portion of said actuator to retard its action in closing the aperture, positive means adapted to rigidly arrest the action of said actuator while the aperture is open, and mechanism for rendering said yielding and positive means inoperative, said mechanism being arranged to throw one of said means out of operative position while the other means is operative.

42. A photographic shutter having aperture-closing mechanism, an actuator therefor arranged to operate said mechanism to open and close the same, yielding means adapted to engage a portion of said actuator to retard its action in closing the aperture, positive means adapted to rigidly arrest the action of said actuator while the aperture is open, and a disk having portions movable into position to engage said yielding means and said positive means respectively to move them out of operative relation with the actuator, the relation of the portions being such that when one of said means is in position to engage the actuator, the other of said means is engaged and held out of operation by said cam.

856,601. BUFFING-ROLL. MAGNUS PREVOST, Haverhill, Mass. Filed Jan. 11, 1905. Serial No. 240,538.



Claim.—1. In combination with a buffing roll, a flexible, encircling, cushioning strip, means for removably connecting said strip at one end to said roll, an attaching device connected to the opposite end of said strip and movable radially of the roll into and out of engagement therewith, and means for connecting said attaching device to the roll movable into and out of locking engagement therewith while said strip is in position thereon, substantially as described.

2. A buffing roll comprising two pivoted sections forming a cylinder when closed, a flexible, encircling, cushioning strip terminating at the meeting faces of said sections, means for connecting said strip at one end to one section, an attaching device connected to the opposite end of said strip and movable radially into and out of engagement with the other section, and means for connecting said attaching device to said section movable into and out of locking engagement therewith while said strip is in position thereon and disposed to be held in locked position by said sections while they are closed, substantially as described.

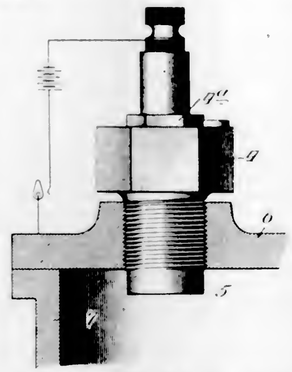
3. In combination with a buffing roll having a longitudinal opening, providing seats at opposite sides thereof, a flexible, encircling, cushioning strip terminating at opposite sides of said opening, a pair of attaching bars respectively connected to the ends of said strip and movable radially into and out of engagement with said seats, and means for connecting said bars to said seats movable into and out of locking engagement therewith while said strip is in position on the roll, substantially as described.

4. A buffing roll comprising two pivoted sections forming a cylinder when closed, and having oppositely disposed seats, a pair of bars having coacting clamping faces, a flexible, encircling, cushioning strip respectively connected at its ends to said bars, means for removably connecting said bars to said sections in position on said seats, one of said bars being movable radially of the roll into and out of engagement with its seat and the connecting means therefor passing therethrough from its clamping face side to engage the section to which it is connected, substantially as described.

5. In combination with a buffing roll, having a pair of seats, a pair of longitudinally extending, holding bars movable transversely into and out of engagement with said seats, a flexible backing strip connected to said bar and adapted to encircle said roll, a cushioning felt connected by adhesive material to the outer side of said strip, and means for securing said bars on said seats movable into and out of locking engagement therewith when the bars are in position on said seats, substantially as described.

6. A buffing roll comprising two pivoted sections forming a cylinder when closed together, a pair of longitudinally extending clamping bars disposed at the meeting edges of said section, an inwardly extending lug on each end of each bar, means engaging said lugs and said sections respectively for removably securing said bars thereto, and an encircling cushioning strip connected at its ends to said bars, substantially as described.

856,602. ELECTRIC SPARKING PLUG. CHARLES E. REED, Jr., Chicago, Ill. Filed Feb. 27, 1907. Serial No. 359,565.



Claim.—1. In a sparking-plug, the combination of a body having a tubular neck forming the sparking-chamber, an upper electrode projecting centrally into said chamber, a ring forming the open base of said chamber, a bearing supported on said ring to aline vertically with said upper electrode, and a lower electrode supported in said bearing.

2. In a sparking-plug, the combination of a body having a tubular neck forming the sparking-chamber, an upper electrode projecting into said chamber, a ring forming the open base of said chamber and having a depending segment provided with an opening, a bearing supported in said opening, and a lower electrode supported in said bearing in vertical alinement with the upper electrode.

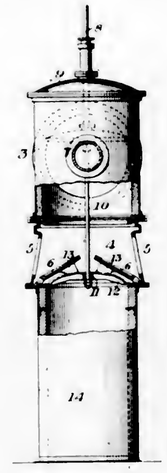
3. In a sparking-plug, the combination of a body having a tubular neck forming the sparking-chamber, an upper electrode projecting into said chamber, a ring having a depending segment containing an opening with a head confined in the opening, the ring, segment and head being threaded and screwed into said neck to form the open base thereof, a neck extending from said head and terminating in a bearing near the center of said ring, and a lower electrode supported in said bearing in vertical alinement with the upper electrode.

4. In a sparking-plug, the combination of a body having a tubular neck forming the sparking-chamber, an upper electrode projecting into said chamber, an annular support for a lower electrode forming the open base of said chamber, a lower electrode on said support in vertical alinement with said upper electrode, and a valved port in the body leading to said chamber.

5. In a sparking-plug, the combination of a body having a tubular neck forming the sparking-chamber, an upper electrode projecting into said chamber, a ring forming the open base of said chamber and having a trough in its upper side, a lower electrode supported in said neck, and a valved port in the body leading to said chamber.

6. In a sparking-plug, the combination of a body having a tubular neck forming the sparking-chamber, an upper electrode projecting into said chamber, a valve-housing in the body having an opening, a spring-pressed valve in the housing controlling said opening therein, a port leading from said housing into the sparking-chamber, a ring forming the open base of said chamber, and a lower electrode supported in said neck.

856,603. CHIMNEY-VALVE FOR HOT-BLAST STOVES. WILLIAM F. RUST, Joliet, Ill. Filed June 8, 1906. Serial No. 320,726.



Claim.—1. In a chimney valve for hot blast stoves, a main valve, and a conduit controlled by said valve and having an air escape outlet which is open when the main valve is closed, and means for closing said outlet when the main valve is open; substantially as described.

2. In a chimney valve for hot blast stoves, a supplemental closure between the valve and the chimney, an air outlet, and connections for moving the closure to close the air outlet when the main valve is open; substantially as described.

3. In a chimney valve, a supplemental closure between the valve and the stack, an air outlet adjacent to said closure, and mechanism connected with the main valve and arranged to move the closure to shut the air outlet when the main valve is opened; substantially as described.

4. In a chimney valve, a movable door between the valve and the chimney, said door being normally in closed position, an air outlet in the flue adjacent to the door, and a connection extending from the main valve and arranged to move the door to close the air outlet when the main valve is opened; substantially as described.

5. A chimney valve having a tail-rod, and a swinging door, the conduit having an air opening adjacent to the door, and the tail-rod having mechanism for moving the door against the air outlet when the main valve is opened; substantially as described.

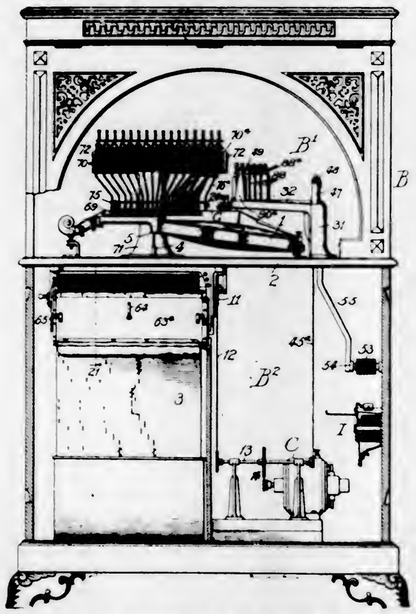
6. A chimney valve having in the conduit between said valve and the chimney flue, a valve device normally forming a supplemental closure for the flue, said flue having a side opening, and means whereby the said opening is closed when the main and supplemental valves are moved from their seats; substantially as described.

7. A chimney conduit having a valve, an air opening in

the valve flue, and a double-acting valve normally forming a supplemental closure for the conduit and arranged to close the air opening when the stove is opened to the chimney; substantially as described.

8. In a chimney valve, a sectional case between the valve and the chimney flue, said casing having escape openings, and means for closing said openings, when the chimney valve is opened said casing being removable to give access to the valve and seat; substantially as described.

856,604. ELECTRIC SELF-PLAYING VIOLIN. HENRY K. SANDELL, Chicago, Ill., assignor to Mills Novelty Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 27, 1906. Serial No. 303,172.



Claim.—1. In combination with a stringed instrument, a sounding device supported adjacent to a string of the instrument and comprising a sounder on a rotatable shaft, means for rotating said sounding device, and a sounder-shaft reversing device connected with said shaft.

2. In combination with a stringed instrument, a sounding device supported adjacent to a string of the instrument, and comprising a rotatable sectional shaft having its sections pivotally connected together end to end and a sounder on the forward shaft-section, means for rotating said sounding device, and a sounder-shaft reversing device connected with the rear section of said shaft.

3. The combination with a stringed instrument, of a sounding device supported adjacent to a string of the instrument and comprising a sounder, a rotatable shaft on which said sounder is mounted, means for rotating said shaft and means whereby the direction of rotation of said shaft can be reversed.

4. The combination with a stringed instrument, of a sounding device supported adjacent to a string of the instrument and comprising a sounder, a rotatable shaft on which the sounder is mounted, means for rotating said shaft and controllable means for reversing the direction of rotation of said shaft.

5. The combination with a stringed instrument, of a sounding device supported adjacent to the string of the instrument, means constantly moving in one direction for rotating the sounding device, and means whereby the direction of rotation of the sounding device can be reversed.

6. In combination with a stringed instrument, a sounding device comprising a rotary shaft and a sounder for a string on said shaft, and a reversing device comprising a driving pinion loosely mounted on said shaft, a pinion firmly mounted on the shaft and an intermediate pinion loosely supported on the shaft to be rotated about the latter and meshing with said two first-named pinions, a ratchet encircling said intermediate pinion and having a normally locked engagement therewith, and ratchet-arresting means, for the purpose set forth.

7. In combination with a stringed instrument, a sounding device comprising a rotatory shaft and a sounder for a string on said shaft, and a reversing device comprising a drive-pulley and a pinion thereon loosely supported on said shaft, a pinion firmly mounted on the shaft and an intermediate spring-pressed pinion loosely surrounding the shaft to be rotated about the latter and meshing with said two first-named pinions, an annular ratchet loosely surrounding the shaft and having a closed side containing a slot through which said intermediate pinion extends and with which it normally interlocks by its controlling spring-pressure, and ratchet-arresting means, for the purpose set forth.

8. In combination with a stringed instrument, a sounding device comprising a shaft formed of flexibly connected sections with a sounder for a string on the forward section, a sleeve having a tube extending longitudinally through it, and in which the rear shaft-section is rotatably mounted, a beveled pinion rigidly mounted on the rear end of said shaft, a hub loosely mounted on said sleeve adjacent to said pinion, a beveled pinion journaled on said hub and meshing with said rigid pinion, an annular ratchet having a closed slot-containing side and provided with a sleeve-extension loosely surrounding said tube to cause the ratchet to encircle said hub and the pinion thereon with the latter crossing said slot, a spring connecting said hub and ratchet, a drive-pulley loosely mounted on said sleeve and provided on one face with a beveled pinion meshing with said pinion on the hub, and an electro-magnet mounted over said ratchet and having, to engage therewith, a stop-rod connected with the armature to be reciprocated thereby relative to said ratchet, for the purpose set forth.

9. In a self-playing stringed instrument, the combination with a string, of a sounding device comprising a rotatably mounted shaft and a sounder thereon adapted to sound said string, said sounding device including an electro-magnet; a plurality of fingering-devices each provided with an electro-magnet and adapted to finger said string when its magnet is energized; an electric circuit having branches, each branch including one only of said fingering-device magnets and the common part including the sounding-device magnet, whereby each of said fingering-device magnets is included in series with said sounding-device magnet, and a reversing device connected with said shaft.

10. The combination with a stringed instrument, having a neck, of fingering devices for the strings, a finger-board supported independently of the neck of the instrument and extending between the neck and the fingering devices and out of contact with the neck with the strings of the instrument extending over the finger-board.

11. The combination with a stringed instrument having a neck, fingering devices for the strings, a finger-board rigidly supported out of contact with the neck and extending over the neck and between it and the fingering devices, the strings of the instrument extending over the finger-board.

12. In a self-playing stringed instrument, the combination of the neck a frame provided with a perforated plate, fingering devices for the strings provided with reciprocating rods movable through the perforations in said plate, and the finger-board of the instrument rigidly suspended from said frame to extend over the neck.

13. In a self-playing stringed instrument, the combination of the neck a frame provided with a perforated plate, fingering devices for the strings provided with reciprocable rods movable through the perforations in the plate, the finger-board of the instrument rigidly suspended from said frame to extend over the neck, and a plate on said neck provided with an upturned forward end across which the strings leading to the tuning-keys of the instrument are stretched.

14. In a self-playing stringed instrument, the combination of a casing in which the instrument is mounted, the strings of the instrument, an upright housing provided with an arm extending lengthwise over said strings, and rotatory sounder-devices supported on said arm for playing said strings and a depressor-device connected with said housing and operative to spring it and depress the said sounder-devices to a lower plane relative to said strings, for the purpose set forth.

15. In an electric self-playing stringed instrument, the combination of a casing in which the instrument is mounted, the strings of the instrument, an upright housing provided with an arm extending lengthwise over said strings rotatory sounder-devices supported on said arm, a depressor-device comprising a lever fulcrumed between its ends and having one end connected with said housing, an armature on the opposite end of the lever, an electro-magnet supported to attract said armature and an electric circuit in which said magnet is included, for the purpose set forth.

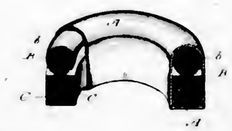
16. In a self-playing instrument, the combination with a string, of a sounding device including an electro-magnet, a fingering-device including an electro-magnet, an electric circuit including said magnets in series and having a branch, a picker device including an electro-magnet in said branch, a circuit opening and closing device and connections whereby said sounding device magnet may be short circuited, comprising normally separated contact bars and means for bringing them into contact when said picker device is operated.

17. In a self-playing stringed instrument, the combination with a string, of a sounding device including an electro-magnet, a fingering-device including an electro-magnet, an electric circuit including said magnets in series and having a branch, a picker device comprising an electro-magnet in said branch, an armature carrying rod provided with a stud and terminating in a head having pivotally supported upon it a finger, a stop rod extending from said finger, normally supported contact springs extending at their free ends into the path of said stud and connections whereby said springs when brought in contact will short circuit said sounding device magnet.

18. In a self-playing stringed instrument, the combination with a string, of a sounding-device including an electro-magnet adapted to sound said string, a plurality of fingering devices each provided with an electro-magnet and adapted to finger said string when its magnet is energized, an electric circuit having branches, each of said fingering device magnets being included in a different one of said branches with their common part including the sounding device magnet whereby each of said fingering device magnets is included in series with said sounding device magnet; a picker device including an electro magnet in another of said branches, a circuit opening and closing device and connections whereby said sounding device magnet can be short circuited, comprising normally separated contact bars and means for bringing them into contact when said picker device is operated.

19. In an electric self-playing stringed instrument, the combination with a casing supporting the parts, of a circuit having branches, a motor, an electrical contact-roller in said circuit and means for feeding a perforated music-sheet across said roller; contact fingers co-operating with said roller through perforations in said sheet sounder-devices for the strings, each including an electro-magnet, fingering devices for the strings, each including an electro-magnet, lugs on the armatures of the sounding-device magnets and a rocker-bar in the paths of said fingers, and a regulator comprising electro-magnets supported at successively increasing distances from said sounding-device magnets, rods connecting the armatures of said regulator-magnets with said rocker-bar, said armatures containing lateral recesses, rods extending between said armatures with their ends confined in the recesses, and a fixed bar extending across the series of said armatures and having depending knife-edges between the armatures in the paths of said last named rods, said fingering-device magnets being each connected by one of said branches with one of said contact fingers and the branches for the fingering-devices of each string having a common part including a sounding-device magnet, and others of said contacts being each connected by a branch with one of said regulator-magnets.

856,605. PACKING. WALTER E. SANDERS, Cleveland, Ohio, assignor to The Mechanical Rubber Company, New York, N. Y., a Corporation of New Jersey. Filed May 11, 1906. Serial No. 316,259.



Claim.—1. In a packing strip, the combination of two molded wedge-shaped strips having their inclined faces in contact, each of said wedge-shaped strips being formed of a sheet of cloth wrapped around itself with a layer of rubber composition interposed between successive convolutions.

2. In a packing strip, the combination of two wedge-shaped strips having their inclined faces in contact, each of said strips being formed of a sheet of cloth wrapped around itself with a layer of rubber composition interposed between successive convolutions, such strips being thereupon molded into such wedge form.

3. In a packing strip, the combination of a strip composed of yielding material, two wedge-shaped strips adjoining said first strip, said wedge-shaped strips having their inclined faces in contact and being respectively formed of a single piece of cloth wrapped around itself and held together by a rubber compound and subsequently molded into such wedge form, and a casing inclosing the whole.

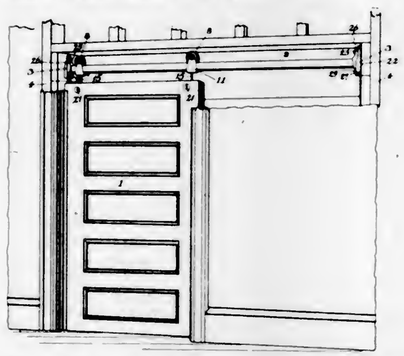
856,606. CHAIN-SNAP. PATRICK J. SCANLON, Newark, N. J. Filed Nov. 26, 1906. Serial No. 345,022.



Claim.—1. The herein described snap, comprising in combination a socket member having a lateral aperture, a resilient tongue member adapted to enter said socket and having a hollow lateral projection to snap into said aperture, and a reinforcing plug in said hollow projection.

2. In a chain snap, the combination of a socket member having an aperture through its side wall, and a tongue member providing a sheet metal strip adapted to lie resiliently against the inner wall of said socket, said strip having a hollow, integral lateral projection adapted to enter the aperture of the socket member, and a finger piece at its end, a reinforcing or filling piece in said hollow projection, and means for attaching a chain to said members.

856,607. COMBINED HANGER AND TRACK FOR EDGEWISE-MOVABLE DOORS. DANIEL SCHUYLER, Bridgeport, Conn., and HOMER LAUGHLIN, Jr., Los Angeles, Cal., assignors to The Perfect Sliding Door Company, Los Angeles, Cal., a Corporation of California. Filed June 21, 1904. Serial No. 213,508.



Claim.—1. A rail, a support running on the rail, arms carried by the support and extending one on each side of the rail, a bridge carried below the rail, by the arms and detachable therefrom, a body below the bridge and a suspender connecting the bridge and the body.

2. A rail, a door hanger running on the rail and surrounding the rail at top, bottom and sides and a centrally arranged suspender below the hanger detachable from the side portions of the hanger and carried thereby.

3. A rail, a hanger running on the rail, a body below the rail, a suspender carried by the hanger and having a threaded part extending through a supporting part of the body, means to hold the body from turning, a nut on the threaded part below the supporting part of the body and a washer interposed between the nut and the supporting part, and constructed to prevent rotation of the nut relative to the body when the supporting part is borne by the washer on the nut.

4. An edgewise movable closure; a rail; a roller running on said rail; supporting means carried by the roller and constructed with an intermediate vibration absorbing detachable portion.

5. Means for supporting a door comprising a rail; a roller on said rail; arms carried by said roller and extending downward therefrom; and a bridge below the rail detachably interlocked with said arms.

6. The combination of a rail; a roller on said rail; arms carried by said roller and extending downward therefrom; a bridge below the rail and detachably interlocked with said arms, a body and means by which the body is adjustably connected with said bridge.

7. A trough shaped metal rail, means for holding said rail tense, a door, a roller running on said rail, sheet metal connection between said roller and the door, and means for rendering said connection tense.

8. A trough shaped metal rail, and a support therefor wedged into the space between the walls of the trough to lessen the vibration.

9. In means for supporting an edgewise movable door, sheet metal arms, arranged side by side, and a wedging device to produce a lateral tension in said arms.

10. The combination with an edgewise movable closure of a roller, a rail for the roller and means connecting said closure with a roller, said means comprising a sound deadening device.

11. Means for supporting a door comprising a rail, a support for the rail, another support for the rail contacting therewith at two points and means for canting such latter support to cramp the rail between said points.

12. Means for supporting a door comprising a rail, a support for one end thereof, a vertically adjustable support for the other end of the rail contacting with the rail at two separate points, means for adjusting the latter support vertically, and means for canting the support.

13. A cantaliver support, a rail fixed thereto, and means for adjusting the support without disturbing its position relative to the rail.

14. An edgewise movable door, an antiresonant support therefor, and a vibration intercepter between the door and such support.

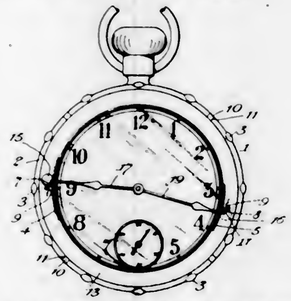
15. An edgewise movable door and a support therefor comprising an angular shaped sheet-metal rail and a grooved wheel, constructed to contact with said rail at the opposite inside faces of the groove and free from contact between said faces.

16. An edgewise movable closure, a support therefor comprising a rail having diverging faces, and an externally-grooved wheel, the opposite inside faces of the groove of which contact with and run on said diverging faces, the intermediate face of the groove being free from contact with the rail.

17. The combination with a bent sheet metal rail of a support for one end of the rail, a support for the other end of the rail extending outside and inside the same and means for canting the latter support to cramp the rail between two parts of such support.

18. The combination with a rail, of a vertically adjustable support for one end of the rail, a vertically adjustable support for the other end of the rail, said supports respectively contacting with the rail at two separate points, and means for canting said supports to cramp the rail.

856,608. WATCH. ALFRED A. O. SEELER, Newark, N. J. Filed April 14, 1906. Serial No. 311,683.



Claim.—1. In a watch for determining the time by the sense of feeling, the combination of a ring, covers rotatable thereon, an hour hand extending between one of said covers and said ring, a minute hand extending between the other one of said covers and said ring and means on said covers adapted to engage said hands, substantially as described.

2. In a watch for determining the time by the sense of feeling, the combination of a ring having hour and minute indications on its outer circumference, covers rotatable thereon having marks, an hour hand extending between one of said covers and said ring, a minute hand extending between the other one of said covers and said ring and means on said covers adapted to engage said hands, substantially as described.

3. In a watch for determining the time by the sense of feeling, the combination of a ring having toothed flanges on its upper and lower faces, covers rotatable thereon, an hour hand extending between one of said covers and said ring, a minute hand extending between the other one of said covers and said ring and pawls on said covers adapted to be engaged by said hands to force them into engagement with the teeth of said flanges, substantially as described.

4. In a watch for determining the time by the sense of feeling, the combination of a ring having toothed flanges on its upper and lower faces, covers rotatable thereon having marks, an hour hand extending between one of said

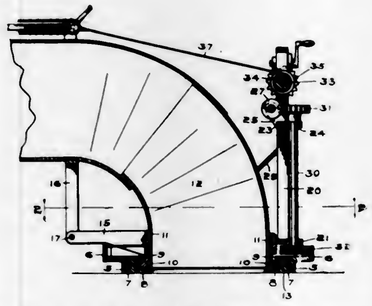
covers and said ring, a minute hand extending between the other one of said covers and said ring and pawls on said covers adapted to be engaged by said hands to force them into engagement with the teeth of said flanges, substantially as described.

5. In a watch for determining the time by the sense of feeling, the combination of a ring having hour and minute indicating projections on its outer circumference, covers rotatable thereon and having projections, an hour hand extending between one of said covers and said ring, a minute hand extending between the other one of said covers and said ring and means on said covers for engaging said hands, substantially as described.

6. In a watch for determining the time by the sense of feeling, the combination of a ring having hour and minute indicating projections on its outer circumference and toothed flanges on its upper and lower faces, covers rotatable thereon and having projections, an hour hand extending between one of said covers and said ring, a minute hand extending between the other one of said covers and said ring and pawls on said covers adapted to be engaged by said hands to force them into engagement with the teeth of said flanges, substantially as described.

7. In a watch for determining the time by the sense of feeling, the combination of a ring having spring plates, covers engaged by said plates to rotatably secure them, an hour hand extending between one of said covers and said ring, a minute hand extending between the other one of said covers and said ring and means on said covers adapted to engage said hands, substantially as described.

856,609. PNEUMATIC STRAW-STACKER. TRAVES N. SELLERS, Munro, Ontario, Canada, assignor to The Indiana Manufacturing Company, Indianapolis, Ind., a Corporation of West Virginia. Filed May 18, 1906. Serial No. 317,640.



Claim.—1. In a pneumatic stacker, the combination with the discharge chute, of a collar, a gear ring engaging said collar, a closure for said gear ring, driving mechanism engaging said gear ring, and means for driving said mechanism.

2. In a pneumatic stacker, the combination, with the discharge chute, of driving mechanism composed of a gear ring, a framework, a shaft supporting member in said framework, a shaft, a pinion on the lower end of said shaft, a pinion at the upper end of said shaft, and a worm gear engaging said upper pinion.

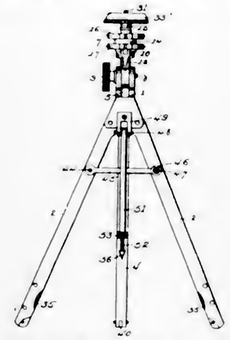
3. A revolving mechanism for stackers composed of a gear ring, a collar provided with supports and a shaft bearing, standards having a shaft bearing therebetween mounted on said supports, a shaft mounted in said bearings having pinions at its lower and upper ends which engage respectively with said internal gear ring and a worm gear, and means for operating said worm gear.

4. A revolving mechanism for stackers consisting of a base-plate, an internal gear-ring mounted thereon, a collar revolubly mounted therebetween, a closure for said internal gear-ring, and driving mechanism connected to said collar and engaging said gear-ring which mechanism when operated revolves with said collar within said internal gear ring.

5. A revolving mechanism for pneumatic stacker chutes comprising a base-plate provided with an upwardly extending flange, a gear-ring mounted thereon having an inwardly extending flange, means for rigidly connecting said base-plate and said gear-ring, a flanged collar seated between said base-plate and said gear-ring, a closure connected to said collar and covering said gear-ring, driving mechanism connected to said collar and engaging said gear-ring, and means for driving said mechanism whereby said collar with said mechanism is revolved.

6. The combination, with a discharge chute, of a collar surrounding said chute, an internal gear-ring engaging said collar, a closure connected to said collar and covering said internal gear-ring, supports and a shaft-bearing on said collar, standards mounted on said supports, a cross-member between said standards provided with a shaft bearing, a shaft supported between said bearings, a pinion on the lower end of said shaft and engaging said gear-ring, and means for driving said shaft, whereby said discharge chute with its driving mechanism is revolved about said internal gear-ring.

856,610. TRIPOD. OTTO W. STEINDORF, Wheeling, W. Va. Filed July 12, 1906. Serial No. 325,917.



Claim.—1. In a tripod for cameras, a head, two oppositely disposed legs pivotally mounted in said head, said legs having intermeshing gear segments, a third leg pivoted in said head, and means for mounting a camera upon said head.

2. In a tripod for cameras, a head having two bifurcations therein at right angles to each other, two oppositely disposed legs pivotally mounted in one of said bifurcations, said legs having intermeshing gear segments, a third pivoted in the other of said bifurcations, a pivoted spur carried by each of the oppositely disposed legs, said spurs being adapted for closing up within the legs, means for holding each of said spurs when open in an inwardly downwardly inclined position, a pivoted spur carried by the third leg, means for holding the last mentioned spur when open in line with said third leg, bracing means for said oppositely disposed legs, and means for mounting the camera on said head.

3. In a tripod for cameras, the combination with a head having pivoted legs, said legs having post or tree engaging means, of an extension brace carried by said head, said brace comprising a tubular rod, an exteriorly threaded stem slidable within said rod and projecting therefrom, and an adjusting nut on said stem, said nut having a central threaded bore and a diagonally extending smooth bore of larger caliber than said threaded bore, said bores bisecting each other.

4. In a tripod, a head, means for mounting a camera on said head, two oppositely-disposed legs pivotally mounted in said head, said legs having intermeshing gear-segments, a third leg pivotally mounted in said head, and pivoted spurs carried by each of said legs.

5. In a tripod, a head, means for mounting a camera on said head, two oppositely-disposed legs pivotally mounted in said head, said legs having intermeshing gear-segments, a third leg pivotally mounted in said head, pivoted spurs carried by each of said legs, and an extensible brace carried by said head.

6. In a tripod, a head, means for mounting a camera on said head, two oppositely-disposed legs pivotally mounted in said head, said legs having intermeshing gear-segments, a third leg pivotally mounted in said head, pivoted spurs carried by each of said legs, and means for holding said spurs in adjusted positions.

7. In a tripod, a head, and three legs pivoted in said head, two of said legs having intermeshing gear segments.

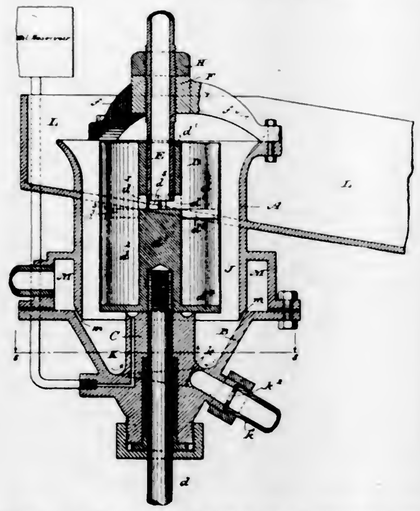
8. In a tripod, a head, two oppositely-disposed legs pivotally mounted in said head, intermeshing gear-segments carried by said legs, a third leg pivoted in said head, and spurs carried by each of said legs.

9. In a tripod, a head, two oppositely-disposed legs pivotally mounted in said head, intermeshing gear-segments carried by said legs, a third leg pivoted in said head, and foldable spurs carried by each of said legs.

10. In a tripod, two oppositely disposed legs pivotally mounted in a suitable head, said legs having intermeshing gear-segments, a third leg pivoted in said head, spurs carried by each of said legs, and means for holding said spurs is adjusted positions.

11. In a device of the character described, a pivoted brace comprising a tubular rod, a threaded stem slidable within said rod and projecting therefrom, and an adjusting nut on the outwardly-projecting end of said stem, said nut having a central threaded bore and a diagonally extending smooth bore of larger caliber than said threaded bore, said bores bisecting each other.

856,611. PROCESS OF SEPARATING OR CLASSIFYING ORES. HERBERT E. WETHERBEE, Cleveland, Ohio, assignor of six-twentieths to William Rattle, one-eighth to James F. Leitch, and seven-fortieths to Cyrus W. Merrell, Cleveland, Ohio. Original application filed Mar. 27, 1905, Serial No. 252,132. Divided and this application filed Oct. 9, 1905. Serial No. 281,882.

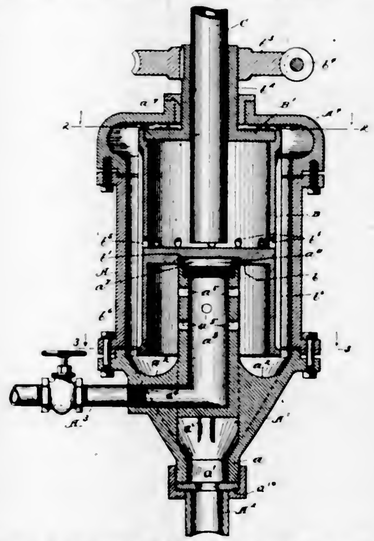


Claim.—1. The process of separating or classifying ores which consists in forming a rapidly rotating annular column of water; subjecting the same to pressure from below, whereby an upward helical flow is produced; centrifugally projecting the ore into said column of water; and momentarily retarding the ore at the external surface of the column, thus causing the rotating water to select and carry upward the lighter ore particles.

2. The process of separating or classifying ores which consists in forming a rapidly rotating annular column of water; subjecting the same to hydrostatic pressure from below, whereby an upward helical flow is produced; centrifugally projecting the ore into said column of water intermediate of its length and at substantially the same speed of rotation; and momentarily retarding the ore at the external surface of the column, thus causing the rotating water to select and carry upward the lighter ore particles.

3. The process of separating or classifying ores which consists in forming a rapidly rotating annular column of water; subjecting the same to hydrostatic pressure from below, whereby an upward helical flow is produced; centrifugally projecting the ore into said column of water intermediate of its length and at substantially the same speed of rotation; momentarily retarding the ore at the external surface of the column, thus causing the rotating water to select and carry upward out of the ring the particles of the lighter class; and removing the particles which sink against the upward flow.

856,612. MEANS FOR SEPARATING OR CLASSIFYING ORES. HERBERT E. WETHERBEE, Cleveland, Ohio, assignor of six-twentieths to William Rattle, one-eighth to James F. Leitch, and seven-fortieths to Cyrus W. Merrell, Cleveland, Ohio. Continuation of application Serial No. 252,132, filed Mar. 27, 1905. This application filed Mar. 25, 1907. Serial No. 364,283.



Claim.—1. In means for separating ores, the combination of a stationary receptacle provided with openings for the ingress and egress of liquid; a positively-driven rotary member in said receptacle which is separated from the receptacle's walls by an annular space forming a sorting column, said rotary member being adapted to impart a rotary motion to the receptacle's contents and to receive and project the ores to be separated into said sorting column intermediate of the top and bottom of the latter; and a source of liquid supply adapted to furnish a stream of liquid flowing upwardly through said sorting column from such ingress opening.

2. In means for separating ores, the combination of a stationary receptacle provided with openings for the ingress and egress of liquid; a positively-driven rotary member in said receptacle which is separated from the receptacle's walls by a vertical elongated annular space forming a sorting column in which the heavier material is free to descend by gravity, said rotary member being adapted to impart a rotary motion to the receptacle's contents and to receive and horizontally project the ores to be separated into said sorting column; and a source of liquid supply adapted to furnish a stream of liquid flowing upwardly through said sorting column from such ingress opening.

3. In means for separating ores, the combination of a stationary receptacle provided with openings for the ingress and egress of liquid; a positively-driven rotary member in said receptacle which is separated from the receptacle's walls by a vertical elongated annular space forming a sorting column in which the heavier material is free to descend by gravity, said rotary member being adapted to impart a rotary motion to the receptacle's contents and to receive and horizontally project the ores to be separated into said sorting column intermediately of the ends of the latter; and a source of liquid supply adapted to furnish a stream of liquid flowing upwardly through said sorting column from such ingress opening.

4. In means for separating ores, the combination with a stationary receptacle provided with openings for the ingress and egress of liquid and normally open; of a positively-driven rotary member in said receptacle adapted to impart a rotary motion to the receptacle's contents, said latter member and the receptacle's walls being separated by an elongated annular space forming a sorting column in which the separation is effected, said rotary member adapted to receive the ores to be separated and deliver them into said sorting column.

5. In means for separating ores, the combination with a stationary receptacle provided with an upper and a lower egress opening for liquid and an opening for the ingress of liquid; of means in said receptacle forming an annular space comprising an upper perpendicular elongated portion forming a sorting column in which the separation is effected, and a lower portion forming a settling chamber; said means including a positively-driven rotary member adapted to impart a rotary motion to the receptacle's contents, said rotary member being located horizontally adjacent to said sorting column and terminating substantially in the horizontal plane which marks the lower termination of said sorting column; said openings being normally open.

6. In means for separating ores, the combination with a receptacle provided with an upper and a lower egress opening for liquid and an opening for the ingress of such liquid; of means in said receptacle forming an annular space comprising an upper perpendicular elongated portion forming a sorting column in which the separation is effected, and a lower portion forming a settling chamber; said means including a positively-driven rotary member adapted to impart a rotary motion to the receptacle's contents and located horizontally adjacent to said sorting column, together with means for deflecting currents of liquid laterally of such rotary member and prior to the entrance of such currents into the said annular space.

7. In means for separating ores, the combination with a receptacle provided with an upper and lower egress opening for liquid and an opening for the ingress of such liquid; of means in said receptacle forming an annular space comprising an upper portion forming a sorting column in which the separation is effected, and a lower portion forming a settling chamber, said means including a positively-driven rotary member adapted to impart a rotary motion to the receptacle's contents and located horizontally adjacent to said sorting column, such rotary member being adapted to deflect currents from below laterally of said member.

8. In means for separating ores, the combination with a receptacle provided with an upper and lower egress opening for liquid and an opening for the ingress of such liquid; of means in said receptacle forming an annular space comprising an upper portion forming a sorting column in which the separation is effected, and a lower portion forming a settling chamber, said means including a positively-driven rotary member adapted to impart a rotary motion to the receptacle's contents and located horizontally adjacent to said sorting column; such rotary member being provided with a web or flange adapted to deflect currents from below, laterally of such rotary member.

9. In means for separating ores, the combination with a receptacle provided with an upper and a lower opening for the egress of liquid and an opening for the ingress of liquid; of means located in said receptacle forming an upright annular space comprising an upper portion in communication with said upper opening and a lower portion in communication with said lower opening, said means including a positively-driven rotary member horizontally adjacent to said upper portion of the annular space, adapted to impart a rotary motion to the receptacle's contents and adapted to receive and horizontally project the ores to be separated into said annular space, said openings for the ingress and egress of liquid being normally open, and said rotary member being concentric with the upper portion of the receptacle.

10. In means for separating ores, the combination of a receptacle comprising an upper cylindrical portion and a lower portion having its interior in direct communication therewith, said receptacle provided with openings for the egress of liquid and respectively in communication with said upper and lower portions, together with an opening for the ingress of liquid located below said upper portion; of a positively-driven rotary member having a vertical axis and located in said upper portion, said member provided with projecting blades having their longitudinal outer edges parallel with the walls of such upper portion and horizontally adjacent thereto throughout substantially their entire length, said blades being removed from said wall a substantial distance forming a free annular space wherein the heavier particles of ore may descend by gravity unobstructed; and means intermediate of the upper and lower portions of said receptacle and adapted to deflect upward currents of liquid laterally of said rotary member.

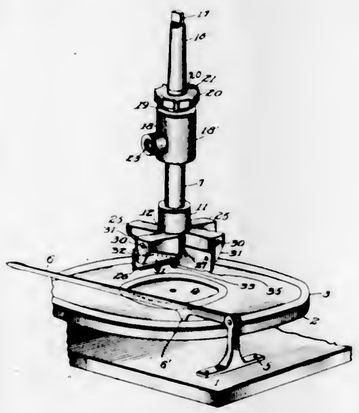
11. In means for separating ores, the combination of a stationary receptacle provided with openings for the ingress and egress of liquid, a positively-driven rotary member in said receptacle adapted to impart a rotary motion to the receptacle's contents, said latter member and the receptacle's walls being separated by an upright annular space forming a sorting column in which the material is separated and in which the heavier material is free to descend by gravity, said rotary member being provided with an interior passage and with lateral openings communicating with said passage and with said sorting column intermediate of the top and bottom of the latter, said rotary member being adapted to receive in said interior passage the ores to be separated and to project the same therefrom through said lateral openings into said sorting column; and a source of liquid supply adapted to furnish a stream of liquid flowing upwardly through said sorting column from such ingress opening.

12. In means for separating ores, the combination of a stationary receptacle provided with openings for the ingress and egress of liquid; a revoluble member in said receptacle having a vertical axis and provided with an interior passage together with a plurality of projecting blades running in the direction of such axis, said revoluble member and the receptacle's walls being separated by an upright annular space forming a sorting column in which the material is separated and in which the heavier material is free to descend by gravity, said interior passage communicating with said sorting column intermediately of said blades and at points intermediate of the top and bottom of said revoluble member; and a source of liquid supply adapted to furnish a stream of liquid flowing upwardly through said sorting column from such ingress opening.

13. In means for separating ores, the combination with a receptacle comprising an upper cylindrical portion and a lower portion having its interior in direct communication therewith, said receptacle provided with openings for the egress of liquid and respectively in communication with said upper and lower portions, together with an opening for the ingress of liquid located below said upper portion;

of a positively-driven rotary member having a vertical axis and located in said upper portion, said member provided with projecting blades having their longitudinal outer edges parallel with the walls of such upper portion and horizontally adjacent thereto throughout substantially their entire length, said blades being removed from said walls a substantial distance forming throughout their length a free annular perpendicular space wherein the heavier particles of ore may descend by gravity unobstructed.

856,613. METHOD OF REMOVING LABELS FROM RECORDS FOR TALKING-MACHINES. CLARENCE S. WICKES, Camden, N. J., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Original application filed Oct. 6, 1905, Serial No. 281,598. Divided and this application filed Nov. 26, 1906. Serial No. 345,065.



Claim.—1. A method of removng labels impressed into a medium which is easily affected by heat, which consists in softening the surface of the label and immediately cutting away the softened portion thereof.

2. The method of removing a label impressed into a medium easily affected by heat, by simultaneously subjecting the label to the action of steam, and cutting away the same.

3. A method of removing labels impressed into a medium which is easily affected by heat, which consists in steaming the surface of the label without substantially softening the supporting medium, and cutting away the steamed portion of the label.

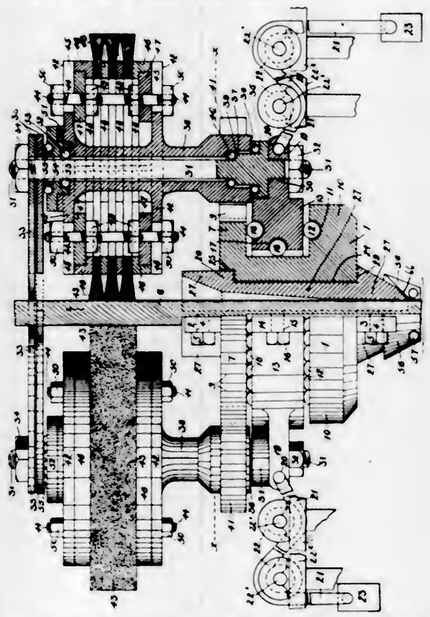
4. A method of remiving labels impressed into a medium which is easily affected by heat, which consists in rapidly and successively, (1) softening the surface of the label without substantially softening the supporting medium, and (2) cutting away the softened portion.

5. A method of removing labels impressed into a medium which is easily affected by heat, which consists in successively (1) projecting steam against the surface of the label, and (2) rapidly removing the steamed portion of the same.

6. A method of removing labels impressed into a medium which is easily affected by heat, which consists in projecting a jet of steam against the surface of the label only, and paring away the steamed portion.

7. A method of removing labels from sound records composed of a material which softens and becomes adhesive under the application of heat, which label is affixed to said sound record by the adhesive property of said material, which consists in softening said label, and then cutting the same from said material.

856,614. APPARATUS FOR CLEANING WIRE ROPES. JAMES M. WRIGHT, Johannesburg, Transvaal. Filed July 24, 1906. Serial No. 327,569.



Claim.—1. In apparatus of the nature indicated, in combination, a die or bobbin constructed in halves and formed with internal helical projections or feathers corresponding to the pitch of the rope, a two part clamp for securing the halves of the die or bobbin round the rope and a two part ring surrounding the two part clamp for permitting the die or bobbin and clamp to rotate therein, and means for supporting the ring.

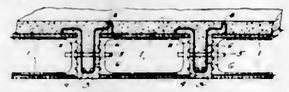
2. In apparatus of the nature indicated, in combination, a two part die or bobbin constructed with internal helical projections corresponding to the pitch of the rope and constructed with projections at the top and with a flange at the bottom, a two part clamp surrounding the parts of the bobbin or die, the clamp being constructed with recesses at the top to receive the projections on the top of the bobbin to fix the bobbin to the clamp, means for connecting the two parts of the clamp, a two part ring surrounding the clamp and means for supporting the ring.

3. In apparatus of the nature indicated, in combination, a two part die or bobbin constructed with internal helical projections corresponding to the pitch of the strands of the rope, a two part clamp for supporting said die or bobbin round the rope, a ring revolubly supporting the clamp and bobbin, means for supporting said ring, spindles stationarily supported by said ring, two circular brushes revolubly mounted on said spindles, means for driving the brushes from the two part clamp, and means for adjusting the brushes to the rope.

4. In apparatus of the nature indicated, in combination, a two part die or bobbin, means for supporting the die or bobbin round the rope, two spindles stationarily carried by said supporting means, brushes mounted on said spindles, and gearing driven by the die or bobbin and driving the brushes.

5. In apparatus of the nature indicated, in combination, a two part bobbin constructed with internal helical projections corresponding to the pitch of the strands of the rope, a two part clamp for securing the halves of the bobbin round the rope, the bobbin and clamp being so connected that the latter is compelled to rotate with the former, the upper portion of the clamp having teeth, a two part ring revolubly supporting the clamp, anti-friction bearings between the top, bottom and inside of the ring and clamp, the ring being constructed with lugs, ropes attached to the lugs, guide pulleys fixedly supported for the ropes and weights attached to the other ends of the ropes, spindles non-rotatably carried by the lugs, and two revolving circular brushes comprising sleeves arranged on the spindles, the sleeves having teeth at their lower ends gearing with the teeth of the clamp for driving the brushes from the die or bobbin.

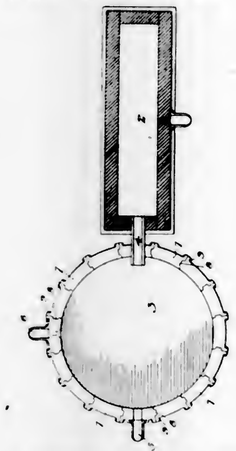
856,615. ARMORED CEMENT OR CONCRETE CONSTRUCTION. GAETAN AJELLO, New York, N. Y. Filed Nov. 19, 1906. Serial No. 344,040.



Claim.—1. A stirrup consisting of a U-shaped bar having outward and downwardly diverging arms, one of the arms being provided with an upwardly extending loop adapted to act as a guide in laying the slab, substantially as specified.

2. A stirrup consisting of a bar having a series of elongated corrugations with outward and downwardly diverging arms, an upwardly projecting loop formed upon one of said arms adapted to act as a guide in laying the slab, substantially as specified.

856,616. FOREHEARTH. CHARLES M. ALLEN, Lo Lo, Mont., assignor to Ralph Baggaley, Pittsburg, Pa. Filed May 25, 1904. Serial No. 209,609.

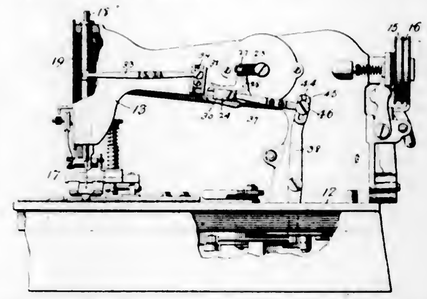


Claim.—1. A forehearth having its walls of a size, weight and mass that will produce and maintain an interior skull of chilled metal forming a heat non-conducting lining when the forehearth is charged and capable of retaining sufficient heat to prevent increase in the thickness of the skull,—substantially as described.

2. A forehearth having its walls formed of metallic blocks of a size, weight and mass in direct proportion to the volume and temperature of the charge to produce and maintain an interior skull of chilled metal forming a heat non-conducting lining when the forehearth is charged, substantially as described.

3. A forehearth having a skull of chilled metal on its inner face, the walls of the forehearth being of a thickness to produce the skull on the introduction of the molten metal and also to retain sufficient heat to prevent increase of the thickness of the skull, substantially as described.

856,617. NEEDLE-BAR MECHANISM FOR BUTTON-HOLE-STITCHING MACHINES. EDWARD B. ALLEN, Bridgeport, Conn., assignor to The Singer Manufacturing Company, a Corporation of New Jersey. Filed July 21, 1906. Serial No. 327,165.



Claim.—1. In a button-hole stitching machine, the combination with a stitch-forming mechanism comprising a laterally movable needle-bar frame and needle-bar, of a rotating cam from which said frame is reciprocated so that the said needle-bar will descend alternately in different planes, two levers fulcrumed in different planes and having overlapping arms which extend in different directions from the respective fulcrums of said levers, one of said levers being operated by said cam and the other of said levers being operatively connected with said needle-bar frame, a shiftable connection between said levers, said connection being simultaneously movable from the fulcrum of one lever and toward the fulcrum of the other, and automatic means for positively shifting said connection back and forth for the production of overseaming or edge-covering and barring stitches.

2. In a button-hole stitching-machine, the combination with a stitch-forming mechanism comprising a laterally movable needle-bar frame and needle-bar, of a rotating cam from which said frame is reciprocated so that the said needle-bar will descend alternately in different planes, two adjacently arranged bell-crank levers having overlapping arms extending in different directions from the respective fulcrums of said levers, one of said levers being operated by said cam and the other being operatively connected with said needle-bar frame, a shiftable connection between said overlapping arms, and automatic means for positively shifting said connection back and forth for the production of overseaming or edge-covering and barring stitches.

3. In a button-hole stitching machine, the combination with a stitch-forming mechanism comprising a laterally movable needle-bar frame and needle-bar, of a rotating cam from which said frame is reciprocated so that the said needle-bar will descend alternately in different planes, two levers having overlapping arms extending in opposite directions from the respective fulcrums of said levers, one of said levers being operated by said cam and the other being operatively connected with said needle-bar frame, a shiftable connection between said levers comprising a slide working in an arm of one lever and having a pin or projection engaging an arm of the other, a lever for shifting said slide, a cam for actuating said lever, and a link or pitman connecting the shifting lever with said slide, so that the position of the latter may be automatically changed for the production of overseaming or edge-covering and barring stitches.

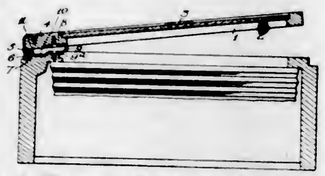
4. In a button-hole stitching machine, the combination with a stitch-forming mechanism comprising a laterally movable needle-bar frame and needle-bar, of a rotating cam from which said frame is reciprocated so that the said needle-bar will descend alternately in different planes, two

bell-crank levers having slotted or grooved overlapping arms extending in opposite directions from the respective fulcrums of said levers one of said levers being operated by said cam and the other being operatively connected with said needle-bar frame, a shiftable connection between said arms comprising a slide working in an arm of one lever and having a pin or projection engaging an arm of the other, a lever for shifting said slide, a cam for actuating said lever, and a link or pitman connecting the shifting lever with said slide, so that the position of the latter may be automatically changed for the production of overseaming or edge-covering and barring stitches.

5. In a button-hole stitching machine, the combination with a stitch-forming mechanism comprising a laterally movable needle-bar frame and needle-bar, of a rotating cam from which said frame is reciprocated so that the said needle-bar will descend alternately in different planes, two levers having overlapping arms extending in different directions from the respective fulcrums of said levers, one of said levers being operated by said cam and the other being operatively connected with said needle-bar frame, a shiftable connection between said levers comprising a slide working in an arm of one lever and having a pin or projection engaging an arm of the other, a lever for shifting said slide, a cam for actuating said lever, and a link or pitman one end of which is adjustably connected with the shifting lever and the other end of which is connected with said slide, so that the position of the latter may be automatically changed for the production of overseaming or edge-covering and barring stitches.

6. In a button-hole stitching machine, the combination with a stitch-forming mechanism comprising a laterally movable needle-bar frame and a needle-bar, of a rotating cam from which said frame is reciprocated so that the said needle-bar will descend alternately in different planes, two bell-crank levers having slotted or grooved overlapping arms extending in different directions from the fulcrums of said levers, one of said levers being operated by said cam and the other being operatively connected with said needle-bar frame, a shiftable connection between said arms comprising a slide working in an arm of one lever and having a pin or projection engaging an arm of the other, a lever for shifting said slide, a cam for actuating said lever, and a link or pitman one end of which is adjustably connected with the shifting lever and the other end of which is connected with said slide, so that the position of the latter may be automatically changed and simultaneously shifted away from the fulcrum of one lever and toward the fulcrum of the other for the production of overseaming or edge-covering and barring stitches.

856,618. FOCUSING-SCREEN FOR CAMERAS. FRANK A. BROWNELL, Rochester, N. Y., assignor to The Eastman Kodak Company, Rochester, N. Y., a Corporation of New York. Original application filed Jan. 12, 1903, Serial No. 138,636. Divided and this application filed Jan. 15, 1904. Serial No. 189,143.



Claim.—1. The combination with a camera open at the rear and an overhanging projection thereon at one side of the opening, of a removable cover having a projection engaging the one on the camera, and a spring mounted on the cover and coöperating with the camera to hold the projections in engagement.

2. The combination with a camera having the open rear frame and the ledge at one side thereof, of a removable focusing screen adapted to be applied to the frame having the hooked ledge for engaging the one on the camera and a spring for moving the screen to hold said ledges in engagement.

3. The combination with a camera having the open rear frame, and the edge at one side thereof, of a removable focusing screen fitting over the frame opening and having the hooked ledge engaging the ledge on the camera frame and a spring for operating the screen laterally to hold the ledges in engagement.

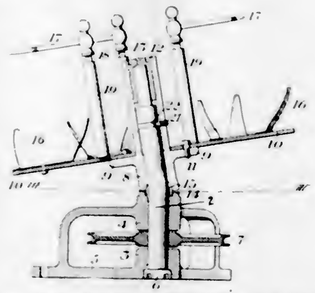
4. The combination with a camera having the open rear frame and the ledge at one side thereof, of a removable screen having the hooked ledge engaging the ledge on the side of the frame opening, and the spring on the screen engaging the camera and holding the ledges in engagement.

5. The combination with a camera having the open rear frame and the ledge at one side thereof, of a removable focusing screen having the hooked ledge engaging the ledge on the side of the frame opening, and the spring on the screen engaging the outer side of the camera frame operating to move the frame laterally and hold the ledges in engagement.

6. The combination with a camera having the open rear frame and the plate at one side thereof forming an inner overhanging ledge and an outer shoulder, of the removable focusing screen fitting over the camera frame and having the hooked plate engaging the plate on the camera frame, and the spring having the free ends coöperating with the shoulder on the plate.

7. The combination with a camera open at one side and a cover for said opening, of two interlocking members capable of detachment by a relative lateral movement of one upon the other, said members being applied to the camera and cover respectively at one side of the opening.

856,619. SHAKING-MACHINE. JAMES M. CAMP, Pittsburg, and WILLIAM AHLEN, Duquesne, Pa. Filed Nov. 28, 1906. Serial No. 345,498.



Claim.—1. A shaking machine comprising a plurality of liquid holding vessels, a table for said vessels, a bent shaft on which said table is loosely mounted, means for rotating said shaft and connections arranged to prevent rotation of the table, substantially as described.

2. A shaking machine comprising a liquid holding vessel, a table for said vessel, means for holding said vessel on the table, a bent shaft on which the table is mounted and means for rotating said shaft; substantially as described.

3. A shaking machine comprising a plurality of liquid holding vessels, a table for said vessels, connections arranged to prevent rotation, means for holding said vessels on the table, a bent shaft on which said table is mounted and means for rotating said shaft; substantially as described.

4. A shaking machine comprising a liquid holding vessel, a table on which said vessel is removably mounted, a bent shaft on which said table is secured, a vertical bearing for said shaft, means for rotating said shaft and mechanism by which rotation of said table is prevented; substantially as described.

5. A shaking machine comprising a liquid holding vessel, a table on which said vessel is removably secured, a bent shaft on which said table is loosely mounted, a vertical bearing for said shaft, means for rotating said shaft and gear teeth by which rotation of said table is prevented; substantially as described.

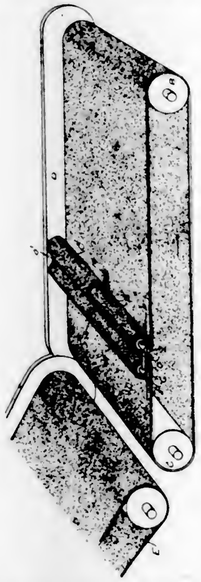
6. A shaking machine comprising a liquid holding vessel, a table for said vessel, a bent shaft on which the table is loosely mounted, means for rotating said shaft, means for preventing rotation of said table and a spring clamp for holding said vessel in position on said table; substantially as described.

7. A shaking machine comprising a liquid holding vessel, a table for said vessel, a bent shaft on which the table is loosely mounted, means for rotating said shaft, means for preventing rotation of said table and a vertically adjustable spring clamp for holding the vessel in position on said table; substantially as described.

8. A shaking machine comprising a liquid holding vessel, a table for said vessel, a bent shaft on which the table is mounted, means for rotating said shaft, means for preventing rotation of said table and a spring controlled clamping device for holding the vessel in position on said table; substantially as described.

9. A shaking machine comprising a liquid holding vessel, a table for said vessel, a table bearing, a bent shaft on which the table bearing is mounted, a bearing for the shaft, means for rotating the shaft and gear-teeth on said bearings for preventing rotation of said table; substantially as described.

856,620. BELT, APRON, CANVAS, OR CONVEYER TIGHTENER. GEORGE E. CLARKE, Toronto, Ontario, Canada. Filed Apr. 28, 1906. Serial No. 314,306.



Claim.—1. The combination with an apron, belt, canvas or conveyer, of means acting under the influence of a torsional force and circulating with said apron, belt, canvas or conveyer so as to automatically take up the slack therein or permit of the necessary expansion thereof.

2. The combination with a divided apron, belt, canvas or conveyer, of means acting under the influence of a torsional force and yieldingly connecting the ends together in such a manner as to automatically take up the slack therein or permit of the necessary expansion thereof.

3. The combination with a divided apron, belt, canvas or conveyer, of adjustable means acting under the influence of a torsional force and yieldingly connecting the ends together in such a manner as to automatically take up the slack therein or permit of the necessary expansion thereof.

4. The combination with a divided apron, belt, canvas or conveyer, of a member to which one end of same is connected; a second member; a spring acting under the influence of torsional force, controlling movement of said second member, and means for connecting said members together in such a manner as to permit of the slack in said apron, canvas, conveyer or belt being taken up or permit of the necessary expansion of same.

5. The combination with a divided apron, belt, canvas or conveyer, of a member to which one end of same is connected; a rotatable member; a spring acting under the influence of torsional force controlling axial movement of said rotatable member; means for connecting said members together in such a manner as to permit of the adjusting movement of said first-mentioned member so as to decrease or increase the torsional force exerted by said spring upon said rotatable member.

6. The combination with an apron, belt, canvas, or conveyer, of means circulating therewith, and a spring acting under the influence of torsional force and controlling axial movement of said means, which, being so attached or connected to said canvas, belt, apron, or conveyer automatically takes up the slack therein or permits of the necessary expansion thereof.

7. The combination with a divided apron, belt, canvas or conveyer, of a normally non-rotating roller to which one end of same is connected; stub-shafts loosely mounted in the ends of said roller and projecting therebeyond; means for locking and unlocking said stub-shafts to and from said roller; a spring-controlled roller to which the other end of said divided apron, belt, canvas or conveyer is yieldingly secured; a spindle within said roller and projecting therebeyond at each end thereof, and means connecting said spindle at each end thereof to said stub-shafts in such a manner as to permit of the slack in said apron, belt, canvas or conveyer being taken up or permit of the necessary expansion of same through the movement of said spring-controlled roller.

8. The combination with a divided apron, canvas, belt, or conveyer, of a normally non-rotating roller to which one end of same is connected; stub-shafts loosely mounted in the ends of said roller and projecting therebeyond; spring-controlled means for locking and unlocking said stub-shafts to and from said roller; a spring-controlled roller to which the other end of said divided apron, canvas, belt, or conveyer is yieldingly secured; a spindle mounted within said roller and projecting therebeyond at each end thereof; a spring within said roller having one end attached to said spindle and its other end attached to said roller; screws connecting said spindle at each end thereof to said stub-shafts so as to couple said rollers together and prevent rotation of said first-mentioned roller; said second-mentioned roller being free to turn on its spindle in order to permit of the necessary expansion and contraction of said apron, canvas, conveyer or belt.

9. The combination with a divided apron, canvas, belt, or conveyer, of a normally non-rotating roller to which one end of same is connected; stub-shafts loosely mounted in the ends of said roller and projecting therebeyond and provided with T-shaped heads; disks closing the end of said roller through which said stub-shafts pass; blocks secured within said roller and provided with bedways in which normally rest the T-shaped head of said stub-shafts; a spring surrounding said stub-shafts and between said blocks and said disks and compressible through the inward movement of said stub-shafts; a spring-controlled roller to which the other end of said divided apron, canvas, belt, or conveyer is yieldingly secured; a spindle mounted within said roller and projecting therebeyond at each end thereof; a spring within said roller having one end attached to said spindle and its other end attached to said roller; screws connecting said spindle at each end thereof to said stub-shafts so as to couple said rollers together and prevent rotation of said first-mentioned roller; said second-mentioned roller being free to turn on its spindle in order to permit of the necessary expansion and contraction of said apron, canvas, conveyer or belt.

10. The combination with a divided apron, canvas, conveyer or belt, and a normally non-rotating roller around which same is wound, of a spring-controlled roller around which the other end of said apron, canvas, conveyer or belt is wound, and means for connecting or coupling said rollers together, so as to permit of the necessary movement of said second-mentioned roller so as to provide for the necessary expansion and contraction of said apron, canvas, conveyer or belt.

11. The combination with a divided apron, canvas, conveyer or belt and a normally non-rotating roller around which same is wound, of a spring-controlled roller around which the other end of said apron, canvas, conveyer or belt is wound; means for connecting or coupling said rollers together, so as to permit of the necessary movement of said second-mentioned roller so as to provide for the necessary expansion and contraction of said apron, canvas, conveyer or belt; and means for permitting of the movement of said first-mentioned roller so as to decrease or increase the action of said spring-controlled roller.

12. The combination with a divided apron, canvas, conveyer or belt, of a normally-rotating roller to which one end of same is connected; a spring-controlled roller to which the other end of same is yieldingly secured; means for connecting said rollers together at their ends in such a manner as to permit of the slack in said apron, canvas, conveyer or belt being taken up or permit of the necessary expansion of same through the movement of said spring-controlled roller, and means for coupling said rollers together midway their length so as to prevent sagging of same.

13. The combination with a divided apron, canvas, conveyer or belt, of a normally non-rotating roller to which one end of same is connected; two spring-controlled rollers to which the other end of same is yieldingly secured; a spindle common to both of said spring-controlled rollers; means for connecting the ends of said spindle which projects beyond the ends of said spring-controlled rollers to said normally non-rotating roller, and means for coupling said normally non-rotating roller and said spring-controlled rollers together.

14. The combination with a divided apron, canvas, conveyer or belt, of a normally non-rotating roller to which one end of same is connected; two spring-controlled rollers to which the other end of same is yieldingly secured; a spindle common to both of said spring-controlled rollers and extending beyond the ends thereof; stub-shafts held in the ends of said normally non-rotating roller and projecting thereabeyond; means for locking and unlocking said stub-shafts to and from said normally non-rotating roller; screws coupling the ends of said stub-shafts to the ends of said spindle; springs secured at one end to said spindle and at the other end to said spring-controlled rollers; a block held in the inner ends of said spring-controlled rollers, and a screw held in said normally non-rotating roller and threading into said block.

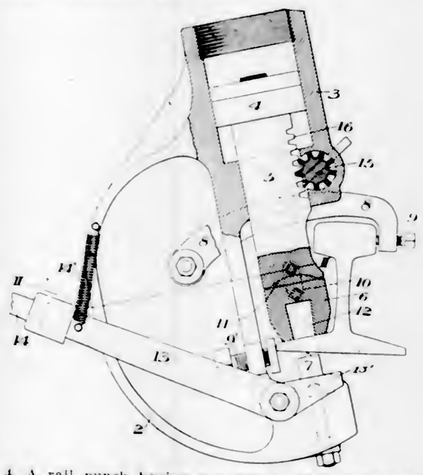
15. The combination with an apron, belt, canvas or conveyer, of a spring acting under the influence of torsional force and circulating therewith, and means whereby the spring is attached or connected to said canvas, belt, apron, or conveyer in such a manner as to automatically take up the slack therein or permit of the necessary expansion thereof.

856,621. RAIL-BOND PUNCH. WILLIAM R. CONDON, Worcester, Mass., assignor to American Steel & Wire Company, Chicago, Ill., a Corporation of New Jersey. Filed Jan. 14, 1907. Serial No. 352,135.

Claim.—1. A punching device having a movable plunger, a depending die head normally loosely connected thereto and free to adjust itself to the surface to be punched, and a relatively fixed punch arranged to co-operate with said die; substantially as described.

2. A punch having a power operated plunger, and a die head connected thereto by a normally loose joint, and free to move to adapt itself to the surface of the part to be punched; substantially as described.

3. A punch for punching tapered rail flanges, and having a die connected thereto by a knuckle joint to permit the die to adjust itself to the tapered surface of the rail flange; substantially as described.



4. A rail punch having a power operated plunger arranged to be placed above the base of the rail to be punched, a die jointed to said plunger and free to adjust itself, and a punch arranged to be brought below the rail base; substantially as described.

5. A rail punch having a power-operated plunger arranged to be placed above the base of the rail to be punched, a die jointed to the plunger and normally free to adjust itself, a fixed punch arranged to be brought below the rail base, and clamping means for attaching the punch to a rail; substantially as described.

6. In a rail punch, a frame having means for its attachment to a rail, a power cylinder carried by the frame, a piston therein having a depending rod or plunger, a punch die having a jointed connection with the rod or plunger and normally free to adjust itself, a co-operating punch, a stripping device, and means engaging the piston rod or plunger for effecting its return movement; substantially as described.

7. A rail punch having a power-operated punch die arranged to be placed above the base of the rail to be punched, a fixed punch arranged to be brought below the rail base, and a stripping lever having arms arranged to engage the under side of the rail base when the lever is depressed; substantially as described.

856,622. PROCESS OF MANUFACTURING DIALKYL-BARBITURIC ACID. MAX CONRAD, Aschaffenburg, Germany, assignor to The Firm of E. Merck, Darmstadt, Germany. Original application filed Nov. 8, 1904, Serial No. 231,871. Divided and this application filed July 13, 1906. Serial No. 326,038.

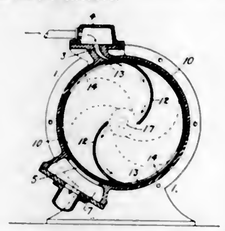
Claim.—1. The process of manufacturing a dialkylbarbituric acid, which consists in condensing a dialkylmalonylamid compound with thiourea by means of an alkaline condensing agent into a dialkylmalonylthiourea and then converting the latter into a dialkylbarbituric acid by means of an agent substituting oxygen for sulfur.

2. The process of manufacturing diethylbarbituric acid, which consists in condensing a diethylmalonaminacid ester with thiourea by sodium alcoholate into diethylmalonylthiourea, and then converting the latter by an oxidizing agent into diethylbarbituric acid

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856,623. TURBINE. ALFRED J. COOPER, Liverpool, England. Filed Apr. 21, 1906. Serial No. 313,045.

Claim.—1. A turbine comprising a casing having inlet and exhaust ports therein, a rotor in said casing, said rotor being in the form of a casing and having inlet and exhaust ports therein, a curved blade connected to the periphery of the rotor and extending inwardly to the diameter of the rotor and to one side of the center thereof, and a second blade connected to the periphery of the rotor on the side opposite to that which the first mentioned blade is secured, said second blade being of opposite curve to the first blade and extending inwardly to the diameter of the rotor and to one side of the center thereof.

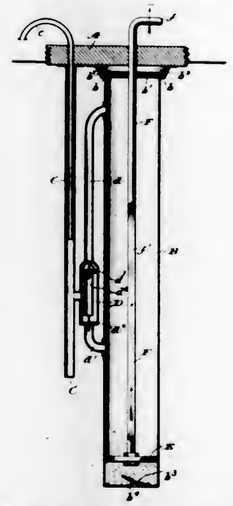


2. The herein described improved turbine, namely, a turbine having within it a rotary portion comprising a cylinder with ports in its periphery for the inlet and outlet of the steam to and from it, on opposite sides, and with two sets of curved blades of opposite curvature, extending between the periphery, at each side of said ports, and the center, and two sets of motor fluid inlet nozzles in opposite directions; substantially as and for the purposes set forth.

3. A turbine comprising a casing, a rotor therein having ports 13 in its periphery and elongated openings 14 extending circumferentially from said ports 13.

4. A turbine comprising a rotor consisting of a cylindrical shell having parallel partitions therein forming a plurality of chambers, each of said chambers having inlet and outlet ports therein and curved plates in each chamber extending from the periphery to a point near the center, said plates in the different chambers being spaced apart circumferentially, one in advance of the other.

856,624. OIL-CAN PUMP. PHILLIP H. CORNS, Delphos, Ohio. Filed July 26, 1906. Serial No. 327,837.



Claim.—1. In an oil can pump, a cylinder, a common discharge and return pipe communicating with the upper and lower portions of said cylinder, and a single piston working within said cylinder and alternately effecting the discharge and a return suction through said pipe.

2. In an oil can pump, a cylinder, a common discharge and return pipe, pipes connecting said discharge and return pipe with the upper and lower portions of said cylinder, valves in said pipes, and a single piston working within said cylinder and alternately effecting the discharge and a return suction through said pipe.

3. In an oil can pump, a cylinder having a reduced opening in the lower end thereof, a common discharge and return pipe, a pipe connecting said discharge and return pipe with the pump cylinder adjacent its upper end, a pipe connecting said discharge and return pipe with said cylinder at some distance from the lower end thereof, valves in said pipes and a single piston working within said cylinder.

4. In an oil can pump, a cylinder having an inwardly opening valve in the lower end thereof provided with a reduced opening therethrough, a common discharge and return pipe, separate pipes connecting said common discharge and return pipe with the upper and lower portions of the cylinder, an outwardly opening valve normally closing the upper end of said cylinder, and a single piston working within said cylinder.

5. In an oil can pump, a cylinder having a reduced opening in the lower end thereof, a common discharge and return pipe, a casing communicating with the lower end of the discharge and return pipe, a pipe connecting said casing with the pump cylinder adjacent the upper end thereof, a pipe connecting the casing with the pump cylinder at some distance from the lower end thereof, valves in said pipes, and a single piston working within the cylinder and adapted to alternately actuate said valves to alternately effect a discharge and a return suction through said common discharge and return pipe.

6. In an oil can pump a cylinder, a cap closing the upper end thereof a common discharge and return pipe communicating therewith, a single piston working within said cylinder and alternately effecting the discharge and a return suction through said pipe, and a piston rod connected to said piston and extending through the cap closing the upper end thereof the pump cylinder, the lower end of said piston rod being provided with a reduced portion.

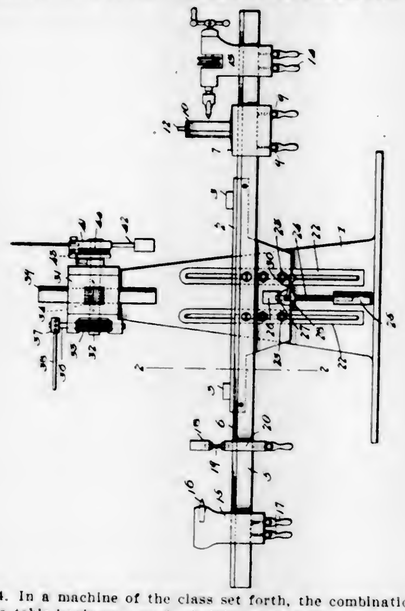
7. In an oil can pump a cylinder having a reduced opening in the lower end thereof and an outwardly opening valve closing the upper end thereof, a common discharge and return pipe, a casing communicating with the lower end of the discharge and return pipe, a pipe connecting said casing with the pump cylinder adjacent the upper end thereof, a pipe concentrically secured within the casing and forming a continuation of the pipe extending to the upper end of the pump cylinder, a pipe connecting the lower end of the casing with the pump cylinder at some distance from the lower end thereof, valves normally closing the upper ends of said two last mentioned pipes, and a single piston working within said pump cylinder.

856,625. MACHINE FOR STRAIGHTENING SHAFTING. ROBERT M. CORREY, Rochester, N. Y. Filed May 18, 1906. Serial No. 317,423.

Claim.—1. In a machine of the class set forth the combination of a frame, a table adjustably secured to the frame and having means for holding a shaft thereon, a rail held on the table and projecting beyond the extremities thereof, a centering truck, tail stock and centering head adjustably held and movably disposed on the said rail, a plunger arranged over the table, and a mechanism cooperating with the plunger to impart a forcible or light pressure thereto.

2. In a machine of the class set forth, the combination of a table having means for supporting a shaft thereon, a vertically movable plunger arranged over the table and provided with gear teeth, a shaft having a pinion thereon meshing with the teeth of the plunger and also carrying a worm gear, and a ratchet wheel at opposite extremities, and means for actuating the worm gear and ratchet wheel to impart varying pressure to the plunger.

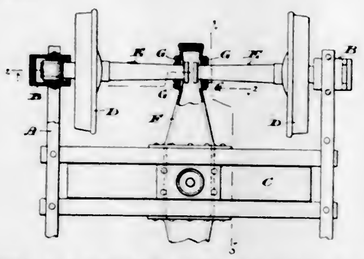
3. In a machine of the class set forth, the combination of a bed having means for holding a shaft thereon, a rail held on the bed and projecting beyond the extremities thereof, and a centering chuck, tail stock and centering head adjustably and movably disposed on the said rail.



4. In a machine of the class set forth, the combination of a table having means for holding a shaft thereon, a rail secured to the table, a chuck adjustably and removably mounted on the rail, and a shaft-support also removably and adjustably mounted on the rail and adapted to co-operate with the chuck.

5. In a machine of the class set forth, the combination of a vertically adjustable bed having means thereon for holding a shaft, a plunger disposed over the bed, a rail secured to the bed, a centering head adjustably and removably applied to the rail, and a tail center also disposed on the rail.

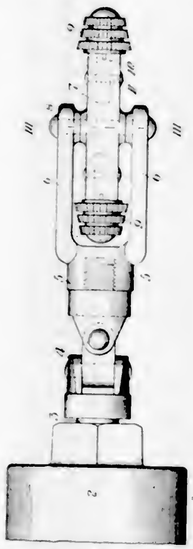
856,626. RAILWAY-CAR TRUCK. HERBERT H. DREW, Waterloo, Wis., assignor of one-half to Edwin M. Snow, Waterloo, Wis. Filed Mar. 25, 1907. Serial No. 364,236.



Claim.—1. A railway-car truck having each wheel thereof provided with an independent short axle with which it is rigid, journal boxes for the axles, and hangers having arched slots in which the inner ends of the axles are loosely supported, provision being had to prevent cramping of said axles incidental to play of their inner ends in the hanger-slots.

2. A railway-car truck having each wheel thereof provided with an independent short axle with which it is rigid, journal-boxes for the axles, hangers having arched slots in which the inner ends of the axles are loosely supported, provision being had to prevent cramping of said axles incidental to play of their inner ends in the hanger-slots, and coupled spring-controlled arms arranged in pivotal connection with the hangers to oppose each axle in opposite directions and thereby resist movement of same out of normal position central of the corresponding hanger-slot.

856,627. BOILER-TUBE CLEANER. WILLIAM S. ELLIOTT, Pittsburg, Pa. Filed Apr. 17, 1905. Serial No. 255,895.



Claim.—1. In a tube cleaner, a head carrying a two-armed lever, both arms of said lever having a rotating cutter thereon, said lever being arranged to swing freely in a plane longitudinally of the axis of the tool to bring the rotary cutter simultaneously in contact with opposite sides of the tube and a motive device connected to said head to rotate it at a high speed within the tube to be cleaned; substantially as described.

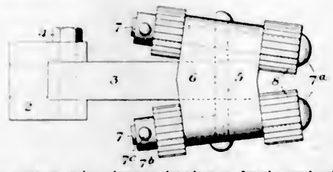
2. In a tube cleaner, a head having a two-armed lever pivoted on a transverse axis, said lever having a rotary cutter on each arm and arranged to swing freely in longitudinal planes, to bring the cutters simultaneously in contact with the opposite sides of the tube and a motor connected to said head to rotate it at a high speed within the tube to be cleaned; substantially as described.

3. In a boiler tube cleaner, a head carrying a two-armed lever, each arm of the lever having a rotary cutter, the lever being arranged to swing freely in longitudinal planes to bring the rotary cutters of the two arms in contact with opposite sides of the tube, and a motor connected to the head to rotate it at high speed to cause vibration of the said lever; substantially as described.

856,628. BOILER-TUBE CLEANER. WILLIAM S. ELLIOTT, Pittsburg, Pa. Filed Apr. 17, 1905. Serial No. 319,998.

Claim.—1. A rotary boiler tube cleaner having a freely swinging pivoted arm, a cutter-carrier connected to said arm and free to swing independently thereof, and a rotary cutter carried by the said arm; substantially as described.

2. A boiler tube cleaner having a pivoted, freely swinging arm, a plurality of cutters carried by the arm to swing therewith, and a carrier for said cutters mounted on the arm to have an independent rocking movement; substantially as described.



3. A rotary tube cleaner having a freely swinging, pivoted, centrifugally acting, arm, a shaft or spindle pivotally secured to said arm, and a cutter mounted on the shaft or spindle; substantially as described.

4. A rotary boiler tube cleaner having a plurality of freely swinging arms, clips or stirrups pivotally secured to said arms, and having cutter supports, and cutters carried by the supports; substantially as described.

5. A rotary boiler tube cleaner having a plurality of pivoted, freely swinging arms, cutter carriers mounted on said arms to swing therewith, and also to have an independent rocking or swinging movement, and a plurality of cutters mounted on said carriers, said cutters being arranged in alternating or staggered relation; substantially as described.

6. A rotary boiler tube cleaner having a slotted head, adapted to be rotated at a high speed within the tube, arms pivoted in the said head and free to swing at right angles to the axis of the tube, and a plurality of cutter wheels carried by said arms upon pivotal supports which are capable of an independent swinging movement in the planes of said arms; substantially as described.

7. A rotary boiler tube cleaner having an arm free to swing at right angles to the axis of the tube, and adapted to be rotated at a high speed within the tube, a clip or stirrup pivotally secured to the free portion of the arm and having cutter wheel bearings, and cutter wheels carried by the said bearings at opposite sides of the clip or stirrup pivot; substantially as described.

8. A boiler tube cleaner having an arm free to swing at right angles to the axis of the tube, a clip or stirrup pivotally secured to the free portion of the arm and having cutter wheel bearings, and cutter wheels carried by the bearings at opposite sides of its pivot, and unequally distant from the pivot; substantially as described.

9. A rotary boiler tube cleaner having a pivoted, freely swinging arm, a cutter carrier connected to said arm and free to swing independently thereof in a parallel plane, a cutter mounted on the cutter carrier, and a universal joint connecting the cleaner head to the driving means therefor; substantially as described.

10. A rotary boiler tube cleaner consisting of a head having a plurality of pivoted centrifugally acting arms which are free to swing in a plane longitudinal of the axis of the tube, shafts or spindles carried by the said arms and capable of an independent rocking or swinging movement, in a plane substantially parallel to the plane of movement of the arms, and toothed cutters carried by the shaft or spindles; substantially as described.

11. A rotary boiler tube cleaner having a freely swinging centrifugally acting arm, a freely swinging saddle or clip carried by the arm and having wheel journals, and cutter wheels mounted on the said journals; substantially as described.

12. A boiler tube cleaner having a pivoted, vibratory, centrifugally acting arm free to swing outwardly from the axis of the tube, a cutter carrier pivotally secured to the said arm and capable of an independent swinging movement, and a rotary cutter wheel mounted on each end portion of the carrier; substantially as described.

13. A boiler tube cleaner having a head adapted to be rotated at a high speed within the tube to be cleaned, a plurality of vibratory, centrifugally acting, freely swinging arms pivoted to the head, a cutter carrier pivotally secured to the outer end portion of each of the arms, and a plurality of cutters mounted on each carrier and having their cutting edges in different longitudinal planes; substantially as described.

856,629. AUXILIARY STOP FOR TYPE-WRITER CARRIAGES. WILLIAM R. FOX, Grand Rapids, Mich. Filed Sept. 16, 1904. Serial No. 224,763.



Claim.—1. A stop D for a typewriter, adapted for use on the back bar C of the carriage, consisting of a sheet of metal folded upon itself, with a transverse notch *f* therethrough having the lips beveled at *f*, to readily pass onto the notched back bar C of the carriage, one of the lips being cut away at D''; a spring *d* to embrace the back bar and with a projection *d'* arranged to engage beneath the back bar C; and a handle D' with a stud riveted through the spring to hold it in position, co-acting for the purpose specified.

2. A stop D for a typewriter, adapted for use on the back bar C of the carriage, consisting of a sheet of metal folded upon itself, with a transverse notch *f* therethrough having the lips to readily pass onto the notched back bar C of the carriage, one of the lips being cut away at D''; a spring *d* to embrace the back bar and with a projection *d'* arranged to engage beneath the back bar C; and a handle D' with a stud riveted through the spring to hold it in position, co-acting for the purpose specified.

3. A stop D for a typewriter, adapted for use on the back bar C of the carriage, consisting of a sheet of metal folded upon itself, with a transverse notch *f* therethrough, having the lips to readily pass onto the notched back bar C of the carriage; a spring *d* to embrace the back bar and with a projection *d'* arranged to engage beneath the back bar C; and a handle D' with a stud riveted through the spring to hold it in position, co-acting for the purpose specified.

4. A stop D for a typewriter, adapted for use on the back bar C of the carriage, consisting of a sheet of metal folded upon itself, with a transverse notch *f* therethrough, having the lips to readily pass onto the notched back bar C of the carriage; and a spring *d* to embrace the back bar and with a projection *d'* arranged to engage beneath the back bar C, co-acting for the purpose specified.

5. A stop D for a typewriter, adapted for use on the back bar C of the carriage, consisting of a suitable body to embrace the back bar; a spring *d* to embrace the back bar and with a projection *d'* arranged to engage beneath the back bar C; and a handle D' with a stud riveted through the spring to hold it in position, co-acting for the purpose specified.

6. A stop D for a typwriter, adapted for use on the back bar C of the carriage, consisting of a suitable body to embrace the back bar; and a spring *d* to embrace the back bar and with a projection *d'* arranged to engage beneath the back bar C, co-acting for the purpose specified.

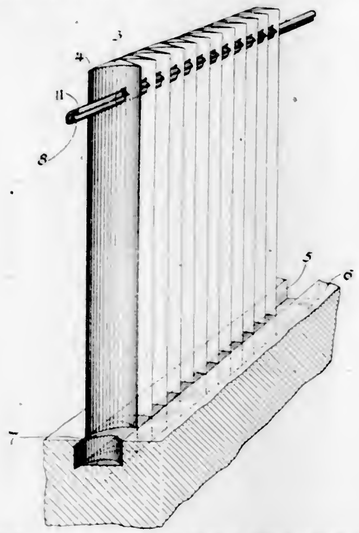
7. A stop for a tabulator adapted for use on the backbar of the carriage of a typewriting machine, consisting of a piece of metal folded upon itself and with a transverse slot *f* therethrough so that the edges of the sheet metal will engage between the teeth on the rack; a handle terminating in a rivet; a spring with an engaging projection arranged within the said stop and held in position by the rivet of the handle, for the purpose specified.

8. A detachable sheet metal stop folded to form two substantially parallel slot engaging securing arms, each of said arms being bifurcated to straddle a supporting rod.

9. A detachable sheet metal stop folded to form two substantially parallel slot engaging securing arms, each of said arms being bifurcated to straddle a supporting rod, and securing means carried by said stop.

10. A detachable sheet metal stop folded to form two substantially parallel slot engaging securing arms, each of said arms being bifurcated to straddle a supporting rod, and a clamping spring carried by said stop.

856,630. TURBINE BLADE AND VANE. JONATHAN S. GREEN, Pittsburg, Pa., assignor to The Westinghouse Machine Company, a Corporation of Pennsylvania. Filed Jan. 2, 1907. Serial No. 350,417.



Claim.—1. In combination with a turbine blade holding element, a turbine blade, the core or major portion of which is formed of metal having substantially the same coefficient of expansion as the metal of said element and a relatively thin sheath or cover welded to said core and formed of metal adapted to withstand the erosive and corrosive effect of the working fluid.

2. In combination with a turbine blade holding element, a turbine blade, the core or major portion of which is formed of a metal having substantially the same coefficient of expansion as the metal of said element and a relatively thin sheath or cover of protective metal welded thereto.

3. In combination with a turbine blade holding element, a turbine blade, the core or major portion of which is formed of a metal having substantially the same coefficient of expansion as the metal of said element and a relatively thin sheath of copper welded thereto.

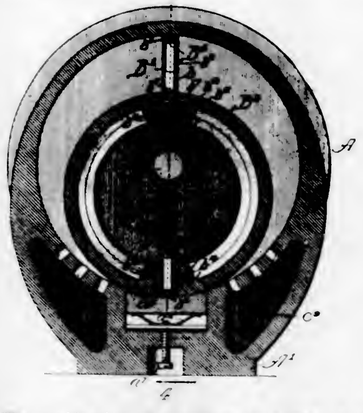
4. In combination with a steel or iron blade holding element, a turbine blade comprising a core portion formed of steel or iron and a relatively thin sheath or cover of copper welded thereto.

5. In combination with a steel or iron blade holding element, a turbine blade comprising a core portion formed of steel or iron and a relatively thin sheath of protective metal welded thereto.

856,631. ROTARY MOTOR. FRED L. GREGORY, Chicago, Ill. Filed Oct. 30, 1905. Serial No. 285,108.

Claim.—1. The combination of a casing, a rotary piston, a vane connected with said piston, lateral-edge and side-edge packing-members connected with the lateral and outer edges of said vane and having overlapping portions slidable upon each other at the outer corners of the vane, and a spring serving normally to force said lateral-edge packing-members into close contact with the ends of the cylinder and serving also, through the medium of said lateral-edge packing-members, to force the end-edge packing-member into contact with the inner cylindrical surface of the cylinder.

2. The combination of a casing, a rotary piston, a vane connected with said piston, an end-edge packing member connected with said vane, lateral-edge packing members connected with said vane and serving to transmit thrust to the end-edge packing member, links connected with said lateral-edge packing members, and a spring-projected follower serving to transmit thrust through said links, for the purpose set forth.



3. The combination of a stationary cylinder, a rotary piston, said cylinder being provided with admission and exhaust ports, and a manually-actuated valve and a power-actuated valve having ports which may be brought into registration with the ports of the cylinder, the manually-actuated valve having additional ports for use in starting the engine, for the purpose set forth.

4. The combination of a stationary cylinder having an end provided with admission and exhaust ports, a rotary piston having a shaft extending through said end, a valve carried by a sleeve journaled on said shaft and equipped with a controlling handle, a valve located outside said first-named valve and actuated by said shaft, and a valve-casing forming with said cylinder-end a chamber for the valves, said sleeve extending through the valve-casing and having its actuating handle connected with its outer end, for the purpose set forth.

5. The combination of a stationary cylinder having an end provided with admission and exhaust ports, a shaft extending through said end, a rotary piston connected with said shaft, a valve controlling said ports and equipped with a tubular stem journaled on said shaft, a valve-casing having an end in which said tubular stem is journaled, said valve casing being provided with a plurality of sockets, an arm connected with said stem and equipped with a catch adapted to engage said sockets, and a valve actuated by said shaft and co-acting with said first-named valve, for the purpose set forth.

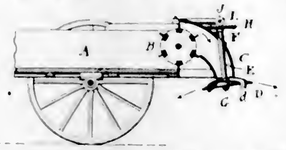
6. The combination of a stationary cylinder having an end provided with admission and exhaust ports, a shaft extending through said end, a rotary piston connected with said shaft, a manually-actuated valve having a face located adjacent to the outer surface of said cylinder end, said valve having an exhaust passage at its inner face and having circumferential starting admission ports and additional ports located within a smaller radius, and a valve adjacent to said first-named valve and actuated by said shaft, said last-named valve being of smaller diameter than the first-named valve and controlling said last-named ports of said first-named valve, for the purpose set forth.

856,632. MANURE-SPREADER. GLEN G. GRISWOLD, Madison, Ohio. Filed Oct. 29, 1906. Serial No. 340,991.

Claim.—1. A disk for a manure spreader having radial vanes on both sides and adapted to be reversed.

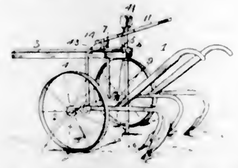
2. A reversible disk for a manure spreader concavo-convex in cross section and provided with radial vanes on both sides, whereby a long or short throw can be given the manure.

3. A manure spreader of disk shape and a shaft supporting the same in a substantially horizontal position, in combination with a toothed revolving distributer on a plane above said spreader and a chute for conveying the



manure from the distributer centrally upon said spreader, said chute having a width at its top substantially equal to the length of said distributer and narrowed to said spreader at its lower end.

856,633. REPLANTER ATTACHMENT. LYCURGUS GUDGELL, Lockridge, Iowa. Filed Nov. 8, 1906. Serial No. 342,530.



Claim.—1. In combination with a stationary member, a tube carried thereby and movable therethrough, a hopper carried by the tube and in communication therewith, a foot on the tube, and means for moving the tube with relation to the stationary member.

2. In combination with a stationary member, a tube carried thereby and movable therethrough, a hopper carried by the tube and in communication therewith, a foot on the tube, means for moving the tube with relation to the stationary member, and means for controlling the operation of the foot through the movement of the tube.

3. In combination, a stationary member, a tube movable therethrough, a hopper carried thereby, means for moving the tube with relation to the stationary member, and means whereby the movement of the tube controls the discharge of the hopper.

4. In combination with a stationary member, a tube movable therethrough, a hopper carried by the tube, and means acting in conjunction with the stationary member for moving the tube with relation to the stationary member.

5. In combination with a stationary member, a tube movable therethrough, a hopper carried thereby, manual means for moving the tube in one direction with relation to the stationary member and automatic means for imparting movement thereto in an opposite direction.

6. In combination, a stationary member, a tube movable through the stationary member, a hopper carried by the tube, a lever engaging the stationary member and the tube for imparting movement thereto in one direction and means for imparting movement to the tube in an opposite direction.

7. In combination, a stationary member, a tube movable through the stationary member, a lever carried by the tube, means for imparting movement thereto in one direction, and springs for imparting movement thereto in an opposite direction.

8. In combination, a stationary member, a tube movable through the stationary member, a lever carried thereby, means for imparting movement thereto in one direction, springs for imparting movement thereto in an opposite direction, and means for limiting the movement of the tube as imparted by the springs.

9. In combination, a stationary member, a tube movable through the stationary member, a hopper carried by the tube, jaws carried by the tube, and means for imparting movement to the tube and means carried by the tube for controlling the operations of the jaws.

10. In combination, a stationary member, a tube movable through the stationary member, a lever carried by the tube, a foot on the tube comprising jaws, means for depressing the tube, and means whereby the depression of the tube distends the jaws.

11. In combination, a stationary member, a tube movable through the stationary member, a hopper carried thereby, means for imparting movement to the tube with relation to the stationary member, and means carried by the tube and engaging with the stationary member for limiting the movement thereof in one direction.

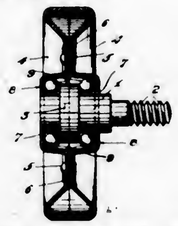
12. In combination, a stationary member, a tube movable through the stationary member, a hopper carried by the tube, a shoe on the tube comprising pivoted jaws, means for moving the tube with relation to the stationary member, and means carried by the tube acting in conjunction with the stationary member for holding the jaws normally closed.

13. In combination, a stationary member, a tube movable through the stationary member, a hopper carried thereby, a shoe carried by the tube, said shoe comprising jaws, means for imparting movement to the tube, and a rod loosely carried by the tube normally engaging with the stationary member and holding the jaws closed.

14. In combination, a stationary member, a tube movable through the stationary member, a hopper carried thereby, a shoe carried by the tube, said shoe comprising jaws, a rod loosely carried by the tube normally engaging with the stationary member to hold the jaws closed and means for elevating said rod when the tube is depressed.

15. In combination, a stationary member, a tube movable through the stationary member, a hopper carried by the tube, mechanism within the hopper for controlling the discharge of the hopper, means for imparting movement to the tube, and means acting in conjunction with the stationary member for controlling the mechanism of the hopper.

856,634. BALL-BEARING WHEEL. FRANK J. HANSEN and HANS J. HANSEN, Minneapolis, Minn. Filed Dec. 17, 1906. Serial No. 348,238.



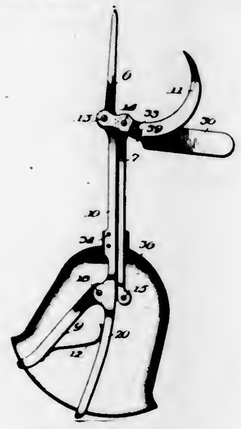
Claim.—1. A wheel made of two sections 4 rigidly united at their intermediate portions, the inner portions of said sections being pressed outward at 8 to form ball runways, and the outer portions thereof being pressed outward and then turned inward to form the rim of the wheel, substantially as described.

2. The combination with an axle having an intermediate collar or annular flange, of a wheel made up of two wheel sections 4 rigidly connected at their intermediate portions, provided with reversely bulged rim-forming portions and with reversely bulged ball runways in its hub portion, and bearing balls interposed between said axle and the ball runways of the hub of said wheel, substantially as described.

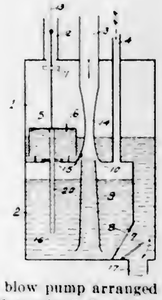
856,635. FORK. WILLIAM HAZZARD, Lorain, Ohio. Filed Mar. 27, 1907. Serial No. 364,794.

Claim.—A grappling fork having spaced grasping fingers, a blade projecting laterally therefrom and having a tubular sleeve at the heel thereof extending across be-

tween the fingers, and a clamping bolt extending through the fingers and the sleeve.



856,636. PUMPING MACHINERY. CHARLES L. HEISLER, St. Marys, Ohio. Filed Oct. 5, 1906. Serial No. 337,650.



Claim.—1. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet, in combination with means for automatically refilling said blowing chamber 2 before it is nearly empty for the purpose of causing a continuous upward discharge of the liquid and air mixture through said tube 3, in the manner described

2. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet, in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and means for actuating the trap when said chamber 2 is full or nearly empty and arranged for automatically refilling said blowing chamber 2 before it is nearly empty for the purpose of causing a continuous upward discharge of the liquid and air mixture through said tube 3, in the manner described.

3. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and a float 5 arranged within the chamber, attached to an air discharge valve 11 and inlet 15 arranged between the chambers 1 and 2, said float 5 being actuated in the manner and for the purpose described.

4. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet, in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and a float 5 arranged within the chamber, attached to an air discharge valve 11 and inlet valve 15 arranged between the chambers 1 and 2, and a hollow valve stem or tube extending from said float 5 down into the chamber 2 for the purpose described.

5. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet, in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and a float 5 arranged within the chamber, attached to an air discharge valve 11, and inlet valve 15 arranged between the chambers 1 and 2 and an auxiliary tank or float 5' connected with said valve stem for the purpose described.

6. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet, in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and a float 5 arranged within the chamber, attached to an air discharge valve 11, and inlet valve 15 arranged between the chambers 1 and 2 and an auxiliary tank or float 5' connected with said valve, and an air tube 21 extending up into said float 5' for the purpose described.

7. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting with it the chamber 2 and a float 5 arranged within the chamber, attached to inlet valve 15 arranged between the chambers 1 and 2, said float 5 being actuated in the manner and for the purpose described.

8. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet, in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and a float 5 arranged within the chamber, attached to inlet valve 15 arranged between the chambers 1 and 2, said float 5 being actuated by an extension rod 13 reaching to the surface for the purpose described.

9. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and means for actuating the trap when said chamber 2 is full or nearly empty and arranged for automatically refilling, said blowing chamber 2 before it is nearly empty for the purpose of causing a continuous upward discharge of the liquid and air mixture through said tube 3 which extends nearly to the bottom of said blowing chamber 2 for the purpose described.

10. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and means for actuating the trap when said chamber 2 is full or nearly empty and arranged for automatically refilling said blowing chamber 2 before it is nearly empty for the purpose of causing a continuous upward discharge of the liquid and air mixture through said tube 3 which extends nearly to the bottom of said blowing chamber 2 and an air pipe 4 arranged mainly within the discharge tube 3 for the purpose described.

11. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet in combination with means for automatically refilling said blowing chamber 2 before it is nearly empty for the purpose of causing a continuous upward discharge of the liquid and air mixture through said tube 3 by the action of the siphon 4 and 10 for the purpose described.

12. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and means for actuating the trap when said chamber 2 is nearly empty or full and arranged for automatically refilling said blowing chamber 2 before it is nearly empty for the purpose of causing a continuous upward discharge of the liquid and air mixture through said tube 3 which extends nearly to the bottom of said blowing chamber 2, said chamber 1 being arranged mainly above chamber 2 for the purpose described.

13. In a blow pump arranged for lifting liquids, the combination of a tube 3 for discharging the mixture of air and liquid, a tube 4 for admitting air or gas under pressure, said tubes being connected with a blowing chamber 2, which is provided with a water inlet in combination with a trap chamber 1 having a water inlet 7 and a valve 8 connecting it with the chamber 2 and a float 5 arranged within the chamber attached to an air discharge valve 11 and inlet valve 15 arranged between the chambers 1 and 2, and an adjustable spring 18 connected with said float 5 for the purpose described.

856,637. PROCESS OF MALTING. HERMAN HEUSER, Chicago, Ill. Filed Jan. 18, 1907. Serial No. 352,922.

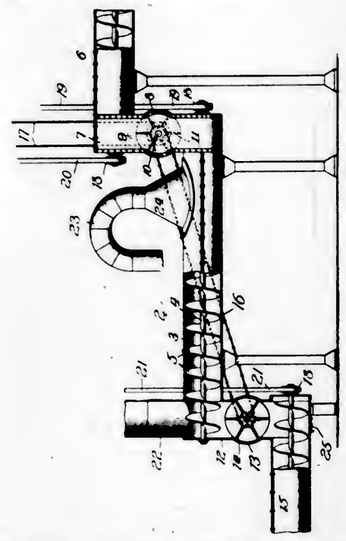
Claim.—1. The process of malting, which consists in steeping the grains, removing from substantially all of the grains substantially all the superficial moisture and retaining substantially all the moisture within the grains, and then subjecting the grains thus superficially dried to germination.

2. The process of malting, which consists in steeping the grains, separating the grains from the steeping water, removing from substantially all of the grains substantially all the superficial moisture and retaining substantially all the moisture within the grains, and then subjecting the grains thus superficially dried to germination.

3. The process of malting, which consists in steeping the grains, evaporating from substantially all of the grains substantially all the superficial moisture while they are in transit from the steeping tank to the germinating chamber, retaining substantially all the moisture within the grains, and then subjecting the grains thus superficially dried to germination.

4. The process of malting, which consists in steeping the grains, evaporating from substantially all of the grains substantially all the superficial moisture while in transit from the steeping tank to the germinating chamber by forcing currents of dry air through the mass of such grains, and retaining substantially all the moisture within the grains, and then subjecting the grains thus superficially dried to germination.

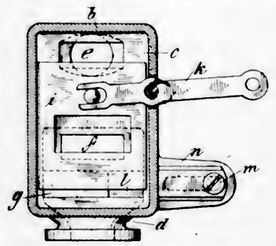
5. The process of malting, which consists in steeping the grains, evaporating the superficial moisture from the grains in their course from the steeping tank to the germinating chamber by forcing currents of dry air through them in the direction counter to their course of movement, and then subjecting the grains thus dried to germination.



6. The process of malting, which consists in steeping the grains, transferring the steeped grains under confinement against the access of the surrounding atmosphere from the steeping tank to the germinating chamber and, while in transit and under such confinement evaporating from the grains the superficial moisture, and then subjecting the grains to germination.

7. The process of malting, which consists in steeping the grains, transferring the steeped grains under confinement against the access of the surrounding atmosphere from the steeping tank to the germinating chamber and while in transit and under such confinement stirring the grains and evaporating from them the superficial moisture, and then subjecting the grains to germination.

856,638. CARBURETER. WILLIAM H. C. HIGGINS, Jr., Orange, N. J. Filed July 13, 1906. Serial No. 326,021.



Claim.—1. A carbureter comprising a mixing chamber provided with a fuel inlet, two air admission ports, and a delivery port, means actuated externally of the carbureter for varying simultaneously the effective area of all of said ports, and independent means also actuated externally of the carbureter for varying the effective area of one of the air admission ports.

2. A carbureter comprising a mixing chamber provided with a fuel inlet, a port for the delivery of the mixture and a plurality of ports for the admission of air, positively actuated means to open and close the delivery port

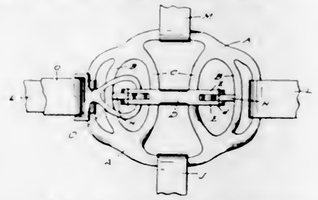
and one of said air ports and positively actuated means to close and open co-ordinately another of said air ports in opposition.

3. A carbureter comprising a mixing chamber provided with a fuel inlet, a delivery port for the mixture, and a plurality of air inlet ports, means to open and close the delivery port and one of the inlet ports, means actuating simultaneously therewith, to close and open another of the inlet ports, and means to adjust the effective area of the last named inlet port.

4. A carbureter comprising a mixing chamber provided with a fuel inlet, a port for the delivery of the mixture, and two ports for the inlet of air, and a valve co-operating with said ports to open the delivery port and one of the air ports and simultaneously close the other of the air inlet ports, and vice versa.

5. A carbureter comprising a mixing chamber provided with a fuel inlet, a port for the delivery of the mixture and two ports for the inlet of air, a valve co-operating with said ports to open the delivery port and one of the air ports and simultaneously close the other of the air inlet ports and vice versa, and means to adjust the effective area of the last named inlet port.

856,639. TRACE-CARRIER. ORION B. HITCHCOCK, Horton, Kans., and JAMES L. WILSON, St. Joseph, Mo. Filed Jan. 26, 1907. Serial No. 354,306.



Claim.—1. In a trace carrier the combination with a base, loop and arch bars and a coupling bar, of duplicate sets of arms projecting outwardly from said arch bars and duplicate detents, each consisting of a body, an outwardly curved taper end, a thumb piece and a lug forward of the body of the detent provided with a perforation by which the detent is pivoted within the space between the arms, substantially as set forth and shown.

2. In a trace carrier provided with loop and arch bars, duplicate horizontal arms projecting oppositely outward from said arch bars, pivots carried by said arms, and detents, each consisting of an enlarged body, a thumb piece, a lower taper end and a lug forward of the body carried by one of said pivots, the weight of the detents being thus backward of the pivoted center and the taper ends borne forward into contact with said loop bars, substantially as set forth and shown.

856,640. OUTLET-BOX. SAMUEL E. HUNTTING, San Francisco, Cal. Filed Apr. 12, 1906. Serial No. 311,401.



Claim.—1. A frame for push buttons and switches with flanges on the top and bottom between which the laths pass, thus supporting the frame.

2. A frame for push buttons and switches with flanges on each side which receive between them the ends of the laths on each side of the frame, thus giving support to such laths.

3. A frame having in front of the foremost flanges a rim slightly less in height than the thickness of the plaster, which rim supports the plaster at the edge of the aperture.

4. A frame with flanges approximately flush with the back side of the frame so that it may be nailed through its back flanges to a board fastened between the studs.

5. A frame having flanges on top and bottom by which it is supported, and having flanges on both sides by which it supports other laths, so that it acts as a metal tie uniting several laths in such a manner as to give better support to the button or switch.

6. A frame so supported by laths at the top and bottom that the supporting screws at top and bottom of button or switch have the wood of the laths to screw into instead of going between the laths.

856,641. FOUNTAIN GLUE-BRUSH. ABRAHAM D. HYMAN, Grand Rapids, Mich. Filed July 19, 1905. Serial No. 270,336.



Claim.—1. In a fountain glue brush, the combination with the reservoir having the discharge aperture in one end thereof, of the downwardly-projecting brush associated with said aperture but not obstructing the passage of the glue therethrough, so that the glue discharged through the aperture directly on the work will be spread thereon by the brush, and the handle by which it is manipulated secured to the under side thereof.

2. In a fountain glue brush, the combination with the reservoir having the discharge aperture in one end thereof, of the downwardly-projecting brush associated with said aperture but not obstructing the passage of the glue therethrough, so that the glue discharged through the aperture directly on the work will be spread thereon by the brush, the guiding members at the sides of the brush immediately adjacent thereto, and the handle secured to the under side of the brush, substantially as shown and described.

3. In a fountain glue brush, the combination with a segmental wedge-shaped reservoir having the discharge aperture at the tip thereof, of the downwardly-projecting brush associated with said aperture but not obstructing the passage of the glue therethrough, so that the glue discharged through the aperture directly on the work will be spread thereon by the brush, and a handle located toward the larger end of the reservoir on the under side thereof to balance it when it is filled, substantially as shown and described.

4. In a fountain glue brush, the combination with a reservoir having the discharge aperture in one end thereof, of the brush associated therewith, and means for suspending the reservoir, consisting of a track, a trolley wheel running on said track, and connections between the trolley wheel and the reservoir.

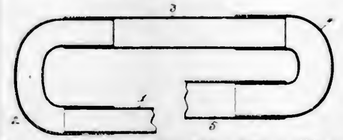
5. In a fountain glue brush, the combination with the reservoir having the discharge aperture in one end thereof, of the brush associated therewith, the pair of handles extending from the sides thereof, and means for suspending the reservoir, consisting of a track, a trolley wheel running on said track, and connections between the trolley wheel and the reservoir.

6. In a fountain glue brush, the combination with the reservoir having the discharge aperture in one end thereof, of the brush associated with said aperture but not obstructing the passage of the glue therethrough, so that the glue discharged through the aperture directly on the work will be spread thereon by the brush, and the supporting rollers adjacent the brush and acting as guiding flanges.

7. In a fountain glue brush, the combination with a reservoir having a discharge aperture in one end thereof, of the brush associated with said aperture but not obstructing the passage of the glue therethrough, so that the glue discharged through the aperture directly on the work will be spread thereon by the brush, and the valve located between the reservoir and brush.

8. In a fountain glue brush, the combination with the main reservoir, of the brush reservoir at one end thereof having the discharge aperture therein, the brush associated with said aperture but not obstructing the passage of the glue therethrough, so that the glue discharged through the aperture directly on the work will be spread thereon by the brush, and the valve interposed between the main reservoir and the brush reservoir adapted to permit the free passage of the glue.

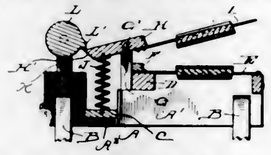
856,642. TUNING-SLIDE FOR HORNS AND LIKE INSTRUMENTS. HARRY B. JAY, Kalamazoo, Mich. Filed Aug. 11, 1906. Serial No. 330,129.



Claim.—1. The combination with a tuning slide or crook of uniform diameter from end to end, of sections with which said slide is telescopically arranged, said sections being of even diameters from end to end, and of such diameters relative to said slide that it telescopes over the section, in advance thereof and into the succeeding section so that no reductions or pockets are formed by the adjustment of the slide, for the purpose specified.

2. The combination with a tuning slide or crook, of sections with which said slide is telescopically arranged, said sections being of even diameter from end to end, and of such diameter relatively to said slide that it telescopes over the section in advance thereof and into the succeeding section so that no reductions or pockets are formed by the adjustment of the slide, for the purpose specified.

856,643. ERASER-CLEANER. ANDREW LARSON, Ottawa, Kans. Filed Mar. 3, 1906. Serial No. 304,076.



Claim.—1. In an eraser cleaner, the combination with a frame provided with a plurality of loops, of a plurality of arms provided with loops pivotally mounted above said frame, and means for operating said arms successively, for the purpose described.

2. In an eraser cleaner, the combination with a frame provided with a plurality of loops having enlarged portions, of a plurality of arms provided with similar loops pivotally mounted above said frame, and a shaft provided with spirally arranged lugs adapted to engage said arms, for the purpose described.

3. In an eraser cleaner, the combination with a frame provided with a plurality of wire loops, of a shaft mounted above said frame provided with a plurality of spring actuated arms carrying wire loops, and a shaft provided with spirally arranged lugs adapted to engage said arms, for the purpose described.

4. In an eraser cleaner, the combination with a frame mounted on legs of a cross bar arranged in said frame provided with a plurality of wire loops having their ends connected to the end of the frame, uprights secured to the sides of the frame carrying a shaft, spaced arms mounted on said shaft provided with beveled ends, springs arranged under one end of said arms, loops connected to the other end of said arms, and a shaft provided with a crank and having spirally arranged lugs adapted to engage the beveled ends of said arms, for the purpose described.

856,644. PICKLING-BATH. CHARLES E. LAVERTY, Pittsburg, Pa.; Arthur F. Laverty administrator of said Charles E. Laverty, deceased. Filed Aug. 28, 1905. Serial No. 276,165.

Claim.—1. A pickling-bath containing a hydrocarbon.

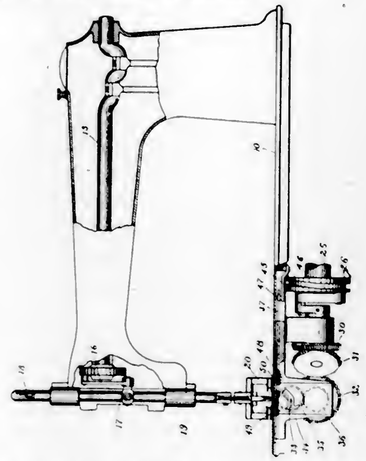
2. A pickling-bath containing an acid and a hydrocarbon.

3. A pickling-bath containing sulfuric acid and with a hydrocarbon.

4. A pickling bath containing an acid and a hydrocarbon oil.

5. A pickling bath containing sulfuric acid and a hydrocarbon oil.

856,645. STITCH-FORMING DEVICE FOR SEWING-MACHINES. ROBERT L. LYONS, Waltham, Mass. Filed Dec. 12, 1904. Serial No. 236,508.



Claim.—1. In a single thread button sewing machine, the combination with a button clamp mounted for movement to position the holes of the button with respect to the needle, of a needle, needle driving means, a looper, and a movable needle thread positioner adapted to engage the thread between the looper and the work to resist the drawing action of the button clamp, in its movement, on the loop.

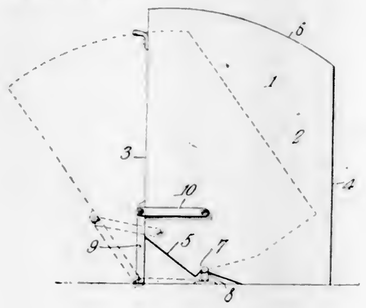
2. In a single thread button sewing machine the combination with stitch forming mechanism comprising a needle and a looper, of a work holder movably mounted with respect to the path of the needle, and movable means, adapted to engage the thread beneath the work holder, to resist the lateral movement thereof under the action of the work holder.

3. In a single thread button sewing machine, the combination with a button clamp mounted for movement to position the holes in the button with respect to the needle, of a needle, needle driving means, a looper, a needle thread positioner movably mounted to work beneath the work and having a path of movement across the needle path, and means for actuating said positioner to move the thread laterally at alternate loop delivery movements of the needle.

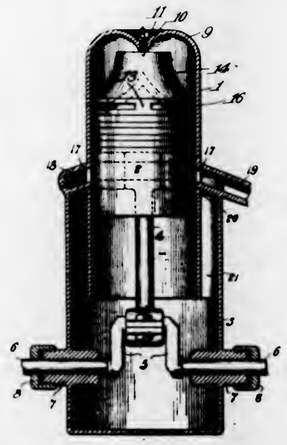
856,646. GROCERY-BIN. DAVID H. MALONE, Kelso, Wash. Filed Feb. 25, 1907. Serial No. 359,119.

Claim.—A bin comprising vertically disposed sides having their forward lower corners cut away and recesses provided at their lower edges at said cut away portions, fixed pivots located in said recesses and upon which the bin is adapted to swing, a board hinged to the floor in advance of the bin and having a plane side lying against the front of the bin and links pivoted at their forward

ends to the ends of said board and at their rear ends to the vertical outer sides of the bin.



856,647. EXPLOSIVE-ENGINE. CHARLES E. MAUD, Monterey, Cal. Filed Jan. 30, 1907. Serial No. 354,884.

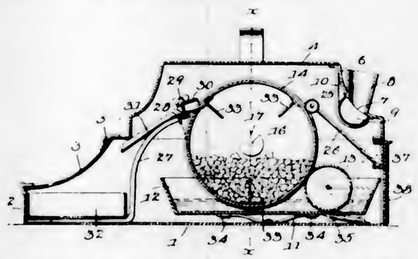


Claim.—1. An explosive engine of the two-cycle type having a working cylinder provided with an axial, inward, cone-shaped projection on its rear wall and provided with air inlet ports opening into said cylinder at the extreme limit of the power stroke of the piston and with a free exhaust port adjacent to the air ports, and a power piston contained in said cylinder and provided with a hollow, frusto-conical air deflector carried by but spaced from the rear wall of the piston and coacting with the cone-shaped projection on the rear wall of the cylinder to direct a scavengering charge of compressed air from the air ports rearward to the cone-shaped rear wall of the cylinder and thence forward to the exhaust port.

2. In an explosive engine of the two-cycle type, a piston, a hollow air-deflector carried thereby, and means for igniting a charge in the path of said air-deflector and arranged to enter the same when the charge is compressed for firing.

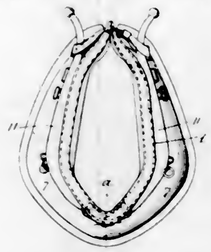
3. In an explosive engine of the two-cycle type, a piston, a hollow air-deflector opening toward the rear, an explosion chamber having its rear wall provided with an inward axially-located cone-shaped projection, and an igniting device carried by said projection and arranged to enter the open end of the deflector.

856,648. ICE-CREAM FREEZER. WILLIAM M. MILBURN, Sherman, Tex., assignor of one-third to D. H. Bailey and one-third to S. W. Ruyle, Grayson county, Tex. Filed Feb. 23, 1906. Serial No. 302,556.



Claim. In a freezer the combination with a casing; of a yieldingly supported receptacle therein, manually operated means engaging the receptacle for tilting the same, a distributing cylinder journaled within the receptacle, an ice containing cylinder rotatably mounted within the casing and projecting into said receptacle and against the distributing cylinder, a knife adjustably mounted adjacent, and bearing upon, the ice containing cylinder for removing frozen material therefrom, a chute extending from and adjustable with said knife, a receptacle within the casing for receiving material from the chute, and a rotatable guard seated by gravity upon and extending longitudinally of the ice containing cylinder at a point between and above the distributing cylinder and the knife.

856,649. HORSE-COLLAR. JOHN F. MOTT, Cleveland, Ohio. Filed Sept. 10, 1906. Serial No. 335,172.

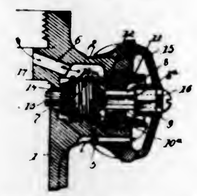


Claim.—1. A horse collar comprising a stuffed body portion, a supporting rim therefor, a leather covering enveloping both body and rim and a forming tube for the lower loop of the rim, and inserted therein, said tube being longitudinally separable into two portions, and the divisional plane therein being substantially vertical, substantially as described.

2. A flattened reinforcing and forming tube for the purpose described, comprising longitudinally separable portions the plane of division being substantially vertical, the combined lower surface of the said portions being downwardly and forwardly inclined, and the rear upper surface of the inner portion being upwardly and forwardly curved, substantially as and for the purpose set forth.

3. A horse collar comprising in combination, a stuffed body portion, and stuffed supporting rim therefor, a leather covering over both portions, a seam at the connecting line between said portions, an expansible forming and reinforcing tube in two separable portions inserted in the loop of the rim, said tube being forwardly and downwardly inclined on its lower surface, and upwardly and forwardly inclined above its inner edge, the stuffing in said rim extending between the separable portions of said reinforcing tube.

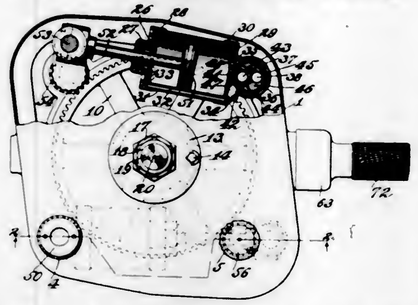
856,650. BY-PASS AND WASTE FOR TAPPING-MACHINES. HENRY MUELLER, Decatur, Ill., assignor to H. Mueller Manufacturing Company, Decatur, Ill. Filed Jan. 24, 1906. Serial No. 297,708.



Claim.—1. A by-pass and waste for tapping machines, comprising a cylindrical lateral extension of the valve chamber of the tapping machine, internally shaped to form the by-pass and waste and having a longitudinal groove in its exterior surface, a valve stem having its outer end projecting beyond the cylindrical extension, valves on the stem to control the by-pass and waste, and a cap-formed handle fastened to the outer end of the valve stem and fitted closely over the cylindrical extension that forms the by-pass chamber.

2. In a tapping machine, the combination with the valve body and the valve thereof, of a lateral by-pass chamber communicating with the interior of the valve body above the valve seat thereof and having an enlarged circular opening leading into the valve body below the valve seat, a valve stem in the by-pass chamber, a valve on the stem adapted to open and close the by-pass, and a cylindrical extension of the by-pass valve projected into the enlarged circular opening and forming thereof a narrow annular passage way.

856,651. PNEUMATIC DRILL. PETER H. MURPHY, St. Louis, Mo. Filed Dec. 11, 1905. Serial No. 291,248.



Claim.—1. A pneumatic drill comprising an integral hollow casing provided with an inwardly extending tubular boss integral therwith, said tubular boss having a bushing therein constituting a main spindle bearing, a main spindle journaled in said bearing, a gear wheel rigidly secured to said spindle, said casing having an opening in one side to admit said gear wheel, a cap-plate to close said opening and provided with an opening having a bushing therein constituting a bearing for one end of said spindle, and means to actuate said spindle operatively connected to said gear wheel.

2. A pneumatic drill comprising an integral hollow casing provided with an inwardly extending tubular boss integral therewith, said tubular boss having a bushing therein constituting a main spindle bearing, a main spindle journaled in said bearing, a gear wheel rigidly secured to said spindle, said casing having an internally screw-threaded opening in one side to admit said gear wheel, a cap plate to close said opening having screw threads on its periphery and provided with an opening having a bushing therein constituting a bearing for one end of said spindle, and means to actuate said spindle operatively connected to said gear wheel.

3. A pneumatic drill comprising an integral hollow casing having an opening in one side to admit the working parts and a cap-plate to close said opening, a main spindle journaled in said casing, a gear wheel secured to said spindle, an engine mounted in said casing and having a crank shaft operatively connected to said gear wheel, said crankshaft being journaled at one end in a bearing in said casing and at its opposite end in a removable bearing plug, the hole to receive said bearing plug being partly in said casing and partly in said cap-plate, whereby said cap-plate is held against rotation when said bearing plug is in place.

4. A pneumatic drill comprising a main spindle, a double acting engine operatively connected to said main spindle, and having a piston and a valve adapted to alternately admit pressure to each face of said piston, a reversing throttle valve, air ducts communicating at one end with said engine valve and communicating at their other ends with said throttle-valve, an exhaust duct communicating with said throttle-valve, said throttle-valve being arranged to connect either of said first-mentioned air ducts with said exhaust duct and the other with a source of supply of compressed air.

5. A pneumatic drill comprising a casing having open-ended spindle bearings forming an opening through the casing from side to side, an open ended spindle journaled in said bearings, a spindle nut removably secured upon the outside of said casing, a thrust bearing arranged between said nut and one end of said main spindle, a tool holder removably mounted in the other end of said main spindle, a feed screw mounted in said spindle nut, and actuating means for said main spindle mounted in said casing.

6. A pneumatic drill comprising a casing having open-ended spindle bearings forming an opening through the casing from side to side, an open-ended spindle journaled in said bearings and provided with a permanently mounted internal key, a spindle nut removably secured upon the outside of said casing, a thrust-bearing arranged between said nut and one end of said main spindle, a tool holder removably mounted in the other end of said main spindle and having a key-way to receive said key, a feed screw mounted in said spindle nut, and actuating means for said main spindle mounted in said casing.

7. A pneumatic drill comprising a casing, a main spindle mounted in said casing, means to actuate said spindle mounted in said casing, a thrust bearing ring removably connected to one end of said main spindle, a tool holder removably mounted in the other end of said spindle, a spindle nut secured to said casing and having a bearing ring arranged to coöperate with said first mentioned bearing ring, and a feed screw mounted in said spindle nut.

8. A pneumatic drill comprising a casing, a main spindle and means to actuate said spindle mounted in said casing, a tool-holder arranged to enter said spindle, said tool-holder and said spindle having registering grooves in the surfaces in contact, and a split-ring of resilient material located in said grooves, the normal diameter of said ring being less than the diameter of said tool-holder at the bottom of its groove, whereby said ring tends to embrace said tool-holder closely.

9. In a pneumatic drill, an engine comprising cylinder heads, concentric separated cylinders, means for connecting said heads to the ends of said cylinders, and forming an annular chamber between them, the inner of said cylinders forming a piston-chamber, and a piston fitting in said piston-chamber, one of said heads having ports opening, respectively, into one end of said piston-chamber and said annular chamber, and said inner cylinder being provided with ports leading from said annular chamber into the opposite end of said piston-chamber.

10. In a pneumatic drill, an engine comprising cylinder heads having screw-threaded peripheral flanges and circular grooves concentric with said flanges, a cylinder screwed upon said flanges at its opposite ends, a cylinder fitting at its opposite ends in said grooves and forming a piston-chamber, said cylinders forming an annular chamber between them, and a piston fitting in said piston chamber, one of said heads having ports opening, respectively, into

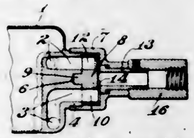
one end of said piston chamber and said annular chamber, and said inner cylinder being provided with ports leading from said annular chamber into the opposite end of said piston chamber.

11. In a pneumatic drill, an engine comprising cylinder heads, concentric separated cylinders, means for connecting said heads to the ends of said cylinders and forming an annular chamber between them, the inner of said cylinders forming a piston chamber, one of said cylinder heads having a bearing portion provided with a valve seat and ducts leading from said valve seat to said piston chamber and said annular chamber, respectively, a valve fitting in said valve seat and provided with parallel longitudinal air ducts and a pair of symmetrically located ports communicating with each of said ducts, said ports being so arranged that each of said ducts in said cylinder head will, respectively, alternately communicate with one port of said pair of ports, and a piston reciprocatingly mounted in said piston chamber.

12. In a pneumatic drill, an oscillating engine comprising a cylindrical main valve having two longitudinal air ducts and a pair of symmetrically located lateral ports opening into each of said ducts, a piston cylinder having a bearing portion surrounding said valve and provided with a rigidly mounted bushing having two ports, said ports being arranged to each communicate alternately with one port of each of said pairs of ports in said main valve, said cylinder being provided with air ducts leading, respectively, to the opposite ends of said cylinder and communicating with said ports in said bushing, respectively, and a piston in said piston chamber.

13. In a pneumatic drill, an oscillating engine comprising a cylindrical main valve having two longitudinal air ducts and a pair of symmetrically located lateral ports opening into each of said ducts, a valve cylinder head having a bearing portion surrounding said valve and provided with a rigidly-mounted bushing having two ports, said ports being arranged to each communicate alternately with one port of each of said pairs of ports in said main valve, a second cylinder head, concentric separated cylinders connecting said cylinder heads and forming an annular chamber between them, the inner of said cylinders constituting a piston chamber, said valve cylinder head having air ducts opening, respectively, into said annular chamber and said piston chamber and communicating with said ports in said bushing, respectively, and a piston in said piston chamber.

856,652. REVERSING-VALVE. PETER H. MURPHY, St. Louis, Mo. Original application filed Dec. 11, 1905, Serial No. 291,248. Divided and this application filed Dec. 8, 1906. Serial No. 346,931.

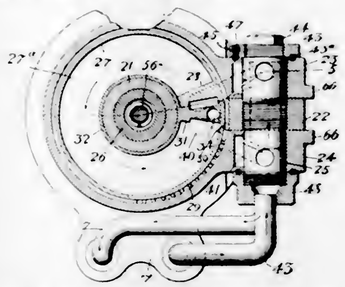


Claim.—1. A reversing valve comprising a cylindrical lug externally threaded and provided with two supply ducts and an exhaust duct opening through its face, a cylindrical housing externally threaded to coöperate with said lug and having a tubular projection, a valve rotatably mounted inside of said housing and having ducts arranged to be put in connection with said first mentioned ducts, respectively, and having also a connecting duct arranged to connect either of said first mentioned ducts with said exhaust duct, and a tubular handle whose bore constitutes a portion of the supply duct, and means for securing said valve to said handle to be manipulated thereby.

2. A reversing valve comprising a cylindrical lug externally threaded and provided with two supply ducts and an exhaust duct opening through its face, a cylindrical housing externally threaded to coöperate with said lug and having a tubular projection, a valve rotatably mounted inside of said housing and having ducts arranged to be put in connection with said first mentioned ducts, respectively, and having also a connecting duct arranged to connect either of said first mentioned ducts with said exhaust duct, a hollow sleeve rotatably mounted in said housing and connected to said valve to actuate it, a hollow handle whose bore constitutes a portion of the supply duct, means for connecting said handle to said sleeve to actuate the valve, and coöperating stops mounted on said housing and said valve, respectively, to limit the rotation of said valve.

3. A reversing valve comprising a cylindrical lug externally threaded and provided with two supply ducts and an exhaust duct opening through its face, a cylindrical housing externally threaded to coöperate with said lug and having a tubular projection, a valve rotatably mounted inside of said housing and having ducts arranged to be put in connection with said first mentioned ducts, respectively, and having also a connecting duct arranged to connect either of said first mentioned ducts with said exhaust duct, a ball yieldingly mounted in said housing and bearing on the face of said valve, said valve being provided with a depression arranged to receive said ball to yieldingly hold the valve against rotation.

856,653. BREECH-OPERATING MECHANISM FOR ORDNANCE. SAMUEL N. MCCLEAN, Cleveland, Ohio, assignor to The McClean Arms and Ordnance Company, Cleveland, Ohio, a Corporation of New Jersey. Filed June 17, 1902. Serial No. 112,085.



Claim.—1. The combination of a source of motive fluid, with a breech block, an annular channel contained in the breech mechanism and surrounding the rear of said block for the flow of said fluid to operate the block, an abutment in said channel, and a part attached to said block in said channel and in the path of the fluid.

2. A breech block, an annular channel contained in the breech mechanism and surrounding the rear of said block for the flow of motive fluid to operate the block, an abutment in said channel, a source of motive fluid connected with the opposite ends of said channel, and a part movable in said channel attached to the block.

3. A breech block, an annular channel contained in the breech mechanism and surrounding the rear of said block for the flow of motive fluid to operate the block, an abutment in said channel, a source of motive fluid connected with the opposite ends of said channel, and means controlling the direction of the flow of the fluid through said channel.

4. The combination of a source of motive fluid, with a breech block, an annular channel contained in the breech mechanism and surrounding the rear of said block for the flow of said fluid to operate the block, an abutment in said channel, said source of fluid being at all times in unobstructed communication with said channel, and a movable part in said channel and secured to the breech block.

5. A breech block, an annular channel contained in the breech mechanism and surrounding the rear of said block for the flow of motive fluid to operate the block, an abutment in said channel, a movable part connected with the breech block and projecting into said channel, a motive fluid put under pressure by the gun's discharge, and means conducting said fluid to said channel.

6. A breech block, an annular channel surrounding the rear of said block for the flow of a motive fluid to operate the block, an abutment in said channel, a part secured to the breech block and movable in said channel, a motive fluid put under pressure by the gun's discharge, means conducting said fluid to said channel, and means controlling the direction of flow of said fluid through said channel.

7. A breech block, a channel for the flow of a motive fluid to operate the block, an abutment therein, a part attached to the breech block and movable in said channel, a recoil cylinder containing a motive fluid and a piston, and means connecting said channel with said cylinder on opposite sides of said piston.

8. A breech block, a channel for the flow of a motive fluid to operate the block, a movable part in said channel attached to said block, a normally stationary abutment in said channel, means releasing said abutment to permit it to move in said channel, and means conducting motive fluid to said channel.

9. A breech block, a channel for the flow of motive fluid to operate the block, an abutment therein, a part movable in said channel and attached to the block, a source of motive fluid, a pintle on which the block swings, and a passage from the source of motive fluid to said channel through said pintle.

10. In a gun, the combination of the breech mechanism, a motor for operating the same, a recoil cylinder, and an uninterrupted passage for the motor fluid from the cylinder through the motor, and back to the cylinder.

11. In a gun, the combination of the breech mechanism, a motor for operating the same, a recoil cylinder, an uninterrupted passage from one end of the cylinder to the motor, and a like passage from the motor to the other end of the cylinder.

12. In a gun, the combination of the breech mechanism, a motor for operating the same, a recoil cylinder containing a motive fluid, a recoil-actuated piston moving in said cylinder, a by-pass from the rear to the front of the piston while it is in the front end of the cylinder, and a passage for the motive fluid from the rear of the piston to the front thereof through said motor after said by-pass has been passed.

13. In a gun, the combination of the breech mechanism, a motor for operating the same, a recoil cylinder containing a motive fluid, a piston moving in said cylinder, a passage for the motive fluid around said piston through said motor, and a by-pass around said piston independent of the motor when the piston is in either end portion of the cylinder.

14. In a gun, the combination of the breech mechanism, and its operating motor, with a recoil cylinder containing a motive fluid, a piston moving therein, a by-pass around said piston independent of the motor when in either end portion of said cylinder, and an intermediate portion of said cylinder without any by-pass, and communicating with the motor.

15. The combination of the breech mechanism and its operating motor with a recoil cylinder and its piston, said cylinder having a by pass around said piston only when the latter is in the end portions thereof, and connections between the intermediate part of the cylinder and the motor.

16. In a gun, the combination of the breech mechanism and its operating motor, a pintle on the gun around which said mechanism swings, a recoil cylinder containing a motive fluid, and an unobstructed passage from the cylinder to the motor through said pintle.

17. In a gun the combination of the breech mechanism and its operating motor, a pintle on the gun around which said mechanism swings, a recoil cylinder containing a motive fluid, an unobstructed passage from the cylinder to the motor and a vent from the motor to the cylinder, the passage and the vent both passing through said pintle.

18. The combination of the breech block and carrier coacting as a motor, a pintle on the gun having a passage for motor fluid therethrough, a hinge member on the carrier embracing the pintle and having a channel in free communication with the passage in the pintle in all positions of the carrier.

19. The combination of the breech block and a carrier coacting as a motor, a recoil cylinder containing a motor fluid, a pintle around which the carrier swings, an unobstructed passage through the pintle to the motor, and a hollow piston rod connected to the recoil cylinder and the passage in the pintle.

20. In a gun, the combination of a breech block having a rearwardly projecting hub or part, a rearwardly projecting flange or ring on the block surrounding said hub or part and having gear teeth engaging corresponding teeth on the gun, a ring secured to the carrier and projecting within the ring on the block, the two rings forming a motor chamber between them, a piston in said chamber secured to the breech block ring and an abutment secured to the carrier ring.

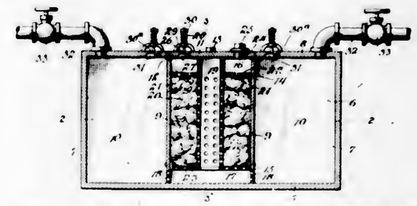
21. The combination of a gun, a breech block, two rings of different diameters and one within the other on the rear face of the block, a carrier inclosing said rings and forming a motor chamber between them, means securing one of said rings to the block and the other to the carrier, an abutment in said chamber secured to one ring and a piston secured to the other ring, and means conducting a motive fluid to said chamber.

22. The combination of a breech block and carrier coacting as a motor, an abutment in the motor chamber detachably secured to the carrier, a piston in said chamber secured to the block, and a handle for manipulating said block independent of the motor.

23. The combination of a breech block and carrier coacting as a motor chamber, a piston in said motor chamber, a recoil cylinder, a piston and a motor fluid therein, an unobstructed passage from the front of the recoil piston to one side of the motor piston, and another unobstructed passage from the rear of the recoil piston to the other side of the motor piston, whereby the recoil of the gun opens the breech and the counter-recoil closes it.

24. In a gun, the combination of the breech mechanism, and its operating motor, with a recoil cylinder containing a motive fluid, a piston moving therein, a by-pass around said piston independent of the motor when in either end portion of said cylinder, and an intermediate portion of said cylinder without any by-pass but communicating with the motor, and means retaining the gun in its recoil position.

856,654. CARBURETER. THOMAS MCCORMICK and ANANIAS MILLER, Mount Pleasant, Pa., assignors of one-fifth to George A. Schaefer, one-fifth to Joslah F. Miller, one-tenth to Henry H. Schaefer, and one-tenth to Walter J. Keist, Allegheny, Pa. Filed June 29, 1905. Serial No. 267,074.



Claim.—1. In a carbureter, the combination with a vaporizing chamber having spaced outer walls, of spaced perforate partitions extending across the chamber in spaced relation to the outer walls, forming an outer air compartment and an outer vapor compartment, means for admitting air to the air compartment, vapor-conducting means communicating with the vapor compartment, an absorbent body located between the perforate partitions, and a perforate tube located between the partitions and surrounded by the absorbent body, said tube communicating with one compartment, and being cut off from communication with the other.

2. In a carbureter, the combination with a vaporizing chamber having spaced outer walls, one of which is detachable and constitutes a closure for the chamber, of spaced perforate partitions extending across the chamber in spaced relation to the outer walls, forming an outer air

compartment, and an outer vapor compartment, means for admitting air to the air compartment, vapor-conducting means communicating with the vapor compartment, an absorbent body located between the perforate partitions, and a perforate tube located between the partitions and surrounded by the absorbent body, said tube communicating with one compartment and having an imperforate terminal portion extending across the other compartment and engaged with the detachable outer wall.

3. In a carbureter, a vaporizing chamber having a top, a bottom, side walls, and perforated partitions located between the top and bottom and spaced from each other, forming an upper air compartment and a lower vapor compartment, a perforated tube extending between the partitions, a body of absorbent hydrocarbon holding material arranged between the partitions and surrounding the tube, a valved air inlet for the air compartment, and vapor-conducting means having communication with the vapor compartment.

4. In a carbureter, a vaporizing chamber having an absorbent body, a partition located thereover and having a hydrocarbon-receiving channel, said partition being provided with openings alongside the channel, and means for admitting air to the vaporizing chamber.

5. In a carbureter, a vaporizing chamber having a transverse partition in its upper portion, an absorbent body located in the chamber below the partition, a perforated tube embedded in the body, said partition having a hydrocarbon-receiving channel in its upper side and extending about the tube, and perforations located on opposite sides of the channel, and means for admitting air to the vaporizing chamber.

6. In a carbureter, the combination with independent mixing chambers having separate air inlets, of a common vaporizing chamber communicating with both and also having an air inlet.

7. In a carbureter, the combination with independent mixing chambers having independent valved air inlets, of a common vaporizing chamber communicating with both and also having an air inlet, and means for respectively connecting the mixing chambers to separate engines.

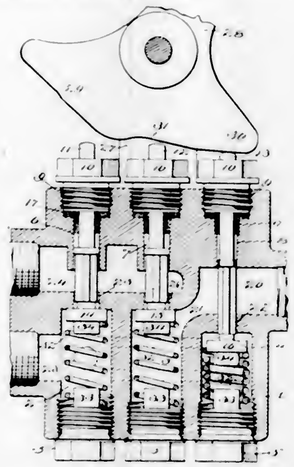
8. In a carbureter, the combination with a casing, of upright interior walls dividing the same into outer mixing chambers and an intermediate vaporizing chamber, said vaporizing chamber communicating with both the mixing chambers, a body of absorbent hydrocarbon-holding material located in the vaporizing chamber, a valved air inlet to the vaporizing chamber on the side of the absorbent body that is opposite to the communication of the vaporizing with the mixing chambers, and valved air inlets communicating with the mixing chambers.

9. In a carbureter, the combination with a closed casing, of upright interior walls located therein, and defining outer mixing chambers and an intermediate vaporizing chamber, said walls having perforations in their lower portions, constituting means of communication between the chambers, spaced substantially horizontal perforated partitions located in the vaporizing chamber and forming an upper air compartment and a lower vapor compartment, the latter being in communication with the mixing chambers, a perforated tube located between the partitions and communicating at its lower end with the vapor chamber, a body of absorbent material surrounding the tube and located between the partitions, a valved air inlet for the air compartment, and valved air inlets for the mixing chambers.

856,655. VALVE. FRANK B. MCMILLIN and MICHAEL F. MORRISSEY, Mount Gilead, Ohio. Filed Dec. 19, 1906. Serial No. 348,672.

Claim.—1. The combination of a valve casing provided with a plurality of valve chambers, the said casing being formed with an inlet communicating with one of the chambers and outlets communicating with the remaining chambers, a valve for each of the chambers, and means for operating the valves whereby the inlet can be placed in communication with any of the outlets.

2. The combination of a valve casing, provided with a plurality of valve chambers, the said casing being formed with an inlet communicating with one of the chambers and outlets communicating with the remaining chambers, a valve within each of the valve chambers, a stem for each valve, and a cam controlling the movements of the valves through the said valve stems.



3. The combination of a valve casing, provided with a plurality of valve chambers, the said casing being formed with an inlet in communication with one of the chambers and an outlet in communication with each of the remaining chambers, a valve for each of the chambers, a valve stem for each of the valves, the said valve stems projecting outwardly beyond the casing, and external means for controlling the action of the valves through the valve stems.

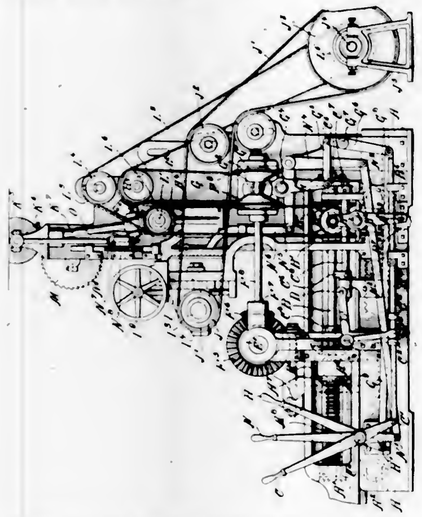
4. The combination of a valve casing, provided with a plurality of valve chambers, the said casing being formed with an inlet communicating with one of the chambers and an outlet communicating with each of the remaining chambers, a valve for each of the chambers, a valve stem for each of the valves, the said valve stems projecting beyond the casing, and a cam operating upon the valve stems to control the movements of the valves.

5. The combination of a valve casing, provided with a plurality of valve chambers opening upon one side of the casing, the said casing being formed with an inlet communicating with one of the chambers and an outlet communicating with each of the remaining chambers, removable plugs closing the valve chambers, a valve within each of the valve chambers, and means for controlling the action of the valves whereby the inlet can be thrown into communication with any of the outlets.

6. The combination of a valve casing, provided with an intermediate valve chamber and with a pair of end valve chambers, the said casing being formed with an inlet communicating directly with the intermediate chamber and with one of the end chambers, an outlet communicating directly with the opposite end chamber, a second outlet communicating with the same valve chamber and also with the intermediate chamber, and a bypass connecting the end valve chambers, and valve means within the valve chambers.

7. The combination of a valve casing, provided with three valve chambers having a parallel relation to each other, the said casing being formed with an inlet extending transversely across the inner end of one of the end chambers and communicating directly with the intermediate chamber, an outlet passing transversely across the inner ends of the opposite end chamber and the intermediate chamber, a second outlet communicating directly with the opposite end chamber, and a bypass connecting the end chambers, passages being formed between the inner ends of the chambers and the inlet or outlet passage extending transversely across the same, and valves operating within the valve chambers.

856,656. CARRIAGE-FEED MECHANISM. FREDRICK NEUDORFF, Sheffield, Ala., assignor to Memphis Column Company, Memphis, Tenn., a Corporation of Michigan. Original application filed Aug. 2, 1905. Serial No. 272,367. Divided and this application filed July 9, 1906. Serial No. 325,360.



Claim.—1. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base, a driving screw carried by said carriage, a driving shaft extended from and movable with said screw, driving devices mounted upon the base through which said shaft travels, and an intermediate driving member disposed between said devices.

2. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base, a driving screw carried by said carriage, a driving shaft extended from and movable with said screw, driving devices mounted upon the base and through which said shaft travels, an intermediate driving member disposed between said devices, means for shifting said driving member, and means carried by the driving shaft for actuating the shifting means.

3. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base, a driving screw carried by said carriage, a driving shaft extended from and movable with said screw, driving devices mounted upon the base and through which said shaft travels, an intermediate driving member disposed between said devices, means for shifting said driving member, fingers carried by the driving shaft, and means extending from the driving member into the path of said fingers to be actuated thereby.

4. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base a driving screw carried by said carriage, a driving shaft extended from and movable with said screw, driving devices mounted upon the base and through which said shaft travels, an intermediate driving member disposed between said devices, a work holder mounted upon said carriage and provided with means for adjusting its chuck, a driving shaft for said work chuck movable with the carriage, and relatively fixed driving devices through which the driving shaft of the work chuck travels in the movement of the carriage.

5. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base, a driving screw carried by said carriage and having an extended shaft, opposite driven cones mounted upon the base and having a sliding connection upon said shaft, an intermediate driving cone, and means for automatically shifting said cone in the travel of said carriage.

6. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base, a driving screw carried by said carriage and having an extended shaft, opposite driven cones mounted upon the base and having a sliding connection upon said shaft, an intermediate driving cone, a pivoted lever upon which said driving cone is mounted, a gear mounted upon the base, a crank pin carried by said gear to engage the slotted end of said pivoted lever, and means for rotating said gear.

7. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base, a driving screw carried by said carriage and having an extended shaft, opposite driven cones mounted upon the base and having a sliding connection with said shaft, an intermediate driving cone, a pivoted lever upon which said driving cone is mounted, a gear mounted upon the base, a crank pin carried by said gear to engage the slotted end of said pivoted lever, a controlling lever mounted upon the base, and a reciprocating rack bar carried by said lever and engaging said gear.

8. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base, a driving screw carried by said carriage and having an extended shaft, opposite driven cones mounted upon the base and having a sliding connection upon said shaft, an intermediate driving cone, a pivoted lever upon which said driving cone is mounted, a gear mounted upon the base, a crank pin carried by said gear to engage the slotted end of said pivoted lever, a controlling lever mounted upon the base, a reciprocating rack bar carried by said lever and engaging said gear, tappets carried by said rack bar, a bell crank lever coöperating with said tappets, and means carried by the shaft of the driving screw for operating said bell crank lever.

9. In a carriage feed mechanism, a base, a carriage mounted to travel thereon, a feed nut mounted upon said base, a driving screw carried by said carriage and having an extended shaft, opposite driven cones mounted upon the base and having a sliding connection upon said shaft, an intermediate driving cone, a pivoted lever upon which said driving cone is mounted, a gear mounted upon the base, a crank pin carried by said gear to engage the slotted end of said pivoted lever, a controlling lever mounted upon the base, a reciprocating rack bar operated by said lever and engaging said gear, tappets carried by said rack bar, a bell crank lever coöperating with said tappets, fingers carried by said driving shaft, coöperating fingers provided upon a counter shaft, and a lever connection from said countershaft to the bell crank lever.

10. In a carriage feed mechanism, a base, provided with a feed nut, a carriage mounted to travel upon said base, a driving screw mounted upon the carriage to coöperate with said nut and provided with an extended shaft therefrom, shifting means mounted upon said shaft, driving devices slidingly mounted upon said shaft, controlling means for said devices, fingers carried by the driving shaft, a countershaft provided with coöperating fingers, a bell crank lever connected to said countershaft, and means carried by said lever to operate said shifting means.

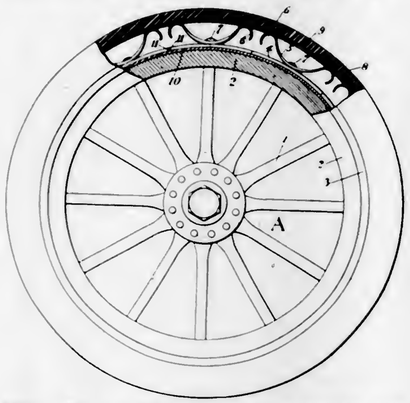
11. In a carriage feed mechanism, a base provided with a feed nut, a carriage mounted to travel on said base, a driving screw movable with said carriage and provided with an extended driving shaft, fingers mounted upon said shaft at the opposite ends thereof, a relatively fixed countershaft provided with means at its opposite ends to engage the fingers of the screw shaft in the travel of the carriage, a driving mechanism for the screw shaft, and means controlled from the countershaft for shifting said driving mechanism.

12. In a carriage feed mechanism, a base provided with

a swiveled feed nut thereon, a carriage adapted to travel upon said base, a driving screw pivotally mounted in said carriage, a shaft carried by said screw at the rear of the carriage, driving devices for said shaft mounted upon the base and having a sliding connection with said shaft, and means carried by said shaft for automatically shifting the driving devices to reverse the direction of rotation of the shaft.

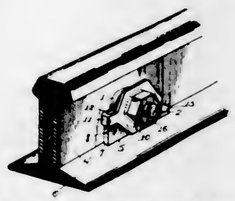
13. In a carriage feed mechanism, a base provided with parallel ways, a carriage mounted upon said base and provided with ways upon its under face, a feed screw for driving said carriage, bearing rollers disposed between said base and carriage, coöperating rack bars carried by the base and carriage at each side, and an intermediate pinion disposed between said rack bars.

856,657. AUTOMOBILE-TIRE. CHARLES F. OBRECHT, Baltimore, Md. Filed Feb. 9, 1907. Serial No. 356,504.



Claim.—The combination with a rim provided with a grooved channel secured thereon, of flat circumferentially bent metal rods, semi-elliptic transversely bent springs secured to the said rods, a transversely bent metal strip placed above the said springs thereby securing the said springs within the said channel, a rubber tire or casing fitted over the said metal strip and inclosing the said spring, the edges of the said tire or casing being secured within the grooves in the said channel substantially as described.

856,658. NUT-LOCK. FREDERICK D. PARSONS, Hammondsville, Ohio. Filed July 11, 1906. Serial No. 325,741.

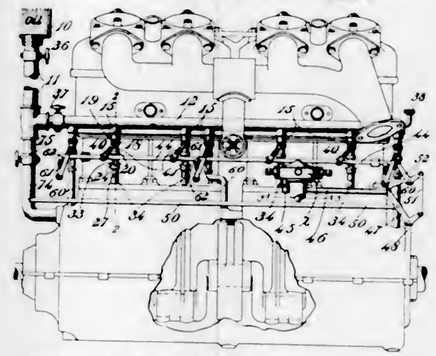


Claim.—1. A nut-lock consisting of a washer having a horizontal extended base adapted for bearing engagement with the top of a rail-base, a lateral extension carried by said washer, a pocket in the rear face of said extension, a nut-embracing ring adapted for slipping over a nut when the latter has been adjusted to position against the face of said washer, and a hook carried by said ring, said hook being adapted for entering the pocket in the washer upon a slight backward rotation of the nut.

2. A nut-lock consisting of a washer having a horizontal extended base adapted for bearing engagement with the top of a rail-base, a lateral extension carried by said washer, a pocket in the rear face of said extension, a ring having a polygonal opening therein and adapted for embracing a polygonal nut, and a hook carried by said ring, said hook being adapted for entering said pocket when the nut to which the ring is applied is turned rearwardly for interlocking said ring and washer.

3. In a nut-lock, a split washer having one of its ends sprung rearwardly for yielding engagement with a railway fish-plate, a horizontal base carried by said washer for bearing engagement with the top of the rail-base, a lateral extension carried by said washer, said lateral extension having a recessed pocket therein on its rear face, and a nut-embracing ring having a hook adapted for interlocking engagement with said pocket.

856,659. LUBRICATOR. LESTER D. PICKETT, Fredonia, N. Y. Filed Nov. 3, 1906. Serial No. 341,907.



Claim.—1. An engine lubricating means comprising an elongated supply chamber, a plurality of discharge chambers arranged below the same and connected to the parts to be lubricated, an independent valve arranged above each of the discharge chambers and controlling the flow of lubricant thereinto, a valve adjusting means operatively connected to all of said valves, and separate valves controlling the outflow from said discharge chambers.

2. An engine lubricator comprising separate lubricant chambers for each part to be lubricated, a supply tube extending above all of said chambers, a separate valve for controlling the flow of lubricant into each of the chambers, a valve stem in each valve, adjustable arms connected to the valve stems, and an operating rod connected to the arms.

3. In an engine lubricator, a separate lubricating device for each part to be lubricated, valves for controlling the entrance of lubricant to said devices, a common operating means for the valve, and independently adjustable connections between the operating means and the valves to permit the feeding of a larger quantity from one device than is fed from the other.

4. An engine lubricator comprising a plurality of lubricating devices having a common source of supply, a separate valve controlling the quantity of lubricant passing from the source of supply of each feeding device, a valve operating means, and independent connections between the operating means and the valves to permit variation in the quantity of lubricant fed by the several feeding devices.

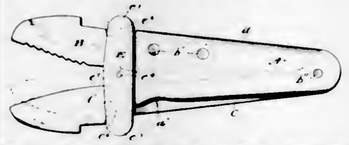
5. In an engine lubricator, a separate feed chamber for each cylinder and each bearing, a supply pipe common to all of said chambers, a valved connection between the supply chamber and each of the feeding chambers, a valve operating means, and connecting arms extending between the operating means and the valves, the arms of those valves which control the flow to the bearings being longer than those which control the supply to the cylinders.

6. The combination in a lubricator, of a separate feed chamber for each part to be lubricated, a main supply tank, a supply pipe leading therefrom and extending above all of the chambers, a valved connection between the supply tank and each chamber, an operating means common to all of the valves, and a valved pipe leading from the supply pipe to the crank casing to permit flooding of the latter with lubricant.

7. In an engine lubricator, a supply pipe, a valve casing connected thereto, a valve arranged within the casing, an operating means for the valve, a tube connected to the valve casing and provided with display openings, a sight feed glass arranged within the tube, said tube carrying a nipple to direct the oil centrally through the tube, a valve casing connected to the lower portion of the tube, a suction opened valve therein, a spring tending to maintain the valve in closed position, and means for adjusting the stress of the spring.

8. In an engine lubricator, a suction opened valve, a stem carrying the same, a closing spring surrounding the stem, a valve casing having a tubular guide extending within the spring, one end of the stem having screw threads, a pair of nuts mounted on the threaded portion of the stem and adjustable to regulate the stress of the spring, the valve casing being provided with a seat or stop against which the innermost nut engages to limit the opening movement of the valve.

856,660. WRENCH. FRED H. SCHALL and MARTIN PLUNKETT, Galesburg, Ill.; said Plunkett assignor to said Schall. Filed May 10, 1906. Serial No. 316,053.



Claim.—1. A wrench of the character described comprising two jaws, a substantially U-shaped handle, a shank on one of the jaws permanently secured within the hollow of said handle, a shank on the other of said jaws pivoted to said handle, means acting to force the pivoted jaw outwardly, and means for locking the jaws in various positions of adjustment including an adjustable yoke encompassing the shanks of the jaws and held against excessive inward movement by the end of the substantially U-shaped handle.

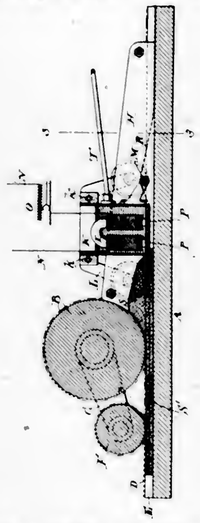
2. A wrench of the character described comprising two jaws, a substantially U-shaped handle, a shank on one of the jaws permanently secured within the hollow of said handle, a shank on the other of said jaws pivoted to said handle, a spring freely inserted in the space in the handle intermediate the inner end of the permanently secured shank and the pivoted end of the other shank acting to force the pivoted jaw outwardly, and means for locking the jaws in various positions of adjustment.

3. A wrench of the character described comprising two jaws, a handle, a shank on one of the jaws permanently secured to said handle, a shank on the other of said jaws pivoted to said handle, means acting to force the pivoted jaw outwardly, and means for locking the jaws in various positions of adjustment including an adjustable yoke encompassing the shanks of the jaws and held against excessive inward movement by the end of the handle.

4. A wrench of the character described comprising two jaws, a handle, a shank on one of the jaws secured to the handle, a shank on the other of said jaws movably connected to said handle, means acting to force the movable jaw outwardly, and means for locking the jaws in different positions of adjustment including step-like edges on the jaw-shanks, a shiftable yoke encompassing said shanks adapted to engage corresponding treads of the step-like edges and held against excessive inward movement by the end of the handle.

5. A wrench of the character described comprising two jaws, a handle, a shank on one of the jaws secured to the handle, a shank on the other of said jaws movably connected to said handle, means acting to force the movable jaw outwardly, and means for locking the jaws in different positions of adjustment including step-like edges on the jaw-shanks, a shiftable yoke encompassing said shanks adapted to engage corresponding treads of the step-like edges and held against excessive inward movement by the end of the handle, said yoke having a part arranged to effect the shifting of the same from an initially adjusted position into registration with advanced step-like edges.

856,661. MACHINE FOR MAKING WIRE-GLASS. ARNO SHUMAN, Connellsville, Pa., assignor to The Continuous Glass Press Company, a Corporation of Pennsylvania. Filed Aug. 15, 1905. Serial No. 274,252.



Claim.—1. In a machine for making wire glass, the combination of a table upon which the glass is rolled, a roller for rolling the glass upon the table, and a magnetic device arranged in advance of the roller for magnetically guiding the wire mesh above the table and immediately into the mass of molten glass being acted upon by the roller.

2. In a machine for making wire glass, the combination of a table upon which the glass is rolled, a roller for rolling the glass upon the table, and an electro-magnetic device arranged in advance of the roller for magnetically supporting the wire mesh above the table immediately in advance of the roller simultaneously with the rolling of the glass by said roller.

3. In a machine for making wire glass, the combination of a stationary table upon which the glass is rolled, a traveling roller for rolling the glass upon the table, a traveling magnetic device arranged in advance of the roller and adjacent to the mass of molten glass being rolled for magnetically supporting the wire mesh above the table during the rolling of the glass thereon, consisting of a traveling frame having transverse magnetic pole pieces slightly above the surface of the table, and means for keeping said pole pieces cool.

4. In a machine for making wire glass, the combination of a table upon which the glass is rolled, a roller for rolling the glass upon the table, and an electro-magnetic device arranged in advance of the roller for magnetically supporting and guiding the wire mesh above the table while the glass is being rolled over it, consisting of a tank having pole pieces in its bottom, electro-magnets

within the tank and connected with the pole pieces, and means for cooling the tank.

5. In a machine for making wire glass, the combination of a table upon which the glass is rolled, a roller for rolling the glass upon the table, and an electro-magnetic device arranged in advance of the roller for magnetically supporting and guiding the wire mesh above the table while the glass is being rolled over it, consisting of a carriage traveling along the table, electro-magnetic devices carried by the carriage, and means for adjusting said electro-magnetic devices on the carriage so as to bring them nearer to or farther from the table.

6. In a machine for rolling wire glass, the combination of a table, a roller traveling over the table, and movable magnetic devices arranged in front of the roller and slightly above the table for supporting the wire mesh above the table in advance of the roller and a guide for guiding the wire mesh above the table and under the magnetic devices.

7. In a machine for rolling wire glass, the combination of a table, a roller traveling over the table, movable magnetic devices arranged in front of the roller and slightly above the table for supporting and guiding the wire mesh above the table and into the molten glass in front of the advancing roller, and means for adjusting the magnetic devices to or from the table.

8. In a machine for rolling wire glass, the combination of a table, a roller traveling over the table, and movable magnetic devices arranged in front of the roller and slightly above the table for supporting the wire mesh above the table in advance of the roller, the said roller and magnetic devices being independently movable over the table whereby the roller may be moved at a greater speed than the magnetic devices.

9. In a machine for making wire glass, the combination of a single table upon which the glass sheet is rolled, a roller, and the electro magnetic guide, said guide being constructed to guide the meshed wire sheet into the mass of molten metal slightly above the level of the table simultaneously with the rolling of the said glass by the roller.

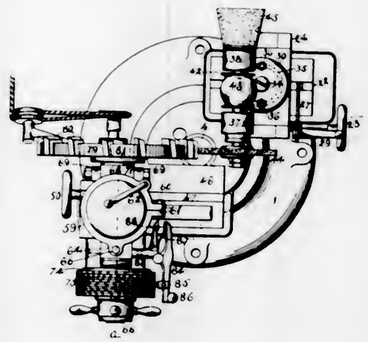
10. The method of making wire glass which consists in rolling a mass of molten glass into a sheet and simultaneously therewith feeding into the advancing end of the glass a wire meshed sheet whereby it is enveloped in the mass of the glass and intermediate of the two surfaces thereof during the rolling operation, and simultaneously therewith electro magnetically suspending the wire meshed sheet immediately at the place where it enters the mass of molten glass, whereby said meshed wire sheet is suspended and guided into the mass of molten glass at the desired distance below the lower surface thereof.

856,662. FACE-MILL GRINDER. GEORGE W. SMITH, Rockford, Ill., assignor to Ingersoll Milling Machine Company, Rockford, Ill., a Corporation of Illinois. Filed Aug. 2, 1905. Serial No. 272,441.

Claim.—1. In a face mill grinder, the combination of a base having a cylindrical column, a bracket having a free swivel engagement with the column, an arm extending from the base, two stops adjustably supported by the bracket toward and from the arm, a grinding wheel supported by the bracket, and a cutter-head support connected with the column.

2. In a face mill grinder the combination of a base having a cylindrical column, a bracket having a swivel engagement with the column, a slide supported by the bracket, a cross-slide supported by the bracket slide, a lever connection with the bracket slide, an arm adjustably connecting the cross-slide with the lever, and a grinding wheel support having a swivel connection with the cross-slide.

3. In a face mill grinder, the combination of a base having a vertical column, a bracket supported by the column, a support having a swivel connection with the bracket, a cutter-head sleeve capable of being clamped around the swiveled support, means for vertically adjusting the cutter-head sleeve, and a cutter-spindle support connected with the cutter-head sleeve.

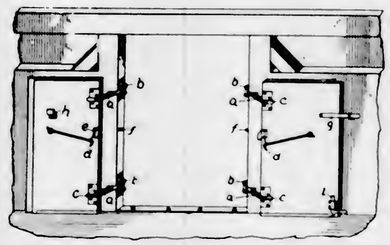


4. In a face mill grinder, the combination of a base having a vertical column, a bracket supported by the column, a support having a swivel connection with the bracket, a cutter-head sleeve capable of being clamped around the swiveled support, means for vertically adjusting the cutter-head sleeve, and a cutter-spindle support pivotally connected with the cutter-head sleeve.

5. In a face mill grinder, the combination of a base having a vertical column, a bracket supported by the column, a support having a swivel connection with the bracket, a cutter-head sleeve capable of being clamped around the swiveled support, means for vertically adjusting the cutter-head sleeve, a cutter-spindle support pivotally connected with the cutter-head sleeve, and means for rocking the cutter-head sleeve and holding it when adjusted.

6. In a face mill grinder, the combination of a base having a vertical column, a bracket supported by the column, a support having a swivel connection with the bracket and provided with a vertical slot, a cutter-head sleeve capable of being clamped around the swiveled support and provided with a vertical slot coinciding with the slot of the swiveled support, a cutter spindle support located within the slots of the swiveled support and cutter-head sleeve, and having a pivotal connection with the cutter-head sleeve, means for rocking the cutter-head sleeve and holding it when adjusted, and means for vertically adjusting the cutter-head sleeve.

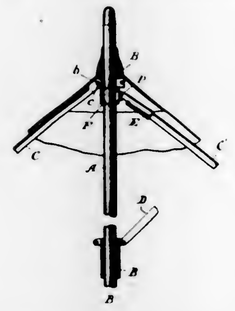
856,663. GRAIN-DOOR FOR CARS. WILLIAM C. N. SMITH, Lincoln, Nebr., and EBASTUS ROADIFER, Logan, Iowa. Filed Oct. 22, 1906. Serial No. 340,039.



Claim.—1. Grain doors for cars consisting of two wooden doors, each provided with means of attaching same to car door frame—and permitting each door to swing freely through the doorway, either to a position against the inside of a car or to a position against the outside thereof, said doors halved together at point of contact with each other when closed and provided with means to resist pressure from grain in car, comprising detachable stays extending from the free edge of each door to the door jamb.

2. In grain doors for cars the combination of two wooden doors, means of attaching the doors to car door frame permitting the doors to swing freely around the door frame or to close tightly together, said means composed of a metal tongue piece transversely pivoted to a plate attached to car door-frame, said tongue piece provided with a longitudinal slit, through which slit a pin passes, each pin terminating in U shaped clips by which clips the pin is attached to car door in recesses provided therefor, the inner edge of which recesses are made V shaped, and means to resist pressure of grain in car and hold doors in position consisting of long heavy hooks each made with a shackle of chain links attached near the hook end, the shackle and the other end of the hook being bolted to car door, the hook end fitting into a screw eye provided therefor in door frame.

856,664. UMBRELLA-MENDER. FRANCIS STELTER, Astoria, N. Y. Filed Oct. 2, 1906. Serial No. 337,114.



Claim.—1. An umbrella mender comprising a socket piece adapted to be connected to a rib or stretcher and a fastener adapted to be applied to the handle of an umbrella in addition to the usual annulus, and means for connecting the fastener and socket piece.

2. An umbrella mender comprising a socket piece of flexible material adapted to be applied to a rib or stretcher, and a fastener connected to the socket piece and adapted to be applied to the umbrella handle in addition to the usual ring.

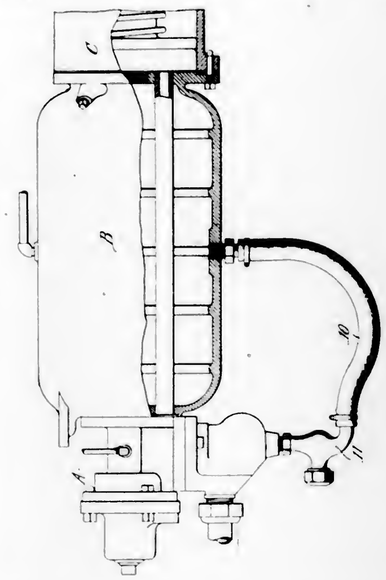
3. An umbrella mender comprising a cylindrical socket piece adapted to receive the end of a rib or stretcher, a fastener adapted to be applied to the handle in addition to the usual ring, and connections between the fastener and socket piece.

4. An umbrella mender comprising a socket piece, a hinged fastener adapted to be applied to the umbrella handle in addition to the usual ring, and connections between the fastener and socket piece.

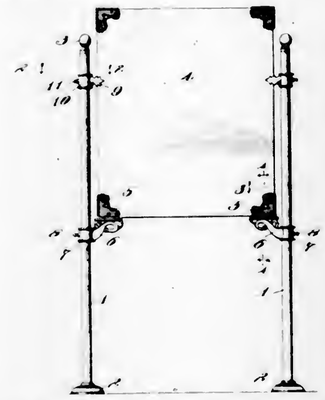
856,665. FEED-VALVE FOR AIR-BRAKE SYSTEMS. GODWIN WAGNER, San Antonio, Tex. Filed Sept. 14, 1906. Serial No. 334,655.

Claim.—In an air brake system, the combination with the auxiliary reservoir and the drip cup, each provided with the usual threaded plug-opening, of a valve casing engaging the plug-opening of the drip cup, and a feed pipe engaging at one end with the drip cup and at its other end with the plug-opening of the reservoir.

856,665.



856,666. SUPPORT FOR ELECTRIC SWITCHBOARDS. ROMAINE L. WARNER, Rockford, Ill., administratrix of C. Frederick Warner, deceased. Filed Oct. 26, 1905. Serial No. 284,589.



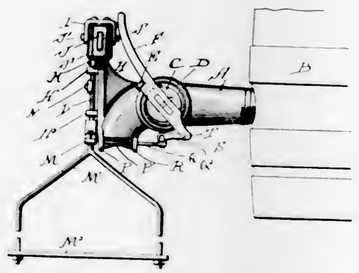
Claim.—1. A switchboard supporting-means consisting of two side posts, each formed from cylindrical tubing and provided with attaching feet, supporting brackets for the switchboard proper, each bracket comprising a sleeve slidably mounted upon one of said side posts, a set screw for fixing each bracket upon its side post, said bracket also comprising a corner piece in which one of the lower corners of the switchboard is adapted to be set, and adjustable means adapted to support the upper portion of the switchboard, said means comprising a clip adapted to receive a vertical edge of said switchboard, and provided with a sleeve portion slidably mounted upon the side posts.

and a set screw for securing said sleeve upon its side post.

2. A switchboard supporting-means consisting of two side posts each provided with attaching feet, supporting brackets for the switchboard proper, each bracket comprising a sleeve slidably mounted upon one of said side posts, a set screw for fixing each bracket upon its side post in desired position, said bracket also comprising a corner piece in which one of the lower corners of a switchboard is adapted to be set, said corner piece having a bottom wall and a back wall transverse to the bottom wall, and adjustable means adapted to support the upper portion of the switchboard, said means comprising a clip adapted to receive a vertical edge of said switchboard, and provided with a sleeve portion slidably mounted upon the side posts, and a set screw for securing said sleeve upon its side post.

3. A switchboard supporting-means consisting of two side posts each provided with attaching feet, supporting brackets for the switchboard proper, each bracket comprising a sleeve slidably mounted upon one of said side posts, a set screw for fixing each bracket upon its side post in desired position, said bracket also comprising a corner piece in which one of the lower corners of a switchboard is adapted to be set, said corner piece having a bottom wall, a back wall transverse to said bottom wall, and two side walls, and adjustable means adapted to support the upper portion of the switchboard, said means comprising a clip adapted to receive a vertical edge of said switchboard, and provided with a sleeve portion slidably mounted upon the side posts, and a set screw for securing said sleeve upon its side post.

856,667. AUTOMATIC SHUT-OFF FOR FAUCETS. JAMES C. WRIGHT, Colorado Springs, Colo., assignor of one-half to J. C. Rawlings, Colorado Springs, Colo. Filed Aug. 14, 1906. Serial No. 330,581.



Claim.—1. The combination with a faucet provided with a spring actuated turning plug, of a weighing scale carried by said faucet, a slide valve connected to said plug and tripping means pivoted to the faucet adapted to be engaged by the scale, for the purpose described.

2. The combination with a faucet provided with a spring actuated turning plug carrying a notched washer, of a weighing scale carried by said faucet, a slide-valve connected to said plug working over the mouth of the faucet, and a pawl held into engagement with the notched washer adapted to be engaged by the scale, for the purpose described.

3. The combination with a faucet provided with a spring-actuated turning plug, of a weighing scale carried by said faucet, a spring actuated slide valve working over the mouth of the faucet connected to said plug and tripping means pivoted to the faucet adapted to be engaged by the scale, for the purpose described.

4. The combination with a faucet provided with a spring actuated turning plug provided with a handle, of a weighing scale carried by said faucet, a slide valve mounted over the mouth of the faucet, connected to said handle, and tripping means pivoted to the faucet adapted to be engaged by the scale, for the purpose described.

5. The combination with a faucet provided with a plug carrying a handle, of a weighing scale carried by said faucet, a spring surrounding one end of said plug bearing against said handle, angle lugs projecting downwardly from the mouth of the faucet carrying bowed springs, a slide-valve mounted on said spring connected to the handle, and tripping means pivoted to the faucet adapted to be engaged by the scale, for the purpose described.

6. The combination with a faucet provided with a spring actuated turning plug carrying a handle, of a weighing scale carried by said faucet, lugs projecting downwardly from the mouth of said faucet carrying bowed springs, a slide-valve mounted on said springs connected to the handle by a link, and tripping means pivoted to the faucet adapted to be engaged by the scale, for the purpose described.

7. The combination with a faucet provided with a spring actuated turning plug, of a weighing scale carried by said faucet, angled lugs projecting downwardly from the mouth of the faucet carrying bowed springs, a slide valve mounted on said spring provided with an opening, a handle carried by the plug provided with a bar, a link connecting said bar to said slide valve and tripping means pivoted to the faucet adapted to be engaged by the scale, for the purpose described.

8. The combination with a faucet provided with a spring actuated turning plug carrying a notched washer, of a handle secured to the other end of said plug, a washer secured over the mouth of the faucet, lugs projecting downwardly from the mouth of the faucet carrying bowed springs, a slide valve, mounted on said springs connected to said handle, and a pawl held into engagement with said washer adapted to be engaged by the scale, for the purpose described.

856,668. WHIFFLETREE-CLIP. DANIEL H. YOUNG, Manchester, Iowa, assignor to Samuel Ross Young, Manchester, Iowa. Filed Jan. 23, 1907. Serial No. 353,710.



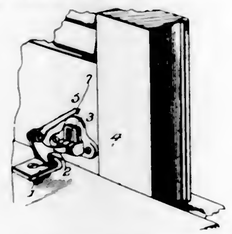
Claim.—1. A clip for securing a trace-end to a tree comprising a body portion having an end for attachment to the tree and at its opposite end an inverted U-shaped portion and at an intermediate point a laterally disposed stud located to one side of the central longitudinal axis of said body.

2. A clip for attaching a trace to a tree comprising a body having an end for engaging the tree and at its opposite end an inverted U-shaped portion and at an intermediate point a laterally disposed stud, said clip being bowed laterally between its ends.

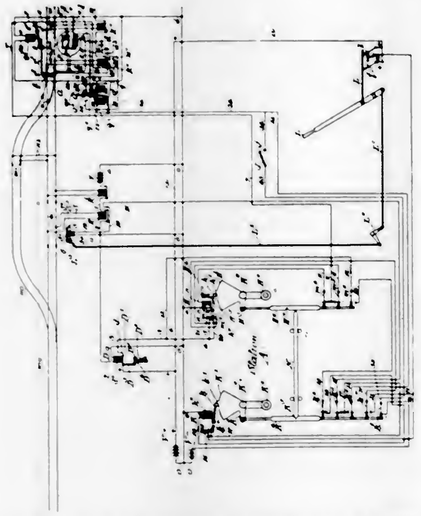
3. A clip for attaching a trace to a tree comprising a body having an end for engaging the tree and at its opposite end an inverted U-shaped portion and at an intermediate point a laterally disposed stud, said body being bowed laterally between its ends said stud being located to one side of the central longitudinal axis of said body.

856,669. LOCK FOR SHUTTER-FASTENERS. BENJAMIN ALBERTSON, Mantoloking, N. J. Filed July 7, 1906. Serial No. 325,172.

Claim.—In a shutter fastener of the type embodying a pivoted catch, a rod pivoted to the catch and interposed between the outer end thereof and the part to which the catch is attached and adapted to occupy an inclined position to form a brace and a guard.



856,670. BLOCK-SIGNAL SYSTEM. CHARLES C. ANTHONY, Philadelphia, Pa. Filed Nov. 28, 1906. Serial No. 345,550.



Claim.—1. In a block signal system, a pair of stations, a single main track between them, a siding entering said track between the stations, means governing the entrance of a train onto the main track from said siding and controlling means therefor, for automatically preventing such entrance when a train is on the main track and moving toward the siding but permitting it when a train on the main track is moving away from the siding.

2. In a single track block signal system, a signal governing the entrance of a train into the block at one end and means for actuating it, including an electromagnetic device the energization of which permits the actuation of the signal, means for supplying current to said device to permit the signal to be moved from the "danger" position to a permissive or cautionary position when a train entering the block by the signal has moved some distance away from the station and separate means for supplying current to the device when the block is empty.

3. In a block signal system, a pair of stations, a single main track between them, a signal at each station, a siding entering said track between the stations, means for automatically preventing each signal from being moved out of the "danger" position when a train on said main track is approaching it and when the other signal is out of the "danger" position, means governing the entrance of a train onto the main track from said siding and controlling means therefor automatically preventing such entrance when a train on the main track is approaching the siding, but permitting such entrance when the train on the same portion of the track is moving in the opposite direction.

4. In a block signal system, a pair of stations, a single main track between them, a siding entering said track between the stations, means governing the entrance of a train onto the main track from said siding and controlling means therefor for automatically preventing such entrance when a train on the main track moving in a direction opposite to that in which the train on the siding moves onto the main track in approaching the siding and when a train on the main track moving in the direction in which the train on the siding moves onto the main track is approaching the siding, but permitting such entrance when the train moving in the said opposite direction is leaving the siding.

5. In a block signal system, a pair of stations, a single main track between them, a signal at each station, means for automatically preventing each signal from being moved out of the danger position when a train on said track is approaching it and when the other signal is out of the danger position, means for moving either signal into the full clear position when the track between the stations is empty, means governed by the entrance of every train onto the track by either signal for returning the signal to the danger position, and means for moving either signal to a permissive position after a train entering the track by it has proceeded a predetermined portion of the distance between the stations, but preventing the movement of the signal into the full clear position until the block is empty.

6. In a block signal system, a pair of stations, a track between them, a siding switch connecting with said track between said stations adjacent one of them, a switch signal at the switch, a main signal, a primary signal instrument and a secondary signal instrument at the station adjacent the switch, means controlled by the secondary instrument for interchangeably clearing the main and switch signals, means controlled by the primary instrument normally locking the secondary instrument against clearance of either signal, said locking means being rendered inoperative by a predetermined movement of the primary instrument, means controlled by a train on track portions between the switch and the remote station for then preventing movement of the primary instrument into said predetermined position, a lock, and means controlled by a train on a track portion between the switch and adjacent station for then causing said lock to prevent movement of the secondary instrument into position to clear the main signal or its return from such position to a position to clear the switch signal.

7. In a block signal system, a pair of stations, a track between them, a siding switch connecting with said track between said stations adjacent one of them, a switch signal at the switch, a main signal, a primary signal instrument and a secondary signal instrument at the station adjacent the switch, means controlled by the secondary instrument for interchangeably clearing the main and switch signals, means controlled by the primary instrument normally locking the secondary instrument against clearance of either signal, said locking means being rendered inoperative by a predetermined movement of the primary instrument, means controlled by a train on track portions between the switch and the remote station for then preventing movement of the primary instrument into said predetermined position, a lock, means controlled by a train on a track portion between the switch and adjacent station for then causing said lock to prevent movement of the secondary instrument into position to clear the main signal or its return from such position to a position to clear the switch signal, and a lock normally preventing the setting of the switch for the siding and unlocked when and by the means by which the switch signal is cleared.

8. In a block signal system, a pair of stations, a track between them, a siding switch connecting with said track between the stations adjacent one of them, a switch signal at the switch, a main signal, a primary signal instrument and a secondary signal instrument at the station adjacent the switch, means controlled by the secondary instrument

for interchangeably clearing the main and switch signals, means controlled by the primary instrument for normally locking the secondary instrument against clearance of either signal, said locking means being rendered inoperative by a predetermined movement of the primary instrument, a lock normally engaging the primary instrument to prevent said predetermined movement, means automatically rendered inoperative by a train on track portions between the switch and the remote station for moving said lock out of engagement with the primary instrument, a second lock for the secondary instrument, means controlled by a train on the track portion between the switch and adjacent station for then causing said lock to prevent movement of the secondary instrument into a position to clear the main signal or its return from such position to a position to clear the switch signal, a circuit controller actuated by the movement out of engagement with the primary instrument of its lock and means controlled by said circuit controller for preventing the clearance of the main signal except when the lock is out of engagement with the primary instrument.

9. In a block signal system, a main block signal, means for moving it from a normal danger position to a cautionary position and to a full clear position, said means including a slot winding, means for energizing said winding to permit the signal to be moved to its full clear position, said means being automatically rendered inoperative by trains anywhere in the block, other means for energizing said winding to permit the signal to be moved into the cautionary position, said other means being rendered inoperative by the presence of a train in one portion only of the block and by an attempt to move the signal into the full clear position.

10. In a block signal system, a block track divided into sections provided each with a relay de-energized by a train on the section, a main signal, means for moving it from a normal danger position to a cautionary position and to a full clear position, said means including a slot winding, means for energizing said winding to permit the signal to be moved to its full clear position, said means including all the track relays and being rendered inoperative by the de-energization of any of them, other means for energizing said winding, to permit the signal to be moved to a cautionary position, said other means including a portion only of the track relays and a circuit controller, said other means being rendered inoperative by the de-energization of any of its track relays or through said circuit controller by an attempt to move the signal into the full clear position.

11. In a block signal system, a block including a pair of stations and the track between them, said track including sections insulated from each other, a relay and a battery for each of said sections, a main signal line extending between the stations and including contact devices opened when said relays are de-energized, a lock relay, a lock, a signal, and a movable member at each station, a source of electric current, means controlled by each member for preventing the clearance of the signal at its station except when the member is in one position, and means controlled by the movements of each member by which the lock relay at its station or said source of current are interchangeably connected into circuit with said line, said lock being arranged to prevent the movement of the member into the signal clearing position, except when the lock relay is energized, but permitting at all times the movements of said member into the positions necessary to connect the source or the lock relay in circuit with said line.

12. In a block signal system, a block including a pair of stations and the track between them, said track being divided into sections insulated from each other and each including a track relay de-energized by a train on the section, a main signal line extending between the stations and including contact devices opened when said relays are de-energized, a source of electric current, a lock relay, a lock, a signal and a movable member at each station, means controlled by each member for preventing the clearance of the signal at its station except when said member is in one position, means controlled by the movements of each of said members by which the lock relay at its station or said source of current are interchangeably connected into circuit with said line, said lock being arranged to prevent the movement of the member into the signal clearing position, except when the lock relay is energized, but permitting at all times the movements of said member into the positions necessary to connect the source or the lock relay in circuit with said line and means controlled by the passage of the current through the lock relay for closing at one point a circuit controlling the clearance of the signal.

13. In a block signal system, a block, including a pair of stations and the track between them, said track being divided into sections insulated from each other, a track relay in each section de-energized by a train on said section, a main signal line extending between the stations and including contact devices opened when said relays are de-energized, a lock relay, a lock, a signal and a movable member at one station, a source of electric current, means controlled by each member for preventing the clearance of the signal at its station except when said member is in one position, means controlled by the movement of each of said members by which the lock relay at its station or said source of current are interchangeably connected into circuit with said line, said lock being arranged to prevent the movement of the member into the signal clearing position except when the lock relay is energized but permitting at all times the movements of said member into the positions necessary to connect the source or the lock relay into the circuit with said line and means controlled by the passage of the current through the lock relay for closing at one point a circuit controlling the clearance of the signal.

14. In a block signal system, a block including a pair of stations and the track between them, said track being divided into sections insulated from each other, a track relay for each section de-energized by a train on said section, a main signal line extending between the stations and including contact devices opened when said relays are de-energized, a source of electric current, lock relay, lock, signal and movable member at each station, means controlled by each member for preventing the clearance of the signal at its station except when said member is in one position, means controlled by the movements of each of said members by which the lock relay at its station or said source of current are interchangeably connected into circuit with said line, said lock being arranged to prevent the movement of the member into the signal clearing position, except when the lock relay is energized, but permitting at all times the movements of said member into the positions necessary to connect the source or the lock relay in circuit with said line, and means controlled by the energization of the lock relay for preventing the main line from being connected in circuit with said source at said station when the magnet is energized.

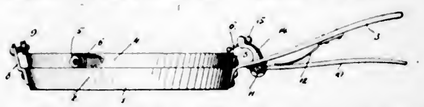
15. In a block signal system, a block, including a pair of stations and the track between them, said track being divided into sections insulated from each other, a track relay for each section de-energized by a train on the section, a main signal line extending between the stations and including contact devices opened when said relays are de-energized, a lock relay, a lock, a signal, and a movable member at each station, a source of electric current, means controlled by each member for preventing the clearance of the signal at its station except when said member is in one position, and means controlled by the movements of each of said members by which the lock relay at its station or said source of current are interchangeably connected into circuit with said line, said lock being arranged to prevent the movement of the member into the signal clearing position except when the lock relay is energized, but permitting at all times the movements of said member into the positions necessary to connect the source or the lock relay into the circuit with said line, a secondary movable member at the station from which the switch is controlled, means connecting said movable members so that said secondary movable member can be moved out of a normal position in either direction only when the first mentioned movable member is in the signal clearing position, means preventing the secondary member from being moved out of the normal position to a signal clearing position or from there back to the normal position except when said secondary circuit is closed, means for preventing the clearance of said signal except when the secondary member is in the signal clearing position, a secondary signal located at or near the switch and means for preventing its clearance except when the secondary member is out of said signal clearing position.

17. In a signal system, a block comprising a pair of stations, a main track between them, and a siding switch connecting with the main track between the stations adjacent one of them, a main signal at each station, a switch signal at the switch, a main signal instrument at each station, movable from a normal position to a position to unlock the signal at its own station, or to a position to unlock the signal at the other station, a lock at each station normally preventing movement of the main instrument to unlock its own signal, means for rendering said lock inoperative only when the block portion between the switch and the remote station is empty, controlled by the presence of trains on such track portion and the operation of the main instrument at the remote station, a secondary instrument at the station adjacent the switch interchangeably movable to a position to clear the main signal and to a position to clear the switch signal, a lock for the secondary instrument controlled by the primary instrument and preventing movement of the secondary instrument into either signal clearing position except when the main instrument is in a position to unlock its own signal, a second lock normally preventing movement of the secondary instrument into position to clear the main signal or its return from such position into the position to clear the switch signal and means controlled by the presence of trains on a track portion between the switch and the adjacent station for rendering said second lock inoperative only when said last mentioned track portion is unoccupied.

18. A signal system for a block comprising a pair of stations, a track between them, and a siding switch between the stations and controlled from one of them, said system including a switch lock and switch signal, a main signal and signal instrument at the switch controlling station, said instrument being movable from a normal position to a main signal clearing position or to a switch signal clearing position, means normally holding said instrument in the normal position, means operable only when the block track portion beyond the switch contains no trains for freeing said instrument from the holding means, other means controlled by a train between the controlling station and switch for then locking said instrument against movement from said normal position to the main signal clearing position, or its return therefrom to said normal position, means controlled by the movement of said instrument into the switch signal clearing position for clearing the switch signal and releasing the switch lock, and means controlled by movement of the instrument into normal position and the presence of a train on the track in position to enter the siding for releasing the switch lock without clearing the switch signal.

19. A signal system for a block comprising a pair of stations, a track between them and a siding switch between the stations and controlled from one of them, said system including a switch lock and switch signal, a main signal and signal instrument at the switch controlling station, said instrument being movable from a normal position to a main signal clearing position or to a switch signal clearing position, means normally holding said instrument in the normal position, means operable only when the block track portion beyond the switch contains no trains, for freeing said instrument from the holding means, other means controlled by a train between the controlling station and switch for then locking said instrument against movement from said normal position to the main signal clearing position or its return therefrom to said normal position, a polarized relay, means controlled by it and the movement of said instrument into the switch signal clearing position for clearing the switch signal and releasing the switch lock, and means controlled by said relay, the movement of the instrument into said normal position and the presence of a train on the track in position to enter the siding for releasing said switch lock without clearing said switch signal.

856,671. COOKING UTENSIL. JOHN BEHRINGER, Chicago, Ill. Filed Feb. 15, 1907. Serial No. 357,452.



Claim.—1. A cooking utensil embodying a ring having inclined sides, a handle carried thereby, a receptacle revolubly mounted upon the upper edges of said ring, and having inner serrated edges, a revoluble roller supported by the side walls of said ring and engaging the upper edges of said receptacle, a pivoted bell crank lever carried by said handle, a movable pin carried by the shorter arm of said lever and adapted to overlie the upper edges of said receptacle, a spring carried by said handle for normally holding said pin out of engagement with said receptacle, and means to normally hold said receptacle out of engagement with the side walls of said ring.

2. A cooking utensil embodying a ring having side walls, a handle carried thereby, a receptacle revolubly mounted upon the upper edges of said side walls, means carried by said side walls and said handle for normally holding said receptacle in engagement with said ring, and means for preventing said receptacle from contacting with the side walls of said ring.

3. In a cooking utensil, a ring having upwardly extending side walls, a pan mounted within the side walls, revoluble supports carried by said pan engaging the upper edge of the side walls, a handle carried by the ring, a bracket carried by the ring at the side opposite the handle, a roller supported by said bracket and overlying the rim of the pan, and means carried by said handle also overlying the rim of the pan, said means and said roller maintaining the pan on the ring when revolved.

4. In a cooking utensil, a ring having upwardly extending side walls, a pan mounted to revolve within the side walls, flanged rollers carried by said pan resting on the rim of said side walls, and means overlying the rim of said pan for retaining the same in proper position within the ring while being revolved.

5. In a cooking utensil, a ring provided with an upwardly extending side wall, a pan mounted to be revolved around within the side wall, supports carried by said pan traveling on the rim of said side wall, a handle carried by said ring, and means carried by said handle projecting over the rim of the pan to hold the latter in position while being revolved.

6. In a cooking utensil, a ring, provided with upwardly extending side walls, a pan mounted for rotation within the side walls and having a serrated edge, supports secured to the periphery of the pan to rest and travel on the rim of said side walls as the pan is rotated, and means overlying the rim of the pan to maintain said supports in engagement with the rim of the side walls as the pan is rotated.

7. In a cooking utensil, a ring provided with upwardly extending side walls, a pan mounted for rotation within the side walls, and rollers carried by the periphery of said pan for supporting the same and traveling on the rim of the side walls as the pan is rotated.

856,672. BAKING-POWDER AND PROCESS OF MAKING THE SAME. OTTO BEST, CHARLES S. ASH, and EDGAR SAMSON, San Francisco, Cal. Filed June 14, 1905. Serial No. 265,154.

Claim.—1. The process of making baking powder which consists in adding to one of the active ingredients a solution of albumen, then thoroughly commingling and drying at a low temperature the mixture so formed to form around the individual particles albuminiferous films, then raising the temperature to coagulate the albumen in the films around the individual particles and thereby render said films insoluble, and then mixing with the other active ingredient in the usual manner, substantially as described.

2. The process of making baking powder which consists in adding to tartaric acid a solution of albumen, then thoroughly commingling and drying at a low temperature the mixture so formed to form around the individual particles albuminiferous films, then raising the temperature to coagulate the albumen in the films around the individual particles and thereby render said films insoluble, and then mixing with the other active ingredient in the usual manner, substantially as described.

3. A baking powder having the particles of one of its ingredients coated with a dry, insoluble film, and mechanically detachable by the action of water.

4. A baking powder having the particles of one of its ingredients coated with an albuminiferous dry, insoluble film, and mechanically detachable by the action of water.

856,673. BAKING-POWDER AND PROCESS OF MAKING THE SAME. OTTO BEST, CHARLES S. ASH, and EDGAR SAMSON, San Francisco, Cal. Filed Sept. 6, 1905. Serial No. 277,256.

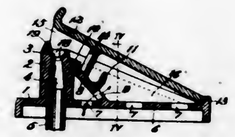
Claim.—1. The process of making baking powder which consists in coagulating albumen, treating the same with a solution of caustic alkali to produce a solution of "alkaline albumen", adding the product to a filler, and commingling the same, adding the necessary quantity of tartaric acid, thoroughly mixing to neutralize the alkali in the "alkaline albumen" by part of said acid and thereby attaching the coated filler by means of the coagulated albumen to the remaining tartaric acid, heating the mixture in a comminuted form to create dry insoluble films around the individual particles of the tartaric acid, and then mixing it with the alkaline ingredient in the usual manner, substantially as described.

2. The process of making baking powder which consists in coagulating albumen, treating the same with a solution of caustic alkali to produce a solution of "alkaline albumen", adding the product to a filler, and commingling the same, adding the necessary quantity of an acid ingredient, thoroughly mixing to neutralize the alkali in the "alkaline albumen" by part of said acid and thereby attaching the coated filler by means of the coagulated albumen to the remaining acid ingredient, heating the mixture in a comminuted form to create dry insoluble films around the individual particles of the acid ingredient, and then mixing it with the alkaline ingredient in the usual manner, substantially as described.

3. A baking powder having the particles of its acid ingredient coated with a dry, insoluble film but mechanically detachable by the action of water, and consisting of starch and coagulated albumen, substantially as described.

4. A baking powder having particles of tartaric acid coated with a dry, insoluble film, but mechanically detachable by the action of water and consisting of starch and coagulated albumen, substantially as described.

856,674. AIR-CARBURETING OIL-BURNER. WILLIAM N. BEST, Los Angeles, Cal., assignor to John H. Best and Ezra Best, Quincy, Ill. Filed Mar. 26, 1903. Serial No. 149,687.



Claim.—1. An air carbureting burner comprising a base, a rib on said base having a trough forming its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a lateral extension and a wall at each side of said extension, an inclined cover plate resting on said extension and on said walls and extending over the trough in proximity thereto to form an elongated slot, and an inclined burner plate extending from the upper part of the rib to the base extension, forming a chamber between said incline and the base, said inclined burner plate and base being provided with perforations communicating with said chamber, and the incline having a flange above the perforations therein.

2. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a perforated lateral extension provided with a flange at its outer edge and with a wall at each side of said extension, an inclined burner plate extending from the rib to the base extension and a cover plate resting on said flange of the base extension, and provided with pins resting on said burner plate, said cover plate extending over the aforesaid trough and forming an elongated outlet slot and conveying upwardly toward said burner plate and forming a converging air supply chamber leading to said outlet slot.

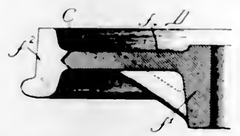
3. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a perforated lateral extension provided with a flange at its outer edge and with a wall at each side of said extension, an inclined burner plate extending from the rib to the base extension and a cover plate resting on said flange of the base extension, said cover plate extending over the aforesaid trough and forming an elongated outlet slot and conveying upwardly toward said burner plate and forming a converging air supply chamber leading to said outlet slot.

4. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, and an oil supply means for said duct, said base having a lateral extension below the top of said trough, a chamber provided with air inlets being supported on said extension, the upper wall of said chamber extending to a point adjacent the top of said trough to form a slot therealong.

5. An air carbureting burner comprising a perforated base having an oil supply duct leading upwardly therethrough at one end and a flange at the other end, the side of the supply duct toward the flange being inclined and provided with oil receptacles, and an inclined cover, one edge of which rests against the flange and the other edge is provided with legs which rest against said inclined side and hold the cover at a distance therefrom to form an inclined flue with an outlet adjacent to said supply duct, there being a wall at each end of said base to form a chamber there above.

6. An air carbureting burner comprising a perforated base having an oil supply duct leading upwardly therethrough at one end and a flange at the other end, the top of the supply duct being provided with a trough and the side of the supply duct toward the flange being perforated and provided with oil receptacles above said perforation, and an inclined cover, one edge of which rests against the flange and the other edge is provided with legs which rest against said inclined side and hold the cover at a distance therefrom to form an inclined flue with an outlet adjacent to said supply duct, there being a wall at each end of said base to form a chamber there above.

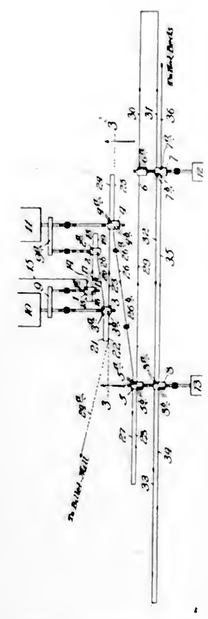
856,675. CAR-WHEEL. THOMAS S. BLAIR, Jr., Elmhurst, Ill. Filed Oct. 30, 1905. Serial No. 285,109.



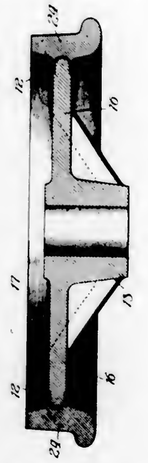
Claim.—1. A cast-metal car-wheel consisting of a relatively-soft metal center and a relatively-hard metal tire with a metal ring interposed between them having a circumferentially grooved inner surface enveloping the rim-portion of said center and a bulging outer surface enveloped in the adjacent circumferentially-grooved surface of the tire.

2. A cast-metal car-wheel consisting of a relatively-soft metal center and a relatively-hard metal tire with a metal ring interposed between and having a welded union with them, said ring having a circumferentially grooved inner surface enveloping the rim-portion of said center and a bulging outer surface enveloped in the adjacent circumferentially-grooved surface of the tire.

3. A cast-metal car-wheel consisting of a relatively-soft metal center having its rim-portion of V-shape in cross-section and a relatively-hard metal tire having an inner circumferential groove of V-shape in cross-section with a metal ring of V-shape in cross-section interposed and enveloping the rim-portion of said center and entering into said groove in the tire.

856,676. 

856,677. CAR-WHEEL. THOMAS S. BLAIR, Jr., Elmhurst, Ill. Filed Mar. 14, 1907. Serial No. 362,375.



Claim.—1. A cast-metal car-wheel consisting of a relatively-soft metal center having its rim of substantially U-shape in cross-section and a relatively-hard metal tire having an inner circumferential groove of said shape in cross-section with an interposed metal key of said shape in cross-section enveloping the rim-portion of said center and entering into said groove in the tire for the purpose set forth.

2. A cast-metal car-wheel consisting of a relatively-soft

856,676. BAKING-POWDER AND PROCESS OF MAKING THE SAME. OTTO BEST, CHARLES S. ASH, and EDGAR SAMSON, San Francisco, Cal. Filed June 14, 1905. Serial No. 265,154.

Claim.—1. The process of making baking powder which consists in adding to one of the active ingredients a solution of albumen, then thoroughly commingling and drying at a low temperature the mixture so formed to form around the individual particles albuminiferous films, then raising the temperature to coagulate the albumen in the films around the individual particles and thereby render said films insoluble, and then mixing with the other active ingredient in the usual manner, substantially as described.

2. The process of making baking powder which consists in adding to tartaric acid a solution of albumen, then thoroughly commingling and drying at a low temperature the mixture so formed to form around the individual particles albuminiferous films, then raising the temperature to coagulate the albumen in the films around the individual particles and thereby render said films insoluble, and then mixing with the other active ingredient in the usual manner, substantially as described.

3. A baking powder having the particles of one of its ingredients coated with a dry, insoluble film, and mechanically detachable by the action of water.

4. A baking powder having the particles of one of its ingredients coated with an albuminiferous dry, insoluble film, and mechanically detachable by the action of water.

856,673. BAKING-POWDER AND PROCESS OF MAKING THE SAME. OTTO BEST, CHARLES S. ASH, and EDGAR SAMSON, San Francisco, Cal. Filed Sept. 6, 1905. Serial No. 277,256.

Claim.—1. The process of making baking powder which consists in coagulating albumen, treating the same with a solution of caustic alkali to produce a solution of "alkaline albumen", adding the product to a filler, and commingling the same, adding the necessary quantity of tartaric acid, thoroughly mixing to neutralize the alkali in the "alkaline albumen" by part of said acid and thereby attaching the coated filler by means of the coagulated albumen to the remaining tartaric acid, heating the mixture in a comminuted form to create dry insoluble films around the individual particles of the tartaric acid, and then mixing it with the alkaline ingredient in the usual manner, substantially as described.

2. The process of making baking powder which consists in coagulating albumen, treating the same with a solution of caustic alkali to produce a solution of "alkaline albumen", adding the product to a filler, and commingling the same, adding the necessary quantity of an acid ingredient, thoroughly mixing to neutralize the alkali in the "alkaline albumen" by part of said acid and thereby attaching the coated filler by means of the coagulated albumen to the remaining acid ingredient, heating the mixture in a comminuted form to create dry insoluble films around the individual particles of the acid ingredient, and then mixing it with the alkaline ingredient in the usual manner, substantially as described.

3. A baking powder having the particles of its acid ingredient coated with a dry, insoluble film but mechanically detachable by the action of water, and consisting of starch and coagulated albumen, substantially as described.

4. A baking powder having particles of tartaric acid coated with a dry, insoluble film, but mechanically detachable by the action of water and consisting of starch and coagulated albumen, substantially as described.

856,674. AIR-CARBURETING OIL-BURNER. WILLIAM N. BEST, Los Angeles, Cal., assignor to John H. Best and Ezra Best, Quincy, Ill. Filed Mar. 26, 1903. Serial No. 149,687.

Claim.—1. An air carbureting burner comprising a base, a rib on said base having a trough forming its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a lateral extension and a wall at each side of said extension, an inclined cover plate resting on said extension and on said walls and extending over the trough in proximity thereto to form an elongated slot, and an inclined burner plate extending from the upper part of the rib to the base extension, forming a chamber between said incline and the base, said inclined burner plate and base being provided with perforations communicating with said chamber, and the incline having a flange above the perforations therein.

2. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a perforated lateral extension provided with a flange at its outer edge and with a wall at each side of said extension, an inclined burner plate extending from the rib to the base extension and a cover plate resting on said flange of the base extension, and provided with pins resting on said burner plate, said cover plate extending over the aforesaid trough and forming an elongated outlet slot and conveying upwardly toward said burner plate and forming a converging air supply chamber leading to said outlet slot.

3. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a perforated lateral extension provided with a flange at its outer edge and with a wall at each side of said extension, an inclined burner plate extending from the rib to the base extension and a cover plate resting on said flange of the base extension, said cover plate extending over the aforesaid trough and forming an elongated outlet slot and conveying upwardly toward said burner plate and forming a converging air supply chamber leading to said outlet slot.

4. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, and an oil supply means for said duct, said base having a lateral extension

below the top of said trough, a chamber provided with air inlets being supported on said extension, the upper wall of said chamber extending to a point adjacent the top of said trough to form a slot therealong.

5. An air carbureting burner comprising a perforated base having an oil supply duct leading upwardly therethrough at one end and a flange at the other end, the side of the supply duct toward the flange being inclined and provided with oil receptacles, and an inclined cover, one edge of which rests against the flange and the other edge is provided with legs which rest against said inclined side and hold the cover at a distance therefrom to form an inclined flue with an outlet adjacent to said supply duct, there being a wall at each end of said base to form a chamber there above.

6. An air carbureting burner comprising a perforated base having an oil supply duct leading upwardly therethrough at one end and a flange at the other end, the top of the supply duct being provided with a trough and the side of the supply duct toward the flange being perforated and provided with oil receptacles above said perforation, and an inclined cover, one edge of which rests against the flange and the other edge is provided with legs which rest against said inclined side and hold the cover at a distance therefrom to form an inclined flue with an outlet adjacent to said supply duct, there being a wall at each end of said base to form a chamber there above.

856,675. CAR-WHEEL. THOMAS S. BLAIR, Jr., Elmhurst, Ill. Filed Oct. 30, 1905. Serial No. 285,109.

Claim.—1. A cast-metal car-wheel consisting of a relatively-soft metal center and a relatively-hard metal tire with a metal ring interposed between them having a circumferentially grooved inner surface enveloping the rim-portion of said center and a bulging outer surface enveloped in the adjacent circumferentially-grooved surface of the tire.

2. A cast-metal car-wheel consisting of a relatively-soft metal center and a relatively-hard metal tire with a metal ring interposed between and having a welded union with them, said ring having a circumferentially grooved inner surface enveloping the rim-portion of said center and a bulging outer surface enveloped in the adjacent circumferentially-grooved surface of the tire.

3. A cast-metal car-wheel consisting of a relatively-soft metal center having its rim-portion of V-shape in cross-section and a relatively-hard metal tire having an inner circumferential groove of V-shape in cross-section with a metal ring of V-shape in cross-section interposed and enveloping the rim-portion of said center and entering into said groove in the tire.

856,676.

856,677. CAR-WHEEL. THOMAS S. BLAIR, Jr., Elmhurst, Ill. Filed Mar. 14, 1907. Serial No. 362,375.

Claim.—1. A cast-metal car-wheel consisting of a relatively-soft metal center having its rim of substantially U-shape in cross-section and a relatively-hard metal tire having an inner circumferential groove of said shape in cross-section with an interposed metal key of said shape in cross-section enveloping the rim-portion of said center and entering into said groove in the tire for the purpose set forth.

2. A cast-metal car-wheel consisting of a relatively-soft

856,672. BAKING-POWDER AND PROCESS OF MAKING THE SAME. OTTO BEST, CHARLES S. ASH, and EDGAR SAMSON, San Francisco, Cal. Filed June 14, 1905. Serial No. 265,154.

Claim.—1. The process of making baking powder which consists in adding to one of the active ingredients a solution of albumen, then thoroughly commingling and drying at a low temperature the mixture so formed to form around the individual particles albuminiferous films, then raising the temperature to coagulate the albumen in the films around the individual particles and thereby render said films insoluble, and then mixing with the other active ingredient in the usual manner, substantially as described.

2. The process of making baking powder which consists in adding to tartaric acid a solution of albumen, then thoroughly commingling and drying at a low temperature the mixture so formed to form around the individual particles albuminiferous films, then raising the temperature to coagulate the albumen in the films around the individual particles and thereby render said films insoluble, and then mixing with the other active ingredient in the usual manner, substantially as described.

3. A baking powder having the particles of one of its ingredients coated with a dry, insoluble film, and mechanically detachable by the action of water.

4. A baking powder having the particles of one of its ingredients coated with an albuminiferous dry, insoluble film, and mechanically detachable by the action of water.

856,673. BAKING-POWDER AND PROCESS OF MAKING THE SAME. OTTO BEST, CHARLES S. ASH, and EDGAR SAMSON, San Francisco, Cal. Filed Sept. 6, 1905. Serial No. 277,256.

Claim.—1. The process of making baking powder which consists in coagulating albumen, treating the same with a solution of caustic alkali to produce a solution of "alkaline albumen", adding the product to a filler, and commingling the same, adding the necessary quantity of tartaric acid, thoroughly mixing to neutralize the alkali in the "alkaline albumen" by part of said acid and thereby attaching the coated filler by means of the coagulated albumen to the remaining tartaric acid, heating the mixture in a comminuted form to create dry insoluble films around the individual particles of the tartaric acid, and then mixing it with the alkaline ingredient in the usual manner, substantially as described.

2. The process of making baking powder which consists in coagulating albumen, treating the same with a solution of caustic alkali to produce a solution of "alkaline albumen", adding the product to a filler, and commingling the same, adding the necessary quantity of an acid ingredient, thoroughly mixing to neutralize the alkali in the "alkaline albumen" by part of said acid and thereby attaching the coated filler by means of the coagulated albumen to the remaining acid ingredient, heating the mixture in a comminuted form to create dry insoluble films around the individual particles of the acid ingredient, and then mixing it with the alkaline ingredient in the usual manner, substantially as described.

3. A baking powder having the particles of its acid ingredient coated with a dry, insoluble film but mechanically detachable by the action of water, and consisting of starch and coagulated albumen, substantially as described.

4. A baking powder having particles of tartaric acid coated with a dry, insoluble film, but mechanically detachable by the action of water and consisting of starch and coagulated albumen, substantially as described.

856,674. AIR-CARBURETING OIL-BURNER. WILLIAM N. BEST, Los Angeles, Cal., assignor to John H. Best and Ezra Best, Quincy, Ill. Filed Mar. 26, 1903. Serial No. 149,687.

Claim.—1. An air carbureting burner comprising a base, a rib on said base having a trough forming its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a lateral extension and a wall at each side of said extension, an inclined cover plate resting on said extension and on said walls and extending over the trough in proximity thereto to form an elongated slot, and an inclined burner plate extending from the upper part of the rib to the base extension, forming a chamber between said incline and the base, said inclined burner plate and base being provided with perforations communicating with said chamber, and the incline having a flange above the perforations therein.

2. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a perforated lateral extension provided with a flange at its outer edge and with a wall at each side of said extension, an inclined burner plate extending from the rib to the base extension and a cover plate resting on said flange of the base extension, and provided with pins resting on said burner plate, said cover plate extending over the aforesaid trough and forming an elongated outlet slot and conveying upwardly toward said burner plate and forming a converging air supply chamber leading to said outlet slot.

3. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, an oil supply means for said duct, said base having a perforated lateral extension provided with a flange at its outer edge and with a wall at each side of said extension, an inclined burner plate extending from the rib to the base extension and a cover plate resting on said flange of the base extension, said cover plate extending over the aforesaid trough and forming an elongated outlet slot and conveying upwardly toward said burner plate and forming a converging air supply chamber leading to said outlet slot.

4. An air carbureting burner comprising a base and a rib thereon having a trough formed at its top and provided with a duct leading to said trough, and an oil supply means for said duct, said base having a lateral extension

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856,675. CAR-WHEEL. THOMAS S. BLAIR, Jr., Elmhurst, Ill. Filed Oct. 30, 1905. Serial No. 285,109.

Claim.—1. A cast-metal car-wheel consisting of a relatively-soft metal center and a relatively-hard metal tire with a metal ring interposed between them having a circumferentially grooved inner surface enveloping the rim-portion of said center and a bulging outer surface enveloped in the adjacent circumferentially-grooved surface of the tire.

2. A cast-metal car-wheel consisting of a relatively-soft metal center and a relatively-hard metal tire with a metal ring interposed between and having a welded union with them, said ring having a circumferentially grooved inner surface enveloping the rim-portion of said center and a bulging outer surface enveloped in the adjacent circumferentially-grooved surface of the tire.

3. A cast-metal car-wheel consisting of a relatively-soft metal center having its rim-portion of V-shape in cross-section and a relatively-hard metal tire having an inner circumferential groove of V-shape in cross-section with a metal ring of V-shape in cross-section interposed and enveloping the rim-portion of said center and entering into said groove in the tire.

856,676.

856,677. CAR-WHEEL. THOMAS S. BLAIR, Jr., Elmhurst, Ill. Filed Mar. 14, 1907. Serial No. 362,375.

Claim.—1. A cast-metal car-wheel consisting of a relatively-soft metal center having its rim of substantially U-shape in cross-section and a relatively-hard metal tire having an inner circumferential groove of said shape in cross-section with an interposed metal key of said shape in cross-section enveloping the rim-portion of said center and entering into said groove in the tire for the purpose set forth.

2. A cast-metal car-wheel consisting of a relatively-soft

metal center having its rim of substantially U-shape in cross-section and a relatively-hard metal tire having an inner circumferential groove of said shape in cross-section with an interposed metal ring of said shape in cross-section enveloping with its inner surface the rim-portion of said center and enveloped about its outer surface by the groove in said tire, the ring having welded union with the center and tire for the purpose set forth.

856,678. BUCKLE. JOHN J. BUCHANAN, Waterbury, Conn., assignor to Waterbury Buckle Co., Waterbury, Conn., a Corporation. Filed Jan. 31, 1907. Serial No. 355,043.



Claim.—In a lever-buckle, the combination with a buckle-frame comprising a wire-body having a lower side, and a sheet-metal clamping-plate the lower portion of which is set forward at an obtuse angle; of a buckle-lever pivoted upon the said wire-body of the frame in position to co-act with the clamping-plate thereof, the setting forward of the lower edge of the said plate forming a threading space between its lower edge and the lower side of the said wire-body whereby the frame may be reduced in width and also whereby the threading of the webbing is facilitated.

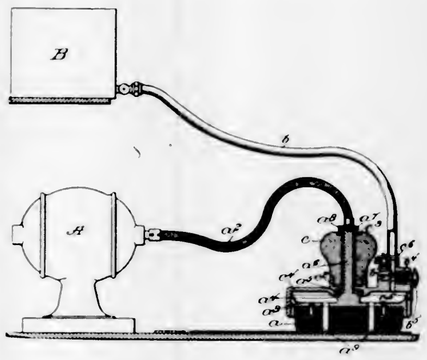
856,679. ADJUSTABLE STAND. HENRY BUCKLAND and ANNIE J. BUCKLAND, Klaton, Waikouaiti, New Zealand. Filed Oct. 30, 1905. Serial No. 284,946.



Claim.—1. A stand for the purpose indicated comprising a tubular pillar, a block having slots and slidable within the pillar, legs pivoted to the block, stay rods connecting the legs together and jointed at their middle part, a tube telescoping into the pillar, a thumb screw securing the tube within the pillar, a quadrant bracket having a stem fitting into the top of the tube, a thumb screw securing the stem to the tube, a tubular arm pivoted to the quadrant bracket the upper part of the arm telescoping into the lower part, a pin fitting holes provided in the quadrant and a hole in the arm, a mirror, a bracket upon the back of the mirror, and a pin by which the mirror is pivoted to the oscillating arm, substantially as set forth.

2. A stand for the purpose indicated comprising a tubular pillar, a block having slots and slidable within the pillar, legs pivoted to the block, stay rods connecting the legs together and jointed at their middle part caps fitting the ends of the pillar, a tube telescoping into the pillar, a thumb screw securing the tube within the pillar, a quadrant bracket having a stem fitting into the top of the tube, a thumb screw securing the stem to the tube, a tubular arm pivoted to the quadrant bracket the upper part of the arm telescoping into the lower part, a pin fitting holes provided in the quadrant and a hole in the arm, a mirror, a bracket upon the back of the mirror, a pin by which the mirror is pivoted to the oscillating arm, a table top, a cap piece screwed into the table top and having a hole to fit upon the end of the pillar, substantially as set forth.

856,680. ROTARY DRESSING IMPLEMENT. CHARLES E. CAMPBELL, Lynn, Mass. Filed Aug. 4, 1905. Serial No. 272,770.



Claim.—1. A rotary dressing implement comprising a rotary brush; a motor; a flexible driving connection between said motor and said brush; a casing for said brush; and means for supplying said casing with dressing material.

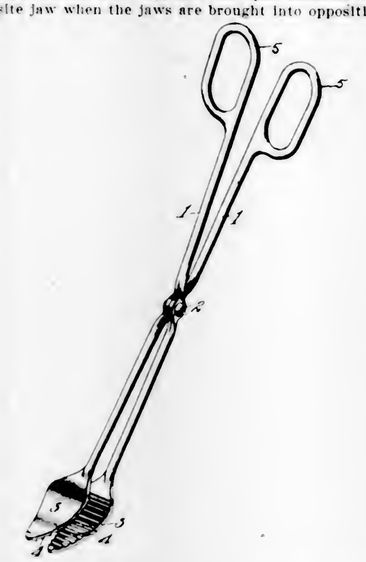
2. The combination with a rotary brush; of a motor; a flexible shaft directly connected with said motor and said brush; a source of liquid; and a flexible tube leading from said source to said brush.

3. The combination with a rotary brush; of a handle constituting a bearing therefor; a chamber formed in said handle to receive dressing material; a flexible driving shaft connected with said brush; and means for supplying said chamber with dressing material.

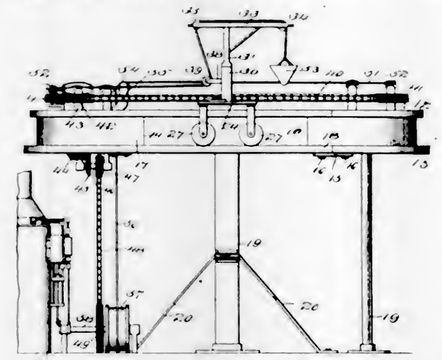
4. The combination with a rotary brush; of a handle constituting a bearing therefor; a chamber formed in said handle to receive dressing material; a flexible driving shaft connected with said brush a reservoir for dressing material; and a flexible tube leading from said reservoir to said chamber.

856,681. TONGS. ROBERT CEDERSTHOM, St. Louis, Mo. Filed May 26, 1906. Serial No. 318,861.

Claim.—A pair of tongs consisting of two movable connected levers and a jaw on each lever adapted to be brought into opposition by movement of the levers, a series of parallel ridges alternating with smooth open surfaces on the meeting faces of said jaws, the ridges on each jaw being positioned to lie opposite the open surfaces on the opposite jaw when the jaws are brought into opposition.



856,682. CONVEYER. AUGUST H. DAHL and ARTHUR E. WHITELY, New York, N. Y., assignors of one-tenth to Charles O. Dahl, New York, N. Y. Filed May 2, 1906. Serial No. 314,877.



Claim.—1. In a device of the class described, a jointed track arranged to be assembled entirely about a building, a carriage mounted upon the track, a cable arranged to move the carriage about the track, load supporting means carried by the carriage, a cable arranged to lift a load, and means to actuate the load lifting cable and to maintain it at a desired position relative to the moving cable.

2. In a device of the class described, a jointed track arranged to be assembled entirely about a building, a carriage mounted upon the track, a cable arranged to move the carriage about the track and return it to the starting point, load supporting mechanism carried by the carriage, a cable arranged to lift a load, and means to actuate the load lifting cable and to maintain it at a desired position relative to the moving carriage.

3. In a device of the class described, a track arranged to be positioned entirely about a building, a carriage mounted upon the track, a cable arranged to move the carriage about the track and return it to the starting point, means adjacent the track for actuating the cable, load supporting mechanism carried by the carriage, a cable arranged to lift a load and means associated with the carriage moving means and arranged independently or simultaneously therewith to actuate the load lifting cable and to maintain it at a desired position relative to the moving carriage.

4. In a device of the class described, a track, means for supporting the said track about a building, a carriage mounted upon and to move about said track, a swinging boom mounted upon said carriage, a cable mounted upon said boom and extending about the said track and downwardly beneath the said track, means to move the carriage and boom about the track in either direction, and means to hold the cable at the desired adjustment relative to the boom.

5. In a device of the class described, a track, means to support the track in operative position about a building, a carriage provided with rollers and arranged to move about the said track, a mast rotatably mounted upon the carriage, a boom carried upon the upper extremity of the mast, a cable extending about the track and downwardly into engagement with a rotating drum, means carried by the boom for accommodating the cable thereupon, means extending about the track and engaging the carriage and arranged to move the carriage thereupon, and means connecting the carriage moving means and the rotating drum.

6. In a device of the class described, a jointed track proportioned to be assembled entirely about a building, an endless cable extending entirely around said track, carriers arranged at the corners for supporting and guiding said cable, a carriage mounted upon the track, and connected with the cable, means for moving the cable in either direction, a load lifting cable carried by the carriage, and means for actuating the load lifting cable, and for maintaining it at a fixed position relative to the carriage.

7. In a device of the class described, a track proportioned to be positioned entirely around a building, an endless cable extending entirely around said track, carriers positioned at the corners of said track, and arranged to support and guide the cable, a rotating member associated with a track and arranged to move the cable in either direction, a carriage mounted upon the track and connected with the cable, load supporting means carried by the carriage, a cable associated with the carriage, and means associated with the rotating member for actuating the lifting cable, and maintaining it in a fixed position relative to the carriage.

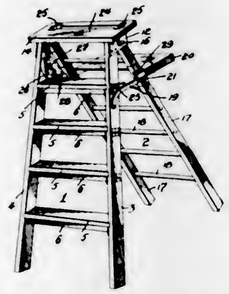
8. In a device of the class described, a track, a carriage mounted and movable upon the track, a mast mounted upon the carriage, and rotatable thereupon, means to maintain the mast in fixed position relative to the carriage, a boom mounted upon the mast, a cable associated with the mast and boom, and means for independently and simultaneously actuating the cable and the carriage.

856,683. EXTENSION-LADDER. JOHN R. DAVIS, Waynesburg, Pa. Filed Oct. 12, 1906. Serial No. 338,580.

Claim.—1. In a ladder, a main frame provided with steps and having a top step or platform provided with a longitudinal slot and with registering transverse slots, plates secured to the side rails of said main frame at the upper end thereof and provided with angle slots, an extension frame comprising side rails connected together by steps, headed pins carried by said side rails at the upper ends thereof to engage in the angle slots of said plates carried by the main frame, arms pivoted to the main frame and provided with shoulders to engage the side rails of the extension frame, a platform carried by said arms, and a spring-held arm carried by one of the side rails of the main frame for engagement with one of the steps of the extension frame to hold the latter in extended position with relation to the main frame.

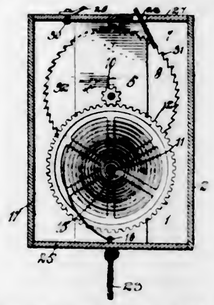
2. In a step ladder, a frame comprising side rails and steps connecting said side rails, and brace members for said steps each formed from a sheet of metal blank bent to form a web, the ends of which extend through the side

rails and are flanged to engage the side rails, the said web having horizontal flanges engaging the step having angularly extending ends engaging the inner faces of the side rails.



3. In a step ladder, a main frame and an extension frame, the latter acting as a brace for the main frame and as an extension therefor, angle plates carried by the side rails of the main frame at their upper end and provided with bayonet slots, a top step or platform for said main frame provided with a longitudinal slot and with registering transverse slots, the latter also registering with the bayonet slots in said plates, headed pins carried by the extension slots, arms pivoted to the main frame having shoulders for engagement with the extension frame, a platform carried by said arms, and a pivoted spring-held arm carried by one of the side rails of the main frame for engagement with one of the steps of the extension frame to hold the latter in extended position with relation to the main frame.

856,684. CLOTHES-LINE REEL. CHARLES D. DITTMAN, Pittsburg, Pa. Filed June 30, 1906. Serial No. 324,244.

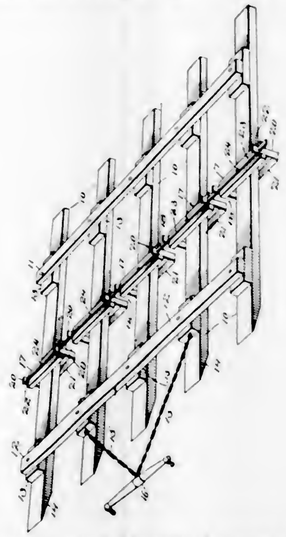


Claim.—A clothes line reel comprising a box or casing having a hinged door, a plate mounted in said box, and shaft journaled in said plate and the side walls of said box, a reel fixed upon said shaft and having a line attached thereto, the periphery of one side of said reel being toothed, a pinion mounted upon said shaft, a gear wheel journaled in said box and meshing with said pinion, and a retracting spring located adjacent to said gear and adapted to actuate said gear and pinion, a roller journaled in said box and plate to guide said line, and a combined handle and locking member carried by the body of said box and projecting into the latter to engage said teeth to normally hold said reel against rotation, and the bottom of said box being provided with an opening for the exit of said line.

856,685. CROP-THINNER. ALFRED B. DOWNS, Memphis, Tenn. Filed Aug. 30, 1906. Serial No. 332,684.

Claim.—1. In a crop thinner, a runner, a block secured transversely of the runner and provided with recesses in its opposite ends, a cutter having up-turned ends disposed within the recesses of the block and depending below the runner, and means securing the cutter within the recesses.

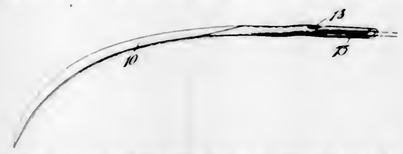
2. In a crop thinner, a runner, a block secured transversely upon the upper side of the runner and provided with recesses formed in its opposite ends, a cutter having upturned ends proportioned for engagement within the recesses of the block and provided with apertures in its extremities, and a cleat extending through the apertures of the cutter and secured to the block.



3. In a crop thinner, a plurality of runners, a block secured to each runner intermediate its ends and with intervals between adjacent blocks, the said blocks being provided with recesses in their opposite ends, cutters having up-turned ends disposed within the recesses of the block and provided with apertures in their extremities, and a cleat extending in parallelism with and secured to the blocks and through the apertures of the cutters.

4. A crop thinner comprising a plurality of runners, cross pieces spaced above and rigidly connecting the runners, blocks secured to the runners transversely intermediate their ends, and with intervals between adjacent blocks and recesses formed in opposite ends, cutters having upturned ends embracing the runner and engaged within the recesses, and provided with apertures in their extremities, and a cleat extending through the apertures of the cutter in parallelism with the blocks and rigidly secured thereto.

856,686. SURGICAL NEEDLE. THOMAS C. EDWARDS, Salinas, Cal. Filed July 21, 1906. Serial No. 327,207.



Claim.—1. A single thread surgical needle having a pair of threading eyes crossing the axis of the needle at an angle to each other.

2. A single thread surgical needle having a pair of threading eyes crossing the axis of the needle at an angle to each other and provided at one side with a helical groove connecting the ends of the eyes.

3. A single thread surgical needle having a pair of threading eyes provided on one side only with a groove extending from the rearmost eye to the head of the needle and on the opposite side with a groove connecting the ends of the eyes.

856,687. TRIBROMO DERIVATIVES OF INDIGO AND PROCESS OF MAKING SAME. GADIENT ENGI, Basel, Switzerland, assignor to The Firm of Society of Chemical Industry in Basle, Basel, Switzerland. Filed Mar. 23, 1907. Serial No. 364,019.

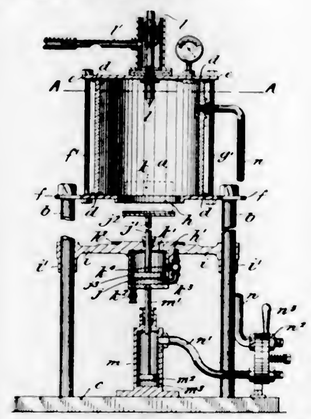
Claim.—1. The described process for the manufacture of tribromo derivatives of indigo, which process consists in heating indigo, mono- and dibromindigo with bromin in the presence of a suitable indifferent medium.

2. The described process for the manufacture of tribromo derivatives of indigo, which process consists in treating indigo, mono- and dibromindigo with bromin in the presence of nitrobenzene.

3. As new products, the described tribromo derivatives of indigo corresponding to the formula $C_{16}H_7O_2N_2Br_3$, constituting in dry state from dark blue to brownish-violet powders, insoluble in water, difficultly soluble in cold anilin and nitrobenzene, more easily in hot anilin and nitrobenzene with a blue to bluish-violet color, dissolving in concentrated sulfuric acid with blue color, and yielding yellowish vats by treatment with suitable reducing agents.

4. As a new article of manufacture, the described tribromo derivative of indigo which can be obtained by heating indigo with bromin in the presence of nitrobenzene, which product dissolves in concentrated sulfuric acid with a greenish-blue and in fuming sulfuric acid of 24 p. c. SO_3 with a deep blue color, is difficultly soluble in hot anilin with a blue color and in hot nitrobenzene with a blue-violet color and yields by treatment with potassium hydrosulfite a greenish yellow vat, from which unmordanted cotton is dyed in beautiful blue shades, fast to washing, light and chlorin.

856,688. DEVICE FOR HERMETICALLY SEALING METAL RECEPTACLES FOR FOOD. GEORGE FARQUHAR and ROBERT NORTH, London, England. Filed Oct. 5, 1906. Serial No. 337,522.



Claim.—1. In a soldering apparatus, the combination of a receptacle having a soldering tool depending from its top and having an opening in its bottom, a closure supported to reciprocate to and from said opening whereby the opening can be closed, means for supporting the vessel to be soldered on said closure, a cylinder, a piston in said cylinder, a rod connecting the piston with said closure, a conduit leading to said cylinder, a valve member connected with the conduit, a conduit connecting the valve member with said receptacle, said valve member being arranged to connect the said piston with a suction device whereby the cylinder is exhausted to cause the piston to raise the closure to close the receptacle, said valve being also arranged to connect the conduit and receptacle with the suction device whereby the air in the receptacle is exhausted.

2. In a soldering apparatus, the combination of a receptacle having a soldering tool depending from its top and having an opening in its bottom, a closure supported to reciprocate to and from said opening whereby the opening can be closed, means for supporting the vessel to be soldered on said closure, a cylinder, a piston in said cylinder, a rod connecting the piston with said closure, a conduit leading to said cylinder, a valve member connected with the conduit, a conduit connecting the valve member with said receptacle, said valve member being arranged to connect the said piston with a suction device whereby the cylinder is exhausted to cause the piston to raise the closure to close the receptacle, said valve being also arranged to connect the conduit and receptacle with the suction device whereby the air in the receptacle is exhausted, and means located externally of said receptacle for heating the soldering tool that projects downward into the receptacle.

3. In a soldering apparatus, the combination of a receptacle, a soldering tool projecting through the top into the receptacle, the receptacle having an opening in its bottom, a reciprocatable closure arranged to close the opening in the bottom of the receptacle, a cylinder projecting downward from said closure, a passage connecting the upper and lower portions of the cylinder, a piston in said cylinder, a rod connected with said piston and projecting through the closure, a support on said rod for the article to be soldered, an aperture in said closure leading into said cylinder, an outlet at the lower part of the cylinder controlled by a cock, a second cylinder supported on the base, a piston in the latter cylinder, a rod connected with the latter piston and secured to the closure member whereby the latter is reciprocated by the piston, a valve member, a conduit leading from the said receptacle to the valve member, and a conduit leading from the second cylinder above the piston to the valve member, the second cylinder having an outlet at its lower portion below the piston.

4. In a soldering apparatus, the combination of a receptacle having an opening therein for admitting the article to be soldered, a closure movable to and from said opening, and vacuum controlled means for moving the closure to and from said opening.

5. In a soldering apparatus, the combination of a receptacle having an opening therein for admitting the article to be soldered, a closure movable to and from said opening, vacuum controlled means for moving the closure to and from said opening, a valve member arranged to control the vacuum device, a conduit connecting the valve member with the receptacle, the valve device being also arranged when shifted to another position to exhaust the receptacle.

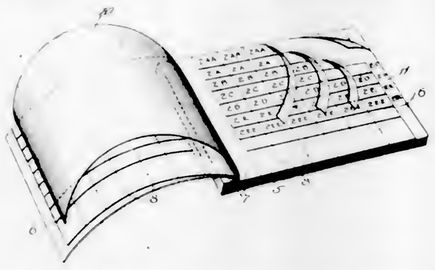
6. In a soldering apparatus, the combination of a receptacle having an opening therein for admitting the article to be soldered, a closure movable to and from said opening, and vacuum controlled means for moving the closure to and from said opening, and pressure operated means for shifting the article in the receptacle on withdrawal of the air therein to bring the article to engage the soldering means.

856,689. LABEL-PACKAGE. CHARLES F. FEHRENBACH, Cleveland, Ohio. Filed Apr. 20, 1907. Serial No. 369,224.

Claim.—1. A label package comprising sheets of labels, and lifting sheets secured together along one edge, said labels being completely separated from each other in one direction in strips extending at right angles to said bound edge, and the strips being attenuated transversely for detachment of the individual labels, and the lifting sheets alternating with said label sheets.

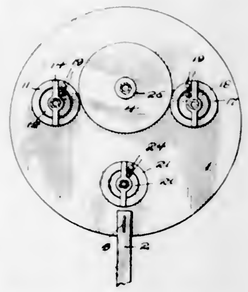
2. A label package comprising label sheets, composed of strips of labels secured only at one end to a common stub, said strips being transversely attenuated, and lifting

sheets of imperforate, relatively springy material, alternating with said label sheets and bound therewith.



3. A label package comprising label sheets, divided in one direction into strips, and in the opposite direction attenuated at intervals, and interspaced lifting sheets, bound with the label sheets along one edge, and projecting beyond the free edges of said label sheets opposite to the bound edge thereof.

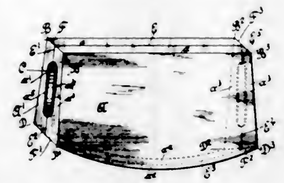
856,690. FAN. CHARLES T. FINKBEINER, Wilkinsburg, Pa. Filed Apr. 2, 1906. Serial No. 309,442.



Claim.—A device of the character described, comprising a main disk having a handle secured thereto and provided with a slot and three pairs of openings, the openings of each pair being located close together, a disk rotatably-mounted on the back of the main disk and having a plurality of radially-disposed names thereon to be displayed one at a time through the slot in said main disk, annuli rotatably-mounted on the back of the main disk, one for each of said pairs of openings, each annulus bearing numbers arranged consecutively and adapted to be displayed one at a time through one of the openings of said pairs of openings, consecutively-numbered disks rotatably-mounted within the annuli and lying in the same plane as the annuli, transverse straps secured to the rear faces of the annuli and securing said consecutively-numbered disks within the annuli, a handle-knob carried by each annulus to facilitate operating the same, and a handle-knob carried by each consecutively-numbered disk, substantially as described.

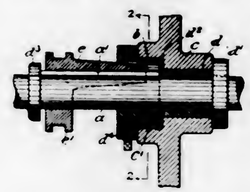
856,691. MUFF-BED. HUGO FISCHER, New York, N. Y. Filed Sept. 25, 1905. Serial No. 280,094.

Claim.—1. A closed muff bed cover or receptacle, comprising an outer, practically rectangular, member having six faces, and an inner tubular member or lining, with a space or chamber therebetween to contain loose filling material, the outer member consisting of two similar, practically rectangular, pieces of fabric, with notches at the corners, having at the sides or shorter edges thereof lining supporting means, the corner edges of each of said pieces being joined together, forming practically rectangular pan-shaped parts, the edges of the two said pieces of the outer member being attached together, forming a longitudinal seam extending entirely around the body portion of the outer member except where the sides or shorter edges serve to support the inner member or lining, substantially as described.



2. A closed muff bed cover or receptacle, comprising an outer, practically rectangular, member having six faces, and an inner tubular member or lining, with a space or chamber therebetween to contain loose filling material, the outer member consisting of two similar, practically rectangular, pieces of fabric, with notches at the corners, having at the sides or shorter edges thereof lining supporting means, the corner edges of each of said pieces being joined together, forming practically rectangular pan-shaped parts, the edges of the two said pieces of the outer member being attached together, forming a longitudinal seam extending entirely around the body portion of the outer member except where the sides or shorter edges serve to support the inner member or lining, in combination with loose filling material inserted between the two said members.

856,692. FRICTION-CLUTCH. CHARLES J. GADD, Steelton, Pa. Filed Apr. 3, 1906. Serial No. 309,648.

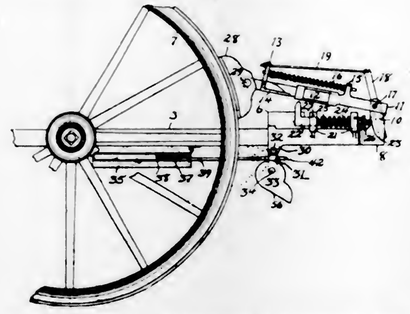


Claim.—The combination, with a pulley loosely mounted on a shaft, of a friction surface in the hub of said pulley, two friction cheeks surrounding said shaft and adapted to be brought into contact with said friction surface, a radial end and a beveled end on each of said friction cheeks, a shifting collar key-seated to said shaft, a wedge formed integral with said collar and adapted to engage the beveled ends of said friction cheeks, and a packing piece between the radial ends of the said friction cheeks, substantially as and for the purposes set forth.

856,693. AUTOMATIC WAGON-BRAKE. CHARLES GARVER, Fort Wayne, Ind. Filed Feb. 1, 1906. Serial No. 298,904.

Claim.—1. In an automatic wagon-brake, a movable double-tree; a brake-shoe operatively connected with the double-tree; means for normally actuating the brake-shoe against the draft of the motive power upon the double-tree; and auxiliary means for automatically increasing the holding power of the initial brake-shoe actuating means after it has been brought into action.

2. In an automatic wagon-brake, a laterally slidable double-tree; a plurality of brake-shoes adapted to engage the rear wheels of the vehicle; a flexible connection between the double-tree and the brake-shoes; means for normally actuating the brake-shoes and for correspondingly actuating the double-tree simultaneously; auxiliary means for automatically increasing the power of the brake actuating means after it has been brought into action; and means for automatically bringing the auxiliary means into action after the brake-shoe has been pressed to its engagement by the said initial actuating means.



3. In an automatic wagon-brake, a supporting casting; a two-part extensible arm pivoted at one end on said casting and carrying upon its other end a pivoted brake-shoe in coöperative relation with the perimeter of the rear wheel; means for normally maintaining the said arm in its extended position to bring the shoe into action against the draft upon the vehicle; means for overcoming the arm extensible means by the action of the said draft and auxiliary means for increasing the holding power of the initial brake-shoe actuating means.

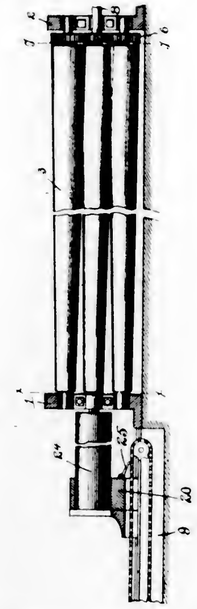
4. In wagon-brake mechanism means for automatically locking the vehicle against a retrogade movement upon an incline consisting of an eccentric brake-shoe pivotally suspended from a proper support in coöperative relation with the rear wheel and below the plane of its axial center, a horizontal raceway; a ball movable on said raceway by gravity; and a pivotal actuating connection between said ball and said brake shoe.

5. An automatic vehicle brake, adapted to prevent a retrogade movement upon an incline, consisting of a ball raceway in horizontal-arrangement; a ball mounted on said raceway and actuated thereon by gravity; and an eccentric brake-shoe pivotally suspended below the plane of the axial center of the wheel and in coöperative relation with the perimeter thereof.

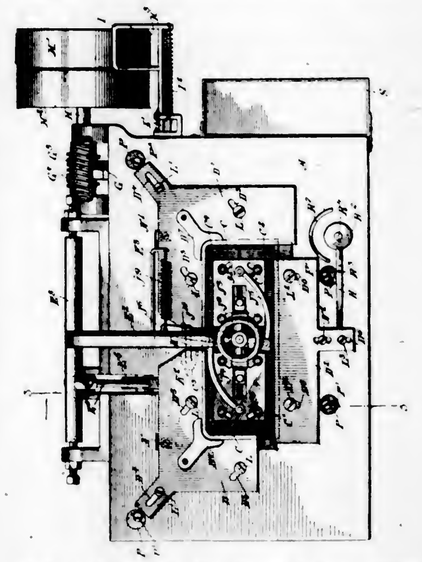
856,694. APPARATUS FOR FORMING TAPERING TUBES. JOHN GRIBBEN, Sharpsburg, Pa., assignor of one-half to David J. Morgan, Pittsburg Pa. Filed Jan. 23, 1907. Serial No. 353,737.

Claim.—1. In an apparatus for forming tapering tubes, the combination of supporting housings, two pairs of tapered rolls journaled in said housings and disposed with the rolls of each pair opposite to each other to provide a tapering pass having its greatest cross sectional area adjacent one of the housings, means for driving said rolls in unison, and a feeding mechanism comprising an endless conveyer, a movable head arranged to be detachably connected with said conveyer and means for securing a tube in said movable head.

2. In an apparatus for forming tapering tubes, four suitably supported tapering forming rolls disposed to form a tapering pass between the rolls having its greatest cross sectional area at one end of the rolls, means at one end of said rolls for driving the same in unison, means at the other end of said rolls for feeding a tube into the said tapering pass, comprising an endless conveyer, a movable head arranged to be carried along by said conveyer toward the pass between the rolls and means for securing a tube in said movable head.



856,695. CREASING AND FOLDING MACHINE FOR COLLARS, CUFFS, AND THE LIKE. HENRY GERHARDT, Hazleton, Pa. Filed Mar. 17, 1905. Serial No. 250,595.



Claim.—1. A creasing and folding machine provided with a former-made in separate parts, a carrier having oblique slots in which the former-parts are mounted to

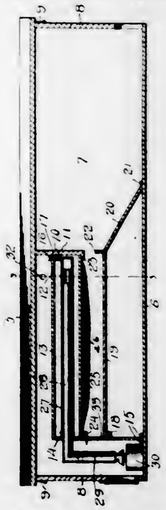
slide toward and from each other, a lever mounted to rock and carrying the said carrier, a rock-shaft journaled in a part of the said lever, means for connecting the said rock-shaft with the said former-parts, to slide the same obliquely toward and from each other, a spring connected with the said rock-shaft, for turning the latter in one direction, and a mechanism connected with the said rock-shaft, for turning it in the opposite direction against the tension of the said spring, the said mechanism comprising an arm on the rock-shaft, a lever for imparting motion to the said arm and a revoluble cam acting on the said lever.

2. A creasing and folding machine provided with a table, folding plates having slots, bolts slidable in the said table and extending through the said slots, a spring frame connected with the said bolts, levers bearing on the said frame, cams acting on the said levers, to place the latter under tension, arms secured to the said folding plates, revoluble cams engaging the said arms, to impart motion to the same in one direction, and springs pressing the said arms, to return the folding plates into an outermost open position.

3. A creasing and folding machine provided with a table, means for forming flaps and folding the same onto the fabric-body resting on the table, means for automatically raising the fabric-body off the table, a pair of clamping jaws mounted to revolve and adapted to engage the raised fabric, and means for closing the said jaws, to clamp the raised fabric and carry it to one side.

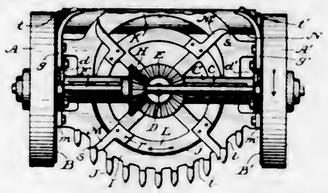
4. A creasing and folding machine provided with a table, means for forming flaps and folding the same onto the fabric-body resting on the table, means for automatically raising the fabric-body off the table, a pair of clamping jaws mounted to revolve and adapted to engage the raised fabric, means for closing the said jaws, to clamp the raised fabric and carry it to one side, and means for opening the jaws for the latter to drop the fabric.

856,696. BROODER. DAVID K. GROFF, Cerro Gordo, Ill. Filed Mar. 28, 1906. Serial No. 308,552.



Claim.—In a brooder, a brooder casing comprising a top, a floor, side walls, a rear end wall and a front end wall, a partition depending transversely from said top centrally thereof, a hover comprising a rear end wall spaced away from the rear end wall of said casing, a floor supported from said rear end wall, and having an inclined front portion resting upon the floor of said casing, and a heating chamber constituting as an entirety the top of said hover and comprising a top plate supported from said rear end wall of said hover and from said partition, said top plate being spaced away from the top of said casing, a bottom plate supported from the said rear end wall of said hover and from said partition and spaced away from the floor of said hover, and a heat retaining receptacle between said top and bottom plates, said heat retaining receptacle communicating with the space between said rear end walls of said hover and said brooder casing, a lamp in the space between said rear end walls and a pipe leading from said lamp to said heat retaining receptacle, said brooder casing having a ventilator opening in one of the walls thereof, said hover having a ventilator opening in the rear end wall thereof.

856,697. MOWER. WILLIAM W. HARE and HENRY H. HARE, Noblesville, Ind., assignors of one-third to Albert Garver, Otisco, Ind. Filed Apr. 16, 1906. Serial No. 311,869.



Claim.—1. A mower including, in combination, a pair of carrying wheels, a pair of disks mounted in the wheels, a frame member secured fixedly to the pair of disks and having a journal-box midway between the disks, a vertical rotative shaft mounted in the journal-box, a miter gear wheel secured to the shaft and upon the journal-box, a drive shaft mounted in the pair of disks, a miter gear wheel secured to the drive shaft between the disks in engagement with said other gear wheel, driving connections between one of the carrying wheels and said drive shaft, a finger-bar secured to the pair of disks, a sickle-wheel attached to said rotative vertical shaft, and a sickle secured to the sickle-wheel.

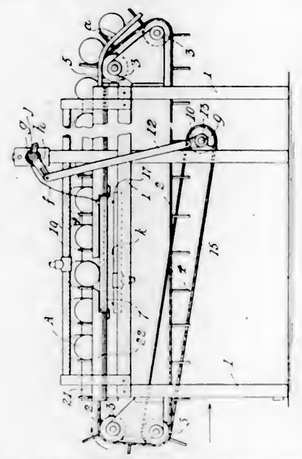
2. A mower including, in combination, a pair of carrying wheels, a pair of disks having axles mounted in the wheels and forming parts of a frame, a frame member secured fixedly to the pair of disks and having a journal-box midway between the disks, a vertical shaft mounted in the journal-box, driving connections between the shaft and one of the carrying wheels, a sickle-wheel secured to the shaft beneath the journal box, a curved finger-bar having the end portions thereof attached adjustably to the frame at the disks thereof, and a sickle secured to the sickle-wheel.

3. A mower including, in combination, a pair of carrying wheels, a frame member having a pair of disks attached thereto and mounted in the wheels, each disk having two screw-bolts connected thereto, a vertical shaft mounted rotatively in the frame member midway between the disks, a drive-shaft mounted in the disks above the frame member, driving gearing between the drive-shaft and one of the carrying wheels, driving gearing between the drive-shaft and the vertical-shaft, a sickle-wheel secured adjustably to the vertical shaft, a sickle secured to the sickle-wheel, and a curved sickle-bar having slotted arms receiving the screw-bolts and thereby secured adjustably to the disks, each end of the sickle-bar having one arm extending vertically and the slot therein being vertical.

4. In a lawn mower, the combination of a hollow main frame member having two flanges at opposite ends thereof, each flange having a disk secured thereto and each disk having two screw-bolts connected thereto, carrying wheels connected to the disks, a rotative drive-shaft mounted in the disks above the main frame member, gearing between the drive-shaft and one of the carrying wheels, a rotative vertical shaft journaled in the frame member midway between the disks, a sickle-wheel secured to the vertical

shaft below the said frame member, gearing between the drive-shaft and the rotative-shaft, a sickle secured to the sickle-wheel, a curved finger-bar having on each one of the two ends thereof an arm engaging one of the disks and having a slot therein receiving the two screw-bolts, a curved rear guard having ears connected to the disks, a pair of housings attached to the disks, and a roller journaled in the housings.

856,698. CAN-SOLDERING MACHINE. EMORY F. HARTLOVE, Baltimore, Md. Filed Feb. 2, 1907. Serial No. 355,348.



Claim.—1. In a soldering machine, an endless sprocket chain having carriers thereon, an inclined rail to support the upper lay of the chain, the said rail having flanges which extend above the sprocket chain, and upon which the cans bear when moved longitudinally of the machine by the carriers, and means to heat the cans during their movement, combined with a soldering block having a groove for solder, and means to heat the soldering block, substantially as specified.

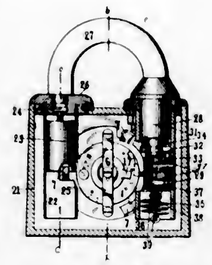
2. In a soldering machine, an endless sprocket chain having carriers thereon, an inclined rail to support the upper lay of the chain, the said rail having flanges which extend above the sprocket chain, and upon which the cans bear when moved longitudinally of the machine by the carriers, and means to heat the cans during their movement, combined with a soldering block having a groove for solder and a passage leading from the groove into which solder may be fed, and means to heat the soldering block, substantially as specified.

856,699. DRILL-CHUCK. FELIX G. H. HEYNAU, Dotzheim, near Wiesbaden, Germany. Filed Nov. 27, 1906. Serial No. 345,410.



Claim.—In a chuck, a holder (*a*) having an axial cavity and symmetrically arranged radial slots, freely movable clamping means seated in said slots, a series of cam rings secured to the holder (*a*) and surrounding said clamping means and relatively rotatable with respect thereto, each ring having a cam surface of a graduated pitch extending substantially around its inner periphery, the several rings being symmetrically arranged in said holder (*a*) and angularly displaced to correspond with the position of said clamping means, substantially as described.

856,700. COMBINATION-LOCK. ARTHUR W. HOAG, New York, N. Y. Filed Aug. 14, 1906. Serial No. 330,530.



Claim.—1. A combination lock comprising an index plate, a dial plate; a spindle projecting therefrom; a wheel provided with peripheral sockets secured to said spindle; a plurality of notched disks loosely mounted on said spindle, one of which is secured to any desired socket on the wheel, laterally projecting pins secured to each of said notched disks at a predetermined point; a locking bolt 39; and means controlled by said notched disks for throwing the bolt.

2. A combination lock comprising an index plate, a dial plate; a spindle projecting therefrom; posts extending from the index plate; a bridge connecting said posts and forming a bearing for one end of said spindle; an indicator 17 on said spindle; a wheel provided with peripheral sockets secured to said spindle; a plurality of notched disks loosely mounted on said spindle one of which is secured to any desired socket on the wheel; a laterally projecting pin secured to each of said notched disks at a predetermined point; a spring between the bridge and disks to maintain the parts in frictional engagement; a locking bolt; and means controlled by said notched disks for throwing the bolt.

3. A combination pad lock comprising a frame provided with an opening in one face adapted to receive the combination mechanism; a shackle movably mounted in the frame; a plate; combination mechanism mounted on said plate; hooks projecting from said plate; a movable sleeve secured in the frame and adapted to engage one of said hooks; and means for moving said sleeve into or out of engagement with said hook whereby the combination mechanism is secured to or released from the frame.

4. A combination pad lock comprising a frame; a sleeve in said frame provided with locking or bolt sockets 29; a shackle movably mounted in the frame; a spindle mounted in the frame; a plurality of notched disks on said spindle; a bolt plate carried by the end of the shackle within the frame; a dog and bolts carried by said plate, the bolts being adapted to enter the sockets; means for alining the notches in said disks to receive the dog whereby the bolts will be withdrawn from the bolt holes permitting the lock to be opened.

5. A combination pad lock comprising a frame; a spindle in said frame; a plurality of notched disks on said spindle; a slotted sleeve secured to the frame; a shackle movably secured in said frame; a bolt plate loosely secured to the end of said shackle within the frame; a dog and bolts carried by said plate, the bolts being adapted to enter slots in the sleeve; means for alining the notches on the disks opposite the dog for the purpose of withdrawing the bolts from the slots and moving the shackle to open the lock.

6. A combination pad lock comprising a frame; a spindle in said frame; a plurality of notched disks loosely

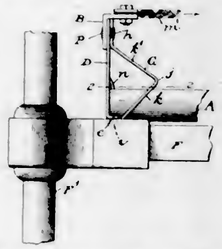
mounted on said spindle; a slotted sleeve secured in said frame; a shackle movably mounted in said sleeve; a spring connecting said shackle and sleeve whereby the shackle is revolved on lifting it; a bolt plate loosely secured to said shackle within the sleeve; a dog and bolts carried on said bolt plate the bolts being adapted to enter slots in the sleeve; means for alining the notches on the disks opposite the dog for the purpose of withdrawing the bolts from the slots and moving the shackle.

7. A combination pad lock comprising a frame; a spindle in said frame; a plurality of notched disks loosely mounted on said spindle; a slotted sleeve secured in said frame; a shackle movably mounted in said sleeve; a bolt plate loosely secured to the end of the shackle within the frame; a spring secured to the bolt plate and the sleeve to exert a downward pressure on the shackle, a dog and bolts carried by said plate the bolts being adapted to enter the slots in the sleeve; means for alining the notches on the disks opposite the dog for the purpose of withdrawing the bolts from the slots and moving the shackle.

8. A combination pad lock comprising a frame, a spindle in said frame; a plurality of notched disks loosely mounted on said spindle; a slotted sleeve secured in the frame; a shackle movably mounted in the sleeve; a spring connecting the shackle and sleeve whereby the former is revolved on lifting it; a bolt plate loosely secured to the end of the shackle within the sleeve; a spring secured to the bolt plate and sleeve to exert a downward pressure on the shackle; a dog and bolts carried by said plate; the bolts being adapted to enter the slots in the sleeve; means for alining the notches in the disks opposite the dog for the purpose of withdrawing the bolts from the slots and moving the shackle.

9. A combination pad lock comprising a frame; combination mechanism consisting of an index plate; hooks on said plate; a dial plate; a spindle projecting therefrom a wheel provided with peripheral sockets secured to the spindle; a plurality of notched disks loosely mounted on said spindle; one of which is secured to any desired socket in the wheel; a laterally projecting pin on each of said disks at a predetermined point; a movable sleeve secured to the frame and adapted to engage a hook on the index plate; means for moving said sleeve into or out of operative engagement with the hook; a second slotted sleeve fixed to said frame; a shackle movably mounted in said sleeve; a spring connecting said shackle and sleeve whereby a rotary movement is given the former on lifting it; a bolt plate loosely secured to the end of the shackle within the sleeve; a second spring connecting the bolt plate and sleeve whereby a downward pressure is exerted on the shackle; a dog and bolts on said plate the bolts being adapted to enter the slots in the sleeve; means for alining the notches in the disks opposite the dog for the purpose of withdrawing the bolts from the slots and moving the shackle.

856,701. BED-RISER FOR WOVEN-WIRE MATTRESSES. JAMES M. HOLLAND and FRANKLIN HOLLAND, Baltimore, Md. Filed Apr. 10, 1907. Serial No. 367,329.



Claim.—1. A sheet-metal riser for the support of woven-wire mattresses comprising an upright plate, D, and an angle-shaped brace attached to the side of the said upright plate—said brace having a horizontal bend intermediate of its vertical ends, said bend forming two inclines and the inclined part below the said bend provided with a hole adapted to receive the end of a stretcher tube, as set forth.

2. The combination of a woven-wire mattress; the usual stretcher tubes one at each side-edge of said mattress; and a sheet-metal riser having an upright plate which supports one corner of the mattress a brace attached to one side of said upright plate and having an upper and lower incline—the latter incline provided with a hole which receives the end of one of said stretcher tubes, and between the two inclines a bend which has position on top of said stretcher tube, whereby the necessity of a bolt or other fastener to couple the riser with the said tube is obviated.

3. A sheet-metal riser for the support of woven-wire mattresses comprising an upright plate, D, and an angle-shaped brace attached to the side of the said upright plate—said brace having a horizontal bend intermediate of its vertical ends, said bend forming two inclines and the inclined part below the said bend provided with a hole adapted to receive one end of a stretcher tube and means integral with the riser for engaging the tube to prevent the tube from turning when in said hole, as set forth.

856,702. CONCRETE GUTTER. MARTIN F. HOWLEY, Pittsburg, Pa. Filed Sept. 17, 1906. Serial No. 334,851.



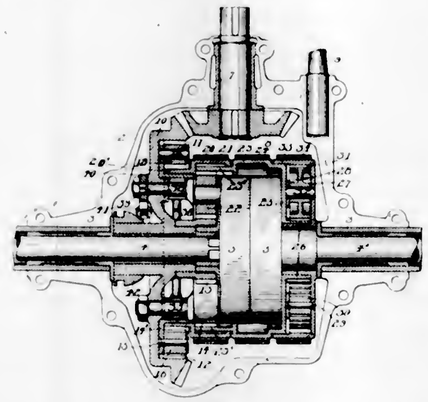
Claim.—1. A road drain comprising a concrete gutter, a cross section of which is in the form of a depressed drainage-receiving body-portion terminating in oppositely-disposed positioning and anchoring flanges of equal length with the body portion, the walls of said body-portion and said anchoring flanges extending in relatively reverse directions from the top plane of the gutter, each flange extending in a direction angular with respect to and lying without the plane of a line drawn vertically through the point of juncture of the flange and the side-wall of the gutter, the body-portion and flanges being of substantially equal thickness throughout the width of the gutter.

2. A road drain comprising a concrete gutter, a cross section of which is in the form of a depressed drainage-receiving body-portion terminating in oppositely-disposed positioning and anchoring flanges of equal length with the body portion, the free edges of said flanges being below the top plane of the gutter and spaced from the walls thereof, each flange extending in a direction angular with respect to and lying without the plane of a line drawn vertically through the point of juncture of the flange and the side-wall of the gutter, said body-portion and flanges being substantially free from surface projections and of equal thickness throughout the width of the gutter.

3. In an open-top gutter composed of concrete and adapted to form a drain for roadways, the herein-described gutter-section consisting of a body or trough portion provided with anchoring flanges extending from the side walls of the trough portion and projecting below the top plane of said side wall, each flange extending in a direction angular with respect to and lying without the plane of a line drawn vertically through the point of juncture of the flange and the side-wall of the gutter, the free edges of the anchoring flanges being spaced from said side walls, said anchoring flanges being continuous throughout the length of the section, and said body-portion and anchoring flanges being of substantially equal thickness throughout the width of the gutter and free from surface projections.

4. A concrete gutter adapted for use as a drain for roadways comprising a concavo-convex body portion, having its edges turned downward and projected horizontally to provide anchoring flanges.

856,703. DRIVING-GEAR FOR MOTOR-CARS, &c. LORENZ IVERSEN, Pittsburg, Pa. Filed Mar. 25, 1907. Serial No. 364,414.



Claim.—1. The combination of a main driven wheel having a cogged surface, a driven shaft, a set of planetary gears carried by the latter and meshing with the cogged surface of the driven wheel, a brake wheel having a cogged surface in mesh with the planetary gears, means for rigidly connecting the main driven wheel and the driven shaft, and brake-wheel holding means.

2. The combination of a main driven wheel having two cogged surfaces, a driven shaft, two sets of planetary gears rotatable therewith—one for each of the cogged surfaces of the driven wheel, cogged brake wheels—one in mesh with each set of planetary gears, and brake-wheel holding means.

3. The combination of a main driven wheel having cogged surfaces, a driven shaft, sets of planetary gears carried by the shaft—one set in mesh with each of said surfaces, overlapping brake wheels having their braking surfaces arranged side by side, each brake wheel having a cogged surface in mesh with a set of said planetary gears, and brake wheel holding means.

4. The combination of a main driven wheel having an internally cogged surface, a driven shaft extending through said wheel, a casing mounted on the driven shaft, an annular projection on the casing concentric with the shaft and driven wheel and extending into the plane of the internal cogged surface of the latter, a set of planetary gears journaled on the annular projection and meshing with said internal cogged surface, clutch mechanism adapted to engage the projection for rigidly connecting it with the main driven wheel, a brake wheel having a cogged surface in mesh with the planetary gears, and brake wheel holding means.

5. The combination of a main driven wheel having an internally cogged surface, a driven shaft extending through said wheel, a part mounted on the shaft having an annular extension projecting into the plane of said cogged surface, a set of planetary gears journaled on the said extension and meshing with said cogged surface, a brake wheel having a cogged surface interposed between said extension and the planetary gears and meshing with the latter, clutch mechanism carried by the main driven wheel and adapted to engage the interior of said extension, and brake-wheel holding means.

6. The combination of a main driven wheel having an internally cogged rim, a driven shaft extending through said wheel, a part mounted on the shaft, an annular flange projecting from said part into the driven wheel, a set of planetary gears on the exterior of the flange and journaled thereto and meshing with the cogged rim of the driven wheel, a brake wheel having a cogged surface interposed between said flange and the planetary gears and meshing with the latter, clutch mechanism carried by the main driven wheel and adapted to engage the interior of said flange, and brake-wheel holding means.

7. The combination of a main driven wheel having cogged surfaces of different diameters, a driven shaft extending through the wheel, a casing mounted on the shaft and having a flange, a set of planetary gears journaled on the flange and meshing with one of the cogged surface of said wheel, a brake wheel having a cogged surface meshing with said planetary gears, a second set of planetary gears journaled on said casing and meshing with the other cogged surface of the driven wheel, a brake wheel having a cogged surface in mesh with said second set of planetary gears, and break-wheel holding means.

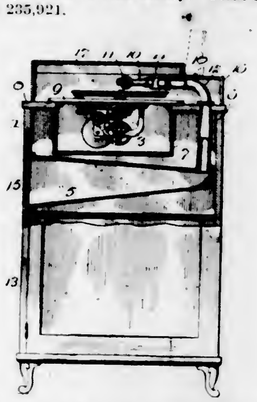
8. The combination of a main driven wheel having internally and externally cogged surfaces of different diameters and in different planes, a driven shaft extending through the wheel, a casing mounted on the shaft, a flange on the casing traversing the planes of said cogged surfaces, a set of planetary gears journaled on the flange and meshing with the internally cogged surface of the driven wheel, a brake wheel having a cogged surface interposed between said flange and the planetary gears and meshing with the latter, a second set of planetary gears journaled on said casing in the plane of said brake wheel and meshing with the interiorly cogged surface of the driven wheel, a second brake wheel having a cogged surface interposed between the first brake wheel and the second set of planetary gears and meshing with the latter, and clutch mechanism carried by the driven wheel and operative in the plane of the first mentioned set of planetary gears for engaging the casing flange, and brake wheel holding means.

9. The combination of a main driven wheel having an externally cogged surface, a shaft extending through the wheel, a casing mounted on the shaft, a set of planetary gears journaled on the casing and meshing with the exteriorly cogged surface of the driven wheel, a wheel having external and internal cogged surfaces with the latter in mesh with said planetary gears, a gear carrier rotatable with the casing, a set of planetary gears journaled on the gear carrier and meshing with the exteriorly cogged surface of the last mentioned wheel, a brake wheel having an internal cogged surface in mesh with the last mentioned set of planetary gears, and brake-wheel holding means.

10. The combination of a main driven wheel having cogged surfaces, a driven shaft, a differential gear casing mounted on the shaft, two sets of planetary gears carried by the gear casing—one set for each of the cogged surfaces of the driven wheel, two combined brake wheels and gears—one for each set of planetary gears, mechanism for rigidly connecting the driven wheel and the said gear casing, and brake wheel holding means.

11. The combination of a main driven wheel having cogged surfaces, a driven shaft, a differential gear casing mounted on the shaft, two sets of planetary gears carried by the gear casing—one for each cogged surface of the driven wheel, two combined brake wheels and gears—one of the brake wheels extending around the periphery of said gear casing and inward over one side of the latter and at said inwardly extending portion provided with a cogged surface, a set of differential gears meshing with said last mentioned cogged surface, a carrier rigid with the gear casing for the last mentioned set of differential gears, a brake wheel having a cogged surface for meshing with said last mentioned differential gears, and brake wheel holding means.

856,704. TALKING-MACHINE. ELDRIDGE R. JOHNSON, Merion, Pa., assignor to Victor Talking Machine Company, a Corporation of New Jersey. Filed Dec. 8, 1904. Serial No. 235,921.



Claim.—1. A talking machine comprising a main casing, a movable closure for said casing, a sound reproducer within said main casing, a motor for said reproducer, a sound conveyer extending from said reproducer toward said closure, and a wall separating said motor from said sound conveyer.

2. A sound reproducing machine comprising a main inclosing cabinet, a sound reproducer within said cabinet, a motor for said reproducer, an inner motor compartment for said motor, an amplifying horn, a movable closure for said main cabinet in front of the mouth of said horn, and a sound conveying tube connecting said reproducer with said horn.

3. A sound reproducing machine comprising a main casing, an adjustable closure for said casing, a sound reproducer within said casing, an inner motor casing, a motor within said casing, a sound conveyer extending from said reproducer toward said closure beneath said motor.

4. A sound reproducing machine comprising a sound reproducer inclosed within a main casing, an inner motor casing, an amplifying horn beneath said casing, a sound conveyer connecting said reproducer with said amplifying horn, an adjustable closure in the front of the main casing and in front of the mouth of said horn.

5. A sound reproducing machine comprising a main casing, a sound reproducer within said casing, a motor compartment within said main casing, a motor in said compartment, an amplifying horn, a sound conveyer connecting said reproducer with said amplifying horn, a hinged door for said main casing in front of said amplifying horn to deflect and modify the reproduced sound.

6. A sound reproducing machine comprising a sound reproducer inclosed within a main casing, an inner motor casing, a motor within said casing, an amplifying horn beneath said casing, a series of small compartments for records below said horn, a sound conveyer connecting said reproducer with said amplifying horn, an adjustable closure in the front of the main casing and in front of the mouth of said horn.

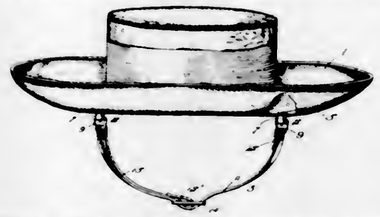
7. A sound reproducing machine comprising a main casing, a removable cover upon said main casing, a sound reproducer within said main casing, a motor compartment within said main casing, a motor within said compartment, an amplifying horn, a sound conveyer connecting said reproducer with said sound amplifying horn, a hinged door in said main casing in the front of said amplifying horn to deflect and modify the reproduced sound.

8. A sound reproducing machine comprising a main casing, a sound reproducer within said casing, a motor, an amplifying horn and a sound conveyer, connecting said reproducer with said amplifying horn all within said casing, a door for said main casing in front of said amplifying horn to deflect and modify the reproduced sound.

9. The combination with a talking machine and an amplifying horn connected thereto, of a casing completely inclosing said talking machine and horn, and swinging door in said casing located adjacent the mouth of said horn for modifying the sound emitted from the horn.

10. A sound reproducing machine comprising a main casing, a reproducer inclosed within said main casing, a motor within said main casing, an amplifying horn in said casing, a series of small compartments for records below said horn, a sound conveyer connecting said reproducer with said amplifying horn, an adjustable closure in the front of the main casing and in front of the mouth of said horn.

856,705. HAT-FASTENER. FRANK C. KAVANAGH, Seattle, Wash. Filed Dec. 15, 1906. Serial No. 348,014.



Claim.—1. In a hat fastener, the combination of fastening devices, each fastening device comprising a threaded member, a revoluble locking member, said locking member provided with a pair of apertures formed in diametrically opposite portions thereof, a bail provided with horizontal ends extending toward each other, the ends of said bail positioned within the apertures of said locking member, and means connecting the bails of the fastening devices.

2. In a hat fastener, the combination of fastening devices, each fastening device comprising a threaded-member provided with a head at one end and having its opposite end pointed, a locking member provided with a longitudinally extending aperture, threaded upon said threaded-member, said locking member provided with apertures positioned at an angle to said first-mentioned aperture, a connecting-member, and means positioned within the last-mentioned apertures of said locking members and connecting said connecting-member to said locking members.

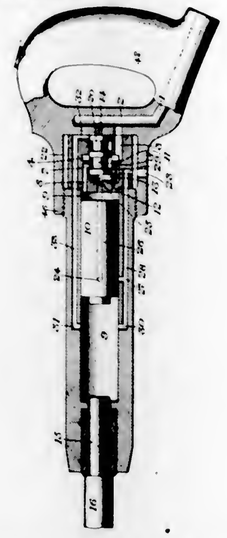
3. In a hat fastener, the combination of fastening devices, each fastening device comprising a stationary member, a revoluble locking member carried by said stationary member, a pivotally mounted bail clamping said locking member, and means connecting the bails of said fastening devices.

856,706. PNEUMATIC TOOL. WILLIAM H. KELLER, Philadelphia, Pa. Filed Jan. 9, 1906. Serial No. 295,230.

Claim.—1. In a pneumatic tool, a balanced valve, composed of two outer ungrooved heads and a central head all of uniform diameter, necks joining said heads, a valve box, having a rearwardly extending valve chamber, means for directing constant pressure upon said outer heads of said valve, and means for creating an exhaust passage intermittently at each end of said valve, said valve and valve box being in alinement with their piston.

2. In a pneumatic tool, a cylinder, a piston therein, a valve chamber open at its rear end, a valve in said chamber in alinement with said piston and, having a plurality of ungrooved heads of uniform diameter joined by necks, an inlet groove in said valve chamber controlled by said valve, ports and passages controlled by said valve for leading the motive fluid toward and away from the ends of said piston, ports leading into the front and rear portions of said valve chamber for admitting live motive fluid constantly to the ends of said valve, and passages controlled by the piston for permitting intermittent exhaust from the ends of said valve.

3. In a pneumatic tool, a cylinder, a piston therein, a valve box, a valve chamber open at its rear end, a valve in said chamber, having a central head and two outer ungrooved heads of uniform diameter joined by necks, an inlet groove in said box, controlled by said central head, ports and passages controlled by said heads, for leading the motive fluid toward and away from the ends of said piston, ports leading into the front and rear portions of said valve chamber for admitting live motive fluid constantly to the outer ends of said valve and passages controlled by the piston for permitting intermittent exhaust from the ends of said valve.



4. In a pneumatic tool, a cylinder, a coverless valve box made in one piece, a balanced valve therein in alinement with said cylinder and having equal pressure areas formed of solid heads of the same diameter, means for directing constant pressure upon the outer area of each of said heads, and a handle secured to said cylinder and having its inner wall contacting with the rear wall of said valve box so as to form the rear closure for said valve box.

5. In a pneumatic tool, a cylinder, a coverless valve box made in one piece, a balanced valve therein having constant pressure on its ends, and a handle secured to said cylinder and having its inner wall contacting with the rear wall of said valve box so as to form the rear closure for said valve box, in combination with means for creating an exhaust passage intermittently at each end of said valve.

6. In a pneumatic tool, a cylinder, a valve chamber, a balanced valve in alinement with said cylinder and having heads of equal diameter adapted to be inserted in said chamber either end foremost, a handle secured to said cylinder, and having its inner wall forming a closure for said valve chamber, a main pressure supply duct leading through said handle to said valve box, a port leading from said supply duct to the rear end of said valve chamber, for conducting live motive fluid constantly thereinto, and a second port leading through said valve box, for conducting live motive fluid constantly to the front end of said valve.

7. In a pneumatic tool, a cylinder, a valve box having a valve chamber open at its rear end, a balanced valve in alinement with said cylinder and having heads of equal diameter adapted to be inserted in said chamber either end foremost, a grasping handle secured to said cylinder, and having its inner wall forming a closure for said valve chamber, a main pressure supply duct leading through said handle to said valve box, a port leading from said supply duct to the rear end of said valve chamber, for conducting live motive fluid constantly thereinto, and a second port leading through said valve box, for conducting live motive fluid constantly to the front end of said valve.

8. In a pneumatic tool, a valve for controlling ports common thereto and to a piston and consisting of a solid body having ungrooved outer and intermediate heads joined by necks, the outer ends of said valve being always exposed to live fluid pressure and intermittently to the exhaust and said valve being located exteriorly to said piston in alinement therewith and adapted to move in the same direction as said piston.

9. In a pneumatic tool, a solid piston, a valve adapted to move in the same direction as the latter, said valve consisting of a body provided with the outer and intermediate heads joined by necks, said outer heads being ungrooved and always exposed to live fluid pressure and said central head being alternately exposed on either side to a greater volume of live fluid pressure, said heads being of the same diameter and said valve being located out of the path of said piston, the movement of the latter terminating exterior to said valve and the latter being provided with exhaust passages which are open intermittently at each end of said valve.

10. In a pneumatic tool, the combination of a cylinder, a piston, ports and passages for conducting the motive fluid to and from said piston, a one piece valve box secured to an end of said cylinder and a solid balanced valve having heads of uniform diameter in said valve box, the outer ends of said valve being ungrooved and always exposed to live fluid pressure and intermittently to the exhaust, said valve being located out of the path of said piston and moving in the same direction as said piston when the latter is in the act of striking a blow upon the working tool.

11. In a pneumatic tool, a valve consisting of a solid body having two ungrooved outer and intermediate heads, necks joining said heads, the area of said outer heads being the same and having live motive fluid constantly acting thereupon, said heads being open intermittently to the exhaust and said valve being out of the path of the piston in alinement therewith and moving in the same direction as said piston.

12. In a pneumatic tool, the combination of a cylinder containing a piston, a one piece valve box located out of the path of the piston, an unapertured valve in said valve box, the movement of said piston being in line with said valve and terminating exterior to said valve which latter is provided with opposing pressure areas against which live motive fluid constantly acts, said opposing pressure areas being of the same diameter and intermittently open to exhaust and said valve moving in the same direction as said piston.

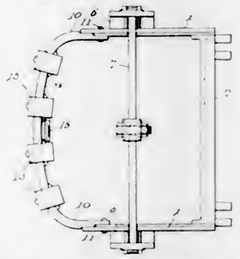
13. In a pneumatic tool, a cylinder, a piston therein, a one piece valve box, an unapertured valve therein moving in the same direction as said piston in line therewith and located at the rear and out of the path thereof, the movement of said piston terminating exterior to said valve, a handle engaging said cylinder and forming the assembling means for said valve box and cylinder, a valve, a pressure supply duct of comparatively large area leading to said valve chamber and live air passages of a reduced area leading from the pressure supply duct of said handle to the ends of said valve chamber.

14. In a pneumatic tool, a cylinder, a one piece valve box located at an end thereof, a handle having thereon means engaging said cylinder for holding the latter, and said valve box in assembled position, a valve in said valve box, a pressure supply duct leading from said handle into said valve box, a groove in the latter for leading motive fluid to opposite portions of said valve, live air passages 14, 11 and 12 for leading a restricted supply of live motive fluid into each end of said valve box, the port 25, passage 26, port 24, port 27, passages 28 and port 29 for permitting exhaust of motive fluid from the forward end of said valve, a port 32, passage 33, port 31 and port 30 for permitting exhaust of the motive fluid from the rear end of said valve, said ports 30 and 27 being controlled by the piston as it nears the extreme limit of its stroke, in each direction, passages 7 and 8 in said valve box for permitting the entrance of motive fluid to drive the piston forwardly,

said passages serving as exhaust passages as the piston moves in a rearward direction, passages 19, 18 and 17 for permitting the inlet of the motive fluid to drive the piston rearwardly and a passage 21 serving in conjunction with said passages 19, 18 and 17 to permit exhaust from the forward end of said piston when the latter moves in a forward direction.

15. In a pneumatic tool, a cylinder, a piston therein, a valve box, a solid balanced valve therein having three heads of uniform diameter, said valve moving in substantial alinement with said piston, means for directing constant pressure upon each outer head of said valve, and means for creating exhaust intermittently at each end of said valve, whereby the same valve and valve box can be used interchangeably with a solid or ungrooved piston, or with a long stroke or short stroke cylinder.

856,707. EXCAVATING-DIPPER. GEORGE W. KING, Marion, Ohio, assignor to The Marion Steam Shovel Company, Marion, Ohio, a Corporation of Ohio. Filed Jan. 7, 1907. Serial No. 351,033.



Claim.—1. A dipper of the character described, comprising a body portion and a front detachably secured thereto, substantially as described.

2. A dipper of the character described, comprising a body portion, a front detachably secured to said body portion, and a lip formed integral with said front, substantially as described.

3. A dipper of the character described comprising a body portion, and a front of cast metal secured thereto, substantially as described.

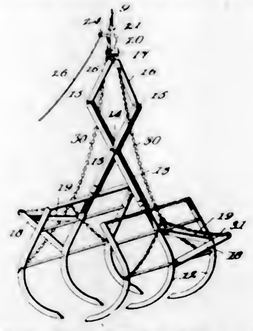
4. A dipper of the character described comprising a body portion, a front of cast metal, and teeth secured to the upper edge of said front, substantially as described.

5. A dipper of the character described comprising a body portion, a front of hard rigid steel detachably secured thereto, teeth secured to the upper end of said front and having shanks extending on the opposite sides thereof, and projections on said front engaging the opposite sides of said shanks, substantially as described.

6. In a dipper of the character described, a body portion comprising side walls, back and bottom portions, a front of relatively heavy casting detachably secured to said side walls, a lip formed integral with said front, and relatively small teeth detachably secured to said lip, substantially as described.

856,708. GRAPPLE. ALCÉE LANDRY, Mark, La. Filed Sept. 14, 1906. Serial No. 334,612.

Claim.—1. In a grapple, the combination with a pair of jaws provided with extension arms pivotally connected together intermediate of their ends, of a pair of links pivotally connected together at one of their ends and at their other ends pivotally connected to the respective ends of said extension arms, and forming a lazy-tongs arrangement, a tripping device adapted to suspend the pivoted ends of said links, means for tripping said device to allow said lazy-tongs to collapse and initially open said jaws by the weight of the load, a leverage arm extending laterally and outwardly from each of said jaws and disposed in a position to be always to one side of said pivoting links and lazy-tongs and located at a substantial distance from the pivotal point of said jaws when said jaws are in their closed position, and intermediate means connected at one end to said tripping device and at their other ends branched and connected independently to said leverage arms and said jaws proper, substantially as described.



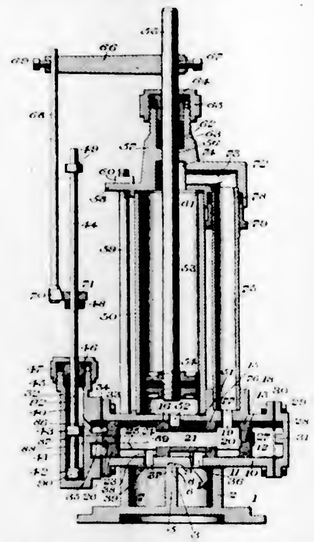
2. In a grapple, the combination with a pair of pivoted jaws, of a tripping device for detachably suspending said jaws from an elevating cable, comprising a spaced base member provided with a tripping lever bent substantially at right angles to form a long and short arm, said short arm being pivotally secured to said base member, a spring controlled latch pivotally mounted at the opposite end of said base member and notched to engage the free end of said long arm when disposed in a vertical position, means for operating said latch to trip said bent lever, and inextensible flexible connections interposed between said tripping device and said jaws, substantially as described.

3. In a grapple, the combination with a pair of jaws provided with extension arms pivotally connected intermediate of their ends, a pair of links pivotally connected together at one end and at their other end pivotally connected to the respective free ends of said extension arms forming a lazy-tongs arrangement; a tripping device adapted to suspend said lazy-tongs device comprising a spaced base member having a lateral extension thereon, and provided at its lower end with a pivoted curved arm adapted to seat, in its locked position between said spaced extension, and provided at its upper end with a spring-operated pivoted latch having a notched end adapted to engage the free end of said curved tripping arm; means for tripping said latch; a leverage arm provided on each of said jaws and extending outwardly therefrom at a position on one side of said pivotal points and said lazy-tongs arrangement, and inextensible flexible means connected to said tripping device at one end and at their other ends branched and connected independently to said leverage arms and said jaws proper, substantially as described.

856,709. WATER-MOTOR. ADOLPH LANG, Philadelphia, Pa., assignor of one-third to Harper F. Smith and one-third to Charles H. Zink, Philadelphia, Pa. Filed Apr. 24, 1906. Serial No. 313,433.

Claim.—1. In a water motor, a casing, having an inlet and an outlet chamber, a slide valve casing mounted thereon having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a piston casing mounted on said slide valve casing, the latter having ports therein communicating with opposite ends of said piston casing, a piston in said casing, a hollow slide valve provided with an annular groove always open to said inlet port and having an exhaust port therein always communicating with said slide valve casing exhaust port, there being ports in said slide valve alternately communicating with the ports leading to opposite ends of the piston casing, and means actuated by the movement of said piston for controlling said slide valve.

2. In a water motor, a casing having an inlet and an outlet chamber, a slide valve casing located thereon, a piston casing located on said slide valve casing, a piston in said piston casing, there being ports and passages leading from said slide valve casing into said piston casing and ports leading from said slide valve casing into said inlet and outlet chambers, a slide valve within the slide valve casing, means for preventing the rotation of said slide valve, and means for changing the position of said slide valve relative to the movement of said piston.



3. In a water motor, a casing, having an inlet and an outlet chamber, a slide valve casing mounted thereon having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a piston casing mounted on said slide valve casing, the latter having ports therein communicating with opposite ends of said piston casing, a piston in said casing, a hollow slide valve provided with an annular groove always open to said inlet port and having a port therein always communicating with said exhaust port, there being ports alternately communicating with ports opening into opposite ends of the piston casing, said slide valve being non-rotatably mounted in the slide valve casing, and means actuated by the movement of said piston for controlling said slide valve.

4. In a water motor, a casing having a diaphragm forming an inlet and an outlet chamber therein, said diaphragm having a tongue, a slide valve casing having a recess with which said tongue engages, there being an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a piston casing mounted on said slide valve casing, there being ports in the latter communicating with opposite ends of said piston casing, a piston mounted in said piston casing, a hollow slide valve having a plurality of annular grooves thereon, one of said grooves being always open to said inlet port, there being a port in said valve always open to the exhaust port and ports controlling admission and exhaust of fluid from opposite ends of the piston, a throw valve casing carried by the slide valve casing, there being ports and passages communicating with the slide valve casing and the throw valve casing to admit fluid through opposite ends of said slide valve, a throw valve in the throw valve casing for controlling such admission, a valve stem therefor, set collars carried by said stem, and means actuated by said piston and co-acting with said set collars to actuate said throw valve.

5. In a water motor, a casing having a diaphragm therein forming an inlet and an outlet chamber, there being a tongue extending from said diaphragm, a slide valve casing mounted above said chambers and having a recess with which said tongue engages, there being an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a piston casing mounted on said slide valve casing, there being ports communicating with opposite ends of said piston chamber, a piston in said chamber, a piston rod carried thereby, an arm adjustably mounted on said piston rod, a rod adjustably mounted in said arm, a bracket carried by said rod, a throw valve stem on which said bracket is movable, set collars on said stem with which said bracket co-acts to actuate said throw valve stem, a throw valve carried by said stem, and a slide valve in the slide valve casing controlling admission and exhaust of fluid to the piston casing, said slide valve being controlled by said throw valve.

6. In a water motor, a casing having a diaphragm forming an inlet and an outlet chamber therein, a slide valve casing mounted above said chambers and having an inlet port communicating with the inlet chamber and an outlet port communicating with the outlet chamber, a hollow slide valve non-rotatably mounted in the slide valve casing and having a plurality of annular grooves, one of said grooves being always open to the inlet port and having a port always open to the exhaust port, a piston casing mounted on the slide valve casing, there being ports communicating with opposite ends of the piston casing and with which the groove always open to the inlet port alternately registers, a piston in said piston chamber, there being exhaust ports in the slide valve alternately registering with ports communicating with opposite ends of the piston chamber, a piston rod carried by the piston, an arm adjustably mounted thereon, a tappet adjustably carried by said arm, a throw valve adapted to actuate said slide valve, a stem extending therefrom on which said tappet travels, and means adjustably mounted on said stem with which said tappet co-acts to actuate the throw valve.

7. In a water motor, a casing having a diaphragm dividing the same into an inlet and an outlet chamber, a slide valve casing mounted thereon and having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a hollow slide valve having a plurality of annular grooves mounted in said slide valve casing, one of said grooves being always open to the inlet port and one of said grooves being always open to the exhaust port, there being a port in the slide valve communicating with said latter groove, a piston casing mounted on said slide valve casing, the latter having ports communicating with the opposite ends thereof, said slide valve having ports therein alternately communicating with said latter ports, a throw valve casing adapted to close one end of the slide valve casing, and having a lug serving as a seat for said slide valve, a closure for the other end of said slide valve casing having a lug serving as a seat for the other end of the slide valve, and means actuated by the piston for admitting motive fluid to and exhausting motive fluid from opposite ends of the slide valve piston at a predetermined point in the travel of said piston.

8. In a water motor, a casing having a diaphragm dividing the same into an inlet and an outlet chamber, a slide valve casing mounted thereon having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a slide valve having imperforate ends mounted in said slide valve casing, a throw valve casing forming a closure for one end of said slide valve casing and having ports communicating with opposite ends of the slide valve casing, there being a feed port in the slide valve casing having a port always open to the inlet of fluid and communicating with the port opening into the throw valve casing, a reciprocating piston controlled by said slide valve, and a valve in the throw valve casing operatively connected with said piston, and controlling the ports in the throw valve casing and thereby the movement of said slide valve.

9. In a water motor, a casing having an inlet and an outlet chamber therein, a slide valve casing mounted thereon, means for preventing improper movement with re-

spect thereto, said slide valve casing having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a hollow slide valve having a plurality of annular grooves thereon mounted in said slide valve casing, one of said grooves being always open to the inlet port, there being a port in said valve always communicating with the exhaust port, a piston casing mounted on said slide valve casing, the latter having ports therein communicating with opposite ends of the piston casing, there being ports in the slide valve adapted to coact with said latter ports, a piston within the piston casing, a piston rod carried thereby, an arm adjustably mounted on said piston rod, a rod adjustably carried by said arm, a bracket carried by said rod, a throw valve controlling admission of motive fluid to opposite ends of the slide valve casing to actuate said slide valve, a valve rod extending from said throw valve, and set collars adjustably carried by said rod with which said bracket co-acts to actuate said throw valve.

10. In a water motor, a casing having an inlet and an outlet chamber therein, a slide valve casing mounted thereon, means for preventing improper movement with respect thereto, said slide valve casing having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a hollow slide valve having a plurality of annular grooves thereon mounted in said slide valve casing, one of said grooves being always open to the inlet port, there being a port in said valve always communicating with the exhaust port, a piston casing mounted on said slide valve casing, the latter having ports therein communicating with opposite ends of the piston casing, there being ports in the slide valve adapted to coact with said latter ports, a piston within the piston casing, a piston rod carried thereby, an arm adjustably mounted on said piston rod, a rod adjustably carried by said arm, a bracket carried by said rod, a throw valve controlling admission of motive fluid to opposite ends of the slide valve casing to actuate said slide-valve, a valve rod extending from said throw valve, and means for preventing the rotation of said slide valve.

11. In a water motor, a casing having a diaphragm forming an inlet and an outlet chamber, a slide valve mounted thereon and having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a closure for one end of said casing having an inwardly extending lug, a chambered throw valve casing adapted to close the other end of said casing and having an inwardly extending lug, a hollow slide valve mounted in the slide valve chamber and adapted to alternately engage said lugs, said valve having a plurality of annular grooves, one of said grooves being always open to the inlet port, one of said grooves being always open to the exhaust port, a piston casing, a piston therein, there being ports in the slide valve casing communicating with opposite ends of the piston casing and alternately serving as inlet and exhaust ports, means for conducting water from the inlet chamber into the chamber in the throw valve casing, means for conducting water from the throw valve casing to opposite ends of the slide valve casing, and a throw valve operatively connected with the piston and mounted in said chamber for controlling said means.

12. In a water motor, a casing having a diaphragm therein forming an inlet and an outlet chamber, a slide valve mounted thereon and having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a closure for one end of said casing having an inwardly extending lug, a chambered throw valve casing adapted to close the other end of said casing and having an inwardly extending lug, a hollow slide valve mounted in the slide valve chamber and adapted to alternately engage said lugs, said valve having a plurality of annular grooves, one of said grooves being always open to the inlet port, one of said grooves being always open to the exhaust port, a piston casing, a piston therein, there being ports in the slide valve casing communicating with opposite ends of the piston casing and alternately serving as inlet and exhaust ports, means for conducting water from the inlet chamber into the chamber in the throw valve casing, means for conducting water from the throw valve casing to opposite ends of the slide valve casing, said slide valve having the side contiguous the exhaust port faced off, and means carried by the slide valve casing engaging said faced off side for preventing the rotation of said slide valve.

13. In a water motor, a casing having a diaphragm forming inlet and outlet chambers, a slide valve casing mounted thereon having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, means for preventing any relative lateral movement of said casings, a hollow slide valve within said casing and having a plurality of annular grooves thereon, one of said grooves always communicating with the inlet port, and one of said grooves always communicating with the exhaust port, a piston casing mounted on the slide valve casing, the latter having ports therein communicating with opposite ends of the piston casing, a piston in said casing, a piston rod extending therefrom, an arm adjustably carried by said rod, a rod carried by said arm, a bracket carried by said rod, a removable closure for one end of the slide valve casing, a chambered throw valve casing for closing the other end of the slide valve casing, there being a passage communicating with the throw valve chamber and with the slide valve casing in proximity to the inlet port, there being passages leading from the throw valve chamber to opposite ends of the slide valve casing, a throw valve within the throw valve chamber adapted to control the passages leading therefrom, a valve stem extending from said throw valve, and set collars mounted thereon with which said bracket co-acts to actuate said throw valve.

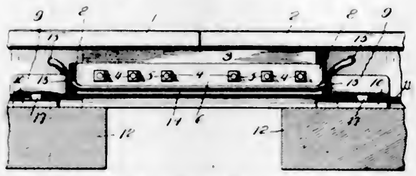
14. In a water motor, a casing having a diaphragm therein forming an inlet and an outlet chamber, a slide valve casing mounted thereon, means carried by said diaphragm and engaging said casing for preventing improper movement thereof, said slide valve casing having an inlet port communicating with the inlet chamber and an exhaust port communicating with the exhaust chamber, a hollow slide valve mounted in the slide valve casing and having a plurality of annular grooves, one of said grooves being always open to the inlet port, there being a port in said valve always open to the exhaust port, a piston casing mounted on the slide valve casing, the latter having ports communicating with opposite ends thereof and co-acting with one of the slide valve grooves to serve as inlet ports, said slide valve having ports therein co-acting with said ports to serve as exhaust ports, a throw valve casing forming a closure for one end of the slide valve casing and provided with a chamber, there being ports and passages leading therefrom communicating with opposite ends of the slide valve casing, there being a feed port communicating with the throw valve casing, and an exhaust port communicating with said casing, a throw valve having a plurality of heads thereon in said throw valve casing and adapted to admit water alternately to opposite ends of the slide valve, a piston within said piston casing, and means actuated by said piston for intermittently actuating the throw valve.

15. In a water motor, a casing having a diaphragm forming an inlet and an outlet chamber therein, a slide valve casing mounted thereon, means for preventing relative lateral movement of said casings, said slide valve having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a hollow slide valve non-rotatably mounted in the slide valve chamber having a plurality of annular grooves, one of said grooves always communicating with the exhaust port, one of said grooves always communicating with the inlet port, there being a port in the slide valve communicating with the exhaust port groove, a piston casing mounted on the slide valve casing, there being ports in the latter communicating with opposite ends of the piston casing and co-acting with one of said grooves to act as inlet ports, there being ports in the slide valve co-acting with said ports to serve as exhaust ports, means for forming a chamber at each end of the slide valve casing, a piston in the piston chamber, an arm adjustably carried thereby, a rod carried by said arm, a bracket carried by said rod, and means co-acting with said bracket to actuate said slide valve.

16. In a water motor, a casing having a diaphragm forming an inlet and an outlet chamber therein, a slide valve casing mounted thereon at right angles thereto, means for preventing relative lateral movement of said casings, said slide valve casing having an inlet port communicating with the inlet chamber, and an exhaust port communicating with the outlet chamber, a hollow slide valve non-rotatably mounted in the slide valve chamber and provided with a plurality of annular grooves, one of said grooves being always open to the inlet port and one of said grooves being always open to the exhaust port, said slide valve having a port communicating with the exhaust port groove, a piston casing mounted on the slide valve casing, there being ports through the latter communicating with opposite ends of the piston casing and alternately co-acting with one of said grooves to serve as inlet ports, said slide valve having ports therein alternately co-acting with said ports to serve as exhaust ports, a throw valve casing forming a closure for one end of the slide valve casing, and having ports and passages communicating with opposite sides of said slide valve casing and with a chamber in the throw valve casing, there being a communication between the inlet and the throw valve chamber and between the exhaust and the throw valve chamber, a throw valve mounted in said chamber controlling admission and exhaust to and from opposite ends of the slide valve casing, and means actuated by the piston for intermittently actuating the throw valve.

17. In a water motor, a casing having a diaphragm forming an inlet and an outlet chamber, a slide valve casing mounted thereon at right angles thereto, means for preventing relative lateral movement of said casings, said slide valve casing having an inlet port communicating with the inlet chamber and an exhaust port communicating with the outlet chamber, a hollow slide valve non-rotatably mounted in the slide valve chamber and provided with a plurality of annular grooves, one of said grooves being always open to the inlet port and one of said grooves being always open to the exhaust port, said slide valve having a port communicating with the exhaust port groove, a piston casing mounted on the slide valve casing, there being ports through the latter communicating with opposite ends of the piston casing and alternately co-acting with one of said grooves to serve as inlet ports, said slide valve having ports therein alternately co-acting with said ports to serve as exhaust ports, a throw valve casing forming a closure for one end of the slide valve casing, having ports and passages communicating with opposite sides of said slide valve casing and with a chamber in the throw valve casing, there being a communication between the inlet and the throw valve chamber and between the exhaust and the throw valve chamber, a throw valve mounted in said chamber controlling admission and exhaust to and from opposite ends of the slide valve casing, a removable cover for the piston casing, and means for fastening the casings together.

856,710. NUT-LOCK. WILLIAM W. LAUGHLIN, Linxor, Pa. Filed Aug. 20, 1906. Serial No. 331,280.



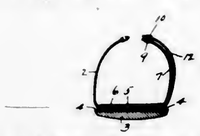
Claim.—A lock plate for the rail-joints of railways, comprising an elongated plate resting against the fish-plate of the rail-joint and provided with openings to receive and lock the nuts of the confining-bolts, and having rearwardly bent portions intermediate its ends provided with apertures to receive a rail bond, the end portions of the plate lying in a different plane from the body of the plate but parallel therewith and engaging the web of the rails beyond the ends of the fish plates, and integral outwardly-projecting extensions carried by said ends fitting the rail base and railway tie, and provided with openings to receive securing spikes.

856,711. TONGUE-SCRAPER. FANNY D. LEES, Philadelphia, Pa. Filed Mar. 28, 1906. Serial No. 308,562.



Claim.—A tongue scraper comprising a single strip of flat spring-wire bent upon itself to form a scraping loop, and having its end portions brought together to form a handle, and a ring adapted to slide upon the end portions to control the size of the loop.

856,712. ARCH-SUPPORT. DNA LIVIGNANO, Cleveland, Ohio. Filed Aug. 20, 1906. Serial No. 331,235.



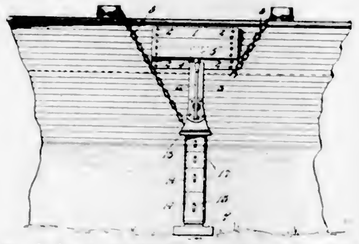
Claim.—1. In a shoe, the combination of the sole and upper, of an arch support composed of pliable material having the lower portion thereof suitably secured to the shoe adjacent the sole and having its upper portion provided with lacing holes, said holes being spaced apart a distance corresponding to the distance between the lacing holes in the upper, the depth of said support being less than the depth of the corresponding portion of the upper, substantially as specified.

2. In a shoe, the combination of the sole and upper, of an arch support of pliable material having its lower portion suitably secured adjacent the instep portion of the sole and having its upper edge inclined to correspond to the inclination of the upper edge of the upper, said support being provided adjacent its upper edge with lacing holes spaced equidistant with the lacing holes in the upper, said support being of less depth than the adjacent portion of the upper.

3. In a shoe, the combination of the sole and upper, of an arch support of pliable material having its lower portion suitably secured adjacent the sole and its upper portion provided with lacing holes corresponding in position to the lacing holes in the corresponding portion of the upper, said support having the body portion thereof extended beyond the top and bottom portions thereof, substantially as specified.

4. An arch support for shoes comprising a body of leather or similar pliable material adapted for application to the instep portion of a shoe and having a bottom portion adapted to be suitably secured to a shoe and an upper edge portion inclined to correspond to the inclination of the upper edge of the lacing portion of the upper and provided with lacing holes, the front and rear edges of the support being curved and the rear edge projecting rearwardly beyond the top and bottom edges thereof, substantially as specified.

856,713. WRECKING APPLIANCE. EDWARD LOVLEY, Sarnia, Ontario, Canada. Filed Feb. 21, 1907. Serial No. 358,559.



Claim.—1. In a wrecking apparatus, in combination with a hydraulic ram and means to furnish a bearing between the ram and the vessel, a foot piece adapted to rest on the earth means whereby the foot piece is lowered beneath said bearing, and tubular sectional pieces adapted to be superposed thereabout between the hydraulic ram and the foot piece, substantially as described.

2. In a wrecking apparatus, in combination with a bearing fixed to the side of the vessel, a hydraulic ram engaging thereagainst and adapted to assume a variety of angular positions with respect thereto, a foot piece adapted to rest on the ground, a flexible member depending from said ram and attached to said foot piece, and a plurality of removable tubular pieces adapted to be alined about said flexible member between the ram and the foot piece, substantially as described.

3. In a wrecking apparatus in combination with a hydraulic ram, extension members consisting of split tubes provided with bolts passing across the slot of the tube, substantially as described.

4. In a wrecking apparatus in combination with a hydraulic ram and a means for furnishing an extension support therefor, split tubes adapted to engage around a flexible member depending from said ram, and bolts passing across the slot of said tubes, substantially as described.

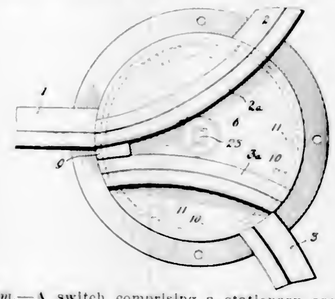
856,714. FASTENING FOR BOOTS AND SHOES AND LEGGINGS, &c. WILLIAM M. MALONE, Wandi Narrabri, New South Wales, Australia. Filed Mar. 7, 1906. Serial No. 304,662.



Claim.—1. A device of the class described embracing in its construction the two opposed flaps to be fastened together, each flap having secured to itself a series of sheet metal plates formed with outwardly turned flanges forming clips, a flexible leather tongue provided with a series of sheet metal plates having inwardly turned flanges extending parallel to each other and arranged to slidingly engage and interlock with said outwardly turned flanges, the lowermost sheet metal plate having its lowermost edge turned in to form a stop for engaging the lowermost clips secured to said flaps, substantially as described.

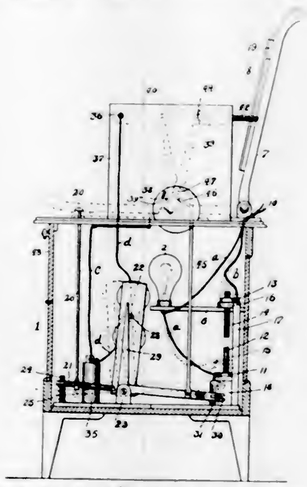
2. A device of the class described embracing in combination two opposed flaps to be fastened together, said edges being provided with retaining devices bent to form longitudinal grooves or channels, a keeper adapted to interlock with said retaining devices and having sliding engagement therewith, and a self-locking detent for retaining said keeper in normal position against accidental displacement, substantially as described.

856,715. TRAMWAY-SWITCH. MALCOLM C. MATTHEWS, Chicago, Ill. Filed Nov. 10, 1906. Serial No. 342,889.



Claim.—A switch comprising a stationary annulus, a plate movable thereon, a projection on said annulus having spaced depressions therein, a projection on said plate designed for engagement in said several depressions, means for partially rotating said plate, and means for limiting the movement of said plate in either direction.

856,716. PHOTOGRAPHIC-PRINTING MACHINE. HERVEY H. MCINTIRE, South Bend, Ind. Filed July 6, 1905. Serial No. 268,531.



Claim.—1. In a photographic printing machine, a case, a lamp in the case, a switch, means for operating the switch to light the lamp, an electric circuit, a timing device to make and break said circuit, and means in the circuit to release the switch operating means to extinguish the light.

2. In a photographic printing machine, a case, a lamp in the case, a switch, means for operating the switch to light the lamp, an electric circuit, a timing device arranged to make and break the circuit, and an electro-magnet in the circuit adapted to release the switch operating means and extinguish the light.

3. In a photographic printing machine, a case, a lamp in the case, a switch, means for operating the switch to light the lamp, an electric circuit, an electro-magnet in the circuit adapted to release the switch operating means to extinguish the light, and a timing device controlled by the switch operating means and arranged to make and break the circuit of the electro-magnets.

4. In a photographic printing machine, a case, a lamp in the case, a switch to control the lighting and extinguishing of the lamp, a timing device, an electric circuit having its terminals connected with the timing device, an electro-magnet in the circuit adapted to be energized and de-energized by the timing device, means to operate the switch to light the lamps, said means being operated by the electro-magnets to release the switch and extinguish the lamp, and means connected with the switch operating means to re-set the timing device and break the electric circuit.

5. In a photographic printing machine, a case having a lamp therein, and a switch to control the lighting of the lamp, a platen, means operated by the platen to actuate the switch and light the lamps, a timing device, an electric circuit having its terminals connected with said timing device, an electro-magnet in said circuit, means operated by the magnet to release the switch operating mechanism and extinguish the lamp, and means operated by the switch operating means to re-set the timing device and thereby break the circuit of the magnets.

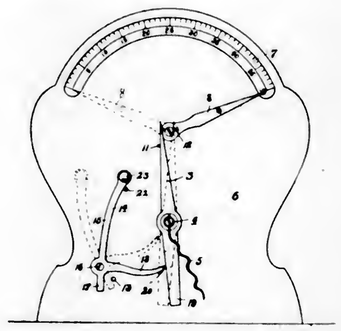
6. In a photographic printing apparatus, a case having a lamp therein, a switch to make and break the circuit for the lamp, a tilting frame, an electro-magnet carried by the frame, a switch operating lever movable with the frame of the electro-magnets, means for tilting the frame and the switch lever to close the circuit for the lamps, and a timing device having terminals for the electro-magnet circuit and adapted to complete said circuit and release the switch operating lever, substantially as specified.

7. In a photographic printing machine, a case having a lamp therein and a switch for controlling the lighting and extinguishing of the lamp, a platen, a tilting frame, a switch operating lever movable with the frame, means operated by the platen to tilt the frame and the lever and complete the circuit for the lamps, an electro-magnet carried by the tilting frame, and means for energizing said magnets to release the switch operating lever from the frame, substantially as specified.

8. In a photographic printing machine, a case having a lamp therein, a switch to control the lighting and extinguishing of the lamp, a frame pivoted in the case, a switch operating lever pivoted in the case, an electro-magnet carried by the frame, and having a pin normally held projected in the path of the switch operating lever, whereby the latter is moved with the frame to complete the lighting circuit, and means operated by the platen to tilt the frame.

9. In a photographic printing apparatus, a case having a lamp therein, a switch for controlling the lighting and extinguishing of the lamp, a frame pivoted in the case, an electro-magnet mounted in the frame, a plate secured to the end of the magnet, a pin secured to the plate and projecting through the frame, a bell-crank lever having one arm engaged by said pin and the other arm connected with the switch to operate the latter, a rod connected with the tilting frame, and a hinged platen to engage the rod, tilt the frame, lift the lever and connect the contacts of the switch, and a timing device adapted to complete the circuit of the electro-magnet and retract the pin from engagement with the bell-crank lever.

856,717. TIMING DEVICE. HERVEY H. MCINTIRE, South Bend, Ind. Filed July 6, 1905. Serial No. 268,534.



Claim.—1. A timing device embodying a motor, a circuit closer mounted upon the face of the motor and operated by the latter, an indicator pivoted upon the face of the motor adjacent one end of the circuit closer, the indicator having a stop near its inner end for co-operation with the circuit closure, and a scale upon the face of the motor over which the indicator moves.

2. A timing device comprising a motor, a circuit closer operated by the motor, an indicator having a stop in the path of the circuit closer, a scale over which the indicator moves, and a lever having an arm projecting into the path of the circuit closure and adapted to disengage the latter from the indicator.

3. A timing device comprising a motor, a circuit closer operated by the motor, an indicator having a stop in the path of the circuit closer, a fixed stop upon the motor for engagement by the circuit closer at one limit of its movement, and means for resetting the circuit closure.

4. A timing device comprising a motor, a circuit closer operated by the motor, a scale, an indicator movable over the scale, and having a stop arranged in the path of the circuit closer, an electric conductor connected with the indicator, an electric conductor connected with the circuit closer, and a lever having an arm projecting in the path of the circuit closer and adapted to disengage the latter from the indicator.

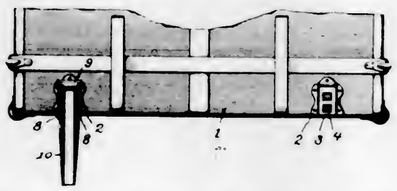
5. A timing device comprising a motor having a rotary driven arbor, a circuit closer frictionally mounted upon the arbor, means to hold the circuit closer against rotation, an indicator having a stop in the path of the circuit closer and forming one terminal of an electric circuit, means for moving the indicator to change the position of the stop, and a scale over which the indicator moves.

6. A timing device comprising a motor, a circuit closer operated by the motor, a pivoted indicator having a stop in the path of the circuit closure, a fixed stop upon the motor for engagement by the circuit closure at one limit of its movement, and a lever having an arm for engagement with the circuit closure to hold the latter in engagement with one of said stops.

7. A timing device comprising a motor, a pivoted circuit closer, an indicator pivoted at one end adjacent one end of the circuit closer, a stop carried by the indicator for coöperation with the circuit closer, and another stop coöperating with the circuit closer to limit the latter at one limit of its movement.

8. A timing device comprising a motor, a pivoted circuit closer, an indicator pivoted at one end adjacent one end of the circuit closer, a stop carried by the indicator for coöperation with the circuit closer, and another stop coöperating with the circuit closer to limit the latter at one limit of its movement, and a resetting device.

856,718. TRUNK-LEG ATTACHMENT. JAMES H. MCNAMARA, Chicago, Ill. Filed Feb. 7, 1907. Serial No. 356,272.



Claim.—1. A leg attachment for trunks comprising a trunk member formed with a chambered body portion having one or more apertures in its front wall, a leg member formed with a flat web having one or more upturned hook shape lugs, and a leg attached to said leg member, substantially as set forth.

2. A leg attachment for trunks comprising a trunk member formed with a marginal attaching web and a chambered body portion having one or more apertures in its front wall, a leg member formed with a flat web having vertical marginal flanges on its inner face adapted to fit the sides of the body portion of the trunk member, and one or more upturned hook shape lugs arranged centrally, and a leg attached to said leg member, substantially as set forth.

3. A leg attachment for trunks comprising a trunk member formed with a marginal attaching web and a chambered body portion having one or more apertures in its front wall, a leg member formed with a flat web and having vertical marginal flanges on its inner face adapted to fit the sides of the body portion of the trunk member, top and vertical marginal flanges on its outer face, and one or more upturned hook shape lugs arranged centrally, and a leg fitted to the recess formed on the outer face of the leg member by the top and vertical marginal flanges, aforesaid, substantially as set forth.

4. A leg attachment for trunks comprising a trunk member formed with a chambered body portion having one or more apertures in its front wall and provided with transverse ribs in its interior, a leg member formed with a flat web having one or more upturned hook shape lugs, and a leg attached to said leg member, substantially as set forth.

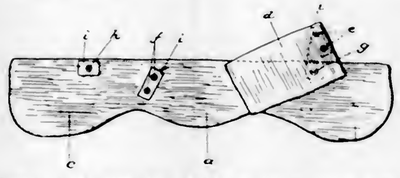
856,719. SHEARING-KNIFE. WILLIAM E. NAGLE, Wilmerding, Pa. Filed Nov. 5, 1906. Serial No. 341,989.



Claim.—1. A shearing knife comprising a body portion, a tongue on said body forming seats in the side of the same, a shearing portion having a groove within the same for fitting over and around said tongue and forming flanges for fitting within said seats, and rivets passing through said tongue and flanges and countersunk within said flanges for removably connecting said body to said shearing portion.

2. A shearing knife comprising a body portion formed of low grade steel, a tongue on said body forming seats in the side of the same, a shearing portion formed of high speed steel having a groove within the same for fitting over and around said tongue and forming flanges for fitting within said seats, and rivets passing through said tongue and flanges and countersunk within said flanges for removably connecting said body to said shearing portion.

856,720. NECK AND CHEST PROTECTOR. NATHAN NEFMAN, Philadelphia, Pa. Filed July 30, 1906. Serial No. 328,283.



Claim.—1. A neck and breast protector comprising a body having end wings adapted to extend down over the chest and also a middle portion, and a flap connected to the body on one side of its transverse center and adapted, with the middle portion of the body, to encircle the neck.

2. A neck and breast protector comprising a body having end wings adapted to extend down over the chest and also a middle portion, a flap connected, near the juncture of the middle portion and one wing, to the inside face of the body along one edge in a diagonal direction with respect to the body, and complementary fastening devices secured respectively to the free end of the flap and to the inside face of the body near the junction of the middle portion and the other wing.

3. A neck and breast protector comprising a muffler adapted to encircle the neck and wings adapted to extend over the chest, the rear half of the neck muffler being integral with and located between the wings and the front half of the neck muffler being stitched to its rear half at approximately the juncture of the latter with one of said wings.

4. A neck and breast protector comprising a body provided with complementary fastening devices near opposite ends thereof, said fastening devices being on opposite faces of the body, a third fastening device between the transverse center of the body and one of the first named fastening devices, and a flap connected, at one end, to the body between the latter's transverse center and the other of the first named fastening devices.

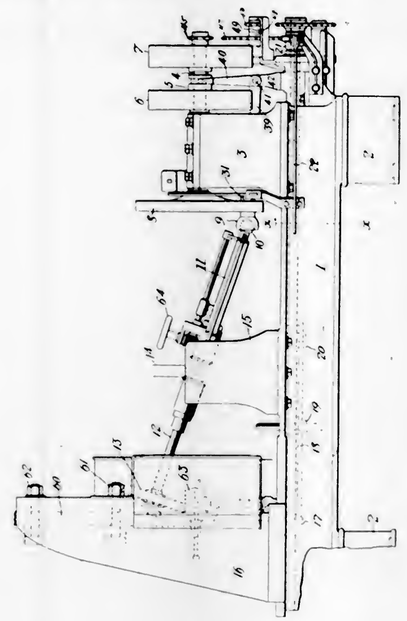
5. A neck and breast protector comprising the following: a body composed of a central portion and integral end portions, the body being scalloped along its lower edge, thus reducing the width of the body where the central portions merge into the end portions; a flap one end of which is secured diagonally to the inside of the central portion of the body near the end thereof adjacent to one of the end portions; a set of complementary fastening devices one of which is secured to the outside face of the flap contiguous to the upper corner thereof, while the other is secured to the inside face of the central portion of the body, and contiguous to the end thereof to which the flap is not secured; and a second set of complementary fastening devices, one being secured to the outside face of one of the end portions of the body and contiguous to the upper edge thereof, and the other being secured to the inner face of the other end portion contiguous to its upper end.

856,721. GRINDING-MACHINE. HENRY B. NICHOLS, Philadelphia, Pa. Filed July 13, 1906. Serial No. 326,602.

Claim.—1. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, together with means to limit and change the direction of the tool drive as desired, and means for automatically feeding the work holding means with respect to the tool.

2. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means to change the direction of the surface feed of the tool at will, together with means to feed the work holder.

3. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means to limit the extent of surface feed of said tool, means for feeding the work holder, and means for automatically limiting the same.



4. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means to direct the surface feed so as to effect a cut over a prescribed surface of the work only, means for automatically feeding the work holder, and means for effecing a reversal thereof.

5. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for reversing the surface feed motion of the tool, means for feeding the work holder, and means automatically operating to reverse said feeding action at a predetermined time.

6. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for automatically feeding the work holder with relation to the tool, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with means for limiting the motion of said feed spindle.

7. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for automatically feeding the work holder with relation to the tool, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with reversing mechanism controlled by the tool spindle in its motion for effecting a change in said motion.

8. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for automatically feeding the work holder with relation to the tool, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with reversing mechanism for said feed spindle, and adjustably actuating means therefor controlled by the spindle in its motion.

9. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for automatically feeding the work holder with relation to the tool, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with oppositely driven motor means for said feed spindle, a reversing lever for throwing in one or the other of the motor means, and automatic controlling means for said reversing lever.

10. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for automatically feeding the work holder with relation to the tool, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with oppositely driven pulleys on said feed spindle, a clutch adapted to connect either one of said pulleys to the spindle, and means actuated by the spindle in its motion to control said clutch.

11. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for automatically feeding the work holder with relation to the tool, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with reversing mechanism for said spindle and a double controlling mechanism therefor for producing a continuous back and forth motion of the feed spindle.

12. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for automatically feeding the work holder with relation to the tool, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with reversing drive pulleys for said spindle, a clutch for connecting one or the other thereto, a lever controlling said clutch, a spindle controlling said lever, a slide bar adapted to move said spindle, adjustable fingers on said bar, and a reversing stud connected with the feed spindle, to act upon said fingers and thereby produce alternate reversals of motion of the spindle.

13. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for automatically feeding the work holder with relation to the tool, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with reversible driving gear for the feed spindle, a link motion therefor controlled by the spindle in its movement, and a locking device initially moved by the spindle, and thereafter act-

ing automatically to insure a complete and positive reversal.

14. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with reversing gear for the feed spindle, and a weighted lever connected thereto with lost motion, and means for initially moving said lever in the act of reversing to a point where it will continue to act under the influence of gravity, to force a positive reversal.

15. In a machine of the class described supporting frame or bed, means for holding a piece of work in position there on, a tool having a double drive, one drive for cutting and the other for surface feed over the work, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with oppositely running drive pulleys for the feed spindle, a clutch for connecting either one of said pulleys at will, a lever controlling said clutch, a link spindle controlling said lever, a slide bar controlling said link spindle, and a weighted lever rigidly secured to said spindle and having a lost motion connection with the slide bar, whereby it may be thrown past center by said slide bar, and thereafter will act under the influence of gravity to effect a complete and positive motion of the link and spindle clutch mechanism.

16. In a machine of the class described a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for surface feed over the work, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle, whereby the latter is moved to effect the surface feed, together with a pair of oppositely running drive pulleys for the feed spindle, an intermediate clutch thereon, a bell-crank lever pivotally carried on the bed of the machine, a reversing spindle in bearings on said bed, a link connection from said reversing spindle to the bell-crank lever, a weighted operating lever rigidly secured at its lower end to said reversing spindle, a slide bar carrying adjustable fingers and adapted to be moved back and forth by a stud connected to the feed spindle and a lost motion connection between the slide bar and the weighted lever, whereby movement of the bar in either direction will force the lever past center and then permit a free and uninterrupted continuance of its motion under the influence of gravity, to produce positive action of the clutch.

17. In a machine of the class described, the combination of a supporting frame or bed, of a work holder slidably mounted thereon, means for feeding said work holder, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for changing the direction of surface feed of said tool over the work, and means for locking said changing means in changed position.

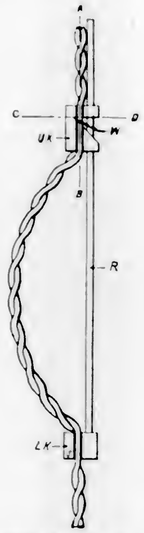
18. In a machine of the class described, the combination of a supporting frame or bed, of a work holder slidably mounted thereon, means for feeding said work holder, a tool having a double drive, one drive for cutting and the other for surface feed over the work, means for changing the direction of surface feed of said tool over the work, means for locking said changing means in changed position, and means for reversing the feed of said work holder.

19. In a machine of the class described, a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for curved surface feed over the work, together with means to limit and change the direction of the surface drive as desired.

20. In a machine of the class described, a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for curved surface feed over the work, together with means to direct said curved surface feed so as to effect a cut over a predetermined surface of the work only.

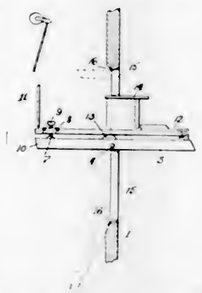
21. In a machine of the class described, a supporting frame or bed, means for holding a piece of work in position thereon, a tool having a double drive, one drive for cutting and the other for curved surface feed over the work, a tool spindle carrying the tool and movable to effect the cutting drive, a feed spindle with connections to the tool spindle whereby the latter is moved in a rotary direction to effect the surface feed, together with means for limiting and changing the direction of motion of said feed spindle.

856,722. AUTOMATIC GRIP-CORD ADJUSTER. OTTO PEDERSEN, Chicago Heights, Ill. Filed Feb. 9, 1907. Serial No. 356,623.



Claim.—In an adjustable lamp support, a knob having two grooves in which rest the two strands of a twisted electric light conductor, a rod fastened to said knob; a second knob similarly engaging the electric light conductor and having a hole through which the rod passes, and also having a recess in one side in which rests the edge of a washer which passes freely over said rod, substantially as described.

856,723. KEYBOARD FOR PIANOS. WILLIAM D. REAVES, South Bend, Ind. Filed Sept. 8, 1906. Serial No. 333,787.



Claim.—1. A piano having its front corner posts formed with grooves each provided with an open end and terminating at its opposite end in a bearing, and a key-bed having pintles pivoted in said bearings.

2. A piano having its front corner posts formed with grooves each provided with an open outer end and an enlarged closed end, balls in the enlarged end of each groove, and a key-bed having pintles mounted in said enlarged ends of the grooves and contacted with by said balls.

3. The combination with the case of a piano having an opening therein, a fly-board hinged at the top and one hinged at the bottom of said opening, and a key-bed pivoted in said opening between said fly boards, the latter cooperating with the key-bed to close said opening when the key-bed is in playing position.

4. The combination with the case of a piano having an opening therein and also having its front corner posts provided with grooves, each groove provided with an open end and terminating in a bearing, a fly-board hinged at the top of said opening and one at the bottom of the opening, and a key-bed pivoted in the opening between the fly-boards and coöperating with the latter to close said opening when the key-bed is in playing position.

5. The combination with a piano case having grooves and an opening therein, of a removable key-bed mounted in said opening and provided with pintles for engagement in said grooves.

6. A piano having its front corner posts formed with grooves on the inner faces thereof, said grooves opening at one end into the rear face of the posts and terminating at their ends in bearings and a key-board having pintles pivoted in said bearings.

7. The combination with a piano case having an opening therein, of a fly-board hinged at the top of the opening and one at the bottom of the latter, a key-bed pivoted in the opening and coöperating with the fly-boards to close said opening when the key-bed is in playing position, and a stop block mounted in the case and adapted to be engaged by the key-bed.

8. The combination with a piano case having its front corner posts formed with grooves, said grooves each having an open end and a closed end to form a bearing, the case also having an opening therein, fly boards hinged one at the top and another at the bottom of said opening, a key bed having pintles mounted in the aforesaid bearings, the key-bed coöperating with said fly-boards to close said opening when the key-bed is in playing position, and a stop-block mounted in the case and adapted to be engaged by the key-bed.

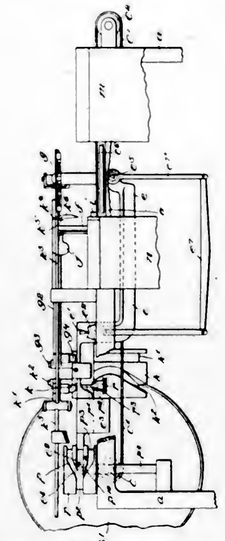
856,724. WEIGHING AND ASSORTING APPARATUS. HENRY RICHARDSON, New York, N. Y. Filed Jan. 16, 1906. Serial No. 296,331.

Claim.—1. In an apparatus of the class described, the combination of a load receiver and a beam, the beam having an additional weight adapted to be elevated when a parcel beyond the correct weight is placed onto the load receiver, a power operated carrier for advancing parcels toward the weighing mechanism, a stop for arresting the motion of a parcel opposite the load receiver, and mechanism for moving the parcel from off the carrier and onto the load receiver.

2. In an apparatus of the class described, the combination of a load carrier, beam mechanism associated therewith, a parcel carrier for conducting parcels to the load carrier, a pushing apparatus to push a parcel off the parcel carrier on the load carrier, and a second pushing apparatus provided with means for pushing parcels off the load carrier in opposite directions, and in a direction different from that followed by the first mentioned parcel.

3. In an apparatus of the class described, the combination of a load carrier, beam mechanism associated therewith, a parcel carrier for conducting parcels to the load carrier, a pushing apparatus to push a parcel off the parcel carrier on the load carrier, a second pushing apparatus provided with means for pushing parcels off the load carrier in opposite directions, and in a direction different from that followed by the first mentioned parcel, and means for locking the beam mechanism temporarily against motion at the conclusion of a weighing operation.

4. In an apparatus of the class described, a load carrier, beam mechanism associated with the load carrier, and a pushing apparatus mounted for movement across the load carrier and having a part when the pushing apparatus moves in one direction to push a package off said load carrier and having a second part to push a package off the load carrier occupying a different level than the first mentioned package on the opposite movement of said pushing apparatus.



5. In an apparatus of the class described, a load carrier, beam mechanism associated with the load carrier, and a pushing apparatus mounted for movement across the load carrier and having a part when the pushing apparatus moves in one direction to push a package off said load carrier and having a second part to push a package off the load carrier occupying a different level than the first mentioned package on the opposite movement of said pushing apparatus, and a second pushing apparatus to move a package onto the load carrier.

6. The combination of weighing mechanism including a load receiver, a carrier for parcels, means for moving parcels from the carrier onto said load receiver, and a reciprocatory pushing device having a head to push a parcel from the load carrier when said device moves in one direction and having a movable member for pushing a parcel from the load receiver when said pushing device is moved in the opposite direction, and means for preventing movement of said movable member on the last mentioned motion.

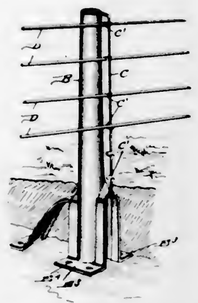
7. The combination of a load receiver and its supporting beam, the beam having an antifriction roll at the outer side of its center of motion, a rotary member having a plurality of parallel projections dividing said member into channels, the projections being made in the form of knife edges at the entering ends of the channels, a knife edge carried by the beam in adjacence to the antifriction roll to guide the latter into a channel as said member rotates, the latter serving when the antifriction roll is in one of its channels to lock the beam against movement, and a tongue pivotally connected with one of the projections at the end opposite that having the knife edge, to prevent dropping of the antifriction roll.

8. The combination of weighing mechanism including a load receiver, a carrier for parcels, means for stopping a parcel on the carrier, a power operated pushing apparatus for pushing the parcel from the carrier onto the load receiver, and a power operated pushing apparatus for pushing a parcel off the load receiver.

9. The combination of weighing mechanism including a load receiver, a parcel carrier for effecting the supply of parcels to said load receiver, a stop for arresting the motion of a parcel on said parcel carrier, a pushing apparatus for pushing a parcel from the carrier onto the said load receiver, a second pushing apparatus for pushing a parcel off the load receiver, and means involving cam mechanism for actuating the two pushing apparatus.

10. The combination of weighing mechanism including a load receiver, a parcel carrier, a device for pushing a parcel from said parcel carrier onto the load receiver and for also, acting through a parcel, to push a parcel off the load receiver, and a second device provided with means acting along different levels for pushing parcels off the load receiver.

856,725. FENCE-POST OR TELEPHONE-POLE. JOHN R. ROACH, Cale, Ind., assignor of one-half to John M. Bale, Bedford, Ind. Filed Oct. 15, 1906. Serial No. 339,049.



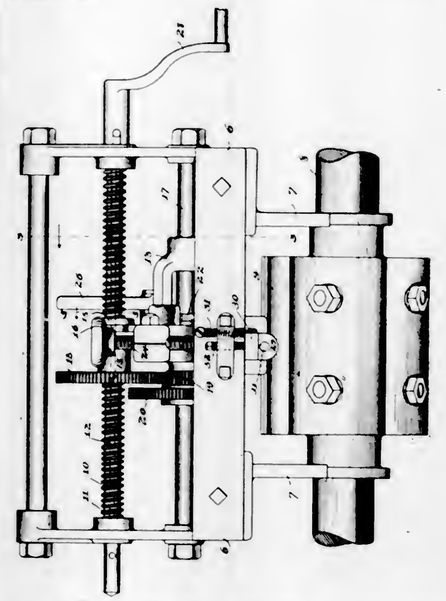
Claim.—1. A tubular post formed from a single piece of sheet metal and having longitudinally projecting edge, said edge being apertured and slotted, the lower portion of the post being bifurcated, each member having re-inforced flanges and laterally projecting base portions, and a member having a head portion adapted to engage the bifurcated head portion of the post substantially as described.

2. A fence post formed from a single piece of sheet metal tubular in form having a longitudinally projecting edge, said edge being apertured and slotted as described, lower portion of the post being bifurcated, each member having re-inforcing flanges and a laterally projecting base portion, said base portion being apertured and a brace having a dove-tail head and an apertured base all arranged and adapted to operate substantially as set forth.

856,726. CUTTER-HEAD-KNIFE SHARPENER. HARRY B. ROSS, Beloit, Wis., assignor to The Berlin Machine Works, Beloit, Wis., a Corporation of Wisconsin. Filed Jan. 17, 1906. Serial No. 296,505.

Claim.—1. A cutter-head knife sharpener having a frame adapted for support upon the cutter-head shaft, a grinding wheel and means for causing the rotation and automatic traverse of the grinding wheel in contact with the knife, an adjustable stop for positioning and holding the cutter-head, and adjusting means for positioning the grinding wheel with reference to the knife, substantially as described.

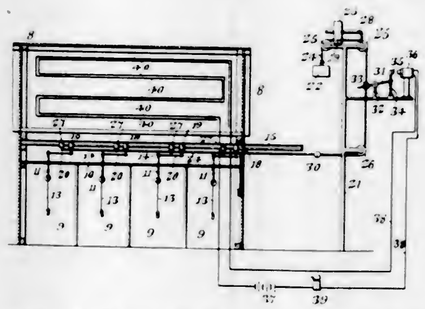
2. In a cutter-head knife sharpener a supporting frame adapted for support upon the cutter-head shaft, a driving-shaft mounted in said frame, a pivoted frame having a grinding wheel rotatably mounted therein, gearing between the power shaft and grinding wheel for imparting rotative movement thereto, worm gearing connecting the power shaft and the pivoted frame for imparting a traversing movement to the latter, an adjustable stop on the pivoted frame for positioning the grinding wheel relative to the knife, an adjustable stop in the main frame for positioning and holding the knife, substantially as described.



3. In a cutter-head knife sharpener the combination with a rotating and traversing grinding wheel and means for positioning said wheel relative to the knife, of means for positioning and holding the knife, comprising a pivoted spring-actuated member, an adjusting screw therefor and an adjustable stop-device mounted therein, substantially as described.

4. In a cutter-head knife sharpener the combination with a supporting frame having a worm shaft thereon, a driving gear having a sliding engagement with said worm shaft, and a grinding wheel carrying-frame pivoted upon the supporting frame, and having gear members thereon concentric to its axis, and a threaded arm carried by the pivoted frame and engaging the worm shaft, substantially as described.

856,727. MEANS FOR RELEASING AND LEADING ANIMALS FROM STABLES. ARTHUR T. RUTHVEN, Topeka, Kans. Filed Aug. 21, 1906. Serial No. 331,465.



Claim.—1. The combination with an animal holding device, of means controlled by the presence of heat for automatically releasing the holding device and moving the same from the stable.

2. The combination with a support, of an animal holding device including a hook that detachably engages the support, and means for effecting the movement of the hook to detach it from the support.

3. The combination with a supporting bar, of a holding hook that detachably engages over the bar and has means for fastening the animal thereto, and means for detaching the hook from the bar and moving said hook from the stable.

4. The combination with a supporting bar, of a plurality of hooks that detachably engage over the bar, and common means for detaching the hooks from the bar and moving them from the stable.

5. The combination with a track, of an animal leading device slidable on the track, and means for moving the device including an element that is slidable on the track in rear of the leading device and engages it to push said leading device along the track.

6. The combination with a track, of a plurality of separate leading devices movable on the track, and means separate from and detachably engaging the said leading devices for sliding them on the track.

7. The combination with a track, of a plurality of animal leading devices, including blocks slidable on the track, and means for moving the blocks, said means including a plurality of connected elements disposed in rear of the blocks.

8. The combination with a supporting bar, of a plurality of holding hooks detachably mounted on the bar, and having means for fastening animals thereto, a track, a plurality of blocks slidably mounted on the track and connected to the different hooks, and means engaging the blocks for moving them on the tracks.

9. The combination with animal holding and leading means, of a single motor for effecting the operation of both the holding and leading means, an electrically operated detent for holding the motor against movement, and a heat-controlled circuit closer coöperating with the detent.

10. The combination with animal releasing and leading means, of an automatic motor controlled by the presence of heat for operating the same.

11. The combination with animal releasing and leading means, of a motor for operating the same, a detent for holding the motor against movement, and heat-controlled means for operating the detent.

12. The combination with animal releasing and leading means, of a motor for operating the same, a detent for holding the motor against movement, and heat controlled electrically operated means for releasing the detent.

13. The combination with animal releasing and leading means, of an upright support, a weighted motor mounted on the support and connected to the releasing and leading means, a movable detent mounted on the support and engaging the weighted motor to hold the same against movement, an electromagnet coöperating with the detent, a source of electric energy, and circuit wires connecting the magnet and source of electric energy and including portions operated by heat-destroyed insulation.

14. The combination with a stable having a door, of a plurality of animal releasing and leading devices movably mounted therein, a motor disposed exteriorly of the stable and having cable connections with the releasing and leading means, holding means for the door connected to said cable, an electrically operated detent coöperating with the motor, and an electric circuit including a heat controlled circuit closer arranged in the stable and controlling the movement of said detent.

15. The combination with a stable including a door, of animal releasing and leading means movably mounted in the stable, a motor for moving said releasing and leading means, a latch for locking the door in closed position, connections between the motor, the latch and the releasing and leading means, and an electrically operated detent for holding the motor against movement.

16. The combination with a stable having a door-way, a door, a track located in the stable and extending through the door-way, a plurality of holding hooks, a plurality of blocks slidably mounted on the track and connected to the holding hooks, a latch for the door, a motor disposed exteriorly of the stable, a plurality of actuating elements slidably mounted on the track in rear of the blocks, a cable connected to the motor, the latch and the elements, an electrically operated detent for the motor, and means for actuating the detent including conducting wires, and heat-destroyed insulation interposed between them.

17. The combination with a support, of animal holding means that detachably engages the support, and common means for disengaging the holding means from the support and drawing the same from the stable.

18. The combination with a bar, of animal holding means including a hook that detachably engages the bar, and common means for disengaging the hook from the bar and moving the same from the stable.

19. The combination with a bar, of a plurality of animal holding hooks that detachably engage the bar, and automatic means for disengaging the hooks from the bar and moving them from the stable.

20. The combination with a track, of a plurality of animal leading devices slidable on the track, a cable, and devices connected to the cable and slidable on the track, said devices detachably engaging the leading devices to move the same upon the track and disengaging therefrom when moved to the outer end of the track.

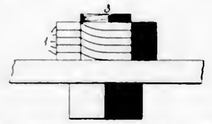
856,728. LOCK-NUT. CHARLES RYSTROM, Rockford, Ill. Filed Dec. 18, 1905. Serial No. 292,233.



Claim.—1. A lock nut consisting of a bar of material fashioned into a series of screw threaded coils shifted progressively laterally to provide an oblique screw-threaded opening.

2. A lock nut consisting of a bar of material fashioned into a series of screw-threaded coils shifted progressively laterally to provide an oblique screw-threaded opening, and the meeting faces of the several coils being embedded in seats in the faces of the adjacent coil.

856,729. LOCK-NUT. CHARLES RYSTROM, Rockford, Ill. Filed Apr. 3, 1906. Serial No. 309,660.



Claim.—1. A lock nut composed of a series of coils internally screw threaded, the threads of the several coils being normally advanced progressively in the direction of the circuit of the screw thread.

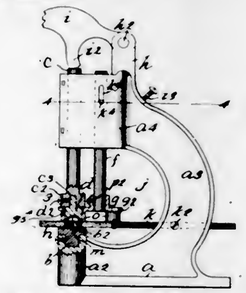
2. A nut-lock composed of a series of coils internally screw-threaded, the threads of some of the coils being normally advanced in the direction of the circuit of the screw thread.

3. A nut-lock composed of a series of coils internally screw-threaded, some of the coils being axially twisted in a forward direction to advance the threads of some of the coils in the direction of the circuit of the screw-thread.

856,730. SPOT-SETTING MACHINE. SAMUEL W. REYNOLDS, West Toledo, Ohio. Filed Feb. 17, 1906. Serial No. 301,711.

Claim.—1. A machine of the class described, comprising a frame provided with an anvil support, an anvil mounted on said support and provided in the top surface thereof with annular grooves, two vertically movable plungers one of which is mounted directly over said anvil and the other at one side thereof, the last named plunger being provided at its lower end with a rotatable "spot" or

button receiver having a plurality of arms, and the plunger which is directly over the anvil being provided in its lower end with a removable plunger head, substantially as shown and described.



2. In a spot setting machine, a frame provided with an anvil support, an anvil having a plurality of annular grooves in the top surface thereof, a gage bar movable longitudinally toward and from the anvil, two plungers mounted over the anvil, one of which is in vertical line therewith and the other at the side thereof, the first named plunger being provided with a detachable plunger head and the other with a rotatable "spot" or button receiver, and means for operating said plungers, substantially as shown and described.

3. In a spot setting machine, a frame provided with an anvil support, an anvil having a plurality of annular grooves in the top surface thereof, a gage bar movable longitudinally toward and from the anvil, two plungers mounted over the anvil, one of which is in vertical line therewith and the other at the side thereof, the first named plunger being provided with a detachable plunger head and the other with a rotatable "spot" or button holder, and means for operating said plungers, comprising a spring for holding both of said plungers in their released positions, and a pivoted arm adapted to be operated to depress one of said plungers in which operation the other plunger descends by gravity, substantially as shown and described.

4. A spot setting machine, comprising a frame provided with an anvil support, an anvil mounted on said support and provided with annular grooves in the top surface thereof, a vertically movable spring supported plunger mounted over said anvil and provided in its lower end with a plunger head, another vertically movable spring supported plunger mounted adjacent to the first named plunger and provided at its lower end with a rotatable "spot" or button receiver having a plurality of arms, and means for operating said plungers, substantially as shown and described.

5. A machine of the class described provided with an anvil having a plurality of annular grooves in the top surface thereof, and a vertically movable support or plunger provided at its lower end with a rotatable support having a plurality of arms provided with openings, substantially as shown and described.

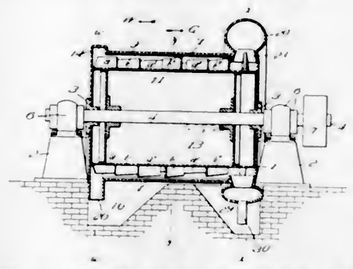
6. In a machine of the class described, comprising a frame provided with an anvil support, an anvil mounted thereon, two vertically movable plungers, one of which is mounted directly over said anvil, and the other at one side thereof, the last named plunger being provided at its lower end with a rotatable "spot" or button receiver having a plurality of arms, and the plunger which is directly over the anvil being provided at its lower end with a plunger head, substantially as shown and described.

7. A machine of the class described, comprising a frame provided with an anvil support, a verrtically movable spring supported plunger mounted over said anvil support, another vertically movable spring supported plunger mounted adjacent to the first named plunger and provided at its lower end with a rotatable device having a plurality of holders or receivers, and means for operating said plungers, substantially as shown and described.

8. A machine of the class described, comprising a frame provided with an anvil having an annular groove, two vertically movable plungers mounted over said anvil and supported by a single spring, one of said plungers being in line with said anvil, and the other plunger being provided at its lower end with a rotatable device having a plurality of arms.

9. A machine of the class described, comprising a frame provided with an anvil having an annular groove, two vertically movable plungers mounted over said anvil and supported by a single spring, one of said plungers being in line with said anvil, and the other plunger being provided at its lower end with a rotatable device having a plurality of arms, and a horizontally movable gage mounted parallel with the top of the anvil.

856,731. GAS-WASHER. GUSTAV SAALER, New York, N. Y. Filed Dec. 27, 1906. Serial No. 349,691.



Claim.—1. In a gas washer, the combination with a suitable casing having a gas outlet at its rear end, a water inlet adjacent to its rear end, a gas inlet and water outlet in the lower portion of its circumference at its front end, of a water seal arranged below said water outlet and forming the bottom thereof to receive the water and impurities from the washer, a suitable drum, inclined wings on the drum arranged to force the water centrifugally and forwardly, means to rotate the drum, and means to force the gas through the casing around the drum from front to rear.

2. In a gas washer, the combination with a suitable casing, of a drum journaled in the casing, said casing having a gas outlet at its rear end, a water inlet adjacent to its rear end and a gas inlet and water outlet at its front end, means to force the gas through from front to rear, means to rotate the drum, and inclined wings on the exterior of the drum to break up the water into mist and to force it both centrifugally and toward the front, said wings being arranged in a plurality of circumferential sets, with the wings of one set arranged opposite the spaces between the wings of the adjacent set or sets.

3. In a machine for washing gases, the combination with a casing having a gas inlet and a water outlet in the lower portion of its circumference at the front end, a gas outlet at the rear end and a water inlet adjacent to the rear end, of a drum rotating in the casing, and inclined wings on the periphery of the drum arranged to force the water centrifugally and toward the front.

4. In a machine for washing gases, the combination with a casing having a gas inlet and water outlet in its circumference at the front end, a gas outlet at the rear end and a water inlet adjacent to the rear end, of a drum rotating in the casing, and a plurality of separate sets of inclined wings on the periphery of the drum, said wings being inclined to force the incoming water forwardly and the sets toward the front being set at less inclination to the drum axis and the sets toward the rear set at a greater inclination.

5. In a gas washer, the combination with a casing circular in cross section, of a drum concentrically journaled in the casing, said casing having a gas outlet at its rear end, a water inlet adjacent to its rear end, a gas inlet and water outlet at its front end, means to force the gas through from front to rear, means to rotate the drum, inclined wings on the exterior of the drum to break up the water into mist and to force it both centrifugally and forwardly, said wings being arranged in a plurality of circumferential sets, with the wings of one set arranged opposite the spaces between the wings of the adjacent set or sets, said gas inlet and water outlet being in the lower portion of the casing circumference, and a water seal arranged below said water outlet.

6. In a machine for washing gases, the combination with a casing having a gas inlet and water outlet at the front end, a gas outlet at the rear end and a water inlet adjacent to the rear end, of a drum rotating in the casing, short, inclined wings on the periphery of the drum arranged to force the water centrifugally and toward the front, means to rotate the drum and means to force the gas through between the casing and the drum from front to rear, said wings being arranged in two series, each series being composed of a plurality of circumferential sets of wings, the wings of each set being uniformly inclined to the drum axis, but the sets of one series being more inclined than those of the other, and the sets of each series being progressively more inclined from front to rear, and the sets of one series being alternately arranged with those of the other, substantially as described and shown.

7. In a machine for washing gases, the combination with a casing having a gas inlet and water outlet in the lower portion of its circumference at the front end, a gas outlet at the rear end, a water inlet adjacent to the rear end, of a drum rotating in the casing, inclined wings on the periphery of the drum arranged to force the water centrifugally and toward the front, and of projections on the interior of the shell extending into close proximity with the wings to oppose the tendency of the water to rotate on the inner surface of the shell.

8. In a machine for washing gases, the combination with a casing having a gas inlet and water outlet at the front end, a gas outlet at the rear end, a water inlet adjacent to the rear end, of a drum in the casing, inclined wings on the periphery of the drum arranged to force the water centrifugally and toward the front, practically parallel strips arranged on the inner surface of the shell, to break the film of water clinging to the interior of the shell and to form channels promoting the flow of the water toward the front, means to draw the gas through from front to rear, and means to rotate the drum.

9. In a machine for washing gases, the combination with a casing having a gas inlet and water outlet in the lower portion of its circumference at the front end, a gas outlet at the rear end and a water inlet adjacent to the rear end, of a drum in the casing, inclined wings on the periphery of the drum arranged to force the water centrifugally and toward the front, continuous, practically parallel, longitudinal strips arranged on the inner surface of the shell, to break the film of water clinging to the interior of the shell and to form channels promoting the flow of the water toward the front, means to draw the gas through from front to rear, and means to rotate the drum.

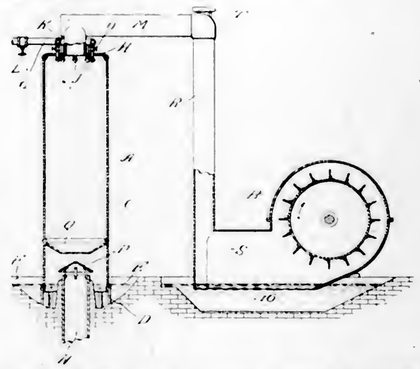
10. In a gas washer, an inclosing casing circular in cross section, having a gas outlet at the rear end, a gas inlet and water outlet in the circumference at the front end and a water inlet adjacent to the rear end, and in combination therewith a journaled drum concentrically arranged in the shell and forming an annular chamber between the drum and the shell, said drum being substantially of equal length to the interior of the shell, series of separate wings arranged on the drum and said series extending from end to end of the drum, said wings being inclined so as to force the water both centrifugally and toward the water outlet, means to operate the drum, and means to force the gas through the washer from front to rear.

11. In a gas washer, the combination with an inclosing casing having a cylindrical main portion, an enlarged rear portion, a gas outlet in said rear portion, a water inlet adjacent to the rear end of the main portion, and a gas inlet and water outlet in the lower portion of the circumference at the front end, of a water seal below said water outlet, a shaft journaled concentrically in the casing, a cylindrical drum on the shaft within the casing, series of separate inclined wings on the drum to force the water forwardly, a fan on the drum arranged in said enlarged portion to force the gas rearwardly and means to rotate the drum, said wings extending from the extreme front end to the extreme rear end of said cylindrical portion of the drum.

12. In a gas washer, the combination with a suitable casing having a gas outlet at its rear end, a water inlet adjacent to its rear end and a water outlet and gas inlet in the lower portion of its circumference at its front end, a gas supply pipe at its front end, an enlarged connection between said pipe and the gas inlet, said pipe and connection being so arranged that the gas turns a sharp angle from the pipe into the connection, a water seal arranged below the water outlet and to form the bottom of said connection, a drum journaled in the casing, inclined wings on the drum to force the water rearwardly, means to rotate the drum and means to force the gas through the casing around the drum from front to rear.

13. In a gas washer, a cylindrical, metallic casing having an enlarged rear portion and having a gas outlet in said rear portion, a water inlet adjacent to its rear end and a gas inlet and water outlet in the lower portion of the circumference at its front end, a water seal below said water outlet, a drip pipe in the bottom of said enlarged portion, a water seal for said drip pipe, a fan in said enlarged portion, a cylindrical, metallic drum journaled concentrically in the casing, inclined wings on the periphery of the drum to force the water forwardly, means to rotate the drum and means to rotate the fan to draw the gas through the casing around the drum from front to rear.

856,732. PROCESS OF PURIFYING GASES. GUSTAV SAALER, New York, N. Y. Filed Dec. 27, 1906. Serial No. 349,692.



Claim.—1. The herein described process of cleansing gases which consists in first cooling the gas and then drawing it through a stream of water, which is being driven in an opposite direction to the movement of the gas, and simultaneously being broken up into water-mist.

2. The herein described process of cleansing gases, which consists in first cooling and moistening the gas, by drawing it through a falling shower of water and then completing the cleansing of the gas by forcing it through a stream of water, which is being driven in an opposite direction to the gas and simultaneously being forced centrifugally and broken up into water-mist.

3. The herein described process of cleansing gases which consists in first cooling and moistening and partially cleansing the gas by drawing it upwardly through an elongated chamber filled with a falling spray of water, and then drawing it into and through a second chamber, in which a stream of water is being driven by a force which moves it both centrifugally and longitudinally, in a direction opposite to the flow of the gas and simultane-

ously breaks up the water into water-mist to a large extent, the direction of the flow of the gas being changed at the entrance to the second chamber, and the force being applied to the water adjacent to the gas inlet end of the second chamber so as to break it up and drive it centrifugally to a greater extent and to force it forward to less extent to commingle the water-mist with the gas, but adjacent to the opposite end of the chamber, less to force the water centrifugally and more to force it forwardly, whereby the water particles and impurities are separated from the gas and the gas dried.

4. The herein described process of thoroughly washing gases for gas engines which consists, continuously and successively in cooling and moistening the gas and washing out the heavy impurities by first forcing the gas through a shower of falling water and then through a stream of water broken up into the finest spray and driven substantially in the opposite direction to the gas, and then washing out the fine impurities by forcing the gas through a plurality of sheets of the fine spray.

5. A continuous process for thoroughly cleansing gases for the gas engine, which consists in forcing or drawing the gas rapidly forward so as to be subjected to the various steps of the process in rapid succession, as follows, first cooling and moistening the gas and precipitating some of the coarser impurities by subjecting the gas to a shower of cool water, then changing the direction of the flow of gas and subjecting it to a stream of water broken up into the finest spray and driven in exactly the opposite direction to the flow of the gas, to further precipitate the heavier impurities and to further cool and moisten the gas, and finally subjecting the gas to a plurality of sheets of said fine spray, formed within a film of water, said spray being formed by centrifugal force, whereby the spray mixed with impurities is constantly being f reed centrifugally into the water film and the water film forced rearwardly to carry off the impurities.

6. The herein described process of washing gases for gas engines, which consists continuously and in succession in first cooling and moistening the gas by forcing it through a shower of falling water, then changing its direction of flow at a sharp angle to precipitate the heavier impurities, then drawing it through a stream of water subdivided into the finest spray and driven directly in the opposite direction to the gas, further to cool and moisten the gas and to precipitate the heavier impurities, and then washing out the fine impurities by forcing the gas through a plurality of sheets of the fine spray.

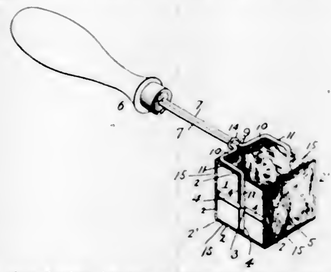
7. In a process for cleaning gases, the method of washing out the finer impurities which consists in forcing the gas through a chamber, and simultaneously maintaining a film of water in the chamber around the gas, forcing the water forward in the opposite direction to the gas, and breaking up the water by centrifugal force, whereby a plurality of sheets of water-mist are formed, through which the gas is forced to pass, and the water-mist mixed with the impurities are constantly being driven centrifugally into the film.

8. The herein described process of cleaning gas that consists as a continuous process in forcing the gas rapidly forward and subjecting it to the effect of water moving in the opposite direction to the gas, the process comprising a series of steps as follows: first subjecting the gas to falling streams of cold water, then to a falling shower of cold water, then changing the direction of the flow of the gas at a sharp angle, then subjecting the gas to a stream of water-mist driven forcibly against the gas, then passing the gas through a plurality of sheets of water-mist, then separating the moisture from the gas.

856,733. SHOE-DAUBER. REUBEN E. SAFFOLD, Rochester, N. Y. Filed June 13, 1906. Serial No. 321,554.

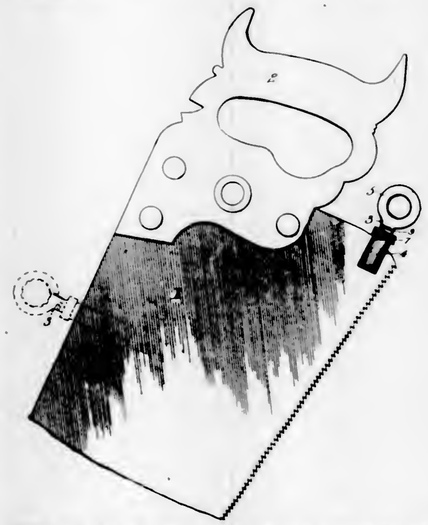
Claim.—1. A shoe-dauber having a plurality of interchangeable daubing surfaces, and provided with grooves in its ends, a supporting member having resilient arms engaging the grooves in the ends of the dauber, and a clamping-ring on the supporting member.

2. A shoe-dauber having a plurality of interchangeable daubing surfaces, and provided with radial grooves in its ends, a supporting member having resilient arms engaging said grooves, and provided with inturned ends on which the dauber rotates, and a clamping-ring on the supporting member.



3. A shoe-dauber having a plurality of interchangeable daubing surfaces, and provided with right angled grooves in its ends corresponding with the daubing surfaces, a supporting member having arms provided with members engaging one of said grooves at each end of the dauber, and inturned ends extending into the body of the dauber, and a clamping-ring on the supporting-member.

856,734. SAW-OILING DEVICE. HARM SCHURING, Washington, D. C. Filed Apr. 9, 1907. Serial No. 367,294.



Claim.—1. An oil cup provided with a bifurcated discharge nozzle, means to clamp said bifurcations upon the blade of a saw, and means to feed oil through said bifurcations.

2. An oil cup provided with a bifurcated discharge nozzle having a beveled screw threaded portion, an interiorly beveled nut engaging said beveled portion of said nozzle whereby the bifurcations may be clamped upon the blade of a saw, and means to feed oil through said bifurcations.

3. An oil cup provided with a bifurcated discharge nozzle having a beveled screw threaded portion, and an interiorly beveled nut engaging said beveled portion of said nozzle whereby the bifurcations may be clamped upon the blade of a saw, each bifurcation containing an oil passage for the purpose specified.

4. An oil cup provided with a bifurcated discharge nozzle, means to clamp said bifurcations upon the blade of a saw, each bifurcation containing an oil passage and a piece of bent wire having its arms extending into said oil passages for the purposes specified.

5. An oil cup provided with a bifurcated discharge nozzle, means to clamp said bifurcations upon the blade of a saw, each bifurcation containing a tapered oil passage and a piece of bent spring wire having its arms extending into said passages and adjustable by frictional contact with the walls thereof.

6. An oil cup provided with a bifurcated discharge nozzle, means to clamp said bifurcations upon the blade of a saw, an oil receptacle having flexible sides, and means to feed oil through said bifurcations.

856,735. NON-REFILLABLE BOTTLE. EDWARD C. SHILLING, Columbus, Ohio, assignor of one-third to Eli M. West, Columbus, Ohio. Filed May 26, 1906. Renewed Jan. 12, 1907. Serial No. 352,057.



Claim.—1. A non-refillable bottle comprising, in combination with a bottle neck, a tube mounted therein having an upper and lower series of apertures and providing a valve-seat, a valve mounted in said tube and adapted to normally cover the lower series of apertures, means for limiting the outward movement of said valve, and a guard secured in the said bottle neck above the valve.

2. A non-refillable bottle comprising, in combination with a bottle neck, a tube secured therein having an upper and lower series of apertures and affording a valve-seat, a weighted valve mounted in said tube and adapted to normally close the lower series of apertures, a guard secured in said bottle neck above the valve, and a spring interposed between said guard and the valve, the weight of said valve being sufficient to overcome the power of the spring when the bottle is turned below the horizontal.

3. A non-refillable bottle comprising, in combination with a bottle neck, a tube mounted therein having an upper and lower series of apertures and affording a valve-seat, a valve mounted in said tube and adapted to normally close the lower series of apertures, a guard secured in the bottle neck above the valve, a spring interposed between said guard and valve and adapted normally to hold the latter to its seat, the weight of the valve being sufficient to overcome the power of the spring when the bottle is turned below the horizontal, and means carried by said guard for limiting the outward movement of said valve.

4. A non-refillable bottle comprising, in combination with a bottle neck having an annular shoulder, a tube mounted in said bottle neck having an upper and a lower series of apertures and providing a valve-seat, a weighted valve mounted in said tube and adapted normally to close the lower series of apertures, a guard having a U-shaped spring mounted therein having projected ends extending outward beyond the guard to project under said shoulder, the U-part of said spring projecting below the guard and serving as a stop to limit the outward movement of said valve, and a spring interposed between the guard and the valve and adapted normally to hold the latter to its seat, the weight of the valve being sufficient to overcome the power of said spring when the bottle is turned below the horizontal.

5. A non-refillable bottle comprising, in combination with a bottle neck having a shoulder, an apertured cork seated in said bottle neck, a tube fitted within said cork and having a valve-seat, and an upper and lower series of apertures, a weighted valve mounted in said tube and having a lower apertured cylindrical portion slidably fitting therein, and an upper extension adapted normally to cover the lower series of apertures in said tube, a guard carrying a spring having ends projecting beyond the guard and adapted to fit under said shoulder, said spring having a central portion projecting below the guard and serving as a stop to limit the onward movement of said valve, and a spring interposed between said guard and the valve adapted normally to hold the latter to its seat, the weight of said valve being sufficient to overcome the power of the spring when the bottle is turned below the horizontal.

856,736. ELECTRICAL HEATER AND EXPANSION COIL. MILTON H. SHOENBERG, San Francisco, Cal., assignor, by direct and mesne assignments, to Consolidated Electric Appliance Companies, Ltd., San Francisco, Cal., a Corporation of California. Filed Sept. 13, 1906. Serial No. 334,409.

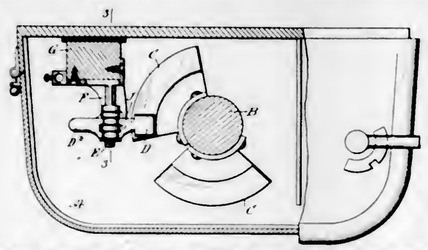
Claim.—1. An electrical heater consisting of an exterior tube, an elastic insulating sheet expanded to fit closely within the tube, an electrical resistant coil expanded to fit the interior of the insulating sheet and retain it in close contact with the tube, and connections whereby an electrical current may be passed through the coil, said connections including non-conducting bushings fixed in the end of the tube, and plugs fixed in the bushings and connecting with the coil.

2. In an electrical heater, a heat conducting tube an insulating sheet fitting within the tube, said sheet consisting of a piece capable of being coiled to initially enter the tube and then expansible to fit snugly against the interior of said tube, an elastic coil having such diameter as to expand and make close contact between itself, the insulating sheet and the interior of the tube and connections whereby an electrical current may be passed through the coil to heat the latter and the tube, and a medium to be heated with which the exterior of the tube is in contact.

856,737. ELECTRIC CONTROLLER. RICHARD VAN R. SILL, Newark, N. J., assignor of two-thirds to Alphonzo E. Pelham, New York, N. Y. Filed Mar. 6, 1907. Serial No. 360,837.

Claim.—An electric controller comprising a vertically disposed shaft under the control of the operator, segmental contact plates secured on the said shaft in staggered form, an insulated post, brackets secured on the said post opposite the said contact plates, each bracket having a horizontally disposed pivot and an integral stop, and a pair of spring-pressed contact jaws fulcrumed on each pivot and

adapted to be engaged by the corresponding contact plate, the said stop extending between the jaws to hold the same in central position relative to the corresponding contact



plate, for the latter to readily enter the jaws, the stop permitting free movement of the jaws when opened by the contact plate.

856,738. BRAKE FOR RAILWAY-VEHICLES. CHARLES C. W. SIMPSON, Wigan, England. Filed Oct. 20, 1906. Serial No. 339,791.



Claim.—1. In brakes for railway vehicles, the combination of a horn plate, a plurality of brake blocks, bars connected to said brake blocks and bearing in said horn plate, a wedge device slidably mounted in said horn plate, having its tapering end between the ends of said bars, and means for raising and lowering said wedge device from either side and from diametrically opposite corners of the vehicle.

2. In brakes for railway vehicles, a horn plate, brake blocks, bars connected to said brake blocks and bearing in said horn plate, a wedge device slidable in said horn plate with its taper part between the ends of said bars, a brake lever pivoted to said horn plate and engaging with said wedge device, a rocking shaft across the vehicle, a crank arm on said rocking shaft engaging with said wedge device, and a brake handle connected to said rocking shaft.

3. In brakes for railway vehicles, a horn plate, brake blocks, bars connected to said brake blocks and bearing in said horn plate, a wedge device slidable in said horn plate with its taper part between the ends of said bars, projecting lugs on both sides of said wedge device, a brake lever pivoted to said horn plate and located between said lugs on one side of the wedge device, a rocking lever, a crank arm on said lever located between the lugs on the other side of said wedge device, and a brake lever on the opposite side of the vehicle or the like from said first brake lever connected to said rocking shaft.

4. In brakes for railway vehicles, a horn plate, brake blocks, bars connected to said brake blocks and bearing in said horn plate, means for adjusting the length of said bars, a wedge device slidable in said horn plate with its taper part between the ends of said bars, and means for raising and lowering said wedge device from either side and diametrically opposite corners of the vehicle or the like.

5. In brakes for railway vehicles, a horn plate, brake blocks, bars connected to said brake blocks and bearing in said horn plate, a wedge piece slidable in said horn plate, a straight portion toward the lower end of said wedge piece, and means located on either side of said vehicle and its opposite ends thereof for raising or lowering said wedge piece.

6. In brakes for railway vehicles, a horn plate, brake blocks, rods secured to said brake blocks and slidably bearing in said horn plate, a wedge device slidable in said horn plate located with its narrowed part normally between said bars, a brake handle on one side of the vehicle or the like directly engaging said wedge device, a brake handle on the other side of the vehicle, a cross shaft connected to said second brake handle, and a crank arm connected to said rocking shaft engaging directly with said wedge device.

7. In brakes for railway vehicles, a wedge device, a support and guide for said wedge device, brake blocks, means intermediate said wedge device and said brake blocks for positively actuating said brake blocks, handles at diametrically opposite corners of the vehicle for raising and lowering said wedge device.

8. In brakes for railway vehicles, a horn plate, a wedge device slidable in said horn plate, brake blocks, means for positively actuating said brake blocks from said wedge device, a tongue on said wedge device, a strap or guide piece about said tongue and secured to said horn plate, and means for operating said wedge device from either side of the vehicle and opposite ends thereof.

9. In brakes for railway vehicles, a horn plate, a wedge device slidable in said horn plate, brake blocks, means intermediate said wedge device and said blocks to positively operate said brake blocks, means for operating said wedge device from either side or from opposite ends of said vehicle or the like, a power cylinder, and means intermediate said power cylinder and said brake blocks for operating said brake blocks independently of said hand levers.

10. In brakes for railway vehicles, a wedge device, brake blocks positively actuated from said wedge device, hand means for actuating said wedge device, a power cylinder, a plunger in said cylinder, a T lever connected to said plunger, means for supporting said T lever, links connected to said T lever and to said brake blocks.

11. In brakes for railway vehicles, a wedge, brake blocks positively actuated from said wedge device, hand means for actuating said wedge device, a power cylinder, a plunger in said cylinder, a T lever connected to said plunger, means for supporting said T lever, links connected to said T lever and to said brake blocks, and slots in said links.

12. In brakes for railway vehicles, a horn plate, a wedge device slidable in said horn plate, brake blocks, bars connected to said brake blocks and slidable in said horn plate, a brake handle pivotal on said horn plate and connected to said wedge device, a rocking shaft, a crank arm on said rocking shaft connected to said wedge device, a handle on said rocking shaft and on the opposite side of said vehicle from said first handle, a T shaped lever with two short and one long arm mounted on said rocking shaft, a power cylinder, a plunger in said cylinder connected to the long arm of said T piece, links connected to the short arm of said T piece and to the brake blocks.

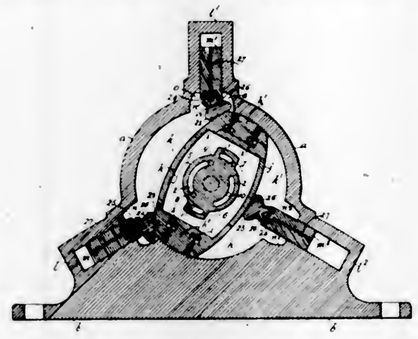
13. In brakes for railway vehicles, the combination with hand means for operating the brakes of a cross shaft connected to said hand operating means, of a lever on said cross shaft, a power cylinder, connections between said lever and said power cylinder, and means connected with said lever for braking the vehicle.

14. In brakes for railway vehicles, a horn plate, a wedge device slidable in said horn plate, brake blocks, bars connected to said brake blocks and slidable in said horn plate, a brake handle pivotal on said horn plate and connected to said wedge device, a rocking shaft, a crank arm on said rocking shaft connected to said wedge device, a handle on said rocking shaft and on the opposite side of said vehicle from said first handle, a T shaped lever with two short and one long arm mounted on said rocking shaft, a power cylinder, a plunger in said cylinder connected to the long arm of said T piece, and means connected to the short arms of said T lever for operating said brake blocks and permitting said brake handles and said brake cylinder to operate the brake independently one of the other.

15. In brakes for railway vehicles, brake blocks, wedging means connected to handles at either side and at different ends of said vehicle or the like for operating said brake blocks, a power cylinder, means for operating said brake blocks therefrom independently of said hand levers and wedging means.

16. In brakes for railway vehicles, a horn plate, a wedging device slidable in said horn plate, lugs on both sides of said horn plate, a hand lever pivotal in said horn plate located between the lugs of said wedge device on one side thereof, a rock shaft, a crank arm on said rock shaft located between the lugs of the wedge device on the opposite side thereof, a second hand lever on said rock shaft and on the opposite side and at the opposite end of said vehicle from said first brake handle, brake blocks, adjustable rods connected to said brake blocks and slidably bearing in said horn plate and located on either side of said wedging device, a downwardly projecting tongue on said wedge device, guiding means for said tongue on said horn plate, spring means on said horn plate for holding the wedge device in given positions, a T lever on said rock shaft with two short and one long arm, a power cylinder a plunger adapted to work in said power cylinder and connected to the long arm of said T lever, links between said brake blocks and the short arm of said T lever, and means for permitting movement of said brake blocks to their braking position without affecting said T lever.

856,739. ROTARY ENGINE. BASIL A. SLADE, London, England. Filed July 30, 1906. Serial No. 328,471.



Claim.—1. The combination, in a rotary motive power engine, of a cylinder *a*, cylinder ends *c*, *d*, bearings and stuffing boxes *e*, *f*, shaft *g*, radial pistons *h* having curved surfaces on their sides *j* and ends *h'*, *h²*, radial diaphragms *m*, radial chambers *l*, recesses or enlargements *n*, inlet passages 1, 1, and exhaust passages 2, 2, through the central part of the piston *h*, projecting boss *p*, cover *q*, concentric recesses 3 and 4, inlet pipe 11, exhaust pipe 12, holes 5, 6, 7, from the recess 3, and holes 8, 9, 10 from the recess 4, cover *r* on cylinder end *d*, central recess in cover *r*, loose disk 19 in recess, passages 13, 14, 15, partly through cylinder end *d* opening at their outer parts through passages 17 into openings 22 in disk 19, of such shape that steam admitted into them is directed in one position of the disk 19 into one of the radial passages 18 and to one side of the diaphragm *m*, and when the disk 19 is turned, into the other of the parallel radial passages 18, and to the other side of the diaphragms, the radial passages 18 passing to enlargements *n* on one or other side of the diaphragm *m*, according to the position to which the disk 19 is turned, and means for turning the disk 19, all substantially as set forth.

2. In a rotary motive power engine, having a cylinder, radial sliding diaphragms, and a central driving shaft, the piston *h* having its outer ends *h'*, *h²* curved to fit in the cylinder and its sides *j* which connect the ends *h'*, *h²*, curved to a much larger radius so as to leave spaces *k*, *k'* between them and the inside of the cylinder, packing at *i*, *i*, in the ends *h'*, *h²* of the piston, and concentric passages 1, 1, and 2, 2, through the body of the piston for the inlet and outlet of steam, the inlet passages 1, 1, being at a greater radial distance from the center than the outlet passages, 2, 2, substantially as set forth.

3. In a rotary motive power engine, having a cylinder, a central driving shaft and revolving piston, and radial sliding diaphragms, the combination with the sliding diaphragms, of a concave sliding piece 23, pivoted by a pin 24 upon the rounded end of the sliding diaphragm *m*, spring packing strips 26, and a radial passage 27 having lateral openings at its lower end each covered and uncovered alternately by the packing strips 26, substantially as set forth.

4. The reversing disk 19 having pairs of triangular shaped openings 22, their outer longer side concentric with the edge of the disk and their outer corners corresponding with the inner ends of the passages 18, and their inner corners corresponding with the opening 17 for the inlet of steam, substantially as set forth.

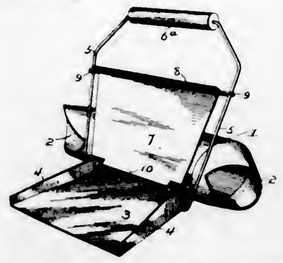
5. In a rotary engine, a cylinder, a central shaft, a radial piston mounted on said shaft and revolving with it in said cylinder, a plurality of sliding diaphragms mounted to rotate said piston and provided with inlet and exhaust passages for the steam, and means carried by said diaphragms for alternately opening and closing said steam passages, substantially as described.

6. In a rotary engine, a cylinder, a central shaft, a radial piston mounted on said shaft and revolving with it in said cylinder, a plurality of sliding diaphragms mounted in the periphery of said cylinder, said diaphragms being adapted to rotate said piston and being provided with inlet and exhaust passages for the steam, swinging members carried by said diaphragms, and means carried by said diaphragms for alternately opening and closing said steam passages, substantially as described.

7. In a rotary engine, a cylinder, a central shaft, a radial piston mounted on said shaft and revolving with it in said cylinder, a plurality of sliding diaphragms mounted in the periphery of said cylinder, said diaphragms being adapted to rotate said piston and being provided with inlet and exhaust passages for the steam, swinging members mounted on the inner ends of said diaphragms, and means connected to and actuated by said swinging members for alternately opening and closing said steam passages, substantially as described.

8. In a rotary engine, a cylinder, a central shaft, a radial piston mounted on said shaft and revolving with it in said cylinder, a plurality of sliding diaphragms mounted in the periphery of said cylinder, said diaphragms being adapted to rotate said piston and being provided with a central steam passage and branch passages extending from said central passages near the inner ends thereof, swinging members mounted on the inner ends of said diaphragms and packing strips connected to said swinging members and actuated to alternately open and close said branch passages, substantially as described.

856,740. DUST-PAN. DAVID W. SNIDER, Salisbury, N. C., assignor of one-third to T. D. Maness and one-third to E. D. Bivens, Salisbury, N. C. Filed June 18, 1906. Serial No. 322,210.



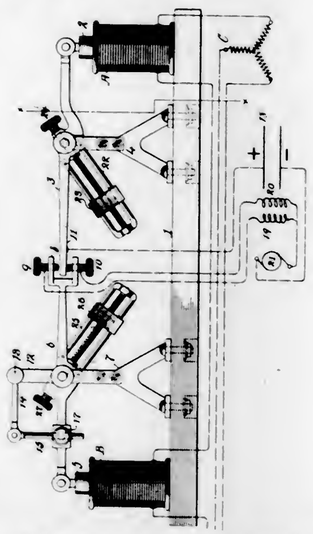
Claim.—1. An article of manufacture comprising a tray, an open-ended receptacle secured to said tray and having an elongated opening communicating therewith, the ends

of said receptacle projecting beyond the sides of the tray, a hinged cover for the tray, laterally projecting loops in proximity to the free end of the cover, and a bail hinged to the tray and passing through the loops on the cover, the portions of the receptacle which project beyond the sides of the tray constituting supports for the bail to hold the cover in raised position.

2. An article of manufacture comprising a receptacle having an elongated slot, a tray secured to the receptacle and communicating with the slot therein, a cover hinged near the juncture of the tray with the receptacle, said cover provided with a lip to protect the hinged juncture of the cover and tray, and means for operating the cover.

3. The combination with a dust receptacle made with an elongated opening in one side, of a tray secured to the receptacle coincident with said elongated opening, a cover hinged over the tray at a point in proximity to the juncture of the tray with the receptacle, a bail having a part extending across the bottom of the tray and hinged thereto, and loops projecting laterally from the free end of the cover, the side members of the bail passing through said loops.

856,741. LOAD-EQUALIZER FOR GENERATORS. SEVERN D. SPRONG, Brooklyn, N. Y., assignor of one-half to Metropolitan Engineering Company. Filed Mar. 26, 1906. Serial No. 308,020.



Claim.—1. A plurality of generating units and means controlled by the establishment of a differential between the average load on each of said units and the actual load on any one of them, for causing said last named unit to assume its distributive share of the whole load.

2. A plurality of generating units and means controlled by the establishment of a differential between the average load on each of said units and the actual load on any one of them, for causing said last named unit to assume a predetermined share of the whole load.

3. A plurality of generating units and means controlled by the establishment of a differential between the average load on each of a number of said units less than the whole and the actual load on any one of them, for causing said last named unit to assume its distributive share of the load on said number of units.

4. A plurality of generating units and means controlled by the establishment of a differential between the average load on each of a number of said units less than the whole and the actual load on any one of them, for causing said last named unit to assume a predetermined share of the load on said number of units.

5. A plurality of generating units, movable circuit terminals associated with each unit, a plurality of electrically operated devices respectively controlling said units and respectively in circuit with said terminals, and means controlled by the establishment of a differential between the average load on each of said units and the actual load on any one of them, for moving into contact the terminals associated with said unit and thereby closing circuit to the electrically operated device in circuit with said last named terminals.

6. A plurality of generating units, relatively movable circuit terminals associated with each unit, means for initially adjusting the initial position of the + and — members of each pair of circuit terminals, a plurality of electrically operated devices respectively controlling said units and respectively in circuit with said terminals, and means controlled by the establishment of a differential between the average load on each of said units and the actual load on one of them for moving into contact the terminals associated with said unit and thereby closing circuit to the electrically operated device in circuit with said last named terminals.

7. A plurality of generating units, movable circuit terminals associated with each unit, a plurality of motors respectively controlling said units and respectively in circuit with said terminals and means controlled by the establishment of a differential between the average load on each of said units and the actual load on any one of them, for moving into contact the terminal associated with said unit and thereby closing circuit to the motor in circuit with said last named terminals.

8. A plurality of generating units, a plurality of movable mechanically connected circuit terminals actuated by said units, a plurality of independent movable circuit terminals each actuated by one of said units and each in proximity to one of said first named terminals and means in circuit with each pair of approximated terminals for controlling the unit associated with said pair of terminals.

9. A plurality of generating units, a plurality of movable circuit terminals simultaneously actuated by all of said units to take a definite position, a plurality of separate movable circuit terminals each associated with one of said units and actuated thereby, and each disposed in proximity to one of said first named terminals and a plurality of electrically operated devices each in circuit with one of said first named terminals and one of said separate terminals, and each constructed to control the unit associated with said separate terminal.

10. In combination with each unit of a plurality of generating units, two solenoids in series circuit with said unit, a movable circuit terminal actuated by one of said solenoids, a movable circuit terminal actuated by the other solenoid and disposed in proximity to said first terminal, a motor in circuit with said terminals and controlling said unit and means for mechanically connecting the several circuit terminals actuated by one set of corresponding solenoids of different pairs.

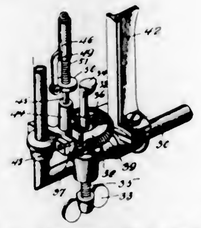
11. In combination with each unit of a plurality of generating units, two solenoids in series circuit with said unit, a movable circuit terminal actuated by one of said solenoids, a movable circuit terminal actuated by the other solenoid and disposed in proximity to said first terminal, a motor in circuit with said terminals and controlling said unit and means for mechanically connecting any number less than all, of the circuit terminals actuated by one set of corresponding solenoids of different parts.

12. In combination with each unit of a plurality of generating units, two solenoids in series circuit with said unit, a movable double contact terminal actuated by one of said solenoids, a movable single contact terminal actuated by the other solenoid and disposed in proximity to both contacts of said first named terminal, a motor controlling said unit and in circuit with said terminals and constructed to rotate in one direction or the other in accordance as circuit is established between one or the other contact of said double contact terminal and said single contact terminal, and means for mechanically connecting the several double contact terminals of different pairs of solenoids.

13. Two generating units C, F, a pair of solenoids A, B, in series circuit with unit C, a pair of solenoids E, D, in series circuit with unit F, two pivoted levers 6 vibrated by solenoids B, E, means for mechanically connecting two or more of said levers 6, contact terminals 9, 10 carried by each of said levers 6, two pivoted levers 3 vibrated by solenoids A, D, a circuit terminal 11 carried by each of said levers 3, the terminals 11 being disposed between the terminals 9, 10, a motor in circuit with the circuit terminals 9, 10, 11, associated with solenoids A, B, and controlling unit C, and a motor in circuit with circuit terminals 9, 10, 11, associated with solenoids D, E, and controlling unit F.

14. Two generating units C, F, a pair of solenoids A, B, in series circuit with unit C, a pair of solenoids E, D, in circuit with unit F, two pivoted levers 6, vibrated by solenoids B, E, adjustable weights carried by said levers, means for mechanically connecting two or more of said levers, contact terminals 9, 10, carried by each of said levers 6, two pivoted levers 3 vibrated by solenoids A, D, adjustable weights carried by said levers, a circuit terminal 11 carried by each of said levers 3, the terminals 11 being disposed between the terminals 9, 10, a motor in circuit with the circuit terminals 9, 10, 11, associated with solenoids A, B, and controlling unit C, and a motor in circuit with circuit terminals 9, 10, 11, associated with solenoids D, E, and controlling unit F.

856,742. AUTOMATIC SHUT-OFF FOR GAS-BURNERS. EMIL TAVASTILA, Domora, Pa. Filed Jan. 23, 1907. Serial No. 353,715.

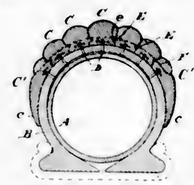


Claim.—1. In an automatic shut off the combination with a gas supply pipe and burner, of a valve controlling the supply of gas to said burner, a valve stem for operating said valve, a spring held collar mounted upon said valve for moving said stem and a strip of metal arranged in close proximity to said burner, sleeves mounted upon said strip of metal and said valve and a slidable spring-pressed rod carried partially within said sleeves, a projecting end of said rod adapted to engage a notch in the periphery of said collar, a pivoted washer encircling said rod and adapted to engage the latter during movement in only one direction, said strip of metal being expanded and contracted by the action of said burner.

2. An automatic shut off consisting of a valve, a valve stem for operating said valve, a spring held collar revolubly mounted upon said valve for operating said stem, and a slidable spring-pressed rod in engagement with an expansible metallic strip and adapted to engage said collar for normally holding the latter in a fixed position, a pivoted washer encircling said rod and adapted to temporarily engage the rod and a lug mounted upon the valve stem for tripping the washer out of engagement with said rod.

856,743. PNEUMATIC TIRE. JESSE O. THOMSON, Philadelphia, Pa. Filed Dec. 4, 1906. Serial No. 346,198.

Claim.—1. In a pneumatic tire, the combination of the inner pneumatic tube with a continuous shoe inclosing said tube, a series of continuous circumferential removable wearing sections inclosing the shoe and arranged side by side in abutting relation transversely considered, and separate means for detachably connecting each of said circumferential sections independently to the shoe.



2. In a pneumatic tire, the combination of the inner pneumatic tube with a shoe inclosing said tube, a series of circumferential removable wearing sections inclosing the shoe and arranged side by side in abutting relation transversely considered, and separate means for detachably connecting said circumferential sections to the shoe consisting of plates embedded in the circumferential sections and screws extending from the inner side of the shoe and connecting with the plates.

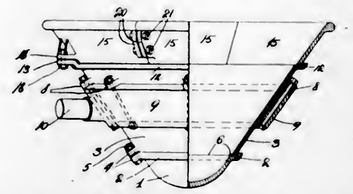
3. In a pneumatic tire, the combination of the inner pneumatic tube with a shoe inclosing said tube, a series of circumferential removable wearing sections inclosing the shoe and arranged side by side transversely considered and provided with interlocking circumferential parts, and separate means for detachably connecting each of said circumferential sections to the shoe.

4. In a pneumatic tire, the combination of the inner pneumatic tube with a shoe inclosing said tube, a series of circumferential removable wearing sections inclosing the shoe and arranged side by side in abutting relation transversely considered, separate means for detachably connecting each of said circumferential sections to the shoe, and transversely arranged binding wires threaded transversely through the series of circumferential wearing sections.

5. A shoe for a pneumatic tire consisting of a tubular portion having a series of continuous circumferential wearing sections C C′ arranged about its outer circumference in abutting contact and in which the sections C′ are provided with inwardly directed portions c, and independent metallic devices for detachably connecting each of the several sections C C′ to the shoe, whereby they are held transversely and circumferentially in close transverse contact with each other and with the shoe.

6. A shoe for a pneumatic tire consisting of a tubular portion having a series of circumferential wearing sections C C′ arranged about its outer circumference and in which the sections C′ are provided with inwardly directed portions c, the outer circumferential surface of each of the sections C being exteriorly curved in cross section so as to form a series of parallel circumferential ribs on the outer portion of the tire, and metallic devices for independently detachably connecting the several sections C C′ to the shoe, whereby they are held in close transverse contact with each other and with the shoe both transversely and circumferentially.

856,744. LADLE. MENSON H. TREADWELL, New York, N. Y. Filed June 27, 1906. Serial No. 323,572.



Claim.—1. A ladle comprising a bottom portion and a sectional rim carried thereby and varying in diameter according to changes in the diameter of the bottom portion, substantially as described.

2. A ladle comprising a bottom, an annular section, and a sectional rim mounted on said annular section and varying in diameter with changes in the diameter of the annular section, substantially as described.

3. A ladle comprising a plurality of horizontal sections secured together, the sections at their meeting edges being of different diameters, and the upper section varying in diameter according to changes in diameter of the adjacent section, substantially as described.

4. A ladle comprising a plurality of sections secured together, the sections at their meeting edges being of different diameters to form shoulders, and the top section comprising a plurality of segments secured together, substantially as described.

5. A ladle comprising a plurality of sections secured together, the sections at their meeting edges being of different diameters to form shoulders, and the top section comprising a plurality of segments secured together to permit expansion, substantially as described.

6. A ladle comprising a bottom having a channel in its upper edge, and a second section secured to said bottom and fitting in said channel, said second section being of greater diameter than said bottom section, substantially as described.

7. In a ladle, a bottom, and an expansible top section secured thereto, the bottom section projecting inwardly from the surface of the top section, substantially as described.

8. A ladle comprising a bowl-shaped bottom section, an annular intermediate section, and a sectional rim or top constructed to vary in diameter according to changes in the diameter of the annular section, said annular section carrying supporting means, substantially as described.

9. A ladle comprising a bottom section having a flange, and an expansible top section having a flange, and means for securing said sections together to permit movement of said top section relatively to said bottom section, substantially as described.

10. A ladle comprising a bowl-shaped bottom section, an annular intermediate section, and a sectional rim carried by said annular section and varying in diameter according to changes in the diameter of the annular section, supporting means carried by said annular section, and a truck having means engaging said supporting means, substantially as described.

11. A ladle comprising a continuous bottom portion varying in diameter with changes in temperature, and a top portion composed of segments free to expand and contract with the bottom portion, as the latter responds to changes in temperature, substantially as described.

12. A ladle comprising a bottom portion, an intermediate portion carrying said bottom portion and an upper portion, trunnions carried by the intermediate portion, said upper portion changing in diameter according to changes in the diameter of the intermediate portion, substantially as described.

13. A ladle adapted to be supported in trunnions and comprising a bottom portion carrying supports, and a top portion carried thereby and comprising sections loosely bolted together, said sections at their meeting edges being of different diameters, substantially as described.

14. A ladle comprising a removable bottom portion, a flanged sectional top portion varying in diameter according to changes in the diameter of the bottom section, and trunnions carried by one of said sections, substantially as described.

15. A ladle comprising a removable bottom portion, an annular supporting portion carrying said bottom portion, and a top composed of segments bolted to said supporting section and varying in diameter according to changes in diameter of said bottom and said annular supporting section, substantially as described.

16. A ladle composed of a plurality of sections one supporting another, one of the supported sections being constructed to vary in diameter according to changes in diameter of its supporting section, substantially as described.

17. A ladle composed of annular sections rigidly bolted together, one of said sections being composed of a plurality of segments independently mounted on the adjacent section and constructed to vary in diameter according to changes in diameter of the adjacent supporting section, substantially as described.

18. A ladle composed of horizontal sections one supporting another, the upper of said sections being composed of segments independently secured to the underlying section and loosely connected to each other in such manner as to vary in diameter according to changes in the diameter of the section carrying said segments, substantially as described.

19. In a ladle, the combination with a section carrying radially slotted lugs, of a second section having a transversely extending slotted lug, and a bolt passing through said slots to secure said sections together, substantially as described.

20. In a ladle, the combination with a section carrying radially slotted lugs, of a second section engaging said first section and having a transversely extending slotted lug, and a bolt passing through said slots and securing the ends of said sections together, substantially as described.

21. In a ladle, the combination with a bowl-shaped section carrying radially slotted lugs, of a second segmental section engaging said first section and having a transversely extending slotted lug, and a bolt passing through said slots and securing the ends of said sections together, substantially as described.

856,745. MODELING FOR SPEED-BOATS. JOHN F. TWIGG, San Francisco, Cal. Filed Feb. 12, 1906. Serial No. 300,633.



Claim.—1. A boat or vessel having an under water body, the lines of which pass through intersections of ordinates and horizontal divisions of a quarter of a circle having a radius approximately two and seventy five hundredths times the half breadth of the boat amidships on the water line.

2. In a boat or vessel, an under water body formed by equally spaced parallel horizontal and vertical lines intersecting the chord of a quarter of a circle and each other, the intersection of said horizontal lines with the arc determining the half width on the water line, and the length of the corresponding vertical lines from their junction with the chord and the horizontal line to the arc, giving the depth to the center keel line.

3. In a boat or vessel, an under water body formed by intersections of a chord of a quarter of a circle having a radius of approximately two and seventy five hundredths times the half breadth of the boat amidships, with equally spaced horizontal and vertical lines intersecting each other and the chord, said lines being parallel with corresponding radii connecting the ends of the arc, said vertical and horizontal lines being extended to intersect the arc, and including the curvature of the boat surface between the vertical and horizontal lines.

4. In a boat or vessel, an under water body formed by intersections of a chord of a quarter of a circle having a radius of approximately two and seventy five hundredths times the half breadth of the boat amidships, with equally spaced horizontal and vertical lines intersecting each other and the chord, said lines being parallel with corresponding radii connecting the ends of the arc, said vertical and horizontal lines being extended to intersect the arc, and the portions of said horizontal lines between the chord and arc corresponding to the half breadth of the sections of the boat.

5. In a boat or vessel, an under water body formed by intersections of a chord of a quarter of a circle having a radius of approximately two and seventy five hundredths times the half breadth of the boat amidships, with equally spaced horizontal and vertical lines intersecting each other and the chord, said lines being parallel with corresponding radii connecting the ends of the arc, said vertical and horizontal lines being extended to intersect the arc, and the portions of said vertical lines between the chord and arc corresponding to the depth of the sections of the boat from the water line.

6. A boat or vessel having the under water lines conforming to the surface of a quarter cylinder, with the bow practically vertical, and wave lines continuing aft in a spiral formed on the surface of the cylinder, and terminating at the stern on an approximately horizontal line.

7. In boat building and designing, an under-water body whose surface outlines correspond to arcs on a segment of a cylinder, said segment made by two intersecting planes disposed at right angles to each other, and extending diagonally of the cylinder, and from the same points of origin thereon, said points of origin lying in planes perpendicular to each other and the line of intersection of said planes being the axis of the cylinder.

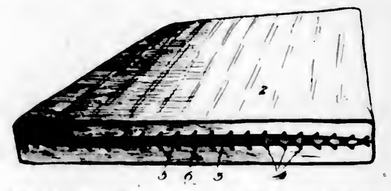
8. In boat building and designing, an underneath body, whose surface lines at the ordinates or sections of the boat's length correspond to arcs on a segment of a quarter cylinder, said quarter cylinder having a length equal to the water line of the boat and a radius equal approximately to 2.75 times the half breadth of the midship section, said segment of the cylinder included between two planes perpendicular to each other and running diagonally of the cylinder from the same points of origin, said points of origin lying at the ends of the quarter cylinder, in the planes of the flat sides thereof.

9. In a boat or vessel, an under-water body whose vertical lines lie in circular curves on a cylinder, the curve of the midship section of said boat having a radius approximately 2.75 times the half breadth of said section.

10. In a boat, an under-water body whose vertical lines lie in circular curves and whose fore and aft lines lie in a twisted spiral on the face of a cylinder, the curve of the midship section of said boat having a radius approximately 2.75 times the half breadth of said section.

856,746. MATTRESS. JOSEPH R. VALENTINE, Salt Lake City, Utah. Filed June 14, 1904. Serial No. 212,531.

Claim.—A mattress consisting essentially of compressible stuffing, a cover permanently fastened about and inclosing the stuffing; said stuffing and cover being tufted, whereby depressions are formed in opposite sides of the same, and an auxiliary slip or removable cover, of non-stretching material and of smaller size than said compressible mattress, removably arranged on the stuffing and permanent cover which is forced under compression into said removable cover, the latter having an opening extending throughout the length of one of its edges and also having a flap or tongue 6 approximately one half the width of the mattress edge and corresponding in length to said opening and arranged at the inner side of and attached to said edge, and means detachably connecting the portions of



the edge of the cover at opposite sides of the opening, for the purpose set forth.

856,747. HYDROCARBON-BURNER. DE WITT D. WALKER, Irvington, Cal., assignor of forty-nine one-hundredths to William H. Blacow, Irvington, Cal. Filed Apr. 13, 1906. Serial No. 311,434.



Claim.—1. A hydrocarbon burner comprising a tube extending horizontally into the fireplace said tube having its inner end upturned and closed and having said upturned portion provided with inclined orifices adapted to deliver jets of gas or vapor downwardly upon the tube, a hydrocarbon supply pipe connecting with the opposite portion of the tube, and a plug within the tube and of less diameter than said tube whereby an annular heating passage is formed between the tube and plug, said plug having one end fixed to the tube and thence extending across the end of the hydrocarbon supply pipe to a point near the upturned end of said tube.

2. A hydrocarbon burner comprising a tube extending horizontally into the fireplace, and having an upturned elbow secured to its inner end, a tee-coupling to one branch of which the outer end of said tube is secured, a fluid supply pipe fitted to a second branch of the coupling, a plug within the tube and of less diameter than said tube, said plug having one end fixed to the remaining branch of the coupling and thence extending across the delivery end of the fluid supply pipe to a point proximate to the elbow, said elbow having orifices adapted to deliver jets of vapor or gas downward upon the tube, and a plug for closing the upper end of the elbow.

3. In a hydrocarbon burner, a horizontally disposed tube extending into the lower part of the fire place having a closed outer end and an inner passage for the hydrocarbon liquid, a plug extending approximately from end to end within the tube and forming therewith a narrow annular channel for the passage of the liquid, an upturned elbow at the inner end of the tube, said section having its upper end closed, inclined oppositely discharging jet openings located beneath the closed end, one of said openings adapted to deliver the inflammable gas against and along the line of the conducting pipe, a false front and bottom for the fire place, said front having inclined air inlet openings for causing a downward draft of air toward the burner pipe.

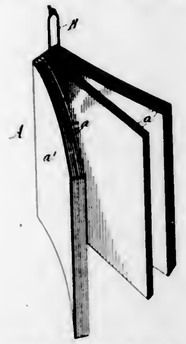
4. In a hydrocarbon burner, a fire place having a false front and bottom, said front being formed with lunette shaped openings adapted to deliver air inwardly and downwardly toward the bottom, a pipe extending horizontally above said bottom having an inlet at the outer end and an upwardly extending elbow at the inner end, said elbow having inclined jet passages oppositely located, one or more of said passages discharging in line with and against the horizontal tube, a plug extending approximately through the horizontal portion of the tube and

forming therewith an annular channel for the passage of the liquid in a thin sheet.

5. In a hydrocarbon burner, a fire place having a false front and bottom, a tube extending above said bottom having an inlet passage at the outer end, an upturned elbow at the inner end and jet openings in said elbow, a plug extending approximately the length of the horizontal tube section and forming therewith an annular channel for the passage of the hydrocarbon, said plug having an outer end formed with a portion which may be engaged so as to remove it from the tube, and a closure for the outer end of the tube and in line with the plug.

6. In a hydrocarbon burner, a tube extending horizontally into the fire place, having an inlet passage at the outer end, an upturned elbow at the inner end closed at the top and having an inclined jet passage contiguous to the closure, one or more of said passages discharging in line with and against the horizontal tube, a plug extending within the tube and forming therewith an annular spiral channel for the passage of hydrocarbon liquid, a false front for the fire place having lunette shaped openings for the admission and direction of air downwardly toward the tube, said front having a horizontal portion extending beneath the horizontal tube, said horizontal portion having a depression formed in it below the elbow of the pipe adapted to receive a combustible for the purpose of a preliminary heating of the apparatus.

856,748. BOOK OR PAMPHLET. JOSEPH A. WARD, Lockport, N. Y. Filed Feb. 26, 1906. Serial No. 302,881.



Claim.—1. A book provided with a suspending device which is attached to a portion only of the leaves thereof adjacent to the back of said book, substantially as set forth.

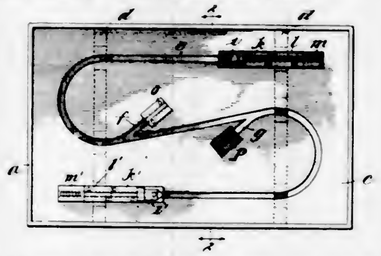
2. A book having a hole extending through a portion only of the leaves thereof adjacent to the back of said book, and a suspending device secured in said hole, substantially as set forth.

3. A book having a hole extending through a portion of the central leaves only thereof, and a suspending device secured in said hole, substantially as set forth.

4. A book provided with a suspending device which is attached to a portion of the leaves thereof and projects outwardly between the leaves to which it is attached and the adjacent leaves of the book beyond the edges thereof, substantially as set forth.

856,749. RAILROAD-PUZZLE. HARRY G. WEBSTER, Chicago, Ill. Filed Dec. 15, 1906. Serial No. 347,987.

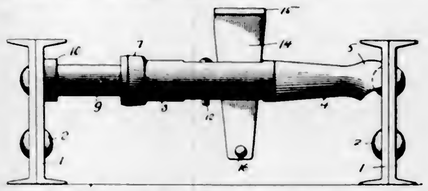
Claim.—1. A puzzle device including a box body, a diaphragm supported clear of the bottom of the box body, and having an S-shaped slot and branch slots extending from the middle portion of the aforesaid slot, two sets of blocks in which the blocks of one are of distinctive character from the blocks of the other, said blocks simulating motor vehicles, trailers and tail cars, each set simulating the vehicles of one train, said blocks having grooves in their sides engaging the walls of said slot and its branches to prevent displacement of said blocks with respect to the diaphragm perpendicularly while said blocks are being pushed along the line of travel afforded by the slot, said branch slots together affording siding facilities for less than the number of vehicles of either train.



2. A puzzle device including a sheet provided with a slot, two sets of blocks in which the blocks of one are of distinctive character from the blocks of the other, said blocks simulating motor vehicles, trailers and tail cars, each set simulating the vehicles of one train, said slot being branched to afford siding facilities for a plurality of vehicles of either train less than the number of vehicles contained in either train, said blocks having grooves in their sides engaging the walls of said slot to prevent displacement of said blocks with respect to the sheet perpendicularly while said blocks are being pushed along the line of travel afforded by the slot, said slot having one portion returned upon another to afford an extended path of travel as compared with the size of the sheet.

3. A puzzle device including two sets of sliding blocks, each set simulating the vehicles of a train, a support therefor having a guide along which said blocks may slide, said guide being branched between its ends to afford siding facilities for less than the number of vehicles in either train, the branching of the guide being positioned to permit said trains to be placed on opposite sides thereof, whereby said siding facilities may be between the trains in forming the puzzle.

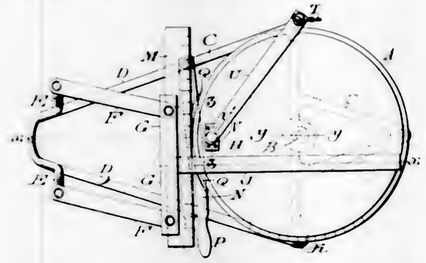
856,750. JAM-DOLLY. JAMES WEIMER, Swissvale, Pa., assignor of one-half to Sanford R. Carse, Pittsburg, Pa. Filed Nov. 15, 1906. Serial No. 343,477.



Claim.—1. A dolly embodying a body portion having a shank terminating in a bell-shaped end, said end being cut away to permit of the dolly being placed in engagement with a rivet, a die slidably mounted in said dolly body and having a socket-head, a wedge-shaped member mounted between the end of said die and said dolly body for adjusting said die, means to retain said die within said dolly body, and means to retain said member within said body, substantially as described.

2. A dolly comprising a hollow body at one end and a head on the other end, the hollow portion of said body being slotted transversely, a die slidably-mounted in said hollow end of the body, a pin extending transversely through the slot in the body of the die and holding the latter in the body, and a wedge extending through the slot in the body and engaging the inner end of the die, substantially as described.

856,751. DRAWING-BOARD. EMIL WERNER, Philadelphia, Pa., assignor of one-half to Adrian St. Clair Garman, Philadelphia, Pa. Filed Dec. 12, 1906. Serial No. 347,416.



Claim.—1. A rotatable drawing board, a square adapted to have a limb thereover, a scale fixed relatively to said board and disposed beyond the periphery of said board and independent of the latter, and pivoted parallel means mounted outside of the periphery of said board for carrying said square and moving said limb in directions parallel with the face of the board and with said scale, said scale being between the pivots of said parallel means and the periphery of the board.

2. A rotatable drawing board, a square adapted to have a limb thereover, a scale fixed relatively to said board and disposed beyond the periphery of said board and independent of the latter, and pivoted parallel means mounted outside of the periphery of said board for carrying said square and moving said limb in directions parallel with the face of the board and with said scale, said scale being between the pivots of said parallel means and the periphery of the board and in a plane below said means.

3. A rotatable drawing board, a base having extensions beyond the periphery of the board, arms rising from said base, parallel bars pivotally mounted on said arms, and a T-square having one limb pivotally connected with said parallel bars, the other limb being mounted to move over said board.

4. A rotatable drawing board, a base having extensions beyond the periphery of the board, arms rising from said base, parallel bars pivotally mounted on said arms, a T-square having one limb pivotally connected with said parallel bars, the other limb being mounted to move over said board, and a scale fixedly mounted with relation to the board, outside the periphery thereof and parallel to which the pivoted limb of the square is at all times movable.

5. In a drawing board, a rotatable board and a pivotally mounted brake lever movable beneath the under face of said board near its periphery to engage the same and prevent rotation thereof.

6. In a drawing board, a rotatable board and a pivotally mounted brake lever movable beneath the under face of said board near its periphery to engage the same and prevent rotation thereof, said brake having an inclined face whereby it forms a wedge.

7. A rotatable drawing board, a support therefor having an extension beyond its periphery and a brake pivotally supported on said extension and movable beneath the lower face of said board to control the speed of rotation and to check the same.

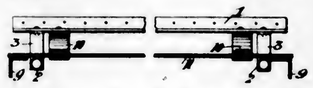
8. A rotatable drawing board, an impression device disposed over said board, a resilient carrier for said impression device, mounted outside the periphery of said board substantially parallel therewith, permitting the same to be lowered to the board and then to be automatically raised therefrom, and means for adjustably holding said impression device on the free end of said carrier.

9. In a drawing board, a pivotal square-carrying member a base having outward extensions, and arms rising therefrom and forming pivotal supports outside the periphery of the board for the pivotal square-carrying member.

10. In a drawing board, a pivotal square-carrying member, a square carried thereby, a base having outward extensions, arms rising therefrom and forming pivotal supports outside the periphery of the board for the pivotal square-carrying member, and a scale supported by said base beneath one limb of the square.

11. In a drawing board, a pivotal square-carrying member, a square carried thereby, a base having outward extensions, arms rising therefrom and forming pivotal supports for the pivotal square-carrying member, a scale supported by said base beneath one limb of the square, a rotatable drawing board, and a brake therefor mounted on said base beneath said scale and movable beneath said board.

856,752. MATTRESS. CHARLES J. WITZEL, New York, N. Y. Filed Dec. 31, 1906. Serial No. 350,176.



Claim.—1. A mattress comprising side and end bars, springs connected to the end-bars and extending downwardly and toward the transverse center-line of the mattress, and tensioning-rods carried by said springs at their lower ends and extending over said side-bars.

2. A mattress comprising side-bars, end-bars which extend at either end beyond said side-bars, said end-bars lying in a plane above said side-bars, flat springs applied to said end-bars and curved downwardly alongside of said side-bars and toward the transverse center-line of the mattress, and tensioning rods carried by the free ends of said springs and extending across said side-bars.

3. A mattress comprising side-bars, end-bars rigidly attached to said side-bars and arranged in a plane above the same, said end-bars extending at their ends beyond the side-bars, springs applied to said end-bars and extending downwardly alongside of said side-bars and formed at their free ends with bores, tensioning rods extending through said bores of the springs and over the side-bars, and nuts for retaining said rods in said bores.

856,753. PROCESS OF TREATING DETINNED IRON AND RESIDUES. CHARLES E. ACKER, Niagara Falls, N. Y., assignor to Tin Products Company, a Corporation of New York. Filed Oct. 4, 1906. Serial No. 337,411.

Claim.—1. The process of treating detinned iron and residues, which consists in washing the material with an anhydrous liquid capable of dissolving stannic chlorid.

2. The process of removing stannic chlorid from the surfaces of detinned iron and residues, which consists in washing the material with carbon tetrachlorid.

3. The process of treating detinned iron and residues, which consists in successively washing the material with different portions of an anhydrous liquid capable of dissolving stannic chlorid.

4. The process of removing wash liquors from detinned iron and residues, which consists in draining the material, and subjecting it to a current of air.

5. The process of removing wash liquors from detinned iron and residues, which consists in draining the material, subjecting it to a current of air, and passing the mixed air and vapor through a solvent for the vapor.

6. The process of removing wash liquors from detinned iron and residues, which consists in draining the material, subjecting it to a current of air, and passing the mixed air and vapor through a non-volatile oil.

7. The process of removing wash liquors from detinned iron and residues, which consists in draining the material, heating it, and subjecting it to a current of air.

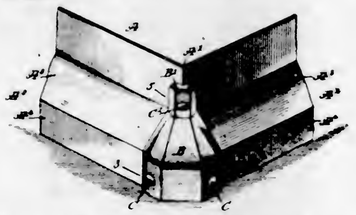
8. The process of removing wash liquors from detinned iron and residues, which consists in draining the material, heating it *in vacuo*, and subjecting it to a current of air.

9. The process of removing wash liquors from detinned

iron and residues, which consists in draining the material, heating it, subjecting it to a current of air, and passing the mixed air and vapor through a solvent for the vapor.

10. The process of treating detinned iron and residues, which consists in successively washing the material with an anhydrous liquid capable of dissolving stannic chlorid and an alkaline solution.

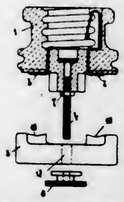
856,754. BASE FOR STOVES OR RANGES. MATTHEW F. ALLEN, Nashville, Tenn. Filed Feb. 8, 1907. Serial No. 356,357.



Claim.—1. A range having a body formed of sheet metal, having its corners split vertically at the bottom, the walls of the range being bent outwardly from the upper end of the split and downwardly in a plane parallel to the walls and inwardly to form a supporting flange, and a corner piece covering the split portion and conforming to the shape of the corner, the upper end of the corner piece extending on to the non-split corner portion of the body, and fastening means for securing the sides of the corner piece to the sides of the body, and the said upper end to the corner of the body.

2. A stove or range having a body formed of sheet metal, the lower portion being split at the corner and bent outward said outwardly bent portion having inwardly extending flanges, a corner piece covering the split portion and conforming to the shape of the corner, the upper end of the corner piece extending onto the non-split corner portion of the body, and fastening means for securing the sides of the corner piece to the sides of the body and the said upper end to the corner of the body.

856,755. ELECTRIC-LAMP SOCKET. JOSEPH AMON, New York, N. Y. Filed Mar. 1, 1906. Serial No. 303,599.



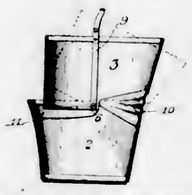
Claim.—1. In an electric lamp-socket, the combination of a support of insulating material having an interior thread to receive the base of an electric lamp, perforations extending through the base of the support, contact-plates secured therein and bent over the base of the support at their inner and outer ends, a clamping-plate of insulating material provided with raised portions, and means for holding said clamping-plate on the base of the support for supporting the conductors in contact with the contact-plates.

2. In an electric lamp-socket, the combination of a support of insulating material having an interior screw-thread adapted to receive the base of an electric lamp, said support being provided in its base with perforations, contact-plates secured into said perforations and provided with bent-over contact-surfaces at their inner and outer ends, a raised portion at the outer surface of the base for separating the outer ends of the contact-plates from each other, a clamping-plate of insulating material provided with raised portions, and means for clamping the conducting-wires interposed between the contact-plates and the raised portions of the clamping-plate firmly in position on the support.

3. In an electric lamp-socket, the combination of a support of insulating material having an interior thread adapted to receive the base of an electric lamp and having a grooved channel at one side of the thread, perforations and a central hole in said base, contact-plates secured in the perforations in the base, one of the contact-plates being seated in said side-groove of the interior thread, an elevation on the base of the support for separating the outer ends of the contact-plates, a screw-post seated in the central hole of the base, a clamping-plate of insulating material provided with raised portions for holding the conducting-wires, and a screw-nut applied to the end of the screw-post for holding the clamping-plate in position on the base of the support.

4. In an electric lamp-socket, the combination of a support of insulating material having an interior screw-thread adapted to receive the base of an electric lamp, the base of the support being provided with perforations and a central shouldered hole, contact-plates inserted in the perforations of the base, a raised portion on the outer surface of the base for separating the contact-plates, a screw-post secured in said shouldered hole, a clamping-plate of insulating material provided with a central opening for the screw-post and raised portions obtusely recessed at their faces, and a screw-nut for holding the conductors and the clamping-plate firmly on the base of the support.

856,756. FEED RECEPTACLE OR BAG. CHARLES H. AVEY, San Francisco, Cal. Filed Jan. 13, 1906. Serial No. 295,977.



Claim.—1. A feed receptacle or bag, having an air inlet capable of expansion upon tipping a portion of the bag.

2. A feed bag or receptacle having a transverse ventilating opening capable of expansion and contraction upon the bending of the bag or receptacle.

3. A feed receptacle or bag comprising a feed holding portion, an attaching portion and means connecting said portions, an expansible opening being formed between the portions to ventilate the said receptacle or bag.

4. A feed receptacle or bag comprising upper and lower portions separated for a portion of their circumference, to afford an expansible air inlet and pivotal means connecting the said portions.

5. A ventilated feed receptacle or bag comprising inclosing walls and a bottom, the said inclosing walls divided for a portion of the distance around the bag, forming upper and lower bag portions and a flexible portion arranged in the undivided part of the said walls, facilitating the tipping of the upper portion of the bag and the spreading of the opening between the divided parts of the walls.

6. A ventilated feed receptacle or bag comprising a lower feed holding portion, an upper attaching portion, rivets for securing the said portions opposite the central portion of the bag, and flexible means arranged opposite the rivets upon one side of the bag to facilitate its folding, the said bag being divided upon the opposite side of the rivets from said flexible portion, the dividing of the bag providing an expansible opening for the introduction of air.

7. A feed receptacle or bag comprising a lower feed holding portion, an upper attaching portion, the said lower portion projecting beyond the upper portion upon one side of the bag for forming an air inlet, and means connecting the two portions of the bag for permitting them to rock with respect to each other.

8. A feed receptacle or bag comprising an upper animal engaging portion, a lower feed carrying portion, pivotally mounted upon the said upper portion, an opening being left between the said portions upon one side of the bag and a flexible piece of material connecting the said portions upon the other side of the bag, the rocking of the upper portion of the bag causing the spreading of the opening in the side thereof.

9. A feed receptacle or bag having an upper supporting portion, a lower swinging portion, means connecting the two portions and permitting the swinging of the lower portion under the weight of itself and contents, stiffening bars extending longitudinally of the upper supporting portion and means for connecting the lower portion to the said stiffening bars and the said upper portion, an expansible opening being left between the said portions part way around the bag.

10. A feed receptacle or bag formed with an upper suspending portion, a lower feed carrying portion secured thereto, part way around the bag and divided therefrom the remainder of the distance around the bag, an outwardly projecting part being formed on the lower portion opposite said divided part and a downwardly projected edge formed on the upper portion and extending into the outwardly projecting part of the lower portion, an expansible opening being secured between the parts at this point.

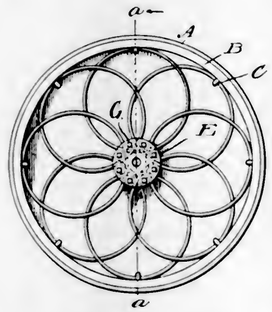
11. A feed receptacle or bag comprising an upper and a lower portion means for movably connecting the two portions, the said portions being separated upon one side of the bag, the lower edge of the upper portion extending into the upper edge of the lower portion, and means permitting of the spreading of the said opening when the animal using the bag raises his head.

12. A feed receptacle having a horizontal vent opening capable of expansion upon the tipping of the upper portion of the receptacle.

13. A feed receptacle provided with a ventilating opening and having a lower feed portion and an upper supporting band, capable of movement with respect to the lower portion to increase the size of the ventilating opening, the band preventing the closing of the opening by an animal's nose.

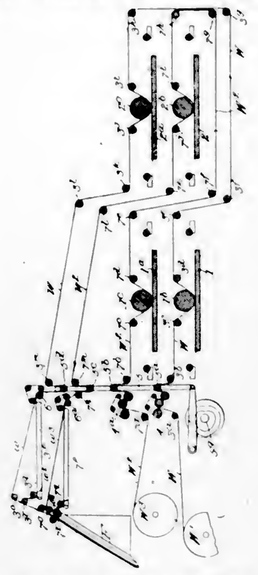
14. A feed receptacle having an air inlet capable of expansion for ventilating the bag or receptacle and a nose limiting band above the expansible opening.

856,757. AUTOMOBILE-WHEEL. JAMES R. BARKER, Green Valley, Ill. Filed Oct. 29, 1906. Serial No. 341,036.



Claim.—An automobile wheel consisting of a metallic tire, a wooden felly upon which the tire is secured, staples secured at predetermined distances apart to the inner face of the wooden felly, the outer portion of circular springs passed through said staples, solid disks E^4, E^5 and sectional disks E E^1, E^2, E^3 provided with grooved openings to receive the inner portions of the flat circular springs and studs projected through the disks.

856,758. FLAT-BED WEB-PRINTING PRESS. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich., a Corporation of Michigan. Filed Aug. 22, 1906. Serial No. 331,602.



Claim.—1. In a web printing press, the combination of four type beds and co-acting impression cylinders, said beds being arranged in two planes, two beds end to end in each plane and the beds in one plane being parallel with the beds in the other plane,—with a set of web feeding, looping and delivering mechanisms at one end of the press, and web guides whereby one or more webs can be directed between the beds and cylinders, substantially as described.

2. In a web printing press, the combination of four type beds and co-acting impression cylinders, said beds being arranged in two planes, two beds end to end in each plane and the beds in one plane being parallel with the beds in the underlying plane—with two sets of web feeding, and delivering mechanisms and a single web looping mechanism at one end of the press, a folder, and web guides whereby a web may be directed through the press to the folder, substantially as described.

3. In a web printing press, the combination of four type beds and co-acting impression cylinders, said beds being arranged in two planes, two beds in each plane and the beds in one plane being parallel with the beds in the other plane, web feeding, and web delivering mechanisms, a single web-looping mechanism, and web guides whereby webs may be directed through the press, each web being printed on one side by a bed and cylinder near the feeding and delivering mechanisms and perfected by a bed and cylinder remote from the feeding mechanisms.

4. In a web printing press, the combination of four type beds and co-acting impression cylinders, said beds being arranged in two planes, two beds end to end in each plane and the beds in one plane being parallel with the beds in the other plane; with two web feeding, and delivering mechanisms at one end of the press a single web-looping mechanism adapted to handle all the webs, and web guides

whereby a web or webs may be directed through the press, so that each web may be printed on one side by a bed and cylinder near the feeding and delivering mechanisms and perfected by a bed and cylinder remote from the feeding mechanisms.

5. In a printing press, the combination of four printing couples arranged in two planes, the printing couples in each plane being end to end and closely adjacent, each couple comprising a stationary bed and a reciprocating impression cylinder, web feeding mechanisms, web delivering mechanisms and a single web looping mechanism at one end of the press, and web guides whereby a web may be carried from the feeding mechanism through two of the printing couples not in the same plane, and whereby a second web may be directed through the remaining printing couples; with a folder adjacent the feeding and delivering mechanisms, and means for directing the webs from the delivering mechanisms into the folder.

6. In a printing press, the combination of four printing couples arranged in two planes, each couple comprising a stationary bed and a reciprocating impression cylinder the beds in each plane being arranged end to end, two sets of web feeding mechanisms, two sets of web delivering mechanisms and a single web looping mechanism at one end of the press, and web guides whereby a web may be carried from one feeding mechanism through two of the printing couples not in the same plane, and whereby a second web may be directed through the remaining printing couples; with means for operating the said feeding and delivery mechanisms in unison, the said looping mechanism being operated by a single cam; a folder adjacent the feeding and delivering mechanisms, and means for directing the webs from the delivering mechanisms into the folder.

7. In a printing press, the combination of two pairs of parallel beds arranged end to end in a main frame, two pairs of reciprocating impression cylinders co-acting with the beds, web-feeding and delivering mechanism, and web-looping mechanism, means for directing a web of paper between the uppermost bed and cylinder in one pair to be printed, and then between the lowermost bed and cylinder in the other pair to be perfected, and means for directing a second web between the lower bed and cylinder of the first pair, and the upper bed and cylinder of the second pair to be perfected.

8. In a printing press, the combination of four printing couples arranged in two planes, each couple comprising a stationary bed and a reciprocating impression cylinder, two sets of web feeding mechanisms, two sets of web delivering mechanisms, and a single web looping mechanism at one end of the press, and web guides whereby a web may be carried from one feeding mechanism through two of the printing couples not in the same plane, and whereby a second web may be directed through the remaining printing couples, substantially as described.

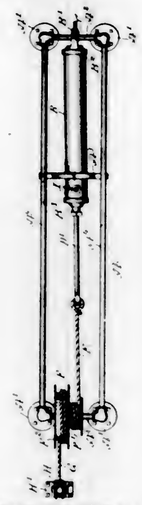
856,759. HYDRAULIC ELEVATOR. ROBERT H. BEEBE and ISAAK R. CONCOFF, St. Johns, Oreg., assignors to The Hydraulic Wood Lift Company, St. Johns, Oreg., a Corporation of Oregon. Filed Mar. 11, 1907. Serial No. 361,851.

Claim.—1. A hydraulic elevator comprising a cylinder containing a piston and mounted to swing laterally, a hoisting drum mounted to turn and to move laterally, and a flexible connection between the hoisting drum and the piston rod of the said piston.

2. A hydraulic elevator comprising a cylinder containing a piston and mounted to swing laterally, a hoisting drum mounted to turn and to move laterally, a flexible connection between the hoisting drum and the piston rod of the said piston, and a hoisting rope connected with the said hoisting drum.

3. A hydraulic elevator comprising a frame, a cylinder pivotally connected at its rear end on the said frame and mounted to swing transversely on the said frame, a piston reciprocating in the said cylinder and having its piston rod extending through the front end of the said cylinder, a hoisting drum, and a flexible connection between the said drum and the said piston rod.

4. A hydraulic elevator comprising a frame, a cylinder pivotally connected at its rear end on the said frame and mounted to swing transversely on the said frame, a piston reciprocating in the said cylinder and having its piston rod extending through the front end of the said cylinder, a hoisting drum mounted to turn and to slide transversely on the said frame, and a flexible connection between the said drum and the said piston rod.



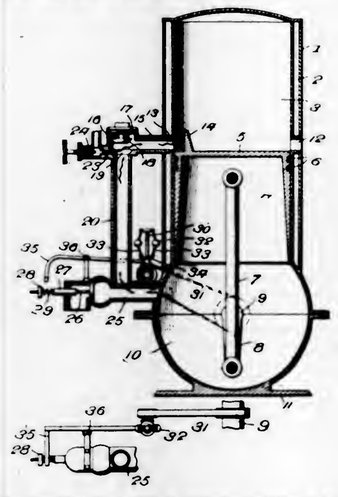
5. A hydraulic elevator comprising a frame, a cylinder pivotally connected at its rear on the said frame and mounted to swing transversely on the said frame, a piston reciprocating in the said cylinder and having its piston rod extending through the front end of the said cylinder, a hoisting drum mounted to turn and to slide transversely on the said frame, a flexible connection between the said drum and the said piston rod, a guide pulley journaled in fixed bearings, and a hoisting rope passing over the said pulley and winding on the said hoisting drum.

6. A hydraulic elevator comprising a frame, a cylinder pivotally connected at its rear end on the said frame and mounted to swing transversely on the said frame, a piston reciprocating in the said cylinder and having its piston rod extending through the front end of the said cylinder, a hoisting drum, a flexible connection between the said drum and the said piston rod, a fluid controlling valve connected with one end of the said cylinder for controlling the ingress and egress of the fluid under pressure, and an air inlet valve for the other end of the said cylinder.

7. A hydraulic elevator comprising a frame, a cylinder pivotally connected at its rear end on the said frame and mounted to swing transversely on the said frame, a piston reciprocating in the said cylinder and having its piston rod extending through the front end of the said cylinder, a hoisting drum, a flexible connection between the said drum and the said piston rod, a fluid controlling valve connected with the said cylinder and having a supply pipe and a discharge pipe, and an air inlet valve connected with the said cylinder and the said discharge pipe.

856,760. COMBUSTION-ENGINE. JOHN H. BENSE and JOHN W. BENSE, Oakharbor, Ohio. Filed July 18, 1906. Serial No. 326,725.

Claim.—1. The combination with a cylinder having a surrounding water jacket, and a compression chamber at one end of said cylinder, said cylinder being provided with an inlet port and an exhaust port extending through said jacket, a piston movable within said cylinder, a driving shaft and means for actuating the piston, a governor actuated from said driving shaft, a pivotally mounted detent operatively connected with the governor, a mixing chamber, a pipe communicating with the compression chamber, a vertically disposed air tube connecting said pipe with the mixing chamber, a valve fitted to a seat at the upper end of said tube, a valve controlling the inlet pipe to the compression chamber and having a stem movable in the path of said detent, and a spring acting on said stem.

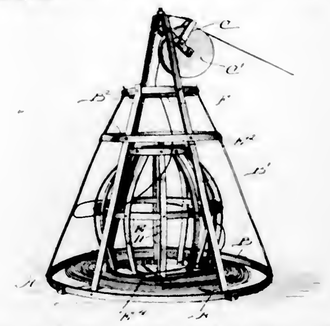


2. The combination with a cylinder having a surrounding water jacket, and a compression chamber at one end of said cylinder, said cylinder being provided with an inlet port and an exhaust port extending through said jacket, a piston movable within said cylinder, a driving shaft and means for actuating the piston, a governor actuated from said driving shaft, a pivotally mounted detent operatively connected with the governor, a mixing chamber, a pipe communicating with the compression chamber, a vertically disposed air tube connecting said pipe with the mixing chamber, a valve fitted to a seat at the upper end of said tube, a valve controlling the inlet pipe to the compression chamber and having a stem movable in the path of said detent, and a spring acting on said stem.

3. The combination with a cylinder having a surrounding water jacket, and a compression chamber at one end of said cylinder, said cylinder being provided with an inlet port and an exhaust port extending through said jacket, a piston movable within said cylinder, a driving shaft and means for actuating the piston, a governor actuated from said driving shaft, a pivotally mounted detent operatively connected with the governor, a mixing chamber, a pipe communicating with the compression chamber, a vertically disposed air tube connecting said pipe with the mixing chamber, a valve fitted to a seat at the upper end of said tube, a valve controlling the inlet pipe to the compression chamber and having a stem movable in the path of said detent, a spring acting on said stem, and an adjustable nut on said stem between which and the bearing on said stem said spring is held.

4. The combination with a cylinder having a surrounding water jacket, and a compression chamber at one end of said cylinder, said cylinder being provided with an inlet port and an exhaust port extending through said jacket, a piston movable within said cylinder, a driving shaft and means for actuating the piston, a governor actuated from said driving shaft, a pivotally mounted detent operatively connected with the governor, a mixing chamber, a pipe communicating with the compression chamber, a vertically disposed air tube connecting said pipe with the mixing chamber, a valve fitted to a seat at the upper end of said tube, a valve controlling the inlet pipe to the compression chamber and having a stem movable in the path of said detent, and an air pump actuated from the driving shaft for forcing air from said compression chamber and fuel into the mixing chamber.

856,761. UNCOILING DEVICE FOR WIRE. JAMES D. BOURNE, Stuttgart, Ark. Filed May 14, 1906. Serial No. 316,766.



Claim.—1. A device of the kind described, comprising inner and outer frames spaced apart, means for holding a wire coil between the frames, a perforated bar carried by the outer frame and above the inner frame, and a pulley for the wire to run over.

2. A device of the kind described, comprising an outer cone-shaped frame, and inner barrel-shaped frame, a base for supporting a wire coil, and a pulley at the apex of the cone frame for the wire to run over.

3. A device of the kind described, comprising a base adapted to support a wire coil, a standard thereon, an outer frame supported by the base and detachable therefrom, a barrel-shaped frame adapted to fit within the cone-shaped frame and fitting over the standard, means for locking the inner frame in position, and a pulley carried by the apex of the outer frame.

4. A wire uncoiling device, comprising outer and inner concentric frames spaced apart, a base for the wire coil detachable from the frames, a bar carried by the outer frame and having a perforation concentric with the said frames, the bar being above the inner frame, and a swinging pulley carried by the apex of the outer frame and adapted to receive wire run through the perforation.

856,762. VENTILATOR. JOHN F. BOWES, North Adams, Mass. Filed Feb. 20, 1907. Serial No. 358,353.



Claim.—1. A ventilator comprising a frame, a sheet of material swingingly suspended within the frame having openings, and a second sheet of material suspended within the frame and having openings out of alinement with the openings in the first sheet, whereby as said sheets are

blown together, the ventilator will be closed, and when they separate, the ventilator will be opened.

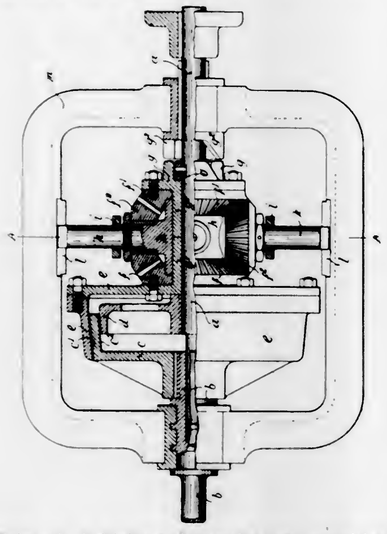
2. A ventilator comprising a frame, a sheet of thin material having openings swingingly suspended within the frame, and a second sheet of thin material and swingingly suspended within the frame having openings out of alinement with the openings of the first sheet, whereby as said sheets are blown together, the ventilator will be closed, and when they separate, the ventilator will be opened.

3. A ventilator comprising a frame having an opening, a covering at both sides of said opening providing an air chamber, a sheet of thin material having openings and swingingly suspended within the frame having openings out of alinement with the openings of the first sheet, whereby as said sheets are blown together, the ventilator will be closed, and when they separate, the ventilator will be opened.

4. A ventilator comprising a frame having an opening, blocks hinged at the opposite ends of the frame, a covering at both sides of the frame opening providing an air chamber therebetween, a sheet of thin material having openings and swingingly suspended within the frame, and a second sheet of thin material swingingly suspended within the frame and having openings out of alinement with the openings in the first sheet, whereby as said sheets are blown together the ventilator will be closed, and when they separate the ventilator will be opened.

5. A ventilator comprising a frame, a sheet of thin material having openings and swingingly suspended at its top edge within the frame, and a second sheet of thin material swingingly suspended at its top edge within the frame and having openings out of alinement with the openings in the first sheet, whereby as said sheets are blown together, the ventilator will be closed, and when they separate, the ventilator will be opened.

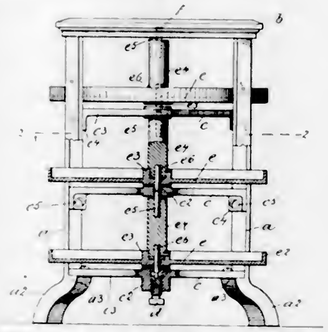
856,763. DRIVING AND REVERSING GEAR. ROBERT J. BROOKS, Teddington, England. Filed Oct. 15, 1906. Serial No. 339,021.



Claim.—1. A driving and reversing gear comprising the combination of a driven shaft, a motor clutch device, a clutch member coacting therewith and adapted to drive the driven shaft direct, a reversing clutch member also adapted to coact with the motor clutch device mounted freely upon the driven shaft, a final clutch member adapted to be coupled to the driven shaft, bevel gearing between the reversing clutch member and the final clutch member, and means whereby the driven shaft, bevel gearing and reversing clutch members may be slid longitudinally to couple the motor clutch device directly to the driven shaft, or to drive the same through the reversing clutch, bevel gear and final clutch substantially as set forth.

2. A driving and reversing gear comprising the combination of a driven shaft, a motor clutch device, a clutch member coacting therewith and adapted to drive the driven shaft direct, a reversing clutch member, a sleeve-like bearing on the driven shaft for said reversing clutch member, a train of bevel wheels the first of which is carried by said sleeve like bearing of the reversing clutch member, a second sleeve on the driven shaft carrying the last wheel of the train of bevel wheels, a non rotatable frame carrying the intermediate wheels of said train of bevel wheels, said frame being freely mounted upon the said sleeve so as to allow of the rotation of said sleeves, extended spindles upon the frame for the said intermediate bevel wheels, guides in the gear frame for said extended spindles and in which the spindles are adapted to slide, a pivoted lever engaging said spindles so as to slide the same together with the bevel gears, the reversing clutch member and the direct driving clutch member as a whole, a final clutch member fitted at the outer end of said second sleeve, and a clutch member on the driven shaft adapted to come into engagement with said final clutch member when the reversing clutch member is put into action substantially as set forth.

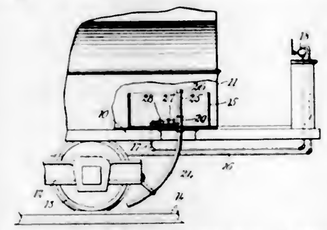
856,764. ROTARY STAND CABINET. ALFRED H. CASE, St. Johnsville, N. Y., assignor of one-half to Fred H. Case, St. Johnsville, N. Y. Filed Sept. 13, 1906. Serial No. 334,391.



Claim.—A stand or cabinet, comprising a plurality of posts, a plurality of supports arranged between said posts one above another and secured to said posts, a top board or table, and shelves arranged over said supports, said shelves being provided with central posts in the top and bottom of which are secured projecting pivot pins, the pivot pin in the bottom central post of the bottom shelf extending downwardly into the hub of the bottom support, and the pivot pin in the top of the central post of the top shelf being pivoted in the top board or table, while intermediate pivot pins at the top and bottom of said posts pass into the central part of the intermediate supports and rest on and are pivoted on each other.

856,765. TRACK-SANDING DEVICE. ARTHUR A. CHURCHILL, Portland, Oreg. Filed Feb. 23, 1907. Serial No. 358,888.

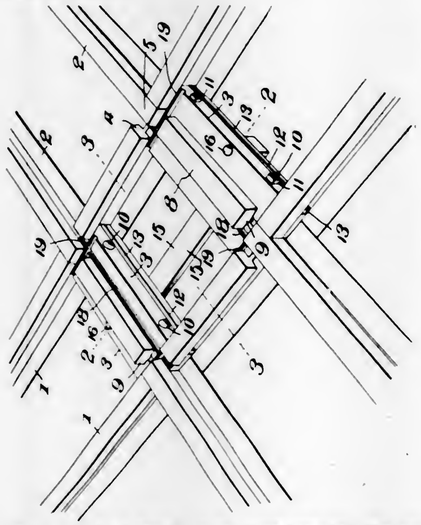
Claim.—1. A track sanding device, comprising a sand box, a conduit extending through the bottom of the box and terminating at a point adjacent the top thereof, means for normally closing the upper end of said pipe; a branch conduit entering the first mentioned conduit adjacent the bottom of the box, said last mentioned conduit being provided with an opening in communication with the interior of the box, and means for forcing the contents of the box through the last mentioned conduit into the first mentioned one.



2. A track sanding device, comprising a sand box, a conduit terminating adjacent the top of the box and leading to a point adjacent the car wheel, a removable cap normally closing the upper end of said conduit, a branch conduit within said box and lying substantially parallel to the bottom thereof and having one end in communication with the first mentioned conduit and having a V-shaped notch in its upper side, and an air pipe having a delivery nozzle terminating within the branch conduit and below said opening therein.

3. A track sanding device, comprising a sand box, a vertically disposed conduit extending through the bottom of the box and terminating adjacent the top thereof, a branch conduit entering the first mentioned conduit adjacent the bottom of the box, said last mentioned conduit having an open end and a V-shaped opening in its upper surface, and an air delivery nozzle extending within the open end and terminating below said opening.

856,766. RAILWAY-TRACK EQUIPMENT. WALTER L. CLEMENT, Indianapolis, Ind. Filed Feb. 21, 1907. Serial No. 358,625.

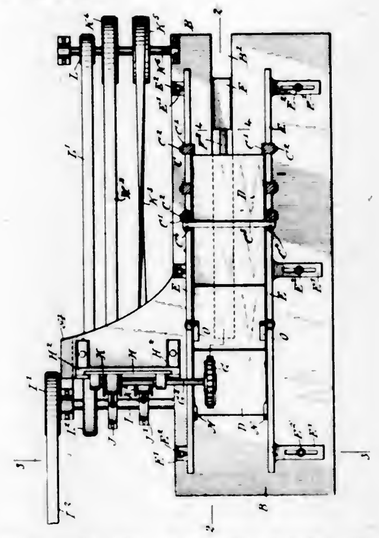


Claim.—1. In a device of the class described the combination with intersecting track ways, the rails of one track way being continuous while the intersecting rails abut against the continuous rails and extend at right angles thereto, rail sections between the continuous rails to connect the intersecting rails and means to hold said rail sections in position, comprising blocks, said blocks being arranged in pairs, bolts extending through said blocks and the rail sections, each of said blocks having longitudinal grooves therein and a bolt extending through the continuous rails and in said grooves whereby the rail sections will be held against lateral movement.

2. In a device of the class described the combination with intersecting track ways, the rails of one of which are continuous; of rail sections between said continuous rails to form a connection between the oppositely disposed rails, blocks arranged in pairs and one at each side of each of said rail sections, bolts extending through said blocks and the rail sections therebetween, a bolt extending through the continuous rails and longitudinally of said blocks and resting in a channel in the outer faces of said blocks, a bar below said blocks and rail sections and means to secure said bar to the blocks.

3. The herein described means for eliminating jars at railway crossings comprising blocks disposed in pairs and at each side of one of the intersecting railway tracks, a channel longitudinally disposed in the upper surface of the inner blocks and auxiliary channels at the ends of each of the blocks adapted to receive and form bearings for the flanges of the wheels respectively passing over said tracks and means to secure said blocks in position.

856,767. HANDHOLD-FORMING MACHINE. ANDREW J. COLVIN, CLAUDE G. HOCKETT, and JOHN W. FITZPATRICK, Grants Pass, Oreg. Filed Oct. 12, 1906. Serial No. 338,595.



Claim.—1. A machine of the class described, comprising a hopper for containing a pile of blanks, a feed mechanism for removing the lowermost blank from under the pile to a hand hold forming device, a pair of cutter heads for cutting hand holds on the opposite faces of the said moved blank, a spring stop for temporarily restraining the movement of the blank when between the cutters, and means for imparting movement in unison to the said feed mechanism and the said cutter heads for the latter to cut the blank at the time the feed mechanism is on the return stroke and to move out of engagement with the blank at the time the feed mechanism moves another blank forward.

2. A machine of the class described comprising a pair of oppositely disposed revolnble cutter heads, means for simultaneously moving the said cutter heads toward and from each other, means for feeding a blank between the cutters during their movement away from each other, and a spring stop against which the blank is fed.

3. A machine of the character described, comprising a pair of oppositely disposed cutters, means for feeding a blank between the cutters, a spring stop for temporarily restraining the forward movement of the blank, and against which the blank is fed, means for moving the cutters in unison toward the blank, and means for preventing the backward movement of the blank during the operation of the cutters.

4. A machine of the class described, comprising a pair of oppositely disposed revoluble cutter heads, means for simultaneously moving the said cutter heads toward and from each other, and a feed mechanism operating in unison with the said cutter heads for feeding a blank between the cutter heads at the time the cutter heads are in extreme apart positions, the feeding mechanism being on the return stroke during the time the cutter heads move toward each other and become active.

5. A machine of the class described, provided with a pair of revoluble cutter heads, cross heads mounted to reciprocate in unison and in which the cutter heads are journaled, means for imparting a reciprocating movement to the cross heads to move the cutter heads simultaneously toward and from each other, means for moving a blank between the cutter heads during their movement from each other, and a spring stop against which the blank is fed for temporarily restraining the movement of the blank.

6. A machine of the class described provided with a pair of revoluble cutter heads, cross heads mounted to reciprocate in unison and in which the cutter heads are journaled, eccentrics having adjustable eccentric rods connected with the said cross heads, a main shaft carrying the eccentrics, a hopper for containing a pile of blanks, a feed mechanism actuated from the said main shaft for removing the lowermost blank from the said hopper and moving it between the said cutter heads at the time they are in widest separate position and a spring stop against which the blank is fed for temporarily restraining the forward movement thereof.

7. A machine of the class described provided with a pair of revoluble cutter heads, cross heads mounted to reciprocate in unison and in which the cutter heads are journaled, eccentrics having adjustable eccentric rods connected with the said cross heads, a main shaft carrying the eccentrics, a hopper for containing a pile of blanks, a reciprocating feed block for moving the lowermost blank out of the said hopper, a crank arm on the said main shaft, a link connecting the said crank arm with the said feed block and a spring stop against which the blank is fed for temporarily restraining the forward movement thereof.

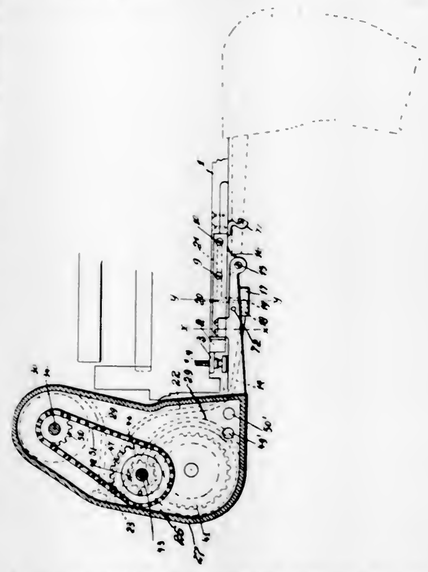
856,768. SPOON. FRANK B. COMINS, Sharon, Mass. Filed Feb. 19, 1906. Serial No. 301,966.



Claim.—The combination with a spoon having bowl and an open tubular stem extending therefrom, of a thermometer bulb located in the bowl and having a tube extending into said stem, and a guard covering said bulb, as and for the purpose described.

856,769. TRACKER-BOX FOR MECHANICAL MUSICAL INSTRUMENTS. WILLIAM F. COOPER, Norwalk, Ohio, assignor of one-half to The A. B. Chase Co., Norwalk, Ohio, a Corporation of Ohio. Filed June 14, 1905. Renewed Apr. 30, 1907. Serial No. 371,055.

Claim.—1. In apparatus of the character described, the combination of a suitable support arranged beneath the keyboard of an instrument and spring latches carried by said support, of a tracker box having a bracket located adjacent each end, said brackets being pivotally attached to said support at a point within the outer edge of the keyboard, latch blocks carried by said brackets and adapted to engage said spring latches, an arm extending from one end of the tracker box, a tempo lever arranged adjacent to said arm and hinged in alinement with the pivotal supports of the said brackets, an arm extending from the other end of the tracker box, a plurality of levers pivotally attached to said last named arm, and a rod pivotally attached to each of said last named levers, said last named rods being adapted to be connected to the expression producing mechanism of mechanical musical instrument operating devices.



2. In an apparatus of the character described, the combination of a suitable support adapted to be secured in position beneath the keyboard of a keyed instrument, a jointing bar carried by said support, ducts leading from said jointing bar, a tracker box pivotally attached to said support, a movable jointing bar carried by said tracker box, ducts leading from said movable jointing bar to said tracker box, means for sustaining said tracker box in such position relatively to said support that said jointing bars will be in contact with one another.

3. In an apparatus of the character described, the combination of a jointing bar, means for supporting said jointing bar, ducts leading from said jointing bar, a tracker box pivotally supported on said means, a jointing bar carried by the tracker box, ducts leading from said last named jointing bar to said tracker box, and means for sustaining said tracker box in such position that the said jointing bars will be in contact with one another.

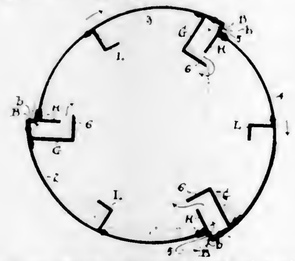
4. In an apparatus of the character described, the combination with a suitable support and ducts attached to the support, of a movable tracker box connected to said support and ducts carried by the tracker box and adapted at one position of the tracker box to register with the ducts which are attached to the support.

5. In an apparatus of the character described, the combination with a suitable support adapted to be attached to a musical instrument, a cross-bar carried by said support, ducts leading into said cross-bar, of a removable tracker box pivotally connected to said support, a cross bar carried by the tracker box, ducts leading from said cross-bar to said tracker box and adapted at one position of the tracker box to register with the ducts which are attached to the support.

6. In apparatus of the character described, the combination with a suitable support, adapted to be attached to a musical instrument, a tracker box detachably connected to said support and movable relative thereto and means carried by the support and the tracker box for sustaining the tracker box in different positions while connected to the support, ducts carried by the tracker box and ducts carried by the support and adapted to register with the ducts carried by the tracker box at one position of the latter.

7. In an apparatus of the character described, the combination with a musical instrument and a suitable support arranged below the key-board, of the musical instrument, of a playing attachment arranged within the case of said instrument, and a tracker box pivotally connected to said support, levers carried by said tracker box, rods pivotally connected to said levers and connected to the playing attachment said levers and said rods having their pivotal connection in alinement with the pivotal connection of the tracker box with the support.

856,770. CYLINDER FOR MECHANICAL DRIERS. WILLIAM M. CUMMER, Cleveland, Ohio. Filed Jan. 18, 1907. Serial No. 352,858.



Claim.—1. A drying cylinder formed of a plurality of segmental sections spaced apart at their edges, and rigid connecting pieces extending the full length of the cylinder between the edges of said sections and provided with draft openings.

2. A cylinder for a drying apparatus consisting of a plurality of sections extending from end to end thereof, spacing pieces running lengthwise of the edges between said sections and rigidly uniting said sections and provided with inlet openings for the drying medium, and longitudinal draft chambers for said openings within the cylinder.

3. A drying cylinder in sections the full length thereof segmentally curved in cross section, and sections separated along both edges, spacing pieces between the said edges provided with draft openings, and a covered draft chamber lengthwise next within said openings provided with side and top guard portions.

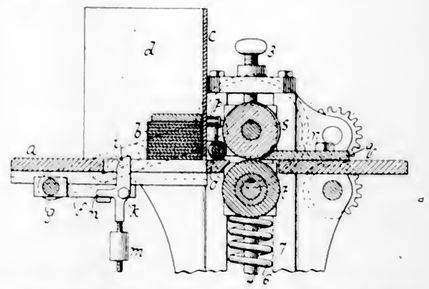
4. A drying chamber having longitudinal openings at intervals about its periphery extending from end to end thereof, rigid connecting pieces located in said openings and provided with draft holes, and a draft chamber located within said cylinder into which said draft holes discharge provided with parallel walls of different elevation and the higher of said walls having a right angled portion extending across the edge of the lower wall and apart therefrom.

5. A drying cylinder consisting of several longitudinal segmental sections having their meeting edges spaced apart and a walled draft chamber projecting inward the full length of said cylinder at the intersection of said sections and having a side opening parallelly arranged to the axis of the cylinder.

6. A drying cylinder formed in segmental sections lengthwise and having draft openings between the meeting edges of said sections, and walled draft chambers over said openings constructed to lift the material being dried and adapted to prevent the escape of material through said draft openings.

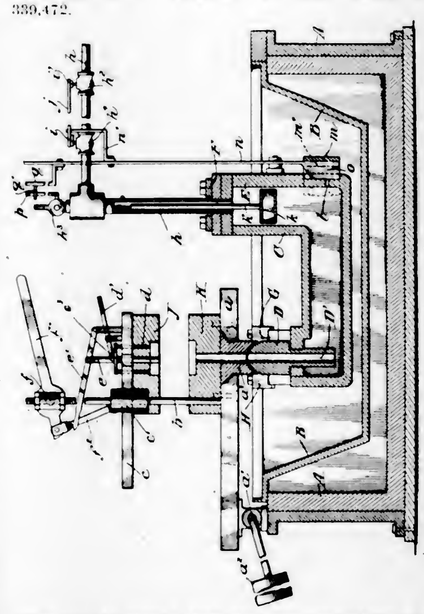
7. A drying cylinder having longitudinal draft openings, and a draft chamber inside said cylinder having parallel walls on opposite sides of said openings and an inner wall to cover said draft openings and a draft inlet along one side wall, and said walls adapted to lift the drying material and confine the same within the cylinder.

856,771. MECHANISM FOR FEEDING BLANKS. CHRISTIAN DANCEL, Brooklyn, N. Y. Filed Feb. 10, 1906. Serial No. 300,522.



Claim.—In a machine for feeding blanks, the combination with a supporting table and a spaced wall between which and the table one blank at a time can pass, of a die roller and feed roller for the blanks, and a gage piece in advance of the rollers, said gage piece being of concave shape so as to leave a space between the same and the table, said space gradually diminished from the center outward, and a spring for yieldingly holding the gage piece in position.

856,772. CASTING APPARATUS. HERMAN H. DOEHLER, New York, N. Y. Filed Oct. 18, 1906. Serial No. 339,472.



Claim.—1. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication

with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, an air shield disposed opposite the discharge of said air line and affording channels thereabout whereby the compressed air is permitted to pass about said shield and act directly on the surface of the molten metal and the air jet is prevented from impinging directly thereon, means controlling the flow of air through said air line and means venting said auxiliary pot.

2. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, a buoyant metallic shield of smaller diameter than said pressure pot disposed opposite the discharge of said air line whereby the compressed air is permitted to pass about said shield and act directly on the surface of the molten metal and the air jet is prevented from impinging directly thereon, means guiding same, means controlling the flow of air through said air line and means venting said auxiliary pot.

3. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot having a pressure chamber therein, a discharge nozzle for said pressure pot whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure chamber, a buoyant metallic shield of smaller diameter than said chamber located in said pressure chamber and disposed opposite the discharge of said air line whereby the compressed air is permitted to pass about said shield and act directly on the surface of the molten metal and the air jet is prevented from impinging directly thereon, a stem for said shield projecting into said air line whereby said shield is guided in its movements, means controlling the flow of air through said air line, and means venting said pressure pot.

4. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, means controlling the flow of air through said air line, means venting said pressure pot, and means charging and re-charging said pot comprising a submerged port in said pot adjacent to the bottom thereof, a valve pivoted relative to said pot and adapted to close said port, means whereby said valve when operated will be forced against said pot in a manner to form a metal tight joint and a lever handle carrying said valve.

5. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, means controlling the flow of air through said air line, means venting said pressure pot, means charging and recharging said pot comprising a submerged port in said pot adjacent to the bottom thereof, a valve pivoted relative to said pot and adapted to close said port, means whereby said valve when operated will be forced against said pot in a manner to form a metal tight joint, and a lever handle carrying said valve, and means actuated by said lever handle whereby said venting means will be actuated before said port is opened.

6. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, means controlling the flow of air through said air line, means venting said pressure pot, and means charging and re-charging said pot comprising a submerged port in said pot adjacent to the bottom thereof, a wedge shaped valve presenting a plane surface toward said pot, pivoted relative to said pot and adapted to close said port, a bridge carried by said pot, an abutment thereon adapted to engage said valve and a lever handle for said valve.

7. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, means controlling the flow of air through said air line, means venting said pressure pot, and means charging and re-charging said pot comprising a submerged port, in said pot adjacent to the bottom thereof, a valve pivoted relative to said pot and adapted to close said port, means whereby said valve when operated will be forced against said pot in a manner to form a metal tight joint, and a lever handle carrying said valve, and means actuated by the said lever handle whereby the means controlling the air flow, is locked when said port is open.

8. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, a plurality of valves arranged in said air line, lever handles therefor, a link connecting said lever handles, means venting said pressure pot and means charging and re-charging said pot comprising a submerged port in said pot adjacent to the bottom thereof, a valve pivoted relative to said pot and adapted to close said port, means whereby said valve when operated will be forced against said pot in a manner to form a metal tight joint and a lever handle carrying said valve, and an extension on said lever handle adapted to be interposed in the path of the lever handle of any said valve in said air line whereby said valves are locked when the port is open.

9. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, means controlling the flow of air through said air line, a pet cock venting said pressure pot, a lever handle therefor, means charging and re-charging said pot comprising a submerged port in said pot adjacent to the bottom thereof, a valve pivoted relative to said pot and adapted to close said port, means whereby said valve when operated will be forced against said pot in a manner to form a metal tight joint, and a lever handle carrying said valve, an extension carried by said lever handle and connections between said extension and said pet cock lever handle whereby said pet cock will be opened before said port.

10. In casting apparatus, the combination of a melting pot, means heating same, an auxiliary or pressure pot, a discharge nozzle therefor whereby molten metal may be discharged therefrom, means in communication with said nozzle whereby a mold may be supported adjacent thereto, an air line discharging into said pressure pot, a plurality of valves arranged in said air line, lever handles therefor, a link connecting said lever handles, a pet cock venting said pressure pot, a lever handle therefor, means charging and re-charging said pot comprising a submerged port in said pot adjacent to the bottom thereof, a valve pivoted relative to said pot and adapted to close said port, means whereby said valve when operated will be forced against said pot in a manner to form a metal tight joint, and a lever handle carrying said valve, an extension on said lever handle adapted to be interposed in the path of the lever handle of any said valve in said air line whereby said valves are locked when the port is open, a second extension carried by said lever handle and connections between said extension and said pet cock lever handle whereby said pet cock will be opened before said port.

11. In casting apparatus, the combination of a melting pot, a furnace thereabout, brackets carried by said pot and said furnace having slight vertical play, an auxiliary or pressure pot having one end supported from said furnace or melting pot, angular lugs carried by the other end resting upon said brackets, a discharge nozzle for said pressure pot whereby molten metal may be discharged therefrom, a mold carrier, a nozzle thereon adapted to fit said discharge nozzle, and means carried by said brackets and adapted to engage said carrier whereby said nozzles will be drawn together.

12. In casting apparatus, the combination of a melting pot, a furnace thereabout, brackets carried by said pot and said furnace having slight vertical play, an auxiliary or pressure pot having one end supported from said furnace or melting pot, angular lugs carried by the other end engaging said brackets, a discharge nozzle for said pressure pot whereby molten metal may be discharged therefrom, a mold carrier comprising a base plate, and a top plate, means whereby said top plate may be advanced toward or drawn from said base plate, a nozzle on said base plate adapted to fit said discharge nozzle, tie rods pivotally connected to said brackets respectively, eccentrics carried thereby adapted to engage said top plate and a lever handle for each of said eccentrics.

13. In casting apparatus, the combination of a melting pot, a furnace thereabout, brackets carried by said pot and said furnace having slight vertical play, an auxiliary or pressure pot having one end supported from said furnace or melting pot, angular lugs carried by the other end engaging said brackets, a discharge nozzle for said pressure pot whereby molten metal may be discharged therefrom, a mold carrier comprising a base plate and a top plate, means whereby said top plate may be advanced toward or drawn from said base plate, a nozzle on said base plate adapted to fit said discharge nozzle, tie rods pivotally connected to said brackets respectively, means whereby said tie rods may be adjusted as to their length, eccentrics carried thereby adapted to engage said top plate and a lever handle for each of said eccentrics.

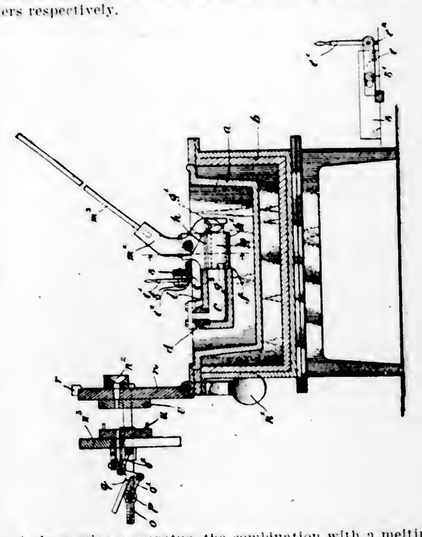
14. In casting apparatus, the combination of a melting pot, a furnace thereabout, brackets carried by said pot and said furnace having slight vertical play, an auxiliary or pressure pot having one end supported from said furnace or melting pot, angular lugs carried by the other end engaging said brackets, a discharge nozzle for said pressure pot whereby molten metal may be discharged therefrom, a mold carrier comprising a base plate, uprights carried thereby, a top plate having sleeves encircling said uprights, a cross head adjustably mounted on said uprights, a lever carried by said adjustable cross head, a link connection between said lever and said top plate, a nozzle on said base plate adapted to fit said discharge nozzle, tie rods pivotally connected to said brackets respectively, means whereby said tie rods may be adjusted as to their lengths, eccentrics carried thereby adapted to engage said top plate and a lever handle for each of said eccentrics.

856,773. CASTING APPARATUS. HERMAN H. DOEHLER, New York, N. Y. Filed Jan. 5, 1907. Serial No. 350,885.

Claim.—1. In casting apparatus, the combination with a melting pot, means heating same and a die support having a nozzle, of a cylinder located in said pot having a nozzle adapted to register with the nozzle of said support, a plurality of narrow guides extending from said cylinder whereby the area of the contacting surfaces of the plunger and the guides is limited, a plunger adapted to be supported by said guides in alinement with, and to enter, said cylinder, and means reciprocating said plunger.

2. In casting apparatus, the combination with a melting pot, means heating same, and a die support having a nozzle, of a cylinder located in said pot having a nozzle adapted to register with the nozzle of said support, a cylindrical support having a plurality of cut away portions forming a plurality of narrow guides and a plurality of conduits leading to said cylinder whereby the area of the contacting surfaces of the plunger and guide is limited, a plunger adapted to be supported by said guides in alinement with, and to enter, said cylinder, and means reciprocating said plunger.

3. In casting apparatus, the combination with a melting pot, means heating same, and a die support having a nozzle, of a cylinder located in said pot, a plunger adapted to be reciprocated in said cylinder, having an opening therein forming oppositely disposed shoulders, and a lever pivotally connected relative to said cylinder having an enlarged head adapted to enter said opening and engage said shoulders respectively.



4. In casting apparatus, the combination with a melting pot, means heating same, and a die support having a nozzle, of a cylinder located in said pot, a plunger adapted to be reciprocated in said cylinder having an opening adjacent to the free end thereof forming oppositely disposed shoulders, and a vertical slot through the end thereof communicating with said opening, and an operating lever having an enlarged head adapted to enter said opening and engage said shoulders respectively, and a reduced portion adjacent thereto adapted to enter said slot.

5. In casting apparatus, the combination with a melting pot, means heating same and a die support having a nozzle, of a cylinder located in said pot, a plunger adapted to be reciprocated in said cylinder having an opening adjacent to the free end thereof forming oppositely disposed shoulders and a vertical slot through the end thereof communicating with said opening, and an operating lever having an enlarged head having convexed sides adapted to enter said opening and engage said shoulders respectively, and a reduced portion adjacent thereto adapted to enter said slot.

6. In casting apparatus, the combination with a melting pot, means heating same, and a die support having a nozzle, of a cylinder located in said pot, a plunger adapted to be reciprocated in said cylinder having an opening adjacent to the free end thereof forming oppositely disposed shoulders and a vertical slot through the end thereof communicating with said opening, and an operating lever having an enlarged head having convexed sides adapted to enter said opening and engage said shoulders respectively, and a reduced portion adjacent thereto adapted to enter said slot, the arm of the lever carrying said head being formed with a reverse curve.

7. In casting apparatus, the combination with a melting pot, means heating same, and a die support having a nozzle, of a cylinder located in said pot having a nozzle adapted to register with the nozzle of said support, a cylindrical support having a plurality of cut away portions forming a plurality of narrow guides and a plurality of conduits leading to said cylinder, and a slot in the top of said support, a plunger adapted to be supported by said guides in alinement with, and to enter, said cylinder, said

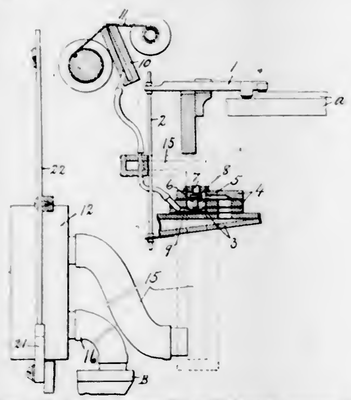
plunger having an opening adjacent to the free end thereof forming oppositely disposed shoulders and a vertical slot through the end thereof communicating with said opening, and an operating lever having an enlarged head having convexed sides adapted to enter said opening and engage said shoulders respectively, and a reduced portion adjacent thereto adapted to enter said slot.

8. In casting apparatus, the combination with a melting pot, means heating same, and a die support having a nozzle, of a cylinder located in said pot having a nozzle adapted to register with the nozzle of said support, a cylindrical support having a plurality of cut away portions forming a plurality of narrow guides and a plurality of conduits leading to said cylinder, and a slot in the top of said support, a plunger adapted to be supported by said guides in alinement with, and to enter, said cylinder, said plunger having an opening adjacent to the free end thereof forming oppositely disposed shoulders and a vertical slot through the end thereof communicating with said opening, and an operating lever having an enlarged head having convexed sides adapted to enter said opening and engage said shoulders respectively, and a reduced portion adjacent thereto adapted to enter said slot, the arm of said lever carrying said head being formed with a reverse curve.

9. In casting apparatus, the combination with a melting pot, means heating same, a die support having a nozzle, pivotally connected relative to said pot, and a tongue on the free edge of said support, of means whereby metal is forced through said nozzle and a locking mechanism comprising a cross bar, a bolt slidably mounted on said bar and means reciprocating said bolt, whereby it is caused to pass over and engage said tongue.

10. In casting apparatus, the combination with a melting pot, means heating same, a die support having a nozzle pivotally connected relative to said pot, and a tongue on the free edge of said support, of means whereby metal is forced through said nozzle and a locking mechanism comprising a cross bar, a bolt slidably mounted on said bar, and a lever pivoted to the outer end of said bolt having one short arm adapted to engage said pot whereby said bolt will be given simultaneous longitudinal and vertical movement to cause it to pass over and bear down upon said tongue.

856,774. PNEUMATIC SELF-PLAYING MUSICAL INSTRUMENT. LEWIS B. DOMAN, Elbridge, N. Y., assignor to Amphion Piano Player Company, Elbridge, N. Y., a Corporation of New York. Filed Oct. 6, 1904. Serial No. 227,471.



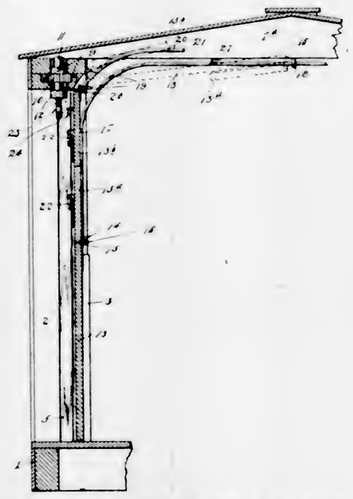
Claim.—1. In a pneumatic self-playing musical instrument, an air exhausting device, and a pneumatic connected thereto, and to atmosphere, in combination with a second pneumatic connected to and between said device and first named pneumatic a cam connected to the second pneumatic, and a lever operating against the cam and operable manually to control the intensity of vacuum in the first named pneumatic.

2. In a pneumatic self-playing musical instrument, an air exhaust device, in combination with the exhaust chamber of a sound producing action communicating with said exhaust device, a pneumatic in the connection between the exhaust device and exhaust chamber of the sound producing action, a valve actuated by said pneumatic to control such communication and means including a cam and lever for controlling the operation of said pneumatic.

3. In a pneumatic self-playing musical instrument, an air exhausting device in combination with an exhaust chamber and a striker pneumatic connected to said chamber and to atmosphere, means including a perforated music-sheet to automatically connect the pneumatic, first with the atmosphere and then with the exhaust chamber, a second pneumatic connected to and between the exhaust chamber and said air exhaust device and having a movable member operable manually to partially close communication between said device and exhaust chamber a rocking cam connected to said movable member, and a lever operating against the cam to rock the same.

4. In a pneumatic self-playing musical instrument, an air exhaust device, a sound producing action having an exhaust chamber, a pneumatic having two ports, one connected to the air exhaust device, and the other connected to the exhaust chamber of the sound producing action, a valve on the movable side of said pneumatic and co-acting with the first named port to control the air tension in the exhaust chamber of the sound producing action, a lever connected to the movable side of said pneumatic and provided with an incline bearing face, and manually operated means riding upon said incline face to rock said lever.

856,775. GRAIN-DOOR FOR CARS. JOHN EDMAN, Minneapolis, Minn., assignor of one-half to Alfred M. Hovland, Minneapolis, Minn. Filed Jan. 2, 1907. Serial No. 350,361.



Claim.—1. The combination with a car body having stop cleats and pivoted lock plates applied to the sides of its door opening, of a lower grain door section adapted to be moved laterally through said door opening and to be clamped between said plates and co-operating stop cleats, guides for said grain door extending upward along the sides of the door opening and thence curving inward and extending approximately to the center of the car, whereby said door may have a sliding movement, and an upper grain door section mounted for sliding movement on independent guides, substantially as described.

2. The combination with a car body having stop cleats and pivoted lock plates applied to the sides of its door opening, of a lower grain door section adapted to be moved laterally through said door opening and to be clamped between said plates and co-operating stop cleats, guides for said grain door extending upward along the sides of the door opening and thence curving inward and extending approximately to the center of the car, whereby said door may have a sliding movement, an upper grain door section mounted for sliding movement on independent guides and also adapted to be moved laterally through said door opening, and locking means for securing said upper door section when in closed position to the pivoted lock plates, substantially as described.

3. The combination with a car, of a grain door seated in the door opening thereof, and pivoted lock and closure plates mounted on the sides of the door frame and engageable with the edges of said grain door, the said door and lock plates having interlocking parts which positively hold the door against vertical movement when such lock plates are in operative position, the same consisting of a stud or projection on one of the members and a perforation or recess in the other member which interlock upon the swinging merely of the lock plates.

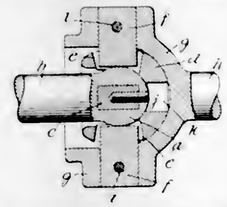
856,776. TETRABROMO DERIVATIVE OF INDIGO AND PROCESS OF MAKING SAME. GADIENT ENGI, Basel, Switzerland, assignor to The Firm of Society of Chemical Industry in Basle, Basel, Switzerland. Filed Mar. 23, 1907. Serial No. 364,020.

Claim.—1. The described process for the manufacture of tetrabromo derivatives of indigo by heating indigo, mono-, di- and tribrom-indigo with bromin, in the presence of a suitable indifferent medium.

2. The described process for the manufacture of tetrabromo derivatives of indigo by heating indigo, mono-, di- and tribrom-indigo with bromin, in the presence of nitrobenzene.

3. As new products the tetrabromo derivatives of indigo corresponding to the general formula $C_{16}H_6O_2N_2Br_4$, constituting in dry state from blue to blue-violet powders, insoluble in water, scarcely soluble in chloroform, cold anilin and cold nitrobenzene, difficultly soluble in hot anilin and hot nitrobenzene with blue to blue-violet color, dissolving in concentrated sulfuric acid with deep blue color and yielding by treatment with alkaline reducing agents a light-yellow colored vat, from which unmordanted cotton is dyed pure blue shades, fast to washing, light and chlorin.

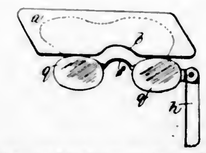
856,777. JOINT. ARMAND FARKAS and JOSEPH KIEFFER, Paris, France. Filed Jan. 9, 1906. Serial No. 295,318.



Claim.—1. In a joint, the combination of a socket member, a spherical cap arranged within the socket member and having four radial orifices therein, a ball member arranged within the cap, and a pair of oppositely arranged blocks extending inwardly from the socket member and into two of the orifices in the cap, said ball member having a pair of oppositely arranged tenons extending outwardly from the ball member and into the other two orifices in the cap.

2. In a joint, the combination of a socket member having an inner spherical surface, a spherical cap loosely arranged within the socket member and having two pair of radial orifices therein, a ball member arranged within the cap, and a pair of oppositely arranged blocks extending inwardly from the socket member and into one pair of orifices in the cap, said ball member having a pair of oppositely arranged tenons extending outwardly from the ball member and into the other pair of orifices in the cap, the width of said orifices being equal to the thickness of the blocks and tenons and the length of the orifices being greater than the width of the blocks and tenons.

856,778. OPTICAL APPARATUS. GEORGINA HEDDON, London, England. Filed Aug. 4, 1906. Serial No. 329,252.



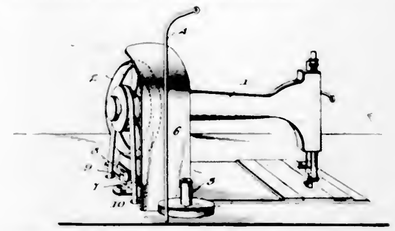
Claim.—1. The combination of a shade having a cut-away portion, a pair of eye glasses hinged to said shade and adapted to fit into said cut away portion, and a folding handle, substantially as described.

2. The combination of a pair of eye glasses, a folding handle, and a shade hinged to said eye glasses, said shade being cut away to fit around the nose of the user and having a recessed portion into which said eye glasses may fold, substantially as described.

3. The combination of a shade having a cut-away portion, a pair of eye glasses hinged to said shade and adapted to fit into said cut-away portion, and a handle pivoted to said eye glasses, substantially as described.

4. The combination of a pair of eye glasses, a handle pivotally attached thereto, and a shade hinged to said eye glasses, said shade being cut away to fit around the nose of the user and having a recessed portion into which said eye glasses may fold, substantially as described.

856,779. OIL-GUARD FOR SEWING-MACHINES. ABRAHAM HELLER and JOSEPH ROMAN, New York, N. Y. Filed June 30, 1906. Serial No. 324,261.



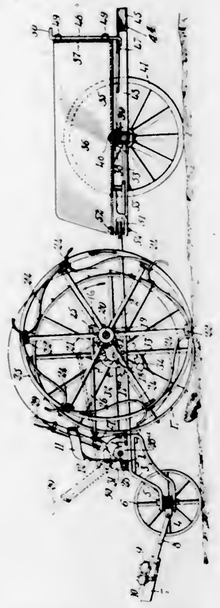
Claim.—The combination with a sewing machine, of an angle plate secured to the bed thereof, a set screw operating in said angle plate, and an upright guard or fender disposed adjacent the hand wheel of said machine at the rear thereof, and provided with a lateral arm slotted to coöperate with said set screw, substantially as described.

856,780. STONE-PICKER. GROVE L. HOLLIDAY and IRA S. HAWKS, Curtiss, Wis. Filed July 17, 1906. Serial No. 326,577.

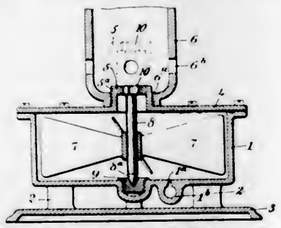
Claim.—1. In a machine for picking stones, a frame, wheels journaled thereon, a picking mechanism adapted to be driven by the wheels, comprising side wheels connected by cross-bars, and a series of fish hook shaped teeth fixed between the adjacent crossbars.

2. In a machine for picking stones, a picking mechanism comprising wheels spaced apart rigidly secured together by crossbars, and fish hook shaped teeth tan-

gentially arranged to the wheels and secured to adjacent bars, for the purpose described.



856,781. GAS-BURNER. BENJAMIN F. JACKSON, Jersey City, N. J. Filed Oct. 24, 1906. Serial No. 340,357.

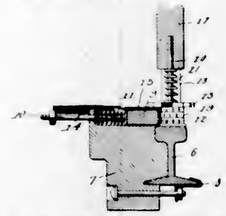


Claim.—1. The combination of a receptacle, a mixing chamber connected therewith by a passage, a revoluble member within said receptacle adapted to be propelled by the flow of a gaseous body passing therethrough into said mixing chamber, and a revoluble distributing head connected with said revoluble member and mounted within said passage to control the flow of gas into said mixing chamber, said distributing head being provided with apertures which constantly shift their position in the mixing chamber, substantially as shown and described.

2. The combination of a receptacle, a mixing chamber connected therewith by a passage, a revoluble shaft mounted within said receptacle and provided with laterally extending blades, and a revoluble distributing head connected with said shaft, rotating therewith and provided with apertures which constantly shift their position in the mixing chamber, substantially as shown and described.

3. The combination with a receptacle having an inlet and an outlet passage, of a mixing chamber connected with said outlet passage, a distributing head mounted within said outlet passage and provided with apertures for controlling the delivery of a gaseous body from the said receptacle into the mixing chamber, and means for rotating the distributing head so as to cause said apertures to constantly change their position in the mixing chamber while the gas is flowing therein, substantially as shown and described.

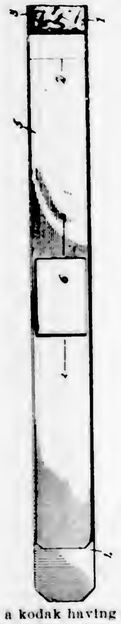
856,782. THIRD-RAIL COVER FOR ELECTRIC RAILWAYS. WILLIAM F. KEMPER, Chicago, Ill. Filed Jan. 21, 1907. Serial No. 353,296.



Claim.—1. The combination with a conductor rail, of brackets secured thereto and supported thereon and projecting beside the same, a series of cover strips over the rail, supporting bolts secured to the strips and slidable laterally in the brackets to cover or uncover the rail, and springs between the strips and brackets.

2. The combination with a conductor rail, of brackets secured thereto and projecting beside the same on the outer side thereof, a series of cover strips over the rail, supporting bolts secured to the strips and extending through the brackets and slidable laterally therein, and springs coiled around the bolts between the strips and the brackets.

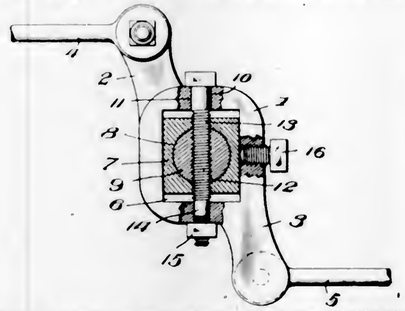
856,783. KODAK-FILM. JESSE B. KETCHUM, Joplin, Mo. Filed Nov. 14, 1905. Serial No. 287,254.



Claim.—A film for a kodak having a web with a focusing opening therein and binding strips at the edge of said opening reinforcing the same.

856,784. VALVE-GEAR. JOHN KOLSTRAM, Garrison, N. D. Filed Nov. 6, 1906. Serial No. 342,305.

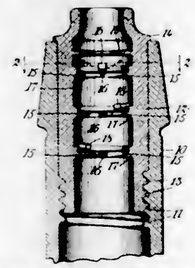
Claim.—1. In a device of the class described the combination with a body and rods secured to said body, of a supporting shaft, a block surrounding said supporting shaft and disposed through an opening in the body and means extending through bores in said body, block and shaft to change the stroke of the rods secured to the body.



2. In a device of the class described the combination with a body having an elongated opening therein, and rods secured to opposite sides of said body, of a supporting shaft, a block surrounding said supporting shaft and within said opening and a threaded bolt extending transversely through said body, block and shaft to adjust said body vertically upon said block, whereby the stroke of the rods upon the body will be varied.

3. In a device of the class described the combination with a body having an opening therein and rods secured to said body; of a supporting shaft, a block on said supporting shaft and in said opening, a bolt disposed through bores in said body and threaded openings in said block and supporting shaft, threads upon said bolt to engage the threaded openings whereby when the bolt is rotated the body will be raised or lowered on the supporting shaft and means to lock the body in its adjusted position.

856,785. NON-REFILLABLE BOTTLE. IRVING I. KREMER, New York, N. Y. Filed Feb. 12, 1907. Serial No. 356,956.

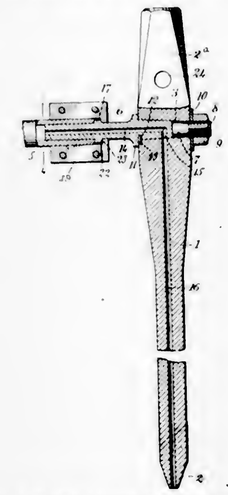


Claim.—1. In a bottle having a neck, a plurality of annular valve seats disposed in planes at right angles thereto, hinge pins arranged diametrically of said bottle neck, semi-circular flaps pivoted to said hinge pins and adapted to contact with said valve seats, and means disposed adjacent each flap and adapted to limit the opening movement thereof.

2. In combination with a bottle having a neck a plurality of valve seats disposed in planes at an angle to the general direction of the bottle neck, hinge pins arranged diametrically of said bottle neck, oppositely disposed flaps pivoted to each of said hinge pins and adapted to contact with said valve seats, and means disposed adjacent each flap and adapted to limit the opening movement thereof.

3. The combination with the neck of a bottle, of a non-removable stopper consisting of a tubular plug having a plurality of annular valve seats integral therewith and disposed in planes at right angles to the bottle neck, hinge pins having their ends embedded within the wall of said plug and arranged diametrically of said plug, semi-circular flaps pivoted to said hinge pins and adapted to contact with said valve seats, and inwardly-directed lugs or projections disposed adjacent each flap and adapted to limit the opening movement thereof.

856,786. THAWING-POINT. JOB H. LAMLEY, Tacoma, Wash. Filed Feb. 14, 1907. Serial No. 357,296.



Claim.—1. A thawing point having a head with a transversely disposed tapered bore, a nipple having a tapered plug received in said tapered bore, said plug having an extremity projecting beyond the face of said head, means attached to said extremity for tightening said plug in said bore, said bore having a recess in the wall thereof, said plug having a projection received in said recess and preventing the rotation thereof, and a hose attached to said nipple, said nipple and said point having communicating ducts.

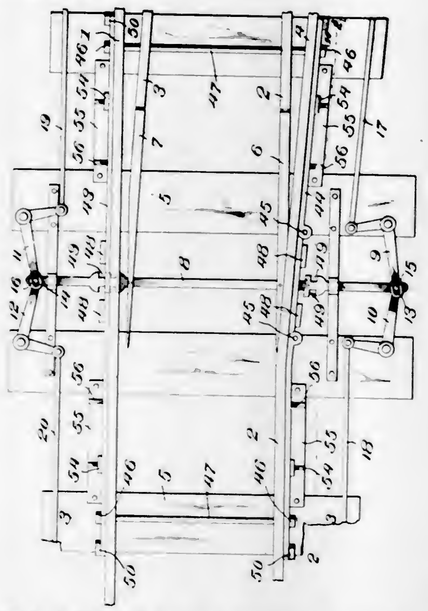
2. A thawing point having a transverse tapered bore in the upper portion thereof, a nipple having a tapered plug received in said bore and having a longitudinally disposed duct with a laterally disposed extension emerging upon the side face of said plug to form a port, said point having a duct communicating with said port and leading to the tip of said point, said plug having a shoulder seating against the face of said point and having a threaded extremity projecting beyond the opposite face thereof, a nut received on said threaded extremity and adapted to seat said plug in said bore, a dowel pin disposed under said shoulder and projecting outwardly from the side wall of said plug, said bore having a recess in the wall thereof receiving said dowel pin, said dowel pin and recess affording means for bringing said port and said second duct into alinement.

856,787. AUTOMATIC RAILWAY-SWITCH. ORA L. LANCE, Chattanooga, Tenn. Filed Nov. 6, 1906. Serial No. 342,229.

Claim.—1. In a device of the class described the combination with track rails and switch rails coöperating therewith; of means to automatically open or close said switch comprising a locking bar, means to move said locking bar longitudinally locking plates movably mounted at the outer faces of the track rails and a pair of depending fingers on each of said plates adapted to engage notches in the edges of said locking bar and hold the same in its adjusted position.

2. In a device of the class described the combination

with track rails and switch rails coöperating therewith; of a locking bar pivotally secured to the movable sections of said rails, means at each end of said locking bar to reciprocate the same longitudinally locking plates at the outer edge of and pivotally secured to said rails and a pair of depending fingers on each of said plates adapted to engage notches in the locking bar and hold the same in its adjusted position.



3. In a device of the class described the combination with track rails, switch rails having movable sections cooperating therewith, a bar having notches in each edge thereof connecting said movable sections and means to move said bar longitudinally; of plates, means to movably secure said plates to the outer face of said rails and above the edge thereof, a pair of fingers carried by each of said plates adapted to engage notches in said locking bar when the plates are depressed and means to normally hold said plates in an elevated position.

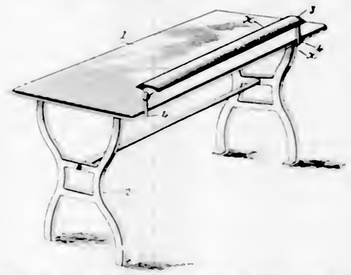
4. In a device of the class described the combination with track rails, switch rails coöperating therewith, a locking bar for said rails and means to move said locking bar longitudinally; of plates, links pivotally secured to said plates, rock shafts rigid with said links, means to normally hold the upper edges of said plates above the surface of said rails and depending fingers on said plates and at each side of said locking bar adapted to engage notches in said locking bar when the plates are depressed.

5. In a device of the class described the combination with track rails, switch rails coöperating therewith, said rails having movable sections and a bar connected to said movable sections; of longitudinally movable plates, means to retain said plates in juxtaposition to the outer faces of said rails, means to normally hold said plates above the upper surface of said rails and depending fingers arranged in pairs carried by said plates adapted to engage said bar and hold the same in its adjusted position when the plates are depressed.

6. In a device of the class described the combination with track rails and switch rails coöperating therewith, said rails having movable sections; of a rocking bar pivotally secured to said movable sections, bell crank levers at each end of said locking bar and yieldingly secured thereto, depression bars at each side of said track rails and at a distance from the locking bar, links depending from said depression bars, bell crank levers yieldingly secured to the lower ends of said links, rods connecting said bell crank levers with the first mentioned bell crank levers and means to depress said depression bars whereby the locking bar will be moved longitudinally and the switch opened or closed.

7. In a device of the class described the combination with track rails, switch rails coöperating therewith, a bar for said switch rails and means to operate said bar; of rock shafts extending through said rails and finding bearings therein, links rigid with the ends of said rock shafts, plates pivotally secured to said links whereby when said shafts are rotated said plates will move downwardly and longitudinally, means to normally dispose the upper edge of said plates above the track rails, rollers at each end of said plates adapted to coöperate with similar rollers upon the rails and depending fingers on said plates adapted to engage notches in said bar and hold the same against longitudinal movement when the plates are depressed.

856,788. TABLE. HENRY H. LEVY, New York, N. Y. Filed June 15, 1905. Serial No. 265,310.



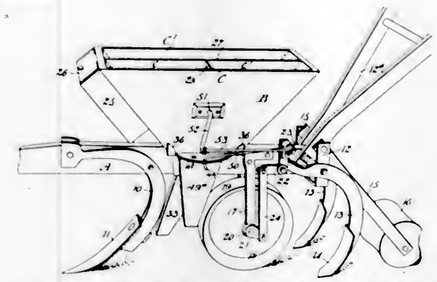
Claim.—1. The combination with a table, of a rest of the character described, comprising arms secured to the table and curved upwardly over one edge of the table, a cross bar connecting the upper ends of the arms, a transversely curved plate provided on its under side with downwardly projecting members having openings through which the said cross bar loosely passes, and springs coiled on the cross bar and having their ends engaging the under side of the plate and the arms.

2. A rest of the character described, comprising curved arms provided with means whereby they may be secured to a table and connected by a cross bar, a transversely curved plate provided on its under side with depending plates having openings therein through which the said bar loosely passes, and springs coiled on the cross bar and having their ends engaging the under side of the curved plate and the said arms.

3. A rest of the character described, comprising curved arms connected at one end by a cross bar and adapted to have their other ends secured to a table, a rest bar having a curved upper face and pivotally mounted on the cross bar of the arms, and coiled springs surrounding the said cross bar and having their ends engaging the rest bar and arms.

856,789. SEED-PLANTER AND FERTILIZER-DISTRIBUTER. CHARLES E. LITTLEFIELD, Jesup, Ga. Filed Nov. 5, 1906. Serial No. 342,075.

Claim.—1. In an agricultural implement, a beam, a furrow opener carried by said beam, a hopper secured to the beam to the rear of the furrow opener, said hopper being provided with a partition dividing it into compartments, one for seed and the other for fertilizing material, each compartment being provided with an outlet for its bottom, an independent chute for each compartment of the hopper, said chutes being located to the rear of the furrow opener, one in advance of the other, a covering wheel located to the rear of the said chutes, means for regulating the discharge of material from one of the compartments by the rotation of the said covering wheel, covering shares carried by the beam to the rear of the covering wheel, and a roller likewise carried by the beam to the rear of the covering shares.



2. In an agricultural implement, a beam, a furrow opener carried by the beam, a hopper supported on said beam to the rear of the furrow opener, a partition dividing the hopper into a seed compartment and a compartment for fertilizing material, a removable bottom for the seed compartment, having an outlet therein, a slot above said outlet and a seed drop disk mounted to oscillate relatively to the said slot and the outlet, a covering wheel carried by the said beam and means for operating the said seed drop disk by the rotation of the said covering wheel, a chute located below the outlet for each compartment of the hopper, extending down between the furrow opener and the said covering wheel, a brush located over the slot in the bottom of the seed compartment and the outlet opening therein, a shaft mounted to oscillate in the said hopper, an agitator carried by said shaft, and means for revolving said shaft by the rotation of the said covering wheel.

3. In a combined planter and fertilizer distributer, a beam, a furrow opener carried by said beam, a covering wheel likewise carried by the beam to the rear of the furrow opener, covering blades supported from the beam to the rear of the covering wheel, a roller likewise supported from the beam to the rear of the covering blades, a hopper located on the said beam between the furrow opener and the covering wheel, said hopper being divided into a compartment for fertilizing material and a compartment for seed, each compartment being provided with an outlet opening in its bottom, a seed drop disk having pockets therein and operating relatively to the outlet in the bottom of the seed compartment, and chutes extending down from said hopper, one from the outlet of each compartment therein, the lower terminals of the chutes being one in advance of the other and both chutes being located between the furrow opener and the covering wheel.

4. In a combined seed planter and fertilizer distributer, the combination with a beam, a furrow opener carried by said beam, a covering wheel to the rear of said furrow opener, hangers therefor, a crank shaft secured to the axle of said covering wheel, an elbow lever fulcrumed upon said beam, and a link connection between the crank shaft and the elbow lever, of a hopper located between the furrow opener and the covering wheel, a partition for said hopper dividing it into two compartments, one for seed and the other for fertilizing material, each compartment having an opening in its bottom, a disk mounted to oscillate at the bottom portion of the seed compartment, which disk is provided with pockets adapted to register with the outlet opening in said compartment, and a link connection between the elbow lever and the disk.

5. In a combined seed planter and fertilizer distributer, the combination with a beam, a furrow opener carried by the beam, a covering wheel to the rear of the furrow opener, hangers therefor, a crank shaft secured to the axle of said covering wheel, an elbow lever fulcrumed upon said beam, and a link connection between the crank shaft and the elbow lever, of a hopper located between the furrow opener and the covering wheel, a partition for the hopper dividing it into two compartments, one for seed and the other for fertilizer material, each compartment having an opening in its bottom, a disk mounted to oscillate at the bottom portion of the seed compartment, which disk is provided with pockets adapted to register with the outlet opening in said compartment, a link connection between the said elbow lever and the said disk, a brush located over the said disk and the outlet opening in the bottom of the seed compartment, a shaft mounted to oscillate in said hopper, an agitator carried by said shaft, and means for operating the said agitator shaft from the said elbow lever as described.

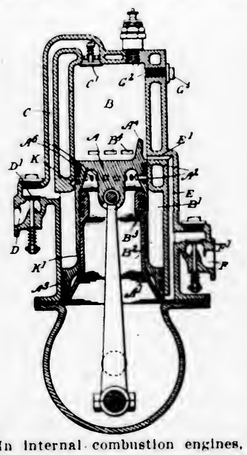
6. In a planter and fertilizer distributer, the combination of a beam, a supporting wheel for the beam and having a crank arm at one end of its shaft, a hopper mounted on the beam, a seed drop disk mounted in the bottom of the hopper, an elbow lever mounted on the beam, a rod connecting the seed drop disk with one member of the elbow lever, and a link connecting the other member of the elbow lever with the crank of the said wheel.

7. In a planter and fertilizer distributer the combination of a beam, a supporting wheel for the beam, a hopper having compartments and mounted upon the beam, a seed dropping device in the bottom of one compartment of the hopper, an agitator in the other compartment of said hopper, an elbow lever mounted on the frame, means for rocking the elbow lever from the supporting wheel, and means for operating the said dropping device and agitator from the said elbow lever.

8. In a planter and fertilizer distributer, the combination of a hopper having an open lower end, a removable bottom for the lower end of the hopper, said bottom being formed of an upper and lower section, the lower section having a segmental recess in its upper face and the upper section provided with a curved slot, means for securing the bottom in position and an oscillating seed drop disk pivoted in the recess of the lower section of the bottom of the hopper and provided with a pair of seed receiving apertures.

9. In a planter and fertilizer distributer, the combination of a hopper having an open lower end and provided with a shoulder at one side of the lower end, and with eyes projecting below the said lower end, a removable bottom having one edge rabbeted to engage the shoulder of the hopper, and a rod passing through the said eyes below the bottom.

856,790. INTERNAL-COMBUSTION ENGINE. EDMUND H. MICKLEWOOD and HARRY WHITBOURNE, Plymouth, England. Filed Apr. 8, 1907. Serial No. 367,061.

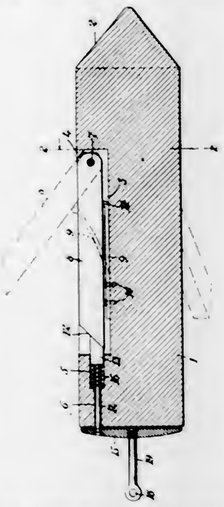


Claim.—1. In internal-combustion engines, a working cylinder, a pump cylinder co-axial therewith, a fixed sleeve within said latter cylinder forming in connection with the

cylinder an annular chamber, a trunk piston sliding over the said sleeve and having an annular extension constituting a pump piston working in said chamber, ducts connecting the chamber at the front and rear of the pump piston with the working cylinder and a source of fluid supply, and valves controlling said ducts.

2. In internal combustion engines, a working cylinder, a pump cylinder co-axial therewith, a fixed sleeve within said latter cylinder forming in connection with the cylinder an annular chamber, a trunk piston sliding over the said sleeve and having an annular extension constituting a pump piston working in said chamber, ducts connecting the chamber at the front and rear of the pump piston with the working cylinder and a source of fluid supply, valves controlling said ducts, a plurality of ports adapted to communicate with said chamber, a channel in the trunk piston adapted to establish such communication, and means for closing the outer ends of any desired number of said ports.

856,791. ANCHOR-PROJECTILE. EVERETT MINGUS, Marshfield, Oreg. Filed May 7, 1906. Serial No. 315,537.



Claim.—1. The combination of a projectile having a long, cylindrical body with longitudinal channels in the face thereof and a conical outer end, lips overhanging the forward ends of the channels, arms pivoted in the channels adjacent to the lips, said arms being rounded off on their upper faces to conform with the periphery of the projectile, springs secured in the bottom of the channels having upturned toes forming stops for the arms, and adapted to press the arms outwardly, inclined ends at the rear ends of the arms, triggers having ends of an exact counterpart for pressing on the arms, stems connecting the triggers with a disk at the rear end of the shell, springs for pressing the triggers forward, and an eye attached to the center of the disk for receiving a line, for the purpose described.

2. The combination of a projectile, longitudinally-extending arms pivoted thereto, a plurality of devices longitudinally slidable in one end of the projectile adapted to engage said arms, and means rigidly attached to said devices operable to release the arms, for the purpose described.

3. The combination of a projectile, longitudinally-extending arms pivoted thereto, a plurality of devices longitudinally slidable in one end of the projectile, means forcing said devices inwardly to engage said arms, and means rigidly attached to said devices operable to release the arms, for the purpose described.

4. The combination of a projectile, longitudinally-extending arms pivoted thereto, and a disk arranged at the rear end of the projectile and longitudinally movable with respect thereto, for releasing the arms.

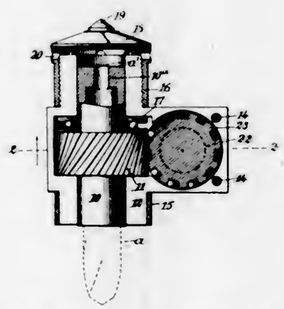
5. The combination of a projectile, longitudinally-extending arms pivoted thereto, a disk arranged at the rear end of the projectile, triggers fixed to the disk for engaging the arms, and means for withdrawing the disk from the projectile to release the arms.

6. The combination of a projectile having a plurality of longitudinal channels in the face thereof, arms pivotally mounted in the channels having their upper faces rounded off and corresponding to the periphery of the projectile, springs secured in the bottom of the channels having upturned toes normally forcing the arms outwardly, a disk at the end of the projectile carrying a plurality of triggers for engaging the ends of the arms to hold them in closed position, and means carried by the disk for attaching a line, for the purpose described.

7. The combination of a projectile having a plurality of longitudinal channels in the face thereof, arms pivotally mounted in the channels, springs secured in the channels, overhanging lips at the forward ends of the channels, forming stops for the arms, a plurality of triggers for engaging the ends of the arms to hold them in closed relation, and means attached to said triggers for releasing the arms.

8. The combination of a projectile having a plurality of longitudinal channels in the face thereof, flat springs secured in the bottom of the channels, arms pivotally mounted in the forward ends of the channels, overhanging lips having inclined faces adjacent to the pivotal connection of the arms, triggers for engaging the arms, springs for pressing the triggers forward, a stem connecting the triggers with a disk at the rear end of the projectile, and means carried by the disk for attaching a line, for the purpose described.

856,792. DRILLING DEVICE. LOUIS K. MOORE and GEORGE J. COSTELLO, Philadelphia, Pa. Filed Apr. 28, 1906. Serial No. 314,191.



Claim.—1. A drilling device comprising a casing provided with oppositely disposed journal bearings and an intermediate chamber, a drill sleeve journaled in said bearings, a gear fixedly secured to said sleeve within said chamber, a feed sleeve having a threaded engagement with the exterior of one end of said casing, and a thrust bearing arranged within said chamber between one side of said gear and said end of the casing, substantially as shown and described.

2. A drilling device comprising a casing provided with oppositely disposed journal bearings, and an intermediate chamber, a drill sleeve journaled in said bearings, a gear fixedly secured to said sleeve within said chamber, feed mechanism connected with one end of said casing, a thrust bearing arranged within said chamber between the side of said gear and casing, and means adapted to rotate said gear, substantially as shown and described.

856,793. SAFETY-RAZOR. WILLIAM J. MOORE, Washington, D. C. Filed Mar. 15, 1907. Serial No. 362,440.



Claim.—1. In a safety razor, the combination of a razor blade, a combined guard and blade support situated on the side of the blade that comes next to the face in shaving, the razor being free from any surface on the opposite side of the blade contiguous to the cutting edge thereof, and a handle projecting at a right-angle from the guard and blade with one end against the blade and clamping it against the guard.

2. In a safety razor, the combination of a razor blade, a combined guard and blade support situated on the side of the blade that comes next to the face in shaving, the razor being free from any surface on the opposite side of the blade contiguous to the cutting edge thereof, a screw projecting from said guard through an opening in the blade, lugs projecting from the guard through openings in the blade on opposite sides of the screw, and a handle having a threaded opening in its end to engage said screw, the handle at said end engaging the blade and clamping it against the guard.

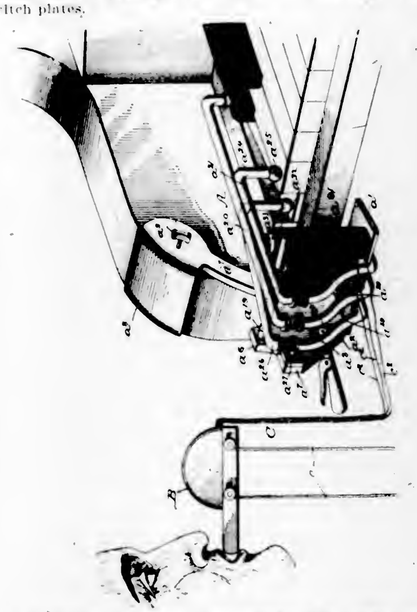
3. In a safety razor, the combination of a razor blade, a combined guard and blade support situated on the side of the blade that comes next to the face in shaving, the razor being free from any surface on the opposite side of the blade contiguous to the cutting edge thereof, a screw projecting from said guard through an opening in the blade, lugs projecting from the guard through openings in the blade on opposite sides of the screw, a handle having a threaded opening in its end to engage said screw, the handle at said end engaging the blade and clamping it against the guard, and finger-engaging notches in the ends of the guard.

4. In a safety razor, the combination of a razor blade, a guard situated on the side of the blade that comes next the face in shaving, the razor being free from any surface on the opposite side of the blade contiguous to the cutting edge thereof, and a handle.

856,794. PIANO-PLAYER. ROBERT MORGAN, Ellsworth, Kans., assignor of one-half to Emile E. Kolochney, Ellsworth, Kans. Filed Jan. 30, 1906. Serial No. 298,580.

Claim.—1. In a piano player and in combination, a plurality of strikers for depressing the individual keys, an electro-magnet for operating each of the strikers, a battery, and means for connecting the battery with a predetermined electro-magnet, comprising a block having a plurality of transverse perforations, a plurality of spaced conducting bars on the block and insulated therefrom, an electrical connection between the end bars at one end of the block, an electrical connection between the end bars at the other end of the block, and including the battery, the terminals of each of said electro-magnets being arranged above adjacent conducting bars, switch plates normally connecting the adjacent conducting bars, means on said plates for completing the circuit between the conducting bars and the adjacent pair of terminals of an electromagnet when the switch plate is elevated, and means for elevating said plates comprising a yoke having an arm for moving the switch plate, and a vane within one of the transverse perforations, said vane being adapted to be moved by a current of air passing through the perforation.

2. In a piano player and in combination, means for depressing the individual keys, electro-magnets for operating said depressing means, a battery, and means for connecting the battery with a predetermined electro-magnet, comprising a block having a plurality of perforations, a plurality of spaced conducting bars on the block and insulated therefrom, an electrical connection between the end bars at one end of the block, and an electrical connection between the end bars at the other end of the block, and including a battery, a plate supported above the block and provided with spaced pairs of binding posts, the terminals of each of said electro-magnets being connected with a pair of said binding posts, switch plates normally resting upon and connecting the adjacent conducting bars, means on said plates for completing the circuit between the conducting bars and the adjacent pair of binding posts when the switch plate is elevated, and means extending into the perforations of the block and adapted to be moved by a current of air passing therethrough for operating the switch plates.

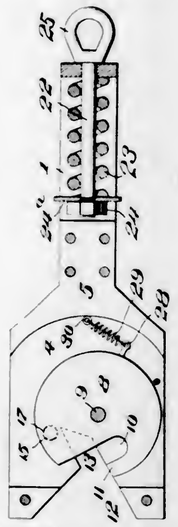


3. In a piano player and in combination, a plurality of strikers for depressing the individual keys, an electro-magnet for operating each of the strikers, a battery, means for connecting the battery with a predetermined electromagnet, comprising a block having a plurality of transverse perforations, a plurality of spaced conducting bars on the block and insulated therefrom, an electrical connection between the end bars at one end of the block, an electrical connection between the end bars at the other end of the block and including a battery, the terminals of each of said electro-magnets being arranged above adjacent conducting bars, means for completing the circuit between the conducting bars and the adjacent pair of terminals on an electromagnet, comprising a switch plate pivotally mounted on the block, and means engaging the switch plate and having a vane within one of the transverse perforations, said vane being adapted to be moved by a current of air passing through the perforation.

856,795. COUPLING. ORA A. MORRIS, Salem, Ind. Filed Feb. 21, 1907. Serial No. 358,707.

Claim.—1. In a coupler of the class described the combination with a draw bar having a head at one end thereof and a coupling disk rotatably mounted in said head; of a

coupling pin, a socket for said pin, a spring surrounding said pin and adapted to direct the same downwardly when the disk is in its closed position and a spring adapted to rotate said disk when the coupling pin is released therefrom.



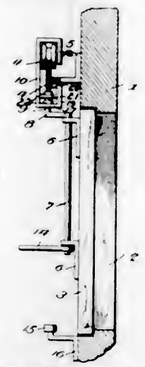
2. The herein described coupler comprising the combination with a draw bar; of a head connected to said draw bar comprising plates, said plates having notches in their outer ends, spacing blocks interposed between said plates a disk rotatably mounted between said plates, said disk having a slot extending inwardly from one face thereof, a knuckle extending from one side of said disk, a link adapted to enter the notches in the plates and engage the disk whereby said disk will be rotated and the knuckle entered into the link, a pin slidably mounted in one of the side plates and adapted to hold the disk in its closed position, and means to return the disk to its nominal position when the pin is released.

3. A coupler of the class described comprising a draw bar, plates secured to one end of said draw bar, spacing blocks interposed between said plates whereby a cavity will be formed between the plates, said plates having notches in their outer ends terminating in slots, a disk rotatably mounted in the cavity and having a slot extending inwardly from the face thereof, a knuckle at one end of said slot, a link adapted to enter the slots in the plates and rotate the disk, whereby the knuckle on said disk will engage the link, means to engage the disk when rotated, and additional means to return the disk to its nominal position when the same is released.

856,796. DOOR-HANGER. WILLIAM MCDONALD, Claremont, Minn. Filed May 3, 1906. Serial No. 315,050.

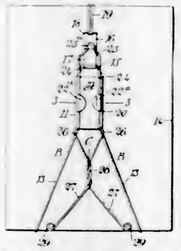
Claim.—1. The combination with a car-door and a trackway above said door; of a hanger comprising a frame, a pair of sheaves mounted in the upper end of said hanger frame, an outwardly directed ledge at the upper end of the inner side section of said frame, a partition connecting the sides of said hanger frame, a bar rotatably journaled in the partition and bottom portion of the hanger frame, and collars secured to said bar above and below the partition whereby longitudinal movement of the hanger on the bar will be prevented.

2. The combination with a sliding door, and a trackway above said door; of a door hanger comprising a frame substantially G-shaped, sheaves rotatably mounted in the upper end of said frame, a partition above and parallel with the bottom of the frame and connecting the lower portion of the side sections of said frame, a bar centrally disposed through the partition and the bottom of the hanger frame, collars secured to the bar above and below the partition, and an outwardly directed ledge on the inner side section of the frame.



3. The combination with a car door and a trackway above said door; of a hanger comprising a frame, a pair of sheaves mounted in the upper end of said frame, an outwardly directed ledge at the upper end of the inner side section of said frame, a partition connecting the sides of said frame, a bar journaled in the partition and bottom portion of the hanger frame, and collars mounted on said bar on each side of the partition, said hanger being substantially G-shaped.

856,797. COMBINED EASEL AND PLATE-HOLDER. SAMUEL MCMICHAEL, Newark, N. J., assignor of one-half to Collins C. Diboll, New Orleans, La. Filed June 29, 1906. Serial No. 324,037.



Claim.—1. In easels and like devices, a plate member, guides overlying the same and a combined supporting and suspension member constructed of pliable wire and comprising a body section and a lower leg section, the sides of the body section being adapted for sliding movement between said guides and the plate member, and means for limiting the movement of said suspension and supporting member.

2. In easels and like devices, a plate member having opposing guide ears formed thereon, and a combined supporting and suspension member, constructed of one piece of pliable wire bent upon itself to form an upper loop section having straight parallel sides and mounted to slide in the said guide ears, a lower foot section and stops at the upper portion of the foot section.

3. In easels and like devices, a plate member of pliable material having its ends bent inwardly upon its body, forming eyes at the ends of said member, and a combined supporting and suspension member constructed of one piece of pliable wire bent upon itself to form an upper loop section having a central upper contracted extension, and parallel straight sides, which are mounted to slide in the said eyes, a crossed foot section, and stops at the junction of the foot section with the loop section.

4. In easels, a back plate having longitudinal eyes at its side edges and opposing guide ears at its back face, a stay wire bent to form an upper loop, the members of the wire adjacent to the loop being held in the eyes of the back plate, and lower diverging supporting arms having hook terminals, an upper hook, a pliable strap adjustably connecting the said hook with the said loop, and a combined supporting and suspension member, consisting of a pliable wire bent upon itself to form an upper loop section slidably mounted in the said ears, a lower leg section and intermediate stops.

5. In easels, the combination with a back plate, a stay wire secured thereto and extending above the same in the form of a loop and below the plate in the form of diverging supporting arms, an upper hook, and a pliable adjustable connection between the loop and the hook, of guides produced upon the back plate, and an easel member constructed of pliable wire, comprising an upper loop section slidably mounted in the guides, a lower leg section and intermediate stops.

856,798. OIL-BURNER. ALEXANDER J. O'BRIEN, Beloit, Wis., assignor of one-half to Charles A. Gault, Beloit, Wis. Filed Sept. 29, 1905. Renewed Dec. 31, 1906. Serial No. 350,182.

Claim.—In a liquid hydro-carbon burner, the combination of a tank or reservoir, a valve-controlled supply-pipe projecting vertically therefrom, a cylindrical gas generator upon the upper end of said supply-pipe and in communication therewith, said generator being provided with a tapered centrally-disposed opening, a burner-tube having its tapered upper end projecting through said opening and extending slightly above the top of said generator, the lower open end of said burner tube being formed with an annular series of apertures, and being bent at right angles, a gas discharge tube leading from the upper portion of said generator, and a needle valve upon said discharge tube adapted to discharge gas into the lower open end of said burner-tube, substantially.

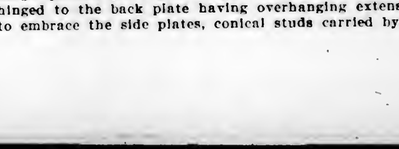
856,799. STAMP. JOHN P. O'CONNER and JAMES E. WRIGHT, Omaha, Nebr. Filed Apr. 30, 1906. Serial No. 314,528.

Claim.—1. In combination with a stamping device having a revoluble marking roller, a device to grip the hand, and a spring connecting the gripping device and the stamping device and serving to press the marking roller of the latter against the object to be stamped held in the hand, and hence causing said roller, when said object is moved, to be rotated and to stamp or mark upon such object.

2. In combination with a stamping device including a revoluble marking roller and having a loop to pass around the hand, and a spring arm connecting the loop and the stamping device and serving to press the marking roller against the object to be stamped and held in the hand, and hence causing said roller, when said object is moved, to be rotated and to stamp the mark upon such object.

3. A device of the character described comprising a hand grip, a spring thereon, an angle bracket adjustably mounted upon the free end of said frame, a substantially U-shaped frame adjustably mounted upon said bracket, a marking roller journaled in said frame, an inking roller journaled in said frame and in contact with said marking roller, and an ink reservoir adjustably secured in said frame, substantially as shown and described.

856,800. TEMPORARY BINDER. JAMES H. PARKES, Nashville, Tenn., assignor to Foster, Weil & Parkes, Nashville, Tenn., a Firm. Filed Feb. 7, 1907. Serial No. 356,246.



Claim.—1. A loose leaf ledger comprising separable binding sections each consisting of a back plate and pivoted side plates adapted to clamp leaves therebetween, clips for securing the side plates together, covers hinged to the outer sections, the sections being connected by removable pintles so that more sections may be inserted between the outer sections said pintles being common to the adjacent sections for securing the back plates and side plates.

2. A loose leaf ledger comprising independent binding sections, each consisting of a back plate and two side plates, pintles for pivoting the side plates to the back plates, end clips pivoted to the back plates to clamp against the side plates, and coöperating paper guides carried by the opposing side plates.

3. A loose leaf ledger comprising independent binding sections each consisting of a back plate and two side plates, pintles pivotally securing the side plates to the back plate, end clips pivoted to the back plates to clamp against the side plates, coöperating paper guides carried by the opposing side plates, and covers to the ledger, the pintles forming the common pivotal joint between the adjacent binding sections and the covers.

4. A loose leaf ledger comprising independent binding sections each consisting of a back plate and two side plates, pintles pivotally securing the side plates to the back plate, end clips pivoted to the back plates to clamp the side plates, studs carried by one of the side plates, and tubular guides carried by the opposing side plate to receive said studs.

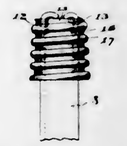
5. A loose leaf ledger comprising independent binding sections each consisting of a back plate and two side plates, pintles pivoting the side plates to the back plate, end clips pivoted to the back plates to clamp the side plates together, studs carried by one of the side plates of each section, tubular guides carried by the opposing side plate to receive the studs, covers pivoted to the outer binding sections, the pintles extending full length of the sections and forming the common joint between the side and back plates and the covers.

6. A paper binding section comprising a back plate and side plates each formed with coöperating hinge sleeves, hinge pintles passing through said sleeves, end clips hinged to the back plate having overhanging extensions to embrace the side plates, conical studs carried by one

of the side plates, and tubular guides carried by the opposing side plate to receive the studs.

7. A temporary binder comprising independent binding sections each consisting of a back plate and side plates formed each with coöperating hinge sleeves, hinge pintles passing through said sleeves, end clips hinged to the back plate having extensions to embrace the side plates, studs carried by one of the side plates, tubular guides carried by the opposing side plate to receive the studs, the pintles passing through certain of the hinge sleeves on the adjoining back plates to hinge the sections together, and covers hinged to the outer sections by means of the pintles on the outermost sections.

856,801. INSULATOR. CHARLES L. PEIRCE, Jr., Chicago, Ill., assignor to Peirce Specialty Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 29, 1906. Serial No. 298,475.



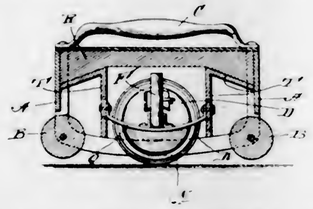
Claim.—1. In combination with an insulator, a bracket formed of a metal bar provided with a slot in one of its sides, and a sheet metal strip surrounding said bar and having one of its ends secured in said slot, substantially as described.

2. In combination with an insulator, a bracket formed of a channel bar and provided with slots, a sheet metal strip adapted to substantially surround said bar and provided with ears to enter said slots, and means for securing said strip to said bar, substantially as described.

3. In combination with an insulator, a bracket formed of a channel bar and provided with slots, an elastic sheet metal strip formed to have a threaded exterior and adapted to surround said bar, and means for retaining said strip within said slots and around said bar, substantially as described.

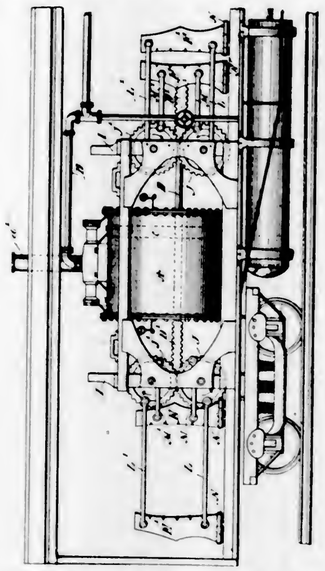
4. In combination with an insulator, a bracket formed of a channel bar having ears formed on its end and provided with slots, and a spring metal strip formed to have a threaded exterior and provided with ears entering said slots and retained therein by swaging over said ears on said bar, substantially as described.

856,802. IRONING APPARATUS. JOHN W. PHARROH, Memphis, Tenn. Filed Oct. 11, 1906. Serial No. 338,470.



Claim.—An ironing apparatus comprising a frame with suitable handle, presser rollers journaled one at each end of the frame, a stationary cylindrical furnace having tapering ends with exits therein, pipes connected to said tapering ends, a cylindrical ironing roller mounted about said furnace, grooved ways about the circumference of the furnace, annular ribs upon the inner circumference of the ironing roller and guided in said ways, as set forth.

856,803. PORTABLE COTTON COMPRESS OR BALING MACHINE. JOHN W. PHILLIPS, Austin, Tex. Filed Dec. 14, 1905. Serial No. 291,789.



Claim.—1. A portable press, comprising a cylinder, a piston arranged to reciprocate therein, rods connected with the piston on opposite sides, and having their outer portions constructed as double rack-bars, two sets of platens, two sets of cog gears, rods connecting the two platens of each set with two of the meshing gears of each set, at opposite points, the double rack-bars meshing and coacting with the gears which are intermediate those with which the platens are connected, whereby one set of platens is opened as the other set closes, substantially as described.

2. An improved press comprising a cylinder, a piston adapted to reciprocate therein, piston rods connected with opposite sides of the piston and having their outer portions constructed as double rack-bars, two double sets of gears each arranged at one end of the piston and each composed of two pairs of meshing gears arranged in the same vertical plane, and two intermediate gears between which the rack-bars work and with which they coact for rotating all the gears, two reciprocable platens, and connecting rods extending therefrom to the meshing gears and pivotally connected with the same at opposite points, substantially as described.

3. In a press, the combination, with an air cylinder and a piston adapted to reciprocate therein, a piston rod having its outer portion constructed as a rack bar, of two gears arranged on shafts in the same vertical plane and separated by a space sufficient to receive the rack-bars between them, two sets of meshing gears arranged on the same shafts in the same plane, reciprocable platens, and rods connecting them with the other gears at opposite points whereby the platens are caused to approach or recede from each other according to the direction at which the gears are rotated by the movement of the piston, the compressing power becoming greater as the platens closely approach each other, substantially as described.

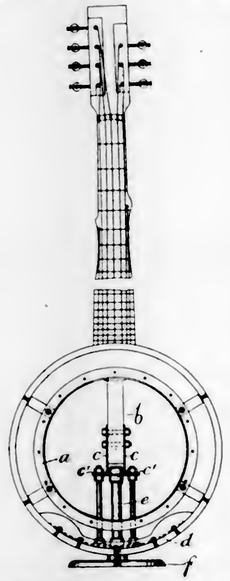
4. In a press of the class indicated, the combination with a horizontal cylinder and a piston adapted to reciprocate therein, alined piston rods projecting on opposite sides of the piston and from opposite ends of the cylinder, their outer portions being constructed as double rack bars, three sets of meshing gears arranged on the same transverse shaft, two of such sets corresponding and the intermediate set being of less diameter so that the piston rack bars will work between them, such gears being arranged on opposite sides of the cylinder, and two sets of platens and connecting rods by which they are operatively connected with the outer sets of gears, so that as the piston reciprocates, the platens on one side are caused to approach each other and those on the other to recede from each other, as described.

5. A portable press comprising a platform mounted on wheels and the press proper fixed on said platform, and comprising a cylinder, a piston adapted to reciprocate therein having rods constructed as double rack bars, gears with which such rack bars engage, and supplemental gears arranged on the side of the first-named gears which mesh with each other, reciprocable platens and rods connecting them with the side gears, substantially as described.

6. In a press, the combination, with platens adapted to approach and recede from each other, means for operating the platens simultaneously for this purpose, the faces of the platens having a series of grooves arranged transversely, bars arranged in said grooves, pistons and rods connecting them with said bars, cylinders in which said pistons reciprocate, the same being arranged in the body of the platens, and air-conducting tubes connected with the cylinders exteriorly, whereby, upon the application of due pneumatic pressure, the said bars may be projected from the faces of the platens to partially compress the bale as required for removal of the original bands or ties, substantially as described.

7. The combination of two platens arranged opposite and parallel, and devices arranged on the faces of said platens and which are movable outwardly therefrom, for partially recompressing a bale transversely at points separated from each other, and means for projecting said devices when required, substantially as described.

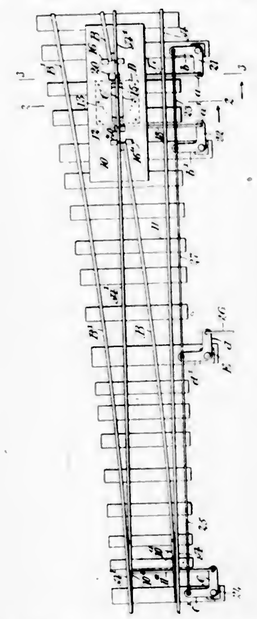
856,804. BANJO-SUPPORT. FRANK B. PIPER, Redbourn, England. Filed Feb. 2, 1907. Serial No. 355,477.



Claim.—1. The combination of a stringed instrument provided with a neck and a rim and a support having a flat base in which said instrument is rotatably supported, substantially as described.

2. The combination of a stringed instrument provided with a neck and a rim and a support on which said instrument is rotatably mounted, said support having a flat base, and anti-friction devices between said instrument and said support, substantially as described.

856,805. RAILROAD-SWITCH. JOHN M. POWELL, Stockton, Utah. Filed Nov. 13, 1906. Serial No. 343,189.



Claim.—1. In railroad switches, the combination with the rails of the main line and the rails of the siding, of a platform plate located adjacent to where the inner rail of the siding and the inner rail of the main line converge, a bed piece located beneath the platform plate and secured thereto, the said bed piece having a circular chamber formed therein, open at the top, a disk mounted to turn freely in said chamber, the said platform plate having a longitudinal opening the center of which is in vertical alinement with the center of said disk, a switch rail located between the main and the siding rails and secured to the center of said disk, the said switch rail being capable of bridging relation to either the main or the siding rails, stop chairs located at the opposing ends of the sections of the inner rails of the siding and main line, to limit the turning movement of the disk and switch rail, blocks attached to the bottom of the switch rail at each side of the center thereof, the said platform plate being provided with slots for the downward extension of said blocks, and shifting mechanism for the switch rail arranged to exert a pushing action on one of said blocks and a pulling action on the other.

2. In railroad switches, the combination with the rails of the main line and the rails of the siding and a platform plate located between the breaks in the inner rails of the said main line and the siding, of a centrally-pivoted switch rail on the platform plate and operative with relation to the main and siding rails, blocks secured to the bottom of the switch rail at opposite sides of its pivot and extending downward through slots formed in the platform plate and mechanism for shifting the switch rail, which mechanism exerts a pulling action on the block at one side of the pivot of the switch rail and a simultaneous pushing ac-

tion on the block at the opposite side of the pivot of said rail, and means for limiting the movement of the switch rail in either direction.

3. In railroad switches, the combination with the rails of the main line and the rails of a siding, a platform plate, a bed piece located beneath the platform plate, and provided with a chamber, and a disk mounted to turn in the chamber of the bed piece, of a switch rail centrally pivoted to said disk and adapted for bridging action relatively to either the main or the siding rails, blocks secured to the bottom of the switch rail, one at each side of its pivot, the said platform plate being provided with slots through which said blocks extend shifting rods connected with the said blocks, elbow levers pivotally connected with said shifting rods, the connecting members of the said levers facing each other, a link connection between said levers, a main elbow lever, means for operating the same, and a link connection between the said main lever and one of the levers connected with the switch rail.

4. In railroad switches, the combination with the rails of the main line, the rails of the siding, a platform plate located between the breaks in the inner rails of the said main line and the siding, a chambered bed piece located beneath the platform plate, and a disk mounted to turn freely in the chamber of the bed piece, of a short switch rail centrally secured to said disk and adapted to operate as a connecting medium with either of the inner rail sections of said main line or siding, blocks secured to the bottom of the said switch rail at each side of its center, the said platform plate being provided with slots for the downward extension of said blocks and to permit of their sliding movement relative to said platform plate, pivoted switch points located a distance from the switch rail, and means connected with the said blocks and with the switch points for simultaneously operating the switch rail and said switch points.

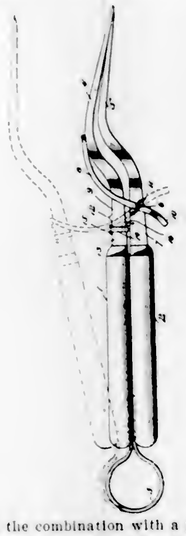
5. In railway switches, the combination with the rails of the main line and the rails of the siding, of a switch rail located between the main and the siding rails and capable of bridging relation to either the main or the siding rails, a turn table carrying said switch rail and comprising a chambered bed piece, a disk mounted to turn in the chamber of the bed piece, a platform plate secured on top of the bed piece and provided with a longitudinal slot in line with the center of said disk, the said switch rail being secured to said disk and extending over the platform plate, blocks secured to the under face of the switch rail at opposite sides of its center and movable in slots in the said platform plate, and a shifting mechanism for the switch rail connected with said blocks.

6. In railway switches, the combination with the rails of the main line and the rails of the siding, of a switch rail located between the main and the siding rails and capable of bridging relation to either the main or the siding rails, a turn table carrying said switch rail, and comprising a chambered bed piece, a disk mounted to turn in the chamber of the bed piece, a platform plate secured to the upper marginal portion of said bed piece and projecting at each end beyond the bed piece, the said platform plate being provided with a longitudinal slot in line with the center of said disk, the said switch rail being secured to said disk, blocks secured to the under face of the switch rail at opposite sides of the center, and movable in slots formed in the said platform plate, a shifting mechanism for the switch rail extending beneath the platform plate and connected with said blocks, and means carried by the platform plate for limiting the movement of the switch rail.

856,806. FORK. LOUIS L. PRATT, Salt Lake City, Utah. Filed May 15, 1906. Serial No. 316,940.

Claim.—1. The combination with an upper and lower handle, a spring secured between the handles at one end, tines carried by the respective handles, a guard pivoted to the lower handle inclosing the upper handle, and means for locking the tines in juxtaposition.

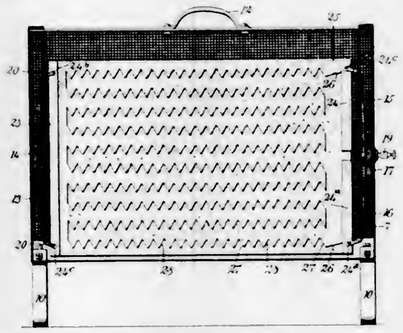
2. A fork consisting of a handle comprising two members, a spring forming the connection between the members at one end, a set of tines carried by the respective members, a guard pivoted to one tine inclosing the other tine, and a catch mounted on one tine adapted to engage a hook on the other tine.



3. In a fork, the combination with a pair of handles, of a spring forming the connection between the handles at one end, a set of tines carried by each of the handles, a guard secured to one handle and limiting the outward movement of the other handle, and a sleeve slidable on one handle to engage the opposite handle.

4. A fork comprising a pair of handles, elastic means forming the connection between the handles at one end, a set of tines carried by each handle and adapted to nest one against the other, a guard carried by one handle encompassing the opposite handle to limit the movement thereof, and a catch carried by one handle to engage the opposite handle and lock the tines in juxtaposition.

856,807. ELECTRIC HEATER. JOSEPH S. REYNOLDS, Santa Barbara, Cal. Filed Jan. 30, 1907. Serial No. 354,853.



Claim.—1. In an electric heater, the combination of a heat-resisting plate provided with apertures, and a wire provided with portions extending through said apertures and clenched so as to hold said wire in engagement with said plate.

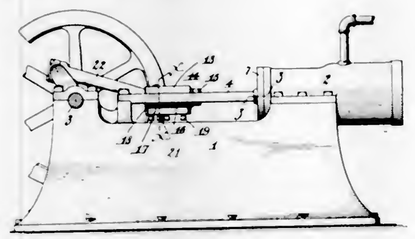
2. In an electric heater, an electrical plate provided with heating members, a sheet of heat-resisting material provided at one of its ends with metallic strips separated from each other, said strips having holes for engaging the support, and an electric wire connected with said strips and secured to said plate.

3. In an electric heater, a heat-resisting plate, consisting of a sheet of heat-resisting material, a wire secured thereupon, and a metallic eyelet engaging said wire for the purpose of supporting said sheet.

4. In an electric heater, a support comprising a plate of insulating material, a pair of members of conducting material mounted thereupon and spaced apart, said members being provided with spiral hooks, and binding posts in electrical communication with said members.

5. In an electric heater, a heat-resisting plate of insulating material provided with mutilations, and a wire having its main portion disposed upon one side of said sheet, said wire being provided with portions projecting through the mutilations and clenched upon the opposite side of said sheet upon said main portion of said wire so as to hold said wire upon said sheet without sewing it thereto.

856,808. ENGINE. WILLIAM ROBERTSON, Buffalo, N. Y., assignor to The Robertson Manufacturing Company, Buffalo, N. Y., a Corporation of New York. Filed Nov. 9, 1905. Serial No. 286,577.

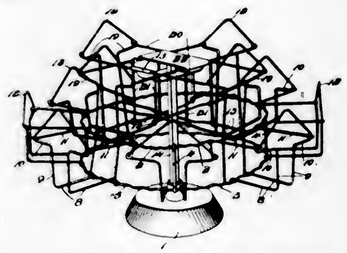


Claim.—1. In an explosive-engine, the combination with a suitable frame having a cylinder provided with sockets at one end, of a crank-shaft journaled in said frame, guide-rods secured at one of their ends to said frame and at their other ends entering said sockets, a piston reciprocal within said cylinder, a cross-head guided on said guide-rods, a piston-rod rigidly affixed at one end to said piston and at its other end adjustably affixed to said cross-head, and a connecting-rod connecting said cross-head with the crank-shaft of the engine.

2. In an explosive-engine, the combination with a suitable frame having a cylinder and parallel guide-rods, of a crank-shaft journaled in said frame, a piston reciprocal within said cylinder, a cross-head guided for movement on said guide-rods and having grooves in its sides for the reception of said guide-rods, shoes within said grooves underneath the guide-rods, adjusting-nuts to take up the wear on said shoes, and a piston-rod and a connecting-rod connecting the cross-head with said piston and with the crank-shaft, respectively.

3. In an explosive-engine, the combination with a suitable frame having a cylinder and parallel guide-rods, of a crank-shaft journaled in said frame, a piston reciprocal within said cylinder, a cross-head guided for movement of said guide-rods and comprising a cross-member and side-members connected by said cross-member and having grooves in their outer faces to receive said guide-rods, shoes within said grooves underneath said guide-rods and having depending lips lying against the ends of said side-members, and adjusting-nuts entering said side-members from the underside thereof and bearing against said shoes to permit of adjusting the latter, a piston-rod rigidly secured at one end to said piston and having its other end adjustably threaded into the cross-head, and a connecting-rod connecting said cross-head with the crank-shaft.

856,809. DISPLAY-RACK. FRANK P. SAWYER, Muscatine, Iowa, assignor to American Pearl Button Company, a Corporation of Iowa. Filed Mar. 27, 1907. Serial No. 364,896.



Claim.—1. In a display rack, the combination of a support, an upright shaft secured in said support, a frame comprising a pair of rings, a series of pockets projecting radially from said rings, a plurality of pockets mounted above said rings and a supporting member carried by the frame and engaging the before mentioned upright shaft.

2. A display rack, comprising a pair of spaced rings, tie members connecting the spaced rings, said tie members being arranged in pairs, supporting bars projecting from the lower ring at points corresponding to said ties, upright members carried by said supporting bars, said supporting bars and said upright members being positioned in such manner as to form pockets on said spaced rings, said pockets radiating from said rings whereby the space within said spaced rings is left unobstructed for receiving a metal foot or base when prepared for shipment.

3. A display rack, formed of a frame, a pocket, formed by spaced supporting bars projecting from the frame, upright members carried by the supporting bars, the said upright members being diverged and then brought inwardly toward each other, and side bars connecting the frame and the diverged portion of the upright members, the said side bars being spaced farther apart than the before mentioned supporting bars.

4. A display rack formed of a frame, provided with a wire pocket formed by a pair of spaced and approximately parallel wires projecting outwardly from the frame, the ends of the wires being bent upwardly to form upright members, the upper portions of which are diverged and then bent inwardly toward each other, and side bars connecting the upright members and the frame.

5. In a display rack, the combination of a support, and a frame carried by the support, the said frame comprising a pair of spaced rings, connecting means between the rings, spaced supporting bars projecting from one ring, spaced bars projecting from the other ring and spaced farther apart than the supporting bars, and connecting means between the supporting bars and side bars whereby pockets are formed.

6. A display rack, comprising a pair of spaced rings, connecting means between the rings, spaced supporting bars projecting from the lower ring, upright members carried by the supporting members and provided with a diverged portion, and side bars connecting the upper ring and the diverged portion of the upright members whereby pockets are formed.

7. A display rack, comprising a ring, cross rods connecting opposite sides of the ring and arranged in spaced pairs, upright members carried by the ring adjacent the junction of the cross rods therewith, and transverse rods connecting corresponding upright members upon opposite sides of the frame.

8. A display rack comprising a ring, cross rods connecting opposite sides of the ring and arranged in pairs, upright members projecting from the ring adjacent the junction of the cross rods therewith, the said upright members being diverged, and transverse rods connecting the diverged portions of corresponding upright members upon opposite sides of the frame.

9. A display rack, comprising a ring, cross rods connecting opposite sides of the ring and arranged in pairs, upright members projecting from the ring at points adjacent the junction of the cross rods therewith, the said upright members being diverged, transverse rods connecting the diverged portions of corresponding upright members upon opposite sides of the rack, and tie members connecting intermediate portions of the transverse rods with corresponding portions of the cross rods.

10. In a display rack, the combination of a standard formed with an upright shaft, a ring, cross rods connecting opposite sides of the ring and arranged in pairs, upright members projecting from the ring at approximately the junction of the cross rods therewith, transverse rods connecting corresponding upright members on opposite sides of the ring, and a pivot plate carried by the pair of transverse rods and engaging the upright shaft.

11. A display rack, comprising a pair of spaced rings, tie members connecting the rings, upright members projecting from the upper ring and forming continuations of the tie members, cross rods connecting opposite sides of one of the rings and arranged in pairs corresponding to the tie members, transverse rods connecting the upright members projecting from the upper ring, and members projecting from the periphery of the spaced rings and forming pockets around the same.

12. A display rack comprising a pair of spaced rings, ties connecting the spaced rings and arranged in pairs, supporting bars projecting from the lower ring at points corresponding to the before mentioned ties, upright members carried by the spaced supporting member, the said upright members being diverged, side bars connecting the diverged portion of the upright members to the upper ring, cross rods connecting opposite sides of the upper ring, the said cross rods being arranged in pairs corresponding to the tie rods connecting the rings, upright members projecting upwardly from the upper ring and forming extensions of the tie members, the said upright members being diverged, and transverse rods connecting the diverged portions of corresponding upright members upon opposite sides of the rack.

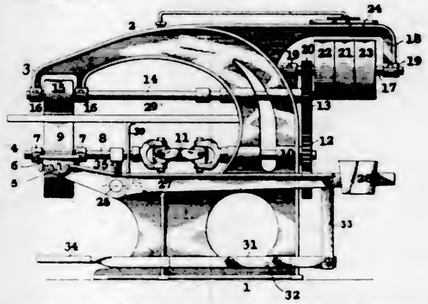
13. A stand of the character described, including a wire frame formed to provide a receding series of pockets in combination with means for rotatably supporting said frame, including a stem, a base for rotatably supporting the stem, a transverse plate secured to the frame and adapted to rest upon the top of said stem.

14. A stand of the character described, including a wire frame formed to provide a receding series of pockets in combination with means for rotatably supporting said frame including a stem, transverse wires extending from one side of said stand to the other side thereof, and a transverse plate secured to the frame at the top thereof and designed to rest upon the top of said stem.

15. A stand of the character described, including a wire frame formed with a series of pockets in combination with means for rotatably supporting said frame, including a stem, a base upon which said stem is rotatably supported, a transverse plate secured to said frame and resting upon the top of said stem, a second transverse plate secured to said frame below the first mentioned plate, said second mentioned plate being formed with an aperture for engaging said stem and transverse wires extending from one side of said stem to the other side thereof below said second mentioned plate, said wires engaging said stem for preventing any tilting of the frame.

16. A stand of the character described, including a wire frame formed with a series of pockets in combination with means for rotatably supporting the frame, said means comprising a base, a stem rotatably supported in said base, a plate secured to the top of said frame and resting upon the top of said stem for supporting said frame, a second plate secured to said frame below said first mentioned plate and formed with an aperture therein for engaging said stem so that when the frame is rotated said stem will also be rotated, and a series of wires extending from one side of said frame to the other side thereof, said wires being brought comparatively close together intermediate their ends for forming engaging means for engaging said stem, said wires being adapted to engage said stem for preventing any tilting of said frame.

856,810. LEATHER-ROLLING MACHINE. GEORGE A. SCHIEREN, Bristol, Tenn. Filed June 27, 1902. Serial No. 113,486.



Claim.—1. The combination of two rolls, fixed bearings for one roll, a frame swinging in the plane of the axes of the rolls, bearings movably mounted on said frame and supporting the other roll so that it may rock in the same plane as the frame, and means for rotating the rolls.

2. The combination of two rolls, fixed bearings for one roll, a frame swinging in the plane of the axes of the rolls, bearings movably mounted on said frame and supporting the other roll so that it may rock in the same plane as the frame, a shaft for the first roll, a flexible shaft for the second roll, and means for rotating the shafts.

3. The combination of a standard open at one end, a roll carried in fixed bearings in the standard, bearings mounted in a swinging frame carried by the standard, oscillating bearings carried by the swinging bearings, another roll mounted in the bearings last mentioned, a shaft for driving said roll, a yielding support for the shaft adjacent to the roll, a flexible part interposed in the shaft, and means for driving the rolls.

4. In a leather rolling machine, the combination of a standard open at one end, two rolls, fixed bearings for one of the rolls, a frame supported by a pivot on the standard so that it swings in the plane of the axes of the rolls; a roll-supporting yoke resting in bearings in said frame and capable of rocking in the same plane as the frame, a shaft carrying the other roll, and bearings in the yoke for said shaft.

5. In a leather rolling machine, the combination of a standard open at one end, two rolls, fixed bearings for one of the rolls, a frame supported by a pivot on the standard so that it swings in the plane of the axes of the rolls; a roll-supporting yoke resting in bearings in said frame and capable of rocking in the same plane as the frame, a shaft carrying the other roll, a universal coupling in said shaft, a shaft in the fixed roll, and means for driving the shafts.

6. In a leather rolling machine, the combination of a standard open at one end, two rolls, fixed bearings for one of the rolls, a frame supported by a pivot on the standard so that it swings in the plane of the axes of the rolls; a roll-supporting yoke resting in bearings in said frame and capable of rocking in the same plane as the frame, a shaft carrying the other roll, a universal coupling in said shaft, a yielding support for the shaft near the roll, a shaft for the fixed roll, and means for driving the shafts.

856,811. DYE OF THE ANTHRAQUINONE SERIES AND PROCESS OF MAKING SAME. ROLAND H. SCHOLL, Karlsruhe, Germany, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany, a Corporation of Baden. Filed Feb. 6, 1906. Serial No. 299,775.

Claim.—1. The process for the production of anthraquinone coloring matter by heating a 2.2'—dimethyl—1.1'—dianthraquinonyl body.

2. The process for the production of anthraquinone coloring matter by heating a 2.2'—dimethyl—1.1'—dianthraquinonyl body with a condensing agent.

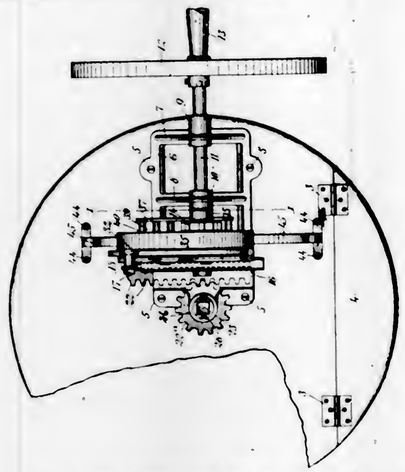
3. The process for the production of anthraquinone coloring matter by heating a 2.2'—dimethyl—1.1'—dianthraquinonyl body with alcoholic potash.

4. The process for the production of anthraquinone coloring matter by heating 2.2'—dimethyl—1.1'—dianthraquinonyl with alcoholic potash.

5. As new articles of manufacture the anthraquinone coloring matters which can be obtained by heating a 2.2'—dimethyl—1.1'—dianthraquinonyl body with a condensing agent, which coloring matters consist of from yellow to brown powders, which are insoluble in water and in dilute acids and in dilute alkalies, and are soluble in concentrated sulfuric acid yielding blue solutions and in hot nitrobenzene and in hot anilin, and which are also soluble in alkaline hydrosulfite yielding red vats, which yield red shades on vegetable fiber, which shades on washing become from yellow to orange.

6. As a new article of manufacture the coloring matter which can be obtained from 2.2'—dimethyl—1.1'—dianthraquinonyl, which coloring matter is a brown powder which is insoluble in water and in dilute acids and in dilute alkalies, and is soluble in concentrated sulfuric acid yielding a blue solution and in hot nitrobenzene, and is soluble in alkaline hydrosulfite yielding a red vat which yields red shades on vegetable fiber, which shades on washing become orange.

856,812. GEARING. JOHN SCHROEDER, Davenport, Iowa. Filed Nov. 22, 1905. Serial No. 288,591.



Claim.—1. The combination with a housing, of a rotary shaft, a pinion mounted on said shaft, a reciprocating rack adapted to slide in said housing and operate said pinion, a carrying frame secured to said rack, a yoke having a rocking and a vertical bodily movement on said frame and provided with a rack, a drive shaft, and a pinion mounted thereon adapted to engage the rack of said yoke, substantially as shown and described.

2. The combination with a rotary shaft, of a pinion mounted on said shaft, a reciprocating rack, a carrying frame secured to said rack, a yoke having a rocking and a vertical bodily movement on said frame and provided with a rack, a shaft, a pinion thereon adapted to engage the rack of said yoke, a fly wheel mounted on the end of said shaft and a lever adapted to reciprocate said carrying frame, substantially as shown and described.

3. A rotary shaft, and a pinion mounted thereon in combination with a reciprocating rack adapted to operate said pinion, a carrying frame secured to said rack, a yoke mounted on said carrying frame having a rocking and a vertical bodily movement thereon and provided with parallel flanges forming a channel around the margin of said yoke, a rack mounted on said yoke, a shaft having its terminal engaging the channel of said yoke and a pinion mounted on said shaft adapted to engage the yoke rack, substantially as shown and described.

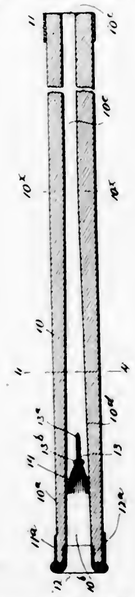
4. A rotary shaft and a pinion mounted thereon, in combination with a reciprocating rack adapted to operate said pinion, a carrying frame secured to said rack, a yoke having a rocking and a vertical bodily movement on said frame, a rack mounted on said yoke comprising laterally extending spools spaced apart and connected at their ends to a longitudinal bar, a shaft, and a pinion mounted on said shaft and adapted to engage the spools of said rack, substantially as shown and described.

5. In a device of the character described, the combination of a reciprocating rack, a carrying frame secured thereto, a rack mounted upon said carrying frame and having a rocking and a bodily movement vertically thereon, a shaft, and a pinion mounted on said shaft adapted to engage the rack of said yoke, substantially as shown and described.

6. A rotary shaft, and a pinion mounted thereon, in combination with a reciprocating rack a carrying frame secured to said rack, a yoke having a rocking and a vertical bodily movement on said frame and provided with a rack, inclined abutments arranged in line with the ends of said yoke and adapted to raise said ends, a shaft and a pinion adapted to engage the rack of said yoke, substantially as shown and described.

7. In a device of the character described, the combination with a vertical shaft, a pinion mounted on said shaft, of a reciprocating rack engaging said pinion, a carrying frame mounted on said rack, a yoke having a rocking and a vertical bodily movement on said frame, and means for reciprocating said rack and frame, substantially as shown and described.

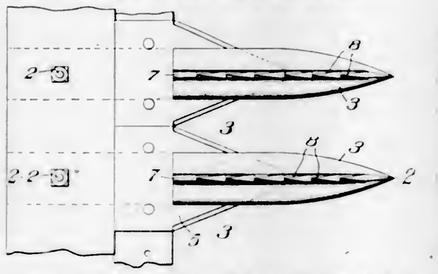
856,813. BLOW-GUN. JOHN SCHULTZ, Chicago, Ill. Filed May 18, 1906. Serial No. 317,563.



Claim.—A pneumatic gun having a tube provided with a tapered bore for most of its length and a concentric bore

of decreased and uniform diameter in the muzzle of the gun.

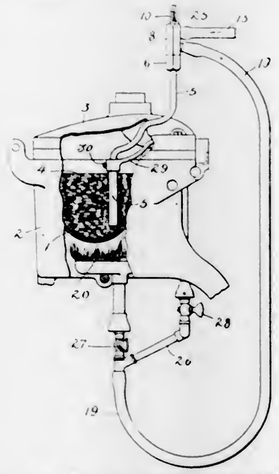
856,814. GUARD. HYRUM P. SCOFIELD, Fishhaven, Idaho. Filed Nov. 6, 1906. Serial No. 342,230.



Claim.—1. The herein described guard having a slot therein forming an overhanging portion, a rib extending from the front end of said guard to the free end of said overhanging portion a plurality of projections extending the full length of said rib, said guard, overhanging portion, rib and projections being in one section.

2. The herein described guard having an overhanging portion thereon, a re-inforcing rib for said overhanging portion and a plurality of projections extending upwardly from said rib, one edge of each projection being disposed at an angle, to the vertical, while the opposite edge thereof is vertical.

856,815. GAS-GOVERNOR FOR TYPE-MACHINES AND THE LIKE. CHARLES W. SEAWARD, Malden, Mass., assignor to C. W. Seaward Company, Boston, Mass., a Corporation of New York. Filed Feb. 26, 1906. Serial No. 302,858.



Claim.—1. In a linotype machine or kindred machine, the hereindescribed apparatus for automatically controlling the temperature of the molten metal for casting type, said apparatus comprising a melting pot, a tube containing mercury extending down into the interior of the melting pot and immersed in the molten metal in the pot, a chambered head with which the upper end of said mercury tube is connected, said head being formed with two chambers and provided with a passage connecting said two chambers, said mercury tube entering into the lower one of said chambers, a hollow adjustable tube closed at its upper end and open at its lower end and extending through the upper chamber in said head and through said connecting passage between the chambers and into said lower chamber, said adjustable tube being provided with a slit in the side thereof extending from the lower end some distance upward, a gas supply tube leading into said upper chamber, said adjustable tube being provided with a port which leads from said upper chamber into the interior of said adjustable tube, whereby the gas may pass from said feed tube through the upper chamber and adjustable tube into the lower chamber, said adjustable tube filling the passage between said chambers and cutting off communication between them except through said tube and port, a gas burner tube leading from said lower chamber and a gas burner connected with said burner tube in proximity to said melting pot, whereby the temperature of the molten metal controls the rising and falling of the mercury and thereby regulates the amount of gas passing through the burner.

2. In a linotype machine or kindred machine, the hereindescribed apparatus for automatically controlling the temperature of the molten metal for casting type, said apparatus comprising a melting pot, a tube containing mercury extending down into the interior of the melting pot and immersed in the molten metal in the pot, a chambered head with which the upper end of said mercury tube is connected, said head being formed with two chambers and provided with a passage connecting said two chambers, said mercury tube entering into the lower one of said chambers, a hollow adjustable tube closed at its upper end and open at its lower end and extending through the upper chamber in said head and through said connecting passage between the chambers and into said lower chamber, said adjustable tube being provided with a slit in the side thereof extending from the lower end some distance upward, a gas supply tube leading into said upper chamber, said adjustable tube being provided with a port which leads from said upper chamber into the interior of said adjustable tube, whereby the gas may pass from said feed tube through the upper chamber and adjustable tube into the lower chamber, said adjustable tube filling the passage between said chambers and cutting off communication between them except through said tube and port, a gas burner tube leading from said lower chamber and a gas burner connected with said burner tube in proximity to said melting pot, whereby the temperature of the molten metal controls the rising and falling of the mercury and thereby regulates the amount of gas passing through the burner, said head comprising two shells having screw threaded connection with each other, one of which is formed with a passage through which the mercury tube enters the mercury chamber, and the other of which is formed with a threaded passage through which the adjustable tube enters the head, said head being formed with nipples on the side connected with said chambers and adapted to be connected with gas tubes.

856,816. NOZZLE. HOWARD B. SHERMAN, Battle Creek, Mich. Filed Oct. 17, 1906. Serial No. 339,351.



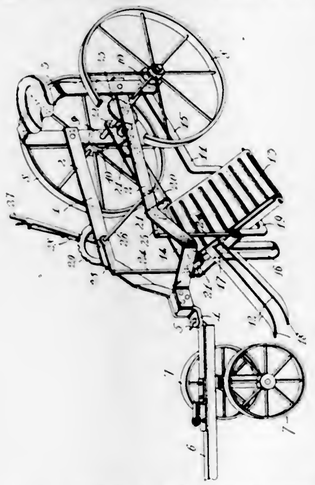
Claim.—1. In a hose nozzle, a base and spindle portion constructed in one part from drawn metal, the spindle portion being a tubular integral extension of the base, the inner end of said spindle portion being closed and exteriorly threaded and having a lateral outlet for the passage of water in the threaded portion; with a valve attached to the inner end of the spindle portion, and a sleeve surrounding the spindle, and internally threaded to engage the threads on the spindle portion.

2. In a hose nozzle, a base and tubular spindle portion constructed in one part from drawn metal, the spindle portion being a tubular integral extension of the base and having its inner end closed and exteriorly threaded and provided with openings in opposite sides of the threaded portion for the passage of water, with a rod metal valve attached to the inner end of the spindle portion, a sleeve surrounding the spindle and internally threaded to engage the threads on the spindle portion, and a stuffing box on the spindle engaged with the sleeve.

3. In a hose nozzle, the combination of a base and spindle portion formed of one piece of drawn metal, the spindle portion having its inner end closed and exteriorly threaded and provided with openings in the threaded portion for the escape of water, the part of the spindle immediately in rear of the threaded portion being slightly reduced in exterior diameter; with a stuffing box slipped on the spindle portion, a ring within the stuffing box confined upon the spindle portion by a flange upset thereon, a sleeve inclosing the spindle portion and having internal threads engaging the external threads on the spindle portion, and also having a threaded end engaging the stuffing box.

4. In a hose nozzle, the combination of a drawn metal base and tubular spindle portion formed integrally of one piece of drawn metal, the spindle portion having its inner end closed and exteriorly threaded and having an opening in the threaded portion for the escape of water, a stuffing box slipped on the spindle portion, a washer and ring within the stuffing box, the ring being confined upon the spindle portion by an upset flange on the spindle, and a valve formed of rod metal attached to the inner end of the spindle portion; with a sleeve inclosing the valve and spindle portion and having internal threads engaging the external threads on the spindle portion, and also having a threaded end engaging the threads of the stuffing box.

856,817. BEET-PULLING MACHINE. EDWARD A. SMITH, Loveland, Colo., assignor to The Fort Collins Implement Manufacturing Company, a Corporation of Colorado. Filed May 28, 1906. Serial No. 319,182.



Claim.—1. A machine of the character described comprising a main frame, a vertically swinging frame pivoted at its rear upon said main frame, means for adjustably supporting the front of said swinging frame, downwardly and forwardly inclined pulling arms upon the front of said swinging frame, and a transverse carrier upon said swinging frame in rear of said arms, substantially as described and for the purpose set forth.

2. A machine of the character described comprising a main frame, wheels for supporting the latter, a drive shaft for the rear wheels, a vertically adjustable frame swung from said shaft, an inverted arch upon said adjustable frame, forwardly and downwardly inclined pulling arms upon said arch, an endless carrier upon said adjustable frame, and driving gearings between said carrier and said shaft, substantially as described.

3. A machine of the character described comprising a main frame, wheels for supporting the latter, a drive shaft for the rear wheels, a vertically adjustable frame swung from said shaft, an inverted arch upon said adjustable frame, forwardly and downwardly inclined pulling arms upon said arch, an endless carrier upon said adjustable frame, a shaft for operating said endless carrier, beveled gears connecting said shafts, a crank shaft, a lever for rocking the latter and holding it in an adjusted position, and a connection between the crank of said shaft and said adjustable frame, substantially as described.

4. A machine of the class described having a transversely-disposed, downwardly-extending, U-shaped cutter to run under the beets, forwardly and downwardly-inclined pulling bars, spaced apart, extending forwardly from and having their rear ends secured to and supported by the upper portions of said cutter, a frame to which the upper portion of said cutter is attached, and a transversely-disposed, inclined conveyer in rear of said cutter and also carried by the said frame.

856,818. SEED-CORN HANGER. CHARLES D. SNYDER, Dixon, Iowa. Filed Feb. 28, 1907. Serial No. 359,887.



Claim.—1. In a corn hanger, a body provided with a hook at one end and with detachable barbs at the other.

2. In a corn hanger, a body provided with a hook at one end and having its opposite end shouldered, and wings detachably secured by said shoulders.

3. In a corn hanger, a body provided with a hook at one end and having its opposite end recessed longitudinally, a head in said recesses provided with laterally extending barbs.

4. In a corn hanger, a body provided with a hook at one end and having its opposite end recessed longitudinally, the upper ends of said recesses being deeper than the remaining portion, a head in said recesses having laterally extending barbs, and shoulders for fitting in said deeper portions of the recesses.

5. In a corn hanger, a body, one end of which is provided with a hook and the other end is grooved longitudinally upon opposite sides with the upper ends of the

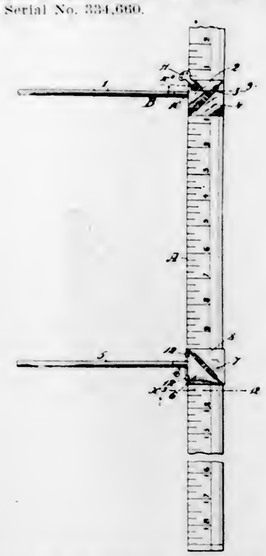
groove substantially meeting each other through the body, a head formed from a single piece of wire folded upon itself to form two parallel portions, and laterally extending barbs, said wires being bent toward each other at a point where said barbs are deflected from the straight portion.

856,819. COLLAR OR CUFF BUTTON. THOMAS H. SPARKS, Wichita, Kans. Filed Dec. 7, 1906. Serial No. 346,776.



Claim.—A collar button having a base which is flat upon its under surface and having an oval-shaped recess formed in said base, a portion of the base intermediate the marginal edge of the recess and the circumference of the base formed into a thin resilient lip, and the portion of the base opposite said resilient lip and forming a portion of the marginal wall of the recess, being thickened and having its upper surface slightly inclined, a shank rising centrally from the base adjacent to the marginal edge of said recess, and a head upon said shank as set forth.

856,820. MEASURING INSTRUMENT. EDWIN B. STIMPSON, New York, N. Y., assignor to The Belcher Brothers Company, a Corporation of New Jersey. Filed Sept. 14, 1906. Serial No. 334,660.



Claim.—1. An instrument for the purpose specified, having two elongated members, and a hinge connecting the same, the hinging axis of which is oblique to the longitudinal axes of both members, one of said members extending out beyond the hinging line and forming a support for the hinge-plate of the other member when the latter is extended.

2. An instrument for the purpose specified, having two elongated members, and a hinge connecting the same, the hinging axis of which is oblique to the longitudinal axes of both members, so that one member may be folded over onto the face of the other when the instrument is not in use, one of said members extending beyond the hinging line to form a support for the hinge-plate of the other member when the latter is extended, and means for locking said hinge-plate to the part on which it rests.

3. An instrument for the character described, having a flat main member, an arm-member, a hinge connecting the same, the hinging axis of which is oblique to the axes of both of said members, said hinge having two plates, one of which is attached to the main member and the other to the arm-member, the main member extending out beyond the hinging line, a socket 9 in said extended portion, and a stud 10 on the hinge-plate of the arm-member in such a position as to enter said socket when the latter member is extended, and lock the parts together.

4. An instrument for the purpose specified, having a flat main member, an arm-member slidable on the main member and connected therewith through a hinge for folding, and the said hinge, having its hinging axis oblique to the axes of both of said members so that it may be folded, when not in use, into position parallel with the main member.

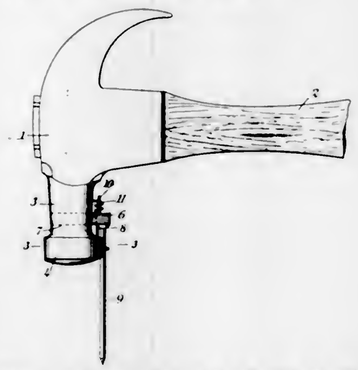
5. An instrument for the purpose specified, having a flat main member A, an arm-member B hinged to the main member in a manner to fold over flat upon the same, a slidable arm-member C, comprising a bar 5, fixed rigidly to a plate 6, the said plate hinged along an oblique line to a slidable hinge-member S embracing the member A, the said slide, and means for locking said sliding member to the plate 6 when the arm is extended.

856,821. SAFETY-PIN. WILLIAM STRAYER, Axtell, Kans. Filed Aug. 1, 1906. Serial No. 328,705.



Claim.—A device of the class described, comprising a plate member having its opposite edges adjacent one end thereof bent inward to form oppositely-disposed catches, a double-pronged pin secured to said plate at the opposite end thereof and having the points adapted to be sprung beneath said catches, and a tapered wedge adapted for insertion between the pin points and the catches for locking both of the pin points in their closed position, said tapered wedge being provided with a catch whereby it may be readily removed.

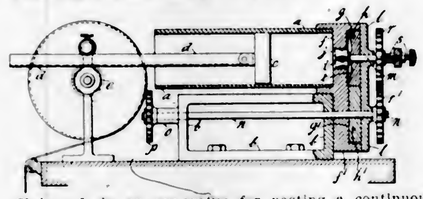
856,822. HAMMER. SOREN S. STUHAG, New York, N. Y. Filed Feb. 7, 1907. Serial No. 356,131.



Claim.—1. A hammer having a poll with an enlarged end or head and provided with a vertical groove in the head and a transverse opening above the head and in alinement with said groove, a post secured in the opening of the poll and provided with a pin projecting from its upper face, and a spring coiled upon the said pin and having one end engaging the poll, the other end of the spring extending downwardly approximately parallel with the poll and terminating in a curved and laterally projecting finger having an outwardly bent lip and extending across the groove of the head of the poll and normally engaging said head.

2. A hammer having a poll provided with a projection extending laterally therefrom and having a vertical pin on its upper face, the poll being provided with a vertical groove below the projection and in alinement therewith, and a spring coiled upon the pin of the projection and having one end engaging the poll, the other end of the spring extending downwardly approximately parallel with the poll and terminating in a curved and laterally projecting finger extending across the groove of the poll and normally engaging said poll.

856,823. PASTING APPARATUS FOR CIGARETTE-MACHINES. GEORGE TICKNER, Jr., London, England. Filed Aug. 9, 1906. Serial No. 329,933.



Claim.—1. In an apparatus for pasting a continuous strip of paper, the combination with the paste receptacle, of a driving spindle mounted adjacent said receptacle, a driven spindle, gears connecting said spindles, disks mounted on said spindles and adapted to rotate in close peripheral engagement, means for feeding the paste between said disks, and a paste applying disk adapted to receive the triturated paste from one of said engaging disks and transfer the same to the strip of paper, substantially as described.

2. In an apparatus for pasting a continuous strip of paper, the combination with a cylindrical paste chamber, of a pair of parallel spindles mounted adjacent said chamber, disks mounted on said spindles and adapted to rotate in close peripheral engagement, means for forcing the paste between the peripheries of said disks, and a paste applying disk adapted to receive the triturated paste from one of said triturating disks and transfer the same to the strip of paper, substantially as described.

3. In an apparatus for pasting a continuous strip of paper, the combination with the paste receptacle, of a driving spindle mounted adjacent said receptacle, a driven spindle, gears connecting said spindles, disks mounted on said spindles and adapted to rotate in close peripheral engagement, means for adjusting said disks, means for feeding the paste between said disks, and a paste applying disk adapted to receive the triturated paste from one of said engaging disks and transfer the same to the strip of paper, substantially as described.

4. In an apparatus for pasting a continuous strip of paper, the combination with a cylindrical paste chamber, of a pair of parallel spindles mounted adjacent said chamber, disks mounted on said spindles and adapted to rotate in close peripheral engagement, means for forcing the paste between the peripheries of said disks, means for adjusting one of said disks, and a paste applying disk adapted to receive the triturated paste from one of said triturating disks and transfer the same to the strip of paper, substantially as described.

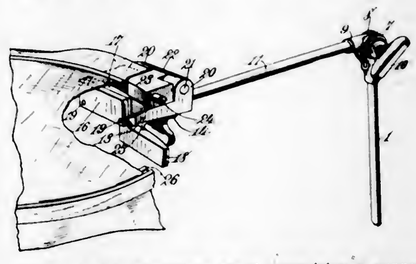
5. In an apparatus for pasting a continuous strip of paper, the combination with a cylindrical paste chamber, of a pair of parallel spindles mounted adjacent said chamber, disks mounted on said spindles and adapted to rotate in close peripheral engagement, means for forcing the paste between the peripheries of said disks, means for adjusting one of said disks, a vertical spindle mounted adjacent said disks, means for adjusting said spindle, and a paste applying disk mounted on said spindle and adapted to receive the triturated pasted from one of said triturating disks and transfer the same to the strip of paper, substantially as described.

6. In an apparatus for pasting a continuous strip of paper, the combination with a cylindrical paste chamber, a plunger operating therein to force forward the paste, a hollow cylinder head provided with an opening opposite the paste chamber, a pair of spindles mounted adjacent said cylinder head, disks mounted on said spindles in the hollow of said cylinder head and adapted to rotate in close peripheral engagement, a grooved trunnion carried by one of said disks and adapted to rotate within the opening in said cylinder head, said disk being also provided with radially extending slots adapted to admit the paste between the peripheries of said rotating disks, and a paste applying disk adapted to receive the triturated paste from one of said triturating disks and transfer the same to the strip of paper, substantially as described.

7. In an apparatus for pasting a continuous strip of paper, the combination with a cylindrical paste chamber, of a plunger working therein to force forward the paste, a pair of parallel spindles mounted adjacent said chamber, disks mounted on said spindles and adapted to rotate in close peripheral engagement, means for admitting the paste between the peripheries of said disks, means for adjusting one of said disks, a vertical spindle mounted adjacent said disks, means for adjusting said spindles, and a paste applying disk mounted on said spindle and adapted to receive the triturated paste from one of said triturating disks and transfer the same to the strip of paper, substantially as described.

8. In an apparatus for pasting a continuous strip of paper, the combination with a cylindrical paste chamber, of a plunger working therein to force forward the paste, a hollow head attached to the end of said cylinder, a pair of parallel spindles mounted adjacent said cylinder head, disks mounted on said spindles in the hollow of said cylinder head and adapted to rotate in close engagement, means for admitting the paste between the peripheries of said disks, means for adjusting said disks, a vertical adjustable spindle mounted adjacent said disks, a paste applying disk mounted on said spindle, said cylinder head being provided with an opening, adjacent one of said rotating disks, through which said paste applying disk is adapted to project and to receive the thoroughly smooth and triturated paste and transfer the same to the paper strip, substantially as described.

856,824. EMBROIDERY-STAND. LEON TOBRINER, Oakland, Cal. Filed Feb. 1, 1907. Serial No. 355,319.



Claim.—1. An embroidery stand comprising a supporting member, means whereby said member can be adjusted to various inclinations, means whereby said member can be reversed, a clamping member pivoted upon said supporting member and associating therewith, and a filling block pivoted to the supporting member and arranged in operative relation with respect to the clamping member.

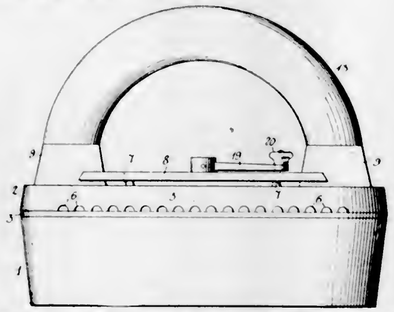
2. An embroidery stand comprising a supporting member, means whereby said member can be adjusted to various inclinations, means whereby said member can be reversed, a clamping member pivoted upon said supporting member and provided with finger pieces, said supporting member having a front wall associating with said clamping mem-

ber, and a plurality of filling blocks pivoted to said supporting member and of different thicknesses.

3. An embroidery stand comprising a vertically-adjustable upright, a suspension arm provided at one end with a head, a coupling piece attached to the other end of said arm and adjustably connected to said upright, a supporting member mounted upon the free end of said arm, means whereby said member can be reversed, a clamping member pivotally connected to said supporting member and provided with a pair of finger pieces, said supporting member having a front wall associating with said clamping member, and said clamping member having its forward face curved with a rounded lower edge, and shiftable filling blocks pivotally connected to said supporting member and of different thicknesses.

4. An embroidery stand comprising a supporting member having a front wall, means whereby said member can be adjusted to various inclinations, means whereby said member can be reversed, a clamping member pivoted upon said supporting member at the rear thereof and associating with said front wall, and a filling block pivoted to each side of the supporting member at the rear of the front wall and arranged in operative relation with respect to the clamping member and the front wall, one of said blocks being of greater thickness than the other.

856,825. SAD-IRON. GEORGE M. URIE, Kansas City, Mo. Filed Apr. 19, 1906. Serial No. 312,603.



Claim.—1. In a sad iron, a shell provided with interior ribs having seats, a top to engage the shell, and a rotatable locking member carried by the top and to interlock with the seats.

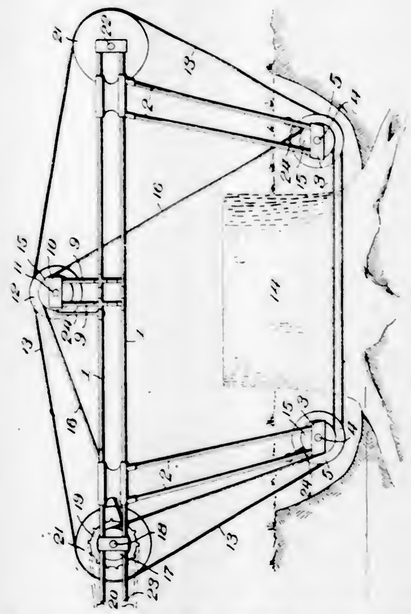
2. In a sad iron, a shell provided with vertically-disposed ribs having longitudinally-disposed seats, a top to engage the shell, and a rotatable locking member carried by the top to interlock with the seats.

856,826. STUMP-SAWING MACHINE. ROBERT WEBB, Howard, Kans. Filed Nov. 6, 1906. Serial No. 342,228.

Claim.—1. In a sawing machine of the class described comprising a frame, brackets on said frame, threaded shafts carried by said brackets, interiorly threaded sleeves on said shafts, means to hold said sleeves against rotation, wheels rotatably mounted on said sleeves, a band saw adapted to travel around said wheels, means to rotate said shafts, a drum at each end of said frame and extending the full width thereof and means to drive one of said drums whereby the saw will be moved longitudinally and laterally.

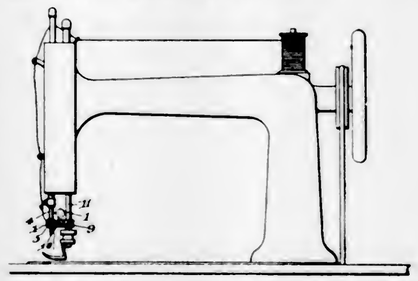
2. A sawing machine of the character described comprising a frame, threaded shafts extending laterally across said frame, saw carrying wheels mounted on said shafts, means to move said wheels longitudinally of the shafts, a drum at each end of said frame and extending the full width thereof, an endless saw adapted to travel over said drums and wheels and means to drive one of said drums whereby the saw will be moved longitudinally.

3. A stump sawing machine comprising a frame, a belt saw, carrying wheels for said belt saw, shafts mounted in said frame, means on said shafts to support said carrying wheels and move the same longitudinally on the shafts, a drum at each end of said frame and extending the full width thereof and means to drive one of said drums whereby the saw will be moved longitudinally and laterally.



4. A stump sawing machine comprising a frame, threaded shafts extending laterally across said frame, an interiorly threaded sleeve on each of said shafts, a collar adjacent one end of said sleeve and a nut at the opposite end thereof, a carrying wheel on said sleeve between said collar and nut, a band saw adapted to travel on said wheels, means to hold said sleeve against rotation and additional means to rotate said shafts whereby the sleeves and wheels thereon will be moved from end to end of said shafts.

856,827. DEVICE FOR ASSISTING THE THREADING OF NEEDLES. JACOB WELTY, Ashland, Ohio. Filed Apr. 16, 1906. Serial No. 311,960.

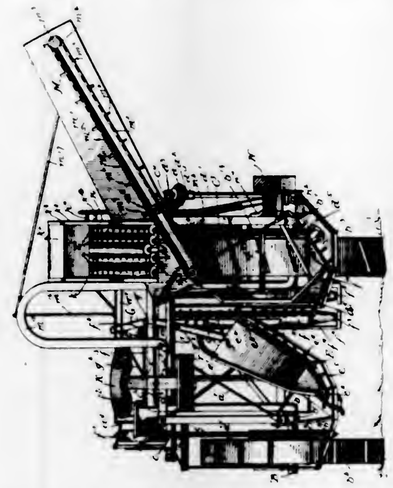


Claim.—1. A device of the class described comprising a reflector, and a clamp for detachably mounting the same on the presser bar of a sewing machine in rear of the needle in position to throw the light to the front, said reflector being movably connected to the clamp and arranged to be thrown from its position in rear of the needle to a point above the clamp.

2. A device of the class described comprising a reflector, a clamp for detachably mounting the same on the presser bar of a sewing machine in rear of the eye of the needle in position to throw the light to the front, and a single screw connecting the terminals of the clamp for holding the latter in engagement with the presser bar, and also pivoting the reflector to the said terminals to permit the reflector to swing in an arc of a circle.

3. A device of the class described comprising a reflector, and a clamp for securing the reflector to the presser bar, said reflector being pivoted at one edge to the clamp and arranged to swing in a vertical plane to and from a position in rear of the needle.

856,828. CORN-HARVESTER. FREDERICK D. WILSON and ALBERT D. WILSON, Ottumwa, Iowa. Filed Dec. 4, 1905. Serial No. 290,138.



Claim.—1. In a corn harvester and in combination, a frame provided with a passage therethrough for receiving the standing corn, conveyer chains on each side of the passage, a pair of vertical rollers at the rear of the passage, one of said rollers being yieldingly mounted, a pair of knocker arms pivoted on the frame, and depending in front of said rollers, spaced teeth on the knocker arms, the teeth on one arm being staggered with respect to the teeth on the other arm, means for vibrating the arms in opposite directions, a conveyer adjacent to the arms, and leading upward therefrom, a plurality of husking rollers at the upper end of the conveyer, a conveyer for receiving the husked corn from the husking rollers and carrying it from the machine, wheels for supporting the frame, and means whereby the wheels may actuate the conveyer chains, the vertical rollers, the knocker arms, the husking rollers and the conveyers.

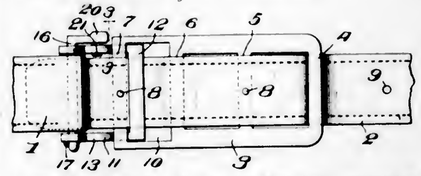
2. In a corn harvester and in combination, a frame having a passageway to receive the standing corn, means within the passageway for straightening the stalks, rollers at the rear of the passageway for preventing the passage of the ears one of said rollers being yieldingly mounted, vibrating arms provided with teeth in front of the rollers for removing the ears from the stalks, a conveyer for receiving the snapped ears, husking rollers at the end of the conveyer for husking the ears, a conveyer for removing the husked ears from the machine, and means for supporting the frame and for actuating the parts.

3. In a corn harvester and in combination, a frame having a passageway to receive the standing corn, means for guiding the stalks along the passageway, vertical rollers journaled at the rear of the passageway, means for normally retaining the rollers at a distance sufficient to allow the passage of the stalks and to prevent the passage of the ears, a plurality of arms pivoted in front of the rollers, teeth on the arms for engaging the ears, and means for vibrating the arms in opposite directions, comprising a shaft journaled in the frame, an eccentric on the shaft, a strap encircling the eccentric, links connecting the strap with the arms, the link of one arm being connected below the point of pivotal attachment and the link of the other arm being connected above such point, wheels for supporting the frame, and means whereby the wheels may rotate the shaft.

4. In a corn harvester and in combination a frame having a passageway to receive the standing corn, means at the rear of the passageway for engaging the stalks, and means for removing the ears while the stalks are so engaged, comprising a pair of arms pivoted adjacent to the stalk engaging means, and provided with teeth for engaging the ears, the teeth on one arm being staggered with respect to the teeth on the other arm, means for vibrating the arms in opposite directions, and means for supporting the frame and for actuating said vibrating means.

5. In a corn harvester and in combination, a frame having a passageway to receive the standing corn, means for guiding the stalks along the passageway, vertical rollers journaled at the rear of the passageway, one of said rollers being yieldingly mounted, a plurality of arms pivoted in front of the rollers, teeth on the arms for engaging the ears, and means for vibrating the arms in opposite directions, comprising an eccentric, a strap encircling the eccentric, and links connecting the strap with the arms.

856,829. BUCKLE. JOHN A. WILSON, Morehead, Kans. Filed Oct. 23, 1906. Serial No. 340,235.



Claim.—1. A buckle of the class described comprising a body portion having a plurality of cross bars, means on said cross bars to engage and hold a trace, a link at one end of said body and adapted to be passed through a slot in said body and engage the trace, said link having registering openings in the free end thereof, a pin adapted to be passed through said openings and into engagement with a hame tug and means on said pin to lock the same against casual rotation.

2. A buckle of the class described comprising the combination with a body portion having cross bars, and prongs on some of said cross bars adapted to engage and hold a trace; of a link one end of which is adapted to be passed through a slot in said body and into engagement with the trace, said link having registering openings at its free end, a locking pin adapted to be passed through said openings, a lever at the upper end of said locking pin and a lug at the lower end thereof, and means carried by said lever adapted to engage the link and prevent casual rotation of the locking pin.

3. A buckle of the class described, comprising the combination with a body portion having a slot at one end thereof; of a link one end of which is adapted to be passed through the slot, the free ends of said link having registering bores therein and recesses in said bores, a pin for said bores, a lug on the lower end of said locking pin, a lever at the upper end of said locking pin and means carried by said lever to engage the link and secure the locking pin against casual rotation.

4. A buckle of the class described comprising the com-

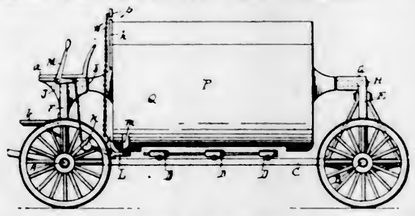
bination with a body having a slot at one end thereof; of a link, one end of which is curved and adapted to be passed through the slot, a locking pin adapted to enter bores in the free end of said link, means at the upper end of said locking pin to hold the same against casual rotation and additional means at the lower end of said pin to prevent casual removal of the pin from the bore.

856,830. SEWING-MACHINE SHUTTLE. CHARLES F. ZANZIG, Milwaukee, Wis. Filed Mar. 19, 1906. Serial No. 306,775.



Claim.—In a shuttle-mechanism having a shuttle-guide, a rotary shuttle fitted in the guide, a segmental web extending from the body of the shuttle to a point concentric with the axis thereof, and a drive-shaft for the shuttle concentric with the same, the combination of a conical headed plug, said plug being fitted into a recess in the end of the drive-shaft, and a spring interposed between the plug and base of the recess, whereby said plug impinges against the concentric web of the shuttle to hold the same against its guide.

856,831. DUMPING-WAGON. FRANK ALDRICH, Detroit, Mich., assignor of one-half to Edmund L. Ebert, Detroit, Mich. Filed June 23, 1906. Serial No. 323,028.



Claim.—1. In a wagon, the combination of a front and rear axle, a reach extending between said axles, a standard rising from each end of said wagon, a bearing in each of said standards, a box provided with arbors at its ends resting in said bearings, a latch on said reach, said box being adapted to be engaged by said latch when said box is in its normal position.

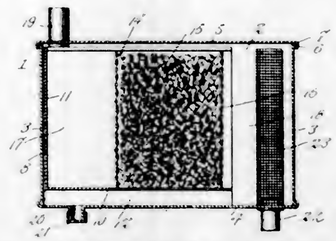
2. In a wagon, the combination of a standard, rising from each end of said wagon, a bearing in each of said standards, a box provided with an arbor at each end thereof, said arbors resting in said bearings, a seat upon one of said standards, a latch adapted to engage said box in its normal position, a lever arm located at one side of said seat and connected with said latch to disengage the same.

3. In a wagon, the combination of a standard rising from each end of said wagon, a bearing in each of said standards, a box provided with an arbor at each end thereof, said arbors resting in said bearings, a seat upon one of said standards, a latch adapted to engage said box in its normal position, a lever arm located at one side of said seat and connected with said latch.

4. In a dump wagon, the combination of a standard rising from each end thereof, a bearing in each of said standards, a box located between said standards and provided with an arbor at each end thereof resting in one of said bearings, a jacket partly surrounding said box and opening at the top and bottom, burners located upon said wagon, and means for securing said box in its normal position with the opening in said jacket above said burners.

5. In a dump wagon, the combination of the front and rear axle, a reach extending between said axles, a standard rising from each end of said wagon, a bearing in each of said standards, a box provided with a jacket opening toward the top and bottom thereof located between said standards and provided with an arbor at each end resting in one of said bearings, burners located upon said reach, and means for securing said box in its normal position with one of the openings through said jacket above said burners.

856,832. FILTER. ANDERS L. ANDERSON, Gayville, S. D. Filed Feb. 26, 1907. Serial No. 359,372.



Claim.—1. A filtering apparatus comprising a vessel having a top inlet and a bottom outlet arranged at the opposite ends of the same, a removable box within the vessel having a top inlet and open at one end, said box being shorter than the vessel and having its closed end arranged adjacent the inlet end of the receptacle, a filtering receptacle within the box arranged closer to the open than to the closed end thereof and forming within the box an inlet chamber and between the open end of the box and discharge end of the receptacle an outlet compartment, and a strainer covering the outlet in said outlet compartment.

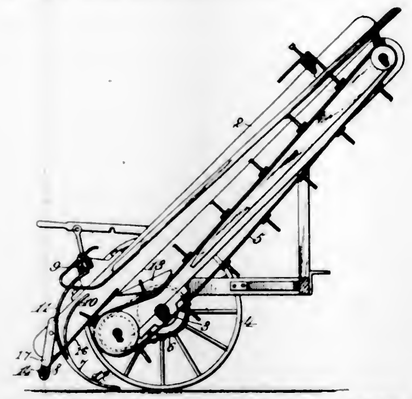
2. In a device of the class described, a vessel provided with spaced guides, a receptacle positioned between the guides and having reticulated walls, a filtering material contained in the receptacle, said vessel being provided at one side of the receptacle with an inlet compartment and at the other side with a discharge compartment, an inlet port leading to the inlet compartment, a discharge port leading from the discharge compartment, a reticulated trap positioned in the latter over the discharge port, and a drain port leading from the vessel, said compartments being wholly closed against communication one with the other except through the receptacle.

3. A filtering apparatus comprising a vessel having a top inlet and a bottom outlet arranged at opposite ends of the same, a cover for closing the vessel, a removable box within the vessel open at top and one end, said box being shorter than the vessel and having its closed end arranged adjacent the inlet end of the receptacle, a filtering receptacle within the box arranged closer to the open than to the closed end thereof and forming within the box an inlet chamber and between the open end of the box and discharge end of the receptacle an outlet compartment, and a strainer tube communicating with the outlet and extending vertically within said outlet compartment.

4. A filtering apparatus comprising a vessel having an inlet, an outlet, inlet and outlet compartments respectively communicating therewith, a body of filtering material between said compartments, and a strainer tube extending up into the outlet compartment and communicating with the outlet, said tube comprising a body of coarse and a surrounding sheath of a finer mesh.

856,833. HAY-LOADER. ALPHEUS ARTER, Lisbon, Ohio. Filed Oct. 1, 1906. Serial No. 337,006.

Claim.—1. In a hay loader, an endless carrier inclined forward and upward, two convex shoes supported at opposite sides of said endless carrier, stationary relatively thereto, and the convex faces of which bear against the lower portion and opposite sides only of the outer run of said carrier to hold said lower portion at an outward and downward angle with respect to the upper portion thereof, and a hay rake to deliver material on to the carrier below the place at which said shoes act thereagainst.



2. In a hay loader, a pair of side frame members inclined forward and upward, an endless carrier supported between said side frame members, stationary shoes carried by the respective side frame members and bearing against the lower portion and opposite sides only of the outer run of said endless carrier at opposite sides thereof to hold said lower portion at an outward and downward angle with respect to the upper portion thereof, a hay rake to deliver material on to the carrier below said shoes, and a clearing rake coöperative with the hay rake and also with said endless carrier.

3. In a hay loader, a pair of side boards inclined forward and upward, an endless carrier supported between said side boards, stationary shoes carried by the side boards near the lower ends and between the sides thereof, said shoes being convexed and their convexed faces bearing against the endless carrier at opposite sides only of said carrier near the lower end thereof to hold the lower portion of said carrier at an outward and downward angle with respect to the upper portion thereof, and a hay rake to deliver material on to the carrier below the shoes.

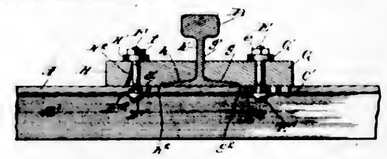
856,834. BRUSH. FERDINAND M. AUFSESSER, Albany, N. Y., assignor to Mohawk Brush Company, Cohoes, N. Y., a Corporation of New York. Filed Nov. 7, 1906. Serial No. 342,400.



Claim.—A brush having a back formed with a cavity, plastic material embedded in the cavity, bristles extending from the plastic material, a veneer having perforations through which the bristles pass, said veneer extending outwardly beyond the plastic material to the outer edges of the brush back, the surface of the veneer beyond the plastic material being cemented to the surface of the brush back beyond the edges of the plastic material.

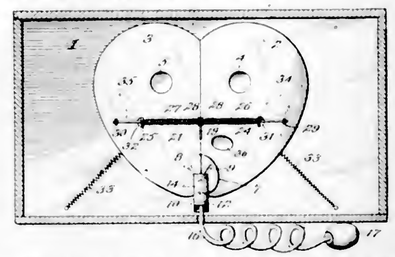
856,835. RAIL-FASTENING. AUGUSTUS W. AVERY, Cove, N. C. Filed Sept. 26, 1906. Serial No. 336,273.

Claim.—1. The combination with the rail and the clamp plate G, of a bolt E and a tie having a slot notched in its opposite walls to receive the corners of the bolt shank whereby to lock the bolt when applied to secure the clamp plate, substantially as set forth.



2. The combination with the rail, the clamp plate and the bolt for securing the same, of a tie plate having a slot receiving said bolt and provided with an enlarged semicircular end portion for the introduction of the bolt head, the rounded side of said enlarged portion being sloped to facilitate the introduction of the head, substantially as set forth.

856,836. PHOTOGRAPHIC SHUTTER. WILLIAM T. BARBER and CHARLIE C. BARBER, Shelbyville, Tenn. Filed May 22, 1906. Serial No. 318,191.



Claim.—1. In a device of the class described, the combination with a camera frame having lenses therein; of plates pivotally secured to said frame and having openings therein, projections at the lower ends of said plates, said projections having elongated slots, means coöperating with said slots to open said plates, and additional means to control the movement of said plates.

2. In a device of the class described, the combination with a camera frame; of plates pivotally mounted upon said frame and having openings therein adapted to register with lenses carried by the frame, and means to simultaneously move said plates toward or from each other.

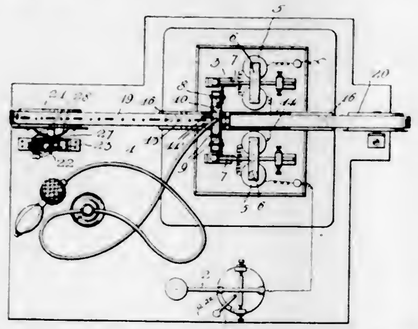
3. In a device of the class described, the combination with a frame having lenses therein; of plates pivotally mounted upon said frame and hinged together at their lower ends, said plates having openings therein adapted to register with the lenses in the frame, a shaft disposed across the face of said plates, means carried by said shaft to limit the movement of said plates, and additional means carried by said shaft to return said plates to their normal closed position.

4. In a device of the class described, the combination with a frame having lenses therein; of plates hinged together at their lower ends and pivotally secured to said frame, means to rotate said plates on their pivot and dispose openings in said plates over said lenses, a shaft rotatably mounted in said frame, a link at the inner end of said shaft, a horizontally disposed shaft mounted in said link, spindles at the outer ends of said shaft, wheels mounted upon said spindles, means to normally hold said wheels at the inner ends of said spindles, and means at the outer end of said spindles to limit the outward movement of said wheels whereby the movement of said plates in one direction will be limited.

856,837. TELEGRAPH APPARATUS. VICTOR C. BALDING, Little Rock, Ark. Filed Mar. 12, 1906. Serial No. 305,614.

Claim.—1. In apparatus of the class described, in combination with a perforator and means to move a tape lon-

gitudinally and present the same to the action of the perforator, a tape guide comprising a plate having side flanges forming a channel for the tape, spring devices to hold the tape against the plate and between the flanges, and means to support and vertically adjust said guide, substantially as described.



2. In a telegraph apparatus of the character described, the combination with a key and sounder, said sounder comprising two electro-magnets each having armatures and contact levers, of a supporting frame connected to and operated by said levers, a perforating instrument carried by said frame, a tape guide arranged beneath said instrument, means to adjust and hold said guide in position, and means to draw a tape through said guide, substantially as described.

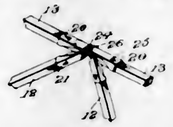
3. In a telegraph apparatus of the character described, the combination with a key and sounder, said sounder comprising two electro-magnets each having armatures and contact levers, of a supporting frame connected to and operated by said levers, a perforating instrument carried by said frame, a tape guide arranged beneath said instrument, supporting bolts arranged at the ends of and adapted to pass through said guide, adjusting and holding nuts arranged on said bolts above and below the ends of said guide, and means to draw the tape through said guide, substantially as described.

4. In a telegraph apparatus of the character described, the combination with a key and sounder, said sounder comprising two electro-magnets each having armatures and contact levers, of a supporting frame connected to and operated by said levers, a perforating instrument carried by said frame, a tape guide arranged beneath said instrument, supporting bolts arranged at the ends of and adapted to pass through enlarged apertures in said ends of the guide, adjusting and securing nuts arranged on said bolts above and below said ends of the guide, a reel to contain imperforated tape, a winding reel to receive the tape after being perforated, and means to operate said reel, thereby causing the same to draw the tape through said guide and to wind said tape upon itself, substantially as described.

5. In a telegraph apparatus of the character described, the combination with a key and sounder, said sounder comprising two electro-magnets each having armatures and contact levers, of a supporting frame connected to and operated by said levers, a perforating instrument carried by said frame, a tape guide arranged beneath said instrument, supporting bolts arranged at the ends of and adapted to pass through enlarged apertures in said ends of the guide, adjusting and securing nuts arranged on said bolts above and below said ends of the guide, a reel to contain imperforated tape, a winding reel to receive the tape after being perforated, a weight motor, and means to frictionally engage said winding reel with the drive shaft of said motor, substantially as described.

6. In a telegraph apparatus of the character described, the combination with a key and sounder, said sounder comprising two electro-magnets, each having armatures and contact levers, of a supporting frame connected to and operated by said levers, a pyrographic device having its burning point secured in and operated by said supporting frame, an apertured tape guide arranged beneath said frame and point, means to adjust and hold said tape guide in position, a reel to contain imperforated tape, a winding reel to receive the tape after being perforated by said pyrographic point, a weight motor having a drive shaft to receive said winding reel, and springs to hold said reel in frictional engagement with said shaft, substantially as described.

856,838. CONNECTION DEVICE FOR THE FRAMES OF AERIAL VEHICLES AND OTHER STRUCTURES. ALEXANDER G. BELL and HECTOR P. MCNEIL, Washington, D. C. Filed Oct. 24, 1906. Serial No. 340,398.



Claim.—1. The combination with the meeting ends of a plurality of bars or strips at the corner of a frame, of a connecting device having arms or branches one for securing the end of each bar, and a lug adapted to be juxtaposed to a similar lug at a corner of another frame to join said frames corner to corner.

2. The combination with the meeting ends of a plurality of bars or strips at one corner of a polyhedral frame or element, of a connecting device having a plurality of arms or branches one for securing the end of each bar, and a lug adapted to be juxtaposed to a similar lug at a corner of another frame to join said frames corner to corner.

3. The combination with the meeting ends of a plurality of bars or strips at one corner of a polyhedral frame or element, of a connecting device made of a single piece of sheet metal and having a plurality of arms or branches one for securing the end of each bar, and a lug adapted to be juxtaposed to a similar lug at a corner of another frame to join said frames corner to corner.

4. The combination with the meeting ends of three bars or strips at one corner of a tetrahedral frame or element, of a connecting device having three arms or branches one for securing the end of each bar, and a lug adapted to be juxtaposed to a similar lug at a corner of another frame or element to join said frames or elements corner to corner.

5. The combination with the meeting ends of a plurality of bars or strips at the corner of a frame, of a connecting device having trough-like arms or branches one for embracing and securing the end of each bar.

6. The combination with the meeting ends of a plurality of bars or strips at the corner of a frame, of a connecting device having trough-like arms or branches one for embracing and securing the end of each bar, and a lug by which connection may be made to another frame.

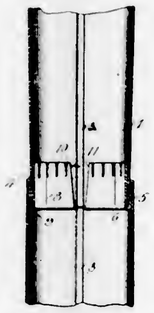
7. The combination with the meeting ends of three bars or strips at one corner of a tetrahedral frame or element, of a connecting device having three trough-like arms or branches one for embracing and securing the end of each bar, and a lug by which connection may be made to another frame or element.

8. As an article of manufacture, a connecting device having a plurality of diverging trough-like arms each adapted to embrace and secure the end of a bar, and a projecting lug at the junction of said arms.

9. As an article of manufacture, a connecting device having a plurality of diverging trough-like arms each adapted to embrace and secure the end of a bar, and a projecting lug at the junction of said arms, said trough-like arms and lug being integrally formed from a single piece of sheet metal.

10. A compound structure formed of a plurality of elements or frames, each frame consisting of a plurality of bars or strips, connecting devices for joining the meeting ends of the bars of each frame at the corners of the latter, each of said devices consisting of diverging arms one for securing the end of each bar, and a projecting lug adapted to be secured to a similar lug of another connecting device where corners of the frames come together in the conpound structure.

856,839. STOVEPIPE-JOINT. WINFIELD S. BICKEL, Shryock, W. Va. Filed Feb. 19, 1907. Serial No. 358,198.

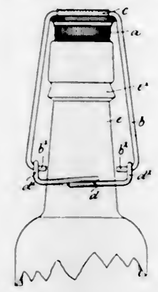


Claim.—1. A pipe joint comprising two seamed sections, one section being bent into an internal re-entrant annular pocket into which the adjacent end of the other section telescopes, said pocket having its walls recessed in a direction longitudinally of the section for receiving the seam of the other section.

2. A pipe joint comprising a pair of sections and having longitudinal seams, one section being bent to form an internal annular re-entrant pocket having its inner part extending beyond the bend connecting the re-entrant portion with the body of the section and also having a plurality of longitudinally extending slits for frictionally engaging the other section extending into the pocket, said pocket having a tapered recess to receive the seam of the adjacent section.

3. A pipe joint comprising a pair of sections having longitudinal seams, one section having an internal annular pocket for receiving the adjacent end of the other section, the pocket being recessed to receive the seam of the adjacent section.

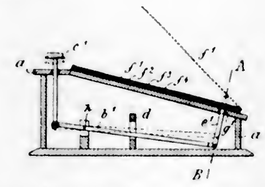
856,840. STOPPER OR CLOSURE FOR BOTTLES AND JARS. FREDERICK A. BIRD, Erdington, near Birmingham, England. Filed Oct. 4, 1906. Serial No. 337,446.



Claim.—1. In a bottle stopper, the combination of a spring bail, a rotatable and slidable spring ring surrounding the bottle neck and having its ends overlapping, the said bail being attached with its central portion to the stopper and detachably engaged with its ends to opposite points of the ring.

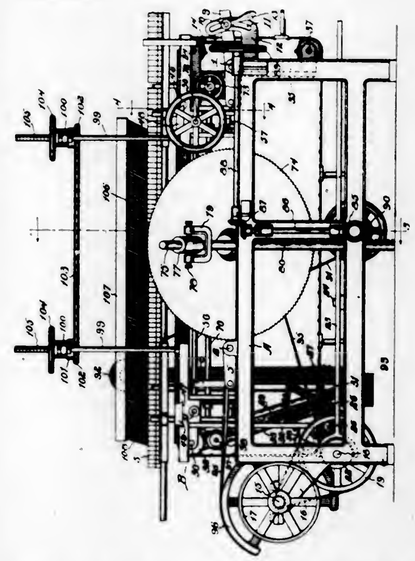
2. In a bottle stopper, the combination of a spring bail, a rotatable and slidable spring ring being bent at opposite points to form eyes and having its ends overlapping, the said bail being attached with its central portion to the stopper and detachably engaged with its ends to the eyes of the ring.

856,841. MEMORANDUM-BLOCK. HEINRICH BIRNBACH, Vienna, Austria-Hungary. Filed Nov. 24, 1906. Serial No. 344,923.



Claim.—In a device of the class set forth, the combination with writing plates, the outer one of which is imperforate, the others being provided with openings, of a plurality of fulcrumed levers carrying pins of varying length extending through said openings and engaging the imperforate portion of the perforated plates and said outer plate, and means for actuating said levers.

856,842. SEGMENT-MITERING MACHINE. HENRY J. BICKEL, Mishawaka, Ind. Filed Feb. 14, 1907. Serial No. 357,302.



Claim.—1. In a machine of the class described, a stationary frame, a vertically adjustable frame, saw carrying mandrels each supported in pivoted bearings upon the stationary and adjustable frames respectively, and work supporting members and an endless feed element carried by the adjustable frame.

2. In a machine of the class described, a stationary frame, a vertically adjustable frame, saw carrying mandrels each supported in pivoted bearings upon the stationary and movable frames respectively, track bars supported longitudinally upon the vertically adjustable frame, and an endless feed element carried by the latter frame.

3. In a machine of the class described, a stationary

frame, a vertically adjustable frame, saw carrying mandrels each supported in pivoted bearings upon the stationary and adjustable frames respectively, laterally adjustable track bars supported upon the vertically movable frame, and an endless feed element carried by the latter frame.

4. In a machine of the class described, a stationary frame, a vertically movable frame, saw carrying mandrels each supported in pivoted bearings upon the stationary and movable frames respectively, vertically adjustable track bars supported upon the movable frame and an endless feed element carried by the latter frame.

5. In a machine of the class described, a stationary frame, a vertically movable frame, saw carrying mandrels each supported in pivoted bearings upon the stationary and movable frames respectively, laterally and vertically adjustable track bars supported upon the movable frame, and an endless feed element carried by the latter frame intermediate the track bars.

6. In a machine of the class described, a stationary frame, a vertically movable frame, saw carrying mandrels each supported in pivoted bearings upon the stationary and movable frames respectively, laterally adjustable slides supported upon the movable frame, vertically movable members guided through the slides, longitudinally disposed track bars connected with the vertically movable members, and an endless feed element carried by the movable frame.

7. In a machine of the class described, a stationary frame, a vertically movable frame, saw carrying mandrels each supported in pivoted bearings upon the stationary and movable frames respectively, laterally movable slides guided upon the movable frame, vertically movable members guided through the slides, longitudinally disposed track bars carried by the vertically movable members, a feed element carried by the movable frame and a brush member carried by said frame, suspended adjustably above the feed element.

8. In a machine of the class described, a stationary frame having transverse rock shafts provided with bell-cranks, a link connecting said cranks, arms radiating from the rock shafts, a vertically movable frame connected pivotally with said arms and counterweighted arms extending from the rock shafts, laterally and vertically adjustable track bars supported by the adjustable frame, an endless feed element carried by the latter, a driven shaft supported by the stationary frame, means for transmitting motion from said driven shaft to the feed element, saw carrying mandrels each supported in pivoted bearings upon the stationary and adjustable frames respectively, and means for transmitting motion from the driven shaft to the saw carrying mandrels.

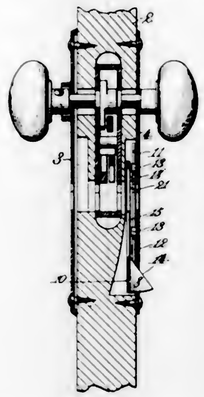
9. In a machine of the class described, a stationary frame, a vertically adjustable frame, track bars supported adjustably by the adjustable frame, an endless feed element carried by the latter frame, said feed element including links having beveled edges and upstanding transverse flanges, means upon the adjustable frame for guiding the beveled edged links of the feed element, and saw carrying mandrels each supported in pivoted bearings upon the stationary and adjustable frames, respectively.

10. In a machine of the class described, a stationary frame, a vertically adjustable frame, longitudinally disposed track bars supported adjustably upon the adjustable frame, a brush member supported adjustably above the track bars and having downward extending resilient flexible tongues, an endless feed element operating between the track bars, adjustably supported saw carrying mandrels having saws disposed adjacent to the track bars, and bearings for the inner ends of said mandrels connected hingedly with the vertically adjustable frame.

856,843. INDICATOR FOR LOCKS. ALPHONSO B. CARLISLE, Atlanta, Ga. Filed Apr. 2, 1906. Serial No. 309,422.

Claim.—1. In an indicator, the combination of locking mechanism, an escutcheon plate having a slot, an indicating device movable through said slot, and key-operated means supported by said escutcheon plate for moving said indicating device through said slot to an indicating position whereby said indicating device can be felt from the exterior of said plate.

2. The combination of a door, locking mechanism connected with the door, a key-operable indicating device associated with the locking mechanism, positively movable depthwise of the door, and operable by the key for said locking mechanism after the latter has been operated.



3. In an indicator, the combination of a lock, a plate, an indicating device supported by said plate, and an actuator also supported by said plate, the actuator being adapted to directly engage the indicating device to move it to an indicating position and directly engageable by the key which operates said lock.

4. In an indicator, the combination of locking mechanism, a plate having a slot, a spring-operated indicating device movable through said slot, and a key-operated actuator slidably supported by said plate for moving said indicating device to its indicating position and in opposition to the spring coöperative with said indicating device.

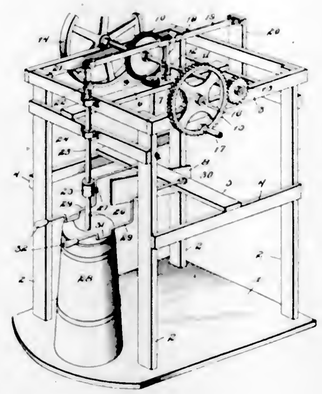
5. In an indicator, a plate having a slot, an indicating device, a spring carrying the indicating device, the spring serving to move the indicating device through said slot and the indicating device having an inclined surface, and an actuator to ride along said inclined surface to retract the indicating device and tension the spring.

6. In an indicator, the combination of a plate having a slot, an indicating device movable through the slot, a spring carrying the indicator and serving to move the indicating device forward through the slot, an actuator slidable against said plate, for engaging the indicating device to retract the same in opposition to the spring, the actuator having a recess and a lug, and a spring detent provided with a lug to engage the other lug and having a return bend extending across the recess.

856,844. CHURN. WALTER L. CLIFTON, Pilotmountain, N. C. Filed Nov. 16, 1905. Renewed Mar. 8, 1907. Serial No. 361,344.

Claim.—The combination with a platform and a frame supported thereby; of independently movable, spring churn retaining rods pivotally mounted upon and adapted to swing laterally in relation to the frame, a plunger slidably mounted on the frame, means thereon adapted to receive and detachably engage a churn dasher, a lever fulcrumed at one end to the frame, a link connection between said lever and the plunger, a crank shaft mounted on the frame, a link connection between the crank shaft and the lever, and means for rotating the crank shaft.

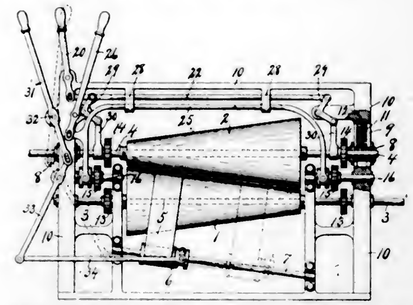
856,844.



856,845. PUMP. HARRY CLINE, Idaville, Pa. Filed Aug. 4, 1906. Serial No. 329,263.

Claim.—In a pump, a barrel, a stand-pipe communicating therewith, an open ended intake pipe sustained in and extending partly through the barrel, a pumping piston arranged for reciprocation in the barrel and comprising a tubular body portion having end heads provided with ports, a head fixed on the intake pipe and fitted within the tubular body portion of the piston, the intake pipe being provided with transverse ports at a point adjacent the head, movable valves sustained for alternately closing the ports in the heads of the pumping piston during reciprocation of the latter, valves disposed at opposite sides of the fixed head for closing respectively the inner end of the intake pipe and the transverse ports therein, and connecting members slidably mounted in the fixed head and connecting the last named valves for alternate movement to open or closed position.

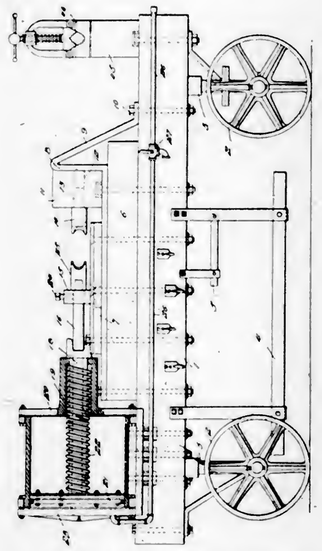
856,846. VARIABLE-SPEED POWER-TRANSMITTING MECHANISM. RAY COLE, Syracuse, N. Y. Filed Apr. 5, 1907. Serial No. 366,526.



Claim.—1. In a variable speed reverse drive mechanism, two friction cones and a sliding contact member for transmitting motion from one cone to the other, means for shifting said member to vary the speed of the driven cone, means for supporting said cone whereby the driving cone may revolve independently of the driven cone, a reverse drive mechanism, and means for throwing said mechanism into and out of action.

2. A variable speed reverse drive mechanism comprising two cones and a sliding member for transmitting motion from one cone to the other, means for sliding said member to vary the speed of the driven cone, gears connected to the cones and rotating therewith, means for supporting the cones, a sliding gear movable into and out of mesh with said gears to reverse the rotation of the driven cone, and means to slide said gear.

856,847. PIPE-BENDING MACHINE. PATRICK J. CONNORS, Greenville, Pa. Filed Mar. 29, 1907. Serial No. 365,306.



Claim.—1. In a bending machine, the combination of a support, a stationary block mounted thereon, a die member

removably carried thereby, a cylinder, a piston and piston head mounted therein and adapted to be moved outwardly by pressure, a spring for returning the same, a link connected to the piston-rod, a pair of tracks or rails upon the support, a frame slidably mounted therein, and removably connected to the other end of the link, and a die carried by said link and frame and adapted to coact with the die carried by the block.

2. In a bending machine, the combination of a support, a die stationarily mounted thereon, a cylinder mounted upon the support, a piston head and rod mounted therein and adapted to be projected by pressure, a spring for returning the same, a link connected to the outer end of the piston rod, a die adapted to coact with said die carried by the link, and means carrying the free end of the link to guide the same and slidably mounted on the support.

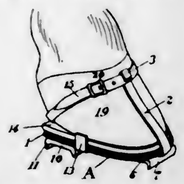
3. In a bending machine, the combination of a support, a die stationarily mounted thereon, a cylinder mounted upon the support, a piston head and rod mounted therein and adapted to be projected by pressure, a spring for returning the same, a link connected to the outer end of the piston rod, a die adapted to coact with said die carried by the link, a pair of rails mounted upon the support, and means slidably mounted in the rails for guiding the free end of the link and its die.

4. In a bending machine, the combination of a support, a die stationarily mounted thereon, a cylinder mounted upon the support, a piston head and rod mounted therein and adapted to be projected by pressure, a spring for returning the same, a link connected to the outer end of the piston rod, a die adapted to coact with said die carried by the link, a pair of rails mounted upon the support, and a frame slidably mounted therein for guiding the free end of the link and its die.

5. In a bending machine, the combination of a female die, consisting of a block having a substantially dove tailed shape channel therein two series of oppositely inclined ratchet teeth in the base of said channel, and a pair of dies slidably mounted within said channel and provided with teeth for engaging the teeth of the block.

6. In a bending machine the combination of a bed, an auxiliary bed carried thereby, a pair of angle-irons carried by the auxiliary bed, a die block connected to the angle of said irons, a die member removably carried by said block, a yoke slidably connected to the auxiliary bed intermediate of its length, a cylinder mounted upon the bed, a piston head mounted in said cylinder, a piston connected to the head and extending toward the yoke, a link connected to said piston and yoke and adapted to reciprocate with the yoke, a die member removably carried by said link, a spring surrounding the piston within the cylinder and normally holding the die members apart, and an air supply for operating the piston head to move the reciprocating die member toward the stationary die member.

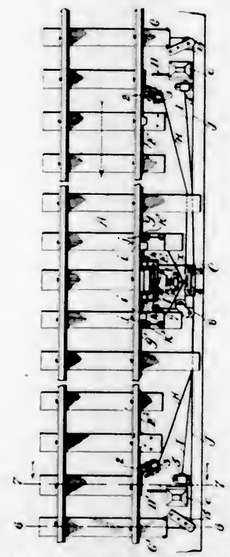
856,848. HORSESHOE. GEORGE P. DE LAUNEY, Baltimore, Md. Filed Apr. 2, 1907. Serial No. 365,948.



Claim.—1. The combination in a horse shoe of the character described comprising a frame or body part, of toe and heel calks located on the under side thereof, a cushion packing located on the top side, a single means for securing the said heel calks and packing to the frame or body part, a flat transversely bent metal rod provided with a hook formed on one end thereof and a cleat formed on the opposite end, means for securing the toe calk within the cleat and the cleat to the frame or body part, clamps secured on the frame or body part adjacent to the said heel calks, a strap provided with a buckle thereon secured to the bar of the frame or body part, and adapted to be extended under the heel and around the hoof of a horse and through the hook provided on the said transversely bent metal rod, whereby the shoe is secured on the hoof, substantially as described.

2. The combination in a horse shoe of the character described comprising a frame or body part, of toe and heel calks on the under side thereof, a cushion packing on the top side, a single means for securing the heel calks and the said packing to the frame or body part, a flat transversely bent metal rod provided with a hook formed on one end thereof, and a cleat formed on the opposite end, a single means for securing the said toe calk within the said cleat and for securing the said cleat and the said packing to the said body part, a strap secured to the frame or body part for securing the shoe on the hoof of a horse, and clamps on the frame or body part for holding the said shoe in rigid position, substantially as described.

856,849. AUTOMATIC RAILWAY-SIGNAL. ROBERT E. DIAL, Fontanet, Ind., assignor of one-half to David C. Stream, Fontanet, Ind. Filed Apr. 1, 1907. Serial No. 365,758.



Claim.—1. In an automatic railway signal, the combination of a lever, a signal device, means for moving the signal device, arranged to be moved by said lever on one movement thereof and to remain idle on the other movement of the lever, a lever arranged to be depressed by a passing train and also arranged to rock the first mentioned lever in one direction and through the medium of the same actuate the signal moving means, and a lever arranged at the opposite side of the first mentioned lever, with reference to the second mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever in the opposite direction and to a position out of the path of the second mentioned lever.

2. In an automatic railway signal, the combination of a lever, a signal device, means for moving the signal device, arranged to be moved by said lever on one movement thereof and to remain idle on the other movement of the lever, a lever arranged to be depressed by a passing train and also arranged to rock the first mentioned lever in one direction and through the medium of the same actuate the signal moving means, a lever arranged at the opposite side of the first mentioned lever, with reference to the second mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever in the opposite direction and to a position out of the path of the second mentioned lever, a lever arranged at the opposite side of the first mentioned lever, with reference to the third mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever in the direction to enable the upper projection thereof to rock the second mentioned lever, a lever arranged at the opposite side of the first mentioned lever, with reference to the third mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever to a position out of the path of the third mentioned lever, means for returning the levers to their normal position, latches for engaging the third and fourth mentioned levers and holding the same in their depressed position, and means for disengaging the latches from said levers.

3. In an automatic railway signal, the combination of a vertically swinging lever having lower and upper lateral projections at its ends, a vertically swinging lever arranged above the lower projection and under the upper projection of the first mentioned lever, a signal device connected with and arranged to be moved by the second mentioned lever when the same is rocked by the upper projection of the first mentioned lever, a lever arranged to be depressed by a passing train and also arranged to rock the first mentioned lever in the direction to enable the upper projection thereof to rock the second mentioned lever, and a lever arranged at the opposite side of the first mentioned lever, with reference to the third mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever to a position out of the path of the third mentioned lever.

4. In an automatic railway signal, the combination of a vertically swinging lever having lower and upper lateral projections at its ends, a vertically swinging lever arranged above the lower projection and under the upper projection of the first mentioned lever, a signal device connected with and arranged to be moved by the second mentioned lever when the same is rocked by the upper projection of the first mentioned lever, a lever arranged to be depressed by a passing train and also arranged to rock the first mentioned lever in the direction to enable the upper projection thereof to rock the second mentioned lever, a lever arranged at the opposite side of the first mentioned lever, with reference to the third mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever to a position out of the path of the third mentioned lever, means for returning the levers to their normal position, latches for engaging the third and fourth mentioned levers and holding the same in their depressed position, and means for disengaging the latches from said levers.

5. In an automatic railway signal, the combination of a vertically swinging lever having lower and upper lateral projections at its ends, a vertically swinging lever arranged above the lower projection and under the upper projection of the first mentioned lever, a signal device connected with and arranged to be moved by the second mentioned lever when the same is rocked by the upper projection of the first mentioned lever, a lever arranged to be depressed by a passing train and also arranged to rock the first mentioned lever in the direction to enable the upper projection thereof to rock the second mentioned lever, a lever arranged at the opposite side of the first mentioned lever, with reference to the third mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever to a position out of the path of the third mentioned lever, a spring-supported platform arranged under and bearing against the first and second mentioned levers, springs for returning the third and fourth mentioned levers to their normal position, latches for engaging the latter levers and holding the same in their depressed position, and means for disengaging the latches from said levers.

6. In an automatic railway signal, the combination of a lever, one or more signal devices, means for moving the signal device or devices, arranged to be moved by said lever on one movement thereof and to remain idle on the other movement of the lever, a lever arranged to be depressed by a passing train and also arranged to rock the first mentioned lever in one direction and through the medium of the same actuate the signal moving means, a lever arranged at the opposite side of the first mentioned lever, with reference to the second mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever in the opposite direction and to a position out of the path of the second mentioned levers, means for returning said levers to their normal positions, latches for engaging and holding the second and third mentioned levers when the same are depressed, levers connected with said latches and arranged at opposite sides of the second and third mentioned levers and also arranged to be depressed by a passing train, and means for raising the last mentioned levers.

7. In an automatic railway signal, the combination of a lever, a second lever arranged alongside the first mentioned lever and arranged to be rocked by said first mentioned lever when the same is rocked in one direction and to remain idle when the first mentioned lever is rocked in the opposite direction, a spring-supported platform arranged under and bearing against the levers, a signal device connected with and arranged to be moved by the second mentioned lever, a lever arranged to be depressed by a passing train and also arranged to rock the first mentioned lever in one direction and through the medium of the same rock the second mentioned lever, a lever arranged at the opposite side of the first mentioned lever, with reference to the third mentioned lever, in position to be depressed by a passing train and also arranged to rock the first mentioned lever in the opposite direction and to a position out of the path of the third mentioned lever, and means for returning the third and fourth mentioned levers to their normal position.

8. In an automatic railway signal, the combination of a railway, a torpedo-carrier movable on and off a rail thereof, means connected with said carrier and arranged to be depressed by a passing train to move the carrier on the rail, means for raising the latter means and moving the carrier off the rail, a latch for engaging the first mentioned means and retaining it in its depressed position, and means for disengaging said latch, arranged to be depressed by a passing train.

9. In an automatic railway signal, the combination of a railway, a casing arranged at one side thereof and having a hinged cover, a torpedo carrier movable in the casing and on and off a rail, means connected with said carrier and arranged to be depressed by a passing train to move the carrier on the rail, means for raising the latter means and moving the carrier off the rail, a latch for engaging the first mentioned means and retaining it in its depressed position, and means for disengaging said latch arranged to be depressed by a passing train.

856,850. GO-CART. FREDERICK W. DOME, Chicago, Ill., assignor to Foyer Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 11, 1905. Serial No. 291,288.

Claim.—1. The combination, in a go-cart, with a back hinged at its lower end, of pins projecting from the opposite longitudinal edges thereof, and a ball-shaped back-support pivoted to the sides of the frame and embracing the edges and rear side of said back, said back-support having pin-engaging sockets lying below and in front of its pivots when said back and its support are in positions of least inclination from the vertical, substantially as described.

2. The combination, in a go-cart, with a back hinged at its lower end, of pins projecting from the opposite longitudinal edges thereof, and a ball-shaped back-support pivoted to the sides of the frame and embracing the edges and rear side of said back, said back-support having a series of laterally projecting pin-engaging sockets adapted to support said back at various angles of inclination, substantially as described.

3. The combination, in a go-cart, with a back hinged at its lower end, of pins projecting from the opposite longitudinal edges thereof, and a ball-shaped back-support pivoted to the sides of the frame and embracing the edges and rear side of said back, said back-support being formed with longitudinally projecting pin-engaging sockets adapted to support said back in an approximately upright position and with laterally projecting pin-engaging sockets adapted

to support said back in various inclined positions approaching the horizontal, substantially as described.



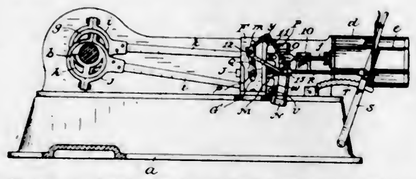
4. A collapsible go-cart having a pivoted foot-rest, and devices carried by the foot-rest and seat-supports, respectively, adapted to be brought into engagement with each other during the final part of the collapsing movement to fold up said foot-rest, substantially as described.

5. A collapsible go-cart having a pivoted foot-rest, and devices carried by the foot-rest and seat-supports, respectively, adapted to be brought into engagement with each other during the final part of the collapsing movement and the initial part of the opening movement whereby to fold up and unfold said foot-rest, respectively, substantially as described.

6. In a collapsible go-cart, the combination with a pivoted foot-rest having lugs projecting inwardly of its pivot, of seat-supporting bars having laterally projecting lugs adapted to be contacted by said lugs on the foot-rest whereby to fold up the latter when the go-cart is collapsed, substantially as described.

7. In a collapsible go-cart, the combination with a pivoted foot-rest having two pairs of lugs projecting inwardly of its pivot, of seat-supporting bars having laterally projecting lugs adapted to be contacted by one pair of said lugs on the foot-rest whereby to automatically fold up the latter when the go-cart is collapsed, and by the other pair of lugs whereby to unfold or turn down the foot-rest when the go-cart is opened out, substantially as described.

856,851. VALVE-GEAR FOR ENGINES. ARCHIE L. DORNEY, Russell township, Putnam county, Ind. Filed May 5, 1906. Serial No. 315,409.



Claim.—1. A valve-gear including a stationary standard having a guide, a crosshead mounted on the guide, a link-bearer attached to the crosshead and provided with an adjustable cap on its top and also an adjustable bearing slip in a side thereof, a link-holder mounted in the link-bearer and having a pair of arms provided with bearings and bearing caps, and a shifting link pivoted in the bearings.

2. An engine including a standard having a slot therein and provided also with guides, a crosshead mounted adjustably in the guides and having a wrist-pin attached thereto and extending through the slot of the standard, a movable tumbler mounted on the standard, a link connected to the wrist-pin and also to the tumbler, means for operating and controlling the tumbler, a link-bearer attached to the crosshead, a shifting link provided with a link-holder mounted movably on the link-bearer, eccentrics having rods connected to the shifting link, a link block movable in the shifting link, and a valve-stem connected with the link block.

3. An engine including a standard having adjustable guides, a crosshead mounted adjustably in the guides, means for adjusting and holding the crosshead in the guides, a link-bearer fixed to the crosshead, a link-holder mounted movably on the link-bearer and having a pair of arms provided with journal-bearings, a shifting link having a link block and pivotally supported by the journal-bearings, eccentrics having rods connected to the shifting link, and a valve-stem connected with the link block.

4. An engine including a standard having guides, a crosshead mounted adjustably in the guides, means for adjusting and holding the crosshead in the guides, a link-bearer fixed to the crosshead and provided with an adjustable bearing cap and also with an adjustable bearing-piece, a link-holder mounted slidably in the link-bearer and engaged by the bearing cap and the bearing-piece, a shifting link having a link-block and pivoted to the link-holder, eccentrics having rods connected to the shifting link, and a valve-stem connected with the link-block.

5. An engine including a stationary standard having guides, a crosshead mounted adjustably in the guides, means for adjusting and holding the crosshead in the guides, a link-bearer attached to the crosshead, a link-holder mounted movably on the link-bearer and having a bearing provided with an adjustable cap, a shifting link having a link-block and pivoted in the bearing of the link-holder, eccentrics having rods connected to the shifting link, and a valve-stem having operative connection with the link-block.

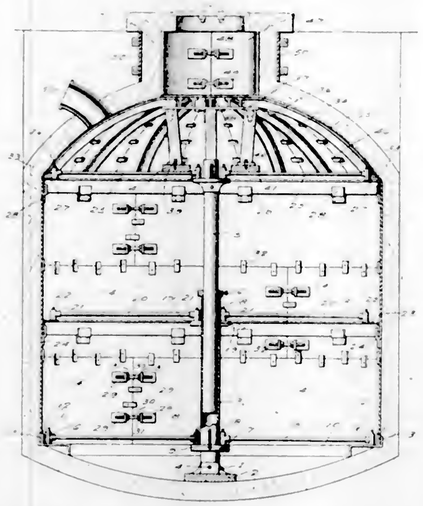
6. An engine including a stationary standard having guides, a crosshead mounted adjustably in the guides, means for adjusting and holding the crosshead in the guides, a link-bearer attached to the crosshead, a link-holder mounted movably in the link-bearer, a shifting link pivoted to the link-holder and provided with fixed wrist-pins, a link-block having sliding connection with the shifting link, a pair of eccentrics, straps on the eccentrics, rods attached to the straps and having bearings in connection with the wrist-pins and provided with adjustable caps also in connection with the wrist-pins, and a valve-stem having operative connection with the link-block.

7. An engine including a stationary standard having guides and also a fixed pivot, a crosshead adjustable in the guides and carrying a link-bearer, a link-holder mounted movably in the link-bearer, a shifting link pivoted on the link-holder and having a movable link-block, a valve-stem having operative connection with the link-block, eccentrics having rods connected to the shifting link, a tumbler having a bearing in connection with the fixed pivot and provided with an adjustable bearing cap on the pivot, the tumbler having also two separate wrist-pins, a wrist-pin secured to the crosshead, a lifting link having bearings provided with adjustable caps connected to the wrist-pin of the crosshead and also to one of the wrist-pins of the tumbler, a reach-rod connected to the other one of the wrist-pins of the tumbler, and means for holding or moving the reach-rod.

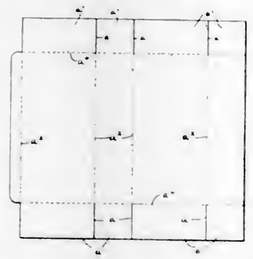
856,852. CISTERN-MOLD. WILLIAM B. DORWARD, Lawrence, Kans. Filed Dec. 15, 1906. Serial No. 347,989.

Claim.—1. In a cistern mold, the combination of a central standard, a column fitted adjustably in said standard, rings on said standard and column, upwardly projecting pins fitted to said rings, an outer angle iron ring provided with upwardly projecting pins, and a brace rod having T-couplings fitted to the ends thereof to engage the pins, side plates for said mold, and keepers for said angle iron ring carried by said plates.

2. In a cistern mold, the combination of a central tubular standard, a column fitted adjustably in said standard, rings on said standard and column, upwardly projecting pins fitted to said rings, an outer angle iron ring provided with upwardly projecting pins, brace rods having T-couplings fitted to the ends thereof to engage said pins, side plates for said mold, keepers for said angle iron ring carried by said plates, and a dome portion consisting of curved angle irons supported by hinged braces.



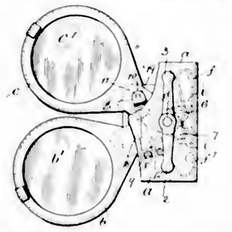
856,853. MANUFACTURE OF MOISTURE-PROOF CARTONS. HENRY G. ECKSTEIN, Chicago, Ill., assignor to Rueckheim Bros. & Eckstein, Chicago, Ill., a Corporation of West Virginia. Filed Oct. 17, 1904. Renewed Nov. 17, 1906. Serial No. 343,929.



Claim.—1. The method of rendering cartons moisture proof that consists in immersing the collapsed cartons in a bath of melted wax to impregnate the body of the carton, withdrawing the collapsed cartons from the bath and finally opening out the cartons into a tubular form before the wax has had time to set.

2. The method of rendering cartons moisture proof that consists in immersing in a bath of melted wax a bundle of collapsed or flattened cartons, allowing them to remain within the bath until the wax thoroughly impregnates the bodies of the cartons, then withdrawing the bundle of collapsed cartons from the bath and finally opening out the cartons in a tubular form before the wax has had time to set.

856,854. SIGNAL-LANTERN. GUSTAV EKLUND, New York, N. Y., assignor to Frederick W. Dressel, New York, N. Y. Filed Oct. 11, 1906. Serial No. 338,371.



Claim.—1. In a signal lantern, the combination with a plurality of manually actuated spring retained color-glass frames, of two similar oppositely placed locking devices each similarly actuated by the movement of one color-glass frame into its operative position to lock and hold against accidental displacement the other color-glass frame in its inoperative position.

2. In a signal lantern, the combination with a plurality of manually actuated spring retained color-glass frames, of two similar independent and oppositely placed pivotally mounted locking devices, each similarly actuated by the movement of the nearest color-glass frame into its operative position to lock and hold against accidental displacement the other color-glass frame in its inoperative position.

3. In a signal lantern, the combination with a plurality of manually actuated spring retained color-glass frames, of two similar reversed and oppositely placed lever arms, means for pivotally connecting the same to the lantern body at points in their length so as to produce long and short members in each lever, means associated with the free ends of the long portions of said lever arms and with the color-glass frames whereby in the movements of said devices the movement of one color-glass frame into its operative position strikes the shorter part of the adjacent lever arm and moves the longer part over into contact or engagement with the other color-glass frame to lock the same in its inoperative position.

4. In a signal lantern, the combination with a box casing connected to the lantern body and open to the interior thereof, of a pair of color-glass frames, the color-glass in each of said frames, means for pivotally mounting said color-glass frames in said box casing, means for operating said color-glass frames independently of one another and exteriorly of the said casing, pivoted means independently actuated by the operation of the said color-glass frames for positively locking the one or the other in its inoperative position and means for positively limiting the extent of movement of the color-glass frames in both directions.

5. In a signal lantern, the combination with a box casing built into the lantern body and open to the interior thereof, of a pair of color-glass frames each constructed with an engaging device, a color-glass in each of said frames, means for operating the said color-glass frames separately and exteriorly of the said box casing, means for normally maintaining the said color-glass frames in their operative or inoperative positions, oppositely placed levers pivotally mounted within said box casing and each adapted to be actuated by one of the said color-glass frames in setting the same in its operative position and means carried by the said levers and co-acting with the engaging devices of said frames for locking the other color-glass frame in its inoperative position.

5. In a signal lantern, the combination with a box casing built into the lantern body and open to the interior thereof, of a pair of color-glass frames in both of which a hole is provided, a color-glass in each of said frames, means for operating the said color-glass frames separately and exteriorly of the said box casing, means for normally maintaining the said color-glass frames in their operative or inoperative positions, oppositely placed levers pivotally mounted within said box casing and each adapted to be actuated by one of the said color-glass frames in setting

the same in its operative position and means carried by the said levers and co-acting with the holes provided in said frames for locking the other color-glass frame in its inoperative position.

7. In a signal lantern, the combination with a box casing built into the lantern body and open to the interior thereof, of a pair of color-glass frames in both of which a hole is provided, a color-glass in each of said frames, means for operating the said color-glass frames separately and exteriorly of the said box casing, means for normally maintaining the said color-glass frames in their operative or inoperative positions, two levers pivotally mounted within the said box casing and adjacent respectively to the said color-glass frames, a pin on the upper end of each of the said levers and an in-turned end on each of the said levers below its pivotal points, the parts being so arranged that in setting one of the color-glass frames the lower edge thereof engages the in-turned end of the adjacent lever and swings the same over to cause the pin at its upper end to enter the aforesaid hole in the other color-glass frame to lock the same in its inoperative position.

856,855. WATERPROOFING COMPOUND. RICHARD FALTER, New York, N. Y. Filed Feb. 1, 1906. Serial No. 298,954.

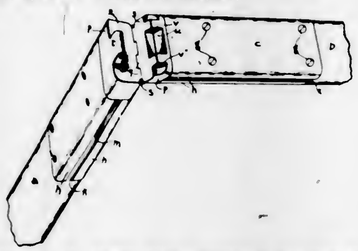
Claim.—1. A composition of matter consisting of ozokerite, mutton tallow and cereate.

2. A composition of matter consisting of white ozokerite, mutton tallow and cereate.

3. A composition of matter consisting of white ozokerite, yellow ozokerite, mutton tallow and cereate.

4. A composition of matter consisting of seven parts of white ozokerite, one part of yellow ozokerite, one part of mutton tallow and one part of cereate.

856,856. HINGE. SAMUEL FARMER, Anderson, Ind. Filed Apr. 5, 1906. Serial No. 310,057.



Claim.—1. A batten hinge consisting of hinge sections having notched thimble portions and abutting head portions provided with lugs and connecting pintle, and means for locking the front portions of such sections together.

2. A folding batten connection, consisting of slotted attachment couplings, and notched abutting hinge sections provided with means for locking such sections together in abutted engagement.

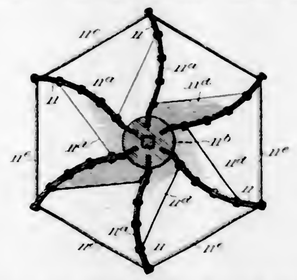
3. The combination with batten sections of slotted attachment sleeves, abutting hinge sections having notched thimble portions engaging said batten sections and sleeves, and means for locking such hinge sections together in abutted engagement.

856,857. PROCESS FOR THE MANUFACTURE OF THREADS, FILMS, OR OTHER FORMS OF CELLULOSE. MAX FREMERY, Oberbruck, and EMILE BRONNERT, Mülhausen-Niedermorschweiler, Germany, and JOHANN URBAN, St. Polten, Austria-Hungary. Filed May 8, 1905. Serial No. 259,477. (Specimens.)

Claim.—1. A process for the manufacture of thick threads or films of cupriferous cellulose consisting in injecting into a strong solution of caustic alkali of about 1.3 specific gravity a solution of cellulose in cupriferous ammoniacal solution prepared at a temperature below 10° C., washing the coagulated cellulose thus obtained and drying it under tension.

2. A process for the manufacture of thick threads or films of cupriferous cellulose consisting in injecting into a strong solution of caustic soda of about 1.3 specific gravity a solution of cellulose in a cupriferous ammoniacal solution prepared at a temperature below 10° C., washing the coagulated cellulose thus obtained and drying it under tension.

856,858. HYDRAULIC MOTOR. GEORGE B. FRENCH, Fremont, Nebr. Filed Mar. 23, 1903. Serial No. 149,115.



Claim.—1. In a hydraulic motor, a current wheel or impeller comprising a shaft having a series of radial-concavo-convex plates or floats, each plate or float consisting of lateral arms extending out from said shaft, plates secured to said arms, lateral plates or shrouds secured to the outer arms of said floats and adapted to partially inclose the space between the ends of two adjoining floats at the ends of the wheel.

2. In a hydraulic motor of the character described, a current wheel or impeller comprising a shaft suitably journaled in position and having a series of concavo-convex radial arms, a plate secured to said arms, lateral plates also secured to said arms, said arms also connected together by braces secured thereto, near their outer ends.

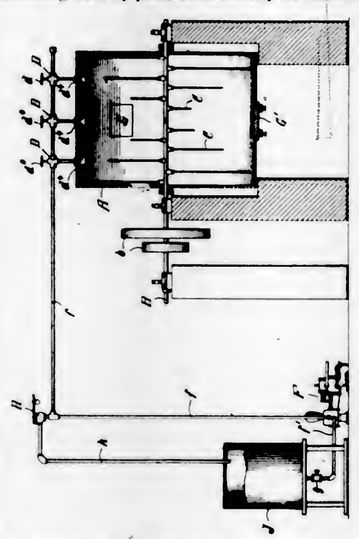
3. In a hydraulic motor of the character described, a current wheel or impeller comprising a shaft, hubs or disks having sockets therein secured upon said shaft, cylindric journals also applied to said shaft, a series of concavo-convex radial arms secured in the sockets of said disk, and suitably braced together, said arms being provided with correspondingly shaped plates or blades and lateral plates secured to the outer arms of said blades and partially inclosing the spaces between the ends of adjoining plates or blades at the ends of the wheel.

856,859. APPARATUS FOR MANUFACTURING SMOKELESS POWDER. GEORGE W. GENTIEU, Peoria, Ill. Filed Apr. 16, 1906. Serial No. 312,031.

Claim.—1. Apparatus for the manufacture of smokeless powder, comprising among its members, a receptacle, stirring devices located therein, a spraying nozzle discharging within said receptacle, a liquid supply connected to said nozzle, and a liquid forcing device interposed between said liquid supply and said nozzle having a greater capacity than the delivery orifices of said nozzle, and automatic pressure relieving device for maintaining an uniform pressure on the nozzles, substantially as described.

2. In apparatus for the manufacture of smokeless powder, the combination with a receptacle, stirring devices located therein, a spraying nozzle located adjacent to the upper part of said receptacle and discharging downwardly therein, and a liquid forcing device connected to said nozzle, means for maintaining an uniform pressure of the liquid at the nozzle, and a regulating device for varying the pressure at which the liquid is discharged, substantially as described.

3. Apparatus for the manufacture of smokeless powder, comprising among its members, a receptacle, stirring devices located therein, a spraying nozzle discharging within said receptacle, a liquid supply for said nozzle, a liquid forcing device connected therewith, a pipe from said forcing device to said nozzle, a by-pass from said pipe to the liquid supply and an automatic pressure operated valve for controlling said by-pass, substantially as described.



4. Apparatus for the manufacture of smokeless powder, comprising among its members, a receptacle, stirring devices located therein, a spraying nozzle discharging within said receptacle, a liquid supply for said nozzle, a liquid forcing device connected therewith, and having a greater capacity than the discharge orifices which it supplies, a pipe connecting said forcing device with said nozzle, a by-pass connected with said pipe and leading to said liquid supply, and an adjustable pressure operated valve controlling said by-pass, substantially as described.

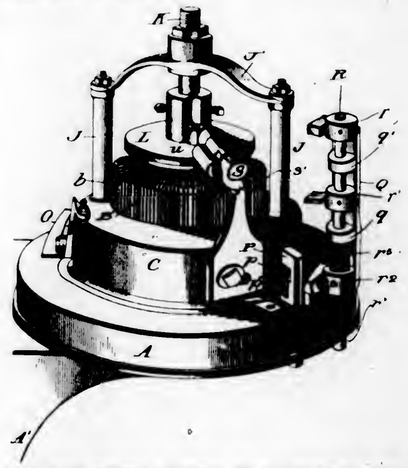
5. In apparatus for the manufacture of smokeless powder, the combination with a receptacle, stirring devices located therein, a spraying nozzle located adjacent to the upper part of said receptacle and discharging downwardly therein, and a liquid forcing device connected to said nozzle, and a pressure operated valve located between the liquid forcing device and the nozzle for regulating the pressure of the liquid delivered from said nozzle, substantially as described.

6. An apparatus for the manufacture of smokeless powder, comprising among its members, a tank, stirring devices located therein, a spray controlling valve located outside of the tank, and having a tubular extension, passing through the tank, a spraying nozzle, secured to said extension within the tank and provided with a plurality of discharge passages, a liquid forcing device connected with said valve, and an automatic pressure operated valve interposed between said pump and said spray controlling valve, for maintaining an uniform pressure upon the liquid supplied to said nozzle, substantially as described.

856,860. KNITTING-MACHINE. GEORGE H. GILBERT, Germantown, Pa., assignor to Kilbourn Knitting Machine Company, New Brunswick, N. J. Filed June 24, 1901. Renewed May 18, 1906. Serial No. 317,608.

Claim.—1. In a rib knitting machine, the combination with the dial, its needles and their operating devices, of the needle cylinder, its needles and their operating mechanism, said needle cylinder being provided with rigidly secured hook web-holders, substantially as described.

2. In a rib knitting machine, the combination with the dial, its needles and their operating devices, of the needle cylinder, its needles and their operating mechanism, and a nosing provided with rigidly secured hook web-holders, substantially as described.



3. In a rib knitting machine, the combination with the dial and its needles, operative mechanism for said needles and means for throwing the dial needles out of operation, the cylinder and its needles, means for operating them, said cylinder being provided with rigidly secured hook web-holders, substantially as described.

4. In a rib knitting machine, the combination with the dial and its needles, of the cylinder provided with hook sinkers, its needles, means for operating the dial and cylinder needles, and a web tension device, substantially as described.

5. In a rib knitting machine, the combination with the dial and needle operating mechanism, of the cylinder provided with hooked sinkers, its needle operating mechanism and means for throwing the dial needles out of operation while the cylinder needles continue knitting, substantially as described.

6. In a rib knitting machine, the combination with the dial and cylinder, their needles and operative mechanism, of rigid hook web-holders secured to said cylinder, a tension device for the knitted web, and means for throwing the dial needles out of operation and releasing the web from tension at the same time, substantially as described.

7. In a rib knitting machine, the combination with the needle cylinder and its needles, of a movably mounted knitting cam, a web tension device, and automatic means for moving the cam to lengthen the stitch and to release the web from tension at the same time, substantially as described.

8. In a rib knitting machine, the combination with the two series of knitting needles and operating devices, of the hook web-holders and means for throwing the dial needles out of action, substantially as described.

9. The combination with the rib knitting mechanism including a movably mounted knitting cam for the cylinder needles, of a web tension device, means for moving the cylinder knitting cam and to release the web tension, substantially as described.

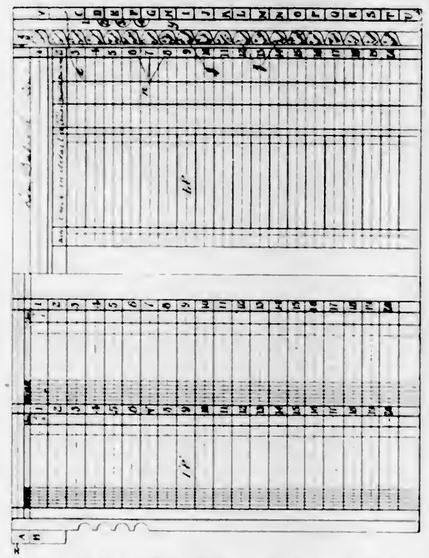
10. In a rib knitting machine, the combination with the dial and cylinder and needle operating devices for both dial and cylinder, of rigid web-holders, a tension device for the knitted web, means for throwing the dial knitting mechanism out of operation and means for at the same time releasing the web from tension, substantially as described.

11. In a rib knitting machine, the combination with the dial and cylinder knitting mechanism, rigid web holders, the tension device for the knitted web and the rod and

cam for relieving the web from tension, substantially as described.

12. In a rib knitting machine, the combination with the dial and cylinder knitting mechanism, rigid web holders, the web tension device, means for throwing the dial knitting mechanism out of operation and for releasing the web tension and pattern mechanism controlling the dial knitting mechanism and the tension releasing mechanism, substantially as described.

856,861. LOOSE-LEAF INDEXED LEDGER. JOHN F. GLOE, Manning, Iowa. Filed May 22, 1906. Serial No. 318,179.



Claim.—1. An indexed ledger, comprising leaves divided into main groups, each main group having one alphabetically indexed tab *x* and each main group being subdivided into sub-groups and each sub-group provided with a numbered sheet I S S and having between these numbered sheets groups of ledger pages L P each page bearing a tab *z* of sufficient size to receive the name of the person.

2. An indexed ledger, comprising leaves divided into main groups, each main group having one alphabetically indexed tab *x* and each main group being subdivided into sub-groups and each sub-group provided with a numbered sheet I S S and having between these numbered sheets groups of ledger leaves L P each leaf bearing a tab *z* of sufficient size to receive the name of a person, said tabs *z* being covered and protected by the edges of the numbered sheets.

3. An indexed ledger, comprising leaves divided into main groups, each main group having one alphabetically indexed tab *x* and each main group being subdivided into sub-groups and each sub-group provided with a numbered sheet I S S and having, between these numbered sheets, ledger leaves L P, each leaf bearing a tab *z* of sufficient size to receive the name of a person and overlaid by the numbered sheets, the alphabetical index tabs *x* being made to extend beyond the numbered sheets and ledger tabs.

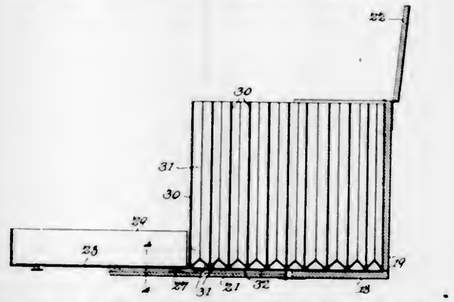
4. An indexed ledger, comprising leaves divided into main groups, each main group having one alphabetically indexed tab *x* and each main group having at the front an index page I P divided into numbered name spaces, and each main group being subdivided into sub-groups each provided with a numbered sheet I S S, said numbered sheets having between them groups of ledger pages L P each page bearing a tab *z* of sufficient size to receive the name of a person and also a number for the tab identical with a number in the name spaces of the index page.

5. An indexed ledger, comprising leaves divided into main groups, each main group having one alphabetical index tab *x*, and each main group having at the front an index page I P divided into blocks that are consecutively numbered, each block further divided into two spaces by a horizontal line; each main group represented by a tab *x* being also subdivided into sub-groups, each of which sub-groups is provided with an index section sheet I S S, with a thickened and numbered edge *y*, said index section sheets I S S having between them groups of ledger pages L P, each page bearing a tab *z* of sufficient size to receive the name of the person and bearing also a number opposite its tab identical with a number in the consecutive series of blocks of the index page I P.

6. An indexed ledger, comprising leaves divided into main groups, each main group having one alphabetical index tab *x* and each main group having at the front an index page I P divided into a vertical series of blocks that are consecutively numbered, and vertical column designated "Sec", each main group represented by a tab *x* being also subdivided into sub-groups, each of which sub-groups is provided with an index section sheet I S S with a thickened and numbered edge *y*, said index section sheets I S S having between them groups of ledger pages L P, each page bearing a tab *z* of sufficient size to receive the name of the person and bearing also a number opposite its tab identical with a number in the consecutive series of blocks of the index page I P.

7. An indexed ledger having ledger leaves each bearing a tab *z* of sufficient size to receive the name of the person and bearing also a vertical series of consecutive numbers, a different number being opposite each tab, an index page I P divided into blocks that are consecutively numbered, the numbers of said blocks being identical with the numbers on the ledger leaves bearing the tabs.

856,862. FILE-CABINET. DAVID F. GREENAWALT, York, Pa. Filed June 7, 1906. Serial No. 320,627.



Claim.—1. In a file cabinet, a casing having a hinged front movable to open position in alinement with the bottom of the case, a series of partitions arranged within the case, a flexible member connecting said partitions, and a receiving box connected to said flexible member and slidable over the front to thereby draw the partitions outward.

2. In a filing cabinet, a case having a hinged front, a plurality of partitions arranged within the case, a flexible connecting means between said partitions, and a slidable member carried by the front and connected to the flexible member to permit spacing of said partitions.

3. The combination in a filing cabinet, of a case having a hinged front, a plate slidably mounted on said front, a plurality of partitions within the casing, and means connecting the slidable plate to the partitions.

4. In a filing cabinet, the combination with a case having a hinged front member, a slidable plate arranged on the inner face of said front member and provided with a marginal flange, partitions arranged within the case, and means for connecting said partitions to the slidable plate.

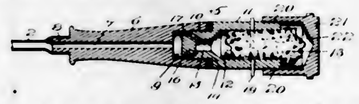
5. In a filing cabinet, the combination with a case, having a hinged front member, of a flanged plate slidably mounted on the inner face of the front and serving when in closed position as a dust guard, and when in open position as a receiving box or basket, a plurality of partitions within the case, flexible bottom and side members connecting the partitions and forming compartments, and a flexible strip connected to all of said partitions, and also connected to said flanged plate.

6. In filing cabinets, the combination with a supporting case having an opening at the top, of a revoluble carrier arranged within the case and having its periphery projecting slightly through the opening, a plurality of filing cases mounted on the carrier and adjustable into alinement with said opening, and means for sustaining the filing cases in elevated position, and at the same time preventing rotation of the carrier.

7. In filing cabinets, the combination with a casing having an opening at the top, of a revoluble carrier arranged within the casing and having a portion of its periphery projecting into the opening, and a plurality of file cases supported by the carrier and having flat covers movable into alinement with the upper surface of the casing top.

8. In filing cabinets, the combination with a casing having an opening in its top, of a revoluble carrier arranged within the casing and provided with radial pockets, and a plurality of filing casings arranged within the pockets and movable into alinement with the opening, said filing casings having movable tops and fronts, the top members being movable into alinement with the top of the casing.

856,863. SHOE CLEANING AND BLACKENING DEVICE. CALVIN C. GRINER, Macungie, Pa. Filed May 18, 1906. Serial No. 317,577.



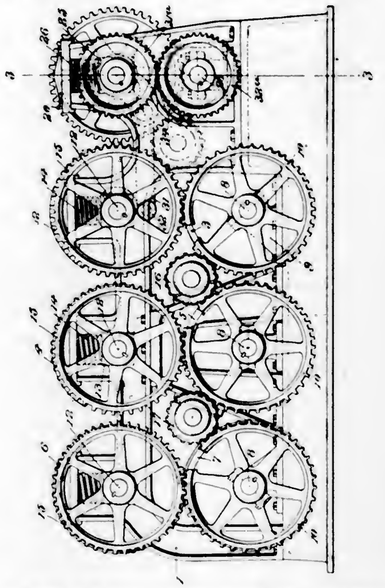
Claim.—1. In a device of the class described, a handle having a longitudinal bore, and with a socket formed in the end and in communication with the bore, a sleeve inserted within and having passages communicating with the socket, a pervious material within the sleeve, means to maintain the pervious material in position, a tube communicating with the bore of the handle, and means adapted to supply a fluid to the tube.

2. In a device of the class described, a handle having a longitudinal bore, and with a socket formed in the end and in communication with the bore, a sleeve inserted within but not filling the socket, and having passages communicating therewith, a pervious material within the sleeve, a pin inserted through the sleeve and adapted to maintain the pervious material in position, a tube communicating with the bore of the handle, means adapted to supply a fluid to the tube, and a closure proportioned to embrace the sleeve and the pervious material.

856,864. MACHINE FOR FORMING METALLIC FENCE-POSTS. PHILIP J. HARRAH, Bloomfield, Ind. Filed Nov. 14, 1906. Serial No. 343,395.

Claim.—1. A fence-post machine comprising co-operating rotary dies constructed to form cut-outs in a portion of the face of a fence-post blank, co-operating rotary dies for crimping or corrugating such post-blank longitudinally after the first mentioned dies have acted thereon, and means for throwing said first mentioned rotary dies out of co-operative relation while a portion of the blank is passing between them.

2. A fence-post machine comprising co-operating rotary dies constructed to form cut-outs in the face of a fence-post blank, co-operating rotary dies for crimping or corrugating such post-blank longitudinally after the first mentioned dies have acted thereon, and means actuated by the operation of the crimping or corrugating dies for throwing said first mentioned rotary dies out of co-operative relation while a portion of the blank is passing between them.



3. A fence-post machine comprising two co-operating dies constructed to form cut-outs in the face of a fence-post blank, one of said dies being mounted in movable bearings, co-operating rotary dies for crimping or corrugating such post blank longitudinally, levers engaging said movable bearings, and means movable with said second mentioned co-operating dies for actuating said levers to move one of said first mentioned dies out of co-operative relation to the other.

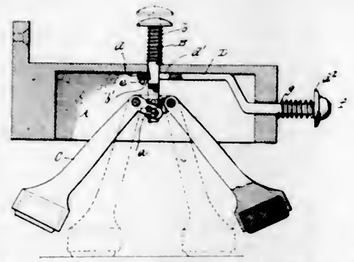
4. A fence-post machine comprising co-operating rotary dies constructed to form cut-outs in the face of a fence-post blank, two sets of co-operating rotary dies for crimping or corrugating such post-blank longitudinally after the first mentioned dies have acted thereon, such second mentioned dies having on their peripheries tapered ribs and grooves, the cross-sectional areas of the rib and groove of the dies of one set being greater than the cross-sectional areas of the rib and groove of the dies of the other set, and co-operating rotary dies having on their peripheries corresponding tapered grooves for compressing a fence-post blank previously crimped or corrugated by the second mentioned dies.

5. A fence-post machine comprising a plurality of sets of co-operative rotary dies, one die of each set having on its periphery a tapered rib and the other die a correspondingly tapered groove, such latter dies having channels at the transverse centers of their grooves, and a set of co-operative dies constructed to form tongues in the face of a fence post blank.

856,865. DOOR-CHECK. MARVIN L. HARRIS, Newport News, Va. Filed Mar. 22, 1907. Serial No. 363,905.

Claim.—1. In combination with a support adapted for attachment to a door, a pair of locking feet pivotally depending from said support and inclining away from each other and normally tending to swing downward toward each other into engagement with the floor, foot-operated means between the arms for spreading and raising them against their normal tendency, and means for normally locking the arms in their raised position, the operative ele-

ment of this latter means extending laterally outward through the end wall of the casing, for the purpose set forth.

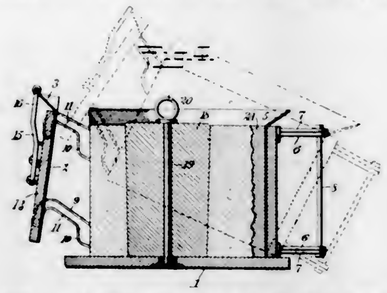


2. In combination with a support adapted for attachment to a door, a floor engaging means depending therefrom and means whereby said floor-engaging means tend to normally engage the floor to lock the door, means for locking the floor-engaging means out of action, this latter means embodying a rod extending laterally through the end wall of the casing, for the purpose set forth.

3. In combination with a support adapted for attachment to a door, floor-engaging means carried thereby, means for normally actuating said means, a locking device for the same, this locking device embodying a rod and means for normally pressing it outwardly, said rod extending beyond the end of the casing so as to be automatically actuated by contact with an obstacle when the door is swung open.

4. In combination with a casing adapted for attachment to a door, a pair of depending locking arms having lateral extensions toward each other, a foot-operated rod passing down through the casing and having movable engagement with said extensions and provided with a notch, a spring for raising said rod, a locking bar extending out through the end wall of the casing and normally engaging said notch, means for keeping said locking bar in engagement with the operating rod, substantially as set forth.

856,866. PORTABLE MOLD. WILLIAM L. HART, West Liberty, Ill. Filed Oct. 22, 1906. Serial No. 339,968.



Claim.—1. A mold, comprising a pallet, walls supported upon said pallet and removable therefrom, two of said walls being hinged to one of the connecting walls, and means carried by said two walls, whereby the other connecting wall may be supported in a position substantially parallel to its normal position and at a distance therefrom.

2. A mold, comprising a base plate or pallet, walls carried thereby and removable therefrom, hinges connecting two of said walls with one of the connecting walls, brackets carried by the two above mentioned walls, and means carried by the other connecting wall adapted to engage with said brackets and hold said last mentioned wall in engagement with the two first mentioned walls or at a distance therefrom.

3. A mold, comprising a pallet, side and end walls supported thereon and removable therefrom, one of said side walls being hinged to said end walls, brackets carried by said end walls, and means carried by the other side wall adapted to engage with said brackets, whereby said side wall may be held in engagement with the end walls or in a substantially parallel plane at a distance therefrom.

4. A mold, comprising a base plate or pallet, end and side walls supported thereon, said end walls being hinged to one of the side walls, brackets carried by said end walls, said brackets extending outwardly therefrom and provided with shoulders, inclined portions and recesses, and projections carried by the other side wall and adapted to engage with said brackets.

5. A mold, comprising two parallel walls, a third wall connecting said parallel walls, metal brackets secured to said parallel walls and extending upwardly and outwardly therefrom, said brackets being provided with inclined portions and recesses, and lugs carried by said third wall and in engagement with said brackets, said brackets and lugs adapted to coöperate to hold said third wall in engagement with the parallel walls or at a distance therefrom and at a higher elevation.

6. A mold, comprising a base plate, a rectangular body portion supported thereon, hinges connecting one of said walls to the two adjacent walls, and means for connecting the opposite wall to the adjacent walls, whereby the last mentioned wall may be moved in an outward and upward direction to a position substantially parallel to its original position, and whereby the entire body may be removed from the base plate by rotating said body about the lower edge of the hinged wall, without interfering with the finished block.

7. A mold, comprising a base plate, a rear wall, a front wall made up of sections, end walls, hinges connecting said end walls and said rear wall, and means for securing said sections of the front wall in their open or closed position, said means comprising a lever pivoted to one of said sections and a link pivoted to said lever and to the other of said sections.

8. A mold, comprising a base plate, a rear wall, a front wall made up of two sections, and end walls, hinges connecting said end walls and said rear wall, brackets and lugs for supporting said front wall in engagement with the end walls or at a distance therefrom, and means for separating the sections of the front wall.

9. A mold, comprising a base plate, a rear wall, a front wall made up of two sections, and end walls, hinges connecting the end walls and said rear wall, the pivot pins of said hinges being supported at a distance from said rear wall, and means for separating the sections of the front wall, said means comprising a lever pivoted to one of said sections, and a link pivoted to said lever and to the other of said sections.

856,867. ATTACHMENT FOR BAIT-HOOKS, JIGGERS, AND LIKE ANGLING DEVICES. JOHN W. HAYWARD, St. Johns, Newfoundland. Filed Mar. 30, 1906. Serial No. 308,863.



Claim.—1. An angling device provided with a flexible bag of reticulated material adapted to receive bait and arranged at the angling hook.

2. An attachment for fish hooks, jiggers and like angling devices, comprising a bait receptacle of flexible reticulated material, and means for attaching it to the angling device.

3. An attachment for fish hooks, jiggers and like angling devices, comprising a bag, and a support engaging the mouth of the bag and adapted to be fastened to the angling device.

4. An attachment for fish hooks, jiggers and like angling devices, comprising an open mesh fabric bag, a wire support engaging the mouth of the bag, and means for securing the said support to the angling device.

5. An attachment for fish hooks, jiggers and like angling devices, comprising an open mesh fabric bag, a wire support engaging the mouth of the bag, means for securing the said support to the fishing device, and means connected with the support for closing the mouth of the bag.

6. An attachment for hooks, jiggers and like angling devices, comprising a bag of an open mesh fabric for containing the bait and the hook, a wire frame having a loop on which the mouth of the bag is attached, and means for securing the wire frame to the shank of the angling device.

7. An attachment for a fish hook, comprising a bag for containing the bait, and a wire frame carrying the said bag, a double eyelet engaged by the ends of the wire frame, and means for fastening the eyelet in place in the shank of the hook.

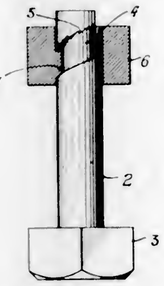
8. An attachment for a double fish hook, comprising a bag for containing the bait, a wire frame attached to the shank of the hook, the said bag having its mouth attached to the said wire frame, one side of which can be opened for placing the bait into the bag, and means for holding the open side of the frame in a closed position.

9. The combination of a fish hook with a flexible pocket attached to the shank thereof, substantially as described.

10. The combination of a fish hook with a flexible pocket attached to the shank thereof with its open end turned toward the top of the hook, substantially as described.

11. The combination of a fish hook with a flexible open work pocket attached to the shank thereof and having its open end turned toward the top of the hook, substantially as described.

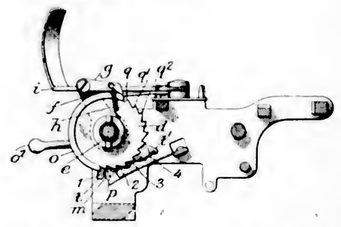
856,868. RATCHET-BOLT. LOUIS HEFFNER, Minneapolis, Minn. Filed Sept. 25, 1905. Serial No. 279,930.



Claim.—1. A bolt having a head at one end and a spirally arranged peripheral groove in its other end, a series of ratchet teeth provided in one edge of said groove, and a nut having a projection to fit into said groove and be guided thereby, and teeth to engage the teeth of said groove, substantially as described.

2. A ratchet bolt comprising a shank having a head at one end and a spirally arranged peripheral groove in its other end provided with a series of ratchet teeth on one edge, a nut having a socket to receive the end of said bolt, and a projection adapted to fit into said groove and slide therein and serve as a guide for said nut, and said projection having a series of ratchet teeth on one edge to engage the teeth in said groove and lock said nut on said shank, substantially as described.

856,869. WRITING-MACHINE. EDWARD B. HESS, New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J., a Corporation of New Jersey. Filed Feb. 16, 1906. Serial No. 301,352.



Claim.—1. Line space devices for a writing machine, comprising the combination of a platen and its ratchet wheel, arm rocking about the axis of the wheel, a push pawl pivoted in the end of the arm and arranged in the plane of the ratchet wheel, a spring normally tending to draw the pawl into engagement with the wheel, a shield rocking about the axis of the wheel and having a flange embracing the wheel throughout part of its circumference, one end of such flange being interposed between the pawl and wheel and acting to regulate the space through which the pawl will move the platen, a yielding detent operating upon the ratchet wheel to hold it in determined position to which it may be moved and a second detent operating upon the shield to hold it in the position to which it may be adjusted.

2. Line space devices for a writing machine, comprising a rotatable platen and its ratchet wheel, a pawl actuated to engage and move the ratchet wheel, a shield determining the point in the stroke of the pawl at which it shall engage the wheel, two detents respectively engaging the ratchet wheel and shield for the purpose set forth, and a yielding support by which both detents are carried.

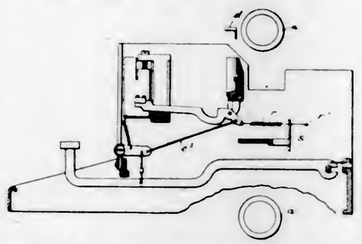
3. Line space devices for a writing machine, comprising the combination of a rotatable platen and its ratchet, a pawl actuated to engage and move the ratchet, a yielding detent acting upon the ratchet, an adjustable shield applied to the ratchet to determine the point in the stroke of the pawl at which it shall engage the ratchet and having an edge with notches one for each position of the shield and a cam part, a yielding detent adapted to engage such notches and cam part and means whereby when such detent engages the latter surface the detent of the ratchet wheel is thrown out of engagement with it.

4. Line space devices for a writing machine, comprising the combination of a rotatable platen and its ratchet, a pawl actuated to engage the ratchet to partially rotate it, a shield rocking about the axis of the ratchet and having two portions, one serving as a guard to determine the point in the throw of the pawl at which it shall engage the ratchet wheel, and another portion having notches and a surface 4 of greater radius, a yielding arm, two detents carried thereby, one acting on the ratchet wheel and the other upon the last named portion of the guard, the arrangement being such that the ratchet detent remains in operative relation to the ratchets in all positions of the guard, except that in which the guard detent engages the surface 4 when the ratchet detent is carried out of engagement with the ratchet wheel.

5. Line space devices for a writing machine, comprising the combination of a rotatable platen, and its ratchet, means for rotating the ratchet through variable distances to determine the line space, a guard rocking about the axis of the ratchet and acting to determine the tooth of the ratchet that shall be engaged by the operating means to thereby determine the line space, such guard having a notched edge of greater radius than the ratchet wheel which edge has a portion 4 of still greater radius, a spring arm, and two detents carried thereby, one detent engaging the ratchet wheel and the other the edge of the last named portion of the guard, the parts operating substantially as described.

6. Line space devices for a writing machine, comprising the combination of a rotatable platen, its ratchet, a pawl for actuating the ratchet through variable distances to afford different line spaces, an adjustable shield rocking about the axis of the ratchet and having on one side of said axis a flange embracing the ratchet and normally interposed between it and the pawl and, on the other side of the axis, an edge of greater radius than the ratchet provided with notches and a portion 4 of still greater radius, a yielding detent engaging the ratchet, a yielding detent engaging the notched edge of the shield, and means whereby when the portion 4 of the shield is moved to a position to engage the shield detent the ratchet detent is thrown out of operative relation to the ratchet.

856,870. WRITING-MACHINE. EDWARD B. HESS, New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J., a Corporation of New Jersey. Filed Sept. 1, 1906. Serial No. 332,940.



Claim.—1. In a typewriting machine, a coiled spring for actuating a type-bar, normally under no tension and extended and under tension as the type-bar reaches the printing point.

2. In a typewriting machine, a spring for actuating a type-bar being slidable or movable longitudinally and also elastically extensible longitudinally.

3. In a typewriting machine, a type-bar spring longitudinally elastical and having a slidable portion integral with the elastic portion.

4. In a typewriting machine, a spring permanently in connection with the type bar and exerting no force on the retraction of a type-bar during its travel except adjacent to the printing point.

5. In a typewriting machine, a spring directly applied to the type-bar having both a sliding and extending movement as the type-bar approaches the printing point and a sliding and contracting movement as it recedes from the printing point.

6. In a typewriting machine, the combination of pivoted type-bars and a spring for each type-bar to retract it from the printing point and at all times connected to the heel of the type-bar and moving therewith but exerting no influence on the return movement of the bar except adjacent to the printing point.

7. In a typewriting machine, the combination with a type-bar of a slidable and extensible spring located behind the pivot of a type-bar.

8. In a typewriting machine, the combination with a series of pivoted type-bars of a series of slidable and extensible springs lying in segmental form and adapted to facilitate the return of a series of type-bars.

9. In a typewriting machine, a type-bar combined with a spring arranged with a plain portion on either end and a spiral portion between the plain portions and having one end secured to the type-bar and the other end slidable adjustably against a stop.

10. In a typewriting machine, a type-bar combined with a retracting spring moving when the type-bar moves but exerting no tension on the type-bar until it is adjacent to the printing point.

11. In a typewriting machine, a type-bar and a spring therefor which latter moves as the type-bar moves but exerts its influence on the type-bar during a portion only of its excursion to and retreat from the printing point.

12. In a typewriting machine, the combination of a series of pivoted type-bars and series of staggered coiled springs which exert no tension on the type-bars until the latter approach the printing point, the coil of each spring being opposite a straight portion of the wire of adjacent springs.

13. In a typewriting machine, the combination with a type-bar of a spring for actuating it and both ends of which move at the same time throughout the major portion of the travel of the bar to the printing point.

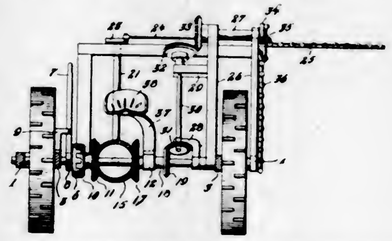
14. In a typewriting machine, the combination of a type-bar, a type-bar guide at the printing point, and a type-bar retracting spring brought into effective action during the latter part only of the advance movement of the type-bar.

15. In a typewriting machine, the combination with a type-bar and a slidable extensible spring located behind the pivot of the type-bar and placed under tension during the latter part only of the advance movement of the type bar of a type-bar guide located adjacent the printing point.

16. In a typewriting machine, a type-bar combined with a retracting spring moving when the type-bar moves but exerting no tension on the type-bar until it is adjacent to the printing point and a type-bar guide adjacent the printing point.

17. In a typewriting machine, the combination of a type-bar, a type-bar actuating device acting under tensile strain to pull the type-bar to effect the printing stroke, and a spring placed under tensile strain during the latter part only of the stroke of the type-bar and acting to pull it away from the printing point.

856,871. HEDGE-TRIMMER. GEORGE O. HOPPE, Cullom, Ill. Filed Feb. 15, 1907. Serial No. 357,517.

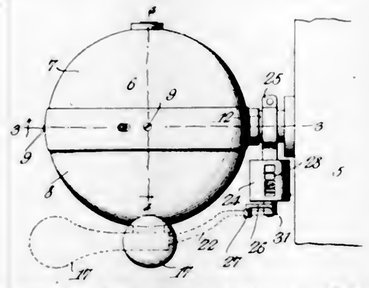


Claim.—A hedge trimmer comprising a supporting frame, a shaft journaled therein, traction wheels carried by said shaft, a clutch member splined on said shaft for axial movement, a clutch member loose on said shaft, a bevel pinion fixed to said last named clutch member, means for engaging and disengaging said clutch members, a vertical shaft, a horizontal shaft, sickle bars one driven from each of said last named shafts, pitmen connecting said last named shafts with their respective sickle bars and gear trains driven from said pinion and operatively connected to said last named shafts.

856,872. BEER-TAP REGISTER. NICHOLAS HORON, Penn Argyl, Pa. Filed Jan. 28, 1907. Serial No. 354,551.

Claim.—1. A measuring faucet including a casing provided with intake and discharge ports, a valve mounted for rotation within the casing and dividing the latter into liquid compartments, said valve being provided with an opening adapted to register with the ports, a handle for operating the valve and registering mechanism disposed in the path of movement of the handle and actuated by the latter.

2. A measuring faucet including a sectional casing provided with intake and discharge ports, a disk mounted for rotation in the casing and provided with a peripheral flange bearing against the interior walls of the casing and having an opening formed therein adapted to register with said ports, a handle for rotating the valve and provided with a laterally extending arm, and registering mechanism disposed in the path of movement of the arm and actuated by the latter.



3. A measuring faucet including a casing provided with intake and discharge ports, a valve mounted for rotation within the casing and dividing the latter into liquid compartments, said valve being provided with a peripheral flange having an opening formed therein and adapted to register with the ports in the casing, said opening permitting the entrance of the liquid to and the discharge of said liquid from both compartments, an operating handle for rotating the valve, and registering mechanism disposed in the path of movement of the handle and operated by the latter.

4. A measuring faucet including a casing provided with intake and discharge ports, a rotary valve dividing the casing into a plurality of liquid compartments and provided with a peripheral flange having an opening formed therein adapted to register with the ports in the casing, there being depressions formed in the valve at the opening in the flange, an operating handle for rotating the valve, and registering mechanism disposed in the path of movement of the operating handle.

5. A measuring faucet including a sectional casing provided with intake and discharge ports, a disk dividing the casing into a plurality of liquid compartments, a flange formed on the periphery of the disk and constituting a valve, said flange being provided with an opening adapted to register with the ports in the casing thereby to permit the entrance of the liquid to and the discharge of the liquid from both compartments, an operating handle for rotating the valve, and registering mechanism disposed in the path of movement of the handle and actuated by the latter.

6. A measuring faucet including a casing and provided with intake and discharge ports, a shaft journaled in the casing, a disk secured to the shaft and forming in connection with the casing a plurality of liquid containing compartments, a flange secured to the disk and having an opening formed therein and adapted to register with the ports in the casing, said flange being disposed in contact with the interior walls of the casing and constituting a valve, and an operating handle secured to the shaft.

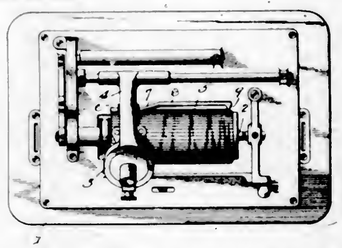
7. A measuring faucet including a casing provided with intake and discharge ports, a shaft journaled in the casing, a disk secured to the shaft and forming in connection with the casing liquid receiving compartments, a flange on the disk and having an opening therein and adapted to register with the ports in the casing, there being depressions formed in the disk at said opening to permit the discharge of the liquid in the compartment when said openings register with the discharge port in the casing, and means for operating the shaft.

8. A measuring faucet including a casing formed of a plurality of sections detachably secured together, said casing being provided with intake and discharge ports, a shaft journaled in the walls of said casing, a disk secured to the shaft and provided with a marginal flange having an opening formed therein adapted to register with the ports in the casing, and a handle for operating the valve.

9. A measuring faucet including a casing provided with intake and discharge ports, a valve mounted for rotation in the casing and adapted to register with said ports, registering mechanism provided with an actuating crank having an extension formed thereon, a lever for rotating the shaft and adapted to engage the crank of the registering mechanism for actuating the crank, the movement of the lever and valve being limited by engagement of the handle with the extension on the actuating crank of the registering mechanism.

10. The combination with a containing vessel, of a registering faucet including a casing provided with intake and discharge ports, a coupling connecting the casing with the containing vessel, a disk mounted for rotation within the casing and provided with a peripheral flange having an opening formed therein and adapted to register with the ports in the casing, registering mechanism secured to the coupling member and provided with an actuating arm, and an operating lever for rotating the disk and adapted to engage the operating arm of the registering mechanism for operating the latter.

856,873. PHONOGRAPH ATTACHMENT. WALBRIDGE G. HORTON, Brattleboro, Vt. Filed Nov. 12, 1906. Serial No. 343,003.



Claim.—1. A phonograph attachment comprising a clasp adapted to be mounted upon the reproducer arm of the machine, said clasp provided with a guide way, and a pointer adjustably engaged in said guide way.

2. The combination with a phonograph, of a clamp removably secured to the reproducer arm thereof, and a pointer adjustably held in said clamp and extending parallel to the record of the machine.

3. The combination with a phonograph, of a clamp having wedge engagement with the reproducer arm thereof, and a pointer secured in said clamp.

4. The combination with a phonograph, of a clamp having wedge engagement with the reproducer arm thereof, guideways formed on the clamp, and a pointer frictionally held in said guideways.

5. The combination with a clamp having inward inclined edges, and oppositely disposed inturned edges forming guideways on the back thereof, of a pointer adjustably held in said guideways.

6. In combination with a phonograph, an arm connected to the reproducer arm of the machine arranged horizontal and parallel with the record cylinder and having a pointer or indicator at its free end.

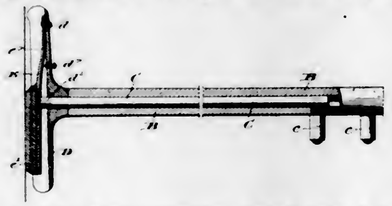
7. The combination with a talking machine, of a pointer adjustably secured to the reproducer mechanism thereof, said pointer having an angularly-deflected pointing finger on the free end thereof.

856,874. CURTAIN-FIXTURE. PAUL A. HOUGHTALING, Riverton, N. J., assignor to The Curtain Supply Company, Newark, N. J., a Corporation of New Jersey. Filed Feb. 23, 1905. Serial No. 247,006.

Claim.—1. A curtain fixture comprising in combination a curtain stick, a guiding head carried by said stick, a friction pad, a spring member operating to force the pad into holding contact with the window frame, and means for varying the tension of the spring member.

2. A curtain fixture comprising in combination a curtain stick, a head carried thereby, a friction pad, a spring mem-

ber operating to force the pad into holding contact with the window frame, a sliding rod connected with the pad support, and means for varying the tension of the spring.



3. A curtain fixture comprising a shade stick, a head carried thereby, a rod sliding in said head, a friction pad, a spring member operating to force the pad into holding contact with the window frame, the sliding rod being connected with the pad support, means for retracting said rod, and independent means for varying the tension of the spring.

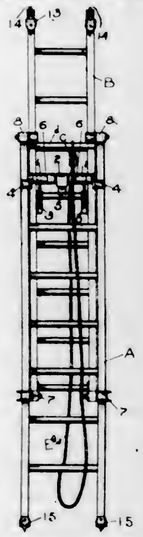
4. A curtain fixture comprising a hollow curtain stick, a rod sliding therein, a hollow head at the end of the stick, and a spring member adjustably connected to the head and also connected to the rod, and having a friction pad mounted thereon and adapted to project beyond the face of the head and to be retracted within the hollow thereof, substantially as described.

5. In a curtain fixture, a head, a holding device having a spring part, and adjustable means for controlling the flexure of the spring, said means being carried by the head.

6. In a curtain fixture, a stick, a holding device operatively associated therewith, said holding device including a spring, and means adjustable independently of the stick to control said spring.

7. In a curtain fixture, a stick, a head, a holding device on said head, said holding device including a spring, and means adjustable to control said spring.

856,875. EXTENSION-LADDER. BENJAMIN HUGHES, Montreal, and HERBERT N. YOUNG, Rockfield, Quebec, Canada, assignors to G. Alfred Morris, Montreal, Canada. Filed Apr. 9, 1906. Serial No. 310,793.



Claim.—1. In an extension ladder comprising a base section and a slidable section, the combination with a shouldered sleeve carrying a counterbalanced hook, a shouldered sleeve carrying a lever and means for elevating said slidable section.

2. In an extension ladder comprising a base section and a slidable section, the combination with a shouldered sleeve carrying a counterbalanced hook, an intermediate shouldered sleeve carrying an integral lever, means for elevating said slidable section, guide rollers at opposite sides of said slidable section, a casting supporting said rollers and a cheek piece, provided with a perforation, formed integral with said casting.

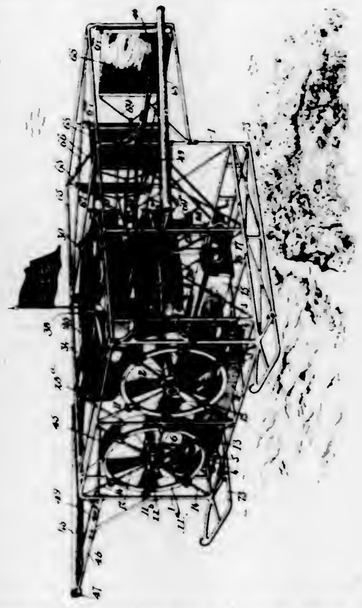
3. In an extension ladder comprising a base section and a slidable section, the combination with a shouldered sleeve carrying a lever, of a pair of shouldered sleeves, each of which carries a hook which is adapted to be retracted by said lever.

4. In an extension ladder comprising a base section and a slidable section, the combination of a rockable shouldered sleeve carrying an integral hook at each of the ends of and rotatable on a rung of said ladder, and an intermediate shouldered sleeve on said rung and carrying an integral lever adapted to engage said hook carrying sleeves at predetermined times.

5. In an extension ladder, a base section with rungs, a slidable section with rungs, interlockable sleeves on opposite end portions of one rung of the base section, a hook integral with said sleeves and a throw off lever integral with an intermediate sleeve, there being shoulders on said intermediate sleeves adapted to engage said interlockable sleeves at predetermined times.

6. In an extension ladder, the combination comprising a base section, a slidable section, rockable and shouldered sleeves carried by one rung of said base section, hooks integral with some of said sleeves, a throw off lever integral with an adjacent sleeve carried on the same rung and shoulders on said lever sleeve adapted to engage the hook carrying sleeve.

856,876. AIR-SHIP. WILLIAM HULL, Souris, Manitoba, Canada. Filed Apr. 7, 1905. Serial No. 254,308.



Claim.—1. The combination of a frame having braces in two parallel planes extending across the front thereof, braces in two parallel planes extending across the top of the same, a series of roller bearings mounted on the said braces in concentric circles, a plurality of propeller frames mounted on said bearings between the braces, two of said frames being located in front of the machine and two at the rear of the first two, the first two being in a vertical plane and the second two in horizontal planes, a propeller in each of said frames, means for rotating the propellers in the first two frames in opposite directions, and means for rotating the other two propellers in opposite directions.

2. The combination with the frame, of a pair of propellers arranged in the same vertical plane near the front thereof, means for driving said propellers in opposite directions, a pair of propellers arranged at the rear of the first-named propellers and in parallel horizontal planes, means for rotating said last-named propellers in opposite directions, said last-named propellers comprising inclined vanes, the edges of adjacent propellers being spaced apart from each other, and means whereby to permit the closing of the space between the vanes.

3. The combination with the frame, of a pair of vertical propellers thereon, means for rotating said propellers in opposite directions, a pair of horizontal propellers on the frames, means for rotating said propellers in opposite directions, said horizontal propellers each comprising a series of inclined vanes, a skeleton frame connecting each pair of adjacent vanes, said frame having a hinge connection with one of the vanes, and the other vane being provided with an extension for overlapping the skeleton frame.

4. An air-ship having a rotary propeller provided with pivoted wings, each wing having a projection pivotally connected with an adjacent wing, whereby the wings can be caused to close together so as to prevent the passage of air between them.

5. The combination of a frame, propellers thereon, means for operating said propellers, a pair of frames extending from the sides of the main frame, said last-named frames being higher at the front than at the rear, a roller extending along the outer edge of each of the said pair of frames, a flexible sheet adapted to be wound on said roller, flexible connections secured to said sheets, rods upon which said connections are adapted to be wound, and a crank or handle for rotating each of said rods, said roller being provided with a spring for winding the sheet upon it.

6. The combination of a frame, propellers thereon, means for operating said propellers, a pair of frames extending from the sides of the main frame, said last-named frame being higher at the front than at the rear, a roller extending along the outer edge of each of the said pair of frames, a flexible sheet adapted to be wound on said roller, flexible connections secured to said sheets, rods upon which said connections are adapted to be wound, and a steering device comprising a series of vertical rollers, a sheet adapted to be wound upon each roller, and means for drawing out said sheets from the rollers independently of each other.

7. The combination of a frame, a pair of inclined wings located along the sides of said frame, the amount of surface of said wings exposed to the air being adjustable, and a steering device, comprising a plurality of vertical rollers, a plurality of sheets, one adapted to be rolled on each roller, and means for drawing said sheets individually toward the center of the frame to leave varied amounts of surface exposed to the air.

8. A steering device, comprising three vertical rollers, three sheets, one adapted to be wound upon each roller, and means for drawing said sheets toward a common point from said rollers.

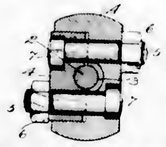
9. An air-ship having a steering device comprising a series of vertical sheets making an angle with each other, and means for varying the extent of the surface of said sheets which is exposed to the air.

10. In an air-ship, the combination of propelling means, a steering device comprising a series of vertical sheets, and wings located at the side of the ship.

11. In an air-ship, the combination of a steering device comprising vertical sheets located at the rear of the ship and extending forwardly toward the center of the ship, and inclined wings located at the side thereof.

12. An air-ship comprising a frame, inflatable bags thereon, said bags being flexible, and means for rolling up said bags into a small compass.

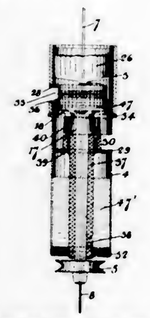
856,877. ROCK-DRILL CHUCK. CHARLES A. HULTQUIST, Lowell, Ariz. Filed Sept. 20, 1906. Serial No. 335,405.



Claim.—1. A drill chuck having a socket to receive the drill shank, a key fitting a chamber upon one side of the shank, and adapted to be compressed upon the drill shank, bolts extending through the key and the chuck upon opposite sides of the drill shank, said bolts having cylindrical heads eccentric to the body portion, correspondingly shaped sunken chambers in the key and the chuck upon opposite sides adapted to receive the heads of the bolts and nuts turnable upon the opposite ends of the bolts to lock the drill shank in the chuck, said chambers and bolt holes not intersecting the segmental drill-holding channels.

2. A drill chuck having a socket and a drill shank fitting therein, a key fitting a countersunk chamber upon one side of the chuck, and bolts by which said key is caused to clamp the drill shank within the chuck, said key having the ends constructed to make a slack fit whereby the key acts as an equalizer for the strain upon the bolts.

856,878. APPARATUS USED IN COVERING WIRES OR OTHER CORES WITH FIBROUS MATERIAL. FREDERICK HUTCHINS, Harlesden, England. Filed Oct. 19, 1906. Serial No. 339,708.



Claim.—1. An apparatus for covering a core with fibrous material, involving a rapidly revolving spindle for applying a stream of air-borne fibers to and around the core as a covering, the head of said spindle forming a vacuum chamber composed of a single annular wall, the said wall being pierced with a series of equi-distantly spaced elongated perforations, adapted while aiding in the separation of the fibers to admit of the passage of air but to exclude fibers, and an inclosed perforated covering provided with a central inlet orifice through which the core passes mounted in said head.

2. An apparatus for covering a core with fibrous material involving a tube, 3, with slotted mouth or opening, 33, in combination with a shelf or ledge, 28, projecting inwardly from the lip of the tube to deflect the fibers into the path of the revolving slotted-head and within the influence of the suction through the slots.

3. An apparatus for covering a core with fibrous material, involving a cup, a gauzed top, and a revolving spindle head, said top forming a support for said cup.

4. In an apparatus for covering a core with fibrous material, a vacuum chamber, detachable rings held within the wall of said chamber, and a perforated covering surface strained and clamped at its edge between the said rings and removable with the latter from said chamber.

5. In a machine for covering a core with fibers supplied to the point of covering in an air-borne continuous stream, a source of supply of unspun fibers, means for supply and support of the core and inclosing casing to aid in confining and directing the course of the stream of air and fibers floating therein and in formation of the spinning vortex of fibers and air, a hollow rotary spindle, a head carried thereby and having a series of perforations in its wall forming air-suction vents, a supporting annular flange at the interior of the head, a reticulated cover mounted on the flange, a holder carried by the spindle, a removable spring member supported by the holder and acting on the carrier for compressing and compacting the fibers thereon, and a clip coöperative with said spindle.

6. In an apparatus for covering a core with fibers, delivery means for the supply of fibers, a casing to guide direct and confine a current of air to cause it to loosen and carry fibers in a stream to the covering point, a rotary spindle provided with a central passage for the core, a head mounted on said spindle forming a chamber, a reticulated cover carried by the head and having a central eyelet through which the core passes, a holder carried by the spindle, a spring member supported by the holder for compressing and compacting the fibers on the core, a clip carried by the spindle and coöperative with the spring member, an oil reservoir for supplying oil to the spindle, and a packing carried by the casing and contacting with the head to prevent the air from escaping below the head.

7. In an apparatus for covering a core with fibers, delivery means for the supply of fibers, a casing to guide direct and confine a current of air to cause it to loosen and carry fibers in a stream to the covering point, a rotary spindle provided with a central passage for the core, a head mounted on said spindle forming a chamber, a reticulated cover carried by the head and having a central eyelet through which the core passes, a holder carried by the spindle, a spring member supported by the holder for compressing and compacting the fibers on the core, a clip carried by the spindle and coöperative with the spring member, an oil reservoir for supplying oil to the spindle, a packing carried by the casing and contacting with the head to prevent the air from escaping below the head, and a ledge supported by the casing for deflecting the supply of fibers.

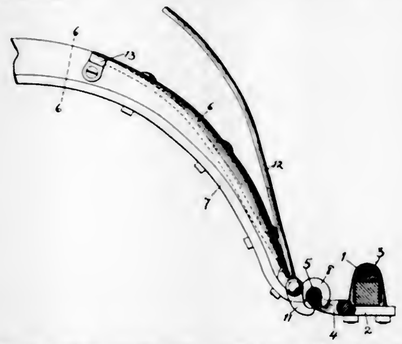
8. In a machine for covering a core with fibrous material, a centrally hollowed spindle and chambered head, a removable reticulated cover for the chamber in the spindle head, having a central inlet orifice, a cup supported by said cover, means for giving rapid rotary motion to the spindle, and a casing for guiding a stream of fibers and air to the central opening in the spindle head.

856,879. THILL-COUPLING. GEORGE H. HUTTON, Baltimore, Md. Filed July 10, 1906. Serial No. 325,436.

Claim.—1. In a thill coupling the combination of an axle having projecting jaws carrying a rounded rod; a coupling iron on the shaft or tongue to engage said rod; a prong fulcrumed on top of said coupling iron and projecting downward at the side of the latter to engage the coupled parts and means for operating said prong.

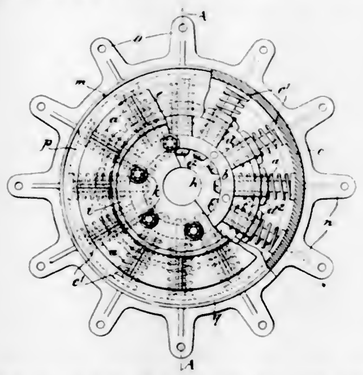
2. In a thill coupling the combination of an axle having forwardly-projecting jaws carrying a round rod; a coupling iron on the shaft or tongue to engage said round rod; a lever having two prongs which straddle the coupling iron and engage the coupled parts.

3. In a thill coupling the combination of an axle having forwardly-projecting jaws; a rounded rod sustained by said jaws; a coupling iron on the shaft or tongue and having its end sustained by the rod between said jaws; a rounded fulcrum seated on the lower end of the coupling iron and having spaced-apart prongs which project downwardly at opposite sides of said iron to engage the coupled parts and an arm for operating said fulcrum and prongs.



4. In a thill coupling the combination of an axle having two forward-projecting jaws carrying a round rod; a shaft or tongue prong having an iron which couples with said round rod; a lever fulcrumed on said iron and having two prongs which take under the coupled parts and a finger on the lever to project at the end of the said round rod.

856,880. SPRING-WHEEL FOR MOTOR-CARS AND OTHER VEHICLES. LOFTUS JACKSON and JOHN JACKSON, London, England, assignors to themselves and The Resilient Hub (Jackson's Foreign Patents) Syndicate Limited, London, England. Filed Mar. 10, 1906. Serial No. 305,403.



Claim.—1. In a spring wheel, inner and outer rings radially movable in relation to one another, spring holders each adapted to act at its inner and outer ends in an outward direction against the inner and outer rings respectively but disconnected therefrom, supplementary spring holders adapted to act against the inner ring and to be moved outward by the outer ring but disconnected from each ring, and springs each held between a pair of said spring holders and adapted to be compressed by inward movement of one of the holders of the pair and by outward movement of the other holder of the pair.

2. In a spring wheel, inner and outer rings radially movable in relation to one another, pairs of spring holders between said rings, one of the holders of each pair extending through the inner ring and adapted to act at its outer end against the inner surface of the outer ring and at its inner end against the inner surface of the inner ring but disconnected from each ring, and the other holder of each pair being adapted to act against the inner ring and to be moved outward by the outer ring and also disconnected from each ring, and coiled springs each held between a pair of said holders.

3. In a spring wheel, inner and outer rings radially movable in relation to one another, spindles each extending radially through the inner ring and provided at its outer end with a head adapted to bear and slide against the inner surface of the outer ring, and at its inner end with a stop adapted to bear against the inner surface of the inner ring, spring holders adapted to carry the inner ends of coiled springs and each arranged to surround one of said spindles, to bear against the inner ring, and to be moved outward by outward movement of the outer ring but capable of turning in a circular direction relatively to said outer ring, and coiled springs each arranged between the head of one of said spindles and the inner end of the corresponding spring holder.

4. In a spring wheel, the combination of inner and outer rings radially movable relatively to one another, spindles extending through the inner ring and having enlarged inner and outer ends adapted to bear against the inner and outer surfaces of the inner and outer rings respectively, recessed spring holders arranged between said rings and adapted to bear against the inner ring and to be moved outward by the outer ring but disconnected from such outer ring to allow of said ring moving radially inward and in a circumferential direction relatively to said spring holders, and coiled springs each surrounding one of said spindles and held between the outer enlarged end thereof and the inner end of the corresponding spring holder.

5. In a spring wheel, the combination of inner and outer rings that are movable in radial and circumferential directions relatively to one another, the outer ring carrying lateral projections, spindles extending through the inner ring and having enlarged inner and outer ends adapted to bear against the inner and outer surfaces of the inner and outer rings respectively, recessed spring holders arranged between said rings and adapted to bear against the inner ring and to engage with the lateral projections carried by the outer ring, said holders and projections being arranged to co-act with each other so as to allow of circumferential movement between them, of inward movement of the projections independent of said holders and to cause outward movement of said projections to cause outward movement of the corresponding holders, and coiled springs each held between the outer end of one of said spindles and the inner end of the corresponding spring holder.

6. In a spring wheel, inner and outer rings radially movable in relation to one another spring holders each adapted to act at its inner and outer ends in an outward direction against the inner and outer rings respectively but disconnected therefrom, supplementary spring holders adapted to act against the inner ring and to be moved outward by the outer ring but disconnected from each ring, springs each held between a pair of said spring holders and to be compressed by inward movement of one of the holders of the pair and by outward movement of the other holder of the pair and driving means adapted to rotate the outer ring and allow of radial movement thereof relatively to the inner ring.

7. In a spring wheel, inner and outer rings radially movable in relation to one another, spring holders each adapted to act at its inner and outer ends in an outward direction against the inner and outer rings respectively but disconnected therefrom, supplementary spring holders adapted to act against the inner ring and to be moved outward by the outer ring but disconnected from each ring, springs each held between a pair of said spring holders and to be compressed by inward movement of one of the holders of the pair and by outward movement of the other holder of the pair and driving means connected to said inner ring and loosely engaging said outer ring and adapted to rotate the same but allow of limited radial and circumferential motions between said rings.

8. In a spring wheel, inner and outer rings movable relatively to one another in a radial and circumferential direction, radially arranged spindles each of which is adapted to bear at its inner and outer ends against the inner surfaces of the inner and outer rings respectively and to extend through the inner ring, hollow cylindrical spring holders arranged between said rings but disconnected therefrom and adapted to bear against the inner ring and to be moved outward by the outer ring and springs each of which bears at one end against the outer end of one of said bolts and at the other end against the inner end of one of said holders.

9. In a spring wheel, inner and outer rings movable relatively to one another in a radial and circumferential direction, radially arranged spindles each of which is adapted to bear at its inner and outer ends against the inner surfaces of the inner and outer rings respectively and to extend through the inner ring, hollow cylindrical spring holders each extending around one of said spindles, each spring holder bearing at its inner end against the outer surface of the inner ring and having lateral flanges at its outer end, lateral flanges connected with the outer ring and adapted to co-operate with the flanges on said holders, and coiled springs each of which bears at one end against the outer end of the corresponding spindle and is held at its inner end in one of said spring holders.

10. In a spring wheel, inner and outer rings movable relatively to one another in a radial and circumferential direction, radially arranged spindles each of which is adapted to bear at its inner and outer ends against the inner surfaces of the inner and outer rings respectively and to extend through the inner ring, hollow cylindrical spring holders each extending around one of said spindles, each spring holder bearing at its inner end against the outer surface of the inner ring and having lateral flanges at its outer end, lateral flanges connected with the outer ring and adapted to co-operate with the flanges on said holders, coiled springs each of which bears at one end against the outer end of the corresponding spindle and is held at its inner end in one of said spring holders, and driving means whereby power communicated to the wheel hub and inner ring will be transmitted to the outer ring and allow of relative radial and circumferential movement of the two rings.

11. In a spring wheel, inner and outer rings movable relatively to one another in a radial and circumferential direction radially arranged spindles each of which is adapted to bear at its inner and outer ends against the inner surfaces of the inner and outer rings respectively and to extend through the inner ring, hollow cylindrical spring holders each extending around one of said spindles, each spring holder bearing at its inner end against the outer surface of the inner ring and having lateral flanges at its outer end, lateral flanges connected with the outer ring and adapted to co-operate with the flanges on said holders, coiled springs each of which bears at one end against the outer end of the corresponding spindle and is held at its inner end in one of said spring holders, a driving plate connected to the inner ring and formed with outwardly extending lugs or projections, and a driving part connected to the outer ring and having corresponding recesses wherein the lugs or projections on the first mentioned driving plate loosely engage.

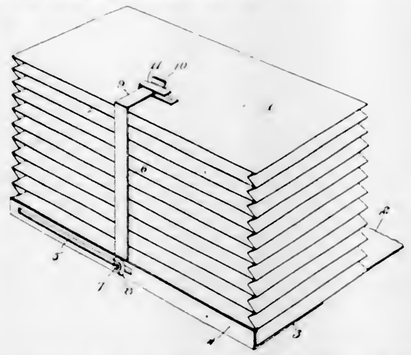
12. A spring hub comprising an inner ring, side plates between which said ring is held, an outer ring having inwardly extending side rings arranged to slide between said side plates, and formed with inner lateral extensions, spindles extending radially through said inner ring and having enlarged inner and outer ends adapted to act against the inner surfaces of the inner and outer rings respectively, recessed spring holders arranged to bear at their inner ends against the inner ring and provided at their outer ends with lateral flanges arranged outside the lateral flanges on the side rings and to co-operate therewith as set forth, and coiled springs each surrounding one of said spindles and held between the outer end thereof and the inner end of the corresponding spring holder.

13. A spring hub comprising an inner ring, side plates between which said ring is held, an outer ring having inwardly extending side rings arranged to slide between said side plates and each provided at its inner side with an annular lateral flange, spindles extending radially through said inner ring, and having enlarged inner and

outer ends adapted to act against the inner surfaces of the inner and outer rings respectively, recessed spring holders arranged to bear at their inner ends against the inner ring and provided at their outer ends with lateral flanges arranged outside the annular lateral flanges on the side rings and to co-operate therewith as set forth, and coiled springs each surrounding one of said spindles and held between the outer end thereof and the inner end of the corresponding spring holder.

14. A spring hub comprising an inner ring, side plates between which said ring is held, an outer ring having inwardly extending side rings arranged to slide between said side plates and formed with inner lateral extensions, one of said plates being formed of a polygonal shape and loosely engaging a correspondingly shaped recess in the adjacent side of the outer ring, spindles extending radially through said inner ring and having enlarged inner and outer ends adapted to act against the inner surfaces of the inner and outer rings respectively, recessed spring holders arranged to bear at their inner ends against the inner ring and provided at their outer ends with lateral flanges arranged outside the lateral flanges on the side rings and to co-operate therewith as set forth, and coiled springs each surrounding one of said spindles and held between the outer end thereof and the inner end of the corresponding spring holder.

856,881. FILE. DUVAL JOHNSON, Pine Bluff, Ark. Filed June 13, 1906. Serial No. 321,474.



Claim.—1. The combination with a collapsible file, and means operable independently of the movement of said file for securing said file in extended condition.

2. The combination with a collapsible file containing a series of pockets, and means operable independently of the movement of said file for securing said file extended to maintain the pockets open.

3. The combination with a collapsible file, of a strip connected with the file and movable independently thereof, said strip being adapted to be disposed transverse the width of the file to secure the file extended in accordance with the length of the strip.

4. The combination with a collapsible file, of a strip secured thereto and movable independently thereof, said strip being adapted in one position to secure the file extended in accordance with the length of the strip.

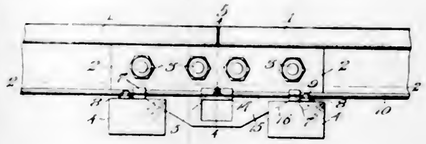
5. The combination with a collapsible file, of a plate secured thereto, a strip movably secured to the plate, and means carried by the file and adapted to be engaged by the free end of the strip, whereby to lock the file in extended condition.

6. The combination with a collapsible file, of a plate secured to the rear wall thereof, a strip movably secured to the plate, and a keeper secured to the front wall of the file and adapted to be engaged by the free end of the strip.

7. The combination with a collapsible file, of a plate secured to the rear wall thereof, a strip pivotally connected to the plate and formed on its free end with a latching extension, and a keeper secured to the front wall of the file and adapted to be engaged by the extension of the strip.

8. The combination with a collapsible file, of a plate secured to the rear wall thereof and formed with a laterally etxending flange to underlie the bottom of the file, a strip having a pivot pin mounted for movement in a longitudinally arranged slot formed in the flange, the free end of the strip being formed with a latch extension, and a keeper secured to the front wall of the file and adapted to be engaged by the extension of the strip to secure the file extended.

856,882. RAIL-JOINT. JEFFERSON D. JONES, Temple, Tex. Filed Feb. 1, 1907. Serial No. 355,233.



Claim.—1. A rail joint comprising a pair of rails, a supporting member located under the abutting ends of the rails, and main and auxiliary retaining means on the supporting member arranged to engage over the bases of the rails.

2. A rail joint comprising a pair of rails, a sheet metal supporting plate having its longitudinal edges bent downwardly into strengthening flanges, upwardly bent lugs stamped out from the flanges and arranged to engage over the rail bases at their meeting ends, and bolts extending through the lugs and body portion of the plate for clamping the parts together.

3. A rail joint comprising a pair of rails, a supporting plate located under the rails, apertured lugs adjacent the corners of the said plate for receiving spikes, oppositely disposed retaining hooks adjacent the ends of the plate for engaging the bases of the rails, means carried by the plate and arranged to grip both ends of the rails, and fastening devices for clamping the said means to the rail bases.

4. A rail joint comprising a pair of rails having their abutting ends spaced apart, a supporting plate disposed under the rails and secured thereto, oppositely disposed members on the plate arranged to engage the bases of both rails, and bolts passing through the members and plates and between the rails.

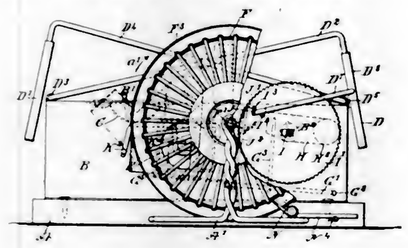
5. A rail joint comprising a pair of rails having their ends abutting, a supporting plate disposed under the rails and provided with longitudinally exteading depending flanges, and retaining means stamped out from the flanges for engaging the rail bases.

6. A rail joint comprising a pair of rails, a supporting plate disposed under the same at their abutting ends and provided with depending flanges, hook shaped lugs stamped out from the flanges and bent upwardly over the plate for engaging the bases of the rails, and retaining means on opposite sides of the said lugs for engaging the rail bases and co-operating with the lugs to prevent lateral displacement of the rails.

7. A rail joint comprising a pair of rails, a supporting plate disposed under the abutting ends and provided with longitudinally extending depending flanges integrally connected with the edges of the plate, hook shaped and oppositely disposed members connected with the plate, and bolts for clamping said members and plates to the rails.

8. A bridge or supporting plate for rails comprising a plate-like body having transversely extending apertured lugs at its corners, transversely extending and oppositely disposed members adjacent the ends of the body and formed integral therewith, oppositely disposed members at the middle of the body and formed integral therewith, and depending flanges extending longitudinally of the body at the side edges thereof.

856,883. ANIMAL-TRAP. JAMES M. KELLOGG, Bozeman, Mont. Filed Apr. 23, 1906. Serial No. 313,181.



Claim.—1. An animal trap comprising a revoluble cage, an entrance chamber connected with the said cage, a door for closing the entrance to the said chamber, means for opening the door on turning the said cage and a releasing device for the said door.

2. An animal trap comprising a revoluble cage, an entrance chamber connected with the said cage, a door for closing the entrance to the said chamber, means for opening the door on turning the said cage, a movable platform in the said chamber, and a releasing device for the said door and controlled by the said platform.

3. An animal trap comprising a revoluble cage, an entrance chamber connected with the said cage, a door for closing the entrance to the said chamber, a pinion on the shaft of the said revoluble cage, a shaft, a gear wheel on the shaft and adapted to mesh with the said pinion, said gear wheel having a crank arm adapted to engage the said door to raise the same, and a platform movable in the said chamber and having a counterweight for moving the said platform into a raised position, the shaft of the said gear wheel being connected with the said platform to move the said gear wheel into meshing position with the said pinion on raising the platform and to move the said gear wheel out of meshing position on lowering the platform.

4. An animal trap comprising a revoluble cage, an entrance chamber connected with the said cage, a door for closing the entrance to the said chamber, a pinion on the shaft of the said revoluble cage, a gear wheel adapted to mesh with the said pinion and having a crank arm adapted to engage the said door to raise the same, a platform movable in the said chamber and having a counterweight for moving the said platform into a raised position, the shaft of the said gear wheel being connected with the said platform to move the said gear wheel in meshing position with the said pinion on raising the platform and to move the said gear wheel out of meshing position on lowering the platform, and a stopping device for the said gear wheel and controlled by the platform.

5. An animal trap comprising a revoluble cage, an entrance chamber connected with the said cage, a door for closing the entrance to the said chamber, a pinion on the shaft of the said revoluble cage, a gear wheel adapted to mesh with the said pinion and having a crank arm adapted to engage the said door to raise the same, a platform movable in the said chamber and having a counterweight for moving the said platform into a raised position, the shaft of the said gear wheel being connected with the said platform to move the said gear wheel in meshing position with the said pinion on raising the platform and to move the said gear wheel out of meshing position on lowering the platform, and a swing gate in the connection between the said entrance chamber and the said revoluble cage.

6. An animal trap comprising a revoluble cage, an entrance chamber connected with the said cage, a door for closing the entrance to the said chamber, a pinion on the shaft of the said revoluble cage, a gear wheel adapted to mesh with the said pinion and having a crank arm adapted to engage the said door to raise the same, a platform movable in the said chamber and having a counterweight for moving the said platform into a raised position, the shaft of the said gear wheel being connected with the said platform to move the said gear wheel in meshing position with the said pinion on raising the platform and to move the said gear wheel out of meshing position on lowering the platform, a swing gate in the connection between the said entrance chamber and the said revoluble cage, and a tripping arm in the said connection and adapted to lock the said platform temporarily in a lowermost position and to lock the swing gate against opening.

7. An animal trap comprising a revoluble cage, an entrance chamber connected with the said cage, a door for closing the entrance to the said chamber, a pinion on the shaft of the said revoluble cage, a gear wheel adapted to mesh with the said pinion and having a crank arm adapted to engage the said door to raise the same, a platform movable in the said chamber and having a counter-weight for moving the said platform into a raised position, the shaft of the said gear wheel being connected with the said platform to move the said gear wheel in meshing position with the said pinion on raising the platform and to move the said gear wheel out of meshing position on lowering the platform, a swing gate in the connection between the said entrance chamber and the said revoluble cage, and a tripping arm in the said connection for locking and releasing the said gate.

8. An animal trap comprising a revoluble cage, an entrance chamber, a gangway connecting the entrance chamber with the said cage, a movable platform in the said entrance chamber, a swing gate in the said gangway adjacent to the cage, and a tripping arm in the gangway adjacent to the entrance chamber, the tripping arm serving to lock the platform in a lowermost position and to lock and release the said gate.

9. In an animal trap, a revoluble cage, an entrance chamber having communication with the cage, means controlling admission to the entrance chamber, and means whereby the admission controlling means is operated by the revolution of the cage.

10. In an animal trap, a revoluble cage, an entrance chamber having communication with the cage, a door for the entrance chamber, and means whereby the door is opened by the revolution of the cage.

11. In an animal trap, a revoluble cage, an entrance chamber having communication with the cage, a door for the entrance chamber, means for operating the door from the cage, a platform in the entrance chamber, and means for controlling the door operating means from the platform.

12. In an animal trap, a revoluble cage, an entrance chamber having communication with the cage, a door for the entrance chamber, a shaft mounted in the entrance chamber, means for operating the shaft from the cage, means for operating the door from said shaft, a platform in the entrance chamber, and means for controlling the shaft operating means from the platform.

13. In an animal trap, a revoluble cage, a shaft upon which the cage is mounted, an entrance chamber having communication with the cage, a door for the entrance chamber, a shaft mounted in the entrance chamber, gearing for operating the shaft from the cage shaft, means for operating the door from the said gearing, a platform in the entrance chamber, and means for throwing the said gearing out of mesh from the platform.

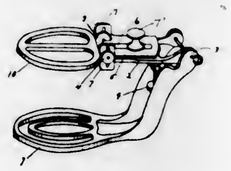
14. In an animal trap, a cage, an entrance chamber, a tilting platform in the entrance chamber, a passage connecting the cage and entrance chamber, a gate for said passage, and a tripping arm in the passage and serving to lock and release the gate and to lock the platform in its lowermost position after it has been tripped.

15. In an animal trap, a cage, an entrance chamber, a passage connecting the cage and chamber, a pivoted gate for the passage, a tripping arm in the passage and provided with a member with which the gate engages, and a tilting platform in the entrance chamber and provided with an arm engaging the tripping arm.

856,884. ATTACHMENT FOR DENTAL ARTICULATORS. MILTON H. KNAPP, Saginaw, Mich. Filed Aug. 16, 1906. Serial No. 330,846.

Claim.—1. The combination with a dental articulator, of a slotted plate secured thereto, slotted ears located

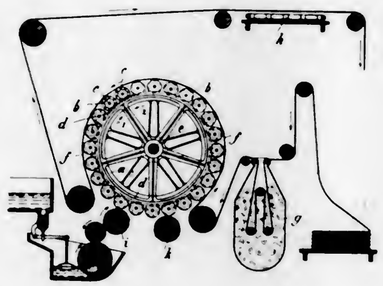
at the outer end of the plate, an upper jaw section, apertured lugs carried by the section, and fastening means for connecting the lugs and ears, to permit vertical linear and swinging adjustments of the sections relative to the plate.



2. An attachment for dental articulators comprising a plate and an upper jaw section loosely connected to the plate to permit a vertical adjustment of the jaw section independently of the plate.

3. The combination with a dental articulator, of a suitably supported plate, and an upper jaw section pivotally and vertically adjustable relative to and independently of the plate.

856,885. APPARATUS FOR APPLYING FLUIDS TO FABRICS. CARL F. KÜBLER, Düsseldorf, Germany. Filed Sept. 18, 1906. Serial No. 335,136.



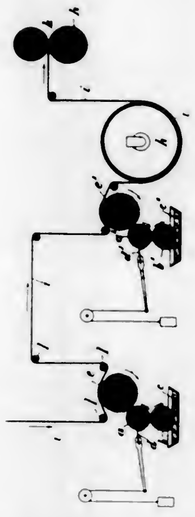
Claim.—In an apparatus for applying a fluid to a fabric, the combination of a rotary cylindrical frame, a shaft therefor, a plurality of rolls journaled in the frame at equal distance from its axis, a gear on each roll, a gear rotatable on the shaft in mesh with the aforesaid gears and adapted to rotate the rolls independent of the frame, color-applying devices mounted in the path of the rolls, and means to hold the fabric to be printed in contact with the rolls.

856,886. METHOD OF APPLYING SMALL QUANTITIES OF FLUIDS ON FABRICS. CARL F. KÜBLER, Düsseldorf, Germany. Filed Sept. 18, 1906. Serial No. 335,137.

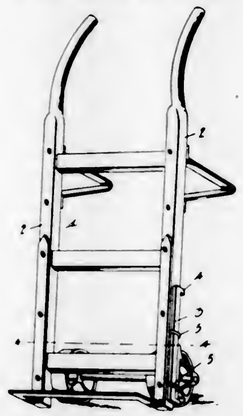
Claim.—1. A method of applying fluids to the surface of a fabric which consists in applying the liquid to an intaglio or recessed surface, wiping the surface and brushing the liquid contained in the intaglio recesses onto the fabric.

2. A method of applying fluids to the surface of a fabric which consists in applying the liquid to an intaglio or recessed surface, wiping the surface and brushing the liquid contained in the intaglio recesses onto a stretched fabric unbacked at the point of brushing.

856,886.



856,887. TRUCK. LEANDER KUYKENDALL, Riverside, Cal. Filed Jan. 10, 1907. Serial No. 351,673.



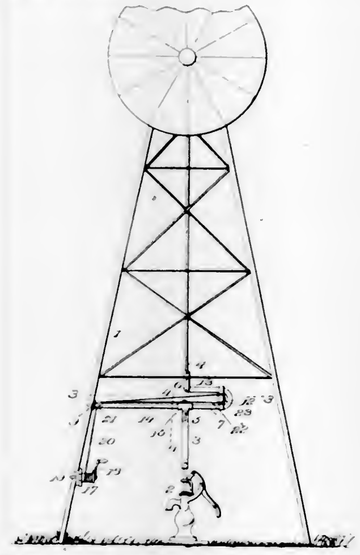
Claim.—1. The combination in a truck having holes in the outer faces and near the lower ends of the side bars of its frame, of two elongated auxiliary bars, having vertical integral extensions on their under edges near their ends; clips adapted to removably secure the inner faces of said auxiliary bars against the outer faces of the side bars of the truck frame; rivets working in said holes in the side bars of said truck frame, with means for holding the heads of said rivets in engagement with said auxiliary bars, substantially as described.

2. In a truck and in combination with the side rail thereof, bearing clips attached to said rails, auxiliary extension bars arranged for longitudinal movement in said bearing clips, the side rails being provided with outwardly opening sockets situated at points between the ends of the auxiliary bars, locking members arranged for movement in the sockets and to bear on the inner faces of the bars for fixing them against movement, and springs

disposed in the sockets to act upon the locking members and press them to locking position.

3. In a truck and in combination with its side rails, bearings attached thereto, elongated extension bars arranged for longitudinal movement in said bearings, the side rails being provided with sockets disposed at points between the ends of the extension bars, locking members loosely arranged in said sockets and provided at their outer ends with heads to bear on the inner faces of the extension bars for holding them against movement, and springs arranged in the sockets for pressing the locking members to locking position.

856,888. STROKE-ADJUSTER FOR WINDMILLS. FRANK S. LAFLIN, Sears, Ill. Filed Feb. 21, 1907. Serial No. 358,645.



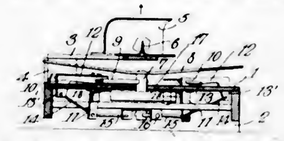
Claim.—1. In combination, a sectional pump rod a track formed with a short leg and a long leg, a support, means for pivotally connecting the short leg of the track to one section, means for pivotally connecting the long leg to the support, a sleeve pivotally connected to the other said pump rod section and slidably mounted on the track, and means for sliding the sleeve on the track and moving the pump rod section to which said sleeve is connected to alter the stroke of the pump rod section carrying the sleeve.

2. In combination, a pump rod formed in sections, a track pivotally connected to one of said sections, a sleeve slidably mounted on the track, and pivotally connected to the other said pump rod section, and means for sliding the sleeve on the track and moving the pump rod section to which said sleeve is connected to alter the stroke of the pump rod section carrying the sleeve.

3. In combination, a sectional pump rod, a track pivoted to one pump rod section, a support, means for pivotally connecting the track to the support, a sleeve slidably mounted on the track and pivotally connected to the other said pump rod section, a guide mounted on the track, guides mounted on the support, a drum, a rope connected to the sleeve and passing over the guide on the track and over one of the guides on the support to the drum, a second rope connected to the sleeve and passing over one of the guides on the support then to the drum, the movement of the drum operating the ropes and moving the sleeve and the pump rod section with which it is connected to alter the stroke of said pump rod.

4. In combination, a sectional pump rod, a support, a track having one end pivotally connected to a pump rod section and extending outwardly therefrom and bent upon itself and extending beyond the point of connection with the pump rod section, means for pivotally connecting the said extended end to the support, a sleeve slidably mounted on the track, and means for sliding the sleeve either side the point of connection of the pump rod section and the track and moving the pump rod section to which said sleeve is connected.

856,889. ANIMAL-TRAP. CHARLES F. LAMP, Durant, Iowa. Filed Nov. 19, 1906. Serial No. 344,117.



Claim.—1. In a trap the combination with rotatable knives and means for actuating the same; of means for holding the knives against movement, and oppositely disposed simultaneously movable tripping devices for releasing said means.

2. In a trap the combination with rotatable knives and means for imparting movement thereto; of an arm movable with the knives, a holding device in the path of the arm, and simultaneously movable tripping devices for actuating the holding device.

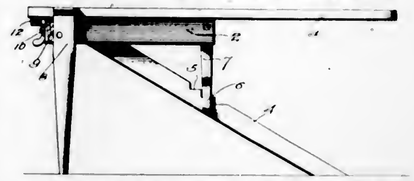
3. A trap comprising spring actuated rotatable knives, an arm rotatable therewith, a pivoted holding device in the path of the arm and constituting a stop therefor, and simultaneously movable tripping devices for withdrawing the stop from the path of the arm.

4. A trap comprising rotatable knives, means for rotating the knives, an arm movable with the knives, a holding device in the path of the arms and constituting a stop therefor, and oppositely extending simultaneously depressible tripping devices connected to the holding device for withdrawing the same from the path of the arm.

5. In a trap the combination with rotatable knives and a spring for actuating them; of means for normally holding the knives against rotation, oppositely extending tripping devices for releasing said means, and a bait holder interposed above and adjacent the tripping devices.

6. In a trap the combination with rotatable devices and a spring for actuating them; of oppositely extending holding devices, an arm movable with the rotatable devices and adapted to be stopped by either of the holding devices, means for moving said holding devices out of the path of the arm simultaneously, and depressible tripping devices carried by said holding devices.

856,890. IRONING-TABLE. WILLIAM C. LOVE, Florence, Tex. Filed Jan. 7, 1907. Serial No. 351,208.

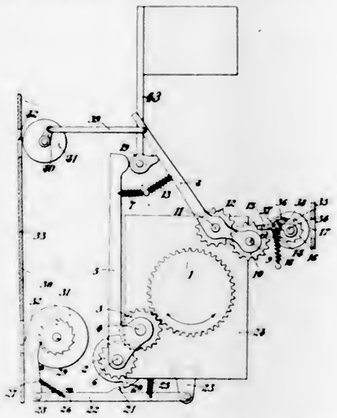


Claim.—1. An ironing table having connected to its under side a pivoted forwardly-inclined supporting leg having in its upper edge a series of notches, a pivoted supporting arm connected to the under face of said table and having a bifurcated lower end to engage the notches in said inclined leg, a pair of pivoted supporting legs having inclined or beveled upper ends connected to the rear end of said board, a cross-bar connecting the upper ends of said legs, a stop block arranged on the under side of the iron-

ing board to form a keeper and a turn button pivotally mounted on the cross-bar of said legs to engage said keeper and hold the legs in an operative position.

2. An ironing table having on its under side longitudinally disposed cleats and a transversely disposed block arranged at the rear end of said cleats, a forwardly inclined supporting leg having in its upper edge a series of notches, a supporting arm pivotally mounted between the forward ends of said cleats and having a bifurcated lower end to engage the notches in said inclined leg, a pair of rear supporting legs having inclined or beveled upper ends and pivotally mounted on the opposite ends of said transverse block, a cross-bar to connect the upper ends of said legs, a stop block arranged on the under side of the ironing board to form a keeper, and a turn button pivotally mounted on the cross-bar of said legs to engage said keeper and hold the legs in an operative position, substantially as described.

856,891. FARE-INDICATOR. CHARLES MASCART, Paris, France. Filed Nov. 13, 1906. Serial No. 343,251.



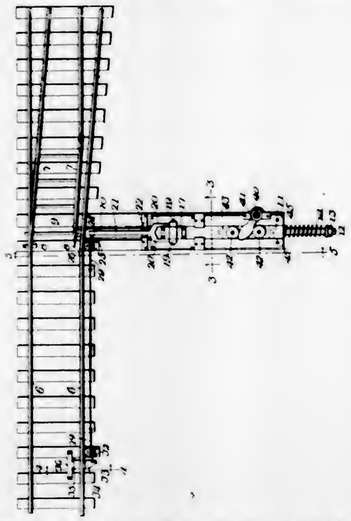
Claim.—1. In time and distance fare indicating apparatus, the combination with a clock mechanism, of a pair of levers, means carried by one of said levers and engaging with the clock mechanism for operating the fare indicator, means carried by the other lever and operated from the clock mechanism for actuating a device for totalizing the duration of breakdowns, and means for shifting said levers in opposite directions, causing thereby the discontinuance of the operation of the fare indicator and the operation of the totalizing device for breakdowns.

2. The combination with a fare indicator and a totalizing device for breakdowns, of a clock mechanism, shiftable motion-transmitting mechanism for conveying motion from the clock mechanism to the fare indicator, shiftable motion-transmitting mechanism for conveying motion from the clock mechanism to the totalizing device, and means for alternately throwing said motion transmitting-mechanisms out of operative connection with the clock mechanism.

3. The combination with a fare indicator and a totalizing device for breakdowns, of a clock mechanism, a shiftable lever and pinion mechanism for conveying motion from the clock mechanism to the fare indicator, a shiftable lever and pinion mechanism for conveying motion from the clock mechanism to the totalizing device, and a cam adapted to engage with the lever and pinion mechanisms for shifting them alternately out of operative engagement with said clock mechanism.

4. In an apparatus of the character described, the combination with a flag staff, of a clock mechanism, a fare indicator operated from the clock mechanism, a totalizing device for breakdowns operated from the clock mechanism, and means actuated by the flag staff for discontinuing the operation of the fare indicator by the clock mechanism and throwing into operation the totalizing device.

856,892. AUTOMATIC SWITCH. GEORGE MATTHEWS, Granville, Ohio. Filed Nov. 2, 1906. Serial No. 341,775.



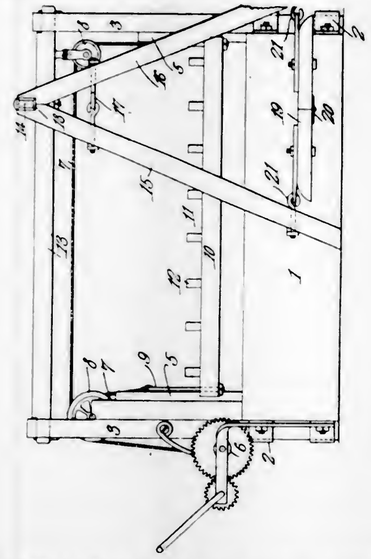
Claim.—1. In a switch, the combination with a switch lever, of a base plate, a boxing slidable thereon and having a pair of rollers thereon between which an arm of the lever extends, a switch rod extending through and slidable in the boxing, a spring coiled around the switch rod and bearing against the boxing and tending to shift the rod and close the switch, a latch carried by the boxing and engaging the switch rod to prevent relative movement thereof, and car-actuated means to release the latch.

2. In a switch, the combination of a notched switch rod, a boxing slidable on the rod, a switch lever connected to the boxing, a latch pin carried by the boxing and arranged to engage in the notch to lock the rod and boxing together, a spring between the boxing and rod, under compression when the boxing and rod are locked together and adapted to shift the rod in the boxing and close the switch when the latch is released, a latch lever pivoted beside the boxing, a swinging link connecting the lever and the pin and adapted to release the pin when the lever is turned and to turn the lever when the switch is opened, and a car-actuated trip connected to the lever and adapted to release the pin.

3. In a switch, the combination of a switch point and rod, a switch lever, connections between the rod and lever including a latch pin which is movable laterally with the rod, and perpendicularly with respect thereto to connect or disconnect said rod and switch lever, a car-actuated trip, a lever connected to the trip, and a swinging link connecting the lever and pin and extending at an angle to the former and adapted to rock the same when the rod is shifted.

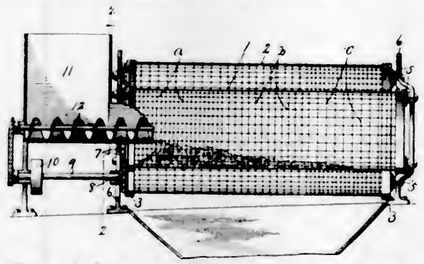
856,893. DEVICE FOR HANDLING AND SCALDING HOGS. ROBERT A. MENEFEE, Albright, W. Va. Filed Feb. 23, 1907. Serial No. 358,915.

Claim.—1. An apparatus of the character indicated comprising a tank, pockets attached to said tank, uprights fitting in said pockets guides mounted upon the uprights, a windlass attached to one of the uprights, a beam connecting the upper ends of the uprights together, a cradle mounted for movement along the guides, pulleys journaled above the cradle and ropes attached to the cradle and the windlass and passing over said pulleys.



2. An apparatus of the character indicated comprising a tank, pockets attached to said tank, uprights fitting in said pockets, guides mounted upon the uprights, a windlass attached to one of the uprights, a beam connecting the upper ends of the uprights together, a cradle mounted for movement along the guides and having bars which receive the said guides between their ends, pulleys journaled above the cradle and ropes attached to the cradle and the windlass and passing over said pulleys.

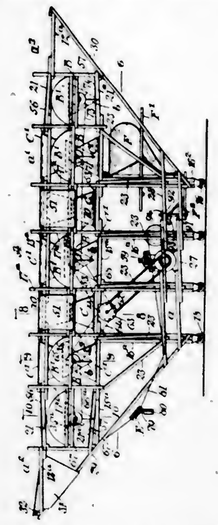
856,894. CORN-SILKING MACHINE. IRVING S. MERRELL, Syracuse, N. Y., assignor to Merrell-Soule Company, Syracuse, N. Y., a Corporation of New York. Filed June 26, 1905. Serial No. 267,106.



Claim.—1. In a corn silking machine, two concentric rotary and inclined screen cylinders arranged one within the other, the meshes at the higher end of the inner cylinder being finer than those at the lower end, and the meshes at the higher end of the outer cylinder being coarser than those at the lower end, and means to rotate said cylinders.

2. In a corn-silking machine, a rotary screen cylinder having a portion thereof of comparatively fine mesh, and another portion thereof, of comparatively coarse mesh, a second rotary screen cylinder, having a portion thereof of comparatively coarse mesh inclosing the fine mesh portion of the first named screen and also having a fine mesh portion surrounding the coarse mesh portion of said first named screen.

856,895. AERIAL VESSEL. LYCURTES D. MERRICK, New York, N. Y. Filed May 23, 1906. Serial No. 318,335.



Claim.—1. In aerial vessels, a skeleton frame, hooded paddle wheels mounted in the frame, means for driving the paddle wheels, and sustaining devices between the paddle wheels, which receive, temporarily hold and rectify the disturbed currents of air and direct them to the following hoods and paddle wheels, as described.

2. In aerial vessels, a skeleton frame, a series of paddle wheels mounted in the frame, hoods over the paddle wheels, and sustaining devices which receive the currents of air from the paddle wheels, temporarily retain the air and direct it to other paddle wheels and their hoods, as described.

3. In aerial vessels, a skeleton frame, paddle wheels mounted to revolve in the frame, stationary hoods for the paddle wheels, and sustaining devices between the hooded paddle wheels, which sustaining devices serve as receivers and conductors of the currents of air delivered to them by the paddle wheels, as described.

4. In aerial vessels, a skeleton frame, hooded paddle wheels mounted in the frame, means for driving the paddle wheels, sustaining devices located between the paddle wheels to receive the air therefrom, which air is directed to the upper portion of the said retainers, and aeroplanes located above and below the said retainers.

5. In aerial vessels, a skeleton frame, hooded paddle wheels mounted in the frame, substantially diamond-shaped sustainers located between the paddle wheels, receiving air therefrom and compressing said air, the air from the paddle wheels being directed upward within the sustainers, an aeroplane stationarily located beneath each sustainer, and elongated aeroplanes stationarily located above said sustainers, extending down at their outer sides and spaced therefrom, as described.

6. In aerial vessels, a skeleton frame, hooded paddle wheels mounted to revolve in said frame, means for revolving said paddle wheels, stationary, substantially diamond-shaped sustainers located between the paddle wheels, open at the front and at the rear, which sustainers are made in an upper and a lower section, the opposing ends of the sections being contracted, spaces intervening between the opposing ends of the sections, and aeroplanes stationarily located above and below the sustainers.

7. In aerial vessels, a skeleton frame, hooded paddle wheels mounted to revolve in said frame, substantially diamond-shaped sustainers located between the said paddle wheels and receiving the air therefrom and air direct from the atmosphere, which sustainers are open at the front and at the rear, aeroplanes located above and below the sustainers and at the forward and rear portion of the frame, the said frame being also provided at its extreme forward portion with an arched aeroplane and at its extreme rear portion with a flat aeroplane.

8. In aerial vessels, a skeleton frame divided into a series of skeleton cubical compartments, hooded paddle wheels and sustainers in alternate engagement located within the said compartments, the said sustainers being substantially diamond-shaped and open at the front and at the rear and provided with means for admitting air at its side portions, means for driving the paddle wheels, a forward arched aeroplane at the upper forward portion of the frame, a flat aeroplane located at the upper rear portion of the frame, triangular aeroplanes located at the forward and rear portions of the said vessel outside of the line of paddle wheels and sustainers, and flat aeroplanes located one above and the other below each of the sustainers.

9. In aerial vessels, a skeleton frame, a series of vertically alining upper and lower hooded paddle wheels, the hoods having forward and bottom openings only, means for rotating the paddle wheels, and substantially diamond-shaped sustaining devices between said hooded paddle wheels, which sustaining devices present wedge shaped upper, lower and side surfaces, said sustaining devices being open at the front and rear and their front and rear edges being tapered in opposite directions from the top to the central portion of the sides and the bottom to the same points at the sides, all arranged for operation substantially as described.

10. In aerial vessels, a skeleton frame, a series of vertically alining upper and lower hooded paddle wheels, the hoods having forward and bottom openings only, means for rotating the paddle wheels, and substantially diamond-shaped sustaining devices between said hooded paddle wheels, which sustaining devices present wedge-shaped upper, lower and side surfaces, said sustaining devices being open at the front and rear and their front and rear edges being tapered in opposite directions from the top to the central portion of the sides and the bottom to the same points at the sides, all arranged for operation substantially as described, the said sustaining devices being constructed in an upper and a lower section having spaces intervening their opposing ends, and means for rigidly holding the sustaining devices in the said frame.

11. In aerial vessels, an operating medium consisting of a hood closed except at its bottom and forward portions, and a paddle wheel mounted to revolve partially within and partially without the hood, which paddle wheel consists of a triangular hub and triangularly-arranged scoop shaped blades secured to the hub.

12. In aerial vessels, an operating medium consisting of a hood closed except at its bottom and forward portions and a paddle wheel mounted to revolve partially within and partially without the hood, comprising a shaft, a triangular hub upon the shaft, and blades secured to the corners of the hubs, which blades have substantially concaved under and convexed outer surfaces, as set forth.

13. In aerial vessels, an operating mechanism consisting of a hood closed except at its bottom and forward portions, and a paddle wheel mounted to revolve partially within and partially without the hood, comprising a shaft, a triangular hub upon the shaft, and blades secured at the corners of the hub, which blades are scoop-shaped, having concaved under and convexed outer surfaces, and triangular external skeleton bracings for the wheel, having attachment to the outer longitudinal portions of the blades of the wheel.

14. In aerial vessels, opposing operating devices, each comprising a hood and a paddle wheel mounted to turn partially within and partially without the hood, and a sustaining device located between the operating devices and in communication with both, each of which sustaining devices is substantially diamond-shaped and open at the front and rear, as specified.

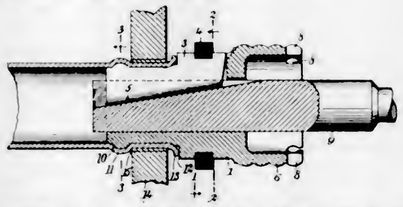
15. In aerial vessels, opposing operating devices, each comprising a hood and a paddle wheel mounted to turn partially within and partially without the hood, a sustaining device located between the operating devices, and in communication with both, which sustaining device is substantially diamond-shaped, is stationary and is open at the front and at the rear, whereby to present upper and lower side exterior surfaces, the front and rear edges being inclined inwardly and downwardly from their upper portions to a central line, and inclined upwardly and inwardly from the bottom to the said central line, said sustaining device being also provided with side openings, and means for directing the air from the paddle wheel with force against the upper section of the sustaining device.

16. In aerial vessels, a body frame, a bow and a stern projection from the upper portion of said frame, a flat aeroplane carried by the stern projection and a bowed aeroplane carried by the bow projection, the convexed surface of the said forward aeroplane being uppermost, for the purpose described.

17. In aerial vessels, a body frame, a bow and a stern projection from the upper portion of the said frame, a flat aeroplane carried by the stern projection, and a second aeroplane carried by the bow projection, which latter aeroplane is downwardly arched, said bow aeroplane being triangular in general contour and widest at the rear, the said bow aeroplane also having its front and rear reaches inclined from its center inwardly to its terminal portions, as specified.

18. In aerial vessels, a frame, a rudder post at the rear of said frame, a vertically disposed rudder secured to said post, an auxiliary horizontal rudder slotted to receive the main rudder and pivotally supported thereby, whereby the auxiliary rudder may turn with the main rudder and may be shifted to vary its angularity with respect to the main rudder, for the purposes set forth.

856,896. TUBE EXPANDING AND BEADING TOOL. WASHINGTON MCCORMICK, Hillyard, Wash. Filed Oct. 19, 1906. Serial No. 339,649.

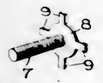


Claim.—1. A tube-expanding and beading device, comprising an integral body formed in two diameters and having a central bore and a plurality of slots extending lengthwise and leading to said bore, a mandrel fitting said bore and formed with a plurality of longitudinal recesses having inclined bottom portions curved in cross section and registering with the slots of the body, and a plurality of expanding and beading tools fitting the said slots and said recesses, and having curved inner edges.

2. A tube-expanding and beading device, comprising an integral body formed in two diameters and having a central bore, a slot extending lengthwise and leading to said bore, a mandrel fitting said bore and formed with a longitudinal recess having an inclined bottom portion curved in cross section and registering with the slot of the body, and an expanding and beading tool fitting the said slot and said recess and having a curved inner edge.

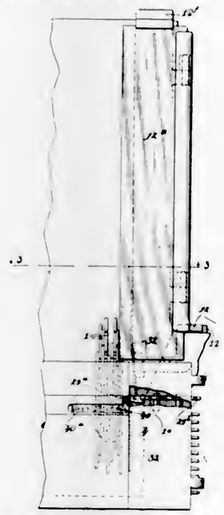
3. A tube-expanding and beading device, comprising an integral body formed in two diameters and having a central bore and a plurality of slots extending lengthwise and leading to the said bore, a mandrel fitting the said bore and formed with a plurality of longitudinal recesses, each having an inclined bottom portion curved in cross section and each registering with a slot of the body, a plurality of expanding and beading tools fitting the said slots and said recesses and having curved inner edges, and an elastic ring fitting an annular groove in said body and a groove in each of said tools.

856,897. EYEGLASSES. EDWIN F. MCKEE and EINAR OFTEDAHL, St. Louis, Mo. Filed May 15, 1906. Serial No. 317,015.



Claim.—A fastening device for eye-glasses, comprising a screw threaded shank, a head integral with one end thereof, and a plurality of pairs of lips integral with the edge of the head, which pairs of lips are oppositely disposed and arranged at right angles to one another.

856,898. MONOLINE-MACHINE. JAMES MCNAMARA, Montreal, Quebec, Canada, assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Mar. 5, 1907. Serial No. 360,798.



Claim.—1. In a monoline machine, matrices each containing a series of characters and alining notches, means for delivering the matrices successively to a common line of one height or another, as demanded, means for sustaining the matrices at the proper height, a yielding detent to engage and hold the successive matrices as they are added horizontally to the line, and a manual device for operating the detent at will to disengage it from the last matrix; whereby the ready removal of the matrices by a turning and lifting movement may be effected.

2. In a matrix composing machine, means for assembling the matrices horizontally in line, means for maintaining the individual matrices at one height or another in the line, as demanded, yielding detents to hold the successive matrices as they are added to the line, and means for throwing one of said detents out of action independently of the other at will.

3. In a composing mechanism, a yielding detent to engage the successive matrices as they are added to the line, and mechanism for disengaging the detent at will and locking it out of action.

4. In a monoline machine, the combination of notched matrices, a movable bridge to temporarily sustain the matrices as they are advancing toward the line, a detent to retain the matrices at the end of the line, the bridge being arranged to throw the detent out of action.

5. In a monoline machine, the combination of notched matrices, the fixed rail 28, swinging bridge 29, and the yielding detent 40, arranged to be thrown out of action by the bridge.

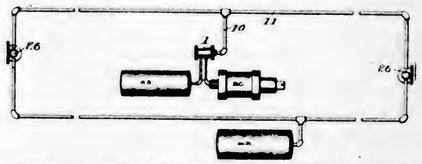
6. In a monoline machine, and in combination with the notched matrices, means for assembling the same in line, a detent to engage and hold the last matrix in the line, a reciprocating front-plate 32, and means for moving the front-plate and the detent away from their operative positions to release the end matrix; whereby the ready removal of said matrix from the machine is permitted.

7. In a monoline machine, and in combination with the reciprocating front-plate 32, the swinging door 12^a, and intermediate devices actuated by the door to cause the retreat of the plate.

8. In a monoline machine, and in combination with the reciprocating front-plate 32, the door 12^a, and the intermediate slide 12^c.

9. In a monoline machine, and in combination with the detent 40, the bridge 29 acting thereon, and the lever 29^b arranged to move and lock the bridge.

856,899. VALVE. ALFRED D. MCWHORTER, Atlanta, Ga. Filed Feb. 7, 1907. Serial No. 356,285.



Claim.—1. In a train pipe system embracing a main reservoir, an auxiliary reservoir and a brake cylinder, means for controlling the flow of compressed air therethrough, comprising a valve operative to initially open communication between said auxiliary reservoir and brake cylinder, thence between said main reservoir and said brake cylinder and upon release to initially open communication between said brake cylinder and auxiliary reservoir and thence between said brake cylinder and atmosphere, substantially as described.

2. A valve casing provided with inlet, atmosphere, brake cylinder and auxiliary reservoir ports, and valve mechanism therefor operating to bring said ports into communication in the following sequence:—auxiliary reservoir and brake cylinder, inlet and brake cylinder; and on release brake cylinder and auxiliary reservoir and brake cylinder and atmosphere, substantially as described.

3. In a train pipe system, the combination with a main reservoir, a brake cylinder and an auxiliary reservoir, of valve mechanism operating upon increased pressure in the train line pipe to open communication initially between said auxiliary reservoir and brake cylinder, thence between said main reservoir and brake cylinder, and upon reduced pressure in the train line pipe to initially open communication between said brake cylinder and auxiliary reservoir and thence between said brake cylinder and atmosphere, substantially as described.

4. In a train pipe system, the combination with a valve casing having inlet, atmosphere, brake cylinder and auxiliary reservoir ports, of mechanism for opening communication between said ports *seriatim*, substantially as described, comprising a plunger rod mounted in said casing, bored at one end and provided with a piston head at the other end, a coil spring mounted in said bore, a headed pin disposed within said bore and in engagement with said spring, an apertured retaining cap for closing said bore and forming a bearing for the shank of said headed pin, and a valve operated by said plunger, substantially as described.

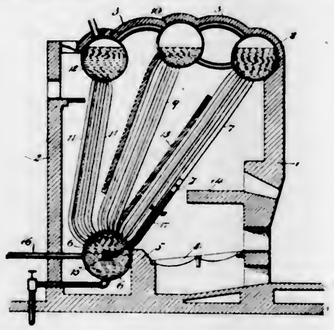
5. An automatically operating valve for train pipe sys-

tems, comprising a casing having an enlarged and a reduced chamber, ports substantially as described being disposed in said reduced chamber, a plunger rod and valve operating in said reduced chamber and having a piston head operating in said enlarged chamber, said enlarged chamber being in communication with the train line pipe, substantially as described.

6. In a train pipe system, the combination with the train pipe, main reservoir, auxiliary reservoir and braking cylinder, of automatically operating valve mechanism for the purpose substantially as described, comprising a valve casing having an enlarged and a reduced chamber, brake cylinder, auxiliary reservoir, and atmosphere ports being disposed in said reduced chamber, and said train pipe communicating with said enlarged chamber, a piston operating in said enlarged chamber and provided with a rod extending within said reduced chamber, and a valve operated by said rod controlling said ports in said reduced chamber, substantially as described.

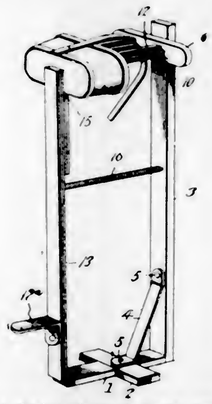
7. In a train pipe system, the combination with the train pipe, main reservoir, auxiliary reservoir and braking cylinder, of automatically operating valve mechanism for the purpose substantially as described, comprising a valve casing having an enlarged and a reduced chamber, brake cylinder, auxiliary reservoir, and atmosphere ports being disposed in said reduced chamber, and an inlet port disposed in said enlarged chamber, said enlarged chamber being in communication with the train line pipe, a piston operating in said enlarged chamber and provided with a rod operating in said reduced chamber, and a valve operated by said rod, said valve controlling said brake cylinder, atmosphere and auxiliary reservoir ports, and said piston controlling said inlet port, substantially as described.

856,900. WATER-CIRCULATING MEANS. ROBERT W. NICHOLS, Indianapolis, Ind., assignor of one-half to John F. Fox, Indianapolis, Ind. Filed Dec. 18, 1905. Serial No. 292,280.



Claim.—In a water tube boiler, the combination with the lower water drum and the front upwardly extending tubes exposed to and impinged by the direct heat of the furnace, of a horizontally extending manifold situated within said water drum and a feed-water supply pipe connected to said manifold, a series of branch or water distributing pipes open at their top ends and connected at their bottom ends to said manifold to extend upwardly and centrally within said front upwardly extending tubes exposed to and impinged by the heat from the furnace, each of said water distributing tubes provided with a series of transverse slits, saw cuts or water jet openings arranged at suitable distances apart along said water distributing tubes, said slits or saw-cuts so situated that the radial flat water-jets ejected from them will impinge directly against those portions of the interior surfaces of the water tubes situated directly back of the exterior surfaces thereof exposed to the direct heat of the furnace, substantially as and for the purpose set forth.

856,901. BASKET-MACHINE. BENJAMIN S. NOE, Berrien Center, Mich. Filed Nov. 7, 1905. Serial No. 286,257.

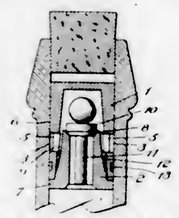


Claim.—1. A device of the character described, comprising a mandrel composed of members spaced apart to provide a passage extending longitudinally through the mandrel, and an arm secured to one of the members and bridging said passage, said arm providing means by which the nails driven through a handle and the upper end of a basket may be clenched and being pivotally mounted to permit the removal of the basket from the mandrel after the handle has been secured thereto.

2. A device of the character described, comprising a mandrel composed of members spaced apart to provide a passage extending longitudinally through the mandrel, an arm secured to one of the members at a point near its inner end to bridge said passage, said arm providing means by which the nails driven through a handle and the upper end of a basket may be clenched and being pivotally mounted to permit the basket to be removed from the mandrel after the handle has been secured thereto, and means for yieldingly retaining the arm in position to bridge said passage.

3. A device of the character described, comprising a support, a head revolubly mounted upon said support, a mandrel composed of two members, means securing the mandrel to the head in spaced relation to provide a passage extending longitudinally through the mandrel, and an arm secured to one of the members to bridge said passage, said arm providing means by which the nails driven through a handle and the upper end of a basket may be clenched and being pivotally mounted to permit the removal of the basket after the handle has been secured thereto.

856,902. NON-REFILLABLE-BOTTLE STOPPER. GEORGE B. OKEY, Indianapolis, Ind., assignor of four-ninths to John C. Sharp and four-ninths to Leander B. Zaring, Indianapolis, Ind. Filed Mar. 22, 1907. Serial No. 363,908.



Claim.—1. A stopper for non re-fillable bottles comprising an interior tubular section having a circumferential base rim, and terminating at its upper end in a valve seat, an upper hollow section closed at its top, supported upon

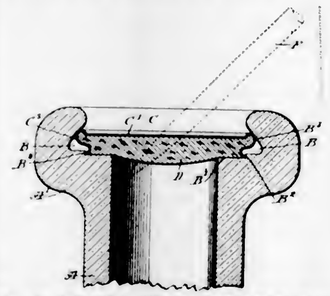
the circumferential base rim and having a plurality of circumferential openings, a circumferential recess intersecting said openings and channels leading from said recess to the closed end, a cement filling between the inner walls of the top section and the outer walls of the valve section to close the lower end of the top section and unite them in fixed relation as a single stopper, and a float-valve within the chamber of the top section adapted to control the valve seat.

2. A stopper for non re-fillable bottles comprising an interior tubular section terminating at its upper end in a valve-seat, an upper hollow section closed at its top and having a plurality of circumferential openings and recesses intersecting said openings and channels leading from said recess to the closed end, and a cement filling around the inner walls of the valve section to close the lower end of the top section and unite them in fixed relation as a single stopper, and a float valve within the chamber of the top section adapted to control the valve-seat, the valve-seat of the said valve-section terminating above the circumferential openings in the top section whereby to support the valve above said openings for the purpose stated.

3. A stopper for non re-fillable bottles comprising an interior tubular section terminating at its upper end in a valve-seat, an upper hollow section closed at its upper end and having a plurality of circumferential openings and channels leading therefrom between said openings to the closed end, a float-valve within the chamber of the top section adapted to control said valve-seat, means for closing the lower end of the top section and for uniting the two sections in fixed relation as a single stopper, and a float valve within the chamber of the top section adapted to control the valve-seat, said valve-seat terminating above the circumferential openings in the top section whereby access to the valve through said openings is prevented.

4. A stopper for a non re-fillable bottle and in combination a base tubular section terminating at its upper end in a valve-seat, an upper hollow section closed at its upper end and having a plurality of circumferential openings, and channels leading therefrom between said openings to the closed end, a float-valve within the chamber of the top section adapted to control said valve-seat, means for closing the lower end of the top section and for uniting the two sections in fixed relation as a single stopper, a float-valve within the chamber of the top section adapted to control the valve seat, and a spherical body freely movable upon the head of said valve between it and the closed head of the top section, said valve being above the circumferential openings and thereby rendered inaccessible through said openings.

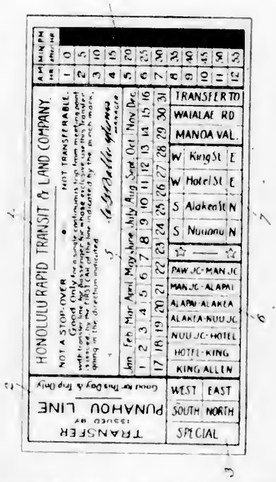
856,903. CLOSURE. FRANK H. PALMER, New York, N. Y. Filed Aug. 29, 1906. Serial No. 332,428.



Claim.—1. A bottle or like package having its neck provided with an interior annular recess, the bottom of which has a raised annular shoulder, and the side wall of the recess is inclined upwardly and inwardly, and an internal closure for the said neck and comprising a cap having a depending rim, the lower edge of which is adapted to abut against the said shoulder, and the side of the rim is adapted to come in contact with the said side wall to form a clamping flange on expanding the cap in the neck of the package, and a packing disk in the said cap and engaged at its peripheral edge by the said rim.

2. A bottle or like package having its neck provided with an annular recess and an annular shoulder spaced apart from the side wall of the recess, said side wall of the recess being beveled upwardly and inwardly, and an internal closure for the said neck, said closure comprising a cap having a depending rim whose edge is adapted to engage the shoulder, and whose peripheral surface is adapted to come in contact with the said side wall when the cap is expanded in the recess to force the rim into a clamping flange, and a packing disk in the said cap and engaged at its peripheral edge by the said depending rim.

856,904. TRANSFER-TICKET. LEVI T. PECK, Honolulu, Territory of Hawaii. Filed Nov. 22, 1905. Serial No. 288,602.



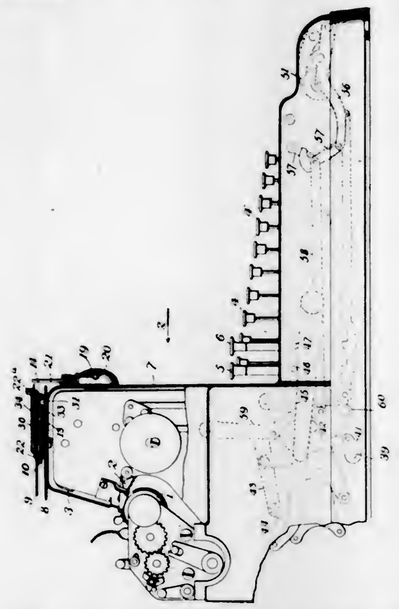
Claim.—A fare receipt for issuance to a passenger, said fare receipt constituting a continuous transfer ticket arranged for the detection of circuit riders and having a group of spaces bearing names or symbols indicating transfer points at intersecting lines and being further provided with another group of spaces separate and independent of the transfer point symbols, each of such latter group of spaces bearing names or symbols indicating a zone through which the issuing car travels, the names or symbols in each of the zone spaces indicating both the beginning and the end of a zone and the last name or symbol in each of these spaces being repeated as the first name in the next succeeding space, said zones covering the entire distance through which the issuing car travels said tickets being arranged for transfer to intermediate or intersecting lines and back again to the issuing line.

856,905. ATTACHMENT FOR ADDING-MACHINES. ARTHUR PENTECOST, East Orange, N. J., assignor to Pike Adding Machine Company, East Orange, N. J., a Corporation of New Jersey. Filed Sept. 6, 1905. Serial No. 277,194.

Claim.—1. The combination with the recording mechanism of an adding machine including a series of type and means for operating them, of a signal device adapted to be automatically actuated upon and only on the completion of a predetermined number of operations of the recording mechanism.

2. The combination with the recording mechanism of an

adding machine including a series of type and means for operating them, of an indicating device adapted to be actuated by the type operating devices of the recording mechanism.



3. The combination with the recording mechanism of an adding machine including a series of type and means for operating them, of means for producing an audible signal upon and only on the completion of a predetermined number of movements of the type operating devices of the recording mechanism.

4. The combination with a recording mechanism including a series of type and a hammer for operating them, of a signal device adapted to be actuated upon the completion of a predetermined number of operations of said hammer.

5. The combination with a recording mechanism including a plurality of series of type and an independent device for co-operating with each of said series, of an indicating device adapted to be actuated by one of said type operating devices of the recording mechanism.

6. The combination with a recording mechanism including a plurality of series of type and a hammer for co-operating with each of said series, of an indicating device adapted to be actuated by one of said hammers, and a signal mechanism adapted to be operated upon and only on the completion of a predetermined number of movements of the said hammer.

7. The combination with a recording mechanism including a plurality of type carriers, a series of type mounted in each carrier, and means for operating said type, of a signal device adapted to be automatically operated upon and only on the completion of a predetermined number of operations of the recording mechanism.

8. The combination with a recording mechanism including a plurality of series of type and a hammer for co-operating with each of said series, of an audible signal device, and means for operating said signal device adapted to be actuated by one of said hammers of the recording mechanism.

9. The combination with a recording mechanism including a plurality of series of type and a hammer for co-operating with each of said series, of means for producing an audible signal when one of said hammers has been operated a predetermined number of times.

10. The combination with a recording mechanism including a plurality of series of type and a hammer for co-operating with each of said series, of means for indicating when one of said hammers has completed a predetermined number of strokes.

11. The combination with a recording mechanism including a plurality of series of type, each series corresponding to a certain numerical value and devices for operating said type, of means for indicating when the series of type corresponding to the lowest numerical value has been operated a predetermined number of times.

12. The combination with a recording mechanism including a plurality of series of type, each series corresponding to a certain numerical value and a hammer for co-operating with each of said series of type, of means for indicating when the hammer co-operating with the series of type representing the lowest numerical value has been operated a predetermined number of times.

13. The combination with the recording mechanism of an adding machine, of a signal mechanism adapted to indicate the completion of a predetermined number of operations of said recording mechanism and including an adjustable member movable step by step at each actuation of said recording mechanism, and means for returning said adjustable member to its original position when the recording mechanism is operated to record the sum of the amounts represented by the previous operations of said mechanism.

14. The combination with the recording mechanism of an adding machine adapted to be controlled by a plurality of rows of keys and having a special device adapted to be operated when the total of a series of items is to be recorded, of a signal mechanism adapted to indicate the completion of a predetermined number of operations of said recording means, including an adjustable member movable step by step at each actuation of said recording mechanism, and means controlled by said total taking devices for returning said adjustable member to its original position.

15. The combination with the recording mechanism of an adding machine, a plurality of number keys, a "sub-total" key, and a "total" key, of a signal mechanism adapted to indicate the completion of a predetermined number of operations of said recording mechanism and including an adjustable member movable step by step at each actuation of said recording mechanism and means controlled by either the "sub-total" or "total" key for returning the said adjustable member to its original position when the recording mechanism is operated to record the sum of the amounts represented by the previous operations of said mechanism.

16. The combination with a recording mechanism including a series of type and means for operating them, of a register or counter including a relatively stationary member and a member movable step by step past said stationary member at each actuation of the recording mechanism, and means for returning said movable part to its normal position whenever the recording mechanism is actuated to record the sum of the items recorded by previous actuations of said mechanism.

17. The combination with the accumulating devices and the recording mechanism of an adding machine, of an item counter or register adapted to be operated at each actuation of said recording mechanism, and means for returning the counter or register to zero position whenever the sum of a series of items is recorded by the recording mechanism.

18. The combination with the recording mechanism of an adding machine and with "total" and "sub-total" keys adapted to control the actuation of the recording mechanism, of a counter or register adapted to be actuated at each operation of the recording mechanism to indicate the number of items recorded, and connections between said register and the "sub-total" and "total" keys, whereby when either of said keys is actuated to cause the recording of the sum of the items previously recorded the register will be returned to normal, or zero position.

19. The combination with the recording mechanism of an adding machine, and an indicating device adapted to be operated at each actuation of the recording mechanism, of means for adjusting a member of said indicating device to prevent actuation thereof by the recording mechanism.

20. The combination with the recording mechanism of an adding machine, of an indicator device having an operating arm adapted to be moved by the said recording mechanism, and means for adjusting said arm to prevent its operation by said recording mechanism.

21. The combination with the accumulating devices of an adding machine, of a counter or register adapted to be actuated whenever and only when an item is accumulated.

22. The combination with the accumulating devices of an adding machine, of a counter or register adapted to be actuated step by step as items are accumulated, and a signal device adapted to be automatically operated upon and only on the completion of the accumulation of a predetermined number of items.

23. The combination with the accumulating devices of an adding machine, of a register or counter including a relatively stationary member and a member movable step by step past said stationary member whenever and only when an item is accumulated.

24. The combination with the accumulating devices of an adding machine, of a register or counter including a relatively stationary member and a member movable step by step past said stationary member whenever and only when an item is accumulated, and means for returning said movable part to its normal position whenever the sum of the items is recorded.

856,906. PROCESS OF FIREPROOFING TEXTILE MATERIALS. WILLIAM H. PERKIN, Jr., Manchester, England, assignor of one-half to Whipp Brothers & Tod, Limited, Manchester, England. Filed May 10, 1902. Serial No. 106,837.

Claim.—1. The herein described process of rendering textile materials less inflammable, said process consisting in fixing an insoluble compound in the fibers of the material by subjecting the material to the action of a soluble stannate, then drying and then subjecting the material to the action of a bath containing a salt of ammonium, substantially as described.

2. The herein described process of rendering textile materials less inflammable, said process consisting in fixing an insoluble compound in the fibers of the material by subjecting the material to the action of a soluble stannate, then drying and then subjecting the material to the action of a bath containing a soluble tungstate and a salt of ammonium.

856,907. EMERGENCY CLAMP RAIL-BRAKE. ERIK S. PETTERSON and BEN F. NEWSOME, Leavenworth, Kans. Filed Aug. 25, 1906. Serial No. 331,999.

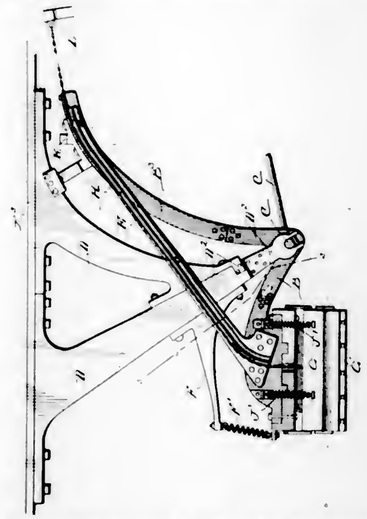
Claim.—1. A device of the kind described comprising a track brake, means for forcing said brake into engagement with the tread of a rail, clamps pivotally supported from said brake and adapted to engage the sides of a rail, and means for operating the clamps independent of movement of the track brake.

2. A device of the kind described comprising a main brake, adapted to engage the tread of a track, a lever adapted to force the same into engagement with the track, clamps supported from said main brake and lever, and means for lifting the clamps independent of movement of the main brake.

3. A device of the kind described comprising an emergency brake, adapted to engage a rail, means for lifting and lowering the said brake, clamps adapted to engage the sides of a rail, links pivotally connecting said clamps to the emergency brake, and chains connected to said clamps and adapted to draw the same into engagement with the rails independent of vertical movement of the emergency brake.

4. A device of the kind described comprising a pivoted lever, a track brake supported by the lower end of said lever, raceways carried upon opposite sides of said lever, clamps pivotally suspended from the brake first mentioned, and adapted to engage the sides of a track and chains running through said raceways and connected to the clamps.

5. A brake of the kind described comprising a rockable lever substantially V-shaped, plates connecting the opposite members of said lever, raceways carried by said plates, a truck brake carried by the lever adapted to engage the tread of a rail, clamps supported from the lever and from the brake adapted for engagement with the sides of a rail, and chains running along said raceways and connected at their lower ends to the said clamps for the purpose of drawing them into engagement with opposite sides of a rail.



6. The combination with a tread brake and means for operating the same, of side clamps pivotally suspended from said brake, raceways supported by the brake operating mechanism, and chains adapted to travel in said raceways, said chains being connected to the clamps, as and for the purpose set forth.

856,908. SHOE-DAUBER. WILLIAM W. PEYTON, Carlisle, Ark. Filed June 20, 1906. Serial No. 322,616.



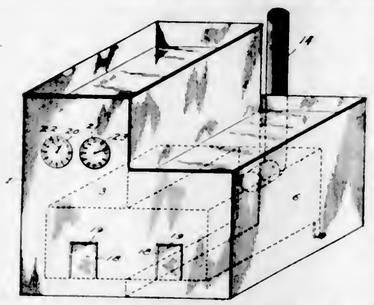
Claim.—1. A device of the class described comprising a body, a dauber brush having a stem engaged with the body, and a handle having a spring clamping coil designed to embrace and for clamping engagement with the body.

2. A device of the class described comprising a body portion, a dauber carried thereby, a handle having a spring clamping coil designed to embrace the body, a pair of arms joined to the coil and movable for expanding or contracting the latter, and means for connecting the ends of the arms.

3. A device of the class described comprising a body portion and a dauber carried thereby, and a handle composed of a single piece of material and consisting of a pair of spaced arms joined at one end with a spring clamping coil designed to embrace the body and provided at their

outer ends with interengaging devices for fixing the arms in clamping position.

856,909. CANNING APPARATUS. JOHN K. PHARR, Catherine, Ala. Filed Jan. 19, 1907. Serial No. 353,158.



Claim.—1. A canning apparatus comprising a boiler having portions of different heights, a vertical partition separating said portions to form compartments, and a heater projecting through the partition into the compartments.

2. A canning apparatus comprising a boiler having walls terminating at different levels, producing compartments, one higher than the other, a vertical partition separating said compartments, and a heater extending through the partition into the compartments and regulating the effective upper receiving spaces thereof.

3. A canning apparatus comprising a boiler divided to form two compartments, one of the compartments being of greater height than the other, and a fire box extending through the partition partially into one and partially into the other compartment and having its top arranged to limit the effective upper receiving spaces of both compartments.

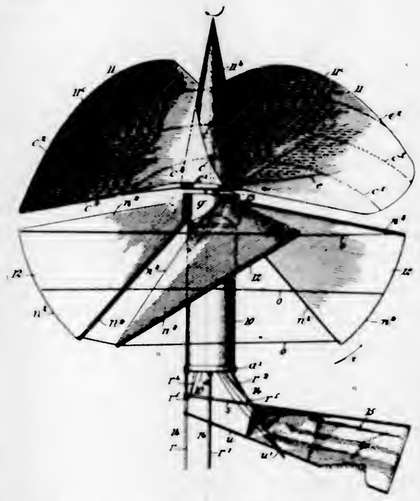
4. A canning apparatus comprising a boiler having front, rear and side walls, one of the side walls and the adjacent portions of the front and rear walls being extended above the opposite side wall and the other portions of the front and rear walls to produce compartments, one of greater height than the other, a partition wall separating said compartments and extending upwardly to form the inner side wall of the higher compartments, and a fire box extending through the partition into both compartments and spaced at all sides from the walls thereof.

5. A canning apparatus comprising a boiler having its forming walls terminating on opposite sides of its longitudinal center to produce portions of different heights, a vertical partition separating said portions into compartments, and a heater extending through the partition into the compartments and having its upper wall arranged to limit the depth of insertion of vessels into the compartments, whereby the heater regulates the depth of the upper receiving spaces of said compartments.

856,910. FLYING-MACHINE. WILLIAM PHILLIPS, Chicago, Ill. Filed Aug. 1, 1905. Serial No. 272,146.

Claim.—1. A flying machine embodying wings supported centrally on an essentially upright spindle, said wings having segmental spiral form and extending in opposite directions, each wing comprising a plurality of ribs extended in spiral order radially from collars secured on the spindle, a plurality of laterally curved bow strips secured transversely on the ribs, a border flange extended around the frame, and a cover stretched taut on each frame.

2. An air ship comprising a casing for supporting a motor, a shaft connected therewith, said shaft being provided with lifting vanes, a frame pivotally supported below the motor casing, means connected with the motor casing whereby to swing the frame at an angle with respect to said motor casing, a rotatable turn table connected with the frame and having a seat projecting into the frame, a vane connected with the turn table, means for swinging and lowering the vane, and legs connected with the turn table for supporting the frame when in an active position.



3. A flying machine comprising wings supported centrally on a spindle, said wings having a segmental spiral form and extending in opposite directions, each wing comprising ribs extending in spiral order radially from the spindle, bow strips secured transversely of the ribs, and a cover stretched on the ribs.

4. A flying machine comprising wings supported centrally on a spindle, said wings having segmental spiral form and extending in opposite directions, and each wing comprising a plurality of ribs extending in spiral order radially from the spindle, and a cover connected with the ribs.

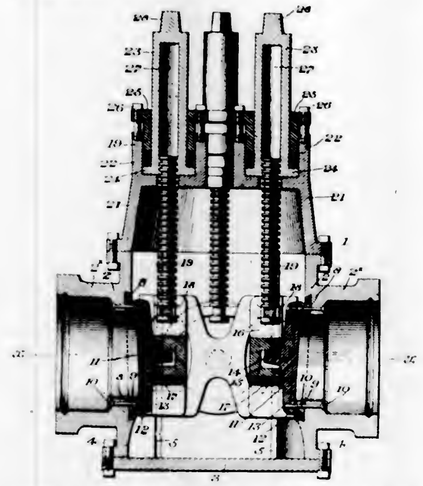
5. A flying machine embodying a framed car, a motor frame rockably mounted on the upper portion of the car frame, a spindle mounted upon the motor frame, a hollow shaft mounted on the spindle, means for rotating the hollow shaft and the spindle in opposite directions, means for inclining the motor frame, spindle and shaft together in a desired direction, two segmental dished wings secured oppositely on the spindle, said wings having spiral trend in the same direction, and four segmental spirally twisted wings mounted on the hollow shaft and inclining in a direction opposite from the spiral trend of the upper paired wings.

6. A flying machine embodying a framed car, a turntable rotatable on the bottom of the car frame, adjustable legs on the lower side of the turntable, and means for adjusting said legs from the interior of the car.

7. A flying machine, embodying a car frame, a turntable rotatable on the bottom of the car frame, a plurality of legs hinged by one end of each on the bottom of the turntable, means for turning the table from within the car frame, a steering vane supported on the legs extending laterally therefrom, and means for raising or lowering the outer end of the vane, said means being controlled from within the car frame.

8. A flying machine embodying a skeleton car frame, a turntable held to rotate at its edge on the bottom wall of the car frame, a hollow seat post in the car frame having a collar passing down through an opening in the bottom of the car frame and secured in a registering opening in the turntable, legs hinged by one end on the lower side of the turntable, a steering vane adapted for rocking movement on the legs, means for rocking the vane in a vertical plane from within the car frame, and means for rocking two opposite legs from within said car frame.

856,911. VALVE. HOWARD S. ROBERTS, Philadelphia, Pa. Filed July 11, 1905. Serial No. 269,197.



Claim.—1. A valve chest comprising a plurality of interchangeable sections, branches therefor, valve seats having inclined walls carried by said sections, gate supports independent of said sections and adapted to be properly raised and lowered, guides for said supports, gates movably mounted on said supports in order to properly engage with said valve seats and means for causing said gates to tilt and be forced out of their normal plane as the supports are moved.

2. A valve chest comprising a plurality of interchangeable sections, branches therefor, valve seats having inclined walls carried by said sections, guides projecting inwardly and secured to said chest, gate supports independent of said sections and adapted to be properly raised and lowered and guided by said guides, gates mounted for rocking movement on said supports in order to properly engage with said valve seats, and means for causing said gates to tilt and be forced out of their normal plane as the supports are moved.

3. A valve chest comprising a plurality of interchangeable sections having recesses, branches therefor, valve seats having inclined inner walls secured in the recesses of said sections, guides projecting inwardly and secured to said chest between said branches, gate supports independent of said sections and movable between said guides in a vertical direction thereon, gates carried by said supports and mounted for rocking movement thereon and bearing faces secured to said gates and adapted to engage said valve seats.

4. A valve chest comprising a plurality of separate interchangeable sections, branches suitably connected therewith, valve seats having inclined inner walls secured to each of said sections, a series of valves for the latter, bearings secured thereto and adapted to engage said seats, lugs projecting from said valves, gate supports independent of the gates and their stems, sockets therein adapted to receive said lugs, guides for said supports and by which the same are positively guided vertically, screw stems mounted on said supports and means for raising and lowering said stems.

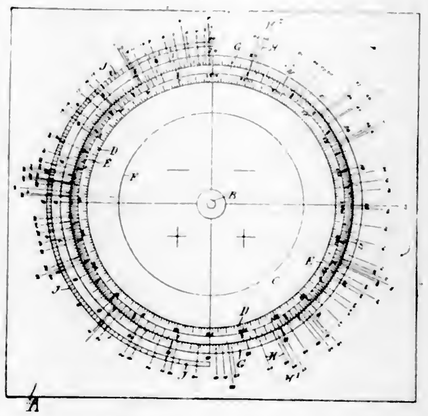
5. A valve chest comprising a plurality of separate interchangeable sections, branches suitably connected therewith, valve seats having inclined inner walls secured to each of said sections, a series of valves for the latter, lugs projecting from said valve, gate supports, sockets therein adapted to receive said lugs, guides for said supports for guiding the same vertically, screw stems mounted on said supports and means for raising and lowering said stems, and rocking the valves while the supports are positively guided in a vertical direction.

6. A valve chest comprising separate interchangeable sections, branches suitably connected therewith, valve seats having inclined walls secured to said sections, valves adapted to engage said seats, a lug having a ball and pin extending from each of said valves, a valve support independent of said sections and positively guided in a vertical direction, a socket therein adapted to receive said lug, screw stems secured to said valves, and sleeves in which said stems have threaded engagement and whereby said valves are actuated.

7. A valve chest comprising interchangeable sections, branches connected therewith of different diameters, valve seats secured to said sections, gate valves for said sections, bearing faces secured thereto adapted to co-act with said seats, balls on said gate valves, gate supports independent of said sections and positively guided in a vertical direction and in which said balls have bearings, pins extending from said balls adapted to increase the leverage, stems secured to said supports, and sleeves adapted to engage said stems and actuate said valves.

8. A base, a plurality of interchangeable sections secured to said base and having branches, guides between said sections and extended inwardly therefrom, seats secured to said sections, gates co-operating with said seats, gate supports independent of the gates, means for guiding said supports vertically, a ball and pin and socket connection between each gate and support, and means non-rotatably connected to the supports for raising and lowering the same together with the gates and automatically rocking the latter.

856,912. STAR-FINDER. JOSEPH T. ROGERS, New York, N. Y., and WILLIAM H. RIDINGS, Milwaukee, Wis. Filed Aug. 28, 1906. Serial No. 332,342.



Claim.—1. A star finder, comprising two members, of which one is mounted to turn on the other, one of the members having on its face a circular graduation representing right ascension and radial lines numbered to correspond to numbers given to stars, and the other member having an annular graduation indicating the hours of the day and co-acting with the said right ascension graduation and the said radial lines.

2. A star finder, comprising a plate having on its face a circular graduation representing right ascension, and radial lines numbered to correspond to numbers given to stars, and a disk mounted to turn on the said plate and having an annular graduation indicating the hours of the

day and co-acting with the graduation and radial lines of the said plate.

3. A star finder, comprising a plate having on its face a circular graduation representing right ascension and radial lines numbered to indicate stars, and a disk mounted to turn on the said plate and having annular concentric graduations co-operating with the graduation and lines on the said plate, one of the concentric graduations indicating the hours of the day and the other representing a correction.

4. A star finder, comprising two members, of which one is mounted to turn on the other, one of the members having on its face a circular graduation representing right ascension and radial lines numbered to correspond to numbers given to stars, and the other member having an annular graduation indicating the hours of the day and co-acting with the said right ascension graduation and the said radial lines, and a table containing the names of the principal stars and numbers on the said names and corresponding to the numbers on the said radial lines.

5. A star finder, comprising two members, of which one is mounted to turn on the other, one of the members having on its face a circular graduation representing right ascension and radial lines numbered to correspond to numbers given to stars, and the other member having an annular graduation indicating the hours of the day and co-acting with the said right ascension graduation and the said radial lines, and a table containing the names of the principal stars, their right ascension and declination, and numbers on the said names and corresponding to the numbers on the said radial lines.

6. A star finder, comprising a plate having an annular right ascension graduation and radial lines provided with numbers, a disk mounted to turn centrally on the said plate and having a graduation indicating the hours of the day and co-acting with the said right ascension graduation and the radial lines, and a table containing the names of the principal stars, their right ascension and declination, and numbers on the said names corresponding to the numbers on the radial lines.

7. A star finder, comprising a plate having an annular right ascension graduation and radial lines provided with numbers, a disk mounted to turn centrally on the said plate and having a graduation indicating the hours of the day and co-acting with the said right ascension graduation and the radial lines, a table containing the names of the principal stars, their right ascension and declination, and numbers on the said names corresponding to the numbers on the said radial lines, and degree graduations on the said disk, one for general correction and the other for Polaris correction.

8. A star finder, comprising a plate having an annular right ascension graduation and radial lines provided with numbers, a disk mounted to turn centrally on the said plate and having a graduation indicating the hours of the day and co-acting with the said right ascension and the radial lines, the said disk being divided into plus and minus quadrants, and a table containing the names of the principal stars, their right ascension and declination, and numbers on the said names corresponding to the numbers on the said radial lines.

9. A star finder, comprising a plate having an annular right ascension graduation and radial lines provided with numbers, a disk mounted to turn centrally on the said plate and having a graduation indicating the hours of the day and co-acting with the said right ascension graduation and the radial lines, and two correcting graduations, one for general correction and the other for Polaris correction.

856,913. SNAP-HOOK FOR WATCH-CHAINS. EDWIN L. ROBINSON, North Attleboro, Mass. Filed Mar. 9, 1904. Serial No. 197,349.

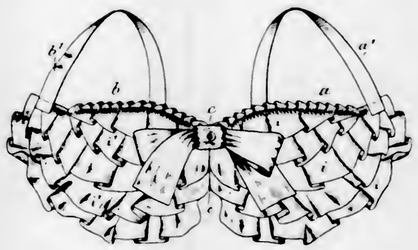
Claim.—1. In a snap hook for watch chains, the combination of the hook swaged at the side of its shank to form a spring, and having an end portion thicker than the spring part, and the separate tongue swaged at the side of its shank to form a spring, and also having an end portion thicker than the spring part, with a hollow ornamental head, provided with a small end which serves to clasp the thick end portions of the shanks of the hook and tongue firmly together, the said shanks being inclosed in the hollow of the head.



2. In a snap hook for watch chains, the combination of the hook, and a separate tongue swaged at the side of its shank to form a spring, and having an end portion thicker than the spring part, with a hollow ornamental head, provided with a small end which serves to clasp the end portion of the shank of the tongue firmly to the end portion of the shank of the hook, the said shanks being inclosed in the hollow of the head.

3. In a snap hook for watch chains, the combination of the hook provided with a transverse groove at the end of its shank, and a separate tongue swaged at the side of its shank to form a spring, and having an end portion thicker than the spring part, and provided with a transverse groove, with a hollow ornamental head, provided with a small end which serves to clasp the thick end portion of the shank of the tongue firmly to the end portion of the shank of the hook, and having the clasping end of the ornamental head swaged into the transverse grooves of the hook and tongue, the said shank of the tongue being inclosed in the hollow of the head.

856,914. BOSOM-FORM. VANDALIA R. RUNYON, Plainfield, N. J. Filed Dec. 10, 1906. Serial No. 347,133.



Claim.—1. A bosom form comprising two similar connected forms of flexible material, a surfacing of a series of partially over-lapping rows of plaits and shoulder-straps therefor.

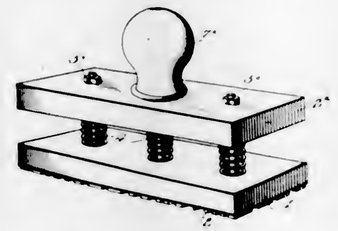
2. A bosom form comprising two similar connected forms of flexible material, bone pockets and bones at the upper edges of these forms, means for imparting thereto a concavo-convex configuration, a surfacing of a series of partially over-lapping rows of plaits and shoulder-straps therefor.

3. A bosom form comprising two similar connected approximately elliptical forms of flexible material, bone pockets and bones along the upper edges of said forms, transversely disposed bones and pockets and means imparting to said forms a concavo-convex configuration in section, a surfacing of a series of partially over-lapping rows of plaits and shoulder-straps therefor.

4. A bosom form comprising two similar connected approximately elliptical forms of flexible material, bone pockets and bones along the upper edges of said forms, transversely disposed bones and pockets, tying strings connected to the under surface of said forms and extending transversely thereof and adapted when under tension to assist in imparting a concavo-convex configuration in section to said forms, a surfacing of a series of horizontally disposed over-lapping rows of plaits, and shoulder-straps therefor.

5. A bosom form comprising two similar connected approximately elliptical forms of flexible material, bone pockets and bones along the upper edges of said forms, transversely disposed bones and pockets, tying strings connected to the under surface of said forms and extending transversely thereof and adapted when under tension to assist in imparting a concavo-convex configuration in section to said forms, a surfacing of a series of horizontally disposed over-lapping rows of plaits which extend below the lower edge of the two connected forms and increase the area of the bosom form, and shoulder-straps therefor.

856,915. HAND-STAMP. ANTHONY J. SAUERBIER, Wellsville, Ohio. Filed Dec. 1, 1906. Serial No. 345,965.



Claim.—1. A hand stamp comprising a type block, recesses in the upper surface of said type block, springs seated in said recesses, a handle block provided with recesses for the opposite ends of said springs, bolts passing through the type block and handle block, and provided with nuts for adjusting the tension of said springs, a bracket or housing secured to the handle block over the central bolt, and provided with an upwardly extending shank, and a handle or knob secured to said shank, substantially as described.

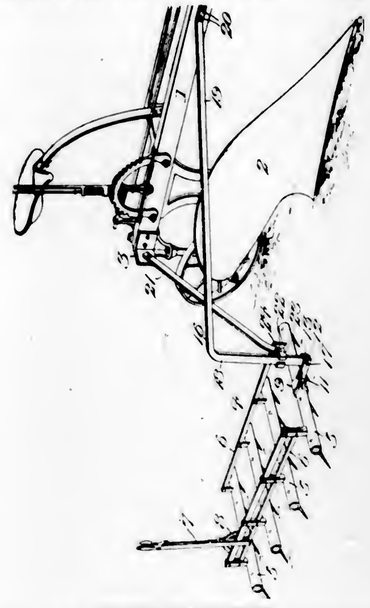
2. A canceling stamp comprising a type block, and a handle block, springs interposed between said blocks, a housing or bracket secured to the handle block over the central spring, a knob secured to said bracket by means of a shank extending from said bracket, and means whereby said handle or knob may be removed and the device attached to a canceling machine, substantially as described.

856,916. HARROW ATTACHMENT. KARL SCHAAL, Seward, Nebr. Filed Sept. 19, 1906. Serial No. 335,301.

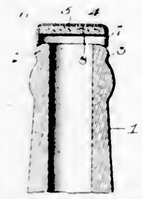
Claim.—1. A harrow attachment comprising a brace secured to the plow beam and comprising a horizontal portion and a vertical portion, a clevis secured to the harrow and a link secured to the clevis, said link having a bifurcated front end and the inner walls of said bifurcation being rounded to permit the harrow to tilt from side to side and a secondary brace secured to the plow beam and connected by a clamp to the first named brace, substantially as described.

2. In a harrow attachment, a clevis connected to the harrow, a link pivotally connected to the clevis, said link having bifurcations provided with curved inner surfaces, substantially as described.

3. In a harrow attachment, two braces connected to a plow beam, and a two-part clamp for connecting one of said braces to the other, a link pivotally connected to one of said braces and a harrow clevis connected to said link.



856,917. METHOD OF APPLYING BOTTLE-SEALS. EDWARD D. SCHMITT, Brooklyn, N. Y., assignor to Monarch Seal Company, New York, N. Y., a Corporation of New York. Filed Oct. 4, 1906. Serial No. 337,477.

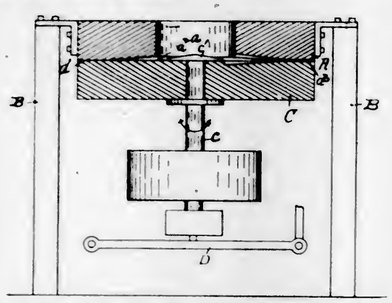


Claim.—The herein described method of applying to a bottle having an annular external bead adjacent to its mouth, a hard metal cap having a flange of normally smaller internal diameter than the diameter of the bead, and containing a compressible sealing member, which consists in assembling the parts, applying pressure which first expands the flange by contact with the bead, then brings the sealing member into contact with the upper edge of the bottle, then further expands the flange to effect a seal between the sealing member and the upper edge of the bottle, and also an auxiliary seal between the metal of the cap and the bead on the bottle, adjacent to the edge of the sealing member whereby the pressure exerted upon the cap is mainly taken up by the flange of the cap, prevents the cutting of the sealing member, and finally forcing the flange of the cap or a portion thereof into locking engagement with the bead on the bottle below the medial line of said bead.

856,918. GRINDING-MILL. MICHAEL SCHRECK, Cincinnati, Ohio. Filed Apr. 28, 1906. Serial No. 314,148.

Claim.—1. In a grinding mill, the combination of a stationary stone having a central opening and a concaved

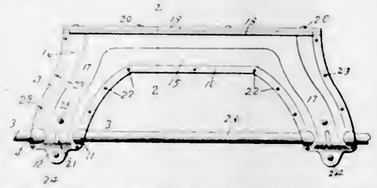
bosom, said stone having grooves therein the outer ends of which are inclined and narrower than at their inner end, and a rotatable stone having a horizontal upper face provided with curved grooves.



2. In combination with an upper stationary stone having a central opening and concaved bosom, with radial grooves therein the outer ends of which grooves are inclined and narrower at their outer than at their inner ends, a rotatable stone having a plain grinding face and curved feed grooves, said feed grooves decreasing in depth until they merge into said grinding face.

3. In a grinding mill an upper stone having a central opening and a series of radial grooves having their outer ends angularly disposed and of less width than the remainder of said grooves, and a lower stone having a grinding face and a conical boss extending in said opening of the upper stone and curved feed grooves leading from said boss outwardly and terminating at the grinding face of said lower stone.

856,919. SHEET-METAL COASTER BRACE AND BEAM. WILLIAM SCHWENE, Ogden, Iowa. Filed June 5, 1906. Serial No. 320,908.



Claim.—1. A brace and beam for coasters, comprising two sheet metal body portions having downwardly and outwardly inclined ends with their margins riveted together and their central portions inclined away from each other and their top edges spaced apart, a top plate riveted to said top edges and axle supporting portions formed in the lower ends of the sides.

2. A brace and beam for coasters, comprising two sheet metal sides, each having a horizontal central portion and downwardly and outwardly inclined end portions, flat margins at the outer edges of the end portions, at the bottom of the end portions and at the under edges of each body portion, outwardly inclined portions adjacent to said flat margins, a flat central portion between said outwardly inclined portions, said flat central portion extending to the top of the brace and beam, flanges at the top of each member extending horizontally away from each other, a flat plate riveted to the tops of these margins, outwardly bowed portions at the lower ends of the body portions to receive an axle, each of said outwardly bowed portions formed with a central depression, rivets connecting the margins of the two body portions together, rivets above and below the said depressions and an axle passed through the outwardly bowed portions and having notches therein to receive the metal formed by said depressions.

856,920. VIBRATOR. HENRY M. SCIPLE, San Francisco, Cal., assignor of one-half to Stephen Mahoney, Minneapolis, Minn. Filed Apr. 25, 1906. Serial No. 313,662.



Claim.—1. A manually operated vibrator embodying a rotary shaft, a tubular stock provided with holes, a collar movable axially around and also lengthwise of said tubular stock, and a contact cup or head provided with a plunger stem insertible through any one of said poles in the tubular stock and working in contact with the cam.

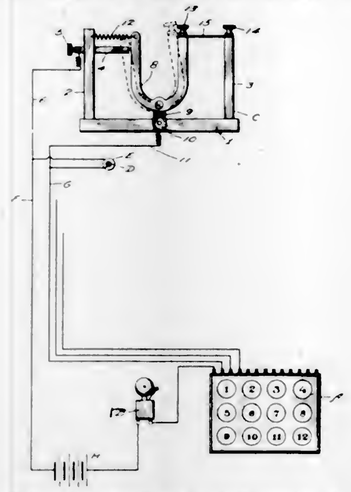
2. A manually operated vibrator embodying a tubular portion, a rotary shaft, a stepped cam thereon, a contact cup or head having a stem working in contact with said cam, said tubular portion having openings for adjusting said stem to coöperate with any one of the steps of the cam.

856,921. ELECTRIC FIRE-ALARM. ISAAC M. SIMONS, Youngstown, Ohio. Filed Feb. 26, 1907. Serial No. 359,364.

Claim.—1. In a device of the class described, a circuit closing device including a base, posts or uprights upon the base, a horizontally disposed arm upon one of the posts, a U-shaped lever supported upon the base intermediate of the posts, a traction spring connecting one arm of the lever with the post having the horizontal arm, a readily fusible strip connecting the other arm of the lever with the opposite post and electric conductors connecting the horizontal arm and the U-shaped lever respectively with the line wires of a circuit including an annunciator and an electric bell.

2. In a device of the class described, a circuit closing device comprising a base having posts or uprights, a rocking member supported pivotally upon the base intermediate of the posts, a spring connecting the rocking member with one of the posts, a readily fusible strip connecting the rocking member with the opposite post, a horizontally disposed arm supported by the first post or upright and having a terminal V-shaped notch adapted to receive the rocking member, and conductors connecting the horizontal arm and the rocking member respectively with the line wires of the circuit including an annunciator and an electric bell.

3. In an electric fire alarm, an annunciator and an electric bell located at a central station, a circuit closing device such as a pressure button arranged in an apartment distant from the central station, line wires connecting the contact members of the circuit closer with an electric circuit including the annunciator, the bell, and a battery, and a special circuit closing device disposed in the apartment where the pressure button is located and including a pair of posts or uprights, a rocking member supported pivotally between said posts or uprights, a spring connecting the rocking member with one of the posts, a horizontally disposed arm supported by said post and having a terminal



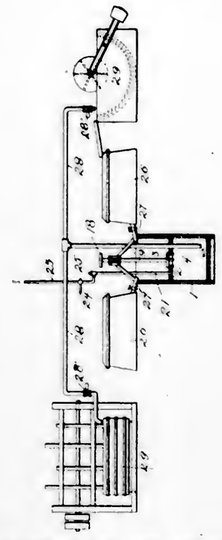
notch adapted to receive the rocking member, a readily fusible strip connecting the rocking member with the other post, and electric conductors connecting the horizontal arm and the rocking member respectively with the line wires of the circuit including the annunciator, the bell and the battery.

856,922. RETURN-LIQUOR SYSTEM FOR DYEING AND BLEACHING MACHINES. ROBERT P. SMITH and GEORGE E. DEUM, Philadelphia, Pa. Filed Apr. 11, 1906. Serial No. 311,036.

Claim.—1. In an apparatus of the class described, a reservoir, a central partition therein separating the same into upper and lower compartments, a manually operated valve in said partition for controlling the communication between said compartments, liquid induction pipes from extraneous sources of supply leading into the upper compartment, a liquid eduction pipe leading from the lower compartment and extending from a point near the floor thereof vertically through both compartments, an air pressure supply leading into said lower compartment, and means arranged in said air pressure supply pipe for controlling the supply and exhaust of air pressure in said lower compartment.

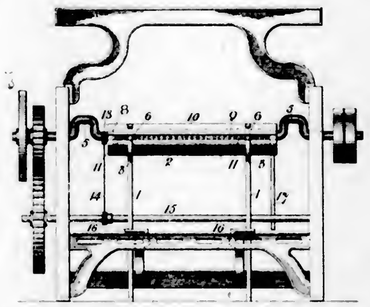
2. In an apparatus of the class described, a reservoir, a central partition separating the same into upper and lower compartments, a manually operated valve in said partition for controlling communication between said compartments, liquid induction pipes from extraneous sources of supply leading into the upper compartment, a liquid eduction pipe leading from the lower compartment and extending from a point near the floor thereof vertically through both compartments, an air pressure pipe from a source of air supply, leading into said lower compartment, a valve in said air pressure pipe controlling said air pressure supply and for exhausting the air from the lower compartment after the eduction of liquid therefrom.

3. In an apparatus of the class described, a tank, a central horizontal partition therein separating the tank into upper and lower compartments, an opening in said partition providing communication between the compartments, a valve seat arranged in said opening, a valve cooperating with said seat, an operating rack stem therefor extending above the top of the tank, a spider for supporting and guiding the upper end of the stem, an operating gear on said spider and engaging said rack stem, an air pressure pipe from a source of supply leading into the lower compartment through the partition, and a fluid eduction pipe extending through the partition and having its lower end in close proximity and spaced from the tank bottom.



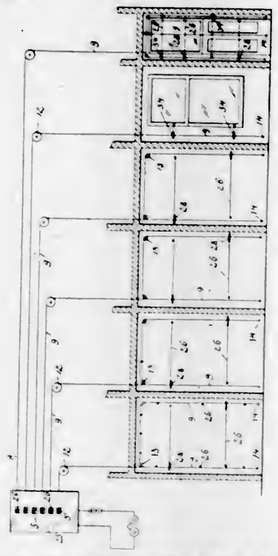
4. In an apparatus of the class described, a tank, a central partition therein separating the same into an open upper compartment and a closed lower compartment, a manually operated valve in the partition, an air pressure supply to the lower compartment and a fluid eduction pipe for the lower compartment.

856,923. HUMIDIFIER FOR MOISTENING THE WARP-THREADS OF LOOMS WHEN WEAVING. THOMAS F. SMITH, Blackburn, England. Filed Jan. 2, 1906. Serial No. 294,171.



Claim.—In a humidifier, the combination, with two supporting legs, each said leg comprising a loop-shaped frame the upper portion of which is provided with a hoop, of a trough supported in the said hoops and having an open top, a revoluble brush journaled in the said trough, and a cover carried by said hoops and arranged over the said trough, two outlet openings being formed, one on each side of the said trough, between its top edges and the bottom edges of the said cover.

856,924. FIRE AND BURGLAR ALARM. BERNARD STAUB, New York, N. Y. Filed Sept. 14, 1906. Serial No. 334,689.



Claim.—1. A system of protection against fire and burglary, comprising a common annunciator, a main set of cords or threads controlling said annunciator and leading from the same to distant points, an auxiliary set of threads or cords, and cutting devices at points of said main set and controlled by said auxiliary set.

2. An annunciator, comprising in combination, a series of rotatable disks, means connected to said disks and leading to distant points for controlling said disks, means for tending to displace said disks, an electric circuit containing a source of energy and a translating device, and a contact device controlled by said disks and adapted to close said electric circuit on the displacement of either of the disks.

3. A system of protection against fire and burglary, comprising a common annunciator, a main set of cords or threads controlling said annunciator and leading from the same to distant points, an auxiliary set of threads or cords, cutting devices at points of said main set and controlled by said auxiliary set, and a bell circuit controlled by said annunciator for indicating the operation thereof.

856,925. WOVEN FABRIC. WILLIAM M. STEVENSON, Indian Orchard, Mass., assignor to Hodges Fiber Carpet Company, Indian Orchard, Mass., a Corporation of Massachusetts. Filed Jan. 30, 1906. Serial No. 298,655.

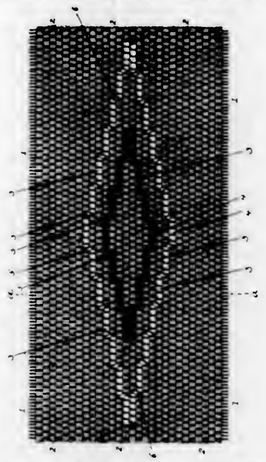
Claim.—1. A woven fabric having a figure woven in relief thereon, and composed of a weft thread extending continuously throughout successive shots and lying wholly upon the face of the fabric.

2. A woven fabric having upon its face, a relief figure consisting of a continuous weft thread shot successively under different sheds of tying warp threads, but lying throughout on the face of the fabric.

3. A woven fabric having upon the face of the same a relief figure composed of a tape or ribbon, interwoven as a weft thread with a plurality of sheds of the warp threads of the fabric.

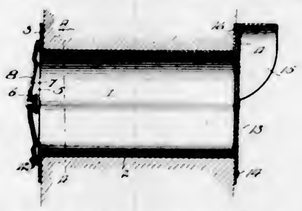
4. A woven fabric having upon the face of the same a relief figure composed of a weft thread passing successively under different sheds of tying warp threads, and having a partial twist imparted to it in passing from one shot to the next.

5. A woven fabric having upon the face of the same, a relief figure composed of a weft thread which is first interwoven with the warp threads of the fabric at a point be-



tween its opposite ends, subsequent interweavings extending progressively toward the ends of the thread.

856,926. VENTILATOR. EVA STEVICK, Grover Hill, Ohio. Filed Sept. 1, 1906. Serial No. 332,927.

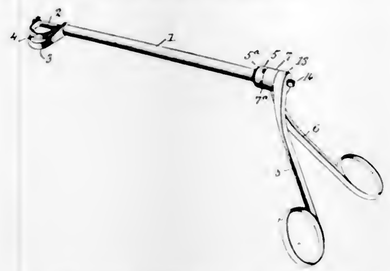


Claim.—The herein described ventilator comprising a pair of sleeves, each having an annular flange at one end thereof, and one of said sleeves having a storm hood projecting outward from the top of its flange, and said sleeves being mounted to telescope one within the other, a damper at the inner end of said ventilator, a hinged lid to which the damper is pivoted, said lid having radial openings therein, a spring clamp cut from the flange of one of the sleeves for holding said lid in closed position, said damper being mounted to rotate on a central pivot which attaches said damper and lid together, and said damper provided with openings, a screen secured to the outer end of the ventilator by lugs cut from the flange of one of the sleeves and bent over the screen material, a ring connected to the lower edge of the damper, rings connected to the rigid flange, and cords leading through said rings for rotating said damper.

856,927. TONSILLOTOME. EDWIN E. STRAW, Marshfield, Oreg. Filed July 26, 1906. Serial No. 327,861.

Claim.—1. A tonsillotome comprising an elongated tubular shaft having an inner shaft journaled therein, cutting blades secured to said shafts curved longitudinally and inclined transversely, and handles arranged at an angle to said shafts and rotatably adjustable thereon, substantially as shown and described.

2. A tonsillotome comprising an elongated tubular shaft having a cutting blade secured thereto, curved longitudinally and inclined transversely, an inner shaft journaled in the tubular shaft and provided with a cutting blade, curved longitudinally and inclined transversely, and handles arranged at an angle to said shaft, one member having a rotary locking adjustment on the outer shaft and the other member being adjustably secured to the inner shaft, substantially as shown and described.



3. A tonsillotome comprising an outer tubular shaft having attached thereto a cutting blade, curved longitudinally and inclined transversely at its central portion, and provided on its end with a recess, an inner shaft journaled in the tubular shaft having a cutting blade, curved longitudinally and inclined transversely at its central portion, and adapted at its end to pass through the recess on the end of the opposite blade, and handles arranged at an angle to said shafts, one member having a rotary locking adjustment on the outer shaft and the other member being adjustably secured to the inner shaft, substantially as shown and described.

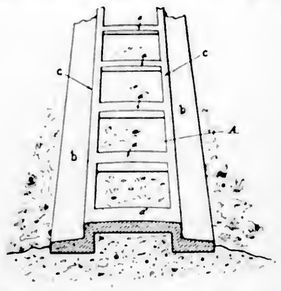
4. In a tonsillotome, the combination with an outer tubular shaft provided on one end with a boss having recesses formed therein, of a cutting blade secured to the opposite end of said shaft, curved longitudinally and inclined transversely at its central portion, an inner shaft journaled in the tubular shaft, an inner cutting blade secured to said shaft, and curved longitudinally and inclined transversely at its central portion, a handle mounted upon the end of the tubular shaft and provided with projections adapted to engage the recesses formed in the hub of said shaft, and a handle detachably secured to the end of the inner shaft, substantially as shown and described.

5. In a tonsillotome, the combination with an elongated tubular shaft provided on one end with a recessed boss, of a cutting blade secured to the opposite end of said shaft, curved longitudinally and inclined transversely at its central portion, an inner shaft having one of its ends slotted and provided with a shoulder to form a spring key, a cutting blade secured to the opposite end of said shaft, curved longitudinally and inclined transversely at its central portion, a handle provided with a hub having projections adapted to engage the recesses of the hub of the outer shaft, and a handle detachably secured to the end of the inner shaft, substantially as shown and described.

6. In a tonsillotome, the combination with an elongated tubular shaft provided on one end with a boss having recesses formed therein, of a cutting blade secured to the opposite end of said shaft, curved longitudinally and inclined transversely at its central portion, an inner shaft having one of its ends engaging the outer end of the blade secured to the tubular shaft, a cutting blade secured to the end of said shaft, curved longitudinally and inclined transversely at its central portion, a handle having a rotating locking engagement with one end of the tubular shaft, and a handle detachably secured to one end of the inner shaft, substantially as shown and described.

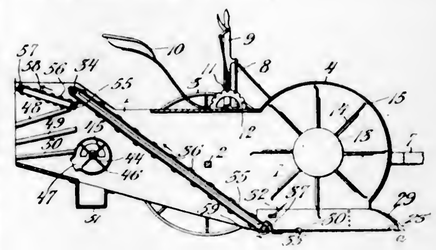
856,928. ROADWAY FOR VEHICLES. ZACHARY T. SWEENEY, Columbus, Ind. Filed Aug. 23, 1906. Serial No. 331,816.

Claim.—1. A roadway composed of concrete having parallel tracks which are firmly held together and kept in place by integral cross bars of the same material, thus forming a solid roadway and doing away with all mechanical appliances for holding the tracks together.



2. A turn in such roadway with outside rail deflected toward the inner rail so as to allow the hind wheels of a motor-propelled vehicle free play and yet remain upon the track in making the turn.

856,929. PEA AND BEAN HARVESTING AND THRESHING MACHINE. ERNEST THARP, Norfolk, Va., and BENAIAH THARP, Jr., Harrington, Del. Filed Oct. 24, 1905. Serial No. 284,237.

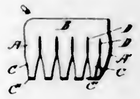


Claim.—1. In a pea and bean harvester, a table having forwardly diverging blades adapted for cutting the vines and directing them onto the table, threshing mechanism arranged to act on the vines and feed them rearwardly on the table, conveying mechanism for carrying the vines to and delivering them at the rear of the machine, and means for separating the threshed seed from the vines prior to discharge of the latter.

2. In a pea and bean harvester, a table provided with a longitudinal, outwardly flaring entrance opening and having cutting knives arranged at opposite sides of said opening for cutting the vines and directing them onto the table, a rotary threshing drum arranged above the latter and adapted to thresh the material and feed the same rearwardly on the table, conveyers disposed for receiving the material from the table and discharging the same at the rear end of the machine, and mechanism for separating the threshed seed from the material prior to discharge of the latter.

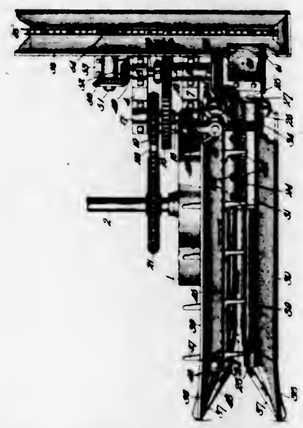
3. In a pea and bean harvester, a collecting table having cutting knives adapted to cut the vines, a rotary threshing drum arranged above the table and having beater arms for threshing the material and feeding the same rearwardly on the table, a conveyer belt operable for carrying the material from the table rearwardly in the machine, a second belt adapted to receive the material from the first named belt and discharge the same at the rear of the machine, said second belt being provided with openings through which the seed fall, a system of screens arranged beneath the second belt for separating and cleaning the seed, and means for operating all of said parts.

856,930. HEEL AND TOE STIFFENER FOR BOOTS AND SHOES. WENDELL P. THORE, Boston, Mass. Filed June 16, 1906. Serial No. 322,092.



Claim.—As a new article of manufacture, a stiffener for the heels of boots and shoes comprising an elastic moldable plate made as shown, having a continuous upper part, a middle strip cut by a series of vertical parallel kerfs whereby the central part of the stiffener is allowed to expand in molding, and a lower part or strip consisting of deep serrations the apexes of which terminate in the said parallel kerfs, substantially as and for the purpose set forth.

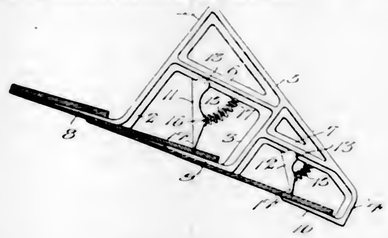
856,931. HUSKING-MACHINE. RALEIGH P. WHITE, Kansas City, Mo., assignor of one-half to Wallace Pratt, Jr., Kansas City, Mo. Filed Dec. 9, 1905. Serial No. 291,068.



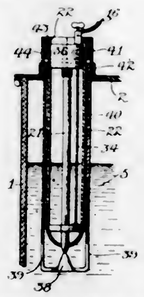
Claim.—The combination of an inclined plate having a central longitudinal bifurcation in its front portion and a central longitudinal slot in its rear portion, a pair of parallel shafts mounted longitudinally on the inclined plate on opposite sides of said bifurcation and slot, stripping and husking rollers secured on said shafts, the husking rollers being arranged alongside the slot and each provided with sharp projections which engage cavities in the opposing roller over the slot in the inclined plate, divergent side plates above said shafts which extend down close to the rollers, an endless chain supported by the inclined plate and moving around one of the side plates and provided with lateral arms projecting over the bifurcation and slot in the inclined plate, and suitable operating mechanism.

856,932. SHINGLING-BRACKET. SPENCER T. WOOTAN, Paducah, Ky. Filed May 16, 1906. Serial No. 317,223.

Claim.—The herein described shingling bracket comprising a cast metal frame of skeleton form provided with longitudinal braces, each provided with a vertical rib, legs having toes projecting in the same direction, and spring pressed dogs each provided with a bifurcated upper end pivotally connected to the ribs, said dogs having pointed lower ends and springs secured to the longitudinal braces and to the dogs for holding them into engagement with the shingles, essentially as described.



856,933. ELECTRICAL INTERRUPTER AND RECTIFIER. HAROLD A. YARNELL, Los Angeles, Cal., assignor to Pacific Wireless Telegraph Company, Los Angeles, Cal., a Corporation of Washington. Filed June 16, 1905. Serial No. 265,480.



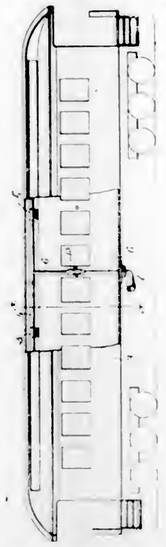
Claim.—1. An electrical interrupter and rectifier comprising a liquid, a shell with a perforated end immersed in the liquid, an electrode in the shell with its end projecting through the perforation in the shell, a tube outside of the shell, the lower end of the tube having arms which support a cone upon which cone the lower end of the electrode rests, and means for securing vertical relative adjustment between the tube and shell whereby the effective contact area of the lower end of the electrode may be regulated.

2. An electrical interrupter and rectifier comprising a liquid, a shell with a perforated end immersed in the liquid, an electrode in the shell with its end projecting through the perforation in the shell, a tube outside of the shell, the lower end of the tube having arms which support a cone upon which cone the lower end of the electrode rests, means for securing vertical relative adjustment between the tube and shell whereby the effective contact area of the lower end of the electrode may be regulated, a conducting rod within the shell extending from the upper end of the shell to near the lower end of the shell, and means at the upper end of the shell for supporting the conducting rod.

856,934. CAR-VENTILATOR. GLEASON L. ARCHER, Boston, Mass. Filed Jan. 26, 1905. Serial No. 242,711.

Claim.—1. In a car, means to take fresh air from beneath the car and introduce it into the car at the top thereof and at one side, and other means to withdraw vitiated air from the top of the car at the other side and discharge it beneath the car, whereby a downward current of fresh air is established on one side of the car, and an upward current of vitiated air is established on the opposite side of the car.

2. In a car ventilating system, two cylinders within the car at the top thereof and situated on opposite sides of the car, each cylinder having openings, a flue extending from each cylinder down through the bottom of the car, each flue terminating in a rotatable funnel-shaped mouth-piece beneath the car, and a gravity lock for each mouth piece.



3. In a car, two cylinders at the top of the car extending longitudinally thereof and situated on opposite sides of the car, each cylinder being provided with registers, a forced-draft flue connected to one cylinder, an induced-draft flue connected to the other cylinder, both flues terminating beneath the car in rotatable funnel-shaped mouth-pieces, whereby by directing the mouth pieces in the opposite direction the fresh air collected by one mouth piece is forced into the corresponding cylinder while the suction produced by the other mouth piece withdraws air from its corresponding cylinder.

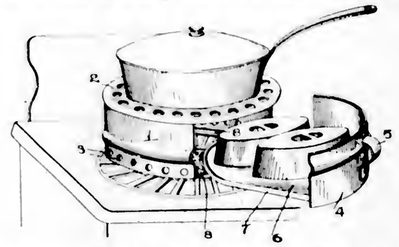
4. In a car ventilating system, two cylinders at the top of the car and on opposite sides, each cylinder having openings, a flue connected with each cylinder and terminating in a funnel-shaped mouth-piece situated beneath the car, each mouth-piece being mounted to turn about a vertical axis, an air filter in one of said flues and means to continuously renew said filter.

5. In a car ventilating system, two cylinders at the top of the car and on opposite sides, each cylinder having openings, a flue connected with each cylinder and terminating in a funnel-shaped mouth-piece situated beneath the car, each mouth-piece being mounted to turn about a vertical axis, a gravity lock for each mouth piece, an air filter in one of the flues, and means to continuously renew said filter.

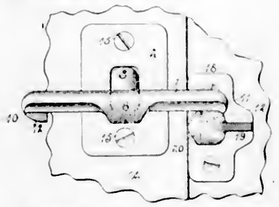
856,935. COMBINED COOKING-UTENSIL HOLDER AND SAD-IRON HEATER. MARTHA B. BASSETT, St. Louis, Mo. Filed Aug. 7, 1906. Serial No. 329,629.

Claim.—1. A device of the class described, constructed with an open-bottomed housing having a perforated top and there being a row of perforations through the side wall of the housing adjacent the bottom thereof, there being an opening in one side of said housing, a plate normally closing said opening, and a shelf carried by said plate and extending into the housing the forward end of which plate is rounded, and the entire edge of said plate being beaded; substantially as specified.

2. A device of the class described, constructed with an open-bottomed cylindrical housing having a flat perforated top, there being a single row of perforations formed through the side of the housing adjacent its lower end, there being an opening in one side of the housing which opening extends from the top to the bottom of the housing, a plate normally closing said opening, a shelf fixed integral with the inner face and lower edge of said plate and extending through the opening into the housing, and the entire edge of which plate is beaded.



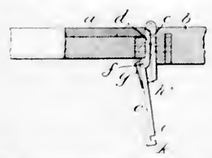
856,936. DOOR-LATCH. CHARLES B. BAUMGARTNER, Rochelle, Ill., assignor to Loraine Manufacturing and Tool Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 1, 1907. Serial No. 365,732.



Claim.—1. A door latch, comprising a pivoted section having a cross-bar provided with two depending end hooks, and a depending center hook, the center hook facing toward the pivot of the section, and the end hooks facing away from the pivot of the section, a suitable latch holder for the end hooks and a suitable catch for the center hook.

2. A door latch comprising a pivoted section having a cross-bar provided with two depending end hooks and a depending center hook, the center hook facing toward the pivot of the section and the end hooks facing away from the pivot of the section, a reversible latch holder for the end hooks and a suitable catch for the center hook.

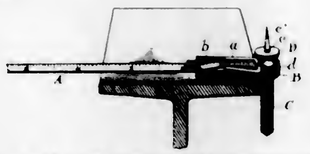
856,937. LOCKING-HINGE. OKO A. BELL, New York, N. Y., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 24, 1906. Serial No. 302,808.



Claim.—1. The combination with a two-leaf hinge, one of whose leaves is provided with an inturned lip, of a brace pivoted to the other leaf, and a spring for pressing said brace against said lip, whereby the brace is caused to engage with said lip and to automatically lock the members in their adjusted position.

2. The combination with a two-leaf hinge, one of whose leaves is provided with an inturned lip, of a brace pivoted to the other leaf, said brace having a channel upon the side bearing against said lip into which said lip is adapted to ride and automatically lock the hinge members in their adjusted positions, and a spring for forcing said brace into engagement with said lip.

856,938. ANCHOR FOR TAPE-LINES. CHARLES J. BELLER, Bedford, Ohio, assignor of one-half to John Beller, Cleveland, Ohio. Filed Feb. 14, 1907. Serial No. 357,424.



Claim.—1. As a new article of manufacture, an anchor for tape lines having two separable portions at right angles to each other and one portion constructed with a hole to thread a tape line through its outer end, and the other portion constructed at one end to counterweight the anchor below the drawing line of the tape and having its opposite end pointed.

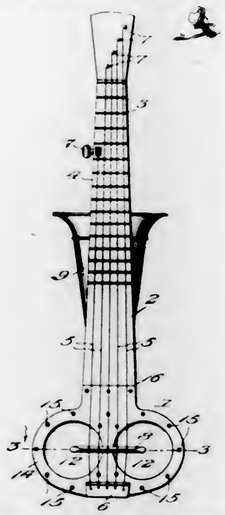
2. An anchor for tape-lines consisting of a flat top piece provided with a hole to enter the tape-line and a part depending at right angles from its other end having a threaded stem, and a nut engaging said stem and locking said parts together.

3. A tape-line having a loop at its end, an anchor comprising a top piece adapted to thread the tape-line through the free end thereof, a right angled part having a threaded stem entered from beneath through said piece and a nut on said stem adapted to lock said parts together and to engage said loop on the tape-line.

4. As a new article of manufacture, an anchor for tape-lines having two parts separably secured together at right angles to each other, one of said parts constructed to make engagement with a fixed object and provided with a threaded stem and the other part constructed to thread the tape-line through the same and engaged on said stem.

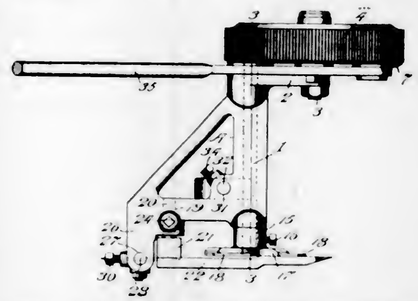
5. The tape-line having a loop at its end, in combination with an anchor plate having a hole in one end through which said loop is threaded, a stem through the opposite end of said plate having one end threaded and a nut on said threaded portion adapted to bear upon and fasten said loop.

856,939. MUSICAL INSTRUMENT. ALFRED T. BOND, Rexburg, Idaho. Filed Jan. 9, 1906. Serial No. 295,309.



Claim.—A musical instrument comprising a hollow body and a neck, said body being provided with a pair of spaced openings in its upper wall and having its upper face depressed below the upper surface of the neck, a diaphragm arranged to cover the openings and constituting a sounding board, said diaphragm being of a size co-extensive with that of the upper face of the body, a pair of resilient packing gaskets applied respectively at opposite faces of the diaphragm for marginally sustaining the same, strings applied to the instrument, a bridge supporting the strings, said bridge being arranged to straddle the space between the openings with its ends resting on the diaphragms respectively within the openings, a retaining plate applied to the face of the body within the depression and attached for holding the gaskets and diaphragm in place, and a resonator communicating with the body of the instrument.

856,940. LAWN-TRIMMING MACHINE. JOHN P. CADY, San Antonio, Tex. Filed Feb. 20, 1907. Serial No. 358,383.



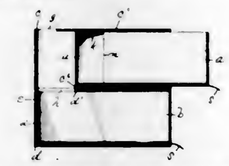
Claim.—1. In a lawn trimming machine, a frame having a forwardly extending lug, a shaft journaled transversely in the frame, a drive wheel supported for rotation by the forwardly extending lug and having an internal gear, a pinion upon the end of the transverse shaft that projects within the drive wheel, clutch means for connecting said pinion with the shaft, a hub upon the opposite end of the shaft having radially extending cutter carrying arms, a stem laterally adjustable in the frame and provided with a head, and a plurality of forwardly divergent fingers upon said head, said fingers being disposed in an approximately vertical plane adjacent to the cutter carrying hub.

2. In a lawn trimming machine, a frame, a transversely disposed driven cutter carrying shaft, a transversely adjustable member carrying a plurality of divergent fingers disposed in an approximately vertical plane and co-operating with the cutters carried by the shaft, an auxiliary rotary sharp edged cutter disk supported in rear of the fingers and approximately in the same vertical plane.

3. In a lawn trimming machine, a frame having a forwardly extending lug, a drive wheel supported for rotation upon said lug, a shaft journaled transversely in the frame and extending within the drive wheel, a pinion upon the shaft meshing with an internal gear upon the drive wheel, clutch mechanism connecting the pinion with the shaft, a cutter carrying hub upon the opposite end of the shaft adjacent to the frame, a member transversely adjustable upon the frame, a plurality of divergent fingers carried by said members and co-operating with the cutter upon the shaft, a vertically adjustable shank carried by the frame intermediate the connecting mechanism and the drive wheel, and a supporting wheel carried by said shank.

856,941. BOX FOR PENS, &c. GILBERT E. CHANDLER, Cambridge, Mass. Filed July 5, 1906. Serial No. 324,770.

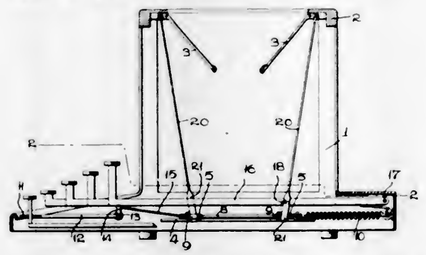
Claim.—1. A box or receptacle for the purpose described, comprising two boxes set one upon the other and rigidly secured together, the top of the upper box being provided with a slot or opening and the bottom of the upper box being provided with a slot or opening under the opening in the top of said box and the top of the lower box being provided with a slot or opening under the openings in the upper box, a sliding drawer in the lower box, a sliding drawer in the upper box, and a platform supported within the upper drawer and registering with and closing said slot in the upper box when the upper drawer is in a closed position.



2. A box or receptacle for the purpose described, comprising two compartments one above the other, the top of the upper compartment being provided with a slot or opening and the horizontal partition between the two compartments being provided with a slot or opening under the opening in the top of the upper compartment, a sliding drawer in the lower compartment, a sliding drawer in the upper compartment, and a platform supported within the upper drawer and registering with and closing said slot in the top of the upper compartment when the upper drawer is in a closed position.

3. A box or receptacle for the purpose described, comprising two compartments one above the other, the top of the upper compartment being provided with a slot or opening and the horizontal partition between the two compartments being provided with a slot or opening under the opening in the top of the upper compartment somewhat broader than the opening in the upper compartment, a sliding drawer in the lower compartment, a sliding drawer in the upper compartment, and a platform supported within the upper drawer flush with its upper edge and somewhat broader than the slot in the upper compartment, said platform registering with and closing said slot in the upper compartment when the upper drawer is in a closed position.

856,942. SHIFTING MECHANISM FOR TYPE-WRITERS. CLARENCE C. CHRISMAN, St. Louis, Mo. Filed Oct. 23, 1906. Serial No. 340,214.



Claim.—1. In a writing machine, a series of type bar levers, a key lever for said series, and a pin and slot connection between said series of type bar levers, and the key levers, whereby any one of the series of type bar levers may be actuated by the key lever, in combination with a shifting mechanism; substantially as specified.

2. In a writing machine, a series of type bar levers, key levers for said series, a pin and slot connection between the type bar levers and the key levers, a shifting mechanism whereby one set of type bar levers may be moved from its normal position, disengaging its connection with the key levers, which movement causes a disengaged set of type bar levers to become engaged with the key levers; substantially as specified.

3. The combination with a writing machine, provided with the usual type bars, of type bar levers pivotally connected to the type bars, depending therefrom, and arranged in pairs, a key lever passing between the lower ends of each pair of type bar levers, a connection between the type bar levers and the key levers whereby either one of the type bar levers may be actuated when the key lever is depressed, and means whereby the lower ends of each pair of type bar levers are shifted horizontally; substantially as specified.

4. The combination with a writing machine, provided with the usual type bars, of type bar levers pivotally connected to the type bars, depending therefrom, and arranged in pairs, a key lever passing between the lower ends of each pair of type bar levers, a connection between the type bar levers and the key levers whereby either one of the type bar levers may be actuated when the key lever is depressed, and means whereby the lower ends of each pair of type bar levers are shifted horizontally; substantially as specified.

5. The combination with a writing machine provided with the usual type bars, of type bar levers pivotally connected to the type bars, a connection at the junction of said type bar levers and the key levers whereby the set of type bar levers normally engaged may be disengaged from the key levers, which movement throws said set of type bar levers out of action and engages and brings into action another set of type bar levers; substantially as specified.

6. The combination with a writing machine, provided with the usual type bars, of type bar levers pivotally connected to the type bars, depending therefrom, and arranged in pairs, a key lever passing between the lower ends of each pair of type bar levers, a pin and slot connection between the type bar levers and the key levers whereby either one of the type bar levers may be actuated when the type lever is depressed, and means whereby the lower ends of the type bar levers are shifted horizontally to change the position of the pins in the slots of the connection between said type bar levers and the key levers; substantially as specified.

7. The combination with a writing machine, provided with the usual type bars, of type bar levers pivotally connected to the type bars, depending therefrom, and arranged in pairs, anti-friction rollers arranged on the adjacent faces of the lower ends of each pair of type bar levers, a key lever passing through each pair of type bar levers, and there being a slot formed in each key lever to receive the anti-friction rollers; substantially as specified.

8. The combination with a writing machine, provided with the usual type bars, of type bar levers pivotally connected to the type bars, depending therefrom, and arranged in pairs, anti-friction rollers arranged on the adjacent faces of the lower ends of each pair of type bar levers, there being a slot formed in each type bar lever to receive the anti-friction rollers, and means whereby the lower ends of the type bar levers are shifted horizontally to change the positions of the rollers in the slots of the key levers; substantially as specified.

856,943. DRIVING MECHANISM. MELVIN B. CHURCH, Grand Rapids, Mich., and KARSTEN KNUDSEN, Chicago, Ill., assignors to The Holson Motor Patents Company, Ltd., Grand Rapids, Mich., a Partnership of Michigan. Filed Feb. 23, 1904. Renewed Oct. 3, 1906. Serial No. 337,273.

Claim.—1. In combination, a pair of compensating gears, an equalizer connecting them, a third gear member meshing with both compensating gears, and driving means, substantially as described.

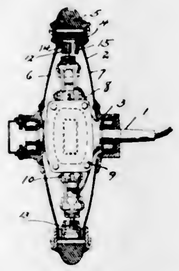
2. In combination, a pair of compensating gears, an equalizer connecting them and a third gear meshing with both compensating gears, said equalizer acting as a power transmission element, and means for driving the pair of gears, substantially as described.

3. In combination, a plurality of compensating gears, equalizer mechanism connecting said gears for compensating movement, and another gear element coöperating in common with said compensating gears at separated points, the portions of said gear coöperating with the compensating gears being rigid with each other.

4. In combination, a pair of compensating gears, an

equalizer connecting them and a third gear meshing with both compensating gears, and means for driving the pair of gears through said equalizer, substantially as described.

5. A driving mechanism comprising a driving member, an encircling member to be driven, connections between the driving member and substantially opposite points of the encircling member to drive the same and equalizer means to control the transmission from the driving member to the encircling member at said opposite points whereby a perfect couple action in continuous rotary motion is effected, substantially as described.



6. A driving mechanism comprising a driving member, an encircling member to be driven, shaft sections and gearing connecting the driving member to substantially opposite sides of the encircling member and equalizing means to control the transmission between each shaft section and the encircling member, substantially as described.

7. A driving mechanism comprising a driving member, an encircling member to be driven, a pair of annular racks carried thereby, gearing intermediate the racks and the driving member to transmit the power to the encircling member at substantially opposite points thereof and equalizing means to control the transmission at each of said opposite points, substantially as described.

8. In combination, a pair of gears and a gear meshing therewith, means whereby said pair of gears have a compensating action in respect to each other, and means for driving the pair of gears, substantially as described.

9. In combination, a pair of gears, a third geared member meshing therewith, and equalizing means for the pair of gears, each gear of the pair alternating with its companion gear in transmitting the power with the greater efficiency according as the teeth of said gears respectively assume the more efficient power transmitting engagement with the teeth of the third geared member, substantially as described.

10. In combination, a pair of rotary power transmitting members, a third member in power transmitting engagement therewith, driving means and equalizing means for the pair of power transmitting members, substantially as described.

11. A drive shaft mechanism comprising a shaft, a driving pinion on each end thereof, two rigidly united parallel gear racks with which the respective pinions are engaged, and means intermediate the ends of said shaft affording a yielding connection between said pinions, for the purpose described.

12. A drive shaft mechanism comprising a shaft, a driving pinion on each end thereof, two rigidly united parallel gear racks with which the respective pinions are engaged, and means intermediate the ends of said shaft affording a yielding connection between said pinions, comprising a pivot support carried by the shaft, an evener carried by said pivot support, and operative connections between the respective pinions and the opposite ends of said evener.

13. A drive shaft mechanism comprising two alined shaft sections, a pinion having rigid connection with each of said sections, two parallel rigidly united gear racks between which said shaft extends diagonally and with which the respective pinions are engaged, and means operatively connecting said shaft sections comprising a pivot support carried by the shaft, an oscillatory member mounted upon said pivot support, and intermeshing connections between the oscillatory member and respective shaft sections.

14. A drive shaft mechanism comprising two alined shaft sections, a rigid driving pinion for each, two rigidly united parallel annular racks between which said shaft is arranged to extend diagonally and diametrically and with which the respective pinions are engaged, and means for yieldably connecting and driving said shaft sections comprising a pivot support carried thereby and having its axis radial to the shaft axis, an oscillatory member mounted upon said pivot support, intermeshing connections between said oscillatory member and the respective shaft sections, and means for applying driving power to said oscillatory member at a point between the shaft sections.

15. In a power transmitting mechanism, a driven member, a pair of parallel coaxial connected racks carried thereby, a driving shaft extending diametrically and diagonally between said racks, pinions on the ends of said shaft engaging, one with one rack and one with the other rack, and an equalizing device forming a yielding connection between the driving and the driven members.

16. A drive-shaft mechanism comprising two alined shaft sections each provided with a rigid driving pinion, two rigidly united gear racks with which the respective pinions are engaged, a pair of diametrically opposite evener bearings upon the meeting end of each shaft section, a pair of eveners one at each side of the shaft axis, having their ends engaged with said evener bearings, a cross-support extending through the intermediate portions of the two eveners, and a driving member operatively connected with said cross-support radially outside of the eveners.

17. In combination, a pair of rotary power transmitting members, a third member in power transmitting engagement therewith and equalizing means for the pair of power transmitting members, said equalizing means having movement relative to said pair of power transmitting means, substantially as described.

18. In combination in power transmission means, an encircling member, an inner member encircled thereby, connections between said inner member and substantially opposite points of the encircling member, driving means and equalizing means to secure a substantially uniform transmission of power at said opposite points, substantially as described.

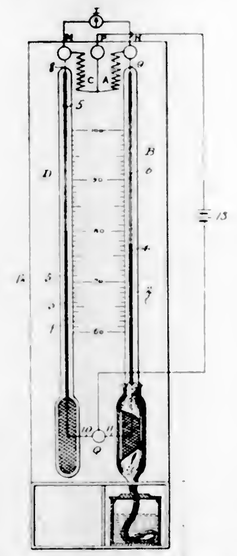
19. In combination in power transmission means, an annular member, members at substantially opposite points in respect to the axial center of said annular member having power transmitting engagement therewith, connecting means between the opposite members, driving means and means whereby a compensating effect is secured at said opposite points, substantially as described.

20. In combination, annular power transmission members, a pair of members, one of which is in engagement with one annular member and the other member of the pair engaging the other annular member, the engaging points being substantially on opposite sides of the center of rotation of the annular members, connecting means between the members of the pair, and equalizing means, substantially as described.

21. In combination, annular power transmission members, a pair of members, one of which is in engagement with one annular member and the other member of the pair engaging the other annular member, the engaging points being substantially on opposite sides of the center of rotation of the annular members, connecting means between the members of the pair, inclined in relation to the axis of rotation, and equalizing means, substantially as described.

22. In combination, an annular geared member and a pair of gears meshing therewith at substantially opposite points, said gears having a compensating action in relation to the annular geared member, each gear of the pair alternating with its companion gear in transmitting the power with the greater efficiency according as the teeth of said gears respectively assume the more efficient power transmitting engagement with the teeth of the annular geared member, substantially as described.

856,944. HYGROMETER FOR REGULATING HUMIDIFYING AND HEATING SYSTEMS. STUART W. CRAMER, Charlotte, N. C. Filed Mar. 9, 1906. Serial No. 305,139.



Claim.—1. The combination with a source of electrical energy, of means for indicating temperature and means for indicating humidity, each of the means being adapted to complete an electric circuit, electrical conductors connecting said source of electrical energy with each of said means, and means for indicating a predetermined relationship between said indicating means by electrically balancing the resistances of said indicating means.

2. The combination with a source of electrical energy, of a dry-bulb thermometer and a wet-bulb thermometer, each of said thermometers being adapted to complete an electric circuit, electrical conductors connecting each of said thermometers in circuit with resistance to form the arms of an electric bridge, electrical conductors connecting said source of electrical energy to the arms of said electric bridge, and means for indicating relative changes in the temperatures as shown by the two thermometers, said means consisting of an electric indicator suitably connected between said arms of said electric bridge.

3. The combination with a source of electrical energy, of means for indicating temperature and means for indicating humidity, each of said means being adapted to complete an electric circuit, a fixed resistance, an electric indicator, and electrical conductors connecting up the said indicating means with said source of electrical energy and said resistance and said electric indicator, said connections including a Wheatstone "bridge," in which the electric indicator consists of a relay adapted to make and break an electric circuit.

4. A hygrometer comprising a dry bulb thermometer and a wet bulb thermometer electrically connected; in combination with a source of electrical energy, and means for indicating differences in resistances of said thermometers according to a predetermined scale.

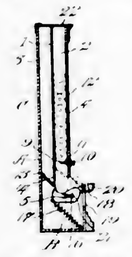
5. The combination with a source of electrical energy, of two thermometers, one for indicating temperature and the other for indicating humidity, each of said thermometers being adapted to complete an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said thermometers and each thermometer with the other, one of said conductors containing an electro-magnetic device.

6. The combination with a source of electrical energy, of a dry-bulb thermometer and a wet-bulb thermometer, each of said thermometers being adapted to complete an electric circuit, separate electrical conductors connecting said source of electrical energy with each of said thermometers and each thermometer with the other, one of the conductors containing an electro-magnetic device.

7. The combination with a source of electrical energy, of means for indicating temperature, and means for indicating humidity, variations in the indications of each of the means being adapted to disturb an electrical balance, electrical conductors connecting said source of electrical energy with each of the said means, and means for indicating a predetermined relationship between said indicating means by said disturbance of the electrical balance.

8. A source of electrical energy, two thermometers, each of said thermometers being adapted to complete an electric circuit, an electro-magnetic device which in its normal position indicates a predetermined scale of humidity at different temperatures, electrical conductors connecting said source of electrical energy, said thermometers and said electro-magnetic device; and means for actuating the electro-magnetic device, adapted to be operated by disturbances in the electrical characteristics of the thermometers produced by changes in temperature and causing said electro-magnetic device to indicate any departure from said predetermined scale of humidity.

856,945. THREAD-CABINET. CHARLES E. DOVE, Dovesville, Va. Filed Feb. 26, 1907. Serial No. 359,392.



Claim.—1. In a device of the class described, a casing comprising a base and a body, the latter being divided vertically into a plurality of front and rear sub-compartments, an inclined flange disposed adjacent to the lower ends of the rear sub-compartments, flaps hinged adjacent to the lower ends of the sub-compartments and co-operating with the flange to form closures for the lower ends of the rear sub-compartments, supporting members disposed to obstruct the lower ends of the front sub-compartments, and spring actuated levers supported adjacent to the lower ends of the front sub-compartments and having operating stems extending through a slot in the casing.

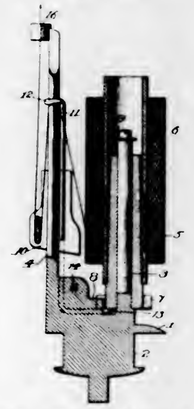
2. In a device of the class described, a casing having front and rear sub-compartments, an inclined flange disposed adjacent to the rear sub-compartment, a flap hingedly supported intermediate the lower ends of the sub-compartments, a spring actuated lever supported below the sub-compartments and having a recess or pocket in its upper side, and means for temporarily obstructing the lower end of the front sub-compartment.

856,946. CARRIER FOR BRAIDING-MACHINES. FELIX DUENKEL, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed July 12, 1906. Serial No. 325,796.

Claim.—1. The combination with a cop-holder, of means whereby said holder acts as a weight for taking up slack in the thread fed from said cop.

2. In a spool-carrier, the combination with a spindle, of a sleeve rotatably mounted thereon and adapted to hold a cop of thread, and means whereby said sleeve and cop act as a weight for taking up slack in the thread fed from said cop.

3. The combination with a cop-holder, of a weight for taking up slack formed in the thread fed from the cop, and means whereby the weight of said cop-holder supplements the slack-controlling weight.

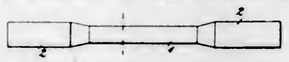


4. A spool-carrier comprising a foot having a vertically extending spindle, a sleeve rotatably mounted on said spindle and adapted to hold a cop of thread, said sleeve having a longitudinal movement on said spindle, a stop for preventing the rotation of said sleeve when in its lowered position, a slidably mounted weight for taking up slack in the thread, and a slidable rod extending above said weight and beneath said sleeve in the paths of movement thereof.

5. In a spool-carrier, the combination with a spindle, of a sleeve rotatably mounted thereon and adapted to hold a cop of thread, said sleeve being also mounted to have a vertical movement on the spindle, a stop for preventing the rotation of said sleeve when in its lowered position, and means whereby the tension of the thread raises the sleeve free from said stop.

6. A spool-carrier comprising a foot having a standard and a spindle, a sleeve rotatably mounted on said spindle and adapted to hold a cop of thread, said sleeve having a vertical movement on said spindle, studs on said spindle, a flange or stop with which said studs are adapted to engage when the sleeve is in its lowered position on the spindle, a weight slidably mounted upon the standard, and a rod slidably engaging said standard in the path of movement of said weight and extending beneath said sleeve for lifting the same free from said stop.

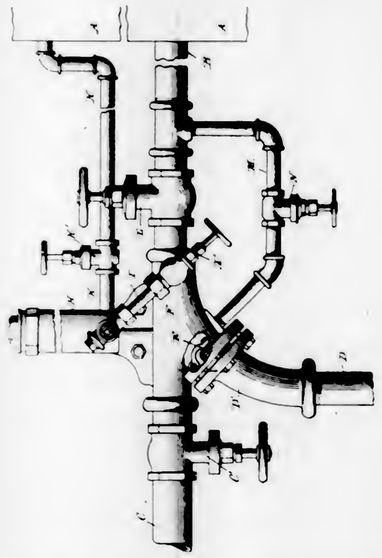
856,947. WELDLESS CHAIN. STEFAN K. VON ECSEGHY, Vienna, Austria-Hungary, assignor to The Firm of Handelsgesellschaft Kleinberg & Co., Vienna, Austria-Hungary. Filed Oct. 19, 1906. Serial No. 339,702.



Claim.—A weldless non-separable chain composed of a plurality of links, each link having a pair of eyes integral with and in planes at right angles to each other, one of said eyes composed of two perforated parts adapted to be pressed into contact, and the opening in each of said parts having a major diameter less than its least external diameter, substantially as described.

856,948. CHEMICAL AND WATER FEED MECHANISM FOR STEAM-BOILERS. ROBERT H. FETTA, Richmond, Ind., assignor to The Fetta Water Softener Company, Richmond, Ind., a Corporation of Indiana. Filed Jan. 22, 1907. Serial No. 353,513.

Claim.—1. In a water and chemical feed for steam boilers the combination with the feed pipe having two branches one a water inlet and the other a blow-off, a check valve in the water inlet branch and a blow-off valve in the blow-off branch, of a compost chamber, a duct leading from the chamber to the feed pipe between said valves and the boiler, and a condensed water and steam pipe leading from the compost chamber to the boiler; substantially as described.



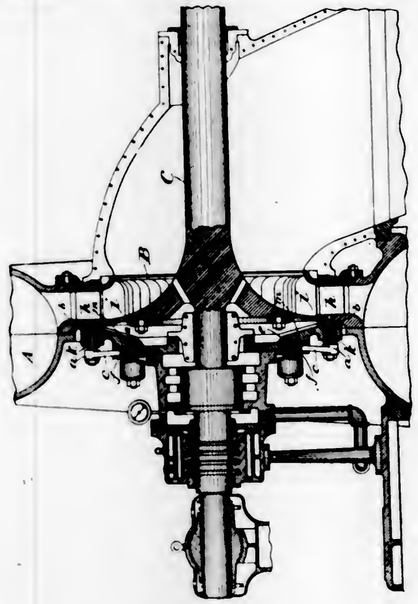
2. In a feed for steam boilers, the combination with the feed pipe having two branches, one a water supply and the other a blow-off and separate valves in said branches and feed pipe respectively, of a by-pass for the valve in the feed pipe opening in position to clean the valve in the water supply branch when the blow-off is open; substantially as described.

3. In a feed for steam boilers, the combination with the feed pipe having a blow-off discharge and valve therefor and a water feed branch entering the feed pipe between the blow-off valve and boiler, of a check valve located at the feed pipe end of the water feed branch for closing the latter and in position to be cleaned by the reverse flow in blowing off; substantially as described.

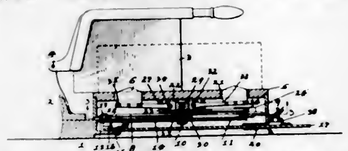
4. In a feed for steam boilers, the combination with the feed pipe having a blow-off discharge and valve therefor and a water feed branch entering the feed pipe between the blow-off valve and boiler, of a check valve located at the feed pipe end of the water feed branch, a compost chamber communicating with the feed pipe for supplying chemical and a water supply pipe leading to the compost chamber; substantially as described.

856,949. TURBINE WATER-WHEEL. ARTHUR GIESLER, Dayton, Ohio, assignor to The Platt Iron Works Company, Dayton, Ohio, a Corporation of Ohio. Filed May 31, 1905. Serial No. 263,075.

Claim.—In a water wheel, a series of gates mounted upon pins, said pins extending on the outer side of the wheel casing, an actuating ring lying on the outer side of the wheel casing, a series of oscillating arms or levers connected upon the exposed ends of the gate pins, the ends of said arms terminating in straight parallel sides, and a series of oscillating bushings mounted in said actuating ring, said bushings having openings in their exposed ends to receive the ends of said levers substantially as specified.



856,950. CHEESE-CUTTER. ALAN K. GILLESPIE, Pittsburg, Pa. Filed Apr. 2, 1907. Serial No. 365,916.



Claim.—1. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, and a cam mechanism connected to said knives for raising and lowering the same within the table.

2. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, and a cam mechanism under said table connected to said knives for raising and lowering the same within the table.

3. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, and inclined ways under said table for raising and lowering the knives within the table.

4. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, and a movable ring under said table having inclined ways for raising and lowering the knives within the table.

5. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives having rods connected thereto, and a movable ring under said table having inclined ways for engaging with said rods to raise and lower the same within the table.

6. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, rods connected to said knives and to a supporting block, and a movable ring under said table having inclined ways for engaging with said rods to raise and lower the same within the table.

7. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, rods connected to said knives and pivoted on a supporting block, and a movable ring under said table and around said block having inclined ways for engaging with said rods to raise and lower the same within the table.

8. In a cheese cutter, the combination of a base, a rotary table, a collar carried by said table having a slot therein, spurs or holding knives, rods connected to said knives and pivoted on a supporting block, a movable ring under said table and around said block having inclined ways for engaging with said rods to raise and lower the same within the table, and a lever connected to said ring and extending through said slot for moving said ring.

9. In a cheese cutter, the combination of a base, a rotary table, and a series of spurs or holding knives adapted to be raised and lowered within the table by a slanting movement.

10. In a cheese cutter, the combination of a base, a rotary table, a series of spurs or holding knives, and means connected to said knives for raising and lowering the same within the table by a slanting movement.

11. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, and a cam mechanism connected to said knives for raising and lowering the same within the table by a slanting movement.

12. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, and a cam mechanism under said table connected to said knives for raising and lowering the same within the table by a slanting movement.

13. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, and inclined ways under said table for raising and lowering the knives within the table by a slanting movement.

14. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, and a movable ring under said table having inclined ways for raising and lowering the knives within the table by a slanting movement.

15. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives having rods connected thereto, and a movable ring under said table having inclined ways for engaging with said rods to raise and lower the same within the table by a slanting movement.

16. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, rods connected to said knives and to a supporting block, and a movable ring under said table having inclined ways for engaging with said rods to raise and lower the same within the table by a slanting movement.

17. In a cheese cutter, the combination of a base, a rotary table, spurs or holding knives, rods connected to said knives and pivoted on a supporting block, and a movable ring under said table and around said block having inclined ways for engaging with said rods to raise and lower the same within the table by a slanting movement.

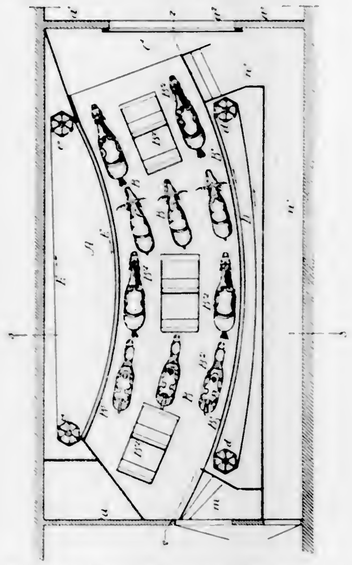
18. In a cheese cutter, the combination of a base, a rotary table, a collar carried by said table having a slot therein, spurs or holding knives, rods connected to said knives and pivoted on a supporting block, a movable ring under said table and around said block having inclined ways for engaging with said rods to raise and lower the same within the table by a slanting movement, and a lever connected to said ring and extending through said slot for moving said ring.

856,951. ILLUSION APPARATUS. FREDERICK J. HAFNER, Philadelphia, Pa., assignor to Atlantic Coast Amusement Company, Inc., Camden, N. J., a Corporation of New Jersey. Filed Oct. 8, 1906. Serial No. 337,972.

Claim.—1. The combination in an illusion apparatus, of a fixed platform representing a section of the rotating platform of a carousel, with an endless belt mirror at one side of the platform representing the fixed portions of the building, and means for moving said belt, substantially as described.

2. The combination in an illusion apparatus, of a suspended platform, a mirror in the form of an endless belt mounted on one side of the platform, and means for driving the mirror, substantially as described.

3. The combination in an illusion apparatus, of a suspended platform, and mirrors in the form of endless belts mounted at each side of the platform, and means for driving the mirrors, substantially as described.



4. The combination in an illusion apparatus, of a platform, figures on the platform representing a carousel, said platform being suspended from the ceiling so as to have free swinging motion, endless belts at each side of the platform, mirrors carried by the belts, the mirrors having the outline of the permanent structure of the building, and means for driving said mirrors, substantially as described.

5. The combination in an illusion apparatus, of a suspended platform, an endless belt at each side of the platform, mirrors carried by the endless belts, the platform being curved in the form of a segment of a circle, the runs of the belts adjacent to the platform being also curved, substantially as described.

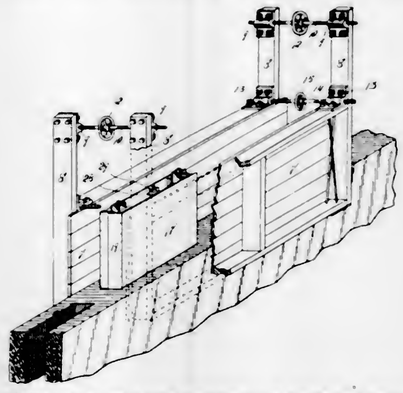
6. The combination in an illusion apparatus, of a building, a platform mounted in the building, guards on each side of the platform, seats mounted on the platform, two endless belts one at each side of the platform, the said belts and the platform being curved in the form of a segment of a circle, means for driving the belts, an admission opening at one end of the platform, and an exit opening at the opposite end of the platform, substantially as described.

7. The combination in an illusion apparatus, of a building, a segmental platform, endless belts at each side of the platform, mirrors carried by the endless belts, a fixed screen at one end of the platform, and means for displaying moving pictures on the screen, substantially as described.

8. The combination in an illusion apparatus, of a platform, means for suspending the platform from the ceiling, figures and seats mounted on the platform, a frame above the platform representing the roof of the moving portion of a carousel, endless belts at each side of the platform, mirrors carried by the endless belts, said belts being painted to represent the posts and other fixed portions of the building so that when the belts travel in a direction opposite to that which the figures are facing it will give the illusion of the platform traveling, substantially as described.

9. The combination in an illusion apparatus, of a platform, an endless belt at each side of the platform, means for driving said belts, mirrors mounted on the belts, chariots and figures pivoted to the platform, and a crank shaft connected to said chariots and figures to give a rocking motion thereto, substantially as described.

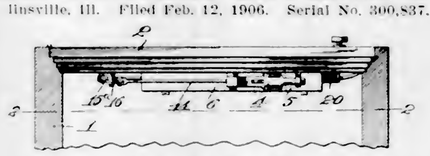
856,932. WALL-MOLD. HOWARD H. HAHN, Denver, Colo., assignor to The Western Engineering Company, Denver, Colo. Filed Feb. 13, 1905. Serial No. 245,384.



Claim.—1. A wall mold consisting of two side members, suitable clamping devices connecting the side members whereby they may be securely connected with the wall, and a core interposed between the side members and consisting of two distinct parts, screws provided with right and left threads connecting the core parts, and a spacing plate hinged to one part, a rod connected with said plate and vertically slidable on the other core part, and a nut also applied to the rod to adjust the latter and operate the spacing plate, substantially as described.

2. A core for molds consisting of two distinct members, screws provided with right and left threads connecting the members, and a spacing plate hinged to one member, a rod connected with the plate and vertically slidable on the other member, and a nut also applied to the rod member, to adjust the latter and operate the spacing plate, substantially as described.

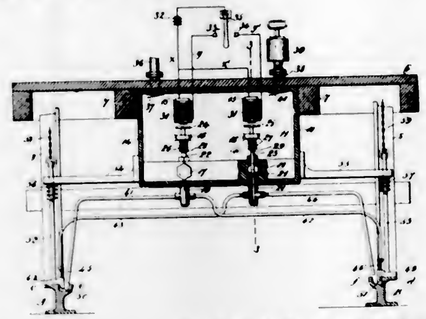
856,953. BURGLAR-ALARM. KATE E. HARTMANN, Collinsville, Ill. Filed Feb. 12, 1906. Serial No. 300,837.



Claim.—The combination with a safe door, of a firearm arranged on the interior thereof, a rod arranged for horizontal movement beneath the firearm, a series of fingers carried by said rod, a bar detachably held on the interior of the safe door for supporting the rod, and spring actuated means connected to the end of the rod for shifting the same horizontally when the door is opened.

856,954. LUBRICATING SYSTEM. FRED L. HAWKINS, Gardner, Mass., assignor to Hawkins Car Oiler and Specialty Manufacturing Company, a Corporation of Arizona. Filed Oct. 28, 1903. Serial No. 178,940.

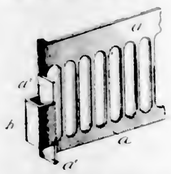
Claim.—1. The combination with a truck having wheels adapted to travel on rails, of a tank mounted on said truck, a valved outlet for said tank, controlling means for the valve located at a distance from said tank and delivery pipes connected with said outlet, one of said pipes being adapted to deliver lubricant to the main rail, and the other of said pipes being adapted to deliver lubricant to a guard flange of one of the rails.



2. The combination with a truck having wheels adapted to travel on rails, of a tank mounted on said truck, a valved outlet for said tank, and a pair of pipes connected to said outlet, one of said pipes extending to a point to deliver lubricant to one of the main rails and the other of said pipes extending to a point for discharging its contents on the guard flange of the other of said rails.

3. The combination with a truck having wheels adapted to travel on rails, of a tank mounted thereon, a plurality of valved outlets in said tank, means for actuating the valves independently, controlling means for said actuating means located at a distance from the tank, and pipes leading from said outlets respectively to points above the traction surface of one rail and above the guard flange of the other rail.

856,955. SPRING-JACK-MOUNTING PLATE. HARRY P. HIBBARD, Chicago, Ill., assignor to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 28, 1905. Serial No. 284,797.



Claim.—1. The combination with a springjack supporting plate, of angular clamping lugs formed of sheet metal secured at the ends of said plate.

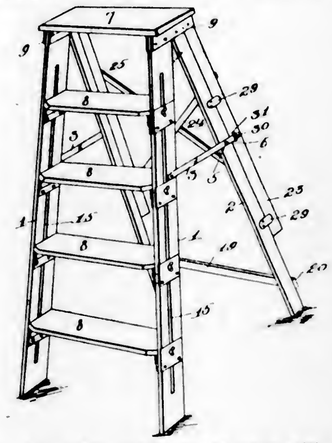
2. The combination with a springjack supporting plate having upturned ends, of a clamping lug at each end thereof, said lugs comprising strips extending angularly from the outer surfaces of said ends and back to said ends.

3. The combination with a springjack supporting plate having upturned ends, of a clamping lug at each end thereof, said lugs comprising strips extending from the upper edges of said ends, outwardly, downwardly and inwardly back to said ends, said strips being formed integrally with the ends of said plate.

4. A sheet metal stamping adapted for use as a spring jack mounting, and comprising a plate having upturned ends carrying on their outer surfaces bent strips forming clamping lugs.

856,956. COLLAPSIBLE STEP-LADDER. JOHN S. HOBBS, Seaford, Del. Filed May 16, 1906. Serial No. 317,176.

Claim.—1. In a step ladder, the combination with collapsible step supporting rails and legs, of brackets immovably held against the inner sides of the legs, step boards having depending end members removably fitted between the brackets and inner surfaces of the rails, the ends of the step boards being also held in close engagement with the inner surfaces of the rails when the depending members engage the brackets, and removable means engaging the rails, brackets and members.



2. A step ladder involving side rails with angular brackets, clamping bolts extending through said brackets, and step boards having angular plates secured to the undersides thereof and insertible between the brackets and the rails, the clamping bolts separably engaging the said brackets and angular plates, the bolts being operative to release the angular plates without separation from the ladder rails.

3. A step ladder having rails and legs, metallic straps disposed over the inner and outer sides of the rails and legs, spring bolts disposed on the inner portions of the straps, and a top step having depending members insertible between the inner straps and the adjacent ladder members, the spring bolts removably engaging the said depending member.

4. A step ladder having rails and legs, metallic straps engaging the upper extremities of the rails and legs, and a top step board having depending members removably insertible between the straps and the rails.

5. A step ladder having rails, collapsible legs movable with respect to the rails and provided with outwardly extending projections, spreaders movably attached to the rails and having openings to engage the projections on the legs, and movable keepers on a part of the legs to engage the spreaders.

6. A step ladder involving side rails having steps removably disposed therein, collapsible hinged legs, a lower brace removably applied at its ends to the rear edges of the legs, and keepers carried by the legs to move over the ends of the brace.

7. A step ladder involving side rails, independent pairs of hinged legs, removable top and intermediate step boards, the pairs of legs being hinged to move toward and from the rails and both the legs and rails being transversely collapsible when the step boards are removed, and independent brace devices removably applied to the rear edges of the pairs of legs.

8. A step ladder having rails with top and intermediate steps removably applied thereto, main legs hinged to move to and from the rails, auxiliary prop legs movably attached to the upper part of the ladder in rear of the main legs and movable independently of the said main legs, spreaders attached to the rails and connectible to both the main and auxiliary legs, and independent brace devices attached to the rear edges of the main legs and auxiliary legs, the rails, main legs and auxiliary legs being

collapsible transversely toward each other when the steps and braces are removed.

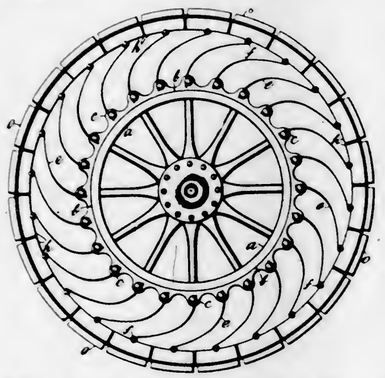
9. A step ladder having rails with removable step boards, main supporting legs hingedly connected to the upper extremities of the rails, and shorter auxiliary prop legs in rear of the main legs and also hinged to the same portion of the ladder as the main legs, the rails, main legs and prop legs being unitedly collapsible in a transverse direction toward each other, the auxiliary prop legs being operative independent of the main prop legs and movable in close engagement with the latter when the main prop legs are used.

10. A step ladder having rails and main legs hinged thereto, step boards removably held by the rails, a brace removably engaging the lower rear edge portions of the main legs, auxiliary prop legs hinged to the same part of the ladder as the main legs, a removable collapsible cross brace engaging the rear edges of the prop legs, and spreaders movably attached to the rails for engaging both the main and prop legs, the rails and main and prop legs being collapsible.

11. A step ladder comprising side rails with angular brackets, step boards having angular plates secured to the underside at the ends thereof and formed with intermediate downwardly opening slots, and securing devices extending through the rails and brackets and engaging the slots of the angular plates.

12. A step ladder comprising side rails with angular brackets and step boards having depending end plates with intermediate slots to removably fit in the brackets, and means engaging the brackets and the slots of the plates to hold the step boards in immovable position with relation to the rails.

856,957. SPRING-TIRE FOR WHEELS. ARTHUR R. HUBBARD, London, England. Filed July 2, 1906. Serial No. 324,158.



Claim.—1. Spring tires for the wheels of motor cars, cycles, carts, carriages, or other vehicles, consisting in the combination with a hub, spokes, and rim, of any of the usual kinds, of a metal hoop fitted and fixed round the rim, a number of projections round the outer circumference of the hoop, transverse inclined grooves on the lugs, a series of elastic steel springs, curved cycloidally in edge view, their inner ends being fitted and fixed in the transverse grooves, metal holders to the backs of which the outer ends of the spring plates are pivoted, and wooden blocks fitted tightly into and projecting beyond the outer edge of the metal holders, substantially as described and shown.

2. In spring tires for wheels, the combination of a metal hoop *b* fixed upon the rim *a* of an ordinary wheel, lugs *c* on the hoop *b*, transverse inclined grooves *d* in the lugs *c*, elastic steel curved springs *e* fixed at their inner ends in the inclined grooves *d*, metal holders *h* pivoted together at their ends, and wooden blocks *o* fitted tightly into the metal holders *h*, substantially as set forth and shown.

3. In a spring tire, the combination with the wheel, of a plurality of lugs formed on said wheel, a tread portion surrounding said wheel and a plurality of curved springs pivotally connected at one end to said tread and rigidly connected at their other ends to said lugs on said wheel, substantially as described.

4. In a spring tire, the combination with the wheel, of a metallic encircling hoop arranged on the periphery thereof, a plurality of lugs formed on said hoop, a plurality of metallic shoes linked together surrounding said hoop and forming the tread portion, a series of curved springs pivotally connected at one end to the said metallic shoes and means for locking the other ends of said springs in said lugs on said hoop, substantially as described.

5. In a spring tire, the combination with the wheel, of a metallic encircling hoop arranged on the periphery thereof, a plurality of radially extending lugs formed on said hoop, said lugs being provided with transverse inclined grooves, metallic shoes in number corresponding to said lugs on said hoop, said shoes being curved slightly on their inner faces and having their ends connected flexibly together forming a complete ring surrounding said hoop, and a plurality of curved springs, the inner ends thereof fitting tightly in said grooves in said lugs and the other ends pivotally attached to said shoes, substantially as described.

6. In a spring tire, the combination with a wheel, of an encircling hoop arranged on the periphery thereof, a plurality of lugs formed on said hoop, said lugs being provided with curved inclined grooves, a tread portion formed of a plurality of flexibly connected metallic shoes surrounding said hoop, wooden blocks fitting securely into and extending out beyond the outer edge of said shoes, a plurality of cycloidally curved springs having their inner enlarged ends tightly secured in said curved inclined grooves and their outer ends pivotally attached to said metallic shoes and means for locking said springs in said grooves, substantially as described.

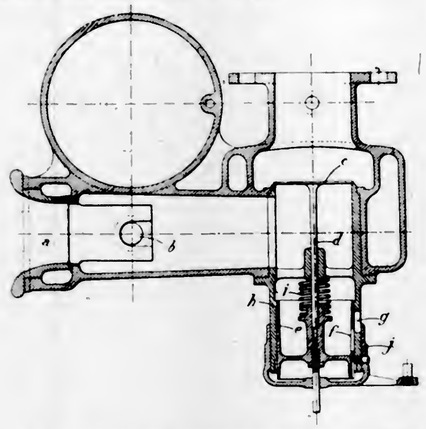
7. In a spring tire, the combination with the wheel, of an encircling hoop arranged on the periphery thereof, lugs formed on said hoop and provided with transverse inclined grooves and registering transverse bores, a tread portion surrounding said hoop, curved springs pivotally attached at their outer smaller end to the inner faces of said tread members, the other end of said spring tightly fitting into said recess, a pin fitting into said bore and into a corresponding recess in said springs thereby locking said springs in said grooves, substantially as described.

856,958. CARBURETER FOR HYDROCARBON-ENGINES. TONY HUBER, Billancourt, France. Filed Aug. 8, 1904. Serial No. 220,017.

Claim.—1. A carbureter for hydrocarbon engines comprising a casing forming a mixing chamber adapted to communicate with the engine and having a permanently-open air inlet, a spraying element arranged in said chamber in operative relation with respect to said air inlet, a valve interposed between the chamber and the engine and arranged in the path of the gases and controlled by the suction-stroke of the piston of the engine, and a piston connected with the valve and adapted to control the admission of an additional supply of air independent of the supply through said air inlet.

2. A carbureter for hydrocarbon engines comprising a casing forming a mixing chamber adapted to communicate with the engine and having a normally-open air inlet and a regulatable air inlet independent of the normally-open air inlet, a spraying device arranged in operative relation with respect to said normally-open air inlet, a valve interposed between the outlet of said chamber and the cylinder of the engine and operated by the suction-stroke of the engine, and means operated by said valve for regulating the supply of air through said regulatable air inlet.

3. A carbureter for hydrocarbon engines comprising a casing forming a mixing chamber adapted to communicate with the engine, said mixing chamber normally open to the atmosphere, a spraying device arranged within said chamber at a point removed from the opening thereof, a valve interposed between the mixing chamber and the engine, arranged in the path of the gases and adapted to be operated by the suction-stroke of the engine, and means connected with and operated by the valve for regulating an additional supply of air to the gas.



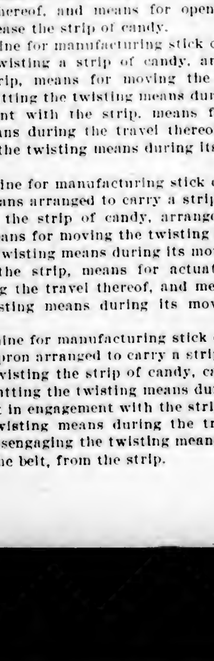
4. A carbureter for hydrocarbon engines comprising a casing having an air inlet and further provided with a regulatable inlet independent of the first mentioned inlet, a spraying device arranged in said casing in operative relation with respect to the first-mentioned air inlet, a valve interposed between said casing and the engine, arranged in the path of the gases and operated by the suction-stroke of the engine, and a hollow piston provided with an opening, said piston connected with and operated by said valve and adapted to regulate the supply of an additional quantity of air through said regulatable air inlet.

5. A carbureter for hydrocarbon engines, comprising a casing forming a mixing chamber adapted to communicate with the engine, said mixing chamber having a permanently-open air inlet and further provided with a regulatable air inlet independent of the first-mentioned air inlet, a spraying device arranged in said chamber in operative relation with respect to the first-mentioned air inlet, a valve interposed between the said chamber and the engine, arranged in the path of the gases and operated by the suction stroke of the engine, a hollow piston provided with an opening, said piston connected with and operated by said valve and adapted to regulate the supply of an additional quantity of air through said regulatable air inlet, and a spring acting to constantly move said valve toward its seat.

6. A carbureter for hydrocarbon engines, comprising a casing forming a mixing chamber and provided with a normally-open air inlet and a regulatable air inlet, said regulatable air inlet positioned in said casing at an angle with respect to the normally-open air inlet, a spraying device, a valve interposed between the casing and engine and operated on the suction stroke of the engine, a piston connected with and operated by the valve, and provided with an opening registering with said regulatable air inlet, said piston adapted to control the admission of an additional supply of air independently of the air supply through the first-mentioned air inlet, and means for regulating the area of said regulatable air inlet.

856,959. CANDY-MAKING MACHINE. WILLIAM T. HUDSON, JAMES R. PARKS, and WILLIAM H. COURSEY, Atlanta, Ga., assignors, by direct and mesne assignments, of one-half to said Hudson, one-third to said Coursey, and one-sixth to Walter E. Dobbins, Atlanta, Ga. Filed Dec. 3, 1906. Serial No. 346,170.

Claim.—1. A machine for manufacturing stick candy, comprising means for twisting a strip of candy, traveling means carrying the twisting means, means for causing the twisting means to grasp the strip of candy, means for actuating the twisting means during the travel thereof, and means for releasing the twisting means from the strip of candy.



2. A machine for manufacturing stick candy, comprising means for twisting a strip of candy, traveling means carrying the twisting means, means for closing the twisting means on the strip of candy, means for actuating the twisting means during the travel thereof, and means for opening the twisting means to release the strip of candy.

3. A machine for manufacturing stick candy, comprising a belt, means carried by the belt for twisting a strip of candy, means for causing the twisting means to grasp the strip of candy, means for actuating the twisting means during the travel thereof, and means for releasing the twisting means from the strip of candy.

4. A machine for manufacturing stick candy, comprising a belt, means carried by the belt for twisting a strip of candy, means for closing the twisting means on the strip of candy, means for actuating the twisting means during the travel thereof, and means for opening the twisting means to release the strip of candy.

5. A machine for manufacturing stick candy, comprising means for twisting a strip of candy, arranged to travel with the strip, means for moving the twisting means, means for putting the twisting means during its movement in engagement with the strip, means for actuating the twisting means during the travel thereof, and means for disengaging the twisting means during its movement, from the strip.

6. A machine for manufacturing stick candy, comprising traveling means arranged to carry a strip of candy, means for twisting the strip of candy, arranged to travel with the strip, means for moving the twisting means, means for putting the twisting means during its movement in engagement with the strip, means for actuating the twisting means during the travel thereof, and means for disengaging the twisting means during its movement, from the strip.

7. A machine for manufacturing stick candy, comprising an endless apron arranged to carry a strip of candy, a belt, means for twisting the strip of candy, carried by the belt, means for putting the twisting means during its movement with the belt in engagement with the strip, means for actuating the twisting means during the travel thereof, and means for disengaging the twisting means during its movement with the belt, from the strip.

8. A machine for manufacturing stick candy, comprising an endless apron arranged to carry a strip of candy and having an opening, a belt, means for twisting the strip of candy, carried by the belt and arranged to pass through the opening in the apron, means for putting the twisting means during its movement with the belt in engagement with the strip, means for actuating the twisting means during the travel thereof, and means for disengaging the twisting means during its movement with the belt, from the strip.

9. A machine for manufacturing stick candy, comprising traveling means for carrying a strip of candy, means for twisting the strip of candy, traveling means carrying the said twisting means, and means for actuating the twisting means during the travel thereof.

10. A machine for manufacturing stick candy, comprising an endless apron for carrying a strip of candy, a belt, means for twisting the strip of candy, carried by the belt, and means for actuating the twisting means during the travel thereof.

11. A machine for manufacturing stick candy, comprising an endless apron arranged to carry a strip of candy and having an opening, a belt, means for twisting the strip of candy, carried by the belt and arranged to pass through the opening in the apron, and means for actuating the twisting means during the travel thereof.

12. A machine for manufacturing stick candy, comprising rolls for reducing a mass of candy to a strip of desired shape and size in cross section, an endless apron arranged to carry the strip of candy, a belt, means carried by the belt for twisting the strip of candy, means for actuating the twisting means during the travel thereof, means for closing the twisting means on the strip of candy, and means for opening the twisting means to release the strip of candy.

13. In a machine for manufacturing stick candy, means for twisting a strip of candy, means for causing the twisting means to grasp the strip of candy, and means for releasing the twisting means from the strip of candy.

14. A machine for manufacturing stick candy, comprising an endless apron for carrying a strip of candy, means for twisting a strip of candy during lengthwise movement thereof, and means for dividing the twisted strip of candy into sticks while said strip is on the endless apron.

15. In a machine for manufacturing stick candy, the combination of means for moving a strip of candy, means for twisting the strip of candy during the movement thereof, means for causing the twisting means to grasp the strip of candy, and means for releasing the twisting means from the strip of candy.

16. In a machine for manufacturing stick candy, the combination of traveling means for supporting a strip of candy, traveling means for twisting the strip of candy, means for causing the twisting means to grasp the strip of candy, and means for releasing the twisting means from the strip of candy.

17. In a machine for manufacturing stick candy, the combination of traveling means for supporting a strip of candy, traveling means for twisting the strip of candy, means for causing the twisting means to grasp the strip of candy, means for releasing the twisting means from the strip of candy, and means for dividing the candy strip into sticks subsequent to the release of the twisting means from said strip.

18. In a machine for manufacturing stick candy, the combination of means for reducing a mass of candy to a strip of desired size and shape in cross-section, traveling means for supporting the formed strip, traveling means for twisting the strip of candy, means for causing the twisting means to grasp the strip of candy, and means for releasing the twisting means from the strip of candy.

19. In a machine for manufacturing stick candy, the combination of means for reducing a mass of candy to a strip of desired size and shape in cross-section, traveling means for supporting the formed strip, traveling means for twisting the strip, means for causing the twisting means to grasp the strip of candy, means for releasing the twisting means from said strip, and means for dividing the strip into sticks subsequent to the release of the twisting means from the strip.

20. A machine for manufacturing stick candy comprising means for moving a strip of candy in the direction of its length, and means for twisting the strip of candy about its axis during the lengthwise movement thereof.

21. A machine for manufacturing stick candy, comprising an endless apron for carrying a strip of candy, said apron having an opening, a belt, means for twisting the strip of candy, carried by the belt and arranged to pass through the opening in the apron, means for putting the twisting means during its movement with the belt in engagement with the strip, means for actuating the twisting means during the travel thereof, means for disengaging the twisting means during its movement with the belt, from the strip, and means for dividing the twisted strip into sticks while said strip is still on the endless apron.

22. A machine for manufacturing stick candy comprising rolls for reducing a mass of candy to a strip of desired shape and size in cross section, an endless apron arranged to carry the strip of candy, a belt, means carried by the belt for twisting the strip of candy, means for causing the twisting means to grasp the strip of candy, and means for releasing the twisting means from the strip of candy.

23. A machine for manufacturing stick candy comprising rolls for reducing a mass of candy to a strip of desired shape and size in cross section, an endless apron arranged to carry the strip of candy, a belt, means carried by the belt for twisting the strip of candy, means for causing the twisting means to grasp the strip of candy, means for releasing the twisting means from the strip of candy, and means for dividing the strip into sticks subsequent to the release of the twisting means from the strip.

24. In a machine for manufacturing stick candy, the combination of a main frame, a belt, a twister carried by the belt, means for closing the twister and holding the same closed during a part of its movement with the belt, coöperating means on the frame and the twister for operating the latter during a part of its movement with the belt, and means for opening the said twister.

25. In a machine for manufacturing stick candy, the combination of means for moving a strip of candy in the direction of its length, means for twisting the strip of candy, movable with the strip in the direction of the length thereof, traveling means carrying the twisting means, means for operating the twisting means while the latter is in engagement with the strip, means for putting the twisting means into engagement with the strip, and means for disengaging the twisting means from the strip.

26. In a machine for manufacturing stick candy, the combination of a frame, a rack fixed with respect thereto, a movable twister having jaws and rotatable linings therein and also having means for opening the jaws and a gear for engaging the rack of the frame and coöperating with the rotatable linings of the jaws to rotate said linings, and means for closing the jaws of the twister incident to movement thereof.

27. In a machine for manufacturing stick candy, the combination of a frame, a fixed rack, fixed longitudinal bars, and a movable twister comprising jaws having shoes arranged to enter and move between the fixed bars, rotatable linings in the jaws, means for opening the jaws when the shoes thereof pass out of engagement with the fixed bars, and a gear for engaging the fixed rack and coöperating with the rotatable linings of the jaws to rotate said linings.

28. In a machine for manufacturing stick candy, the combination of a frame, a fixed rack, fixed longitudinal bars, and a movable twister comprising jaws having shoes arranged to enter and move between the fixed bars, rotatable linings in the jaws provided with miter-gear sections, means for opening the jaws when the shoes thereof pass out of engagement with the fixed bars, and a gear having spur teeth to engage the fixed rack and also having beveled teeth intermeshed with the miter-gear sections of the rotatable jaw linings.

29. In a machine for manufacturing stick candy, the combination with a twister comprising jaws, means for opening the jaws, rotatable linings in the jaws, and a gear for coöperating with and rotating said linings; of means for moving the twister rectilinearly, means for closing the jaws of the twister incident to said movement thereof, and means for rotating the gear of the twister during the rectilinear movement of the twister.

30. In a machine for manufacturing stick candy, the combination of a frame, a fixed rack, fixed longitudinal bars, a belt, and a movable twister carried by the belt and comprising a body having runners arranged to be guided in the frame, jaws pivoted to the body and having shoes arranged to enter and move between the fixed bars, springs for opening the jaws when the shoes thereof are out of engagement with the fixed bars, rotatable linings in the jaws provided with miter-gear sections, and a gear rotatable on the body and having spur teeth to engage the fixed rack and also having beveled teeth intermeshed with the miter gear sections of the rotatable jaw linings.

31. In a machine for manufacturing stick candy, the combination of a frame, means for reducing a mass of candy to a strip of desired size and shape in cross-section, an endless apron mounted in the frame and having openings at intervals in its length; said apron being arranged to support the strip of candy on its upper stretch, a belt also mounted in the main frame, twisters carried by the said belt and timed to extend through the openings in the apron, means for causing the said twisters to grasp the strip of candy, means for operating the twisters while the same are moving with the strip of candy, and means for releasing the twisters from the strip of candy.

32. In a machine for manufacturing stick candy, the combination of a frame, means for reducing a mass of candy to a strip of desired size and shape in cross-section, an endless apron mounted in the frame and having openings at intervals in its length; said apron being arranged to support the strip of candy on its upper stretch, a belt also mounted in the main frame, twisters carried by the said belt and timed to extend through the openings in the apron, means for causing the said twisters to grasp the strip of candy, means for operating the twisters while the same are moving with the strip of candy, means for releasing the twisters from the strip of candy, and means for dividing the strip into sticks of desired length subsequent to the release of the strip from the twisters.

33. In a machine for manufacturing stick candy, the combination of means for twisting a strip of candy, means for moving the said twisting means, and means for actuating the twisting means during the said movement thereof.

34. In a machine for manufacturing stick candy, the combination of means for producing sticks of candy, cooling means comprising a casing having a discharge, means for supplying a cooling agent to said casing, and carrying means arranged in said casing in position to receive the sticks of candy from the producing means and convey the same in a tortuous course to the discharge, a rotary platform arranged to move a circular series of boxes or cartons one by one toward and away from the discharge of the cooling means, and means for rotating the said platform step by step.

35. In a machine for manufacturing stick candy, the combination of means for reducing a mass of candy to a strip of desired size and shape in cross-section, means for twisting the said strip in one direction, and means for twisting the strip in the opposite direction.

36. In a machine for manufacturing stick candy, the combination of a frame, an endless carrier, twisters carried by the endless carrier and having means for grasping a strip of candy, coöperating means on the frame and one twister for rotating the candy grasping means of said twister in one direction, and coöperating means on the frame and the following twister for rotating the candy grasping means of the latter twister in the opposite direction.

37. In a machine for manufacturing stick candy, the combination of rectilinearly movable means for twisting a strip of candy, means for so moving the said twisting means, and means for actuating the twisting means during rectilinear movement thereof.

38. In a machine for manufacturing stick candy, the combination of a rectilinearly movable twister having rotary means arranged to receive a strip of candy, means for moving the twister rectilinearly, and means for coöperating with the twister during rectilinear movement thereof to rotate the rotary candy-receiving means of the twister.

39. In a machine for manufacturing stick candy, the combination of a twister comprising a gear, rotary means for receiving a strip of candy, arranged to derive motion from the gear, means for moving the twister, and means arranged to coöperate with and rotate the gear of the twister during movement of the twister.

40. In a machine for manufacturing stick candy, a fixed rack, in combination with a twister comprising a spur gear for intermeshing with the fixed rack, and rotary means intermeshed with said gear and arranged to receive a strip of candy, and means for moving the twister.

41. In a machine for manufacturing stick candy, the combination with a twister comprising a gear, jaws, means for opening the jaws, and jaw linings arranged to derive rotary motion from the gear; of means for moving the twister, means arranged to coöperate with and rotate the gear of the twister during movement of said twister, and means for closing the jaws of the twister during movement of the twister.

42. In a machine for manufacturing stick candy, the combination of means arranged to twist a strip of candy in one direction, and means arranged to twist the strip of candy in the opposite direction.

43. In a machine for manufacturing stick candy, the combination of a frame, an endless apron mounted in the frame and having an opening; said apron being arranged to support a strip of candy on its upper stretch, a belt also mounted in the frame, a twister carried by the belt and timed to extend through the opening in the apron, means for causing the twister to grasp the strip of candy, means for operating the twister while same is moving with the strip of candy, means for releasing the twister from the strip of candy, and means for dividing the strip into sticks of desired length subsequent to the release of the strip from the twister.

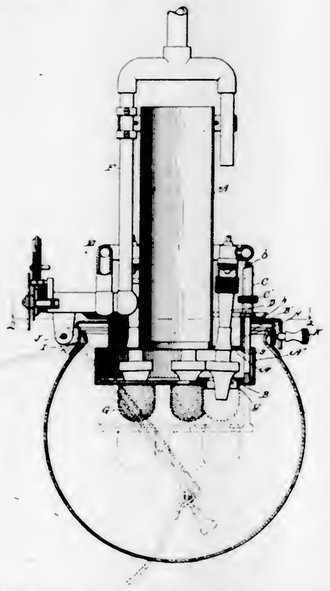
44. In a machine for manufacturing stick candy, the combination of a twister comprising a gear, and rotary means for receiving a strip of candy, having one of its ends engaged with and arranged to derive motion from the gear, a following twister comprising a gear and rotary means for receiving a strip of candy, having its opposite end engaged with and arranged to derive motion from the gear, traveling means carrying the twisters, and means for rotating the gears of the twisters in a common direction during the travel thereof.

45. In a machine for manufacturing stick candy, the combination of a twister comprising a spur gear, and rotary means for receiving a strip of candy, intermeshed at one end with and arranged to derive motion from the spur gear, a following twister comprising a spur gear, and rotary means for receiving a strip of candy, intermeshed at its opposite end with and arranged to derive motion from the spur gear, traveling means carrying the twisters, and a fixed rack for rotating the spur gears of the twisters in a common direction during the travel thereof.

856,960. GAS-LAMP. ALFRED H. HUMPHREY and HUBERT R. HUMPHREY, New York, N. Y. Filed June 22, 1906. Serial No. 322,890.

Claim.—1. In a gas lamp, the combination of a chimney having an outwardly and downwardly projecting flange at its lower end; a plurality of burners arranged in an inverted position through said flange; inverted mantles for said burners; a plate-like mantle holder having openings therethrough to receive the mantles and adapted to fit said flange on said chimney and substantially close the same, whereby the air is drawn toward the mantles by the draft of the chimney; an upwardly projecting supporting rod for said holder adjustably arranged through said flange on said chimney; a stop for limiting the upward movement of said rod; a locking sleeve having a longitudinal slot therein arranged on said rod, the upper end of said sleeve being cam shaped; and a laterally projecting pin on said rod adapted to be engaged by said locking sleeve for lock-

ing said rod in position, substantially as and for the purpose set forth.



2. In a gas lamp, the combination of a chimney having an outwardly and downwardly projecting flange at its lower end; a plurality of burners arranged in an inverted position through said flange; inverted mantles for said burners; a plate-like mantle holder having openings therethrough to receive the mantles and adapted to fit said flange on said chimney and substantially close the same, whereby the air is drawn toward the mantles by the draft of the chimney; an upwardly projecting supporting rod for said holder adjustably arranged through said flange on said chimney; a locking sleeve having a longitudinal slot therein arranged on said rod; and a laterally projecting pin on said rod adapted to be engaged by said locking sleeve for locking said rod in position, substantially as and for the purpose set forth.

3. In a gas lamp, the combination of a chimney having an outwardly and downwardly projecting flange at its lower end; a plurality of burners arranged in an inverted position through said flange; inverted mantles for said burners; a plate-like mantle holder having openings therethrough to receive the mantles and adapted to fit said flange on said chimney and substantially close the same, whereby the air is drawn toward the mantles by the draft of the chimney; an upwardly projecting supporting rod for said holder adjustably arranged through said flange on said chimney; a stop for limiting the upward movement of said rod; and means for locking said rod in its elevated position, substantially as and for the purpose set forth.

4. In a gas lamp, the combination of a chimney having an outwardly and downwardly projecting flange at its lower end; a plurality of burners arranged in an inverted position through said flange; inverted mantles for said burners; a plate-like mantle holder having openings therethrough to receive the mantles and adapted to fit said flange on said chimney and substantially close the same, whereby the air is drawn toward the mantles by the draft of the chimney; an upwardly projecting supporting rod for said holder adjustably arranged through said flange on said chimney; and means for locking said rod in its elevated position, substantially as and for the purpose set forth.

5. In a gas lamp, the combination of a chimney having an outwardly and downwardly projecting flange at its lower end; a plurality of burners arranged in an inverted position through said flange; inverted mantles for said burners; a plate-like mantle holder having openings therethrough to receive the mantles and adapted to fit said flange on said chimney and substantially close the same, whereby the air is drawn toward the mantles by the draft of the chimney; a revolubly and vertically adjustable supporting rod secured to said holder at one side thereof; a stop for limiting the upward movement of said rod; and means for securing the same in its elevated position, for the purpose specified.

6. In a gas lamp, the combination of a chimney having an outwardly and downwardly projecting flange at its lower end; a plurality of burners arranged in an inverted position through said flange; inverted mantles for said burners; a plate-like mantle holder having openings therethrough to receive the mantles and adapted to fit said flange on said chimney and substantially close the same, whereby the air is drawn toward the mantles by the draft of the chimney; and a revolubly and vertically adjustable supporting rod secured to said holder at one side thereof, for the purpose specified.

7. In a gas lamp, the combination of a plurality of burners arranged in an inverted position; a plate like mantle holder having openings therethrough adapted to receive the mantles; a revolubly and vertically adjustable supporting rod secured to said holder at one side thereof; a stop limiting the upward movement of said rod; means for securing the same in its elevated position and means for revolubly supporting said rod in its lowered position, for the purpose specified.

8. In a gas lamp, the combination of a plurality of burners arranged in an inverted position; a plate-like mantle holder having openings therethrough adapted to receive the mantles; a revolubly and vertically adjustable supporting rod secured to said holder at one side thereof; means for securing the same in its elevated position and means for revolubly supporting said rod in its lowered position, for the purpose specified.

9. In a gas lamp, the combination of a burner arranged in an inverted position; a mantle holder; a revolubly and vertically adjustable supporting rod secured to said holder at one side thereof; a stop for limiting the upward movement of said rod; means for securing the same in its elevated position and means for revolubly supporting said rod in its lowered position, for the purpose specified.

10. In a gas lamp, the combination of a burner arranged in an inverted position; a mantle holder; a revolubly and vertically adjustable supporting rod secured to said holder at one side thereof; means for securing the same in its elevated position and means for revolubly supporting said rod in its lowered position, for the purpose specified.

11. In a gas lamp, the combination of a plurality of burners arranged in an inverted position; a plate-like mantle holder having openings therethrough adapted to receive the mantles; an upwardly projecting supporting rod for said holder; a stop for limiting the upward movement of said rod; a locking sleeve having a longitudinal slot therein arranged in said rod, the upper end of said sleeve being cam shaped; and a laterally projecting pin on said rod adapted to be engaged by said locking sleeve for locking said rod in position said pin being adapted to revolubly support said rod in its lowered position, substantially as described.

12. In a gas lamp, the combination of a plurality of burners arranged in an inverted position; a plate-like mantle holder having openings therethrough adapted to receive the mantles; an upwardly projecting supporting rod for said holder; a locking sleeve having a longitudinal slot therein arranged in said rod; and a laterally projecting pin on said rod adapted to be engaged by said locking sleeve for locking said rod in position said pin being adapted to revolubly support said rod in its lowered position, substantially as described.

13. In a gas lamp, the combination of a burner arranged in an inverted position; a mantle holder; supporting rod for said holder; a stop for limiting the upward movement of said rod; a locking sleeve having a longitudinal slot therein arranged on said rod, the upper end of said sleeve being cam shaped; and a laterally projecting pin on said rod adapted to be engaged by said locking sleeve for locking said rod in position said pin being adapted to revolubly support said rod in its lowered position, for the purpose specified.

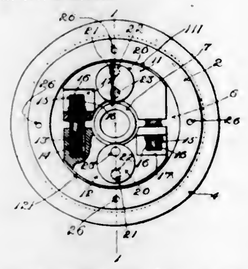
14. In a gas lamp, the combination of a burner arranged in an inverted position; a mantle holder; supporting rod for said holder; a locking sleeve having a longitudinal slot therein arranged on said rod; and a laterally projecting pin on said rod adapted to be engaged by said locking sleeve for locking said rod in position, said pin being adapted to revolubly support said rod in its lowered position, for the purpose specified.

15. In a gas lamp, the combination of a chimney having an outwardly and downwardly projecting flange; a burner arranged in an inverted substantially vertical position through said flange; an inverted mantle for said burner; a plate-like mantle holder having an opening therein adapted to receive the mantle fitted into said flange on said chimney, whereby the air is drawn toward the mantles by the draft of the chimney, for the purpose specified.

16. In a gas lamp, the combination of a chimney having an outwardly and downwardly projecting flange at its lower end; an inverted substantially vertical burner arranged through said flange; and a plate-like mantle holder of non-heat conducting material having an opening therethrough adapted to receive the mantle fitted into said flange whereby the air is drawn toward the mantles by the draft of the chimney, for the purpose specified.

17. In a gas lamp, the combination of a plurality of burners arranged in an inverted position; a plate-like mantle holder having openings therein, through which said burners are arranged so that their tips are below said plate when said plate is in its operative position, said openings being adapted to receive the mantles; and a vertically adjustable support for said plate adapted, when in its lowered position, to rotatably support said plate whereby it may be swung to one side as desired, for the purpose specified.

856,961. SPEED-GOVERNOR FOR ARMATURE-SHAFTS, &c. EDWARD B. JACOBSON, Pittsfield, Mass., assignor to Pittsfield Spark Coil Company, Pittsfield, Mass., a Corporation of Massachusetts. Filed Aug. 20, 1903. Serial No. 170,168.



Claim.—1. The combination with a driven part to which rotary movement is communicated, of means for driving the said part, including a speed governing device, controlling the speed which is transmitted to the said part and operated by the increasing resistance to rotation of the driven part which is due to increase of the rate of movement of the latter, substantially as described.

2. The combination with a shaft adapted to be connected with the armature of a dynamo, of rotary actuating means for the said shaft, embracing a speed governing device operated by the armature re-action and acting to regulate the rate of movement which is transmitted to the said shaft, substantially as described.

3. The combination with a driven part to which rotary movement is communicated, of rotary actuating means therefor embracing frictional driving connections and means operated by the increase of resistance to the rotation of the said driven part at higher speeds to reduce the effect of the said connections in transmitting movement to such part, thereby governing the speed of the latter, substantially as described.

4. The combination with the shaft 1, an annular member 2, and a friction-clutch, of connecting means acting both to transmit movement between the clutch and the shaft and to reduce the effect of the said clutch when the pre-determined resistance to the rotary movement of the driven member is reached, substantially as described.

5. The combination with the shaft 1, an annular member 2 and the friction-clutch for transmitting movement between the annular member and the shaft, of a crank-disk 8, and connecting means between the said crank-disk and the movable member of the clutch operating both to transmit movement between the said member of the clutch and the crank-disk and shaft, and to reduce the interengagement of the clutch members when the resistance to the rotation of the driven member attains the pre-determined degree, substantially as described.

6. The combination with the shaft 1, the annular member and the friction-clutch comprising the opposite movable blocks and the springs, of the crank-disk connected with the shaft, and the connectors or links joining the said blocks with the crank-disk, substantially as described.

7. The combination with the shaft 1, the annular member, provided with the lubricant-chamber and the ducts leading to the shaft, and the friction-clutch comprising the opposite movable blocks and the springs, of the crank-disk connected with the shaft, and the connectors or links joining the said blocks with the crank-disk, substantially as described.

8. The combination with the shaft 1, the annular member, and the friction-clutch comprising the opposite blocks and the springs, and spring adjusting devices in connection with the said blocks, of the crank-disk 8 connected with the shaft 1, and the connectors or links respectively joining the said blocks with the said crank-disk, substantially as described.

9. In a clutch comprising a driving part, and a driven part, means for causing the driving part to deliver to the driven part a predetermined maximum torque, and means adapted to control the last-mentioned means and for restricting the said torque to the maximum degree predetermined.

10. In a clutch comprising a driving part, and a driven part of the clutch, means for causing the driving part to deliver to the driven part a predetermined maximum torque in either direction, and means adapted to control the last-mentioned means and for restricting the said torque to the maximum degree predetermined.

11. In a clutch comprising a member constituting the driving part, and a member constituting the driven part of the clutch, means for causing the driving part to deliver to the driven part a predetermined maximum torque in either direction, and means adapted to control the last-mentioned means and for restricting the said torque to the maximum degree predetermined, and means for varying said first-mentioned means to deliver a maximum torque of greater or less degree.

12. In a clutch comprising a driving part of the clutch, and a driven part of the said clutch, means for causing the driving part to deliver to the driven part a predetermined maximum torque, means adapted to control the last-mentioned means and for restricting the said torque to the maximum degree predetermined, and means for varying said driving part to deliver a maximum torque of greater or less degree.

13. The combination with a shaft, of a clutch comprising a member secured rigidly upon said shaft to rotate therewith, a second member carried loosely by said shaft adjacent to said first-mentioned member, one of said members constituting the driving part and the other member constituting the driven part of the said clutch, means for causing the driving part to deliver a predetermined maximum torque to the driven part, and means adapted to control the last-mentioned means and for restricting said torque to the maximum degree predetermined.

14. The combination with a shaft, of a clutch compris-

ing a member secured rigidly upon said shaft to rotate therewith, a second member carried loosely by said shaft adjacent to said first-mentioned member, one of said members constituting the driving part and the other member constituting the driven part of the said clutch, means for causing one of said parts to deliver a predetermined maximum torque to the other part, means adapted to control the last-mentioned means and for restricting said torque to the maximum degree predetermined, and means for adjusting said last-mentioned means to deliver a maximum torque of greater or less degree.

15. The combination with a shaft, of a clutch comprising a collar fixed rigidly upon said shaft, an annular member encircling said collar and carried loosely by said shaft, friction mechanism located between said collar and the interior of said annular member, means for causing said collar to deliver to or receive from the annular member a predetermined maximum torque, and means adapted to control the last-mentioned means and for restricting said torque to the maximum degree predetermined.

16. The combination with a shaft, of a clutch comprising a collar fixed rigidly upon said shaft, an annular member encircling said collar and carried loosely by said shaft, friction mechanism located between said collar and the interior of said annular member, means for causing said collar to deliver to or receive from the annular member a predetermined maximum torque, and means adapted to control the last-mentioned means and for restricting said torque to the maximum degree predetermined, said means being adjustable to vary the degree of the maximum torque delivered.

17. The combination with a shaft, of a clutch comprising a collar fixed rigidly upon the shaft, a casing encircling said collar and carried loosely by the shaft, a pair of shoes located between said collar and the interior of said casing with their bearing faces adjacent to said casing, means for causing said shoes to deliver to or receive from the casing a predetermined maximum torque, and means adapted to control the last-mentioned means and for restricting the said torque to the maximum degree predetermined.

18. The combination with a shaft, of a clutch comprising a collar fixed rigidly upon said shaft, a casing encircling said collar and carried loosely by said shaft, a pair of shoes located between said collar and casing, yielding resistance means exerting pressure upon said shoes and maintaining them yieldingly in contact with the interior of the casing, and retracting means carried by said collar and exerting a radial force upon said shoes, for the purpose set forth.

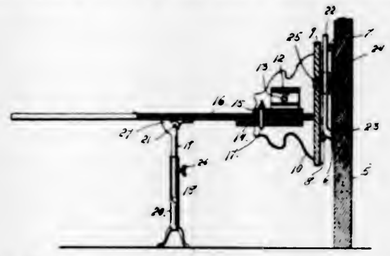
19. The combination with a shaft, of a clutch comprising a collar fixed rigidly upon said shaft, a casing encircling said collar and carried loosely by said shaft, a pair of shoes located between said collar and casing, yielding resistance means exerting pressure upon said shoes and maintaining them yieldingly in contact with the interior of the casing, means for varying said pressure, and retracting means carried by said collar, and exerting a radial force upon said shoes, for the purpose set forth.

856,962. IRONING-BOARD. WILLIAM J. KELLY and PETER J. GERMAIN, Denver, Colo., assignors of one-third to David Ogilvie, Denver, Colo. Filed Feb. 16, 1906. Serial No. 301,355.

Claim.—1. The combination with an ironing board, of a bracket therefor, and a relatively stationary bracket-supporting plate, one of the said devices having a rod and the other a sleeve adapted to engage the rod, and a set screw threaded in the sleeve and engaging the rod for purposes of vertical adjustment.

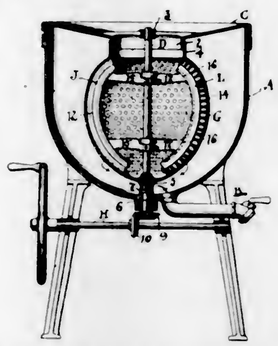
2. The combination with an ironing board, of a bracket therefor, and a relatively stationary bracket-supporting plate, one of the said devices having vertically disposed tongues, and the other counterpart ways adapted to receive the tongues, and suitable means for holding the bracket in the desired position of vertical adjustment on the plate.

3. The combination with an ironing board, of a bracket therefor, and a relatively stationary bracket-supporting plate, one of the said devices having a vertically disposed rod, and the other a sleeve adapted to engage the rod, one of the said devices (the plate and bracket) having vertically disposed tongues, and the other grooves or ways for engaging the tongues, and means carried by the sleeve and engaging the rod for purposes of vertical adjustment.



4. The combination with an ironing board, of a bracket therefor, the said bracket being provided with vertically disposed ways on its inner surface, and a relatively stationary supporting plate having vertically disposed tongues adapted to engage the ways of the bracket, the supporting plate also being provided with a centrally disposed rod and the bracket having a sleeve adapted to receive the rod, the bracket plate being provided with a set screw passing through the plate and entering the sleeve to engage the rod, whereby by tightening the screw the bracket may be locked in place on the supporting plate.

856,963. SOUP-STRAINING APPARATUS. CHARLES LATSCH, Cleveland, Ohio, assignor to The Foulloux Ballon Passoire Company, Cleveland, Ohio. Filed Oct. 17, 1906. Serial No. 339,357.



Claim.—1. A straining apparatus comprising a containing vessel with an outlet at its bottom to carry away the strained liquid, in combination with a rotatable strainer mounted in the containing vessel having a central axis of rotation and means to rotate said strainer, whereby the contents of the vessel are discharged by the centrifugal action of the strainer, and cleansing means engaging the inner surface of the strainer adapted to keep open the perforations thereof.

2. A straining apparatus comprising a stationary outer vessel having a bottom outlet, an open work rotatable strainer in said vessel having a vertical axis and means to rotate said strainer, in combination with a stationary shaft and devices fixed thereon adapted to crush particles against the wall of the strainer and to clear the perforations of obstructions.

3. A straining apparatus comprising a fixed containing vessel having an outlet at its bottom, a rotatable strainer therein having a central vertical axis, and a shaft loosely supported in the bottom of said strainer and fixed at its top, in combination with devices on said shaft operatively engaging the inner surface of the strainer to promote the straining operation, and power connections for rotating the strainer, one of said devices having a flexible wiping portion and the other a brush to cleanse said surface.

4. In a soup straining apparatus, a fixed containing vessel having a removable cover and a valve controlled outlet at its bottom, a strainer having its lower bearing in said vessel and its upper bearing on said cover, a fixed shaft centrally in said strainer and stationary wings thereon adapted respectively to crush particles and to clear the strainer of obstructions, and means to rotate the strainer, one of said wings comprising a brush and the other a flexible wiping blade.

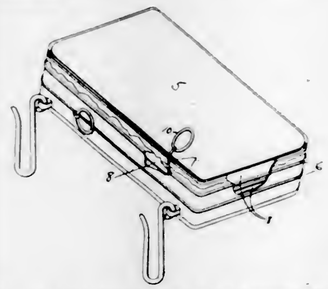
5. A soup straining apparatus comprising a stationary outer vessel and a cover therefor, a rotatable strainer in said vessel widest at its middle and narrowed to each end, and power connections with the bottom of said strainer, in combination with a fixed shaft supported in the bottom of the strainer and at its top in said cover, and a flexible wiper and a brush, respectively, for said strainer having arms mounted on said shaft.

6. The vessel and a removable cover thereon having a central opening and a flange about said opening and inclined toward said opening, in combination with a rotatable perforated strainer engaging said cover, means connected with the bottom of the strainer to rotate the same, a fixed shaft in the axis of said strainer, and wiping and brushing wings respectively mounted on said shaft, one of said wings rigid with said shaft and the other rotatable thereon.

7. The outer vessel adapted to hold liquid, and a removable cover thereon having a central opening and a circular downwardly extending flange about said opening, a rotatable strainer engaged with said flange and open at its upper end and closed at its bottom, a fixed shaft in said strainer separably engaged at its top in said cover, and journaled in the bottom of the strainer, and devices to crush particles and cleanse the surface of the strainer having arms locked on said shaft, in combination with means to rotate the strainer comprising a short shaft fixed in the bottom thereof from without the containing vessel and means to engage and rotate said shaft.

8. A separable soup strainer comprising an outer vessel having an outlet at its bottom and a removable cover open at its center to receive the soup, an open work strainer rotatably engaging said cover about said opening and the bottom of said vessel and power connections therefor through the bottom of said casing constructed to separably engage the strainer, in combination with a central shaft in the strainer fixed against rotation and surface contact devices for the strainer having arms engaged on said shaft, one of said devices adapted to crush particles in the soup and the other to sweep particles from the surface of the strainer.

856,964. DEVICE FOR OPENING BOXES. JOHN E. LEE, Conshohocken, Pa. Filed Feb. 19, 1907. Serial No. 358,232.



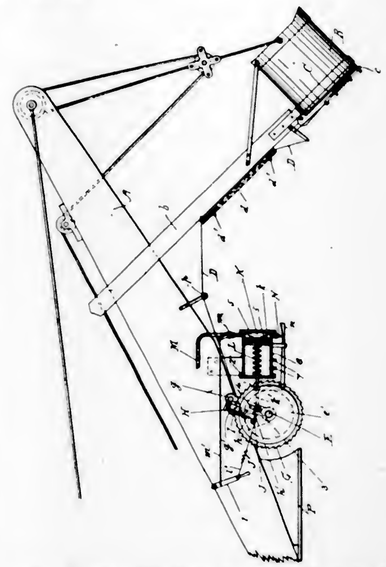
Claim.—1. In a box adapted to be hermetically sealed, means for opening the same, said means consisting of a filament secured beneath and in a groove in a surface of the box, an independent backing strip clamped inside the box to hold said filament in the groove and means to actuate the filament from outside the box.

2. In a box adapted to be hermetically sealed, means for opening the same, said means consisting of a filament secured beneath and in a groove in a surface of the box, an independent backing strip of different material clamped inside the box to hold said filament in the groove and means to actuate the filament from outside the box.

3. In a box having independent end and side pieces and adapted to be hermetically sealed, means for opening the same, said means consisting of a filament secured beneath and in a groove in the side piece, an independent backing piece clamped at the joint of said side and end piece and adapted to hold said filament in the groove and means to actuate the filament from outside the box.

4. In a box adapted to be hermetically sealed, means for opening the same, said means consisting of a filament secured beneath and in a groove in a surface of the box, and an independent backing strip adapted to be pressed against said filament by the contents of the box so as to hold said filament in the groove, substantially as described.

856,965. EXCAVATING-MACHINE. FITZ JAMES LEWIS, Empire, Panama. Filed Oct. 27, 1906. Serial No. 340,885.



Claim.—1. The combination, with a dipper boom, and a dipper provided with a discharge door and a latch therefor; of a revoluble shaft carried by the said boom, a collar secured to the said shaft, a tension spring connected to the said collar and operating to revolve the said shaft in one direction, a drum secured on the said shaft, and a flexible connection wound on the said drum and connected with the said latch.

2. The combination, with a dipper provided with a handle and having a door and a latch therefor; of a guide tube secured to the said dipper handle, and a flexible connection slidable in the said tube and connected with the said latch.

3. The combination, with a supporting boom, a dipper provided with a door and a latch therefor; of a revoluble drum, a flexible connection wound on the said drum and connected with the said latch, means for keeping the said

connection taut, a ratchet toothed wheel for revolving the said drum, a pivoted lever provided with a pawl for engaging with the said wheel, a motor cylinder secured to the said boom and provided with a piston operatively connected with the said lever, a steam connection for moving the piston in one direction, and a spring for moving the piston in the reverse direction.

4. The combination, with a dipper provided with a door and a latch therefor; of a revoluble drum, a flexible connection wound on the said drum and connected with the said latch, a ratchet toothed wheel for revolving the said drum, a pivoted lever provided with a pawl for engaging with the said wheel, a tension spring for holding the said flexible connection taut, means for normally holding the said pawl out of engagement with the said wheel so that the said drum is free to revolve in each direction, and means for placing the said pawl in engagement with the said wheel and for actuating the said lever.

5. The combination, with a supporting boom, and a dipper provided with a door and a latch therefor; of a revoluble drum, a flexible connection wound on the said drum and connected with the said latch, means for keeping the said connection taut, a ratchet toothed wheel for revolving the said drum, a pivoted lever provided with a pawl for engaging with the said wheel, a motor cylinder secured to the said boom and provided with connections for operating the said lever, means for moving the said pawl into and out of engagement with the said wheel, and means for supplying pressure fluid to the said cylinder after the said pawl has been placed in engagement with the said wheel.

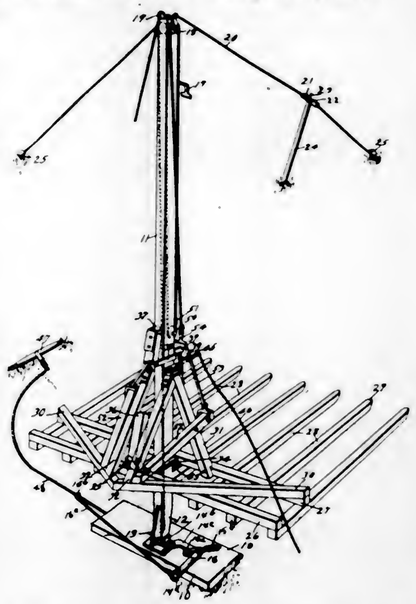
6. The combination, with a supporting boom, and a dipper provided with a door and a latch therefor; of a revoluble drum, a flexible connection wound on the said drum and connected with the said latch, means for keeping the said connection taut, a ratchet toothed wheel for revolving the said drum, a pivoted lever provided with a pawl for engaging with the said wheel, a motor cylinder secured to the said boom and provided with connections for operating the said lever, means for normally holding the said pawl out of engagement with the said wheel, a valve for supplying pressure fluid to the said cylinder, a single operating lever, and connections between the said valve and operating lever and between the said pawl and operating lever whereby the said pawl is operated only when in engagement with the said wheel.

7. The combination, with a dipper provided with a door and a latch therefor; of a revoluble drum, a flexible connection wound on the said drum and connected with the said latch, a ratchet toothed wheel for revolving the said drum, a pivoted lever provided with a pawl for engaging with the said wheel, a motor cylinder and connections for operating the said lever, said cylinder being provided at one end with an exhaust port which is uncovered by its piston, a valve connected to the other end of the said cylinder for admitting steam to move the piston in one direction, a spring for moving the piston in the return direction, and a steam release valve which is opened automatically by the motion of the said piston.

8. The combination, with a supporting boom, and a dipper provided with a door and a latch therefor; of a revoluble drum supported from the said boom, a flexible connection wound on the said drum and connected with the said latch, and a tension spring which winds the said drum in one direction and thereby holds the said connection taut while the dipper is being operated.

856,966. HAY-STACKER. ROBERT S. LEWIS and GEORGE D. LEWIS, Russell, Iowa. Filed Sept. 26, 1906. Serial No. 336,368.

Claim.—1. In a hay stacker, the combination of an upright standard, a hay platform arranged to slide vertically upon said standard in a substantially horizontal position, a trip device for normally holding the hay platform in a substantially horizontal position and for permitting it to swing downwardly to discharge a load when the trip device is released and means for automatically tilting the hay platform downwardly when at its lower limit of movement without releasing the trip device.



2. In a hay stacker, the combination of an upright standard, a guide frame slidingly mounted thereon and capable of tilting movement relative thereto, a trip device normally holding the guide frame in an upright position, a hay platform firmly fixed to the guide frame to tilt in unison therewith.

3. In a hay stacker, the combination of an upright standard, a hay platform, a guide frame firmly fixed to the hay platform and capable of tilting with the hay platform relative to the standard and means for elevating the hay platform relative to the standard.

4. In a hay stacker, the combination of an upright standard, a hay platform comprising cross pieces and tines, a guide frame mounted on the cross pieces and fixed thereto, rollers carried by the guide frame and platform to engage the standard, levers fixed to the guide frame in front of the standard and in the rear of the standard, a bail connecting the forward ends of said levers and a platform elevating rope secured to said bail.

5. In a hay stacker, the combination of an upright standard, a hay platform, a guide frame fixed to the hay platform, a guide arm pivoted to the hay platform in the rear of the standard and extended upwardly and rearwardly to slidingly engage the rear of the standard, said guide frame arranged to permit the platform to tilt relative to the standard, means for holding said guide arms close to the standard and means for elevating the hay platform.

6. In a hay stacker, the combination of an upright standard, a hay platform, a guide frame fixed to the hay platform, a guide arm pivoted to the hay platform, a loop pivoted to the guide arm and slidingly connected with the upright standard, a latch device for connecting the guide frame with said loop and means for elevating the hay platform.

7. A hay stacker, comprising an upright standard, a hay platform, a guide frame fixed to the hay platform, a guide arm pivoted to the hay platform, a loop pivoted to the guide arm and surrounding the upright standard, a hook projecting forwardly from said loop, an arm connected with the guide frame to engage said hook and hold the platform against tilting movement and a manually operated trip lever for disengaging the hook from the arm on the guide frame.

8. A hay stacker, comprising an upright standard, a hay platform, a guide frame fixed to the hay platform, a guide arm pivoted to the hay platform, a loop pivoted to the guide arm and surrounding the upright standard, a hook projecting forwardly from said loop, an arm connected with the guide frame to engage said hook and hold the platform against tilting movement, a manually operated trip lever for disengaging the hook from the arm on the guide frame and an adjustable trip arm fixed to the upper portion of the upright standard to engage said trip device and automatically elevate the hook on the pivoted loop.

9. A hay stacker, comprising an upright standard, a hay platform, comprising cross pieces and tines, said standard inserted in the hay platform between the cross pieces, rollers fixed to the cross pieces to engage the sides of the standard, a roller connected with the platform to engage the front of the standard, a guide frame fixed to the hay platform and having rollers at its top to engage the sides of the standard, a guide arm pivoted to the rear cross piece of the platform and having a roller at its top to engage the rear of the upright standard, a loop pivoted to the said guide arm and surrounding the upright standard and having a hook at its forward end, an arm fixed to the front of the guide frame to be engaged by said hook, a trip lever carried by the guide frame to engage said hook, a rope connected therewith for manually operating it, a trip arm adjustably fixed to the upright standard for automatically operating the trip lever, levers fixed to the guide frame, a bail secured to said levers in front of the standard and an elevating rope fixed to said bail.

10. In a hay stacker, the combination of an upright standard, a guide frame slidingly mounted thereon and capable of tilting movement relative thereto, a trip device normally holding the guide frame in an upright position, a hay platform firmly fixed to the guide frame to tilt in unison therewith and an elevating rope attached to the guide frame in front of the standard.

11. In a hay stacker, the combination of an upright standard, a hay platform arranged to slide vertically upon said standard in a substantially horizontal position and means for holding said platform with its front end tilted downwardly when at the base of the standard, the lower portion of the forward face of said standard inclined downwardly and rearwardly to permit the hay platform to assume a tilted position when at its lower limit of movement.

12. In a hay stacker, the combination of a rotatable upright standard, an arm connected therewith, a lever attached to the arm, a rod pivoted to the lever and having a loop at one end, a hay platform slidingly connected with the standard, an elevating rope passed through the loop in said rod and extended to the top of the standard and connected with the hay platform and a collar on the said rope to engage the said loop for automatically turning the standard when the platform is being elevated.

13. In a hay stacker, the combination of a rotatable upright standard, an arm connected therewith, a lever attached to the arm, a rod pivoted to the lever and having a loop at one end, a hay platform slidingly connected with the standard, an elevating rope passed through the loop in said rod and extended to the top of the standard and connected with the hay platform and a collar on the said rope to engage the said loop for automatically turning the standard when the platform is being elevated and a spring connected with the said arm for automatically returning the standard when the elevating rope is slackened.

14. In a hay stacker, the combination of a base, a standard rotatably mounted on the base, an arm fixed to the standard and extended laterally, a lever pivoted to said arm, a rod pivoted to the lever and having a loop in its end, a hay platform slidingly mounted on the standard, a pulley at the base of the standard, two pulleys at the top of the standard, a pulley connected with the hay platform, a rope passed through the loop in the rod, under the pulley at the base of the standard, over one of the pulleys at the top of the standard, under the pulley attached to the hay platform, over the other pulley attached to the top of the standard and having its end attached to the hay platform and a collar fixed to said rope capable of passing around said pulleys and designed to engage the loop on the said rod for automatically turning the standard.

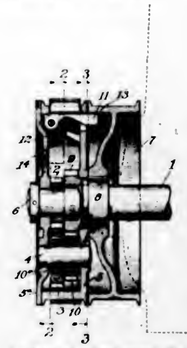
15. In a device of the class described, the combination of a standard, a number of guy wires connected with its upper end, one of said guy ropes provided with a perforated plate, and a pole having a projection therein designed to enter the perforation in said plate.

16. A hay stacker, comprising an upright standard, a hay platform slidingly mounted upon said standard, guiding devices for holding the hay platform in a substantially horizontal position on the standard, the lower end of said standard having its front face inclined downwardly and rearwardly and a spring on the rear face of the standard extended downwardly and rearwardly to engage a part of the hay platform and cause it to tilt when at its lower limit of movement.

17. In a hay stacker, the combination of a base, a standard rotatably mounted on the base, an arm connected to the standard and having a substantially right-angled extension, a stop at the outer end of said arm, a lever pivoted to the arm to be engaged by said stop, a rod pivoted to the outer end of the lever and a spring connected with said arm, said spring capable of permitting the standard to move a half revolution and of returning it when released.

18. In a hay stacker, the combination of a base, a standard pivoted to the base, an arm projected from one side of the standard and having a right-angled extension and a stop at the outer end of said extension, a loop slidingly mounted upon the arm and having a roller therein to engage the arm, a spring connected with the loop and fixed to the base, a lever fulcrumed near the corner of said arm to engage said stop, a rod pivoted to the outer end of the lever and having a loop in its other end, a rope passed through said loop and a collar on the rope to engage the loop.

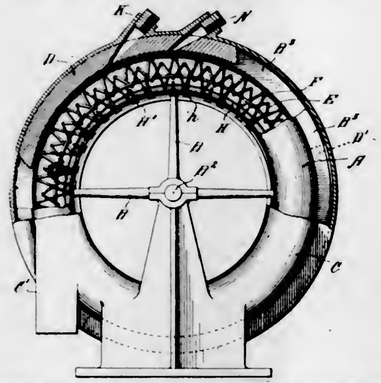
856,967. VARIABLE-SPEED GEAR. SHERMAN T. LEWIS, Milwaukee, Wis., assignor of two-thirds to Retta Pierce Davenport and Everett C. Rockwell, Chicago, Ill. Filed May 28, 1906. Serial No. 319,101.



Claim.—1. In a change speed gear the combination of a driving member, a driven member, and an intermediate member, all independently rotatable about a common axis, a train of gears for transmitting motion from the driving to the driven member, said transmission gearing including a gear wheel rigid with the driving member, another gear wheel rigid with the driven member, and two rigidly connected gear wheels connecting them; a pin mounted in said intermediate member eccentric with the axis thereof for loosely supporting said connected gear wheels; a clutch arm, spring-influenced to normally cause said driven and intermediate members to rotate in unison; and a brake adapted to operate to release said clutch and simultaneously arrest said intermediate member.

2. In a change speed gear, the combination of a driving shaft, a driven member loosely mounted thereon, an intermediate member rotatable independently of said shaft and driven member; a pin on said intermediate member eccentric but parallel to said shaft; a gear wheel tight upon said shaft and another tight upon said driven member; a double gear wheel connecting them and loosely mounted on said pin; a clutch normally causing said intermediate and driven members to rotate in unison; a band brake operative upon said intermediate member to prevent its rotation and adapted to release said clutch; and means for operating said band brake.

856,968. STEAM-SPRAY MOTOR. JOHN LOFTUS, Albany, N. Y., assignor of one-half to Peter Kinnear, Albany, N. Y. Filed Mar. 19, 1907. Serial No. 363,187.



Claim.—1. A steam spray motor, comprising a rotatable wheel having a hollow rim, a casing for said wheel, spiral coils mounted within said rim, nozzles passing through said casing, tangent to said wheel, and adapted to admit steam and water independent of each other to said spiral coils, as set forth.

2. A steam spray motor, comprising a rotatable wheel having a hollow rim, a casing for said wheel, spiral coils mounted within said rim, a guard plate mounted about a portion of said spiral coils, and tangentially disposed steam and water nozzles passing through said casing and guard plate, as set forth.

3. A steam spray motor, comprising a rotatable wheel having a hollow rim, with an annular slot in the periphery thereof, spiral coils mounted within said rim, a guard plate extending about a portion of said coils, a casing about said wheel, and tangentially disposed steam and water nozzles passing through said casing and guard plate, as set forth.

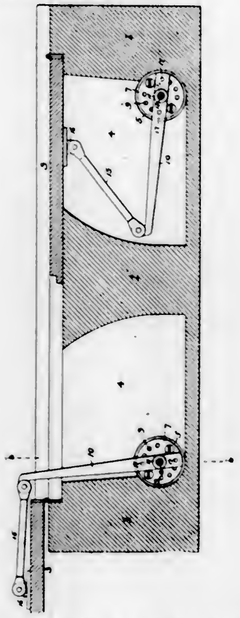
4. A steam spray motor, comprising a rotatable wheel having a hollow rim, with flanges at the edges thereof which are spaced apart, spiral coils within the rim, a casing in which the wheel is mounted, a guard plate mounted within the casing and held adjacent to the marginal edges of said flanges, and tangential steam and water nozzles passing through said casing and guard plate, as set forth.

5. A steam spray motor, comprising a rotatable wheel having a hollow rim, with flanges at the edges thereof which are spaced apart, spiral coils within the rim, and detachably held therein, a casing in which the motor wheel is mounted, a guard plate supported within the casing and provided with apertures, and tangentially disposed steam and water nozzles passing through said casing and apertures of the guard plate, as set forth.

6. A steam spray motor, comprising a rotatable wheel having a hollow rim, with flanges at the edges thereof which are spaced apart, spiral coils of different diameters, one mounted within the other, means for allowing the inner coil to have an expansive movement incident to centrifugal movement of the wheel, and means for preventing the coils from moving independent of each other, as set forth.

7. A steam spray motor, comprising a rotatable wheel having a hollow rim, with flanges at the edges thereof which are spaced apart, spiral coils of different diameters, one mounted within the other, means for allowing the inner coil to have an expansive movement incident to centrifugal movement of the wheel, eye-bolts passing through the rim, a wire engaging the eyes of said bolts and also said coils, and nuts mounted upon said bolts, as set forth.

856,969. WINDOW-SHUTTER-OPERATING DEVICE. HARRY N. LOWENTHAL, Philadelphia, Pa. Filed Jan. 27, 1906. Serial No. 298,264.

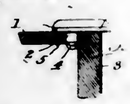


Claim.—The combination of a window frame, having a window a shutter, and a sill, said sill having a horizontally slotted recess open on its outer face and a chamber at one of the inner corners of the recess, opening on the upper surface of said sill inside the window, a cap plate closing the opening of said chamber, a plate secured to the base of the chamber and provided with an upwardly projecting pin and a series of openings concentric therewith, a lever pivotally mounted on the pin and vertically movable thereon, a hub for the lever having a stem projecting upwardly through the cap plate, a handle on the upper end of the stem, downwardly projecting pins on the lever placed to engage the openings in the plate within the chamber, a bracket on the shutter, and a link connecting said bracket with the lever, substantially as described.

856,970. ALINING DEVICE FOR SECTIONAL BOOK-CASES. CARL J. LUNDSTROM, Little Falls, N. Y. Filed Oct. 27, 1906. Serial No. 340,798.

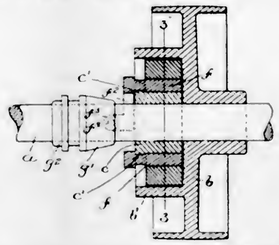
Claim.—1. The combination with a bookcase section; of alining devices movably connected to the rear wall of the section, said devices being adapted to be projected beyond the ends of the section and having means operable from the interior of the section to project them.

2. The combination with bookcase sections; of an alining device slidably connected to the rear of each section, each alining device having a portion projecting through the back of the corresponding section whereby it may be operated from within the section.



3. The combination with a bookcase section having a slot in its rear wall; of a slidable alining device having a portion projecting through said slot, said projecting portion including an enlarged free end forming a finger piece within the section, the alining portion of the device being arranged upon the outside of the section and adapted to maintain the slot closed at either limit of its sliding movement.

856,971. CLUTCH. WILLIAM H. MACDONALD, Boston, Mass., assignor to James S. Wilson, Chelsea, Mass. Filed Apr. 7, 1902. Serial No. 101,795.



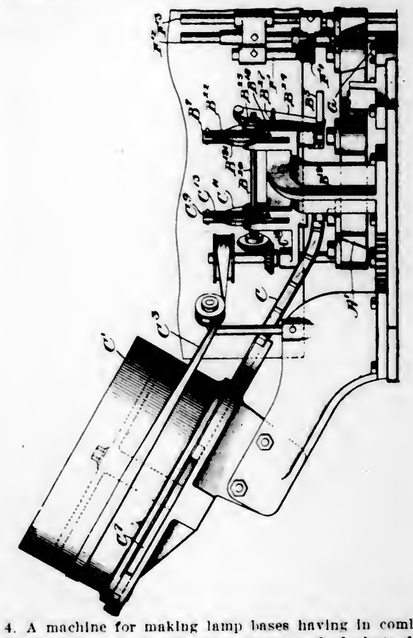
Claim.—A clutch comprising two members, one of which encircles the other and of which one is provided with an annular flange, pins projecting radially from the inner clutch member, a plurality of ring-sections slidingly mounted on said pins and arranged between said members with their ends in proximity, shafts arranged parallel to the axis of rotation of said members, arms on the ends of said shafts adapted to be engaged by a sleeve and thrust outwardly to rock said shafts, cam-members on said shaft, and wedges adapted to be engaged by said cam-members whereby the rocking of said shafts separates said ring-sections and causes them to engage the outer clutch member.

856,972. MACHINE FOR MAKING LAMP-BASES. NORMAN MARSHALL, Newton, Mass. Filed Sept. 20, 1905. Serial No. 279,291.

Claim.—1. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for center contacts having its delivery end arranged to register with the receptacles, means for separating and delivering center contacts to said feed chute, mechanism for separating individual contacts from the series in the feed chute and transferring them to the receptacle, means for feeding an insulating compound to unite the parts, and mechanism for shaping the compound.

2. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for center contacts having its delivery end arranged to register with the receptacle, a hopper for supplying contacts to the feed chute, a stop for engaging the end contact in the feed chute, a separating device for feeding the end contact past the stop, a reciprocating plunger for carrying the contact into the receptacle, means for feeding an insulating compound to unite the parts, and mechanism for shaping the compound.

3. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for the center contacts having its delivery end arranged to register with the receptacle, means for supplying contacts to the feed chute, a stop at the end of the feed chute, a carrier in advance of the stop, a separator for feeding the end contact in the chute past the stop and to the carrier, means for operating the carrier to carry the contact into the receptacle, means for feeding an insulating compound to unite the parts, and mechanism for shaping the compound.



4. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for center contacts having its delivery end arranged to register with the receptacle, carrying jaws, mechanism for reciprocating the carrying jaws between the feed chute and the receptacle, and means for opening and closing the jaws.

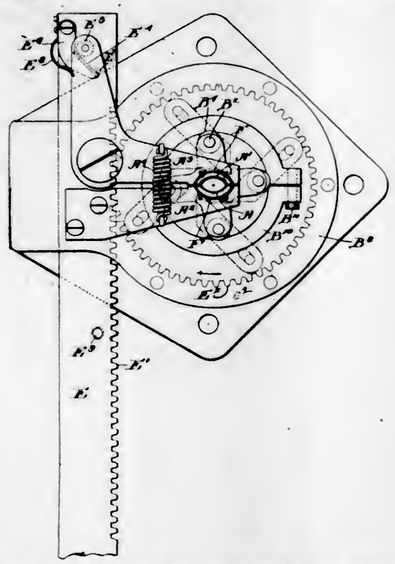
5. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for the center contacts having its delivery end arranged to register with the receptacle, a yielding stop at the delivery end of the feed chute, a reciprocating slide provided with an inclined cam surface arranged to pass behind the stem of the contact and force the contact past the yielding stop, a carrier for receiving the contact, means for operating the carrier to deliver the contact to the receptacle, means for feeding an insulating compound to the receptacle, and mechanism for shaping the compound.

6. A machine for making lamp bases having in combination a series of receptacles for the base parts, a feed chute for the center contacts, mechanism for separating individual contacts from the series in the feed chute and transferring them to a receptacle, a feed chute for the shells, mechanism for transferring individual shells from the chute to the receptacle, means for supplying insulating compound to a receptacle, mechanism for shaping the compound, and means for bringing the receptacles successively into register with the ends of the contact and shell chutes, with the means for supplying insulating material and with the shaping mechanism.

7. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for the center contacts, a carrier at the end of the feed chute, devices for transferring individual contacts from the chute to the carrier, a feed chute for the shells, a carrier at the end of the chute, means for supplying an insulating material, mechanism for shaping the material, mechanism

for bringing the receptacle successively into register with the carriers, with the supplying means, and with shaping mechanism.

856,973. GLASS-SEVERING MACHINE. NORMAN MARSHALL, Newton, Mass. Filed Nov. 7, 1905. Serial No. 286,191.



Claim.—1. A machine for severing glass rods having in combination, rod holding jaws, means for opening said jaws for the feed of the rod one or more scoring cutters and means for causing a relative rotary movement between the cutters and rod to score the rod circumferentially.

2. A machine for severing glass rods having in combination, rod holding jaws, one or more scoring cutters, means for causing a relative rotary movement between the cutters and jaws to score the rod circumferentially and rod breaking means.

3. A machine for severing glass rods having in combination, rod holding jaws means for opening said jaws for the feed of the rod and closing the jaws, one or more scoring cutters, means for causing a relative rotary movement between the cutters and rod, and rod breaking means.

4. A machine for severing glass rods having in combination, rod holder jaws, and a scoring device, one of said devices being mounted for rotation about the axis of the rod and means for opening said jaws for the feed of the rod.

5. A machine for severing glass rods having in combination, rod holding means, a plurality of scoring cutters, means for forcing the cutters radially inward against the rod, and means for causing a relative rotary movement between the cutter or cutters and holding means about the axis of the rod to score the rod.

6. A machine for severing glass rods having in combination, rod holding means, one or more scoring cutters, means for forcing the cutter or cutters against the rod, means for causing a relative rotary movement between the cutter or cutters and holding means about the axis of the rod to score the rod, and means for breaking the rod.

7. A machine for severing glass rods having in combination, rod holding jaws, one or more scoring cutters, means for forcing the cutters against the rod, means for opening the jaws for the feed of the stock and for closing the jaws, means for causing a relative rotary movement between the cutters and holding jaws, and means for breaking the rod at the scored point.

8. A machine for severing glass rods having in combination, devices for scoring a rod circumferentially, means for engaging the rod on opposite sides of the scored point and deflecting it against a support approximately at the scored point.

9. A machine for severing glass rods having in combination, rod holding jaws, a feed stop, means for opening the jaws for the feed of the rod, one or more scoring cutters, means for moving the cutters toward and away from the rod, means for causing a relative rotary movement between the cutters and jaws.

10. A machine for severing glass rods having in combination, rod holding devices, one or more scoring cutters, and a breaking finger.

11. A machine for severing glass rods having in combination, rod holding devices, one or more scoring cutters, a breaking finger, and a feed stop.

12. A machine for severing glass rods having in combination, rod holding jaws constructed to engage the rod along substantially a circumferential line, means coöperating therewith to score the rod circumferentially, and a breaking finger.

13. A machine for severing glass rods having in combination, rod holding devices, one or more scoring cutters, one or more carriers for the cutters, a frictionally held head on which the cutter carriers are mounted, and an operating device connected with the head through the carriers.

14. A machine for severing glass rods having in combination, rod holding devices, a frictionally held cutter carrying head, cutter carrying levers mounted on the head, and an actuating ring connected with the cutter carrying levers.

15. A machine for severing glass rods having in combination, a frictionally held cutter carrying head, a cutter lever mounted thereon, and an actuating-ring connected with the lever.

16. A machine for severing glass rods having in combination a frictionally held cutter carrying head, a cutter lever mounted thereon, an actuating ring connected to the lever, a feed stop rod, holding jaws, and a breaking finger.

856,974. MACHINE FOR MAKING LAMP-BASES. NORMAN MARSHALL, Newton, Mass. Filed Nov. 9, 1906. Serial No. 342,624.

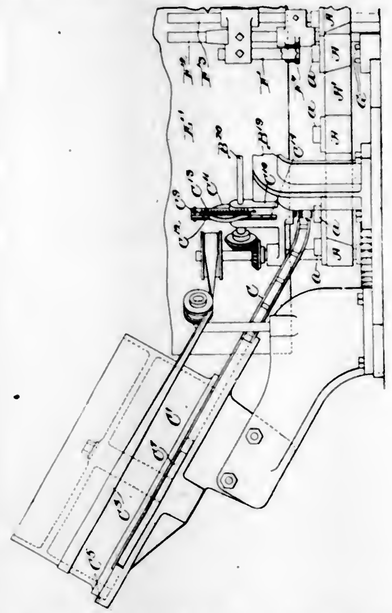
Claim.—1. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for the shells having its delivery end arranged to register with the receptacle, yieldingly mounted supports at the delivery end of the feed chute, a reciprocating plunger for transferring the shells from the supports to the receptacle, means for supplying an insulating compound to the receptacle, and means for shaping the compound.

2. A machine for making lamp bases having in combination, a receptacle for the base parts, a feed chute for the shells having its delivery end arranged to register with the receptacle, supporting fingers arranged at the delivery end of the feed chute, a reciprocating plunger shaped to enter the shell, and carry it downward past the supporting fingers, means for supplying an insulating compound to the receptacle, and mechanism for shaping the compound.

3. A machine for making lamp bases having in combination a rotary hopper mounted upon an inclined axis, a series of openings in the lower edge of the hopper corresponding in shape to the shape of the shells, a guideway into which said openings deliver, and a feed chute forming a continuation of the guideway.

4. A machine for making lamp bases having in combination a rotary hopper mounted upon an inclined axis, a series of openings in the lower edge of the hopper corresponding in shape to the shells, a guideway partially surrounding the hopper into which said openings deliver and provided with a wall which approaches the periphery of the hopper and acts as a cam surface for forcing the shells back into the recesses as they pass up the guideway.

5. A machine for making lamp bases having in combination a rotary inclined hopper, a series of openings in the lower edge of the hopper corresponding in shape to the shape of the shells, a guideway partially surrounding the hopper into which the openings deliver, a yielding wall for the guideway which approaches the periphery of the hopper and acts as a yielding cam surface for forcing the shells into the openings as they pass up the guideway.



6. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for the shells having its delivery end arranged to register with the receptacle, yieldingly mounted supports at the delivery end of the feed chute, and a reciprocating plunger for transferring the shells from the supports to the receptacle.

7. A machine for making lamp bases having in combination a receptacle for the base parts, a feed chute for the shells having its delivery end arranged to register with the receptacle, supporting fingers arranged at the delivery end of the feed chute, and a reciprocating plunger shaped to enter the shell and carry it downward past the supporting fingers.

8. A machine for making lamp bases having in combination a receptacle for the base parts provided with a recess for the center contact and a seat for the shell, a feed chute for the shells having its delivery end arranged to register with the receptacle, yieldingly mounted supports at the delivery end of the feed chute, and a reciprocating plunger for transferring the shells from the support to the receptacle.

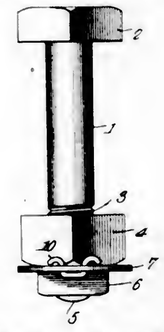
856,975. PROCESS OF TREATING CREOSOTE AND PRODUCT THEREOF. ALBERT G. MEYER, San Francisco, Cal., assignor of two-fifths to Henry R. Newbauer, San Francisco, Cal. Filed Nov. 8, 1904. Serial No. 231,894. (Specimens.)

Claim.—1. The process of treating creosote which consists in mixing therewith a suitable proportion of acetanilid to form a paste, adding to said paste a suitable proportion of carbonate of ammonium, and then adding thereto a suitable quantity of pure nitric acid, adding water and boiling the mixture, then adding alcohol and then again boiling the mixture, allowing the same to cool until it separates into a liquid portion and a crystalline portion, separating the crystals, washing the crystals, and dissolving the same in dilute alcohol, substantially as described.

2. The process which consists in reacting on creosote with acetanilid, then adding thereto carbonate of ammonium and nitric acid in suitable proportions and then reducing the product to a crystalline form, substantially as described.

3. The composition of matter, comprising creosote and acetanilid substantially in the proportions specified, readily soluble in alcohol or ether, slowly soluble in cold water, more soluble in hot, yielding a strong odor of creosote, the crystals melting at about 110° C. substantially as described.

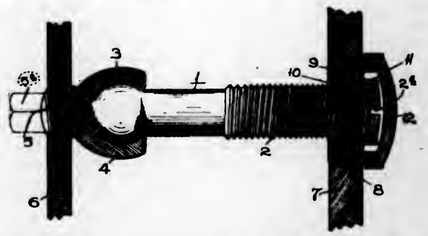
856,976. NUT-LOCK. HEZEKIAH MILLER, Fort Morgan, Colo., assignor of one-half to Isaac C. Ferree, Sterling, Colo. Filed Feb. 2, 1907. Serial No. 355,465.



Claim.—1. In a nut lock the combination of a bolt, a primary nut thereon, a lock nut provided with a laterally extending flange on its inner end and having a circular series of spaced holes within the periphery of said flange, and a locking pin adapted to engage a plurality of said holes and be bent into contact with the primary nut.

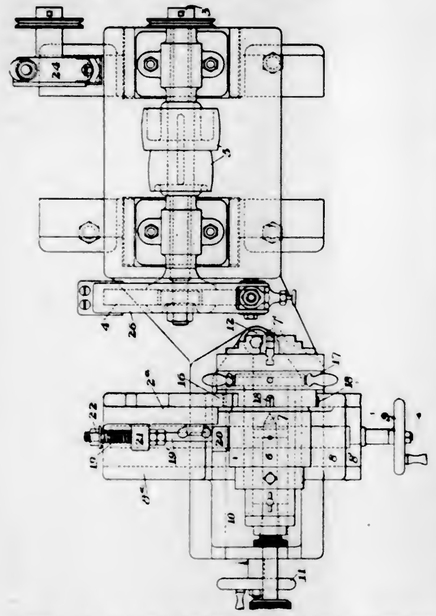
2. In a nut lock, the combination of a bolt provided with right and left hand threads, a primary nut adapted to fit upon the right-hand threaded portion of said bolt, a lock nut adapted to fit upon the left-hand threaded portion of said nut and provided with a laterally-extending circular flange of a diameter slightly greater than the long diameter of the primary nut and having uniformly spaced holes arranged about the periphery of said flange, and a U-shaped locking pin adapted to engage in alternate holes of said flange, substantially as described and for the purpose set forth.

856,977. FLEXIBLE STAY-BOLT. THOMAS H. MOONEY, Houston, Tex. Filed Oct. 8, 1906. Serial No. 337,878.



Claim.—The combination with a pair of boiler sheets, of a cup fixed to one of the sheets, a stay bolt, a spherical head integral with one end of the stay bolt which head is seated in the cup, a socket seated in the opposite sheet in which socket is formed a semicircular seat, a nut adjustably seated on the end of the stay bolt opposite the end provided with a head and which nut has a curved surface adapted to fit the semicircular seat in the socket, and a cap detachably secured to the socket and which incloses the nut and end of the stay bolt.

856,978. TAP-GRINDING MACHINE. OLIVER M. MOWAT, McKeesport, Pa., assignor to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Nov. 2, 1905. Serial No. 285,679.



Claim.—1. In a tap-grinding machine, the combination with a grinding wheel rotating upon a fixed axis, of a tap holding chuck having a longitudinal and an angular adjustment, and means whereby as the tap is rotated in the chuck, the latter is moved with respect to the wheel; substantially as described.

2. In a tap-grinding machine, the combination with a grinding wheel, of a movable tap-holding chuck, having a tap-rotating member, a fixed eccentric guide adjacent to the said member, and means on said member contacting with the said guide when the member is rotated; substantially as described.

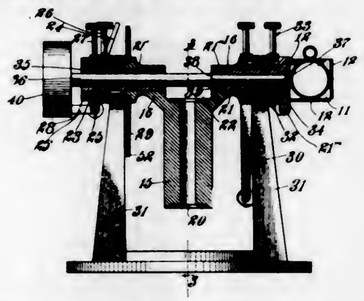
3. In a tap-grinding machine, a grinding wheel arranged to rotate about a fixed axis, a tap-holding chuck having a tap-turning member, a support for the chuck having means for permitting the chuck to be moved longitudinally, transversely and angularly with respect to the wheel, and eccentric means for moving the chuck transversely to its longitudinal axis when said member is turned; substantially as described.

4. In a tap-grinding machine, the combination with a tap-holding chuck movable transversely with respect to its longitudinal axis, and having a tap-turning member provided with spaced lugs or projections, a fixed guide member having an eccentric face arranged to be engaged by said lugs or projections, and a spring acting upon the chuck in the opposite direction; substantially as described.

5. In a tap-grinding machine, a tap-holding and rotating chuck, a transversely movable base upon which the chuck is mounted, a longitudinally and angularly adjustable subbase upon which the first named base is mounted, and eccentric means automatically coöperating with the chuck to form a clearance grind as the tap is rotated in the chuck; substantially as described.

6. In a tap-grinding machine, the combination of a grinding wheel, a tap-holding and rotating chuck mounted for longitudinal, lateral and angular movement, and means for effecting a lateral movement of said chuck when the tap is rotated; substantially as described.

856,979. TRANSIT. MAX MUNZNER, Los Angeles, Cal. Filed June 22, 1906. Serial No. 322,805.



Claim.—1. In a transit, a frame; a main axis mounted in the frame; means for locking the main axis to the frame; a secondary axis concentrically mounted in the main axis; a telescope mounted on the secondary axis; and means for indicating the relative movement between the two axes.

2. In a transit, a frame; an axis mounted in the frame; a recess in the axis; a telescope; having an internally screw threaded socket in the casing thereof, the surface around the socket forming a bearing; a bearing for the telescope on the axis; a bolt in the axis adapted to screw into the socket of the telescope.

3. In a transit, a frame; an axis having a recess therein mounted in the frame; an arm on the axis below the recess; a telescope having a bearing surface adapted to fit in the recess; a bolt in the arm adapted to hold the telescope secured to the arm.

4. In a transit, a frame; a main axis mounted in the frame; a secondary axis concentrically mounted inside the main axis; a telescope; and means to secure the telescope to the secondary axis.

5. In a transit, a frame; a main axis mounted in the frame; a secondary axis concentrically mounted in the main axis; a bearing surface on the secondary axis; a telescope; a bearing surface on the telescope adapted to fit the bearing surface on the secondary axis; and a bolt in the secondary axis adapted to hold the two bearing surfaces together.

6. In a transit, a frame; a main axis mounted in the frame; a secondary axis concentrically mounted in the main axis; a telescope mounted on one end of the secondary axis; and a counter-weight mounted on the other end of said secondary axis.

7. In a transit, a frame; a main axis mounted in the frame; a secondary axis concentrically mounted in the main axis; a telescope mounted on the secondary axis; and means for indicating the relative movements between the two axes.

8. In a transit, a frame; a main axis mounted in the frame; means for indicating the relative movement between the main axis and the frame; a secondary axis mounted concentric to the main axis; means for indicating the relative movement between the secondary and main axes; a telescope mounted on the secondary axis.

9. In a transit, a frame; a main axis; means for indicating the relative movement between the main axis and the frame; a secondary axis; means for indicating the relative movement between the main and secondary axes; a plurality of bearing surfaces on the axes; a telescope having a plurality of bearing surfaces; and means for securing a bearing surface of the telescope against a bearing surface of the axes.

10. In a transit, a frame; a main axis; means for indicating the relative movement between the main axis and the frame; a secondary axis; means for indicating the relative movement between the main and secondary axes; a plurality of bearing surfaces on the axes; a telescope; a plurality of bearing surfaces on the telescope; means for securing a bearing surface of the telescope against a bearing surface of the axes; and counter-weights adapted to balance the weight of the telescope.

11. In a transit, a frame; a main axis; means for indicating the relative movement between the main axis and the frame; a secondary axis; means for indicating the relative movement between the secondary and main axes; a bearing surface in the end of the secondary axis; a transverse axis; a bearing sleeve for the transverse axis; a telescope on the transverse axis; a bearing surface on the bearing sleeve; and means for holding the bearing surface of the sleeve and the bearing surface of the secondary axis together in alinement.

12. In a transit, a frame; a main axis mounted in the frame; means for indicating the relative movement between, and for locking together the main axis and the frame; a secondary axis concentrically mounted in the main axis; means for indicating the relative movement between and for locking together the two axes; bearing surfaces on the main axis; a bearing surface on the secondary axis; a telescope having a plurality of bearing surfaces adapted to fit into the bearing surfaces in the axes; counter-weighted bolts in the axes and attached to the telescope to hold the same in alinement.

13. In a transit, a main axis provided with an arm extending at right angles thereto, said axis and arm having bearing recesses therein; and a telescope having a plurality of bearing lugs adapted to fit into the recesses in the axis and arm.

14. In a transit, a frame; a main axis; a secondary axis concentric to the main axis; and means for indicating the relative movement between the secondary axis and the frame.

15. In a transit, a frame; a main axis; means for indicating the relative movement between the main axis and the frame; a secondary axis; means for indicating the relative movement between the secondary and main axis; a bearing surface in the end of the secondary axis; a solar attachment secured to the bearing surface on the secondary axis.

16. In a transit, a frame; a main axis having a bearing recess therein; a solar attachment adapted to receive the main telescope; a main telescope on the solar attachment; a bearing surface on the solar attachment; and means for holding the two bearings surfaces together and a counter-weight to the solar attachment.

17. In a transit, a frame; a main axis; a perpendicular arm on the main axis; a solar attachment; a telescope on the solar attachment; and means for securing the solar attachment to either end of the perpendicular arm.

18. In a transit, a frame; a main axis; a perpendicular arm on the main axis having a longitudinal bore therein; a solar attachment; an axis on the solar attachment adapted to fit in the bore in the perpendicular arm; and means for reversibly securing the axis in the bore.

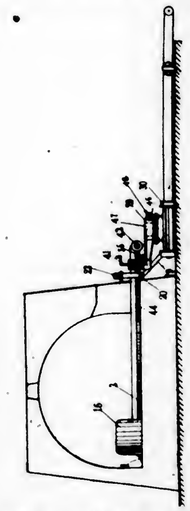
856,980. COKE-WORKING APPARATUS. GEORGE F. MYERS, Columbus, Ohio, assignor to John C. Pennie, Montclair, N. J. Filed July 23, 1903. Serial No. 166,652.

Claim.—1. Apparatus for breaking down and withdrawing coke from a coke oven, comprising a wedge adapted to wedge up the coke, an endless carrier receiving the wedged-up coke from the wedge and conveying it from the oven, and means for projecting the wedge and carrier into the oven.

2. Apparatus for breaking down and withdrawing coke from a coke oven, comprising a frame carrying at its forward end a rigid wedge, and carrying a conveyer at the rear of said wedge, and means for projecting the wedge and conveyer into the oven.

3. Apparatus for breaking down and withdrawing coke from a coke oven, comprising a wedge adapted to wedge up the coke, a conveyer receiving the wedged-up coke from the wedge, means for projecting the wedge and conveyer into the oven, and means for swinging the wedge and conveyer into different paths of movement.

4. In apparatus for breaking down and withdrawing coke from a coke oven, the combination with a receiving conveyer, of a breaking-down wedge provided with upright side guides for directing the falling coke upon the conveyer, and means for projecting the conveyer and wedge into the oven.



5. In apparatus for breaking down and withdrawing coke from a coke oven, the combination with a receiving conveyer, of a breaking-down wedge provided with upright side guides for directing the falling coke upon the conveyer, said side guides also extending rearwardly along opposite sides of the conveyer, and means for projecting the conveyer and wedge into the oven.

6. In apparatus for breaking down and withdrawing coke from a coke oven, the combination with a receiving conveyer, of a wedge located in front of and of greater width than the conveyer, upright side guides having an inward curve at the junction of the wedge and conveyer, floor plates filling in the spaces between said curves and the side edges of the conveyer, and means for projecting the conveyer and wedge into the oven.

7. In apparatus for breaking down and withdrawing coke from a coke oven, a conveyer, means for projecting said conveyer into an oven, and a rigid wedge attached to the side frames of the conveyer, said side frames being cut down at their forward edges to conform to the shape of the wedge.

8. In apparatus for breaking down and withdrawing coke from a coke oven, the combination with a conveyer, means for inserting said conveyer into the oven, said conveyer being adapted to carry coke from the inside of the oven to the outside thereof, and means for discharging the coke laterally from the conveyer before it reaches the farther end of the conveyer.

9. In apparatus for breaking down and withdrawing coke from a coke oven, the combination with a conveyer, means for inserting said conveyer into the oven, said conveyer being adapted to carry coke from the inside of the oven to the outside thereof, and means for discharging the coke laterally from the conveyer before it reaches the farther end of the conveyer, said means being located outside of the oven.

10. In apparatus for breaking down and withdrawing coke from a coke oven, the combination with a conveyer, means for inserting said conveyer into the oven, said conveyer being adapted to carry coke from the inside of the oven to the outside thereof, and means for discharging the coke laterally from the conveyer before it reaches the farther end of the conveyer, said means being located outside of the oven and consisting of a scraper arranged to reciprocate transversely of said conveyer.

11. In apparatus for breaking down and withdrawing

coke from a coke oven, the combination with a wedge adapted to wedge up the coke, of an endless carrier consisting of a plurality of chains arranged in longitudinal parallelism and adapted to receive the coke wedged up by the wedge, and means for projecting the wedge and chains into the oven.

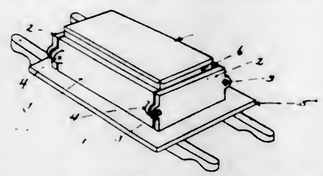
856,981. MEANS FOR HYDRAULICALLY OPERATING VALVES AND COCKS. WILLIAM J. MCCARROLL, Philadelphia, Pa., assignor to Burnham, Williams & Co., Philadelphia, Pa., a Firm. Filed Aug. 17, 1906. Serial No. 330,953.

Claim.—1. In a valve operating means, in combination, a valve, a stem or rod carried by or engaging said valve, a cylinder the forward end of which is open to the air, and the rear end of which is closed, a piston, furnished with a cam-like forward end adapted to engage said rod or stem, carried by said cylinder, a liquid carrying pipe, one end of which enters the closed end of said cylinder and the other end of which enters an hydraulic cylinder, said latter cylinder, a piston in said latter, cylinder, and means for operating said piston.

2. In a valve operating means, in combination, a valve, a stem or rod carried by or engaging said valve, a cylinder the forward end of which is open to the air and the rear end of which is closed, a piston furnished with a cam-like forward end adapted to engage said rod or stem, carried by said cylinder, a spring adapted to normally throw said piston backward, a liquid carrying pipe one end of which enters the closed end of said cylinder and the other end of which enters an hydraulic cylinder and means for operating said piston.

3. In a valve operating means, in combination, a valve, a stem carried by or engaging said valve, a piston with a cam-like face adapted in its movements to engage and operate said stem and valve, a cylinder open at one end and closed at the other for carrying said piston, and means for introducing and withdrawing a liquid from the closed end of said cylinder.

856,982. MOLD FOR PLASTIC MATERIAL. EDWARD H. MCCLINTOCK, West Somerville, Mass., assignor of one-half to Edward B. Martin, John D. Crosby, and Chester S. Day and one-fourth to Arthur S. Martin, Boston, Mass. Filed June 11, 1906. Serial No. 321,275.



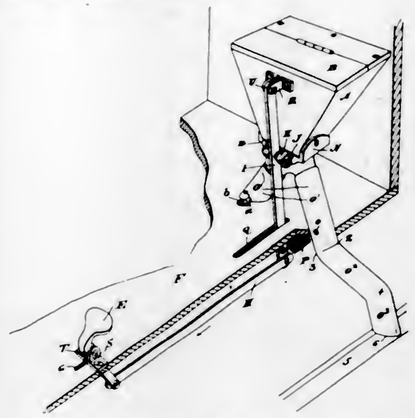
Claim.—1. The combination in a mold for plastic material, of a main mold, a lining for said main mold consisting of separable portions adapted, when in position in the mold, to fit together in substantially leakage proof relation, and means for retaining said separable portions in said leakage proof relation after the removal of the main mold.

2. The combination in a mold for plastic material, of a main mold, and an inner lining contained within said main mold, said inner lining being substantially proof against leakage when in its position in the main mold, and being provided with means for temporarily maintaining the same in its leakage proof condition after its removal from the said main mold.

3. The combination in a mold for plastic material of a main mold and an inner lining adapted to fit within said main mold, said inner lining being composed of metal plates mounted on the pallet and normally springing outwardly with respect to each other, but, when in position in said main mold, having their edges held in contact so as to render said lining substantially proof against leakage, and having means for holding said sides temporarily in contact after the removal of said lining from the inner mold.

4. The combination in a mold for plastic material, of a main mold, and an inner lining adapted to fit within said main mold, said inner lining having its various surfaces hinged to adjacent surfaces and having means for temporarily locking said surfaces together whereby the said inner lining is maintained in a substantially leakage proof condition.

856,983. TRACK-SANDER. GEORGE NUGENT, Toronto, Ontario, Canada. Filed Feb. 16, 1906. Renewed May 20, 1907. Serial No. 374,681.



Claim.—1. In a device of the class described, the combination with a hopper; a cut-off controlling discharge-opening thereof, and means for operating said cut-off; of one or more bent pipes opening from said hopper and below said cut-off, each being formed or made by cutting or punching a suitable amount of material from one side of the pipe and then bending the pipe until the edges of the notch abut, the longitudinal axis of said bent portion of said pipe occupying an outward-backward position relative to the longitudinal axis of the other portion of said pipe, and a bend made, as before described, in said bent portion, so that the longitudinal axis of the last-mentioned bent portion will occupy a position parallel to a vertical plane and at a backward-inclined angle to the longitudinal axis of the bent portion of said pipe immediately forming an integral part thereof.

2. In a device of the class described, the combination with a hopper; a cut-off controlling discharge-opening thereof, and means for operating said cut-off; of one or more bent pipes opening from said hopper and below said cut-off, each being formed or made by cutting or punching a suitable amount of material from one side of the pipe and then bending the pipe until the edges of the notch abut, the longitudinal axis of said bent portion of said pipe occupying an outward-backward position relative to the longitudinal axis of the other portion of said pipe, and a bend made, as before described, in said bent portion, so that the longitudinal axis of the last-mentioned bent portion will occupy a position parallel to a vertical plane and at a backward-inclined angle to the longitudinal axis of the bent portion of said pipe immediately forming an integral part thereof; the discharge-end of said pipes being cut off or constructed so that its plane will be parallel with the plane over which the pipe may be moved.

3. In a device of the class described, the combination with a hopper; a cut-off controlling discharge-opening thereof, of one or more pipes for controlling sand along a way opening into said hopper and constructed of two or more portions, the longitudinal axes of which bear such

inclination to each other and to the surface of said way that the sand passing therethrough will be trailed therefrom as it is moved.

4. In a device of the class described, the combination with a hopper; a cut-off controlling discharge-opening thereof, of one or more pipes for controlling sand along a way opening into said hopper and constructed of two or more portions, the longitudinal axes of which bear such inclination to each other and to the surface of said way that the sand passing therethrough will be trailed therefrom through the discharge-ends of the pipes which are cut off or constructed so that their plane will be parallel with the surface of the way.

5. In a device of the class described, the combination with a hopper provided with a constricted discharge-opening, and a cut-off controlling said discharge-opening, of a member adapted for connection with the bottom of said hopper and integrally provided with two outwardly-extending hollow pipes, and pipes coöperating with said hollow pipes provided with a lower portion, the longitudinal axis of which lies substantially in a plane parallel to the vertical plane of the rail, and at a forward-inclined angle in the direction of movement of the car so that the sand will be trailed onto the rail.

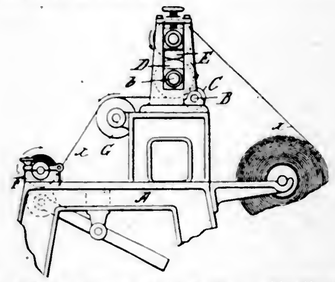
6. In a device of the class described, the combination with a hopper provided with a constricted discharge-opening, and a cut-off controlling said discharge-opening, of a member adapted for connection with the bottom of said hopper and integrally provided with two outward-backward-extending hollow pipes, and pipes fitted over said outward-backwardly-extending pipes so that their longitudinal axes will be on a line with the longitudinal axes of said outward-backwardly-extending pipes; the intermediate portion of said pipes being formed so that their longitudinal axes will occupy an outward-backward position relative to the longitudinal axis of the upper portion of said pipes, and the lower portion of said intermediate portions being formed so that its longitudinal axis will occupy a position parallel to a vertical plane of the rail, and a backward-inclined angle relative to the longitudinal axes of said intermediate portions.

7. In a device of the class described, the combination with a hopper provided with a constricted discharge-opening, and a cut-off controlling said discharge-opening, of a member adapted for connection with the bottom of said hopper and integrally provided with two outward-backward-extending hollow pipes, and pipes fitted over said outward-backwardly-extending pipes so that their longitudinal axes will be on a line with the longitudinal axes of said outward-backwardly-extending pipes; the intermediate portion of said pipes being formed so that their longitudinal axes will occupy an outward-backward position relative to the longitudinal axis of the upper portion of said pipes, and the lower portion of said intermediate portions being formed so that its longitudinal axis will occupy a position parallel to a vertical plane of the rail; a backward-inclined angle relative to the longitudinal axes of said intermediate portions, the discharge-end of said lower portions being cut off or constructed so that its plane will be parallel to the top of the rail over which it is passing.

856,984. PAPER-SLITTING MACHINE. JOHN L. PERKINS and JOHN O. STANLEY, Holyoke, Mass., assignors to B. F. Perkins and Son, Incorporated, Holyoke, Mass., a Corporation of Massachusetts. Filed Aug. 29, 1906. Serial No. 332,467.

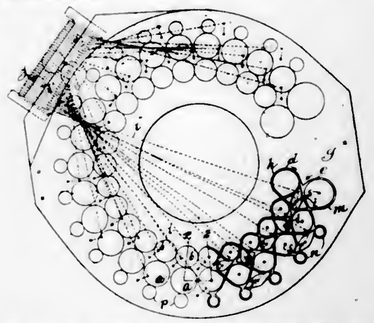
Claim.—1. In a paper slitting machine, the combination with a plurality of axially adjustable rotary slitting disks, of a bed-roll comprising a plurality of axially adjustable sections in pairs, each section of a pair consisting of a cylindrical portion and endwise extending separated portions having surfaces continuous with the periphery of the cylindrical portion, the projections of the one section of a pair being adapted for dispositions between the projections of the other section, and means for confining the axially adjustable parts in their desired relations.

2. In a paper slitting machine, the combination with a shaft having a plurality of axially adjustable rotary slitting disks thereon, and means for confining said disks in their adjusted positions on said shaft, of a bed-roll comprising a shaft, a plurality of sections in pairs, each section of a pair consisting of a cylindrical portion fitting and endwise adjustable on the bed roll shaft and endwise extending separated portions having surfaces continuous with the periphery of the cylindrical portion, the projections of the one section of a pair being adapted for dispositions between the projections of the other section thereof, and set screws engaged through the individual sections for confining them in their desired relations to each other and to the disks, on their shaft.



3. In a paper slitting machine, the combination with a shaft having a plurality of axially adjustable rotary slitting disks thereon, and means for confining said disks in their adjusted positions on said shaft, of a bed-roll comprising a shaft, a plurality of sections in pairs, each section of a pair consisting of a cylindrical portion fitting and endwise adjustable on the bed roll shaft, and endwise extending separated portions having surfaces continuous with the periphery of the cylindrical portion, the projections of the one section of a pair being adapted for dispositions between the projections of the other section, and one of the sections of a pair having a hub extended from the cylindrical portion within said projections, a set screw engaging through the hub of the one section to bind against the bed roll shaft, and a set screw engaging through the other section from a peripheral portion thereof to bind against the bed roll shaft.

856,985. BRAIDING-MACHINE. ROBERT C. RAHM, Wyomissing, Pa., assignor to Textile Machine Works, Incorporated, Wyomissing, Pa. Filed Oct. 14, 1904. Serial No. 228,393.



Claim.—1. A braiding machine comprising two parallel communicating race-circle courses having separate terminal gears, carriers traversing said courses, switches controlling the movement of said carriers from one course to the other, and separate switches arranged at right angles to the main switches.

2. A braiding machine comprising two parallel communi-

cating race-circle courses having separate terminal gears, carriers traversing said courses, and switches controlling the movement of said carriers from one course to the other.

3. A braiding machine comprising two parallel communicating race-circle courses having separate terminal gears, carriers traversing said courses, switches controlling the movement of said carriers from one course to the other, and separate means for temporarily reversing the movement of certain of the carriers as desired.

4. A braiding machine comprising two parallel communicating race-circle courses having separate terminal gears, one of said courses having set-back loops, carriers traversing said courses, switches controlling the movement of said carriers from one course to the other, and separate reversing and loop switches.

5. A braiding machine comprising two parallel communicating race-circle courses having separate terminal gears, carriers traversing said courses, hollow warp-thread spindles around which the carriers swing, and switches controlling the movement of the carriers from one course to the other.

6. A braiding machine comprising two parallel communicating race-circle courses having separate terminal gears, carriers traversing said courses, hollow warp-thread spindles between the two courses, and switches controlling the movement of said carriers from one course to the other.

7. A braiding machine comprising two parallel communicating race-circle courses having separate terminal gears, carriers traversing said courses, switches controlling the movement of said carriers from one course to the other, and hollow warp-thread spindles for said switches.

8. A braiding machine comprising two concentric communicating race-circle courses having separate terminal gears, carriers traversing said courses, and switches controlling the movement of said carriers from one course to the other.

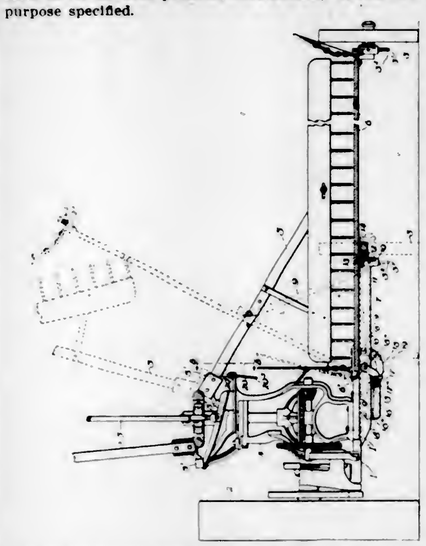
9. A braiding machine comprising two concentric courses having radially alined inter-communicating race-circles with separate terminal gears, carriers traversing said concentric courses in equal times, and switches controlling the movement of said carriers from one course to the other.

10. A braiding machine comprising two concentric courses having radially alined inter-communicating race-circles with separate terminal gears, an inner circle of intermeshing horn-gears, a corresponding outer circle of similar horn gears of larger diameter driven in unison with said inner circle of gears, carriers traversed uniformly in the respective courses by said gears, and switches controlling the movement of said carriers from one course to the other.

856,986. PLATFORM-FOLDING DEVICE FOR REAPERS. CHARLES A. A. RAND, Chicago, Ill. Filed Mar. 29, 1907. Serial No. 365,232.

Claim.—1. In a platform folding device for reapers, in combination, a reaper frame, a platform frame hinge-connected thereto, a platform support fixed rigidly to the reaper frame and made to extend outwardly beneath said platform, a grain wheel adapted to be attached either to the outer end of the platform or to the outer end of the platform support, and a brace having at one end a pivotal connection with the platform and adapted to rigidly secure the same in either its folded position or in its normal working position.

2. In a platform folding device for reapers, in combination, a reaper frame, a platform frame hinge-connected thereto, a platform support fixed rigidly to the reaper frame and made to extend outwardly beneath said platform, a grain wheel adapted to be attached either to the outer end of the platform or to the outer end of the platform support, and a brace having at one end a pivotal connection with the platform and at the other end an interlocking connection with the inner end of the platform support for rigidly sustaining the said platform in its working position, and also an interlocking connection with the outer end of said support for rigidly sustaining the platform in its elevated position, substantially as and for the purpose specified.



3. In a platform folding device for reapers, in combination, a reaper frame, a platform frame hinge-connected thereto, a platform support fixed rigidly to the reaper frame and made to extend outwardly beneath said platform, a grain wheel adapted to be attached either to the outer end of the platform or to the outer end of the platform support, a brace having a pivotal connection at its outer end with the platform and interlocking connections at its inner end with the platform support whereby said brace is adapted to hold the platform either in normal working position or in a folded position, and a spring operating to swing said brace away from the platform.

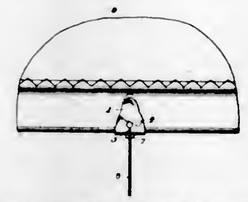
4. In a platform folding device for reapers, in combination, a reaper frame, a platform frame hinge-connected thereto, a platform support fixed rigidly to the reaper frame and made to extend outwardly beneath said platform, a grain wheel adapted to be attached either to the outer end of the platform or to the outer end of the platform support, a brace having at its outer end a pivotal connection with the platform and adapted to rigidly secure the same in either its folded position or in its normal working position, and a pendent strut pivotally secured to the platform support for sustaining the grain side of the reaper while changing the grain wheel from the platform to the platform support.

5. In a platform folding device for reapers, in combination, a reaper frame, a platform frame hinge-connected thereto, a platform support fixed rigidly to the reaper frame and made to extend outwardly beneath said platform, a grain wheel adapted to be attached either to the outer end of the platform or to the outer end of the platform support, a brace having at one end a pivotal connection with the platform and adapted to rigidly secure the same in either its folded position or in its normal working position, a lever for locking said brace to secure the platform in its normal working position, and a pendent strut arranged to lock said lever in its brace-locking position and to also sustain the grain side of the reaper while changing the grain wheel from the platform to the platform support.

6. In a platform folding device for reapers, in combination, a reaper frame, a platform frame hinge-connected thereto, a platform support fixed rigidly to the reaper frame and made to extend outwardly beneath said platform, said support comprising two angle bars arranged a slight distance apart to form a slot between their opposing edges, and a wheel and brace casting binding together the outer ends of said angle bars, a grain wheel adapted to be attached either to the outer end of the platform or to said wheel and brace casting, a brace having a sliding connection with said casting and a pivotal connection at one end with said platform and adapted to rigidly secure the same in either its folded position or in its normal working position, a lever for locking said brace to secure the platform in its normal working position, and a pendent strut arranged to lock said lever in its brace-locking position and to also sustain the grain side of the reaper while changing the grain wheel from the platform to the wheel and brace casting.

7. In a platform folding device for reapers, in combination, a reaper frame, revolving reel arms mounted thereon, a platform frame hinge-connected to said reaper frame, a platform support fixed rigidly to the reaper frame and extending outwardly beneath said platform, a grain wheel adapted to be attached either to the outer end of the platform or the platform support, a brace having at one end a pivotal connection with the platform and adapted to rigidly secure the same in either its folded position or in its normal working position, and a spring-locked swing arm mounted on the reaper frame and arranged to engage and support one of the reel arms when the platform frame is in its elevated position.

856,987. WINDOW-SHADE PULL. CHARLES A. SCHEIF, Beechwood, Pa. Filed Nov. 24, 1906. Serial No. 344,870.



Claim.—1. In a device of the character described a substantially U shaped clip adapted to be sprung into position, fastening means on said clip for retaining said clip in position; said clip having an opening formed in the side thereof, the lower edge of which being interrupted by a slotted portion extending to the bottom of said clip; a stamped out or looped portion in the bottom of said clip and having an opening formed through said looped portion communicating with the lower end of the slotted portion, as, and for, the purpose set forth.

2. In a device of the character described, a cord securing clip for attaching to the reinforced lower end of the shade, consisting of a substantially U shaped member adapted to be sprung into position; a suitable opening in said clip to receive the knotted end of the operating cord; a slotted portion communicating with said opening to permit of said cord being drawn downward to a depressed seat in the bottom of said clip; an opening through said depression communicating with the lower end of the slotted portion; as, and for, the purpose set forth.

3. In a device of the character described, a substantially U-shaped clip adapted to be sprung into position; fastening means on said clip for retaining it in position; and a stamped out or looped portion formed in the bottom of said clip having apertures at the sides thereof and a bottom opening therein; as, and for the purpose set forth.

4. In a device of the character described, a substantially U-shaped clip, one side being somewhat longer than the other to facilitate adjustment on the shade, and adapted to be sprung into position; fastening means on said clip for retaining it in position; and a stamped out or looped portion formed in the bottom of said clip having apertures at the sides thereof and a bottom opening therein; as, and for the purpose set forth.

5. In a device of the character described, a substantially U-shaped clip, one side being somewhat longer than the other and adapted to be sprung into position; fastening means on said clip for retaining it in position; an opening formed in the side of said clip, the lower edge of which communicates with a slotted portion extending to the bottom of said clip; a stamped out or looped portion formed in the bottom of said clip having apertures at the sides thereof and an opening therein interrupting the lower end of the slotted portion; as, and for the purpose set forth.

6. A window shade pull consisting of a clasp formed of a single piece of tempered sheet metal bent so as to fit around and closely-clasp the reinforced lower end of the shade and having two integral arms, one of which being somewhat shorter than the other to facilitate adjustment on the shade, an inwardly extending prong on the upper edge of the clasp adapted to engage the reinforced end of the shade and hold said clasp in position, a stamped out integral loop formed in the bottom of said clasp having apertures at the sides thereof and having a bottom opening; one of said arms having an opening formed in the lower portion thereof and having a slot which continues downward and communicates with the bottom opening formed in the looped portion, said slot being interrupted by the opening.

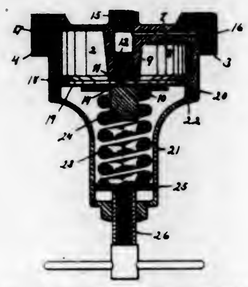
856,988. SLEIGH-RUNNER. HENRY J. SCHNEIDER and HERMAN TIETZ, Eau Claire, Wis.; said Tietz assignor to said Schneider. Filed Dec. 11, 1906. Serial No. 347,303.

Claim.—1. The combination with a beam; of contacting base plates secured thereto, upstanding ears upon each plate and embracing the beam, said ears contacting, a depending extension upon one of the base plates, a stud axle integral therewith and extending therefrom, all portions of said axle being disposed beneath the base plates, and a depending extension upon the other plate and having a socket constituting a seat for the free end of the axle.

2. The combination with a beam; of contacting base plates secured thereto, upstanding ears upon each plate and embracing the beam, said ears contacting, a depending extension upon one of the base plates, a stud axle integral therewith and extending therefrom, all portions of said axle being disposed beneath the base plates, a depending extension upon the other plate having a socket constituting a seat for the free end of the axle, a runner, a knee

thereon, and a sleeve carried by the knee and rotatably mounted upon the stud axle and below the base plates.

856,989. PRESSURE-REGULATOR. JOHN A. SCHULTZ, Jr., Newark, N. J. Filed Oct. 3, 1906. Serial No. 337,309.



Claim.—1. In a pressure regulator, a body portion providing an interior chamber, a fluid inlet projecting into said chamber and providing an interior valve seat and adjacent slide-way, a valve in said slideway adapted to be forced toward said seat by the pressure of the fluid, a stem upon said valve adapted to project from the inlet, and a spring-controlled diaphragm adapted to engage said valve stem and the end of said inlet.

2. In a pressure regulator, a body portion providing an interior chamber, a fluid inlet terminating in a hollow post centrally disposed in said chamber, said post being perforated at the end and having thereat an interior valve seat, a valve slidably arranged in said hollow post, a stem projecting from said valve through the end of the post, a diaphragm adapted to engage said stem and the end of the post, and adjusting means for said diaphragm.

3. In a pressure regulator, a body portion providing an interior chamber, a fluid inlet projecting into said chamber and providing an interior valve seat and adjacent slideway, a valve in said slideway adapted to be forced toward said seat by the pressure of the fluid, and means engaging said valve to positively seat the same.

4. In a pressure regulator, a body portion providing an interior chamber, a fluid inlet projecting into said chamber and providing an interior valve seat and adjacent slideway, a valve in said slideway adapted to be forced toward said seat by the pressure of the fluid, a stem upon said valve adapted to project from the inlet, and a spring-controlled diaphragm adjacent to said inlet and connected to the said stem.

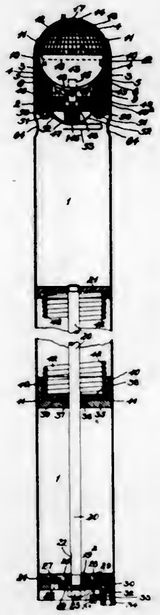
856,990. INSTRUMENT FOR SURVEYING BOREHOLES. KURT W. O. SCHWEDER, Johannesburg, Transvaal. Filed Feb. 13, 1907. Serial No. 357,230.

Claim.—1. In a device of the nature specified, a casing for holding liquid, a sphere floating in the liquid in said casing, said sphere being weighted, a magnet carried by the sphere, and means for fixing the sphere in the position it assumes at the point to be surveyed.

2. In a device of the nature specified, a casing for holding liquid, a transparent cap or cover therefor, a sphere floating in the liquid, said sphere being weighted, a magnet carried by the sphere and means for fixing the sphere in the position it assumes at the point to be surveyed.

3. In a device of the nature specified, a casing for holding liquid, a transparent cap or cover therefor, a sphere floating in the liquid in the casing conatructed with a pin or projection at the top and marked externally with degrees of longitude and parallels of latitude, said sphere being weighted, a magnet carried by the sphere, and means for fixing the sphere in the position it assumes at the point to be surveyed.

4. In a device of the nature specified, a casing for holding liquid, a transparent cap or cover therefor having a point marked at the center of the top, a sphere floating in the liquid inside the casing constructed with a pin or projection at the top and marked externally with degrees of longitude and parallels of latitude, said sphere being weighted, a magnet carried by the sphere, and means for fixing the sphere in the position it assumes at the point to be surveyed.



5. In a device of the nature specified, a casing for holding liquid comprising a concave piece, a transparent cap or cover fitted thereto and forming with the concavity a spherical chamber, a sphere floating in the liquid in said chamber, said sphere being weighted, a magnet carried by the sphere, and means for fixing the sphere in the position it assumes at the point to be surveyed.

6. In a device of the nature specified, a casing for holding liquid fitted with a transparent cap or cover, a sphere floating in the liquid in said casing, said sphere being graduated and constructed with a projection and weighted so as to maintain said projection at the top, a magnet carried by the sphere for causing the sphere to assume a certain position in relation to the magnetic north, said cap or cover being marked at the point beneath which the projection on the sphere lies when the casing is vertical, and means for fixing the sphere in the position it assumes at the point to be surveyed.

7. In a device of the nature specified, a casing for holding liquid comprising a concave piece, a transparent cap or cover fitted thereto, packing between the concave piece and transparent cap, a piece screwed to the concave piece and shaped to engage the transparent cap to secure it to the concave piece, a sphere floating in the liquid in said casing having a projection, said sphere being graduated and weighted opposite the said projection to maintain said projection at the top, a magnet carried by the sphere, and means for fixing the sphere in the position it assumes at the point to be surveyed.

8. In a device of the nature specified, the combination with a casing for holding liquid comprising a concave piece, of a transparent cap or cover fitted thereto and forming with the concavity a spherical chamber, a sphere floating in the liquid in the casing constructed with a projection and weighted opposite said projection, a magnet carried by the sphere, means for fixing the sphere comprising a cylindrical piece, constructed with wings which serve as guides, a nut screwed on an extension of said cylindrical piece, a spring located in a recess in the concave piece and engaging the nut, a rubber cap or cover secured to the concave piece over said nut, and means which operate after the lapse of a given period of time to engage the nut to fix the sphere in the position it assumes at the point to be surveyed.

9. In a device of the nature specified, the combination with a tubular casing, of a concave piece fixed in one end thereof, a transparent cap or cover fixed to said piece forming with the concavity a spherical chamber for holding liquid, means for making a liquid-tight joint between the cap and concave piece and for securing the cap in position, said cap having a mark at the center of the top, a sphere floating in the liquid in the spherical chamber, said sphere being graduated and having a projection at the top to engage the inside of the transparent cap and weighted opposite said projection, a magnet carried by the sphere, means for fixing the sphere comprising a piece located in a recess in the concave piece beneath the sphere, a spring for maintaining said piece out of contact with the sphere, a flexible cover inclosing said piece for preventing the escape of liquid from the spherical chamber, a spring adapted to cause said piece to engage the sphere, a piston in the casing, a piston rod connected therewith, a disk connected to the piston rod, a diaphragm fitted in the casing through which the piston rod works, a spring between said diaphragm and disk, a non-return valve carried by the piston, an outlet aperture for the liquid with which that portion of the casing between the piston and diaphragm is filled, and means for regulating said aperture.

10. In a device of the nature specified, in combination, the casing 1, the diaphragm 35, the casing constructed with the holes 64, the casing and diaphragm with the holes 41, the piece 2 screwed into the end of the casing made concave on its outer end, the transparent cap or cover 4 surrounding the upper end of the piece 2 and forming therewith the spherical chamber 12, the packing 6 and retaining piece 10, the transparent cap having a mark at the center at the top, the sphere 13 graduated externally and having a projection 14 at the center of the top and weighted opposite said projection so as to maintain said projection vertical, the magnet 16 carried by the sphere 13 for causing the sphere to assume a certain position in relation to the magnetic north, means for fixing the sphere comprising the cylindrical piece 43 having wings 44 and ring 45 located in a recess beneath the sphere, the screw-threaded extension 45, the nut 47 screwed thereon and the spring 48 located in the recess 46 and engaging the nut 47, the flexible cover 52 fixed to the piece 2 beneath the nut 47, the spring 53 fixed beneath the cover, the piston 19 formed with the outlet aperture 30 and fitted with the non-return valve 24, the piece 32 fixed to the piston, the adjusting screw 31 carried thereby, the revoluble retaining piece 34, the packing 37 fitted to the diaphragm 35, the piston rod 20 formed with the flat or groove 22, the disk 21 fixed to the piston rod, and the spring 42 fixed beneath the disk and diaphragm, substantially as described.

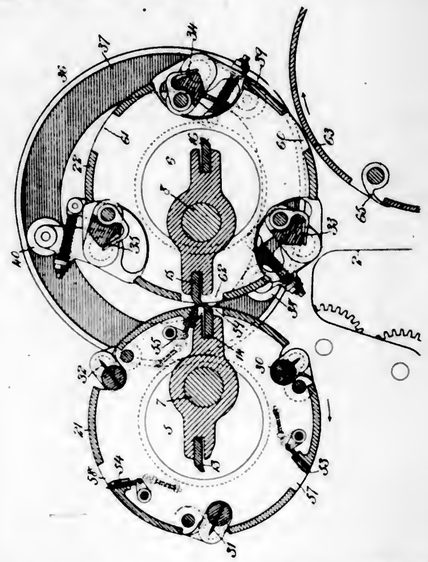
856,991. CUTTING AND FOLDING MACHINE. RALPH C. SEYMOUR, New York, N. Y., assignor to C. B. Cottrell & Sons Company, New York, N. Y., a Corporation of New Jersey. Original application filed Dec. 15, 1906, Serial No. 347,952. Divided and this application filed Feb. 4, 1907. Serial No. 355,538.

Claim.—1. In a cutting and folding machine, two rotary cylinders and two co-acting rotary cutters both mounted to rotate within said cylinders.

2. In a cutting and folding machine, two rotary cylinders and two coacting rotary cutters both mounted to rotate eccentrically within said cylinders.

3. In a cutting and folding machine, two rotary cylinders, two coacting rotary cutters both mounted to rotate within said cylinders and means for rotating the cutters at a predetermined speed with respect to the speed of rotation of said cylinders.

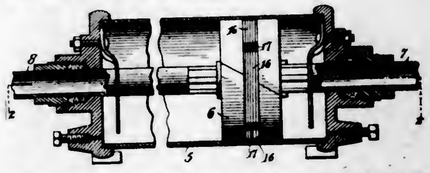
4. In a cutting and folding machine, two rotary cylinders, two coacting rotary cutters both mounted to rotate eccentrically within said cylinders and means for rotating the cutters at a predetermined speed with respect to the speed of rotation of said cylinders.



5. In a cutting and folding machine, two rotary cylinders, rotary cutters mounted within said cylinders and means for rotating the cutters one revolution for every two-thirds of a revolution of said cylinders.

6. In a cutting and folding machine, two rotary cylinders, rotary cutters mounted eccentrically within said cylinders and means for rotating the cutters one revolution for every two-thirds of a revolution of said cylinders.

856,992. PISTON-PACKING. RALPH R. SPEARS, Wheeling, W. Va. Original application filed June 14, 1906, Serial No. 321,674. Divided and this application filed Nov. 30, 1906. Serial No. 345,714.

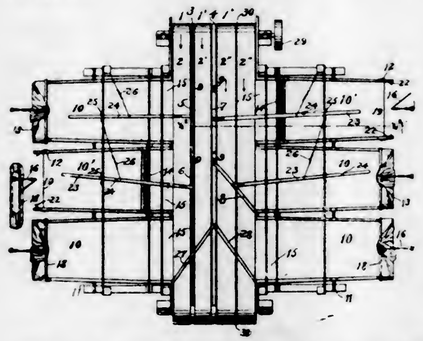


Claim.—1. In mechanism of the character set forth, the combination with a cylinder, of a reciprocatory piston operating therein and having an annular groove in its periphery, a band of flexible material surrounding the periphery of the piston, said band having having its intermediate portion located in the groove and of less thickness than the depth of said groove, and its side margins free and disposed on opposite sides thereof, and means extending around the outside of the said intermediate portion of the band and located in the groove of the piston to maintain said portion therein.

2. In mechanism of the character set forth, the combination with a cylinder, of a reciprocatory piston operating therein, and having an annular groove in its periphery a band of flexible material surrounding the piston, said band having an intermediate inset portion located in the groove of the piston and having its side margins free and

projecting beyond the opposite sides of said inset portion, and a wire wound into a series of convolutions around the said inset portions of the band, said wire being located in the groove and having its several convolutions soldered together.

856,993. FRUIT-CRATER. CHARLES C. TEAGUE, Santa Paula, Cal., assignor of one-fourth to John B. Horrell, one-fourth to Arthur S. Bryant, Santa Paula, Cal., and one-half to Limonerla Company, Santa Paula, Cal., a Corporation of California. Filed Jan. 2, 1906. Serial No. 294,161.



Claim.—1. A runway provided with a lateral opening, a tilting chute communicating with such opening, means to stop the opening when the chute is tilted, and a bottomless bag detachably connected with the outlet of the chute.

2. A runway provided with a lateral opening, means for diverting contents of the runway into such opening, a tilting chute communicating with the opening, means to stop the opening when the chute is tilted, and a bottomless bag detachably connected with the outlet of the chute.

3. A runway having an outlet, a tilting chute communicating with such outlet, means for closing said outlet when the chute is tilted, and a bottomless bag detachably connected with the outlet of the chute.

4. A tilting chute, a bottomless bag detachably connected with the outlet thereof, the same forming a flexible chute and adapted to close said outlet when folded, and counter balancing suspending means connected with the bag.

5. A chute, a bottomless bag detachably connected with the outlet of the chute and adapted to fold over said outlet to close the same and counterbalancing suspending means connected with the bag.

6. A tilting chute, a runway for supplying material to the chute, and a cut-off fastened to and depending from the supply end of the chute to cut off the supply means when the chute is tilted, the floor of the tilting chute normally forming a continuation of the floor of the runway.

7. A tilting chute, means for supplying material to the chute, a cut-off extending downward from the supply end of the chute to cut off the supply means when the chute is tilted, and a bag encircling and detachably connected with the outlet of the chute.

8. A run-way provided with a traveling bottom and lateral outlets, means for directing contents of said runway into said outlets alternately, tilting chutes opening from said outlets respectively and provided with means for closing said outlets when the chutes are tilted, respectively, and bags detachably connected with the outlets of the chutes.

9. Intercommunicating run-ways respectively provided with a traveling floor and lateral outlets and separated by partitions provided with gates, tilting chutes at the outlets respectively, and means for automatically closing the outlets when their chutes are tilted, respectively, the floor of the tilting chute normally forming a continuation of the floor of the run-way.

10. Intercommunicating run-ways respectively provided with traveling floors and lateral outlets and separated by partitions provided with gates; tilting chutes at the outlets respectively; means for automatically closing the outlets when their chutes are tilted, respectively; bags detachably connected with the outlets of the chutes, respectively; and counterbalanced suspending means connected with said bags respectively.

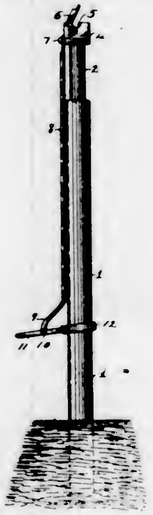
11. A runway provided with a lateral opening, a tilting chute communicating with such opening and having a floor normally forming a continuation of the floor of the run-way, and means to automatically stop the opening when the chute is tilted.

12. A runway provided with a lateral opening, means for diverting contents of the run-way into such opening, a tilting chute communicating with the opening and having a floor normally forming a continuation of the floor of the run-way, and means to automatically stop the opening when the chute is tilted.

13. A runway having an outlet, a tilting chute communicating with such outlet and means depending from the receiving end of the tilting chute for automatically closing said outlet when the chute is tilted, the floor of the tilting chute normally forming a continuation of the floor of the run-way.

14. Intercommunicating run-ways respectively provided with traveling floors and lateral outlets and separated by partitions provided with gates; tilting chutes at the outlets respectively; a downwardly extending closure carried by the chutes at the supply end for closing the outlets when their chutes are tilted, respectively; bags detachably connected with the outlets of the chutes, respectively; and counterbalanced suspending means connected with said bags respectively.

856,994. CLOTHES-LINE PROP. ROBERT I. WILLIAMS, Struthers, and EMERSON F. SEACRIST, Girard, Ohio. Filed May 31, 1906. Serial No. 319,573.



Claim.—A clothes line prop comprising a stationary tubular member, a tubular member telescoping and slidable therein and provided with an enlarged head on its upper, outer end having a transverse groove for the reception of a clothes line, a rod connected to said head on said movable member and extending downwardly outside and adjacent said stationary member, a handle member pivotally mounted intermediate its ends to the lower end of said rod and provided with a collar encircling said stationary member and adapted to be moved into frictional engagement therewith by the downward movement of said rod, substantially as described.

856,995. BELL. PHILIP C. ARNOLD, East Hampton, Conn., assignor to The Bevin Brothers Manufacturing Company, East Hampton, Conn., a Corporation of Connecticut. Filed April 7, 1904. Serial No. 202,066.



Claim.—1. In combination with a bell body having a plurality of perforations, a loop provided with a tongue supporting member provided with lugs and with lugs to be inserted through the perforations, the lugs of the loop and the lugs of the tongue supporting member arranged when bent, to form shoulders extending both laterally and longitudinally of the loop.

2. In combination with a bell body having a plurality of perforations, a loop having lugs projecting therefrom and arranged to be inserted through independent perforations and bent to secure the loop in place said loop having a lug adapted to be upset against the bell body and forming a support for the striker or tongue.

3. In combination with a bell body having a plurality of perforations, a loop having lugs projecting through the perforations and secured within the bell body, the ends of the loop also projecting through perforations and forming a support for a tongue and having shoulders secured against the inside of the bell body.

4. In combination with a bell body, a loop, the meeting ends of said loop having downturned parts projecting through the bell body, and provided with shoulders arranged to be upset against the inner surface thereof and also forming a support for the tongue.

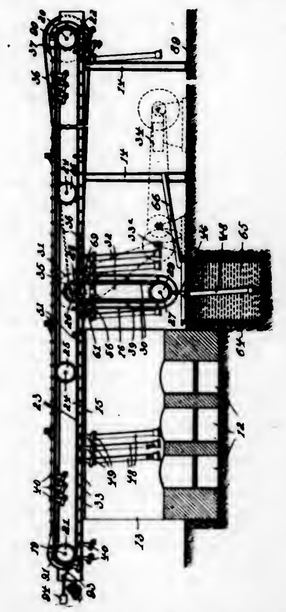
5. In combination with a bell body having a plurality of perforations, a loop having upturned ends and lugs arranged to register with said perforations, said lugs being upset against the inner surface of the bell body, and a striker or tongue dependent from the downturned ends of the loop.

6. In combination with a bell body, a loop having its adjacent ends turned down, shoulders formed on said down turned ends and arranged to project within the bell body, lugs projecting from the loop on opposite sides of the adjacent down turned ends arranged to project through the bell body, said shoulders and lugs adapted to be upset against the bell body.

7. In combination with a bell body, a loop having its adjacent ends turned down, shoulders formed on said down turned ends and arranged to project within the bell body, lugs projecting from the loop on opposite sides of the adjacent down turned ends arranged to project through the bell body, said shoulders and lugs adapted to be upset against the bell body, a striker, and means for securing said striker to the down turned end members of the loop.

8. In combination with a bell body having a plurality of independent perforations, a loop formed from a single piece of material and having its adjacent ends down turned from the loop, lugs formed integral with the loop and projecting therefrom substantially parallel with the down turned end portions said down turned end portions and lugs arranged to register with the perforations of the bell body and a tongue loosely secured to the down turned end portions.

856,996. APPARATUS FOR COATING PIPES AND OTHER ARTICLES. EDGAR A. CUSTER and ROBERT A. PITMAN, Philadelphia, Pa., assignors to Tacony Iron Works, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Feb. 25, 1907. Serial No. 359,286.



Claim.—1. In an apparatus of the character described, a furnace, a vat for coating material, one set of endless chains extending horizontally over said furnace and vat and beyond the same, a second set of endless chains extending vertically and terminating above said vat and located outside of said horizontally arranged chains, the latter adapted to slowly conduct articles to be coated over said furnace and said vertically arranged chains adapted to quickly lower and raise the articles into and out of said vat.

2. In an apparatus of the character described, a furnace, a vat for coating material arranged adjacent to said furnace, carriers for materials to be coated, and two sets of endless chains, one set of said chains arranged to slowly conduct the carriers disconnected from said chains and articles suspended from said carriers over said furnace and the other set of said chains arranged so as to conduct the carriers and by the same the articles into and out of said vat.

3. In an apparatus of the character described, a furnace, a vat for coating material, endless chains, carriers disconnected from said chains, a structure for supporting said carriers and chains, certain of said chains arranged to move said carriers and by the same, articles to be coated over said structure and over said furnace and certain other of said chains arranged to conduct said carriers and by the same, said articles into and out of said vat.

4. In an apparatus of the character described, a furnace, a vat for coating material, a structure, carriers for articles to be coated movably arranged on said structure, endless chains supported by said structure and arranged to alternately move said carriers and articles suspended therefrom over said furnace, and to lower and raise said carriers and by the same, articles into and out of said vat and means for transferring the carriers from one chain to the other.

5. In an apparatus of the character described, a furnace, a vat for coating material, a structure, carriers for articles

to be coated movably arranged on said structure, endless chains arranged to respectively move in horizontal and vertical planes, supported by said structure, the set of horizontally arranged chains adapted to move said carriers and the articles on said structure over said furnace and beyond the same, and the set of vertically arranged chains adapted to conduct the carriers and by the same, said articles suspended therefrom into and out of said vat, means for automatically transferring the carriers from the structure to the vertically moving chains, and means for automatically conducting the carriers from the vertically moving chains back to the structure and into re-engagement with the horizontally moving chains.

6. In an apparatus of the character described, a furnace, a vat for coating material, a structure, carriers for articles to be coated movably arranged on said structure, endless chains arranged respectively to move in horizontal and vertical planes, supported by said structure, the set of horizontally arranged chains adapted to move said carriers and the articles on said structure over said furnace and beyond the same, and the set of vertically arranged chains adapted to conduct the carriers and by the same, said articles suspended therefrom into and out of said vat, means for automatically transferring the carriers from the structure to the vertically moving chains, means for automatically conducting the carriers from the vertically moving chains back to the structure and into re-engagement with the horizontally moving chains and means actuated by said carriers and adapted to disengage said articles therefrom.

7. In an apparatus of the character described, a furnace, a vat for coating material, a structure, carriers for articles to be coated adapted to travel on said structure and two sets of endless chains arranged respectively in horizontal and vertical planes, one set adapted to move the carriers and articles suspended therefrom over said structure and through said furnace and the other set adapted to lower and raise said articles into and out of said vat and to hold the articles stationary in said vat by releasing and then re-engaging said carriers.

8. In an apparatus of the character described, a structure, carriers for articles to be coated, endless chains having projections adapted to engage said carriers and to move the same over said structure, and means supported by said structure adapted to automatically move said carriers back to their position with respect to said structure when removed therefrom.

9. In an apparatus of the character described, a structure, carriers for articles to be coated supported by said structure, endless chains carried by said structure and arranged respectively, to move in horizontal and vertical planes thereon, fingers connected with said chains and adapted to engage said carriers and move the same over said structure and means carried by said structure and actuated by the vertically arranged chains adapted to transfer said carriers from said structure upon the fingers of the vertical chains.

10. In an apparatus of the character described, a structure, carriers for articles to be coated supported by said structure, endless chains carried by said structure and arranged respectively, to move in horizontal and vertical planes thereon, fingers connected with said chains and adapted to engage said carriers and to move the same over said structure, and means carried by said structure and actuated by the vertically arranged chains adapted to transfer said carriers from said structure upon the fingers of the vertical chains, and the fingers of said vertical chains arranged to permit of the disengagement of said carriers therefrom and of the re engagement of the same.

11. In an apparatus of the character described, a structure, carriers supported by said structure, each of said carriers having a hanger and a grip pivotally connected therewith, said hanger and grip arranged to engage articles to be coated and hold the same suspended from said carriers, endless chains, each having fingers adapted to engage said carriers and move the same over said structure, a shaft supported by said structure having means extending in the path of travel of said carriers, a second shaft supported by said first shaft having projecting means, said first shaft adapted when said carriers abut against said projecting means to raise said second shaft and the means of said second shaft when raised to disengage the grip from said articles to disconnect the same from said hanger.

12. In an apparatus of the character described, a structure, carriers supported by said structure, each of said carriers having a hanger and a grip pivotally connected therewith, said hanger and grip arranged to engage articles to be coated and hold the same suspended from said carriers, endless chains, each having fingers adapted to engage said carriers and move the same over said structure, a series of shafts carried by said structure, each having arms adapted to automatically move said carriers back to their position with respect to said structure when removed therefrom, a second shaft having arms extending into the path of travel of said carriers, and a third shaft movably supported by said second shaft when actuated by said carriers abutting against the arms adapted to raise said third shaft and the finger of said third shaft arranged when actuated to disengage the grip from said article to disconnect the same from said hanger.

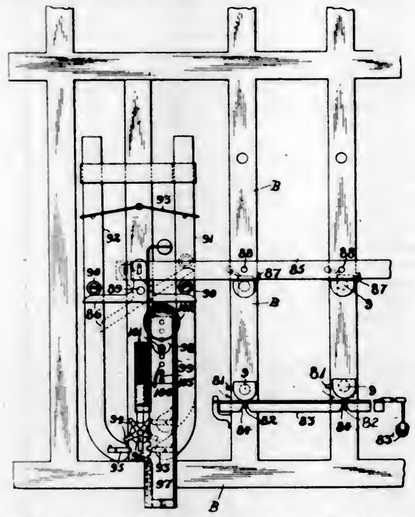
13. In an apparatus of the character described, a structure, carriers supported by said structure, each of the said carriers having a hanger and a grip pivotally connected therewith, said hanger and grip arranged to engage articles to be coated and hold the same suspended from said carriers, a furnace, a vat for containing coating material, endless chains connected by said structure and arranged to separately and respectively move in horizontal and vertical planes thereon, each of said chains having fingers adapted to engage said carriers, the horizontally arranged chains adapted to move said carriers on said structure over said furnace and into engagement with the vertically arranged chains, a series of shafts carried by said structure, each having arms adapted to automatically move said carriers back to their position with respect to said structure when removed therefrom, means carried by said structure adapted when actuated by said vertical chains to shift said carriers upon their fingers to permit of the lowering and raising of said articles carried by the hangers and grip into and out of said vat, means carried by said structure adapted when engaged by the raised carrier to automatically shift the same from the fingers of said vertical chains back upon said structures and into reëngagement with the horizontally moving chains, a second shaft having arms extending into the path of travel of said carriers, and a third shaft movably supported by said second shaft having a finger, said second shaft when actuated by said carriers abutting against the arms adapted to raise said third shaft and the finger of said third shaft arranged when actuated to disengage the grip from said article to disconnect the same from said hanger.

856,997. VOTING-MACHINE. WILLIAM M. CUTTER and WILLIS A. SUTFIN, Marysville, Cal.; said Sutfin assignor of one-half of his right to said Cutter. Original application filed Aug. 2, 1905. Serial No. 272,316. Divided and this application filed Oct. 15, 1906. Serial No. 338,973.

Claim.—1. In a voting machine, the combination of voting mechanisms arranged in series vertically according to the political affiliation of the candidates represented by said mechanisms and arranged horizontally according to the offices to be voted for, and means to prevent the simultaneous operation of any two candidate voting mechanisms in the same horizontal row, said last-named means including vertical and horizontal sliding bars having a limited movement in two directions from an intermediate normal position of rest.

2. In a voting machine, the combination of voting mechanisms arranged in series vertically according to the political affiliation of the candidates represented by said mechanisms and arranged horizontally according to the offices to be voted for, means to prevent the simultaneous operation of any two candidate voting mechanisms in the same horizontal row, said last-named means including vertical and horizontal sliding bars, and flexible tapes acted on by said bars.

3. In a voting machine, the combination of voting keys arranged in series vertically according to the political affiliation of the candidate represented by said keys and arranged horizontally according to the offices to be voted for, means to prevent the simultaneous operation of any two candidate voting keys in the same horizontal row, and means to prevent the simultaneous operation of more than one key in the same vertical series, said last-named means comprising slidable bars engageable by the keys and operable in either direction by the keys, and bendable stops operable on by the bars.



4. In a voting machine, the combination of voting mechanisms arranged vertically in series according to the political affiliation of the condidates represented by said voting mechanisms and horizontally according to the respective offices to be voted for, and means normally preventing the simultaneous actuation of more than one mechanism in the same horizontal or in the same vertical series, said last-named means including respective horizontal and vertical sliding bars and bendable stops engageable by the bars.

5. In a voting machine, the combination of a plurality of voting keys arranged in line, and means to prevent the operation of more than one of said keys in said line, said means including a rockable notched angle bar.

6. In a voting machine, the combination of a plurality of voting keys arranged in line, said keys having rotatable stems, and means to prevent the operation of more than one of said voting keys, said means including a rockable notched angle bar and projections on the stem engageable in the notches in said angle bar and means to rock said bar on the operation of any key stem.

7. In a voting machine, the combination of a plurality of voting keys arranged in line, said keys having rotatable stems, and means to prevent the operation of more than one of said means including a rockable notched angle bar, projections on the key stems to rock the bar and other projections on the stems engageable with notches in the angle bar.

8. In a voting machine, group-voting mechanism including keys having stems, and means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a toothed rack-bar operable one step at each actuation of a key, and an adjustable stop in the path of said rack-bar, a pinion engaging the teeth in the rack-bar and mechanism to rotate the pinion in either direction.

9. In a voting machine, a group-voting mechanism including keys having stems, and means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a toothed rack-bar operable one step at each actuation of a key, and an adjustable stop in the path of said rack-bar, a pinion engaging the teeth in the rack-bar and sliding dogs operating on opposite sides of said pinion to rotate the latter to reciprocate the rack bar.

10. In a voting machine, group-voting mechanism including keys having stems, and means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a sliding bar reciprocal by said key stems a ⊥ lever engaged by said sliding bar, a sliding rack-bar, connections between the lever and said sliding rack-bar to reciprocate the latter, and a stop interposable in the path of said rack bar.

11. In a voting machine, group-voting mechanism including keys having stems, and means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a sliding bar operable by the key stems, sliding-dogs, connections between the sliding-bar and said dogs to operate the latter alternately, a sliding rack-bar, connections between the dogs and the rack-bar to reciprocate the latter, and stop means interposable in the path of the rack-bar.

12. In a voting machine, group-voting mechanism including keys having stems, means to prevent the operation of a greater number of keys in the group than the number of candidates to be voted for in said group, said means including a sliding bar operable by the key stems, sliding dogs, connections between the sliding-bar and said dogs to operate the latter alternately, a sliding rack-bar, connections between the dogs and the rack-bar to reciprocate the latter, stop means interposable in the path of the rack-bar, and means independent of said operating means for the rack-bar to return the rack-bar to its normal position.

13. In a voting machine, group-voting mechanism, including a key, a rockable ⊥-shaped lever, a sliding bar operable by the key, said bar engageable with said ⊥ lever, dogs actuated by said ⊥ lever, and a device operated by the dogs to limit the number to be voted for in a group.

14. In a voting machine, group-voting mechanism, including a rockable ⊥ lever, means to rock said lever, a pair of dogs operable by said lever, a rack having an adjustable stop to limit the number which can be voted for in a group, and connections between the rack and said dogs to actuate the rack.

15. In a voting machine, group-voting mechanism including a rockable lever, means to rock said lever, a pair of dogs operable by said lever, a rack having an adjustable stop to limit the number which can be voted for in a group, connections between the rack and said dogs to actuate the rack in one direction when one dog is operated, and to actuate the rack in an opposite direction when the other dog is operated.

16. In a voting machine, group-mechanism including a sliding-bar, means to reciprocate the bar, a rockable lever engageable by said bar, independently operable dogs actuated by said lever, a pinion engageable by said dogs, one dog turning the pinion in one direction and the other turning it the other way, a rack engageable by the pinion, and means carried by the rack to limit the number which can be voted for in any one group.

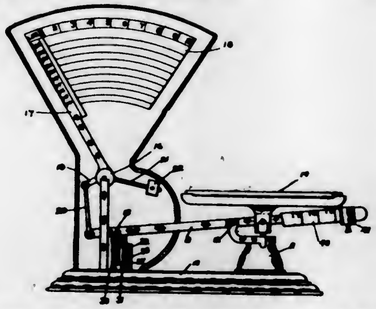
17. In a voting machine, the combination of a plurality of voting keys having rotatable stems, means to prevent the simultaneous actuation of two or more keys, said means including slidable locking bars, some of said locking bars arranged transversely to the other locking bars, means on the key-stems to operate the locking bars, said locking bars mounted for reciprocation in either direction, means for holding said bars in operable position relative to the key stems, and suitable stop means operable by said bars.

18. In a voting machine, the combination of a plurality of voting keys having rotatable stems, means to prevent the simultaneous actuation of two or more keys, said means including slidable locking bars, some of said lock-

ing bars arranged transversely to the other locking bars, means on the key stems to operate the locking bars, said locking bars mounted for reciprocation in either direction, and means for holding said bars in operable position relative to the key stems and suitable stop means operable by said bars, said last-named means including flexible tapes engageable by the bars.

19. In a voting machine, the combination of a plurality of keys, and means to prevent the simultaneous actuation of a plurality of said keys, said means comprising horizontal and vertical sliding bars, connections between the bars and keys whereby on the actuation of a key, a corresponding horizontal and a corresponding vertical bar are reciprocated, and bendable stop devices engageable by said bars.

856,998. SCALE. FRANK P. DUNN, Anderson, Ind., assignor of one-fourth to George P. Louiso, one-fifth to Henry F. Dunn, one-eighth to Martin Dunn, and one-eighth to Edward W. Louiso, Anderson, Ind. Filed Nov. 19, 1906. Serial No. 344,018.



Claim.—1. In a scale, the combination with a pivoted beam adapted to receive a load on one end, and having a normally weighted opposite end to oppose an applied load, of a counterbalance normally in a raised position, a connection between said counterbalance and the scale beam whereby said counterbalance will act until equilibrium upon the scale beam in the direction of applied load with a variable force as the counterbalance approaches or recedes from its normal position, and means for indicating the position of equilibrium of the scale beam under an applied load, whereby the effect of such applied load is indicated.

2. In a scale, the combination with a pivoted beam adapted to receive a load on one end, and having a normally weighted opposite end to oppose an applied load, of a counterbalance normally in a raised position, a connection between said counterbalance and the scale beam whereby said counterbalance will act until equilibrium upon the scale in the direction of applied load with a variable force diminishing as the counterbalance approaches a lower position, and means for indicating the position of equilibrium of the beam under an applied load, whereby the effect of said applied load is indicated.

3. In a scale, the combination with a pivoted beam adapted to receive a load on one end, and having a normally weighted opposite end to oppose an applied load, of a counterbalance normally in a raised position, a connection between said counterbalance and the scale beam whereby said counterbalance will act until equilibrium upon the scale in the direction of applied load with a variable force as the counterbalance approaches or recedes from its normal position, an indicator scale, and an indicator connected to the scale beam to move therewith and traverse the scale, whereby the various positions of equilibrium of the structure under different applied loads may be indicated to indicate the effect of the particular applied load.

4. In a scale, the combination with a pivoted beam adapted to receive a load on one end, and having a normally weighted opposite end to oppose an applied load of a counterbalance normally in a raised position, a connection between said counterbalance and the scale beam whereby said counterbalance will act upon the scale in the direction of applied load with a variable force diminishing as the counterbalance approaches a lower position, an indicator scale, and an indicator connected to the scale beam to move therewith and traverse the scale.

5. In a scale, the combination with a pivoted beam adapted to receive a load on one end and having a normally weighted opposite end to oppose an applied load, of a rock-shaft, an arm carried by said shaft and connected to the scale beam, a counterweight arm carried by said shaft in a normally raised position, a counterweight on said arm to act until equilibrium upon the scale beam in the direction of applied load, and means for indicating the position of equilibrium of the beam under an applied load, whereby the effect of said applied load is indicated.

6. In a scale, the combination with a pivoted beam adapted to receive a load on one end and having a normally weighted opposite end to oppose an applied load, of a rock-shaft, an arm carried by said shaft and connected to the scale beam, a counterweight arm carried by said shaft in a normally raised position, a counterweight on said arm to act upon the scale beam in the direction of applied load, an indicator scale, and an arm carried by the rock shaft and traversing the scale.

7. In a scale, the combination with a pivoted beam adapted to receive a load on one end, and having a normally weighted opposite end to oppose an applied load, of a counterbalance normally in a raised position, a connection between said counterbalance and the scale beam whereby said counterbalance will act upon the scale beam in the direction of applied load with a variable force as the counterbalance approaches or recedes from its normal position, a dash pot having a passage forming a connection between its ends, a rotatable valve mounted in said passage and having a portion adapted to lie parallel with the passage or transversely across the same, and a piston mounted in the dash pot and connected with the scale beam.

8. In a scale, the combination with a pivoted beam adapted to receive a load on one end, and having a normally weighted opposite end to oppose an applied load, of a counterbalance normally in a raised position, a connection between said counterbalance and the scale beam whereby said counterbalance will act upon the scale in the direction of applied load with a variable force diminishing as the counterbalance approaches a lower position, a dash pot having a passage forming a connection between its ends, a rotatable valve mounted in said passage and having a portion adapted to lie parallel with the passage or transversely across the same, and a piston mounted in the dash pot and connected with the scale beam.

9. In a scale, the combination with a pivoted beam adapted to receive a load on one end, and having a normally weighted opposite end to oppose an applied load, of a counterbalance normally in a raised position, a connection between said counterbalance and the scale beam whereby said counterbalance will act upon the scale in the direction of applied load with a variable force as the counterbalance approaches a lower position, an indicator scale, an indicator connected to the scale beam to move therewith and traverse the scale, a dash pot having a passage forming a connection between its ends, a rotatable valve mounted in said passage and having a portion adapted to lie parallel with the passage or transversely across the same, and a piston mounted in the dash pot and connected with the scale beam.

10. In a scale, the combination with a pivoted beam adapted to receive a load on one end, and having a normally weighted opposite end to oppose an applied load, of a counterbalance normally in a raised position, a connection between said counterbalance and the scale beam whereby said counterbalance will act upon the scale in the direction of applied load with a variable force diminishing as the counterbalance approaches a lower position, an indicator scale, an indicator connected to the scale beam to move therewith and traverse the scale, a dash pot having a passage forming a connection between its ends, a rotatable valve mounted in said passage and having a portion adapted to lie parallel with the passage or transversely across the same, and a piston mounted in the dash pot and connected with the scale beam.

11. In a scale, the combination with a pivoted beam adapted to receive a load on one end and having a normally weighted opposite end to oppose an applied load, of a rock-shaft, an arm carried by said shaft and connected to the scale beam, a counterweight arm carried by said shaft in a normally raised position, a counterweight on said arm to act upon the scale beam in the direction of applied load, a dash pot having a passage forming a connection between its ends, a rotatable valve mounted in said passage and having a portion adapted to lie parallel with the passage or transversely across the same, and a piston mounted in the dash pot and connected with the scale beam.

12. In a scale, the combination with a pivoted beam adapted to receive a load on one end and having a normally weighted opposite end to oppose an applied load, of a rock-shaft, an arm carried by said shaft and connected to the scale beam, a counterweight arm carried by said shaft in a normally raised position, a counterweight on said arm to act upon the scale beam in the direction of applied load, an indicator scale, an arm carried by the rock shaft and traversing the scale, a dash pot having a passage forming a connection between its ends, a rotatable valve mounted in said passage and having a portion adapted to lie parallel with the passage or transversely across the same, and a piston mounted in the dash pot and connected with the scale beam.

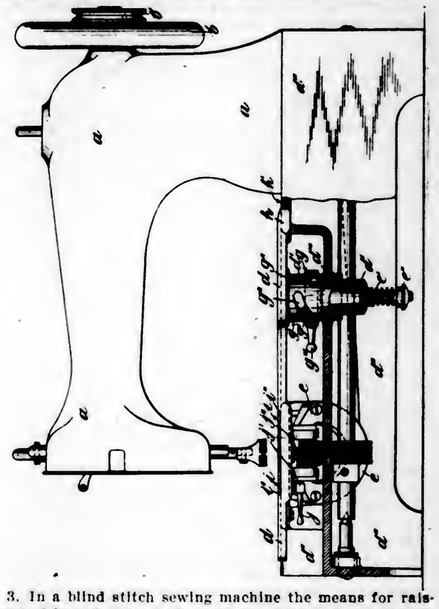
13. In a scale, the combination with a pivoted beam adapted to receive a load on one end and having a normally weighted opposite end to oppose an applied load, of a counter-balance normally in a raised position, a connection between said counter-balance and the scale beam whereby said counter-balance will act until equilibrium upon the scale beam in the direction of an applied load with a force varying as the counter-balance approaches or recedes from its normal raised position, and means connected with said mechanism for automatically indicating the position of equilibrium under a given applied load and thereby indicating the effect of such load upon the structure.

14. In a scale, the combination with a pivoted beam adapted to receive a load on one end and having a normally weighted opposite end to oppose an applied load, of a rotative indicator support, an indicator, a scale traversed by said indicator, a connection between the indicator support and the scale beam, a counterweight arm carried by said indicator support in a normally raised position, a counterweight on said arm to act upon the scale beam in the direction of the applied load, and means connected to said scale connected to one of the movable parts of said structure to regulate the vibration of the beam.

856,999. BLINDSTITCH SEWING-MACHINE. DENIS FLANAGAN, Clayton-le-Moors, England. Original application filed June 11, 1904, Serial No. 212,136. Divided and this application filed July 3, 1905. Serial No. 268,197.

Claim.—1. In a blind stitch sewing machine the means for holding and supporting the fabric to be operated upon consisting of a cloth plate with an overhanging end arranged longitudinally of the bed of the machine, a vertical pivot for supporting said plate along the axis line of which it can be raised in horizontal planes parallel with the top plane surface of the bed and about which axis it can be rotated away from the sewing needle substantially as and for the purposes described.

2. In a blind stitch sewing machine the means for raising and lowering the cloth plate consisting of a vertically arranged pivot formed integral with the cloth plate, a stationary pivot bearing fixed in the bed of the machine, screw grooves formed in the interior of said bearing, a loose collar mounted upon the bearing, projections in the interior of the collar engaging with the screw grooves, and means for rotating said collar substantially as described.



3. In a blind stitch sewing machine the means for raising and lowering the cloth plate consisting of a vertically arranged pivot on the underside of the cloth plate, a stationary pivot bearing fixed in the bed of the machine, screw grooves formed in the exterior of said bearing, a loose collar mounted upon the bearing between the underside of the cloth plate and the bed of the machine, projections in the interior of the collar engaging with the screw grooves a handle on the exterior of the collar for rotating such, a spring surrounding the lower end of the pivot and means for adjusting said spring substantially as described.

4. In a blind stitch sewing machine the combination with the fabric supporting plate of an adjustable plate located in grooves on the upper side of said supporting plate, and means for moving the adjustable plate toward and from the sewing needle, consisting of an eccentric stud passed through the plate and the supporting plate, a slot in the supporting plate, a bush in the slot surrounding the eccentric stud, a lever mounted on the stud and means for securing the lever in position substantially as described.

857,000. CAP. MENDEL L. GLASS, St. Louis, Mo., assignor to Gram & Glass Cap Company, St. Louis, Mo., a Corporation of Missouri. Filed Mar. 16, 1907. Serial No. 362,626.

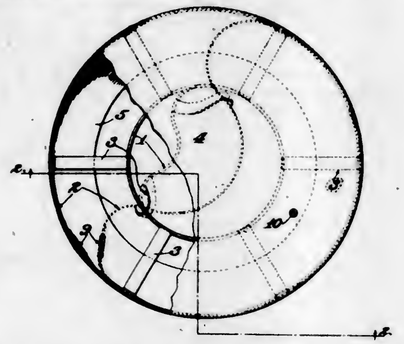
Claim.—1. A cap comprising a frame consisting of a band, a flexible expansion ring and flexible ties connecting them, a cover comprising a body portion and an inturned marginal portion arranged to constitute a pocket for said expansion ring.

2. A cap comprising a frame consisting of a band, a flexible extension ring of flat wire braid and supple ties connecting them, and a cover comprising a body portion and an inturned marginal portion arranged to constitute a pocket for said extension ring.

3. A cap comprising a frame consisting of a band, a flexible extension ring and flexible ties connecting them, and a cover comprising two members each having a body portion and an inturned marginal portion arranged to constitute a pocket for said extension ring, the edges of said marginal portions being joined.

4. A cap comprising a frame, a reversible cover sepa-

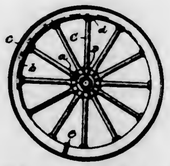
rably mounted thereon, said cover comprising two members each having a body portion and an inturned marginal portion arranged to coöperate with said frame, one of said members being waterproof.



3. A cap comprising a frame consisting of a band, a flexible extension ring and supple ties connecting them, and a cover comprising a body portion and an inturned marginal portion arranged to constitute a pocket for said extension ring, said extension ring consisting of a wire braid and a clamping member adapted to clamp the ends thereof together.

6. A cap comprising a band, a flexible extension ring and supple ties connecting them, and a cover comprising a body portion and an inturned marginal portion arranged to constitute a pocket for said extension ring, said extension ring consisting of a wire braid and an adjustable clamping member adapted to clamp the ends thereof together.

857,001. METAL WHEEL-SPOKE. CHARLES HEART, Alexandria, Ind., assignor to Keefer-Heart Iron and Steel Company, Alexandria, Ind., a Corporation. Original application filed May 25, 1905, Serial No. 262,114. Divided and this application filed Sept. 9, 1905. Serial No. 277,744.



Claim.—1. A metal wheel spoke having a tenon formed integral therewith and comprising two separate joined opposing sides having their edges turned inwardly and forming abutting lips at the joints thereof, and a thimble extending about the tenon and holding the two sides thereof together.

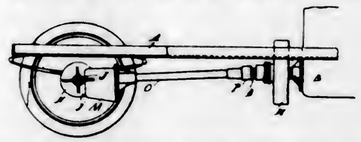
2. A hollow metal wheel spoke having a tenon formed integral therewith and comprising two sides having their edges turned inwardly and forming abutting lips at the joints of the sides, and a thimble extending about the tenon and across the end thereof, the thimble holding the two sides of the tenon together.

3. A hollow metal wheel spoke comprising a body part and an integral tenon, the body part having a seam therein and the tenon comprising two separate abutting sides, and a thimble extending about the tenon and also about a portion of the body part and holding the two sides of the tenon together.

4. In a wheel spoke, the combination with a thimble, of a hollow metal spoke having a tenon comprising two sides each separately formed integral with the body of the spoke and having two lips turned inwardly, the lips of one side abutting against the lips of the other side of the tenon, the end of the spoke and the tenon being inserted in the thimble.

5. In a hollow metal wheel spoke, the combination with a rectangular tapering end portion of the spoke having a longitudinal seam therein, of two parallel braces extending along the sides of the ends of the sloping plates of said tapering end, said braces having an integral brace attached thereto bearing against the side of said end portion opposite the seam thereof, said parallel braces bearing against the seamed side of said end portion and having lips bearings against opposite sides of said seam.

857,002. APPARATUS FOR TRANSMITTING MOTION. CHARLES B. KING, Detroit, Mich., assignor to Northern Motor Car Company, Detroit, Mich., a Corporation of Michigan. Filed Sept. 12, 1904. Serial No. 224,058.



Claim.—In an automobile having transmission apparatus of the bevel-gear type, the combination of a motor having a main shaft, a sleeve upon said main shaft provided with a longitudinally extending slot, the transmission shaft having one end extending into said sleeve and provided with a laterally extending pin projecting into said slot, a sleeve surrounding said slotted sleeve and contacting the end of said pin and means for clutching said slotted sleeve to the main shaft and unclutching the same.

857,003. METHOD OF FORMING BOOK-BACKS. ALFRED J. KROENCKE, Pittsburg, Pa., assignor to Tom Cobb King, East Orange, N. J. Filed July 6, 1905. Serial No. 268,391.



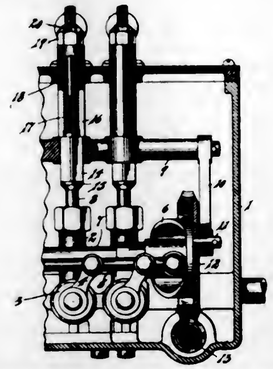
Claim.—1. The herein described method for forming book backs, which consists in, first, securing to a suitably prepared binder's board, of requisite width and length, a suitable covering of greater width and length than said board, then pressing the said board and covering material together and pressing the same into a trough shaped body and simultaneously forming transverse hubs or bands at intervals thereon, then, by pressure, upsetting the ends of the board, forming headers thereon.

2. As a new article of manufacture, a book back comprising a binder's board, having a suitable covering material thereon of greater length and width than said board, and having transverse hubs or bands pressed from said board and covering material outwardly at intervals, and having headers formed by upsetting the ends of the board and covering material, folded thereover.

857,004. PUMP. JOSEPH P. LAVIGNE, Detroit, Mich., assignor to The Lavigne Manufacturing Company, Detroit, Mich., a Corporation of Michigan. Filed Feb. 12, 1906. Serial No. 300,600.

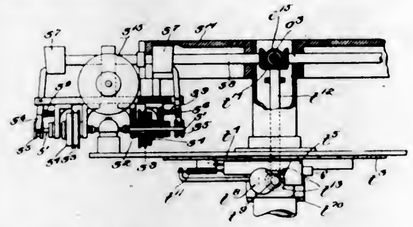
Claim.—1. In a pump, the combination of a pump barrel, a piston reciprocating therein, a stem for said piston provided with a prismatic section, a sleeve adjustable along said piston stem by turning relative thereto, means fitting upon the prismatic portion of the stem for actuating said piston, and means whereby the relative position of said sleeve and stem determines the travel of the piston substantially as described.

2. The combination of a tank, a pump inclosed therein provided with a barrel, a piston and a stem therefor extending through a wall of said tank provided with a prismatic section and with a graduated terminal, a cross-head fitting upon said prismatic section and adapted to slide thereupon, means for reciprocating said cross-head, a sleeve adjustable along said piston stem and extending through the wall of said tank and provided with a graduated terminal adapted to coact with the graduated terminal of the stem to indicate the travel of said stem, and means whereby the relative position of said sleeve and stem determines the travel of the piston, substantially as described.



3. The combination of a tank, a pump inclosed therein, said pump being provided with a piston and stem therefor, said stem extending through a wall of the tank, a sleeve surrounding said stem passing, and adapted to reciprocate through, the wall of said tank, said sleeve being adjustable along said stem, and means whereby the relative position of said sleeve and stem determines the extent of travel of the piston.

857,005. ASSEMBLING APPARATUS. NORMAN MARSHALL, Newton, Mass. Original application filed Jan. 10, 1905, Serial No. 241,884. Divided and this application filed Sept. 20, 1905. Serial No. 279,288.



Claim.—1. A screw tightening apparatus comprising two oppositely arranged screw driving spindles, a work support provided with a seat for a socket and means for locating the socket so that the cap screw holes therein will come in proper relation to the screw driving spindles, means for moving the work support to bring the screw holes into line with the screw driving spindles, and mechanism for operating the spindles.

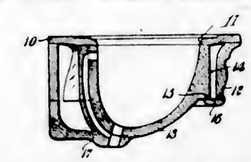
2. A screw tightening apparatus comprising two oppositely arranged screw driving spindles, a series of work supports each provided with a seat for a socket and means for locating the socket so that the cap screw holes will come in proper relation to the screw driving spindles, mechanism for bringing the work supports successively between the screw driving spindles with the screw holes in line with the spindles, and mechanism for operating the spindles.

3. A screw tightening apparatus comprising two oppositely arranged screw driving spindles, a work supporting jig provided with a seat for a socket shell, fingers on the jig for engaging the sides of the key slot in the shell and holding the shell in position, means for moving the jig to bring the cap screws into line with the screw driving spindles, and mechanism for simultaneously operating the spindles.

4. A work supporting jig for screw tightening apparatus comprising a seat for a socket shell, and fingers arranged to engage the sides of the key slot in the shell.

5. A work supporting jig for screw tightening-apparatus comprising a seat for a socket shell, an arm slotted for the key shaft and inwardly projecting fingers arranged to enter the key-slot in the shell.

857,006. LAVATORY. HENRY PRICE, Elizabeth, N. J., assignor of one-half to Owen Healey, Elizabeth, N. J. Filed Jan. 28, 1907. Serial No. 354,510.



Claim.—1. An article of the class described, wherein the apron is provided with a lower flange and the bowl is provided with spaced lateral shoulders extending thereover.

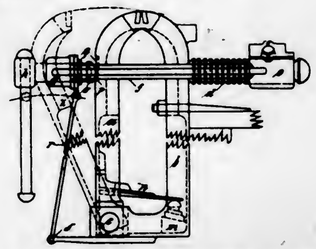
2. An article of the class described, wherein the apron is provided with a lower flange and the bowl is provided with spaced laterally extending shoulders bearing thereon.

3. An article of the class described, wherein the apron is provided with a lower flange having a horizontal upper surface and the bowl is provided with spaced shoulders having horizontal downwardly facing surfaces bearing on said flange.

4. An article of the class described having an apron provided with a lower flange having a horizontal upper surface and a bowl having lateral brackets provided with horizontal lower ends forming shoulders bearing upon said flange.

5. An article of the class described, comprising a table, an apron, and a flange, and including a bowl interposed between the table and the flange and provided with lateral projections having upper and lower horizontal surfaces for contact respectively with the under surface of the table and the upper surface of the flange.

857,007. VISE. CARL MARKMANN, Uma, Germany. Filed July 9, 1906. Serial No. 325,415.

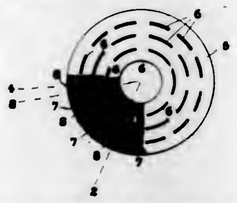


Claim.—An improved vise comprising in combination with the adjustable jaws a strong spring fixed to the fixed jaw and an arm laterally projecting from the adjustable jaw acted upon by said spring, a yoke for determining the width of the opening of the jaws, an arm having circular grooves laterally projecting from the fixed jaw, a sleeve at the one end of the yoke adjustable on said lateral arm, a detent-pin in said sleeve for securing the same in its

position on the grooved arm, the clamping screw in the other end of the yoke and rods for securely guiding said yoke in its movement, substantially as described and shown and for the purpose set forth.

REISSUES.

12,660. CARTRIDGE. HUDSON MAXIM, Brooklyn, N. Y. Original application filed Aug. 24, 1899, Serial No. 728,304. Divided and application filed Apr. 23, 1901, Serial No. 57,153. Applications for reissue filed Sept. 8, 1902. Serial No. 122,604. Original No. 677,528, dated July 2, 1901.



Claim.—1. An integral mass or unit of explosive material in the form of a rod or bar provided with a plurality of longitudinal perforations each of which has a plurality of lateral vents.

2. An integral mass or unit of explosive material in the form of a rod or bar provided with a plurality of uniformly-disposed longitudinal perforations, and a plurality of lateral vents transecting a plurality of said longitudinal perforations.

3. An integral mass or unit of explosive material in the form of a rod or bar provided with a plurality of longitudinal perforations, and a plurality of uniformly-disposed lateral vents transecting a plurality of said longitudinal perforations.

4. An integral mass or unit of explosive material in the form of a rod or bar provided with a plurality of longitudinal perforations so disposed as to present substantially equal thicknesses of material between all the burning-surfaces, and a plurality of uniformly-disposed lateral vents for said longitudinal perforations.

5. An integral mass or unit of explosive material provided with a central longitudinal perforation and a plurality of other longitudinal perforations arranged around said central perforation, and a plurality of lateral vents which act to simultaneously vent both the central and the other longitudinal perforations.

6. An integral mass or unit of explosive material provided with a central longitudinal perforation and a plurality of other longitudinal perforations symmetrically arranged around said central perforation, and a plurality of lateral vents extending from said central perforation and transecting one or more of the other longitudinal perforations.

7. An integral mass or unit of explosive material provided with a plurality of longitudinal perforations, a plurality of lateral vents to said longitudinal perforations and a plurality of laterally-opening cells.

8. An integral mass or unit of explosive material provided with a plurality of longitudinal perforations, a plurality of uniformly-disposed lateral vents to said longitudinal perforations, and a plurality of uniformly-disposed laterally-opening cells.

9. A cartridge-charge consisting of a bundle or fagot of integral units of explosive material in the form of rods or bars provided with a plurality of uniformly-disposed longitudinal perforations and a plurality of lateral vents transecting a plurality of said longitudinal perforations.

10. An integral mass or unit of explosive material in the form of a rod or bar provided with a plurality of longitudinal perforations so disposed as to present substantially equal thicknesses of material between the perforations, each of which longitudinal perforations has a plurality of lateral vents.

11. A cartridge-charge consisting of a bundle or fagot of integral units of explosive material in the form of rods or bars provided with a plurality of longitudinal perforations each of which longitudinal perforations has a plurality of lateral vents.

12. A cylindrical integral rod or bar of explosive material having a plurality of longitudinal perforations each of which has a burning-surface concentric with the rod or bar, and a plurality of lateral vents for said longitudinal perforations.

13. An integral rod or bar of explosive material having a central longitudinal perforation and a plurality of other longitudinal perforations, each of which has a burning-surface parallel with some part of the burning-surface of the central perforation, and a plurality of lateral vents for said longitudinal perforations.

14. An integral mass of explosive material formed in the shape of a long rod having radial multi-perforations, and a plurality of internal flame passages intercepting a plurality of said multi-perforations.

15. An integral mass of explosive material formed in the shape of a long rod having radial multi-perforations, and a plurality of longitudinally extending internal flame passages intercepting a plurality of said multi-perforations.

16. A mass or unit of explosive material of uninterrupted continuity in the form of a long rod provided with a plurality of internal, longitudinal transversely multi-vented flame passages.

17. A mass or unit of explosive material of uninterrupted continuity in the form of a long rod provided with one or more internal longitudinal flame passages each of which has a plurality of transverse vents.

18. A mass or unit of explosive material of uninterrupted continuity formed in the shape of a long rod having multi-longitudinal internal flame passages, and a plurality of transverse vents intercepting a plurality of said flame passages.

DESIGNS.

38,611. HANDLE FOR SPOONS, FORKS, OR SIMILAR ARTICLES. JOHN CLULEE, Wallingford, Conn., assignor to International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed May 15, 1907. Serial No. 373,886. Term of patent 7 years.



Claim.—The ornamental design for a handle for a spoon, fork or similar article, as shown.

38,612. BACK FOR BRUSHES, MIRRORS, OR SIMILAR ARTICLES. LOUIS C. HILLER, Wallingford, Conn., assignor to International Silver Company, Meriden, Conn., a Corporation of New Jersey. Filed May 15, 1907. Serial No. 373,883. Term of patent 7 years.



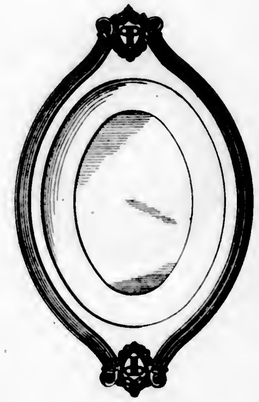
Claim.—The ornamental design for a back for a brush, mirror or similar article, as shown.

38,613. COMBINED MATCH-HOLDER, ASH-TRAY, AND BELL. GEORGE C. LYNCH, New York, N. Y. Filed May 9, 1907. Serial No. 372,831. Term of patent 14 years.



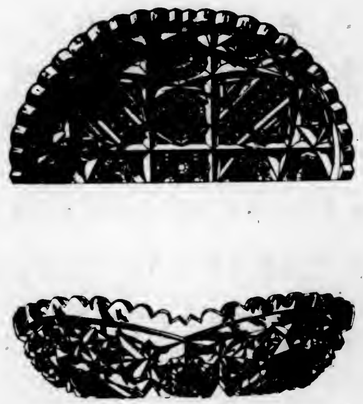
Claim.—The ornamental design for combined match holder, ash tray and bell, as shown.

38,614. DISH OR SIMILAR ARTICLE. GILBERT L. CROWELL, Jr., Arlington, N. J., assignor to Dominick & Haff, New York, N. Y., a Joint Stock Company of New York. Filed May 10, 1907. Serial No. 373,018. Term of patent 7 years.



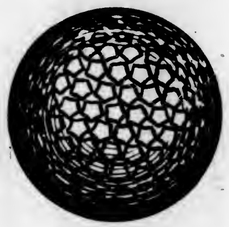
Claim.—The ornamental design for a dish or similar article as shown.

38,615. GLASS DISH. HERMAN RICHMAN, New York, N. Y., assignor to L. Straus & Sons, New York, N. Y., a Firm. Filed May 16, 1907. Serial No. 374,108. Term of patent 7 years.



Claim.—The ornamental design for glass dish, as shown.

38,616. RUBBER BALL. JACOB FISHER, Lambertville, N. J., assignor to Lambertville Rubber Company, Lambertville, N. J., a Corporation of New Jersey. Filed Dec. 20, 1906. Serial No. 348,827. Term of patent 7 years.



Claim.—The ornamental design for a rubber ball, as shown.

38,617. FONT OF TYPE FOR USE IN PHONETIC SPELLING. GEORGE S. JONES, Indianapolis, Ind. Filed May 13, 1907. Serial No. 373,519. Term of patent 14 years.



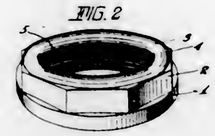
Claim.—The ornamental design for a font of type for use in phonetic spelling, as shown.

38,618. COUPLING OR NIPPLE FOR PIPES. ROBERT MCKEAN THOMAS, Elizabeth, N. J., assignor to Thomas & Betts Co., New York, N. Y., a Corporation of New York. Filed July 14, 1906. Serial No. 326,295. Term of patent 14 years.

FIG. 1



FIG. 2



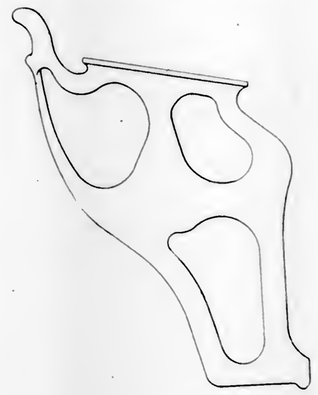
Claim.—The ornamental design for a coupling or nipple for pipes, substantially as herein shown and described.

38,619. DISPLAY-STAND. ARTHUR P. JACKSON, Passaic, N. J. Filed Apr. 25, 1907. Serial No. 370,334. Term of patent 14 years.



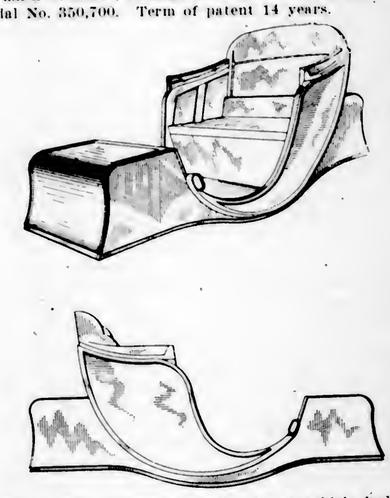
Claim.—The ornamental design for a display stand, as shown.

38,620. SIDE FRAME FOR DENTIST AND BARBER CHAIRS. JAMES BARKER, Philadelphia, Pa. Filed Apr. 29, 1907. Serial No. 371,024. Term of patent 14 years.



Claim.—The ornamental design for a side frame for dentist and barber chairs, as shown.

38,621. VEHICLE-BODY. FREDERICK K. STONE and FRANK P. STONE, Chicago, Ill. Filed Dec. 31, 1906. Serial No. 350,700. Term of patent 14 years.



Claim.—The ornamental design for a vehicle body as shown.

TRADE-MARKS

PUBLISHED JUNE 11, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 4,341. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) M. SHAUGHNESSY DISTILLING COMPANY, St. Louis, Mo. Filed May 5, 1905.

CLUB HOUSE

Particular description of goods.—Whisky.

Ser. No. 5,031. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) C. P. MOORMAN & COMPANY, INC., Louisville, Ky. Filed May 11, 1905. Used ten years.



Particular description of goods.—Whisky.

Ser. No. 7,533. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRANK ANTONIO CHAPA, San Antonio, Tex. Filed June 6, 1905.



Particular description of goods.—A Remedial Agent for Stomach and Muscular Troubles.

Ser. No. 7,729. (CLASS 12. MASONRY MATERIALS.) WARREN BROTHERS COMPANY, Boston, Mass. Filed June 9, 1905.

BITUSTONE

Particular description of goods.—Bituminous Pavements and Sidewalks.

Ser. No. 7,991. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) E. C. ATKINS & COMPANY, Indianapolis, Ind.; New York, N. Y.; Memphis, Tenn.; Atlanta, Ga.; Minneapolis, Minn.; Portland, Oreg.; Seattle, Wash.; San Francisco, Cal.; Chicago, Ill., and Toronto, Canada. Filed June 12, 1905.

EXCELSIOR

Particular description of goods.—Tools for Fitting Saws.

Ser. No. 8,428. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) CHICAGO FLEXIBLE SHAFT COMPANY, Chicago, Ill. Filed June 17, 1905. Used ten years.

Stewart

Particular description of goods.—Animal Shearing or Clipping Machines.

Ser. No. 14,234. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) SCHUETZ, RENZIEHAUSEN & Co., Pittsburg, Pa. Filed Nov. 3, 1905.

FORT PITT

Particular description of goods.—Whisky.

Ser. No. 14,786. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) HEINR. BÖKER & Co., Solingen, Germany. Filed Nov. 18, 1905. Used ten years.

Particular description of goods.—Razors.

Ser. No. 15,073. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) AUSTIN CLOTHING COMPANY, Memphis, Tenn. Filed Nov. 29, 1905.

AUSTIN CLOTHING CO.
MEMPHIS TENN.

Particular description of goods.—Overcoats, Coats, Vests, Pants, and Overalls.

Ser. No. 15,725. (CLASS 48. DAIRY PRODUCTS.) UNION CONDENSED MILK CO., New York, N. Y. Filed Dec. 28, 1905.

CONCENTRATED MILK

The central field on which the cross is placed is red.
Particular description of goods.—Milk.

Ser. No. 15,797. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) THE MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Jan. 2, 1906.

Particular description of goods.—Crucibles, Cupels, Scorifiers, and Roasting-Dishes, (Both These Two Descriptions of Goods Being Articles in the Nature of Crucibles,) Crucible Covers, Stands, and Stirrers, Wedges, Chlorin-Tubes and Couple Tubes, All the Above-Mentioned Goods Being of Fire-Clay or Similar Refractory Material; Clay Liners for Crucibles, Fire-Bricks, Plates, Slabs, Domes, and Tubes, All Said Goods Being of Clay or Similar Refractory Material; Patching Material for Furnace-Work of Clay or Similar Refractory Materials; Rehausses, Being Muffle-Rings or Removable Taps (Accessories for Use with Crucibles) of Clay or other Refractory Material, also Crucibles Made of Plumbago or Graphite and other like Fire-Standing Goods, Consisting of Muffles, Scorifiers, Furnaces, and Retorts Made of Plumbago or Graphite.

Ser. No. 16,229. (CLASS 8. DETERGENTS.) A. & F. PEARS, LIMD., London, England. Filed Jan. 17, 1906. Used ten years.

A. & F. PEARS'S
GENUINE
TRANSPARENT SOAP.
SHAVING STICK.

Particular description of goods.—Perfumed Soap.

Ser. No. 17,163. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PENNSYLVANIA TANNING COMPANY, Great Bend, Pa. Filed Jan. 17, 1906.

BLACK HORN BRAND

Particular description of goods.—Chamois-Skins.

Ser. No. 18,541. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) THE C. B. CONES AND SON MANUFACTURING COMPANY, Indianapolis, Ind. Filed Apr. 5, 1906. Used ten years.

CONES' "BOSS"

Particular description of goods.—Workingmen's Overalls, Coats, and Unlaundered Work-Shirts.

Ser. No. 18,543. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CHARLES W. MIXER, Hastings, Mich. Filed Apr. 5, 1906.

MIXER'S CANCER SPECIFIC

Particular description of goods.—A Remedy for Cancers, Tumors, Abscesses, and All Scrofulous Affections.

Ser. No. 19,172. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) THE J. & P. BALTZ BREWING CO., Philadelphia, Pa. Filed Apr. 30, 1906. Used ten years.

Baltz

Particular description of goods.—Beer.

Ser. No. 19,813. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) F. A. HARDY & COMPANY, Chicago, Ill. Filed May 23, 1906.

TORIGOID

Particular description of goods.—Spectacle-Frames.

Ser. No. 20,074. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GIUSEPPE JAVARONE, Naples, Italy. Filed June 5, 1906.

BIOS NAPOLI

Particular description of goods.—A Tonic and Medicine for General Restorative and Blood-Strengthening Purposes and for Anemia, Neuralgia, Nausea, Inappetency, and Stomach-Ache.

Ser. No. 20,460. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) BENJAMIN YOUNG, (a Firm,) Milwaukee, Wis. Filed June 21, 1906.

"UNO"

Particular description of goods.—Horse-Collars.

Ser. No. 20,519. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE FIRM OF ALFRED FENNINGS, Cowes, England. Filed June 23, 1906. Used ten years.

FENNINGS' COOLING  CHILDREN'S POWDERS.

Particular description of goods.—Medicines for the Cure and Relief of Children's Ailments.

Ser. No. 20,906. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BORCHERDT MALT EXTRACT COMPANY, Chicago, Ill. Filed July 13, 1906.



Particular description of goods.—Medicinal Malt Preparations, Plain and Medicated Malt Extracts.

Ser. No. 20,908. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) BORCHERDT MALT EXTRACT COMPANY, Chicago, Ill. Filed July 13, 1906. Used ten years.

BORCHERDT'S

Particular description of goods.—Medicinal Malt Preparations, Plain and Medicated Malt Extracts.

Ser. No. 21,112. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) C. BENEDICT CO., Oakland, Cal. Filed July 24, 1906.



Particular description of goods.—Bust-Supporters and Corset-Covers and Combination Bust-Supporter, Corset-Cover, and Dress-Shield.

Ser. No. 21,113. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) C. BENEDICT CO., Oakland, Cal. Filed July 24, 1906.



Particular description of goods.—Bust-Supporters and Corset-Covers and Combination Bust-Supporter, Corset-Cover, and Dress-Shield.

Ser. No. 21,155. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) CROSS PHOTO PAPER CO., Rochester, N. Y. Filed July 25, 1906.



Particular description of goods.—Photographic-Printing Papers.

Ser. No. 21,172. (CLASS 9. EXPLOSIVES.) E. I. DU PONT COMPANY, Wilmington, Del. Filed July 26, 1906. Used ten years.



Particular description of goods.—Gunpowder.

Ser. No. 21,412. (CLASS 9. EXPLOSIVES.) THE HAZARD POWDER COMPANY, Hazardville, Conn. Filed Aug. 9, 1906. Used ten years.



Particular description of goods.—Gunpowder.

Ser. No. 21,611. (CLASS 9. EXPLOSIVES.) LAFLIN & RAND POWDER COMPANY, New York, N. Y. Filed Aug. 16, 1906. Used ten years.

U. M. C. SPECIAL

Particular description of goods.—Gunpowder.

Ser. No. 21,617. (CLASS 9. EXPLOSIVES.) THE HAZARD POWDER COMPANY, Hazardville, Conn. Filed Aug. 16, 1906. Used ten years.



Particular description of goods.—Gunpowder.

Ser. No. 21,618. (CLASS 9. EXPLOSIVES.) THE HAZARD POWDER COMPANY, Hazardville, Conn. Filed Aug. 16, 1906.



Particular description of goods.—All Kinds of Powder Used for Shotgun, Rifles, and Small-Arms.

Ser. No. 21,694. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) JOSEPH C. ALLEN, Plainfield, N. J. Filed Aug. 21, 1906.

ROYAL

Particular description of goods.—A Silver Polish Especially Prepared for Jewelers and Silversmiths for Use on Gold and Silverware.

Ser. No. 22,314. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) HINCKEL BREWERY COMPANY, Albany, N. Y. Filed Sept. 25, 1906.



Particular description of goods.—Lager-Beer and Porter.

Ser. No. 22,877. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) A. R. MOSLER & CO., New York, N. Y. Filed Oct. 24, 1906.



Particular description of goods.—Spark-Plugs.

Ser. No. 22,980. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE DUFFNER & KIMBERLY COMPANY, New York, N. Y. Filed Oct. 29, 1906.



Particular description of goods.—Ornamental Electric Lamps.

Ser. No. 23,032. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) COLUMBUS PLATE & WINDOW GLASS COMPANY, Lancaster, Ohio. Filed Nov. 1, 1906.

COLUMBUS

Particular description of goods.—Window-Glass.

Ser. No. 23,210. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) S. M. BIXBY & CO., New York, N. Y. Filed Nov. 10, 1906.

Royal Polish

Particular description of goods.—Leather and Shoe Blackings, Paste, Polish, and Leather and Shoe Varnish.

Ser. No. 23,894. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) NATIONAL FOOD COMPANY, Fond du Lac, Wis. Filed Dec. 8, 1906. Used ten years.

NATIONAL

Particular description of goods.—Poultry Food.

Ser. No. 23,972. (CLASS 43. THREAD AND YARN.) NEW ENGLAND COTTON YARN CO., Boston, Mass. Filed Dec. 13, 1906.



Particular description of goods.—Cotton Thread.

Ser. No. 23,973. (CLASS 43. THREAD AND YARN.) NEW ENGLAND COTTON YARN CO., Boston, Mass. Filed Dec. 13, 1906.



Particular description of goods.—Cotton Thread.

Ser. No. 23,974. (CLASS 43. THREAD AND YARN.) NEW ENGLAND COTTON YARN CO., Boston, Mass. Filed Dec. 13, 1906.



Particular description of goods.—Cotton Thread.

Ser. No. 23,975. (CLASS 43. THREAD AND YARN.) NEW ENGLAND COTTON YARN CO., Boston, Mass. Filed Dec. 13, 1906.



Particular description of goods.—Cotton Thread.

Ser. No. 23,976. (CLASS 43. THREAD AND YARN.) NEW ENGLAND COTTON YARN CO., Boston, Mass. Filed Dec. 13, 1906.



Particular description of goods.—Cotton Thread.

Ser. No. 24,104. (CLASS 2. MINERAL.) MORGAN CRUCIBLE COMPANY LIMITED, Battersea, London, England. Filed Dec. 18, 1906.



Particular description of goods.—Plumbago, Either in a Powdered or Solid Form, Prepared for Use in Manufactures.

Ser. No. 24,301. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SALLIE SCARR WILHELM, Statesville, N. C. Filed Dec. 27, 1906.

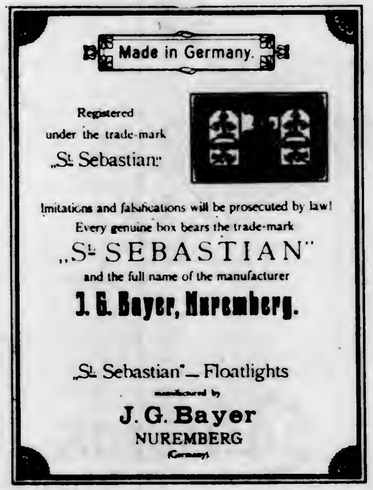
Particular description of goods.—Pills for the Treatment of Chills.

Ser. No. 24,640. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) THE WALKERVILLE BREWING CO. LIMITED, Walkerville, Ontario, Canada. Filed Jan. 15, 1907.



Particular description of goods.—Ale and Porter.

Ser. No. 24,684. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) J. G. BAYER, (a Firm,) Nuremberg, Germany. Filed Jan. 16, 1907.



Particular description of goods.—Float-Lights.

Ser. No. 24,821. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) BENTLEY AND OLMSTED COMPANY, Des Moines, Iowa. Filed Jan. 22, 1907.

Men Who Work

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 24,982. (CLASS 9. EXPLOSIVES.) E. I. DU PONT COMPANY, Wilmington, Del. Filed Jan. 29, 1907.



Particular description of goods.—All Kinds of Powder Used for Shotgun, Rifle, and Small-Arms.

Ser. No. 25,001. (CLASS 55. WINES.) SAMUEL STREET & Co., New York, N. Y. Filed Jan. 29, 1907.

RECUPERATOR

Particular description of goods.—Port-Wine.

Ser. No. 25,003. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) WICHMAN, LUTGEN & Co., Alameda, Cal. Filed Jan. 29, 1907.

MARIN COUNTY CLUB

Particular description of goods.—Whisky.

Ser. No. 25,050. (CLASS 8. DETERGENTS.) FRIEDRICH ADOLF RICHTER, Rudolstadt, Germany, and New York, N. Y. Filed Feb. 1, 1907.



Particular description of goods.—Soap.

Ser. No. 25,051. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE RIDGELY TRIMMER COMPANY, Springfield, Ohio. Filed Feb. 1, 1907. Used ten years.

RIDGELY

Particular description of goods.—Hand-Tools for Trimming Wall-Paper.

Ser. No. 25,213. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) WILLIAM N. HARTSHORN, Boston, Mass., assignor to The Priscilla Publishing Co. of Boston, Mass., a Corporation of Boston, Mass. Filed Feb. 7, 1907.

PRISCILLA

Particular description of goods.—Embroidery Patterns and Stamped Fabrics.

Ser. No. 25,274. (CLASS 9. EXPLOSIVES.) RHEIN.-WESTF. SICHERHEITS-ZÜNDSCHNURFABRIK GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Crefeld-Linn, Germany. Filed Feb. 12, 1907.



Particular description of goods.—Safety-Fuses.

Ser. No. 25,466. (CLASS 54. SEA FOODS.) NORTHWESTERN FISHERIES COMPANY, Seattle, Wash. Filed Feb. 20, 1907.



The field of the shield being blue.
Particular description of goods.—Canned Salmon.

Ser. No. 25,629. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EDWARD G. THOMPSON, New York, N. Y. Filed Feb. 26, 1907.

AURMINO

Particular description of goods.—A Remedy for the Liquor Habit.

Ser. No. 25,652. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALONZO F. BROWN, Oakland, Cal. Filed Feb. 28, 1907. Used ten years.

CALIFORNIA
Rheumatic Eradicator

Particular description of goods.—Rheumatic Cures.

Ser. No. 25,655. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) BENJAMIN GOLDENBERG, New York, N. Y. Filed Feb. 28, 1907.

PUSS-IN-BOOTS

Particular description of goods.—Toy Hats, Boots, Clown-Suits and Toy-Animal Clothing.

Ser. No. 25,742. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MARY LITTLE-PATON, Long Beach, Cal. Filed Mar. 4, 1907.

'BARZY-FLUF'

Particular description of goods.—Dry Cleaning Compound for the Hair.

Ser. No. 25,778. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE CABLE COMPANY, Chicago, Ill. Filed Mar. 5, 1907.

Corona

Particular description of goods.—Pianos, Automatic Piano-Players, and Self-Playing Pianos.

Ser. No. 25,845. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ELEANOR FILKINS, Columbus, Ohio. Filed Mar. 8, 1907.



Particular description of goods.—Tablets for Obesity.

Ser. No. 25,904. (CLASS 54. SEA FOODS.) F. H. FROMM & Co., Philadelphia, Pa. Filed Mar. 11, 1907.



Particular description of goods.—Canned Sardines.

Ser. No. 25,997. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) MLLE WOLFE CO., Philadelphia, Pa. Filed Mar. 15, 1907.



Particular description of goods.—Dress-Pads and Artificial Breasts.

Ser. No. 26,045. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) RHEIMS WINE & VINEYARD COMPANY, Bath, N. Y. Filed Mar. 18, 1907.

STEUBEN CLUB

Particular description of goods.—Whisky.

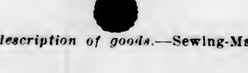
Ser. No. 26,124. (CLASS 35. BELTING, HOSE, AND MACHINERY-PACKING.) HENRY J. M. HOWARD, Washington, D. C. Filed Mar. 21, 1907.



The center line being in yellow and the boundary-lines in red.

Particular description of goods.—Fire-Hose.

Ser. No. 26,125. (CLASS 35. BELTING, HOSE, AND MACHINERY-PACKING.) HENRY J. M. HOWARD, Washington, D. C. Filed Mar. 21, 1907.



The center line being in green and the boundary-lines in red.

Particular description of goods.—Fire-Hose.

Ser. No. 26,253. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) ENDICOTT-JOHNSON COMPANY, Endicott, N. Y. Filed Mar. 26, 1907.

Endwell

Particular description of goods.—Boots and Shoes of Leather.

Ser. No. 26,272. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) GERSON, JACOBSON & Co., New York, N. Y. Filed Mar. 26, 1907.

Boulevard Clothes

Particular description of goods.—Overcoats, Coats, Pants, and Vests.

Ser. No. 26,275. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRANCIS S. WALKER, Fayette, Iowa. Filed Mar. 27, 1907.

C·A·D

Particular description of goods.—A Cough and Lung Remedy.

Ser. No. 26,312. (CLASS 28. SEWING-MACHINES AND ATTACHMENTS.) LEO LAMMERTZ, Aix-la-Chapelle, Germany. Filed Mar. 28, 1907.



Particular description of goods.—Sewing-Machine Needles.

Ser. No. 26,331. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) LEO REX CANNING & PRESERVING CO., New York, N. Y. Filed Mar. 29, 1907.



Particular description of goods.—Canned Vegetables and Canned and Preserved Fruits.

Ser. No. 26,338. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) AMERICAN BREWING COMPANY OF ROCHESTER, N. Y., Rochester, N. Y. Filed Mar. 29, 1907.



Particular description of goods.—Beer, Ale, and Porter.

Ser. No. 26,375. (CLASS 8. DETERGENTS.) THOMAS GILL SOAP CO. INC., Brooklyn, N. Y. Filed Mar. 30, 1907.



Particular description of goods.—Laundry, Toilet, and Textile Soaps.

Ser. No. 26,385. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) FRED. BUTTERFIELD & Co., New York, N. Y. Filed Apr. 1, 1907.

THISTLEDOWN

Particular description of goods.—Percaline.

Ser. No. 26,388. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE EMDEN CO., New York, N. Y. Filed Apr. 1, 1907.

EMDOLIN

Particular description of goods.—Composition on Webbing for Wall-Coverings.

Ser. No. 26,439. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MORRIS RENYI, New York, N. Y. Filed Apr. 3, 1907.

MARIA CELLA DROPS.



Particular description of goods.—Proprietary Medicine Used as a Remedy for Stomach Diseases.

Ser. No. 26,474. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) ALLEN'S B. B. B. FLOUR CO., INC., San Jose, Cal. Filed Apr. 4, 1907.

B
B
B

Particular description of goods.—Wheat-Flour, Self-Rising Pancake-Flour, Self-Rising Boston Brown-Bread Flour.

Ser. No. 26,480. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) IDEAL CONCRETE MACHINERY COMPANY, South Bend, Ind. Filed Apr. 5, 1907.



Particular description of goods.—Concrete-Mixers, Concrete-Block Molds, Fence-Post Molds, Brick-Molds, Sill and Lintel Molds, Pillar, Capital, and Base Molds, Tile-Molds, Spindle-Molds, Cylinder-Molds, Ball-Molds, Sash-Weight Molds, Pier-Coping Molds, and Interchangeable Face-Plates, Pallets, Cores, Liners, and Dividing-Plates for Such Molds.

Ser. No. 26,492. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRED J. TAYLOR, Kansas City, Mo. Filed Apr. 5, 1907.



Particular description of goods.—A Medicated Stock Food.

Ser. No. 26,498. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS Co., Chicago, Ill. Filed Apr. 6, 1907.

NOVORO

Particular description of goods.—A Preparation for the Treatment of Diseases of the Blood and Skin.

Ser. No. 26,499. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS Co., Chicago, Ill. Filed Apr. 6, 1907. Used ten years.

DR. PETER'S
UTERINE

Particular description of goods.—A Preparation for the Treatment of Ailments Peculiar to Females.

Ser. No. 26,501. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS Co., Chicago, Ill. Filed Apr. 6, 1907. Used ten years.

Huile Curative
DU
DR. PIERRE

Particular description of goods.—A Liniment.

Ser. No. 26,554. (CLASS 60. INKS AND INKING MATERIALS.) AMERICAN RIBBON & CARBON Co., Rochester, N. Y. Filed Apr. 8, 1907.



Particular description of goods.—Type-Writer Ribbons and Carbon-Paper.

Ser. No. 26,556. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WALLACE CASLER, Chicago, Ill. Filed Apr. 8, 1907. Used ten years.

ORIENTAL PASTE

Particular description of goods.—An Emollient.

Ser. No. 26,563. (CLASS 48. DAIRY PRODUCTS.) JOHN S. MARTIN & Co., New York, N. Y. Filed Apr. 8, 1907.

IXL

Particular description of goods.—Cheese.

Ser. No. 26,572. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) WILLIAM P. SUMNER, Jacksonville, Fla. Filed Apr. 8, 1907.



Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 26,586. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) GEORGE BENDA, New York, N. Y. Filed Apr. 9, 1907.



Particular description of goods.—Gold Paint.

Ser. No. 26,587. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) GEORGE BENDA, New York, N. Y. Filed Apr. 9, 1907.



Particular description of goods.—Gold Paint.

Ser. No. 26,594. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) L. D. MCLEAN Co., San Francisco, Cal. Filed Apr. 9, 1907.



Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 26,626. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) THE GUYER HAT Co., Boston, Mass. Filed Apr. 11, 1907.

Particular description of goods.—Felt Hats.

Ser. No. 26,627. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) THE GUYER HAT Co., Boston, Mass. Filed Apr. 11, 1907.

PARCHMENT

Particular description of goods.—Felt Hats.

Ser. No. 26,668. (CLASS 66. OBJECTS OF ART AND ORNAMENT.) BERNHARD WILMSEN, Philadelphia, Pa. Filed Apr. 12, 1907.



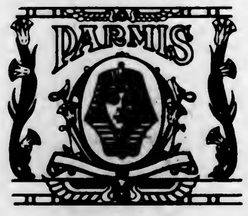
Particular description of goods.—Non-Inflammable Paper Decorations and Ornaments, Known as Paper Novelties.

Ser. No. 26,718. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) WILLIAM JAMES, New York, N. Y. Filed Apr. 15, 1907.

ACORN

Particular description of goods.—Carbureters.

Ser. No. 26,724. (CLASS 71. TOBACCO PRODUCTS.) A. PARMIS COMPANY, New York, N. Y. Filed Apr. 15, 1907.



The stripes of the head-dress being alternately yellow and red and the background being printed in blue.

Particular description of goods.—Cigarettes.

Ser. No. 26,837. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) FRIEDMAN-SHELBY SHOE Co., St. Louis, Mo. Filed Apr. 20, 1907.

FRIEDMAN-SHELBY
SHOE CO.

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 26,858. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) SACKMAN BROS., Alexandria, La. Filed Apr. 22, 1907.

"EZY CREEPER"



Particular description of goods.—Leather Shoes, Boots, and Slippers.

Ser. No. 26,868. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) CRANE BROS., Westfield, Mass. Filed Apr. 23, 1907.

Linenoid

Particular description of goods.—Articles Made of Molded Linen Fiber.

Ser. No. 26,880. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) THOMAS F. LAUBACH, New York, N. Y. Filed Apr. 24, 1907.



Thos. F. Laubach

Particular description of goods.—Cider.

Ser. No. 26,881. (CLASS 8. DETERGENTS.) THE HEWITT BROS SOAP COMPANY, Dayton, Ohio. Filed Apr. 24, 1907.

Easy Task

Particular description of goods.—Soap for Laundry and Household Use.

Ser. No. 26,885. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) MEDLICOTT-MORGAN COMPANY, Springfield, Mass. Filed Apr. 24, 1907.

MEDLICOTT-MORGAN CO.

Particular description of goods.—Knitted Underwear.

Ser. No. 26,889. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) GEO. O. STREET & SONS, New York, N. Y. Filed Apr. 24, 1907.

S

Particular description of goods.—Finger-Rings, Fobs, Seals, Charms, Collar-Buttons, Cuff-Links, and Cuff-Buttons, Scarf-Pins, and Lockets.

Ser. No. 26,925. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) THE RUBBER PRODUCTS COMPANY, Barberton, Ohio. Filed Apr. 25, 1907.

ANCHOR BRAND

Particular description of goods.—Fountain-Syringes.

Ser. No. 26,958. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ALFRED PAUL GARDINER, New York, N. Y. Filed Apr. 27, 1907.

RG
TOOTH
POWDER

Particular description of goods.—Tooth-Powder.

Ser. No. 26,959. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) ANT. HIMMELBAUER & CO., Mährisch-Ostrau and Vienna, Austria. Filed Apr. 27, 1907.

JAA

Particular description of goods.—Ceresine and Ozocerite.

Ser. No. 26,967. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) PACIFIC MANIFOLDING BOOK COMPANY, Oakland, Cal. Filed Apr. 27, 1907.

Duplex

Particular description of goods.—Sales-Books.

Ser. No. 26,995. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) SYKES & STRANDBERG, Attleboro, Mass. Filed Apr. 29, 1907.

S&S

Particular description of goods.—Jewelry for Personal Adornment.

Ser. No. 27,006. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DR. PETER FAHRNEY & SONS CO., Chicago, Ill. Filed Apr. 29, 1907. Used ten years.

LA
Vigorie.l'Estomac
DU
DR. PIERRE

Particular description of goods.—A Preparation for the Treatment of Diseases of the Stomach and Bowels.

Ser. No. 27,024. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE APPEN-D-FORM COMPANY, Elkhart, Ind. Filed Apr. 30, 1907.

The shield is green and the cross red.

Particular description of goods.—An Ointment and Salve.

Ser. No. 27,033. (CLASS 71. TOBACCO PRODUCTS.) THE SOLIS CIGAR COMPANY, Denver, Colo. Filed Apr. 30, 1907.

DRY CLIMATE

Particular description of goods.—Cigars.

Ser. No. 27,053. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILSON P. STRADER, Lexington, Ky. Filed May 1, 1907.

SANIBU

Particular description of goods.—A Tonic for Treatment of Rheumatism and Diseases of the Stomach.

Ser. No. 27,054. (CLASS 47. CONFECTIONERY.) WALLACE & CO., New York, N. Y. Filed May 1, 1907.

SA-YO

Particular description of goods.—Jujubes.

Ser. No. 27,064. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRITTS & WIEHL COMPANY, Chattanooga, Tenn. Filed May 2, 1907.

OXYDENDRINE

Particular description of goods.—A Remedy for the Relief of Dropsies and a Stimulant and Tonic for the Heart in Both Tablet and Liquid Form.

Ser. No. 27,070. (CLASS 68. PUBLICATIONS.) JOHN A. MCGUIRE, Denver, Colo. Filed May 2, 1907.

OUTDOOR
LIFE

Particular description of goods.—Periodical Publications, as Monthly Magazines.

Ser. No. 27,072. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) NATIONAL LEAD COMPANY, Jersey City, N. J., and New York, N. Y. Filed May 2, 1907. Used ten years.

COLLIER COMPANY
SAINT LOUIS

Particular description of goods.—Castor-Oil.

Ser. No. 27,078. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) UNION OIL COMPANY, Providence, R. I. Filed May 2, 1907.

Particular description of goods.—Cotton-Seed Oil.

Ser. No. 27,121. (CLASS 47. CONFECTIONERY.) LITTLEFIELD & STEERE CO., Knoxville, Tenn. Filed May 4, 1907. Used ten years.

Steere's

Particular description of goods.—Candies of All Kinds.

Ser. No. 27,124. (CLASS 47. CONFECTIONERY.) THE ROBERT F. MACKENZIE CO., Cleveland, Ohio. Filed May 4, 1907.



Particular description of goods.—Candy.

Ser. No. 27,128. (CLASS 8. DETERGENTS.) HOWARD W. MORSE, Boston, Mass. Filed May 4, 1907.



Particular description of goods.—A Compound for Cleaning Fabrics and Gloves.

Ser. No. 27,167. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) PLINEY E. COOPER, Minneapolis, Minn. Filed May 6, 1907.



Particular description of goods.—Wheat-Flour.

Ser. No. 27,172. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) INDEPENDENT DRUG COMPANY, New York, N. Y. Filed May 6, 1907.

A HAIR IN EVERY DROP

Particular description of goods.—Tonics for the Scalp.

Ser. No. 27,191. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) FRANK H. CHAMBERLAIN, Boston, Mass. Filed May 7, 1907. Used ten years.



Particular description of goods.—Silk, Felt, Straw, Fur, Cloth, and Leather Hats and Caps, and Helmets Made of Felt, Cork, and Straw, and Hat-Bodies Covered With Cloth, Tweed, Silk, and Cotton.

Ser. No. 27,192. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) FRANK H. CHAMBERLAIN, Boston, Mass. Filed May 7, 1907. Used ten years.



Particular description of goods.—Silk, Felt, Straw, Fur, Cloth, and Leather Hats and Caps, and Helmets Made of Felt, Cork, and Straw, and Hat-Bodies Covered With Cloth, Tweed, Silk, and Cotton, Textile Collars and Cuffs, Shirts of all Kinds, Except Knitted, and Cloth, Leather, and Skin Gloves.

Ser. No. 27,193. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) FRANK H. CHAMBERLAIN, Boston, Mass. Filed May 7, 1907. Used ten years.



Particular description of goods.—Silk, Felt, Straw, Fur, Cloth, and Leather Hats and Caps, and Helmets Made of Felt, Cork, and Straw, and Hat-Bodies Covered With Cloth, Tweed, Silk, and Cotton.

Ser. No. 27,196. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) THE IMPERIAL NOVELTY COMPANY, Providence, R. I. Filed May 7, 1907.

Brainstorm

Particular description of goods.—Puzzles.

Ser. No. 27,200. (CLASS 10. FERTILIZERS.) NEW ORLEANS ACID AND FERTILIZER COMPANY, Union township, Hudson county, N. J. Filed May 7, 1907.



Particular description of goods.—Fertilizers.

Ser. No. 27,211. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GRAPE CAPSULE COMPANY, Allentown, Pa. Filed May 8, 1907.

GRAPIOL

Particular description of goods.—Medicines in Capsule Form for Amenorrhea, Dysmenorrhea, and Painful and Irregular Menstruation.

Ser. No. 27,213. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GRAPE CAPSULE COMPANY, Allentown, Pa. Filed May 8, 1907.

VAGIPOS

Particular description of goods.—Suppositories for the Treatment of Vaginitis, Metritis, Leucorrhea, Gonorrhea, Pruritis, and Catarrh.

Ser. No. 27,214. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GRAPE CAPSULE COMPANY, Allentown, Pa. Filed May 8, 1907.

EUCOL

Particular description of goods.—Medicines for Coughs, Colds, Bronchitis, and Pulmonary Consumption.

Ser. No. 27,216. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GRAPE CAPSULE COMPANY, Allentown, Pa. Filed May 8, 1907.

PERUSTOL

Particular description of goods.—Medicines in Capsule Form for Amenorrhea, Dysmenorrhea, and Painful and Delayed Menstruation.

Ser. No. 27,218. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GRAPE CAPSULE COMPANY, Allentown, Pa. Filed May 8, 1907.

SAN-METHYL

Particular description of goods.—Medicines in Capsule Form for Gonorrhea, Gonorrheal Rheumatism, Gleet, and Urethal Diseases Generally.

Ser. No. 27,220. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE C. S. MOREY MERCANTILE COMPANY, Denver, Colo. Filed May 8, 1907.



Particular description of goods.—Flavoring Extracts.

Ser. No. 27,229. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) WAPLES-PLATTER GROCER COMPANY, Denison, Fort Worth, and Dallas, Tex. Filed May 8, 1907.



Particular description of goods.—Canned Fruits and Vegetables, Sauer-Kraut, Dried Fruits, and Spices.

Ser. No. 27,235. (CLASS 8. DETERGENTS.) HOWARD W. MORSE, Boston, Mass. Filed May 8, 1907.

Magine

Particular description of goods.—A Compound for Cleaning Fabrics and Gloves.

Ser. No. 27,239. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) DUSTENE COMPANY, Buffalo, N. Y. Filed May 8, 1907.

DUSTENE

Particular description of goods.—A Liquid Preparation for Renewing and Preserving Varnished Surfaces.

Ser. No. 27,243. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HENRY SOLOMON WELLCOME, London, England. Filed May 8, 1907.

BIVO

Particular description of goods.—Medicated Wines.

Ser. No. 27,247. (CLASS 71. TOBACCO PRODUCTS.) AFRICAN CIGARETTE COMPANY, LIMITED, London, England. Filed May 9, 1907.



Particular description of goods.—Cigarettes.

Ser. No. 27,249. (CLASS 71. TOBACCO PRODUCTS.) AFRICAN CIGARETTE COMPANY, LIMITED, London, England. Filed May 9, 1907.



Particular description of goods.—Cigarettes.

Ser. No. 27,251. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) ALABAMA CONSOLIDATED COAL & IRON CO., Birmingham, Ala. Filed May 9, 1907. Used ten years.

ETOWAH

Particular description of goods.—Iron.

Ser. No. 27,255. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) HAAS-LIEBER GROCERY CO., St. Louis, Mo. Filed May 9, 1907.

Pilot

Particular description of goods.—Canned Peaches, Canned Tomatoes, and Flavoring Extracts.

Ser. No. 27,256. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) HAAS-LIEBER GROCERY CO., St. Louis, Mo. Filed May 9, 1907.

Pilot

Particular description of goods.—Baking-Powder.

Ser. No. 27,265. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) UNITED STATES WHIP COMPANY, Westfield, Mass. Filed May 9, 1907.



Particular description of goods.—Whips.

Ser. No. 27,266. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) WAPLES-PLATTER GROCER COMPANY, Denison, Fort Worth, and Dallas, Tex. Filed May 9, 1907.



Particular description of goods.—Syrup and Molasses.

Ser. No. 27,267. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) WAPLES-PLATTER GROCER COMPANY, Denison, Fort Worth, and Dallas, Tex. Filed May 9, 1907.



Particular description of goods.—Syrup and Molasses.

Ser. No. 27,272. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) ALFRED DU MONTIER, Alexandria, Va. Filed May 9, 1907.

PARATILE

Particular description of goods.—Metal Tiles.

Ser. No. 27,277. (CLASS 71. TOBACCO PRODUCTS.) JOHN F. O'DONNELL, Kansas City, Mo. Filed May 10, 1907.

CENTURY MAIDENS

Particular description of goods.—Cigars.

Ser. No. 27,279. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) H. E. BUCKLEN & COMPANY, Chicago, Ill. Filed May 10, 1907. Used ten years.



Particular description of goods.—Salves.

Ser. No. 27,280. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) NEW ULM ROLLER MILL COMPANY, New Ulm, Minn. Filed May 10, 1907.



Particular description of goods.—Wheat-Flour.

Ser. No. 27,292. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y. Filed May 10, 1907.



Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor and the Plants or Trees From Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 27,293. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) BORNE, SCRYMSER COMPANY, New York, N. Y. Filed May 10, 1907.



Particular description of goods.—Lubricating-Oils.

Ser. No. 27,294. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) FERNANDEZ VALDES & CO., Havana, Cuba. Filed May 11, 1907

NORMA

Particular description of goods.—Leather Boots, High and Low Cut Leather Shoes and Slippers.

Ser. No. 27,295. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) FERNANDEZ VALDES & CO., Havana, Cuba. Filed May 11, 1907.



Particular description of goods.—Leather Boots, High and Low Cut Leather Shoes and Slippers.

Ser. No. 27,297. (CLASS 69. SMOKERS' ARTICLES NOT INCLUDED IN CLASS 71.) ADOLPH FRANKAU & CO., LTD., London, England. Filed May 11, 1907.

NERÖID.

Particular description of goods.—Cigar and Cigarette Tubes.

Ser. No. 27,301. (CLASS 54. SEA FOODS.) THE MORGAN OYSTER COMPANY, San Francisco, Cal. Filed May 11, 1907.

SHOAL POINTS

Particular description of goods.—Fresh Oysters.

Ser. No. 27,303. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PAUL BROTHERS, Philadelphia, Pa. Filed May 11, 1907.

ROXIDE

Particular description of goods.—Leather Boots, Shoes, and Slippers.

Ser. No. 27,304. (CLASS 59. HOROLOGICAL INSTRUMENTS.) NEWMAN CLOCK COMPANY, Chicago, Ill. Filed May 11, 1907. Used ten years.

Newman

Particular description of goods.—Portable Watchmen's Clocks and Dials Therefor.

Ser. No. 27,332. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) STANDARD PLAYING CARD CO., Chicago, Ill. Filed May 13, 1907.

TEDDY BEAR

Particular description of goods.—Playing-Cards.

Ser. No. 27,335. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) FERNANDEZ VALDES & Co., Havana, Cuba. Filed May 13, 1907.

THE KARDENIO SHOE

Particular description of goods.—Leather Boots, High and Low Cut Leather Shoes and Slippers.

Ser. No. 27,346. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) ALTON MFG. CO., New York, N. Y. Filed May 13, 1907.

INVERTO

Particular description of goods.—Illuminating-Gas Burners.

Ser. No. 27,359. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) BILLINGS, CLAPP COMPANY, Boston, Mass. Filed May 14, 1907.

IMPERIAL

Particular description of goods.—Olive-Oil.

Ser. No. 27,379. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE CUSHMAN & DENISON MANUFACTURING COMPANY, New York, N. Y. Filed May 15, 1907.

CADO

Particular description of goods.—Pencils.

Ser. No. 27,390. (CLASS 8. DETERGENTS.) MEDICATED SUPPLIES Co., Peekskill, N. Y. Filed May 15, 1907.

MEDICURA

Particular description of goods.—Toilet Soap.

TRADE-MARKS

REGISTERED JUNE 11, 1907

63,137. SPOOL-COTTON, THREAD, AND SEWING-COTTON. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 23, 1907. Serial No. 26,166. PUBLISHED APRIL 16, 1907.

63,138. SPOOL-COTTON, THREAD, AND SEWING-COTTON. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 23, 1907. Serial No. 26,167. PUBLISHED APRIL 16, 1907.

63,139. SPOOL-COTTON, THREAD, AND SEWING-COTTON. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 23, 1907. Serial No. 26,169. PUBLISHED APRIL 16, 1907.

63,140. BITUMINOUS CONCRETE PAVEMENTS. THE BARBER ASPHALT PAVING COMPANY, Philadelphia, Pa.
Filed December 28, 1906. Serial No. 24,315. PUBLISHED APRIL 16, 1907.

63,141. PACKING MATERIALS FOR PREVENTING LEAKAGE OF FLUIDS. CHICAGO BAILEY COMPANY, Chicago, Ill.
Filed February 25, 1907. Serial No. 25,607. PUBLISHED APRIL 16, 1907.

63,142. WRITING AND PRINTING PAPER. GEORGE LA MONTE & SON, Nutley, N. J., and New York, N. Y.
Filed January 24, 1907. Serial No. 24,876. PUBLISHED APRIL 16, 1907.

63,143. MATCHES. ILLINOIS MATCH COMPANY, Joliet, Ill.
Filed February 12, 1907. Serial No. 25,268. PUBLISHED APRIL 16, 1907.

63,144. BUCKLES. MARVEL BUCKLE COMPANY, Baltimore, Md.
Filed January 28, 1907. Serial No. 24,947. PUBLISHED APRIL 16, 1907.

63,145. COAL. JAMES C. MCGREW, Lexington, Mo.
Filed March 16, 1907. Serial No. 26,015. PUBLISHED APRIL 16, 1907.

63,146. SOAP AND WASHING POWDER. SIEGEL COOPER & Co., Chicago, Ill.
Filed May 13, 1905. Serial No. 5,413. PUBLISHED APRIL 16, 1907.

63,147. VARNISHES, JAPANS, AND ENAMELS. STANDARD VARNISH WORKS, New York, N. Y.
Filed September 18, 1906. Serial No. 22,178. PUBLISHED APRIL 16, 1907.

63,148. CALCIMINE. TROY COLD WATER KALSOMINE COMPANY, Green Island, N. Y.
Filed March 21, 1907. Serial No. 26,132. PUBLISHED APRIL 16, 1907.

63,149. FRICTION-MATCHES. UNION MATCH Co., Duluth, Minn.
Filed February 23, 1906. Serial No. 17,293. PUBLISHED APRIL 16, 1907.

63,150. POLISHING-PAPER FOR METAL AND GLASS ARTICLES. ALBERT W. YOUNG, Philadelphia, Pa.
Filed February 12, 1907. Serial No. 25,280. PUBLISHED APRIL 16, 1907.

63,151. WOODEN OR BAMBOO CANES. ISRAEL EISENSTEIN, New York, N. Y.
Filed March 18, 1907. Serial No. 26,058. PUBLISHED APRIL 16, 1907.

63,152. BOOTS AND SHOES OF LEATHER. ENDICOTT-JOHNSON COMPANY, Endicott, N. Y.
Filed March 14, 1907. Serial No. 25,968 PUBLISHED APRIL 16, 1907.

63,153. RUBBER BOOTS AND SHOES. GOODYEAR RUBBER COMPANY, New York, N. Y.
Filed March 16, 1907. Serial No. 26,007. PUBLISHED APRIL 16, 1907.

63,154. SOLUBLE SULFUR COMPOUND. JAMES B. HIXON, New York, N. Y.
Filed February 25, 1907. Serial No. 25,594. PUBLISHED APRIL 16, 1907.

63,155. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,446. PUBLISHED APRIL 16, 1907.

63,156. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,447. PUBLISHED APRIL 16, 1907.

63,157. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,457. PUBLISHED APRIL 16, 1907.

63,158. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,471. PUBLISHED APRIL 16, 1907.

63,159. SMOKING-TOBACCO. J. N. WYLLIE & Co., Danville, Va.
Filed March 13, 1907. Serial No. 25,956. PUBLISHED APRIL 16, 1907.

63,160. LUBRICATING-OILS. ATLANTIC REFINING COMPANY, Franklin and Philadelphia, Pa.
Filed May 18, 1905. Serial No. 6,048. PUBLISHED APRIL 16, 1907.

63,161. DYESTUFF. BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany.
Filed February 7, 1907. Serial No. 25,177. PUBLISHED APRIL 16, 1907.

63,162. DYESTUFF. BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany.
Filed February 7, 1907. Serial No. 25,178. PUBLISHED APRIL 16, 1907.

63,163. CERTAIN ARTICLES OF CLOTHING. CELLULAR CLOTHING COMPANY, LIMITED, London, England.
Filed December 31, 1906. Serial No. 24,363. PUBLISHED APRIL 16, 1907.

63,164. REMEDIES FOR CERTAIN DISEASES. LOUIS J. COTE, Berlin, N. H.
Filed March 13, 1907. Serial No. 25,940. PUBLISHED APRIL 16, 1907.

63,165. REMEDIES FOR CERTAIN DISEASES. LOUIS J. COTE, Berlin, N. H.
Filed March 13, 1907. Serial No. 25,941. PUBLISHED APRIL 16, 1907.

63,166. LEDGER-INDEX BRISTOL-PAPER. DANFORTH L. JONES & COMPANY, New York, N. Y.
Filed April 13, 1906. Serial No. 18,757. PUBLISHED APRIL 16, 1907.

63,167. LEDGER-INDEX BRISTOL-PAPER. DANFORTH L. JONES & COMPANY, New York, N. Y.
Filed April 13, 1906. Serial No. 18,758. PUBLISHED APRIL 16, 1907.

63,168. REMEDY FOR DYSPEPSIA. F. W. DIEMER, Springfield, Mo.
Filed March 6, 1907. Serial No. 25,798. PUBLISHED APRIL 16, 1907.

63,169. PERIODICAL JOURNALS. JOSEPH H. FRANCIS, Chicago, Ill.
Filed March 13, 1907. Serial No. 25,950. PUBLISHED APRIL 16, 1907.

63,170. KNIT GOODS IN THE PIECE. FRENCH & WARD, New York, N. Y., and West Stoughton, Mass.
Filed March 19, 1907. Serial No. 26,073. PUBLISHED APRIL 16, 1907.

63,171. COTTON SHEETINGS, SHIRTINGS, AND DRILLS. THE HENRIETTA MILLS Henrietta and Caroleen, N. C.
Filed May 16, 1906. Serial No. 19,596. PUBLISHED APRIL 16, 1907.

63,172. GIN. P. HOPPE, Schiedam, Netherlands.
Filed March 20, 1907. Serial No. 26,093. PUBLISHED APRIL 16, 1907.

63,173. GIN. P. HOPPE, Schiedam, Netherlands.
Filed March 20, 1907. Serial No. 26,094. PUBLISHED APRIL 16, 1907.

63,174. DRIERS FOR PAINTS AND VARNISHES. LEFRANC & Co., Paris, France.
Filed October 30, 1906. Serial No. 23,001. PUBLISHED APRIL 16 1907.

63,175. STEEL PENS. LEVISON & BLYTHE MANUFACTURING COMPANY, St. Louis, Mo.
Filed March 18, 1907. Serial No. 26,041. PUBLISHED APRIL 16, 1907.

63,176. CERTAIN CLEANSING PREPARATION. ALVINE W. LYON, Baltimore, Md.
Filed December 15, 1906. Serial No. 24,067. PUBLISHED APRIL 16, 1907.

63,177. TOBACCO, CIGARS, AND CIGARETTES. MAISON PIERRE BARDOU-JOB, Perpignan, France.
Filed June 6, 1906. Serial No. 20,091. PUBLISHED APRIL 16, 1907.

63,178. REMEDY FOR AFFECTIONS AND DISEASES OF THE KIDNEYS. PETTIT MEDICINE COMPANY, Minneapolis, Minn.
Filed March 19, 1907. Serial No. 26,074. PUBLISHED APRIL 16, 1907.

63,179. WHISKY. RIEGER & LINDLEY, Salt Lake City, Utah.
Filed August 28, 1906. Serial No. 21,776. PUBLISHED APRIL 16, 1907.

63,180. PAPER BAGS. THE UNION BAG & PAPER COMPANY, New York, N. Y.
Filed March 18, 1907. Serial No. 26,049. PUBLISHED APRIL 16, 1907.

63,181. BOND, LEDGER, LINEN, AND WRITING PAPERS. UNION CARD & PAPER Co., New York, N. Y.
Filed March 20, 1907. Serial No. 26,113. PUBLISHED APRIL 16, 1907.

63,182. COTTON PIECE GOODS. WARE SHOALS MFG. Co., Ware Shoals, S. C.
Filed March 11, 1907. Serial No. 25,913. PUBLISHED APRIL 16, 1907.

63,183. REAMERS, DRILLS, AND COUNTERSINKS. WILEY & RUSSELL MFG. Co., Greenfield, Mass.
Filed October 9, 1905. Serial No. 13,424. PUBLISHED APRIL 16, 1907.

63,184. STEAM FIRE-ENGINES. AMERICAN-LA FRANCE FIRE ENGINE Co., Elmira, N. Y.
Filed December 14, 1906. Serial No. 24,009. PUBLISHED APRIL 16, 1907.

63,185. UNFINISHED SOLID AND TUBULAR CAST BARS. THE BRASS FOUNDRY AND HEATING Co., Peoria, Ill.
Filed December 29, 1906. Serial No. 24,332. PUBLISHED APRIL 16, 1907.

63,186. TYPE-WRITER RIBBONS AND CARBON-PAPER. THE CARTER'S INK COMPANY, Boston, Mass., and New York, N. Y.
Filed March 20, 1907. Serial No. 26,102. PUBLISHED APRIL 16, 1907.

63,187. PERFORATED MUSIC SHEETS OR ROLLS. THE CHASE & BAKER COMPANY, Buffalo, N. Y.
Filed March 16, 1907. Serial No. 26,008. PUBLISHED APRIL 16, 1907.

63,188. PAPER BAGS. THE CLEVELAND-AKRON BAG Co., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,835. PUBLISHED APRIL 16 1907.

63,189. PAPER BAGS. THE CLEVELAND-AKRON BAG Co., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,843. PUBLISHED APRIL 16, 1907.

63,190. AXES. THE COLLINS COMPANY, Collinsville, Conn.
Filed March 7, 1907. Serial No. 25,813. PUBLISHED APRIL 16, 1907.

63,191. AXES. THE COLLINS COMPANY, Collinsville, Conn.
Filed March 7, 1907. Serial No. 25,814. PUBLISHED APRIL 16, 1907.

63,192. STEEL. COLUMBIA STEEL COMPANY, Hartford, Conn.
Filed January 21, 1907. Serial No. 24,801. PUBLISHED APRIL 16, 1907.

63,193. CERTAIN MEDICINAL AND TOILET PREPARATIONS. GEO. B. CURTIS, Chicago, Ill.
Filed March 16, 1907. Serial No. 26,009. PUBLISHED APRIL 16, 1907.

63,194. HAIR-PINS, COMBS, AND HAIR ORNAMENTS. FISHEL, NESSLER & COMPANY, New York, N. Y.
Filed February 21, 1907. Serial No. 25,511. PUBLISHED APRIL 16, 1907.

63,195. BOOKS OF POETRY AND PROSE. G. P. PUTNAM'S SONS, New York, N. Y.
Filed March 1. 1907. Serial No. 25,682. PUBLISHED APRIL 16, 1907.

63,196. CERTAIN GLASSWARE. GILL BROTHERS COMPANY, Steubenville, Ohio.
Filed March 6, 1907. Serial No. 25,799. PUBLISHED APRIL 16, 1907.

63,197. DOCUMENT-FILES. THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio.
Filed February 19, 1907. Serial No. 25,407. PUBLISHED APRIL 16, 1907.

63,198. BAKING-POWDER. KENTON BAKING POWDER COMPANY, Cincinnati, Ohio.
Filed February 23, 1907. Serial No. 25,535. PUBLISHED APRIL 16, 1907.

63,199. CERTAIN ARTICLES MADE OF PLUMBAGO OR GRAPHITE. THE MORGAN CRUCIBLE COMPANY, LIMITED Battersea, London, England.
Filed June 22, 1906. Serial No. 20,493. PUBLISHED APRIL 16, 1907.

63,200. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,444. PUBLISHED APRIL 16, 1907.

63,201. CANDY. ROSSETER AND BURKHARDT, Los Angeles, Cal.
Filed February 18, 1907. Serial No. 25,382. PUBLISHED APRIL 16, 1907.

63,202. CERTAIN MEASURING INSTRUMENTS. SARCO FUEL SAVING & ENGINEERING Co., New York, N. Y.
Filed March 4, 1907. Serial No. 25,754. PUBLISHED APRIL 16, 1907.

63,203. LAXATIVES. STEARNS & CURTIUS, New York, N. Y.
Filed March 19, 1907. Serial No. 26,081. PUBLISHED APRIL 16, 1907.

63,204. WHISKY. STEINHARDT BROS. & Co., New York N. Y.
Filed February 25, 1907. Serial No. 25,599. PUBLISHED APRIL 16, 1907.

63,205. CIGARS. JOHN F. SUNTYCH, St. Paul, Nebr.
Filed January 7, 1907. Serial No. 24,508. PUBLISHED MARCH 19, 1907.

63,206. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed February 12, 1907. Serial No. 25,254. PUBLISHED APRIL 16, 1907.

63,207. SPOOL-COTTON, THREAD, AND SEWING-COTTON. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,715. PUBLISHED APRIL 16, 1907.

63,208. SPOOL-COTTON, THREAD, AND SEWING-COTTON. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,717. PUBLISHED APRIL 16, 1907.

63,209. SPOOL-COTTON, THREAD, AND SEWING-COTTON. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,718. PUBLISHED APRIL 16, 1907.

63,210. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 4, 1907. Serial No. 25,719. PUBLISHED APRIL 16, 1907.

63,211. SPOOL-COTTON, SEWING-COTTON, AND THREAD. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 6, 1907. Serial No. 25,783. PUBLISHED APRIL 16, 1907.

63,212. INSULATING MATERIAL CONTAINING CORK. ARMSTRONG CORK Co., Pittsburg, Pa.
Filed February 23, 1907. Serial No. 25,523. PUBLISHED APRIL 16, 1907.

63,213. PAPER BAGS. THE CLEVELAND-AKRON BAG Co., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,833. PUBLISHED APRIL 16, 1907.

63,214. PAPER BAGS. THE CLEVELAND-AKRON BAG Co., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,844. PUBLISHED APRIL 16, 1907.

63,215. PAPER BAGS. THE CLEVELAND-AKRON BAG Co., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,845. PUBLISHED APRIL 16, 1907.

63,216. FROGS, CROSSINGS, SWITCHES, AND SWITCH-STANDS. THE CLEVELAND FROG AND CROSSING COMPANY. Cleveland, Ohio.
Filed November 26, 1906. Serial No. 23,587. PUBLISHED APRIL 16, 1907.

63,217. FROGS, CROSSINGS, SWITCHES, AND SWITCH-STANDS. THE CLEVELAND FROG AND CROSSING COMPANY, Cleveland, Ohio.
Filed November 26, 1906. Serial No. 23,588. PUBLISHED APRIL 16, 1907.

63,218. SOAPS FOR TOILET, LAUNDRY, AND HOUSEHOLD USE, AND SHAVING-SOAP. COLGATE & Co., New York, N. Y.
Filed January 15, 1907. Serial No. 24,655. PUBLISHED APRIL 16, 1907.

63,219. SOAPS. COLGATE & Co., New York, N. Y.
Filed February 1, 1907. Serial No. 25,042. PUBLISHED APRIL 16, 1907.

63,220. AXES. THE COLLINS COMPANY, Collinsville, Conn.
Filed March 7, 1907. Serial No. 25,808. PUBLISHED APRIL 16, 1907.

63,221. AXES. THE COLLINS COMPANY, Collinsville, Conn.
Filed March 7, 1907. Serial No. 25,809. PUBLISHED APRIL 16, 1907.

63,222. AXES. THE COLLINS COMPANY, Collinsville, Conn.
Filed March 7, 1907. Serial No. 25,815. PUBLISHED APRIL 16, 1907.

63,223. CIGARS. ABRAHAM DAVIS, Flint, Mich.
Filed February 16, 1907. Serial No. 25,354. PUBLISHED APRIL 16, 1907.

63,224. RECONSTRUCTIVE TONIC. THE DAVIS CHEMICAL COMPANY, Denver, Colo.
Filed March 16, 1907. Serial No. 26,010. PUBLISHED APRIL 16, 1907.

63,225. RUGS AND CARPETS. THE EDEN MANUFACTURING Co., Langhorne and Philadelphia, Pa.
Filed February 2, 1907. Serial No. 25,059. PUBLISHED APRIL 16, 1907.

63,226. RUGS AND CARPETS. THE EDEN MANUFACTURING Co., Langhorne and Philadelphia, Pa.
Filed February 2, 1907. Serial No. 25,060. PUBLISHED APRIL 16, 1907.

63,227. RUGS AND CARPETS. THE EDEN MANUFACTURING Co., Langhorne and Philadelphia, Pa.
Filed February 2, 1907. Serial No. 25,061. PUBLISHED APRIL 16, 1907.

63,228. WHISKY, GIN, AND BRANDY. FIGGE-DOYLE Co., Milwaukee, Wis.
Filed March 6, 1907. Serial No. 25,806. PUBLISHED APRIL 16, 1907.

63,229. KNIT UNDERWEAR. FRANK BROS. & Co., New York, N. Y.
Filed March 12, 1907. Serial No. 25,928. PUBLISHED APRIL 16, 1907.

63,230. BOOKCASES, FILING-CABINETS, DOCUMENT-BOXES, CUPBOARDS, AND WARDROBES. THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio.
Filed February 19, 1907. Serial No. 25,401. PUBLISHED APRIL 16, 1907.

63,231. AIR-BRAKE HOSE. HEWITT RUBBER COMPANY Buffalo, N. Y.
Filed March 4, 1907. Serial No. 25,737. PUBLISHED APRIL 16, 1907.

63,232. OVERALLS AND JUMPERS. THE HOOKER CORSER & MITCHELL COMPANY, Brattleboro, Vt.
Filed January 29, 1907. Serial No. 24,988. PUBLISHED APRIL 16, 1907.

63,233. WHIPS. THE HORSE WHIP Co., Westfield, Mass.
Filed March 13, 1907. Serial No. 25,951. PUBLISHED APRIL 16, 1907.

63,234. COAL. HOWE & DAVID, Findlay, Ohio.
Filed February 27, 1907. Serial No. 25,635. PUBLISHED APRIL 16, 1907.

63,235. WOMEN'S LEATHER SHOES AND OXFORDS. THE KELLAM-GOLLER-LAND-Co., Lynn, Mass.
Filed March 4, 1907. Serial No. 25,738. PUBLISHED APRIL 16, 1907.

63,236. BOYS', YOUTHS', AND MEN'S LEATHER SHOES. R. H. LANE & COMPANY, Toledo, Ohio.
Filed March 4, 1907. Serial No. 25,739. PUBLISHED APRIL 16, 1907.

63,237. SILK PIECE GOODS. LEERBURGER & HESSLEIN, New York, N. Y., assignors to The Holmes Silk Company, Paterson, N. J., a Corporation of New Jersey.
Filed July 25, 1906. Serial No. 21,160. PUBLISHED FEBRUARY 19, 1907.

63,238. LEATHER BOOTS AND HIGH AND LOW CUT LEATHER SHOES. LEONARD, SHAW & DEAN, Boston, Mass.
Filed February 13, 1907. Serial No. 25,290. PUBLISHED APRIL 16, 1907.

63,239. DENTIFRICE USED IN TAKING CARE OF THE TEETH, GUMS, AND MOUTH. LEWIS GEORGE OLMSTED, Peru, Ill.
Filed March 16, 1907. Serial No. 26,021. PUBLISHED APRIL 16, 1907.

63,240. DRESS AND NEGLIGÉE SHIRTS AND TEXTILE COLLARS AND CUFFS THEREFOR. M. E. SMITH & Co., INC., Omaha, Nebr.
Filed May 16, 1905. Serial No. 5,836. PUBLISHED APRIL 16, 1907.

63,241. LEATHER SHOES. NOYES-NORMAN SHOE Co., St. Joseph, Mo.
Filed February 2, 1907. Serial No. 25,064. PUBLISHED APRIL 16, 1907.

63,242. LEATHER BOOTS, SHOES, AND SLIPPERS. PAUL BROTHERS, Philadelphia, Pa.
Filed March 15, 1907. Serial No. 25,993. PUBLISHED APRIL 16, 1907.

63,243. PIANOS AND PIANO-PLAYERS. ROTH & ENGELHARDT, New York, N. Y.
Filed February 25, 1907. Serial No. 25,598. PUBLISHED APRIL 16, 1907.

63,244. CERTAIN JEWELRY AND PRECIOUS-METAL WARE. SCHLESS, BROD & Co., New York, N. Y.
Filed January 10, 1907. Serial No. 24,561. PUBLISHED APRIL 16, 1907.

63,245. CERTAIN BUILDING MATERIALS. EMIL SEQUIN, EUROLITH-WERKE VORMALS C. SEQUIN-BRONNER, Zurich, Switzerland.
Filed November 1, 1905. Serial No. 14,172. PUBLISHED APRIL 16, 1907.

63,246. CERTAIN WHITE GOODS. SHERMAN & SONS COMPANY, New York, N. Y.
Filed October 12, 1905. Serial No. 13,526. PUBLISHED APRIL 16, 1907.

63,247. CERTAIN SILVERWARE AND JEWELRY. SIMONS BRO. & Co., Philadelphia, Pa.
Filed February 6, 1907. Serial No. 25,164. PUBLISHED APRIL 16, 1907.

63,248. CERTAIN ELECTRICAL SUPPLIES. SPRAGUE ELECTRIC COMPANY, New York, N. Y.
Filed June 10, 1905. Serial No. 7,874. PUBLISHED APRIL 16, 1907.

63,249. JEWELRY. LOUIS STERN & Co., Providence, R. I.
Filed February 27, 1907. Serial No. 25,640. PUBLISHED APRIL 16, 1907.

63,250. GAS STOVES AND RANGES AND FITTINGS AND PARTS THEREFOR. WILLIAM M. CRANE Co., New York, N. Y.
Filed May 3, 1905. Serial No. 4,160. PUBLISHED APRIL 16, 1907.

63,251. WHISKY. HOWARD C. WOODBURY, Boston, Mass.
Filed March 20, 1907. Serial No. 26,117. PUBLISHED APRIL 16, 1907.

63,252. ALE, PORTER, AND BROWN STOUT. D. G. YUENGLING & SON, Pottsville, Pa.
Filed May 16, 1906. Serial No. 19,585. PUBLISHED JUNE 26, 1906.

63,253. OLIVES AND OLIVE-OIL. AMERICAN OLIVE COMPANY, Los Angeles, Cal.
Filed December 4, 1906. Serial No. 23,751. PUBLISHED APRIL 16, 1907.

63,254. SODA-WATER AND MINERAL WATER. ANDREW LOHR BOTTLING Co., Cairo, Ill.
Filed February 14, 1907. Serial No. 25,308. PUBLISHED APRIL 16, 1907.

63,255. SIGNALING APPARATUS. JOHN ASTROM, Milwaukee, Wis.
Filed December 24, 1906. Serial No. 24,249. PUBLISHED APRIL 16, 1907.

63,256. CHEMICALS USED IN REDUCING, DISCHARGING, AND BLEACHING. BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany.
Filed February 7, 1907. Serial No. 25,179. PUBLISHED APRIL 16, 1907.

63,257. DYESTUFF. BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany.
Filed February 7, 1907. Serial No. 25,180. PUBLISHED APRIL 16, 1907.

63,258. DYESTUFF AND CHEMICALS USED IN REDUCING, DISCHARGING, AND BLEACHING. BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany.
Filed February 7, 1907. Serial No. 25,181. PUBLISHED APRIL 16, 1907.

63,259. CERTAIN PAINTS AND PAINTERS' MATERIALS. LEO H. BAEKELAND, Yonkers, N. Y.
Filed February 15, 1907. Serial No. 25,392. PUBLISHED APRIL 16 1907.

63,260. SOCKS. BOWMAN ELDRIDGE & COMPANY, Portland, Oreg.
Filed April 17, 1905. Serial No. 2,052. PUBLISHED APRIL 16, 1907.

63,261. MELONS. BRAWLEY CANTALOUPE GROWERS ASSOCIATION, Brawley, Cal.
Filed March 7, 1907. Serial No. 25,823. PUBLISHED APRIL 16, 1907.

63,262. COTTON PIECE GOODS. FRED. BUTTERFIELD & Co., New York, N. Y.
Filed February 21, 1907. Serial No. 25,499. PUBLISHED APRIL 16, 1907.

63,263. CERTAIN CLOTHING. THE CLIO WAIST Co., New York, N. Y.
Filed January 30, 1907. Serial No. 25,014. PUBLISHED APRIL 16, 1907.

63,264. LIQUID AND POWDER PERFUMES AND TOILET WATERS. COLGATE & Co., New York, N. Y.
Filed February 1, 1907. Serial No. 25,041. PUBLISHED APRIL 16, 1907.

63,265. TABLETS FOR PURIFYING THE BREATH. TOMPKINS C. DELAVAN, New York, N. Y.
Filed December 20, 1906. Serial No. 24,349. PUBLISHED APRIL 16, 1907.

63,266. CANNED SALMON AND CANNED CLAMS. DOWNING TAYLOR Co., Springfield, Mass.
Filed January 3, 1907. Serial No. 24,402. PUBLISHED APRIL 16, 1907.

63,267. REMEDY FOR VENEREAL DISEASES. ITHAMAR T. DUNCAN, Decatur, Tex.
Filed December 30, 1905. Serial No. 15,787. PUBLISHED APRIL 16, 1907.

63,268. PRINTED AND DYED TEXTILE FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Eddystone and Philadelphia, Pa.
Filed July 15, 1905. Serial No. 10,367. PUBLISHED MARCH 13, 1906.

63,269. HEMATIN ALBUMEN. FRIEDRICH FEUSTELL NFL., Altona, Germany.
Filed February 2, 1907. Serial No. 25,073. PUBLISHED APRIL 16, 1907.

63,270. BLUING. LUTHER FORD & Co., Minneapolis, Minn.
Filed January 25, 1907. Serial No. 24,898. PUBLISHED APRIL 16, 1907.

63,271. REMEDY FOR CERTAIN DISEASES. FORD REMEDY Co., Wichita, Kans.
Filed December 10, 1906. Serial No. 23,900. PUBLISHED APRIL 16, 1907.

63,272. CREAM FOR SHAVING. FRANÇOIS HABY, Berlin, Germany.
Filed September 20, 1906. Serial No. 22,200. PUBLISHED APRIL 16, 1907.

63,273. LIQUID MEDICAL COMPOUNDS FOR STOMACH AND BOWEL DISORDERS. GEORGE HANSELL, Philadelphia, Pa.
Filed January 17, 1906. Serial No. 16,259. PUBLISHED APRIL 16, 1907.

63,274. MEAT-PRESERVATIVE. B. HELLER & Co., Chicago, Ill.
Filed June 15, 1905. Serial No. 8,238. PUBLISHED APRIL 16, 1907.

63,275. WRAPPING, TISSUE, NEWS, BOOK, AND PRESS PAPERS. THE J. L. N. SMYTHE COMPANY, Philadelphia, Pa.
Filed February 2, 1907. Serial No. 25,084. PUBLISHED APRIL 16, 1907.

63,276. PERIODICALS. THE JEWELERS CIRCULAR PUBLISHING Co., New York, N. Y.
Filed December 5, 1906. Serial No. 23,780. PUBLISHED APRIL 16, 1907.

63,277. COFFEE. JOHN BLAUL'S SONS COMPANY, Burlington, Iowa.
Filed March 20, 1907. Serial No. 26,088. PUBLISHED APRIL 16, 1907.

63,278. COFFEE. JOHN BLAUL'S SONS COMPANY, Burlington, Iowa.
Filed March 20, 1907. Serial No. 26,089. PUBLISHED APRIL 16, 1907.

63,279. SPARK-PLUGS FOR EXPLOSIVE-ENGINES. THE K. W. IGNITION COMPANY, Cleveland, Ohio.
Filed February 18, 1907. Serial No. 25,373. PUBLISHED APRIL 16, 1907.

63,280. BED AND WRAPPER BLANKETS. THOS. KELLY & Co., Boston, Mass.
Filed December 22, 1906. Serial No. 24,227 PUBLISHED APRIL 16, 1907.

63,281. CURE FOR HEADACHE. D. MACN. MACKAY, Goldsboro, N. C.
Filed February 13 1906. Serial No. 16,981. PUBLISHED APRIL 16, 1907.

63,282. CERTAIN TEXTILES. MERRIMACK MANUFACTURING COMPANY, Lowell, Mass.
Filed December 6, 1906. Serial No. 23,824. PUBLISHED FEBRUARY 12, 1907.

63,283. REMEDIES FOR CERTAIN DISEASES. MICROLINE MEDICINE COMPANY, Dallas, Tex.
Filed February 20, 1907. Serial No. 25,438. PUBLISHED APRIL 16, 1907.

63,284. CONDENSED MILK. MOHAWK CONDENSED MILK Co., St. Johnsville, N. Y.
Filed February 2, 1907. Serial No. 25,078. PUBLISHED APRIL 16, 1907.

63,285. REMEDY FOR GRIPPE. JAMES THOMAS MORGAN, Springfield, Mo.
Filed September 22, 1906. Serial No. 22,250. PUBLISHED APRIL 16, 1907.

63,286. BISCUITS. NATIONAL BISCUIT COMPANY, New York, N. Y.
Filed February 7, 1906. Serial No. 16,813. PUBLISHED APRIL 16, 1907.

63,287. FEVER AND AGUE REMEDIES. C. H. & F. L. OSGOOD, Norwich, Conn.
Filed January 16, 1907. Serial No. 24,700. PUBLISHED APRIL 16, 1907.

63,288. VINEGAR. PRICE & LUCAS CIDER AND VINEGAR COMPANY, Louisville, Ky.
Filed February 26, 1907. Serial No. 25,627. PUBLISHED APRIL 16, 1907.

63,289. STOMACH-REGULATORS. RHEGULUS COMPANY, La Grange, Ill.
Filed August 24, 1905. Serial No. 11,959. PUBLISHED APRIL 16, 1907.

63,290. REMEDY FOR CERTAIN DISEASES. VALENTINE SCHMIDT, San Francisco, Cal.
Filed April 10, 1906. Serial No. 18,655. PUBLISHED APRIL 16, 1907.

63,291. REMEDIES FOR LUNG AND THROAT DISEASES. WILLIAM J. SIBLEY, Rochester, N. Y.
Filed March 7, 1907. Serial No. 25,833. PUBLISHED APRIL 16 1907.

63,292. APPARATUS FOR THE VISION OF PANORAMIC VIEWS. SOCIÉTÉ ANONYME PERIPHOTE ET PHOTORAMA, Paris, France.
Filed September 20, 1906. Serial No. 22,204. PUBLISHED APRIL 16, 1907.

63,293. MEDICINAL OIL. STALLMAN & FULTON COMPANY, New York, N. Y.
Filed January 3, 1907. Serial No. 24,416. PUBLISHED FEBRUARY 19, 1907.

63,294. RAT AND ROACH EXTERMINATOR. STEARNS ELECTRIC PASTE Co., Buffalo, N. Y.
Filed November 10, 1906. Serial No. 23,245. PUBLISHED APRIL 16, 1907.

63,295. WHISKY. OSCAR TAUSSIG, New York, N. Y.
Filed May 12, 1905. Serial No. 5,330. PUBLISHED MAY 8, 1906.

63,296. SUGAR-CURED MEATS TENNESSEE PACKING & PROVISION COMPANY, Nashville, Tenn.
Filed May 23, 1905. Serial No. 6,376. PUBLISHED APRIL 16, 1907.

63,297. MILK, CREAM, AND BUTTER. THOMPSON AND OTT, New York, N. Y.
Filed November 26, 1906. Serial No. 23,619. PUBLISHED APRIL 16, 1907.

63,298. CANDY. TRIGG CANDY COMPANY, Chattanooga, Tenn.
Filed March 18, 1907. Serial No. 26,048. PUBLISHED APRIL 16, 1907.

63,299. TALKING-MACHINES AND RECORDS THEREFOR. VICTOR TALKING MACHINE COMPANY, Camden, N. J.
Filed January 9, 1907. Serial No. 24,543. PUBLISHED APRIL 16, 1907.

63,300. CANNED FRUITS AND VEGETABLES. WAYNE COUNTY PRESERVING COMPANY, Newark, N. Y.
Filed November 27, 1906. Serial No. 23,637. PUBLISHED APRIL 16, 1907.

63,301. PLOWS. WIARD PLOW COMPANY, Batavia, N. Y.
Filed February 19, 1907. Serial No. 25,428. PUBLISHED APRIL 16, 1907.

63,302. COFFEE AND TEA. A. J. SHELDON Co., New York, N. Y.
Filed March 15, 1907. Serial No. 25,996. PUBLISHED APRIL 16, 1907.

63,303. CERTAIN CHEMICALS. BADISCHE ANILIN & SODA FABRIK, Ludwigshafen-on-the-Rhine, Germany.
Filed April 10, 1906. Serial No. 18,672. PUBLISHED APRIL 16, 1907.

63,304. GIN, WHISKY, RUM, BRANDY, AND LIQUEURS. BOORD & SON (INCORPORATED), London, England.
Filed August 14, 1906. Serial No. 21,535. PUBLISHED APRIL 16, 1907.

63,305. CERTAIN RUBBER ARTICLES. CONTINENTAL-CAOUTCHOUC-UND GUTTA-PERCHA-COMPAGNIE, Hanover, Germany.
Filed July 23, 1906. Serial No. 21,687. PUBLISHED APRIL 16, 1907.

63,306. GLUCOSE. CORN PRODUCTS REFINING COMPANY, Jersey City, N. J., and New York, N. Y.
Filed March 13, 1907. Serial No. 25,938. PUBLISHED APRIL 16, 1907.

63,307. GLUCOSE. CORN PRODUCTS REFINING COMPANY, Jersey City, N. J., and New York, N. Y.
Filed March 13, 1907. Serial No. 25,939. PUBLISHED APRIL 16, 1907.

63,308. OXYGENATED TALCUM POWDER. NATHAN E. GOLDBERG, Brooklyn, N. Y.
Filed April 24, 1906. Serial No. 19,041. PUBLISHED OCTOBER 23, 1906.

63,309. CERTAIN FOODS. THE GREAT ATLANTIC & PACIFIC TEA COMPANY, New York, N. Y.
Filed March 2, 1907. Serial No. 25,690. PUBLISHED APRIL 16, 1907.

63,310. STOGIES. HOWARD HAZLETT, Wheeling, W. Va., administrator of Augustus Pollack, deceased.
Filed February 21, 1907. Serial No. 25,496. PUBLISHED APRIL 16, 1907.

63,311. STOGIES. HOWARD HAZLETT, Wheeling, W. Va., administrator of Augustus Pollack, deceased.
Filed February 21, 1907. Serial No. 25,498. PUBLISHED APRIL 16, 1907.

63,312. BITTERS. DR. J. G. B. SIEGERT & HIJOS, Port of Spain, Trinidad.
Filed May 18, 1905. Serial No. 6,625. PUBLISHED MARCH 27, 1906.

63,313. CANNED SALMON. KELLEY-CLARKE Co., Seattle, Wash.
Filed November 6, 1906. Serial No. 23,138. PUBLISHED APRIL 16, 1907.

63,314. MIXED PAINTS AND VARNISHES. "LE RIPOLIN," (SOCIÉTÉ ANONYME FRANÇAISE DE PEINTURES LAQUÉES ET D'ENDUITS SOUS-MARINS, PROCÉDÉS LEFRANC & BRIEGLEB RÉUNIS,) Paris, France.
Filed August 29, 1905. Serial No. 12,078. PUBLISHED APRIL 16, 1907.

63,315. MALT WHISKY. MACKENZIE BROS., Ross-Shire, Scotland.
Filed October 20, 1906. Serial No. 22,802. PUBLISHED APRIL 16, 1907.

63,316. WHEAT-FLOUR. THE NEW CENTURY MILLING COMPANY, Dallas, Tex.
Filed March 15, 1907. Serial No. 25,992. PUBLISHED APRIL 16, 1907.

63,317. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25, 449. PUBLISHED APRIL 16, 1907.

63,318. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle. Wash.
Filed February 20, 1907. Serial No. 25,452. PUBLISHED APRIL 16. 1907.

63,319. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,455. PUBLISHED APRIL 16, 1907.

63,320. CONDENSED MILK. PACIFIC COAST CONDENSED MILK CO., Seattle, Wash.
Filed February 23, 1907. Serial No. 25,559. PUBLISHED APRIL 16, 1907.

63,321. CANNED LOBSTERS AND CANNED SALMON. PORTLAND PACKING COMPANY, Portland, Me.
Filed November 22, 1906. Serial No. 14,907 PUBLISHED APRIL 16, 1907.

63,322. CERTAIN FOODS. REISS & BRADY, New York, N. Y.
Filed October 6, 1906. Serial No. 22,574. PUBLISHED APRIL 16, 1907.

63,323. BUTTER AND CHEESE. SIEGEL COOPER & CO, Chicago, Ill.
Filed May 13, 1905. Serial No. 5,431. PUBLISHED APRIL 16, 1907.

63,324. CANNED FRUITS. SIEGEL COOPER & CO., Chicago, Ill.
Filed May 13, 1905. Serial No. 5,435. PUBLISHED APRIL 16, 1907.

TRADE-MARKS CANCELED.

54,312. BOOTS, SHOES, AND SLIPPERS OF LEATHER OR TEXTILE MATERIAL, OR BOTH, AND SOLES THEREFOR. MORSE AND ROGERS, New York, N. Y.
Registered June 26, 1906. Canceled May 29, 1907.

LABELS

REGISTERED JUNE 11, 1907.

13,597.—*Title:* "FAMOUS STACK." (For Cigars.) OTTO A. GALLUN, Milwaukee, Wis. Filed May 20, 1907.

13,598.—*Title:* "NON-SUCH." (For Punch.) NON-SUCH PURE FOOD COMPANY, Atlanta, Ga. Filed May 16, 1907.

13,599.—*Title:* "NON-SUCH." (For Ginger-Ale.) NON-SUCH PURE FOOD COMPANY, Atlanta, Ga. Filed May 16, 1907.

13,600.—*Title:* "BUCHU GIN." (For Gin.) SIGMUND HOCHSTADTER, New York, N. Y. Filed May 22, 1907.

13,601.—*Title:* "ANNANDALE RYE." (For Whisky.) THE PARKER-BLAKE CO. LTD., New Orleans, La. Filed May 16, 1907.

13,602.—*Title:* "TWIN STAR." (For Maple-Syrup.) CLARENCE A. CRANE, Warren, Ohio. Filed May 22, 1907.

13,603.—*Title:* "FOSFORAT." (For a Rat, Mouse, and Vermin Exterminator.) THE FOSFORAT CO., Cleveland, Ohio. Filed May 10, 1907.

13,604.—*Title:* "SO-EASY STRAW HAT CLEANER." (For a Straw-Hat Cleaner.) ADNER LABORATORY COMPANY, Philadelphia, Pa. Filed May 20, 1907.

13,605.—*Title:* "ORIENTAL." (For Brooms.) LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed May 9, 1907.

13,606.—*Title:* "OSOLYTE." (For Brooms.) LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed May 9, 1907.

13,607.—*Title:* "THE NEW GAME, TEDDY'S BEAR HUNT." (For a Game.) SPOTSWOOD D. BOWERS, Bridgeport, Conn. Filed May 22, 1907.

13,608.—*Title:* "ROSETTE IRONS." (For Irons.) ALFRED ANDRESEN & CO., Minneapolis, Minn. Filed May 18, 1907.

PRINTS

REGISTERED JUNE 11, 1907.

2,027.—*Title:* "THE FAMOUS BEARS." (For Jewelry.) PAYE AND BAKER MANUFACTURING COMPANY, North Attleboro, Mass. Filed May 18, 1907.

2,028.—*Title:* "THE MATADOR WITH A SWORD KILLS THE BULL." (For Proprietary Medicines.) MI-CRO-LINE MEDICINE CO., Dallas, Tex. Filed May 20, 1907.

2,029.—*Title:* "PANTS CHART." (For Men's and Boys' Trousers.) ED. V. PRICE & COMPANY, Chicago, Ill. Filed October 12, 1906.

2,030.—*Title:* "SOUVENIR-CARD, KAISER SUITS AND CLOAKS." (For General Wearing-Apparel.) ARTHUR H. KAISER, New York, N. Y. Filed May 9, 1907.

2,031.—*Title:* "SOLID RIVETS." (For Rivets.) EDWIN B. STIMPSON, New York, N. Y. Filed May 16, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

RICHARDS *v.* BURKHOLDER.

Decided October 12, 1906.

INTERFERENCE—REDUCTION TO PRACTICE—SIMPLE DEVICE—ORIGINAL DEVICE NOT PRODUCED.

Where the device in issue is said to belong to that class of simple devices the mere production of which without test is regarded as an actual reduction to practice, but the device originally made was not produced in evidence, and the testimony tending to establish the identity of a later device, which was introduced in evidence, with the original device is so general as to leave it uncertain whether this later device is of the same strength, size, shape, and proportion as the original, *Held* that actual reduction to practice is not proved.

APPEAL from Examiners-in-Chief.

DOOR-HANGER.

Messrs. Bond, Adams, Pickard & Jackson for Richards.

Messrs. Offield, Towle & Linthicum for Burkholder.

MOORE, *Assistant Commissioner:*

This is an appeal by Richards from a decision of the Examiners-in-Chief affirming the decision of the Examiner of Interferences and awarding priority of invention to Burkholder on the following issue:

1. In a device of the class described, the combination with a hollow track opened in the rear for the reception of supporting-brackets, of supporting-brackets having spring-heads adapted to fit the inner contour of said hollow track, substantially as described.
2. In a device of the class described, the combination with a hollow track opened in the rear for the reception of supporting-brackets, of a supporting-bracket made of a single piece of metal and having a spring-head adapted to fit the inner contour of said hollow track, substantially as described.
3. The combination with a hollow track having a longitudinal opening in one side of a supporting-bracket having portions doubled to form a head sprung into said hollow track and arms extending transversely through said opening in said track, substantially as described.
4. A supporting-bracket for a hollow slotted track, comprising spring-arms having attaching ends, and a connection between their opposite ends adapted to allow normal expansion of said arms, and forming a head to fit with the track, substantially as described.

The interference was declared between Richards's application, filed November 10, 1904, and a patent granted to Burkholder, dated October, 4, 1904, on an application filed October 21, 1903. Under these circumstances it is necessary for Richards to establish beyond a reasonable doubt a prior reduction to practice or a prior conception coupled with diligence. Both of the lower tribunals held that he had failed to sustain this burden.

The issue relates to a track for sliding doors, consisting of a tube slotted in the rear and a supporting-bracket having a spring-head fitting the inner contour of the tube and adapted to slide therein.

I fully concur in the reasoning and in the conclusions reached by the Examiners-in-Chief, and it is deemed unnecessary to discuss the testimony further, except to state the view which I take of the evidence relating to the two devices on which appellant relies for a reduction to practice.

It is claimed that a full-sized device embodying the invention was made in 1902 and placed on a shavings-shed which stood in the factory-yard, where it remained in satisfactory operation for at least a number of months. Richards testified that this device consisted of several brackets and about four or six feet of tubular slotted track involving the construction in issue, upon which a door of the ordinary size was hung.

D. W. Simpson, the president of the company which employed Richards at the time the invention was made, Le Roy Simpson, who was also an officer of the company, and George Wheeler, an employee closely associated with Richards, all claim to have seen this device on the shavings-shed; but their testimony is so conflicting as to attendant circumstances as to leave the question in much doubt. Richards states that this door was placed on the shed "regardless of closing openings." (Richards, X-Q. 200.) Le Roy Simpson claims that it closed a small opening. (Le Roy Simpson, Q. 11.) Wheeler claims to have seen it at one time, some time after July, 1902, but knows very little about it. (Wheeler, Q. 25.) D. W. Simpson states that he saw this test on the shavings-shed; but upon being asked how the brackets were fitted to the track he said they were riveted thereto. In a later answer (Q. 25) he corrects this statement by saying that he understood the question to be how the first brackets (meaning the brackets first put on the market) were fitted to the tubular track. There seems to be no ambiguity about the question; but the explanation might be accepted were it not for the fact that another witness, Tolman, who moved the shavings-shed in 1903, testified that the only track which he saw on the shed at that time was riveted to its sustaining-brackets. (Tolman, Q. 47.) Moreover, this witness states that there was no opening adjacent the track, (Q. 45,) and on this point his testimony is in agreement with that of the inventor, but opposed to that of Le Roy Simpson.

It is also claimed that the evidence shows a successful test of the invention by means of a device set up in Richards's workroom. Richards testified (Q. 16) that he put up in his room a full-sized piece of track about three feet long with brackets to fit the inside of the track, hung a small door about twelve by twenty-four inches (X-Q. 67) thereon, and attached a set of weights

to the door. This device, he states, remained for some time, and was seen by Wheeler and D. W. Simpson. Wheeler testified (Q. 30) that he saw in Richards's room a small model consisting of a small piece of track mounted on a board, having a hanger to fit the track. He describes the construction of the device no further than to say that the hanger had a block about a foot and a half long attached to it. (Qs. 30–32.) With respect to this device D. W. Simpson says:

I first saw a mounted model in Mr. Richards's room composed of a small door about two feet wide and about a foot and a half long. The testing of the hanger and track occurred some time later. * * * This test, to which I refer, was made by attaching a door on the side of a building. (Q. 18.)

Not only does this testimony leave the question of the precise construction of the track and bracket used in this device in doubt, but it utterly fails to prove that the device was subjected to the tests necessary to constitute a reduction to practice.

It is further claimed by appellant that the testimony clearly proves that one or more brackets like "Richards's Exhibit Richards's Bracket" were actually constructed not later than the summer of 1902, and it is contended that even though it be conceded that there is not sufficient proof of an actual test of the invention the device belongs to that class of simple devices the mere making of which is sufficient to give to the inventor the benefit of an actual reduction to practice. This contention is unsound. In the first place, the original device is not produced in evidence, and the witnesses do not specifically describe the structure which they claim to have seen in 1902. The general character of their testimony is illustrated by the following questions and answers:

Q. 7. Please look at the bracket I now hand you, marked "Richards's Exhibit Richards's Bracket," and state when you first saw a bracket of that shape and construction.
A. About September 3, 1902. (Richards's Record, p. 37.)
Q. 18. Did you see such bracket and track in any other place than on that shavings-shed at the time you returned from Europe, if so, please state where?
A. I saw them in Mr. Richards's department; he had a number of hand-made samples around the bench, hand-made brackets. (Richards's Record, p. 38.)
Q. 8. Please look at the bracket I now hand you marked "Richards's Exhibit Richards's Bracket," and state when you first saw a bracket of that form and construction, and the circumstances under which you saw it.
A. I saw this style of bracket first as I recollect it, in the spring, early spring of 1903, this form of bracket, however, was shown to me by Mr. Richards being made of tin. It was shown to me in his workroom. (Richards's Record, p. 57.)
Q. 17. You have testified that you first saw a bracket of this form made of tin; when did you first see one made of iron or steel?
A. A few days later. (Richards's Record, p. 58.)

This testimony is too general in character to be accepted as proof beyond a reasonable doubt that a bracket of the same strength, size, shape, and proportion as the exhibit in evidence was made at the time stated. In the second place, it is doubtful whether or not the construction in issue belongs to that class of simple devices which require no actual test to determine their fitness to withstand commercial use. This doubt is increased by the fact that the inventor himself and the officers of the company which employed him, who had had long experience with devices of this character, deemed it necessary to test the device before placing the same on the market or applying for a patent thereon. The testimony of all the witnesses clearly shows that the device alleged to have been placed on the shavings-shed was placed there solely for the purpose of testing it and that the device alleged to have been set up in Richards's room was set up for the same purpose.

The decision of the Examiners-in-Chief is affirmed.

EX PARTE SACKS.

Decided February 6, 1907.

TRADE-MARK—THE WORD "UNION" GEOGRAPHICAL AND DESCRIPTIVE.

The word "Union" refused registration as a trade-mark for heel-plates for boots and shoes on the ground that it is a geographical term, also for the reason that it is commonly used as a descriptive term to designate the goods made by members of a trade-union.

ON APPEAL.

TRADE-MARK FOR BOOTS AND SHOES.

Mr. W. P. Preble, Jr., for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the word "Union" as a trade-mark for heel-plates for boots and shoes.

The Examiner refused registration on the ground that the mark is geographial in character or indicates that the goods are union-made.

The action of the Examiner is believed to be correct.

The first definition of "Union" given in *The Century Cyclopedia of Names* is "The United States of America." The registration of appellant's mark is refused in view of the above definition, of section 5 of the Trade-Mark Act of February 20, 1905, which provides that no mark consisting merely of "a geographical name or term, shall be registered under the terms of this act," and of the decisions of the courts holding such terms as "Columbia," (*Columbia Mill Company* v. *Alcorn*, 150 U. S., 460,) "Old Country" and "Our Country," (*Wrisley Company* v. *Iowa Soap Company*, 122 Fed. Rep., 796,) and "Continental" (*Continental Insurance Company* v. *Continental Fire Association*, 101 Fed. Rep., 255) to be geographical and not capable of appropriation as trade-marks.

In *Columbia Mill Company* v. *Alcorn*, *supra*, the United States Supreme Court said:

The appellant was no more entitled to the exclusive use of the word "Columbia" as a trade-mark than he would have been to the use of the word "America," or "United States," or "Minnesota," or "Minneapolis." These merely geographical names cannot be appropriated and made the subject of an exclusive property.

The word "Union" should also be refused registration on the ground that the word is descriptive of a characteristic of the goods. The words "Union" or "Union Made" are commonly applied to goods to indicate that they are made by members of the trade-union to distinguish them from goods made by non-union workmen. As applied to heel-plates the inference would be that they are made by union labor.

That it is the practice of this Office to refuse to register the word "Union" as a trade-mark appears from the cases of *ex parte The Union Metallic Cartridge Company* (70 MS. Dec., 400) and *Martin H. Taylor*, (71 MS. Doc., 480,) where the word "Union" was refused registration as a trade-mark for cartridges and cartridge-belts and for smoking and chewing tobacco, respectively.

The decision of the Examiner of Trade-Marks is affirmed.

THE ELLISON-HARVEY CO. *v.* MONARCH.

Decided March 19, 1907.

TRADE-MARK—INTERFERENCE IN FACT—BULL'S HEAD AND ENTIRE BULL.

Where the registrant's mark comprised the picture of the head of a bull and the words "Doherty's Short Horn" and the applicant's mark presented for registration consisted only of a full-length picture of a bull, although the words "Old Durham Rye" appear on the label, *Held* that inasmuch as it is probable that the goods of both parties would be known as "bull" whisky interference in fact exists. (*Coleman* v. *Crump*, 70 N. Y., 573, 580, cited.)

ON APPEAL.

TRADE-MARK FOR WHISKY.

Mr. Howard A. Coombs for The Ellison-Harvey Co.
Mr. Arthur E. Wallace for Richard Monarch.

ALLEN, *Commissioner:*

This is an appeal by The Ellison-Harvey Co. from the decision of the Examiner of Trade-Marks denying its motion to dissolve the interference on the ground of non-interference in fact.

Richard Monarch has registered as a trade-mark for whisky the picture of the head of a bull and the words "Doherty's Short Horn."

The Ellison-Harvey Co. shows as its trade-mark for the same goods the full-length representation of a bull.

The Examiner of Trade-Marks held that the distinguishing feature of each mark is the representation of the bull and that it is immaterial whether merely the head of the bull is shown or the full length of the bull. In my opinion the decision of the Examiner of Trade-Marks is correct.

Appellant's label contains in addition to the picture of an entire bull the words "Old Durham Rye" and other reading matter. It contends that—

goods of this character are always known by their name, and a purchaser desiring "Doherty's Short Horn" would not be misled into buying "Old Durham."

Appellant, however, has applied for the registration of a mark consisting merely of the full-length picture of a bull. Whether this picture is intended to represent a Durham bull or a short-horn bull does not appear from the mark, and it is doubtful whether an expert could tell from the representation.

In *Coleman* v. *Crump* (70 N. Y., 573, 580) an injunction was granted restraining defendant from infringing plaintiff's trade-mark consisting of the figure of a bull's head for mustard, whereby this article was known as "bull-head mustard," although there were certain points of difference between the bulls' heads used by the respective parties. In this case the court said:

Slight variations in the figure of the head, by which an expert might detect a resemblance to an animal of a different descent or breed in the simulated trade-mark from that which might be supposed to have been in the eye of the artist in designing the original, cannot avail the defense. There is a general resemblance in all the bull's heads printed and made exhibits in this action. Any difference is colorable, and would not prevent the ordinary purchaser from being deceived.

(See also *Johnson & Johnson* v. *Bauer & Black*, 82 Fed. Rep., 662, and cases therein cited.)

The fact that one mark shows merely the head of a bull while the other shows the entire bull is not thought to be material or to be a distinction which the purchasing public would appreciate. (*Corbin & Son Company* v. *Miller, Kohlhepp, Giese and Company*, 98 O. G., 1485.) It seems probable that the goods of both parties would be known as "bull" whisky. It is believed that the use of the two marks upon the same class of goods would be likely to cause confusion in the trade and deceive purchasers.

The decision of the Examiner of Trade-Marks is affirmed.

EX PARTE L. & A. SCHARFF.

Decided April 13, 1907.

1. TRADE-MARK—"SPRING HILL" ANTICIPATED BY "SPRING VALLEY."

Held that the words "Spring Valley" as a trade-mark for whisky so nearly resembles a prior registered mark which is described as a "crescent" or "new moon" and the words "Spring Valley" as to cause confusion in trade.

2. SAME—ANTICIPATION OF "TEN-YEAR" MARKS.

The allegation of ten years' exclusive use next preceding the passage of the act of February 20, 1905, does not confer registrability upon the mark if it so nearly resembles a registered or known trade-mark owned and in use by another upon merchandise of the same descriptive properties as to be likely to cause confusion in trade.

ON APPEAL.

TRADE-MARK FOR WHISKY.

Messrs. Mason, Fenwick & Lawrence for the applicants.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register the words "Spring Hill" as a trade-mark for whisky in view of a prior registration by E. Walters, June 25, 1872, No. 873, of a trade-mark the essential features of which are described as "the crescent" or "new moon" and the words "Spring Valley."

The trade-mark of the applicants is presented for registration under the ten-year proviso of the act of 1905. The allegation of ten years' exclusive use next preceding the passage of that act does not, however, confer registrability upon the mark if it so nearly resembles a registered or known trade-mark owned and in use by another and appropriated to merchandise of the same descriptive properties as to be likely to cause confusion in the mind of the public. As stated in my decision in the *International Silver Company* v. *William A. Rogers, Limited*, (124 O. G., 318:)

When the differences between marks are insignificant, trifling, or not readily distinguishable, the marks are the same for all practical purposes, and it is not reasonable to believe that the intent of the law is to register on the ground of exclusive use where practically the same mark has been used by others.

In the present case the initial word of each mark, which by virtue of its position is the most prominent feature thereof, is the same, and it is believed that the words "Hill" and "Valley" in the respective marks do not so clearly distinguish the marks that a purchaser using ordinary care would not be likely to mistake one for the other. The fact that the representation of a crescent appears in the registered mark is immaterial, since the name "Spring Valley" is the predominating feature by which the goods would be known.

The decision of the Examiner of Trade-Marks is affirmed.

EX PARTE DODGE MANUFACTURING COMPANY.

Decided April 18, 1907.

TRADE-MARK—REPRESENTATION OF MERCHANDISE WITH MERE NAME OF AN INDIVIDUAL APPEARING THEREON—NOT REGISTRABLE.

When the trade-mark shown in the drawing comprises the representation of an ingot of bearing metal of a particular form with the name "Dodge" cast thereon and similar bars of metal are shown in prior registrations, *Held* that since the applicant can have no trade-mark in the form or appearance of the merchandise or in the mere name of an individual appearing thereon the mark is not registrable.

ON APPEAL.

TRADE-MARK FOR BABBITT OR BEARING METAL.

Mr. George E. Waldo and *Messrs. Davis & Davis* for the applicant.

ALLEN, *Commissioner:*

This is an appeal from the action of the Examiner of Trade-Marks refusing to register a trade-mark.

The mark as shown upon the applicant's drawing consists of the name "Dodge" cast upon a bar of metal of a particular form. The Examiner calls attention to the registration of Hagenfield, No. 14,232, April 5, 1887, which shows a bar of metal of similar form to that of the applicant. Another bar of this form is shown by the registration of the New York Smelting and Refining Company, No. 23,057, May 16, 1893. The Examiner states in his statement upon the appeal in part as follows:

The mark claimed is the name of an individual and it is submitted that the impressing of the letters of the name on the blocks of an ingot of bearing metal in the common way in which marks are impressed on blocks of bearing metal is not a particular or distinctive display of the mark. It is believed that the mark should not be registered as a technical trade-mark. In this connection it is noted that the name is the trade-mark and not the block of metal bearing the name. In other words, if the block of metal, which forms no part of the trade-mark, were removed from the drawing merely the name of an individual in an ordinary style of lettering would remain.

The position taken by the Examiner is correct. That the applicant can have no trade-mark in the form or appearance of the merchandise is well settled. Nothing more than this is presented for registration in this case but the name of the individual.

The action of the Examiner refusing registration is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

MIEL *v.* YOUNG.

Decided May 7, 1907.

1. INTERFERENCE—CONSTRUCTION OF CLAIM IN ISSUE.

A claim should be given the broadest interpretation which it will support, and limitations should not be imported into the claim from the specification to meet the exigencies of the particular situation in which the claim may stand at a given time.

2. SAME—SAME—LIMITATIONS NOT IMPORTED FROM PATENT SPECIFICATION.

Where in a stone-saw construction the claim calls for "removable means for reinforcing the lower ends of the blades during the initial part of a cutting operation" and it appears that the device of Miel, a patentee, was designed to prevent the blades from "chattering or wabbling" laterally, while Young's structure is for the purpose of enabling the blades of the saw "to stand the strain for their work" and to support the saw longitudinally, *Held* that there is no limitation in the claim, which refers broadly to reinforcing means, which necessitates the reading into the claim of structural features found only in the specification of the patent.

Mr. T. Walter Fowler and *Mr. R. C. Mitchell* for Miel.

Mr. Albert E. Dieterich for Young.

MCCOMAS, *J.:*

In this case the Assistant Commissioner of Patents awarded priority of invention to James S. Young in this interference, the subject-matter of which is a stone-saw, and the single issue is:

In a stone-saw, the combination of a saw-beam, a series of long bearing-blades carried thereby, and removable means for reinforcing the lower ends of the blades during the initial part of a cutting operation.

On December 31, 1904, Young, the appellee, filed his application for a patent for a stone-saw and while it was pending, on April 24, 1905, the appellant Miel filed his application for a patent for a stone-saw also and on November 14, 1905, obtained a patent therefor. The Examiner of Interferences awarded priority of invention to Young, the senior party, on the record, no testimony having been taken by either party to the interference. Miel is the patentee and the single count of the issue is in terms the first claim of his patent. On November 20, 1905, Young filed an amendment containing his interfering claim. The Examiners-in-Chief concluded that the invention of the issue is an issue which Young had not disclosed in his application and that Miel is entitled to prevail on the question of priority because of the failure of Young to produce evidence showing that he was in possession of the invention of the issue prior to the filing date of Miel and, therefore, reversed the decision of the Examiner of Interferences in Young's favor.

Upon appeal the Assistant Commissioner of Patents reversed the decision of the Examiners-in-Chief and found for Young, and Miel appealed to this court.

The invention here relates to means for supporting the blades of stone-saws which consist of numerous strips of steel projecting perpendicularly from a beam. These blades are several feet in length and the ends of the blades, forcing an abrasive material against the stone, effect the sawing. Because of their length these blades tend to vibrate when sawing until having entered the stone, the sides of the kerf prevent them from vibrating laterally. To prevent vibration, Miel provided rigid blocks between the blades, the blocks being notched at the ends to receive the edges of the blades, the blocks being suspended from the beam by screw-threaded bars so adapted in position as to be shifted by means of nuts on the rods. When it becomes necessary to remove or raise the blocks, whose thickness is greater than the kerf formed by the saw, Miel's specification says he may taper the blades and thus draw the blocks up to the narrower portion of the space between the blades in order that they may press upon the edges of the blades and rigidly unite them.

Young unites the blades of his saw by thin strips of metal having hooked ends which pass through apertures in the blades, the apertures being perpendicular to the faces of the blades except as to a slight inclined portion at one end. The hooks on the supporting members of the end blades are threaded and provided with a nut by means of which all of the supporting members may be put under tension. The supporting-strips are thin and so arranged that they can enter the kerf. Young's specification states that the slots in the blade are slightly beveled to receive the upset or rivet-over portion of the inserted strip end. The drawing of Young's application shows that the strips are not riveted to the blades in the sense in which "rivet" is ordinarily used. The ends of the strips are not upset to form a head but the hooked end of the strip is sprung into the slot in the blade correspondingly shaped so that the Commissioner concludes, the resiliency of the metal would permit the springs to be forced into the slots and out again. Indeed Young specifically states that the strips can be moved from one position to another wherefore the Commissioner concludes that he has a right to make the claim in issue. That Young's reinforcing device may not be removable as readily as Miel's and that it is not designed to be removed after

the initial stage of the cutting is completed is unimportant. If the device be removable, as the claim specifies, it suffices even though Young's device need not be removed during the entire sawing operation. We concur with the Commissioner that there is no limitation in the claim which refers broadly to reinforcing means which give weight to the claim that Miel's device was designed to prevent the blades from "chattering or wabbling" laterally, while Young's structure is for the purpose of enabling the blades of the saw "to stand the strain for their work," and to support the saw longitudinally.

This claim should be given the broadest interpretation which it will support and we should not strive to import limitations from the specification to meet the exigencies of the particular situation in which the claim may stand at a given time. Although Miel is a patentee, if the terms of his claim do not in their ordinary and natural meaning define his invention according to his intent he may apply for a reissue.

The reasonable presumption is that an inventor intends to protect his invention broadly; and consequently the courts have often said that the scope of a claim should not be restricted beyond the fair and ordinary meaning of the words, save for the purpose of saving it. * * * The senior party who has a patent may not be heard to ask that his claim be rewritten so that he may prevail in an interference. He would be in somewhat better position had his patent not been issued, or had he surrendered it for reissue. (*Andrews* v. *Nilson*, 27 App. D. C., 454. See *Podlesak* v. *McInnerney*, 126 O. G., 2127; 26 App. D. C., 399.)

We concur with the Commissioner that upon this issue we should not read into it limitations not within it, limitations found only in the specification of the appellee's patent. Young has fully disclosed the invention defined by the terms of the interference.

The decision of the Commissioner of Patents must be affirmed, and the clerk of this court is directed to certify the proceedings in this court to the Commissioner of Patents according to law.

Court of Appeals of the District of Columbia.

RICHARDS *v.* BURKHOLDER.

Decided May 7, 1907.

INTERFERENCE—PRIORITY—CONCEALMENT OF INVENTION.

If there be concealment or suppression of the invention, the field lies open to be occupied by a more diligent, though later, inventor, who when he has not only put the invention into public use, but has also obtained a patent for it, cannot be divested of his right to hold the field except upon proof beyond a reasonable doubt that the earlier and more negligent inventor has not gone back to an abandoned device or a device suppressed or concealed in order to establish a prior right.

Mr. John L. Jackson and *Mr. C. E. Pickard* for Richards.

Mr. C. C. Linthicum for Burkholder.

MCCOMAS, *J.:*

This is an appeal by Richards from the decision of the Assistant Commissioner of Patents awarding priority of invention to Burkholder upon the following issues:

1. In a device of the class described, the combination with a hollow track opened in the rear for the reception of supporting-brackets, of supporting-brackets having spring-heads adapted to fit the inner contour of said hollow track, substantially as described.

2. In a device of the class described, the combination with a hollow track opened in the rear for the reception of supporting-brackets, of a supporting-bracket made of a single piece of metal and having a spring-head adapted to fit the inner contour of said hollow track, substantially as described.

3. The combination with a hollow track having a longitudinal opening in one side of a supporting-bracket having portions doubled to form a head sprung into said hollow track and arms extending transversely through said opening in said track, substantially as described.

4. A supporting-bracket for a hollow slotted track, comprising spring-arms having attaching ends, and a connection between their opposite ends adapted to allow normal expansion of said arms, and forming a head to fit with the track, substantially as described.

The subject-matter of the issue is a supporting-bracket and track for door-hangers, the bracket being composed of a strip of plain metal, doubled to form a circular head, with arms extending transversely therefrom, and provided with attaching ends to be secured to a building, and the head being adapted to fit the inner surface of a pipe or tube, slotted in the rear, and affording a track for the wheel of the door-hanger.

A month after Burkholder had secured a patent on the invention, and a year after Burkholder had filed his application, Richards appeared and filed his application and alleged in his preliminary statement disclosure and reduction to practice July 10, 1902, which date would anticipate Burkholder, who claims conception of the invention in January, 1903, his patent having been granted October 4, 1904.

The three tribunals of the Patent Office concurred in awarding priority to Burkholder, all of them agreeing that the testimony on behalf of Richards fails to prove beyond a reasonable doubt that Richards conceived the invention and reduced it to practice prior to Burkholder's reduction to practice in 1903 and all of them base the decision upon the same ground, namely, that Richards failed to sustain the burden of proof resting upon him as to the fact of reduction to practice. We concur in the reasoning and in the conclusion of the three tribunals. Therefore, we need not consider whether or not as a matter of law a bracket, which Richards claims to have made in 1902, was a reduction to practice, since it has not been proven beyond a reasonable doubt that such a bracket was made in that year.

As the Examiners-in-Chief well say:

Even if it be assumed that Richards conceived the invention in 1902, and then made some experiments his total abandonment of those experiments and neglect and loss of the physical things then made, together with the inaction of himself and assignee for two years justify us in concluding that he abandoned his efforts as unsatisfactory and that he did not in fact make a successful reduction to practice. (*Warner* v. *Smith* 84 O. G., 311; 13 App. D. C., 111.)

All the testimony tends to show that the device claimed to have been set up in the workroom of Richards and the device claimed to have been placed on the door of a shed were so placed in each instance for the purpose of testing the two devices on which the appellant relied to prove a reduction to practice.

If we assume that Richards satisfactorily proved the making of the bracket in question in July, 1902, we should not overrule the decision appealed from for Richards was not prevented by any compelling circumstance from giving his invention to the public by placing it on the market, or filing an application for a patent. If there be concealment or suppression of the invention, the field lies open to be occupied by a more diligent, though later inventor, who, when he has not only put the invention into public use but has also obtained a patent for it, cannot be divested of his right to hold the field except upon proof beyond a reasonable doubt that the earlier and more negligent inventor has not gone back to an abandoned device or a device suppressed or concealed in order to establish a prior right.

We refrain from reviewing the voluminous testimony sufficiently reviewed in the three tribunals below but we also are impressed that the inactivity of Richards for two years during which period Burkholder entered the field, and ignorant of the claim of Richards independently produced the invention, put it upon the market, applied for and obtained the patent is fatal to the former claim.

Richards was in the employment of the Wilcox Manufacturing Company of Aurora, Ill., and claims to have produced this invention for that company. Although Richards claims he completed and tested his invention in the summer of 1902 and explained it to the officers of that company no steps were taken to ascertain whether it was patentable until the summer of 1903, nor was any attempt made to put it on the market until the summer of 1904 and the application was not filed until November 10, 1904, after the patent had issued to Burkholder and after the Burkholder bracket had been advertised and a company had proceeded to take orders and ship it in quantities.

Burkholder's record date is October 21, 1903. Richards's record date is November 10, 1904. Apart from this priority of the appellee, the testimony of many witnesses and documentary evidence as well, show that Burkholder conceived the invention, disclosed it to others, promptly placed it on the market, and seasonably applied for the patent granted him.

It is true a number of witnesses support Richards's claim that he conceived the invention about July, 1902, and testify their knowledge of one or the other of the two devices of Richards and that his invention was made while he was in the room in the northwest corner of the second floor of the building of the Wilcox Manufacturing Company, but on behalf of Burkholder there is much testimony tending to show that Richards was moved from that room as early as April, 1902, and that he could not have made the invention in it after the first of July in that year as he claims. Credible witnesses testify that they saw the model made by Richards located in that room which others with opportunity to see it say it was not there. Again credible witnesses testify that they saw the device applied to the shed described by witnesses, while other witnesses with ample opportunity to observe testify that it was not there. Of course, in each instance this negative testimony is far less weighty than the positive testimony of witnesses in behalf of Richards, who claim to have seen the different devices in the two different places. It tends, however, to lessen the degree of conviction produced by Richards's whole case.

We have carefully examined the testimony and upon the issue of fact which is the only issue in this interference, we agree with all of the tribunals below that Richards has failed to prove his case beyond a reasonable doubt. As we have said in *Orcutt* v. *McDonald*, (27 App. D. C., 228,) and in many other cases, where the tribunals of the Patent Office all agree in deciding the same way on questions of fact, this court will not reverse such a decision unless it clearly appears that the decision was against the weight of the evidence. In this case where we fully agree with them and where the only question raised upon this appeal which needs to be considered is the issue of fact, we refrain from reviewing the facts and content ourselves with concurring in the conclusion of the Commissioner of Patents, whose judgment therefore must be affirmed.

The decision of the Commissioner of Patents must be affirmed, and the clerk of this court is directed to certify the proceedings in this court to the Commissioner of Patents according to law.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 6, 1907.

The Ohio Chemical Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The Norwich Pharmacal Company, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Ohio Chemical Company, of Columbus, Ohio. The notice of said declaration mailed by the Patent Office in the usual manner to the said Ohio Chemical Company at its known address, 573 North High street, Columbus, Ohio, has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Ohio Chemical Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 4, 1907.

Ida M. Rew, her assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Otis Company, of Ware, Mass., for registration of a trade-mark and a trade-mark registered to Ida M. Rew, of New York, N. Y., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Ida M. Rew and to her attorney of record having been returned, with the information that the registrant cannot be found and that the attorney of record is dead, notice is hereby given to the said Ida M. Rew, her assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	.....	New Hampshire	3	.....
Alaska, District of	.....	.....	New Jersey	23	6
Arizona Territory	2	.....	New Mexico Ter'y	.....	.....
Arkansas	2	.....	New York	76	29
California	19	2	North Carolina	3	.....
Colorado	10	.....	North Dakota	3	.....
Connecticut	8	4	Ohio	52	18
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Florida	2	.....	Oregon	6	.....
Georgia	7	1	Panama	.....	.....
Hawaii Territory	.....	.....	Pennsylvania	45	7
Idaho	3	.....	Porto Rico	.....	.....
Illinois	39	11	Rhode Island	9	.....
Indian Territory	.....	.....	South Carolina	2	.....
Indiana	17	3	South Dakota	2	.....
Iowa	11	1	Tennessee	1	1
Kansas	6	1	Texas	10	1
Kentucky	4	1	Utah	3	1
Louisiana	4	2	Vermont	2	.....
Maine	3	4	Virginia	4	.....
Maryland	3	4	Washington	4	2
Massachusetts	27	15	West Virginia	.....	1
Michigan	16	4	Wisconsin	20	3
Minnesota	8	4	Wyoming	1	.....
Mississippi	2	.....	U. S. Army	.....	.....
Missouri	14	10	U. S. Navy	.....	.....
Montana	1	.....			
Nebraska	5	2	Total to citizens of the United States	491	138
Nevada	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	.....	.....	Natal	.....	.....
Austria-Hungary	5	.....	Netherlands	2	.....
Belgium	1	.....	Newfoundland	.....	.....
Brazil	.....	.....	New South Wales	.....	.....
British West Indies	.....	.....	New Zealand	3	.....
Canada	6	.....	Norway	.....	2
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	.....	.....
Cuba	.....	.....	Scotland	1	.....
Denmark	1	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	19	10	Sweden	4	.....
France	13	3	Switzerland	1	1
Germany	18	3	Transvaal, South Africa	1	.....
Haiti	.....	.....	Victoria	1	.....
India	1	.....	Western Australia	.....	.....
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Japan	.....	.....	Total to citizens of foreign countries	79	19
Java	.....	.....			
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Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 8, 1907.

Frederic B. Cochran, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Richmond Cedar Works, of Richmond, Va., an application of the Sturges & Burn Manufacturing Company, of Chicago, Ill., for registration of a trade-mark, and a trade-mark registered to Frederic B. Cochran, of New York, N. Y. The attorneys of record for said Frederic B. Cochran state that they have been unable to locate their client, and no street address for this party is on file in the case.

Notice is therefore hereby given to Frederic B. Cochran, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Commissioner.*

Renewal of Forfeited Cases.

A petition for the renewal of a forfeited application need not be signed by the inventor or assignee, but may be signed by the attorney.

A power of attorney in the original application authorizing an attorney to transact all business in the Patent Office in connection with the application construed to be of sufficient scope to include the signing of a petition for renewal and the subsequent prosecution of the application. (*Ex parte Agee*, 101 O. G., 1609.)

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business June 11, 1907.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	May 29	May 13	143
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	May 29	May 6	306
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	May 27	May 27	138
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 27	May 13	269
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	May 27	May 7	331
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	May 24	May 10	403
327	XVIII. Steam-Engineering, etc ...	May 23	Apr. 25	202
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 22	May 24	234
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	May 22	May 11	216
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 22	Apr. 15	591
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	May 21	Apr. 15	273
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 18	May 13	135
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May 18	Apr. 20	240
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	May 15	May 9	265
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	May 15	May 3	234
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 14	Apr. 27	278
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	May 14	Apr. 19	300
109	XVI. Telegraphy and Telephony..	May 13	May 11	243
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	May 13	May 6	333
378	XXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May 10	Apr. 13	443
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172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	May 8	May 3	229
152	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	May 6	May 10	210

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Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	May 6	Apr. 8	444
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	May 4	Apr. 19	205
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	May 2	May 11	353
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	May 1	Apr. 8	409
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	Apr. 27	Apr. 26	351
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Apr. 27	Apr. 13	460
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	Apr. 25	Apr. 10	458
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	Apr. 23	Apr. 1	719
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 22	Apr. 13	446
332	X. Carriages and Wagons.....	Apr. 18	Apr. 18	623
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122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Apr. 18	Mar. 20	472
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Apr. 17	Apr. 8	419
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 12	Mar. 19	444
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Apr. 8	Apr. 5	711

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159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
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	Designs	June 6	June 1	18
	Labels and Prints			....

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 8, 1907.

Jacob Ross, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Ferdinand Westheimer & Sons, of St. Joseph, Mo., for registration of a trade-mark and a trade-mark registered to Jacob Ross, of Chippewa Falls, Wis., and the attorneys of record for said Jacob Ross state that they have been unable to locate their client.

Notice is therefore hereby given to Jacob Ross, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

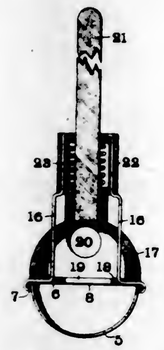
This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Commissioner.*

PATENTS

GRANTED JUNE 18, 1907.

857,008. EXPLOSIVE TOY. MARTIN ARMSTRONG and ALBERT A. COUP, St. Louis, Mo. Filed Sept. 22, 1906. Serial No. 335,717.



Claim.—1. In a toy, the combination with a substantially hemispherical hollow body formed of impervious flexible material and provided with an outlet, of means for clamping a diaphragm over said outlet in position to be ruptured by the collapse of said body.

2. In a toy, the combination with a pair of disks provided with outlets of different diameters, of means for holding said disks together to clamp a diaphragm between them, and a hollow body of impervious flexible material secured to one of said disks for rupturing said diaphragm.

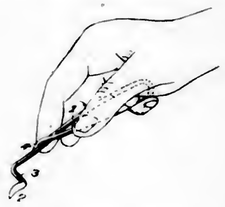
3. In a toy, the combination with a hollow body formed of impervious flexible material and provided with an outlet, of a member provided with an outlet and adapted to clamp a diaphragm over the outlet of said body, the outlet in said member being larger than the outlet in said body.

4. In a toy, the combination with a substantially hemispherical hollow body formed of impervious flexible material, of a disk provided with an outlet, and a flange carried by said disk and extending substantially at right angles thereto and receiving the edge of said body, whereby pressure on said body forces said edge into contact with said flange and disk.

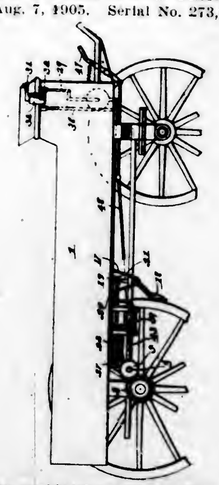
5. In a toy, the combination of a substantially hemispherical hollow body formed of impervious flexible material, of a disk provided with an outlet, a flange carried by said disk and receiving the edge of said body, and a member provided with an outlet and adapted to clamp a diaphragm over said first named outlet, said first outlet being smaller than said second named outlet.

857,009. CAN-OPENER. FRANK G. ASCHBRENNER, Stratford, Wis. Filed Oct. 20, 1906. Serial No. 339,824.

Claim.—A can opener comprising a single length of wire having one extremity thereof flattened, one edge of the flattened portion being curved and sharpened to form a blade, a lateral offset portion located adjacent the blade and constituting a fulcrum, and a loop shaped handle extending from the outer extremity of the offset portion, the terminal portion of the lower part of the handle extending over and around the upper member to afford a securing means for the extremity of the wire and to provide a finger rest.



857,010. AIR-BRAKE. ORAH T. BEATTY, East Brady, Pa., assignor of one-third to T. S. Filson, East Brady, Pa. Filed Aug. 7, 1905. Serial No. 273,205.



Claim.—1. The combination with an air brake for wagons, a gear wheel carried by an axle of the wagon, curved and slotted brackets, a shaft slidably journaled in the slots of said brackets, a gear wheel carried by said shaft adapted to mesh with the gear wheel first mentioned, a disk carried also by the slidable shaft, an air cylinder, a piston therein, a piston rod pivotally connected to the disk, and springs arranged in the slots of the brackets and bearing upon the shaft journaled in said slots for the purpose of holding the gear wheel carried by the shaft in engagement with the gear wheel of the axle.

2. The combination with a vehicle, of a gear wheel, carried thereby and adapted to rotate in unison with a wheel of the vehicle, a shaft, curved slotted bearings in which the said shaft is slidably journaled, a gear wheel carried by said shaft and adapted to mesh with the first mentioned gear wheel, an air compressor, means connected to the shaft for compressing air during rotation of said shaft, a reservoir adapted to receive air from the compressor,

brake actuating devices operable by compressed air from the reservoir, a cylinder having communication with the reservoir, a piston therein, a piston rod, a coil spring within the cylinder encircling the piston rod, a slidable block obliquely slotted, said block being movable by the said piston rod, and the shaft before mentioned passing loosely through the slot of the said block and adapted to be moved along the slots of the shaft bearings when the block is moved, thereby lifting the gear wheel carried by the shaft from engagement with the gear wheel carried by the vehicle when the piston is moved against the tension of its spring by pressure of air from the reservoir.

3. The combination with a vehicle, of a gear wheel carried by the vehicle, and rotatable by movement of the vehicle, a shaft slidably held in suitable bearings, a gear wheel on the shaft adapted to mesh with the first mentioned gear wheel, a disk on the shaft, a cylinder, a piston therein, said cylinder being provided with openings in one end, check valves carried by the piston, a pitman pivotally connecting said piston to the disk, a pipe leading from the end of the cylinder opposite the disk, a check valve in said pipe, a reservoir into which said pipe opens, brake actuating devices, operable by compressed air from the said reservoir, a cylinder having a spring pressed piston therein, a valve casing, pipe leading from the reservoir and from the last mentioned cylinder to said casing, a valve adapted to place said pipes into communication with each other, and means whereby movement of the piston last mentioned against the tension of its spring slides the shaft in its bearings and disengages the gear wheels.

857,011. TRAVELING-GRATE STOKER. JOHN E. BELL, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 21, 1904. Serial No. 233,600.



Claim.—1. In a traveling grate, a pair of chains consisting each of inner and outer links, rollers journaled between the links of each chain, and grate-bars secured to the inner links of the chain; substantially as described.

2. In a traveling grate, a pair of chains, consisting each of inner and outer links, pins connecting the inner and outer links of each chain, rollers journaled on the pins between the links, and grate bars secured to the inner links; substantially as described.

3. In a traveling grate, a pair of chains, consisting each of inner and outer links, the inner links having overhanging portions, rollers journaled between the inner and outer links of each chain, and grate bars removably secured to the inner links of each chain; substantially as described.

4. In a traveling grate, a pair of chains composed each of separable inner and outer links, the inner links having their upper end portions bent horizontally toward the outer link to form supports for the ends of the grate bars; substantially as described.

5. In a traveling grate, a pair of chains composed each of separable inner and outer links, rollers journaled between the links, and continuous run-ways for the rollers, the inner links of each chain having horizontal portions which extend toward the outer links which form seats for the grate bars; substantially as described.

6. In a traveling grate, a pair of chains, a series of transverse grate bars secured to and connecting the chains, rollers carried by each chain, and continuous run-ways for the rollers having curved end portions at least one of which is separate from, and adjustable with respect to, the other portions of the runway; substantially as described.

857,012. TRAVELING-GRATE SYSTEM. JOHN E. BELL, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 26, 1904. Serial No. 234,365.



Claim.—1. In a traveling grate stoker, main grate bars having air openings, and formed with side webs or flanges, rollers carried by the side webs or flanges, and sub-grate bars mounted on said rollers for endwise movement; substantially as described.

2. In a traveling grate stoker, main grate bars having air openings therein, and formed with side webs or flanges, rollers carried by the said webs or flanges, endwise-movable sub-grate bars mounted on said rollers, and means for actuating the sub-grate bars as they travel; substantially as described.

3. In a traveling grate stoker, an endless grate having main grate bars provided with air inlet openings, movable sub-grate bars carried by the main grate bars and acting as dampers to control the admission of air through the said openings, levers depending from the main grate bars and movable therewith, said levers having an actuating connection with the sub-grate bars, and fixed cams for actuating the levers; substantially as described.

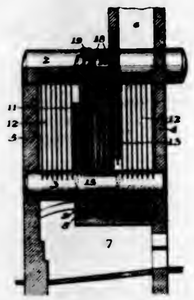
4. In a traveling grate stoker, a main grate bar, a sub-grate bar carried by the main bar, a bell crank lever pivoted to the main bar and engaging the sub-grate bar, and fixed cam means engaged by said lever; substantially as described.

857,013. SUPERHEATER-BOILER. JOHN E. BELL, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 4, 1905. Renewed Nov. 17, 1906. Serial No. 343,931.

Claim.—1. A boiler having upper and lower longitudinal drums connected by water tubes, means for passing gases longitudinally of the drums, and a superheater in the boiler structure having a chamber or drum separate from the boiler drums and provided with superheating tubes, the boiler having water tubes between the source of heat and the superheater; substantially as described.

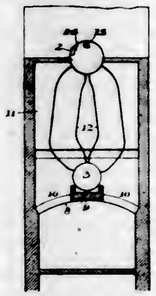
2. A water tube boiler having upper and lower longitudinal drums connected by water tubes, a baffle arranged to give the gases up and down passes among the tubes and longitudinally of the drums, and a superheater located in the boiler setting with water tubes between it and the source of heat, said superheater having a chamber or drum separate from the boiler drums and provided with superheating tubes exposed to the heat of the gases; substantially as described.

3. A water tube boiler having longitudinal upper and lower drums connected by water tubes, baffles arranged to give the gases up and down passes longitudinally of the drums and among the water tubes, and a superheater forming at least the major portion of the heating surface in a pass back of the first pass of the gases, said superheater having a drum or chamber separate from the boiler drums and provided with superheating tubes; substantially as described.



4. A water tube boiler having longitudinal upper and lower drums connected by water tubes, baffles arranged to give at least three up and down passes to the gases longitudinally of the drums, and a superheater forming at least the major portion of the heating surface in a pass in the rear of the first pass, said superheater having a drum or chamber separate from the boiler drums and provided with superheating tubes; substantially as described.

857,014. SUPERHEATER-BOILER. JOHN E. BELL, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 4, 1905. Serial No. 253,833.



Claim.—1. A water tube boiler having upper and lower longitudinal drums connected by water tubes, means for passing gases longitudinally of the drums, and a superheater in the boiler structure and connected to the steam space of the boiler, said boiler having water-heating tubes between the source of heat and the superheater, substantially as described.

2. A water tube boiler having upper and lower longitudinal drums connected by water tubes, baffles arranged to give the gases up and down passes among the tubes longitudinally of the drums, and a superheater located in the boiler setting, said superheater being exposed to the heat of the gases and connected to the steam space of the boiler, said boiler having water-heating tubes between the source of heat and the superheater; substantially as described.

3. A water tube boiler having longitudinal upper and lower drums connected by water tubes, baffles arranged to give the gases serial up and down passes longitudinally of the drums and among the water tubes, and a superheater forming at least the major portion of the heating surface in a pass back of the first pass of the gases among the tubes; substantially as described.

4. A water tube boiler having a single mud drum connected by water tubes to an upper steam and water drum or drums, said drums extending longitudinally, baffles arranged to give the gases up and down passes, longitudinally of the mud drum, and a superheater forming at least a major portion of the heating surface in a pass in the rear of the first pass of the gases; substantially as described.

5. A boiler having longitudinal upper and lower drums connected by water tubes, a part of each of the drums being cut off by a transverse partition forming steam chambers, superheating tubes connecting said chambers and means for passing heated gases over the tubes and longitudinally of the drums; substantially as described.

6. A water tube boiler having an upper steam and water drum divided into water and steam chambers, the water chamber being located between the steam chamber and the source of heat, upright water tubes in the path of the heat and connected with the water chamber, and upright superheating tubes in rear of the water tubes with respect to the path of heat and connected to the steam chamber.

7. A water tube boiler having longitudinal upper and lower drums connected by water tubes, baffles arranged to give the gases up and down passes longitudinally of the drums among the tubes, the upper drum having a cross partition forming a steam chamber, and superheating tubes connected to said steam chamber and forming at least a major part of the heating surface in one pass of the gases; substantially as described.

8. A water tube boiler having an upper steam and water drum divided by transverse partitions into a water chamber and steam chambers, the water chamber being located between the source of heat and the steam chambers, and upright superheating tubes connected to the steam chambers and disposed to produce at least two up and down passes to the steam.

9. A water tube boiler having upper and lower drums provided with transverse partitions dividing the drums into water and steam chambers, the water chambers being located between the source of heat and the steam chambers, and upright superheating tubes connecting the steam chambers of the drums and disposed to give at least two up and down passes to the steam in the superheating tubes.

10. A water tube boiler having a plurality of longitudinal steam and water drums connected by water tubes to a longitudinal mud drum or drums, a baffle extending transversely of the drums, and a superheater in the boiler setting located back of the first pass of the gases; substantially as described.

11. A water tube boiler having upper and lower longitudinal drums connected by water tubes, a chamber below the mud drum or drums with ports leading upwardly among the tubes at one end, a baffle arranged to give up and down passes to the gases longitudinally of the drums, and a superheater located in a pass in the rear of the first pass; substantially as described.

12. A water tube boiler having longitudinal upper and lower drums connected by water tubes, baffles arranged to give at least three up and down passes to the gases longitudinally of the drums, and a superheater forming at least the major part of the heating surface in one pass in the rear of the first pass; substantially as described.

13. A water tube boiler having a plurality of longitudinal steam and water drums, connected by water tubes to a longitudinal mud drum or drums, an inlet for heating gases at one end, baffles arranged to give the gases at least three up and down passes, and a superheater forming at least the major part of the heating surface in a pass of the gases in the rear of the first pass; substantially as described.

14. A water tube boiler having a plurality of upper longitudinal steam and water drums connected by water tubes to a mud drum or drums, cross partitions in the upper drums forming steam chambers, and superheating tubes connected to said chambers, said boiler having

water-heating surface between the source of heat and the superheating tubes; substantially as described.

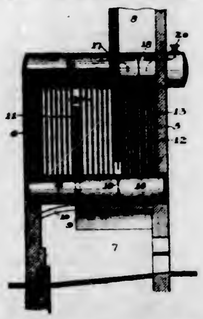
13. A water tube boiler having a plurality of upper longitudinal steam and water drums connected by water tubes to a mud drum or drums means for passing gases up and down the tubes longitudinally of the drums, cross partitions in the upper drums forming steam chambers, and superheating tubes connected to said chambers and forming a major part of the heating surface in a pass of the gases in the rear of the first pass; substantially as described.

16. A water tube boiler having upper and lower longitudinal drums connected by water tubes, means for passing the gases longitudinally of the drums and up and down over the water tubes, and a superheater located in the boiler structure and having upper and lower chambers or drums connected by steam tubes, said superheater forming the major portion of the heating surface in a pass back of the first pass of the gases; substantially as described.

17. A water tube boiler having upper and lower longitudinal drums connected by water tubes, means for passing the gases longitudinally of the drums and over the water tubes, and a superheater located in the boiler structure and having upper and lower chambers or drums connected by steam tubes, the boiler having water tubes between the superheater and the source of heat; substantially as described.

18. A boiler having a single mud drum connected by water tubes to an upper steam and water drum or drums, said drums extending longitudinally of the setting, a furnace below the mud drum with ports leading upwardly to the tubes at one end, a baffle arranged to give up and down passes to the gases longitudinally of the drums, and a superheater in rear of the first pass and having one or more chambers or drums provided with superheating tubes, substantially as described.

857,015. SUPERHEATER-BOILER. JOHN E. BELL, Barberton, Ohio, assignor to The Babcock & Wilcox Company, New York, N. Y., a Corporation of New Jersey. Filed Apr. 4, 1905. Serial No. 253,834.



Claim.—1. A water tube boiler having at least two longitudinal mud drums connected by banks of tubes to an upper longitudinal steam drum or drums, means for passing gases longitudinally of the drums among the tubes, and a superheater in the boiler setting and having superheating tubes exposed to the gases the boiler having water tubes located between the source of heat and the superheater; substantially as described.

2. A water tube boiler having at least two longitudinal mud drums connected by water tubes to one or more longitudinal steam and water drums, baffles arranged to give the gases up and down passes among the tubes longitudinally of the drums, and a superheater located in the boiler setting back of the first pass, said superheater being exposed to the heat of the gases and connected to the steam space of the boiler; substantially as described.

3. A water tube boiler having at least two longitudinal mud drums connected by water tubes to one or more longitudinal steam and water drums, baffles arranged to give the gases serial up and down passes longitudinally of the drums and among the water tubes, and a superheater forming at least the major portion of the heating surface in a pass back of the first pass of the gases among the tubes; substantially as described.

4. A water tube boiler having at least two longitudinal mud drums connected by water tubes to one or more longitudinal steam and water drums, a part of each of the drums being cut off by a transverse partition forming steam chambers, and superheating tubes connecting said chambers; substantially as described.

5. A water tube boiler having a plurality of mud drums with cross partitions forming steam chambers for a part of their length, and superheating tubes connected to said steam chambers, said boiler having water tubes between the source of heat and the superheater; substantially as described.

6. A water tube boiler having longitudinal mud drums connected by banks of tubes to one or more longitudinal steam and water drums, means for passing gases over the tubes longitudinally of the drums partitions forming steam chambers in each drum, and superheating tubes connecting said steam chambers; substantially as described.

7. A water tube boiler having at least two longitudinal mud drums connected by upright water tubes to one or more upper longitudinal steam and water drums, baffles arranged to give the gases up and down passes longitudinally of the drums among the tubes, the drums having transverse partitions dividing them into water and steam chambers, the water chambers being located between the source of heat and the steam chambers, and upright superheating tubes connecting the upper and lower steam chambers and forming at least a major part of the heating surface in one pass of the gases in rear of the first pass, substantially as described.

8. A water tube boiler having two or more longitudinal mud drums connected by upright banks of tubes to an upper longitudinal steam and water drum, the steam and water drum having a partition dividing it into steam and water chambers, upright superheating tubes connected to the steam chambers, and means for passing the heat up and down over the tubes in the longitudinal direction of the drums; substantially as described.

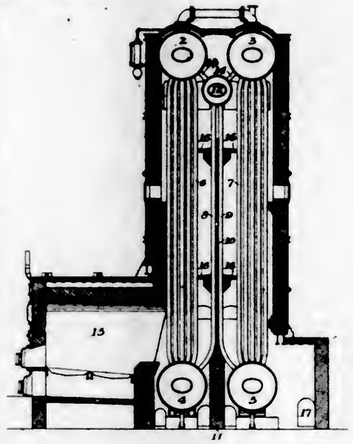
9. A water tube boiler having a plurality of longitudinal mud drums connected by water tubes to a longitudinal steam and water drum, baffles arranged to give the gases up and down passes over the tubes and in the longitudinal direction of the drums, and a superheater in the boiler setting located in one of the passes in rear of the first pass; substantially as described.

10. A water tube boiler having a plurality of longitudinal mud drums connected by water tubes to a longitudinal steam and water drum, baffles arranged to give the gases up and down passes over the tubes and in the longitudinal direction of the drums, and a superheater in the boiler setting located in one of the passes in rear of the first pass, said superheater forming the major portion of the heating surface in its pass; substantially as described.

857,016. WATER-TUBE BOILER. JOHN E. BELL, New York, N. Y., assignor to The Babcock & Wilcox Company, New York, N. Y., a Corporation of New Jersey. Filed May 21, 1906. Serial No. 317,854.

Claim.—1. A water tube boiler having upper transverse steam and water drums, each connected by a bank of tubes to a lower transverse mud drum, a water chamber in the upper part of the boiler between the main banks of tubes and connected to the water space of at least one of the steam and water drums, rows of tubes leading downwardly from the water chamber and connecting it directly to the mud drums, and a baffle extending between the latter tubes and terminating below the water chamber; substantially as described.

2. A water tube boiler having two transverse steam and water drums each connected by a bank of tubes to a transverse mud drum, a transverse water chamber extending between the banks of tubes in the upper part of the boiler and connected to the water spaces of both steam and water drums, and tubes leading downwardly from said water chamber and connecting directly into both mud drums; substantially as described.



3. A water tube boiler having two transverse steam and water drums each connected by a bank of tubes to a transverse mud drum, a transverse water chamber extending between the banks of tubes in the upper part of the boiler and connected to the water spaces of both steam and water drums, and tubes leading downwardly from said water chamber and connecting directly into both mud drums, and a baffle extending upwardly between the latter tubes and terminating below the water chamber; substantially as described.

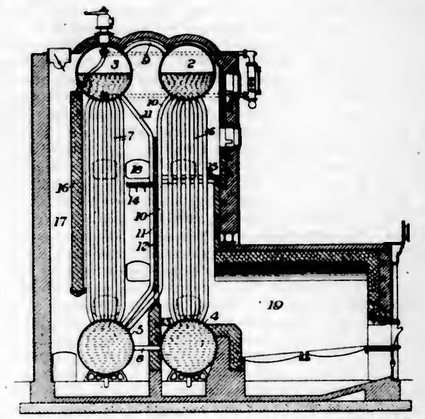
4. A water tube boiler having upper transverse steam and water drums, each connected by a bank of tubes to a transverse mud drum, a transverse water chamber extending between the banks of tubes in the upper part of the boiler, and connected to the water space of one of the steam and water drums, and tubes leading downwardly from said water chamber, and connecting directly into both mud drums; substantially as described.

857,017. WATER-TUBE BOILER. JOHN E. BELL, New York, N. Y., assignor to The Babcock & Wilcox Company, New York, N. Y., a Corporation of New Jersey. Filed Nov. 7, 1906. Serial No. 342,347.

Claim.—1. In a water tube boiler, a plurality of upper transverse steam and water drums, a plurality of connected transverse mud drums, banks of tubes connecting the upper and lower drums, an added row of tubes between the banks, said tubes entering the front upper drum and the second mud drum, and a baffle in the rear of said added row of tubes and between it and the rear bank of tubes; substantially as described.

2. In a water tube boiler, a plurality of upper transverse steam and water drums, a plurality of transverse mud drums, banks of tubes connecting the upper and lower drums, and at least two added rows of tubes between the main banks, both of said rows entering the rear mud drum, one row being connected to the front upper drum and the other row to the rear upper drum; substantially as described.

3. In a water tube boiler, a plurality of upper transverse steam and water drums, a plurality of transverse mud drums, banks of tubes connecting the upper and lower drums, at least two added rows of tubes between the main banks, both of said rows entering the rear mud drum, one row being connected to the front upper drum, the other row to the rear upper drum, and a baffle extending vertically between the two rows of added tubes; substantially as described.



4. In a water tube boiler, a plurality of upper transverse steam and water drums, a plurality of transverse connected mud drums, banks of tubes connecting the upper and lower drums, and at least two added rows of tubes between the main banks, both of said rows entering the rear mud drum, one row being connected to the front upper drum and the other row to the rear upper drum; substantially as described.

857,018. CARRIAGE-CURTAIN FASTENER. AUGUST E. BERNHARDT, Guelph, Ontario, Canada. Filed Feb. 9, 1906. Serial No. 300,267.

Claim.—A fastener for curtains and the like, comprising two lapping parts adapted to engage one another to resist a pull in the direction of the length of the two parts, in combination with a retainer pivoted at one end on a pivot perpendicular to the surface of the under part, and adapted to engage the upper part and hold it in engagement with the under part, or to be moved transversely of the direction of pull to release it; and a beak on the retainer, the upper part being provided with a longitudinal groove into which the beak may be sprung, substantially as described.

857,019. CATAMENIAL APPLIANCE. WILLIAM D. BERRY, Louisville, Ky. Filed July 22, 1904. Serial No. 217,685.

Claim.—1. In a catamenial appliance, the combination of a two-part elastic belt adjustable at the back, each part of said belt having its rear end permanently fastened to a

friction-buckle, an elastic leg strap fixed to said belt, and a flexible and absorbent concave pouch detachably applied to said belt and said leg strap, substantially as specified.

2. In a catamenial appliance, the combination of an elastic belt around the body and resting on the hips comprising two equal parts, an elastic leg strap passing around the nates and having its ends fixed to said parts of said belt near the front and at equal distances from the front ends of said parts of said belt, a light, thin absorbent pouch having on two of its angles means for detachably securing to the front ends of said parts of said belt, and on its apex means for detachably applying to said leg strap, and absorbent material placed in said pouch and held gently and yieldingly against the vulva by said elastic belt, said elastic leg strap and said pouch, substantially as specified.

3. In a catamenial appliance, the combination of a belt formed of two equal elastic straps each having at one end permanently attached a loop and at the other end permanently attached a conventional friction-buckle, the friction-buckle on the one strap strung on and adapted for adjustment on the other belt strap mutually forming means for adjusting the length of said belt, a leg strap having one end fixed to the one strap of said belt toward the front end thereof and the other end having a conventional friction-buckle, said leg strap passing slidably through a loop permanently fastened on the other of the belt straps symmetrically with the other end, an absorbent pouch or sack detachably fastened to said belt and said leg strap, and soft, fluffy absorbent material removably placed in said pouch so disposed and arranged as to yieldingly press against and cover the vulva and adjacent parts, substantially as specified.

4. In a catamenial appliance, a supporting belt formed of two straps each of which has permanently fastened at one end a buckle, the buckle on the end of one strap strung on and adapted to be adjusted on the body of the other strap mutually and held in position by friction and forming means for adjusting the length of said supporting belt, and means for absorbing the catamenial flow comprising a sack composed of absorbent material adapted to absorb any overflow or leakage and loose absorbent material removably placed in said sack, substantially as and for the purpose specified.

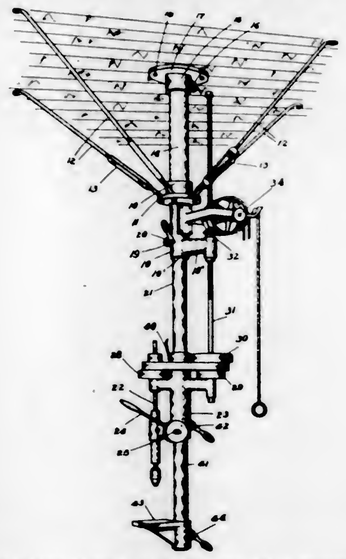
857,020. SUSPENDED DRILL-PRESS. JOHN HENRY BIRCH and JOHN HAYS BIRCH, Crawfordsville, Ind. Filed Sept. 29, 1906. Serial No. 336,688.

Claim.—1. A suspended drill press comprising a main head and means for suspending the same, a drill-spindle head, means for supporting said drill spindle head from the main head and permitting vertical adjustment of the drill-spindle head relative to the main head, means for retaining the same in any desired position of adjustment, and a work table detachably secured to said drill-spindle head.

2. A suspended drill press comprising a main head and means for suspending the same, a drill-spindle head, means for supporting said drill spindle head from the main head permitting vertical adjustment of the drill-spindle head relative to the main head, means for retaining the same in any desired position of adjustment, a work table support detachably secured to said drill-spindle head, a work table carried by said support and means for vertically adjusting the work table.

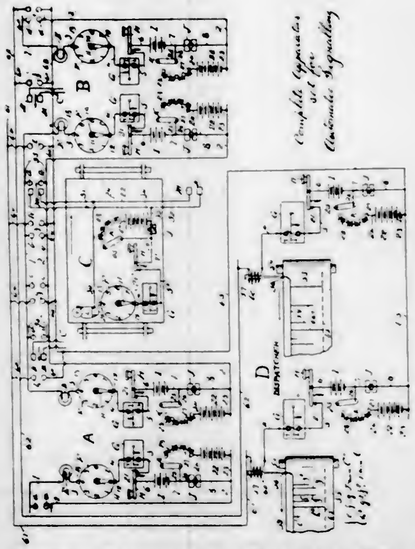
3. A suspended drill press comprising a main tubular head, means for securing the same to an overhead support, a stem mounted in said tubular head and vertically adjustable in said head, means for holding said main stem in any desired position of vertical adjustment, a spindle head carried by said main stem, a drill spindle journaled in the spindle head, and driving means for said drill spindle operable in any vertical position of adjustment of the main stem.

4. A suspended drill press comprising a main tubular head, means for securing the same to an overhead support, a main stem mounted in said tubular head and vertically adjustable in said tubular head, means for holding said main stem in any desired position of vertical adjustment, a spindle head carried by said main stem, a drill spindle journaled in the spindle head, driving means for said drill spindle operable in any vertical position of adjustment of



the main stem, a work table stem detachably secured in the spindle head, and a work table carried by said table stem.

857,021. SIGNALING SYSTEM FOR RAILROADS. FRANCIS M. BLACK, Kincaid, Kans. Filed Dec. 15, 1902. Serial No. 135,343.



Claim.—1. The combination with suitable wiring, of means for recording current strength, and means by which said recording means may be actuated by electrical impulses traversing said wiring to indicate the positions of a plurality of trains.

2. The combination with a current strength recording means, of means in an electric circuit for locating the position of trains.

3. The combination of two main line wires joined through opposing batteries, means on a car for connecting these wires between the batteries, thus closing two circuits, and current strength indicators at each end of the main lines.

4. In an electric signal system for railways, the combination with a current strength indicator located at a station, of means by which said indicator is actuated to denote the positions of a plurality of cars.

5. The combination with suitable wiring, of two current strength indicators located one at each of two stations, and means by which electrical impulses traversing said wiring actuates said indicators to denote intermittently the positions of a plurality of trains between said stations.

6. The combination with a railway line and a car, of an instrument for recording current strength, a battery in a variable resistance, all carried by the car, and means for cutting said battery and variable resistance into circuit with said instrument, substantially as described.

7. In combination with a railway line, a car, and a station, of an instrument for recording current strength, a battery, and a variable resistance, all at the station; a pair of line conductors to which said station apparatus is connected, a series of spaced supports arranged along the line close to the track, a pair of insulated contact pieces fixed upon each of said supports, said contact pieces being connected to said line conductors, and a pair of contact-brushes carried by the car in position to contact successively with said pairs of contact pieces, substantially as described.

8. The combination with current strength recording means, of means by which said recording means is actuated to indicate the positions and directions of a plurality of trains.

9. The combination of two line conductors, a series of spaced pairs of insulated contact-pieces connected to said line conductors, a car, a pair of brushes carried by the car in position to engage the contact-pieces of each pair successively, battery in the car, means for connecting said battery to said brushes, and a current strength recording instrument connected to said conductors, substantially as described.

10. The combination of two line conductors, a series of spaced pairs of insulated contact-pieces connected to said line conductors, a car, an indicating instrument therein, a pair of contact-brushes carried by the car in position to successively engage said contact-pieces, a battery, and a current strength recording instrument, said recording instrument always being connected to said line conductors, and means for cutting said battery into circuit with said line conductors for sending special signals, substantially as described.

11. The combination with a railway line and a car, of a series of spaced pairs of insulated contact-pieces arranged close to the track, two line conductors connected by taps to said contact-pieces, an indicating instrument in the car, a pair of contact brushes carried by the car in position to successively engage said pairs of contact-pieces, said brushes being connected to said indicating instrument, and a despatcher's apparatus connected to said line conductors, said apparatus comprising a battery, a variable resistance, an instrument for recording current strength, and means for cutting said battery into the line circuit for signaling purposes, substantially as described.

12. In an electrical signaling system for railroads, the combination of a plurality of recording devices at the despatcher's office having means for recording current strength, and means for actuating the same, with a system of wiring whereby the recorders record the positions and directions of trains in their respective blocks.

13. The combination with current recording means, of means by which said recording means is actuated to record the directions of a plurality of trains.

14. The combination with current indicating means located at a station, of means by which said indicating means is actuated to indicate the directions of a plurality of trains.

15. The combination with current strength recording means, of means by which said recording means is actuated to record signals from a train.

16. The combination with means for recording current strength, of means by which said recording means is actuated to record the position of a train and signals therefrom.

17. In a railway electric signaling system, a plurality of train circuits, a single indicating instrument common to all of said circuits, and means in said instrument whereby the position of each of the trains in the various train circuits may be indicated.

18. In a railway signaling system, a plurality of train circuits, a single indicating instrument common to all of said circuits, and means in said instrument whereby the speed of the trains in the various train circuits may be indicated.

19. In a railway signaling system, a plurality of train circuits, a single indicating instrument common to all of said circuits, and means in said instrument whereby the direction of the trains in the various train circuits may be indicated.

20. In a railway signaling system, a plurality of train circuits, a single indicating instrument common to all of said circuits, and means in said instrument whereby the speed and direction of the trains in the various train circuits may be indicated.

21. In a railway signaling system, a plurality of train circuits, a single indicating instrument common to all of said circuits, and current strength recording means in said instrument whereby the position, speed and direction of the trains in the various train circuits may be indicated.

22. In a railway electric signaling system, a plurality of train circuits, a recording instrument common to all of said circuits, said recording instrument comprising a constantly moving tape, and current strength recording means whereby train position, speed and direction indications in any of said train circuits may be legibly imposed or superimposed upon said tape.

23. In a railway electric signaling system, a plurality of train circuits, a recording instrument common to all of said circuits, said recording instrument comprising a constantly moving tape, and current strength recording means whereby train position, speed and direction indications in any of said train circuits may be legibly imposed or superimposed upon said tape concurrently with code signal indications through said train circuits.

24. In a railway electric signaling system, a main signaling circuit, an electric indicating instrument therein, a local train circuit adapted to close said main circuit, means in the local train circuit for passing signals to said indicator, and means in said local circuit for controlling the activity of said indicator.

25. In a railway electric signaling system, a main signaling circuit, a signal indicator therein, a local train circuit adapted to close said main circuit, and means in said local train circuit for actuating said indicator according to code and simultaneously controlling the energy of the code impulses.

26. In a railway signaling system, a plurality of train circuits, a single indicating instrument common to all of said circuits, and current strength recording means in said instrument whereby the position and speed of the trains in the various train circuits may be indicated.

27. In a railway signaling system, a plurality of train circuits, a single indicating instrument common to all of said circuits, and current strength recording means in said instrument whereby the position and direction of the trains in the various train circuits may be indicated.

28. The combination in an electric circuit, of two opposed electrical generators located in said circuit, a current strength indicator in said circuit, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators.

29. The combination in an electric circuit, of two opposed electrical generators located in said circuit, two cur-

rent strength indicators in said circuit, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators and intermediate said indicators.

30. The combination in an electric circuit, of two opposed electrical generators located in said circuit, a current strength indicator in said circuit, and means connected with a car for intermittently electrically connecting opposite sides of said circuit intermediate said generators.

31. The combination in an electric circuit, of two opposed electrical generators located in said circuit, two current strength indicators in said circuit, and means connected with a car for intermittently electrically connecting opposite sides of said circuit intermediate said generators and intermediate said indicators.

32. The combination in an electric circuit, of two opposed electrical generators located in said circuit, a current strength indicator in said circuit, means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators, and means for controlling the passage of currents through said circuit.

33. The combination in an electric circuit, of two opposed electrical generators located in said circuit, a current strength indicator located in said circuit, means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators, and means on said car for controlling the passage of currents through said circuit.

34. The combination in an electric circuit, of two opposed electrical generators in said circuit, two current strength indicators located in said circuit, means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators and intermediate said indicators, and means for controlling the passage of currents through said circuit.

35. The combination in an electric circuit, of two opposed electrical generators in said circuit, two current strength indicators in said circuit, means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators and intermediate said indicators, and means on said car for controlling the passage of currents through said circuit.

36. The combination in an electric circuit, of two opposed electrical generators in said circuit, a current indicator in said circuit, and means connected with a car for electrically and intermittently connecting opposite sides of said circuit intermediate said generators.

37. The combination in an electric circuit, of two opposed electrical generators in said circuit, two current indicators in said circuit, and means connected with a car for electrically and intermittently connecting opposite sides of said circuit intermediate said generators and intermediate said indicators.

38. The combination in an electric circuit, of two opposed electrical generators in said circuit, a current indicator in said circuit, means connected with a car for electrically and intermittently connecting opposite sides of said circuit intermediate said generators, and means for controlling the passage of currents through said circuit.

39. The combination in an electric circuit, of two opposed electrical generators in said circuit, a current indicator in said circuit, means connected with a car for electrically and intermittently connecting opposite sides of said circuit intermediate said generators, and means on said car for controlling the passage of currents through said circuit.

40. The combination in an electric circuit, of two opposed electrical generators in said circuit, two current indicators in said circuit, means connected with a car for electrically and intermittently connecting opposite sides of said circuit intermediate said generators and intermediate said indicators, and means in said circuit for controlling the passage of currents through said circuit.

41. The combination in an electric circuit, of two opposed electrical generators in said circuit, two current indicators in said circuit, means connected with a car for electrically and intermittently connecting opposite sides of said circuit intermediate said generators and intermediate said indicators, and means on said car for controlling the passage of currents through said circuit.

42. The combination with two sets of signaling apparatus, of two opposed electrical generators, conductors connecting said apparatus and generators in circuit, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators and intermediate said two sets of apparatus.

43. The combination with two sets of signaling apparatus, of two opposed electrical generators, conductors connecting said apparatus and generators in circuit, and means connected with a car for connecting electrically opposite sides of said circuit intermediate said two sets of signaling apparatus and intermediate said generators, said connecting means including signaling apparatus carried by the car.

44. The combination with two sets of signaling apparatus, of two opposed electrical generators, conductors connecting said apparatus and generators in circuit, means connected with a car for connecting electrically opposite sides of said circuit intermediate said two sets of apparatus and intermediate said opposing generators, said connecting means including signaling apparatus carried by the car, an electrical generator carried by the car and means for cutting the electrical generator on the car in and out of circuit with the signaling apparatus carried by the car.

45. The combination with two sets of signaling apparatus, of two opposed electrical generators, conductors connecting said apparatus and generators in circuit, means connected with a car for electrically and intermittently connecting opposite sides of said circuit intermediate said two sets of apparatus and intermediate said generators, said connecting means including signaling mechanism carried by the car, an electrical generator carried by the car, and means for cutting the generator on the car in and out of circuit with the signaling apparatus on the car.

46. The combination in an electric circuit, of two current indicators in said circuit, two electrical generators in said circuit, means connected with a car for electrically connecting opposite sides of said circuit intermediate said indicators and intermediate said generators, two extra electrical generators, two variable resistances connected in circuit respectively with said two extra generators, and means for cutting said resistances and extra generators in and out of circuit with said two generators respectively.

47. The combination with a car, of an indicator operative by electric currents, a signaling device in circuit with the said indicator and operative only by stronger currents than are employed to operate said indicator, an electrical generator, conductors in circuit with said generator, and means connected with the car for connecting said conductors in circuit with the indicator and signaling device on said car.

48. The combination with a car, of an indicator, and an electric bell on said car and in circuit with each other, the bell being operative only by currents stronger than are normally employed to operate said indicator.

49. The combination with a car, of an electric bell and an indicator in circuit with each other and carried by the car, two conductors and an electrical generator in circuit with each other, means connected with the car for connecting said conductors in circuit with the bell and indicator, the bell being inoperative by the current from said generator, and means for generating in the circuit currents strong enough to operate the bell.

50. In railway signaling apparatus, a current strength recording means having means of indicating the positions of a plurality of trains.

51. In railway signaling apparatus, the combination with a current strength recording means located in an electric circuit, of a current strength regulator in said circuit.

52. In railway signaling apparatus, the combination with a current strength recording means located in an electric circuit, of means for varying the resistance of said circuit.

53. In railway signaling apparatus, the combination with two opposed sources of current in an electric circuit, of a current strength indicator in said circuit, and means connected with a train for locating by said indicator the position of the train.

54. In railway signaling apparatus, the combination with two opposed sources of current in an electric circuit, of means for simultaneously indicating at two points in said circuit the position of a train.

55. In railway signaling apparatus, the combination with two opposed sources of current in an electric circuit, of two current strength indicators in said circuit, and means by which said sources of current are caused to simultaneously denote on said indicators respectively the location of a train.

56. In railway signaling apparatus, the combination with a current strength indicator, of means for sending to said indicator intermittent electrical impulses corresponding in strength to the position of a train.

57. In railway signaling apparatus, the combination with a plurality of current strength indicators, of means for sending simultaneously to said indicators electrical impulses corresponding in strength to the position of a train relative to said indicators.

58. In railway signaling apparatus, the combination with a current strength recording instrument of means by which said instrument may be actuated to indicate simultaneously the positions of a plurality of trains.

59. In railway signaling apparatus, the combination with a single instrument wholly automatic in action, of means by which said instrument indicates by current strength the positions of a plurality of trains.

60. The combination with a system of wiring, of an automatic instrument, and means by which said instrument indicates the direction of a plurality of trains.

61. The combination with a system of wiring, of an automatic instrument, and means by which the directions of a plurality of trains are denoted on said instrument by intermittent electrical impulses traversing said system of wiring.

62. The combination with a single instrument automatic in action, of means by which said instrument indicates the directions of a plurality of trains.

63. The combination with an automatic instrument, of means by which said instrument indicates the directions and positions of a plurality of trains.

64. The combination with an automatic instrument, of means by which said instrument indicates the directions and speed of a plurality of trains.

65. The combination with a current strength recording instrument, of means by which said instrument indicates the positions and speed of a plurality of trains.

66. The combination with an automatic instrument, of means by which said instrument indicates the positions, directions and speed of a plurality of trains.

67. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the direction of a train.

68. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the position and direction of a train.

69. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the direction and speed of a train.

70. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the position and speed of a train.

71. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the position, direction, and speed of a train.

72. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record signals from a train.

73. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the position and direction of a train and signals therefrom.

74. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the position, direction and speed of a train and signals therefrom.

75. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the directions of a plurality of trains.

76. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the speed of a plurality of trains.

77. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the positions and directions of a plurality of trains.

78. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the positions and speed of a plurality of trains.

79. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the directions and speed of a plurality of trains.

80. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the positions, directions and speed of a plurality of trains.

81. The combination with an instrument for recording current strength, of means by which said instrument is actuated to record the positions of a plurality of trains and signals therefrom.

82. The combination with an instrument for recording current strength of means by which said instrument is actuated to record the directions of a plurality of trains and signals therefrom.

83. The combination with an instrument for recording current strength of means by which said instrument is actuated to record the positions, directions and speed of a plurality of trains and signals therefrom.

84. The combination with an instrument for recording current strength of means by which said instrument is actuated to record the positions and directions of a plurality of trains and signals therefrom.

85. The combination with a single instrument of means for recording with said instrument the position, direction and speed of a train and signals therefrom.

86. The combination with a single instrument of means by which said instrument is actuated to record the positions, directions, and speeds of a plurality of trains and signals therefrom.

87. The combination with a single instrument of means by which said instrument is actuated to record the position and direction of a train and signals therefrom.

88. The combination with a single instrument of means by which said instrument is actuated to record the positions and directions of a plurality of trains and signals therefrom.

89. The combination in an electric circuit, of means for recording current strength, means for generating a current in said circuit, and means on a car for controlling the passage of currents through said circuit.

90. The combination in an electric circuit, of means for recording current strength, means for generating a current in said circuit, and means by which a moving car may intermittently control the passage of currents through said circuit.

91. The combination in an electric circuit, of means for recording current strength, means for generating a current in said circuit, a car, a current indicator on said car, and means for connecting said indicator in circuit with said recording means.

92. The combination with means for recording currents traversing an electric circuit, of means for generating a current in said circuit, a car, a current indicator carried by said car, and means for intermittently connecting said indicator in circuit with said recording means.

93. The combination in an electric circuit, of means in said circuit for recording current strength, signaling means in circuit with said recording means, a car, a current indicator on said car, signaling means on said car and in circuit with said indicator, and means for connecting said indicator and the signaling means on said car in circuit with said recording means.

94. The combination in an electric circuit, of means in

said circuit for recording current strength, signaling means in circuit with said recording means, a car, a current indicator and signaling means on said car and in circuit with each other, and means for intermittently connecting said indicator and signaling means on the car in circuit with said recording means.

35. The combination in an electric circuit, of means in said circuit for recording current strength, a variable resistance, means for cutting the variable resistance in and out of circuit with said recording means, a current generator in circuit with said recording means, a car, and means on said car for opening and closing said circuit, when the car is traveling.

96. The combination in an electric circuit, of means in said circuit for recording current strength, a variable resistance, means for cutting said variable resistance in and out of circuit with said recording means, a current generator in circuit with said variable resistance, a car, an indicator carried by said car, means by which said indicator is connected in circuit with said recording means, and a second generator in circuit with said recording means.

97. The combination in an electric circuit, of means in said circuit for recording current strength, a generator in circuit with said recording means, a variable resistance, means for cutting said variable resistance in and out of circuit with said recording means, a car, an indicator on said car, means for connecting said indicator in circuit with said generator, a variable resistance on said car, and means for cutting the variable resistance on the car in and out of circuit with said generator.

98. The combination in an electric circuit, of opposed electrical generators located in said circuit, an electric lamp located in said circuit, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators.

99. The combination in an electric circuit, of two opposed electrical generators located in said circuit, two electric lamps located in said circuit, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators and intermediate said lamps.

100. The combination with two conductors forming part of an electric circuit, of an electric lamp located in said circuit, a plurality of contacts connected with one of said conductors, means for generating a current in said circuit, a car, and means carried by the car for connecting successively with said contacts and with the other conductor, said car carried means controlling the passage of the current through said lamp.

101. In a railway signaling system, the combination in an electric circuit, of two electrical generators, a current indicator, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators.

102. In a railway signaling system, the combination in an electric circuit, of two electrical generators, a current strength indicator, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators.

103. In a railway signaling system, the combination in an electric circuit, of two electrical generators, a current indicator, and means connected with a car by which when the car is traveling opposite sides of said circuit will be intermittently connected intermediate said generators.

104. In a railway signaling system, the combination in an electric circuit, of two electrical generators, a current indicator, a plurality of contacts connected with one side of the circuit, and means connected with a car for successively connecting said contacts with the opposite side of said circuit.

105. In a railway signaling system, the combination in an electric circuit, of two electrical generators, two current indicators, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators and intermediate said indicators.

106. In a railway signaling system, the combination in an electric circuit, of two electrical generators, two current indicators, and means connected with a car for intermittently connecting opposite sides of said circuit intermediate said generators and intermediate said indicators.

107. In a railway signaling system, the combination in an electric circuit, of two electrical generators, a current strength indicator, and means connected with a car for electrically connecting opposite sides of said circuit intermediate said generators.

108. In a railway signaling system, the combination in an electric circuit, of two electrical generators, a current strength indicator, and means connected with a car for intermittently connecting opposite sides of said circuit intermediate said generators.

109. In a railway signaling system, the combination in an electric circuit, of two electrical generators, two current indicators, and means connected with a car for intermittently connecting opposite sides of said circuit intermediate said generators and intermediate said indicators.

110. In a railway signaling system, the combination in an electric circuit, of two electrical generators, two current strength indicators, and means connected with a car for intermittently connecting opposite sides of said circuit intermediate said generators and intermediate said indicators.

111. In a railway signaling system, the combination with means for recording current strength, of means for sending to said recording means electrical impulses corresponding in strength to the position or a train.

112. The combination in an electric circuit, of means for recording current strength, and circuit closing means carried by a car.

113. The combination in an electric circuit, of means for recording current strength, and means carried by a car for electrically connecting opposite sides of said circuit.

114. The combination in an electric circuit one side of which is provided with a plurality of contacts, of current strength recording means, and means carried by a car for electrically successively connecting said contacts with the opposite side of said circuit.

115. The combination in an electric circuit, of means for writing records of current strength, and means carried by a car for controlling said recording means.

116. The combination in an electric circuit, of means for writing records of current strength, and means carried by a car for successively actuating said recording means.

117. The combination in an electric circuit, of circuit controlling means carried by a car, and means for writing records of current strength, said records denoting the positions, speed and direction of the car.

118. The combination in an electric circuit, of a plurality of circuit closing means carried respectively by a plurality of cars, and current strength recording means in said circuit.

119. The combination with two electrical circuits, of circuit controlling means carried by a car, a current indicator in one circuit, and a current strength recorder in the other circuit.

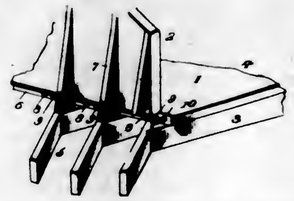
120. The combination with two electrical circuits each having on one side a plurality of contacts, of a current indicator in one circuit, a current strength recorder in the other circuit, and means carried by a car for successively electrically connecting the contacts of each circuit with the opposite side of the circuit.

121. The combination in an electric circuit, of means for writing records of current strength, and a current strength indicator, manually operated circuit controlling means, and automatic circuit controlling means carried by a car.

122. The combination with a plurality of electrical circuits each having on one side a plurality of contacts, of a plurality of current strength recorders located one in each circuit, and means carried by a car for successively electrically connecting the contacts of each circuit with the opposite side of the circuit.

123. The combination in an electric circuit, of means for recording current strength, manually controlled means for transmitting currents of different strength in said circuit, a plurality of contacts on one side of said circuit, means carried by a car for successively connecting said contacts with the opposite side of said circuit, a manually operated circuit controller on said car, and a current indicator carried by the car.

857,022. MAIL-RECEIVER. NEWTON K. BOWMAN, North Lawrence, Ohio. Filed Oct. 24, 1906. Serial No. 340,397.



Claim.—1. Means for receiving mail from a moving train, the same consisting of a platform and a coöperating folding deflector.

2. Means for receiving mail from a moving train, the same comprising a platform and a deflector hinged thereto and adapted to be turned either into upright position for operation or to be lowered into horizontal position to be out of the way.

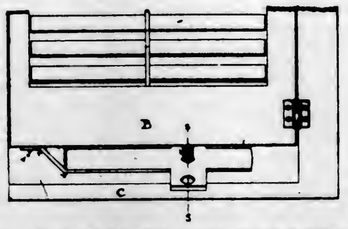
3. Means for receiving mail from a moving train, the same consisting of a platform and a coöperating folding deflector, the latter supported by said platform or an extension thereof both in upright and horizontal position.

4. In means for receiving mail from a moving train, the combination of a platform, and a deflector hinged relatively to the platform and adapted to receive both a turning and a sliding movement, the latter admitting of throwing coöperating parts of the platform and deflector into or out of register.

5. A mail receiver of the character described, comprising in combination, a platform, bars projected therefrom, a deflector having stays upon its outer or rear side adapted to abut against said bars to hold the deflector in upright position, said deflector adapted to receive both a turning and a lateral sliding movement, whereby its stays are turned into or out of register with corresponding bars of the platform.

6. Means for receiving mail from a moving train, the same consisting of a platform having an inclined portion, bars extended approximately at a right angle to said inclined portion, a deflector comprising stays and connected to the inclined portion of the platform to receive both a turning and a lateral sliding movement, the latter throwing the stays of the deflector into and out of register with said bars projected from the inclined portion of the platform.

857,023. BLIND-FASTENER. JEROME BRADLEY, Lancaster, Mass. Filed Dec. 22, 1905. Serial No. 292,944.



Claim.—In blind fasteners, a plate upon a blind, apertured therein to lock with pins upon the sill and wall, and bracing means for said plate so located as to bring said means, the aperture and the locking pin in a line, when the blind is locked, substantially as described.

857,024. PENDANT ELECTRIC FIXTURE. WALTER L. BRADSHAW, Cambridgeport, Mass., assignor, by mesne assignments, to John E. R. Hayes, Melrose, Mass. Filed Aug. 29, 1903. Serial No. 171,309.



Claim.—1. In incandescent electric light fixtures, the combination with a support for the electric wire terminals of a device for supporting the lamp from the conducting cord, said device comprising a tapering or cone shaped shell, a sleeve extending into the shell and slitted to form clamping fingers said sleeve having a continuous retaining flange to which the fingers are attached to render the same unitary or integral in construction, a cap covering the slitted portion of the sleeve and the shell and adapted to force the fingers against the walls of the shell to compress the fingers against the conducting cord, and means to attach the supporting device to the support for the electric wire terminals.

2. In a device of the character described, a lamp supporting device provided with means of attachment to the support for the electric wire terminals, said device comprising a tapering shell or casing, a slitted sleeve movable in the shell the slits in the sleeve forming yielding clamping fingers, cam shoulders on the fingers and means for forcing the sleeve into the shell and the cam fingers against the tapering sides of the shell whereby they may be compressed against the conducting cord when said cord is passed through the supporting device.

3. A device for relieving the terminal connections of electrical translating devices from strain, comprising a hollow tapering or cone shaped shell or casing open at each end for the passage of the conducting cord and having at one end a screw threaded neck or nipple to engage the rosette or lamp socket and at its other end with an extended rim for the connection of a cap, a hollow block having clamping jaws to engage the conducting cord and a cap piece adjustable on the rim of the casing and adapted to force the block into the casing and the jaws against the tapering sides of the casing to compress them against the conducting cord so that the weight of the lamp may be taken from the terminals.

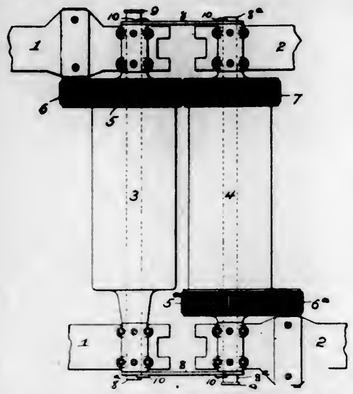
4. A device of the character specified having a hollow shell or casing provided with a sloping interior wall and through which the connecting cord or wire is adapted to pass, a cord-clamping member or members inside said shell or casing adapted in part when pressed into the casing to engage with the sloping wall thereof and thereby be made to engage with the connecting cord or wire, a hollow insulating bushing on said cord or wire connecting with said clamping member or members, and a cap piece connecting with and adjustable on the rim of the casing and adapted to force said bushing toward or into the shell or casing and said clamping member or members against the sloping sides thereof.

857,025. OVERHEAD TRAVELING CRANE. EDGAR E. BROSIUS, Alliance, Ohio, assignor to The Morgan Engineering Company, Alliance, Ohio. Filed May 3, 1906. Serial No. 315,053.

Claim.—1. The combination with two independent trolleys each provided with a hoist drum and gearing for rotating each drum, of means for coupling the trolleys whereby they are caused to travel in unison and means for coupling the hoist gears of said trolleys.

2. The combination with two trolleys mounted to travel in the same path, each trolley carrying a hoist drum, of

a pinion on each drum, the said pinions adapted to mesh when the trolleys are coupled, and means for coupling the trolleys.



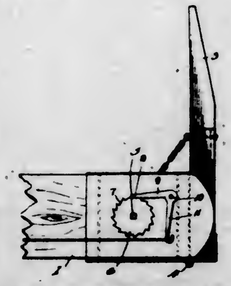
3. The combination with two trolleys mounted to travel on the same track, a hoist drum on each trolley, and a pinion on each drum, the said pinions meshing when the trolleys are coupled, of two bars for coupling the trolleys together.

4. The combination with two trolleys adapted to travel on the same track, a hoist drum on each trolley, and a toothed wheel on each drum, the said wheels adapted to intermesh when the trolleys are coupled, of a combined coupling and spacing bar carried by each trolley, and adapted to be detachably connected to the other trolley.

5. The combination with two trolleys adapted to travel on the same track, a hoist drum on each trolley, and a toothed wheel on each drum, the said wheels adapted to intermesh when the trolleys are coupled, of a combined coupling and spacing bar carried by the shaft of each hoist drum, and each bar adapted to be detachably connected to the shaft of the other hoist drum.

6. The combination of two independent trolleys each provided with a hoist drum, gearing for rotating each drum, a pinion on each drum, the said pinions adapted to mesh when the trolleys are coupled, and means for coupling the trolleys.

857,026. LOAD-RELEASING MECHANISM FOR LOGGING-CARS. LEWIS W. BROWN, Port Norfolk, and ALBERT W. CHAPPELLE, Ivor, Va. Filed Apr. 10, 1907. Serial No. 367,385.



Claim.—1. In a mechanism of the class described, the combination with a portion of a car, of a log supporting stake pivoted thereto, a shaft journaled in said portion, a ratchet wheel fixed to said shaft, a pawl pivoted at a point approximately in the horizontal plane of the highest point of the periphery of the said ratchet wheel, an arm projecting from said pawl substantially at right angles, means for operating the arm for releasing the pawl from engagement with the ratchet wheel, and a flexible connecting means between the stake and the said shaft adapted to be wound about the shaft for sustaining the stake in an upright position.

2. In a mechanism of the class described, the combination with a portion of a car, of a log supporting stake pivoted thereto, a shaft journaled in said portion contiguous to said stake, a chain connecting the stake and shaft and adapted to be wound about the shaft for sustaining the stake in an upright position, a ratchet wheel fixed to the shaft, and having teeth formed with radial shoulders, an elbow lever pivoted contiguous to said ratchet wheel in substantially the plane of the upper edge of the ratchet wheel, one of the arms of the elbow lever being formed with a squared end adapted to engage the shoulders of the ratchet teeth, and means engaging the other arm of said lever for swinging the lever upon its pivot for releasing the ratchet wheel and shaft and permitting the chain to unwind.

3. In a mechanism of the class described, the combination with the bunk of a car, of a log sustaining stake pivotally connected with one end of the said bunk, a shaft journaled in said bunk contiguous to said stake, a chain connecting the stake to said shaft and adapted to be wound about the shaft for sustaining the stake in an upright position, an elbow lever pivoted to said bunk to swing longitudinally of said car body and adapted to have one of its arms engage the said ratchet wheel, and a trip rod engaging the other of said arms and extending to the opposite end of the bunk from the said stake.

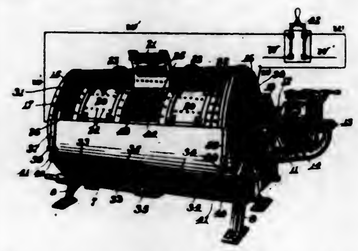
4. In a mechanism of the class described, the combination with a portion of a car, of a stake pivotally connected therewith, a shaft journaled in said portion, a chain connecting the stake to the shaft, a ratchet wheel fixed to the shaft, an elbow lever pivoted at a point substantially in the same horizontal plane as the highest point of the periphery of the ratchet, and having its arms extending at right angles, one of said arms serving as a pawl and arranged to engage the said ratchet wheel, and means connected with the other of said arms for facilitating operation of the elbow lever for releasing the ratchet wheel.

5. In a mechanism of the class described, the combination with a portion of a car, of a stake pivotally connected therewith, a shaft journaled in said portion, a chain connecting the stake with the shaft, and adapted to be wound about the shaft for sustaining the stake in operative position, a ratchet wheel fixed to the shaft, an elbow lever pivotally mounted contiguous to said ratchet wheel and adapted to have one of its arms engage the ratchet wheel as a pawl, the other of the arms of said elbow lever being of greater length than the first mentioned arm and adapted to be operated for moving the first mentioned arm out of engagement with the ratchet wheel for releasing the same.

6. In a mechanism of the class described, the combination with a bunk of a car, having a mortised out portion, of a shaft journaled in said bunk and extending across the mortised out portion, a chain fixed to said shaft within the said mortised portion, a stake connected with said chain and pivotally connected to said bunk, a ratchet wheel fixed to said shaft, a pawl pivoted in substantially the same horizontal plane as the highest point of the periphery of said ratchet in position for engaging the ratchet at such point, and means for releasing the pawl from engagement with the ratchet, the mortised out portion of said bunk being of sufficient depth for accommodating a chain when wound about the said shaft without the wound portion extending above the upper portion of the bunk.

857,027. WASHING-MACHINE. GEORGE D. BURTON, Boston, Mass., assignor to American Electrical Process Company, a Corporation of Maine. Filed Nov. 20, 1905. Serial No. 288,173.

Claim.—1. The combination of a tank adapted to contain liquids, a perforated revoluble receptacle therein, a perforated partition therein, and two electrodes so located within said tank as to cause a current of electricity to pass diagonally through said liquids.



2. The combination of a tank adapted to contain liquids, an electrode secured to the front inner face of one of the heads thereof, another electrode secured to the rear inner face of the other head, and a perforated receptacle revoluble in said tank between said electrodes.

3. The combination of a tank adapted to contain liquids, an electrode secured to the front inner face of one of the heads thereof, another electrode secured to the rear inner face of the other head, and a perforated cylindrical receptacle having perforated partitions therein revoluble in said tank between said electrodes.

4. The combination of a tank adapted to contain liquids, an electrode secured to the front inner face of one of the heads thereof, another electrode secured to the rear inner face of the other head, a perforated cylindrical receptacle having perforated partitions therein revoluble in said tank between said electrodes and forming a plurality of compartments, and a closure for each compartment.

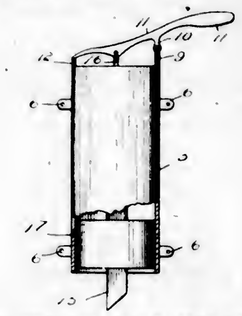
5. The combination of a tank adapted to contain liquids, an electrode secured to the front inner face of one of the heads thereof, another electrode secured to the rear inner face of the other head, and a perforated cylindrical receptacle having perforated partitions therein revoluble in said tank between said electrodes, the heads and partitions in said cylinder having a plurality of perforations therein.

6. The combination of a tank adapted to contain liquids, a receptacle mounted upon trunnions and revoluble in said tank, perforated ends to said receptacle, perforated partitions within said receptacle dividing it into compartments, a closure for each compartment, and an electrode within said tank at each end so located that a current of electricity will flow through the liquids in said tank and receptacle diagonally from one to the other.

7. The combination of a tank adapted to contain liquids, a receptacle mounted upon trunnions and revoluble in said tank, perforated ends to said receptacle, perforated partitions within said receptacle dividing it into compartments, a closure for each compartment, a plurality of inwardly extending projections secured to the inner face of each of said compartments, and an electrode within said tank at each end so located that a current of electricity will flow through the liquids in said tank and receptacle diagonally from one to the other.

857,028. GATE-LATCH. ELIZABETH F. CAMPBELL, Andalusia, Ala. Filed Mar. 22, 1906. Serial No. 307,499.

Claim.—1. A latch comprising a hollow casing, having a closing web at its upper end and provided with an opening and having a second web therewithin between its ends, said second web having an opening formed therethrough beneath the first named opening, said casing being open at its lower end, a bolt slidably engaged in the opening of the second web and having an enlargement at its lower portion of a size to fit snugly within the casing to prevent lateral movement of the bolt, said bolt projecting downwardly beyond the enlargement to extend through the lower open end of the casing, a lever pivoted between its ends at one side of the casing at the top thereof, said lever having a hand piece extending outwardly beyond the casing at one side of the pivot point, and a link pivoted to the lever at the opposite side of the lever from its end piece and pivoted to the upper end of the bolt.



2. A latch comprising a hollow casing, having a closing web at its upper end provided with an opening and having a second web therewithin between its ends, said second web having an opening formed therethrough beneath the first named opening, said casing being open at its lower end, a bolt slidably engaged in the opening of the second web and having an enlargement at its lower portion of a size to fit snugly within the casing to prevent lateral movement of the bolt, said bolt projecting downwardly beyond the enlargement to extend through the lower open end of the casing, a lever pivoted between its ends at one side of the casing at the top thereof, said lever having a hand piece extending outwardly beyond the casing at one side of the pivot point, said lever being connected with said bolt, and an upwardly extending stop piece carried by the casing at its opposite side from the pivot point of the lever, the lever being arranged for engagement of its end with the stop piece to limit the downward movement of the bolt and the lever.

857,029. COMBINED CART AND HOG-CHUTE. BENJAMIN F. CLEVELAND, Sac City, Iowa. Filed July 12, 1906. Serial No. 325,880.



Claim.—1. In a device of the character described, the combination of the bottom and sides, of an end piece connected to said bottom at each end thereof, auxiliary sides secured to each of said end pieces and normally overlapping the said sides, when the said end pieces are in a closed position, the whole arranged whereby said auxiliary sides form an addition to the said sides when the said end pieces are in an open position, substantially as described.

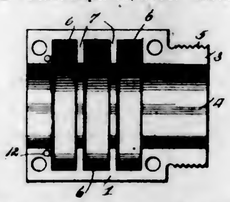
2. In a device of the character described, the combination of the bottom and sides, of an end piece hinged to the said bottom, auxiliary sides secured to said end piece at the side edges thereof and normally overlapping the said sides when the said end piece is in a closed position, the whole arranged whereby the said auxiliary sides form an addition to the said sides when the said end piece is in an open position, substantially as described.

3. In a device of the character described, the combination of the bottom and sides, of extending handles, an end piece hinged to the said bottom, auxiliary sides secured to

said end piece, the whole arranged whereby the said end piece may be swung down on said handles causing the said auxiliary sides to form an addition to said sides, substantially as described.

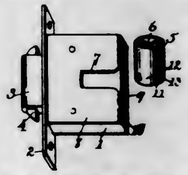
4. In a device of the character described, the combination of the bottom and sides, of an end piece associated therewith, auxiliary sides secured to said end piece for making an addition to the said sides, additional sides removably secured to said sides, and an auxiliary end secured to said additional sides, substantially as described.

857,030. METALLIC PACKING. EDWARD M. COOK, Oberlin, Ohio. Filed Sept. 22, 1906. Serial No. 335,764.



Claim.—A packing cage comprising semi-cylindrical sections, each having a reduced threaded semi-cylindrical extension, one of the sections being formed with threaded openings and the other section formed with registering bolt holes opening through the peripheral surface of the section, pins projecting from one of the sections and adapted to seat in openings formed in the other section, said pins and co-operating openings being arranged between the co-operating bolt holes and openings and the shaft opening, and said bolt holes and openings being arranged in longitudinal alinement with the threaded surface of the extensions, whereby the connecting means of the section includes the bolts and threaded extension, and are arranged in alinement to afford the maximum holding effect.

857,031. CENTER FOR LOCKS. WILBUR R. CORBIN, New Britain, Conn., assignor to The Corbin Cabinet Lock Company, New Britain, Conn., a Corporation of Connecticut. Filed Oct 13, 1906. Serial No. 338,868.



Claim.—1. A lock case having a slot for a center, a center to project into said slot, and interengaging means between said case and center arranged to prevent relative turning movement thereof, or endwise movement of the center.

2. A lock case having a slot extending from one edge thereof, and a center having lips to underlie the edges of said slot.

3. A lock case having a slot for a center, and a center having grooves on opposite sides providing a web noncircular in cross-sectional form and of a width equal to the width of said slot and lips to underlie the edges thereof.

4. A lock case having a slot extending to one edge of the case, and a center having a web to fit said slot and lips to underlie the edges thereof.

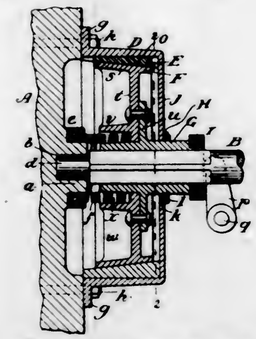
5. A lock case having a slot extending to one edge thereof and a recess formed underneath said slot, and a center having lips to enter said recess and a web to be received by said opening.

6. A lock case having a slot extending to one edge thereof, a recess formed in the case underneath said slot, and a center having a web non-circular in form to fit said slot, and lips to pass into said recess and underlie the edges of said slot.

7. A lock case having a slot formed through one wall thereof, and a center having oppositely disposed grooves to engage the edges of said slot whereby the parts are secured together by a sliding movement of one with respect to the other.

8. A lock case having a slot formed through one wall and extending to the edge of the case, and a center having grooves to engage the edges of said slot, the distance between the bottoms of said grooves being practically the same as the width of said slot whereby the parts are secured together by a sliding movement of one with respect to the other, and whereby relative turning movement is prevented.

857,032. CLUTCH FOR AUTOMOBILES AND OTHER PURPOSES. MAURICE H. CORMACK, New York, N. Y., assignor to Standard Brake Company, New York, N. Y., a Corporation of New York. Filed Mar. 2, 1906. Serial No. 303,742.



Claim.—1. In a clutch, the combination, with a driving member and a drum fixed thereto, of a driven shaft journaled in said driving member, an actuating head movable longitudinally along said driven shaft but rotatable therewith, an expansible member compressible against said drum by said actuating head, means interposed between said driving member and said actuating head for normally maintaining said head in clutching engagement, and means mounted independently of said driven shaft for shifting said head in opposition to the action of said means.

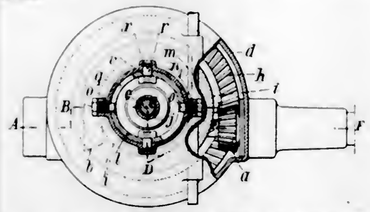
2. In a clutch, the combination, with a driving member and a drum fixed thereto, of a driven shaft journaled in said driving member, an actuating head movable longitudinally along said driven shaft but rotatable therewith, an expansible member compressible against said drum by said actuating head, means interposed between said driving member and said actuating head for normally maintaining said head in clutching engagement, and a rock-shaft mounted independently of said driven shaft and carrying a forked lever to engage said head and shift the same in opposition to said first-named means.

3. In a clutch, the combination, with a fly-wheel having a bored hub, of a driven shaft journaled in said hub and freely rotatable therein, an actuating head movable axially along said driven shaft but rotatable therewith, a drum fixed to said fly-wheel and inclosing said head, an expansible member which is forced into engagement with said drum by said head, means acting on said head to normally maintain said parts in such engagement, and means mounted independently of said driven shaft and abutting against the hub of said head whereby said head is moved out of clutching engagement.

4. In a clutch, in combination, a driving member, a driven shaft journaled in said driving member, a hub slidable axially along said driven shaft but keyed thereto in order to rotate therewith, said hub having intermediately of its length an outwardly-extending flange, a web secured to said flange and having a tapered rim-portion integral therewith and an integral flange extending laterally toward said driving member, a helical spring interposed between said web and said driving member and disposed in the socket formed between the flange of said web and said hub, a drum fixed to said driving member and inclosing said web and its tapered rim, an expansible member interposed between said tapered rim and the inner peripheral surface of said drum, and means to shift said hub and the parts secured thereto, in opposition to said spring.

5. In a clutch, in combination, a fly-wheel having a bored hub, a driven shaft freely rotatable in said hub, a head rotatable with said driven shaft but movable axially therealong, a drum fixed to said fly-wheel and inclosing said head with the exception of one end-portion of its hub, an expansible member interposed between said head and said drum, means acting upon said head for normally maintaining said member in engagement with said drum, and means acting upon the end-portion of the hub of said head which extends without said drum to shift said head out of clutching engagement.

857,033. CHANGE-SPEED GEAR FOR MOTOR-VEHICLES. GUSTAVE CORNILLEAU and AUGUSTE SAINTE-BEUVE, Paris, France. Filed July 31, 1906. Serial No. 328,526.

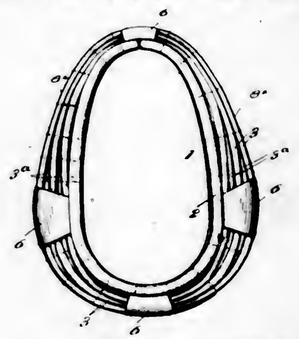


Claim.—1. In a change speed gear for motor vehicles and in combination, a driving axle in two portions, a differential gear connecting said portions, a sheath for said gear, two opposed hyperboloid toothed wheels of differing diameter secured thereon, a spindle driven from the engine, said spindle being arranged transverse of the axis of said sheath and passing between said wheels, two bevel pinions fixed on said spindle so that relative movement of the spindle and the sheath will engage one pinion with one of the wheels and disengage the other pinion from the other wheel, and means under the control of the driver to impart said relative movement.

2. In a change speed gear for motor vehicles and in combination, a driving axle in two portions, a differential gear connecting said portions, a sheath for said gear, two opposed hyperboloid toothed wheels of differing diameter secured thereon, a spindle driven from the engine, said spindle being arranged transverse of the axis of said sheath and passing between said wheels, two bevel pinions fixed on said spindle so that movements of the sheath in the general direction of its axis will engage one pinion with one of the wheels and disengage the other pinion from the other wheel and means under the control of the driver to impart said movements to the sheath.

3. In a change speed gear for motor vehicles and in combination, a driving axle in two portions, a differential gear connecting said portions, a sheath for said gear, two opposed hyperboloid toothed wheels of differing diameter secured thereon, a spindle driven from the engine, said spindle being arranged transverse of the axis of said shenth and passing between said wheels, two bevel pinions fixed on said spindle so that movements of the sheath in the general direction of its axis will engage one pinion with one of the wheels and disengage the other pinion from the other wheel and means under the control of the driver to impart said movements to the sheath, said means comprising a sleeve loose on said sheath capable of rotary but not of longitudinal movement, an operative connection between the sleeve and the sheath whereby rotary movement of the sleeve imparts movement to the sheath in the direction of its axis and means to rotate the sleeve.

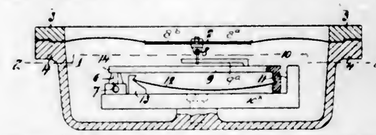
857,034. HORSE-COLLAR. SAMUEL H. CRUM, Orangeburg, S. C. Filed Aug. 13, 1906. Serial No. 330,421.



Claim.—1. In a horse collar, the combination of a body portion composed of a plurality of concentric tubular laminæ provided with suitable filling material, the opposite sides of the body portion being brondened by interposing short laminæ between the concentric laminæ, a reinforcing band extending around the body portion of the collar and holding the laminæ together, and a neck roll integral with one of the intermediate laminæ and projecting laterally from the body portion.

2. In a horse collar, the combination of a body portion composed of a plurality of concentric laminæ, a neck band formed in connection with one of the laminæ, a reinforcing band surrounding the portion of the collar at which the neck roll is connected to the body portion, and protecting strips extending over the face of the body portion of the collar, the inner ends of the protecting strips being secured to the before mentioned reinforcing band.

857,035. SIGNAL-LIGHT APPARATUS. GUSTAF DALÉN, Stockholm, Sweden, assignor to Aktiebolaget Gasaccumulator, Stockholm, Sweden, a Corporation of Sweden. Filed Feb. 15, 1906. Serial No. 301,300.



Claim.—1. In light signal apparatus, a casing having an expansible diaphragm, gas supply and delivery pipes, a valve inclosed in the casing and controlling the passages of the gas through the pipes, a magnetic means for operating the valve, and means for operating the valve against action of the magnetism.

2. In light signal apparatus, a casing having an expansible diaphragm, gas supply and delivery pipes, a valve inclosed in the casing and controlling the passages of the gas through the pipes, a seat for the valve, one of said parts being made of magnetized material and means for operating the valve against the action of the magnetism.

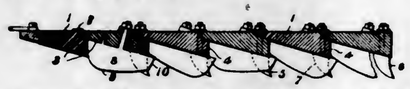
3. In light signal apparatus, a casing having an expansible diaphragm, gas supply and delivery pipes, a valve inclosed in the casing and controlling the passage of the gas through the pipes, a magnetic valve seat for said valve and means for automatically opening the valve against the action of the magnetism.

4. In light signal apparatus, a casing having an expansible diaphragm, gas supply and delivery pipes, a valve in-

closed in the casing and controlling the passage of gas, a magnetic valve seat for said valve, a lever connection between the valve and the diaphragm and a spring tending to close the valve against the action of the pressure on the membrane.

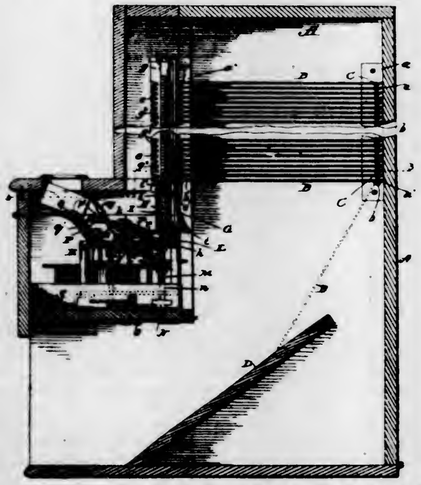
5. In light signal apparatus, a casing having an expansible diaphragm, a lever connected to the diaphragm, knife pivots for said lever at one end, the opposite end of said lever forming a valve, a magnetic valve body having a seat coöperating with the end of the lever, a gas supply pipe to the casing, a delivery pipe leading from the valve body, and a leaf spring acting on the lever.

857,036. SOIL PULVERIZER, LISTER, AND MARKER. JAMES W. DALRYMPLE, Solsberry, Ind. Filed Oct. 17, 1906. Serial No. 339,400.



Claim.—In an implement of the class described, a frame including a plurality of transversely disposed members having downwardly and rearwardly inclined surfaces, pointed blades attached to said members and being disposed in planes parallel with the line of draft, blades adapted to be adjustably positioned upon the supporting members and having substantially semi-ovate cutting edges and straight edges located at the ends of said cutting edges.

857,037. VENDING-MACHINE. CLINTON E. DAVISON, Little Rock, Iowa. Filed Apr. 17, 1906. Serial No. 312,189.



Claim.—1. The combination of a coin chute having at its delivery end a downwardly inclined over-hanging lip, a movable coin-operated lever or device having an integral independently operable, movable coin-engaging member disposed beneath said lip and means to actuate said member to release a coin therefrom.

2. The combination of a coin chute having at its delivery end a downwardly inclined over-hanging lip, a movable coin-operated lever or device having an integral elastic, independently operable, movable coin-engaging member disposed beneath said lip, and means to actuate said member to release a coin therefrom.

3. The combination of a coin chute having at its delivery end a downwardly inclined over-hanging lip, a movable coin-operated lever or device having an integral independently operable, movable coin-engaging member disposed beneath said lip, a motor, and motor-actuated means to actuate said member to release a coin therefrom.

4. The combination of a coin chute having at its delivery end a downwardly inclined over-hanging lip, delivery mechanism, a movable coin-operated lever or device having an integral independently operable, movable coin-engaging member disposed beneath said lip, and means to actuate said member to release a coin therefrom.

5. The combination of a coin chute having at its delivery end a downwardly inclined over-hanging lip, delivery mechanism, a movable coin-operated lever or device having an integral independently operable, movable coin-engaging member disposed beneath said lip, a motor, and motor-actuated means to actuate said member to release a coin therefrom.

6. The combination of a coin chute having at its delivery end a downwardly inclined over-hanging lip, a coin-operated lever, a coin releasing lever having one end disposed beneath said lip and engaging the coin-operated lever, means to prevent lateral displacement of the coin releasing lever and means to actuate the coin-releasing lever.

7. The combination of a coin chute having at its delivery end a downwardly inclined over-hanging lip, a coin-operated lever, a coin-releasing lever having one end disposed beneath said lip and engaging the coin-operated lever, means to prevent lateral displacement of the coin releasing lever, a motor controlled by the coin-operated lever, and motor-operated means to actuate the coin-releasing lever.

8. The combination of a coin guide having at its outlet end a lug or projection, a lever having an elastic portion contiguous to said outlet end and disposed beneath said projection, and means to operate the elastic portion of the lever contiguous to said outlet end.

9. The combination of a coin guide having at its outlet end a lug or projection, a lever having an elastic portion contiguous to said outlet end and disposed beneath said projection, a motor controlled by said lever, and motor-actuated means to operate the elastic portion of the lever contiguous to said outlet end.

10. The combination of a coin guide having at its outlet end a lug or projection, a lever having an integral elastic member contiguous to said outlet end and disposed beneath said projection, and means to operate the portion of the lever contiguous to said outlet end.

11. The combination of a coin chute having at its delivery end a downwardly inclined overhanging lip, a coil-operated lever or device, a coin-releasing lever engaging the latter beneath said lip, and a pin-carrying wheel the pin of which is constructed to engage and lift one end of and to actuate said coin-releasing lever.

12. The combination of a motor, a coin chute having an overhanging lip inclined downwardly from its delivery end, a pivoted coin operated lever, an independently pivoted coin releasing lever, a lug on the coin operated lever overhung by the end of the coin releasing lever, and means acting on the other end of the coin operated lever to move the same on its pivot.

13. The combination of a motor, a coin chute having an overhanging lip inclined downwardly from its delivery end, a pivoted coin operated lever, an independently pivoted coin releasing lever, a lug on the coin operated lever overhung by the end of the coin releasing lever, means acting on the other end of the coin operated lever to move the same on its pivot, and means for holding the coin releasing lever out of the path of said means.

14. The combination with the coin operated lever having a lug near its coin-engaging end, and a coin-releasing lever, and an arm parallel therewith, of a member engaged at one end with said arm and its other end pressing down said levers.

15. The combination with a coin operated lever having a lug near its coin engaging end and a coin releasing lever having one end overhanging said lug, an arm parallel with the end of the coin engaging lever, and a forked member having its forked end engaging over said arm, and its other end overlying and pressing down said levers.

857,038. DEVICE FOR RESTORING NAP TO FABRICS. GEORGE B. DEXTER, Brookline, Mass. Filed Oct. 20, 1906. Serial No. 339,804.



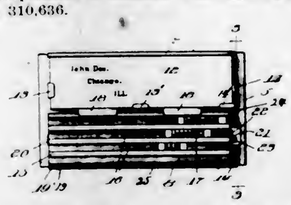
Claim.—1. In a device of the character described a rigid holder, a handle fast thereto, a convexly curved spring mounted on said holder one end of said spring adapted to slide relatively thereto, a covering of sheet material for said spring, and a plurality of teeth formed of wire inserted in said covering, the free ends of said teeth extending away from said spring and inclined at an angle thereto.

2. In a device of the character described, a holder provided with slots, a convexly curved spring mounted on said holder and adapted to yield relatively thereto, said spring provided with ears adapted to reciprocate in said slots, and a plurality of teeth mounted on said spring, the free ends of said teeth extending away from said spring and inclined at an angle thereto.

3. In a device of the character described, a holder provided with slots, a convexly curved spring mounted on said holder and adapted to yield relatively thereto, said spring provided with ears adapted to reciprocate in said slots, a covering of sheet material fast to said spring, and a plurality of teeth formed of wire inserted in said covering, the free ends of said teeth extending away from said spring and inclined at an angle thereto.

4. In a device of the character described, a holder provided with a slot, a convexly curved spring mounted on said holder and adapted to yield relatively thereto, said spring provided with an ear adapted to reciprocate in said slot, and a plurality of teeth mounted on said spring, the free ends of said teeth extending away from said spring and inclined at an angle thereto.

857,039. PRINTING DEVICE. JOSEPH S. DUNCAN, Chicago, Ill., assignor to Addressograph Company, Chicago, Ill., a Corporation of Illinois. Filed Apr. 9, 1906. Serial No. 310,636.



Claim.—1. A printing device of the character described comprising a frame, means for removably holding a card in place on the frame, said means comprising a stop at one end of the frame to engage one end of the card, and a lip on the frame beneath said stop to overlap the corner of the card and hold the card in engagement with said stop.

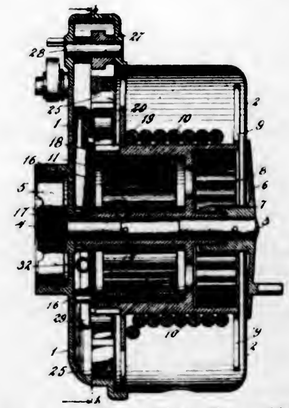
2. A printing device of the character described comprising a frame and means for holding a card in place on the frame, said means consisting of a bead at the top of the frame to engage the upper edge of the card, a lip on the frame to engage the bottom of the card between its ends, a lip at one end of the frame to engage one end of the card, a stop at the other end of the frame against which the adjacent end of the card abuts, and a lip on the frame beneath said stop to overlap the lower corner of the card at the end adjacent to said stop and hold the card in engagement with said stop.

3. A printing device of the character described comprising a frame, means on said frame for holding a type holder, and a locking device on the frame comprising a spring tongue, there being an upstanding lip and an offset handle lip on said tongue.

4. A printing device of the character described comprising a frame, and means on said frame for holding a type holder thereon, said means comprising an inwardly bent upstanding flange to engage the lower edge of the holder, the ends of said flange being bent to form feet for the holder.

5. A printing device of the character described comprising a frame, means on said frame for holding a type holder, said means comprising an over-hanging lip to engage the upper edge of the holder, an inwardly bent flange to engage the lower edge of the holder, the ends of said flange being bent to form feet for the holder, a fixed stop to be engaged by one edge of the holder, and a locking device to engage the other end of the holder, said locking device comprising a spring tongue, an upstanding locking lip, and an offset handle lip.

857,040. TROLLEY-RETRIEVER. CHARLES I. EARLL, New York, N. Y. Filed Oct. 24, 1904. Serial No. 229,731.



Claim.—1. In a trolley retriever the combination with three relatively movable members; one constituting a drum, another a normally stationary member, and another an intermediate member, and a power spring having one end attached to the intermediate member and the other end to one of the other of said members, of means automatically connecting said intermediate member with the drum while the drum is moved in one direction and means automatically connecting said intermediate member, with the normally stationary member while it is moved in the other direction, during the setting of said power spring.

2. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member, and another an intermediate member, of a power spring having one end secured to the intermediate member and the other end to one of the other of said members with ratchet and pawl connections between the intermediate member and the drum, and between the intermediate member and the normally stationary member, such that during the setting of the power spring the turning of the drum in one direction will cause the engagement of the ratchet connections between the intermediate member and the drum and the turning of the drum in the opposite direction will cause the engagement of the ratchet connections between the intermediate member and the normally stationary member.

3. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member, and another an intermediate member, of a power spring normally set in a strained condition, having one end secured to the intermediate member and the other end to one of the other of

said members, means to connect the intermediate member with the drum when the drum is turned in one direction, and means to connect the intermediate member with the stationary member when the drum is turned in the opposite direction, thrown into action automatically during the setting of said power spring.

4. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member, and the third an intermediate member and a power spring having one end secured to the intermediate member and the other end to one of the other said members, said power spring being normally held in a set or strained condition and inactive to produce rotation of said drum, means for throwing said power spring into action to rotate said drum, and power spring setting means, automatically connecting said intermediate member with the drum while the drum is turned in one direction and with the stationary member while turned in the opposite direction during the setting, and means for automatically throwing said setting means out of action when said power spring has been set to a predetermined limit.

5. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member and the third an intermediate member, and a power spring having one end secured to said intermediate member and the other end to one of the other members, and holding means automatically thrown into action to hold said intermediate member to said drum while the drum is turned in one direction and holding means automatically thrown into action to hold said intermediate member to said normally stationary member while it is turned in the opposite direction during the setting of the power spring.

6. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member and the third an intermediate member and a power spring having one end secured to said intermediate member and the other end to one of the other members, and holding means automatically thrown into action to hold said intermediate member to said drum while the drum is turned in one direction and holding means automatically thrown into action to hold said intermediate member to said normally stationary member while it is turned in the opposite direction, and means for automatically throwing the holding means between said intermediate member and one of the other said members out of action when the power spring has been set to a predetermined limit.

7. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member and another an intermediate member and a power spring having one end secured to the intermediate member and the other to one of the other of said members, of an automatic step by step setting mechanism operated by the rotation of the drum in the direction to unwind the rope therefrom.

8. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member and another an intermediate member, and a power spring having one end secured to the drum and the other end to the intermediate member, of means for automatically connecting the intermediate member with the drum while the drum turns in one direction and means for automatically connecting said intermediate member with said stationary member while it turns in the opposite direction during the setting of said power spring.

9. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member and another an intermediate member, and a power spring having one end secured to the drum and the other end to the intermediate member, of means for automatically connecting the intermediate member with the drum while the drum turns in one direction and means for automatically connecting said intermediate member with said stationary member while it turns in the opposite direction during the setting, said means including means for freeing said intermediate member from one, and leaving it in engagement with the other, of said members after said power spring has been set a predetermined amount.

10. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member, and the third an intermediate member, and a power spring having one end secured to the drum and the other end to the intermediate member, of means for automatically connecting the intermediate member with the drum while the drum turns in one direction and means automatically connecting the intermediate member with said stationary member while the drum turns in the opposite direction during the setting of said power spring, and an automatic stop to prevent the setting of said power spring beyond a predetermined limit.

11. In a trolley retriever the combination with a drum, and a power spring adapted to be thrown into action by the rotation of said drum to wind up the trolley rope, during which said power spring unwinds, of means automatically thrown into action by the unwinding of said power spring to cause the unwinding of rope from the drum to rewind said power spring.

12. In a trolley retriever the combination with a drum adapted to receive the trolley rope of a power spring normally in a set condition adapted to be thrown into action by the rotation of said drum, to wind up the trolley rope, and means automatically thrown into action for retaining said power spring at intervals while it is being reset.

13. In a trolley retriever the combination with a drum adapted to receive the trolley rope, of a spring, normally under strain and adapted to be thrown into action by the sudden acceleration or rapid rotation of said drum to wind up the trolley rope, and means automatically thrown into action during said action of said spring whereby the unwinding of the rope from said drum will wind up or set said spring.

14. In a trolley retriever the combination with a drum adapted to receive the trolley rope of a spring normally under strain adapted to be thrown into action by the sudden acceleration or rapid rotation of said drum to wind up the trolley rope, and means automatically thrown into action by the unwinding of rope from said drum to set said power spring and means to retain said spring at intervals.

15. In a trolley retriever the combination with a drum, a tension spring and a power spring of a ratchet and pawl retaining mechanism automatically thrown into action to hold said power spring in a plurality of stages while it is being set.

16. In a trolley retriever the combination with a drum, a tension spring and a power spring of the ratchet and pawl retaining mechanism automatically thrown into action to hold said power spring in a plurality of stages while it is being set and an automatic stop to limit the amount to which said power spring is set.

17. In a trolley retriever the combination with a drum, a tension spring and a power spring of a ratchet and pawl retaining mechanism automatically thrown into action to hold said spring in a plurality of stages during the setting and means for automatically throwing said ratchet and pawl connecting mechanism out of action when said power spring has been set to a predetermined limit.

18. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member, and another an intermediate member, and a power spring having one end secured to the intermediate member and the other end to one of the other of said members, of ratchet and pawl connections between said intermediate member and said stationary member and ratchet and pawl connections between said intermediate member and said drum and means for automatically throwing both of said ratchet and pawl connections into action.

19. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member and another an intermediate member, and a power spring having one end attached to the intermediate member and the other end to one of the other of said members of ratchet and pawl connections between said intermediate member and said stationary member and ratchet and pawl connections between said intermediate member and said drum, means for automatically throwing both of said ratchet and pawl connections into action and means for automatically throwing one of said ratchet and pawl connections out of action when said power spring has been set a predetermined amount.

20. In a trolley retriever the combination with a drum, a tension spring and a power spring of a lug secured to said power spring intermediate its two ends, a setting mechanism for said power spring and means engaging said lug to throw said setting mechanism into action.

21. In a trolley retriever the combination with a drum and a power spring adapted to be thrown into action to rotate said drum, of a setting mechanism for said power spring and means engaging said power spring intermediate its two ends to throw said mechanism into action.

22. In a trolley retriever the combination with a drum, and a power spring of a setting mechanism, a lug secured to said power spring intermediate its two ends and means actuated by engagement with said lug to limit the setting of said power spring.

23. In a trolley retriever the combination with three relatively movable members, one constituting a drum, another a normally stationary member and another an intermediate member, and a power spring having one end attached to the intermediate member and the other end to one of the other of said members, a lug secured to said power spring connections between the said intermediate member and one of the other of said members adapted to be thrown into and out of action by engagement with said lug.

24. In a trolley retriever the combination with two members one constituting a drum, the other a normally stationary member and a power spring, normally in a strained condition and having its two ends retained by one of said members, means for automatically releasing one of the ends of said spring from the member by which it is normally held and connecting said released end to the other member to bring said drum under the action of said power spring, and automatic means for retaining the said released end of said spring by said stationary member and said drum alternately when said drum is rotated alternately in opposite directions.

25. In a trolley retriever the combination with a drum of a power spring adapted to be thrown into action by the rotation of said drum, to wind up the trolley rope, of means automatically thrown into action during the winding up of said trolley rope to cause the unwinding of rope from said drum to reset said power spring.

26. In a trolley retriever the combination with a drum adapted to receive the trolley rope, a tension spring and a power spring of a set mechanism for the power spring thrown into action by the unwinding of said spring and thrown out of action when said spring is wound up to a predetermined point and adapted to permit the drum to take up slack under the action of the tension spring and to prevent the unwinding of the power spring before said retriever spring is fully set.

27. In a trolley retriever the combination with a drum, a tension spring, a normally stationary member and an intermediate member of a power spring secured to said drum and said intermediae member, automatic means for locking said intermediate member to said drum when said drum is turned in one direction and automatic means for locking said intermediate member to said stationary member when the drum is turned in the opposite direction.

28. In a trolley retriever the combination with a drum a stationary member and an intermediate member of a power spring having one end secured to said drum and the other end to said intermediate member, retaining means on said intermediate member adapted to engage the drum when the drum is turned in one direction and to engage the stationary member when it is turned in the opposite direction.

29. In a trolley retriever the combination with a drum a stationary member and an intermediate member of a power spring, having one end secured to said drum and the other end to said intermediate member, retaining means on said intermediate member adapted to engage the drum when the drum is turned in one direction and to engage the stationary member when it is turned in the opposite direction, and means for automatically freeing said intermediate member from said stationary member when said power spring is wound up to a predetermined limit.

30. In a trolley retriever the combination with a drum a stationary member and an intermediate member of a pawl upon said intermediate member engaging teeth upon said drum a pawl upon said intermediate member engaging teeth upon said stationary member and means for automatically throwing last named pawl into and out of action.

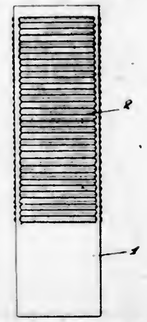
31. In a trolley retriever the combination with a drum a stationary member and an intermediate member, of a power spring secured to said drum and said intermediate member, a pawl upon said intermediate member adapted to engage teeth upon said drum and means for throwing said pawl into engagement with said teeth to prevent the relative rotation of said drum and said intermediate member when said power spring has been wound up to a predetermined limit.

32. In a trolley retriever the combination with a drum adapted to receive the trolley rope, a tension spring and a power spring, of means for retaining said power spring when said drum rotates under the action of said tension spring and means for causing the unwinding of rope from said drum to set said power spring and a trolley rope having an enlarged portion for the grip.

33. In a trolley retriever the combination with the drum, the tension spring and the power spring, of reciprocating setting means and a rope having an enlarged grip portion.

34. In a trolley retriever the combination with two relatively movable members, one constituting a drum and the other a normally stationary member, and a power spring having one of its ends secured to one of said members, of mechanism automatically connecting the other end of said power spring with the drum when the drum is turned in one direction and with said normally stationary member when the drum is turned in the opposite direction, during the setting of said power spring.

857,041. CAN OR RECEPTACLE FOR STORAGE BATTERIES. THOMAS A. EDISON, Llewellyn Park, Orange, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Oct. 5, 1903. Serial No. 175,819.



Claim.—A seamless can or receptacle made of electro-deposited iron and carbon incorporated therewith, substantially as set forth.

857,042. ADJUSTING-BOX. GEORGE W. EDWARDS and EARNEST E. EDWARDS, Cambridge, Nebr. Filed Dec. 15, 1906. Serial No. 348,061.

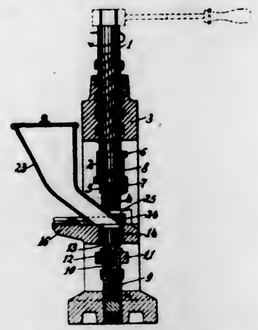
Claim.—1. The combination, with the halves of a bearing box, the back of one of which halves is formed with an inclined surface, and a relatively stationary support, of a

wedge formed with apertures therein and bearing against said surface, a plate having a lug projecting in one of said apertures, and a spring pressing against said lug, substantially as set forth.



2. The combination, with the halves of a bearing box, of wear-out-wedges meeting the two halves of the box on an incline, and an automatic take up wedge for pressing the halves of the box together.

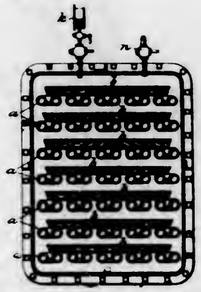
857,043. SCREW-PRESS FOR MOLDING TABLETS. HUBERT ENDEMANN, Vienna, Austria-Hungary. Filed Apr. 22, 1907. Serial No. 369,682.



Claim.—1. In a screw press for molding tablets, the combination with the screw and the matrix of a carriage adapted to slide to and fro over the matrix, a supply hopper carried by the said sliding carriage, a crank geared with the carriage, a spring tending to keep the carriage above the matrix, and a cam mounted on the screw and adapted so to operate the crank that the carriage is pushed away from the matrix, substantially as and for the purpose described.

2. In a screw press for molding tablets, the combination with the screw and the lower die or movable matrix bottom, of a laterally projecting arm rigidly connected with the lower die, an endwise movable rod parallel to and guided by the side of the screw, a tappet secured to the bottom portion of the said rod in such a position as to project below the lateral arm of the lower die, a spring tending to keep the rod raised, a spring tending to lower the lower die, a second tappet secured to the top portion of the said rod, and a cam secured to the screw and adapted so to co-operate with the said second tappet that, on the screw being lowered, the cam carries along the tappet and passes below the same, and on the screw being raised, it raises the tappet, substantially as and for the purpose described.

857,044. PRODUCTION OF PRINTING-INK PIGMENTS. PETER FIREMAN, Braddock Heights, Va. Filed Oct. 21, 1905. Serial No. 283,783.

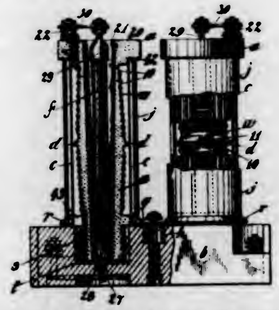


Claim.—1. The method of producing dry precipitated black ferro-ferric oxid, which consists in dissolving a ferrous salt, obtaining therefrom, by oxidation and precipitation, a ferro-ferric oxid wherein the ratio of the ferrous to the ferric iron is greater than that represented by the formula $FeO.Fe_2O_3$, and drying the same with the exclusion of air; substantially as described.

2. The method of producing dry precipitated black ferro-ferric oxid, which consists in dissolving a ferrous salt, precipitating the salt by a substance having an alkaline reaction, oxidizing the precipitate by a current of air to such a degree as to produce a ferro-ferric oxid wherein the ratio of the ferrous to the ferric iron is greater than that represented by the formula $FeO.Fe_2O_3$, and drying the same with the exclusion of air; substantially as described.

3. Dry precipitated black ferro-ferric oxid, wherein the ratio of the ferrous to the ferric iron is greater than is represented by the formula $FeO.Fe_2O_3$; substantially as described.

857,045. LIGHTNING-ARRESTER. GEORGE L. FOOTE, New York, N. Y., assignor to Foote, Pierson & Company, New York, N. Y., a Firm. Filed Dec. 29, 1906. Serial No. 349,937.



Claim.—1. In a lightning arrester the combination of a tapered core of insulating material having a helical groove in its surface, a bare conductor supported in said groove and an insulated conducting medium fixed parallel with the axis of said core and in close proximity to said conductor.

2. In a lightning arrester the combination of a core of insulating material tapered from the center toward each end and having a helical groove in its surface, a bare conductor supported in said groove and an insulated conducting medium fixed parallel with the axis of said core and in close proximity to said conductor.

3. In a lighting arrester the combination of a tapered core of insulating material having a helical groove in its surface, a bare conductor supported in said groove and an insulated sheet of conducting material arranged to form an incomplete cylinder, fixed parallel with the axis of said core outside of and in close proximity to said conductor.

4. In a lightning arrester the combination of a core of insulating material having a tapered axial passage from end to end, a helical conductor supported upon the surface of said core, an exterior conductor in close proximity insulated therefrom and an inclosed section of fusible conductor located in the tapered interior of the core and connected in series with the helical conductor.

5. In a lightning arrester the combination of a core of insulating material having an axial passage extending from end to end, a helical conductor supported upon the surface of said core, an exterior conductor in close proximity to but insulated from said helical conductor, a section of fusible conductor inclosed in a protecting tube of insulating material located in said axial passage in the core, a screw terminal for said fusible section engaging a screw socket in the bottom of said passage, a screw terminal for the upper end of said fusible section and a link of conducting material for uniting the terminals of the helical coil to the fusible section.

6. In a lightning arrester the combination of a suitable core of insulating material, a helical conductor suitably supported thereon and an external ground contact fixed in close proximity parallel with the major axis consisting of a curved sheet of metal having crimps or corrugations in its surface parallel with the axis of the core.

7. In a lightning arrester the combination of a suitable core of insulating material, a helical conductor supported thereon, an external ground contact fixed in close proximity parallel with the major axis, consisting of a curved sheet of metal having crimps or corrugations in its surface arranged parallel with the axis of the core and a cylinder of insulating material inclosing said curved sheet of metal.

8. The combination of a series of insulating base blocks, a lightning arrester for each block consisting of a line contact and a ground contact in close proximity, a cylinder inclosing said contacts, means for separably connecting each cylindrical arrester to its base block and means for uniting each base block with an adjacent block to secure accurate alinement consisting of a projection on one edge and a depression on the other edge of each base block arranged to engage or register with similar projections and depressions on adjacent base blocks.

857,046. PROCESS OF PRODUCING CONCENTRATED FORMIC ACID FROM FORMATES. EMIL FRANKE, Grünau, near Berlin, Germany, assignor to Chemische Fabrik Grünau Landshoff & Meyer Aktiengesellschaft Manufacturing Chemists, Grünau, near Berlin, Germany. Filed June 27, 1906. Serial No. 323,687.

Claim.—1. A process for producing concentrated formic acid from formate, consisting in intimately mixing a solid formate with the solid acid salt of a polybasic acid which is stronger than formic acid, and in submitting the mixture thus formed to distillation.

2. A process for producing concentrated formic acid from formates, consisting in intimately mixing a solid formate with the solid acid salt of a polybasic acid which is stronger than formic acid, and in submitting the mixture thus formed to distillation in a retort, whereby said formic acid is distilled off.

3. A process for producing concentrated formic acid from formates, consisting in intimately mixing a solid formate with sodium bisulfate, and in submitting the mixture thus formed to distillation.

4. A process for producing concentrated formic acid from formates, consisting in intimately mixing a solid formate with the solid acid salt of a polybasic acid which is stronger than formic acid, and in submitting the mixture thus formed to distillation in a retort and in stirring the same during distillation, whereby said formic acid is distilled off, substantially as described.

857,047. HAND WEAPON. KONRAD GEHRER, Elgg, Switzerland. Filed Mar. 29, 1907. Serial No. 365,277.



Claim.—1. A device comprising in combination a slotted shaft, a handle, a rod movable longitudinally within the shaft and connected to the handle, and knives pivoted to the rod and engaging the slots in the shaft and adapted to project from the shaft on movement of the rod toward one of its end positions.

2. A device comprising in combination a slotted shaft, a handle, a rod movable longitudinally within the shaft and connected to the handle, knives pivoted to the rod and engaging the slots in the shaft and adapted to project from the shaft on movement of the rod toward one of its end positions, and means for resiliently holding the rod in its other end position for the purpose set forth.

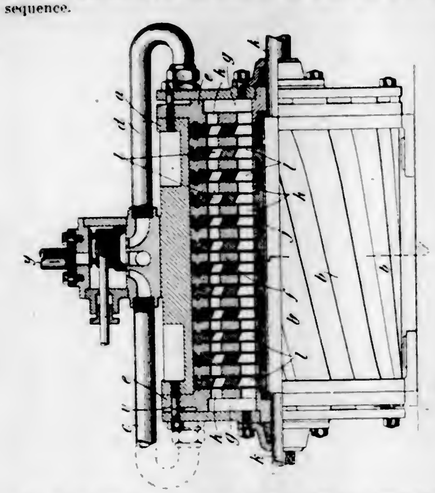
3. A device comprising in combination a slotted shaft, a handle, a rod movable longitudinally within the shaft and connected to the handle, knives pivoted to the rod and engaging the slots in the shaft and adapted to project from the shaft on movement of the rod toward one of its end positions, and means comprising a screw threaded nut in the handle for moving the rod to project the knives on the revolution of said handle.

857,048. TURBINE. JULES GERSANT, Clapham, London, and GEORGES J. J. LEGRAND, Lancing, England. Filed June 30, 1906. Serial No. 324,292.

Claim.—1. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages of uniform dimensions therethrough, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

2. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages of uniform dimensions therethrough, a plurality of channels formed in one with the cylinder and each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other

fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of such sequence.



3. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages of uniform dimensions therethrough, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

4. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

5. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages therethrough, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

6. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed in one with the cylinder and each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

7. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

8. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

9. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages therethrough, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

10. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed in one with the cylinder and each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

11. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

12. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

13. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with motive fluid passages of uniform dimensions therethrough, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

14. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with motive fluid passages of uniform dimensions therethrough, a plurality of channels formed in one with the cylinder and each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

15. A turbine comprising a cylinder containing a plurality of fixed and rotatable parts with motive fluid passages of uniform dimensions therethrough, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

16. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in a fixed part in one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

17. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with motive fluid passages therethrough, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

18. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed in one with the cylinder and each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

19. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

20. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

21. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with motive fluid passages therethrough, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

22. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed in one with the cylinder and each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

23. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

24. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

25. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages of uniform dimensions therethrough, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

26. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages of uniform dimensions therethrough, a plurality of channels formed in one with the cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of

the sequence of connected channels and ports and the other to the other end of such sequence.

27. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages of uniform dimensions therethrough, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, & motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

28. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of the said sequence.

29. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages therethrough, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

30. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed in one with the cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

31. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to upon and close approximately uniformly throughout their length, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

32. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

33. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with motive fluid passages therethrough, and a plurality of channels formed between the cylinder and a second cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

34. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed in one with the cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

35. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

36. A turbine comprising a cylinder containing two fixed parts and one intermediate rotatable part all with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in one of the fixed parts to one or more ports adjacent to the corresponding ports in the other fixed part, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

37. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with motive fluid passages of uniform dimensions therethrough, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

38. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with motive fluid passages of uniform dimensions therethrough, a plurality of channels formed in one with the cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

39. A turbine comprising a cylinder containing a plurality of fixed and rotatable parts with motive fluid passages of uniform dimensions therethrough, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

40. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part in one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

41. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with motive fluid passages therethrough, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

42. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed in one with the cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

43. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence.

44. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the other end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

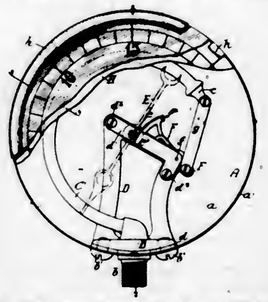
45. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with motive fluid passages therethrough, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

46. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed in one with the cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

47. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels formed between the cylinder and a second concentric cylinder and each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

48. A turbine comprising a cylinder containing a plurality of alternately fixed and rotatable parts with radial passages therethrough so shaped as to open and close approximately uniformly throughout their length, a plurality of channels each in sequence connecting through motive fluid chambers one or more of a series of motive fluid ports in a fixed part at one end of the cylinder to one or more ports adjacent to the corresponding ports in a fixed part at the opposite end of the cylinder, and motive fluid supply and exhaust passages one connected to one end of the sequence of connected channels and ports and the other to the other end of said sequence, and means for reversing the connections of such supply and exhaust passages.

857,049. PRESSURE-GAGE. JOHN R. GOEHRING, Philadelphia, Pa., assignor to T. Broom Belfield, Philadelphia, Pa. Filed Sept. 1, 1906. Serial No. 332,918.



Claim.—1. The combination in a pressure gage, of a sheet metal body portion, a head having a stem projecting through the flange of the body portion, a Bourdon tube carried by the head, a struck up metal frame having an extension clamped between the head and the body portion and carrying the indicating mechanism, substantially as described.

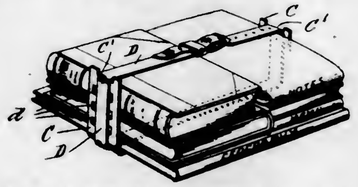
2. The combination in a pressure gage, of a flanged casing, a head having a stem projecting through the flange of the casing and curved on its under side, a Bourdon tube carried by the head, a sheet metal frame having a curved extension clamped between the head and the flange, means

for securing the parts together, and indicating mechanism carried by the frame and connected to the tube, substantially as described.

3. The combination in a pressure gage, of a body portion, pressure indicating mechanism, a dial having projecting lugs shaped so as to rest upon the edge of the frame, a sheet of glass for inclosing the dial, the glass resting upon the projecting lugs of the dial, and means for securing the glass to the frame, substantially as described.

4. The combination in a gage, of a body portion, pressure indicating mechanism mounted in the body portion, a dial inclosing the indicating mechanism, said dial having lugs at the edge bent so as to rest against the edge of the body portion and providing a flat bearing surface, a sheet of glass resting upon the flat bearing surface of the lugs, and a ring confining the glass and dial to the body portion, substantially as described.

857,050. BOOK-CARRIER. FELIX GOTTSCHALK, New York, N. Y. Filed May 19, 1906. Serial No. 317,758.



Claim.—1. A book carrier consisting of a base, end pieces hinge connected to the opposite ends of the base, to occupy upright positions and also to be foldable on the base, and a strap or like flexible binder arranged along the base, extending upwardly in engagement with the end pieces, and continued over the base, and adapted to tighten the carrier.

2. A book carrier consisting of a base, comprising engaged sections, longitudinally contractible and distensible, the one relatively to the other, and end plates or uprights connected to the extremities of said sectionally formed base, and a strap or like flexible binder extending along the base, also upwardly in engagement with the end pieces, and over the base, and adapted to tighten the carrier.

3. A book carrier consisting of a base, end pieces connected to the opposite ends of the base, to occupy upright positions, and having one or more strap or band engagement apertures between their upper and lower edges, and a strap or band arranged along the base, extended upwardly in engagement with the end pieces and over the base, and adapted to be fastened.

4. A book carrier consisting of a base, end pieces connected to the opposite ends of the base, to occupy upright positions and having recesses in their upper edges, and a strap or band arranged along the base, extended upwardly in engagement with the end pieces, and over the base, and serving as a fastener for the carrier.

5. A book carrier consisting of a base, end pieces, connected to the opposite ends of the base, to occupy upright positions and having engagement recesses in their upper edges, and engagement apertures or slots between their upper and lower edges, and a strap or band arranged along the base, extended upwardly in engagement with the end pieces, and over the base, and having fastening means therefor.

6. A book carrier consisting of a base, comprising engaged sections, longitudinally contractible and distensible, the one relatively to the other, means for limiting the endwise movements of said sections, and for preventing the disconnection thereof, and end plates or uprights connected to the extremities of said sectionally formed base, and a strap or band extending along the base, also upwardly in engagement with the end pieces, and over the base, and serving to tighten and fasten the device.

7. A book carrier consisting of a base, comprising engaged and relatively longitudinally contractible and distensible sections, one thereof being constructed with marginal longitudinal overturned lips, within which the edge portions of the other section are engaged, and end plates or uprights connected to the extremities of said sectionally formed base, and a strap or band arranged along the base, also extending upwardly in engagement with the end pieces, and over the base, and serving to tighten and fasten the device.

8. A book carrier consisting of a base, comprising engaged and relatively longitudinally contractible and distensible, thin metallic sections, one thereof being constructed with marginal longitudinal overturned lips, within which the edge portions of the other section are engaged, and both said sections being constructed with matching longitudinally extending corrugations, and end plates or uprights hinge connected to the extremities of said sectionally formed base, and a strap or band arranged along the base, also upwardly in engagement with the end pieces, and over the base, and provided with tightening means.

9. A book carrier consisting of a base comprising engaged and relatively longitudinally contractible and distensible thin metallic sections, one thereof being constructed with marginal longitudinal overturned lips within which the opposite edge portions of the other section are engaged, and one of said sections having a longitudinal slot between its edges and terminating within its ends, and the other section having a projection extended within said slot, end plates or uprights hinge-connected to the extremities of said sectionally formed base, and a strap or band arranged along the base and also extended upwardly and engaging with the end pieces and continued over the base, and adapted to be fastened in its encircling relation.

10. A book carrier consisting of a base, end pieces hinge connected to the opposite ends of the base, and a strap or band arranged along the base, extending upwardly in engagement with the end pieces, and continued over the base and having a fastening means, and a box, and means of detachable connection between the box and base, whereby said box may be supported by the carrier and at pleasure detached therefrom.

11. A book carrier consisting of a base, end pieces hinge connected to the opposite ends of the base and a strap or band arranged along the base, extending upwardly in engagement with the end pieces, and continued over the base, and having fastening means, and having combined therewith a box provided at opposite sides with one or more pairs of members constructed with inturned extremities to engage on, and acquire supporting engagements at, the marginal portions of the base.

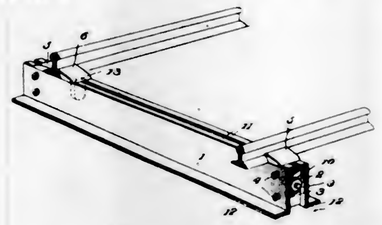
12. A book carrier consisting of a base comprising engaged and relatively longitudinally contractible and distensible thin metallic sections, one thereof being constructed with marginal longitudinal overturned lips within which the opposite edge portions of the other section are engaged, and one of said longitudinal lips having projections struck up therefrom near opposite ends thereof, end plates or uprights hinge connected to the extremities of said sectionally formed base, and a strap or band arranged along the base and also extended upwardly and engaging with the end pieces and continued over the base and adapted to be tightened and fastened, and a box provided at opposite sides with pairs of members constructed with inturned extremities to engage over the longitudinal overturned lips of one of said base sections, and said members being capable of lateral deflections, for the purpose explained.

13. In a device of the character described, the combination with a base consisting of two sections constituted of thin metallic strips, made with longitudinal matching corrugations, one of said base sections having a longitudinal slot terminating within the ends thereof, and the other section having a lip angularly turned therefrom and engaging in said slot, and one of said sections being furthermore constructed with longitudinally extending edgewise located overturned ears within which the edge portions of the other section have sliding engagements, of end plates hinge-connected to the outer ends of said base sections and provided with transverse strap engagement slots between their upper and lower ends and having in their upper ends strap engagement notches or recesses, a strap or band ranging along under the sectionally formed base, extended upwardly outside of said end plates and adapted to engage as desired, either through the end plate slots or across the recessed upper ends of the end plates, and to be continued over the base, and provided with a securing appliance.

14. The combination with a book carrier consisting of a base, upright end pieces connected to the opposite ends of the base, and a strap or band arranged along under the base, extending upwardly in engagement with the end pieces, and continued over the base, and having a fastening means therefor, of a box to be supported by and under the base, means for detachably connecting the box to the base,—and said box having a cover constructed at its top with a longitudinal channel for the accommodation of the strap.

15. A book carrier consisting of a base, comprising engaged sections, longitudinally contractible and distensible the one relatively to the other, and end plates or uprights hinge connected to the extremities of said sectionally formed base, and a flexible binder extending along the base, also upwardly in engagement with the end pieces, and over the base, and adapted to serve as a fastening for the carrier, and said binder having an arm or shoulder engagement loop.

857,051. METALLIC RAILROAD-TIE. JOHN L. GOURLEY, Uhrichsville, Ohio, assignor of two-thirds to L. S. Nicholls and T. D. Healea. Filed Mar. 6, 1907. Serial No. 360,851.



Claim.—1. A metallic railway tie comprising spaced members, spacing pieces interposed between said members, a fixed clip, a movable clip, and means for adjusting and securing the movable clip into adjusted position, said means coöperating with the spacing means interposed between the said beams.

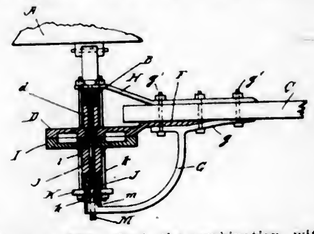
2. A metallic railway tie comprising spaced members, means connecting the said members, fixed clips having pendent lugs apertured to receive fastening means connecting the members, movable clips having pendent lugs formed with openings, and fastenings passed through the openings in the lugs of the movable clips adapted to effect adjustment thereof and to secure the movable clip in an adjusted position.

3. A metallic railway tie comprising transversely spaced beams, spacing pieces interposed between said beams, means connecting the beams, fixed clips secured to the beams by the connecting means thereof, movable clips having pendent lugs, and fastening means coöperating with the before mentioned spacing pieces and with the lugs of the movable clips to admit of adjusting the latter and securing the same in the adjusted position.

4. A metallic railway tie comprising transversely spaced beams, a hollow spacing piece arranged between the beams, bolts connecting the beams and the spacing pieces, fixed clips held between the beams by said bolts connecting the beams, clips having pendent lugs extended into the space formed between the said beams, and other bolts passing through the openings in the lugs of the movable clips and other openings in the said spacing pieces to adjust the movable clips and secure the same in an adjusted position.

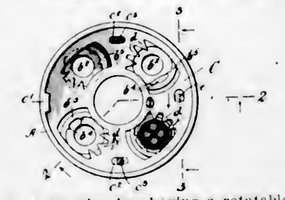
5. A metallic railway tie comprising transversely spaced beams having inner flanges along their upper edges and outer flanges at their lower edges, spacing pieces between the beams underlapping the upper flanges thereof, bolts connecting the beams and spacing pieces, fixed clips secured to the beams, adjustable clips having pendent portions coming between the beams and having notches in opposite edges of the pendent portions to receive the inner upper flanges of said beams, and fastenings for securing the movable clips to said spacing pieces and serving to draw said clips to clamp the rails between them.

857,052. FIFTH-WHEEL. JULIUS A. GRASBERGER, Richmond, Va. Filed May 9, 1906. Serial No. 315,987.



Claim.—In a fifth wheel, the combination, with a leaf spring, an upper circle-plate arranged with its center directly under the said leaf spring and provided with a projecting arm, a distance block arranged between the said spring and circle-plate, and clamping bolts securing the said parts together; of a lower circle-plate, an axle arranged directly under the center of the said lower circle plate, clamping bolts securing the said lower circle-plate and axle together, a reach resting on the said projecting arm with its front end clear of the said distance block, a top stay resting on the said spring and reach, a king-bolt stay arranged under the said reach, bolts securing the said stays and arm to the said reach, and a king-bolt passing through holes in the said stays, spring, block, circle-plates and axle and pivotally connecting the said circle plates.

857,053. JUNCTION-BOX. EDWIN T. GREENFIELD, Kiamesha, N. Y. Filed June 11, 1906. Serial No. 321,186.



Claim.—1. A junction box having a rotatable clamping device supported on one side of a wall of the box and means for rotating said device from the other side of said wall, substantially as described.

2. A junction box having a clamping device supported on one side of a wall of the box and rotatable relatively thereto, guides for said device, and means for rotating said device from the other side of said wall, substantially as described.

3. A junction box having a clamping plate supported on one side of a wall of the box, said plate having openings therein, teeth formed on a side of each of said openings, and means for moving said plate operated from the opposite side of said wall, substantially as described.

4. A junction box having a clamping plate supported on one side of a wall of the box, said plate having openings therein, guides for said plate, teeth formed on a side of each of said openings, and means for moving said plate operated from the opposite side of said wall, substantially as described.

5. A junction box having openings through a wall there-

of for conductors, a plate supported on said wall and having corresponding openings therethrough, means for retaining said plate in position permitting predetermined movement thereof relatively to said wall, and means for moving said plate operated from the opposite side of said wall, substantially as described.

6. A junction box having openings through a wall thereof for conductors, a clamping device having corresponding openings therethrough supported upon one side of a wall of the box, and means operated from the other side of said wall for causing said clamping device to grip a conductor passing through said openings, substantially as described.

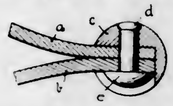
7. A junction box having a clamping plate supported upon a wall thereof, said plate having an opening therein and a screw located in an opening in said wall and having a head at one end and at the other an inclined portion adapted to enter said opening, substantially as described.

8. A junction box having side and rear walls and openings in said rear wall, a clamping plate having corresponding openings supported on said rear wall, teeth formed on said plate at one side of each of said openings and a screw passing through said rear wall and having an inclined portion adapted to engage the wall of an opening in said plate to move the latter relatively to said wall, substantially as described.

9. A junction box having openings in a wall thereof, a clamping device having corresponding openings therethrough mounted for rotation on one side of a wall of the box, and means operated from the other side of said wall for rotating said clamping device and causing the same to grip a conductor passing through said openings, substantially as described.

10. A junction box having openings for conductors therein, a clamping device having corresponding openings therein supported on a wall of said box and means for rotating said device and causing the same to grip conductors passing through said openings, substantially as described.

857,054. SEAT-SPRING. CHARLES M. HAESKE, South Bend, Ind. Filed Jan. 2, 1906. Serial No. 294,138.



Claim.—A spring comprising leaves having their ends bearing laterally against each other, a socket having circular ends and a semi-cylindrical intermediate portion with rectangularly disposed under surfaces, the ends of said leaves squarely abutting against one of said rectangularly-disposed surfaces, and a rivet passing through both of the ends of said leaves and the intermediate portion of said socket and fixing the ends to the other rectangularly-disposed surface.

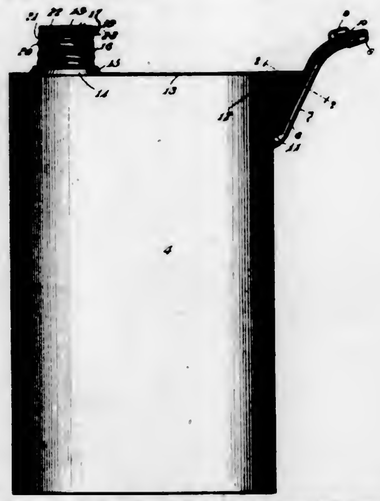
857,055. ADJUSTABLE SHOE TREE OR STRETCHER. JOHN S. HANSEN, Brockton, Mass. Filed May 11, 1906. Serial No. 316,245.



Claim.—1. A last, comprising a forepart and a heel-part extensible lengthwise, combined with a longitudinally movable connecting member, and a rotary operating handle for said member, said handle being freely removable from the last when the last parts and connecting member are in operative position, and provided with retaining means for securing said handle when in operative position.

2. A last comprising a forepart and a heel-part extensible lengthwise, combined with a longitudinally movable connecting member, and a rotary operating handle standing perpendicularly to said connecting member, the end of said handle and the top edge of said connecting member having coöperating engaging parts for adjusting said last parts lengthwise, said handle also having a lug extending laterally adjacent its lower end and said heel-part having an undercut groove located to receive said lug when said coöperating engaging parts of the connecting member and handle are in operative position with relation to each other.

857,056. OIL-CAN. WILLIAM E. HARMON and THOMAS B. GOODPASTURE, Houston, Tex. Filed Nov. 10, 1906. Serial No. 342,899.



Claim.—1. A container of the class described comprising a receptacle, a trap pocket secured to one wall thereof, said wall having an opening communicating with the upper portion of the interior of said trap pocket, said pocket having spaced side walls and a delivery spout fitted snugly between the side walls and constituting a closure for the pocket below the said opening, said spout projecting from the trap pocket and having an opening communicating with the pocket and disposed below the opening in the wall.

2. A container of the class described comprising a receptacle, a trap pocket secured to one wall thereof and comprising a hood having an open side, said pocket having communication with the interior of the receptacle, and a delivery spout constituting a closure for the open side of the pocket, said spout having an inlet communicating with the lower portion of the pocket, and an outlet that projects from said pocket.

3. A container of the class described comprising a receptacle, a trap pocket secured to one wall thereof and comprising a downwardly tapered hood having side walls, and a spout secured between the said walls and constituting the outer lower wall of the pocket, said spout having communication at its lower end and its inner side with the pocket, and said receptacle having communication with the pocket in rear of the spout and above the inlet thereof.

4. A container of the class described comprising a receptacle having a filling opening, a perforate detachable closure covering the opening, and a cap movably mounted on the receptacle and movable to positions to respectively cover and uncover the perforate portion of the closure, said cap having a vent opening that is in communication with the perforations of the closure when the same are uncovered.

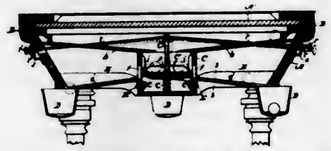
5. A container of the class described comprising a receptacle having a filling opening and a nipple surrounding the same, a cap detachably mounted on the nipple and having a perforate wall, and a washer permeable to air and clamped between the nipple and the perforate wall of the cap, said washer extending across and being in engagement with the perforate wall of the cap.

6. A container of the class described comprising a receptacle having a filling opening and a nipple surrounding the same, a perforate cap detachably secured on the nipple, a washer permeable to air, clamped between the nipple and cap, said washer extending across the perforate portion of the cap, and another detachable cap mounted on the nipple and movable thereon to a position to close the perforate portion.

7. A container of the class described comprising a receptacle provided with a nipple having threaded portions of different diameters, a cap threaded on the smaller portion of the nipple and having a vent, and another cap threaded on the larger portion of the nipple and movable thereon to a position to close the vent.

8. A container of the class described comprising a receptacle, a delivery spout having a trap pocket, said receptacle being provided with a filling opening, a nipple surrounding the opening and having threaded portions of different diameters, a cap threaded on the smaller portion and having an outer wall that is perforate, a washer permeable to air extending across the perforate portion of the cap and clamped between said cap and the outer end of the nipple, and another cap threaded on the larger portion of the nipple and covering the first-mentioned cap, said latter cap being movable to a position to close the perforations in the first-mentioned cap and having a vent opening in one side.

857,057. POOL-TABLE. HENRY L. HASKELL, Ludington, Mich. Filed Aug. 26, 1903. Serial No. 170,832.



Claim.—1. The combination with a pool table of a centrally arranged general receptacle; troughs or chutes from the pockets of said table to said general receptacle; a valve for said general receptacle; a centrally arranged spring support therefor; stops for said valve on each side of said receptacle, adapted to serve as bearings therefor; an upwardly projecting stem on said valve; trip rods connected to said stem; guide plates having key-hole slots therein adapted to receive said trip rods; adjustable stops on said trip rods; delivery openings in the side of said general receptacle; stops on each side of said receptacle for limiting the movement of said valve; individual receptacles; and suitable troughs from said general receptacle to said individual receptacles, for the purpose specified.

2. The combination with a pool table of a centrally arranged general receptacle; troughs or chutes from the pockets of said table to said general receptacle; a valve for said general receptacle; a centrally arranged spring support therefor; stops for said valve on each side of said receptacle, adapted to serve as bearings therefor; an upwardly projecting stem on said valve; trip rods connected to said stem; guide plates having key-hole slots therein, adapted to receive said trip rods; adjustable stops on said trip rods; delivery openings in the sides of said general receptacle; and suitable troughs from said general receptacle to said individual receptacles, for the purpose specified.

3. The combination with a pool table of a centrally arranged general receptacle; troughs or chutes from the pockets of said table to said general receptacle; a valve for said general receptacle; a centrally arranged spring support therefor; stops for said valve on each side of said receptacle, adapted to serve as bearings therefor; an upwardly projecting stem on said valve; trip rods connected to said stem; guide plates having key-hole slots therein adapted to receive said trip rods; delivery openings in the sides of said general receptacle; stops on each side of said receptacle for limiting the movement of said valve; individual receptacles; and suitable troughs from said general receptacle to said individual receptacles, for the purpose specified.

4. The combination with a pool table of a centrally arranged general receptacle; troughs or chutes from the pockets of said table to said general receptacle; a valve for said general receptacle; a centrally arranged spring support therefor; stops for said valve on each side of said receptacle, adapted to serve as bearings therefor; an upwardly projecting stem on said valve; trip rods connected to said stem; guide plates having key-hole slots therein adapted to receive said trip rods; delivery openings in the sides of said general receptacle; and suitable troughs from said general receptacle to said individual receptacles, for the purpose specified.

5. The combination with a pool table of a centrally arranged general receptacle; troughs or chutes from the pockets of said table to said general receptacle; a valve for said general receptacle; a centrally arranged spring support therefor; stops for said valve on each side of said receptacle, adapted to serve as bearings therefor; an upwardly projecting stem on said valve; trip rods connected to said stem; delivery openings in the sides of said general receptacle; stops on each side of said receptacle for limiting the movement of said valve; individual receptacles; and suitable troughs from said general receptacle to said individual receptacles, for the purpose specified.

6. The combination with a pool table of a centrally arranged general receptacle; troughs or chutes from the pockets of said table to said general receptacle; a valve for said general receptacle; a centrally arranged spring support therefor; stops for said valve on each side of said receptacle, adapted to serve as bearings therefor; an upwardly projecting stem on said valve; trip rods connected to said stem; delivery openings in the sides of said general receptacle; and suitable troughs from said general receptacle to said individual receptacles, for the purpose specified.

7. The combination with a pool table of a general receptacle suitably connected to the pockets thereof; a tilting valve for said general receptacle; a spring support therefor; an upwardly projecting stem on said valve; trip rods connected to said stem; means for locking said trip rods; delivery openings in the sides of said general receptacle; and individual receptacles suitably connected to said general receptacle, for the purpose specified.

8. The combination with a pool table of a general receptacle suitably connected to the pockets thereof; a tilting valve for said general receptacle; an upwardly projecting stem on said valve; trip rods connected to said stem; means for locking said trip rods; delivery openings in the sides of said general receptacle; and individual receptacles suitably connected to said general receptacle, for the purpose specified.

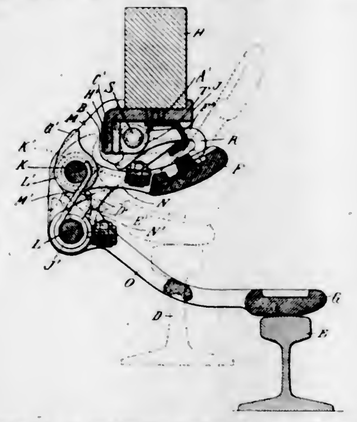
9. The combination with a pool table of a general receptacle having a plurality of delivery openings in the sides thereof; troughs or chutes from the pockets of said table to said general receptacle; a tilting valve for said general receptacle adapted to control the delivery of balls through said openings thereof; a spring support for said valve; a stem for said valve; trip rods connected to said stem; and individual receptacles suitably connected to said general receptacle, for the purpose specified.

10. The combination with a pool table of a general receptacle having a plurality of delivery openings in the sides thereof; troughs or chutes from the pockets of said table to said general receptacle; a tilting valve for said general receptacle adapted to control the delivery of balls through said openings thereof; a return spring for said

valve; a stem for said valve; trip rods connected to said stem; and individual receptacles connected to said general receptacle, for the purpose specified.

11. The combination with a pool table of a general receptacle having a plurality of delivery openings in the sides thereof; troughs or chutes connecting said general receptacle with the pockets of said table; a valve for said receptacle adapted to control the delivery of balls through the said openings thereof; a return spring for said valve; trip rods for said valve; and individual receptacles suitably connected with said general receptacle, for the purpose specified.

857,058. AUTOMATIC INTERLOCKING CONTACT MECHANISM FOR ELECTRIC-RAILWAY SYSTEMS. FRANK HEDLEY, JAMES S. DOYLE, and HJALMAR WALLERSTEDT, New York, N. Y. Filed Sept. 11, 1905. Serial No. 277,855.



Claim.—1. In an electric traction system, the combination with a plurality of current supply conductors arranged out of alinement with each other, of a plurality of separately pivoted contacts, respectively coöperating with said conductors, and means whereby when one contact moves into operative position with respect to its conductor, the other is positively retracted.

2. In an electric traction system, the combination with a plurality of independent current supply conductors arranged out of alinement with each other, of a plurality of separately pivoted contacts respectively coöperating with said conductors, and means whereby when one of said contacts occupies coöperative position with reference to its conductor the other is positively locked in retracted position.

3. In a contact mechanism for electric cars, a plurality of separately pivoted contacts having coöperating engaging lugs or shoulders, whereby, when one of said contacts moves into operative position another is moved out of operative position.

4. The combination with a plurality of contact rails arranged at different distances from the running track and at one side thereof, of a contact mechanism, means for moving said contact mechanism into operative relation with respect to one or the other of said contact rails, and a pivoted hook associated with said contact mechanism to hold the same out of operative relation with respect to one of said rails and in operative relation with respect to the other of said rails.

5. In an electric traction system, the combination with a plurality of conductors arranged out of alinement with each other, of a contact mechanism for coöperation with said conductors, means for actuating said contact mechanism into coöperative relation with respect to one or the other of said conductors, and a spring impelled hook associated with said contact mechanism to lock or hold the contact mechanism out of operative relation with respect to one of said conductors and in operative relation with respect to the other of said conductors, and means for automatically disengaging said hook.

6. In an electric traction system, the combination with a plurality of contact rails arranged at different distances from the running track and at one side thereof, of a contact mechanism, means normally tending to yieldingly maintain said contact mechanism in coöperative relation with respect to one or another of said contact rails, a pivoted hook associated with said contact mechanism and operating to positively lock the same out of coöperative relation with respect to one of said contact rails and in position to coöperate with another of said rails, and means for automatically releasing said hook.

7. In an electric traction system, the combination with a contact rail arranged at one side of the running track, of a contact mechanism carried by the car and including a contact member, means normally acting to yieldingly maintain said contact member in coöperative relation with respect to said contact rail, a pivoted hook associated with said contact mechanism, and operating to positively lock said contact member out of operative relation with respect to said contact rail, and means for automatically releasing said hook.

8. In an electric traction system, the combination with a contact rail, arranged at one side of the running track, of a contact mechanism carried by the car and including a movable contact member, means normally acting upon said contact member to maintain the same in coöperative relation with respect to said contact rail, means for moving said contact out of coöperative relation with respect to said rail, a pivotally mounted spring actuated hook associated with said contact mechanism and operating to maintain said contact member in retracted position with respect to said rail, and means for automatically releasing said hook.

9. In an electric traction system, a contact mechanism for electric cars, a supporting bracket or casting, a plurality of contact members pivotally mounted upon independent pivots to rock or swing thereon, one of said contact members operating within the other.

10. In an electric traction system, the combination with track rails, and current supply conductors arranged alongside of said rails but at different distances therefrom, of contact members respectively coöperating with said conductors, and a bracket having separate pivot pins upon which said contacts are respectively pivoted.

11. In an electric traction system, the combination with track rails, and current supply conductors arranged alongside said rails but at different distances therefrom, of a plurality of separately pivoted contacts respectively cooperating with said conductors, means for locking one of said contacts in retracted or inoperative position when the other contact is in operative position, and means whereby when such other contact is moved into retracted position said locking means are released.

12. In a contact mechanism for electric cars, a supporting bracket or casting, a contact member having carrying arms pivotally mounted on said bracket or casting, and a second contact member also pivotally mounted on said bracket or casting and arranged to rock or swing within the space between said carrying arms.

13. In a contact mechanism for electric cars, a support, a plurality of contact members separately pivoted thereon, one of said contact members extending a greater distance from said support than the other, and interlocking mechanism between said members whereby when one of said members is moved into operation position the other is moved into inoperative position.

14. In a contact mechanism for electric cars, a support, a contact member pivotally mounted thereon, a locking device arranged to engage said contact member when the latter is moved into retracted position, to retain the same in such position, and a second contact member also pivotally mounted on said support, and arranged, when moved into retracted position to release said locking device.

15. In a contact mechanism for electric cars, a support, a contact member pivotally mounted thereon, and provided with an engaging shoulder or projection, a second contact member also pivotally mounted on said support and provided with a coöperative shoulder or projection with which said first mentioned shoulder or projection engages when said first mentioned contact member is in operative position, whereby said second contact member is positively retained in retracted position.

16. In a contact mechanism for electric cars, a support, a contact member pivotally mounted thereon, a retaining device arranged to engage said member and lock the same in retracted position, a second contact member also pivotally mounted on said support, said retaining device being arranged in the path of swinging movement of said second contact member whereby, when said second contact member is moved into retracted position said retaining device is released.

17. In a contact mechanism for electric cars, a support, a contact member pivotally mounted thereon, a spring arranged to exert its tension upon said contact member, said spring having a loose mounting upon said support, and a second contact member also pivotally mounted upon said support and arranged when moved to engage said loose mounting whereby to relieve the tension of said spring.

18. In a contact mechanism for electric cars, a plurality of separately pivoted contact members, a spring arranged to exert tension upon one of said members and means operated by the movement of the other of said members for relieving said spring pressure.

19. In a contact mechanism for electric cars, a plurality of separately pivoted contact members, a spring having one end engaging one of said members, a loosely mounted collar with which the other end of said spring engages, and a lug or projection connected to the other of said contact members and arranged to engage said collar, when said member is moved to retracted position to impose increased tension of said spring on the other of said contact members.

20. In a contact mechanism for electric cars, a support, a pin or stud mounted therein, a contact member mounted to rock or swing upon said pin or stud, a collar loosely mounted upon said pin or stud and provided with a lug or extension, a spring mounted on said pin or stud and having one end engaging said contact member and the other engaging said collar, and a second contact member pivotally mounted upon said support and having a lug or extension arranged to engage the lug or shoulder on said collar.

21. In a contact mechanism for electric cars, a support, pins or studs mounted therein, arms sleeved to rock upon each of said pins or studs, contact members carried by said arms, a detachable lock device, arranged to automatically engage one of said contact members to retain the same in retracted position, and engaging means respectively carried by said contact means for retaining the other of said contact members in retracted position.

22. In an electric traction system, the combination with track rails, and current supply conductors arranged alongside said rails but at different distances therefrom, of a support, independent pivot studs carried by said support, contact members pivotally supported upon said studs and having their contact faces arranged to operate at different distances from said support, and respectively coöperating with said conductors, and means for yieldingly maintaining said contact members respectively in operative position.

23. In an electric contact device for electric cars, a support, a plurality of contact members separately pivoted thereon, and having their contact surfaces at different distances from said support, means for automatically moving said contact members out of operative position, and means whereby, when a contact member is moved out of operative position, the other member is permitted to move into operative position.

24. In an electric traction system, the combination with track rails, and current supply conductors arranged alongside said rails but at different distances therefrom, of separately pivoted contact members having their contact faces respectively coöperating with said conductors, means normally operating upon each member to maintain the same in contact with its corresponding conductor, and means whereby when one contact member is in operative position the other is positively locked in retracted position.

25. In a system of the character described a plurality of separately pivoted contact members means normally operating upon said member to maintain the same in operative position, means arranged alongside the track rails for automatically moving the member occupying operative position into retracted position, and means whereby when one member is in operative position the other is positively retained in retracted position.

26. In a system of the character described, a plurality of separately pivoted contact members, means normally operating upon each member to maintain the same in operative position, means for automatically moving the member occupying operative position, into retracted position, means for automatically retaining said contact members positively in retracted position, and means operated by the movement of one member into retracted position for releasing the retaining means of the other member.

27. In a system of the character described, a stationary support carried by a part of the moving car, a plurality of contact members separately pivoted on said support, conductors arranged adjacent the road bed and in different relations with respect thereto and respectively coöperating with corresponding contact members, means arranged to be engaged by the contact member occupying operative position for moving the same into retracted position, means for retaining the said members in retracted position, and means whereby when said member is moved into retracted position the other contact member is released and permitted to move into operative position with respect to its corresponding conductor.

28. In a system of the class described a plurality of separately pivoted contact members having their contact surfaces arranged to operate in different planes, a corresponding plurality of conductors respectively coöperating therewith, means normally operating upon each of said contact members to maintain the same in contact with its coöperating conductor, means for positively moving the contact members into retracted position, and independent means for retaining the retracted member in retracted position.

29. In a system of the character described a plurality of separately pivoted contact members, a corresponding plurality of conductors arranged out of alinement with each other, means normally operating on each of said contact members for maintaining the same in operative contact with its corresponding conductor, and automatic means for moving said contact members out of contacting relation with their coöperating conductors.

30. In a device for the purpose specified, a plurality of separately pivoted contact shoes, means normally operating independently on each to maintain the same in contact position, and means for automatically moving said shoes out of contacting position.

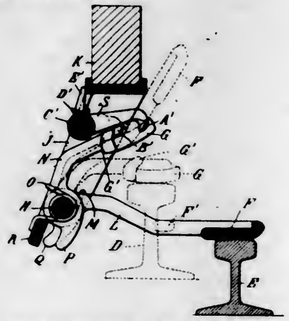
31. In an electric traction system a plurality of current carrying conductors arranged at different distances from the track rails, a contact apparatus carried by the car and including a corresponding plurality of separately pivoted contacts respectively coöperating with said conductors, means for positively disengaging one of said contacts from its conductor, and means whereby when one contact member is disengaged from its conductor the other contact member is permitted to engage its coöperating conductor.

857,059. AUTOMATIC CONTACT MECHANISM FOR ELECTRIC-RAILWAY SYSTEMS. FRANK HEDLEY, JAMES S. DOYLE, and HJALMAR WALLERSTEDT, New York, N. Y. Filed Oct. 7, 1905. Serial No. 281,722.

Claim.—1. In a contact mechanism for electric cars operated over roads having current supply conductors, arranged in varying relation with respect to the track rails, a plurality of contact members pivotally mounted independently upon a common axis, to be moved into and out of operative relation, and means whereby when one member is moved out of operative position the other is free to move into operative position.

2. In a contact mechanism of the character described, a

plurality of contact members mounted independently upon a common axis, and pivoted hooks arranged to respectively engage said contact members when rocked into retracted position for positively locking said contact members individually in retracted position.



3. In a contact mechanism for electric cars a plurality of contacts mounted independently of each other upon a common axis, a positive locking mechanism for each of said contacts when moved into retracted position, and means whereby when one of said contact members is moved into retracted position to be locked, the locking devices of the other contact member are released.

4. In a contact mechanism for electric cars, a plurality of independently mounted contacts, engaging locks or projections carried by each of said contacts, and a pivoted member having a corresponding plurality of hooks respectively arranged to engage said lugs or projections to positively lock or retain said contact members individually in retracted position.

5. In a contact mechanism for electric cars, a plurality of contact members pivotally mounted upon a common axis, each of said contacts provided with engaging lugs or projections, engaging devices coöperating with said lugs or projections, when said contact members are moved into retracted position; and means whereby when one of said contact members is moved into retracted position to be engaged and locked in such position, the engaging devices which maintain the other contact member in retracted position are disengaged.

6. In a contact mechanism for electric cars, a plurality of independent, pivotally mounted, contact members, devices for engaging and positively locking said contact members, individually, when moved into retracted position, and means whereby when one of said members is moved into retracted position the engaging devices for the other member are automatically disengaged.

7. In a contact mechanism for electric cars, a plurality of contact members, yieldingly mounted, engaging devices coöperating with said members to positively engage and lock the same, individually, in retracted position, and means whereby when one of said members is moved into retracted position to be engaged and positively locked in such position, the other of said members is released from engaging relation with respect to its locking devices.

8. The combination of a plurality of contact rails arranged at different distances from the running track, with a contact mechanism including a supporting bracket or casting carried by a car, a stud mounted thereon, contact members pivotally mounted independently of each other upon said stud, and a member having engaging hooks respectively arranged to engage and hold the contact members in retracted position.

9. The combination with a plurality of contact rails arranged at different distances from the running track, of a supporting bracket or casting, a stud mounted therein, a plurality of contact members pivotally mounted independently of each other upon said stud, said contact members having contact surfaces to respectively coöperate with said contact rails, means for yieldingly impelling said contact members toward contact relation with their respective contact rails, and engaging devices arranged to engage said contact members to retain the same in retracted position.

10. The combination with a plurality of contact rails arranged at different distances from the running track, of a supporting bracket or casting, a stud mounted therein, a plurality of contact members independently pivoted at one end upon said stud, means normally operating to yieldingly maintain said contact members in operative position, engaging devices adapted to respectively engage said contact members when moved into retracted position to positively lock the same in such position, and means whereby, when one contact member is moved into retracted position, another member is released from its engaging device.

11. In a contact mechanism for electric cars, a supporting bracket or casting, a stud mounted therein, a plurality of contact members independently pivoted upon said stud, and engaging devices pivotally mounted upon said bracket or casting, and adapted to respectively engage said contact members, when moved into retracted position, to positively lock the same in such retracted position.

12. The combination with a plurality of conductors arranged at different distances from the running track, of a plurality of contact members, a support upon which said members are pivotally mounted for rocking movement independently of each other said members respectively coöperating with said conductors and a guide section of bowed form for positively moving one of said contact members out of operative position with reference to its corresponding conductor whether the car moves in one direction or another.

13. The combination of a plurality of conductors arranged at different distances from the running track, of a plurality of contact members, a support upon which such members are pivotally mounted for independent rocking movement, said members having contact surfaces respectively mounted to coöperate with said conductors, a guide rail having curved ends with which one of said contact members coöperates, and by which said member is moved into retracted position whether the car moves in one direction or another, means for engaging the retracted contact member to retain the same in retracted position, and means whereby, when one member is retracted, another member is released from retracted position.

14. In a contact device for electric cars, a plurality of contact members, movably mounted upon the car, to be moved into or out of operative position, and a movable guide rail or section for moving one of said contact members out of operative position.

15. In a contact mechanism for electric cars, a movable contact device carried by the car, and a yieldingly mounted guide section arranged to be engaged by said contact device during the movement of the car along its track, whereby said contact is moved out of operative position.

16. In a contact device for electric cars, a contact member movably mounted upon the car, and a pivotally mounted guide section with which said contact co-operates and by which said contact is positively moved into retracted position.

17. In a contact mechanism for electric cars, a contact member, pivotally mounted upon the car, in combination with a guide section adapted to be engaged by said contact member, whereby said member is moved into retracted position, said guide section being yieldingly mounted.

18. In a contact mechanism for electric cars, a contact member pivotally mounted, in combination with a guide section with which said contact member coöperates, and by which said member is positively moved into retracted position, said guide section having an inclined surface at each end thereof, said surface being arranged in a spiral, whereby a flat surface is presented to the contact surface of the member during the rocking movement of the latter into retracted position.

19. In a contact mechanism for electric cars, a pivotally supported contact member, a current carrying conductor with which said contact member coöperates, in combination with a yielding guide section arranged to be engaged by the contact member, whereby the latter is moved out of coöperative relation with respect to said current carrying conductor, and into retracted position.

20. In a contact mechanism for electric cars, a contact member movably mounted, and a current carrying conductor with which said contact member coöperates, in combination with a pivotally mounted guide section arranged to be engaged by said contact member as the car moves along its track rails, whereby said contact member is moved out of contact relation with its coöperating conductor and into retracted position, and means for yieldingly maintaining said guide section in position to be engaged by said contact member.

21. In a contact mechanism for electric cars, a movably mounted contact member, and a conductor with which said contact member coöperates, in combination with a movably mounted guide section with which said contact member engages as the car moves along, whereby said contact member is moved out of contact with said conductor and into retracted position, and means for positively locking said contact member in retracted position.

22. In a contact mechanism for electric cars, a plurality of contact members movably mounted, and conductor rails with which said contact members respectively coöperate, in combination with a guide section arranged to be engaged by one of said contact members as the car moves along, whereby said contact is moved out of contacting relation with respect to its corresponding conductor and into retracted position, and means for yieldingly maintaining said guide section in position to be engaged by said contact member.

23. In a contact mechanism for electric cars, a plurality of contact members pivotally mounted upon a common axis to rock or swing into and out of operative position, and current carrying conductors with which said contact members respectively coöperate, in combination with a movably mounted guide section arranged to be engaged by one of said contact members as the car moves along whereby said contact member is moved out of contact relation with respect to its corresponding conductor and into retracted position.

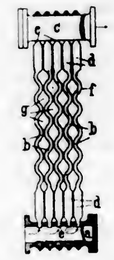
24. In a contact mechanism for electric cars, a plurality of contact members independently pivoted upon a common axis, and conductors with which said contact members respectively coöperate, in combination with a movably mounted section arranged to be engaged by one of said contact members, as the car moves along, to shift or rock the same from contact relation with respect to its corresponding conductor, and into retracted position, locking devices for positively maintaining said contact members in retracted position, and means whereby when one of said contact members is moved into retracted position, the locking devices for the other contact member are released.

25. In a contact mechanism for electric cars, a contact member movably mounted, and a conductor with which said contact member coöperates, in combination with an inclined guide section arranged to be engaged by said contact member, whereby the latter is moved out of contact relation with respect to its conductor, and into retracted position, a pivotally mounted support for said guide section, and means for yieldingly maintaining said guide section in position to be engaged by said contact member as the car moves along its track rails.

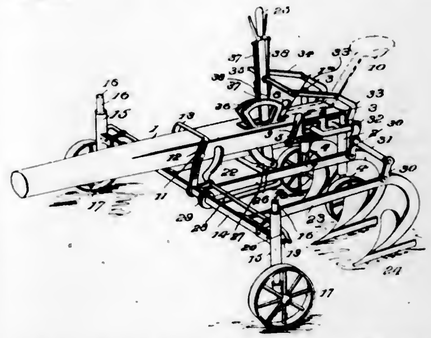
857,060. HEATING APPARATUS. JULES HEIZMANN, Strassburg, Germany. Filed Dec. 29, 1904. Serial No. 238,736.

Claim.—A device of the character described comprising two hollow members and tubes connecting them, said connecting tubes each comprising two cylindrical portions or expansion chambers, a greatly contracted portion connecting each expansion chamber with one of the hollow members, and a central undulated flattened portion connecting the two cylindrical expansion chambers, the undulated portions of adjacent tubes being arranged to form substantially circular passages between them for the passage of a heating medium, substantially as and for the purpose set forth.

857,060.



857,061. STRADDLE OR GANG PLOW. RUFUS C. HENDERSON, Kankakee, Ill. Filed Dec. 14, 1906. Serial No. 347,882.



Claim.—1. A plow comprising a wheel supported tongue, a cross bar having a vertically sliding connection with the tongue and provided at its ends with vertical sleeves, shafts mounted to slide vertically in said sleeves, traveling wheels journaled on said shaft, draw bars connected to said cross bar and provided with cultivating devices, a crank shaft journaled in the tongue in the rear of said cross bar and operatively connected to said draw bars, the tongue being provided with a depending hanger and a bell crank lever fulcrumed on said hanger and pivotally connected to said crank shaft above its fulcrum, one arm of the bell crank below its fulcrum being connected to the cross bar, and a slotted guide secured to said cross bar.

2. In a plow the combination of a wheel supported tongue, a cross bar provided with a yoke encircling said tongue and movable vertically with respect to the same, the cross bar being provided at its ends with vertical sleeves, wheel supported shafts mounted to slide vertically in said sleeves and also mounted to turn in the sleeves about their longitudinal axes, draw bars connected to said cross bar and provided with cultivating devices, means for raising and lowering the cross bar and draw bars, and means for holding said shafts as against their rotary or axial movement.

3. In a plow the combination of a wheel supported tongue, a cross bar provided with a yoke encircling said tongue and movable vertically with respect to the same, the cross bar being provided at its ends with vertical sleeves, wheel supporting shafts mounted to slide vertically in said sleeves and also mounted to turn in the sleeves about their longitudinal axes, draw bars connected to said cross bar and provided with cultivating devices, means for raising and lowering the cross bar and draw bars, and means for holding said shafts as against their rotary or axial movements, said last named means consisting of latch pins working through the sleeves, foot operating rock shafts connected to said latch pins to withdraw the same, and springs for moving said pins in one

direction, the vertical shafts being provided with grooves adapted to receive said pins.

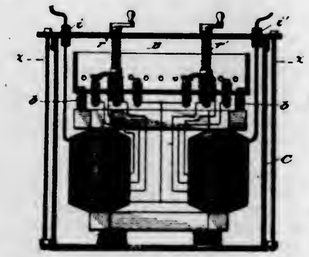
4. In a plow, the combination of a wheel supported tongue, a cross bar having a vertical sliding connection with the tongue, draw bars connected to said cross bar and provided with cultivating devices, means for raising and lowering the cross bar and draw bars, traveling wheels provided with shafts having a sliding connection with portions of the cross bar and mounted to turn axially, and means for limiting said shafts as against said axial movements.

5. In a plow, the combination of a supporting tongue, a cross bar operatively connected thereto, draw bars connected to said cross bar and provided with cultivating devices, the cross bar being provided at its ends with sleeves, shafts mounted to turn in said sleeve, wheels journaled at the lower ends of said shafts, latch pins adapted for engagement with said shafts to prevent the same from turning, and means for withdrawing said latch pins.

6. In a plow, the combination of a tongue provided with vertical sleeves at its rear end, shafts mounted to turn in said sleeves, traveling wheels connected to said shafts, latch pins adapted to hold said shaft from turning in the sleeves, means for withdrawing said latch pins, a cross bar connected to said tongue, and provided at its ends with sleeves, shafts provided with traveling wheels and mounted to turn in the sleeves of the cross bar, latch pins adapted to engage said last named shafts to prevent them from turning, and means for withdrawing said last named latch pins.

7. A plow comprising a tongue, traveling wheels upon which said tongue is mounted at its rear end and with respect to which it is adjusted vertically, a cross bar provided with a yoke encircling said tongue and adapted to move vertically with respect to the latter, and a traveling wheel adapted to support the outer end of said cross bar, draw bars secured to and extending from said cross bar and provided at their rear end with cultivating devices, a bell crank handle lever fulcrumed at a point underneath the tongue and extending to a point above the tongue, and a hanger secured to the tongue and on which the lever is fulcrumed, the lower end of said lever extending forwardly and provided with spaced apart members secured to the cross bar, a crank shaft operatively connected to the rear ends of the draw bars and mounted to rock on the rear end of the tongue, arms 33 connected to said shaft to rock the same, and cross bars carried by the lever above the tongue, and links connecting said last named cross bar to the arms 33.

857,062. ELECTRICAL TRANSFORMER. JOHN D. HILLIARD, Albany, N. Y. Filed Nov. 20, 1906. Serial No. 344,208.



Claim.—1. In an electrical transformer, a core, primary and secondary windings on said core, a casing for said windings and core, and a switch within said casing, said switch having two or more fixed contacts connected to different points on the transformer windings, a movable contact for co-operating with said fixed contacts, said casing being filled with oil to a sufficient depth to cover all of said contacts, and an operating handle for the switch projecting out of the casing and provided with indicating points corresponding in position with the contacts, substantially as described.

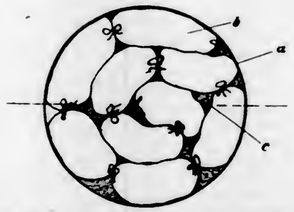
2. An electrical transformer comprising a casing containing oil, two compartments in said casing, transformer windings immersed in the oil in one compartment and a regulating switch also immersed in oil in the other compartment, said switch having contact points on the transformer windings, and an operating handle projecting out of the casing, substantially as described.

3. An electrical transformer comprising a casing containing oil, a transformer core and windings immersed in the oil, a regulating switch for changing the ratio of transformation, comprising contacts connected to various points on the transformer windings, a separate inclosure also containing oil for said switch, insulating supports for said inclosure adapted to rest upon the transformer core, and an operating handle for the switch extending out of the casing, substantially as described.

4. An electrical transformer comprising a main casing containing oil, a core with primary and secondary windings immersed in the oil within the casing, a separate switch casing carried upon the transformer core and also immersed in the oil, a switch mounted in said separate casing and having contacts connected to taps from different points on one or both of the windings, and an operating handle for said switch extending out of the main casing through the top thereof, substantially as described.

5. An electrical transformer comprising a main casing containing oil, a core with primary and secondary windings immersed in the oil within the casing, a separate switch casing carried upon the transformer core and also immersed in the oil, a switch mounted in said separate casing and having contacts connected to taps from different points on one or both of the windings, and an operating handle for said switch extending out of the main casing through the top thereof, said handle being insulated from the operating parts of the switch lying within the casing, substantially as described.

857,063. HEATING DEVICE FOR CAMP COOKING APPARATUS. KASPAR HOFMANN, Munich, Germany. Filed Jan. 28, 1907. Serial No. 354,496.

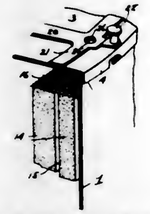


Claim.—A heating device for camp-cooking apparatus comprising a tin box, a collapsible tube charged with liquid fuel and placed upon the bottom in the said tin, and a layer of powdered material over the said tube, all combined substantially as and for the purpose set forth.

857,064. CARBURETING-LAMP. GEORGE H. HOLGATE, Philadelphia, Pa. Filed July 20, 1906. Serial No. 326,987.

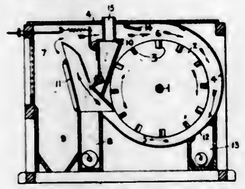
Claim.—1. A portable carbureter comprising a case, porous material contained within the case, a tube arranged within the case concentric thereto and stationary therewith, a revoluble member upon said stationary tube, means for imparting a partial revolution thereto, a stationary member concentric to the revoluble tube and having an air space between, openings in the case cover, a revoluble plate adapted to control said openings, and openings in the inner tube and surrounding member adapted to be operated by the revolution of the revolving member, and a heating means located below the central tube, all substantially as shown and described.

2. A portable carbureter consisting of a receptacle, absorbent material disposed in annular layers within, having spaces between each layer, and at the bottom of the receptacle, a stationary tube member open at its upper end, extending through the center of the receptacle, a movable tubular member adapted to rotate about the stationary member, and in close contact therewith; a second stationary tubular member surrounding the movable member, having a space between and closed at both ends; ports opening in the upper end of the outer stationary tubular member, ports formed through the top of the receptacle, port closures connecting with the movable tubular member, ports formed through the walls of the stationary tubular member and movable member within the space below the absorbent material; ports formed through the inner stationary tubular member and movable member at a point between the ends of the outside stationary tubular member, both of the latter sets of ports adapted to be opened and closed by revolving said movable tubular member, a burner arranged to deliver its heat below the central tubular member, and means for conveying a fuel supply thereto.



3. A portable carbureter comprising a case, a cover therefor, absorbent material contained within said case, a tube arranged within the case concentric thereto and stationary therewith, a tube closely fitting said stationary tube and means for imparting a partial revolution thereto, a stationary tube concentric to said movable tube of a larger diameter forming an air space between the two openings, ports in the cover and in the inner stationary tube regulated by the revolution of the movable tube, a burner positioned below and centrally with the said inner stationary tube, and a gas carrying connection thereto and leading from the lower portion of the casing.

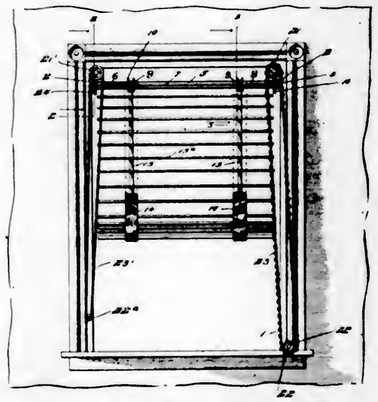
857,065. GRAIN-CLEANING APPARATUS. JACOB B. HOLGATE and CHARLES CLOUGH, Blackburn, England; said Clough assignor to said Holgate. Filed Nov. 18, 1904. Serial No. 233,340.



Claim.—A separating machine consisting of a casing having expansion spaces and collecting compartments therein, an air propeller in said casing, a feed hopper within the casing the rear wall thereof being inclined, and located in close proximity to the upwardly moving part of the propeller so as to direct the air from the propeller across the mouth of the hopper and deflecting plates co-operating with the propeller to form a continuous belt of air around said hopper.

857,066. VENETIAN BLIND OR SHADE. WALLACE B. HUGHES, Dallas, Tex. Filed Oct. 1, 1906. Serial No. 336,945.

Claim.—1. In a device of the character described, the combination with a pair of brackets, an auxiliary roller engaging and journaled upon said brackets, of a sectional roller positioned between said brackets and of less length than said auxiliary roller, the sectional roller engaging and journaled upon the periphery of said auxiliary roller, each two sections of the sectional roller provided with a tape-receiving compartment formed between their contiguous ends, blind-lifting means positioned within said compartment and fixedly secured to and adapted to be wound upon said auxiliary roller, and means connecting the sections of said sectional roller.



2. In a device of the character described, the combination with brackets, an auxiliary roller engaging and journaled upon said brackets, of a sectional roller of less length than and carried entirely by said auxiliary roller, said sectional roller of greater width than the auxiliary roller and journaled upon its periphery, each two sections of the sectional roller provided with a tape-receiving compartment formed between their contiguous ends, the contiguous ends forming guiding means and constituting the sides of a spool, a tape positioned within the tape-receiving compartment and fixedly secured directly to the auxiliary roller, and means spanning across the compartment and connecting the sections of the sectional roller.

3. In a device of the character described, the combination with brackets, an auxiliary roller engaging and journaled upon said brackets, of a primary roller of less length than and engaging and journaled entirely upon the periphery of the auxiliary roller, said primary roller of greater width than the auxiliary roller and provided with a compartment, the auxiliary roller extending through the center of said compartment and beyond the ends of the primary roller, and blind-lifting means positioned within said compartment and fixedly secured to the auxiliary roller.

4. In a device of the character described, the combination with a support, of a primary roller provided with a compartment, an auxiliary roller of greater length and revolubly mounted within and extending beyond the ends of said primary roller, the ends of the auxiliary roller journaled upon said support, the auxiliary roller extending through the center of said compartment, and blind-lifting means positioned within said compartment and secured to said auxiliary roller.

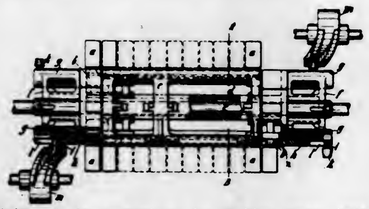
5. In a device of the character described, the combination with a support, of an auxiliary roller engaging and journaled at its ends upon said support, a primary roller of greater width and supported entirely upon said auxiliary roller, said primary roller of less length than and engaging the periphery of said auxiliary roller, said primary roller comprising a series of sections and a compartment formed between the contiguous ends of each two sections, said auxiliary roller extending through the center of each compartment, a tape positioned within each compartment and secured to said auxiliary roller, a strip connecting all

of said sections to one side of the longitudinal axis of the primary roller, and means for actuating said rollers.

6. In a device of the character described, the combination of a primary and an auxiliary roller, the primary roller of greater width and less length than said auxiliary roller, the primary roller journaled entirely upon the periphery of said auxiliary roller, the auxiliary roller extending through the ends of said primary roller, means secured to one of the extended ends of the auxiliary roller for imparting independent rotary movement thereto with respect to said primary roller; and means for actuating said primary roller.

7. In a device of the character described, the combination of a roller, comprising sections, a compartment formed between the contiguous ends of said sections, means connecting the sections only at one side of the longitudinal axis of said roller, an auxiliary roller revolubly mounted within said primary roller and extending through the center of said compartment and beyond the ends of the primary roller, said auxiliary roller constituting the hub of a spool and the contiguous ends of the primary roller constituting the sides of said spool, and blind-lifting means positioned within said compartment and secured to the auxiliary roller.

857,067. DEVICE FOR MANUFACTURING PAPER BAGS. THEODOR HUGO, Berlin, Germany, assignor to The Firm of Gebrüder Tellschow, Berlin, Germany. Filed Jan. 27, 1906. Serial No. 298,196.



Claim.—1. In a machine for making paper bags, the combination of a frame having guide ways, holders movable therein, carriers adapted to receive said holders and transfer them from one guide way to the other, pushers on said carriers, and means for actuating the pushers, substantially as described.

2. In a machine for making paper bags, the combination of a frame having oppositely arranged guide ways, independent holders movable therein, rotary carriers adapted to receive and transfer said holders from one guide way to the other, pushers on said carriers, and means for actuating the pushers, substantially as set forth.

3. In a machine for making paper bags, the combination of a frame having an upper and a lower guide way, a plurality of independent holders movable in said guide ways, a rotary carrier at each end of said frame adapted to receive and transfer said holders from one guide way to the other, pushers reciprocating in said carriers, and rotary cam disks for actuating said pushers, substantially as described.

4. In a machine for making paper bags, the combination of a stationary frame having guide ways, independent holders movable therein, bag formers mounted on said holders, rotary carriers having slots adapted to be brought into line with the guide ways in the frame, reciprocating pushers on said carriers in line with said slots, and means for actuating said pushers, substantially as described.

5. In a machine for making paper bags, the combination of a stationary frame having an upper and a lower guide slot extending from end to end thereof, independent holders movable in said slots, bag formers mounted on said holders, a rotary carrier at each end of said frame provided with a plurality of slots and pushers adapted to be brought successively into line with said guide slots, means for rotating said carriers, and cams for actuating said pushers, substantially as described.

6. In a bag machine, the combination of a stationary frame having an upper and a lower guide slot and cooperating slides, independent holders movable within said slots and upon said slides, formers mounted on said holders, rotary carriers each having a plurality of slots, and a pusher movable in each slot, means for giving the carriers a partial rotation to bring the slots therein successively into line with the guide slots in the frame, and cams adapted to actuate the pushers when the carriers are at rest, substantially as described.

7. In a machine for making paper bags, the combination of a stationary frame having guide ways, holders movable in the latter, intermittently rotating carriers adapted to receive said holders and transfer them from one guide way to the other, pushers in said carriers, and means for actuating said pushers when the carriers are at rest, substantially as described.

857,068. RAIL-TIE. CHARLES W. ISRAEL, Paris, Ill. Filed Mar. 3, 1906. Serial No. 304,046.



Claim.—1. A railroad-tie comprising two sections, a spring connecting-plate attached mutually to abutting ends of the sections for movement of the sections with respect to each other, rail-clips, recess-forming ridges integral with the sections and engaging the rail-clips, bolts engaging the rail-clips and elongated slot-like perforations provided therefor in the sections, all substantially as described.

2. A railroad-tie comprising end sections mutually connected, each section comprising a top-plate, a plastic base in adhesive connection with the top-plate, reinforcing thickened portion and webs integral with the top-plates, a brace for the top-plates, pendent lugs integral with said top-plates a truss-rod anchored within said pendent lugs and engaged over the brace of the top-plate, said webs, lugs, brace and truss-rod being embedded in the plastic base, all substantially as described and for the purpose set forth.

3. A railroad-tie comprising two end-sections, each comprising a plastic base and a metallic top-plate having elongated slot-like perforations there-through, rail-clips seated within the recesses provided therefor and resting upon the top-plate, bolts engaged with the rail-clips and adjustably engaged with the elongated perforations, bolt-heads upon the lower ends of the bolts and engaged with the lower side of the top-plates, an inclosed recess comprising pendent webs and a plate cover adapted to inclose the bolt-head, all substantially as described and for the purpose specified.

4. In a railroad-tie, the combination with a two-section plastic base of two mutually connected metallic top-plates, the top-plates being reinforced by depending thickened portions and webs, a brace for the top-plate, two pendent anchor-lugs, a truss-rod connected with the anchor-lugs and in connection with the brace, rail-clips seated upon the top-plates and in connection with bolts engaged in elongated perforations in the top-plates provided, a connecting spring-plate mutually connected with the abutting ends of the alined top-plates, all substantially as described and for the purpose set forth.

857,069. ARRANGEMENT FOR THE CENTERING OF THE IMAGES IN KINEMATOGRAPH PROJECTION APPARATUS. ERNEST A. IVATTS, Paris, France, assignor to La Compagnie Generale De Phonographes, Cinematographes & Apparells De Precision, Paris, France. Filed Feb. 19, 1907. Serial No. 358,262.

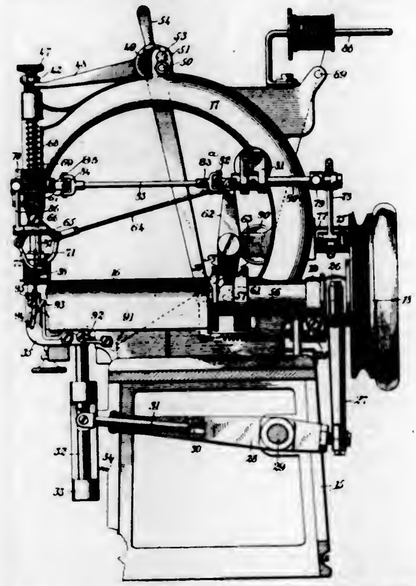
Claim.—1. In a kinematograph, the combination with the objective and the driving shaft, of a plate rotatable concentric with said shaft, a stirrup on said plate, a film-feeding drum journaled in said stirrup, and inter-meshing gears on the shaft and on the drum.

2. In a kinematograph, the combination with the objective and the driving shaft, of a circular plate rotatable concentric with said shaft, a film-feeding drum mounted on said plate and geared to said shaft, a ring concentric with said plate, and a locking device carried by said plate and engaging with said ring.



3. In a kinematograph, the combination with the objective and the driving shaft, of a circular plate concentric with said shaft and having a beveled edge, a film-feeding drum mounted on said plate and geared to said shaft, a stationary ring engaging with the beveled edge of said plate, an arm on said plate, and a set screw carried by said arm and engaging with the edge of said ring.

857,070. SEWING-MACHINE. WILLIAM JASPER, New York, N. Y., assignor of one-half to Andrew Wolf, New York, N. Y. Filed Aug. 8, 1905. Serial No. 273,224.



Claim.—1. A sewing machine provided with a needle mechanism, a complemental stitch forming mechanism, a presser foot a bodily movable loop guide above the presser foot and operating mechanism for positively moving the said guide toward and from the needle.

2. A sewing machine provided with a needle and hook working up through the work plate, a presser foot above the work plate, means for operating the said parts, mechanism above the presser foot for carrying the loop from the needle into operative relation with the hook, a loop-guide also located above the presser foot and engaging the needle at its side opposite the said loop carrying mechanism and means for supporting the loop guide from the head.

3. A sewing machine provided with a needle and hook working up through the work plate, a presser foot above the work plate, means for operating said parts, means for carrying the loop from the needle into operative relation with the hook, a bodily movable loop guide above the presser foot to engage the needle and hold the loop for the loop carrying mechanism, and means for positively actuating the said loop guide.

4. A sewing machine having a needle and hook, means for carrying a loop from the needle into operative relation with the hook, and a forked member adapted to straddle the needle to guide the loop and insure the engagement therewith of said means for carrying the loop.

5. A sewing machine having a needle and hook, means coacting with the upper portions thereof to carry the loop from the needle into operative relation with the hook presser foot and feed mechanism, and a means extending horizontally between the presser foot and said means for carrying the loop to protect the same and the loop from detached particles of the work.

6. A sewing machine having a needle and hook, a pivoted loop guide coacting with the needle mechanism for positively actuating the said guide toward and from the needle, a looper adapted to take the loop from the needle to the hook, and a second looper adapted to engage the loop with the hook.

7. A sewing machine having a needle and hook, a loop guide coacting with the needle, a looper adapted to take the loop from the needle to the hook, and a second looper adapted to engage the loop with the hook, the loop guide and the second looper being movable alternately toward and from the stitch line, and the first looper being movable across the path of the guide and second looper.

8. A sewing machine having a needle and hook, a loop guide coacting with the needle, a looper adapted to take the loop from the needle to the hook, a second looper adapted to engage the loop with the hook, an elbow lever on the limbs of which the guide and second looper are mounted to move alternately toward and from the stitch line, and a rocker arm on which the first looper is mounted to move across the path of the guide and second looper.

9. A sewing machine having a needle and hook, a loop guide coacting with the needle, a looper adapted to take the loop from the needle to the hook, a second looper adapted to engage the loop with the hook, an elbow lever on the limbs of which the guide and second looper are mounted to move alternately toward and from the stitch line, a rocker arm on which the first looper is mounted to move across the path of the guide and second looper, and means for mounting the elbow and rocker arm which means is movable toward and from the work.

10. A sewing machine having a needle and hook, a loop guide coacting with the needle, a looper adapted to take the loop from the needle to the hook, a second looper adapted to engage the loop with the hook, an elbow lever on the limbs of which the guide and second looper are mounted to move alternately toward and from the stitch line, a rocker arm on which the first looper is mounted to move across the path of the guide and second looper, means for mounting the elbow and rocker arm, which means is movable toward and from the work, a presser foot, and a connection between the same and the said means for mounting the elbow and rocker arm.

11. A sewing machine having a needle and hook, a loop guide, means for carrying the loop from the needle into operative relation with the hook, a means for mounting said guide and means for carrying the loop, said mounting means being movable toward and from the work.

12. A sewing machine having a needle and hook, a loop guide, means for carrying the loop from the needle into operative relation with the hook, means for mounting said guide and means for carrying the loop, said mounting means being movable toward and from the work, a presser foot, and a connection between the presser foot and said mounting means.

13. A sewing machine having a needle and hook, looper mechanism, a slide on which the same is mounted, a spring pressing the slide toward the work, a presser foot, a spring pressing the presser foot toward the work, and a connection between the slide and presser foot to cause the former to move upward with the latter.

14. A sewing machine having a needle and hook, a looper means including a swinging part, a movable member on which said swinging part is pivoted, means for imparting

movement to said swinging part irrespective of the movement of said member and a presser foot independent of said movable member.

15. A sewing machine having a needle and hook, a looper means including a swinging part, a movable member on which said swinging part is pivoted, means including a combined reciprocating and swinging rod for imparting movement to said swinging part irrespective of the movement of said member and a presser foot independent of said member.

16. A sewing machine having a needle and hook, a looper means including a swinging part, a movable member on which said swinging part is pivoted, and means including a rock shaft with a universal and extensible joint and arranged to impart movement to said swinging part irrespective of the movement of said member.

17. A sewing machine having a needle and hook, a looper means including two swinging parts, a movable member on which said swinging parts are pivoted, a rod connected to one swinging part and capable of combined swinging and reciprocal motion, a rocking shaft arranged to swing the other swinging part and having a universal and extensible joint therein, and means for reciprocating the rod and rocking the shaft.

18. A sewing machine having a needle and hook, a looper means including two swinging parts, a movable member on which said swinging parts are pivoted, a rod connected to one swinging part and capable of combined swinging and reciprocal motion, a rocking shaft arranged to swing the other swinging part and having a universal and extensible joint thereon, means for reciprocating the rod and rocking the shaft, and a loop guide connected to the first swinging part to be actuated simultaneously therewith.

19. A sewing machine comprising a needle and hook working up through the work plate, a presser foot above the work plate, a feed dog therebelow, looper mechanism above the presser foot to take the loop from the needle to the hook, means for automatically lifting the presser foot from the work as the feed dog and needle and hook are disengaged from the same.

20. A sewing machine, a feed dog, a presser foot, stitch forming devices, and means for automatically lifting the presser foot from the work as the feed dog disengages the same, said means comprising a cam, an elbow lever actuated thereby and having connection with the presser foot, and an adjustable eccentric received in a cavity in the elbow lever and forming the fulcrum thereof, whereby upon adjustment of the eccentric the elbow lever may be moved bodily to render it active or inactive.

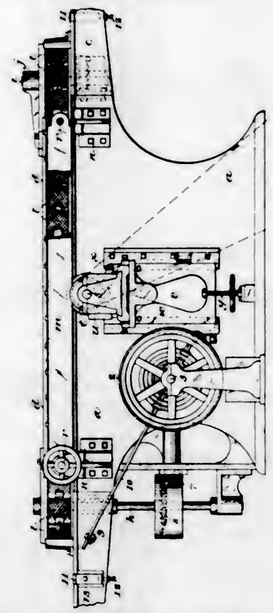
857,071. JOINTING-MACHINE. PETER J. JOECKEN, Sheboygan Falls, Wis., assignor to Falls Machine Company, Sheboygan Falls, Wis., a Corporation of Wisconsin. Filed Nov. 28, 1906. Serial No. 345,453.

Claim.—1. In a jointing machine the combination of a bed, a chain guide mounted thereon, and adjustable at different points in its length perpendicularly to the bed, chain wheels at the ends of said guide, and a feed chain mounted upon said wheels, substantially as described.

2. In a jointing machine the combination of a bed provided with adjusting screws, a chain guide supported upon said screws and secured to said bed against said adjusting screws by binding screws, chain wheels at the ends of said frame, and a feed chain mounted upon said wheels, substantially as described.

3. In a jointing machine the combination of a frame having a horizontal top bed, a chain guide supported upon said bed by vertical adjusting screws and secured against said adjusting screws by binding screws, chain wheels at the ends of said guide, a feed chain mounted upon said wheels, a pressure bar parallel with said guide and a rotary cutter head mounted between said guide and pressure bar on a transverse arbor, substantially as described.

4. In a jointing machine the combination of a frame provided with a horizontal bed, a longitudinally channeled guide mounted on said bed, screws for lining up said guide and securing it to said bed, chain wheels at the ends of said guide, a feed chain mounted on said wheels and confined between them in said guide, a laterally adjustable pressure bar parallel with said guide and a rotary cutter mounted on a transverse arbor between said guide and pressure bar, substantially as described.



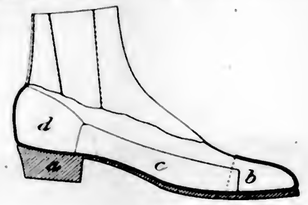
5. In a jointing machine the combination of a frame having a horizontal bed, a channeled chain guide mounted upon said bed, vertical adjusting and binding screws for lining up and securing said guide upon the bed, chain wheels at the ends of said guide, a feed chain mounted on said wheels and confined between them in said guide, a bar mounted on said frame opposite and parallel with said guide and provided with yielding pressure rollers, and a rotary cutter between said guide and bar, substantially as described.

6. In a jointing machine the combination of a frame having a horizontal bed, a channeled chain guide mounted on said bed, vertical adjusting screws supporting said guide at intervals, binding screws securing said guide to the bed at intervals, chain wheels at the ends of said guide, a feed chain mounted on said wheels and confined in said guide, a laterally adjustable bar mounted on said frame opposite and parallel with said guide and provided with a series of laterally yielding pressure rollers, and a rotary jointing cutter between said guide and bar, substantially as described.

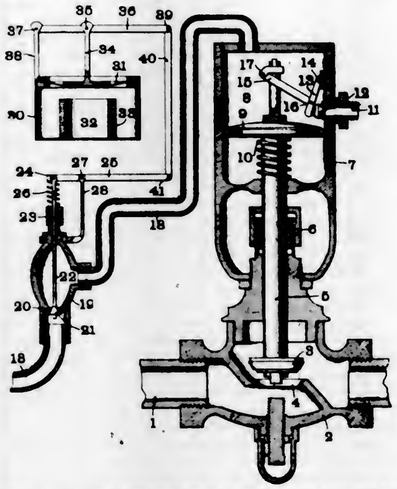
7. In a jointing machine the combination of a frame having a horizontal bed, a chain guide mounted on said bed, chain wheels at the ends of said guide, a feed chain mounted on said wheels, a pressure bar mounted on the frame opposite and parallel with said guide, a rotary jointing cutter between said guide and pressure bar, and a vertically adjustable rest mounted on an extension of the bed in the path of the lower jointed edge of the material after it passes the feed chain, substantially as described.

857,072. WATERPROOF BOOT AND SHOE. HEINRICH F. KARTH, Hamburg, Germany. Filed Mar. 22, 1906. Serial No. 307,448.

Claim.—The combination with a boot or shoe of a waterproof but air-permeable layer, said layer being inserted beneath the lining at the instep portion only *i. e.* between the heel and toe portion, substantially as and for the purpose set forth.



857,073. TEMPERATURE-REGULATOR. FREDERICK B. KEMMLER, St. Louis, Mo. Filed July 18, 1906. Serial No. 326,652.

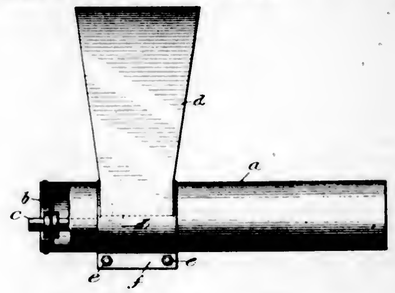


Claim.—1. In a temperature regulator, the combination with a main passage for the heating fluid, of a valve in said passage, a pressure chamber provided with a piston controlling said valve, a pivotal relief valve for said pressure chamber, a link connecting said relief valve and piston, a pressure passage leading to said pressure chamber, a valve in said pressure passage, and a thermostat controlling said latter valve.

2. In a temperature regulator, the combination with a main passage for the heating fluid, of a valve in said passage, a pressure chamber, a piston in said chamber and secured to the stem of said valve, a pivoted relief valve in said chamber, a link connecting said piston and relief valve, a pressure passage leading to said pressure chamber, a valve in said pressure passage, a closed chamber adapted to contain a volatile liquid and provided with a movable abutment, and operating connections between said abutment and said latter valve.

857,074. MACHINE FOR CHARGING RETORTS. LEOTIS W. KIRK, Pueblo, Colo., assignor of one-half to William L. Hartman, Pueblo, Colo. Filed Mar. 19, 1906. Serial No. 306,883.

Claim.—In a portable apparatus for charging retorts and the like, the combination of a tube having a discharge opening at one end, a fluid pressure supply nozzle at the other end, and a hopper for delivering the material to the tube intermediate the ends thereof, whereby a space is left in the tube behind the material delivered by the hopper and said material is discharged from said tube in a substantially uniform compact stream.

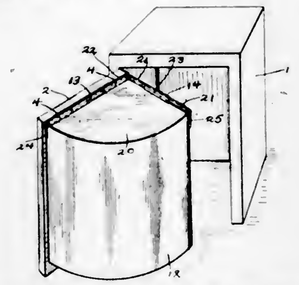


857,075. METHOD OF PROTECTING VEGETABLE MATTER. AUGUST KOY, Peters, Tex. Filed Apr. 25, 1906. Serial No. 313,655.

Claim.—1. That method of protecting vegetable matter which consists in storing the same upon a layer of wood ashes and scattering wood ashes over the vegetables so stored and in thereafter sprinkling the ash covered vegetables with a solution of salt.

2. That method of protecting corn from the ravages of the weevil which consists in covering the floor of the crib with a layer of wood ashes, next placing a layer of corn in the husk upon the layer of wood ashes, next scattering a quantity of wood ashes over the layer of corn, next sprinkling the layer of corn with a solution of salt, and thereafter adding additional layers of corn, one at a time, and applying wood ashes and a solution of salt to each layer in the manner stated.

857,076. FLOUR-BIN. GEORG KRAUS, Cleveland, Ohio. Filed Apr. 24, 1907. Serial No. 370,000.



Claim.—1. The combination with a chest having a door hinged to swing vertically of a hinge-member secured on the inner face of said door near the top thereof, a bracket secured below said hinge-member, a bin, quadrant-shaped in horizontal section, a hinge-member arranged on one of the straight sides of said bin at the top thereof, a depending flange secured at the bottom of said side and arranged to fit into the bracket on the bottom of the door and a pintle operatively connecting the hinge-member on the door and the hinge-member on the bin.

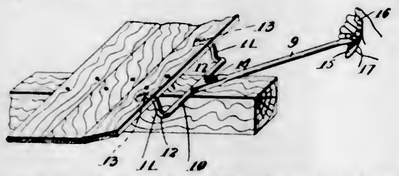
2. The combination with a chest having a door hinged to swing vertically of a hinge-member secured on the inner face of said door near the top thereof, a bracket secured below said hinge-member, a bin, quadrant shaped in horizontal section, a hinge-member arranged on one of the straight sides of said bin at the top thereof, a depending flange secured at the bottom of said side and arranged to fit into the bracket on the bottom of the door, a pintle for operatively connecting the hinge-member on the door

and the hinge-member on the bin and a support secured beneath said bin on the bottom thereof and provided with roller bearings.

3. The combination with a chest, having a door hinged to swing vertically of a hinge-member secured on the inner face of said door near the top thereof, a bracket secured on said door below said hinge-member, a bin, quadrant shaped in horizontal section, a hinge-member arranged at the top of each straight side of said bin and provided with barrels of the same size as on the hinge-member on the door, a depending flange adapted to fit into the bracket on the door secured at the bottom of each straight side of the said bin, a cover provided with a hinge-member corresponding to the hinge-member on the door and pintles for operatively connecting the hinge-member on one of the straight sides of the bin to the hinge-member on the door and for securing the hinge-member on the cover to the hinge-member on the other straight side of the bin.

4. The combination with a chest having a door hinged to swing vertically of a hinge-member secured on the inner face of said door near the top thereof, a bracket secured on said door below said hinge-member, a bin, quadrant shaped in horizontal section, a hinge-member arranged at the top of each straight side of said bin and provided with barrels of the same size as on the hinge-member on the door, a depending flange adapted to fit into the bracket on the door secured at the bottom of each straight side of said bin, a cover provided with a hinge-member corresponding to the hinge-member on the door, pintles for operatively connecting the hinge-member on one of the straight sides of the bin to the hinge-member on the door and for securing the hinge-member on the cover to the hinge-member on the other straight side of the bin and a support mounted on the bottom of said bin and provided with a roller bearing.

857,077. TOOL. LOUIS LABRECK, Millbury, Mass. Filed Mar. 6, 1907. Serial No. 360,830.

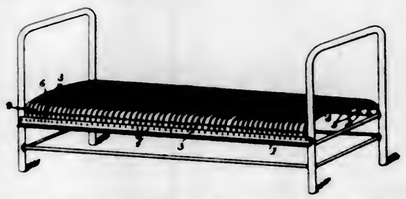


Claim.—1. As an article of manufacture, a tool having a handle, a rocking bearing surface, a cross-bar between the bearing surface and handle, and a grip located at the opposite end of the handle and inclined with respect thereto, said grip having a wide face on one side and a projection on the other side at an acute angle with the handle, the wide part of the grip serving as a grip for the fingers and the projection for the thumb.

2. As an article of manufacture, a tool having a handle, a cross-bar at the end thereof, curved arms extending from the cross-bar and constituting a rocking bearing surface, and a grip pivoted to the other end of the bar, said grip having a wide face on one side and a narrow one on the other at an acute angle to the bar, said faces having substantially continuously curved outer surfaces.

857,078. MATTRESS. ELIE D. H. LAMBOTTE, Brussels, Belgium. Filed Nov. 19, 1906. Serial No. 344,143.

Claim.—1. A mattress comprising in combination, a supporting frame composed of angle irons arranged to bring the webs thereof in vertical planes, a plurality of strips of thin flexible non-resilient metal transversely arranged with respect to the longitudinal axis of the mattress and disposed in parallel relation to each other, means for securing the ends of said strips to said angle irons in a manner to cause the body portions of the strips to bow upwardly and bridge the space between said angle irons, and leaf springs fitting against the inner faces of the ends of said strips and extending upwardly beneath the same, said leaf springs being rigidly secured to said angle irons near the ends of said strips and rigidly secured to said strips above the angle irons.



2. A mattress comprising in combination, supporting members, a plurality of strips of thin flexible non-resilient metal transversely arranged with respect to the longitudinal axis of the mattress and disposed in parallel relation to each other, means for securing the ends of said strips to said supporting members, leaf springs for supporting each strip, means rigidly securing said springs to said supporting members, and means rigidly securing said springs to said strips.

3. A mattress comprising in combination, stationary supporting members, a plurality of strips of thin flexible non-resilient metal transversely arranged with respect to the longitudinal axis of the mattress and disposed in parallel relation to each other, means for rigidly securing said strips to said supporting members, and yieldingly acting means for supporting said strips, said yieldingly acting means being secured to said strips to maintain the parts in alinement.

4. A mattress comprising in combination, supporting members, a plurality of strips of thin flexible non-resilient metal transversely arranged with respect to the longitudinal axis of the mattress and disposed in parallel relation to each other, means for securing said strips to said supporting members, and individual yieldingly acting means for supporting said strips, said means being secured to said strips to maintain said individual means in alinement with said strips.

5. A mattress comprising in combination, supporting members, a plurality of thin metal strips transversely arranged with respect to the longitudinal axis of the mattress and disposed in parallel relation to each other, individual springs for supporting said strips, and means for maintaining said springs in alinement or supporting relation to said strips.

6. A mattress comprising in combination, supporting members, a plurality of thin metal strips transversely arranged with respect to the longitudinal axis of the mattress and disposed in parallel relation to each other, means for securing said strips to said supporting members, and individual yieldingly acting means for supporting said strips, said yielding means being secured to said strips and to said members to maintain said individual means in alinement with said strips.

857,079. MULTIPLEX TELEPHONY. MAURICE LEBLANC, Paris, France, assignor to Westinghouse Electric and Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 26, 1903. Renewed Mar. 19, 1907. Serial No. 363,212.

Claim.—1. The method of transmitting sounds telephonically which consists in modifying, in accordance with sound waves, single phase alternating currents of a given frequency, combining at a distant point the currents thus produced with alternating currents of the same frequency, and translating the resultant currents into sound waves, substantially as described.

2. The method of transmitting sounds telephonically which consists in modifying, in accordance with sound waves, single phase alternating currents of a frequency which is high compared to the pitch of the sound, combining at a distant point the currents thus produced with alternating currents of the same frequency, and translating the resultant currents into sound waves, substantially as described.

3. The method of multiplex telephony which consists in modifying respectively, in accordance with sets of sound waves, sets of single phase alternating currents of different frequencies, combining at a distant point each modified current thus produced with an alternating current of its same frequency, and translating the resultant sets of currents into sets of sound waves, substantially as described.

4. The method of transmitting sounds telephonically which consists in modifying, in accordance with sound waves, single phase alternating currents of a given frequency, and sending the modified currents through a telephone receiver excited with alternating currents of the same frequency, to thus translate the modified currents into sound waves, substantially as described.

5. The method of multiplex telephony which consists in modifying, respectively, in accordance with sets of sound waves, sets of single phase alternating currents of different frequencies, and translating each modified alternating current into sound waves by sending it through a telephone receiver excited by an alternating current of its same frequency, substantially as described.

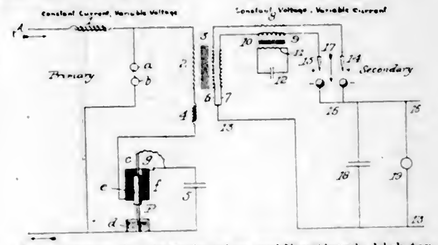
6. The method of multiplex telephony which consists in modifying respectively, in accordance with sets of sound waves, sets of single phase alternating currents the frequencies of which are high and the differences of whose frequencies are high compared with the pitch of the sound waves, combining at a distant point each modified current thus produced with an alternating current of its same frequency, and translating the respective resultant sets of currents into sets of sound waves, substantially as described.

7. The method of multiplex telephony which consists in modifying respectively, in accordance with sets of sound waves, sets of single phase alternating currents whose frequencies are high and the differences of whose frequencies are high compared with the pitch of the sound, and translating each modified alternating current into sound waves by sending it through a telephone receiver excited by an alternating current of its same frequency, substantially as described.

857,080. APPARATUS FOR TRANSFORMING CONTINUOUS CURRENTS. MAURICE LEBLANC, Paris, France, assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Nov. 30, 1903. Serial No. 183,247.

Claim.—1. A system for transforming unidirectional currents of one tension into unidirectional currents of another tension which comprises a line carrying unidirection currents, a resonator having R^2 small with respect to $\frac{4l}{c}$ an electric exploder in shunt of the resonator, a transformer, and an electric valve or valves for rectifying the transformed alternating currents thus produced, substantially as described.

2. A system for transforming unidirectional currents into unidirectional currents of a different tension, which comprises a line carrying unidirectional currents, a resonator arranged to store an amount of energy which is large with respect to that consumed in an alternating period, an electric exploder in shunt of the resonator, a transformer, and an electric valve or valves to rectify the transformed alternating current thus produced, substantially as described.



3. A system for transforming unidirectional, high-tension into unidirectional, low-tension currents, comprising a line carrying continuous currents, a resonator having R^2 small with respect to $\frac{4l}{c}$ and arranged to store an amount of energy which is large with respect to that consumed in an alternating period, an electric exploder in shunt of the resonator, a step-down transformer, and an electric valve or valves for rectifying the low tension currents thus produced, substantially as described.

4. A system for transforming unidirectional high-tension currents of constant strength into unidirectional, low-tension currents of constant voltage, comprising a line carrying the continuous, high-tension currents, a resonator having R^2 small with respect to $\frac{4l}{c}$ and arranged to store an amount of energy which is large with respect to that consumed in an alternating period, an electric exploder in shunt of the resonator, a step-down transformer, a condenser in its secondary circuit to render zero its coefficient of apparent self-induction, and an electric valve or valves for rectifying the low-tension alternating current thus produced, substantially as described.

5. The combination of a line carrying continuous currents, a resonator including a condenser connected therewith, an automatic circuit breaker in shunt of the condenser and an electric exploder in shunt of the resonator, the parts being electrically proportioned so that the circuit breaker will close its circuit to cause the extinction of the arc if the arc in the exploder is not disestablished at the proper time, substantially as described.

6. The combination of a line carrying continuous currents, a resonator including a condenser connected therewith, an automatic circuit breaker having its actuating coil in series with and its contact points in shunt of the condenser, and an electric exploder in shunt of the resonator, the parts being electrically proportioned so that the circuit breaker will close its circuit to cause the extinction of the arc in the exploder if this arc is not disestablished at the proper time, substantially as described.

7. An induction coil having a secondary circuit, a primary circuit of a second transformer connected therewith, and a condenser in the secondary circuit of the second transformer of a capacity to render zero the apparent self-induction of the combined secondary and primary circuits first specified, substantially as described.

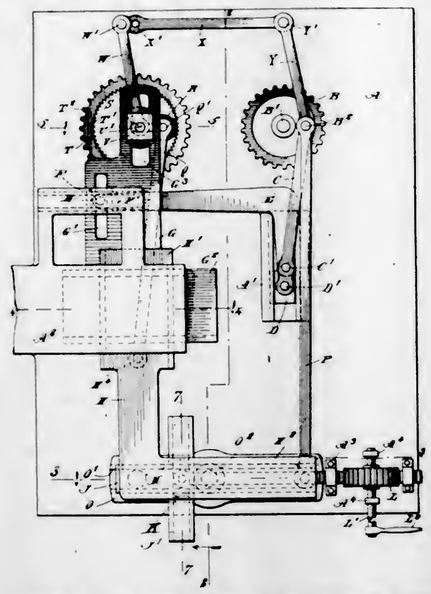
8. An induction coil having a pair of oppositely wound secondaries, connected at one end to one side of the local circuit, a pair of oppositely wound primaries of a second induction coil connected respectively to the other ends of the secondaries, a pair of electric valves connected to these primaries and to the other side of the local circuit respectively, and a condenser in the secondary circuit of the second transformer of a capacity to render zero the apparent self-induction of the pair of secondary and the pair of primary circuits above specified, substantially as described.

9. An electric valve comprising a vacuum tube containing one terminal connected to one side of the circuit, a pair of terminals of opposite sign to the first connected

to the other side of the circuit, these three terminals supporting alternating electromotive forces dephased by 180 degrees, and a fourth terminal similar to the first terminal, the first and fourth terminals supporting an electromotive force, dephased with reference to the electromotive forces first specified to always maintain an arc in the exploder, substantially as described.

10. The combination of an electric valve comprising a vacuum tube having terminals of opposite signs, a source of alternating electromotive force to be rectified connected with the terminals, a source of electromotive force of high tension to initially establish the arc in the valve, and a source of electromotive force dephased with reference to the electromotive force to be rectified, to always maintain an arc in the valve, substantially as described.

857,081. VARIABLE-SPEED TRANSMISSION. ROBERT E. LINCOLN, Jersey City, N. J. Filed Feb. 1, 1907. Serial No. 355,197.



Claim.—1. The combination of the frame, the drive shaft, the rotary driven member provided with gear teeth, the driving pawl arranged to engage said teeth, the slide connected with the said pawl and movable transversely of said rotary member to bring the pawl into and out of engagement therewith, means controlled by the drive shaft, for reciprocating said slide, another slide on which the first-named slide is movable, the second slide being movable on the frame in a direction at a right angle to the movement of the first slide, mechanism connected with the second slide, for giving the pawl a swinging motion about the center of the rotary driven member, an operating connection from the drive shaft to the second slide to reciprocate the same, and adjusting mechanism for varying the movement of the second slide.

2. The combination of the frame, the drive shaft, the rotary driven member, the driving pawl, the slide connected with said pawl and arranged to move it into and out of engagement with said member, means, controlled by the drive shaft, for reciprocating said slide, another slide on which the first-named slide is movable, said second slide being movable on the frame in a direction at a right angle to the movement of the first slide, mechanism connected with the second slide for giving the pawl a swinging motion about the center of the driven member, an operating connection from the drive shaft to the second slide to reciprocate the same, and adjusting mechanism for varying the movement of the second slide.

3. The combination of the frame, the drive shaft, the rotary driven member, the driving pawl, the slide connected with said pawl and arranged to move it into and out of engagement with said member, means, controlled by the drive shaft, for reciprocating said slide, another slide on which the first-named slide is movable, said second slide being movable on the frame transversely to the movement of the first slide, mechanism connected with the second slide for giving the pawl a swinging motion about the center of the driven member, an operating connection from the drive shaft to the second slide to reciprocate the same, and adjusting mechanism for varying the movement of the second slide.

4. The combination of the frame, the drive shaft, the rotary driven member, the driving pawl, the slide connected with said pawl and arranged to move it into and out of engagement with said member, means, controlled by the drive shaft, for reciprocating said slide, another slide on which the first-named slide is movable, said second slide being movable on the frame transversely to the movement of the first slide, mechanism connected with the second slide, for giving the pawl a swinging motion about the center of the driven member, an operating connection from the drive shaft to the second slide to reciprocate the same, and adjusting mechanism for varying the throw of the second slide and also for reversing it.

5. The combination of the rotary driven member, the driving pawl, reciprocating means for moving said pawl into and out of engagement with the driven member, reciprocating mechanism for swinging said pawl, when engaged, about the center of the driven member, and adjusting means for varying the swinging movement of the pawl.

6. The combination of the rotary driven member, the driving pawl, a guide located at the center of the driven member and having sliding engagement with said pawl, means for moving the pawl into and out of engagement with the driven member, mechanism for swinging said pawl about the center of the driven member, and adjusting means for varying the swinging movement of the pawl.

7. The combination of the driven member, the driving pawl, means for moving the pawl into and out of engagement with the driven member, a reciprocating slide for moving the pawl and the driven member jointly while they are in engagement, a rocking lever, and an operative connection between the said lever and the slide, said connection being adjustable toward and from the lever's fulcrum.

8. The combination of the driven member, the driving pawl, means for moving the pawl into and out of engagement with the driven member, a reciprocating slide for moving the pawl and the driven member jointly while they are in engagement, a rocking lever, a second slide movable lengthwise of said lever, a third slide movable transversely of the first-named slide and pivotally connected with the second slide, and means for adjusting the second and third slides toward and from the lever's fulcrum.

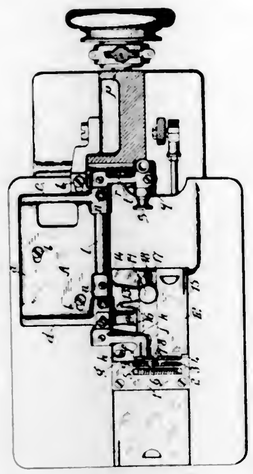
9. The combination of the driven member, the driving pawl, means for moving the pawl into and out of engagement with the driven member, a reciprocating slide for moving the pawl and the driven member jointly while they are in engagement, a rocking lever, a second slide movable lengthwise of said lever, a third slide movable transversely of the first-named slide and pivotally connected with the second slide, and a normally stationary rack-bar mounted adjacent to said lever and adjustable lengthwise with the second and third slides.

10. The combination of the driven member, the driving pawl, mechanism for moving the pawl into and out of engagement with the driven member, the rocking lever, an operative connection between said lever and the pawl to move the latter jointly with the driven member while they are in engagement, and an adjusting device for shifting said connection from one side of the lever's fulcrum to the other.

11. The combination of the driven member, the driving pawl, means, connected with said pawl, for moving it in unison with the driving member when they are in engagement, a central pin on which the pawl may slide in or out, a link connected with the pawl at the point where said means are connected with it, a rod and a slide pivotally connected with said link, a transversely movable slide on which the first-named slide is movable lengthwise, a lever connected with said rod, and mechanism for rocking said lever while the second named slide is moved transversely.

12. The combination of the driven member, the driving pawl, means for moving the pawl into and out of engagement with the driven member, a reciprocating slide for moving the pawl and the driven member jointly while they are in engagement, said slide being provided with a guideway arranged at an angle to its line of movement, a second slide movable along said guideway and itself provided with a guideway parallel to the line of motion of the first slide, a stationary guide engaging the guideway of the second slide, means for adjusting said guide transversely to the line of movement of the first slide, a third slide pivotally connected with the second slide, a lever provided with a longitudinal guideway for the third slide, and means for rocking said lever.

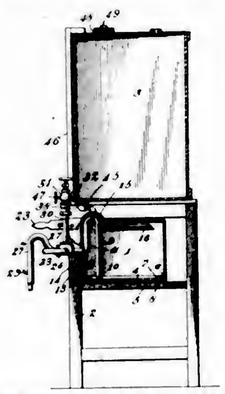
857,082. SEWING-MACHINE. WILLIAM T. LINTNER and WILLIS C. ROBBINS, Mount Vernon, and JOHN P. WEIS, New York, N. Y., assignors to The Manhattan Machine Supply Company, New York, N. Y., a Corporation of New York. Filed Dec. 9, 1902. Serial No. 134,501.



Claim.—1. The combination with a sewing machine, of a cutter attachment therefor comprising a cutter frame containing a means of attachment to the sewing machine proper, extensions above and below said means of attachment, a movable cutter member secured to the extension above the attachment, a stationary cutter secured to the extension below the attachment, said cutter frame furnishing a portion of the cloth support, and a movable lint shield furnishing another portion of the cloth support.

2. The combination with a sewing machine, of a cutting attachment therefor comprising a frame, a movable cutter carried by an upper portion of said frame, a downwardly and laterally extending member secured to said frame, a cutter carried by the lateral portion of the member, a horizontally disposed slide adjacent to the downwardly extending portion of the member, and a lint shield movably superposed upon said slide.

857,083. LIQUID-MEASURING APPARATUS. ERNEST O. LINTON, Sheboygan, Wis., assignor of one-third to Louis Gutsch and one-third to D. T. Phalen, both of Sheboygan, Wis. Filed Oct. 17, 1905. Serial No. 283,132.

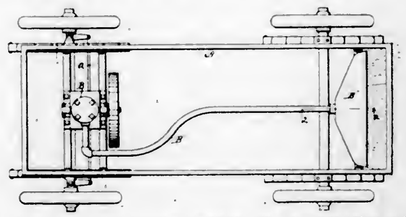


Claim.—1. In an apparatus of the class described, the combination of a measuring receptacle, liquid measuring mechanism, a supply pipe, a valve casing connected with the top of the measuring receptacle and provided at its top with a valve seat, a valve arranged to engage the seat and provided with a stem having its ends guided in the top and bottom of the casing, a float located below the valve and connected with the stem at an intermediate point, and a stop extending downward from the float and arranged to limit the downward movement of the same.

2. In an apparatus of the class described, the combination of a measuring receptacle, an interiorly arranged siphon composed of a long leg extending from the top to the bottom of the receptacle, and a short leg, a delivery pipe, a valve connecting the delivery pipe with the short leg, and an adjustable air tube connected with the top of the siphon.

3. In an apparatus of the class described, the combination of a measuring receptacle, an interiorly arranged siphon, a delivery pipe, a supply pipe, a valve connecting the delivery pipe and the supply pipe with the siphon, an adjustable air tube communicating with the top of the siphon, a shaft carrying the air tube and having an exteriorly arranged lever, and a gage plate having a projecting flange arranged to be engaged by the lever.

857,084. MOTOR-VEHICLE. LYNN C. LULL, Kalamazoo, Mich. Filed Oct. 24, 1904. Serial No. 229,766.



Claim.—1. In a motor vehicle, the combination of a suitable body; a motor cylinder; an exhaust port therefor; a delivery pipe connected to said exhaust port; and a fan-shaped delivery nozzle therefor, pear-shaped in cross-section, having a slot-like opening extending substantially across said vehicle body, arranged under said body close to the bottom thereof, said delivery nozzle being directed to deliver rearwardly from beneath said body; for the purpose specified.

2. In a motor vehicle, the combination of a suitable body; a motor cylinder; an exhaust port therefor; a delivery pipe connected to said exhaust port; and a fan-shaped delivery nozzle therefor, having a slot-like opening extending substantially across said vehicle body, arranged under said body close to the bottom thereof, said delivery nozzle being directed to deliver rearwardly from beneath said body; for the purpose specified.

3. In a motor vehicle, the combination of a suitable body; a motor cylinder; an exhaust port therefor; a delivery pipe connected to said exhaust port; and a delivery nozzle therefor, having a slot-like delivery opening extending substantially across said vehicle body, arranged under said body close to the bottom thereof, said delivery nozzle being directed to deliver rearwardly from beneath said body; for the purpose specified.

4. In a motor vehicle, the combination of a suitable body; a motor cylinder; an exhaust port therefor; a delivery pipe connected to said exhaust port; and a delivery nozzle therefor, extending substantially across said vehicle body, arranged under said body close to the bottom thereof, said delivery nozzle being directed to deliver rearwardly from beneath said body; for the purpose specified.

5. In a motor vehicle, the combination of a suitable body; a motor cylinder; an exhaust port therefor; a delivery pipe connected to said exhaust port, and a delivery nozzle therefor, arranged under said body close to the bottom thereof, said delivery nozzle being directed to deliver rearwardly from beneath said body; for the purpose specified.

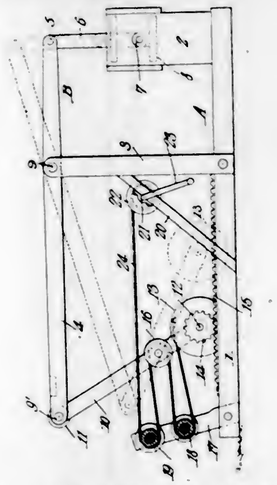
6. In a motor vehicle, the combination of a suitable body; a motor cylinder; an exhaust port therefor; a delivery pipe connected to said exhaust port; and a delivery nozzle therefor, arranged under said body close to the bottom thereof, said delivery nozzle being directed to deliver outwardly from beneath said body, for the purpose specified.

857,085. TRACE-SHIELD. JOHN E. MARTIN, Bethany, Ill. Filed Aug. 10, 1906. Serial No. 330,077.



Claim.—A trace shield formed of a single strip of metal, bent into trough shape and comprising a bottom section, sides bent at an angle thereto, and a section connecting the upper edges of said sides at the rear end of the shield, said bottom section being formed at its front end with a longitudinal extension, the free end thereof being bent into hook shape and adapted to be detachably connected with one of the members of a trace buckle.

857,086. BALING-PRESS. ELIHU MAY, Magee, Miss. Filed Jan. 26, 1907. Serial No. 354,288.



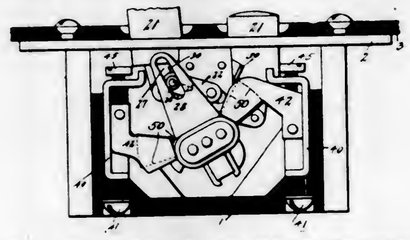
Claim.—1. In an apparatus of the character described the combination with a base, a casing thereon constituting a compressing chamber, and an upright; of a walking beam, a plunger connected thereto and movable within the chamber, a hanger pivotally connected to the walking beam, a drum rotatable therewith, means rotatable with the drum for bearing upon and engaging the base, a flexible power transmitting device secured to and adapted to be wound upon the drum, a sheave upon the hanger, sheaves fixedly supported above the base, all of said sheaves being engaged by the power transmitting device, and means for actuating said device to unwind it from and rotate the drum.

2. In a baling press the combination with a base, a rack bar thereon, and a walking beam; of a hanger, a gear carried by the hanger and meshing with the rack bar, a drum rotatable with the gear, a flexible power transmitting device secured to and adapted to be wound upon the drum, a sheave fixedly supported above the base, said device extending over the sheave, and means for actuating said device to unwind it from and rotate the drum.

3. In a baling press the combination with a base having a rack bar thereon, a compressing chamber, a walking beam and a plunger connected to said beam; of a hanger pivotally connected to the beam, a gear rotatably mounted thereon and engaging the rack bar, a drum rotatable with the gear, a standard, sheaves thereon, a sheave upon the hanger, a flexible power transmitting device extending over the sheaves and secured to and adapted to be wound upon the drum, and means for actuating said device to unwind it from the drum and rotate the gear upon the rack.

857,087. ELECTRIC SNAP-SWITCH. WALTER S. MAYER, Philadelphia, Pa., assignor to The Machen & Mayer Electrical Manufacturing Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Jan. 4, 1907. Serial No. 350,786.

Claim.—1. In a device of the character described, the combination of a pivoted lever, the said lever being provided with a gear segment, means for occasioning movement of the said lever, a pivoted spring tensioning lever, one end of which is provided with teeth which are adapted to engage the teeth of the gear segment, a spring, the ends of which are located upon the opposite sides of a portion of the said spring tensioning lever, a pivoted snap lever, a portion of which upon one side of its pivotal point is located between the ends of the said spring, a link connected at one end to the first-named lever and having its other end movably connected to the snap lever, and a contact member operatively connected to the said snap lever.



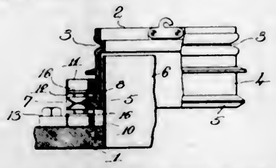
2. In a device of the character described, the combination of a pivoted lever, the said lever being provided with a gear segment, means for occasioning movement of the said lever, a pivoted spring tensioning lever, one end of which is provided with teeth which are adapted to engage the teeth of the gear segment, a coiled wire spring, the ends of which are located upon the opposite sides of a portion of the said spring tensioning lever, a pivoted snap lever, a portion of which upon one side of its pivotal point is located between the ends of the said spring, a link connected at one end to the first-named lever at a point to one side and above the pivotal point of said lever, the other end of the said link being pivotally and slidably connected to an end portion of the said snap lever, and means to prevent pivotal movement of the said snap lever during the movement of the said first-named lever to place the said spring under tension, and a contact member operatively connected to the said snap lever.

3. In a device of the character described, the combination of a contact member, means for supporting the same including a shifter, means for energizing said shifter, a controller for imparting energy to the said energizing means, means interposed between the said controller and the said shifter for controlling the movement of the latter, the said interposed means being pivotally connected to the controller and slidably connected to the shifter.

4. In a device of the character described, the combination of a contact member, means for supporting the same including a shifter, means for energizing said shifter, a controller for imparting energy to the said energizing means, a link interposed between the said controller and the said shifter and operatively connected to each of them, and means cooperating with the said link to hold and release the shifter.

5. In a device of the character described, the combination of a contact member, means for supporting the same including a shifter, means for energizing said shifter, a controller for imparting energy to the said energizing means, a link pivotally connected at one end to the said controller, and slidably connected at its other end to the said shifter, a stop adapted to contact with the said link for the purpose set forth.

857,088. ROTARY-RING SPINNING OR TWISTING APPARATUS. JOHN T. MEATS and GEORGE E. CHANDLER, Taunton, Mass., assignors to Mason Machine Works, Taunton, Mass., a Corporation of Massachusetts. Filed July 5, 1906. Serial No. 324,759.



Claim.—1. In apparatus for spinning or twisting fibrous material, the combination, with a rotatable ring, and a ring-rail of ring-supports mounted on the rail and each provided with a roll rotating on a fixed vertical axis, detachable, plate-like hardened end-thrust bearings for each roll arranged in parallelism, the peripheral portions of the rolls co-operating with the ring and sustaining the same axially and laterally, and means to prevent rotative movement of the bearings on the supports.

2. In apparatus for spinning or twisting fibrous material, the combination, with a rotatable ring, and a ring-rail, of supports mounted on the rail and each provided with a vertical pin, a grooved roll rotatably mounted on the pin, detachable, flat faced and hardened end-thrust bearings for the ends of each roll, the pin extending through the bearings, and means to restrain the bearings from rotative movement, the rolls co-operating with the periphery of the ring and sustaining the same axially and laterally.

3. In apparatus for spinning or twisting fibrous material, the combination, with a rotatable ring, and a ring-rail, of substantially [-shaped supports mounted on the ring-rail, a fixed, vertical pin held in each support, a roll rotatably mounted on the pin, and hardened non-rotatable bearing washers interposed between the upper and lower ends of the roll and the adjacent flat portions of the support and resting upon such flat portions, the pin passing through the washers.

4. In apparatus for spinning or twisting fibrous material, the combination, with a rotatable ring, and a ring-rail, of supports mounted on the rail and each having a vertical pin fixed therein, a grooved anti-friction roll rotatably mounted on the pin and adapted to co-operate with the peripheral portion of the ring, flat, hardened end-thrust bearings for the roll, laterally positioned by the pin, and means to prevent rotative movement of the bearings on the supports.

5. In ring-spinning or twisting apparatus, a rotatable ring, a ring-rail, ring-supporting brackets mounted on the rail, each bracket having a projecting foot and an overhanging head, a fixed vertical pin connecting the head and foot, a ring-sustaining roll rotatably mounted on each pin, hardened flat bearing-washers interposed between the ends of the roll and the head and foot of the bracket, to take up end-thrust of the roll, and means to prevent rotation of the washers, the pivot pin passing through the latter.

6. A grooved ring-supporting roll having bearing hubs at its ends, a bracket having a foot and an overhanging head, a vertical pivot-pin fixed in the head and foot and on which the roll is rotatable, flat, hardened bearings removably interposed between the hubs of the roll and the head and foot, respectively, of the bracket, the pivot-pin passing through said bearings, and means to restrain the latter from rotation.

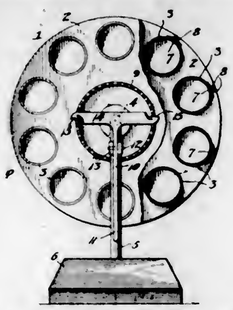
7. A substantially [-shaped bracket, a vertical pivot pin fixed in the head and foot thereof, a grooved roll rotatably mounted on the pin, removable hardened end-thrust bearings interposed between the ends of the roll and the head and foot of the bracket, and held from lateral displacement on the flat face of the head and foot by the pivot pin, and means to restrain said bearings from rotation.

8. A grooved ring-supporting roll, a vertical pivot-pin on which the roll is rotatably mounted, a bracket in which the ends of said pin are fixed, and non-rotative, hardened washers, interposed between the ends of the roll and the adjacent flat portions of the bracket and resting upon the flat portions thereof, to form end-thrust bearings for the roll.

857,089. WIRE-CLOTH REEL. KIRKHAM MEHAFFEY, Williamsport, Ind. Filed Sept. 10, 1906. Serial No. 334,038.

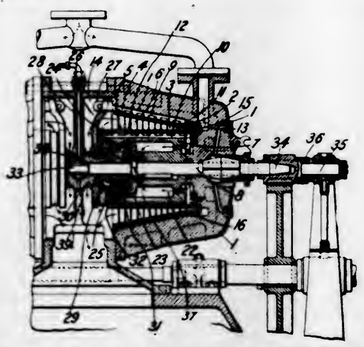
Claim.—A device of the character described comprising a base, uprights thereon, a horizontal shaft between said uprights, a drum having heads revolubly mounted on said shaft, an annular series of ratchet teeth upon one of said heads, a T-shaped lever pivoted upon one of said uprights and having the ends of its cross portion bent at

right-angles and twisted to provide pawls adapted to engage said annular series of ratchet teeth, and a spring for



actuating said lever to hold said pawls in engagement with said ratchet teeth.

857,090. REVERSIBLE TURBINE. JEAN MOLAS, London, England, assignor of one-half to John Alfred Smeeton, London, England. Filed Jan. 2, 1907. Serial No. 350,375.



Claim.—1. In a reversible turbine in which the relative and directive elements are adapted to interchange their functions to enable reversal of motion to be effected without reversal of the direction of flow of the motive fluid; the combination with a stationary casting whose internal surface is circular in cross section, and a revoluble member passing axially through said casing; of a number of separate vane-carrying hoops without permanent connection with any other part or one with the other, located side by side on said revoluble member so as to approximately fill the interior of the casing, the vanes of one hoop being formed to produce rotation in one direction, and the vanes of the next hoop to produce rotation in the other direction, means for supplying motive fluid to the casing and for exhausting it therefrom after passing consecutively through the separate hoops of vanes, and means for selecting and fixing alternate separate hoops of vanes to the stationary casing, while the remaining separate hoops of vanes are selected and fixed to the revoluble member, or vice versa, according to the direction of motion required.

2. In a reversible turbine in which the rotative and directive elements are adapted to interchange their functions to enable reversal of motion to be effected without reversal of the direction of flow of the motive fluid; the combination with a stationary casing whose internal surface is circular in cross section, and a revoluble member passing axially through said casing; of a number of separate vane-carrying hoops without permanent connection with any other part or one with the other, located side by side on said revoluble member so as to approximately fill the interior of the casing, the vanes of one hoop being formed to produce rotation in one direction, and the vanes of the next hoop to produce rotation in the other direction, means for supplying motive fluid to the casing and for exhausting it therefrom after passing consecutively through the separate hoops of vanes, sliding members carried in the casing adapted to engage alternate vane-carrying hoops, and sliding members carried by the revoluble member also adapted to engage alternate vane-carrying hoops, and means for simultaneously moving the said sliding members of one set in the opposite direction to the sliding members comprising the other set, to lock alternate hoops to the casing and the remaining hoops to the rotor, and vice versa, according to the direction of motion of the turbine required, substantially as set forth.

3. In a reversible turbine in which the rotative and directive elements are adapted to interchange their functions to enable reversal of motion to be effected without reversal of the direction of flow of the motive fluid; the combination with a stationary casing whose internal surface is circular in cross section, and a revoluble member passing axially through said casing; of a number of separate vane-carrying hoops without permanent connection with any other part or one with the other located in the annular space between the revoluble member and the casing, the vanes of one hoop being formed to produce rotation in one direction, and the vanes of the next hoop to produce rotation in the other direction, means for supplying motive fluid to the casing and for exhausting it therefrom after passing consecutively through the separate hoops of vanes, sliding members carried in the casing adapted to engage alternate vane-carrying hoops, and sliding members carried by the revoluble member also adapted to engage alternate vane-carrying hoops, and means for simultaneously moving the said sliding members of one set in the opposite direction to the sliding members comprising the other set, to lock alternate hoops to the casing and the remaining hoops to the rotor, and vice versa, according to the direction of motion of the turbine required, substantially as set forth.

4. In a reversible turbine in which the rotative and directive elements are adapted to interchange their functions to enable reversal of motion to be effected without reversal of the direction of flow of the motive fluid; the combination with a stationary casing whose internal surface is circular in cross section, said casing having longitudinal grooves on its inner surface, a revoluble shaft passing axially through said casing, bearings in the ends of said casing to carry said shaft, a rotor core within said casing keyed to said shaft and having longitudinal grooves in its periphery; of a number of separate vane-carrying hoops without permanent connection with any other part or one with the other located in the annular space between the revoluble rotor core and the casing, said hoops having notches through their outer and inner peripheries extending transversely of the planes of the hoops, racks located in the grooves of the casing and of the rotor, teeth on the racks adapted to engage only the notches of alternate hoops, and mechanism for simultaneously moving the racks comprising one set in the opposite direction to the racks comprising the other set to lock alternate hoops to the casing and the remaining hoops to the rotor, or vice versa, according to the direction of motion required, and means for supplying motive fluid to the casing and for exhausting it therefrom after passing consecutively through the separate hoops of vanes, substantially as set forth.

5. In a reversible turbine in which the rotative and directive elements are adapted to interchange their functions to enable reversal of motion to be effected without reversal of the direction of flow of the motive fluid; the combination with a stationary casing whose internal surface is circular in cross section, a revoluble member passing axially through said casing, a number of separate vane-carrying hoops without permanent connection with any other part or one with the other located in the annular space between the revoluble member and the casing, said hoops having notches around their external and internal peripheries, one side of a notch in one hoop being inclined and the opposite side of a corresponding notch in the next hoop being oppositely inclined, and so on, and means for supplying motive fluid to the casing and for exhausting it therefrom after passing consecutively through the separate hoops of vanes; of racks carried in the casing and capable of sliding motion relatively thereto, and racks carried by the rotor also capable of sliding motion relatively thereto, teeth on the racks spaced to engage only the notches of alternate hoops, said teeth being of less width than the notches and wedge-shaped with the narrower ends facing toward the motive fluid inlet, and means for simultaneously moving the racks of one set in the opposite direction to the racks of the other set, substantially as set forth.

6. In a reversible turbine in which the rotative and directive elements are adapted to interchange their functions to enable reversal of motion to be effected without reversal of the direction of flow of the motive fluid; the combination with a stationary casing, a revoluble shaft passing axially through said casing, a rotor core keyed to said shaft, a number of separate vane-carrying hoops without permanent connection with any other part or one with the other located in the annular space between the rotor core and the casing, and means for supplying motive fluid to the casing and for exhausting it therefrom after passing consecutively through the separate hoops of vanes; of sliding members carried in the casing adapted to engage alternate vane-carrying hoops and sliding members carried by the rotor core also adapted to engage alternate vane-carrying hoops, a stationary cylindrical boss within the casing through which boss the axial shaft passes, a low pressure piston adapted to slide and revolve on said boss and connected to the sliding members of the rotor core, and a high pressure piston adapted to slide on said boss, in contact with said low pressure piston and connected to the sliding members of the casing, means for admitting a constant supply of motive fluid at reduced pressure to normally act on the low pressure piston to maintain the sliding members in one of their positions, and means for admitting high pressure motive fluid to the high pressure piston to slide the pistons and thereby operate the sliding members for reversing the fixing of the vane-carrying hoops substantially as set forth.

7. In a reversible turbine in which the rotative and directive elements are adapted to interchange their functions to enable reversal of motion to be effected without reversal of the direction of flow of the motive fluid; the combination with a stationary casing whose internal surface circular in cross section is of opposite conicity, a revoluble shaft passing axially through said casing, rotor cores keyed to said shaft, a number of separate vane-carrying hoops without permanent connection with any other part or with one another located side by side in two sets, one set at each end of said casing, said hoops being of varying diameters so as to fill the interior of the ends of the casing between the rotor core and said casing, the said hoops carrying vanes of progressively varying sizes to permit of the expansion of the pressure fluid passing through them, the vanes of one hoop being formed to produce rotation in one direction, and the vanes of the next hoop to produce rotation in the other direction, means for supplying motive fluid in opposite directions to the two sets of vane-carrying hoops to prevent endwise pressure upon the axial shaft, and means for exhausting the motive fluid after passing consecutively through the sets of vane-carrying hoops; of sliding members carried in the casing adapted to engage alternate vane-carrying hoops and sliding members carried by the rotor core also adapted to engage alternate vane-carrying hoops, a stationary cylindrical boss within the casing through which boss the axial shaft passes, a low pressure piston adapted to slide and revolve on said boss and connected to the sliding members of the rotor core, and a high pressure piston adapted to slide on said boss, in contact with said low pressure piston and connected to the sliding members of the casing, means for admitting a constant supply of motive fluid at reduced pressure to normally act on the low pressure piston to maintain the sliding members in one of their positions, and means for admitting high pressure motive fluid to the high pressure piston to slide the pistons and thereby operate the sliding members for reversing the fixing of the vane-carrying hoops substantially as set forth.

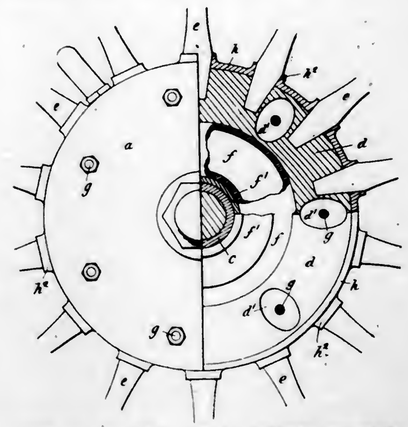
857,091. WHEEL FOR CYCLES, MOTOR-CARS, CARRIAGES, AND OTHER VEHICLES. JOHN N. B. MOORE, Ipswich, England. Filed Dec. 21, 1905. Serial No. 292,854.



Claim.—1. The improved wheel for cycles, motor carriages and other vehicles constructed with two flat rings *a* parallel to each other and having their parallel ends formed to receive blocks *c*, metal bridge pieces *d* being fitted between the blocks and attached to the rings *a* by lugs *e* fitting into notches *f* and screws *g*, spokes *l* attached at one end to the bridge pieces and at the other end to the hub of the wheel with the intervention of the couplings *m*, the inner pneumatic tire *n* supported upon the circular rim *o* and pressing upon the inner concave shaped parts of the blocks *c*, substantially as described and shown in the drawings.

2. A wheel for cycles and the like comprising parallel rings, blocks movably held between the said rings, bridge pieces fitted between the blocks and connected to the rings, a resilient tire pressing upon the inner ends of the blocks, a circular rim surrounding the inner circumference of said tire and spokes connecting the hub of the wheel to the rings and bridge pieces said circular rim being independent of the spokes and hub.

857,092. PNEUMATIC HUB FOR VEHICLES. GEORGE MIDDLETON, London, England, assignor to The Middleton Pneumatic Hub Company, (1906,) Limited, London, England. Filed Sept. 14, 1906. Serial No. 334,642.



Claim.—A pneumatic hub for vehicles, comprising a pair of flanges, an axle sleeve integral with one of said flanges, a wood spoke drum located between said flanges, a metal band fixed to and surrounding said drum, sockets for the spokes formed through said band and in said drum, a metal rim having flanges thereon and adapted to rotate around the axle sleeve, a pneumatic ring located within said rim and supporting said drum, and means to retain said parts in working position, as set forth.

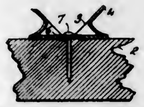
857,093. RAILROAD CATTLE-GUARD. HENRY B. MYERS, Marshfield, Mo. Filed Feb. 28, 1907. Serial No.

a bolt having an abutment at one end and a threaded portion at its opposite end, and a clamping nut engaging said

having spirally directed and spirally-alined openings therethrough, of separate chambers distributed along the pipe in communication with the openings therein, and a

inner surface of the pipe, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said

857,093. RAILROAD CATTLE-GUARD. HENRY B. MYERS, Marshfield, Mo. Filed Feb. 28, 1907. Serial No. 359,803.



Claim.—1. A cattle guard, comprising a plurality of substantially V shaped parallel metal plates, adapted to be secured transversely to the railroad ties, and having serrated upper edges, the ends of each of said plates being flattened and opposite intermediate portions of each plate being downwardly turned, thus serving as lateral supports.

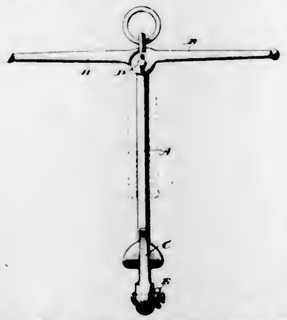
2. In a cattle guard, the combination with the railroad ties, of a plurality of parallel substantially V shaped plates mounted upon said ties and having serrated upper edges, each of said plates being longitudinally adjustable on said ties.

3. A cattle guard member, comprising a substantially V shaped plate having flattened ends and opposite intermediate portions being downwardly turned so as to furnish lateral supports for said plate.

4. A cattle guard member comprising a substantially V shaped plate having flattened ends, the upper edges of the V shaped portion being serrated and the plate being adjustable lengthwise on the railroad ties.

5. In a railroad cattle guard, the combination with the railroad ties, of a plurality of parallel, substantially V shaped plates having flattened ends and intermediate opposite portions downwardly turned to serve as lateral supports, the upper edges of the V shaped portion of each plate being serrated, and each plate having a plurality of longitudinal slots, and securing devices extending through said slots and into said ties.

857,094. ANCHOR. WILLIAM MCBRIDE, Portland, Me., assignor to The Thomas Laughlin Company, Portland, Me., a Corporation of Maine. Filed Oct. 5, 1906. Serial No. 337,591.

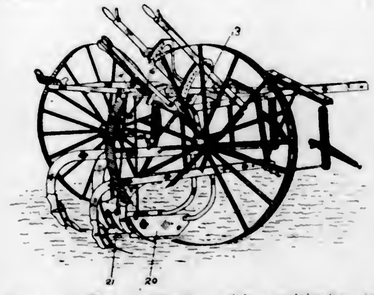


Claim.—1. The combination with a shank and foldable member of an anchor, of means for pivoting said member including a bolt having an abutment at one end, and a threaded portion at its opposite end, said member having a slotted portion and the bolt having a lug adapted to engage said slotted portion, and a clamping nut engaging the threaded portion of the bolt whereby the member may be clamped in position, in combination with means for preventing complete separation of the clamping nut from the bolt arranged to restrict the range of movement of the nut to an extent less than the length of the lug on the bolt whereby to constantly preserve the engagement between said lug and slotted portion of the foldable member to hold the bolt against turning movement during the adjustment of the clamping nut.

2. The combination with a shank and foldable member of an anchor, of means for pivoting said member including a bolt having an abutment at one end and a threaded portion at its opposite end, and a clamping nut engaging said threaded portion whereby said member may be clamped in position, in combination with co-operating instrumentalities between said bolt, and a part of the anchor holding said bolt against rotary movement during the adjustment of the clamping nut, and means for preventing complete separation of the clamping nut from the bolt arranged to restrict the range of movement of the nut whereby to constantly preserve said co-operating instrumentalities in operating engagement.

3. The combination with a shank and foldable member of an anchor, of means for pivoting said member comprising a threaded bolt having a clamping nut thereon, whereby the member may be held in position, the bolt being extended a substantial distance beyond the nut in its clamping position to enable the nut to be released from clamping position without removal from the bolt, and means on the bolt for preventing accidental removal of the nut therefrom, in combination with means preventing rotary movement of the bolt when the nut is being adjusted.

857,095. CLOD-FENDER ADJUSTER. THOMAS F. MCCARTY and LEWIS C. MCCARTY, Fall Creek township, Hamilton county, Ind. Filed Nov. 15, 1906. Serial No. 343,626.



Claim.—1. The combination with a cultivator, and the clod fenders thereof, of a pair of operating levers connected respectively to said fenders, means for holding said levers in desired position of adjustment, said levers having portions arranged closely adjacent and carrying means for releasing the levers, whereby said levers may be simultaneously released and operated by one hand.

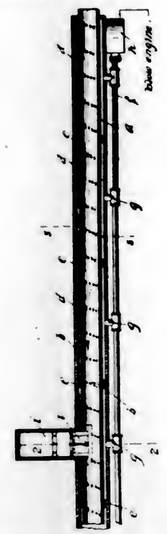
2. An attachment for cultivators comprising a pair of closely adjacent levers, a segment, detents carried by said levers and adapted to engage said segment, means carried by the levers for operating the detents, said means being arranged to be grasped simultaneously in one hand, and means for connecting the levers to clod fenders of a cultivator.

3. An attachment for cultivators comprising a rock-shaft, means for attaching said shaft to a cultivator, a sleeve journaled on the shaft, a pair of adjacent levers, one carried by the shaft and the other by the sleeve, detents for holding said levers, detent-operating means carried by the levers in position to be simultaneously operated by one hand, and arms carried by the shaft and sleeve for connection with clod fenders of a cultivator.

857,096. CONVEYING SYSTEM. ALVIN C. MCCORD, Chicago, Ill. Filed Nov. 4, 1902. Renewed Jan. 2, 1906. Serial No. 294,153.

Claim.—1. In a conveying system, the combination with a pipe having spirally directed openings therethrough, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said chambers, substantially as described.

2. In a conveying system, the combination with a pipe having spirally directed and spirally-alined openings therethrough, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said chambers, substantially as described.



3. In a conveying system, the combination with a pipe having spirally directed openings therethrough tangential with the inner surface of the pipe, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said chambers, substantially as described.

4. In a conveying system, the combination with a pipe having spirally directed and spirally alined openings therethrough tangential with the inner surface of the pipe, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said chambers, substantially as described.

5. In a conveying system, the combination with a pipe having spirally arranged openings inclined toward the exit end of the pipe, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said chambers, substantially as described.

6. In a conveying system, the combination with a pipe having spirally arranged openings inclined toward the exit end of the pipe and tangential with the pipes inner surface, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said chambers, substantially as described.

7. In a conveying system, the combination with a pipe having spirally directed openings therethrough and inclined toward the exit end of the pipe, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said chambers, substantially as described.

8. In a conveying system, the combination with a pipe having spirally directed and spirally alined openings therethrough and inclined toward the exit end of the pipe, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communiction with said chambers, substantially as described.

9. In a conveying system, the combination with a pipe having spirally directed openings therethrough and inclined toward the exit end of the pipe, tangential with the inner surface of the pipe, of separate chambers distributed along the pipe in communication with the openings therein, and a blowing engine in communication with said chambers, substantially as described.

10. In a conveying system, the combination with a pipe having spirally directed openings therethrough and inclined toward the exit end of the pipe, tangential with the inner surface of the pipe, of means for forcing fluid through said openings, substantially as described.

11. In a conveying system, the combination with a pipe having spirally directed and spirally alined openings therethrough, and inclined toward the exit end of the pipe, of means for forcing fluid through said openings, substantially as described.

12. In a conveying system, the combination with a pipe having spirally directed openings therethrough and inclined toward the exit end of the pipe, of means for forcing fluid through said openings, substantially as described.

13. In a conveying system, the combination with a pipe having spirally arranged openings inclined toward the exit end of the pipe and tangential with the pipes inner surface, of means for forcing fluid through said openings, substantially as described.

14. In a conveying system, the combination with a pipe having spirally arranged openings inclined toward the exit end of the pipe, of means for forcing fluid through said openings, substantially as described.

15. In a conveying system, the combination with a pipe having spirally directed and spirally alined openings therethrough, tangential with the inner surface of the pipe, of means for forcing fluid through said pipe, substantially as described.

16. In a conveying system, the combination with a pipe having spirally directed openings therethrough, tangential with the inner surface of the pipe, of means for forcing fluid through said openings, substantially as described.

17. In a conveying system, the combination with a pipe having spirally directed and spirally alined openings therethrough, of means for forcing fluid through said openings, substantially as described.

18. In a conveying system, the combination with a pipe having spirally directed openings therethrough, of means for forcing fluid through said openings, substantially as described.

19. A conveying pipe in combination with means for effecting the spiral flow of fluid therein and a chute or intake for the material in communication with said pipe, said chute having one door controlling communication between the same and the pipe and another door at the reception opening of the chute, the doors being provided with mechanism for operating the same together, the doors being so relatively disposed that the chutes are opened for the reception of material when they are cut off from the pipe, and vice versa, substantially as described.

20. In a conveying system, the combination with a conveying pipe provided with openings therethrough serving to direct fluid toward the exit end of the pipe, of a blowing pipe communicating with the aforesaid pipe at intervals, and a blowing engine located nearest the exit end of the pipe and communicating with said blowing pipe, substantially as described.

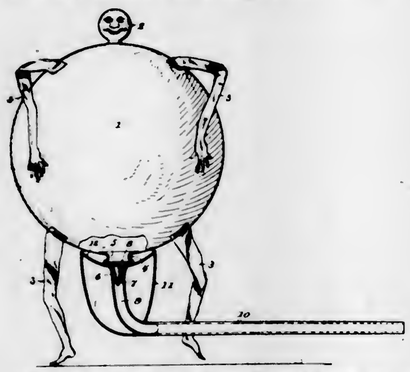
21. In a conveying system, the combination with a conveying pipe provided with openings therethrough for directing fluid into its interior toward the exit end of the pipe, of a plurality of separate chambers distributed along said pipe and communicating with the openings therein, and means for forcing air into said chambers and thence through the openings, substantially as described.

22. A conveying pipe in combination with means for effecting the flow of fluid therein and a chute or intake for the material in communication with said pipe, said chute having one door controlling communication between the same and the pipe and another door at the reception opening of the chute, the doors being provided with mechanism for operating the same together, the doors being so relatively disposed that the chutes are opened for the reception of material when they are cut off from the pipe, and vice versa, substantially as described.

23. In a conveying system, the combination with a pipe

having spiral perforations therethrough, of an air chamber surrounding said spirally perforated pipe, and means for producing a blast of air in said surrounding air chamber, substantially as described.

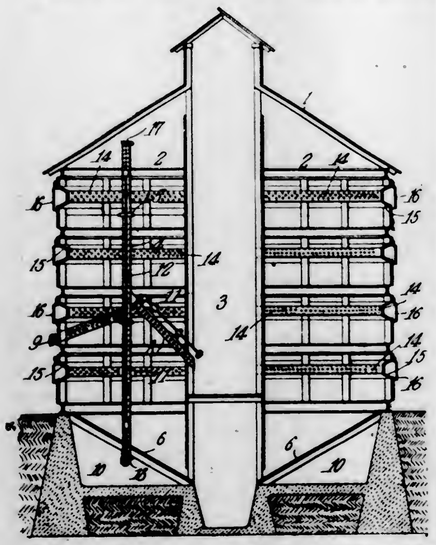
857,097. TOY. FRANK J. MCCORMACK, Milwaukee, Wis. Filed May 28, 1906. Serial No. 319,003.



Claim.—1. The herein described combination toy, consisting of a blow-pipe, and an inflatable bulb having a tapered extension provided with a valve-controlled opening, and adapted to enter the blow-pipe bowl.

2. The herein described toy consisting of a bulb having an inflating neck, a valve-casing having a tapered valve-seat extension, and a valve fitted in the valve-seat; in combination with a blow-pipe provided with an opening at its bowl for the reception of the tapered valve-seat extension.

857,098. GRAIN-BIN VENTILATOR, GRAIN-SAMPLER, AND WEEVIL-EXTERMINATOR. JOHN N. MCNEES, Hughesville, Mo. Filed Apr. 4, 1907. Serial No. 366,426.

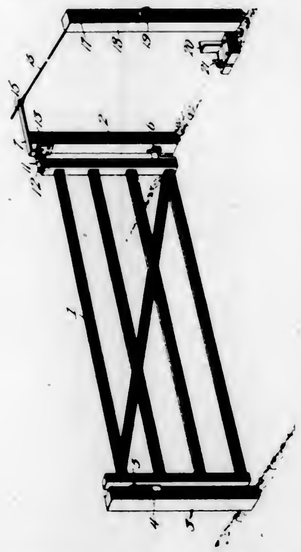


Claim.—1. In combination with an elevated grain bin, a foraminous pipe vertically disposed therein and passing through the bottom of the bin, said pipe having at different points along its length openings, a movable rod extending parallel with the pipe and having shields provided with openings which are adapted to register with the openings in the pipe.

2. In combination with a grain bin having an adjacent shaft, means for introducing air into the shaft, a foraminous pipe vertically disposed in the bin and passing through the bottom thereof and a foraminous branch connecting said pipe with the shaft.

3. In combination with an elevated grain bin, a foraminous pipe vertically disposed therein and passing through the bottom of the bin, said pipe having at different points along its length openings, a movable rod extending parallel with the pipe and having shields adapted to close the openings in the pipe.

857,099. GATE. JOHN F. MCNEILL, Melbourne, Victoria, Australia. Filed Oct. 8, 1904. Serial No. 227,721.

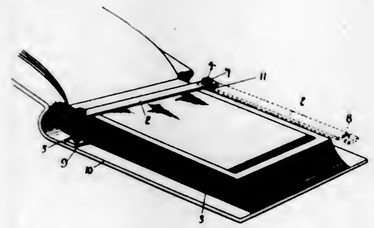


Claim.—The combination with a gate post, of a gate hinged at its lower end to said post, and an operating lever connecting the upper portion of the gate with the post, said lever comprising a handle portion, a section depending at right angles from the end of the handle portion, and a section projecting at right angles from the depending portion in parallel relation to the handle portion, said latter portion being connected at its end to the gate and pivotally connected intermediate its ends to the post, and means for operating the lever.

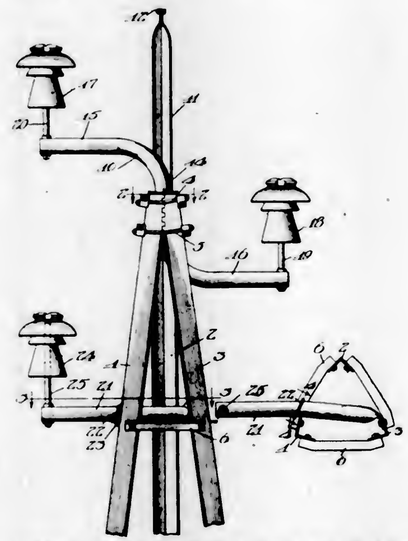
857,100. MANIFOLDING DEVICE. JOHN E. NORMAN, Leicester, England. Filed Jan. 2, 1906. Serial No. 294,330.

Claim.—A manifolding book comprising in combination sheets 3, screw threaded pins 4, 5 located on each side of the sheets, a bar 2 pivoted to the pin 4, a slot in the said bar to pass over the pin 5, nuts 7 on said pins to tighten down the bar when located across the book, and a spring 11 located under the pivoted end of said bar and around the pin 4 to support said pivoted end at or near the writing level when the bar is swung round alongside the sheets and clear of same, substantially as described.

857,100.



857,101. CROSS-ARM FOR TOWERS. LA VERNE W. NOYES, Chicago, Ill. Filed July 2, 1906. Serial No. 324,439.



Claim.—1. The combination with the post of a tower, of a cross-arm therefor having a portion by which it is supported substantially at right angles to the remainder thereof, and a second arm having one end connected to one leg of the post and an intermediate portion secured to and supported by one of the braces of the tower.

2. The combination with the post of a tower, of a hollow cylindrical cross-arm therefor having one portion thereof connected to one leg of the tower, and an intermediate portion supported by and secured to one of the braces of the post.

3. The combination with the post of a tower, of a cross-arm therefor having a substantially vertical intermediate portion by which it is supported in position, and substantially horizontal end-portions.

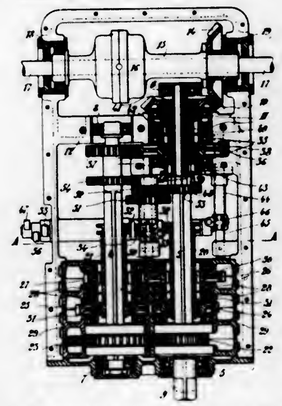
4. The combination with the post of a tower, of a cross-arm therefor having an intermediate portion by which it is supported extending substantially at right angles to its end-portions.

5. The combination with the post of a tower, of a cross-arm therefor, cylindrical in cross section and having an intermediate portion by which it is supported extending substantially at right angles to the end-portions.

6. The combination with a plurality of converging legs of the post of a tower, of a cross-arm for the tower having a portion thereof clamped between said posts.

7. The combination with a plurality of converging posts of a tower, of a cross-arm therefor having a portion thereof clamped between said posts at the point where they converge and extending substantially at right angles to the remaining portion of the arm.

857,102. CHANGE-SPEED AND REVERSING GEAR. JULES R. PARANT, Neuilly-sur-Seine, France. Filed Jan. 17, 1907. Serial No. 352,806.



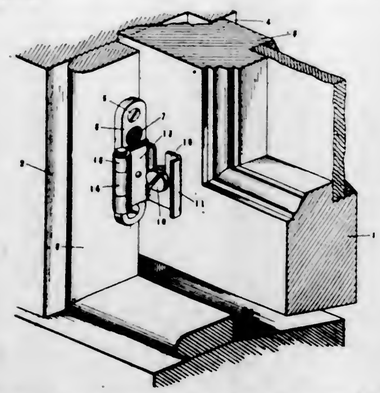
Claim.—1. In a change speed and reversing gear and in combination a driven shaft, a toothed wheel thereon, a second toothed wheel in constant engagement therewith, a third toothed wheel adapted to be driven through a reducing speed gear, a driving shaft in one piece passing through the hubs of said second and third wheels but not in contact therewith, a sleeve loosely mounted on said driving shaft and extending between said shaft and the hubs of said second and third wheels, in constant operative connection with said second wheel and adapted to be placed in operative connection either with said third wheel or with the driving shaft, and means under the control of the operator to give longitudinal movement to said sleeve to place it as desired in either of said operative positions.

2. In a change speed and reducing gear and in combination a driven shaft, a toothed wheel fixed thereon, a driving shaft in one piece, a second toothed wheel at one end of said shaft concentric thereto with a hub surrounding said shaft but not in contact therewith and supported by ball bearings on the exterior of its hub, a third toothed wheel mounted adjacent to and in similar manner to said second wheel, a sleeve mounted loosely on said driven shaft extending within the hubs of said wheels, engaging means between said sleeve and the hub of said second toothed wheel so that they always rotate together but the sleeve is capable of longitudinal movement relatively to said wheel hub, means to engage said sleeve and said third toothed wheel at a certain longitudinal position of said sleeve, means to engage said sleeve with the shaft to rotate therewith, means controlled by the operator to move said sleeve longitudinally to engage it either with said third wheel or with the shaft, an intermediate shaft, a toothed wheel on said shaft in constant engagement with said third toothed wheel, a series of reducing gears each comprising two toothed wheels in constant engagement one with the other and mounted respectively concentric to and surrounding the intermediate shaft and the driving shaft, but not in contact therewith and supported on ball bearings engaging the exterior of their hubs, two sleeves mounted respectively on said driving shaft and said intermediate shaft so as to rotate therewith and be capable of longitudinal movement thereon, each sleeve extending within the hubs of the respective toothed wheels of said reducing gears, engaging means between each sleeve and the hubs of the respective toothed wheels so ar-

ranged that longitudinal movement of each sleeve places it in engagement with one of the wheels, and means under the control of the operator to shift both of said sleeves.

3. In a change speed and reducing gear and in combination a driven shaft, a toothed wheel fixed thereon, a driving shaft in one piece, a second toothed wheel at one end of said shaft concentric thereto with a hub surrounding said shaft but not in contact therewith and supported by ball bearings on the exterior of its hub, a third toothed wheel mounted adjacent to and in similar manner to said second wheel, a sleeve mounted loosely on said driven shaft extending within the hubs of said wheels, engaging means between said sleeve and the hub of said second toothed wheel so that they always rotate together but the sleeve is capable of longitudinal movement relatively to said wheel hub, means to engage said sleeve and said third toothed wheel at a certain longitudinal position of said sleeve, means to engage said sleeve with the shaft to rotate therewith, means controlled by the operator to move said sleeve longitudinally to engage it either with said third wheel or with the shaft, an intermediate shaft, a toothed wheel on said shaft in constant engagement with said third toothed wheel, a series of reducing gears each comprising two toothed wheels in constant engagement one with the other and mounted respectively concentric to and surrounding the intermediate shaft and the driving shaft, but not in contact therewith and supported on ball bearings engaging the exterior of their hubs, two sleeves mounted respectively on said driving shaft and said intermediate shaft so as to rotate therewith and be capable of longitudinal movement thereon each sleeve extending within the hubs of the respective toothed wheels of said reducing gears, engaging means between each sleeve and the hubs of the respective toothed wheels so arranged that longitudinal movement of each sleeve places it in engagement with one of the wheels, means under the control of the operator to shift both of said sleeves, a reversing gear comprising a toothed wheel on the driving shaft and one on the intermediate shaft and wheels carried on an independent shaft adapted under the control of the operator to place said toothed wheels in operative connection.

857,103. WINDOW-SWINGING DEVICE. GEORGE H. PARKER, Arlington, N. J., assignor to John Wallace Baker, Stamford, Conn. Filed Feb. 2, 1906. Serial No. 299,105.



Claim.—1. In combination, a slidable member, a stationary member, means fixed upon said stationary member, means fixed upon said slidable member, a plate adapted to engage said first-mentioned fixed means, and a second plate hinged to a forward extension of said first plate adapted to engage said second-mentioned means and provided with means whereby said second plate is adapted to lock said first plate in engagement with said first-mentioned fixed means.

2. In combination, a slidable member, a stationary member, means fixed upon the slidable member, means fixed upon the stationary member, a hinge comprising a plate adapted slidably to engage the means upon the fixed member, and a plate pivoted to a forward extension of said first plate provided with means automatically to engage the fixed means upon said slidable member, said last mentioned plate being also provided with means passing through said first-mentioned plate to engage the means fixed upon said stationary member when each of said plates are engaged with their respective means.

3. In combination, a slidable member, a stationary member, means fixed upon said stationary member, means fixed upon said slidable member, a plate adapted to engage said first fixed means, a second plate hinged to a forward extension of the first plate and provided with an upright member adapted to engage said second-mentioned means, and means whereby said second plate is adapted to lock said first plate in engagement with said first-mentioned fixed means.

4. In combination, a sash, a frame, a member fixed upon said sash, a member fixed upon said frame, a plate constructed to engage the member fixed upon said frame, and a plate hinged to a forward extension of the first plate constructed to engage the member fixed upon said sash and to lock said first-mentioned plate in engagement with the member fixed upon said frame when both of said plates are in engagement with their respective fixed members.

5. In combination, a sash, a frame, a member fixed upon said sash, a member fixed upon said frame, a plate provided with a forwardly-extending part constructed to engage the member fixed upon said frame, and a plate hinged to the forwardly-extending part of the first plate constructed to engage the member fixed upon said sash and having a projection adapted to lock said first-mentioned plate in engagement with the member upon said frame when said last-mentioned plate is engaged with the member fixed upon said sash.

6. In window construction, in combination, a frame, a slidable sash mounted to swing from said frame, a member fixed upon said sash, a member fixed upon said frame, and a hinge adapted detachably to engage the member fixed upon the frame and the member fixed upon the sash, said hinge being provided with means whereby it is locked to the member fixed upon the frame before the sash is swung from the frame.

7. In combination, a frame, a sash adapted to slide in said frame and to be swung therefrom, a pair of pivotally mounted plates adapted to form a hinged connection between the frame and the sash, and means carried by one of said plates for locking the other thereof to the frame before said sash is swung therefrom.

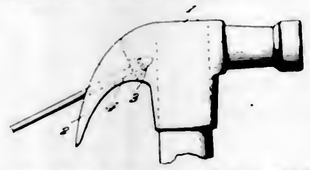
8. In combination, a frame, a sash mounted to slide in said frame and to be swung with reference thereto, a pair of pivotally mounted plates for effecting a detachable hinged connection between said sash and said frame, and a projection upon one of said plates which extends through the other thereof to lock said plates to said frame before the sash is swung from the frame.

9. In combination, a fixed member, a slidable member adapted to be swung from the fixed member, a socket fixed upon one of said members, a post fixed upon the other thereof, a pair of pivotally mounted plates, one of which is adapted detachably to engage said socket and the other detachably to engage said post, and means for locking said plates against movement when the above-mentioned engagement has been effected and before the slidable member is swung from the fixed member.

10. In window construction, in combination, a frame, a sash slidably mounted in said frame, a post upon said sash, a socket upon said frame, a plate provided with means adapted to engage said socket and having a forward extension, a second plate pivoted to said forward extension and adapted automatically to engage said post, and a projection upon said second plate extending through an opening in said first plate to engage said socket when said plates are lying flatwise against each other.

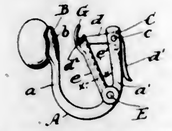
11. In a window construction, in combination, a frame, a slidable sash adapted to be swung from said frame, a socket fixed upon the frame, a post fixed upon the sash, a plate having means adapted to make a slip connection with said socket, and a plate having near one edge means for forming a slip connection with the post on the sash and at its other edge having means for making a pivotal connection with the other plate, said socket being located between the point of pivotal connection of said plates and the point of slip connection of the second mentioned plate with the post upon the sash.

857,104. HAMMER. WILLIAM H. PARKER, Jr., Elgin, Nebr. Filed Oct. 1, 1906. Serial No. 336,893.



Claim.—As a new article of manufacture, the herein described hammer head provided between its claws with an outwardly facing tapered socket designed to receive the head of a nail and hold the latter by frictional contact with the tapering walls of said socket, thereby being susceptible of accommodating heads of different sizes and of holding the head frictionally in different positions so that the nail may assume different angles with respect to the hammer head.

857,105. ATTACHMENT FOR HOLDING EAR ORNAMENTS. CHARLES H. PATTEN, Providence, R. I., assignor to Charles E. Hancock Company, a Corporation of Rhode Island. Filed Mar. 14, 1907. Serial No. 362,286.



Claim.—1. In a device of the character set forth, the combination with a loop having one end formed with a seat for an ornament, of a hollow arm pivoted to one arm of said loop and having a concavo-convex surface at its free end, and a lever pivoted near the free end of said arm of the loop with its free end resting in the concave portion of the pivoted arm when the parts are in engaged position.

2. In a device of the character set forth, the combination with a loop having one end formed with a seat for an ornament, of a hollow arm pivoted to one arm of said loop and having a concavo-convex surface at its free end, and a lever pivoted near the free end of said arm of the loop with its free end resting in the concave portion of the pivoted arm when the parts are in engaged position, said pivoted arm having a longitudinal slot and the lever having lateral lugs.

3. In a device of the character set forth the combination with the loop and a concave-convex bearing plate upon one end of the loop, of an ornament mounted in the convex face of said bearing plate, an arm pivotally mounted in the loop, a concavo-convex bearing plate upon the arm, and means upon the other end of the loop for forcing the second bearing plate toward the first bearing plate and having a portion engaging the concave face of said plate of the arm when the parts are in their engaged position.

857,106. GASKET FOR PIPE-COUPLINGS. THOMAS PENDERGAST, Lancaster, Pa., assignor of fifty-one one-hundredths to John Hertzler, Lancaster Pa. Filed Apr. 13, 1906. Serial No. 311,574.

Claim.—1. A gasket for train-pipe or similar couplings, comprising a ring of rubber or other elastic material having an annular metallic facing on one marginal portion only of the face of said ring, leaving a surrounding exposed rubber portion, the body of said ring being yieldable or elastic; whereby two of such rings in opposition in a coupling have metallic contact faces surrounded by rubber which under pressure crowds around said contact faces to make a steam-tight joint.



2. A gasket for train-pipe and similar couplings, comprising a thick rubber or other elastic ring, and a stiff reinforcing ring or metallic lining secured only in the inside of said rubber ring and having a top flange overlying the inner marginal portion only of the face of said rubber ring, leaving the body of said rubber ring elastic and leaving an annular exposed face of rubber around said flange, substantially as described.

3. A gasket for train-pipe and similar couplings, comprising a thick rubber or other elastic ring, and a stiff metallic lining or reinforcing ring fitted therein having an outset bottom edge or rib embedding in the rubber inside the rubber ring and having a narrow top flange overlying the inner portion only of the face of said elastic ring.

4. A gasket for train-pipe and similar couplings, comprising a thick rubber or other elastic ring, and a stiff metallic lining therein consisting of a cylindrical sheet-metal ring having a flaring bottom portion and having a narrow top flange overlying the inner portion only of the face of said elastic ring.

5. A reinforcing ring or lining for rubber gaskets comprising a cylindrical sheet-metal ring having a narrow top flange and a flaring bottom edge, said ring adapted to be secured inside of a rubber or elastic gasket, substantially as described.

6. The combination, in a train-pipe coupling, of the coacting coupling-heads having seats for opposing gaskets, and the gaskets fitted therein consisting of rubber or other elastic rings having inside metallic reinforcing rings with top flanges overlying the inner marginal portions only of the faces of said elastic rings, whereby in bringing the coupling-heads together the gaskets present metallic contact faces, and when the coupling-heads are clamped or drawn together the surrounding rubber portions of the rings are pressed closely together around said metallic flanges, making a fluid-tight joint.

857,107. LOOM-SHUTTLE. JAMES L. POALK, Philadelphia, Pa., assignor to Automatic Oscillating Loom Company of America, a Corporation of New Jersey. Filed July 28, 1906. Serial No. 328,243.

Claim.—1. In a loom shuttle, two weft retaining members projecting in opposite directions and one of said members having a free end overlapping the free end of the other member.

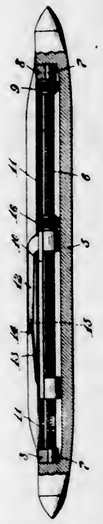
2. In a loom shuttle, two weft retaining members projecting in opposite directions, one of said members being flexible and having its free end extending under the free end of the other member.

3. A loom shuttle having a hollowed body, a plate adapted to slide in the hollow body and two weft retaining members secured to said plate and projecting in opposite directions thereon, one of said members having its free end overlapping the free end of the other member.

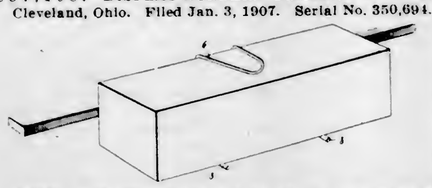
4. In a loom shuttle, two weft retaining members projecting in opposite directions and one of said members having its free end overlapping the free end of the other member combined with means for moving said members with respect to the ends of the shuttle.

5. A loom shuttle having a hollowed body, a threaded rod turning loosely in said body, a plate in screw threaded engagement with said rod and arranged to travel thereon when said rod is rotated, and two weft retaining members carried by said plate and projecting in opposite directions

with the free end of one member overlapping the free end of the other member.



857,108. DISPLAY-HOLDER. FREDERICK PRUTTON, Cleveland, Ohio. Filed Jan. 3, 1907. Serial No. 350,694.



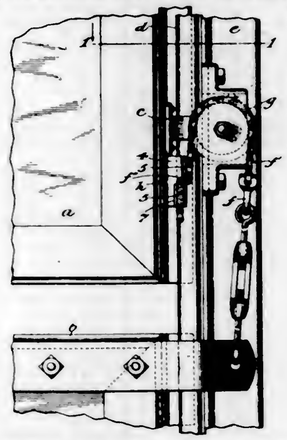
Claim.—The combination of a spring clip comprising a plate having rearwardly-extending arms at its upper and lower edges and vertically-extending tubes at its side edges, and an article holder comprising a piece of wire folded and bent to form vertical parts held by friction and slidable vertically in the tubes, and forwardly-extending spring arms at the upper and lower ends of said parts, between which the article is held.

857,109. CHAIN-ATTACHING BRACKET FOR ELEVATOR-SHAFT DOORS. JOSEPH RASHKIN, New York, N. Y. Filed June 14, 1905. Serial No. 265,146.

Claim.—1. A chain-attaching bracket comprising an attaching-plate, a part projecting outwardly from and disposed at an angle to said attaching-plate, said outwardly projecting part being provided with laterally projecting flanges substantially in line with each other and formed with a laterally opening chain-receiving space between their adjacent ends, one of said flanges being provided with a chain retaining means formed integral therewith.

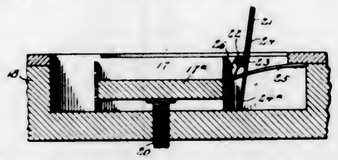
2. A chain-attaching bracket comprising an attaching plate, rigid members off-set from and disposed in a plane substantially parallel to said plate, and formed with a laterally opening chain-receiving space between them, one of said elements having a chain-retainer formed integral therewith and located wholly to one side of said laterally opening space.

3. A chain-attaching bracket, comprising an attaching-plate, a part off-standing from said plate and disposed at an angle thereto, laterally projecting flanges formed on said off-standing part and disposed in a plane substantially parallel to the attaching-plate, said flanges having a chain-receiving space formed there between and means to prevent accidental displacement of a chain from said space, said



means consisting of a projection carried by one of said flanges and located in a plane substantially parallel with the off-standing part.

857,110. DESK. JAMES L. RHODES, Green Forest, Ark. Filed Jan. 5, 1907. Serial No. 350,911.



Claim.—1. A desk provided with a compartment in the top adapted to receive a tablet or the like, a plate supported by the desk top and movable under the upper sheet or sheets of the tablet when they are lifted, and a clasp at the end of the plate, adapted to hold the end of the sheet.

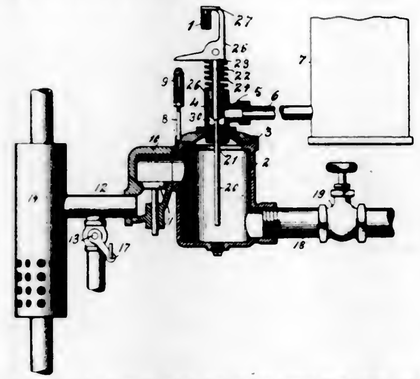
2. A desk provided with a depressed compartment in the top adapted to receive a tablet or the like, and a tearing guide hinged to the desk top beside said compartment and arranged to swing over upon the tablet therein, said tearing guide having a slide movable across the tablet, and the desk top having a recess in which the guide and slide fit when swung back.

3. A desk having a depressed compartment in the top thereof, adapted to hold a tablet or the like, a lid hinged to the top at one end of the compartment and arranged to swing down between the upper sheet or sheets of the tablet and the remainder thereof when said sheet or sheets are lifted, and a tearing guide hinged to the top beside the compartment and arranged to swing down upon said sheet.

4. A desk having a depressed compartment in the top thereof, adapted to hold a tablet or the like, a lid for said compartment, hinged to the desk top, and a spring clasp hinged to the desk top at the hinged end of the lid, and overlapping the same, and adapted to hold the end of a sheet on the lid.

857,111. VAPORIZER FOR GAS-ENGINES. JOHN V. RICE, Jr., Bordentown, N. J. Filed June 7, 1906. Serial No. 320,512.

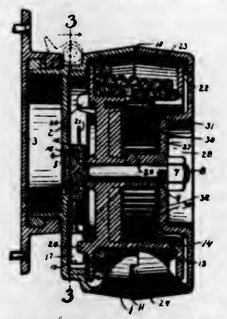
Claim.—1. In combination with an engine, a vaporizing chamber having an air-inlet valve, an oil supply, a feed valve for introducing the oil into the vaporizing chamber, an angular lever connected to said valve and actuated by the engine, and an adjusting device for determining the throw of said angular lever, the same being in the path of one of the arms of the lever, substantially as described.



2. The combination with the valve-operating lever of a gas-engine, of a vaporizing chamber, an oil supply, an air-inlet valve on the vaporizing chamber, and an oil-inlet valve having a spring-provided valve rod, and an angular lever attached to the oil-inlet valve and vibrated by the contact with one of its arms of the aforesaid engine lever during the movements of the latter.

3. The combination of the valve-operating lever of a gas-engine, of a vaporizing chamber having an air-inlet valve, an oil supply tank, a conical feed valve for introducing oil into the vaporizing chamber, a right-angled lever pivoted to the stem of said valve and actuated by the vibrations of the aforesaid engine lever, and an adjusting nut in the path of the right-angled lever whereby the extent of throw of said lever may be predetermined, substantially as described.

857,112. TROLLEY-CATCHER. WILLIAM S. ROATH, Canton, Ohio. Filed Apr. 26, 1905. Serial No. 257,426.



Claim.—1. In a trolley catcher, a case having an annular ratchet therein, a rotatable reel in the case having centrifugally acting dogs oppositely pivoted thereon with toes adapted to engage the ratchet, and a coiled spring connecting the dogs to normally hold them in from such engagement.

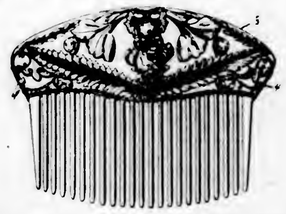
2. In a trolley catcher, a case having a rotatable reel therein, a coiled spring in the reel having its outer end attached thereto, a rotatable cover on the case having an axial projection adapted to telescope in the spring with means for releasably connecting the projection with the inner end of the spring, and means for stopping the cover against rotation when it is closed on the case.

3. In a trolley catcher, a case having a rotatable reel therein, a coiled spring in the reel having its outer end attached thereto and having a shoulder on the inside of its inner end, a rotatable cover on the case having an axial projection adapted to telescope in the spring there being a shoulder on the projection adapted to engage the spring-shoulder, and means for stopping the cover against rotation when it is closed on the cover.

4. In a trolley catcher, a case having an axial post therein, a reel journaled on the post, a coiled spring in the reel having its outer end attached thereto, a rotatable cover on the case having a sleeve adapted to telescope on the post and in the spring with means for releasably connecting the sleeve to the inner end of the spring, and means for stopping the cover against rotation when it is closed on the case.

5. In a trolley catcher, a case having an axial post therein, a reel journaled on the post, a coiled spring in the reel having its outer end attached thereto and having a shoulder on the inside of its inner end, a rotatable cover on the case having a sleeve adapted to telescope on the post and in the spring there being a shoulder on the sleeve adapted to engage the spring-shoulder, and means for stopping the cover against rotation when it is closed on the case.

857,113. LADY'S COMB WITH ADJUSTABLE ORNAMENT. ANTONIO SAVASTANO, New York, N. Y. Filed May 14, 1906. Serial No. 316,811.



Claim.—1. In a comb the combination with a supplemental rigid back conforming with the body of the comb, of resilient offsets on the supplemental back and carrying attaching means adapted to engage the comb and secure the back thereto.

2. In a comb the combination with a comb having sockets at each end, of a supplemental back conforming with the shape of the comb and carrying springs with pins or prongs adapted to fit into the sockets of the comb.

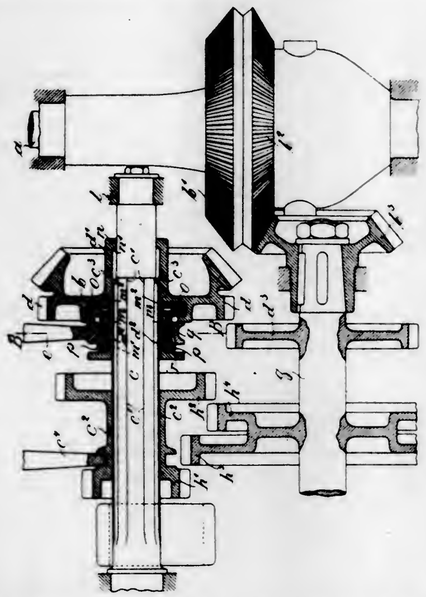
857,114. GEAR FOR AUTOMOBILES, &c. KARL SCHNAITMANN, Untertürkheim, Germany, assignor to The Firm of Daimler-Motoren-Gesellschaft, Untertürkheim, Germany. Filed Dec. 3, 1906. Serial No. 346,158.

Claim.—1. A gearing comprising a differential shaft, a bevel wheel thereupon, a driving shaft, a bevel wheel, adapted to slide longitudinally but not to rotate on the driving shaft and engaging with said bevel wheel of the differential shaft, means for locking the slidable bevel wheel in engagement with the bevel wheel of the differential shaft, and means for shifting the bevel wheel on the driving shaft.

2. A gearing comprising a differential shaft, two bevel wheels thereon, a driving shaft, a bevel wheel, adapted to slide longitudinally but not to rotate on the driving shaft, means for setting fast the slidable bevel wheel when engaging with the bevel wheel of the differential shaft, a counter shaft, a bevel wheel and spur-wheels fixedly arranged thereon, the last mentioned bevel wheel engaging with the other bevel wheel of the differential shaft, and means for shifting the slidable bevel wheel of the driving shaft.

3. A gearing comprising a differential shaft, a bevel wheel thereupon, a driving shaft, a bevel wheel, adapted

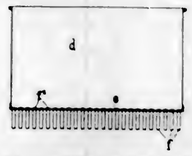
to slide longitudinally but not to rotate on the driving shaft, this bevel wheel having an extended hub and grooves (i^1 k') governing rails having heads and located in said grooves, setting pieces arranged in a hole of the driving shaft and having wedge-shaped grooves, adapted to coöperate with the guiding rails, a spring tending to force outwardly the setting pieces, and a hinged setting ring engaging with the heads of the guiding rails.



4. A gearing comprising a differential shaft, bevel wheels thereupon, a driving shaft, a bevel wheel, adapted to slide longitudinally but not to rotate on the driving shaft, the bevel wheel having an extended hub and provided with grooves (i^1 k'), governing rails having heads and arranged in the aforementioned grooves, setting-pieces located in a hole of the driving shaft and provided with wedge-shaped grooves therein and coöperating with the governing rails, a spring tending to force the setting pieces into the recesses (k'), a toothed wheel made integrally with the hub of the bevel-wheel *b*, toothed wheels adapted to slide but not to rotate on the driving shaft, a countershaft, and toothed wheels on the counter shaft, the latter wheels engaging with the toothed wheels of the driving shaft, and a bevel wheel fixedly arranged on the counter shaft and engaging with the other bevel wheels of the differential shaft, and means for displacing the slidable wheels of the driving shaft.

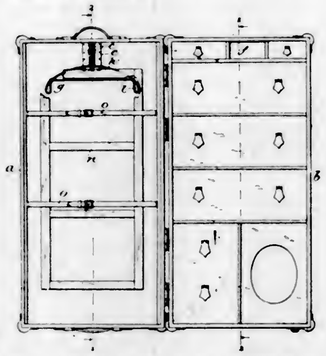
5. A gearing comprising a differential shaft, two bevel wheels thereon, a driving shaft, a bevel-wheel adapted to slide but not to rotate and mounted on the driving shaft and having an extended hub, pawls arranged pivotally in recesses of the extended hub, springs forcing the one end of the pawls against the driving shaft, a setting ring embracing the extended hub and the pawls, and adapted to operate the pawls as to remove the other end of the pawls from the driving shaft, a toothed wheel made integrally with the bevel wheel of the driving shaft, toothed wheels adapted to slide but not to rotate on the driving shaft, a counter shaft, toothed wheels made integrally with the counter shaft, and adapted to engage with the toothed wheels of the driving shaft, and a bevel wheel fixedly arranged on the counter shaft and engaging with the other wheel of the differential shaft.

857,115. HEAT-CONDUCTOR. WILHELM SCHÖNLEBER, Strassburg, Germany. Filed June 12, 1906. Serial No. 321,321.



Claim.—A vessel or utensil of the character described, having perforations through the bottom thereof, and thimbles with closed ends secured in said perforations, the closed ends or heads of the thimbles being upset or riveted in the perforations of the bottom and projecting slightly into the body of the vessel, forming virtually, not integrally, part of said bottom, substantially as and for the purpose set forth.

857,116. WARDROBE-TRUNK. ALONZO D. SEAMAN, Milwaukee, Wis., assignor to George Burroughs and Sons, Milwaukee, Wis., a Copartnership. Filed Oct. 1, 1906. Serial No. 336,847.



Claim.—1. In a wardrobe trunk the combination with a hanging compartment, of a metal hanger-supporting rod attached at one end to the back of said compartment, extending outwardly therefrom beyond the open front of the compartment and bent back and attached at its other end to the top of the compartment, substantially as described.

2. In a wardrobe trunk the combination with a hanging compartment, of a metal hanger-supporting rod having a laterally bent foot at one end which is attached to the back of the compartment, said rod extending outwardly beyond the front of the compartment and looped backward, its other end being attached to the top of the compartment, substantially as described.

3. In a wardrobe trunk the combination with a hanging compartment, of a looped metal hanger-supporting rod attached at one end to the back and at the other end to the top of said compartment, the looped part of the rod projecting beyond the front of the compartment, and a hinged cover section having a compartment into which the looped part of said rod extends when the trunk is closed, substantially as described.

857,117. LAST. FREDERICK J. SHAINSEY, Sr., Dayton, Ohio, assignor to Krentler-Arnold Hinge Last Company, Detroit, Mich., a Corporation of West Virginia. Filed Nov. 1, 1904. Serial No. 230,903.

Claim.—1. A last, having its heelpart provided with a vertical U-shaped binding member whose legs are entirely surrounded by the wood of the heel part and permanently secured at the bottom of the last.

2. A last, having its heelpart provided with a vertical U-shaped binding member whose legs are entirely surrounded by the wood of the heelpart, said legs at their lower ends having lateral enlargements for anchoring said member in unyielding position.



3. A last, having its heelpart provided with a vertical U-shaped binding member whose legs are entirely surrounded by the wood of the heelpart, and a heel plate, said legs being riveted permanently to said heel plate.

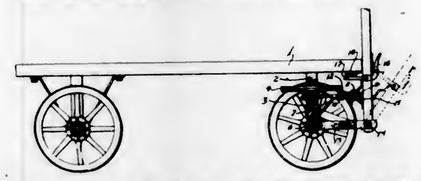
4. A last, comprising a forepart and heelpart, hinged together, the hinge part having its rear portion etxending vertically into the front end of the heelpart, and an inverted U-shaped retaining member located between the spindle socket of the last and the front end of the heelpart, said retaining member having its legs extending vertically in and surrounded by the wood of the last at the opposite sides of, and out of vertical alinement with, the rear portion of said hinge part and permanently secured in said heelpart.

5. A divided last, whose parts are connected by a vertical union, combined with an inverted U-shaped retaining member embedded in the heelpart and having its legs extending divergently downward and entirely surrounded by the wood of the heelpart adjacent the opposite sides of the latter, and means for permanently retaining said member in position.

6. A divided last, comprising a forepart and heelpart, a vertical hinge connecting the same, and binding means extending vertically in the heelpart of said last at the opposite sides of said hinge.

7. A last, having its heelpart provided with a vertical U-shaped binding member and means for binding together the free ends of the legs thereof.

857,118. TRUCK-BRAKE. ELI H. SLAYBAUGH, Alliance, Ohio, assignor of one-half to Harry B. Gardner, Alliance, Ohio. Filed Aug. 13, 1906. Serial No. 330,295.



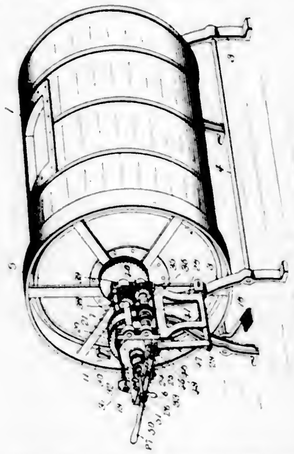
Claim.—1. In a truck, an axle with wheels, guides on the axle with a spring controlled brake beam slidably mounted thereon and having shoes normally adjacent to the wheels, a handle pivoted to the axle adapted when approximately in a vertical position to impinge the beam to bring the shoes against the wheels, and means for locking the parts in this relation.

2. In a truck, an axle with wheels, a spring controlled brake-beam movably mounted on the axle and having shoes normally adjacent to the wheels, an oscillatable handle connected with the axle and adapted when approximately in a vertical position to impinge the beam to bring the shoes against the wheels, and means for locking the parts in this relation.

857,119. COMBINED CHURN AND BUTTER-WORKER. MAX F. STADTMULLER, Pomeroy, Iowa. Filed Apr. 22, 1907. Serial No. 369,629.

Claim.—1. In combination, a churn body mounted to have rotary movement imparted thereto, a drive pulley and interlocking means between the drive pulley and churn body to cause both to rotate together.

2. In combination a churn body mounted to have rotary movement imparted thereto, a drive pulley and interlocking means between the drive pulley and churn body to cause both to rotate together, said interlocking means comprising a lock bolt mounted upon one of the parts, and a stop provided upon the other part and adapted to be engaged by the lock bolt when projected.



3. In combination, a churn body mounted to have rotary movement imparted thereto, a drive pulley and interlocking means between the drive pulley and churn body to cause both to rotate together, said interlocking means consisting of a stop provided upon the drive pulley and a spring actuated lock bolt mounted upon the churn body and adapted to be projected into the path of the said stop.

4. In combination a churn body mounted to have rotary movement imparted thereto, a drive pulley and interlocking means between the drive pulley and churn body to cause both to rotate together, and means to effect disengagement of said interlocking means without interrupting the rotation of the drive pulley.

5. In combination a churn body mounted to have a rotary movement imparted thereto, a drive pulley, interlocking means between the drive pulley and churn body to cause both to rotate together, and means to effect disengagement of said interlocking means and to bring the churn body to a standstill and hold the same in a predetermined position without effecting the continued rotation of the drive pulley.

6. In combination a working body mounted to have rotary movement imparted thereto, a drive pulley mounted independently of and concentric with said working body, interlocking means between the drive pulley and working body to effect simultaneous rotation thereof and means to effect disengagement of said interlocking means without effecting the continued rotation of the drive pulley, and adapted to bring the working body to rest and hold the same in a predetermined position.

7. In combination a working body mounted to have a rotary movement imparted thereto, a drive pulley mounted independently of and concentric with said working body, interlocking means between the drive pulley and working body to effect simultaneous rotation thereof the same comprising a keeper having a stop, and a spring actuated lock bolt having a portion to be engaged with said stop to hold the bolt projected, and means arranged to engage with the bent portion of the lock bolt and effect disengagement therewith from said stop which automatically releases the rotating body from the drive pulley, said means engaging with the keeper and holding the said body in a predetermined position.

8. In combination a rotary working body, a drive pul-

ley, gearing for transmitting motion from the drive pulley to said working body, a movable frame supporting said power transmitting gearing, and means for moving said frame to throw the power transmitting gearing into or out of operative position.

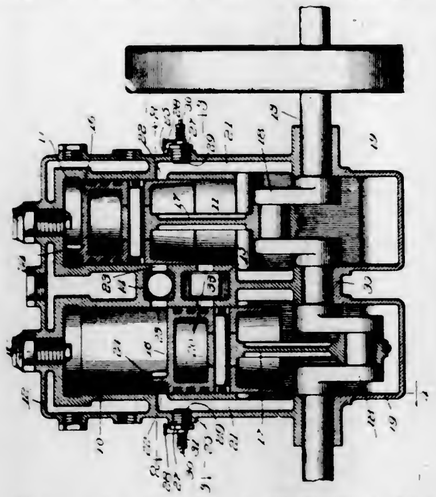
9. In combination, a rotary working body, a drive pulley, power transmitting gearing between said working body and drive pulley, a movable frame supporting said power transmitting gearing, a shaft, a pitman and crank connection between said shaft and movable frame, and an operating lever for turning said shaft and having a stop to engage with the pitman to hold the frame when the power transmitting gearing is out of action.

10. In combination a rotary body, a dasher mounted to rotate within said body, a drive pulley concentric with said working body and dasher, gear wheels fast to respectively said working body and dasher, power transmitting gearing between the drive pulley and the said gear wheels, and a clutch between the said gear wheels for throwing the same into or out of coöperative relation.

11. In combination, a rotary working body, a rotary dasher arranged to operate therein, gear wheels having positive connection with respectively the said body and dasher, a drive pulley, power transmitting mechanism between the drive pulley and the said gear wheels embodying a loose spur pinion, a clutch for throwing said loose spur pinion into and out of clutched engagement with its supporting shaft, a second clutch for throwing the aforementioned gear wheels into and out of engagement, and a shipper lever for simultaneously operating both clutch devices in opposite directions, whereby one is thrown out of action when the other is in operative position.

12. In combination, a rotary working body, a rotary dasher arranged therein, gear wheels having positive connection with respectively said body and dasher, a clutch for throwing said gear wheels into and out of engagement, a shipper lever for operating said clutch, a drive pulley, a movable frame, power transmitting gearing mounted upon said movable frame and embodying a loose pinion, a clutch for throwing said loose pinion into and out of engagement, and operating means for said clutch mounted upon the movable frame and having loose or sliding connection with the aforesaid shipper lever.

857,120. GAS-ENGINE. BENJAMIN F. STEWART, Chicago, Ill. Filed Sept. 2, 1904. Serial No. 223,119.



Claim.—1. In a gas engine, in combination, a pair of power cylinders cast integral, a compression chamber for each cylinder, an air chamber between the cylinders, a port leading from the air chamber to each compression chamber.

2. In a gas engine, in combination, a pair of power cylinders cast integral, a compression chamber for each cylinder, an air chamber and an exhaust chamber between the cylinders, ports opening from the air chamber to each compression chamber, and ports connecting the exhaust chamber with the explosion chamber of each cylinder.

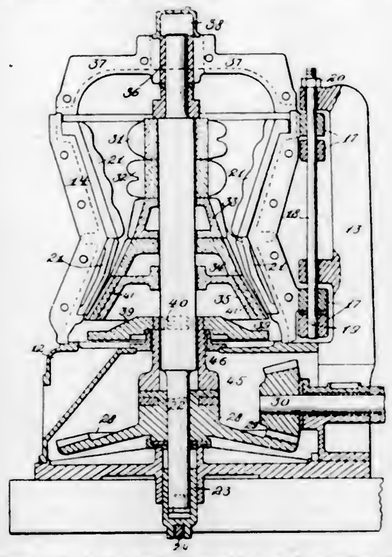
3. In a gas engine, in combination, a pair of power cylinders cast integral, a reciprocatory piston in each cylinder, a compression chamber at the outer end of each cylinder, an air chamber between the cylinders and adjacent the outer end thereof, an exhaust chamber between the cylinders and adjacent the inner ends thereof, ports leading from the air and exhaust chambers through the walls of each cylinder and so arranged as to be uncovered alternately by the pistons at the ends of their strokes.

4. In a gas engine, in combination, a pair of power cylinders cast integral, a compression chamber for each cylinder, an air chamber between the cylinders, a port leading from the air chamber to each compression cylinder, an expansible U-shaped double slide valve fitted within the air chamber and adapted to cover its ports.

5. In a gas engine, in combination, a pair of juxtaposed power cylinders, a compression chamber for each cylinder, an air chamber between the cylinders, and a port leading from the air chamber to each of the compression chambers, the ports being controlled by the pistons of the cylinders and being opened alternately.

6. In a gas engine, in combination, a pair of cylinders having a common wall, a compression chamber for each of the cylinders, an induction passage formed in the wall between the cylinders, and a port leading from the passage to each of the compression chambers.

857,121. CRUSHING AND GRINDING MILL. THOMAS L. STURTEVANT, Quincy, and THOMAS J. STURTEVANT, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me., a Corporation of Maine. Filed Sept. 27, 1905. Serial No. 280,329.



Claim.—1. In a vertical crushing and grinding mill, the combination with a suitable base, of a vertical post or standard, a casing comprising two parts which are vertically hinged to said post or standard and which rest on and are secured to said base when in closed or working position, said casing parts being formed independent of said post or standard and being thus adapted to be loosened or swung aside horizontally and simultaneously to relieve clogging of the mill or when access to the chamber of the mill is desired, normally stationary or non-rotary crushing elements mounted on said hinged casing parts, a vertical shaft within said casing, and rotating crushing elements mounted on said shaft and which may be removed from said shaft, without taking the latter out of the mill, when said casing parts are swung aside.

2. In a vertical crushing or grinding mill, the combination with a suitable base, of a vertical post or standard supported by said base, one or more casing parts carrying normally stationary crushing or grinding elements and vertically hinged or pivoted to said post or standard, so as to be adapted to be swung aside horizontally like a door or doors when access to the interior of the mill is desired, means for positively lifting said casing part or parts from the said base to avoid heavy frictional contact with the base when horizontal movement of the said casing part or parts is necessary, a vertical shaft within the casing, and rotating crushing elements carried by said shaft.

3. In a vertical crushing or grinding mill, the combination with a suitable base, of a vertical post or standard supported by said base, one or more casing parts hinged or pivoted to said post or standard, so as to be adapted to be swung aside horizontally like a door or doors when access to the interior of the mill is desired, a vertical rod which serves as the hinge or pivot for said casing part or parts, ears on the said part or parts encircling said rod, means for changing the vertical position of the said rod when the said part or parts are to be adjusted vertically, a vertical shaft within the casing, and rotating crushing elements carried by said shaft.

4. In a crushing or grinding mill, the combination with a base, of a casing comprising two vertically hinged casing parts normally resting on said base and carrying normally stationary crushing elements, positive means for simultaneously raising both of said casing parts away from said base, so that the said casing parts may both be readily swung aside horizontally when desired, and rotating crushing elements within the said casing.

5. In a crushing or grinding mill, the combination with a base, of a vertical post or standard supported by said base, a plurality of casing parts normally resting on said base and carrying normally stationary crushing or grinding elements and both vertically hinged at two separated points to said post or standard, rotary crushing elements within the chamber of the casing, and means for positively and simultaneously raising both of said casing parts away from said base to permit them to be easily swung horizontally.

6. In a crushing or grinding mill, the combination with a base, of one or more hinged casing parts normally resting on said base and carrying normally stationary crushing elements, means for positively lifting said casing part or parts out of engagement with said base when the casing is to be opened for access to the chamber of the mill, a vertical rotating shaft carrying rotating crushing elements within said chamber, and a vertical post provided with a pintle for said casing part or parts.

7. In a crushing or grinding mill, two vertically hinged casing parts capable of opening outward horizontally, said casing parts being apertured or recessed at their tops to afford a vertical support or bearing, combined with a vertical shaft having its upper bearing in said recess.

8. In a crushing or grinding mill, two vertically hinged casing parts capable of opening outward horizontally, said casing parts having complemental apertures or recesses at their tops, a sleeve received by said apertures or recesses and clamped in place by said casing parts, combined with a vertical shaft having its bearings in said sleeve.

9. In a crushing or grinding mill, two vertically hinged casing parts capable of opening outward horizontally, and a divided hopper the two parts of which are surmounted on and carried by the said casing parts, said hopper parts being apertured or recessed to afford a vertical support or bearing, combined with a vertical shaft having its upper bearing at said hopper parts.

10. In a crushing or grinding mill, two vertically hinged casing parts capable of opening horizontally at the same time, and a divided hopper the two parts of which are surmounted on and carried by the said casing parts, said hopper parts being apertured or recessed, a sleeve received by the said apertured or recessed portions of said hopper parts, and clamped in place thereby when the latter are secured together, combined with a vertical shaft having its bearing in said sleeve.

11. In a crushing or grinding mill, two vertically hinged casing parts capable of opening horizontally at the same time, and carrying normally stationary crushing elements, and a divided hopper the two parts of which are surmounted on and carried by the said casing parts, said hopper parts being apertured or recessed to afford a bearing, combined with a vertical shaft having its upper bearing at said hopper parts, and an oil box or lubricator carried by one of said hopper parts.

12. In a crushing or grinding mill, the combination with a base, of a vertical post or standard, a rod or pintle supported by said post or standard, one or more casing parts independent of said post or standard and normally resting on and supported by said base and which are hinged to said rod or pintle and carry normally stationary crushing elements, means for positively lifting said rod or pintle which is provided with means to raise the said casing part or parts from the said base when access to the chamber of the mill is desired, and rotating crushing elements within the mill chamber.

13. In a crushing or grinding mill, the combination with a base, of a vertical post or standard, a rod or pintle supported by said post or standard, one or more casing parts independent of said post or standard and normally resting on and supported by said base and which are hinged to said rod or pintle and carry normally stationary crushing elements, means for positively lifting said rod or pintle which is provided with means to raise the said casing part or parts from the said base when access to the chamber of the mill is desired, rotating crushing elements within the mill chamber, a vertical shaft carrying said rotating crushing elements, and a hopper surmounting said casing part or parts and affording an upper bearing for said shaft.

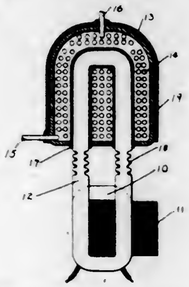
14. In a crushing or grinding mill, the combination with a base, a post or support rising from said base, two casing parts hinged to said post or support so that both may be swung aside at the same time, normally stationary crushing elements carried by said casing parts, means for simultaneously lifting both of said casing parts from said base when they are to be swung aside, and rotary crushing elements within the mill chamber and which are accessible when said casing parts are swung aside.

15. In a crushing or grinding mill, the combination with a base, of a post or standard, a casing composed of two parts hinged to said post or standard and having contracted middle portions at the waist of the mill, normally stationary crushing elements carried by said hinged casing parts, a vertical shaft within the chamber of the mill, rotating crushing elements carried by said shaft and the lowermost of which is of larger diameter than the chamber of the mill at its waist; whereby, when the said hinged casing parts are both swung aside all the said rotary crushing elements, including the larger lowermost ones, may be removed without removing the said shaft from the mill, and whereby also entire unclogging of the mill may be effected by loosening or opening out said hinged casing parts.

16. In a vertical crushing and grinding mill, the combination with a suitable base, of a vertical post or standard, a casing comprising two parts which are vertically hinged to said post or standard, said casing parts being formed independent of said post or standard and being thus adapted to be loosened or swung aside horizontally and simultaneously to relieve clogging of the mill or when access to the chamber of the mill is desired, normally stationary or non-rotary crushing elements mounted on said hinged casing

parts, a vertical shaft within said casing, and rotating crushing elements mounted on said shaft and which may be removed from said shaft, without taking the latter out of the mill, when said casing parts are swung aside.

857,122. ELECTRIC HEATER. ELIHU THOMSON, Swampscott, Mass., assignor to General Electric Company, a Corporation of New York. Filed Oct. 15, 1906. Serial No. 338,920.



Claim.—1. An electric heater comprising a transformer having its primary circuit embedded in a mass of hysteretic iron.

2. An electric heater comprising a transformer having its primary circuit inclosed by a mass of hysteretic iron, and tubes embedded in the iron for a heat-transmitting circulatory medium.

3. An electric heater for alternating currents, comprising a primary coil, and a short-circuited secondary of magnetic material provided with tubes forming a core for the primary coil.

4. An electric heater comprising a transformer having its primary circuit inclosed by a mass of hysteretic iron, and embedded iron tubes in said mass conveying a heat-transmitting circulatory medium.

5. An electric heater for alternating currents, comprising a primary coil and a short-circuited secondary of magnetic material having a portion thereof arranged to form a core for the primary coil.

6. An electric heater for alternating currents comprising a primary coil, and a short-circuited secondary inclosing and completely surrounding the same.

7. An electric heater for alternating currents, comprising a transformer, having a tubular short-circuited secondary, and a primary coil mounted within the same.

8. An electric heater for alternating currents, comprising a primary coil and a short-circuited secondary inclosing the same, and provided with tubes surrounding the primary coil.

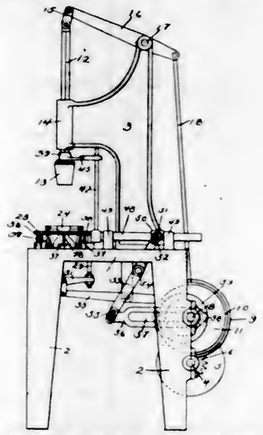
9. An electric heater comprising a transformer having its primary circuit embedded in a mass of iron, and a heat-insulating medium between the iron mass and the primary circuit to maintain a relatively low temperature in the primary circuit.

10. An electric heater comprising a heat-generating transformer, the primary of which is a low-resistance conductor carrying a current of large volume, and means applied to said conductor to maintain a low temperature relatively to that of the transformer.

11. An electric heater for alternating currents, comprising a primary coil and a multi-tubular short-circuited secondary, inclosing and completely surrounding the same, a portion of said tubes forming a core for the primary coil, one of said hopper parts.

857,123. PRESS FOR FORMING INTERNAL GROOVES IN PAPER VESSELS. ALBERT R. TIFFANY, Dayton, Ohio, assignor to Charles B. Oglesby, Middletown, Ohio. Filed Apr. 28, 1905. Serial No. 257,854.

Claim.—1. In a press of the character described, the combination with a male and female die mold, of inner and outer die plates movably mounted on said molds respectively, with means for expanding the inner and contracting the outer die plates when the die molds are operated, substantially as described.



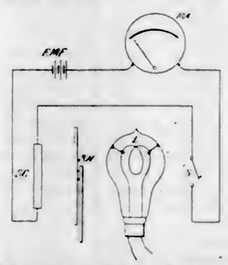
2. In a press of the character described, the combination with a movable male and a fixed female die mold, of inner and outer die plates movably mounted on said molds respectively, with means for expanding the inner and contracting the outer die plates when the die molds are operated, as described.

3. In a press of the character described, the combination with a male and female die mold, of inner and outer die plates secured to said molds respectively, with means for expanding the inner die plates, and an integral frame inclosing the outer die plates, with means for actuating said frame to contract the outer die plates, as described.

4. In a press of the character described, the combination with a male and female die mold, of inner die plates mounted on said male die mold, oscillating collar on said mold with links coupling said collar and die plates, whereby the oscillation of the collar will contract and expand said plates, an integral frame inclosing the outer die plates, with means for actuating said frame to contract the outer die plates, substantially as described.

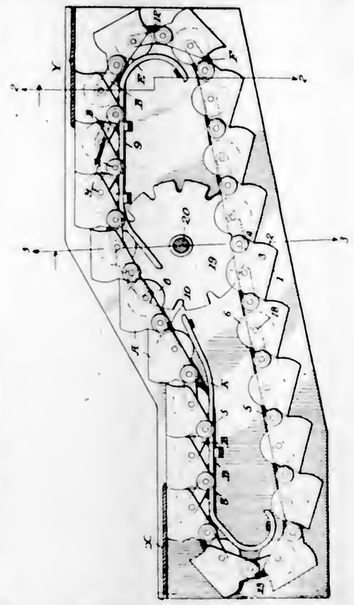
5. In a press of the character described, the combination with a shaft, and a series of cams thereon, of a movable male die mold, a fixed female die mold, laterally movable inner and outer die plates mounted on said movable and fixed die molds respectively, an integral frame surrounding the outer die plates, and connecting mechanism intermediate said cams, and the movable male mold, the inner die plates and the integral frame, for actuating said parts in succession, substantially as described.

857,124. PHOTOMETER. THEODORE TORDA, London, England. Filed Feb. 26, 1906. Serial No. 303,002.



Claim.—The improvements in photometers or apparatus for testing the intensity of light, comprising a timing device and a shutter in combination with a selenium cell, and current meter, whereby the selenium cell is exposed to the light rays for a certain period, and shut off for another period in the required proportions, substantially for the purpose herein set forth.

857,125. TRAVELING CONVEYER. ISAAC H. VENN, Yonkers, N. Y., assignor to Otis Elevator Company, East Orange, N. J., a Corporation of New Jersey. Filed Mar. 20, 1901. Renewed Nov. 10, 1906. Serial No. 342,904.



Claim.—1. A traveling stairway consisting of alternating steps and links, each link connected to one step at a point adjacent to the riser and to the next step at an independent point nearer the forward end, substantially as set forth.

2. A traveling stairway consisting of alternating steps and links, the steps in front and rear of each intermediate step connected to the latter at each end at independent points substantially as set forth.

3. A traveling stairway consisting of a series of links, the alternate links consisting of steps, the risers of each step constructed to meet the edge of the tread of the succeeding step in any position which the steps may take while linked together to form either steps or a platform, substantially as set forth.

4. A traveling stairway consisting of a series of links, the alternate links consisting of steps, the riser of each step constructed to meet the edge of the tread of the succeeding step in any position which the steps may take while in the form of steps or a platform and the tracks adapted to bearings on the steps arranged to guide the chain to travel in horizontal, inclined and curved paths, substantially as set forth.

5. A chain of alternating steps and links pivoted together at points permitting the links to coincide with the same inclined plane when the steps are in stepped position, and to occupy inclined positions between the steps when the treads of the latter are on the same plane, substantially as set forth.

6. A chain of alternating steps and links pivoted together at points permitting the links to coincide with the same inclined plane when the steps are in stepped position, and to occupy inclined positions between the steps when the treads of the latter are on the same plane, tracks, and bearings on the steps adapted thereto, arranged to support the steps in each position, substantially as set forth.

7. The combination of a series of steps and intermediate connecting links, bearings on the steps and tracks supporting the same arranged to permit the links to assume a position coinciding with the same plane to bring the steps to step position, and to assume inclined positions to bring the steps into position with their treads on the same plane, substantially as set forth.

8. In a traveling conveyer, a chain composed of alternate steps and links, the latter connected to the steps to permit the links to be in line when the chain is inclined, bearings on the steps, and tracks partly inclined and partly horizontal, the links and steps connected to impart greater speed to the portion of the conveyer which is traveling on the inclined part of the rails, substantially as set forth.

9. In a traveling stairway, a continuous chain consisting of alternating jointed steps and links with bearings at the rear of each step for the front of the next step, and end and intermediate bearings on each step, and a track continuous between the ends of the structure adapted to support one set of step bearings, substantially as set forth.

10. In a traveling stairway, a continuous chain consisting of alternating jointed steps and links with bearings at the rear of each step for the front of the preceding step, end and intermediate bearings for each step, a track continuous between the ends of the structure adapted to support one set of step bearings, at each side, and a track for the intermediate bearings adjacent to each horizontal portion of the main track, substantially as set forth.

11. The combination of a chain consisting of alternating steps and links, continuous upper tracks partly horizontal and partly inclined, side bearings on the steps resting continuously on said tracks intermediate bearings, and a track supporting the latter step bearings independently of the other tracks, substantially as set forth.

12. The combination of a chain consisting of alternating steps and links, forwarding and return tracks and guard rails, part of each track continuous with part of the guard rail, side bearings on the steps adapted to the said rails, an independent upper track, and bearings on the steps adapted to the independent track, substantially as set forth.

13. The combination with the forwarding tracks, of steps having separated roller bearings on fixed axes, other roller bearings on fixed axes in intermediate positions on the steps, and an independent track therefor, and links connected to the steps at the axes of the roller bearings, substantially as set forth.

14. The combination of continuous parallel rails in the same vertical plane constituting forwarding and return tracks and guards, a chain of alternating steps and links, side bearings on the steps adapted to said tracks, and a bearing on each step adapted to support the forward part of the succeeding step when in stepped position, substantially as set forth.

15. The combination of continuous parallel rails in the same vertical plane constituting forwarding and return tracks and guards, a chain of alternating steps and links, side bearings on the steps adapted to said tracks, a bearing on each step adapted to support the forward part of the succeeding step when in stepped position, other step bearings, and an independent track therefor, substantially as set forth.

16. The combination with a chain of alternating steps and links, of independent series of bearing rolls and independent track supports therefor, the links pivoted at the axes of the side bearing rolls, substantially as set forth.

17. The combination with a chain of alternating steps and links, of independent series of bearing rolls, the links pivoted at the axes of the side bearing rolls, independent track supports therefor on the forwarding part of the track, and a return track for one series of bearings, substantially as set forth.

18. The combination in a traveling stairway, of a series of steps each having end and intermediate bearings on

fixed axes at different distances from the tread, a pair of links connected to each two steps at the axes of the adjacent bearing points, the riser of each step conforming to the path in which moves the adjacent edge of the tread of the preceding step, side tracks having horizontal, inclined and curved rail sections, and supplemental sections adjacent to the horizontal sections, substantially as set forth.

19. The combination of the chain of steps each with a projection 4 at its rear part constituting a bearing for the front of the next step to prevent the descent of the latter, substantially as set forth.

20. In a traveling conveyer the combination of tracks, steps, links, a single support at each end of the step bearing on the tracks, and contact parts on adjacent steps for the purpose of maintaining a predetermined relation between the steps, substantially as set forth.

21. In a traveling conveyer, steps supported at their ends and by contact with adjacent steps, substantially as set forth.

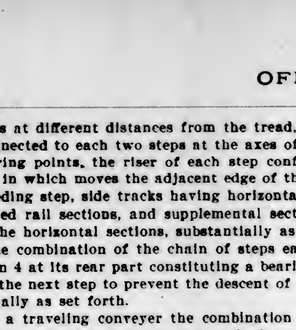
22. In a traveling conveyer, the combination of steps having treads and convex risers in which the chord of the arc of the convex riser is at right angles to the tread, substantially as set forth.

23. In a traveling conveyer, the combination of guides, steps and links arranged to maintain contact between the steps while on both horizontal and inclined planes and to alter the distance between centers of the bearing surfaces or treads by change in the direction of movement of the conveyer, substantially as set forth.

24. In a traveling stairway, a chain consisting of a series of links or bearings, rails or supports arranged to guide the chain both in inclined and horizontal paths, and connections whereby the links are maintained in juxtaposition in traveling both paths whereby greater speed is imparted to the portion of the chain on the inclined part of the path, substantially as set forth.

25. The combination with the chain of alternate steps and links, and wheels for supporting the steps, of means for preventing the lifting of the rear portions of the steps.

857,126. CORRIDOR-DOOR LOCK. HENRY G. VOIGHT, New Britain, Conn., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn., a Corporation of Connecticut. Filed Mar. 4, 1907. Serial No. 360,359.



Claim.—1. In a lock, a latch bolt, a dogging device therefor, latch retracting mechanism carried thereby, a casing, a rotatable shell therein, a key plug rotatable in said shell, a plurality of roll-backs, one of said roll-backs being operable independently of the other, said hubs being carried respectively by said shell and plug, means for locking said plug and shell against rotation, said means being operable by different keys to release the plug from the shell and to release both the plug and shell from the case, one of said roll-backs coöperating with the dead-lock at all times, the other roll-back being independent of the dead-lock at all times.

2. In a lock, a latch-bolt, a dead-locking device therefor, latch-retracting means carried by said dead-locking device, means for actuating said latch-retracting mechanism from the outer side of the lock when the said dead-locking device is out of action, said means being out of the range of operation of said externally controlled means when said dead-locking device is in action, and a clearance passage through said dead-locking device to permit the means for actuating said latch-retracting mechanism to turn freely when said dead-locking device is in the dead-locking position.

3. In a lock, a latch bolt, a dogging device therefor, latch retracting mechanism therefor, a pin cylinder lock including two concentric movable members, pin tumblers for locking the same, a roll-back arm carried by each of said concentric movable members, locking devices for said concentric movable members, means for operating said locking devices to release one of said concentric movable members whereby the same may be rotated with its respective roll-back arm, and another device for releasing both of said concentric movable members whereby both may be rotated simultaneously together with their roll-back arms, and means whereby when said dead-lock is in action one of said roll-backs will have no effect upon the latch retracting mechanism or the dogging device.

4. In a lock of the character described, a pair of concentric roll-back hubs, means for independently operating one of said roll-backs including a normally locked plug, means for operating both of said roll-backs including said normally locked plug and a surrounding shell, a latch, latch operating and latch dogging mechanism, and means whereby one of said roll-backs will have no effect on the latch retracting mechanism when the dogging device is in action, and means to operate the other roll-back to release the dogging device to restore the parts to their position whereby the first roll-back may be utilized to release the latch.

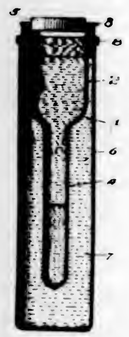
5. In a lock of the character described, a latch bolt, a dead lock, means for operating both the latch bolt and the dead lock from the inner side of the door at all times; two roll-back hubs operable from the opposite side of the door by suitable key mechanism, one of said hubs being arranged to operate said dead lock at all times, the other hub being arranged to operate the latch bolt only and that only when the dead lock is out of action, said dead lock having a clearance space through which the last-mentioned hub may travel freely when the dead lock is in action.

6. In a lock, a latch bolt, a dead lock, means for operating both latch bolt and dead lock from the inner side of the door at all times, means for operating the latch bolt from the outer side of the door through the medium of key-controlled mechanism and including two tumbler controlled rotatable members, a roll-back hub on each of said members, a key for rotating one of said members and its roll-back to actuate both the dead lock and the latch bolt, and a key for actuating the other rotatable member and its roll-back to actuate the latch bolt only, and that only when the dead lock is out of action.

857,127. TESTING-TUBE. CONSTANTIN WAGNER, New York, N. Y. Filed July 11, 1906. Serial No. 325,713.

Claim.—1. A testing device of the character described, comprising a tube formed with a reduced portion, having graduations on the reduced portion, a jar surrounding said tube, said jar being adapted to contain a heating medium, and a retaining means for said tube for holding the same centrally of said jar, said means formed with a comparatively long body portion for impinging against said tube and having formed on the periphery thereof an annular flange for projecting beyond said jar, said retaining means forming a stopper for said jar and being held in position by said annular flange.

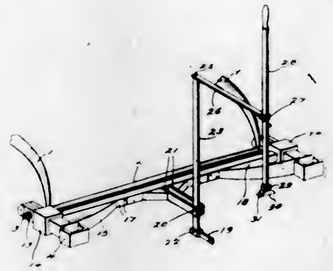
2. A device of the character described, comprising a tube formed with a reduced portion, said reduced portion being provided with graduations thereon, a jar surrounding said tube, said jar being adapted to contain a heating medium, a rubber securing means for contacting with said tube, said securing means firmly impinging against said tube and said jar for firmly holding said tube in position and for preventing the displacement of the heating means contained in said jar, said retaining means being formed with a flange on its outer periphery for limiting the extent of the insertion of the same into said jar.



3. A testing device of the character described, comprising a tube formed with reduced portion, having graduations formed thereon, an enlarged portion for receiving the matter to be tested, a jar surrounding said tube, an elastic sleeve for holding said tube centrally of said jar, means for regulating the position of said sleeve, and means for rotating in a vertical position said jar and tube.

4. A butter testing device, comprising a tube formed with a reduced portion on one end, and an enlarged portion on the opposite end, said reduced portion being formed with graduations thereon, a stopper adapted to be inserted in the end of the enlarged portion of said tube, a jar surrounding said tube and adapted to contain a heating medium, a packing sleeve for holding the said tube centrally of said jar, said packing sleeve firmly impinging against the upper end of said tube and said stopper and acting as a stopper for said jar, and means for rotating vertically said jar and tube for causing the water in the butter to move to the bottom of said tube.

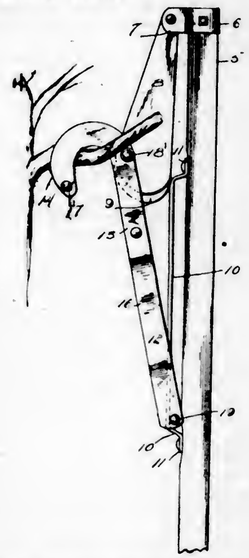
857,128. HORSE-DETACHER. GEORGE A. WATERS, Eldorado, Ill. Filed Nov. 3, 1906. Serial No. 341,940.



Claim.—1. A horse detacher comprising a draw bar connected to the thills of a vehicle and provided with projecting ends, a releasing device, a keeper hinged thereto, a sleeve mounted to slide on the releaser and on said keeper, a cross bar to which the sleeve is attached, springs connected to the cross bar for holding the sleeve in position to engage the keeper, and a lever for moving the cross bar and sleeve against the tension of the spring to release the keeper.

2. A horse detacher comprising a cross bar, sleeves mounted thereon, a releasing device provided with a hinged keeper, springs for moving the sleeves into position for engaging keepers, and a lever for moving the cross bar and sleeves to release the keepers, substantially as described.

857,129. PRUNING IMPLEMENT. DAVID W. WATSON and DAVID A. WATSON, Dover, N. H. Filed June 27, 1906. Serial No. 323,640.



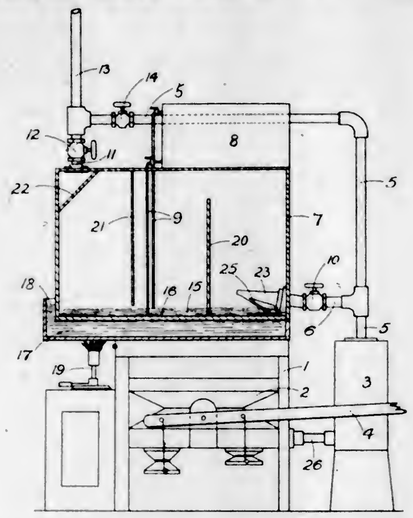
Claim.—1. A pruning implement comprising a handle having a sleeve at its upper end, a blade pivoted to said sleeve, a guide plate secured at opposite ends to said handle and having said ends off-set to dispose the intermediate portion of said guide plate in spaced relation to the handle, and a blade-engaging member pivoted to the guide plate for sliding movement thereon for operation of the blade, said blade being pivoted to the free end of the blade-engaging member.

2. An implement of the class described comprising a handle, a sleeve carried by one end of the handle and having ears, a blade pivoted at one end between the ears and having its opposite end sharpened, a plate having offset end portions secured with these portions against the handle and with its intermediate portion in spaced relation to the handle, said blade extending normally downwardly and resting against the plate, plates located at opposite sides of the blade and pivoted thereto, said pivot point being located at the lower outer portion of the blade, said plates being hooked outwardly and downwardly above the pivot point and being offset in opposite directions below the pivot point, to extend at opposite sides of the first named plate, and a pin engaged in the lower ends of the second named plates and between the first named plates and the handle, for movement of the lower ends of said second named plates longitudinally of the handle.

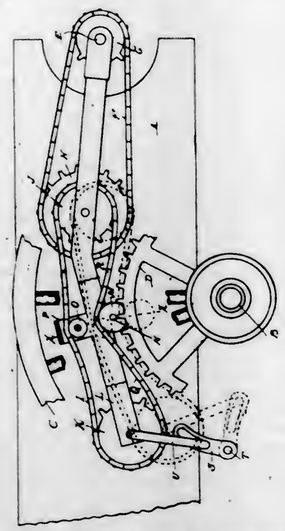
857,130. CARBURETER. ALLAN J. WAY, Wellington, New Zealand. Filed Feb. 14, 1906. Serial No. 301,030.

Claim.—A carbureter comprising a carbureting chamber, vertical perforated partitions therein extending from the top and bottom, means for feeding liquid petrol to said chamber, means for heating the chamber and a tapered nozzle for introducing air to said chamber, said nozzle having a branch extending rearwardly and downwardly

from adjacent the outlet end thereof, the lower end of said branch being immersed in the petrol.



857,131. DRIVE MECHANISM FOR DISTRIBUTING-WAGONS. ROBERT S. WELLS, Detroit, Mich., assignor to American Harrow Company, Detroit, Mich., a Corporation of Michigan. Filed Dec. 15, 1906. Serial No. 348,003.



Claim.—1. In a wagon, the combination with the ground wheel, and a shaft to be driven, of a rockable frame, sprocket wheels carried by said frame, a sprocket chain extending about said spracket wheels and connected to drive said shaft, a sprocket wheel connected to be driven by said ground wheel, means for holding said sprocket chain with portions thereof in angular relation to each other and in proximity to separated points in the periphery of said sprocket wheel connected to said ground wheel, and means for moving said frame to engage or disengage said chain portions with the teeth of the sprocket.

2. A drive mechanism for distributing wagons comprising a ground wheel sprocket, a sprocket chain arranged in the plane of said ground wheel sprocket, means for supporting said sprocket chain with portions thereof in angular relation to each other and respectively adjacent to different portions of the ground wheel sprocket, and means for adjusting said chain supporting means to engage or disengage said portions thereof from the sprocket.

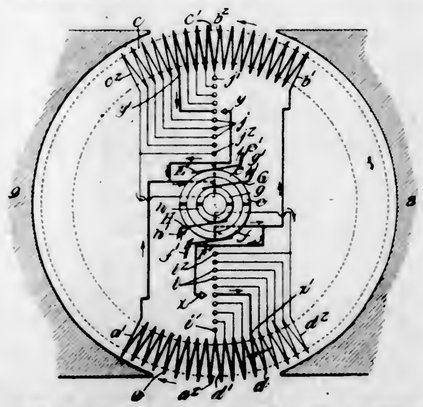
3. In a drive mechanism for distributing wagons, the combination with the ground wheel, of a sprocket driven thereby a driven shaft, a frame pivoted on said shaft and extending in the plane of said sprocket wheel, a sprocket chain connected to drive said driven shaft and carried by said frame, means for supporting sections of said chain in angular relation to each other and adjacent to separated points in the periphery of said sprocket wheel, and means for adjusting said frame to engage or disengage said chain and sprocket.

4. In a drive mechanism for distributing wagons, the combination with a drive sprocket, of a frame rockable in the plane of said sprocket, sprocket wheels journaled in said frame, a sprocket chain extending about said wheels across a segment of said drive sprocket, and a support on said frame for said chain intermediate said sprockets for holding portions of the chain in angular relation to each other, for the purpose described.

5. In a drive mechanism for distributing wagons comprising a drive sprocket, a sprocket chain, sprockets about which said chain passes on opposite sides of said drive sprocket, an adjustable frame on which said chain sprockets are carried and an idler roll for supporting said chain intermediate said sprockets whereby portions of the chain are held in angular relation to each other.

6. A drive mechanism for distributing wagons comprising a drive sprocket, a sprocket chain in the plane thereof, sprockets about which said chain passes on opposite sides of said drive sprocket, an adjustable frame having separated sides for embracing said drive sprocket and carrying said chain sprockets and roller supports on said frame separated to pass on opposite sides of said drive sprocket and holding said chain with portions thereof in angular relation to each other.

857,132. DYNAMO-ELECTRIC MACHINE. JOSEPH R. WESZELINOVITS, Chicago, Ill. Filed July 14, 1906. Serial No. 326,212.



Claim.—1. In a dynamo electric machine, the combination, with the field magnets of an armature winding having two kinds of connections, one an invariable connection always including the same number of conductor turns and leading to the field magnets for exciting them, and the other a variable connection including a variable number of conductor turns for delivering current to the load circuit, and means for varying the number of conductor turns in the armature acting to deliver current to the load circuit.

2. In a dynamo electric machine, the combination, with the field magnets of an armature winding having two kinds of connections, one an invariable connection always including the same number of conductor turns and leading to the field magnets for exciting them, and the other a variable connection including a variable number of conductor turns for delivering current to the load circuit and means for varying the number of conductor turns in the armature acting to deliver current to the load circuit.

3. In a dynamo electric machine, the combination, with the field magnets of an armature winding having two kinds of connections, one an invariable connection always including the same number of conductor turns and leading to the field magnets for exciting them, and the other a variable connection including a variable number of conductor turns connected to the exterior circuit, the number of turns acting upon the exterior circuit depending upon the speed of the dynamo—or the load of the motor, the greater the speed or load the less the number of acting turns and vice versa.

4. In a dynamo electric machine, the combination, with the field magnets of an armature winding having a main and an auxiliary coil connected together in series, each coil comprising a plurality of turns of a suitable conductor; two kinds of connections to said armature winding, one an invariable connection always including all of the turns of both main and auxiliary coils, and the other a variable connection and always including the principal coil and more or less of the auxiliary coil, depending respectively as the speed of the machine decreases or increases, the invariable connection leading to the field magnets for exciting them, and the variable connection leading to the load circuit, and means for varying said variable connection.

5. In a dynamo electric machine, the combination, with the field magnets of an armature winding having a main and an auxiliary coil connected together in series, each coil comprising a plurality of turns of a suitable conductor; and two kinds of connections to said armature winding, one an invariable connection always including all of the turns of both main and auxiliary coils, and the other a variable connection and always including the principal coil and more or less of the auxiliary coil, depending respectively as the speed of the machine decreases or increases, the invariable connection leading to the field magnets for exciting them, and the variable connection leading to the mains.

6. In a dynamo electric machine, the combination, with the field magnets of an armature winding having a main and an auxiliary coil connected together in series, each coil comprising a plurality of turns of a suitable conductor; two kinds of connections to said armature winding, one an invariable connection always including all of the turns of both main and auxiliary coils, and the other a variable connection and always including the principal coil and more or less of the auxiliary coil, depending respectively as the speed of the machine decreases or increases, the invariable connection leading to the field magnets for exciting them, and the variable connection leading to the load circuit; and an automatic governor for varying said variable connection.

7. In a dynamo electric machine, the combination, with the field magnets of an armature winding having a main and an auxiliary coil connected together in series, each coil comprising a plurality of turns of a suitable conductor; two kinds of connections to said armature winding, one an invariable connection always including all of the turns of both main and auxiliary coils, and the other a variable connection and always including the principal coil and more or less of the auxiliary coil, depending respectively as the speed of the machine decreases or increases, the invariable connection leading to the field magnets for exciting them, and the variable connection leading to the load circuit; and a fly ball governor for automatically varying said variable conductor.

8. In a dynamo electric machine, the combination, with the field magnets of an armature winding having two kinds of connections, one an invariable connection always including the same number of conductor turns and leading to the field magnets for exciting them, and the other a variable connection including a variable number of conductor turns for delivering current to the load circuit, said variable and invariable connections having conductor turns in common.

9. In a dynamo electric machine, the combination, with the field magnets of an armature winding having two kinds of connections, one an invariable connection always including the same number of conductor turns and leading to the field magnets for exciting them, and the other a variable connection including a variable number of conductor turns for delivering current to the load circuit, said variable and invariable connections having conductor turns in common and said variable connections always comprising a portion of said invariable connections.

10. A dynamo having a closed coil armature with a variable number of turns constituting the main inducing coils, and auxiliary coils for exciting the fields.

11. A dynamo having a main commutator connected to the main line terminals, an auxiliary commutator connected to the field-exciting coil; a fixed number of armature turns in circuit with said auxiliary commutator, and a variable number of armature turns in circuit with said main commutator.

12. A dynamo having field magnets, a main commutator whose brushes connect with the main line, terminals, an auxiliary commutator whose brushes connect with the field exciting coil, an armature coil connected to the segments of said auxiliary commutator, and means for throwing more or less of said armature coil into connection with the segments of said main commutator.

13. A dynamo having field magnets, a main commutator, whose brushes connect with the main line terminals an auxiliary commutator whose brushes connect with the field exciting coil, an armature coil connected to the segments of said auxiliary commutator, and a centrifugal governor for throwing more or less of said armature coil into connection with the segments of said main commutator.

14. A dynamo having field magnets, a single armature shaft, a main and an auxiliary commutator rotating in unison with said shaft, a main commutator whose brushes connect with the main line terminals an auxiliary commutator whose brushes connect with the field exciting coil, an armature coil connected to the segments of said auxiliary commutator, and means for throwing more or less of said armature coil into connection with the segments of said main commutator.

15. A dynamo having field magnets, a main commutator, whose brushes connect with the main line terminals an auxiliary commutator whose brushes connect with the field exciting coil, an armature coil connected to the segments of said auxiliary commutator, a row of contact points connected with different portions of said armature coil and a controller for connecting the main commutator segments with different ones of said contact points.

16. A dynamo having field magnets, a main commutator, whose brushes connect with the main line terminals an auxiliary commutator whose brushes connect with the field exciting coil, an armature coil connected to the segments of said auxiliary commutator, a row of contact points connected with different portions of said armature coil, a controller for connecting the main commutator segments with different ones of said contact points and self operating means for operating said controller.

17. A dynamo having field magnets, a main commutator, whose brushes connect with the main line terminals an auxiliary commutator whose brushes connect with the field exciting coil, an armature coil connected to the segments of said auxiliary commutator, a row of contact points connected with different portions of said armature coil, a controller for connecting the main commutator segments with different ones of said contact points, a controller for connecting the main commutator segments with different ones of said contact points, and a centrifugal device for operating said controller.

18. A constant potential, variable speed electric gener-

ator having a single armature consisting of main coils and additional turns of conductor connected to the end of each of said main coils an exciting coil in series with the main coils and all of their additional turns, and load brushes adapted to be connected in series with all of said main armature coils and a varying number of said additional coils.

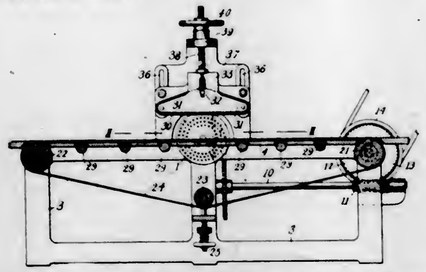
19. In a dynamo electric machine, the combination, with the field magnets of an armature winding having a main and an auxiliary coil connected together in series, each coil comprising a plurality of turns of a suitable conductor; and two kinds of connections to said armature winding, one an invariable connection always including all of the turns of both main and auxiliary coils, and the other a variable connection and always including the principal coil and more or less of the auxiliary coil, and a governor for controlling the variable connection.

20. In a dynamo electric machine, a main and an auxiliary commutator, an exciting coil connected to said auxiliary commutator, and armature coils connected in series with said auxiliary commutator, a portion of said armature coils being connected in parallel between different segments of said main commutator.

21. In a dynamo electric machine a main and an auxiliary commutator, and armature coils connected in series with said auxiliary commutator, a variable amount of said armature coils being connected in parallel between different segments of said main commutator and an exciting coil connected to said auxiliary commutator.

22. In a dynamo electric machine a main and an auxiliary commutator, armature coils connected in series with said auxiliary commutator and a variable amount of said armature coils being connected in parallel between different segments of said main commutator, an exciting coil connected to said auxiliary commutator and means for varying the amount of said armature which is in parallel between the segments of the main commutator.

857,133. MACHINE FOR TRIMMING PAPER. CHARLES E. WHITMARSH, New York, N. Y., assignor of one-half to Edwin S. Ives, New York, N. Y., and one-half to Thomas J. Ryan, Brooklyn, N. Y. Filed Mar. 25, 1905. Serial No. 251,953.



Claim.—1. In a paper-trimming machine, the combination of a table, and a rotatable trimming disk arranged at an angle to the plane of the table, said disk being provided with a plurality of teeth projecting axially from a face of the disk, as set forth.

2. In a paper-trimming machine, the combination of a table, a rotatable trimming disk arranged at an angle to the plane of the table, said disk being provided with a plurality of teeth projecting axially from a face of the disk, and means for carrying the paper across the table in engagement with the disk, as set forth.

3. In a paper-trimming machine, the combination of a table, a rotatable trimming disk having axially projecting teeth, and means for passing the paper across the face of the disk in engagement with the teeth thereon, as set forth.

4. In a paper-trimming machine, the combination with a rotatable trimming disk having axially projecting teeth, and a conveyer for passing the paper across the face of the disk in engagement with the teeth thereon, as set forth.

5. In a paper-trimming machine, the combination of a rotatable trimmer, a conveyer for delivering the paper to the trimmer and means for holding the paper firmly on the conveyer during its engagement with the trimmer, as set forth.

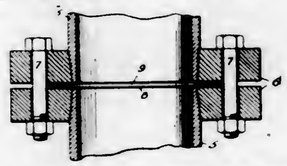
6. In a paper-trimming machine, the combination of a rotatable trimmer, a conveyer constructed to deliver paper thereto, and a guide for the paper arranged adjacent to the conveyer, as set forth.

7. In a paper-trimming machine, the combination of a rotatable trimmer, a belt-conveyer for delivering paper thereto, a presser arranged to engage the paper and hold the same on the conveyer while the paper is being trimmed, and means for adjusting the position of the presser relative to the conveyer, as set forth.

8. In a paper-trimming machine, the combination of a rotatable trimmer, a table arranged adjacent thereto, and presser devices arranged above the table, comprising a vertically adjustable frame and a belt traveling on rollers journaled in the frame, as set forth.

9. In a paper-trimming machine, the combination with a table, and a rotary trimmer arranged adjacent thereto, of a belt-conveyer arranged to travel over the table past the trimmer, and an adjustable guide mounted on the table parallel with the conveyer, as set forth.

857,134. GASKET. ELMER A. WILCOX, Chicago, Ill. Filed Apr. 23, 1906. Serial No. 313,268.



Claim.—1. The combination with the parts of a steam or similar joint, having opposing faces or flanges as shown, of an endless ring inserted between the faces or flanges and compressed thereby, such ring being made of soft metal and U shape in cross section, with the open side or edge toward the axis of the joint, and the space within the ring being filled with an elastic filling.

2. The combination with the parts of a steam or similar joint, having opposing faces or flanges as shown, of an endless ring inserted between the faces or flanges and compressed thereby, such ring being made of soft metal and U shape in cross section, with the open side or edge toward the axis of the joint, and the space within the ring being filled with an elastic filling projecting toward the axis beyond the inner edges of the ring.

857,135. SHAKING-GRATE. ALFRED B. WILLOUGHBY, Philadelphia, Pa. Filed May 14, 1906. Serial No. 316,701.



Claim.—1. A grate, consisting of bars, each of which is provided with ribs terminating at their upper surface in different planes and at their lower respective ends in bearing portions having horizontal and inclined bearing faces, a rib projecting from each of the horizontal bearing faces, bearers for said bars having horizontal and inclined bearing faces and a depression arranged in each of the horizontal faces thereof, said ribs arranged to hold said bars on said bearers by engaging the depressions thereof, the inclined faces of said bars and bearers arranged to limit the rocking or shaking movement of said bars, and said

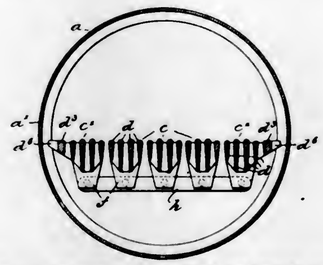
ribs arranged when said bars are rocked to successively engage the fuel resting thereon.

2. A grate, consisting of bars, each of which is provided with ribs terminating at their upper surface in different planes and at their respective ends in bearing portions having horizontal and inclined bearing faces, a rib projecting from each of the horizontal bearing faces, bearers for said bars having horizontal and inclined bearing faces and a depression arranged in each of the horizontal faces thereof, said ribs arranged to hold said bars on said bearers by engaging the depressions thereof, the inclined faces of said bars and bearers arranged to limit the rocking or shaking movement of said bars, and said ribs arranged when said bars are rocked to successively rub against the fuel without breaking the crust thereof.

3. A grate, consisting of bars, each of which is provided with ribs of varying depths and varying angular outlines and terminating at their upper surface in different planes and at their respective ends in bearing portions having horizontal and inclined bearing faces, a rib projecting from each of the horizontal bearing faces, bearers for said bars having horizontal and inclined bearing faces and a depression arranged in each of the horizontal faces thereof, said ribs arranged to hold said bars on said bearers by engaging the depressions thereof, the inclined faces of said bars and bearers arranged to limit the rocking or shaking movement of said bars and certain of said ribs arranged to deflect air against certain other ribs to aid in the cooling thereof.

4. A grate, consisting of bars, each of which is provided with ribs of varying depth and varying angular outlines and terminating at their upper rounded surface in different planes and at their respective ends in bearing portions having horizontal and inclined bearing faces, a rib projecting from each of the horizontal bearing faces, bearers for said bars having horizontal and inclined bearing faces and a depression arranged in each of the horizontal faces thereof, said ribs arranged to hold said bars on said bearers by engaging the depressions thereof, the inclined faces of said bars and bearers arranged to limit the rocking or shaking movement of said bars, and the outer ones of said ribs adapted to deflect air against the inner ribs to aid in the cooling thereof.

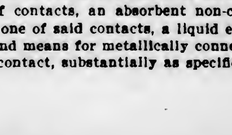
857,136. SHAKING-GRATE. ALFRED B. WILLOUGHBY, Philadelphia, Pa. Filed May 15, 1906. Serial No. 316,923.



Claim.—1. In combination with a horizontal furnace of substantially annular outline, of a grate, consisting of bars arranged parallel to each other and to the longitudinal axis of said furnace, each bar consisting of ribs terminating in solid end portions, the ribs of said bars being of equal number and the end bars being provided with an additional rib located adjacent to the furnace wall, the additional rib of said end bars when the same are rocked or shaken adapted to remove the ash of the fuel bed adjacent to said wall by passing the same and the remaining ribs thereof and ribs of said intermediate bars adapted to rub against and to remove the ash from the fuel bed by a lateral movement and without breaking the crust of said fuel bed.

2. In combination with a horizontal corrugated furnace of substantially annular outline, of a grate, consisting of bars arranged parallel to each other and to the longitudinal axis of said furnace, each bar consisting of ribs terminating in solid end portions, the ribs of said bars being of equal number and the end bars being provided with an additional rib, the additional rib of said end bars being shaped to form alternate contracted and expanded portions at the outer side so as to conform to the outline of the corrugations of said furnace wall and the expanded portions of the additional ribs having slots to permit of the free expansion of the same.

857,137. BINDING-POST. WILLIAM G. WINTER, St. Louis, Mo., assignor to The Emerson Electric Manufacturing Company, St. Louis, Mo., a Corporation of Missouri. Filed Jan. 9, 1907. Serial No. 351,527.



Claim.—1. A device of the character described comprising a central metallic member adapted to receive a binding device and provided at its lower end with an opening for receiving a conducting wire, an externally screw-threaded metallic sleeve surrounding said member, and insulating material separating said sleeve and member; substantially as described.

2. A device of the character described comprising a central metallic member adapted to receive a binding device and provided at its lower end with a reduced tubular-shaped portion and at its upper end with a collar, and a block of insulating material in which said member is embedded, the top face of said block being flush with the shoulder produced by forming the collar on the upper end of said member and the tubular-shaped portion at the lower end of said member projecting beyond the bottom face of said block; substantially as described.

3. A device of the character described comprising a central metallic member provided with a screw-threaded portion for receiving a binding device and with an opening at its lower end to receive a conducting wire, a block of insulating material surrounding said member and provided at its upper end with an enlarged portion, and an externally screw-threaded sleeve surrounding the lower portion of said block; substantially as described.

4. A device of the character described comprising a non-circular member adapted to receive a binding screw, a block of insulating material surrounding said member and provided with an enlarged head, a tubular-shaped portion on the lower end of said member which projects beyond the bottom face of said block and is adapted to receive a conducting wire, a circular collar on the upper end of said member projecting beyond the top face of the block, a washer surrounding said collar, and an externally screw-threaded sleeve surrounding the lower portion of said block; substantially as described.

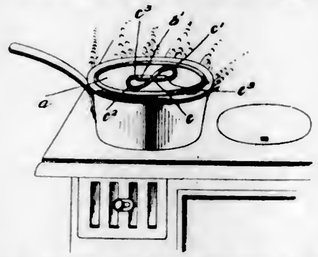
857,138. REGULATING RESISTANCE FOR ELECTRIC CURRENTS. PAUL WÖBBER, Cuxhaven, Germany. Filed Nov. 20, 1906. Serial No. 344,216.



Claim.—1. A device of the character described, comprising a pair of contacts, an absorbent non-conducting rod connected to one of said contacts, a liquid element carried by said rod and means for metallically connecting said rod to the other contact, substantially as specified.

2. A device of the character described, comprising a pair of contacts, an absorbent non-conducting rod connected to one of said contacts, a liquid element carried by said rod a screw spindle connected to the other contact, and a slide movable on the spindle and adapted to engage the rod, substantially as specified.

857,139. COVER-RING. MARSHALL E. WOODS, Woodville, Mass. Filed Nov. 12, 1906. Serial No. 342,955.



Claim.—1. A cover ring having two arms for engaging the cover located at an angle to each other, whereby when one arm engages the cover the other will extend upwardly at an angle to the cover.

2. A pivoted cover ring or handle having two arms for engaging the cover on which it is mounted on opposite sides of the pivotal point of the ring, said arms being at an angle with respect to each other.

3. A pivoted cover ring or handle having an arm for engaging the upper surface of the cover on which it is mounted, and an arm standing on an incline when the first named arm is flat on the surface of the cover.

4. A pivoted cover ring or handle having an arm for engaging the upper surface of the cover on which it is mounted, and an arm standing on an incline when the first named arm is flat on the surface of the cover, and adapted to lie flat on the cover on the other side when the first named arm is in inclined position, said arms being connected together by the central portion of the ring.

5. A cover ring comprising a bowed portion, and two arms extending from the bowed portion in different planes and terminating in pivots for the ring.

6. A cover ring comprising a bowed portion, two arms extending from the bowed portion in different planes, and two straight inwardly extending ends on the arms located in line with each other and constituting a pivot for the ring.

857,140. LOCKET, &c. STEPHEN WOODS, White Plains, N. Y. Filed Mar. 16, 1905. Serial No. 250,427.



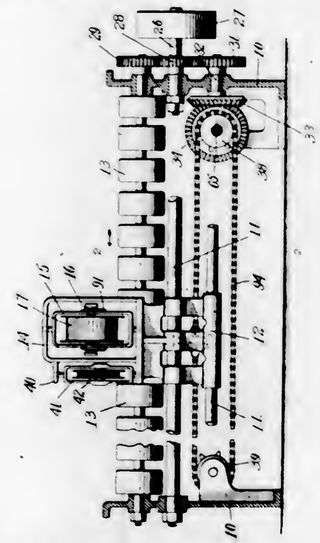
Claim.—1. An article of the class described comprising a pair of sections or leaves adapted to bear exhibit devices on their normally proximate faces, and a hinge having its axis transverse to said faces, uniting said leaves, in combination with a section of spring wire secured at one end to one of said leaves and extending inside the margin thereof, a hook formed on the outer end of said wire passing to the outside of said leaf and adapted to seat on the outer side of the other leaf.

2. In an article of the class described, a pair of pivotally united leaves provided with interior marginal flanges on their proximate faces and exhibit retaining means held thereby, in combination with a locking latch for holding said leaves in closed position, comprising a wire secured to the interior of one leaf, concealed by the marginal flange thereof, and extending to the outside of the said leaf, and a hook formed at the outer end of said wire adapted to overhang a portion of the other section.

3. An article of the class described comprising a pair of sections or leaves provided with means for holding exhibit devices on their normally proximate faces, a hinge for said leaves with its axis transverse to said faces, and a swivel joint between one of said leaves and the said hinge, in combination with a spring wire secured at one end to one of said leaves and extending inside the margin thereof, a hook formed on the other end of said wire, passing to the outside of said leaf, said hook being adapted to seat on the outer side of the other leaf.

4. An article of the class described, comprising a plurality of leaves formed with means for holding exhibit devices, a main hinge uniting said leaves having its axis transverse to the plane of the proximate faces thereof, and an intermediate swivel joint between the main hinge and one of said leaves, in combination with a detent carried by one of said leaves spring pressed inwardly toward the center thereof and immovable laterally thereto, said detent being adapted to overhang and bear against the margin of an adjacent leaf.

857,141. MACHINE FOR COVERING BUNDLES OF WIRE. GEORGE F. WRIGHT and GEORGE M. WRIGHT, Worcester, Mass.; Harriet E. Wright administratrix of said George F. Wright, deceased. Filed Mar. 7, 1903. Serial No. 146,649.



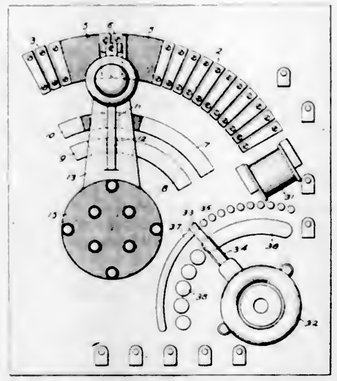
Claim.—1. In a machine of the class described, the combination of a pair of horizontal cylindrical rolls for supporting a bundle of rods or wires, means for applying power to turn the bundle, a support for a web-roll of narrow paper, and means for producing relative longitudinal movement between the roll of paper and bundle, whereby the paper will be wrapped spirally around the bundle.

2. In a machine of the class described, the combination of a pair of horizontal cylindrical rolls for supporting a bundle of rods or wires, means for turning said rolls by power to rotate the bundle, a carriage, a frame supported on top and bottom vertical trunnions in the carriage, and adapted to receive a web-roll of narrow paper, a presser-arm extending from the frame and bearing upon the bundle of wires, and a paper clamp for adjustably tensioning the paper, said parts being combined so that the paper will be wound spirally around the bundle.

3. In a machine for covering bundles of straight rods or wires, the combination of means for supporting and rotating a bundle of rods or wires upon a horizontal axis, a support for a roll of narrow wrapping material, a support for a reel of binding wire, means for producing relative longitudinal movement between said supports and said supporting means, and guides for the binding wire for directing the binding wire into line with the wrapping material as the same winds around the bundle of rods or wires.

4. In a machine of the class described, the combination of a pair of horizontal cylindrical supporting rolls for supporting a bundle of rods or wires, means for rotating the bundle of rods or wires by applying power to turn the supporting rolls, a carriage having a supporting frame pivoted on top and bottom vertical trunnions for holding a roll or spool of narrow paper, a presser-arm carried by the carriage and having tension devices for the paper, and a spring-pressed top roll, said parts co-operating so that the bundle of rods or wires being covered will be held in place between the supporting rolls, the presser-arm, and top roll.

857,142. STARTING-RHEOSTAT. WILLIAM C. YATES, Schenectady, N. Y., assignor to General Electric Company, a Corporation of New York. Filed Dec. 1, 1905. Serial No. 289,834.



Claim.—1. The combination with a motor, of a starting rheostat therefor, and means whereby the motor may be controlled through a portion of the starting resistance with the controlling arm of the rheostat in the off position.

2. The combination with a motor, of a starting rheostat therefor, and electrically controlled means whereby the motor may be controlled through a portion of the starting resistance with the controlling arm of the rheostat in the off position.

3. The combination with a motor, of a starting rheostat therefor, a plurality of switches, and means whereby the motor may be controlled through a portion of the starting resistance from said switches with the controlling arm of the rheostat in the off position.

4. The combination with a motor, of a starting rheostat therefor, a plurality of switches arranged in multiple, and means whereby the motor may be controlled through a portion of the starting resistance from said switches with the controlling arm of the rheostat in the off position.

5. The combination with a motor, of a starting rheostat therefor, an auxiliary switch, means whereby the motor may be controlled from said switch through a portion of the starting resistance with the controlling arm in the off position, and means whereby the motor may be stopped from said switches when the controlling arm is in the running position.

6. The combination with a motor, of a starting rheostat therefor, a plurality of switches, means whereby the motor may be controlled from said switches through a portion of the starting resistance with the controlling arm in the off position, and means whereby the motor may be stopped from said switches when the controlling arm is in the running position.

7. The combination with a motor, of a starting rheostat therefor, an auxiliary switch, means whereby the motor may be controlled from said switch through a portion of the starting resistance with the controlling arm in the off position, a no-voltage release magnet, and means controlled by said switch for deënergizing said magnet.

8. The combination with a motor, of a starting rheostat therefor, a plurality of switches, means whereby the motor may be controlled from said switches through a portion of the starting resistance with the controlling arm in the off position, a no-voltage release magnet, and means controlled by said switches for deënergizing said magnet.

9. The combination with a motor, of a starting rheostat therefor, a plurality of switches arranged in multiple, means whereby the motor may be controlled from said switches through a portion of the starting resistance with the controlling arm in the off position, a no-voltage release magnet, and means controlled by said switches for deënergizing said magnet.

10. The combination with a motor, of a starting rheostat therefor, an auxiliary switch, means controlled by said switch whereby the motor may be operated at less than normal running speed, a resistance in the motor circuit, and means whereby said resistance acts as a retarding resistance when the motor is being controlled by the switch and as a brake resistance when the motor circuit is broken.

11. The combination with a motor, of a starting rheostat therefor, a plurality of switches, means whereby the motor may be controlled through a portion of the starting resistance from said switches with the controlling arm of the rheostat in the off position, a resistance in the motor circuit, and connections whereby said resistance acts as a retarding resistance when the motor is being controlled by the switches and as a brake resistance when the motor circuit is broken.

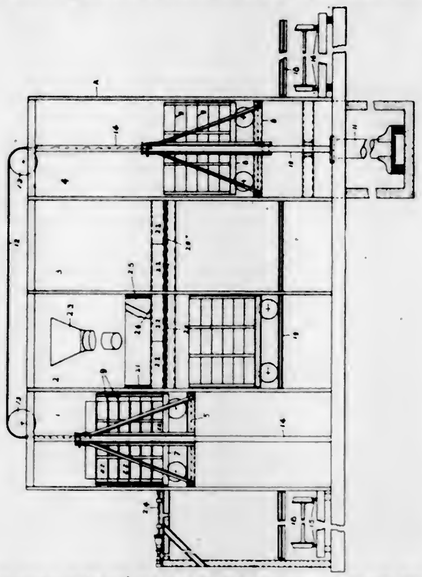
857,143. FILLING MECHANISM FOR BRICKMAKING PLANTS. FRANK ZAGELMEYER, Bay City, Mich. Filed July 30, 1906. Serial No. 328,441.

Claim.—1. A filling mechanism comprising a plurality of elevators, a filling box interposed therebetween having a mold receiving space therebeneath, trucks adapted to support a plurality of molds in tiers, the trucks removably received on the elevators, means for conveying the trucks to and from the elevators, and a pusher arranged in alinement with the mold receiving space beneath the filling box, one of the elevators adapted to bring successive tiers of the truck loaded with empty molds into alinement with the pusher and filling box, the passage of the molds beneath the filling box adapted to crowd the previously placed molds onto the truck removably carried by the remaining elevator.

2. In a brick making apparatus, a filling mechanism, an empty mold elevator, means receivable on the elevator and supporting a plurality of molds, a filled mold elevator, means on such last named elevator for receiving a succession of filled molds, a flexible connection between the elevators, and means for positively actuating at least one elevator at will.

3. In a brick making machine, a filling mechanism, a truck carrying a plurality of empty molds, means for conveying the truck to the machine, an elevator adapted to receive the truck, means for raising the truck to the filling mechanism to present the empty molds successively thereto, means for feeding the empty molds to the filling mechanism, a second elevator, an empty truck carried thereby adapted to receive the molds as they are filled, means for conveying the filled mold truck from the machine and a way leading between the two elevators to receive the successive trucks when the empty molds have been removed therefrom.

4. A filling mechanism comprising a plurality of elevators, a filling box, having a mold receiving space therebeneath, one of the elevators adapted to carry a plurality of empty molds and a pusher arranged in alinement with



the mold receiving space and adapted to engage the successive empty molds and push them beneath the filling box and toward the opposite elevator.

857,144. ANTIFRICTION GEAR-TOOTH. ERHARD T. ALBER, Ann Arbor, Mich. Filed Dec. 20, 1906. Serial No. 348,696.



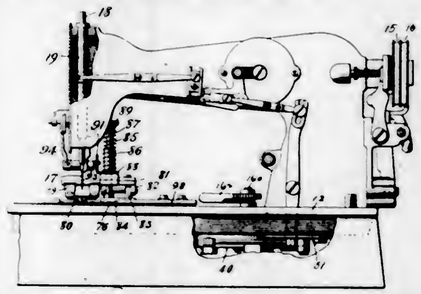
Claim.—1. A gear wheel having teeth consisting of cylindrical pins, bearing rollers surrounding said pins and lying parallel therewith, rotatable caps embracing the rollers and pins, and means engaging said caps to retain them rotatably in place.

2. A gear wheel having teeth consisting of radial pins, bearing rollers surrounding said pins and lying parallel therewith, rotatable caps embracing said pins and rollers, each of said caps having a peripheral channel therein, an annulus secured to the side of the wheel having an inwardly turned flange lying in the channel of said caps.

3. A gear wheel having teeth consisting of rotatable caps, embracing bearing members, each of said caps having an annular channel in its periphery, an annulus removably attached to the side of the wheel and having an inwardly turned flange which engages freely in the channels of said caps.

857,145. BUTTONHOLE-STITCHING MACHINE. EDWARD B. ALLEN, Bridgeport, Conn., assignor to The Singer Manufacturing Company, a Corporation of New Jersey. Filed July 21, 1906. Serial No. 327,166.

Claim.—1. In a button-hole stitching machine, the combination with stitch-forming mechanism and a work-clamp, of a feed-wheel operatively connected with said clamp, one or more feed clutch-dogs for intermittingly rotating said feed-wheel, a rotating eccentric, a bell-crank lever one arm of which is forked to embrace said eccentric and the other arm of which extends at a right angle to said forked arm, or approximately so, and is slotted practically for its entire length to afford a wide variation of adjustment of the feed, and a link or pitman one end of which is operatively connected with said clutch feed dog or dogs and the other end of which is adjustably attached to the said slotted arm of said bell-crank lever.



2. In a button-hole stitching machine, the combination with a bed-plate provided with an opening, of a stitch-forming mechanism, a work-clamp located above the said bed-plate, and main and secondary guide-plates or guiding devices for said work-clamp both bodily located beneath said bed-plate and to one of which said work-clamp is rigidly connected through said opening.

3. In a button-hole stitching machine, the combination with a bed-plate provided with an opening, of a stitch-forming mechanism, a work-clamp located above the bed-plate of the machine, and main and secondary guide-plates or guiding devices for said work-clamp both bodily located beneath said bed-plate and to one of which said work-clamp is rigidly connected through said opening, said main guide-plate being movable, transversely of the button-holes to be made, in suitable supports beneath said bed-plate, and the said secondary guide-plate being movable, lengthwise of the button-holes to be made, on the said main guide-plate.

4. In a button-hole stitching machine, the combination with a bed-plate provided with an opening, of a stitch-forming mechanism, a work-clamp located above the bed-plate of the machine, main and secondary guide-plates or guiding devices for said work-clamp both located bodily beneath said bed-plate and to one of which said work-clamp is rigidly connected through said opening, said main guide-plate being movable, transversely of the button-holes to be made, in suitable supports beneath said bed-plate, and the said secondary guide-plate being movable, lengthwise of the button-holes to be made, on the said main guide-plate, a feed-wheel provided with two cam-grooves, a shifting lever operated from one of said cam-grooves and adjustably connected with said main guide-plate, and a feed-lever operated from the other of said cam-grooves and connected with the said secondary guide-plate.

5. In a button-hole stitching machine, the combination with a bed-plate provided with an opening, of a stitch-forming mechanism, a work-clamp, a main guide-plate, a sliding rod attached to one end of and movable with said guide-plate, means for guiding and steadying the other end of said guide-plate, a secondary guide-plate having ears at one side and with which secondary guide-plate said work-clamp is connected, through said opening, a rod fixed relative to said main guide-plate and on which said ears can slide, and means for steadying and guiding the other side of said secondary guide-plate on said main guide-plate.

6. In a button-hole stitching machine, the combination with a bed-plate provided with an opening, of a stitch-forming mechanism, a work-clamp which is located above the said bed-plate, a main guide-plate located beneath said bed-plate and connected with said work-clamp through said opening, a sliding rod attached to one end of and movable with said guide-plate, means for guiding and steadying the other end of said guide-plate, a secondary guide-plate having ears at one side, a rod fixed relative to said main guide-plate and on which said ears can slide, and means for steadying and guiding the other side of said secondary guide-plate on said main guide-plate.

7. In a button-hole stitching machine, the combination with a bed-plate provided with an opening, of a stitch-forming mechanism, a work-clamp, a main guide-plate, a rod connected with one end of said guide-plate and fitted to slide in supports on the bed-plate of the machine, a guiding and steadying tongue, at the opposite end of said guide-plate, movable in a guide-way beneath said bed-plate, a secondary guide-plate mounted on said main guide-plate and having ears at one side and with which secondary guide-plate said work-clamp is connected, through said opening, a rod fixed relative to said main guide-plate and on which rod said ears are fitted to slide, and a steadying and guiding tongue-and-groove connection between said main and secondary guide-plates at the other side of said secondary guide-plate.

8. In a button-hole stitching machine, the combination with a bed-plate provided with an opening; of a stitch-forming mechanism, a work-clamp which is located above the bed-plate of the machine, a main guide-plate located beneath said bed-plate, a rod connected with one end of said guide-plate and fitted to slide in supports beneath said bed-plate, a guiding and steadying tongue, at the opposite end of said guide-plate, movable in a guide-way formed beneath said bed-plate, a secondary guide-plate mounted on said main guide-plate and having ears at one side and with which secondary guide-plate said work-clamp is connected through said opening, a rod fixed relative to said main guide-plate and on which rod said ears are fitted to slide, and a steadying and guiding tongue-and-groove connection between said main and secondary guide-plates at the other side of said secondary guide-plate.

9. In a button-hole stitching-machine, the combination with a stitch-forming mechanism, of a work-clamp, a bed-plate provided with openings, means, located beneath said bed-plate, for feeding said clamp relative to the needle of the machine, means also located beneath the said bed-plate and accessible from above the latter through said openings, for regulating or adjusting the said feeding means in changing to different sizes of button-holes or different kinds of work.

10. In a button-hole stitching machine, the combination with a stitch-forming mechanism, of a work-clamp, a bed-plate provided with openings, and means, located beneath said bed-plate, for feeding and shifting said clamp relative to the needle of the machine, means also located beneath the said bed-plate and accessible from above the latter through said openings, for regulating or adjusting the said feeding and shifting means in changing to different sizes of button-holes or different kinds of work.

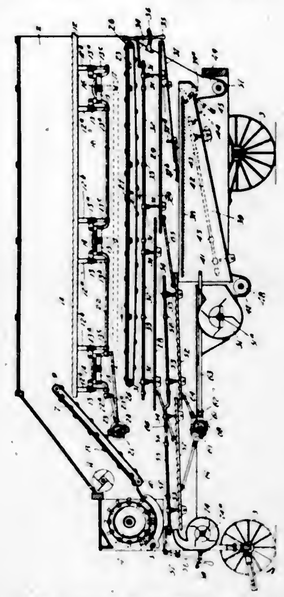
11. In a button-hole stitching-machine, the combination with a stitching machine, of a work-clamp, a bed-plate provided with openings, main and secondary guide-plates for said work-clamp located beneath said bed-plate, said work-clamp being connected with said secondary guide-plate through one of said openings, means, also located beneath said bed-plate, for feeding said clamp relative to the needle of the machine, and means, also located beneath said bed-plate and accessible from above the latter, through others of said openings, for regulating or adjusting said feeding means in changing to different sizes of button-holes or different kinds of work.

12. In a button-hole stitching machine, the combination with a stitching-mechanism, of a work-clamp, a bed-plate provided with openings, main and secondary guide-plates for said work-clamp located beneath said bed-plate, said work-clamp being connected with said secondary guide-plate through one of said openings, means, also located beneath said bed-plate, for feeding and shifting said clamp relative to the needle of the machine, and means, also located beneath said bed-plate and accessible from above the latter, through others of said openings, for regulating or adjusting said feeding and shifting means in changing to different sizes of button-holes or different kinds of work.

857,146. METHOD OF PRODUCING CALCIUM HYDRID. PAUL ASKENASY and LORENZ STOCKEM, Nuremberg, Germany, assignors to Elektrochemische Werke, Gesellschaft M. B. H., Berlin, Germany, a Corporation of Germany. Filed May 17, 1906. Serial No. 317,402.

Claim.—The hereinbefore described method of producing hydrid of calcium by a direct combination of hydrogen with calcium, consisting in conducting hydrogen into molten calcium, substantially as and for the purpose set forth.

857,147. THRESHING-MACHINE. ALBERT T. BAKKEN, McIntosh, Minn. Filed Dec. 15, 1904. Serial No. 236,919.



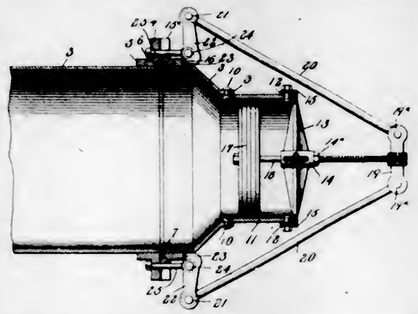
Claim.—1. In a threshing machine, a pair of independently mounted feed pans and a sieve equipped shoe, of a shaft having three cranks set one in advance of the other, and pitmen connecting one of said cranks to said shoe and the other two cranks one to each of said feed pans, substantially as described.

2. In a threshing machine, the combination with a sieve and means for vibrating the same and for holding the same within fixed limits for longitudinal movements, of links supporting the said sieve, link supports, and means for adjusting said link supports to vary the angularity of said links to said sieve, substantially as described.

3. In a threshing machine, the combination with feed pans and means for vibrating the same and for holding the same within fixed limits for longitudinal movements, of links supporting said pans, link supports, and means for adjusting said link supporters to vary the angularity of said links with respect to said pans, substantially as described.

4. In a machine of the character described, the combination with a sieve or similar device and means for vibrating the same and for holding the same within fixed limits for longitudinal movements, of adjusting rods, links pivoted to said rods and supporting said sieve, and means for moving said rods to vary the angularity of said links with respect to said sieve, substantially as described.

857,148. AUTOMATIC RETORT-COVER. JAMES J. BARR, Slidell, La., assignor of one-half to Cliff S. Walker, Slidell, La. Filed July 19, 1906. Serial No. 326,835.



Claim.—1. A receptacle, and means for closing the same, said means comprising a cover, and means carried thereby movable independently thereof and actuated by pressure within the receptacle, for securing said cover in position.

2. A receptacle, a cover therefor, and means responsive to pressure within the receptacle and movable independently of the cover for forcing said cover into sealing engagement with the receptacle.

3. A receptacle, a cover therefor, a sealing ring between the cover and receptacle, and movable means whereby said cover will be urged against said ring with a force proportional to the pressure within the receptacle.

4. A receptacle, a cover therefor, adapted to abut against the edge thereof and lie partially in the same plane, and fluid pressure operated means for holding said parts together.

5. A receptacle, a cover therefor, sealing means between said cover and said receptacle, reciprocating means carried by said cover responsive to fluid pressure, and means connected to said means for forcing said cover into engagement with said sealing means.

6. A receptacle, a cover therefor, sealing means between said receptacle and cover, and automatic means, controlled by fluid pressure within said receptacle and movable independently of said cover, for forcing said cover against said sealing means.

7. A receptacle, a cover therefor, and automatically movable means for forcing said cover into engagement with said receptacle, with a pressure proportional to the fluid pressure existing within said receptacle.

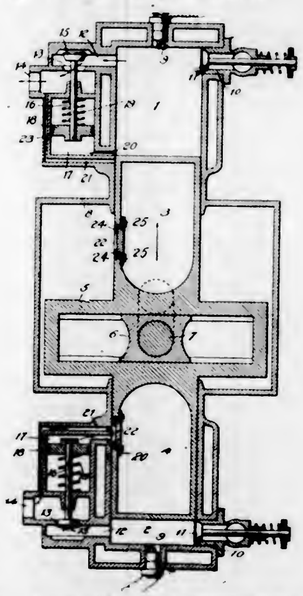
8. A receptacle, a cover therefor, locking levers adapted to engage said cover for shifting it against the receptacle thereby forming an air tight closure, a pair of links adapted when operated in one direction to move and hold said levers in locking position, and link operating means arranged within said cover and connected with the links.

9. A receptacle, a cover therefor, locking levers adapted to engage said cover for shifting it against the receptacle thereby forming an air tight closure, a pair of links adapted when operated in one direction to move and hold said levers in locking position, and pressure-operated link-operating means arranged within said cover and connected with the links.

10. A receptacle, a cover, bolts extending through said receptacle and cover, locking levers pivotally connected to the bolts and adapted to engage the cover for shifting it against the receptacle thereby forming a tight closure, a pair of links for operating the levers, and link operating means arranged within said cover and connected to the links.

11. A receptacle, a cover, bolts extending through said receptacle and cover, locking levers pivotally connected to the bolts and adapted to engage the cover for shifting it against the receptacle thereby forming a tight closure, a pair of links for operating the levers, and pressure-operated, link-operating means arranged within said cover and connected to the links.

857,149. EXHAUST-VALVE MECHANISM FOR EXPLOSIVE-ENGINES. GEORGE M. BEARD, Warsaw, Ind. Filed Jan. 17, 1905. Serial No. 241,491.



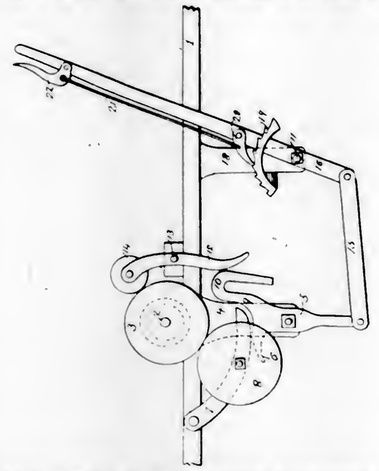
Claim.—In combination with an engine cylinder having inlet and outlet ports and a reciprocating piston, a chamber located adjacent said cylinder and communicating with the same by a passage which opens into the cylinder at or near the piston's outstroke, a piston located in said chamber and adapted to be moved by the pressure of the explosion gases and thereby open the cylinder outlet at the end of the working piston's outstroke, and an adjustable valvular appliance moving with the working piston which at the end of the instroke puts the said chamber in communication with the exhaust, so as to allow the outlet port valve to close.

857,150. BRAKE MECHANISM. GENE S. BLAKE, Potomac, Ill. Filed June 4, 1906. Serial No. 320,120.

Claim.—1. In combination, a frame, a driving shaft, a wheel carried by the shaft, an arm pivoted to the frame, and depending therefrom, a roller carried by said arm, a second arm extending upwardly from the frame a roller on said second arm, a swinging lever, said lever having extensions engaging the arms in such a manner as to force the rollers in contact with the wheel.

2. In combination, a frame, a driving shaft, a wheel carried by the shaft, an arm pivoted to the frame and depending therefrom, a roller carried by said arm, a second arm extending upwardly from the frame a roller on said second arm, a swinging lever, said lever having extensions thereon engaging the arms in such a manner as to force the rollers in contact with the wheel, the depending arm normally resting on an extension of the swinging lever.

3. In combination, a frame, a driving shaft, a wheel carried by the shaft, an arm pivoted to the frame and depending therefrom, a roller carried by said arm, a second arm extending upwardly from the frame, a roller on said second arm, a swinging lever having an extension extending at approximately right angles thereto for engaging the depending arm, said swinging lever having a second extension extending approximately on the same plane for contacting with the upwardly extending lever, said extensions being adapted to force the rollers into contact with the wheel.



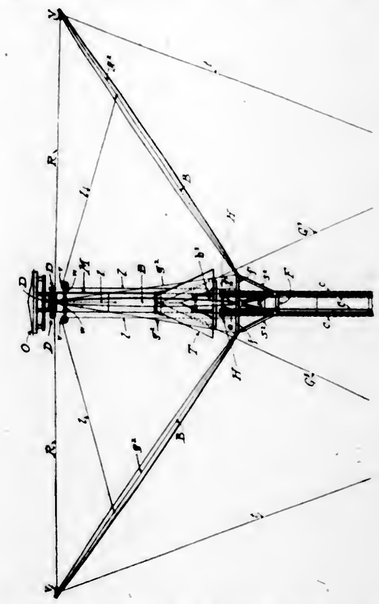
857,151. DRILL-BIT HOLDER. ULYSSES S. BOOTH, Portland, Oreg., assignor to The Champion Blower & Forge Company, Lancaster, Pa., a Corporation of Pennsylvania. Filed Feb. 26, 1907. Serial No. 359,444.



Claim.—1. A drill-bit holder or chuck comprising a suitable head on or adapted for attachment to a drill spindle, said head having a longitudinal bore or socket and a transverse bore or socket intersecting the former, each bore terminating part way of the bore which it intersects, so as to provide a shoulder within the head having a flattened surface or seat for engagement with the flattened end of a drill-bit shank.

2. A drill-bit holder or chuck comprising a suitable head on or adapted for attachment to a drill spindle, said head having a longitudinal bore or socket and a transverse bore or socket intersecting the former, each bore terminating part way of the bore which it intersects, so as to provide a shoulder within the head having a flattened surface or seat for engagement with the flattened end of a drill-bit shank, and means adapted to secure the flattened end of the shank in engagement with said seat.

857,152. SUPPORT FOR CROWN OR ANTENNA WIRES FOR ELECTRIC MASTS. ALEXANDER E. BROWN, Cleveland, Ohio, assignor to The Brown Hoisting Machinery Company, Cleveland, Ohio. Filed Jan. 18, 1907. Serial No. 352,971.



Claim.—1. A support for antennæ wires of electric masts, made up of an oscillating frame-structure upon said mast, booms vertically pivoted thereto and flexible supports for said wires, extending between and connected with the outer ends of said booms, substantially as shown and described.

2. In a support for antennæ wires of electric masts, the combination of an oscillating frame-structure upon said mast, booms vertically pivoted thereto, and flexible supports for said wires, extending between and connected with the outer ends of said booms, substantially as shown & described.

3. A support for antennæ wires of electric masts, comprising an oscillating frame-structure upon said mast, booms vertically pivoted thereto, flexible supports for said wires between and connected with the outer ends of said booms, and suitable guys and stays from said booms to said mast and frame-structure to maintain the same in a diagonal position with respect to said mast, when said booms are lowered on their pivots for the purpose, substantially as shown and described.

4. A support for antennæ wires of electric masts, comprising an oscillating frame-structure upon said mast, booms vertically pivoted thereto, flexible supports for said wires between and connected with the outer ends of said booms and with suitable mechanism for winding in the same, provided for the purpose, and suitable guys and

stays from said booms to said mast, and frame-structure to maintain the same in a position diagonally outward with respect to said mast, when lowered on their pivots for the purpose, substantially as shown and described.

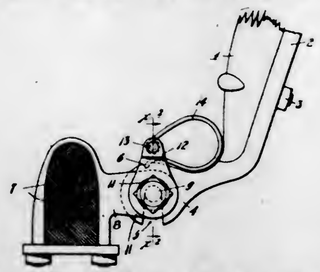
5. In combination with an electric mast, a support for antennæ wires, comprising an oscillating frame-structure surrounding said mast, booms vertically pivoted to the sides thereof, flexible supports for said wires between and connected to the outer ends of said booms, and extending backwardly and fastened to suitable mechanism, provided for the purpose at the mast, for winding in the same, and suitable guys and stays, from said mast and frame-structure to said booms, to maintain the same in a diagonal position with respect to the mast when lowered outwardly on their pivots for the purpose, all substantially as shown and described.

6. In combination with an electric mast, a support for antennæ wires, comprising an upper and lower oscillating frame-structure surrounding said mast, radial booms vertically pivoted to the same, flexible supports for said wires between and connected to the outer ends of the said booms of each structure, and, in the uppermost of said set of booms, extending backwardly and fastened to suitable mechanism at the mast for winding in the same, hanger-like connections between said structures, suitable guys and stays between said sets of booms, and between said booms and said mast, and frame-structure, to maintain said booms, in a diagonal relation to said mast when lowered outwardly on their pivots for the purpose, substantially as shown and described.

857,153. PROCESS FOR HARDENING LEATHER. DANIEL BRYAN, Walton, Liverpool, England. Filed Dec. 27, 1906. Serial No. 349,600.

Claim.—A process for hardening leather in which the leather is steeped in cold water for a period of about twenty four hours; then slowly air dried for a period of about twenty four hours; then hammered; and then allowed to lie in a dry place to set.

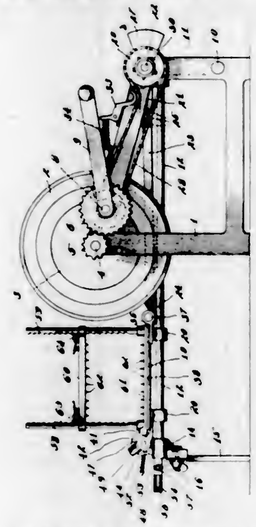
857,154. THILL-COUPLING. JOHN M. BRYANT, Cleveland, Ohio. Filed Mar. 14, 1906. Serial No. 305,972.



Claim.—1. The combination with a coupling bracket having laterally spaced ears and a bolt passed therethrough, of a detachable member having a head provided with an open seat engageable with said bolt and having a lock notch opposite to said seat, link bearings independent of but surrounding said bolt and rigidly secured with respect thereto and with respect to the ears of said coupling bracket, a pair of links loosely pivoted on said link bearings, and an approximately U-shaped spring pivoted at one end to the free end of said links and engageable at its other end with the said lock notch of said head, to hold the seat of said head engaged with said bolt, substantially as described.

2. The combination with a coupling bracket having laterally spaced ears and a bolt passed therethrough, of a detachable member having a head with an open seat engageable with said bolt, and a lock notch opposite to said seat, a pair of peripherally grooved washers on said bolt, a pair of links loosely pivoted in the grooves of said washers, and a U-shaped spring pivotally connected to the free end of said links and engageable at its free end with the lock notch of said head, to hold the seat of said head engaged with said bolt, substantially as described.

857,155. MEAT-SLICER. FRANKLIN P. BURKHARDT, Springfield, Ohio, assignor to The Anderson Tool Company, Anderson, Ind., a Corporation of Indiana. Filed Mar. 12, 1904. Serial No. 197,776.



Claim.—1. In a meat slicing machine, a rotary cutter, guides pivotally supported at one end and arranged to extend in lines parallel with respect to the plane of action of the cutter, an adjustable support for the free ends of said guides, a work holder mounted to slide upon said guides, means for reciprocating said work holder along said guides, a ratchet mechanism for intermittently advancing said work holder toward the plane of action of the cutter, and means actuated by the reciprocatory movements of said work holder for actuating said ratchet mechanism, as and for the purpose set forth.

2. In a meat slicing machine, a rotary cutter, a pivotally mounted yoke, guide rods supported at one end in said yoke and arranged to extend in lines parallel with respect to the plane of action of the cutter, a vertically adjustable support for the opposite ends of said guide rods, a work-holder mounted to slide upon said rods, and means for reciprocating said work holder along said guides, as and for the purpose set forth.

3. In a meat slicing machine, a rotary cutter, a pivotally mounted yoke, guide rods supported at one end in said yoke and arranged to extend in lines parallel with respect to the plane of action of the cutter, a vertically adjustable support for the free ends of said rods, a work-holder mounted to reciprocate along said guide rods, and means actuated by the reciprocatory movements of said work holder for intermittently advancing the same automatically toward the plane of action of the cutter, as and for the purpose set forth.

4. In a meat slicing machine, a rotary cutter, and a reciprocatory table, a guide carried by said table and extending transverse to the line of reciprocatory movement thereof, a supplemental table having guiding engagement with said rod at one end and a rack at the opposite end thereof, a worm arranged to engage said rack, and means for intermittently rotating said worm, as and for the purpose set forth.

5. In a meat slicing machine, a rotary cutter, and a reciprocatory table, a guide rod extending in a line transverse to the line of reciprocatory movement of said table, a supplemental table having guiding straps at one edge thereof operating upon said rod and forming a hinge connection, said supplemental table provided with a rack at the opposite edge thereof, a ratchet mechanism with which said rack detachably engages, and means for intermittently operating said ratchet mechanism, as and for the purpose set forth.

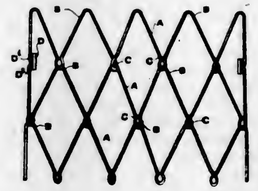
6. In a ment slicing machine, a slicing cutter and a table mounted for relative reciprocatory movement, a supplemental table mounted to move transverse to the line of relative reciprocatory movement and carrying a rack at one side edge thereof, a worm arranged to engage said rack, a ratchet gear connected to rotate with said worm, a loosely sleeved casing carrying a pawl engaging said ratchet gear, an arm connected to said casing, and a stationary adjustable engaging bar arranged to engage said arm to actuate said casing, as and for the purpose set forth.

7. In a meat slicing machine, a rotary cutter, a reciprocatory table, a supplemental table mounted for movement upon said first-mentioned table in a line transverse to the line of reciprocatory movement thereof, a rack connected to said supplemental table along one side edge thereof, a stud carried by said first-mentioned table to reciprocate therewith, a worm and a ratchet gear mounted upon said stud to rotate therewith, a casing sleeved over said ratchet gear and carrying a pawl engaging said gear, an arm connected to said casing, a stationarily mounted adjustable bar arranged in the path of said arm to rotatively displace said casing, and means for returning said casing to initial position, as and for the purpose set forth.

8. In a meat slicing machine, a main frame, a cutter shaft and a countershaft journaled therein, a drive mechanism arranged to rotate both of said shafts, a cutter carried by said cutter shaft, guide rods pivotally mounted at one end and supported for vertical adjustment at the other end, a work holder mounted to slide on said rods, and means actuated by said countershaft for reciprocating said holder on said rods past the cutter, as and for the purpose set forth.

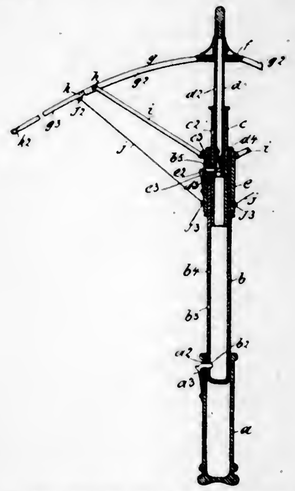
9. In a meat slicing machine, a main frame made in one piece, a cutter shaft and a countershaft journaled therein, guide rods pivotally connected to said main frame at one end, means for adjusting the height of the other ends of said rods, a work holder mounted to slide on said rods, a cutter mounted on said cutter shaft, and connections between said countershaft and work holder for reciprocating the latter, as and for the purpose set forth.

857,156. WIRE-SPRING FABRIC. ALEXANDER G. CAMERON, Winnipeg, Manitoba, Canada, assignor of one-half to Frederick John Irwin, Winnipeg, Canada. Filed June 1, 1906. Serial No. 319,742.



Claim.—As a new article of manufacture, a fabric composed of a series of individual lengths of wire inter-looped and securely inter-locking the one in the other, and means for fastening the outstanding ends of the inter-looped set, comprising a ferrule having an opening in the sides thereof to receive the said ends and designed to be flattened bending the ends upwardly and securing them therein as and for the purpose specified.

857,157. UMBRELLA. DOMENICO CELENZA and MAX ROSEN, New York, N. Y. Filed Aug. 18, 1906. Serial No. 331,111.



Claim.—1. An umbrella the stick portion of which including the handle is composed of separate telescopic sections with one of which the ribs are connected in the usual manner, said telescopic sections being provided with spring pawls which are adapted to hold them both in the telescoped and in the extended position, one of said telescopic sections of the stick and handle portion being provided with a runner-sleeve with which the braces are connected, said runner-sleeve being provided with a spring pawl which operates to hold it on one of said telescopic sections in two different positions, the ribs of the umbrella being composed of separate parts hinged together at the point where the braces are connected, and the adjacent ends of the separate parts of the ribs being overlapped, and the outer end portions of the ribs being provided with flexible supports which are connected therewith and with the runner-sleeve.

2. An umbrella the stick portion of which including the handle is composed of four telescopic sections with one of which the ribs are connected in the usual manner, spring pawls for holding said sections both in the telescoped and in the extended position, one of said telescopic sections being provided with a runner-sleeve with which the braces are connected, the ribs of the umbrella being composed of separate parts hinged together at the point where the braces are connected therewith, and the outer end portions of the ribs being provided with flexible supports which are connected therewith and with the runner-sleeve.

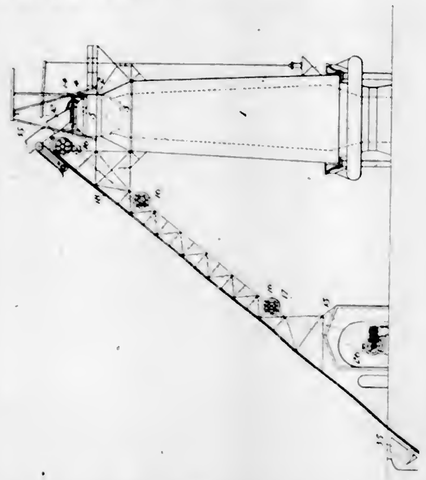
857,158. FURNACE-TOP. CHARLES H. CLARK, Ensley, Ala. Filed Oct. 14, 1905. Serial No. 282,853.

Claim.—1. The combination with a furnace having a movable top portion for distributing the stock, power means and means driven thereby which discharge stock upon said portion, of a driving connection between said movable top portion and a source of power, which connection is independent of said stock discharging means but adapted to move said top portion with a predetermined relationship to the operation of said stock discharging means.

2. In combination, a furnace having a movable distributing top, stock hoisting devices, a prime mover for operating said hoisting devices, instrumentalities for adjusting said top which are directly connected to said prime mover independently of said hoisting devices, and means to cause

said top to move at a predetermined speed with relation to that of the hoisting devices.

3. In a furnace charging mechanism, separate means for hoisting and distributing the stock in the furnace, a prime mover, and independent driving connections from said prime mover to said hoisting and to said distributing means, said driving connections for said distributing means comprising speed reducing means disposed adjacent to said prime mover.



4. The combination with a furnace having a movable top portion for distributing the stock and means to discharge stock upon said portion, of a flexible driving connection between said movable top portion and a source of power which moves said portion with predetermined relationship to the operation of said stock discharging means.

5. In a blast furnace top, a rotatable distributing portion, hoisting mechanism for the stock which is distributed by said portion, and means to drive said hoisting mechanism and distributing portion from the same source of power, said means comprising a cable for driving said portion.

6. In a blast furnace, a movable top portion, means to hoist stock to said top portion, a hoisting engine, and an endless flexible driving means deriving motion from said engine at a predetermined ratio of speed relative to that of the hoisting means and adapted to operate said movable top, as and for the purposes described.

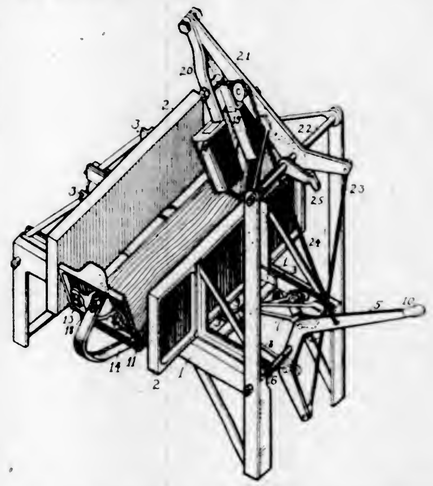
7. In a blast furnace, a movable top portion, hoisting mechanism for the stock, an engine for driving said mechanism, and a cable driven by said engine and adapted to operate said top, as and for the purposes described.

8. In a furnace charging mechanism, a removable top portion, an endless cable or chain for driving said portion, hoisting machinery for the stock, and a driving connection between said cable or chain and the hoisting machinery comprising speed reducing means disposed away from and free of said top.

9. In combination, a furnace having a movable distributing top, stock hoisting mechanism, an engine, devices driven at different relative speeds by said engine and operatively connected to said hoisting mechanism and top, the device for driving the top being disposed at a distance from said top and operatively connected therewith by a flexible driving means.

10. In an apparatus of the character described, an engine, speed reducing gear means connected directly to said engine and driving an endless cable, hoisting mechanism driven by said engine, a movable furnace top which is operated by said cable, and supporting means for said cable.

857,159. MOLD FOR CONCRETE BLOCKS. JOHN R. COURTER, Montclair, N. J. Filed May 19, 1906. Serial No. 317,672.



Claim.—1. In a mold, the combination of a supporting frame, movable side plates, a lever located to one side of the side plates, and pitman connections independent of each other between each plate and the lever.

2. In a mold, the combination of a supporting frame, side plates mounted to slide on the frame, a lever fulcrumed in the frame to one side of the side plates, and pitman connections from the plates to points on the lever oppositely situated with respect to its fulcrum point.

3. In a mold, the combination of a supporting frame, movable side plates, a hand-lever located to one side of the side plates with its handle elevated above the level of the mold, and pitman connections independent of each other between each plate and the lever.

4. In a mold, the combination of a supporting frame, movable side plates and end plates supported from the frame, a set of toggle links between the side plates, a set of toggle links between the end plates, a connection between the two sets of toggle links at the points of connection of the links of each set, and means independent of the toggles for concurrently operating the side plates.

5. In a mold, the combination of a supporting frame, a removable pallet, end plates, positioned to wholly overlie the pallet in closing the mold, a set of toggle links connected at their outer ends to the end plates and slidably supported intermediate of their ends by the frame, and means acting at the point of connection of the links to operate them.

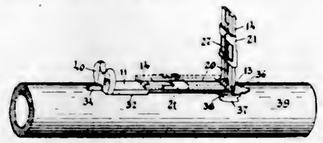
6. In a mold, the combination of a supporting frame, a removable pallet, movable side plates and end plates, the end plates being positioned to wholly overlie the pallet in closing the mold, a set of toggle links between the side plates, a set of toggle links connected at their outer ends to the end plates and slidably supported intermediate of their ends by the frame, a connection between the two sets of toggle links at the points of connection of the links of each set, and means independent of the toggles for concurrently operating the side plates.

7. In a mold, the combination of a supporting frame, movable side plates, cores, an overhead suspension for the cores and means for concurrently operating the side plates and the suspension.

8. The combination of a supporting frame, a mold supported thereon, cores, a core-extracting lever mounted with its outer end above the mold, a suspension between the end of the core-extracting lever and the core, and actuating means connected with the core extracting lever to lift the cores and to swing the cores to one side, there being a slack connection between the operating means and the suspension.

9. The combination of a supporting frame, a mold with movable sides supported thereon, a hand-lever for actuating the movable sides, cores, a core-extracting lever mounted with its outer end above the mold, a suspension between the end of the core-extracting lever and the cores, a connection between the core-extracting lever and the hand-lever to lift the cores, and a slack connection between the suspension and the hand-lever.

857,160. GUN-SIGHT. HENRY M. CREMER, Gad, Wis. Filed Mar. 5, 1906. Serial No. 304,214.



Claim.—1. In a gun-sight, a sighting-plate having a central longitudinal slot, a piece sliding vertically on said plate and having an opening at the center, and a pendulum carrying a sighting-bead at its lower end and pivoted on said sliding-piece at the upper part thereof, said sliding-piece having a marked point on the lower part thereof immediately opposite the end of said bead when in vertical position.

2. In a gun-sight, the combination of a sighting-plate having a longitudinal central slot, a piece sliding vertically thereon and having a central opening and an upper and lower transverse bar, said lower bar having a notch in the center of its upper edge, and a pendulum pivoted on said upper bar and carrying at its lower end a pointed sighting-bead which lies opposite the bottom of said notch when the sight is held truly upright.

3. In a gun-sight, the combination of a sighting-plate adapted to be held upright when in use and having a longitudinal central slot, a sliding-piece 21 mounted thereon and having a central opening and an upper and lower transverse bar, a spring-plate 22 mounted on said sliding-piece and pressing against said plate to hold said sliding-piece frictionally in position, and a pendulum pivoted on said upper transverse bar at the center thereof, said pendulum carrying an oval sighting-bead pointed at its lower end; said lower transverse bar having at its center a V-shaped notch which lies opposite the pointed end of said pendulum when the sight is in truly upright position; the space on all sides of said oval bead being open.

4. A gun-sight comprising, in combination, a base-plate, a sighting-plate pivoted thereto and having an angular heel 16 at the base thereof, a leaf-spring secured to the underside of said base and pressing against said heel to spring said sighting-plate into either vertical or horizontal position, and a shoulder 19 projecting at right angles to the under surface of the heel 16 and abutting against the end of said spring when said sighting-plate is vertical to limit its further movement.

5. In a gun-sight, the combination of a stationary base-member, and means for attaching the same to the gun-barrel comprising a longitudinal rib or lug on the underside thereof adapted to fit in a corresponding groove in a plate attached to the barrel.

6. In a gun-sight, the combination of a stationary base-member, and means for attaching the same to the gun-barrel comprising a longitudinal rib or lug on the underside thereof adapted to fit in a corresponding groove in a plate attached to the barrel; said rib or lug being prolonged to form a tongue 34.

7. In a gun-sight, the combination of a base, and means for attaching the same to the gun-barrel comprising a rib or lug on the underside thereof adapted to fit in a corresponding groove on a plate attached to the barrel; said rib or lug being prolonged to form a tongue 34 and having a notch at the upper side of said tongue adapted to be engaged by an overlying object on the gun-barrel.

8. In a gun-sight, in combination with a stationary base-member, means for attaching the same to a gun-barrel comprising a pair of lateral longitudinal lugs or ribs and a central longitudinal lug or rib on the underside thereof.

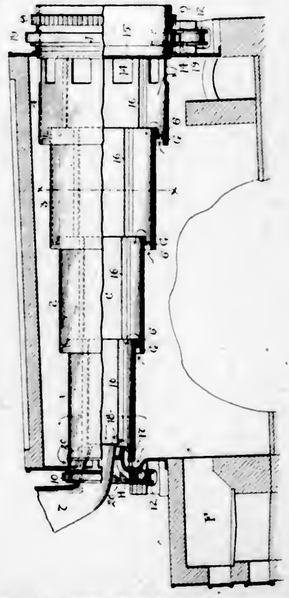
9. In a gun-sight, in combination with a stationary base-member, means for attaching the same to a gun-barrel comprising a pair of lateral longitudinal lugs or ribs, and a central longitudinal lug or rib on the underside thereof; said central lug or rib being prolonged rearwardly beyond the base to form a tongue adapted to engage under an overlying object.

10. In combination with a plate adapted to be attached to a gun-barrel and having a longitudinal groove therein and a piece overlying said groove at one end thereof, a sight having a stationary base-member, and a lug or rib removably fitting in said groove and having a tongue projecting under said piece.

11. In combination with a plate adapted to be attached to a gun-barrel and having a longitudinal groove therein and a piece overlying said groove at one end thereof, a sight having a base, and a lug or rib on said base removably fitting in said groove and having a tongue projecting under said piece; said base having further lateral ribs 32 on the underside thereof, abutting against the opposite edges of said plate.

12. In a gun-sight, in combination with a stationary base member, means for attaching the same to a gun barrel comprising a pair of lateral longitudinal lugs or ribs and a central longitudinal lug or rib on the underside thereof; and a sighting member mounted movably thereon.

857,161. MECHANICAL DRIER. WILLIAM M. CUMMER, Cleveland, Ohio. Filed Feb. 15, 1907. Serial No. 357,596.



Claim.—1. As a new article of manufacture, a drying cylinder formed in sections, and rings connecting the sections provided with openings transversely through the middle thereof, whereby draft passages are formed into the cylinder.

2. A drying cylinder formed in sections of different sizes,

and rings uniting adjacent ends of said sections equal to the difference in the sizes thereof and provided with openings into the cylinder.

3. A drying cylinder formed in sections and the end of one section smaller in diameter than the end of the adjacent section with which it connects, and rings connecting said adjacent ends having a series of holes about their middle portion.

4. In a drying apparatus, a rotary drying cylinder formed in sections arranged to discharge one into the other successively and varying in cross sections, and rings connecting said sections having webs with openings through the same.

5. In a drying apparatus, a rotary drying cylinder formed in sections of different diameters and each section having a uniform diameter and said sections increasing in cross sectional area from one end of the cylinder to the other, and rings uniting said sections having holes through the same, whereby draft inlets to the cylinder are provided.

6. In a drying apparatus, a cylinder adapted to be rotated and provided with an inlet at one end and a discharge at the other end, and said cylinder constructed of a series of sections of different diameters and each section having the same diameter, and inlet openings for the products of combustion at the ends of said sections.

7. A drying apparatus comprising a cylinder composed of sections of different diameters and substantially angle shaped rings connecting said sections having draft openings in the webs thereof.

8. A drying apparatus comprising a drier chamber, in combination with a drying cylinder formed in sections of varying sizes smallest at the front end of the cylinder, and a furnace at the front of said chamber adapted to discharge immediately beneath the said smallest section of the cylinder.

9. A drying apparatus comprising a drying chamber of uniform depth from end to end, in combination with a drying cylinder largest at the rear formed of sections of increasing cross-sectional area from the front to the rear of said chamber.

857,162. CULTIVATOR. FRANK E. DAVIS, La Crosse, Wis. Filed Jan. 18, 1904. Serial No. 189,496.

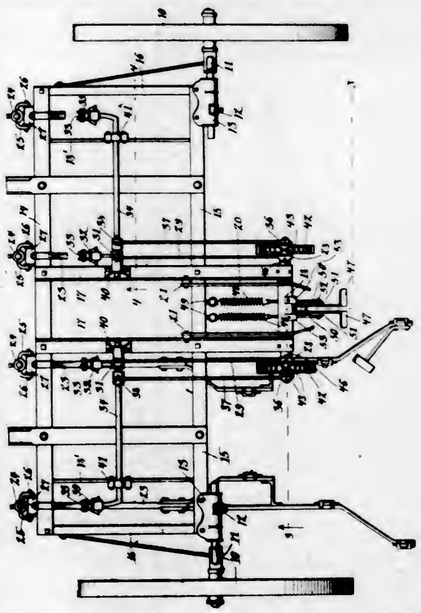
Claim.—1. In a cultivator the combination of a frame, a drag-bar swiveled at its front end so that it can be swung laterally and vertically, a foot-lever, a connection between said foot-lever and said drag-bar, automatically operating means for holding the drag-bar in lifted position when shifted by the foot-lever and means whereby the drag-bar can be lowered when it has been raised by the foot-lever.

2. In a cultivator the combination of a frame, a drag bar swiveled at its front end so that it can be swung laterally and vertically, a foot-lever, a connection between said foot-lever and said drag-bar, a spring whereby the drag-bar will be held in lifted position when shifted by the foot-lever and means whereby the drag-bar can be lowered when it has been raised by the foot-lever.

3. In a cultivator the combination of a frame, a drag-bar swiveled at its front end so that it can be swung laterally and vertically, a foot-lever, a connection between said foot-lever and the drag-bar, a spring applied to lift the drag-bar when the foot-lever is operated, and to hold the foot-lever in position when the drag-bar is lowered and means whereby the drag-bar can be lowered and for restoring the foot-lever into operative position when the drag-bar is lowered.

4. In a cultivator, the combination of a frame, drag-bar swiveled at its front end so it can be swung laterally and vertically, a pivoted foot-lever for raising the drag-bar, a connection between said foot-lever and said drag-bar, a spring having an eccentric connection arranged to travel across the "dead center", to differentially apply the force of said spring so as to alternately hold the lever in either of its positions and means whereby the drag-bar can be lowered and for shifting the foot-lever into operative position.

5. In a cultivator, the combination of a frame, a drag-bar, a pivoted foot-lever for raising the drag-bar, a connection between said foot-lever and said drag-bar, a spring, a link connecting said spring and said lever, the link-connection being arranged with respect to the lever fulcrum, to travel across the "dead center" and differentially apply said spring to hold the lever in either of its alternative positions and means whereby the drag-bar can be lowered and for shifting the foot-lever into operative position.



6. In a cultivator, the combination of a frame, drag-bar swiveled at its front end so it can be swung laterally and vertically, a foot-lever, and an operative connection between said foot-lever and said drag-bar comprising a hand-lever having an adjustable connection with said foot-lever.

7. In a cultivator the combination of a frame, a drag-bar swiveled at its front end so that it can be swung laterally and vertically, a foot-lever, a hand-lever, both of said levers being operatively connected to the drag-bar, and automatically operating means whereby the drag-bar will be secured in lifted position when the drag-bar is shifted by either of said levers.

8. In a cultivator the combination of a frame, a drag-bar swiveled at its front end so that it can be swung laterally and vertically, a foot-lever, a hand-lever, both of said levers being operatively connected to the drag-bar, and a spring whereby the drag-bar will be secured in lifted position when the drag-bar is shifted by either of said levers.

9. In a cultivator, the combination of a frame, drag-bar swiveled at its front end so it can be swung laterally and vertically, a foot-lever, a hand-lever, both of said levers being operatively connected to said drag-bar, and a spring alternately applied, to lift said drag-bar when said drag-bar is raised by either of said levers, and to hold said levers in position when the drag-bar is in its lowered position.

10. In a cultivator, the combination of a frame, drag-bar swiveled at its front end so it can be swung laterally and vertically, a foot-lever, a rack shiftable by said foot-lever, a hand-lever adjustably secured to said rack, and a connection between said hand-lever and said drag-bar.

11. In a cultivator, the combination of a frame, drag-bar swiveled at its front end so it can be swung laterally and vertically, a foot-lever, a rack shiftable by said foot-lever,

a hand-lever adjustably secured to said rack, a connection between said hand-lever and said drag-bar, and means holding the connection in position to retain the drag-bar in raised position.

12. In a cultivator, the combination of a frame, drag-bar swiveled at its front end so it can be swung laterally and vertically, a foot-lever, a rack shiftable by said foot-lever, a hand-lever adjustably secured to said rack, a connection between said hand-lever and said drag-bar, and a spring applied to lift said drag-bar.

13. In a cultivator, the combination of a frame, a drag-bar swiveled at its front end so it can be swung laterally and vertically, a foot-lever, a rack shiftable by said foot-lever, a hand-lever adjustably secured to said rack, a connection between said hand-lever and said drag-bar, and a spring applied to alternately lift said drag-bar and to hold said rack and levers when the drag-bar is in lowered position.

14. In a cultivator, the combination of a frame, a pair of shovel-beams, a rack, and two hand-levers, each connected to one of said beams, and each of which is interlocked with said rack, said rack being movably sustained so shift thereof will effect conjoint shift of both of said beams.

15. In a cultivator, the combination of a frame, a pair of shovel-beams, a rack, two hand-levers, each connected to one of said beams, and each of which is interlocked with said rack, said rack being movably sustained so shift thereof will effect conjoint shift of both of said beams, and means securing said rack to support the beams in either raised or lowered positions.

16. In a cultivator, the combination of a frame, a pair of shovel-beams, a rack, two hand-levers, each connected to one of said beams, and each of which is interlocked with said rack, said rack being movably sustained so shift thereof will effect conjoint shift of both of said beams, and a spring alternately applied to shift said rack to lift the beams, and to hold said rack in position when the beams are in working position.

17. In a cultivator, the combination of a frame, a pair of shovel-beams, a foot-lever, a connection whereby said foot-lever can effect conjoint lift of both of said beams, said connections being adjustable to permit independent shift of the beams.

18. In a cultivator, the combination of a frame, a pair of shovel-beams, two hand-levers, each having a connection with one of said beams, and a foot-lever having connection with both of said hand-levers, and whereby conjoint shift of both of said hand-levers can be effected.

19. In a cultivator, the combination of a frame, a pair of shovel beams, two hand-levers, each having a connection with one of said beams, locking means for each of said levers, and a foot-lever having connection with both of said hand-levers and whereby conjoint shift of both of said hand-levers can be effected.

20. In a cultivator, the combination of a frame, a pair of shovel-beams, two hand-levers, each having a connection with one of said beams, a foot-lever having connection with both of said hand-levers, and whereby conjoint shift of both of said hand-levers can be effected, and a spring applied to conjointly lift both of the beams.

21. In a cultivator, the combination of a frame, a pair of shovel-beams, two hand-levers each having a connection with one of said beams, a movably sustained rack wherewith both of said hand-levers are interlocked, and a foot-lever shifting said rack and whereby conjoint shift of both beams can be effected.

22. In a cultivator, the combination of a frame, a pair of shovel-beams, two hand-levers, each having a connection with one of said beams, a movably sustained rack wherewith both of said hand-levers are interlocked, a foot-lever for shifting said rack and whereby conjoint shift of both beams can be effected, and a spring applied to conjointly lift the beams.

23. In a cultivator, the combination of a frame, a pair of shovel-beams, two hand-levers, each having a connection with one of said beams, a pivotally sustained rack wherewith both of said hand-levers are interlocked, a foot-lever for shifting said rack and whereby conjoint shift of both beams can be effected, and a spring applied to alternately lift the beams, and secure said rack and its connections in position when the beams are in working position.

24. In a cultivator the combination of a frame, carrying wheels, a drag-bar swiveled at its front to swing laterally and vertically, a lever-support extending rearwardly of the axle, a foot-lever pivoted in the rear of the axle and sustained by said support in convenient position with respect to the operator's seat, a suspension device located forwardly of the axle, and a connection between the lever and the suspension device.

25. In a cultivator the combination of a frame, carrying-wheels, a drag-bar pivoted at its front to swing laterally and vertically one or more bars extending longitudinally of the frame, and near the center of the frame and extended rearwardly of the wheel-axle, a hand-lever pivoted in the rear of the axle and sustained by said bars in convenient position with respect to the operator's seat, locking means for the lever a suspension device arranged forwardly of the wheel-axle and connected to the drag-bar near the front end thereof, and a connection between the suspension device, and the hand-lever.

26. In a cultivator the combination of a frame, carrying-wheels, a drag-bar swiveled at its front to swing laterally and vertically, a lever-support extending rearwardly of the axle, a hand-lever sustained by said support in the rear of the axle and in convenient position with respect to the operator's sent, and an operative connection between the drag-bar and the lever comprising a crank arranged in front of the axle and connected to said lever, and a suspension device connected to the crank and to the drag-bar.

27. In a cultivator the combination of a frame, a pair of drag-bars, two hand-levers, a connection between one of the levers and one of the drag-bars, comprising a pivotally sustained cross-shaft having a crank connected with the drag-bar carried thereby, and a connection between the other lever and the other drag-bar, comprising a crank pivotally sustained by said rod, and connected with the drag-bar carried thereby.

28. In a cultivator, the combination with a frame, a pair of drag-bars, two hand levers, a connection between one of the levers and one of said drag-bars, comprising a cross-shaft having a crank connection with the drag-bar carried thereby, and a bar connecting said shaft and said lever, and a connection between the other hand-lever and the other drag-bar, comprising a crank pivotally sustained by said cross-shaft, and a bar connecting said other lever and said crank.

29. In a cultivator the combination of a frame, carrying-wheels, a drag-bar swiveled at its front so it can be raised and lowered and moved laterally, a foot-lever arranged rearwardly of the wheel-axle, a hand-lever pivoted rearwardly of the wheel-axle, supporting-means for said levers, an operative connection whereby the drag-bar can be lifted by either of said levers means for holding the levers in position to cause them to hold the drag-bar in lifted position.

30. In a cultivator the combination of a frame, carrying-wheels, a drag-bar swiveled at its front so it can be raised and lowered or moved laterally, said frame comprising a support extending rearwardly of the axle, a foot-lever pivoted in the rear of the axle and sustained by said support in convenient position with respect to the operator's seat, and an operative connection between said lever and the drag-bar whereby the drag-bar can be lifted, said connection comprising a hand-lever and a suspension device arranged in front of the axle.

31. In a cultivator the combination of a frame, carrying-wheels, a pair of drag-bars each swiveled at its front so it can be swung vertically or laterally, said frame comprising a support extended rearwardly of the wheel-axle, a hand-lever for each drag-bar, a connection between each of the hand-levers and one of the drag-bars, and a foot-lever pivotally sustained in the rear of the axle in convenient position with respect to the operator's seat and connected to both of said hand-levers and whereby both of the drag-bars can be operated.

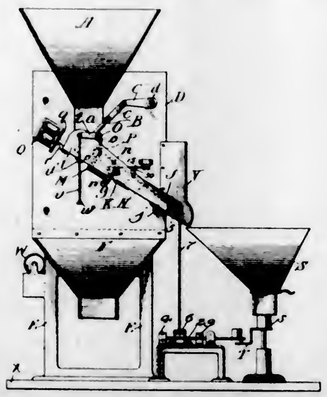
857,163. WRENCH. EGBERT H. DERBY, Winnebago, Minn. Filed Aug. 11, 1906. Serial No. 330,251.



Claim.—1. A wrench having a slotted handle, plates mounted on each side of said handle, a V-shaped wrench head pivoted between one of said plates and the handle, a spring-actuated dog mounted in said slot, and adapted to hold said wrench head at the desired adjustment, said plates being adapted to form a housing for said dog, substantially as described.

2. In a wrench, the combination with a movable head pivoted to a handle, a dog mounted in said handle, and having a spring for holding the same in engagement with the head, plates mounted on each side of said handle, and adapted to guide said dog in its movements, one of said plates being slotted and capable of oscillatory motion, said dog having a lug projecting through said slot, for releasing said dog, said slot being L-shaped for the purpose of locking said dog in engagement with said head.

857,164. AUTOMATIC WEIGHING DEVICE. PETRONELLA EDTBAUER, Chicago, Ill. Filed Dec. 24, 1906. Serial No. 349,209.



Claim.—1. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined chute having two longitudinal channels and fulcrumed below said hopper and tiltable to change the direction of flow of the commodity; balance scales at the end of said chute farthest from said hopper and means for directing the flow through one of said channels away from said scales.

2. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined chute having two longitudinal channels one of which is wider than the other and fulcrumed below said hopper and tiltable to change the direction of flow of the commodity; balance scales at the end of said chute farthest from said hopper and means for directing the flow through one of said channels away from said scales.

3. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined chute having two longitudinal channels one of which is wider and shorter than the other and fulcrumed below said hopper and tiltable to change the direction of flow of the commodity; balance scales at the end of said chute farthest from said hopper and a short tilting chute for receiving and directing the flow away from said scales through the broader channel independently of the longer narrow channel.

4. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined chute having two longitudinal channels and fulcrumed below said hopper and tiltable to change the direction of flow of the commodity; balance scales at the end of said chute farthest from said hopper, means for directing the flow through one of said channels away from said scales, and a funnel below said hopper adapted to receive from said chute the excess flow of said hopper.

5. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined chute having two longitudinal channels one of which is wider than the other and fulcrumed below said hopper and tiltable to change the direction of flow of the commodity; balance scales at the end of said chute farthest from said hopper, means for directing the flow through one of said channels away from said scales, and a funnel below said hopper adapted to receive from said chute the excess flow of said hopper.

6. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined chute having two longitudinal channels one of which is wider and shorter than the other and fulcrumed below said hopper and tiltable to change the direction of flow of the commodity; balance scales at the end of said chute, a short tilting chute for receiving and directing the flow away from said scales through the broader channnel independently of the longer narrow channel, and a funnel below said hopper adapted to receive from said chute the excess flow of said hopper.

7. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute fulcrumed below said hopper and temporarily supported at one end, electrically controlled devices for releasing the supported end of said tilting chute, and balance scales at the end of said chute farthest from said hopper which are electrically connected to said releasing devices.

8. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute temporarily supported at one end having two longitudinal channels and fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper which are electrically connected to releasing devices, means for directing the flow through one of said channels away from said scales and electrically controlled releasing devices for said tilting chute and for said directing means.

9. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute temporarily supported at one end having two longitudinal channels one of which is wider than the other and fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper which are electrically connected to releasing devices, means for directing the flow through one of said channels away from said scales and electrically controlled releasing devices for said tilting chute and for said directing means.

10. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute temporarily supported at one end having two longitudinal channels one of which is wider and shorter than the other and fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper which are electrically connected to releasing devices, a short tilting chute for receiving and directing the flow away from said scales through the broader channel independently of the longer narrow channel, and electrically controlled releasing devices for said tilting chute.

11. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute temporarily supported at one end having two longitudinal channels one of which is wider and shorter than the other and fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper which are electrically connected to releasing devices, a short tilting chute for receiving and directing the flow away from said scales through the broader channel independently of the longer narrow channel and independently electrically controlled releasing devices for each of said tilting chutes.

12. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute temporarily supported at one end having two longitudinal channels one of which is wider and shorter than the other and fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper, which are electrically connected to releasing devices, a short tilting chute for receiving and directing the flow away from said scales through the broader channel independently of the longer narrow channel, and independently electrically controlled consecutively operated releasing devices for each of said tilting chutes.

13. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute having two longitudinal channels one of which is wider and shorter than the other and fulcrumed below said hop per, balance scales at the end of said chute farthest from said hopper; a lever of the first class for tilting said short chute; magnets for actuating said lever, an electric cir cuit electrically connecting said scales and magnets, and a short tilting chute for receiving and directing the flow away from said scales through the broader channel independently of the longer narrow channel.

14. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute fulcrumed below and at one side of said hopper, a rock-shaft to which said hopper is secured mediate its ends, a pawl projecting therefrom, an armature engaged by said pawl, magnets therefor, balance scales at the end of said chute farthest from said hopper, and an electric circuit connecting said balance scales and magnets.

15. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute having two longitudinal channels which are fulcrumed below and at one side of said hopper, a rock-shaft to which said chute is secured, balance scales at the end of the chute farthest from said hopper, a short tilting chute for receiving and directing the flow through one of said channels away from said scales, a rock-shaft to which said short tilting chute is secured, and means for connecting said rock-shafts which permit the latter to tilt independently of the former but makes both return simultaneously.

16. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute having two longitudinal channels which are fulcrumed below said hopper, a rock-shaft to which said chute is secured, balance scales at the end of the chute farthest from said hopper, a short tilting chute for receiving and directing the flow through one of said channels away from said scales, both of said tilting chutes temporarily supported at one end, a rock-shaft to which said short tilting chute is secured, means for connecting said rock-shafts which permit the latter to tilt independently of the former but makes both return simultaneously, and electrical means dependent upon said scales for releasing first the short tilting chute and then the other.

17. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute having two longitudinal channels and fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper, means for directing the flow through one of said channels away from said scales, and a suitable automatic device for restricting the discharge from said hopper.

18. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute having two longitudinal channels one of which is wider than the other and fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper, means for directing the flow through one of said channels away from said scales, and a suitable automatic device for restricting the discharge from said hopper.

19. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute having two longitudinal channels one of which is wider and shorter than the other and fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper, a short tilting chute for receiving and directing the flow away from said scales through the broader channel independently of the longer narrow channel, and a suitable automatic device for restricting the discharge from said hopper.

20. An automatic feed mechanism for weighing devices comprising a suitable hopper, an inclined tilting chute having two longitudinal channels fulcrumed below said hopper, balance scales at the end of said chute farthest from said hopper, means for directing the flow through one of said channels away from said scales and a suitable automatic swinging device for restricting the discharge from said hopper.

21. An automatic feeding machine for weighing scales comprising a suitable hopper, an adjustable gate for regulating the discharge opening thereof, an inclined tilting chute fulcrumed below said hopper, a suitable automatic device independent of said gate for restricting the discharge from said hopper, and balance scales at the end of said chute farthest from said hopper.

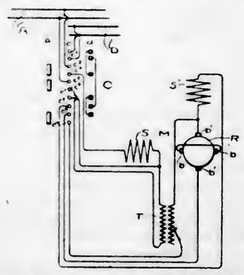
22. An automatic feeding machine for weighing scales comprising a suitable hopper, an adjustable gate for regulating the discharge opening thereof, an inclined tilting chute fulcrumed below said hopper, a suitable automatic swinging device independent of said gate for restricting the discharge from said hopper, and balance scales at the end of said chute farthest from said hopper.

23. An automatic feed mechanism for weighing devices comprising a suitable hopper, a sliding gate therefor, a rock-shaft, a link connecting said rock-shaft and gate, an index arm secured to the extended arm of said shaft, an inclined tilting chute fulcrumed below said hopper, and balance scales at the end of said chute farthest from said hopper.

24. An automatic feed mechanism for weighing devices comprising a suitable hopper, a sliding gate therefor, a rock-shaft, a link connecting said rock-shaft and gate, an index arm secured to the extended arm of said shaft, indicia adjacent to said index arm indicating the extent of closure of the discharge opening of said hopper, an inclined tilting chute fulcrumed below said hopper, and balance scales at the end of said chute farthest from said hopper.

25. An automatic feed mechanism for weighing devices comprising a suitable hopper, a sliding gate for regulating the discharge opening thereof, indicia indicating the relative position of said gate, means operatively connected to said gate provided with an index arm for indicating an item enumerated in said indicia according to the extent of closure of the discharge opening of said hopper, an inclined tilting chute fulcrumed below said hopper, and balance scales at the end of said chute farthest from said hopper.

857,165. MOTOR CONTROL. FRIEDRICH EICHBERG, Berlin, Germany, assignor to General Electric Company, a Corporation of New York. Filed Jan. 11, 1905. Serial No. 240,551.

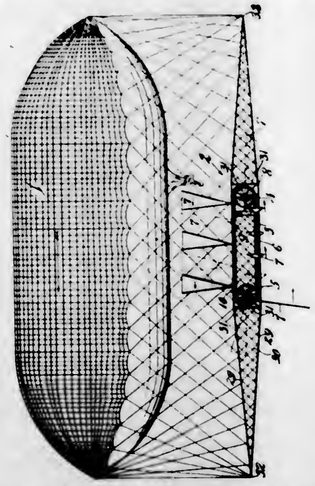


Claim.—1. In combination with an alternating current motor of the commutator type having two sets of commutator brushes, one on the line of the stator field and the second displaced 90 electrical degrees therefrom, means for connecting the stator winding and second set of brushes in series to an alternating current source and short-circuiting the first set of brushes, and means for connecting said stator winding and second set of brushes in series to a direct current source and preventing a flow of current between the brushes of the first set.

2. In combination with an alternating current motor of the commutator type having two sets of commutator brushes, one on the line of the stator field and the second displaced 90 electrical degrees therefrom, means for connecting the stator winding and second set of brushes in series through a transformer to an alternating current source and short-circuiting the second set of brushes, and means for connecting said stator winding and second set of brushes directly in series to a direct current source and preventing a flow of current between the brushes of the first set.

3. In combination with an alternating current motor of the commutator type having two sets of commutator brushes, one on the line of the stator field and the second displaced 90 electrical degrees therefrom, a transformer, means for connecting the stator winding of the motor and the primary of said transformer to an alternating current source, connecting the second set of brushes to the secondary of said transformer, and short-circuiting the first set of brushes, and means for connecting the stator winding and said second set of brushes in series to a direct current source, cutting said transformer out of circuit, and preventing a flow of current between the brushes of the first set.

857,166. FLYING-MACHINE. FLETCHER E. FELTS, Los Angeles, Cal. Filed Feb. 19, 1906. Serial No. 301,742.



Claim.—1. A flying machine provided with traveling wings, means for propelling said wings, and means constructed to feather the wings to move edgewise in extended position on their forward stroke, and to hold the wings in operative position to move flatwise on their rearward stroke.

2. A flying-machine provided with wings, means for propelling the wings, means to feather the wings and to hold them upright on the forward stroke, and means to turn the wings into operative position at the beginning of the rearward stroke, and to hold them extended laterally during the rearward stroke.

3. A flying machine provided with swiveled wings, a belt connected with said wings to operate the same in extended position, means for driving the belt, and means for turning the extended wings on their swivels into edgewise non-operative position as they move forward and into operative position as they move backward.

4. A flying machine provided with elongated wings swiveled to turn on swivels having their axes extending substantially in line with the mid length of said wings, means for advancing said wings forwardly and rearwardly through a circuit in which the wings at all times extend longitudinally outward from said circuit and at right angles to the direction of advancement, and means for turning said wings on their swivels from operative to inoperative position and vice versa.

5. A flying machine provided with elongated wings, means for advancing said wings forwardly and rearwardly through a circuit in which the wings at all times extend longitudinally outward from said circuit and at an angle to the direction of advancement, swivels for said wings extending in the direction of the length thereof, and means for automatically turning said wings on their swivels to feather the same.

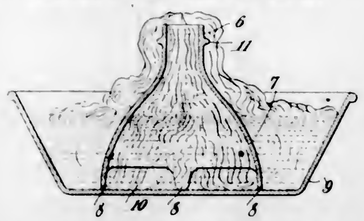
6. A flying machine provided with elongated wings; means for advancing said wings forwardly and rearwardly through a circuit lying in a vertical plane, means for holding said wings vertical throughout their upper run, and means for holding said wings horizontal during their lower run.

7. A flying machine provided with wings, an endless track, means for propelling the wings along said track, said track holding said wings upright on their forward stroke, and being twisted at the end to move the wings into laterally extended position during the rearward stroke.

8. A flying machine provided with frame, two endless tracks on said frame, a belt, means for driving the belt, two sets of wings, one set for each track, carriages on said tracks, means connecting the belt with the carriages for driving the same, and means connecting the wings with the carriages respectively for propelling said wings.

9. A flying-machine provided with a frame, two endless twisted tracks on said frame, a belt, means for driving the belt, two sets of wings,—one set for each track; carriages on said tracks, means connecting the belt with the carriages for driving the same, and means connecting the wings with the carriages respectively for propelling said wings.

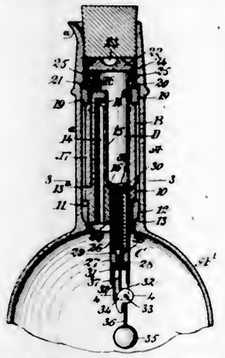
857,167. COOKING UTENSIL. SAMUEL FINE, Arcadia, Pa. Filed July 3, 1906. Serial No. 324,640.



Claim.—The combination with a hollow body portion having its upper end provided with a reduced neck the exterior walls of which are smooth and unobstructed and having its lower portion provided with integral depending supporting feet extending in the same plane with the side walls of the body portion and having their free ends rounded and spaced apart to form a plurality of liquid passages, a pair of integral lugs extending laterally from the smooth exterior walls of the neck and spaced from the upper end of said neck, and a lifting device including a handle provided with a flat plate having a centrally disposed opening formed therein for the reception of the neck of the body portion and provided with oppositely disposed recesses communicating with the central opening and adapted to receive the lugs on said neck whereby when the plate is rotated on the neck the lugs will engage the imperforate portion of said plate.

857,168. NON-REFILLABLE BOTTLE. GEORGE FRASER, Jersey City, N. J., assignor to Joseph M. Winkler, New York, N. Y. Filed Apr. 19, 1906. Serial No. 312,566.

Claim.—1. A regulating valve mechanism for the stoppers of bottles and similar vessels, comprising a casing, a valve seated therein and controlling the outlet thereof, a cam pivoted to the lower part of the casing and adapted when moved in one direction to unseat the valve, and a pendulum weight rigidly connected to said cam and controlling the movement thereof, the said weight swinging downward toward the lower side of the bottle when the latter is tilted to move the cam to unseat the valve.



2. In stoppers for bottles and similar vessels, a controlling valve mechanism consisting of a casing having a through-way therein and a valve seat in one portion of its length, the lower end of said casing being provided with opposing apertures, a spring controlled valve adapted to the seat in said casing, the valve being provided with a stem extending above and below the valve, and provided at its upper end with a cap to close the upper end of the casing when the valve is seated, a spindle mounted at the lower part of the valve casing, a cam on said spindle and having movement in the apertured portions of the casing, the said cam engaging the lower end of said valve-stem, and a weight having a stem connected with said cam to move the same to unseat the valve.

3. In stoppers for bottles and like vessels, a controlling valve consisting of a casing having a through-way therein, and a conical valve sent at one point within the casing, a valve fitted to the valve seat and adapted to close the said through-way, a valve stem having guided movement and extending above and below the valve, the said stem being provided at its upper end with a cap to close the upper end of the casing when the valve is seated a spring exerting action on the valve to seat the same, a cam mounted to rock in the said casing, the cam being in engagement with the lower end of said valve stem, and a pendulum weight connected with and controlling the movement of the said cam to unseat the valve.

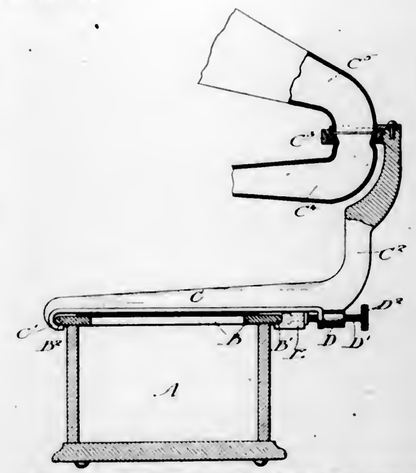
4. In non-refillable bottles, a chambered stopper provided with a closed top and opposing apertures in its sides below the top, a duct for liquid located within the stopper, having an outlet in its chamber and an inlet at the lower end of the stopper, a valve casing located at the lower portion of the stopper in communication with the chamber therein and extending below the lower edge of the stopper, a spring-controlled valve located in the said casing, and a pendulum-controlled cam mounted in the casing, adapted for lifting action on said valve in one position of the stopper.

5. In non-refillable bottles, a chambered stopper closed at the top and having side ports therein adjacent to the top, a duct member formed within the chamber of the stopper for the exit of liquid, the said duct member having an outlet in said chamber and an inlet at the bottom of the stopper, a valve for the outlet of the said duct member, a valve casing located at the lower portion of the stopper in communication with the said chamber and extending beyond the lower end of the stopper, a conical seat formed within the said casing, a conical valve fitted to the said seat, a spring exerting seating pressure on the valve, a projection from the valve, a cam mounted to rock in the valve casing in engagement with the projection from the valve, and a pendulum weight connected with and operating said cam, for the purposes described.

6. In non-refillable vessels, a stopper provided with a chamber closed at the top and having side ports adjacent to its top, a valve casing located at the lower part of the stopper and in communication with said chamber, the said casing extending below the stopper, an air controlling valve seated in said casing and controlling the passage of air through the same, and a pendulum controlled cam connected with said casing for unseating the valve when the bottle is tilted, the said stopper being provided with a duct for the exit of liquid, the said duct having its inlet end at the lower end of the stopper and its outlet end communicating with said chamber.

7. The combination with a bottle of a stopper for the neck of the bottle, the said stopper comprising a body section having a circular base fitting within the lower part of the neck of the bottle, the said base being provided adjacent to one side with an opening extending through the same from the top to the bottom, a duct member extending upward from the opposite side of said base, and provided with a duct extending from a point adjacent to the top of the duct member through the base and communicating at its lower or inner end with the interior of the bottle, the said duct member being segmental in shape in cross section and having its inner face flat, the said duct having an outlet at its upper or outer end the outlet opening at the inner face of the duct member, a valve held on the inner face of the duct member and normally closing said outlet, a cover section for the stopper consisting of a cylinder resting upon the upper face of the base of the body section and provided with a closed top and opposing ports in its sides below the top, the said top being spaced from the inner wall of the neck of the bottle, the cover section when in position forming a chamber with which the outlet end of the said duct communicates, a valve casing fitted in the opening in the base of the body section of the stopper and communicating at its outer end with said chamber, the said casing extending within the body portion of the bottle, an air controlling valve seated in the casing, and means for unseating the valve to admit air into the body of the bottle when the bottle is tilted.

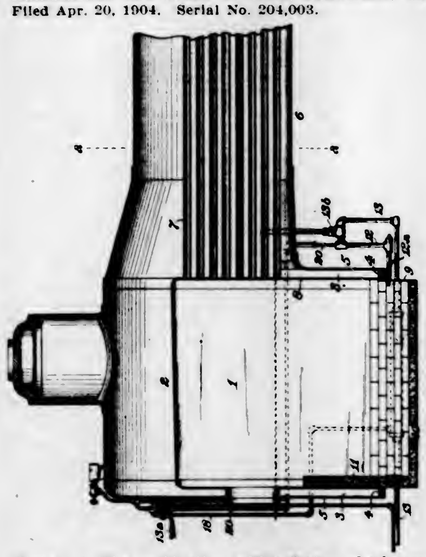
857,169. PHONOGRAPH-HORN SUPPORT. LEWIS P. HALLADAY, Streator, Ill. Filed Jan. 16, 1907. Serial No. 352,538.



Claim.—As a new article of manufacture, a phonograph horn support comprising a rigid arm provided at one end with an outer hook shaped portion to clasp the edge of the

table and adapted to extend across the box, and having an upwardly projecting portion at the other end thereof carrying a horn supporting ring, a threaded sleeve on the bottom of the arm beneath the upwardly projecting portion, a horizontally arranged screw threaded rod working therein, and a clamp on the inner end of the rod adapted to engage the edge of the top of the table opposite the edge engaged by the hook, substantially as described.

857,170. OIL-BURNING STEAM-BOILER. TAYLOR W. HEINTZELMAN and JAMES G. CAMP, Sacramento, Cal. Filed Apr. 20, 1904. Serial No. 204,003.

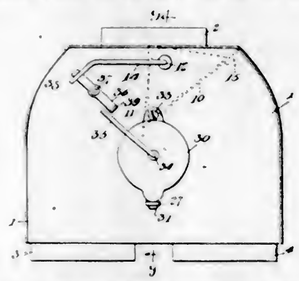


Claim.—1. The combination, with a firebox of a locomotive boiler, of a fire brick lined ash pan extending continuously from the front to the rear of the firebox, a fire brick lining abutting against the rear wall of the firebox, a hydrocarbon burner extending into the firebox at or near the front end thereof and having an uninterrupted discharge therefrom to said rear lining, and a direct draft opening formed in the bottom of the ash pan adjacent to the rear end thereof, whereby the passage of heat from the burner is permitted throughout the length of the firebox and a flame is turned back toward the tube sheet to effect complete combustion.

2. The combination, with a firebox of a locomotive boiler, of an ash pan extending continuously from the front to the rear of the firebox, a refractory lining on the bottom, sides, and rear of the ash pan, said lining abutting against the walls of and extending into the firebox, a hydrocarbon burner extending into the firebox at or near the front end thereof and having an uninterrupted discharge therefrom to the rear lining, and a direct draft opening in the bottom of the ash pan adjacent to the rear thereof, whereby the passage of heat from the burner is permitted throughout the length of the fire-box and a flame is turned back toward the tube sheet to effect complete combustion.

3. The combination, with a firebox of a locomotive boiler, of a fire brick lined ash pan extending continuously from the front to the rear of the firebox, a fire brick lining abutting against the rear wall of the firebox, a hydrocarbon burner extending into the firebox at or near the front end thereof and having an uninterrupted discharge therefrom to said rear lining, and a direct draft opening formed in the bottom of the ash pan adjacent to the rear end thereof which establishes draft through the firebox to the boiler tubes in opposite direction to the traverse of flame from the burner, thereby turning the flame toward the tube sheet without preventing the heating action on the rear portion of the firebox and supplying oxygen for complete combustion.

857,171. WATER CUT-OFF. GEORGE HENKEL, Springfield, Ohio. Filed Dec. 28, 1905. Serial No. 293,555.



Claim.—1. A water cut-off, comprising a casing, an inlet pipe communicating therewith, waste and cistern pipes leading therefrom, a deflector located beneath the inlet pipe and within the casing, locking means for releasably retaining the deflector in one position, a motor within the casing, means actuated by the motor for releasing the deflector, a shield inclosing the motor and provided with an opening communicating with the waste pipe, the deflector and shield dividing the casing into two compartments, and means for supplying motor power, substantially as described.

2. A water cut-off comprising a casing provided with an inlet and a plurality of outlet pipes, a motor located within the casing, a shield surrounding the motor and partially dividing the casing into two passages leading from the inlet to the two outlet pipes, respectively, the shield being provided with an opening leading to one of the outlet pipes, a deflector located beneath the inlet pipe, the opposite ends of the deflector being adapted to engage the shield and coöperate therewith to completely divide the casing into two passages, and means for supplying the motor with power, substantially as described.

3. A water cut-off comprising a casing having an inlet pipe and a plurality of outlet pipes, a deflector for directing a stream from the inlet pipe to either of the outlet pipes, means for releasably locking the deflector at one limit of its movement, a motor located within the casing, a shield surrounding the motor to inclose it within a chamber, means actuated by the motor for releasing the deflector, means for automatically reversing the deflector, and means for supplying the interior of the shield-surrounded chamber with water, substantially as described.

4. In a water cut-off an entering conduit and branch discharge conduits connecting therewith, a deflector directing the flow into one or the other of said discharge conduits according to its position, a water wheel, a shield surrounding said water wheel to inclose the same in a chamber, and having an inlet aperture therein, means actuated by said water wheel for controlling the position of said deflector, and means carried by said deflector for conducting to said aperture in said casing a portion of the flow, substantially as described.

5. In a water cut-off an entering conduit and branch conduits connecting therewith, a deflector directing the flow into one or the other of said discharge conduits according to its position, a water wheel, a shield surrounding said water wheel and inclosing the same in a chamber, and having an inlet aperture therein, means actuated by said water wheel for controlling the position of said deflector, and a conduit carried by said deflector and connecting said entering conduit with the aperture in said shield, substantially as described.

6. In a water cut-off, a main housing having an entering conduit at the top and two discharge conduits at the bottom, a pivoted deflector acting normally to direct the flow to one of said discharge conduits, a detent for holding the deflector in position to direct the flow to the other discharge conduct, a water wheel casing located within the housing between said discharge conduits and having an inlet opening at its top and a discharge opening below, a water wheel located in said casing, and means operated by said water wheel for actuating the detent to release the deflector, said deflector having an aperture which registers with the inlet opening of the water wheel casing when the deflector is engaged by the detent, said deflector also having a conduit communicating with its aperture and provided with a restricted receiving mouth which is presented to the flow when the deflector is held by the detent, substantially as described.

7. In a water cut-off of the character described, the combination with a water wheel and its casing having an inlet aperture, of a deflector comprising an apertured plate, and a triangular conduit mounted thereon and closed along one of its sides, the second side being closed, except for the aperture, by the deflecting plate, and the remaining side presenting a narrow receiving mouth, substantially as described.

8. In a water cut-off, a main conduit and two branch conduits, and a pivoted deflector normally directing the flow toward one of the discharge conduits, said deflector having a detent arm, a trip lever having an arm to engage said detent arm and hold the deflector in position to direct the flow to the other discharge conduit, a water wheel, and a tripping arm actuated from said water wheel, said trip lever having a second arm arranged in the path of said tripping arm, said trip lever being reversible and both of its arms being adapted to engage the detent arm, while only one of said trip lever arms is adapted to be engaged by the tripping arm, substantially as described.

9. In a water cut-off, the combination, with a main conduit and branch conduits, and a pivoted deflector acting normally to direct the flow to one of said branch conduits, of a detent for holding said deflector in position to direct the flow to the other branch conduit, a water wheel, mechanism operated by the water wheel for actuating the detent to release the deflector, and means for interrupting the operative connection between said detent and its actuating mechanism without releasing said deflector, substantially as described.

10. In a water cut-off of the character described, the combination, with a main housing containing a water wheel and deflector, and a water wheel shaft projecting through said housing and having a pinion, of a cap or cover detachably mounted on the exterior of the housing and a gear and tripping arm mounted in said cap or cover and removable therewith, substantially as described.

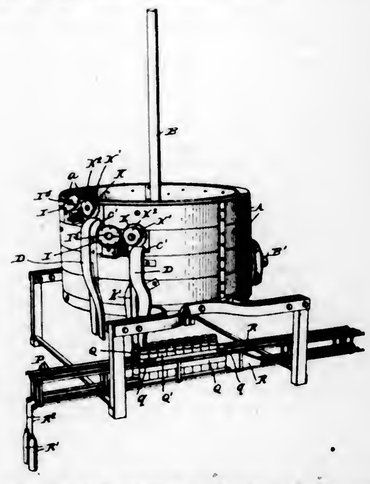
11. In a water cut-off an entering conduit and branch discharge conduits connecting therewith, a pivoted deflector acting to direct the flow into one of said discharge conduits when free, a detent holding said deflector in position to direct the flow to the other discharge conduit, a tripping arm for actuating said detent to release the deflector, a water wheel, a shaft carrying said tripping arm, and a threaded part on said shaft, a gear loosely mounted on said shaft and actuated by said water wheel, a threaded collar engaging the threaded part of said shaft, and an arm carried by said collar and engaging said gear, whereby said gear moves independently of said shaft until said collar has reached the inner limit of its movement, substantially as described.

12. In a water cut-off, an entering conduit and branch discharge conduits communicating therewith, a pivoted deflector acting to direct the flow into one of said discharge conduits when free, a detent for holding said deflector in position to direct the flow to the other discharge conduit, a water wheel, a tripping arm for actuating the detent to release the deflector, and gearing connecting said water wheel and tripping arm and comprising two parts having threaded engagement, rotating respectively in unison with the water wheel and tripping arm and movable by their threaded relations to an engagement with each other whereby they rotate in unison, substantially as described.

13. In a water cut-off of the character described, the combination, with a shifting deflector and its detent, of a tripping arm and shaft, a water wheel, a gear loosely mounted on the shaft and driven from the water wheel, and a connecting arm threaded on the shaft and having a sliding engagement with the gear to rotate in unison therewith, the shaft having a stop against which the connecting arm is screwed by the rotation of the gear, substantially as described.

14. In a water cut-off of the character described, a shifting deflector and its detent, in combination with a tripping arm and shaft, a water wheel, a gear loosely mounted on the shaft, driven from the water wheel, and provided with an aperture, and a connecting arm threaded on the shaft and having a projection engaging the aperture of the gear, whereby said connecting arm rotates in unison with the gear and is movable longitudinally of the shaft, said shaft having a stop against which the connecting arm is screwed by the rotation of the gear, substantially as described.

857,172. COIN SEPARATING, COUNTING, AND PACKAGING MACHINE. CHARLES F. HESS, Scranton, Pa. Filed Oct. 29, 1906. Serial No. 341,161.



Claim.—1. In a device such as described, the combination with a substantially horizontal rotary carrier having peripherally disposed coin receptacles in its upper face, of coin dischargers working in said receptacles radially of the carrier, a cam for advancing and a cam for retracting said dischargers.

2. In a device such as described, the combination with a rotary carrier having peripherally disposed coin receptacles in its upper face and an aperture in each receptacle for the passage of coins of smaller diameter than those adapted to be held in the receptacles, of coin dischargers working in said receptacles radially of the carrier, a cam face for advancing and a cam face retracting said dischargers.

3. In a device such as described, the combination with a rotary carrier having peripherally disposed coin receptacles in its upper face and an aperture in each receptacle for the passage of coins of smaller diameter than those adapted to be held by the receptacles, of coin dischargers working in said receptacles radially of the carrier, a cam face for partially advancing said dischargers and holding them in such position during a portion of the revolution of the carrier, a cam face for completing the advance movement of the dischargers and means for retracting the dischargers.

4. In a device such as described, the combination with a rotary carrier having peripherally disposed coin receptacles in its upper face and an aperture in each receptacle

for the passage of coins of smaller diameter than those adapted to be held in the receptacles, of coin dischargers working in said receptacles radially of the carrier, a cam face for partially advancing said dischargers a cam face for completing the advance of the dischargers and a cam face for retracting the dischargers.

5. In a device such as described, the combination with a rotary carrier having peripherally disposed coin receptacles in its upper face and an aperture in each receptacle for the passage of coins of smaller diameter than those adapted to be held by the receptacle, of coin dischargers working in said receptacles and having projections thereon, fixed cam faces forming a guide way for said projections and having concentric and non-concentric portions, the latter being formed to first partially advance, then fully advance and finally retract the dischargers and to permit of a dwell when the dischargers are partially advanced.

6. In an apparatus such as described, the combination with a plurality of horizontally-rotatable coin carriers and means for discharging coins radially therefrom, of a plurality of movable coin receivers, parallel horizontal ways on which the receivers are mounted below the rotary carriers, chutes for directing the discharged coins to the receivers and mechanism operated by the discharged coins for controlling the movement of the receivers.

7. In an apparatus such as described the combination with a coin carrier having receptacles for coins therein and means for successively discharging the coins from the receptacles, of a plurality of channels for directing the discharged coins and a coin operated gate for determining the channel into which the coin shall pass.

8. In an apparatus such as described the combination with a rotary coin carrier having receptacles for coins therein and means for successively discharging the coins from the receptacles, of a plurality of channels for directing the discharged coins to receivers, and a coin operated gate in proximity to the carrier for determining the channel into which the coin shall pass.

9. In an apparatus such as described, the combination with a rotary coin carrier having coin receptacles therein and means for successively discharging the coins therefrom, of a plurality of channels for directing the discharged coins to receivers, a gate for determining the channel, into which the coin shall pass and a gate operating mechanism, itself operated by the coins to shift the gate upon the passage of a predetermined number of coins.

10. In an apparatus such as described the combination with a rotary coin carrier having coin receptacles therein and means for successively discharging the coins therefrom, of a plurality of channels for directing the discharged coins to receivers, means for determining the channel through which the coins shall pass, independently movable receivers into which the channels discharge and means whereby said receivers are fed alternately.

11. In a coin packaging apparatus, the combination with coin carrying and discharging mechanism for feeding the coins in succession, of a plurality of independently movable receivers, means for feeding them alternately and means for directing the discharged coins into the receivers alternately and during their periods of rest.

12. In a coin packaging apparatus the combination with coin carrying and discharging mechanism for feeding the coins in succession, of a plurality of independently movable receivers, a coin controlled feeding mechanism for feeding them alternately and coin controlled means for directing the discharged coins into the receivers alternately and during their periods of rest.

13. In a coin packaging apparatus, the combination with coin carrying and discharging mechanism for feeding the coins in succession, of a plurality of independently movable groups of receivers, a feeding mechanism for feeding the groups alternately, controlled by the coins to feed the receivers when a predetermined number of coins have been discharged and coin controlled means for directing the discharged coins into the receivers alternately and during their periods of rest.

14. In an apparatus such as described, the combination with the rotary carrier having coin receptacles therein and radially movable means for first partially and then fully discharging the coins radially from the receptacles in succession, of a coin counter operated by the partially discharged coins and a coin chute with which the receptacles register after passing the counter to receive the discharged coins.

15. In an apparatus such as described, the combination with the rotary carrier having coin receptacles therein and means for first partially and then fully discharging the coins radially therefrom in succession, of a coin counter operated by the partially discharged coins, a plurality of coin channels a gate for determining which channel the coins shall enter and a cam for operating said gate also operated by the partially discharged coin.

16. In an apparatus such as described the combination with the rotary carrier having coin receptacles therein, means for first partially and then fully discharging the coins radially therefrom in succession, and independently movable coin receivers for the discharged coins, of means for feeding the receivers alternately and means for directing the discharged coins into one or the other of said receivers, both controlled by the partially discharged coins.

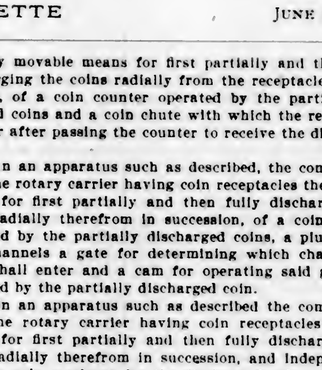
17. In an apparatus such as described the combination with the coin carrier and mechanism for discharging the coins in succession therefrom, of a plurality of independently movable groups of receivers, oppositely arranged escapements for feeding said groups alternately and mechanism operated by the coins for reciprocating said escapements.

18. In an apparatus such as described the combination with a plurality of superposed carriers having radial receptacles therein and means for discharging the coins radially from the chambers, of a plurality of movable receivers and horizontal ways therefor located below the carriers and chutes for directing the discharged coins from the carriers to the receivers.

19. In an apparatus such as described the combination with the carrier having radial receptacles therein and means for discharging the coins radially, of a coin chute having a lip extending toward the carrier and beyond the point of greatest diameter of the discharged coin.

20. In an apparatus such as described the combination with the carrier having radial receptacles therein and means for discharging the coins radially, of a coin chute having a lip curved to pass on the inner side of the discharged coin to deflect the same away from the carrier.

857,173. MOLDING-MACHINE. HENRY E. HODGSON, Cleckheaton, and JAMES HARTLEY, Manchester, England. Filed Dec. 12, 1905. Serial No. 291,474.



Claim.—1. A sand molding machine having in combination, a revoluble pattern table adapted to carry a sand molding box; toggle link suspension gear for said revoluble pattern table; a ramming head and means for raising the table to ram the sand into the sand molding box; substantially as described.

2. A sand molding machine having in combination, a revoluble pattern table adapted to carry a sand molding box; toggle link suspension gear for said pattern table; a ramming head; and a power cylinder for raising the table to cause the ramming head to ram the sand into the sand molding box; substantially as described.

3. A sand molding machine having in combination a revoluble pattern table, toggle links supporting said revoluble table, pivoted guides for the toggle links, a molding box carried by the table, a power cylinder for raising said table, and a stationary ramming head against which the box is projected, substantially as described.

4. A sand molding machine having in combination a revoluble pattern table for carrying a molding box, a power ramming cylinder for raising the table; toggle links supporting said revoluble table; pivoted guides for the toggle links, buffers on said toggle links for avoiding shocks, and a stationary ramming head coacting with the table substantially as described.

5. A sand molding machine having in combination a revoluble pattern table for carrying a molding box, a horizontally movable carriage supporting said pattern table, toggle link suspension gear between said carriage and the revoluble pattern table, and a fixed ramming head coacting with the table, substantially as described.

6. A sand molding machine having in combination a revoluble pattern table for carrying a molding box, a horizontally movable carriage supporting said pattern table, toggle link suspension gear between said carriage and the revoluble pattern table, guides for the toggle links, said guides being pivotally mounted on the carriage, and a fixed ramming head coacting with the table, substantially as described.

7. A sand molding machine having in combination, a revoluble pattern table for carrying a molding box; a horizontally movable carriage supporting said pattern table; toggle link suspension gear between said carriage and table; guides for the toggle links said guide being pivotally mounted on the carriage, buffers on the toggle links for avoiding shock, a fixed ramming head, above the table and a power cylinder for raising the table to cause the ramming head to ram the sand into the mold substantially as described.

8. A sand molding machine having in combination a revoluble pattern table for carrying a molding box; trunnions on the table; links enveloping said trunnions and forming a pivoted support for the table; pivotally carried guides for said links; a bracket carrying said guides; a traversable carriage supporting the bracket; rails for said carriage, a fixed ramming head above the table and means for raising the table to cause the head to ram the sand into the mold, substantially as described.

9. In combination with a sand molding machine having a pneumatically operated ramming cylinder and a horizontally movable pattern table, a horizontally movable pattern drawing table, a pneumatic drawing cylinder beneath the drawing table, an hydraulic cylinder concentrically arranged with respect to the pneumatic cylinder, a head or plate raised by the pneumatic drawing cylinder adapted to contact with the drawing table, and a piston on said head or plate adapted to work in the hydraulic cylinder, substantially as described.

10. In combination with a sand molding machine having a pneumatically operated ramming cylinder and a horizontally movable pattern table, a horizontally movable pattern drawing table, a pneumatic drawing cylinder beneath the drawing table, an hydraulic cylinder concentrically arranged with respect to the pneumatic cylinder, a head or plate raised by the pneumatic drawing cylinder and adapted to contact with the drawing table, a piston on said head or plate adapted to work in the hydraulic cylinder, and a hollow chamber containing the liquid which forms the working agent in the hydraulic cylinder, substantially as described.

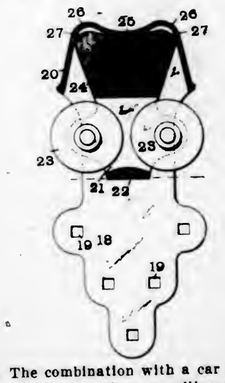
11. In combination with a sand molding machine having a pneumatically operated ramming cylinder and a horizontally movable pattern table, a horizontally movable pattern drawing table, a pneumatic drawing cylinder beneath the table, an hydraulic cylinder concentrically arranged with respect to the pneumatic cylinder, a head or plate raised by the pneumatic drawing cylinder and adapted to contact with the drawing table, a piston on said head or plate adapted to work in the hydraulic cylinder, a hollow chamber having communication with the hydraulic cylinder for supplying the liquid which forms the working agent in said hydraulic cylinder, and a non-return valve in said communication arranged to automatically admit the liquid to the said hydraulic cylinder.

12. In combination with a sand molding machine having a pneumatically operated ramming cylinder and a horizontally movable pattern table, a horizontally movable pattern drawing table, a pneumatic drawing cylinder beneath said drawing table, an hydraulic cylinder concentrically arranged with respect to said pneumatic cylinder, a head or plate carried by the pneumatic drawing cylinder, a piston on said head or plate adapted to work in the hydraulic cylinder, a hollow chamber for containing the liquid which forms the working agent in the hydraulic cylinder having communication with said hydraulic cylinder, a non-return valve arranged in said communication to automatically admit the liquid to the said hydraulic cylinder, and a controlling valve for regulating the exit of liquid from the said hydraulic cylinder, substantially as described.

13. In combination with a sand molding machine means for withdrawing the pattern from the mold comprising a table, a guided head located below the table a hollow oil chamber within said head, a passage leading from said hollow oil chamber, a centrally disposed cylinder to which said passage leads, non-return and regulating valves governing the flow of oil to and from said cylinder through the said passage, an annular pneumatic piston head (4) and a cylinder adapted to slide over said head substantially as described.

14. In a power sand molding machine having a horizontally movable pattern carriage, and a fluid operated ramming cylinder means for preventing the accidental admission of working fluid to the ramming cylinder when the pattern table is not in proper position beneath the ramming head comprising a cock (26) having a handle (28) and a projection (29), a shelf (30) carried by the longitudinally movable carriage co-acting with the projection (29) on the handle, substantially as described.

857,174. DOOR-HANGER. LOUIS A. HOERR, St. Louis, Mo. Filed Sept. 21, 1906. Serial No. 335,540.



Claim.—1. The combination with a car body, of a door, a sliding support for said door, a rolling support for said door, and means controlled by the lateral movement of said door for shifting said door from one of said supports to the other.

2. The combination with a car body, of a door, sliding support for said door, a hanger provided with a rolling support for said door, and means controlled by the lateral movement of said door for shifting said door from one of said supports to the other.

2. The combination with a car body, of a door, a sliding means controlled by the lateral movement of the door for moving said door vertically.

4. The combination of the car body, of a door, a hanger for said door, and means carried by said hanger and controlled by the lateral movement of the door for moving the door vertically.

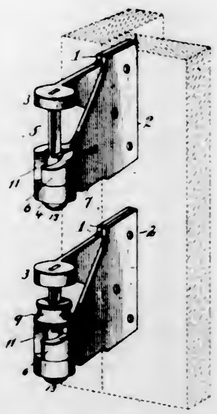
5. The combination with a car body, of a door, a hanger secured to said door, a tilting member carried by said hanger and provided with a sliding support, and a rolling support mounted thereon.

6. The combination with a car body, of a door, a hanger secured to said door and having a hood, a member provided with a sliding bearing and having an upward projection adapted to engage said hood, and a rolling bearing carried by said member.

7. The combination with a car body, of a door, a hanger secured to said door and having a hood, a member provided with a sliding bearing and having an upward triangular projection adapted to engage said hood, and a rolling bearing carried by said member.

8. The combination with a car body, of a door, a hanger secured to said door and having a hood, an inverted channel bar secured to said car body forming a shield for said door, a tilting member provided with a sliding support cooperating with said channel bar, and a rolling support carried by said member and co-operating with said channel bar.

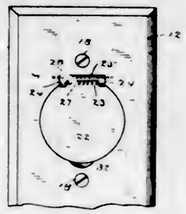
857,175. HINGE. HENRY E. HOKE, Hanover, Pa. Filed Nov. 30, 1906. Serial No. 345,795.



Claim.—1. A self locking hinge comprising a plate or leaf having knuckles and a rigid pintle connected to said knuckles, a plate or leaf having a knuckle pivotally mounted on said pintle, and a vertically movable non rotatable thimble mounted on said pintle, said thimble and pivotally mounted knuckle being constructed and adapted to interlock at one relative position of the hinge leaves.

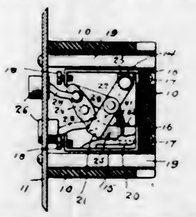
2. A self locking hinge comprising pivotally connected plates or leaves with knuckles and pintle, said pintle having a flattened and a cylindrical part and having a vertically movable thimble mounted on the flattened part and formed with a tooth or projection on its under side and the knuckles of one of said plates being mounted on the cylindrical part of the pintle and provided with a kerf or slot, forming both a seat for the engagement of said tooth or projection to interlock the leaves at one point, and an opening for the passage of the flattened part of the pintle, the plate or leaf carrying the slotted knuckle being vertically movable in relation to the other plate or leaf.

857,176. FLUSH ATTACHMENT-PLUG. HARVEY HUBBELL, Bridgeport, Conn. Filed July 30, 1906. Serial No. 328,349.



Claim.—In a flush attachment plug, the combination with a face plate having an opening and a recess extending from one side thereof, of a bar fitting said recess and pivoted therein and having end lugs, and a recess between said lugs and a cover fitting the opening of the face plate and having a tongue fitting the recess of the bar between its lugs and pivoted to said lugs, the opening of the face plate being formed to stop the cover in closed position, the edges of the bar and the surfaces against which said edges abut when the cover is closed, being beveled.

857,177. FLUSH SWITCH. HARVEY HUBBELL, Bridgeport, Conn. Filed Nov. 16, 1906. Serial No. 343,705.



Claim.—1. A switch of the character described comprising pivoted rocker and switch arms the pivots thereof being parallel and independent, a link connecting the rocker with the switch arms, push buttons connected with the rocker at opposite sides of its pivot, and fixed contacts to coöperate with the switch arms, the connection between the movable parts being adapted to positively actuate the rocker and switch arms in both directions.

2. A switch of the character described comprising a pivoted rocker and pivoted switch arms the pivots thereof being parallel and independent, a link connecting the rocker with the switch arms, push buttons connected with the rocker at opposite sides of its pivot and at lesser distances from its pivot than the connection of the link with the rocker, and fixed contacts to coöperate with the switch arms.

3. A switch of the character described comprising a pivoted rocker, and two pivoted switch arms, a shaft connecting said switch arms to swing in unison, said shaft being located between the pivots and the ends of said arms, a link connecting the rocker with said shaft, push buttons connected with the rocker at opposite sides of its pivot, and fixed contacts to coöperate with the switch arms.

4. A switch of the character described comprising fixed and movable contacts, pivoted arms by which the movable contacts are carried, a two-part shaft each part having at its outer end a hub 35 on which one of the arms is pivoted, insulation between said hubs and said arms, one of said shaft parts being provided on its inner end with a hub 33 and the other part with a socket to receive it, a rocker arm, an arm pivoted to the rocker arm and having an eye through which hub 33 passes, and means for oscillating the rocker arm to open and close the switch.

5. A switch of the character described comprising fixed and movable contacts, pivoted arms by which the movable contacts are carried, a shaft to which said arms are connected, a rocker arm, an arm connecting the rocker arm and the shaft, a pin extending from said shaft, a guide through which the pin passes and a spring between the guide and the shaft.

6. A switch of the character described comprising fixed and movable contacts, pivoted arms by which the movable contacts are carried, a two-part shaft to whose outer ends said arms are connected, a hub on the inner end of one of said shaft parts and a socket in the other part to receive it, a rocker arm, an arm pivoted to the rocker arm and having an eye through which said hub passes, a pin also having an eye through which said hub passes, a guide through which the pin passes and a spring bearing on the guide and the eye of the pin, substantially as described, for the purpose specified.

7. A switch of the character described comprising four standards provided with binding screws, contact plates on two of said standards, arms pivoted to the other standards and carrying contact blades adapted to engage the contact plates, a shaft connecting said arms, a rocker arm and an arm connecting the rocker arm and the shaft, oscillation of said rocker arm acting to raise and lower the contact carrying arms, thereby opening and closing the switch.

8. A switch of the character described comprising four standards provided with binding screws, contact plates on two of said standards, arms pivoted to the other standards and carrying contact blades adapted to engage the contact plates, a shaft connecting said arms, a rocker arm, a standard on which the rocker arm is pivoted and which is provided with a guide, an arm connecting the rocker arm and the shaft, a pin extending from the shaft and passing through the guide and a spring bearing against the guide and the shaft, substantially as described, for the purpose specified.

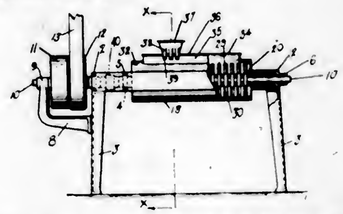
9. A switch of the character described comprising fixed contacts, contact carrying arms, a shaft on which said arms are pivoted, a rocker arm, connections intermediate the rocker arm and the shaft, a pin extending from said shaft, a guide through which the pin passes, a spring acting to accelerate the movement in opening and closing the switch when the rocker arm has passed the mid-position, and a stop on the pin which engages the guide to limit the upward movement of the arms in opening the switch.

857,178. CUSPIDOR CLEANER AND LIFTER. HERBERT H. JACKSON, Detroit, Mich. Filed Aug. 13, 1906. Serial No. 330,413.



Claim.—A cuspidor cleaning and lifting device formed from a single piece of wire bent in the center to form a loop, and having the two members below the loop twisted together to form a shaft, which at its lower portion is curved in the opposite direction to the direction in which the tines project, the two members of the wire below the shaft being bent gradually outwardly, and then slightly inwardly, and then the ends spread a little outwardly, thus forming the tines which are bent upwardly so as to be at a right-angle with the shaft and having the same curved slightly downwardly between the ends of the tines and the shaft, all substantially as shown and described.

857,179. CONFECTIONERY-MACHINE. ALEXANDER S. JACOLUCCI, Providence, R. I. Filed Mar. 13, 1907. Serial No. 362,209.



Claim.—1. In a machine of the type set forth, the combination with the frame and driving shaft, of a series of bars mounted in the frame, and a series of beater arms provided with oppositely directed beveled portions upon opposite sides of their centers fixed to the shaft and alternately disposed with relation to the bars.

2. In a machine of the type set forth, the combination with the frame and driving shaft, of a series of independently slidable bars mounted in the frame, and a series of beater arms provided with oppositely directed beveled portions upon opposite sides of their centers, fixed to the shaft and alternately disposed with relation to the bars.

3. In a machine of the type set forth, the combination with the frame provided with longitudinal grooves upon its opposite inner faces, of a shaft rotatably mounted in the ends of the frame, a trough slidably mounted in the grooves, transverse bars provided with enlarged ends which rest upon the trough, a cover also slidably mounted in the grooves and resting upon the ends of the bars, and beater arms upon the shaft alternately disposed with relation to the bars.

4. In a machine of the type set forth the combination with the frame, of a cover slidably mounted in the frame and provided with an oblong opening, and a funnel slidably mounted upon the cover above the opening, and means for adjusting the funnel.

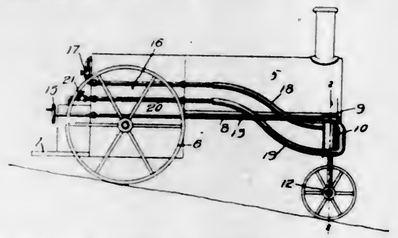
5. In a machine of the type set forth, the combination with the frame provided with longitudinal grooves upon its opposite inner faces, of a divided shaft rotatably mounted in the ends of the frame, a trough slidably mounted in the grooves, a series of removable bars traversed loosely by the shaft and resting upon the margins of the trough, a slidable cover whose margins rest upon the ends of the bars, and beater arms removably mounted upon the shaft in alternate relation to the bars.

6. In a machine of the type set forth, the combination with the frame provided with longitudinal grooves upon its opposite inner faces of a shaft rotatably mounted in the ends of the frame, a trough resting in the grooves, transverse bars loosely traversed by the shaft and resting upon the trough, a cover also mounted in the grooves above the bars and provided with an oblong opening in its top a flange upon the margin of the opening of the cover, a funnel slidably mounted upon the flange, means for adjusting the funnel, and beater arms upon the shaft alternately disposed with relation to the transverse bars.

857,180. TRACTION-ENGINE. LUTHER Y. KEIBLER, Saltsburg, Pa. Filed Mar. 17, 1906. Serial No. 306,649.

Claim.—1. In a traction engine, the combination with a boiler having wheels at one end, of wheels connected with the boiler at its other end, and means located between the boiler and the last named wheels for moving the boiler vertically with respect to the wheels, said means being shiftable longitudinally of the boiler.

2. In a traction engine, the combination with a wheeled boiler, of means for moving one end of the boiler with respect to the wheels, said means being shiftable longitudinally of the boiler.



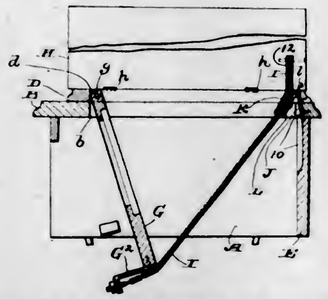
3. In a traction engine, the combination with a wheeled boiler, of means for moving one end of the boiler with respect to the wheels, said means being shiftable longitudinally of the boiler, and means for shifting the boiler-moving means.

4. In a traction engine, the combination with a wheeled boiler, of pressure operable means for moving one end of the boiler vertically with respect to the wheels, connections between said moving means and the boiler for the passage of fluid under pressure to the means, said means being shiftable longitudinally of the boiler, and means for shifting the boiler-moving means.

5. In a traction engine, the combination with a wheeled boiler, of means for moving one end of the boiler vertically with respect to the wheels, said means being arranged for operation by fluid pressure, a pipe communicating with the boiler and with the means for the passage of water under pressure to said means, a valve in the pipe, an exhaust pipe communicating with said means, a water tank for the boiler, said exhaust pipe being arranged to discharge into said tank, and a valve for the exhaust pipe.

6. The combination with a wheeled horizontal boiler, of a worm shaft carried by the boiler longitudinally thereof, fluid operable mechanism mounted upon the shaft for movement longitudinally thereof when the shaft is revolved, said mechanism being arranged for operation to move the boiler vertically, flexible means for conducting fluid under pressure from the boiler to the fluid operable mechanism, a water tank carried by the boiler, flexible means for conveying fluid from the pressure operable means to the water tank, and valves for the fluid-conveying means.

857,181. MACHINE-BEARING CABINET. THEODOR KUNDTZ, Lakewood, and JOSEPH REHOR, Cleveland, Ohio; said Rehor assignor to said Kundtz. Filed Mar. 18, 1907. Serial No. 363,141.



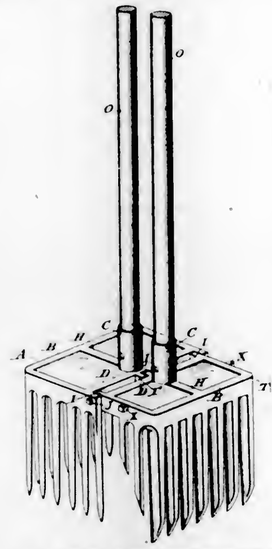
Claim.—1. In a table or cabinet of the character indicated, the combination, with the stationary portion of the cabinet, said portion comprising a table-top having an opening extending vertically therethrough, and a frame arranged above and extending around the said opening, said frame having the opening therein arranged in registry with the first-mentioned opening; a movable load-carrying platform-forming leaf arranged within the opening in the frame or depending below the opening in the table-top according as the said leaf is in the one or the other of its extreme positions, which leaf is pivotally supported at the forward portion of the frame and arranged with its axis longitudinally of the cabinet, and a cover-forming leaf adapted to cover the said openings and hinged to and transversely of the left-hand end of the frame at a right angle to the axis of the load-carrying leaf, of a plate secured to the table-top at the rear of the aforesaid openings and extending upwardly into the said frame; a swinging bracket pivoted at its upper end to and arranged to swing forwardly from the plate; a guide-roller arranged at and projecting forwardly from the forward side of and borne by the bracket, said guide-roller being provided at its forward end with a circumferentially extending flange, and a flexible connection attached at one end to the cover-forming leaf a suitable distance from the hinged end of the leaf, thence leading to and over the guide-roller between the flange and the bracket and operatively connected at its opposite end with the load-carrying leaf.

2. In a table or cabinet of the character indicated, the combination, with the stationary portion of the table or cabinet, said portion comprising a table-top having an opening extending vertically therethrough, and a frame arranged above and extending around the said opening, said frame having the opening therein arranged in registry with the first-mentioned opening; a movable platform-forming load-carrying leaf arranged within the opening in the frame or depending below the opening in the table-top according as the said leaf is in the one or the other of its extreme positions, which leaf is pivotally supported at the forward portion of the frame and arranged with its axis longitudinally of the cabinet, and a cover-forming leaf adapted to cover the said openings and hinged to and transversely of the left-hand end of the frame at a right angle to the axis of the load-carrying leaf, of a suitably supported forwardly and rearwardly swinging bracket arranged at the rear and centrally between the ends of the opening in the frame; a guide-roller arranged at and projecting forwardly from the forward side of and supported from the bracket, which roller is provided at its forward end with an annular flange, and a flexible connection attached at one end to the cover-forming leaf a suitable distance from the hinged end of the leaf, thence leading to and over the roller between the flange and the bracket and operatively connected at its other end with the load-carrying leaf.

3. In a table or cabinet of the character indicated, the combination, with the stationary portion of the table or cabinet; a hinged or pivotally supported load-carrying platform-forming leaf adapted to swing in a vertical plane and arranged in a horizontal plane or in its downwardly swung or depending position according as the said leaf is at the one or the other extremity of its range of movement, and a suitably supported hinged cover-forming leaf arranged to cover the sweep of the load-carrying leaf in the depending position of the load-carrying leaf, of a suitably supported swinging bracket arranged externally of but in suitable proximity to the sweep of the free longitudinal edge of the load-carrying leaf and also arranged with its axis parallel with the axis of the load-carrying leaf; an axle supported from and projecting forwardly of the bracket; a guide-roller rotatably mounted on the axle and provided with a circumferentially extending flange, and a flexible connection between the load-carrying leaf and the cover-forming leaf, which connection leads over the roller between the flange and the bracket.

4. In a table or cabinet of the character indicated, the combination, with the stationary portion of the table or cabinet; a hinged or pivotally supported load-carrying platform-forming leaf adapted to swing in a vertical plane and arranged in a horizontal plane or in its downwardly swung or depending position according as the said leaf is at the one or the other extremity of its range of movement, and a suitably supported hinged cover-forming leaf adapted to extend over the sweep of the load-carrying leaf in the depending position of the load-carrying leaf, of a suitably supported swinging bracket arranged externally of but in suitable proximity to the sweep of the free longitudinal edge of the load-carrying leaf and also arranged to swing toward or from the said sweep during the movements of the load-carrying leaf; a guide-roller supported from the bracket and provided with a circumferentially extending flange, and a flexible connection attached at one end to the cover-forming leaf a suitable distance from the axis of the leaf, thence leading to and over the guide-roller between the flange and the adjacent side of the bracket, and operatively connected at its opposite end to the load-carrying leaf.

857,182. HAND POTATO-DIGGER. FRANK R. LANCASTER, South Whitley, Ind. Filed Oct. 6, 1906. Serial No. 337,808.



Claim.—1. A potato digger consisting of two forks, a receptacle fork A and a scoop fork T hinged together by means of the projections I and the bolt J, the closed tine rims B of said forks together forming a rectangle with which the tines attached thereto form an open basket which may be closed for the purposes set forth.

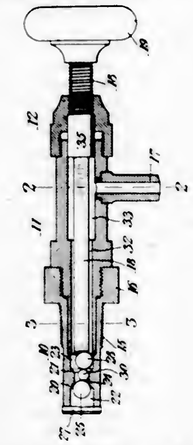
2. The scoop fork T supplied with stops X and the tines on the sides of a shorter length than the remaining tines of the forks for the purpose stated.

857,183. WATER-GAGE. FRANK W. LEIDECKER, Marietta, Ohio. Filed July 28, 1906. Serial No. 328,256.

Claim.—1. In a device of the class described, a valve casing formed of a pair of detachable sections, the inner of which is arranged for connection with the boiler, and is provided with a valve seat, a loose valve movable under boiler pressure to closed position against the seat and serving to prevent the passage of fluid from the boiler when the outer section of the casing is detached.

2. In a device of the class described, a valve containing casing adapted to communicate with the boiler and having a pair of valve seats, a pressure closed valve movable against one of the seats, a second valve, manually operable means for moving the same against the other seat, and a loose member arranged between the valves and adapted to transmit movement from one to the other.

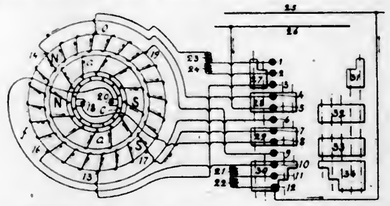
3. In a device of the class described, a casing having a pair of valve seats facing in opposite directions, respectively, a pair of valves, one of which is movable by pressure against its seat, a manually operable means for moving the second valve to its seat, and a loose ball arranged between the valves and serving as a means for transmitting movement from one to the other.



4. In a device of the class described, a casing having a pair of spaced valve seats and provided with a contracted passage way between the seats, a pair of ball valves one of which is movable against its seat by fluid pressure, a manually operable means for moving the other valve against its seat, and a loose member arranged in the contracted passage way and serving as a means for transmitting movement from one valve to the other.

5. In a device of the class described, a valve casing including detachably connected inner and outer sections, the inner section having a valve seat, a fluid pressure closed valve carried by the inner section and arranged to close against said seat and prevent the escape of fluid when the outer section is detached, and a separate stem for closing said valve, said stem being carried by the outer section.

857,184. DYNAMO-ELECTRIC MACHINE OR ELECTRIC MOTOR. ROBERT LUNDELL, New York, N. Y. Filed Jan. 11, 1906. Serial No. 295,597.



Claim.—1. A dynamo electric machine or electric motor of the commutator type having a distributed field winding for excitation and for producing a commutation-field of predetermined strength, said field winding being substantially a counterpart of the armature winding; in combination with two sets of terminals for the said field winding connected to a switch or controller, said switch being provided with means for shifting the magnetizing effect of the said field winding from one side of the axis of the armature-field to the opposite side thereof, utilizing all of the coils of the said field winding, for the purpose of reversing the direction of rotation, substantially as described.

2. A dynamo electric machine or electric motor of the commutator type having a distributed field winding for excitation and for producing a commutation-field of predetermined strength; in combination with means for regulating the strength of the excitation component of the said field winding and additional means for shifting the magnetizing effect of the said field winding from one side of the axis of the armature-field to the opposite side thereof, for the purpose of reversing the direction of rotation, substantially as described.

3. In a dynamo electric machine or electric motor of the commutator type, a distributed field winding having its main field terminals arranged to produce field polarities at an angle of less than 90 electrical degrees to the axis of the armature-field; in combination with other auxiliary field terminals for the said field winding and means connected with said auxiliary terminals for regulating the strength of the excitation component of the said field winding, substantially as described.

4. In a dynamo electric machine or electric motor of the commutator type, a distributed field winding having its main terminals connected in series with the armature; in combination with other auxiliary field terminals for the said field winding electrically displaced from the first-mentioned terminals and connected with means for regulating the strength of the excitation component of the said field winding, substantially as described.

5. In a dynamo electric machine or electric motor of the commutator type, a distributed field winding having its main field terminals arranged to produce field polarities at an angle of less than 90 electrical degrees to the axis of the armature-field; in combination with other auxiliary field terminals for the said field winding connected with a speed regulating controller, said controller being provided with means for diverting part of the excitation current for the said field winding, substantially as described.

6. In a dynamo electric machine or electric motor of the commutator type, a distributed field winding having its main field terminals connected in series with the armature; in combination with other auxiliary field terminals for the said field winding electrically displaced from the first mentioned terminals, said auxiliary field terminals being connected with an independent source of current supply, substantially as described.

857,185. COMPASS-HANDLE-ADJUSTING DEVICE. OTTO G. MAYER, Stuttgart, Germany. Filed June 23, 1906. Serial No. 323,006.



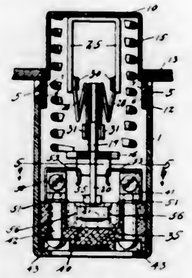
Claim.—1. A device secured to a compass, for automatically retaining the handle thereof in the middle position, comprising a pair of disks located between the compass-heads, each disk being pivotally connected with one compass-head only and both disks being pivotally secured together, and an arm secured to the pivot connecting said disks and slidably engaging the handle aforesaid.

2. A device secured to a compass for automatically retaining the handle thereof in the middle position, comprising a pair of disks located between the compass-heads, each disk being pivotally connected with one compass-head only, the pivots for said disks being located respectively in said heads at points lying equidistant from and at opposite sides of the plane of symmetry of the compass-legs, the two disks being pivoted together, and an arm secured to the pivot connecting said disks and slidably engaging the handle aforesaid.

3. A device secured to a compass for automatically retaining the handle thereof in the middle position, comprising a pair of disks located between and pivotally connected with the compass-heads, each disk being provided with a slot through which the pivot of the compass-heads passes and the pivots for said disks being located respectively at opposite sides of the slots aforesaid, the two disks being pivoted together, and an arm secured to the pivot connecting said disks and slidably engaging the handles aforesaid.

4. A compass having a hollow handle and a hollow head provided with arms, compass-heads pivoted between said arms, a pair of disks pivotally connected together and located between said compass-heads and pivots engaging each compass-leg with one only of the disks, said disks having slots for engaging the side-walls of the hollow head and slots for the pivot of the compass heads, and an arm secured to the pivot connecting said disks and slidably engaging the handle aforesaid.

857,186. ELECTRIC SWITCH. WALTER S. MAYER, Philadelphia, Pa., assignor to The Machen & Mayer Electrical Manufacturing Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Dec. 12, 1906. Serial No. 347,517.



Claim.—1. In a device of the character described, the combination of a receptacle having movable fingers, a yoke-shaped member located within the said receptacle and having openings therein adapted to be engaged by the said fingers and the said yoke-shaped member also having slots extending longitudinally of its opposite legs, a movable plunger projecting into the said receptacle and being located between the opposite legs of the said yoke-shaped member and being provided with means which are adapted to engage the said longitudinal slots, and a tension member located between the said plunger and the said yoke-shaped member for the purpose of holding the said plunger in an extended or projected position, contact members supported in the said receptacle and means operatively connected to the said plunger for contacting with the said contact members, for the purpose set forth.

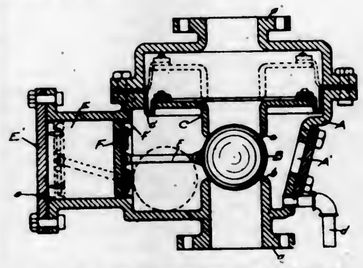
2. In a device of the character described, the combination of a member having oppositely arranged slots extending longitudinally of the said member, a bar extending between the opposite sides of the said member and connected to the same, the said bar being provided with guides extending therefrom, a plunger projecting inwardly between the opposite sides of the said member, a tension device located between the said plunger and the said member for holding the parts in extended or projected position, a member located interiorly of the said plunger and connected to the same, a contact block, a sliding member engaging the said guides and connected to the said contact block, and coiled springs connected to the said sliding member and to the said member located interiorly of the said plunger, and contact members with which the said block is adapted to contact.

3. In a device of the character described, the combination of a member having oppositely arranged slots extending longitudinally of the said member, a bar extending between the opposite sides of the said member and connected to the same, the said bar being provided with guides extending therefrom, a plunger projecting inwardly between the opposite sides of the said member, a tension device located between the said plunger and the said member for holding the parts in extended or projected position, a member located interiorly of the said plunger and connected to the same, a movable contact block, a sliding member engaging the said guides, and connected to the said contact block, coiled springs connected to the said sliding member and to the said member located interiorly of the said plunger, an insulating block, binding posts secured to the said insulating block, and contact springs connected to the said binding posts and adapted to be engaged by the said movable contact block.

4. An electric switch consisting of a casing, a block of insulating material located therein, a U-shaped strip for holding said block in place, contact springs secured to said block, a slide, means for guiding said slide, a contact block carried by the slide, a plunger adapted to slide in the casing, means for normally forcing said plunger outward, a yoke carried by the plunger, two springs connecting said yoke and slide, the said springs being adapted to occasion outward movement of the slide when the yoke is moved inward, and inward movement thereof when the yoke is moved outward, thereby making and breaking contact between the contact block and contact springs, as and for the purpose set forth.

5. In a device of the character described, the combination of a tubular casing, a U-shaped strip secured within said casing, an insulating block secured to said strip, a bridge bar also secured to said strip, guide posts carried by the bridge bar, a slide guided by said posts, an extension formed with the slide, a contact block carried by said extension, contact springs carried by the insulating block, said springs being connected with the circuit wires, a plunger fitted to slide within the casing, a spring for normally forcing said plunger outward, a yoke carried by the plunger, and a spring pivoted at one end to the yoke and at its other end to the slide, the said spring being adapted to occasion movement of the said slide in directions opposite to that in which the plunger is moved.

857,187. DRY-PIPE VALVE. JONATHAN C. MELOON, Providence, R. I., assignor to General Fire Extinguisher Company, New York, N. Y., a Corporation of New York. Filed Sept. 11, 1902. Serial No. 122,983.



Claim.—1. In a dry pipe valve, the combination, with the water-valve, of means for holding said valve closed by pressure in the system, and mechanism arranged to withdraw said valve from the water-way when said valve is released, substantially as described.

2. In a dry pipe valve, the combination, with the water-valve, of means for holding said valve closed by pressure in the system, and mechanism actuated by water pressure arranged to withdraw said valve from the water-way when said valve is released, substantially as described.

3. In a dry pipe valve, the combination, with the water-valve, of means for holding said valve closed by pressure in the system, and mechanism actuated by water pressure from the supply pipe when said valve is released, arranged to withdraw said valve from the water-way, substantially as described.

4. In a dry pipe valve, the combination, with a double seated valve, of a fixed seat for said valve, a movable seat for said valve, said movable seat being mounted upon a movable part adapted to be acted upon by the pressure in the system, and means for withdrawing said valve from the water-way when the pressure in the system is reduced to release said valve, substantially as described.

5. In a dry pipe valve, the combination, with the water-valve, of means for holding said valve closed by pressure in the system, means for limiting the upward movement of said valve when the valve is released, and means for withdrawing said valve from the water-way, substantially as described.

6. In a dry pipe valve, the combination, with the water-valve, of means for holding said valve closed by pressure in the system, mechanism arranged to withdraw said valve from the water-way when said valve is released, and means for guiding said valve in its movement, substantially as described.

7. In a dry pipe valve, the combination of a valve, a fixed seat for said valve and a movable seat for said valve between which fixed and movable seats the valve is clamped as long as the requisite pressure is maintained in the system, said valve being released and free to leave the water-way when the pressure in the system is reduced, substantially as described.

8. In a dry pipe valve, the combination, with the valve casing, of a valve, a fixed seat for said valve and a movable seat for said valve, between which fixed and movable seats the valve is clamped as long as the requisite pressure in the system is maintained, said valve being released and free to leave the water-way when the pressure in the system is reduced, and said valve casing being provided with a chamber to receive said valve, substantially as described.

9. In a dry pipe valve, the combination of a valve, a fixed seat for said valve, a movable member subjected to the pressure in the system, a valve seat carried by said movable member, between which fixed and movable seats the valve is clamped as long as the requisite pressure is maintained in the system, said valve being released and free to leave the water-way when the pressure in the system is reduced, substantially as described.

10. In a dry pipe valve, the combination of a valve, a fixed seat for said valve, a movable member subjected to the pressure in the system, a valve seat carried by said movable member, between which fixed and movable seats the valve is clamped as long as the requisite pressure is maintained in the system, said valve being released and free to leave the water-way when the pressure in the system is reduced, and means for arresting the movement of the valve in opening before the movable member has reached the limit of its movement, substantially as described.

11. In a dry pipe valve, the combination of a valve, a fixed seat for said valve, a movable seat for said valve, between which seats the valve is normally clamped, said valve being free to leave the water-way when released, and means to guide said valve in its movement out of the water-way, substantially as described.

12. In a dry pipe valve, the combination of a valve, a fixed seat for said valve, a movable seat for said valve, between which seats the valve is normally clamped, said valve being free to leave the water-way when released, means to limit the movement of said valve in opening, and means to guide said valve in its movement out of the water-way, substantially as described.

13. In a dry pipe valve, the combination, with the water valve, of means for holding said valve closed by pressure in the system, and means made operative by the opening of said valve for moving said valve out of working relation with its seat, substantially as described.

14. The combination with a valve, of means for holding said valve closed against pressure by the action of a less pressure, and means other than the valve operated by

fluid pressure upon the reduction of the holding pressure for withdrawing said valve to one side of the valve seat.

15. The combination with a valve, of means for holding said valve closed against pressure by the action of a less pressure, a movable member subjected to fluid pressure when the valve opens for withdrawing said valve to one side of the valve seat.

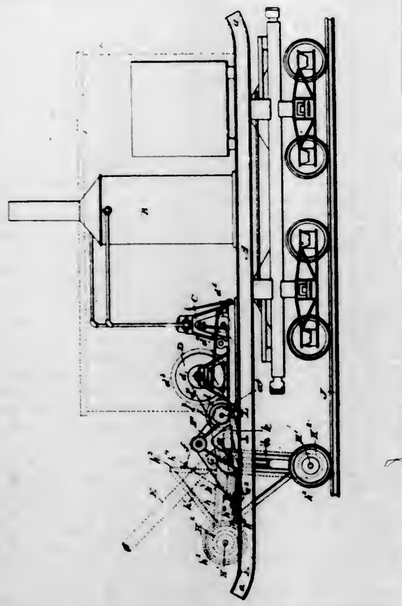
16. The combination with a valve, of means for holding said valve closed against pressure by the action of a less pressure, a piston subjected to fluid pressure when the valve opens for withdrawing said valve to one side of the valve seat.

17. The combination of a chamber, opposing inlet and outlet valve seats, a valve between said valve seats, means for holding the valve and vale seats in engagement against pressure in the inlet by the action of a less pressure, and a movable member subjected to the pressure in the chamber for withdrawing said valve from between said valve seats.

18. The combination of a chamber, a supply inlet, a movable member separating the chamber from the system, an outlet through said member, a valve closing said inlet and outlet and held to its seat by the pressure on the movable member, and means for withdrawing said valve from between the inlet and outlet upon a reduction of pressure in the system.

19. The combination of a chamber, a supply inlet, a movable member separating the chamber from the system, an outlet through said member, a valve closing said inlet and outlet and held to its seat by the pressure on the movable member, a piston subjected to the pressure in the chamber for withdrawing the valve from between the inlet and outlet.

857,188. LOG-LOADER. JOHN R. MCGIFFERT, Duluth, Minn., assignor to Clyde Iron Works, Duluth, Minn., a Corporation of Minnesota. Filed Dec. 30, 1904. Serial No. 238,984.



Claim.—1. In a log-loading machine, the combination with a conveyance, of a log-loader movably mounted thereon, and provided with means independent of said conveyance for propelling the same.

2. In a log-loading machine, the combination with a conveyance, of a log-loader slidably mounted thereon and provided with means independent of said conveyance but adapted while said loader is resting thereon to propel the same.

3. In a log-loading machine, the combination with a base-frame adapted to be moved along one car to an adjacent car, of means mounted upon said frame and adapted independently of such cars to propel the same while said frame is resting on one thereof.

4. In a log-loading machine, the combination with a conveyance, of a log-loader movably mounted thereon and provided with propelling means adapted to engage the track while said loader is resting on said conveyance.

5. In a log-loading machine, the combination with a flat-car, of a log-loader slidably resting thereon and provided with propelling mechanism adapted to engage the track while said loader is resting on said car.

6. In a log-loading machine, the combination with a base-frame adapted to be moved along one car to an adjacent car, of propelling mechanism mounted upon said frame and adapted to engage the track while said frame is resting on one of such cars.

7. In a log-loading machine, the combination with a base-frame adapted to be moved along one car to an adjacent car, of means mounted upon said frame for propelling said cars while said frame is resting on any one of the same.

8. In a log-loading machine, the combination of a car adapted to travel upon a track, a base-frame carried by said car and movable longitudinally of same, and propelling means mounted upon said frame arranged to engage or disengage said track.

9. In a log-loading machine, the combination of a car adapted to travel upon a track, a base-frame carried by said car and movable longitudinally of same and propelling means mounted upon such base, and embodying a truck provided with traction-wheels, the latter being arranged to operatively engage said track or disengage same.

10. In a log-loading machine, the combination of a car adapted to travel upon a track, a base frame carried by said car and movable longitudinally of same, and propelling means mounted upon such base, and embodying a swinging truck provided with traction wheels, said truck being arranged so as to allow its wheels to operatively engage said track.

11. In a log-loading machine, the combination of a car adapted to travel upon a track, a base-frame carried by said car and movable longitudinally thereon, and propelling mechanism carried by said frame, such mechanism including a movable truck provided with traction wheels adapted to engage said track, said truck being arranged to be raised above the plane of the top surface of such car.

12. In a log-loading machine, the combination with a train of cars movable upon a track, of a log-loader movable upon such train and provided with means adapted to propel the same, such means comprising a swinging truck adapted to optionally engage such track, and operatively connected with the engine of said log-loader.

13. In a log-loading machine, the combination with a train of cars movable upon a track, and a log-loader movable upon such train, of means for propelling such train comprising a swinging truck adapted to operatively engage such track, connections between said truck and the engine of such loader adapted to actuate said truck to thus engage and disengage said track, and other connections adapted to rotate the wheels of the same.

14. In a log-loading machine, the combination with a car upon a track, of a base-frame movable upon such car and provided with means adapted to propel the same, such means comprising a truck frame pivoted upon a transverse axis in said base-frame and bearing a pair of wheels adapted to engage such track, cables operated by the engine of such log-loading machine and adapted to swing such truck frame upon its axis, and driving means operated by such engine and adapted to rotate said wheels.

15. A log-loader comprising a base-frame movable from one car to another and propelling means mounted upon said frame, such means including a swinging truck provided with traction wheels, said truck being arranged so as to allow its wheels in one position to operatively engage a track.

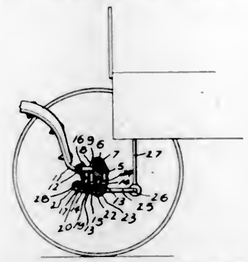
16. A log-loader comprising a base-frame movable from one car to an adjacent car, and propelling mechanism mounted upon said frame, such means including a movable truck provided with traction wheels adapted in one position of said truck to engage a track, and in another position thereof to lie above the plane of the bottom of said frame.

17. A log-loader comprising a base-frame movable from one car to an adjacent car, an engine mounted upon said frame, and propelling mechanism operatively connected with said engine, said mechanism including a swinging truck bearing traction wheels adapted in one position of said truck to engage a track.

18. A log-loader comprising a base-frame movable from one car to an adjacent car, propelling mechanism mounted upon said frame, said mechanism including a swinging truck provided with traction wheels adapted in one position of said truck to operatively engage a track, an engine also mounted upon said frame and connected to drive the traction wheels of said truck and to actuate the latter to thus engage and disengage the track.

19. A log-loader comprising a base-frame movable from one car to an adjacent car, propelling mechanism mounted upon said frame, said mechanism including a truck frame pivoted in said base-frame upon a transverse axis near one end of the same and provided with a pair of traction wheels adapted in one position of said truck to operatively engage a track, an engine mounted upon said base-frame, cables operated by said engine and adapted to swing said truck frame about its axis, and driving means operated by said engine and adapted to rotate said traction wheels.

857,189. HORSE-RELEASER. ARCHIE MCLEAN, Rowland, N. C. Filed Jan. 29, 1907. Serial No. 354,656.



Claim.—1. A device of the class described comprising a clip formed of a pair of hinged sections and designed for engagement around an axle, means for holding the sections closed around the axle, said means serving also as an anti-rattler, and means for releasing the sections from engagement with the axle.

2. A device of the class described comprising a clip formed of a pair of hinged sections, a thill connected with one of said sections, a leaf spring engaged with the thill, an arm hinged to the spring, a yoke connected with the arm and engaged with the other of the hinged sections, and means for moving the arm to disengage the yoke from the said sections.

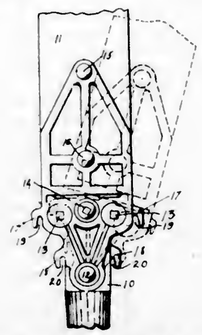
3. A device of the class described comprising a clip formed of a pair of hinged sections, a thill connected with one of the sections, a spring engaged with one section, an arm hingedly connected with the spring, a yoke hinged to the arm and engaged with the other section, and means for swinging the arm to change the relative location of the hinged joints and disengage the yoke from the said sections.

4. A device of the class described comprising a clip formed of a pair of hinged sections, a thill connected with one of the sections, a leaf spring engaged with the thill and with the section to which the thill is connected, an arm hinged to the leaf spring, a yoke hinged to the arm and engageable with the other section, the hinge joint for the arm and spring being shiftable by the movement of the arm outwardly from the spring to disengage the yoke from its section.

5. A device of the class described comprising a clip formed of a pair of hinged sections, a thill connected with one of the sections, a leaf spring engaged with the thill and with the section to which the thill is connected, an arm hingedly connected with the spring, a yoke hingedly connected with the arm in advance of the hinged joint of the arm and the spring and engageable with the other section, said arm being adapted to be swung outwardly from the spring to change the relative location of the hinged joints, and means for swinging the arm.

6. A device of the class described comprising a clip formed of a pair of hinged sections, a thill connected with one of the sections, a leaf spring engaged with the thill and with the section to which the thill is connected, an arm hingedly connected with the spring, a yoke hingedly connected with the arm in advance of the hinged joint of the arm and the spring and engageable with the other section, said arm being adapted to be swung outwardly from the spring to change the relative location of the hinged joints, and a shaft having hooked ends connected with the arm for swinging the same when the shaft is rocked.

857,190. HINGE-PLATE FOR TILTING POSTS. LESLIE H. NEEDHAM, Des Moines, Iowa, assignor to Mrs. John M. Parker, Oskaloosa, Iowa. Filed Sept. 21, 1906. Serial No. 335,604.

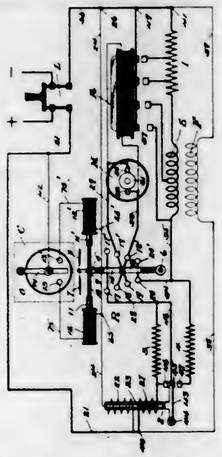


Claim.—A fence post consisting of a lower section and an upper section, a hinge plate formed with an offset providing a shoulder engaging the lower edge of the upper section and having an aperture at its base, a pivotal bolt extending through said aperture and through an aperture provided therefor in said lower section, the upper portion of said plate having a plurality of apertures therein, bolts passing through said apertures and through apertures provided therefor in said upper section, said plate having an intermediate portion, a series of apertures each located at the same distance from said first named aperture of the plate for register with an aperture provided in said lower section, a stay bolt engaging through said last named registering apertures, and a plurality of outwardly and downwardly extending lugs projecting from the lateral edges of said plate to provide recesses in conjunction with said plate edges.

857,191. AUTOMATIC MOTOR-CONTROLLING APPARATUS. FREDERICK W. NEWELL, Hastings-upon-Hudson, N. Y., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Nov. 13, 1905. Serial No. 286,998.

Claim.—1. The combination with a motor, of controlling apparatus therefor, a doubly-wound magnet having one winding connected across the mains and the other winding in circuit with the motor-armature, and electric

means controlled by said magnet for regulating the speed of the motor.



2. The combination with a motor, of controlling apparatus therefor, a differentially-wound magnet having one winding connected across the mains and another winding in circuit with the motor-armature; and electric means controlled by said magnet for slowing down said motor when excessive speed is attained.

3. The combination with a motor, of starting means therefor, a differentially-wound relay having one winding connected across the mains and the other winding in series with the motor-armature, an electro-dynamic-brake circuit, and means controlled by said relay for closing said circuit when the motor acts as a generator.

4. The combination with a motor, of reversing switches therefor, a differential relay having one winding connected to the mains and the other winding in a normally open circuit with the motor-armature, means controlled by said relay for regulating the speed of said motor, and means for operating said reversing switches to close said normally open circuit and effect a starting of the motor in the desired direction.

5. The combination with the motor, of controlling means therefor, a doubly-wound electro-magnet, a plurality of resistances, and means controlled by said electro-magnet for inserting one of said resistances in series with the motor-armature, and another of said resistances in shunt thereto.

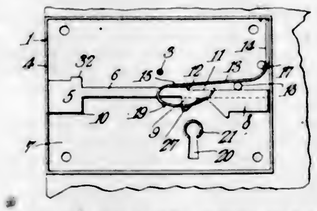
6. The combination with an electric motor, of controlling apparatus therefor, a doubly-wound magnet, two resistances, and means controlled by said magnet for inserting one of said resistances in series with the motor-armature and the other in shunt thereto, when the motor acts as a generator.

7. The combination with an electric motor, of controlling apparatus therefor, a differentially-wound magnet, a resistance normally in series with one of the windings of said magnet, an additional resistance, and means controlled by said magnet for inserting said first-named resistance in series with the motor-armature, and said additional resistance in shunt thereto.

8. The combination with an electric motor, of controlling apparatus therefor, a differential relay having one winding connected to the mains and the other winding in series with the motor-armature, a resistance normally short-circuited by said relay, and an additional resistance inserted in shunt to the motor-armature upon the neutralization of the magnetism in the relay-magnet and the consequent insertion of said first-named resistance in series with the motor-armature.

9. The combination with an electric motor, of controlling apparatus therefor, a differentially-wound magnet having one winding of comparatively high resistance and connected directly across the mains and another winding of low resistance arranged to be connected in series with the motor-armature, a resistance in series of the low resistance winding, an additional resistance, and means controlled by said magnet for short-circuiting said first-named resistance and cutting out said additional resistance when said magnet is energized and for inserting said first-named resistance in series with the motor-armature and said additional resistance in shunt thereto when the motor is acting as a generator and said magnet is de-energized.

857,192. LOCK. CALLE P. NIXHOLM, Melrose, Mont., assignor of one-half to Carl A. Nixholm, Butte, Mont. Filed Feb. 25, 1907. Serial No. 359,162.



Claim.—1. In a lock, a case therefor containing a centrally disposed diaphragm, a lock bolt, slidably disposed on one edge of said diaphragm, having an enlarged head provided with a stop at one end, and a broad plate or wing at each side of the opposite end projecting downwardly on each side of said diaphragm.

2. In a lock, a case therefor, a centrally disposed diaphragm in the lower half of the case extending from end to end thereof and having a notch in an upper corner, a lock bolt slidably mounted on the upper edge of said diaphragm having an enlarged head at one end adapted to enter said notch, a broad plate or wing at each side of the opposite end projecting downwardly on the sides of said diaphragm, and a lug on the under side of said lock bolt near each wing, the opposing faces of each lug and wing inclined away from each other from above downwardly.

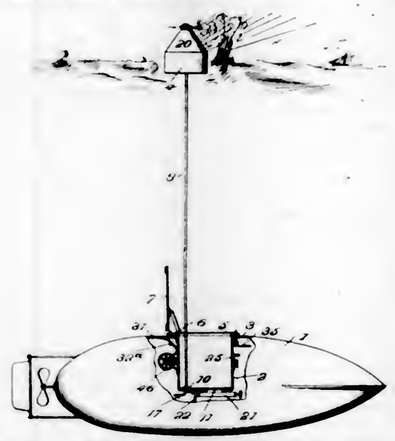
3. A lock comprising a casing, a centrally disposed diaphragm in the bottom thereof, a locking bolt slidable on one edge of said diaphragm, springs bearing on the top of said locking bolt and having return cam shaped portions, downwardly projecting lugs on said bolt straddling said diaphragm, and lateral projections on said lug seated against the cam shaped portion of said spring.

4. A locking bolt for locks comprising a slender body portion with an enlarged head on one end, a stop on said bolt downwardly projecting wings on the other end forming a guide channel, and downwardly projecting lugs in advance of said wings their opposing edges being inclined upwardly and toward each other, and a lateral projection on each of said lugs.

857,193. LIFE-SAVING APPARATUS FOR SUBMARINE BOATS. OSCAR A. C. OEHMLER, Washington, D. C., assignor of one-third to William Frederick Gude and Adolphus Gude, Washington, D. C. Filed Feb. 4, 1907. Serial No. 355,677.

Claim.—1. In life saving apparatus for submarine boats, the combination of a boat, a casing applied thereto, a buoy permanently connected with the boat and received in the casing, a cover for the casing, an operating mechanism comprising lifting bars connected with the cover, screws connected with said lifting bars to actuate the same and open the cover, and means arranged exterior to the casing and within the boat for operating the screws as specified.

2. In life saving apparatus for submarine boats, the combination of a boat, a casing applied thereto, a buoy permanently connected with the boat, and received in the casing, a cover for the casing, an operating mechanism comprising lifting bars pivotally connected at the upper ends thereof with the cover, blocks slidably mounted on the casing and connected with the lower ends of the lifting bars, screws connected with the blocks to impart longitudinal movement thereto, and means exterior to the casing and within the boat operably connected with the screws for simultaneous actuation thereof.



3. In life saving apparatus for submarine boats, the combination of a boat, a casing applied thereto, a buoy received in said casing and housed thereby, a cover for the casing, means for initially operating the cover to unseat the same, and main operating means for opening the cover after actuation thereof by the initial operating means aforesaid.

4. In life saving apparatus for submarine boats, the combination of a boat, a casing thereon, a buoy received in said casing, a cover having a water tight connection with the boat and co-operating with the casing to inclose the buoy, means for initially operating the cover to unseat the same preparatory to opening movement thereof, main operating means for actuating the cover after unseating thereof, and means for supplying water to the space within the casing previous to moving the cover, whereby to equalize pressure at opposite sides of said cover.

5. In life saving apparatus for submarine boats, the combination of a boat, a casing thereon, a buoy received in said casing, a cover having a water tight connection with the boat and co-operating with the casing to inclose the buoy, means for initially operating the cover to unseat the same preparatory to opening movement thereof, main operating means for actuating the cover after unseating thereof, and means loosely connecting the main operating means with the cover to permit of the initial movement of the cover independent of the main operating means aforesaid.

6. In life saving apparatus for submarine boats, the combination of a boat, a casing applied thereto, a buoy received in said casing, a cover for the casing co-operating therewith, to house the buoy, a rotatably mounted screw having threaded connection with the cover for initial movement thereof, means for actuating the screw, and main operating mechanism connected with the cover to open the same after operation of the screw aforesaid, whereby the buoy may be released from the boat.

7. In a life saving apparatus for submarine boats, the combination of a boat, a casing applied thereto, a buoy received in said casing, a cover or lid for the casing, and auxiliary mechanisms for operating said cover or lid to open the same and release the buoy.

8. In a life saving apparatus for submarine boats, the combination of a boat, a casing applied thereto, a buoy received in said casing, a cover or lid for the casing, auxiliary mechanisms for operating said cover or lid to open the same and release the buoy, one of the above mechanisms comprising spaced lifting bars connected at the upper ends thereof to the cover, horizontally sliding blocks connected with said lifting bars, screws mounted on the casing and connected with said blocks, and an operating shaft connected with said screws to effect simultaneous operation of the same.

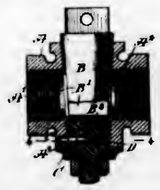
9. In life saving apparatus for submarine boats, the combination of a submarine boat, a buoy, means connecting said buoy with the boat, and permitting the buoy to rise to the surface of the water when the boat is submerged, said buoy embodying a reflecting surface, and means for discharging a chemical illuminating signal from the buoy after it has risen to the surface.

10. In life saving apparatus for submarine boats, the combination of a submarine boat, a buoy connected therewith, means normally preventing separation of the buoy from the boat, means connecting the buoy with the boat and permitting the same to rise to the surface of the water when the boat is submerged, and means for indicating when the buoy reaches the surface of the water on release thereof.

11. In life saving apparatus for submarine boats, the combination of a submarine boat, a buoy connected therewith, means normally preventing separation of the buoy from the boat, means connecting the buoy with the boat and permitting the same to rise to the surface of the water when the boat is submerged, and an electrically operating means arranged within the boat for indicating to the occupants thereof when the buoy reaches the surface of the water on release of the same from the boat.

12. In life saving apparatus for submarine boats, the combination of a submarine boat, a buoy, a cable connecting the buoy to the boat, means normally preventing separation of the buoy from the boat, means for releasing the buoy, an air passage leading from within the boat through the buoy and the connecting cable thereof, means inserted within the upper end of the passage to normally close the same and means for forcing air through said air passage after the buoy has reached the surface of the water to clear or open the passage to the atmosphere.

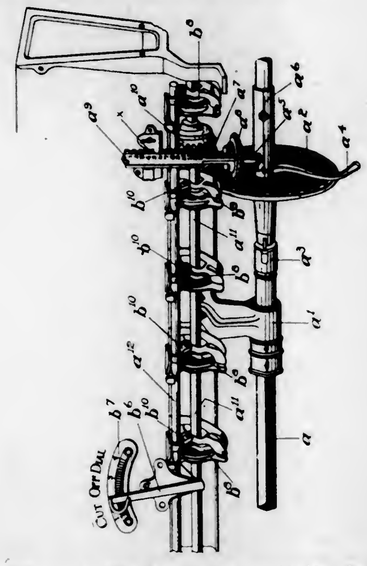
857,194. SELF-LOCKING SAFETY-COCK. WILLIAM F. PABST and WILLIAM WEST, Denver, Colo., assignors to Benjamin F. Seymour, Jr., Denver, Colo. Filed Mar. 6, 1905. Serial No. 248,471.



Claim.—1. In a self locking safety cock and including a plug-valve having a spring pressed radial locking-pin, a casing for said plug-valve having a radial recess in its inner wall in registering relation with said valve-pin, and a recess starting from the inner end of said radial recess and having its wall curving therefrom eccentrically outward and terminating in a shoulder whereby in closing said valve the interior eccentric wall causes the self retraction of said locking-pin to the position in which it is automatically locked.

2. In a self locking safety cock and including a plug-valve having a spring pressed radial locking-pin, a casing for said plug-valve having a radial recess in its inner wall in registering relation with said valve-pin and terminating in a deflected curved passage opening at the outer wall at one side of said radial recess, and a recess starting from the inner end of said radial recess and having its wall curving therefrom eccentrically outward and terminating in a shoulder, the said deflected passage being formed in the wall which serves to cover and to conceal the locking-pin.

857,195. SEED-DISTRIBUTER. FRANK R. PACKHAM, Springfield, Ohio, assignor to The American Seeding Machine Company, Springfield, Ohio, a Corporation of Ohio. Filed Jan. 5, 1907. Serial No. 350,903.



Claim.—1. A seed distributing mechanism for grain drills comprising a plurality of seed distributers, including a rotating carrying element for the seed, means for varying the size of the opening through which said seed is adapted to pass, driving mechanism for said distributers, and means for varying the speed of said distributers from said driving mechanism, an indicator for the distributer varying element and an indicator for the speed varying element, said indicators being each provided with a plurality of numbers, means tabulated with figures which represent variations in the respective indicators for both sets of adjusting mechanism, and co-operating to indicate the result for each combination, substantially as specified.

2. In a seed distributing mechanism for grain drills, a plurality of distributers, each comprising a casing, distributing wheel and measuring channel, means for adjusting the size of said measuring channel, and means for adjusting the speed of the distributing wheel, indicators for each of said adjusting means, each of said indicators being provided with a single series of figures co-operating therewith, and a chart comprising a plurality of figures adapted to indicate the amount of seed sown by the mechanism for each combination of said adjusting mechanism, substantially as specified.

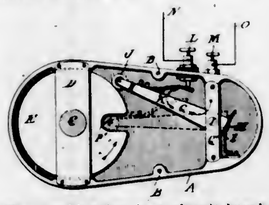
3. In a seed distributing mechanism, the combination of a driving shaft, variable speed mechanism connected to said shaft, a series of distributers including distributing wheels, casings for said wheels having discharge orifices, means for varying the said discharge orifices for different kinds of seed, and means for operating the variable speed devices for varying the quantity sown, indicators for each of said variable devices, one of said indicators indicating the character of seed and the other indicating the quantity sown, and a table or chart to be read with said indicator comprising a plurality of figures for the different combinations of said indicators, substantially as specified.

4. In a seed distributing mechanism for grain drills, the combination of a plurality of seed distributing devices including a rotating carrying element for the seed, the variable mechanism for adjusting said seed distributers to different characters of seed, variable speed mechanism for adjusting the speed of said carrying element to vary the quantity of seed carried thereby, indicators for each of said variable mechanisms indicating, respectively, the character of the seed sown and the quantity of seed sown, and a chart comprising a plurality of figures which represent variations in the position of the indicators for both adjusting mechanism and indicates also the results of the combination both as to the character of the seed and the quantity to be sown, substantially as specified.

5. In a seed distributing mechanism for grain drills, the combination of a plurality of seed distributing devices including a rotating carrying element for the seed, a cut-off mechanism for adjusting for different characters of seed, and speed-adjusting mechanism for varying the quantities of seed fed by the carrying element, an indicator for the first-mentioned mechanism, an indicator for the second-mentioned speed mechanism, each indicator being provided with a row of indicating points, and means co-operating with the seed distributing mechanism for indicating the proper adjustments of the cut-off mechanism and the speed adjusting mechanism in accordance with the character of the seed to be sown.

6. In a seed distributing mechanism for grain drills, a plurality of distributers, each comprising a casing, distributing wheel and measuring channel, means for adjusting the size of said measuring channel, and means for adjusting the speed of the distributing wheel, indicators for each of said adjusting means, each of said indicators being provided with a single series of figures co-operating therewith, and tabulated means having separate spaces for each character of grain, each space appropriated to one position of adjustment of said measuring channel and co-operating with said speed adjusting mechanism to indicate the varying amount of grain sown, substantially as specified.

857,196. CIRCUIT-BREAKER FOR GAS-ENGINES. FLEMION B. PACKWOOD, Lincoln, Nebr. Filed Jan. 2, 1906. Serial No. 294,110.



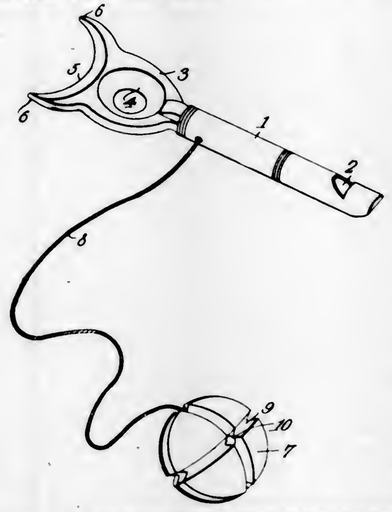
Claim.—The combination in a circuit breaker, of a case, a rotatable shaft extended into the case, electric circuit terminals on the case, one of said terminals being arranged insulated from the case and made projecting thereinto, and devices in the case, comprising a circular body arranged on the rotatable shaft, the circular body being constructed with a peripheral opening, a conductive arm having pivotal support in the case, the pivot connection being located at one end of the arm, the arm at the other end being extended adapted to enter the opening in said circular body, the arm being also arranged in conductive connection with the case, a yielding contact on said arm, and tension means adapted to yieldingly hold the extended end of the conductive arm in contact with said circular body during circuit completing or cutting out adjustment thereof.

857,197. TRUNK-STRAP FASTENER. HENRY J. PATTERSON, St. Johns, Mich. Filed May 18, 1906. Serial No. 317,641.

Claim.—A device as described, comprising two articulated or pivoted together members, one member having a plate-like portion extending inward from its pivoting point, said plate-like portion being provided with an upward and forward curved hook, said member also having upraised longitudinal portions arranged laterally of, and extending above said plate-like portion and forming in part the walls of an orifice directly opposed to the terminal of said hook, the terminal of said hook also depending to a point close to the upper or outer surfaces of said longitudinal or lateral portions, the free ends of said members being adapted to be locked together, a link-member effective for engagement with said hook and said longitudinal or lateral portions and directly in alinement with said orifice, and a strap-member connected to said link-member and one of the first noted members.



857,198. TOY. MIGUEL PEREZ, Chicago, Ill. Filed Oct. 11, 1906. Serial No. 338,457.



Claim.—1. A toy comprising a handle, a head attached thereto and extending in alinement thereto said head having in its side an annular depression and at its end a semicircular portion, a sphere having peripheral grooves and a string attaching said sphere to said handle.

2. A toy comprising a handle, a head attached thereto and extending in alinement therewith said head having an annular depression and a semicircular portion terminating in pointed ends, a sphere having peripheral grooves and apertures and a string attaching said sphere to the handle.

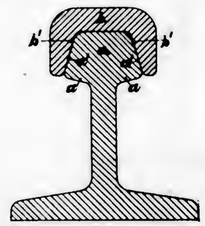
3. A toy comprising a handle, a head attached thereto and having a semicircular portion, a sphere having peripheral grooves and a string attaching said sphere to the handle.

4. A toy comprising a handle, a head attached thereto and having a semicircular portion, a sphere having intersecting peripheral grooves and a string attaching said sphere to the handle.

5. A toy comprising a handle, a head attached thereto and having a semicircular portion terminating in pointed ends, a sphere having intersecting peripheral grooves with apertures located at the points of intersection of said grooves and a string attaching said sphere to the handle.

6. A toy comprising a handle, a head attached thereto and having a semicircular portion which terminates in pointed ends, a sphere having intersecting peripheral grooves and radially extending apertures located at the points of intersection of said groove and a string connecting said sphere to the handle.

857,199. PERMANENT WAY-RAIL. HERBERT W. PERRY, Trichinopoli, India. Filed Sept. 7, 1905. Serial No. 277,500.



Claim.—A permanent way rail of the section illustrated, comprising in combination a rail head and a renewable and rollable capping, the slope of the inner surfaces of the sides of said capping being a little steeper or more vertical than that of the sides of the head of the rail, whereby said capping is secured to the rail head solely by the bite or friction between the two.

857,200. FELLY FOR VEHICLE-WHEELS. WILLIAM S. PLUMMER, St. Louis, Mo., assignor to American Wheel Company, St. Louis, Mo., a Corporation of Missouri. Filed May 17, 1906. Serial No. 317,286.

Claim.—1. In a vehicle wheel, the combination with a rim, of a sectional felly provided with sockets for the spokes, and means arranged between the adjacent ends of a pair of sections for holding said sections to said rim.

2. In a vehicle wheel, the combination with a rim, of a hollow sectional felly provided with sockets for the spokes, and means arranged between the adjacent ends of a pair of sections for holding said sections to said rim.

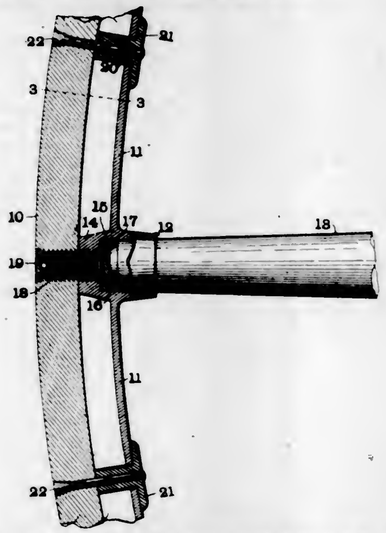
3. In a vehicle wheel, the combination with a rim, of a sectional felly provided with sockets for the spokes, and a retaining member arranged between and overlapping the adjacent ends of a pair of sections for holding said sections to said rim.

4. In a vehicle wheel, the combination with a rim, of a sectional felly provided with sockets for the spokes, a retaining member overlapping the adjacent ends of a pair of sections and provided with a projection extending between said ends, and a bolt or rivet extending through said rim and projection to hold said sections to said rim.

5. In a vehicle wheel, the combination with a rim, of a sectional felly provided with sockets for the spokes, and a retaining member arranged between but overlapping the adjacent edges of a pair of sections and flush with the outer surface of said sections.

6. In a vehicle wheel, the combination with a felly provided with a socket for a spoke, of a cup in said socket having a beveled seat for the end of a spoke, and means for adjusting said cup.

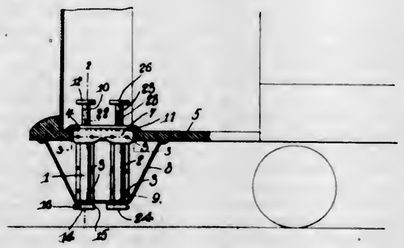
7. In a vehicle wheel, the combination with a rim, of a felly secured to said rim and provided with a socket for a spoke, a member in said socket and adapted to bear against the end of the spoke, a set screw passing through said rim and felly and bearing against said member, and means for protecting the head of said screw.



8. In a vehicle wheel, the combination with a rim, of a felly secured to said rim and provided with a socket for a spoke, a member in said socket and adapted to bear against the end of the spoke, and a set screw threaded into said rim and felly and bearing against said member.

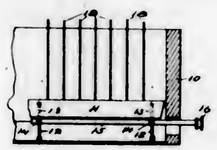
9. In a vehicle wheel, the combination with a rim, of a hollow felly secured to said rim and provided with a socket for a spoke, said felly being provided with a solid portion adjacent to said socket, a member in said socket and adapted to bear against the end of the spoke, and a set screw threaded into said rim and the solid portion of the said felly and bearing against said member.

857,201. SWITCH-OPERATING DEVICE. LEONARD Z. PRESTON, Scottsville, Kans. Filed Apr. 12, 1907. Serial No. 367,781.



Claim.—The combination with a switch comprising a base having a guard and a tread, and a pivoted switch-tongue engageable with the guard and tread, and having its point spaced therefrom, of a switch operating device carried by the car comprising a pair of shoes having pointed ends and beveled on opposite sides, and means for throwing said pointed ends into the space between the point of the switch-tongue and the guard and tread, respectively.

857,202. CARD-INDEX. JOSEPH E. RALPH, Newark, N. J. Filed Feb. 1, 1906. Serial No. 299,051.



Claim.—1. In a card index, means to raise the several cards of a plurality of groups of sub-classifications above their normal positions, and those classified under each such sub-classification, to a distinct position.

2. In a card index, a container, means to select and raise the several cards of a plurality of groups of sub-classifications above their normal positions, and those classified under each of said classifications to a distinct position.

3. In a card index, a container, a bar disposed within said container, cards of a particular groups of sub-classifications resting upon said bar, and means to raise the bar and the cards resting thereupon.

4. In a card index, a container, a plurality of bars disposed within said container, a plurality of cards within the container, and arranged with the cards of distinct sub-classifications resting upon different ones of said bars, and means to raise the bars and the cards resting thereon.

5. In a card index, a container, cards of a plurality of classifications within the container a channel bar disposed within said container, cards within said container and so arranged that cards of a distinct classification only rest upon the said channel bar, and means extending without the container for raising the channel bar and the cards resting thereon.

6. In a card index, a container, a channel bar disposed within and extending longitudinally of the said container, and with its closed side uppermost, a card disposed within the said container and provided with a bearing member extending below the normal edge of said card and positioned to rest upon the said channel bar, and means extending without the container to elevate the said channel bar and the said card.

7. In a card index, a card provided with bearing members secured upon its lower edge and adjustable longitudinally of the said card.

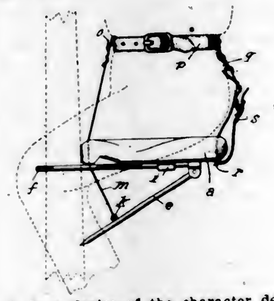
8. In a card index, a card provided with spaced openings adjacent its lower edge, and bearing members secured in said openings and extending below the normal edge of said card, and adjustable to any of said openings.

9. In a card index, a container, a plurality of bars disposed upon opposite sides and extending longitudinally of said container, cards within said container provided each with depending bearing members arranged to be adjustably positioned for bearing upon either of said bars, and means to selectively elevate either of said bars and the cards resting thereon.

10. In a card index, a container, a plurality of bars disposed upon each side and extending longitudinally of the said container, cards within said container provided each with openings at each end along their lower edges, depending bearing members arranged to be adjustably secured in either of said spaced openings, and means extending without the container to elevate either of said bars.

11. In a card index, a container, provided with a plurality of bars upon each side extending longitudinally thereof, cards within the container provided each with spaced scallops along the lower edge and grouped at each end of said card and differently designated, bearing members arranged to be secured within either of said scallops and to extend below the normal edge of said cards and bear upon the upper surfaces of the correspondings bars, and means extending without the container to elevate either of said bars.

857,203. TELEPHONE-LINEMAN'S GRAB-SEAT. CLAYTON RANDALL, Mabel, Minn. Filed Feb. 21, 1907. Serial No. 358,612.

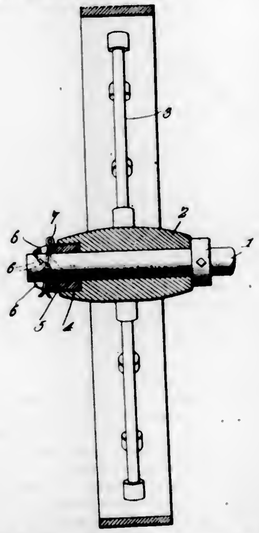


Claim.—1. In a device of the character described, the combination of a seat formed with a hole; an arm having one end pivotally secured to said seat and the other end adapted to engage a pole; and a cord one end of which is attached to said arm and the other end of which is passed through said hole; said cord being free to move through said hole and serving to position said arm where the weight of the lineman will drive it into the pole.

2. In a device of the character described, the combination of a seat; a pair of arms pivotally secured to said seat and adapted to be engaged by the knees of the lineman; and a coil spring which normally holds said arms apart.

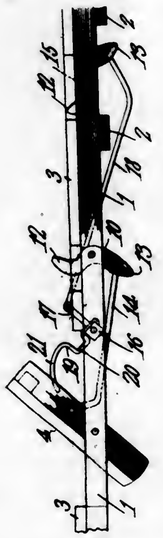
3. In a device of the character described, the combination of a seat; an arm pivotally secured to said seat and mounted free to swing in a plane at right angles to the plane of said seat; a pair of coöperating arms pivotally secured to said seat and mounted free to swing in a plane parallel to the plane of said seat; a coil spring which normally holds said pair of arms apart; and means under control of the lineman for positioning the first named arm.

857,204. HUB. JACOB C. REDEMER, Beaver, Okla. Filed June 23, 1906. Serial No. 323,091.



Claim.—The combination with an axle; of a hub rotatably mounted thereon and having a countersunk end, a tubular frusto-conical cap having its large end fitted within the countersunk portion of the hub, the end of said cap having notches of different sizes therein, and means engaging the axle and adapted to be seated in any of said notches for holding the cap within the hub.

857,205. AUTOMATIC CAR-STOP. JAMES W. REED, Berwind, Colo., assignor of one-half to Joseph Cox, Tabasco, Colo. Filed Apr. 8, 1907. Serial No. 367,101.



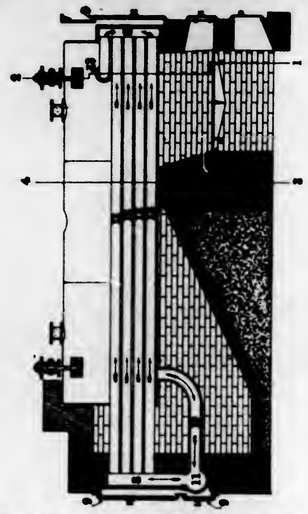
Claim.—1. An automatic car stop comprising a line of track, a tipple included therein, stop levers movable into and out of the paths of cars on said track, direct connections between said levers and the tipple, other levers also movable into and out of the paths of cars on said track and located at a point more remote from the tipple than the first set of levers, a rock shaft connected to said second set of levers, a spring tending to hold said rock shaft in a position to maintain the second set of levers in inactive position, and cam latches on the rock shaft in the path of the tipple for moving the second set of levers into active position.

2. An automatic car stop comprising a line of track, a tipple included therein, stop levers adjacent to said tipple and movable into and out of the path of cars on said track, direct connections between the tipple and the stop levers, another set of stop levers more remote from the tipple than the first set, a rock shaft, connections between the same and the second set of stop levers, a spring connected to said rock shaft and tending to move the same in a position to maintain the second set of levers in inactive position, and latch arms having locking sections to receive a portion of the tipple and other cam sections constituting continuations of the locking sections and arranged to be engaged by the tipple when moved from an inclined to a horizontal position.

857,206. STEAM-BOILER. WILLIAM ROBERTSON, Milton, Mass. Filed Mar. 26, 1906. Serial No. 308,166.

Claim.—The combination in a steam-boiler of shells containing fire tubes suspended from beams overhead, headers at the front and rear ends of the boiler, the rear headers expanded into a mud-drum, water tubes at the sides of shells having their ends expanded into said headers, large

pipes connecting the mud-drum to the bottom of said shells at their rear end, and tubes connecting the front headers



to nozzles in sides of said shells at their front ends, all substantially as set forth.

857,207. STOP MECHANISM FOR DRILL-PRESSES. SHERMAN C. SCHAUER, Cincinnati, Ohio, assignor to The Cincinnati Machine Tool Company, Cincinnati, Ohio, a Copartnership. Filed Feb. 18, 1907. Serial No. 357,842.



Claim.—1. The combination of a driven gear, a fixed stop, a longitudinally movable spindle, and means for engaging the spindle alternately with the gear and with the stop.

2. The combination of a driven gear, a fixed stop, a longitudinally movable spindle, a sleeve splined thereon, and means for moving the sleeve in engagement with the gear and with the stop.

3. The combination of a driven gear provided with a clutch member, a spindle rotatively and longitudinally movable therein, a sleeve splined thereon and provided with a clutch member adapted to engage with the gear for rotating the spindle, and means for preventing the rotation of the sleeve when disengaged from the gear.

4. The combination of a top yoke, a driven gear, a longitudinally movable spindle, a bracket removably secured on the yoke, and means for detachably engaging the spindle with the bracket and with the gear.

5. The combination of a spindle, a driving and a reversing gear therefor, means for detachably engaging the spindle with either of said gears, and means for locking one of said gears in a non-rotative position.

6. The combination of a spindle, a driving and a reversing gear therefor, means for detachably engaging the spindle with either of said gears, a fixed stop, a train of gears connecting said gears together, and means for disconnecting a portion of said train from the driving gear and engaging it with the fixed stop.

7. The combination of a driving shaft provided with a spur gear, and with a bevel pinion, a bevel gear engaging with the pinion, a secondary shaft provided with a smaller spur gear and with a bevel pinion, a bevel gear engaging with said latter pinion, a fixed stop, an idle spur gear in continuous engagement with one of said spur gears, means for detachably engaging said idle gear with said other spur gear and with the stop, a spindle, and means for detachably engaging either of said bevel gears therewith.

8. The combination of a longitudinally movable spindle, a rotative and a non-rotative member, mounted concentric therewith at fixed points, and means for detachably engaging the spindle with said members.

9. The combination of a longitudinally movable spindle, a rotative and a stationary member mounted concentric therewith at fixed points, and means for engaging the spindle with said members alternately.

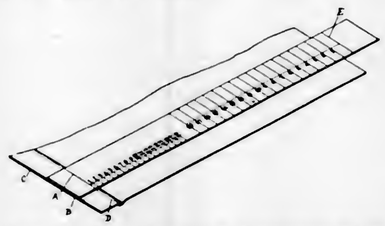
10. The combination of a longitudinally movable spindle, a rotative member, a non-rotative member, and means for detachably engaging the spindle with either of said members at any point in its longitudinal movement.

11. The combination of a longitudinally movable spindle, a rotative and a non-rotative member mounted concentric therewith at fixed points, and means for engaging the spindle in different rotative or longitudinal positions with either of said members.

12. The combination of a longitudinally and rotatively movable spindle, a rotative driving member therefor, a non-rotative member, and means for detachably engaging the spindle in any rotative or longitudinal position with either of said members.

13. The combination of a longitudinally and rotatively movable spindle, a rotative member, a non-rotative member, and means for engaging the spindle in any of its longitudinal or rotative positions with said members alternately.

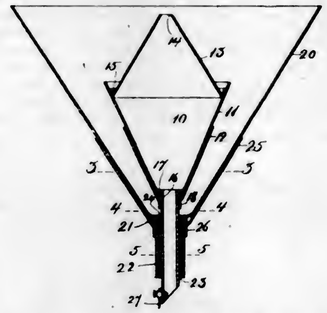
857,208. PLAITING-GAGE. PAUL SCHOEN, Troy, N. Y., assignor, by direct and mesne assignments, of one-half to Hall, Hartwell & Co., Troy, N. Y., a Firm, and one-half to Paul E. Schoen, Troy, N. Y. Filed Feb. 18, 1905. Serial No. 246,332.



Claim.—1. A gage for plaiting, a predetermined pattern provided with two graduated scales, the graduations of each indicating distances from a common point, those of one of said scales being placed at appropriate distances from said point to indicate the predetermined location of the respective plaits desired in a fabric strip, and those of the other scale at appropriate distances from said point to indicate each the total predetermined width of the fabric strip upon the completion of the corresponding plait each of said scales having its graduations identified by the same consecutive series of identification characters, the series in connection with one of said scales being arranged in inverse order relatively to the other series.

2. A gage for plaiting, a predetermined pattern provided with two graduated scales, both on the same side of, and the graduations of each indicating distances from, a common point, those of one of said scales being numbered consecutively in one direction and being placed at appropriate distances to indicate the predetermined location of the respective plaits desired in a fabric strip, and those of the other scale being consecutively numbered in the opposite direction with the same numbers and placed to indicate each the total predetermined width of the fabric strip from said point upon the completion of the corresponding plait.

857,209. SOUND-PRODUCING DEVICE. WILLIAM C. SMITH, Paterson, N. J. Filed Oct. 5, 1906. Serial No. 337,620.



Claim.—1. In a sound producing device the combination of an inner tube, a horn extending therefrom, an outer tube encircling said inner tube, a sound insulator between the tubes, and a horn extending from the outer tube.

2. In a sound producing device the combination of an inner tube, a horn extending therefrom, an outer tube encircling said inner tube, a sound insulator between the tubes, a horn extending from the outer tube, and a stylus extending from the inner tube.

3. In a sound producing device the combination of an inner tube of bamboo, a horn extending therefrom, an outer tube of bamboo encircling said inner tube, a sound insulator between the tubes, a horn extending from the outer tube, and a stylus extending from the inner tube.

4. In a sound producing device for a talking machine the combination of an inner tube of bamboo, a conical horn extending from the tube, a sound insulator around the tube, an outer tube of bamboo around the insulator, and a conical horn extending from the outer tube.

5. In a sound producing device the combination of an inner tube, a horn extending therefrom, a cap having an opening connected with the horn, an outer tube encircling said inner tube, a sound insulator between the tubes, a horn extending from the outer tube and encircling the other horn.

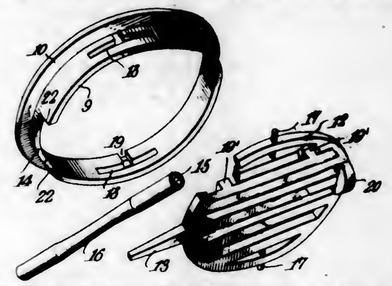
6. In a sound producing device the combination of an inner tube, a horn extending therefrom, a conical support for the horn supported on the said tube, a cap having an opening secured to the horn, an outer tube encircling the inner tube, sound insulating rings between the outer surface of the inner tube and the inner surface of the outer tube, a horn extending from the outer tube, a support for the outer horn secured to the outer tube, and a stylus connected with the inner tube.

7. In a sound producing device for a talking machine the combination of an inner tube of bamboo, a paper horn having a flange, the flange fastened to the tube, a conical paper support for the horn having a flange, the latter secured to the tube, a pair of rubber sound insulators around the tube, an outer tube of bamboo around the insulators, an outer paper horn having a flange with the latter fastened to the outer tube, a conical paper support for the outer horn having a flange with the latter fastened to the outer tube.

857,210. GRATE FOR BAKERS' OVENS. JOHN A. STACKHOUSE, Dover, N. J. Filed Dec. 11, 1906. Serial No. 347,302.

Claim.—1. A device of the class described including a supporting frame having oppositely disposed segmental slots formed therein and intersected by vertical recesses, and a grate provided with laterally extending trunnions slidably engaging the walls of the slots, said grate being capable of tilting movement on the trunnions.

2. A device of the class described including a supporting frame provided with oppositely disposed slots intersected by vertical recesses and having a segmental opening formed in one wall thereof, an oscillating grate pivotally mounted for sliding movement in the slots and having one end thereof weighted, and an angular extension formed on the grate and projected through the opening in the supporting frame for engagement with an operating handle.



3. The combination with a baker's oven, of a supporting frame secured to and piercing the floor of the oven and provided with oppositely disposed segmental slots intersected by vertical recesses, and an oscillating grate pivotally mounted for sliding movement in the slots and having one end thereof weighted for automatically returning the grate to operative position after the latter has been tilted.

4. The combination with a baker's oven, of a supporting frame secured to the floor of the oven and piercing the latter, said frame being provided with oppositely disposed slots intersected by vertical recesses, an oscillating grate having lateral trunnions slidably mounted within the slots, one end of the grate being weighted and its opposite end provided with an angular extension for engagement with an operating handle, said grate being capable of tilting movement on the trunnions.

5. The combination with a baker's oven having an opening formed in the floor thereof, of a supporting frame provided with a laterally extending flange engaging the walls of the opening and provided with oppositely disposed segmental slots intersected by vertical recesses, said supporting frame being provided with an opening defining stop shoulders, and an oscillating plate having lateral trunnions slidably mounted within the slots, one end of said grate being weighted and the opposite end thereof provided with an angular extension projecting through the opening in the grate for engagement with an operating handle, said grate being capable of tilting movement on the trunnions.

857,211. DRAFT DEVICE. DAVID W. STAPP, Phillipsburg, Kans. Filed Sept. 14, 1906. Serial No. 334,645.

Claim.—1. A device of the character described comprising a slotted draft member having spaced longitudinal flanges extending laterally from opposite sides thereof, a slotted draw bar mounted in the draft member, follower plates extending through the slots of the member and draw bar, a plurality of compression springs arranged between the follower plates, retaining members arranged between the laterally extending flanges of the draft member and engaging the ends of the follower plates, and means on the draft member engaging the retaining member for holding the latter in place.

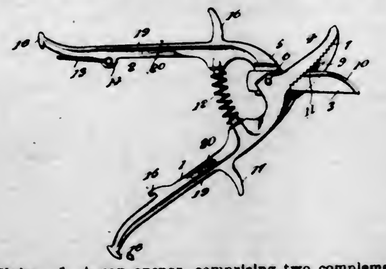
2. A device of the character described comprising a draft member made up of a top plate having integral slotted webs formed with outwardly directed flanges, a bottom plate secured against said flanges and having ribs fitted upwardly into the space between said webs, a slotted draw bar resting against said ribs between said webs, follower plates extending through the slots of said webs and draw bar, springs mounted between said follower plates, retaining members resting at their inner faces against said webs, said retaining members having grooves in their outer portions, and rods extending through said bottom plate,

flanges, top plate and through the grooves of said retaining members.



3. A device of the character described comprising a draft member made up of a top plate having integral slotted webs formed with outwardly-directed flanges, a bottom plate secured against said flanges and having ribs fitted upwardly into the space between said webs, a slotted draw bar resting against said ribs between said webs, follower plates extending through the slots of said webs and draw bar, springs mounted between said follower plates, retaining members fitted between said top plate and said flanges and resting at their inner faces against said webs, said retaining members having grooves in their outer portions, rods extending through said bottom plate, flanges, top plate and through the grooves of said retaining members, and a cross piece secured to the rear end of said draw bar and extending outward through said slotted webs to act as a safety attachment.

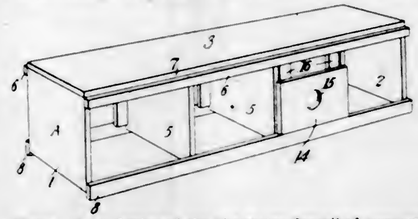
857,212. CAN-OPENER. ROBERT T. STEVENSON, Aurora, Ill. Filed Feb. 28, 1906. Serial No. 303,539.



Claim.—1. A can opener, comprising two complemental members, a pin connecting said members together, one of said members extending forwardly of the pivot and constituting a head, and the other member being formed at the pivot point with a depression and terminating substantially at said pivot point, and a cutting blade which is an element distinct from the member with the depression, said cutting blade being located at its rear end in said depression and having the pivot pin extending therethrough, said blade being thereby secured in place by the same pin which pivotally connects said members together.

2. A can opener, comprising two complemental members pivotally connected together, one of said members terminating substantially at the pivot point and the other extending integrally in advance of the pivot point and constituting a cutting head, said head being longitudinally slotted for a portion only of its length and provided on both sides of its lot with transverse serrations and at one edge with a depending flange 9, the other member being provided at the pivot with a depression in alinement with the slot of the head, and a cutting blade secured in said depression and adapted to work in said slot, the pivot pin passing through the said blade and constituting a means for securing it in place as well as the means for pivotally connecting the two members together.

857,213. HEN'S NEST. SCHUYLER C. STEVENS, Smith Center, Kans. Filed Mar. 22, 1907. Serial No. 363,856.



Claim.—1. A device of the character described composed of coöperatively arranged detachable sections adapted to engage one above the other and having partitions therein dividing them into rows of nests, one of the sections being provided with strips along its lower portion adapted to interlock with the top of the other section to prevent relative lateral disengagement thereof.

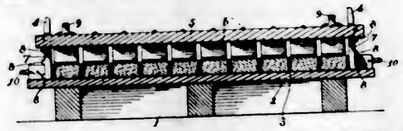
2. A device of the character described, composed of superposed detachable sections, each section embodying end pieces, a top board connecting them, and horizontally extending strips arranged at the sides thereof, the strips of one section engaging the longitudinal edges of the top board on the adjacent section for preventing relative lateral displacement of the sections.

3. A device of the character described composed of superposed detachable sections, each section embodying end pieces, a top board connecting them, partitions arranged transversely of the section and dividing it into a row of nests, strips extending longitudinally of the section and connecting the end pieces and partitions, the lower longitudinal edges of the strips projecting below the lower edges of the end pieces and partitions and adapted to coöperate with the longitudinal edges of the top board of the adjacent section to prevent relative lateral displacement of the sections, and cleats on the upper surface of the top board of one section adapted to engage at the inner sides of the end boards to prevent relative longitudinal displacement of the sections.

4. A device of the character described embodying end pieces, a top board connecting them, partitions arranged transversely of the top board and forming a row of nests, upper and lower parallel strips arranged at each side of the nest, and closures for the nests each embodying a cover board having cross pieces thereon adapted to engage behind the said strips to prevent outward movement of the closures, the ends of the boards of the latter coöperating with the vertical edges of the adjacent partitions to prevent inward movement of the closures.

5. A device of the character described embodying superposed detachable sections, each of the latter embodying end pieces, a top board secured thereto, partitions arranged transversely of the section and dividing it into a row of nests, upper and lower horisontal strips arranged on the vertical edges of the partitions and end pieces, the lower pair of strips being arranged to coöperate with the longitudinal edges of the top board of the next lower section to prevent lateral displacement of the sections, and closures for the nests each embodying a cover board adapted to engage the vertical edges of two adjacent partitions and a pair of cross pieces arranged on the rear thereof and adapted to engage the rear sides of the upper and lower strips at either side of the section, the lower ends of the cross pieces projecting a short distance beyond the lower edge of the cover board than the upper ends project above the upper edge of the cover board, the weight of the cover serving to prevent disengagement of the lower ends of the cross pieces and the lower strip.

857,214. MOLD FOR CEMENT BLOCKS. CARL E. STOKOE, Grand Haven, Mich. Filed July 6, 1906. Serial No. 324,944.



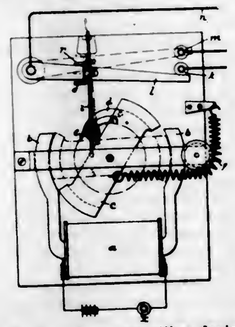
Claim.—1. The combination of a mold consisting of a series of rigidly connected cells open at the top and bottom, guide posts on the mold, a detached stripper plate, a follower for each cell attached to the stripper plate, and guides attached to the said plate and slidably engaging the sides and edges of the posts.

2. The combination of a pallet, a mold consisting of a series of rectangular cells having parallel vertical walls and rigidly connected to each other, vertical guide posts rigidly attached to said mold and projecting upward therefrom, a detached follower plate vertically movable between the posts, followers attached to the plate above each cell of the mold, guides attached to the plate and slidably and detachably engaging the posts at the opposing sides and edges thereof, said guides also extending to the plane of the bottom of the mold to engage the pallet, and handles on the mold and plate to manually and separately operate the same.

3. The combination of a mold consisting of a series of cells open at the top and bottom, guide posts at the respective ends of the mold, a stripper frame having guides slidably engaging the posts, and plates having folded edges to detachably engage the posts.

4. A device for molding concrete bricks comprising a platen, a series of rigidly connected cells open at top and bottom and having parallel vertical walls, vertical guide posts at the respective corners of the series of cells, a follower plate, followers attached to the plate opposite the respective cells, guides attached to the plate and slidably engaging the posts and also adapted to engage the platen and support the followers, handles on the cells and follower plate, and plates having folded edges adapted to detachably engage the posts.

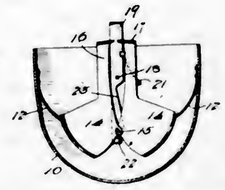
857,215. APPARATUS FOR AUTOMATIC LIGHTING OF GAS-JETS AND THEIR EXTINCTION AFTER A PREDETERMINED TIME. FREDRIK TEGTOR, Stockholm, Sweden. Filed Nov. 11, 1904. Serial No. 232,323.



Claim.—1. In a contact controlling device the combination of the stationary contacts, of an electromagnet, an oscillating armature, an oscillating lever connected to the armature and arranged to move over the contacts and check mechanism for controlling the return movement of the armature.

2. In a contact controlling device the combination of the stationary contacts, an oscillating lever arranged to move over the contacts, an electromagnet, an oscillating armature, a spring for returning the armature to normal position, a connection from said armature to the oscillating lever for oscillating said lever, a ratchet, a pawl on the armature engaging with said ratchet and check mechanism actuating the ratchet for controlling the return movement of the armature.

857,216. WATCH-GUARD. LESLIE L. TIBBELL, Buchanan, Mich. Filed Jan. 17, 1907. Serial No. 352,809.



Claim.—1. A watch guard comprising a locking device formed of two pivotally connected members, and a resilient support for said members, said support being constructed to accelerate the pivotal movement of said members in either direction.

2. A watch guard comprising two pivotally connected members constructed to receive a watch, said members having extensions forming jaws, and means for accelerating the opening and closing movements of said jaws.

3. A watch guard comprising two pivotally connected members constructed to receive a watch, said members having upper extensions forming jaws, and a resilient support for each member, said supports being arranged to accelerate the opening and closing movements of said jaws.

4. A watch guard comprising two members constructed to receive a watch, said members being pivotally connected, and spring arms supporting said members, said spring arms being pivotally connected to the members on a plane different from the pivotal connection between the members.

5. A watch guard comprising two pivotally connected members constructed to receive a watch, said members having upper extensions forming jaws, and a spring arm pivotally connected to each member and supporting the same, the pivotal connections of said spring arms being on a plane different from the pivotal connection between the members.

6. A watch guard comprising two pivotally connected members constructed to receive a watch, supporting means for said members constructed to accelerate the pivotal movement of said members in either direction, and a locking lever to hold said members in closed position.

7. A watch guard comprising two members constructed to receive a watch, a resilient support for each member, a pivot uniting said members and provided with an extension, and a locking lever arranged to engage said extension.

8. In a watch guard the combination of a fob or casing provided with means for securing the same in the pocket of a garment, of two pivotally connected members constructed to receive a watch, and means carried by said fob or casing for supporting said members and constructed to accelerate the pivotal movement of said members in either direction.

9. In a watch guard the combination of a fob or casing provided with means for securing the same in the pocket of a garment, of two pivotally connected members constructed to grasp a watch, and spring arms carried by

said fob or casing and pivotally connected to said members, the pivotal connections of said spring arms being on a plane different from the pivotal connection between the members.

857,217. BOX-FASTENER. WILLIAM TISCH, La Crosse, Wis. Filed Apr. 4, 1906. Serial No. 309,887.



Claim.—1. The combination with a box provided with a hinged lid, of a keeper plate provided with upper and lower outwardly directed portions, a latch member pivoted at one end to the lower outwardly directed portion of said plate and having its opposite end directed at an angle to its body portion for engagement with the lid of the box to force the latter tightly upon the sides and ends of the latter, said latch member also having an outwardly directed portion to embrace the upper outwardly directed portion of the keeper plate and provided with a slot, and a keeper swiveled on the keeper plate and provided with a head to pass through said slot of the latch member and bear against the outwardly directed portion of the latter to lock the lid against accidental opening.

2. The combination with a box provided with a hinged lid; of a keeper plate, a latch member pivoted to the plate and having one end formed to engage the lid and force it down tightly upon the sides and ends of the box and also having an outwardly directed portion intermediate its ends, and a keeper secured to the keeper plate and having a head for binding engagement with said outwardly directed portion to lock the lid against accidental opening.

3. A keeper comprising a body portion having reduced ends and bent upon itself to form a head and a shank, and a disk fitted to said shank.

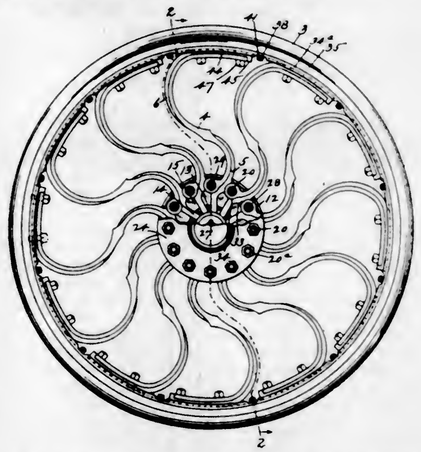
857,218. CIGAR-MOISTENING BOX. WILLIAM TISCH, La Crosse, Wis. Filed May 3, 1906. Serial No. 315,087.



Claim.—A tobacco box having a removable top, a perforate partition dividing the box into a tobacco compartment and a moisture compartment, the bottom of the box having an external recess provided with openings communicating with the moisture compartment, an inverted cup seated in the recess and having portions struck up to provide openings registering with the openings in the back of the recess, said struck up portions being bent through the openings in the back of the recess forming fastenings for the cup, and a rotary closure for the openings pivoted within the cup and having openings for alinement with the openings of the cup.

857,219. VEHICLE-WHEEL. JOHN R. WELCH, Alexandria, Ind. Filed Jan. 20, 1906. Serial No. 296,966.

Claim.—1. In a vehicle wheel, the combination of a hub and a rim, a series of spokes having their inner ends operatively connected to said hub and their outer ends curved toward said rim, and a leaf spring for each of said spokes, each of said springs being provided with a stop for engagement by the outer extremity of a spoke and being curved to correspond to the curvature of the spoke to reinforce the same, and means for securing said spokes and springs to the rim, substantially as specified.



2. In a vehicle wheel, the combination of a hub and a rim, of a series of spokes extending between said hub and rim, each of said spokes being reversely curved, and a pair of reinforcing springs for each of said spokes, each of said springs being adapted to engage and reinforce the convex surfaces of said spoke, substantially as specified.

3. In a vehicle wheel, the combination of a rim and a hub, spokes operatively connected to said hub and rim, each of said spokes having its inner portion curved in one direction and its outer portion curved in the opposite direction, a leaf spring operatively connected to the hub and engaging the adjacent inner convex surface of the spoke, and a spring operatively secured to the rim and engaging the adjacent outer convex surface of said spoke, substantially as specified.

4. In a vehicle wheel, the combination of a hub and a rim, spokes operatively connecting said hub and rim, each of said spokes having an inner curved portion and a reversely curved outer portion, and a pair of curved springs for each of said spokes, one spring being secured to the hub and the other to the rim, the spoke having its intermediate unreinforced portion of greater cross-sectional area than the other portions thereof, substantially as specified.

5. In a vehicle wheel, the combination of a rim and a hub, said hub having a series of ribs projecting radially therefrom, spokes having their outer ends operatively connected to said rim and their inner ends operatively connected to said hub, and reinforcing springs for the inner portions of said spokes, each of said springs having an inner end adapted to fit between a pair of said ribs, substantially as specified.

6. In a vehicle wheel, the combination of a rim and a hub, the hub being provided with a series of ribs projecting from the barrel thereof, of a series of resilient spokes operatively connecting said rim and hub, and a series of reinforcing springs for the inner portions of said spokes, each of said springs being provided with an inner portion adapted to fit between a pair of said ribs and an exterior portion adapted to engage and reinforce the spoke, substantially as specified.

7. In a vehicle wheel, the combination of a rim and a hub, spokes operatively connecting said rim and hub, each of said spokes being provided with a curved portion adjacent to the inner end thereof, ribs projecting outwardly from the barrel of the hub, and a series of reinforcing springs having their inner ends fitted between said ribs and each having a curved portion adapted to engage and reinforce the inner curved portion of a spoke, substantially as specified.

8. In a vehicle wheel, the combination of a rim and a hub, said hub being provided with ribs projecting outwardly from the barrel thereof, a plurality of resilient spokes operatively connecting said rim and hub, the inner end portions of said spokes being curved and being connected to said hub beyond the outer ends of said ribs, and reinforcing springs having their inner ends fitted between said ribs and their outer portions curved to engage and reinforce the inner curved portions of said spokes, substantially as specified.

9. In a vehicle wheel, the combination of a hub and a rim, of a series of spokes having their inner ends curved and provided with cylindrical bearings, pivots for said bearings carried by said hub, and a series of reinforcing springs having their inner ends projecting inwardly beyond said bearings, each of said springs being provided with concave portions adapted to engage said bearings and with an outer curved portion adapted to engage the correspondingly curved inner portion of a spoke to reinforce the same, substantially as specified.

10. In a vehicle wheel, the combination of a rim and a hub, said hub being provided with oppositely-located face plates and a flange located between said face plates and provided with recesses for the reception of the inner ends of the spokes, the opposite walls of each of said recesses diverging inwardly, spokes operatively connecting said hub and rim and having their inner ends curved and connected to said hub between the recesses, and a reinforcing spring for each of said spokes having its inner end secured to the hub and its outer end projecting through a recess and engaging the convex curved surface of a spoke, substantially as specified.

11. In a vehicle wheel, the combination of a rim and a hub, said hub comprising oppositely-located face plates and flanges extending between said face plates and provided with recesses for the reception of the inner ends of the spokes, pins extending between said plates between said recesses, spokes having their outer ends operatively connected to said rim and their inner ends curved and provided with cylindrical bearings for said pins, a reinforcing spring for the inner curved portion of each of said spokes, said spring being provided with concave surfaces adapted to fit the cylindrical bearings of adjacent spokes and also having a curved outer portion for engagement with the corresponding curved portion of a spoke, the width of each of said recesses being slightly greater than the combined widths of the adjacent portions of a spring and spoke, substantially as specified.

12. In a vehicle wheel, the combination of a rim and a hub, said hub comprising oppositely located face plates and flanges extending between said face plates and provided with recesses for the reception of the inner ends of the spokes, the opposite walls of each recess diverging inwardly, pins extending between said plates between said recesses, spokes having their outer ends operatively connected to said rim and their inner ends curved and provided with cylindrical bearings for said pins, a reinforcing spring for the inner curved portion of each spoke, said spring being provided with concave surfaces adapted to fit the cylindrical bearings of adjacent spokes and also having a curved outer portion for engagement with the corresponding curved portion of a spoke, the width of each recess being greater than the combined widths of the adjacent portions of a spring and spoke, substantially as specified.

13. In a vehicle wheel, the combination of a hub and a rim, said hub comprising a fixed and a removable face plate, ribs projecting outwardly from the barrel of the hub, said ribs being of a length to space said face plates apart and each of said ribs being provided with a boss, corresponding bosses on the removable face plate, spokes operatively connected to said rim and having their inner ends connected to said hub outside of the ends of such bosses, and reinforcing springs for the inner ends of said spokes, the inner ends of said springs being adapted to fit between the adjacent ribs and the bosses on said ribs and the removable face plate, the outer portions of said springs engaging the inner portions of said spokes to reinforce the same, substantially as specified.

14. In a vehicle wheel, the combination of a hub and a rim, said hub comprising a fixed and a removable face plate, spokes operatively connected to said face plates and said rim, ribs projecting outwardly from the barrel of the hub, the length of said ribs being as great as the width of the inner ends of the spokes, bosses for said ribs being provided on said face plates, reinforcing springs having their inner ends inserted between said ribs and bosses and their outer portions engaging the spokes to reinforce the same, substantially as specified.

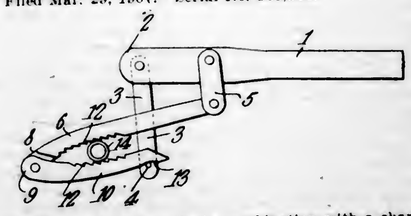
15. In a vehicle wheel, the combination of a rim and a hub, said hub being provided with oppositely-located face plates, each of said plates being provided with a flange having recesses therein for the reception of the inner ends of the spokes, ribs projecting from the barrel of the hub and serving, with said flanges, to space the face plates apart, spokes operatively connected to said rim and having their inner ends extending through said recesses, and reinforcing members for said spokes having their inner ends fitted between said ribs and their outer ends projecting through said recesses and engaging said spokes, substantially as specified.

16. In a vehicle wheel, the combination of a rim and a hub, a series of reversely-curved spokes extending between said rim and hub, and a pair of reinforcing springs for each of said spokes, one of said springs being secured to the rim and engaging the adjacent convex surface of the spoke and being substantially coextensive with such surface and the other spring being secured to the hub and engaging the adjacent convex surface of the spoke and being substantially coextensive with such surface.

17. In a vehicle wheel, the combination of a rim and a hub, a series of spokes extending therebetween, said spokes having their outer end portions curved to conform to the curvature of the rim and the portions adjacent to said end portions curved away from the rim, and a reinforcing leaf spring for each of said spokes, each of said springs being secured to said rim and conforming in shape to the end portion of the spoke and engaging the curved portion of the spoke adjacent to the rim, each of said springs being provided with a stop at the outer end thereof for the corresponding end of the spoke, and means for securing said spokes and springs to the rim.

18. In a vehicle wheel, the combination of a rim and a hub, a series of reversely curved spokes extending between said rim and hub, and a pair of reinforcing springs for each of said spokes, one of said springs being secured to the rim and engaging the adjacent convex surface of the spoke and being substantially coextensive with such surface and the other spring being secured to the hub and engaging the adjacent convex surface of the spoke and being substantially coextensive with such surface, each of said springs having a greater curvature than that of the corresponding surface of the spoke.

857,220. WRENCH. EMIL H. ZANTO, Dartford, Wis. Filed Mar. 29, 1907. Serial No. 365,344.

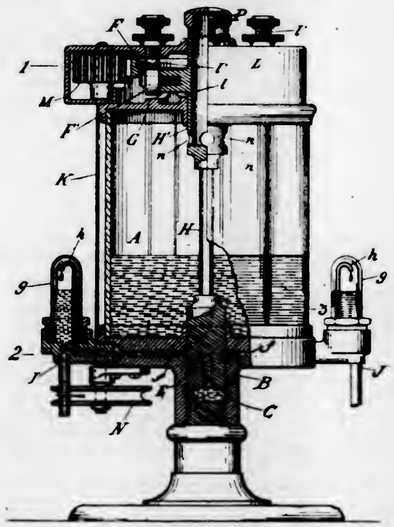


Claim.—1. In a wrench the combination with a shank; of a jaw, a link connection between the jaw and an intermediate portion of the shank, and a combined supporting and actuating link movably connected to one end portion of the shank, and a secondary jaw movably connected to

one end of the first mentioned jaw and having a slotted portion disposed to receive and engage the supporting link.

2. In a wrench the combination with a shank; of a jaw movably connected thereto, a combined supporting and actuating link movably connected to the shank and extending through the jaw, a secondary jaw movably connected to the first mentioned jaw and having a slotted portion disposed to receive the link, said secondary jaw having a concaved seat for the link.

857,221. MULTIPLE-FEED LUBRICATOR. CHARLES A. ANDERSON and ERICK A. ERICKSON, Chicago, Ill., assignors, by mesne assignments, to Reeves & Company, Columbus, Ind., a Corporation of Indiana. Filed Oct. 13, 1904. Renewed Mar. 11, 1907. Serial No. 361,893.



Claim.—1. In a pump, the combination, with a cylinder having induction and eduction ports communicating with the bore thereof, of a piston rotatably and axially reciprocable within said cylinder and having a passage formed therein and communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, a gear carried by said piston, a second gear meshing therewith to completely rotate the piston, and means for axially reciprocating the piston and the gear.

2. In a pump, the combination, with a cylinder having induction and eduction ports communicating with the bore thereof, of a piston rotatably and axially reciprocable within said cylinder and having a passage formed therein and communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, means for rotating said piston, means for axially reciprocating said piston, and means for adjusting the amplitude of the axial movement of said piston.

3. In a pump, the combination, with a cylinder having a plurality of eduction ports and means for introducing fluid thereinto, of a piston rotatably and axially reciprocable within said cylinder, and having a passage formed therein and communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, means for rotating said piston, and a plurality of independently adjustable means for axially reciprocating said piston a plurality of times each rotation thereof, whereby the amplitude of the several axial reciprocations of the pistons may be independently varied.

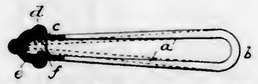
4. In a pump, the combination, with a cylinder having a plurality of eduction ports and means for introducing fluid thereinto, of a piston rotatably and axially reciprocable within said cylinder and having a passage formed therein and communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, means for rotating said piston, and a plurality of means for axially reciprocating said piston a plurality of times each rotation thereof.

5. In a pump, the combination, with a reservoir, of a cylinder formed therein and having an induction passage leading thereto from the reservoir and an eduction passage leading therefrom, of a piston rotatably and axially reciprocable within said cylinder and having a passage formed therein and communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, means for rotating said piston, a cam track engaging the said piston to move the same in one direction axially, a pin adapted to engage said piston and move the same axially in the opposite direction, and means for adjusting said pin axially of the piston.

6. In a pump, the combination, with a reservoir, of a cylinder having a plurality of induction ports leading thereinto from the reservoir and a corresponding series of eduction ports, a piston rotatably and axially reciprocable within said cylinder and having a passage formed therein and communicating with the cylinder at the end of the piston and adapted to be brought into registry with the induction and eduction ports successively, means for rotating said piston, a cam track having a plurality of cams adapted to engage the piston and shift the same axially in one direction a plurality of times for each rotation thereof, and a corresponding series of adjustable pins adapted to engage the piston and shift the same axially in the opposite direction.

7. In a pump, the combination, with a reservoir, of a cylinder supplied from said reservoir and having a plurality of eduction passages, an ejecting means arranged within said cylinder, means for operating said ejecting means a cycle of times corresponding with the number of ejection passages and delivering material in succession to the eduction passages, and means for independently varying the amplitudes of several ejecting operations in the cycle.

857,222. HAIR-RETAINING DEVICE. MARION L. BAGLEY, Santa Barbara, Cal. Filed Jan. 3, 1907. Serial No. 350,677.

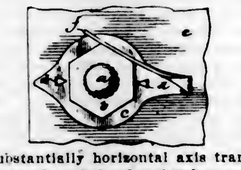


Claim.—In a device of the character described, the combination of a hair-pin the prongs of which are resilient and are pierced each with a hole near its free end; and a cap formed with a socket from the interior wall of which project toward each other studs adapted to engage in the holes in said prongs; the distance of said holes from the lower end of said prongs being substantially the same as the distance of said studs from the bottom of said socket.

857,223. NUT-LOCK. SHERMAN BARBER, Chicago, Ill. Filed Sept. 15, 1906. Serial No. 334,763.

Claim.—1. A lock-nut washer consisting of an expanded apertured plate having a reduced arm extended for a considerable distance outward in substantially a horizontal plane, then bent upward and backward over the plate on a substantially horizontal axis transverse to the length of the arm, and beyond said bend twisted on a longitudinal axis to position its nut-engaging portion in a substantially vertical plane.

2. A lock nut washer, consisting of an apertured plate having a reduced arm extending outward for a considerable distance in a substantially horizontal plane and in a direction substantially radial with reference to the bolt hole in the washer, then bent upward and backward over

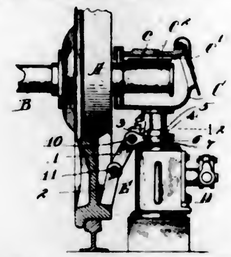


itself on a substantially horizontal axis tranaverse to its length, and beyond such bend twisted on a longitudinal axis to position its nut-engaging portion in a substantially vertical plane.

857,224. PROCESS OF OBTAINING MEDICINE FROM CARROTS. EMILIO F. BOLT, Copenhagen, Denmark. Filed Dec. 27, 1904. Serial No. 238,500.

Claim.—The hereindescribed process of producing a medicine from carrots, which consists in extracting the juice from the carrots, adding to said juice a quantity of wine yeast sufficient to produce active fermentation therein, maintaining the materials at a temperature at which fermentation can take place until a small portion of the fermentable material contained in the juice is transformed into alcohol, then removing the yeast and sterilizing the resulting liquid.

857,225. LIFTING-JACK. CHARLES W. BOOTH, Milwaukee, and CHARLES GASPAR, Fond du Lac, Wis. Filed Aug. 25, 1906. Serial No. 331,977.



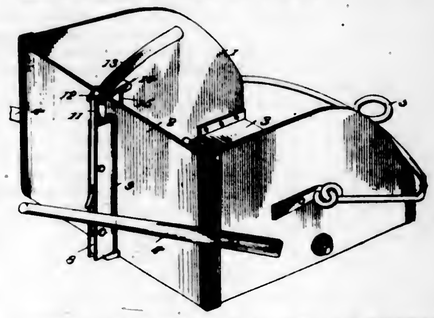
Claim.—1. The combination with a lifting jack, of a jointed arm pivotally connected to the body portion of the jack, interlocking parts on the body portion of the jack and on the members of said arm adapted for securing said arm to the jack body and the arm members to each other in adjusted position and means for securing said interlocking parts in engagement.

2. The combination with a lifting jack, of a jointed arm pivotally connected adjacent to the upper end of the body portion of the jack at a point laterally beyond the side thereof to provide for holding said arm against the body portion of the jack when not in use, interlocking parts on the body portion of the jack and on the members of said arm adapted for securing said arm to the body portion of the jack and the arm members to each other in adjusted pivotal positions and means for securing said interlocking parts in engagement.

3. The combination with a lifting jack, of a jointed arm pivotally connected to the body portion of the jack, interlocking parts on the body portion of the jack and on the members of said arm for securing said arm to the body portion of the jack and the arm members to each other in adjusted pivotal positions and means for securing said interlocking parts in engagement, said means comprising clamping screws passing through one connected member and threaded into the other.

4. The combination with a lifting jack, of a band or collar secured to the body portion thereof, a jointed arm pivoted to said band or collar, interlocking parts on said band or collar and on the members of said arm adapted for securing said arm to said collar and the arm members to each other in adjusted positions, means for securing said interlocking parts in engagement and a lug on said collar adapted to bear against the side of the body of the jack above the point of pivotal attachment of said jointed arm thereto.

857,226. SCRAPER. THOMAS BOOTH, Boise, Idaho. Filed Oct. 15, 1906. Serial No. 339,004.



Claim.—1. In a scraper or shovel of the class described, the combination of a body provided with a movable bottom, draft means for the scraper, a dog for normally holding the movable bottom in closed position, an operating lever having operative connection at one end with the dog aforesaid, a catch for holding said operating lever in a certain position, and means for simultaneously tripping the catch and actuating the operating lever to disengage the dog from the movable bottom.

2. In a scraper or shovel of the class described, the combination of a body provided with a movable bottom, draft means for the scraper, a dog for normally holding the movable bottom in closed position, an operating lever having operative connection at one end with the dog aforesaid, a catch for holding said operating lever in a certain position, and a trip lever having pivotal connection with the operating lever and the catch aforesaid to simultaneously actuate these parts, whereby to disengage the dog from the movable bottom.

3. A scraper or shovel comprising a movable bottom for dumping purposes, a dog normally coöperating with the movable bottom to hold the same closed, a catch operatively connected with the dog aforesaid to hold the latter in engagement with the movable bottom, and means for simultaneously actuating the catch and the dog to disengage the latter from the movable bottom.

4. A scraper or shovel comprising a movable bottom, a dog pivoted to the back of the scraper and normally coöperating with the movable bottom to hold the same closed, an operating lever pivoted to the scraper and having one end arranged to actuate the dog, a catch pivotally connected with the other end of the operating lever, and engaging the body of the scraper to hold the said operating lever in a predetermined position, and means for disengaging said catch for the purpose specified.

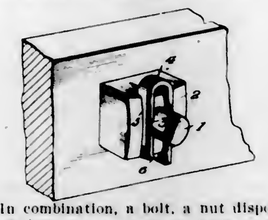
5. A scraper or shovel comprising a movable bottom, a dog pivoted to the back of the scraper and normally coöperating with the movable bottom to hold the same closed, an operating lever pivoted to the scraper and having one end arranged to actuate the dog, a catch pivotally connected with the other end of the operating lever, and engaging the body of the scraper to hold the said operating lever in a predetermined position, and a trip lever arranged to disengage the catch aforesaid from the top of the scraper and operably connected with the operating lever to actuate the same.

6. A scraper comprising a movable bottom pivotally connected at one end thereof, a dog pivoted to the body of the scraper and coöperating with the free end of the mov-

able bottom to hold the latter closed, an operating lever pivoted to the scraper between its ends having one end loosely connected with the dog, a catch pivotally connected with the opposite end of the operating lever and coöperating with the body of the scraper to hold said lever in a predetermined position, and a trip lever pivoted to the operating lever and arranged for actuation thereof, said trip lever having an end portion arranged to engage the catch to disengage the latter, for the purpose specified.

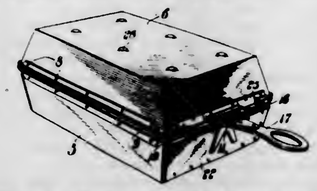
7. A scraper comprising a movable bottom pivotally connected at one end thereof, a dog pivoted to the body of the scraper and coöperating with the free end of the movable bottom to hold the latter closed, an operating lever pivoted to the scraper between its ends, having one end loosely connected with the dog, a catch pivotally connected with the opposite end of the operating lever and coöperating with the body of the scraper to hold said lever in a predetermined position, a trip lever pivoted to the operating lever and arranged for actuation thereof, said trip lever having an end portion arranged to engage the catch to disengage the latter, for the purpose specified, the pivotal connection between the catch and the operating lever comprising the connecting means between said operating lever and trip lever.

857,227. NUT-LOCK. THOMAS BOOTH, Boise, Idaho. Filed Oct. 15, 1906. Serial No. 339,005.



Claim.—In combination, a bolt, a nut disposed thereon and provided with grooves or kerfs in its outer side, the bolt being formed with opposite recesses or seats on its nut receiving end, a longitudinally tapering key of U form comprising sides arranged transversely to the bolt and engaging in the recesses or seats thereof, the sides of the key being also received in the grooves or kerfs in the outer side of the nut, and the outer end of one side of the key being reduced laterally and bent to engage a side of the nut to form a stop to prevent accidental displacement of the key.

857,228. BAKING-PAN. THOMAS BOYD, Elgin, Oreg. Filed Feb. 28, 1907. Serial No. 359,786.



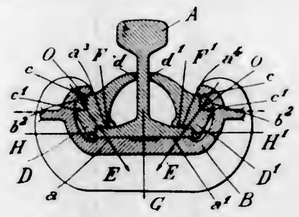
Claim.—1. A baking pan including upper and lower pivotally connected sections, the upper edge of the lowermost section being beaded, a wire extending through the bead and bent outward at the central portions of the ends of said section to form loops for engagement with the hooked portion of a lifting lever, and reinforcing plates permanently secured to the opposite end walls of the lower pan section and extending over the entire surface of said walls beneath the loops, said plates forming a brace for engagement with the lower portion or foot member of said lifting lever.

2. A baking pan comprising upper and lower pivotally connected sections, the lower section having a beaded edge, a wire extending through the beaded edge and bent outward at one end of said section to form a lifting loop for engagement by a lifting lever, portions of the beaded end walls of the lower section being cut away to expose the wire, and the upper section having a similarly beaded edge, and a wire extending through the bead, the wire of the upper section being bent outward forming hooks which pivotally engage with the exposed portions of the wire of the lower section, and a removable plate secured to the end wall of the lower section and extending over the entire surface of the wall beneath said loop.

3. A baking pan including pivotally connected sections, loops extending outward from the opposite end walls of the lower section for engagement with a lifting lever, reinforcing plates permanently secured to said end walls and extending over the entire surface of said walls beneath the loops to form bearing surfaces with which the lower portion of such lifting lever may engage, and an inwardly bent guide lip depending from the upper section and adapted to engage the adjacent end wall of the lower section when the two sections of the pan are closed.

4. A baking pan including a substantially rectangular receptacle having its upper edge provided with a marginal bead, a reinforcing wire extending through the bead and bent outward at one end of the pan to form a loop for engagement with a lifting lever, and a reinforcing plate permanently secured to the end wall of the pan and extending over the entire surface of the wall beneath said loop, said reinforcing plate having a beaded edge forming a bearing surface to be engaged by the lower portion of the lifting lever.

857,229. RAIL AND OTHER LIKE JOINT. CHARLES A. A. CHENU, Étampes, France. Filed July 21, 1906. Serial No. 327,202.



Claim.—1. In a rail joint, the combination with the rails, of a chair having its edges curved inwardly toward the web of the rails, and jaws arranged between the chair and rails and bearing against the rail bases at the sides and on the upper surfaces thereof, and also contacting with the inwardly turned edges of the chair.

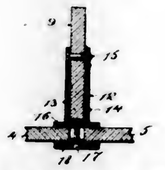
2. In a rail joint, the combination with the rails, of a chair extending beneath the rails and having its edges bent inwardly toward the web of the rails and forming curved bearing surfaces, and wedge shaped jaws arranged between the rail and said curved bearing surfaces of the chair, said jaws engaging the rail bases at the sides and on the upper surfaces at points between the sides and the webs of the rails.

3. In a rail joint, the combination with the rails, of a chair extending beneath the rails and having its edges extending upwardly above the rail base, and jaws arranged between the rails and upwardly extending edges of the chair, each jaw having two independent contact surfaces engaging the rail bases, one engaging a side of a base and the other bearing upon the top of said base at a point between the edge thereof and the web of the rail.

4. In a rail joint, the combination with the rails, of a chair extending beneath the rails and having its side edges extending above the bases of the rails, and wedge shaped jaws extending between the rails and said edges of the chair, each jaw having two independent points of contact with the rail bases and a third point of contact with the webs of the rails.

5. In a rail joint, the combination with the rails, of a chair extending beneath the rails and having its edges bent inwardly toward the webs of the rails and providing curved bearing surfaces above the plane of the bases of the rails, and wedge shaped jaws arranged between the rails and said curved bearing surfaces, each of said jaws having a lateral bearing surface, engaging the webs of the rails, and two depending contact surfaces, one engaging the upper surfaces of the rail bases, and the other extending below said top surfaces and bearing against a side of the rail base.

857,230. STRUCTURE OF GLASS. SACHARY I. FEINBERG, New York, N. Y. Filed Apr. 28, 1905. Serial No. 257,814.



Claim.—1. In a device of the class described, a partition with a recessed edge, two plates abutting against the partition and a clamp resting in a recess in said partition and holding said plates and partition in fixed relation.

2. In a device of the class described, a recessed partition, a clamp fixed to said partition and extending into a recess of said partition, plates abutting against said partition, a cap resting against said plates and a screw connecting said cap and that part of the clamp extending into said recess.

3. In a device of the class described, a partition comprised of a plurality of layers, a clamp fixed to said partition, a plurality of plates and means for uniting the clamp and plates.

4. In a device of the class described, a partition composed of a plurality of layers, one of said layers having members united by tongue and groove joints, a plurality of plates, and means for uniting said partition and plates.

5. In a device of the class described, a partition composed of a plurality of layers, a recess in the edge of said partition adapted to receive a part of a clamp, a plurality of plates, a cap, and means for uniting said clamp and cap.

6. In a device of the class described, a partition composed of a plurality of layers, one of said layers protruding so as to form a tongue, a plurality of plates abutting against said tongue, and means for fixedly uniting said plates and partition.

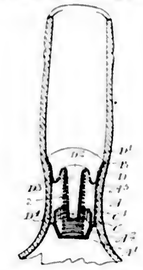
7. In a device of the class described, a partition composed of a plurality of layers, one of said layers protruding so as to form a tongue, a clamp fixed to said partition, a plurality of abutting plates, and means for uniting said partition and plates.

8. In a device of the class described, a partition composed of a plurality of plates, a recess in an edge of said partition, a clamp having a part resting in said recess, a plurality of plates, a cap and a screw connecting said clamp and cap.

857,231. NON-REFILLABLE BOTTLE. LEONARD S. FENWICK, Toronto, Ontario, Canada. Filed Dec. 3, 1906. Serial No. 346,138.

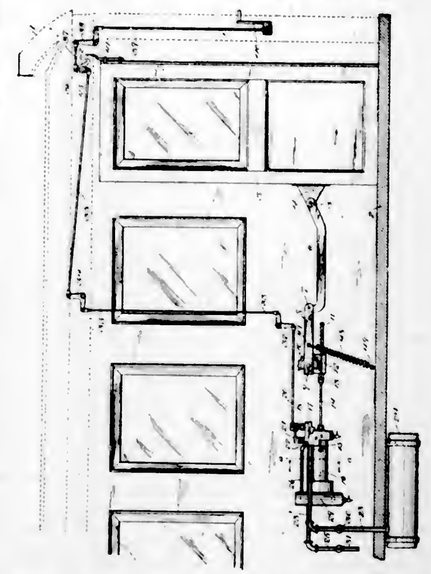
Claim.—1. In a non-refillable bottle, in combination a sleeve adapted to fit the neck of the bottle and provided with a reduced tapered lower portion, a hollow imperforate valve provided with a suitable bottom and tapered lower portion, guiding ribs upon the valve and a protecting cap fitting the upper portion of the sleeve and suitably secured in place and provided with a depending stem extending into the valve and having a hole therein, the stem of the valve having perforations in the flange surrounding the same and the sleeve being adapted to engage a groove in the neck of the bottle as and for the purpose specified.

2. In a non-refillable bottle, in combination a sleeve adapted to fit the neck of the bottle and provided with a reduced tapered lower portion, a hollow imperforate valve provided with a suitable bottom and tapered lower portion, guiding ribs upon the valve and a protecting cap fitting the upper portion of the sleeve and suitably secured in place and provided with a depending stem extending into the



valve and having a hole therein, the stem of the valve having perforations in the flange surrounding the same and the sleeve being adapted to engage a groove in the neck of the bottle, and a spiral spring extending from the cap to the bottom of the hollow valve as and for the purpose specified.

857,232. DOOR-OPERATING APPARATUS. PARIS R. FORMAN, Chicago, Ill., assignor to Burdett-Rowntree Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Oct. 27, 1905. Serial No. 284,594.



Claim.—1. The combination with a door, of a motor for operating said door, and means for effecting a variation of the operating pressure in inverse proportion to the speed at which the door is moved.

2. The combination with a door, of a fluid pressure motor connected to operate said door, a source of fluid pressure supply, means for controlling said motor from a point adjacent the door-way, and means to effect a variation of the operating pressure in the motor in inverse proportion to the speed at which the door is moving.

3. The combination with a door, of a motor connected to open or close said door, means for retaining said door in closed position, controlling-mechanism for said motor a

single means for actuating said retaining-means and said controlling means, and means to vary the operating-pressure in inverse proportion to the speed at which the door is moved.

4. The combination with a door, of fluid-pressure apparatus for moving said door, means for varying the operating-pressure in said fluid-pressure apparatus in inverse proportion to the speed at which the door is moved, a controlling mechanism for said fluid-pressure apparatus, latch-mechanism for retaining the door in closed position, and a single means for operating said latch-mechanism to release the door and for actuating said controlling-mechanism to effect a movement of the door to open position.

5. The combination with a door, of a fluid-pressure motor, connections between said motor and the door, a source of fluid-pressure supply for said motor, means for varying the operating-pressure therein in inverse proportion to the speed at which the door is moving, automatic latch-mechanism for retaining the door in closed position when closed, controlling means for the motor, and manual means for actuating said latch-mechanism to release the door and for operating said controlling-means to effect the opening of the door.

6. The combination with a door, of an operating-cylinder, connections between said cylinder and the door, a retarding device, means for rendering said retarding device inoperative during the first part of the motion of the door, and means for varying the operating-pressure therein in inverse proportion to the speed at which the door is moved.

7. The combination with a door, of an operating-cylinder, a piston therein, a crank-arm, a connection between said crank-arm and the door, means actuated by said piston for moving said crank-arm, a retarding device, means for rendering the retarding-device inoperative during the first part of the motion of the door, and means for varying the operating-pressure therein in inverse proportion to the speed at which the door is moved.

8. The combination with a door, of a crank-arm, a connection between said crank-arm and the door, a fluid-pressure motor for actuating said crank-arm to effect an opening or closing of the door, a retarding device, means for rendering said retarding device inoperative during the first part of the motion of the door, and means for varying the operating-pressure therein in inverse proportion to the speed at which the door is moved.

9. The combination with a door, of an operating-cylinder, a piston therein, connections between said piston and the door, means for assisting the pressure applied to said piston during the first part of the motion of the door and for resisting such pressure during the latter part of the motion of the door to effect a cushioning thereof, and means for varying the operating-pressure therein in inverse proportion to the speed at which the door is moved.

10. The combination with a door, of an operating cylinder, a piston therein, connections between said piston and the door, a spring acting on said connections to assist the pressure applied to said piston during the first part of the motion of the door and to resist said pressure during the latter part of the motion of the door, and means for varying the operating-pressure therein in inverse proportion to the speed at which the door is moved.

11. The combination with a door, of a cylinder, a piston in said cylinder actuated by the fluid-pressure, connections between the piston and the door, said connections comprising a crank-arm, means for accelerating the speed of the door during the first part of its motion and for retarding the speed of the door during the latter part of its motion, and means for varying the operating pressure in the cylinder in inverse proportion to the speed at which the door is moving.

12. The combination with a door, of a fluid-pressure motor connected to operate said door, means for accelerating the speed of the door during the first part of its motion and for retarding the speed thereof during the latter part of its motion, and means for varying the operating-pressure in the motor in inverse proportion to the speed at which the door is moving.

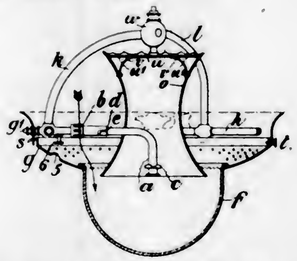
13. The combination with a door, of a cylinder, a piston in said cylinder; connections, comprising a crank arm, between said piston and the door, means for accelerating the speed of the door during the first part of its motion and for retarding the speed of the door during the latter part of its motion, a source of fluid-pressure supply, and means for controlling the flow of fluid to and from said cylinder to effect a variation of the operating-pressure in the cylinder in inverse proportion to the speed at which the door is moving.

14. The combination with a door, of a fluid-pressure motor; connections, comprising a crank arm, between said motor and the door; a spring acting on said crank-arm to accelerate the speed of the door during the first part of its motion, means for controlling said motor, and means to effect a variation of the operating-pressure therein in inverse proportion to the speed at which the door is moving.

15. The combination with a door, of fluid-pressure apparatus for operating said door, means for accelerating the speed of the door during the first part of its motion and for retarding the speed of the door during the latter part of its motion, latch-mechanism for retaining the door in closed position, means for varying the operating-pressure in said fluid-pressure apparatus in inverse proportion to the speed at which the door is moving, controlling-mechanism for the motor, and means for actuating said latch-mechanism to release the door and for operating said controlling-mechanism to effect the opening of the door.

16. The combination with a door, of a motor, a pivoted crank arm connected to the motor, a link pivotally connected between the door and said crank arm, means for controlling the operation of said motor to bring the pivotal points of said arm and link in substantial alinement both when the door is open and when the door is closed, and means operable from a point adjacent the door to be operated for actuating said motor-controlling means.

857,233. INVERTED INCANDESCENT GAS-BURNER. ADOLPHUS S. FRANCIS, London, England. Filed Apr. 20, 1906. Serial No. 312,866.



Claim.—1. An inverted incandescent gas burner comprising a gas supply pipe, a ring pipe connected thereto, a plurality of bent-burner tubes connected to said ring and projecting substantially radially inward the free ends of said bent tubes projecting substantially vertically downward, air inlets to said tubes in proximity to said ring pipe, and mantle supporting means on said tubes near the free ends of same, said free ends being in proximity to one another substantially as and for the purpose set forth.

2. An inverted incandescent gas burner comprising a gas supply pipe, a ring pipe connected thereto, a plurality of bent burner tubes connected to said ring and projecting substantially radially inward the free ends of said bent-tubes projecting substantially vertically downward, air inlets to said tubes in proximity to said ring pipe, mantle supporting means on said tubes near the free ends of same, said free ends being in proximity to one another, a chimney flared at its lower end, and apertures in said chimney through which said tubes project substantially as and for the purpose set forth.

3. An inverted incandescent gas burner comprising a gas supply pipe, a ring pipe connected thereto, a plurality of two-part bent burner tubes connected to said ring and projecting substantially radially inward, the free ends of said bent tubes projecting substantially vertically downward, air inlets to said tubes in proximity to said ring pipe, a sliding joint between the parts of each of said tubes, mantle supporting means on said tubes near the free ends of same, said free ends being in proximity to one another substantially as and for the purpose set forth.

4. An inverted incandescent gas burner comprising a gas supply pipe, a ring pipe connected thereto, a plurality of two-part bent burner tubes connected to said ring and projecting substantially radially inward, the free ends of said bent tubes projecting substantially vertically downward, air inlets to said tubes in proximity to said ring pipe, a sliding joint between the parts of each of said tubes, mantle supporting means on said tubes near the free ends of same said free ends being in proximity to one another, a chimney flared at its lower end, and apertures in said chimney through which said tubes project substantially as and for the purpose set forth.

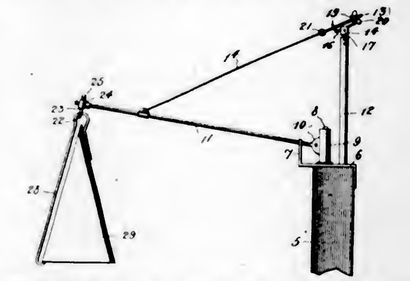
5. An inverted incandescent gas burner comprising a gas supply pipe, a ring pipe connected thereto, a plurality of bent burner tubes connected to said ring and projecting substantially radially inward, the free ends of said bent tubes projecting substantially vertically downward, air inlets to said tubes in proximity to said ring pipe, mantle supporting means on said tubes near the free ends of same, said free ends being in proximity to one another, a chimney flared at its lower end, apertures in said chimney through which said tubes project, an imperforate globe of larger diameter than the flared end of said chimney and means supporting said globe beneath said burners and beneath said chimney substantially as and for the purpose set forth.

6. An inverted incandescent gas burner comprising a gas supply pipe, a ring pipe connected thereto, a plurality of bent burner tubes connected to said ring and projecting substantially radially inward, the free ends of said bent tubes projecting substantially vertically downward, air inlets to said tubes in proximity to said ring pipe, mantle supporting means on said tubes near the free ends of same, said free ends being in proximity to one another, a chimney flared at its lower end, apertures in said chimney through which said tubes project, said apertures being so disposed that said free ends are approximately in the same plane as the flared end of said chimney, an imperforate globe of larger diameter than said flared end, and means supporting said globe beneath said burners and beneath said chimney and with its upper edge about in said plane, substantially as and for the purpose set forth.

7. An inverted incandescent gas burner comprising a gas supply pipe, a ring pipe connected thereto, a plurality of bent burner tubes connected to said ring and projecting substantially radially inward, the free ends of said bent tubes projecting substantially vertically downward, air inlets to said tubes in proximity to said ring pipe, mantle supporting means on said tubes near the free ends of same, said free ends being in proximity to one another, a chimney flared at its lower end, apertures in said chimney through which said tubes project, an imperforate globe of larger diameter than the flared end of said chimney, means supporting said globe beneath said burners and beneath said chimney, a cover closing the upper end of said chimney, and a ring of apertures situated near to the edge of said cover, substantially as and for the purpose set forth.

8. An inverted incandescent gas burner comprising a gas supply pipe, a ring pipe connected thereto, a plurality of bent burner tubes connected to said ring and projecting substantially radially inward, the free ends of said bent tubes projecting substantially vertically downward, air inlets to said tubes in proximity to said ring pipe, mantle supporting means on said tubes near the free ends of same, said free ends being in proximity to one another, a chimney flared at its lower end, apertures in said chimney through which said tubes project, an imperforate globe of larger diameter than the flared end of said chimney, means supporting said globe beneath said burners and beneath said chimney, and a domed cover supported upon said chimney for the purpose of further isolating the fresh air supply from the escaping gases of combustion, substantially as and for the purpose set forth.

857,234. MAIL-BOX. HORATIO GEDDES, Cleveland, Ohio. Filed June 5, 1906. Serial No. 320,279.



Claim.—1. A conical receptacle having a loop extending from the base to the apex thereof, in combination with a supporting arm having an eye through which the loop loosely extends.

2. A mail box comprising a vessel open at one end, a closure inside the vessel, and a hinge connection between the closure and the vessel, comprising eyes secured respectively to the closure and to the inside of the vessel, and a connection between said eyes, to permit the closure to swing downwardly, and laterally and bodily from the walls of the receptacle.

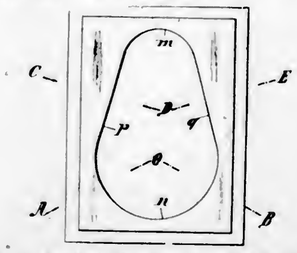
3. The combination with a support, of a vertically and horizontally swinging arm carrying a mail box, a standard rising from the support, a swiveled and vertically swinging plate on the standard, and a guy wire extending from the aforesaid arm, and adjustably carried by the aforesaid plate.

4. A receptacle having a loop extending from the top to the bottom thereof, in combination with a suspension device movable from one end of the loop to the other to support the receptacle with either end up.

5. A mail-box comprising a vessel, a rod pivoted at one end on the inside thereof, and a closure for the vessel hinged to the other end of the rod.

6. The combination with a support, of a horizontally swinging arm carrying a receptacle, and a guy wire secured at one end to the arm, and having at the other end a swiveled support, the pivotal axes of the arm and the guy wire support being out of alinement.

857,235. MEANS FOR DRAWING HOLLOW ARTICLES. KARL GOSSWEILER, Vienna, Austria-Hungary. Filed Nov. 12, 1906. Serial No. 343,109.



Claim.—1. A matrix for shaping hollow bodies comprising a matrix body portion provided with an oblong opening having circular and straight portions, the margins of said circular and straight portions being transversely rounded, the radii of curvature of the margins of the straight portion being relatively less than the marginal curvature of the circular portions.

2. A matrix for shaping hollow bodies comprising a matrix body portion provided with an oblong opening having circular and straight portions, the margins of said circular and straight portions being transversely rounded at different radii.

3. A matrix for shaping hollow bodies comprising a matrix body portion provided with an opening having circular and straight portions, the margins of said circular and straight portions being transversely curved at different radii.

4. A matrix for shaping articles comprising a matrix body portion having a single opening provided with a plurality of forming margins rounded at different radii, the margin of one radii gradually merging into the rounded margin of other radii.

5. A matrix for shaping hollow bodies comprising a matrix body portion provided with a single opening the upper margin of which is rounded at different radii, the rounded portion of one radii gradually merging into rounded portions of other radii.

857,236. INK-BLOTTER. KARL GOSSWEILER, Vienna, Austria-Hungary. Filed Nov. 12, 1906. Serial No. 343,110.



Claim.—1. A blotter comprising in combination, a plurality of superposed sheets of blotting paper; means uniting the ends of said paper in fixed relation, and a lenticular core inserted between and spreading said sheets, the resultant spring action of said sheets holding said core in place.

2. A blotter comprising in combination, superposed sheets of blotting paper, means uniting the ends of said sheets in fixed relation, and a core inserted between and spreading said sheets, the resultant spring action of said sheets holding said core in place, said core being located between the points of said uniting means.

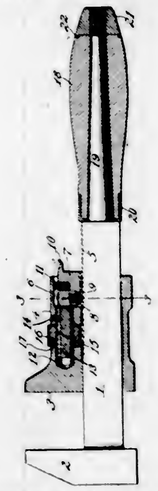
3. A blotter comprising in combination, a plurality of sheets of blotting paper, means for connecting said sheets at the ends thereof, and means for spreading said sheets between the uniting means whereby the resultant spring action of the sheets may serve to retain the parts in assembled relation.

857,237. WRENCH. OTIS M. HANSFORD, Americus, Ga. Filed July 2, 1906. Serial No. 324,522.

Claim.—1. A wrench comprising a shank or wrench-bar carrying a fixed-jaw, said shank having a longitudinal rack, a movable jaw-frame carrying a coacting movable jaw, said jaw-frame being slidably fitted on the shank or wrench-bar, a pivoted catch arranged in a socket in the jaw-frame and engaging said rack, and auxiliary adjusting means for effecting a fine adjustment, said auxiliary adjusting means being adjustably connected with the jaw-frame and bearing rearwardly against said catch but not positively connected thereto and adapted when manipulated to effect a forward movement of the jaw-frame and movable jaw.

2. A wrench comprising a shank or wrench-bar carrying a fixed jaw and having a longitudinal rack, a jaw-frame slidably-fitted on said shank and having a coacting movable jaw, a pivoted catch arranged in a socket in the jaw-frame and engaging said rack, a non-rotatable screw in said jaw-frame bearing against said catch, and a nut engaging said non-rotatable screw, said nut having an exposed periphery for engagement by the fingers and being fitted between the confronting walls of a slot or opening in the jaw-frame, and the pivot of said catch having slotted connections with the jaw-frame.

3. A wrench comprising a shank carrying a fixed jaw, a movable jaw-frame slidably-fitted on said shank and carrying a coacting movable jaw, a catch arranged in a socket in said jaw-frame and having teeth which engage said rack, said catch having a pivot pin with projecting ends fitted in slots in the jaw-frame, a non-rotatable screw in the jaw-frame bearing against said catch above its pivot, and a nut on said screw, said nut having an exposed periphery and being fitted between the confronting faces of a slot or opening in the jaw-frame.



4. A wrench comprising a shank or wrench-bar carrying a fixed jaw and having a longitudinal rack, a jaw-frame slidably-fitted on said shank and having a coacting movable jaw, a catch consisting of a block pivotally arranged in a socket in said jaw-frame and having teeth for engaging said rack, the pivotal connection between said block and jaw-frame being slightly adjustable, and an adjusting-screw for said jaw-frame operatively connected therewith and arranged forwardly of said block and bearing thereagainst.

857,238. FASTENER FOR LOOSE SHEETS. FREDERICK P. HARRIS, Cleveland, Ohio. Filed Aug. 17, 1905. Serial No. 274,526.



Claim.—1. A fastener for the purpose specified, said fastener comprising a thimble having at the lower end thereof a flange, a sleeve adapted to fit within said thimble and having at its upper end a flange and a head, said head being provided with a central perforation, said sleeve being also provided with slits extending through the lower end thereof, the bore of said sleeve being contracted toward said lower end, and a plunger in said bore having a body adapted to engage the contracted portion of the bore, an operating stem for said plunger extending through the central perforation of said head, and a finger piece or button for said stem, substantially as specified.

2. A fastener for the purpose specified, said fastener comprising a thimble having at the lower end thereof a flange, a sleeve adapted to fit within said thimble and having at its upper end a flange and a head, said head being provided with a central perforation, said sleeve being also provided with slits extending through the lower end thereof, the bore of said sleeve being contracted toward said lower end, and a plunger in said bore, having a body adapted to engage the contracted portion of the bore, an operating stem for said plunger extending through the central perforation of said head, a finger piece or button for said stem, and a screw connection between said plunger and said sleeve, substantially as specified.

3. In a fastener for the purpose specified, the combination of a tubular thimble having at the lower end thereof a flange, a sleeve having at its upper end a flange, the said sleeve being provided with slits extending through the lower end thereof and having its inner wall projected inwardly toward its lower end to contract the bore thereof, a plunger for distending said sleeve, said plunger comprising a body portion adapted to engage the inwardly projected portion of the inner wall of the sleeve, said body portion having a spiral groove thereon, a pin projecting inwardly from the sleeve and engaging said groove, and a button or finger piece for rotating said body portion, substantially as specified.

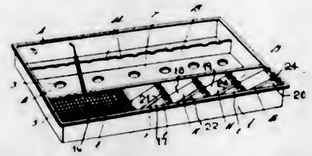
857,239. WATER-COLOR BRUSH. JOSEPH W. HAWKINS, Passaic, N. J. Filed Apr. 6, 1906. Serial No. 310,282.



Claim.—1. A water color brush comprising the handle, the brush and the ferrule connecting the handle and the brush and a plate having at one side a ferrule provided with a brush, and at the other a sleeve adapted to be slipped over the ferrule of the brush proper, said sleeve being split throughout its length and provided with rearwardly extended lugs having prongs for engaging the handle.

2. A water color brush comprising the handle, the brush and the ferrule connecting the handle and the brush, and a plate having at one side a ferrule provided with a brush, and at the other a sleeve adapted to be slipped over the ferrule of the brush proper, said sleeve and ferrule of the plate diverging at their outer ends.

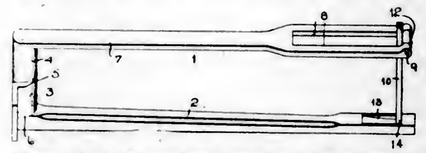
857,240. DENTAL TRAY. JAMES A. HENNING, Beardstown, Ill. Filed Oct. 1, 1906. Serial No. 336,933.



Claim.—1. A dental instrument tray for use in sterilizing cabinets comprising a body having a perforated bottom and a surrounding side wall, and partitions in said body dividing it into compartments of unequal size, some of said compartments having inclined floors each provided with a central longitudinal rib, and said partitions adjacent to said floors provided with spaced notches in their upper edges.

2. A dental instrument tray for use in sterilizing cabinets comprising a body having a perforated bottom and surrounding side walls, partitions in the body dividing it into compartments of unequal sizes, some of said compartments having inclined floors each provided with a central longitudinal rib, and the partitions adjacent to the floors being provided with spaced notches in their upper edges, and one of the compartments being provided with a foraminous cover.

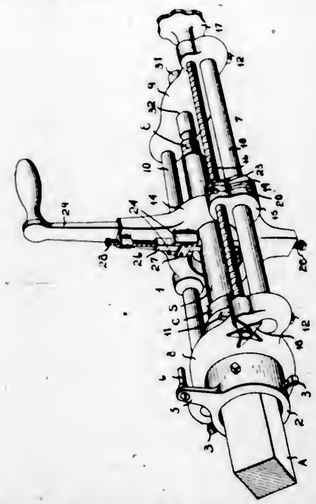
857,241. HARNESS-HOOK. JONAS H. HITTLE, Mackinaw, Ill. Filed July 2, 1906. Serial No. 324,416.



Claim.—1. A harness hook comprising a supporting bar having a pintle at one end and a locking recess at its other end, a guard arm carried by the pintle and disposed in substantial parallelism with the bar and having its free end provided with spaced fingers carrying a bolt, and a keeper having an eye to engage the bolt and an end to engage the locking recess.

2. A harness hook comprising a supporting bar provided with a locking recess, a guard arm provided with spaced fingers, a pintle connecting the bar and the arm and provided with a bearing shoulder, a clip to engage the pintle between the shoulder and the supporting bar, and a keeper pivoted between the fingers and having one end arranged to engage the locking recess.

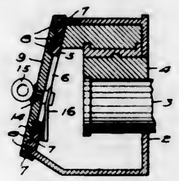
857,242. AXLE-SPINDLE-TURNING MACHINE. JOHN JOHNSON, Salt Lake City, Utah. Filed May 3, 1906. Serial No. 315,113.



Claim.—The hereindescribed axle spindle turning machine comprising a collar having means for centering and securing the same on an axle and provided with a radially extending arm having a trip projecting therefrom, a frame

comprising outer and inner heads and guide rods connecting them, said outer head having a pivot pin to engage the outer end of the axle spindle and support the outer end of the frame for revolution, and said inner head being detachably and revolubly mounted on the collar, a carriage having lugs slidably mounted on the guide rods and radial arms at an angle to said lugs, said arms having guide devices and lugs beyond the outer ends of such guide devices and one of said arms also having a lever whereby such carriage together with the frame may be revolved around the axle spindle, cutters movable radially in the guide devices of the said arms of said carriage, adjusting screws for said cutters operating in threaded openings in the said lugs of said arms, a feed screw mounted in and connecting the heads and provided at its inner end with a star wheel for coaction with the trip to rotate said feed screw by a step-by-step movement when the frame is revolved, and a nut secured to the carriage and engaged by the feed screw.

857,243. COVER FOR JOURNAL-BOXES. HENRY H. KRYGER, Minneapolis, Minn. Filed Mar. 20, 1906. Serial No. 306,950.



Claim.—1. The combination, with a journal-box, having an aperture 6 in its front, the wall of the aperture below the center being of curved form, of a hinged cover adapted to close said aperture and a rotatable spring latch placed eccentrically in relation to said opening and adapted to engage the inner face of the front wall of the box and thereby to lock said cover in its closed position.

2. The combination, with a journal-box, having an aperture 6 in its front, the wall of the aperture below the center being of curved form, and with grooves in the face of the journal-box surrounding said aperture, and suitable packing arranged in said grooves, of a hinged cover, adapted to close said aperture, and provided with ribs adapted to fit into said grooves, and a rotatable spring latch placed eccentrically in relation to said aperture, and adapted to engage the inner face of the front wall of the box and thereby lock said cover in its closed position.

3. The combination, with a journal-box, having the aperture 6 in its front, the wall of the aperture below the center being of curved form, there being a series of grooves surrounding said aperture and provided with suitable packing, of a hinged cover adapted to close said aperture and provided with ribs fitting said grooves, and a rotatable stud 14 journaled in said cover upon the inner side thereof eccentrically to said aperture 6, and a spring 16, block 17 and roller 18 mounted upon said stud.

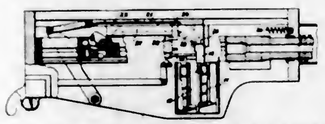
4. The combination, with a journal-box having an aperture 6 in its front wall with a series of grooves surrounding said aperture and suitable packing arranged in said grooves, of a hinged cover adapted to close said aperture and provided with a series of ribs fitting said grooves and a rotatable spring latch placed eccentrically in relation to said aperture and adapted to engage the inner face of the said wall of the box and thereby to lock it.

5. The combination, with a journal box having an aperture 6 in its front wall, with a series of grooves surrounding said aperture and suitable packing arranged in said grooves, of a cover hinged at its side to said journal box and adapted to close said aperture and provided with a series of ribs fitting said grooves and a rotatable spring latch placed eccentrically in relation to said aperture and adapted to engage the inner face of the wall of said box and to lock said cover in its closed position, substantially as described.

6. The combination, with a journal box having an aperture 6 in its front wall, with a series of grooves surrounding said aperture and suitable packing arranged in said grooves, of a hinged cover adapted to close said aperture and provided with a series of ribs fitting said grooves a rotatable spring 16 and a roller 18, said spring being placed eccentrically in relation to said aperture and said roller being adapted to engage the inner face of the wall of the box and thereby to lock the cover in its closed position, substantially as described.

7. The combination, with a journal box having a circular aperture 6 in its front wall and with a circular groove surrounding said aperture and suitable packing arranged in said groove, of a rectangular cover hinged to the wall of the journal box and adapted to close said aperture and provided with a circular rib fitting said groove and a rotatable spring latch placed eccentrically with relation to said aperture and adapted to engage the inner face of the wall of the box and thereby to lock the cover in its closed position.

857,244. FEED MECHANISM FOR AUTOMATIC MAGAZINE-GUNS. HERMANN LEHMANN, Magdeburg, Germany, assignor to Fried. Krupp Aktiengesellschaft Grusonwerk, Magdeburg-Buckau, Germany. Filed Aug. 24, 1905. Serial No. 275,631.



Claim.—1. The combination of the magazine sections adapted to be hinged together and having means for supporting a plurality of rows of cartridges interlocking portions preventing movement in the direction of the axis of the hinging, and an axially movable coupling pin carried by one section for holding two sections together.

2. The combination of the magazine sections adapted to be hinged together and having interlocking portions preventing movement in the direction of the axis of the hinging, an axially movable coupling pin carried by one section for holding two sections together, and a spring acting on the pin and causing it to snap into engagement with another section when the two sections have their interlocking portions pressed together.

3. The combination of a plurality of magazine sections having interlocking portions, and means causing said sections to automatically interlock when the interlocking portions are pressed together.

4. In a gun, a plurality of magazine sections having hinged connection with one another and each having means for supporting a plurality of parallel rows of cartridges.

5. In a gun, a plurality of magazine sections having hinged connection with one another and each having means for supporting a plurality of parallel rows of cartridges, said sections being constructed to move the rows of cartridges successively to a position into which they may be singly fed into the barrel.

6. In a gun, the combination of means for supporting a plurality of parallel rows of cartridges, and automatic means for moving the row supporting means so that the rows are successively moved to a position into which they may be singly fed into the barrel.

7. In a gun, the combination of a part moving automatically upon the firing of the gun, means for supporting a plurality of parallel rows of cartridges, and means controlled by the automatically moving part and moving the row supporting means so that the rows are successively moved to a position from which they may be singly fed into the barrel.

8. In a gun, the combination with a magazine having means for supporting a plurality of rows of cartridges, of a cartridge lifter having a plurality of fingers to enter between all the members of a row of cartridges, and means moving the cartridge lifter in four directions all transverse of the longitudinal axis of the barrel.

9. In a gun, a cartridge lifter having a plurality of fingers of gradually decreasing length.

10. In a gun, a cartridge lifter having a plurality of fingers constructed to enter successively between successive cartridges of a row of cartridges.

11. In a gun, a cartridge lifter constructed to enter successively between successive cartridges of a row of cartridges, and means for moving the cartridge lifter to cause all of the cartridges in the row to move simultaneously.

12. In a gun, the combination with means for supporting a vertical row of cartridges, of means successively entering between successive cartridges beginning with the lower two, to space the cartridges.

13. In a gun, the combination with means for supporting a vertical row of cartridges, of means successively entering between successive cartridges beginning with the lower two, to space the cartridges, and means maintaining said cartridges spaced.

14. In a gun, the combination with means for supporting a row of cartridges, of means for spacing the cartridges, and means for maintaining said cartridges spaced.

15. In a gun, the combination of a cartridge lifter, having a plurality of spacing and lifting fingers, and means for holding the cartridges in spaced relation after they have been spaced by the fingers.

16. In a gun, the combination of a cartridge lifter, having a plurality of spacing and lifting fingers, and means for holding the cartridges in spaced relation after they have been spaced by the fingers, said means being movable to permit the cartridges to be fed by the fingers.

17. In a gun, the combination of a magazine constructed to support a vertical row of cartridges, and a cartridge lifter movable in four directions transverse of the longitudinal axis of the barrel and having a plurality of spacing and lifting fingers gradually decreasing in length.

18. In a gun, the combination of a magazine constructed to support a row of cartridges, a cartridge lifter movable in four directions transverse of the longitudinal axis of the barrel and having a plurality of spacing and lifting fingers gradually decreasing in length, and means for supporting the cartridges in spaced relation.

19. In a gun, the combination of a magazine constructed to support a row of cartridges, a cartridge lifter movable in four directions transverse of the longitudinal axis of the barrel and having a plurality of spacing and lifting fingers gradually decreasing in length, and means for supporting the cartridges in spaced relation, said means being movable to permit the feed of the cartridges.

20. The combination of a magazine constructed to support a plurality of parallel rows of cartridges, a cartridge lifter constructed to feed from one row at one time, and means automatically feeding another complete row to the cartridge lifter when one row has been completely fed to the barrel.

21. In a gun, the combination of the movable magazine, constructed to hold a plurality of parallel rows of cartridges, and a cartridge lifter constructed to space the cartridges of each row, and to singly feed the cartridges to the barrel.

22. In a gun, the combination of the movable magazine constructed to hold a plurality of parallel rows of cartridges, means for feeding the cartridges, and means automatically causing the movement of the magazine every time a complete row has been fed.

23. In a gun, the combination with a magazine having means for supporting a plurality of rows of cartridges, and a part moving automatically on firing, of a cartridge lifter having fingers constructed to enter successively between successive cartridges of a row of cartridges, a connection between said part and the lifter causing two movements transverse of the longitudinal axis of the barrel, and a second connection between the lifter and the automatically moving parts causing two other movements of the lifter.

24. In a gun, the combination of a magazine having means for supporting a plurality of rows of cartridges, a part moving automatically upon firing and provided with two grooves, a cartridge lifter having fingers constructed to enter successively between successive cartridges of a row of cartridges, and connection between both grooves and the cartridge lifter causing the lifter to move to and from the cartridges and move them into a position to be fed into the barrel.

25. The combination of a slidably mounted guide piece, a cartridge lifter slidable thereon, a part movable automatically upon the firing of the gun, connection between said part and the guide piece to move the latter, and connection between said automatically moving part and the lifter to move the lifter.

26. In a gun, the combination of the slide provided with two grooves, a slidably mounted guide piece, a cartridge lifter slidably mounted thereon, a connection between one of the grooves and the guide piece to cause the movement of the guide piece, and a connection between the other groove and the lifter to cause a movement of the lifter on the guide piece.

27. The combination with a movable magazine, of a cartridge lifter having one of its movements in the direction of the feed of the magazine, and means carried by one of said parts causing the magazine to move with the lifter.

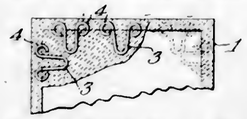
28. The combination with a movable magazine, of a cartridge lifter having one of its movements in the direction of the feed of the magazine, and a dog carried by the lifter to engage the magazine and cause the magazine to move with the lifter.

29. The combination of a movable magazine constructed to carry a plurality of rows of cartridges, means for singly feeding said cartridges from a row, said means causing the movement of the magazine when a row has been fed.

30. The combination of a movable magazine constructed to carry a plurality of rows of cartridges, and a movable cartridge lifter carrying means for engaging the magazine after a row has been completely fed, to cause the magazine to move with the lifter and position another row so that a feed may take place therefrom.

31. The combination of the magazine having a plurality of partitions on opposite walls thereof, and a plurality of projections on said partitions; and a lifter movable in the direction of the feed of the magazine and provided with a plurality of fingers, and with a spring pressed dog on one of said fingers to engage a projection on the magazine to cause the magazine to move with the lifter.

857,245. BURIAL-VAULT. THOMAS B. MALONE, Buffalo, Ind. Filed Jan. 31, 1907. Serial No. 355,095.



Claim.—A burial vault comprising a body consisting of a bottom and vertical sides composed of plastic material having embedded metallic rods and a cover for closing the same, U-shaped irons embedded in the bottom of the vault and having intermediate portions disposed toward the middle of the bottom, the ends of said iron being curled and being located substantially under the vertical sides of the vault all portions of each individual iron lying in the same plane which plane is parallel with the plane of the bottom.

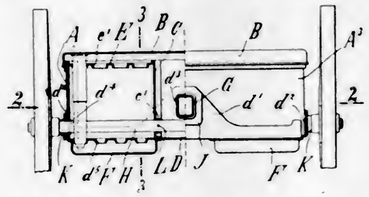
857,246. AMMUNITION-VEHICLE. WILHELM MAYER, Essen-on-the-Ruhr, Germany, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Filed June 18, 1906. Serial No. 322,320.

Claim.—1. An ammunition vehicle having a box provided with a bottom having side members with bearings for the wheel-axle.

2. An ammunition vehicle having a box provided with a bottom having side members with bearings for the pole.

3. In a device of the character described, a box bottom made from a single piece of metal and having upwardly bent flanges provided with bearings for the purpose set forth.

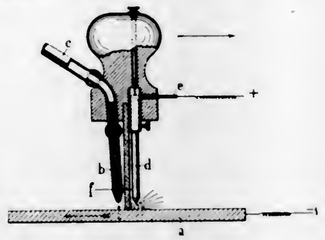
4. In a device of the character described, a box bottom made from a single piece of metal having upwardly bent flanges throughout its circumference; each of said flanges being provided with a bearing stamped therein.



5. In a device of the character described, a box bottom made from a single piece of sheet metal; the bottom having its four edges bent to provide vertical flanges, and each flange being provided with a bearing.

6. An ammunition vehicle having a box provided with a bottom with seats for the projectiles and having a pair of side members provided with bearings for the wheel axle and a second pair of side members provided with bearings for the pole.

857,247. APPARATUS FOR FUSING METALS. ADOLPH E. MENNE, Crenzthal, Germany, assignor to Cölnmusener-Bergwerks-Actien-Verein, Crenzthal, Germany, a Corporation of Germany. Filed July 9, 1906. Serial No. 325,362.



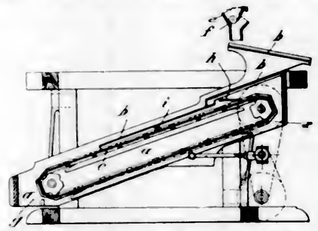
Claim.—1. A device for fusing metal comprising in combination means connecting said metal to one pole of a source of electricity, an electrode, means connecting said electrode to the other pole of said source of electricity, whereby an arc may be formed between said electrode and said metal, and means insulated electrically from said electrode adapted to supply gas supporting combustion to said arc, substantially as described.

2. A device for fusing metal comprising in combination, means connecting said metal to one pole of a source of electricity, an electrode, means connecting said electrode to the other pole of said source of electricity, whereby an arc may be formed between said electrode and said metal, and a nozzle insulated electrically from said electrode adapted to supply gas supporting combustion to said arc, substantially as described.

3. A device for fusing metal comprising in combination means connecting said metal to one pole of a source of electricity, an electrode, means connecting said electrode to the other pole of said source of electricity, whereby an arc may be formed between said electrode and said metal, a nozzle insulated electrically from said electrode adapted to supply gas supporting combustion to said arc, and a partition between said nozzle and said electrode, substantially as described.

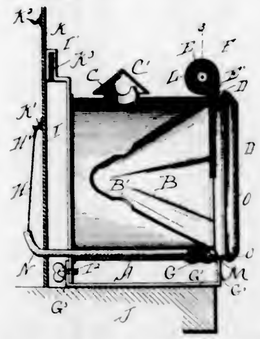
4. A device for fusing metals comprising in combination means connecting said metal to one pole of a source of electricity, an electrode, means connecting said electrode to the other pole of said source of electricity, whereby an arc may be formed between said electrode and said metal, a nozzle insulated electrically from said electrode adapted to supply gas supporting combustion to said arc, a partition between said nozzle and said electrode, and means uniting said electrode, nozzle and partition whereby the same may be mounted on a tool, substantially as described.

857,248. SEED-SEPARATOR. WILLY MEYER, Hameln, Germany. Filed July 21, 1904. Serial No. 217,445.



Claim.—In an apparatus for separating grain, a metallic transporting endless band having recesses forming pockets, and mounted in an inclined sieve-frame having a jerky reciprocating movement, sieves arranged above said band, a scraper arranged transversely of said band and adapted to permit the passage of the smaller grains while preventing the passage of the larger grains, means for driving said band in a direction opposite to the gravity movement of the grain thereon, and a brush secured to said band and adapted to clean the under side of one of the sieves carried by said frame.

857,249. HEADLIGHT. AMERICUS MIESSE, Lima, Ohio, assignor of one-eighth to Frank D. Carpenter, one-eighth to Fred D. Closser, one-eighth to Frank W. Drake, one-eighth to William H. Hay, one-eighth to Richard H. Carpenter, and one-eighth to Henry M. Reed, John W. Reed, and James F. Reed, Lima, Ohio. Filed June 16, 1906. Serial No. 322,074.



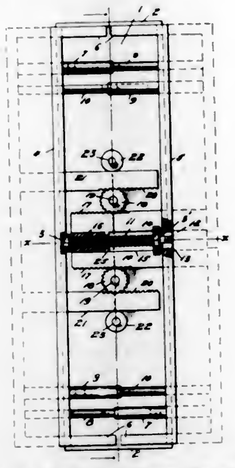
Claim.—1. In a device of the kind described, the combination with a casing, provided with a slot in its top, of a rectangular hollow frame provided with a semi-circular portion adapted to be secured over the slot of the casing, a casing provided with a downwardly projecting hood arranged over said frame provided with openings, in its ends, a spring actuated roller mounted in said opening, and a screen carried by the roller, for the purpose described.

2. In a device of the kind described, the combination with a casing provided with a slot in its top, of a frame mounted on said casing over said slot, a casing provided with a downwardly projecting hood fitting over said frame, a roller mounted in said casing carrying a screen operating means connected to the screens, for the purpose described.

3. In a device of the kind described, the combination with a cylindrical casing provided with a slot adjacent its front end, of a rectangular hollow frame provided with semi-circular portions adapted to be secured over the slot of the casing provided with a downwardly projecting hood adapted to fit over said frame, a screen mounted in the casing provided with the hood and a cord connected to the screen adapted to draw the screen to the bottom of the casing, for the purpose described.

4. In a device of the kind described, the combination with a cylindrical casing provided with adjustable supporting members, of a casing arranged over a slot formed in one end of the cylindrical casing, carrying a spring actuated roller, a screen mounted on said roller provided with a curved lower end, a glass door secured on the front of the casing, a flexible tube arranged in the bottom of the casing extending out an opening in the end, a pulley secured to the casing adjacent the end of the tube, and a cord secured to the screen passing out through the tube carrying a ring at its end, for the purpose described.

857,250. BINDER FOR LOOSE-LEAF LEDGERS. HARRY R. MOORE, Wichita, Kans. Filed May 22, 1906. Serial No. 318,223.

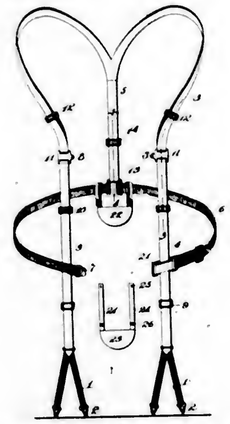


Claim.—1. In a loose leaf binder, the combination with the back plate and binding strips associated therewith and provided with means for holding loose leaves, of a follower rigidly secured to one of the binding strips, ears formed on the back plate, one of said ears extending over the follower to hold it to the back plate, and a screw spindle journaled in the ears, extending transversely of the back plate and meshing with the follower.

2. In a loose-leaf binder, the combination with a back plate, and binding strips associated therewith and having means for holding loose leaves, of means for operating the binding strips comprising a threaded spindle mounted in the back plate and extending transversely thereof, a follower block engaging said spindle and attached to one of the binding strips, arms extending from the other binding strip, and means engaging the follower block and the arms for moving them in opposite directions, substantially as specified.

857,251. HOSE-SUPPORTER. HERBERT B. MOSES, New York, N. Y. Filed Feb. 5, 1906. Serial No. 299,442.

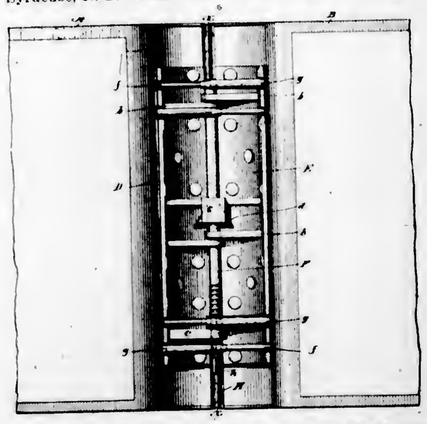
Claim.—1. As a new article of manufacture, a hose-supporter having a belt and garters, and shoulder supports supporting the garters, and connected to the belt in the front and back, and pieces for attaching a catamenial bandage, each of which comprises a piece of cloth provided with straps, each of the said straps having a hole at the end and a button near the point of attachment of the strap to the cloth, the said pieces being removably secured to the belt adjacent to the shoulder supports in the front and back, each two straps on each piece being on opposite sides of the shoulder support.



2. As a new article of manufacture, a piece for attachment to the belt of a hose supporter, which comprises a piece of cloth provided with straps, each of the said straps having a hole at the end and a button near the point of attachment of the strap to the cloth.

3. As a new article of manufacture, a hose supporter having an adjustable, elastic belt open in front and closed by a fastener, a single adjustable, non-elastic back member secured to the belt on a slide so as to be adjustable to the middle of the back of the wearer independently of the adjustment of the length of the belt, a pair of adjustable, non-elastic shoulder straps secured to the back member, the free ends of the shoulder straps being connected to the belt adjacent to the ends thereof and terminating in elastic garters, means for adjusting the lengths of the ends of the shoulder straps between the garters and belt, means for fastening the shoulder straps together in front of the wearer above the belt, and means for adjusting the position of the fastening means.

857,252. LOOSE-LEAF BINDER. JOHN L. MCMILLAN, Syracuse, N. Y. Filed June 2, 1902. Serial No. 109,981.



Claim.—1. A binder for books, leaves or sheets, comprising cover-boards and a back portion to which the

cover-boards are flexibly connected, said back portion being formed of two parts hinged together; and means applied to the back portion and serving to force toward each other the edges of said back portion on that side of the hinge axis on which the leaves or sheets are located.

2. A cover or binder comprising plates D and E hinged together; cover-boards A and B flexibly connected to said plates; a wedge interposed between the proximate edges of said plates; and means, substantially such as described, for forcing said wedge between said plates and causing them to swing about their hinge rod and to clamp sheets or leaves placed between the edges thus moved toward each other.

3. A binder or cover comprising curved back members C; curved plates D and E secured to said back members, hinged together and provided with inclined faces or edges *d*; cover-boards A and B flexibly connected to the back members C; a screw rod or spindle F movable longitudinally relatively to the back members; and a block G swiveled upon the screw rod and provided with a wedge block *e*, said wedge block being located between the inclined faces or edges of the plates D and E and adapted, when rod F is moved lengthwise, to force apart the proximate edges of the plates D, E and thereby to move toward each other the opposite edges of said plates and thus to clamp or bind the sheets or leaves introduced between them.

4. The herein-described binder, comprising cover-boards A, B; back sections or members C; curved plates D, E; longitudinally-movable hinge rod F; block G movable longitudinally of said rod but held against rotation therewith; and wedge *e* carried by said block, interposed between the plates D and E and adapted, when moved longitudinally, to swing said plates about their hinge axis and thus to throw toward each other the opposite or remote edges of the plates.

5. The herein-described binder, comprising cover-boards A, B; back sections or members C; plates D, E provided with ears or lugs *b* and *c*; hinge rod or spindle F threaded in the lug *c*; block G movable lengthwise of the hinge rod but held against rotation therewith; wedge *e* carried by block G and interposed between plates D and E; and telescopic impaling pins *f*, *g*, carried by the plates D, E, all substantially as shown and described.

6. In a binder, the combination with cover-boards; of a back formed of two parts and provided with plates D and E hinged together and having inturned edges on that side of their hinge axis toward the cover-boards; and means G, such as described, for swinging the plates D, E about their hinge axis and causing the inturned edges of said plates to grip or bind and compress a package of leaves or sheets placed between them.

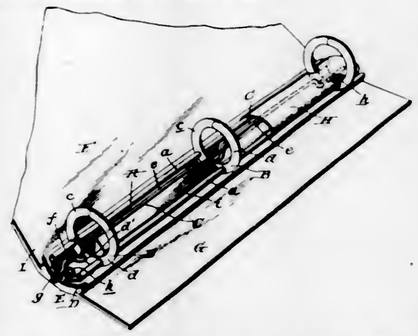
7. A binder consisting of a frame; telescopic supports for the leaves or sheets; and jaws suitably supported and adapted to move toward or away from each other, the plane of movement of which is at an angle to the plane of said supports.

8. A cover or binder, comprising in combination, a back formed of two sections or members hinged together; cover-boards flexibly connected with said back sections; gripping or clamping plates carried by the back sections; means for forcing the gripping plates toward each other; and a plaited or bellows-like cover strip connnecting the proximate edges of the back sections, substantially as shown and described.

857,253. LOOSE-LEAF BINDER. JOHN L. MCMILLAN, Syracuse, N. Y. Filed Apr. 20, 1906. Serial No. 312,810.

Claim.—1. In a binder, the combination of a trough-like support; a series of divided rings pivotally supported therein; a cover; and a rod having pivotal or journal portions seated in the inner ends of the divided-ring sections, and cranked portions adapted to bear respectively against the trough-like support and against the cover and to lower the pivotal or journal portions when said rod is rocked or turned.

2. In combination with a back and cover-boards E, F, G, a concave stiffening member D; a trough-like ring-supporting member A; divided rings B, having their members separately pivoted to opposite edges of said supporting member; cover H; and actuating rod C, pivotally supported in the overlapping inner ends of the ring members, provided with cranked portions *e*, *f*, and operating handle *g*, and serving, when turned, to raise or lower the proximate inner ends of the divided rings.



3. In a binder, the combination of a back and cover-boards; a trough-like holder or support; a cover therefor; two-part rings, the members of which are separately and pivotally mounted in said support; and a locking rod having journal portions mounted in the proximate inner ends of the divided-ring members, and having cranked portions to bear respectively against the ring-support and its cover.

4. In a binder, the combination with a support and divided rings having their members separately and pivotally mounted in said support, and having their proximate inner ends overlapping and provided with notches; a cover for said support; and a rod journaled in the notches of the overlapping inner ends of the ring members, and provided with cranked portions to bear respectively against the ring support and its cover.

5. In a binder, the combination of a trough-like support; a cover therefor; divided rings each having its members separately and pivotally mounted in said support; a rod journaled in the overlapping proximate inner ends of the ring members, and provided with cranked portions to bear respectively upon said support and its cover; and a stop to limit the movement of the cranked portions of the rod.

6. In a binder, the combination with a trough-like support and its cover, of two-part rings the members of which are separately and pivotally mounted in said support; and a rod or rock-shaft journaled in the overlapping inner ends of said ring members, and having a cranked portion which, as the rod is turned in one direction, bears upon the cover and thereby forces down the journal portions of the rod and with them the inner ends of the divided rings.

7. In a binder, the combination with a trough-like support and its cover, of two-part rings the members or which are separately and pivotally mounted in said support; and a rod or rock-shaft journaled in the overlapping inner ends of said ring members, and having a cranked portion which, as the rod is rotated in one direction, bears upon the trough-like support and elevates the journal portions of the rod and with them the inner ends of the ring members, thereby throwing apart the outer ends of said members.

857,254. LOOSE-LEAF BINDER. JOHN L. MCMILLAN, Syracuse, N. Y. Filed June 11, 1906. Serial No. 321,257.

Claim.—1. The herein-described binder comprising a back and cover-boards, a stiffener secured thereto; a trough-like support secured to said stiffener; rings G comprising members *a*, *b* pivotally mounted upon said support; rod or wire *d* passing through proximate ends of said ring members and forming a hinge or joint therefor; a spring located within the ring support and having a narrow passage for the rod *d* between opposing walls or faces; and a cap-plate H applied to said support and serving to retain the spring therein.



2. In a loose-leaf binder the combination with a suitable support, of divided rings the members of which are independently pivoted in said support; a rod or wire passing through the overlapping ends of said members at a point between their pivotal supports; and a spring holding-device for maintaining the ring members in their opened and closed positions, said holding-device having a narrow passageway for the rod formed by yielding or resilient walls, said passageway being widened at those points to which the rod or wire is carried when the rings are fully opened or fully closed.

3. In a loose-leaf binder the combination with a cover and suitable support, of impaling rings, each comprising two members hinged or jointed together at one end and independently pivoted in the support, said members having a knuckle-joint whereby the extent of their opening is limited and determined.

4. In a loose-leaf binder the combination with a cover and a suitable support attached thereto, of rings each comprising two members hinged together at one end and pivotally mounted in the support; and a spring arranged to bear against the pivot pin or rod connecting the ends of the rings and to hold the same in the different positions to which it is moved in the act of opening and closing the rings.

5. In a loose-leaf binder, in combination with a suitable support, impaling rings G, each comprising two members *a*, *b* pivotally mounted in said support; a hinge-rod or wire *d* connecting proximate ends of said rings; and a spring I having flattened loop *j*, and branches *k* extending from said loop in substantially parallel planes and in close proximity, and thence branching or curving outward, substantially as shown.

857,255. PATTERN FOR ORNAMENTAL POSTS. KNUTE NELSON, Chicago, Ill. Filed Feb. 4, 1907. Serial No. 355,548.

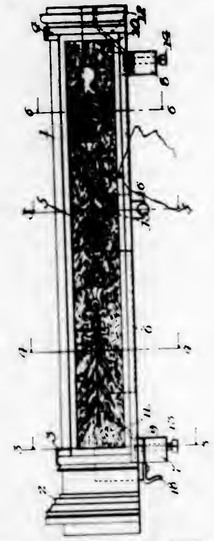
Claim.—1. A post pattern consisting of a longitudinal half of the post cut between diagonal corners and having inwardly movable sides, and means whereby the same can be moved inwardly while the pattern is in the mold.

2. A post pattern consisting of a longitudinal half of a post cut along a plane extending between opposite corners of the post, the wall portions of said post being hinged so as to swing inwardly, and means whereby said wall portions can be swung inwardly while the pattern is in the mold.

3. A post pattern, comprising a diagonally cut longitudinal half of a post having hinged walls, a slide in said post, and inclines whereby said slide moves laterally to swing said side walls in and out.

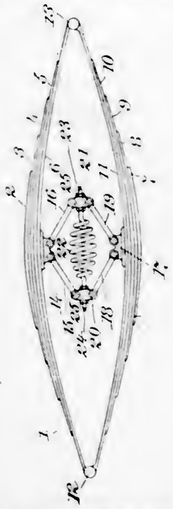
4. A post pattern comprising a diagonally cut longitudinal half of a post having hinged side portions, a slide longitudinally movable within said pattern, inclines on the slide for moving the same laterally so as to swing the sides of the pattern in and out, and spring means tending to swing the sides toward each other.

5. A post pattern comprising a casing in the form of a diagonally cut longitudinal half of a post, said casing having side walls hinged along adjacent edges, and also having cross pieces or bridges a coil spring connected with said side walls and tending to swing the same toward one another across the pieces or bridges on said casing, a longitudinally disposed slide within the casing mounted on said bridges, said slide having inclines whereby it is shifted laterally when moved longitudinally and being arranged to swing the side portions of the casing in and



out by its lateral shifting, and a handle 18 by which the slide can be engaged and shifted.

857,256. VEHICLE-SPRING. FRANCIS E. PRATT, New Rochelle, N. Y. Filed Mar. 21, 1906. Serial No. 307,251.



Claim.—1. In a supporting device for vehicles the combination of the main spring, a pair of links pivoted thereto, a stiff double acting spring connecting the other ends of said links, and means for compelling the ends of said links so connected to the double acting spring to separate one from the other as the main spring is deflected and to approach one another as the main spring reacts from such deflection.

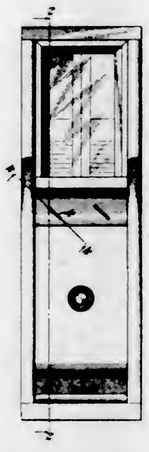
2. In a supporting device for vehicles the combination of an elliptical spring, a quadrilateral jointed system of

links having opposite corners connected to the two parts of the elliptical spring and a second stiff double-acting spring connecting the other two corners of the quadrilateral system.

3. In a supporting device for vehicles the combination of an elliptical spring, a quadrilateral jointed system of links having opposite corners connected to the two parts of the elliptical spring and a second spring connecting the other two corners of the quadrilateral system, said second spring being a keg shaped spring of great stiffness, located in the same plane as the jointed system of links.

4. In a supporting spring for vehicles the combination of an elliptical leaf spring, a pair of links pivotally attached to the inner leaf of each side of the spring, two short blocks pivotally connecting the opposite free ends of the links and a spiral spring connecting said blocks, said spiral spring having screw threaded ends passing through said blocks, and nuts meshing with said threads, each block being clasped between the two nuts on one end of the spiral spring.

857,257. VENDING-MACHINE. PETER A. ROBICHON, New York, N. Y. Filed Apr. 27, 1906. Serial No. 314,041.



Claim.—1. In combination with a vending machine, a coin-chute adapted to deliver a coin to a coin-receptacle, a coin-receptacle adapted to receive and deliver said coin to a coin-carrier, a coin-carrier having a slot therein adapted to receive and hold said coin in position to engage an ejector, and an ejector adapted to be advanced by said coin to deliver the goods from their magazine, said ejector also resting upon and operating to accelerate the delivery of said coin from said carrier to the coin-till.

2. In combination with a vending machine, means for delivering a coin to a coin-carrier, a coin-carrier adapted to receive said coin, an ejector adapted to be advanced and raised by said coin to deliver the goods from their magazine, and means for advancing and raising said coin to operate said ejector.

3. In combination with a vending machine, means for delivering a coin to a coin-carrier, a movable coin-carrier adapted to hold the coin in operative position to engage an ejector, a carrier support provided with a recess so formed as to raise the coin and ejector as the carrier is advanced, and an ejector adapted to be advanced and raised by said coin to deliver the goods from their magazine.

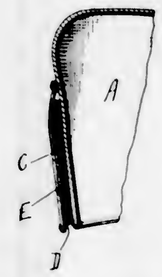
4. In combination with a vending machine, means for delivering a coin to a coin-carrier, a movable coin-carrier adapted to hold the coin in operative position to engage an ejector, a carrier support provided with a recess having converging sides so formed as to raise the coin and ejector as the carrier is advanced, and an ejector adapted to be advanced and raised by said coin to deliver the goods from their magazine.

5. In combination with a vending machine, means for delivering a coin to a coin-carrier, a movable coin-carrier adapted to hold the coin in operative position to engage an ejector, a carrier support provided with a circular opening so positioned as to raise the coin and ejector as the carrier is advanced, and an ejector adapted to be advanced and raised by said coin to deliver the goods from their magazine.

6. In combination with a vending machine, means for delivering a coin to a coin carrier, a movable coin-carrier adapted to hold the coin in operative position to engage an ejector, a carrier support co-operating with said coin-carrier as the same is advanced and adapted to cause the coin to pass under and into engagement with said ejector, and means to cause the coin to raise and advance the ejector into operative position, and an ejector adapted to be advanced and raised by said coin to deliver the goods from their magazine.

7. In combination with a vending machine, means for delivering a coin to a coin-carrier, a movable coin-carrier adapted to hold the coin in operative position to engage an ejector, a carrier support co-operating with said coin-carrier as the same is advanced and adapted to cause the coin to pass under and into engagement with said ejector, and means to cause the coin to raise and advance the ejector into operative position, and an ejector adapted to be advanced and raised by said coin to deliver the goods from their magazine, said ejector also operating to accelerate the movement of coin from carrier to the coin-till.

857,258. HAT OR CAP. LOUIS ROSENBAUM, Boston, Mass. Filed Mar. 14, 1907. Serial No. 362,253.

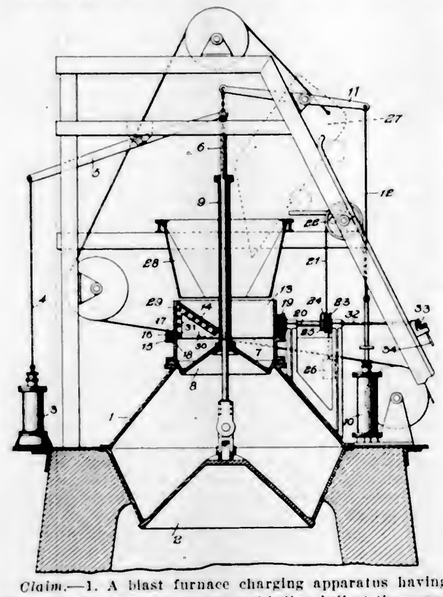


Claim.—1. A hat or cap comprising a main body portion, an outside band secured to said body portion and extending around the back thereof, and a protecting flap adapted, when it is turned down, to protect the back of the neck of the wearer and when it is turned up to lie between the body portion of the cap and the outside band, substantially as described.

2. In a hat or cap, a main body portion, an outside band secured thereto and extending around the back thereof, a flexible binding secured to the lower edge of said band, and a protecting flap adapted to protect the neck of the wearer secured to said flexible binding, whereby the protecting flap may be turned up between the band and the body portion without affecting the size of the cap, substantially as described.

3. In a hat or cap, a main body portion, an outside band secured thereto and extending around the back thereof, a flexible binding secured to the lower edge of said band, and a protecting flap secured to said binding, the front ends of said flap running up beneath the band, whereby the flap, when it is turned down, is drawn close to the neck and ears of the wearer and when it is turned up, is adapted to lie between the band and the body portion without affecting the size of the cap, substantially as described.

857,259. BLAST-FURNACE-CHARGING APPARATUS. CHARLES H. SAMPLE, Homestead, Pa., assignor to Walter Kennedy, Bellevue, Pa. Filed Aug. 10, 1906. Serial No. 330,019.



Claim.—1. A blast furnace charging apparatus having in combination a main hopper and bell, a bell at the upper end of the main hopper, a movable shell above and movable around the axis of the upper bell and provided with an eccentric discharge opening, and means for shifting said shell.

2. A blast furnace charging apparatus having in combination a main hopper and bell, means controlling the flow of material into the main hopper, a shell movable around the axis of the main bell and provided with an eccentric discharge opening and means for shifting said shell.

3. A blast furnace charging apparatus having in combination a main hopper and bell, means controlling the flow of material into the main hopper, a shell movable around the axis of the main bell and provided with an inclined plate extending part way across the shell and means for shifting the shell.

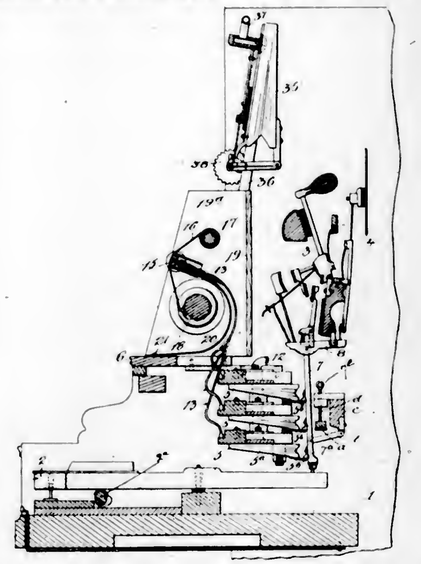
4. A blast furnace charging apparatus having in combination a main hopper and bell, a supplemental hopper and bell, a shell movably supported by the supplemental hopper and having an eccentric discharge opening and means for shifting said shell.

5. A blast furnace charging apparatus having in combination a main hopper and bell, a shell movably supported above the main bell and provided with a plate extending at an angle partially across the shell, and having a removable section including a portion of said plate.

857,260. AUTOMATIC PIANO. HARRY M. SALYER, New York, N. Y., assignor to John H. Ludwig, New York, N. Y. Filed Mar. 29, 1905. Serial No. 252,660.

Claim.—1. In a piano the combination of the piano action and the keys, with operating pneumatics located above the keys and forward of the prolongs, means for operating the action by the pneumatics, a receptacle supported upon the shelf of the piano in front of the action, a tracker and music-sheet operating rolls supported upon said receptacle, a motor for operating the music-sheet devices, and means for supporting the same above said receptacle in the space forward of the strings, substantially as described.

2. In a piano the combination of the piano action and the keys, with operating pneumatics located above the keys forward of the prolongs of the action, means for operating the action by said pneumatics, a receptacle supported by the shelf of the piano forward of the action, a tracker supported within said receptacle, music-sheet rolls and means for supporting the same within said receptacle, devices for operating said rolls supported by said receptacle, and a motor connected with the music-sheet operating devices and supported above said receptacle in the space forward of the strings, substantially as described.



3. In a piano the combination of the piano action and the keys, with operating pneumatics located above the keys forward of the prolongs of the action, means for operating the action by said pneumatics, a receptacle supported by the shelf of the piano forward of the action, a tracker supported within said receptacle, music-sheet rolls, means for supporting the same within said receptacle, devices for operating said rolls supported by said receptacle, and a motor connected with the music-sheet operating devices and supported above said receptacle in the space forward of the strings, a shaft of the music-sheet operating devices having a support carried by the shelf of the piano, substantially as described.

4. In a piano the combination of the piano action and keys, with operative pneumatics connected with the action for mechanically operating the same, arms connected with the prolongs of the action, and means for limiting the upward movement of said arms, substantially as described.

5. In a piano the combination of the piano action and keys, with operative pneumatics connected with the action for mechanically operating the same, arms connected with the prolongs of the action, and stops above said arms to limit the upward movement of the arms, substantially as described.

6. In a piano the combination of the piano action and keys, with operative pneumatics connected with the action for mechanically operating the same, arms connected with the prolongs of the action, stops above said arms, and means for adjustably supporting said stops to limit the upward movement of the prolongs, substantially as described.

7. In a piano the combination of the piano action and keys with operating pneumatics located above the keys forward of the prolongs of the action, connections between the prolongs and the corresponding pneumatics, and stops

to limit the upward movement of the prolongs, substantially as described.

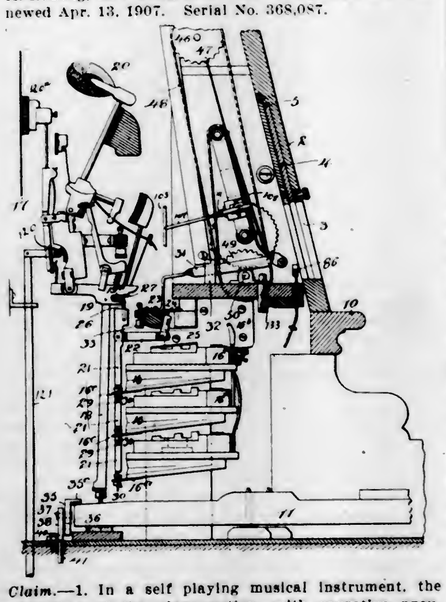
8. In a piano the combination of the piano action and keys, with operating pneumatics located above the keys forward of the prolongs of the action, connections between the prolongs and the corresponding pneumatics, arms connected with the prolongs, and stops above the arms to limit the upward movement of the prolongs, substantially as described.

9. In a piano the combination of the piano action and keys, with operating pneumatics located above the keys forward of the prolongs of the action, connections between the prolongs and the corresponding pneumatics, arms connected with the prolongs, stops above the arms, and means for adjustably supporting said stops, whereby the upward movement of the prolongs may be regulated, substantially as described.

10. In a pianoforte action a wippen, an extension connected thereto and engaging the key, a swinging guide connected to the extension, a rail, a stop attached to the rail and located in the path of said guide and serving to limit the motion thereof when the key is struck and thereby limit the motion of the wippen, substantially as described.

11. In a mechanically operated piano, the combination with the piano action having abstract rods, of rods or plates having elongated openings, for receiving screws engaging with the abstract rods, the lower end of said rods being enlarged to form abutments, substantially as described, said elongated slots enabling vertical adjustment of said plate on the abstract rod and said screws serving to secure said plate in any adjustable position.

857,261. SELF-PLAYING MUSICAL INSTRUMENT. HARRY M. SALYER, New York, N. Y., assignor to John H. Ludwig, New York, N. Y. Filed Aug. 19, 1905. Renewed Apr. 13, 1907. Serial No. 368,087.



Claim.—1. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, and means for positively connecting the pneumatics with corresponding movable parts of the action for operating the hammers co-extensively in opposite directions with the movement of the pneumatics and for releasing the pneumatics from said movable parts of the action, substantially as described.

2. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, and means for positively connecting the pneumatics with the hammer actuating devices of the action to move co-extensively in opposite directions with the movement of the pneumatics and for releasing said pneumatics from said devices at will, substantially as described.

3. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, and means for positively connecting the pneumatics with the hammer operating devices of the action for causing said devices to move coextensively in opposite directions with the movement of the pneumatics, substantially as described.

4. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, and means for positively connecting the hammer operating devices of the action with the actuating parts of the pneumatics for causing said devices to move back and forth to an extent equal to and coincident with the movement of the actuating parts of the pneumatics, substantially as described.

5. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, and arms connected with the pneumatics and firmly connected with the hammer operating devices of the action to cause said devices to move coextensively in opposite directions with the movement of the actuating parts of the pneumatics, substantially as described.

6. In a self playing musical instrument, the combination of the piano action, with operating pneumatics, arms, and means for positively connecting the arms with the actuating parts of the pneumatics and for positively connecting the arms with the hammer operating devices of the action for causing said devices to move co-extensively in opposite directions with the movement of the actuating parts of the pneumatics, substantially as described.

7. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms pivotally connected with the actuating parts of the pneumatics to move co-extensively therewith in opposite directions, and means for positively connecting said arms with the hammer operating devices of the action to cause said devices to move co-extensively in opposite directions with the actuating parts of the pneumatics, substantially as described.

8. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms pivotally connected with the actuating parts of the pneumatics to move co-extensively therewith in opposite directions, and means for positively connecting said arms with the wippens of the action to cause the wippens to move co-extensively with the corresponding actuating parts of the pneumatics, substantially as described.

9. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, and arms pivotally connected with the actuating parts of the pneumatics to move co-extensively therewith in opposite directions, said arms being detachably connected with the hammer operating devices of the action to cause said devices to follow the exact movement of the arms by the pneumatics at will, substantially as described.

10. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, and arms pivotally connected with the actuating parts of the pneumatics to move co-extensively therewith in opposite directions, said arms being detachably connected with the wippens to cause the wippens to have the same movement as the pneumatics and to permit the wippens to be disconnected from said arms for independent operation, substantially as described.

11. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms, means for connecting said arms with said pneumatics and with the hammer operating devices of the action, and a movable member connected with said arms for moving said arms into and out of connection with the hammer operating devices of the action, substantially as described.

12. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms, means for connecting said arms with said pneumatics and with the hammer operating devices of the action, and a bar movably supported and movably connected with said arms for moving said arms into and out of connection with the hammer operating devices of the action, substantially as described.

13. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms, means for connecting said arms with said pneumatics and with the hammer operating devices of the action, a bar movably supported, and links movably connecting the bar with said arms for connecting the arms with the hammer operating devices of the action and for disconnecting the arms therefrom, substantially as described.

14. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms movably connected with the pneumatics and detachably connected with the wippens of the action, a movable member, and means for connecting said member with said arms for holding the arms in positive operating relation to the wippens and for disconnecting the arms from the wippens, substantially as described.

15. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms movably connected with the pneumatics and detachably connected with the wippens of the action, a movable member, and links connecting the member with the arms for holding the arms in operative connection with the wippens and for disconnecting the arms therefrom, substantially as described.

16. In a self playing musical instrument, the combination of the piano action, and keys, with operative pneumatics, arms positively connecting the pneumatics with the wippens of the action independent of the abstracts to move the wippens co-extensively with the pneumatics in opposite directions, and means for limiting the movement of said arms imparted by the pneumatics, substantially as described.

17. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms positively connected with the pneumatics and with the hammer operating devices of the action, to move the wippens co-extensively with the pneumatics in opposite directions a movable member connected with said arms, and stops carried by said member for limiting the movement of said devices, substantially as described.

18. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms connected with the pneumatics and with the hammer operating devices of the action, a movable member, links connecting said member with said arms, and stops connected with said member to co-act with said links to limit the upward movement of said arms, substantially as described.

19. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms connected with the pneumatics and provided with fingers, the wippens of the action having recesses receiving said fingers, and means for holding said fingers within said recesses during operation of the action by the pneumatics and for with-holding said fingers from said recesses for permitting operation of the action independently of the pneumatics, substantially as described.

20. In a self playing musical instrument, the combination of the piano action, with operative pneumatics, arms connected with the pneumatics and provided with fingers, the wippens of the action having recesses to receive said fingers, a movable member, and means connecting said member with said arms for holding the fingers in the recesses of the wippens in one position of the member and for withholding said fingers from said recesses in a different position of said member, substantially as described.

21. In a self playing musical instrument, the combination of the piano action with operative pneumatics, arms connected with the pneumatics and provided with fingers, the wippens of the action having recesses to receive said fingers, a movable member, means connecting said member with said arms for holding the fingers in the recesses of the wippens in one position of the member and for withholding said fingers from said recesses in a different position of said member, and a handle and catch for holding said member in operative position, substantially as described.

22. In a self playing musical instrument, the combination of music-rolls, a motor for operating the same, operative pneumatics and their wind-chests, wind inducing apparatus, means connecting said apparatus with said wind-chests, a main valve normally open to permit flow of air from said chests to the wind inducing apparatus, a controlling valve to cause the main valve to close, pipes connecting the motor with the wind inducing apparatus, a normally closed valve in the passage between the motor and said apparatus, a controlling valve to control the last named valve, a tube connecting said controlling valves, and a normally closed valve connected with said tube to admit air thereto to cause the first named valve to close to shut off air from the wind-chests to prevent playing while the music-sheet is being re-rolled and to open the valve between the motor and the wind inducing apparatus to permit the motor to operate at high speed for re-rolling the music-sheet, substantially as described.

23. In a self playing musical instrument, the combination of a piano action & strings music-rolls, a motor for operating the same, operative pneumatics and their wind-chests, wind inducing apparatus, means connecting said apparatus with said wind-chests, a main valve normally operating the same, operative pneumatics and their wind-inducing apparatus, a controlling valve to cause the main valves to close, pipes connecting the motor with the wind inducing apparatus, a normally closed valve in the passage between the motor and said apparatus, a controlling valve to control the last named valve, and a tube connecting said controlling valves, a normally closed valve connected with said tube to admit air thereto to cause the first named valve to close to shut off air from the wind-chests to prevent playing while the music sheet is being rerolled and to open the valve between the motor and the wind inducing apparatus to permit the motor to operate at high speed for re-rolling the music-sheet, the valve of said tube being located in the space between the top frame and strings, a re-roll shifting lever, and means for operating said valve co-incidently with the operation of the re-roll shifting lever, substantially as described.

24. In a self playing musical instrument, the combination of music-sheet rolls, a motor for operating the same, operative pneumatics and their wind-chests, wind inducing apparatus, means connecting said apparatus with said wind-chests, a main valve normally open to permit flow of air from said chests to the wind inducing apparatus, a controlling valve to cause the main valve to close, pipes connecting the motor with the wind inducing apparatus, a normally closed valve in the passage between the motor and said apparatus, a controlling valve to control the last named valve, a tube connecting said controlling valves, a normally closed valve connected with said tube to admit air thereto to cause the first named valve to close to shut off air from the wind-chests to prevent playing while the music-sheet is being re-rolled and to open the valve between the motor and the wind inducing apparatus to permit the motor to operate at high speed for re-rolling the music-sheet, a shifting lever for connecting the motor alternately with the music-sheet winding and re-winding rolls, and means for operating said valve co-incidently with the shifting of said lever, substantially as described.

25. In a self playing musical instrument, the combination of a motor, music-sheet rolls to be operated thereby, gearing connecting the motor with said rolls, clutches and a shifting lever for causing either roll to operate, a governor, gearing connecting the governor with the motor, means for throwing the governor into and out of connection with the motor, operative pneumatics and their wind-chests, wind inducing apparatus connected with the wind-chests, a normally open valve controlling the flow from the wind-chests to said apparatus, a controlling valve to control the first named valve, pipes connecting the motor with said apparatus, a normally closed valve between the motor and said apparatus, a controlling valve to control

said normally closed valve, a tube connecting said controlling valves, a valve connected with said tube for admitting air thereto, and means for operating said valve by the said lever, whereby when said lever is shifted to operate the re-winding roll connection between the wind chests and the wind inducing apparatus and between the motor and governor will be cut off and direct communication between the motor and said apparatus will be established, substantially as described.

26. In a self playing musical instrument, the combination of a casing, a piano action & strings a shelf forward of the strings, operative pneumatics and their wind-chests forward of the strings, music-rolls supported upon said shelf, a motor, gearing for operating said rolls, wind inducing apparatus connected with the wind-chests and with the motor, valves to control the flow of air from the wind-chests to said apparatus and from the motor to said apparatus, connections between said valves for operating them simultaneously, a handle connected with one of said valves for controlling the flow of air from the wind-chests, said handle being located behind the top frame, said top frame having an opening to permit access to said handle, a valve at one side of said receptacle for controlling the flow of air from the wind-chests to said wind inducing apparatus, said valve being located adjacent said receptacle, the top frame having an opening to permit access to said valve, a governor connected with the motor, and a lever connected with the governor and located adjacent said receptacle in line with an opening in the top frame, substantially as described.

27. In a self playing musical instrument, the combination of a casing, a piano action & strings a shelf forward of the strings, operative pneumatics and their wind-chests forward of the strings, music-rolls supported upon said shelf, a motor, gearing for operating said rolls, wind inducing apparatus connected with the wind chests and with the motor, valves to control the flow of air from the wind chests to said apparatus and from the motor to said apparatus, connections between said valves for operating them simultaneously, a handle connected with one of said valves for controlling the flow of air from the wind-chests, said handle being located behind the top frame, said top frame having an opening to permit access to said handle, a valve at one side of said receptacle for controlling the flow of air from the wind-chests to said wind inducing apparatus, said valve being located adjacent said receptacle, the top frame having an opening to permit access to said valve, a governor connected with the motor, and a lever connected with the governor and located adjacent said receptacle in line with an opening in the top frame, a damper rail, bellows connected with the wind inducing apparatus, means for operating said rail by said bellows, and a valve connected by a pipe with said bellows and located behind the top frame adjacent one of the openings therein, substantially as described.

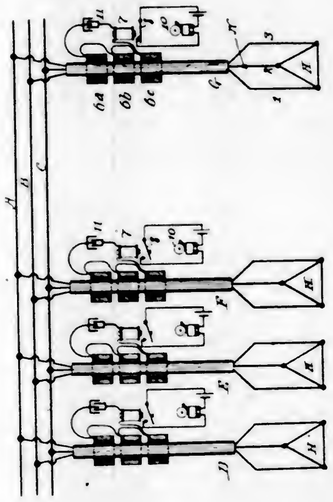
857,262. GROUND AND FAULT DETECTOR FOR ELECTRIC DISTRIBUTION SYSTEMS. PHILIP TORCHIO and THOMAS W. VARLEY, New York, N. Y. Filed Mar. 8, 1907. Serial No. 361,201.

Claim.—1. In a device for indicating capacity disturbance on a main line and feeder system, a plurality of feeders of normally balanced capacity and means for selecting the particular feeder, the fault on which has caused said capacity disturbance.

2. In a device for indicating capacity disturbance on a main line and feeder system, a plurality of feeders of normally balanced capacity and means associated with each of said feeders for selecting the particular feeder, the fault on which has caused said capacity disturbance.

3. In a device for indicating capacity disturbance on a main line and feeder system, a plurality of feeders of normally balanced capacity and inductively controlled means for selecting the particular feeder, the fault on which has caused said capacity disturbance.

4. A main line, a plurality of feeders of normally balanced capacity, a coil surrounding each feeder and means associated with each coil for indicating current induced in said coil due to variations in capacity balance in said feeder.



5. A main line, a plurality of feeders of normally balanced capacity, and means actuated by a disturbance of capacity balance in one feeder for throwing thereon the sum of the resulting capacity disturbances of the other feeders.

6. A main line, a plurality of feeders of normally balanced capacity, an indicating device associated with each feeder, and means actuated by an unbalanced capacity in one feeder for causing the indicating device associated therewith to be operated by the sum of the resulting unbalanced capacities of the other feeders.

7. A main line, a plurality of feeders of normally balanced capacity, an indicating device associated with each feeder and constructed to be inductively operated thereby at a certain predetermined disturbance in said balance, and means actuated by a balance disturbance in any one feeder for throwing upon said feeder, the sum of the disturbances in the other feeders.

8. A main line, a plurality of feeders of normally balanced capacity, a ring transformer surrounding each feeder and means associated with each transformer for indicating current induced in the coil thereof due to variations in capacity balance of said feeder.

9. A multiple conductor of normally balanced capacity, a ring transformer surrounding said conductor and a translating device in circuit with said transformer and constructed to be operated by the induced current due to disturbance of said balance.

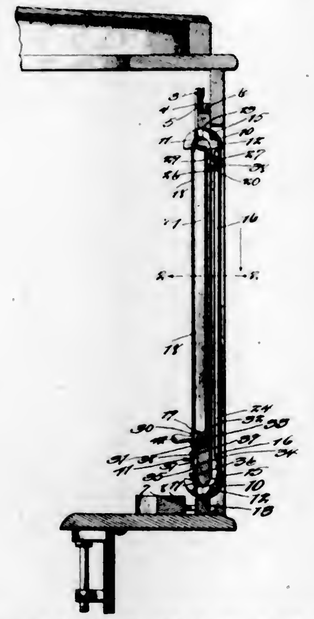
10. A multiple conductor of normally balanced capacity, a ring transformer surrounding said conductor, and an alarm device in circuit with said transformer and constructed to be operated by the induced current due to disturbance of said balance.

11. A multiple conductor of normally balanced capacity, a ring transformer surrounding said conductor, an electro magnet in circuit with said transformer and, in relay circuit controlled by said magnet, and indicating device.

12. A multiple conductor of normally balanced capacity, a ring transformer surrounding said conductor, an electro magnet and a condenser in circuit with said transformer, and in relay circuit controlled by said magnet, and indicating device.

13. A multiple conductor of normally balanced capacity, a plurality of ring transformers surrounding said conductor, and an alarm device constructed to be operated by the induced current due to disturbances of said balance: the said transformers and alarm device being in series circuit.

857,263. WINDOW-CLEANING DEVICE. HARRY E. WALTER, Washington, D. C., assignor of one-third to Robert A. Boswell, Washington, D. C. Filed May 16, 1906. Serial No. 317,188.



Claim.—1. In a window cleaning device, the combination with a window sash, of pairs of semi-circular tubings fixed to the upper and lower portions of the sash thereof, a pair of slotted tubings connecting said semi-circular tubings upon the outside of the sash, a cross head to move vertically between said slotted tubings, endless bands lying in said slotted tubing and secured to said cross head, a second cross head to move adjacent the inner face of the window and secured to said bands, and means for tightening said bands.

2. In a window cleaning device, a pair of cross heads, endless bands connected to the cross heads, slotted tubings for guiding one of the cross heads and means carried by the bands for tightening the bands.

3. In a window cleaning device, a cross head triangular in cross section to insure a firm bearing throughout the glass of the window and having a knife edge, one of the outer faces of said cross head being disposed angularly to said line of travel pintles at the ends of said cross head, clamping means on said face, and a strip of rubber held on said face by said clamping means combined with a band having a connecting bar upon each side of said cross head, the connecting bars receiving said pintles.

4. In a window cleaning device, a cross head triangular in cross section to insure a firm bearing throughout the glass of the window and having a knife edge, one of the outer faces of said cross head being disposed angularly to said line of travel, and having means for clamping a strip of suitable material for wiping the glass of the window, means for actuating the cross head, and means for guiding said cross head and its actuating means.

5. In a window cleaning device, a cross head triangular in cross section to insure a firm bearing throughout the glass of the window and having a knife edge, said cross head being adapted to carry a wiper; endless means to cooperate with the cross head, slotted tubings for guiding the cross head and said endless means, and means carried by the endless means for tightening the same.

6. In a window cleaning device, a cross head triangular in cross section to insure a firm bearing throughout the glass of the window and having a knife edge, said cross head being adapted to carry a wiper, endless means to cooperate with the cross head, means carried by the endless means for tightening the same, slotted tubing and curved terminals therefor to guide said cross head and the endless means.

7. In a window cleaning device, a pair of cross heads, endless bands connected therewith, slotted tubings secured to the window sash, top and bottom guides for said bands and means carried by said bands for tightening the same.

8. In a window cleaning device, a cross head triangular in cross section and having the knife edge disposed to bear directly against the glass, a clamping member hinged to one of the faces of said cross head, a strip of rubber to be clamped thereby and means for securely fastening said clamping member.

9. In a window cleaning device, a pair of semi-circular tubings fixed to the upper and lower portions of the sash of the window, and slotted tubings connecting the semi-circular tubings upon the outside of the window, a cross head guided in said slotted tubings, endless means connected with said cross head and a wiper carried by said cross head.

10. In a window cleaning device, a pair of semi-circular tubings fixed to the upper and lower portions of the sash of the window, slotted tubings connecting the semi-circular tubings upon the outside of the window, bands to move through said tubings, a pair of cross heads connected to said bands, wipers carried by said cross heads, and means carried by said bands compensating for the slack or tightness of the bands.

11. In a window cleaning device, a pair of semi-circular tubings fixed to the upper and lower portions of the sash of the window, slotted tubings connecting the semi-circular tubings upon the outside of the window, endless bands designed to move through said tubings pulleys journaled within said semi-circular tubings and over which said bands pass and a pair of cross heads connected to said bands.

12. In a window cleaning device, a pair of cross heads, endless bands to coöperate therewith, slotted tubings, curved terminals therefor, rollers in said terminals, and means carried by said bands for tightening said bands.

13. In a window cleaning device, a pair of semi-circular tubings fixed to the upper and lower portions of the sash of the window, slotted tubings connecting the semi-circular tubings upon the outside of the window, pulleys journaled within said semi-circular tubings, endless bands designed to move through said tubings and over the pulleys; a cross head carrying a wiper, pintles projecting from each end of said cross head and screw-threaded, connecting bars for the bands and having a threaded recess to receive said pintles; a second cross head connected with said bands, a wiper carried by said cross head, handles carried by said second cross head and means carried by said bands for compensating for the slack or tightness of the bands.

14. In a window cleaning device, cross heads for operation upon opposite sides of the glass, endless means connecting said cross heads, means inclosing and guiding a portion of said endless means, curved terminals for said guiding means, and means carried by said endless means for adjusting the tension thereof.

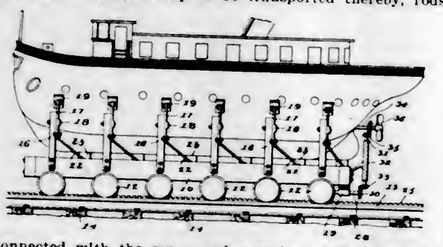
857,264. DEVICE FOR TRANSPORTING SHIPS. EARL C. WEST and ALBERT F. WOLTHER, Brownton, Minn. Filed June 27, 1906. Serial No. 323,738.

Claim.—1. A structure of the class described comprising a wheeled truck, a ship supported thereby, and means operated from said ship for propelling the truck.

2. A structure of the class described including means for automatically gripping a ship to be transported thereby.

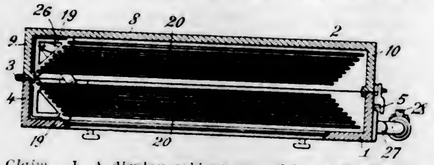
3. A structure of the class described comprising a wheeled truck, gripping arms mounted upon the truck and arranged to grip a ship to be transported thereby, and means connecting the arms and arranged to rock the same to engage a ship, the ship being designed to rest upon the connecting means.

4. A structure of the class described comprising a wheeled truck, gripping arms mounted upon the truck and arranged to grip a ship to be transported thereby, rods



connected with the arms, and a spring plate connecting the rods and arranged for engagement by the ship to cause the rods to rock the gripping arms.

857,265. DISPLAY-CABINET. ELIJAH A. WILCOX, New York, N. Y. Filed July 16, 1906. Serial No. 326,510.



Claim.—1. A display cabinet comprising a fixed section and a movable section, supporting brackets in each section, the supporting faces of said brackets being disposed at substantially right angles to each other when the cabinet is closed, and a series of display frames carried by said brackets, whereby when the sections are opened at right angles the inner ends of the frames will be substantially in line.

2. A display cabinet divided vertically into a movable front section and a back section, the said sections being hinged to each other along the dividing line of one side, and a plurality of swinging vertically disposed display frames pivotally mounted within said cabinet so that they may be placed parallel to either section, a part of said frames being attached to each section, means for supporting the front section of said cabinet when open, and a folding stop attached to each section of the cabinet and which determines the point to which the movable front section may be moved from the back section.

3. A display cabinet divided vertically into a movable front section and a back section, the said sections being hinged to each other along the dividing line of one side, and a plurality of swinging vertically disposed display frames pivotally mounted within said cabinet, a part of said frames being attached on a diagonal line across each section, and a folding stop attached to each section of the cabinet and which determines the point to which the movable front section may be moved from the back section, whereby the sections may stop automatically with the inner ends of the frames in line.

4. A display cabinet divided vertically into two sections hinged to each other at the division line of one side, lines of lights upon the top of each section, and reflectors adapted to throw light into the interior of said cabinet when open.

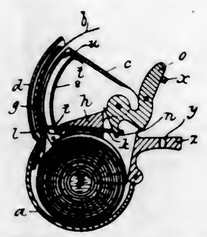
5. A display cabinet divided vertically into two sections, hinged to each other at the division line of one side, lines of light upon the top of each section, and two reflecting devices therefor, which operate to throw light upon the display frames.

6. A display cabinet divided vertically into two sections, hinged to each other at the division line of one side, a plurality of vertically disposed display frames attached to each portion of one side, and lines of lights upon the top of each section, and two reflecting devices therefor, which operate to throw light upon the display frames.

7. A display cabinet divided vertically into a movable front section and a back section, the said sections being hinged to each other along the dividing line of one side, a plurality of swinging vertically disposed display frames pivotally mounted within said cabinet, a part of said frames being attached to each section, a folding stop attached to each section of the cabinet, which determines the point to which the movable front section may be moved from the back section, means for supporting the front section of said cabinet when open, said means consisting of a wheel attached to said movable front section and adapted to run upon the means supporting the base of said cabinet, lines of lights upon the top of each section, and two reflecting devices for said lines of light adapted to throw light upon the said display frames.

8. A display cabinet divided vertically into two hinged sections, lighting devices carried by each section, and devices co-operating with said lighting devices to constitute reflectors when the cabinet is open and a closed housing when the cabinet is closed.

857,266. MACHINE FOR ISSUING CHECKS OR TICKETS. ALBERT E. YOUNG, Christchurch, and EDWARD G. KERR, Timaru, New Zealand. Filed Apr. 25, 1907. Serial No. 370,136.



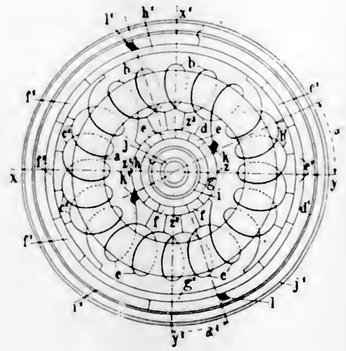
Claim.—1. In ticket issuing machines, a casing comprising two portions hinged together, one of such portions being provided with a curved extension on one side and with a spring plate underlying such extension and being adapted to contain a roll of tickets, the other portion of the casing being formed with a curved face adapted, when the casing is closed to engage against the spring plate and curved extension of the first portion and to grip upon the free end of the ticket roll placed between them, in combination with a toothed plate carried in a pivoted arm and a lever for turning such arm, substantially as herein specified.

2. In ticket issuing machine, a casing comprising two portions hinged together one of such portions being provided with a curved extension on one side and with a spring plate underlying such extension and being adapted to contain a roll of tickets, the other portion of the casing being formed with a curved face, adapted when the casing is closed to engage against the spring plate and curved extension of the first portion and its grip upon the free end of the ticket roll placed between them in combination with an arm pivoted in the casing, a thumb lever for turning such arm, a plate slidably mounted in the arm and formed with teeth on its outer edge, and an extension of the thumb lever engaging with the inner end of the toothed plate substantially as specified.

3. In ticket issuing machines, a casing comprising two portions hinged together, one of such portions being provided with a curved extension on one side and with a spring plate underlying such extension and being adapted to contain a roll of tickets, the other portion of the casing being formed with a curved face adapted when the casing is closed, to engage against the spring plate and curved extension of the first portion and its grip upon the free end of the ticket roll placed between them, in combination with an arm pivoted in the casing, a spring controlled lever for turning such arm, a toothed plate slidably mounted in the arm, a lug projecting laterally from the plate, a curved guide plate normally overlying such lug and formed with a notch at each end in the edge adjacent to the lug, and an extension upon the thumb lever engaging with the inner end of the toothed plate, substantially as specified.

4. In ticket issuing machines, a casing adapted to contain a roll of tickets and formed with a slot or orifice therein, an arm pivoted in the casing, a plate slidably mounted in the arm provided with teeth on its outer edge, a spring controlled thumb lever pivoted in the casing, an extension on such lever engaging with the inner end of the toothed plate, such extension being so disposed and arranged that when the lever is turned, it will impart a limited longitudinal sliding movement to the plate and will then turn the arm on its pivot substantially as specified.

857,267. REDRESSING AND REGULATING DEVICE ENABLING TO TRANSFORM A SINGLE-PHASE CURRENT INTO A CONTINUOUS ONE. LOUIS R. AUVERT and ALPHONSE F. E. FERRAND, Paris, France. Filed Aug. 9, 1905. Serial No. 273,344.

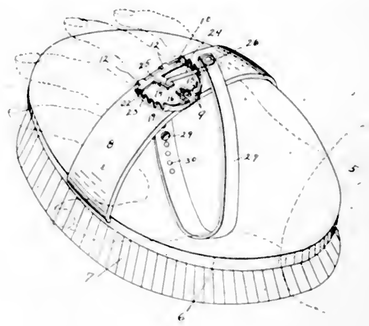


Claim.—1. A rotary transformer comprising the following parts held to rotate in unison: a ring of magnetizable material, two series of coils on said ring, two collector rings connected with the respective coils, conducting rings each connected with one of the several collector rings to convey two separate alternating currents to said collector rings, each collector ring comprising insulated contact plates; and stationary brushes engaging said collector rings to receive a direct current therefrom.

2. A rotary transformer comprising the following parts held to rotate in unison: a ring of magnetizable material, two series of coils on said ring, two collector rings connected with the respective coils, conducting rings each connected with one of the several collector rings to convey two separate alternating currents to said collector rings, each collector ring comprising insulated contact plates connected with said coils at different points; and stationary brushes engaging said collector rings to receive a direct current therefrom, said brushes being adjustable circumferentially to vary the mean potential of the transformed current.

3. A rotary transformer comprising the following parts held to rotate in unison: a ring of magnetizable material, two series of coils on said ring, two collector rings connected with the respective coils, conducting rings each connected with one of the several collector rings to convey two separate alternating currents to said collector rings, each collector ring comprising insulated contact plates, and each coil consisting of complete windings and half-windings connected with said contact plates by long and short leads respectively; and stationary brushes engaging the collector rings to receive a direct current therefrom.

857,268. ATTACHMENT FOR HORSE-BRUSHES. CORYDON I. BUSH, Portsmouth, Ohio. Filed Feb. 1, 1906. Serial No. 299,036.



Claim.—1. In a brush attachment the combination with the back strap a hand retaining band and a base plate on said back strap, an arm pivotally connected with the base plate with which the free end of the hand retaining band is connected, a fixed support for the end of the hand retaining band opposite to that connected with said arm and locking devices for said arm on said base plate.

2. In a brush attachment the combination with the back strap a hand retaining band, a base plate on said back strap an arm pivotally connected at one end with said base plate and a wrist upon the outer end of said arm with which the free end of the hand retaining band is connected, a fixed support for the end of said hand retaining band opposite to that connected with said arm and inclined teeth on said base plate engaged by said pivoted arm.

3. In a brush attachment the combination with the back strap a hand retaining band, a base plate on the back strap, securing devices on the said base plate with which the free end of the hand retaining band is connected, a fixed support for the end of the said hand retaining band opposite to that connected with the securing devices, and adjustable securing devices on the base plate.

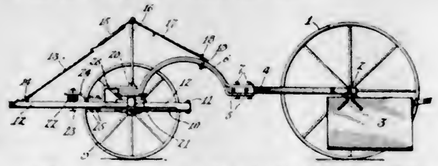
4. A horse brush a back strap thereon, a hand retaining band connected at one end with the back of the brush, and a band holding and taking up device, detachably connected with the back strap and with which the other end of the hand retaining band is connected.

5. In a brush attachment, the combination with the back of the brush, a back strap, a hand retaining band secured at one end to the back of the brush, a plate on the back strap, an arm pivotally connected at one end with said plate and having the other end pivotally connected with the free end of the hand retaining band, and securing means for the arm connected with the said plate.

6. In a brush attachment, the combination with the back of the brush, a back strap, a hand retaining band secured at one end to the back of the brush, a plate on the back strap, an arm pivotally connected at one end with the said plate and having the other end pivotally connected with the free end of the hand retaining band, and retaining devices for said arm connected with said plate.

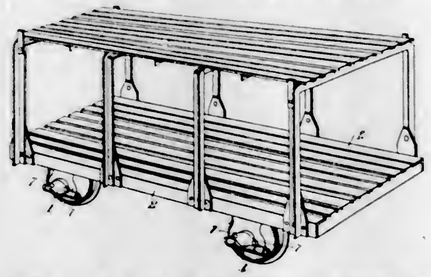
7. In a brush attachment, the combination with the back of the brush, a back strap, a hand retaining band detachably secured at one end to the back of the brush, a plate secured to the back strap, and an arm pivotally connected at one end to said plate and having the other end pivotally connected with the free end of the hand retaining band, a curved plate connected with the plate on the back of the strap, having toothed openings adapted to receive said arm, an inwardly extended plate on the upper edge of said curved plate having a slot, a clamping plate on the back strap and an adjusting screw.

857,269. SCRAPER. JOHN E. CULVER, Los Angeles, Cal. Filed Nov. 12, 1906. Serial No. 343,141.



Claim.—In combination with a two wheeled scraper in which the scraper and all its appurtenances are carried by the two wheels thereof, of a device adapted to be attached to the scraper in lieu of the rigid tongue of the scraper, which consists of a gooseneck detachably fastened to the frame of the two wheeled scraper, a truck supporting the front end of the gooseneck, and a tongue connected to the truck.

857,270. DRYING-CAR FOR CLAY PRODUCTS. WILLIAM R. CUNNINGHAM, Bucyrus, Ohio, assignor to The American Clay Machinery Co., Bucyrus, Ohio, a Corporation. Filed Apr. 10, 1907. Serial No. 367,452.



Claim.—1. In a vehicle, the combination with the body thereof, the axle and bearing wheels thereon, of a journal-box in which each end of the axle is turnable, a vertically-forked hanger fixed to the vehicle body, and means for pivotally-mounting the under side of the journal-box in the lower part of the fork of said hanger to enable the box to automatically respond to irregularities in the road-bed and to adjust itself relative to the fixed hanger.

2. In a vehicle, the combination with the body thereof, the axle and bearing wheels thereof, of a vertically-forked hanger fixed to the vehicle body, and a journal-box having a hub on its lower side pivotally mounted in the lower part of the fork of the hanger and adapted to oscillate transverse thereof.

3. The combination of a fixedly-secured hanger having a centrally disposed opening in its lower portion, a bolt in the lower portion of the hanger and extending across the opening therein, and a journal-box within the opening of the hanger having a hub on its lower side receiving said bolt whereby the box may oscillate transversely of said bolt.

4. The combination of a fixedly-secured hanger having a bifurcated lower portion forming two arms, said arms having holes therein axially in line, a bolt fitting said holes and extending transversely across the opening therebetween, a journal-box mounted in the opening of the hanger and having a hub-portion on its under side, said hub-portion being contained between the arms formed by the bifurcation of the hanger and being pivotally mounted on said bolt, whereby it may oscillate transverse thereof.

5. The combination of a fixedly-secured hanger having a bifurcated lower portion forming two arms, said arms having holes therein axially in line, a bolt fitting said holes and extending transversely across the opening therebetween, a journal-box mounted in the opening of the hanger and having a hub-portion on its under side, said hub-portion being contained between the arms formed by the bifurcation of the hanger and being pivotally mounted on said bolt, whereby it may oscillate transverse thereof, said box having a removable cap-plate over its outer side and having an inturned flange on its inner side with an opening to receive an axle or shaft, and an annular series of rollers within the box and retained longitudinally in place by said cap-plate and inturned flange.

6. A vehicle of the character described having in combination a body with angle-irons extending along the sides thereof, hangers fixed to said angle-irons and having bifurcated lower portions, axles having bearing wheels upon which the body is supported, and journal-boxes mounted in the bifurcated portions of the hangers and receiving the ends of the axles, said boxes having roller-bearings and having lower portions pivotally hung within the bifurcated portions of the hangers whereby the boxes oscillate relative to the hangers and in response to unevenness of the surface over which the vehicle travels, and the alinement of the roller-bearings with the axles is maintained.

857,271. ANTI-LOST-MOTION DEVICE FOR PULL-OUT SHELVES. LEONARD DAY, New York, N. Y. Filed May 3, 1906. Serial No. 315,112.



Claim.—1. Automatic means to co-operate with a pull-out extension shelf sliding between two or more substantially parallel, spaced ways which guide and restrain said shelf, said means operable to cause the inner and outer ends of the portion of said shelf between said ways respectively to engage ways located on opposite sides of said sliding shelf, and said means operable throughout the sliding movement of said shelf, so as to prevent lost motion at said inner end and to produce a silent extension shelf.

2. Automatic means, operable throughout the sliding movement of a pull-out extension shelf sliding between substantially parallel, spaced ways, for maintaining the inner end of said shelf in sliding engagement with one of said ways while the portion of said shelf near the exposed end thereof is normally maintained in sliding engagement with an oppositely located way, so as to prevent lost motion at the inner end of said shelf and to produce a silent extension shelf.

3. Automatic spring means operable upon a pull-out extension shelf, sliding between upper and lower substantially flat and parallel ways, but with one end extending therefrom, said means to maintain the inner end of said shelf in sliding contact with said upper way throughout the sliding movement of said shelf, while the portion of said shelf near the said extending end is normally held by gravity in sliding contact with said lover way, said means for preventing lost motion at the inner end of said shelf and to produce a silent extension shelf.

4. Automatic spring means comprising, a bowed spring strip, provided at its convex middle portion and at the opposite side of one end with smooth sliding surfaces and at its opposite end with a perforated attaching foot, said spring means operable upon a pull-out extension shelf, sliding between upper and lower substantially flat and parallel ways, but with one end extending therefrom, said means to maintain the inner end of said shelf in sliding contact with said upper way throughout the sliding movement of said shelf, while the portion of said shelf near the said extending end is normally held by gravity in sliding contact with said lower way, said means for preventing lost motion at the inner end of said shelf and to produce a silent extension shelf.

5. Automatic means, operable throughout the sliding movement of a pull-out extension shelf sliding between substantially parallel, spaced ways, for maintaining the inner end of said shelf in sliding engagement with one of said ways while the portion of said shelf near the exposed end thereof is normally maintained in sliding engagement with an oppositely located way, so as to prevent lost motion at the inner end of said shelf and to produce a silent extension shelf, said means comprising an elongated bowed spring strip, provided at its convex middle portion and on the opposite side near one end with smooth sliding surfaces, said strip also provided at its opposite end with a flat attaching foot, said foot provided with one or more perforations.

6. Automatic means, operable throughout the sliding movement of a pull-out extension shelf sliding between substantially parallel, spaced ways, for maintaining the inner end of said shelf in sliding engagement with one of said ways while the portion of said shelf near the exposed end thereof is normally maintained in sliding engagement with an oppositely located way, so as to prevent lost motion at the inner end of said shelf and to produce a silent extension shelf, and an antifriction runner for the inner end of said shelf.

7. In combination with a pull-out extension shelf; two or more spaced substantially parallel flat ways for guiding and restraining said shelf; the inner end of said shelf slidably retained between said ways; the other end of said shelf projecting from between said ways and forming an extending portion of variable extent; and automatic means, operative throughout the sliding movement of said shelf, for maintaining said inner end and said extending portion of said shelf respectively in sliding engagement with oppositely located ways, so as to prevent lost motion at said inner end and to produce a silent extension shelf.

8. In combination with a pull-out extension shelf; two or more spaced substantially parallel flat ways for guiding and restraining said shelf; the inner end of said shelf slidably retained between said ways; the other end of said shelf projecting from between said ways and forming an extending portion of variable extent; and one or more springs operative throughout the sliding movement of said shelf, for maintaining said inner end and said extending portion of said shelf respectively in sliding engagement with oppositely located ways, so as to prevent lost motion at said inner end and to produce a silent extension shelf.

9. In combination with a pull-out extension shelf; two or more spaced substantially parallel flat ways for guiding and restraining said shelf; the inner end of said shelf slidably retained between said ways; the other end of said shelf projecting from between said ways and forming an extending portion of variable extent; and one or more springs attached to and sliding with said shelf, operative throughout the sliding movement of said shelf for maintaining said inner end and said extending portion of said shelf respectively in sliding engagement with oppositely located ways, so as to prevent lost motion at said inner end and to produce a silent extension shelf.

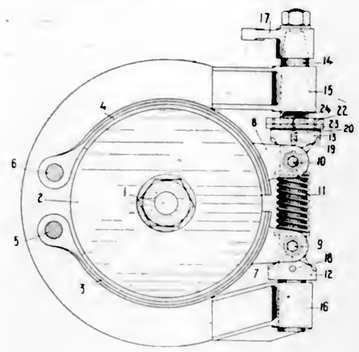
10. In combination with a pull-out extension shelf; one or more flat ways extending lengthwise along the top of said shelf; one or more flat ways extending lengthwise along the bottom of said shelf; one or more sliding springs each interposed between the bottom of said shelf, near its inner end, and a flat way extending along the bottom of said shelf, for the purpose of elevating said inner end and preventing lost motion of said inner end when said extension shelf is pressed down from above where it extends from between said top and bottom ways.

11. In combination with a pull-out extension shelf; one or more flat ways extending lengthwise along the top of said shelf; one or more flat ways extending lengthwise along the bottom of said shelf; a sliding spring interposed between the bottom of said shelf, near its inner end, and each flat way extending along the bottom of said shelf, for the purpose of elevating said inner end and preventing lost motion of said inner end when said extension shelf is pressed down from above where it extends from between said top and bottom ways.

12. In combination with a pull-out extension shelf; one or more flat ways extending lengthwise along the top of said shelf; one or more flat ways extending lengthwise along the bottom of said shelf; a sliding spring interposed between the bottom of said shelf, near its inner end and each flat way extending along the bottom of said shelf, each spring being secured to said shelf in position slidably to engage the underlying way, for the purpose of elevating said inner end and preventing lost motion of said inner end when said extension shelf is pressed down from above where it extends from between said top and bottom ways.

13. In combination with a pull-out extension slide; a plurality of spaced ways located respectively on opposite sides of said slide and adapted to guide and restrain the same; means for maintaining the inner end of said slide in sliding engagement with one of said ways; and means for maintaining a way on the opposite side of said slide in sliding contact with said slide near the extension portion of the same.

857,272. BRAKE FOR MOTOR-VEHICLES. GIOVANNI ENRICO, Turin, Italy, assignor to F. I. A. T. Fabbrica, Italiana Automobili Torino, Turin, Italy. Filed Aug. 16, 1906. Serial No. 330,817.



Claim.—1. In a motor vehicle or the like, a brake comprising a drum, a pair of jaws adapted to act against said drum, a shaft, a pair of cams mounted upon said shaft and adapted to actuate said jaws, means for turning said shaft, and means for adjusting the position of one of said cams upon said shaft.

2. In a motor vehicle or the like, a brake comprising a drum, a pair of jaws adapted to act against said drum, a shaft, a pair of cams mounted upon said shaft and adapted to actuate said jaws, one of said cams having a nonrotative sliding connection with said shaft, and means for adjusting the position of said cam on said shaft.

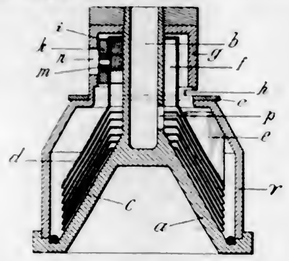
3. In a motor vehicle or the like, a brake comprising a drum, a pair of jaws adapted to act against said drum, a shaft, a pair of cams mounted upon said shaft and adapted to actuate said jaws, one of said cams having a slot, and a pin fixed to said shaft and extending into said slot, and a set nut adapted to be adjusted on said shaft and to limit the movement of said cam.

4. In a motor vehicle or the like, a drum, a pair of pivoted jaws adapted to act against said drum, a shaft having a pair of cams, one of which is fixed and the other of which is formed with a slot, a pin fixed to said shaft and entering said slot, a set nut having notches or the like screwing on said shaft and limiting the movement of the slotted cam, and means for turning said shaft.

5. In a motor vehicle or the like, a drum, a pair of pivoted jaws adapted to act against said drum, a shaft having a pair of cams, each of said cams having two faces, and two pairs of projections fixed to said jaws and engaging said cams, one of each pair of projections lying on the opposite side of said shaft to the other of such pair.

6. In a motor vehicle or the like, a brake comprising a drum, a pair of jaws adapted to act against said drum, a shaft having a fixed bearing on each side of said jaws, a pair of cams each mounted upon said shaft between one of the shaft bearings and the ends of said jaws, said cams being adapted to actuate said jaws, means for turning said shaft, and means for adjusting the positions of one of said cams upon said shaft.

857,273. CENTRIFUGAL CREAM-SEPARATOR. ERIK A. FORSBERG, Stockholm, Sweden, assignor to Aktiebolaget Separator, Stockholm, Sweden. Filed Sept. 23, 1904. Serial No. 225,620.



Claim.—1. In a centrifugal cream separator, the combination of a centrifugal bowl provided with an unobstructed discharge for the skim milk, a liner therein consisting of superposed conical plates, an upper plate upon the liner, extending into the bowl neck and closed against the central feed tube of the bowl, and a hollow regulating screw connected with the upper plate for regulating the discharge of the cream and drawing it off from the inner space of the upper plate.

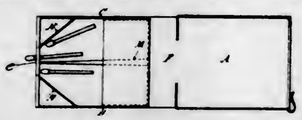
2. In a centrifugal cream separator, the combination of a centrifugal bowl provided with an unobstructed discharge for the skim milk, a liner therein consisting of superposed conical plates, an upper plate upon the liner, extending into the bowl-neck and closed against the central feed tube of the bowl, a block secured to the neck of the upper plate and a hollow regulating screw in said block for regulating the discharge of the cream and drawing it off from the inner space of the upper plate.

3. In a centrifugal cream separator, the combination of a centrifugal bowl provided with an unobstructed discharge for the skim milk, a liner therein consisting of superposed conical plates, an upper plate upon the liner, extending into the bowl neck and closed against the central feed tube of the bowl, a block secured to the neck of the upper plate, an orifice in the said upper plate and a hollow regulating screw in the said block, the hole in the regulating screw alining with the orifice in the upper plate.

4. In a centrifugal cream separator, the combination of a centrifugal bowl provided with an unobstructed discharge for the skim milk, a liner therein consisting of superposed conical plates, an upper plate upon the liner, extending into the bowl-neck, and closed against the central feed tube of the bowl, and a hollow regulating screw in the upper plate for regulating the discharge of the cream and drawing it off from the inner space of the upper plate.

5. In a centrifugual cream separator, the combination of a centrifugal bowl provided with an unobstructed discharge for the skim milk, a liner therein consisting of superposed conical plates, an upper plate upon the liner, extending into the bowl-neck and closed against the central feed tube of the bowl, the neck of the bowl being provided with a slit for the discharge of the skim-milk and the upper plate provided with a hollow regulating screw for regulating the discharge of the cream and drawing it off from the inner space of the upper plate.

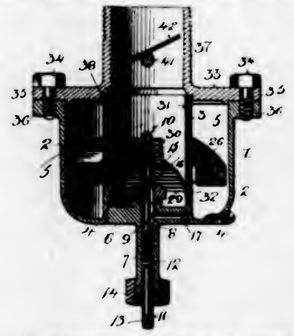
857,274. POCKET MATCH-BOX. MARCO GABASIO, Turin, Italy. Filed May 12, 1906. Serial No. 316,545.



Claim.—1. A match box comprising an outer rectangular casing having a delivery opening in one end, a slide closing said opening, an inner member having sides converging toward said opening and a second inner member covering the rear part of said first member, substantially as described.

2. A match box comprising an outer receptacle consisting of two flanged parts folded over the one upon the other with the flanges overlapping, and having a delivery opening through the flanges of one end, a slide closing said opening, an inner part having a central longitudinal rib and side flanges converging toward said opening, and a second inner part covering the rear portion of said first named part and having depending side and rear flanges, substantially as described.

857,275. CARBURETER. CHARLES T. GAITHER, Youngstown, Ohio. Filed Feb. 1, 1906. Serial No. 298,962.



Claim.—1. A carbureter comprising a mixing chamber having a means for admitting liquid therein, and a valve effecting the entry of air into said chamber, said valve comprising resilient separating parts through which air is adapted to pass when the said parts separate, and means for securing one portion of the coil, and a free end on the coil adapted to be raised and the coils separated by the suction of the carbureter.

2. A carbureter comprising a mixing chamber having a sprayer therein, an air inlet for said chamber, and means for governing the entry of air therein comprising a valve composed of a resilient coil, the parts of which are adapted to separate and allow air to pass between, the lower portion of the valve being secured and the upper portion free, whereby the suction of the carbureter will cause the valve coils to open.

3. A carbureter comprising a mixing chamber having a liquid inlet, and an air inlet to said mixing chamber, and a valve effecting the inlet of air into said chamber, comprising a spiral of resilient material in which the spirals are adapted to separate, to allow air to pass therebetween, the lower end of the valve being secured and the upper end free, so that the suction of the carbureter will separate the coils and whereby they will be returned by the resiliency of the coils.

4. A carbureter having a mixing chamber, with a liquid inlet therein, and having an inlet for air, and a valve effecting the inlet of air, said valve comprising a conically shaped member with the larger portion at the bottom, formed of spirally wound resilient material, the coils of which are adapted to separate, thereby providing spaces for the admission of air, the valve being secured near the bottom and the top being free to move upwardly.

5. A carbureter, comprising a mixing chamber, a nozzle for admitting liquid into said chamber, an air inlet for said chamber, a cylinder surrounding the nozzle and a valve composed of resilient coils adapted to be separated by the suction in the carbureter to permit air to enter said mixing chamber, in addition to the air admitted through the said cylinder.

6. A carbureter comprising a mixing chamber, having a nozzle for the admission of liquid, a member surrounding the nozzle and through which air is admitted into said chamber near the nozzle whereby the suction of the engine will cause the liquid to spray from said nozzle, and a valve for governing the further entry of air into the mixing chamber, said valve being adapted to be operated by the suction of the engine.

7. A carbureter comprising a mixing chamber, having a nozzle for the admission of liquid, a member surrounding the nozzle and through which air is admitted near the nozzle and a valve adapted to control the further entry of air into the mixing chamber, comprising resilient coils, one end of said valve being secured, whereby the suction of the engine will cause the coils to separate and admit air therebetween.

8. A carbureter having a mixing chamber, a nozzle for admitting liquid therein, an air inlet to said chamber and a valve having a cylindrical top forming an inlet for the admission of air directly to the nozzle, and a curved lower portion composed of resilient coils secured at the lower portion, and free at the top, to be separated by the suction of the engine to form an additional air inlet to the said mixing chamber.

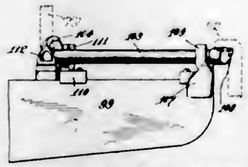
9. A carbureter having a mixing chamber, a nozzle for the admission of liquid therein, a valve having a cylindrical top 30 surrounding the nozzle, and forming an air passage between the nozzle and top 30, whereby air is admitted directly to the nozzle top, the said valve extending downwardly therefrom in a conical form and projecting outwardly, said conical portion being formed of coils of resilient material, the lower portion of which is secured, and the upper portion free whereby the suction of the engine will cause the coils to separate and admit air to enter the mixing chamber independent of the air passage in the cylindrical part 30.

10. A carbureter having a mixing chamber, a nozzle for the admission of liquid therein, a valve having a cylindrical top 30 surrounding the nozzle, and forming an air passage between the nozzle and part 30, whereby air will be admitted at the nozzle, the said valve extending outwardly therefrom, and comprising resilient coils, which are adapted to lie in contact with each other and adapted to be separated by the suction of the engine, to allow for the further admission of air, means securing the lower portion of the valve, said cylindrical portion 30 being free and adapted to rise when the coils are separated.

11. A carbureter having a cylinder forming a mixing chamber and having a shoulder, a nozzle for the admission of liquid into the mixing chamber and a valve for effecting the admission of air into the mixing chamber, comprising a plurality of resilient coils adapted to be separated for the admission of air therebetween, and a cylinder adapted to secure a portion of the valve on the shoulder of the said first mentioned cylinder.

12. A carbureter having a mixing chamber, a valve adapted to admit liquid into said chamber, and a valve adapted to admit air into said mixing chamber below the nozzle of the liquid valve, and means for preventing the air so admitted from directly affecting the said nozzle, the said air valve comprising resilient coils which are secured near the bottom, and having the top free and adapted to be separated by the suction of the engine.

857,276. DRY-PIPE VALVE. JOHN R. HAMILTON, Mount Kisco, N. Y., assignor to Manufacturers Automatic Sprinkler Company, New York, N. Y., a Corporation of New York. Filed Feb. 6, 1906. Serial No. 299,742.



Claim.—1. In dry pipe valves, a valve casing for connection with an inlet pipe, a water valve in said casing provided with a protruding valve rod, a check valve in said casing to control the outlet to supply pipe and distributing system, an air chamber to be connected through an air pipe with said distributing system, an air valve in said chamber provided with a protruding stem, a support, brackets secured to said support and provided with yokes projecting on opposite sides of said support, a rock lever having an arm and an enlarged head provided with a socket and obliquely mounted above said support in said yokes, an alining lug on said bracket below said valve stem and releasable holding devices engaging said valve rod and said arm.

2. In dry pipe valves, a casing, a water valve in said casing to control the inlet of water thereto, an air chamber to be connected with a distributing system, an air valve in said chamber and provided with a stem, a support, brackets secured to said support and provided with yokes projecting on opposite sides of said support, a rock lever having an arm and a head provided with a socket and obliquely mounted above said support in said yokes, an alining lug below said valve stem to engage said head and releasable holding devices engaging said water valve and said arm.

3. In dry pipe valves, a valve casing, a water valve in said casing, an air chamber to be connected to a distributing system, an air valve in said chamber provided with a stem, a support, brackets provided with yokes secured to said support, a rock lever having a head provided with a socket mounted in said yokes, an alining lug below said valve stem and releasable holding devices between said water valve and said rock lever.

4. In dry pipe valves, a casing, a valve, a chamber, a stem protruding from said chamber and controlled by the pressure within it, a support, brackets secured to said support and provided with yokes projecting on opposite sides of said support, a rock lever having an enlarged head provided with a socket and obliquely mounted above said support in said yokes, an alining lug engaging said head and located below said stem and releasable holding devices between said valve and said rock lever.

5. In dry pipe valves, a valve casing, a valve within said casing, a chamber, a stem protruding from said chamber and controlled by the pressure within it, a support below said stem, brackets secured to said support and provided with yokes projecting on opposite sides of said support and releasable holding devices engaging said valve and having a hook normally substantially in line with said support, a rock lever having an arm and a head provided with a socket on the opposite side from said arm, the said lever being obliquely mounted above said support in said yokes and an alining lug engaging said lever to prevent the irregular resetting of said valve.

6. In automatic valves, a valve, a chamber having a stem protruding therefrom and controlled by the pressure therein, a support in line with said stem, releasable holding devices for said valve comprising a member normally in line with said support, brackets secured to said support and provided with yokes projecting on opposite sides of said support, a rock lever having an arm for engagement with said member and provided with a socket on the other side from said arm, said lever being obliquely mounted with respect to said support in said yokes, and means to prevent the irregular resetting of said valve and lever.

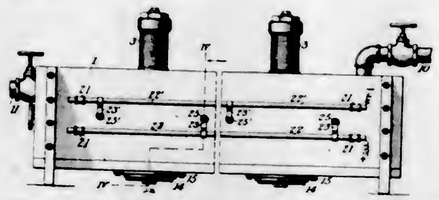
7. In automatic valves, a chamber, a stem protruding from said chamber and controlled by the pressure therein, said stem being substantially in line with said support, releasable valve holding devices having a member normally in line with said support, a rock lever having an arm to be engaged by said member and a socket on the other side of said lever to engage said stem, said lever being obliquely mounted with respect to said support and provided with means to prevent its irregular resetting.

8. In automatic valves, a chamber, a stem protruding from said chamber and controlled by the pressure therein, releasable valve holding devices, a rock lever having an elongated rock shaft and provided with a member engaging said devices, and also provided with an enlarged head having a socket for engaging with said stem and an alining lug engaging said lever to prevent its irregular resetting.

9. In automatic valves, a chamber, a member controlled by the pressure in said chamber, releasable valve holding devices, a rock lever having an elongated rock shaft and engaging said devices, and provided with a laterally extending socket for engagement with said member, and means to prevent the irregular re-setting of said lever.

10. In automatic valves, a valve casing, a valve in said casing, an air chamber, a stem controlled by the pressure in said chamber, a rock lever having an elongated rock shaft revolubly mounted, and having a head provided with a laterally located socket to be engaged by said stem to prevent irregular re-setting, and releasable holding devices between said valve and said rock lever.

857,277. ELECTROLYTIC PROCESS OF PURIFYING LIQUIDS. JOHN T. HARRIS, New York, N. Y. Filed June 20, 1903. Renewed Nov. 20, 1906. Serial No. 344,315.



Claim.—1. The process of purifying liquids, which consists in magnetizing an anode of a material which will yield a coagulant, passing an electric current from the magnetized anode through the impure liquid, and separating the impurities from the treated liquid, as set forth.

2. The process of purifying liquids, which consists in magnetizing an anode of a material which will yield a coagulant, moving a stream of the impure liquid past the magnetized anode, passing an electric current from the anode through the moving liquid, and separating the impurities from the treated liquid, as set forth.

3. The process of purifying liquids, which consists in moving a stream of the impure liquid through a series of electrodes which will yield a coagulant, electrolyzing the moving liquid and simultaneously subjecting the electrodes and liquid to the action of a magnetic field, and separating the impurities from the treated liquid, as set forth.

4. The process of purifying liquids, which consists in magnetizing an anode of a material which will yield a coagulant, passing an electric current from the magnetized anode through the impure liquid, simultaneously injecting a gas through the liquid, and separating the impurities from the treated liquid, as set forth.

5. The process of purifying liquids, which consists in magnetizing an anode of a material which will yield a coagulant, passing an electric current from the magnetized anode through the impure liquid, simultaneously injecting air through the liquid, and separating the impurities from the treated liquid, as set forth.

6. The process of purifying liquids, which consists in magnetizing an anode of a material which will yield a coagulant, moving a stream of the impure liquid past the magnetized anode, passing an electric current from the anode through the moving liquid, simultaneously injecting air through the liquid, and separating the impurities from the treated liquid, as set forth.

7. The process of purifying liquids, which consists in moving a stream of the impure liquid through a series of electrodes which will yield a coagulant, electrolyzing the moving liquid, simultaneously subjecting the electrodes and liquid to the action of a magnetic field and injected air, and separating the impurities from the treated liquid, as set forth.

8. The process of purifying liquids, which consists in passing an electric current through the impure liquid from a metallic anode which will yield a coagulant, simultaneously subjecting the anode and liquid to the action of a magnetic field, coagulating the impurities, and separating the coagulum from the liquid, as set forth.

9. The process of purifying liquids, which consists in passing an electric current through the impure liquid from a metallic anode which will yield a colloidal hydroxid, simultaneously subjecting the anode and liquid to the action of a magnetic field, coagulating the impurities by the electrolytic hydroxid, and separating the coagulum from the liquid, as set forth.

10. The process of purifying liquids, which consists in passing an electric current from a magnetized iron anode through the impure liquid, thereby producing a colloidal iron compound, coagulating the impurities by said compound, and separating the coagulum from the liquid, as set forth.

11. The process of purifying liquids, which consists in moving a stream of the impure liquid past a metallic anode which will yield a coagulant, simultaneously subjecting the anode and moving liquid to the action of a magnetic field, coagulating the impurities, and separating the coagulum from the liquid, as set forth.

12. The process of purifying liquids, which consists in moving a stream of the impure liquid through a series of magnetized iron electrodes, thereby producing a colloidal iron compound, coagulating the impurities by said compound, and separating the coagulum from the liquid, as set forth.

13. The process of purifying liquids, which consists in passing an electric current through the impure liquid from a metallic anode which will yield a coagulant, simultaneously agitating the liquid and subjecting the anode and liquid to the action of a magnetic field, coagulating the impurities, and separating the coagulum from the liquid, as set forth.

14. The process of purifying liquids, which consists in passing an electric current through the impure liquid from a magnetized iron anode and simultaneously injecting air tarough the liquid, thereby producing a colloidal iron compound, coagulating the impurities by said compound, and separating the coagulum from the liquid, as set forth.

15. The process of purifying liquids, which consists in moving a stream of the impure liquid through a series of groups of magnetized iron electrodes, simultaneously passing an electric current and jets of air through the moving liquid, thereby producing an iron coagulant, coagulating the impurities, and separating the coagulum from the liquid, as set forth.

16. The process of purifying liquids, which consists in magnetizing an anode of a material which will yield a coagulant, electrolyzing the impure liquid with the magnetized anode, adding to the liquid a reagent which will assist in the production of the coagulant, combining the coagulant with the impurities in the liquid, and separating the coagulum from the liquid, as set forth.

17. The process of purifying liquids, which consists in magnetizing an iron anode, electrolyzing the impure liquid with the magnetized anode, thereby producing an iron coagulant, adding to the liquid a reagent which will assist in the production of the coagulant, combining the coagulant with the impurities in the liquid, and separating the coagulum from the liquid, as set forth.

18. The process of purifying liquids, which consists in electfolyzing the impure liquid by passing it between electrodes which are spaced apart, the anode or anodes being of iron and simultaneously injecting air into the liquid, thereby producing an iron coagulant, adding to the liquid a reagent which will assist in the production of the coagulant, combining the coagulant with the impurities in the liquid, and separating the coagulum from the liquid, as set forth.

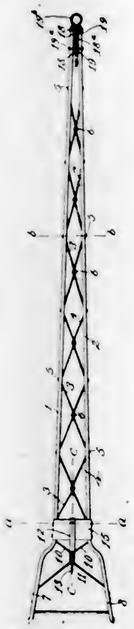
19. The process of purifying liquids, which consists in magnetizing an iron anode, electrolyzing the impure liquid with the magnetized anode, and simultaneously injecting air into the liquid, thereby producing an iron coagulant, adding to the liquid a reagent which will assist in the production of the coagulant, combining the coagulant with the impurities in the liquid, and separat- the coagulum from the liquid, as set forth.

20. The process of purifying liquids, which consists in electrolyzing the impure liquid by passing it between electrodes which are spaced apart, the anode or anodes being of a material which will yield a coagulant, simultaneously injecting a gas through the liquid, coagulating the impurities, and separating the coagulum from the treated liquid, as set forth.

21. The process of purifying liquids, which consists in electrolyzing the impure liquid by passing it between electrodes which are spaced apart, the anode or anodes being of iron and simultaneously injecting air through the liquid, thereby producing an iron coagulant, coagulating the impurities, and separating the coagulum from the treated liquid, as set forth.

22. The process of purifying liquids, which consists in passing a stream of the impure liquid by passing it between electrodes which are spaced apart, the anode or anodes being of a material which will yield a coagulant, simultaneously injecting air between the electrodes, coagulating the impurities, and separating the coagulum from the treated liquid, as set forth.

857,278. VEHICLE-TONGUE. JOSEPH L. HECHT, Davenport, Iowa, assignor to Davenport Wagon Company, a Corporation of Iowa. Filed Dec. 6, 1906. Serial No. 346,577.



Claim.—1. A vehicle draft member composed of two longitudinal complementary metal channel bars arranged with the channels inward, and continuous bracing straps extended throughout substantially the entire length of the member and connected at intervals with said channel bars respectively within the channels, and connected also with each other at points between their points of connection with the channel bars.

2. A vehicle tongue composed of two longitudinal complementary metal members, bent outwardly and rearwardly at their rear ends to form integral tongue-hounds, and connections between said member for holding them spaced in fixed relations.

3. A vehicle tongue comprising two longitudinal complementary metal bars spaced apart, and a pair of cooperating braces connecting said bars, in combination with a hammer strap formed independently of and connected between said braces.

4. A vehicle tongue comprising two longitudinal complementary metal bars spaced apart, in combination with a hammer strap comprising a vertical sustaining portion fixed between said bars, and a horizontal hammer strap proper extending above said bars.

5. A vehicle tongue comprising two longitudinal complementary metal bars spaced apart, in combination with a hammer strap consisting of a single piece of metal, with its rear end disposed in a vertical plane and fastened between the complementary bars, and with its forward end disposed in a horizontal plane and extending above said bars.

6. A vehicle tongue comprising two longitudinal complementary metal bars spaced apart, in combination with a hammer strap consisting of a single piece of metal twisted between its ends, with its rear end disposed in a vertical plane and fastened between the complementary bars, and with its forward end disposed in a horizontal plane and extending above said bars.

7. A vehicle tongue comprising two longitudinal complementary metal members spaced apart, in combination with a horizontal plate spanning said members at their rear ends and adapted to serve as a doubletree support, and a hammer strap sustained by said members and having a horizontal portion disposed above the plate.

8. A vehicle tongue comprising two longitudinal complementary metal members, in combination with a lead horse connection in the form of a horizontal loop or eye provided with a rearwardly extending body portion, said body portion being arranged longitudinally and secured between the forward ends of said complementary members.

9. A vehicle tongue comprising two longitudinal complementary metal bars, in combination with a lead-horse connection, and neck-yoke stop, consisting of a horizontal body portion having an eye at its front end and a depending stop on its rear end, said body portion being fixedly sustained between the two members, with the eye projecting in front of the tongue and with the depending stop projecting below the tongue.

10. A vehicle tongue comprising two longitudinal complementary metal channel bars arranged with the channels inward, in combination with opposing spacing blocks seated in the channels at the front end of the bars, and a lead-horse connection and neck-yoke stop in the form of an integral structure, embodying a horizontal body portion, said body portion being extended longitudinally between the opposing spacing blocks, and means for fastening said parts rigidly in fixed relations.

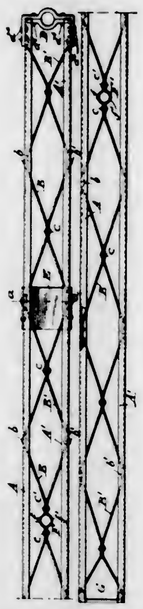
11. A vehicle tongue comprising two longitudinal complementary metal bars, in combination with a neck-yoke stop and lead-horse connection, consisting of a single piece of metal with hooked ends bent on itself to form a lead-horse loop or ring, a flat body portion, and a neck yoke stop, the said body portion being extended longitudinally between the said complementary members and firmly secured in place.

12. A vehicle tongue comprising two longitudinal complementary channel bars arranged with the channels inward, and bracing straps connected at intervals with the respective channel bars within the channels, and connected at intervals with each other, in combination with a neck-yoke stop and lead-horse connection fastened between said channel bars at the front, a horizontal plate seated on and secured to the channel bars at the rear, and a hammer strap having a horizontal portion extending above the horizontal plate, and having a depending portion fastened to and sustained by the bracing straps.

857,279. WAGON-REACH. JOSEPH L. HECHT, Davenport, Iowa, assignor to Davenport Wagon Company, a Corporation of Iowa. Filed Dec. 11, 1906. Serial No. 347,243.

Claim.—1. As a new article of manufacture, a structural-metal wagon reach complete in itself and independent of the front and rear gears to which it is adapted to

be detachably attached, said wagon reach comprising two complementary metal members, braces connecting said members and holding them rigidly spaced apart as a single elongated structure, a king bolt bearing connected with the forward extremities of said complementary members; whereby the reach is adapted to be detachably connected with the front gear, and means whereby said reach is adapted to be connected detachably with the rear gear.



2. A wagon-reach comprising two complementary longitudinal members spaced apart, and a king-bolt bearing in the form of two parts, one of said parts extending across the front ends of said members and fastened to the sides of same, and the other part extending between said members and secured to the part of the bearing first mentioned.

3. A wagon-reach comprising two complementary longitudinal members spaced apart, a king-bolt bearing attached to and forming a connection between said members at the front, and a reach-bolt bearing attached to said members in rear of the king-bolt bearing.

4. A wagon reach comprising two longitudinal complementary members held spaced apart and constituting a single rigid structure, and a wear plate extending across the under side of said reach, and bridging the space between the complementary members, said wear plate presenting a flat continuous wear-surface, and having its ends bent upward and riveted to the outer sides of said members respectively.

5. A wagon-reach comprising two longitudinal complementary members, braces fastened to the inner sides of said members and extending inward toward each other and connected together, said braces being bent outward at their points of connection with each other, to form a reach-bolt bearing.

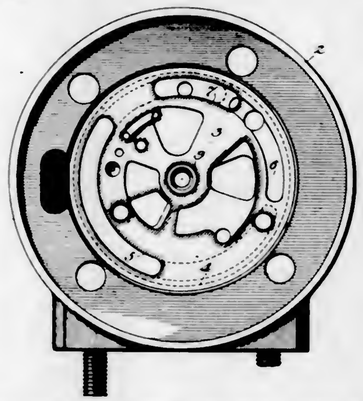
6. A wagon-reach comprising two longitudinal complementary members, braces connecting said members and holding them spaced apart, said braces being bent to form a reach-bolt bearing, and a king-bolt bearing applied to and connecting said members at the front.

7. A wagon reach comprising a pair of complementary channel iron members arranged in spaced relation, braces attached to and connecting said members, and a king bolt bearing fixed to the reach and comprising a pair of coöperating pieces, one of said pieces having bearing portions seated on the flat faces of and attached to the members, and the other piece being attached to the first named piece and having its ends seated in the channeled faces of the members.

8. A wagon reach comprising a pair of complementary members arranged in spaced relation, a bearing attached to and connecting the forward ends of the members and provided with a bolt receiving opening, a cross-plate extended between and attached to the rear ends of the members for connecting the same, and a brace attached to and connecting the members at a point between their ends and having a bolt receiving opening.

9. A wagon reach comprising two complementary channel-iron members, with the channels arranged inward, braces connected to said members within the channels and holding them spaced apart as a single rigid structure, and a king bolt bearing connected with the forward ends of said members.

857,280. MEANS FOR LUBRICATING VALVES. JAMES A. HICKS, Atlanta, Ga. Filed Nov. 6, 1906. Serial No. 342,180.



Claim.—1. A valve comprising opposed members having registering ports, and a lubricant cellar so disposed in the face of one of said members as to be out of the range of the ports in the other member during movement of the valve.

2. A rotary valve comprising opposed members having registering ports, and a lubricant cellar so disposed in the face of one of said members as to be out of the range of the ports in the other member during rotation of the valve.

3. A rotary valve comprising opposed members having registering ports, and a lubricant cellar circumferentially arranged in the face of one of said members outside of the range of the ports in the other member during rotation of the valve.

4. A rotary valve comprising opposed members having registering ports, and an arc-shaped lubricant cellar circumferentially disposed in the face of one of said members outside of the range of the ports in the other member during rotation of the valve.

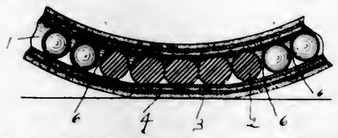
5. A rotary valve comprising a ported valve seat, a ported valve movable thereon, and a lubricant cellar so disposed in the face of said movable valve as to be outside of the range of the valve-seat ports during rotation of the valve.

6. A rotary valve comprising a ported valve seat, a ported valve movable thereon, a pivot pin on one of said valve parts, a lubricant cellar encircling said pin, and a second lubricant cellar so disposed in the face of one of said valve parts as to be outside of the range of the ports in the other valve part.

7. In a rotary valve, a ported valve seat, a ported valve moveable thereon, a pivot pin on said movable valve, there being a lubricant cellar encircling said pin, and a second lubricant cellar so disposed in the face of said movable member, as to be outside of the range of the ports in the valve seat.

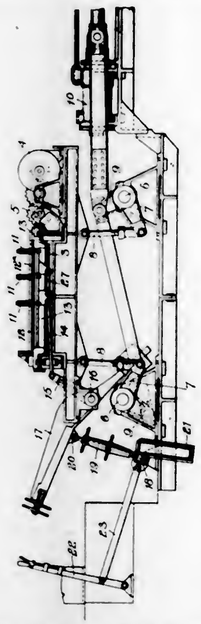
8. A rotary valve comprising a valve seat having radially and circumferentially arranged ports, a movable valve having radially and circumferentially arranged ports, and a lubricant cellar in the face of one of the valve members which is radially and circumferentially offset from the range of the ports in the other member.

857,281. BALL-BEARING TUBE FOR TIRES. WALTER HOGREN, Leominster, Mass. Filed Oct. 17, 1905. Serial No. 283,112.



Claim.—A device for holding up collapsed tubular tires comprising a flexible tube adapted to be inserted within the tire, solid, elastic, spherical bodies located within the tube, the sum total of the diameters of said bodies being less than the inner circumference of the tubular tire.

857,282. FEED-TABLE FOR ROLLING-MILLS. SIGMUND V. HUBER, Pittsburg, Pa. Filed Feb. 3, 1905. Serial No. 244,020.



Claim.—1. A feed table for rolling mills having in combination means for guiding or directing an article along the table, means for raising and lowering the table, mechanism operative by the table for shifting the guides laterally and means for rendering the shifting mechanism inoperative during the movements of the table, substantially as set forth.

2. A feed table for rolling mills having in combination means for guiding or directing an article along the table, means for raising and lowering the table, mechanism operative by the table for shifting the guides laterally, an arm forming a part of the guide-shifting mechanism, a stationary abutment, and connection from the abutment to said arm consisting of parts or members, one movable relative to the other and means for shifting one of said parts or elements to a position to control the position of the arm.

3. A feed table for rolling mills having in combination two or more series of slides arranged to move transversely of the table, guides carried by the slides means for raising and lowering the table and mechanism operative by the table for shifting one series of slides independent of the other series, substantially as set forth.

4. A feed table for rolling mills having in combination two or more series of slides arranged to move transversely of the table, guides carried by said slides, means for raising and lowering the table and mechanism operative by the table for shifting one series of slides a greater distance than the other series of slides, substantially as set forth.

5. A feed table for rolling mills having in combination means for guiding or directing the articles along the table, means for raising and lowering the table, a link having a fixed pivotal point, a connection from said link to the guiding means, said connection being movably attached to the link, and means for shifting the link to vary the point of attachment of the connection thereto during the operation of the mechanism.

6. A feed table for rolling mills having in combination means for guiding or directing articles along the table, means for raising and lowering the table, an arm connected to the guiding means and forming a portion of the guide-shifting mechanism, a link having a fixed pivotal support, a block, a connection from said block to the arm of the shifting mechanism and means for shifting the link during the operation of the feed table, said parts being operative by the table to shift the guides.

7. A feed table for rolling mills having in combination means for guiding and directing the articles along the table, means for raising and lowering the table, an arm connected to the guiding means and forming a portion of the guide-shifting mechanism, two parts or elements, one fixed as against movement by the table, and the other movable relative to the first part or element, a connection from one of the elements to the arms of the shifting mechanism and means for shifting one of the elements during the operation of the feed table.

8. A feed table for rolling mills having in combination means for guiding or directing articles along the table, means for raising and lowering the table, and connections from the guiding means to a stationary abutment, said connection including a movable part or element and means whereby said movable part or element may be shifted during the operation of the table.

857,283. FEED-TABLE FOR ROLLING-MILLS. SIGMUND V. HUBER, Pittsburg, Pa. Filed Dec. 1, 1905. Serial No. 289,797.

Claim.—1. A feed-table for rolling mills having in combination side plates, a manipulator, means for shifting the manipulator and means operative by the side plates for controlling the manipulator, substantially as set forth.

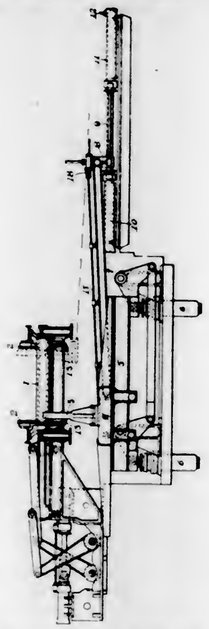
2. A feed-table for rolling mills having in combination side-plates, means for shifting the side-plates, a manipulator means for shifting the manipulator and means controlled by the side-plates for shifting the manipulator, substantially as set forth.

3. A feed-table for rolling mills having in combination side-plates, a manipulator, fluid pressure means for shifting the manipulator, and a valve mechanism operative by the side-plates for controlling the fluid pressure means, substantially as set forth.

4. A feed table for rolling mills having in combination side plates, means for shifting the side plates, and a manipulator movable by the side plates.

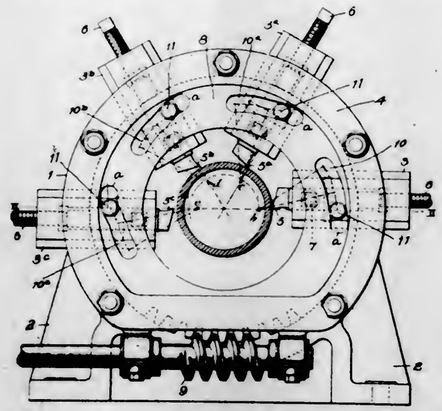
5. In a feed table for rolling mills, the combination of a manipulator, a slide movably mounted thereon, mechan-

lam for operating the manipulator, and means adapted to be operated by the slide for controlling the operation of the manipulator operating mechanism.



6. In a feed table for rolling mills, the combination of a manipulator, a slide movably mounted thereon, means for shifting the manipulator, means controlled by the slide for controlling the manipulator shifting mechanism and means for returning the slide to normal position.

857,284. CUTTING-TOOL. SIGMUND V. HUBER, Pittsburg, Pa. Filed Mar. 5, 1907. Serial No. 360,735.



Claim.—1. A cutting tool having in combination a series of cutters and means for shifting said cutters through successively greater distances.

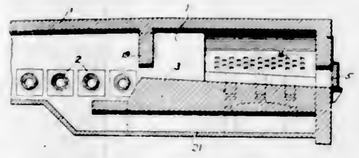
2. A cutting tool having in combination a series of cutters and means for shifting the cutters preliminarily through successively greater distances and for shifting them equally thereafter.

3. A cutting tool having in combination a series of radially movable cutters and means for causing the cutters to bite in the same plane and in succession on the article operated on.

4. A cutting tool having in combination a head, a series of cutters radially arranged in the head, and a plate rotatively mounted on the head and provided with means for shifting the cutters inwardly, each successive cutter to a greater depth than the preceding cutter.

5. A cutting tool having in combination a head, a plate rotatably mounted on the head and provided with slots formed on arcs of circles having their centers at successively shorter distances from the axis of the tool, cutter carrying blocks provided with pins projecting into said slots, and means for rotating the plate.

857,285. HEATING-FURNACE. JOHNSON HUGHES, Wissahickon, Pa. Filed Jan. 4, 1906. Serial No. 294,519.



Claim.—1. A heating furnace having a refractory bottom, rolls for carrying materials thereto, means for passing a flame above said bottom from a side thereof, means for passing a flame below said bottom, and a passage for carrying the heated products of combustion above and below said rolls in contact with the materials in their progress to said refractory bottom.

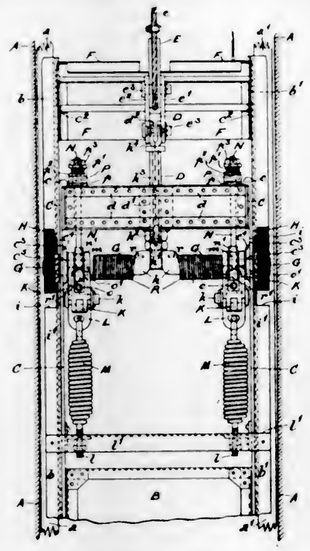
2. A heating furnace having a refractory bottom throughout the discharging end thereof, rolls for carrying materials from the inlet end of said furnace to said bottom, means for passing a flame above said bottom, means for passing a flame below said bottom, and a passage in which the heated products of combustion join and through which the same are carried above and below said rolls in contact with the materials in their progress to said refractory bottom.

857,286. SAFETY MECHANISM FOR HOISTING OR HAULING APPARATUS FOR MINES. RAGNVALD JENSEN, East Rand, Transvaal. Filed Dec. 17, 1906. Serial No. 348,320.

Claim.—1. In a safety device such as described, the combination with the vehicle, guides and winding rope of two shafts revolubly supported by the vehicle, cams fixed on the extremities of said shafts and adapted to contact with the sides of the guides, links connecting the corresponding extremities of the two shafts, collars fixed to the shafts, main springs connected to the links, springs connected at one extremity to the links and at the other to the shafts, and connections between the shafts and rope which permit the shafts to rotate in the event of the vehicle becoming unsupported by the rope.

2. In a safety device such as described, the combination with the vehicle, guides and winding rope of two shafts capable of moving laterally or away from and toward each other and revolubly supported by the vehicle, cams fixed on the extremities of said shafts and adapted to contact with the sides of the guides, links connecting the corresponding extremities of the two shafts, collars fixed to the shafts, main springs connected to the links, springs connected at one extremity to the links and at the other to the shafts, and connections between the shafts and rope which permit the shafts to rotate in the event of the vehicle becoming unsupported by the rope.

3. In a safety device such as described, the combination with the vehicle, guides and winding rope of two shafts movable laterally or away from and toward each other and revolubly supported by the vehicle, cams fixed on the extremities of said shafts and adapted to contact with the sides of the guides, links connecting the corresponding extremities of the two shafts, collars fixed to the shafts, means for limiting the rotatory movement of said collars, main springs connected to the links, springs connected at one extremity to the links and at the other to the shafts, and connections between the shafts and rope which permit the shafts to rotate in the event of the vehicle becoming unsupported by the rope.



4. In a safety device such as described, the combination with the vehicle, guides and winding rope of two shafts movable laterally or away from and toward each other and revolubly supported by the vehicle, cams fixed on the extremities of said shafts and adapted to contact with the sides of the guides, links connecting the corresponding extremities of the two shafts, means for limiting the downward movement of the said links, collars fixed to the extremities of the shafts, main springs connected to the links, springs connected at one extremity to the links and at the other to the shafts, and connections between the shafts and rope which permit the shafts to rotate in the event of the vehicle becoming unsupported by the rope.

5. In a safety device such as described, the combination with the vehicle, guides and winding rope of two shafts movable laterally or away from and toward each other and revolubly supported by the vehicle, cams fixed on the extremities of said shafts and adapted to contact with the sides of the guides, links connecting the corresponding extremities of the two shafts, adjustable means for limiting the downward movement of said links, collars fixed to the shafts, adjustable means for limiting the rotary movement of said collars, main springs connected to the links, springs connected at one extremity to the links and at the other to the shafts, and connections between the shafts and rope which permit the shafts to rotate in the event of the vehicle becoming unsupported by the rope.

6. In a safety device such as described, the combination with the vehicle, guides and winding rope of two crank shafts revolubly mounted in curved elongated slots in the frame of the vehicle, two pairs of links connecting corresponding extremities of said shafts, main springs connected to the links, springs carried by the shafts which serve to rotate the shafts when the vehicle becomes unsupported, cams on the ends of the shafts adapted to contact with the guides, collars adjustably fixed on the shafts, means for limiting the rotary movement of said collars comprising a projection on the collar and a part screwed into the link to serve as a stop to be engaged by the projection aforesaid.

7. In a safety device such as described the combination with the vehicle, guides and winding rope of two crank shafts revolubly mounted in curved elongated slots in the frame of the vehicle, two pairs of links connecting corresponding extremities of said shafts, means for limiting the downward movement of said links, comprising screwed rods connected at their lower ends to the links, sockets, bushings screwed into the sockets, through which bushing the screwed rods project nuts screwed onto the rods above the bushings, and lock-nuts for the bushings, main springs connected to the links, springs carried by the shafts which serve to rotate the shafts when the vehicle becomes unsupported, cams on the ends of the shafts adapted to contact with the guides, and collars adjustably fixed on the crank shafts.

8. In a safety device such as described the combination with the vehicle, guides and winding rope of two crank shafts revolubly mounted in curved elongated slots in the frame of the vehicle, two pairs of links connecting corresponding extremities of said shafts, means for limiting the downward movement of said links, comprising screwed rods connected at their lower ends to the links, sockets, bushings screwed into the sockets, through which bushings the screwed rods project, nuts screwed onto the rods above the bushings, and lock-nuts for the bushings, main springs connected to the links, springs carried by the shafts which serve to rotate the shafts when the vehicle becomes unsupported, cams on the ends of the shafts adapted to contact with the guides, collars adjustably fixed on the shafts, means for limiting the rotary movement of said collars comprising a projection on the collar and a part screwed into the link to serve as a stop to be engaged by the projection aforesaid.

857,287. METHOD OF PREPARING FUEL BRIQUETS. HARRY W. JORDAN, Syracuse, N. Y., assignor to Semet-Solvay Company, Syracuse, N. Y., a Corporation of Pennsylvania. Filed Aug. 6, 1906. Serial No. 329,514.

Claim.—The method of preparing material to be briqueted, comprising coal, or other fuel material, or materials, or any combination thereof, and a binding material, which consists in grinding together the binding material and a part of the coal or other material or materials to a fine state, and then mixing the finely ground mass with the remainder of the coal or other material or materials in a coarser state, substantially as and for the purposes set forth.

857,288. TYPE-WRITING MACHINE. EDWARD F. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed July 8, 1905. Serial No. 268,854.

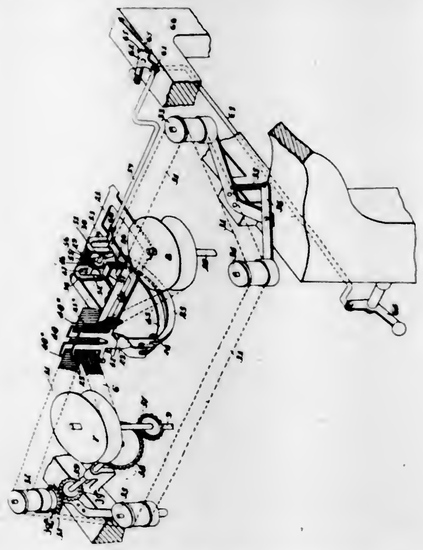
Claim.—1. In a typewriting machine, the combination of types, type operating mechanism, and means for winding a plurality of separate ink ribbons, of means to cause the type operating mechanism to vibrate either ribbon into and out of operative position at each type stroke, or to render the vibrating means inoperative.

2. In a typewriting machine having types, type-operating mechanism, and a platen, the combination of a plurality of sets of ribbon spools, ribbon vibrating devices, and means to cause the type-operating mechanism to vibrate the ribbon which is carried by either set of spools to cover and uncover the printing point at the type strokes, independently of the ribbon carried by the other spools, or to render the vibrating devices inoperative, at will.

3. In a typewriting machine, having types, type operating mechanism and a platen, the combination of ribbon-vibrating devices including a pair of carriers, and means to cause the type-operating mechanism to reciprocate either carrier at the type strokes while the other remains idle, or to render both carriers inoperative, at will.

4. In a typewriting machine having a platen, types mounted to strike upon the visible side thereof, and a type-operating mechanism, the combination of ribbon-vibrating devices including a plurality of ribbon carriers mounted

one in front of the other in front of said platen, and means to cause the type operating mechanism to move either carrier to cover and uncover the printing point during the type strokes, or to render both carriers inoperative at will.



5. In a typewriting machine having a platen, types mounted to strike thereon, and a type-operating mechanism, the combination of a member reciprocated at the type strokes, by said type-operating mechanism, of a plurality of ribbon carriers, and means for operatively connecting either of said ribbon carriers to said reciprocating member, or for causing both carriers to remain simultaneously unconnected to said reciprocating member, at will.

6. In a typewriting machine, the combination with a platen and types mounted to strike upon the visible side thereof, of a plurality of sets of ribbon spools, a member reciprocating at the type strokes, a plurality of ribbon carriers, a plurality of levers for operating said carriers, and means for effecting connection of said reciprocating member to either lever or to throw them simultaneously out of operation.

7. In a front strike writing machine, the combination with a platen and types mounted to strike upon the front side thereof, of a plurality of sets of ribbon spools, a plurality of ribbon carriers one in front of the other and in front of the platen, a pair of independently operable levers mounted side by side and connected to a member reciprocating at the type strokes, and means for either causing said reciprocating member to operate either lever or throwing the levers simultaneously out of operation, at will.

8. In a typewriting machine, the combination with a plurality of ribbon carriers, of a member reciprocating at the type strokes, a pair of actuators mounted upon said reciprocating member, one for operating each of said ribbon carriers, and means for rendering either actuator effective while the other is idle, or for rendering both actuators ineffective during the reciprocations of said reciprocating member, at will.

9. In a typewriting machine, the combination with types and a platen, of a plurality of ribbon vibrating devices each including a projecting pin, a member reciprocating at the type strokes, and a device upon said reciprocating member and provided with openings for said pins, and adjustable means for adjusting said device so that one opening may engage one pin thereby to actuate the corresponding ribbon vibrator, while the other opening is out of engagement with the other pin, and for simultaneously throwing both of said openings out of engagement with the pins, as desired.

10. In a typewriting machine, the combination with types and a platen, of a plurality of ribbon vibrating levers having projecting pins, a member reciprocating at the type strokes, a device mounted upon said reciprocating member and having openings for engaging said pins one at a time, adjustable means for adjusting said device in engagement with either of said pins and for throwing it out of engagement with both of said pins simultaneously, and means for detaining said device where so adjusted.

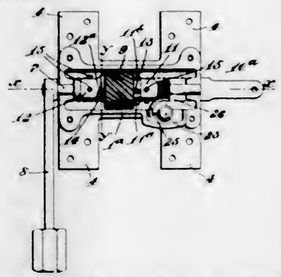
11. In a typewriting machine, the combination with types and a platen, of a plurality of ribbon carriers, levers connected to said carriers, a member reciprocating at the type strokes, actuators mounted upon said reciprocating member and connectible to either of said levers at will, a finger piece mounted upon the framework of the machine, means connecting said finger piece to said actuators, and means for detaining said actuators simultaneously in an inoperative position or in a position to operate either one of the other of said levers.

12. In a typewriting machine having a platen and types mounted to strike upon a visible side thereof, the combination of two pairs of ribbon spools having their ribbons superposed between the spools, means for winding the ribbons upon both pairs of spools, ribbon-vibrating devices, and means to render the vibrating devices inoperative or to cause either ribbon to be vibrated to cover and uncover the printing point at the type strokes independently of the other ribbon.

13. In a typewriting machine having a platen and types mounted to strike upon the front thereof, the combination of a pair of ribbon spools in front of the platen, spool-winding means, an endless ribbon surrounding said spools and their ribbon, spools whereon said endless ribbon runs, ribbon-vibrating devices, and means to render the vibrating devices inoperative or to cause either ribbon to be vibrated to cover and uncover the printing point at the type strokes independently of the other ribbon.

14. In a typewriting machine, the combination of a plurality of ribbons, vibrators for the ribbons, actuating mechanism for said vibrators, and means movable to connect any vibrator independently to said actuating mechanism and to disconnect all of said vibrators from said actuating mechanism.

857,289. SWITCH-STAND. MALCOLM W. LONG, Harrisburg, and JAMES M. HOFFER, Steelton, Pa., assignors to The Pennsylvania Steel Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 12, 1906. Serial No. 338,630.



Claim.—1. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear mounted on said shaft, and the rack-bar adapted to be reciprocated longitudinally in suitable guide-ways of said case, and having the helical teeth engaging the teeth of said gear, substantially as set forth.

2. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear mounted on said shaft, the reciprocatory rack-bar having helical teeth engaging teeth of said gear, and means for allowing lost motion between said bar and shaft, substantially as set forth.

3. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the reciprocatory switch-bar, connections between said shaft and said bar, whereby said bar will be reciprocated longitudinally by rotation of said shaft, and the converse, together with means for allowing lost motion between said shaft and said bar, substantially for the purpose set forth.

4. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the switch-bar, connections between said shaft and said bar, whereby the said bar will be reciprocated longitudinally by rotation of said shaft, and the converse; means for allowing lost motion between said shaft and said bar, and means for varying the extent of such lost motion, substantially for the purpose set forth.

5. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the switch-bar, connections between said shaft and said bar, whereby said bar will be reciprocated longitudinally by rotation of said shaft, and the converse, means for allowing lost motion between said shaft and said bar, together with the vertical target-shaft and operating connections between said target-shaft and said horizontal shaft, substantially as and for the purpose set forth.

6. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear mounted on said shaft, the switch-bar having the helical teeth rack engaging teeth of said gear; means for allowing lost motion between said bar and shaft, and means for varying the extent of such lost motion, substantially as and for the purpose set forth.

7. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear mounted on said shaft, the bar adapted to slide longitudinally in guide-ways of said case, the helical teeth rack detachably secured to said bar, the teeth of which rack engage teeth of said gear, substantially as and for the purpose set forth.

8. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear mounted on said shaft, the bar having the transverse shoulders and adapted to slide longitudinally in suitable guide-ways of said case, and the detachable, helical teeth rack resting upon said bar between said shoulders, whereby said rack is maintained against longitudinal displacement, the teeth of said rack engaging teeth of said gear, substantially as and for the purpose set forth.

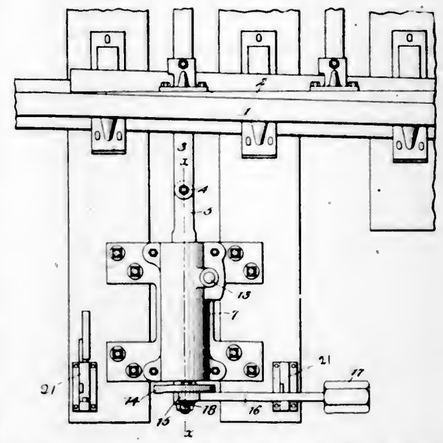
9. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear loosely mounted on said shaft, the collars on said shaft, each having the separated shoulders, the studs projecting from said gear into the space between said shoulders respectively, and the bar having the helical teeth rack, whose teeth engage teeth of said gear, substantially as and for the purpose set forth.

10. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear loosely mounted on said shaft, the collars on said shaft having the separated shoulders, the studs projecting from said gears into the space between said shoulders, respectively; means for effecting adjustments rotatively of said collars on the shaft, and the bar having the helical teeth rack, whose teeth engage the teeth of said gear, substantially as and for the purpose set forth.

11. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear mounted on said shaft, the helical teeth rack-bar engaging said gear; means for allowing lost motion between said bar and shaft, together with the vertical target-shaft and operating connections between said target-shaft and said horizontal shaft, substantially as and for the purpose set forth.

12. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical teeth gear mounted on said shaft, the helical teeth rack-bar engaging said gear, allowing lost motion between said bar and shaft; means for varying the extent of such lost motion, together with the vertical target-shaft and operating connections between said target-shaft and said horizontal shaft, substantially as and for the purpose set forth.

857,290. SWITCH-STAND. MALCOLM W. LONG, Harrisburg, Pa., assignor to The Pennsylvania Steel Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 12, 1906. Serial No. 338,631.



Claim.—1. In a switch-stand, the combination, with the casing, of the switch-bar adapted to be longitudinally reciprocated therein, the horizontal shaft journaled in said casing, connections between said shaft and the said bar, whereby rotation of the shaft imparts longitudinal movement to said bar, and the reverse; the lever loosely mounted on said shaft, lugs on said shaft adapted to be engaged by said lever arm, which extends through the space between the said lugs, the said space between said lugs being greater than the width of said lever-arm, substantially as and for the purpose set forth.

2. In a switch-stand, the combination, with the casing, of the switch-bar adapted to be longitudinally reciprocated therein, the horizontal shaft journaled in said casing, connections between said shaft and said bar, whereby rotation of the shaft imparts longitudinal movement to said bar, and the reverse; the lever loosely mounted on said shaft, lugs on said shaft adapted to be engaged by said lever arm, which extends through the space between the said lugs, said space between said lugs being greater than the width of said lever-arm; means for adjusting said lugs whereby the location and width of said space between the lugs may be varied, substantially as and for the purpose set forth.

3. In a switch-stand, the combination, with the casing, of the switch-bar adapted to be longitudinally reciprocated therein, the horizontal shaft journaled in said casing, connections between said shaft and said bar, whereby rotation of the shaft imparts longitudinal movement to said bar, and the reverse; the lever loosely mounted on said shaft, lugs on said shaft adapted to be engaged by said lever-arm, which extends through the space between said lugs, and means for adjusting said lugs circumferentially to vary the location of said space, substantially as and for the purpose set forth.

4. In a switch-stand, the combination, with the casing, of the switch-bar adapted to be longitudinally reciprocated therein, the horizontal shaft journaled in said casing, connections between said shaft and said bar, whereby rotation of the shaft imparts longitudinal movement to said bar, and the reverse; the lever loosely mounted on said shaft, the disk on said shaft, lugs on said disk adapted to be engaged by the said lever-arm, which extends through

the space between the said lugs, the said space between said lugs being greater than the width of said lever-arm, substantially as and for the purpose set forth.

5. In a switch-stand, the combination, with the casing, of the switch-bar adapted to be longitudinally reciprocated therein, the horizontal shaft journaled in said casing, connections between said shaft and said bar, whereby rotation of the shaft imparts longitudinal movement to said bar, and the reverse; the lever loosely mounted on said shaft, the disk on said shaft, lugs on said disk adapted to be engaged by said lever-arm which extends through the space between the said lugs, said space between said lugs being greater than the width of said lever-arm; means for adjusting said lugs whereby the location and width of said space between the lugs may be varied, substantially as and for the purpose set forth.

6. In a switch-stand, the combination, with the casing, of the switch-bar adapted to be longitudinally reciprocated therein, the horizontal shaft journaled in said casing, connections between said shaft and said bar, whereby rotation of the shaft imparts longitudinal movement to said bar, and the reverse; the lever loosely mounted on said shaft, the disk on said shaft, lugs on said disk adapted to be engaged by said lever-arm, which extends through the space between said lugs, and means for adjusting said lugs circumferentially to vary the location of said space, substantially as and for the purpose set forth.

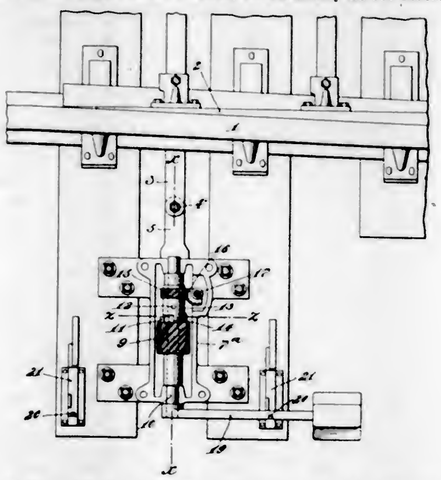
7. In a switch-stand, the combination, with the casing, of the switch-bar adapted to be longitudinally reciprocated therein, provided with rack-teeth, the horizontal shaft journaled in said casing, parallel with said switch-bar, the helical gear on said shaft engaging the rack-teeth of said switch-bar, the disk on said shaft, the lugs on said disk, the lever-arm loosely mounted on said shaft, extending between said lugs; said disk being provided with circumferential slots; the bolts passing through said slots respectively, and securing said lugs to the face of said disk, whereby the relative positions of said lugs may be adjusted, substantially as and for the purpose set forth.

8. In a switch-stand, the combination, with the casing, of the switch-bar, a shaft journaled in said casing, connections between said shaft and said bar, whereby rotation of the shaft imparts longitudinal movement to said bar, and the reverse; the rotatable lever-arm, and connections between said lever-arm and said shaft, permitting a lost motion between said lever-arm and said shaft, substantially as and for the purpose set forth.

857,291. SWITCH-STAND. MALCOLM W. LONG, Harrisburg, Pa., assignor to The Pennsylvania Steel Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Oct. 12, 1906. Serial No. 338,632.

Claim.—1. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the collar on said shaft, the target shaft, driving connections between said collar and target shaft; the longitudinally movable switch-bar, connections between said switch-bar and said collar, whereby rotation of said collar causes longitudinal movement of said switch-bar, and the converse; together with a frangible connection securing said collar to said horizontal shaft, whereby, if said shaft be locked against rotation, and the switch automatically operated, said frangible connection will be severed, and the collar will be caused to rotate on said shaft, and so the target-shaft rotated, substantially as set forth.

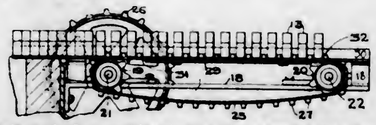
2. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical gear loosely mounted on said shaft, the rack-bar, having teeth engaging said gear, said rack-bar being adapted to be reciprocated longitudinally in said case, and its outer end connected to the switch-rails; a collar on said shaft, provided with a part engaging a part on the said helical gear, the target-shaft, driving connections between said target shaft and said collar; together with a frangible connection securing said collar to said first-mentioned shaft, whereby, if said horizontal shaft be locked against rotation, and the switch automatically operated, said collar will be caused to rotate on said shaft, and so the target shaft rotated, substantially as set forth.



3. In a switch stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, the helical gear loosely mounted on said shaft, the rack-bar, having teeth engaging said gear, said rack-bar being adapted to be reciprocated longitudinally in said case, and its outer end connected to the switch-rails; a collar on said shaft, provided with a part engaging a part on the said helical gear; there being a lost motion between said two parts; the target shaft, driving connections between said target shaft and said collar; together with a frangible connection securing said collar to said first-mentioned shaft, whereby, if said horizontal shaft be locked against rotation, and the switch automatically operated, said collar will be caused to rotate on said shaft, and so the target shaft rotated, substantially as set forth.

4. In a switch-stand, the combination of the case, the horizontal shaft journaled therein, the lever on said shaft, means for locking said lever against rotation; the helical gear loosely mounted on said shaft, the rack-bar adapted to be reciprocated longitudinally in said case below said shaft, and provided with teeth engaging said helical gear, the outer end of said rack-bar being connected to the switch-rails; the collar on said shaft, the frangible pin connecting said collar and shaft, the lug on said collar, and the corresponding lug on said helical gear engaging the first mentioned lug; the vertical target shaft, driving connections between said collar and target shaft, substantially as set forth.

857,292. FURNACE. ADOLPH W. MACHLET and FRITZ W. MACHLET, Elizabeth, N. J. Filed Aug. 1, 1906. Serial No. 328,698.



Claim.—1. In combination, a furnace having an interior track, an endless chain, and wheels over which said chain runs in proximity to the end of said track; said chain having a succession of means to carry blanks to and deposit them upon the end of said track, and force them along the same.

2. In combination, a furnace having a track, a chain having a succession of lugs to carry blanks, means extending along said chain to guide the blanks, chain-driving means, and devices whereon said chain runs in proximity

to the end of said track; said chain mounted in such relation to the track that the blanks carried along by said lugs are deposited *seriatim* on the track and forced therealong by the lugs.

3. The combination with a furnace having a track, of an endless chain mounted wholly outside of the furnace, and means for operating said chain; the chain having a succession of means to carry blanks to said track and deposit them thereon, and push them against one another and along said track.

4. In combination, a furnace having a track, an endless chain mounted outside of said furnace to receive the blanks, means for driving said chain, a succession of lugs upon said chain in position to carry blanks to said track and deposit them thereon, and push them together and along the track, and a plate to support said chain under the weight of the blanks.

5. In combination, a furnace having a track, an endless chain mounted outside of said furnace, means for driving said chain, a succession of lugs upon said chain in position to carry blanks to said track and deposit them thereon, and push them together and along the track, and a blank-guiding trough through which said chain runs, said trough extending in line with said track away from the furnace.

6. In combination, a furnace having an interior track in the form of a trough, a blank-guiding trough outside of the furnace and about in line with said track, an endless chain running in said exterior trough and having a succession of lugs to carry blanks and deposit them upon said interior track, and means to drive the chain.

7. The combination with a furnace, of a trough extending through the furnace, and having an extension outside of the furnace, and an endless chain resting upon and running in said extension, an opening being provided in the bottom of the trough for said chain to run through, and a wheel beneath the trough for driving said chain; the latter having a succession of lugs to carry blanks along the extension and deposit them in the main portion of the trough and push them therealong.

8. The combination with a furnace, of a trough extending through the furnace, and having an extension outside of the furnace, and an endless chain resting upon and running in said extension, two openings being provided in the bottom of the trough for said chain to run through, and two wheels beneath the trough for carrying said chain; the latter having a succession of lugs for carrying blanks along the extension and depositing them in the main portion of the trough and pushing them therealong.

9. The combination with a furnace, of a conveyor chain for causing articles to traverse said furnace, said chain comprising links, each provided with a lug for conveying the blanks, and a sprocket wheel over which the chain runs; the lugs being hollowed to form sockets for the wheel sprockets.

857,293. BRAID-PACKET. CHARLES L. MEYERS, Jersey City, N. J. Filed Aug. 24, 1906. Serial No. 331,844.



Claim.—1. In a packet for braid and the like, an envelop closed at the ends and having two cuts or openings in its face, in combination with a bundle of such braid received therein and having its free end passed through one of said openings from the interior of said envelop to the exterior, and the extremity of said end passed through the other of said openings to the interior and adhesive means for fastening the free end.

2. In a packet for braid and the like, an envelop closed at the ends and having cuts in its face forming two tongues, in combination with a bundle of braid received therein and having a free end passed through one of said cuts from the interior of said envelop to the exterior, and the extremity of such end passed through the other of said openings from the exterior to the interior, and an adhesive on the inner face of the second of said tongues, for engaging and holding said free end.

3. In a packet for braid and the like, an envelop closed at the ends and having cuts in its face forming two tongues, one above the other, and an adhesive on the inner face of the lowermost, in combination with a piece of such braid wound to form a rectangular bundle and received in said envelop, and a free end on said bundle extending from the interior of said envelop through the uppermost of said cuts to the exterior and its extremity passed through the lowermost of said cuts to the interior and secured by said adhesive.

4. In a packet for braid and the like, an envelop, sealed at both ends tongues B and C therein formed one above the other by semicircular cuts a a^1 in the face of said envelop, in combination with a bundle of braid received in said envelop, a free end M^1 of such braid extended through said cuts, and an adhesive on the inner face of the lowermost tongue C for holding said free end in place and preventing the removal of said bundle.

857,294. SEAM FOR BALL-COVERS, &c. DAVID M. MONTGOMERY, Fleetwood, Pa. Filed Apr. 24, 1906. Serial No. 313,372.



Claim.—1. A ball having a sectional cover provided with lines of longitudinal stitching adjacent to the abutted edges, said edges being united by cross-stitching below the exterior surface and engaging said longitudinal stitching.

2. A ball having a sectional cover provided with lines of longitudinal stitching adjacent to the abutted edges, said edges being united by cross-stitching engaging said longitudinal stitching.

3. A ball having a sectional cover the abutted edges of which are provided with lines of exposed longitudinal stitching and united by concealed cross-stitching engaging said longitudinal stitching.

4. A ball having a sectional cover the edge portions of which have thickening strips secured thereto by lines of longitudinal stitching and the abutted edges of which are united by cross-stitching engaging said longitudinal stitching.

5. A seam composed of abutting fabric edges each having a parallel line of reinforcing stitches, and uniting stitching engaging both lines of reinforcing stitches.

6. A seam composed of abutting fabric edges each having a parallel line of reinforcing stitches, and uniting stitches below one surface of the fabric and engaging both lines of reinforcing stitches.

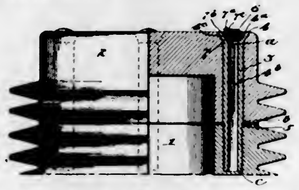
7. A seam composed of abutting fabric edges each having a reinforcing strip on one face thereof and a parallel line of reinforcing stitches, and uniting stitches engaging both lines of reinforcing stitches.

8. A seam composed of abutting fabric edges each having a reinforcing strip on one face thereof and a parallel line of reinforcing stitches, and uniting stitches below one surface of the fabric and engaging both lines of reinforcing stitches.

857,295. BOLT. HENRY H. MUDGE, Bristol, R. I. Filed July 26, 1906. Serial No. 327,932.

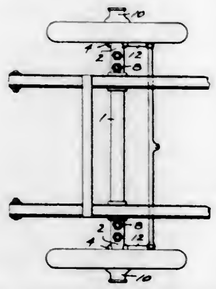
Claim.—1. A bolt adapted to draw or bind together two bodies, said bolt having a shank threaded at its lower part

and provided throughout its length with a bore of polygonal shape, and a head furnished with a cavity diminishing in size from the top to the bottom and corresponding in cross section to the shape of the bore of the shank, the sides of the cavity registering with those of said bore, substantially as set forth.



2. A bolt adapted to draw or bind together two bodies, said bolt having a shank threaded at its lower part and provided throughout its length with a bore of polygonal shape, and a head furnished with a cavity diminishing in size from the top to the bottom and corresponding in cross section to the shape of the bore of the shank, the sides of the cavity registering with those of said bore, combined with a tapered cap having sides fitting the sides of the cavity of the head and furnished with a spring locking device, substantially as set forth.

857,296. VEHICLE WHEEL AND AXLE. JAMES E. MURRAY, McKeesport, Pa. Filed Oct. 17, 1906. Serial No. 339,374.



Claim.—1. In a vehicle, the combination of an axle, a wheel provided with a recessed hub and with a spindle located centrally in said recess, and a sleeved wheel journal hinged to the axle and surrounding the wheel spindle and projecting into the recess of the hub and having a bearing against the walls of said recess.

2. In a vehicle, the combination of an axle, a wheel provided with a recessed hub and a spindle located centrally in said recess, and a sleeved wheel journal hinged to the axle on vertical pivots located substantially in the plane of the wheel base, said journal surrounding the wheel spindle and projecting into the recessed hub and having a bearing against the walls of said recess.

3. In a vehicle, the combination of an axle, a wheel hub having a bearing face in the plane of the spokes, and a spindle located centrally of said bearing face, a sleeved wheel journal hinged to the axle on a vertical pivot and provided with a bearing face contacting with the bearing face in the hub.

4. In a vehicle, the combination of an axle, a wheel provided with a recessed hub having a bearing face in the plane of the spokes, a wheel journal hinged to the axle on vertical pivots located substantially in the plane of the spokes and provided with a bearing face on a larger radius than said pivots and contacting with the bearing face in the hub.

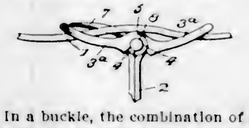
5. In a vehicle, the combination of an axle, a wheel provided with a hub hollow in the plane of the spokes and having a contracted recess extending outside of said plane, a wheel spindle in the hub recess located centrally thereof, and a sleeved wheel journal hinged to the axle and projecting into the recess of the hub with the trunnions located substantially in the plane of the spokes, said journal surrounding the wheel spindle and its outer end having a bearing in the contracted hub recess.

6. In a vehicle, the combination of an axle, a wheel provided with a hub having a large recess in the plane of the spokes and a contracted recess extending outside of said plane, a wheel spindle on said hub located centrally of said recesses, a sleeved wheel journal hinged to the axle and surrounding the wheel spindle and having one bearing fitting in the large recess in the plane of the spokes and another bearing fitting in the contracted recess outside of the plane of said spokes.

7. In a vehicle, the combination of an axle, a wheel provided with spokes and with a hub hollow in the plane of the spokes and having a contracted recess extending outside of said plane, and a wheel journal hinged to the axle on a vertical pivot and projecting into the recessed hub with said pivots lying substantially in the plane of the spokes, said wheel journal having its end bearing in the recess in the hub outside of the plane of the spokes and having a bearing face outside of the trunnions and contacting with outer face of the hub recess in the plane of the spokes.

8. In a vehicle, the combination of an axle, a wheel provided with a recessed hub having a bearing face in the plane of the spokes and with a spindle located centrally in said recess, a sleeved wheel journal hinged to the axle on vertical pivots located substantially in the plane of the spokes and surrounding the wheel spindle, and a disk on said sleeved wheel journal and provided with a bearing face outside of the pivots and contacting with the bearing face in the hub.

857,297. BUCKLE. JOHN G. MCNABB, Sonora, Cal. Filed Aug. 1, 1906. Serial No. 328,789.



Claim.—1. In a buckle, the combination of a frame composed of end sections embodying sides provided with hooks at extremities thereof, a tongue carrying bar engaged at its end portions by the hooks of the sides of the sections aforesaid, and a tongue extending from said bar.

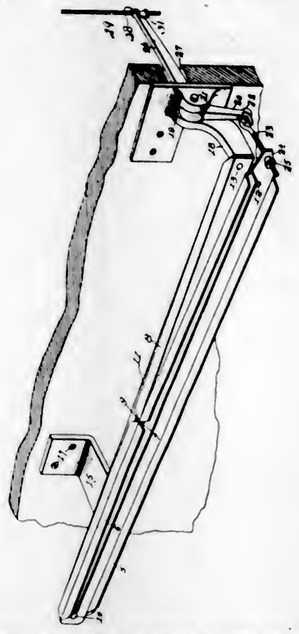
2. A buckle comprising end sections of approximately U-form, each section having the free extremities of its sides formed with integral hooks, the mouths of which are adapted to be transversely alined, a tongue carrying bar engageable by the hooks of the sections of the frame, and a tongue extending from said bar.

3. A buckle comprising end sections of approximately U-form, each section having the free extremities of its sides formed with integral hooks, the mouths of which are adapted to be transversely alined, means for limiting the relative movement of the sections of the frame, a tongue carrying bar engageable at opposite ends by the hooks of the sections of the frame, and a tongue extending from said bar.

4. A buckle comprising end sections of approximately U-form, each section having the free extremities of its sides formed with integral hooks, the mouths of which are adapted to be transversely alined, the hooks of the sections of the frame being formed with abutting shoulders to limit the relative movement of such sections, a tongue carrying bar having its opposite ends reduced and engageable by the hooks of the sections whereby said sections are connected together, and a tongue extending from said bar intermediate of its ends.

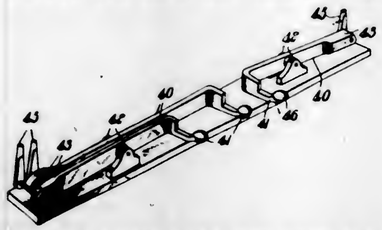
857,298. THERMOSTAT. JAMES L. NIX, Homer City, Pa. Filed July 24, 1906. Serial No. 327,585.

Claim.—1. In a device of the class described, two inner channeled-members secured back to back at a point between their ends, and being bent outwardly from said point to their outer extremities; two outer channeled-members set in the first named channeled-members, the four members being secured together at their inner ends, and the outer channeled-members being secured to the inner channeled-members at their outer ends, substantially as described.



2. The herein described thermostat comprising the channeled-members 6 and 8, a channeled-member 5 seated in the channeled-member 6, the channeled-member 11 seated in the channeled-member 8, the members 5, 6, 8 and 11 being rigidly secured together at their inner ends, the members 6 and 8 being secured to each other at a point between their ends, the members 5 and 6 being secured together at their outer ends and the members 8 and 11 being secured to each other at their outer ends, substantially as described.

857,299. PIANO-PEDAL. LEVI W. NORCROSS, Fort Worth, Tex. Filed Dec. 8, 1906. Serial No. 346,902.



Claim.—1. In a piano, a pedal lever pivoted at a point intermediate its ends and having at one end an integral right-angled extension forming a pedal, the opposite end of the lever being counter-weighted, and a lifter rod connecting member extending laterally from one side of the counter-weighted end of said lever.

2. In a piano, an integral pedal lever and pedal formed of cast metal, and a lifter rod pin burned into the lever and projecting from that face of the lever opposite the pedal.

3. In a piano, a pivotally mounted pedal lever having at one end an integral pedal member of contracted width, a detachable foot piece having a depending bolting flange at one side of its center, so that the central portion of the foot piece may be placed over the pedal member, and securing bolts extending through the flange and the pedal member.

857,300. SPEED-CHANGING DEVICE. ROLLIN C. OGBURN, Flora, Ill. Filed July 25, 1904. Serial No. 218,110.



Claim.—1. In a clutch for speed changing gears, a hollow shaft, a wheel having internal ratchet teeth mounted revolubly thereon and a clutch carrying wheel attached fixedly thereto, curved bars pivoted to said clutch carrying wheel, pawls pivoted to the free ends of said bars, pins passing radially through said clutch carrying wheel and said shaft, upon which the free ends of said bars rest, and a plunger adapted in passing through said shaft to cause the engagement of said clutch to first named wheel.

2. In a clutch for speed changing gears, a hollow shaft, a wheel having internal ratchet teeth mounted revolubly thereon, a clutch carrying wheel attached fixedly thereto, curved bars pivoted to said clutch carrying wheel, pawls pivoted to the free ends of said bars, pins forming stops attached to said pawls and passing through said curved bars, pins passing radially through perforations in said clutch carrying wheel and said hollow shaft, and a plunger adapted in sliding through said shaft to cause the operation of said clutch, as specified.

3. In a clutch for speed changing gears, a hollow shaft, a wheel, 1, having internal ratchet teeth, 3, mounted revolubly thereon, a clutch carrying wheel, 2, attached fixedly thereto, a plurality of curved bars, 8, pivoted to said clutch carrying wheel, springs, 8^a, adapted to draw the free ends of said curved bars inward, pawls, 6, pivoted to the free ends of said curved bars, pins, 7, attached to said pawls and passing through said curved bars, having heads, 7^a, adapted to form stops, springs, 7^c, adapted to press the pawls, 6, outward, pins, 9, passing radially through perforations in said clutch carrying wheel and said shaft, upon which the said pawls rest, and a plunger adapted in passing through said shaft to force said pins, 9, and said pawls outward, substantially as shown and described and for the purposes set forth.

4. In a clutch for speed changing gears, a hollow shaft, a wheel having internal ratchet teeth mounted revolubly thereon, a clutch carrying wheel attached fixedly thereto, curved bars pivoted to said clutch carrying wheel, pawls pivoted to the free ends of said curved bars, pins passing radially through said clutch carrying wheel and said shaft, upon which said pawls rest, and a plunger adapted in passing through said shaft to force said pins outward and thereby to cause said pawls pivoted to said bars to move outwardly and forwardly toward the ratchet teeth of the said first named wheel, as described.

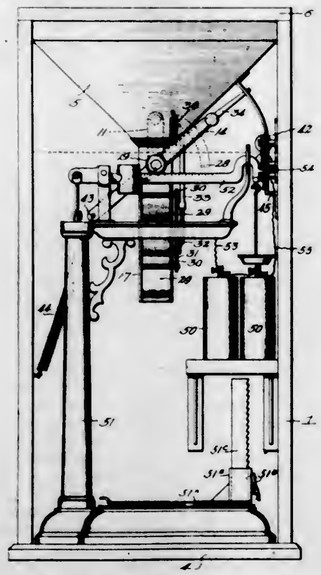
5. In a clutch for speed changing gears, a hollow shaft, a wheel having internal ratchet teeth revolubly mounted thereon, a clutch carrying wheel fixedly attached thereto, a plurality of curved bars pivoted to said clutch carrying wheel, pawls pivoted to the free ends of said curved bars, pins passing radially through perforations in said clutch carrying wheel and said shaft, and a plunger adapted in passing through said shaft to force said pins outward and thereby to cause said pawls pivoted to said curved bars to

move both outward and forward into connection with said ratchet teeth of said first named wheel, the said pawls adapted when in said position to move inwardly with respect to said curved bars in order to allow said ratchet teeth to pass over said pawls, substantially as shown and described and for the purposes set forth.

6. In a clutch for speed changing gears, a hollow shaft, a wheel having internal ratchet teeth mounted revolubly thereon, a clutch carrying wheel attached fixedly thereto, a plurality of curved bars pivoted to said clutch carrying wheel, pawls pivoted to the free ends of said bars, pins passing radially through perforations in said clutch carrying wheel and said shaft, upon which the said pawls rest, and a plunger adapted to pass through said shaft, said clutch being adapted to cause the engagement of said first named wheel to said shaft in one direction only, as described.

7. In a clutch for speed changing gears, a hollow shaft, a wheel having internal ratchet teeth mounted revolubly thereon, a clutch carrying wheel attached fixedly thereto, a plurality of curved bars pivoted to said clutch carrying wheel, pawls pivoted to the free ends of said bars, pins passing radially through perforations in said clutch carrying wheel and said shaft, upon which the said pawls rest, and a plunger adapted to pass through said shaft and to force said pins outward and thereby to cause said pawls pivoted to said curved bars to move both outward and forward into engagement with the ratchet teeth of said first named wheel, the said pawls adapted to become engaged to said ratchet teeth when traveling in one direction only, as described.

857,301. AUTOMATIC WEIGHING-MACHINE. OLIVER C. PATTON, Denver, Colo., assignor, by direct and mesne assignments, of one-third to Fred L. Jones and one-third to Clinton A. Douglass, Denver, Colo., and one-third to Andrew F. Harris, Dolores, Colo. Filed June 18, 1906. Serial No. 322,271.



Claim.—1. In a weighing machine, the combination of the casing, provided with a hopper and a weighing scale, of a chute extending from said hopper to said scale, a valve in the bottom of said hopper, means for manually opening and latching said valve, a spring arranged to effect said valve's closing movement, means including an electrically charged magnet for unlatching said valve whereby said spring is actuated to close said valve, and a plurality of gate valves in said chute adapted to control the passage-way through said chute.

2. In a weighing machine, the combination of the casing having a hopper, a weighing scale, and a discharging chute extending from said hopper to said scale, of a rotary valve and valve seat in said hopper, a partially rotative lever arranged to control said hopper valve, manual means for opening said valve through the medium of said lever, a latch for locking said lever in a position to hold said valve in an open position, and means including springs attached to said valve and an electrically operating magnet arranged to operate said latch to release said valve operating lever, a spring arranged to automatically close said valve when said lever locking latch is released by said magnet, means connected with said scale for operating said magnet at a point of its predetermined weighing movement, a plurality of gate valves in said chute, and means attached to said gate valves and to said hopper valve operating lever and including springs for opening and closing said gate valves synchronously with said hopper valve, as specified.

3. In an electrically controlled weighing machine, the combination with the casing, the hopper having a discharge aperture, a weighing scale in said casing, and a discharge spout leading from said hopper to said scale, of a semi-circular shaped valve seat in the discharge aperture of said hopper, a semi-circular-shaped valve rotatably mounted in said valve seat comprising a disk having a semi-circular curved plate integrally connected to and extending from it, and arranged to slidably fit the inner peripheral curve of said valve seat, and to control its discharge aperture, and means for manually rotating said valve to open it, a spring arranged to close said valve, and an electrically controlled operating bar actuated by said scale on the completion of its load.

4. In an electrically controlled weighing machine, the combination of the casing, the hopper, the discharge chute and an operative weighing scale, with the valve seat arranged in the discharge aperture of said hopper, the rotary valve, in said seat, the rotatable tubular shaft, the valve stem extending through said shaft, means for rotating said tubular shaft to open and close said valve, and means for adjusting said valve in its seat independent of the rotary movement of said tubular shaft.

5. In an electrically controlled weighing machine, the combination with the casing, the hopper, the discharge chute, and the weighing scale, of the valve seat in said hopper, the valve rotatably mounted in said valve seat, the tubular shaft, the valve stem extending through said shaft, the expansive spring on the end of said valve stem, a plurality of notches in the end of said tubular shaft, and a sliding knob on said stem provided with a pin adapted to fit said recesses and arranged to be held against and locked to the end of said tubular shaft by the expansive power of said spring.

6. In an electrically controlled weighing machine, the combination of the casing, the hopper, the discharge chute, and the scale, with the tubular valve seat, the rotary tubular shaped valve in said seat, the tubular shaft rotatably mounted in said casing, the spring on said valve stem, the finger knob slidably mounted on said stem and provided with a projecting pin, the notches in the end of said tubular shaft adapted to receive said pin, a crank handle secured to said tubular shaft, and means for defining the rotative movement of said handle and valve stem and valve to open and close said valve.

7. In an electrically controlled weighing machine, the combination with the casing, the hopper, the scale having a weighing beam, the discharge chute, and the rotary valve, and its valve stem, of a tubular shaft rotatably journaled in said casing, and surrounding said valve stem, means connected with said valve stem for releasably locking said valve stem, to said shaft, and for adjusting said valve relative to its seat independent of said tubular shaft, a crank handle for rotating said shaft and valve to open said valve, a stop secured in said casing for defining the rotative movement of said shaft and valve, a lock lever secured to said shaft and adapted to swing with it, a swinging hook latch pivoted and supported in the downward path of said lock lever and adapted to lock the same to hold the valve open, a magnet supported in said casing and connected to a source of electric current supply, a circuit wire arranged above the scale beam and connected to said magnet, a circuit wire connecting said scale, and the source of electrical supply, and springs arranged to move said lock lever and tubular shaft to close said valve.

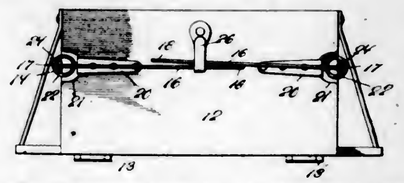
8. In an electrically controlled weighing machine, the combination of the casing, the hopper, the discharge chute, the scale, the valve, the valve stem, the tubular shaft provided with a valve locking lever, and the manually operating crank, with a plurality of valves in said discharge chute comprising curved blades of metal fitting slidably between the sides of said chute, and a terminal edge adapted to bear closely against the bottom of said chute, and pivotally secured to the sides of said chute at their opposite edges, a right angled crank extension to the pivotal center of each of said valves, a lever connected to the far ends of said crank extensions of all of said valves, an adjustable rod pivotally connected at one end to said lever, and at its other end to said lock lever, a contraction spring connected at one end to the free end of said lock lever and secured at its opposite end to said casing.

9. In an electrically controlled weighing machine, the combination of the tubular shaft having a valve lock lever, the adjustable valve and stem, the discharge chute, the hopper, and the casing, the swinging valves pivoted in said chute, the crank stems on which said valves are supported, the connecting lever pivoted to said crank stem, the adjustable rod pivotally connected to said connecting lever, and to said lock lever, and contraction springs connected to said casing at one end and to said lock lever.

10. In an electrically controlled weighing machine, the combination of a suitable casing, a hopper therein, an operative scale in said casing, and a discharging chute extending from said hopper to said scale, an adjustable rotary valve in said hopper adapted to be manually operated to be opened, a plurality of valves in said discharge chute adapted to work synchronously with said hopper valve, and a lock lever connected to said hopper valve operating mechanism, with an operative electric circuit valve locking mechanism coöperatively connected to said scale, and consisting of a magnet connected to a source of current supply, having an armature operatively connected to a latch hook to move the same, said latch hook being positioned in the valve opening movement of said lock lever and adapted to lock and hold said lever when said valve is opened, and having said electrical current circuit arranged in the path of said scales weighing beam, said circuit being adapted to be closed by the upward moving contact of said beam's weighing movement with it, and operating to cause said magnet to attract said armature and thereby move said latch and release said lock lever, and means including springs for closing said hopper and discharge chute valves.

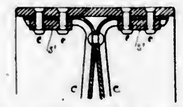
11. In an electrically operating weighing mechanism, the combination of the casing, the hopper, the discharge chute, the scales, tubular shaft, the lock lever, and the valve, said valve and lock lever and tubular shaft being adapted to be manually turned a predetermined distance to open and close said valve, with a bracket projecting inward from said casing adjacent to the path of said lock lever, a hooked latch pivoted at one end and having a hook at its opposite end positioned to be engaged and pushed back by the valve opening movement of said lock lever, a magnet secured to said casing adjacent to said latch, provided with a make-and-break armature, a rod connecting said latch to said armature to normally hold said latch in the paths of said lock lever when said armature is out of contact with said magnet, an electrical current wire connecting said magnet to the body of said scale, and an electric circuit contact terminal connected to said magnet and arranged in the upward path of the weighing beam of said scale, said circuit being adapted to be closed by the upward weighing movement of said scale's beam contacting with said magnet terminal contact, whereby said magnet attracts said armature and moves said latch to release said valve's lock lever, and springs arranged to move said lock lever and tubular shaft and said valve to close said valve.

857,302. END-GATE. ALBERT G. QUINN, Cleveland, Ga. Filed Aug. 30, 1906. Serial No. 332,681.



Claim.—The combination with a wagon-body having sides and a bottom, of an end gate hinged to the bottom for movement into and out of closed position and having notches in its ends, plates secured to one face of the gate and having end portions turned to extend into the notches, rings secured to the plates within the notches, straps secured to the outer faces of the sides and extending rearwardly therebeyond to project through the rings when the gate is in closed position, rods having eyes at their ends engaged each with an eye in one of the straps, said rods being slidably engaged in the rings, the other eyes of the rods being arranged to prevent disengagement of the rods from the rings, a hook secured to the outer face of the gate, said eye rods being foldable for engagement in the hook when the gate is in closed position to hold the gate against movement, and members carried by the gate and arranged to extend from the outer faces of the sides when the gate is in closed position.

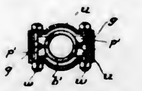
857,303. BELT-PULLEY. GEORGE RICHARDS, Philadelphia, Pa. Filed Aug. 9, 1905. Serial No. 273,498.



Claim.—1. In a composite belt pulley, the combination with the hub, of a rim having at least one joint and pairs of arms extending from the hub, whose outer ends are bent away from each other toward the pulley edges, and underlie and support the rim, a pair of arms extending approximately beneath said joint, a clip underlying the bent outer ends of each arm and two rivets extending through the rim, clip and arm, one rivet engaging the rim on one side of said joint and the other rivet engaging the rim on the other side of said joint.

2. In a composite belt pulley, the combination with the hub, of a rim having at least one joint, channel arms extending from the hub, whose outer ends are bent away from each other toward the pulley edges and underlie and support the rim, one at least of said arms extending underneath said joint, a clip fitting within the channels of the bent outer end of said arm, and rivets extending through the clip and arm and through the rim on opposite sides respectively of said joint.

857,304. PULLEY. GEORGE RICHARDS, Philadelphia, Pa. Filed Aug. 9, 1905. Serial No. 273,499.



Claim.—1. The combination with a hub comprising two hub members spaced apart on the line of the axis, each hub member consisting of hollow castings having extensions on opposite sides forming recesses, of a bush having projections on opposite sides extending into said recesses, said hub and bush being split through a plane parallel to their axis and intersecting said projections and recesses, into parts or halves, and bolts extending through the ex-

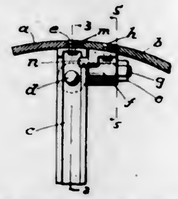
tensions of the hub outside the projections and securing together the parts or halves of each hub member.

2. The combination with a hub comprising two hub members spaced apart on the line of the axis, each hub member comprising two parts or halves, of a bush comprising two bush members also spaced apart on the line of the axis and contained respectively within the two hub members, and bolts securing together the two parts or halves of each hub member and engaging, but not extending through, the corresponding bush member to hold it in definite relation to the corresponding hub member.

3. The combination, with a hub provided with lateral extensions on opposite sides forming interior recesses and split, through a plane parallel to its axis and intersecting said recesses, into parts or halves, of a bush having laterally extending sides, provided with longitudinally extending grooves, that extend respectively within said recesses and bolts respectively engaging the hub extensions and extending through their recesses and securing together the parts or halves of the hub.

4. The combination with a hub comprising two hub members spaced apart on the line of the axis, each hub member consisting of hollow castings having extensions on opposite sides forming recesses, of a bush having laterally extending sides, provided with longitudinally extending beveled grooves, that extend within said recesses, said bush being split, through a plane parallel to its axis and extending through the bases of said grooves, into parts or halves, and bolts respectively engaging the hub extensions and extending through their recesses and securing together the parts or halves of each hub member.

857,305. BELT-PULLEY. GEORGE RICHARDS, Philadelphia, Pa. Original application filed Aug. 9, 1905, Serial No. 273,498. Divided and this application filed May 1, 1906. Serial No. 314,633.



Claim.—1. In a composite belt pulley, the combination with the hub, of a rim having a joint, pairs of arms extending from the hub, the outer ends of each pair being bent away from each other toward the pulley edges and underlying and supporting the rim, a pair of said arms extending approximately beneath said joint and secured to the rim on one side of said joint, a clip secured to the rim on the other side of said joint, and a bolt pivoted to said pair of arms and engaging said clip.

2. In a composite belt pulley, the combination with the hub, of a rim having a joint, pairs of arms extending from the hub, the outer ends of each pair being bent away from each other toward the pulley edges and underlying and supporting the rim, a pair of said arms extending approximately beneath said joint and secured to the rim on one side of said joint, a clip secured to the rim on the other side of said joint, and a bolt pivoted to said pair of arms and engaging said clip, projections on the clip underlying respectively the two arms of a pair.

3. In a composite belt pulley, the combination with the hub, of a rim having a joint, pairs of arms extending from the hub, the outer ends of each pair being bent away from each other toward the pulley edges and underlying and supporting the rim, a pair of said arms extending approximately beneath said joint and secured to the rim on one side of said joint, a clip secured to the rim on the other side of said joint, a rivet by which the two arms of a pair are secured together at approximately the point at which the onter ends of the arms diverge, and a bolt pivoted on said rivet and extending through said clip.

4. In a composite belt pulley, the combination with the hub, of a rim having a joint, pairs of arms extending from the hub, the outer ends of each pair being bent away from each other toward the pulley edges and underlying and supporting the rim, a pair of said arms extending approximately beneath said joint and secured to the rim on one side of said joint, a central clip and outside clips secured to the rim on the other side of said joint, the central clip engaging said pairs of arms, and the outside clips engaging respectively the two arms of said pair.

5. In a composite belt pulley, the combination with the hub, of a rim having a joint, pairs of arms extending from the hub, the outer ends of each pair being bent away from each other toward the pulley edges and underlying and supporting the rim, a pair of said arms extending approximately beneath said joint and secured to the rim on one side of said joint, a central clip and outside clips secured to the rim on the other side of said joint, and means by which said arms and clips may be drawn together, thereby enabling the opposing rim ends to be tightly abutted at the joint.

6. In a composite belt pulley, the combination with the hub, of a rim having a joint, pairs of arms extending from the hub, the outer ends of each pair being bent away from each other toward the pulley edges and underlying and supporting the rim, a pair of said arms extending approximately beneath said joint and secured to the rim on one side of said joint, a central clip and outside clips secured to the rim on the other side of said joint, projections on the central clip underlying respectively the two arms of a pair, and projections on the outside clips underlying respectively the said two arms.

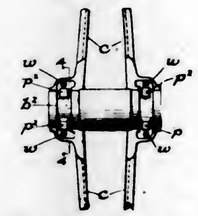
7. In a composite belt pulley, the combination with the hub, of a rim having a joint, pairs of arms extending from the hub, the outer ends of each pair being bent away from each other toward the pulley edges and underlying and supporting the rim, a pair of said arms extending approximately beneath said joint and secured to the rim on one side of said joint, a central clip and outside clips secured to the rim on the other side of said joint, projections on the central clip underlying respectively the two arms of a pair, projections on the outside clips underlying respectively said two arms, and means by which said arms and clips may be drawn together.

8. In a composite belt pulley, the combination with the hub, of a rim having a joint, pairs of arms extending from the hub, the outer ends of each pair being bent away from each other toward the pulley edges and underlying and supporting the rim, a pair of said arms extending approximately beneath said joint and secured to the rim on the other side of said joint, projections on the central clip underlying respectively the two arms of a pair, outside clips, projections on the outside clips having upwardly inclined faces underlying respectively said two arms, a bolt engaging said pair of arms and said central clip, and means to support each outside clip on the rim and to draw said clip toward the rim.

9. In a composite belt pulley, the combination with the hub, of a rim having a joint, arms extending from the hub, whose outer ends are bent outwardly toward the rim edge and underlie and support the rim, one of said arms extending approximately beneath said joint and secured to the rim on one side of said joint, a clip, a bolt engaging the clip and the rim on the other side of said joint and permitting the clip to be moved toward the rim, and a projection on the clip having an inclined face engaging the inner side of said arm.

857,306. PULLEY. GEORGE RICHARDS, Philadelphia, Pa. Original application filed Aug. 9, 1905, Serial No. 273,499. Divided and this application filed May 1, 1906. Serial No. 314,634.

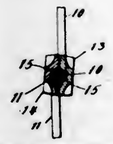
Claim.—1. The combination with a hub comprising two hub members each having extensions on opposite sides forming interior rectangular recesses and each being split, through a plane intersecting said extensions, into two parts or halves, of a bush having two pairs of projections, at each of its ends, extending respectively into opposite hub recesses, and bolts, each extending through the hub extensions between the end walls thereof and said projections and securing together the parts or halves of each hub member, said bush spanning the space between the hub members.



2. The combination with a hub comprising two hub members each having extensions on opposite sides forming interior rectangular recesses and each being split, through a plane intersecting said extensions, into two parts or halves, of a bush having two pairs of projections, at each of its ends, extending respectively into opposite hub recesses, and bolts, each extending through the hub extensions between the end walls thereof and said projections and securing together the parts or halves of each hub member, said bush spanning the space between the hub members, and having longitudinally extending grooves extending along opposite sides thereof between the projections of each pair, the bush being split longitudinally into two parts or halves intersecting said grooves.

3. The combination with a hub comprising two hub members each having extensions on opposite sides forming interior rectangular recesses and each being split, through a plane intersecting said extensions, into two parts or halves, of a bush having two pairs of projections, at each of its ends, extending respectively into opposite hub recesses, and, by contacting with the walls thereof, preventing the bush from turning relatively to the hub, and bolts, each extending through the hub extensions between the end walls thereof and said projections and securing together the parts or halves of each hub member.

857,307. EXPANDED-METAL-SPLICING DEVICE. AMOS W. RUSH, Grand Rapids, Mich., assignor to Northwestern Expanded Metal Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 19, 1906. Serial No. 348,608.

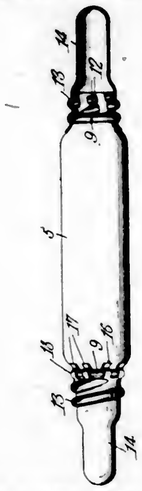


Claim.—1. The splice for uniting sheets of expanded metal, consisting of grooved plates adapted to receive the edges or ends of the metal and to be united by riveting the shoulders formed by the grooves resisting both lateral and longitudinal separation of the sheets united by the splice.

2. The two part splice for uniting sheets of expanded metal, the parts of the splice having recesses or pockets shaped so as to adapt them to receive and hold either the ends or the side edges of the sheets and also adapted to be riveted together upon the metal.

857,308. ROLLING-PIN. CHARLES L. SANFORD, Washington, Pa., assignor of one-fourth to Okey J. Morrison, Ripley, W. Va. Filed Mar. 27, 1907. Serial No. 364,928.

Claim.—1. A rolling pin including a hollow body portion having an interior chamber opening through one end of the pin and adapted to contain a cooling medium, a circumferential flange formed on each end of the body portion a closure for the open end of said pin, and handles detachably secured to the opposite ends of the pin, and provided with terminal spring fingers adapted to engage the adjacent flanges on said body portion one of said handles forming a housing for the closure.



2. A rolling pin including a hollow body portion having an interior chamber for the reception of a cooling medium and provided with oppositely disposed flanges the side walls of the body portion at the opposite ends thereof being beveled to form inclined shoulders, and handles secured to the opposite ends of the pin and provided with spaced spring clamping fingers adapted to engage the flanges and shoulders, respectively.

3. A rolling pin including a hollow body portion having its opposite ends reduced to form terminal necks, the exterior walls of which are provided with interrupted threads, there being an annular flange formed on each neck at a point adjacent the threads, and handles engaging the threads on the necks and provided with terminal spring fingers for engagement with the annular flanges.

4. A rolling pin having an interior chamber for the reception of a cooling medium and provided with oppositely disposed necks the exterior walls of which are formed with annular flanges, and handles detachably mounted on the necks and provided with terminal spring fingers for engagement with the flanges, one end of each handle being reduced and provided with smooth exterior walls forming bearing surfaces.

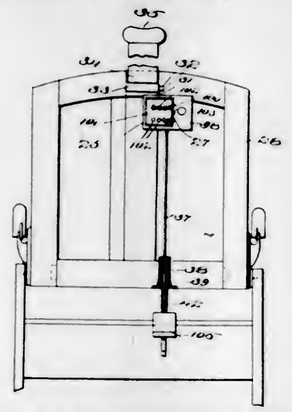
5. A rolling pin having an interior chamber for the reception of a cooling medium and having its opposite ends reduced and provided with annular flanges, the walls of the pin at said flanges being beveled to form inclined shoulders, and handles detachably secured to the opposite ends of the pin and provided with spring clamping fingers having grooves formed therein for the reception of the flanges and having their terminals bent laterally for engagement with the inclined shoulders of the pin.

857,309. REGISTER. CHRISTIAN SCHILLINGER, Scranton, Pa. Filed Mar. 15, 1906. Serial No. 306,310.

Claim.—1. In a device of the class described, the combination of a chair provided with a movable headrest, a spring normally held in a compressed position by the headrest, a registering mechanism, and means whereby the registering mechanism is actuated by the before mentioned spring.

2. In a device of the class described, the combination of a chair provided with a movable headrest, a spring normally held in a compressed position by the headrest, a reg-

istering mechanism, a train of gears actuating the registering mechanism, and means whereby the train of gears is operated by the before mentioned spring.



3. In a device of the class described, the combination of a chair provided with a movable headrest, a spring normally held in a compressed position by the headrest, a registering mechanism, a rock shaft provided with means for actuating the registering mechanism, and means whereby the rock shaft is controlled by the before mentioned spring

4. In a device of the class described, the combination of a chair provided with a movable head rest, a spring normally held in a compressed position by the head rest, a rock shaft controlled by the spring, a registering mechanism operated by the rock shaft, and a sounding device operated by the rock shaft.

5. In a device of the class described, a chair, a register associated with the chair, a barrel mounted upon the chair, a sleeve disposed within the barrel, a cushioning member disposed within the barrel and arranged to hold the sleeve at the lower extremity of its movement, the plunger rod disposed within the sleeve, and a cushioning member disposed within the sleeve and arranged to hold the plunger rod at the upward limit of its movement.

6. In a device of the class described, a chair, a registering train associated with the chair, a rock shaft pivotally connected with the chair structure, means connected to the rock shaft to actuate the train, a plunger connected with the rock shaft, and means carried by the chair for engaging and actuating the plunger.

7. In a device of the class described, a chair, a registering train mounted upon the chair, a rock shaft pivotally mounted upon the chair, means carried by the rock shaft for engaging and actuating the train, a plunger connected with the rock shaft, means carried by the chair for engaging and actuating the plunger, and means carried by the rock shaft for producing an audible sound.

8. In a device of the class described, the combination of a chair provided with a movable head rest, a rock shaft carrying a pair of crank arms, a registering mechanism, a sounding mechanism, means whereby both the sounding and registering mechanism are actuated by one of the crank arms, and means carried by the opposite crank arm whereby the rock shaft is automatically operated when the head rest is moved.

9. In a device of the class described, the combination of a chair provided with a movable head rest, a rock shaft provided with a pair of crank arms, a train of gears, registering mechanism actuated by the train of gears, a sounding mechanism, means whereby the sounding mechanism and train of gears are actuated by one of the crank arms, and means carried by the opposite crank arm whereby the rock shaft is automatically operated when the head rest is moved.

10. In a device of the class described, the combination of a chair provided with a movable back, registering mechanism carried by the back, a rock shaft for actuating the registering mechanism, and a plunger carried by the back and operating the rock shaft, the said plunger being designed to engage the chair body.

11. In a device of the class described, the combination of a chair provided with a movable back, a rock shaft mounted upon the back, a train of gears actuated by the rock shaft, registering mechanism controlled by the train of gears, and a plunger mounted upon the chair back for operating the rock shaft, the said plunger being designed to engage the chair body when the back is moved.

12. In a device of the class described, the combination of a chair provided with a movable back, a rock shaft mounted upon the back, a registering mechanism actuated by the rock shaft, a sounding mechanism actuated by the rock shaft, and means whereby the rock shaft is automatically operated when the chair back is moved.

13. In a device of the class described, the combination of a chair provided with a movable back, a rock shaft mounted upon the back, a registering mechanism actuated by the rock shaft, a sounding mechanism actuated by the rock shaft, and a plunger for operating the rock shaft, the said plunger being mounted upon the chair back and designed to engage the chair body when the back is moved.

14. In a device of the class described, the combination of a shaft, a registering mechanism actuated by the shaft, a reciprocating bar provided with a nose and actuated by the shaft, a sounding device, a striker for the sounding device, one end of the striker being designed to be engaged by the nose upon the reciprocating bar, and means for moving the reciprocating bar laterally to release the striker from engagement with the said nose.

15. In a device of the class described, the combination of a shaft, a registering mechanism actuated by the shaft, a reciprocating bar actuated by the shaft, a sounding device, a striker for the sounding device designed to be actuated by the reciprocating bar, and a cam for moving the reciprocating bar laterally to release the striker.

16. In a device of the class described, the combination of a shaft, a registering mechanism actuated by the shaft, a reciprocating bar actuated by the shaft and provided with a laterally projecting nose, a sounding device, a striker for the sounding device, one end of the striker being designed to be engaged by the before mentioned nose, and a cam surface for moving the reciprocating bar laterally to release the striker from engagement with the nose.

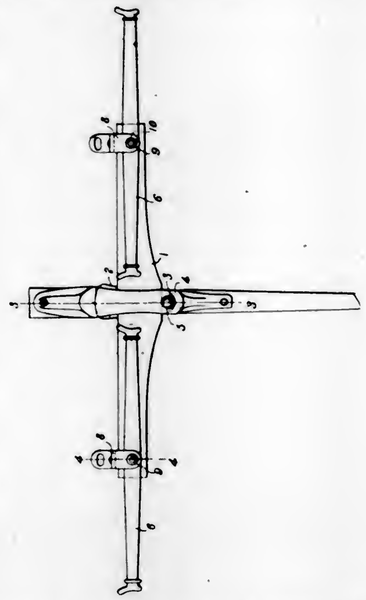
857,310. WHIFFLETREE. HENRY SELLON, Bridger, Wyo. Filed Feb. 1, 1907. Serial No. 355,312.

Claim.—1. In combination, a tongue, a recessed housing secured thereto and provided with a pivot opening, a fulcrum block having a fulcrum stud adapted to fit in said opening and provided with a recessed face, a double tree also recessed, the recessed portion of the double tree and block interfitting, and means for securing the block and double tree together.

2. In combination, a tongue, a recessed housing rigidly secured thereto, there being a pivot opening at one end of the recess, and the opposite wall of the recess being curved on an arc struck from the center of such pivot opening, a recessed fulcrum block disposed within the recess of the housing, and carrying a fulcrum stud fitting within said opening, one end of said block fitting against the curved wall of the housing recess, and the sides of the block converging toward the fulcrum stud, a double tree having a recess, the walls of which converge to conform to the convergent sides of the block, and means for securing the double tree and block to each other.

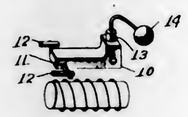
3. A coupling for whiffletrees comprising a member recessed to receive a part to be coupled and having converging sides and rounded ends, a fulcrum projecting from one of the ends thereof, and a second part having a recess adapted to receive said first part and a recess to receive said fulcrum, and having converging sides corresponding to the sides of said first member.

4. In a whiffletree, the combination of a double tree, a swingle tree mounted thereon, a yoke fitting around the rear edge of both trees, the forward ends of the yoke having bolt receiving openings, a bolt extending through said openings and a corresponding opening in the swingle tree,



the double tree being provided with a transversely elongated aperture for the passage of said bolt, and means for securing the lower rear portion of the yoke to the double tree.

857,311. REGULATING ATTACHMENT FOR ELECTRIC LIGHTS. CHETWOOD SMITH, Worcester, Mass. Filed Jan. 2, 1903. Serial No. 137,482.



Claim.—1. A cut-out comprising a magnet, an armature pivoted near one end, a counter-balance for the armature, and means whereby the counter-balance can be adjusted so that the center of gravity of the combined armature and counter-balance will be on a vertical line at the side of the magnet opposite the pivot of the armature, whereby the device may be used in positions in which an armature provided with a counter-balance fixed on one side of the pivot, would render the same inoperative.

2. A cut-out for an electric lamp having a heater circuit, said cut-out comprising a magnet, a pivoted armature adapted to make and break the heater circuit, and adjustable means for counter-balancing the armature to make the circuit in either normal, inverted, or horizontal position, whereby the lamp may be operatively employed in all of such positions.

3. A cut-out comprising a magnet, an armature pivoted near one end and adapted to make and break a heater circuit, and a counter-balance for the armature, said armature having means whereby the counter-balance may be applied to it in several different positions so that it will balance the armature either in normal, inverted, or horizontal position for permitting the device to be used in all such positions.

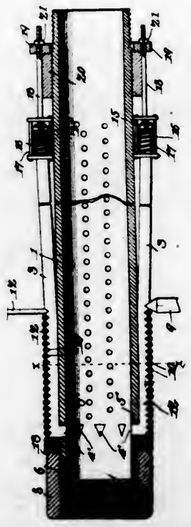
857,312. BALANCE-STAFF FOR WATCHES. FREDERICK C. SMITH, New Milford, Conn. Filed Apr. 26, 1906. Serial No. 313,865.



Claim.—1. In combination, a balance-staff having an enlarged portion, a balance-wheel provided with a central socket on its top surface corresponding in shape to the said portion and bearing against the same, a screw thread on the staff a suitable distance below the wheel, a spacer freely slidable over the thread and fitting on the portion of the staff between the thread and wheel and bearing at its top end on the under side of the latter and provided with an annular flange fitting into the opening of the wheel, and a roller table screwed upon the threaded portion of the staff and bearing against the lower end of the spacer for removably holding the latter and balance wheel in position.

2. In combination, a balance-staff having a frusto-conical portion, a balance-wheel provided with a central socket in its top surface corresponding to said portion and engaging the same, a screw-thread on the staff a suitable distance below the wheel, a spacer slidable over the thread and fitting on the portion of the staff above the thread and engaging at one of its ends the side of the wheel opposite the socket, and a roller-table which screws on the threaded portion of the staff and engages the opposite end of the spacer to removably hold the latter and balance-wheel in position.

857,313. WELL-SCREEN. GEORGE W. STANCLIFF, El Campo, Tex., assignor to Stancliff Well Screen and Mfg. Co., Houston, Tex. Filed Mar. 12, 1906. Serial No. 305,673.



Claim.—1. In a well screen the combination with an apertured strainer tube and a collar upon one end portion thereof; of ribs disposed longitudinally upon the tube and engaging it adjacent the collar there being a space between

said ribs and collar, said ribs having notches in their outer edges, and a wire coiled around the tube and ribs and seated in the notches in the ribs, the first whirls of the coil being secured within and entirely filling the space between the collar and the ribs.

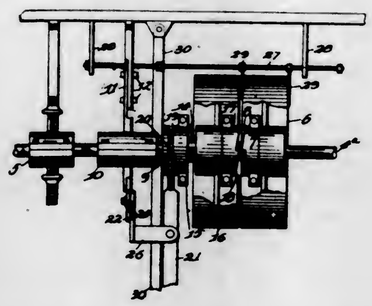
2. In a well screen the combination with an apertured strainer tube and collars upon the end portions of the tube; of ribs disposed longitudinally upon and engaging the tube between the collars, said ribs having notches in the outer edges, a wire coiled around the tube and ribs and seated in the notches in the ribs, the first whirls of the coil being secured within and entirely filling the space between one of the coils and the ribs, and ribs interposed between and parallel with the first mentioned ribs and having smooth outer faces contacting with the coiled wire.

3. In a well screen the combination with an apertured tube; of ribs disposed longitudinally upon and having one end engaging the tube, means engaging the other end of the ribs for exerting a constant pull thereon, and a wire coiled around the tube and ribs and holding said ribs under lateral tension.

4. In a well screen the combination with an apertured strainer tube; of a plurality of ribs disposed longitudinally upon and having one end seated in the apertures within the tube, said ribs having notches in their outer portions, means secured to the tube for exerting a constant pull upon the ribs, and a wire coiled around the ribs and tube and seated within the notches, said wire being held constantly under tension by the ribs.

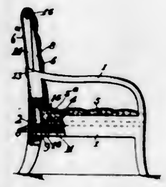
5. In a well screen the combination with a strainer tube and a collar upon one end portion thereof; of ribs disposed longitudinally upon the tube and engaging it adjacent the collar, there being a space between the ribs and collar, said ribs having notches in their outer edges, a wire coiled around the tube and seated in the notches in the ribs, one end portion of the wire being coiled within the space between the ribs and collar and ribs interposed between and parallel with the first mentioned ribs and having smooth outer faces contacting with but not engaging the coiled wire.

857,314. BELT-SHIFTING MECHANISM. WILLIAM T. STANFIELD, St. Louis, Mo., assignor of one-half to Edwin Ettinger, St. Louis, Mo. Filed Jan. 29, 1906. Serial No. 298,502.



Claim.—A belt shifting mechanism comprising an adjustable hanger, a sleeve composed of two sections supported in said hanger, a bracket adjustably located upon said hanger, a shifting lever supported in said bracket, a sleeve supported on the first-mentioned sleeve, a clamp, said clamp holding together the last-mentioned sleeve also constructed of two sections, a pulley rigidly mounted upon the last-mentioned sleeve in combination with a line-shaft loosely operating in the sleeve held in the adjustable hanger, a pulley rigidly mounted upon the line-shaft, clutch members connected to each pulley and each being composed of two sections, the clutch members supported to the pulley-wheel on the line-shaft provided with a depression in which the end of the sleeve supported by the hanger is recessed, substantially as specified.

857,315. BED-LOUNGE. OAKLEY B. STARKWATHER, Grand Rapids, Mich. Filed June 25, 1906. Serial No. 323,265.



Claim.—1. In a bed lounge, end frames, a support horizontally movable to either the rear or the front of said frames, arms pivoted at their lower ends on said support and carried thereby, a back pivoted to the upper ends of said arms and supported thereby, and also adapted to turn to reverse positions relative to said arms, and means for supporting said back in either substantially vertical or a horizontal position.

2. In a bed lounge, a back frame mounted on a rod, pinions fixed on the respective ends of the rod, horizontal racks supporting the pinions and traversed thereby and end frames supporting the racks, and a reversible back cushion supported by the back frame.

3. In a bed lounge, end frames, racks on the end frames, a rod extending between the frames, pinions fixed on the ends of the rod and traversing the racks, a back frame pivoted on the rod and carried thereby, stops on the end frames pivotally engaged by the back frame, and legs pivoted to the back frame.

4. In a bed lounge, end frames, a bottom spaced apart from the end frames, movable arms extending between the bottom and end frames, a rod beneath the bottom and supporting the arms, pinions on the ends of the rod, racks on the end frames and supporting the pinions, and also traversed thereby, a back frame supported and carried by the arms and a reversible back cushion supported by the frame.

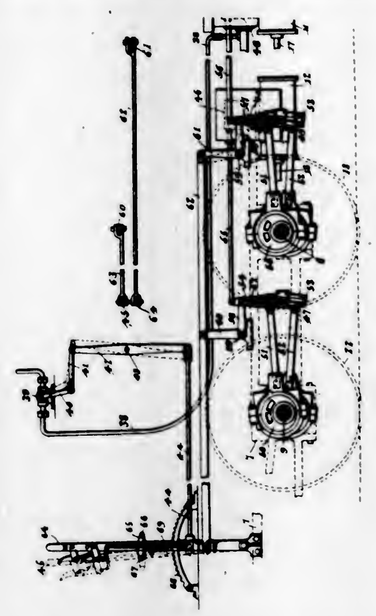
5. In a bed lounge, the combination of a bottom to support the seat cushion, end frames spaced apart from the bottom, arms extending between the bottom and end frames, a rod journaled in one end of the arms and supporting the same, pinions on the ends of the rod, racks on the end frames and traversed by the pinions, a back frame pivoted to the other ends of the arms and supported thereby, and reversible seat and back cushions supported by the bottom and frame.

857,316. COMPOUND ENGINE. WILSON E. SYMONS, Cleburne, Tex. Filed Feb. 10, 1904. Serial No. 192,996.

Claim.—1. In a locomotive, the combination with high and low pressure cylinders and separate valve gears therefor, of an auxiliary steam pipe for leading live steam to the low pressure cylinder in starting, a starting valve in said pipe, a reversing lever, connections whereby the reversing lever effects the differential adjustment of the separate valve gears, and means operatively connecting the reversing lever with the starting valve.

2. In a locomotive, the combination with high and low pressure cylinders, their valves and separate valve gears, of separate driving means for the respective valve gears, a sectional reversing lever, means connecting each section of the lever with one of the valve gears, means for causing the sections of the reversing lever to move in unison after limited relative movement thereof, an auxiliary pipe for leading live steam to the low pressure cylinder, a starting valve in said pipe, and a connection between the starting valve and one section of the reversing lever.

3. The combination with high and low pressure cylinders, their valves and separate valve gears, of a reversing lever comprising relatively movable sections, each having operative connection with one of the valve gears, means for leading steam to the high pressure cylinder and thence to the low pressure cylinder, and an auxiliary pipe for leading live steam to the low pressure cylinder, an auxiliary valve in said pipe, and means operatively connecting the auxiliary valve with one section of the reversing lever.



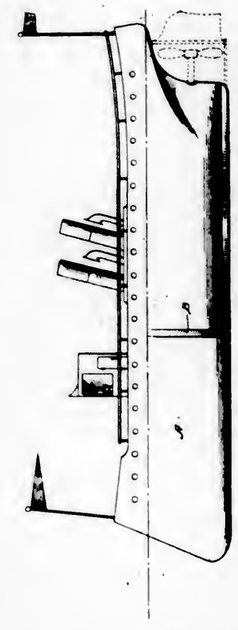
4. The combination with a locomotive frame, of a pair of high pressure cylinders and a pair of low pressure cylinders mounted on the frame, means for leading steam to each high pressure cylinder and thence to a low pressure cylinder, an emergency exhaust for each high pressure cylinder, means for leading live steam directly to each low pressure cylinder, valves controlling the various steam passages to enable each high pressure cylinder to be used in compound or to permit the use of any cylinder or cylinders independently of any other or others, a high pressure valve gear, a separate low pressure valve gear, a reversing lever connected to both valve gears, an auxiliary pipe for leading live steam to the low pressure cylinders in starting, an auxiliary valve in said pipe, and a connection between the auxiliary valve and the reversing lever.

857,317. LINES FOR VESSELS. THEODORE R. TIMBY, Brooklyn, N. Y. Filed Apr. 27, 1906. Renewed May 10, 1907. Serial No. 372,877.

Claim.—1. The combination in a vessel having sail or screw power a hull provided with the usual counters and over-hanging stem, a wave impact receiving surface of sufficient dimensions to aid in forcing the vessel ahead when waves moving in a forward direction impinge thereon, substantially as described.

2. The combination in a vessel having sail or screw power a hull provided with the usual counters of an abrupt abutment at or near the mid-ship section having a wave impact receiving surface of sufficient dimensions to aid in forcing the vessel ahead when waves moving in a forward direction impinge thereon, and a keel beginning at or near said abutment and extending to the stem of said hull, substantially as described.

857,317.



857,318. ADJUSTABLE SUPPORT FOR SECTIONAL BOOKCASES. FRED W. TOBEY, Grand Rapids, Mich. Filed Dec. 26, 1906. Serial No. 349,525.



Claim.—1. In combination with a bookcase section, a leg therefor carried by a plate having a slot at one side of the leg, and means passed through the slot for movably securing the plate to the bottom of the section.

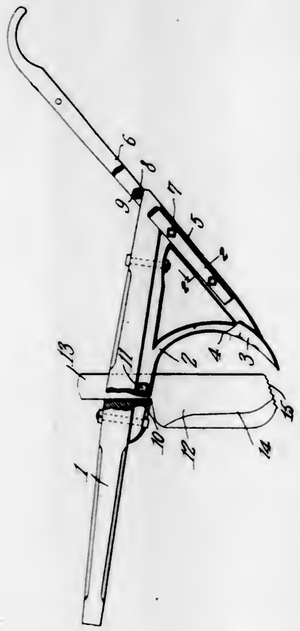
2. In combination with a bookcase section, a leg therefor carried by a plate having a slot at one side of the leg, and means passed through the slot for movably securing the plate to the bottom of the section, the plate having pivotal and lateral movement on said means.

3. In combination with a bookcase section, an L-shaped plate having a slot in one arm, a fastening extended through the slot and adjustably securing the plate to the bottom of the case, and a leg rigidly attached to the other arm of the plate.

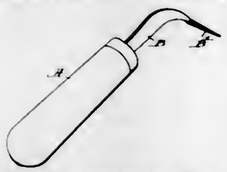
857,319. VIRGIN-GROUND PLOW. JAMES H. TRIPP, Vanceboro, N. C., assignor to Joseph B. Harvey, Vanceboro, N. C. Filed Apr. 16, 1907. Serial No. 368,516.

Claim.—In a plow such as described comprising a beam, a standard and handles, a colter having an elongated shank with a relatively broad blade having a cutting edge which is rounded off at its lower end and a lower edge provided with teeth or serrations.

857,319.



857,320. HOUSEHOLD-TOOL. GEORGE ULETT, Waltham, Mass. Filed Mar. 19, 1906. Serial No. 306,766.

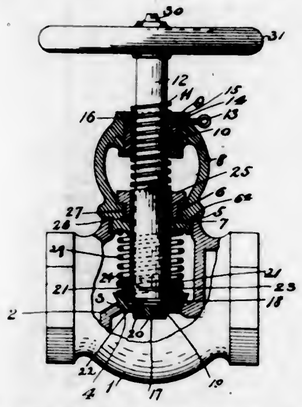


Claim.—In a tool for household use, a handle, a connected flat blade having its outer end bent at a substantial right angle from said blade and pointed to be thrust through a paper sealing disk, the penetration of said point being arrested by the blade striking the top of the jar containing said sealing disk, the subsequent rotation of said blade while resting on the top of the jar causing the side of the pointed end to be brought upwardly to contact with the under side of said sealing disk that the same may be lifted positively from the mouth of the jar.

857,321. GLOBE, ANGLE, AND CHECK VALVE. THOMAS WALTZ, Newton, Ill. Filed Apr. 6, 1904. Serial No. 201,908.

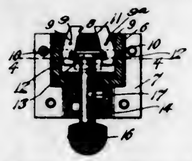
Claim.—1. In a valve, a valve rod having a flange at its valve end, pins on the valve rod, a disk having recesses to register with the pins on the valve rod, an internal screw-thread in the disk, a nut on the valve rod adapted to engage the internal thread of the disk, and a spring above the nut adapted to hold the valve normally to its seat.

2. In a valve, a main stock having a threaded opening, a yoke-shaped cap having an external thread to screw into the opening, a stuffing box in the cap, a threaded valve rod, an internally-threaded sleeve adapted to engage the threads upon the valve rod, a collar at the top of the yoke to receive the sleeve, a set screw for locking the sleeve to the yoke, a disk, means for locking the disk to the valve rod, and a spring to normally hold the valve to its seat.



3. In a device of the character described, a valve rod having a socket formed in its end, pins adapted to be received in said socket, and a collar to secure the pins in the socket.

857,322. SASH-FASTENER. ABRAM O. BAKER, St. Louis, Mo. Filed June 23, 1906. Serial No. 323,150.



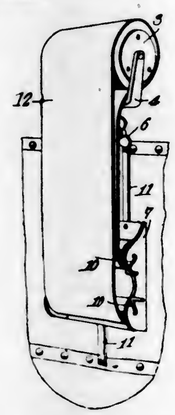
Claim.—1. In a sash fastener, the combination of a rack provided with opposite sets of locking teeth, a lock casing, rocking dogs in said casing adapted to engage said teeth, a spring arranged to retract the dogs, and an oscillating stem having a cam head to project the jaws against the pressure of the spring.

2. A sash fastener comprising a rack having opposite sets of teeth, a casing, rocking pawls fulcrumed within the casing and having their forward ends projecting therefrom to engage the teeth, a spring arranged between the pawls to normally force the engaging ends thereof apart, the rear ends of the pawls being provided with notches, and an oscillating stem having a cam head adapted to engage the notched ends of the pawls to force the engaging ends thereof into locking position against the pressure of said spring.

3. In a sash fastener, the combination with sashes, of a rack upon one of the sashes, a casing upon the other sash, spring retracted dogs in said casing, an oscillating stem having a cam head for engaging and controlling the action of the dogs, and means for imparting an endwise movement to said stem to adjust the head into and out of operative position.

857,323. SANITARY HEAD-REST. NELSON BREAKENRIDGE, Redlands, Cal., assignor of one-half to John C. Bingman, Redlands, Cal. Filed Jan. 16, 1907. Serial No. 352,561.

Claim.—1. In a sanitary head-rest for chairs, the combination with a chair back having a head-rest adjustable vertically thereon, of a frame arranged on the rear of the chair back and having oppositely extending strips for securing it to the chair back frame, a pair of rollers having their axes arranged substantially in the plane of adjustment of the head-rest and mounted in fixed relation in said frame on the chair back, and a strip of covering material arranged to be operated by said rollers and passing over the head-rest.



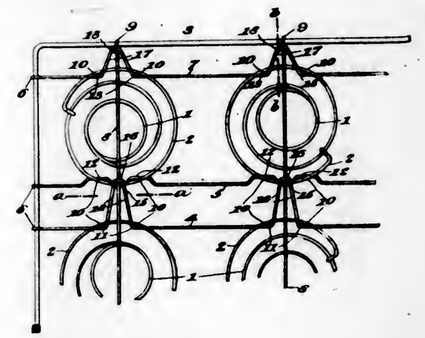
2. In a sanitary head-rest for chairs, the combination with a head-rest adapted to move vertically relatively to the chair back and having a yoke-shaped frame supporting it, of a pair of rollers mounted in fixed relation on the chair back, a pivotal connection for the head-rest having its axis arranged substantially in line between the head-rest and the axes of the rollers, and a strip of covering material having its ends attached to the respective rollers and having an intermediate portion extending over the head-rest and between the periphery of the latter and its supporting frame.

3. In a sanitary head-rest for chairs, the combination with a head-rest section embodying a yoke-shaped frame having a head supporting roller journaled thereon and adjustable vertically relatively to the chair back to accommodate itself to different persons, a pair of rollers mounted on a relatively fixed portion of the chair back and having web attaching devices thereon, and a web or strip having its ends attached to the respective rollers by means of the said attaching devices and having an intermediate portion extending over the roller and between the periphery of the latter and the yoke-shaped frame of the head-rest section.

4. In a sanitary head-rest for chairs, the combination with a head-rest section embodying a yoke-shaped frame carried by the head-rest slide of a chair back, and a head supporting roller journaled in the said frame, of a pair of winding and unwinding rollers journaled in a relatively fixed portion of the chair back, the axes of the rollers being arranged substantially in the plane of adjustment of the head-rest section, and a web or strip having its ends attached to the respective rollers and having an intermediate portion extending over the head supporting roller and passing between the said roller and its yoke-shaped supporting frame.

857,324. SPRING BED-BOTTOM. CHARLES D. BROUVETTE, Cincinnati, Ohio, assignor of one-half to Francis Karr, Holland, Mich. Filed Jan. 23, 1906. Serial No. 297,503.

Claim.—1. In a spring-structure, the combination of helical springs having end coils and arranged in parallel rows and main and auxiliary tie-wires extended along adjacent sides of adjacent rows of said springs and each having, at two points, supporting-connection with the end coil of each spring in the row traversed by it, the auxiliary tie-wire having, between such points of connection with each end coil, a bent portion passed vertically upward through and resting adjacent to such end coil and the main tie-wire being provided with integral loops passed through the end coils of the springs traversed by it and extended laterally from said end coils with extremities passed between the upper face of the end coils of the adjacent row of springs and the lower face of the upwardly bent portions of the auxiliary tie-wire which are passed through and interlock with such end coils, said extremities of the loops having vertically-bent terminal portions engaged behind said upbent intermediate portions of the auxiliary tie-wire.



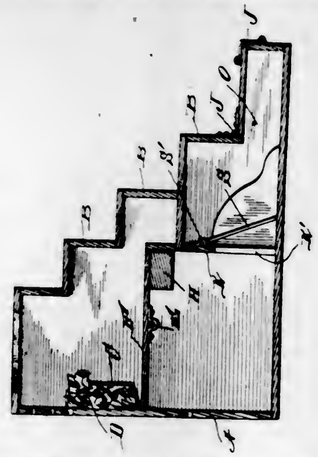
2. In a spring-structure, the combination of helical springs having end coils and arranged in parallel rows, main and auxiliary tie-wires extended along adjacent sides of adjacent rows of said springs and each having, at two points, supporting-connection with the end coil of each spring in the row traversed by it the auxiliary tie-wire having, intermediate such points of connection with each end coil, an upwardly bent portion passed vertically through such end coil and the main tie-wire being provided with integral loops passed through the end coils of the springs traversed by it and extended laterally from said end coils with extremities passed between the upper face of the end coils of the adjacent row of springs and the lower face of the upwardly bent portions of the auxiliary tie-wire which are passed through such end coils, said extremities of the loops having arched or upwardly-bent terminal eyes engaged behind said upbent intermediate portions of the auxiliary tie-wire and transversely-extended locking-wires passed across the structure and through the terminal eyes of said loops above but contiguous to the intermediate upbent portions of the auxiliary tie-wires.

3. In a spring-structure, the combination of a row of helical springs along the lateral side of the structure and provided with end coils, a border-wire adjacent to but spaced from said end coils, locking wires the ends of which have enlarged loops forming hooks encircling the border-wire and a lateral tie-wire parallel with the border-wire and having at two points supporting-connection with the end coil of each of said row of springs and having, between such points of connection with the end coil, a laterally projecting loop extending through such end coil and toward but not engaging the border-wire and with its extremity engaged with the terminal loop of one of the locking-wires.

857,325. ANIMAL-TRAP. ROBERT E. BROWN, Wiggs, Ark. Filed Mar. 20, 1907. Serial No. 363,462.

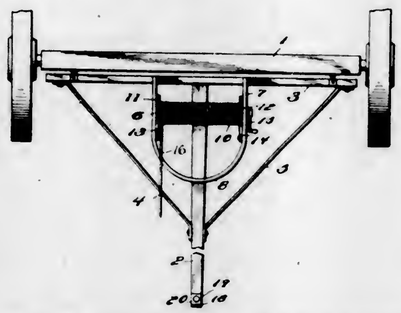
Claim.—A self-setting and ever-set trap, comprising a casing having a series of steps, one of which is hinged and adapted to serve as a door to a compartment of the trap, a weighted platform pivotally mounted within the casing, a bait receptacle fixed to the vertical wall of the casing and projecting laterally therefrom, the under edge of said receptacle adapted to serve as a stop to normally hold the platform in a horizontal position, a partition wall within the casing and provided with an exit passageway, ver-

tically disposed bracket extensions projecting from said partition upon either side of the passageway, and a verti-



cally swinging gate pivotally mounted between said bracket extensions, as set forth.

857,326. WINDLASS ATTACHMENT. ELLIOTT R. BUCKWALTER, Laurens, Iowa. Filed June 10, 1905. Serial No. 264,690.

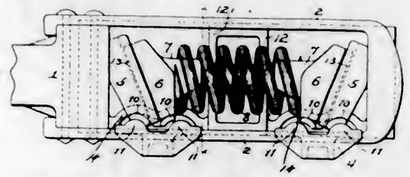


Claim.—The combination, with the axle of a portable threshing machine, and the tongue provided with a cross-bar through the intervention of which the tongue is connected to the axle, of a U-shaped frame having the ends of its side bars or arms connected to the cross-bar and its forward end resting on the tongue, a windlass journaled in the side bars of the frame, a crank connected with the windlass for operating the same, ratchet wheels and pawls for preventing backward turn of the windlass, and an angular plate secured on the forward end of the tongue and provided with a perforation in the upright part for guiding the cable and holding up the outer end of the tongue.

857,327. DRAFT AND BUFFING APPARATUS. SAMUEL P. BUSH, Columbus, Ohio. Filed May 11, 1906. Serial No. 316,408.

Claim.—1. The combination of contacting friction elements movable simultaneously and having pivotal mountings located in proximity to each other, and a resisting spring pressing against said elements.

2. The combination of contacting friction elements movable together in the same plane, means for imparting a subsequent pivotal movement to said elements whereby they will be moved relatively to each other and a spring pressing against said friction elements.



3. The combination of two contacting friction elements, means affording pivotal mountings for the lower ends of said friction elements and a spring pressing against said friction elements.

4. The combination of a draw bar, a yoke and draft irons, of a friction element bearing against the draw bar, a second friction element contacting with the first mentioned friction element, a spring bearing against the second friction element and means for permitting said elements to turn on pivotal supports located below the same and supported by the draft irons.

5. The combination of two contacting friction elements normally disposed in an inclined position, means under said elements affording pivotal mountings therefor and a spring pressing one friction element toward the other.

6. The combination with two contacting friction elements normally disposed in an inclined position, pivotal mountings for said elements, said mountings being spaced apart and permitting an initial simultaneous movement of said elements and a subsequent pivotal movement, and a spring pressing one element against the other.

7. In a friction draft and buffing apparatus, the combination of two sets of fulcrumed contacting friction elements, and an intermediate resisting spring between them.

8. In a friction draft and buffing apparatus, the combination of contacting friction elements having fixed fulcrums, and a resisting spring bearing against the said friction elements.

9. In a friction draft and buffing apparatus, the combination with a yoke, of two sets of friction elements, pivotal bearings for each of said friction elements fixed to a part stationary with respect to the yoke and friction elements and a resisting spring between said friction elements.

10. In a friction draft and buffing apparatus, the combination of fulcrumed friction elements, each element having a series of beveled faces contacting with the other friction element, and a resisting spring bearing against said friction elements.

11. In a friction draft and buffing apparatus, the combination of friction elements having a series of beveled contacting faces, fixed fulcrums for the friction elements, and a resisting spring bearing against the elements.

12. In a friction draft and buffing apparatus, the combination of two sets of friction elements each set having a series of beveled faces between them, fixed pivots for the friction elements, and a resisting spring between them.

13. In a draft and buffing apparatus, the combination of contacting friction elements having simultaneous movement, the contacting faces moving in opposite directions relatively to each other, fixed pivotal mountings for said elements and a resisting spring bearing against said friction elements.

14. In a draft and buffing apparatus, the combination of pivoted or fulcrumed friction elements, an actuating device contacting with one element, a spring pressing against the other element, said points of contact being so located relatively to the fulcrums of the elements as to increase the movement transmitted to the spring beyond that of the actuating device.

15. In a draft and buffing apparatus, the combination of pivoted or fulcrumed friction elements constructed and mounted so as to have a preliminary longitudinal movement before pivoting, and a resisting spring bearing against the friction elements.

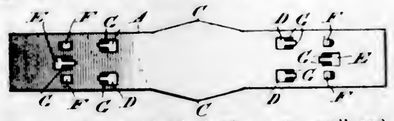
16. In a draft and buffing apparatus, the combination of two sets of pivoted or fulcrumed friction elements having a preliminary longitudinal movement before pivoting, and a resisting spring between the pairs of friction elements.

17. In a draft and buffing apparatus, the combination with a coupler, draft irons and a yoke secured thereto, of a pair of friction elements at both ends of the yoke one pair bearing against the coupler and the other against the end of the yoke, a coiled spring supported on lugs on the inner friction elements, and fixed pivots or fulcrums for all of said friction elements, supported by the draft irons.

18. In a draft and buffing apparatus, the combination with a coupler, and a yoke secured thereto, of a pair of friction elements at both ends of the yoke, a spring between the pairs of friction elements, draft irons having shoulders to limit the movement of the friction elements, and carrying irons providing pivots or fulcrums for the friction elements.

19. In a draft and buffing apparatus, the combination of fulcrumed elements, friction devices on the opposing faces of said elements, said devices having beveled faces, and a spring bearing against the elements.

857,328. METALLIC RAILWAY-TIE. PATRICK M. CANTY and HARRY W. SCHOENFELT, Altoona, Pa. Filed Apr. 8, 1907. Serial No. 367,060.



Claim.—1. A metallic tie having a top wall and side walls depending therefrom and also having swells of obtuse angle form in plan at the middles of its side walls, and straight hollow end portions.

2. In a tie, a metallic tie body, closed at its sides, top and ends and having swells of obtuse angle form in plan at the middles of its side walls, and straight hollow end portions, and also having inwardly directed base flanges, and a plastic filling retained in the said tie body by the base flanges thereof.

3. The combination in a tie, of a metallic tie body closed at its sides, top and ends and having swells of obtuse angle form in plan at the middles of its side walls, and straight hollow end portions, and also having openings in its top and inwardly directed base flanges, a plastic filling retained in the tie body by the base flanges thereof, rails arranged on the tie body, and means extending through the openings in the top of the tie body and connecting the rails and the said body.

4. The combination of a metallic tie provided at its top with abutments, rails arranged above the said tie, chair plates removably interposed between the tie and the rails and having upwardly directed flanges resting between the abutments and the outer edges of the rail bases, and means for holding the said rails and chair plates down upon the tie.

5. The combination of a metallic tie provided on its top with abutments and in its top with openings and also provided on its top with serrations extending in the direction of the width thereof, rails arranged above the said tie, chair plates removably arranged between the tie and the rails and having upwardly directed flanges interposed between the abutments and the outer edges of the rail bases, clamps resting on the rail bases and having transverse serrations opposed to those of the tie, and bolts connecting the clamps and the tie and extending through the openings in the top of the latter.

6. The combination of a metallic tie provided on its top with integral abutments and in its top with openings of T-form and also provided on its top at opposite sides of the stems or reduced portions of the T-shaped openings with transverse serrations, rails arranged above the said tie, chair plates removably arranged between the tie and the rails and having upwardly directed flanges interposed between the abutments and the outer edges of the rail bases, clamps resting on the rail bases and having transverse serrations opposed to those of the tie, bolts extending through the clamps and the reduced portions of the openings in the tie top and having heads disposed below said top, and nuts mounted on the bolts above the clamps.

857,329. COOKING-KETTLE. WILLIAM CAREY, Seattle, Wash., assignor, by mesne assignments, to N. T. Jolliffe, Seattle, Wash. Filed July 16, 1906. Serial No. 326,486.



Claim.—1. A cooking vessel provided with oppositely disposed perforated ears, a cover and a sectional lifting device adapted to engage the perforation in the ears for locking the cover in position on the vessel, said lifting device being provided with intermediate operating handles one of which is movable vertically to inoperative position thereby to release the adjacent section from engagement with the contiguous perforated ear.

2. A cooking vessel provided with oppositely disposed perforated ears, a perforated cover having a vertically disposed guard extending inwardly from one edge thereof and provided with a recess, and a lifting device extending transversely across the cover and passing through the opening in the guard for engagement with the ears, said lifting device being provided with intermediate operating handles one of which is stationary and the other movable vertically to inoperative position thereby to release the lifting device from engagement with the perforated ears.

3. A cooking vessel provided with oppositely disposed perforated ears, a perforated cover having a vertically disposed guard spaced inwardly from one edge thereof and provided with a recess, guiding flanges extending from the walls of said recess to the adjacent edge of the cover, and a lifting lever passing through the recess in the guard and bearing against the flanges for engagement with the perforations in the ears, said lifting device being provided with intermediate operating handles one of which is stationary and the other movable vertically to inoperative position thereby to release the lifting device from engagement with the perforated ears.

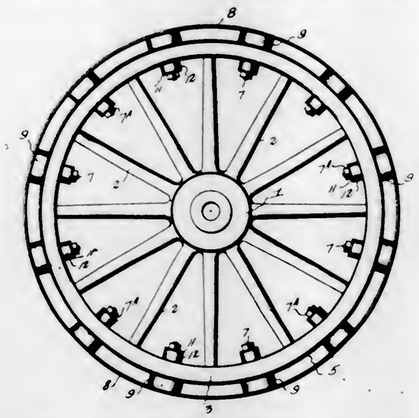
4. A cooking vessel provided with oppositely disposed perforated ears, a perforated cover provided with a vertically disposed guard and having a recess formed therein, a lifting member passing through the recess in the guard and provided with reduced extensions adapted to enter the perforations in the ears, and a shoulder formed on one end of the member and adapted to bear against the adjacent wall of the guard at said recess, said lifting device being provided with intermediate operating handles one of which is stationary and the other movable vertically to inoperative position thereby to release one of said extensions from engagement with the adjacent perforated ear.

5. A cooking vessel provided with oppositely disposed perforated ears, a cover having a vertically disposed guard provided with a recess, and a lifting member consisting of relatively stationary and movable levers adapt-

ed to engage the perforations in the ears, said lifting member being provided with co-acting handles one of which is movable vertically to inoperative position thereby to release said member from engagement with the adjacent perforated ears.

6. A cooking vessel provided with oppositely disposed perforated ears, a perforated cover having a vertically disposed guard spaced inwardly from one edge of the cover at said perforations, a relatively stationary lever extending transversely of the cover and engaging the perforations in one of said ears, a movable lever pivoted on the stationary lever and adapted to engage the adjacent ear, and co-operating handles secured to the adjacent ends of said levers, one of said handles being movable vertically to inoperative position thereby to release the lever from engagement with the adjacent perforated ear.

857,330. VEHICLE-WHEEL. FRANCIS J. CONANT, Los Angeles, Cal. Filed June 26, 1906. Serial No. 323,522.

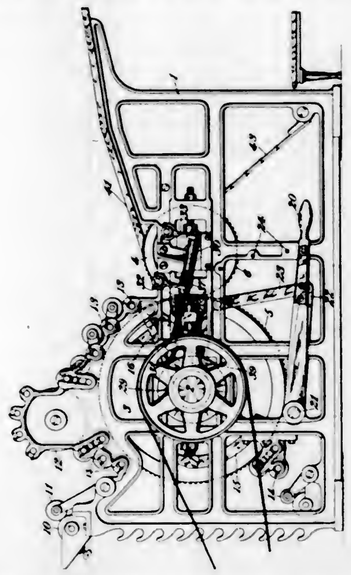


Claim.—1. In a wheel, the combination with a hub and a felly, a rim wider than the felly, a tire concentric with and of larger diameter than said rim, a plurality of spokes radiating from said hub to said felly, a series of rubber cushions between the rim and the tire, a second series of rubber cushions within the felly between the said spokes, each cushion of the second series being in radial alinement with a cushion of the first series, and a series of clamping bolts extending through the felly, rim and tire, each bolt passing through a pair of cushions, a clamping nut on the inner end of each bolt, and a washer between said nut and the inner cushion.

2. In a wheel, the combination of a felly, a rim wider than the felly, a tire concentric with and of larger diameter than said rim, a series of rubber cushions between the rim and the tire, a second series of rubber cushions within the felly, each cushion of the second series being in radial alinement with a cushion of the first series, and a series of clamping bolts extending through the felly, rim and tire, each bolt passing through a pair of cushions, a clamping nut on the inner end of each bolt, and a washer between said nut and the inner cushion.

3. In a wheel, the combination with the felly, the spokes, and the hub, of a rim mounted on said felly of greater width than said felly, a tire concentric with and of larger diameter than said rim, a series of rubber cushions between the rim and the tire, a series of clamping bolts extending from said tire through said rim and felly and beyond said felly between said spokes, a nut threaded to the end of each of said clamping bolts, a washer on each clamping bolt adjacent to said nut, and a rubber cushion on each clamping bolt between said washer and said felly in radial alinement with the rubber cushions between said rim and tire.

857,331. PRINTING-PRESS. GEORGE R. CORNWALL, Rye, N. Y. Filed Dec. 21, 1904. Serial No. 237,833.



Claim.—1. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and automatic means constructed and arranged for causing the printing couple to give an impression direct from the printing plate upon a sheet, or to give an impression from the printing plate upon the offset surface and then from the offset surface to the sheet.

2. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and automatic means for causing said couple to perfect a sheet at one impression, one side of the sheet being printed directly from the printing plate and the other side being printed from the said printing plate by means of the offset surface.

3. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and means constructed and arranged to cause the printing couple to print a sheet on both sides at one impression, one side being printed directly from the printing plate and the other from the offset surface, or to print either a direct impression from the printing plate, or an offset impression from the offset surface, on one side of the sheet only.

4. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and sheet-handling means adapted to be set to take sheets at such time and in such manner as to cause the printing couple to give an impression direct from the printing plate upon a sheet, or to give an impression from the printing plate upon the offset surface and then to the sheet, as desired.

5. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and sheet-handling means adapted to be set to take sheets at such time and in such manner as to cause the printing couple to perfect a sheet at one impression, one side of the sheet being printed directly and the other by offset.

6. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and sheet-handling means adapted to be set to take sheets at such time and in such manner as to cause the printing couple to print a sheet on both sides at one impression, one side being printed directly from the printing plate and the other from the offset surface, or to print either a direct or an offset impression on one side only of the sheet, as desired.

7. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and means which may be set to automatically cause the printing couple to give an impression direct from the printing plate upon a sheet, or to give an impression from the printing plate upon the offset surface and thence to the sheet, as desired.

8. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and means which may be set to automatically cause the printing couple to perfect a sheet at one impression, one side of the sheet being printed directly from the printing plate and the other by offset.

9. A printing press including in combination a cylinder carrying a printing plate, a cylinder carrying an offset surface, said cylinders constituting a printing couple, inking means for the plate-carrying cylinder, and means which may be set to automatically cause the printing couple to print a sheet on both sides at one impression, one side being printed directly from the printing plate and the other by offset from the offset surface, or to print either a direct impression from the plate or an impression from the offset surface on one side only of the sheet, as desired.

10. A printing press including in combination a printing couple, means carried by the members of said couple for detachably holding printing or impression surfaces, and means for causing said couple to present to an interposed sheet a yielding impression surface to co-act with an unyielding printing surface, or an unyielding impression surface to co-act with a yielding printing surface, or a yielding impression surface to co-act with a yielding printing surface.

11. A printing press including in combination a rotary member adapted to carry surfaces of a yielding and surfaces of a non-yielding nature, and a second member having an off-set surface, and forming a printing couple with said rotary member, said second member being adapted to receive a design from one of said non-yielding surfaces and to co-act with one of said yielding surfaces to impress a sheet.

12. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, inking means for the said cylinder, an offset cylinder, said cylinders constituting a printing couple, said offset cylinder being arranged to rotate a plurality of times for each rotation of the plate-carrying cylinder, and means which may be set to automatically cause the said printing couple to print upon one side of the sheet directly from a planographic printing plate, or from the plate to the offset surface and thence to the sheet, as desired.

13. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, inking means for the said cylinder, an offset cylinder, said cylinders constituting a printing couple, said offset cylinder being arranged to rotate a plurality of times for each rotation of the plate-carrying cylinder, and means which may be set to automatically cause the printing couple to print a sheet on both sides at one impression, one side being printed directly from the plate and the other by offset from the offset surface, or to print either a direct impression from the plate, or an offset impression from the offset surface, on one side of the sheet only, as desired.

14. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, inking means for the said cylinder, an offset cylinder, said cylinders constituting a printing couple, said offset cylinder being arranged to rotate a plurality of times for each rotation of the plate-carrying cylinder, sheet-handling means adapted to be set to take sheets at such time and in such manner as to cause the printing couple to give an impression direct from the printing plate upon a sheet, or to give an impression from the printing plate upon the offset surface and then to the sheet, as desired.

15. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, inking means for the said cylinder, an offset surface, said cylinders constituting a printing couple, said offset cylinder being arranged to rotate a plurality of times for each rotation of the plate-carrying cylinder, sheet-handling means adapted to be set to take sheets at such time and in such manner as to cause the printing couple to print a sheet on both sides at one impression, one side being printed directly from the plate and the other by offset from the offset surface, or to print either a direct impression from the plate, or an offset impression from the offset surface, on one side of the sheet, as desired.

16. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, a cylinder carrying an offset surface, said cylinders comprising a printing couple, damping means for the plate-carrying cylinder, inking means for the plate-carrying cylinder, gripper mechanism carried by one of said cylinders, and means which may be set to automatically cause the gripper mechanism to take a sheet after every revolution of its cylinder or to take a sheet after a plurality of revolutions of its cylinder.

17. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, a cylinder carrying an offset surface, said cylinders constituting a printing couple, said offset cylinder being adapted to make a revolution for each plate carried by the plate-carrying cylinder, damping means for the plate-carrying cylinder, inking means for the plate-carrying cylinder, gripper mechanism carried by the offset cylinder, and means which may be set to automatically cause the grippers to take a sheet after each revolution of the offset cylinder or to take a sheet after a plurality of revolutions of the offset cylinder.

18. A printing press including in combination a cylinder carrying a plurality of planographic printing plates and ink slabs in alternate relation, damping means for the said cylinder, inking means for the said cylinder, a cylinder carrying an offset surface, said cylinders constituting a printing couple, said offset cylinder being adapted to make a revolution for each printing plate carried by the plate-carrying cylinder, gripper mechanism carried by said offset cylinder, and means which may be set to automatically cause the grippers to take a sheet after each revolution of the offset cylinder or to take a sheet after a plurality of revolutions of the offset cylinder.

19. A printing press including in combination a form cylinder carrying a plurality of planographic printing plates, an inking system for inking the plates upon the said cylinder, damping means for damping the plates upon the said cylinder, a cylinder carrying an offset surface and constituting with the said form cylinder a printing couple, automatic sheet-feeding means for feeding sheets, and settable controlling means for the sheet-feeding means to regulate the feeding of sheets to the printing couple relatively to the rotation of its members.

20. A printing press including in combination a cylinder carrying a planographic printing plate, means for damping the said plate, a series of inking rolls adapted to contact with said plate to ink the plate, and means for moving any desired number of said rolls out of contact with said plate.

21. A printing press including in combination a cylinder carrying a planographic printing plate, means for damping the said plate, a series of inking rolls adapted to contact with said plate to ink the plate, and means carried by the said cylinder which may be set to move away any desired number of the said rolls while the printing plate is passing underneath.

22. A printing press including in combination a cylinder

carrying a plurality of planographic printing plates, means for damping the said plates, a series of inking rolls adapted to ink the plates as they pass underneath the rolls, and means which may be set to automatically cause a greater number of rolls to act on one plate than on another.

23. A printing press including in combination a cylinder carrying a planographic printing plate and an ink slab, means for damping the said plate, a series of ink rolls adapted to contact with said printing plate and with said ink slab, and means for moving any desired number of said ink rolls out of contact with the printing plate.

24. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, means for damping the said plates, a plurality of ink slabs, a series of ink rolls adapted to contact with the said printing plates and said ink slabs, and means settable with respect to each printing plate for determining the number of ink rolls that shall contact with such printing plate.

25. A printing press including in combination a cylinder carrying a planographic printing plate, means for damping the said plate, a series of movable ink rolls normally in contact with the printing plate as it passes beneath the rolls, a member settable with reference to any desired number of the ink rolls in the said series, and a member carried by the printing cylinder for rendering the said settable member operative to move away such ink rolls out of contact with the printing plate as it passes underneath.

26. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, means for damping the said plates, a series of movable inking rolls adapted to contact with the plates as they pass beneath the rolls, means which may be set to permit the inking rolls to contact with a plate or to move the rolls away so as to prevent their contact with the plate, and means which may be set to determine the number of rolls to be acted upon by the said moving means.

27. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, means for damping the said plates, a series of movable inking rolls adapted to contact with the plates as they pass beneath the rolls, a cam carried upon the cylinder in a definite relation to a printing plate, and movable means carried on the frame of the press which may be interposed between the said cam and the said rolls to move the rolls out of contact with the plate.

28. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, means for damping the said plates, a series of movable inking rolls adapted to contact with the plates as they pass beneath the rolls, a cam carried upon the cylinder in a definite relation to a printing plate, and means which may be set so as to cause the said cam to move any desired number of the inking rolls away so as to prevent their contact with the plate.

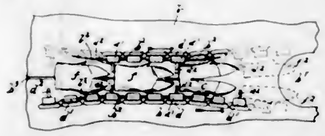
29. A printing press including in combination a printing cylinder carrying a planographic printing plate, means for damping the said plate, a series of movable ink rolls normally in contact with the printing plate as it passes beneath the rolls, a member settable with reference to one or more of the ink rolls in the said series, and a member carried by the printing cylinder which may be set to render operative or inoperative the said settable member to move away the ink rolls out of contact with the printing plate as it passes underneath.

30. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, damping means for the said cylinder, inking means for the said cylinder, a cylinder carrying an offset surface, said cylinders constituting a printing couple, said offset cylinder being adapted to make a plurality of revolutions for each revolution of the plate-carrying cylinder, grippers carried upon the said offset cylinder, means for actuating said grippers at every rotation of the offset cylinder, and means which may be set to automatically throw said actuating means out of operative relation to the said grippers.

31. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, damping means for the said cylinder, inking means for the said cylinder, a cylinder carrying an offset surface, said cylinders constituting a printing couple, said offset cylinder being adapted to make a plurality of revolutions for each revolution of the plate-carrying cylinder, grippers carried upon the said offset cylinder, means for actuating said grippers to cause them to take a sheet, a cam for moving said actuating means, and means for putting the actuating means out of operative relation with the cam.

32. A printing press including in combination a cylinder carrying a plurality of planographic printing plates, damping means for the said cylinder, inking means for the said cylinder, a cylinder carrying an offset surface, said cylinders constituting a printing couple, said offset cylinder being adapted to make a plurality of revolutions for each revolution of the plate-carrying cylinder, grippers carried upon the said offset cylinder, means normally in position to actuate said grippers at each revolution of the offset cylinder to cause them to take a sheet, a cam for moving said actuating means out of operative relation to said grippers, and a member which may be moved into position to connect said cam and said actuating means or to disconnect the said cam from the said actuating means.

857,332. MACHINE FOR SPLITTING PIGS' FEET. JAMES CUNNING, Indianapolis, Ind. Filed Oct. 11, 1904. Serial No. 228,061.



Claim.—1. In a device of the character described, a table, a band-saw operating through said table, endless chains spaced apart and arranged to travel upon opposite sides of said band-saw parallel with the cutting plane thereof, means carried by said chains for feeding the material between them and against the saw, and means for causing the inner sides of said chains to approach and recede from said saw.

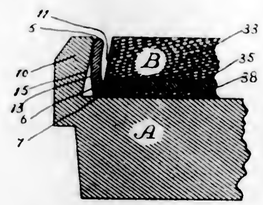
2. In a device of the character described, the combination with suitable supports carrying a band-saw and operating mechanism therefor, of a table provided with an aperture to receive said band-saw, endless conveyers formed of connected links arranged on each side of said band-saw and operated by the band-saw mechanism, said endless conveyers having an arched member extending from each link, and means carried by said table for regulating the distance between said conveyers.

3. In a machine of the class described, a table, a band-saw operating through said table, an endless chain on each side of the saw and traveling across the table and adapted to feed the material to the saw, a spring pressure plate adapted to yieldably bear on the material as it passes beneath the plate, and laterally projecting spurs extending from each chain and spaced at uniform distances to feed the material to the saw and to deliver the severed parts from the saw.

4. In a device of the class described, a table, a band-saw operating through said table, endless chains spaced apart and arranged to travel upon opposite sides of said band-saw parallel with the cutting plane thereof, the links of said chains provided with arching projections and with a plurality of said projections provided with lateral feeding spurs, and inwardly curving plates carried by said table and over which said arching projections are adapted to pass to cause the inner sides of the chains to travel in courses toward the saw at one side and away from the saw at the other side.

5. In a device of the class described, a table, a band-saw operating through said table, endless chains spaced apart and arranged to travel upon opposite sides of said band-saw parallel with the cutting plane thereof, the links of said chains provided with arching projections and with a plurality of said projections provided with lateral feeding spurs, inwardly curving plates carried by said table and over which said arching projections are adapted to pass to cause the inner sides of the chains to travel in courses toward the saw at one side and away from the saw at the other side, and a spring pressed pressure plate arranged between said chains and in advance of the saw and adapted to yieldably press upon the material passing beneath it.

857,333. MEANS OF ATTACHING DIALS TO WATCH-MOVEMENTS. FRANK R. CUNNINGHAM, Medford, Mass. Filed Dec. 2, 1905. Serial No. 290,005.



Claim.—1. A dial for time-pieces provided with a spring rim located substantially between the two planes coincident with the inner and outer faces of the dial, and capable of yielding toward the center of the dial.

2. A movement plate having a wall thereon, and a dial having a resilient periphery located substantially between the planes coincident with the inner and outer faces of the dial; said wall and periphery being made capable of mutual engagement by the yielding centrifugal pressure of said periphery.

3. A movement plate having a wall thereon, and a substantially flat dial having peripheral spring devices located within the plane of the dial and capable of centripetal yielding and of engagement with said wall.

4. A movement plate having a wall thereon, and a dial having a resilient periphery located substantially between the planes coincident with the inner and outer faces of the dial; said resilient periphery and wall being made capable of mutual engagement by the yielding centrifugal pressure of said periphery, and the latter having one or more interruptions therein.

5. A movement plate having an undercut wall thereon, and a dial having a resilient periphery located substantially between the planes coincident with the inner and outer faces of the dial and constructed to be sprung into engagement with said wall.

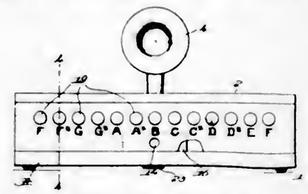
6. The combination with a movement plate having a wall thereon, of a dial substantially less in diameter than said wall, and having its outer surface approximately coincident with the edge of said wall, and a resilient metallic ring located between said dial and wall; said ring being permanently attached to said dial and disposed for resilient engagement with said wall.

7. The combination with a movement plate having a wall thereon, of a dial, and a resilient ring substantially L-shaped in cross section having its branch projecting inward and secured to said dial; said ring being substantially included between the two planes coincident with the inner and outer faces of the dial, and disposed to engage said wall and thereby hold the dial in place.

8. The combination with a movement plate having a wall thereon, of a dial substantially less in diameter than said wall, and a resilient metallic ring located between said dial and wall disposed for holding the dial in place therein; said wall being formed with a recess, and said ring being formed with a projection resiliently engaging said recess.

9. The combination with a movement plate having a wall thereon, of a dial substantially less in diameter than said wall, and a resilient ring thinner in section than the space between said dial and wall; said ring being secured at one edge to said dial and disposed to have its other edge elastically pressed against said wall.

857,334. TUNING INSTRUMENT. CHARLES P. DOLAN, Boston, Mass. Filed Mar. 27, 1907. Serial No. 364,790.



Claim.—1. In a device of the class described, a wind-chest, and a closed sound-chamber having a single outlet provided with a horn, a tube communicating with the wind-chest to deliver air thereto under pressure, a partition separating said wind-chest and sound chamber, and provided with a series of openings, a series of reeds supported on the partition adjacent the openings therein, valves slidably mounted on the partition to open and close the openings therein, and valve-operating handles connected with the valves and operative from the exterior of the sound-chamber.

2. In a device of the class described, a wind-chest having a single air-inlet, a juxtaposed sound-chamber having a single outlet, a partition dividing the chest and chamber and having a series of reed-openings therein, reeds mounted on the partition within the wind-chest and below the reed-openings, and valves co-operating with the said openings, slidably mounted on the partition and operative from the exterior of the sound-chamber.

3. In a device of the class described, a wind-chest having a single air-inlet, a juxtaposed sound-chamber having a single outlet, a partition dividing the chest and chamber and having a series of reed-openings therein, a series of blocks having reed-chambers therein mounted on the under side of the partition and each provided with a reed, the free end of each reed lying beneath a reed-opening, slide valves mounted on the top of the partition, to open or close the reed-openings, means to yieldingly retain a valve in open or closed position, and externally accessible stems connected with and to operate the valves.

4. In a device of the class described, a wind-chest provided with means to introduce thereto air under pressure, an adjacent sound chamber having a single outlet, a partition separating the wind-chest and sound-chamber and having a stop-shoulder and a series of reed-openings near the shoulder, slide-valves movable on the partition toward and from the shoulder, to open and close the reed-openings, means to operate the valves from the exterior of the apparatus, springs bearing on the valves to maintain them in open or closed position, and a series of reeds in the wind-chest and mounted on the partition with their free ends opposite the reed-openings therein.

5. In a device of the class described, a wind-chest having a single air-inlet, a juxtaposed sound-chamber having a single outlet, a partition dividing the chest and chamber and having a series of reed-openings therein, reeds mounted on the partition within the wind-chest and below the reed-openings, slide-valves mounted on the partition, to open and close the reed-openings therein, a common stop to limit closing movement of the valves, retaining devices yieldingly bearing on the valves to maintain them in open or closed position, and valve stems extended through the wall of the sound-chamber and having handles secured to their outer ends.

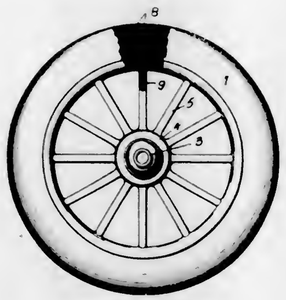
6. In a device of the class described, a wind-chest and a superposed sound-chamber, an outlet for the latter provided with a horn, a partition dividing said chest and chamber, and provided with a series of reed-openings, a flexible air-delivery tube connected with the wind-chest, means within the latter for distributing the air evenly therethrough, reeds within the wind-chest mounted on the partition below the reed-openings, and externally operated slide-valves mounted on the partition within the sound-chamber, to open and close the reed-openings.

7. In a tuning device, two sound-chambers, each having

a single outlet, an interposed wind-chest, means to deliver air thereinto under pressure, partitions separating the wind-chest from the sound-chambers, each partition having a series of reed-openings, co-operating valves, operative from the exterior of the apparatus, a series of chambered reed-blocks mounted on each partition within the wind-chest, and reeds carried by the blocks and having their free ends opposite the reed-openings, one set of reeds being tuned to concert and the other to international pitch, whereby by operating one or the other set of valves the device may be used for either pitch.

8. In a device of the class described, a wind-chest and an adjacent sound-chamber, the latter having a single emission opening, a partition dividing the chest and chamber and provided with a series of reed-openings, an air-delivery tube connected with the wind-chest, a metallic shield in the chest in front of the tube, to distribute the air and also to collect any incoming moisture, an escape valve for moisture collected by the shield, reeds within the wind-chest and mounted on the partition adjacent the reed-openings thereto, and externally operated slide-valves to open and close the reed-openings.

857,335. VEHICLE-WHEEL. FERDINAND EPHRAIM, San Francisco, Cal. Filed Nov. 21, 1905. Serial No. 288,460.



Claim.—1. An improved vehicle wheel comprising a metallic axle-box, a hub, spokes, felly and tire mounted upon said axle-box and composed of integral resilient material, the resiliency of the wheel being greatest in the tire, and least in the hub, the tire being provided with an interstitial web of strengthening material, substantially as described.

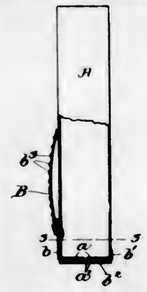
2. An improved vehicle wheel comprising a metallic axle-box, a hub, spokes, felly and tire mounted upon said axle-box and composed of integral resilient material, the resiliency of the wheel being greatest in the tire, and least in the hub, the tire being provided with an interstitial web of strengthening material, and the spokes being provided with metallic stiffening material embedded therein, substantially as described.

857,336. CARTON FOR NUTMEGS AND THE LIKE. JOHN B. FALLON, Jr., Boston, Mass. Filed June 4, 1906. Serial No. 320,005.

Claim.—1. A cardboard carton of the character described comprising a body portion and a metal grater attached to the carton and engaging two sides of the carton to reinforce the body portion.

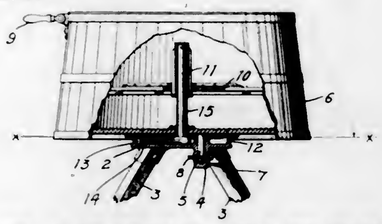
2. A cardboard carton of the character described comprising a body portion with end flaps and a grater held to the body portion by the end flaps and engaging two sides of the body portion to reinforce the body portion.

3. A cardboard carton of the character described comprising a body portion and a grater attached to the body portion and made of sheet metal bent to have two portions parallel and a third portion connecting the parallel portions, the two parallel portions engaging the two sides of



the carton, and the third portion engaging the end of the carton to reinforce the body of the carton.

857,337. WASHING-MACHINE. WILBERT C. FAWKES, Minneapolis, Minn. Filed June 14, 1906. Serial No. 321,683.



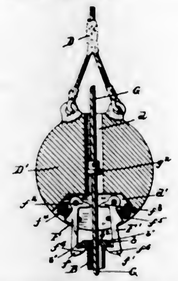
Claim.—1. The combination, with a base having supporting legs and a series of gear teeth, of a tub having an eccentric pivot on said base, a rubber shaft centrally mounted in said tub and provided with a rubber head and a segmental gear secured on said shaft and having its teeth in engagement with the gear on said base, the end teeth of said segmental gear being a greater distance from its axis than those teeth in the middle, whereby the movement of the tub will be slower and the leverage thereon greater at the end of a stroke in one direction and the beginning of the stroke in the other direction, and the middle teeth only being in engagement with the gear on said base when said tub is in the middle of its stroke, and the end teeth only of said segmental gear being in engagement with the corresponding teeth of said base gear when said tub is at the end of its stroke, substantially as described.

2. The combination, with a base having supporting legs, and a vertical flange on one edge provided on its inner face with a series of gear teeth, of a tub having an eccentric pivot on said base, a shaft centrally mounted in said tub and depending below the same and provided with a rubber head, the lower end of said shaft being near the axis of said tub, a segmental gear secured on said shaft, the end teeth of said base gear and said segmental gear being a greater distance from the center of said shaft than the middle teeth of said gears, and the end teeth only of said segmental gear being in engagement of the stroke of said tub and said shaft describing a partial revolution around the axis of said tub, and said segmental gear having recessed or concaved edges to receive said axis and thereby permit the increase of leverage on said shaft at the ends of the stroke, substantially as described.

3. The combination, with a base having supporting legs, of a tub having an eccentric pivot on said base, a rubber shaft centrally mounted in said tub and provided with a rubber head, and a gear mechanism connecting said shaft with said base whereby said rubber shaft will be revolved when said tub is oscillated and said gear mechanism having a greater leverage on said shaft and operating it at a slower speed at the beginning of the stroke of said tub

in each direction than during the middle part of the stroke of said tub, substantially as described.

857,338. AMUSEMENT APPARATUS. ARDEN S. FITCH, New York, N. Y. Filed Sept. 13, 1904. Renewed Nov. 21, 1906. Serial No. 344,499.



Claim.—1. In an amusement apparatus, the combination of a parachute-structure and means carried thereby to receive and sustain a weight, with means to elevate the parachute and its weight-sustaining means to a given height, and means to guide the same during a descent thereof.

2. In an amusement apparatus, the combination of a permanently and fixedly open or distended parachute-structure and means carried thereby to receive and sustain a weight, with means to elevate the parachute and its weight-sustaining means to a given height, and means to guide the same during a descent thereof.

3. In an amusement apparatus the combination of an elevatable parachute-structure provided with means to receive and sustain a weight and releasable to the action of gravity when elevated, with means to guide said parachute and its weight-sustaining means during a descent thereof, and means to retard the movement of the same during the latter part of said descent.

4. In an amusement apparatus, the combination of a parachute-structure and means carried thereby to receive and sustain a weight, with a fixed support of a determined height, means, operative on said support, to elevate the parachute and its weight-sustaining means, and means, carried by said support to guide the parachute and its weight-sustaining means in a descent thereof.

5. In an amusement apparatus, the combination of a permanently and fixedly distended parachute-structure and means for receiving and sustaining a weight, with a centrally located support, common to said parachute and its weight-sustaining means and upon which the same are respectively rigidly mounted.

6. In an amusement apparatus, the combination of a permanently and fixedly distended parachute-structure having a central support on which it is rigidly mounted, with means to receive and sustain a weight, comprising a platform, rods to support the same, a support, below said parachute, to which said rods are connected, and arms to rigidly unite said rod-support to said central support of said parachute.

7. In an amusement apparatus, the combination of a parachute-structure and means carried thereby to receive and sustain a weight, a fixed support of a determined height, a hoisting-cable, operatively mounted on said support and provided with means to engage said parachute to elevate the same and its weight-sustaining means on said support, and to release them from it at the conclusion of an ascent thereof, and means carried by said support, common to and to guide said parachute and hoisting-cable in the operative movements thereof.

8. In an amusement apparatus, the combination of a parachute-structure comprising a centrally-supporting longitudinally-extended sleeve and means carried by said parachute to receive and sustain a weight, with means to elevate said parachute and its weight-sustaining means to a given height, and a fixedly mounted guide-rope to play in said parachute-sleeve to guide said parachute and its weight-sustaining means in the operative movements thereof.

9. In an amusement apparatus, the combination of a parachute-structure comprising a centrally supporting longitudinally extended sleeve and means carried by said parachute to receive and sustain a weight, a fixed support of a determined height, a hoisting-cable operatively mounted on said support, an apertured counter-weight and means, carried by said cable, to detachably engage said parachute to elevate the same and its weight-sustaining means, a fixedly mounted guide-rope, carried by said support, to play in said parachute-sleeve and counter-weight to guide the same in their operative movements, and means to disengage said cable-engaging means from said parachute at the conclusion of an ascent thereof.

10. In an amusement apparatus, the combination of a parachute-structure comprising a central support and means carried by said support for receiving and sustaining a weight, there being a flange on the upper end of said central support, a hoisting-cable operatively mounted to elevate said parachute and its weight-sustaining means, a counter-weight, on said cable, a clutch-device carried by said counter-weight to detachably engage the flange on said parachute central support, and means to disengage said clutch-device from said flange at the conclusion of an ascent of said parachute.

11. In an amusement apparatus, the combination of a parachute-structure comprising a central support and means carried thereby to receive and sustain a weight, with a hoisting-cable operatively mounted to elevate said parachute and its weight-sustaining means, a counter-weight carried by said cable, a clutch-device carried by said counter-weight to detachably engage said central support of the parachute, and a fixedly mounted guide-rope common to and to guide said parachute and said cable counter-weight in the operative movements thereof, together with a stop carried by said guide-rope to release said clutch-device from said parachute-support at the conclusion of an ascent by said parachute.

12. In an amusement apparatus, the combination of a parachute-structure comprising a central supporting-sleeve with a constricted opening at its upward end, and means carried by said parachute to receive and sustain a weight, with a fixedly mounted guide-rope to play in said sleeve and guide said parachute in its operative movements, and a piston-piece rigidly mounted on said guide-rope to enter and work in said sleeve, at the lower end thereof, to compress the air therein.

13. In an amusement apparatus, the combination of a parachute-structure comprising a central supporting-sleeve and means carried thereby to receive and sustain a weight, with a fixed support of a determined height, and a guide-rope to play in said parachute supporting-sleeve to guide said parachute in its operative movements, said rope being secured at one end to said fixed support and at the opposite or lower end anchored to the ground.

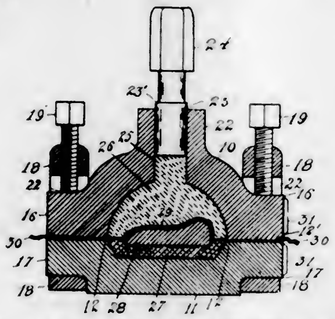
14. In an amusement apparatus the combination of a parachute-structure and means to receive and sustain a weight, with a fixed support of a determined height, carrying operative means to elevate said parachute thereon, and a guide-rope to guide said parachute in its operative movements, rigidly connected at one end to said fixed support and at the opposite or lower end to a screw-link anchored in the ground.

15. In an amusement apparatus, the combination of a parachute-structure and means to receive and sustain a weight, with a fixedly mounted guide-rope to guide said parachute in its operative movements and a spring-platform located on the ground about the anchorage of said guide-rope therein.

16. An amusement apparatus comprising a series of parachute-structures each carrying means to receive and sustain a weight, a fixed support of a determined height common to all the parachutes of the series thereof, means, operatively mounted on said support, to severally elevate the parachutes thereon, means, carried by said support, to individually guide each parachute of the series thereof during its descent when released from the action of said

elevating means, and means severally operative to individually retard the movement of each said parachute during the latter part of its said descent.

857,339. DENTAL-PLATE SWAGE. GRANT E. FREEBORN, Belfast, N. Y. Filed Feb. 12, 1906. Serial No. 300,789.



Claim.—1. A dental plate swage composed of upper and lower parts, said parts having a plane of separation therebetween on the line of the plate, a binding joint uniting said parts which allows of horizontal movement in any direction in separating the same, a forming compound within said parts, and means for compressing said compound on the plate and die.

2. In a dental plate swage, a hollow base comprising upper and lower portions, lugs on said portions, an outwardly opening angle in the joint between said parts, clamps to engage said lugs and form a binding joint by closing said angle between said parts, a tubular opening in said upper portion, a plunger operable in said opening, a suitable die and compound for counter-die within said base, and a sheet of rubber between said die and counter-die and binding joint.

3. A dental plate swage composed of upper and lower parts, a flat joint between said parts slightly opening toward the exterior, a clamping means to close said slight opening and form a binding joint between the parts, a forming compound within said swage, a tubular opening in said upper part, a plunger operable in said opening to compress said compound onto the plate, said plunger having a reduced portion next to the head, substantially as and for the purpose specified.

4. In a dental plate swage, a hollow base comprising a cup-shaped lower portion having a flat upper face around said cup, a hollow upper portion having its lower edge beveled outwardly at an upward angle to form a binding joint with said lower portion, lugs on said portions, clamps for said lugs to form said binding joint, a tubular opening in said upper portion, a plunger operable in said opening having a shoulder to gage the amount of compression, a suitable die and compound for counter-die within said hollow base, and a sheet of flexible material between said die and extending out through said binding joint to form a packing.

857,340. THILL-COUPLING. JOHN F. GALVIN, New York, N. Y. Filed Jan. 2, 1907. Serial No. 350,367.



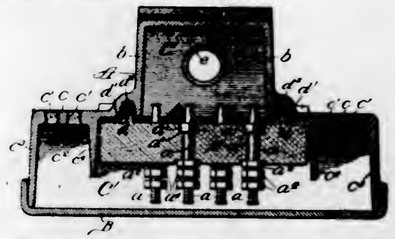
Claim.—1. In a thill coupling, a draft-eye formed of a fixed jaw and a movable jaw, each jaw having a spherical recess therein, a spherical knuckle fitting in said recesses, and an interposed packing consisting of two cup-shaped members permanently connected together.

2. In a thill coupling, a draft-eye consisting of a fixed jaw and a movable jaw, said jaws being provided with spherical recesses, a draft-eye having a spherical knuckle on the end thereof fitting into said recesses, and an interposed metal packing consisting of two cup-shaped or spherical main members connected together by a neck.

3. A packing for a thill coupling, consisting of two cup-shaped metal members, the concave portions thereof facing each other, said members being connected together by a metal strip, said packing being adapted to fit around a spherical knuckle of a coupling.

4. A packing for a thill coupling, consisting of two cup shaped members formed out of sheet metal, the concave portions of these two sheet metal members facing each other, said members being connected together by a narrow metallic strip formed integral with the sheet metal members, said packing being adapted to fit around a spherical knuckle of a thill coupling.

857,341. TERMINAL-BOX FOR ELECTRIC CABLES. SERGIUS P. GRACE and RICHARD A. L. SNYDER, Pittsburg, Pa., assignors to Western Electric Company, Chicago, Ill., a Corporation of Illinois. Filed Aug. 3, 1906. Serial No. 329,000.



Claim.—1. A terminal box for electric cables, comprising a casing forming a chamber for receiving the cable ends, a block forming a cover for said chamber, terminal posts mounted in said block, wings extending at an angle from the front of each side of said casing, said wings being provided with openings through which electric conductors may be led to the said terminal posts, and a cover for said wings and terminal block.

2. A terminal box for electric cables, comprising a casing forming a chamber for receiving the cable end, a block forming a cover for said chamber, terminal posts mounted in said block, wings upon each side of said chamber extending at right angles from the front edges of said casing, said wings being provided with openings through which a subscriber's line may extend to said terminals, and a cover for said wings and terminal block.

3. A cable-terminal box having a chamber for receiving the cable ends, said chamber being open at its front, flanges extending outwardly at approximately right angles from the front edges of the walls of said chamber, said flanges being provided with a groove extending around said opening of the chamber, and a plate provided with a rib adapted to fit in said grooves, said plate forming a terminal mounting block and serving as a cover for said rear chamber.

4. A cable-terminal box having a chamber for receiving the cable ends, said chamber being open at its front, flanges extending outwardly at approximately a right angle from the front edges of the walls of said chamber, said flanges being provided with a groove extending around said opening of the chamber, a flexible gasket in said groove, and a plate provided with a rib adapted to enter said groove and rest upon said gasket, said plate being adapted to seal said chamber and to form a terminal mounting block.

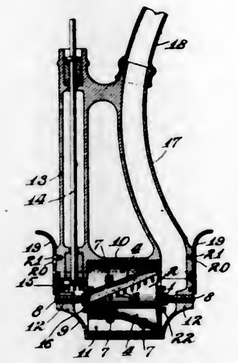
5. A cable-terminal box having a rear chamber opening into a front chamber of greater width than said rear chamber, the rear wall of said front chamber being provided with a groove surrounding said opening, and a plate provided with a rib adapted to fit in said groove, said plate being adapted to close said rear chamber and to form a terminal mounting block.

6. A cable-terminal box having a rear chamber opening into a front chamber of greater width than said rear chamber, a plate covering the opening between said chambers, terminal posts mounted in said plate, the rear wall of said front chamber being provided with openings through which conductors may be led to said terminal posts.

7. A cable-terminal box having a rear chamber opening into a front chamber of greater width than said rear chamber, two parallel ribs extending vertically on the rear wall of said front chamber, and a plate resting on said rear wall between said ribs, said plate closing said rear chamber and forming a terminal mounting block.

8. A cable-terminal box having a rear chamber and a front chamber extending upon each side of said rear chamber, said front chamber being provided in its rear wall, on each side of the rear chamber, with a series of holes, and ribs lying between said holes and the opening to the rear chamber, a plate resting on said rear wall between said ribs to close the rear chamber, terminal posts mounted in said plate, and a cover for said front chamber.

857,342. RAZOR. JOHN GREEN, St. Louis, Mo., assignor to Theodore W. Remmers, St. Louis, Mo. Filed July 5, 1906. Serial No. 324,729.



Claim.—1. A razor comprising a shaft, means for actuating said shaft, a helical blade and a helical guard therefor mounted to rotate with said shaft, and a casing having a slot through which said blade is operative, said casing having an ejection duct at its end.

2. A razor comprising a shaft, means for actuating said shaft, helically arranged curved guards mounted on said shaft, helical blades mounted on said guards with their cutting edges extending beyond said guards, and a casing having a slot through which said blades are operative.

3. A razor comprising a shaft, means for actuating said shaft, guards on said shaft, curved flexible blades having marginal spacing ribs bearing against said guards, adjusting screws for clamping said blades to said guards, and a casing having a slot through which said blades are operative.

4. A motor actuated razor comprising a separable casing, a shaft provided with razor blades mounted therein, means for actuating said shaft, guards for said blades, and means to facilitate the stropping of said blades, said means comprising counterpart bearings and gears at each end of said shaft arranged to permit said shaft to be turned end for end.

5. A motor actuated razor comprising a casing, a shaft mounted therein and carrying razor blades and guards therefor, means for actuating said shaft, and means for facilitating the stropping of said blades, said means comprising adjustable pins mounted in said casing and arranged to constitute bearings for said shaft and counterpart coned bearings at the ends of said shaft to coöperate therewith, whereby said shaft may be turned end for end.

6. A motor actuated razor comprising a slotted casing composed of separable members, a shaft carrying razor blades and guards therefor, and means for facilitating the stropping thereof, said means comprising adjustable pins mounted in said casing and arranged to constitute bearings for said shaft and coned bearings therefor in the ends of said shaft, whereby said shaft can be turned end for end.

7. A motor actuated razor comprising a shaft having razor blades and guards therefor, means for actuating said shaft, and a separable casing in which the same are arranged, one member of said casing having flat slotted springs and the other member having pins to engage therewith.

8. A razor comprising a shaft and means for actuating said shaft, blades and guards therefor mounted to rotate with said shaft and a casing having a slot through which said blade is operative and having an ejection duct, parts of said casing being arranged to constitute a handle for manipulating the device.

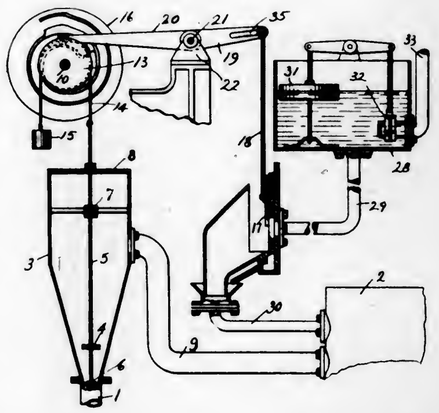
9. A razor blade comprising a flexible body portion having holes in its middle portion and integral longitudinal ribs on one side thereof along its margins, substantially as and for the purpose set forth.

10. A razor blade comprising a curved flexible body portion having integral marginal ribs arranged longitudinally on the concave side thereof.

11. A blade for a motor actuated razor comprising a flexible helical body portion of curved section provided with integral marginal ribs arranged longitudinally thereof on the concave side.

12. In a motor actuated razor, a helical guard of curved section and a flexible helical blade of curved section adjustably secured thereto.

857,343. AUTOMATIC FLOW-REGULATOR FOR LIQUIDS AND GASES. JOHN H. GREGORY and WALTER W. JACKSON, Columbus, Ohio, and FREDERICK N. CONNET, Providence, R. I., assignors to Builders Iron Foundry, Providence, R. I., a Corporation. Filed July 6, 1905. Serial No. 268,376.



Claim.—1. A device for supplying liquids or gases, comprising a main supply pipe, an auxiliary supply pipe, a valve controlling the flow from said latter pipe, and means actuated by the velocity of flow through said main to regulate the amount of opening of said valve and so automatically regulate the flow from said supply pipe.

2. In a device for supplying liquids or gases, a main supply pipe, an auxiliary supply vessel, an auxiliary valve to control the flow from said vessel, a main valve actuated by the velocity of flow through said main pipe, and means whereby the movement of said main valve will regulate the

amount of opening of said auxiliary valve to automatically regulate the supply from said auxiliary vessel.

3. A device for supplying liquids or gases, comprising a main supply pipe, a chamber communicating with said pipe, an auxiliary supply vessel, an auxiliary valve to control the flow from said vessel, a valve in said chamber actuated by the velocity of flow through said main pipe, and means whereby the movement of said latter valve will regulate the amount of opening of said auxiliary valve to automatically control the supply from said auxiliary vessel.

4. A device for supplying liquids or gases comprising a main supply pipe, a chamber communicating with said pipe, an auxiliary supply vessel, an auxiliary valve to control the flow from said vessel, a valve in said chamber and adapted to be moved a distance proportionate to the velocity of the flow therethrough, and means whereby the movement of said main valve will regulate the amount of opening of said auxiliary valve to automatically control the supply from said auxiliary vessel.

5. In a device of the character described, a main supply pipe, a valve chamber communicating with said pipe, an auxiliary supply vessel, a gate to control the flow from said vessel, a valve in said chamber adapted to be moved a distance proportionate to the velocity of the flow therethrough, and means whereby the movement and position of said valve will move and determine the position of said gate so that the quantity drawn from said chamber will be automatically proportioned to the quantity passing through the main pipe.

6. In a device for supplying liquids or gases, a main supply pipe, an auxiliary supply pipe, a valve chamber, a valve capable of being raised by the flow into said chamber, and means including a tapered portion in said chamber whereby said valve will be raised in a predetermined ratio to the velocity of the flow through said main and means operated by the action of said valve to control the flow from said auxiliary supply.

7. In a device for supplying liquids or gases, a main supply pipe, a valve, a valve chamber provided with a tapering portion in which said valve works, said chamber communicating with said supply pipe, an auxiliary supply vessel, said valve arranged to be raised by the pressure in the main pipe, and means controlled by the working of said valve to operate gates and automatically regulate the flow from the said auxiliary supply.

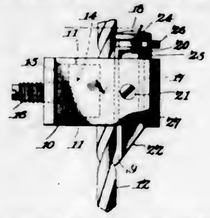
8. In a device for supplying liquids or gases, a main supply pipe, an auxiliary supply vessel, a chamber connected to said supply pipe through which chamber the contents of said main supply pipe pass, a valve operated by the flow through said chamber, and means whereby the action of said valve operates a rotatable cam to open and close gates and automatically regulate the flow from the auxiliary supply.

9. In a device for supplying liquids or gases, a main supply pipe, an auxiliary pipe, a valve, a valve chamber provided with a tapered portion in which said valve works, said chamber being connected to said main pipe so that the contents of said pipe must flow through said tapered portion, said valve being arranged to rise a distance in proportion to the velocity of the flow and means including a rotatable cam to operate gates and automatically control the flow from said auxiliary supply so that the quantity drawn from the latter will always be proportioned to the quantity passing through said main.

857,344. COMBINED COUNTERSINKING AND COUNTERBORING ATTACHMENT. JOHN H. HENRY, Brattleboro, Vt. Filed June 25, 1906. Serial No. 323,355.

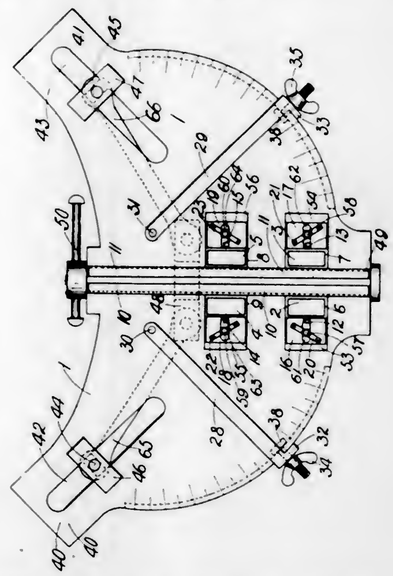
Claim.—1. A countersink comprising a body portion having a bit opening and a cutter opening which merge at adjacent sides, a cutter mounted for longitudinal adjustment in the cutter opening, the sides of which serve as guides for the cutter, and a bit clamping block mounted for lateral movement in the body portion.

2. A countersink comprising a body portion having adjacent bit and cutter opening, a cutter located in the cutter opening, a bit clamping block located in the body portion, said body portion having a chip exit recess communicating



with the cutter opening and terminating at the outer side of the body portion.

857,345. COMBINED MITER-BOX AND CRAMP. HARRY HILL and JAMES BLAIN, Dunedin, New Zealand. Filed Dec. 31, 1906. Serial No. 350,262.



Claim.—1. A miter box and cramp comprising in combination a baseplate having side extensions with slots therein, saw guides mounted centrally across said baseplate, adjustable fences pivoted on said baseplate, means for clamping said fences in desired position, a central screw journaled beneath said baseplate and provided with an operating handle, a nut traveling on said screw, clamps pivoted to pins projecting through and traveling in the slots in said extensions, and arms extending beneath said basepiece pivoted at one end to said nut and at the other end to said pins substantially as described.

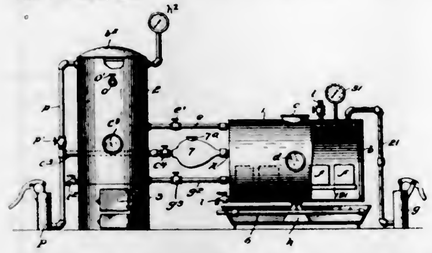
2. A miter box and cramp comprising in combination a baseplate having its back edges formed as arcs of circles and having side extensions with slots therein, saw guides mounted centrally across said baseplate, longitudinally slotted flanges formed on said back edges of said baseplate, adjustable fences pivoted at their inner ends on said baseplate at points corresponding to the centers of said circles and having their outer ends turned down over said flanges, means on the adjustable fences for engaging the slots for clamping said ends to said flanges, a central screw journaled beneath said base plate and provided with an operating handle, a nut traveling on said screw, clamps

pivoted to pins projecting through and traveling in the slots in said side extensions and arms extending beneath said basepieces pivoted at one end to said nut and at the other end to said pins substantially as described.

3. A miter box and cramp comprising in combination a baseplate having its back edges formed as arcs of circles and having side extensions with slots therein, sawguides mounted centrally across said baseplate, said sawguides consisting of a pair of uprights at each side of the sawpath carrying adjustable sliding brackets fitted with strips of wood or the like said uprights having footpieces sliding laterally and adjustable in recesses formed in said baseplate, longitudinally slotted flanges formed on said back edges of said baseplate, adjustable fences pivoted at their inner ends on said baseplate at points corresponding to the centers of said circles and having their outer ends turned down over said flanges, means on the adjustable fences for engaging the slots for clamping said ends to said flanges, a central screw journaled beneath said baseplate and provided with an operating handle, a nut traveling on said screw, clamps pivoted to pins projecting through and traveling in the slots in said side extensions and arms extending beneath said baseplate pivoted at one end to said nut and at the other end to said pins substantially as described.

4. A miter box and cramp comprising in combination a baseplate having its back edges formed as arcs of circles and having side extensions with slots therein, saw guides mounted centrally across said baseplate said sawguides consisting of a pair of uprights at each side of the sawpath carrying adjustable sliding brackets fitted with strips of wood or the like said uprights having also foot pieces sliding laterally and adjustable in recesses formed in said baseplate, longitudinally slotted flanges formed on said back edges of said baseplate, adjustable fences pivoted at their inner ends on said baseplate at points corresponding to the centers of said circles, and having their outer ends turned down over said flanges, means on the adjustable fences for engaging the slots for clamping said ends to said flanges, a central screw journaled beneath said baseplate and provided with an operating handle, a nut traveling on said screw, clamps pivoted to pins projecting through and traveling in the slots in said side extensions, arms extending beneath said baseplate pivoted at one end to said nut and at the other end to said pins and wedge-pieces with stepped outer faces adapted to fit on said clamps substantially as described.

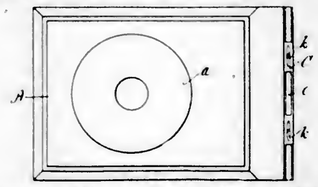
857,346. PRESERVING APPARATUS. WILLIAM G. HOLDEN, Corpus Christi, Tex. Filed Aug. 8, 1906. Serial No. 329,792.



Claim.—1. In an apparatus for preserving fruit and the like, a vacuum tank for containing the material to be treated, a pivotal support for the tank upon which the latter may be tilted, a heater for the vacuum tank, an air-exhaust pump and connections therefrom to the vacuum tank, a syrup tank, a heater, an air-pressure pump for said syrup tank, and connections from the syrup tank to the vacuum tank.

2. An apparatus for preserving fruit and the like comprising a vacuum tank, a heater and air-exhaust pump for the vacuum tank, a syrup tank, a heater and an air pressure pump for the syrup tank, a sprayer in the vacuum tank, a connection from the sprayer to the syrup tank, another connection between the vacuum and syrup tanks for delivering syrup to the vacuum tank in bulk, a powdered-sugar receptacle having direct and unobstructed connection with the interior of the vacuum tank, and connections between said receptacle and the air pressure pump.

857,347. ADJUSTABLE FRAME FOR DOOR LOCKS AND LATCHES. JOHN HOPE, Jr., Edgewood, R. I., assignor to Hope Lock Company, Providence, R. I., a Corporation of Rhode Island. Filed July 31, 1905. Renewed Apr. 25, 1907. Serial No. 370,308.



Claim.—1. A rigid lock or latch frame provided with an outer plate, and connected front plate extending across the edge of the door, and an inner plate secured to the front plate, a tie-piece which extends transversely between the outer and inner plates and is secured thereto, and extends forward to engagement with the front plate, the said front plate being perforated to receive the fastening screws, whereby the necessity for the employment of fastening screws through the side plates of the frame will be avoided.

2. A lock or latch frame provided with an outer plate, and connected front plate extending across the edge of the door, and an inner plate secured at its forward end to the end of the front plate, and a tie-piece which extends transversely between the outer and inner plates and is secured thereto, and extends forward to engagement with the front plate, and is adapted to hold the inner and outer plates firmly together.

3. In a lock or latch frame, the combination of the outer plate, the front plate, and the inner plate, with a tie-piece adapted to hold the inner and outer plates firmly together, the said tie-piece being provided with the hollow arms extending to the rear side of the front plate, to receive the fastening screws, the said screws passing through the front plate and through the hollow arms of the said tie-piece.

4. A lock or latch frame comprising an outer plate provided with an inwardly extending lug, and a front plate extending across the edge of the door, and an inner plate secured at its forward end to the front plate, and having an inwardly extending lug, in combination with a tie-piece secured to the lugs of the inner and outer plates, and extending forward to engage the front plate, and constructed to receive the fastening screws, said screws passing through the front plate and through the said tie-piece.

5. A lock or latch frame provided with an outer plate, a front plate extending across the edge of the door, and an inner plate secured to the front plate, a tie piece secured to the said inner and outer plates, and extending transversely between the same, and forward to engagement with the front plate, a door having a notch made therein, and screws for fastening the said tie-piece to the bottom of the notch made in the door, whereby a proper bearing will be secured for holding the lock or latch frame rigidly to the door without requiring supporting screws through the side plates.

6. A rigid lock or latch frame made of greater width than the thickness of the door to which it is to be applied, in combination with an automatically adjustable rim-plate, extending around the inner edge of the inner plate of the frame, whereby the said rigid lock or latch frame is made applicable to doors of different thicknesses.

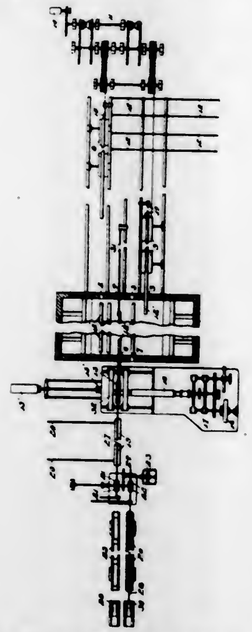
7. An automatically adjustable rim-plate in combination with a rigid lock or latch frame, the said rim-plate extending around the inner edge of the inner plate of the frame.

and bearing against the side of the stile of the door, whereby the said rigid frame is made applicable to doors of different thicknesses.

8. The combination of a rigid lock or latch frame comprising outer and inner plates, and a front plate extending across the edge of the door, with the automatically adjustable rim-plate extending around the inner edge of the inner plate of the frame, and cut away at its forward end to provide for the front plate.

9. The combination of a rigid lock or latch frame comprising outer and inner plates, and a front plate extending across the edge of the door, with the spring-actuated rim-plate extending around the inner edge of the inner plate of the frame, and means for limiting the forward movement of the rim-plate under the action of the springs.

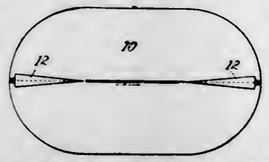
857,348. APPARATUS FOR MANUFACTURING TUBES. SIGMUND V. HUBER, Pittsburg, Pa. Filed July 29, 1904. Serial No. 218,737.



Claim.—In a tube mill, a transversely movable set of rolls and separate stationary means for withdrawing mandrel bars from their position relative to the rolls, the said set of rolls adapted to be brought into alinement with the said withdrawing means.

857,349. WITHDRAWN.

857,350. BOILER-COVER. MYER KAMENSTEIN, New York, N. Y. Filed Apr. 15, 1907. Serial No. 368,269.

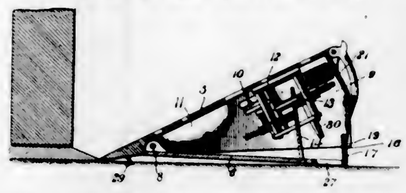


Claim.—1. A sheet metal cover having depressed sections flattened against the side of the cover, substantially as specified.

2. An oblong sheet metal cover having a pair of depressed triangular sections, at opposite ends of its major axis, flattened against the lower side of the cover, substantially as specified.

3. An oblong sheet metal cover having a pair of depressed and peripherally notched sections, at opposite ends of its major axis, flattened against the lower side of the cover, substantially as specified.

857,351. WIRELESS BURGLAR-ALARM. FREDERICK KELLER, Paterson, N. J., assignor of one-third to Charles E. Roberts and one-third to Bernhard Petzold, Paterson, N. J. Filed Oct. 10, 1906. Serial No. 338,289.



Claim.—1. In a burglar alarm, a casing formed of a plurality of pivotally united sections one of which constitutes a supporting base, means for sounding the alarm when one of the sections is depressed, means for locking the movable section in operative and inoperative position, and an impaling member pivotally mounted for swinging movement on one of the sections of said casing.

2. In a burglar alarm, a casing formed of pivotally united sections one of which constitutes a supporting base, alarm mechanism arranged within the casing and including a vibrating hammer, a stop-pin carried by the base for locking the hammer against vibration when one of said sections is elevated and adapted to permit free movement of the hammer when said section is depressed, means for locking the movable section in elevated and depressed position, and an impaling member pivotally mounted on one of the sections of the casing, and hooks carried by the impaling member and adapted to engage the adjacent casing section when said impaling member is moved to operative position.

3. In a burglar alarm, a casing formed of pivotally united sections one of which constitutes a supporting base, alarm mechanism arranged within the casing and actuated to sound the alarm when one of said sections is depressed, lugs extending laterally from the casing, and an impaling member pivotally mounted between the lugs.

4. In a burglar alarm, a casing formed of pivotally united sections one of which constitutes a supporting base, alarm mechanism arranged within the casing and actuated to sound an alarm when one of said sections is depressed, and an impaling member pivotally mounted on the casing and provided with a hook adapted to engage the casing when said member is moved to operative position.

5. In a burglar alarm, a casing formed of pivotally united sections one of which constitutes a supporting base, alarm mechanism arranged within the casing and actuated to sound an alarm when one of the sections is depressed, said casing having one end thereof inclined and provided with spaced lugs, and an impaling member pivotally mounted for swinging movement between the lugs and provided with a hook adapted to engage the casing when the member is swung upwardly to operative position.

6. In a burglar alarm, a casing formed of pivotally united sections one of which constitutes a supporting base, alarm mechanism arranged within the casing and actuated to sound an alarm when one of said sections is depressed, a lug extending vertically from a supporting base and provided with spaced notches, a spring depending from the upper section of the casing and provided with an inwardly extending lip adapted to engage the notches in the lug for locking the movable section in operative and inoperative position and an impaling member pivotally mounted for swinging movement on one section of said casing.

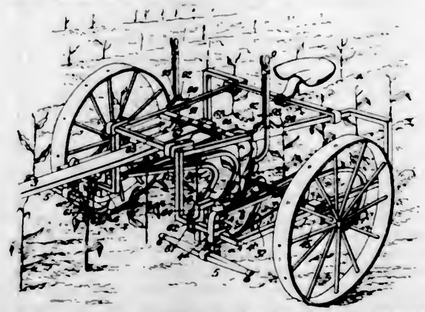
7. In a burglar alarm, a casing formed of pivotally united sections one of which constitutes a supporting base, alarm mechanism arranged within the casing and including a vibrating hammer having a laterally extending arm, a stop-pin extending vertically from the supporting plate and provided with an off-set portion adapted to engage the arm of the hammer when the upper section of the casing is elevated, and an impaling member pivotally mounted for swinging movement on one of said sections, said hammer being free to vibrate and sound an alarm when the movable section is depressed.

8. In a burglar alarm, a casing formed of a plurality of pivotally united sections one of which constitutes a supporting base, alarm mechanism carried by one of the sections and actuated to sound an alarm when said section is depressed, a lug extending vertically from the free end of the supporting base and provided with a plurality of spaced notches, there being a finger opening formed in the supporting base at said lug, and a spring arm depending from the upper section and provided with a laterally extending lip adapted to engage the notches in the lug for locking the sections in operative and inoperative position.

9. In a burglar alarm, a substantially triangular shaped casing formed of a plurality of pivotally united sections one of which constitutes a supporting base and is provided at its free end with a vertically disposed lug having spaced notches formed therein, the opposite section having its reduced end provided with a rearwardly extending spur and its opposite end inclined and provided with spaced lugs, alarm mechanism arranged within the casing and actuated to sound the alarm when one of said sections is depressed, an impaling member pivotally mounted between the lugs and provided with means for engagement with a casing when the member is swung vertically to operative position, and a spring arm depending from one of the sections and provided with a laterally extending lip adapted to engage the notches in the lug, there being a finger-opening formed in the supporting base at said lug.

10. In a burglar alarm, a substantially triangular shaped casing formed of a plurality of pivotally united sections one of which is provided with a chamber and the other with a pair of spaced vertically disposed lugs, a pin extending transversely across the casing and forming a pivotal connection between said sections, alarm mechanism arranged within the chamber and actuated to sound an alarm when one of said sections is depressed, a lug extending vertically from the free end of the lower section and provided with spaced notches, there being a finger-opening formed in said section in advance of the lug, and a spring arm depending from the upper section and provided with a laterally extending lip adapted to engage said notches.

857,352. CULTIVATOR. HENRY E. KLINE, Terre Haute, Ind., assignor of one-third to Henry Meyer, Terre Haute, Ind. Filed Feb. 8, 1907. Serial No. 356,434.

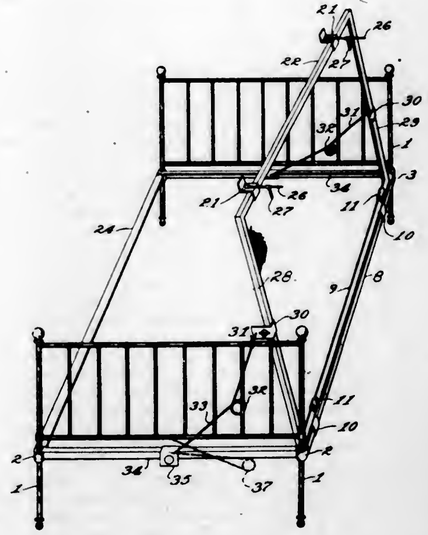


Claim.—1. In a cultivator of the character described, a main frame formed of a single piece of bar iron, the ends of which are divergingly extended to form upper side bars, then pendently extended to form rear members, then forwardly extended in parallel planes, then bent inwardly at right angles toward each other to form lower front bars, then bent upwardly into a yoke shape, the cross bar of the yoke being fastened to two ends of the bar, substantially in the manner shown and described.

2. In a cultivator of the character described, the combination with the arched front frame and the laterally extended front members, the parallel side members, the rear vertical members and the upwardly diverging members having the front ends secured to the cross bar of the arch frame and a supplemental and horizontally slotted cross bar mounted on the diverging bars; of the tongue pivotally mounted on the cross bar of the arch, having its rear end extended through the slotted cross bar, means for receiving the said end in the slot, a supporting wheel, the swingle tree connections on the lower front frame members, and means for connecting the plow gangs to the lower front frame members and for shifting the gangs laterally and vertically with respect to the frame, all being arranged substantially as shown and described.

3. In a cultivator of the character described, the combination with one of the upper and lower side sections comprising a longitudinally extended side bar, a rear vertical member, a front horizontal and vertical member, and a diagonally disposed upper member connected at the ends with the vertical members of the frame; of the supporting wheel adjustably mounted on the side bar, the swingle tree adjustably mounted in the front member, the plow gear connection box adjustably mounted on the front frame member, said connection including a laterally swinging and vertically shiftable clip head, the plow gang pivotally connected to said clip head and means for shifting the plow gang vertically and laterally with respect to the frame, as set forth.

857,353. TILTING BED-SPRING. ARTHUR LAWRENCE, Chicago, Ill. Filed Jan. 25, 1907. Serial No. 354,053.



Claim.—1. The combination of a bedstead having a side rail, a bed-spring frame, a pair of adjustable clamp jaws removably engaging one of the side rails of the bedstead.

and an attaching member hinged to said clamp jaws and secured to the bed-spring frame, one of said clamp jaws having both a vertical and a horizontal adjustment relatively of its companion jaw.

2. The combination of a bedstead and a bed-spring having adjoining side rails on each side, one side rail of said bed-spring having a hinge connection with the adjacent side rail of the bedstead, and a pair of adjustable clamp jaws removably engaging the opposite side rail of the bed-spring, one of said clamp jaws being provided with a projection adapted to bear upon the adjacent side rail of the bedstead and thereby support the bed-spring in normal position, and one of said clamp jaws having both a vertical and a horizontal adjustment relatively of its companion jaw.

3. The combination of a bedstead and bed-spring frame, each having side rails, a pair of adjustable clamp jaws removably engaging one of the side rails of the bedstead and a second pair of adjustable clamp jaws hinged to the first pair and removably engaging the adjoining side rail of the bed-spring frame, one of the clamp jaws of each pair having both a vertical and a horizontal adjustment relatively of its companion jaw.

4. The combination of a bedstead and bed-spring frame, each having side rails, a pair of adjustable clamp jaws removably engaging one of the side rails of the bedstead and a second pair of adjustable clamp jaws hinged to the first pair and removably engaging the adjoining side rail of the bed-spring frame, one of the clamp jaws of each pair having an adjustment relatively of its companion jaw in two different planes at an angle to each other.

5. The combination of a bedstead and a bed-spring frame, having adjoining side rails on each side, each of said rails being formed of angle iron, a clamp connecting the adjoining rails on one side, said clamp consisting of a pair of angular arms, one of said arms being adapted to engage two faces of the side rail of said bed-spring, and the other of said arms adapted to engage two faces of the side rail of said bedstend, each of said arms being provided with an adjustable clamping member adapted to secure said arm against shifting upon the rail engaged thereby, said arms having a hinge-connection adapted to permit the bed-spring frame to be swung on such connection from a horizontal toward a vertical position.

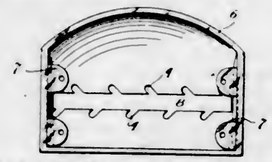
6. The combination of a bedstead and a bed-spring frame, each having adjoining side rails on one side, said rails being formed of angle iron, a clamp connecting said adjoining rails and comprising two angular parts hinged together to form a widened W in cross-section, with the arms of said W at substantially right angles to each other, and an adjustable clamping member co-acting with each of said angular parts for rigidly securing said angle irons to said parts.

7. In a device of the class described, the combination of a pair of angle iron rails with a clamping member consisting of two angular arms pivotally connected together, and adapted to pivotally and detachably connect said rails, each of said arms having a slot extending at an angle to the axis of said pivotal connection, a bolt seated in, and adjustable lengthwise of each of said slots and carrying clamping members adapted to bear against one face of the slotted member, and against the opposite face of one of said rails.

8. In a device of the class described, the combination of a pair of angle iron rails, with a clamping member consisting of two angular arms hinged together, said arms each having one of its ends hooked and adapted to engage one edge of one of said rails, and adjustable jaws on said members adapted to engage the opposite edges of said rails.

9. The combination of a bedstead and a bed-spring frame pivoted together at one side and provided with end rails, clamps removably engaging said end rails of the bedstead and the spring frame respectively, a pair of spring arms each pivotally secured to one of said clamps and said arms being connected at their meeting ends by a spring adapted to normally extend said arms so as to hold the bedspring frame in a raised position on its pivotal connection.

857,354. DRAFT DEVICE FOR FURNACES. JOHN T. MAZEY, Coventry, England. Filed Apr. 4, 1907. Serial No. 366,255.

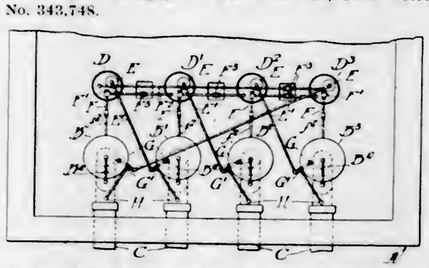


Claim.—1. In a draft appliance for furnaces, an air induction box adapted for application to the interior of the fire box of the furnace, and having a long induction slot or port provided with notches in its edges, substantially as described.

2. In a furnace, the combination with a fire box door having air induction ports, of an induction box secured to the inner side of said door and provided with a long induction slot or port provided with notches in its upper and lower edges, the notches in its upper edge being staggered with respect to the notches in its lower edge, substantially as described.

3. In a furnace, the combination with a fire box door having air induction ports, of an induction box 6 applied to the inner face thereof, and provided with an air induction slot or passage 8 having in its upper and lower edges notches 9, the upper notches being staggered with respect to the lower notches, and a shutter 10 secured to and located within said draft box 6, with air passages left above and below the same, said shutter having the slots or draft passages 11, substantially as described.

857,355. PLURAL ALTERNATING SIPHON. SIDNEY W. MILLER, Chicago, Ill. Filed Nov. 16, 1906. Serial No. 343,748.



Claim.—1. An apparatus for the purpose set forth comprising a tank, a plurality of trapped siphons operating alternately to empty said tank, blow-off traps communicating with the air spaces of said siphons above their traps, and means controlled by the rise of liquid in said tank, operating in a predetermined order to transmit pressure to said blow-off traps to start said siphons into operation.

2. An apparatus for the purpose set forth comprising a liquid tank, a plurality of trapped siphons operating alternately to empty said tank, blow-off traps located above the floor of the tank and communicating severally with the said siphons above their traps, and means controlled by the rise of liquid in the tank operating alternately to force said blow-off traps and start said siphons into operation.

3. An apparatus for the purpose set forth comprising a liquid tank, a plurality of trapped siphons operating alternately to empty said tank, chambers associated with said siphons, blow-off traps severally communicating with the siphons above their traps, and means controlled by the presence of liquid in said chambers acting to transmit pressure alternately to said blow-off traps to force the same and start the siphons into operation.

4. An apparatus for the purpose set forth comprising a liquid tank, a plurality of trapped siphons for emptying said tank, chambers associated with said siphons, blow-off traps severally communicating with the siphons above their traps, means controlled by the presence of liquid in said chambers acting to transmit pressure alternately to said blow-off traps to force the same and start the siphons into operation, and means operating during the operation of each siphon for emptying its associated chamber.

5. An apparatus for the purpose set forth comprising a liquid tank, a plurality of trapped siphons operating alternately to empty the tank, a blow-off trap for each siphon comprising two legs, one of which communicates with the air space in the siphon and the other of which discharges into the atmosphere, and a pressure transmitting pipe communicating with the latter leg of the blow-off trap.

6. An apparatus for the purpose set forth comprising a liquid tank, a plurality of trapped siphons operating alternately to empty the tank, a blow-off trap for each siphon comprising a leg which extends upwardly into the intake leg of the siphon, and a vertical outer leg connected with said inner leg and discharging to the atmosphere, and a pressure transmitting pipe connected with said trap on the side of the outer leg remote from the inner leg.

7. An apparatus for the purpose set forth comprising a liquid tank, a plurality of trapped siphons operating alternately to empty said tank, a blow-off trap associated with each siphon comprising an inner leg which extends upwardly into the intake leg of the siphon, and a vertical leg extending upwardly outside of said intake leg of said siphon and connected with the first mentioned leg by a transverse portion and a pressure transmitting pipe connected with the outer leg near the lower end thereof, and disposed parallel with said legs of the trap.

8. An apparatus for the purpose set forth comprising a liquid tank, a plurality of trapped siphons acting alternately to empty the tank, a series of chambers severally associated with said siphons and filled from the source supplying liquid to the tank, a downwardly opening bell in each chamber, a pressure transmitting pipe located above the floor of the tank and connected at one end with said downwardly opening bell, and at its other end with one of the siphons, and means for discharging each chamber through the medium of its associated siphon.

9. An apparatus for the purpose set forth, comprising a tank, a plurality of siphons operating alternately to empty the tank, means operating during the filling of the tank to transmit pressure to one siphon of the series at a time to bring the same into operation, and means for separately cutting each siphon out of the operative series.

10. An apparatus for the purpose set forth comprising a plurality of tanks, a plurality of trapped siphons operating alternately to empty the tank, a series of chambers severally associated with said siphons and filled from the source supplying liquid to the tank, means operating during the filling of each chamber for transmitting pressure to the siphon associated with another chamber of the series to start said siphon into operation, means for emptying each chamber through the operation of its associated siphon, and means for separately cutting out each siphon from the operating series.

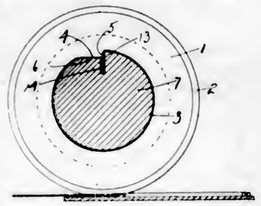
11. An apparatus for the purpose set forth comprising a tank or receptacle, a plurality of trapped siphons operating alternately to empty the tank, a series of chambers severally associated with said siphons and filled from the source supplying liquid to the tank, means operating during the filling of each chamber for transmitting pressure to the siphon associated with another chamber of the series to start said siphon into operation, a chamber emptying siphon connecting each chamber with its associated siphon for emptying the contents of each chamber through the operation of its said associated siphon, each chamber emptying siphon being provided with an extension pipe dipping into another chamber of the series, and valves in said chamber emptying siphons and the extension pipes thereof.

12. An apparatus for the purpose set forth, comprising a tank, a plurality of trapped siphons, blow-off traps associated with said siphons, means for operating said siphons in a predetermined rotative order for emptying the tank, and means for varying the depth of seal of said blow-off traps.

13. An apparatus for the purpose set forth comprising a tank, a plurality of trapped siphons, blow-off traps associated with said siphons, each provided with a longitudinally adjustable outlet end, and pressure means operating with said blow-off traps to bring the siphons into operation, constructed to operate said siphons in a predetermined rotative order.

14. An apparatus for the purpose set forth comprising a tank, trapped siphons operating alternately to empty the tank, blow-off traps associated with said siphons, means controlled by the rise of liquid in said tank, operating in a predetermined order to transmit pressure to said blow-off traps to start the siphons into operation, and means for varying the depth of seal of said blow-off traps.

857,356. ROTARY CUTTER-SHAFT FOR PILE-CUTTING MACHINES. THOMAS MORTON, Crompton, R. I. Filed Mar. 20, 1907. Serial No. 363,488.



Claim.—1. In a device of the character described, the combination of a circular cutter blade, a shaft on which said blade is mounted, said shaft being provided with a slot, a hardened abutment plate adapted to fit edgewise into said slot to receive the thrust and wear of the cutter on its face, and a key strip forced into said slot to bind said plate in position therein.

2. In a device of the character described, the combination of a cutter blade, a shaft on which said blade is mounted, said shaft being provided with a slot, a hardened abutment plate adapted to fit into said slot to receive the thrust and wear of the cutter, a key strip forced into said slot to bind said plate in position therein the edge of said slot being turned over the edge of said key to rivet the same therein.

3. In a device of the character described, the combination of a circular cutter blade, a shaft on which said blade is mounted, a flattened portion on said shaft leaving an abutment or wall, said shaft being provided with a slot, a hardened plate adapted to fit edgewise in said slot and be backed up by said wall, said plate being adapted to receive the thrust and wear of the cutter on its face, and a key strip forced into said slot to bind said plate in position thereon.

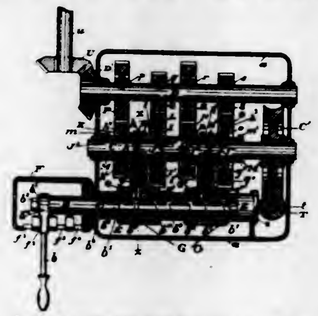
4. In a device of the character described, the combination of a circular cutter blade, an internally projecting tooth on said blade, a shaft on which said blade is mounted, a flattened portion on said shaft to receive said tooth and form an abutment or wall, said shaft being also provided with a slot, a hardened plate adapted to fit edgewise in said slot and be backed up by said wall, said plate being adapted to engage said tooth and receive the thrust and wear of the cutter, a key strip forced into said slot to bind said plate in position thereon, the edge of said slot being turned over the edge of said key to rivet the same therein.

5. In a device of the character described, the combination of a circular cutter blade, a shaft on which said blade is mounted, said shaft being provided with a slot, a plurality of thin hardened abutment plates set end to end, the same being adapted to fit into said slot to receive the thrust and wear of the cutter, adjacent ends of said plates being cut on an angle to fit together, and one or more key strips forced into said slot to bind said plate in position therein.

6. In a device of the character described, the combination of a circular cutter blade, a shaft on which said blade

is mounted, said shaft being provided with a slot, a thin hardened abutment plate adapted to fit edgewise into said slot to receive the thrust and wear of the cutter on its face, a key formed of a thin strip of softer material forced into said slot to bind said plate in position therein, and means for holding said key in said slot.

857,357. SPEED-CHANGING MECHANISM. EDWARD A. MULLER, Madisonville, Ohio, assignor to The King Machine Tool Company, Winton Place, Ohio, a Corporation of Ohio. Filed Mar. 24, 1905. Serial No. 251,860.



Claim.—1. In a variable speed mechanism, the combination of a driving shaft, different sized driving gears thereon provided with clutch members, shiftable clutch members movable into and out of operative engagement with the first-named members, and means including a shiftable shaft provided with longitudinal grooves and other grooves extending therefrom, some obliquely and others circumferentially, and connections from the shiftable clutch members to said shaft and so arranged that but one clutch actuating connection will engage an oblique groove at any time, the other clutch actuating connections entering the straight grooves.

2. In a variable speed mechanism, the combination of a driving shaft, normally loose gears thereon provided with clutch members, a plurality of double clutch members on the shaft and shiftable between pairs of gears, a unitary longitudinally-shiftable axially-turnable shaft, and connections between said shaft and the double clutch members, said shaft capable of moving one double clutch into operative engagement with a loose gear and coördinately holding all other double clutches inoperative.

3. In a variable speed mechanism, the combination of a driving shaft, normally loose gears thereon, arranged in pairs, said gears having clutch teeth on their contiguous sides, a double clutch rotatively attached to and slidable on the shaft between the gears constituting each pair, a yoke adapted to actuate each clutch, a shifter shaft having a longitudinal groove and other grooves extending therefrom, some bearing obliquely toward each end and others circumferential in direction, so arranged as to permit but one yoke connection to enter any oblique groove at any time, all others entering straight grooves and means for adjusting said shifter shaft.

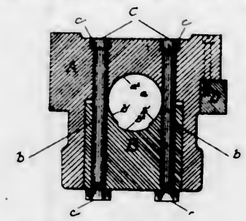
4. In a variable speed mechanism, the combination of a driving shaft, normally loose, different sized driving gears fitted with clutch teeth mounted thereon, clutch members rotatively attached to and slidable on said shaft, adapted to engage said gear clutch teeth, a yoke and yoke pin adapted to operate said clutch members, a shifter-shaft having a longitudinal groove and other grooves extending in one direction therefrom, some bearing obliquely toward each end, and others circumferential in direction, so arranged as to permit but one yoke pin to enter oblique grooves at any time, all others entering straight grooves and means for adjusting said shifter shaft.

5. In a change speed mechanism, a shifter shaft having a longitudinal groove and other grooves extending in one direction therefrom, some bearing obliquely toward each end, and others circumferential in direction, a clutch yoke provided with pins, said grooves so arranged as to permit but one yoke pin to enter oblique grooves at any time, all others entering straight grooves, clutch members operable by the yoke, and means for adjusting said shifter shaft.

6. In a change speed mechanism, the combination of change gears provided with clutch members, shiftable clutch members engageable with the first named members, a clutch yoke provided with pins said yoke being projected so as to form a loose sleeve, a shifter shaft having a longitudinal groove and other grooves extending in one direction therefrom, some bearing obliquely toward each end, and others circumferential in direction, said grooves so arranged as to permit but one yoke pin to enter oblique grooves at any time, all others entering straight grooves, a fixed sleeve surrounding the shaft and having longitudinal slots adapted to allow a free limited movement of each yoke pin, and means for adjusting the shifter shaft.

7. In a change speed mechanism, the combination of change gears provided with clutch members, shiftable clutch members engageable with the first-named members, a clutch yoke provided with pins said yoke being projected so as to form a loose sleeve, a shifter shaft having a longitudinal groove and other grooves extending in one direction therefrom, some bearing obliquely toward each end, and others circumferential in direction, said grooves so arranged as to allow but one yoke pin to enter oblique grooves at any time, all others entering straight grooves, a fixed sleeve surrounding the shaft and having longitudinal slots adapted to allow a free limited movement of each yoke pin, a handle rigidly attached to the shifter shaft, and an index cylinder having a longitudinal slot and other slots arranged substantially at right angles thereto arranged to receive said handle and hold the same when the shifter shaft is in operative position.

877,358. TOOL-HOLDING DEVICE. EDWARD A. MULLER, Madisonville, Ohio, assignor to The King Machine Tool Company, Winton Place, Ohio, a Corporation of Ohio. Filed July 3, 1905. Serial No. 268,185.



Claim.—A machine tool having in combination a ram bored longitudinally in alinement with the main spindle, said ram having recesses cutting its bore at right angles to the axis of said bore, clamping blocks fitted into said recesses, said blocks having inner faces formed to wedge a cylindrical tool shank placed in said bore, and bolts piercing said blocks and the ram on either side of the bore.

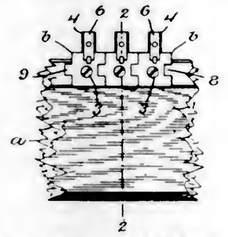
857,359. HAMMER-SUPPORTING FLANGE FOR PIANO-ACTIONS. ROBERT J. MURRAY, Cambridge, Mass. Filed Jan. 10, 1907. Serial No. 351,623.

Claim.—1. A flange for piano actions composed of a series of inter-engaging sections, each adapted for independent attachment to a hammer rail.

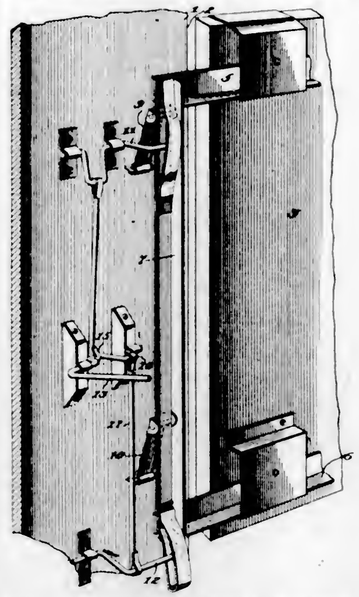
2. A flange for piano actions composed of a series of sections, each adapted for independent attachment to a hammer rail, said sections having inter-engaging members adapted to co-operate under variable spacing of the sections.

3. A flange for piano actions composed of a series of sections, each adapted for independent attachment to a hammer rail, and each having a tongue at one end and a recess at its opposite end, the tongue of each section being adapted to enter the recess of the adjacent section.

4. As an article of manufacture a piano action flange section having a pivot-supporting arm, an orifice for an attaching screw, a recess in one end, and a tongue on the opposite end.



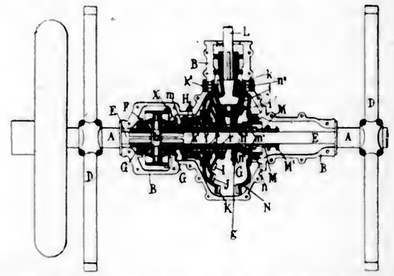
857,360. CAR-DOOR. ROBERT J. NEVILLE, Nashville, Tenn. Filed Oct. 11, 1905. Serial No. 282,306.



Claim.—1. The combination with a car having a door opening and a door for closing the latter, of a frame including end bars, and upper and lower bars constituting tracks, parallel links interposed between the frame and side of the car, crank arms coacting with said frame adjacent to the corners thereof for shifting the frame, a lever journaled on the side of the car having its pivotal portion provided with reversely-extending cranks, and links interposed between the latter cranks and the adjacent crank arms associated with the frame.

2. The combination with the wall of a container as a car having a door opening and a door for closing the latter, of a rectangular frame carrying the door, links interposed between the same and the wall of the container, a crank shaft extending parallel with the lower bar of the frame and provided adjacent to opposite ends with cranks coacting with opposite ends of the frame, a double crank journaled on the car adjacent to each of the upper ends of the frame, each having one of its cranks coacting with the frame, a lever having reversely-arranged cranks, a link interposed between one of the latter and a crank of said crank shaft, a second link interposed between the other of said reversely-arranged cranks and the second crank of the adjacent double crank, and a link interposed between the second crank of the other double crank and the adjacent crank of said crank shaft.

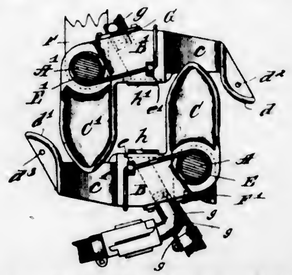
857,361. GEARING. FRANCOIS PILAIN, Lyon, France. Filed Aug. 15, 1905. Serial No. 274,320.



Claim.—1. In combination with a live axle and a driving shaft for automobile vehicles, gearing of the character described comprising a notched sleeve on the axle, bearings composed of a series of collars made fast to the sleeve by means of teeth engaging the notches, bevel wheels turning on said bearings adapted to be rotated by the driving shaft, said bevel wheels having toothed crowns between the bearings, and means adapted to be longitudinally moved between the teeth of the bearing rings and the teeth of the crowns so as to render fast any bevel gear wheel with the shaft.

2. In combination with a driving shaft provided with a pinion, a live axle and forward driving gearing operatively connecting the same, a mechanism for obtaining the reverse comprising a bevel wheel facing said forward driving gearing and meshing with said pinion on the driving shaft, said bevel wheel being provided with a toothed crown, together with a longitudinally movable drum operatively connected to the live axle and having keyheaded bars for engagement between the teeth of the toothed crown of the bevel wheel and means to operate said drum and to render the forward driving gearing inoperative during the functioning of the reverse mechanism.

857,362. AUTOMATIC AIR-SIGNAL, AIR-BRAKE, AND STEAM COUPLING. HERMAN C. PRIEBE, Blue Island, Ill. Filed Mar. 20, 1907. Serial No. 363,468.



Claim.—1. In a coupling device, the combination of the two halves or sections, knuckle pins upon which each of said sections are supported, coiled springs surrounding said coupling pins above the sections and extending outside of each section to the bottom thereof, air and steam passages through said coupler sections, and means for providing an air tight connection between the confronting faces of said sections.

2. In a coupling device the combination of the two halves or sections, knuckle pins extending through each of said sections and having connection with the car coupler,

air and steam passages through said sections, pipes connected through said passages and extending to the air and steam pipes of the car, flexible gaskets between the confronting faces of said sections, coiled springs supported by the aforesaid knuckle pins and adapted to hold the two sections of the coupler together, substantially as described.

3. In a coupling device, the combination of the two halves or sections, each section having bifurcated grooves interlocking with corresponding projections on the other section, knuckle pins upon which said sections are supported, coiled springs surrounding said pins and extended outside of each of said sections, coincident air and steam passages through the said sections, flexible connections between the confronting faces of said sections and means for automatically opening and closing said couplers.

4. In a coupling device, the combination of two interlocking sections, each of which has an annular opening extending vertically therethrough, said annular opening being of smaller diameter mediate of the length thereof than at the ends, supporting pins extending through said annular opening and springs for holding said sections together.

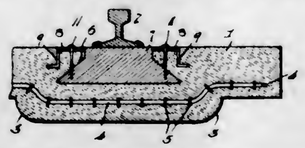
5. In a coupling device, the combination of two interlocking halves or sections each of which has an annular opening extending vertically therethrough, each section carrying projections upon one side thereof and a groove or channel on the opposite side, the projections of one section fitting into the grooves of the opposite section, coincident steam and air passages through said sections, pipes connected with said air passages and pipes extending approximately through the steam passages, said steam pipes having flanges abutting against the outer sides of said sections and secured thereto, substantially as described.

6. In an automatic coupling device of the class described, the combination of two interlocking sections, each of said sections having an annular opening extending vertically therethrough, said opening being of larger diameter at the ends than at the center thereof, pins extending through said openings, coincident air and steam passages through said sections, flexible gaskets between the confronting faces of the two sections, and means for automatically coupling and uncoupling said sections.

7. In an automatic coupling device, the combination of a car coupler and knuckle pins extending therethrough, with two interlocking sections supported by said coupling pins, projections extending from each of said sections and fitting into grooves or channels in the opposite section, springs bearing against the outside of each section, and means for automatically opening and closing said couplers simultaneously with the car coupler.

8. In an automatic coupling device, the combination of a car coupler and the knuckle pins extending therethrough, with two interlocking sections supported upon said knuckle pins, said sections having one or more passage ways extending therethrough, springs supported upon said knuckle pins and bearing against the outside of each section, and means for automatically opening and closing said sections simultaneously with the operation of the car coupler.

857,363. RAILWAY-TIE. ALBERT S. REAVIS, Washington, D. C. Filed Mar. 19, 1907. Serial No. 363,245.



Claim.—1. A railway tie embodying a concrete body offset on its lower side to provide oppositely located transverse shoulders, and reinforcing bars extending lengthwise of the tie and embedded therein and also offset to correspond with the offsets in the body of the tie.

2. A railway tie embodying a concrete body provided in its upper side with recesses, rail blocks seated in said recesses, and reinforcing bars provided at numerous intervals intermediate its ends with rib shoulders and embedded in the tie.

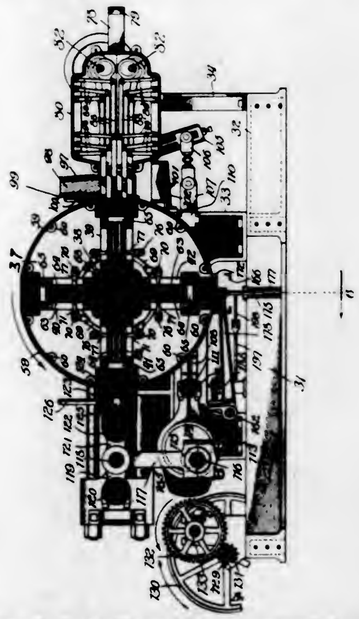
3. A railway tie embodying a concrete body provided in its upper side with recesses, rail blocks seated in said recesses, and edge protector plates extending along opposite sides of said recesses in parallel relation thereto.

4. A railway tie embodying a concrete body provided in its upper side with recesses, rail blocks seated in said recesses, and parallel edge protecting plates extending along the opposite sides of said recesses and provided with holes through which fasteners may be driven into the blocks.

5. A railway tie embodying a concrete body provided in its upper side with recesses, rail blocks seated in said recesses, and plates extending along the opposite sides of said recesses and provided with extensions or feet which are embedded in the tie.

6. A railway tie embodying a concrete body provided in its upper side with dovetailed recesses, dovetailed blocks seated in said recesses, plates extending along the opposite sides of the recesses and overhanging the sides of the blocks, and fasteners driven through said plates into the blocks.

857,364. BRICKMAKING-MACHINE. FREDERICK P. ROSBACK, Benton Harbor, Mich. Filed Feb. 28, 1907. Serial No. 359,875.



Claim.—1. In a brick-machine, the combination of a rotatable drum, molds disposed at intervals about said drum, tampers supported at one point adjacent to the periphery of the drum, a plurality of eccentric-actuated reciprocating tampers supported at one point adjacent to the periphery of the drum to act against the material to be compacted in a single mold, receiving-means for the product of the machine supported at a third point adjacent to said periphery, and drum-driving means constructed and arranged to rotate said drum intermittently to register molds thereon with said points in each partial rotation of the drum.

2. In a brick machine, the combination of a rotatable drum, molds disposed at intervals about said drum, a plurality of eccentric-actuated reciprocating tampers supported at one point adjacent to the periphery of the drum to act against the material to be compacted in a single mold, a power-driven toggle-actuated presser-head supported at another point adjacent to said periphery, receiving means for the product of the machine movably supported at a third point adjacent to said periphery, and drum-driving means constructed and arranged to rotate said drums intermittently to register molds thereon with said point in each partial rotation of the drum.

3. In a brick-machine, the combination of a rotatable drum, molds disposed at intervals about said drum, a plurality of co-operating power-driven tampers supported at one point adjacent to the periphery of the drum, a movable power-actuated support for said tampers, a power-driven presser-head reciprocably supported at another point adjacent to said periphery, receiving means for the product of the machine supported at a third point adjacent to said periphery, and drum-driving means constructed and arranged to rotate said drum intermittently to register molds thereon with said points in each partial rotation of the drum.

4. In a brick-machine, the combination with a bed and frame thereon, of a drum rotatably mounted on the frame, and provided with molds at intervals, a plurality of eccentric-actuated reciprocating tampers supported on said frame at a point adjacent to the periphery of the drum to act against the material to be compacted in a single mold, and drum-driving means constructed and arranged to rotate said drum intermittently to register a mold thereon with said tampers in each partial rotation of the drum.

5. In a brick-machine, the combination with a bed and frame thereon, of a drum rotatably mounted on the frame and provided with molds at intervals, a tamper-housing movably supported on said frame, a plurality of tampers reciprocally supported in said housing, adjacent to the periphery of the drum to reciprocate in horizontal planes, and drum-driving means constructed and arranged to rotate said drum intermittently to register a mold thereon with said tampers in each partial rotation of the drum.

6. In a brick-machine, the combination of a rotatable drum having a mold-opening in its wall, a mold-base extending from the drum-shaft to register with said opening, a mold consisting of bottom-plates fixed on the outer end of said base and a wall-structure surrounding said base and containing partitions, a plurality of power-driven tampers supported adjacent to the periphery of the drum and provided with heads containing longitudinal slots, and drum-driving means constructed and arranged to rotate said drum intermittently to register said mold with said tampers.

7. In a brick-machine, the combination of a rotatable drum, a series of four molds disposed at equal intervals apart about said drum, a plurality of power-driven tampers supported at one point adjacent to the periphery of the drum, a power-driven presser-head supported at another point adjacent to said periphery, receiving means for the product of the machine supported at a third point adjacent to said periphery, and drum-driving means constructed and arranged to rotate said drum intermittently to register, in each partial rotation thereof, three of said molds respectively with said tampers, said presser-head and said receiving means.

8. In a brick-machine, the combination of a rotatable drum, molds disposed at intervals about said drum, each mold consisting of a fixed bottom-plate and a wall-structure supported to extend about said plate and movable back and forth thereon, tamping means supported at one point adjacent to the drum, a power-driven presser-head reciprocally supported at another point adjacent to said periphery, receiving means for the product of the machine supported at a third point adjacent to said periphery, drum-driving means constructed and arranged to rotate said drum intermittently to register molds thereon with said points in each partial rotation of the drum, and means constructed and arranged to co-operate with said drum-driving means to move said wall-structure at said receiving point away from its contents.

9. In a brick-machine, the combination of a rotatable drum having slotted heads, molds disposed at intervals about said drum, each mold consisting of a fixed bottom-plate and a wall-structure supported to extend about said plate and movable back and forth thereon, with bosses on opposite sides of the wall-structure projecting through slots in said heads and anti-friction rollers journaled on the bosses, cam-rings stationarily supported at opposite ends of the drum, and each provided with a lower pivotal section, said anti-friction rollers extending into the cam-paths on said rings, tamping means supported at one point adjacent to the drum, a power-driven presser-head supported at another point adjacent to said periphery, receiving-means for the product of the machine supported at an intermediate point adjacent to said periphery, drum-driving means constructed and arranged to rotate said drum intermittently to register molds thereon with said points in each partial rotation of the drum, and means constructed and arranged to co-operate with said drum-driving means to turn said pivotal sections of the rings and raise the wall-structure of the mold engaging therewith for the purpose set forth.

10. In a brick-machine, the combination of a rotatable drum carrying a mold, a tamper-housing supported adjacent to the periphery of said drum, a plurality of power-driven tampers having link-supports in said housing adapting them to be reciprocated in parallel planes one upon the other, and drum-driving means constructed and arranged to rotate said drum intermittently to register said mold with said tampers in each rotation of the drum.

11. In a brick-machine, the combination of a rotatable drum carrying a mold, a plurality of power-driven tampers supported one above the other adjacent to the periphery of said drum and provided with heads having dished perforated recesses, and drum-driving means constructed and arranged to rotate said drum intermittently to register said mold with said tampers in each rotation of the drum.

12. In a brick-machine, the combination of a mold-carrying drum, means constructed and arranged to rotate said drum intermittently, a receiving-table operatively connected with said driving-means and supported to rise and fall with reference to a mold when brought into registry therewith, a track with which said table registers in its lowered position, a pallet-rack supported over said track and slide-plate on the track co-operating with said receiving-table, for the purpose set forth.

13. In a brick-machine, the combination of a mold-carrying drum, means constructed and arranged to rotate said drum intermittently, a receiving-table operatively connected with said driving-means and supported to rise and fall with reference to a mold when brought into registry therewith, a delivery-track extending transversely of the machine, a pallet-supply track spaced from and alining with said supply track, with both of which tracks said table registers in its lowered position in the space between them, a pallet-rack supported over said supply-track and a slide-plate thereon co-operating with said receiving-table.

14. In a brick-machine, the combination of a mold-carrying drum, means constructed and arranged to rotate said drum intermittently, a cam actuated receiving-table operated by said driving-means and supported to rise and fall with reference to a mold when brought into registry therewith, a track with which said table registers in its lowered position, a pallet-rack supported over said track, a slide-plate on the track, and a bell-crank connection between said slide-plate and the cam which actuates said table.

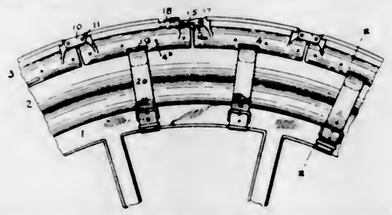
15. In a brick-machine, the combination of a mold-carrying drum, means constructed and arranged to rotate said drum intermittently, a rock-shaft carrying a receiving-table on an arm extending to register said table with the mold-path, an adjustable yielding connection between said arm and shaft, and a cam having an arm-connection with said shaft and operatively connected with said driving-means, for the purpose set forth.

16. In a brick-machine, the combination of a mold-carrying drum, means constructed and arranged to rotate said drum intermittently, a rock-shaft, an arm extending from said rock-shaft and having a flexible connection therewith, a receiving-table on said arm registering with the mold-path, a guide for the movements of said table, and a cam

having an arm-connection with said shaft, and operatively connected with said driving-means, for the purpose set forth.

17. In a brick-machine, the combination of a mold-carrying drum, means constructed and arranged to rotate said drum intermittently, a rock-shaft carrying a receiving-table extending into registry with the mold-path, a cam having an arm-connection with said shaft and operatively connected with said driving-means, a track with which said table registers in its lowered position, a pallet-rack supported above the track, a slide-plate on the track, a bell-crank having a link connection with the slide-plate, and a slide-bar connected with the bell-crank and having a link-connection with said cam, for the purpose set forth.

857,365. GUARD FOR TIRES. CHARLES R. SAUNDERS and ANTON B. BREITWEG, Cleveland, Ohio. Filed Dec. 1, 1906. Serial No. 345,872.



Claim.—1. A guard for vehicle tires comprising a plurality of plates or members flexibly connected, and means for connecting the ends of said guard, said means comprising a bolt pivotally connected to one of the end plates or members, a cross bar on the other end plate or member, said cross bar being provided with an aperture for the reception of the end of the bolt, and a nut on said bolt.

2. A guard for vehicle tires comprising a plurality of plates or members flexibly connected, means for connecting the ends of said guard, said means comprising a lug on one of the end plates or members, a bolt pivoted to said lug, the other end plate or member being provided with a recess for the reception of the end of the bolt, and an adjusting nut in said recess engaging the end of said bolt.

3. A tire guard for vehicle wheels comprising a plurality of plates or members flexibly connected, each of said plates or members having end portions conforming substantially in curvature to the curvature of the tire and having intermediate of the end portions a recess or cavity, said recess or cavity extending from end portion to end portion of said plate.

4. A tire guard for vehicle tires comprising a plurality of plates or members flexibly connected, each of said plates or members being provided at opposite ends thereof with surfaces of substantially the same contour as the normal contour of the tire and with a concavity intermediate of said surfaces and extending longitudinally therebetween the curvature of said cavity being greater than that of said surfaces.

5. A guard for vehicle tires comprising a plurality of plates or members flexibly connected, each being provided with curved end portions and with a longitudinally extending cavity intermediate said portions the curvature whereof is greater than that of said end portions.

6. A guard for vehicle tires comprising a plurality of plates or members, each of said members being provided with a recess adjacent the end thereof, means located in said recesses for flexibly connecting said plates or members, each of said plates or members being provided with side flanges and each of said plates or members being provided on the interior thereof with curved surfaces adapted to engage the tire and with an outwardly projecting longitudinally extending concavity.

7. A tire guard for vehicle wheels comprising a plurality of plates or members flexibly connected together, each of said plates being provided with side flanges conforming to the contour of the tire, said flanges being provided with apertures for the reception of fastening means for securing the same to the rim or felly, and each of said plates or members being provided with tire-engaging portions and a longitudinally extending cavity intermediate of said portions.

8. A protecting plate or member for the purpose specified having curved end portions and a longitudinally extending cavity intermediate of said portions and of greater curvature than said end portions, and a lining for said cavity.

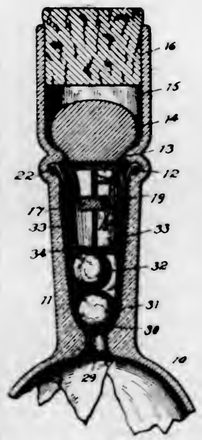
9. A guard for vehicle tires comprising a plurality of plates or members flexibly connected, each of said plates or members being provided with surfaces of substantially the same contour as the normal contour of the tire and with a longitudinally extending concavity intermediate of said surfaces the curvature of which is greater than that of said surfaces, and a lining for each of said concavities.

10. A protecting plate or member for the purpose specified having side flanges and end portions of substantially the same curvature as the normal curvature of the tire and a longitudinally extending cavity intermediate of said end portions and of greater curvature than said portions, a lining for said plate or member, and means for securing the same to said flanges.

11. A guard for vehicle tires comprising a plurality of plates or members flexibly connected, each of said plates or members being provided with bearing surfaces of substantially the same contour as the normal contour of the tire and with a concavity extending longitudinally of said plate and of greater curvature than the normal curvature of the tire, and a protecting lining interposed between said bearing surfaces and the adjacent surface of the tire.

12. A protecting plate or member for the purpose specified having side flanges, each of said flanges being provided with an aperture near the inner end thereof, a lining for said plate or member, said lining having portions extending between the said flanges and the tire to which the said plate or member is applied, and a strap for securing said plate or member to the tire, said strap extending through the apertures in the flanges and the lining.

857,366. NON-REFILLABLE BOTTLE. WILLIAM L. SCHULTZ, New York, N. Y. Filed Feb. 16, 1907. Serial No. 357,685.



Claim.—1. The combination with a bottle having the neck thereof provided with a groove therein, of a stopper-valve arranged in the bottle neck and adapted to form a closure, a locking device having a part thereof fitting in the groove of the bottle neck and holding the valve against removal, a float-valve, a weight arranged between the float-valve and the stopper-valve, seats for the stopper and the float valves, and means for limiting the movement of the weight.

2. In a device of the character described, the combination with a stopper-valve adapted to form a closure in the bottle neck, a locking device having a part thereof adapted to fit a groove in the bottle neck and hold the valve against removal, a float-valve, seats for the stopper and the float valves, and a weight arranged between the float-valve and the stopper-valve.

3. The combination with a bottle having a groove therein, of a stopper-valve arranged in the bottle and adapted to form a closure therein, a locking device having the ends thereof fitting the groove of the bottle and holding the valve against removal, a float-valve, seats for the stopper and the float valves, a weight arranged between the float-valve and the stopper-valve, and means for causing the weight to hold the float-valve to its seat under certain conditions.

4. In a non-refillable bottle, the combination with a bottle having an annular groove in the neck thereof, of a stopper-valve movable within the bottle neck and adapted to form a closure therein and provided with slots extending transversely thereof and at right angles to each other, a locking device comprising two members passing through the slots in the stopper-valve and having parts thereof extending inward within the bottle neck, said parts having the ends thereof projecting outward so as to enter the groove in the bottle neck thereby rigidly holding the stopper-valve from removal yet permitting it to have a limited movement, a float-valve, seats for the float and the stopper valves, a weight adapted to hold the float-valve to its seat, and means to cause the weight to hold the float-valve to its seat in certain positions of the bottle.

5. In a non-refillable bottle, the combination with a stopper-valve adapted to move within a bottle neck and form a closure therein and provided with a slot extending transversely thereof, of a locking device passing through the slot in the stopper-valve and having parts thereof extending inward, said part having the ends thereof projecting outward so as to enter a groove in the bottle neck thereby adapting it to rigidly holding the stopper-valve from removal yet permitting it to have a limited movement, a float-valve, seats for the float and the stopper valves, a weight adapted to hold the float-valve to its seat, and means adapted to cause the weight to hold the float-valve to its seat.

6. In a non-refillable bottle, the combination with a bottle having an annular groove in the neck thereof, of a stopper-valve movable within the bottle neck and adapted to form a closure therein and provided with slots extending transversely thereof and at right angles to each other, a metallic locking device comprising two members passing through the slots in the stopper-valve and having parts thereof extending inward within the bottle neck, said parts having yielding spring ends projecting outward so as to enter the grooves in the bottle neck thereby rigidly holding the stopper-valve from removal yet permitting it to have a limited movement on the locking device, a float-valve, seats for the float and the stopper valves, a weight adapted to hold the float-valve to its seat under certain conditions, and means adapted to cause the weight to hold the float-valve to its seat.

7. In a non-refillable bottle, the combination with a bottle having an annular groove in the neck thereof, of a stopper-valve movable within the bottle neck and adapted to form a closure therein and provided with a slot extending transversely thereof, a locking device passing through the slot in the stopper-valve and having parts thereof extending inward within the bottle neck, said parts having yielding ends projecting outward so as to enter the grooves in the bottle neck thereby rigidly holding the stopper-valve from removal yet permitting it to have a limited movement on the locking device, a float-valve, seats for the float and the stopper valves, a movable weight adapted to hold the float-valve to its seat under certain conditions, and a ring carried by the locking device and arranged adjacent to the weight and adapted to cause the weight in certain positions of the bottle to positively hold the float-valve to its seat.

8. In a non-refillable bottle, the combination with a bottle having an annular groove in the neck thereof, of a stopper-valve movable within the bottle neck and adapted to form a closure therein and provided with slots extending transversely thereof and at right angles to each other, a metallic locking device comprising two members passing through the slots in the stopper-valve and having arms or parts thereof extending inward within the bottle neck, said parts having spring ends projecting outward so as to enter the grooves in the bottle neck thereby rigidly holding the stopper-valve from removal yet permitting it to have a limited movement, a float-valve, seats for the float and the stopper valves, a movable weight adapted to hold the float-valve to its seat in certain positions of the bottle, and a ring carried by the locking device and arranged adjacent to the weight and adapted to cause the weight to hold the float-valve to its seat.

857,367. MULTO-CONDUCTOR. ALBERT F. SHORE and WILLIAM SHORE, New York, N. Y. Filed Jan. 2, 1907. Serial No. 350,315.

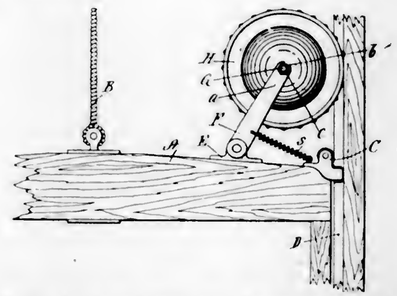


Claim.—1. A woven multi-conductor composed of an insulating woof and individual conductors forming the warp, portions of the conductors projecting above the general surface of the weave in the forms of loops, and adapted to serve as terminals for branch conductors, substantially as set forth.

2. A flexible electric conductor composed of a woven fabric having a conducting warp and an insulating woof, portions of the warp being formed during the weaving into loops adapted to serve as branch terminals, substantially as described.

3. The combination with a branch circuit of a woven multi-conductor having an insulating woof, a warp formed of individual conductors and means integral with the conductors and external to the weave for connecting the branch circuit with the multi-conductor.

857,368. ALARM-BELL FOR ELEVATORS. ARTHUR C. SISSON, Pawtucket, R. I. Filed Dec. 18, 1905. Serial No. 292,349.



Claim.—1. In an alarm bell, the combination of the forked supporting arm, the fixed pivot axle, the cam-holding disk secured to the pivot axle, the bell held upon the pivot axle between the cam-holding disk and a fork of the supporting arm, the pivoted cam held upon the cam-holding disk, the track wheel, and the spring-actuated hammer pivoted to the said wheel.

2. In an alarm bell, the combination of the forked supporting arm, the fixed pivot axle, the cam-holding disks secured to the pivot axle, the bells held upon the pivot axle between the cam-holding disks and a fork of the supporting arm, the pivoted cams held upon the cam-holding

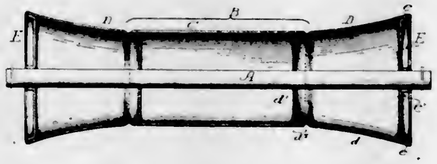
disks, the track wheel loosely held upon the pivot axle between the cam-holding disks, and the spring-actuated hammers pivoted to the sides of the said wheel at opposite sides of its axis.

857,369. GARMENT-HOOK EYE. CHARLES W. STEVENS, Jr., New Brunswick, N. J. Filed Oct. 17, 1906. Serial No. 339,304.



Claim.—A garment-hook eye comprised of wire bent into shape, having securing eyes at one end, side arms extending from said eyes and diverging at the other end, and a straight portion connecting the said side arms for forming a hook engaging eye, said wire extending between said arms from the portion forming one of the said securing eyes and ending in an attaching eye smaller than said hook engaging eye and having a straight portion parallel with the hook engaging portion of the said hook engaging eye.

857,370. BELT-CONVEYER IDLER. FERDINAND F. WAECHTER, Philadelphia, Pa., assignor to Link-Belt Company, Chicago, Ill., and Philadelphia, Pa., a Corporation of Illinois. Filed Nov. 3, 1906. Serial No. 341,904.



Claim.—1. The combination of a shaft, a tubular body portion flared at each end, pressed metallic disks each having a flange flared on the same line as the inside of the flare of the body portion and having a tubular hub confined to the shaft, substantially as described.

2. The combination in an idler, of a shaft, a central tubular section, end sections fitting in the tubular section, and disks mounted on the shaft and forced into the flared ends of the pressed end sections, substantially as described.

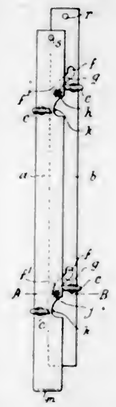
3. The combination in an idler, of a shaft, a central tubular section, pressed metallic end sections fitting in the tubular section, and disks mounted on the shaft and forced into the flared ends of the pressed end sections, substantially as described.

4. The combination of a shaft, a tubular central section, two pressed end sections flared and having reduced portions at their inner ends, said reduced portions fitting in the ends of the central section, with disks mounted on the shaft and extending into the flared portions of the end sections, substantially as described.

5. The combination of a shaft, a tubular central section, two pressed metallic end sections flared and having perforated heads through which the shaft passes, and flanged disks mounted on the shaft, the flanges of the disks fitting within the flared portions of the end sections, substantially as described.

6. The combination of a shaft, a tubular central section, pressed metallic bell shaped end sections having perforated heads, the shaft passing through the perforations in the heads, a pressed metallic disk having a flange shaped to conform with the flare of the bell shaped end sections and having a hub flange forced onto the shaft, the disks retaining the several parts in position and securing them rigidly to the shaft, substantially as described.

857,371. FILE, TEMPORARY BINDER, LOOSE-LEAF BOOK, AND THE LIKE. JOHN WALKER, Jr., Putney, London, England. Filed Dec. 29, 1904. Serial No. 238,718.



Claim.—1. In a file, temporary binder or the like, the combination of two plates each of which normally extends substantially across the entire face of the other, and each of which is provided with a fastening prong, which prongs register in the normal positions of the plates, said plates being adapted to move longitudinally and transversely relatively to each other to provide a wide lateral separation of the prongs said plates being provided with guiding means extended substantially across the width of such plates and adapted to guide them in such movements.

2. In a file, temporary binder or the like, the combination of two plates each of which normally extends substantially across the entire face of the other, and each of which is provided with a fastening prong, which prongs register in the normal positions of the plates, said plates being adapted to move longitudinally and transversely relatively to each other to provide a wide lateral separation of the prongs, said plates being provided with a pin and slot connection adapted to guide them in such movements, such slot extending obliquely substantially across the width of such plates.

3. In a file, temporary binder or the like, the combination of two plates each of which normally extends substantially across the entire face of the other, and each of which is provided with a fastening prong, which prongs register in the normal positions of the plates, said plates being adapted to move longitudinally and transversely relatively to each other to provide a wide lateral separation of the prongs, said plates being provided with guiding means extended substantially across the width of such plates and adapted to guide them in such movements, and means for preventing an initial lateral separation of the plates when in their normal positions.

4. In a file, temporary binder or the like, the combination of two plates each of which normally extends substantially across the entire face of the other, and each of which is provided with a fastening prong, which prongs register in the normal positions of the plates, said plates being adapted to move longitudinally and transversely relatively to each other to provide a wide lateral separation of the prongs, said plates being provided with a pin and slot connection adapted to guide them in such movements, such slot extending substantially across the width of such plates and having a portion extending obliquely substantially longitudinally of such plates whereby to prevent an initial lateral separation of the plates.

5. In a file, temporary binder or the like, the combination of two plates mounted one upon the other, and adapted to slide relatively to each other, each of said plates having a prong, said prongs registering in the normal positions of the plates, such plates having means for guiding them to move longitudinally and transversely relatively to each other to separate such prongs, said means extending obliquely at such an angle to the length of the plates that the latter tend to move to separate the prongs when under a lateral stress, and means for preventing such separation.

6. In a file, temporary binder or the like, the combination of two plates mounted one upon the other, and adapted to slide relatively to each other, each of said plates having a prong, said prongs registering in the normal positions of the plates, such plates having a pin and slot connection adapted to guide them to move to separate such prongs, the slot of said connection extending obliquely at such an angle to the length of the plates that the latter tend to move to separate the prongs when under a lateral stress, such slot having a portion extending substantially longitudinally of such plates into which said pin moves when the plates are in their normal positions, whereby such separation is prevented until the plates are given an initial longitudinal movement.

7. In a file, temporary binder or the like, the combination of two plates mounted one upon the other, and adapted to slide relatively to each other, each of said plates having a prong, said prongs registering in the normal positions of the plates, such plates having a pin and slot connection adapted to guide them to move to separate such prongs, the slot of said connection extending obliquely at such an angle to the length of the plates that the latter tend to move to separate the prongs when under a lateral stress, such slot having a portion extending substantially longitudinally of such plates into which said pin moves when the plates are in their normal positions, whereby such separation is prevented until the plates are given an initial longitudinal movement, and said slot having a similar portion at its opposite end adapted to prevent such plates from moving toward their closed positions from their open positions.

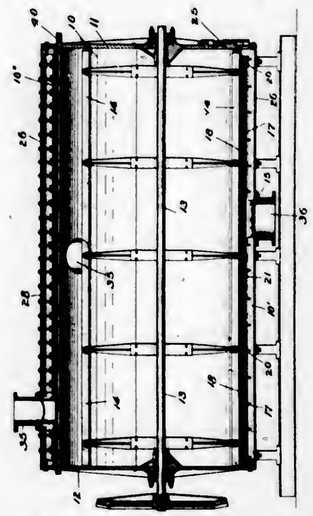
8. In a file, temporary binder or the like, the combination of two plates mounted one upon the other, and, each having a prong, one of said plates having a slot having a portion extending obliquely in a direction transverse to said plate, and a portion extending substantially longitudinally thereof, and the other of said plates having a part sliding in said slot, whereby when such part is in the transverse portion of said slot the prongs may be laterally and longitudinally separated by a longitudinal movement of said plates, and when such part is in the longitudinal portion of said slot, lateral movement of the plates is resisted.

9. In a file, temporary binder or the like, the combination of two plates, each having a prong, said plates being adapted to slide relatively to each other to separate said prongs, slots in the lower of said plates, pins in the upper plate working in said slots and having heads beneath said lower plate, a binding material beneath said lower plate, and a third plate clamping such material against said lower plate, and having slots within which said pin heads slide.

10. In files, temporary binders, loose leaf books or the like, an upper plate, a lower plate, the upper plate being provided with pins and the lower plate with slots, said pins being disposed in the slots, heads to said pins of greater width than the slots, a plurality of prongs on one plate adapted to mate with similar prongs on the other plate, a third plate provided with slots and secured to the lower plate and so disposed that the heads of the pins travel in the slots of the third plate, and binding material disposed between the lower and third plates substantially as described.

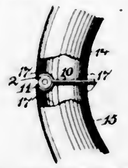
11. In files, temporary binders, loose leaf books or the like, an upper plate, a lower plate, the upper plate being provided with pins and the lower plate with slots, said pins being disposed in the slots, heads to said pins of greater width than the slots, a plurality of prongs on one plate adapted to mate with similar prongs on the other plate, said slots having parts inclined to the horizontal axis of the device and parts parallel thereto, a third plate provided with slots and secured to the lower plate, and so disposed that the heads of the pins travel in the slots of the third plate, and binding material disposed between the lower and third plates, substantially as described.

857,372. EVAPORATOR AND EXTRACTOR FOR GARBAGE REDUCTION. FREDERICK G. WISELOGEL, Indianapolis, Ind., assignor to United States Construction and Utilization Company, Rochester, N. Y., a Corporation of New York. Filed Oct. 9, 1906. Serial No. 338,174.



Claim.—In an extractor and evaporator, the combination with a receiving chamber having a longitudinal slot in its bottom and an opening in its head at the end of said slot, a closure for said opening, and a filter structure supported in said channel and longitudinally withdrawable therefrom through the opening in the head, a heating jacket embracing the lower side of the receiving chamber and a cooling saddle embracing the upper side of said chamber.

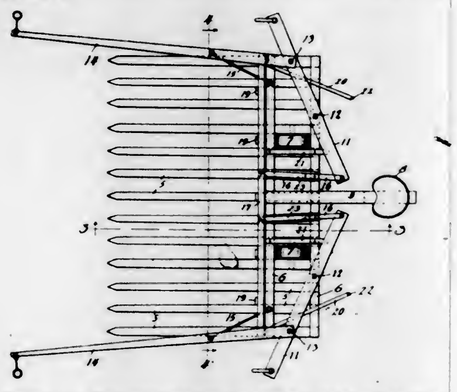
857,373. METHOD OF MANUFACTURING JOINTS OF BRACELETS. CHARLES WRIGGINS, Irvington, N. J., assignor to Long & Koch, Newark, N. J., a Corporation of New Jersey. Filed Dec. 6, 1906. Serial No. 346,549.



Claim.—1. The improved method of forming a hinge for jewelry, comprising the provision of a pair of plates having one edge of each plate grooved, supplying pintle blocks to the opposed grooves, assembling the grooved plates so supplied, inserting a pintle through the pintle blocks, and then securing the members to be hinged to the outside faces of the plates.

2. The improved method of forming a hinge for jewelry, comprising the provision of a pair of plates made of sheet metal and each plate having a groove on one edge, supplying each groove with suitably disposed pintle blocks, assembling the plates with the blocks in place, soldering the members to be hinged to the outside of the plates, then inserting a pintle in the blocks, and then cutting off the hinge to the contour of the article hinged.

857,374. HAY-RAKE. DAVID F. ANDERSON, Council Bluffs, Iowa, assignor to E. Children's Sons Manufacturing Co., Council Bluffs, Iowa, a Corporation of Iowa. Filed Dec. 1, 1905. Renewed May 6, 1907. Serial No. 372,029.



Claim.—1. The combination in a hay rake, of a discharging head, pivoted draw-bars, connections from the inner ends of said draw-bars to the discharging head, and poles for the attachment of the horses pivoted to the outer ends of the draw-bars.

2. The combination in a hay rake, of draft bars pivotally mounted on the main frame, poles or tongues joined to the outer ends of the bars, and a discharging head connected to the inner ends of the bars.

3. The combination with the discharging head of a hay rake, of pivoted draft bars, the inner ends of which are mechanically connected to the discharging head, and the outer ends are provided with means for the attachment of the horses.

4. The combination with the discharging head of a hay rake, of pivoted draft bars, tongues connected to the outer ends of the bars and also connected to the frame of the rake by the rods 15, and connections from the inner ends of the bars to the discharging head.

5. The combination in a hay rake, of a discharging head, pivoted draw-bars, connections from said head to the draw-bars, and tongues attached to the draw-bars and also connected to the main frame by stays.

6. The combination in a hay rake, of a discharging head, pivoted draw-bars connected to and operating said head, and poles or tongues pivotally joined to the draw-bars and braced from the stationary part of the frame essentially as described, whereby the backing or turning of the horses operates the discharging head.

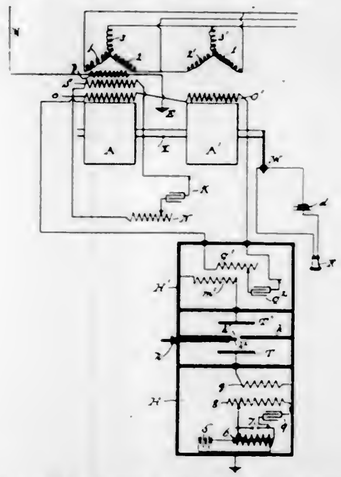
7. The combination in a hay rake, of a discharging head, a draw-bar at each side of the center of the machine having its inner end joined to the head, a tongue or pole at each side of the machine pivotally joined to the draw-bar upon the same side of the machine with it, and stays or braces connecting said poles near their junction with the draw-bars to the main frame.

8. The hay rake having a discharging head in combination with pivoted draw-bars, one at each side of the machine, pushing connections between said draw-bars and the head, and tongues, one at each side, pivoted to the draw-bars and having means for attachment to the horses' collars or pole strips.

9. The hay rake wherein are combined a discharging head, pivoted draw-bars connecting to and operating said head, and poles or tongues 14 pivoted to the draw-bars and provided with means for their attachment to the horses' collars or pole strips.

10. In a hay rake, the combination of a discharge head, draw-bars operating said head, and tongues or poles, one at each side of the machine and flexibly united to the bars, and also connected to the main frame, and having means at their forward ends for attachment to the horses' collars or pole straps, whereby the horses are enabled to swing said poles backward or outward in the discharging movement.

857,375. RECEIVING APPARATUS FOR WIRELESS TELEGRAPHY. LUDWIG ARNSON, New York, N. Y. Filed Dec. 20, 1905. Serial No. 292,582.



Claim.—1. A receiving apparatus for wireless telegraphy, comprising a hysteresis motor, means for counterbalancing the normal torque on the armature, a primary coil for connection in the aerial circuit, a secondary in a circuit containing variable inductance and capacity, such primary and secondary being wound adjacent to the field coils of the motor, and means for indicating the resulting modifications of the torque.

2. A receiving apparatus for wireless telegraphy, comprising two motors with connecting armatures and field windings, the normal torque on one armature counterbalancing the normal torque on the other, a primary coil for connection in the aerial circuit, a secondary in a circuit containing variable inductance and capacity, such primary and secondary being wound adjacent to the field coils of one of said motors, coils in a local oscillatory circuit wound within the field of the two motors, but to counterbalance each other and means for indicating modifications of the torque.

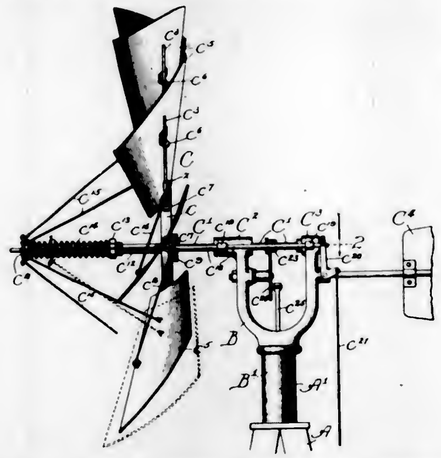
3. A receiving apparatus for wireless telegraphy, comprising an aerial, two hysteresis motors with connected armatures and field windings, the normal torque on one armature counterbalancing the normal torque on the other, means for imposing on one of the fields wave oscillations from the aerial, a sympathetic oscillator having coils wound on the two motors but in opposition, and a local energizer or oscillator generator.

4. A receiving apparatus for wireless telegraphy, comprising an aerial, a hysteresis motor, means for imposing upon the field of the latter wave oscillations from the aerial, a sympathetic oscillator having coils in connection with said motor, a local energizer of oscillations and an inclosing metallic box.

5. A receiving apparatus for wireless telegraphy, comprising an aerial, a hysteresis motor, means for imposing upon the field of the latter wave oscillations from the aerial, a sympathetic oscillator having coils in connection with said motor, a local energizer of oscillations in inclosing box and means for reducing the action of the local energized oscillations upon the sympathetic oscillator circuit.

6. A receiving apparatus for wireless telegraphy having a local oscillator, means for varying the frequency of the oscillations, and means for varying the amplitude of the oscillations, these latter means including a local energizing circuit having a radiating surface, a local oscillating circuit having a co-operating radiating surface, and an adjustable screen between the radiating surfaces.

857,376. WINDMILL. JOHN AXELSTROM, Chicago, Ill. Filed Apr. 20, 1906. Serial No. 312,846.



Claim.—1. In a wind-mill, a wheel having rotatable, radially movable vanes, a compression spring projecting from one side of the wheel, connections between said spring and said vanes, and means for turning the vanes upon their axes as they move radially under the centrifugal force developed by the rotation of the wheel.

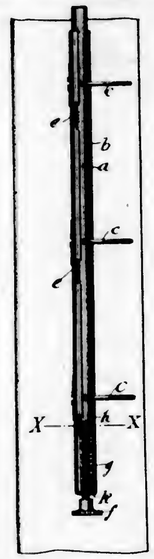
2. In a wind-mill, a wheel comprising a center with radial spokes, vanes having their longitudinal central portions pivotally and slidably connected with said spokes, a wheel-shaft, a spring encircling said shaft at one side of the wheel, a member connected with the outer end of said spring and linked to the wheel-vanes, and links connecting the wheel-vanes with the wheel-center, for the purpose set forth.

3. In a wind-mill, the combination of a wheel-shaft, a wheel mounted thereon having rotatable, radially movable vanes, a spring projecting laterally at one side of the wheel, a member connected with the outer end of said spring and extending through the wheel-hub, links connecting the outer end of said member with the wheel-vanes, means for rotating the wheel-vanes upon their axes, and means for shifting the member extending through the wheel to turn the vanes to the inoperative position.

4. In a wind-mill, the combination of a wheel-shaft, a wheel-center mounted thereon, rotatable, radially movable vanes connected with said wheel-center, a spring projecting laterally from one side of the wheel, a member connected with the outer end of said spring and linked to the wheel-vanes, means for rotating the wheel-vanes on their axes, and means for adjusting the tension of said spring.

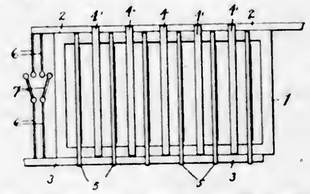
857,377. TEMPORARY BINDER. FRANCIS R. BAKER, Birmingham, England, assignor to John Walker, London, England. Filed Mar. 30, 1907. Serial No. 365,572.

Claim.—A temporary binder comprising a tubular member having a continuous longitudinal slot with notches therein and a shoulder at one end of said member, prongs formed on said member, a rod slidable in said member and extending beyond the same at one end, prongs formed on said rod and slidable in said longitudinal slot to coact with the prongs of said tubular member, a spring embracing said rod at one end portion and interposed between a shoulder thereon and the shoulder of the tubular member.



and a knob on the end of said rod which extends beyond said tubular member.

857,378. ELECTROLYTICALLY REFINING METALS. ANSON G. BETTS, Troy, N. Y. Filed Feb. 20, 1905. Serial No. 246,453.



Claim.—1. The process of electrolytically refining a set of metal anodes arranged in multiple, which consists in first passing from said anodes through a suitable electrolyte to suitable cathodes practically the full volume of the refinery circuit until the active anode area begins to diminish largely, and then shunting around the tank containing said anodes, part of the refinery current, which part increases thereafter functionally with the diminishing active anode area.

2. The process of electrolytically refining a set of metal anodes arranged in multiple, which consists in passing from said anodes through a suitable electrolyte to suitable cathodes an electric current of volume which does not change to an appreciable extent functionally with variations of resistance of the bath, and when the active surface of said anodes has been reduced to a considerable extent shunting through another conductor an increasing portion of the current.

857,379. HORSE HAY-FORK. JOHN M. BOYD, Fond du Lac, Wis. Filed Sept. 6, 1904. Serial No. 223,381.

Claim.—1. In a hay fork, in combination with a suitable fork head, parallel bails attached to each side thereof, prongs or tines pivoted between said bails, catches *c*, *c*, adapted to engage the upper ends of said prongs, levers

l. l. adapted to lock said catches, and springs *f. f²*. adapted to hold said catches and levers in their proper positions, as and for the purposes set forth.



2. The combination of the balls *b.* arranged in pairs at each side of the fork, prongs *a.* pivoted between said balls at each side, catches c. formed with a forward downwardly extending portion *c'.*, a rear downward extension *c²*., an upward forward extension *c³*., and a hub *c⁴*., a locking lever *l.* formed with a downward extension *l'.* and a hub *l²*., and springs *f. f²*., substantially as and for the purposes set forth.

3. The combination of the head *h.*, the spear *s.* the balls *b.* prongs *a.*, and catches *c.*, locking levers *l.*, and the springs *f. f²*., substantially as and for the purposes set forth.

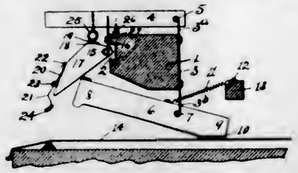
4. The combination of the balls *b.*, prongs *a.* pivoted between said balls, a locking mechanism adapted to engage and hold said prongs, and guards attached at their lower ends to said prongs and adapted to slide at their upper ends up and down along said balls, substantially as and for the purposes set forth.

5. In a hay fork, in combination with the prongs *a.* and balls *b.*, the guards *k.*, substantially as and for the purposes set forth.

6. The combination of the head *h.*, balls *b.*, prongs *a.*, catches and levers *c.* and *l.*, springs *f. f²*., and guards attached at one end to the prongs *a.* and adapted to slide up and down along the balls *b.* at their opposite ends, substantially as and for the purposes set forth.

7. In a hay fork, the combination of the head *h.*, spear *s.*, balls *g.*, prongs *a.*, catches *c.*, levers *l.*, springs *f. f²*., and guards *k.*, substantially as and for the purposes set forth.

857,380. ACTION FOR STRINGED MUSICAL INSTRUMENTS. LEANDER F. BOYD, Toledo, Ohio. Filed Apr. 4, 1906. Renewed May 21, 1907. Serial No. 374,847.



Claim.—1. In a piano-action, a hammer, a key disposed above the hammer and in substantial parallelism therewith, a jack carried intermediate the hammer and key and movable by the latter to effect a depression of the former, and a resilient finger carried by the lower end of the jack serving as a back-check for coacting with the striker end of the hammer when the key is depressed to hold the hammer away from its string, substantially as described.

2. In a piano-action, a key and a hammer spaced apart and disposed in the same general direction, a jack connecting the key and hammer and movable by the former to effect a depression of the latter, and a spring-finger adjustably carried at the outer side of the jack to serve as a back-check and having its free terminal bent inwardly around the end of the jack contiguous to the striker end of the hammer and faced with a soft material, substantially as described.

3. In a piano-action, an action-rail, a key and a hammer pivotally carried on opposite sides of said rail, a jack intermediate the key and hammer and movable by the former to effect a depression of the latter, a resilient finger carried by the jack serving as a back-check for the hammer and an adjustable stop carried by the key for coacting with the action-rail whereby to regulate the pressure of the resilient finger on the hammer.

857,381. HEATING-BAR FOR ELECTRIC FURNACES. ARCHIBALD L. BROUGHAM, New York, N. Y. Filed Oct. 26, 1906. Serial No. 340,708.



Claim.—1. A heating bar having terminal portions and an intervening heating portion anastomosed to said terminal portions.

2. A heating bar comprising a heating portion of low conductivity united at each end to a terminal portion by numerous inosculations.

3. An electrical heating bar comprising three parts, namely, two terminals and an intervening heating portion, said parts having digitiform ends which are interdigitated.

4. A heating bar comprising three parts, namely, two terminals of relatively high conductivity and an intervening portion of relatively low conductivity; each end of said intervening portion formed with a plurality of rows of digits, the terminals having corresponding rows of digits and being interdigitated with said intervening portion.

5. A heating bar comprising three parts, namely, two terminals of relatively high conductivity and an intervening portion of relatively low conductivity; each end of said intervening portion formed with numerous rows of digits, each row including numerous digits, the terminals having corresponding rows of digits and being interdigitated with said intervening portion.

6. A heating bar comprising three parts, namely, two terminals of relatively high conductivity and an intervening portion of relatively low conductivity; each end of said intervening portion formed with numerous rows of digits, each row including numerous digits, the terminals having corresponding rows of digits and being interdigitated with said intervening portion, each of said digits being about square in cross-section.

7. A heating-bar comprising three parts, namely, two terminals of relatively high conductivity and an intervening portion of relatively low conductivity; each end of said intervening portion formed with numerous rows of digits, each row including numerous digits, the terminals having corresponding rows of digits and being interdigitated with said intervening portion, all of said digits being attenuated, and the digits in the respective sets being

firmly joined together so that the entire structure forms a rigid bar.

8. A heating-bar having terminal portions and an intervening portion of lower conductivity anastomosed to said terminal portions; the anastomosis extending farther into said intervening portion at the middle than at the sides of the bar.

9. A heating-bar comprising a heating portion of low conductivity united at each end to a terminal portion by numerous inosculations, which, beginning at the sides of the bar, extend to gradually increasing distances longitudinally of the bar, the middle inosculations projecting the most into said heating portion.

10. A heating-bar comprising a terminal portion of relatively high conductivity and a heating portion of relatively low conductivity; said portions having digitiform ends which are interdigitated, and the digitations projecting from the terminal into the heating portion more at the middle than at the sides of the bar, and projecting from the heating portion into the terminal more at the sides than at the middle of the bar.

11. A heating-bar comprising a terminal of relatively high conductivity and a heating portion of relatively low conductivity; said parts having digitiform ends which are interdigitated, the digitations being graduated in a manner to gradually decrease the conductivity of the bar considered at a whole, from the terminal end to the heating-portion end of the interdigitated portion of the bar.

12. A heating-bar comprising a terminal portion of relatively high conductivity and a heating portion of relatively low conductivity; the end of said terminal portion formed with a plurality of rows of digits, the terminals having corresponding rows of digits and being interdigitated with the terminal digits, all of the digits being about equal in length and all arranged in escheion with the terminal digits projecting gradually farther into the heating portion from the sides to the middle of the bar.

13. A heating-bar comprising a terminal portion of molded material and a heating portion of molded material of lower conductivity and anastomosed to said terminal portion, said terminal portion and heating portion molded together.

14. A molded heating-bar consisting principally of carbon and clay and comprising a heating portion and a terminal portion united by numerous inosculations, the proportion of clay being much greater in the heating portion than in the terminal portion, and said portions molded together.

15. A molded heating-bar formed of carbon and a resistance material, and comprising terminal portions and an intervening portion, said portions having digitiform ends which are interdigitated, the proportion of carbon being greater in said terminal portions than in said intervening portion.

16. An electrical bar having terminals and an intervening portion united to the terminals by means of interdigitated structures.

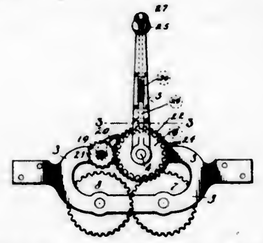
17. As a means for effecting connection between two bodies of varying electrical resistances, a set of digitations of high conductivity united to one of said bodies, and a set of digitations of low conductivity united to the other of said bodies; said digitations interdigitated.

18. An electrical heating bar comprising two terminals and an intervening portion, said parts having digitiform ends which are interdigitated and integrated.

19. A molded electrical heating bar having terminal portions of high electrical conductivity, an intervening portion of high electrical resistance, and connecting portions merging said terminals gradually into said intervening portion.

857,382. SAFETY APPLIANCE FOR HOISTING MECHANISMS. WILLIAM F. BUCH, Cleveland, Ohio. Filed Apr. 3, 1907. Serial No. 366,085.

Claim.—1. In a hoisting device, a drive shaft, a crank for turning said drive shaft, a hoisting mechanism connected with said drive shaft, a detent pawl, a member loosely mounted on the drive shaft, connections between said member and said detent pawl, means for normally holding the detent pawl out of operative position, and means on the crank for controlling said member, whereby, when the crank gets beyond control of the operator said member will throw the detent pawl into engagement with the hoisting mechanism and prevent the backward movement thereof.



2. In a hoisting device, a main drive shaft, a crank for turning said drive shaft, a gear secured to the drive shaft, and a hoisting mechanism connected with said gear, a detent pawl, means for normally holding said detent pawl out of operative position, a member loosely mounted on the drive shaft, connections between said member and said detent pawl, and means on the crank for controlling said member, whereby, when the crank gets beyond control of the operator said member will throw the detent pawl into engagement with the said gear and thereby prevent the backward movement of the hoisting mechanism.

3. In a hoisting mechanism, a main drive shaft, a crank for turning said drive shaft, a train of hoisting gears geared with said shaft so as to be driven thereby, a detent pawl adapted to engage said train of gearing and hold the same against backward movement, a gear loosely mounted on the drive shaft, said gear being connected with the detent pawl, means for normally holding the detent pawl out of operative position, and means carried by the crank and adapted to engage said loosely mounted gear whereby, when the operator loses control of the crank, said loosely mounted gear will become connected with the crank and will rock the detent pawl into engagement with the train of gearing and thereby prevent the backward movement of said train of gearing.

4. In a hoisting mechanism, a main drive shaft, a crank for turning said drive shaft, a train of hoisting gear geared with said shaft so as to be driven thereby, a detent pawl adapted to engage said train of gearing and hold the same against backward movement, a gear loosely mounted on the drive shaft, said gear being connected with the detent pawl, means for normally holding the detent pawl out of operative position, a grip lever carried by the crank, and connections between said grip lever and said loosely mounted gear whereby, when the operator loses control of the crank, said loosely mounted gear will become connected with the crank, and will rock the detent pawl into engagement with the train of gearing and thereby prevent the backward movement of said train of gearing.

5. In a hoisting mechanism, a main drive shaft, hoisting mechanism connected with and driven by said shaft, a crank secured to said shaft for rotating the same, said crank having a handle, a grip lever connected with said handle, a loose gear mounted on the drive shaft, a pinion meshing with said loose gear, a detent pawl connected with said pinion whereby, when the gear is turned in one direction, the pawl will be thrown into engagement with the hoisting mechanism to prevent backward movement thereof, means for normally holding said pawl out of operative position and means connected with the grip lever for engaging the said loose gear, whereby when the crank moves backwardly with the grip lever released, the detent will be thrown into engagement with the hoisting mechanism, and will thereby arrest the same.

6. In a hoisting mechanism, a drive shaft, a driving gear connected with and driven by said shaft, hoisting mechanism connected with said gear, a crank secured to said shaft for rotating the same, said crank having a

handle, a grip lever connected with said handle, a loose gear mounted on the drive shaft, a pinion meshing with said loose gear, a detent pawl connected with said pinion whereby, when the gear is turned in one direction, the pawl will be thrown into engagement with the driving gear on the drive shaft to prevent backward movement thereof, means for normally holding said pawl out of operative position and means connected with the grip lever for engaging the said loose gear, whereby when the crank moves backwardly with the grip lever released, the detent will be thrown into engagement with the driving gear, and will thereby arrest the hoisting mechanism.

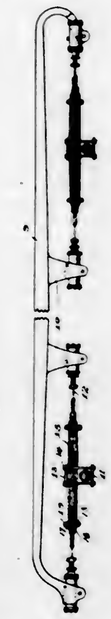
7. In a candle molding machine, a mold box, rack bars connected with said mold box, a main drive shaft, gearing connecting said main drive shaft with said racks, whereby, when the main drive shaft is turned in one direction, the mold box will be lifted and when the shaft is turned in the opposite direction, the mold box will be lowered, a crank connected with the main drive shaft, a handle and a grip lever on said crank, a gear loosely mounted on the main shaft, a detent pawl, a pinion connecting said detent pawl and said gear, means for normally holding the detent pawl out of operative position, and connections between the grip lever and said loosely mounted gear whereby when the grip lever is released, the gear will be turned with the crank and the detent pawl will be thrown into engagement with the hoisting gears to hold the latter positively against reverse movement.

8. In a candle molding machine, a mold box, rack bars connected with said mold box, a main drive shaft, gearing connecting said main drive shaft with said racks, whereby, when the main drive shaft is turned in one direction the mold box will be lifted and when the shaft is turned in the opposite direction, the mold box will be lowered, a crank connected with the main drive shaft, a handle and a grip lever on said crank, a gear loosely mounted on the main shaft, a detent pawl, a pinion connecting said detent pawl and said gear, a spring engaging said gear and normally holding the detent pawl out of operative position, and connections between the grip lever and said loosely mounted gear whereby when the grip lever is released, the gear will be turned with the crank and the detent pawl will be thrown into engagement with the hoisting gears to hold the latter positively against reverse movement.

9. In a hoisting mechanism, a drive shaft, hoisting mechanism connected with and driven by said shaft, a crank secured to said shaft for rotating the same, said crank having a handle, a grip lever connected with said handle and adapted to be pressed into the same so that the handle and the grip lever form a continuous and smooth surface for the hand, a loose gear mounted on the drive shaft, a rock shaft, a pinion on said rock shaft and meshing with said loose gear, a detent pawl carried by the said rock shaft and adapted to engage the hoisting mechanism when the rock shaft is turned in one direction, a spring connected with the loose gear and normally holding the same in such position that the detent will be out of engagement with the hoisting mechanism, and means connecting the grip lever with the said loose gear whereby, when the crank moves backwardly with the grip lever released, the detent pawl will be thrown into engagement with the hoisting mechanism against the tension of the said spring, and will thereby arrest the movement of said hoisting mechanism.

10. In a hoisting mechanism, a drive shaft, hoisting mechanism connected with and driven by said shaft, a crank secured to said shaft for rotating the same, said crank having a handle, a grip lever connected with said handle and adapted to be pressed into the same so that the handle and the grip lever form a continuous and smooth surface for the hand, a loose gear mounted on the drive shaft, a rock shaft, a pinion secured to said rock shaft and meshing with said loose gear, a detent pawl carried by the said rock shaft and adapted to engage the hoisting mechanism when the crank is turned backwardly, a spring connected with the loose gear and normally holding the same in such position that the detent will be out of engagement with the hoisting mechanism, and a spring-pressed plunger adapted to connect the grip lever with the said loose gear whereby, when the crank moves backwardly with the grip lever released, the plunger will be thrown into engagement with the loose gear and the detent pawl will be thrown into engagement with the hoisting mechanism so as to arrest the movement of said hoisting mechanism, the spring connected with the loose gear rocking the pawl out of operative position when the grip lever is again pressed into the handle.

857,383. VEHICLE-SPRING. CHARLES BURGESS, Jr., Wenona, Ill. Filed Jan. 14, 1907. Serial No. 352,239.



Claim.—1. In a spring construction for a vehicle, the combination of an axle, a frame, a spring secured between its ends to said axle and lying in a horizontal plane and buffer springs secured to said frame and to the ends of said spring, the longitudinal axial line of said spring and buffer springs being in the same horizontal plane, substantially as described.

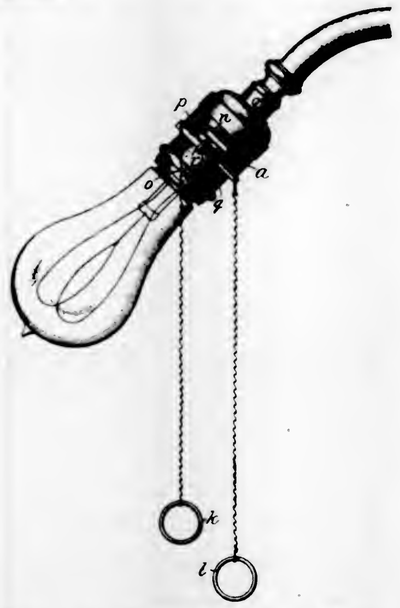
2. In a spring construction for a vehicle, the combination of an axle, a frame, a spring secured between its ends to said axle, rocking cylinders secured to said frame, pistons within said cylinders connected to the ends of said spring, and buffer springs backing said pistons, the normal tension of said buffer springs being outward from the ends of said spring, substantially as described.

3. In a spring construction for a vehicle, the combination of an axle, a frame, a spring secured between its ends to said axle, and lying in a horizontal plane, rocking cylinders secured to said frame and lying in the same horizontal plane as said spring, pistons within said cylinders rigidly connected to the ends of said spring, and buffer springs backing said pistons, the normal tension of said buffer springs being outward from the ends of said spring, substantially as described.

4. In a spring construction for a vehicle, the combination of an axle, a frame, a spring having its central portion secured to the axle, rocking cylinders secured to said frame and adapted to contain oil, piston rods within said cylinders having piston heads each provided with a longitudinal aperture for the passage of oil on either side thereof, buffer springs surrounding said piston rods, the opposite ends of said springs being rigidly connected to said piston rods, substantially as described.

5. The combination with a spring comprising a series of leaves, of vertical guide posts slidably mounted on both sides thereof, bearings journaled in said guide posts and in contact with the outer surfaces of the upper and lower leaves of said spring, substantially as described.

857,384. ELECTRIC-LIGHT SWITCH. HARRY R. COFFEY, Chicago, Ill. Filed Jan. 7, 1907. Serial No. 351,156.



Claim.—1. An attachment for electric switches, comprising a clamping member formed to fit the switch handle, said clamping member having outwardly extending lips, a lever member mounted in said lips, said lever member having means co-operating with the lips for adjusting the clamping members on the handle, and operating members attached to the ends of the lever member.

2. An attachment for electric switches, comprising a clamping member formed to fit the switch handle, apertures in the ends of said clamping member, one of said apertures being screw threaded, a shouldered screw passing through said apertures, and pendent members attached to the ends of said screw.

857,385. TOOL FOR PLACING SHANKED BUTTONS. ALBERT H. CUSHMAN, Chicago, Ill., assignor to Morley Manufacturing Company, Boston, Mass., a Corporation of Maine. Filed Dec. 14, 1906. Serial No. 347,742.

Claim.—1. In a tool for placing shanked buttons, the combination of a stool, a plunger guide mounted on the stool, a plunger to reciprocate therein, a button head holder movably secured to and carried by the plunger and normally held below the plunger face, and means automatically to move the button head holder to withdraw it from a button head and from below the plunger face when the plunger approaches its lowermost position.

2. In a tool for placing shanked buttons, the combination of a stool, a plunger guide mounted on the stool, a plunger to reciprocate therein, a button head holder consisting of a pair of fingers extending across the plunger face below the same, pivoted on the plunger, and provided with tipping cams, and wipers to engage said cams and tip the fingers to release a button head as the plunger approaches its lowermost position.



3. In a tool for placing shanked buttons, the combination of a stool, a plunger guide mounted on the stool, a plunger to reciprocate therein, a button head holder consisting of a pair of fingers extending across and below the plunger face, shanks carrying said fingers pivoted on the plunger, and cams on the shanks to tip them, wipers to guide and hold said shanks from tipping during the initial movement of the plunger, and to engage the cams to tip the shanks and attached fingers to release a button head as the plunger approaches its lowermost position.

4. In a tool for placing shanked buttons, the combination of a stool, a plunger guide mounted on the stool, a plunger to reciprocate therein, a button head holder under the plunger face, means to withdraw the holder from the button, and a depressing handle rigidly attached to the plunger, and co-operating with the plunger guide to lift and carry the tool.

5. In a tool for placing shanked buttons, the combination of a stool, a plunger guide mounted thereon, a plunger to reciprocate therein, a button head holder under the plunger face movably secured to and carried by the plunger, means automatically to withdraw the holder from a button head and from below the plunger face when the plunger approaches its lowermost position, and a pointer secured to the stool and terminating close to the delivery point of the plunger.

6. In a tool for placing shanked buttons, the combination of a stool, a plunger guide mounted on the stool, a plunger to reciprocate therein, a button head holder under the plunger face, means to withdraw the holder from a button, an elevating spring for the plunger, a stop on the plunger guide, and a depressing handle rigidly secured to the plunger, said handle co-operating with said stop on the plunger guide to lift and carry the tool.

7. In a device of the character described for placing shanked buttons, in combination with the main support and plunger guide, of a pair of supporting brackets rigidly secured to the plunger guide and the main support at either side of the plunger guide, each provided with a slot open on its upper side, a button chute removably supported by said slots by means of a pair of supporting studs, a stop in the lower part of the chute and a pin held between said brackets to engage the stop to remove it from the chute channel when the chute is placed in position between the brackets.

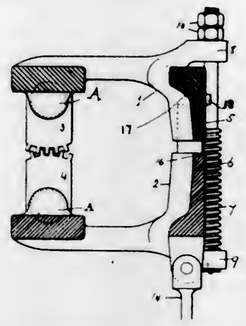
8. A tool for placing buttons, comprising a stool, a plunger guide mounted on the stool, a plunger to reciprocate therein, an operating handle for the plunger, a spring normally holding the plunger in its elevated position, a pair of fingers extending across and below the plunger face, shanks carrying said fingers pivoted to the plunger, cams on the shanks, wipers to guide and hold the shanks

from tipping during the initial movement of the plunger and to engage the cams to tip the shanks and open the fingers as the plunger approaches its lowermost position, a pointer secured to the stool and terminating near the delivery point of the plunger, and a button chute to deliver the buttons to said fingers.

9. In a tool for placing shanked buttons, the combination of a stool, a plunger guide mounted on the stool, a plunger to reciprocate therein, a button head holder below the plunger face, and means to withdraw the holder from a button, the stool being provided with an adjustable leg adapted to serve as a guide for spacing the buttons.

10. A device for placing shanked buttons, comprising a support, a plunger guide thereon, a plunger to reciprocate in the plunger guide, a button head holder movably secured below and carried by the plunger and normally held below the plunger face, and means automatically to move the button head holder to withdraw it from a button head and from below the plunger face when the plunger approaches its lowermost position.

857,386. MACHINE FOR DECORTICATING MANILA FIBER, &c. CAROLUS E. DAILEY, Brooklyn, N. Y. Filed Oct. 22, 1906. Serial No. 340,029.



Claim.—1. In a machine for decorticating Manila or other fibers, decorticating parts consisting of a blade having a grooved edge and a blade having a sharpened edge adapted to coöperate with the grooved blade in combination with means tending to hold said blades constantly in juxtaposition.

2. In a machine for decorticating Manila or other fibers, decorticating parts consisting of a blade having a sharpened serrated edge and a blade having a grooved edge adapted to coöperate with said sharpened blade.

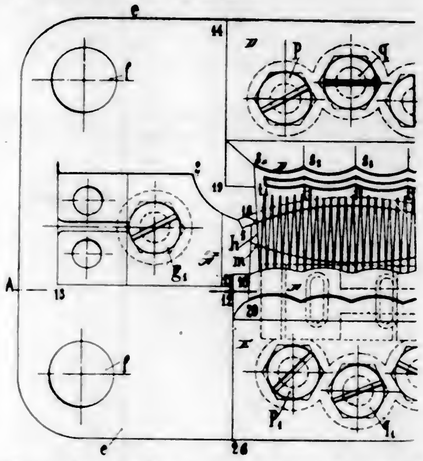
3. In a machine for decorticating Manila or other fibers, decorticating parts consisting of a blade having a grooved edge and a blade having a sharpened serrated edge adapted to coöperate with the grooved blade, said blades being set at other than a right angle to the direction of pulls of the fiber passing between said blades.

4. In a machine for decorticating Manila or other fibers, decorticating parts consisting of a blade having a grooved edge and a blade having a sharpened serrated edge adapted to coöperate with the grooved blade, and means tending to keep said blades constantly in juxtaposition.

5. In a machine for decorticating Manila or other fibers, decorticating parts consisting of a blade having a grooved edge and a blade having a sharpened serrated edge adapted to coöperate with the grooved blade, and spring means tending to keep said blades constantly in juxtaposition.

6. In a machine for decorticating Manila and other fibers, decorticating parts consisting of a blade having a grooved edge and a blade having a sharpened serrated edge adjustably secured to a backing plate and adapted to coöperate with the grooved blade, substantially as described.

857,387. MACHINE FOR MANUFACTURING CELLULOID COMBS. PASCAL DURANDO, Lyon, France. Filed Feb. 2, 1906. Serial No. 299,134.



Claim.—1. A machine for making combs comprising means to stamp out in one operation a comb having an ornamented back.

2. A machine for making combs comprising means to stamp out in one operation a comb having finally formed teeth and an ornamental back.

3. In a machine for making combs, means for stamping out in one operation two combs having finally formed teeth and ornamental backs, the teeth of one comb being stamped out of the stock to form the interdental spaces of the other comb.

4. In a machine for making combs, the combination of two opposing dies which stamp out in one operation and from one sheet of stock two combs having ornamental backs.

5. In a machine for making combs, the combination of two opposing dies which stamp out in one operation and from one sheet of stock two combs having ornamental backs and finally formed teeth.

6. In a machine for making combs, a die having a teeth-forming plate and a pattern-forming plate.

7. In a machine for making combs, a die having a teeth-forming portion, and interchangeable means for stamping out on the back of the comb an ornamental design.

8. In a machine for making combs, a die having teeth-forming means thereon, and an interchangeable pattern-forming plate.

9. In a machine for making combs, a die having teeth-forming means, and a plate removably attached to said die and carrying a pattern to be stamped out on the back of a comb.

10. In a machine for making combs, a die, a teeth-forming plate applied to said die, and a pattern-forming plate applied to said die.

11. In a machine for making combs, a die, a teeth-forming plate carried thereby, a pattern-forming plate at one side of said teeth-forming plate, and an ejecting device at the other side of said teeth-forming plate.

12. In a machine for making combs, a teeth-forming plate to form the teeth throughout the greater part of their length, and a second plate to form the teeth at their butt ends.

13. In a machine for making combs, a teeth-forming plate to form the teeth throughout the greater part of their length, and a plate carrying a design in intaglio and relief to be stamped out on the back of the comb and means to form the teeth throughout the remainder of their length.

14. In a machine for making combs, a die comprising a main plate, a teeth-forming plate carried by said main plate, and a pattern-forming plate attached to said main plate and fitting against said teeth-forming plate.

15. In a machine for making combs, a die comprising a main plate, a central teeth-forming plate applied thereto, a pattern-forming plate attached to said main plate and abutting against said teeth-forming plate, and an ejecting block slidable at right angles to the plane of the die at one edge of said teeth-forming plate.

16. In a machine for making combs, a die comprising a central teeth-forming plate A^x, a pattern-forming plate D, an ejecting block A, and a plate E to restrict the lateral movement of said ejecting block.

17. In a machine for making combs, opposing dies having teeth-forming plates thereon and pattern-forming plates, the pattern-forming plates of the two dies bearing an opposite relation to the teeth-forming plates.

18. In a machine for making combs, opposing dies having coöperating teeth-forming plates affixed thereto, said plates having grooves and cutting edges which taper oppositely.

19. In a machine for making combs, opposing dies, teeth-forming plates carried thereby, and pattern-forming plates also carried thereby, the pattern-forming plates of said dies being arranged at opposite sides of the teeth-forming plates.

20. In a machine for making combs, the combination of two opposing dies, each carrying a teeth-forming plate, a pattern-forming plate and an ejecting device, the teeth-forming plates being superposed but oppositely disposed, and the ejecting device of one die and the pattern-forming plate of the other die being arranged in superposed relation.

21. In a machine for making combs, opposing dies which stamp out in one operation two flat combs having finally formed teeth and ornamental backs, and means for ejecting the combs from the dies.

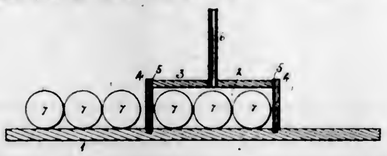
22. In a machine for making combs, two opposing dies which stamp out in one operation and from one sheet of celluloid two combs having finally formed teeth and having their backs stamped in intaglio and relief on opposite surfaces.

23. In a machine for making combs, coöperating dies, teeth-forming plates carried by said dies and provided with grooves and cutting edges which stamp out two combs from one sheet of celluloid, the teeth of one comb being stamped out to form the interdental spaces of the other comb, and plates carried by said dies to stamp on the backs of the combs ornamental designs in intaglio and relief.

24. In a machine for making combs, two coöperating dies, each carrying a teeth-forming plate, a plate for stamping the back of the comb, and an ejecting block, said devices of the dies being arranged in reverse relation.

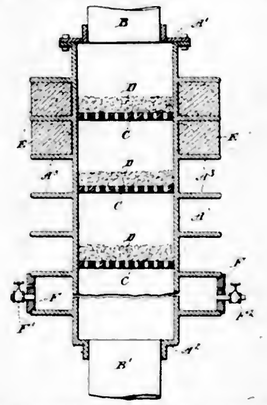
25. In a machine for making combs, the combination of two dies, a central teeth-forming plate carried by each die and provided with tapered grooves and cutting edges, the grooves and cutting edges of one plate tapering oppositely from the other plate, pattern-carrying plates arranged at opposite edges of said teeth-forming plates, and an ejecting block movable at right angles to the plane of each die and arranged at the edge of the teeth-forming plate which is opposite to the pattern-forming plate.

857,388. METHOD FOR TESTING FILLED AND CLOSED CANS. EDWARD S. ENO, Elgin, Ill. Filed June 7, 1906. Serial No. 320,639.



Claim.—The method herein described of testing closed and filled cans containing liquids, which consists in placing the cans in a receptacle, closing the receptacle hermetically, then exhausting the air from the receptacle to a certain degree and finally allowing the receptacle to fill with air.

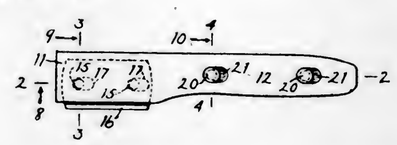
857,389. CONTACT-CHAMBER. WILLIAM C. FERGUSON, Flushing, N. Y., assignor to General Chemical Company, New York, N. Y., a Corporation of New York. Filed Apr. 22, 1904. Serial No. 204,327.



Claim.—1. A contact chamber for catalytic processes, provided with a heat-retaining covering of unequal effectiveness adapted to cause a different amount of radiation from different parts of the surface of said contact chamber.

2. A contact chamber for catalytic processes, combined with independently removable split rings of anti-radiating material surrounding said chamber at different points of its length.

857,390. SAFETY-RAZOR-BLADE HOLDER. MORRIS D. FLETCHER, Springfield, Mass. Filed Mar. 13, 1907. Serial No. 362,191.



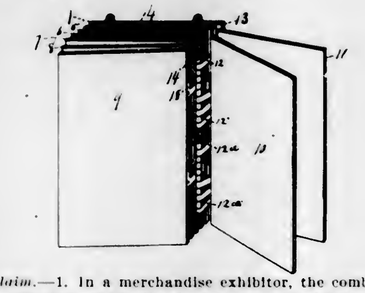
Claim.—1. A safety-razor blade holder comprising two separable jaws adapted to receive a razor blade between them and having integral handles in sliding relation to each other, means to retain such blade in place between said jaws, and fastening means for the separable parts.

2. The combination, in a safety-razor blade holder, of two jaws adapted to retain a razor blade in place between them, a handle provided with a locking pin, and another handle slotted to receive and engage said locking pin, said handles being in sliding relation to each other for locking and releasing purposes.

3. The combination, in a safety-razor blade holder, of a jaw provided with blade-engaging pins and having a handle, a second jaw also having a handle, said handles being mutually reciprocal for locking and releasing purposes, and locking pins projecting from the inside face of one of such handles, the other handle being slotted to receive and engage said locking pins.

4. The combination, in a safety-razor blade holder, of a jaw provided with blade-engaging pins and having a handle, a second jaw having elongated counter-sinks to receive the heads of said pins and also provided with a handle, and locking pins projecting from the inside face of one of such handles, the other handle being slotted to receive and engage said locking pins.

857,391. MERCHANDISE-EXHIBITOR. SAMUEL GOLDBERG, New York, N. Y. Filed Dec. 29, 1906. Serial No. 350,031.



Claim.—1. In a merchandise exhibitor, the combination of a plurality of equally sized rectangular frames, evenly disposed to form a parallelopipedon, an additional and larger frame forming a base for the other frames and protruding to one side thereof, a pair of hinges the fixed butts of each of said hinges being fastened to the protruding portion of said base, and having such length that the pintles of each of said hinges have their extended axes coinciding with each other, and lying longitudinally of the edges of the central frames, each hinge having L-shaped rotary butts of different lengths, the vertical faces of which are alternately fastened to the edges of the frames located successively farther and farther from said pintles and each frame being attached to one rotary butt of each hinge.

2. In a merchandise exhibitor, the combination of a base and a plurality of superposed supporting frames, a pair of hinges, fixed butts for each of said hinges being attached to the base, the pintles of each of said hinges lying longitudinally of the edges of one of the frames, rotary butts for each of said hinges and each frame being attached to one rotary butt of each hinge, the rotary butts having different lengths for attachment to the frames located farther and farther from said pintles, and each rotary butt consisting of an L-shaped piece of sheet metal the vertical face of which is fastened to the edge of a frame, and having one end thereof bent around one of said pintles.

857,392. HAT-FASTENER. ERNA HABBEMA-HORAK, Enschede, Netherlands. Filed Dec. 6, 1906. Serial No. 346,525.



Claim.—1. A hat fastener comprising a clasp fitting over the wearer's head, a spring secured to the end of said clasp, and a fastener-bearing member passing over the end of said clasp and held in place by said spring.

2. A hat fastener comprising a clasp fitting over the wearer's head, a spring secured to the end of said clasp, an offset upon said spring, a fastener-bearing member passing over the end of said clasp, and a recess in said member in which said offset seats.

3. A hat fastener comprising a clasp fitting over the wearer's head, a spring secured to the end of said clasp, an offset upon said spring, a fastener-bearing member passing over the end of said clasp, a recess in said member in which said offset seats, ribbons secured to the hat, and means upon said ribbons engaging the fastener carried by said member.

4. A hat fastener comprising a U-shaped clasp of flexible sheet material, said clasp being held in place beneath the hair of the wearer, a spring secured to the end of said clasp, a fastener-bearing member passing over the end of said clasp and held in place by said spring, and means carried by the hat engaging the fasteners borne upon said fastener-bearing member.

5. A hat fastener comprising a U-shaped clasp of sheet material, said clasp being held in place beneath the hair of the wearer, a stud borne by said clasp, and a socket borne by the hat, said stud being inserted in said socket, thereby to hold the hat fixed upon the head.

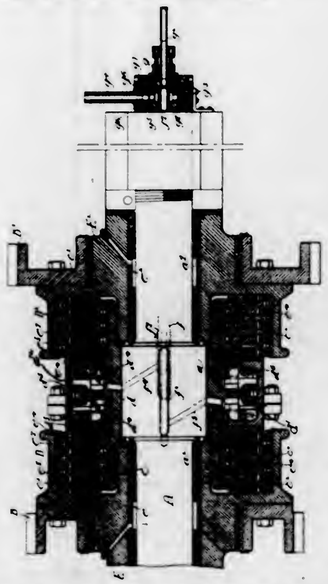
6. A hat fastener comprising a U-shaped clasp of sheet material, a fastener borne upon the end of said clasp but detachable therefrom, and means carried by the hat and engaging said fastener.

7. A sheet-material clasp held in place by the hair of the wearer, studs borne upon the ends of said clasp but detachable therefrom, and sockets carried by the hat and engaging said studs.

8. A sheet-material clasp held in place by the hair of the wearer, said clasp having tapering ends but a broad middle portion, detachable fasteners on the ends of said clasp, and means carried by the hat to be secured to said fasteners.

9. A sheet-material clasp held in place by the hair of the wearer, said clasp having tapered ends but a broad middle portion, a fastener-support placed on said ends, and locking-means to hold said fastener support on said clasp.

857,393. CLUTCH MECHANISM. WILLIAM J. HAGMAN, Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Plainfield, N. J., a Corporation of New Jersey. Filed Sept. 14, 1905. Serial No. 278,492.



Claim.—1. The combination of a pair of fluid operated clutches and a cylinder and piston for actuating the same, with a shaft provided with two concentric passages respectively connected to the two ends of the cylinder, a non-revoluble ring carried on an extension of the shaft and having an interior annular recess connected to a fluid supply pipe and in communication with the exterior of said concentric passages, a pipe in line with the line of the inner of said passages, and a stuffing box carried by the shaft for making an air tight connection between said pipe and said inner passage, substantially as described.

2. A driving mechanism for planer platens comprising a hollow clutch shaft operatively connected with the platen, two reversely rotating clutch barrels mounted loosely on said shaft, co-operating clutch disks operatively connected respectively with each barrel and the clutch shaft, a central air pipe arranged axially within the clutch shaft, an axially movable shifting cylinder arranged between the disks of the two clutches and having opposite ends connected by branch passages with bores of the clutch shaft and the central pipe, a piston operatively connected with the clutch shaft and arranged in said cylinder between said branch passages, a stationary air box receiving said clutch shaft and having an air chamber connected with the bore of said shaft, a branch air pipe connected with the chamber of said air box, a branch air pipe connected with the central air pipe, and packings arranged between the bore of said air box and the periphery of said shaft on opposite sides of the air chamber.

857,394. GENERATOR FOR ALTERNATING ELECTRIC CURRENTS. WILLIAM HALLOCK, New York, N. Y. Filed Sept. 21, 1906. Serial No. 335,541.



Claim.—1. An alternating current generator having concentrically arranged field and generating coils, a field with concentric sets of polar projections staggered radially with relation to each other, and a rotor traversing the field and having connecting pieces or projections turning opposite the field projections, whereby the magnetic circuit alternately includes the field coil only and the field and generating coils.

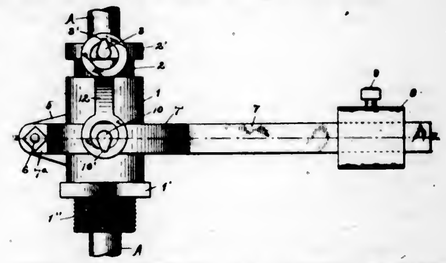
2. An alternating electric generator having stationary staggered pole pieces in the field, a rotor traversing the field and having connecting pieces turning opposite the polar projections, and concentrically arranged field and generating coils, each comprising a single coil, and the coils being placed on opposite sides of the inner polar projections.

3. An alternating current generator comprising a field having two sets of polar projections radially staggered with reference to each other, a single field coil, a generating coil, and a rotor without winding turning opposite the said polar projections, the said rotor having concentrically arranged magnetic connecting pieces separated by non-magnetic material.

4. An alternating current generator comprising a field having sets of concentrically arranged but radially staggered pole pieces, concentrically arranged field and generating coils, each comprising a single coil, and the coils being arranged adjacent to the pole pieces, and a rotor turning opposite the said polar projections, said rotor having concentrically arranged magnetic connecting pieces turning opposite the aforesaid polar projections.

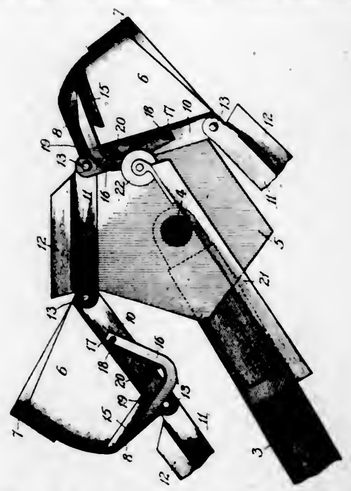
5. An alternating current generator, comprising a field having radially arranged polar projections in two concentric sets, the projections of each set being spaced apart, field and generating coils arranged concentrically and on radially opposite sides of the inner set of polar projections, and a rotor having spokes carrying connecting pieces to turn opposite the said polar projections, whereby at each revolution of the rotor there are as many complete cycles per revolution as there are spokes on the rotor.

857,395. STUFFING-BOX. JOHN HALTERMAN, Portland, Ind. Filed Nov. 7, 1906. Serial No. 342,340.



Claim.—In a stuffing-box, the combination of the body adapted to be secured on the upper end of a well tubing and containing a packing cavity around the polish-rod operative in said tubing, a follower adapted to surround the said polish-rod and to fill said cavity, a beam extending out beyond the said body and having prongs to surround the body, means for pivoting said prongs to the body on the side opposite said beam, arms extending out from the top of the follower, arms extending out from said prongs of the beam, a link for connecting each pair of said arms, a weight adjustably maintained on said beam, and means for retaining said links on said arms when the pressure of the weight is exerted, all substantially as shown and described and for the purposes set forth.

857,396. DREDGE-BUCKET. ISAAC B. HAMMOND, Portland, Oreg. Filed Feb. 12, 1907. Serial No. 356,946.



Claim.—1. In a dredge, the combination with a traveling bucket formed with an outwardly-flaring surrounding wall, of a bodily-movable, bucket-contents loosening, plunger in the base-portion of the bucket surrounded by said wall, an actuating lever for the plunger carried by the bucket, and a shoulder in the path of travel of the lever, for the purpose set forth.

2. In a dredge, the combination with a traveling bucket formed with a bottom and an outwardly flaring surround-

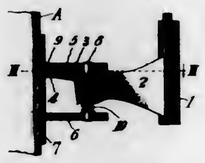
ing wall, of a bodily-movable bucket-contents loosening, plunger in the base-portion of the bucket surrounded by said wall, an actuating lever for the plunger carried by the bucket, and a shoulder in the path of travel of the lever, for the purpose set forth.

3. In a dredge, the combination of a dredge bucket, movable spring-returned discharging-mechanism extending into the base portion of the bucket, means for moving the bucket to its discharging position, and actuating means for said discharging-mechanism in the path of movement thereof.

4. In combination, a traveling and upsetting dredge-bucket, having an outwardly flaring surrounding wall, a movable plunger in the base of the bucket, surrounded by said wall, a curved lever pivoted at one end to one side of the bucket outside the same and operatively connected at its opposite end with the plunger, and a shoulder in the path of the curved portion of the lever, substantially as and for the purpose set forth.

5. In combination, a traveling and upsetting dredge-bucket, a movable plunger in the base of the bucket, a curved lever pivoted at one end to one side of the bucket and operatively connected at its opposite end with the plunger, a spring confined between the lever and side of the bucket, and a shoulder in the path of the curved portion of the lever, all constructed to operate substantially as and for the purpose set forth.

857,397. ADJUSTABLE SUPPORT FOR SIGNAL-LAMPS. ALEXANDER H. HANDLAN, JR., St. Louis, Mo. Filed Nov. 12, 1906. Serial No. 343,038.

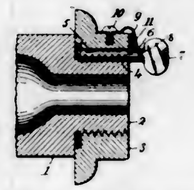


Claim.—1. A supporting bracket for signal lamps comprising a bracket arm having a horizontal wing formed with a segmental series of openings, a bracket plate having upper and lower arms spaced apart a greater distance than the height of the bracket arm and between which the bracket arm with its wing projects, a vertical pivot post adapted to slide vertically in the bracket arm and connecting the upper and lower arms and secured thereto, and a depending pin secured to the upper arm and adapted to engage one of the series of openings in the wing when the upper arm is seated upon the wing and to be released from the opening when the upper arm is raised from the wing to enable the lamp to be moved laterally.

2. A supporting bracket for signal lamps comprising a bracket arm having a horizontal wing formed with a segmental series of openings, a bracket plate having upper and lower arms spaced apart a greater distance than the height of the bracket arm and between which the bracket arm with its wing projects, a vertical pivot post adapted to slide vertically in the bracket arm and connecting the upper and lower arms and secured thereto, a spring coiled around the pivot post between the bracket arm and the lower arm, and a depending pin secured to the upper arm and adapted to engage one of the series of openings in the wing when the upper arm is seated upon the wing and to be released from the opening when the upper arm is raised from the wing to enable the lamp to be moved laterally.

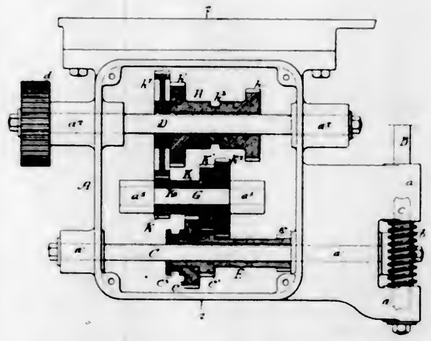
857,398. NUT-LOCK. DANIEL B. HANLON, New Liberty, Ky., assignor of one-half to Wilson S. Ball and Thos. H. North, New Liberty, Ky. Filed Nov. 20, 1906. Serial No. 344,237.

Claim.—In a nut lock, the combination with an axle having a screw threaded portion provided with a longitudinal groove, of a nut provided with a longitudinal groove adapted to register with the groove of the axle, and coacting therewith to form a recess, a pin extending into the recess, and provided with a lateral tongue for engaging the face of the nut, and a spring clip secured to the nut



and extending over the outer face thereof and provided with a chambered portion for receiving the tongue whereby to lock the pin in place.

857,399. SPEED-BOX FOR METAL-WORKING MACHINES. ELLIS J. HANNUM, Philadelphia, Pa., assignor to Newton Machine Tool Works, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 8, 1906. Serial No. 342,469.



Claim.—1. The combination in a speed box, of a casing, a driven shaft mounted in the casing, a power shaft, a driving shaft arranged at right angles to the power shaft, a worm on the power shaft, a worm wheel on the driving shaft meshing with the said worm, an intermediate shaft between the driving shaft and the driven shaft, a hub on said intermediate shaft, a sleeve arranged to slide longitudinally on the driving shaft, a series of gears thereon, a series of gears on the intermediate hub and arranged to mesh with the gears on the sleeve of the driving shaft when the said sleeve is shifted to certain positions, a sleeve on the driven shaft having a series of gears also arranged to mesh with the gears on the hub when shifted in certain positions, and means for shifting the two sleeves, substantially as described.

2. The combination in a speed box, of a casing, a driving and a driven shaft mounted in bearings in the casing, an intermediate shaft also mounted in bearings in the casing and situated between the driving and driven shafts, a hub on the intermediate shaft, a sleeve on the driving shaft and a sleeve on the driven shaft, a series of gears on the hub and a series of gears on each sleeve, said gears differing in diameter, and two levers pivoted to the casing, each lever having an arm projecting through a slot in the casing and having blocks, the block of one lever engaging the sleeve on the driving shaft and the block of the other lever engaging the sleeve on the driven shaft, and means for locking the levers in their adjusted positions, substantially as described.

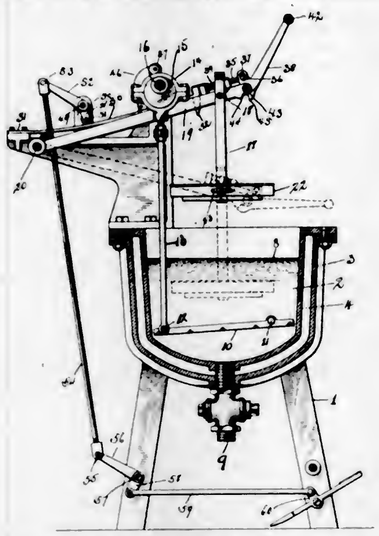
857,400. KNIFE-HANDLE. CHARLES D. HARRINGTON, Southbridge, Mass., assignor to Harrington Cutlery Company, a Corporation of Massachusetts. Filed Mar. 3, 1906. Serial No. 303,938.



Claim.—1. The combination with a handle having a screw nut in one end, of clamping jaws, each having a longitudinal groove on its inner edge to receive a knife blade, and each having in its inner edge near its inner end a notch, said notches registering one with the other, a screw turning in said nut and having a flat head to extend between the clamping jaws within the grooves therein, and a block or lip on said head adapted to engage said notches in the clamping jaws.

2. The combination with a handle having a screw nut in one end, and a rotary ferrule on the other end, of clamping jaws, each having a cam-shaped projection on one end to engage said ferrule, and a longitudinal groove therein to receive a knife blade, and a notch on the inner edge of each of said clamping jaws near its inner end, a screw turning in said screw nut and having a flat head to extend between the clamping jaws within the grooves therein, and an integral projection or projections on said head adapted to engage notches in the clamping jaws.

857,401. MACHINE FOR IMMERSING THE CORES OR CENTERS OF CONFECTIONS. LOUIS N. HARTOG, New York, N. Y. Filed Apr. 19, 1907. Serial No. 369,085.



Claim.—1. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, means whereby said tray may be manually lowered into the trough, spring withdrawing mechanism, spring controlled shaking mechanism, and means whereby the spring withdrawing, and spring controlled shaking mechanism, will co-operate during the shaking operation.

2. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, means whereby said tray may be manually lowered into the trough, automatic spring withdrawing mechanism, spring controlled shaking mechanism, and means for throwing said shaking mechanism into and out of its operating position.

3. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, a pair of spring supported forwardly extending arms in which said tray is mounted, means whereby said supporting arms and tray may be manually lowered, means for automatically restoring same to their upper position when the pressure is withdrawn and means for shaking the tray after withdrawal.

4. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, a pair of forwardly extending arms in which said tray is mounted, means whereby said supporting arms and tray may be manually lowered, and a pair of torsional springs for supporting and withdrawing said arms when the manual pressure is withdrawn.

5. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, a pair of forwardly extending arms in which said tray is mounted, means whereby said supporting arms and tray may be manually lowered, a pair of torsional springs for supporting and withdrawing said arms when the manual pressure is withdrawn, and means for shaking the tray after withdrawal.

6. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, a pair of forwardly extending arms in which said tray is mounted, means whereby said supporting arms and tray may be manually lowered, a pair of torsional springs for supporting and withdrawing said arms when the manual pressure is withdrawn, a spring controlled shaking mechanism and means for operating same after the withdrawal of the tray.

7. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, a pair of forwardly extending arms in which said tray is mounted, means whereby said arms and tray may be manually lowered, springs for supporting said arms and for withdrawing them to their upper position when the manual pressure is removed, a spring controlled shaking mechanism and means for operating same after the withdrawal of the tray.

8. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, a pair of forwardly extending arms in which said tray is mounted, means whereby the tray, so supported, may be manually lowered into the trough, springs for supporting said arms and for withdrawing them to their upper position when the manual pressure is removed, a spring controlled shaking mechanism and means whereby the spring withdrawing and the spring controlled shaking mechanism will be made to co-operate during the shaking process.

9. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, a pair of arms extending across and above the trough hung in the frame or body of the machine at their rear ends and provided with a handle connecting their forward ends, means whereby the tray may be manually lowered into the trough, springs at the rear ends of the arms for automatically withdrawing the tray upon the release of the manual pressure, spring controlled mechanism for shaking the tray after withdrawal and means whereby both of said sets of springs are thrown into conjunctive operation during the shaking process.

10. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, a pair of spring supporting arms extending across and above the trough hung in the frame or body of the machine at their rear ends and having a handle connecting their forward ends, means whereby the tray may be manually lowered into the trough, spring controlled tray shaking mechanism consisting of forwardly extending spring arms and means for throwing said shaking mechanism into and out of operative position.

11. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, means whereby said tray

may be manually lowered and automatically withdrawn, forwardly extending spring arms, mechanism for shaking the said spring arms and means for throwing said shaking mechanism into and out of operative position.

12. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, spring arms attached to the rear side of the machine and extending forwardly over the trough, curved arms extending upwardly from said spring arms, rotatable toothed wheels, and means for throwing the said curved arms into operative combination with the said toothed wheels, all arranged substantially as and for the purposes set forth.

13. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray supported above said trough, means for manually lowering the tray into the trough, spring mechanism for automatically withdrawing same, spring arms secured to the rear of the machine and extending forwardly over the trough, means, when the tray is withdrawn, for throwing the spring withdrawing mechanism and the forwardly extending spring arms into conjunctive operation for shaking the tray.

14. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, means whereby the tray may be manually lowered into the trough spring mechanism for automatically withdrawing the tray and supporting it in its upper position, forwardly extending spring arms attached at their rear ends to the machine, rollers 51, means for bringing said rollers to bear upon the spring arms whereby the said spring arms and the tray withdrawing springs are brought into conjunctive operation and means whereby when the parts have reached such position the tray is subjected to a shaking operation.

15. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, means whereby said tray may be manually lowered into the trough, means for automatically withdrawing the same and supporting the tray in its upper position, forwardly extending spring and tray supporting arms attached at their rear ends to the machine and having a connecting handle at their forward end, curved arms attached to and extending upwardly from said spring arms and provided with rollers 47, toothed wheels having means of rotation and arranged immediately below said rollers 47 and means whereby the rollers 47 can be brought down upon the said toothed wheels and shake the tray after withdrawal.

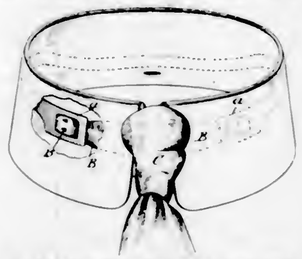
16. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, forwardly extending spring arms, pivotally supported at their rear ends upon torsional springs, with said springs, means for securing the tray above said trough, curved arms 46 having rollers 47, toothed wheels 48 and main shaft 16 upon which said toothed wheels are mounted and means whereby the said rollers 47 can be thrown into operative proximity to the wheels 48 for the purpose of shaking the tray.

17. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, the forwardly extending spring arms, means for suspending the tray in said spring arms, spring controlled means whereby said spring arms can be drawn backward and forward over the trough, means for locking the arms in their rear position and a guide way for directing the said arms downwardly and immersing the tray when in their forward position.

18. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, the forwardly extending spring arms, means for supporting the immersing tray near their forward ends, two way guides upon the machine, means secured to the arms operating in connection with both said two way guides and capable of moving from one to the other, and two sets of torsional springs arranged between the rear ends of the spring arms and the body of the machine substantially as and for the purposes set forth.

19. In a machine for the immersion of the cores or centers of confections, the combination of a trough or receptacle, an immersing tray, means on said tray for removably and reversibly securing it in the yoke, means for supporting said yoke whereby the said tray may be lowered into and withdrawn from the trough and a cover for the tray made to fold midway of its length and having means for locking it in its open as well as its closed position.

857,402. NECKTIE DEVICE. CHARLES I. HOOPLE, Anaheim, Cal. Filed May 3, 1906. Serial No. 314,979.



Claim.—1. In a necktie device, a combined guide and support comprising a resilient curved band adapted to encircle the collar, the ends of the band terminating near the ends of said collar, said band ends being provided with spurs, strips of fabric material engaged by said spurs, said strips being adapted to be folded together to form the tie, said band ends being provided with means coöperating with the spurs whereby to retain the strips in place.

2. In a neck tie device, a combined guide and support, consisting of a curved spring band having slots and spurs at its terminal portions, and fabric ends interlaced through said slots and engaged by said spurs.

857,403. SNAP-HOOK. GEORGE M. HUBBARD, New Haven, Conn., assignor to The W. & E. T. Fitch Co., New Haven, Conn., a Corporation. Filed Nov. 12, 1906. Serial No. 343,021.

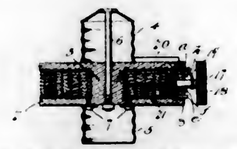


Claim.—1. A snap hook comprising a body formed with a nose at one end and with an opening through said body, said body also formed with a recessed seat at the forward end of said opening, lugs formed integral with the upper edge of said body and at each side of said seat, and a U-shaped spring located in said body one end resting in said recess and beneath said lugs, the other end of the spring extending beneath the nose of the hook, substantially as described.

2. A snap hook comprising a body formed with a nose at one end, a loop at the opposite end and with an opening through said body forming side and upper walls, said body also formed with a recessed seat at the forward end of said opening, lips formed at the lower edge of said opening beneath said upper wall, lugs formed integral with the upper edge of said opening at each side of said seat, and a U-shaped spring arranged within said opening one end bearing on said seat beneath said lugs, and the spring extending rearward over said lips beneath said upper wall and forward beneath the nose of the hook, substantially as described.

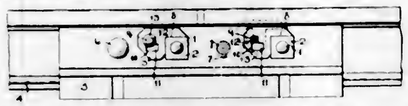
857,404. ELECTRIC-LAMP REGULATOR. EMERY JOHNSON, Newberg, Oreg. Filed Jan. 25, 1907. Serial No. 354,119.

Claim.—1. An electric lamp attachment adapted to be interposed between a lamp and lamp socket and to connect the same, the attachment comprising a frame consisting of oppositely arranged plates of non-conducting material, and a core connecting said plates, a series of resistance coils wrapped one upon another around said core and between said plates, and means including a switch for throwing one or more of said coils into the lamp circuit.



2. An electric lamp attachment adapted to be interposed between a lamp and lamp socket and to connect the same, the attachment comprising oppositely arranged frame plates of non-conducting material, a core interposed between said plates, resistance coils wrapped one upon another around said core and between said frame plates, a contact head connecting said plates, contact points on said head to which lead wires from the coils are connected, and means including a switch for throwing one or more of said coils into the lamp circuit.

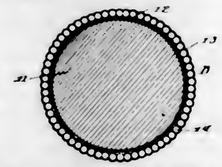
857,405. NUT-LOCK. CHARLES KEMMERER, Barberton, Ohio. Filed Oct. 4, 1906. Serial No. 337,433.



Claim.—1. In a nut lock, an element, a bolt projecting therefrom, a nut upon said bolt, a headed pin or stud upon said element, a locking plate having a longitudinal slot with an offset formed at its upper side at the outer end of the plate, said plate having a lateral arm projecting from its opposite inner end at its upper edge to form a nut-receiving recess, whereby said plate is adapted to slide on said element in planes parallel with the walls of said recess.

2. In a nut lock, an element, a bolt projecting therefrom, a nut upon said bolt, a headed pin, a locking plate having a right-angular slot through which said pin projects, said slot having its vertical portion arranged at the outer end of said plate and extended upwardly and a lateral arm at its upper inner edge forming a right angular nut engaging recess whereby said plate is adapted to move vertically and laterally to lock and unlock the nut.

857,406. HEAD FOR HAT-PINS AND THE LIKE. WILLIAM J. KITTEL, Jersey City, N. J. Filed Feb. 14, 1907. Serial No. 357,283.



Claim.—1. The method of producing heads for hat pins and like articles, buttons or similar articles, which consists in coloring or producing a design on a core, coating the design with a transparent colorless adhesive material, and covering the said coating with crystals.

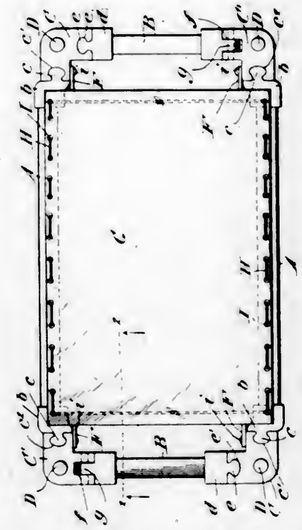
2. The herein described method of producing the heads for hat pins and like articles, buttons and similar articles, which consists in coloring or producing a design upon a core, covering the decorated core with a covering of transparent colorless varnish, covering the varnish coating with a layer of crystal sand, and finally giving the coating of crystal sand, a coating of transparent colorless varnish.

3. As an improved article of manufacture, a head for a hat pin and like articles and buttons or similar articles, consisting of a core exteriorly decorated and provided with a coating of transparent colorless varnish, crystals covering the varnished and decorated surface of the core, and a second coating of transparent colorless varnish applied to the crystal surface, as described.

4. The method of producing heads for hat pins and like articles, buttons or similar articles, which consists in coloring or producing a design on a core, coating the design with a transparent colorless adhesive material, and covering the said coating with a coating of fine crystal sand.

5. As an improved article of manufacture, a head for a hat pin and like article, consisting of a core exteriorly decorated and provided with a coating of transparent colorless adhesive material, and crystals applied to the said decorated and adhesive surface of the core.

857,407. BEDSTEAD. FRANK KRUPP, New Orleans, La. Filed May 6, 1907. Serial No. 372,218.



Claim.—1. In a device adapted to be converted from a bedstead into a stretcher and vice versa, the combination of side bars, a support carried by said side bars, end bars, corner blocks connected with the end bars and detachably connected with the ends of the side bars, and combined legs and handle bars extending in opposite directions from the corner blocks; the lower portions of the said legs and handle bars being arranged in one position of the corner blocks to rest upon the floor and in another position of the corner blocks to rest under and be connected with the side bars, and connections intermediate the side bars and the corner blocks whereby the latter may be shifted from a position at the ends of the side bars to a position below the said side bars.

2. In a device adapted to be converted from a bedstead into a stretcher and vice versa, the combination with side bars, and a support carried by said side bars; of end bars, corner blocks connected with the end bars and detachably connected with the ends of the side bars, and combined legs and handle bars extending in opposite directions from the corner blocks; the inner or lower portions of the said legs and handle bars being arranged in one position of the corner blocks to rest upon the floor and in another position of the corner blocks to rest under and be connected with the side bars, and the outer or upper portions of the said legs and handle bars being arranged in one position of the corner blocks to extend above the corner blocks and

in another position of the corner blocks to extend outward beyond the ends of the side bars.

3. In a device adapted to be converted from a bedstead into a stretcher and vice versa and to be folded into a compact bundle, the combination of side bars, a flexible support connected with and extending between the side bars, corner blocks detachably connected with the ends of the side bars, end bars hinged to corner blocks and detachably connected to opposite corner blocks, connections intermediate the side bars and the corner blocks whereby the latter may be shifted from a position at the ends of the side bars to a position below the said side bars, and combined legs and handle bars extending in opposite directions from the corner blocks; the inner portions of the said legs and handle bars being arranged in one position of the corner blocks to rest upon the floor and in another position of the corner blocks to rest under and be connected with the side bars.

4. In a device adapted to be converted from a bedstead into a stretcher and vice versa, the combination of side bars, corner blocks having ends opposed to the ends of the side bars, tongues on the one removably arranged in grooves in the other, a support carried by said side bars, end bars extending between and connecting opposite corner blocks, and combined legs and handle bars extending in opposite directions from the corner blocks; the inner portions of the said legs and handle bars being arranged in one position of the corner blocks to rest upon the floor and in another position of the corner blocks to rest under and be connected with the side bars, and connections intermediate the side bars and the corner blocks whereby the latter may be shifted from a position at the ends of the side bars to a position below the said side bars.

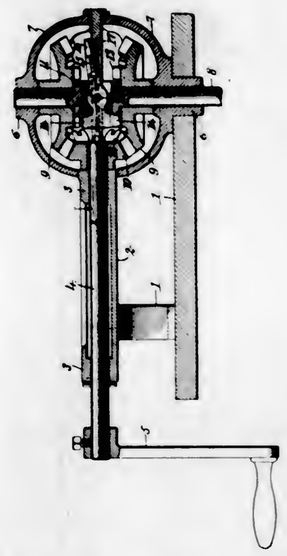
5. In a device adapted to be converted from a bedstead into a stretcher and vice versa and to be folded into a compact bundle, the combination of side bars having downwardly tapered tongues at their ends, a flexible support connected with and extending between the side bars, corner blocks having downwardly tapered grooves in their ends opposed to the ends of the side bars to receive the tongues on said ends; two of the said corner blocks having downwardly tapered sockets in their other ends, end bars hinged to the other two corner blocks and having downwardly tapered tongues at their ends removably socketed in the last mentioned grooves of the corner blocks, link connections intermediate the side bars and the corner blocks, and combined legs and handle bars fixed with respect to and extending in opposite directions from the corner blocks, for the purposes set forth.

857,408. MECHANICAL MOVEMENT. ALEXANDER LINDSAY and JOHN MEINERT, Davenport, Iowa. Filed Oct. 13, 1906. Serial No. 338,780.

Claim.—1. In combination, a power shaft, a gear wheel secured thereto, a driven shaft, two gear wheels loosely mounted thereon and adapted to engage with the first mentioned gear wheel, and a member pivoted to said driven shaft intermediate the gear wheels thereon and having one end adapted to engage alternately with each of said last mentioned gear wheels and having the other end adapted to engage with the teeth of the first mentioned gear wheel for reversing the position of the member.

2. In combination, a power shaft, a gear wheel secured thereto, a driven shaft, two gear wheels loosely mounted on said driven shaft and adapted to engage with the first mentioned gear wheel, a lever pivoted to said driven shaft intermediate the gear wheels thereon and adapted to engage alternately with each of said gear wheels, and said lever having teeth adapted to engage with the first mentioned gear wheel for reversing the position of the lever.

3. In combination, a power shaft a bevel gear wheel secured thereto, a driven shaft two bevel gear wheels loosely mounted thereon and in engagement with the first mentioned gear wheel, a lever pivoted to the driven shaft intermediate said gear wheels, each of said loosely mounted gear wheels having lugs on their inner surfaces and adapted to engage alternately with one end of the pivoted lever, said lever having teeth on the opposite end thereof adapted to engage with the gear wheel of the power shaft for reversing the position of the lever, and a guide for continuously holding the lever in the desired position, save when its position is being reversed by the action of the power shaft gear wheel.



4. In combination, a power shaft, a bevel gear wheel mounted thereon, a driven shaft, bevel gear wheels loosely mounted thereon and adapted to engage with the first mentioned gear wheel, a lever pivotally connected to said driven shaft intermediate the loosely-mounted gear wheels, said lever having wings on one end, and each of said loosely mounted gear wheels having projections on the inner surface adapted to engage with the wings on said lever, said lever having teeth on the opposite end thereof adapted to engage with the teeth of the power shaft gear wheel, and a guide terminating adjacent the power shaft gear wheel, for locking the lever in the desired position.

857,409. CONVEYER-TRUCK. ARTHUR MARVIN, Paxola, Ill. Filed Sept. 20, 1906. Serial No. 335,454.

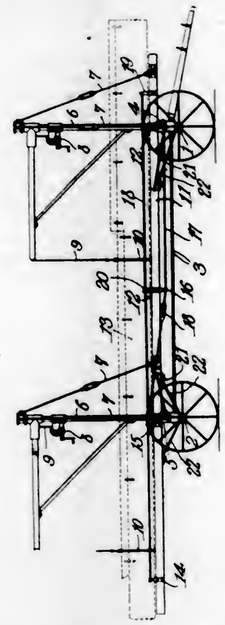
Claim.—1. A truck comprising wheel mounted axles, bolsters located upon said axles, a sill connecting said bolsters together and projecting at its rear end beyond the rear bolster, davits mounted upon the bolsters, guys bracing the davits, the guys of the rear davit being located above the rear bolster and in advance of the same.

2. A truck comprising wheel mounted axles, bolsters attached to said axles, a sill connecting said bolsters together, and yokes having upwardly extending ends arranged at intervals along said sill.

3. A truck comprising wheel mounted axles, bolsters attached thereto, a sill connecting said bolsters together, and truss rods fixed at one end above the sill and at their other ends below the sill and studs interposed between the truss rods and the sill.

4. A truck comprising wheel mounted axles, bolsters attached thereto, a sill connecting said bolsters together and projecting at its end beyond a bolster, studs attached to the sill above the last said bolster, studs attached to the projected end of the sill, studs attached to the sill at a point intermediate of said bolsters, and a truss rod attached to the forward bolster and engaging said studs.

857,409.



857,410. INTERNAL-COMBUSTION ENGINE. WILLIAM MOREY, Jr., New York, N. Y. Filed Nov. 2, 1906. Serial No. 341,725.



Claim.—1. In an internal combustion engine, a cylinder, a piston within said cylinder and having a uniform length of stroke, and means whereby said piston performs two of its strokes at a speed greater than that at which it performs the remaining two strokes.

2. In an internal combustion engine, a cylinder having a piston therein acting upon the four-cycle principle and having a uniform length of stroke, and means whereby the scavenging and intake strokes are performed at a much greater speed than the compression and power strokes.

3. In an internal combustion engine, a cylinder having a piston therein acting upon the four-cycle principle, and means whereby two of its strokes are performed in less time than either of the other two strokes.

4. In an internal combustion engine, a cylinder, two pistons therein, and means whereby the pistons travel in the same direction at the same rate during two strokes of one of the pistons and at different rates during the remaining two strokes of said piston.

5. In an internal combustion engine, a cylinder, two pistons therein, one of said pistons operating upon the four-cycle principle, and means whereby the two pistons travel in the same direction during the compression and power strokes of said piston and in opposite directions during the scavenging and intake strokes.

6. In an internal combustion engine, a cylinder, two pistons therein, one of said pistons traveling upon the two-cycle principle and the other upon the four-cycle principle, and means whereby the pistons travel in the same direction at the same rate during two strokes of the last mentioned piston.

7. An internal combustion engine, having an open-ended cylinder provided with inlet and outlet valves adjacent one end thereof, and two pistons therein, one of said pistons traveling upon the four-cycle principle and the other piston located between the first mentioned piston and the open end of the cylinder, and traveling upon the two-cycle principle.

8. An internal combustion engine, having a cylinder one end thereof being open and the opposite end thereof being provided with inlet and exhaust valves, and two pistons within said cylinder, one of said pistons traveling upon the four-cycle principle and the other of said pistons being provided with perforations throughout its length, and located intermediate the first mentioned piston and the open end of the cylinder.

9. An internal combustion engine, having an open ended cylinder, a piston located therein and operating upon the four-cycle principle, and a second piston between said first mentioned piston and the open end of the cylinder, and having passages whereby the space between the two pistons may communicate with the atmosphere at all times.

10. An internal combustion engine, having an open ended cylinder, a piston operating therein upon the four-cycle principle, and a second piston between said first mentioned piston and the open end of the cylinder and operating upon the two-cycle principle, said last mentioned piston being provided with perforations whereby the space between said pistons may communicate at all times with the atmosphere.

11. In an internal combustion engine, a cylinder having a piston therein operating upon the four-cycle principle, a second piston therein and operating upon the two-cycle principle, said last mentioned piston being provided with passages whereby the space between said pistons may communicate at all times with the atmosphere, and means whereby the two pistons travel in contact with each other during two of the strokes of the first mentioned piston, and travel independent of each other during the remaining two strokes.

12. In an internal combustion engine, a cylinder having an open end, a piston located therein and acting upon the two-cycle principle, and means traveling with said piston during the greater part of the compression and the power strokes and adapted to travel longitudinally of the cylinder during the final portion of the power stroke and the beginning of the compression stroke to remove the exhaust gas and take in a fresh charge.

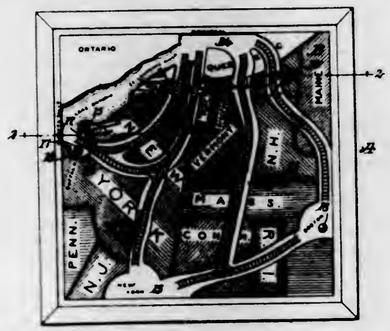
13. In an internal combustion engine, a cylinder, a piston located therein and acting upon the two-cycle principle, and a second piston traveling therewith during the main portion of each stroke and adapted to travel independently thereof to eject the exhaust gases and take in a fresh charge while the first mentioned piston is completing its power stroke and beginning its compression stroke.

14. In an internal combustion engine, a cylinder, a piston located therein and acting upon the two-cycle principle, a second piston in contact with the first mentioned piston during the latter portion of the compression stroke and the first portion of the power stroke, and means whereby the second piston travels at a greatly increased speed to eject the exhaust gases and take in a fresh charge while the first mentioned piston is completing its power stroke and beginning its compression stroke.

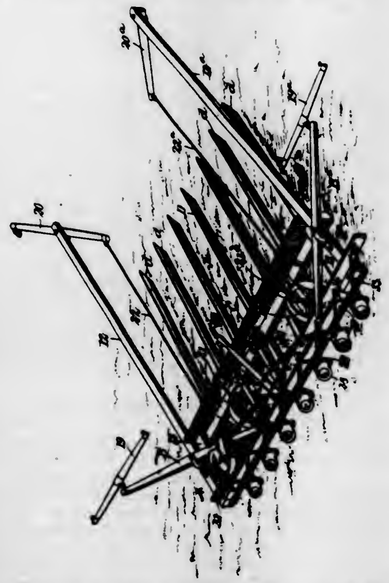
857,411. GAME DEVICE. FREDERICK W. MOSELEY, St. Hyacinthe, Quebec, Canada. Filed Jan. 24, 1907. Serial No. 353,884.

Claim.—In a game device, fixed elevations, some of which have pockets formed therein, said elevations being separated by channels leading to said pockets, a magnetic plate located in each pocket, the said channels leading from different points to a common goal, rolling objects adapted to travel in the channels, and attractable by the

said magnets, the pockets being differently designated and the rolling objects adapted to enter said pockets being correspondingly designated, one of the said rolling objects being distinctive from all the others.



857,412. SWEEP-RAKE. FREDERICK NELSON, Driscoll, N. D. Filed Feb. 26, 1906. Serial No. 303,005.



Claim.—1. A rake, a sweep board mounted for movement over the rake teeth, eveners pivoted at opposite sides of the rake at the rear of the teeth, extensions from the rake, neck yokes pivoted on said extensions at a point in advance of the teeth, a swingletree for each evener, and connections between the inner ends of the neck yokes and the sweep boards, and the inner ends of the eveners and the sweep board, whereby when a team is backed the sweep board is carried forward over the teeth, and when the team is started forward the sweep board is automatically carried rearward to its normal position.

2. In a rake, a head, teeth extending from the head, tongues extending from the ends of the head upwardly in direction of the points of the teeth, eveners fulcrumed on the rake head at its side portions, swingletrees connected with the outer ends of the eveners, neck yokes pivoted at the forward ends of the said tongues, a sweep board mounted to slide over the teeth, link connections between the inner ends of the neck yokes and the sweep board, and link connections between the inner ends of the eveners and the said sweep board.

3. In a rake, a head, teeth extending from the head, tongues extending from the ends of the head upwardly in direction of the points of the teeth, eveners fulcrumed on the rake head at its side portions, swingletrees connected with the outer ends of the eveners, neck yokes pivoted at the forward ends of the said tongues, a sweep board mounted to slide over the teeth, link connections between the inner ends of the neck yokes and the sweep board, and link connections between the inner ends of the eveners and said sweep board, a slide connected with the central portion of the sweep board, and a socket plate secured to the said head, through which the said slide passes, whereby to compel the sweep board to move straight forward or backward, under all conditions of usage.

4. A rake head and bearings secured to the under face of the rake head, teeth mounted to turn in said bearings, said teeth being beveled at one side at their outer ends, a shifting bar located above the rake head, an operating lever for said bar, and crossed link connections between the shifting bar and the rear end of each of the teeth.

5. The combination with a wheel-supported rake head and bearings located at the under face of the rake head, of teeth mounted to turn in the said bearings, the outer ends of the said teeth being beveled at one side, ferrules located at the rear ends of the said rake teeth, and an elongated flange located at the upper portion of each ferrule, a shifting bar having end movement over the rake head, links pivotally attached to each end of each flange, which links are crossed and pivotally connected with the shifting bar, a lever, and a link connection between the lever and the shifting bar.

6. The combination of a rake, tongues extending from the rake, eveners pivoted to the rake, devices connected with the tongues and eveners respectively for the attachment of the draft animals, a sweep board, connections between the said devices on the tongues and the sweep board, and connections between the eveners and the sweep board.

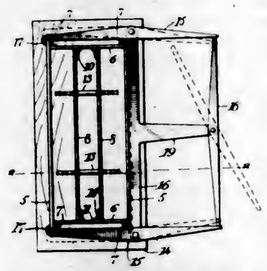
7. The combination with a rake, of a tongue extending from the rake, a sweep board slidably mounted upon the rake, an evener pivoted to the rake and having one end connected with the sweep board, a draft device connected to the other end of said evener, a draft device in advance of the evener and connected with the tongue, and a link connecting said device on the tongue with the sweep board.

8. The combination with a hay rake, of a sweep board slidably mounted upon the rake, a tongue extending forwardly from the rake, an evener fulcrumed to the rear portion of the tongue, a draft device connected with the outer end of said evener, a draft device fulcrumed to the front end of the tongue, a link pivoted to the inner end of the forward draft device and to the sweep board, and means for connecting the sweep board with the inner end of the evener.

9. The combination with a rake, and its supporting wheels, of a sweep board slidably mounted upon the tops of the rake teeth, tongues secured to the rake at opposite sides and extending forwardly therefrom, an evener fulcrumed to the rear portion of each tongue, a link connecting the inner end of each evener with the sweep board, a swingletree on the outer end of each evener, a draft attachment fulcrumed to the forward end of each tongue, and a link connected to the inner end of each of said draft attachments and also connected to the sweep board.

10. The combination with a hay rake, and its supporting wheels, of a sweep board slidably mounted upon the rake teeth, tongues secured to the rake at opposite sides and extending forwardly therefrom, an evener fulcrumed to the rear portion of each tongue, forwardly extending links connecting the inner ends of the eveners with the sweep board, a swingletree connected with the outer end of each evener, neck yokes pivoted at the forward ends of each tongue, and a rearwardly extending link connecting the inner end of each of said neck yokes with the said sweep board.

857,413. MOLD FOR ARTIFICIAL STONE. FREDERICK NELSON, Menoken, N. D. Filed Nov. 9, 1906. Serial No. 342,650.



Claim.—1. A mold for the purpose specified, comprising side boards, end boards having detachable connection with the side boards, a clamping device comprising jaws, a bar to which said jaws are pivoted, the said bar being designed for engagement with one of the side boards, the free ends of the jaws being provided with hook portions for engaging with the opposite side boards, the said jaws having outward projections, and means connected with the bar for engaging the projections of the clamping jaws.

2. A mold for the purpose specified, comprising side boards, end boards having detachable connection with the side boards, a clamping device comprising jaws, a bar to which said jaws are pivoted, the said bar being designed for engagement with one of the side boards, while the free ends of the jaws have hook portions for engaging with the opposite side boards, the said jaws having outward projections, an arm extended from the bar, and a clamping lever mounted to swing on said arm and adapted to engage with said projections.

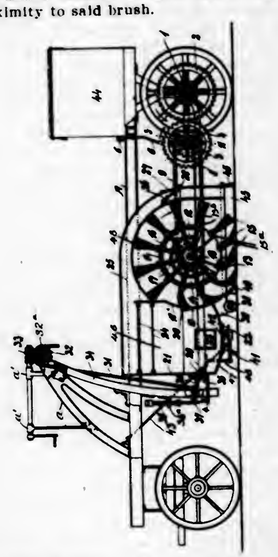
857,414. TOOTH-POWDER BOX. WALTER H. PERKINS, Waterbury, Conn., assignor to The Waterbury Mfg. Co., Waterbury, Conn., a Corporation. Filed Mar. 4, 1907. Serial No. 360,522.



Claim.—The combination with a box having a top formed with a neck and a top plate, a central opening in the top plate having stop shoulders, said top plate also provided with a clearance slot combined with a cap adapted to set over said neck, the said cap having a clearance slot to register with the slot in the cap plate, the central portion of the cap struck inward forming a stud to extend through the perforation in the top plate, said stud upset within the top so as to overlap the inner face of the top plate, and a projection formed at one side of said stud and adapted to engage with the shoulders in the perforation in the top plate, substantially as described.

857,415. STREET-SWEEPING MACHINE. GEORG PUM, Vienna, Austria-Hungary. Filed Oct. 19, 1905. Serial No. 283,471.

Claim.—1. A street sweeper comprising in combination, a carriage having a rear axle, a frame pivotally mounted thereon, means for raising and lowering the forward end of said frame, curved guides for said forward end whose center of curvature coincides with the rear axle, said guides comprising channel irons, said frame having lifting arms projecting into said channel guides and supporting arms embracing said channel guides, a brush rotatably mounted on said frame and adapted to be lowered into and raised out of engagement with the street surface, gearing mounted on said frame and driven by said rear axle to operate the brush in a direction opposite to the wheels of the vehicle, and a receiver on said frame located in delivering proximity to said brush.



2. In a street sweeper, the combination of a rotating brush, a dust receptacle in delivering proximity thereto, an air discharge for said receptacle, and perforated walls retaining the larger particles of the discharged air, the perforations of one wall being larger than those of the adjacent wall, and a discharge conduit receiving the smaller dust particles from said receptacle and delivering the same to a point adjacent the street surface and the brush.

3. In a street sweeper, the combination of a rotating brush, a receptacle in delivering proximity thereto, a casing inclosing said brush and extending approximately to the sweeping surface, a sweeping plate extending to said sweeping surface forwardly of the brush, a weighted curtain of flexible material extending to said surface laterally and rearwardly of the brush, and a discharge conduit receiving from said receptacle and extending to a point within said weighted curtain.

4. In a street sweeper, the combination of a rotating brush, a receptacle in delivering proximity thereto, a casing inclosing said brush and extending approximately to the sweeping surface, a sweeping plate extending to said sweeping surface forward of the brush, a weighted curtain of flexible material extending to said surface laterally and rearwardly of the brush, and an air discharge conduit leading from said receptacle and delivering within said casing and curtain at a point adjacent the latter, said conduit having a discharge opening at a point above the bottom of said casing.

5. In a street sweeper, the combination of a rotating brush, a housing therefor, a dust receptacle in delivering proximity to said brush, a discharge conduit communicating with said receptacle and extending to a point adjacent to the street surface and inside of said housing, said conduit having an opening above the lower end thereof, and outside the housing, and a valve adapted to close either said opening or the conduit below said opening.

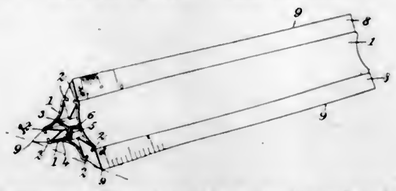
6. In a street sweeper, the combination of a carriage having a rear axle, a frame pivotally mounted thereon, means for raising and lowering the forward end of said frame, a brush carried by said frame, curved guides for said forward end of the frame whose centers of curvature coincide with said rear axle, said guides being formed of channel iron, and arms projecting from said frame into the channels of said guides, and arms projecting from said frame embracing said guides, said first mentioned arms

being connected with said means for raising the frame and said second mentioned arms being connected to stationary parts for limiting downward movement of the frame.

7. In a street sweeper, the combination of a carriage having a rear axle, a frame pivotally mounted thereon, means for raising and lowering the forward end of said frame, a brush carried by said frame, curved guides for said forward end of the frame whose centers of curvature coincide with said rear axle, said guides being formed of channel iron, arms projecting from said frame into the channels in said guides, said arms being connected with said means for raising the frame, and arms projecting from said frame and embracing said guides.

8. In a street sweeper, the combination of a carriage having a rear axle, a frame pivotally mounted on said axle, a brush carried by said frame, means for raising and lowering one end of the frame, curved guides for said frame whose centers of curvature coincide with said rear axle, arms projecting from said frame and engaging said guides and connected with said means, arms projecting from said frame and engaging said guides, and means connected with said last mentioned arms for limiting movement of said frame.

857,416. SCALE. MORRIS M. SCHWARTZ, North Bergen, N. J. Filed Feb. 25, 1907. Serial No. 359,056.



Claim.—1. A rhomb scale having centrally disposed longitudinal grooves on opposite sides thereof, and beveled faces extending from said grooves and meeting at the edges of the scale in acute angles.

2. A rhomb scale having centrally disposed longitudinal grooves on opposite sides thereof, and beveled faces of different character of finish extending from said grooves and converging at the edges of the scales in acute angles.

3. A scale comprising a holder and a plurality of members having longitudinal grooves engaging said holder, and beveled faces extending from said grooves to the outer edges of the members, and so inclined relatively to the holder that only the edges of two adjacent members bear on a supporting surface.

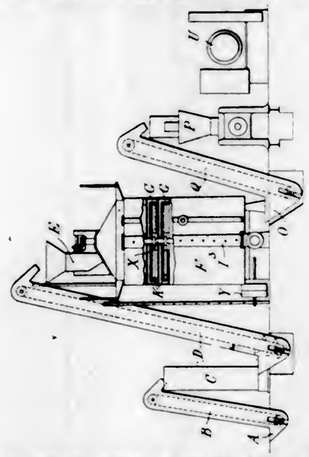
4. The combination of a plurality of scales each having on each side a double bevel and an intermediate groove, and a holder having segmental sections provided with offset edges engaging said grooves and with longitudinal recesses adapted to receive the inner bevels of the scales.

5. The combination of a plurality of scales each having on each side a double bevel, and a holder having longitudinal recesses adapted to receive the inner bevels of the scales, and retaining means adapted to engage the central portion of said scales intermediate of said bevels.

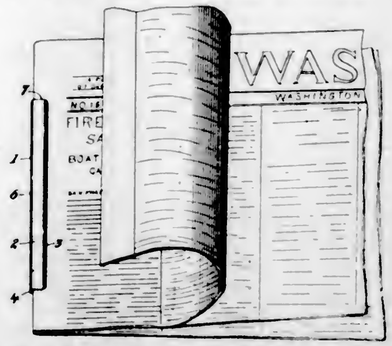
857,417. APPARATUS FOR MAKING ARTIFICIAL FUEL. JAMES J. SHEDLOCK, London, England. Filed Nov. 5, 1906. Serial No. 342,071.

Claim.—1. In an apparatus for making artificial fuel, the combination of a gas tight vessel in which the fuel material is heated, an automatic feeding and measuring device delivering into said vessel, a series of hollow shelves or trays in said vessel, each provided with a discharge aperture, means for moving the material treated over each shelf, means for heating said shelves internally, and means for regulating the amount of heat applied to said shelves, substantially as described.

2. In an apparatus for making artificial fuel, the combination of a gas tight vessel in which the material is heated, automatic feeding and measuring devices delivering the material into said vessel, a series of hollow trays each provided with a discharge aperture located within said vessel, means for moving the material treated over said shelves, means for supplying heated gas to the interior of said shelves, means for regulating the amount of gas supplied to said shelves, and delivering devices for the material treated and the volatilized products, subtantially as described.



857,418. PAPER-CLIP. CHARLES SPIRO, New York, N. Y. Filed Mar. 26, 1907. Serial No. 364,656.



Claim.—1. A paper clip comprising opposite clamping jaws having longitudinal clamping edges, and means for pivotally connecting said jaws at their longitudinal center.

2. A paper clip comprising opposite jaws having a longitudinal clamping edge and an angularly disposed pivoting flange, and a pivot connecting the flanges to said jaws.

3. A paper clip comprising opposite jaws having a longitudinal clamping edge and an angularly disposed pivoting flange, and a pivot connecting the flanges to said jaws, said flanges being tapered from the pivotal point toward the jaw end thereof.

4. A paper clip comprising opposite jaws having parallel clamping edges, and means to permit movement of one of said jaws upon the other to separate the clamping edges at one end thereof.

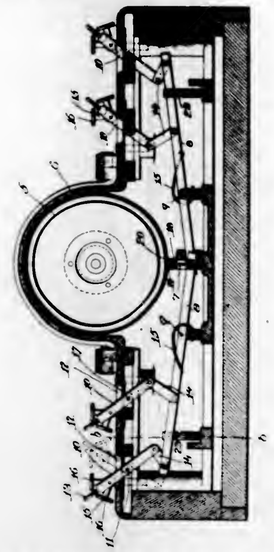
5. A paper clip comprising opposite clamping jaws of spring material having at one longitudinal edge an inturned clamping face and at the opposite edge a pivoting flange, and means for clamping said flanges together.

6. In a paper clip, coöperating clamping jaws provided at one longitudinal edge with an inturned clamping face curved at its opposite ends and at its opposite edge with an angularly disposed pivoting flange tapered from its longitudinal center toward the jaw end thereof.

7. A paper clip comprising parallel elongated clamping jaws connected by a transverse pivot intermediate of their ends and disposed at a right angle to the length of the jaws.

8. A paper clip comprising parallel resilient clamping jaws connected by a transversely disposed pivot intermediate of their ends at an angle to the clamping face of the jaws.

857,419. TIME-RECORDER. DESRIE A. STOWELL, Gardner, Mass., assignor to Simplex Time Recorder Company, Gardner, Mass., a Corporation of Massachusetts. Filed Jan. 18, 1906. Serial No. 296,642.



Claim.—1. In a time recorder, the combination with a casing, of means within the casing to support a record sheet, a pivoted punch-carrying lever within the casing, a punch carried thereby, an actuating lever pivoted between its ends to the casing and having one end exposed for manual manipulation, and a link connecting the other end of said lever to the punch-carrying lever, said levers being mounted to turn about different axes.

2. In a time recorder, the combination with a support for a record sheet of a pivoted actuating member having an exposed end for manual manipulation and adapted to be turned about its pivot into either one of two positions, a pivoted lever, a marking device carried thereby, and operative connections between said actuating member and said lever whereby the latter is operated to mark the record sheet when the actuating member is moved into either one of its two positions.

3. In a time recorder, the combination with a movable support for a record sheet of a marking device to engage said record sheet, a pivoted actuating lever having an exposed end for manual manipulation and adapted to be turned into either one of two different positions, and operative connections between the actuating lever and the marking device for causing the latter to be operated to mark the record sheet during the movement of the lever in each direction, said lever serving to indicate by its position the character of the record made.

4. In a time recorder, the combination with a movable support for a record sheet, a marking device to engage the record sheet, a pivoted actuating lever having an exposed end for manual manipulation and constructed to be turned into either one of two different positions, means to cause the marking device to be operated by the turning movement of said lever into either one of its two positions, and an indicator carried by said lever and capable of indicating the number in either of its two positions.

5. In a time recorder, a movable support for a record-sheet, a marking device to engage the record-sheet, an actuating lever for operating the marking device, said lever being constructed to be moved manually into either one of two different positions and adapted to operate the marking device during its movement in either direction, and two number-carrying plates on each lever.

6. In a time recorder, movable means for supporting a record-sheet, a plurality of punches to engage the record-sheet, an actuating lever for each punch, connections between each actuating lever and the punch, whereby the punch is operated during the movement of the lever into either one of its two positions, and two number-carrying plates on each lever.

7. In a time recorder, the combination with a plurality of series of punch-carrying levers and a marking punch carried by each lever, of a bar provided with transverse slots to receive the levers of each series, said bars each having a longitudinal slot, a plurality of interlocking blocks slidably mounted in the longitudinal slot of each bar, and connections between the blocks in the two bars, whereby any lever in one series is prevented from being operated while any lever in the other series is operated.

8. In a time recorder, movable means to support and form a backing for a record-sheet, a punch to penetrate said sheet, punch-actuating mechanism, and an inking pad through which the punch passes during its penetrative movement and before it penetrates the sheet.

9. In a time recorder, the combination with means to support a record sheet of a punch to penetrate said sheet, punch-actuating mechanism, and an inking pad in which the end of the punch is received when in its inoperative position.

10. In a time recorder, in combination, movable means to support and form a backing for a record sheet, a punch to penetrate said sheet, punch-actuating mechanism, and means to ink all sides of the punch before it penetrates the sheet.

11. In a time recorder, the combination with movable means to support and form a backing for a record sheet, a punch to penetrate said sheet and punch-actuating mechanism, of means to ink all sides of the punch during its penetrative movement and before it penetrates the sheet.

12. In a time recorder, the combination with movable means to support and form a backing for a record sheet and a punch to penetrate said sheet of an ink-pad containing chamber situated between the punch and the sheet, an ink pad in said chamber whereby the punch passes through said ink pad during its penetrative movement.

13. In a time recorder, a rotative cylinder to carry a record-sheet, a clock-work including a driving shaft, a shaft-extension movable longitudinally of the driving shaft but rotative therewith, two gears of different sizes carried by said shaft-extension, a driven shaft having two gears, and operative connections between the driven shaft and the cylinder, the slidable movement of the shaft-extension permitting the driven shaft to be geared to either of the gears on the driving shaft.

857,420. COLLAPSIBLE BABY-CARRIAGE. GUSTAF A. SVANBERG, Fort Lee, N. J. Filed Mar. 20, 1906. Serial No. 306,947.

Claim.—1. In a collapsible carriage of the character herein set forth, the combination with the body springs and the axles mounted in connection therewith and provided with projecting pins, of spring locking plates arranged to secure the axles in place by engagement with the pins thereon, substantially as and for the purposes set forth.

2. A collapsible carriage comprising the removable wheels, the body springs, the axles mounted on said

springs and arranged to be turned in relation thereto, the springs being hinged upon the bottom of the carriage body, the hinged push arms arranged to be turned against the bottom of the box or body and to project beyond one end of the same, and the hinged side and end boards, the whole being combined and arranged substantially as shown and described and for the purposes set forth.



3. In a collapsible carriage of the character herein set forth, the combination of a box, longitudinally extending springs hinged to said box, and axles pivotally attached at one end to said springs, substantially as shown and described.

4. In a collapsible carriage of the character herein set forth, the combination of a body, side plates and end plates hinged to said body and adapted to be folded inward thereon, springs extending longitudinally of said body and hinged thereto, axles pivotally attached at one end to said springs, and handle arms pivotally attached to the rear of said body, substantially as shown and described.

857,421. LAUNDRY-MARKING MACHINE. TOM L. TAYLOR, Atlanta, Ga., assignor to Pearl Laundry Machinery Company, Atlanta, Ga., a Corporation of Georgia. Filed Jan. 20, 1905. Serial No. 242,018.

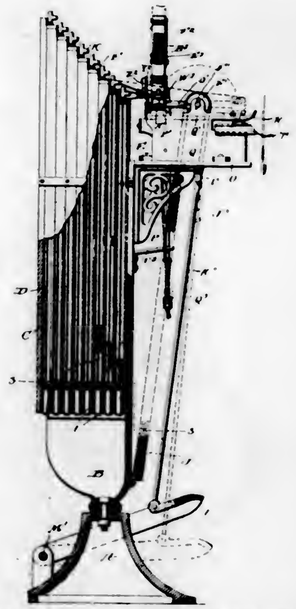
Claim.—1. In a machine of the character specified, the combination of a type magazine or case; a series of banks of type mounted thereon; means for normally holding said type in position and returning them when unrestrained; a chase; means for holding the type in the chase; a platen; and means for moving the chase with the type therein toward the platen.

2. In a machine of the character specified, the combination of a type magazine or case; a series of type mounted thereon, each type having a weight attached thereto by a cord; a chase; means for securing the type within the chase; a platen; and means for moving the chase with the type therein over toward the platen.

3. In a machine of the character specified, the combination of a type magazine or case; a series of type mounted thereon; a weight suspended from each type by a cord; a chase adapted to hold the type; a platen; means for moving the chase over toward the platen; and an automatic inking mechanism adapted to apply ink to the face of the type.

4. In a machine of the character specified, the combination of a type magazine or case; a series of type mounted thereon; a weight suspended from each of said type by a cord; a chase; a platen; means for moving the chase with the type therein over toward the platen; means for clamping the goods to be marked upon said platen; and an automatic inking mechanism adapted and arranged to apply ink to the type in the chase, substantially as described.

5. In a machine of the character specified, the combination of a type magazine or case; a series of type mounted thereon; a weight suspended from each of said type by a cord; a platen; a chase located intermediate said magazine and the platen; means for moving the chase toward and from the platen; an inking device; a clamping device for the goods to be marked; and means under the control of the operator for moving the chase toward the platen, clamping the goods, and causing the inking mechanism to come into operation upon the return of the chase from the platen.



6. In a machine of the character specified, the combination of a type magazine or case having a series of channels formed therein; a series of type arranged in banks or steps; a series of guide-plates or bars extending across said channels, each plate having a series of holes or slots formed therein in line with the channels; a series of cords, one for each type, said cords passing through the holes or slots in the bars; a weight attached to each of said cords; a chase; a platen; and means for moving the chase toward and from the platen.

7. In a machine of the character specified, the combination of a type magazine or case having a series of channels or grooves formed therein which terminate at different heights, thereby forming steps; a cross-bar for each step, said cross-bars each being provided with a series of key-hole slots in line with the channels or grooves beneath the same; a series of type; a cord extending from each type through a key-hole slot into a channel; a weight connected to the lower end of each cord; a chase; a platen; and means for shifting the chase toward and from the platen.

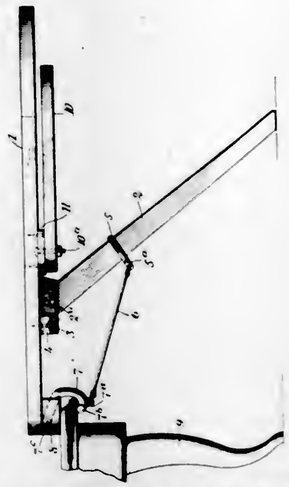
8. In a machine of the character specified, the combination of a type magazine or case; a series of type mounted thereon; means for normally holding said type in normal position with reference to the magazine and returning them to such position when not restrained; a chase; means carried by the chase for holding the type in position thereon; a platen; means for oscillating the chase toward and from the platen; a clamp for the goods to be marked; an inking device pivotally mounted to one side of the chase; and means for throwing the inking device down upon the type as the chase is brought to its rearmost position, substantially as described.

9. In a machine of the character specified, the combination of a type magazine or case; a series of type mounted thereon; a cord attached to each type; a weight secured to each cord; a chase; means carried by the chase for retaining the type thereon; a platen; means for oscillating the chase toward and from the platen; an inker pivotally mounted to one side of the chase; a counterweight for normally holding said inker in its elevated position; and a device intermediate said inker and the means for oscillating the chase for depressing the inker as the chase is swung rearwardly away from the platen.

10. In a machine of the character specified, the combination of a type magazine or case; a series of type carried thereby; an oscillating chase; a drum connected to the chase; a chain passing about the drum; a spring connected to one end of the chain and to a fixed portion of the machine; a treadle connected to the opposite end of the chain; an inker pivotally mounted adjacent to one side of the machine; and connections intermediate said inker and the actuating device for the chain, whereby the inker will be thrown down upon the type carried by the chase as the chase is moved to its rearmost position, substantially as described.

11. In a machine of the character specified, a chase, comprising a main body, retaining fingers extending outwardly over said body, a spring-pressed latch, and a spring-pressed abutment or follower normally forced toward said latch in line with the fingers, substantially as described.

857,422. IRONING-TABLE. WILLIAM H. TICHBORNE, New Castle, Pa. Filed Sept. 11, 1906. Serial No. 334,121.

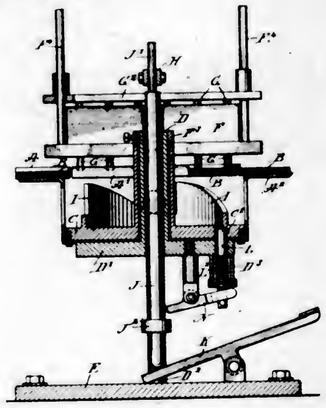


Claim.—1. The combination with an ironing board having its end provided with a transverse clamping cleat, of a clamp comprising a yoke pivoted at one end to said cleat and provided on its opposite end with a clamping face, an inclined support hinged to said board, a clamp adjustable lengthwise of said inclined support, and a rod connecting said clamps, substantially as shown and described.

2. The combination with an ironing board, of a clamp comprising a yoke pivoted at one end to said board and provided on its opposite end with a clamping face, an inclined support hinged to said board, a clamp adjustable lengthwise of said inclined support, and means for connecting said yoke and clamp, substantially as shown and described.

857,423. PASTING-MACHINE. JOHN H. TRISMEN, New York, N. Y. Filed Feb. 14, 1907. Serial No. 357,343.

Claim.—1. A pasting machine provided with a paste box for containing paste, and having its bottom provided with an aperture, a cross head above the said paste box, and provided with a plunger extending into the said paste box and registering with the aperture, a plurality of supports for the sheets to be pasted, a table on which the supports are carried, said table being adapted to pass the supports successively into pasting position under the said paste box, for the plunger to deliver the paste to the sheet, and means whereby the movement of the table may elevate the plunger to raise the lower end of the same into the paste and to permit the supports to pass under the bottom of the plunger.



2. A pasting machine provided with a paste box for containing paste and having its bottom provided with an aperture, a cross head above the said paste box and provided with a plunger extending into the said paste box and registering with the said aperture, a revoluble table having a plurality of supports for the sheets to be pasted together, the said supports being adapted to pass successively into pasting position under the said paste box, and means controlled by the said table for raising and lowering the said cross head.

3. A pasting machine provided with a paste box for containing paste and having its bottom provided with an aperture, a cross head above the said paste box and provided with a plunger extending into the said paste box and registering with the said aperture, a revoluble table having a plurality of supports for the sheets to be pasted together, the said supports being adapted to pass successively into pasting position, means controlled by the said table for raising and lowering the said cross head, and a locking device for locking the table in place as soon as a support moves into pasting position.

4. A pasting machine provided with a paste box for containing paste and having its bottom provided with an aperture, a cross head above the said paste box and provided with a plunger extending into the said paste box and registering with the said aperture, a revoluble table having a plurality of supports for the sheets to be pasted together, the said supports being adapted to pass successively into pasting position under the said paste box, a cam on the said table, and a slide mounted to slide up and down and connected at its upper end with the said cross head, and provided at its lower end with a friction roller for engagement with the said cam.

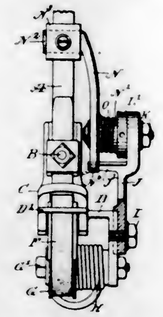
5. A pasting machine provided with a paste box for containing paste and having its bottom provided with an aperture, a cross head above the said paste box and provided with a plunger extending into the said paste box and registering with the said aperture, a revoluble table having a plurality of supports for the sheets to be pasted together, the said supports being adapted to pass successively into pasting position under the said paste box, a cam on the said table, a slide mounted to slide up and down and connected at its upper end with the said cross head, and provided at its lower end with a friction roller for engagement with the said cam, and a manually con-

trolled locking device for locking and interlocking the said table.

6. A pasting machine comprising a pair of oppositely disposed paste boxes, each having apertures in its bottom, sets of plungers for the said paste boxes and registering with the corresponding apertures, and a table mounted to turn and having a plurality of supports, of which two are at a time in pasting position under the said paste boxes, and the other two are in sheet receiving position between the said paste boxes.

7. A pasting machine comprising a pair of oppositely disposed paste boxes, each having apertures in its bottom, sets of plungers for the said paste boxes and registering with the corresponding apertures, a table mounted to turn and having a plurality of supports, of which two are at a time in pasting position under the said paste boxes, and the other two are in sheet receiving position between the said paste boxes, and means controlled by the said table for raising and lowering the said sets of plungers on turning the table.

857,424. PICKER-STICK CHECK. NAPOLÉON VAILLANCOURT, Lewiston, Me. Filed Oct. 2, 1906. Serial No. 337,071.



Claim.—The combination with the picker stick, of a bracket having an opening therethrough, a bearing, a bolt traversing the bearing and the opening, said bearing having an annular flange, a check arm for engagement by the picker stick, and having a hub journaled on the bearing, a coil spring on the hub, said spring having one end connected with the arm and the other with the flange of the bearing, the lower end of said arm being forked and the bracket being provided with a lug engaging the fork whereby to limit the swinging of the arm, and a nut engaging the bolt whereby to adjust the bearing with respect to the arm.

857,425. EMULSIONING AND SOLIDIFICATION OF HYDROCARBONS. WILLEM VAN DER HEYDEN, Nanterre, France. Filed June 26, 1906. Serial No. 323,458.

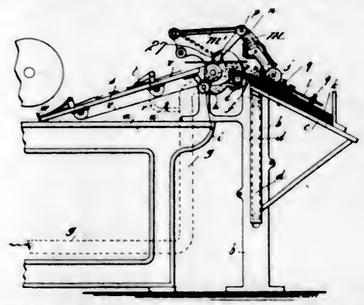
Claim.—1. Improvement in the solidification of hydrocarbons such as naphtha, petroleum, benzin, benzol and such like, which consists in adding dust-like fuels, such as coal dust and such like, to an emulsion of hydrocarbons and a solution of glue and then submitting the mass to a hardening process.

2. Improvement in the solidification of hydrocarbons such as naphtha, petroleum, benzin, benzol and such like, which consists in adding glycerin and dust-like fuels to an emulsion of hydrocarbons and a solution of glue and then submitting the mass to a hardening process.

3. Improvement in the solidification of hydrocarbons such as naphtha, petroleum, benzin, benzol and such like, which consists in adding salts of organic acids, such as tartrate, oxalate, citrate and dust-like fuels to an emulsion of hydrocarbons and a solution of glue and then submitting the mass to a hardening process.

4. Improvement in the solidification of hydrocarbons such as naphtha, petroleum, benzin, benzol and such like, which consists in adding glycerin, salts of organic acids, such as tartrate, oxalate, citrate and dust-like fuels to an emulsion of hydrocarbons and a solution of glue and then submitting the mass to a hardening process.

857,426. PAPER-FEEDING MACHINE FOR PRINTING OR LIKE MACHINES. FREDERICK W. VICKERY, London, England. Filed Dec. 11, 1903. Serial No. 184,822.



Claim.—1. An appliance for feeding sheets of paper to printing machines, comprising a movable air supply box arranged to supply air to the edge of the pile of paper, a feed supply pipe communicating with the said box and having means for automatically shutting off the supply of air to the same when in its lowermost position, a frictional roller for engaging the topmost sheet of paper to withdraw the same from the pile, and cam mechanism for raising and lowering the supply box and for actuating the feed roller.

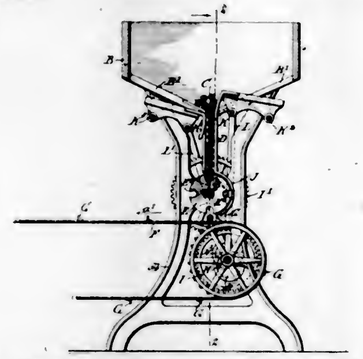
2. An appliance for feeding sheets of paper to a printing machine comprising an oscillating air supply box arranged to supply to a pile of paper to separate the uppermost sheets an air blast, an air supply pipe communicating with said box and adapted to automatically cut off the supply of air when the said box is in its lowermost position, a frictional roller engaging the topmost sheet of paper to withdraw the same from the pile, mechanism for actuating the supply box and the frictional roller, and a fixed means for controlling the separation of the uppermost sheets of the pile of paper.

3. The combination of a feed table and a support for a pile of paper sheets, a sheet transferring device movable from the pile to the feed table, means for directing an air blast between the forward edges of the uppermost sheets of paper for separating the same, and an air supply pipe coöperative with said means and having an automatic valve adapted to shut off the supply of air to the air blast means when the same is in its lowermost position, means for operating the transferring device and said air blast means.

857,427. STICK-FEEDER. WILLIAM H. WALDRON, New Brunswick, N. J., assignor to John Waldron Company, New Brunswick, N. J. Filed Mar. 9, 1907. Serial No. 361,450.

Claim.—1. A stick feeder comprising an endless carrier, a revoluble spacing device for delivering the sticks to the said carrier, a delivery chute containing the sticks one on top of the other, and delivering the lowermost stick to the said spacing device, a hopper for containing the sticks, and into the bottom of which opens the upper end of the said chute, and agitating means for engaging the sticks on each side of the delivery chute at the junction of the said delivery chute with the said hopper.

2. A stick feeder comprising an endless carrier, a revoluble spacing device for delivering the sticks to the said carrier, a delivery chute containing the sticks one on top of the other, and delivering the lowermost stick to the said spacing device, a hopper for containing the sticks and into the bottom of which opens the upper end of the said chute, and up and down agitating arms engaging the stick at the junction of the said delivery chute with the said hopper.



3. A stick feeder comprising an endless carrier, a revoluble spacing device for delivering the sticks to the said carrier, a delivery chute containing the sticks one on top of the other, and delivering the lowermost stick to the said spacing device, a hopper for containing the sticks and into the bottom of which opens the upper end of the said chute, up and down agitating arms engaging the stick at the junction of the said delivery chute with the said hopper, and means actuated from the said endless carrier and connected with the said arms for alternately imparting an up and down agitating motion to the same.

4. A stick feeder provided with a hopper for containing the sticks, a delivery chute leading from the bottom of the said hopper, and agitating means engaging the sticks on each side of the delivery chute at the junction of the said hopper therewith.

5. A stick feeder provided with a hopper for containing the sticks, a delivery chute leading from the bottom of the said hopper, agitating arms for engaging the sticks at the said delivery chute and hopper, and means for alternately imparting an up and down swinging motion to the said arms.

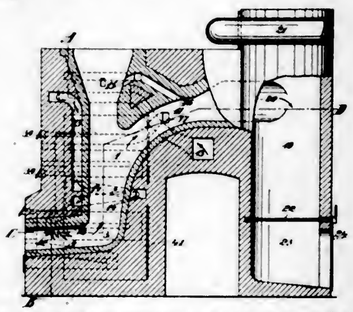
857,428. KNOB ATTACHMENT FOR COVERS. EDWIN J. WESTON, Jr., Oakland, Cal., assignor of one-half to J. C. Hawver, Auburn, Cal. Filed June 13, 1906. Serial No. 321,464.



Claim.—1. A cover for a culinary vessel said cover comprising the cover portion proper and a knob therefor, a screw-threaded bolt, the lower end of which is provided with a head, said head being of concavo-convex form with its concavity presented upwardly whereby its marginal edge will contact with the under side of the cover, a sleeve contained within the knob, and having a threaded interior adapted to engage the threads of said bolt, said head having a diameter greater than that of the base of the knob whereby when the sleeve is turned, the portion of the cover which lies within the periphery of the head is compressed or flattened to form substantially an elastic lock.

2. A cover for a culinary vessel said cover consisting of a cover portion proper, a knob, a washer beneath the knob, a screw-threaded bolt formed integral with a concavo-convex head whose concavity is presented upwardly and whose peripheral edge bears upwardly against the under side of the cover, said bolt having guiding lugs at its junction with said head, an internally threaded sleeve contained within the knob and fitted to said bolt, said sleeve having a head at the upper end provided with a slot for the engagement of a tool, and said concavo-convex head having a diameter greater than that of the washer whereby the portion of the cover below the washer and contained within the periphery of the head is compressed or flattened when the sleeve is turned.

857,429. KILN. GUSTAV WIEGMANN and CLEMENS DÖRR, Berlin, Germany. Filed Mar. 24, 1902. Serial No. 99,696.



Claim.—1. The combination in a kiln, of a vertical shaft having a feed portion and a combustion portion, an approximately horizontal shaft communicating with the lower end of the combustion portion of said vertical shaft, blast nozzles opening into both sides of the approximately horizontal shaft, a flue leading off from that point where the feed portion of the vertical shaft meets with the combustion portion, and a channel connected with the feed portion of the vertical shaft at a point above the connection of said feed portion with the flue, the said channel leading to the flue, substantially as set forth.

2. In a kiln, the combination with the vertical shaft and flue leading therefrom, of a channel connecting the upper part of said shaft with said flue, the said channel communicating with said shaft at a point above the connection of the latter with the flue, substantially as set forth.

3. In a kiln, the combination with a vertical shaft having a feed portion, and a combustion portion, of a flue leading off from that point where the feed portion of the shaft meets with the combustion portion, an approximately horizontal shaft in direct communication with the lower end of the combustion portion of said vertical shaft, blast nozzles opening into both sides of the approximately horizontal shaft, and passages built in the walls of the said shafts, said passages being adapted to be heated by the fire in said shafts and opening into said flue, substantially as set forth.

4. The combination in a kiln, of a vertical shaft having plane walls, and comprising an upper feed portion and a lower combustion portion, a flue leading off from said shaft at the point where the feed portion meets the combustion portion, an approximately horizontal shaft in direct cornerless communication with the lower end of the combustion portion of said vertical shaft, blast nozzles opening into said approximately horizontal shaft, and passages built in the walls of said shafts, said passages being adapted to be heated by the fire in said shafts, the passages extending upward in a zigzag form and opening into said flue, substantially as set forth.

5. In a kiln, the combination with a vertical shaft having an upper feed portion and a lower combustion portion, a flue leading from the shaft at the point where the feed and combustion portions meet, an approximately horizontal shaft in direct communication with the lower end of the combustion portion of the vertical shaft, blast nozzles opening into both sides of the approximately horizontal shaft, and an air passage in the walls of the vertical shaft, the said air passage beginning underneath the said flue, and after passing along near to the inner surface of

said vertical shaft terminating in the said blast nozzles, substantially as set forth.

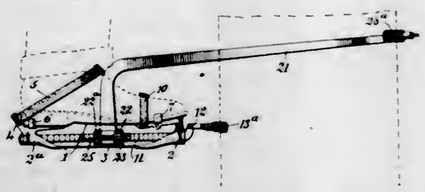
6. The combination in a kiln, of a vertical shaft having plane walls, a flue leading off from said shaft, an approximately horizontal shaft in direct cornerless communication with the lower end of the vertical shaft, blast nozzles opening into the said approximately horizontal shaft, and an air passage built in the walls of said shafts, said passage beginning underneath the said flue and after passing along near to the inner surface of said vertical shaft and extending around the lower part of the same, terminating in said nozzles, substantially as set forth.

7. A kiln having a vertical shaft comprising a feed portion and a combustion portion, a flue leading off from the point where the feed portion meets with the combustion portion, a dust chamber to which the flue leads, an approximately horizontal shaft in direct communication with the combustion portion of the vertical shaft, an air channel disposed in the walls of the vertical shaft and adapted to be heated by the fire in said shaft, blast nozzles at the end of said air channel and opening into said approximately horizontal shaft, and a second air channel disposed in the walls of said shafts and opening out into the flue and adapted to be heated by the fire in said shafts.

8. A kiln, comprising in combination a vertical shaft having plane walls, a flue leading from said shaft, an approximately horizontal shaft in direct communication with the vertical shaft, an air channel disposed in the walls of said shafts and adapted to be heated by the fire in said shafts, blast nozzles at the end of said air channel and opening into said approximately horizontal shaft, a second air channel likewise disposed in the wall of said shafts and opening out into said flue and adapted to be heated by the fire in said shafts, a smoke-dust separating chamber to which the said flue leads, and a gas outlet channel disposed above the inlet for the flue gases, and leading from the smoke-dust separating chamber substantially as set forth.

9. A kiln comprising a vertical shaft, an approximately horizontal shaft in direct communication with the vertical shaft, blast nozzles opening into said approximately horizontal shaft, a smoke-dust separating chamber, a flue connecting said chamber with said vertical shaft, an air channel disposed in the walls of said shafts and adapted to be heated by the fire in said shafts, the said air channel opening into the said flue, and a gas outlet channel disposed above said flue and leading from the smoke-dust separating chamber, as set forth.

857,430. POLE-CLIMBING SHOE. CARL F. YOUNGQUIST and CARL G. YOUNGQUIST, San Francisco, Cal. Filed June 19, 1906. Serial No. 322,396.



Claim.—1. In a pole climbing shoe, a foot plate, clamping jaws and straps carried by the foot plate, blocks secured to the under ends of the foot plate having flanges on their lower edges, a base plate secured to the inner flanges of said blocks, a rack bar passing through the blocks between the foot plate and base plate, said rack bar terminating at the toe end of the foot plate in an arc shaped bar, rubber jaws incased in metal holders adjustably connected to said bar, an arm adjustably secured to the rack bar, said arm passing upwardly and curving about to a point diametrically opposed to the arc shaped bar, rubber jaws incased in metal holders secured to said arm diametrically of but above said first-named jaws, and a detachable bar carried by said arm for the purpose described.

2. In a pole climbing shoe, in combination, a foot plate, a rack-bar in fixed relation to the foot plate, clamping jaws rigidly carried at the forward end of the rack-bar, an arm embracing the rack-bar and curving around from the side of the foot plate to the front thereof, jaws fixed to the arm, and a pawl carried by the arm for holding it in adjusted position on the rack-bar.

3. In a pole climbing shoe, in combination, a foot plate, means for attaching the foot thereto, blocks secured to the under face of the foot plate at each end thereof, a bar rigidly fixed to said blocks and having jaws spaced apart and arranged at the front end thereof, an arm slidable on said bar and curving around from the side of the foot plate to the front thereof, jaws fixed to said arm, and means for holding said arm in adjusted position on said bar.

4. In a pole climbing shoe, a foot plate, means for attaching the foot thereto, blocks secured to the under face of the foot plate at each end thereof, a base plate secured to the lower edges of the blocks, a longitudinal bar fixed intermediate the foot plate and base plate pole engaging means fixed at the toe end of the foot plate, an arm adjustable on said bar, said arm curving around to the front of the foot plate, and pole engaging means carried by said arm.

5. In a pole climbing shoe, a foot plate, means for attaching the foot thereto, a rack bar fixed to the foot plate, pole engaging means carried on the forward end of the rack bar, a base plate secured underneath the rack bar, an arm curved about the forward end of the foot plate having a guide adjustable on the rack bar, pole engaging means fixed to said arm, a pawl pivoted at one side of the guide normally forced into the teeth of the rack bar, and a lever carrying a cam for withdrawing said pawl.

6. In a pole climbing shoe, in combination, a foot plate, means for attaching the foot thereto, a clamping jaw rigidly carried at one end of the foot plate, a second clamping jaw opposed to the first and connected to said foot plate, and means providing for the free movement of said jaws toward each other acting to prevent such movement in the opposite direction.

7. In a pole climbing shoe, in combination, a foot plate, a pair of jaws rigidly carried at the toe end of the foot plate, a second pair of jaws connected to the foot plate and opposed to said first-named jaws, and means providing for the free movement of said pairs of jaws toward each other acting to prevent such movement in the opposite direction.

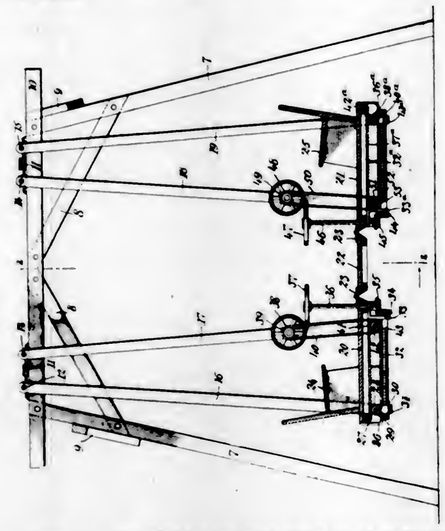
857,431. PRESSER-FOOT FOR SEWING-MACHINES. EDWARD T. ALLAN, Carthage, Ohio, assignor to The Union Special Sewing Machine Company, Chicago, Ill., a Corporation of Illinois. Filed May 21, 1900. Serial No. 17,407.



Claim.—1. A presser foot for sewing machines, comprising a main portion having a needle opening therein, and a supplemental portion carried thereby the lower face of which is below the main portion, said lower face having a guiding edge located at one side of the needle opening and substantially parallel with the tread of the foot, a guiding edge located forward of the needle opening and at an angle to the first named guiding edge and a guiding edge located back of the needle opening and at an angle to both said former named guiding edges; substantially as described.

2. A presser foot for sewing machines, comprising a main portion having a needle opening and a transverse groove in its upper face, and a supplemental portion having a slotted shank fitting in said transverse groove and means for securing the supplemental portion in its adjusted positions, said supplemental portion having a guiding edge extending below the main portion and comprising a guiding face which is substantially parallel with the tread of the foot and guiding faces located at an angle to the first named guiding face; substantially as described.

857,432. ADJUSTABLE SWING. CHARLES F. BEAN, Port Tampa City, Fla. Filed Sept. 26, 1906. Serial No. 336,259.



Claim.—1. The combination of a plurality of platforms, suspenders for supporting the same, mechanism connecting the said platforms together, and means controllable at will for varying the degree of inclination of one of said platforms independently of the other while said platforms are in motion.

2. The combination of a plurality of platforms, suspenders for supporting the same, a connection from one of said platforms to the other, and means controllable at will for adjusting said platforms relatively to said suspenders, for the purpose of varying the inclination of said platforms while in motion.

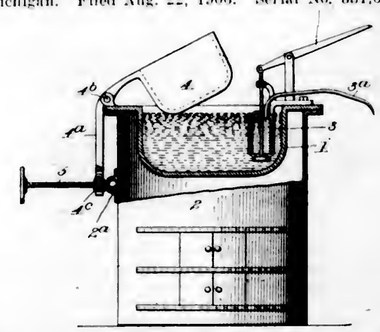
3. The combination of a frame, suspenders depending therefrom, a plurality of platforms mounted upon said suspenders and adapted to swing therewith, a connecting member extending from one of said platforms to another to maintain said platforms in unison with regard to their general swinging movement, and mechanism independent of said connecting member for spacing said suspenders at different angles relatively to each other so as to vary the degree of inclination obtainable by the respective platforms while the latter are in motion.

4. The combination of a frame, suspenders depending therefrom, platforms mounted upon said suspenders and adapted to swing therewith, a connecting member extending from one of said platforms to another, so as to enable said platforms to swing in unison, and means controllable at will for spacing said suspenders at different angles relatively to each other for the purpose of causing said platform to incline while in motion.

5. The combination of a frame, suspenders depending therefrom, a platform supported by said suspenders, a rack and a pinion connected with said platform for varying the angular position of said suspenders relatively to each other for the purpose of causing said platform to tilt while in motion, and means for turning said pinion relatively to said rack.

6. The combination of a frame, suspenders hanging therefrom, a plurality of separate platforms supported by said suspenders and adapted to tilt, a connection from one of said platforms to another, and means controllable at will for adjusting the tilting of one of said platforms independently of the other while said platforms are in motion.

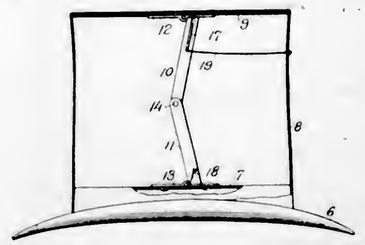
857,433. TYPE-METAL MELTING-POT. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich., a Corporation of Michigan. Filed Aug. 22, 1906. Serial No. 331,604.



Claim.—1. In a type metal melting pot, the combination of the pot, a metal pump, a body adapted to be lowered into the pot to displace the metal therein and raise its level in the pot and pump, a rotatable screw, and connections between said screw and the body and the pot, whereby said body may be positively moved in or out of the pot and secured in any adjusted position, substantially as set forth.

2. In combination with a furnace, a melting pot therein, a pump therein for forcing metal therefrom, a displacer, a hinged lever supporting said displacer, and a rotatable screw pivotally connected to the outer end of said lever and to a fixed point, and adapted to regulate the position of the displacer in the pot and maintain the molten metal at the desired level, substantially as described.

857,434. COLLAPSIBLE HAT. EMIL BEHRINGER, Brooklyn, N. Y. Filed Feb. 26, 1907. Serial No. 359,354.



Claim.—1. In a hat the combination with a crown having a flexible extension secured thereto, of an auxiliary crown within the extension and expanding means between the two crowns.

2. In a collapsible hat, the combination with a flexible extension, of a crown surrounded by same, an auxiliary crown within the top of the extension, and expanding means between the two crowns and secured thereto.

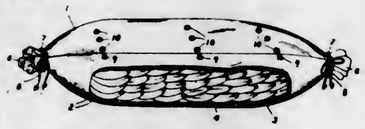
3. In a collapsible hat, the combination with the crown, of a flexible extension secured thereto, an auxiliary crown in the top of the extension, a toggle joint having one of its members secured to each of the crowns, a spring adapted to open the toggle joint and means for locking the toggle joint in its closed position.

4. In a collapsible hat, the combination with a crown, of an auxiliary crown, a flexible extension connecting the crowns, a toggle joint also connecting the crowns, a spring

acting on the toggle joint to normally extend the extension, and means for locking the toggle joint in closed position.

5. In a collapsible hat the combination with a crown, of an auxiliary crown, a flexible extension enveloping the crowns, a toggle joint connecting the crowns and secured thereto, a spring encircling the pivot of the toggle joint, and a latch controlled from the outside of the hat and adapted to lock and hold the toggle joint in its closed position.

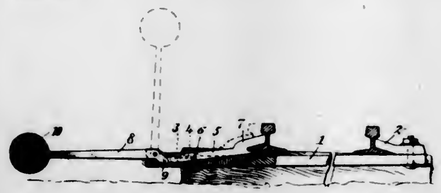
857,435. BANANA-PACKAGE. WILLIAM BELL, Montreal, Quebec, Canada. Filed Jan. 17, 1907. Serial No. 352,805.



Claim.—1. A banana package, comprising a cover portion suitably padded and quilted and unpadded end strips extending from the facings of said padded portion and adapted to be drawn together on the folding of said cover portion around a bunch of bananas and wrap said padded portion completely over the ends of said bunch of bananas, substantially as described.

2. A banana package, comprising a padded and quilted cover portion and unpadded end strips formed of the inner and outer facings extending from the termini of said padded portion, rings firmly secured in rows across said end strips in proximity to said padded portion, draw strings extending through said rings, snap hooks secured to one of the longitudinal edges of said cover portion, and a succession of eyes extending inwardly from the other longitudinal edge for each of said hooks, substantially as described.

857,436. TRACK-SPREADING SIGNAL. ISAAC M. BOND, Tacoma, Va. Filed Nov. 6, 1906. Serial No. 342,187.



Claim.—1. The combination of rigid means for engaging one of the rails of a railway, a signal connected to said means, and a rigid device for engaging the opposite rail adapted to automatically operate the signal to indicate the spreading of the rails.

2. The combination of rigid means for engaging the flange and web of one of the rails of a railway, a signal connected to said means, and a rigid device for engaging the flange and web of the opposite rail, adapted to automatically operate the signal to indicate the spreading of the rails.

3. The combination of means for engaging one of the rails of a railway, a signal pivotally connected to said means, and means pivotally connected to the signal for engaging the opposite rail, adapted to automatically operate the signal to indicate the spreading of the rails.

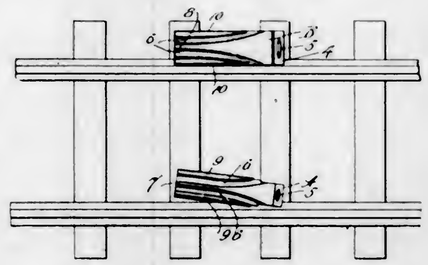
4. The combination of means for engaging one of the rails of a railway, a signal, means engaging the opposite rail, adapted to automatically move the signal to indicate the spreading of the rails, and means to hold the signal in the position in which it is moved.

5. The combination of a bar having means for engaging one of the rails of a railway, a lever slidably suspended on the bar, engaging the opposite rail, and a signal pivoted to said lever.

6. The combination of a slotted bar having means at one end for engaging a rail, a lever slidably suspended in the slot of said bar and engaging the opposite rail, and a bell crank lever having a signal, also pivotally connected in the slot of said bar and to said first-named lever, for the purpose described.

7. The combination of a slotted bar having means for engaging one of the rails of a railway, teeth at the sides of the slotted end of said bar, a lever having a pin slidably suspending it in the slot of the bar and engaging the opposite rail, said pin engaging said teeth, and a bell crank lever having a signal, pivoted to said first-named lever and the bar, for the purpose described.

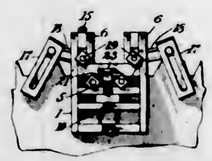
857,437. CAR-REPLACER. JAMES M. BOWMAN, Denison, Tex. Filed Feb. 1, 1907. Serial No. 355,234.



Claim.—1. In a car replacing device, an inside replacing member consisting of an inclined plane having guide grooves spaced apart by a relatively narrow ridge or web, and relatively wide side flanges overhanging the side walls of the member; said guide grooves being rearwardly divergent, and the side walls of the member being provided, adjacent to the terminals of the grooves, with bosses or reinforcements.

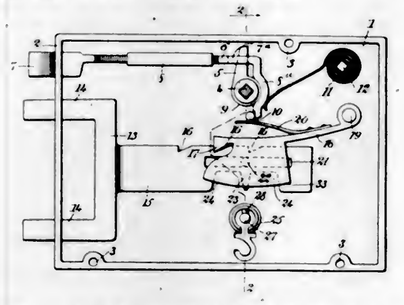
2. A car replacing device comprising, in combination, an inside replacing member consisting of an inclined plane having guide grooves spaced apart by a relatively narrow ridge or web, and relatively wide side flanges overhanging the side walls of the members, said guide grooves being rearwardly divergent and the side walls of the member being provided adjacent to the terminals of the grooves with bosses or reinforcements, and an outside replacing member consisting of an inclined plane having guide grooves spaced apart by a relatively wide side ridge or web and relatively narrow side flanges, the side walls of the member being provided with lugs or reinforcements adjacent to the terminals of the guide grooves.

857,438. SAW-TOOL. WILLIAM BRYSON, Fifield, Wis. Filed Jan. 16, 1905. Serial No. 241,263.



Claim.—A saw tool comprising blocks adapted to engage opposite sides of a saw, the blocks having longitudinal slots and each provided at its ends with upwardly extending projections, clamping bolts passing through the slots of the blocks, a slotted link pivoted between opposing projections of the blocks, a U-shaped and slotted gage, and a bolt passing through the slots of the link and gage.

857,439. LOCK. CARMENO CALICCHIO, New York, N. Y. Filed Jan. 12, 1907. Serial No. 351,961.



Claim.—1. A lock comprising a casing having a bolt provided with back notches, a guide way, and a plurality of ward contact surfaces, a tumbler pivotally attached to said casing and provided with a lug adapted to engage the notches of said bolt, a spring adapted to hold said lug in engagement with said notches, and a curved edge adapted to be raised by a key inserted in said lock, to release said lug from engagement with said notches, and enable the ward of said key to be brought in contact with said bolt, and a sleeve rotatably mounted in said casing and provided with a central rod offset from the wall of said sleeve, adapted to receive the barrel of a key and hold said key in engagement with said casing, substantially as shown and described.

2. A lock having a casing, a bolt mounted to slide therein and provided with back notches, a tumbler pivotally mounted in said casing and provided with a lug adapted to engage said notches, a spring adapted to hold said lug in engagement with said notches, and an extension projecting across the shank of said bolt adjacent to said contact surfaces, a sleeve rotatably mounted on said casing, and provided with a central bar adapted to receive the barrel of a key, and a web connecting said bar with said sleeve adapted to engage the slot of a key and hold said key in engagement with said sleeve, substantially as shown and described.

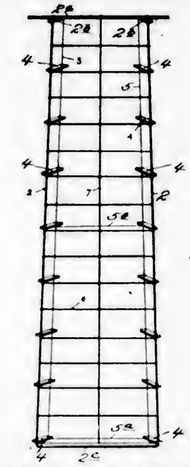
3. A lock having a bolt provided with a shank having back notches formed therein, and key contact surfaces, a latch pivotally attached to said casing provided with a lug adapted to engage said notches, a spring adapted to hold said lug in engagement with said notches, a sleeve rotatably mounted in said casing and provided with a central bar having a web connected therewith and with the interior of said sleeve, and a key provided with a barrel adapted to engage the end of said bar and having a slot adapted to engage the web of said sleeve, substantially as shown and described.

4. A lock having a casing, a sleeve rotatably mounted in said casing and provided with a central bar adapted to receive the barrel of a key, and a web connecting said bar with said sleeve, adapted to engage the slot of a key and hold said key in engagement with said sleeve, substantially as shown and described.

857,440. PORTABLE WINDOW FIRE-ESCAPE LADDER. DAVID N. E. CAMPBELL, Baltimore, Md. Filed Jan. 31, 1906. Serial No. 298,845.

Claim.—1. A ladder having sides and a transverse portion at the lower end of the ladder constituting a continuation of the sides, a tube to receive said transverse portion, rungs connecting said sides, brackets connected with the respective sides and extending rearward therefrom, bands connecting the rear ends of the respective series of brackets, a transverse portion uniting the lower ends of the bands and constituting a continuation of the same, and a head connected with the topmost brackets.

2. A ladder having sides and a transverse portion at the lower end of the ladder constituting a continuation of the sides, a tube to receive said transverse portion, rungs connecting said sides, brackets connected with the respective sides and extending rearward therefrom, bands connecting the rear ends of the respective series of brackets, a transverse portion uniting the lower ends of the bands and constituting a continuation of the same, a head connected with the topmost bracket, and a stay device extending from the head to said tube, connected with each of said parts and also with said rungs.



857,441. TRUNK-ROPE FASTENER. EDWARD W. CARROLL and FRANK S. BAIRD, Congress, Ariz. Filed July 28, 1906. Serial No. 328,186.



Claim.—1. A rope fastener for trunks, boxes and the like, comprising a member, means carried thereby and adapted to receive and hold one end of a rope, a lever pivoted to said member, means carried by said lever and to which the other end of the rope is secured, and means carried by said lever and movable in relation thereto, and adapted to receive and guide the last mentioned end of the rope.

2. Means for fastening the ends of ropes, comprising a plate, means at one end thereof for holding one end of a rope, said means comprising a notched wheel and springs normally pressing the rope against said wheel, a forked lever having one end of the forks pivoted to the other end of the plate, and means on the under side of said lever intermediate the ends thereof for holding the end of a rope, said means comprising a notched wheel and a spring for normally pressing said rope against said wheel.

3. A rope fastener for trunks, boxes and the like, comprising a plate adapted to be secured to the trunk or box, a rope-clamping means slidably connected to said plate, a lever pivotally connected to said rope-clamping means and adapted to have the other end of the rope secured thereto.

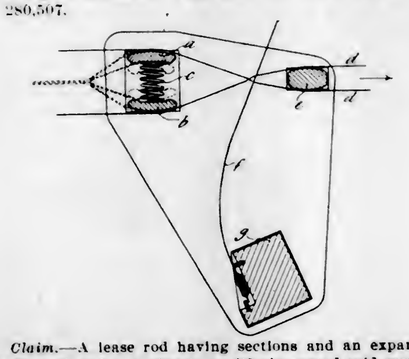
4. A rope-fastening means for trunks and the like, comprising a plate adapted to be secured to the trunk, a second plate slidably secured to the first-mentioned plate, means on said second plate for holding one end of the rope, a lever pivoted to the second plate, means on said lever to which the other end of the rope may be secured, and a second lever pivoted to the first-mentioned lever and through which the rope passes.

5. A rope-fastening means for trunks and the like, comprising a plate adapted to be secured to the trunk, a second plate slidably secured to the first-mentioned plate, means on said second plate for holding one end of the rope, a lever pivoted to the second plate, means on said lever to which the other end of the rope may be secured, means for locking the lever to the second plate when in closed position, and a second lever pivoted to the first-mentioned lever and through which the rope passes.

6. Means for fastening the ends of ropes, comprising a plate, a member at one end thereof to which one end of a rope is secured, a forked lever having the ends of the forks pivoted to the other end of said plate, and means on the under side of said lever intermediate the ends thereof for holding the other end of a rope.

7. A trunk rope fastener comprising a plate adapted to be secured to the trunk and having an upwardly-extending projection, a second plate having a slit therein adapted to receive the projection, whereby said second plate is held in sliding engagement with the first-mentioned plate, rope-securing means at one end of said second plate, a forked lever having its forked end pivoted to the other end of said second plate, rope-securing means on said lever, a second lever pivoted to the first-mentioned lever intermediate its ends, and means for locking the first-mentioned lever to the plate, both of the rope-securing means being completely concealed and protected when the lever is in its locked position.

857,442. LEASE-ROD FOR LOOMS, WARPING MACHINES, AND THE LIKE. THOMAS A. B. CARVER, Glasgow, Scotland. Filed Sept. 28, 1905. Serial No. 280,507.



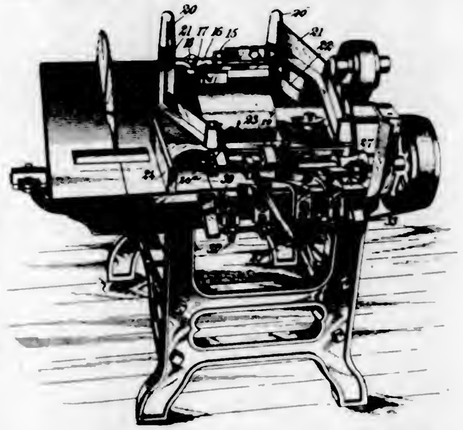
Claim.—A lease rod having sections and an expansive medium therefor serving to positively spread said sections apart and maintain the same in parallel planes.

857,443. WORK-GAGE. FRED M. CHAPMAN, RALPH W. CHAPMAN, and HARRY W. CHAPMAN, Oldtown, Me. Filed Mar. 30, 1905. Serial No. 252,887.

Claim.—1. The combination of an intermediately pivoted bar, an adjustable means for holding said bar against pivotal movement, links pivotally connected to the end portions of the bar, a bar pivotally connecting the free portions of the links, a gage carried by the end of the second named bar transversely of the same, a handle pivotally connected to the second named bar, and a series of adjustable stops with which the handle coacts.

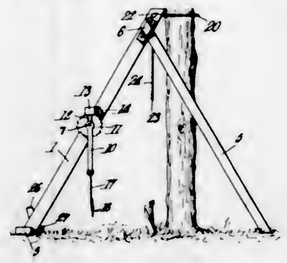
2. The combination of an intermediately pivoted bar, an adjustable means for holding said bar against pivotal movement, links pivotally connected to the end portions of the bar, a bar pivotally connecting the free portions of the links, a gage carried by the end of the second named bar transversely of the same, a handle pivotally connected to the second named bar, and a series of adjustable stops with which the handle coacts, the said stops overlapping each other, for the purpose specified.

3. The combination of an intermediately pivoted bar, a means for adjustably holding the bar at the desired position, links pivoted to the ends of the bar, a second bar pivoted to the free ends of the links and having a work gage thereon, and means for swinging the links to adjust the gage and for holding the gage in the desired adjustment.



4. The combination with a saw table, of two links located over the same, means pivotally mounting the links at the rear of the table, the links extending forward toward the front of the table and swinging horizontally over the same, a gage-bar pivoted to the free ends of the links, a handle pivoted to the gage-bar and swinging vertically, stops at the front of the table with which stops the handle co-acts, and means for adjusting the handle horizontally on the gage-bar.

857,444. WIRE-STRETCHER. DANIEL R. CLARK, Purdin, Mo. Filed Mar. 29, 1907. Serial No. 365,390.



Claim.—1. In a machine of the character described, the combination of a main frame, detachable legs thereon, a windlass removably mounted in said frame, and means at opposite ends of said frame by which it may be securely fastened against movement.

2. In a machine of the character described, the combination of a main frame comprising two side members and a top and bottom connecting bar, detachable legs fitted into sockets on said side members, a shaft removably mounted in said frame, a hand crank on said shaft and a fixed arm also on the shaft having a sleeve on its outer end.

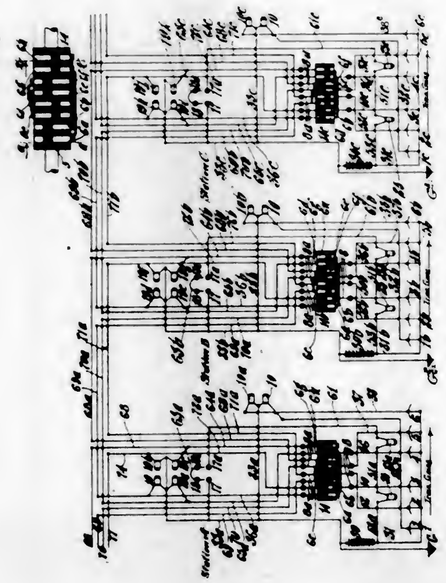
3. In a machine of the character described, the combination of a main frame comprising two side members and a top and bottom cross bar, detachable legs attached to said side members, a shaft mounted to rotate in said frame, a fastening chain attached to the top bar for securing the upper end of said frame to a post or tree and a ring on the lower bar for staking it to the ground.

857,445. FOOD PRODUCT AND PROCESS OF MAKING THE SAME. FRANK H. L. CLARKE, Cannes, France. Filed Jan. 30, 1906. Serial No. 298,707.

Claim.—1. The herein described alimentary product of concentrated form, comprising comminuted pulp of the banana fruit, essential oil of the banana skins, milk powder, malt extract, triturated cocoa beans and sugar, substantially as specified.

2. The herein described method of manufacturing the alimentary product of concentrated form, consisting in drying and comminuting the pulp of the banana fruit, restoring the aroma lost by the pulp during its treatment by combining with it the essential oil extracted from the skins, mixing the aromatized comminuted pulp with dried milk powder and extract of malt, incorporating the mixture with triturated cocoa beans, and flavoring the product with sugar, substantially as specified.

857,446. BLOCK-SIGNAL SYSTEM FOR RAILWAYS. HOMER G. COMSTOCK, San Francisco, Cal. Filed Nov. 24, 1903. Serial No. 182,461.



Claim.—1. The combination in a block signal system of signals located in pairs at the end of each block, depression buttons disposed in series at points adjacent to each signal, means carried by the train by which said buttons are successively depressed, batteries and connections whereby the depressions of said buttons close circuits, an interposed switch actuated by the closing of the first of the circuits, whereby circuits are closed at the distant and adjacent stations upon the entrance of the train into the block and the depression of other buttons, electro magnets energized by the closing of said circuits, and armatures and intermediate mechanism by which the signals are moved and the "danger" signals exposed.

2. The combination in a block system for railways of a series of signals located at the end of each block, depression buttons located in the path of the train, and mechanism carried by the train by which said buttons are successively moved, and electrical circuits closed to expose the "danger" signal at the ends of the block and the preceding block when the train enters said block, safety devices and electro magnets and connections controlled by said signals by which said electro magnets are actuated and the safety devices raised into position, appliances carried by the train and actuated by said devices when raised whereby another train is automatically arrested.

3. The combination in a railway block system of a series of signals located at the end of each block, and capable of being seen from each direction when exposed, devices located in the path of the train and contiguous to the end of each block, depression buttons, and mechanism upon the train whereby said buttons are successively depressed to complete electrical circuits whereby the signals are set to "danger" adjacent to and in advance of the train and restored to their normal position when the train leaves the block, and mechanism located in the path of the train and raised by mechanism controlled by an electrical circuit completed by the movement to danger of two adjacent signals whereby contacts are produced between said mechanism and devices carried by the train so that any train is automatically arrested before entering the block still occupied by another train.

4. In a block system and railway signaling apparatus, signaling devices mounted upon levers, shafts to which said levers are fixed, cylindrical commutator switches carried upon the shafts of the levers, contact springs or brushes resting upon the periphery of the switch, electro magnets mounted in pairs, armatures movable between said magnets and connections between said armatures whereby the signals are moved and the commutator switches are rotated to make or break an electrical circuit through the contact brushes.

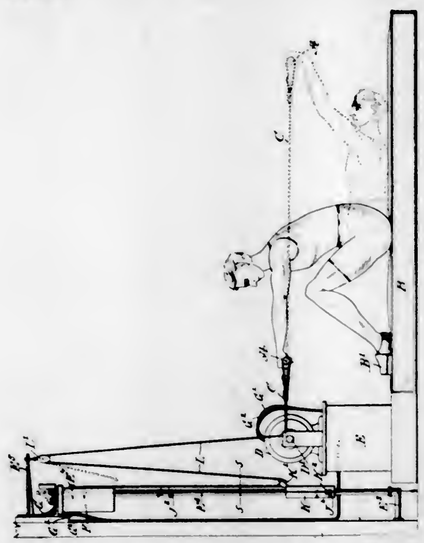
5. In a railway block and signaling apparatus, stations at the ends of each block, depression devices located at said stations, means carried by the train whereby said devices are successively actuated, contacts made by the first depression by which an electrical circuit is established, an electro magnet energized thereby, a revoluble commutator switch and actuating mechanism therefor, and an armature moved by the energizing of the magnet whereby the commutator is turned to complete circuits in readiness to actuate signals at the distant station.

6. In a railway block and signaling apparatus, depression devices located at the ends of each block and contacts by which electrical circuits are completed at each depression, a revoluble commutator switch, an electro magnet, armature, and mechanism actuated thereby to rotate the commutator and complete an electrical circuit with the distant station when the train enters the block, an electro magnet at the distant station, energized by said circuit, an armature, mechanism actuated by the movement of the armature and a signal exposed, and a second commutator switch set in unison with the movement of the signal to complete another circuit whereby a signal is set to protect the entering train.

7. In a railway block and signaling system, depression buttons or the like located at the ends of each block and means carried by the train by which said buttons are successively depressed, commutator switches, electro magnets, armatures and intermediate mechanism whereby the switches are moved by the entering of a train at either end of a block, and electrical connections established and a danger signal set at the opposite end, other commutator switches, and mechanism by which they are set in unison with the setting of said signals to complete new circuits through which electric currents are passed by the depression of subsequent buttons and the advance of the train.

8. The combination with the depression devices and signals of a railway block and signaling system, of a revoluble commutator switch, said switch consisting of a cylinder with a series of encircling conducting bands, elastic arms disposed in pairs and resting on the periphery of the cylinder at each side of a plane through its axis, longitudinally disposed insulated surfaces upon which one set of said arms rest when the others rest upon the conducting bands, and mechanism to rotate the cylinder in unison with the approach of a train from either direction.

857,447. EXERCISING APPARATUS. JOHN J. COOPER, New York, N. Y. Filed Oct. 22, 1906. Serial No. 339,989.



Claim.—1. An exercising apparatus comprising a motor, exercising devices actuated in one direction by the user of the apparatus, and means for causing the motor to actuate the exercising devices in the reverse direction.

2. An exercising apparatus comprising a motor, exercising devices directly connected with the said motor, and controlling means for the said motor for the latter to actuate the said exercising means intermittently.

3. An exercising apparatus comprising a motor, exercising devices directly connected with the said motor, and means controlled jointly by the said motor and the said exercising devices to successively actuate the exercising devices by the user of the apparatus and the said motor.

4. An exercising apparatus comprising a motor, exercising devices having a forward and a return stroke, and capable of being actuated by the user of the apparatus during a portion of the stroke, and means for starting, running and stopping the motor during the remainder of the stroke.

5. An exercising apparatus having exercising devices having a forward and a return stroke, a motor for actuating the said exercising devices and means for starting and stopping the motor during a period of the full stroke given to the exercising means by the user of the apparatus.

6. An exercising apparatus comprising a motor, exercising devices directly connected with the said motor, and a starting device for the said motor and controlled by the said exercising devices.

7. An exercising apparatus comprising exercising means, a motor for actuating the same, and stopping means controlled by the said exercising means for stopping the motor.

8. An exercising apparatus comprising exercising means, a motor for actuating the same, and a stopping and starting device for the said motor and controlled by the said exercising means.

9. An exercising apparatus comprising exercising means, an electric motor for actuating the said exercising means, and a switch controlled by the said exercising means to start and stop the motor.

10. An exercising apparatus comprising exercising means having a forward and a return stroke, an electric motor for actuating the said exercising means, and a switch controlled by the said exercising means to start the motor on the forward stroke given to the exercising means by the user of the apparatus and to stop the motor at the end of the return stroke of the exercising means.

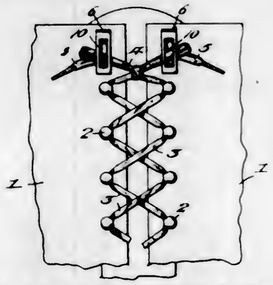
11. An exercising apparatus comprising an electric motor, a pull bar having ropes adapted to wind up and unwind on the motor shaft, and automatic means for starting the motor at the end of the forward stroke of the pull bar and for stopping the motor at the end of the return stroke of the pull bar.

12. An exercising apparatus comprising an electric motor, a pull bar having ropes adapted to wind up and unwind on the motor shaft, a switch for stopping and starting the motor, and means connected with the motor shaft and the said switch for throwing the latter in or out.

13. An exercising apparatus comprising an electric motor, a pull bar having ropes adapted to wind up and unwind on the motor shaft, a switch for stopping and starting the motor, means connected with the motor shaft and the said switch for throwing the latter in or out, the said means comprising a rope winding and unwinding on the motor shaft, a guide pulley for the said rope, a block on the said rope, and a rod connected with the said switch and having collars for engagement by the said block.

14. An exercising apparatus comprising an electric motor, a pull bar having ropes adapted to wind up and unwind on the motor shaft, a switch for stopping and starting the motor, means connected with the motor shaft and the said switch for throwing the latter in or out, the said means comprising a rope winding and unwinding on the motor shaft, a guide pulley for the said rope, a block on the said rope, a rod connected with the said switch and having collars for engagement by the said block, and means for adjusting the said collars on the said rod.

857,448. SHOE-LACE HOLDER. ERNEST CULLEN and GUSTAF SJOLANDER, Midland, Mich., assignors of one-third to James H. Johnson, Midland, Mich. Filed June 9, 1906. Serial No. 321,923.

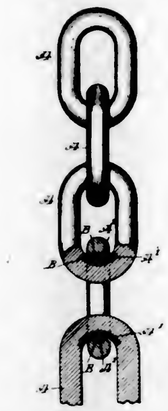


Claim.—A shoe lace holder composed of a single piece of sheet metal folded to form coöperating front and rear spring clamping jaws, the front jaw being provided with a longitudinal opening and terminated at its lower end in a pair of rearwardly projecting engaging spurs, the rear jaw being flared at its upper end to form an entrance space between the upper ends of the jaws, a transversely curved, longitudinal web struck from the rear jaw to seat in said opening, bracing strips formed at the sides of said web and terminally joined to the rear jaw for strengthening the same, said strips being extended from the upper flared end of the jaw to a point adjacent the lower end thereof, and a sharpened engaging spur formed on the upper end of the rear jaw and adapted for coöperation with the first named spurs for attaching the holder to the shoe.

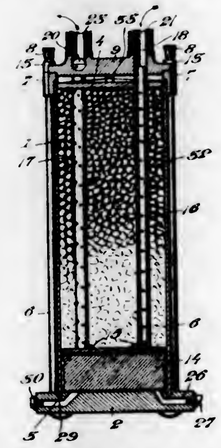
857,449. CHAIN. HORACE T. CURRIE, Chicago, Ill. Filed Dec. 27, 1906. Serial No. 349,661.

Claim.—A chain having interlocked links each provided at the inner face of each end with a recess and an anti-friction metal filling the said recess, and conforming at its outer surface to the contour of the inner face of the end of the link.

857,449.



857,450. FILTER. AMBROSE D. DE LAND, Sheboygan, Wis. Filed Oct. 6, 1906. Serial No. 337,724.

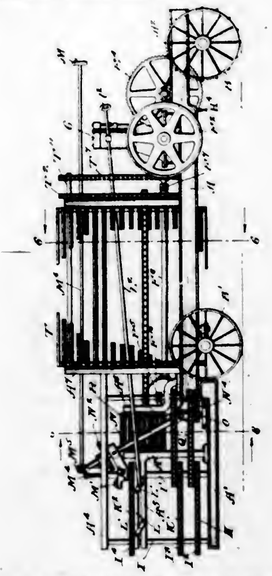


Claim.—1. In a device of the class described, a tank having a cover and containing a charge of filtering material, a plurality of perforated tubes through the tank, an inlet pipe coupled to the cover and communicating with the upper end of one of said tubes, a discharge pipe also coupled to the cover and a duct connecting said discharge pipe for communication with the upper ends of a pair of said tubes.

2. In a device of the class described, a tank having a cover and containing a charge of filtering material, an inlet pipe coupled to the cover, a perforated tube communicating with said pipe and extended longitudinally through the filtering material in the tank, a discharge pipe coupled to the cover, a connecting duct opening into said discharge pipe and a pair of perforated tubes extended through the filtering material in the tank and having connection at their upper ends with the connecting duct.

3. In a device of the class described, a tank having a cover and containing a charge of filtering material, an inlet and a discharge pipe coupled to the cover, a perforated tube communicating with the inlet pipe and extended through the filtering material in the tank, a second perforated tube extending through the filtering medium in the tank and communicating at one end with a discharge pipe, a pressure head arranged for longitudinal movement in the tank, and means for admitting a liquid under pressure to operate the head for compressing the filtering material.

857,451. SUGAR-CANE HARVESTER. JOHN D. EHRLICH and FERNAND F. ESCOFFIER, Berwick, La. Filed Sept. 25, 1906. Serial No. 336,138.



Claim.—1. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper, substantially as described.

2. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for stripping the trash from the cut stalks, a V shaped hopper having sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper, substantially as described.

3. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, and means for carrying the cane from the cutters to a suitable receptacle, substantially as described.

4. A cane harvester comprising a movable vehicle body

with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, and means for carrying the cane from the cutters to a suitable receptacle, substantially as described.

5. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a rotary cutter located near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, and means for carrying the cane from the cutters to a suitable receptacle, substantially as described.

6. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a rotary cutter located near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, and means for carrying the cane from the cutters to a suitable receptacle, substantially as described.

7. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a rotary cutter located near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means for raising or lowering the upper cutter, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, and means for carrying the cane from the cutters to a suitable receptacle, substantially as described.

8. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means for raising or lowering the upper cutter, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, and means for carrying the cane from the cutters to a suitable receptacle, substantially as described.

9. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes, allowing same to spring up to the upper cutter, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper, substantially as described.

10. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper, substantially as described.

11. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, means for varying the height both of said cross bar and of said upper cutter, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper, substantially as described.

12. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, means for varying the height of said cross bar and of said upper cutter, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper, substantially as described.

13. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and means for stripping the trash from the cut canes while in transit between the cutters and the receptacle, substantially as described.

14. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and means for stripping the trash from the cut canes while in transit between the cutters and the receptacle, substantially as described.

15. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a rotary cutter located near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and means for stripping the trash from the cut canes while in transit between the cutters and the receptacle, substantially as described.

16. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a rotary cutter located near the ground for cutting the bottoms of the canes, a

rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and means for stripping the trash from the cut canes while in transit between the cutters and the receptacle, substantially as described.

17. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a rotary cutter located near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means for raising or lowering the upper cutter, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and means for stripping the trash from the cut canes while in transit between the cutters and the receptacle, substantially as described.

18. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means for raising or lowering the upper cutter, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and means for stripping the trash from the cut canes while in transit between the cutters and the receptacle, substantially as described.

19. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottom of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes, allowing same to spring up to the upper cutter, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, means for carrying the cane from the cutters to said hopper, and means for stripping the trash from the cut canes while in transit between the cutters and the hopper, substantially as described.

20. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, toothed stripper bands for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper between the cutters and the hopper, substantially as described.

21. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

22. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

23. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a rotary cutter located near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

24. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a rotary cutter located near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

25. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a rotary cutter located near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means for raising or lowering the upper cutter, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

26. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, means for raising or lowering the upper cutter, means dependent upon the resiliency of the canes for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

27. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes, allowing same to spring up to the upper

cutter, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, means for carrying the cane from the cutters to said hopper, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the hopper, substantially as described.

28. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, means for carrying the cane from the cutters to said hopper, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the hopper, substantially as described.

29. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering the divergent canes into a narrow passage, a rotary cutter comprising a circular knife and a disk contiguous thereto, located in said passage and near the ground for cutting the bottoms of the canes, a similar cutter spaced above and forward of the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, means for varying the height both of said cross bar and of said upper cutter, a V-shaped hopper having the sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper between the cutters and the hopper, substantially as described.

30. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located near the ground for cutting the bottoms of the canes, a cutter spaced above the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, means for varying the height of said cross bar and of said upper cutter, a V-shaped hopper having the sides formed of inclined carriers, and means for carrying the cane from the cutters to said hopper between the cutters and the hopper, substantially as described.

31. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a rotary cutter comprising a circular knife and a disk contiguous thereto, located in said passage and near the ground for cutting the bottoms of the canes, a similar cutter spaced above and forward of the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, means for carrying the cane from the cutters to a suitable receptacle, and means for stripping the trash from the cut canes while in transit between the cutters and the receptacle, substantially as described.

32. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a rotary cutter comprising a circular knife and a disk contiguous thereto, located in said passage and near the ground for cutting the bottoms of the canes, a similar cutter spaced above and forward of the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes allowing same to spring up to the upper cutter, means for carrying the cane from the cutters to a suitable receptacle, and means for stripping the trash from the cut canes while in transit between the cutters and the receptacle, substantially as described.

33. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering the divergent canes into a narrow passage, a cutter located in said passage and near the ground for cutting the bottom of the canes, a cutter spaced above and in front of the first cutter and adapted to cut the top off the canes, a cross bar located in front of and below the upper cutter and adapted to bend over the heads of the canes, allowing same to spring up to the upper cutter, means for stripping the trash from the cut stalks, a V-shaped hopper having the sides formed of inclined carriers, means for moving either of said carriers, and means for carrying the cane from the cutters to said hopper between the cutters and the hopper, substantially as described.

34. A cane harvester comprising a movable vehicle body with means for propelling same, means for gathering and holding the divergent canes in a substantially vertical plane prior to reaching the cutters, a cutter located in said passage and near the ground for cutting the bottoms of the canes, a cutter spaced above and in front of the first cutter and adapted to cut the top off the canes, means for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and toothed stripper bands removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

35. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a cutter located in said passage and near the ground for cutting the bottoms of the canes, a cutter spaced above and in front of the first cutter and adapted to cut the top off the canes, means for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and means removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

36. A cane harvester comprising a movable vehicle body with means for propelling same, a series of moving chains provided with pusher lugs forming a V-shaped throat at the forward end of the machine for gathering the divergent canes into a narrow passage, a rotary cutter located in said passage and near the ground for cutting the bottoms of the canes, a rotary cutter spaced above the first cutter and adapted to cut the top off the canes, means for automatically presenting a substantially uniform length of top to be cut off, means for carrying the cane from the cutters to a suitable receptacle, and means for removing the trash from the cut cane while in transit between the cutters and the receptacle, substantially as described.

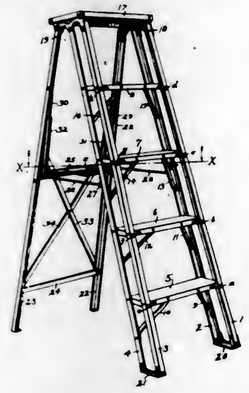
857,452. HEAT-REGULATOR FOR OVENS. JOHN P. FARMER, Montavilla, Oreg. Filed Jan. 9, 1906. Serial No. 295,314.



Claim.—1. The combination of a flat ported wall, with a thermostat arranged to open and close the ports thereof, said thermostat comprising a pair of metal strips of different co-efficients of expansion, the strip having the greater co-efficient being arranged next the wall and having a flat portion adapted to open and close the ports, and rivets for securing the strips together which have countersunk heads in the strip controlling the ports.

2. The combination of a wall provided with a plurality of ports, with a thermostat comprising a pair of strips of metal of different co efficients of expansion with the strip having the greater coefficient next the wall and having flat end portions arranged with their longitudinal dimensions alining and connected by a laterally extending bulge, one of the said flat portions forming a single valve for covering and uncovering the several ports, rivets extending through the flat and bulged portions for securing the strips together, and means for securing the other flat portions to the said wall, the said rivets extending through the flat portion forming the valve having their ends countersunk and flush with the surface of the said flat portion which contacts with the ported wall.

857,453. METAL STEP-LADDER. ROBERT H. FETTA, Richmond, Ind. Filed July 6, 1905. Serial No. 268,394.



Claim.—1. In a step-ladder having two pairs of standards and a pair of movable legs formed of angle-iron, a plurality of sheet metal steps carried between the pairs of standards, a down-turned flange formed around each step, braces connected near the forward edge of the center of each step and to the rear standards, and tongues extending outwardly from the face of the front standards and engaging the flanges of the steps, all substantially as shown and described.

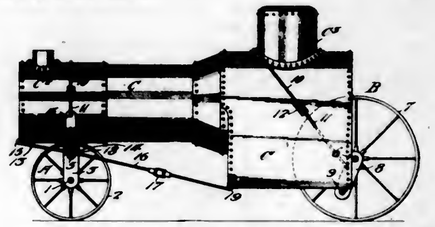
2. In a step ladder having two pairs of standards and a pair of legs formed of angle-irons, a plurality of steps formed of sheet metal, each step having a flange turned at right angles to the body of the step and extending thereabout, a pair of tongues for each step one of each being formed in the front of each standard, braces for supporting the center of each step, and means for permanently connecting the ends of the steps to the standards, all substantially as shown and described.

3. A step ladder having in combination with the standards formed of angle iron, a plurality of steps formed of sheet-metal and having downwardly turned flanges extending from each edge, tongues formed in the faces of the front standards for engagement with the flanges of the steps, means for permanently connecting the steps to and between the pairs of standards, and a pair of braces connecting the forward central edge of each step to the rear standards, all substantially as shown and described.

4. In a step ladder, the combination with two pair of standards formed of angle iron, of a plurality of sheet metal steps, each having a downturned peripheral flange, means for securing the steps at the side to the standards, and upturned lugs on the standards upon which the front flange of the steps rest; substantially as described.

5. In a step ladder the combination with the two pairs of standards, of a plurality of sheet metal steps having downturned peripheral flanges, tongues formed in the faces of the front standards in which the front flange of the steps rest, and rivets for securing the steps at the ends to the standards; substantially as described.

857,454. BOILER-TRUCK. WILLIAM T. FIERS and BENJAMIN F. TIGNER, Redkey, Ind. Filed Mar. 27, 1906. Serial No. 308,356.



Claim.—1. A device of the character described comprising front and rear wheeled frames adapted to support the front and rear portions of a boiler, the rear wheeled frame comprising an axle adapted to bear against the rear of the boiler, plates pivotally mounted on said axle, a rod connecting the free ends of said plates adapted to extend under the rear portion of the boiler, a yoke connected with said plates to attach said rear wheeled frame to the boiler, said yoke being adapted to bear upon the front portion of the steam dome of the boiler to hold said frame against rearward movement, and means for connecting the front wheeled frame to the boiler.

2. A boiler truck comprising a front wheeled frame, a rear wheeled frame, said frames being adapted to support the front and rear ends of a boiler, means for connecting said frames with the body of the boiler, and rods connected with the front wheeled frame and provided with hooked ends to respectively engage the flange at the front end of the boiler and the flange at the lower forward edge of the firebox.

3. A device of the character described comprising front and rear wheeled frames, said frames being adapted to support the front and rear portions of a boiler, means for connecting the front wheeled frame with the boiler, means for connecting the rear wheeled frame to the boiler, and braces extending from said front wheeled frame and having portions to respectively engage the flange at the front of the boiler and the flange around the mud ring at the forward edge of the fire box of the boiler.

4. A device of the character described comprising front and rear wheeled frames having frame supports for the front and rear portions of a boiler, rods extending from said frame supports, yokes adapted to engage the top portions of the body and fire box of the boiler, turn buckles connecting the respective yokes with the respective rods of the frames, and stays for connecting the front wheeled frame with the front end of the boiler body and lower front portion of the fire box.

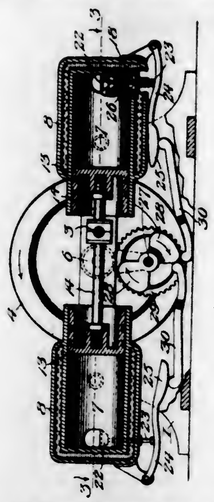
5. A boiler truck comprising a front wheeled frame, a rear wheeled frame, means for connecting said frames with the body of the boiler, and brace rods carried by the front wheeled frame and having hooked ends to engage the flanged portions upon the front and rear of the boiler.

6. A device of the character described comprising front and rear wheeled frames, the front wheeled frame having a saddle pivotally connected therewith, and the rear wheeled frame being provided with a pivoted supporting portion adapted to engage under the lower rear end of the fire box, yokes for respectively connecting said saddle and pivoted supporting portion of the rear wheeled frame with the body and fire box of the boiler, the yoke of the rear wheeled frame being adapted to engage the steam dome and hold said frame from rearward movement, and bracing rods connected with the front wheeled frame and extending forwardly and rearwardly therefrom, said rods being provided with hooked free ends for respective engagement with the front flanged end of the body and the flange at the lower forward end of the fire box.

7. A boiler truck comprising a front wheeled frame, a rear wheeled frame, said frames being adapted to respectively support the front and rear ends of a boiler, the rear wheeled frame being provided with pivotally mounted depending plates and a rod connecting said plates at their

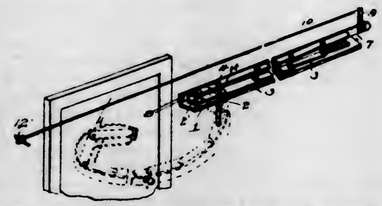
lower ends, said rod being adapted to extend beneath the lower rear end of the boiler, rigid yokes for connecting said frames with the body of the boiler, and braces for connecting the front wheeled frame with portions of the boiler in front and rear thereof.

857,455. GAS AND GASOLENE ENGINE. PETER FURST, Anderson, Ind. Filed Nov. 29, 1904. Serial No. 234,763.



Claim.—In an engine, a frame, a pair of opposed cylinders pivoted for oscillation therein, said cylinders being provided with inlet and exhaust ports, a drive shaft journaled in the frame between the cylinders and having crank portions, pistons arranged for reciprocation in the cylinders and having their rods connected directly with the respective crank portions of the shaft, spring pressed valves arranged for normally closing the exhaust ports, operating members pivotally mounted on the cylinders in position to act upon the exhaust valves, pivoted auxiliary levers disposed to act respectively on said members for opening the valves, a stub shaft journaled in the frame beneath the drive shaft, gear connections between the shafts for rotating the stub shaft and a double cam member fixed on the latter and adapted to positively actuate the auxiliary levers.

857,456. BURGLAR-TRAP. OTTO W. GABRIELSON, Issaquah, Wash., assignor of one-third to Nestor Wester, Issaquah, Wash. Filed Sept. 7, 1905. Serial No. 277,413.



Claim.—1. A trap comprising securing means capable of flexible movement in one direction only.

2. A trap comprising a plurality of links pivotally connected together and free to swing in one direction, and means for preventing said links from swinging in the opposite direction.

3. A trap comprising a plurality of links pivotally connected together and free to swing in one direction, and means carried by said links for limiting the same against movement in the opposite direction.

4. A trap comprising a chain and pawl and ratchet mechanism for limiting the links of such chain from moving in one direction, said links being left free to move in the opposite direction.

5. A trap comprising links pivotally connected together, each of said links being U-shaped in cross section, and the flange of each of said links being arranged to overlap the flanges of another link at one end, means pivotally connecting said flanges together, and pawl and ratchet devices for limiting said links against movement in one direction for leaving the same free to swing in the opposite direction.

6. A trap comprising links pivotally connected together end for end, a pawl carried by one end of each link, and a ratchet carried by the contiguous end of the next succeeding link.

7. A trap comprising a plurality of links pivotally connected together end for end, a pawl projecting from one corner of one end of each of said links, and a ratchet formed across the face of the opposite end of each of said links and adapted to be engaged by the pawl of the next succeeding link.

8. A trap comprising links pivotally connected to each other, each of said links being formed approximately U-shaped in transverse section, a ratchet formed in each flange of each link at one end thereof, and a pawl carried by each flange of each link at the opposite end thereof and adapted to engage the ratchet of the contiguous link.

9. In a trap, the combination with a support, of a chain adapted to be supported thereby, means pivotally connecting said chain to said support, means for retaining such chain against movement in one direction while permitting the same to move in an opposite direction, and means for swinging said chain upon its pivot.

10. In a trap, the combination with a support, of a chain adapted to be sustained thereby, means for pivotally securing said chain in position, a spring for swinging said chain upon its pivot, and means for preventing said chain from moving in one direction while leaving the same free to move in the opposite direction.

11. In a trap, the combination with a support, of a chain sustained thereby, means for pivotally securing said chain, a spring fixed in the rear of the chain, a trip maintaining said chain normally inactive, means for throwing said trip for releasing the spring, and means for preventing the links of said chain from swinging rearwardly while leaving the same free to swing forwardly.

12. In a trap, the combination with a support, of a chain pivoted to and adapted to be sustained by said support, means in the rear of said chain for throwing the same forwardly when released, means for retaining said chain throwing means normally inactive, and means for preventing rearward pivoting of the links of said chain while leaving the links free to pivot forwardly.

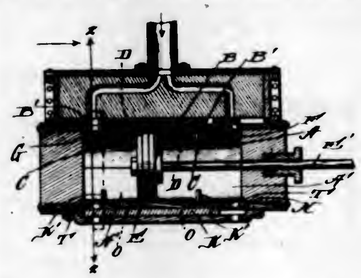
13. A trap comprising a chain formed of links pivotally connected together said links being free to swing forwardly, means for locking said links against rearward movement after forward movement thereof, some of said links being free to swing rearwardly prior to forward movement thereof.

14. A trap comprising a series of links pivotally connected together, some of said links being formed with abutting walls designed to prevent rearward pivoting thereof, said links being free to pivot forwardly, means for locking said links against rearward movement after forward pivotal movement thereof, and other of said links being pivoted to swing freely rearwardly prior to forward swinging thereof and means for locking the last mentioned links against rearward movement after forward swinging thereof.

857,457. CUT-OFF VALVE FOR ENGINES. WILLIAM GOODWIN, Decatur, Ill. Filed Aug. 18, 1906. Serial No. 331,220.

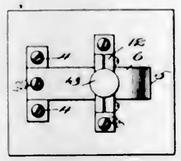
Claim.—In combination with a cylinder having portions of its circumference diametrically opposite flattened and

terminating in flanges, a plate seated upon the flattened part of the cylinder at its top and bearing against said flanges, said plate having a longitudinal recess in its upper surface, a sliding valve plate mounted in said recess, pins projecting from said valve through slots in the plate and said cylinder, a boxing having flanged ends resting upon the flanges of said plate, said boxing being recessed in its lower end to receive the valve, the ends of the recesses in said boxing and plate being flush, a slotted plate



fastened to the flat bottom of the cylinder and engaging the flanges at the ends thereof, the lower surface of said slotted plate having a recess therein, a pin carrying valve mounted in the latter and pins thereon, a plate having a recess in its upper surface fitted to the plate which is fastened to the bottom of the cylinder and adapted to hold said pin carrying plate in position, a piston mounted within the cylinder and adapted as it reciprocates, to contact with the pins of said valve, as set forth.

857,458. CONTACT-BREAKER FOR INDUCTION-COILS. FRANK B. GRIFFIN, Oshkosh, Wis., assignor to Frank S. Fell and William R. Hill, Oshkosh, Wis. Filed Dec. 3, 1906. Serial No. 346,161.



Claim.—1. A device of the character described, comprising a base plate, a magnet mounted adjacent thereto, an armature for said magnet, a spring for said armature, said spring being secured to said base, means on said base for regulating the tension of said spring, and means positioned adjacent to said magnet for assisting said tensioning means and holding said spring in a predetermined position.

2. A device of the character described, comprising a casing and a magnet mounted therein, a contact breaker for said magnet comprising a plurality of springs and means for varying the tension of said spring.

3. A circuit breaker, comprising a base, a straight flat spring, means for adjusting the vibration of said spring, and means for damping the movement of said spring.

4. A circuit breaker comprising a base, a vibrating spring secured thereto, means near one end thereof for regulating the angle of said spring when out of operation, and adjusting means at the opposite end of said spring for regulating the length of the movement of said spring.

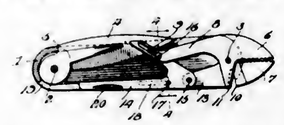
5. A circuit breaker comprising a base, a vibrator mounted thereon, a bowed spring in contact with said vibrator for preventing trembling of the same and means for regulating the tension of said spring.

6. A circuit breaker comprising a base and vibrator, a plurality of means for regulating the tension of said vibrator, and means for damping the tremble of said vibrator.

7. A circuit breaker comprising a base, a vibrator secured thereto, adjustable means for normally holding said vibrator in an elevated position, a bowed spring for preventing trembling during the movement of said vibrator and a set screw for regulating the tension of said spring.

8. A circuit breaker comprising a base, a vibrator secured thereto, adjustable means for varying the length of vibration of said vibrator, adjustable means for regulating the tension of said vibrator, and means for permitting the vibrator to operate with but one vibration for each rupture of the circuit.

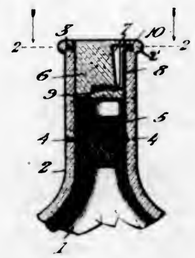
857,459. COMBINATION-TOOL. JOHN A. HENDRICKSON, Stedman, Cal. Filed Dec. 1, 1906. Serial No. 345,961.



Claim.—1. A combination tool comprising a knife handle, a pair of pincers pivotally connected to said handle, one member of said pincers having an arm extending into said handle and provided with a slot, a lever pivotally connected to the other jaw member of the pincers and provided with a pin passing through the slot in the arm, and a pin connected to said lever and extending through a slot in the handle, substantially as described.

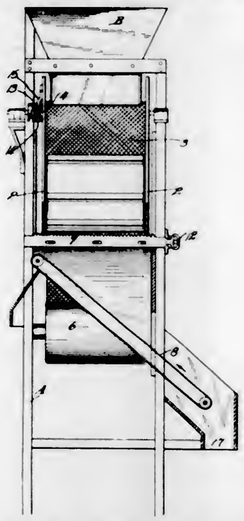
2. A tool comprising a knife handle, a pair of tool members pivotally connected to said handle, one of said members having an arm extending into the handle and provided with a slot, a lever pivotally connected to the other member and provided with a pin passing through the slot in the arm, said lever having a sliding pivotal connection with the handle.

857,460. BOTTLE. DON J. HIGGINBOTHAM, Rialto, Fla., assignor of one-third to Lewis H. Locklar, Rialto, Fla. Filed Mar. 3, 1906. Serial No. 304,035.



Claim.—A bottle comprising the neck with a head having an internal surrounding groove, said neck being also provided with diametrically opposite inner and outer grooves, a cork stopper mounted in the neck and extending midway above said opposite inner and outer grooves, a glass stopper also mounted in said neck and spaced apart from the cork stopper and having its upper surface flush with the upper surface of the neck, said stopper being provided with a continuous inclined recess formed in one side thereof, a straight retaining spring having on its lower end a right angular projection which is embedded part way into the body portion of the glass stopper so as to hold the spring in position within the recess, said spring also having at its upper end a straight projection arranged at right angles with the straight portion of the spring, and said inclined recess serving to give the straight body portion of the spring an inclined bend to permit of the upper projection thereon to engage the groove in said head, substantially as specified.

857,461. HOP-PICKER. EMIL C. HORST, San Francisco, and JOHN EHRHORN, Perkins, Cal., asignors to E. Clemens Horst Co., San Francisco, Cal., a Corporation of New Jersey. Filed Oct. 17, 1906. Serial No. 339,376.



Claim.—1. In a hop picking and separating apparatus, an inclined traveling screen and sides to which the screen forms a bottom, means for delivering hop vines upon the screen, means for agitating the screen and sides transversely to cause the hops to depend there-through, and a cutter located beneath the screen whereby the hops are separated, said cutter having its cutting edge presented opposite to the travel of the screen and against which edge the screen carries the vines, and means for reciprocating the cutter transversely of the screen.

2. In an apparatus for picking hops, an endless traveling inclined screen, means for transversely shaking the screen to cause the hops to depend there-through, a cutter by which the hops are severed from the vines upon the top of the screen, and an upwardly traveling inclined endless carrier upon which the severed leaves and hops will fall, and means for operating said carrier whereby the leaves are carried upward and discharged, and the hops move downward.

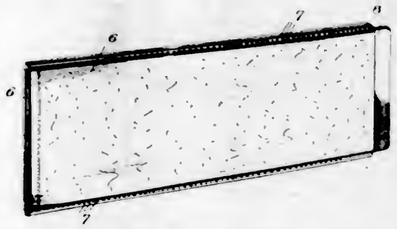
3. In an apparatus for picking and separating hops, an endless traveling inclined screen, means for delivering vines with hops thereon upon the top of the screen, side boards hinged at the lower end, and of which the screen forms a bottom, a drum over which the upper end of the screen passes having a cam groove, and a fixed pin entering said groove whereby the drum and the upper end of the screen are oscillated transversely.

4. In an apparatus for picking and separating hops, an endless traveling inclined screen, means for delivering vines and hops upon the upper end of the screen, side boards of which the screen forms a bottom, said boards being hinged at the lower end, a drum over which the upper end of the screen passes, said drum having a cam groove, a fixed pin engaging said groove whereby the drum and upper end of the screen are oscillated transversely, said drum having a circular groove formed in it, and connections between the side boards and said groove whereby the said boards are caused to oscillate in unison with the movements of the drum and screen.

5. In an apparatus for picking and separating hops from the vines, an endless traveling inclined screen having hinged side boards, means for reciprocating the upper end of the screen and the side boards in unison, a converging directing plate located above the screen, a reciprocating knife or cutter below the screen whereby the hops are separated from the vines, and independent receiver for the hops and leaves.

6. In hop picking apparatus, a movable perforated support for the hops and vines, and an inclined upwardly traveling endless conveyer arranged beneath said support to receive the hops and leaves falling through the openings in the support.

857,462. BLOTTER OR PAD. LOUIS S. HOUGHTON, Baltimore, Md. Filed June 18, 1906. Serial No. 322,355.



Claim.—1. An improved blotter consisting of a sheath of material having a blotting surface and a flat stiffening element inclosed within and removable from the same.

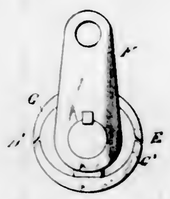
2. An improved blotter consisting of a sheath of material having a blotting surface and a sheet of stiffening material inclosed within and removable from the same.

3. An improved blotter consisting of a sheath of material having a blotting surface and a strip of metal inclosed within and removable from the same.

4. An improved blotter consisting of a covering formed of a plurality of sheets one being of blotting material and a flat stiffening element inclosed within and removable from the same.

5. An improved blotter consisting of a covering formed of a plurality of sheets of blotting material and a flat stiffening element inclosed within and removable from the same.

857,463. VALVE FOR EXPLOSIVE-ENGINES. GUY W. IRWIN, Bradford, Pa. Filed Sept. 12, 1904. Serial No. 224,160.



Claim.—1. The combination with a gas and oil engine cylinder, of a round valve in communication therewith, and having an oval opening therein, thus forming two thin walls, and cuts extending through the entire length of said thin walls.

2. The combination with a gas or oil engine cylinder, of a valve chamber in communication with the cylinder, and a hollow valve within said chamber and having cuts on opposite sides at an angle to the radius thereof, and extending entirely through the walls of the valve.

3. The combination with a gas or oil engine cylinder, of a valve chamber in communication therewith, a valve within said valve chamber and having cuts on opposite sides at an angle to the radius thereof, and completely severing the valve into two sections, and a transverse member connecting the said sections at one end intermediate the cuts.

4. The combination with a gas or oil engine cylinder, of a valve in communication therewith and having an oval

opening therein forming two oppositely arranged thin walls, and said thin walls having cuts completely severing the valve and said cuts extending at an angle to the radius thereof.

5. The combination with a gas or oil engine cylinder, of a round valve in communication therewith and having an oval opening forming two thin walls, said thin walls having cuts completely severing the valve into two sections, and said cuts extending at an angle to the radius thereof and a transverse member within one end of the valve and secured to the thick walls of the two sections of the valve and holding them in their relative positions.

6. The combination with a gas or oil engine cylinder, of a round valve in communication therewith and having an oval opening therethrough forming two thin walls, said thin walls having passage-ways and cuts extending from said passage ways to the end of the valve and completely severing the valve into two sections, said cuts extending at an angle to the radius thereof,-and a transverse member within one end of the valve and secured to the thick walls of the two sections of the valve, and holding them in their relative positions.

7. The combination with a gas or oil engine cylinder, of a round valve in communication therewith and having an oval opening therethrough forming two thin walls, said thin walls having passage-ways and cuts extending from said passage-way to the end of the valve at an angle to the radius thereof and completely severing the valves into two sections, and a transverse member within one end of the valve and secured to the thick walls of the two sections of the valve, and holding them in their relative positions, and a valve stem extending laterally from the said transverse member.

8. The combination with a gas or oil engine cylinder, of a cylindrical valve chamber in communication therewith at one end, a round valve filling said chamber and having an oval opening therethrough forming two thin walls, said thin walls having oppositely-arranged passage-ways, and cuts extending from the opposite sides of each passage-way to the end of the valve at an angle to the radius of the valve, and completely severing the valve into two elongated semi-circular sections, a transverse plate within one end of the valve and flush therewith and secured to the thick walls of the semi-circular sections and holding them in their relative positions, a valve-stem secured to said plate and extending through the valve chamber, and operating means carried by the end of said stem.

9. The combination with a gas or oil engine cylinder, of a valve chamber in communication therewith, a valve within the chamber and having expansibly controlled means constructed and arranged to cause the hot gases to leak from around the valve to indicate that the valve is overheated.

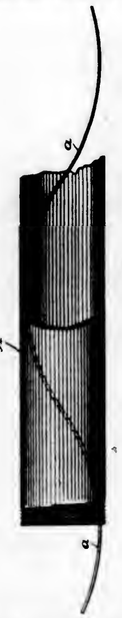
10. The combination with a gas or oil engine, cylinder, of a valve chamber in communication therewith, a hollow valve within the chamber and having expansibly controlled means constructed and arranged to cause the hot gases to leak from around the valve to indicate that the same is overheated.

11. The combination with a gas or oil engine cylinder, of a hollow valve having a wall with relatively thick and thin portions, the thin portion having expansibly-controlled means constructed and arranged to cause the hot gases to leak from around the valve to indicate that the valve is overheated.

12. The combination with a gas or oil engine, cylinder, of a hollow valve having a wall with relatively thick and thin portions, the thin portion having a cut at an angle to the radius to cause the hot gases to leak from around the valve to indicate that the valve is overheated.

857,464. HELICALLY-RIFFLED PIPE. JOHN D. ISAACS, Oakland, and JAMES B. SPEED, Berkeley, Cal., assignors to Rifled Pipe Company, San Francisco, Cal., a Corporation of California. Filed June 23, 1905. Serial No. 266,574.

Claim.—1. A fluid pipe line having a relatively rigid interior wall, and a helically directed spring wire seated on said wall by its own resilient pressure.



2. A single piece fluid pipe line having a helically directed spring wire seated on the interior wall thereof by its own resilient pressure, the convolutions of the wire being drawn out and widely spaced apart whereby the general direction of the wire is longitudinally of the pipe.

3. In an apparatus for the method stated, a pipe line having on its interior wall a helically directed wire seated by its own resilient pressure, and means for supplying the lighter and heavier fluids to the pipe line.

857,465. SEAM FOR UNITING MATERIALS. JOHN C. IVORY, Newton, N. H., assignor to Daniel E. Kempster, trustee, Boston, Mass. Filed Oct. 27, 1905. Serial No. 284,659.

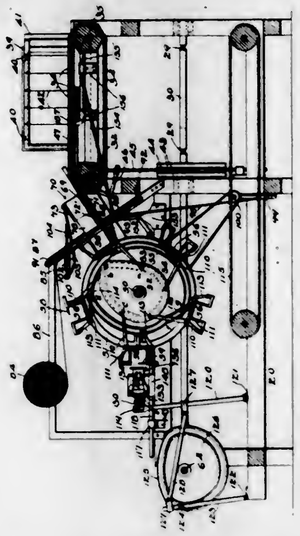


Claim.—A seam consisting of pieces of over-lapped, perforated material, one piece of material having a channel and a lip over hanging the channel, a continuous thread having a series of loops formed throughout its length and passed through alining perforations of the pieces of material, and a locking member disposed between the bight portion of each loop and the outer face of the channeled piece of material with the bight ends of the loops formed for disposition in the channel beneath said lip which overlaps the channel, each locking member being arranged longitudinally in line with the series of perforations of the material and with the portions of the continuous thread intermediate the loops of the latter, the locking members being spaced and independent of one another.

857,466. WRAPPING-MACHINE. JENS N. JACOBSEN, Ferndale, Cal. Filed Nov. 24, 1905. Serial No. 288,908.

Claim.—1. The combination with a receiving pocket, of an endless conveyer, means for feeding a sheet of wrapping material across the mouth of the pocket, a reciproca-

tory feeder moving between the conveyer and the pocket, article gripping jaws forming a part of said feeder, and stationary cams for moving the jaws into engagement with the article.



2. The combination with a receiving pocket, of means for feeding a sheet of wrapping material across the mouth of the pocket, an endless conveyer, a feeding device movable between the conveyer and the pocket and provided with a recessed bottom to permit engagement of the article with the wrapper, a pair of gripping plates carried by the feeder, cams for moving said gripping plates into engagement with the article, and springs for removing the plates from engagement with the article.

3. In a wrapping machine, a revoluble carrier, a plurality of pockets supported thereby, means for imparting a step by step movement to said carrier, an endless conveyer, means for imparting a step by step movement to the endless conveyer, and a reciprocating feeding device movable in an inclined plane between the discharge end of the carrier and the pockets, as the latter are successively presented to receiving position.

4. In an article-wrapping machine, the combination with a reciprocatory carrying frame, of an end folder, including a pivotally mounted folding member arranged during movement of the carrier in one direction for folding one edge of the wrapper, and during movement in the opposite direction for folding the opposite edge of the wrapper.

5. In a device of the class specified, a reciprocatory carrying frame, and a folding member pivotally connected thereto and provided with successively operable folding edges, one of which folding edges is brought into action when the frame is moved in one direction and the other of which edges is brought into action when the frame is moved in the other direction.

6. In a device of the class specified, a reciprocatory carrier, a folding member pivotally connected thereto and provided with folding plates arranged at an angle to each other, one folding plate being movable to operative position during the movement of the carrier in one direction, and the other folding plate being movable to operative position during the movement of the carrier in the other direction.

7. In a device of the class specified, a reciprocatory carrier, a pivotally mounted folding member supported thereby and provided with folding edges that are successively adjusted to operative position, and a pair of pivotally mounted side folders, also, supported by the carrier and operable between movements of the two folding edges.

8. In apparatus of the class described, an end folder for rectangular tubes comprising a pair of folded plates arranged approximately at a right angle to each other, means for moving said plates across the end of the tube, the edge of one of said plates being active during movement in one direction, and the edge of the other being brought into play during movement in the opposite direction, and side folders operable at the completion of the initial folding operation.

9. An end folding device for rectangular tubes, comprising a reciprocatory carrier, a folding member having folding edges, one of which is active during the forward movement of the carrier, and the other being turned to operative position for engagement with the wrapper during the reverse movement, and pivotally mounted side folders operable at the completion of the initial folding operation.

10. An end folder for rectangular tubes comprising a reciprocatory frame, a plurality of folders pivotally mounted thereon, and a frame actuating member operatively connected to the folders and receiving initial movement independent of the reciprocatory frame to adjust the positions of the folders.

11. An end folding device for retangular tubes comprising a reciprocatory carrier, pivotally mounted folding members supported thereby, an operating bar for the carrier, means for connecting said bar to the folding members, and means for effecting preliminary independent movement of the bar in advance of movement of the carrier in each direction to adjust said folders prior to their engagement with the tube.

12. In apparatus of the class described, a reciprocatory folding frame, a folding member carried thereby and formed of a pair of plates arranged at a right angle to each other, an operating member having a linked connection with the folding member, a pair of pivotally mounted side folding plates having slotted shanks, a pin carried by the operating member and entering the slots, and means for imparting movement to the operating member for effecting adjustment of the folders in advance of the engagement with the operating member with the carrier.

13. The combination with a carrying frame, of end folding members pivoted thereto, and each formed of a pair of plates disposed approximately at a right angle to each other, a reciprocatory operating bar, pins projecting from the bar and extending through lugs on the carrying frame, links connecting the folders to said pins, a pair of pivotally mounted side folding plates supported by the frame and having slotted shanks, lugs projecting from the bar, and a pin carried by said lugs and entering the slots to effect preliminary adjustment of the folding members in advance of the movement of the carrying frame.

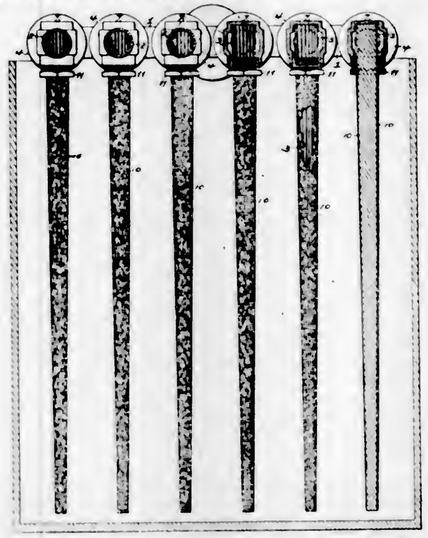
14. In apparatus of the class described, an endless article conveyer, a revoluble carrier, a plurality of pockets supported thereby, a strip feeding means for moving the end of a strip of wrapping material over the mouth of the pockets as the latter approach the receiving position, a feeder for carrying the successive articles from the conveyer to the pockets, and serving in connection with the article and the walls of the pockets to effect initial forming of the wrapper, means operating during movement of the carrier for folding down the projecting edges of the wrapper, means for folding the ends of the wrapper, a main shaft, cams carried thereby, mechanism operable by said cams for imparting movement to the end folders and to the conveyer, and feeding means, and means operated from said shaft for imparting a step by step movement to said carrier.

857,467. FILTER. WALTER T. JANNEY and GEORGE H. DERN, Mercur, Utah. Filed Feb. 21, 1907. Serial No. 358,573.

Claim.—1. A filter, comprising a grooved tapering body and a covering of filtering material thereon.

2. A filter, comprising a grooved conical stick, and a fabric sock or bag thereon.

3. A filter, comprising a tapering stick having an annular series of longitudinal grooves, some of said grooves terminating short of the smaller end of the stick and decreasing in depth from the larger end of the stick, and a canvas sock or bag on said stick.



4. In a filter, the combination with a tubular header, of a series of grooved filtering sticks secured in openings in the header, and fabric coverings on said sticks.

5. In a filter, the combination with a tubular header having openings in one wall and hollow enlargements in a wall opposite the openings, of tapering grooved filtering sticks located in the openings and projected up into the hollow enlargements, tie bushings around the sticks and screwed into the openings in the header, and a fabric sock or bag around each stick and secured at its upper end in the tie bushing.

6. In a filter, the combination with two parallel binders of a series of tubular headers connecting the binders, and a series of filtering sticks depending from each header.

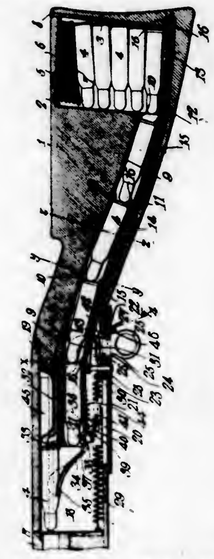
7. A filter, comprising a filtering stick of general conical or tapering form having peripheral or surface grooves, and a covering on said stick.

857,468. RIFLE OR SHOTGUN. ERNEST O. JOHNSON, Madison, Wis. Filed Jan. 31, 1907. Serial No. 355,120.

Claim.—1. In a gun, a reciprocating trigger-carrier, a reciprocating breech-block connected and movable therewith, means operated by the reciprocating trigger-carrier for feeding a cartridge forward simultaneously with the forward movement of the breech-block, and means for moving the cartridge into alinement with the gun-barrel when the breech-block is retracted.

2. A gun comprising a magazine for cartridges formed in the gun-stock, a conduit for the cartridges from the magazine to the gun-barrel, a reciprocating trigger-carrier, means connected therewith for producing a progressive step-by-step advancement of the cartridges in the direction of the gun-barrel, and a breech-block connected to the trigger-carrier and movable therewith to close the breech of the gun-barrel as the cartridges are moved forward and to move out of the path of the foremost cartridge when the trigger-carrier is retracted.

3. In a magazine gun, a conduit leading from the magazine to a point adjacent to the gun-barrel comprising a tube having fixed, elastic tongues projecting thereinto and a longitudinal slot opposite said tongues, said conduit being widened or expanded laterally at its receiving end, and a flexible, reciprocating band exterior to said conduit and provided with elastic tongues entering said conduit through the slot therein.



4. In a gun, a magazine, a longitudinally slotted conduit leading therefrom and provided with elastic tongues projecting into the conduit in the path of the cartridges and serving as back-stops therefor, a flexible band movable along said conduit adjacent thereto and having elastic tongues projecting into the conduit through the slot therein and into the path of the cartridges, a sliding member carrying the trigger and connected to and operating the flexible band, a breech-block fast on the sliding member, and an elastic cartridge-receiver in alinement with the conduit co-operating with the breech-block to present the cartridges to the bore of the gun-barrel.

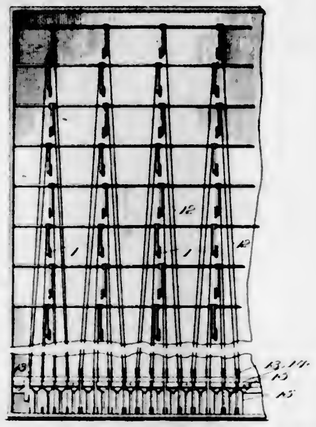
5. In a magazine gun, means for feeding cartridges from the magazine to the gun-barrel, a reciprocating member, a trigger carried thereby and connected with and operating the cartridge-feeding mechanism, a breech-block carried by and in fixed relation to said reciprocating member, and a hammer moved into firing position by the backward movement of the reciprocating member by engagement with the breech-block.

6. A magazine gun comprising a stock containing a magazine for cartridges, a conduit leading from said magazine to a chamber adjacent to the gun-barrel, and provided with means for preventing retrogade movement of the cartridges, a flexible band having spring tongues entering said conduit in the path of the cartridges, a sliding trigger-carrier also carrying a breech-block and connected to the flexible band to operate the latter, an elastic cartridge-carrier for receiving the cartridges leaving the conduit and coacting with the breech-block to move them into alinement with the gun-barrel, a hammer moved into firing position by the breech-block on its backward movement, and a spring against the action of which the trigger-carrier is moved rearwardly and under the action of which the trigger-carrier is moved forwardly.

857,469. VOTING-MACHINE. FRANK KEIPER, Jamestown, N. Y., assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y., a Corporation of New York. Filed July 19, 1899. Serial No. 724,374.

Claim.—1. In a voting machine, interlocking mechanism consisting of interlocking blocks or spacers, suitably

recessed or slotted, and straps with wedges attached thereto, said straps working in or being nested in the slotted portion of the interlocking blocks.



2. In a voting machine, the combination of interlocking blocks or spacers, provided with slots, said blocks having portions abutting against each other, and straps with wedges attached thereto working in the slots in said blocks.

3. In a voting machine, interlocking straps arranged in pairs, each interlocking strap having an interlocking wedge attached thereto, one of said wedges being beveled to the right and the other to the left, the wedges being mounted back to back with the edges of the beveled part of said wedges lying normally side by side.

4. In a voting machine, interlocking wedges arranged in pairs, each wedge having a beveled edge, said wedges of each pair being placed back to back with the edge of each wedge normally in juxta-position with the edge of its mate.

5. Interlocking blocks or spacers having parallel interlocking surfaces, each exposed interlocking surface being reduced in width by a recess cut entirely across each of the said interlocking surfaces.

6. In a voting machine, an interlocking block or spacer having parallel interlocking sides, said block having one side thereof doubly beveled and having its sides provided with recesses.

7. An interlocking block or spacer having parallel interlocking surfaces on opposite sides of said block, the interlocking surface on each side of the block being bisected and reduced in width by a recess extending across said side.

8. A wedge shaped interlocking block or spacer, having parallel interlocking surfaces on opposite sides of said block, each of said interlocking surfaces being bisected and reduced in width by a recess extending across said side.

9. An interlocking wedge with a strap connected thereto, said wedge and strap having broad parallel surfaces, the broad surfaces of the one lying parallel to the broad surfaces of the other, and extending in the same direction, the broad surfaces of the wedge being broader than the corresponding surfaces of the strap at the place of connection, the surfaces of the wedge in excess of the width of the strap only being adapted to interlocking contact.

10. In a voting machine, the combination of a channel, interlocking blocks or spacers carried therein and interlocking straps provided with wedges broader than the straps, which wedges interlock with the blocks with only that portion of the wedges that is in excess of the width of the strap.

11. A flat interlocking wedge having a flat strap connected centrally thereto, said wedge being wider than the strap at the place of connection, the interlocking portion of the wedge being confined to the part of the wedge in excess of the width of the strap, which part of the wedge is not intersected by the strap nor placed in line with it.

12. In a voting machine, the combination of channels, abutments in said channels, movable interlocking blocks or spacers between said abutments, and interlocking rods provided with wedges adapted to engage said blocks, said interlocking rods being more than twice as numerous as the movable interlocking blocks, whereby each of said interlocking blocks serves to interlock with one wedge of either or each of the two adjacent pairs of wedges.

13. In a voting machine, the combination of a channel, movable interlocking blocks or spacers in said channel, and paired wedges placed back to back between said interlocking blocks, a separate pair after each consecutive block, whereby the number of movable interlocking blocks required is less than one-half the number of interlocking wedges.

14. A flat interlocking wedge having a flat strap connected centrally thereto and substantially at the line of the acute angle of the wedge, the part of said wedge effective for interlocking being carried out of line with and at the side or sides of the strap.

15. The combination in the limiting mechanism of a voting machine, of two interlocking blocks or spacers placed with their interlocking surfaces normally in direct abutment, two wedges placed together and having a longitudinal movement positively directed toward and positively confined to the interval between said blocks for the purpose of spreading the blocks, said blocks and wedges having a limited lateral movement greater than the displacement of the wedges.

16. The combination in a voting machine of a limiting mechanism comprising interlocking blocks or spacers normally placed with their interlocking surfaces in direct abutment, a wedge for separating said blocks and a recess through said blocks through which a pull can be exerted on said wedge to force it between said blocks to spread them.

17. A series of separable interlocking blocks or spacers, arranged consecutively, and movable with respect to each other, having interlocking surfaces, the adjacent interlocking surfaces of consecutive blocks being capable of directly contacting with each other, a separate pair of interlocking wedges positioned at each interval between said blocks for interlocking with and spreading apart the pair of blocks at that interval, either or both of said wedges being movable into and out of interlocked position in the interval between said blocks.

18. A series of separable interlocking blocks or spacers, arranged consecutively, movable with respect to each other and capable of direct abutment, having interlocking surfaces, a separate pair of interlocking wedges positioned at each interval between said blocks for interlocking with and spreading apart the pair of blocks at that interval, either or both of said wedges being movable into and out of interlocked position in the interval between said blocks.

19. A pair of interlocking blocks or spacers having interlocking surfaces, the interlocking surfaces of said blocks being normally in direct abutment, a wedge for interlocking with said blocks capable of being inserted between said blocks to spread them, said wedge having a projection extending from its forward edge, which projection extends normally between said blocks when their interlocking surfaces are in contact.

20. The combination in a voting machine of a pair of interlocking blocks or spacers placed consecutively with their interlocking surfaces normally in contact, a pair of wedges placed normally in position for one or both of said wedges to be inserted between said blocks, said wedges being positively limited to insertion jointly or severally between said predetermined pair of consecutive blocks.

21. The combination in a voting machine, of a single candidate group of voting keys, each key being provided with a wedge, fixed and movable means interlocking with said wedges, said movable means being less than half the number of the wedges with which they interlock.

22. In a voting machine, a pair of movable interlocking blocks or spacers, normally in interlocking contact, a pair of interlocking wedges normally capable of being inserted between said blocks to space them apart, keys connected to said wedges for operating them.

23. A pair of movable interlocking blocks or spacers normally in abutment, a pair of interlocking wedges normally capable of being inserted between said blocks, to space them apart, said wedges each being beveled on one side only and being arranged back to back.

24. A series of wedges placed back to back in pairs, a series of separable blocks movable with respect to each other, a separate pair of wedges for each interval between the blocks, and positively limited to operating therein to spread the blocks.

25. Interlocking blocks or spacers normally in abutment with recesses between them, straps passing between said blocks or spacers and through said recesses, said straps being so adjusted to said blocks or spacers, that said straps can pass between them either perpendicularly or diagonally thereto, without changing the distance between centers of said blocks or spacers or without forcing them out of abutment.

26. In an interlocking mechanism, interlocking straps having wedges connected thereto, said wedges being wider than the straps, interlocking blocks or spacers interlocking with said wedges, said spacers having recesses in their interlocking sides, wide and deep enough to permit the straps to lie therein below their interlocking surface but not wide enough to admit the wedges therein.

27. An interlocking block or spacer having two thick ends, carrying interlocking surfaces, connected by an intermediate part, which part is of reduced thickness to avoid interlocking contact thereon.

28. The combination in the limiting mechanism of a voting machine, of channel blocks in direct abutment, with two wedges placed back to back in position for one or both of them to be inserted between said blocks to spread them.

29. The combination in a voting machine, of channel blocks, with two wedges placed back to back in position for one or both of the wedges to be inserted between the blocks to spread the blocks.

30. A series of interlocking blocks or spacers capable of direct abutment, keys, straps, and interlocking wedges cooperating therewith, said straps passing between said spacers in direct abutment connecting said interlocking wedges lying on one side of said blocks or spacers with said keys lying on the other side of said blocks or spacers.

31. A series of interlocking blocks or spacers capable of directly contacting with each other, wedges capable of being pulled to voted position, separating said blocks or spacers and means for guiding said wedges to the joints between the blocks or spacers.

32. The combination of an interlocking block, an interlocking strap and an interlocking wedge, said block being recessed to receive the strap therein and having on either side of said recess frictional interlocking surfaces.

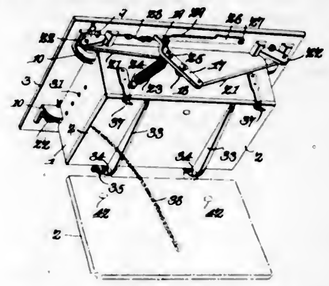
33. In a voting machine, interlocking mechanism, consisting of interlocking blocks or spacers, suitably recessed or slotted, and straps with wedges attached thereto, each wedge being broader than its strap, said straps being more narrow than the recesses of the blocks and being normally nested and operating therein, the wedges being too wide to enter the recesses and operating outside thereof when moved to interlocking position.

34. An interlocking block or spacer, a supporting channel therefor, said block or spacer made of a part of one thickness joining two parts of greater thickness, each of which thicker parts having interlocking surfaces thereon, the thicknesses referred to being measured parallel to and along the supporting channel.

857,470. CUSPIDOR. FESTUS W. KENDALL, Elmira Heights, N. Y. Filed June 15, 1906. Serial No. 321,927.

Claim.—1. A cuspidor comprising a well having a flange formed with a slot, a lid for said well, an operating lever extending through said slot for opening said lid, and a spring operated closing lever for closing said slot when said lid is closed.

2. A cuspidor comprising a well having a flange at its upper end, said well and flange being formed at the corners thereof with cut-away portions having shoulders and beveled walls, lids for said well having rearwardly extending laterally offset arms formed with beveled outer edges and being adapted to rest on said shoulders, and means for opening and closing said lids.



3. A cuspidor comprising a well portion, an outwardly-projecting horizontal flange surrounding the top of the well, cut-away portions formed in the flange at the upper corners of the well and provided with shoulders, lids having rearwardly-extending, laterally-offset arms adapted to fit in said cut-away portions, and pivot supports for the lids extending through the arms and arranged to cause the latter to rest on the shoulders in the cut-away portions when the lids are closed.

4. A cuspidor comprising a well portion, an outwardly-projecting horizontal flange surrounding the top of the well, cut-away portions formed in the flange at the upper corners of the well and provided with shoulders, projections on the inner sides of the walls of the well near the middle thereof, and lids having rearwardly-extending, laterally-offset arms adapted to fit in said cut-away portions and arranged to be supported when closed flush with the surface of the flange and said lids resting at their meeting edges on the projections in the well and the said arms at their other edges resting on the shoulders formed in the cut-away portions.

5. A cuspidor comprising a well portion, an outwardly-projecting, horizontal flange surrounding the top of the well, cut-away portions formed in the flange at the upper corners of the well and provided with shoulders and curved beveled walls meeting the inner walls of the well, and pivotally supported lids having rearwardly-extending, laterally-offset arms provided with curved beveled edges conforming to the curved beveled edges of and adapted to fit in the said cut-away portions at the upper corners of the well.

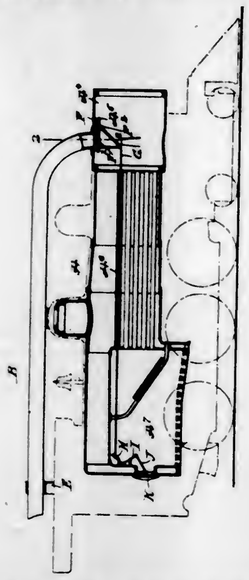
857,471. SMOKE AND CINDER CONDUCTOR. HENRY L. LARISEY, Charleston, S. C. Filed Nov. 24, 1905. Serial No. 288,901.

Claim.—1. A smoke and cinder conductor for railroad trains, comprising a conducting tube leading from the smoke box of the locomotive, and a valve controlling the admission of the smoke and cinders to the said tube and connected with the firing door of the locomotive furnace, to close the valve on opening the firing door.

2. A smoke and cinder conductor for railroad trains, comprising a conducting tube leading from the smoke box of the locomotive, and a valve controlling the admission of the smoke and cinders to the said tube and connected with the firing door of the locomotive furnace, to close the valve on opening the firing door, the said valve having openings adapted to register with the exhaust nozzle for the passage of the exhaust steam.

3. A smoke and cinder conductor for railroad trains, comprising a conducting tube leading from the smoke box of the locomotive, a valve controlling the admission of the smoke and cinders to the said tube, and a rod and lever mechanism connecting the said valve with the firing door of the locomotive furnace.

4. A smoke and cinder conductor for railroad trains, comprising a conducting tube leading from the smoke box of the locomotive, a valve controlling the admission of the smoke and cinders to the said tube, and a rod and lever mechanism connecting the said valve with the firing door of the locomotive furnace, the said rod extending from the smoke box through one of the smoke tubes of the boiler into the fire box thereof.



5. In a smoke and cinder conductor for railroad trains, the combination with a locomotive, of a conducting tube leading from the smoke box of the locomotive, a valve within the smoke box for closing the end of the conducting tube opening into the smoke-box, and a lever mechanism for operating the valve from the firing door of the locomotive.

6. In a smoke and cinder conductor for railroad trains, the combination with a locomotive, of a conducting tube leading from the smoke-box of the locomotive and extending rearwardly, a valve mounted to slide within the smoke-box below the end of the conducting tube opening into the smoke-box, a rod secured to the valve and extending rearwardly through one of the smoke flues of the locomotive boiler, a pivoted lever to which the rod is pivoted, a second pivoted lever pivoted to the first named lever, and a link connecting said second lever with the firing door of the locomotive.

857,472. CURRYCOMB. RICHARD F. LAWSON, Effingham, Ill. Filed Aug. 1, 1906. Serial No. 328,747.



Claim.—1. A curry comb comprising a main or body plate provided with slots arranged in parallel rows, the slots of each row being spaced apart and alternating with the slots of the adjacent rows and the said slots being of a length in excess of the spaces between the alined slots, tooth plates having well rounded edges and slitted transversely in their upper edges and having the sections or flanges so formed bent in opposite directions at right angles to the tooth plates and forming heads to abut the main plate, the teeth being inserted through the main plate with the said head flanges abutting the upper side thereof and a cover plate fitting upon the main plate and flanged at its edges over the edges of the main plate, substantially as set forth.

2. A curry comb comprising a main or body plate having slots for the passage of tooth plates, tooth plates passed through said slots and having well rounded edges and headed to abut the upper side of the main plate, and a cover overlying the heads of the teeth and securing the same in place, substantially as set forth.

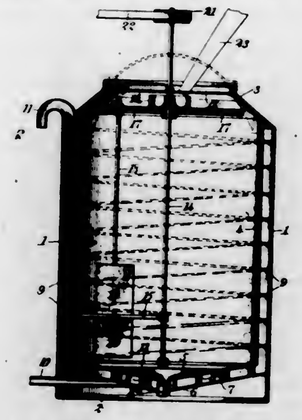
3. A curry comb comprising a main or body plate having slots and individual teeth in the form of independent plates projecting through said slots in the main plate, and means above the main plate securing the said individual teeth and plates, substantially as set forth.

4. A curry comb comprising a main or body plate having slots, tooth plates projecting through said slots from above and having heads upon said main plate and means securing the same in place, substantially as set forth.

5. A curry comb having a main or body plate slotted for the passage of tooth plates, and tooth plates having well rounded edges and extensions at their back edges and having said edges separated and bent forming head flanges, the tooth plates being passed through the slots of the main plate with the head flanges abutting the upper side thereof and retaining means overlying the head flanges, substantially as set forth.

6. A curry comb comprising a main plate provided with slots arranged in series and tooth plates projecting through said slots and having well rounded edges and provided at their upper edges with flanges bearing upon the main plate, the said tooth plates being arranged in rows with the teeth of one row alternating with the spaces between those of the adjacent row and the width of said teeth at their juncture with the main plate being in excess of the space between the alined teeth, substantially as set forth.

857,473. STORAGE AND COOLING VAT FOR MILK OR CREAM. ZEPHANIAH S. LAWRENCE, West Shefford, Quebec, Canada. Filed Nov. 14, 1906. Serial No. 343,331.



Claim.—1. A vat for milk or cream, having a shaft journaled centrally therein, a cup fixed to the shaft and having a perforated bottom, and a series of radial discharge pipes leading from the perforations.

2. A vat for milk or cream, having a shaft journaled therein, a series of radiating pipes fixed to the shaft, for receiving the milk and cream and discharging it into the vat, a paddle suspended from one of said pipes, and means for revolving the shaft, whereby the paddle sets the milk or cream in motion.

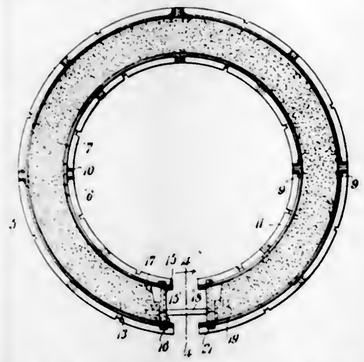
3. A vat for milk or cream, having a double wall between which a cooling medium is adapted to be passed, a shaft journaled centrally in the vat, and a series of radiating pipes fixed to the shaft, for receiving and discharging the milk or cream into the vat.

4. A vat for milk or cream, having a double wall with a spiral passage therebetween through which a cooling medium is adapted to be passed, a shaft journaled centrally in the vat, a series of radiating pipes carried by the shaft, for receiving and discharging the milk or cream adjacent to the inner wall of the vat, and means operated by said shaft for enforcing the circulation of the milk or cream in the vat.

5. A vat for milk or cream, having a shaft journaled centrally therein, a cup provided with a series of radiating pipes fixed to said shaft near the top of the vat, an arm fixed to the shaft near the bottom of the vat, and a paddle adjustably suspended from one of said pipes and engaged by said arm, for the purpose described.

6. A vat for milk or cream, having a double, concave bottom and sides with a spiral passage therebetween, and revoluble means in the vat for discharging the milk or cream adjacent to the inner wall of the vat, said double, concave bottom having an orifice at its center for withdrawing the contents of the vat.

857,474. MOLD FOR MAKING SOLID CONCRETE SILOS. WILLIAM H. LIMBERG, Plymouth, Wis. Filed Apr. 6, 1907. Serial No. 366,773.



Claim.—1. A mold including inner and outer shell members, spaced apart to form an intermediate molding chamber and each formed of a plurality of sections provided with marginal reinforcing flanges, the metal forming one of the flanges of each section being provided with spaced incisions and the metal between said incisions bent downwardly to form a depending lug adapted to engage a recess formed in the flange of an adjacent section, for locking said sections in superposed order.

2. A mold including inner and outer shell members spaced apart to form an intermediate molding compartment and each formed of a plurality of sections having their adjacent ends detachably secured together, longitudinal timbers seated between said members and spaced inwardly from the adjacent ends thereof, and clamping bolts extending transversely through the timbers and adjacent shell members for locking said timbers within the molding compartment.

3. A mold including inner and outer shell members spaced apart to form a molding compartment and each formed of a plurality of sections having their adjacent ends detachably connected, longitudinal timbers interposed between the walls of the shell members and spaced inwardly from the adjacent ends thereof, said timbers being provided with lateral off-sets having their ends inclined or beveled, and clamping members extending through the walls of the shell members and timbers, respectively for locking the latter within the molding compartment.

4. A mold including inner and outer shell members spaced apart to form an intermediate molding compartment, sectional longitudinal timbers interposed between the walls of the shell members, clamping bolts extending through the shell members and timbers, respectively, for locking the latter within the molding compartment, tie-rods extending transversely through the timbers and having their opposite ends disposed within the molding compartment, there being recesses formed in the edges of the longitudinal timbers for the reception of the tie-rods.

5. A mold including inner and outer shell members spaced apart to form an intermediate molding compartment and each formed of a plurality of segmental sections having their adjacent ends reinforced by perforated angle bars, fastening devices passing through the perforations of adjacent angle bars for securing the sections in assembled position, angle bars secured to the upper and lower edges of the several sections and curved to conform to the curvature of said sections, there being a recess formed in one of the longitudinal angle bars of each section, and integral lugs depending from the opposite angle bar of each section and adapted to enter the contiguous recess in the longitudinal angle bar of an adjacent section thereby to lock said sections against accidental displacement.

857,475. FRUIT-PICKER. OLAF E. LINDFORS, Fruita, Colo. Filed Mar. 21, 1906. Serial No. 307,226.



Claim.—1. A fruit picker comprising two spaced sides or members, a chute arranged between the sides or members throughout the entire length thereof and supported by the said sides or members, and cutting mechanism also supported by the sides or members.

2. A fruit picker comprising two spaced sides or members movably connected, a flexible chute arranged between and supported by the sides or members throughout the entire length thereof, and cutting mechanism operated by the said sides or members.

3. A fruit picker comprising two sides or members spaced apart throughout their entire length, a flexible

chute mounted within the space between the sides or members and having its sides connected with the said sides or members, cutting mechanism connected with the sides or members, said sides or members being movable toward and from each other to stretch the chute, and thereby control the passage of the fruit through the same and also to operate the cutting mechanism.

4. A fruit picker comprising cutting mechanism, spaced sides or members, each being pivotally connected with the cutting mechanism, and connecting means pivoted to each of the sides or members and permitting the same to move longitudinally and transversely for operating the cutting mechanism and for also moving the same laterally of the fruit picker.

5. A fruit picker comprising two sides or members spaced apart throughout their entire length, cutting mechanism pivoted to the outer ends of each of the sides or members and spacing the outer ends of the same, connecting means pivoted to and spacing the sides or members, said sides or members being movable toward and from each other and also longitudinally in opposite directions, whereby the sides or members are adapted to operate the cutting mechanism and are also capable of changing the positions of the cutting mechanism, and a flexible chute mounted within the space between the sides or members and arranged to be contracted by the same to control the passage of fruit through the said chute.

6. A fruit picker comprising cutting mechanism having pivoted jaws and provided with arms, spaced sides or members, each pivoted at its outer end to one of the arms, connecting means pivoted to the sides or members and spaced from the cutting mechanism, and a chute arranged between the said sides or members and extending from the cutting mechanism.

7. A fruit picker comprising cutting mechanism having pivoted jaws and provided with arms, spaced sides or members, each pivoted at its outer end to one of the arms, connecting means pivoted to the sides or members at a point between the ends thereof, the inner or lower portions of the sides or members forming handles for operating the fruit picker, and a chute arranged between the sides or members and extending from the cutting mechanism.

8. A fruit picker comprising cutting mechanism having pivoted jaws provided with arms, movably mounted sides or members pivotally connected with the arms for operating the cutting mechanism, and a chute supported by the sides or members.

9. A fruit picker comprising cutting mechanism having pivoted jaws and provided with arms, sides or members connected at their upper or outer ends with said arms, connecting means pivoted to the sides or members and a flexible chute arranged between and connected with the sides or members, said sides or members being movable toward and from each other to operate the cutting mechanism and also to stretch the chute to control the passage of the fruit therethrough.

10. A fruit picker comprising pivoted jaws, spaced sides or members connected with and adapted to operate the jaws, and a chute arranged between and supported by the sides or members and having extensions connected with the jaws and arranged to form a pocket or receptacle.

11. A fruit picker comprising pivoted jaws, spaced sides or members movable toward and from each other for operating the jaws, a flexible chute connected with the sides or members and with the jaws, said sides or members being movable outwardly to simultaneously stretch the chute and close the jaws.

12. A fruit picker comprising cutting mechanism having pivoted jaws, spaced sides or members pivotally connected with the cutting mechanism for operating the jaws, and a connecting device pivoted to each of the sides or members at an intermediate point and permitting the same to move longitudinally, whereby the cutting mechanism is moved bodily in a direction lateral of the fruit picker.

13. A fruit picker comprising cutting mechanism, spaced sides or members movably connected with the cutting mechanism for operating the same, a chute arranged between the sides or members and supported thereby, and a yoke receiving the sides or members and connected with the same and also surrounding the chute.

14. A fruit picker comprising cutting mechanism, spaced sides or members composed of extensible sections, said sides or members serving as operating means for the cutting mechanism, and a chute arranged between the sides or members and composed of sections connected with the first mentioned sections throughout the entire length of the same.

15. A fruit picker comprising spaced sides or members composed of extensible telescopic sections, cutting mechanism operated by the said sides or members, and a flexible chute arranged between the said sides or members and composed of sections movable into and out of each other, the sections of the chute being connected with the first mentioned sections throughout the entire length of the same.

16. A fruit picker comprising means for severing the fruit, a chute, and spaced sides or members supporting the chute throughout their entire length, said sides or members being provided with extensible sections, some of the sections being manually operable and other sections being automatically operable.

17. A fruit picker provided with supporting means having extensible sections, a locking device for holding the sections in their adjustment, and hoisting means for extending the sections, and means for moving the sections inwardly, the latter means being also connected with the locking device for automatically releasing the sections.

18. In a fruit picker, the combination of spaced sides or members, each composed of top, bottom, and intermediate sections, a chute arranged between and supported by the sides or members, means carried by the sides or members for picking the fruit, manually operated hoisting connections mounted on the bottom sections of the sides or members and connected with the intermediate sections for raising the same, flexible connections also mounted on the bottom sections and extending in opposite directions from the hoisting connections and connected with the intermediate sections for lowering the same, and separate automatically operable means for simultaneously raising and lowering the top sections.

19. In a fruit picker, the combination of spaced sides or members, an intermediate chute carried by the sides or members, cutting mechanism also supported by the sides or members, a receptacle receiving the lower portion of the chute, and a resilient extensible tubular connection attached to the chute and to the receptacle.

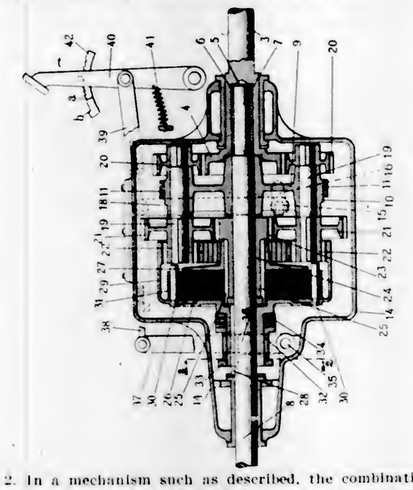
20. In a fruit picker, the combination of spaced sides or members, an intermediate chute carried by the sides or members, cutting mechanism also supported by the sides or members, a receptacle receiving the lower end of the chute, and a tubular connection between the chute and the receptacle, said tubular connection being extensible to permit the sides or members and the parts supported thereby to be moved toward and from the receptacle.

21. In a fruit picker, the combination of spaced sides or members, an intermediate chute carried by the sides or members, cutting mechanism also supported by the sides or members, a receptacle receiving the lower end of the chute, and a tubular connection encircling the chute and attached to the same and to the receptacle and having an extensible coiled spring normally retaining the tubular connection in a contracted condition.

857,476. SPEED-CHANGING MECHANISM. GEORGE D. MUNSING, New York, N. Y. Filed Apr. 4, 1907. Serial No. 366,339.

Claim.—1. In a mechanism such as described, the combination with a driving shaft, a gear wheel thereon, a brake wheel, planet pinions carried by the brake wheel and meshing with said gear wheel, a driven shaft, a gear wheel loose thereon, an internal gear slidable on the driven shaft, planet wheels driven by the aforesaid planet pinions driving the gear wheel loose on the driven shaft, planet pinions adjacent the aforesaid planet gear wheels gearing with the internal gear wheel and means between

the internal gear wheel and the gear wheel on the driven shaft to frictionally control their relative rotation.



2. In a mechanism such as described, the combination with a driving shaft and toothed element thereon; of a driven shaft, an internal gear wheel slidable on the driven shaft and a member loose on the driven shaft, planet gearing carried by said member thereby gearing the toothed element to the internal gear wheel and means including friction mechanism operated by the sliding movement of the internal gear wheel to frictionally retard the planet gearing and control the revolution of the internal gear wheel and driven shaft in accordance with the degree of friction.

3. In mechanism such as described, the combination with alined driving and driven shafts, an externally toothed member on one shaft and an internally toothed axially slidable member on the other shaft, an intermediate member between them free to rotate, planet gear wheels mounted on said intermediate member and gearing with both the externally and internally toothed members, and means including friction mechnism operated by the axial movement of the internally toothed member to cause said planet gear wheels to impart differential rotation between the externally and internally toothed members depending upon the slip in the friction mechanism.

4. In mechanism such as described, the combination with driving and driven shafts, an externally toothed member on one shaft and an internally toothed axially slidable member on the other shaft, an intermediate member between them free to rotate, planet gear wheels mounted on said intermediate member and gearing with both the externally and internally toothed members; means including friction mechanism operated by the axial movement of the internally toothed member to cause said planet gear wheels to impart differential rotation between the externally and internally toothed members and means brought into operation when the friction mechanism is released to reverse the direction of rotation of the internally toothed member.

5. In mechanism such as described, the combination with alined driving and driven shafts; of an externally toothed member on one shaft and an internally toothed, axially slidable member on the other shaft, an intermediate brake member between them free to rotate, planet gear wheels mounted on the brake member and gearing with the other two members, and a brake band to control the rotation of the brake member.

6. In mechanism such as described, the combination with alined driving and driven shafts; of an externally toothed member on one of the shafts and an internally toothed axially slidable member on the other, a brake member between the aforesaid members free to rotate on one of the shafts, short shafts mounted to rotate in the brake member, planet wheels on the shafts driven by the externally toothed member and planet wheels and planet pinions on said short shafts, the pinions gearing with the internally toothed member, a loose gear wheel on one of the shafts meshing with the gear wheel on the short shafts, friction plates slidable but not rotatable on the loose gear wheel, alternate friction plates slidable in and movable with the internally toothed member, a brake band for the brake member and connected simultaneously movable levers one for axially moving the internal toothed member and the other for operating the brake band.

7. In mechanism such as described the combination with driving and driven shafts; of a toothed member on one shaft and a toothed axially slidable member on the other shaft, planet gear wheels gearing the two members together and friction mechanism operated by the axial movement of the axially slidable member.

8. In mechanism such as described, the friction mechanism comprising an internally toothed member, friction plates mounted within the member carried by the web a gear wheel whose sleeve or boss projects into the toothed member and friction plates thereon co-operating with the first-mentioned friction plates.

9. In mechanism such as described, the friction mechanism comprising an internally toothed member, pins secured to the web of said member, friction plates loosely mounted on said pins, a gear wheel whose boss or sleeve projects into the internally toothed member and through the plates mounted therein, a stop plate on said boss and friction plates axially movable on the boss and alternating with the afore-mentioned friction plates.

857,477. PUMPING APPARATUS. GEORGE J. MURDOCK, Newark, N. J. Filed Apr. 17, 1906. Serial No. 312,072.

Claim.—1. In pumping apparatus such as described, a chamber having an outlet and one or more inlets, said inlets relatively restricted with respect to said outlet, and means for transmitting pulsating pressure from an engine exhaust or other source of pulsating fluid-pressure to liquid within said chamber.

2. In pumping apparatus such as described, a chamber having an outlet and one or more inlets, said inlets relatively restricted with respect to said outlet, the upper portion of said chamber closed and forming an air chamber, and means for transmitting pulsating pressure from an engine exhaust or other source of pulsating fluid-pressure to liquid within said chamber.

3. In pumping apparatus such as described, a chamber having a relatively free outlet and one or more relatively restricted inlets, and a passage within said chamber adapted for connection to an engine exhaust or other source of pulsating fluid-pressure, and opening toward said outlet.

4. In pumping apparatus such as described, a chamber having a relatively free outlet and one or more relatively restricted inlets, the upper portion of said chamber closed and forming an air chamber, and a passage within said chamber adapted for connection to an engine exhaust or

other source of pulsating fluid-pressure, and opening toward said outlet.

5. In pumping apparatus such as described, a chamber having an air-space at one end and an outlet at the other, and a passage within said chamber adapted for connection to a source of supply of motive fluid and opening toward said outlet, said chamber having a neck portion surrounding said passage and connecting said air space and outlet, and having one or more inlet openings in said neck portion.

6. In pumping apparatus such as described, a chamber having an air-space at one end and an outlet at the other, a passage within said chamber adapted for connection to a source of supply of motive fluid, said chamber having a contracted portion between said outlet and the mouth of said passage, and having a neck portion connecting said contracted portion and air space, and having one or more inlet openings in said neck portion.

7. In pumping apparatus such as described, a chamber forming at one end an air space and having an outlet at the other end and one or more inlet openings in its sides, said chamber provided with a passage having a mouth directed toward said outlet, said passage adapted for connection to a source of supply of motive fluid.

8. In pumping apparatus such as described, a chamber comprising an air space and a liquid space and having an outlet, one or more lateral inlets, and a passage adapted for connection to external operating means and having a mouth directed toward said outlet, in combination with a supply chamber surrounding said first chamber and communicating therewith through said inlets.

9. In pumping apparatus such as described, the combination of a main chamber, a supply chamber surrounding the same, and an operating passage within said main chamber, said main chamber having an outlet and having also one or more inlet openings connecting it with said supply chamber.

10. In a liquid circulating system, the combination of a source of supply of liquid, a liquid-conveying circuit comprising outgoing and return conduits, and pumping means in such circuit consisting of a chamber having an inlet receiving liquid from the circuit and having an outlet, separated from said inlet, connected to such circuit, and having also a closed air space, said chamber having also a passage projecting into the liquid-space of the chamber toward said outlet and adapted for connection to an engine exhaust or the like.

11. An internal combustion engine comprising a cooling jacket and a circulating system therefor comprising an exhaust-operated pump having an air and water chamber having an inlet and an outlet, the former relatively restricted with respect to the latter, and having a standpipe connected to the engine exhaust and directed to discharge toward said outlet, a valveless conduit connecting said inlet to the discharge port of the engine jacket, and a conduit connecting the outlet to the inlet port of the engine jacket.

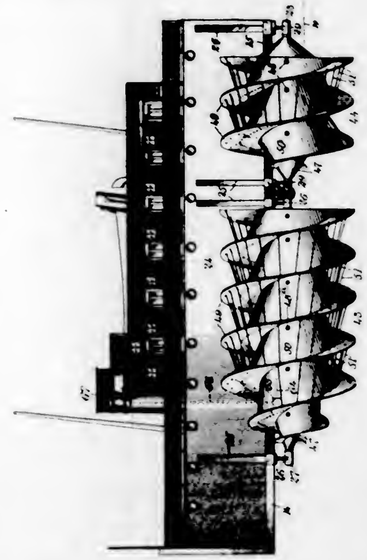
857,478. VESSEL. JOHN MCARDLE, San Francisco, Cal. Filed Jan. 18, 1906. Serial No. 296,585.

Claim.—1. A vessel comprising a frame provided with overhanging ways, a bearing having flanges coöperating with the ways, a shaft journaled in the bearing, a float carried by the shaft, and means connected with the bearing whereby to move the shaft.

2. A vessel comprising a frame provided with overhanging ways, a bearing having flanges coöperating with the ways, a shaft comprising a plurality of hinged sections, one of said sections being journaled on the frame, and the other in the bearing, floats carried by the shafts, and means for moving the bearing.

3. A vessel comprising a frame provided with overhanging ways, a bearing having flanges coöperating with the ways, a sectional shaft comprising a plurality of hinged sections, one of said sections being journaled on the frame, and the other in the bearing, a float carried by the shaft, an operating shaft, and a connection between the operating shaft and the sectional shaft.

4. A vessel comprising a frame, and a float comprising a plurality of sections hinged to each other and arranged longitudinally of the frame for supporting the same, and means for laterally moving the end of one of said sections.



5. A vessel comprising a frame, a float provided with spiral blades and composed of a plurality of sections hinged to each other and arranged longitudinally of the frame for supporting the same, and means for laterally moving the end of one of said sections.

6. In a vessel, a rotatable float having a cylindrical wall, a spiral blade projecting from the cylindrical wall, and an inclined wall extending between the convolutions of the blade.

7. In a vessel, a rotatable float having a cylindrical wall, a spiral blade projecting from the cylindrical wall, and an inclined wall extending from the blade to the cylindrical wall.

8. In a vessel, a rotatable float having a cylindrical wall, a spiral blade projecting from the cylindrical wall, and stays connecting the convolutions of the blade.

9. A vessel comprising a frame, a shaft journaled therein said shaft having independently movable sections, and floats carried by the sections.

10. A vessel comprising a frame, a shaft journaled therein and having independently movable sections, a universal joint connecting the sections, and floats carried by said sections.

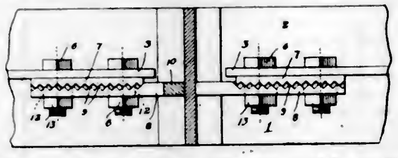
11. A vessel comprising a frame, a shaft, a movable bearing for the shaft, anti-friction members situated between the bearing and frame, and a float carried by the shaft.

12. A vessel comprising a frame provided with overhanging ways, a bearing having flanges co-operating with the ways, a shaft journaled in the bearing, and a float carried by the shaft.

13. A vessel comprising a frame provided with overhanging ways, a bearing having flanges co-operating with the ways, a shaft journaled in the bearing, and anti-friction members situated between the bearing and ways.

14. A float comprising a frame, longitudinal shafts journaled at opposite sides thereof and having independently movable sections, an intermediate operating shaft, and connections between the operating shaft and sections of the longitudinal shafts.

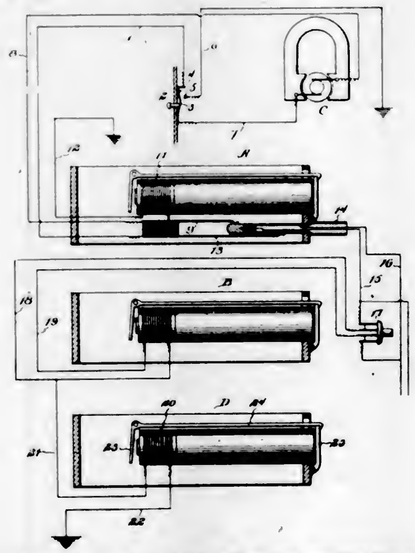
857,479. RAILWAY-TRACK CLAMP. SAMUEL MCELFATRICK, Princeton, Ky. Filed Apr. 15, 1907. Serial No. 368,357.



Claim.—1. A railway track clamp comprising ratchet plates adapted to be bolted to a tie on opposite sides of the rail, fastening bars having on one side a series of ratchet teeth adapted to be engaged with the teeth on said ratchet bar, and means to clamp said fastening bars into engagement with the ratchet plate and with the opposite sides of the rail, substantially as described.

2. A railway track clamp, comprising ratchet plates adapted to be secured to a tie on opposite sides of the track rail, adjusting bars having on one side a series of ratchet teeth adapted to be engaged with the teeth of said ratchet plates, said fastening bears having their ends engaged with the opposite sides of the rail, a brace formed on the upper side of one of said fastening bars to engage the head of the rail on one side thereof, and clamping bolts and nuts arranged through said ratchet plates and fastening bars whereby the latter are drawn into engagement with the ratchet plates and are forced laterally into tight engagement with the track rail, substantially as described.

857,480. TELEPHONE SYSTEM. LEWIS B. NIEMANN, Staplehurst, Nebr. Filed Mar. 8, 1907. Serial No. 361,336.

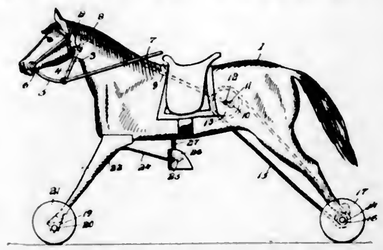


Claim.—1. In a telephone system, the combination of a subscriber's station including a source of ringing current, and means for establishing a grounded circuit; with an exchange station including a grounded signal drop, and a clearing-out drop; a circuit connecting the subscriber and exchange stations together; and a supplemental signal at the exchange station connected in circuit to be operated by a current derived from a subscriber's station.

2. In a telephone system, the combination of a subscriber's station including a generator, and means for grounding the same; a central station including a grounded signal drop, a clearing-out drop, and a metallic circuit connecting the said drops with the subscriber's station; and a supplementary signal connected with one side of the metallic circuit and connected with ground to be energized by current from the generator when the latter is grounded.

3. In a telephone system, the combination of a subscriber's station including a magneto, a metallic circuit connected therewith, a grounded conductor, and a switch for opening the metallic circuit and connecting the grounded conductor with the magneto; with a central exchange including a grounded signal drop, a jack connected with the metallic circuit, a cord circuit having a plug for connecting the latter with the metallic circuit leading to the subscriber's station and for cutting out the signal drop; and a clearing-out drop included in the cord circuit; and a supplemental signal drop of low resistance connected with one side of the circuit including the clearing-out drop and also connected with the ground.

857,481. TOY. JAMES R. PATTERSON, New Comerstown, Ohio. Filed Apr. 12, 1907. Serial No. 367,865.



Claim.—1. In a toy, the combination of a body, having a seat and mounted upon front and rear wheels, mechanism mounted in the body and operably connected to the rear wheels for transmitting motion thereto, and mechanism mounted in the neck and operable from the seat for operating the mechanism within the body.

2. In a toy, the combination of a body having a seat and mounted upon front and rear wheels and having mechanism for moving the same, of a pair of front legs pivotally connected to the body, stirrups operably connected to the body, and means connecting the legs to the stirrup whereby the toy is steered.

3. In a toy, the combination of a body having a seat and mounted upon front and rear wheels, mechanism mounted in the body and operably connected to rear wheels for transmitting motion thereto, and mechanism mounted in the neck and operable from the seat for operating and controlling the mechanism within the body, the front legs being pivotally connected to the body, and stirrups operably connected to the body and to said front legs whereby the front legs are moved to steer the toy.

4. In a toy, the combination of a body mounted upon wheels, a double lever mounted in the forward end thereof, means connected with one end of the lever for operating the same, a shaft mounted in the body of the toy, means connecting the shaft and the other end of said lever, whereby motion is transmitted from the lever to the shaft and means connecting said shaft and the rear wheels of the toy whereby motion is transmitted to the rear wheels.

5. In a toy, the combination of a body mounted upon wheels, a double lever mounted in the forward end thereof, means connected with one end of the lever for operating the same, a shaft mounted in the body of the toy, means connecting the shaft and the other end of said lever, whereby motion is transmitted from the lever to the shaft, means connecting said shaft and the rear wheels of the toy whereby motion is transmitted to the rear wheels and a momentum device mounted in the body and operably connected with the shaft for the purpose set forth.

6. In a toy, the combination of a body mounted upon wheels, a double lever mounted in the forward end thereof, means connected with one end of the lever for operating the same, a shaft mounted in the body of the toy, means connecting the shaft and the other end of said lever, whereby motion is transmitted from the lever to the shaft, means connecting said shaft and the rear wheels of the toy whereby motion is transmitted to the rear wheels, and a momentum device mounted in the body and operably connected with the shaft for the purpose set forth, and a spring actuated brake operated by the legs of the rider for engaging the momentum device.

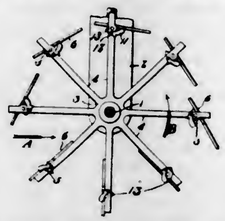
7. In a toy, the combination of a body mounted upon wheels, a double lever mounted in the forward end thereof, means connected with one end of the lever for operating the same, a shaft mounted in the body of the toy, means connecting the shaft and the other end of said lever, whereby motion is transmitted from the lever to the shaft, means connecting said shaft and the rear wheels of the toy, whereby motion is transmitted to the rear wheels, the front wheels of the toy being pivotally connected to the body, a pivoted stirrup, and means connected to the pivoted stirrup and the front wheels for steering the toy.

8. In a toy, the combination of a body having a seat and mounted upon front and rear wheels, of a pair of front legs pivotally connected to the body and carrying the front wheels, stirrups pivotally mounted and operable from the seat, and means connecting the front legs to the stirrups whereby the body is steered.

9. In a toy, the combination of a body mounted upon front and rear wheels, mechanism mounted in the body for operating the rear wheels to propel the toy, a momentum device operably connected therewith, means for operating said mechanism, and a brake mechanism controllable from the outside and adapted to act upon the momentum device.

10. In a toy, the combination with a body mounted upon front and rear wheels, a seat for the operator to sit astride the body, mechanism mounted in the body for operating the rear wheels to propel the toy, a momentum device operably connected therewith, means for operating said mechanism, and a brake mechanism controllable by the rider from the seat adapted to act upon the momentum device.

857,482. WATER-WHEEL. ALONZO H. PERRY, Kinloch Park, Mo. Filed Dec. 29, 1905. Serial No. 293,804.



Claim.—1. A water wheel including radial arms, paddles pivotally mounted on the arms each on an axis located intermediate the middle and one side of the paddle, gravity actuated devices mounted on the arms for permitting the paddles to move to and from a feathering position during the period they are out of the water, and stops on the arms which are arranged to be engaged by the paddles as the latter enter the water and to be disengaged as soon as the paddles become completely submerged.

2. A water wheel including radial arms, paddles pivotally supported thereon between the arms and each on an axis intermediate its horizontal edges and having end extensions arranged to overlap and abut the arms while the paddle is submerged, pivotal paddle-engaging props carried by the arms and limited in their swinging movements in one direction, each prop capable of gravitating from the adjacent paddle when the latter approaches the water, and stops carried by the arms for engagement by the respective paddles when the props disengage therefrom and only during the time required to completely submerge each paddle.

3. A water wheel having feathering paddles adapted to become radial by folding inward, each paddle being pivotally supported intermediate of its ends, means to prevent the paddle from folding when out of the water and capable of releasing the paddles when the latter enter the water, and means to hold the paddles against folding when they first enter the water until they become submerged below their pivotal axes.

4. A water wheel including radial arms, paddles pivotally supported thereon and capable of folding inwardly, means to prevent the paddles folding when out of the water, each paddle being pivotally supported intermediate of its ends and adapted to enter the water in an upright position, and stops carried by the under sides of the arms for engagement with the lower end portions of the paddles when entering the water to prevent rotation of the paddles until after their pivotal axes become submerged.

5. A water wheel having radial arms, a series of paddles adapted to fold radially inward and pivotally supported at one side of their middles, means to prevent the paddles folding when out of the water, said means capable of disengaging the paddles to free the same when entering the water, stops carried by the arms for engagement by the rear sides of the lower shorter end portions of the paddles when entering the water to prevent folding thereof, said paddles being free to fold radially inward after their axes have become submerged.

6. A water wheel comprising two sets of radial arms, a series of paddles, each paddle working between and pivotally supported by corresponding arms, the pivotal support being located at one side of the middle of the paddle and the other side of the paddle having end extensions to overlap and lie against the arms as a support, pivotal props carried by the arms for engagement with the extended portions of the paddles to prevent folding of the paddles when out of the water and capable of gravitating out of engagement with the paddles when the latter enter the water, each paddle being disposed to have its short end enter the water first, and stops carried by the arms for engagement by the short ends of the paddles when entering the water to prevent folding of the paddles by the pressure of the water until the paddles become submerged below their pivotal axes.

7. A water wheel having an upright submerged shaft, a closure around the shaft at the water level, and a thermal device within the closure to prevent accumulation of ice around the shaft.

8. A water wheel having an upright submerged shaft, and an electric heater to prevent accumulation of ice around the shaft.

9. A water wheel having an upright submerged shaft, a case embracing the submerged portion of the shaft, and an electric heating coil contained within the case.

857,483. SOUND-BOX FOR TALKING-MACHINES. MINARD A. POSSONS, Cleveland, Ohio. Filed July 14, 1906. Serial No. 326,265.



Claim.—1. A stylus for talking machines made from sheet metal consisting of a flat body portion having a circular periphery consisting of a plurality of radially-extending points, and having a rotatable supporting point concentric with the said circular periphery, as and for the purpose described.

2. The combination with the sound box of a talking machine, of a rotatable circular-shaped stylus having a plurality of peripherally arranged points, the axis of the stylus extending in a direction at right angles to the movement of the diaphragm of the sound box, as and for the purpose described.

3. The combination with the sound box of a talking machine, of a rotatable disk-shaped stylus having a plurality of radially-arranged points for the purpose described, an oscillatable lever connected with the diaphragm of the sound box, and carrying the axis of the stylus arranged in a direction at right angles to the movement of the diaphragm.

4. The combination with the sound box of a talking machine, of a rotatable disk-shaped stylus made of sheet metal and having a plurality of concentrically-arranged points for the purpose described, the axis of the stylus connected with the diaphragm and extending in a direction at right angles to the movement of the diaphragm of the sound box.

5. A rotatable stylus for machines of the character referred to consisting of a disk-like member formed from sheet metal and having a plurality of reproducing points which are rigid in the direction of the sound wave deflection and flexible in a direction at right angles thereto.

6. A rotatable stylus for machines of the character referred to consisting of a disk like member formed from sheet metal having on its periphery a plurality of reproducing points which are widened in the direction of the sound wave deflection for the purpose described.

7. A rotatable stylus for machines of the character referred to, consisting of a disk-like member having a plurality of triangular shaped reproducing points around its periphery.

8. A stylus for talking machines formed of sheet metal having a flat body portion terminating in a plurality of circularly arranged triangular-shaped reproducing points.

9. A rotatable stylus for machines of the character referred to consisting of a disk-like member formed from sheet metal and having on its periphery a plurality of reproducing points which are rigid in the direction of the sound wave deflection, the said member being flexible in a direction at right angles to said sound wave deflection at a point between its center and said reproducing point.

10. The combination with a sound box, of a flexible rotatable stylus carried thereby, and having a series of points, and means for rotating said stylus.

11. The combination with a sound box, of a rotatable disk-shaped stylus formed of flexible sheet metal having its periphery terminating in a series of circularly-arranged reproducing points, and means for removably securing the stylus to the sound box, and of holding it in its adjusted rotated position.

12. The combination with a sound box, of a flexible stylus carried thereby and having a series of points, and a swinging member for securing the stylus to the sound box.

13. The combination with a sound box, of a flexible rotatable stylus carried thereby and having a series of points, and a swinging member for securing the stylus to the sound box.

14. The combination with a sound box, of an oscillating member mounted thereon and having engagement with the diaphragm of the sound box, a stud carried by said oscillating member, a rotatable stylus carried by said stud and a swinging member passing over the stud and securing the stylus thereon.

15. The combination with a sound box, having the usual diaphragm, of an eyelet carried thereby, and a stylus-carrying member secured at one end within the eyelet.

16. The combination with a sound box having the usual diaphragm, of an eyelet carried thereby, an oscillating member carried by the sound box, a stylus carried by one end of said member and the opposite end secured within the eyelet carried by the diaphragm.

17. The combination with a sound box, of a stylus stamped from a single piece of flexible metal in the form of a wheel, and having a series of points carried by the outer periphery thereof.

18. The combination with a sound box, of a stylus stamped from a single piece of flexible metal in the form of a wheel, a series of points carried by the outer periphery thereof and the spokes of said wheel-like member being thin to give the desired flexibility to the points.

19. The combination with a sound box, of a stylus formed in one piece from a sheet of flexible material with a series of peripherally arranged points.

20. The combination with a sound box, having the usual diaphragm, of an eyelet carried thereby, an oscillating member carried by the sound box, a stylus carried by one end of said member, the opposite end turned laterally and passing through the eyelet, and means for securing the said laterally turned portion within the eyelet.

21. The combination with a sound box, of an oscillating member mounted thereon, and having one end engaging the diaphragm of the sound box, a stud carried by the lower end of the oscillating member and having its outer end screw-threaded, a rotatable stylus carried by said stud, an arm pivotally supported by the oscillating member and adapted to swing over the stud, and a swiveled nut carried by the arm and adapted to screw upon the stud and holding the stylus thereon.

22. The combination with a sound box, of a rotatable stylus carried thereby and having a series of points, and means independent of the record for rotating said stylus.

23. The combination with a sound box, of a disk-shaped stylus rotatably mounted thereon, and a series of points carried by the outer periphery of said disk, and means for rotating the disk and means for holding the disk in its adjusted position.

24. The combination with a sound box, of a disk-shaped stylus rotatably mounted thereon, a series of radially-arranged points carried by the outer periphery of said disk, and means for holding the disk in its adjusted position.

25. The combination with a sound box, of a disk-shaped stylus rotatably mounted thereon, a series of radially-arranged points, said stylus having an indicating mark to indicate the starting point, and by which it is determined when all of the points have been used.

26. The combination with a sound box, of an oscillating member carried thereby and having one end secured to the diaphragm of the sound box, a disk-shaped stylus rotatably mounted upon the opposite end of said oscillating member, a series of radially-arranged points carried by the outer periphery of the stylus, and means for rotating said stylus.

27. The combination with a sound box, of an oscillating member carried thereby, a disk-shaped rotary stylus carried by said member, a shaft rotatably carried by the sound box, a crank carried by the shaft and having an outwardly-extending pin adapted to engage the points and to turn the same the distance between the points during each rotation of the shaft.

28. The combination with a sound box, of a disk-shaped stylus rotatably carried thereby and having a series of points carried by its outer periphery, and means independent of the record for rotating the stylus the distance between two of the teeth during each movement.

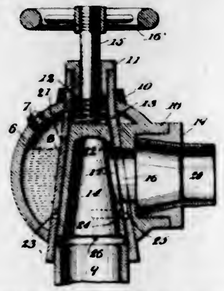
29. The combination with a sound box, of a disk-shaped stylus rotatably carried thereby and having a series of points, a rotary shaft adjacent the stylus, and means carried by the shaft for moving the stylus the distance between the points during each rotation of the shaft.

30. The combination with a sound box, of a disk-shaped stylus rotatably carried thereby and having a series of points, a rotary shaft adjacent the stylus, and means carried by the shaft for engaging the points and moving the stylus the distance between the points during each rotation of the shaft.

857,484. VALVE. HIRAM S. RANKIN, Cripple Creek, Colo., assignor, by direct and mesne assignments, to The Rankin Lubricating Valve Co., Cripple Creek, Colo., a Corporation of Colorado. Filed May 17, 1906. Serial No. 317,316.

Claim.—1. The combination, with a hollow casing adapt-

ed to contain oil, of a valve proper inclosed thereby and having ports which communicate to admit pressure into the oil chamber when the valve is closed, and having a passage which communicates with the said chamber when the valve is closed and with the interior of the valve when it is open, as described.



2. The combination, with a casing adapted to contain oil and having a lateral opening, of a tapered barrel S which extends through the walls of the casing, a tapered valve arranged rotatably in said barrel and fitted thereto, both valve and barrel being provided with openings at the side and bottom, and means for securing the valve in the barrel, substantially as described.

3. The combination with a casing adapted to contain oil, of an angle cock which is located within the casing, comprising a barrel and a hollow turning plug therein, the barrel and plug having ports which are located near the top of the casing and register when the valve is closed, to admit pressure into the casing, the plug having also a segmental groove in the outer surface thereof, and the barrel having a port which opens at the bottom of the casing and registers with the groove when the valve is closed and also having a passage 25 which opens into the main way of the valve and another 26 that registers with the groove in the plug when the same is open.

857,485. ELECTRIC HEATER. JAMES A. REARDON, Seattle, Wash. Filed Feb. 28, 1906. Serial No. 303,492.



Claim.—1. In an electric heater, a hollow cylindrical cylinder having on its periphery a double rib extending helically from end to end of the cylinder, one of the ribs being provided with an under-cut recess at a point near one end of the cylinder to receive the bight of the wire and prevent its accidental displacement, and both of the ribs having openings near the opposite end of the cylinder, and a double resistance wire, the bight of which extends through the under-cut recess, the wire being wound in the grooves between the ribs and the terminals of the wire passing through said openings.

2. In an electric heater, a cylinder of insulating material having wire receiving grooves in its periphery, a resistance wire disposed between the grooves and having both of its terminals at one end of the cylinder, an annular metallic casing within which the cylinder is inclosed, a handle carrying said casing, and current conducting wires extending through the handle and connected to the terminals of the resistance wire.

3. In an electric heater, a grooved cylinder of insulating material, a resistance wire wound within the grooves and having its two terminals at the same end of the cylinder, a metallic casing inclosing the cylinder and including a pair of spaced tubes, the inner of which is open at both ends to permit the passage of liquid, a bifurcated handle secured to the cylinder, and current conductors extending through the handle and connected to the terminals of the resistance wire.

4. In an electric heater, a cylindrical support formed of insulating material and provided with peripheral grooves, a resistance wire wound within the grooves and having both of its terminals at the same end of the cylinder, an annular casing inclosing said support, the grooves being of sufficient depth to prevent contact between the wires and the outer portion of the casing, a handle member, a pair of tubes connecting the handle member to the casing, current conductors extending through the handle member and the tubes and connected to the terminals of the resistance wire, and a switch located in the handle.

5. In an electric heater, an annular casing arranged to form a central liquid passage, projections arranged at one end of the casing to permit free circulation of the liquid when the casing is placed on end, a handle secured to the opposite end of the casing, and a high resistance conductor arranged within the casing and insulated therefrom.

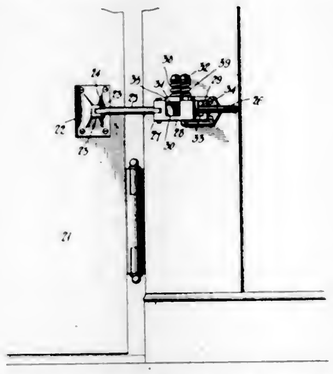
6. In an electric heater, an annular casing having a central liquid passage, a handle secured to one end of the casing, a high resistance conductor arranged within and held from contact with all portions of the casing, current conductors extending through the handle and connected to the high resistance conductor, and lugs or projections disposed at that end of the casing opposite the handle to permit the free circulation of liquid when the heater is placed on end.

7. In an electric heater, the combination with a casing, of a high resistance conductor arranged within and held from electrical contact with the casing, a two part handle comprising inner and outer detachable sections, contact members carried by the sections and arranged to engage with each other to complete a circuit, a controlling switch carried by the outer section of the handle, the outer section together with the switch and current conductors being detachable from the inner section.

8. In an electric heater, a casing, a high resistance conductor arranged within and insulated from said casing, a sectional handle for said casing, said sections having plug and socket connection, and the inner section having current conductors that are connected to the high resistance conductors, a switch carried by the outer section of the handle, and current conductors leading through such outer section, the switch being connected to one of said current conductors the outer section of the handle, together with the switch and the outer current conductors being detachable from the inner section of the handle.

857,486. DOOR-CHECK. JOHN A. REED, Monon, Ind. Filed Oct. 29, 1906. Serial No. 341,143.

Claim.—1. In a door check the combination of a guide rod rigidly secured at one end to one side of the door, a slide mounted on said rod and comprising a recessed member having a spring pressed bearing plate fitting in said recess over said rod whereby the rod is clamped between said recessed member and said plate and frictionally held thereby, and a brace pivotally connected with said slide and with the door frame.



2. In a door check the combination of a guide rod fixed at one end to one side of the door, a slide mounted on said rod and comprising a recessed member having a spring pressed bearing plate fitting in said recess over said rod and engaging said rod, to clamp it between said recessed member and said plate, means for regulating the tension of said spring, and a brace pivotally connected with said slide and with the door frame.

3. In a door check the combination of a guide rod mounted on and spaced from one side of the door, a slide mounted on said rod and comprising a recessed member having packing disposed therein on opposite sides of said rod, a plate arranged over said packing, a top member having a socket, a spring disposed in said socket and bearing on said plate, means for regulating the tension of said spring, and a brace pivotally connected with said slide and with the door frame.

857,487. PLOW. JAMES RIVARA, Natchez, Miss. Filed Feb. 27, 1907. Serial No. 359,595.

Claim.—1. The combination with a mold board plow; of a rotary plow head mounted on a horizontal rotary shaft immediately above and in front of the mold board and having projections adapted to engage and help turn over the sod.

2. The combination with a mold board plow; of a rotary plow head mounted on a horizontal rotary shaft immediately above and in front of the mold board and having disintegrating projections for cutting up and destroying the unity of the slice of sod simultaneously with the turning of the same.

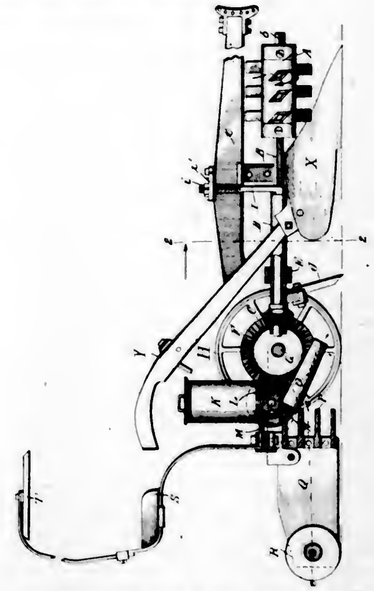
3. The combination with a mold board plow; of a rotary plow head mounted on a horizontal rotary shaft immediately above and in front of the mold board and having obliquely arranged cutting blades for disintegrating and comminuting the sod at the moment of turning.

4. The combination with a mold board plow; of a rotary plow head and rotary shaft for the same arranged horizontally above and projecting in front of the mold board and means for adjusting the plow head longitudinally on the shaft.

5. The combination with a mold board plow; of a rotary plow head and rotary shaft for the same arranged horizontally above and projecting in front of the mold board and means for adjusting said shaft and plow head up and down.

6. The combination with a mold board plow; of a rotary plow head and rotary shaft for the same arranged horizontally above and projecting in front of the mold board and means for adjusting said shaft and head sidewise in horizontal direction.

7. The combination with a mold board plow; of a rotary plow head and rotary shaft for the same arranged horizontally above and projecting in front of the mold board and means for adjusting the forward end of said rotary head laterally in relation to the mold board in both vertical and horizontal direction.



8. The combination with a mold board plow; of a rotary plow head and axial shaft arranged horizontally above and projecting in front of the mold board, means for supporting the same, a transverse axle with running wheels and bevel gears connecting the same with the shaft of the rotary plow head.

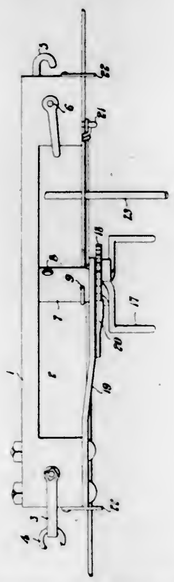
9. The combination with a mold board plow having handles; of a rotary plow head mounted on a horizontal axial shaft immediately above and in front of the mold board, running wheels and gears for driving said rotary head from the running wheels, a driver's seat in rear of the handles and foot pedals arranged near the driver's seat and connected to the plow handles to enable him to use both his hands and feet for controlling the plow.

857,488. CLASP. ABRAHAM ROSENTHAL, Altoona, Pa. Filed Nov. 9, 1905. Serial No. 286,564.



Claim.—A clasp for suspending and displaying articles of wearing apparel, comprising a flat strip of rectangular shaped resilient metal bent to U-shape, the sides being nearly parallel with each other and having rectangular shaped jaws struck approximately from near their ends, said jaws being provided with teeth struck from their terminals, said jaws being bent inwardly toward each other and spaced apart at their upper ends so that the teeth on one jaw will point toward the spaces between the teeth on the other jaw, and said jaws adapted to be sprung apart by an article interposed between the same to engage the teeth on said jaws, substantially as specified.

857,489. WIRE STRETCHER AND SPLICER. JOEL SANDERS, Bliss, Idaho. Filed Mar. 2, 1907. Serial No. 360,188.

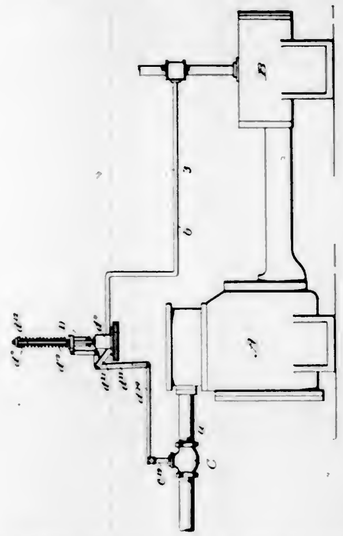


Claim.—An implement of the character described comprising a bar provided with a recess at the middle of one of its longitudinal edges, attaching means located at the ends thereof, a shaft journaled for rotation upon the bar and traversing the said recess, a strap attached to one end of the bar and receiving the end portion of the shaft and terminating short of the other end of the bar, a pin attached to the last said end of the bar, means for rotating the shaft and means for holding said shaft against rotation.

857,490. SPEED-REGULATOR FOR PUMPS. WILLIAM W. SATTERTHWAITE, Washington, N. C. Filed Oct. 31, 1906. Serial No. 341,459.

Claim.—1. In a speed regulator for fluid operated pumps, the combination with the pump and the reservoir for liquid under pressure connected therewith, of a casing connected with the reservoir, a stem above the casing and spaced apart therefrom, said stem having an integral collar at the end adjacent to the casing and a collar slidably mounted on the stem at the outer end thereof, rods threaded into the casing and extending parallel with the stem and upon each side thereof, said rods extending through both collars and having their free ends screw-threaded, shoulders on the rods for limiting the movement of the stem, nuts engaging the ends of the rods, a spring encircling the stem between the collars, a cylinder threaded into the lower end of the stem, the opening of the cylinder being coaxial with the opening of the casing, and a plunger having a relatively large end working in the cylinder and a relatively small end working in the casing, said plunger having a longitudinal opening therethrough, and an annular shoulder on the outer surface thereof for engaging the cylinder to limit the motion thereof, the shoulder resting upon the casing, a valve connected with the exhaust of the pump and a connection between the valve and the plunger whereby movement of the plunger will operate the valve.

2. In a speed regulator for fluid operated pumps, the combination with the pump and the reservoir for liquid under pressure connected therewith, of a casing connected with the reservoir, a cylinder arranged above the casing and spaced apart therefrom, the opening of the cylinder and the opening of the casing being coaxial with each other, a plunger having one end of relatively large diameter movable in the cylinder, and the other end of relatively small diameter movable in the casing, said plunger having a longitudinal opening therethrough, a valve connected with the exhaust of the pump, and a connection between the cylinder and the valve whereby the movement of the cylinder may operate the valve.



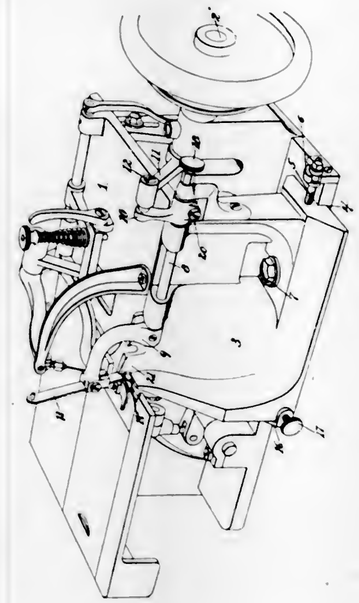
3. In a speed regulator for fluid operated pumps, the combination with the pump and the reservoir for liquid under pressure connected therewith, of a casing connected with the reservoir, a plunger movable in the casing and provided with a stem projecting therebeyond, said stem having an integral collar adjacent to the casing, and a collar slidably mounted on the stem, at the outer end thereof, rods threaded into the casing and extending parallel with the stem and upon each side thereof, said rods extending through both the collars and having their free ends screw threaded, shoulders on the rods for limiting the movement of the plunger, nuts engaging the ends of the rods, a spring encircling the stem between the collars, a valve connected with the exhaust of the pump, and a connection between the valve and the plunger whereby the movement of the plunger may operate the valve.

4. In a speed regulator for fluid operated pumps, the combination with the pump and reservoir for liquid under pressure, connected therewith, of a valve interposed in the exhaust of the pump, a casing connected with the reservoir, a plunger movable in the casing, a spring normally acting to move the plunger against the force of the liquid under pressure, means for regulating the tension of the spring, a bracket projecting from the casing, an elbow lever pivoted on the bracket, a link connecting the plunger with one of the arms of the elbow lever, and a connection between the other arm and the valve whereby movement of the plunger will operate said valve.

5. In a speed regulator for fluid operated pumps, the combination with the pump and the reservoir for liquid under pressure connected therewith, of a casing connected with the reservoir, a spring actuated plunger movable within the casing, a bracket projecting from the casing, an elbow lever journaled in the bracket, a connection between one of the arms of the elbow lever and the plunger, a valve in the exhaust pipe of the pump, and a connection between the valve and the other arm of the elbow lever, whereby movement of the plunger will open and close said valve.

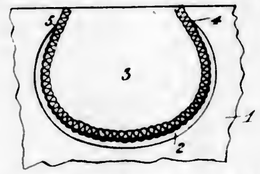
6. In a speed regulator for fluid operated pumps, the combination with the pump and the reservoir for liquid under pressure connected therewith, of a valve interposed in the exhaust of the pump, said valve comprising a casing for a partition provided with an opening therethrough, a valve seat secured to the partition and having its outer face provided with oppositely arranged shoulders connected by inclined surfaces leading from the base of one shoulder to the top of the other, said seat having a central opening registering with the opening of the partition, a valve resting upon the seat and having oppositely arranged shoulders and inclined surfaces contacting with the shoulders and the inclined surfaces of the seat, a stem connected with the valve, a plunger acted upon by the pressure of the fluid in the reservoir, and a connection between the plunger and the valve stem whereby the movement of the plunger will operate the stem to open and close the valve.

857,491. TRIMMER FOR SEWING-MACHINES. JOHN D. SCHOONMAKER, Camden, N. J. Filed Dec. 26, 1901. Serial No. 87,282.



Claim.—The combination of an overedge sewing machine, a detachable bracket having ways that slide on the frame of the machine, and provided at one end with an angular slot, an open bearing secured to the frame, an adjusting screw accommodated in said bearing for shifting the bracket longitudinally in respect to the frame, a rocker shaft journaled in the bracket with provision for endwise adjustment, a knife slidably mounted in said slot, a pivotal arm 16 for binding and releasing said knife, a clamping screw whereby said arm may be adjusted, a cooperating adjustable vibrating knife carried by the rocker shaft, a main driving shaft, and operative connections intermediate the latter and the rocker shaft such that the trimmer may be removed, said bracket having a guide 19, over which the thread is laid and having a part 21, to deflect the trimmed material, substantially as specified.

857,492. PROCESS OF NECKING GARMENTS. GEORGE SCOTT, Amsterdam, N. Y., assignor to Union Special Machine Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 26, 1907. Serial No. 364,620.



Claim.—1. The method herein described of uniting overlapping plies of fabric, consisting in piercing one of said plies at a point distant from its edge, cutting said ply on a predetermined line, and by a substantially simultaneous operation deflecting one of the cut edges, securing one of said cut edges to the lower ply by overstitching, one line of said overstitching passing through and uniting the two plies and the other line passing through the single ply only, the cross threads of the overstitching covering the last mentioned cut edge; substantially as described.

2. The method herein described of necking underwear, consisting in folding the web of fabric to form overlapping plies, inserting a knife in one of said plies at a point distant from the edge of the fold, cutting said ply on a predetermined line and by a substantially simultaneous operation deflecting one of the cut edges and securing the other cut edge to the lower ply by a double row of stitches, one row passing through the two plies and the other through the single ply and uniting said rows of stitches so as to cover the last mentioned cut edge; substantially as described.

3. The method herein described of necking underwear, consisting in folding the web of fabric to form overlapping plies, inserting a knife in one of said plies at a point distant from the edge of the fold, cutting said ply on a predetermined line and by a substantially simultaneous operation deflecting one of the cut edges and securing the other cut edge to the lower ply by a double row of stitches, one row passing through the two plies and the other through the single ply and uniting said rows of stitches so as to cover the last mentioned cut edge, and folding the deflected cut edge underneath the upper ply of fabric and securing the same thereto, so that the fold extends around the edge of the upper ply, and continues to the point of cutting, forming a reinforce for the top portion of the neck; substantially as described.

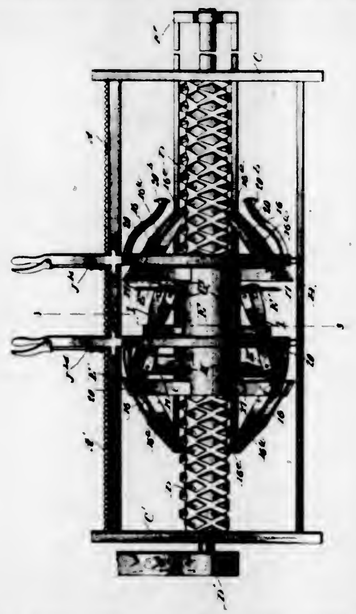
4. The method herein described of uniting overlapping plies of fabric, consisting in piercing one of said plies at a point distant from its edge, cutting said ply on a predetermined line, and by a substantially simultaneous operation deflecting one of the cut edges, securing one of said cut edges to the lower ply by overstitching, the cross threads of the overstitching covering the last mentioned cut edge; substantially as described.

857,493. POWER-TRANSMISSION MECHANISM. FRANK SEDIVY, Globe, Ariz. Filed Dec. 15, 1906. Serial No. 348,039.

Claim.—1. A mechanism of the character described, comprising a screw having reversely inclined threadways, a traveler slidable over said screw and having means for interlocking with the threadways thereof and moving alternately into and out of engagement with their respective threadways, means for shifting said means interlocking with the threadways of the screw, and movable carriers for said shifting means whereby the latter may be set to reverse the device at different points, substantially as set forth.

2. The combination with the main frame the screw, the traveler movable thereon, the detents carried by said traveler for engaging the screw, and guideways on said traveler, of springs engaging at their free ends with said guideways and adapted to operate the detents of the traveler.

and carrier frames to which the said springs are secured, said carrier frames being movable along the main frame, and means for securing the said carrier frames at different points along the main frame, substantially as set forth.



3. A power transmitting mechanism, comprising a screw having double threadways, a traveler movable along the screw and having means for engaging the threadways thereon, and the carrier frame movable along the main frame and having means for shifting the thread engaging means on the traveler, substantially as set forth.

4. The combination of the main frame, the screw journaled therein, and having reversely inclined threadways, the carrier movable along the screw, the rockers pivoted between their ends to the carrier and having at their opposite ends detents engaging the respective threadways of the screw, restraining springs for the opposite ends of said rockers, guideways terminating adjacent to said restraining springs, and carrier frames movable along the main frame and having springs operating in connection with the guideways and arranged to shift the rockers, substantially as and for the purposes set forth.

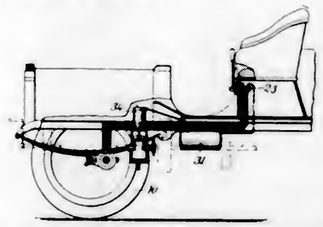
5. The combination with the main frame having the top bar provided with the rack and with the grooves in its opposite sides, of the screw journaled in the main frame, the traveler movable along the screw having means for engagement therewith, and carrier frames having springs for shifting the screw engaging means of the carrier and also provided with wheels or rollers running in the opposite grooves of the top bar of the main frame, and with pawls engaging with the rack of said top bar, substantially as set forth.

6. In an apparatus of the class described, the combination with a traveler operating means therefor and a main frame, of a carrier frame movable along the main frame and provided with means coöperating in reversing the stroke of the traveler, and means for securing the carrier frame in any desired adjustment, substantially as set forth.

7. The combination of a main frame, a screw journaled therein and having reversely inclined threadways, a traveler movable along the screw and having rockers and detents at the ends thereof for engaging with the respective threadways of the screw, inclined guideways at the opposite ends of the traveler, springs operating in connection with said guideways and adapted to shift the rockers of the traveler, and carriers for said springs, said carriers being movable along the main frame, substantially as set forth.

8. An apparatus substantially as described, comprising the main frame, a screw journaled therein and having reversely inclined threadways, a traveler movable along said screw and having means for engagement with said threadways, the means for engagement with one threadway being connected with those for engagement with the other threadway, whereby they may be alternately engaged with their respective threadways, and a carrier movable relatively to the main frame and having means for shifting the thread engaging devices of the carrier, substantially as set forth.

857,494. MOTOR-VEHICLE STEERING-GEAR. WILLIAM E. SLATER, San Francisco, Cal. Filed May 31, 1906. Serial No. 319,498.



Claim.—1. A motor vehicle, comprising a motor cylinder, means for connecting said cylinder with the steering wheel or wheels of a vehicle, a source of pressure supply, means for controlling the passage of said fluid to said cylinder, comprising a valve casing, a valve plug mounted therein and provided with a plurality of passages, supply pipes connecting certain of said passages with the opposite ends of the cylinder, exhaust pipes connecting other of said passages with the opposite ends of the cylinder, a pipe connecting the first mentioned passages with the source of fluid supply, and a spring-pressed check valve in communication with the second mentioned passages.

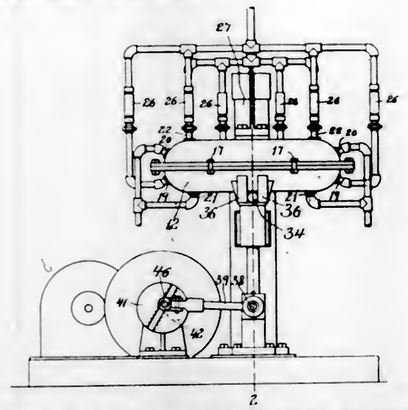
2. In a device of the class described, a cylinder, a piston operating therein, a source of fluid pressure supply, a valve casing, a conduit connecting said valve casing with the source of fluid pressure supply, a supply pipe and an exhaust pipe connecting said valve casing to each end of the cylinder, and a valve plug within said valve casing, provided with a plurality of passages therethrough adapted when in one position to connect the source of fluid supply to one side of the piston and permit the exhausting from the opposite side, and when in a second position to connect the source of fluid supply to the second mentioned side of the piston and permit the exhausting from the first mentioned side.

3. A motor vehicle having a motor cylinder, a piston operating therein, connections between the piston and the steering wheel or wheels of the vehicle, a source of fluid pressure supply, a valve casing, independent supply and exhaust pipes leading from said valve casing to each end of the cylinder, a conduit connecting said valve casing with the source of fluid pressure supply, and a valve plug within the valve casing provided with a plurality of passages, one of said passages having a branch in communication with the source of fluid pressure supply and separate branches adapted to be alternately placed in communication with the separate supply conduits to the cylinder, and the second passage having one branch opened to the atmosphere and separate branches adapted to be alternately placed in communication with the separate exhaust conduits from the ends of the cylinder.

4. In a device of the class described, a motor cylinder, a source of fluid pressure supply, a valve casing, a conduit connecting said valve casing with the source of fluid pressure supply, separate conduits connecting said valve casing with the opposite ends of the cylinder, and a valve plug within said valve casing and provided with a passage therethrough, said passage having a branch in communication with the source of fluid pressure supply, secondary branches in communication with the first mentioned branch and each adapted to be placed in communication with one of the supply conduits to the cylinder, and smaller branches in communication with the first mentioned branch and each normally communicating with supply conduits to the cylinder.

5. In a device of the class described, a cylinder, a source of fluid pressure supply, a valve casing, a conduit connecting said valve casing with the source of fluid pressure supply, a conduit connecting said casing with the atmosphere, a supply conduit and an exhaust conduit connecting said casing with each end of the cylinder, and a valve plug within the valve casing, said valve plug having a plurality of passages therein and adapted to normally supply motive fluid simultaneously to both ends of the cylinder, and when rotated to the proper position, to shut off the supply to either end and open the exhaust from the opposite end to the atmosphere.

857,495. MACHINE FOR FILLING FABRIC FOR TIRES. WILLIAM R. SMITH, Buffalo, N. Y., assignor of one-half to Herbert H. Hewitt, Buffalo, N. Y. Filed Nov. 16, 1906. Serial No. 343,724.



Claim.—1. A filling apparatus comprising an annular mold composed of an outer member and an inner member, said members having annular cavity-forming faces, supporting means for the inner member wholly outside the mold cavity, the latter being entirely unobstructed, and means for conducting filling material to the said cavity.

2. A filling apparatus comprising an annular mold composed of an outer member and an inner member, said members having annular cavity-forming faces, means for conducting filling material to the said cavity, and means for moving said members to distribute the filling material.

3. A filling apparatus comprising an annular mold composed of an outer member and an inner member, said members having annular cavity-forming faces, means for conducting filling material through the members to the opposite faces thereof, and means for moving said members to distribute the filling material.

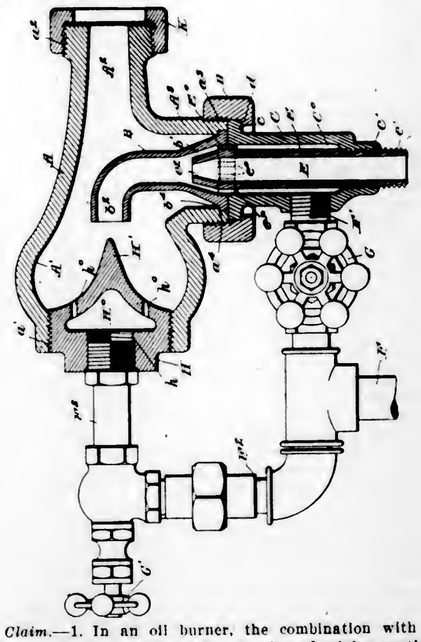
4. A filling apparatus comprising an annular mold composed of an outer member having separable sections, an inner member located between said sections, means for rotatively supporting said members, means for conducting filling material to the cavity formed by said members, and means for rocking or oscillating the members.

5. A filling apparatus comprising an annular mold composed of an outer member having a yoke, and an inner member having a central hub, means for conducting filling material to the mold cavity, fixed bearings supporting the said yoke and hub, and means for rocking or oscillating the members.

6. A filling apparatus comprising an annular mold composed of an outer member and an inner member, means for conducting filling material to the mold cavity, means for rotatively supporting said members, and means for rocking or oscillating said members, comprising rock shafts having oppositely-projecting arms engaging ears affixed to said members, and means for rocking said rock shafts.

7. A filling apparatus comprising an annular mold composed of an inner member and an outer member, said mold having conduits for supplying filling material to the mold cavity, means for rocking or oscillating said members to distribute the filling material, and a system of pipes for conducting the filling material to the conduits, said pipes having flexible sections.

857,496. OIL-BURNER. EDGAR L. STREAM and WILLIAM J. GIBBENS, New Orleans, La. Filed Sept. 20, 1906. Serial No. 335,457.



Claim.—1. In an oil burner, the combination with a mixing chamber provided with an enlarged mixing portion and a tapered delivery portion, of a curved conical plug closing the enlarged end of the chamber, a curved pipe having its outlet in front of said plug and provided with a conical base, an oil pipe provided with a conical nozzle opening into said base and spaced therefrom, a slotted flange surrounding said oil pipe at the base of said nozzle, and means for forcing steam under pressure through said slotted flange, substantially as described.

2. In an oil burner, the combination with a mixing chamber provided with an enlarged mixing portion and a tapered delivery portion, of a curved conical plug closing the enlarged end of the chamber, a curved pipe having its outlet in front of said plug and provided with a conical base, an oil pipe provided with a conical nozzle opening into said base and spaced therefrom, a sleeve engaging said oil pipe and spaced therefrom to form an annular chamber, a slotted flange or ring partly closing said annular chamber at the base of said nozzle, and means for forcing steam under pressure into said annular chamber, substantially as described.

3. In an oil burner, the combination with a mixing

chamber provided with an enlarged mixing portion and a tapered delivery portion, of a curved perforated conical plug closing the enlarged end of the chamber, means for blowing steam through the perforations in said conical body, a curved pipe having its outlet in front of said plug and provided with a conical base, an oil pipe provided with a conical nozzle opening into said base and spaced therefrom, a slotted flange surrounding said oil pipe at the base of said nozzle, and means for forcing steam under pressure through said slotted flange, substantially as described.

4. In an oil burner, the combination with a mixing chamber provided with an enlarged mixing portion and a tapered delivery portion, of a curved perforated conical plug closing the enlarged end of the chamber, means for blowing steam through the perforations in said conical body, a curved pipe having its outlet in front of said plug and provided with a conical base, an oil pipe provided with a conical nozzle opening into said base and spaced therefrom, a sleeve engaging said oil pipe and spaced therefrom to form an annular chamber, a slotted flange or ring partly closing said annular chamber at the base of said nozzle, and means for forcing steam under pressure into said annular chamber, substantially as described.

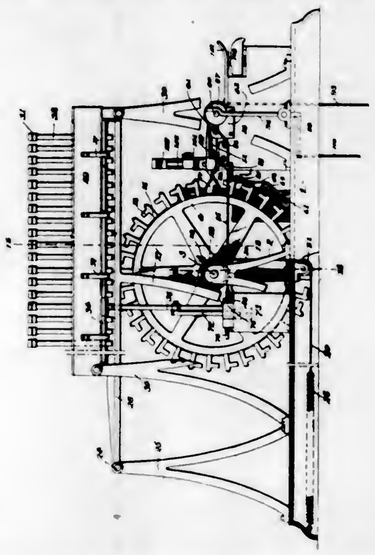
5. In an oil burner, the combination with a mixing chamber provided with an enlarged mixing portion and a tapered delivery portion, of a curved conical plug closing the enlarged end of the chamber, the said plug being provided with perforations grouped around its axis, means for forcing steam through said perforations, a curved pipe having its outlet in front of said plug and provided with a conical base, an oil pipe provided with a conical nozzle opening into said base and spaced therefrom, a slotted flange surrounding said oil pipe at the base of said nozzle, and means for forcing steam under pressure through said slotted flange, substantially as described.

6. In an oil burner, the combination with a mixing chamber provided with an enlarged mixing portion and a tapered delivery portion, of a curved conical plug closing the enlarged end of the chamber, the said plug being provided with perforations, a curved pipe having its outlet in front of said plug and provided with a conical base, an oil pipe provided with a conical nozzle opening into said base and spaced therefrom, a sleeve engaging said oil pipe and spaced therefrom to form an annular chamber, a slotted flange or ring partly closing said annular chamber at the base of said nozzle, and a steam pipe having two separately controlled branches for forcing steam under pressure into said annular chamber and also through said perforations in said plug when desired, substantially as described.

7. In an oil burner, the combination with a mixing chamber provided with an enlarged mixing portion and a tapered delivery portion, of a curved conical plug closing the enlarged end of the chamber and provided with an internal chamber, and perforations opening therefrom into the mixing chamber, a curved pipe having its outlet in front of said plug and provided with a conical base, an oil pipe provided with a conical nozzle opening into said base and spaced therefrom, a slotted flange surrounding said oil pipe at the base of said nozzle, and a steam pipe having two separately controlled branches for forcing steam under pressure through said slotted flange and also through said perforations in said plug when desired, substantially as described.

8. In an oil burner, the combination with a mixing chamber provided with an enlarged portion and a tapered delivery portion, of a curved conical plug closing the enlarged end of the chamber and provided with an internal chamber, and perforations opening therefrom into the mixing chamber, a curved pipe having its outlet in front of said plug and provided with a conical base, an oil pipe provided with a conical nozzle opening into said base and spaced therefrom, a sleeve engaging said oil pipe and spaced therefrom to form an annular chamber, a slotted flange or ring partly closing said annular chamber at the base of said nozzle, and a steam pipe having two separately controlled branches for forcing steam under pressure into said annular chamber and also through said perforations in said plug when desired, substantially as described.

857,497. LAUNDRY MARKING-MACHINE. TOM L. TAYLOR, Atlanta, Ga., assignor to The Pearl Laundry Machinery Company, Atlanta, Ga., a Corporation of Georgia. Filed Sept. 26, 1904. Serial No. 226,064.



Claim.—1. In a machine of the character specified, the combination of a series of type-carriers; means for actuating said carriers to bring the desired type into line; a chase movable toward and from said carriers to receive the type and remove the same therefrom; a locking mechanism to hold the carriers in their adjusted position until the type withdrawn therefrom are returned; and means actuated by the chase to release said mechanism.

2. In a machine of the character specified, the combination of a series of type-carriers; means for actuating the same; a chase movable toward and from said carriers, to receive the type and remove the same therefrom; a locking mechanism to hold the carriers in their adjusted position until the type withdrawn therefrom are returned; and means actuated by the chase upon its return movement to release said locking mechanism.

3. In a machine of the character specified, the combination of a series of type-carriers; a series of keys for each carrier adapted to move the carriers to predetermined positions; means to lock the keys in their actuated positions; a chase movable toward and from the carriers; and means actuated by the chase upon its return movement to release the key-locking means.

4. In a machine of the character specified, the combination of a series of rotary type-carriers; a series of keys for each carrier; mechanism intermediate said keys and the carriers to move the carriers to predetermined positions; means to lock the keys in their actuated positions; a chase movable to and from the carriers; and means actuated by the chase upon its return movement to release the key-locking means.

5. In a machine of the character specified, the combination of a series of rotary type-carriers; a series of keys for each carrier; a lever arranged beneath each series of keys; connections intermediate said lever and the carriers; means for rotating the carriers in a direction opposite to that effected by the downward movement of the keys; means to lock the keys in their depressed positions; a chase movable toward and from said carriers and adapted to withdraw the type therefrom; and means actuated by the chase upon its return movement toward the carriers to release the key-locking means.

6. In a machine of the character specified, the combination of a series of rotary type-carriers; a series of keys for each carrier; a lever arranged beneath each series of keys, said lever being provided with a downwardly-projecting arm; connections intermediate said arm and the corresponding type-carrier; a spring for each carrier tending to rotate the same in a direction opposite to that effected by the downward movement of a key; a locking mechanism designed to hold the keys in their depressed positions; a chase movable toward and from said carriers; and means operated by said chase for effecting the release of the key-locking mechanism upon the return of the chase toward the carriers.

7. In a machine of the character specified, the combination of a series of type-carriers; a series of keys for each carrier; a spring-actuated dog or catch carried by each key and adapted to lock the same when it is depressed to actuate the carrier; a frame slidably mounted in line with said dogs; means for normally holding said frame out of engagement with said dogs; a chase movable toward and from said carriers; and means controlled by the movement of the chase for forcing the frame against the dogs and thereby releasing the same, substantially as described.

8. In a machine of the character specified, the combination of a series of type-carriers; a key-board; series of keys mounted in said board, one series for each carrier; a spring-actuated dog adapted to lock each key in its depressed position; a frame slidably mounted beneath the key-board in line with said dogs; springs normally holding said frame out of contact with the dogs; a lever bearing at one end against the frame; a chase movable toward and from the type-carriers; and means actuated by the chase to move said lever and thus cause the frame to release the dogs, substantially as described.

9. In a machine of the character specified, the combination of a series of type-carriers; a key-board; a series of keys mounted in said board; a spring-actuated locking dog for each key; a frame slidably mounted beneath the key-board in line with said dogs; springs tending normally to hold the frame out of contact with said dogs; a lever pivoted to a fixed portion of the machine, one end of said lever bearing against the frame; a spring-actuated block tending normally to tilt the lever and thus move the frame to release the dogs; a chase movable toward and from the type-carriers; and connections intermediate said chase and the block for withdrawing the block from the lever and holding the same in such position and releasing the block when the chase is moved rearwardly toward the type-carriers, substantially as described.

10. In a machine of the character specified, the combination of a series of type-carriers; a key-board; a series of keys mounted in said board for actuating the carriers; a spring-pressed dog for each key adapted to lock said key in its actuated position; a frame slidably mounted beneath the key-board in line with the dogs; springs tending to move the frame in one direction out of contact with the dogs; a lever pivoted to a fixed portion of the machine and bearing at one end upon the frame; a wedge-shaped block mounted in line with the opposite end of the lever; means for normally holding said block out of contact with the lever; means for forcing the block into contact with the lever as the block is moved rearwardly by its actuating spring; a chase movable toward and from the carriers; a band or cord connected to the chase and to the wedge-shaped block; a locking device adapted to hold the block in its forward position as the chase is withdrawn from the type-carriers; and means to release said locking device as the chase is moved rearwardly toward the type-carriers, whereby the lever will be actuated by the wedge-shaped block and the frame moved into contact with and release the locking dogs of the keys.

11. In a machine of the character specified, the combination of a series of type carriers; a chase movable toward and from the carriers, said chase likewise having an oscillating movement about its axis; a platen; an inking device; and means carried by the chase for actuating the inking device as the chase is thrown rearwardly away from the platen, substantially as described.

12. In a machine of the character specified, the combination of a chase having an oscillating movement about its axis; a platen; an inker located to one side of the chase; and means carried by the chase for moving the inker down directly upon the type carried by the chase when said chase is swung away from the platen.

13. In a machine of the character specified, the combination of a chase having an oscillating movement about its axis; a platen; an inker pivotally mounted to one side of the chase and normally standing out of line therewith; and means for throwing the inker down directly upon the type as the chase is swung rearwardly away from the platen.

14. In a machine of the character specified, the combination of a chase having an oscillating movement about its axis; a platen; an inker pivotally mounted adjacent to the chase; and means carried by the chase adapted and arranged to throw the inker directly into contact with the face of the type carried by the chase when the chase is swung rearwardly away from the platen, the inker moving in a plane substantially in alinement with the axis of the type, whereby the ink will be applied evenly over the various type, substantially as described.

15. In a machine of the character specified, the combination of a chase having an oscillating movement about its axis; a platen; an inker pivotally mounted to one side of the chase; means for maintaining the inker in a normally elevated position; and an arm extending outwardly from the chase, said arm coming into contact with the inker and moving the same downwardly as the chase is swung rearwardly away from the platen.

16. In a machine of the character specified, the combination of a series of type-carriers; a chase movable bodily toward and from said carriers and likewise capable of being rotated about its axis; a platen; an inker pivotally mounted to one side of the chase; an arm carried by the chase, said arm coacting with the inker to move the same down upon the type in the chase as the chase is rocked rearwardly about its axis away from the platen; and means for oscillating the chase.

17. In a machine of the character specified, the combination of a suitable bed; a series of type-carriers; a chase mounted upon the bed and movable thereon toward and from the type-carriers, said chase being likewise capable of oscillation about its axis; a platen; an inker pivotally mounted upon the bed to one side of the chase; means carried by the chase for depressing the inker; means for oscillating the chase; and means for moving the chase bodily toward the type-carriers, substantially as described.

18. In a machine of the character specified, the combination of a suitable base; a chase pivotally mounted thereon; an inker pivotally mounted at one side of the base and normally held out of contact with the type carried by the chase; means carried by the chase for depressing the inker and bringing the same into contact with the type carried by the chase; and means for varying the position of the inker with reference to the chase.

19. In a machine of the character specified, the combination of a suitable base; a chase mounted pivotally thereon; a bracket adjustably mounted upon one side of the base; an inker pivotally mounted in said bracket; and normally held out of contact with the type carried by the chase and means for rocking the inker and bringing the same into contact with the type carried by the chase, as the chase is moved away from the printing point.

20. In a machine of the character specified, the combination of a suitable base; a chase mounted thereon; an inker pivotally mounted at one side of said base; a ribbon mounted in said inker; means for rocking said inker in a plane substantially in alinement with the axis of the type to bring the ribbon directly into contact with the face of the type carried by the chase; and means for shifting said ribbon.

21. In a machine of the character specified, the combination of a suitable base; a chase pivotally mounted thereon; an inker pivotally mounted at one side of the base; an arm carried by the chase; a block carried by the inker and normally standing in line with said arm; means for normally holding the inker in an elevated po-

sition out of the path of travel of the chase; and means to limit the rocking movement of the inker.

22. In a machine of the character specified, the combination of a suitable base; a chase mounted thereon; an inker pivotally mounted at one side of the base, said inker comprising an ink-fountain and an arm extending outwardly therefrom; means for normally holding said arm in an elevated position; means carried by the chase for depressing the inker; an inking ribbon mounted in said inker; means for shifting said ribbon; and a yielding cushion for the ribbon in line with that portion which comes into contact with the type carried by the chase, substantially as described.

23. In a machine of the character specified, the combination of a suitable bed; a spring-pressed platen; a plate overlying the platen and against which it is normally pressed; a printing surface; means for bringing said surface against the material held between the platen and the plate; and means for temporarily separating the plate and platen as the printing surface is withdrawn from the printed material.

24. In a machine of the character specified, the combination of a suitable bed; a chase mounted thereon; means for oscillating said chase without its axis; a plate; a spring-pressed platen mounted below the plate and normally held up toward the same to clamp the article to be printed; and connections intermediate said chase and platen for withdrawing the platen from the goods previously printed as the chase is swung rearwardly to a position in which the type therein may receive ink.

25. In a machine of the character specified, the combination of a suitable bed; a chase mounted thereon; means for oscillating the chase about its axis; a plate; a spring-pressed platen normally held up to the plate to clamp the goods to be marked; connections intermediate said platen and the chase, whereby the platen is lowered as the chase is swung rearwardly; an inker standing in line with the type carried by the chase when said chase is moved rearwardly; and means for depressing the inker when the parts assume the positions just mentioned.

26. In a machine of the character specified, the combination of a suitable bed; a chase mounted upon the bed; means for oscillating said chase about its axis; a spring-pressed platen; connections intermediate said platen and the chase for withdrawing the platen from the goods previously stamped as the chase is thrown to its rearward position; an inker pivotally mounted in line with the type carried by said chase; and means carried by the chase for depressing the inker, substantially as described.

27. In a machine of the character specified, the combination of a suitable bed; a series of type-carriers; a chase mounted upon said bed and movable toward and from the type-carriers; means for automatically locking the type in the chase as it is withdrawn from the carriers; means for oscillating the chase about its axis; a spring-pressed platen clamping the goods to be printed; connections intermediate said platen and the chase to withdraw the platen from the goods as the chase is swung to its rearward position; an inker pivotally mounted in line with the type carried by the chase when the chase is in the position just noted; and means for depressing the inker.

28. In a machine of the character specified, the combination of a suitable base; a series of type-carriers; a chase mounted upon said base and movable toward and from said carriers; means for moving said chase in the direction stated; means for oscillating the chase about its axis, a spring-pressed platen; a plate located above the platen and against which the goods to be printed may be clamped; connections intermediate said platen and the chase for lowering the platen as the chase is swung rearwardly; and an inker adapted to ink the type when the chase is swung rearwardly.

29. In a machine of the character specified, the combination of a suitable bed; a series of type-carriers; means for actuating said carriers; a chase movable bodily toward and from said carriers to remove the type from or replace the same thereon; means for automatically locking the desired type within the chase; means for releasing the type when the chase is moved rearwardly toward the carriers; a spring-pressed platen; connections intermediate the platen and the chase for releasing the platen from the goods as the chase is swung rearwardly; and an inker adapted to make contact with the type carried by the chase when the chase reaches the position just noted.

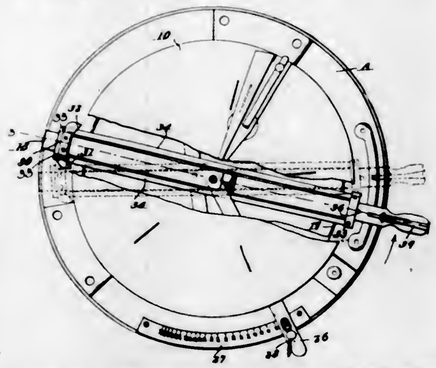
30. In a machine of the character specified, the combination of a series of type-carriers provided with pins extending radially from the periphery thereof; a series of type, one for each pin; a spring carried by each type and adapted to coact with the pin to normally hold the type in place thereon; and a chase movable toward and from said carriers to remove the type from the carriers, substantially as described.

31. In a machine of the character specified, the combination of a series of type-carriers; series of type carried thereby, the outer end of each type being beveled; a chase movable toward and from said carriers; a pocket formed in said chase adapted and designed to receive selected type from the carriers; and means for automatically locking the type in the chase.

32. In a machine of the character specified, the combination of a series of type-carriers; a series of type mounted upon each carrier; a chase movable toward and from the carriers, said chase being provided with a series of division or retaining plates 46; a cross-rod 47 extending through said plates; and a locking device adapted to engage the type upon the face opposite that against which the rod 47 bears.

33. In a machine of the character specified, the combination of a series of type-carriers; series of type mounted thereon; a chase movable toward and from said carriers to remove the selected type therefrom; a series of division plates 46 carried by said chase; a cross-rod 47 connecting the rear portions of said plates; a locking frame for said type comprising levers 48 and 49 connected by cross-bar 50; and means for automatically throwing said locking frame into position.

857,498. CHEESE-CUTTER. WILLIAM G. TEMPLETON, Colorado Springs, Colo. Filed June 30, 1906. Serial No. 324,231.



Claim.—1. The combination with a revoluble cutter board, of an operating lever, a block pivoted thereto and provided with a pair of oppositely arranged cutter board engaging teeth, and means for turning the block to engage either of the teeth with the board to effect rotative movement of the board in either direction.

2. In a cheese cutter, the combination with a revoluble cutter board, of a lever carrying movable means for engaging the board, whereby motion may be communicated in either direction from the lever to the board, a handle movably mounted upon the lever and operatively connected with said board engaging means for throwing the same into engagement with the board, and movable means for controlling the direction of movement of the handle with reference to the lever.

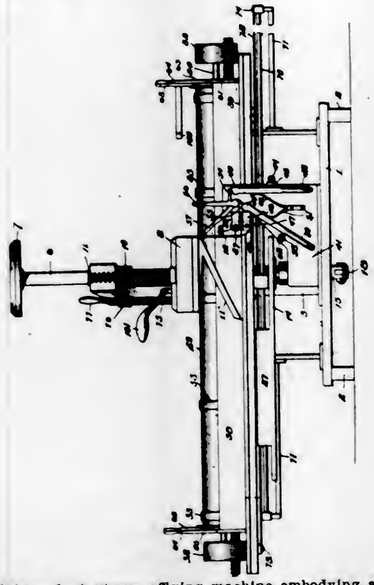
3. In a cheese cutter, the combination with a revoluble cutter board, of a lever carrying movable means for engaging the board, whereby motion may be communicated in either direction from the lever to the board, a handle movably mounted upon the lever and operatively connected with said board engaging means for throwing the same into engagement with the board, and movable stop devices for controlling the extent of movement of the handle with reference to the lever in one direction.

4. The combination with a revoluble cutter board, of an operating lever extending under the board, a handle member pivoted to the front end of the lever and movable independently thereof to a limited extent, a toothed cutter board engaging block pivoted to the opposite end of the lever, and a connecting rod extending between the handle and the block.

5. The combination with a revoluble cutter board, of an operating lever extending under the board, a handle pivoted to the front end of the lever and having limited independent movement, a block pivoted to the rear end of the lever and provided with a pair of cutter board engaging teeth, and a pair of connecting rods arranged on opposite sides of the lever and extending between the handle and the block.

6. The combination with a revoluble cutter board, of an operating lever extending under the board, a toothed block pivoted to the rear end of the lever, a handle pivoted to the front end of the lever, a rod extending between the handle and the block, a pivotally mounted latch carried by the handle and having one end extending through an opening in the handle, and a lug or shoulder projecting from the lever and arranged to be engaged by said catch.

857,499. STAMP-AFFIXING MACHINE. GARFIELD O. THOMPSON, Sanborn, N. D. Filed May 2, 1906. Serial No. 314,806.



Claim.—1. A stamp affixing machine embodying a platen, and a table, means connected to said platen and table for moving the same simultaneously toward and from each other, means for feeding stamps between said platen and table, means for severing the stamp, a carriage, and means for moving the carriage at right angles to the path of movement of the platen.

2. A stamp affixing machine comprising a table and a platen, means connected to said table and platen for positively moving the same toward and from each other, a carriage movable at right angles to the path of movement of the platen for feeding stamps successively between the platen and table, means for moving said carriage, and means for moistening the stamps preparatory to their entrance between the platen and table.

3. A stamp affixing machine comprising a table, a platen working in opposition thereto, said platen being mounted upon a plunger, said table being connected to a pivoted lever, connections between said lever and plunger whereby said platen and table are positively moved in opposite directions, a carriage movable at right angles to the path of movement of the platen to feed stamps successively between the platen and table, presser rolls, moistening rolls, and means for moving said rolls toward and from each other.

4. A stamp affixing machine comprising a table, a platen, connections between said table and platen whereby they are operated positively and simultaneously, a carriage movable at right angles to the path of movement of the platen to feed stamps between the platen and table, rollers between which the stamps are fed, and means for moving said rollers apart to allow the stamps to be inserted between them.

5. A stamp affixing machine comprising a table, a platen, severing mechanism carried by said platen, a lever connected to said table, a connecting rod attached to said lever, said rod being mounted in an arm extending from the platen operating mechanism whereby said platen and table are positively and simultaneously moved toward and from each other, a stamp carriage movable at right angles to the path of movement of the platen, said carriage embodying a roller upon which the stamp sheet is wound, and spring clips embracing said roller and adapted to confine the stamp sheet thereon.

6. A stamp affixing machine embodying a table, a leg secured to said table and mounted to move in a guide, a lever pivoted to said leg and fulcrumed on the frame, a connecting rod connected to said lever, a platen, a plunger to which said platen is connected, said plunger having an arm extending therefrom through which the connecting rod extends, whereby said table and platen are simultaneously and positively moved in opposite directions, and a severing device carried by said platen.

7. A stamp affixing machine embodying a table, a platen connected to a plunger, connections between said table and plunger whereby the platen and table are moved simultaneously toward and from each other, a stamp carriage movable at right angles to the path of movement of the plunger, a rack rail connected with said carriage, a pinion engaging said rack rail, a shaft for said pinion, a second pinion having a clutch engagement with said shaft, and an actuating rack bar movable with the platen and cooperating with the clutch pinion.

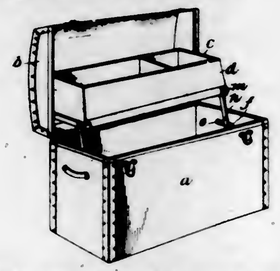
8. A stamp affixing machine embodying a table, a platen working in opposition thereto, a stamp carriage movable at a right angle to the path of movement of the platen, a rack rail on said carriage, a pinion shaft having a pinion engaging said rack rail, a second pinion having a clutched engagement with said shaft, and an actuating rack bar meshing with said pinion and movable with the platen, said rack bar being pivotally mounted so that it may be thrown out of mesh with the pinion.

9. A stamp affixing machine comprising a table, a platen working in opposition thereto, a carriage movable at right angles to the path of movement of said platen and adapted to feed the stamps successively between the platen and table, means for moving said carriage intermittently, rollers between which the stamps are fed preparatory to their entrance between the platen and table, means for holding said rollers in contact and means for moving said rollers apart to allow the stamps to be inserted between the same.

10. In a machine of the character described, a table, a platen working in opposition to said table, a carriage, means for moving said carriage at right angles to the path of movement of said platen to feed the stamps successively between the platen and table, said means comprising racks and pinions adapted to be simultaneously operated, rollers

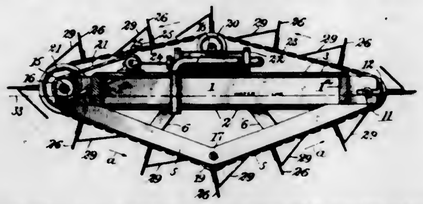
between which the stamps are fed preparatory to their entrance between the platen and table, means for moving said rollers apart to allow the stamps to be inserted between the same, and means for holding said rollers in contact.

857,500. TRUNK. ROBERT L. TURMAN, Atlanta, Ga. Filed Mar. 15, 1907. Serial No. 362,521.



Claim.—The combination of a trunk body, brackets fastened to said body and provided with right angled portions extending into said body, a link at each end of said body pivoted thereto above said brackets and having its lower end adapted in certain positions to abut against the projecting end of one of said brackets, a tray support pivoted near one end to said link, and a link rigidly attached at one end to the other end of said tray support, said link being pivotally attached at its other end to the trunk lid, substantially as described.

857,501. HYDRAULIC MOTOR. WILLIAM R. TUTTLE, Asotin, Wash. Filed Jan. 5, 1906. Serial No. 294,747.



Claim.—1. A hydraulic motor comprising endless traveling chains, links of which are provided with clamps, paddles carried by the clamps, braces for the paddles having engagement with both the clamps and the chains, and means whereby the paddles are caused to move at gradually increasing depths.

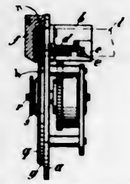
2. A hydraulic motor comprising endless traveling chains, links of which are provided with clamps, paddles carried by the clamps, braces for the paddles having engagement with both the clamps and the chains, said braces being constructed of integral parallel members, and means whereby the paddles are caused to move at gradually increasing depths.

3. A hydraulic motor comprising endless traveling chains, links of which are provided with clamps, said clamps comprising parallel members, paddles received between the parallel members of the clamps, means for securing the clamps to the paddles, and braces for the paddles, said braces comprising a member having one end inserted between one of the parallel members of the clamp and the paddle, and the other end connected with the chain.

4. A hydraulic motor, comprising endless traveling chains, links of which are provided with clamps, paddles carried by the clamps, and braces for the paddles having engagement with both the clamps and the chains.

5. A hydraulic motor, comprising endless traveling chains, links of which are provided with clamps, paddles carried by the clamps, and braces for the paddles having engagement with both the clamps and the chains, said braces being constructed of integral parallel members.

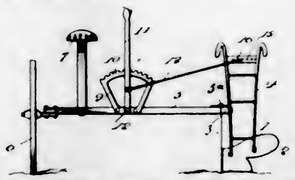
857,502. WATCHMAN'S CLOCK. REINHARD VOGELMANN, Stuttgart, Germany. Filed Mar. 19, 1906. Serial No. 306,937.



Claim.—1. A check clock having a marking disk support, stationary matrix or type faces, a marking key the end of which is adapted to force the disk against the matrix, a key guide, a safety plate or guard normally closing the guide and provided with a tapering projection to be engaged by one side of the key, a spring carrying said plate, a tapered projection on the opposite side of the key, and a spring actuated member engaging against said projection and serving to give an audible signal when the key is fully inserted, the two springs bearing in opposing directions against the sides of the key.

2. A check clock having a key guide, a key adapted to be inserted therein, said key having a grooved projection the outer face of which is tapered, and a spring held roller arranged to engage the outer face of the projection as the key is inserted, or to traverse the groove as the key is withdrawn.

857,503. RIDING ATTACHMENT FOR PLOWS. EDWARD WALBAUM, Webster, S. D. Filed Nov. 26, 1906. Serial No. 345,112.

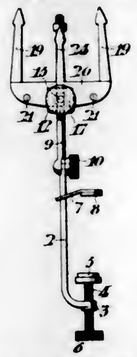


Claim.—In a device of the character described, the combination of a plow comprising a beam and a pair of spaced handles, a cross bar connecting the handles, a laterally extending beam having its inner end pivotally connected to the plow beam, a wheel mounted upon the outer end of the said beam, a plate secured to the beam and formed with a toothed edge, an operating lever pivotally connected to the beam, a latch carried by the operating lever and engaging the toothed edge of the plate, a rod loosely connected to the operating lever and having an adjustable connection with the before mentioned cross bar connecting the plow handles, and a draft bar connecting the outer portion of the laterally extending beam with the forward portion of the plow beam.

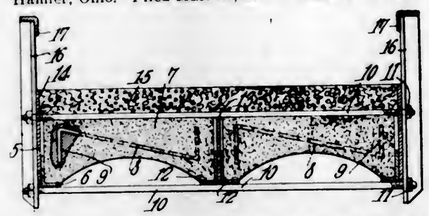
857,504. PORTABLE MUSIC-REST. MANUEL WALDTEUFEL, Philadelphia, Pa. Filed Apr. 3, 1907. Serial No. 366,076.

Claim.—1. The combination of a stem; means for securing the same to the body of an instrument of the violin type; an extension rod pivotally attached to said stem and having a threaded portion; a nut engaging said threaded portion; and a music clamping device carried by said nut, whereby the music sheet may be rotatively adjusted with relation to the rod, and the rod may be angularly adjusted with relation to the stem.

2. The combination of a stem; means for securing the same to the body of an instrument of the violin type; an extension rod pivotally attached to said stem, and having a threaded portion; a nut engaging said threaded portion; a stud arranged transversely to the threaded cavity of said nut, and provided with an opening for the passage of the rod, said stud being provided with a threaded projection; a clamping plate secured to the nut; a second clamping plate fitting thereon, both of said clamping plates being provided with an opening for the passage of the threaded portion of the stud; and a thumb nut whereby said plates may be clamped together and said stud may be caused to frictionally engage with the extension rod.



857,505. BRIDGE CONSTRUCTION. JOSEPH WELFLE, Hamler, Ohio. Filed Mar. 20, 1907. Serial No. 363,504.



Claim.—1. A bridge construction including side walls, blocks interposed between the side walls, and tie rods connecting the side walls and extending above and below the blocks for locking the latter against accidental displacement.

2. A bridge construction including side walls, supporting members secured to the side walls, blocks resting on the supporting members, and the rods connecting the side walls and extending above and below the blocks for locking the latter against accidental displacement.

3. A bridge construction including side walls, supporting members secured to the side walls, a division plate provided with corresponding supporting members, blocks resting on said supporting members, and tie rods connecting the side walls and extending above and below the blocks for locking the latter in engagement with the supporting members.

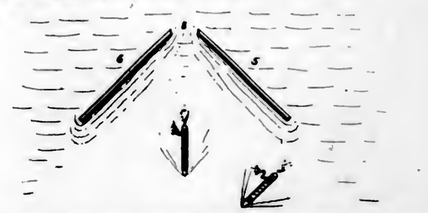
4. A bridge construction including side walls, supporting members carried by the side walls, blocks resting on the supporting members, a longitudinal division plate interposed between the ends of adjacent blocks, tie rods connecting the side walls and extended above and below the blocks for locking the latter against accidental displacement, the side walls being extended vertically above the adjacent tie rods to form a compartment for the reception of a surface forming material.

5. A bridge construction including side walls, supporting members secured to the side walls, blocks resting on the supporting members, standards secured to the side walls, longitudinal rails carried by the standards, and transverse tie rods piercing the standards and side walls and extending above and below the blocks for locking the latter in engagement with the supporting members.

6. A bridge construction including side walls, standards secured to the outer faces of the side walls, longitudinal rails carried by the upper ends of the standards, supporting members secured to the inner faces of the side walls, blocks interposed between the side walls and resting on the supporting members, rods extending above and below the blocks and having their opposite ends threaded and extended through the side walls and adjacent standards, and clamping nuts engaging the threads on said rods for regulating the tension of the latter.

7. A bridge construction including side walls, standards secured to the exterior faces of the side walls, longitudinal rails carried by the upper ends of the standards, supporting members secured to the inner faces of the side walls, a division plate extending longitudinally of the bridge intermediate the side walls, supporting members carried by the division plate, concrete blocks engaging adjacent supporting members, tie rods extending above and below the blocks and division plate and having their opposite ends threaded and extended through the side walls and adjacent standards, clamping nuts engaging the threads on the tie rods for clamping the blocks in engagement with the supporting members, the upper longitudinal edges of the side walls being extended vertically above the adjacent tie rods to form a compartment for the reception of the surface forming material.

857,506. BREAKWATER. GEORGE A. WIELAND, Duluth, Minn. Filed Oct. 6, 1906. Serial No. 337,822.



Claim.—1. The combination with a canal emptying into a large body of water, of a breakwater arranged opposite the canal a distance therefrom to allow a vessel to pass around the same and enter the canal, said breakwater formed in two sections arranged at substantially right angles to each other and at an angle to the canal, and said sections spaced a distance apart to allow a vessel to pass between the same and enter the canal.

2. The combination with a canal emptying into a large body of water, of a breakwater arranged opposite the canal a distance therefrom to allow a vessel to pass around the same and enter the canal, said breakwater formed in two sections and of a solid form from the bottom of the body of water to above the same, and having an oblique cap to divert the waves upwardly, said sections arranged at right angles to each other and at an angle to the canal and spaced a distance apart equal to the width of the canal to allow the vessel to pass between the sections and enter the canal.

857,507. SLEEPING-BAG. HERBERT W. WILSON, Springfield, S. D. Filed Nov. 10, 1906. Serial No. 342,802.



Claim.—1. The combination of a child's sleeping bag open at both ends, means for securing the bag in position on a mattress, and means passing through one end of the bag for holding the child in position therein.

2. The combination of a child's sleeping bag open at both ends, means for securing the bag in position on a mattress, and means for holding the child in position in the bag.

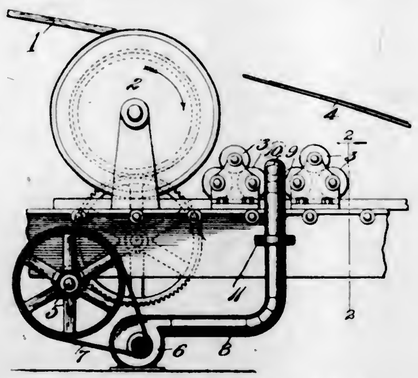
3. The combination of a child's sleeping bag open at both ends, means for securing the bag in position on a mattress, a yoke for holding the child in position in the bag, and means attached to the yoke passing through one end of the bag for holding the yoke in place.

4. The combination of a child's sleeping bag open at both ends, straps attached to the bag adapted to adjustably secure it upon a mattress, and means passing through one end of the bag for retaining the child in position therein.

5. The combination of a child's sleeping bag open at both ends, and means passing through one end of the bag for retaining the child in position therein.

6. The combination of a child's sleeping bag open at both ends, means passing through one end of the bag for retaining the child in position therein, and means for adjustably attaching said retaining means.

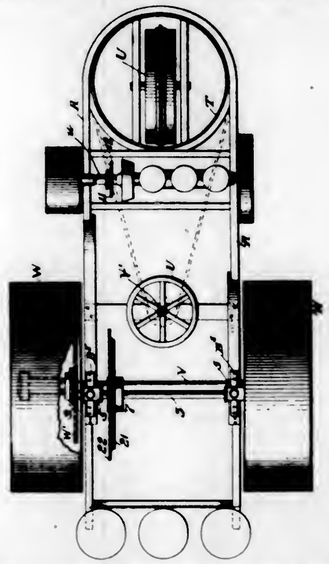
857,508. PRINTING-PRESS MECHANISM. EDGAR B. WOODWARD, St. Louis, Mo. Filed Aug. 6, 1906. Serial No. 329,414.



Claim.—In combination with a printing press embodying an impression cylinder and form rollers located proximate thereto, of means for directing a current of air across the machine just above and longitudinally of the form rollers, means for so controlling the current of air that the same will not interfere with the passage of paper over the impression cylinder, and operative connections between the air current generating means and the press mechanism whereby the former is automatically operated during the operation of the printing press.

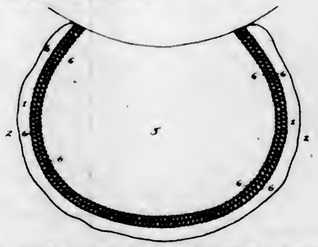
857,509. TRACTION-ENGINE. ANSEL S. WYSONG, Meade, Kans., assignor of one-half to Evan A. Twist, Meade, Kans. Filed Apr. 7, 1906. Serial No. 310,511.

Claim.—1. The combination substantially as herein described of the main frame, the engine shaft having a clutch sleeve and large and small sprocket wheels thereon, the rear axle, the countershaft above the rear axle, the side frames secured at their front ends to the main frame and extending upwardly and rearwardly therefrom and provided with horizontal seats and with portions depending therefrom and connected adjustably with the main frame, bearing boxes for the countershaft adjustable horizontally along the said seats of the side frames, the sleeve and transmission gear upon the countershaft, said shaft and sleeve being provided with sprocket wheels, and wheels on the rear hubs and geared with the said sprocket wheels of the sleeve and countershaft, the casing inclosing the transmission gear and provided with large and small sprocket wheels, and a chain connecting the sprocket wheels of said casing and of the clutch sleeve on the engine shaft, substantially as and for the purpose set forth.



2. The combination with the main frame and the engine or drive shaft and large and small sprocket wheels thereon, of the rear axle and its wheels, a countershaft, above the axle shaft, side frames supporting the countershaft for the main frame gearing between said countershaft and the wheels of the rear axle, the large and small sprocket wheels upon the countershaft, and a chain connecting the sprocket wheels of the countershaft and of the drive shaft, substantially as set forth.

857,510. METHOD OF PRODUCING SEWED FABRICS. BERNARD H. ZIMMERMAN, Utica, N. Y., assignor, by mesne assignments, to Union Special Machine Company, Chicago, Ill., a Corporation of Illinois. Filed Nov. 20, 1903. Serial No 181,970.



Claim.—1. The method herein described, of uniting overlapping plies of fabric, consisting in inserting a knife between the plies and cutting but one of the same on a predetermined line, and by a substantially simultaneous operation deflecting one of the cut edges, securing one of said cut edges to the lower ply by overstitching, one line of said overstitching passing through and uniting the two plies and the other line passing through the single ply only, the cross threads of the over stitching covering the last mentioned cut edge; substantially as described.

2. The method herein described, of necking underwear, consisting in folding the web of fabric to form overlapping plies, inserting a knife at the fold which is thereby caused to enter between the plies, and cutting one of the same, cutting said ply on a predetermined line, and by a substantially simultaneous operation deflecting one of the cut edges and securing the other cut edge to the lower ply by a double row of stitches, one row passing through the two plies and the other through the single ply, and uniting said rows of stitches, so as to cover the last mentioned cut edge; substantially as specified.

857,511. WHIP. FRANCIS H. AUDLEY, New York, N. Y., assignor of one-half to Francis J. Audley and one-half to Baldwin Schlesinger, New York, N. Y. Filed Mar. 15, 1906. Serial No. 306,165.



Claim.—1. A whip comprising a handle member and a thong member connected by a circular plate provided at its opposite side edges with reinforcing fingers which extend in opposite directions and overlap the adjacent ends of the handle member and thong member, said plate being also provided with a double ended pin which is passed centrally therethrough and into the handle and thong members.

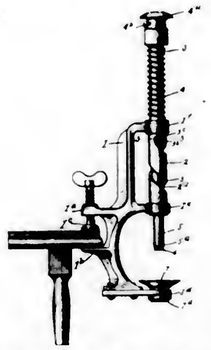
2. A whip comprising a handle member and a thong member connected by a circular plate provided at its opposite side edges with reinforcing fingers which extend in opposite directions and overlap the adjacent ends of the handle member and thong member, said plate being also provided with a double ended pin which is passed centrally therethrough and into the handle and thong members, in combination with flexible reinforcing devices placed on and overlapping the adjacent ends of the handle member and thong member, said parts being all securely wrapped.

3. The herein described device for use in connecting the thong member and stick or handle member of a whip, said device comprising a circular plate provided at its opposite side edges with two fingers which project in opposite directions, one of said fingers at each side being cut from the material of the other and being shorter than said other finger, and said plate being also provided with a central hole for the reception of a double pointed pin.

4. A whip comprising a handle member and thong member connected by a circular plate provided at its opposite side edges with reinforcing fingers which extend in opposite directions, said plate being also provided with a double pointed pin which is passed centrally therethrough and into the handle and thong members, in combination with flexible reinforcing side members placed on the opposite sides of the connection of the handle and thong members, said parts being also securely wrapped with thread or wire.

5. A whip comprising a handle and thong members connected by a transversely arranged circular plate placed between said parts and provided at its opposite side edges with reinforcing fingers which extend in opposite directions and which overlap the thong and handle members, a double pointed pin passed centrally through said plate, flexible reinforcing strips placed so as to overlap the connection between the thong and the stick or handle members, and a casing of flexible material inclosing all of said parts, all of said parts including said casing being securely wrapped with wire or thread.

857,512. FRUIT AND VEGETABLE CORER. JOHN BAKER, Hoopeston, Ill. Filed Aug. 8, 1906. Serial No. 329,787.



Claim.—1. In a coring machine, the combination of a frame adapted to be mounted on a support, a fixed spirally slotted guide fixed in said frame, a plunger mounted to reciprocate and rotate in said guide, a spring for retracting the plunger, a pin on the plunger engaging the spiral slot in the guide, a cutter surrounding the ejector, a yielding spring pressed ejector within the cutter and a fruit support attached to the frame below the plunger, substantially as described.

2. In a coring machine, the combination of a frame adapted to be attached to a table, a vertical spirally slotted guide fixedly attached to said frame, a reciprocating and rotatable plunger mounted in said guide, a spring above the guide for retracting the plunger, a pin on the plunger engaging the spiral slot to cause the plunger to rotate as it is reciprocated, a spring pressed ejector within the plunger in the guide, a cutter surrounding and normally retracted above the ejector, and a fruit support on the frame below the cutter having a core-opening, substantially as described.

3. In a corer, the combination of a frame, adapted to be attached to a table, a spirally grooved guide fixedly secured thereto, a fruit support below the guide having a core-outlet opening, a reciprocatory and rotatable plunger mounted in said guide, a pin on the plunger engaging the spiral groove of the guide, a rotatable knob on the upper end of the plunger, a spring interposed between the knob and upper end of the guide, a tubular cutter attached to the lower end of the plunger, an ejector in the cutter, an ejector-rod within the plunger, and an ejector-spring within the plunger, all substantially as described.

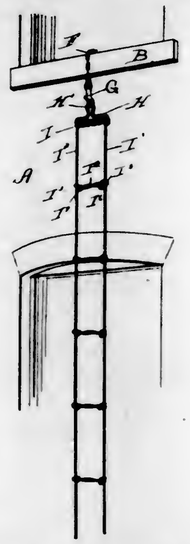
857,513. FIRE-ESCAPE. RICHARD BARTH, Oklahoma, Okla. Filed Oct. 6, 1906. Serial No. 337,765.

Claim.—1. The combination with a bit provided with a rung, of a chain connected to said rung carrying a loop having overlapping ends and a rope knotted over said overlapping ends having its ends formed into a ladder for the purpose described.

2. In a fire escape, the combination with a bit adapted to be secured under the window frame, of a chain connected to said bit carrying a loop with overlapping ends, and a rope knotted over said ends, the ends of the rope being formed into a ladder, for the purpose described.

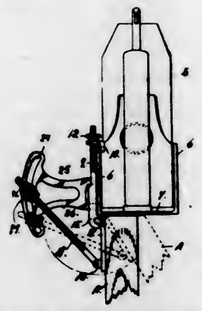
3. In a fire escape, the combination with a loop adapted

to be supported out a window, of a rope knotted over said loop, one end of the rope being looped over the other end and the other end being looped over said looped portion to form a rung for the ladder, for the purpose described.



4. In a fire escape the combination with a loop having overlapping ends, of a rope knotted over said ends, one end of said rope being looped around the other end at intervals to form rounds, then twisted and looped around itself, then looped around the twisted portion, and the other end being looped around the looped portion of the other end for the purpose described.

857,514. GAGE ATTACHMENT FOR PLANES. NOAH N. BEASLEY, Greeley, Colo. Filed June 11, 1906. Serial No. 321,119.



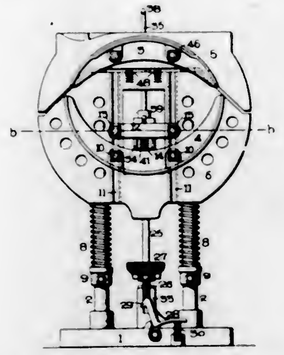
Claim.—1. A gage attachment for planes, consisting of a body part adapted to be fixedly connected with the plane, a gage plate pivotally connected with the body part and adapted to be adjusted in either direction to any required angle, a screw stem hinged to the gage plate, a U-shaped keeper through whose parallel arm the screw stem passes, a screw connected with the keeper, a slotted segmental member connected with the body of the device, the screw of the keeper passing through the slot of the segment, and a thumb nut applied to the screw stem connected with the gage plate, and occupying a position between the parallel arms of the keeper.

2. A gage plate attachment for planes, consisting of a body part, a gage plate pivotally connected with the body part and adapted to be adjusted in either direction to any required angle, a slotted segment also connected with the body part, a screw stem pivotally connected with the gage plate, and a suitable connection between the screw stem and the slotted segment for regulating the position of the gage plate with reference to the body of the device, and suitable means connected with the threaded stem for adjusting the gage plate independently of the adjustment permitted by the slotted segment.

3. In a device of the class described, the combination with a body part consisting of a plate whose extremities are provided with suitable means for fixedly connecting the body part with a plane, a gage plate pivotally connected with the body part and adapted to be adjusted in either direction to any required angle, the body part being provided with a member having a curved slot, a stem hinged to the gage plate, a suitable connection between the stem and the part having the curved slot, to permit the adjustment of the gage plate, and suitable means connected with the stem for adjusting the position of the gage plate independently of the adjustment permitted by the slotted part.

4. A gage attachment for planes, consisting of a body part provided with upwardly projecting screws, angle clips slidable on the screws and adapted to engage the upper edge of a metal plane, nuts applied to the screws above the angle clips, the extremities of the body part being provided with depending ears, a gage plate adapted to be adjusted in either direction to any required angle and provided with pins at its extremities journaled in the ears of the body part, a threaded stem hinged to the body part, a U-shaped keeper whose parallel arms are provided with unthreaded openings through which the threaded stem passes, a nut engaging the threaded stem and occupying a position between the said keeper arms, a screw connected with the keeper, a slotted segment through which the keeper screw passes, and a thumb nut applied to the keeper screw for locking the keeper in any desired position on the segment.

857,515. BARREL-HOOP-NAILING MACHINE. EDWIN F. BEUGLER, Buffalo, N. Y., assignor to Edward B. Holmes, Buffalo, N. Y. Filed May 25, 1905. Serial No. 262,187.



Claim.—1. In a machine of the class described, a machine frame, a hoop forming device comprising a stationary segmental member and a movable segmental member, an upper toggle lever pivoted to the stationary segmental member, a lower toggle lever pivoted to the upper toggle lever and the movable segmental member and a foot lever operatively connecting to the toggle levers, substantially as set forth.

2. In a machine of the class described, a machine frame, a hoop forming device comprising a stationary segmental member and having a curved portion, a lower toggle lever pivoted to the upper toggle lever and the movable segmental member and an angular foot-lever having its upper extremity pivoted to the toggle levers, substantially as set forth.

3. In a machine of the class described, a machine frame, having a plurality of projecting bars, a hoop forming device having hoop forming segments mounted on the bars, one of said segments being slidable on said bars, means for holding the hoop firmly bent around the hoop forming plates and toggle mechanism for moving the slidable plate to spread the plates sufficiently to stretch the hoop blank into circular form, substantially as set forth.

4. In a machine of the class described, a machine frame, composed of a base and bars projecting from the base, a hoop forming device having hoop forming segments, one of which is fixed to the bars and another of which is slidably mounted on the bars, means for holding the hoop firmly bent around the hoop forming plates consisting of a rod having its upper end bent to catch over the hoop ends and toggle mechanism for moving the slidable plate from the fixed plate to stretch the hoop blank into circular form, substantially as set forth.

5. In a machine of the class described, a machine frame having a base and two upright bars extending from the base, a hoop forming device having an upper member rigidly secured to the bars and a lower member slidably mounted on the bars, toggle mechanism operatively connected to the lower member of the hoop forming device and a foot lever operatively connected to the toggle mechanism, substantially as set forth.

6. In a machine of the class described, a machine frame, having a base and two upright bars extending from the base, a hoop forming device having an upper member rigidly secured to the bars and a lower member slidably mounted on the bars, toggle mechanism operatively connected to the lower member of the hoop forming device, a foot lever operatively connected to the toggle mechanism, and mechanism for securing a very fine adjustment of the members of the hoop forming device, whereby the hoop blank will be supported in perfect circular shape, substantially as set forth.

7. In a machine of the class described, a frame having projecting bars, an upper stationary member rigidly secured to the upper ends of the bars, a lower movable member slidably mounted on the bars below the stationary member, segmental hoop forming plates attached to the said members and one of said plates being adjustable on the members to which it is attached, and manually operative means for moving the slidable member, substantially as set forth.

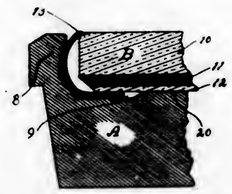
8. In a machine of the class described, a frame having projecting bars, an upper stationary member rigidly secured to the upper ends of the bars, a lower movable member slidably mounted on the bars below the stationary member, segmental hoop forming plates attached to the said members and one of said plates having a hardened portion against which nails driven through the hoop ends strike and are turned over, and manually operative means for moving the slidable member, substantially as set forth.

9. In a machine of the class described, a frame having projecting bars, an upper stationary member rigidly secured to the upper end of the bars, a lower movable member slidably mounted on the bars below the stationary member, segmental hoop forming plates attached to the said members, means for securing a very fine adjustment including a cross bar adjustably secured to one member and a set screw supported by the cross bar and bearing against the plate attached to said member, and manually operative means for moving the slidable member, substantially as set forth.

10. A machine of the class described having a hoop forming device consisting of a plurality of members and segmental hoop forming plates attached to said members, one of said plates being adjustable, a cross bar adjustably secured to the member having the adjustable plate, and a set screw threaded through the cross bar and bearing against the adjustable plate for the purpose of securing a very fine adjustment.

11. In a machine of the class described, a machine frame consisting of a base and a plurality of upright bars, a hoop forming device comprising a stationary member rigidly secured to the upper ends of the bars and a movable member mounted upon the bars, springs for maintaining said movable member in its elevated position, a foot lever pivoted to the base and a set of toggle levers connected to the stationary member and the movable member and the foot lever.

857,516. DIAL-RIM. FRANK R. CUNNINGHAM, Medford, Mass. Filed Feb. 14, 1906. Serial No. 301,059.



Claim.—1. The combination with a movement plate having a wall thereon, of a dial substantially less in diameter than said wall, and a ring composed of a flexibly resilient material located between the edge of said dial and said wall; said ring being thinner in cross-section than the space between said dial and wall, and held by bending stress in engagement with both dial and wall.

2. The combination with a movement plate having a wall thereon, of a dial substantially less in diameter than said wall, and a flexibly resilient ring located between said dial-edge and wall and curved to grip the dial-edge with its top and bottom edges, and to engage said wall with its outer convex face; said ring being thinner in cross-section than the space between said dial and wall.

3. The combination with a movement plate having a wall thereon, of a dial substantially less in diameter than said wall, and a flexibly resilient rim located between said dial edge and wall and curved to grip the dial edge, one of the inner edges of said rim serving to center said dial, and the other edge contacting the flat surface of said dial to allow a centripetal yielding of said rim under pressure on its outer surface, said outer surface being adapted to engage the wall on the movement plate.

4. The combination with a movement plate having a wall thereon, and a groove at the foot of said wall, of a dial less in diameter than said wall, and a ring thinner in cross-section than the space between said wall and dial, and having one edge located in said groove and resiliently engaging both said dial-edge and wall.

5. The combination with a movement plate having a peripheral wall, of a dial substantially less in diameter than said wall, and a resilient ring located between said dial and wall and engaging both; said ring normally deviating slightly from the circular form.

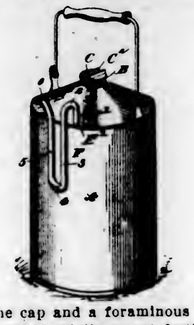
6. The combination with a movement plate having an overhung peripheral wall, of a dial substantially less in diameter than said wall, and a resilient ring located between said dial and wall; said ring being polygonal in outline.

7. The combination with a movement plate having an overhung peripheral wall, of a dial substantially less in diameter than said wall, and a resilient ring located between said dial and wall; said ring being concavo-convex in cross section and polygonal in outline.

857,517. OIL-CAN. ALEXANDER F. DEMORY, Houston, Tex., assignor of one-third to Carl J. Suhm, Houston, Tex. Filed Oct. 4, 1906. Serial No. 337,486.

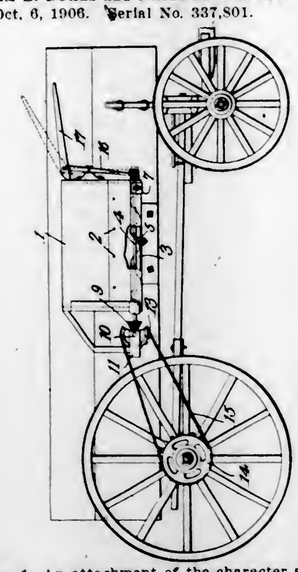
Claim.—A can having a filling opening and a cap for closing the same and having said cap provided in its outer

plate with venting openings and above said plate with a cover plate for closing and exposing said openings, a



packing within the cap and a foraminous disk for retaining said packing, substantially as set forth.

857,518. COMPOST AND COTTON-SEED DISTRIBUTER. WILLIAM B. DUKES and JAMES M. DEKLE, Moultrie, Ga. Filed Oct. 6, 1906. Serial No. 337,801.



Claim.—1. An attachment of the character as indicated comprising a hopper, a trough constituting the bottom thereof and having an outlet opening, a shaft carrying a worm located in said trough, means for rotating the said shaft, and knives attached to the shaft and being located over the outlet opening of the trough.

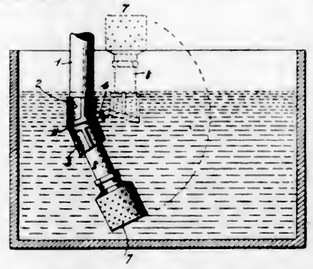
2. An attachment of the character as indicated comprising a hopper, a trough constituting the bottom thereof and having an outlet opening, a shaft carrying a worm located in said trough, means for rotating said shaft, and knives attached to the shaft and being located over the outlet opening of the trough, and means for moving said shaft longitudinally.

3. An attachement as described comprising a hopper, a trough constituting the bottom thereof and having an outlet opening, a shaft journaled for rotation and having a worm located in said trough, means for rotating said shaft, means for moving said shaft longitudinally consisting of a shifting lever fulcrumed to the hopper and engaging the shaft, a supplemental lever fulcrumed to the shifting lever and having its working end in engagement with the hopper.

4. An attachment as described comprising a hopper having in its lower portion transversely extending parallel bars, a trough constituting the bottom of the hopper and having an outlet opening, a worm shaft journaled for rotation in the hopper below the bars and carrying a worm located within the trough, knives attached to the worm shaft and operating above the outlet opening of the trough, and means for rotating said shaft.

5. An attachment as described comprising a hopper having in its lower portion transversely extending parallel bars, a trough constituting the bottom of the hopper and having an outlet opening, a worm shaft journaled for rotation in the hopper below the bars and carrying a worm located within the trough, knives attached to the worm shaft and operating above the outlet opening of the trough, means for rotating said shaft and means for moving said shaft longitudinally.

857,519. STRAINER-SUPPORT FOR WATER-PIPES. WILLIAM S. FOSTER, Richford, Vt. Filed Oct. 17, 1906. Serial No. 339,344.



Claim.—1. The combination with a main intake pipe of a strainer therefor, devices for supporting said strainer in operative relation to the free end of said intake pipe, said devices including means whereby said strainer may be moved to a position above the water line, whereby the same is rendered accessible for cleaning said supporting device also serving to properly position said strainer relative to the intake pipe when lowered; substantially as described.

2. The combination with a main intake pipe, of a strainer therefor, a short length of pipe for supporting said strainer in operative relation to the free end of said intake pipe, devices for securing said short length of pipe to said main intake pipe, said devices including means whereby said strainer may be moved to a position above the water line, and rendered accessible for cleaning and also whereby said strainer is properly positioned relative to the intake pipe when lowered; substantially as described.

3. The combination with a main intake pipe, of a strainer therefor, devices for supporting said strainer in operative relation to the free end of said intake pipe, said devices including means whereby said strainer may be moved to a position above the water line and rendered accessible for cleaning, said supporting means allowing the cleaning of the strainer without interfering with the free outflow through the intake pipe.

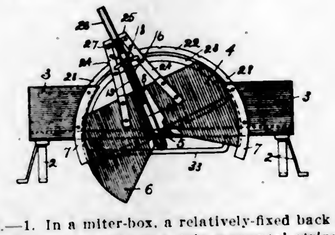
4. The combination with a main intake pipe, of a strainer support therefor, comprising a short length of pipe having a strainer on the end thereof and a coupling for securing said short length of pipe to the main intake pipe, said coupling forming the sole support for said short length of pipe, said short length of pipe being of such length that the strainer may be moved to a position above the water line whereby the same is rendered accessible for cleaning; substantially as described.

5. The combination with a main intake pipe of a strainer support therefor, comprising a short length of pipe having a strainer on the end thereof, a coupling for connecting said short length of pipe to said main intake pipe, the opposing faces of said coupling being so formed that the short length of pipe is held at an angle to the main intake pipe, said coupling also forming means whereby the short length of pipe may be moved so as to bring the strainer above the water line and render the same accessible for cleaning; substantially as described.

6. The combination with a main intake pipe, of a short length of pipe, a strainer carried thereby, a coupling connecting said short length of pipe to said main intake pipe, including members which are hinged together, the engaging faces of said members being inclined to the longitudinal axis of the main intake pipe, and the longitudinal axis of the short length of pipe, said coupling also forming means whereby the short length of pipe may be moved so as to bring the strainer above the water line and render the same accessible for cleaning; substantially as described.

7. The combination with a main intake pipe, a short length of pipe, a strainer carried thereby, a coupling connecting said short length of pipe to said main intake pipe including members which are hinged together, the engaging faces of said members being each inclined to the longitudinal axis of the main intake pipes, and the longitudinal axis of the short length of pipe, one of said members having a recessed seat formed in the face thereof and the other member having an extending lip which engages said recessed seat; substantially as described.

857,520. MITER-BOX. MARION J. GOODALE, Toledo, Ohio. Filed Sept. 17, 1906. Serial No. 334,826.



Claim.—1. In a miter-box, a relatively-fixed back having a rotatable part, spaced concentric segmental strips rising from the back, a saw-frame mounted for movement about a horizontal axis, and a member passing between the segmental strips and connecting the uprights of the saw-frame, substantially as described.

2. In a miter-box, a back having a rotatable part, segmental strips fixed to the rotatable and fixed portions of the back in concentric spaced relation, whereby one has a turning movement within the other, a saw-frame mounted for movement about a horizontal axis, and a member passing loosely between said strips and connecting the uprights.

3. In a miter-box a back having a rotatable part, a saw-frame mounted for horizontal and vertical pivotal movements and having its horizontal axis offset from that of the rotatable part, spaced segmental guide-strips fixed to the back and concentric to the axis of said part, and a member passed between said strips and having its ends in longitudinally sliding connection with the uprights of the saw-frame.

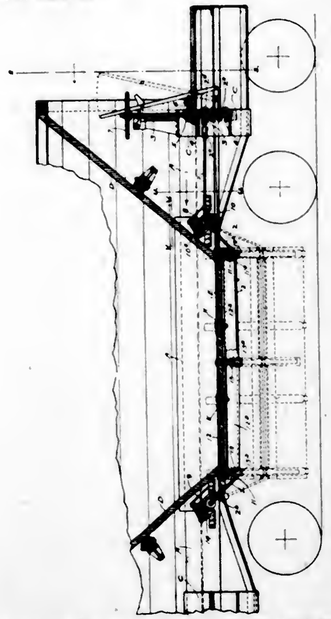
4. In a miter-box, a back having a rotatable part, a saw-frame mounted for horizontal and vertical pivotal movements, a member connecting the uprights of said frame above said part and having pivotal connection with said part in substantial axial alinement with the vertical pivot of the saw-frame.

5. In a miter-box, a swinging saw-frame comprising a horizontal shaft carried beneath the bed, longitudinally-slotted tubular uprights carried at the ends of said shaft, saw-guides slidingly mounted in said uprights, a member connecting the upper ends of said uprights, and a pivotal member about which said member is adapted to swing.

6. In a miter-box, a swinging saw-frame comprising a U-shape member having longitudinally slotted tubular uprights, saw-guides vertically movable in said uprights, a member connecting the upper ends of the uprights and having pivotal connection with the back of the box, and means carried by said member for holding the saw in elevated inoperative position.

7. In a miter-box, a back having a rotatable part, a U-shape saw-frame mounted for swinging and tilting movements, a notched segmental strip carried by the fixed portion of the back, a segmental strip carried by the rotatable part concentric to said first strip and spaced therefrom, a member connecting the uprights of said saw-frame and having a fixed pivot on the strip carried by said part, and means carried by said part for locking with the notches in the first mentioned strip, substantially as described.

857,521. DUMP-CAR-DOOR-OPERATING MECHANISM. JAMES R. GROVES, Denver, Colo., assignor to The Herr Dump Car Company, Denver, Colo. Filed June 1, 1906. Serial No. 319,722.



Claim.—1. In a dump car provided with a hinged dumping door, the combination of means for closing the door comprising a flexible device fixedly connected with a stationary part of the car at one end of the door, extending underneath the latter in a line parallel with its hinging axis, a guide connected with the door and engaged by the flexible device, and means connected with the flexible device whereby the latter may be taken up and paid out at will.

2. The combination in a dump car having a hinged dumping door, of a flexible device passing underneath the door in a line parallel with its hinging axis, the said device being fixedly connected with the car at one end of the door, and means located at the opposite end of the door with which the flexible device is connected for manipulating the latter for door-closing and releasing purposes.

3. In a dump car provided with a dumping door hinged at its opposite longitudinal edges, means coöperating with the hinging member to release the door at either edge for dumping purposes, and a flexible device extending underneath the door and centrally disposed, whereby as the flexible device is properly manipulated the door may be raised to the closed position.

4. A dumping car provided with a hinged dumping door, and means coöperating with the hinge members to release

the door for dumping purposes, and a flexible device fixedly connected with the car at one extremity of the door, and extending underneath the same, and means connected with the flexible device at the opposite extremity of the door whereby the flexible device may be wound up or paid out as desired, the flexible device being entirely independent of the releasing means.

5. In a dump car, the combination with a hinged dumping door, of a flexible device connected with the car at one extremity of the door parallel with the line of its hinging axis, passing underneath the door, means connected with the flexible device at the opposite extremity of the door for manipulating the said device for door-closing and releasing purposes, and anti-frictional guides secured to the under surface of the door and engaged by the flexible device.

6. The combination with a vehicle body having a dumping door, of a flexible device connected with the car at one extremity of the door and extending underneath the same, means connected with the flexible device at the opposite extremity of the door for manipulating the flexible device, the under side of the door being provided with a channel, and anti-frictional means supported by the walls of the channel and engaged by the flexible device.

7. The combination with a vehicle body provided with a dumping door, of a flexible device extending underneath the door, a swiveled socket in which one extremity of the flexible device is anchored, a sheave located at the opposite extremity of the door and engaged by the flexible device, and a swiveled holder for the last named sheave.

8. The combination with a vehicle body having a dumping door, of a flexible device extending underneath the door, means for holding the flexible device at one extremity, means connected with the opposite extremity of the flexible device for manipulating the latter for door-closing purposes, sheaves journaled in the door on the under side and engaged by the flexible device, and braces passing underneath the sheaves whereby the flexible device is prevented from leaving the sheaves.

9. The combination with a vehicle body provided with a door hinged at both longitudinal edges, means coöperating with the hinged members for releasing the door at either hinged edge, and a flexible device extending underneath the door, means for retaining the flexible device in operative position underneath the door, means for anchoring the flexible device at one extremity, and means connected with the opposite extremity of the flexible device for manipulating the latter for door-closing purposes.

10. The combination with a vehicle body having a door hinged at both longitudinal edges, means coöperating with the hinged members of the door for releasing the latter to allow the door to open at either hinged edge, a flexible device extending underneath the longitudinal center of the door, the door being provided with guides for the flexible device whereby it is maintained in operative relation with the door, and means connected with the flexible device for manipulating the latter for door-closing purposes.

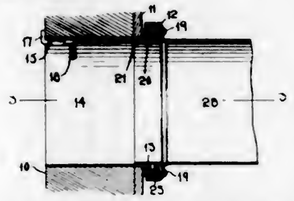
11. The combination with a vehicle body having a central longitudinally disposed beam, hinged dumping doors located on opposite sides of the said beam, means coöperating with the hinged member of each door for releasing the door to allow it to open at its hinged edge, and a flexible device extending underneath each door parallel with the line of its hinging axis, and means connected with the flexible device for manipulating the latter for door-closing purposes.

12. The combination with a vehicle body provided with a dumping door, means for releasing the door to allow it to open for dumping purposes, a flexible device extending underneath the door, parallel with its hinging axis, means connected with the flexible device and located in a plane above the plane of the door, whereby the flexible device is supported at the opposite extremities of the door, and means connected with the flexible device for manipulating the latter for door-closing and releasing purposes.

13. The combination with a vehicle body provided with a hinged dumping door, means coöperating with the hinged members of the door for releasing the door to allow it to open at its hinged edge, a flexible device extending underneath the door parallel with its hinging axis, means for anchoring the flexible device at one extremity of the door, and winding means connected with the flexible device at the opposite extremity of the door.

14. The combination with a vehicle body having a dumping door, of a cable connected at one extremity of the door, extending underneath the latter parallel with its hinging axis, a chain connected with the opposite extremity of the cable, and a winding shaft with which the chain extremity of the cable is connected.

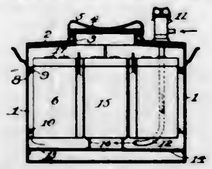
857,522. STOVEPIPE-THIMBLE AND FLUE-STOPPER. DELL HARDING, Owego, N. Y. Filed Oct. 4, 1906. Serial No. 337,436.



Claim.—1. In a device of the class described, comprising a base plate for bearing against a chimney breast and provided with a transverse aperture and with a thimble communicating with said aperture and adapted to engage a stove pipe opening in the chimney, a rod swinging from said thimble and with the inner end out-turned for engaging the interior of the chimney, and adjusting screws operating through said plate for bearing against the chimney breast.

2. A device of the class described comprising a hollow base plate for bearing against the chimney breast and provided with a transverse aperture and with a thimble communicating with said aperture and adapted to engage the stove pipe opening of the chimney, leaves slidable within said hollow base and operating to close the opening therein, means for detachably coupling said thimble to the chimney, means for adjusting said base relative to said chimney breast.

857,523. STEAM COOKING APPARATUS. BARTHOLOMEUS J. HENDRIKS, Lienden, near Kesteren, Netherlands. Filed May 4, 1906. Serial No. 315,190.



Claim.—1. A steam cooking apparatus comprising in combination, a cylindrical steaming chamber, means for delivering steam thereto, a plurality of sector shaped food receptacles suspended in said chamber and forming a central open space, a food receptacle suspended in said space, an inclined perforated diaphragm dividing said chamber into two compartments and permitting water condensation to pass from the uppermost to the lowermost compartment, a closure for said steaming chamber, and means for holding said closure in place.

2. A steam cooking apparatus comprising a cylindrical steam chamber provided with an upper wall having an opening, said wall slanting downwardly from said opening, a closure for said opening, a spring composed of a flat strip of metal engaging said closure, lugs with which said spring is connected, an inclined perforated diaphragm dividing said chamber into two compartments and permitting water of condensation to pass from one compartment to the other, a plurality of sector shaped food receptacles located out of engagement with each other to form spaces intervening the same and also to form a central space, interlocking hook members for said receptacles and said steam chamber for supporting the former out of engagement with the walls of said chamber, distance pieces for said chamber engaging the lower portions of said receptacles for maintaining them in a generally vertical position, a cylindrical food receptacle disposed in said central space out of contact with said sector shaped receptacles, supports for said cylindrical receptacle mounted on said diaphragm, and means for supplying steam to said chamber.

3. A steam cooking apparatus comprising a cylindrical steam chamber provided with an upper wall having an opening, said wall slanting downwardly from said opening, a closure for said opening, yieldingly acting means engaging said closure to hold the same in place, an inclined perforated diaphragm dividing said chamber into two compartments and permitting water of condensation to pass from one compartment to the other, a plurality of sector shaped food receptacles located out of engagement with each other to form spaces intervening the same and also to form a central space, interlocking hook members for said receptacles and said steam chamber for supporting the former out of engagement with the walls of said chamber, distance pieces for said chamber engaging the lower portions of said receptacles for maintaining them in a generally vertical position, and means for supplying steam to said chamber.

4. A steam cooking apparatus comprising a cylindrical steam chamber provided with an upper wall having an opening, said wall slanting downwardly from said opening, a closure for said opening, an inclined perforated diaphragm dividing said chamber into two compartments and permitting water of condensation to pass from one compartment to the other, a plurality of sector shaped food receptacles located out of engagement with each other to form spaces intervening the same, interlocking hook members for said receptacles and said steam chamber for supporting the former out of engagement with the walls of said chamber, distance pieces for said chamber engaging the lower portions of said receptacles for maintaining them in a generally vertical position, and means for supplying steam to said chamber.

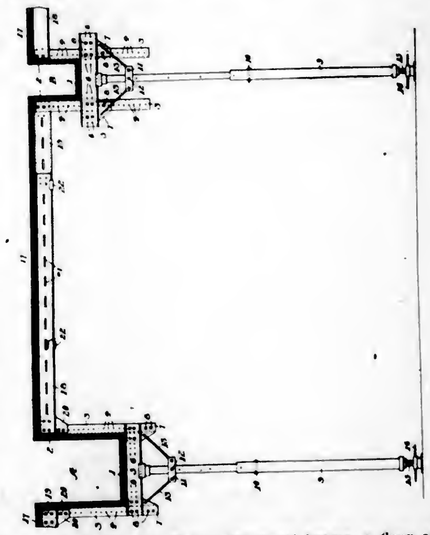
5. A steam cooking apparatus comprising in combination, a steaming chamber, a plurality of food receptacles for said chamber, supporting hooks projecting from said chamber and receptacles near the tops of the latter, and distance pieces near the lower ends of said receptacles whereby the entire area of said receptacles is exposed to the action of steam, said hooks and spacing pieces supporting said receptacles in horizontal alinement.

6. A steam cooking apparatus comprising in combination, a cylindrical steaming chamber, a plurality of sector-shaped food receptacles therefor shaped and arranged to form a central space, a cylindrical food receptacle disposed in said central space, means for supporting said sector shaped food receptacles out of contact with each other and out of engagement with said chamber and in horizontal alinement with each other, and means for supporting said cylindrical food receptacle out of contact with said sector-shaped receptacles and said chamber, and in horizontal alinement with said sector shaped receptacle.

7. A steam cooking apparatus comprising in combination, a steaming chamber, means delivering steam thereto, an inclined diaphragm dividing said chamber into two compartments and permitting water of condensation to flow from one compartment to the other, a plurality of food receptacles for said steaming chamber arranged to form a central space, a receptacle for said central space, and means for supporting said receptacles out of engagement with each other and out of engagement with said diaphragm and said steaming chamber, said receptacles being in horizontal alinement with each other.

8. A steam cooking apparatus comprising in combination, a steaming chamber, means delivering steam thereto, an inclined perforated diaphragm dividing said chamber into two compartments and permitting water of condensation to flow from one compartment to the other, a plurality of food receptacles for said chamber, horizontally arranged means for supporting said food receptacles in said chamber free from engagement with each other and free from engagement with said chamber and diaphragm, a centrally disposed food receptacle, and means carried by said diaphragm and supporting said central receptacle out of engagement with said first mentioned receptacles and out of engagement with said diaphragm.

857,524. MOLD FOR FIREPROOF CONSTRUCTION. WILLIAM S. HINDMAN, Edgeworth, and PAUL H. ANTHONY, Ben Avon, Pa. Filed Oct. 24, 1906. Serial No. 340,289.



Claim.—1. In a mold for structural beams, a floor and side walls, vertical side bars to support said side walls, horizontal bars to support the said floor, means co-operating with said vertical and horizontal bars for adjusting distances apart of said vertical bars, means for adjusting the height of the horizontal bars relatively to the vertical bars, and extensible means for supporting said mold from below.

2. In a mold for structural beams, lagging to support and shape the sides and bottom of a beam, vertical bars to support the side lagging, horizontal bars to support the bottom lagging, means co-operating with said vertical and horizontal bars, for securing said horizontal bars to the vertical bars and for adjusting the former vertically on the latter, and the latter horizontally on the former, and extensible means for supporting the mold in its desired vertical position from below.

3. In a mold for structural beams, lagging to support and shape the sides and bottom of a beam, vertical bars to support the side lagging, a horizontal bar arranged to support the bottom lagging and having its ends crossing said vertical bars, said bars being provided with longitudinal series of holes, and securing means passed through registering holes in said bars, and extensible means for supporting the mold from below.

4. A girder composed of overlapping bars each having a longitudinal series of holes, and fastening devices, each having one member in one of the holes of one bar, and another member supporting the other bar.

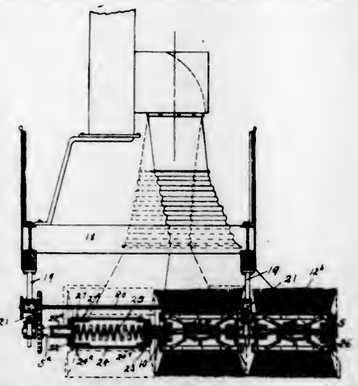
5. A girder composed of overlapping bars each having a longitudinal series of holes, and fastening devices, each having one member in one of the holes of one bar, and another member in engagement with the bottom of the lower edge of the other bar.

6. A girder composed of overlapping bars and fastening devices, each having a portion lying between the bars and two lateral members, one in supporting engagement with each bar.

7. A mold for structural work comprising lagging for beams and the structural connections between beams, vertical and horizontal bars, means for adjustably securing them together to support the sides and bottom of each beam, overlapping horizontal bars, each having one end secured to a vertical bar, and means for supporting the overlapping portions of said bars, comprising clips each having oppositely extending members, one member being supported by one bar and supporting the other bar.

8. A mold for columns consisting of a casing, and encircling bands for supporting the same, the bands being composed of pairs of bars, means for securing the ends of each pair permanently together, the remaining ends of each pair slotted and crossing the ends of the other pair, and means in the slots for adjustably securing together said crossing ends.

857,525. ROTARY BRUSH. BERNARD KERN, Jr., Toledo, Ohio. Filed July 18, 1904. Serial No. 216,959.



Claim.—1. A rotary broom having two spaced end castings provided with radially-disposed peripheral pockets, a plurality of steel brushes and fiber brushes having their ends mounted in alining pockets in the opposite end castings, fiber brushes being movably mounted and the steel brushes rigidly mounted in their respective pockets, and means within the broom having connection with each fiber brush for radially adjusting said fiber brushes.

2. A rotary broom comprising a shell, a plurality of steel brushes and fiber brushes circumferentially mounted on said shell, the fiber brushes being radially adjustable, rotatable means mounted within the shell and having connection with the fiber brushes for causing an adjustment of said brushes, when said means is turned, and means for imparting rotation to said means.

3. A rotary broom comprising a shaft, a plurality of steel brushes and fiber brushes, a sleeve loosely mounted on the broom-shaft internally of said broom, collars threaded to the ends of said sleeve, connecting rods pivoted to the collars and fiber brushes whereby said fiber brushes are adjusted by a longitudinal movement of said collars, and means for rotating said sleeve to move said collars.

4. A shaft comprising two separable sections capable of having their inner ends placed in abutment and secured together, one of said sections being longitudinally adjustable in its bearing, bearings for the shaft sections, a spacing member removably secured between the contiguous ends of the shaft sections whereby to cause a portion of the adjustable section to be examined without its bearing, and a broom carried by the extended end of the shaft.

5. A rotary broom consisting of rigidly spaced end castings having radially-disposed peripheral pockets, a plurality of brushes having their ends mounted in the alining pocket in said castings and having portions extending beyond the faces of said castings, a band at the outer side of each casting for engaging the extended portion of the brushes whereby to lock the brushes in the pockets.

6. A rotatable shaft, a broom comprising rigidly connected end castings mounted on said shaft and having radially elongated pockets provided in the periphery thereof, a series of brush sections rigidly secured in a portion of said pockets, a second series of brush sections adjustably secured in others of said pockets, and means inclosed within the broom for radially adjusting said latter brush sections.

7. The combination with a shaft, of a broom carried by said shaft having its shaft-receiving opening of greater diameter than that of the shaft and provided with recesses extending from the said opening, and a pinion carried by the shaft and having its teeth loosely meshing with the recesses in the shaft-receiving opening of the broom whereby to impart rotation to and permit of lateral play of the broom on the shaft.

8. A shaft comprising two separable sections, one of which sections is longitudinally adjustable in its bearing, a bearing for each shaft section, a longitudinally yielding spacing member removably secured between the contiguous or inner ends of the shaft sections whereby to cause a portion of the adjustable shaft section to extend without its bearing, and a broom mounted on the extended end of the shaft.

9. Two shaft bearing members, a sectional shaft having one section mounted in one bearing member and prevented from longitudinal movement therein and the other section mounted to have a longitudinal movement in the other bearing member, means secured between the contiguous ends of the shaft sections whereby a portion of the longitudinally movable section is extended beyond its bearing, and a rotary broom mounted on the extended section.

10. A rotary broom carrying shaft comprising two separable sections, one of which is longitudinally movable in its bearing, bearings in which the shaft sections are mounted, a spacing member secured between the contiguous ends of the shaft sections whereby to cause a portion of the longitudinally movable section to extend beyond its bearing, said spacing member comprising a shell having relatively movable ends, and yielding means inclosed within the shell in abutment with its ends, and a broom mounted on the extended end of the shaft.

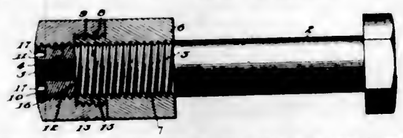
11. A rotatable broom-shaft, a broom mounted on said shaft and comprising a series of sections, said sections each having their bearing openings of greater diameter than said shaft to permit of independent lateral play thereon, rigid means mounted on said shaft for loosely engaging the hubs of the outer broom sections for imparting rotation thereto, sockets provided in the hub portions of the inner broom sections, and pins projecting from the inner faces of the outer broom sections and extending loosely within the sockets in the contiguous ends of the inner broom section to impart rotation thereto and permit a limited independent lateral play of the sections.

12. A rotary broom carrying shaft comprising two separable sections, one of which is longitudinally movable in its bearing, a bearing for each shaft section, yielding spacing means removably secured between the contiguous ends of the shaft sections, said means comprising a shell having its ends relatively movable axially of the shaft and secured to the contiguous ends of the shaft sections whereby to permit of a slight longitudinal movement of the extended section, and a spring mounted within the shell with its ends abutting the shell ends, and a broom section carried by the extended shaft section at each side of its bearing.

13. The combination with a shaft, the bearings therefor, and means for extending a portion of the shaft beyond one of the bearings, of a broom mounted on the extended portion of the shaft and having its shaft receiving opening of greater diameter than the shaft whereby to permit of lateral play on the shaft, and means for causing the broom to revolve with the shaft.

14. In combination, a rotary broom having an axial opening therethrough, a shaft extending through said opening and being of less diameter than said opening whereby to permit of lateral play of the broom thereon, bearings for the shaft, and means for causing the broom to revolve with the shaft.

857,526. NUT-LOCK. ALBERT H. KNOFF, Oak Hall, Pa., assignor of one-half to Charles M. McCurdy, Bellefonte, Pa. Filed Feb. 7, 1907. Serial No. 356,210.



Claim.—1. In a nut-lock, a bolt having screw-threaded portions of different diameters, a nut adapted to engage the inner screw-threaded portion, a nut adapted to engage the outer screw-threaded portion and having an exterior screw-threaded portion differing in the number of screw threads to the inch from its interior screw-threaded surface, and a nut having screw-threads adapted to make screw-threaded engagement with said bolt-nuts, substantially as described.

2. In a nut-lock, a bolt having inner and outer portions of different diameters provided with screw-threads reversely inclined to each other, a nut adapted to engage the inner screw-threaded portion, a nut adapted to engage the outer screw-threaded portion and having an exterior screw-threaded surface differing in the number of screw-threads to the inch from its interior screw-threaded surface, and a nut adapted to make screw-threaded engagement with said bolt-nuts, substantially as described.

3. In a nut-lock, a bolt having a body portion provided with screw-threads, and an integral extension of less diameter than the body portion and provided with screw-threads reversely inclined to those of the body portion, a nut adapted to be screwed on said body portion of the bolt and having exterior screw-threads reversely inclined to its interior screw-threads, a nut adapted to be screwed on to said integral bolt extension and having exterior screw-threads differing in the number of threads to the inch from its interior screw-threads but of the same inclination, and a nut adapted to be screwed on said last named nut and having an enlarged bore at its inner end provided with screw-threads adapted to engage with the exterior screw-threads of the first named nut; substantially as described.

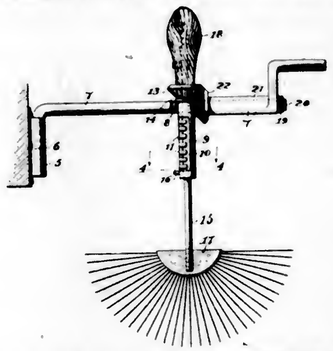
4. In a nut-lock, a bolt having a body portion provided with left-hand screw-threads and an integral extension of less diameter than the body portion and provided with right-hand screw-threads, a nut adapted to be screwed on the body portion of the bolt, a nut adapted to be screwed on said bolt extension and having exterior right-hand screw-threads differing in the number of threads to the inch from its interior screw-threads, and a nut adapted to make screw-threaded engagement with said bolt-nuts; substantially as described.

857,527. POT-CLEANER. ELIZABETH C. LEWIS, Oak Grove, Ala. Filed Jan. 5, 1907. Serial No. 350,919.

Claim.—1. In a device of the character described, actuating means comprising a rotatable longitudinally-apertured member, a rod disposed therein and having thereon a cleaning element, and a pin fixed on said rod, said member being formed with means coöperable with said pin whereby said rod is held in adjusted position.

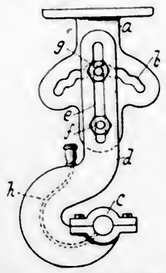
2. In a device of the character described, actuating means comprising a rotatable longitudinally-apertured member formed with a longitudinally-disposed slot and with transverse slots leading therefrom, said slots opening into the aperture of said member, a rod disposed in said member and having thereon a cleaning element, and a pin on said rod and capable of movement in said slots.

3. In a device of the character described, actuating means comprising a rotatable longitudinally-apertured member formed with a longitudinally-disposed slot and with transverse slots leading therefrom and terminating in detents, said slots opening into the aperture of said member, a rod disposed in said member and having thereon a cleaning element, and a pin on said rod and capable of movement in said slots and engagement with said detents.



4. In a device of the character described, the combination with a fixed rod having an aperture therethrough, of an elongated longitudinally-apertured member rotatably seated in said rod-aperture and having a portion depending below said rod, said elongated member being formed in the depending portion with a longitudinally-disposed slot and with transverse slots leading therefrom, a gear on said elongated member, a rotatable rod disposed in said elongated member and having thereon a cleaning element, a pin on said rotatable rod and capable of movement in said slots, a manually-rotatable member on said fixed rod, and a gear on said manually-rotatable member and coöperable with the gear on said elongated member.

857,528. SHAFT-HANGER. JOSEPH A. MANAHAN, New York, N. Y. Filed June 2, 1906. Serial No. 319,935.

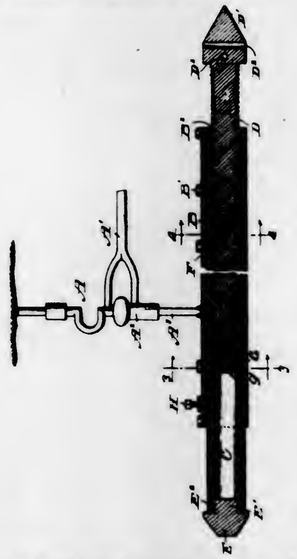


Claim.—A shaft hanger or bracket having a segmental or curved slot, and an arm having a longitudinal or vertical slot combined with a bolt secured to the hanger and extended into the slot of the arm and a second bolt extended through the slots of the arm and hanger, and said segmental slot having serrated or corrugated edges to provide an antislipping medium for the bolt therein.

857,529. ADJUSTABLE DRILL-SUPPORT. ADOLPH MOHRBACHER, Cripple Creek, Colo. Filed Aug. 28, 1906. Serial No. 332,346.

Claim.—1. An extension cross bar consisting of a tubular section, sleeves threaded internally and fitted and held within the opposite ends of the said tube, a point having a screw stem threaded into one of said sleeves, and a bolt section threaded into the other sleeve and having at its inner end a screw stem and a collar thereon and forming

a slide fitting within the tubular section, said bolt having a point at its outer end, and an adjustable sleeve or jacket fitting on and movable longitudinally and rotarily upon the tube of the cross bar, and having at one end an inwardly projecting flange fitting and slidable along the threaded bolt, the said sleeve or jacket being provided with a socket or sockets to receive the end of a stoping bar, and means for securing the said sleeve or jacket in any desired adjustment, substantially as set forth.



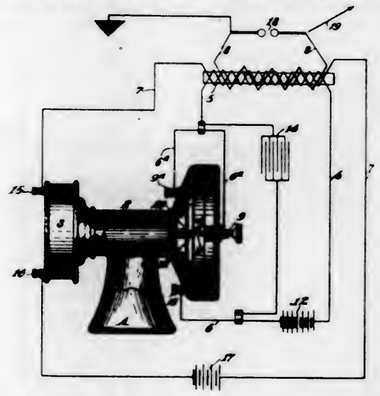
2. A cross bar having a tubular section and a bolt or threaded section screwing into the tubular section, and a sleeve or jacket adjustable upon the tubular section and projecting at one end over the bolt section and having at said end an inwardly projecting flange to slide upon the bolt section, and steady such end of the sleeve or jacket, the latter having a seat or seats for a stoping bar, substantially as set forth.

857,530. WIRELESS TELEPHONE. FRANCIS J. McCARTY, San Francisco, Cal.; Henry A. McCarty, administrator of said Francis J. McCarty, deceased, assignor to McCarty Wireless Telephone Co., San Francisco, Cal., a Corporation of California. Filed Feb. 12, 1906. Serial No. 300,639.

Claim.—1. In a wireless telephone, means for intensifying the vibrations from a transmitting device, said means consisting of a transmitting diaphragm with metallic contact points upon opposite sides, and connecting means, an induction coil, local battery and connections there-through and with the coil, a spark gap interposed in the secondary circuit and a microphone transmitter.

2. In a telephone, means introduced into transmission devices comprising a double transmitter, said transmitter consisting of a mouth-piece, a transmitting diaphragm with metallic contacts upon opposite sides, an induction coil and battery and connections with the transmitter, primary coils and a secondary coil energized thereby, means whereby a spark is produced, to transmit articulate speech.

3. In a wireless telephone, an induction coil having two primary windings and a single secondary winding, and two opposed transmitting diaphragms both operating synchronously, one of said diaphragms having contacts upon opposite sides, one of said primary windings being connected to each of said contacts and the other primary winding being connected to the other diaphragm, and said secondary winding being energized by said primary winding, substantially as and for the purpose described.



4. In a wireless telephone, a mouth-piece, a transmitting diaphragm having contacts upon opposite sides and a conductor connecting said contacts, a battery, an induction coil, wires connecting the coil and transmitter, a microphone transmitter, means whereby it is actuated in unison with the first named transmitter, and a second primary winding of the induction coil, said second winding being connected with the microphonic transmitter.

5. In a wireless telephone, a mouth-piece, a transmitting diaphragm with connected metallic contacts upon opposite sides, an induction coil and battery and connections with the transmitter, a microphone transmitter actuated in unison with the first named transmitter, a second primary winding of the induction coil connected with the microphone transmitter, and a battery interposed between said transmitter and the connected primary winding of the coil.

6. In a wireless telephone, a mouth-piece, a transmitting diaphragm with connected contacts upon opposite sides, a battery, an induction coil, wires connecting the coil and transmitter, a microphone transmitter, means whereby it is actuated in unison with the first named transmitter, a second primary winding of the induction coil, said second winding being connected with the microphone transmitter, and a condenser interposed between the local battery and the first transmitter.

7. In a telephone, a mouth piece, a transmitting diaphragm with contacts upon opposite sides so disposed as to complete and interrupt circuits alternately when energized, an induction coil having two primary windings one of which has its terminals connected to said contacts, and a second transmitter operating synchronously with the first named transmitter and connected with the other primary winding of said coil.

8. In a telephone, a mouth-piece, a transmitting diaphragm with contacts upon opposite sides disposed to alternately complete and interrupt circuits through each pair of contacts when energized, metallic connections between the exterior elements of said contacts, and induction coil having double primary windings, one of said windings being connected with both the diaphragm contacts, and a second diaphragm operable synchronously with the first-named diaphragm and connected with the other primary of said coil.

9. In a telephone, a mouth-piece, a transmitting diaphragm, with contacts upon opposite sides disposed to alternately complete circuits through each pair of contacts when energized, an induction coil with double primary windings, one of said windings being connected with both the diaphragm contacts, a microphone transmitter with which the other primary winding is connected, a battery, and a chamber with which the mouth-piece connects between the transmitters.

10. In a telephone, means for intensifying the vibrations, said means comprising a chamber with which a mouth-piece is connected, a plurality of transmitters connected with the chamber, an induction coil with double primary windings connected respectively with the transmitters, a secondary circuit energized thereby and connected with an aerial conductor, contacts upon opposite sides of one of the transmitters, alternately energized and de-energized by the diaphragm vibrations, and connections between said contacts, and also with one of the primary windings.

11. In a telephone, a double transmitter, a plurality of primary coils connecting respectively with the two transmitting devices, contacts upon opposite sides of one of the transmitting diaphragms, connections between said contacts and with one of the primary coils, and a secondary coil.

12. In a telephone, an induction coil consisting of a plurality of primary coils and a secondary coil, a double transmitter, alternately acting contacts upon opposite sides of one transmitting diaphragm, connections between said contacts and with one of the primary coils, and connections between the other primary coil and the other transmitter.

857,531. PRINTING-PLATE AND PROCESS OF PREPARING THE SAME. MILTON A. McKEE, New York, N. Y., assignor to C. B. Cottrell & Sons Company, New York, N. Y., and Stonington, Conn., a Corporation of New Jersey. Filed Dec. 21, 1901. Serial No. 86,789.



Claim.—1. That improvement in the art of treating manufactured relief printing plates which consists in mechanically producing in the printing face of such plate depressions and elevations at predetermined places where the printing is to be respectively light and heavy, and in also evening or leveling the back of the plate.

2. That improvement in the art of treating manufactured relief printing plates which consists in preparing from a proof of the matter which is on the face of the plate to be printed from a matrix with high and low portions corresponding respectively to the depressions and elevations which are to appear in the face of the printing plate, then placing the matrix and the printing plate face to face and subjecting the two to pressure, and in then evening or leveling the back of the plate.

3. That improvement in the art of treating manufactured relief printing plates which consists in preparing from a proof a matrix with high and low portions corresponding respectively to the depressions and elevations which are to appear in the printing plate, then placing the matrix and the printing plate face to face subjecting the two to heat and pressure, and in evening or leveling the back of the plate.

4. That improvement in the art of treating manufactured relief printing plates which consists in taking a copy of the face of the plate to be printed from, in preparing from such copy a matrix with high and low portions and then forcing the face of the printing plate against the matrix and producing in the plate depressions and elevations the reverse of those in the matrix, and in subsequently evening or leveling the back of the plate.

5. That improvement in the art of treating manufactured relief printing plates which consists in forming on a proof sheet a matrix with an uneven surface and then pressing said matrix and plate together and producing in the latter an uneven printing surface corresponding in reverse to that of the matrix.

6. That improvement in the art of treating manufactured relief printing plates which consists in forming on a proof sheet a matrix with an uneven surface the reverse of that to be produced in the plate and then by means of heat and pressure causing the printing face of the plate to conform to the inequalities of the matrix.

7. That improvement in the art of treating manufactured relief printing plates which consists in taking an impression of the matter on the face of the plate to be printed from and determining from said impression where the face of the printing plate is to be changed; then preparing a matrix with high and low portions corresponding respectively with the depressions and elevations which are to be produced in the plate, and then applying such matrix to the face of the plate and producing in the latter the said predetermined depressions and elevations.

8. That improvement in the art of treating manufactured relief printing plates which consists in taking a proof of the plate, forming a matrix therefrom, producing from said matrix projections or elevations in the back of the plate by a cutting operation, and then transferring same to the face of the plate.

9. That improvement in the art of treating manufactured relief printing plates so as to obtain portions thereof which shall print heavier than other portions of the plate, which consists in preparing a matrix from a suitable sheet of fabric by cutting out therefrom portions corresponding to those portions of the plate which are to produce the heavier impressions, then applying said matrix to the face of said plate with the cut out portions in register with said portions of the plate which are to print heavier, and then subjecting the matrix and plate to pressure and causing the portions of the plate registering with the cut out portions of the matrix to be elevated above the remaining portions of the plate.

10. That improvement in the art of treating manufactured relief printing plates so as to obtain portions thereof which shall print heavier than other portions of the plate, which consists in preparing a matrix from a suitable sheet of fabric by cutting out therefrom portions corresponding to those portions of the plate which are to produce the heavier impressions, then applying said matrix to the face of the said plate with the cut out portions in register with said portions of the plate which are to print heavier, and then subjecting the matrix and plate to heat and pressure and causing the portions of the plate registering with the cut out portions of the matrix to be elevated above the remaining portions of the plate.

11. That improvement in the art of treating manufactured relief printing plates so as to obtain portions thereof which shall print lighter than other portions of the plate, which consists in preparing a matrix from a suitable sheet of fabric by building up thereupon portions corresponding to those portions of the plate which are to produce the lighter impressions, then applying said matrix to the face of said plate with the built up portions in register with the said portions of the plate which are to print lighter, and then subjecting the matrix and plate to pressure and causing the portions of the plate registering with the built up portions of the matrix to be depressed below the remaining portions of the face of the plate.

12. That improvement in the art of treating manufactured relief printing plates so as to obtain portions thereof which shall print lighter than other portions of the plate, which consists in preparing a matrix from a suitable sheet of fabric by building up thereupon portions corresponding to those portions of the plate which are to produce the lighter impressions, then applying said matrix to the face of said plate with the built up portions in register with the said portions of the plate which are to print lighter, and then subjecting the matrix and plate to heat and pressure and causing the portions of the plate registering with the built up portions of the matrix to be depressed below the remaining portions of the plate.

13. That improvement in the art of treating manufactured relief printing plates so as to obtain portions thereof which shall print light and other portions which shall print heavier, and which consists in preparing a matrix from a suitable sheet of fabric by building up portions of the sheet for those portions of the plate which are to

print light and cutting out portions of the sheet for those portions of the plate which are to print heavier, and then subjecting the matrix and plate to pressure and causing the portions of the plate registering with the built up portions of the matrix to be depressed and those portions of the plate registering with the cut out portions of the matrix to be elevated.

14. That improvement in the art of treating manufactured relief printing plates so as to obtain portions thereof which shall print light and other portions which shall print heavier, and which consists in preparing a matrix from a suitable sheet of fabric by building up portions of the sheet for those portions of the plate which are to print light and cutting out portions of the sheet for those portions of the plate which are to print heavier, and then subjecting the matrix and plate to heat and pressure and causing the portions of the plate registering with the built up portions of the matrix to be depressed and those portions of the plate registering with the cut out portions of the matrix to be elevated.

15. That improvement in the art of preparing printing plates which consists in producing in the back of the plate depressions and elevations at predetermined places, and then subsequently producing similar depressions and elevations in the face of the plate where the printing is to be respectively light and heavy by pressing forward the elevations produced in the back of the plate.

16. That improvement in the art of preparing printing plates which consists in producing in the back of the plate depressions and elevations at predetermined places and then subsequently by heat and pressure producing similar depressions and elevations in the face of the plate where the printing is to be respectively light and heavy by pressing forward the elevations produced in the back of the plate.

17. That improvement in the art of preparing printing plates which consists in preparing a matrix with high and low portions corresponding respectively to the depressions and elevations which are to appear in the face of the printing plate, then placing the matrix and printing plate face to face, and then subjecting the same to pressure and to the action of a shaving knife and producing thereby in the back of the plate depressions and elevations the reverse of those in the matrix.

18. That improvement in the art of preparing printing plates which consists in placing against the face of the printing plate the face of a matrix having high and low portions corresponding respectively to the depressions and elevations which are to appear in the printing plate, then subjecting the back of the plate to a plurality of shaving operations and producing thereby a series of depressions and elevations on the back of the plate, and then subjecting the plate and matrix to the action of heat and pressure and causing the depressions and elevations to appear in the face of the plate and the back of the plate to become smooth and even.

19. That improvement in the art of preparing printing plates which consists in placing face to face a plate and a prepared matrix, then shaving the back of the plate and producing thereon high and low portions the reverse of those in the matrix, and then subjecting the plate and matrix to the action of heat and pressure and causing depressions and elevations to appear in the face of the plate corresponding to those which had previously been formed in the back of the plate.

20. That improvement in the art of preparing printing plates so as to obtain an uneven printing face, which consists in applying to the face of the plate when cold a previously prepared uneven faced matrix, then subjecting the plate while under pressure to the action of a shaving knife and producing thereby on the back of the plate a series of depressions and elevations, and then subjecting the plate to heat and pressure while still in register with the matrix and causing substantially corresponding depressions and elevations to appear in the face of the plate and the back of the plate to become smooth and even.

21. That improvement in the art of preparing printing plates which consists in first producing in the back of the plate a series of depressions and elevations and in then forcing the metal toward the face of the plate to produce therein a series of substantially similar depressions and elevations.

22. That improvement in the art of preparing printing plates which consists in first producing a series of depressions and elevations and in then forcing the metal from the back of the plate toward the face of the plate to produce therein a series of substantially similar depressions and elevations.

23. That improvement in the art of preparing printing plates which consists in first producing in the back of the plate a series of depressions and elevations and in then forcing the metal toward the face of the plate to produce therein a series of substantially similar depressions and elevations and simultaneously smoothing or evening the back of the plate.

24. That improvement in the art of preparing printing plates which consists in producing in the back of the plate a series of depressions and elevations by a series of shaving operations, and in subsequently producing in the face of the plate by pressure a series of substantially similar depressions and elevations by forcing the elevations forward toward the face of the plate.

25. That improvement in the art of preparing printing plates which consists in applying to the face of the plate a suitable matrix, and then by a series of shaving operations under pressure producing in the back of the plate irregularities corresponding to those in the matrix, and in then by heat and pressure transferring such irregularities from the back of the plate to the face of the plate and causing the back of the plate to become substantially smooth and even.

26. That improvement in the art of preparing printing plates which consists in preparing the back of the plate with depressions and elevations corresponding to those which are to appear in the face of the plate, and in then subjecting the plate to pressure and causing said depressions and elevations to appear in the face of the plate.

27. That improvement in the art of preparing printing plates which consists in preparing the back of the plate with depressions and elevations corresponding to those which are to appear in the face of the plate, and in then subjecting the plate to heat and pressure and causing said depressions and elevations to appear in the face of the plate.

28. That improvement in the art of preparing printing plates which consists in producing in the back of the plate an uneven surface, then applying to the face of the plate a matrix having a corresponding uneven surface, and then subjecting the two to pressure.

29. That improvement in the art of preparing printing plates which consists in producing in the back of the plate an uneven surface, then applying to the face of the plate a matrix having a corresponding uneven surface, and then subjecting the two to heat and pressure.

30. That improvement in the art of preparing printing plates which consists in producing an unevenness in the back of the plate by cutting operations and while the face of the plate is held against a correspondingly uneven faced matrix.

31. That improvement in the art of preparing printing plates which consists in producing an unevenness in the back of the plate by cutting operations and while the face of the plate is held against a correspondingly uneven faced matrix, and then subjecting the plate and matrix to the action of heat and pressure and causing the unevenness in the back of the plate to appear in the face of the plate and the back of the plate to become substantially smooth and even.

32. That improvement in the art of preparing printing plates which consists in producing in the back of the plate a series of depressions and elevations by a series of shaving operations and controlling the production of such depressions and elevations by an uneven faced matrix applied to the face of the plate.

33. That improvement in the art of preparing printing plates which consists in producing in the back of the plate a series of depressions and elevations, then applying to the face of the plate any suitable soft material such as blotting paper, and applying to the outer side of such material a matrix having a face corresponding substantially to the depressions and elevations in the back of the plate, and then subjecting the whole to heat and pressure.

34. That improvement in the art of preparing printing plates which consists in producing in the back of the plate a series of depressions and elevations, then subjecting said plate to heat and pressure together with a matrix applied to the face of the plate and having depressions and elevations corresponding substantially to those on the back of the plate, and then subjecting the plate and matrix to the action of cold and pressure.

35. The process herein described, of treating a printing plate for the purpose of giving greater prominence to the different parts of its face, according to the heavier or lighter imprint desired, consisting in first obtaining an impression of the plate on a sheet of suitable fabric, then forming a matrix by cutting out certain portions of said sheet and building up other portions with additional thickness of fabric, and afterward placing said matrix and the plate face to face, and subjecting them together to heat and pressure, substantially as herein set forth.

36. The process herein described, of treating printing plates by first obtaining an impression of the plate on a sheet of suitable fabric; second, forming a matrix by cutting out certain portions of said sheet and building up other portions with one or more additional thicknesses of fabric; third, placing said matrix and plate face to face while shaving the back of the plate; and fourth, subjecting to heat and pressure the said shaved plate and the matrix while facing each other with an interposed sheet of soft material, substantially as herein set forth.

37. The process herein described of treating a printing plate by first obtaining on a sheet of suitable fabric an impression from an ordinary electrotype plate; second, forming a matrix by cutting out from said sheet those portions corresponding with the parts of the plate from which the blacker or heavier imprint is desired and building up those portions corresponding with the parts of the plate from which lighter imprints are desired by the superposition and securing thereon of additional thickness of paper of the requisite form; third, placing this matrix and the plate face to face and shaving the back of the plate to reduce its thickness where desired; fourth, placing said matrix on a board with a sheet of soft paper over the matrix and laying the plate on the soft sheet with its face thereon; fifth, subjecting said board, matrix, soft sheet and plate together to pressure and heat, and finally, subjecting said board, matrix, soft sheet and plate to simultaneous pressing and cooling operations, substantially as herein set forth.

38. That improvement in the art of preparing printing plates which consists in producing by pressure the graduations necessary for the printing surface of the plate.

39. That improvement in the art of preparing printing plates which consists in applying graduated pressures to the printing plate to form graduations in the face of the plate.

40. The process of producing a graduated printing surface which consists in first producing a graduated surface representing the printing tones and then by pressure producing therefrom a graded surface in the face of the plate.

41. That improvement in the art of preparing printing plates which consists in first preparing a preliminary graduated surface and then by pressure causing graduations predetermined by the preliminary graduated surface to appear in the face of the plate.

42. That improvement in the art of preparing printing plates which consists in applying pressure to the plate through an intervening graduated surface to form graduations in the face of the plate.

43. That improvement in the art of preparing printing plates which consists in forcing into the face of the plate relative elevations and depressions corresponding to the tones of the subject.

44. The process of producing a graduated printing surface which consists first in preparing a graduated surface in accordance with the printing tones to be obtained and then operating on the plate with said graduated surface so as to cause said graduated surface to produce the desired graduated printing surface in the face of the plate.

45. The process of producing a graduated printing surface which consists first in preparing a graduated surface and then by pressure causing the graduations of said graduated surface to be permanently fixed in the face of the printing plate.

46. That improvement in the art of preparing printing plates which consists in reducing the thickness of the plate in accordance with some of the tones of the subject and applying pressure to produce graduations in the face of the plate in accordance with the tones of the subject.

47. That improvement in the art of preparing printing plates having "make-ready" formed therein which consists in applying a matrix to the plate and subjecting the plate and matrix to heat and pressure.

48. The herein described process of producing printing surfaces which consists in first forming a relief printing surface in a thin plate, and then applying different degrees of pressure to various sections thereof, thereby producing permanent differences in profile in said plate, the levels of which are in correspondence with the darkness of the shades to be printed by the sections.

49. The herein described process of producing printing surfaces which consists in first forming a graduated surface and then through said surface applying different degrees of pressure to various sections of the printing plate, thereby producing permanent differences in profile in said plate, the levels of which are in correspondence with the shades or tones to be printed by the sections.

50. The herein described process of producing printing surfaces, which consists first in forming a relief printing surface in a yielding material and then producing a graded printing surface by applying different degrees of pressure to various sections thereof and so as to produce permanent graded alterations in the surface in profile.

51. That improvement in the art of treating manufactured relief printing plates which consists in producing in the printing face of the plate depressions and elevations at predetermined places where the printing is to be respectively light and heavy and an also evening or leveling the back of the plate and in then subsequently curving the plate.

52. That improvement in the art of treating manufactured relief printing plates which consists in forming on a proof sheet a matrix with an uneven surface, then pressing said matrix and plate together and producing in the latter an uneven printing surface corresponding in reverse to that of the matrix, and in then curving said plate with the matrix applied to the face side thereof.

53. That improvement in the art of treating manufactured relief printing plates which consists in forming on a proof sheet a matrix with an uneven surface, then pressing said matrix and plate together and producing in the latter an uneven printing surface corresponding in reverse to that of the matrix, and in then curving said plate under heat and pressure with a matrix applied to the face side of the plate and a soft backing interposed between the matrix and the plate.

54. That improvement in the art of treating manufactured relief printing plates which consists in forming on a proof sheet a matrix with an uneven surface, then pressing said matrix and plate together and producing in the latter an uneven printing surface corresponding in reverse to that of the matrix, in then curving said plate under heat and pressure and with a matrix applied to the face side thereof, and in then subsequently cooling and setting said plate under pressure.

55. That improvement in the art of preparing printing plates which consists in preparing a matrix and in producing in the back of the plate depressions and elevations at predetermined places where the printing is to be respectively light and heavy, in then subsequently producing similar depressions and elevations in the face of the plate, and in then curving the plate with a matrix applied to the face side thereof.

56. That improvement in the art of preparing printing plates which consists in preparing a matrix and in producing in the back of the plate depressions and elevations

at predetermined places where the printing is to be respectively light and heavy, in then subsequently producing similiar depressions and elevations in the face of the plate, in then curving the plate under heat and pressure with a matrix applied to the face side of the plate, and in subsequently cooling and setting the plate under pressure.

57. That improvement in the art of preparing printing plates which consists in applying a prepared matrix to the face of the plate, then shaving the back of the plate and producing therein high and low portions the reverse of those in the matrix, in then subjecting the plate and matrix to the action of heat and pressure and causing depressions and elevations to appear in the face of the plate corresponding to those which had previously been formed in the back of the plate, and in then curving the plate under heat and pressure with a matrix applied to the face side of the plate.

58. That improvement in the art of preparing printing plates which consists in applying a prepared matrix to the face of the plate, then shaving the back of the plate and producing therein high and low portions the reverse of those in the matrix, in then subjecting the plate and matrix to the action of heat and pressure and causing depressions and elevations to appear in the face of the plate corresponding to those which had previously been formed in the back of the plate, in then curving the plate under heat and pressure with a matrix applied to the face side of the plate, and in then cooling and setting the plate under pressure.

59. That improvement in the art of preparing curved printing plate having "make ready" formed therein, which consists in curving the plate with a matrix or relief form applied to the face side of the plate.

60. That improvement in the art of preparing curved printing platea having "make ready" formed therein, which consists in curving the plate under heat and pressure with a matrix or relief form applied to the face side of the plate.

61. That improvement in the art of preparing curved printing platea having "make ready" formed therein, which consists in curving the plate under heat and pressure with a matrix applied to the face side thereof and soft material interposed between the matrix and the plate.

62. That improvement in the art of preparing curved printing plates having "make ready" formed therein, which consists in curving the plate under heat and pressure with a matrix applied to the face side of the plate, and in then subsequently cooling and setting the plate under pressure.

63. That improvement in the art of preparing curved printing plates having "make ready" formed therein, which consists in curving the plate under heat and pressure and with an applied matrix.

64. As a new article of manufacture, a relief printing plate whose face conatitutes the printing surface and is formed with depressions and elevations at those portions where the impressions are to be respectively light and dark and whose back is even and level.

65. As a new article of manufacture, a relief printing plate having an even and level back and a predetermined undulating face which constitutes the printing surface of the plate and which is adapted to yield different predetermined heavy and light impressions, heavy impressions at the raised portions of the plate and light impressions at the depressed portions of the plate.

66. As a new article of manufacture, a relief printing plate having an evenly pressed back and a pressed up printing face composed of a series of printing projections and depressions formed at predetermined places where the printing pressures are to be respectively heavy and light.

67. A printing surface having the sections thereof, which are designed to print the darker shades, permanently elevated above the levels of the sections adapted for the lighter shades.

68. A printing surface having the sections thereof, which are designed to print the darker shades, permanently elevated above the levels of the sections adapted for the lighter shades, these levels being graded one into the other.

69. A printing block having an uneven printing face or surface, parts of said printing surface being raised to correspond to the darkly shaded parts of the subject to be printed, and other parts of its printing surface being depressed to correspond to the lighter shaded parts of the subject to be printed, the whole surface level of the block being a graduated printing surface.

70. A printing plate reduced in thickness from the back and depressed from the front to correspond to the successive gradations of light and shade represented by the picture on the face.

71. A printing surface having sections thereof which are designed to print the darker shades permanently elevated above the levels of the sections adapted for the lighter shades, the levels being graded one into the other from the permanently elevated parts to the lightest printing shade.

72. As a new article of manufacture, a relief printing plate having a permanently formed graduated printing surface.

73. As a new article of manufacture, a printing plate varying in structural thickness in accordance with the several pressures required for printing the different tones.

74. As a new article of manufacture, a printing plate varying in structural thickness in accordance with the several pressures required for printing the different tones, the back of the plate being even.

75. As a new article of manufacture, a graduated relief printing plate varying in thickness in accordance with the various tones of the subject on the face of the plate.

76. As a new article of manufacture, a graduated relief printing plate varying in thickness according to the various tones of the subject on the face of the plate, and even on the back.

77. As a new article of manufacture, a printing plate having graduated elevations on its printing surface corresponding with the dark tones and the intermediate tones of the subject on the face of the plate the dark tones being the highest.

78. As a new article of manufacture, a printing plate having the required "make-ready" permanently produced in the face of the plate.

79. As a new article of manufacture a relief printing plate having a predetermined uneven permanently formed printing face which is adapted to yield different predetermined heavy and light impressions.

80. As a new article of manufacture, a curved relief printing plate having an even back and a predetermined uneven printing face which is adapted to yield different predetermined heavy and light impressions.

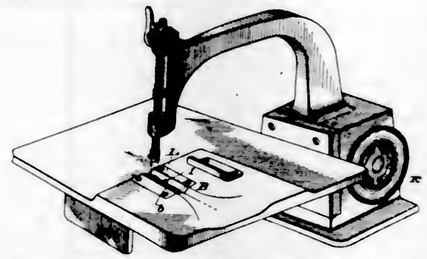
81. As a new article of manufacture, a curved relief printing plate having a permanently formed graduated printing surface.

82. As a new article of manufacture, a curved printing plate having the required "make ready" permanently produced in the face of the plate.

857,532. SEWING-MACHINE. CHESTER MCNEIL, Chicago, Ill., and CHARLES L. STURTEVANT, Washington, D. C., assignors to Union Special Sewing Machine Company, Chicago, Ill., a Corporation of Illinois. Original application filed Nov. 29, 1899, Serial No. 738,666. Divided and this application filed June 1, 1903. Serial No. 159,648.

Claim.—1. In a blind stitch sewing machine in combination with a driving shaft, a needle, a bar supporting the same, with means for reciprocating in a substantially horizontal plane, a looper co-operating with the needle to form stitches, means for crimping the work; whereby that portion through which the stitches are to pass is held at an angle to the body of the goods to enable the needle to get a bite therein, and means for adjusting the needle on said bar, to regulate the amount of bite, substantially as described.

2. In a blind stitch sewing machine, in combination with a driving shaft, a needle a bar, having a head supporting the needle with means for reciprocating it in a substantially horizontal plane, a looper co-operating with the needle to form stitches, means for crimping the work, whereby that portion through which the stitches are to pass is held at an angle to the body of the goods to enable the needle to get a bite therein, and means for adjusting the needle on said head to regulate the amount of bite; substantially as described.



3. In a blind stitch sewing machine of the character described, including means for crimping that portion of the fabric through which the needle passes, and including also an eye-pointed needle a bar, having a head supporting the needle and moving in a substantially horizontal plane, means for adjusting said needle vertically on said head, whereby it will operate in different horizontal planes; substantially as described.

4. A sewing machine having stitch-forming mechanism, including a needle reciprocating in a substantially horizontal plane, a looper supported on an upright shaft, with means for oscillating said shaft, and means for raising and lowering said looper, comprising a reciprocating slide having a reduced portion, and a thickened portion, whereby the looper passes the needle first upon one side and then upon the other; substantially as described.

857,533. MEANS OR DEVICE FOR OPERATING TRAMWAY AND OTHER POINTS AND THE LIKE. JOHN R. PEACOCK, Nottingham, England. Filed Dec. 18, 1906. Serial No. 348,399.



Claim.—1. In tramway points the combination of the moving end of a point rail attached to one arm of a two armed lever pivoted from the tram rail, and the other arm carrying one or more friction rollers, a spring attached at one end to a point box or to the tram rail with its other end pressing against one arm of the two armed lever, a grooved guide formed alongside the tram rail, with one or more shoes suspended from the tramcar frame which can be lowered into the grooved guide until they come in contact with the friction rollers, all for the purposes specified and substantially as described.

2. A tramway point operating appliance comprising a two armed lever pivoted from the tram rail, having one arm connected to the moving end of a point rail, a spring bearing against the lever, one or more friction rollers or studs on the other arm which can be moved horizontally by one or more shoes suspended from a passing tramcar when lowered into a grooved guide formed alongside the tram rail, all for the purposes specified and substantially as shown and described hereinbefore.

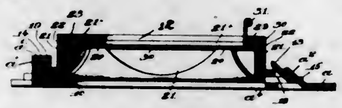
857,534. MEANS OR DEVICE FOR OPERATING TRAMWAY AND OTHER POINTS AND THE LIKE. JOHN R. PEACOCK, Nottingham, England. Filed Dec. 18, 1906. Serial No. 348,400.



Claim.—1. In tramway points the combination of the moving end of a point rail with a spring inclosed in a point box, or taking a bearing against the tram rail, a grooved guide formed alongside the tram rail terminating with a similar groove formed diagonally across the head of the tram rail, to a little beyond the moving end of the point rail, with one or more friction rollers suspended from a tramcar frame which can be lowered into the grooved guide and pass along same and along the diagonal groove in the tram rail until they come in contact with the moving end of the point rail, all for the purposes specified and substantially as described.

2. A tramway point operating appliance comprising a spring attached to the moving end of the point rail and bearing against a point box or a tram rail, a grooved guide formed alongside the tram rail, in combination with a diagonal groove formed across the head of the tram rail, and one or more friction rollers suspended from a passing tramcar which can be lowered in and travel along the said grooved guide and diagonal groove, all for the purposes specified and substantially as shown and described hereinbefore.

857,535. RING-HOLDER FOR SPINNING AND TWISTING RINGS. GEORGE L. PIERCE, Manchester, N. H., assignor, by mesne assignments, to High Speed Ring Company, Boston, Mass., a Corporation of Maine. Filed July 21, 1905. Renewed Nov. 22, 1906. Serial No. 344,648.

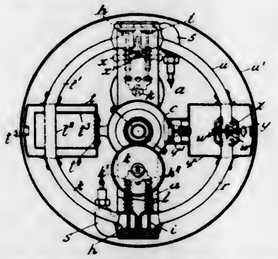


Claim.—1. A ring holder comprising a two-part shell, one part having a resilient positioning member to engage the other part, an inclosed frictionless annulus, and a traveler.

2. In a spinning ring, a holder comprising a rail-plate adapted to be confined to the top of a ring-rail and having a positioning device and a locking device, a ring sustaining or receiving plate having a lip, and a device coacting with the locking member of the rail-plate, an inclosed frictionless annulus, and a traveler.

3. The combination with a rail-plate of a two-part shell provided with a base, a frictionless annulus, and a traveler, and resilient means carried by said rail-plate between which said base may be snapped or held frictionally to confine the two-part shell to the rail-plate.

857,536. GAS, OIL, AND LIKE ENGINE. CHARLES B. REDRUP, Barry Dock, England. Filed Mar. 31, 1905. Serial No. 253,070.



Claim.—1. In combination, an internal combustion motor of the rotating cylinder type having two cylinders disposed in line, a closed crank chamber between said cylinder in which the explosive mixture is drawn, a chamber communicating with said crank chamber in which the explosive mixture is accumulated, said chamber being radially disposed with reference to said cylinders with pipes connecting said chamber to the respective inlet valve casings of said cylinders and a silencing exhaust chamber also radially disposed with reference to said cylinders, and pipes leading therefrom to the respective exhaust valve casings of said cylinders substantially as described.

2. In combination, an internal combustion motor of the rotating cylinder type having two cylinders disposed in line, a closed crank chamber between said cylinder in which the explosive mixture is drawn, a chamber communicating with said crank chamber in which the explosive mixture is accumulated, said chamber being radially disposed with reference to said cylinders with pipes connecting said chamber to the respective inlet valve casings of said cylinders, a silencing exhaust chamber also radially disposed with reference to said cylinders, and pipes leading therefrom to the respective exhaust valve casings of said cylinders, said exhaust chamber being constructed of an outer cylindrical casing and an inner cylindrical casing into which the said pipes discharge, and an outlet from said inner casing at the inner end thereof and an outlet from the outer casing at the outer end thereof substantially as described.

3. In combination, an internal combustion motor of the rotating cylinder type, a chamber for the accumulation of the explosive mixture under pressure and means actuated by centrifugal force to close the outlet from said accumulator chamber, said means consisting of a tube traversing said accumulator chamber and two openings in line in said tube and provided with valve seatings and a double valve, said valve being weighted and being maintained open by means of a spring and being adapted to close said openings substantially as described.

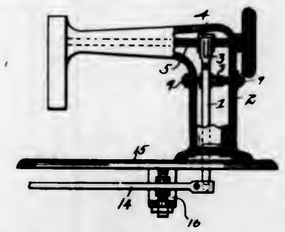
4. In combination an internal combustion motor of the rotating cylinder type consisting of two cylinders arranged in line and having a common closed crank chamber a chamber for the accumulation of the explosive mixture said chamber being connected to said crank chamber in position at right angles to the position of the said cylinders, and an exhaust chamber in a position in line with said accumulator chamber substantially as described.

5. In combination, an internal combustion rotary motor, a chamber for the accumulation of the explosive mixture, a tube traversing said chamber and two openings in line in said tube and provided with valve seatings and a double valve, said valve being weighted and being maintained open by means of a spring and being adapted to close said openings substantially as described.

6. In combination in an internal combustion motor of the rotating cylinder type, a chamber for the accumulation of the explosive mixture, inlet and exhaust valves for said motor, springs for said valves and means operated by centrifugal force for maintaining a greater pressure upon said springs upon the motor attaining an excessive speed substantially as described.

7. In combination in an internal combustion motor of the rotating cylinder type, a chamber for the accumulation of the explosive mixture, juxtaposed inlet and exhaust valves for said motor, springs for said valves and means operated by centrifugal force for maintaining a greater pressure upon said springs upon the motor attaining an excessive speed, said means consisting of levers pivoted upon a common center said levers having one of each of their extremities weighted, and their other extremities engaging the springs of said valves substantially as described.

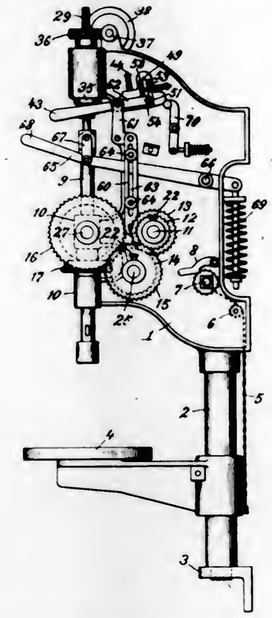
857,537. SEWING-MACHINE BEARING. WILLIAM S. RESER, Dayton, Ohio, assignor of one-third to Clarence E. Ramby, Dayton, Ohio. Filed Oct. 19, 1906. Serial No. 339,666.



Claim.—1. In a bearing of the type specified, a lever, said lever having recesses on opposite sides of its fulcrum point, a centering screw on each side of said lever in alinement with said fulcrum point, said centering screws having recesses, and a ball between each centering screw and the adjacent portion of the lever, said balls being engaged on their opposite sides by the circumferential edges of the recesses in said centering screws and said lever, the portions of said balls lying within the circumferences of said recesses being free from contact with the screws or the lever.

2. In a bearing of the type specified, a lever, a centering screw on each side of said lever, a ball interposed between each of said centering screws and the lever and forming the fulcrum of the lever, said balls each engaging on one side the annular rim only of a recess and having the portion of their surface lying within the circumference of said rim free from metallic contact.

857,538. AUTOMATIC DRILLING-MACHINE. LOUIS E. RICE, Salem, Ohio, assignor to The Silver Manufacturing Company, a Corporation of Ohio. Filed Aug. 1, 1905. Serial No. 272,201.



Claim.—1. A drilling machine comprising a rotatable drill spindle, a tripping device, means for driving said spindle and said tripping device, feed mechanism for giving the spindle motion in the direction of its length, and means for automatically connecting the tripping device with the feed mechanism for throwing the feed in and out of operation at predetermined points in the travel of the spindle.

2. A drilling machine comprising a rotatable drill spindle, a power shaft therefor, feed mechanism for giving the spindle motion in one direction only, a tripping device adapted to be continuously driven by said power shaft, and means for automatically connecting the tripping device with the feed mechanism for throwing the feed in and out of operation at predetermined points in the travel of the spindle.

3. A drilling machine comprising a rotatable drill spindle, a reciprocatory tripping device, feed mechanism for giving the spindle motion in one direction only to advance it toward the work, a latch connected with said feed mechanism and normally clear of said tripping device, and means for automatically shifting the latch into the path of the tripping device for throwing the feed in and out of operation at predetermined points in the travel of the spindle.

4. A drilling machine comprising a rotatable drill spindle, a power shaft therefor, feed mechanism for advancing the spindle relatively to the work, means tending normally to retract the spindle, and means arranged to be continuously operated by the power shaft and means whereby said continuously operated means may be connected to the feed mechanism for throwing the feed into and out of operation to limit the movement of the spindle.

5. In a drilling machine, a rotatable drilling spindle, feed mechanism therefor, a power shaft, tripping mechanism arranged to be continuously operated by said power shaft, for throwing the feed mechanism into and out of operation, a latch connected with said feed mechanism, a gage-bar having adjustable stops thereon connected to said latch, and means connected to the spindle and arranged to engage said stops.

6. The combination with feed mechanism, of a co-operating trip device comprising a trip pin, means for giving said pin a back and forth movement in a definite path of travel, a co-operating latch normally clear of the trip pin and connected with said feed mechanism, and means for shifting the latch relatively to the pin.

7. The combination of a drill spindle, requisite gearing co-operating therewith, feed mechanism for giving the spindle motion in the direction of its length, means tending to retract said spindle, a trip device for engaging and disengaging the feed comprising a reciprocating trip pin, a co-operating latch connected with the feed mechanism, and means for periodically shifting the latch relatively to the pin to throw the feed in and out of operation at predetermined points in the path of travel of the spindle.

8. The combination of a rotatable drill spindle, a power shaft therefor, a feed screw operatively connected with the spindle, a rotatable feed nut, a lever arm connected with said feed nut, an automatic trip device adapted to be continuously operated by the power shaft, a latch carried by said lever, and means for periodically shifting the latch into the path of the trip device and causing the lever arm to shift the nut into engagement with the feed screw.

9. The combination of a rotatable drill spindle, a feed screw operatively connected with the spindle, feed mechanism comprising pivoted links and split feed nut members pivoted thereto, a cam-member connected with said links, a lever arm connected with said cam-member, a trip device, and means to periodically connect the lever arm with the trip device.

10. An automatic feed mechanism comprising a feed screw, a rotary sectional feed nut, pivoted supports to which the members of the feed nut are pivotally secured, cams co-acting to impart movement to the supports to shift the nut in and out of engagement with the feed screw, a lever for operating the cams, and an automatic trip latch controlling the lever.

11. An automatic feed mechanism comprising a feed screw, a loose sleeve thereon, a sectional feed nut co-operating with the feed screw, links pivoted upon the sleeve and supporting the members of the feed nut, a second sleeve loosely mounted upon the feed screw and provided with cam portions engaging the links, and means for giving motion to the last named sleeve to effect an opening and closing of the feed nut relatively to the feed screw.

12. An automatic feed mechanism comprising a feed screw, a loose sleeve thereon, a sectional feed nut co-operating with the feed screw, links pivoted upon the sleeve and supporting the members of the feed nut, a second sleeve loosely mounted upon the feed screw and provided with cam slots to receive the free ends of the links, means for rotating the link connected sleeves and the feed nut carried thereby, and means for producing relative motion between the sleeves lengthwise of the feed screw to cause the cam controlled links to open and close the feed nut.

857,539. STEREOSCOPE. HENRY E. RICHMOND, Westwood, N. J. Filed Mar. 30, 1906. Serial No. 308,843.



Claim.—1. A clamp consisting of a main member, clamping means connected thereto and finger members extending directly from the main member, said main member being so constructed as to permit the clamping means to be moved when the finger members are moved toward each other.

2. A clamp consisting of a main member, clamping

means connected thereto and finger members extending therefrom, a part of the main member being weakened so as to permit the clamping means to be moved when the finger members are moved toward each other.

3. A clamp consisting of a main member, clamping members connected thereto, and finger members extending therefrom, said main member being longitudinally slotted to permit the clamping member to be moved when the finger members are moved toward each other.

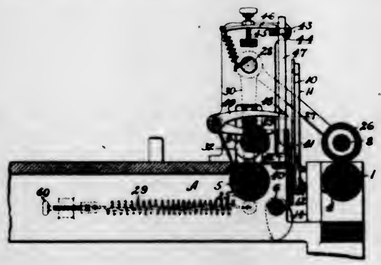
4. In a stereoscope, a shaft, a cross-bar slidably connected thereto, a clamp secured to the cross-bar, said clamp consisting of a main member, leaf springs extending at right angles from said main member and bearing upon the shaft, and finger pieces connected to the main member, said main member being weakened longitudinally to permit the leaf springs to be raised out of contact with the shaft when the finger members are moved toward each other.

5. In a stereoscope, a shaft, a cross-bar slidably connected thereto, a main member of a clamp secured to the cross-bar, leaf springs extending from said main member and bearing upon the shaft, and finger pieces connected to said main member, said main member being slotted longitudinally to permit the leaf springs to be moved out of contact with the shaft when the finger pieces are moved toward each other.

6. In a stereoscope, a shaft, a cross-bar slidably mounted thereon, a main member of a clamp secured to the cross-bar, leaf springs extending from said member and bearing upon the shaft, finger pieces connected to the main member, said main member being constructed to permit the leaf springs to be withdrawn from contact with the shaft when the finger pieces are moved together, and a guide connected to the clamp to hold the cross-bar in alinement with the shaft.

7. In a stereoscope, a shaft, a cross-bar provided with a slot on the under side thereof into which the shaft fits, said bar being slidably mounted on the shaft, a clamp having a main member spanning said slot and secured to the cross-bar, leaf springs integral with said member and bearing on the shaft, finger pieces integral with the main member, said main member being provided with a slot longitudinally thereof so that the leaf springs may be raised from the shaft when the finger pieces are moved toward each other, a guide secured to the cross-bar, said guide having an upturned member seated in the slot between the edge of the shaft and the shoulder of the slot.

857,540. MACHINE FOR CUTTING RIBBED FABRICS. FRANK W. ROBINSON, Reading, Pa., assignor of one-half to Oscar B. Wetherhold, Reading, Pa. Filed Sept. 1, 1906. Serial No. 332,992.



Claim.—1. A machine for cutting connectedly-formed stocking legs having transverse ribs, to lengths determined by the spacing of the ribs, comprising a regularly reciprocated shearing device, a fabric-detaining device or stop arranged to engage each rib during a cutting operation, and feed rolls arranged to stretch the portion of the fabric operated upon by the cutting device, substantially as set forth.

2. A machine for cutting connectedly-formed stocking legs having transverse ribs, to lengths determined by the spacing of the ribs, comprising a regularly reciprocated shearing device, continuously acting feed rolls in advance of said shearing device and a rib-engaging and disengaging stop located to the rear of said shearing device and arranged to detain the fabric against the stretching action of said feed-rolls during the shearing operation.

3. A machine for cutting connectedly-formed stocking legs having transverse ribs, to lengths determined by the spacing of the ribs, comprising a regularly reciprocated shearing device, continuously acting feed-rolls in advance of said shearing device, a rib-engaging and disengaging stop located to the rear of said shearing device and arranged to detain the fabric against the continued action of said feed rolls during the shearing operation, and means for regulating the feed-pressure of said continuously acting rolls so as to vary the stretching effect upon the fabric.

4. A machine for cutting connectedly-formed stocking legs having transverse ribs, to lengths determined by the spacing of the ribs, comprising a regularly reciprocated shearing device, continuously acting feed-rolls in advance of said shearing device, a rib-engaging and disengaging stop located to the rear of said shearing device and arranged to detain the fabric against the continued action of said feed rolls during the shearing operation, and intermittently acting auxiliary feed mechanism to the rear of said shearing device.

5. A machine for cutting connectedly-formed stocking legs having transverse ribs, to lengths determined by the spacing of the ribs, comprising a regularly reciprocated shearing device, continuously acting feed-rolls in advance of said shearing device, a rib-engaging stop located to the rear of said shearing device and arranged to detain the fabric against the continued action of said feed-rolls during the shearing operation and thereafter release the same, and auxiliary feed mechanism to the rear of said shearing device arranged to temporarily operate upon the fabric after it is released from said rib-engaging stop.

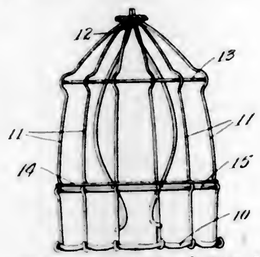
6. In a machine for cutting ribbed fabrics having a shearing device, means for operating the same at regular intervals, and a continuously acting feed mechanism in advance and an intermittently acting feed mechanism to the rear of said shearing device, a rib-engaging stop mechanism for the fabric located to the rear of said shearing device and comprising a bottom support for the latter, a coöperating rib-engaging device, and means for moving said device at regular intervals into and out of the path of the ribbed portions of the passing fabric.

7. In a machine for cutting ribbed fabrics having a shearing device, means for operating the same at regular intervals, and a continuously acting feed mechanism in advance and an intermittently acting feed mechanism to the rear of said shearing device, a rib-engaging stop mech anism for the fabric comprising a horizontally adjustable bottom support for the fabric, a coöperating rib-engaging device carried by said bottom support, and means for vertically moving said device at regular intervals into and out of the path of the ribbed portions of the passing fabric.

8. A machine for cutting ribbed fabrics comprising a shearing device, continuously acting feed rolls in advance thereof having a regulated feed-pressure as desired, an intermittently acting feed mechanism to the rear thereof, a horizontally fixed and vertically movable rib-engaging fabric-stop located adjacent said shearing device, and means for coöperatively moving said shearing device, intermittent feed mechanism, and rib-engaging fabric stop at regular feed intervals, substantially as set forth.

9. A machine for cutting ribbed fabrics comprising a shearing device, continuously acting feed rolls in advance thereof having a regulated feed-pressure as desired, an intermittently acting feed mechanism to the rear thereof, a horizontally fixed and vertically movable rib-engaging fabric-stop located adjacent said shearing device, means for coöperatively moving said shearing device, intermittent feed mechanism and rib-engaging fabric-stop at regular feed intervals, and means for varying such feed intervals, substantially as set forth.

857,541. LAMP-PROTECTOR. GEORGE A. RUSSELL, Worcester, Mass.; Mary C. Russell administratrix of said George A. Russell, deceased. Filed Dec. 14, 1903. Serial No. 185,020.



Claim.—1. As an article of manufacture, a lamp guard comprising a frame-work having an open end and a substantially closed end and centering fingers for holding an electric lamp-globe centrally in the frame, said centering fingers consisting of pieces of wire, each of which is fastened at one end to said closed end of the frame-work, and the rest of which is unattached, whereby the fingers can be sprung apart to receive the lamp.

2. As an article of manufacture, an electric lamp protector or guard comprising a wire frame-work consisting of a ring, an end-washer, frame-wires connecting the ring and end washer, with spreading rings for holding the frame wires in place, and spring fingers secured to the end washer with their free ends extending toward the open end of the wire-frame.

857,542. MEASURING-TOOL. WILLIAM THAIN, Newport, Ky., assignor of one-half to Charles A. Rebhun, Norwood, Ohio. Filed May 8, 1906. Serial No. 315,825.



Claim.—1. A measuring tool comprising two diverging unequal arms bent into handle form at their inner ends, a flexible measuring tape connected respectively with the free ends of said diverging arms, substantially as described.

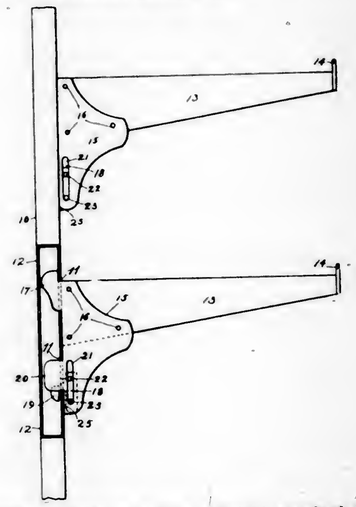
2. A measuring tool composed of a support bent to form a handle, and two diverging arms of unequal length projecting from the handle, and a flexible measuring tape connected to one of said arms and pivotally connected to the other diverging arm, substantially as described.

3. A measuring tool consisting of a support bent into handle form, and two diverging bow-shaped terminal arms of unequal lengths, a pivot on one of said arms, a flexible measuring tape pivotally secured upon said pivot, the opposite end of said tape attached to the end of the longer arm forming a bow-shaped measuring tool, substantially as described.

4. A measuring tool consisting of a support bent to form a handle, and two diverging unequal arms formed of one piece of metal, a flexible measuring tape connected respectively with the free ends of said diverging arms, substantially as described.

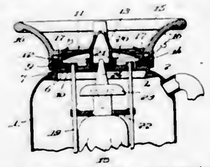
857,543. SELF-LOCKING SHELF-BRACKET. HORATIO THOMAS, Chicago, Ill., assignor to Thomas Bros. Mfg. Co., Chicago, Ill., a Corporation of Illinois. Filed Sept. 21, 1906. Serial No. 335,553.

Claim.—1. The combination with an upright standard having spaced apart openings therein, of a bracket-arm having at the lower and upper portions of its rear end extensions to fit in said openings, and a locking member movably mounted on the rear lower portion of the bracket-arm and having a rearwardly and downwardly extending projection, substantially as described.



2. The combination with an upright standard having spaced apart openings therein, of a bracket-arm having at its rear upper portion a rearwardly and upwardly projecting extension and provided on its rear lower portion with rearward spaced apart extensions and slots in its sides, a locking member located between the rear lower portion of the sides of the bracket-arm and having a rearwardly and downwardly extending projection, and a pin carried by the locking member and fitting in said slots, substantially as described.

857,544. CHEMICAL FIRE-EXTINGUISHER. JESSE B. THOMAS, Boston, Mass., assignor of one-half to Alfred J. Knight, Brookline, Mass. Filed Jan. 8, 1906. Serial No. 295,003.



Claim.—1. In a chemical fire-extinguisher, a canister having an externally-threaded neck, a cover having an outwardly extended stopper guide formed thereon, an annular lip on one and an opposed annular seat on the other of said members, a packing ring in the seat, to be engaged by the lip, an acid receptacle suspended within the canister, a gravity stopper therefor, and a cap having an open center to permit the stopper-guide to pass through it and adapted to screw onto the neck and directly engaging the exterior face of the cover, to force the lip into sealing engagement with the packing ring as the cap is screwed down.

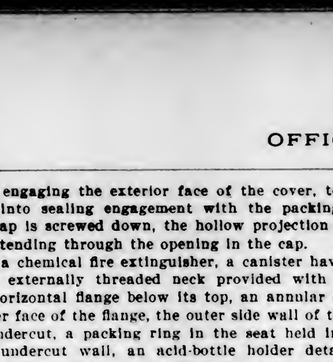
2. In a chemical fire-extinguisher, a canister having an externally threaded neck, a cover having a central hollow projection integral therewith and forming a stopper guide, an annular lip on one and an opposed annular seat on the other of said members, a packing ring in the seat, to be engaged by the lip, an acid receptacle suspended within the canister, a gravity stopper therefor, and a cap having an open center and adapted to screw onto the neck and

directly engaging the exterior face of the cover, to force the lip into sealing engagement with the packing ring, as the cap is screwed down, the hollow projection on the cover extending through the opening in the cap.

3. In a chemical fire extinguisher, a canister having an upright, externally threaded neck provided with an internal horizontal flange below its top, an annular seat in the upper face of the flange, the outer side wall of the seat being undercut, a packing ring in the seat held in place by the undercut wall, an acid-bottle holder detachably suspended from the inner wall of the seat, inside the packing ring and out of engagement therewith, a cover having a depending annular lip to bear upon the exposed face of said packing ring between the inner and outer walls of the seat, and a cap to screw upon the neck and directly engaging the exterior face of the cover to force the lip thereof into sealing engagement with the packing ring.

4. In a chemical fire-extinguisher, a canister having an externally threaded neck, a cover having a central hollow projection, outwardly extended therefrom, an annular lip on one and an opposed annular seat on the other of said members, a packing ring in the seat, to be engaged by said lip, an acid-bottle, a holder therefor detachably suspended within the canister, a gravity stopper for the bottle and guided by the hollow projection on the cover when the extinguisher is inverted, and an annular cap adapted to screw onto the neck and having a series of separated lugs integral therewith to directly engage the exterior of the cover, to force the lip and packing ring into sealing engagement, the hollow projection on the cover extending through the open center of the cap.

857,545. AUTOMATIC SELLING AND DELIVERING APPARATUS FOR LIQUIDS. LARS O. T. THOMPSON, Stockholm, Sweden, assignor to Carl Pehr Josef Jonsson, Stockholm, Sweden. Filed July 12, 1906. Serial No. 325,893.



Claim.—1. In apparatus of the class described, a receiving vessel, a vessel supporting lever formed of a pair of pivotally connected sections, a vessel counter-balancing means connected to the lever, and an auxiliary device engaging the outer section of the lever and serving to sustain the vessel during the reception of a portion of the load.

2. In apparatus of the class described, a receiving vessel having a bottom discharge valve, a vessel supporting lever having a pair of pivotally connected sections, a counter-balancing means connected to said lever, and automatic locking devices for holding the vessel in both load receiving and load discharging positions.

3. In apparatus of the class described, a receiving vessel, a counter-balanced lever supporting the same, said lever being formed of a pair of pivotally connected sections, of which the outer section is pivoted to the vessel, and yieldable connecting means tending to prevent independent movement of the outer section of said lever, and locking levers for engaging such outer section and holding the same in both load receiving and load discharging positions.

4. In apparatus of the class described, a load receiver, a counter-balanced lever supporting the same, said lever being formed of a pair of pivotally connected sections, a spring connecting the sections and tending to prevent independent movement of the outer section of the lever, a pivotally mounted member tending to support the outer section of the lever during the load receiving operation, the lever being movable relatively to said member to release position, and means for adjusting said member to thereby time the point of release.

5. In apparatus of the class described, a load receiving vessel, a counter-balanced lever for supporting the same, said lever being formed of two pivotally connected sections, a spring connecting the sections to each other and tending to prevent independent movement of the outer section of the lever under the weight of the load, a pin projecting from the outer section of the lever, an adjustable lever engaging said pin and tending to support the same during the reception of the load, said outer section of the lever being movable relatively to the support to a release position, and means for adjusting the supporting lever to vary the amount of the load received.

6. In apparatus of the class described, a load receiver, a counter-balanced lever supporting the same, said lever being formed of a plurality of pivotally connected sections, arms projecting from both sections, a tension spring connecting the arms, a pin projecting from the outer section of the lever, and a pair of spring held locking levers with which said pin engages, and from which it is automatically disengaged at the limit of its upward and downward movements.

7. In apparatus of the class described, a load receiver having a discharge valve at the bottom, a valve supply pipe above the load receiver, a counter-balanced supporting means for the receiver, a notched link connected to the stem of the supply valve, mechanism under the control of the support for engaging said notched link and moving the same to close the supply valve during the downward movement of the receiver, means for automatically opening and closing the discharge valve, a pawl engaging the notched link, and means for moving said pawl to release position.

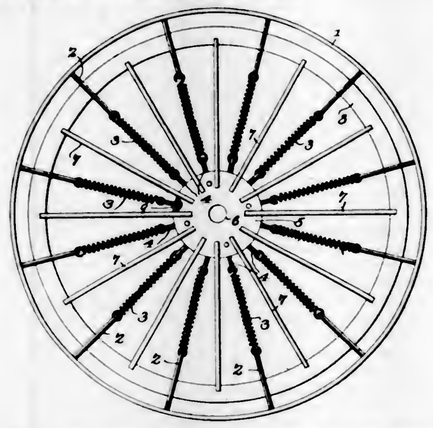
8. In apparatus of the class described, a load receiver having a bottom discharge valve, means for opening and closing the valve on the limit of downward and upward movements, a supply pipe, a valve therefor, a lever carried by the stem of said valve, a spring connected to the lever and tending to close the valve, a notched link connected to the lever, a pawl engaging said notched link, means for moving said pawl to release position, a pivotally mounted counter-balanced lever forming a support for the load receiver, and interengaging means between said lever and notched link, whereby the supply valve is moved to closed position during the descent of the load receiver.

857,546. VEHICLE-WHEEL. DELL WARD, Grand Rapids, Mich., assignor of one-fifth to John Kelsey and one-fifth to Henry J. Herbert, Detroit, Mich., one-fifth to Joseph R. Taylor, Grand Rapids, Mich., and one-fifth to Wallace W. Johnson, Chicago, Ill. Filed Apr. 2, 1906. Serial No. 309,403.

Claim.—1. A wheel comprising a hub, spokes, a felly, a concentric rim spaced from the felly, spaced loops carried by the rim and embracing the felly, and springs extending between the closed ends of the loops and the hub.

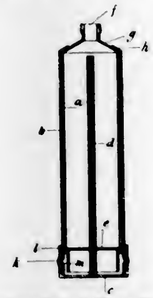
2. A wheel comprising a hub, a felly, a rim spaced from the felly, rigid spokes secured to the peripheral edge of the hub between the side faces of the latter and connected with the felly, radially disposed loops secured to the rim between the rigid spokes and embracing the felly, and springs extending between the closed ends of the loops and the peripheral edge of the hub and disposed in alinement with the rigid spokes.

3. A wheel comprising a hub, spokes, radially disposed eyes secured to the peripheral edge of the hub between the side faces and alternating with the spokes, a felly, a rim spaced from the felly, slotted hangers carried by the rim and embracing the felly, and helical springs hooked into the eyes and connected with the hangers.



4. A cushioning attachment for wheels comprising a rim, spaced radially disposed loops having their opposite ends extended through the rim and secured thereto, eyes secured to the peripheral edge of the hub between its side faces, and springs connecting the eyes and the closed ends of the adjacent loops.

857,547. EMPTYING DEVICE FOR COLLAPSIBLE TUBES. ALFRED H. W. WEBER, Hamburg, Germany, assignor to P. Beiersdorf & Co., Hamburg, Germany. Filed Jan. 8, 1906. Serial No. 295,119.

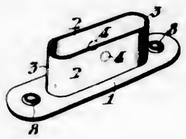


Claim.—The combination with a tube or container for paints and the like, of a second tube fitting outside the container and having an inturned flange at the top resting on the top of the container, a bead near the lower end of said second tube, a removable rotary flanged bottom cap for the second tube, a bead on said cap flange adapted to spring over and interlock with the bead on said second tube, a screw spindle secured to said cap and extending up into the container and a piston engaging said spindle.

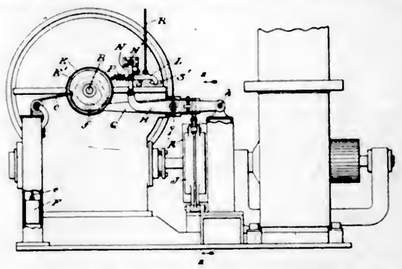
857,548. PULLEY CASING OR HOUSING. CHARLES A. BRINLEY, Philadelphia, Pa., assignor to The American Pulley Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 25, 1907. Serial No. 353,955.

Claim.—1. A housing of metal having an axle electrically welded at one or both of its ends to the metal of the housing.

2. An imperforate housing of metal having an inclosed axle substantially integral, at one or both of its ends, with the metal of the housing.



857,549. COMPOUND BRAKE. JOHN DILLON, Milwaukee, Wis., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Filed Mar. 22, 1906. Serial No. 307,334.



Claim.—1. In an elevator, the combination with an emergency brake, of means for automatically applying said brake at a predetermined point in the travel of the elevator car, and mechanical means operable from the car, for releasing such emergency brake at will.

2. In an elevator, the combination with hoisting apparatus, of a brake therefor, means for applying said brake at a predetermined point in the travel of the car, and means entirely mechanical for releasing said brake at will.

3. In an elevator, the combination with hoisting apparatus, of a brake therefor, a brake lever, means for actuating said lever about a fulcrum to apply the brake, and means entirely mechanical for destroying the fulcrum to effect the release of the brake.

4. In an elevator, the combination with hoisting apparatus, of a brake, a brake lever, means for actuating said lever to apply the brake, mechanism for holding the fulcrum of the brake stationary, and a device for actuating the holding mechanism to set free the said fulcrum and effect the release of the brake.

5. In an elevator, the combination with hoisting apparatus, of a brake therefor, means for applying said brake, toggle mechanism, and means for operating said toggle mechanism to effect a release of the brake.

6. In an elevator, the combination with hoisting apparatus, of a brake therefor, brake-applying mechanism, a toggle, means for holding said toggle in fixed position, a spring connected to said toggle, and a device for actuating said holding-means to permit said spring to break said toggle and effect the release of the brake.

7. In an elevator, the combination with hoisting apparatus, of a brake therefor, a brake-applying device, toggle mechanism co-acting with said brake-applying device to permit the latter to operate and to hold said brake applied, and means for operating the toggle mechanism to render the brake-applying device inoperative.

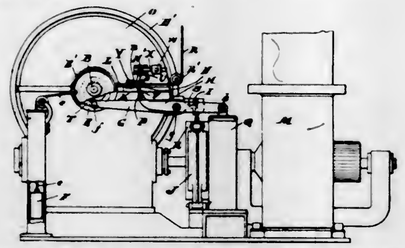
8. In an elevator, the combination with a hoisting device, of a brake therefor, a brake lever, stop-motion apparatus for said hoisting device and co-acting with said brake lever to effect the application of the brake, mechanical means for holding the fulcrum of the brake lever stationary, and an emergency brake rope for actuating said holding means to free the said fulcrum and effect the release of the brake.

9. In an elevator, the combination with a hoist; of a brake therefor; a brake lever; stop-motion apparatus

connected to said hoist and to said brake lever to effect the application of the brake at the limits of travel of the elevator car; an additional lever connected to a fixed pivot at one end and to a movable pivot at the other end; a pivotal connection between said levers to form the fulcrum of the brake lever; a toggle connected to one end of said additional lever; a latch and stops for holding said toggle, additional lever and fulcrum stationary; a spring connected to said toggle; and a rope connected to the latch to release the same and permit the spring to break the toggle and move both said levers to effect the release of the brake.

10. In an elevator, the combination with hoisting apparatus, of stop-motion mechanism connected thereto, a brake, a brake-applying lever, a cam connected between said stop-motion mechanism and said lever, mechanical means for holding the fulcrum of the brake lever stationary, a spring, and means for releasing said holding-means to free the said fulcrum and lift the brake lever to effect the release of the brake.

857,550. COMPOUND BRAKE. JOHN DILLON, Milwaukee, Wis., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Original application filed Mar. 22, 1906, Serial No. 307,334. Divided and this application filed Oct. 3, 1906. Serial No. 337,256.



Claim.—1. In an elevator, the combination with a brake, of a brake-applying device comprising a pivoted lever, mechanical means for holding the fulcrum of said lever stationary, a device for actuating said mechanical means to release the brake, and means for automatically resetting said mechanical means.

2. In an elevator, the combination with a brake, of a brake lever, means for automatically operating said brake lever to apply the brake, toggle mechanism connected to the brake lever, a stop engaged by the toggle for holding the fulcrum of the brake lever stationary, a rope connected to the toggle to actuate the same and effect the release of the brake, and means for automatically resetting the toggle mechanism and the brake lever fulcrum.

3. In an elevator, the combination with an emergency brake, of means for automatically applying said brake at a predetermined point in the travel of the elevator car, mechanical means operable from the car for releasing such emergency brake at will, and automatic means for resetting said mechanical means.

4. In an elevator, the combination with hoisting apparatus, a brake therefor, means for applying said brake at a predetermined point in the travel of the car, means entirely mechanical for releasing said brake at will, and automatic means for resetting said mechanical brake-releasing means.

5. In an elevator, the combination with hoisting apparatus, of a brake therefor, a brake lever, means for actuating said lever about the fulcrum to apply the brake, means entirely mechanical for displacing the fulcrum to effect the release of the brake, and means for automatically resetting said mechanical means.

6. In an elevator, the combination with hoisting apparatus, of a brake, a brake lever, means for actuating said lever to apply the brake, mechanism for holding the fulcrum of the brake stationary, a device for actuating the holding mechanism to set free the said fulcrum and effect the release of the brake, and automatic means for resetting said device to normal position.

7. In an elevator, the combination with hoisting apparatus, of a brake therefor, means for applying said brake, toggle mechanism, means for operating said toggle mechanism to effect a release of said brake, and automatic means for resetting said toggle mechanism.

8. In an elevator, the combination with hoisting apparatus, of a brake therefor, brake-applying mechanism, a toggle, means for holding said toggle in fixed position, a device for actuating said holding means to displace said toggle and effect the release of the brake, and automatic means for resetting said toggle.

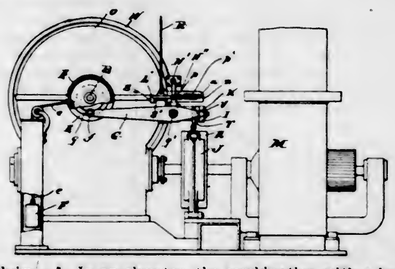
9. In an elevator, the combination with hoisting apparatus, of a brake therefor, a brake-applying device, toggle mechanism co-acting with said brake-applying device to permit the latter to operate, and to hold said brake applied, means for operating the toggle mechanism to render the brake-applying device inoperative, and means for automatically resetting the toggle mechanism to operative position.

10. In an elevator, the combination with a hoisting device, of a brake therefor, a brake lever, stop-motion apparatus for said hoisting device and co-acting with said brake lever to effect the application of the brake, mechanical means for holding the fulcrum of the brake lever stationary, an emergency brake rope for actuating said holding means to free the said fulcrum and effect the release of the brake, and automatic means for resetting said holding means.

11. In an elevator, the combination with a hoist: of a brake therefor; a brake lever; stop-motion apparatus connected to said hoist and to said brake lever to effect the application of the brake at the limits of travel of the elevator car; an additional lever connected to a fixed pivot at one end and to a movable pivot at the other end; a pivotal connection between said levers to form a fulcrum of the brake lever; a toggle connected to one end of said additional lever; a stop for limiting the movement of said toggle; a weight for holding the toggle against said stop, and the additional lever and fulcrum stationary; and a rope connected to the toggle to release the same and effect displacement of said fulcrum and the release of the brake.

12. In an elevator, the combination with hoisting apparatus, of stop-motion mechanism connected thereto, a brake, a brake-applying lever, a cam connected between said stop-motion mechanism and said lever, mechanical means for holding the fulcrum of the brake-lever stationary, means for releasing said holding means to free the said fulcrum and lift the brake-lever to effect the release of the brake, and automatic means for resetting said holding means.

857,551. COMPOUND BRAKE. JOHN DILLON, Milwaukee, Wis., assignor to Otis Elevator Company, Jersey City, N. J., a Corporation of New Jersey. Original application filed Mar. 22, 1906, Serial No. 307,334. Divided and this application filed Oct. 3, 1906. Serial No. 337,257.



Claim.—1. In an elevator, the combination with a hoist, of brake mechanism, a single actuating-lever, means for

normally holding the fulcrum of said lever stationary, and a device for operating said holding means to free the fulcrum and release the brake.

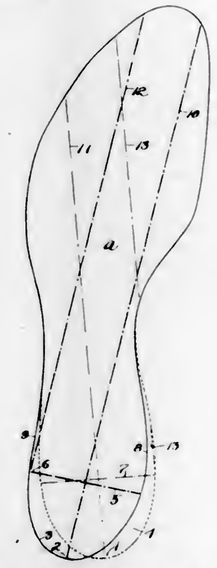
2. In an elevator, the combination with a hoist, of automatic stop-motion apparatus therefor, brake mechanism, a single actuating lever connected between said stop-motion apparatus and said brake mechanism, means for normally holding the fulcrum of said lever stationary, and a device for operating said holding means to free the fulcrum and release the brake.

3. In an elevator, the combination with a hoist, of a cam connected thereto, brake mechanism, a single actuating lever connecting the cam and brake mechanism, and toggle mechanism connected to said lever.

4. In an elevator, the combination with hoisting apparatus, of brake mechanism, a single actuating device, stop-motion mechanism operated by the hoisting apparatus when the car moves beyond predetermined limits of travel, to positively apply the brake, a toggle connected to said actuating device, means for holding the toggle stationary, means for releasing the toggle, and a spring for moving the toggle and an actuating device to release the brake when said toggle-releasing means is actuated.

5. In an elevator, the combination with hoisting apparatus, of brake mechanism, stop-motion mechanism operated by the hoisting apparatus, a toggle, a spring connected to said toggle, and tending to pull the same in a predetermined direction, a latch and stops for holding said toggle in a predetermined position against the action of said spring, a single actuating lever connected at its ends, respectively, to the stop-motion mechanism and to said brake mechanism, and fulcrumed at an intermediate point to said toggle, and a rope connected to said latch to release the latter and permit said spring to break the toggle and move the brake-lever to release the brake.

857,552. LAST. ERNEST A. EASTMAN, Chicago, Ill., assignor of one-half to Crawford, McGregor & Canby Company, Dayton, Ohio, a Corporation. Filed Nov. 17, 1906. Serial No. 343,875.



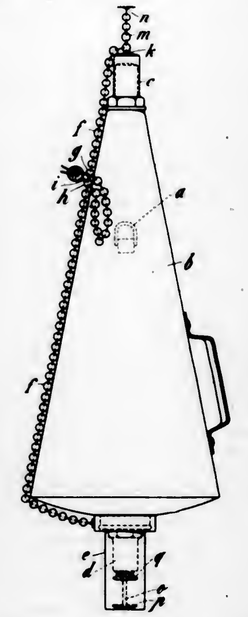
Claim.—1. A crooked last for boots and shoes, having the center line at the back of the heel located toward the outside of the last sufficiently to bring the center line of the last, which extends from said center line of the heel, perpendicular to the width line, at or inside the toe of the last while yet maintaining the crooked formation of the last as distinguished from a straight last.

2. A crooked last for boots and shoes, having the outside rear end of the heel built up and the inside rear end of the heel taken off, so as to render the crooked last abnormal but not straight and to bring the center line at the rear of the heel toward the outside sufficiently to swing the center line of the last nearer to the inside of the forepart than it is to the outside.

3. A crooked last for boots and shoes in which the toe has an inward swing, having its heel so shaped that the center line passing through the middle of the width line, and a line parallel thereto intersecting the outside end of said width line embrace the toe of the last between their forward ends.

4. A crooked last for boots and shoes in which the toe has an inward swing, having its heel so shaped that a line from the inside end of the width line projected forward parallel to the center line of the last falls outside of the inside surface of the forepart of the last.

857,553. PROTECTING DEVICE FOR CHEMICAL FIRE-EXTINGUISHERS. RAIMUND GRAF, Pohrlitz, Austria-Hungary, assignor to Minimax Consolidated Limited, London, England, a Firm. Filed Mar. 5, 1907. Serial No. 360,772.



Claim.—Protective device for fire extinguishers consisting of two caps, one over the nozzle at the top of the extinguisher and the other at the bottom covering the push button for effecting the action of the chemicals, a chain loosely connecting said caps and a seal between two links of the chain, overbridging a loop of a number of links of the chain, to keep the chain taut between the caps and thus prevent their accidental removal.

857,554. HORSESHOE. JAMES E. GROSJEAN, Lima, Ohio. Filed Sept. 24, 1906. Serial No. 336,008.

Claim.—1. The combination with the heel portion of a horseshoe having the lower face thereof provided with a

ledge and a pair of shoulders one arranged above the other, of a calk carrying plate having a flattened and an offset portion, said flattened portion mounted against said ledge and abutting against the lower one of said shoulders, means for securing the flattened portion to the heel portion of the horseshoe, a rearwardly extending lug carried by the offset portion of the calk carrying plate, and a slotted extension projecting at right angles with respect to the heel portion of the shoe and adapted to receive said lug, said lug and slotted extension constituting a stop for limiting the movement of the plate in either direction, combined with a cushioning element interposed between the offset portion of the plate and the heel portion of the shoe and abutting against the upper one of said shoulders.



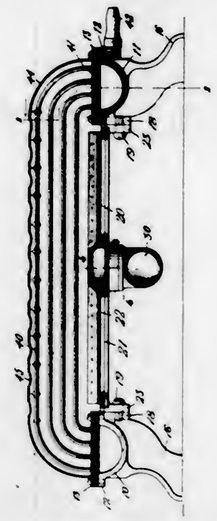
2. In combination a horseshoe having its heel formed of a stationary and a shiftable portion, the rear terminus of each of said portions being in vertical alinement with each other a cushioning element interposed between said portions, an extension formed integral with the rear terminus of one of said portions, extending at right-angles with respect thereto and provided with an open slot, and an attaching lug projecting rearwardly from the rear terminus of the other portion, formed integral therewith and adapted to take in the slot in said extension, said slotted angular extension and said lug connecting the shiftable portion to the stationary portion and further providing a means for limiting the movement of the shiftable portion in either direction.

3. In combination a horseshoe having its heel formed of a stationary and a shiftable portion, said stationary portion provided with a pair of shoulders and a ledge a part of said shiftable portion positioned against said lug and abutting against one of the shoulders, a cushioning element interposed between said portions, and abutting against the other of said shoulders an extension formed integral with the terminus of one of said portions, extending at right-angles with respect thereto and provided with a slot, an attaching lug formed integral with and extending rearwardly from the other of said portions and adapted to take in the slot in said extension, said slotted angular extension and said lug connecting the shiftable portion to the stationary portion and further constituting means for limiting the movement of the shiftable portion in either direction.

4. The combination with the heel portion of a horseshoe having the rear terminus thereof provided with an extension projecting at right-angles with respect thereto and provided with an open slot, of a calk carrying plate having the forward end thereof secured to said heel portion and the other end provided with a rearwardly extending lug adapted to engage the slot in said extension for connecting the rear end of said plate with the heel portion, and a cushioning element interposed between said plate and said heel portion and having the rear end thereof inclosed by the said extension, combined with means extending in the cushioning element for limiting the compression thereof.

5. In combination a horseshoe having its heel formed of a stationary and a shiftable portion, a cushioning element interposed between the said portions, an extension formed integral with and projecting at right-angles to the rear terminus of one of said portions and provided with an open slot, a rearwardly extending attaching lug formed integral with and projecting from the rear terminus of the other portion and adapted to take in the slot in said extension, said extension and said lug connecting the shiftable portion to the stationary portion and further constituting a means for limiting the movement of the shiftable portion in either direction, and means carried by one of said portions and engaging in the cushioning element to retain it in position and limit the compression thereof.

857,555. WATER-HEATER. BROOKS HAYNIE, Austin, Tex., assignor to King Manufacturing Co., Austin, Tex. Filed June 2, 1906. Serii No. 319,904.



Claim.—1. In a water heater, headers having horizontally disposed tube sheets, the upper faces of which are recessed, water tubes extending through openings in the recessed portion of each of said tube sheets, and fusible metal disposed in each of the recesses and surrounding the end portions of the tubes.

2. In a water heater, a pair of spaced headers having supporting members, a burner section detachably connected to said headers and forming a rigid connection within the same, and tubes extending from one header to the other.

3. In a water heater, the combination with a pair of spaced headers, of a burner forming a spacing and connecting means between the headers, and tubes connecting the headers and extending over the burner.

4. In a water heater, a pair of spaced headers, a burner detachably connected to the headers and serving as a connecting means between the headers, and tubes connecting the headers and arranged above the burner.

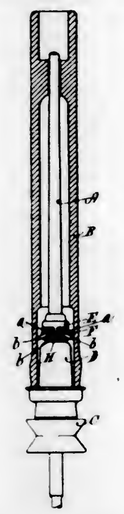
5. In a water heater, a pair of headers, each comprising a substantially trough shaped lower section having a dividing partition, and an upper tube sheet detachably connected to the lower section, supporting feet upon the headers, a burner detachably connected to the two headers and serving as a rigid connecting means between them, and water tubes extending between the tube sheets and arranged above the burner.

857,556. BOBBIN-CLUTCHING DEVICE FOR SPINDLES. HENRY E. HUGHES, Central Falls, R. I. Filed Mar. 13, 1906. Serial No. 305,895.

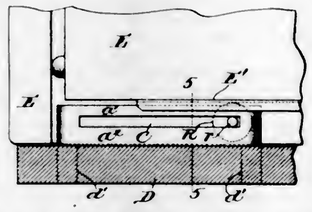
Claim.—1. The combination of a spindle, with a ring of chain links held to revolve with the spindle, and adapted to engagement with the wall of the bore of the bobbin upon the rotation of the spindle.

2. The combination of a ring of chain links, and a spindle provided with a groove adapted to hold the inner edge of the outwardly extending links of the chain, with means for preventing the rotation of the said chain upon the spindle.

3. The combination of a ring of chain links, with a spindle provided with a groove adapted to hold the inner edge of the outwardly extending links of the chain, the protecting collar above the said groove, and means for holding the chain against rotation upon the spindle.



857,557. ROLLER-SUPPORT FOR MOVABLE DOORS AND OTHER OBJECTS. DAVID E. HUNTER, Cambridge, Mass., assignor to Library Bureau, Boston, Mass., a Corporation of New Jersey. Filed Feb. 15, 1907. Serial No. 357,461.



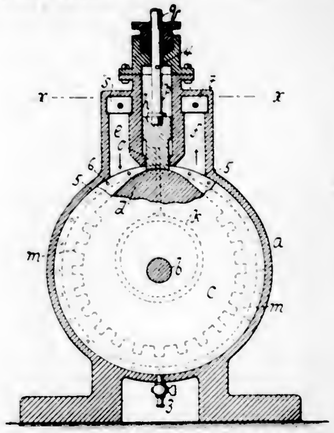
Claim.—1. A roller support consisting of a pair of plates, each in a single piece and formed with a slotted bridge portion flanked by post portions laterally offset from the bridge portion, the pair of plates placed face to face with the post portions in contact and the slotted bridge portions spaced apart by the offset post portions.

2. The combination with a roller support consisting of a pair of plates, each in a single piece formed with a slotted bridge portion flanked by post portions laterally offset from the bridge portion, the pair of plates placed face to face with the post portions in contact and the slotted bridge portions spaced apart by the offset post portions, of a roller provided with lateral trunnions resting in the said slotted bridge portions.

857,558. ROTARY ENGINE. THOMAS KEENAN, Brooklyn, N. Y., assignor of one-half to Frederick W. Sparks, Brooklyn, N. Y. Filed Mar. 20, 1907. Serial No. 363,500.

Claim.—1. A rotary engine comprising a drum with cylinder and abutment valve, a chamber for the abutment valve and a stem detachably connected to the valve so that the stem can be held raised from the valve while the latter is in operation.

2. A rotary engine having a drum and a cylinder into which the drum is fitted, said drum having a circumferential groove and steam or pressure entrance to the groove to form a fluid packing.



3. A rotary engine having a drum and a cylinder into which the drum is fitted, said drum having flanges with circumferential grooves open toward the cylinder and pressure entrance into the grooves, said grooves adapted to receive fluid to form a packing.

4. A rotary engine involving a cylinder, a drum having a shaft revolubly mounted in said cylinder, a projection on said drum forming a cam and adapted to extend in close proximity to the inner bore of the cylinder, a plurality of pipes leading into the cylinder forming a steam inlet and outlet pipe, a slidable gate valve intermediate the inlet and outlet pipes, a supply pipe having communication with the inlet pipe, a valve for controlling said supply pipe, an eccentric mounted on said shaft and associated with the valve for actuating the same, and alternating cut-off valves for the inlet and exhaust pipes.

5. A rotary engine involving a cylinder, a drum having an off-set rotatively mounted in said cylinder, a casing having an inlet and exhaust passages in communication with said cylinder, a slide valve compartment, a slide gate valve mounted in said compartment, a main supply pipe having communication with the casing, a valve for controlling the main supply pipe, means for actuating the same, alternating movable valves for controlling the inlet and outlet passages, and peripheral teeth on said drum forming impact blades, said drum having circumferential grooves provided with communication with the interior of the cylinder to form fluid packing.

6. A rotary engine involving a cylinder, a drum having an off-set rotatively mounted in said cylinder, a casing having an inlet and exhaust passages in communication with said cylinder, a slide valve compartment, a slide gate valve mounted in said compartment, a main supply pipe having communication with the casing, a valve for controlling the main supply pipe, means for actuating the same, alternating movable valves for controlling the inlet and exhaust passages, peripheral teeth on said drum forming impact blades, said drum having circumferential grooves provided with communication with the interior of the cylinder to form fluid packing, and a detachable guide stem for the sliding gate valve.

857,559. SNAP-FASTENER STUD. HERMAN KERNGOOD, Baltimore, Md., assignor to Alma Manufacturing Company of Baltimore City, Baltimore, Md., a Corporation of Maryland. Filed July 16, 1906. Serial No. 326,358.

Claim.—1. A snap-fastener stud, having an outer spring composed of a dome and legs, an inner spring-supporting eyelet having a top smaller than its barrel and extending up into the spring close to its dome and whose barrel extends circumferentially to the legs of the spring, and

means to unite the spring and inner eyelet, combined with a stepped rivet for attaching the stud to an article, said rivet extending up into the inner eyelet, substantially filling its bottom and having its top clenched at and to the smaller top of the inner eyelet.

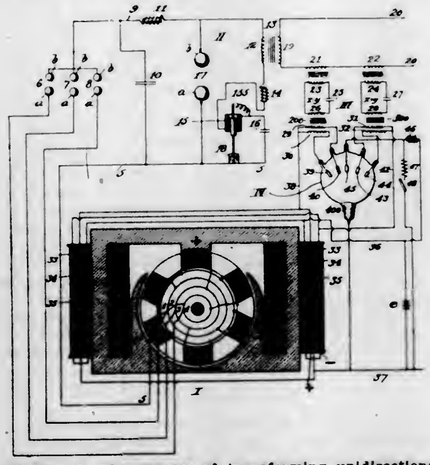


2. A snap-fastener stud, having an outer spring, and an inner open-end spring-supporting eyelet whose top extends up beneath and in proximity to the dome of the spring and is turned in, and whose barrel extends circumferentially to the legs of the spring, combined with a fastening rivet for attaching the stud to an article, said rivet extending up into the inner eyelet and through the open top and its top clenched upon the turned-in top of said eyelet for effecting such attachment.

3. A snap-fastener stud, having an outer spring, provided with a dome, an inner stepped eyelet extending up toward the dome of the spring, means to unite the spring and eyelet, and an attaching rivet having a reduced upper end extending approximately to the dome of the spring, a shoulder next below, a portion below the shoulder of a diameter to substantially fill the inner eyelet, and a base flange.

4. A snap-fastener stud, having an outer spring composed of a dome and legs, and an inner open-end spring-supporting eyelet whose top extends up toward said dome and is turned in and whose barrel extends circumferentially to the legs of the spring, combined with a rivet for attaching the stud to an article, said rivet extending up into the inner eyelet, substantially filling its bottom and having a reduced top clenched at and to the top of the eyelet.

857,560. PROCESS FOR GENERATING HIGH-FREQUENCY ALTERNATING CURRENTS. MAURICE LEBLANC, Paris, France, assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Filed Feb. 5, 1904. Serial No. 192,227.



Claim.—1. The process of transforming unidirectional currents into currents which are alternating and of constant frequency, which consists in charging a resonator, having R^2 small with respect to $\frac{4l}{c}$, with unidirectional currents for one portion of each alternating period, and discharging the resonator through a path of low resistance during the other portion of each alternating period, substantially as described.

2. The process of transforming unidirectional currents into currents which are alternating and sinusoidal, which consists in charging the resonator with unidirectional current for one portion of each alternating period so that it shall store an amount of electrical energy which is large with respect to the energy consumed in the system in one period, and discharging the resonator through a path of low resistance during the other portion of this alternating period, substantially as described.

3. The process of transforming unidirectional currents into practically sinusoidal alternating currents of effectively constant frequency, which consists in charging a resonator having R^2 small with respect to $\frac{4l}{c}$, with unidirectional currents for one portion of each alternating period, and so that it shall store an amount of electrical energy which is large with respect to the energy consumed in the system in a period, and discharging the resonator through a path of low resistance during the other portion of this alternating period, substantially as described.

4. The process of generating and maintaining upon a working circuit alternating currents of a constant normal frequency, which consists in generating unidirectional currents, transforming these into alternating currents by periodically charging a resonator therewith and discharging the resonator through a low resistance path, causing a departure from the normal alternating current frequency to bring about a variation in the current flowing in an electrically tuned circuit, and utilizing such variation of current flow to change the excitation of the prime generator of unidirectional currents to restore the alternating frequency to normal, substantially as described.

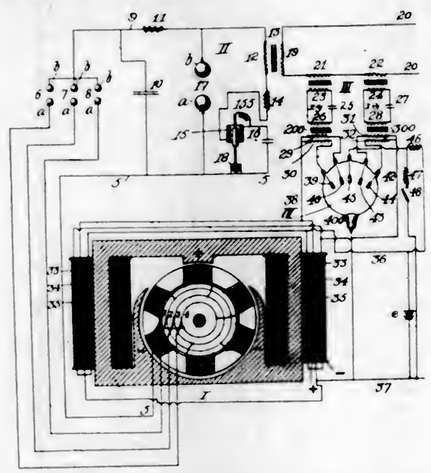
5. The process of maintaining at a normal value the frequency of an alternating current transformed from a unidirectional current, which consists in causing a departure from this frequency to respectively increase and decrease the currents flowing in two differently tuned electrical circuits, and utilizing such variation of current flow differentially to change the excitation of the generator of unidirectional current to restore the alternating frequency to normal, substantially as described.

6. The process of generating and maintaining upon a working circuit alternating currents of a constant normal frequency, which consists in generating unidirectional currents, transforming these into alternating currents by periodically charging a resonator therewith and discharging the resonator through a low resistance path, causing a departure from the normal frequency of such alternating currents to respectively increase and decrease the currents flowing in two differently tuned electrical circuits, and utilizing such variation of current flow differentially to change the excitation of the generator of unidirectional current to restore the alternating frequency to normal, substantially as described.

857,561. APPARATUS FOR GENERATING HIGH-FREQUENCY ALTERNATING CURRENTS. MAURICE LEBLANC, Paris, France, assignor to Westinghouse Electric & Manufacturing Company, a Corporation of Pennsylvania. Original application filed Feb. 5, 1904, Serial No. 192,227. Divided and this application filed Mar. 14, 1906. Serial No. 306,033.

Claim.—1. A system for transforming unidirectional currents into alternating currents of constant frequency comprising a line carrying continuous currents, a resonator having R^2 small with respect to $\frac{4l}{c}$, an induction coil having its primary connected with the resonator, and an electric exploder in shunt of the resonator, substantially as described.

2. A system for transforming unidirectional currents into alternating currents which are sinusoidal in form, comprising a line carrying continuous currents, a resonator arranged to store an amount of energy which is large with respect to that consumed in an alternating period, an induction coil having its primary connected with the resonator, and an electric exploder in shunt of the resonator, substantially as described.



3. A system for transforming unidirectional currents into sinusoidal currents of constant frequency, comprising a line carrying continuous currents, a resonator having R^2 small with respect to $\frac{4l}{c}$ and arranged to store an amount of energy which is large with respect to that consumed in an alternating period, an induction coil having its primary connected with the resonator, and an electric exploder in shunt of the resonator, substantially as described.

4. A prime generator of unidirectional current and an exciter winding therefor, a circuit carrying alternating currents transformed from the unidirectional currents, and an electrically tuned circuit associated with this circuit and with the exciter winding to maintain the frequency of the alternating currents constant, substantially as described.

5. A prime generator of unidirectional currents, and an exciter winding therefor, a circuit carrying alternating currents transformed from the unidirectional currents, and an electrically tuned circuit and an electric valve or current rectifier, associated with the alternating current circuit and the exciter winding to maintain the frequency of the alternating current constant, substantially as described.

6. A prime generator of unidirectional currents and a pair of differential exciter windings therefor, a circuit carrying alternating currents of a normal frequency transformed from the unidirectional currents, and circuits electrically tuned to a frequency respectively above and below normal associated, on the one hand with the alternating current circuit, and, on the other hand, with the differential exciter windings respectively, substantially as described.

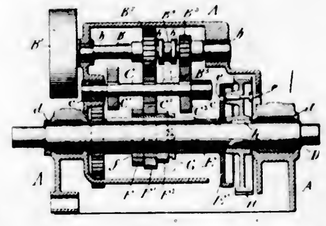
7. A prime generator of unidirectional currents and a pair of differential exciter windings therefor, a circuit carrying alternating currents of a normal frequency transformed from the unidirectional currents, circuits electrically tuned to a frequency respectively above and below normal, and electrical valves or current rectifiers each respectively connected to a tuned circuit and an exciter winding, substantially as described.

8. A prime generator of unidirectional current and an exciter winding therefor, an electric resonator and an exploder in shunt thereof for transforming the unidirectional current into alternating currents, and an electrically tuned circuit energized by these alternating currents and associated with the exciter winding to maintain the alternating currents of normal frequency, substantially as described.

9. A prime generator of unidirectional current and a pair of differential exciter windings therefor, an electric resonator and an exploder in shunt thereof for transforming the unidirectional current into alternating currents, and a pair of circuits energized by these alternating currents, tuned to a frequency respectively above and below the normal frequency it is desired to maintain, and in turn energizing the exciter windings of the prime generator to maintain the normal frequency constant, substantially as described.

10. A prime generator of unidirectional current and a pair of differential exciter windings therefor, an electric resonator and an exploder in shunt thereof for transforming the unidirectional current into alternating currents, a pair of circuits energized by these alternating currents and tuned to a frequency respectively above and below the normal frequency it is desired to maintain, and electric valves or current rectifiers connected to a tuned circuit and an exciter winding respectively, substantially as described.

857,562. SPEED-CHANGING DEVICE. RICHARD K. LE BLOND and WILLIAM F. GROENE, Cincinnati, Ohio. Filed July 8, 1905. Serial No. 268,845.



Claim.—1. In combination, a driving shaft, a driven shaft, an intermediate shaft, a series of gear-wheels mounted on the intermediate shaft adapted to rotate in unison and prevented from longitudinal movement, said driven shaft being geared to said gears, a sleeve on the driving shaft and a plurality of pinions thereon arranged to be thrown into mesh with the gear wheels on the intermediate shaft.

2. In combination, a driving shaft, a driven shaft, and an intermediate shaft, gears on said intermediate shaft adapted to rotate in unison and prevented from longitudinal movement, a sliding sleeve on the driven shaft, a series of gears on said sleeve, arranged to mesh with the gears on the intermediate shaft, a sleeve arranged to slide on the driving shaft, a series of gears thereon arranged to mesh with the gears on said intermediate shaft, and means for shifting the sleeves so as to change the speed of the driven shaft.

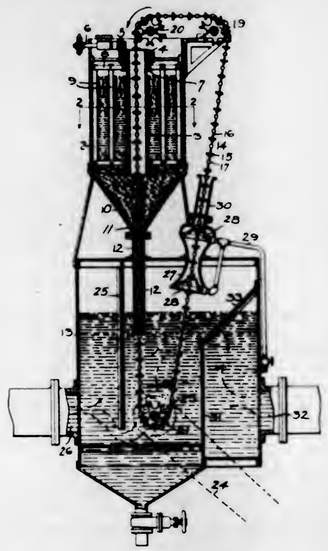
857,563. APPARATUS FOR FEEDING LIME TO WATER. FREDERICK B. LEOPOLD, Evanston, Ill., and CHARLES A. BROWN, Lorain, Ohio; said Leopold assignor to Pittsburgh Filter Manufacturing Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 13, 1906. Serial No. 325,986.

Claim.—1. In apparatus of the character described, the combination of a suitable lime-paste receptacle, a water tank communicating therewith, means for subdividing the lime paste, and means for feeding such subdivisions successively to said water tank.

2. In apparatus of the character described, the combination of a lime-paste receptacle, a water reservoir communicating therewith, and a series of pistons operating in succession to feed the lime-paste to said reservoir.

3. In apparatus of the character described, the combination of a lime-paste receptacle, a water reservoir communicating therewith, an endless conveyer carrying pis-

tons, and means for moving said conveyer through said receptacle and into said reservoir.



4. In apparatus of the character described, the combination of a lime-paste receptacle, a water reservoir, a cylinder and a series of pistons adapted to enter said cylinder and feed the paste to said reservoir.

5. In apparatus of the character described, the combination of a lime-paste receptacle, a water reservoir communicating therewith, a cylinder, and endless conveyer carrying pistons adapted to pass through said cylinder and feed the paste to said reservoir.

6. In apparatus of the character described, the combination of a lime-paste receptacle, a water reservoir communicating therewith, an endless conveyer carrying a series of pistons adapted to feed the paste to said reservoir, and means for spraying said pistons.

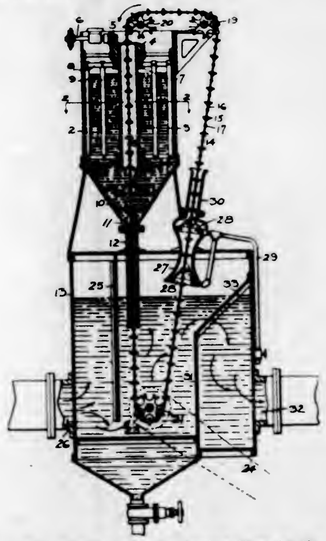
7. In apparatus of the character described, the combination of a lime-paste receptacle, a water reservoir communicating therewith, an endless conveyer carrying a series of pistons adapted to feed the paste to said reservoir, a receptacle through which said pistons pass, and means for spraying said pistons therein.

8. In apparatus of the character described, the combination of a lime-paste receptacle, a water reservoir communicating therewith, an endless conveyer carrying a series of pistons adapted to feed the paste to said reservoir, a baffle in said reservoir extending below the inlet thereto, and said conveyer extending down adjacent to the lower end of said baffle.

9. In apparatus of the character described, the combination of a lime-paste receptacle, a water reservoir communicating therewith, an endless conveyer carrying a series of pistons adapted to feed the paste to said reservoir, a receptacle through which said pistons pass, said receptacle having an enlarged portion, a spray pipe in said enlarged portion, and a contracted portion leading from said receptacle.

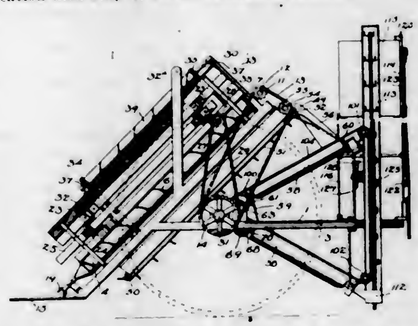
10. In apparatus of the character described, the combination of a lime paste receptacle, a water reservoir communicating therewith, a contracted extension or tube extending from said lime paste receptacle down into the water in said tank, an endless conveyer carrying pistons, and means for moving said conveyer through said lime paste receptacle and said tube.

857,564. METHOD OF FEEDING LIME TO WATER. FREDERICK B. LEOPOLD, Evanston, Ill., and CHARLES A. BROWN, Lorain, Ohio; said Leopold assignor to Pittsburgh Filter Manufacturing Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed July 13, 1906. Serial No. 325,987.



Claim.—The method of introducing lime in the form of paste to water to be treated, consisting in subdividing the mass of paste into previously determined quantities, and then feeding the subdivisions successively directly to the water to be treated.

857,565. CORN-HUSKING MACHINE. WILLIAM B. METCALF, Humboldt, Nebr. Original application filed Apr. 26, 1905, Serial No. 257,521. Divided and this application filed May 1, 1906. Serial No. 314,695.



Claim.—1. Husking mechanism including a pair of rolls disposed in an inclined position, an additional pair of rolls supported in an oppositely inclined position beneath the first pair of rolls, and an endless conveyer having leads operating adjacent to the upper sides of the pairs of rolls.

2. Husking mechanism including a pair of rolls disposed in an inclined position, an additional pair of rolls supported in an oppositely inclined position beneath the first pair of rolls, and an endless conveyer having leads operating adjacent to the upper sides of the pairs of rolls and provided with resilient ear engaging means.

3. In a machine of the class described, a pair of husking rolls disposed in an inclined position, an additional pair of husking rolls disposed in an oppositely inclined position beneath the first pair of rolls, inclined pans having sieve tops supported beneath the pairs of rolls, a chute connecting the lower end of the upper pan with the upper end of the lower pan, and a discharge spout at the lower end of the lower pan.

4. In a machine of the class described, a set of husking rolls including a plurality of pairs of rolls disposed in oppositely inclined positions, one pair beneath another, ear guiding means connecting the lower ends of upper rolls with the upper ends of lower rolls, grain pans having sieve tops disposed beneath the pairs of rolls, connecting means between said grain pans, and a discharge spout at the lower end of the lowermost grain pan.

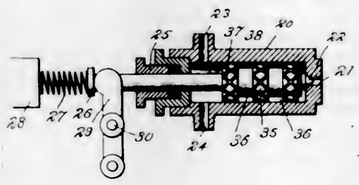
5. In a machine of the class described, husking mechanism, conveying means, pivotally supported parallel bars, and an ear receptacle pivotally supported upon said bars.

6. In a machine of the class described, husking mechanism, an ear conveyer, a movably supported ear receptacle, a hinged side door for the latter, and latch means to retain said door closed.

7. In a machine of the class described, husking mechanism, ear conveying means, a movably supported ear receptacle, means for sustaining said receptacle in receiving position and for retaining it when permitted to move into discharging position, and means for restoring said receptacle into normal position.

8. In a machine of the class described, a supporting frame, pairs of parallel uprights pivotally connected with said frame, an ear receptacle pivotally supported upon said pairs of uprights and having a hinged side door, a winding drum having a ratchet, a pawl engaging said ratchet, and flexible connecting means between said winding drum and the uprights.

857,566. ATOMIZING SPRAY-NOZZLE. ALESSANDRO FRANCHETTI, New York, N. Y., assignor to Delavergne Machine Company, New York, N. Y., a Corporation of New York. Filed Sept. 28, 1906. Serial No. 336,567.



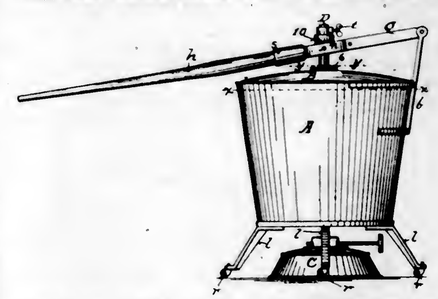
Claim.—1. An atomizing spray nozzle having a plurality of intersecting ducts or passage-ways, a common spray outlet communicating with the ducts or passage-ways, and intervening chambers or recesses of larger capacity than the ducts or passage-ways in which the fuel is stored when the common spray outlet is closed.

2. An atomizing spray nozzle comprising a nozzle casing having a spray outlet, a piston fitting within the nozzle casing and provided with a plurality of intersecting grooves or channels in its periphery, inlets to the casing for oil and compressed air, and a valve controlling the flow through the nozzle.

3. An atomizing nozzle comprising a casing having a spray outlet and compressed air and oil inlets, a needle valve controlling the spray outlet, and a piston mounted upon the needle valve and formed with a plurality of intersecting grooves or channels in its periphery for the passage and mixing of the air and oil.

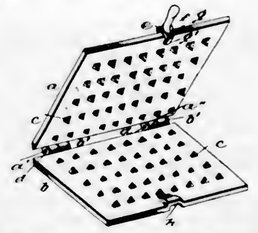
4. An atomizing spray nozzle comprising a casing having a spray outlet and compressed air and oil inlets, a needle valve controlling the spray outlet, means for operating the needle valve, and a piston mounted upon the needle valve stem and formed in the periphery with a plurality of intersecting grooves or channels, and a plurality of circumferential grooves for the purpose set forth.

857,567. POUNDER-WASHER. RICHARD HAYES, Salt Lake City, Utah. Filed June 19, 1906. Serial No. 322,493.



Claim.—An upright cylindrical tub, provided with a top carrying a guide-plate, and a lug fitted to operate within a spirally disposed slot in a laterally reciprocating and axially rotating bar, carrying near the upper end a trunnioned sleeve, fitted with a union, and a ball-bearing ring with balls with a set screw; said bar provided with a cap-nut, and carrying a washer and a hub fitted near the lower end; the hub provided with a multiple of projecting arms and cones, with means for heating the water in said tub, as and for the purposes described.

857,568. MEAT-TENDERER. JOHN W. HURLEY, Portland, Oreg., assignor of one-half to Henry Clay Jordan. Filed Aug. 18, 1906. Serial No. 331,165.



Claim.—1. In a meat tenderer, the combination of a pair of jaws provided with teeth on their inner faces, and respectively made with hinge joints by which the jaws are separably hinged, means for locking the hinge joints against inadvertent separation, lever-like means pivoted on the front end of one jaw and arranged to engage with the front end of the other, to forcibly compress the jaws.

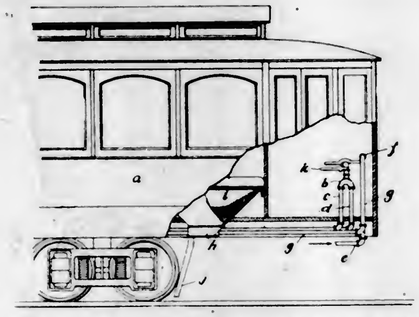
2. A meat tenderer comprising a pair of jaws provided with teeth on their inner faces, one thereof being made with perforated hinge-knuckles, and the other with hinge-knuckles provided with projecting pintles removably inserted in the perforated hinge-knuckles; one pair of hinge-knuckles being provided with means preventing inadvertent disengagement and consisting in one member of said pair of hinge-knuckles being made with a rigid projecting arm having a lug on its extremity arranged to engage with the other member, and the latter having a recess arranged to allow the lug to pass when brought in alinement therewith.

REISSUES.

12,661. MEANS FOR OPERATING PNEUMATIC VALVES. WILLIAM LINTERN, West Park, Ohio, assignor to The Nichols-Lintern Company, a Corporation of Cleveland, Ohio. Filed May 1, 1905. Serial No. 258,436. Original No. 765,743, dated July 26, 1904.

Claim.—1. The combination with a controlling handle arranged to be swung horizontally through an arc of a

circle, of a self-closing valve, and a hand-lever located in operative proximity to said handle adapted to operate said valve in any position of said handle, substantially as set forth.



2. The combination with a controlling handle arranged to be swung horizontally through an arc of a circle, of a self-closing valve, and a grip-lever upon said handle adapted to operate said valve in any position of said handle, substantially as set forth.

3. The combination with an air-brake valve and a track sanding device, of a controller handle for operating the said air-brake valve arranged to swing through an arc of a circle, a self-closing valve, and a hinged hand-lever located in close proximity to said controller handle and arranged to be in close and constant operating relation with both the said self-closing valve and the controller handle, substantially as set forth.

4. The combination with an air-brake valve and a track sanding device, of a controller handle for said air-brake valve arranged to swing through an arc of a circle, a self-closing valve, a hinged lever located in close proximity to said controller handle and arranged to be in close and constant operating relation with both the self-closing valve and the controller handle, and means for automatically operating the said self-closing valve at a predetermined position of the said controller handle, substantially as set forth.

5. The combination with a controlling handle arranged to be swung through an arc of a circle, of a self-closing valve, and a lever located in close proximity to said handle provided with a circular segment adapted to operate said valve in any position of said handle, substantially as set forth.

6. The combination with a controlling handle arranged to be swung through an arc of a circle, of a self-closing valve, and a grip lever upon said handle provided with a circular segment adapted to operate said valve in any position of said handle, substantially as set forth.

7. The combination with a controlling handle arranged to be swung through an arc of a circle, of a self-closing valve, and a grip lever hinged to said handle provided with a circular segment through which said valve may be operated at any position of said handle, substantially as set forth.

8. The combination of a controlling handle arranged to be swung through an arc of a circle, a self-closing valve, a lever located in close proximity to said handle, a circular segment carried by said lever, and an elevated surface upon said segment adapted to open said valve automatically when said controlling handle is swung to an emergency position, substantially as set forth.

9. The combination of a controlling handle arranged to be swung through an arc of a circle, a self-closing valve, a grip lever upon said handle, a circular segment carried by said grip lever, and an elevated surface upon said segment connected to the face thereof by an inclined plane and adapted to open said valve automatically when said controlling handle is swung to an emergency position, substantially as set forth.

10. In apparatus of the class described, the combination of a controlling handle mounted to be swung through an arc of a circle, a hinged lever extended in close proximity to said handle and provided with a circular segment, and a self-closing valve provided with a projecting stem arranged to be operated by the segment of said hinged lever, substantially as set forth.

11. In apparatus of the class described, the combination of a controlling handle mounted to be swung through an arc of a circle, a grip lever having a hinge attachment to said handle and provided with a circular segment, and a self-closing valve provided with a projecting stem arranged to be operated by the segment of said grip lever, substantially as set forth.

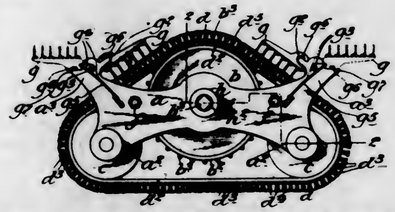
12. In apparatus of the class described, the combination of a controlling handle mounted to be swung through an arc of a circle, a grip lever having a hinge attachment to said handle, a suitable top for said grip lever, a circular segment carried by said grip lever, and a self-closing valve provided with a projecting stem arranged to be operated by the segment of said grip lever, substantially as set forth.

13. In apparatus of the class described, the combination of a controlling handle mounted to be swung through an arc of a circle, a grip lever having a hinge attachment to said handle, a suitable stop for said grip lever, a circular segment carried by said grip lever, an elevated and inclined surface upon said segment, and a self-closing valve provided with a projecting stem arranged to be operated by the segment of said grip lever and opened automatically by said elevated and inclined surface when said controlling handle is swung to an emergency position substantially as set forth.

14. The combination with an air-brake controlling valve, of a handle thereof having a limited travel about the operating axis of said valve, a grip lever hinged so as to travel with said handle, a circular rim carried by said grip lever, and a supplementary self-closing valve provided with a projecting stem arranged to be operated by the rim of said grip lever, substantially as set forth.

15. The combination with an air-brake controlling valve, of a handle thereof having a limited travel about the operating axis of said valve, a grip lever hinged so as to travel with said handle, a circular rim carried by said grip lever, a supplementary self-closing valve provided with a projecting stem arranged to be operated by the rim of said grip lever, and a raised portion of said rim adapted to automatically open said supplementary valve when said brake valve handle is swung to its outer position in one direction, substantially as set forth.

12,662. BRUSH FOR CLEANING HORSES. JOSEPH F. SCANLAN, New York, N. Y. Filed Mar. 19, 1907. Serial No. 363,327. Original No. 793,234, dated June 27, 1905.



Claim.—1. A device of the class described, comprising a main oblong frame composed of side plates, a central cylindrical rotatable member mounted between said side plates centrally thereof and provided at the opposite ends thereof with sprocket teeth, rollers mounted in the opposite ends of the main frame and at one side of a plane passing centrally and longitudinally through said frame and through the rotatable member, and an endless brush mounted on said central rotatable member and said rollers and provided in the opposite sides thereof with holes adapted to receive said sprocket teeth.

2. A device of the class described, comprising a main oblong frame composed of side plates, a central cylindrical rotatable member mounted between said side plates centrally thereof and provided at the opposite ends thereof with sprocket teeth, rollers mounted in the opposite ends of the main frame and at one side of a plane passing centrally and longitudinally through said frame and the rotatable member, and an endless brush mounted on said central rotatable member and said rollers and provided in the opposite sides thereof with holes adapted to receive said sprocket teeth, said main frame being also provided in the opposite ends thereof and opposite said rollers with combs which are pivoted therein and adapted in one position to bear on said brush.

3. A device of the class described, comprising a main oblong frame composed of side members, said side members being provided centrally with oppositely directed trunnions, a main cylindrical rotatable member mounted in the main frame and provided with a shaft passing through said trunnions, said rotatable member being also provided at the opposite ends thereof with sprocket teeth, rollers mounted in the opposite ends of the main frame and at one side of a plane passing centrally and longitudinally through said main frame and said rotatable member, and an endless brush mounted on said rotatable member and said rollers and adapted to be driven by the sprocket teeth on said rotatable member.

4. A device of the class described, comprising a main frame composed of side plates having central trunnions which project in opposite directions, a main cylindrical rotatable member mounted between said side plates and provided with a shaft which passes through said trunnions, said rotatable member being also provided at its opposite ends with sprocket teeth, rollers mounted in the ends of the main frame at one side of a plane passing centrally and longitudinally through said frame and through the center of the rotatable member, an endless brush mounted on said rotatable member and said rollers and adapted to be driven by said sprocket teeth, combs pivoted in the opposite ends of the main frame and adapted to bear on said brushes and between said rollers and said main rotatable member, and means for holding said combs both in and out of contact with said brush.

5. A device of the class described, comprising a main oblong frame, a central cylindrical rotatable member mounted therein, rollers mounted in the opposite ends of said frame and at one side of a plane passing centrally and longitudinally through said frame and the central cylindrical rotatable member, an endless brush mounted on said central cylindrical rotatable member and on said rollers, and means whereby the turning of said central cylindrical rotatable member will turn said brush thereon and on said rollers.

6. In a brush of the class described, a main oblong frame, an endless belt brush mounted in said frame, a handle connected with said frame centrally of a side thereof, a driving shaft passing through said handle, and means whereby the rotation of said shaft will turn said brush.

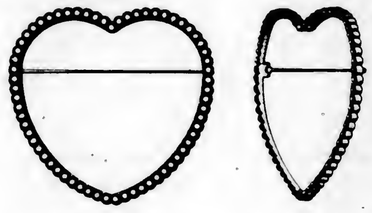
7. In a brush of the class described, a main oblong frame, an endless belt brush mounted in said frame, handles connected with the opposite sides of the frame centrally thereof, a driving shaft passing through said handles, and means whereby the rotation of said shaft will turn said brush.

8. In a brush of the class described, a main oblong frame, rollers mounted in the opposite ends thereof, an endless belt brush mounted on said rollers, a handle connected with said frame centrally of a side thereof, a driving shaft passing through said handle, and means whereby the rotation of said shaft will turn said brush.

9. In a brush of the class described, a main oblong frame, rollers mounted in the opposite end portions thereof, an endless belt brush mounted on said rollers, handles connected with the opposite sides of the frame centrally thereof, a driving shaft passing through said handles, and means whereby the rotation of said shaft will turn said brush and said rollers.

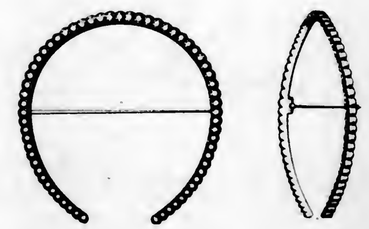
DESIGNS.

38,622. BROOCH-PIN. HENRY W. FISHEL, New York, N. Y., assignor to said Henry W. Fishel and Theodore H. Fishel, New York, N. Y., copartners, trading as Fishel, Nessler & Co. Filed Apr. 29, 1907. Serial No. 371,021. Term of patent 14 years.



Claim.—The ornamental design for a brooch pin as shown.

38,623. BROOCH-PIN. HENRY W. FISHEL, New York, N. Y., assignor to said Henry W. Fishel and Theodore H. Fishel, New York, N. Y., copartners, trading as Fishel, Nessler & Co. Filed Apr. 29, 1907. Serial No. 371,022. Term of patent 14 years.



Claim.—The ornamental design for a brooch pin as shown.

38,624. SPOON. LULU GRIMM BLASIER, Williamsburg, Iowa. Filed May 23, 1907. Serial No. 375,359. Term of patent 14 years.



Claim.—The ornamental design for a spoon, as shown.

38,625. SPOON. LULU GRIMM BLASIER, Williamsburg, Iowa. Filed May 23, 1907. Serial No. 375,360. Term of patent 14 years.



Claim.—The ornamental design for a spoon as shown.

38,626. GLASS CANDLESTICK. BENJAMIN W. JACOBS, Lancaster, Ohio. Filed May 25, 1907. Serial No. 375,747. Term of patent 7 years.



Claim.—The ornamental design for a glass candlestick, as shown.

38,627. JUG OR SIMILAR ARTICLE. JOHN SLATER, Stoke-upon-Trent, England, assignor to William S. Pitcairn, New York, N. Y. Filed Oct. 17, 1906. Serial No. 339,420. Term of patent 3½ years.



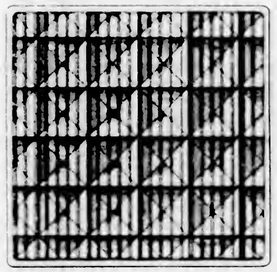
Claim.—The ornamental design for a jug or similar article, as shown.

38,628. CIGAR. HENRY RUDEN, Chicago, Ill. Filed Apr. 13, 1907. Serial No. 368,120. Term of patent 14 years.



Claim.—The ornamental design for a cigar, as shown.

38,629. GLASS TILE. DANIEL C. RIPLEY, Pittsburg, Pa., assignor to United States Glass Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Apr. 2, 1907. Serial No. 366,048. Term of patent 14 years.



Claim.—The ornamental design for glass tile, as shown.

38,630. PINCUSHION. JOHN U. BARR, New York, N. Y. Filed May 7, 1907. Serial No. 372,444. Term of patent 3½ years.



Claim.—The ornamental design for a pin-cushion as shown.

TRADE-MARKS

PUBLISHED JUNE 18, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 2,218. (CLASS 29. BROOMS, BRUSHES, AND DUSTERS.) UNIVERSAL BRUSH COMPANY, Troy and New York, N. Y. Filed Apr. 19, 1905.



Particular description of goods.—Toilet-Brushes.

Ser. No. 3,110. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THE WOODFORD DISTILLING CO., Chicago, Ill. Filed Apr. 26, 1905.

Pennsylvania Club

Particular description of goods.—Whisky.

Ser. No. 4,896. (CLASS 64. MEDICAL AND SURGICAL APPARATUS, APPLIANCES, AND INSTRUMENTS.) MCKESSON & ROBBINS, New York, N. Y. Filed May 10, 1905.

ALBOLENE

Particular description of goods.—Atomizers.

Ser. No. 4,897. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MCKESSON & ROBBINS, New York, N. Y. Filed May 10, 1905. Used ten years.

McK. & R.

Particular description of goods.—Remedial Preparations for Treatment of the Blood, Respiratory Organs, Alimentary and Stomach Ailments, Skin Diseases, Eye, Ear, Throat, and Nose Ailments, Anesthetics, and Remedies for the Treatment of the Heart, Kidneys, Liver, and for other Organic Ailments.

Ser. No. 7,130. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) POLK MILLER DRUG CO., Richmond, Va. Filed May 31, 1905. Used ten years.

SERGEANT'S

Particular description of goods.—Preparations for Destroying Insects and Vermin on Dogs and other Animals

Ser. No. 8,684. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE HEDWORTH BARIUM CO., LTD., Newcastle-upon-Tyne, England. Filed June 21, 1905.

Particular description of goods.—Binoxid of Barium, Oxid of Barium, Chlorid of Barium, Nitrate of Baryta, Peroxid of Hydrogen, and Sulfid of Barium.

Ser. No. 11,443. (CLASS 60. INKS AND INKING MATERIALS.) MILLER-BRYANT PIERCE COMPANY, Aurora, Ill. Filed Aug. 8, 1905.

THE PINK OF PERFECTION

Particular description of goods.—Carbon-Papers for Type-Writer Use and Type-Writer Ribbons.

Ser. No. 11,544. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) TURNER BROTHERS LIMITED, Rochdale, England. Filed Aug. 11, 1905.

FIREFLY

Particular description of goods.—Jointing Materials Made of Asbestos, Rubber, Balata, and Gutta-Percha, Singly or in Combination With One or More of the Others, Engine-Packing, and Hose-Pipes.

Ser. No. 11,742. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) JOHN F. MEYER & SONS MILLING CO., St. Louis and Springfield, Mo. Filed Aug. 17, 1905. Used ten years.

QUEEN BEE HIGH PATENT JOHN F. MEYER & SONS SPRINGFIELD, MO.

Particular description of goods.—Wheat-Flour.

Ser. No. 13,690. (CLASS 43. THREAD AND YARN.) J. & P. COATS, LIMITED, Paisley, Scotland. Filed Oct. 17, 1905.

Particular description of goods.—Sewing and Crochet Cotton on Spools or Reels and in Hanks or Balls.

Ser. No. 14,813. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) T. F. FIRTH & SONS LIMITED, Brighouse, England. Filed Nov. 20, 1905.

Particular description of goods.—Woolen Blankets and Woolen Rugs (for Personal Use) and Woolen Rugs, (Being in the Nature of Carpets.)

Ser. No. 14,814. (CLASS 86. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) T. F. FIRTH & SONS LIMITED, Brighouse, England. Filed Nov. 20, 1905.

Particular description of goods.—Horse-Blankets and Horse-Rugs of Wool and of a Mixture of Jute and Shoddy and of a Mixture of Jute and Wool.

Ser. No. 14,815. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) A. W. WILLS & SON, Birmingham, England. Filed Nov. 20, 1905. Used ten years.

A. W. WILLS

Particular description of goods.—Edge-Tools, Being Axes, Adzes, and Bill-Hooks.

Ser. No. 14,816. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) A. W. WILLS & SON, Birmingham, England. Filed Nov. 20, 1905.

Particular description of goods.—Edge-Tools, Being Axes, Adzes, and Bill-Hooks.

Ser. No. 15,404. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) JOHN E. CASSIDY & SON INCORPORATED, Boston, Mass. Filed Dec. 14, 1905. Used ten years.

Pine Hill

Particular description of goods.—Whisky.

Ser. No. 16,234. (CLASS 8. DETERGENTS.) A. & F. PEARS LIMD., London, England. Filed Jan. 17, 1906. Used ten years.

PEARS

Particular description of goods.—Perfumed Soaps.

Ser. No. 16,883. (CLASS 28. SEWING-MACHINES AND ATTACHMENTS.) WHEELER & WILSON MANUFACTURING COMPANY, Bridgeport, Conn., assignor to Singer Manufacturing Company, a Corporation of New Jersey. Filed Feb. 10, 1906. Used ten years.

WHEELER & WILSON

Particular description of goods.—All Kinds of Sewing-Machines and Their Parts and Attachments.

Ser. No. 16,884. (CLASS 28. SEWING-MACHINES AND ATTACHMENTS.) WHEELER & WILSON MANUFACTURING COMPANY, Bridgeport, Conn., assignor to Singer Manufacturing Company, a Corporation of New Jersey. Filed Feb. 10, 1906. Used ten years.

Wheeler & Wilson Sewing Machines.

Particular description of goods.—All Kinds of Sewing-Machines and Attachments.

Ser. No. 17,187. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) ANTHONY L. HERKENHOFF, Minster, Ohio. Filed Feb. 19, 1906.

20TH CENTURY

Particular description of goods.—Power-Distributing Pulleys Which are Adapted for Use in Connection With Power Transmitting and Distributing Means for Pumping Oil-Wells.

Ser. No. 19,062. (CLASS 47. CONFECTIONERY.) SOCIÉTÉ GUÉRIN-BOUTRON & FILS, Paris, France. Filed Apr. 25, 1906.

G. B. CHOCOLAT EXPEDITIF

G. B.
CHOCOLAT EXPEDITIF
The only one really dissolved without boiling
OF MARAGNAN AND VANILLA
Guaranteed Pure Cocoa and Sugar

Particular description of goods.—Chocolate.

Ser. No. 19,399. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) JOHN CONRAD SCHRECK, Pittsburg, Pa. Filed May 9, 1906.

SNAKE

Particular description of goods.—Wall-Ties.

Ser. No. 20,005. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) BLACK DIAMOND MANUFACTURING COMPANY, Cincinnati, Ohio. Filed June 2, 1906.

Diamond

Particular description of goods.—Belt-Dressings.

Ser. No. 20,897. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE SALT UNION LIMITED, Liverpool, England. Filed July 12, 1906. Used ten years.

ASHTON'S
FACTORY FILLED

Particular description of goods.—Salt.

Ser. No. 21,354. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) FEDERAL VARNISH COMPANY, New York, N. Y. Filed Aug. 6, 1906.

FED-LAC

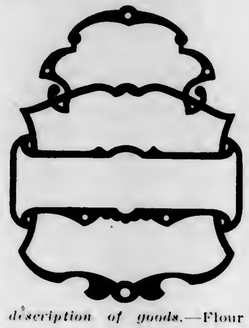
Particular description of goods.—Varnish.

Ser. No. 21,616. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) THE EASTERN DYNAMITE COMPANY, Kenvil, N. J. Filed Aug. 16, 1906. Used ten years.

VICTOR

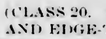
Particular description of goods.—Electric Blasting-Machines and Electrical Insulating-Wire.

Ser. No. 22,488. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) MINOT FLOUR MILL CO., Minot, N. D. Filed Oct. 4, 1906.



Particular description of goods.—Flour Made from Wheat.

Ser. No. 23,300. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) WALTER PAPE, St. Louis, Mo. Filed Nov. 12, 1906.



Particular description of goods.—Pocket-Knives, Table-Knives, Butcher-Knives, Carving-Knives, Manicure-Knives, Scissors, and Razors.

Ser. No. 23,358. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HARRISON BLUNT, Cambridge, Mass. Filed Nov. 15, 1906.

DR. BLUNT'S
MAGNA CURA



Particular description of goods.—Liniment for External and Internal Use.

Ser. No. 23,483. (CLASS 22. FIREARMS, AND EQUIPMENTS AND PROJECTILES NOT OTHERWISE CLASSIFIED.) THE LYMAN GUN SIGHT CORPORATION, Middlefield, Conn. Filed Nov. 20, 1906. Used ten years.

Lyman

Particular description of goods.—Gun-Sights.

Ser. No. 23,601. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CORA ANN COFFIN, Seattle, Wash. Filed Nov. 26, 1906.



Original Fig Pudding

Particular description of goods.—Canned Fig-Pudding.

Ser. No. 23,605. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ADOLF FLÜGGE, Hannover, Germany. Filed Nov. 26, 1906.

Blaudium

Particular description of goods.—Medical Compounds, Pharmaceutical Preparations, and Perfumes Containing Ferrum Carbonicum Purum.

Ser. No. 23,923. (CLASS 52. PACKING-HOUSE PRODUCTS.) ST. LOUIS DRESSED BEEF & PROVISION CO., St. Louis, Mo. Filed Dec. 10, 1906.



Particular description of goods.—Lard.

Ser. No. 24,311. (CLASS 52. PACKING-HOUSE PRODUCTS.) CHARLES WOLFF PACKING COMPANY, Topeka, Kans. Filed Dec. 28, 1906. Used ten years.



Particular description of goods.—Lard.

Ser. No. 24,392. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) WICHERT & GARDINER, New York, N. Y. Filed Jan. 2, 1907.



Particular description of goods.—Leather Boots and Leather Shoes.

Ser. No. 24,822. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) BENTLEY & OLMSTED COMPANY, Des Moines, Iowa. Filed Jan. 22, 1907.

THE MAN WHO WORKS

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 24,870. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) A. W. WILLS & SON, Birmingham, England. Filed Jan. 24, 1907. Used ten years.

A W. WILLS

Particular description of goods.—Hoes, Spades, Shovels, Picks, Agricultural Forks, and Hammers.

Ser. No. 24,929. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) MASCHINENFABRIK ROCKSTROH & SCHNEIDER NACHF., A. G., DRESDEN-HEIDENAU, Dresden, Germany. Filed Jan. 26, 1907.

VICTORIA

Particular description of goods.—Electric Motors.

Ser. No. 25,348. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) CHAS. A. SCHIEREN & CO., New York, N. Y. Filed Feb. 16, 1907.



Particular description of goods.—Leather Belting.

Ser. No. 25,374. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) DAVID LEERBURGER, New York, N. Y. Filed Feb. 18, 1907.

DANDY

Particular description of goods.—Men's and Boys' Coats, Vests, Trousers, and Overcoats.

Ser. No. 25,587. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) PACIFIC COAST RUBBER CO., Seattle, Wash. Filed Feb. 25, 1907.



Particular description of goods.—Rubber Shoes, Pacs, Being Rubber Shoes With Leather Tops, Rubber Clothing, Rubber Bands, Rubber Bath-Sprays, Rubber Bathing-Caps, Rubber Finger-Cots, Rubber Gloves, Rubber Cane and Chair Tips, Rubber Nipples, Rubber Sheeting, Rubber Water-Bottles, Rubber Cushions, and Rubber Ice-Bags.

Ser. No. 25,884. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) THE GEORGE WORTHINGTON COMPANY, Cleveland, Ohio. Filed Mar. 11, 1907.



Particular description of goods.—Axes, Hatchets, Scythes, Grass-Hooks, Handsaws, Bucksaws, Crosscut-Saws, Chisels, Drawing-Knives, Butcher-Knives, Pocket-Knives, Auger-Bits, Files, Horse-Rasps, Mattocks, Toilet-Clippers and Hand Fetlock-Clippers, Hand-Shears, and Hand Horse-Clippers.

Ser. No. 25,885. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) THE GEORGE WORTHINGTON COMPANY, Cleveland, Ohio. Filed Mar. 11, 1907.



Particular description of goods.—Braces, Hammers, Screw-Drivers, and Picks.

Ser. No. 25,903. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) FRANK BROS & CO., New York, N. Y. Filed Mar. 11, 1907.



Particular description of goods.—Knit Underwear.

Ser. No. 25,995. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) ROYAL GEM MILLS CO., St. Johnsville, N. Y. Filed Mar. 15, 1907.



Particular description of goods.—Tubular-Knit Ribbed-Fabric Undergarments Comprising Ladies' and Children's Vests, Pants, and Union Suits.

Ser. No. 26,059. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ALART & MCGUIRE, New York, N. Y. Filed Mar. 19, 1907. Used ten years.

OK

Particular description of goods.—Sweet, Sour, and Mixed Pickles, Catsup, Capers, Salad-Oil, Olive-Oil, Olives, Vinegar, Worcestershire and Analogous Sauces, Pepper-Sauce, India Relish.

Ser. No. 26,181. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) NOLDE BROTHERS, Richmond, Va. Filed Mar. 23, 1907.



Particular description of goods.—Bread.

Ser. No. 26,274. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FRANCIS S. WALKER, Fayette, Iowa. Filed Mar. 27, 1907.

MAGIC

Particular description of goods.—A Liquid Remedy for Cholera, Colic, Painter's Colic, Cramps, Dysentery and Bloody Flux, Rheumatic and Neuralgic Pains, Painful Menstruations, Sprains, Burns, Bruises, Diphtheria, and Sore Throat.

Ser. No. 26,336. (CLASS 9. EXPLOSIVES.) SOCIÉTÉ ANONYME DES EXPLOSIFS DE CLERMONT MULLER & CIE., Liège, Belgium. Filed Mar. 29, 1907.

MULLERITE

Particular description of goods.—Gunpowder for Sporting and Military Purposes.

Ser. No. 26,418. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) H. MUELLER MANUFACTURING COMPANY, Decatur, Ill. Filed Apr. 2, 1907. Used ten years.

MUELLER EXTRA

Particular description of goods.—Valves and Cocks for Steam, Water, and Gas Distribution.

Ser. No. 26,419. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) H. MUELLER MANUFACTURING COMPANY, Decatur, Ill. Filed Apr. 2, 1907. Used ten years.

MUELLER STANDARD

Particular description of goods.—Valves and Cocks for Steam, Water, and Gas Distribution.

Ser. No. 26,420. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) H. MUELLER MANUFACTURING COMPANY, Decatur, Ill. Filed Apr. 2, 1907. Used ten years.

MUELLER SPECIAL

Particular description of goods.—Valves and Cocks for Steam, Water, and Gas Distribution.

Ser. No. 26,426. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ROSENBERG BROS. & Co., San Francisco, Cal. Filed Apr. 3, 1907.

Notawun

Particular description of goods.—Raisins.

Ser. No. 26,595. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) L. T. PIVER & CIE., Paris, France. Filed Apr. 9, 1907.



Particular description of goods.—Sachet-Powders.

Ser. No. 26,618. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JAMES S. RILEY, Hayne, N. C. Filed Apr. 10, 1907.



Particular description of goods.—A Remedy for the Cure and Alleviation of Gravel.

Ser. No. 26,663. (CLASS 25. LOCKS AND SAFES.) THE PENNSYLVANIA STEEL CO., Steelton, Pa. Filed Apr. 12, 1907.

MANARD

Particular description of goods.—Castings for Safes and Vaults and Their Parts.

Ser. No. 26,696. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) BEAR LITHIA SPRINGS CO., Jersey City, N. J. Filed Apr. 13, 1907.

BLISCO

Particular description of goods.—Bottled Mineral Water.

Ser. No. 26,708. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) SIGMUND BLUMENTHAL, New York, N. Y. Filed Apr. 15, 1907.

LIGHTNING

Particular description of goods.—Needle-Threaders.

Ser. No. 26,744. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) OPPENHEIMER, FRANC & LANGSDORF, New York, N. Y. Filed Apr. 16, 1907.



Particular description of goods.—Cravats.

Ser. No. 26,761. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) WILLIAM P. SEYMOUR, Columbus, Ohio. Filed Apr. 17, 1907.

RIVAL-GAL-FARA-SINU

Particular description of goods.—Electric Batteries.

Ser. No. 26,773. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) FREDERICK HAMILTON GREEN, Muscatine, Iowa. Filed Apr. 18, 1907.

Sagarets

Particular description of goods.—Laxative and Tonic Medicines.

Ser. No. 26,845. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MARTIN CHARLES CARR, Du Quoin, Ill. Filed Apr. 20, 1907.



Particular description of goods.—A Medicinal Powder for Producing an Inhalant.

Ser. No. 26,878. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ERSO PROPRIETARY COMPANY, Gaines, Pa. Filed Apr. 24, 1907.



Particular description of goods.—A Liniment, Alterative, and Antibilious Bitters.

Ser. No. 26,929. (CLASS 47. CONFECTIONERY.) THE GINTER GROCERY CO., Boston, Mass. Filed Apr. 25, 1907.



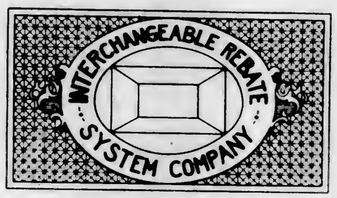
Particular description of goods.—Chocolates.

Ser. No. 26,941. (CLASS 9. EXPLOSIVES.) BURTON POWDER COMPANY, Pittsburg, Pa. Filed Apr. 26, 1907.



Particular description of goods.—Fuse-Caps, Detonators, and Dynamite.

Ser. No. 26,961. (CLASS 72. MERCHANDISE NOT OTHERWISE CLASSIFIED.) THE INTERCHANGEABLE REBATE SYSTEM COMPANY, Denver, Colo. Filed Apr. 27, 1907.



Particular description of goods.—Trading-Stamps.

Ser. No. 26,962. (CLASS 59. HOROLOGICAL INSTRUMENTS.) LANGENDORF WATCH CO., Langendorf, Switzerland. Filed Apr. 27, 1907.

LW

Particular description of goods.—Watches, Clocks, and Clock-Works.

Ser. No. 26,974. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) ERSTE WIENER EXPORT MALZFABRIK HAUSER & SOBOTKA, Stadlau-Wien, Austria. Filed Apr. 29, 1907.

Diamalt

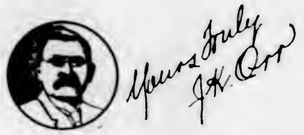
Particular description of goods.—A Concentrated Malt Extract Used for Making Bread.

Ser. No. 26,975. (CLASS 5. ADHESIVES.) ERSTE WIENER EXPORT MALZFABRIK HAUSER & SOBOTKA, Stadlau-Wien, Austria. Filed Apr. 29, 1907.

Diastafor

Particular description of goods.—A Malt Preparation Used as a Size for Cotton and other Threads and Yarns.

Ser. No. 26,990. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) J. K. ORR SHOE COMPANY, Atlanta, Ga. Filed Apr. 29, 1907.



Particular description of goods.—Leather Boots and Shoes.

Ser. No. 27,010. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

C.T.HAM
MFG CO NO
6 Square Lamp

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,014. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

No 10

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,026. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) HENRY FLECKENSTEIN, Portland, Oreg. Filed Apr. 30, 1907. Used ten years.

CONTINENTAL

Particular description of goods.—Whisky.

Ser. No. 27,041. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE CABLE COMPANY, Chicago, Ill. Filed May 1, 1907.

SOLO-AID

Particular description of goods.—Automatic Piano-Players and Self-Playing Pianos.

Ser. No. 27,042. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE CABLE COMPANY, Chicago, Ill. Filed May 1, 1907.

SOLOIST

Particular description of goods.—Automatic Piano-Players and Self-Playing Pianos.

Ser. No. 27,044. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) HILLS BROS., San Francisco, Cal. Filed May 1, 1907.



Particular description of goods.—Coffee.

Ser. No. 27,045. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) THE CARBORUNDUM COMPANY, Niagara Falls, N. Y. Filed May 1, 1907.



Particular description of goods.—Carborundum, Carborundum Grains and Powder, Carborundum Sharpening-Stones, Carborundum Wheels, Carborundum Paper, and Carborundum Cloth.

Ser. No. 27,073. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) NOXAL POLISH MANUFACTURING COMPANY, Philadelphia, Pa. Filed May 2, 1907.

NOXAL

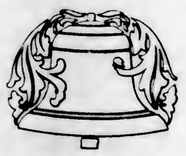
Particular description of goods.—Metal-Polish.

Ser. No. 27,080. (CLASS 4. ABRASIVE AND POLISHING MATERIALS NOT INCLUDED IN CLASSES 8 AND 16.) MAURICE L. BRANDT, New York, N. Y. Filed May 3, 1907.



Particular description of goods.—Razor-Strops.

Ser. No. 27,081. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) CHARLES A. CAMPBELL, Brooklyn, N. Y. Filed May 3, 1907.



Particular description of goods.—Illuminating-Gas Burners.

Ser. No. 27,097. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed May 4, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 27,107. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CORBETT BROS. CO., Paterson, N. J., and New York, N. Y. Filed May 4, 1907.



Particular description of goods.—Ribbons.

Ser. No. 27,129. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) S. S. PIERCE CO., Boston, Mass. Filed May 4, 1907.



Particular description of goods.—Whisky.

Ser. No. 27,137. (CLASS 15. OILS AND GREASES NOT INCLUDED IN CLASSES 6, 16, AND 50.) THE UNIVERSAL OIL CO., Baltimore, Md. Filed May 4, 1907.

UNIVERSALINE

Particular description of goods.—Lubricating and Cutting Oils and Greases and Lubricating Compounds.

Ser. No. 27,152. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) A. B. ANDREWS COMPANY, New York, N. Y. Filed May 6, 1907.

ARCO

Particular description of goods.—Hosiery.

Ser. No. 27,154. (CLASS 41. KNITTED, NETTED, AND LACE GOODS.) A. B. ANDREWS COMPANY, New York, N. Y. Filed May 6, 1907.

Arco Mills

Particular description of goods.—Hosiery.

Ser. No. 27,156. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) H. F. WEBB COMPANY, Portland, Me. Filed May 6, 1907.

SEA BREEZE

Particular description of goods.—Canned Corn.

Ser. No. 27,202. (CLASS 68. PUBLICATIONS.) W. R. HEARST, New York, N. Y. Filed May 7, 1907.

SEATTLE JOURNAL

Particular description of goods.—A Newspaper.

Ser. No. 27,206. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE TEA TRAY COMPANY OF NEWARK, N. J., Newark, N. J. Filed May 7, 1907.

"ART-TONE"

Particular description of goods.—Amplifying-Horns.

Ser. No. 27,231. (CLASS 71. TOBACCO PRODUCTS.) WALTER S. BARE, Lititz, Pa. Filed May 8, 1907.



Particular description of goods.—Cigars.

Ser. No. 27,238. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE SOUTH MARION MFG. WHOLESALE AND RETAIL DRUG CO., Marion, Ind. Filed May 8, 1907.

PELOCRESO

Particular description of goods.—Insect-Exterminator.

Ser. No. 27,254. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) WILLIAM JEFFERSON GUERNSEY, Philadelphia, Pa. Filed May 9, 1907.

PF

Particular description of goods.—A Predigested Liquid Food for Invalids and Infants.

Ser. No. 27,282. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) UNITED STATES WHIP COMPANY, Westfield, Mass. Filed May 10, 1907.



Particular description of goods.—Whips.

Ser. No. 27,284. (CLASS 52. PACKING-HOUSE PRODUCTS.) INTERSTATE PACKING CO., Winona, Minn. Filed May 10, 1907.



Particular description of goods.—Hams, Bacon, and Cured Meats.

Ser. No. 27,287. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) AYERS-YOUNG HAT CO., Pittsburg, Pa. Filed May 10, 1907. Used ten years.

SCHENLEY

Particular description of goods.—Men's and Boys' Stiff and Soft Felt Hats, Straw Hats, and Caps.

Ser. No. 27,288. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) AYERS-YOUNG HAT CO., Pittsburg, Pa. Filed May 10, 1907. Used ten years.

BRIGHTON

Particular description of goods.—Men's and Boys' Stiff and Soft Felt Hats, Straw Hats, and Caps.

Ser. No. 27,289. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) AYERS-YOUNG HAT CO., Pittsburg, Pa. Filed May 10, 1907. Used ten years.

HILTON

Particular description of goods.—Men's and Boys' Stiff and Soft Felt Hats, Straw Hats, and Caps.

Ser. No. 27,296. (CLASS 10. FERTILIZERS.) F. W. TUNNELL & CO., Philadelphia, Pa. Filed May 11, 1907. The mark is printed in red.



Particular description of goods.—Fertilizers.

Ser. No. 27,300. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) W. M. LAIRD COMPANY, Pittsburg, Pa. Filed May 11, 1907.

"Luxura"

Particular description of goods.—Leather Boots and Shoes.

Ser. No. 27,306. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) MAYER & WOLFSON, New York, N. Y. Filed May 11, 1907.

"JUSTASNAP"

Particular description of goods.—Vests, Drawers, and Trousers.

Ser. No. 27,310. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) GEORGE M. EMERY, Portland, Me. Filed May 11, 1907.



Particular description of goods.—Toilet Cream.

Ser. No. 27,312. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CHARLES F. SCHNEIDER, Kingsley, Iowa. Filed May 11, 1907.

WORMITE

Particular description of goods.—A Medicinal Preparation Especially Adapted for Killing and Removing Intestinal Worms from Hogs and other Animals.

Ser. No. 27,316. (CLASS 70. STATIONERY NOT OTHERWISE CLASSIFIED.) THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio. Filed May 11, 1907.



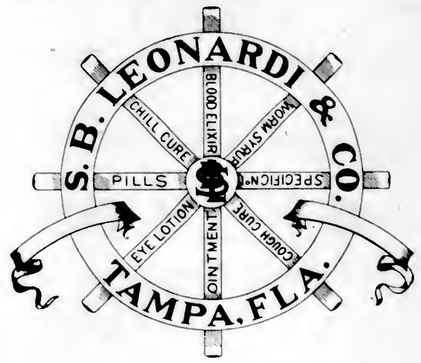
Particular description of goods.—Document-Files.

Ser. No. 27,318. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) NATIONAL BISCUIT COMPANY, Jersey City, N. J. Filed May 13, 1907. Used ten years.

SOCIAL TEA

Particular description of goods.—Biscuit.

Ser. No. 27,321. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SYDNEY B. LEONARDI, Tampa, Fla. Filed May 13, 1907.



Particular description of goods.—A Cough Remedy, Ointment, Chill Remedy, Blood Remedy, a Remedy for Venereal Diseases, Worm-Syrup, Eye-Lotion, and Liver Medicine.

Ser. No. 27,323. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) SYDNEY B. LEONARDI, Tampa, Fla. Filed May 13, 1907.

SEVEN ELEVEN
7 11

Particular description of goods.—A Remedy for Malarial Fevers, La Grippe, Colds, Neuralgia, and Dengue Fever.

Ser. No. 27,325. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans. Filed May 13, 1907.



PELICAN

Particular description of goods.—Wheat-Flour.

Ser. No. 27,329. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) THE WESTERN SHADE CLOTH COMPANY, Chicago, Ill. Filed May 13, 1907.

Victor

Particular description of goods.—Window-Shade Cloth.

Ser. No. 27,341. (CLASS 25. LOCKS AND SAFES.) THE W. BINGHAM COMPANY, Cleveland, Ohio. Filed May 13, 1907.

XLCR

Particular description of goods.—Padlocks.

Ser. No. 27,343. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM C. CUTLER, Sawtelle, Cal. Filed May 13, 1907.

YAMA

Particular description of goods.—A Liquor and Tobacco Cure.

Ser. No. 27,349. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) S. GATTI & SON, Washington, D. C. Filed May 14, 1907.

Pompeian

Particular description of goods.—Coffee and Tea.

Ser. No. 27,350. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) S. GATTI & SON, Washington, D. C. Filed May 14, 1907.

Pompeian

Particular description of goods.—Canned and Bottled Olive-Oil, Canned and Fresh Tomatoes, Canned and Fresh Mushrooms, Canned and Fresh Peas, Dried Dates, and Dried Figs.

Ser. No. 27,351. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) THE RAVEN GLOSS MFG. CO., New York, N. Y. Filed May 14, 1907.

CADET

Particular description of goods.—A Dressing for Leather or Canvas Articles.

Ser. No. 27,352. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) THE RAVEN GLOSS MFG. CO., New York, N. Y. Filed May 14, 1907.



Particular description of goods.—A Dressing for Leather or Canvas Articles.

Ser. No. 27,353. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) V. N. HINKLE, Decatur, Ill. Filed May 14, 1907.

HINKLE'S BANNER

Particular description of goods.—Wheat-Flour.

Ser. No. 27,355. (CLASS 2. MINERAL.) LESTER CLAY CO., Jacksonville, Fla. Filed May 14, 1907.



Particular description of goods.—Fullers' Earth.

Ser. No. 27,356. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) WILLIAM C. DOBBS, Pittsburg, Pa. Filed May 14, 1907.

WIN-R

Particular description of goods.—Fruit-Flavored Non-Alcoholic Drinks.

Ser. No. 27,362. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) MORSE & ROGERS, New York, N. Y. Filed May 14, 1907.

MONEY SAVER

Particular description of goods.—Leather Boots, Shoes, and Slippers.

Ser. No. 27,376. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) B. FISCHER & Co., New York, N. Y. Filed May 15, 1907.

Golden Crown

Particular description of goods.—Coffee.

Ser. No. 27,380. (CLASS 47. CONFECTIONERY.) NATIONAL CANDY COMPANY, Jersey City, N. J., and St. Louis, Mo. Filed May 15, 1907.

Honey Suckle

Particular description of goods.—Candies.

Ser. No. 27,385. (CLASS 47. CONFECTIONERY.) J. G. MCDONALD CANDY COMPANY, Salt Lake City, Utah. Filed May 15, 1907.

Particular description of goods.—Chocolates.

Ser. No. 27,394. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) FRIEDRICH ADOLF RICHTER, Rudolstadt, Germany, and New York, N. Y. Filed May 15, 1907. Used ten years.

Richter's

Particular description of goods.—Toy Building-Blocks.

Ser. No. 27,396. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) JOHN BIRD COMPANY, Rockland, Me. Filed May 15, 1907.

Particular description of goods.—Spices, Mustard, and Flavoring Extracts.

Ser. No. 27,402. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) CLIMAX COFFEE & BAKING POWDER CO., Indianapolis, Ind. Filed May 15, 1907.

CLIMAX

Particular description of goods.—Baking-Powder.

Ser. No. 27,403. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) CLIMAX COFFEE & BAKING POWDER CO., Indianapolis, Ind. Filed May 15, 1907.

OURICO

Particular description of goods.—Coffee.

Ser. No. 27,405. (CLASS 29. BROOMS, BRUSHES, AND DUSTERS.) LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed May 15, 1907.

BETTER BUY

Particular description of goods.—Brooms.

Ser. No. 27,406. (CLASS 29. BROOMS, BRUSHES, AND DUSTERS.) LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed May 15, 1907.

SNAP

Particular description of goods.—Brooms.

Ser. No. 27,407. (CLASS 29. BROOMS, BRUSHES, AND DUSTERS.) LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed May 15, 1907.

MIDGET

Particular description of goods.—Brooms.

Ser. No. 27,408. (CLASS 29. BROOMS, BRUSHES, AND DUSTERS.) LEE BROOM & DUSTER COMPANY, Lincoln, Nebr. Filed May 15, 1907.

FAIRY QUEEN

Particular description of goods.—Brooms.

Ser. No. 27,409. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) MORRIS ROSENBAUM'S SONS, New York, N. Y. Filed May 16, 1907.

WANDA

Particular description of goods.—Cloth and Piece Goods Consisting of Woolens, Silks, and Velvets Available for Use in Manufacturing Men's, Ladies', and Children's Garments and Wraps.

Ser. No. 27,410. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) MORRIS ROSENBAUM'S SONS, New York, N. Y. Filed May 16, 1907.

ARIEL

Particular description of goods.—Cloth and Piece Goods Consisting of Woolens, Silks, and Velvets Available for Use in Manufacturing Men's, Ladies', and Children's Garments and Wraps.

Ser. No. 27,419. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE LINCOLN WATERPROOF CLOTH CO., Boundbrook, N. J. Filed May 16, 1907.

Particular description of goods.—Paint.

Ser. No. 27,429. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y. Filed May 16, 1907.

Particular description of goods.—Rubber Gums, Raw Rubber, and Substitutes Therefor, and the Plants or Trees from Which Such Gums, Rubber, or Substitutes are Derived, Prepared for Shipment.

Ser. No. 27,430. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) BURTON BROS. & CO., New York, N. Y. Filed May 17, 1907.

Particular description of goods.—Cotton Dress Goods.

Ser. No. 27,431. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) THE CUDAHY PACKING CO., Chicago, Ill., and South Omaha, Nebr. Filed May 17, 1907.

REX

Particular description of goods.—Lye and Washing-Soda.

Ser. No. 27,434. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOSEPH H. KOLB, Tatamy, Pa. Filed May 17, 1907.

Master

Particular description of goods.—A Remedy for the Treatment of Sore Throat.

Ser. No. 27,438. (CLASS 65. MUSICAL INSTRUMENTS AND TALKING-MACHINES AND SUPPLIES THEREFOR.) THE STARR PIANO CO., Richmond, Ind. Filed May 17, 1907. Used ten years.

Remington

Particular description of goods.—Pianos and Organs.

Ser. No. 27,464. (CLASS 54. SEA FOODS.) WAPLES-PLATTER GROCER COMPANY, Denison, Fort Worth, and Dallas, Tex. Filed May 18, 1907.

Particular description of goods.—Canned Fish and Oysters.

Ser. No. 27,465. (CLASS 54. SEA FOODS.) WAPLES-PLATTER GROCER COMPANY, Denison, Fort Worth, and Dallas, Tex. Filed May 18, 1907.

Particular description of goods.—Canned Fish and Oysters.

Ser. No. 27,467. (CLASS 71. TOBACCO PRODUCTS.) GUSTAV A. MOEBS & CO., Detroit, Mich. Filed May 18, 1907.

ALMO-VAR

Particular description of goods.—Cigars.

Ser. No. 27,468. (CLASS 71. TOBACCO PRODUCTS.) GUSTAV A. MOEBS & CO., Detroit, Mich. Filed May 18, 1907.

Particular description of goods.—Cigars.

Ser. No. 27,469. (CLASS 71. TOBACCO PRODUCTS.) GUSTAV A. MOEBS & CO., Detroit, Mich. Filed May 18, 1907.

BEN-HUR

Particular description of goods.—Cigars.

Ser. No. 27,470. (CLASS 71. TOBACCO PRODUCTS.) GUSTAV A. MOEBS & CO., Detroit, Mich. Filed May 18, 1907.

Particular description of goods.—Cigars.

Ser. No. 27,471. (CLASS 71. TOBACCO PRODUCTS.) GUSTAV A. MOEBS & CO., Detroit, Mich. Filed May 18, 1907.

DOCTOR STORK

Particular description of goods.—Cigars.

Ser. No. 27,473. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) C. A. MURDOCK MFG. CO., Kansas City, Mo. Filed May 18, 1907. Used ten years.

OLD DOMINION

Particular description of goods.—Coffee.

Ser. No. 27,474. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) C. A. MURDOCK MFG. CO., Kansas City, Mo. Filed May 18, 1907.

TAL-TAN

Particular description of goods.—Coffee.

Ser. No. 27,475. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) C. A. MURDOCK MFG. CO., Kansas City, Mo. Filed May 18, 1907. Used ten years.

HECLA

Particular description of goods.—Coffee.

Ser. No. 27,476. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) C. A. MURDOCK MFG. CO., Kansas City, Mo. Filed May 18, 1907. Used ten years.

Tropical

Particular description of goods.—Coffee.

Ser. No. 27,479. (CLASS 71. TOBACCO PRODUCTS.) SIMEON DOTY, Lynn, Mass. Filed May 18, 1907.

PEEP-IN

Particular description of goods.—Cigars.

Ser. No. 27,481. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE FULLER CANNERIES COMPANY, Cleveland, Ohio, and South Dayton, N. Y. Filed May 18, 1907.

COTTAGE BRAND

Particular description of goods.—Canned Vegetables.

Ser. No. 27,482. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE FULLER CANNERIES COMPANY, Cleveland, Ohio, and South Dayton, N. Y. Filed May 18, 1907.



Particular description of goods.—Canned Vegetables.

Ser. No. 27,483. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE FULLER CANNERIES COMPANY, Cleveland, Ohio, and South Dayton, N. Y. Filed May 18, 1907.



Particular description of goods.—Canned Vegetables.

Ser. No. 27,496. (CLASS 11. LEATHER BLACKINGS AND DRESSINGS.) EDWARD J. REILLY, Baltimore, Md. Filed May 18, 1907.

U-RUB -SHINE

Particular description of goods.—Polishes and Dressings for Leather Boots and Shoes.

Ser. No. 27,532. (CLASS 71. TOBACCO PRODUCTS.) PARK & TILFORD, New York, N. Y. Filed May 20, 1907.



Particular description of goods.—Cigars.

Ser. No. 27,533. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) PAUL BROTHERS, Philadelphia, Pa. Filed May 20, 1907.



Particular description of goods.—Leather Boots, Shoes, and Slippers.

Ser. No. 27,547. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) W. D. BRACKETT & Co., Boston, Mass. Filed May 21, 1907.

WONDAWELT

Particular description of goods.—Leather Shoes.

Ser. No. 27,552. (CLASS 8. DETERGENTS.) KROM SOAP COMPANY, Atlanta, Ga. Filed May 21, 1907. Used ten years.

KROM

Particular description of goods.—Soap.

Ser. No. 27,569. (CLASS 12. MASONRY MATERIALS.) NATIONAL FIRE PROOFING COMPANY, Pittsburg, Pa. Filed May 22, 1907.



Particular description of goods.—Clay Sewer-Pipes, Flue-Linings, and Conduits.

Ser. No. 27,592. (CLASS 9. EXPLOSIVES.) THE EASTERN DYNAMITE COMPANY, Kenvil, N. J. Filed May 23, 1907. Used ten years.

BLACK JACK

Particular description of goods.—High Explosives.

Ser. No. 27,593. (CLASS 9. EXPLOSIVES.) THE EASTERN DYNAMITE COMPANY, Kenvil, N. J. Filed May 23, 1907. Used ten years.

S.P.

Particular description of goods.—High Explosives.

Ser. No. 27,606. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) SCHOTTLER & HABERT, West Hoboken, N. J. Filed May 23, 1907.

ERASINE

Particular description of goods.—A Paint and Varnish Removing Compound.

TRADE-MARKS

REGISTERED JUNE 18, 1907.

63,325. WITHDRAWN.

63,326. WITHDRAWN

63,327. PAINT AND VARNISH REMOVER. BERRY BROTHERS, LIMITED, Detroit, Mich.
Filed March 26, 1907. Serial No. 26,257. PUBLISHED APRIL 23, 1907.

63,328. LENSES FOR AUTO-GOGGLES, SPECTACLES, AND EYEGLASSES. WILLISTON W. BISSELL, Rochester, N. Y.
Filed February 21, 1907. Serial No. 25,508. PUBLISHED APRIL 23, 1907.

63,329. CERTAIN PAINTERS' MATERIALS. HENRY B. CABOT and HELEN N. CABOT, Boston, Mass., executors of Samuel Cabot, deceased.
Filed March 4, 1907. Serial No. 25,727. PUBLISHED APRIL 23, 1907.

63,330. LOADED CARTRIDGES. BLAISE CAMET, Lyon, France.
Filed October 13, 1906. Serial No. 22,679. PUBLISHED APRIL 23, 1907.

63,331. CIGARS, CHEROOTS, AND CIGARETTES MADE OF CIGAR-TOBACCO. CAYEY-CAGUAS TOBACCO COMPANY, New York, N. Y., and Caguas, Porto Rico.
Filed March 29, 1907. Serial No. 26,325. PUBLISHED APRIL 23, 1907.

63,332. CERTAIN PAINTERS' MATERIALS. EAGLE PAINT & VARNISH COMPANY, Allegheny, Pa.
Filed February 28, 1907. Serial No. 25,653. PUBLISHED APRIL 23, 1907.

63,333. OPHTHALMOMETERS. F. A. HARDY & Co., Chicago, Ill.
Filed May 3, 1905. Serial No. 4,227. PUBLISHED APRIL 23, 1907.

63,334. CIGARS. JABEZ FEABEY & COMPANY, Newark, N. J.
Filed March 9, 1907. Serial No. 25,874. PUBLISHED APRIL 23, 1907.

63,335. STOVES AND RANGES. KELLEY-HOW-THOMSON Co., Duluth, Minn.
Filed March 25, 1907. Serial No. 26,237. PUBLISHED APRIL 23, 1907.

63,336. CERTAIN SAPONACEOUS AND ALKALINE COMPOUNDS. THE LOPAS COMPANY, Boston, Mass.
Filed February 21, 1906. Serial No. 17,229. PUBLISHED APRIL 23, 1907.

63,337. KEROSENE OIL LAMPS. MANHATTAN BRASS Co., New York, N. Y.
Filed March 18, 1907. Serial No. 26,028. PUBLISHED APRIL 23, 1907.

63,338. CERTAIN ABRASIVE AND POLISHING MATERIALS. NORTON COMPANY, Worcester, Mass.
Filed February 14, 1907. Serial No. 25,306. PUBLISHED MARCH 26, 1907.

63,339. LEAD PIGMENTS. PICHER LEAD COMPANY, Joplin, Mo.
Filed March 25, 1907. Serial No. 26,238. PUBLISHED APRIL 23, 1907.

63,340. LEAD PIGMENTS. PICHER LEAD COMPANY, Joplin, Mo.
Filed March 25, 1907. Serial No. 26,239. PUBLISHED APRIL 23, 1907.

63,341. OIL-BURNING TUBULAR HAND-LANTERNS. R. E. DIETZ COMPANY, New York, N. Y.
Filed November 1, 1905. Serial No. 14,190. PUBLISHED APRIL 23, 1907.

63,342. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,289. PUBLISHED APRIL 23, 1907.

63,343. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,291. PUBLISHED APRIL 23, 1907.

63,344. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,293. PUBLISHED APRIL 23, 1907.

63,345. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,295. PUBLISHED APRIL 23, 1907.

63,346. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,297. PUBLISHED APRIL 23, 1907.

63,347. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,298. PUBLISHED APRIL 23, 1907.

63,348. METAL DRESSINGS AND POLISH. S. M. BIXBY & Co., New York, N. Y
Filed November 10, 1906. Serial No. 23,237. PUBLISHED JANUARY 15, 1907.

63,349. METAL DRESSINGS AND POLISH. S. M. BIXBY & Co., New York, N. Y.
Filed November 10, 1906. Serial No. 23,239. PUBLISHED JANUARY 15, 1907.

63,350. CERTAIN PAINTERS' MATERIALS. STANDARD VARNISH WORKS, New York, N. Y.
Filed March 26, 1907. Serial No. 26,268. PUBLISHED APRIL 23, 1907.

63,351. CERTAIN PAINTERS' MATERIALS. TOCH BROTHERS, New York, N. Y.
Filed March 13, 1907. Serial No. 25,945. PUBLISHED APRIL 23, 1907.

63,352. CERTAIN PAINTS. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.
Filed January 19, 1907. Serial No. 24,761. PUBLISHED APRIL 23, 1907.

63,353. CERTAIN PAINTS. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.
Filed January 19, 1907. Serial No. 24,763. PUBLISHED APRIL 23, 1907.

63,354. CIGARS. J. FRED WILCOX & COMPANY, Chicago, Ill.
Filed March 29, 1907. Serial No. 26,337. PUBLISHED APRIL 23, 1907.

63,355. SPOOL-COTTON, THREAD, AND SEWING-COTTON. THE AMERICAN THREAD COMPANY, Jersey City, N. J.
Filed March 23, 1907. Serial No. 26,168. PUBLISHED APRIL 23, 1907.

63,356. SHOULDER-BRACES AND SUSPENDERS. P. BAILLY & CIE., Paris, France.
Filed June 16, 1906. Serial No. 20,361. PUBLISHED APRIL 23, 1907.

63,357. SHOULDER-BRACES AND SUSPENDERS. P. BAILLY & CIE., Paris, France.
Filed June 16, 1906. Serial No. 20,362. PUBLISHED APRIL 23, 1907

63,358. MEN'S COTTON, LINEN, AND SILK FABRIC OVERSHIRTS. BATES STREET SHIRT CO., Lewiston, Me.
Filed March 18, 1907. Serial No. 26,054. PUBLISHED APRIL 23, 1907.

63,359. BONE PHOSPHATE. BAUGH & SONS COMPANY, Philadelphia, Pa.
Filed April 22, 1905. Serial No. 2,686. PUBLISHED MAY 1, 1906.

63,360. GAME-BOARDS. ELIJAH J. BOND, Charleston, W. Va.
Filed March 28, 1907. Serial No. 26,304. PUBLISHED APRIL 23, 1907.

63,361. KNITTED UNDERWEAR. THE BRISTOL MANUFACTURING COMPANY, Bristol, Conn.
Filed March 6, 1907. Serial No. 25,796. PUBLISHED APRIL 23, 1907.

63,362. MEN'S AND BOYS' LEATHER BOOTS AND HIGH AND LOW CUT LEATHER SHOES. THE CHARLES MEIS SHOE CO., Cincinnati, Ohio.
Filed March 23, 1907. Serial No. 26,178. PUBLISHED APRIL 23, 1907.

63,363. MINERAL AND TABLE WATERS AND ALL NON-ALCOHOLIC CARBONATED BEVERAGES. FRANK D. COUNCILMAN, Harrison Valley, Pa.
Filed March 11, 1907. Serial No. 25,901. PUBLISHED APRIL 23, 1907.

63,364. SILK PIECE GOODS. EMPIRE SILK CO., Paterson, N. J., and New York, N. Y.
Filed March 26, 1907. Serial No. 26,258. PUBLISHED APRIL 23, 1907.

63,365. WHISKY. SIG. & SOL. H. FREIBERG, Cincinnati, Ohio.
Filed May 1, 1905. Serial No. 3,778. PUBLISHED APRIL 23, 1907.

63,366. WAIST-BELTS. KUNSTADTER BROS., Chicago, Ill.
Filed February 13, 1907. Serial No. 25,289. PUBLISHED APRIL 23, 1907.

63,367. WHISKY. FRANK T. MORRISSEY, Lowell, Mass.
Filed March 25, 1907. Serial No. 26,197. PUBLISHED APRIL 23, 1907.

63,368. SILK AND COTTON WARP UMBRELLA-COVER FABRICS. RICHARD MÜLLER, Winnipauk, Conn.
Filed December 26, 1906. Serial No. 24,282. PUBLISHED APRIL 23, 1907.

63,369. GASOLENE. THE NATIONAL REFINING COMPANY, Cleveland, Ohio.
Filed March 13, 1907. Serial No. 25,957. PUBLISHED APRIL 23, 1907.

63,370. SHOES MADE WHOLLY OR IN PART OF LEATHER. PETERS SHOE CO., St. Louis, Mo.
Filed March 25, 1907. Serial No. 26,199. PUBLISHED APRIL 23, 1907.

63,371. SARSAPARILLA. SCHONEBERGER & NOBLE, New York, N. Y.
Filed March 23, 1907. Serial No. 26,183. PUBLISHED APRIL 23, 1907.

63,372. NATURAL MINERAL WATER AND CRYSTALS RESULTING THEREFROM. LYCURGUS SMITH, Mineral Wells, Tex.
Filed July 30, 1906. Serial No. 21,263. PUBLISHED APRIL 23, 1907.

63,373. SILK PIECE GOODS AND SILK AND COTTON MIXED PIECE GOODS. MAX STRAUSS, New York, N. Y.
Filed March 22, 1907. Serial No. 26,156. PUBLISHED APRIL 23, 1907.

63,374. FELT HATS. WILLIAM A. BROOKS, Cincinnati, Ohio.
Filed June 11, 1906. Serial No. 20,210. PUBLISHED APRIL 23, 1907.

63,375. AUTOMATIC PIANO-PLAYERS AND SELF-PLAYING PIANOS. THE CABLE COMPANY, Chicago, Ill.
Filed March 5, 1907. Serial No. 25,779. PUBLISHED APRIL 23, 1907.

63,376. BEER. THE E. BECKER BREWING COMPANY, Lancaster, Ohio.
Filed May 25, 1906. Serial No. 19,854. PUBLISHED SEPTEMBER 11, 1906.

63,377. SILK DRESS GOODS. FRIED, MENDELSON & CO., New York, N. Y.
Filed March 6, 1907. Serial No. 25,791. PUBLISHED APRIL 23, 1907.

63,378. HOSE-SUPPORTERS. GORDON MANUFACTURING COMPANY, New Rochelle, N. Y.
Filed September 12, 1906. Serial No. 22,042. PUBLISHED APRIL 23, 1907.

63,379. LEATHER BOOTS AND SHOES. ARNE GUNDERSON, Green Bay, Wis.
Filed February 19, 1907. Serial No. 25,420. PUBLISHED APRIL 23, 1907.

63,380. KNITTED UNDERWEAR. THE H. L. WELCH HOSIERY CO., Waterville, Conn.
Filed February 27, 1907. Serial No. 25,642. PUBLISHED APRIL 23, 1907.

63,381. COATS, TROUSERS, AND DRESS AND NEGLIGÉE SHIRTS. THE HERSHEY RICE MANUFACTURING COMPANY, Columbus, Ohio.
Filed February 25, 1907. Serial No. 25,593. PUBLISHED APRIL 23, 1907.

63,382. LEATHER BOOTS AND SHOES. JOS. ROSENHEIM SHOE CO., Savannah, Ga.
Filed November 9, 1906. Serial No. 23,181. PUBLISHED DECEMBER 11, 1906.

63,383. CERTAIN KNITTED GARMENTS. JOHN H. PARKER, Malden, Mass.
Filed November 15, 1905. Serial No. 14,644. PUBLISHED APRIL 23, 1907.

63,384. SUSPENDERS. SMITHMADE SUSPENDER CO., Boston, Mass.
Filed February 18, 1907. Serial No. 25,385. PUBLISHED APRIL 23, 1907.

63,385. WOMEN'S SHIRT-WAISTS AND SHIRT-WAIST SUITS. B. D. SPANDAUER & CO., Baltimore, Md.
Filed December 26, 1906. Serial No. 24,284. PUBLISHED MARCH 26, 1907.

63,386. CORSETS. STIX, BAER & FULLER D. GOODS CO., St. Louis, Mo.
Filed July 21, 1906. Serial No. 21,071. PUBLISHED APRIL 23, 1907.

63,387. BALL-BEARING CASTERS. ACME BALL-BEARING COMPANY, Chappaqua, N. Y.
Filed April 30, 1906. Serial No. 19,180. PUBLISHED APRIL 23, 1907.

63,388. ELECTRICAL INSULATING MATERIAL. AMERICAN HARD RUBBER CO., New York, N. Y.
Filed May 11, 1905. Serial No. 5,153. PUBLISHED APRIL 23, 1907.

63,389. CERTAIN CUTLERY. CATTARAUGUS CUTLERY COMPANY, Little Valley, N. Y.
Filed March 8, 1907. Serial No. 25,867. PUBLISHED APRIL 23, 1907.

63,390. COOKING COMPOUND MADE FROM VEGETABLE OILS AND BEEF FATS. E. D. COOK & CO., Binghamton, N. Y.
Filed October 22, 1906. Serial No. 22,830. PUBLISHED APRIL 16, 1907.

63,391. MOUSE AND RAT TRAPS. ENTERPRISE NOVELTY & M. F. G. CO., Knoxville, Ill.
Filed December 26, 1906. Serial No. 24,285. PUBLISHED APRIL 23, 1907.

63,392. CERTAIN CUTLERY AND EDGE-TOOLS. FAYETTE R. PLUMB, INCORPORATED, Philadelphia, Pa.
Filed February 9, 1907. Serial No. 25,225. PUBLISHED APRIL 23, 1907.

63,393. SWEATERS. GEORGE E. WYE COMPANY, Needham, Mass.
Filed February 23, 1907. Serial No. 25,568. PUBLISHED APRIL 23, 1907.

63,394. STILL AND CARBONATED WATERS. GLENN ROCK MINERAL SPRING COMPANY, Waukesha, Wis.
Filed November 19, 1906. Serial No. 23,461. PUBLISHED APRIL 23, 1907.

63,395. CERTAIN CUTLERY AND EDGE-TOOLS. KELLEY-HOW-THOMSON CO., Duluth, Minn.
Filed March 25, 1907. Serial No. 26,232. PUBLISHED APRIL 23, 1907.

63,396. HAMMERS, SCREW-DRIVERS, AND SHOVELS. KELLEY-HOW-THOMSON CO., Duluth, Minn.
Filed March 25, 1907. Serial No. 26,233. PUBLISHED APRIL 23, 1907.

63,397. CERTAIN LAUNDRY APPLIANCES AND MACHINES. KELLEY-HOW-THOMSON CO., Duluth, Minn.
Filed March 25, 1907. Serial No. 26,234. PUBLISHED APRIL 23, 1907.

63,398. SEWING-MACHINES. KELLEY-HOW-THOMSON CO., Duluth, Minn.
Filed March 25, 1907. Serial No. 26,236. PUBLISHED APRIL 23, 1907.

63,399. CERTAIN ORNAMENTAL OBJECTS. A. MAYET, New York, N. Y.
Filed February 23, 1907. Serial No. 25,556. PUBLISHED APRIL 23, 1907.

63,400. HAND FIRE-EXTINGUISHERS. PLUVIUS-FEUERLÖSCHER-GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Hamburg, Germany.
Filed September 10, 1906. Serial No. 22,008. PUBLISHED APRIL 23, 1907.

63,401. MOTOR-CYCLES. WILLIAM F. REMPPIS, Reading, Pa.
Filed March 7, 1907. Serial No. 25,832. PUBLISHED APRIL 23, 1907.

63,402. HACK SAW-BLADES. THE WEST HAVEN MFG. CO., West Haven, Conn.
Filed March 18, 1907. Serial No. 26,030. PUBLISHED APRIL 23, 1907.

63,403. MAGAZINES. JOHN WILLY, Chicago, Ill.
Filed June 11, 1906. Serial No. 20,204. PUBLISHED APRIL 23, 1907.

63,404. CUTLERY IN GENERAL. BROOKES & CROOKES, Sheffield, England.
Filed September 14, 1905. Serial No. 12,551. PUBLISHED APRIL 23, 1907.

63,405. CUTLERY IN GENERAL, AND OTHER HAND-TOOLS HAVING A CUTTING EDGE. JONAS & COLVER LIMITED, Sheffield, England.
Filed September 14, 1905. Serial No. 12,620. PUBLISHED APRIL 23, 1907.

63,406. CERTAIN CUTLERY. JOSEPH ALLEN & SONS LIMITED, Sheffield, England.
Filed February 12, 1906. Serial No. 16,941. PUBLISHED APRIL 23, 1907.

63,407. CUTLERY IN GENERAL, AND OTHER HAND-TOOLS HAVING A CUTTING EDGE. JOSEPH ALLEN & SONS LIMITED, Sheffield, England.
Filed February 12, 1906. Serial No. 16,942. PUBLISHED APRIL 23, 1907.

63,408. CUTLERY OF ALL DESCRIPTIONS. JOSEPH ALLEN & SONS LIMITED, Sheffield, England.
Filed February 12, 1906. Serial No. 16,944. PUBLISHED APRIL 23, 1907.

63,409. CUTLERY IN GENERAL. JOSEPH RODGERS & SONS, LIMITED, Sheffield, England.
Filed February 12, 1906. Serial No. 16,939. PUBLISHED APRIL 23, 1907.

63,410. CERTAIN EDGE-TOOLS. W. K. & C. PEACE, LD., Sheffield, England.
Filed February 12, 1906. Serial No. 16,946. PUBLISHED APRIL 23, 1907.

63,411. CUTLERY IN GENERAL. THE WILKINSON SWORD COMPANY, LIMITED, London and Sheffield, England.
Filed April 21, 1906. Serial No. 18,964. PUBLISHED APRIL 23, 1907.

63,412. CANNED, SMOKED, PICKLED, AND PRESERVED FISH. A/S. THE BERGEN CANNING CO., Bergen, Norway.
Filed March 21, 1907. Serial No. 26,145. PUBLISHED APRIL 23, 1907.

63,413. REMEDY FOR AFFECTIONS AND DISEASES OF THE EYE. JOHN P. W. S. AYMOND, Bunkie, La.
Filed March 14, 1907. Serial No. 25,960. PUBLISHED APRIL 23, 1907.

63,414. CANNED, SMOKED, PICKLED, AND PRESERVED FISH. BERGENS VARMROGERI MOLT & CO., Bergen, Norway.
Filed March 26, 1907. Serial No. 26,251. PUBLISHED APRIL 23, 1907.

63,415. CHOCOLATE. BERNESE CHOCOLATE WORKS TOBLER & CO., LIMITED, Berne, Switzerland.
Filed September 28, 1905. Serial No. 13,102. PUBLISHED DECEMBER 4, 1906.

63,416. COFFEE AND TEA. F. E. ROYSTON & CO., Aurora, Ill.
Filed March 11, 1907. Serial No. 25,909. PUBLISHED APRIL 23, 1907.

63,417. BITTERS. FOSTER MILBURN CO., Buffalo, N. Y.
Filed May 18, 1905. Serial No. 5,946. PUBLISHED APRIL 23, 1907.

63,418. WHEAT AND GRAHAM FLOUR. J. L. ILES CO., Davenport, Iowa.
Filed September 5, 1905. Serial No. 12,221. PUBLISHED APRIL 3, 1906.

63,419. WALL-PAPERS. JAMES R. CROMPTON & BROTHERS, LIMITED, Elton Paper Mills, near Bury, England.
Filed August 25, 1905. Serial No. 11,994. PUBLISHED APRIL 23, 1907.

63,420. ANTISEPTIC GERMICIDE AND DEODORANT PREPARATIONS. PEROXIDENT MANUFACTURING COMPANY, St. Louis, Mo.
Filed January 16, 1907. Serial No. 24,664. PUBLISHED APRIL 23, 1907.

63,421. BEER. THE PORTSMOUTH BREWING & ICE CO., Portsmouth, Ohio.
Filed May 31, 1906. Serial No. 19,965. PUBLISHED JULY 24, 1906.

63,422. LIQUID GAS IN PORTABLE TANKS FOR INFLATING TIRES. THE PREST-O-LITE COMPANY, Indianapolis, Ind.
Filed March 19, 1907. Serial No. 26,077. PUBLISHED APRIL 23, 1907.

63,423. GLOBES FOR LAMPS AND LANTERNS. R. E. DIETZ COMPANY, New York, N. Y.
Filed April 14, 1906. Serial No. 18,796. PUBLISHED APRIL 23, 1907.

63,424. EXTERNAL REMEDY FOR CROUP. THE SMOOT DRUG CO., Provo, Utah.
Filed February 1, 1906. Serial No. 16,665. PUBLISHED APRIL 17, 1906.

63,425. NUTRITIVE AND TONIC FOODS FOR POULTRY AND PIGEONS. TAYLOR BROS., Camden, N. J.
Filed February 5, 1907. Serial No. 25,147. PUBLISHED APRIL 23, 1907.

63,426. CERTAIN CHINA, STONEWARE, EARTHENWARE, PORCELAIN AND TERRA-COTTA WARES. VILLEROY & BOCH, Mettlach, Germany.
Filed January 18, 1906. Serial No. 16,286. PUBLISHED APRIL 23, 1907.

63,427. BISCUIT. AUSTIN BISCUIT COMPANY, Chelsea, Mass.
Filed March 15, 1907. Serial No. 25,986. PUBLISHED APRIL 23, 1907.

63,428. ANODYNE. BATTLE & CO., CHEMISTS' CORPORATION, St. Louis, Mo.
Filed February 12, 1907. Serial No. 25,276. PUBLISHED APRIL 23, 1907.

63,429. CHEMICAL OR MEDICAL PREPARATION USED AS AN ALTERATIVE. BATTLE & CO., CHEMISTS' CORPORATION, St. Louis, Mo.
Filed February 12, 1907. Serial No. 25,277. PUBLISHED APRIL 23, 1907.

63,430. CHEMICAL OR MEDICAL PREPARATION USED AS A HYPNOTIC. BATTLE & CO., CHEMISTS' CORPORATION, St. Louis, Mo.
Filed February 12, 1907. Serial No. 25,278. PUBLISHED APRIL 23, 1907.

63,431. ANTIPURULENT. BATTLE & CO., CHEMISTS' CORPORATION, St. Louis, Mo.
Filed February 12, 1907. Serial No. 25,279. PUBLISHED APRIL 23, 1907.

63,432. REMEDY FOR TUBERCULOSIS. BEHRINGWERK, Marburg, Germany.
Filed March 23, 1907. Serial No. 26,170. PUBLISHED APRIL 23, 1907.

63,433. SUBSTITUTE FOR COFFEE. CEREAL PRODUCTS COMPANY, Baltimore, Md.
Filed March 20, 1907. Serial No. 26,104. PUBLISHED APRIL 23, 1907.

63,434. PROPRIETARY MEDICINE. HENRY L. LAUTEMANN, Newark, N. J.
Filed March 13, 1907. Serial No. 25,952. PUBLISHED APRIL 23, 1907.

63,435. CANNED FRUITS AND VEGETABLES. MENNILLO BROS., New York, N. Y.
Filed March 8, 1907. Serial No. 25,853. PUBLISHED APRIL 23, 1907.

63,436. CERTAIN INSECT-REPELLENT. FREDERICK L. STALLMAN, New York, N. Y.
Filed March 19, 1907. Serial No. 26,078. PUBLISHED APRIL 23, 1907.

63,437. WHEAT-FLOUR. AKIN ERSKINE MILLING CO., Evansville, Ind.
Filed March 12, 1907. Serial No. 25,918. PUBLISHED APRIL 23, 1907.

63,438. CERTAIN MEDICINES. THE CITIZENS' WHOLESALE SUPPLY CO., Columbus, Ohio.
Filed November 26, 1906. Serial No. 23,600. PUBLISHED JANUARY 8, 1907.

63,439. CORN-STARCH. CORN PRODUCTS REFINING COMPANY, New York, N. Y.
Filed March 11, 1907. Serial No. 25,900. PUBLISHED APRIL 23, 1907.

63,440. WHEAT-FLOUR. THE GLOBE MILLING COMPANY, Watertown, Wis.
Filed March 29, 1907. Serial No. 26,327. PUBLISHED APRIL 23, 1907.

63,441. CERTAIN FURNITURE. THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio.
Filed February 19, 1907. Serial No. 25,402. PUBLISHED APRIL 23, 1907.

63,442. CERTAIN FURNITURE. THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio.
Filed February 19, 1907. Serial No. 25,411. PUBLISHED APRIL 23, 1907.

63,443. DOCUMENT-FILES AND DESK-PADS. THE GLOBE-WERNICKE COMPANY, Cincinnati, Ohio.
Filed February 21, 1907. Serial No. 25,512. PUBLISHED APRIL 23, 1907.

63,444. MEDICINAL PREPARATIONS FOR CERTAIN DISEASES. H. E. BUCKLEN & COMPANY, Chicago, Ill.
Filed February 15, 1907. Serial No. 25,318. PUBLISHED APRIL 23, 1907.

63,445. COLD-CREAM. ARTHUR MORGAN HOBBY, Brooklyn, N. Y.
Filed April 11, 1906. Serial No. 18,706. PUBLISHED FEBRUARY 19, 1907.

63,446. RUBBER PACKING. ALFRED B. JENKINS, New York, N. Y.; Boston, Mass., and Elizabeth, N. J.; assignor to Jenkins Rubber Co., Elizabeth, N. J., a Corporation of New Jersey.
Filed November 2, 1906. Serial No. 23,048. PUBLISHED APRIL 23, 1907.

63,447. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,472. PUBLISHED APRIL 23, 1907.

63,448. TOILET CREAMS AND SHAMPOOS. THE RIMAK CHEMICAL COMPANY, New York, N. Y.
Filed February 18, 1907. Serial No. 25,381. PUBLISHED APRIL 23, 1907.

63,449. MEDICINAL OINTMENT OR LOTION. CHARLES JAMES SINDELAR, New York, N. Y.
Filed March 8, 1906. Serial No. 17,647. PUBLISHED JUNE 5, 1906.

63,450. CONDITION-POWDERS. VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn.
Filed August 2, 1905. Serial No. 11,196. PUBLISHED APRIL 23, 1907.

63,451. SARDINES. ANGUS, WATSON & CO., Newcastle-upon-Tyne, England.
Filed October 20, 1905. Serial No. 13,780. PUBLISHED APRIL 23, 1907.

63,452. PAPER BAGS. THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,836. PUBLISHED APRIL 23, 1907.

63,453. PAPER BAGS. THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,838. PUBLISHED APRIL 23, 1907.

63,454. PAPER BAGS. THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,839. PUBLISHED APRIL 23, 1907.

63,455. PAPER BAGS. THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,840. PUBLISHED APRIL 23, 1907.

63,456. PAPER BAGS. THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,842. PUBLISHED APRIL 23, 1907.

63,457. PAPER BAGS. THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,846. PUBLISHED APRIL 23, 1907.

63,458. PAPER BAGS. THE CLEVELAND-AKRON BAG CO., Cleveland, Ohio.
Filed December 6, 1906. Serial No. 23,847. PUBLISHED APRIL 23, 1907.

63,459. CHEWING-GUM. ASA M. FITCH, Indianapolis, Ind.
Filed February 8, 1907. Serial No. 25,212. PUBLISHED APRIL 23, 1907.

63,460. FLAVORING EXTRACTS. THE MILLER MANUFACTURING COMPANY, New York, N. Y.
Filed March 27, 1907. Serial No. 26,281. PUBLISHED APRIL 23, 1907.

63,461. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,450. PUBLISHED APRIL 23, 1907.

63,462. CERTAIN PHARMACEUTICAL PREPARATIONS. SMITH KLINE AND FRENCH COMPANY, Philadelphia, Pa.
Filed February 26, 1907. Serial No. 25,617. PUBLISHED APRIL 23, 1907.

63,463. MAGAZINE OR PERIODICAL. W. G. BOHANNAN COMPANY, San Jose, Cal.
Filed May 11, 1906. Serial No. 19,443. PUBLISHED OCTOBER 9, 1906.

63,464. CORN-FLAKES. THE H-O (HORNBY'S OATMEAL) COMPANY, New York and Buffalo, N. Y.
Filed March 21, 1907. Serial No. 26,130. PUBLISHED APRIL 23, 1907.

63,465. RICE. WALL RICE MILLING CO. LIMITED, Lake Charles, La.
Filed March 16, 1907. Serial No. 26,023. PUBLISHED APRIL 23, 1907.

LABELS

REGISTERED JUNE 18, 1907.

13,609.—*Title:* "STAG." (For Cigars.) L. E. SWAN, Saginaw, Mich. Filed April 27, 1907.

13,610.—*Title:* "EDWIN CIGAR COMPANY'S CIGARS." (For Cigars.) THE EDWIN CIGAR CO., New York, N. Y. Filed May 15, 1907.

13,611.—*Title:* "TURJO." (For Cigars.) M. T. COFFEY CO., Fall River, Mass. Filed May 23, 1907.

13,612.—*Title:* "D. McG. NEWCOMER." (For Cigars.) D. McG. NEWCOMER, Hanover, Pa. Filed May 23, 1907.

13,613.—*Title:* "MARS." (For Cigars.) BEST & RUSSELL COMPANY, Chicago, Ill. Filed May 24, 1907.

13,614.—*Title:* "KARDOS." (For a Beverage.) R. HORWITZ DISTILLING CO., St. Louis, Mo. Filed May 24, 1907.

13,615.—*Title:* "SCHILLING'S BEST." (For Tea.) A. SCHILLING & COMPANY, San Francisco, Cal. Filed May 28, 1907.

13,616.—*Title:* "PROFESSIONAL TOOTH PASTE." (For Tooth-Paste.) REYNOLDS & LEHR, Baltimore, Md. Filed May 16, 1907.

13,617.—*Title:* "MRS. M. G. BROWN'S POOR RICHARD EYE WATER." (For an Eye-Water.) F. A. MOSEBACH New York, N. Y. Filed May 28, 1907.

13,618.—*Title:* "PHOSIGNA." (For Medicine.) THE BARNES-HART COMPANY, Boston, Mass. Filed May 4, 1907.

13,619.—*Title:* "THE SPRINGER SANITARIUM." (For Medicinal Preparations.) NATHAN A. SPRINGER, Baltimore, Md. Filed May 28, 1907.

13,620.—*Title:* "MENTHOLATUM." (For an External Remedy for the Relief of All Inflammations.) THE MENTHOLATUM CO., Wichita, Kan. Filed May 25, 1907.

13,621.—*Title:* "BRANDT SELF HONING." (For Razor-Strops.) MAURICE L. BRANDT, New York, N. Y. Filed May 28, 1907.

13,622.—*Title:* "SEARCHLIGHT GARMENT." (For Women's, Ladies', Misses', and Children's Garments.) E. J. KORACH & CO., Cleveland, Ohio. Filed May 13, 1907.

PRINTS

REGISTERED JUNE 18, 1907.

2,032.—*Title:* "APPAREL FOR MAN AND BOY." (For Clothing.) E. L. BOONE, Chicago, Ill. Filed May 27, 1907.

2,033.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed May 23, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

BARBER v. WOOD.

Decided January 26, 1907.

INTERFERENCE—MOTION TO DISSOLVE—TRANSMISSION—GROUND OF PUBLIC USE.

Public use is considered in the practice of this Office as a separate question requiring an investigation independent of the question of priority of invention involved in an interference proceeding. A motion for dissolution based upon the ground of public use should not therefore be transmitted.

APPEAL on motion.

SHEET-DELIVERY MECHANISM.

Messrs. Brown & Seward and *Mr. Walter F. Rogers* for Barber.

Messrs. Southgate & Southgate for Wood.

MOORE, *Assistant Commissioner:*

This is an appeal by Barber from the decision of the Examiner of Interferences refusing to transmit his motion to dissolve so far as based on the ground of public use.

On June 30, 1906, Barber brought a motion to dissolve this interference on several of the grounds mentioned in Rule 122, also on the ground that the invention of the issue had been in public use for more than two years prior to the filing of Wood's application involved in the interference. This motion was transmitted to the Primary Examiner by the Examiner of Interferences upon all the grounds alleged except that of public use.

Public use is considered in the practice of this Office as a separate question, requiring an investigation independent of the question of priority of invention involved in an interference proceeding. (*Davis* v. *Swift*, 96 O. G., 2409; *Shrum* v. *Baumgarten*, 104 O. G., 577.) No testimony has been taken, and there is nothing in the case upon which the Primary Examiner at the present time can intelligently consider the bar of public use. No error is found in the refusal to transmit this ground. Other questions are raised in appellant's brief; but they do not properly relate to the question appealed, but rather to matter embraced in appellant's petition, subsequently filed, and will be considered in disposing of said petition.

The decision of the Examiner of Interferences is affirmed.

KEITH, ERICKSON, AND ERICKSON v. LUNDQUIST.

Decided March 6, 1907.

INTERFERENCE—MOTION TO TAKE TESTIMONY ABROAD—SUFFICIENCY OF SHOWING—APPEAL.

The sufficiency of a showing in support of a motion to take testimony abroad is a matter which should be left largely to the discretion of the Examiner of Interferences, and his decision granting such a motion should not be reviewed except where clear error is made to appear.

APPEAL on motion.

AUTOMATIC EXCHANGE.

Mr. A. Miller Belfield for Keith, Erickson, and Erickson.

Mr. Casper L. Redfield for Lundquist.

MOORE, *Assistant Commissioner:*

This case comes up on an appeal by Lundquist from a decision of the Examiner of Interferences granting the motion of Keith, Erickson, and Erickson to take testimony abroad.

The substance of the assignments of errors is that the Examiner of Interferences erred in holding that the competency of the proposed testimony should not be decided on motion and in failing to hold the showing in support of the motion insufficient.

With respect to the first alleged error it is believed that it was not the intention of the Examiner of Interferences to decide that the competency of the proposed testimony should not be considered on motion. On the other hand, the decision indicates that he considered the proposed testimony and found that it appeared to be competent, but concluded that the question whether it was, in fact, competent should not be finally decided. The decision in this respect is believed to be correct and in accordance with Rule 158 (2).

With respect to the sufficiency of the showing in support of the motion it is believed that this is a matter which should be left largely to the discretion of the Examiner of Interferences and that his decision granting a motion to take testimony abroad should not be reviewed except where clear error is made to appear. In this case it is not made to appear that the Examiner of Interferences has waived any requirement of the rules or that error has been made in the interpretation thereof.

The decision of the Examiner of Interferences is affirmed.

TURNER v. MACLOSKIE.

Decided May 18, 1907.

INTERFERENCE—MOTION FOR DISSOLUTION BASED UPON CONTINGENCY—NOT TRANSMITTED.

A motion by one party to an interference to dissolve the interference as to certain counts in case certain other counts are found to be unpatentable in view of the same references upon a motion to dissolve brought by his opponent should not be transmitted.

APPEAL on motion.

AIR-BRAKE.

Mr. E. A. Wright for Turner.

Mr. Albert G. Davis for Macloskie, Jr.

MOORE, *Acting Commissioner:*

This is an appeal by Macloskie from the decision of the Examiner of Interferences refusing to transmit his motion.

Macloskie moved to dissolve on the ground that counts 1, 2, and 3 are unpatentable in view of certain patents cited in case counts 4, 5, 6, 7, and 8 are found unpatentable in view of the same patents on Turner's motion to dissolve. Macloskie states that he regards counts 1, 2, and 3 as patentable over the references cited and brought his motion merely because of Turner's motion to dissolve as to the other counts now pending before the Primary Examiner. His contention is that the patents cited are as pertinent to the one set of claims as to the other and that if the Examiner dissolves the interference as to counts 4, 5, 6, 7, and 8 on said references he should do the same with respect to counts 1, 2, and 3.

Macloskie's motion is objectionable in form in that it is based on a contingency and requires that the patentability of counts 4, 5, 6, 7, and 8 be first considered. The Examiner of Interferences properly refused to transmit the motion for this reason and also because Macloskie's motion was brought long after the limit allowed for filing such motions.

The transmission of Macloskie's motion is not believed necessary in order that his interests may be properly safeguarded. If his contention is true that the references are as applicable to one set of claims as to the other, it is to be presumed that the Examiner will take notice of the fact in considering Turner's motion to dissolve, and if in his opinion they are pertinent he will request jurisdiction under Rule 128 for the purpose of considering the patentability of counts 1, 2, and 3.

The decision of the Examiner of Interferences is affirmed.

EX PARTE MILLETT AND REED.

Decided May 25, 1907.

RES ADJUDICATA—PRACTICE—REJECTION.

Where an application is filed the specification and claims of which the Examiner holds to be substantially the same as those of a prior application of the same party the claims of which have been declared unpatentable by the Commissioner and the courts, *Held* that the application should be examined and the claims rejected on the ground that the question of their patentability is *res adjudicata*.

ON PETITION.

PRESSURE-GAGE.

Mr. Ralph W. Foster for the applicants.

MOORE, *Acting Commissioner:*

This is a petition that the Examiner be directed to examine the application as to its merits.

The character of the present application is stated by the Examiner as follows:

The above-named application is the last of a continuous series of four applications each based upon the same subject-matter as the others and each, after the original, purporting to be a continuation of its immediate predecessor and, consequently, of the original. That each before the present one was such a continuation has not been questioned. The specification of this last application has been rewritten so as to present in a somewhat different manner from the preceding ones, the alleged difficulties that have been overcome by the applicants in making their assumed invention. * * * It is, therefore, submitted that this application is what it purports to be, a continuation of the prior ones.

The claims of the last of this series of applications prior to the present application were held to be unpatentable by the various tribunals of the Office and by the Court of Appeals of the District of Columbia. Applicants also attempted unsuccessfully to obtain the issue of a patent thereon through a bill in equity under the provisions of section 4915 of the Revised Statutes. Then the applicants filed a petition before the Commissioner of Patents to reopen their case for further prosecution under Rule 142. Said petition having been denied, applicants filed the present application on February 11, 1907.

The Primary Examiner declined to examine this latter application as its to merits unless directed to do so by the Commissioner, upon the ground that to do so would virtually nullify the Commissioner's decision refusing to reopen the prior application under Rule 142.

This rule is not considered applicable to the present case. Applicants have filed a new application with the specification and claims differing in certain respects from those of the prior application. The Examiner regards these differences as unessential. The question of whether the changes are, in fact, immaterial or whether the present application is properly a continuation of the prior application is not up for consideration upon this petition. The single question presented is what disposition should be made of the application by the Examiner under the circumstances stated and in view of the holding of the Examiner.

The Court of Appeals of the District of Columbia has held in the cases of *Barrett* (87 O. G., 1075) and *Fay* (90 O. G., 1157) that the doctrine of *res adjudicata* may be applied in the discretion of the Commissioner to new applications of the character that the Examiner finds to exist in the present case.

In his statement the Examiner says:

It is submitted that the subject-matter of the present claims has been already adjudicated upon not only by the highest tribunals of the Office but by the courts as well.

In view of this opinion the Examiner should reject the claims on the ground of *res adjudicata* in accordance with the practice set forth in *ex parte Kenney*, (118 O. G., 2253.) In this case the Commissioner stated:

It is therefore clear that this Office is justified in refusing to consider successive applications for the same subject-matter. In other words, it is not required to reëxamine the question of patentability, but may take it as settled by the first adjudication. It is not understood, however, that the ruling of the court means that the existence of the second application may be ignored. It is on file and must be disposed of in some way. It is obviously necessary to make some examination of it before it can be determined that it presents the same questions as were adjudicated in the first case. When that determination is reached, however, the Office may refuse to examine the case further and may refuse to allow it because of the previous adjudication. Such refusal to allow must be regarded as a rejection, and therefore the Examiner should state clearly and definitely that the claims are rejected.

It is believed that the appellant is entitled to a review of the Examiner's ruling by the several appellate tribunals. That review, like the Examiner's action, will be confined to the question whether the matter is *res adjudicata* and will not extend to a reconsideration of the question whether the claims cover patentable subject-matter.

Although the letter of the Examiner refusing to examine the application as to its merits for the reasons stated by him might be construed as equivalent to a rejection of the same, it is thought that the action should be in the form of a rejection on the ground that the question of the patentability of the claims is *res*

adjudicata by reason of the adjudication in the prior application. (*Commissioner of Patents* v. *Whiteley*, 71 U. S. Sup. Ct., 522; *ex parte Nichols*, 1870, C. D., 71; *ex parte Le Van*, 1872, C. D., 40; *ex parte Arkell*, 1877, C. D., 73.) Having entered such an action in the case, the Examiner need not further examine the merits of the claims unless convinced that there is error in his finding or unless it is reversed on appeal.

The petition is granted to the extent indicated.

BASTIAN *v.* CHAMP.

Decided May 24, 1907.

1. INTERFERENCE—MOTION TO AMEND ISSUE—TRANSMISSION OF.

Where a certified copy of a part of an application was filed under Rule 105, but later the entire case was thrown open to inspection by order of the Commissioner, *Held* to excuse delay in bringing a motion to amend under Rule 109 as to claims which were not in certified copy.

2. SAME—SAME—PRACTICE.

Where a sufficient excuse is offered for the delay in bringing a motion to amend as to certain claims thereof, *Held* that the entire motion should be transmitted, as no additional delay will be occasioned.

APPEAL on motion.

BOTTLE-FILLING MACHINE.

Mr. William O. Belt and *Messrs. Bacon & Milans* for Bastian.

Mr. Jesse B. Fay for Champ.

MOORE, *Acting Commissioner:*

This is an appeal by Champ from the decision of the Examiner of Interferences transmitting Bastian's motion as a whole to amend his application by inserting six claims for the purpose of having them added as counts to the issue of the interference.

The motion is based on Rule 109 as to two of the claims and on the practice set forth in *Churchward* v. *Douglas* v. *Cutler* (106 O. G., 2016) as to the remaining claims.

A certified copy under Rule 105 of a portion of Champ's application was originally included in the interference as declared in May, 1906; but the entire application of Champ was thrown open to the inspection of Bastian on March 19, 1907, as the result of an order of the Commissioner. The present motion was filed March 23, 1907.

It is conceded by Champ that the above facts excuse the delay in bringing the portion of the motion based on Rule 109; but he appeals from the transmission of the remainder of the motion on the ground that no satisfactory excuse has been made for the delay in filing the same. The question of the transmission of a motion filed outside of the usual time rests largely within the discretion of the Examiner of Interferences. (*Winter* v. *Slick* v. *Vollkommer*, 97 O. G., 1837; *Harrison* v. *Shoemaker*, 109 O. G., 2170.) The action of the Examiner is not found to involve an abuse of discretion, and it will not, therefore, be disturbed. In view of the transmission of the portion of the motion based on Rule 109 the transmission of the remainder of the motion will not occasion additional delay.

The decision of the Examiner of Interferences is affirmed.

IN RE BATTLE CREEK SANITARIUM COMPANY, LIMITED.

Decided April 17, 1907.

1. TRADE-MARK—OPPOSITION—ALLEGATION OF USE OF MARK.

An alleged use of the mark sought to be registered by the opposer as a part of its name and in its advertising is not a trade-mark use, and therefore forms no basis for refusing registration to the applicant.

2. SAME—SAME—AMENDMENT.

Amendment to an opposition subsequent to the expiration of thirty days after publication will not be permitted where it would result in presenting a new ground in an opposition which is otherwise invalid.

ON APPEAL.

TRADE-MARK FOR BAKERY PRODUCTS, ETC.

Messrs. Chappell & Earl for the Battle Creek Sanitarium Company.

Mr. Fritz von Briesen for Fuller.

ALLEN, *Commissioner:*

This is an appeal by the Battle Creek Sanitarium Company, Limited, from the decision of the Examiner of Interferences sustaining the demurrer of Frank Fuller to its notice of opposition to the registration of a trade-mark.

Frank Fuller is an applicant for the registration of a trade-mark. The Battle Creek Sanitarium Company, Limited, have filed a notice of opposition to such registration. The opposition is based upon alleged use of the mark sought to be registered by the opposer as a part of its name and in its advertising. The applicant by demurrer has denied the sufficiency of such use to negative his right to registration, and his demurrer has been sustained on this ground by the Examiner of Interferences.

I am of the opinion that the position taken by the Examiner of Interferences is right. The use of a term by the opposer in advertising or as part of a corporate name is not a trade-mark use and would not form a ground for suit by the applicant upon his registration should it be granted. Section 16 of the Trade-Mark Act limits the right to sue upon the registration to those cases where the mark or an imitation thereof has been affixed by the defendant to the merchandise. The allegations of the notice of opposition in this case, if proved, would therefore form no basis for refusing registration to the applicant, and, so far as may be determined from such allegations, the registration of the mark of the applicant cannot result in legal injury to the opposer.

The opposer asks leave to amend its notice of opposition to set up use of the mark by it upon merchandise. This would be to lay a ground for opposition where at present there is none and bring the real notice of opposition after the statutory time for bringing such notices has expired. It is believed that amendment should not be permitted in such cases, and permission to do so in this case is denied.

The decision of the Examiner of Interferences sustaining the demurrer dismissing the opposition and adjudging that Frank Fuller is entitled to the registration of the mark for which he has made application is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

DUNBAR *v.* SCHELLENGER.

Decided February 5, 1907.

1. INTERFERENCE—REOPENING FOR INTRODUCTION OF NEWLY-DISCOVERED EVIDENCE—REVIEW BY COURT OF APPEALS.

Where the tribunals of the Patent Office in the exercise of their discretion have refused to reopen a case for the introduc

tion of newly-discovered evidence, their conclusions will be reviewed by the court of appeals only in case of an abuse of discretion.

2. SAME—PRIORITY—APPEAL TO COURT—CONSIDERATION OF PATENTABILITY.

"As regards the contention of the appellant that 'the structure in interference differs from the prior structure of Roberts in but two particulars,' * * * it is sufficient to say, that in so far as it appears to raise a question of patentability, that question has been settled by the allowance of the claims."

Mr. W. Clyde Jones, *Mr. Robert L. Ames*, and *Mr. Benjamin R. Johnson* for Dunbar.

Mr. C. A. Brown for Schellenger.

SHEPARD, *J.*:

This is an interference proceeding involving priority of invention of a means for operating the supervisory signals of a telephone system; and was declared between the application of Schellenger filed February 14, 1901, and that of Dunbar filed March 22, 1901.

The issue contains ten counts as follows:

1. The combination with a telephone-line, of a source of electricity and a pair of relays adapted to be bridged between the limbs of the talking-circuit thereof, a switch at the substation and a switch at the central station for controlling the circuit through said relays, and a signal adapted to be controlled by the conjoint action of said relays.

2. The combination with a pair of telephone-lines, of an inductive device through which the same are adapted to be united for conversation, a charging source of electricity and a pair of relays adapted to be bridged between the two limbs of each of said lines, one pair of relays being individual to one of said lines and the other pair being individual to the other line, switches at the substations and at the central station for controlling the circuit through said relays, and a signal controlled by the conjoint action of each pair of relays.

3. The combination with a metallic telephone-line free from permanent grounds outside the central office, of a charging-current source, a third conductor, a pair of relays at the central office, one of said relays being energized over the telephone-line and the other over a portion of the talking-circuit and the third conductor.

4. The combination with a metallic telephone-line, of a pair of relays and a charging-current source bridged across the line at the central station, a third conductor to which one pole of the current source is connected, both of said relays being adapted to be operated over the metallic telephone-line, and one of said relays being adapted to be operated over a portion of said line and third conductor.

5. The combination with a metallic telephone-line, of an operator's plug and a cord-circuit, a source of current and a pair of relays bridged across said circuit, a third conductor connected with one pole of said source, one of said relays being adapted to be operated over the metallic line when the subscriber's telephone is in use, and the other to be operated over a part of the line and said third conductor when the subscriber's telephone is not in use and the operator's plug is connected with the line.

6. In a telephone system, the combination with a telephone-line, of a source of current and a relay bridged between the two limbs of the talking-circuit thereof, a second relay at the central office connected in a circuit including a portion of one side of the talking-circuit and means for energizing it, a switch at the substation and a switch at the central station for controlling the circuit through said relays, and a signal controlled by the conjoint action of said relays.

7. In a telephone system, the combination with a telephone-line, of a source of electricity at the central office, an operator's plug and a pair of relays associated therewith, one of said relays being energized from the said source of electricity as long as the said operator's plug is connected with the said line and over a path having a part coincident with the talking-circuit, and the other relay being energized as long as the said operator's plug is connected with the said line and when the subscriber's telephone is in use, and a signal associated with said pair of relays, the circuit of said signal being established by the operation of the first of said relays and said signal being rendered inoperative by the operation of the second of said relays.

8. The combination with telephone-lines extending from subscriber's stations to an exchange, of a cord-circuit at the exchange provided with two strands for forming connections between two telephone-lines, a pair of relays corresponding to each end of the cord-circuit and included in bridge thereof, a source of current for inclusion in circuit with each of said pairs of relays, a supervisory signal for each pair of relays and jointly controlled thereby, switching apparatus for controlling the operation of the relays, and a condenser included in each cord-strand between the connections of the relays therewith.

9. The combination with telephone-lines extending from substations to jacks at an exchange, of a cord-circuit at the exchange provided with two strands for forming connections between subscriber's lines, a pair of relays corresponding to each end of the cord-circuit and included in bridge thereof; a source of current for energizing the said relays, a supervisory signal for each pair of relays and jointly controlled thereby, switching mechanism at the substations for controlling the operation of one of each pair of relays, means including a jack and a cord-circuit plug inserted in the jack, whereby a closed circuit is established through the remaining relay of each pair which is independent of the operative position of the substation apparatus, and a condenser included in each cord-strand between the connections of the relays therewith.

10. In a telephone system, an operator's cord-circuit, a pair of relays each operated over circuits including portions of the talking-circuit and a supervisory signal having its circuit controlled by the contacts of both of said relays, one of said relays being adapted to normally close the circuit and to be energized over the telephone-line when the line is in use whereby the signal is at that time rendered inert, and the other relay being adapted to normally open the circuit whereby when the cord-circuit is not connected with the line the signal is inert and when connected with a line in use the signal is displayed.

The Examiner of Interferences held that Dunbar's evidence established September 17, 1900, as the date of conception of the invention of the issue; but being of the opinion that Schellenger's clearly showed conception and reduction to practice in August, 1900, priority was awarded to him. He expressed the opinion also, that even were the evidence of reduction to practice insufficient, Schellenger's diligence, nevertheless, entitled him to the benefit of his earlier conception.

The decision reviews the testimony at great length, and contains an elaborate description of the invention as disclosed in the applications of the respective parties. This description seems to be an accurate one, but its insertion would occupy unnecessary space.

After noting an appeal from this decision, Dunbar filed a motion to restore jurisdiction to the Examiner of Interferences in order that he might entertain a motion to reopen the case for the introduction of alleged newly-discovered evidence. The evidence consisted of the testimony of Schellenger as a witness, on July 5, and 18, 1905, on behalf of Clausen in an interference between Clausen and Dean, No. 23,797, relating to telephone circuits and signals. To the motion were attached, a transcript of said testimony, the affidavits of counsel, and the affidavit of an expert relating to the evidence in connection with the issues and the evidence in the present case. This affidavit does not recite the issue in *Clausen* v. *Dean*, but contains sketches made by the witness of Clausen's invention: and also undertakes an analysis of the claims of the present issue, and claims that they are readable upon the Clausen structure. The Commissioner transmitted the motion to the Examiner of Interferences for decision. The then Examiner of Interferences had succeeded the one who rendered the award of priority above mentioned. The decision denied the motion. As the admissibility and effect of the testimony recited in the motion have been earnestly contended for throughout the proceedings, and on the final hearing, we shall quote liberally from this decision. The Examiner said:

Dunbar's motion is based upon the allegation that certain testimony given by Schellenger when testifying in behalf of Clausen in another interference (*Clausen* v. *Dean*, No. 23,797) is to the effect that the invention at issue in this case was disclosed to him by Clausen at a date prior to the date of conception to which Schellenger testified in this interference. An examination of Schellenger's testimony given in the second interference indicates that the disclosure made to him by Clausen did in fact embody the subject-matter of several counts of the above-entitled interference.

Considerable stress has been laid upon the contention that the interference should be reopened on the ground that the proposed new evidence would affect Schellenger's credit as a witness. In view of the fact that Schellenger and Clausen appear to have worked together in making improvements along the same line, it seems more probable that the discrepancies in Schellenger's testimony in the two cases arose from failure of the attorneys for himself and Clausen to properly limit the claims to their separate inventions. It is established, however, by the testimony of other witnesses, that Schellenger actually reduced the invention to practice before Dunbar. The possibility that Schellenger may not have been the originator of the invention in no way impairs the testimony of the other witnesses to the effect that Schellenger

was in possession of the invention and reduced it to practice prior to Dunbar's established date of conception. These facts preclude the possibility of awarding priority of invention to Dunbar.

For these reasons Schellenger's deposition given in the second interference, even if introduced in the present case, could not affect the award of priority which has been rendered. Had such testimony as that contained in Schellenger's later deposition originally been in this case, it might have led the Examiner of Interferences to direct the attention of the Commissioner under Rule 126 to the fact that a statutory bar existed to the grant of a patent to Schellenger as to certain of his claims. Inasmuch, however, as the determination of the question as to whether or not such bar exists is an *ex parte* matter and not within the jurisdiction of the Examiner of Interferences, no good cause exists for reopening the interference for the purpose of introducing testimony relative to the existence of a statutory bar.

He then cites, and quotes from the opinions in *Foster* v. *Antisdel* (88 O. G., 1527; 14 App. D. C., 552) and *Prindle* v. *Brown*, (112 O. G., 957; 24 App. D. C., 114,) which hold that a junior applicant cannot overcome the prior date of his opponent by proving that a third party was the first inventor. The decision thereafter proceeds as follows:

The only possible grounds upon which the evidence in question could be admitted would be that it utterly destroyed the credibility not only of Schellenger but of all his corroborating witnesses as to his possession and reduction to practice of the invention prior to the date established by Dunbar. It does not appear that any reason exists for the inference that the variance between the testimony given by Schellenger in the two cases was due to any fraudulent intent on Schellenger's part. However this may be, there appears to be no reason for holding that the testimony given by the other witnesses for Schellenger is impaired by the state of facts brought to light in support of this motion.

It is also contended that the testimony of Schellenger in the other interference, which testimony it is now sought to introduce in evidence in this interference, should be accepted as an admission against interest, and would justify the holding that Schellenger is not an original inventor. For the reasons that have been stated above and clearly announced by the Commissioner in *Trufant* v. *Prindle* v. *Brown* (*supra*), this question is not pertinent to the question of priority of invention as between Schellenger and Dunbar, since it is shown that Schellenger was the first in possession of the invention. This being true, Dunbar could not be adjudged the first inventor, even if it were admitted that Schellenger received his idea from some person other than Dunbar.

On appeal to him, the Commissioner affirmed this decision upon a full review of the question. He was clearly of the opinion that the testimony was inadmissible to show invention by another, not a party to the interference. His decision concludes as follows:

It does not appear that there was any abuse of discretion by the Examiner of Interferences in refusing to reopen the case. If it should appear upon consideration of the entire record upon appeal that the decision upon the question of priority would be changed by evidence that Schellenger's testimony is not entitled to full faith and credit, the case may be reopened for further testimony. The Examiner of Interferences, who has considered the entire record, is of the opinion that such reopening is not justified and no good reason is seen for disturbing his decision upon interlocutory appeal.

The case was then referred to the Examiners-in-Chief to determine the appeal on the question of priority. These affirmed the award to Schellenger. On final appeal to the Commissioner this decision was affirmed. After a careful review of the evidence he said:

Not only is Schellenger entitled to the award of priority on the ground that he was the first to conceive and the first to reduce to practice, but also on the ground that he was exercising reasonable diligence at and before the time when Dunbar entered the field and up to the time of filing his application.

Upon the question of admitting the evidence contained in the motion he said:

After the decision of the Examiner of Interferences on the question of priority, and pending an appeal to the Examiners-in-Chief, Dunbar brought a motion to reopen the interference for the purpose of introducing into the record a deposition given by Schellenger in a later interference between different parties, which it was alleged showed that Schellenger was not the inventor of certain counts of this interference and which, also, it is alleged, discredited Schellenger, as it contained allegations contrary to those made in the present case. The Examiner of Interferences refused to reopen the case and upon appeal from that decision, I held that the case would be reopened, if at all, only for the admission of evidence discrediting Schellenger's testimony, and that whether it should be so reopened would be determined when the case came before me for final hearing. Upon examination of the deposition in the later interference, it is found that Schellenger testifies that one Henry P. Clausen, under whose direction Schellenger was working while in the employ of the American Electric Telephone Company, was the inventor of a certain circuit which Schellenger referred to as a "three-relay system." This circuit is specifically different from the "four-relay" system which forms the subject-matter of this interference. Assuming for the purpose of argument that some of the counts of this interference are broad enough to cover both of these structures, I am nevertheless convinced that such testimony does not materially lessen the weight to be given to Schellenger's testimony in this interference. It must be remembered that Schellenger was testifying in both instances with respect to specific constructions, in the first interference with respect to a "four-relay" system, and in the later interference with respect to a "three-relay" system whose circuits differed in many respects from the circuits of the "four-relay" system. In the earlier testimony Schellenger testified that he constructed a specific device upon a certain date; in his later deposition he testified that Clausen, upon a certain date, set up a different apparatus. There is no inconsistency in these statements. I am convinced that the deposition in the later interference furnishes no substantial basis for believing that the testimony first given was false. The only real effect of admitting this testimony would be to show, possibly, that some of the counts of this interference were first invented by a third party, and not by Schellenger. As stated in a prior decision, in this case, this question is to be considered, if at all, after the final determination of the question of priority.

The appellee has moved to dismiss so much of the appeal as relates to the motion to reopen the case for the consideration of the newly-discovered evidence. Whether such an appeal can be entertained, at all, though the question has been raised and decided by the Commissioner along with the general question of priority, has never been expressly decided by this court. In *Richards* v. *Meissner* (114 O. G., 1831; 24 App. D. C., 305, 309), it was said by Mr. Justice Morris:

The reopening of a cause for the introduction of newly-discovered evidence is always a matter for the trial court, and is in its discretion; and that discretion is not subject to review in a purely appellate tribunal, such as this court is.

The evidence was, however, incidentally discussed and it was said that there was no indication of the abuse of discretion. Reference was also made to the case of *Cross* v. *Phillips* (10 App. D. C., 228, 237), in which one of the errors assigned was, the refusal of leave to amend a preliminary statement. There the court said:

In courts both of law and equity the right to amend is not an absolute one, but rests in the discretion of the court, and the exercise of this discretion is not reviewable unless it may be in case of its palpable abuse.

(See also, *Hammond* v. *Basch*, 115 O. G., 506; 24 App. D. C., 469, 472.) In view of the character of these cases, we think, that the exercise of discretion in refusing to reopen a case for the introduction of newly-discovered evidence, might be the subject of review and correction when undoubtedly abused, and productive of palpable injustice. Clearly the Commissioner was right in his action in this instance on the ground that it is not admissible to show that a third person was, in fact, the first inventor. As regards the effect of the later deposition by way of discrediting the evidence of Schellenger in this case, it is sufficient to say, that, after a comparison of the two, with the aid of the elaborate and earnest argument on behalf of the appellant, we are not convinced of error in the final conclusion of the Commissioner.

The question of priority on the record, as submitted, remains to be considered. Each tribunal of the Patent Office, accepting the proof of conception by Dunbar on September 17, 1900, has agreed in holding that Schellenger conceived the invention of the issue and reduced it to practice in August, 1900. These concurrent conclusions, under the settled rule in such cases, impose the burden upon the appellant of showing error therein clearly. This he has failed to do. The several decisions contain fair and careful reviews of the testimony of Schellenger and his corroborating

witnesses, and we do not think it important to add anything to the discussion. They appear to have given the proper weight to the evidence of each witness, carefully distinguishing between those fully competent to understand the nature and details of the invention when disclosed and tested, and those not well informed therein.

As regards the contention of the appellant that—

the structure in interference differs from the prior structure of Roberts in but two particulars, and all of the claims in issue are readable directly upon the Roberts structure, except for the limitations as to these two distinguishing features—

it is sufficient to say, that in so far as it appears to raise a question of patentability, that question has been settled by the allowance of the claims. (*Johnson* v. *Mueser*, present term.)

And in so far as it relates to the necessary elements of Schellenger's construction to answer the test of conception and reduction to practice, we think it is fairly met in the decision of the Examiners-in-Chief as follows:

"The invention in controversy is so fully described in the decision of the Examiner of Interferences and in the briefs and applications of the respective parties, that we regard it as unnecessary to herein explain its details. In its general aspect said invention is a modification of or an improvement upon previously-existing means for operating the supervisory (or electric lamp) signals at the central station of a telephone system, by means of which signals the operator determines whether the called subscriber has responded, and whether either subscriber has concluded the conversation and placed his receiver upon the switch-hook of the telephone. A patent to one Roberts, No. 777,544 of December 13, 1904, mentioned in the record, illustrates the prior art. It discloses a telephone system in which the supervisory signals are controlled by four relays, two of said relays being disposed in each half of the apparatus at the exchange, and one of these two relays situated in a bridge across the cord or talking circuit, while the other relay is arranged in a local circuit connected with the bridge. In the apparatus here in controversy both relays are included in the bridge, and a portion of the cord or talking circuit is at certain times used as a part of the circuit for one of the relays. Although the issue does not call for any specific arrangement of the cord-circuits and does not require that the bridge shall be connected with these circuits in any unusual way, or that any particular supplementary devices shall be employed in connection with the system, it is contended on behalf of Dunbar that Schellenger has not carried his invention beyond the experimental stage when as alleged by him he set up and tested the apparatus upon which he relies for reduction to practice. It is pointed out that at that time he did not develop a satisfactory "busy test" and had not in contemplation any operative means for enabling the operator to automatically cut out the subscriber's bell-circuits when connections between the central station and the telephones at the substations are established.

The objection thus raised is in our opinion without weight for not only does the prior art reveal means which may be used for attaining both of the aforesaid objects, but the combinations covered by the issue possess their own utilities irrespective of the presence or absence of calling and testing devices of any kind. In other words, the issue is directed to a new and useful invention which although it is intended to be an element of a telephone-exchange, nevertheless possesses its own characteristic utility.

It may be remarked that had all of the expert tribunals of the Office denied the sufficiency of Schellenger's evidence of actual reduction to practice in August, 1900, on account of the character of the structure, and the failure to test it in a regular working telephone system, we would not, considering the nature and purpose of the invention, dissent from such a conclusion. (*McDonald* v. *Edison*, 105 O. G., 1263; 21 App. D. C., 527, 529; *Paul* v. *Hess*, 115 O. G., 251; 24 App. D. C., 463, 467; *Gallagher* v. *Hein*, 115 O. G., 1330; 25 App. D. C., 77, 82; *Ocumpaugh* v. *Norton*, 115 O. G., 1850; 25 App. D. C., 90, 93.) But, as they are well informed in the art, and have concurred in holding the test sufficient, the conditions are not such as to satisfy us that they have erred in such finding.

The question is of no practical importance, however, because we fully agree with them that Schellenger, having shown his conception of the invention, was not lacking in diligence between the date of that conception and the presentation of his application. His delay was not great, and his financial condition, coupled with his necessary occupation during the period, furnishes a sufficient excuse for his failure to take speedier action.

It follows that the decision of the Commissioner will be affirmed. It is so ordered, and the clerk will certify this decision to the Commissioner of Patents as required by law. Affirmed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 15, 1907.

Charles H. Palmer, Jr., his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of The Columbia Carriage Company, of Hamilton, Ohio, for registration of a trade-mark and a trade-mark registered to Charles H. Palmer, Jr., of Amesbury, Mass., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Charles H. Palmer, Jr., and also the copy mailed to his attorney of record, together with the letter setting times for taking testimony, having been returned undelivered, notice is hereby given to the said Charles H. Palmer, Jr., his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 6, 1907.

The Ohio Chemical Company, its assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The Norwich Pharmacal Company, of New York, N. Y., for registration of a trade-mark and a trade-mark registered to the Ohio Chemical Company, of Columbus, Ohio. The notice of said declaration mailed by the Patent Office in the usual manner to the said Ohio Chemical Company at its known address, 573 North High street, Columbus, Ohio, has been returned by the Post-Office Department undelivered.

Notice is therefore hereby given to the said Ohio Chemical Company, its assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 4, 1907.

Ida M. Rew, her assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of Otis Company, of Ware, Mass., for registration of a trade-mark and a trade-mark registered to Ida M. Rew, of New York, N. Y., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Ida M. Rew and to her attorney of record having been returned, with the information that the registrant cannot be found and that the attorney of record is dead, notice is hereby given to the said Ida M. Rew, her assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

F. I. ALLEN, *Commissioner.*

Printed Copies of Patents.

A printed copy of the complete specification and drawings of any patent published herein can be obtained for five cents.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

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Patents	792	No. 857,569 to No. 858,360, inclusive.
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Trade-Marks	138	No. 63,466 to No. 63,603, inclusive.
Labels	10	No. 13,623 to No. 13,632, inclusive.
Prints	6	No. 2,034 to No. 2,039, inclusive.
Reissues	5	No. 12,663 to No. 12,667, inclusive.
Total issue	965	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks, Labels, and Prints.	States.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Alabama	3	.....	New Hampshire	4	.....
Arizona Territory	.....	.....	New Jersey	33	16
Arkansas	4	2	New Mexico Ter't'y	.....	.....
California	18	3	New York	123	36
Colorado	8	.....	North Carolina	4	.....
Connecticut	25	4	North Dakota	1	.....
Delaware	1	.....	Ohio	40	4
District of Columbia	8	3	Oklahoma Territ'y	3	.....
Florida	2	.....	Oregon	5	1
Georgia	14	1	Panama	.....	.....
Hawaii Territory	.....	.....	Pennsylvania	94	9
Idaho	3	.....	Philippine Islands	1	.....
Illinois	67	4	Rhode Island	4	.....
Indian Territory	1	1	South Carolina	2	.....
Indiana	17	2	South Dakota	5	.....
Iowa	13	1	Tennessee	3	.....
Kansas	9	2	Texas	10	3
Kentucky	7	.....	Utah	1	.....
Louisiana	3	1	Vermont	2	.....
Maine	1	4	Virginia	8	3
Maryland	16	2	Washington	15	4
Massachusetts	56	5	West Virginia	10	1
Michigan	27	3	Wisconsin	13	5
Minnesota	12	3	Wyoming	.....	.....
Mississippi	2	.....	U. S. Army	.....	.....
Missouri	27	2	U. S. Navy	2	.....
Montana	1	.....			
Nebraska	3	11	Total to citizens of the United States	729	136
Nevada	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks, Labels, and Prints.	Countries.	Patents and Designs.	Trade-Marks, Labels, and Prints.
Argentina	.....	.....	Natal	.....	.....
Austria-Hungary	.....	.....	Netherlands	1	.....
Belgium	3	.....	Newfoundland	1	.....
Brazil	.....	.....	New South Wales	2	.....
British West Indies	.....	.....	New Zealand	.....	.....
Canada	14	1	Norway	.....	1
Cape Colony	.....	.....	Persia	.....	.....
Chile	.....	.....	Queensland	.....	.....
China	.....	.....	Roumania	.....	.....
Costa Rica	.....	.....	Russia	2	.....
Cuba	.....	.....	Scotland	.....	.....
Denmark	1	.....	South Australia	.....	.....
Ecuador	.....	.....	Spain	.....	.....
England	17	6	Switzerland	5	2
France	8	1	Transvaal, South Africa	.....	.....
Germany	20	5	Haiti	1	.....
Ireland	1	.....	Victoria	.....	.....
Italy	1	2	Western Australia	.....	.....
Japan	.....	.....			
Java	.....	.....	Total to citizens of foreign countries	77	18
Mexico	.....	.....			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 17, 1907.

The Improved Newburgher Pantaloons Manufacturers, their assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of the Kentucky Jeans Clothing Company, of Louisville, Ky., for registration of a trade-mark and a trade-mark registered to The Improved Newburgher Pantaloons Manufacturers, of 426 Broadway, New York, N. Y., and the notice of said declaration mailed by the Patent Office in the usual manner to the said The Improved Newburgher Pantaloons Manufacturers having been returned undelivered, notice is hereby given to the said The Improved Newburgher Pantaloons Manufacturers, their assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Commissioner.*

Trade-Marks.

The publication of trade-marks under the act of February 20, 1905, in the OFFICIAL GAZETTE, commenced May 2, 1905, and will appear in each weekly number of the GAZETTE thereafter.

Extra copies of the trade-mark portion of the GAZETTE, which will be sold separately, may be obtained single or in quantities for five cents each. Coupons will be taken in payment therefor.

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business June 18, 1907.

Room No	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
308	XV. Bread, Pastry, and Confections, Making, Coating, Laminated Sheets and Fabrics, Fuel, Glass, Hydraulic Lime and Cement, Paper-Making, Paving, and Plastics.	June 4	June 7	138
303	XVII. Clutches, Linotyping, Printing, Matrix-Making, Nut and Bolt Locks.	June 4	May 20	159
322	XXXVI. Curtains, Shades, and Screens, Drafting, Driers, Measuring Instruments, and Wind-Wheels.	June 3	May 21	332
324	XII. Elevators, Journal-Boxes, Lubricators, Machine Elements, Pulleys and Shafting.	June 3	May 13	336
312	VII. Games and Toys, Mechanical Motors, Optics, Paper Manufactures, Velocipedes.	June 3	May 11	231
128	II. Bee Culture, Dairy, Label-Affixers, Paper Files and Binders, Pneumatics, Presses, Store-Service, Tobacco, etc.	June 3	May 4	221
304	XXXIV. Railways, Railway-Brakes, Rolling-Stock.	June 1	May 11	392
318	VI. Bleaching and Dyeing, Chemicals, Explosives, Fertilizers, Medicines, Preserving, Sugar and Salt.	May 31	May 14	268
172	XXXI. Alcohol, Charcoal and Coke, Distillation, Gas, Heating and Illuminating, Hides, Skins, and Leather, Liquid Coating Compositions, Oils, Fats, and Glue, Water Purification.	May 29	May 17	211
244	XXXV. Baggage, Buckles, Buttons, and Clasps, Card, Picture, and Sign Exhibiting, Deposit and Collection Receptacles, Package and Article Carriers, Packing and Storing Vessels, Photography.	May 29	May 1	626
327	XVIII. Steam-Engineering, etc.	May 27	May 4	217
179	XX. Artificial Limbs, Builders' Hardware, Dentistry, Locks and Latches, Safes, Undertaking.	May 27	Apr. 24	233
133	XXII. Air-Guns, Ammunition and Explosive Devices, Boats and Buoys, Catapults and Targets, Firearms, Marine Propulsion, Ordnance, Ships.	May 25	May 13	129
232	IV. Bridges, Conveyers, Cranes and Derricks, Excavating, Hoisting, Hydraulic Engineering, Loading and Unloading, and Towers.	May 24	May 17	266
315	XXV. Butchering, Mills, Threshing, and Vegetable Cutters and Crushers.	May 24	Apr. 25	267
164	XXXIII. Canes, Canopies, Cutlery, Domestic Cooking Vessels, Electricity, Medical and Surgical, Electric Signaling, Fireproof Buildings, Harness, Masonry, Tents, and Umbrellas.	May 23	May 29	249
321	I. Tillage, etc., Fences, and Railway Draft Appliances.	May 20	May 22	300
137	VIII. Beds, Chairs, Furniture, Kitchen and Table Articles, Store Furniture.	May 20	Apr. 2	395
375	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, Washing Apparatus.	May 18	May 18	309
382	XXVIII. Miscellaneous Heat-Engines, Internal-Combustion Engines.	May 16	May 15	389
153	XXX. Fluid-Pressure Regulators, Lamps and Gas-Fittings, Type-Writing Machines.	May 16	May 14	211
147	XXIX. Coopering, Fire-Escapes, Ladders, Roofs, Wheelwright-Machines, Wooden Buildings, Wood-Sawing, Wood-Turning, Woodworking-Tools, Woodworking.	May 15	Apr. 1	334
109	XVI. Telegraphy and Telephony.	May 13	May 18	264
378	XXXVIII. Artesian and Oil Wells, Bottles and Jars, Care of Live Stock, Fishing and Trapping, Stationery, Stone-Working.	May 13	Apr 16	424

Applications Under Examination—Continued.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. Amended	New.	No. of applications awaiting action.
107	XXXVII. Electricity, Conductors, Lighting, Special Apparatus.	May 13	Apr. 13	436
307	XIV. Compound Tools, Cutting and Punching Sheets and Bars, Farriery, Metal-Bending, Metal-Ornamenting, Sheet-Metal Ware, Making, Tools, Wire-Working.	May 10	Apr. 27	195
144	XXIV. Apparel, Apparel Apparatus, Sewing-Machines, Surgery, Toilet.	May 6	May 11	381
142	IX. Air and Gas Pumps, Baths and Closets, Fire-Extinguishers, Hydraulic Motors, Pumps, and Sewerage.	May 4	Apr. 17	441
379	XXIII. Acoustics, Coin-Handling, Horology, Recorders, Registers, Signals, Time Controlling Mechanism.	May 1	Apr. 25	345
175	III. Annealing and Tempering, Coating with Metal, Electrochemistry, Metal-Founding, Metallurgy, Shaping Fluid Metal.	May 1	Apr. 8	458
148	XXXII. Carbonating Beverages, Dispensing Beverages, Dispensing-Cans, Metallic Shipping and Storing Vessels, Packaging Liquids, Paper Receptacles, Refrigeration, Wooden Receptacles.	May 1	Apr. 1	746
167	V. Bookbinding, Harvesters, Jewelry, and Music.	Apr. 27	Apr. 27	447
332	X. Carriages and Wagons	Apr. 27	Apr. 20	614
122	XIX. Heating and Cooking Stoves, Liquid and Gaseous Fuel, Stoves and Furnaces, and Furnaces.	Apr. 27	Apr. 1	469
330	XIII. Arms, Projectiles, and Explosive Charges, Making, Metal-Working, Needle and Pin Making, etc.	Apr. 23	Apr. 19	386
154	XI. Boot and Shoe Making, Boots, Shoes, and Leggings, Button, Eyelet, and Rivet Setting, Leather Manufactures, Nailing and Stapling, Check-Controlled Apparatus, Whips and Whip Apparatus.	Apr. 22	Apr. 27	442
112	XXI. Textiles, Carding, Knitting, Spinning, Weaving, etc.	Apr. 19	Apr. 5	420
105	XXVI. Electricity, Generation, Electric Heaters, Electric Railways, Motive Power.	Apr. 12	Mar. 19	465
343	XXXIX. Cushion and Pneumatic Tires, Fine Arts, and Water Distribution.	Apr. 9	Apr. 10	731
	Total number of applications awaiting action			13,877
159	TRADE-MARKS, DESIGNS, LABELS AND PRINTS.			
	Trade-Marks	June 15	June 11	166
	Designs	June 14	June 10	25
	Labels and Prints			

Interference Notice.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 8, 1907.

Frederic B. Cochran, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of the Richmond Cedar Works, of Richmond, Va., an application of the Sturges & Burn Manufacturing Company, of Chicago, Ill., for registration of a trade-mark, and a trade-mark registered to Frederic B. Cochran, of New York, N. Y. The attorneys of record for said Frederic B. Cochran state that they have been unable to locate their client, and no street address for this party is on file in the case.

Notice is therefore hereby given to Frederic B. Cochran, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

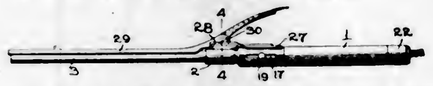
This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Commissioner.*

PATENTS

GRANTED JUNE 25, 1907.

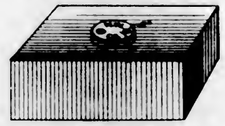
857,569. ELECTRIC CURLING-IRON. ISABELL ALLEN, Kansas City, Mo., and GEORGE HANLON, Shawneetown, Ill. Filed Oct. 16, 1906. Serial No. 339,256.



Claim.—1. A curling iron, comprising a handle, a tube carried thereby, means arranged on the interior of the tube for heating the same, a plate pivotally mounted on the forward end of the handle, and a swinging leg pivotally connected to the forward end of said plate.

2. A curling iron, constructed with a handle, a tube carried thereby, an electric heater arranged in said tube, means arranged in the handle whereby the electric heater is controlled, a plate pivotally arranged on the forward end of the handle and adapted to swing at right angles thereto, a swinging leg pivotally arranged on the forward end of the plate, and a spring arranged between said plate and the rear end of said leg.

857,570. TAG-REST FOR SOAP. LEWIS C. ALLEN, Cincinnati, Ohio, assignor to The M. Werk Company, Cincinnati, Ohio, a Corporation of Ohio. Filed Apr. 1, 1907. Serial No. 365,720.



Claim.—1. A tag rest for soap cakes, formed of a substance insoluble in water, said rest having a head adapted to project beyond the body of the soap, said head having a flanged periphery.

2. A tag rest for soap cakes, said rest formed of a substance indestructible by water and comprising a top adapted to project beyond the body of the soap, said top having a plurality of perforations and a flanged periphery.

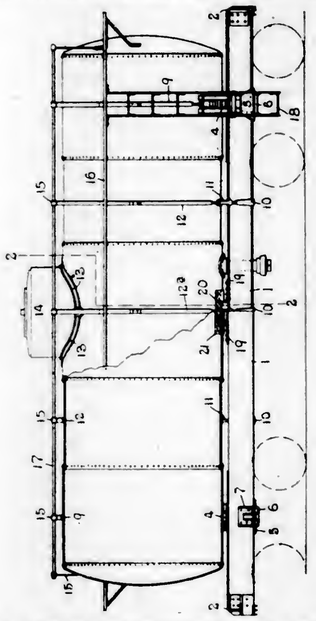
3. A unitary tag-rest for soap cakes, formed of a substance indestructible by water or soap, and having in combination, a top adapted to project beyond the body of the soap and perforated to permit water to wash through, said top having a peripheral flange adapted to be embedded in the soap cake.

4. A unitary tag-rest adapted to project beyond the body of a soap cake, said rest being formed of an insoluble substance and adapted to be embedded in soap cakes, having perforations adapted to admit water, and a portion adapted to be embedded in the soap.

857,571. TANK-CAR. JOHN M. AMES, New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo., a Corporation of New Jersey. Filed Dec. 28, 1906. Serial No. 349,878.

Claim.—1. In a tank car, the combination with a tank, of a frame, and interlocking members forming abutments between the tank and frame, which members are designed at all times to receive end thrusts and allow the tank to expand substantially throughout its length; substantially as described.

2. In a tank car, the combination with an underframe, of a tank mounted on said underframe, and interlocking members forming abutments between the tank and frame, which members are designed at all times to receive end thrusts and allow the tank to expand substantially throughout its length; substantially as described.



3. In a tank car, the combination with a tank, of a frame, and interlocking members at the center of the car which prevent the tank from shifting longitudinally; substantially as described.

4. In a tank car, the combination with an underframe, of a tank mounted on the underframe, and interlocking members at the center of the car which prevent the tank from shifting longitudinally; substantially as described.

5. In a tank car, the combination with an underframe including body bolsters, of a tank supported by the underframe, and interlocking members arranged between the body bolsters, said interlocking members forming abutments which prevent the tank from shifting longitudinally and allow it to expand; substantially as described.

6. In a tank car, the combination with a tank, of an underframe, bands anchored to the underframe and extending over the tank, and interlocking members which prevent the tank from shifting longitudinally and allow it to expand, the relative position of said interlocking members being constant; substantially as described.

7. In a tank car, the combination with a tank, of an underframe, bands anchored to the underframe and extending over the tank, and interlocking members between said tank and frame which prevent the tank from shifting longitudinally, the relative position of said interlocking members being constant; substantially as described.

8. In a tank car, the combination with a tank, of an underframe, bands anchored to the underframe and extending over the tank, and interlocking members at the center of the car which prevent the tank from shifting longitudinally; substantially as described.

9. In a tank car, the combination with a tank, of a frame, lugs secured to said tank and frame near the center of the car, which lugs interlock and prevent the tank from shifting longitudinally; substantially as described.

10. In a tank car, the combination with a tank, of an underframe, lugs secured to the underframe near the center of the car, and a projection carried by the tank arranged between said lugs; substantially as described.

11. In a tank car, the combination with a tank, of an underframe, lugs secured to the underframe near the center of the car, and a projection carried by the tank arranged between said lugs; substantially as described.

12. In a tank car, the combination with a tank, of a frame including body bolsters, a tank-supporting member near the center of the car, and lugs co-operating with said tank-supporting member to prevent the tank from shifting longitudinally; substantially as described.

13. In a tank car, the combination of a tank, an underframe, and interlocking members on said tank and underframe, said members being located at the center of the car and having coincident engaging faces; substantially as described.

14. In a tank car, the combination with a tank, of a frame, interlocking members between said tank and frame, one of which interlocking members is riveted to the tank near the center thereof, the rivets passing through a reinforcing plate located inside of the tank; substantially as described.

15. In a tank car, the combination with a tank, of an underframe, and interlocking members between said tank and underframe, one of which interlocking members is secured to the underframe near the center thereof, substantially as described.

857,572. TRACK LIFTING, LEVELING, BALLASTING, AND TAMPING MACHINE. CLEMENT I. AMEY, Toronto, Ontario, Canada. Filed Dec. 31, 1906. Serial No. 350,287.

Claim.—1. The hereinbefore described apparatus comprising a tamping means consisting of a tamper frame, tampers, spring pressed fulcrums rockably and yieldingly connecting the tampers to the tamper frame, means for raising and lowering the tamper frame, and operable means engaging the upper ends of the tampers to press them outward, and the lower ends inward.

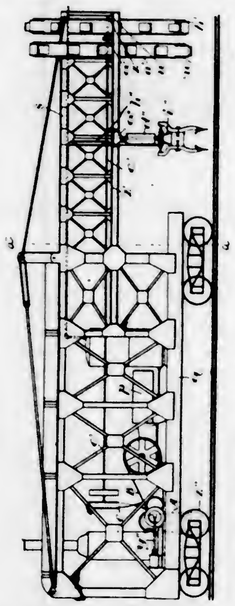
2. The hereinbefore described apparatus comprising a tamping means consisting of a tamper frame, two sets of tampers arranged on opposite sides of the tamper frame, spring pressed fulcrums rockably and yieldingly connecting the tampers to the tamper frame, means for raising and lowering the tamper frame and tampers, and operable means engaging the upper ends of the tampers to press them outward, and the lower ends inward.

3. The hereinbefore described apparatus comprising a tamping means, means for raising and lowering the tamping means relatively to the road bed, other means for actuating the tamping means to move beneath the tie when performing their tamping functions, and a ballasting means.

4. The hereinbefore described apparatus comprising a tamping means, consisting of two sets of tampers arranged to operate on opposite sides of the tie, means for raising and lowering the tamping means, other means for actuating the tampers to move beneath the tie when performing their tamping functions, and a ballasting means.

5. The hereinbefore described apparatus comprising a ballasting means consisting of two elevators arranged at opposite sides of the road bed and extending transversely across the same, and means for actuating the elevators whereby the ballast may be deposited at the sides of the tie from end to end thereof.

6. The hereinbefore described apparatus comprising a ballasting means consisting of two elevators arranged at opposite sides of the road bed, and extending transversely across the same, means for actuating the elevators whereby the ballast may be deposited at the sides of the tie from end to end thereof, and a tamping means to force the ballast under the ties.



7. The hereinbefore described apparatus comprising a ballasting means consisting of two elevators arranged at opposite sides of the road bed, and extending transversely across the same, means for actuating the elevators whereby the ballast may be deposited at the sides of the tie from end to end thereof, and a tamping means consisting of a set of tampers, means for simultaneously raising and lowering all the tampers of the set, and other means for simultaneously actuating the tampers to press the ballast under the ties.

8. The hereinbefore described apparatus comprising a track lifting carriage, rail grips carried thereby, and a carriage lifting means consisting of two cylinders connected to the track lifting carriage, pistons movable within the cylinders, piston rods for the pistons, extending beyond the lower end of the cylinders, feet adjustably connected to the pistons, and pneumatic means connected with the cylinders.

9. The hereinbefore described apparatus comprising a track lifting carriage, rail grips carried thereby, clamps for locking the rail grips, lifting cylinders carried by the track lifting carriage, pistons for the lifting cylinders, piston rods for the pistons, projecting beyond the lower ends of the cylinders, feet adjustably connected to the lower ends of the pistons, and means for actuating the pistons, and cylinders to raise the track lifting carriage.

10. The hereinbefore described apparatus comprising a main carriage, a motor carried thereby, and a ballast lifting means consisting of two elevators, working from opposite sides of and transversely across the track bed, and arranged to carry the ballast from the sides thereof, and deposit it at the sides of the ties along the length thereof.

11. The hereinbefore described apparatus comprising a main carriage, a motor mounted thereon, a driving shaft actuated by the motor, a driven shaft, means for actuating the driven shaft from the driving shaft, sprocket wheels mounted on the driving and driven shafts, elevators consisting of elevator belts meshing with the sprocket wheels, and carriers for the elevator belts, means for effecting the adjustment of the elevators, and an adjustable supporting means for the elevators.

12. The hereinbefore described apparatus comprising a main carriage, a crane projecting beyond the end of the main carriage, a driving shaft journaled in bearings carried by the crane, a motor for actuating the driving shaft, a driven shaft actuated by the driving shaft, sprocket wheels mounted on the driving and driven shafts, and elevators consisting of elevator sides having elongated slots therein, through which project the driving and driven shafts, guide blocks loosely mounted on the driving and driven shafts engaging with the walls of the elongated slots, sprocket wheels revoluble between the elevator sides, elevator belts passing around the said sprocket wheels, elevator buckets pivotally connected to the elevator belts to be selectively tripped during the travel thereof, and friction brakes to arrest the travel of the elevator belts.

13. The hereinbefore described apparatus comprising a main carriage, a crane projecting beyond the end of the main carriage, a driving shaft journaled in bearings carried by the crane, a motor for actuating the driving shaft, a driven shaft actuated by the driving shaft, sprocket wheels mounted on the driving and driven shafts, and elevators consisting of elevator sides having an elongated slot therein through which project the driving and driven shafts, guide blocks loosely mounted on the driving and driven shafts engaging with the walls of the elongated slots, sprocket wheels revoluble between the elevator sides, elevator belts passing around the sprocket wheels, elevator buckets pivotally connected to the elevator belts to be selectively tripped during the travel thereof, friction brakes to arrest the travel of the elvator belts, a supporting means for the elevators, and means to adjust the supporting means during the adjustment of the elevators.

14. The hereinbefore described apparatus comprising a main carriage, a crane projecting beyond one end thereof, a track rail carried by the crane, a crane car mounted on the track rail, lifting and lowering cylinders, a tamping frame suspended from the lifting and lowering cylinders, tamping levers fulcrumed to the tamping frame, expanding cylinders actuating the tamping levers, means actuating the lifting and lowering cylinders, and means actuating the expanding cylinders.

15. The hereinbefore described apparatus comprising a main carriage, a crane projecting beyond one end thereof, a track rail carried by the crane, a crane car mounted on the track rail, lifting and lowering cylinders suspended from the crane car, a tamping frame suspended from the lifting and lowering cylinders, tamping levers fulcrumed to the tamping frame, blades connected with the tamping levers, expanding cylinders actuating the tamping levers, and means actuating the lifting and lowering cylinders and means actuating the expanding cylinders.

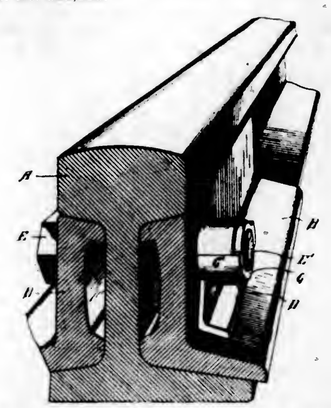
16. The hereinbefore described apparatus comprising a tamping mechanism consisting of a tamping frame, tamping levers fulcrumed to the tamping frame, expanding cylinders for the tamping levers, and means for actuating the expanding cylinders.

17. The hereinbefore described apparatus comprising a tamping mechanism consisting of a tamping frame, spring tensioned fulcrums supported by the tamping frame, tamping levers rockable on the spring tensioned fulcrums, and expanding cylinders for the expanding levers.

18. The hereinbefore described apparatus comprising a tamping mechanism consisting of a tamping frame, spring tensioned fulcrums supported by the tamping frame, tamping levers rockable on the spring tensioned fulcrums, blades for the tamping levers, and expanding cylinders for actuating the tamping levers.

19. The hereinbefore described apparatus comprising a tamping mechanism consisting of lifting and lowering cylinders, pistons movable therein, piston rods for the pistons, compression springs engaging the pistons and cylinders, a tamping frame suspended from the piston rods, spring tensioned fulcrums carried by the tamping frame, tamping levers rockable on the spring tensioned fulcrums, shovel blades connected to the lower ends of the tamping levers, expanding cylinders actuating the expanding rails means for actuating the expanding cylinders, and means for actuating the lifting and lowering cylinders.

857,573. NUT-LOCK. WILLIAM ATKINS, St. John, New Brunswick, Canada, assignor of two-thirds to Alexander W. MacRae, St. John, Canada. Filed Oct. 18, 1906. Serial No. 339,558.



Claim.—1. A nut lock comprising, in combination with a bolt having flexible fingers projecting from one end thereof, a nut adapted to receive said threaded bolt and provided with a flange to hold the nut from rotation, a washer engaging said nut and adapted to be held to the nut by said fingers, as set forth.

2. A nut lock comprising, in combination with a bolt having flexible fingers projecting from one end thereof, a nut having transverse grooves formed in the circumference thereof and provided with a flange adapted to hold the nut from rotation, a washer having arms projecting therefrom and adapted to engage the grooves of said nut, said finger being adapted to be bent to hold the washer upon the nut, as set forth.

3. A nut lock comprising, in combination with a bolt having flexible fingers projecting from one end thereof, a nut having an angled flange and grooves formed in said nut at the upper edges of said flange, a washer having arms projecting at right angles therefrom and adapted to engage said grooves, said fingers being adapted to be bent to engage the washer and hold the same upon the nut, as set forth.

857,574. PENCIL-SHARPENER. FREDERICK E. V. BAINES, Blackheath, England. Filed Oct. 4, 1906. Serial No. 337,432.



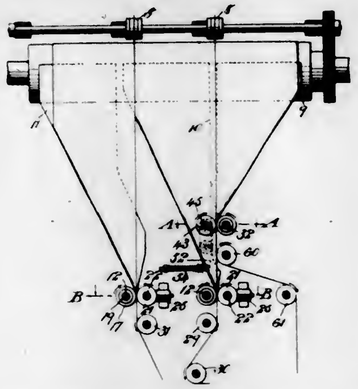
Claim.—1. In a pencil sharpener, a cutter for sharpening the lead or graphite consisting of a metallic bush having a plurality of radially arranged V-shaped slots of varying widths, as set forth.

2. In a pencil sharpener a cutter for sharpening the lead or graphite consisting of a metallic bush having four radially arranged slots two of which are of the same width and the other two slots are each of a different width, as set forth.

857,575. WEB-FOLDING MACHINE. HOWARD M. BARBER, Stonington, Conn., assignor to C. B. Cottrell & Sons Company, New York, N. Y., a Corporation of New Jersey. Filed May 15, 1906. Serial No. 317,042.

Claim.—1. In combination, right and left hand turners forming a double turner around which upper and lower

webs are passed, the point of one of the turners being above the point of the other turner and a device for each of the turners arranged to engage both the upper and lower webs as they leave the turner for driving the webs in unison.



2. In combination, right and left hand turners forming a double turner around which upper and lower webs are passed, the point of one of the turners being above the point of the other turner and a device located at the point of each turner arranged to engage both the upper and lower webs as they leave the turner for driving the webs in unison.

3. In combination, right and left hand turners forming a double turner around which upper and lower webs are passed, the point of one of the turners being above the point of the other turner, a device at the point of each of the turners arranged to engage both the upper and lower webs as they leave the turner for driving the webs in unison and a driving connection between the two devices.

4. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging one web and stud shafts having driving pulleys for engaging the other web and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

5. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a drive roll for engaging the upper web, stud shafts having driving pulleys for engaging the lower web and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

6. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging one web, stud shafts having driving pulleys for engaging the other web, movable spring-pressed bearings for the driving pulley stud shafts, and loose pulleys on the driving roll shaft coacting with the driving roll pulleys.

7. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging the upper web, stud shafts having driving pulleys for engaging the lower web, movable spring-pressed bearings for the driving pulley stud shafts and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

8. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging one web, stud shafts having driving pulleys for engaging the other web, driving connections between the stud shafts and the driving roll shaft, and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

9. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging the upper web, stud shafts having driving pulleys for engaging the lower web, driving connections between the stud shafts and the driving roll shaft, and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

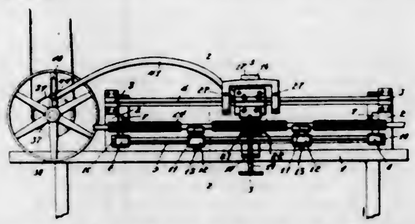
10. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging one web, stud shafts having driving pulleys for engaging the other web, movable spring-pressed bearings for the driving pulley stud shafts, a driving connection between the stud shafts and the driving roll shaft, and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

11. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging the upper web, stud shafts having driving pulleys for engaging the lower web, movable spring-pressed bearings for the driving pulley stud shafts, a driving connection between the stud shafts and the driving roll shaft, and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

12. In combination, right and left hand turners forming a double turner around which upper and lower webs are passed, one of the turners being shorter than the other, a device arranged to drive both of the webs from the longer turner in unison comprising a shaft having a driving roll for engaging one web, a shaft having driving pulleys for engaging the other web and loose pulleys on the driving roll shaft coacting with the driving pulleys, and a device arranged to drive both of the webs from the shorter turner in unison comprising a shaft having a driving roll for engaging one web, stud shafts having driving pulleys for engaging the other web, and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

13. In combination, right and left hand turners forming a double turner around which the upper and lower webs are passed, one of the turners being shorter than the other, a device arranged to drive both of the webs from the longer turner in unison comprising a shaft having a driving roll for engaging the upper web, a shaft having driving pulleys for engaging the lower web and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts, a device arranged to drive both of the webs from the shorter turner in unison comprising a shaft having a driving roll for engaging the upper web, stud shafts having driving pulleys for engaging the lower web, and loose pulleys on the driving roll shaft coacting with the driving pulleys on the stud shafts.

857,576. MACHINE FOR RAISING FLUTES ON DRAWING AND OTHER ROLLS. GEORGE A. BATES, Fall River, Mass. Filed Aug. 13, 1906. Serial No. 330,420.



Claim.—1. In a machine for making longitudinal flutes on rollers, the combination with a support for the roll to be fluted, of a movable slide box, a rotary cutter carried

thereby and journaled on an axis transverse to that of the roll, means for moving said slide box lengthwise of the roll, and means for pressing the roll against the cutter.

2. In a machine for making longitudinal flutes on rolls, the combination with a movable support for the roll, of a movable slide box, a cutter carried thereby, means for moving said slide box lengthwise of the roll, means co-operating with the support to hold the roll against the cutter, and additional means for exerting pressure on said roll to hold it against the cutter.

3. In a machine for making longitudinal flutes on rolls, the combination with a movable support for the roll, of a movable slide box, a cutter carried thereby, means for moving said slide box lengthwise of the roll, and means for holding the roll against the cutter with any desired degree of pressure, comprising a movable plate, and a screw bearing against said plate.

4. In a machine of the class described, the combination with a frame having upper and lower arms, of a yoke connected to one of said arms, a slide-box movable within the yoke, means for moving the slide-box, a cutter carried by the slide-box, means for supporting the roll to be refluted, means for pressing the roll against the cutter comprising an abutment plate hinged to the frame aforesaid, and means on the other arm of the frame to press said abutment plate against the roll.

5. In a machine of the class described, the combination with a frame having a yoke, of a slide-box movable within the yoke, a cutter carried by the slide-box, a movable support for the roll to be refluted, means for moving said support to cause the roll to continuously bear against the cutter, an arm on said frame, an abutment plate pivoted to the frame, and a screw passing through the arm and bearing against the abutment plate, said abutment plate being adapted to be brought against the roll with any desired degree of pressure to hold the roll against the cutter.

6. In a machine for making longitudinal flutes on rolls, the combination with pivoted counterbalanced arms carrying pillow blocks forming a support for the shaft of the roll to be fluted, of a slide box movable lengthwise of said roll, a cutter carried by the slide box and adapted to bear on the roll, a drive wheel, a pitman connected to the slide box, an adjustable connection between the pitman and the wheel by which the point of connection can be moved radially on said wheel, and means for producing a firm pressure up against the under side of the roll opposite to the cutter.

857,577. DIPPER-MOUNTING. ARCHIBALD L. BECKER, Toledo, Ohio, assignor to The Vulcan Iron Works Company, Toledo, Ohio, a Corporation of Ohio. Filed Dec. 26, 1906. Serial No. 349,462.

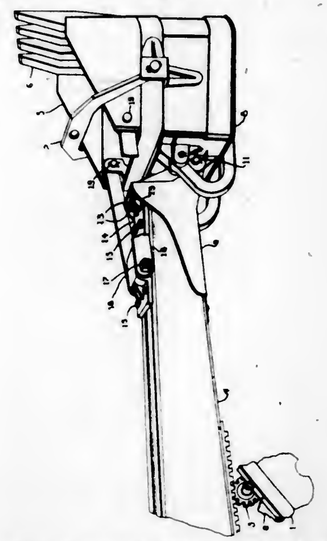
Claim.—1. A dipper, a directing member therefor, an intermediate mounting device comprising two pieces both directly engaging the member, a detachable connection uniting the pieces of the device independently of the directing member, and a plurality of connections from the dipper to the device.

2. A dipper, a directing member therefor, an intermediate unified mounting device adjustable to directly clamp surfaces of the directing member lying in planes perpendicular to the working of the dipper, and a plurality of connections from the dipper to the device.

3. A dipper, a directing member therefor, an intermediate unified mounting device comprising two pieces both directly engaging the member, means for connecting the two pieces, additional devices constituting the sole means for holding the device on the directing member by extending into the directing member, and a plurality of connections from the dipper to the device.

4. A dipper, a directing member therefor, an intermediate mounting device having a wall abutting the end of the directing member, a second wall extending along one side of the member from said end, and a third wall detachably connected to the abutting wall, said second and third walls directly engaging the member and adjusting means mounted on one of the walls for varying the working angle of the dipper.

5. A pivotally mounted excavator working member having an operating portion, a directing member, a power applying connection intermediate the operating portion and the directing member, a unified mounting device for the working member, on the directing member and having opposing walls parallel to the pivotal mounting of the working member, and means for drawing the walls directly into engagement with the directing member.



6. A dipper, a directing member therefor, a mounting device having a plurality of connections to the dipper, said mounting device eliminating torsion between the connections and the member, and non-shear-sustaining tension bolts constituting the sole additional means for holding the device to the directing member.

857,578. STORM-GARMENT. IDA V. BENOIT, New York, N. Y. Filed June 26, 1906. Serial No. 323,422.

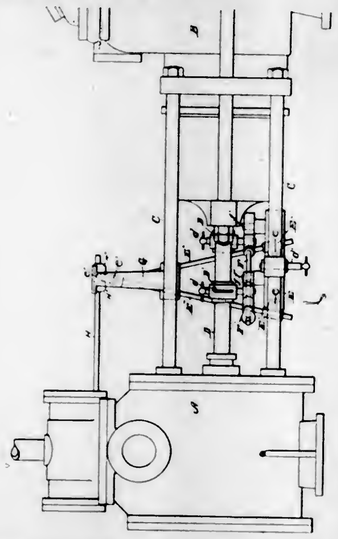


Claim.—In a device of the character described, a trousers like structure having well defined leg portions, and operative hangers or extensions on the outer and upper edges of the structure adapted to support the same in position, said hangers being integral with the structure and oppositely disposed when in applied position, said structure being open in front and open transversely from leg to leg, said front opening and transverse opening communicating.

857,579. VALVE-GEAR. JOHN C. BIRD, Battle Creek, Mich., assignor to Union Steam Pump Company, Battle Creek, Mich. Filed Sept. 15, 1905. Serial No. 278,653.

Claim.—1. The combination with a pair of engine cylinders of a pair of pumps; tie rods for said cylinders and pumps; valve stems; pivoted levers for actuating said valve stems, said valve stems having tappets arranged to be engaged by said levers; a pair of sleeves slidably mounted upon said tie rods; sleeves through which said levers are arranged, pivotally mounted on said sliding sleeves; a

synchronizing bar; sleeves through which said bar is arranged, pivotally mounted on said sliding sleeves; piston rods; brackets on said piston rods; sleeves through which said synchronizing bar is arranged, pivotally mounted on said brackets; and brackets on said tie-rods, to which said last named sleeves may be pivotally secured when disconnected, for the purpose specified.



2. The combination with a pair of engine cylinders of a pair of pumps; tie-rods for said cylinders and pumps; valve stems; pivoted levers for actuating said valve stems, said valve stems having tappets arranged to be engaged by said levers; a pair of sleeves slidably mounted upon said tie rods; sleeves through which said levers are arranged, pivotally mounted on said sliding sleeves; a synchronizing bar; sleeves through which said bar is arranged, pivotally mounted on said sliding sleeves; piston rods; brackets on said piston rods; and sleeves through which said synchronizing bar is arranged, pivotally mounted on said brackets, for the purpose specified.

3. The combination with a pair of engine cylinders of a pair of pumps; tie-rods for said cylinders and pumps; valve stems; pivoted levers for actuating said valve stems; a pair of sleeves slidably mounted upon said tie-rods; sleeves through which said levers are arranged, pivotally mounted on said sliding sleeves; a synchronizing bar; sleeves through which said bar is arranged, pivotally, mounted on said sliding sleeves; piston rods; sleeves through which said synchronizing bar is arranged, pivotally connected to said piston rods; and brackets on said tie-rods, to which said last named sleeves may be pivotally secured when disconnected, for the purpose specified.

4. The combination with a pair of engine cylinders of a pair of pumps; tie-rods for said cylinders and pumps; valve stems; pivoted levers for actuating said valve stems; a pair of sleeves slidably mounted upon said tie-rods; sleeves through which said levers are arranged, pivotally mounted on said sliding sleeves; a synchronizing bar; sleeves through which said bar is arranged, pivotally mounted on said sliding sleeves; piston rods; and sleeves through which said synchronizing bar is arranged, pivotally connected to said piston rods, for the purpose specified.

5. The combination with a pair of engine cylinders of the piston rods; valve stems; pivoted levers for actuating said valve stems; a pair of reciprocating members; sleeves through which said levers are arranged, pivotally mounted on said reciprocating members; a synchronizing bar; sleeves through which said bar is arranged, pivotally mounted on said reciprocating members; sleeves through which said synchronizing bar is arranged, detachably secured to said piston rods by pivot pins; and means by which said last named sleeves may be pivotally supported when disconnected from said piston rods, for the purpose specified.

6. The combination with a pair of engine cylinders of the piston rods; valve stems; pivoted levers for actuating said valve stems; a pair of reciprocating members; sleeves through which said levers are arranged, pivotally mounted on said reciprocating members; a synchronizing bar; sleeves through which said bar is arranged, pivotally mounted on said reciprocating members; and sleeves through which said synchronizing bar is arranged, pivotally secured to said piston rods, for the purpose specified.

7. The combination with a pair of engine cylinders of the piston rods and valve stems; a pair of reciprocating members for actuating said valve stems; a synchronizing bar; sleeves through which said bar is arranged, pivotally mounted on said reciprocating members; sleeves through which said synchronizing bar is arranged, detachably secured to said piston rods by pivot pins; and means by which said last named sleeves may be pivotally supported when disconnected from said piston rods, for the purpose specified.

8. The combination with a pair of engine cylinders of the piston rods and valve stems; a pair of reciprocating members for actuating said valve stems; a synchronizing bar; sleeves through which said bar is arranged, pivotally mounted on said reciprocating members; sleeves through which said synchronizing bar is arranged, pivotally secured to said piston rods, for the purpose specified.

9. The combination with a pair of engine cylinders of the piston rods and valve stems; a synchronizing bar; means controlled thereby for actuating said valve stems; sleeves through which said synchronizing bar is arranged, detachably secured to said piston rods by pivot pins; and means by which said sleeves may be pivotally supported when disconnected from said piston rods, for the purpose specified.

10. The combination with a pair of engine cylinders of the piston rods and valve stems; a synchronizing bar; means controlled thereby for actuating said valve stems; and sleeves through which said synchronizing bar is arranged, pivotally secured to said piston rods, for the purpose specified.

11. The combination with a pair of engine cylinders of the piston rods and valve stems; a synchronizing bar; means controlled thereby for actuating said valve stems; means for pivotally securing said bar to said piston rods; and means for pivotally supporting either end of said bar when disconnected from said piston rods, for the purpose specified.

857,580. EXPLOSIVE. FRANK E. W. BOWEN, London, England. Filed Oct. 5, 1904. Serial No. 227,215.

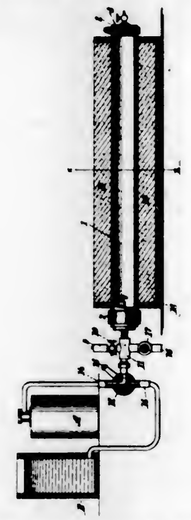
Claim.—1. An explosive compound, containing a combustible, which on ignition gives rise to large volumes of gas, ammonium perchlorate, and a metal whose oxid has a high heat of formation, combined in such proportions that the amount of oxygen present is substantially sufficient to combine only with the metal and with the carbon to form the oxid of the metal and carbon dioxid.

2. An explosive compound, containing a combustible, which on ignition gives rise to large volumes of gas; ammonium perchlorate and a metal whose oxid has a high heat of formation, combined in such proportions that for every one atom of carbon in the combustible and for every two atoms of the metal, there are approximately present, respectively, two and three atoms only of oxygen.

3. An explosive compound, containing paraffin, ammonium perchlorate and a metal whose oxid has a high heat of formation, combined in such proportions that for every one atom of carbon contained in the paraffin and for every two atoms of the metal, there are approximately present, respectively, two and three atoms only of oxygen.

4. An explosive compound, containing paraffin, perchlorate of ammonia and aluminum combined in such proportions that for every one atom of carbon and for every two atoms of aluminum, there are approximately present, respectively, two and three atoms only of oxygen.

857,581. METHOD OF MOLDING HOLLOW OBJECTS FROM CEMENT. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Jan. 23, 1907. Serial No. 353,692.



Claim.—1. The method of making a hollow object which consists in preparing a bed of plastic material capable of hardening, forming in said bed, a matrix for guiding the core, placing in said matrix a flexible fluid distended core, covering said core with further plastic material and finally removing said distending fluid from said core after said material has hardened sufficiently to retain its shape.

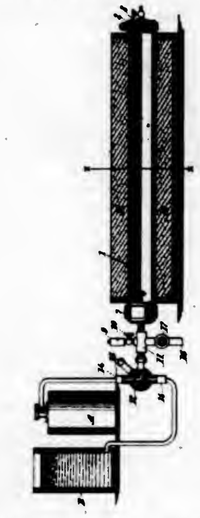
2. The method of making a hollow object which consists in embedding in a plastic material capable of hardening, a gas distended flexible core, then substituting for said gas, liquid under pressure, and finally removing said liquid from said core after said material has hardened sufficiently to retain its shape.

3. The method of making a hollow object which consists in preparing a bed of plastic material capable of hardening, placing a gas distended flexible core thereon, covering said core with further plastic material, substituting for said gas, liquid under pressure, and finally removing said liquid from said core after said material has hardened sufficiently to retain its shape.

4. The method of making a conduit which consists in preparing a bed of plastic material capable of hardening, forming in said bed a groove or channel, placing in said groove or channel a substantially close fitting gas distended flexible tubular core, covering said core with further plastic material, substituting for said distending gas, a liquid under pressure, and finally removing said liquid from said core after said material has hardened sufficiently to retain its shape.

857,582. APPARATUS FOR MOLDING HOLLOW OBJECTS FROM CEMENT. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Jan. 23, 1907. Serial No. 353,693.

Claim.—1. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a distensible core of flexible material, means for admitting to said core a gas under pressure, and means for admitting to said core liquid under pressure, to expel said gas.



2. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a tubular distensible core of flexible material closed at one end, means for admitting at will gas or liquid under pressure to the opposite end of said core, and means for permitting gas or liquid at will to escape from said last named end of said core.

3. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a tubular distensible core of flexible material closed at one end, a removable plug at the opposite end, a duct in said plug communicating with the interior of said core, and means for admitting to said duct at will liquid or gas under pressure.

4. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a tubular distensible core of flexible material closed at one end, a radially expansible plug in the opposite end, a ring encircling said tubular core and circumferentially inclosing said plug, a duct in said plug communicating with the interior of said core, and means for admitting to said duct at will liquid or gas under pressure.

5. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a tubular distensible core of flexible material closed at one end, a removable plug at the opposite end, a duct in said plug communicating with the interior of said core, means for admitting to said duct at will liquid or gas under pressure, a gas relief valve and a pipe extending from said relief valve through said duct.

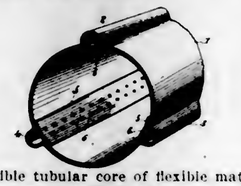
857,583. CORE FOR MOLDING HOLLOW CEMENT OBJECTS. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Jan. 23, 1907. Serial No. 353,694.

Claim.—1. A distensible core of flexible material having on its outer surface a longitudinal hollow corrugation, said corrugation having its sides disposed at an angle to the circumferential periphery of said core, and means for preventing obliteration of said corrugation by internal fluid pressure.

2. A distensible core of flexible material, having on its outer surface a longitudinal hollow rib, having its sides

disposed at an angle to said core and, in its base, openings for receiving distending fluid from the interior of said core.

3. A distensible tubular core of flexible material having on its outer surface a plurality of longitudinal corrugations and means for preventing obliteration of said corrugations by internal fluid pressure.



4. A distensible tubular core of flexible material having on its outer surface a longitudinal corrugation, and a perforated strip of flexible material secured on the inner periphery of said core and everywhere bridging said corrugation recess.

857,584. APPARATUS FOR AND METHOD OF MOLDING HOLLOW OBJECTS FROM CEMENT. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Jan. 23, 1907. Serial No. 353,695.



Claim.—1. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a tubular distensible core of flexible material and means for filling a predetermined length of said core with liquid under pressure and the remainder of said core with gas under pressure.

2. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a tubular distensible core of flexible material, means for filling said core with gas under pressure and means for filling a predetermined length of said core with liquid under pressure and simultaneously expelling the gas therefrom.

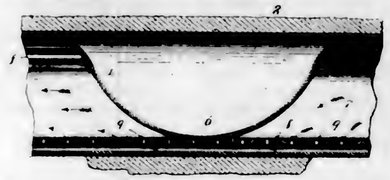
3. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a tubular distensible core of flexible material, means for admitting to one end of said core gas under pressure and means for admitting liquid under pressure to the other end of said core.

4. In an apparatus for the manufacture of hollow objects, conduits and the like, from plastic material capable of hardening, a tubular distensible core of flexible material, a piston movable in said core, means for admitting gas under pressure to one end of said core and means for admitting liquid under pressure to the other end of said core.

5. The method of making a monolithic conduit which consists in first, embedding a gas distended core of flexible material in a body of externally molded cement, forming a section of the conduit; second, admitting liquid to said embedded core to expel said gas and simultaneously sealing said liquid in said section; third, embedding a new length of said gas distended core in cement to form an immediately succeeding section; fourth, removing the seal and admitting said liquid to expel the gas from said new section and sealing said liquid therein; and so on until the desired length of conduit is completed.

857,585. MEANS FOR PREVENTING SELF-SEALING OF FLUID-DISTENDED FLEXIBLE TUBES DURING EXHAUSTION. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Feb. 20, 1907. Serial No. 358,424.

Claim.—1. A distensible tube of flexible material, means connected to one end of said tube for exhausting distending fluid therefrom and means for preventing local sealing of said tube by collapse thereof at a point between said exhausting means and the other end of said tube.

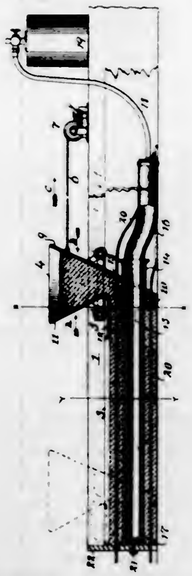


2. A distensible tube of flexible material and, secured on the inner periphery of said tube, a hollow longitudinal rib having openings in its wall.

3. A distensible tube of flexible material and, secured on the inner periphery of said tube, a plurality of hollow longitudinal ribs, each having openings in its wall.

4. In combination with a tube of flexible material distended by internal fluid pressure and a longitudinal hollow rib having openings in its wall secured on the inner periphery of said tube, means connected to one end of said tube for removing the distending fluid therefrom.

857,586. APPARATUS FOR CONTINUOUSLY MAKING MONOLITHIC OBJECTS. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Feb. 20, 1907. Serial No. 358,425.



Claim.—1. In combination with a stationary open mold of trough shaped cross section, means movable along the length of said mold for depositing plastic material therein, and means for simultaneously laying a continuous flexible core in the material so deposited.

2. In combination with a stationary open mold of trough shaped cross section, means movable along the length of said mold for depositing plastic material continuously therein, and means for simultaneously embedding a strip of reinforcing material and a continuous core in the plastic mass.

3. In combination with a stationary open mold of trough shaped cross section, means movable along the length of said mold for continuously depositing plastic material therein, means for simultaneously embedding a continuous hollow core of flexible material in the plastic mass, and means for distending said core by internal fluid pressure.

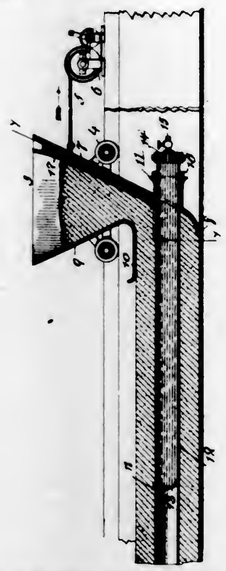
4. In combination with a stationary open mold of trough shaped cross section, a hopper movable along the length of said mold, constructed to deliver plastic material into said mold and having one wall extending to the bottom of said mold: the said wall having an opening for receiving a continuous flexible core.

5. In combination with a stationary open mold of trough shaped cross section, a hopper movable along the length of said mold, constructed to deliver plastic material into said mold and having one wall extending to the bottom of said mold: the said wall having a central opening for receiving a continuous flexible core and a plurality of adjacent openings for receiving strips of reinforcing material.

6. In combination with a stationary open mold of trough shaped cross section, a hopper movable along the length of said mold and constructed to deliver plastic material into said mold: the said hopper having one wall extending to the bottom of said mold provided with an opening for a flexible core, and the other wall having an outwardly turned flange.

7. In combination with a stationary open mold of trough shaped cross section, a hopper constructed to deliver plastic material into said mold and having its front wall downwardly extending to the bottom of said mold, trucks supporting said hopper, guide rails on the mold edges for said trucks, a guide tube in said front hopper wall, and a flexible core extending through said guide tube.

857,587. APPARATUS FOR CONTINUOUSLY MAKING MONOLITHIC HOLLOW OBJECTS. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Feb. 20, 1907. Serial No. 358,426.



Claim.—1. A stationary mold, movable means for continuously depositing in said mold plastic material to form an elongated object, and means, carried by said first named means for forming a bore or cavity in the material deposited.

2. A stationary mold, movable means for continuously depositing in said mold plastic material to form an elongated object, and a core carried by said movable means.

3. A stationary mold, movable means for continuously depositing in said mold plastic material to form an elongated object, and a flexible core carried by said movable means.

4. A stationary mold, movable means for continuously depositing in said mold plastic material to form an elongated object, and a flexible distensible core carried by said movable means.

5. In an apparatus for continuously making elongated monolithic hollow objects, a stationary mold, a traveling hopper for depositing plastic material in said mold and a traveling core.

6. In an apparatus for continuously making monolithic elongated hollow objects, a stationary mold a traveling hopper for depositing plastic material in said mold and a core supported on said hopper and extending rearwardly therefrom.

7. In an apparatus for continuously making monolithic elongated hollow objects, a stationary mold a traveling hopper for depositing plastic material in said mold, having on one wall a flange for reguinting the depth of said deposited material, and a core supported at one end in the other wall of said hopper and extending rearwardly therefrom.

8. In combination with means for continuously depositing plastic material to form an elongated object and means for forming a bore or cavity in said object, means for delivering a hardening material to the surface of said bore.

9. In combination with means for continuously depositing plastic material to form an elongated object and means for forming a bore or cavity in said object, means for conveying a relatively quick setting material to the surface of said bore.

10. In combination with means for continuously depositing plastic material to form an elongated object and means for forming a bore or cavity in said object, means for conveying a relatively quick setting material in comminuted form to the surface of said bore.

11. In an apparatus for continuously making elongated hollow objects from plastic material, a device for continuously depositing said plastic material, a core carried by said device, and means in said device for depositing a material relatively quick setting when moistened upon the surface of said core.

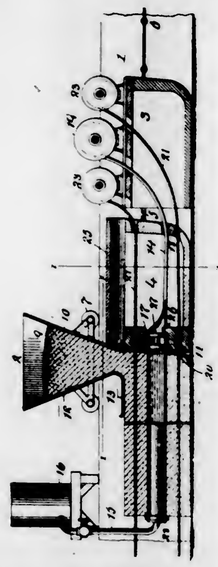
12. In an apparatus for continuously making elongated hollow objects from plastic material, a receptacle for continuously depositing said plastic material, a core carried by said receptacle and in said receptacle, a duct for conveying material, relatively quick setting when moistened, upon the surface of said core.

857,588. APPARATUS FOR AND METHOD OF CONTINUOUSLY MAKING MONOLITHIC HOLLOW OBJECTS. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Feb. 20, 1907. Serial No. 358,427.

Claim.—1. A receptacle movable along the length of an earth trench for continuously depositing plastic material therein and a former having smooth vertical sides and disposed in advance of and movable with said depositing receptacle; the said former being constructed of less width than said trench to provide a molding space on each side of said former and between said former and the trench walls for the reception of earth.

2. A receptacle movable along the length of an earth trench for continuously depositing plastic material therein, a former having smooth vertical sides and a roof or cover sloping to said sides: the said former being disposed in advance of and movable with said receptacle and being constructed of less width than said trench to produce a molding space on each side of said former and between said former and the trench walls for the reception of earth.

3. A device for supporting and paying out a flexible core in a previously formed open earth trench of trough shaped cross section, a device including a guide for said core as it is paid out and smooth vertical side walls for smoothing the vertical sides of said trench and a device for continuously depositing plastic material in said trench and in contact with the smoothed sides thereof to embed said core, the said devices being connected together and advanced in the trench in the order named, and means for continuously moving said devices along the length of said trench.



4. In combination with a stationary open mold, a device for paying out a flexible core into said mold, a device for depositing plastic material in said mold to embed said core and means for continuously moving said devices along the length of said mold.

5. In combination with a stationary open mold, a device for paying out a flexible core into said mold, a device for paying out a flexible strip of reinforcing material into said mold, a device for depositing plastic material in said mold to embed said core and strip and means for continuously moving said devices along the length of said mold.

6. In combination with a stationary open mold, a device for paying out a flexible core into said mold, a device for depositing plastic material in said mold to embed said core, a guide for said core interposed between the said devices, and means for continuously moving said devices and guide along the length of said mold.

7. In combination with an open mold, means movable along the length of said mold for continuously paying out into said mold a flexible core, and means also movable along the length of said mold for depositing material therein to embed said core.

8. In combination with an open mold, means for continuously paying out into said mold a flexible core, means for continuously paying out into said mold a flexible strip of reinforcing material and means for continuously depositing in said mold plastic material to embed said core and strip; all of said means being movable along the length of said mold.

9. In combination with an open mold, means for continuously paying out into said mold a flexible core, means for continuously depositing in said mold plastic material to embed said core, and means, interposed between said paying out means and said depositing means, for guiding said core: all of said means being movable along the length of said mold.

10. In combination with a stationary open mold, a support means for moving said support continuously along the length of said mold, a flexible core in coil form having one extremity secured at the end of said mold, a reel on said support carrying said coil, and a device also movable along the length of said mold for continuously depositing plastic material in said mold to embed said core, as said core is paid out from said reel.

11. In combination with a stationary open mold, a device for laying a flexible distensible core therein, a device for depositing plastic material in said mold to embed said core, means for continuously moving said devices along the length of said mold, and means for distending the embedded portion of said core by internal fluid pressure.

12. In combination with a stationary open mold, a device for laying a flexible distensible core therein, a device for depositing plastic material in said mold to embed said core, means for continuously moving said devices along the length of said mold, means for distending said core by internal fluid pressure and means for limiting the length of said core so distended to the embedded portion thereof.

13. In combination with a stationary open mold, a device for paying out a flexible distensible core into said mold, a device for depositing plastic material in said mold to embed said core, means for supplying fluid under pressure to the paid out end of said core, a traveling seal interposed between said paying out device and said depositing device and means for continuously moving said devices along the length of said mold.

14. In combination with a stationary open mold, a support means for continuously moving said support along the length of said mold, a flexible distensible core in coil form carried by said support, having one extremity secured at the end of said mold, means for admitting fluid under pressure to said core at said secured end, a piston in said core, a device for continuously depositing plastic material in said mold to embed said core and means for producing a traveling constriction in said core in advance of said piston.

15. The method of continuously producing in a trench, an open earth mold for a continuous monolithic conduit, which consists in causing said trench to be traversed in advance of the means for depositing the plastic material to be embedded by a former of less width than said trench and having smooth vertical sides, and continuously packing earth in the spaces between the sides of said former and the sides of said trench to form the smooth vertical sides of said mold.

857,589. MEANS AND METHOD FOR CONTINUOUSLY MAKING TUBE-LINED MONOLITHIC HOLLOW OBJECTS. JAMES M. BOYLE, New York, N. Y., assignor to Monolithic Duct Company, a Corporation of New York. Filed Feb. 20, 1907. Serial No. 358,428.

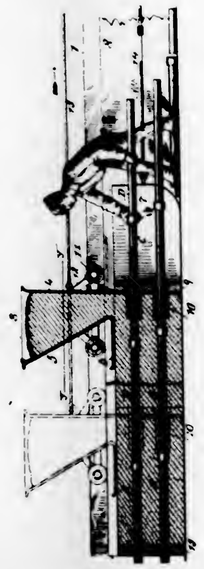
Claim.—1. A stationary open mold, a tube supported in fixed position therein, a device for depositing plastic material in said mold to embed said tube and means for continuously moving said device along the length of said mold.

2. A stationary open mold, a plurality of parallel tubes supported in fixed position therein, a device for depositing plastic material in said mold to embed said tubes and means for continuously moving said device along the length of said mold.

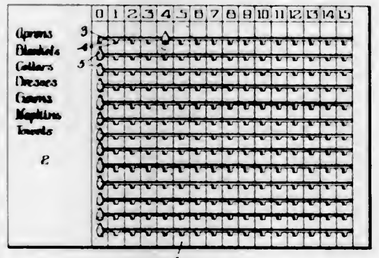
3. The method of making tube-lined cement conduits which consists in continuously and progressively depositing plastic material in an open stationary mold upon a fixed lining tube supported in said mold.

4. The method of making tube-lined cement conduits which consists in continuously and progressively depositing plastic material in an open stationary mold and upon a fixed lining tube supported therein, then attaching to the end of said tube a second tube, and continuing the deposit as before, and so on indefinitely.

857,589.



857,590. LAUNDRY REGISTERING DEVICE. THOMAS O. BRANCH, Little Rock, Ark., assignor of one-fourth to Mark C. Priddy, Little Rock, Ark. Filed May 16, 1906. Serial No. 317,210.

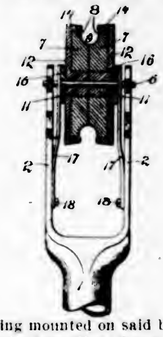


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Claim.—The combination with a base member provided with a plurality of slots and a plurality of depressions disposed along each of said slots, said slots representing a list of articles to be accounted for, of means for registering the number of each of said articles to be accounted for, comprising a plurality of counterbalancing indicators, one for each slot, each of said indicators consisting of a shank, a pointer on one end of said shank, and an oppositely disposed counterbalancing weight on the other end of said shank coöperating to hold said pointer directed upwardly, said shank portion being freely swung in said slot and adapted to ride therealong and be dropped and seated in one of said depressions, the whole operating to provide an automatic interlock between said freely mounted indicators and said base at varying positions in said slots, substantially as described.

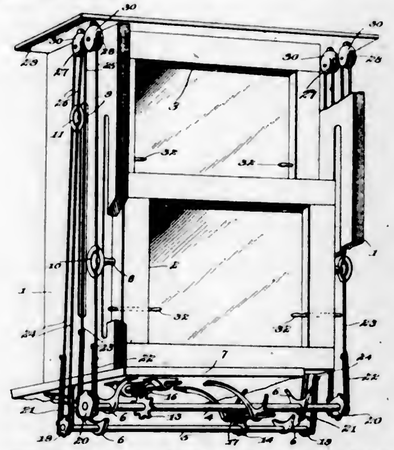
857,591. TROLLEY-HARP. ARLINGTON D. BRITTAIN, Youngstown, Ohio. Filed Apr. 18, 1906. Serial No. 312,374.

Claim.—In a trolley, the combination with a harp, and a pin or axle journaled therein, of a wheel comprising two circular wheel-sections each peripherally-grooved with the groove in one section facing the groove in the other section, and cups for said wheel-sections, each cup having an apertured boss to receive the axle or pin of the harp, the



wheel sections being mounted on said bosses, and each cup having an inwardly-extending flange inclosing the ungrooved peripheral portion of the wheel-sections.

857,592. WINDOW-SASH-OPERATING DEVICE. CHARLES BROWN, Canton, Ohio. Filed Mar. 23, 1907. Serial No. 364,114.



Claim.—1. In a window sash operating device, a window frame sashes movable in the frame, bars located intermediate the tops and bottoms of the window sashes, said bars extended through slots formed in the window frame and provided with heads, shafts journaled below the window frame, said shafts provided with sprocket wheels, chains located around the sprocket wheels, elevating cables or cords connected to the chains and to the heads, and means for rotating the shafts, substantially as and for the purpose specified.

2. In a device for operating window sashes, the combination of a window frame, sashes located therein, said sashes provided with bars located intermediate their top and bottom ends, heads secured to the bars, shafts located below the window sashes, said shafts provided with gear wheels and sprocket wheels respectively, chains located around the sprocket wheels, cords connected to the chains and to the heads, pulleys adapted to support the cord above the head, said pulleys located in the upper portion of the window frame and means for rotating the shafts, substantially as and for the purpose specified.

3. In a device for operating window sashes, the combi-

nation of a window frame, sashes located therein, said sashes provided with bars and the bars provided with pivoted heads, said bars located intermediate the top and bottom ends of the sashes, shafts located below the window sashes, said shafts provided with gear wheels and sprocket wheels respectively, chains located around the sprocket wheels, elevating cords connected to the chains and to the heads, pulleys adapted to support the cords, said pulleys located in the upper portion of the window frame, means for rotating the shafts, and means for locking the window sashes against swinging movement, substantially as and for the purpose specified.

4. In a window sash operating device, a window frame, sashes adapted to move in a vertical plane in the frame, said sashes provided with bars located intermediate their ends, said bars provided with pivoted heads, shafts located below the window frame, means for rotating the shafts, sprocket wheels mounted upon the shafts, and means for elevating the sashes by the rotation of the sprocket wheels, substantially as and for the purpose specified.

857,593. ARTIFICIAL SNAKE, &c. JOSEPH N. BROWN, Dodgeville, Wis. Filed Apr. 4, 1906. Serial No. 309,819.



Claim.—1. In a device of the described class, the combination with a series of members arranged lineally; and a flexible connection extending in a vertical plane centrally through the several members of the series; said members being provided with walls diverging in a vertical plane from each other and from said central connection.

2. In a device of the described class, the combination with a series of members arranged lineally; and a flexible connection extending in a vertical plane centrally through the several members of the series; said members being provided with walls diverging in a vertical plane from each other and from said central connection; together with end members of different character from the intermediate members and connected to the extremities of the flexible connection.

3. In a device of the described class, a confection comprising a series of soluble members, each formed in sections; and an insoluble central and continuous band connecting the sections to each other and connecting the members in a lineal series; the contiguous walls of the members being arranged to diverge from the connecting band and from each other in a vertical plane; said band being formed of material which can be readily torn apart between the sections and of sufficient width in a vertical plane to support the sections against relative vertical movements by permitting them to swing freely in a horizontal plane.

857,594. HORSE-COLLAR. CHARLES W. CAMPBELL, Macon, Ga. Filed May 2, 1906. Serial No. 314,835.



Claim.—1. The combination of a separable or divided collar carrying pivoted latches at its free ends, and a collar pad arranged at the divided portion of the collar and overlapped by the ends thereof, and a longitudinally-arranged metal lock-strap on said pad provided with holes therein for engagement by said latches, the latter comprising pintles having outside finger-pieces and inside foot-pieces so disposed on said pintles as to enter said holes in one position and to engage and lock under the lock-strap when turned to another position.

2. In a horse collar, the combination of a divided or separable collar, a pad arranged between the ends of the collar, a metal lock-strap on said pad having a series of holes therein, the surface of the strap being above the subjacent portion of the pad, and pivoted latches carried by the ends of the collar adapted to enter said holes and when turned to engage the under side of the lock-strap.

3. In a horse collar, the combination of a separable or divided collar, a collar-pad arranged between the ends thereof, a metal lock-strap arranged and secured longitudinally of the pad, said lock-strap having a series of oblong holes therein, the perforated portion of the lock-strap being above the subjacent portion of the pad, pivoted latches carried by the ends of the collar adapted to enter said holes and to be turned for engaging the under side of the lock-strap, and finger pieces attached to said latches for manipulating the same, said finger pieces adapted to be engaged by the humes for holding the latches in locking position.

4. The combination with the pad having a perforated lock-strap, of the divided or separable collar having its free ends adapted to overlie the pad and provided with latches to engage said lock-strap, said latches comprising pintles provided with inside foot-pieces disposed so as to enter said holes in one position and when turned to engage under the lock-strap, and provided with the outside angle-shaped finger pieces b^2 adapted to extend toward the front of the collar when the latches are in locking position, whereby said finger pieces are adapted to be engaged by the harness strap to hold the harness from slipping forward and to hold the latches locked, substantially as described.

5. In combination with an adjustable collar of the character described carrying latches at its points, a rolled collar-pad comprising an under pad portion and two upper pieces secured thereon and separated at opposite sides of the medial line, leaving a longitudinal space between said upper pieces, and a metal lock-strap secured on the pad over said space and provided with holes for engagement by latches.

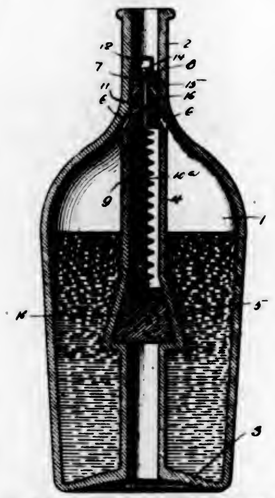
857,595. COLLAR-PAD. CHARLES W. CAMPBELL, Macon, Ga. Filed Nov. 30, 1906. Serial No. 345,628.

Claim.—1. A saddle-like pad having its front and back rolled upward, the same comprising an under portion and an upper portion secured together around their outer edges, the under portion consisting of two half-parts having adjacent edges joined in a concave seam at the ridge, and the upper portion consisting of two opposed half-parts having confronting edges formed concave and joined at an intermediate line in such manner as to straighten out or destroy their original curvature, the said upper portion when so formed conforming to or fitting the under portion.



2. A saddle-like pad having its front and back rolled upward, the same comprising an under portion and an upper portion secured together around their outer edges, the under portion consisting of two half-parts having adjacent edges joined in a concave seam at the ridge, and the upper portion consisting of two crescent-like half-parts arranged transversely of the ridge and joined at the middle in such manner as to straighten out the original curvature of their inner concave edges.

857,596. ANTIREFILLABLE BOTTLE. HENRY CAMPBELL, Karns City, Pa. Filed Mar. 21, 1907. Serial No. 363,750.



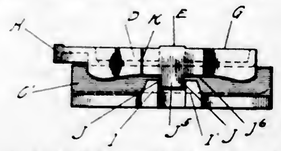
Claim.—1. A bottle consisting of a receptacle having a contracted neck, a tubular stem carried by the bottom of said receptacle, and formed integral with said neck, said stem having a central enlargement and diametrically opposed openings formed therein adjacent to said neck, a support mounted in said enlargement, a rod carried by said support, a coiled spring surrounding said rod, a closure carried by said spring, and adapted to normally close the openings of said neck, said closure having a tube arranged therein, a spherical body supported at the upper end of said tube, said closure having openings formed therein adapted to establish communication between the first mentioned openings and said tube.

2. A bottle consisting of a receptacle having a contracted neck, a tubular stem carried by the bottom of said receptacle, and formed integral with said neck, said stem having a central enlargement and diametrically opposed openings formed therein adjacent to said neck, a support mounted in said enlargement, a rod carried by said support, a coiled spring surrounding said rod, a closure carried by said spring and adapted to normally close the openings of said neck, said closure having a tube arranged therein adapted to communicate with the openings of said neck, a spherical body adapted to normally close said tube, and means to limit the upward movement of said closure.

3. A bottle consisting of a receptacle having a contracted neck, a tubular stem carried by the bottom of said receptacle and communicating therewith, said stem having diametrically opposed openings formed therein, a closure movably supported in said stem, a tube arranged in said closure and adapted to communicate with said openings, a spherical body normally closing said tube, means to limit the upward movement of said closure within said neck, and means to limit the downward movement of said closure within said stem.

4. A bottle consisting of a receptacle having a contracted neck, a tubular stem carried by the bottom of said receptacle and communicating therewith, said stem having diametrically opposed openings formed therein, a closure movably supported in said stem, a tube arranged in said closure and adapted to communicate with said openings, means to normally close the upper end of said tube, and means to limit the movement of said closure within said receptacle.

857,597. JOURNAL-BOX. STERLING H. CAMPBELL, Detroit, Mich. Filed Nov. 13, 1905. Serial No. 287,120.



Claim.—1. A car axle journal bearing comprising a box having the herein-described standard construction of top, a brass and a wedge having a plane central bearing of limited extent forming a rocker bearing in contact with the flat top of the box, the portion of the wedge between said rocker bearing and the end being cut away to permit of angular adjustment without contact with the box.

2. In a car axle journal bearing, a wedge having a straight plane surface on the central portion of its lower side for co-operation with the herein-described standard construction of brass, and a brass having a single plane top and having an interlocking engagement with said wedge at the side thereof, limiting relative endwise movement thereof in either direction.

3. In a car axle journal bearing, a wedge adapted for coöperation with the herein-described standard construction of brass, and a brass having a plane top extending substantially its whole length, and having an interlocking engagement with said wedge at the side thereof, limiting relative endwise movement in either direction.

4. In a car axle journal bearing, a brass having an upwardly projecting lug at the side thereof and a wedge having a side flange thereof cut away to interlock with said lug and to limit relative endwise movement in either direction.

5. In a car axle bearing, the combination with a standard box and a wedge, of a brass having a plain horizontal face for bearing against said wedge, there being interlocking lugs at the side of said brass and wedge for limiting relative endwise movement in either direction.

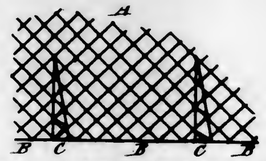
6. In a car axle bearing, a wedge having the side flange thereof cut away at two points to form two shoulders facing in the same direction and one shoulder facing in the opposite direction adapted for interlocking engagement with either a single or bifurcated upwardly-projecting lug on the brass and limiting relative endwise movement.

857,598. TENNIS-NET. JAMES C. CHAPIN, Englewood, N. J. Filed Apr. 20, 1907. Serial No. 369,197.

Claim.—1. A tennis net, whose lower portion includes a panel freely suspended from the body portion of the net.

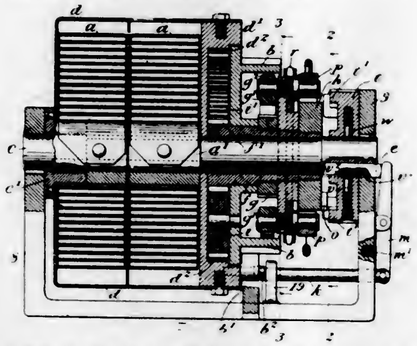
2. A tennis net, whose lower portion comprises a plurality of panels freely suspended from the body portion of the net and laterally disconnected from each other.

3. A tennis net composed of a substantially uniform knotted or woven mesh throughout, the lower portion thereof divided into a plurality of laterally disconnected panels.



4. A tennis net having its lower portion formed of a plurality of laterally disconnected panels, said adjacent panels normally overlapping each other.

857,599. ENGINE-STARTER. CLYDE J. COLEMAN, Rockaway, N. J., assignor to Conrad Hubert, New York, N. Y. Filed July 16, 1904. Serial No. 216,912.



Claim.—1. An engine-starter comprising a power-storing device, a lock-wheel and means for unlocking the same, a rotating sleeve, speed-reducing gearing fulcrumed on the lock-wheel and connecting the sleeve and power-storing device, means for starting the engine by the power-storing device through rotation of the lock-wheel and without relative movement of the parts of the gearing, and means for actuating the power-storing device from the engine through actuation of the reducing gearing.

2. An engine-starter comprising a power-storing device, a lock-wheel and means for unlocking the same, a rotating sleeve, speed-reducing gearing fulcrumed on the lock-wheel and connecting the sleeve and power-storing device, means for starting the engine by the power-storing device through rotation of the lock-wheel and without relative movement of the parts of the gearing, and centrifugally-operated means movable by centrifugal force into engaging position to connect the engine and sleeve and actuate the power-storing device from the engine through the sleeve and reducing gearing.

3. An engine-starter comprising a starter-spring, a gear connected thereto, a lock-wheel and means for unlocking the same, a rotating sleeve provided with gear teeth, planetary gearing carried by the lock-wheel and meshing with said gear and sleeve, means for starting the engine by the starter-spring through rotation of the lock-wheel and without relative movement of the parts of the gearing, and means for winding the spring from the engine through the sleeve and planetary gearing.

4. An engine-starter comprising a starter-spring, a gear connected thereto, a lock-wheel and means for unlocking the same, a rotating sleeve provided with gear teeth, planetary gearing carried by the lock-wheel and meshing with said gear and sleeve, means for starting the engine by the starter-spring through rotation of the lock-wheel and without relative movement of the parts of the gearing, and centrifugally-operated means movable by centrifugal force into engaging position to connect the engine and sleeve and wind the spring from the engine through the sleeve and gearing.

5. An engine-starter comprising a power-storing device, a rotating power-transmitting member connected thereto, a rotating part connected with the engine, means engageable only in one direction of movement for connecting such power-transmitting member with the engine-connected part, a governor-arm carried by the engine-connected part, a clutch-dog carried by the power-transmitting member and located in position to be engaged by the governor-arm upon the attainment of a predetermined speed of the engine-connected part, and releasing means for the clutch-dog controlled by the power-storing device.

6. An engine-starter comprising a power-storing device, a rotating part connected with the engine, means engageable only in one direction of movement for connecting the power-storing device and engine-connected part, a governor-arm carried by the engine-connected part, a rotating clutch-dog-carrier connected to the power-storing device and a clutch-dog carried thereby in position to be engaged by the governor-arm upon the attainment of a predetermined speed of the engine-connected part, and releasing means for the clutch-dog controlled by the power-storing device.

7. An engine-starter comprising a power-storing device, a gear connected thereto, a rotating engine-connected part, a lock-wheel and means for unlocking the same, the said gear and the engine-connected part and the lock-wheel having a common axis of rotation, means for connecting the power-storing-device-connected part with the lock-wheel to start an engine by the power-storing device, and means including speed-reducing gearing fulcrumed on the lock-wheel for connecting the engine-connected part with said gear to store power therein.

8. An engine-starter comprising a power-storing device, a rotating part connected with the engine, a lock-wheel and means for unlocking the same, the engine-connected part and the lock-wheel having a common axis of rotation, means for connecting the power-storing device with the engine-connected part to start an engine by the power-storing device, and centrifugal means including speed-reducing gearing fulcrumed on the lock-wheel for connecting the engine-connected part with the power-storing device to store power therein.

9. An engine-starter comprising a power-storing device, a rotary clutch-dog carrier connected therewith, a rotating part operatively connected with the engine and centrifugal connecting means carried thereby, the clutch-dog carrier and the engine-connected part having a common axis of rotation, means engageable only in one direction of movement for connecting the power-storing device with the engine-connected part to start an engine, a clutch-dog carried by the clutch-dog carrier and located in position to co-act with the centrifugal connecting means upon the attainment of a predetermined speed of the engine-connected part, releasing means for the clutch-dog, and means controlled by the power-storing device and controlling the releasing means.

10. An engine-starter comprising a power-storing device, a gear connected thereto, a rotating power-transmitting member provided with gear teeth, a lock-wheel connected to the power-storing device by means engageable only in one direction of movement, a planetary pinion carried by the lock-wheel and engaging said gear and power-transmitting member, a locking device for the lock-wheel, and means for connecting the power-transmitting member with an engine to start the engine by rotation of the gear in the direction in which the lock-wheel and gear are engageable and for connecting the power-transmitting member with the engine to store power in the power-storing device by rotation of the gear in the opposite direction.

11. An engine-starter comprising a power-storing device, a rotating part operatively connected with the engine, means for connecting the power-storing device with the engine-connected part to start an engine by the power-storing device, centrifugal connecting means carried by the engine-connected part, a rotating clutch-dog carrier connected to the power-storing device, a clutch-dog carried thereby and normally located in position to co-act with the centrifugal connecting means upon the attainment of a predetermined speed of the engine-connected part, a movable releasing plate engageable with the clutch-dog to move the clutch-dog out of such co-active position, and means controlled by the power-storing device for moving such releasing plate into such operative position.

12. An engine-starter comprising a power-storing device, a rotating part operatively connected with the engine, means for connecting the power-storing device with the engine-connected part to start an engine by the power-storing device, centrifugal connecting means carried by the engine-connected part, a rotating clutch-dog carrier connected to the power-storing device, a clutch-dog carried thereby and normally located in position to co-act with the centrifugal connecting means upon the attainment of a predetermined speed of the engine-connected part, a movable releasing plate engageable with the clutch-dog to move the clutch-dog out of such co-active position, means controlled by the power-storing device for moving such releasing plate into such operative position, and yielding means controlling the releasing plate.

13. An engine-starter comprising a power-storing device, a rotating part operatively connected with the engine, means for connecting the power-storing device with the engine-connected part to start an engine by the power-storing device, centrifugal connecting means carried by the engine-connected part, a rotating clutch-dog carrier connected to the power-storing device, a clutch-dog carried thereby and normally located in position to co-act with the centrifugal connecting means upon the attainment of a predetermined speed of the engine-connected part, a movable releasing plate engageable with the clutch-dog to move the clutch-dog out of such co-active position, means controlled by the power-storing device for moving such releasing plate into such operative position, and yielding means controlling the releasing plate, the yielding means and releasing plate having an inclined abutment tending to advance the releasing plate into further engagement with the clutch-dog.

14. An engine-starter comprising a starter-spring, a gear connected thereto, a rotating power-transmitting member provided with gear teeth, a lock-wheel connected with said gear by means engageable only in one direction of movement, a planetary gear carried by the lock-wheel and engaging teeth on the gear and on the power-transmitting member, a locking device for the lock-wheel, means for connecting the power-transmitting member with an engine to start the engine by rotation of the gear in the direction in which the lock-wheel and gear are engaged and for connecting the power-transmitting member with the engine to wind the spring by rotation of the gear in the opposite direction, and a stop for the gear controlled by the movement of such member.

15. An engine-starter comprising a power-storing device, a rotating power-transmitting member, a rotating part operatively connected with the engine, means engageable only in one direction of movement for connecting the power-storing device with the power-transmitting member, and directional engaging means for connecting the power-transmitting member with the engine-connected part to start the engine by the power-storing device, a centrifugal-arm carried by the engine-connected part, a clutch-disk carried by the power-transmitting member and a clutch-dog on such disk and located in position to co-act with the centrifugal-arm upon the attainment of a predetermined speed of the engine-connected part, and motion-transmitting means for connecting the power-transmitting member with the power-storing device during the centrifugal-clutch-actuated movement thereof.

16. An engine-starter comprising a power-storing device, a rotating part operatively connected with the engine, means engageable only in one direction of movement for connecting the power-storing device with the engine-connected part to start the engine, a centrifugal-arm carried by the engine-connected part, a clutch-dog carrier connected to the power-storing device, a clutch-dog carried thereby and normally located in position to co-act with the centrifugal-arm upon the attainment of a predetermined speed of the engine-connected part, a slide-rod controlled by the power-storing device, a movable releasing plate engageable with the clutch-dog to move the clutch-dog out of said co-active position, and an actuating spring-pin carried by the releasing plate, the slide-rod having abutments located in position to co-act with such spring-pin.

17. An engine-starter comprising a power-storing device, a rotating part operatively connected with the engine, means engageable only in one direction of movement for connecting the power-storing device with the engine-connected part to start the engine by the power-storing device, a centrifugal-arm carried by the engine-connected part, a clutch-dog carrier connected to the power-storing device, a clutch-dog carried thereby and normally located in position to co-act with the centrifugal arm upon the attainment of a predetermined speed of the engine-connected part, a slide-rod controlled by the power-storing device, a movable releasing plate engageable with the clutch-dog to move the clutch-dog out of said co-active position, an actuating spring-pin carried by the releasing plate, the slide-rod having abutments located in position to co-act with such spring-pin, and a detent for restraining the movement of the releasing plate.

18. An engine-starter comprising a power-storing device, a rotating engine-connected part, means engageable only in one direction of movement for connecting the power-storing device and engine-connected part, centrifugal means for connecting the engine-connected part with the power-storing device to store power in the power-storing device, a thrust device controlling the centrifugal means, and connections between the thrust device and the power-storing device comprising helically engaging parts, whereby an inoperative condition of the centrifugal means is effected by the power-storing device when the power-storing device is fully charged.

19. In an engine-starter, the combination of a means for storing energy, a reversible gearing connected thereto, a clutch connecting the gearing to the engine, and devices for controlling the clutch and gearing to cause the gearing to transmit to or from the means for storing energy.

20. In an engine-starter, the combination of means for storing energy, a reversible gearing connected thereto, a clutch joining the gearing to the engine, and devices automatically actuated from said means for storing energy to adjust the clutch and gearing and cause them to transmit to the means for storing energy.

21. In an engine-starter, the combination of a means for storing energy, a rotary shaft, means connecting it to the engine, a gear in connection with said means for storing energy, a gear in connection with the shaft, an independently-rotatable member, a gear carried thereby, and means for arresting the movement of said independently-rotatable member at will.

857,600. PAPER-HANGER'S TOOL. WILLIAM U. COLTHAR, Springfield, Ohio. Filed Aug. 5, 1905. Serial No. 272,798.



Claim.—1. The combination, with a straight-edge provided with a guide, of an attachment therefor comprising a body, a downwardly extending member supported from the lower side of said body and extending entirely around the same and having guideways formed therein, and means co-acting with the walls of said guideways to engage said guide and retain said attachment in its adjusted position on the straight-edge, substantially as described.

2. The combination, with a straight-edge provided with a guide, of an attachment therefor comprising a body, a

downwardly depending flange from near the outer edge of said body and extending entirely around the same and having guideways formed therein, and means co-acting with the walls of said guideways to engage said guide and retain said attachment in its adjusted position on the straight-edge, substantially as described.

3. The combination, with a straight-edge provided with a guide, of an attachment therefor comprising a body, a downwardly extending flange from near the outer edge of said body and extending entirely around the same and having guideways formed therein, and springs adapted to engage said guide and hold the same in frictional engagement with the walls of said guideway, substantially as described.

4. The combination, with a straight-edge provided with a guide, of an attachment therefor comprising a cylindrical body, an annular flange depending therefrom and having recesses therein to form guideways, and springs secured to said body and co-acting with the walls of said guideways to engage said guide and retain said attachment in its adjusted position on said straight-edge, said body having a spirit level diametrically arranged thereon, substantially as described.

5. The combination, with a straight-edge having a guide of diminishing width toward the body of the straight-edge, of an attachment therefor comprising a body provided with a spirit-level and constructed and arranged to engage under the guide, one of the engaging parts being yielding or spring-pressed, to permit direct engagement and to hold the body frictionally in position on the guide, substantially as described.

6. The combination, with a straight-edge having a guide circular in cross section embedded therein for less than half of its diameter, of an attachment therefor comprising a body provided with a spirit-level, said body having seats adapted to fit the guide on one side and relieved or cut away on the other side, and a spring or springs carried by said body and having a shoulder to engage under the side of the guide opposite that against which the body bears, substantially as described.

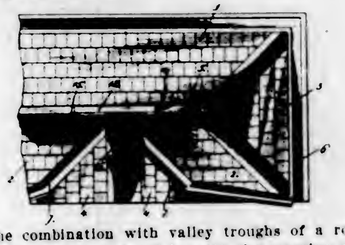
7. The combination, with a straight-edge having a guide of diminishing width toward the body of the straight-edge, of an attachment therefor comprising a body provided with a spirit-level and constructed and arranged to engage under the guide, said body being provided with bearing surfaces to rest upon the top of the straight-edge, one of the engaging parts being yielding or spring-pressed, to permit direct engagement and to hold the body frictionally against the guide and straight-edge, substantially as described.

8. An attachment for paperhanger's straight-edge comprising a body having a depending flange, two sets of guideways formed in said flange at right angles to each other and adapted to engage the straight-edge, springs carried by said body adapted to co-act with said guideways to hold the body in position on the straight-edge, and a spirit-level mounted on said body parallel with one of said guideways and at right angles to the other, substantially as described.

9. The combination, with a straight-edge having a guide thereon substantially circular in cross section, of a plumbing and leveling attachment therefor comprising a substantially circular body having a spirit-level diametrically mounted thereon, said body having a cylindric wall with opposite recesses arranged in pairs at right angles to each other, each recess having one side adapted to fit the corresponding side of the guide and form an engaging surface, the other side being cut away and provided with a spring adapted to engage under the guide, substantially as described.

857,601. GUTTER AND VALLEY TROUGH FOR ROOFS. HARRY COOPER, Roscoe, Pa. Filed Feb. 20, 1907. Serial No. 358,446.

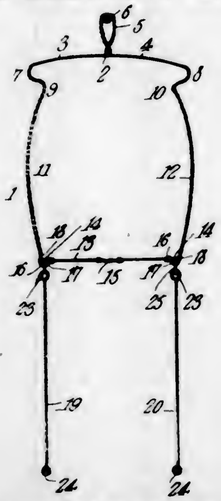
Claim.—1. In combination with a roof having a shielded main and hip ridges, and valley troughs, of guides and holders secured to said roof beneath the covering thereof, and adapted to detachably hold said valley troughs, a T-shaped section of said shield hinged to the main ridge of said roof to permit of the removal of said valley trough and means to hold said section in a closed position, substantially as described.



2. The combination with valley troughs of a roof, of guides and holders mounted beneath the covering of said roof and adapted to detachably hold said valley troughs, and means hinged to the main ridge of said roof for shielding the upper ends of the valley troughs.

3. In combination with a roof having a shield on the main ridge thereof, a section of said shield being hinged, of a valley trough secured to the roof and having its upper end received under the hinged section of said shield, substantially as described.

857,602. CLOTHES-HANGER. MARION CRANE, Lake Odessa, Mich. Filed Mar. 11, 1907. Serial No. 361,791.

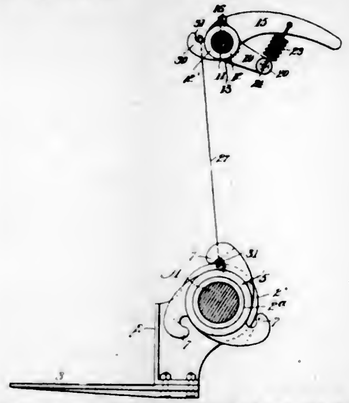


Claim.—1. A clothes hanger comprising an outline body section formed of wire with uninterrupted outwardly curved side and shoulder sections, a projection at the junction of each side section with the shoulder section to enter the arm joints of a garment and help sustain the shoulders, and an independent section for each trousers leg attached to the lower corners of said body portion and adapted to swing in any direction.

2. A clothes hanger, comprising a body section having broad shoulder pieces, projections therefrom adapted to enter the arms of a coat and bulging sides connected at the bottom by a straight piece, a loop being formed on the corner of said body, and a depending section formed of approximately straight diverging rods, their ends being joined by spiral springs and provided with means of attachment to the said loops.

3. A clothes hanger comprising a body frame having approximately the outline of a human body, and an independent section for each leg of a pair of trousers each section comprising approximately a pair of straight bars connected to each other at their ends by straight spiral springs and freely hung to the body portion and adapted to swing in any direction.

857,603. WIRE ATTACHMENT FOR BRICK AND TILE CUTTING MACHINES. WILLIAM R. CUNNINGHAM, Bucyrus, Ohio, assignor to The American Clay Machinery Co., Bucyrus, Ohio, a Corporation. Filed Mar. 14, 1907. Serial No. 362,345.



Claim.—1. In a wire attachment of the character described, the combination with a wire having an enlargement, the end of the wire being extended beyond said enlargement and being looped across itself to form a retaining means for the enlargement, of means for holding one end of the wire, and a claw-shaped member for detachably engaging the enlargement on the opposite end of said wire.

2. In a wire attachment of the character described, the combination with a wire and balls at the opposite ends thereof, said wire being passed through the balls and having its projecting ends looped backwardly transversely across the wire and thereby retaining the balls in place on said wire, of means for holding one end of the wire, and a pivotally-mounted claw-shaped member for engaging and holding the ball on the opposite end of said wire.

3. In a wire attachment of the character described, the combination with a wire having enlargements on its outer ends, said wire being passed through the enlargements and the ends looped backwardly transversely across the wire at substantially the junction of the wire with the outer surface of the ball, of claw-shaped members to receive the outer ends of said wire, said members having curved seats for said enlargements.

4. In a wire attachment of the character described, the combination with a wire having enlargements at opposite ends, the ends of the wire being extended beyond the enlargements and thence looped backwardly across the wire to form a retaining means for the enlargements, means for engaging and holding one of said enlargements, a pivotally-mounted claw-shaped member for engaging and holding the opposite enlargements, and a spring acting upon said member to cause it to hold the wire under tension.

5. In a wire attachment of the character described, the combination with a wire having enlargements at opposite ends, said wire being extended beyond the enlargements and thence bent backwardly to form a retaining means for the enlargements, of claw-shaped members at opposite ends of the wire and into engagement with which the enlargements are substantially hooked.

6. In a wire attachment of the character described, the combination with a wire having enlargements at the ends, said wire being extended beyond the enlargements and thence looped backwardly across itself, of oppositely-turned hook-shaped members adapted to engage said enlargements, said members being forked to admit the wire and form spacing guides therefor.

7. In a wire-attachment of the character described, the combination with the cutting wire having an enlargement on the inner end thereof, said wire being passed through the enlargement and the end looped backwardly transversely across the wire to thereby retain the enlargement in place on said wire, the push-board, the platen fixed thereto, and the shaft upon which the push-board is fixedly mounted, said push-board having a hub-portion for the shaft, of a ring mounted upon said hub-portion said ring having a hook-shaped member the outer end of which is forked to form a claw into engagement with which the inner end of the wire is hooked, the slot of said claw forming a spacing and guiding means for the inner end of the wire, and wire-holding means for the outer end of the wire.

8. In a wire-attachment of the character described, the combination with a wire and means for attaching the inner end thereof, said wire having an enlargement on its outer end, the wire being passed through the enlargement and the end looped backwardly transversely across the wire to thereby retain the enlargement in place on said wire of a wire-attachment for the outer end of the wire, said attachment comprising a shaft or "wire-bar," and a lever turnably-mounted on the shaft having a short arm with a hook-shaped extremity, said extremity being forked to form a claw over which the wire is adapted to engage.

9. In a wire-attachment of the character described, the combination with a wire and means for attaching the inner end thereof, said wire having an enlargement on its outer end and the outer end of the wire being passed through the enlargement and then looped backwardly transversely across the wire to thereby hold the enlargement in place, of a wire-attachment for the outer end of the wire, said attachment comprising a shaft or "wire-bar," and a lever turnably-mounted on the shaft having a short arm with a hook-shaped extremity, said extremity being forked to form a claw over which the wire is adapted to engage, and a spring acting upon the lever to normally hold the wire under tension.

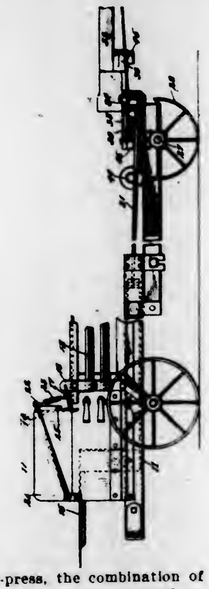
10. In a wire attachment of the character described, the combination with a wire and means for attaching the inner end thereof, said wire having an enlargement on its outer end and the outer end of the wire being passed through the enlargement and then looped backwardly transversely across the wire to thereby hold the enlargement in place, of a wire-attachment for the outer end of the wire, said attachment comprising a shaft or "wire-bar," and a lever turnably-mounted on the shaft having a short arm with a hook-shaped extremity, said extremity being forked to form a claw over which the wire is adapted to engage, and a spring connected to the long arm of the lever, and to a fixed point said spring normally holding the wire under tension and yielding to allow the short arm of the lever to be moved relative to the attaching means for the inner end of the wire to thereby permit the wire to be placed in position.

11. In a wire attachment of the character described, the combination with a wire having enlargements fixed to its opposite ends, means including a claw-shaped member engageable with the enlargement on the inner end of the wire, and an attaching means for the outer end of the wire, said means comprising a shaft or "wire-bar," or member fixed to said shaft and having a forked hub-portion and a projecting arm, a lever pierced to loosely receive the shaft, said lever passing through the fork of said hub-portion and having a hook-shaped short arm the extremity of which is forked to form a claw which receives the wire and is engageable with the enlargement at the upper end thereof, and a spring connecting the lever with the said projecting fixed arm and normally holding the wire under tension.

857,604. HAY-PRESS. JOSEPH DAIN, Ottumwa, Iowa. Filed Nov. 2, 1905. Serial No. 285,593.

Claim.—1. In a hay-press, the combination of a baling case, compressing mechanism, a tucker, means supporting the tucker so that it may move inwardly and outwardly

relatively to the baling case and may rock longitudinally thereof, and a spring for returning said tucker to its normal position.



2. In a hay-press, the combination of a baling case, a plunger, a tucker pivotally mounted on a swinging support and coöperating with the plunger, and a spring for returning said tucker to its normal position upon the withdrawal of the plunger.

3. In a hay-press, the combination of a baling case, compressing mechanism, a tucker coöperating therewith, means pivotally supporting said tucker between its ends so that it may rock longitudinally of the press, and a spring for returning said tucker to its normal position.

4. In a hay-press, the combination of a baling case, compressing mechanism, a tucker coöperating therewith, swinging means pivotally supporting said tucker between its ends so that it may rock longitudinally of the press, and a spring for returning said tucker to its normal position.

5. In a hay-press, the combination of a baling case, a plunger, a swinging support mounted on the baling case, a tucker pivotally mounted on said swinging support and adapted to project into the baling case, and a spring for returning said tucker to its normal position upon the withdrawal of the plunger.

6. In a hay-press, the combination of a baling case, a plunger, a swinging support mounted on the baling case, a tucker pivotally mounted between its ends on said swinging support and adapted to project into the baling case, and a spring for returning said tucker to its normal position upon the withdrawal of the plunger.

7. In a hay-press, the combination of a baling case having a feed opening, a plunger movable in said case under said feed opening, a tucker arranged transversely of the press adjacent to the forward edge of the feed opening and adapted to project into the baling case, means pivotally supporting said tucker so that it may rock longitudinally of the press, and a spring for rocking said tucker upon its pivot to return it to its normal position after operation.

8. In a hay-press, the combination of a baling case, compressing mechanism, a tucker adapted to coöperate with said compressing mechanism, said tucker being movable inwardly and outwardly relatively to the baling case and being arranged to rock longitudinally of the press, and a spring for rocking said tucker to return it to its normal position.

9. In a baling-press, the combination of a baling case, a plunger, a tucker pivotally mounted so that it may rock longitudinally of the baling case, said tucker being inwardly and outwardly movable and having a lip arranged to move forward with a charge of hay as it is carried forward by the plunger, and means for rocking said tucker to move said lip backward and inward as the plunger recedes.

10. In a baling-press, the combination of a baling case, compressing mechanism, a tucker having a lip projecting into the baling case, means supporting said tucker so that said lip may move longitudinally of the baling case as well as inwardly and outwardly relatively thereto, and means for returning said tucker to its normal position when said compressing mechanism returns to its normal position.

11. In a baling-press, the combination of a baling case, a plunger, and spring-actuated means supported by the baling case independently of the plunger and operating to exert backward pressure upon the plunger during part of the return stroke thereof.

12. In a baling-press, the combination of a baling case, a plunger, a pivotally-mounted tucker having an edge portion projecting into the baling case and adapted to swing forward above the plunger as the latter advances, and means for moving said inner edge backward as the plunger is withdrawn.

13. In a baling-press, the combination of a baling case, a plunger, a swinging support, a tucker pivotally carried by said swinging support and movable outwardly and inwardly relatively to the baling case, said tucker having a lip projecting into the baling chamber and movable forward over the fresh charge of hay and the plunger as the hay is compressed, and means for moving said lip backward and inward when the plunger recedes to tuck down the projecting ends of hay.

14. In a baling-press, the combination of a baling case, a plunger, a swinging link for actuating said plunger, a connection between said link and said plunger, a pivot for said link, a laterally-projecting lug carried by said pivot, a bearing for said pivot having a recess for the passage of the lug, and a block fitted in said recess.

15. In a baling-press, the combination of a baling case, a plunger, a swinging link for actuating said plunger, a connection between said link and said plunger, a pivot for said link, a laterally-projecting lug carried by said pivot, a bearing for said pivot having a recess for the passage of the lug, and a block fitted in said recess, said lug being out of alinement with said recess during the normal operation of said link.

16. In a baling-press, the combination of a baling case, a plunger, a swinging link for actuating said plunger, a connection between said link and said plunger, a pivot for said link, a laterally-projecting lug carried by said pivot, a bearing for said pivot having a recess for the passage of the lug, and a block fitted in said recess, said lug being out of alinement with said recess during the normal operation of said link, said link being arranged to overlap said block.

17. In a baling-press, the combination of a baling case, a plunger, a swinging link for actuating said plunger, a connection between said link and said plunger, a pivot for said link, a laterally-projecting lug carried by said pivot, a bearing for said pivot having a recess for the passage of the lug, and a block fitted in said recess, said lug being out of alinement with said recess during the normal operation of said link, said block having a projecting lug.

857,605. AMUSEMENT APPARATUS. ANSEL J. DAYTON, Tacoma, Wash. Filed June 1, 1906. Serial No. 319,743.

Claim.—1. In an amusement apparatus, the combination with a base, of a central table secured thereto, a revoluble spacing disk concentric with said table, anti-friction balls engaging said base and supporting and projecting through said spacing disk, a passenger disk supported by the balls and concentric with said table, and means secured to said passenger disk and engaging said table whereby said passenger disk is rotated.

2. In an amusement apparatus, the combination with a base, of a central table secured thereto, a revoluble spacing disk concentric with said table, anti-friction balls engaging said base and supporting and projecting through said spacing disk, a passenger disk supported by the balls and concentric with said table, and rowing levers secured to said passenger disk and engaging said table whereby said passenger disk is rotated.



3. In an amusement apparatus, the combination with a base, of a central table secured thereto, radial flanges secured to the top of said table, a revoluble spacing disk concentric with said table, anti-friction balls engaging said base and supporting and projecting through said spacing disk, a passenger disk supported by the balls and concentric with said table, and rowing levers secured to said passenger disk and engaging said radial flanges on said table whereby said passenger disk is rotated.

4. In an amusement apparatus, the combination with a base, of a central circular table secured thereto, a revoluble annular spacing disk concentric with said table, anti-friction balls engaging said base and supporting and projecting through said spacing disk, anti-friction rollers mounted on said spacing disk and engaging said circular table to hold said disk concentric therewith, an annular passenger disk supported by the balls and engaging the outer surfaces of said rollers whereby it is held concentric with said table, and means secured to said passenger disk and engaging said table whereby said passenger disk is rotated.

5. In an amusement apparatus, the combination of a central table, radial flanges secured to the top thereof, a rotating passenger disk concentric with said table, rowing levers pivoted to said passenger disk, wheels mounted on the ends of said rowing levers and adapted to engage and roll on said flanges whereby said passenger disk is rotated.

6. In an amusement apparatus, the combination of a fixed base, a rotating passenger disk, a brake shoe carried by said passenger disk and adapted to be brought into frictional engagement with said base, an actuating lever carried by said disk and engaging said shoe, a weight mounted on the end of said lever and adapted to act thereon by its centrifugal force, and a wing mounted on said lever at an angle to the direction of rotation and adapted to act thereon by the resistance of the air.

857,606. BATTERY. FRANK A. DECKER, Philadelphia, Pa., assignor, by mesne assignments, to Decker Electrical Manufacturing Company, Wilmington, Del. Filed Mar. 30, 1904. Serial No. 200,847.

Claim.—1. In a battery, a compartment having imperforate walls of porous material, a fragmental electrode in said compartment, and means in said compartment for permitting the free circulation of fluid and contact thereof with said electrode, substantially as specified.

2. In a battery, a compartment having imperforate walls of porous material, a perforated plate dividing said compartment, and an active fragmental element retained in said compartment by said plate, substantially as specified.

3. In a battery, a compartment comprising a pair of diaphragms, one of said diaphragms having ribs in said compartment, a perforated plate in said compartment supported by said ribs, and an active fragmental element between said plate and the other of said diaphragms, substantially as specified.

4. In a battery, a plurality of compartments comprising flange bordered diaphragms joined together, a fragmental electrode in one of said compartments, and a plate electrode having a projection thereon for engaging a conductor in the other of said compartments, substantially as specified.



5. In a battery, a plurality of compartments comprising flange bordered diaphragms joined together, a perforated member dividing one of said compartments, a fragmental electrode retained by said perforated member, and a ribbed plate electrode in the other of said compartments, substantially as specified.

6. In a battery, a compartment comprising diaphragms having intersecting ribs and flanged borders, an active fragmental element in said compartment, and means for retaining said fragmental element and providing for the circulation of fluid in said compartment, substantially as specified.

7. In a battery, a cell, a plurality of compartments therein, electrodes in said compartments, and a conductor in said cell making electrical contact with said electrodes through the vertical end walls of said compartments, substantially as specified.

8. In a battery, a plurality of compartments comprising flange bordered diaphragms joined together, each of said diaphragms having its parts composed of homogeneous material, and a conductor having contacts penetrating the borders of the alternate compartments, substantially as specified.

9. In a battery, a plurality of compartments comprising flange bordered diaphragms joined together, a conductor having contacts extending through the borders of the alternate compartments, electrodes in said compartments connected with said contacts, electrodes in the remainder of said compartments, and a conductor connecting said last named electrodes, substantially as specified.

10. In a battery, a distributer comprising elongated openings of greater length than width adapted for disseminating a fragmental electrode, in combination with compartments registering with said openings, said distributer having means for distributing such fragmental electrode in each of said compartments substantially as specified.

11. In a battery, a distributer having feeding and terminal openings, compartments fed through said feeding openings, and electrodes having terminals in said terminal openings, substantially as specified.

12. In a battery, a plurality of compartments, and a distributing lid for said compartments, said lid having openings therethrough for feeding alternate compartments, and closures extending over intermediate compartments, substantially as specified.

13. In a battery, a plurality of compartments, and a distributing lid for said compartments, said lid having openings therethrough for feeding and closures extending over compartments registering therewith, substantially as specified.

14. In a battery, a plurality of compartments compris-

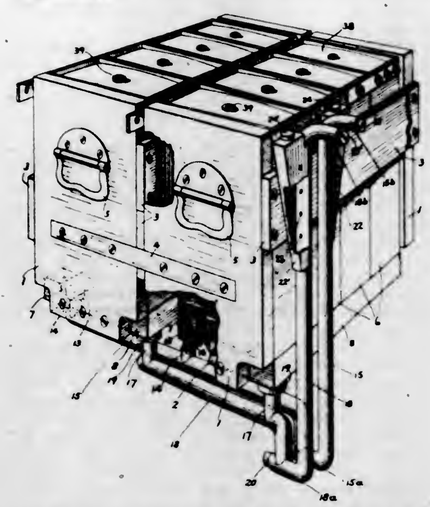
ing flange bordered diaphragms joined together, a tube passing through the borders of said compartments and having orifices communicating with alternate compartments, and orifices through the bottoms of compartments separated from said tube orifices, substantially as specified.

15. In a battery, a plurality of compartments comprising flange bordered diaphragms joined together, and a tube extending through the lower borders of said diaphragms and communicating with one of said compartments, said tube rising approximately to the top of said compartments and descending to the bottom thereof, and an orifice for passing a fluid, said orifice containing the end of said tube, substantially as specified.

16. In a battery, a cell, a plurality of compartments therein, and electrodes in said compartments electrically connected within said cell in multiple relation through the side walls of said compartments, substantially as specified.

17. In a battery, a receptacle having an aperture in the bottom thereof, a plurality of compartments having openings in the bottoms thereof, said compartments being removably supported in said receptacle and above the bottom thereof, and means permitting the circulation of fluid in said receptacle beneath said compartments, substantially as specified.

857,607. ELECTROCHEMICAL APPARATUS. FRANK A. DECKER, Philadelphia, Pa., assignor, by mesne assignments, to Decker Electrical Manufacturing Company, Wilmington, Del. Filed Jan. 16, 1906. Serial No. 296,262.



Claim.—1. In apparatus of the class described, a plurality of crates arranged in parallel with corresponding ends connected together, each crate having bottom strips of less width than the ends and side strips disposed at different elevations permitting juxtaposed side strips of joined crates to lie one above the other, in combination with a series of cells in each of said crates, and conduits secured to the bottoms of the envelops of the cells and disposed on either side of the bottom strips thereof, the conduits communicating with the interiors of the respective cells.

2. In apparatus of the class described, a set of cells each having one or more horizontally disposed insulating conduits within and cemented to the bottom thereof, and one or more horizontally disposed insulating conduits without and cemented to the bottoms of the several cells, each of the exterior conduits communicating with a conduit within each cell.

3. In apparatus of the class described, a cell having an exterior conduit communicating with the interior at the bottom thereof, said conduit having a drop forming a trap therein with an outlet below the bottom of said cell.

4. In apparatus of the class described, a cell having an exterior conduit connected therewith at the bottom thereof, said conduit having a mouth near the top of said cell, and a sight chamber having a mouth, said chamber being connected to said conduit near the top thereof so as to communicate therewith.

5. In apparatus of the class described, a plurality of envelops, and a rubber conduit conforming and vulcanized to the bottoms and communicating with the interiors thereof.

6. In apparatus of the class described, a number of cells each having one or more conduits within the bottom thereof, and one or more exterior conduits connected to the bottoms of said cells and communicating with a conduit in each of said cells, said exterior conduit or conduits rising to or near the top of said cells.

7. In apparatus of the class described, a set of cells each having one or more conduits within and cemented to the bottom thereof, and one or more conduits without and cemented to the bottoms of the several cells, the exterior conduit or conduits communicating with an interior conduit of each of said cells.

8. In appartus of the class described, a plurality of sets of cells, each cell having one or more conduits therein, one or more conduits exterior to each set of cells, each exterior conduit communicating with an interior conduit of each cell of its set, a recessed boss on each of said exterior conduits, and conduits having flanged branches thereon secured in said recessed bosses, each of said last named conduits communicating with a set of first named exterior conduits.

9. In apparatus of the class described, a cell having therein a cup tapering from the top to the bottom and a space exterior to said cup tapering from the bottom to the top, conduits in the bottom of said cell communicating respectively with said cup and said space.

10. In apparatus of the class described, a cell having therein a cup and a space exterior to said cup, a conduit in the bottom of said cell having a tapered socket therein, a tapered nipple in the bottom of said cup fitting in said tapered socket, and a conduit exterior to said cell with which said interior conduit communicates.

11. In apparatus of the class described, a cell, a rubber conduit vulcanized to the interior of said cell, a second rubber conduit vulcanized to the exterior and communicating with the interior of said cell and a nipple directly connecting said conduits.

12. In apparatus of the class described, a cell, an insulating conduit in and cemented to the bottom thereof having tapered sockets therein, cups having tapered nipples seated in said sockets, a second insulating conduit without and cemented to the bottom of said cell, and a nipple connecting said conduits.

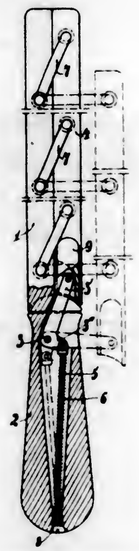
13. In apparatus of the class described, a plurality of battery cells, an insulating conduit disposed along the bottoms vulcanized to and communicating with said cells and within each cell a conduit of comparatively small bore connected with said first named conduit.

14. In apparatus of the class described, a cell having therein a cup, a conduit in the bottom of said cell, said cup and conduit having a connection comprising a tapered nipple and a tapered socket fitting therein, and a conduit exterior to said cell with which said interior conduit communicates.

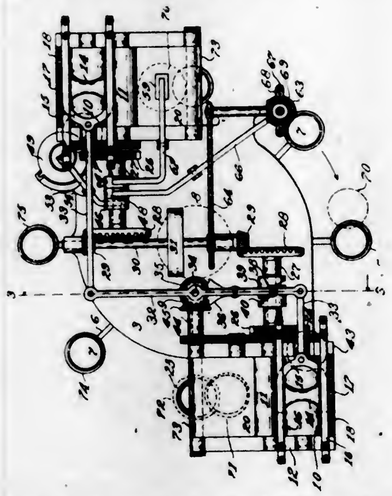
857,608. NEWSPAPER-HOLDER. JOHANN J. DETTWYLER, Sissach, Switzerland. Filed Dec. 5, 1905. Serial No. 290,429.

Claim.—In a paper holder the combination of a stationary member having a handle, a movable member adapted to bear against or be removed from said stationary member, U-shaped links having their arms engaging said members respectively, a bell-crank lever pivoted within the handle and connected at one arm to the movable member, and a spring bearing on the other arm of said lever substantially as described.

857,608.



857,609. PIE-MACHINE. FRED DEUERLING, Chicago, Ill. Filed Feb. 6, 1907. Serial No. 356,049.



Claim.—1. The combination of a pair of opposed rollers adapted to elongate a mass of plastic material passed between, and a third roller co-acting with one of the rollers of said pair and adapted to elongate the material in a direction transverse to the elongation effected by said first pair of rollers.

2. The combination of a pair of opposed rollers adapted to elongate a mass of plastic material passed between, a third roller journaled on an axis transverse to that of one of the rollers of said pair and adapted to travel along such roller in a longitudinal direction to elongate the material in a direction transverse to the elongation effected by said first pair of rollers.

3. The combination of a pair of opposed rollers, mechanism for driving said rollers intermittently, a third roller journaled on an axis at right angles to one of the rollers of said pair and co-acting therewith, mechanism for causing said third roller to travel across the surface of said one roller for elongating a mass of plastic material between them, said mechanisms being arranged to operate alternately and adapted to successively roll the material in different directions to form thin sheets.

4. The combination of a pair of opposed horizontally disposed rollers adapted to elongate a mass of plastic material passed between, a third roller disposed at right angles to one of the rollers of said pair and having its periphery concave toward said one roller, said third roller being adapted to roll along the surface of said one roller in a longitudinal direction for rolling out a mass of plastic material upon the surface of said one roller, and mechanism for operating said third roller in advance of the operation of said pair of rollers for rolling the material into sheets.

5. The combination of a conveyer adapted to carry a series of pie tins, a pie crust rolling machine located adjacent to the path of said conveyer, and delivery mechanism for conveying pie crusts from said crust rolling machine to said conveyer and adapted to automatically discharge a pie crust upon each of said tins when such tin arrives at a certain position along the path of said conveyer.

6. The combination of a conveyer adapted to support and carry along in succession a series of pie tins, a horizontally disposed endless apron extending along and above a part of the path of said conveyer and adapted to carry sheets of dough and deliver the same edgewise downwardly toward the path of said conveyer, rolling mechanism adapted to roll a mass of dough into a thin sheet and deposit the same upon said apron, and mechanism for controlling the successive operations of said rolling mechanisms so as to deliver sheets of dough to said apron at suitable intervals for depositing one of such sheets upon each pie tin when the same arrives at the delivery end of said apron.

7. The combination of a conveyer adapted to support a pie tin in a substantially horizontal position and carry the same along, a horizontally disposed endless apron adapted to support a sheet of dough on its upper surface and deliver the same downwardly into the path of the pie tin on said conveyer, and a roller having its periphery opposed to that of said apron near the delivery end thereof and adapted to engage the sheet of dough on said apron and prevent the same from slipping off when depending therefrom.

8. The combination of a conveyer adapted to support a pie tin in a substantially horizontal position and carry the same along, a horizontally disposed endless apron adapted to support a sheet of dough on its upper surface and deliver the same downwardly into the path of the pie tin on said conveyer, and a guide at the delivery end of said apron adapted to prevent the dough from slipping off from said apron while depending therefrom.

9. The combination of feeding means adapted to carry along a series of horizontally disposed pie tins, an endless apron extending along and above the path of the tins and adapted to support sheets of dough and deliver the same edgewise in a downward direction toward the path of said tins, a pair of opposed rollers adapted to roll a sheet of dough and deliver the same upon said apron, mechanism for operating said rollers intermittently, a third roller mounted above one of the rollers of said pair, being journaled on an axis at right angles to the axis of said roller and mounted to roll along said one roller in a longitudinal direction for flattening out a mass of dough supported by said roller, said third roller being arranged to operate during intervals when said pair of rollers is at rest, and said rollers being driven to operate at suitable intervals for supplying sheets of dough to said apron at proper intervals to register with the tins on said conveyer.

10. A machine for rolling plastic material into thin sheets, comprising a supporting surface intermittently movable in one direction for carrying the material along, a roller journaled in movable bearings and adapted to travel across said surface in a direction transverse to the move

ment of said surface, a second roller having its periphery opposed to said surface and co-acting therewith, and mechanism for intermittently and alternately moving said surface and said first roller.

11. A machine for rolling plastic material into thin sheets, comprising a supporting surface intermittently movable in one direction for carrying the material along, a roller journaled in movable bearings and adapted to travel across said surface in a direction transverse to the movement of said surface, a second roller journaled in stationary bearings and adapted to operate upon said material when said surface moves along, means intermittently and alternately moving said first roller and said surface.

12. A pie machine comprising a conveyer adapted to carry pie tins in succession along a horizontal path, a pair of crust rolling mechanisms adapted to deliver pie crusts to the pie tins on said conveyer at different points along said path, means adapted to moisten the edges of a crust after the same has been deposited by the first of said crust rolling devices, and means co-operating with said second crust rolling device and adapted to impress a mark upon each crust during its passage from said second crust rolling means to said tins, all being arranged to operate intermittently and being timed so as to operate successively upon each pie tin carried by said conveyer.

13. In a pie machine, the combination of a support for a pie tin, a moistener mounted above said support and movable toward and away from said support for moistening the edges of a pie crust on a tin supported thereon, said moistener comprising an annular pad of absorbent material, and a fountain for supplying moisture for said pad.

14. The combination of a conveyer adapted to support and carry along a series of pie tins, a moistener comprising an annular pad located above the path of the tins on said conveyer, said conveyer being intermittently movable for bringing the pie tins in succession to a position below said moistener, mechanism for automatically depressing said moistener during intervals when said conveyer is at rest, and means for uniformly moistening the surface of said pad.

15. In a pie machine, a moistener comprising a horizontally disposed annular pad of absorbent material, and a fountain adapted to distribute moisture uniformly over the surface of said pad.

16. In a pie machine, a moistener comprising a tank having an annular perforated area in its bottom, a pad of absorbent material mounted on said tank below said perforated area, and means for feeding water into said tank.

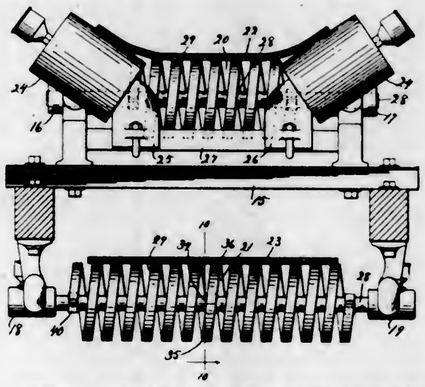
17. In a pie machine, a moistener comprising a tank having a downwardly concave annular perforated bottom, and an annular pad of absorbent material mounted upon and below said bottom and adapted to receive moisture through said perforations.

18. In a pie machine, a moistener comprising a tank having its bottom dished at the middle part and having a downwardly and outwardly inclined perforated annular area surrounding the dished part, an annular pad of absorbent material secured below said perforated area and adapted to soak up liquid overflowing the edges of said dished part.

19. In a pie machine, a crust moistener comprising a plate having a central area with level edges and adapted to overflow uniformly at all sides, a pipe for feeding liquid to said central area, said plate having a downwardly and outwardly inclined annular perforated area surrounding said central area, and an annular pad of absorbent material secured below said perforated area and adapted to soak up liquid passing through said perforated area.

20. In a pie machine, a crust moistener comprising a plate having a central area with level corrugated edges, and adapted to overflow uniformly at all sides, a pipe for feeding liquid to said central area, said plate having a downwardly and outwardly inclined annular perforated area surrounding said central area, and an annular pad of absorbent material secured below said perforated area and adapted to soak up liquid passing through said perforated area.

857,610. CARRYING-ROLL FOR BELT CONVEYERS, &c. RAYMOND W. DULL, Aurora, Ill., assignor to Stephens-Adamson Mnfg. Co., a Corporation of Illinois. Filed Mar. 14, 1907. Serial No. 362,396.



Claim.—1. A carrying roll for belt conveyers comprising, in combination, an arbor, and a bar bent to helical form spaced apart from the arbor and forming the periphery of the roll, the ends of the bar being inturned and secured to the arbor.

2. A carrying roll for belt conveyers comprising, in combination, an arbor, a bar bent to helical form spaced apart from the arbor and forming the periphery of the roll, and connection between the ends of the bar and the arbor.

3. A carrying roll for belt conveyers comprising, in combination, a rigid arbor extending from end to end of the roll, and a bar bent to helical form about the arbor and forming the periphery of the roll, the ends of the bar being secured to the arbor.

4. A carrying roll for belt conveyers comprising, in combination, an arbor, a bar bent to helical form spaced apart from the arbor and forming the periphery of the roll, one end of the bar being inturned and chamfered to receive the arbor, and clamping means for securing the chamfered end of the bar to the arbor.

5. A carrying roll for belt conveyers comprising, in combination, an arbor, and a plurality of bars having overlapping end to end connection, such bars being bent to helical form and spaced apart from the arbor to form the periphery of the roll, and the connected ends of the bars being inturned and oppositely chamfered to receive the arbor.

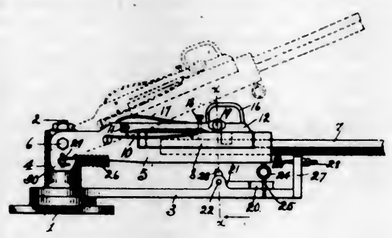
857,611. PLASTER-LATH. FRED W. FARRINGTON and SENECA B. BURCHARD, Minneapolis, Minn. Filed Feb. 12, 1906. Serial No. 300,726.



Claim.—A plaster lath consisting of a flat comparatively thin sheet rectangular in form and composed of a mixture of plaster of paris and a fibrous material molded together, and a reinforcing wire included by the thickness of said lath and extending from end to end and from side to side of the middle line thereof, and having its end or transverse portions near the points where nails are usually driven through the lath, whereby the shanks of the nails will contact with said transverse portions and tension the longitudinal sections of the wire and lock the lath securely on the wall and prevent it from bending and buckling.

857,612. TROLLEY-STAND. EDGAR L. FIXLER, Delta, Ohio. Filed July 12, 1906. Serial No. 325,762.

Claim.—1. In a trolley-stand, a barrel having a yieldingly mounted socket part, and a spring-pressed key pivoted to the barrel and overlapping the movable socket part and having a part adapted to normally lock with the pole.



2. In a trolley-stand, a barrel, a pole, a key associated with the barrel for normally locking the pole therein, and means for effecting a movement of the key to release the pole at a predetermined point in the lowering movement of the barrel.

3. In a trolley-stand, a socket part, a pole, a movable member associated with the socket part for normally co-acting with the pole to prevent withdrawal thereof, and means for automatically effecting a release of said member from the pole at a predetermined point in the lowering movement of the socket-part.

4. In a trolley-stand, a barrel having a perforated movable socket part, a pole, a key movably carried by the barrel for locking with the pole, said key overlying the socket-part with its pole coacting part operating through the perforation therein and being capable of a limited movement relative to the socket-part, and means for normally retaining the socket-part in one position relative to the barrel.

5. In a trolley-stand, a barrel having a movable part forming one side of its socket, a pole, a member carried by the barrel for normally coacting with the pole to retain it in position and having a limited movement relative to the movable barrel part, and means for effecting a release of the member and a movement of the barrel part relative to the pole.

6. In a trolley-stand, a table, a barrel pivotally carried thereby, a pole, a key for locking the pole to the barrel, and means on the table for effecting a movement of the key to release the pole at a predetermined point in the lowering of the barrel.

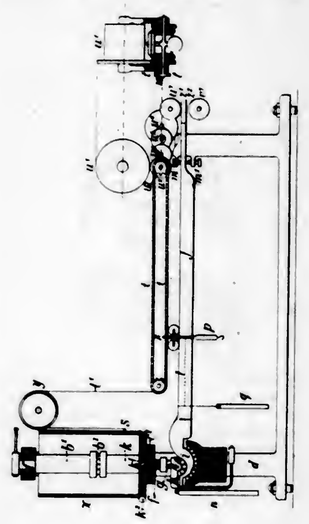
7. In a trolley-stand, a table, a barrel pivotally carried thereby, a pole, a key for locking the pole to the barrel, means on the table for effecting a release of the key from the pole at a predetermined point in the movement of the barrel, and means for retaining the barrel in unlocked position relative to the table.

8. In a trolley-stand, a table, a barrel having a movable socket part, a pole, a key yieldingly carried by the barrel and having a portion protruding through the socket part and co-acting with the pole to normally retain it fixed to the barrel, means connecting the key and socket part for enabling them to have limited relative movements, and means on the table for causing a release of the key from the pole and a movement of the socket part relative thereto at a predetermined point in a movement of the barrel.

857,613. MACHINE TO TEST MATERIALS, PRINCIPALLY FOR COMPRESSION. ANDREW GAGARINE, St. Petersburg, Russia. Filed Aug. 4, 1906. Serial No. 329,214.

Claim.—Machine for testing materials comprising, in combination with the testing mechanism, a lever, a semi-circular shoulder thereon, a ball-bearing for supporting said shoulder, a counterweight to balance the said lever, a traveling weight on said lever, a clock work for moving the same, means for applying the test force to said lever, a drum, means for revolving said drum in accordance with the yielding movement of the specimen tested, a pen, a differential pulley and a connection between said pen and said traveling weight.

857,613.



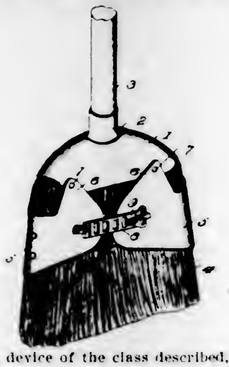
857,614. HAT-PIN. WILLIAM GASKELL and THOMAS VALE, Fayette City, Pa. Filed Oct. 16, 1906. Serial No. 339,191.



Claim.—1. A hat pin having a plurality of circumferentially-arranged grooves adjacent the pointed end of the pin, a removable securing member apertured to receive the hat pin and bored in one end, a plug threaded into said bore and centrally apertured to receive the hat pin, a pair of levers pivoted in the bore of said securing member at opposite sides of the hat pin and having their outer ends turned inwardly toward the pin to engage in said circumferentially arranged grooves in the pin, push pins pivotally connected to the inner ends of said levers and extending outwardly through the securing member and having heads on their outer ends, and springs arranged on said push pins between the levers and the heads for normally holding the inturned ends of said levers in engagement with the pin.

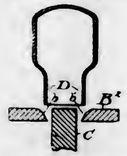
2. A hat pin having a fixed head, and having a plurality of grooves adjacent its pointed end, a removable securing member slidable on the pin and having an enlarged bore in one end, the walls of which are free from engagement with the pin, a lever pivoted within the bore of said securing member and having its outer end turned inwardly toward the pin to engage the grooves thereof, and a spring pressed push pin pivotally connected to the inner end of said lever and extending outwardly through the securing member, substantially as described.

857,615. BROOM-SHIELD. BAKER F. GASQUE, Dillon, S. C. Filed June 29, 1906. Serial No. 324,088.



Claim.—In a device of the class described, the combination of a cap piece of cup shape provided with a central opening to receive the handle of a broom, sections consisting of U-shaped plates the upper portions of which have pivotal connection at opposite sides with the cap piece above mentioned, and fastenings connecting the lower portions of the sections aforesaid as specified.

857,616. FORMING SEAMLESS METALLIC HOLLOW VESSELS. JOHN H. GAULT, Philadelphia, Pa., assignor to The International Silver Company, a Corporation of New Jersey. Filed Sept. 17, 1904. Serial No. 224,861.



Claim.—1. The hereinbefore described method of forming a seamless hollow unitary metallic vessel, having a portion of greater and a portion of lesser cross section, which consists in first forming a hollow blank, then reducing the cross section of one portion only, and then expanding, in cross section, by internal action, a part or the whole of the remainder of the blank.

2. The hereinbefore described method of forming a seamless hollow unitary metallic vessel, having a contracted and an expanded portion, which consists in first forming a hollow blank, then forcing said blank at the open end partially through a die to contact it and supporting the interior of said blank, during said action, at the portion to be contracted, then expanding a part or the whole of the remainder of the blank.

3. The hereinbefore described method of forming a vessel of the character described, which consists in first forming a hollow blank, then contracting a portion only of said blank, then surrounding said blank by a mold, one portion of which conforms to the contracted portion of the blank, and the other portion of which is larger than the remainder of the blank and expanding said last mentioned portion of the blank.

4. The hereinbefore described method, which consists in forming a hollow metallic blank, the metal at one portion being thicker than the remainder of the blank and expanding in cross section the whole or a part of the portion of the blank having the thicker metal.

5. The hereinbefore described method which consists in forming a metallic blank, the metal at one portion being thicker than the remainder of the blank and expanding in cross section the whole or a part of the portion of the blank having the thicker metal.

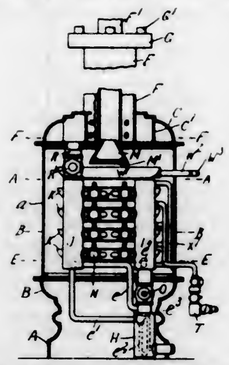
6. The hereinbefore described method of forming a seamless hollow unitary metallic vessel, having a neck portion and a body portion, which consists in first forming a hollow blank of uniform cross-section in both that part thereof corresponding to the neck, and that part thereof corresponding to the body, of the vessel to be formed, then applying external reducing pressure to that part only of the blank corresponding to the neck of the vessel to be formed, thereby forming a partly shaped blank having a body portion of uniform cross-section and a neck portion also of uniform cross-section, but of smaller diameter, and then expanding, in cross-section, by internal pressure, the body portion.

7. The hereinbefore described method of forming a seamless hollow unitary metallic vessel, having a neck portion and a body portion, which consists in first forming a hollow blank, then drawing a part only thereof through a reducing die for a distance substantially exceeding the depth of the die and simultaneously supporting the part subjected to the reducing action and then expanding, in cross-section, by internal action, a part or the whole of the remainder of the blank.

8. The hereinbefore described method of forming a seamless hollow unitary metallic vessel, having a neck portion and a body portion, which consists in first forming a hollow blank, then drawing a part only of the blank through a plurality of dies of successively decreasing diameters, and then expanding, in cross section, by internal action, a part or the whole of that part of the blank which has not been subjected to the reducing action.

9. The hereinbefore described method of forming a seamless hollow unitary metallic vessel, having a neck portion and a body portion, which consists in first forming a hollow blank of uniform cross-section in both that part thereof corresponding to the neck, and that part thereof corresponding to the body, of the vessel to be formed, then drawing a part only of the blank through a plurality of dies of successively decreasing diameters, thereby forming a blank having a body portion of uniform cross-section and a cylindrical neck portion of uniform but smaller cross-section, and then expanding, in cross-section, by internal action, the body portion of the blank.

857,617. FURNACE. JEAN F. GIROUX, Montreal, Quebec, Canada. Filed July 7, 1903. Serial No. 164,615.



Claim.—1. In a hot water heater for supplying hot water to a heat distributing system such heater having flow and return connections for effecting communication with the heating system, the combination with the heater and a supply pipe connected to the return connection of such heater of means in intimate relation with and for heating the water flowing through such supply pipe the latter means being independent of but controlled by the heating means.

2. In a hot water heater for supplying hot water to a heat distributing system such heater having flow and return connections for effecting communication with the heating system, the combination with the heater and a supply pipe connected to the return connection of the heater, of means for pre-heating the water flowing through such supply pipe, and means for super-heating the water flowing through the flow pipe of the heater.

3. In a heater, the combination with an inclosing casing of a series of heating sections within said casing and having intake and outlet ports, a feeder within the casing and connected to and communicating with the intakes of all of said heating sections, a concentrator within the casing and connected to and communicating with the outlets of all of said heating sections, means for connecting the return of a heating system to said feeder, means for connecting the flow of such heating system to said concentrator, and means for heating said heating sections.

4. In a heater, the combination with an inclosing casing of a series of heating sections having intake and outlet ports, a feeder within said casing and connected to and communicating with the intakes of all of said heating sections, a concentrator within said casing and connected to and communicating with the outlets of all of said heating sections, means for connecting the return of a heating system to said feeder, means for connecting the flow of such heating system to said concentrator, an independent heat generator for each of said heating sections, and means for controlling the said heat generators individually, and said inclosing casing having a chimney connection.

5. In a water-heating furnace, the combination with an inclosing casing, of a series of water-heating sections having intake and outlet ports, a feeder connected to and communicating with the intakes of all of said water-heating sections, a concentrator connected to and communicating with the outlets of all of said water-heating sections, means for connecting the return of a heating system to said feeder consisting of a pipe through which said return flow passes, means for heating said pipe means for connecting the flow of such heating system to said concentrator, and means for heating said water-heating sections, said water-heating sections, feeder, and concentrator being all located within such inclosing casing, and said inclosing casing having a chimney connection.

6. In a water-heating furnace, the combination with an inclosing casing, of a series of water-heating sections having intake and outlet ports, a feeder connected to and communicating with the intakes of all of said water-heating sections, a concentrator connected to and communicating with the outlets of all of said water-heating sections, a pipe extending from said feeder downwardly toward the lower end of the furnace and a coil of pipe connected at one end to said last mentioned pipe, and extending horizontally and into the lower end of such feeder, means for connecting the flow of such heating system to said concentrator, and means for heating said water sections, said water-heating sections, feeder, and concentrator being all located within such inclosing casing, and said inclosing casing having a chimney connection.

7. In a water-heating furnace, the combination with an inclosing casing, of a series of water-heating sections having intake and outlet ports, a feeder within the casing and connected to and communicating with the intakes of all of said water-heating sections, a concentrator within the casing and connected to and communicating with the outlets of all of said water-heating sections, means for connecting the return of a heating system to said feeder, means for connecting the flow of such heating system to said concentrator, an independent heat generator consisting of a gas burner located beneath and in close proximity to each of said water-heating sections, and means for controlling the supply of gas to each of said burners, and said inclosing casing having a chimney connection.

8. In a heater, a heating section consisting of an annular inclosing part, and an inner curved part independent of said inclosing part, said inclosing and inner parts communicating at their ends with one another, means for separating the joint intake ends from the joint outlet ends, and means for connecting the flow and return pipes to said joint intake ends and joint outlet ends respectively.

9. In a water-heating furnace, the combination with water-heating means, of means in communication with the water heating means of the furnace for super-heating the water flowing from such water-heating means, said super-heating means consisting of a section of volutoid form and horizontally arranged, and having only a single passage a water-conductor leading from the water-heating means to one end of the volutoid section, and effecting the said communication and a water-conductor leading from the opposite end of said volutoid section, for the purpose set forth.

10. In a water-heating furnace, comprising an inclosing casing, water-heating means within said inclosing casing, the combination with said water-heating means of means for super-heating the water flowing from said water heating means, said super-heating means consisting of a section of volutoid form extending completely across the upper end of said inclosing casing and having a central vertical passage therethrough, a water-conductor leading from said water-heating means to the outer end of said volutoid section, the inner end of said volutoid section having a vertical cylindrical section connected at its lower end thereto, a water distributing head connected to and communicating with the upper end of said vertical cylindrical section, and having a central vertical passage therethrough, of a pipe for conducting the products of combustion from the interior of said inclosing casing, said pipe leading from the upper end of said interior of the casing upwardly through the passage in said volutoid section through said vertical section, and through said distributing head, and having a truncated cone at its lower end and communicating therewith, said cone having a valve for controlling the passage therethrough substantially as described and for the purpose set forth.

11. In a water-heating furnace, the combination with water-heating means consisting of a series of water-heating sections, and a series of gas burners, each burner of said series being in close proximity to and beneath the water-heating sections, of a separate water-heating section for heating water for domestic use, and a separate burner for said last mentioned section, and means for controlling the supply of gas to said burners individually, substantially as described and for the purpose set forth.

12. In a water-heating furnace, comprising a series of super-imposed water-heating sections, and a series of gas burners located beneath and alternating with and in close proximity to the water-heating sections of said series, the combination with said burners of a distributer box, a gas conducting pipe leading to said distributer box, a valve controlling said gas supplying pipe, a micrometric dial upon said valve concentric to the stem thereof, an index hand carried upon said stem in registering relation to said dial, a pair of distributing sections adjacent to said distributing box, a pair of gas conductors one of which connects said distributing box to one of said distributing sections and the other connects the distributing box to the other of said distributing sections, each of the before mentioned gas burners comprising a pair of gas burning members, a series of valve controlled gas pipes leading from one of said distributing sections, and one of said pipes being connected to each of said burner members, a series of pipes connecting the other distributing section to the other burner members, and each of the gas conductors connecting the distributing box to the distributing sections being provided with a valve, and each valve having a micrometric dial thereon concentric to its valve stem, and each valve stem having an index hand thereon in indicating relation to said dial, substantially as described and for the purpose set forth.

13. In a heater comprising a casing, heating sections within said casing, means effecting a communication between said sections, a flow pipe connected at one end to one end of said heating sections, and a supply pipe connected at one end to the opposite end of said heating sections, the combination with said heating sections and flow and supply pipes, of valvular means located in said flow and supply pipes for cutting off same from the heating sections.

14. In a hester, a heating section consisting of an annular inclosing part, and an inner curved part independent of said inclosing part, said inclosing and inner parts communicating at their ends with one another, means for separating the joint intake ends from the joint oulet ends.

and means for connecting the flow and return pipes to said joint intake ends and joint outlet ends respectively, each of such sections having one side formed with convex heating surface.

15. In a water heating furnace, the combination with an inclosing casing of a series of water-heating sections having intake and outlet ports, a feeder connected to and communicating with the intakes of all of said water-heating sections, a concentrator connected to and communicating with the outlets of all of said water-heating sections, a pipe extending from said feeder downwardly toward the lower end of the furnace and offset, a coil of pipe connected at one end to the bend at the off-set, and extending horizontally and into the lower end of such feeder, a second pipe connected at one end to said concentrator and having its other end extended downwardly to the lower end of said pipe, and upwardly through the interior thereof, through the bend at the off-set, and extending horizontally and into the lower end of such feeder, means for connecting the flow of such heating system to said concentrator, and means for heating said water sections, said water-heating sections, feeder, and concentrator being all located within such inclosing casing, and said inclosing casing having a chimney connection.

857,618. CHECK-PROTECTOR. JUDSON M. GRIFFIN, Detroit, Mich. Filed Feb. 9, 1907. Serial No. 356,532.



Claim.—1. In combination with a base having a grilled upper surface, means hinged thereto for holding a paper in place thereupon, said means being wholly free from interfering engagement over the grilled portion, and a grilled roller adapted to be moved lengthwise of the grilled surface, being guided within and confined to a path complementary in extent therewith, substantially as described.

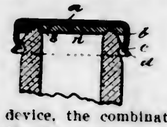
2. In a check protector, in combination with a grilled base, a mutilating roller adapted to coact therewith in mutilating a sheet of paper inserted therebetween, means hinged to the base for holding the paper in place, and a guide member whereby the possible range of movement of the roller is limited, substantially as described.

3. A check protector, having in combination with a mutilating roller, a base portion adapted to support the check and to co-operate with the roller in the mutilation of selected portions of its surface, means hinged to that part of the base portion whose surface is not pressed upon by said roller for holding the check in place during the movement of the roller thereover, and means adapted to confine and guide the travel of the roller, substantially as described.

4. In a check protector, the combination of a base having a portion of its upper surface roughened, a roller having a mutilating periphery adapted to travel thereover, and a frame portion hinged thereto and adapted by pressure thereagainst to hold a check in position over the roughened portion of the surface, though out of interfering position with the access thereto from above and to serve as a confining guide-way for the travel of the roller over the roughened portion of the base, substantially as described.

857,619. BOTTLE-SEALING DEVICE. FREDERICK W. HALL, Camden, N. J. Filed May 31, 1906. Serial No. 319,485.

Claim.—1. A hard-metal sealing cap having a disk-shaped crown with an integral and continuous annular flange which is provided intermediate its length with an inturned open groove and an outwardly inclined rim edge below and proceeding from the lower wall of said groove.

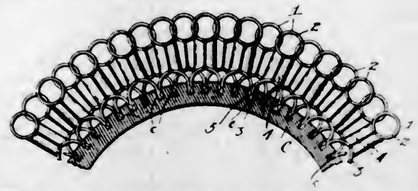


2. In a sealing device, the combination with a bottle having a lip and below it a projecting annular shoulder, a compressible sealing medium under sealing pressure on the bottle lip, and means to maintain said elements in sealed relation, consisting of a hard metal sealing cap having a continuous annular flange provided with an inturned open groove intermediate its length adapted initially to pass over the bottle shoulder, and below it a rim edge initially inclined outwardly, whereby when radial pressure is applied to said inclined rim edge to bring it into substantially the same vertical plane with the portion of the flange above the groove, the inner annular edge of the groove will be slightly contracted circumferentially and sprung into locked contact with the under-face of the bottle shoulder.

3. A sealing device comprising a bottle having a head provided with a projecting annular shoulder between its lip and neck, a compressible sealing medium, and a hard metal sealing cap having a continuous flange provided intermediate its length with an open and inturned annular groove and a depending rim proceeding from the lower wall thereof, said groove being brought into locked relation to the annular shoulder of the bottle.

4. A sealing device consisting of the combination with a bottle having a projecting annular locking shoulder between its lip and neck, a compressible sealing disk under sealing pressure on the lip of the bottle, and a paper-lined hard metal sealing cap having a continuous annular flange provided intermediate its length with an open inturned annular groove and an annular rim edge proceeding from the lower wall thereof, and which is brought into a substantially vertical plane when the groove of the cap is in locked relation to the bottle shoulder.

857,620. COOLING DEVICE FOR ENGINES. ELMER B. HARSHBARGER, Bellefontaine, Ohio. Filed Nov. 1, 1906. Serial No. 341,604.

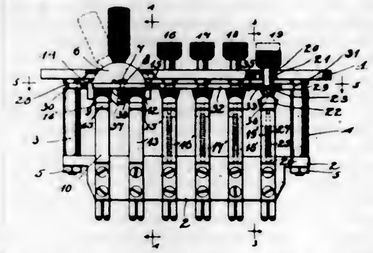


Claim.—1. A cooling device of the character described, for attachment to a heated part of a motor, comprising a strip of metal doubled upon itself and shaped to provide a transversely extending tubular portion at one end of the device, and a longitudinally-extending tubular portion intermediate the ends of the device, said strip having its ends bent outwardly and crimped.

2. The combination with a heated part of a motor having seats therein, of a plurality of cooling devices formed of strips of metal bent upon themselves and shaped to provide transverse tubular portions at the outer ends of such devices, and longitudinal tubular portions intermediate the ends of such devices, said strips also having their ends crimped to provide crimped portions at the inner ends of such devices, each pair of adjacent crimped ends of such cooling devices being interlocked and engaged with one of the seats.

3. The combination with an engine cylinder having parallel grooves therein, of loop-shaped cooling devices arranged in rows, each pair of the adjacent ends of the devices in each row being interlocked and seated in one of said grooves, and the devices in adjacent rows being arranged in staggered relation.

857,621. SWITCHING DEVICE. ALEXANDER M. HAUBRICH, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Sept. 28, 1904. Serial No. 226,286.



Claim.—1. In an electric switching device, the combination with an operator's ringing and listening key, of a plurality of actuating buttons, switch contacts actuated by said operator's key and said buttons, means for locking a button upon depression thereof, means for releasing said button upon depression of another button, and means for releasing depressed buttons upon rotation of the operator's key.

2. In a telephonic switching device, the combination with an operator's key, of a plurality of actuating buttons, switch mechanism associated with said operator's key and with said actuating buttons, means for locking said buttons in position upon depression thereof, and means upon rotation of said operator's key for releasing the depressed actuating buttons.

3. In a telephonic switching device, the combination with an operator's listening key, of a plurality of actuating buttons, switching mechanism for each of said actuating buttons, and a common lock bar for said buttons, depression of one of said actuating buttons causing it to be locked in its depressed condition by said locking bar, rotation of said operator's key causing movement of said lock bar to release said actuating button.

4. In a telephonic switching apparatus, the combination with an operator's key, of a plurality of actuating buttons associated therewith, switching mechanism for each actuating button, a locking bar common to said actuating buttons, a cam detent on each button, the depression of a button causing engagement of said locking bar with the detent of the button to lock said button in its depressed position, and means upon rotation of the operator's key for allowing said locking bar to escape from said detent to allow the locked button to return to its normal position.

5. In a telephonic switching apparatus, the combination with an operator's key, of a plurality of actuating buttons associated therewith, switching mechanism for each actuating button, a locking bar common to said actuating buttons having openings corresponding with the buttons, a cam detent for each button adapted to pass through the corresponding opening in the locking bar, spring mechanism for actuating said bar upon passage therethrough of a detent cam to lock the corresponding button in its depressed position, connecting mechanism between said operator's key and said locking mechanism, and means upon rotation of said operator's key for allowing said spring mechanism to move said locking bar to release the depressed buttons.

6. In a telephonic switching apparatus, the combination with an operator's key, of a plurality of actuating buttons associated therewith, switching mechanism for each button, a locking bar common to said buttons provided with an opening below each button, a cam detent for each button for passing through the corresponding opening in said locking bar to be engaged by the bar to hold the button in its depressed position, and an extension from said operator's button for engaging a stud on said actuating bar to move said bar laterally upon rotation of the operator's key whereby depressed buttons are released from said locking bar.

7. In a telephonic switching apparatus, the combination with an operator's key, of a plurality of actuating buttons associated therewith, switch mechanism associated with each button, a locking bar common to said actuating buttons having an opening below each button, a cam detent for each button adapted to pass through the corresponding opening in the locking bar upon depression of the button, the cam detent causing lateral displacement of said locking bar upon depression of the button, spring mechanism for resisting this lateral displacement and for returning the locking bar after displacement to lock the depressed button, and an extension from said operator's key for engaging a stud on said locking bar to move said locking bar in an opposite lateral direction upon rotation of the operator's key, whereby the depressed button is released.

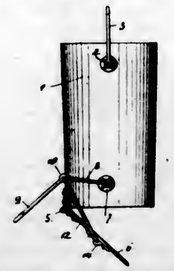
8. In a telephonic switching device, the combination with an operator's key, of a plurality of actuating buttons, switch mechanism associated with said operator's key, switch mechanism associated with said actuating buttons, means for locking said buttons in position upon depression thereof, independent means for locking the operator's key in position upon actuation thereof, and means upon actuation of said operator's key for releasing the pressed actuating buttons.

9. In a telephonic switching device, the combination with an operator's key, of a plurality of actuating buttons, switch mechanism associated with said operator's key, switch mechanism associated with said actuating buttons, means for locking said buttons in position upon depression thereof, independent means for locking the operator's key in position upon actuation thereof, and means upon actuation of said operator's key for causing actuation of the locking means of the buttons for causing release of depressed buttons.

10. In a telephonic switching device, the combination with an operator's key, of a plurality of actuating buttons, switch mechanism associated with said operator's key, switch mechanism associated with said actuating buttons, a locking bar for locking said buttons in position upon actuation thereof, independent means for locking the operator's key in position upon actuation thereof, a pin extending from said locking bar, and an extension from said operator's key, actuation of said operator's key causing said extension to engage the pin to move the locking bar to release the actuating buttons.

11. In a telephonic switching device, the combination with an operator's key, of a plurality of actuating buttons, switch mechanism associated with said operator's key and with said actuating buttons, a locking bar for locking said buttons in position upon actuation thereof, a pin extending from said locking bar, and an extension from said operator's key, rotation of said operator's key causing said extension to engage the pin to move the locking bar to release the actuating buttons.

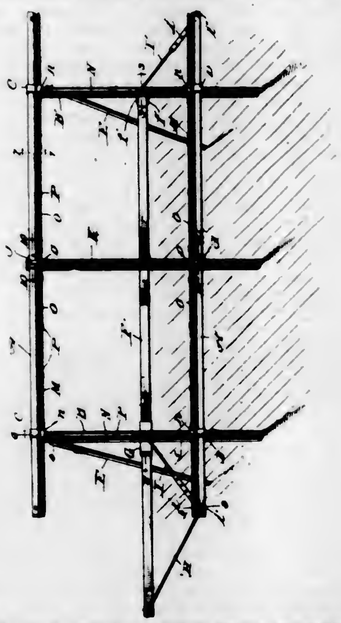
857,622. BUCKET. NOAH M. HELLER, Sharpsburg, Pa. Filed Mar. 12, 1907. Serial No. 361,925.



Claim.—In a dumping bucket, a bucket body provided near its upper end with a bail and having a beveled edge

at its lower end, a bottom hinged to the lower end of the bucket body adapted to fit with said beveled edge and having straps on its underneath face located to one side of the central line of said bottom, sockets carried by the bucket body on opposite sides near its lower end, a bail having side arms trunnioned in said sockets, said bail also having eyes, and a support trunnioned in the straps carried by said bottom with it ends engaged in the eyes of said yoke, substantially as described.

857,623. CURTAIN-STRETCHER. FRANK G. HOFFHEINS, York, Pa., and FRANK S. STANFIELD, Cleveland, Ohio. Filed Dec. 13, 1905. Serial No. 291,643.



Claim.—1. A curtain stretcher frame comprising four bars, means for connecting said bars, rods supported on said bars, two of said rods being slidably adjustable on the other two rods and all lying in a single plane, pins carried by the rods to receive the curtain, and means for adjusting said frame both as to length and width in one operation for a larger or a smaller curtain.

2. A curtain stretcher frame comprising four bars, means for connecting and holding said bars to form a rectangular frame, rods supported on said bars, two of said rods being slidably adjustable on the other two rods and all lying in a single plane, pins carried by the rods to receive the curtain, and means for adjusting said frame in one operation both as to length and width for a larger or a smaller curtain and constantly maintaining its rectangular shape.

3. A curtain stretcher frame comprising four bars, means for connecting said bars, and a bar for adjusting said frame both as to length and width in one operation and in relative proportions for a larger or smaller curtain.

4. A curtain stretcher frame comprising two side bars, two end bars connected with said side bars to move lengthwise thereof, one of said side bars being relatively fixed on the end bars and the other side bar being connected to said end bars to slide endwise thereof, rods supported on said bars, two of said rods being slidably adjustable on the other two rods and all lying in a single plane, and pins carried by the rods to receive the curtain.

5. A curtain stretcher frame comprising two side bars, two end bars slidably connected to the side bars, rods supported on said bars, the rods on the end bars being slidably adjustable on the rods on the side bars and all lying in a single plane, pins carried by the rods to receive the curtain, and means for simultaneously adjusting said end bars and the rods thereon inwardly or outwardly on the side bars and the rods thereon.

6. A curtain stretcher frame comprising two side bars, two end bars slidably connected to the side bars, rods supported on said bars, the rods on the end bars being extensible and slidably adjustable on the rods on the side bars and all lying in a single plane, pins carried by said rods to receive the curtain, and means for adjusting said frame both as to length and width in one operation to receive a larger or a smaller curtain.

7. A curtain stretcher frame comprising two side bars one of which is movable relative to the other, two end bars movably connected to the side bars, and an adjusting bar connected to said movable side bar and the end bars for moving said bars simultaneously.

8. A curtain stretcher frame comprising two side bars one of which is movable relative to the other, two end bars movably connected to the side bars, an adjusting bar connected to both end bars, and pivot means connecting said movable side bar to the end bars and to the ends of the adjusting bar.

9. A curtain stretcher frame comprising two side bars one of which is movable relative to the other, two end bars movably connected to the side bars, an adjusting bar fastened to one end bar and slidably connected to the other end bar, links pivotally connecting the ends of the movable side bar to the end bars, and a link pivotally connecting the free end of the adjusting bar with the adjacent end of the movable side bar.

10. A curtain stretcher frame comprising two side bars and two end bars, said end bars being connected to said side bars to move lengthwise thereof and one of said side bars being connected with said end bars to move lengthwise thereof, an adjusting bar fastened to one end bar and slidably connected to the other end bar, and means pivotally connecting the ends of the movable side bar to the end bars and to the ends of the adjusting bar.

11. A curtain stretcher frame comprising two side bars one of which is movable relative to the other, two end bars movable lengthwise on the side bars, a guide fastened on one end of each end bar to receive the fixed side bar, a guide slidably mounted on each end bar, means on said slidable guides for slidably holding the movable side bar, and means for adjusting said movable side bar and said end bars simultaneously.

12. A curtain stretcher frame comprising two side bars one of which is movable relative to the other, two end bars movably connected to the side bars, an adjusting bar fastened to one end bar, a guide on the other end bar to slidably hold said adjusting bar, a link connecting the free end of the adjusting bar to the adjacent end of the movable side bar, a pair of links connecting the ends of the movable side bar to the end bars, and means for adjusting said pair of links.

13. A curtain stretcher frame comprising two side bars and two end bars, means for connecting said bars, each of said side bars being made in two sections, a hinge connecting the adjacent ends of said sections, a keeper over the joint of each side bar, a center brace arranged in said keepers, one of said side bars being provided with an opening formed partly in the abutting edges of its sections, and a pin on said center brace fitting in said opening.

14. A curtain stretcher frame comprising four bars, means for connecting and holding said bars to form a rectangular frame, means for adjusting said frame both as to length and width in one operation for a larger or smaller curtain, rods fastened to the inner edges of said bars in a single plane, and pins slidably arranged on said rods.

15. A curtain stretcher frame comprising two side bars and two end bars, rods on the side bars, telescopic rods on the end bars slidably connected to the rods on the side bars, and pins on said rods.

16. A curtain stretcher frame comprising two side bars and two end bars, rods on the side bars, telescopic rods on the end bars, sleeves on the ends of the latter rods to receive the rods on the side bars, and pins on said rods.

17. A curtain stretcher frame comprising two side bars and two end bars, one of said side bars being movable relative to the other side bar and both of said end bars being movable on the side bars, means for adjusting said movable side bar and end bars, rods on the side bars, telescopic rods on the end bars slidably connected to the rods on the side bars, and pins on said rods.

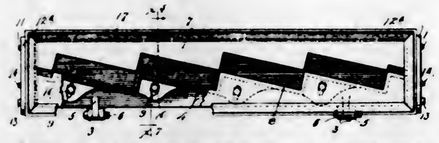
18. The combination of a curtain stretcher bar, a rod on said bar, and a pin movable on said rod, said pin having a curtain engaging portion extending upward above the rod and a tail piece extending rearward from the rod and substantially at a right angle to the curtain engaging portion to bear against the underside of said bar, whereby the strain of the curtain on the curtain engaging portion will clamp the tail-piece against the bar.

19. The combination of a curtain stretcher bar, a rod supported on the inner edge of said bar, and a pin bent to encircle said rod and having a curtain engaging portion extending upward above the rod and a tail piece extending rearward from the rod and substantially at a right angle to the curtain engaging portion to bear against the underside of said bar, whereby the strain of the curtain on the curtain engaging portion will clamp the tail-piece against the bar.

20. The combination of a curtain stretcher bar, a rod supported on the inner edge of said bar, and a pin movable on said rod, said pin being made of a single piece of wire and having two convolutions encircling the rod, said convolutions being separated from each other, a tail piece to bear against the underside of said bar, and a curtain engaging portion constituted by one end of the pin extending upward between the convolutions.

21. A curtain stretcher frame comprising two side bars, one of which is movable relative to the other, two end bars slidably connected to said side bars, rods supported on said bars, two of said rods being extensible and slidably adjustable on the other two rods and all lying in a single plane, and means for simultaneously adjusting said movable side bar and the end bar and the rods carried thereby.

857,624. BRICK-MOLDING MACHINE. THOMAS C. HOLT, Minneapolis, Minn. Filed July 23, 1906. Serial No. 327,311.



Claim.—1. In a molding machine, the combination with a supporting frame, of a reversible base plate supported thereby, and a pair of wall forming mold plates formed on zigzag rectangular lines, and one of which wall forming mold plates is secured to and is reversible with said reversible base plate, and the other of which is independently supported from said supporting frame, substantially as described.

2. In a molding machine, the combination with a supporting frame, of a reversible base plate hinged thereto, and a pair of coöperating wall forming mold plates formed on zigzag rectangular lines and coöperating to form a multiplicity of molds, one of which wall plates is secured to and reversible with said reversible base plate, and the other of which is independently supported from said supporting frame, and which reversible base plate projects beyond the wall plate which is secured thereto to form bottoms to the several molds, substantially as described.

3. In a molding machine, the combination with a fixed bed and a reversible base plate hinged thereto, of a pair of coöperating wall forming mold plates secured one to said fixed bed and the other to said reversible base plate, and a pallet board holding device carried by said reversible base plate and having a limited movement thereon and operating when said base plate is turned upside down to permit said pallet board to be lowered with respect to said base plate, substantially as and for the purposes set forth.

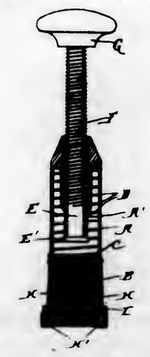
4. In a molding machine, the combination with a base and a reversible base plate hinged thereto, of a pair of coöperating wall forming mold plates, secured one to said base and the other to said reversible base plate, and U-shaped bars carried by said reversible base plate and having limited pivotal movements with respect thereto, and which U-shaped bars are adapted to hold a pallet board, and portions of which are arranged for co-operation with latch lugs on the fixed wall forming mold plates, substantially as described.

5. In a molding machine, the combination with a fixed bed and a reversible base plate hinged thereto, of a pair of wall forming mold plates secured one to said fixed bed and the other to said reversible base plate, the opposing faces of which wall forming mold plates are formed on zigzag rectangular lines and the free edge of which reversible base plate is also formed on zigzag rectangular lines and projects beyond the wall forming mold plate which is secured thereto, and when said base plate is in operative position coincides with the zigzag face of the relatively fixed wall forming mold plate, substantially as described.

6. In a molding machine, the combination with a fixed bed, of a pair of wall forming mold plates formed on zigzag rectangular lines, one of which wall forming mold plates is adjustable toward and from the coöperating zigzag wall forming mold plate in a direction parallel to the transverse end walls of the molds formed by the coöperating wall plates, to thereby set the said mold plates to form bricks of different depth or thickness, substantially as described.

7. In a molding machine, the combination with a fixed bed or support, of a reversible base plate hinged thereto, and a pair of wall forming mold plates formed on zigzag rectangular lines, one of which wall plates is rigidly but adjustably secured to the said reversible base plate, and the other of which is independently supported from said bed plate or support, and which adjustable wall plate is adjustable in a direction parallel to the transverse end walls of the molds formed by the coöperating wall plates, to thereby set the said wall plates to form bricks of different depths or thickness, substantially as described.

857,625. STAMP OR LABEL AFFIXING MACHINE. THEODORE C. HOOK, Philadelphia, Pa. Filed May 10, 1905. Renewed Apr. 23, 1907. Serial No. 369,753.

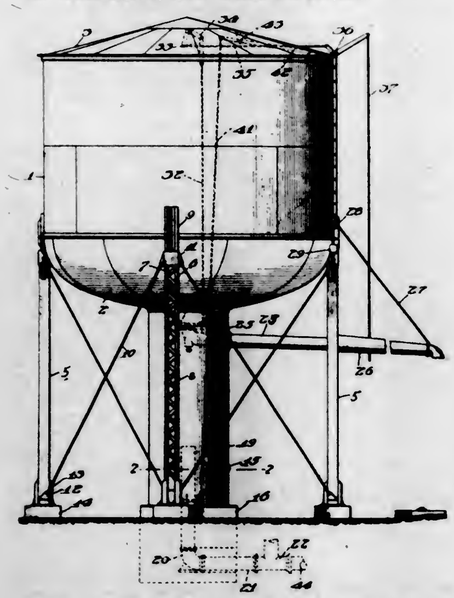


Claim.—1. In a device of the character described, a body portion provided with a recess opening upward from the lower end thereof, the stamps or labels adapted to be piled one on top of the other in the lower end of the body portion with the blank side downward, thin strips adapted to protrude beyond the inside edge of the recess in the body portion at several points so as to lie underneath the edge of the lowermost stamp or label and prevent the acci-

dental displacement of said stamps or labels, means for removing said strips outward when the machine is to be filled, a plate resting upon the top of the stamps or labels and adapted to slide in the recess of the body portion, a spring interposed between said plate and the body portion, a vertically sliding plunger arranged to slide in the body portion above the plate, a spring tending to force the plunger upward, the lower end of the plunger normally held out of contact with the plate but adapted to come in contact with the plate when the plunger is forced downward, as and for the purpose specified.

2. In a device of the character described, a body portion provided with a vertical recess formed upward from the lower end thereof, the stamps or labels adapted to be placed one above the other with the blank side downward in the lower end of the recess, spring strips arranged upon opposite sides of the body portion upon the outside thereof, said spring strips bent at their lower ends so as to extend underneath the body portion and normally protrude a slight distance beyond the recess so as to lie underneath the edges of the stamps, a ring encircling the body portion and spring strips, said ring adapted to hold the spring strips in their normal position when it is down in its lowermost position, the spring strips adapted to move away from the body portion when the ring is raised, a plate arranged upon the top of the stamps or labels and adapted to slide within the recess, a spring interposed between said plate and the upper end of the body portion, a vertically sliding plunger arranged in the body portion above the plate, an enlargement formed upon the lower end of the body portion, a head formed upon the upper end of the plunger, a spring interposed between the body portion and the head, said spring adapted to normally hold the enlargement against the body portion and at a distance above the plate, as and for the purpose specified.

857,626. WATER-TANK. GEORGE T. HORTON, Chicago, Ill. Filed Mar. 6, 1905. Serial No. 248,691.



Claim.—1. The combination with a water tank, having a hemi-ellipsoid bottom, of an inlet pipe for said tank, said inlet pipe also serving as a support for the bottom of the tank.

2. The combination with a water tank, having a substantially hemi-ellipsoidal bottom, of suitable supports for said tank, and an inlet pipe entering the bottom of said tank and also serving as a support for the same.

3. The combination with a water tank, having a substantially hemi-ellipsoidal bottom, of an inlet pipe for said tank, said pipe serving as an additional support for the bottom of the tank and as a settling basin.

4. The combination with a water tank, having a substantially hemi-ellipsoidal bottom, of an inlet pipe for said tank, said pipe also serving as a support for the bottom of the tank, and a supply pipe entering said inlet pipe.

5. The combination with a water tank, having a substantially hemi-ellipsoidal bottom, of an inlet pipe therefor, said pipe also serving as a support for the bottom of the tank, and a supply pipe entering said inlet pipe at the bottom thereof and extending partially up into said pipe.

6. The combination with a water tank, having a substantially hemi-ellipsoidal bottom, of an inlet pipe for said tank, said pipe also serving as a support for the bottom of said tank, and a blow-off valve arranged in the bottom of said pipe.

7. The combination with a water tank, having a substantially hemi-ellipsoidal bottom, of an inlet pipe for said tank, said pipe serving as a support for the bottom of the tank, a supply pipe entering the bottom of said inlet pipe and extending partially up into the same, and a blow-off valve arranged in the bottom of said inlet pipe.

8. The combination with a water tank, having a substantially hemi-ellipsoidal bottom, of an inlet pipe therefor, said pipe serving as a support for the bottom of said tank, a supply pipe entering said inlet pipe, a blow-off valve arranged in the bottom of said inlet pipe, and means for operating said blow-off valve from the top of said tank.

9. The combination with a water tank, having a substantially hemi-ellipsoidal bottom, of an inlet pipe for said tank, said pipe serving as a support for the bottom of said tank, and a discharge pipe leading from the top of said inlet pipe.

10. The combination with a tank, having a substantially hemi-ellipsoidal bottom, of an inlet pipe for said tank, said pipe also serving as a support for said bottom, a discharge pipe entering said inlet pipe at a point near the top thereof, a valve for maintaining said discharge pipe normally closed, and means for operating said valve from the outside of said tank.

11. The combination with a water tank, of an inlet pipe for said tank, said pipe serving as an additional support for the bottom of the tank and as a settling basin.

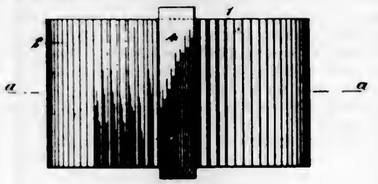
12. The combination with a water tank, of an inlet pipe for said tank, said pipe serving as a support for the bottom of the tank and as a settling basin, a supply pipe entering the bottom of said inlet pipe and extending partially up into the same, and a blow-off valve arranged in the bottom of said inlet pipe.

13. The combination with a water tank, of an inlet pipe therefor, said pipe serving as a support for the bottom of said tank and as a settling basin, a supply pipe entering said inlet pipe, a blow-off valve arranged in the bottom of said inlet pipe, and mans for operating said blow-off valve from the top of said tank.

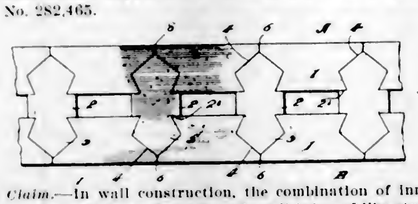
14. The combination with a water tank, of an inlet pipe therefor, said pipe serving as a support for the bottom of said tank and as a settling basin, a supply pipe entering said inlet pipe, a blow-off valve arranged in the bottom of said inlet pipe, means for operating said blow-off valve from the top of said tank, a discharge pipe entering said inlet pipe at a point near the top thereof, a valve for maintaining said discharge pipe normally closed, and means for operating said valve from the outside of said tank.

857,627. CLEANING DEVICE. LEWIS O. HOWELL, Philadelphia, Pa., assignor, by mesne assignments, to Sanitary Appliance Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Nov. 5, 1906. Serial No. 342,019.

Claim.—A cleaning device of the character specified, consisting of a semi-cylindrical body of compressible material having its exterior face corrugated laterally and its inner face corrugated longitudinally, substantially as shown and described.

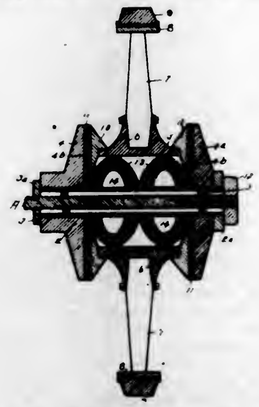


857,628. BUILDING-WALL CONSTRUCTION. THEODORE JONAS, Republic, Mo. Filed Oct. 12, 1905. Serial No. 282,465.



Claim.—In wall construction, the combination of inner and outer walls spaced apart, each wall being of like structure and composed of blocks laid in courses, the vertical joints between opposing blocks alining transversely, each block having a terminal abutting surface at its outer corner and a V-shaped recess at its inner corner, whereby adjacent blocks butt at their outer corners and have mortises formed between their ends at the inner corners, said mortises having their walls outwardly diverged for a part of their length, thence inwardly converged for the remainder of their length, and spacing bond blocks tying the walls and spaced apart and having opposite lateral extensions to come between the wall blocks, and end tenons fitted in the aforesaid mortises, said tenons having their walls outwardly diverged, thence inwardly converged, the said bond blocks breaking joint with the wall blocks, the wall blocks and the spacing bond blocks being laid in courses in the formation of the wall.

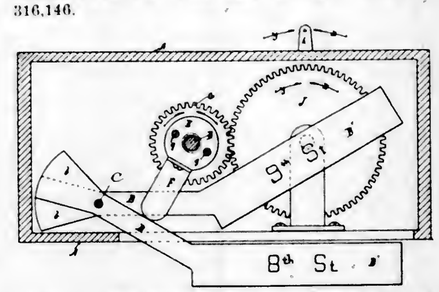
857,629. VEHICLE-WHEEL. RICHARD JONES, Bay City, Mich. Filed June 15, 1906. Serial No. 321,932.



Claim.—1. The combination with an axle, a skein mounted on the axle, collars secured to the skein, and a sleeve encircling the skein between the collars, of inwardly projecting end rings carried by the opposite ends of the sleeve, and a grooved cushioning ring U-shaped in cross section interposed between the skein and sleeve, the side edges of the ring resting on the skein and being engaged and braced by the inwardly projecting end rings, the skein operating to close the open face of the groove.

2. The combination with an axle and a skein rotatable thereon, of collars secured to the skein, a sleeve loosely surrounding the skein and capable of movement transversely of the skein, a cushioning ring interposed between the skein and sleeve, the sleeve being recessed at its periphery, an eye on the sleeve, a bar secured to the inner collar and passing through the recess in the sleeve and the eye, and a spring on the bar bearing against the eye to permit the wheel to move transversely of the axle, and positively connect the sleeve and collar.

857,630. STATION-INDICATOR. HENRY L. KEELER, Lundys Lane, Pa. Filed May 10, 1906. Serial No. 316,146.



Claim.—1. In a station indicator the combination of a series of arms pivoted in a frame, station cards on said arms, a non-rotatable screw secured in said frame transversely to said pivoted arms, a nut rotatable on said screw, an arm secured to said nut adapted to contact successively with said pivoted arms when the nut is rotated on the screw, and mechanism adapted to cause said nut to rotate on said screw, substantially as set forth.

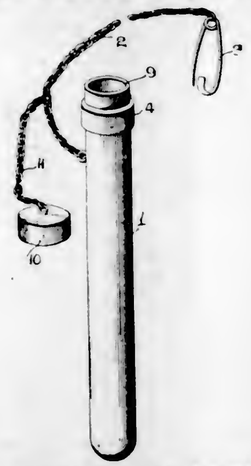
2. In a station indicator the combination of a frame, a series of station-card arms pivoted therein, means adapted to retain said arms in a normally invisible position, a screw non-rotatably secured in said frame transversely to said arms, a rotatable nut upon said screw, an arm on said nut adapted to contact successively with said arms and operate each of said arms to display the station-card thereon in succession, and means for rotating said nut on said screw, substantially as set forth.

3. In a station indicator the combination of a frame, a series of arms pivoted therein, station-cards on said arms, a screw secured in said frame transversely to said pivoted arms, a nut rotatable on said screw, an arm secured to said nut adapted, when rotated, to successively contact with each of said pivoted arms, a pinion rotatably mounted on one end of said screw, a rotatable collar mounted on the opposite end of said screw, and means for rotatably connecting said pinion and collar adapted to rotate said nut on said screw, a shaft mounted in said frame, a spur-wheel secured on said shaft intermeshing with said pinion, a crank rotatably mounted on said shaft, a ratchet disk secured on said shaft, a pawl on said crank arm adapted to engage said ratchet disk, and means adapted to return said crank arm to its normal position when it is released, substantially as set forth.

4. In a station indicator the combination of a frame, a series of station-card arms pivoted therein, means adapted to retain said arms in a normally invisible position, a screw non-rotatably secured in said frame transversely to said arms, a rotatable nut on said screw, an arm on said nut adapted to contact successively with each of said arms and operate the said arms to successively display the station-cards thereon, a rotatable collar on the end of said screw, a gear pinion rotatably mounted on the other end of said screw, means for rotatably connecting said collar and pinion and adapted to rotate said nut on said screw.

a gong secured to said frame, means adapted to sound said gong when the nut is rotated on the screw, a spur-gear intermeshing with said pinion, and means adapted to cause said spur wheel to intermittently revolve in the desired direction, substantially as set forth.

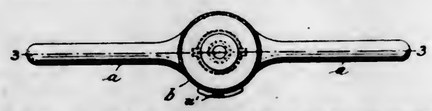
857,631. ANTISEPTIC CASE FOR THERMOMETERS. CHARLES W. KENNERLY and BENJAMIN E. STOCKWELL, St. Louis, Mo. Filed Oct. 30, 1906. Serial No. 341,320.



Claim.—1. A device of the class described, constructed with a receptacle adapted to contain liquid, a cap normally closing the upper end of said receptacle, a thermometer carried by said cap, and an auxiliary cap normally carried by the first mentioned cap and adapted to close the upper end of the receptacle when the first mentioned cap and thermometer are removed from the receptacle; substantially as specified.

2. In a device of the class described, a tubular receptacle, a cap normally closing the upper end thereof, a thermometer carried by the under side of said cap, a chain fixed at one end of the receptacle, a pin attached to the outer end of the chain, and an auxiliary cap secured to said chain and adapted to close the upper end of the receptacle when the first mentioned cap and thermometer are removed from said receptacle; substantially as specified.

857,632. TAP-HOLDER. DAVID KIHLGREN, Springfield, Mass. Filed Sept. 1, 1906. Serial No. 332,991.



Claim.—1. In a tap-holder having a bored out portion, two series of disks mounted therein, one series being held against rotation, a chuck-piece carried by one of the series of disks, means for varying the pressure on the series whereby one series of disks will slip on the other series when undue torsional strain is exerted on the holder.

2. In a tap-holder having a bored out portion, recesses communicating with said bored out portion, a series of disks provided with projecting ends mounted in the bored out portion and their projecting ends engaging said recesses, another series of disks mounted in the bored out portion and alternately arranged between the first mentioned disks, said second series of disks having a rectangular opening therethrough, the first series of disks having a circular opening therethrough, a chuck rectangular in shape engaging the rectangular opening in said disk whereby, when the holder is rotated the first series of disks will transmit rotative movement to said chuck-piece and whereby when undue pressure is placed on the holder, rotative movement of the chuck-piece will cease.

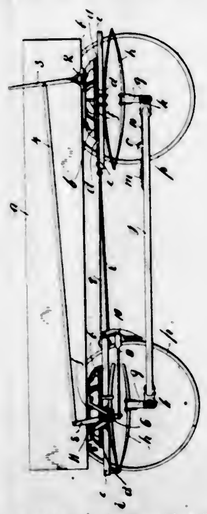
3. In a tap holder, means for rotating a tap, said means consisting of two series of frictional disks carried by the holder, means for preventing the rotation of one series, and means for varying the pressure between the disks as described.

4. In a tap holder provided with means for holding a tap, said means being driven by a multiple series of disks alternately arranged, and means for varying the pressure between said disks for limiting the amount of torsional strain that can be exerted upon the tap.

5. In a holder of the class described, a series of frictional disks carried thereby, one series provided with locking means for engaging the holder proper, the other series being alternately arranged between said first mentioned series, elastic means for varying the pressure between the two series of disks and means for holding a tap, said means consisting of a chuck piece carried by the second series of disks.

6. In a tap holder provided with means for holding a tap, said means being driven by a multiple series of disks alternately arranged, and means for varying the pressure between said disks for limiting the amount of torsional strain that can be exerted upon the tap, the series of disks being in planes at right angles to the axis of the tap-holding means.

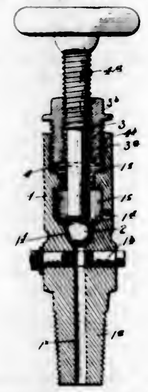
857,633. ROAD-VEHICLE. HARRY E. KLINE, Shamokin, Pa. Filed Nov. 16, 1906. Serial No. 343,740.



Claim.—1. In a wagon, the combination of a pair of axles; a frame mounted on each of said axles; a pair of link-rods which extend diagonally between said frames, one end of one of said link-rods being pivotally connected to the top of one of said frames and the corresponding end of the other of said link-rods being connected to the bottom of the same frame; a brake-rod rotatably mounted in said frame and extending between said link-rods; brake-shoes on said brake-rod; and means for rotating said brake-rod to apply said brake-shoes.

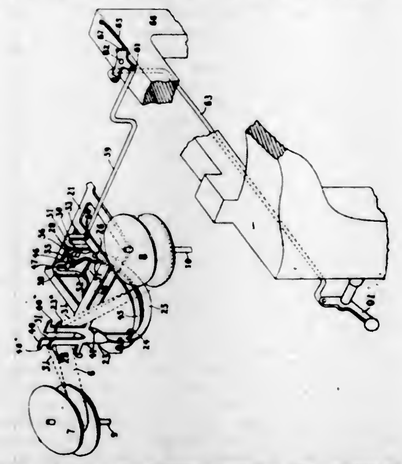
2. In a wagon, the combination of a pair of axles; a pair of frames mounted one on each of said axles; a pair of link-rods which extend diagonally between said frames and are pivotally secured thereto; a brake-rod rotatably mounted in one of said frames and extending transversely thereof between said link-rods; and a coupling-bar the ends of which are pivotally connected to said axles.

857,634. GAGE-COCK. WILLIAM H. KRINER, Hagerstown, Md. Filed Dec. 11, 1905. Serial No. 291,347.



Claim.—A gage cock comprising a screw-threaded end having a central steam-passage, a body portion provided with an enlarged valve-chamber above the upper end of said steam passage, a valve-seat at the upper end of said passage, an outlet or port near the bottom of said enlarged chamber and above the valve when seated, an opening above the enlarged valve-chamber, to gain free access thereto, a screw-threaded member tapped into said opening to close the same, said screw-threaded member being provided with a screw-threaded opening through its center, a valve controlling stem tapped through the latter opening and a spherical valve adapted to play loosely in the enlarged valve-chamber, adapted to rest on the valve-seat in the bottom of the enlarged valve-chamber, and to be held securely on its seat by the lower end of the valve-controlling stem when the latter is turned down thereon.

857,635. TYPE-WRITING MACHINE. EDWARD F. KUNATH, Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y., a Corporation of New Jersey. Filed Sept. 7, 1905. Serial No. 277,429.



Claim.—1. In a typewriting machine, the combination with a pair of ribbon spools, of a plurality of superposed separate ribbons wound simultaneously thereon, and extending face to face from one spool to the other, and means for moving either ribbon to cover and uncover the printing point independently of the other ribbon.

2. In a typewriting machine, the combination with a pair of ribbon spools and means for winding them, of a plurality of ribbons wound simultaneously thereon, and means for causing one ribbon to cover and uncover the printing point at the type strokes while another ribbon remains motionless.

3. In a typewriting machine having types, spools, a universal bar reciprocating at the type strokes, the combination with a plurality of separate superposed ribbons wound simultaneously upon the spools, and extending face to face from one spool to the other, of means for enabling said universal bar to move either ribbon independently of the other to cover and uncover the printing point.

4. In a typewriting machine having type-operating mechanism, a platen and spools, the combination with a plurality of separate superposed ribbons wound simultaneously upon the spools, and extending face to face from one spool to the other, of means connected to the type-operating mechanism for moving either ribbon independently of the other to cover or uncover the printing point at the operations of the types.

5. In a typewriting machine, the combination with a platen and types mounted to strike upon the front side thereof, of a pair of ribbon spools, a plurality of separate superposed ribbons wound simultaneously on the spools and extending from one spool to the other, and a plurality of ribbon carriers mounted in front of said platen, one for each of said ribbons.

6. In a typewriting machine, the combination with a platen and types mounted to strike upon the front side thereof, of a pair of ribbon spools, a plurality of ribbons extending from one spool to the other, and a plurality of ribbon carriers mounted in front of said platen, one for each of said ribbons, and means for moving either carrier up to the printing point independently of the other carrier.

7. In a typewriting machine having a universal bar reciprocating at the type strokes, the combination with a pair of ribbon spools, of a plurality of separate superposed ribbons extending from spool to spool, a plurality of independently operable ribbon carriers one for each of said ribbons, and means for enabling said universal bar to operate either of said carriers while the other remains stationary.

8. In a typewriting machine, the combination with a pair of ribbon spools, of a plurality of ribbons extending from spool to spool, and a plurality of independently operable ribbon carriers one for each of said ribbons; said ribbon carriers mounted one behind another, and means for vibrating either carrier independently of the other, to cover and uncover the printing point at the type strokes.

9. In a typewriting machine, the combination with a pair of ribbon spools, of a plurality of separate superposed ribbons extending from one spool to the other, and wound simultaneously thereon, and a flexible shield strip intervening between said ribbons and wound together therewith.

10. In a typewriting machine, the combination with a pair of ribbon spools, of a plurality of ribbons extending from one spool to the other, and a flexible shield strip intervening between said ribbons and wound together therewith; and means for moving either ribbon to cover and uncover the printing point independently of the other ribbon and of said shield strip.

11. In a typewriting machine, the combination with a pair of ribbon spools, of a plurality of ribbons extending from one of said spools to the other to be wound simultaneously upon either spool, and means for moving either ribbon at each type stroke to cover and uncover the printing point independently of the other ribbon, or for causing both ribbons to remain idle at the type strokes, at will.

12. In a typewriting machine, the combination with a pair of ribbon spools, of a plurality of ribbons extending from one of said spools to the other to be wound simultaneously upon either spool, a plurality of carriers one for each of said ribbons, and means for causing either car-

rier to be operated while the other carrier remains idle, or for causing both carriers to remain idle at the type strokes, at will.

13. In a typewriting machine, the combination with a platen and a pair of ribbon spools, of a plurality of ribbons extending from spool to spool to be wound simultaneously upon either spool, the ribbon next to the platen being inked only upon the side which faces the platen, and a plurality of independently operable ribbon carriers one for each of said ribbons.

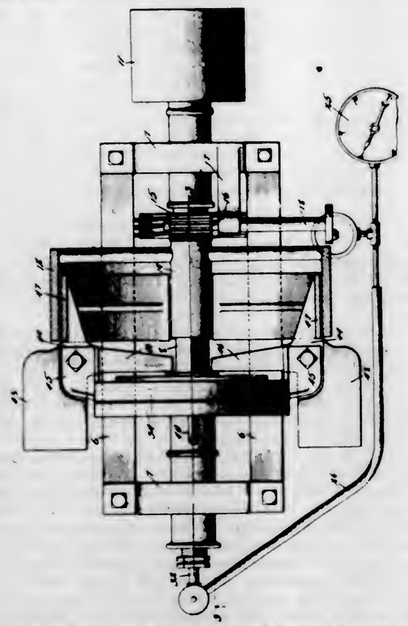
14. In a typewriting machine, the combination with a platen and a pair of ribbon spools, of a plurality of ribbons extending from spool to spool to be wound simultaneously upon either spool, each of said ribbons being inked only upon the side which faces the platen, a plurality of ribbon carriers one for each of said ribbons, and means for causing either carrier to reciprocate at the type strokes while the other carrier remains idle.

15. In a typewriting machine, the combination with a platen and a pair of ribbon spools, of a pair of ribbons extending from spool to spool to be wound simultaneously upon either spool, each of said ribbons being inked only upon the side which faces the platen, a pair of ribbon carriers one for each of said ribbons, a separate protective strip between said ribbons to be wound upon said spools therewith, and means for causing either carrier to reciprocate at the type strokes while the other carrier remains idle.

16. In a typewriting machine, the combination of a single pair of ribbon spools, two ribbons connecting said spools, and a single vibrating mechanism having independently movable vibrators for said ribbons.

17. In a typewriting machine, the combination of two ribbon vibrators arranged one in front of the other, two ribbons held by said vibrators parallel with each other and spaced apart, and a single pair of spools to which said ribbons are connected.

857,636. SPEED-REGULATING MECHANISM. GEORGE F. LEIGER, Chicago, Ill. Filed Mar. 11, 1907. Serial No. 361,673.



Claim.—1. The combination with a shaft, a loose pulley on said shaft, and a clutch-member adapted to effect an engagement between said shaft and said pulley, of fluid operated mechanism adapted to normally effect an engagement at a given pressure between such clutch-member and said pulley, and centrifugally operated mechanism adapted to effect a disengagement between said clutch-member and said pulley when a given speed of rotation is reached.

2. The combination with a shaft, a loose pulley on said shaft, and a clutch-member adapted to effect an engagement between said shaft and said pulley, of fluid operated mechanism adapted to normally effect an engagement at a given pressure between such clutch-member and said pulley, means for applying a predetermined pressure upon said fluid, and centrifugally operated mechanism tending to effect a disengagement against said pressure between said pulley and said clutch-member.

3. The combination with a shaft, a pulley loosely mounted on said shaft, clutch-members carried by said shaft and adapted to engage said pulley, and centrifugally operated mechanism adapted to disengage said clutch-members from said pulley, of fluid operated mechanism adapted to engage said clutch-members and force them into engagement with said pulley with a predetermined pressure.

4. The combination with a shaft, a pulley loosely mounted on said shaft, clutch-members carried by said shaft and adapted to engage said pulley, and centrifugally operated mechanism adapted to disengage said clutch-members from said pulley, of fluid operated mechanism adapted to engage said clutch-members and force them into engagement with said pulley with a predetermined pressure, and means for varying the pressure of said fluid-operated mechanism upon said clutch-members.

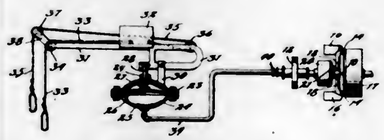
5. The combination with a shaft, a pulley loosely mounted on said shaft, clutch-members carried by said shaft and adapted to engage said pulley, and centrifugally operated mechanism adapted to disengage said clutch-members from said pulley, of a diaphragm-casing secured to said shaft, a flexible diaphragm carried by said diaphragm-casing, mechanism adapted to apply a fluid pressure upon said diaphragm, and mechanism intermediate said diaphragm and said clutch-members and adapted by the fluid pressure upon said diaphragm to effect an engagement between said clutch-members and said pulley.

6. The combination with a shaft, a pulley loosely mounted on said shaft, clutch-members carried by said shaft and adapted to engage said pulley, and centrifugally operated mechanism adapted to disengage said clutch-members from said pulley, of a diaphragm-casing secured to said shaft, a flexible diaphragm carried by said diaphragm casing, mechanism adapted to apply a fluid pressure upon said diaphragm, mechanism intermediate said diaphragm and said clutch-members and adapted by the fluid pressure upon said diaphragm to effect an engagement between said clutch-members and said pulley, and means for varying the fluid pressure upon said diaphragm.

7. The combination with a shaft, a pulley loosely mounted on said shaft, clutch-members carried by said shaft and adapted to engage said pulley, and centrifugally operated mechanism adapted to disengage said clutch-members from said pulley, of a diaphragm-casing secured to said shaft, a flexible diaphragm carried by said diaphragm-casing, a pressure pump, means for operating said pump, connections between said pump and said diaphragm-casing and adapted to contain a fluid, means whereby the pressure of said fluid upon said diaphragm may be varied, and mechanism intermediate said diaphragm and said clutch-members whereby the pressure upon said diaphragm will effect an engagement between said clutch-members and said pulley.

8. The combination with a shaft, a pulley loosely mounted on said shaft, levers carried by said shaft, clutch-members on one end of said levers adapted to engage said pulley, and weights on the other ends of said levers adapted by centrifugal force to disengage said clutch-members from said pulley, of a diaphragm-casing secured to said shaft, a flexible diaphragm in said diaphragm-casing, means for applying a fluid pressure to said diaphragm, a plate slidingly mounted on said shaft and rotatable therewith and adapted to engage said levers, connections between said plate and said diaphragm and adapted when fluid pressure is applied to said diaphragm to move said plate against said levers and effect an engagement between said clutch-members and said pulley, means for applying fluid pressure to said diaphragm, and means whereby said fluid pressure may be varied.

857,637. SPEED-REGULATING MECHANISM. GEORGE F. LEIGER, Chicago, Ill. Filed Mar. 11, 1907. Serial No. 361,674.



Claim.—1. The combination with a shaft, a loose pulley on said shaft, and a clutch-member adapted to effect an engagement between said shaft and said pulley, of a cylinder on said shaft, a piston in said cylinder adapted to be operated by fluid pressure to cause said clutch-member to effect an engagement between said shaft and said pulley, and centrifugally operated mechanism adapted to weaken the force of the engagement between said shaft and said pulley when a predetermined speed of rotation is passed.

2. The combination with a shaft, a loose pulley on said shaft, a clutch-member adapted to effect an engagement between said shaft and said pulley, and fluid-operated mechanism adapted to cause said clutch-member to effect an engagement between said shaft and said pulley, of a compressible chamber communicating with said fluid-operated mechanism, means for applying a varied amount of pressure upon said compressible chamber, and centrifugally operated mechanism adapted to weaken the force of the engagement between said shaft and said pulley when a predetermined speed of rotation is passed.

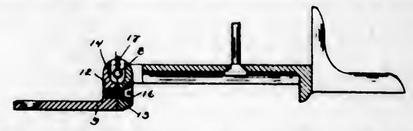
3. The combination with a shaft, a loose pulley on said shaft, a clutch-member adapted to effect an engagement between said shaft and said pulley, and fluid-operated mechanism adapted to cause said clutch-member to effect an engagement between said shaft and said pulley, of a compressible chamber communicating with said fluid-operated mechanism, a lever bearing on said compressible chamber, a weight slidingly mounted on said lever and adapted to apply pressure to said compressible chamber, and centrifugally operated mechanism adapted to weaken the force of the engagement between said shaft and said pulley when a predetermined speed of rotation is passed.

4. The combination with a shaft, a loose pulley on said shaft, a clutch-member adapted to effect an engagement between said shaft and said pulley, and fluid-operated mechanism adapted to cause said clutch-member to effect an engagement between said shaft and said pulley, of a compressible chamber communicating with said fluid-operated mechanism, said chamber being formed of a rigid casing member and a flexible diaphragm, a plate bearing on said flexible diaphragm, a lever bearing on said plate, a weight slidingly mounted on said lever and adapted to apply pressure to said diaphragm, and centrifugally operated mechanism adapted to weaken the force of the engagement between said shaft and said pulley when a predetermined speed of rotation is passed.

857,638. PEDAL FOR PIANOS. OTTO LESTINA, Newport, Ky. Filed Mar. 15, 1907. Serial No. 362,546.

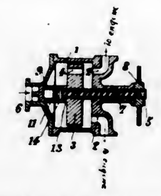
Claim.—1. In a pedal mounting, the combination of a metal pedal bifurcated at its inner end, and carrying a pivot pin rigid with the pedal, a divided bearing for the pin, comprising a fulcrum plate secured to the piano casing, and a separable block with screw for securing and adjusting the separate block, said bearing being cut away around the pivot pin to permit engagement only at the ends, with a leather washer interposed between the pivot pin and bearing.

2. In a pedal mounting, the combination of a metal



pedal, and a metal fulcrum block, the metal pedal bifurcated at its inner end, and carrying a pivot pin rigid with the pedal thereon, the fulcrum support being divided vertically at the point of bearing, with a separable block forming half of the pivot bearing, a recess formed in the bearing around the pin to serve as an oil holder, and a leather washer surrounding the pin, to prevent metal contact of the pivoted parts, and to absorb the oil applied to the recess.

857,639. APPARATUS FOR AUTOMATICALLY STARTING EXPLOSIVE-MOTORS OR THE LIKE. LÉON A. C. LETOMBE, Paris, France. Filed Oct. 4, 1906. Serial No. 337,420.



Claim.—1. In apparatus for automatically starting explosion motors or the like, a compressed fluid distributing device comprising the combination with a casing having ports leading to the motor, of a valve adapted to have reciprocal and rotary motion within said casing for the purpose of opening and closing said ports alternately to the admission of compressed fluid.

2. In apparatus for automatically starting explosion motors or the like, a distributing device interposed between the source of compressed fluid supply and the motor, said distributing device comprising a casing having the same number of ports as there are motor cylinders to be supplied with compressed fluid, and an apertured valve having reciprocal and rotary motion within said casing and being adapted to alternately open and close the ports in said casing to the admission of compressed fluid.

3. In apparatus for automatically starting explosion motors or the like, a distributing device comprising a ported casing, a bored spindle revolubly mounted therein and a valve carried by said spindle and adapted to have reciprocal and rotary motion within said casing.

4. In apparatus for automatically starting explosion motors or the like, a distributing device comprising the combination with a casing having ports corresponding in number to the number of cylinders to be supplied with compressed fluid, of a hollow shaft extending transversely through a portion of said casing, means for revolving said shaft and a valve mounted upon said shaft and adapted to have reciprocal and rotary motion within said casing.

5. In apparatus for automatically starting explosion motors or the like, a distributing device comprising the combination with a casing having a port for the admission of compressed fluid and separate ports for the passage of compressed fluid to the motor cylinders, of a valve interposed between said admission and emission ports, said valve being designed to have reciprocal and rotary motion within the casing for the purpose of alternately opening and closing said emission ports to the flow of compressed fluid.

6. In apparatus for automatically starting explosion motors or the like, the combination with a casing having a port at one end for the admission of compressed fluid and

ports at the opposite end for permitting the compressed fluid to pass into the motor cylinders, of a valve adapted to have reciprocal and rotary motion within said casing and interposed between the admission port and emission ports for the purpose of alternately opening and closing said emission ports to the flow of compressed fluid.

7. In apparatus for automatically starting explosion motors or the like, a distributing device comprising the combination with a casing having a contracted end containing a compressed fluid admission port, of a shaft adapted to revolve within bearings formed by said casing, means for revolving said shaft, a valve mounted upon said shaft to have reciprocal and rotary motion within the casing, said valve being adapted to be forced within the casing upon the admission of compressed fluid thereto and to be returned to normal inoperative position upon exhaustion of compressed fluid from the casing.

8. In apparatus for automatically starting explosion motors or the like, a distributing device comprising a casing provided at one end with a port for the admission of compressed fluid, and at its opposite end with ports for leading said compressed fluid to motor cylinders, of a valve within said casing having an arc port cut therein and means whereby said valve may have reciprocal and rotary motion within said casing.

9. In apparatus for automatically starting explosion motors or the like, a distributing device comprising the combination with a casing having a compressed fluid admission port at one end and ports at the opposite end for leading compressed fluid to motor cylinders, of a shaft extending partially through said casing, and a valve mounted upon said shaft and adapted to have reciprocal and rotary motion within said casing, said valve being provided with a boss adapted to fit within the walls forming said compressed fluid admission port.

10. In apparatus for automatically starting explosion motors or the like, a distributing device comprising the combination with a casing having an admission port at one end and emission ports at its opposite end, of a hollow shaft journaled in said casing, a valve mounted upon said shaft, and a spring contained in said shaft.

11. In apparatus for automatically starting explosion motors or the like, a distributing device comprising the combination with a casing having an admission port at one end and emission ports at its opposite end, of a valve adapted to have reciprocal and rotary motion within said casing, said valve embodying means for alternately opening and closing said emission ports to the flow of compressed fluid.

12. In apparatus for automatically starting explosion motors or the like, the combination with a distributing device comprising a casing having emission ports, of motor cylinders communicating with said emission ports, a valve adapted to rotate and reciprocate for alternately opening and closing said emission ports, and a valve in each said cylinder for closing the same when the pressure therein is greater than the pressure in said casing.

13. In apparatus for automatically starting automobile motors or the like, the combination with a distributing device comprising a casing having emission ports, a valve designed to have reciprocal and rotary motion within said casing for alternately opening and closing said ports to the admission of compressed fluid, a cylinder in communication with each said emission port, and a valve interposed between each cylinder and emission port for closing said cylinder when the pressure therein is greater than the pressure in said casing.

14. In apparatus for automatically starting automobile motors or the like, the combination with a distributing device comprising a casing having emission ports, a motor cylinder in communication with each said port, and a valve adapted to have reciprocal and rotary motion within said casing, said valve being provided with means for alternately opening and closing said ports to the admission of compressed fluid to said cylinders.

15. In apparatus for automatically starting automobile motors or the like, the combination with a distributing device comprising a casing having a compressed fluid admission port at one end and emission ports at its opposite end, a motor cylinder in communication with each said emission port, a shaft journaled in said casing, a valve adapted to reciprocate and rotate upon said shaft within said casing, and means for revolving said shaft, said valve embodying means for alternately opening and closing the said emission ports to the admission of compressed fluid to said motor cylinders.

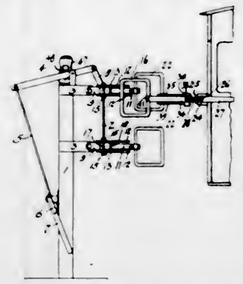
857,640. MANUFACTURE OF SILK-LIKE THREADS. RUDOLF LINKMEYER, Brussels, Belgium. Filed Mar. 22, 1906. Serial No. 307,405.

Claim.—1. In the manufacture of silk like threads by precipitation of cellulose in alkaline solutions, subjecting the threads, on leaving the precipitation bath, to the action of an ammonia absorber suitable for forming with the oxid of copper in the threads combinations readily soluble in acids but insoluble in water, and subsequently washing the threads with diluted acids.

2. In the manufacture of silk like threads by precipitation of cellulose in alkaline solutions, subjecting the threads, on leaving the precipitation bath, by winding said threads to permit of filtration from the outside to the inside and vice versa, to the action of an ammonia absorbent and at the same time forming, with the oxid of copper contained in the threads, combinations readily soluble in acids but insoluble in water, and subsequently washing the threads with diluted acids.

3. In the manufacture of silk like threads by precipitation of cellulose in alkaline solutions, treating the threads, on leaving the precipitation bath with a solution of carbonate of soda, and subsequently washing the threads with diluted acids.

857,641. TRAIN-ORDER DELIVERING AND RECEIVING APPARATUS. WILLIAM T. LONG, Sumner, Wash., assignor of one-half to Henry Knoblauch, Sumner, Wash. Filed Apr. 9, 1907. Serial No. 367,214.



Claim.—1. In a train order delivering and receiving apparatus, the combination of an annular carrier adapted to contain the train order, spring actuated means adapted to releasably hold said carrier, and a catching point moving relatively to said carrier and adapted to enter said carrier and remove it from said holding means.

2. In a train order delivering and receiving apparatus, the combination of an annular carrier adapted to contain the train order, spring actuated means adapted to releasably hold said carrier, a catching point moving relatively to said carrier and adapted to enter said carrier and remove it from said holding means, and a spring actuated closing piece pivoted to the catching mechanism and adapted to prevent said carrier from falling therefrom.

3. In a train order delivering and receiving apparatus, the combination of a supporting body, spring actuated holding means adapted to releasably hold a carrier and pivoted to said supporting body, means mounted on the supporting body and engaging said spring actuated holding means to control it on its pivot, an annular carrier adapted to contain the train order and to be held by said spring actuated holding means, a second supporting body moving relatively to said first supporting body, a catching point pivoted to said second body and adapted to enter said carrier and remove it from said holding means, means engaging said catching point to control it on its pivot, and a spring actuated closing piece pivoted to the catching mechanism and adapted to prevent said carrier from falling therefrom.

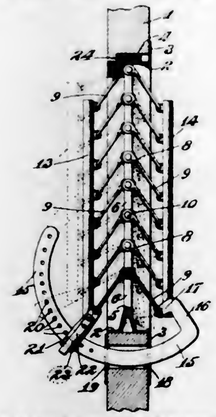
4. A train-order carrier comprising an annular body having a portion of its sides cut away to form two opposite slots adapted to be engaged by a carrier holder.

5. In a train-order delivering apparatus, the combination of an annular carrier, a receptacle mounted thereon, opposite slots formed in the sides of said carrier, and a spring actuated holding means whereby said carrier is releasably held in operative position.

6. In a train-order receiving apparatus, the combination of an annular carrier moving relatively to the receiving apparatus and having a receptacle mounted thereon, a catching point adapted to enter said annular carrier and to receive it thereon, and a spring actuated closing piece adapted to be engaged and started by said annular carrier and to close behind said carrier to prevent it falling from said catching point.

7. In a train-order receiving apparatus, the combination of a receiving body having a catching point extending therefrom and adapted to enter an annular carrier, a closing piece pivoted to said receiving body and having one leg extending toward the catching point and adapted to be engaged by and moved by the annular carrier and having a second leg withdrawn from said catching point when the mechanism is set to receive a carrier but engaging said catching point behind said carrier when it has moved said first leg, and a spring actuated link secured to said closing piece and adapted to hold said second leg in its withdrawn position when the mechanism is set to receive a carrier and to swing said closing piece so that said second leg will engage said catching point when said carrier has moved said first leg.

857,642. VENTILATOR. JACOB LORENZ, St. Louis, Mo., assignor of one-third to John S. Evard, St. Louis, Mo. Filed Nov. 13, 1905. Serial No. 287,032.



Claim.—1. In a device of the character described, the combination of two series of wings, both series of wings having a common series of pivots, controlling-means for each to cause same to operate in unison, a sector connecting both said controlling-means, and means for detachably connecting said sector to the inner one of said controlling means.

2. In a device of the character described, the combination of two series of wings, both series of wings having a common series of pivots, controlling-means for each to cause same to operate in unison, a sector connecting both said controlling-means, and means for adjusting the position of said sector relative to the inner of said controlling means.

3. In a device of the character described, the combination of two series of wings, both series of wings having a common series of pivots, controlling-means for each to cause same to operate in unison, and a sector connecting both said controlling-means, said sector having perforations therethrough, and the inner of said controlling-means having a projection thereon and means connected therewith to lock said sector by means of said perforations.

4. In a device of the character described, the combination of two series of wings, both series of wings having a common series of pivots, controlling-means for each to cause same to operate in unison, a sector connecting both said controlling-means, and a bifurcated projection upon the inner of said controlling-means, said sector passing through the bifurcation thereof, said bifurcation serving as a guide.

5. In a device of the character described, the combination of two series of wings, both series of wings having a common series of pivots, controlling-means for each to cause same to operate in unison, a sector connecting both said controlling-means, said sector having recesses therein, and a spring-pressed pin connected with said controlling-means for locking said sector by means of said recesses.

6. In a device of the character described, the combination of a frame having an opening therethrough, faceplates covering said opening each provided with a narrow slit, a plurality of series of wings, said series of wings having a common series of pivots, controlling-means to cause each one of each series of wings to move in unison with the others of said series, and a sector connecting the controlling-means for both of said series.

7. In a device of the character described, the combination of a main frame and an internal frame fitted thereto, said internal frame having a flange for attachment to the main frame, a slot in said flange, a plurality of V-shaped slats having independently-actuatable wings supported in said internal frame, a common series of pivots for said wings, and a sector cross-connecting said series of wings, said sector passing through and being guided by said slot.

8. In a device of the character described, the combination of a main frame and an internal frame fitted thereto, said internal frame having a flange for attachment to the main frame, a slot in said flange, a slot in said main frame with which said first-mentioned slot registers, a plurality of V-shaped slats having independently-actuatable wings supported in said internal frame, a common series of pivots for said wings, and a sector cross-connecting said series of wings, said sector passing through and being guided by said slots.

9. In a device of the character described, the combination of a frame, a slot in said frame, a plurality of V-shaped slats having independently-actuatable wings supported in said frame, a common series of pivots for said wings, and a sector cross-connecting said series of wings, and passing through and being guided by said slot.

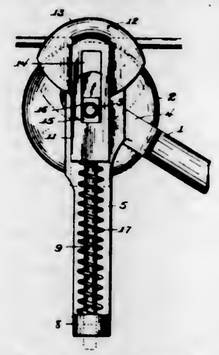
10. In a device of the character described, the combination of a frame provided with a ridge in its lower portion and a groove in its upper portion, V-shaped slats supported in said frame, the wings of the lowest of said slats impacting against said ridge, and a member secured to the topmost slat, projecting beyond the apex thereof and into said groove.

11. In a device of the character described, the combination of a frame provided with a ridge in its lower portion and a groove in its upper portion, said groove extending into and forming a recess in the sides of said frame, V-shaped slats supported in said frame, the wings of the lowest of said slats impacting against said ridge, and a member secured to the topmost slat and projecting beyond the apex and the ends thereof and into said groove and said recess.

857,643. TROLLEY-GUARD. GEORGE L. MATHENEY, Bridgeport, Ohio, assignor of one-half to J. O. Howells, Bridgeport, Ohio. Filed July 12, 1906. Serial No. 325,863.

Claim.—In a device of the character described, the combination with a trolley wheel, a wheel axle, and a trolley

harp, of a longitudinal stationary arm mounted in a substantially vertical position on said axle against the harp at each side thereof, an angular lug having a vertical hole therethrough carried by the lower end of said arm, and a vertically-movable element mounted on each end of said axle against said arm, said element comprising a body portion having a longitudinal slot therein through which the axle extends, a guide-block carried by the spindle and slidable in said slot, a stem carried by the lower end of the



body portion, the lower end of said stem being movably held in the hole in the lug, a coil spring carried by said stem between said body portion and said lug, a head carried by said body portion, said head being normally held with its upper edge elevated above the trolley wheel, said upper edge being rounded, and a beveled inwardly-directed lip carried by said head above the edge of said wheel, substantially as and for the purposes set forth and described.

857,644. HAT. ADOLPH MAYER, New York, N. Y. Filed Jan. 19, 1907. Serial No. 353,016.



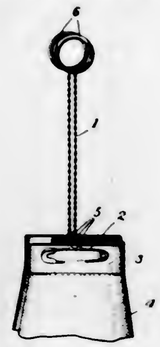
Claim.—1. A hat composed of a frame having a crown and a rim, an elongated strip covering the crown, the strip having its ends converging from one edge to the other edge, the longer edge of the strip having a hem, a draw-string disposed within the hem to gather the strip on the top of the crown, the longer edge of the strip and the draw-string coöperating with the former when the former is gathered by the latter to form a series of radially extending folds on top of the crown and also to hold the strip upon the latter, and means for detachably securing the shorter edge of the strip to the frame.

2. A hat composed of a frame having a crown and a rim, an elongated strip covering the crown, the strip having its ends converging from one edge to the other edge, the longer edge of the strip having a hem, a draw-string disposed within the hem to gather the strip on the top of the crown, the longer edge of the strip and the draw-string coöperating when the former is gathered by the latter to form a series of radially extending folds on top of the crown and also to hold the strip upon the latter, means for detachably securing the shorter edge of the strip to the frame, and material detachably secured upon the rim independently of said strip.

3. A hat composed of a frame having a crown and a rim, a strip covering the crown, means whereby the strip may be gathered along one edge and held upon the crown, means for removably securing the other edge of the strip to the frame at the inner edge of the rim, a rim covering embracing the rim and having a portion forming the crown lining, finishing material secured over the upper outer face of the rim covering, and means for removably securing the finishing material upon the frame independently of said strip or said rim covering.

4. A hat composed of a frame having a crown and a rim, an elongated strip covering the crown, the strip having a hem along one longitudinal edge, a draw-string disposed within the hem to gather the strip on the top of the crown and to form a series of radially extending folds on top of the crown, means for detachably securing the opposite longitudinal edge of the strip to the frame, and a finishing material detachably secured over the rim independently of said strip whereby the strip or finishing material may be removed from the frame independently of each other.

857,645. GARMENT-HANGER. EMMA MAYER, Sunbury, Pa. Filed Sept. 22, 1906. Serial No. 335,797.



Claim.—In a skirt hanger, the combination with three fastening devices adapted to engage the waist band of a skirt, said devices having eyes, of a flexible support, such as a chain, extending through said eyes whereby when the chain is supported at its ends the fastening devices are drawn together by the weight of the skirt, thus folding the garment, said support having rings at its ends of larger diameter than the eyes in the fastening devices, whereby said rings serve as a means for suspending the hanger and as stops to prevent the fastening devices from sliding off the flexible support.

857,646. METAL SIGN. MORITZ MAYER, New York, N. Y. Filed May 31, 1906. Serial No. 319,468.

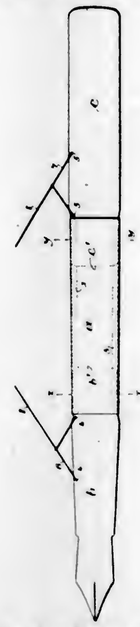
Claim.—1. A sign composed of suitable material comprising a plurality of separable parts which in their elongated continuity are necessary to construct the form of the article advertised, means for connecting the said parts in substantial alinement, and means for suspending the center by the end parts.

2. A sign composed of three parts of metal adapted to be placed in substantial alinement, the central part having bent over top and bottom edges forming slide-ways on one surface thereof, and the end parts adapted to be received in the slide ways at the opposite ends of the central part and means for suspending the sign by the side parts.

3. A sign composed of three parts of metal adapted to be placed in substantial alinement, the central part having bent over top and bottom edges forming slideways on one surface thereof, the side parts having reduced ends with shoulders and the reduced ends adapted to be received in the slide ways of the central part up to the shoulders, said parts having holes adjacent to said shoulders for cords by which both the side parts and central part are suspended.

4. A sign composed of three parts of suitable material adapted to be placed in substantial alinement, the central part having bent over top and bottom edges forming slideways on one surface thereof, the side parts having reduced ends with shoulders and the reduced ends adapted to be

received in the slide ways of the central part up to the shoulders, said side parts having holes in pairs in their



upper edges and loops of cord secured thereto and by which the sign is suspended from the side parts.

857,647. GASKET-CUTTER. GEORGE T. MILLER, Jamisonville, Pa. Filed Dec. 15, 1906. Serial No. 348,083.



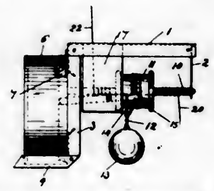
Claim.—1. A gasket cutter comprising a shank or bit provided with a depending prong, plates carried by said shank and provided with guide-ways on their inner sides, and graduated on their outer surfaces, said plates being also provided with edge teeth, knives supported within said guide-ways, and means for adjusting said knives consisting of spring-pressed pins and cross bars secured to said pins and adapted to engage said teeth.

2. A gasket cutter comprising a shank or bit provided with a depending prong, plates carried by said shank formed on their inner sides with guide-ways, and graduated on their outer surfaces, and having their lower edges formed with teeth, reversible knives provided with horizontal flanges fitting said guide-ways and having squared openings, pins extending through said openings, springs encircling said pins, and cross bars at the lower ends of said pins adapted to engage said teeth.

857,648. AUTOMATIC CONTROLLER FOR DAMPERS. EMIL F. MILLER, Chicago, Ill. Filed Feb. 9, 1907. Serial No. 356,507.

Claim.—1. In a device of the class described the combination with a frame of an alarm clock supported thereon, a shaft, means connecting said shaft with the dampers of a furnace, a lever pivoted on said frame and controlled by said clock and means supported on said lever adapted to rotate said shaft and open the dampers at a predetermined time.

2. In a device of the class described the combination with a frame of an alarm clock supported thereon, a rotatable shaft in said frame, a weight adapted to rotate said shaft, a lever pivoted on the frame and engaged at one end beneath the alarm key of the clock and adapted at the other end to normally support said weight, and flexible cords adapted to be wound on said shaft when the alarm goes off.

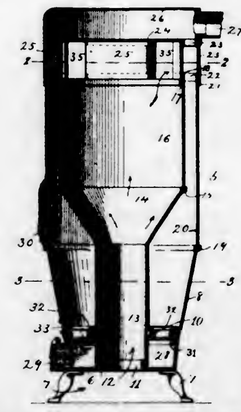


3. In a device of the class described the combination with a frame of an alarm clock supported thereon, a shaft supported in said frame, a drum thereon, a flexible connection on said drum, a weight connected therewith, a lever pivoted on the frame and normally engaged at one end beneath the alarm key, a loop in said connection adapted to normally support the weight on said lever and flexible connections adapted to wind on said shaft when the alarm goes off and releases the weight.

4. In a device of the class described the combination with a frame of an alarm clock having a key on the back thereof, a lever adapted to be engaged at one end beneath said key when the alarm is wound, a weight normally supported on the opposite end of said lever, a shaft, damper cords connected therewith and means connecting said weight and shaft adapted to wind the cords on said shaft when the alarm goes off.

5. The combination with a frame, of an alarm clock supported thereon, a drum shaft journaled in the frame, a drum thereon, a weight, a weight cord connecting said drum and weight and adapted to be wound on said drum and rotate the same, a lever pivoted on the frame and adapted to normally support said weight on one end, an alarm key on said clock adapted to normally engage said lever in position to support the weight and damper cords adapted to be wound on said shaft when the alarm goes off and releases the weight.

857,649. STOVE. LEWIS MILLER, Elwood, Ind. Filed Apr. 2, 1906. Serial No. 309,536.



Claim.—In a device of the character described, the combination with an inner shell communicating with an air supply pipe and forming an air chamber, and an outer shell forming a combustion chamber and surrounding said inner shell in spaced relation, of an annulus arranged be-

tween said shells in the upper portion thereof and formed with a series of openings communicating with the combustion chamber occurring between said shells, spaced vertical pipes leading severally from said openings and a cap plate formed with openings severally registering with said pipes and transversely occupying the entire space defined by said outer shell, said pipes having sealed connection with said annulus and said cap plate.

857,650. MOUNTING FOR EYEGLASSES OR SPECTACLES. PAUL MOEWS, Detroit, Mich. Filed Feb. 27, 1905. Serial No. 247,519.



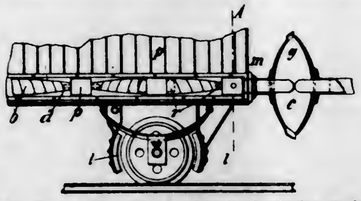
Claim.—1. A single piece flat metal fitting for eyeglasses or spectacles, comprising channel shaped attaching sections parallelly arranged in planes perpendicular to the plane of the lenses, a bridge member joining the upper inner ends of the channel section and projecting forwardly at an acute angle therefrom, upwardly extending guards offset from the attaching sections and bridge, and closed depending loops connecting the lower ends of said attaching sections and guards.

2. In eyeglasses or spectacles, a mounting comprising a bridge member, upwardly extending guards, and intermediate loop-shaped attaching sections projecting forwardly from the bridge, the members of each loop extending rearwardly in relation to the lenses, and being connected respectively at their ends to one of the bridge ends, and an adjoining guard.

3. In eyeglasses or spectacles, a single-piece fitting consisting of a bridge, loop-shaped attaching sections having their complementary members extending rearwardly of, and in a plane substantially perpendicular to, the lenses, the upper members of the loops being connected to the bridge ends, forming a continuation of the bridge, and complementary guards secured to the ends of the lower members.

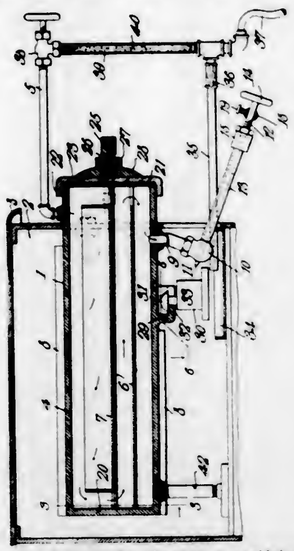
4. In a mounting for eye-glasses or spectacles, the combination with a bridge member, of forwardly projecting loop-shaped attaching sections at the bridge ends, studs upon said sections extending longitudinally of the bridge, and guard members extending upwardly and offset rearwardly from the attaching sections.

857,651. BRAKE AND BUFFER. FRITZ MÖLLER, Hamburg, Germany. Filed Feb. 1, 1907. Serial No. 355,336.



Claim.—In the improvements in and relating to buffers and brakes for the wagons of railways, the combination of hollow beams *a* with the wagons; springs *b* slidably arranged in the hollow of the said beams by connecting them with blocks *p* which having the projections *r* inserted in the interior of the springs whereby the latter is kept in position: the blocks *p* connected to the springs *b* near the ends of the wagon having a projection *e* adapted to slide in the groove of the bar *f*; the bars slidably arranged in the hollow of the said beams having arms *i* with brakes *l*, and the arms *h* having brakes *l* turnably attached so that the bars are adapted to apply the said brakes on the respective wheels when the bars are pushed inward by the force of a collision; the plate springs *g* rigidly fixed at the ends of the said bars, and the springs being provided with shoe-like indentations and corresponding plain surfaces at their ends so that the springs situated in one wagon with the plain surface at their ends, enter into the indentation of the springs situated in the opposite one; and the screw bolts *m* provided at the ends of the wagon which are adapted to prevent the springs *b* being driven out at the extreme end of a train when an unusual impact drives the buffers *c* beyond their limits causing the bars *f* to apply their brakes on the wheels, and the springs *b* to take away the shock of the collision, substantially as shown and described.

857,652. HYDROCARBON-BURNER. THOMAS MUEHLEISEN, San Diego, Cal. Filed Dec. 15, 1906. Serial No. 348,047.

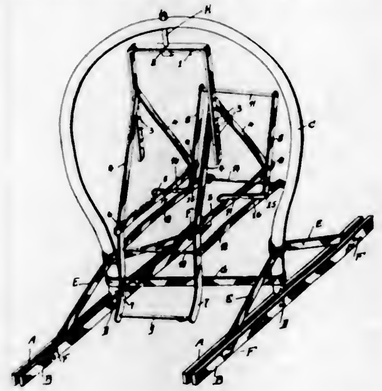


Claim.—In a hydrocarbon burner, a gasifying chamber, an oil supply pipe connected therewith, said chamber having a gas exit, a U-shaped lug carried by the chamber, a flame deflector having an enlarged head and a reduced neck which enters the space between the ends of the U-shaped lug, the lower portion of said deflector being triangular in horizontal section.

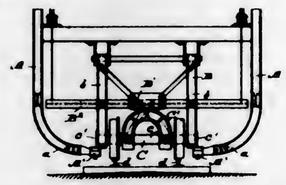
857,653. SWING. FRANK F. MCCAULLEY, Sistersville, W. Va. Filed Sept. 16, 1904. Serial No. 224,694.

Claim.—1. The combination with an inverted U-shaped supporting-frame, of a swing-frame suspended from said supporting-frame, and a swing carried by the swing-frame and comprising supporting-bars adjustably-connected at their upper ends to the swing-frame, arm-rest bars pivotally-connected to said supporting-bars, foot-rails pivotally-connected to the forward ends of the arm-rest bars, cross-rods connecting said foot-rails, side-bars pivotally-connected at their forward ends to the foot-rails, back-rails pivotally connected to the arm-rest bars and the side-bars, a cross-rod connecting said back-rails adjacent their upper ends, pins carried by the arm-rest bars, and toothed racks to engage with said pins, substantially as described.

2. In a device of the class described, a supporting frame, a swing frame suspended from said supporting frame, and a swing carried by said swing frame and comprising supporting bars detachably connected at their upper ends to the swing frame, arm rests pivotally connected to said supporting bars and provided respectively with lateral pins, foot rails pivotally connected to the arm rests, transverse rods connecting said foot-rails, side bars movably connected to the foot rails, back rails movably connected to the arm rests and side bars, a transverse rod connecting said back rails, and bars swinging from said swing frame and provided with spaced teeth adapted to engage with said lateral pins.



857,654. LOG-LOADER. JOHN R. MCGIFFERT, Duluth, Minn., assignor to Clyde Iron Works, Duluth, Minn., a Corporation of Minnesota. Filed Dec. 30, 1904. Serial No. 238,082.



Claim.—1. In a log-loading machine, the combination with a frame-supporting foot having a substantially horizontal end portion, of a shoe having an aperture adapted to loosely receive said foot.

2. In a log-loading machine, the combination with a frame-supporting foot having a substantially horizontal end portion, of a shoe having a central aperture adapted to loosely receive said foot.

3. In a log-loading machine, the combination with a frame-supporting foot having a horizontal end portion, of a shoe attached thereto and in rolling contact therewith.

4. In a log-loading machine, the combination with a frame-supporting foot having a horizontal end-portion, of a shoe provided with an aperture adapted to receive said foot, said shoe being oscillatory about said foot.

5. In a log-loading machine, the combination with a frame-supporting foot having a horizontal end-portion, of a shoe provided with an aperture adapted to receive said foot, said shoe having a limited oscillatory movement about said foot.

6. In a log-loading machine, the combination with a frame-supporting foot having a horizontal end portion, of a shoe having a central aperture for receiving said foot, said shoe and foot being respectively provided with bearings for rolling contact with each other.

7. In a log-loading machine, the combination of a frame-supporting foot having a horizontal end portion provided with a convex lower bearing surface, of a shoe attached loosely to said foot, such shoe forming a support for said convex bearing surface, whereby said foot and shoe may be in rolling contact with each other.

8. In a log-loading machine, the combination with a frame-supporting foot having a horizontal end-portion provided with a convex lower bearing surface, of a shoe provided with an aperture adapted to receive said foot, said shoe forming a support for said convex bearing surface whereby a rolling contact is had between said foot and shoe.

9. In a log-loading machine, the combination with a frame-supporting foot having a substantially horizontal end-portion, of a shoe having a horizontal aperture through its neutral axis for the reception of said foot.

10. In a log-loading machine, the combination with a frame-supporting foot having a substantially horizontal end-portion, of a shoe having a horizontal aperture through its neutral axis adapted to loosely receive said foot.

11. In a log-loading machine, the combination with a frame-supporting foot having a substantially horizontal end-portion of a shoe having a horizontal aperture through its neutral axis for the reception of said foot, the portion of said shoe below such aperture serving as a tension member and the portion above such aperture serving as a compression member.

12. In a log-loading machine, the combination with a frame supporting foot having a substantially horizontal end-portion, of a shoe having a horizontal aperture through its neutral axis, such aperture being elongated along said neutral axis and being adapted to loosely receive said foot, the portion of said shoe below such aperture serving as a tension member and the portion above such aperture serving as a compression member.

13. In a log-loading machine, the combination with a frame-supporting foot having a horizontal end portion formed with a lower convex curved surface, of a shoe consisting of a lower horizontal member, an upper member, separators forming an intermediate open space, and bottom contact pieces, said horizontal end portion of the foot being seated and loosely secured in said space.

14. In a log-loading machine, the combination with a frame-supporting foot having a horizontal end portion, of a shoe comprising a base member and an upper strap adapted to secure such end portion of said supporting foot to said base member.

15. In a log-rolling machine, the combination with a frame-supporting foot having a horizontal end portion, of a shoe comprising a base member formed of a flat metal bar with upturned ends and an upper bar forming a compression member and adapted to secure such end portion of said supporting foot to said base member.

16. In a log-loading machine, the combination with a frame-supporting foot having a horizontal end portion formed with a lower convex curved surface, of a shoe comprising a base member formed of a flat metal bar with upturned ends, an upper bar forming a compression member and adapted to secure such end portion of said supporting foot to said base member, and blocks secured between said base member and said upper bar.

17. In a log-loading machine, a shoe for a frame-supporting foot, comprising a base-member formed of a flat metal bar having its extremities turned up, an upper flat metal bar having its extremities riveted to said base-member and near the end thereof, wedge-shaped separators secured between said base member and strap, and calks secured to the bottom of said base member.

18. In a log-loading machine, the combination of a car axle, a frame supported upon said axle and adapted to rock laterally thereof, and boxes slidably mounted in said frame and adapted to receive the ends of said axle.

19. In a log-loading machine, the combination of a frame, boxes slidably mounted in said frame, a car axle having its ends journaled in said boxes, and an arched yoke mounted on said axle and adapted to receive the weight of said frame.

20. In a log-loading machine, the combination of a frame, boxes resiliently mounted in said frame, a car axle having its ends journaled in said boxes, and an arched yoke mounted on said axle and adapted to receive the weight of said frame.

21. In a log-loading machine, the combination of a frame provided with a member having a curved convex bearing surface, boxes slidably mounted in said frame, a car axle having its ends journaled in said boxes, and an

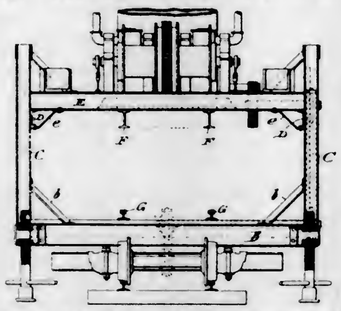
arched yoke mounted on said axle and contacting with the convex bearing surface of said frame member.

22. In a log-loading machine, the combination of a swinging frame, boxes slidably mounted in said frame, a car axle having its ends journaled in said boxes, and an arched yoke mounted on said axle and adapted to receive the weight of said frame.

23. In a log-loading machine, the combination of a frame provided with a member having a convex bearing surface provided with a central cavity, boxes slidably mounted in said frame, a car axle having its ends journaled in said boxes, and an arched yoke mounted on said axle and contacting with the convex bearing surface of said frame member, said yoke being provided with a lug adapted to engage the cavity in said member.

24. In a log-loading machine, the combination with the loader-body, of a frame pivotally attached thereto on a transverse axis and provided with a member having a convex bearing surface provided with a central cavity, boxes slidably mounted in said frame, a car axle having its ends journaled in said boxes, and an arched yoke mounted on said axle and contacting with the convex bearing surface of said frame member, said yoke being provided with a lug adapted to engage the cavity in said member.

857,655. FRAME FOR LOG-LOADERS. JOHN R. McGIFFERT, Duluth, Minn., assignor to Clyde Iron Works, Duluth, Minn., a Corporation of Minnesota. Filed Dec. 30, 1904. Renewed Oct. 4, 1906. Serial No. 337,458.



Claim.—1. In a frame for a log-loader, the combination with a base, of a deck comprising transverse beams supported above said base, and longitudinal beams lying beneath said transverse beams and secured to the same.

2. In a frame for a log-loader, the combination with a base, of posts mounted on each side thereof; a longitudinal beam secured to the posts along each side respectively of said base; transverse beams secured to opposite posts respectively; and intermediate longitudinal beams lying beneath said transverse beams and secured to the same.

3. In a frame for a log-loader, the combination with a base, of upright corner posts; a longitudinal beam secured to the posts on each side respectively of said base; transverse beams secured to opposite posts respectively; and intermediate longitudinal beams lying beneath said transverse beams and secured thereto.

4. In a frame for a log-loader, the combination with a base, of upright corner posts; a post on each side of said base intermediate of the corresponding corner posts; a longitudinal beam secured to the posts along each side respectively of said base; transverse beams secured to opposite posts respectively; and intermediate longitudinal beams lying beneath said transverse beams and secured thereto.

5. In a frame for a log-loader, the combination with a base, of upright corner posts; a longitudinal beam secured to the posts on each side respectively of said base; diagonally disposed braces extending from the ends of each of said longitudinal beams to the corresponding side of said base; transverse beams secured to opposite posts respectively; and intermediate longitudinal beams lying beneath said transverse beams and secured thereto.

6. In a frame for a log-loader, the combination with a base, of upright corner posts; a post on each side of the base intermediate of the corresponding corner posts; a longitudinal beam secured to the posts along each side respectively of said base; diagonally disposed braces extending from the ends of each of said longitudinal beams to the corresponding side of said base; transverse beams secured to opposite posts respectively; and intermediate longitudinal beams lying beneath said transverse beams and secured thereto.

7. In a frame for a log-loader, the combination of a base embodying two longitudinal sills, and a bolster at each end of said sills joining the same; corner posts mounted upon said base; a longitudinal beam secured to the posts on each side respectively of said base; transverse beams secured to opposite posts respectively; and intermediate longitudinal beams lying beneath said transverse beams and secured thereto.

8. In a frame for a log-loader, the combination of a base embodying two longitudinal sills, and a bolster at each end of said sills joining the same; upright corner posts mounted upon said base; a post on each side of the base intermediate of the corresponding corner posts; a longitudinal beam secured to the posts along each side respectively of said base; diagonally disposed braces extending from the ends of each of said longitudinal beams to the corresponding sill; transverse beams secured to the opposite posts respectively; and intermediate longitudinal beams lying below said transverse beams and secured thereto.

9. In a log-loader, the combination with a frame comprising a base, posts mounted on each side thereof, two longitudinal beams respectively secured to the inside of said posts and a deck supported upon said longitudinal beams; of propelling mechanism for said log-loader including a driving shaft transversely mounted on said deck, a counter-shaft similarly mounted in said vase, and operative connections between corresponding ends of said shafts, the ends of said shafts and such connections all lying without the line of said longitudinal beams and within that of said posts.

10. In a log-loader, the combination with a frame comprising a base, posts mounted along each side thereof, two longitudinal beams respectively secured to the inside of said posts above said base, and a deck supported upon said longitudinal beams; of propelling mechanism for said log-loader including a driving shaft transversely mounted on said deck, a counter-shaft similarly mounted in said base, sprocket wheels mounted on corresponding ends of said shafts and a sprocket chain connecting said wheels, the ends of said shafts, said wheels and chain all lying without the line of said longitudinal beams and within that of said posts.

11. In a log-loader, the combination with a frame comprising two lower longitudinal sills, two bolsters connecting the front and rear ends of said sills transversely, four corner posts mounted upon said bolsters, two upper lateral longitudinal beams parallel with said sills and respectively secured to the inside of a front and rear corner post, transverse beams resting upon said upper longitudinal beams, and other intermediate upper longitudinal beams secured to said transverse beams; of propelling mechanism for said log-loader including a driving shaft transversely mounted on said upper beams, a counter-shaft similarly mounted on said sills, and operative connections between corresponding ends of said shafts, the ends of such shafts and such connections all lying without the line of said longitudinal beams and within that of said posts.

12. In a frame for a log-loader, the combination of two lower lateral longitudinal sills; two bolsters connecting the front and rear ends of said sills transversely; four corner posts supported upon said bolsters; two upper lateral bars parallel with said sills and secured to the inside of a front and rear corner post; transverse beams resting upon said bars and located between said corner posts; two oppositely located upright posts secured respectively to an upper beam and lower sill intermediate of the corresponding corner posts; a transverse beam connecting such intermediate upright posts; and longitudinal beams secured to the lower surfaces of the transverse beams and located upon opposite sides of the central vertical longitudinal plane of the frame.

857,656. METALLIC TIE FOR RAILWAYS. DANIEL P. McQUEEN, Saratoga Springs, N. Y. Filed Apr. 19, 1907. Serial No. 369,065.



Claim.—1. An auxiliary metallic tie for preventing rails from spreading, provided with jaws engaging the outsides of opposite rails and made in parts having an interlocking edgewise sliding connection.

2. A metallic tie for preventing rails from spreading, provided with jaws engaging the outsides of opposite rails and made in parts having an interlocking connection and which are formed near the jaws with recesses or shoulders to receive spikes for holding them in place.

3. The combination with a wooden tie or sleeper of an auxiliary metallic tie for preventing rails from spreading, provided with jaws for engaging the outsides of opposite rails and made in parts having an interlocking connection and provided with recesses forming shoulders and spikes driven into the sleeper at the shouldered portions of the jaws and the heads of which engage the flanges of the rails.

4. The combination of a wooden tie or sleeper having a recess in its upper surface and a metallic tie resting on the sleeper provided with jaws engaging the outsides of opposite rails and made in parts having an interlocking joint which is arranged in the recess of the sleeper.

5. The combination of a wooden tie or sleeper having a recess in its upper surface, a metallic box in said recess, a tie section having a jaw engaging the outside of one rail, another tie section having a jaw engaging the outside of the opposite rail and an interlocking joint between the two sections arranged in said box.

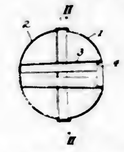
6. The combination of a wooden tie or sleeper, a rail having a locking and a bracing jaw formed with a central portion arranged beneath the rail, an outer portion engaging the web of the rail, an inner portion provided with a downwardly projecting flange and formed also with recesses producing shoulders for spikes which are employed to secure the jaw to the sleeper.

857,657. LIQUID-FUEL-BURNING APPARATUS. FRANK E. NELSON, Santa Barbara, Cal. Filed June 12, 1906. Serial No. 321,364.



Claim.—An injector burner comprising a casing having a steam chamber in its forward portion and an opening in its forward end and also having the forward end wall of the steam chamber inclined outward and rearward from said opening, and a core or plug removably arranged in the casing and containing an oil chamber adapted to be connected with a source of oil supply and having a reduced forward end portion occupying the opening in the forward end of the casing and a flange located in rear of said reduced end portion and provided with a sharp corner bearing against the inclined forward end wall of the steam chamber in the casing and also having a central discharge aperture communicating with and extending forward from the oil chamber and two or more passages extending rearward and outward from said central aperture and connecting the same with the steam chamber.

857,658. CURTAIN-ROD ORNAMENT. THOMAS NEWELL, Waterbury, Conn., assignor to American Pin Company, Waterville, Conn., a Corporation of Connecticut. Filed June 23, 1906. Serial No. 323,169.



Claim.—1. A curtain rod ornament consisting of a hollow shell having an opening therein and an expansible hollow supporting tube inside said shell adapted to bind on the curtain rod, one end of said tube being secured to the shell adjacent said opening and the other being seated against the opposite wall of said shell.

2. A curtain rod ornament consisting of a hollow shell having an opening therein for the reception of the curtain rod, and provided, opposite said opening, with an interior concave wall, in combination with a split tube adapted to receive the aforesaid curtain rod within the shell, said tube being secured at one end to the shell at a point adjacent the said opening and having its other end seated against said concave wall, the curvature of said wall being sufficient to hold the said end in central position and not so great as to prevent a slight expansion of said split tube in accommodating itself to the curtain rod.

3. A curtain rod ornament consisting of a substantially spherical hollow shell having an opening therein, in combination with a split rod-clamping tube adapted to receive the end of the curtain rod thrust therein, inside said shell, having one end located adjacent to and surrounding the said opening, and the other end seated against the inner wall of said shell, diametrically opposite from said opening.

4. A curtain rod ornament consisting of a hollow shell having an opening therein, and formed with an inner concave wall opposite said opening in combination with an interior rod-clamping tube having one end seated against said concave wall and provided near its other end with flanges embracing the margin of said opening to hold said tube in position.

5. A curtain rod ornament consisting of a hollow shell having an opening therein for the reception of the rod, and a rod-clamping tube having one end seated against the inner wall of said shell and provided with annular flanges formed upon it and respectively located on opposite sides of the margin of said opening to hold the end of said tube in contact with said inner wall of the shell.

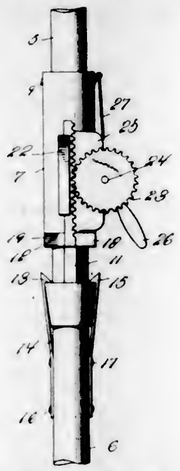
6. A curtain rod ornament comprising a hollow shell having an opening therein to receive the rod, in combination with a split tube having one end seated against the inner concave wall of said shell and the other extending through said opening and means for securing said tube within said opening to prevent its withdrawal from the said inner wall, said tube being adapted to removably hold the end of a curtain rod thrust into the aforesaid opening in the shell.

857,659. PUMP-ROD COUPLING. CHARLES H. NICHOLS, Ruby, Wis. Filed June 8, 1906. Serial No. 320,861.

Claim.—1. In a pump rod coupling, the combination, with a coupling member secured to the pitman rod, of clutch means secured upon the piston rod of the pump to normally engage said coupling member, a rack slidably mounted upon said coupling member, means carried by said rack for disengaging said clutch means, and means for imparting movement to said rack to actuate said disengaging means.

2. In a pump rod coupling, the combination, with a coupling member secured to the pitman rod, of spring plates secured to the piston rod of the pump, said spring plates being provided with projections to normally engage said coupling member, a rack slidably mounted upon said coupling member, means carried by said rack for disen-

gaging said spring plates, and means for imparting movement to said rack to actuate said disengaging means.



3. In a pump rod coupling, the combination, with a coupling member secured at one end to the pitman rod and recessed to receive the piston rod of the pump, the opposite sides of said coupling member being provided with corresponding cut away portions forming shoulders thereon, of two spring plates, each secured at one end to opposite sides of said piston rod and having their free ends provided with projections to normally engage said shoulders, a rack slidably mounted upon said coupling member, means secured to said rack for positively disengaging said spring plate projections, and means for actuating said disengaging means.

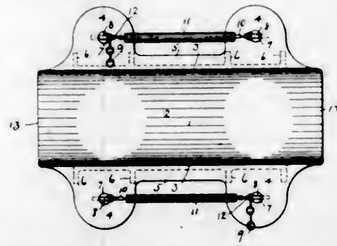
4. In a pump rod coupling, the combination, with a coupling member secured at one end to the pitman rod and having its other end recessed to receive the piston rod of the pump, the opposite sides of said coupling member being provided with corresponding cut-away portions to form shoulders, of two spring plates each secured at one end to opposite sides of the said piston rod, and provided at their free ends with triangular projections normally engaging said shoulders, a spacer mounted to slide upon the face of said coupling member and provided with flanges adapted to enter between said spring plate projections to disengage the same from said shoulders, means to slide said spacer longitudinally of said coupling member, and means to secure said means in the disengaged position.

5. In a pump rod coupling, the combination with a coupling member secured at one end to the pitman rod and having its other end recessed to receive the piston rod of the pump, the opposite sides of said coupling member being provided with corresponding shoulders formed by cutting away corresponding portions of each side thereof, of two spring plates each secured at one end to the opposite sides of the said piston rod and provided at their free ends with triangular extensions normally engaging said shoulders, a spacer mounted upon the face of said coupling member and provided with flanges extending into said cut-away portions, means mounted upou said coupling member to reciprocate said spacer between the shoulders of said cut-away portions to cause the same to enter between the triangular projections of said spring plates and disengage the same therefrom, and means to secure said means in the disengaged position.

6. In a pump rod coupling, the combination, with a coupling member secured at one end to the pitman rod and having its other end recessed to receive the piston rod of the pump, the opposite sides of said coupling member being provided with correspondingly cut-away portions forming shoulders thereon, of two spring plates each secured at one end to opposite sides of said piston rod and provided at their free ends with triangular projections normally engaging said shoulders, a spacer mounted upon the face of said coupling member and provided with flanges extending into said cut-away portions, means mounted upon said coupling member to reciprocate said spacer between the shoulders of said cut-away portions to cause said spacer to enter between the said triangular projections of said spring plates and disengage the same therefrom, said means comprising a rotatable shaft mounted in a boss on one side of said coupling member, a gear wheel secured to one end of said shaft, and a rack bar secured to said spacer and with which said gear wheel intermeshes, the opposite end of said shaft being provided with an operating lever, and means to secure said lever when the coupling is disengaged.

857,660. CASTER. JOHN E. NORWOOD, Baltimore, Md. Filed Aug. 20, 1906. Serial No. 331,250.

Claim.—1. A device of the class described, comprising



a movable body portion having a channel formed therein and opening through its ends, said channel having the ends of its floor extending downwardly and beyond the said body portion, and means forming a handle on each side of the body portion and adapted to secure the caster to the vehicle wheel.

2. A device of the class described, comprising a movable body portion having a channel formed therein and opening through its ends, said channel having the ends of its floor extending downwardly and beyond the ends of the body portion in planes at an obtuse angle to each other, and means forming handles on each side of the body portion and adapted to secure the caster to the vehicle wheel.

3. A device of the class described, comprising a casting including a concavo-convex bottom and disposed with its concave side directed upwardly, vertical longitudinally extending side walls, laterally extending ears carried by the ends of the side walls at the upper portions thereof, downwardly slanted leaves carried by the bottom at its ends, said portions being formed integral, and supporting rollers carried by the ears.

4. A caster for vehicles comprising a cast body portion having a wheel-receiving channel therein, supporting rollers for the body portion, and downwardly inclined leaves carried by the body portion at the ends of its channel, and a chain on each side to form a handle and adapted to secure the wheel within the said channel.

5. A caster for vehicles comprising a cast body portion having a wheel-receiving channel therein, and two laterally extending ears at each end thereof, eyes projecting from said ears, a chain on each side of the body portion adapted to connect the two ears on the same side or two ears on opposite sides, supporting rollers for the body portion, and downwardly inclined leaves carried by the body portion at the ends of its channel.

857,661. REAMER. BENJAMIN M. NUZUM, Grafton, W. Va. Filed Feb. 11, 1907. Serial No. 356,667.

Claim.—1. A device of the character described comprising a stem having a rotary cutter, a feed-screw embracing said stem, a yoke having parallel members in which are provided oppositely-disposed grooves, and a removable work-holder slidably held in said grooves, said holder being self-centering with respect to said cutter.



2. In a tool for refacing valves, valve-seats, injector-spindles, steam-nozzles, and the like, a revoluble spindle, a feed-screw for said spindle, a yoke in which said feed-screw is mounted, a pair of arms carried by said yoke in parallel alinement with said feed-screw, said arms being provided on adjacent faces with transverse grooves, a plate having its opposite edges slidably mounted in said grooves, said plate having a central aperture therein, recesses provided in said plate in open communication with said aperture for the reception of the lateral lugs carried by a stem projected through said aperture, and a cutter for acting upon the part held between said arms.

857,662. TELEPHONE-DIRECTORY. GUY C. ODOR, Lima, Ohio. Filed May 10, 1906. Serial No. 316,111.

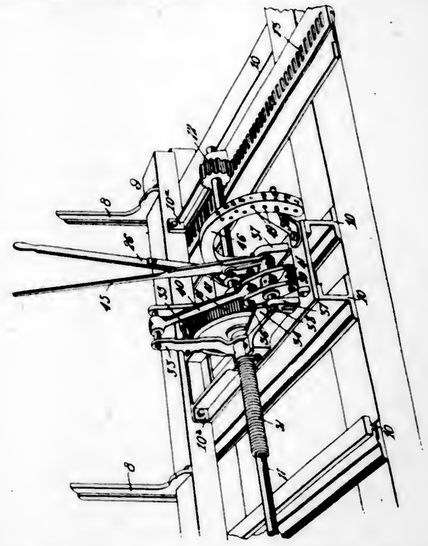


Claim.—In a directory of the character described the combination with an upper disk and a base, each centrally apertured, of a smaller disk formed separately from said upper disk and said base and located between them and also having a central aperture, a directory disk centrally apertured to inclose the smaller disk and adapted to be rotated around it, said directory disk being located between the upper disk and the base and the upper disk having a sight opening through which matter on the directory disk may be exposed, the said upper disk, the base and the smaller disk being secured together and constructed and arranged to be clamped by the mouth piece of a telephone transmitter so that they are firmly held while the directory sheet may be rotated around the smaller disk and between the base and the upper disk, substantially as described.

857,663. SAWMILL SET-WORKS. ALEXANDER C. OSBORN, Clarksburg, W. Va. Filed June 19, 1906. Serial No. 322,421.

Claim.—1. In a saw mill set works, the combination with the knees, of a set shaft, connections between the set shaft and the knees, a setting ratchet on the shaft, a combined clutching and brake disk keyed to the shaft and arranged to move longitudinally thereof, means for moving said disk to clutch the setting ratchet and to bear against said setting ratchet and operate as a brake, and means for effecting a step by step rotative movement of the setting ratchet.

2. In a saw mill set works, the combination with the knees, of a set shaft, connections between the knees and the set shaft, a setting ratchet mounted loosely on the shaft, means for effecting a step by step rotative movement of the setting ratchet, a clutch disk mounted on the shaft, interengaging means between the periphery of the clutch disk and the setting ratchet, a slidable key carried by the shaft and having projections at both ends, one of said projections being arranged to engage a recess in the hub of the disk, a clutch operating lever, and a grooved hub or collar carried thereby and encircling the shaft, the second projection of the key being arranged to enter said groove, the lever being movable to force the disk from clutching position into frictional engagement with a portion of the setting ratchet to thereby form a brake for retarding reverse movement of the set shaft.



3. In a saw mill set works, the combination with the knees, of a set shaft, connections between the knees and the set shaft, a setting ratchet mounted loosely on the shaft, a combined clutch and friction disk revoluble with the shaft, means for moving said disk lengthwise of the shaft to clutch the setting ratchet thereto or to frictionally engage said setting ratchet to retard return movement of the set shaft, and a spring connected to the set shaft and placed under stress during movement in one direction, said spring in unwinding tending to return the shaft and connected parts to initial position.

4. In a saw mill set works, the combination with the knees, of a set shaft operatively connected thereto, a return spring connected to the set shaft, a setting ratchet mounted loosely on the shaft and provided at one side with a recess, the rim of said setting ratchet having clutch teeth, a friction ring secured within the recessed portion of the setting ratchet, a combined clutching and friction disk revoluble with the shaft and movable longitudinally thereof, said disk having peripheral clutching teeth to engage with the similar teeth of the setting ratchet, a spring tending to hold said disk in clutching position, and means for moving the disk against the action of the spring into frictional engagement with the friction ring.

857,664. ELECTROMEDICAL APPLIANCE. DAVID R. OVERMAN, St. Louis, Mo. Filed Jan. 10, 1907. Serial No. 351,580.

Claim.—1. A pad comprising a cushion of soft leather prepared with wool thereon, a pocket attached to said

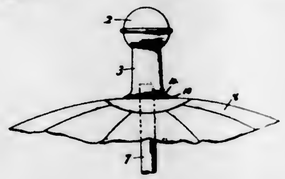
leather, said pocket having a lining of moisture-proof material, and an electro-galvanic battery within said pocket, said battery having terminals extending into the wool of said cushion.



2. A pad comprising a soft fibrous cushion, a pocket of material impervious to moisture, and an electro-galvanic battery within said pocket, said battery having terminals extending into said fibrous cushion.

3. A pad comprising a soft fibrous cushion, a pocket having a moisture-proof pocket of insulation material, a zinc disk secured in said pocket by a copper rivet which extends into said fibrous cushion, a copper disk in said pocket adjacent to said zinc disk but spaced therefrom, said copper disk being secured in place by a copper rivet which extends into said fibrous cushion, and an absorbent pad in said pocket in contact with said zinc and copper disks.

857,665. PARASOL-TOP. WALTER H. PERKINS, Waterbury, Conn., assignor to The Waterbury Mfg. Co., Waterbury, Conn., a Corporation. Filed Apr. 20, 1907. Serial No. 369,282.



Claim.—The herein described parasol top comprising a tubular shank having an outwardly flaring mouth, a sheet metal nut located within said shank and comprising a threaded sleeve, and an outwardly flaring flange the edge of the stem flange closed over the edge of the nut flange, substantially as described.

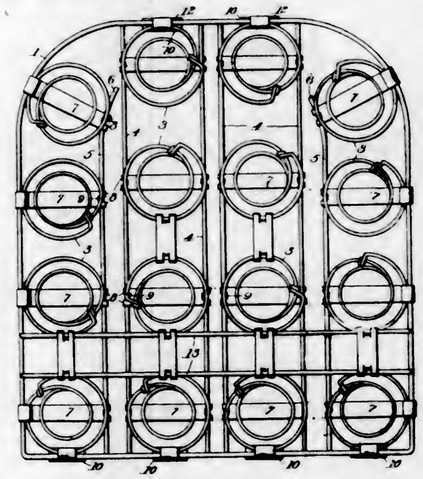
857,666. SPRING-CUSHION WORK. MACY A. PHELPS, Jackson, Mich., assignor to Jackson Cushion Spring Company, Jackson, Mich. Filed Oct. 6, 1906. Serial No. 337,741.

Claim.—1. A cushion comprising a frame, supporting wires, springs arranged upon the wires, and a fastener connecting each spring and the corresponding supporting wires, each fastener having three fingers at each end, the outer fingers at each end being bendable about the springs and supporting wires and the intermediate finger lying throughout its length at a right angle to the body of the respective fastener and adjacent the side of the convolution of the spring and supporting wire opposite the side of the convolution of the spring and supporting wire against which the main portions of the outer fingers engage.

2. A fastener of the character described comprising a plate having three fingers at each end, one finger being disposed in plane different than the plane of the other fingers.

3. A fastener of the character described comprising a body portion having three fingers at each end, the intermediate finger of each end lying in a plane different from the plane of the outer fingers of each end.

4. A spring cushion comprising a frame, springs within the frame, supporting wires for the support of the springs, and fasteners secured to the supporting wires and springs, each fastener having three fingers at each end for connecting them to the supporting wires and springs, one fastener lying centrally of each spring.



857,667. WATCH. WILSON E. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed June 8, 1906. Serial No. 320,707.



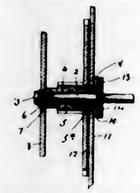
Claim.—1. In a watch, the combination with the front and rear movement-plates thereof, of a hollow center-pinion having its ends bearing directly in the said plates and having a central longitudinal passage, a center-wheel fixed upon the said pinion, a center-shaft passing through the said pinion and at its rear end terminating in two spring fingers, and a cannon-pinion driven upon the projecting forward end of the said shaft, the said spring-fingers frictionally coupling the center-shaft with the center pinion by which the shaft is rotated.

2. In a watch, the combination with the front and rear movement-plates thereof, of a hollow center-pinion having its ends bearing directly in the said plates and formed with a central longitudinal passage, a center-wheel fixed upon the said pinion, a center-shaft passing from front to rear through the said center-pinion and at its rear end terminating in two spring-fingers enlarged at their ends to form a head not larger in diameter than the said rear-bearing of the said center pinion, and a cannon-pinion driven upon the projecting forward end of the said shaft, the said fingers frictionally coupling the center-shaft with the center-pinion by which the shaft is rotated and permitting it to be removed from the hollow center pinion by drawing it from rear to front.

857,668. WATCH. WILSON E. PORTER, New Haven, Conn., assignor to New Haven Clock Co., New Haven, Conn., a Corporation. Filed June 8, 1906. Serial No. 320,708.

Claim.—In a watch, the combination with the front and rear movement plates thereof, of a hollow center pinion

bearing directly at its ends in the said plates and formed with a central longitudinal passage, a center-wheel mounted upon the said center-pinion, a center-shaft passing from rear to front through the longitudinal passage of the center-pinion and formed at its rear end with a head not exceeding in diameter the diameter of the rear end of the center pinion, a cannon-pinion driven upon the projecting forward end of the center shaft, and a friction washer for frictionally coupling the center-shaft with the center-pinion, the said washer being compressed by driving the said pinion upon the said shaft, and held under tension by the action of the pinion, when in place, and the head of the shaft, against each other.



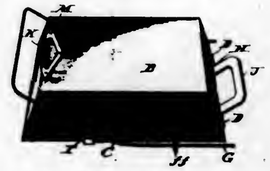
857,669. FAN ATTACHMENT FOR CHAIRS. JOSEPH F. A. PROBST, Sharpsburg, Pa. Filed Sept. 8, 1905. Serial No. 277,559.



Claim.—1. A fan attachment for rocking chairs embodying a substantially vertically disposed rod, a spring secured to said rod adjacent to bottom thereof and a clamp carried by said spring whereby to secure the latter to the rocker of a chair said rod being formed for a portion of its length with a threaded surface, a collar sleeved upon said rod, said collar having pivotal connection with a clamp mounted upon the back of the chair, said collar being also internally threaded and adapted to engage with the rod threads, a fan, a depending socket loosely mounted therein, means for securing said socket to said rod, a ratchet carried by said socket, a spring pressed pawl carried by said fan blade and adapted to be engaged by said ratchet, and a resilient finger projecting through a slot in said fan and movable therein, said finger being adapted to engage said pawl to throw the latter away from contact with said ratchet.

2. A fan attachment for rocking chairs embodying a vertical rod formed along a portion of its length with a threaded surface, a socket secured to the bottom of said rod, a friction roller mounted in said socket, a leaf spring rigidly carried by said socket, a clamp rigidly secured to the end of the said leaf spring and adapted to straddle the rocker of the chair whereby to secure said leaf spring to said rocker, a clamp secured to the back of the chair, a hinge socket carried by said clamp, a stationary collar sleeved upon said rod and held in said socket, said collar being formed on its inner periphery with inclined teeth adapted to intermesh with said spiral surface, a fan, a depending socket rotatably mounted in said fan at a central point, means for securing the said socket to said rod, a ratchet carried by said socket and a spring pressed pawl pivotally mounted upon said fan and adapted to be engaged by said ratchet.

857,670. OVEN FOR HEATING FLAT-IRONS. JOHN G. REDFORD, Milwaukee, Wis. Filed Oct. 24, 1903. Serial No. 178,421.



Claim.—1. In an oven of the class described the combination of a bottom plate provided at its sides with projections adapted to form fulcrums, a cover provided with supports hinged to said bottom, said cover having a lining of asbestos or other suitable material which is a non-conductor of heat, said cover being of greater diameter than the bottom and adapted to form therewith when closed an inlet space for heated gases, a U shaped lever fulcrumed on said projections and having its closed portion extending beyond the front portion of the oven and its free ends extending beneath said supports, said free ends being provided with notches adapted to engage said supports and said lever being adapted to be operated to open said cover and to hold the same in open position.

2. In an oven of the class described the combination of a bottom plate provided on its rear edges with projecting up turned hooks and a projecting stop block between said hooks, said stop block and said hooks such a distance beyond the rear edge of the bottom plate that the edge of the cover is suitably spaced from the rear edge of the bottom plate, a cover of greater diameter than the bottom plate and adapted to form therewith an inlet space for heated gases, said cover having notches cut in the lower rear edge opposite the upturned hooks on said bottom plate a wire bound into the lower rear edges of the cover and extending across the notches cut in said cover said upturned hooks and said wire across said notches forming a hinge connecting the cover and the bottom plate.

857,671. REINFORCING-BAR FOR CONCRETE. AMEDEE V. REYBURN, Jr., St. Louis, Mo. Filed Apr. 23, 1906. Serial No. 313,186.

Claim.—1. A re-inforcing bar for concrete construction whose edges lie in two substantially parallel planes, and provided at each of its edges with a series of lateral projections transverse to the plane of the bar, said bar having flat portions at its edges and in the plane of the bar intervening between individual projections of the same series, the projections at one of said edges being intermediate those at the opposite edge.

2. A re-inforcing bar for concrete construction whose edges lie in two substantially parallel planes and provided at each of its edges with a series of lateral projections transverse to the plane of the bar, said bar having flat portions at its edges and in the plane of the bar intervening between individual projections of one of said series and

flat portions at its edges and in the plane of the bar intervening between individual projections of the other series, the projections at one edge of said bar being intermediate those at the opposite edge.



3. A re-inforcing bar for concrete construction whose edges lie in two substantially parallel planes and provided at each of its edges with a series of lateral projections transverse to the plane of the bar, each projection of each series extending laterally in a direction opposite to that of the next adjacent member of its series, said bar having flat portions at its edges and in the plane of the bar intervening between individual projections in the same series, the projections at one of said edges being intermediate those at the opposite edge.

4. A re-inforcing bar for concrete construction, provided at each of its edges with a series of lateral projections transverse to the plane of the bar, the projections at one of said edges extending across the face of the bar beyond the line of the inner ends of the projections at the opposite edge of the bar.

5. A re-inforcing bar for concrete construction, provided at each of its edges with a series of lateral projections transverse to the plane of the bar, the projections at one of said edges extending across the face of the bar beyond the line of the inner ends of the projections at the opposite edge of the bar, each projection of each series extending in a direction opposite to that of the next adjacent member of its series.

6. A re-inforcing bar for concrete construction, provided at each of its edges with a series of lateral projections transverse to the plane of the bar, the projections each extending more than half way across the face of the bar.

7. A re-inforcing bar for concrete construction, provided at each of its edges with a series of lateral projections transverse to the plane of the bar, the projections each extending more than half way across the face of the bar and each projection of each series extending in a direction opposite to that of the next adjacent member of its series.

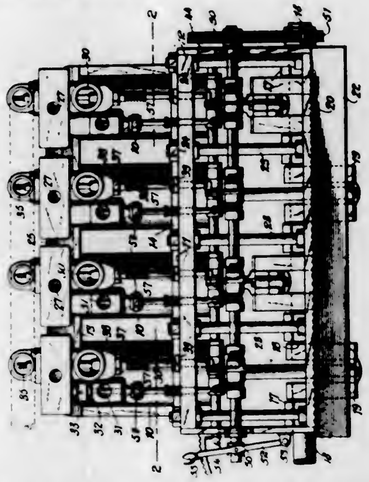
8. A re-inforcing bar for concrete construction whose edges lie in two substantially parallel planes, and provided at each of its edges with a series of lateral projections transverse to the plane of the bar, the projections at one edge of said bar extending across the face of the bar beyond the line of the inner ends of the projections at the opposite edge of said bar.

9. A re-inforcing bar for concrete construction, having edges lying in two substantially parallel planes, and provided at each of its edges with a series of curved lateral projections transverse to the plane of said bar, said bar having flat portions in the plane of the bar intervening between the individual projections of each series, the projections of each series extending across the face of said bar beyond the line of the inner ends of the projections of the series at the opposite edge of the bar, and each projection of each series extending laterally in a direction opposite to that of the next adjacent member of the series.

10. A re-inforcing bar for concrete construction whose edges lie in two substantially parallel planes, and provided at each of its edges with a series of concavo-convex lateral projections transversed to the plane of the bar, said bar having flat portions at its edges and in the plane of the bar and intervening between individual projections of the same series, the projections at one of said edges being intermediate those at the opposite edge.

11. A re-inforcing bar for concrete construction, provided at each of its edges with a series of concavo-convex lateral projections transversed to the plane of the bar, the projections at one of said edges extending across the face of the bar beyond the line of the inner ends of the projections at the opposite edge of the bar.

857,672. VALVE-GEAR FOR EXPLOSION-ENGINES. JOHN V. RICE, Jr., Bordentown, N. J. Filed June 6, 1904. Serial No. 211,301.



Claim.—1. In a valve for a gas engine, the combination with one or more cylinders, of supply and exhaust valves, stems depending therefrom, a rotating shaft adapted to be shifted longitudinally, means for actuating same, cams carried by said shaft, a spring pressed cam between said cams, a non-rotatable shaft adjacent said rotating shaft, means carried by said shaft for operating the stems, said means being actuated by said cams.

2. In a valve for a gas engine, the combination with one or more cylinders, of supply and exhaust valves, stems depending therefrom, a rotating shaft adapted to be shifted longitudinally, means for actuating same, cams carried by said shaft, a spring pressed cam adjacent thereto, a non-rotatable shaft adjacent said rotating shaft, means carried by said shaft for operating the stems, said means being actuated by said cams.

3. In a valve for a gas engine, the combination with one or more cylinders, of supply and exhaust valves, stems depending therefrom, a rotating shaft adapted to be shifted longitudinally, means for actuating same, cams carried by said shaft, a spring pressed cam, a non-rotatable shaft, adjacent said rotating shaft, depending rocking arms carried by said shaft, said rocking arms being actuated by said cams on the shifting of said rotatable shaft, and other arms carried by said non-rotatable shaft between the hubs of said depending arms.

4. In a valve for a gas engine, the combination with one or more cylinders, of supply and exhaust valves, stems depending from same, a rotating shaft beneath same, means for driving said shaft, cams secured to said shaft, a spring-pressed cam carried between said cams, and means bearing on said fixed cams and operating the valve stems.

5. In a valve for a gas engine, the combination with one or more cylinders, of supply and exhaust valves, stems depending from same, a rotating shaft beneath same, means for driving said shaft, cams secured to said shaft, a spring-pressed cam carried between said cams, rocking arms operating the supply-valve stems and actuated by said fixed cams, and other arms operating the exhaust-valve stems and actuated by the spring-pressed cam.

6. In a valve for a gas engine, the combination with one or more cylinders, of supply and exhaust valves, stems depending from same, a non-rotatable shaft, rocking arms carried by said shaft and actuating said stems, a rotating shaft beneath the stems, said shaft being adapted to be shifted longitudinally, means for driving the shaft, means for actuating the supply valve stem operating rocking arms, and spring-pressed means on the shaft for operating the exhaust valve stem operating rocking arms during the longitudinal movements of said shaft.

7. In a valve for a gas engine, the combination with one or more cylinders, of supply and exhaust valves, stems depending from same, a rotating shaft beneath the stems and adapted to be shifted longitudinally, means for driving same, cams carried by said rotating shaft, a non-rotatable shaft, means bearing on said cams for actuating the stems, said means being carried by said non-rotatable shaft and consisting of rocking arms actuating the exhaust-valve stems, and other arms actuating the supply-valve stems, said latter arms being provided with hubs straddling the hubs of the exhaust-valve operating arms and having depending arms carrying rollers.

8. In a gas engine, the combination with one or more cylinders, of a flange or web uniting the same and having perforations, valve stems playing through the perforations, a shaft running the length of the engine, rocking arms loosely carried by the shaft, cams actuating series of arms and valve stems, spring pressed cams actuating other series of arms and valve stems, a rotating shaft carrying the cams and adapted to be shifted longitudinally, and having a spline at one end, a wheel on the rotating shaft and having a groove in which plays said spline, means for driving the wheel, a loose collar on the other end of the shaft and between permanent washers, and a lever adapted to control the loose collar to shift the rotating shaft.

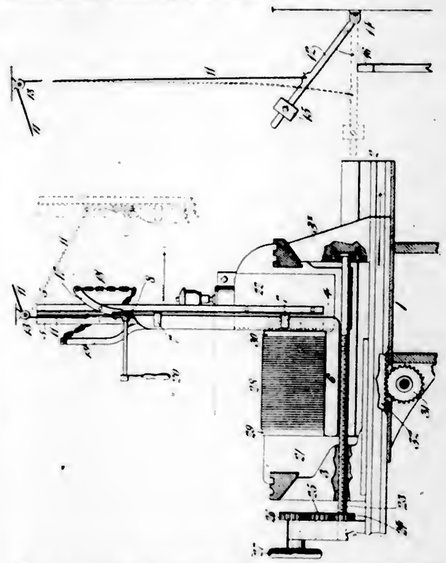
857,673. DEVICE FOR HANDLING MATERIAL. THOMAS B. RICE, Jr., Philadelphia, Pa. Filed Feb. 14, 1907. Serial No. 357,347.

Claim.—1. In a counterbalancing device for work on a traveling carriage of a machine, a support for the work capable of traveling with said carriage, means connected therewith for counterbalancing the support and the work and capable of movement to lift the work, means for holding said support in its operative position, and means operated by the movement of the carriage for releasing said means.

2. In a counterbalancing device for work on a traveling carriage of a machine, a support for the work capable of traveling with said carriage, means connected therewith for counterbalancing the support and the work and capable of movement to lift the work, a latch for holding said support in its lowermost position and means operated by the movement of the carriage for releasing such latch.

3. In a counterbalancing device for work on a traveling carriage of a machine, a support for the work capable of traveling with said carriage, adjustable means connected therewith for counterbalancing the support and the work and capable of movement to lift the work, a latch for holding said support in its lowermost position and means operated by the movement of the carriage for releasing such latch.

4. In a counterbalancing device for work on a traveling carriage of a machine, a movable support, capable of traveling with the carriage, a weight in suitable connection with said support, guides for said support, means for holding said support in lowered position, and means for automatically releasing said locking means.



5. In a counterbalancing device for work on a traveling carriage of a machine, a movable support, capable of traveling with said carriage, guides therefor, a connecting rod for said support, a guide for said connecting rod, a weight suitably connected to said support capable of movement to lift the work and the support, and a pivoted latch adapted to engage said support when in lowered position.

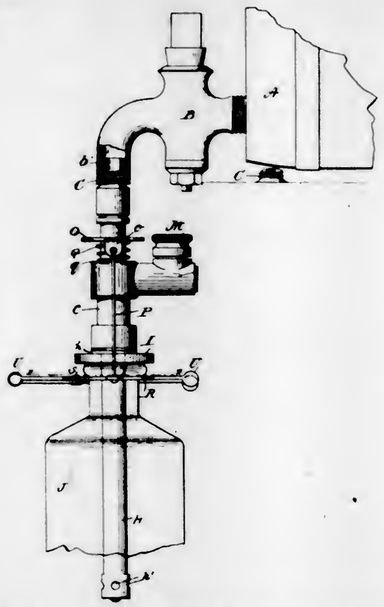
6. In a counterbalancing device for work on a traveling carriage of a machine, a movable support, capable of traveling with the carriage, guides therefor, a connecting rod for said support, a guide for said connecting rod, a weight suitably connected to said support, a pivoted latch adapted to engage said support when in lowered position, and means for releasing said latch automatically.

7. In a counterbalancing device for work on a traveling carriage of a machine, a support, guides therefor, a connecting rod for said support, a guide for said connecting rod, a weight in suitable connection with said connecting rod and adapted to normally hold said support in elevated position, a latch adapted to engage with said support when in lowered position to hold the same, and a cord or cable connected with said latch and to a suitable stationary point for automatically releasing said latch.

857,674. BOTTLE-FILLING APPARATUS. JOHN C. A. RIECKE, Baltimore, Md., assignor, by direct and mesne assignments, of one-fourth to Harry Hamburger, one-fourth to Philip Hamburger, Jr., and one-half to Mark Hamburger, Baltimore, Md. Filed Dec. 15, 1905. Serial No. 291,934.

Claim.—1. In a bottle filling device, a filling tube, a detachable extension therefor having an internal valve at its lower end surrounding a discharge opening, a valve stem in the detachable extension, a shoulder on the valve stem, a spring seated between the shoulder and the end of the tube, whereby the valve stem is normally projected, a valve on the stem, a filling block attached to the valve stem and slidable in the discharge opening of the detachable extension, a valve actuating member slidable on the detachable extension, the said filling block having its

lower end secured to said valve actuating member, and a flange on the valve actuating member whereby pressure on the receptacle is communicated to the valve actuating member.

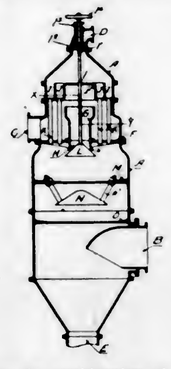


2. In a bottle filling device, a filling tube, a detachable extension therefor having an internal valve at its lower end surrounding a discharge opening, a valve stem in the detachable extension, a shoulder on the valve stem having peripheral recesses, a spring seated between the shoulder and the end of the tube whereby the valve stem is normally projected, a valve on the stem having perihperal recesses, a filling block attached to the valve stem and slidable in the discharge opening of the detachable extension, a valve actuating member slidable on the detachable extension; the said filling block having its lower end secured to said valve actuating member, and a flange on the valve actuating member whereby pressure on the receptacle is communicated to the valve actuating member.

857,675. CONDENSER. FRANK C. ROBERTS, Philadelphia, Pa. Filed Mar. 23, 1907. Serial No. 364,173.

Claim.—1. In a condenser, the combination of a condensing vessel, a partition dividing said vessel into an upper and lower chamber, one or more steam or vapor inlet connections leading to the lower chamber, one or more water outlet connections leading from the lower chamber, one or more water inlet connections leading to the upper chamber, one or more air outlet connections leading from the upper chamber, a centrally located water opening in said partition for the passage of water from the upper chamber to the lower chamber, one or more openings located around said water opening and in said partition, providing communication for the passage of air and vapor from the lower to the upper chamber, a cone located concentrically in said water opening, means within the upper chamber whereby the height of water above said opening will increase or decrease according as the quantity of water to be discharged through said water opening is increased or decreased and means for raising and lowering said cone.

2. In a condenser, the combination of a condensing vessel, a partition dividing said vessel into an upper and a lower chamber, one or more steam or vapor inlet connections leading to the lower chamber, one or more water outlet connections leading from the lower chamber, one or more water inlet connections leading to the upper chamber, one or more air outlet connections leading from the upper chamber, a centrally located water opening in said partition for the passage of water from the upper chamber to the lower chamber, one or more openings located around said water-opening and in said partition providing communication for the passage of air and vapor from the lower chamber to the upper chamber and for the passage of water from the upper chamber to the lower chamber, a cone located concentrically in said water opening, means within the upper chamber whereby the height of water above said water opening will increase or decrease according as the quantity of water to be discharged through said water opening is increased or decreased and means for raising and lowering said cone.



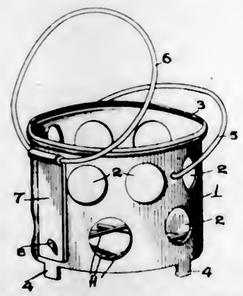
3. In a condenser, the combination of a condensing vessel, a partition dividing said vessel into an upper and a lower chamber, one or more steam or vapor inlet connections leading to the lower chamber, one or more water outlet connections leading from the lower chamber, one or more water inlet connections leading to the upper chamber, one or more air outlet connections leading from the upper chamber, a centrally located water opening in said partition for the passage of water from the upper chamber to the lower chamber, one or more annular compartments in said upper chamber open at the top, one or more tubes open to said annular compartments and providing communication between said annular compartment or compartments and said lower chamber, a cone located concentrically in said water opening, means within the upper chamber whereby the height of water above said water opening will increase or decrease according as the quantity of water to be discharged through said water opening is increased or decreased and means for raising and lowering said cone.

4. In a condenser, the combination of a condensing vessel, a partition dividing said vessel into an upper and a lower chamber, one or more steam or vapor inlet connections leading to the lower chamber, one or more water outlet connections leading from the lower chamber, one or more water inlet connections leading to the upper chamber, one or more air outlet connections leading from the upper chamber, a centrally located water opening in said partition for the passage of water from the upper chamber to the lower chamber, one or more openings located around said water opening and in said partition providing communication for the passage of air and vapor from the lower to the upper chambers, a cone located concentrically in said water opening, means within the upper chamber whereby the height of water above said water opening will increase or decrease according as the quantity of water to be discharged through said water opening is increased or decreased, means for raising and lowering said cone, means within the upper chamber whereby an excess of water over that discharged through said water opening in said partition is caused to pass from the upper to the lower chamber through said openings in said partition located around said water opening.

5. In a condenser, the combination of a condensing vessel, a partition dividing said vessel into an upper and a lower chamber, one or more steam or vapor inlet connections leading to the lower chamber, one or more water outlet connections leading from the lower chamber, one or more water inlet connections leading to the upper chamber, one or more air outlet connections leading from the upper chamber, a centrally located water opening in said partition for the passage of water from the upper chamber to the lower chamber, one or more openings located around said water opening and in said partition providing communication for the passage of air and vapor from the lower chamber to the upper chamber and for the passage of water from the upper chamber to the lower chamber, a cone located concentrically in said water opening, means within the upper chamber whereby the height of water above said water opening will increase or decrease according as the quantity of water to be discharged through said water opening is increased or decreased, means for raising and lowering said cone, means within the upper chamber whereby an excess of water over that discharged through said water opening in said partition is caused to pass from the upper chamber to the lower chamber through said openings in said partition located around said water opening.

6. In a condenser, the combination of a condensing vessel, a partition dividing said vesssel into an upper and a lower chamber, one or more steam or vapor inlet connections leading to the lower chamber, one or more water outlet connections leading from the lower chamber, one or more water inlet connections leading to the upper chamber, one or more air outlet connections leading from the upper chamber, a centrally located water opening in said partition for the passage of water from the upper chamber to the lower chamber, one or more annular compartments in said upper chamber open at the top, one or more tubes open to said annular compartments and providing communication between said annular compartment or compartments and said lower chamber, a cone located concentrically in said water opening, means within the upper chamber whereby the height of water above said water opening will increase or decrease according as the quantity of wafer to be discharged through said water opening is increased or decreased, means for raising and lowering said cone, means within the upper chamber whereby an excess of water over that discharged through said water opening in said partition is caused to pass from the upper to the lower chamber through one or more of said tubes.

857,676. COFFEE-MAKING DEVICE. CHARLES S. ROGERS, Hot Springs, Ark. Filed Aug. 2, 1906. Serial No. 328,944.



Claim.—1. The herein described device for making coffee, consisting of a perforated casing adapted to be inserted into a cooking utensil, a sheet of foldable fabric adapted to contain the coffee, and a band pivoted below the top edge of said casing and on the exterior thereof, adapted to be located around and removed from the top portion of the same for retaining and releasing the fabric; substantially as specified.

2. The herein described device for making coffee, consisting of a perforated casing adapted to be inserted into a cooking utensil, a sheet of foldable fabric adapted to contain the coffee, a band pivoted below the top edge of said casing and on the exterior thereof, adapted to be located around and removed from the top portion of the same for retaining and releasing the fabric, and a handle pivoted to said casing; substantially as specified.

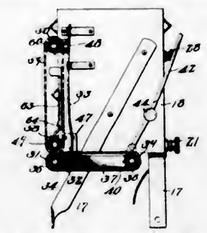
3. The herein described device for making coffee, comprising a perforated casing, a fabric for holding the coffee, a resilient plate secured to said casing, and a retaining band carried by said plate and adapted to pass over the top portion of said casing for retaining the fabric; substantially as specified.

4. The herein described device for making coffee, comprising a perforated casing, a fabric for holding the coffee, a resilient plate secured to said casing, a retaining band carried by said plate and adapted to pass over the top portion of said casing for retaining the fabric, and a reticulated bottom for said casing; substantially as specified.

5. The herein described device for making coffee, comprising a casing, a foldable fabric adapted to be superimposed on the top edge of said casing, a bearing carried by said casing, and a retaining band carried by said bearing and adapted to pass over the top edge of said casing for retaining the fabric and uniting the flaps thereof, thereby converting the same into a closed bag; substantially as specified.

6. The herein described device for making coffee, consisting of a perforated casing adapted to be inserted into a cooking utensil, a rib formed around the top edge of said casing, a sheet of foldable fabric adapted to contain the coffee, and a band pivoted below the top edge of said casing and on the exterior thereof, adapted to be located around and removed from the top portion of the same for retaining and releasing the fabric; substantially as specified.

857,677. PAPER AND ENVELOP FEEDING ATTACHMENT FOR TYPE-WRITERS. SAMUEL D. RUTH, Beatrice, Nebr. Filed Dec. 29, 1905. Serial No. 293,803.



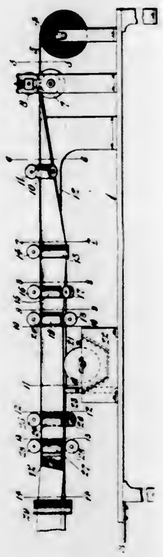
Claim.—1. In a feeding attachment for typewriting machines, a casing, feed rollers for discharging articles therefrom, a gear on the shaft of one of the feed rollers, an adjustable frame pivotally mounted on the shaft and arranged to swing in a vertical plane, a short shaft at the free end of said frame, a driven gear carried by said short shaft, and a sprocket wheel and link belt connection between the short shaft and the feed roller shaft, whereby movement may be imparted to said feed rollers.

2. In a device of the class described, the combination with a casing having a discharge opening, feed rollers pivoted adjacent to said opening, a shaft carrying one of said feed rollers, a sprocket wheel on said shaft, a frame pivoted to the shaft and provided at its free end with a short shaft, a sprocket wheel and a gear wheel carried by the short shaft, a link belt connecting the two sprocket wheels, a rod pivoted to the free end of the frame, a lug carried by the casing and having an opening for the passage of the rod to permit adjustment of the gear wheel into and out of operative position, and means for locking said rod to hold the frame in any adjusted position.

3. In a device of the class specified, the combination

with a casing having a discharge slot, of feed rollers adjacent to the slot, shafts carrying said feed rollers, means for revolving one of said shafts, a pair of discharge rollers arranged at the rear of the casing and projecting through openings formed in the wall thereof, shafts carrying the discharging rollers, a link belt connection between the driven feed roller and the lower discharging roller, a loose sprocket wheel carried by the shaft of the lower discharging roller, and clutching means for engaging and disengaging said shaft and sprocket wheel, a sprocket wheel on the shaft of the upper discharging roller, and a link belt connecting said sprocket wheels.

857,678. MACHINE FOR MAKING TUBES. FRANK SCHAFER, Philadelphia, Pa. Filed Feb. 11, 1902. Serial No. 93,522.



Claim.—1. In a tube making machine, means for supplying a continuous strip of material, devices for scoring said strip of material longitudinally, means for bending said scored strip along the said scores to form flaps, means for applying adhesive material to the outer face of one of the edge flaps, means independent of the bending means for holding the outer flap from contact with the adhesive-applying means, means for pressing the other edge flap upon the outer face of the flap to which the adhesive material has been applied for forming a tube, means for flattening out the said tube after the overlapping portions have been caused to adhere, means for applying the adhesive material to the exterior of the tube, means for applying frictional material to said adhesive material, and means for cutting said tube into sections after the tube has been subjected to the operations of the above mentioned instrumentalities.

2. In a tube making machine, a rigid longitudinal former, means for scoring and feeding a strip of material thereto, oppositely inclined means for giving the initial bend to the strip, means embodying an independent roller for each side for bending the strip around all of the sides of the former, an adhesive-applying device, means independent of the bending means for holding the outer flap out of contact with the adhesive-applying device, means including an inclined roller for bending the outer flap and pressing the adjacent faces of the flaps firmly together.

3. In a tube making machine, a rigid longitudinal former, means for feeding a strip thereto and means for bending the strip around all the sides of the former, means for applying adhesive material to the outer face of one of the edge flaps of the strip, means independent of the bending means for holding the outer flap away from the adhesive-applying means as the latter applies the adhesive-material to the inner flap and means for pressing the other edge flap upon said flap to which the adhesive material has been applied.

4. In a tube making machine, means for feeding a strip, a grooved roll over which the strip passes, rotatable scoring disks situated opposite the grooves of said roll and between which and said rolls the strip passes, a rigid longitudinal former extending from said roller to the point where the tube is completed, inclined rollers arranged upon opposite sides of said former to give the initial bend to the strip, an adhesive-applying device independent rollers arranged upon each side of said former and disposed at intervals throughout its length to bend the strip around all sides of said former and to press its overlapped edges together and means independent of the bending means for holding the outer flap out of contact with said adhesive applying device.

5. In a tube making machine, means for feeding a strip, a grooved roll over which the strip passes, rotatable scoring disks situated opposite the grooves of said roll and between which and said rolls the strip passes, a rigid longitudinal former extending from said roller to the point where the tube is completed, inclined rollers arranged upon opposite sides of said former to give the initial bend to the strip, an adhesive-applying device independent rollers arranged upon each side of said former and disposed at intervals throughout its length to bend the strip around all sides of said former and to press its overlapped edges together, one of the rollers for bending the outer flap of said strip being inclined and means independent of the bending means for holding the outer flap out of contact with said adhesive applying device.

6. In a tube making machine, a feeding device, a scoring device, a rigid former, rollers mounted on inclined shafts for partially bending said strips around said former, rollers disposed at points along and situated over said former, rollers situated on opposite sides of said former and parallel with the sides thereof, means for bending the said strip around all sides of the former, adhesive-applying means and means independent of said rollers and cooperating therewith for holding the outer flap away from the adhesive-applying means while the adhesive material is being applied to the other flap for securing the overlapping portions of the same together.

7. In a tube making machine, a feeding device, a scoring device, a rigid former, means for partially bending a strip around said former, and means independent thereof for bending one of the overlapping portions of the strip against the bottom of said former and consisting of a roller situated over said former, rollers situated on opposite sides thereof and practically parallel therewith, and a roller situated below the former and practically parallel with the bottom surface thereof, and means for overlapping the edges of said strip upon said former and securing the same together and all arranged to act in successive order.

8. In a tube making machine, a rigid former, means independent of each other disposed upon the various sides of the former for bending a strip around all sides of the former while the strip is resting against said former, means for applying adhesive material to the outer face of one edge portion of the strip, an inclined roller for subsequently bending the outer edge of said strip, and means for compressing the last-named edge portion of the strip upon the edge to which the adhesive material has been applied.

9. In a tube making machine, a rigid former, means for bending a strip around the same, a rotatable disk adapted to engage one edge portion of said strip, means for applying adhesive material to said disk, means independent of and cooperating with said disk to hold the opposite edge portion of the strip from contact with said disk, and means for bending the other edge portion of the strip upon the edge portion of the strip to which the adhesive material has been applied while the same is held against said former.

10. In a tube making machine, a rigid former, and means for bending a strip around all sides of the same, means for applying adhesive material to one edge portion of the strip, and a guide independent of the bending means for engaging the other edge portion of the strip situated adjacent said devices for applying adhesive material and adapted to hold said other edge portion of the strip away from the pasting device.

11. In a tube making machine, a rigid former, independent means upon the various sides of the former for partially bending a strip around all sides of the same, means for applying adhesive material to one edge portion of said strip, means for holding the opposite edge portion of the strip away from the pasting device, and means for partially bending the other edge portion toward the same consisting of guide rollers situated on a plurality of sides of the former, and an inclined roller adapted to bend the other overlapping portion partially toward the edge portion to which the adhesive material has been applied.

12. In a tube making machine, a rigid former, independent means upon the various sides of the former for bending a strip around all sides of the same, means for overlapping the edges, means for applying adhesive material to one of the overlapping edge portions thereof, means for holding the opposite edge portion of the strip away from the pasting device, and means for compressing said overlapping portions, consisting of rollers situated on all sides of the former and contracting with the strip.

13. In a tube making machine, a rigid former, extending the whole length upon which the completed tube is formed, independent means upon the various sides of the former for bending a strip around all sides of the same an inclined roller for giving the initial bend to the outer flap adhesive applying means, means for holding the outer flap away from the adhesive applying means while the adhesive material is being applied to the other flap, means for subsequently securing the overlapping edge portions thereof together, and rollers situated on opposite sides of the path of the tube and practically parallel and between which the tube passes, the distance between said rollers being such that said tube is flattened.

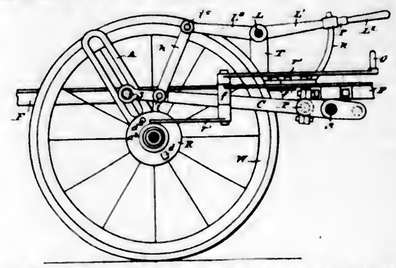
14. In a tube making machine, devices disposed independently upon the various sides of the tube for forming a tube, a rigid former extending to the point where the completed tube is formed, means for applying adhesive material to the surface of a portion only of said completed tube, means for applying frictional material to said adhesive material, and means for severing said tube into sections after the frictional material has been applied, and after the tube has been subjected to the operation of the above mentioned instrumentalities.

15. In a tube making machine, means disposed independently upon the various sides of the tube for forming a tube, a rigid former extending to the point where the completed tube is formed, means for applying adhesive material at intervals to an outer surface of the tube, means for applying frictional material to said adhesive material, means for drying said adhesive and frictional materials and means for severing said tube into sections after the frictional material has been applied and at points situated between the portions to which the adhesive material is applied.

16. In a tube making machine, means disposed independently upon the various sides of the tube for forming a tube, a rigid former extending to the point where the completed tube is formed, means for applying adhesive material thereto, and for supplying frictional material to said adhesive material, and means for directing a current of air against the portion of the tube to which the frictional material is applied after said frictional material has been applied whereby the surplus is removed.

17. In a tube making machine, means disposed independently upon the various sides of the tube for forming a tube, a rigid former extending to the point where the completed tube is formed, means for applying frictional material to a surface thereof, and means for directing an air blast against the said frictional material after it is applied to the tube whereby the surplus is removed.

857,679. VARIABLE-SPEED AND POWER-TRANSMITTING DEVICE. THEODORE SCHEFFLER, Paterson, N. J. Filed Apr. 28, 1906. Serial No. 314,311.



Claim.—1. The combination with an axle, of a casing having an annular receptacle, a split expanding ring carried in said receptacle, a clutch-hub loosely mounted on said axle and having an opening therethrough the sides of which form a fulcrum for a canting clutch-pin, a reverse-hub provided with a like opening therethrough the sides of which are partly parallel with and partly at an angle to, the axle, and a canting clutch-pin passing through the openings of the reverse-hub and clutch-hub into the split-ring casing between the abutting ends of the split-ring, substantially as set forth.

2. In a vehicle, the combination with an axle, of a wheel-hub having an annular receptacle therein, a split expanding ring carried in said receptacle, a clutch-hub loosely mounted on said axle and having an opening therethrough the sides of which form a fulcrum for a canting clutch-pin, a reverse-hub fitted on said clutch-hub adapted to rotate therewith and to be moved horizontally thereon, and provided with a like opening therethrough the sides of which are partly parallel with, and partly at an angle, to the axle, a canting clutch-pin passing through the openings of the reverse-hub and clutch-hub into the wheel-hub between the abutting ends of the split-ring, and means for moving the reverse-hub horizontally on said clutch-hub substantially as set forth.

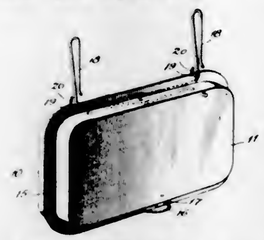
3. In a vehicle, the combination with an axle, of a pair of wheel-hubs each having an annular receptacle therein, a split-expanding ring carried in each of said receptacles, a pair of clutch-hubs having their inner ends abutting each other and their outer ends abutting against said wheel-hubs, an opening passing through each of said clutch-hubs, the sides of said opening forming a fulcrum for a canting clutch-pin, a pair of reverse-hubs fitted on the sleeves of said abutting clutch-hubs adapted to rotate therewith and horizontally movable thereon, like openings through said reverse-hubs, the sides of the openings being partly parallel with, and partly at an angle to the axle, a canting clutch-pin passing through the openings in each set of reverse and clutch-hubs into the wheel-hub between the abutting ends of the split-ring, and means for simultaneously moving said reverse-hubs horizontally on said clutch-hubs, substantially as set forth.

4. In a vehicle, the combination with the axle and a pair of wheel-hubs each having an annular receptacle therein, a split expanding ring in each of said receptacles, a pair of clutch-hubs abutting against said wheel-hubs, a pair of reverse-hubs adapted to rotate with said clutch-hubs and be movable in relation thereto, openings through the reverse-hubs and clutch-hubs, a clutch-pin adapted to pass through said openings in each set of hubs and between the ends of the split ring, and to be held straight or canted in either direction, by the movement of the respective reverse-hubs, a predetermined distance toward or away from the respective clutch-hubs; clutch-levers having sliding blocks, and power transmitting connecting rods

having their reciprocating ends fulcrumed to said sliding blocks, and means for adjusting the position of said sliding blocks in relation to the said clutch-levers to change the speed substantially as set forth.

5. In a vehicle, a clutch-lever device comprising a canting pin and clutch members adapted to operate the driven members of a vehicle, in combination with such driven members and means for engaging said canting-clutch-pin to drive the members of the vehicle in the direction desired, and to release clutch-pin so as not to cant, causing the said members of the vehicle to revolve loosely on the axle thereby stopping the vehicle without stopping the engine, substantially as set forth.

857,680. RECEIPTACLE FOR ANTISEPTIC BANDAGES. OTTO C. SCHULZ, Chicago, Ill., assignor to Bauer & Black, Chicago, Ill., a Corporation of Illinois. Filed Nov. 22, 1906. Serial No. 344,541.



Claim.—1. A box for a first aid package comprising two members each having a flat outstanding flange adapted to rest one upon the other, a binding strip to inclose said flanges and securely lock the members together, and a divided ring attached to the strip adjacent to one end thereof to facilitate the removal of the strip from the box, said ring being arranged so that its ends may be engaged with the other end of said strip.

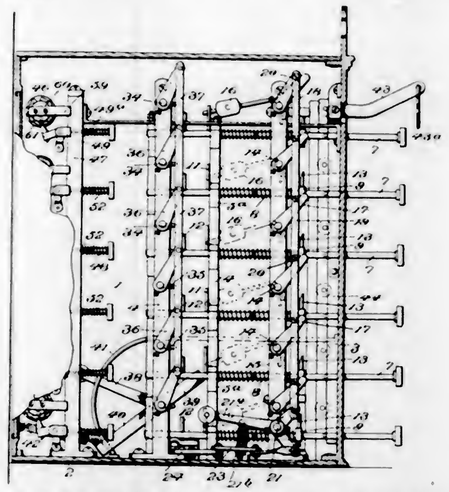
2. A box for a first aid package comprising two members each having a flat flange adapted to rest one upon the other, a binding strip to inclose said flanges and securely lock the members together, and two suspension hooks loosely arranged in holes in the strip so that they may be folded down upon the box and alongside the strip and flanges for shipment or swung upward for use, said hooks being flattened or indented to prevent removal from the strip.

857,681. VOTING-MACHINE. OSCAR E. SEIBEL, Bloomington, Ill. Filed June 15, 1906. Serial No. 321,921.

Claim.—1. In a vote casting machine, the combination of a push rod arranged for a definite traverse and adapted to be pushed in for a portion of its traverse by the voter, means for locking said push rod at such point, independently operable means for completing the traverse of the push rod, counting mechanism arranged to be actuated by said completion of the traverse of the push rod, and means for releasing said rod.

2. In a voting machine, the combination of an automatically retracted push rod arranged for a definite traverse and adapted to be pushed in by the voter for a portion only of its traverse, means for preveting the further actuation of the push rod by the voter, means for automatically locking the push rod at such point, independently operable vote casting mechanism adapted to release said limiting means to push the rod farther in, counting mechanism adapted to be actuated by the push rod upon its said further inward movement, and means for releasing said rod.

3. In a voting machine, the combination of an automatically retracted push rod arranged for a definite traverse and adapted to be pushed in by the voter for a portion only of its traverse, means for preventing the further or subsequent actuation of said push rod by the voter, means for automatically locking the push rod at such point, independently operable vote casting mechanism adapted to release said limiting means to push the rod farther in, counting mechanism adapted to be actuated by said further inward movement of the push rod, means for releasing said rod, and means whereby the said releasing means locks the vote casting mechanism after a single actuation thereof.



4. In a voting machine, the combination of a rod adapted for actuation by the voter, means for automatically locking said rod after actuation by the voter, counting mechanism, vote casting mechanism arranged to act upon said rod to cause the actuation of the counting mechanism by the rod, means for automatically locking the vote casting mechanism after a single actuation of the same, and means for releasing said rod, the said releasing means being arranged to also release the locking means of the vote casting mechanism.

5. In a voting machine, the combination of a plurality of horizontally extending series of automatically retracted push rods, said rods being independently movable one from the other and being adapted to be pushed in by the voter, a series of lock shafts arranged horizontally one in proximity to each horizontal series of push rods, said lock shafts being provided with lugs and the push rods being provided with lugs coacting with the lugs of the shafts, means tending to maintain said shafts with their lugs in the path of movement of the lugs of the push rods, said means permitting the shafts to be rocked by the lugs of the push rods whereby said lugs may pass their coacting lugs and thereby lock the push rods in a pushed in position, means connected to all the said lock shafts for rocking the same simultaneously in a direction to release said push rods, and means for recording the votes indicated by the rods that are pushed in.

6. In a voting machine the combination of a plurality of horizontally extending series of automatically retracted push rods, said rods being independently movable one from the other and being adapted to be pushed in by the voter, a series of lock shafts arranged horizontally one in proximity to each horizontal series of push rods, said lock shafts being provided with lugs and the push rods being provided with lugs coacting with the lugs of the shafts, means tending to maintain said shafts with their lugs in the path of movement of the lugs of the push rods, said means permitting the shafts to be rocked by the lugs of the push rods whereby said lugs may pass their coacting lugs and thereby lock the push rods in a pushed in position, each lock shaft being provided with a crank, a releasing frame adapted to move said cranks in one direction only, and means for actuating said frame, and for recording the votes of those push rods that have been pushed in.

7. In a voting machine the combination of a plurality of horizontally extending series of automatically retracted push rods, said rods being independently movable one from the other and being adapted to be pushed in by the voter, a series of lock shafts arranged horizontally one in proximity to each horizontal series of push rods, said lock shaft being provided with lugs and the push rods being provided with lugs coacting with the lugs of the shafts, means tending to maintain said shafts with their lugs in the path of movement of the lugs of the push rods, said means permitting the shafts to be rocked by the lugs of the push rods whereby said lugs may pass their coacting lugs and thereby lock the push rods in a pushed in position, each shaft being provided with a crank at one end, a releasing frame consisting of spaced bars and cross pins, the bars straddling said cranks the cross pins engaging with said cranks and adapted to move said cranks in one direction only, means for actuating said releasing frame, and means for recording the votes of those rods that have been pushed in.

8. In a voting machine, the combination of a push rod arranged for a definite traverse and adapted to be pushed in a portion of such traverse by the voter, means for automatically locking said push rod at such point, means for releasing said push rod, means for automatically retracting said push rod, vote casting mechanism operable independently of the locking mechanism, counting mechanism, means whereby the vote casting mechanism will cause the completion of the traverse of the rod and a consequent actuation of the counting mechanism, and means whereby the rod locking mechanism will lock said vote casting mechanism after a single operation thereof.

9. In a voting machine, the combination of a push rod arranged for a definite traverse and adapted to be pushed in a portion of such traverse by the voter, means for automatically locking said push rod at such point, means for releasing said push rod, means for automatically retracting said push rod, vote casting mechanism operable independently of the locking mechanism, counting mechanism, means whereby the vote casting mechanism will cause the completion of the traverse of the rod and a consequent actuation of the counting mechanism, means whereby the rod locking mechanism will automatically lock the vote casting mechanism after a single operation thereof, and means whereby the rod releasing mechanism will automatically release the vote casting mechanism.

10. In a voting machine, the conbination of a push rod arranged for a definite traverse and adapted to be pushed in a portion of such traverse by the voter, means for automatically locking the push rod at such point, vote casting mechanism operable independently of the rod locking mechanism, counting mechanism, means whereby the vote casting mechanism will cause the push rod to complete its traverse and actuate the counting mechanism, a latch arm embodied in the vote casting mechanism and a lever locking device adapted to be automatically interposed in the return path movement of such latch arm, said lever locking device being arranged for actuation by the rod locking mechanism.

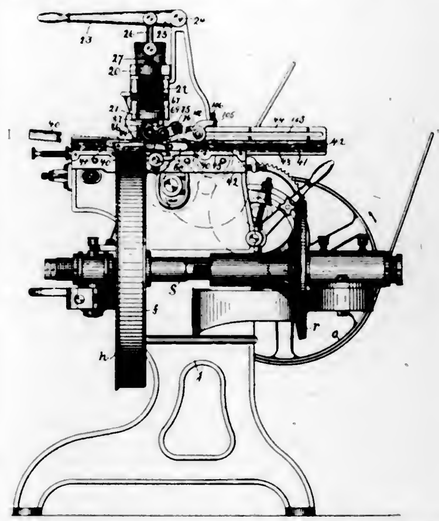
11. In a voting machine the combination of a push rod adapted to be actuated by the voter, a counting mechanism, vote casting mechanism arranged to actuate the counting mechanism for a rod that has been pushed in, said vote casting mechanism being operable independently of the voter, a locking mechanism arranged to lock the pushed in rod automatically, said locking mechanism being manually operable to release said rod and arranged at one side of the machine while the vote casting mechanism is operable from the opposite side of the machine, means for automatically locking the vote casting mechanism after a single operation thereof, and means whereby the manual operation of the rod releasing mechanism will also release said vote casting mechanism.

12. In a voting machine, the combination of a rod arranged for a definite traverse and adapted to be pushed in by the voter for a portion of such traverse, means for automatically locking such push rod at such point such push rod being provided with two spaced apart pins, counting mechanism, a vote casting mechanism including a shaft provided with a finger designed to enter the spaces between said pins and to contact with one of said pins to draw the rod to the completion of its traverse, and to effect the actuation thereby of the counting mechanism.

13. In a voting machine the combination of a rod arranged for a definite traverse and adapted to be pushed in by the voter for a portion of such traverse, means for locking the rod at such point against withdrawal, counting mechanism, said rod being provided with two pins one of which is higher than the other, the higher pin serving as a stop to limit the inward movement of said rod at the portion of its traverse as set forth, and a voting casting mechanism including a shaft provided with a finger adapted to contact with the other finger of said rod and complete the traverse of the rod into operative connection with the counting mechanism.

14. In a voting machine the combination of counting mechanism including an actuating rod therefor, a push rod arranged for a definite traverse and adapted to be pushed in by the voter until its inner end is in contiguous relation to said actuating rod, means for limiting the inward movement of said push rod by manual actuation, and a vote casting mechanism arranged to complete the traverse of said rod and to cause the end of the latter to push the actuating rod of the counting mechanism.

857,682. SCARFING-MACHINE. CHARLES F. STACKPOLE, Lynn, Mass., assignor, by mesne assignments, to The Turner Tanning Machinery Company, Boston, Mass., a Corporation of Maine. Filed Feb. 15, 1904. Serial No. 193,532.



Claim.—1. In a machine of the class described, in combination, a bed roll, a ring roll co-operating therewith, a gage roll movable toward and from said ring roll, an endless band or belt knife adapted to cut the material as it is fed from between the said gage roll and said ring roll, means to move said knife, an inclined gage arm or bar, a rack bar to which said gage arm is secured, a frame in which said rack bar is supported, a driving gear to move said rack bar in one direction, a shaft upon which said gear is mounted, levers to support said shaft, gearing to connect said driving gear with the gage roll, a second gear to reverse the motion of said rack bar, a shaft on which said reversing gear is mounted, levers pivoted upon the shaft of the said driving gear and in which the shaft of the reversing gear is supported, a cam movable with the rack bar to disengage the driving gear from said rack bar, a lever to disengage the reversing gear from said rack bar, a device movable with said rack bar to actuate said disengaging lever, a spring rod or arm to hold the

reversing gear in its disengaged position, and a stop to limit the reverse movement of said rack bar, substantially as described.

2. In a machine of the class described, in combination, a rotatable support for the material to be cut, a rotatable gage roll co-operating with said support and movable toward and from the same, a movable knife to cut the material fed from between said support and gage roll, an inclined gage bar or arm to control the movement of said gage roll toward said support, a carrier for said gage bar or arm, means to drive said carrier in one direction in a plane substantially at right angles to the plane in which said gage roll is moved, means to move said carrier in a reverse direction, means to disengage said driving mechanism from said carrier, means to disengage said reversing mechanism from said carrier, and a stop to arrest the carrier in its movement in the reverse direction, substantially as described.

3. In a machine of the class described, in combination, a bodily movable gage roll, a support for the material located below said gage roll, and a knife to cut the material, an inclined gage controlling the bodily movement of the gage roll toward said support according to the cut made in said material by said knife, and mechanism to move said gage in a path substantially at right angles to the path in which the gage roll is moved, substantially as described.

4. In a machine of the class described, in combination, a rotatable gage roll to engage the material, means to effect bodily movement of said gage roll, a knife to cut said material, a gage to control the bodily movement of the gage roll toward said knife, and mechanism driven from said gage roll to effect movement of said gage in a path at an angle to the path in which the gage roll is moved bodily, substantially as described.

5. In a machine of the class described, in combination, a rotatable bed roll, a ring roll co-operating therewith, a rotatable gage roll located above and movable toward and from said ring roll, means to move said gage roll toward said ring roll, a movable endless knife adapted to cut the material as it is fed from between said gage roll and ring roll, means to move said knife, a gage movable in a direction substantially at right angles to that in which the gage roll is moved to regulate the downward movement of said gage roll according to the cut in the material made by the said knife, power operated mechanism to move said gage in opposite directions, and means to automatically reverse the movement of said gage when it has reached substantially the end of its movement in opposite directions, substantially as described.

6. In a machine of the class described, in combination, a bed roll, a ring roll co-operating therewith, a gage roll movable toward and from said ring roll, an endless knife arranged substantially on a level with said ring roll and engaging the under side of the material interposed between said gage roll and said ring roll, means to move said knife, an inclined gage to control the movement of said gage roll toward said ring roll, a carrier for said gage, means to drive said carrier in one direction in a plane substantially at right angles to the plane in which said gage roll is moved, means to move said carrier in a reverse direction, means to disengage said driving mechanism from said carrier, and means to disengage said reversing mechanism from said carrier, substantially as described.

7. In a machine of the class described, in combination, a knife to cut the material, devices between which the material is gripped while being cut by said knife, means to effect bodily movement of one of said devices toward the other, and a gage interposed in the path of movement of said bodily movable device to limit its movement toward the other of said devices according to the cut made by the knife, substantially as described.

8. In a machine of the class described, in combination, a reciprocating gage, a rack bar to which said gage is attached, and mechanism to reciprocate said rack bar, said mechanism comprising a gear to move said rack bar in one direction, a second gear to move said rack bar in the opposite direction, means to rotate said gears, and means to automatically effect engagement of said gears alternately with said rack bar substantially at the end of the movement of said gage in opposite directions, substantially as described.

9. In a machine of the class described, a rack bar provided with a longitudinally extended slot or guideway, a bolt movable in said guideway, an inclined gage bar or arm mounted on said bolt, means to clamp said inclined gage arm to said rack bar to move therewith, and means to move said rack bar, substantially as described.

10. In a machine of the class described, in combination, an inclined gage, a movable carrier to which said gage is secured, mechanism to move said carrier in a substantially horizontal path, means to automatically disengage said mechanism from said carrier when the latter reaches substantially the end of its movement in one direction, mechanism to move said carrier in a reverse direction, and means to automatically disengage said reversing mechanism from said carrier when the latter reaches substantially the end of its movement in the reverse direction, substantially as described.

11. In a machine of the class described, in combination, a gage bodily movable in a substantially horizontal path, mechanism for moving said gage in said path, and means attached to said gage for rendering said mechanism inoperative when the gage has reached substantially the end of its movement in one direction, substantially as described.

12. In a machine of the class described, in combination, a gage bodily movable in a substantially horizontal path, mechanism for moving said gage in said path, and means movable with said gage for rendering said mechanism inoperative when the gage has reached substantially the end of its movement in one direction, mechanism for moving said gage in a reverse direction, and means movable with said gage for rendering said reversing mechanism inoperative when the gage has reached substantially the end of its movement in the reverse direction, substantially as described.

13. In a machine of the class described, in combination, a gage roll movable in a substantially vertical path means to move said gage roll, a gage movable in a substantially horizontal path and controlling the movement of the gage roll in one direction in said vertical path, and mechanism for moving said gage in said horizontal path, substantially as described.

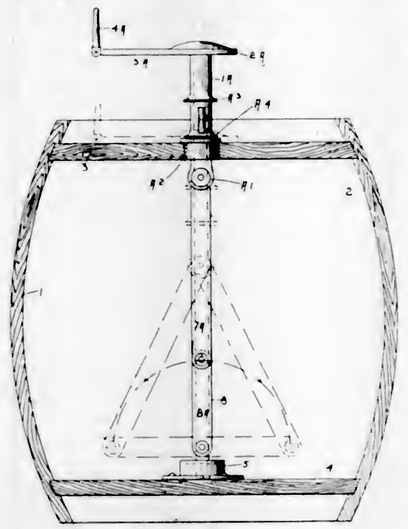
14. In a machine of the class described, in combination, a gage roll movable in a substantially vertical path means to move said gage roll, a gage movable in a substantially horizontal path and opposing the movement of the gage roll in one direction in said vertical path, and mechanism actuated by said gage roll for moving said gage in said horizontal path, substantially as described.

15. In a machine of the class described, in combination a gage roll movable in a substantially vertical path, means to move said gage roll in said vertical path, a gage movable in a substantially horizontal path and opposing the movement of the gage roll in one direction in said vertical path, mechanism for moving said gage in opposite directions in said horizontal path, and means to render said mechanism inoperative to move said gage when the latter reaches substantially the end of its movement in opposite directions, substantially as described.

16. In a machine of the class described, in combination, a bed roll, a ring roll co-operating therewith, a gage roll movable toward and from said ring roll, a movable endless knife adapted to cut the material as it is fed from between said gage roll means to move said knife and ring roll, and a gage movable in a direction substantially at right angles to that in which the gage roll is moved to regulate the movement of the said gage roll toward said ring roll according to the cut made by the knife in said material, substantially as described.

857,683. AGITATOR. LIONEL M. STERN, Cleveland, Ohio. Filed Nov. 28, 1906. Serial No. 345,445.

Claim.—1. In an agitator of the character described, a cask, a longitudinally disposed extensible and contractible rotatory paddle carried by the opposite extremities of the cask, an adjustable longitudinally extensible shaft comprising a member leading out of the cask, provided with a handle, said member having a series of adjusting stops for maintaining the extension of the shaft.



2. In an agitator of the character described, a cask, a longitudinally disposed extensible and contractible rotatory paddle, carried by the head and bottom of the cask, said paddle consisting of an adjustable longitudinally extensible shaft, comprising a member carried by the head of the cask and a member carried by the bottom of the cask and a bearing therefor, the member carried by the head of the cask being provided with an extensible paddle secured at opposite extremities to the bearing carried by the bottom of the cask, and to the member carried by the head of the cask respectively, said latter member being provided with a series of adjusting stops, normally within the cask and a handle without the cask for rotating the paddle.

3. In an agitator of the character described, a cask, provided with an internal socket secured to the bottom thereof, and a removable socket carried by the head of the cask, and a telescopic shaft having a tubular socket carried by the socket in the head and a solid section carried by the socket in the bottom of said cask, an extensible paddle having sections pivoted to the solid portion of the shaft at one of their extremities and sections pivoted at respectively the opposite extremities of the aforesaid sections, and an extremity of the tubular portion of the shaft and a series of adjusting stops normally within the cask carried by the tubular portion of the shaft and a handle at the outer terminal of the said tubular shaft.

4. In an agitator of the character described, adapted to be carried by a cask, a telescopic shaft having a portion of relatively larger diameter and a portion of relatively smaller diameter adapted to play vertically within the former portion, the portion of smaller diameter having a terminal bearing and a socket therefor, an extensible sectional paddle, having its sections pivoted together and to the portion of smaller diameter and to the portion of larger diameter, the portion having the larger diameter being provided with a series of adjusting stops for regulating the extension of the paddle and a split bearing socket adapted to engage said stops together with a terminal handle for the said larger portion of the shaft.

5. In an agitator of the character described and in combination with a cask, a telescopic shaft having one of its telescopic members relatively fixed to the bottom of the cask, a bearing therefor carried by the bottom of the cask, and a split bearing for the other telescopic member, said member being freely longitudinal adjustable, said split socket being carried by the head of the cask, a pivoted extensible paddle, pivoted to and carried by both telescopic members of the shaft, and a series of adjusting stops carried by the free telescopic member for adjusting the longitudinal position of the same.

6. In an agitator of the character described, the combination with a cask, of a telescopic shaft, carrying an extensible paddle, of a bearing socket secured to the bottom of the cask and of a removable split bearing socket carried by the head of the cask, said telescopic shaft having a non-adjustable member having one of its terminals provided with a bearing carried by the fixed socket and said shaft having an adjustable portion slidingly mounted on the free terminal of the non-adjustable portion, the paddle being pivotally carried by the lower bearing, and pivotally carried by the longitudinally adjustable portion of the shaft and a series of adjusting stops carried by the said portion for maintaining the adjustment thereof.

7. In an agitator of the character described, the combination with a cask of a telescopic shaft, carrying a pivoted extensible paddle, of a bearing socket secured to the bottom of the cask and of a removable split bearing socket carried by the head of the cask, said shaft having a non-adjustable member with one of its terminals provided with a bearing, revolubly mounted in the lower fixed socket and the upper portion of the shaft, slidingly mounted on the free terminal of the lower portion and adapted to rotation in the upper split socket, the paddle being pivotally carried by the lower bearing and pivotally carried by the adjustable portion of the shaft, together with a series of adjusting stops, carried by the same, adapted to thrust on the split socket and an integral crank carried by the upper terminal of the adjustable portion of the shaft provided with a hinged handle.

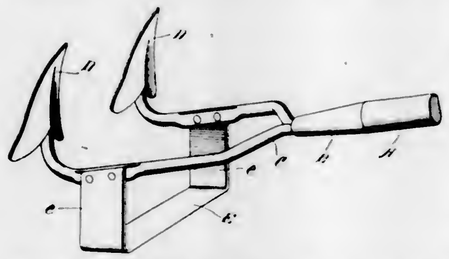
8. In an agitator of the character described, the combination with a cask, of a rotatory telescopic shaft, and a hinged sectional extensible paddle, having terminals of its sections carried thereby within the cask, adapted to longitudinal adjustment, said shaft being carried by the head and bottom of the cask and having an adjustable portion carried by the head of the cask, provided with a removable split bearing, and of a lower restricted bearing, the latter bearing pivotally secured to the lower terminals of the sections of the paddle and provided with a restricting bearing socket secured to the bottom of the cask, an adjustable portion of said shaft being pivotally connected with the upper terminals of the sections of the paddle, and of a series of adjusting stops integrally formed with the adjustable portion, together with an integral crank, carried by the free terminal of the adjustable portion, said crank having a flange, and a pivoted handle carried by the crank.

9. In an agitator of the character described, the combination with a cask, an extensible paddle comprising a telescopic shaft, said extensible paddle consisting of a plurality of respectively lower and upper hinged blades, a lower bearing socket secured to the bottom of the cask, carrying a restricted portion of the shaft, and terminals of the lower blades pivoted thereto, and of an adjustable portion of the shaft carried by the head of the cask, and slidingly mounted on the restricted portion of the shaft having an upper split removable bearing socket in the head of the cask, the terminals of the upper blades of the paddle being carried by the adjustable portion of the shaft and a series of integrally formed stops adapted to rest upon the said split socket and an integrally formed crank having a hinged handle, carried by the outer free terminal of the adjustable portion of the shaft, said crank being formed with an annular sealing cap.

10. In an agitator of the character described, the combination with a cask, of an extensible paddle, comprising a telescopic shaft, said extensible paddle consisting of a plurality of respectively lower and upper hinged blades, and of a lower bearing socket secured to the bottom of the cask, carrying a restricted portion of the telescopic shaft, and terminals of the lower blades pivoted thereto, and an adjustable portion of the shaft consisting of a tube, car-

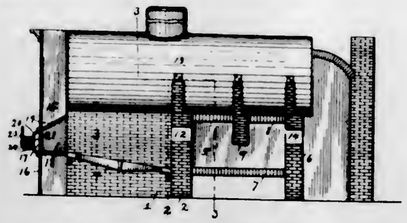
ried by the head of the cask, slidingly mounted on the restricted portion of the shaft and of an upper split removable bearing socket in bearing relation with the tubular portion in the head of the cask, the terminals of the upper blades of the paddle being carried by the tubular portion, and a vent therein together with a series of integral stops and a terminal sealing cap having an extending portion and a hinged handle carried thereby.

857,684. GARDEN IMPLEMENT. CHARLES S. STEVENS, Conneaut, Ohio. Filed Dec. 13, 1906. Serial No. 347,603.



Claim.—A reversible garden tool composed of a handle, a socket, two partly diverging rods having their rear ends fitted into said socket, two pointed cultivator teeth D fixed on the downwardly bent operative ends of said rods and a U-shaped bracing bar E connected to the straight parallel middle parts of said rods and preventing the latter from bending laterally, the middle part of said bar being arranged at an angle to the straight parallel middle parts of said rods and provided with an edge for scraping or weeding when the tool is reversed substantially as set forth.

857,685. FURNACE CONSTRUCTION. FRANK E. STINCHFIELD, Norfolk, Va., assignor of one-half to Curtis P. Smith, Norfolk, Va. Filed Apr. 27, 1906. Serial No. 314,061.



Claim.—1. A smoke consuming furnace comprising a primary combustion chamber, a secondary combustion chamber, means for admitting and directing air in a vortex current through the primary combustion chamber and a baffle located in the second combustion chamber in the path of said current.

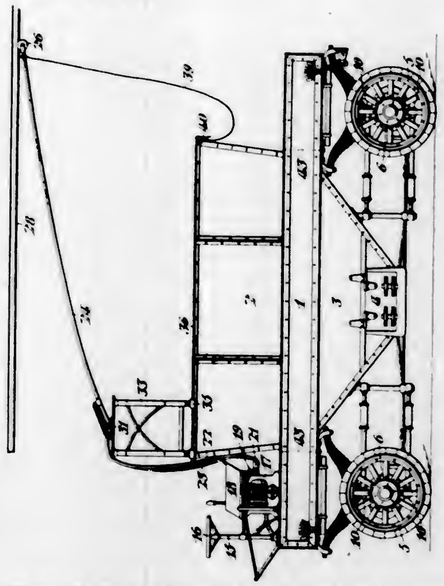
2. A smoke consuming furnace comprising a primary combustion chamber or fire box, a secondary combustion or smoke consuming chamber, means for admitting air in a spirally moving current through the primary combustion chamber or fire box and a baffle located in the secondary combustion or smoke consuming chamber in the path of said current for intercepting and dissipating the carbon particles carried thereby, said baffle being adapted to be heated to incandescence.

3. A smoke consuming furnace comprising a primary combustion chamber, a secondary combustion chamber, a bridge wall separating said chambers, means adapted to give an incoming current of air a spiral movement in the primary combustion chamber and a baffle rearward of said bridge wall for intercepting and dissipating carbon particles carried by said current.

4. A smoke consuming furnace, comprising the combination with a horizontal boiler and an inclosing housing, of a bridge wall beneath said housing dividing the space within the same into a primary combustion chamber and a secondary combustion chamber having communication through said bridge wall, means for admitting and directing air in a vortex current through said primary combustion chamber and means in said secondary combustion chamber for intercepting said current and dissipating the carbon particles carried thereby.

5. A smoke consuming furnace, comprising the combination with a horizontal boiler and an inclosing housing, of a bridge wall beneath said housing dividing the space within the same into a communicating primary combustion chamber and a secondary combustion chamber, means for admitting and directing air in a vortex current through said primary combustion chamber, means in said bridge wall for dividing said current into a plurality of smaller currents and a baffle in said secondary combustion chamber for intercepting said smaller currents and dissipating the carbon particles carried thereby.

857,686. ELECTRICALLY-PROPELLED VEHICLE. RUSSELL THAYER, Philadelphia, Pa. Filed Apr. 4, 1907. Serial No. 366,434.



Claim.—1. In an electrically propelled vehicle which derives its motor current alternately from an external supply system and from a storage battery carried by the vehicle, constructed and arranged to coöperate with a railway system which includes two overhead electrical conductors and parallel subjacent tracks insulated from said conductors; a motor; means maintaining said motor insulated from said tracks; means arranged to removably connect said motor electrically with said overhead conductors; a storage battery; and, means arranged to removably connect said motor electrically with said storage battery, substantially as set forth.

2. In an electrically propelled vehicle which derives its motor current alternately from an external supply system and from a storage battery carried by the vehicle, constructed and arranged to coöperate with a railway system which includes two overhead electrical conductors and parallel subjacent tracks insulated from said conductors; a motor; means maintaining said motor insulated from said tracks; means, comprising means pivoted on the vehicle, arranged to removably connect said motor electrically with said overhead conductors; a storage battery; and means arranged to removably connect said motor electrically with said storage battery, substantially as set forth.

3. In an electrically propelled vehicle which derives its motor current alternately from an external supply system and from a storage battery carried by the vehicle, constructed and arranged to coöperate with a railway system which includes two overhead electrical conductors and parallel subjacent tracks insulated from said conductors; a motor; means maintaining said motor insulated from said tracks; means, comprising two poles independently pivoted and relatively movable on the vehicle, arranged to removably connect said motor electrically with said overhead conductors; a storage battery; and, means arranged to removably connect said motor electrically with said storage battery, substantially as set forth.

4. In an electrically propelled vehicle which derives its motor current alternately from an external supply system and from a storage battery carried by the vehicle, constructed and arranged to coöperate with a railway system which includes two overhead electrical conductors and parallel subjacent tracks insulated from said conductors; a motor; means maintaining said motor insulated from said tracks; means arranged to removably connect said motor electrically with said overhead conductors; a storage battery; means arranged to removably connect said motor electrically with said storage battery; and wheels arranged to support said vehicle independently of said tracks while said motor is in electrical connections with said external supply system, substantially as set forth.

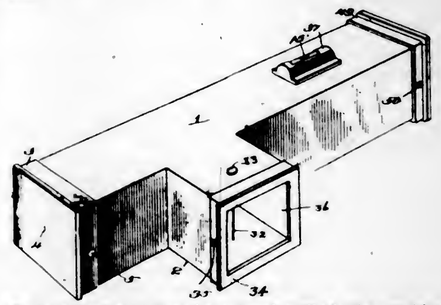
5. In an electrically propelled vehicle which derives its motor current alternately from an external supply system and from a storage battery carried by the vehicle, constructed and arranged to coöperate with a railway system which includes two overhead electrical conductors and parallel subjacent tracks insulated from said conductors; a motor; means maintaining said motor insulated from said tracks; means, comprising means pivoted on the vehicle, arranged to removably connect said motor electrically with said overhead conductors; a storage battery; means arranged to removably connect said motor electrically with said storage battery; and wheels arranged to support said vehicle independently of said tracks while said motor is in electrical connection with said external supply system, substantially as set forth.

6. In an electrically propelled vehicle, which derives its motor current alternately from an external supply system and from a storage battery carried by the vehicle, constructed and arranged to coöperate with a railway system which includes two overhead electrical conductors and parallel subjacent tracks insulated from said conductors; a motor; means maintaining said motor insulated from said tracks; means, comprising two poles independently pivoted and relatively movable on the vehicle, arranged to removably connect said motor electrically with said overhead conductors; a storage battery; means arranged to removably connect said motor electrically with said storage battery; and wheels arranged to support said vehicle independently of said tracks while said motor is in electrical connection with said external supply system, substantially as set forth.

857,687. COMBINATION HAND-LEVEL AND TRIANGLE. WALTER THORBURN, Seattle, Wash. Filed Dec. 7, 1905. Serial No. 290,784.

Claim.—1. In a device of the character described, the combination with a primary and an auxiliary casing, of a removable frame positioned within said primary casing, a reflector carried by said primary casing, wires positioned within said primary and auxiliary casings, a level carried by said primary casing directly above said reflector, a horizontal mirror carried by said frame, and a level carried by said frame.

2. In a device of the character described, the combination with a casing, a level secured upon the outside of said casing, a reflector positioned within said casing beneath said level, of a telescoping frame positioned within said casing, and a transverse level supported upon said frame.

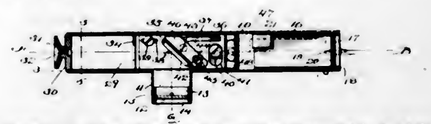


3. In a device of the character described, the combination with a primary and an auxiliary casing, of a telescoping frame carried by said primary casing, said frame comprising a base or bottom plate of the same width as the distance between the inner walls of said casing, a front and a rear end of different widths, a top connecting said ends and tapering throughout its length, a mirror and a level carried by said frame, wires carried by said primary and auxiliary casings, a level carried by said primary casing, and a reflector carried by said primary casing beneath said last mentioned level.

4. In a device of the character described, the combination with a casing, of an adjustable mirror support carried by said casing, said support comprising a stationary, hollow section slitted longitudinally throughout its length, a horizontally movable section provided with a tenon, the tenon positioned within the hollow portion of said stationary section, and, means for adjusting and securing said movable section in an adjusted position.

5. In a device of the character described, the combination with a primary casing, of a mirror supporting frame carried by said primary casing, said frame comprising a base or bottom, ends secured to said base, each end of different widths, and a top connecting said ends and being of varying width throughout its length.

857,688. HAND-LEVEL AND TRIANGLE. WALTER THORBURN, Seattle, Wash. Filed July 11, 1906. Serial No. 325,712.



Claim.—1. In a device of the class described, a sight tube provided with a sight opening at one end, and an objective at the opposite end, an off-set tube extending from the sight tube intermediate its ends, a reflector disposed within the sight tube, and at an angle to reflect through the sight opening a ray of light projected through the off-set tube, and means carried by the tube for determining the longitudinal and transverse horizontal position of the sight tube.

2. In a device of the class described, a sight tube, a plate disposed within the said tube and movable longitudinally thereof, and provided with a slot, an eccentric screw engaged within the slot and arranged to move the plate as the screw is moved rotatably, means to secure the plate at its adjusted position, and a reflector carried by the plate.

3. In a device of the class described, a sight tube, a plate disposed within the sight tube, and movable longitudinally relative thereto, a reflector pivoted upon and movable with the plate, and means for moving the reflector angularly upon its movable pivot.

4. In a device of the class described, a sight tube pro-

vided with an off-set tube, a plate disposed within and movable longitudinally of the sight tube, a reflector pivotally mounted upon the plate and disposed normally to register with the off-set tube, and means to move the reflector angularly upon the pivot.

5. In a device of the class described, a sight tube provided with an off-set tube, a reflector pivotally mounted within the tube, and registering with the off-set tube, a plate arranged to support the reflector and provided with a slot, and an eccentric screw disposed within the slot and arranged to move the plate angularly upon being rotated.

6. In a device of the class described, a sight tube provided with a sight opening at one end, and an object opening at the opposite end, a horizontal and a vertical sight wire spanning the object opening, a tube off set from one side of the sight tube intermediate its ends, and provided with an object opening, a vertical sight wire spanning the object opening of the off-set tube, a spirit level secured to the sight tube adjacent the object end, and provided with a circumferential mark, a reflector secured within the sight tube, and at an angle to reflect to the sight opening the circumferential mark of the spirit level as a continuation of the horizontal sight wire of the object opening, a spirit level disposed within and transversely of the sight tube and in such position that when the tube is horizontal transversely the bubble of the level is in alinement between the vertical sight wire of the object opening and the sight opening, a reflector disposed in position to reflect to the sight opening, the image of the vertical sight wire of the off-set tube as a continuation of the vertical sight wire of the object opening of the sight tube, means to move the last-named reflector longitudinally of the sight tube, and means for moving the last-named reflector angularly relative to the axis of the sight tube.

857,689. FLEXIBLE EYE-GUARD. HENRY M. TILESTON, Chicago, Ill. Filed Apr. 4, 1906. Serial No. 309,852.



Claim.—1. In an eye guard the combination of a frame consisting of a front and side wings, flexible hinges to attach the side wings to the front, such wings and front respectively provided with apertures therein and lenses over the apertures, with hoods attached to the front and wings, the upper one of the hoods arranged to limit the opening of the wings from the front and the lower one of the hoods arranged to lie loosely on the face of the wearer of the device; and such hoods arranged to fit the face of the wearer to exclude dust and the like; substantially as described.

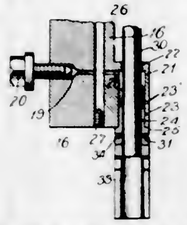
2. In an eye guard a flexible frame comprising a front, side wings each provided with apertures a hinge of flexible material connecting the wings and front and a flexible binding in combination with lenses over the apertures, and flexible ventilated hoods respectively connected to the front and wings of the upper and lower edges thereof; substantially as described.

3. In an eye guard, the combination of a flexible frame comprising a flexible front, flexible side wings hinged to the front and a flexible binding with a flexible ventilated web attached to the top edges of the frame to conform to the features of the wearer and to limit the relative movement of the side wings and front and ventilated webs attached to the lower edges of the front and side wings, respectively, to form curtains resting against the features of the wearer; substantially as described.

4. An eye guard consisting of front wings and hoods, the hoods constructed of flexible material, in combination with hinges of flexible material joining the wings and front to permit the wings to be folded down on the front, and a binding of flexible material, such binding covering the ends of the flexible hinges and arranged to form the foundation to which the hoods are attached; substantially as described.

5. In an eye guard, a flexible frame comprising a front provided with apertures and side wings provided with apertures, in combination with lenses to the apertures, rims of flexible sheet metal provided with prolongations to attach the lenses in place, the prolongation on the straight side of the rim extending the entire length of the straight side of the aperture in the wings, a hinge of flexible material connecting the wings to the front, a flexible hood connecting the wings to the front to limit their relative movement and to conform to the features above the eyes, additional hoods fitting loosely to the features below the eyes and means to hold the eye guard in place; substantially as described.

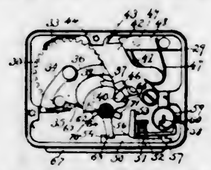
857,690. MULTIPLE-DRILL PRESS. WILLIAM C. TOON, Chicago, Ill. Filed Sept. 26, 1906. Serial No. 336,287.



Claim.—1. The combination with a bracket having a body grooved along its front edge, and slotted through its rear edge on the line of the groove, of a reversible head provided with a tongue for engagement in the groove, and a screw, taking through the slot, engaging the tongue.

2. In a drill press, a spindle supporting arm provided with a spindle receiving opening counterbored at each end, said arm provided with a lubricating-oil reservoir having conduits leading to said counterbores, spindle thrust bearings seated in said counterbores, shouldered near their outer ends to provide enlargements for annular grooves for balls, and a spindle having enlargements on its respective ends in which to provide annular grooves for the respective coacting members of said bearings, and balls in said grooves.

857,691. SYSTEM-LOCK. HARRY P. TOWNSEND, New Britain, Conn., assignor to The American Serial Lock Company, Hartford, Conn., a Corporation of Connecticut. Filed Apr. 1, 1905. Serial No. 253,338.



Claim.—1. In a collecting device, a receiver, lock mechanism for the receiver including a governor, a self-contained controller including an index wheel to register with said governor, operating mechanism located within the controller and including a key permanently secured thereto but movable to operate the mechanism of the receiver lock and of the controller.

2. A receiver having lock mechanism including a governor, a self-contained controller having an index to register with the governor, means for locking the controller to

the receiver, operating mechanism for the controller including a key permanently secured thereto but movable to operate both the lock mechanism and the controller mechanism.

3. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having mechanism, and a key secured to the controller but movable to engage the lock mechanism of the receiver and having a different movement to operate the mechanisms of both the controller and the receiver.

4. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having operating mechanism including a lock to secure the controller to the receiver, and a key permanently secured to the controller but movable to engage said lock mechanism and having a different movement to operate the mechanisms of both the receiver and controller.

5. A receiver, a door therefor, lock mechanism for said door, a self-contained controller, a key permanently secured to the controller, and arranged to operate said lock mechanism means for locating the key in its normal working position, and a guard operated by the movement of the key in its abnormal position.

6. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having operating mechanism, a key movable to engage and operate said lock mechanism and the controller mechanism, means for preventing rotation of the key except in its working position, and means to lock said key against turning movement when located out of its proper position.

7. A receiver, a door for the receiver, lock mechanism for said door, a self-contained controller having operating mechanism including means for locking the controller to the receiever, a key movable to engage and operate both of said mechanisms, means for preventing rotation of the key except when in proper position, and means to lock said key in its turning movement when located out of its proper position.

8. A receiver, a door therefor, lock mechanism for said door and including a lock case having a grooved lip, a controller having a flange to engage said lip, operating mechanism located in the controller and including means for locking the controller to said lock case, and a single key for operating the mechanism of the said lock and of said controller.

9. A receiver, a door therefor, lock mechanism including a lock case having a grooved lip and a governor, a controller having a flange to engage said grooved lip, and operating mechanism including an index to engage said governor, and means for locking the controller to said case, and a key for operating the mechanism in the controller and in the lock case.

10. A receiver, a door therefor, lock mechanism for said door including a lock case, a self-contained controller having mechanism including a lock for securing it to the lock case, and a key permanently secured to the controller but movable to operate the mechanism of both the controller and the lock.

11. A receiver, a door therefor, lock mechanism for said door, said mechanism including a bolt, means for moving the bolt independently of the lock mechanism, and means for operating it by the movement of the lock mechanism.

12. A receiver, a door therefor, lock mechanism for said door, said mechanism including a bolt, means for moving the bolt independently of the lock mechanism to unlock the door, and means for moving the bolt in the opposite direction by the movement of the lock mechanism.

13. A receiver, a door therefor, lock mechanism for said door and including a bolt, means for moving the bolt in one direction independently of the lock mechanism, and means for manually operating the lock mechanism to move the bolt in the opposite direction.

14. A receiver, a door therefor, lock mechanism for said door, including a bolt movable independently of the lock mechanism in one direction, means for imparting said independent movement to the bolt, and a controller for operating said lock mechanism to move the bolt in the opposite direction.

15. A receiver, a door therefor, lock mechanism for said door including a bolt independently movable in one direction independently of said lock mechanism, means for imparting said independent movement to the bolt, a controller having operating mechanism for securing it to said lock, and means appurtenant to the controller for operating the mechanism thereof and for operating the lock mechanism to move said bolt in the opposite direction.

16. A receiver, a door therefor, lock mechanism including a governor and a bolt movable independently of the lock mechanism, means for imparting said independent movement to the bolt, a controller having mechanism including means to lock it to the receiver and an index to register with the governor, and means for operating the mechanism of the controller and of the lock.

17. A receiver, a door therefor, a bolt located on the inner surface of the receiver to lock said door, a lock case located outside of the receiver and having mechanism connected with said bolt, the latter having a movement independently of its operating mechanism, means for moving said bolt in one direction independently of the lock mechanism, and means for operating the lock mechanism to move the bolt in the opposite direction.

18. A receiver, a door therefor, a bolt located on the inner wall thereof to lock said door, a lock case secured to the outer surface of the receiver and having mechanism connected with said bolt which has movement in one direction independently of said mechanism, means for manually moving the bolt independently of its operating mechanism, means outside of the receiver for operating the lock mechanism, and a stop to lock the bolt against sliding movement.

19. A receiver, a door therefor, a bolt located on the inner surface of the receiver to lock the door, a lock case secured to the outer surface of the receiver and having lock mechanism connected with said bolt and including a governor, said bolt having movement independently of the lock mechanism, a controller to be secured to said lock case and having an index to register with said governor, and means for simultaneously operating the mechanism of both the controller and the lock.

20. A receiver, a door therefor, a sliding bolt located on the inner surface of the receiver to lock said door, a lock case secured to the outer surface of the receiver and having lock mechanism connected with said bolt which has a movement independently of said lock mechanism, a stop to hold the bolt against movement in the open position of the door, means operated by the movement of the door for removing said stop as the door is closed, and means for moving said bolt.

21. A receiver, a door therefor, a sliding bolt located on the inner surface of the receiver, a spring stop to hold the bolt against movement, a locking lug on the door to be engaged by a nose on the bolt, said lug operating to remove the stop from the path of movement of the bolt, said bolt having a movement independently of its lock mechanism, a lock case secured to the outer surface of the receiver and having mechanism connected with the bolt, and means for operating the mechanism of the lock case.

22. A receiver, a door therefor having a locking lug, a bolt located on the inner surface of the receiver and having a nose to engage said locking lug, a stop to prevent sliding movement of the bolt and located in the path of movement of said lug, said bolt having a movement independently of the locking mechanism, means for imparting such independent movement to said bolt, a lock case secured to the outer surface of the receiver and having mechanism in engagement with said bolt, and a controller to be attached to the case and having means for operating the mechanism therein.

23. A receiver, a door therefor having a locking lug, a sliding bolt located on the inner surface of the receiver and having a nose to engage said lug, said bolt also having a movement independently of its lock mechanism, a stop to prevent sliding movement of the bolt and located in the path of movement of said lug, means for imparting independent movement to the bolt, a lock case having mechanism connected with said bolt and including a governor, a controller to be attached to said lock case, and having an index to engage said governor, and means located

on the controller for operating the mechanism of both the controller and the lock case.

24. A receiver, a door therefor, lock mechanism for said door including a bolt, means for connecting the bolt with the remainder of the lock mechanism and including a pin upon one part engaging a slot upon the opposite part whereby the bolt has an unlocking sliding movement independently of the rest of the lock mechanism, means for causing said unlocking sliding movement, and means for manually operating the lock mechanism to impart locking movement to the bolt.

25. A receiver, a door therefor, lock mechanism for said door, a controller to be attached to said receiver, a key for operating the controller and door lock mechanism, and means for preventing turning movement of the key to operate said mechanism until the controller is accurately seated.

26. A receiver, a door therefor, lock mechanism for said door, a controller to be secured to the receiver, a bolt included in the controller mechanism, a single means for operating both the controller and door lock mechanism, and means for preventing movement of said bolt until the controller has been accurately seated.

27. A receiver, a door therefor, lock mechanism for said door, a controller to be removably secured to the receiver and having mechanism including a bolt for locking the controller to the receiver, a stop to prevent movement of said bolt, and means for removing said stop from the path of movement of the bolt.

28. A controller for collection devices including operating mechanism, a bolt included in said mechanism for locking the controller in place, a key permanently secured to the controller for operating its mechanism, and means for preventing movement of said bolt until the controller has been accurately seated.

29. A controller for collection devices including a case, operating mechanism located within the case, a registering index included in said mechanism, means for moving said index, means for locking said index against movement, and means for operating the lock to release the index before pressure applied to rotate the latter.

30. A controller for collection devices including a case, mechanism located therein, a registering index included in said mechanism, a lock for said index, means for rotating said index, a key for operating said mechanism, and connections between the key and means for moving the index and lock for releasing the latter before operation of the former.

31. A controller for collection devices including a case, operating mechanism located therein, a registering index included in the mechanism, a lock for said index, means for moving the index, a key for operating said mechanism, and a stop for said lock released only in the turning movement of the key to operate the mechanism.

32. A controller for collection devices including a case, operating mechanism located within said case and including a registering index, means for moving said index, a lock for said index, a key for operating said mechanism, and connections between said index, lock and the key for operating the index only in the movement of the lock.

33. A controller for collection devices including a case, operating mechanism located within said case, a registering index included in said mechanism, means for moving said index, a lock for said index, a key for operating said mechanism, and connections between said key and lock for preventing movement of the latter only in the movement of the key, and for removing said lock before power applied to rotate the index.

34. A receiver, lock mechanism therefor, a controller, controller mechanism located within the controller, a key for operating said mechanism, a key block for said key, means for positioning said key to permit rotative movement thereof without obstruction by the key block, and means for preventing rotation of the key until the controller is properly seated.

35. A receiver, lock mechanism therefor, a controller, controller mechanism located therein, a key for operating said mechanism, a key block for said key, means normally preventing rotation of said key when out of position to pass said block, and means for preventing rotation of the key until the controller is properly seated.

36. A receiver, lock mechanism therefor, a controller, controller mechanism located therein, a key for operating said mechanism, a block for said key, means for positioning said key to permit rotative movement thereof without obstruction by said key block, and means for preventing rotative movement of said key until in proper position to freely pass said block.

37. A receiver, lock mechanism therefor, a controller, controller mechanism therein, a key for said mechanism, a key block to permit independent rotative movement of the key only with the receiver in proper position, and means for preventing rotative movement of the key until in proper position to freely pass the key block.

38. In a controller for collection devices, a key, a key block for preventing independent movement of the key until in proper position to pass said block, and a safety stud resting against said key when in proper position to freely pass said block.

39. In a controller for collection devices, a key, a block for preventing independent rotative movement of the key until in proper position to pass said block, a safety stud resting against said key when in proper position to pass said block, and means for preventing movement of said safety stud until the controller is in a predetermined position.

40. A receiver, lock mechanism therefor, a controller, mechanism therefor including a locking lever to secure it to the receiver, a key for operating the mechanisms, a block to prevent independent rotative movement of the key until in proper position, a safety stud resting against the key when in position to freely pass said block, a safety stop to prevent rotative movement of the key, and means for removing said stop when the controller is in proper position.

41. A receiver, lock mechanism therefor, a controller, mechanism therefor including a locking lever to secure it to the receiver, a key for operating said mechanisms, a key block to prevent independent rotative movement of the key until in proper position, a safety stud located on the locking lever and resting against the key when the key is in proper position to pass said block, a safety stop to prevent rotative movement of the key, and means for removing said stop when the controller is placed in proper position.

42. In a controller for collection devices, an index dial, a dial locking lever for said index, a key for operating said parts, a key block to prevent independent rotative movement of the key until in position to pass said block, and a safety stud in engagement with the key when in position to pass said block.

43. In a controller for collection devices, an index wheel, a dial locking lever for said wheel, means for rotating said wheel, a key to operate said locking lever and dial rotating means, a block for said key to prevent independent rotative movement of the key until in proper position to pass the block, and a safety stud in contact with the key when in position to pass said block.

44. In a controller for collection devices, an index wheel, a dial locking lever, an arm for rotating said wheel, a link secured to said arm and to said lever to permit independent movement of the latter, a key for operating said parts, a key block to prevent rotative movement independently of the key until the key is in proper position, and a safety stop in contact with the key when in proper position to pass the key block.

45. A receiver, a door therefor, a keeper for said door, lock mechanism including a tumbler controlled bolt, for moving said keeper a loose connection between the keeper and bolt permitting movement of the latter independently of the former, and means for operating said keeper.

46. In a controller for collection devices, operating mechanism therefor, a key for said operating mechanism, a block for said key, and a key stop on said block to prevent rotation of the key with the block in its abnormal position.

47. A controller for collection devices, operating mechanism therefor, a key for said operating mechanism, a block for said key, and tumbler operated mechanism to release said block from position to prevent rotation of the key.

48. A controller for collection devices, operating mechanism therefor, a key for said operating mechanism, a block to prevent rotation of said key, a dog for said block, and tumbler operated mechanism to release said dog.

49. A controller for collection devices, operating mechanism therefor, a key for said operating mechanism, a block for said key, and a key operated device connected with said mechanism for releasing said block.

50. A controller for collection devices, operating mechanism therefor, a key for said operating mechanism, a block for said key, a dog to prevent movement of said block, a barrel having a stud to engage said dog, and key and tumbler actuating mechanism for said barrel.

51. A receiver, a self-contained controller, mechanism on the controller and receiver for preparing the former for removable attachment to a designated receiver only, and means for operating said mechanism.

52. A receiver, a controller, mechanism on the receiver and controller for preparing the latter for removable attachment only to a designated receiver, said mechanism also including means for insuring the closure of the receptacle, and means for operating said mechanism.

53. A receiver, a controller, mechanism on the receiver and controller for preparing the latter for removable attachment only to a designated receiver, said mechanism also including means for compelling the closure of the receiver and for attaching the controller to the receiver, and means for operating said mechanism.

54. In a registering mechanism including rotating parts to register one with the other, a toothed member connected with the rotating registering part, and a spring actuated lever engaging said teeth to prevent movement of the registering part whereby adjustment of a rotating part may be effected.

55. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having mechanism, a key secured to the controller but movable to engage and operate the mechanisms of both the controller and the receiver.

56. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having operating mechanism, including a lock to secure the controller to the receiver, a key permanently secured to the controller but movable to operate both the controller mechanism and the lock mechanism.

57. A receiver, a door therefor, lock mechanism for said door including a lock case having a grooved lip, a controller having a flange to engage said lip, operating mechanism located within the controller and including a bolt for locking the controller to the lock case, means on said bolt for preventing rotation of a key, and the key for operating the mechanism of the lock and of the controller.

58. A receiver, a door therefor, lock mechanism appurtenant to said door, said mechanism including a sectional bolt, one section of the bolt for securing the door, said sections having a movement independent each of the other, and means for operating the locking section of the bolt independently of the lock mechanism.

59. A receiver, a door therefor, lock mechanism for said door, a self-contained controller removably engaged with the door and having operating mechanism, a key movable to engage and operate the lock mechanism and the controller mechanism, means for preventing rotation of the key except in its working position, and means to lock said key in its turning movement when located out of its proper position.

60. A receiver, a door therefor, lock mechanism for said door and including a lock case having a grooved lip, a controller having a flange to engage said lip for removable engagement of the controller, operating mechanism located in the controller and including means for locking the controller to said lock case, and a key for operating the mechanism of the lock and of the controller.

61. A receiver, a door therefor, lock mechanism for said door including a lock case, a self-contained controller having mechanism including a lock for removably securing it to the lock case, and a key permanently secured to the controller but movable to operate the mechanism of both the controller and lock.

62. A receiver, a door therefor, lock mechanism for said door and including a bolt manually movable in both directions, means for moving the bolt in one direction independently of the lock mechanism, and means for manually operating the lock mechanism to move the bolt in the opposite direction.

63. A receiver, a door therefor, lock mechanism for said door, a controller to be removably secured to the receiver, a bolt included in the controller mechanism, means for operating both the controller and lock mechanism, and means for preventing movement of said bolt until the controller has been accurately seated.

64. A receiver, a door therefor, lock mechanism for said door, a controller to be removably secured to the receiver and having mechanism including a bolt for locking the controller to the receiver, a stop to prevent movement of said bolt, and means for moving said stop from the path of movement of the bolt in placing the controller in position.

65. A controller for collection devices including operating mechanism, means for removably attaching the controller in place, a bolt included in said attaching mechanism, a key for operating the controller mechanism, and means for preventing turning movement of said key until the controller has been accurately seated, but permitting such movement when the controller is accurately seated.

66. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having operating mechanism, a key secured thereto but movable into the lock to operate the mechanism of both the controller and said lock, means for preventing rotation of the key except in its working position, and means to lock said key against both turning and lengthwise movement when located out of its proper position.

67. A receiver, a door therefor, lock mechanism appurtenant to said door, said mechanism including a sectional bolt, one section of the bolt for securing the door and the other section controlled by tumblers of the lock mechanism, said bolt sections having a movement independent each of the other, and means for manually operating the locking section of the bolt independently of the lock mechanism to unfasten the door.

68. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having operating mechanism, a key movable to engage and simultaneously operate said lock mechanism and the controller mechanism, means for preventing rotation of the key except in its working position, and means to lock said key against turning movement when located out of its proper position.

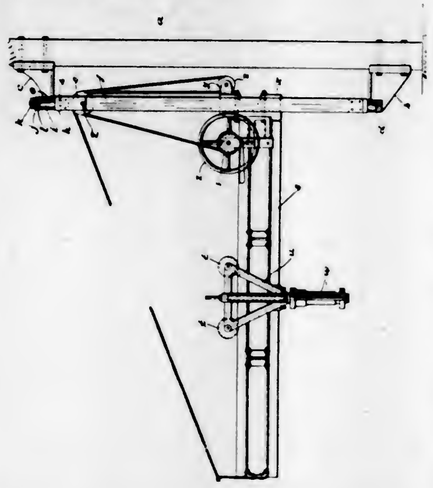
69. A receiver, a door therefor, lock mechanism for said door including a lock case, a self-contained controller having mechanism including a lock for securing it to the lock case, and a key permanently secured to the controller but movable to simultaneously operate the mechanism of both the controller and the lock.

70. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having mechanism, a key secured to the controller but movable to engage and simultaneously operate the mechanism of both the controller and the receiver.

71. A receiver, a door therefor, lock mechanism for said door, a self-contained controller having operating mechanism, including a lock to secure the controller to the receiver, a key permanently secured to the controller but movable to simultaneously operate both the controller mechanism and the lock mechanism.

72. A receiver, a door therefor, lock mechanism for said door including a lock case having a grooved lip, a controller having a flange to engage said lip, operating mechanism located within the controller and including a bolt for locking the controller to the lock case, means on said bolt for preventing rotation of a key, and the key for simultaneously operating the mechanism of the lock and of the controller.

857,692. STONE-DRESSING MACHINE. WILBER H. VAN SICKEL, Philadelphia, Pa., assignor to Thos. H. Dallett Co., a Corporation of New Jersey. Filed Feb. 15, 1907. Serial No. 357,435.



Claim.—1. In combination, a standard rotatably supported, a frame adapted to carry the tool, rotatable with said standard and movable vertically thereon, and means to support said frame independent of the standard.

2. In combination, a standard, a frame, adapted to carry the tool, rotatable and movable vertically and guided by said standard in its rotation and vertical movement, and means to support said frame independent of said standard.

3. In combination, a standard rotatably supported, a frame, adapted to carry the tool, rotatable with said standard and movable vertically thereon, a sheave for supporting said frame, and a support independent of said standard, for said sheave.

4. In combination, a standard, a frame, adapted to carry the tool, rotatable and movable vertically and guided by said standard in its rotation and vertical movement, a sheave for supporting said frame, and a support, independent of said standard, for said sheave.

5. In combination, a vertical standard, adapted to rotate, means at both ends of standard to guide said standard, in its rotation, a horizontal frame, adapted to carry a tool, rotatable with said standard, and a sheave rotatable with said standard, and connection between said sheave and frame for elevating the frame.

6. In combination, a vertical standard adapted to rotate, means to support said standard at one end and guide said standard at both ends, a horizontal frame, adapted to carry a tool, rotatable with said standard, and a sheave rotatable with said standard, and connection between said sheave and frame for elevating the frame.

7. In combination, a vertical standard adapted to rotate, means to guide said standard at both ends, in its rotation, and to support said standard at its lower end, a horizontal frame, adapted to carry a tool, adapted to rotate with said standard, and a sheave rotatable with said standard, and connection between said sheave and frame for elevating the frame.

8. In combination, a vertical standard, a projecting bracket near the upper end of said standard, a guiding bearing carried by said bracket in which the upper end of the standard is guided, a bracket near the lower end, a bearing carried by said bracket, the standard being seated in said last mentioned bearing, and the lower end guided thereby, a horizontal frame, adapted to carry a tool, adapted to rotate with said standard, and a sheave rotatable with said standard, and connection between said sheave and frame for elevating the frame.

9. In combination, a vertical standard, adapted to rotate, a bearing at the upper end of said standard in which the upper end of said standard is guided in its rotation, a bearing at the lower end of said standard in which the standard is supported, and the lower end guided in its rotation, a horizontal frame, adapted to carry a tool, adapted to rotate with said standard, and a sheave rotatable with said standard, and connection between said sheave and frame for elevating the frame.

10. In combination, a vertical standard, adapted to rotate, a bearing at the upper end of said standard in which the upper end of said standard is guided in its rotation, a bearing at the lower end of said standard in which the standard is supported, and the lower end guided in its rotation, a horizontal frame, adapted to carry a tool, adapted to rotate with said standard, a sheave near the upper end of said standard for supporting said horizontal frame, and means, independent of said standard, to support said sheave.

11. In combination, a vertical standard, adapted to rotate, a bearing at the lower end of said standard in which said standard is supported and guided, a horizontal frame, adapted to carry a tool, a sheave for supporting said horizontal frame, a bearing near the upper end of said standard, a frame, carrying the sheave, and connection between said standard and sheave frame whereby the sheave rotates with the standard.

12. In combination, a bifurcated vertical standard, adapted to rotate, a bearing at the lower end of said standard in which said standard is supported and guided, a horizontal frame, adapted to carry a tool, a bearing near the upper end of said standard, a frame carried by said last mentioned bearing, a yoke projecting from said frame, a sheave for supporting the horizontal frame located between bifurcations of standard, there being orifices in the standard and yoke, a shaft for said sheave passing through said orifices, the orifice through the standard being larger than the orifice through the yoke.

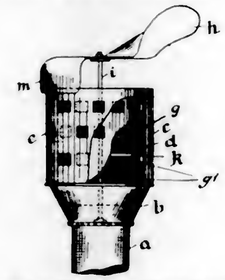
13. In combination, a bifurcated vertical standard, adapted to rotate, a bearing at the lower end of said standard in which said standard is supported and guided, a horizontal frame, adapted to carry a tool, a bearing near the upper end of said standard, a frame carried by said last mentioned bearing, a yoke projecting from said frame, a sheave for supporting the horizontal frame located between bifurcations of standard, there being orifices in the standard and yoke, a shaft for said sheave passing through said orifices, the orifice through the standard being larger than the orifice through the yoke, and a bearing in the sheave supporting frame forming a guide for the upper end of the standard.

14. In combination, a bifurcated vertical standard, adapted to rotate, a bearing at the lower end of said standard in which said standard is supported and guided, a horizontal frame, adapted to carry a tool, a bearing, a frame carried by said last mentioned bearing, a yoke projecting from said frame, a sheave for supporting the horizontal frame located between bifurcations of standard, there being orifices in the standard and yoke, a shaft for said sheave passing through said orifices, the orifice through the standard being larger than the orifice through the yoke.

857,693. SPARK AND SOOT ARRESTER. ROBERT WAGENSCHIEFFER, Hanover-Linden, Germany. Filed Dec. 15, 1906. Serial No. 348,002.

Claim.—1. A spark and soot arrester comprising an outer perforated open-ended, cylindrical casing, an inner perforated and rotatable open-ended, cylindrical casing concentric therewith and a series of superposed plates within said interior casing provided with apertures located as to be non-coincident in successive plates.

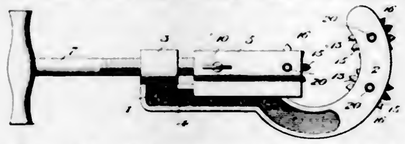
2. A spark and soot arrester comprising an outer perforated open-ended, cylindrical casing, an inner perforated and rotatable open-ended, cylindrical casing concentric therewith and a series of superposed plates within said interior casing provided with apertures located as to be non-coincident in successive plates together with flanges depending from the edges of said apertures.



3. A spark and soot arrester comprising an outer perforated open-ended casing, an inner perforated and rotatable open-ended casing, a series of superposed plates within said interior casing provided with apertures located as to be non-coincident in successive plates, flanges depending from the edges of said apertures, a rotatable cowl located above said casings and means co-acting with said cowl for removing accumulations from the upper surfaces of the plates aforesaid.

4. A spark and soot arrester comprising an outer perforated open-ended casing, an inner perforated and rotatable open-ended casing, a series of superposed plates within said interior casing provided with apertures located as to be non-coincident in successive plates, flanges depending from the edges of said apertures, a rotatable cowl located above said casings, means co-acting with said cowl for removing accumulations from the upper surfaces of the plates aforesaid, and a screen on the cowl adapted to protect the upper edge of said casings.

857,694. PIPE-CUTTER. CHARLES WAHNSIEDLER, Evansville, Ind. Filed July 14, 1906. Serial No. 326,210.

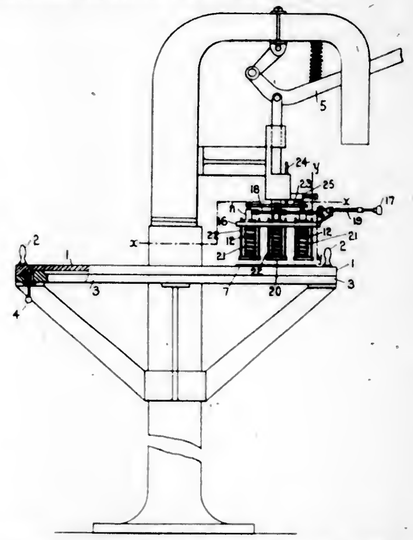


Claim.—1. A rotary cutter comprising a hub and a plurality of cutter pins having sharpened outer ends and provided with tapered shanks driven in sockets in said hub, in combination with a journal pin passing through the hub and provided with means for loosening the shanks of said pins on movement of said journal pin.

2. In a pipe cutter, the combination with a frame to engage the pipe, of a slide-block movable on said frame and having an opening or recess, cutting means carried by said slide-block, an adjusting screw having an elongated grooved end received in the opening in said slide-block, a set screw carried by the slide-block whose tip is of considerably less width than the length of the groove aforesaid and received in the said grooved end of the screw, and a cushion located in said opening and interposed between said screw end and the slide-block, said relation of groove and screw tip permitting movement of the adjusting screw in relation to the set screw.

857,695. BOTTLE-STOPPER, ELECTRICAL FITTING, AND THE LIKE. ALFRED WALTHO, Liscard, England. Filed Nov. 24, 1906. Serial No. 344,892.

Claim.—1. The combination of a table having an intermittent rotary motion and carrying a set or series of molds, with a set or series of plungers each of which consists of a central spindle and a sleeve surrounding it such spindle being rotatable and vertically movable within such sleeve which is provided with slots the lower portion of which are adapted to receive lugs carried by the spindle substantially as and for the purposes described.

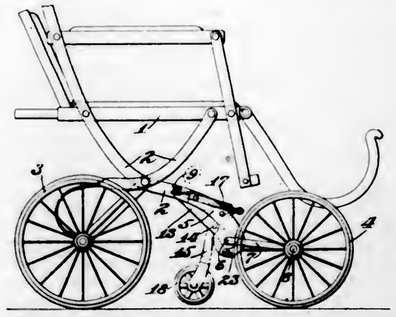


2. The combination of a mold carrying table and plungers adapted to enter such molds, with a frame having links connected to such plungers and a spring actuated handle whereby the set of plungers are synchronously moved substantially as set forth.

3. The combination of a table 1 compound plungers 11 and the means for operating them, with a catch device consisting of plate 23 catch 25 rod 17 and collar 26, substantially as set forth.

4. The combination of table 1 and the means for fixing it in any desired position, compound plungers 11, sleeves 12, springs 21, collars 20, frame 16, links 19, handle 17, catch plate 23, catch 25, rod 17, and collar 26, all operating in the manner and for the purposes herein set forth.

857,696. BABY-BUGGY AND THE LIKE. MORITZ WEINSTEIN, St. Louis, Mo., assignor of one-half to Max Sperling, St. Louis, Mo. Filed Oct. 3, 1906. Serial No. 337,238.



Claim.—1. In a baby buggy or the like, the combination with the body thereof, of a running gear comprising rear and front wheels, said front wheels being depressibly mounted with relation to said body, and means for depressing said front wheels when the buggy is passing abruptly from a higher to a lower plane, said depressing means be-

ing adapted to be automatically operated to depress said front wheels when said buggy is passing abruptly from a higher to a lower plane; substantially as described.

2. In a baby buggy or the like, the combination with the body thereof, of a running gear comprising rear and front wheels, said front wheels being depressibly mounted with relation to said body, means for depressing said front wheels, means for locking said front wheels in normal position against the action of said depressing means, and means adapted to automatically release said locking means when the buggy is passing from a higher to a lower plane over an abrupt descent; substantially as described.

3. In a baby buggy or the like, the combination with the body thereof, of an underframe, rear wheels on said underframe, front wheels depressibly mounted on said underframe, means tending to depress said front wheels at all times, means for locking said front wheels in normal position against the action of said depressing means, and means adapted to automatically release said locking means when the buggy is passing abruptly from a higher to a lower plane; substantially as described.

4. In a buggy or the like, the combination with the underframe, of a depressible frame carried thereby, means for holding said frame in normal elevated position, and means, acting in opposition to said holding means, for depressing said frame, said holding means being adapted to be automatically released when said buggy passes over an abrupt descent; substantially as described.

5. In a buggy or the like, the combination with an underframe, of a rotatable frame carried thereon, wheels on said frame, means for locking said frame in normal position, and coiled springs mounted on said frame for rotating said frame when said locking means is released; substantially as described.

6. In a buggy or the like, the combination with an underframe, of a rotatable frame carried thereon, wheels on said frame, means for locking said frame in normal position, springs adapted to rotate said frame when said locking means is released, and means for regulating the amount of rotation of said frame when said locking means is released; substantially as described.

7. In a buggy or the like, the combination with the underframe, of a rocking frame carried thereby, wheels on said rocking frame, a spring actuated lever and notched disk for locking said frame in normal position, and springs adapted to automatically rock said frame rearwardly when said lever is tripped out of engagement with said disk; substantially as described.

8. In a buggy or the like, the combination with the underframe, of a rocking frame carried thereby, wheels on said rocking frame, means for locking said frame in normal position, means for swinging said frame rearwardly when said locking means is released, and means for cushioning the rearward swing of said frame; substantially as described.

9. In a buggy or the like, the combination with the underframe, of a depressible frame carried thereby, automatically releasable means for holding said frame in normal elevated position, and means for depressing said frame when said holding means is released; substantially as described.

10. In a buggy or the like, the combination with the underframe, of a rocking frame carried thereby, wheels on said rocking frame, automatically releasable means for holding said rocking frame in normal elevated position, and means for rocking said rocking frame and its carried wheels when said holding means is released; substantially as described.

11. In a buggy or the like, the combination with the underframe, of a rocking frame carried thereby, wheels on said rocking frame, an automatically releasable locking lever mounted on said underframe and adapted to co-operate with said rocking frame for holding the same in normal elevated position, and a spring connected to said rocking frame, the tension thereof being exerted, in opposition to said locking lever, to rock said frame, whereby, when said locking lever is released from co-operation with said rocking frame, said spring will rock said frame and its carried wheels; substantially as described.

12. In a buggy or the like, the combination with the body thereof, of a running gear comprising a frame, rear wheels mounted on said frame, a rocking frame mounted on said first-mentioned frame, front wheels mounted on said rocking frame, a notched disk on said rocking frame, an automatically releasable locking lever mounted on said first-mentioned frame and adapted to co-operate with said disk to lock said rocking frame in elevated normal position, and a spring for rocking said frame when said lever is in inoperative position with respect to said disk; substantially as described.

13. In a buggy or the like, the combination with the underframe, of a rotatable shaft, extensions on said shaft, wheels on said extensions, means attached to said shaft for rotating the same, means mounted on said underframe and co-operating with said shaft for normally holding the said extensions in elevated position against the action of said rotating means, and means for regulating the rotation of said shaft when said locking means is in inoperative position; substantially as described.

14. In a buggy or the like, the combination with the underframe, of a rotatable shaft on said frame, extensions on said shaft, wheels on said extensions, a notched disk on said shaft, a spring actuated lever mounted on said underframe and adapted to co-operate with said disk to lock said shaft against rotation, and springs on said shaft for rotating the same when said lever and disk are disengaged; substantially as described.

15. In a buggy or the like, the combination with the underframe, of a rocking shaft on said frame, extensions on said shaft, wheels on said extensions, a notched disk on said shaft, a spring-actuated lever mounted on said underframe and adapted to co-operate with said disk to lock said shaft against rocking movement, springs on said shaft for rocking the same when said lever and disk are disengaged, and means for regulating the tension of said springs; substantially as described.

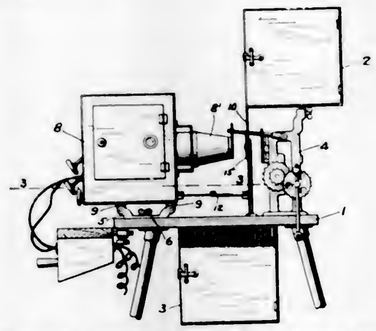
16. In a buggy or the like, the combination with the underframe, of a rotatable shaft on said underframe, extensions on said shaft, wheels on said extensions, means for locking said shaft against rotation, in which locked position said wheels are presented forwardly of said underframe, and springs for rotating said shaft when said locking means is released, the rotation of said shaft swinging said wheels backwardly and downwardly under said body; substantially as described.

17. In a buggy or the like, the combination with the underframe, of a tilting frame mounted thereon, said frame consisting of a shaft, extensions on said shafts, and wheels on said extensions, a notched disk on said shaft, a spring-actuated lever co-operating with said disk and when in engagement therewith locking said wheels in a forward, elevated position, springs on said shaft adapted to swing said wheels downwardly and rearwardly when said lever is disengaged from said disk, and means acting in opposition to said springs for regulating the rearward and downward swing of said wheels when said lever is disengaged from said disk; substantially as described.

18. In a buggy or the like, the combination with the underframe, of a tilting frame mounted thereon, said frame consisting of a shaft, extensions on said shafts, and wheels on said extensions, a notched disk on said shaft, a spring-actuated lever co-operating with said disk and when in engagement therewith locking said wheels in a forward, elevated position, springs on said shaft adapted to swing said wheels downwardly and rearwardly under said buggy when said lever is disengaged from said disk, stops for regulating the amount of the downward and rearward swing of said wheels when said lever is disengaged from said disk, and means for cushioning the downward and rearward swing of said wheels; substantially as described.

857,697. LIFE-MOTION-PICTURE-PROJECTING MACHINE. ORVILLE T. WEISER, Philadelphia, Pa., assignor to Siegmund Lubin, Philadelphia, Pa. Filed May 3, 1907. Serial No. 371,579.

Claim.—1. A magic lantern, a way on which said lantern is adapted to move, a door, and means connecting said door and lantern so that when said lantern is in operative position said door is held thereby in the line of projection.



2. A lantern, a way on which said lantern is adapted to slide transversely to its line of projection, a hinged door, and a link connecting said door and lantern.

3. A lantern, means for supporting said lantern so that its tube can be thrown into and out of the line of projection, a film moving mechanism, and a door connected to said lantern so that when said lantern is in the projecting position said door is disposed in its line of projection between it and the film moving mechanism.

4. A lantern, a pair of ways extending transversely to the line of projection of said lantern, means whereby said lantern is movable on said ways into and out of the line of projection, a film moving mechanism, a door hinged with relation to said film moving mechanism, and a link pivotally connected to said lantern and to said door.

5. A lantern, means for supporting said lantern so that it can be moved into and out of the line of projection, a film moving mechanism, a door means connecting said door with said lantern so that said door is held in the line of projection by said lantern when in the operative position, said door having an aperture therein in the line of projection, and means for opening and closing said aperture.

857,698. RECEPTACLE-CLOSURE. ALFRED L. WEISSENTHANNER, New York, N. Y. Filed Nov. 15, 1905. Serial No. 287,451.



Claim.—1. A sealing disk for the purpose described comprising a section of an elastic material, and a superposed section of a stiff, flexible, inelastic, nonmetallic material, made impervious to fluids.

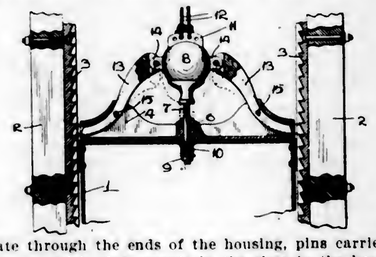
2. A sealing disk for the purpose described comprising a section of an elastic material and a superposed section of a flexible but inelastic material, the latter having a coating of dried linseed oil.

3. A sealing disk for the purpose described comprising a section of an elastic material and a superposed section of pasteboard, the latter having a coating of dried linseed oil.

4. A sealing disk for the purpose described comprising a section of cork, and a superposed section of pasteboard, the latter having a coating of dried linseed oil.

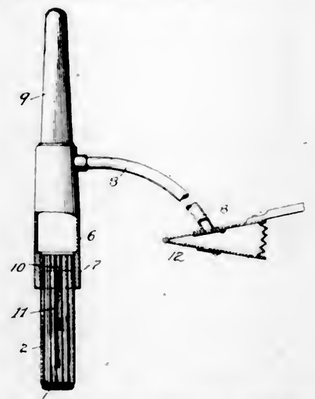
857,699. SAFETY-ELEVATOR. GEORGE L. WHEELER, St. Louis, Mo., assignor of one-half to Charles H. Carter, St. Louis, Mo. Filed Jan. 29, 1907. Serial No. 354,753.

Claim.—The combination, with an elevator cage and the upright guides therefor, of racks fixed to the inner faces of the guides, a housing fixed on the top of the elevator cage, there being curved slots formed in the outer portions of said housing, a rod arranged for vertical movement through the center of the housing, an expansive coil spring arranged on the lower end of the rod, a weight fixed on the upper end of the rod, arms pivotally connected to opposite sides of the weight, the lower ends of which rods



operate through the ends of the housing, pins carried by the arms, which pins operate in the slots in the housing, and a perforated plate integral with the top of the weight for attaching the cables supporting the elevator cage.

857,700. ERASING APPLIANCE FOR USE IN TYPEWRITING. CHARLES WHITE, Baltimore, Md. Filed June 14, 1906. Serial No. 321,676.



Claim.—1. An ink erasing appliance comprising an erasing member adapted to be grasped by the fingers and to be thereby rubbed back and forth on the paper, a portion of the structure having an air passage leading to the erasing surface and a pneumatic device for exhausting the air through said passage during the operation of erasing, substantially as herein described.

2. An ink erasing appliance comprising an erasing member adapted to be grasped by the fingers and to be thereby rubbed back and forth on the paper, a portion of the structure having an air passage in fixed proximity to the abrading surface, and a pneumatic device for exhausting the air through said passage during the operation of erasing, substantially as herein described.

3. An erasing appliance comprising an erasing member, a holder therfor consisting of a corrugated or grooved member forming between itself and the erasing member a duct or ducts and a suction tube connected with the holder through which the cuttings are removed as they are formed, substantially as described.

857,701. CLASP FOR NECKTIE-FASTENERS. FRANK E. WICKING, Pueblo, Colo. Filed June 8, 1906. Serial No. 320,809.

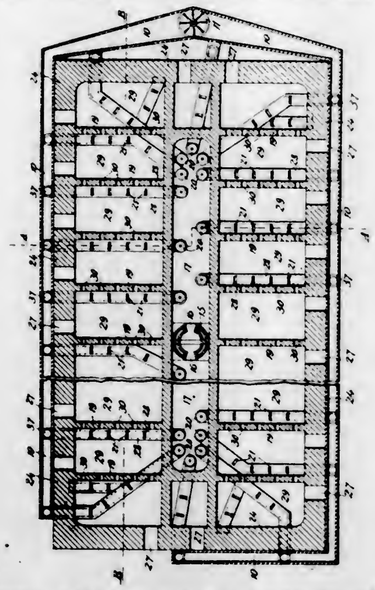
Claim.—1. A clasp for necktie holders consisting of an oblong base plate *a*, and two semi-circular arched flexible loops *b* integral with said plate and bent over the latter

toward each other and centrally notched, said loops being connected with the plate only at their ends, whereby finger spaces are provided in rear of the loops, substantially as described.



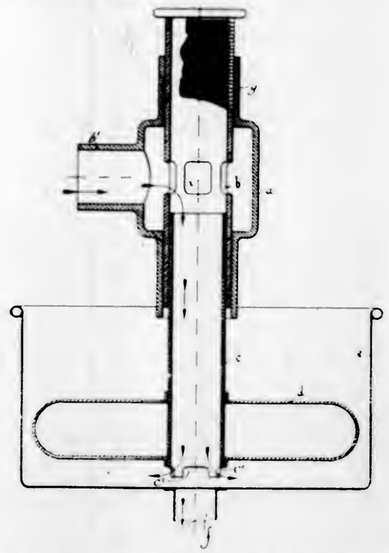
2. A clasp for necktie holders consisting of a single piece of sheet material and comprising a base adapted for attachment to a tie or shield, and two arched and notched loops extending from opposite sides of the base portion, the loops being bent toward each other on one side of the base to form opposing spring jaws with an intermediate socket and converging edges forming mouths leading to the socket from opposite directions, said base portion being extended beyond the jaws to form a shield, substantially as described.

857,702. BRICK-KILN. HENRY J. WILLIAMS, Spokane, Wash. Filed Jan. 29, 1907. Serial No. 354,634.



Claim.—In a kiln for burning, drying and cooling brick or other articles of earthenware manufacture, the combination of a number of units or apartments as receptacles for the articles to be treated, arranged side by side around an inner air chamber separated by a wall from such units or apartments, openings in the partitions between the units or apartments for the passage of atmosphere, a continuous air chamber around the outer lower surface of the kiln communicating with a fan and with an air chamber underneath and connected by openings to each unit or apartment, such air chamber underneath the separate units communicating also with a centrally disposed inner air chamber in which is placed a flue with openings from such flue to such inner chamber, a continuous air chamber around the outer upper surface of the kiln and also the inner upper surface of the different units or apartments, each communicating with the said units, an air chamber between the arch of each unit or apartment and the upper or finishing wall of the kiln, openings or apertures extending through the upper or finishing wall of the kiln and through the arches of the different units or apartments into the open space or chambers of such units or apartments, all air chambers and passages leading to the separate units or apartments provided with valves for the opening and closing of the same, each unit or apartment having an opening from the outer surface of the kiln as means of ingress and egress for materials to be treated, substantially as set forth.

857,703. FLOAT. JOSEPH WILLMANN, Rome, N. Y. Filed Oct. 29, 1903. Serial No. 179,027.



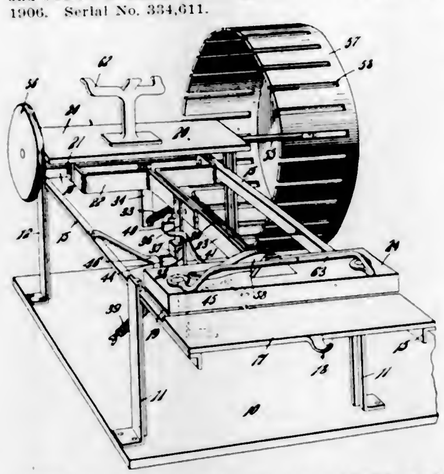
Claim.—1. In a liquid separator, a vertically disposed tubular member having connection between its ends with a source of supply of liquid, a member telescopically disposed within said tubular member and adjustable therein, there being openings in said second member adapted to communicate with said source of supply and coacting with the walls of said first-named member to control said connection with said source of supply, a tube open at its ends and telescopically movable within said second member, and a float disposed on said tube at its lower end, adapted to lie within the feed bowl of the separator and be actuated by variations in the level of liquid therein to reciprocate said tube and control the supply of liquid through said openings.

2. In a liquid separator, a vertically disposed tubular member enlarged between its ends and having connection at said enlarged portion, with a source of supply of liquid, a member telescopically disposed within said tubular member and adjustable therein, there being openings in said second member adapted to communicate with said source of supply and coacting with the walls of said first-named member to control said connection with said source of supply, a tube open at its ends and telescopically movable within said second member, and a float disposed on said tube at its lower end, adapted to lie within the feed-bowl of the separator and be actuated by variations in the level of liquid therein to reciprocate said tube and control the supply of liquid through said openings.

3. In a liquid separator, a fixed vertically disposed tubular member enlarged between its ends and connected at said enlarged portion with a source of supply of liquid, a tube disposed telescopically within said tubular member and vertically adjustable therein, said tube being closed at its upper end and provided between its ends with openings communicating with said enlarged portion of said tubular member, a tube open at both ends telescopically movable in said first-named tube and adapted to control the openings therein, and a float carried by said last-named tube and adapted to be actuated by variations in the level of liquid in the feed bowl of the separator to impart movement to said last-named tube to regulate the supply of liquid through the openings in said first-named tube.

4. In a liquid separator, the combination with a substantially T-shaped member having three substantially cylindrical arms one of which is horizontally disposed and connected with the source of supply of the liquid to be separated, of a hollow cylindrical member disposed telescopically and vertically adjustable within the vertical arms of said T-shaped members and having an opening between its ends through which the liquid passes, a feed-bowl disposed below said T-shaped member and having connection with the separating means, a vertically disposed feed pipe movable telescopically within said hollow cylindrical member at its upper end and constituting a valve controlling said openings therein and projecting into said feed-bowl at its lower end, and a float carried by said feed pipe and disposed within said feed-bowl, said float being adapted to be actuated by variations in the level of the liquid in said feed-bowl to impart vertical movement to said feed pipe to regulate the flow of liquid.

857,704. ADDRESSING-MACHINE. MELVIN J. WISE and JOSIAH L. RHEA, Bloomington, Ill. Filed Sept. 14, 1906. Serial No. 334,611.



Claim.—1. In a machine of the class described, a slidable frame, a platen, and an inking pad carried thereby, a pivotally mounted type form, and cams carried by said slidable frame for effecting vertical movement of said type form.

2. In a machine of the class described, the combination with a slidable frame, of a platen, and an inking pad carried thereby, a pivotally mounted type form, cams carried by the frame for elevating the type form during movement of the frame in both directions, a catch for holding said type form in elevated position, and cams carried by the slidable frame for moving said catch to release position during movement of the frame in both directions.

3. In apparatus of the class described, a slidable frame, a platen and an inking pad carried thereby, a type form, pivotally mounted bars carrying said type form, an arm depending from said bars, a catch arranged to engage said arm and hold the type form in elevated position, lugs projecting from the arm, and the catch, a double cam carried by the frame and arranged to engage with the arm carried lug and elevate the type form, and a pair of cams also carried by the frame and arranged to engage with the catch carried lug in order to move said catch to release position.

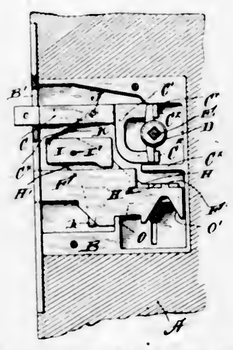
4. In apparatus of the class described, the combination with a slidable frame, of a platen, and an inking pad carried thereby, a type form, a pivoted support for said type form, said support being formed of pivotally connected sections, means carried by the frame for controlling the vertical movement of the type form, and a type carrying drum with which said type form may be moved into alinement.

5. In apparatus of the class described, a slidable frame, a platen, and an inking pad carried thereby, a type form, a pivotal support for the type form, said support being formed of pivoted bars having limited sliding movement, means for locking said bars rigidly together, and a type carrying drum with which said type form may be moved into alinement.

6. In apparatus of the class described, a slidable frame, a platen and an inking pad carried thereby, a type form, a plurality of pivotally connected bars forming a support for the type form, said bars being arranged for limited sliding movement, one of the bars having an end notch, and the other having a pin arranged to enter said notch to lock the bars rigidly together, a spring connecting the bars and tending to hold the same in locked relation, a spring connecting the bars to the slidable frame, said spring being arranged to act on both the bars and the frame, an arm depending from said bars and provided with a shoulder, a catch arranged to engage said shoulder, lugs projecting from the arm and the catch, a double cam carried by the frame and arranged to engage the arm carried lug during movement of the frame in both directions, a double cam also carried by the frame and arranged to engage with the catch carried lug, and a type carrying drum with which the type form may be moved into alinement.

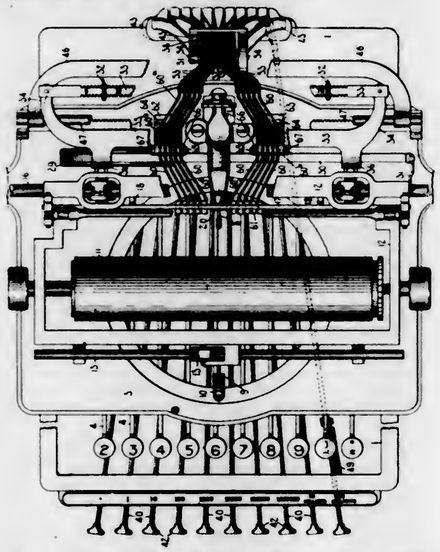
7. In apparatus of the class described, a type form having type receiving slots, type, the sides of which are slotted or grooved to enter said slots, a type clamping plate, and a cam lever for actuating said plate.

857,705. LATCH-KNOB DOOR-LOCK. LEWIS W. WOODBURN, Charleston, Ill. Filed July 31, 1905. Serial No. 272,055.



Claim.—In combination with a latch and casing therefor, a knob shaft, and rocking member mounted thereon and adapted for actuating said latch, means within the casing for guiding said latch from longitudinal movement, a longitudinal movable bolt, the under edge of the same being provided with recesses, one of which has inclined edges adapted to be engaged by the bit of a key, a projection upon the casing, a projection extending into the other recess adapted to limit the throw of the bolt in one direction or the other, a lug projecting from the upper edge of the bolt, a tilting plate mounted within the casing and provided with a lateral extension adapted to contact with one edge or the other of said lug upon the bolt to hold the latter from longitudinal movement in one direction or the other, and an elastic member connecting said plate and latch, as set forth.

857,706. TYPE-WRITING MACHINE. OSCAR WOODWARD, New York, N. Y., assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y., a Corporation of New York. Filed Sept. 30, 1905. Serial No. 280,858.



Claim.—1. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices; a column stop; a series of key-actuated denomination stop members; and a series of releasing devices each of said series of releasing devices being adapted to be actuated by one of said series of denomination stop members to release said carriage from the escapement devices and permit it to run freely until the actuated denominaton stop member and said column stop coact.

2. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices; a column stop; a series of key operated denomination stop members; and a series of independently operable releasing devices each of which is adapted to be operated by one of said series of denomination stop members to release said carriage from the escapement devices and permit it to run freely until the operated denomination stop member and the column stop coact.

3. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices; a column stop; a series of key operated denomination stop members; and a series of releasing devices each separate from the others and operable by one of said denomination stop members to release said carriage from the escapement devices.

4. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; a column stop; a series of pivoted denomination stops; a series of actuating keys therefor; and a series of devices for releasing said carriage, each device being operable by one of said keys and independently of all the other releasing devices.

5. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices; a column stop; a series of keys; a series of denomination stop members operable by said keys; and a series of releasing devices also operable by said keys and adapted to release the carriage from its escapement devices, each key and its associate denomination stop and releasing device being operable independently of all the other keys, denomination stops and releasing devices.

6. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices including a rack and pinion; a column stop; a series of keys; a series of denomination stops operable by said keys; and a series of independently movable levers each operable by one of said keys to separate said rack and pinion.

7. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices including a rack and pinion; a column stop; a series of keys; a series of denomination stops operable by said keys, a series of levers; and connections between said levers and said denomination stops, each of said levers being operable independently of all the other levers to separate said rack and pinion and permit the carriage to move freely until it coacts with the operated denomination stop member.

8. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices including a rack and pinion; a column stop; a series of push rods; denomination keys thereon; a series of pivoted denomination stops, each connected with one of said push rods; a series of bell crank levers, each connected with one of said denomination stops; and a series of lifting levers, each adapted to lift said rack from said pinion and each connected with one of said bell crank levers.

9. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices including a rack and pinion; a column stop; a series of push rods; denomination keys at the front of the machine and connected with said push rods; a series of pivoted denomination stops, each operable by one of said push rods; a series of bell crank levers; pin and slot connection between each of said bell crank levers and one of said denomination stops, and a series of levers provided with lifting shoes, each of said levers being connected with one of said bell crank levers and operable by the latter to lift said rack out of engagement with said pinion.

10. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices; a column stop, a supporting frame detachable from the machine; a series of key actuated denomination stop members fulcrumed in said frame; a series of devices connected with said stop members and each associated with a denomination stop member and each operable independently of the other releasing devices to release the carriage during the tabulating operation.

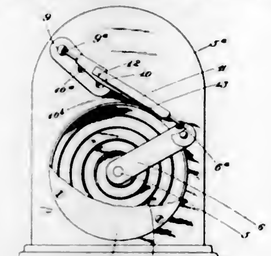
11. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices; a column stop; a series of key actuated denomination stop members; a series of devices, each associated with a denomination stop member and each operable independently of the other releasing devices to release the carriage during the tabulating operation.

12. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices including a rack and pinion; a column stop adjustably mounted on said carriage; a series of spring pressed push rods mounted beneath the machine base and each provided with a finger key; a detachable frame or bracket mounted on the frame of the machine; a series of denomination stop members fulcrumed in said bracket and each connected with one of said push rods; a series of bell crank levers fulcrumed in said bracket, and each connected with one of said denomination stop members; a series of levers each connected with one of said bell crank levers at one end, and each having a lifting shoe at the other end adapted to coact with said rack to lift it out of engagement with said pinion.

13. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices; a set of column stops; a series of key-actuated denomination stop members; and a series of releasing devices, each of said series of releasing devices being adapted to be actuated by one of said series of denomination stop members to release said carriage from the escapement devices and permit it to run freely until the actuated denomination stop member and one of said column stops co-act.

14. In a typewriting machine and in a tabulating mechanism, the combination of a carriage; escapement devices; a set of column stops; a series of key-operated denomination stop members; and a series of releasing devices, each operative by one of said denomination stop members, said releasing devices being separately adjustable, each being adapted to be set or timed to effect the release of said carriage from the escapement devices independently of the operation of any of the other denomination stop members and releasing devices.

857,707. DEVICE FOR PERMITTING THE AUTOMATIC OPERATION OF FIRE-ALARM BOXES. LEONIDAS G. WOOLLEY, Lima, Ohio, assignor to John C. Riley, Lima, Ohio. Filed Aug. 31, 1906. Serial No. 332,797.



Claim.—1. In combination with automatically movable means for effecting a signal, a device for holding said movable means in position to operate upon a dangerous rise of temperature comprising two members hinged together and overlapping each other, and a fusible material between the lapping portions of said members to secure said members substantially in alinement or parallel to each other, substantially as described.

2. In combination with automatically movable means for effecting a signal, a device for holding said movable means in position to operate upon a dangerous rise of temperature comprising two members hinged together and secured fixedly with reference to each other by a material fusible on a dangerous rise of temperature.

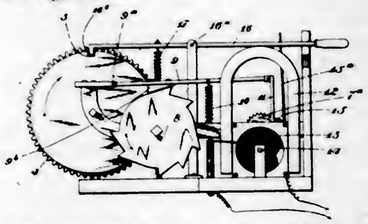
3. In combination with a signal box having automatically movable means for effecting a signal, a device for holding said movable means in position to operate upon a dangerous rise of temperature comprising two bar-like members hinged together, a material fusible on a dangerous rise of temperature to secure said members substantially in alinement or parallel to each other, said members being adapted to engage the said automatically movable means and a fixed point on the box to hold the movable means in position until released by a dangerous rise of temperature.

4. In combination with a signal box having a signal sending shaft, with a crank fixed thereon, means for automatically rotating said shaft and crank, a device for holding said crank in position to automatically operate upon a dangerous rise of temperature comprising two members hinged together, and means fusible on a dangerous rise of temperature to hold said members in fixed relation to each other, said device being adapted to engage the crank and a fixed point on the signal box.

5. In combination with a magneto-electrical signal device having automatically movable means for effecting a signal, said means including a crank, a device for holding said crank in position to operate automatically upon a dangerous rise of temperature comprising a two-part device unattached to said crank, the parts of said device held together by a fusible material and said device adapted to engage said crank and a fixed point away from said crank.

857,708. CIRCUIT-OPERATING DEVICE. LEONIDAS G. WOOLLEY, Lima, Ohio, assignor to John C. Riley, Lima, Ohio. Filed Aug. 31, 1906. Serial No. 332,798.

Claim.—1. In a circuit-operating device, the combination of a motor, a signal wheel driven thereby, an electromagnetic generator, and means for operating said generator by the signal wheel.



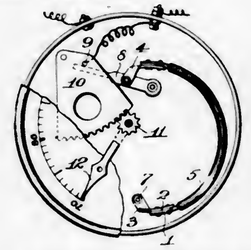
2. In a circuit-operating device, the combination of a motor, a toothed signal wheel driven thereby, a lever carrying a rack bar said lever being actuated by said toothed wheel, an electromagnetic generator including a coiled armature having a shaft, and a pinion on said shaft engaged by said rack bar.

3. In a circuit-operating device, the combination of a motor, a signal wheel driven thereby, an electromagnetic generator, means for operating said generator by the signal wheel, an escapement for controlling the operation of the motor, and means for automatically stopping the operation of the escapement.

4. In a circuit-operating device, the combination of a motor, a signal wheel driven thereby, an electromagnetic generator, means for operating said generator by the signal wheel, an escapement for controlling the operation of the motor, means for manually releasing said escapement and automatically stopping its operation.

5. In a circuit-operating device, the combination of a motor, a signal wheel driven thereby, an electromagnetic generator including a coiled armature, and means between the generator and the signal wheel adapted to give intermittently quick movements to the armature of the generator.

857,709. THERMOSTATIC SPRING. THEODORE H. WURMB and ROBERT BAUMANN, St. Louis, Mo. Filed Dec. 11, 1906. Serial No. 347,379.



Claim.—1. A thermostatic spring, comprising two similarly curved strips, one of spring steel and the other of cold rolled German silver, and a German silver wire closely wound upon said strips, in such a manner as to entirely inclose the main body portions of the curved strips.

2. A thermostatic spring, comprising two similarly curved strips, one of spring steel and the other of cold rolled German silver, a German silver wire closely wound upon said strips in such a manner as to entirely inclose the main body portions of the curved strips, the ends of which strips are rigidly united, and the ends of the wire being united to the strips.

3. A thermostatic spring, comprised of two similarly curved strips, the outer one of which is formed of spring steel, the inner one being formed of zinc, alloyed with nickel, copper, and antimony, and which strips are tightly wound with a wire formed of the same material as the second strip, in such a manner as to entirely inclose the main body portions of the curved strips.

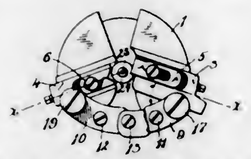
4. A thermostatic spring, composed of two similarly curved strips, the outer one of spring steel, the inner one

of German silver, the edges of the ends of said springs being united by solder, and a wire of German silver closely wound upon said strips in such a manner as to entirely inclose the main body portions of the curved strips, and the ends of said wire being united with the ends of the strips.

5. A thermostatic spring, composed of two similarly curved strips, the outer one of spring steel, the inner one of German silver, and a German silver wire wound upon said strips in such a manner as to form air spaces between the outer faces of the pair of strips and the corresponding portions of the wire.

6. A thermostatic spring, composed of two similarly curved strips, the outer one of spring steel, the inner one of alloy, and a wire tightly wound upon said strips so as to entirely inclose the main body portions of the strips, which wire and the inner strip are formed of an alloy having zinc as the basis of its composition.

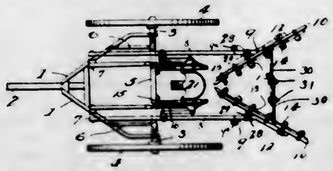
857,710. CUTTING-TOOL. WILLIAM D. ALLEN and GUSTAVE A. JOHNSON, New Haven, Conn., assignors to Marlin Fire Arms Company, New Haven, Conn., a Corporation of Connecticut. Filed Sept. 7, 1906. Serial No. 333,585.



Claim.—1. In a taper cutting tool, a body, radial guideways in said body at opposite sides of the center, a member mounted to slide in each guide-way, a pair of levers pivoted to the body near the margin thereof on separate fulcrums, a pin and slot connection between the inner ends of said levers, and a pin and slot connection between each lever and one of the members.

2. In a taper cutting machine, a body and a shank, both provided with a central, longitudinal passage, radial guideways in said body at opposite sides of the center, a member mounted in each of said guide-ways, means to simultaneously move both of said members toward and from each other, a spring-pressed abutment mounted to slide in said passage normally engaging the inner faces of said members, and a smaller central projection therefrom extending flush with the outer faces of said members, said projection provided with a recess at its extremity to engage the stock.

857,711. HARROW. JESSE E. ARNOLD, Hico, Tex. Filed Oct. 11, 1906. Serial No. 338,381.



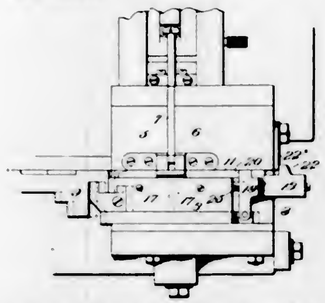
Claim.—1. A cultivator comprising a wheeled frame, beams extending rearwardly thereof, hangers depending from said beams and comprising spring held pivoted sections, and tooth carrying bars fixed to the ends of said hangers.

2. A cultivator comprising a wheeled frame, parallel beams extending rearwardly thereof and including at their rear ends pivoted divergent angular sections, hangers depending from said sections, tooth carrying bars fixed to said hangers in coincident relation to said sections, and adjustably connected elements connecting said sections.

3. A cultivator comprising a wheeled frame, parallel beams pivotally suspended therefrom and extending rearwardly thereof, means for raising and lowering said beams on their pivots, said beams including at their rear ends pivoted divergent sections, hangers depending from said divergent sections, tooth carrying bars fixed to the lower ends of said hangers in coincident relation to said sections and adjustably connected elements connecting said sections.

4. A cultivator comprising a wheeled frame, parallel beams pivotally suspended therefrom and extending rearwardly thereof, means for raising and lowering said beams on their pivots, said beams including at their rear ends pivoted divergent sections, hangers depending from said divergent sections and comprising spring held pivoted sections, tooth carrying bars fixed to the lower ends of said hangers, and adjustably connected elements connecting said divergent sections.

857,712. MOLD FOR TYPE-MACHINES. JOHN S. RANCROFT, Philadelphia, Pa., assignor to Lanston Monotype Machine Company, Philadelphia, Pa., a Corporation of Virginia. Filed Dec. 1, 1904. Renewed Nov. 9, 1905. Serial No. 286,599.



Claim.—1. A mold such as described provided with independently movable cross-blade and jet slide, in combination with means for successively operating the jet slide and cross-blade, to first cut off the sprue and close the mold in advance of the movement of the cross-blade.

2. A mold for type casting machines such as described provided with a cross-blade and an independently movable jet slide intermediate the mold cavity and nozzle seat.

3. In a mold for type casting machines such as described provided with side blocks, mold-blade and nozzle seat, and in combination therewith a movable cross-block provided with a jet opening and an independently movable cross-blade.

4. In a mold for type casting machines such as described and in combination with the reciprocating cross-block thereof, a cross-blade forming one wall of the mold cavity and a detainer coupling the cross-block and cross-blade and engaging a fixed abutment to limit the motion of the cross-blade.

5. In a mold for type machines and in combination with the cross-block thereof, a cross-blade guided to reciprocate upon the cross-block.

6. In a mold for type casting machines and in combination with the reciprocating cross-block thereof, a cross-blade, mounted to reciprocate upon the cross-block, a pin extending transversely of the cross-blade and cross-block engaging bearings on each, and an adjusting device engaging said pin.

7. In a mold for type casting machines and in combination with the cross-block thereof, a cross-blade mounted upon the cross-block, a pin extending transversely of the cross-block and engaging a bearing on the cross-blade, a gage for said pin and an adjusting screw for holding the pin upon said gage.

8. In a mold for type casting machines the combination with a reciprocating cross-block provided with jet blocks and an independently movable cross-blade, of a cross-blade detainer carried by the cross-block and engaging the cross-blade, means for yieldingly advancing said detainer in one direction, and a shoulder for engaging a fixed abutment, to arrest the detainer and cross-blade during a portion of the movement of the cross-block.

9. In a mold for type casting machines and in combination with the reciprocating cross-block thereof provided with a jet opening intermediate the mold cavity and nozzle seat, a cross-blade movably supported upon said cross-block, a detainer carried by the cross-block and engaging the cross-blade, said detainer being provided with a retracting spring and a shoulder, the latter in position to engage the mold when the cross-block is at one extreme of its movement.

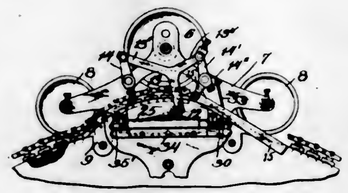
10. In a type casting machine such as described and in combination with the movable matrix nozzle and type carrier thereof, a mold provided with a nozzle seat; a reciprocating cross-block coupled with the type carrier and containing the jet opening; a cross-blade movable upon the cross-block; a detainer coupled with the cross-block and cross-blade and provided with a retracting spring; and means for engaging the detainer, to arrest the latter during the motion of the cross-block in one direction.

11. In a mold for type casting machines and in combination with the reciprocating cross-block and independently movable cross-blade coupled to a detainer, a removable gage for intercepting the detainer to limit the motion of the cross-blade.

12. In a mold for type casting machines such as described and in combination with the reciprocating cross-block and cross-blade thereof, a cross-blade detainer mounted upon the cross-block and engaging the cross-blade, said detainer provided with an arm engaging a bearing on the cross-blade, a latch engaging an opposing bearing on the cross-blade, and a spring acting upon said latch to advance the detainer and hold it under yielding pressure in contact with the cross-block.

13. A mold for type casting machines such as described provided with means for closing the inductive end of the mold cavity while the matrix is seated and before the injected metal has entirely solidified.

857,713. TRAVELING-FLAT CARDING-ENGINE. WILLIAM BATTEN and WILLIAM HAYES, Auburn, Me., assignors to Batten-Hayes Company, Lewiston, Me., a Corporation of Maine. Filed July 20, 1906. Serial No. 327,060.



Claim.—1. In a traveling flat carding engine the combination of a main cylinder, a set of flats, means to cause said flats to travel in working relation with said cylinder, a stripping or cleaning device for said flats, a conveyer adapted to receive the strippings, and means for moving said conveyer.

2. In a traveling flat carding engine the combination of a main cylinder, a set of flats, means to cause said flats to travel in working relation with said cylinder, a stripping or cleaning device for said flats, a conveyer adapted to receive the strippings, and means for moving said conveyer intermittently.

3. In a traveling flat carding engine the combination of a main cylinder, a set of flats, means to cause said flats to travel in working relation with said cylinder, a stripping or cleaning device for said flats, a conveyer adapted to receive the strippings, said conveyer extending transversely of the direction of travel of the flats, and means for moving said conveyer.

4. In a traveling flat carding engine the combination of a main cylinder, a set of flats, means to cause said flats to travel in working relation with said cylinder, a stripping or cleaning device for said flats, a conveyer adapted to receive the strippings, projections on said conveyer adapted to enter the mass of strippings, and means for moving said conveyer.

5. In a traveling flat carding engine the combination of a main cylinder, a set of flats, means to cause said flats to travel in working relation with the card-clothed periphery of the cylinder around a portion of the circumference of said cylinder, means to expose the card-clothed faces of the flats temporarily in position to be cleaned at an intermediate point in the said travel, a stripping device which acts upon the flats while thus exposed at said point, a conveyer adapted to receive the strippings, and means for moving said conveyer.

6. In a traveling flat carding engine the combination of a main cylinder, a set of flats, means to cause the said flats to travel in working relation with the card-clothed periphery of the cylinder around a portion of the circumference of said cylinder, bridges to separate the card-clothed faces of the flats temporarily from the card-clothed surface of the said cylinder, a stripping device for the flats located in the space or opening thus produced between the flats and the cylinder, a conveyer adapted to receive the strippings also located in said space below the stripping device, and means for moving said conveyer.

7. In a traveling flat carding engine the combination of a main cylinder, a set of flats, means to cause said flats to travel in working relation with said cylinder, a stripping device for said flats, a conveyer adapted to receive the strippings, a shaft and means for driving the same, and means connected to said shaft for simultaneously actuating said flats, stripping device, and conveyer.

8. In a traveling flat carding engine the combination of a main cylinder, a set of flats, means to cause said flats to travel in working relation with said cylinder, a stripping device for said flats, a conveyer adapted to receive the strippings, a shaft and means for driving same, and means connected to said shaft for simultaneously actuating said flats, stripping device, and conveyer, said means comprising a variable speed motion.

9. In a traveling flat carding engine the combination of a cylinder, a set of flats, means to cause said flats to travel in working relation with the cylinder during a certain period of their forward movement, means for withdrawing the flats from and returning them into working relation with said cylinder during another period of their forward movement, means for cleaning or stripping the flats, and means for automatically conveying the strippings away from and out of the engine.

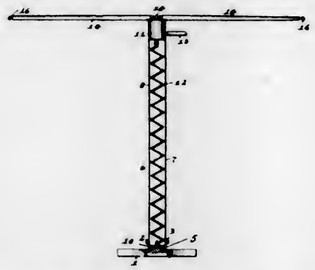
10. In a traveling flat carding engine the combination of a cylinder, a series of flats, means to cause said flats to travel in working relation with the cylinder, means to interrupt said working relation, means for cleaning or stripping the material from the flats during this interrupted working relation period, means for automatically removing the said material away from and out of the carding engine, and means to return the flats into working relation with the cylinder.

11. In a traveling flat carding engine the combination of a cylinder, a series of flats traveling in working relation with the cylinder, bridges or deflecting guides to cause the flats to leave the cylinder and to return thereto after being cleaned, means to clean or strip the material from the flats, and means for automatically removing the said material away from and out of the carding engine.

12. In a traveling flat carding engine the combination of a cylinder, a series of traveling flats, means to cause the said flats to travel in working relation with the card clothed periphery of the cylinder, elevated guides to separate the card clothed faces of the flats temporarily from the card clothed surface of the said cylinder, a cleaning device for the flats located in the space or opening thus produced between the flats and the cylinder, and means

for removing out of the carding engine the material cleaned from the flats, substantially as described.

857,714. CLOTHES-DRIER. JAMES S. BOUGHER, Pittsburg, Pa., assignor of one-half to Sidney Hirsh, Pittsburg, Pa. Filed Dec. 18, 1906. Serial No. 348,497.



Claim.—1. The combination with arms, of a case for inclosing said arms, and a spring operated block within said case having said arms hinged thereto and adapted to be raised and lowered to open and close said arms.

2. The combination with arms, of a case for inclosing said arms and having a vertical slot within the same and a slot extending out at right angles therefrom, a spring operated sliding block within said case having said arms hinged thereto and adapted to be raised and lowered to open and close said arms, and a handle passing through said vertical slot and connected to said block for moving the same, said handle being adapted to be passed into said angular slot for holding said arms in their open position.

857,715. MEANS FOR AUTOMATICALLY TIMING THE SPARK FOR PRODUCING IGNITION IN EXPLOSION-MOTORS. AUGUSTE E. BRILLIÉ, Paris, France, assignor to Société Anonyme des Automobiles Eugène Brillié, Paris, France. Filed Dec. 24, 1906. Serial No. 349,227.



Claim.—1. In a device of the character described, the combination with a magneto igniter provided with an armature shaft, of a sleeve thereon carrying projections, a motor shaft provided with a socket having grooves or cut out portions into which said projections are adapted to enter, and means acting upon said projections for advancing the armature shaft relatively to the motor shaft.

2. In a device of the character described, the combination with a magneto igniter provided with an armature shaft, of a sleeve on said shaft having projections formed thereon, a motor shaft carrying a socket having sector shaped grooves wherein the said projections are adapted to enter and have limited rotary motion, and means engaging said projections to thereby advance the armature shaft relatively to the motor shaft upon rotation of the latter.

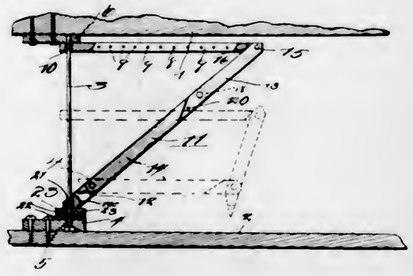
3. In a device of the character described, the combination with a magneto igniter provided with an armature shaft, of a sleeve carried by said shaft and having lateral projections, a motor shaft, a socket upon said motor shaft having grooves wherein the projections enter and have limited rotary motion, a disk carried by said motor shaft, and means carried by said disk for engaging said projections and advancing the armature shaft in a degree corresponding to the rate of rotation of said motor shaft.

4. In a device of the character described, the combination with a magneto igniter provided with an armature shaft, of a sleeve on said shaft having lateral projections, a motor shaft provided with a socket having grooves into which said projections are adapted to enter, a disk rigidly secured to said motor shaft, and weighted fingers pivoted to said disk, said fingers being adapted to engage said projections and advance the armature shaft relatively to the motor shaft in a degree corresponding to the rate of rotation of the latter.

5. In a device of the character described, the combination with a magneto igniter, provided with an armature shaft, of a sleeve on said shaft having lateral projections, a motor shaft provided with a socket having grooves into which said projections are adapted to enter, a disk rigidly secured to said motor shaft, fingers pivoted upon said disk and weighted extensions formed integrally with said fingers.

6. In a device of the character described, the combination with a magneto igniter provided with an armature shaft, of a sleeve on said shaft having lateral projections, a motor shaft provided with a socket having grooves into which said projections are adapted to enter, a disk rigidly fixed upon said motor shaft forward of said socket, a plurality of fingers pivoted upon said disk, weighted extensions formed integrally with said fingers, and retractile springs controlling said extensions.

857,716. DISPLAY-HOLDER FOR RUGS. EMMET BROWN, Mitchell, Ind. Filed June 16, 1906. Serial No. 321,991.



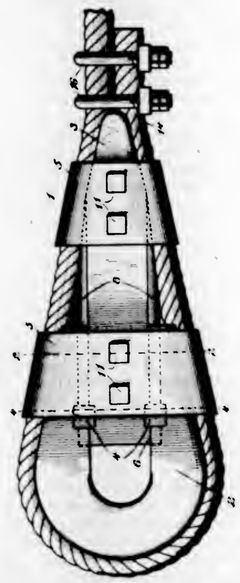
Claim.—In a rug holder, a base plate, a ceiling plate, a standard disposed therebetween, a beam pivotally and slidably mounted upon the standard, a diagonal brace bar attached to the beam with its lower end pivotally connected to the standard, said brace bar being foldable so as to lower the beam from a higher to a lower horizontal plane, and locking means to hold the brace rigidly in alinement when the beam is in its higher position.

857,717. ROPE-THIMBLE. GLENN C. BROWN, Bessemer, Ala. Filed Mar. 16, 1906. Serial No. 306,468.

Claim.—1. In a device of the character described, the combination of a thimble, a wedge member constructed to be inserted in said thimble, a suitable key for locking said thimble and wedge member together and a clamp constructed to engage the rope, said clamp being carried by said wedge member, substantially as described.

2. In a device of the character described, the combination of a thimble, a member constructed to be inserted in said thimble, means for locking said thimble and member together, and a clamp associated with said thimble and member for engaging the rope, substantially as described.

857,717.



857,718. SHEET-METAL TILE. SEWARD H. CALKINS, Baltimore, Md. Filed Mar. 21, 1907. Serial No. 363,606.

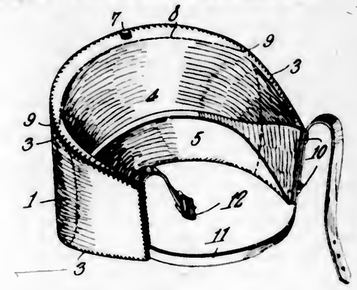


Claim.—1. The combination of two tiles each having on all of its opposite edges a flange, 3, which projects backward and also inclines inwardly and forms at the back parallel opposing undercuts, and two of said adjoining inclined flanges provided with an outward lateral flange, 8, which has position in a plane parallel with the front face of the tile, and the edge of one of said inclined flanges, 3, of one tile bearing on or in contact with a flat lateral flange, 8, of the other tile, thereby forming a joint having a concealed space.

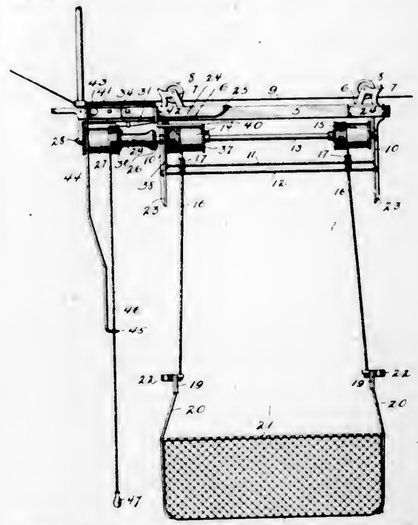
2. A sheet-metal tile having around its edges a flange projecting backward and also inclining inwardly and forming an undercut surrounding its edges, and two of said inclined flanges provided with an outward border flange, 8, whose surface is parallel with the front face of the tile, and a flanged edge, 10, projecting at a right-angle with respect to the said border flange, 8.

857,719. KNEE-PAD. WILLIAM R. CHAMBERS, SOLOMON R. CHAMBERS, and WADE H. CHAMBERS, May, Tex. Filed Mar. 6, 1907. Serial No. 360,856.

Claim.—A knee pad, comprising an inner and an outer strip of leather united at their edges by stitching, a fold of leather connected by the same stitching to each edge of the pad and extending inwardly over the inner fold 2, an inflatable bag between said inner and outer strips, and fastening means on the ends of said knee pad.



857,720. PACKAGE-CARRIER. JAMES W. CLARK, Janesville, Wis. Filed Sept. 26, 1906. Serial No. 336,247.



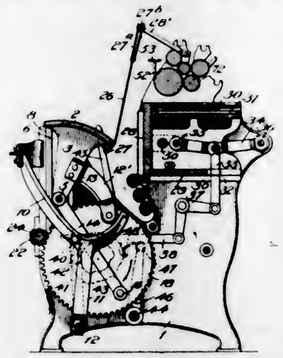
Claim.—1. In a device of the character described, the combination with an overhead trolley, of a carriage adapted to travel upon said trolley, a shaft mounted longitudinally of said carriage, drums mounted upon said shaft, a receptacle, cords adapted to be wound upon said drums, the lower ends of which are connected to said receptacle, and eyelets carried by said receptacle, said eyelets being adapted to receive depending portions of the carriage.

2. In a device of the character described, the combination with an overhead trolley, of a carriage adapted to travel upon said trolley, a shaft mounted longitudinally of said carriage, drums mounted upon said shaft, a receptacle, flexible members connected to said receptacle which are adapted to be wound upon said drums, a rod parallel with the shaft and forming a part of the carriage, and pulleys mounted for rotation and bodily endwise movement upon said rod, said pulleys receiving said flexible members and serving to center the receptacle with relation to the carriage.

3. In a device of the character described, the combination with a carriage, of a rotative shaft mounted longitudinally of said carriage, drums carried by said shaft, flexible members adapted to be wound upon said drums, a receptacle connected to said flexible members, a drum located at a sales station, said drum having a recessed end

which is adapted to receive the end of the shaft, manually operable means for imparting rotative movement to said drum, means for holding said drum against movement when the carriage is in transit, means for automatically releasing said drum when the carriage reaches the sales station, means for holding the drums of the carriage against rotation when said carriage is in transit, and manually operable means for releasing said drums when the carriage reaches a sales station.

837,721. PRINTING-PRESS. WILLIAM M. CLARK, Philadelphia, Pa. Filed July 3, 1905. Serial No. 268,108.



Claim.—1. A printing press of the character described comprising a movable platen having a curved working face, a vertically disposed bed co-operating with the platen, means for shifting said bed longitudinally into and out of the path of the platen, and means depending from the platen for maintaining it constant in its movement.

2. A printing press of the character described comprising a movable platen having a curved working face, a vertically disposed bed co-operating with the platen, means for shifting said bed longitudinally into and out of the path of the platen, and means depending from the platen for maintaining it constant in its movement, and means for operating the platen thereby causing it to progressively engage the vertically disposed bed to form the impression.

3. A printing press of the character described comprising an oscillatory platen having a curved working face, a vertically disposed bed co-operating with the platen, operating means for the platen, and means connected with and operated by the operating means for the platen for shifting said bed longitudinally into and out of the path of the platen, and means depending from the platen for maintaining the oscillatory movement thereof constant during its operation.

4. A printing press of the character described, comprising a platen having a curved working face, a pair of reciprocatory slides, a reciprocatory shaft carried thereby, arms loosely mounted upon the shaft and attached to the platen, a depending guide member attached to said arms and provided with a roller, a curvilinear track upon which said roller travels, and means for operating said shaft.

5. A printing press of the character described comprising an oscillatory platen, a depending curved guide member carried by the platen and extending substantially at right angles with respect to the working face of the platen, a curved track for said guide member, a reciprocating means for operating the platen and to which the platen is connected, a guide for said reciprocatory means, and a rotary means engaging with said reciprocating means for operating it.

6. A printing press of the character described, comprising a reciprocatory and oscillatory curved platen, a depending curved guide carried by the platen and extending at an angle with respect thereto, a stationary curved track for said guide, a reciprocatory means for operating the platen, and a rotary means engaging said reciprocatory means for operating it.

7. A printing press of the character described, comprising an oscillatory platen having a curved working face, a flat bed co-operating with the platen, means for moving the bed into and out of the path of the platen, means for discontinuing the movement of the bed, and inking mechanism, operating means therefor, and means for discontinuing the operation of the inking mechanism.

8. A printing press of the character described comprising the combination of an oscillatory platen having a curved working face, a vertically disposed flat bed, means for moving the bed longitudinally into and out of the path of the platen, and a plurality of flexible members having the upper end thereof secured over and above the bed and the lower end secured to the platen and extending over the inner edge thereof and adapted to automatically assume a gripping position for the material on the movement of the platen in one direction and to assume an inoperative position when the platen moves in an opposite direction.

9. A printing press of the character described comprising the combination of an oscillatory platen having a curved working face, a vertically disposed flat bed, means for moving the bed longitudinally into and out of the path of the platen, and a plurality of flexible members having the upper end thereof secured over and above the bed and the lower end secured to the platen and extending over the inner edge thereof and adapted to automatically assume a gripping position for the material on the movement of the platen in one direction and to assume an inoperative position when the platen moves in an opposite direction, a track, and means carried by the platen and co-operating with the track for maintaining the movement of the platen constant during the oscillations thereof.

10. A printing press of the character set forth, comprising a platen having a curvilinear working face, and means for imparting an oscillatory movement to the platen when traveling to and from its operative position and to cause the platen to assume a substantially horizontal position to receive the material to be operated upon combined with a vertically disposed and longitudinally movable flat bed adapted to be moved toward and from the platen.

11. A machine of the character described comprising a vertically disposed flat bed, a carriage having said bed attached to the forward end thereof, slide blocks mounted in the sides of the carriage means for longitudinally moving said carriage causing thereby the positioning of the bed for an impression, and a rotatable eccentric connection between the carriage and said blocks, said connection when rotated adjusting the limit of travel of the carriage to regulate the impression.

12. A machine of the character described, comprising a platen having a curvilinear working face, a vertically extending flat bed co-operating with the platen, a carriage means for moving said carriage longitudinally causing thereby the shifting of the bed toward and from the platen, slide blocks supported by the carriage and a rotatable eccentric connection between the carriage and said blocks, said connection when rotated adjusting the travel of the carriage, thereby regulating the impression, and means for moving the platen into progressive engagement with the bed.

13. In a printing press of the character described a reciprocatory and oscillatory curved platen, a frame, a longitudinally movable element carried thereby, a bed plate adjustably connected to and movable with said element and arranged in operative relation with respect to the platen, means connected with the element and frame for imparting a longitudinal movement to the element, operating mechanism detachably connected with said means, and a shifting device for throwing the connection between the operating mechanism and said means.

14. In a printing press of the character described, an oscillatory platen having a curved working face, a flat bed co-operating with the platen and adapted to be moved into and out of the path of the platen, means for moving the bed, an operating mechanism for the platen, a detachable connection between said operating mechanism and said means, and a shifting device for throwing out said connection, thereby disconnecting the movement of the carriage.

15. In a printing press of the character described, an oscillatory platen having a curved working face, a flat bed co-operating with the platen and adapted to be moved into and out of the path of the platen, means for moving the bed, an operating mechanism for the platen, a detachable connection between said operating mechanism and said means, a shifting device for throwing out said connection, thereby disconnecting the movement of the carriage, an inking mechanism, operating means therefor, a detachable connection between said operating means and said platen operating mechanism, and means for shifting the connection between said operating means for the inking mechanism and the operating mechanism for the platen thereby discontinuing the operation of the inking mechanism.

16. A printing press of the character described, comprising an oscillatory platen having a curved working surface, a vertically disposed flat bed co-operating with the platen, means for longitudinally moving said bed into and out of the path of the platen, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction, and to automatically assume an inoperative position when the platen moves in the opposite direction.

17. A printing press of the character described, comprising an oscillatory platen having a curved working surface, a vertically disposed flat bed co-operating with the platen, means for longitudinally moving said bed into and out of the path of the platen, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction, and to automatically assume an inoperative position when the platen moves in the opposite direction, and means for adjusting the bed plate to regulate the impression.

18. A printing press of the character described, comprising an oscillatory platen having a curved working face, a track, means depending from the platen and engaging the track for maintaining the operation of the platen constant, a reciprocatory mechanism connected with the platen for vertically moving it, and a pair of gear wheels connected with said mechanism for operating it.

19. A printing press of the character described, comprising an oscillatory platen having a curved working face, a track, means depending from the platen and engaging the track for maintaining the operation of the platen constant, a reciprocatory mechanism connected with the platen for vertically moving it, a pair of gear wheels connected with said mechanism for operating it, and a driven shaft having integral pinions engaging said gears for operating them.

20. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, and means operated by the gears and connected with the platen for operating it.

21. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, and means for maintaining the operation of the platen constant.

22. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears, for operating them, means operated by the gears and connected with the platen for operating it, a flat bed co-operating with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, and means operated by one of said gears and connected with said mechanism for operating it.

23. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, a flat bed co-operating with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, and means for disconnecting said mechanism from its operating means thereby discontinuing the operation of the mechanism and the moving of the bed plate.

24. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, an inking mechanism, and means connected therewith and with one of said gears for operating said mechanism.

25. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, means for disconnecting said mechanism from its operating means thereby discontinuing the operation of the mechanism and the moving of the bed plate, an inking mechanism, means connected therewith and with one of the gears for operating said inking mechanism, and means for discontinuing the operation of the inking mechanism.

26. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction combined with a form bed arranged in operative relation with respect to the platen.

27. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, means for maintaining the operation of the platen constant, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction combined with a form bed arranged in operative relation with respect to the platen.

28. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen for operating it, a flat bed co-operating with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction.

29. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said

gears for operating them, means operated by the gears and connected with the platen for operating it, a flat bed co-operating with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating, means for disconnecting said mechanism from its operating means thereby discontinuing the operation of the mechanism and the moving of the bed plate, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction.

30. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, an inking mechanism, means connected therewith and with one of said gears for operating said mechanism, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction.

31. A printing press of the character described, comprising an oscillatory platen having a curved working face, a pair of gears mounted on independent shafts, a driven shaft having a pair of integral pinions engaging with said gears for operating them, means operated by the gears and connected with the platen, mechanism for moving the bed out of the path of the platen after the impression has been made, means operated by one of said gears and connected with said mechanism for operating it, means for disconnecting said mechanism from its operating means thereby discontinuing the operation of the mechanism and the moving of the bed plate, an inking mechanism, means connected therewith and with one of the gears for operating said inking mechanism, means for discontinuing the operating of the inking mechanism, and a plurality of flexible members constituting a gripping means adapted to automatically assume a gripping position when the platen moves in one direction and to automatically assume an inoperative position when the platen moves in the opposite direction.

32. A printing press of the character set forth, comprising a vertically disposed bed longitudinally movable to impression position, an oscillatory platen adapted when moving in one direction to progressively contact with said bed, means depending in a curvilinear manner from the platen for maintaining the operation of the platen constant, and means for longitudinally moving the bed out of the path of the platen immediately after the impression has been made and when the platen moves in the opposite direction.

33. A printing press of the character set forth, comprising a vertically disposed bed, an oscillatory platen adapted when moving in one direction to progressively contact with said bed, a track associating with the platen, a guide associating with the track and platen and adapted to maintain the operation of the platen constant, and means for moving the bed out of the path of the platen after the impression has been made and when the platen moves in the opposite direction.

34. A printing press of the character set forth, comprising the combination with a flat bed and a platen adapted to progressively contact with the bed, of means for operating the platen, said means consisting of a pair of reciprocatory slides, a shaft connected thereto, a pair of arms attached to the platen and mounted upon the shaft, a pair of gears, means connected with the gears and with the shaft for imparting a reciprocatory movement to the platen, a track, and a guide arm depending from the platen and traveling over said track for imparting an oscillatory movement to the platen.

35. A printing press of the character described, comprising a platen having a curved working face and a vertically disposed movable bed, of means for moving the bed, said means comprising a carriage attached to the bed, a toggle connected with the carriage and with the press frame, a link attached to the toggle, a bell crank connected with said link, a shifting rod attached to the bell crank and carrying a roller in one end, and a vibratory arm carrying a socket adapted to receive said roller.

36. A printing press of the character described, comprising a platen having a curved working face and a vertically disposed movable bed, of means for moving the bed, said means comprising a carriage attached to the bed, a toggle connected with the carriage and with the press frame, a link attached to the toggle, a bell crank connected with said link, a shifting rod attached to the bell crank and carrying a roller in one end, and a vibratory arm carrying a socket adapted to receive said roller, combined with means for discontinuing the movement of the bed, said means consisting of a protuberance on said rod, a rock shaft, a shifting lever attached to the rock shaft, and a deflecting arm having a roller adapted when said shaft is rocked by said lever to engage in said protuberance thereby shifting said rod and moving the roller carried by the rod out of said socket.

37. A printing press of the character described, comprising a pair of rotatable gears, a platen having a curved working face, means connected with the gears and with the platen for imparting a reciprocatory movement to the latter, a curved track, and a guide arm depending from the platen and traveling upon the track for imparting an oscillatory movement to the platen.

38. A printing press of the character described, comprising a pair of rotatable gears, a platen having a curved work face, means connected with the gears and with the platen for imparting a reciprocatory movement to the latter, a curved track, a guide arm depending from the platen and traveling upon the track for imparting an oscillatory movement to the platen, a movable flat bed co-operating with the platen, and means operated by one of the gears for moving the bed into and out of the path of the platen.

39. A printing press of the character described, comprising a pair of rotatable gears, a platen having a curved work face, means connected with the gears and with the platen for imparting a reciprocatory movement to the latter, a curved track, a guide arm depending from the platen and traveling upon the track for imparting an oscillatory movement to the platen, a movable flat bed co-operating with the platen, means operated by one of the gears for moving the bed into and out of the path of the platen, an inking mechanism, and means operated by the other of the gears for operating said mechanism.

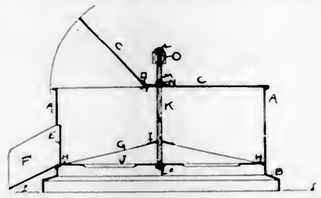
40. A printing press of the character described, comprising a reciprocatory and oscillatory curved platen, a depending curved guide carried by the platen and extending at an angle with respect thereto, a stationary curved track for said guide, a reciprocatory means for operating the platen, a rotary means engaging said reciprocatory means for operating it, and a vertically disposed and longitudinally movable form bed arranged in operative relation with respect to said platen.

41. A printing press of the character described, comprising a reciprocatory and oscillatory curved platen, a depending curved guide carried by the platen and extending at an angle with respect thereto, a stationary curved track for said guide, a reciprocatory means for operating the platen, a rotary means engaging said reciprocatory means for operating it, a vertically disposed and longitudinally movable form bed arranged in operative relation with respect to said platen, and means for moving the form bed out of the path of the platen after an impression has been made.

42. A printing press of the character described, comprising a reciprocatory and oscillatory curved platen, a depending curved guide carried by the platen and extending at an angle with respect thereto, a stationary curved track for said guide, a reciprocatory means for engaging the platen, a rotary means engaging said reciprocatory means

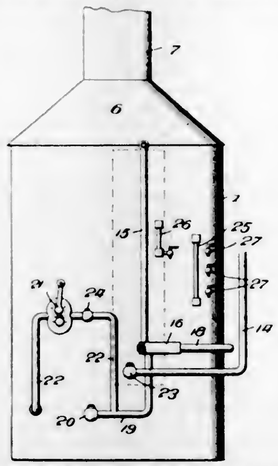
for operating it, a vertically disposed and longitudinally movable form bed arranged in operative relation with respect to said platen, and means for adjusting the form-bed, thereby regulating the impression.

857,722. ASH-SEPARATOR. HARRY M. COATS, Jersey City, N. J. Filed Feb. 20, 1906. Serial No. 302,148.



Claim.—In an ash separator, the combination of a cylindrical casing, a disk shaped circular screen adapted to rotate within said casing, a fixed cover having a hinged section on the casing, a shaft fixed at the center of said screen, and rotatably suspended from said cover, a discharge opening in the casing above the screen and means for rotating said screen substantially as described.

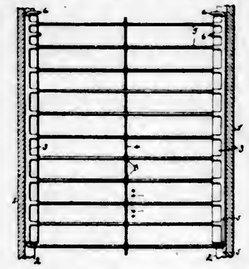
857,723. STEAM-GENERATOR. MILES CONNOR, Pueblo, Colo. Filed Sept. 1, 1906. Serial No. 332,985.



Claim.—1. A boiler of the class described, a steam generator disposed therein comprising a series of horizontally disposed tubes, means to connect said generator with the upper portion of said boiler, in combination with a vertically disposed steam generator, a circulating valve, means to connect the circulating valve and the upper portion of said vertical generator, and additional means to connect the inlet and ejecting ends of the circulating valve with the lower portions of the boiler and horizontal generating tubes respectively.

2. In a steam generator of the class described, the combination with a boiler having a water and steam space therein, and a plurality of horizontally disposed tubes in said boiler connected with the upper end of the steam space; of a generator in said boiler comprising an upper and a lower head and vertically disposed generating tubes connecting said heads, means to direct water into the lower head, a pipe extending downwardly from said upper head, a circulating valve connected to said pipe, a pipe connecting the circulating valve with the boiler, and additional means connecting the circulating valve and horizontally disposed generating tubes.

857,724. SHELF OR RACK. GEORGE E. DEAN, Albion, Mich. Filed Mar. 16, 1907. Serial No. 362,697.



Claim.—1. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends, the rear pair of cross-bars having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the lateral projections thereof; sheet metal end pieces folded over and clamped upon the ends of said cross-bars, said end pieces being arranged to engage only the laterally-turned portions of the front cross-bar; and a connecting bar having notches in its upper edge in which said cross-bars are arranged, said connecting bar being swaged or upset to clamp the cross-bars in the said notches thereof, as specified.

2. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends, one of said cross-bars having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the lateral projections thereof; sheet metal end pieces folded over and clamped upon the ends of said cross-bars, said end pieces being arranged to engage only the laterally-turned portions of the front cross-bar; and a connecting bar having notches in its upper edge in which said cross-bars are arranged, said connecting bar being swaged or upset to clamp the cross-bars in the said notches thereof, as specified.

3. A shelf or rack comprising a plurality of cross-bars having laterally turned ends, the rear pair of cross-bars having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the lateral projections thereof; sheet metal end pieces folded over and clamped upon the ends of said cross-bars; and a connecting bar having notches in its upper edge in which said cross-bars are arranged, said connecting bar being swaged or upset to clamp the cross-bars in the said notches thereof, as specified.

4. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends, one of said cross-bars having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the lateral projections thereof; sheet metal end pieces folded over and clamped upon the ends of said cross-bars; and a connecting bar having notches in its upper edge in which said cross-bars are arranged, said connecting bar being swaged or upset to clamp the cross-bars in the said notches thereof, as specified.

5. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends, the rear pair of cross-bars having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the lateral projections thereof; and sheet metal end pieces folded over and clamped upon the ends of said cross-bars, said end pieces being arranged to engage only the laterally-turned portions of the front cross-bars, as specified.

6. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends, one of said cross-bars having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the lateral projections thereof; and sheet metal end pieces folded over and clamped upon the ends of said cross-bars, said end pieces being arranged to engage only the laterally-turned portions of the front cross-bar, as specified.

7. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends, the rear pair of cross-bars having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the lateral projections thereof; and sheet metal end pieces folded over and clamped upon the ends of said cross-bars, as specified.

8. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends, one of said cross-bars having dawnwardly-projecting outwardly-facing ledge-engaging hooks formed on the lateral projections thereof; and sheet metal end pieces folded over and clamped upon the ends of said cross-bars, as specified.

9. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends; sheet metal end pieces folded over and clamped upon the ends of said cross-bars, said end pieces being arranged to engage only the laterally-turned portions of the front cross-bar; and a connecting bar having notches in its upper edge in which said cross-bars are arranged, said connecting bar being swaged or upset to clamp the cross-bars in the said notches thereof, as specified.

10. A shelf or rack comprising a plurality of cross-bars having laterally-turned ends; sheet metal end pieces folded over and clamped upon the ends of said cross-bars; and a connecting bar having notches in its upper edge in which said cross-bars are arranged, said connecting bar being swaged or upset to clamp the cross-bars in the said notches thereof, as specified.

11. A shelf or rack comprising a plurality of cross-bars, the front and rear cross-bars having laterally-turned ends, the rear cross-bar having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the laterally-turned ends thereof; sheet metal end pieces folded over and clamped upon the ends of said cross-bars, said end pieces being arranged to engage only the laterally-turned portion of the front cross-bar; and a connecting bar having notches in its upper edge in which said cross-bars are arranged, said connecting bar being swaged or upset to clamp the cross-bars in the said notches thereof, as specified.

12. A shelf or rack comprising a plurality of cross-bars the front and rear cross-bars having laterally-turned ends, the rear cross-bar having downwardly-projecting outwardly-facing ledge-engaging hooks formed on the laterally-turned ends thereof; and sheet metal end pieces folded over and clamped upon the ends of said cross-bars, said end pieces being arranged to engage only the laterally-turned portion of the front cross-bar, as specified.

13. A shelf or rack comprising a plurality of cross-bars, one of the cross-bars having laterally-turned ends, provided with downwardly-projecting outwardly-facing ledge-engaging hooks; and sheet metal end pieces folded over and clamped upon the ends of said cross-bars, as specified.

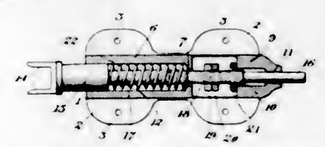
14. A shelf or rack comprising a plurality of cross-bars, one of the cross bars having its ends formed into outwardly-facing ledge-engaging hooks; and sheet metal end pieces folded over and clamped upon the ends of said cross-bars, as specified.

15. A shelf or rack comprising a plurality of cross-bars; sheet metal end pieces folded over and clamped upon the ends of said cross-bars; and a transverse bar having notches in its upper edge in which said cross-bars are arranged, said transverse bar being swaged or upset to clamp the cross-bars in the said notches thereof, as specified.

857,725. ELEVATOR GUIDE-SHOE. HUGH DONOHOE. New York, N. Y. Filed Mar. 19, 1907. Serial No. 363,238.

Claim.—1. In an elevator guide-shoe, the combination of a sleeve; a plunger working in the sleeve and provided with a guide at one end; an adjustable stop on the other end of said plunger; an abutment located to be engaged by said stop when the guide end of the plunger is sufficiently telescoped into the sleeve; and a spring adapted to hold the guide end of said plunger extended yieldingly out of the sleeve.

2. In an elevator guide-shoe, the combination of a sleeve; a plunger working in the sleeve and provided with a guide at one end; an adjustable stop on the other end of said plunger; an abutment adapted to be engaged by said stop; a spring adapted to hold the guide end of said plunger extended yieldingly out of the sleeve; and a shock deadening material interposed between said stop and said abutment.



3. In an elevator guide-shoe, the combination of a sleeve; a guide-carrying plunger working in the sleeve; an adjustable stop adapted to control the extent to which the guide end of the plunger can be telescoped into the sleeve; and a spring adapted to hold the guide-end of the plunger extended yieldingly out of the sleeve and located between said sleeve and plunger to be independent of any adjustment of the adjustable stop.

4. In an elevator guide-shoe, the combination of a sleeve; a plunger working in said sleeve and provided with a guide at one end; a tail-piece having an opening therein to receive the other end of said plunger; an adjustable stop on the intermedinte portion of said plunger adapted to abut against said tail-piece; and a spring adapted to hold the guide end of the plunger extended yieldingly out of the sleeve.

5. In an elevator guide-shoe the combination of a sleeve; a plunger working in said sleeve and provided with a guide at one end; a tail-piece having an opening therein to receive the other end of said plunger; an adjustable stop on the intermediate portion of said plunger adapted to abut against said tail-piece; a spring adapted to hold the guide-end of the plunger extended yieldingly out of the sleeve, and a washer of shock-deadening material surrounding the plunger and located between the adjustable stop and the tail-piece.

6. In an elevator guide-shoe, the combination of a sleeve; a second sleeve; a plunger extending through both of said sleeves and provided with a guide on its end which projects out of the first sleeve; a spiral spring surrounding the plunger within the first sleeve and located between an abutment on said sleeve and an abutment on the plunger; and a nut engaging screw-threads on the plunger intermediate the parts thereof which work in the sleeves.

7. In an elevator guide-shoe, the combination of a sleeve; a plunger working in the sleeve; an adjustable stop adapted to control the extent to which the "rail-end" of the plunger can be telescoped toward the sleeve; and a spring adapted to hold the "rail-end" of the plunger extended yieldingly out of the sleeve and located between a part of the sleeve and the plunger to be independent of any adjustment of the adjustable stop.

8. In an elevator-guide shoe, the combination of a sleeve; a second sleeve; a plunger extending through both of said sleeves; a spring operating on the plunger and adapted to hold its "rail-end" extended yieldingly out of the first named sleeve; and a pair of nuts engaging screw-threads on the plunger intermediate the parts thereof which work in the sleeves.

857,726. METHOD OF MAKING LEATHER TIRES. GIACOMO DURIO, ACHILLE DURIO, and GIOVANNI MARTINA, Turin, Italy. Filed Feb. 2, 1906. Serial No. 299,217.



Claim.—1. In the manufacture of leather tires or the like, the process which consists in first forming a sheet of leather into a seamless cylinder, and then bending the latter to cause the edges thereof to lie inwardly of the body portion.

2. In the manufacture of leather tires or the like, the process which consists in first forming a sheet of leather into a seamless cylinder, and then bending the latter to cause the edges thereof to lie inwardly of the body portion by stretching such body portion outwardly.

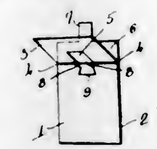
3. In the manufacture of leather tires or the like, the process which consists in first forming a sheet of leather into a seamless cylinder and then bending the latter to cause the edges thereof to lie inwardly of the body portion by stretching such body portion outwardly while progressively bringing such edges toward each other.

4. In the manufacture of leather tires or the like, the process which consists in first forming a seamless annular structure having cylindrical walls from a sheet of leather and then forming such structure into the shape of a tire.

5. In the manufacture of leather tires or the like, the process which consists in forming a sheet of leather into the form of a cylinder having a bottom, removing such bottom and forming such cylinder into tire shape.

6. In the manufacture of leather tires or the like, the process which consists in forming a sheet of leather into the form of a cylinder having a bottom, removing such bottom, and stretching the middle portion of such cylinder radially outward.

857,727. PIN TICKET OR TAG. JOHN C. EDWARDS, Brookline, Mass., assignor to A. Kimball Company, New York, N. Y., a Corporation of New York. Filed Jan. 26, 1907. Serial No. 354,270.



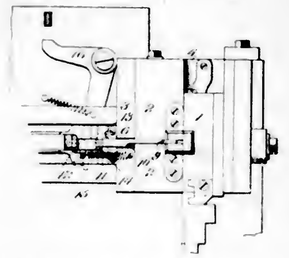
Claim.—1. As an article of manufacture, a pin ticket or tag doubled upon itself and cemented together for a part of its length, the free end of one ply constituting a fold adapted to be turned over the edge of a fabric and having an opening therein, the free end of the other fold constituting a flap, and having a tongue to enter the opening in the fold, and an attaching fastener having a head positioned between the cemented plies adjacent the fold and adapted to pass through the fabric and then through the opening in and be turned down upon the outer face of the fold, the flap covering the turned down portion of the fastener and being held in place by the tongue.

2. As an article of manufacture, a pin ticket or tag doubled upon itself and permanently connected for a part of its length, leaving a fold and a flap formed by the uncemented portions of the plies, said fold having an opening and the flap having a tongue to enter the same, and a staple attached to the connected plies and adapted to pass through a fabric adjacent its edge and then through the fold when turned over the fabric edge, the staple being thereafter turned down upon the fold and concealed by the flap when its tongue is inserted in the fold opening.

3. As an article of manufacture, a pin ticket or tag doubled upon itself and permanently connected for a part of its length, the free end of one ply forming a fold and the free end of the other ply forming a flap, a staple attached to the connected plies, to pass through a fabric adjacent its edge and then through the fold bent over the edge of the fabric, the staple legs when turned down upon the outer face of the fold being concealed by the flap, and means to retain the flap in position to conceal the staple legs.

4. As an article of manufacture, a pin ticket or tag doubled upon itself and permanently connected for a part of its length, leaving a fold and a flap formed by the uncemented portions of the plies, a staple attached to the connected plies adjacent the fold and projecting from the face of said plies toward which the fold is bent when in use, an opening in the fold extending toward its outer end from the bend, to receive the staple legs when passed through a fabric adjacent its edge, and a tongue on the flap to be passed through the opening after the staple legs have been turned down upon the fold.

857,728. TYPE-MOLD. EDWARD A. ESCHINGER, Philadelphia, Pa., assignor to Lanston Monotype Machine Company, Philadelphia, Pa., a Corporation of Virginia. Filed Dec. 10, 1904. Serial No. 236,347.



Claim.—1. A type mold such as described provided with a longitudinally divided or sectional mold blade, the upper or cut-off section whereof is furnished with a beveled guiding surface coöperating with an overlapping guide on the side block forming a top guide for said section.

2. A type mold, such as described, provided with a sectional mold-blade, the lower or body section whereof is provided with an internal top guide, and the upper or cut-off section with an overlapping top guide carried by the side block.

3. A type mold, such as described, provided with a sectional mold-blade the upper or cut-off section whereof is provided with a lateral extension or flange projecting beneath a top guiding surface on the side block.

4. A type mold, such as described, provided with a sectional mold-blade, the two members or sections whereof are each provided with two top guides, the one applied near the casting faces and the other to the rear portion.

5. A type mold, such as described, provided with a mold-blade composed of superposed independently movable sections, of which latter the lower or body section is provided with transverse openings for the reception of the gage block and front stop, the latter operating as top guides, while the upper or cut-off section is provided with an opening in its rear portion for the front stop, and a longitudinal side bearing engaged by an overlapping portion of the side block, forming a top bearing therefor.

6. A type mold such as described provided with a mold-blade composed of superposed independently movable sections of which the upper or cut-off section is provided with an off-set vertical extension or plate in parallel relation with the lower or body section.

7. A type mold such as described, provided with a mold-blade composed of superposed independently movable sections, the upper or cut-off section whereof is furnished with a bevel surface extending longitudinally thereof and projecting beneath or bearing on the side block to form a top guide.

8. A type mold such as described provided with a divided mold-blade composed of superposed independently movable sections, the upper or cut-off section whereof is furnished with a top bearing surface in the form of a bevel engaged by an overlapping bearing on the side block, said bevel and bearing terminating near without entering the mold-cavity.

9. A type mold such as described provided with a divided mold-blade composed of superposed longitudinally movable sections, one of said sections carrying a pivoted latch coöperating with a shoulder on the other section.

10. In a type mold such as described, provided with a divided mold-blade, and in combination therewith, a latch pivotally supported upon one section in position to engage

a shoulder on the other section when the casting faces are in alinement, adjusting devices coupled with one of said sections and an elastic pressure device coupled with the other section, to advance and hold the latter when the latch is disengaged.

11. In a type mold such as described provided with a divided mold-blade and in combination therewith a one way yielding latch mounted upon one mold-blade section in position to automatically engage a shoulder on the other section when their casting faces are in alinement, and an actuating connection or cross-pin coupled with one section.

12. In a type mold such as described provided with a divided mold-blade and in combination therewith a latch pivotally supported upon the cut-off section in position to engage a shoulder on the body section, when their casting faces are in alinement, a front stop for alining the two sections, and actuating devices coupled with the body section for simultaneous adjustment.

13. In a type mold such as described and in combination with the divided mold-blade thereof, a latch pivoted upon one section in position to engage a shoulder on the other section, a spring coupled with said latch to advance the section on which it is carried, and means for actuating said latch to uncouple the sections for individual adjustment.

14. In a type mold such as described provided with a divided mold-blade and in combination therewith, the latch pivoted upon and carried by the cut-off section in position to engage a shoulder on the body section and provided with an actuating arm; a spring for advancing and holding the cut-off section; adjusting devices coupled with the body section, and a lever in position to engage the actuating arm of the latch.

15. In a type mold such as described provided with a divided mold-blade composed of superposed independently movable body and cut-off sections the latter provided with a vertical extension off-set and lying in parallel relation with the body section; a front stop for both sections; a cross-pin engaging the body section; a pawl pivoted upon the extension of the cut-off section in position to engage a shoulder on the body section; a spring attached to the mold and engaging said pawl: and means for actuating the pawl to disengage it from the shoulder on the body section.

16. A type mold such as described provided with a mold-blade composed of superposed independently movable sections of which one section is provided with an off-set portion in parallel relation with one side of the other section.

17. A type mold such as described provided with a divided mold-blade, the upper or cut-off section whereof carries an off-set portion in parallel relation to the lower or body section and a pivoted latch engaging a shoulder on said body section, the latter being provided with means for attachment to the adjusting devices.

18. A type mold such as described provided with a sectional mold-blade and top guides applied to the rear portions of each of said sections.

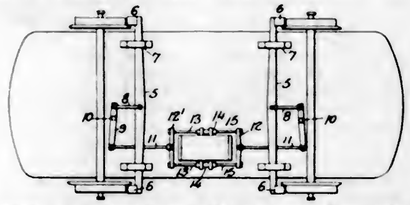
19. A type mold provided with a sectional mold-blade and a front stop or gage, the latter engaging said sections to form a top guide therefor.

20. The combination with a type mold such as described, provided with a sectional mold-blade, a latch carried by one of said sections and interlocking with the other section, of a lever supported in fixed relation to said latch and adapted to contact therewith.

21. In a type casting machine, a matrix, a mold having a slot leading to the face of the matrix, main and auxiliary blades for determining the width of the slot, means for connecting and disconnecting the main and auxiliary blades, and a spring for moving the auxiliary blade forward to cut off the slot at a distance from the matrix when the blades are disconnected.

22. In a type casting machine, a matrix, a type mold having its slot leading to the face of the matrix, main and auxiliary blades for determining the width of the slot, means for disconnecting the blades a spring for moving the auxiliary blade forward to cut off the slot at a distance from the matrix and means for moving the main blade forward to eject the lead, connect it with the auxiliary blade and move the main and auxiliary blades back to their normal position.

857,729. ELECTRIC BRAKE. EMIL FRANKE, Astoria, N. Y. Filed Aug. 4, 1906. Serial No. 329,200.



Claim.—1. In an electric brake for cars and vehicles the combination with a cylinder carrying electro-magnets, of a circuit including the electro-magnets, one or more controllers in the circuit, cross-heads carrying armatures and telescoping within each other, brake beams and shoes and means connecting the cross-heads with the brake beams.

2. In an electric brake for cars and vehicles the combination with a cylinder carrying two or more electro-magnets of cross-heads without the cylinder and carrying armatures, cross-heads within the cylinder and also carrying armatures, coupling means for the interior and exterior cross-heads, brake beams and shoes and means connecting the cross-heads with the brake beams.

3. In an electric brake for cars and vehicles the combination with a casing inclosing two or more electro-magnets, cross-heads within and without the casing carrying armatures, telescoping connections for the cross-heads and adapted to allow the movement of two or more sets of cross-heads and move in the proper direction when the electro-magnets are energized, brake beams and shoes and means connecting the cross-heads with the brake beams so that the brakes may be applied.

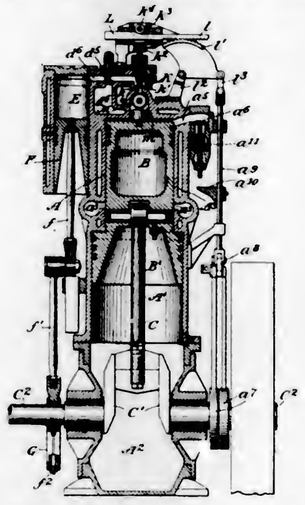
4. In an electric brake for cars and vehicles the combination with two or more electro-magnets, of an electric circuit and controller, cross-heads with armatures adapted to be attracted by each end of the magnetic core, coupling rods adapted to connect those cross-heads which move in corresponding directions when the magnets are energized, brake beams and shoes and connections between the brake beams and the coöperating cross-heads.

5. In an electric brake for cars and vehicles the combination with electro-magnets in an electric circuit, of armatures coupled so as to work in the same direction when the magnets are energized, telescopic rods adapted to carry the armatures and permit them to move in the same line, brake beams and shoes and levers and rods connecting each pair of correspondingly moving armatures with the brake beams.

6. In an electric brake the combination with an electric circuit, of electro-magnets, armatures operated by each end of the magnetic cores, brake beams, means connecting each brake beam so that it is operated by the correspondingly moving armatures, resistance coils in the circuit, a shaft carrying a contact arm for the coils, an operating handle and arm on the shaft with a depending pin, a tube or sleeve carrying the shaft and a segment at the top of the sleeve with holes for the depending pin and corresponding in number with the resistance coils.

857,730. INTERNAL-COMBUSTION ENGINE. ARTHUR B. GOODSPEED, East Orange, N. J., assignor to Industrial Development Company, New York, N. Y., a Corporation of New York. Filed Apr. 12, 1904. Serial No. 202,720.

Claim.—1. In a slow combustion engine, the combination of a working cylinder having an inlet port for the charge, an air inlet port at the forward end of the working cylinder, exhaust ports slightly in advance of the air inlet port, a secondary exhaust valve controlled port at the head of the working cylinder, a positively operated valve to control said charge inlet port, means to deliver fuel oil to said valve-controlled port, an igniter within the head of the cylinder, a compression cylinder, a closed crank chamber, a connection between the crank chamber and the air inlet port leading into the working cylinder, a connection between the compression cylinder and the valve-controlled charge inlet port, valve operating means to open said valve after the piston of the working cylinder completes its rearward stroke, and means carried by said valve operating means for opening the secondary exhaust valve, whereby the air under pressure from said compression cylinder is admitted to the working cylinder during the forward movement of the piston therein simultaneously with the fuel oil; substantially as described.



2. In a slow combustion engine, the combination of a working cylinder having an inlet port for the charge, an air inlet port at the forward end of the working cylinder, and exhaust ports slightly in advance of the air inlet port, a positively operated valve to control said charge inlet port, a secondary exhaust valve-controlled port at the head of the working cylinder, means to deliver fuel oil to said valve-controled charge inlet port, an igniter within the head of the cylinder, a compression cylinder in tandem with the working cylinder, a closed crank chamber, a piston in the working cylinder and having a portion fitted to the compression cylinder, a connection between the crank chamber and the air inlet port leading into the working cylinder, a connection between the compression cylinder and the charge inlet port, valve operating means to open said valve after the piston of the working cylinder completes its rearward stroke, and means carried by said valve operating means for opening the secondary exhaust valve, whereby the air under pressure from said compression cylinder is admitted to the working cylinder during the forward movement of the piston therein simultaneously with the fuel oil; substantially as described.

3. In a slow combustion engine, the combination of a working cylinder having at its head an inlet port for the charge, an air inlet port at the forward end of the working cylinder, exhaust ports slightly in advance of the air inlet port, both said ports being uncovered by the piston as it reaches the forward limit of its stroke, a secondary exhaust valve controlled port at the head of the working cylinder, a positively operated valve to control said charge inlet port, a single valve operating device for operating said secondary exhaust valve and said charge inlet valve, means to deliver fuel oil to said valve-controlled charge inlet port, a compression cylinder and a connection between the compression cylinder and the air inlet port, an igniter within the head of the cylinder, means to deliver air under pressure to said air inlet port, and independent means to deliver air under pressure to said charge inlet port during the forward stroke of the piston in the working cylinder and simultaneously with the fuel oil; substantially as described.

4. In an engine, the combination of a working cylinder having at its head an inlet port for the charge, an air inlet port at the forward end of the working cylinder, exhaust ports slightly in advance of the air inlet port, both said ports being uncovered by the piston as it approaches the limit of its forward movement, a secondary exhaust valve-controlled port at the head of the working cylinder, a positively operated valve to control said charge inlet port, a single valve operating device for operating said secondary exhaust valve and said charge inlet valve, means to deliver fuel oil to said valve-controlled charge inlet port, and means to open said charge inlet port valve after the piston of the working cylinder completes its rearward stroke, whereby the air under pressure from said compression cylinder is admitted to the working cylinder during the forward movement of the piston therein simultaneously with the fuel oil; substantially as described.

5. In a slow combustion engine, the combination of a working cylinder having an inlet port for the charge, an independent air port, in the forward end of the cylinder, exhaust ports slightly in advance of the air port, and arranged to be opened as the piston approaches the limit of its forward stroke, and a secondary exhaust port at the head of the working cylinder, a reversing gear to open said secondary exhaust port, a valve to control said inlet charge port, means to open said valve after the piston completes its rearward stroke, means to deliver oil to said valve-controlled inlet charge port, an igniter within the head of the cylinder, a compression cylinder, a closed crank chamber, a connection between the crank chamber and the air port, and a connection between the compression cylinder and said valve-controlled inlet charge port, whereby air is delivered to the working cylinder after the piston completes its rearward stroke; substantially as described.

6. In a slow combustion engine, the combination of a working cylinder having an inlet for the fuel charge, a valve to control said inlet, means to open said valve after the piston completes its rearward stroke, an air port in the forward end of the cylinder, exhaust ports slightly in advance of the air port, an igniter, a fuel oil supply, a compression cylinder and connections between it and the air port, an air compressor, a connection from said compressor to said valve-controlled inlet charge port, and means to vary the throw of the air compressor in one direction only according to the load on the engine; substantially as described.

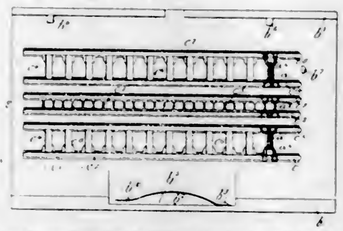
7. In a slow combustion engine, the combination of a working cylinder having an inlet for the fuel charge, a positively operated valve to control said inlet, an igniter, a fuel oil supply, a main air compressor, an auxiliary air compressor receiving air from the main compressor and delivering it to said valve-controlled inlet, means to vary the admission of air to the main compressor, and means to vary the throw of the auxiliary compressor according to the load of the engine; substantially as described.

8. In a slow combustion engine, a cylinder comprising a working chamber; an air compressing chamber of larger diameter than said working chamber and abutting therewith; a piston comprising a working portion moving in said working chamber and an enlarged compressing portion moving in said compressing chamber; a charge inlet port leading into said working chamber; a positively operated valve controlling said port; operating mechanism adapted to open said valve during the working stroke of said piston; a storage reservoir for storing air compressed by the aforesaid air compressor; a second air compressor

deriving its supply from said reservoir, said second compressor discharging into said charge inlet port; and means for supplying fuel oil to said charge inlet port.

9. In a slow combustion engine, a cylinder comprising a working chamber; an air compressing chamber of larger diameter than said working chamber and abutting therewith; a piston comprising a working portion moving in said working chamber and an enlarged compressing portion moving in said compressing chamber; a closed crank case wherein air to scavenge said working chamber is compressed by said piston during the rearward stroke thereof; supply and exhaust ports for admitting said scavenging air to the working chamber and for permitting the exhaust of burned gases therefrom, both said ports being overrun by said piston; a charge inlet port leading into said working chamber; a positively operated valve controlling said port; operating mechanism adapted to open said valve during the working stroke of said piston; a storage reservoir for storing air compressed by the aforesaid air compressor; a second air compressor deriving its supply from said reservoir, said second compressor discharging into said charge inlet port; and means for supplying fuel oil to said charge inlet port.

857,731. CARRIER-PLATE FOR HOOKS AND EYES. JOHN W. GRANGER, Philadelphia, Pa. Filed Oct. 11, 1904. Serial No. 228,079.



Claim.—A carrier for holding hooks, eyes and a card during the assembling of the same, said carrier consisting of an upper and a lower plate, of which one is provided with longitudinally extending needle slots, and a plurality of series of grooves transverse to said slots, two series of the grooves being adapted to receive hooks and loop eyes and another series being shaped to receive invisible eyes, the grooves of said latter series all terminating in two of the longitudinal slots independently of the other slots and said other slots extending in pairs adjacent to the respective ends of the series of grooves for the hooks and loop eyes, a stop on one side of the carrier placed to limit the movement of a card between the plates, a spring of sheet material held to the carrier at one end and placed on the side thereof opposite the stop, said spring being convexly bent so as to directly engage a card between the plates, with a stop placed to be engaged by the free end of the spring for limiting the movement thereof, substantially as described.

857,732. HEDDLE FOR WEAVING-LOOMS. JULIUS GMOS, Horgen, Switzerland. Filed Sept. 27, 1906. Serial No. 336,490.

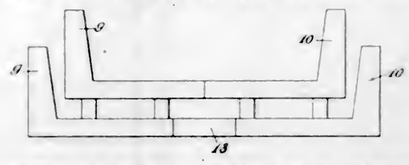
Claim.—1. A heddle for weaving looms comprising a flat metal strip having a loop adjacent each end, the shanks of each of said loops being bent out of the plane of the heddle in opposite directions to one another, the bent front portion of the loop at the upper end lying in a direction opposite to the front portion of the loop at the lower end and the rear portion of the loop at the lower end in a direction opposite to the rear portion of the loop at the upper end substantially as described.

2. A heddle for weaving looms comprising a flat metal strip having a loop adjacent each end the eyes of said loops being expanded and the shanks bent laterally out of the plane of the heddle in opposite directions the bent front portion of the loop at the upper end lying in a direction opposite to the front portion of the loop at the lower end and the rear portion of the loop at the lower end in a direction



opposite to the rear portion of the loop at the upper end substantially as described.

857,733. FLOATING DRY-DOCK. ELIAS GUNNELL, Manitowoc, Wis. Filed Mar. 29, 1906. Serial No. 308,740.



Claim.—1. A dry dock comprising similar independent L-shaped sections with the opposing horizontal legs of substantially uniform lengths from one end of the dock to the other, and means for securing the inner ends of the horizontal portions thereof detachably in fixed relation to each other and in contact.

2. A dry dock comprising independent L-shaped sections, and an independent middle section between the horizontal portions of the L-sections, and means for securing the ends of the horizontal portions of the L-sections detachably to the sides of the middle section.

3. A dry dock composed of independent L-shaped sections each of substantially uniform cross section throughout its length and means for securing the inner ends of the horizontal legs detachably together.

4. An angle fastening for pontoons comprising a wing adapted to be secured rigidly to one of the pontoons, a wing extending at right angles to the first wing and provided with holes for bolt shanks and pairs of ribs intermediate the bolt holes and adapted to secure additional bolts between them.

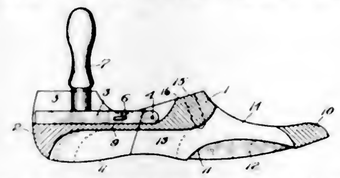
5. A fastening for pontoons comprising a pair of cast securing angles each of which is adapted to be secured to the pontoons by one wing and having bolt receiving openings on the other wing and spaced pairs of ribs between the wings, bolts for the bolt openings and other bolts for the pairs of spaced ribs adapted to have the heads and nuts thereof rest upon the tops of the ribs.

6. A fastening angle for pontoons comprising wings at an angle to each other and pairs of holding and stiffening ribs spaced along the angle and adapted to receive the shanks of securing bolts between them.

7. In combination, in a fastening means for pontoons, an angle comprising wings at right angles to each other and pairs of holding and stiffening ribs spaced along the angle and adapted to receive the shanks of bolts between them, fastening bolts and washers for the bolts.

8. A fastening angle for pontoons comprising a wing adapted to be secured on one of the pontoons, a second wing at right angles to such first wing and provided with bolt holes, and pairs of holding and stiffening ribs connecting the wings at intervals and adapted to receive the shanks of securing bolts.

857,734. VENTILATING-TREE. JOHN S. HANSEN, Brockton, Mass. Filed May 11, 1906. Serial No. 316,244.



Claim.—1. A ventilating shoe-tree, having a series of thin ribs extending downwardly, with intervening air spaces opening at the bottom and also at the top of the shoe-tree.

2. A ventilating shoe-tree, constructed and arranged to engage and support the shoe at the sides and top of the upper and throughout the width of the bottom of the shoe, and provided with ventilating air spaces extending through the last from the bottom to the top, and having communication back of the instep with the outside air when in a shoe, for ventilating both the bottom of the shoe and the top portion of the upper.

3. A ventilating shoe-tree, having a series of thin, parallel ribs extending downwardly, with intervening air spaces, said ribs terminating at the bottom to conform to the last-shape of the shoe, excepting at the region of the ball of the last where a large hollow open space is provided, connecting in common a plurality of the adjacent intervening air spaces.

4. A ventilating shoe-tree, having a series of thin, parallel ribs extending longitudinally of the tree and separated by air spaces opening at the bottom of the tree, and also at the top between the toe and instep.

5. A ventilating shoe-tree, having a series of thin, parallel ribs extending longitudinally of the tree and separated by air spaces opening at the bottom of the tree, and means, back of the instep, affording outside air-communication with said separating air-spaces.

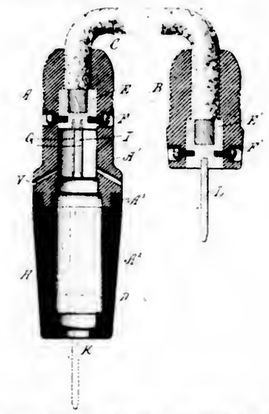
6. A ventilating shoe-tree, having a series of thin, parallel ribs extending longitudinally of the tree and separated by air spaces opening at the bottom of the tree, said ribs being cut away in the ball-region to form a large open space common to said separating air spaces.

7. A ventilating shoe-tree, having a series of thin, parallel ribs extending longitudinally of the tree and separated by air spaces opening at the bottom of the tree, said ribs being cut away in the ball-region to form a large open space common to said separating air spaces, and openings from said large open space to the outside air when the tree is in a shoe.

857,735. FUSED PLUG AND RECEPTACLE. JOHN C. HATZEL and EDGAR L. MORLEY, New York, N. Y. Filed Jan. 5, 1906. Serial No. 294,704.

Claim.—1. A switch-board receptacle comprising a tubular casing, means for securing said casing upon a switch-board, a contact spring within and electrically connected to said casing and means for securing a circuit wire in electrical connection with said casing.

2. A switch-board receptacle comprising a metallic tubular casing, a pair of contact springs extending longitudinally within said casing, a thimble secured to one end of said casing, said thimble being provided with means for securing a circuit wire thereto.



3. A plug for switch boards, comprising a handle composed of insulating material, said handle having a longitudinal aperture therethrough, a portion of said aperture being enlarged to form a fuse cavity, means for permanently securing a flexible lead or cable in one end of said handle, and a standard inclosed fuse in said cavity in metallic connection with said lead or cable.

4. A plug for switch boards, comprising a sectional handle comprised of insulating material, said handle having a longitudinal aperture therethrough, a portion of said aperture being enlarged to form a fuse cavity, a spring secured in one end of said cavity, means for permanently securing a flexible lead or cable in one end of said aperture in metallic connection with said spring.

5. A plug for switch boards, comprising a handle composed of insulating material, said plug having a longitudinal aperture therethrough, said aperture being enlarged at one end portion thereof to form a fuse cavity, means for permanently securing a flexible lead or cable in one end of said plug, a standard inclosed fuse in said cavity in metallic connection with said lead or cable, and an external metallic circuit closing connection in metallic contact with said fuse.

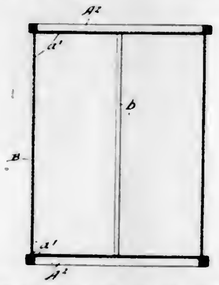
6. In an electrical device of the character described, the combination of a pair of plugs each having external metallic circuit closing connections, a flexible lead or cable in metallic circuit with said circuit closing connections, one of said plugs having a standard inclosed fuse inserted in said metallic circuit and inclosed within said plug.

857,736. PROCESS OF MAKING SHEET-METAL PRESERVING-CANS. JOHN G. HODGSON, Maywood, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 18, 1907. Serial No. 362,813.

Claim.—1. The improvement in the art or process of manufacturing sheet metal preserving cans having hard, solid, firmly adherent, tasteless and odorless protective coatings on the inside, consisting in first coating sheets of tin plate in the flat throughout on one side with a thin film or coating of boiled linseed oil and turpentine, then baking and drying the same, then cutting and forming the sheets into can bodies and can heads, then soldering the side seam of the can body, then applying the can heads to the can bodies, and finally soldering the end seams of the cans, substantially as specified.

2. The improvement in the art or process of manufacturing sheet metal preserving cans with hard, solid, firmly adherent protective coatings on the inside, consisting in first coating sheets of tin plate in the flat throughout on

one side with a flux-acting coating material, then baking and drying the same, then cutting and forming can bodies and can heads from such sheets, then soldering the side seam, and subsequently applying the can heads to the can bodies, substantially as specified.



3. The process of manufacturing can bodies having protective coatings, consisting in first coating sheets of tin plate in the flat with a flux-acting protective coating, and then cutting therefrom can bodies with the protective coating extending to the extreme edges of the can body blanks, then forming blanks into can bodies and soldering the side seams, substantially as specified.

4. The process of manufacturing can bodies having protective coatings, consisting in taking a can body blank in the flat having a non-metallic protective coating thereon extending to the extreme edges thereof, forming the blank into a can body with the protective coating extending into the seam, and soldering its side seam, substantially as specified.

5. The process of manufacturing protective coated can bodies, consisting in taking a can body blank having a hard, dry, firmly adherent flux-acting non-metallic protective coating extending over the seam portion of the can body blank, forming the blank into a can body with the protective coating extending into the seam, and soldering the side seam thereof, substantially as specified.

6. The process of making protective coated can bodies, consisting in taking a can body blank having a hard, solid, firmly adherent non-metallic protective coating extending over the seam portion of the blank, forming the same into a can body with the protective coating extending into the seam and soldering the side seam thereof, substantially as specified.

7. The process of making protective coated can bodies, consisting in taking a can body blank having a hard, dry, solid continuous linseed oil protective coating extending throughout the seam portion of the blank, forming said blank into a can body with the protective coating extending into the seam, and soldering the side seam, substantially as specified.

8. The process of making protective coated can bodies, consisting in taking a can body blank having a hard, dry, solid continuous linseed oil protective coating extending throughout the seam portion of the blank, forming said blank into a can body with the protective coating extending into the seam, and fluxing and soldering the side seam, substantially as specified.

9. The process of making protective coated cans, consisting in applying to a can body a can head having a hard, dry, non-metallic protective coating on its inside extending over the seaming flange and then soldering the end seam at the contacting inner surface of the coated seaming flange, substantially as specified.

10. The process of making protective coated cans with soldered end seams, consisting in applying to the can body a can head having a non-metallic protective coating extending over the inside surface of its flange and then soldering the end seam at the contacting inner surface of the coated seaming flange, substantially as specified.

11. The improvement in the art or process of manufacturing sheet metal preserving cans having hard, solid, firmly adherent, tasteless and odorless protective coatings on the inside, consisting in first coating sheets of tin plate in the flat throughout on one side with a thin film or coating of boiled linseed oil and turpentine, then baking and drying the same, then cutting and forming the sheets into can bodies and can heads, then soldering the side seams of the can body, then applying the can heads to the can bodies, soldering the end seams of the cans, and then, after the cans have been filled applying and soldering to the top heads of the cans can tops having a like preservative coating on the inside thereof, substantially as specified.

12. The improvement in the art or process of manufacturing sheet metal preserving cans with hard, solid, firmly adherent protective coatings on the inside, consisting in first coating sheets of tin plate in the flat throughout on one side with a flux-acting coating material, then baking and drying the same, then cutting and forming can bodies and can heads from such sheets, then soldering the side seams, subsequently applying the can heads to the can bodies, and then after the cans have been filled applying and soldering to the top heads of the cans, can caps having a like protective coating on the inside thereof, substantially as specified.

13. The process consisting in applying to a can a can cap having a hard, dry, non-metallic protective coating on its inside extending over the seam portion of the cap, and then soldering the cap on the can at the inner contacting coated seam portion of the cap, substantially as specified.

14. The process consisting in applying to cans having a hard, dry, non-metallic protective coating on the inside thereof, a can cap having a dry, hard, protective coating on its inside extending over the seam portion thereof, and then soldering the cap to the can at the inner contacting coated seam portion of the cap, substantially as specified.

15. The process of making protective coated cans, consisting in first applying to the tin plate sheets from which the parts of the can are to be formed a protective coating of linseed oil, then drying the coating, then cutting and forming the parts of the can from such coated sheets, then assembling the parts and soldering the parts together, substantially as specified.

16. The process of making soldered seams in cans without causing the solder to coat or smear the inside surface of the cans adjacent to the seam or seams, consisting in first providing the seam portion and adjacent portion of the can with a hard, dry, flux-acting protective coating, and then soldering the seam from the outside, substantially as specified.

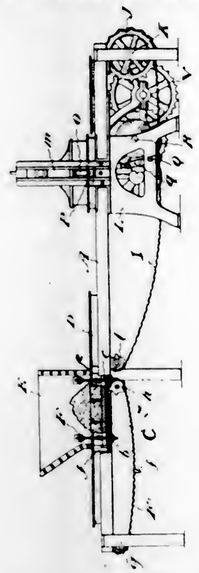
17. The process of making soldered seams in cans without causing the solder to coat or smear the inside surface of the cans adjacent to the seam or seams, consisting in first providing the seam portion and adjacent portion of the can with a hard, dry, flux-acting non-metallic protective coating, then fluxing the seam and soldering the seam at the contacting protective coated portion thereof from the outside, substantially as specified.

18. The process of making soldered seams in cans without causing the solder to extend upon the inside surface of the cans adjacent to the seams, consisting in first coating the inside surface of the part or parts to be joined by the solder-seam with a hard, dry, solid, protective coating of linseed oil, and then soldering the seam from the outside, substantially as specified.

19. The process of making soldered seams in cans without causing the solder to extend upon the inside surface of the cans adjacent to the seams, consisting in first coating the inside surface of the part or parts to be joined by the soldered seam with a hard, dry, solid, protective coating of linseed oil, and then fluxing the seam and soldering the same from the outside, substantially as specified.

857,737. MACHINE FOR MOLDING CEMENT BRICKS, BLOCKS, AND THE LIKE. HERBERT J. HURD, Berlin, Ontario, Canada. Filed Sept. 24, 1906. Serial No. 335,896.

Claim.—1. In a molding machine the combination of a main frame having a guideway formed thereon; a hopper supported above it; molds adapted to slide on the guideway beneath the hopper; a conveyer adapted to move the molds; a press adapted to press the articles in the molds; a conveyer traveling at twice the speed of the first conveyer, adapted to convey the filled molds through the press; means for lifting the molds away from the pressed articles while the latter are carried forward by the conveyer, and for subsequently dropping the mold on the conveyer; and means for driving the various parts whereby the conveyers are stationary while the press is in contact with the molded articles, substantially as described.



2. In a molding machine the combination of a main frame having a guideway formed thereon; a hopper supported above it; molds adapted to slide on the guideway beneath the hopper; a conveyer adapted to move the molds; a press adapted to press the articles in the molds; a conveyer traveling at twice the speed of the first conveyer, adapted to convey the filled molds through the press; means for separating the molds and the pressed articles and replacing the former on the conveyer in a different position; and means for driving the various parts whereby the conveyers are stationary while the press is in contact with the molded articles, substantially as described.

3. In a molding machine the combination of a main frame having a guideway formed thereon; a hopper supported above it; mold bottoms adapted to slide on the guideway beneath the hopper; mold frames adapted to rest on said bottoms; a conveyer adapted to move the mold bottoms and frames beneath the hopper; a press adapted to press the articles in the molds; a conveyer adapted to convey the filled molds from the hopper through the press; means for raising the mold frames when the molds are in the press; and means for operating the conveyers, the mold frame lifter and the press, said means being arranged to drive the second conveyer at twice the speed of the first conveyer, to stop the conveyers while the press is operating in the molds, to raise the mold frame lifter before the press has disengaged, and to drop the lifter after the second conveyer has moved forward at least the length of a mold, substantially as described.

4. In a molding machine the combination of a main frame having a guideway formed thereon; molds adapted to slide on the guideway; means for filling the molds; a press adapted to press the articles in the molds; a conveyer adapted to convey the filled molds through the press; means for lifting the molds away from the pressed articles while the latter are carried forward by the conveyer, and for subsequently dropping the mold on the conveyer; and means for driving the various parts whereby the conveyer is stationary while the press is in contact with the molded articles, substantially as described.

5. In a molding machine the combination of a main frame having a guideway formed thereon; molds adapted to slide on the guideway; means for filling the molds; a press adapted to press the articles in the molds; a conveyer adapted to convey the filled molds through the press; means for separating the molds and the pressed articles and replacing the former on the conveyer in a different position; and means for driving the various parts whereby the conveyer is stationary while the press is in contact with the molded articles, substantially as described.

6. In a molding machine the combination of a main frame having a guideway formed thereon; mold bottoms adapted to slide on the guideway; mold frames adapted to rest on the said bottoms; means for filling the molds; a press adapted to press the articles in the molds; a conveyer adapted to convey the filled molds through the press; means for raising the mold frames when the molds are in the press; and means for operating the conveyer, the mold frame lifter and the press, said means being arranged to stop the conveyer while the press is operating in the molds to raise the mold frame lifter before the press has disengaged, and to drop the lifter after the conveyer has moved forward at least the length of a mold, substantially as described.

857,738. MACHINE FOR MAKING LATH-BOARDS. HERMAN R. KARSTENS, Ladysmith, Wis. Filed July 12, 1906. Serial No. 325,822.



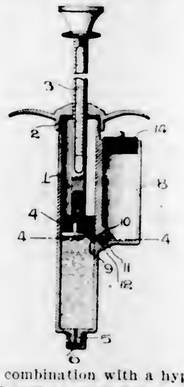
Claim.—1. In a machine of the class described, a supporting frame, feeding rollers arranged in pairs spaced apart and mounted for rotation upon said supporting frame, above and below the path of the material thereon means for rotating said feeding rollers, a frame mounted above the table and pivoted thereto at its lower end, and constituting a supporting frame and carying shafts spaced apart and extending transversely of the supporting frame, saws carried by said shafts with the saws of one shaft arranged intermediate of those upon the other shaft, means for simultaneously rotating said saw shafts, and means whereby the rotary motion of said rollers is caused to oscillate said swinging frame.

2. In a machine of the class described, a supporting frame, means carried by said supporting frame for feeding the material thereover, a frame formed of spaced side members pivoted at their lower ends to said supporting frame and connected by a transverse member and spaced from said supporting frame and with arms extending laterally from said side members, shafts spaced apart and journaled respectively in said arms, saws carried by said shafts with the saws of one shaft arranged intermediate of those upon the other shaft, means for simultaneously rotating said shafts, and means for intermittently vibrating said pivoted saw carrying frame.

3. A machine of the class described, a supporting frame, feed rollers arranged in pairs and spaced apart and mounted for rotation upon said supporting frame above and below the path of the material moving thereover, and with a relatively long crank arm upon the journal of one of said rollers, a frame formed of a transverse member and spaced side members pivoted at one end to said supporting frame and extending above the same, and with arms extending laterally from said side members, shafts spaced apart and journaled respectively in said arms, saws carried by said

shafts with the saws of one shaft arranged intermediate to those of the other shaft, a relatively short crank arm upon one of said shafts, and a connecting rod between said crank arms.

857,739. FOUNTAIN HYPODERMIC SYRINGE. CHARLES W. KENNERLY and BENJAMIN E. STOCKWELL, St. Louis, Mo. Filed Oct. 16, 1906. Serial No. 339,234.



Claim.—1. The combination with a hypodermic syringe, of a reservoir fixed to the barrel of the syringe, there being a passageway leading from the lower end of the reservoir to the interior of the barrel, and a valve operated from the exterior of the syringe for controlling the discharge of liquid through said passageway; substantially as specified.

2. The combination with the barrel of a hypodermic syringe, of a reservoir formed integral with the upper portion of said barrel, there being a passageway from the lower end of the reservoir to the interior of the barrel, a valve arranged in said passageway and means fixed on one end of said valve whereby the same is rotated to open or close communication through the passageway; substantially as specified.

857,740. PIN TICKET OR TAG. ALONZO KIMBALL, New York, N. Y., assignor to A. Kimball Company, New York, N. Y., a Corporation of New York. Filed Jan. 14, 1907. Serial No. 352,081.



Claim.—1. As an article of manufacture, a pin-ticket bent transversely and folded upon itself to embrace the edge of a fabric to which it is to be secured, a pin permanently attached to the ticket at a distance from the end thereof, to pass through the fabric at the edge thereof and through the fold adjacent the bend and be turned down at the opposite side of the fabric upon the fold of the ticket, said fold being apertured to receive the pin, and a flap at one end of the ticket to cover the turned down portion of the pin, the ticket having an aperture to receive the end of the flap and retain it in position.

2. As an article of manufacture, a pin ticket having a tongue-receiving aperture, and a plurality of transverse bends to form a body portion, a fold, and a flap, the body portion and fold being bent toward each other to embrace the edge of a fabric, a pin permanently attached to the body portion and adapted to pass through the fabric and the fold adjacent the junction of the latter with the body portion and be turned down upon the fold, the flap covering such turned down portion of the pin, and a tongue on the flap, to be inserted in the aperture in the ticket and retain the flap in place.

3. As an article of manufacture, a pin ticket having a plurality of transverse bends to form a body portion, a fold, and a flap, the fold being apertured and receiving between it and the body portion the edge of a fabric, a pin attached to the body portion and adapted to pass through the fabric and the aperture in the fold adjacent the junction of the latter with the body portion and be turned down upon the fold, and means to retain the flap in position to cover and protect the turned down portion of the pin.

4. As an article of manufacture, a pin ticket having a plurality of transverse bends to form a body portion, a fold, and a flap, the body portion and fold being bent toward each other to receive between them the edge of a fabric, and a pin attached to the body portion adjacent the junction thereof with the fold and adapted to pass through the fabric and the fold and be turned down upon the latter, the flap covering such portion of the pin, the ticket having an aperture into which the end of the flap is inserted to retain it in position.

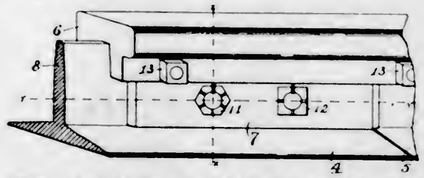
5. As an article of manufacture, a pin ticket having a body portion and a fold, to embrace the edge of a fabric, a pin attached to the body portion adjacent its junction with the fold and adapted to pass through the fabric and the fold and be turned down upon the latter, and a flap forming a continuation of the fold, to cover the turned down portion of the pin, the body portion having an aperture therein through which the end of the flap is inserted, to retain the flap in position.

6. As an article of manufacture, a pin ticket having a plurality of transverse bends to form a body portion, an adjacent fold, and a flap, the body portion and fold having apertures therein, the edge of a fabric being embraced by the said body portion and fold, and a pin attached to the former near its junction with the latter, the pin being adapted to pass through the fabric at its edge and through the aperture in the fold and be turned down upon the latter, the flap being turned over upon the fold to cover the turned down portion of the pin and having its end inserted in the aperture in the body portion.

7. As an article of manufacture, a pin ticket having a body portion and a contiguous fold, to embrace the edge of a fabric, a pin attached to the body portion, adapted to pass through the fabric and the fold adjacent the junction of the latter with the body portion and be turned down upon the fold, a flap at one end of the ticket, to cover the turned down portion of the pin, and means to retain the flap in position.

8. As an article of manufacture, a pin ticket bent transversely to form a body portion, an adjoining fold, and a flap, the body portion and fold embracing the edge of a fabric, a pin attached to the body and adapted to pass through the fabric and the fold adjacent the edge of the former and near the junction of the latter with the body portions, and be turned down upon the fold, and means to retain the flap in position to cover such turned down portion of the pin, said flap being bent over and outside of the junction of the body portion and fold of the ticket.

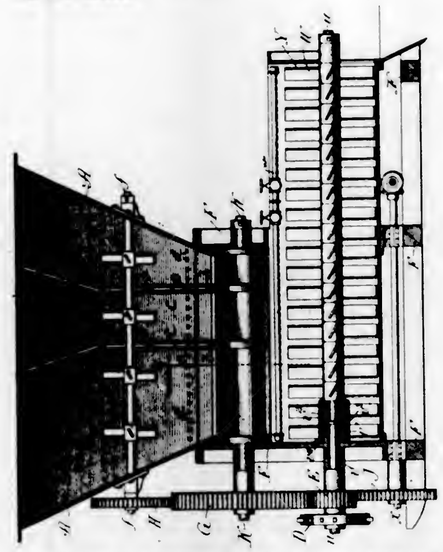
857,741. RAILROAD-RAIL. ALPHONSE KING, San Antonio, Tex. Filed Jan. 30, 1907. Serial No. 354,835.



Claim.—1. A section of railway rail, having at one end an off-set extension, of the web alone, provided with bolt holes and having at the other end bolt holes through the web itself corresponding with those in said extension, whereby the web extension, occurring at but one end of each section, may overlap the web of the abutting section and be bolted thereto.

2. In a railway rail, the combination of abutting sections of rail, each consisting of a foot and an integral web, and each web having at one end, and below its upper edge, an off-set extension projecting beyond the foot and provided with bolt holes and having bolt holes at the other end corresponding with those in said extension, whereby said extension occurring at one end only of each web, may overlap the abutting section and be bolted thereto, and abutting sections of grooved cap removably secured to said web and breaking joints therewith, for the purpose set forth.

857,742. MEASURING AND MIXING MACHINE. ANDREW LANQUIST, Chicago, Ill. Filed Oct. 12, 1905. Serial No. 282,516.



Claim.—1. In a measuring and mixing machine, the combination of a hopper having a plurality of adjustable compartments and partitions each adapted to contain and feed a constituent material onto a measuring roll, a measuring roll having longitudinal divisional walls mounted eccentrically to the axis thereof and forming pockets, movable transverse partitions in said pockets, means for adjusting and locking them therein, means for alining the partitions of the hopper with said transverse partitions, mixing apparatus below said roll and a cylindrical casing provided with a top opening into said hopper compartments and a bottom opening into said mixing apparatus, said casing being adapted to fit closely about the outer edges and ends of said longitudinal divisional walls.

2. In a concrete measuring machine, a hopper having a shearing bar on the lower end of its forward wall, a measuring roll having longitudinal divisional walls extending from a point rearward of the axis of rotation to the circumference of said roll, shearing bars on the outer ends of said walls and a casing, extending from the forward wall of said hopper in the direction of delivery, having a curved inner surface adapted to fit closely about the outer ends of said walls, said bars having a shearing engagement with the bar on said hopper wall.

3. The combination of a plurality of compartments adapted to feed material onto a measuring roll, a measuring roll having longitudinal divisional walls inclined in the direction of rotation eccentrically to the axis of the roll and forming pockets therein, a cylindrical casing adapted to fit closely about the outer edges and ends of said longitudinal divisional walls, movable transverse partitions in said pockets, and means for locking said partitions and the walls of said feeding compartments in alinement for the purposes described.

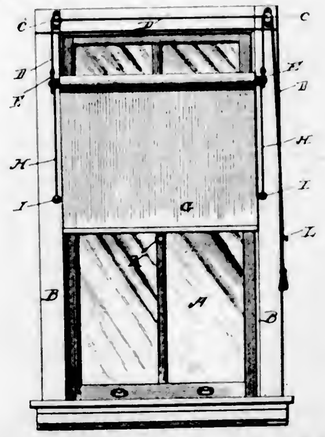
4. In a concrete measuring machine, a hopper having a forward wall rigid at its lower end, a measuring roll having longitudinal divisional walls extending from a point rearward of the axis of rotation to the circumference of said roll, the outer ends of said divisional walls being rigid and having a shearing, packing and crushing engagement with the forward wall of said hopper, and a casing extending from the forward wall of said hopper in the direction of delivery having a curved inner surface substantially coincident with the circumference of said roll.

5. In combination with a hopper having partitions adapted to subdivide it, a roll provided with longitudinal divisional walls mounted eccentrically to its axis, a rigid bar on the lower end of the forward wall of the hopper, bars on the ends of said divisional walls adapted to shear therewith, and transverse partitions adapted to subdivide the spaces between said walls, said hopper partitions and said transverse partitions being substantially in vertical alinement.

6. The combination with a plurality of feed devices and mixing apparatus, of a roll intermediate thereof having longitudinal wings mounted eccentrically to its axis, means for rotating said roll, longitudinal bars on the forward ends of said wings inclined forwardly and a stationary longitudinal bar positioned to shear with the bars of said wings at the point where the latter pass the feed devices.

7. In a mixing and measuring machine, a roll intermediate of feeding and mixing devices having longitudinal divisional walls mounted eccentrically to its axis, adjustable transverse plates adapted to fit snugly between adjacent walls, shoulders on said arms and corresponding notches on said plates, a guide opening in said plates on the end nearest the axis of said roll, and wedge keys adapted to alternately lock and unlock said plates between said walls against said shoulders.

857,743. CURTAIN-FIXTURE. GENTRY F. LIVESAY, and one-third to Russell D. Bush, Ceresco, Nebr. Filed Feb. 3, 1905. Serial No. 243,997.

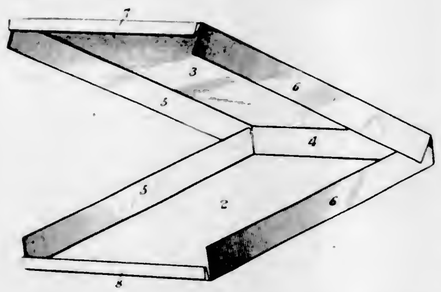


Claim.—1. A curtain fixture comprising a roller having a curtain connected thereto, the ends of said roller being reduced and provided with pintles mounted in disk shaped brackets provided with perforated lugs, the pintles being secured therein by screws, cap shaped guide blocks secured to the frame, provided with oppositely arranged openings, cords passing through said blocks, connected to the per-

forated lugs of the brackets, and cords connected to the reduced ends of the roller adapted to work between the shoulder of the roller and the bracket, and provided with weights at their free ends, as set forth.

2. A curtain fixture comprising a roller having a curtain connected thereto, the ends of said roller being reduced, the cords connected to and wound upon the reduced portions and having weights at their lower ends, the extreme ends of the roller being provided with pintles, the disk shaped brackets in which the pintles are journaled together with means for fastening the pintles in said brackets, the elevating cords connected to said brackets and the cap shaped guide blocks attached to the window frame provided with openings and through which the elevating cords pass, substantially as described.

857,744. WRAPPER FOR METAL SHEETS. HERBERT E. MARKS, Poughkeepsie, N. Y., assignor to The American Sheet & Tin Plate Company, Pittsburg, Pa., a Corporation of New Jersey. Filed July 19, 1905. Serial No. 270,411.



Claim.—1. A wrapper formed of a blank which is bent to form an end and opposite sides, the free ends of the wrapper being bent inwardly to define the other end of the wrapper and provided with sealing flaps, a sealing strip having wings embracing the flaps and connecting the ends of the blank, the sides of the blank having overlapping flaps defining the edges of the wrapper substantially as described.

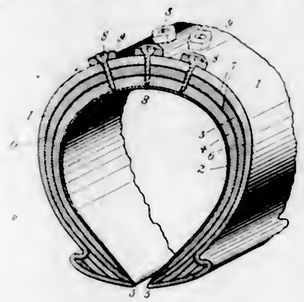
2. A wrapper comprising a blank folded to form an end and opposite sides, the side edges of the sides having overlapped flaps defining and closing the side edges of the wrapper, the free ends of the wrapper being bent inwardly to define the other end of the wrapper and then bent outwardly to form sealing flaps, and a sealing strip having inturned edges embracing the sealing flaps and connecting the ends of the wrapper substantially as described.

3. A wrapper formed of a blank which is bent to form an end and opposite sides, the free ends of the wrapper being bent inwardly to define the other end of the wrapper and then bent outwardly to form sealing flaps, and a sealing strip having inturned edges embracing the sealing flaps and connecting the same by a single seam, the width of the sealing strip being substantially equal to the width of the adjacent side of the wrapper, the side edges of the sides of the blank having overlapped flaps defining and closing the side edges of the wrapper, substantially as described.

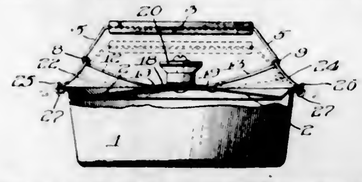
857,745. TIRE. FREDERICK MESINGER, New York, N. Y. Filed Dec. 12, 1906. Serial No. 347,401.

Claim.—1. A tire composed of a series of superposed layers cemented to each other at the sides and detached at the tread, and of a solid anti-friction material between the detached portions of the layers, substantially as specified.

2. A tire composed of a series of superposed layers cemented to each other at the sides and detached at the tread, a solid anti-friction material in the interstices between the layers, and screws engaging the layers and passing through said interstices, substantially as specified.



857,746. RECEPTACLE-COVER. THADDEUS D. MCCALL, Chicago, Ill. Filed Aug. 11, 1906. Serial No. 330,144.



Claim.—1. In a device of the character described, the combination with a cover, of clutching means adapted to engage the walls of a receptacle, elastic means for holding the clutching means, normally in engagement, and means attached to the cover and operatively related thereto for overcoming the resistance of the elastic means to release the clutching means.

2. The combination of a cover, a plurality of spring actuated hooks adapted to engage normally the walls of a receptacle, a fixed member on the cover and means operatively related to the fixed member for releasing the spring actuated hooks.

3. In a device of the character described, the combination with a cover, of clutching means permanently secured to the cover and adapted to engage the walls of a receptacle, and elastic means operatively related to the cover and the clutching means whereby the clutching means is normally adapted to engage the walls of the receptacle under tension.

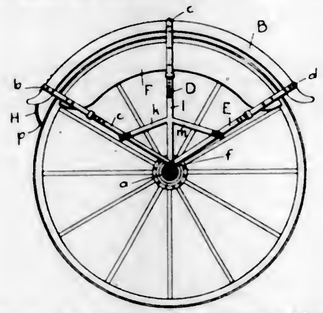
4. In a device of the character described, the combination with a cover, of clutching means permanently secured to the cover and adapted to engage the walls of a receptacle, elastic means operatively related to the cover and the clutching means whereby the clutching means is adapted to be held normally under tension in contact with the walls of the receptacle, a handle on the elastic means, and a fixed member on the cover adjacent to the handle and adapted to co-operate therewith in releasing the tension on the clutching means.

5. In a device of the character described the combination with a cover, of a movable handle, clutching means pivotally connected with the said handle, and an elastic means interposed between the handle and the cover.

6. In a device of the character described, the combination with a cover, of clutching means permanently attached to the cover and adapted to secure the cover to a receptacle embodying a movable handle and a plurality of elastically controlled hooks pivotally connected with the said handle.

7. In a device of the character described the combination with a cover, of clutching means permanently secured thereto and embodying a plurality of elastically controlled hooks, a movable handle operatively controlling the said hooks, and a fixed handle secured to the cover with which the said movable handle is adapted to co-operate.

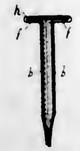
857,747. MUD-GUARD FOR VEHICLES. WILLIAM T. MCCAULEY, Osgoode, Ontario, Canada. Filed Nov. 22, 1906. Serial No. 344,655.



Claim.—1. In a vehicle mud guard the combination with the wheel, axle, and two clips thereof, of a mud guard extending partially around the wheel, a brace connected to the outer clip and to the center of the mud guard, two braces connected to the inner clip and to the extremities of the mud guard, a third star shaped brace having the arms thereof connected respectively to the three braces and to the innermost clip as and for the purpose specified.

2. In a vehicle mud guard, the combination with the wheel, axle and two clips thereof, of a mud guard semi-circular in cross-section extending partially around the wheel, straps secured thereto at the center and extremities, a brace adjustably connected to the center strap and to the outer clip, two braces adjustably conected to the straps at the extremities of the guard and to the inner clip, a side guard secured to the straps, and a star-shaped brace connecting the three braces and the inner clip substantially as described.

857,748. METALLIC PAPER-FASTENER. GEORGE W. MCGILL, New York, N. Y. Filed Apr. 26, 1905. Serial No. 257,417.



Claim.—1. A metallic fastener comprising a pair of shank-blades trough-shaped lengthwise, and normally set with the backs of the troughs together lengthwise.

2. A metallic fastener comprising a head and a pair of shank-blades trough-shaped lengthwise sprung from the head and normally set with the backs of the troughs together lengthwise and the trough-shaped formation extending to the roots of the blades.

3. A metallic fastener comprising a pair of shank-blades transversely curved and set with their convex surfaces facing each other and providing lengthwise between the edges of the respective blades spaces the walls of which diverge transversely outward in opposite directions from the apex of the convex surfaces of the blades.

4. A metallic fastener comprising shank blades and a head in a plane at right angles to said shank blades, the said blades being transversely curved at their junctions with said head.

5. In a metallic fastener such as described, a plurality of shank-blades trough-shaped lengthwise and normally set with the backs of the troughs together throughout their length and provided at one end with head or capping parts set thereat in transverse direction.

6. In a metallic fastener such as described a plurality of shank-blades trough-shaped lengthwise, and normally set with the backs of the troughs together throughout their length, and provided at one end with head or capping parts set thereat in transverse direction, in combination with a metal cap covering and closed upon such head or capping parts.

857,749. METALLIC FASTENER. GEORGE W. MCGILL. Riverdale-on-Hudson, N. Y. Filed Jan. 7, 1907. Serial No. 351,198.



Claim.—1. A metallic fastener consisting of a head part and a shank having two blades, each blade tapering from the transverse fold of its heading end to the terminal of its free end and folded longitudinally in manner to bring both of its edges into the same plane throughout their length, the blades being seated with their convex surfaces normally facing each other lengthwise.

2. A metallic fastener consisting of a head part and a shank having two longitudinally folded blades, both blades tapering from the transverse fold of their heading end to the terminal of their free end and seated with their convex surfaces normally facing each other throughout their length.

3. A metallic fastener having two longitudinally folded shank-blades which taper from their heading end to their free end and which are seated with their convex surfaces normally facing each other lengthwise, the longitudinal fold of the respective blades causing the two edges of one blade to face in a direction opposite to that of the two edges of the other blade, and to bring the edges of both blades, when the latter are folded apart on material being fastened, to bear against such material throughout the entire length of their folded over portion and to present outwardly above such material smooth convex surfaces decreasing in width and convexity from the line of such parting fold to their free-ends.

4. A metallic fastener of the character described wherein the two blades forming its shank are longitudinally folded and made tapering from their heading end to their free end and are seated together with their convex surfaces facing each other in manner that when the fastener is applied in binding material as herein described the blades of its shank on being folded apart and down upon the same will present outwardly above such material smooth convex surfaces decreasing in width and convexity from the line of such parting-fold to their free ends.

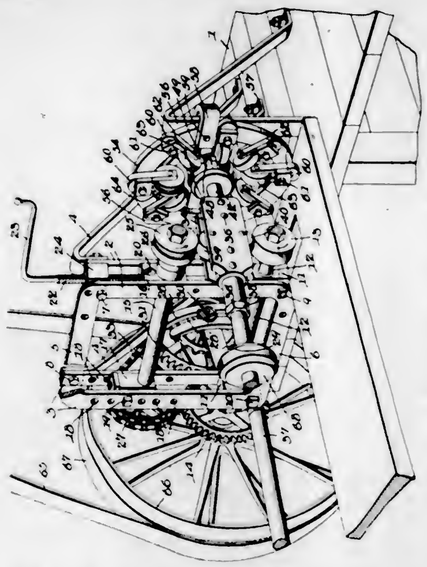
5. A metallic fastener consisting of a head part and a shank having two longitudinally folded blades which taper from the transverse fold of their heading end to the terminal of their free end, and which are seated with their convex surfaces normally facing each other throughout their length, and which have their heading ends inclosed in a metal cap.

6. A metallic fastener of the character described having a shank composed of two blades, each blade formed from a blank tapering from its heading end to its free end and longitudinally folded to provide thereon a plurality of tapering faces, the shank-blades being seated with their convex surfaces normally facing each other lengthwise.

857,750. PIPE-SEAMING MACHINE. WILLIAM F. NORMAN, Nevada, Mo. Filed June 4, 1906. Serial No. 320,098.

Claim.—1. In a pipe making machine, the combination of a frame, a pair of substantially parallel shafts mounted upon the frame, one of the shafts being mounted for swinging adjustments toward and away from the other shafts a core located between the shafts and provided with anti-friction rollers, and pressure rollers carried by

the shafts in co-operative relation with the anti-friction rollers.



2. In a pipe making machine, the combination of a frame, substantially parallel shafts, one of the shafts having a pivotally supported journal and a laterally adjustable journal, means for shifting the laterally adjustable journal, a core situated between the shafts, and pressure rollers carried by the shafts and co-operating with the core.

3. In a pipe making machine, the combination of a frame, a power shaft, a countershaft in parallelism therewith and mounted for swinging adjustments toward and away from the power shaft, a gear upon the power shaft, another gear in mesh with the first mentioned gear and mounted to swing in an arc around the circumference of the first mentioned gear, a belt connection between the swinging gear and the countershaft, a core situated between the shafts, and pressure rollers carried by the shafts and co-operating with the core.

4. In a pipe making machine, the combination of a frame, a drive shaft having a gear, a countershaft in substantial parallelism with the drive shaft, pivotal and slidable bearings for the countershaft, means connected to the slidable bearing for adjusting the same to swing the countershaft toward and away from the drive shaft, a driven gear in mesh with the drive gear and mounted to swing around the circumference thereof, a belt connection between the driven gear and the pivotal end of the countershaft, a core situated between the two shafts, and pressure rollers carried by the shafts and co-operating with the core.

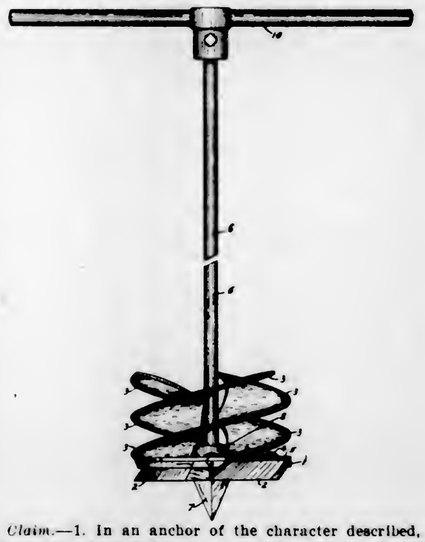
5. In a pipe making machine, the combination of an open frame, an annular series of radially adjustable corrugating rollers carried thereby, a corrugating core centered within the series of rollers and including a head provided with a centrally threaded stem and an annular series of radial grooves, the opposite walls of each groove being provided with corresponding notches, anti-friction rollers received within the grooves and provided with trunnions received in the notches, a cap embracing the stem and provided with radially notched grooves receiving the rollers and the trunnions thereof, and a nut fitting upon the stem and holding the cap in place.

6. In a machine of the character described the combination with a skeleton frame and radially adjustable rollers mounted within the frame: of a corrugating core surrounded by the rollers and having corrugating rollers journaled therein and projecting therebeyond and between the rollers carried by the skeleton frame, rollers connected to the core and adapted to be surrounded by a pipe, a feed roller co-operating with one of said rollers, a combined feed and pipe seam engaging roller adapted to bear upon a pipe and co-operate with one of said interior rollers, and a pipe seam receiving roller adjustably connected to the frame, said pipe seam receiving rollers constituting guides for a pipe.

7. In a machine of the character described the combination with pipe feeding and corrugating mechanism; of a combined feed and pipe seam engaging roller, and a combined corrugating and pipe seam engaging roller, said rollers constituting guides for a pipe while being corrugated.

8. A machine of the character described comprising a skeleton frame, an annular series of radially adjustable brackets carried by the frame, a combined corrugating and pipe seam receiving roller journaled in one of the brackets, corrugating rollers journaled within the other brackets, a corrugating core comprising radially disposed rollers and supports therefor, means for feeding a pipe on to the core and between the rollers and the brackets, and a combined feeding and pipe seam receiving roller, both of said pipe seam receiving rollers constituting pipe guides.

857,751. LAND-ANCHOR. FREDERICK R. PARKER, Chicago, Ill., assignor to Frank B. Cook, Chicago, Ill. Filed Oct. 29, 1906. Serial No. 341,128.



Claim.—1. In an anchor of the character described, a bit portion adapted to be bored into the earth, a plurality of spirally formed extension blades lying in the path of the auger, and means for extending the extension blades out of the path of the auger.

2. In an anchor of the character described, a bit portion adapted to be bored into the earth, a plurality of cutters on the bit portion, a plurality of extension blades lying in the path of the auger, and means for extending the extension blades out of the path of the auger.

3. In an anchor of the character described, a bit portion adapted to be bored into the earth, a plurality of cutters on the bit portion, a plurality of spirally formed extension blades normally lying in the path of the auger, and means for extending the extension blades out of the path of the auger.

4. In an anchor of the character described, a bit portion adapted to be bored into the earth, a plurality of cutters on the bit portion, a plurality of spirally formed extension blades pivoted to the bit portion and lying in the path of the auger, and a pinion arranged to gear with the extension blades and thereby turn same out of the path of the auger when desired.

5. In an anchor of the character described, a bit portion adapted to be bored into the earth, a plurality of similar extension blades lying in the path of the auger, and means to gear with the extension blades to move same out of the path of the auger.

6. In an anchor of the character described, a bit portion adapted to be bored into the earth, a rod loosely inserted through the bit portion, a plurality of extension blades pivoted to the bit portion and provided with gear teeth, and a pinion carried by the rod and adapted to gear with the extension blades to move same out of the path of the auger, the said pinion being also adapted to impinge on the extension blades and thereby turn the bit portion to bore same into the earth when desired.

7. In an anchor of the character described, a bit portion adapted to be bored into the earth, a rod loosely inserted therethrough, and means whereby the rod is locked to the bit portion to bore same into the earth when turned in one direction, the said rod being unlocked from the bit portion when turned in the opposite direction.

8. In an anchor of the character described, a bit portion adapted to be bored into the earth, extension blades lying in the path of the auger, a rod loosely inserted through the bit portion and the extension blades, and means whereby the whole is locked together to be bored into the earth when the rod is turned in one direction, and whereby the bit portion is unlocked from the rod and the extension blades are moved out of the path of the auger when the rod is turned in the opposite direction.

9. An anchor of the character described comprising a bit portion, a plurality of spirally formed extension blades pivoted to the bit portion, a cutter for each blade, on the bit portion, adapted to cut the earth and force same up between two of the adjacent said spirally formed blades, means for boring the whole into the earth, and means for spreading the said blades apart after the anchor is bored into the earth.

10. In an auger adapted to be bored into the earth, spirally formed blades therefor, and means whereby the said blades are spread out of the path of the auger while the boring portion remains stationary.

11. In an auger comprising a boring portion and spirally formed portions, mechanism whereby the boring portion and spirally formed portions are locked together during the process of boring, and whereby the spirally formed portions may be spread apart when desired.

12. In an anchor of the character described, a bit portion provided with a plurality of cutters, a rod extending loosely through the bit portion, and means whereby the rod may be locked to the bit portion to bore same into the earth when desired.

13. In anchor of the character described, a flat disk-like bit portion provided with a plurality of cutters on the underneath side thereof, a rod extending loosely through the said disk-like portion and provided with a point underneath the latter, a plurality of spirally formed blades pivoted to the upper side of the said disk-like portion, gear teeth on the said spirally formed blades, and a pinion carried by the said rod and adapted to impinge on the spirally formed blades to lock the parts of the anchor together for boring same into the earth when the rod is turned in one direction, and adapted to gear with the said spirally formed blades to spread same apart when the rod is turned in the opposite direction.

14. In an anchor of the character described, the combination of an auger adapted to be bored into the earth, spirally formed extension blades lying in the path of the auger, means for boring the auger into the earth, and means whereby counterboring spreads the extension blades out of the path of the auger.

15. In an anchor of the character described, the combination of an auger adapted to be bored into the earth, spirally formed extension blades lying in the path of the auger, and means whereby counterboring spreads the extension blades out of the path of the auger.

16. In an anchor of the character described, the combination of an auger adapted to be bored into the earth, spirally formed extension blades normally lying in the path of the auger, and a pinion geared with the said blades to spread same out of the path of the auger.

17. In an anchor of the character described, the combination of spirally formed extension blades, and a pinion geared therewith to spread the blades apart when turned.

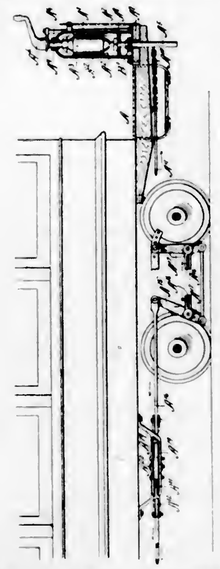
18. In an anchor adapted to be bored into the earth, spirally formed extension blades adapted to be spread apart and means for spreading the blades apart by counterboring after the anchor is bored into the earth.

19. In an anchor of the character described, the combination of an auger adapted to be bored into the earth, spirally formed cams normally lying in the path of the auger, and means arranged to bore the auger into the earth when turned in one direction and to spread the cams apart when turned in the opposite direction.

20. In an anchor of the character described, the combination of an auger adapted to be bored into the earth, spirally formed cams normally lying in the path of the auger, and a pinion arranged to bore the auger into the earth when turned in one direction and to spread the cams apart when turned in the opposite direction.

21. In an anchor of the character described, a bit portion having a cutter, a rod extending loosely through the bit portion, and means whereby the rod may be locked to the bit portion to bore same into the earth.

857,752. MECHANICAL POWER-BRAKE. LOUIS PFINGST, Boston, Mass., assignor to Pfingst Electric Manufacturing Company, Kittery, Me., a Corporation of Maine. Filed Mar. 6, 1903. Serial No. 146,470.



Claim.—1. In an apparatus of the character described, an upright electric motor with extended shafts and the upper end fitted with a ratchet brake handle, the lower end equipped with a brake chain to be wound around the extended shaft for the applying or releasing of the car brakes.

2. In an apparatus of the character described, a brake spindle located on a vehicle or car equipped with an electric motor frame, a ratchet fitted to said spindle, and a pawl pivoted to the motor frame by a plate for the hold-

ing of wound-up chain when the electric current is cut off, in combination with hand power mechanism independent of the motor mechanism for operating said spindle.

3. In an apparatus of the character described, a power driven brake spindle, a loose handle for said spindle, electric motor having an armature surrounding said spindle, extended shafts and brake chain in combination with the brake mechanism for the applying and releasing of car wheel brake shoes.

4. In an apparatus of the character described, a power driven brake spindle in combination with the motor and hand power mechanism to simultaneously or independently wind or unwind the brake chain for actuating the brake mechanism.

5. In an apparatus of the character described, a power driven brake spindle equipped with a ratchet handle capable of being held by the operator in one position while the electric power is winding up chain holding by the handle that which is taken up with the current cut off.

6. In an apparatus of the character described, a power driven brake spindle adapted to wind up chain and let off at the same time or to hold what has been taken up, a motor for operating said spindle, and a ratchet brake handle.

7. In an apparatus of the character described, a power driven brake spindle adapted to wind up chain and let off at the same time or to hold what has been taken up, a motor for operating said spindle for winding up and unwinding the chain to apply or release the brake mechanism, and a ratchet brake handle.

8. In an apparatus of the character described, a power driven brake spindle, an armature motor for operating said spindle, and a loose handle for said spindle.

9. In an apparatus of the character described, a power driven brake spindle, an armature motor for operating said spindle, and a loose ratchet handle for said spindle.

10. In an apparatus of the character described, a power driven brake spindle, an armature motor for operating said spindle, a ratchet brake handle for said spindle, in combination with equalizing brake mechanism for applying or releasing the brakes.

11. In an apparatus of the character described, a power driven brake spindle, an upright electric motor for operating said spindle, an electric motor frame for said motor, a bearing for said spindle located in the platform, and an intermediate and an upper bearing for said spindle supported by the motor frame.

12. In an apparatus of the character described, a power driven brake spindle, a motor for operating said spindle, and a handle loosely revoluble on said spindle.

13. In an apparatus of the character described, a power driven brake spindle, a motor surrounding said spindle for operating the same, and a handle loosely revoluble on said spindle.

14. In an apparatus of the character described, a power driven brake spindle or shaft operated by an armature motor for applying or releasing the brakes and surrounded by the armature of said motor, and a loose handle for said spindle.

15. In an apparatus of the character described, a power driven brake spindle or shaft operated by an armature electric motor for applying or releasing the brakes and surrounded by the armature of said motor, and a loose handle for said spindle.

16. In an apparatus of the character described, hand power mechanism, a power driven brake spindle adapted to be operated independently of said hand power mechanism, and a motor for operating said spindle.

17. In an apparatus of the character described, a power driven brake spindle, a motor for operating said spindle, and a loose handle for said spindle in combination with equalizing brake mechanism for applying or releasing the brakes.

18. In an apparatus of the character described, a power driven brake spindle equipped with a loose hand power mechanism capable of being held by the operator in one position while the power is winding up the chain, and a pawl and ratchet for holding the taken-up chain with the current cut off.

19. In an apparatus of the character described, a power driven brake spindle, and an upright electric motor for operating said spindle with the commutated armature of said motor located between the bearings of the motor frame that surrounds the spindle and armature.

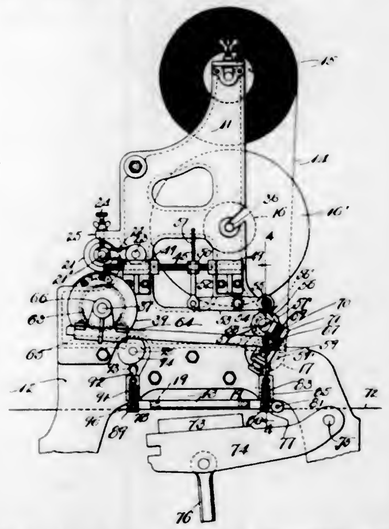
20. In an apparatus of the character described, an upright electric motor with extended shafts with the upper end fitted with a loose handle and the lower end equipped with a brake chain to be wound around the lower extended shaft for the applying or releasing of the car brakes.

21. In an apparatus of the character described, a power driven brake spindle or shaft operated by a commutated armature motor with the commutated armature surrounding its shaft and the commutated armature surrounded by the magnetic pole or poles for applying or releasing the brakes of a vehicle or car.

22. In combination, a rotatable member, a motor connected to rotate said member, a handle loosely mounted on said member, and means whereby said member may be rotated by said handle.

23. In combination, a motor with an extended shaft, a handle loosely connected with said shaft, a chain which is wound around said shaft as the latter rotates, and means whereby said shaft may be rotated by said handle.

857,753. OFFSET-WEB-FEED MECHANISM FOR PRINTING-PRESSES. GEORGE H. PIERCE, Quincy, Mass., assignor to New Era Machinery Company, Boston, Mass., a Corporation of New Jersey. Filed Feb. 12, 1906. Serial No. 300,620.



Claim.—1. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, two rolls to which the opposite ends, respectively, of said offset web are fastened, a main driving shaft, mechanism driven by said shaft to intermittently feed said offset web from one of said rolls to the other across the face of said platen, and mechanism operated by said main shaft adapted to disconnect and connect said last named mechanism from and to, respectively, said main shaft.

2. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, two rolls to which the opposite ends respectively of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a main driving shaft, mechanism driven by said shaft to impart a rotary motion to said feed roll, and mechanism adapted to disconnect and connect said last named mechanism from and to, respectively, said main shaft.

3. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, two rolls to which the opposite ends, respectively, of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a main driving shaft, mechanism driven by said shaft to impart a rotary motion to said feed roll, and mechanism adapted to disconnect said last named mechanism from and to, respectively, said main shaft and render inoperative said feed roll actuating mechanism.

4. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, a supply roll and a receiving roll, to which rolls the opposite ends, respectively, of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a main driving shaft, mechanism driven by said shaft to impart a rotary motion to said feed roll, mechanism adapted to disconnect and connect said last named mechanism from and to, respectively, said main shaft, and mechanism to impart a rotary motion to said receiving roll.

5. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, a supply roll and a receiving roll, to which rolls the opposite ends, respectively, of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a main driving shaft, mechanism driven by said shaft to impart a rotary motion to said feed roll, mechanism adapted to disconnect and connect said last named mechanism from and to, respectively, said main shaft, and frictionally driven mechanism adapted to impart an intermittent rotary motion to said receiving roll.

6. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, two rolls to which the opposite ends, respectively, of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a pawl, a ratchet fast to said feed roll, mechanism adapted to impart a rocking motion to said pawl and through said pawl to impart an intermittent rotary motion to said ratchet and feed roll, and mechanism to move said pawl out of connection with said ratchet during the entire extent of said rocking movement.

7. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, two rolls to which the opposite ends, respectively, of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a pawl, a ratchet fast to said feed roll, mechanism adapted to impart a rocking motion to said pawl and through said pawl to impart an intermittent rotary motion to said ratchet and feed roll, a rock-shaft, a projection upon said rock-shaft, and mechanism to rock said shaft and bring said projection alternately into and out of connection with said pawl, whereby said pawl is alternately moved into and out of engagement with said ratchet.

8. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, two rolls to which the opposite ends, respectively, of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a rotary shaft, a ratchet fast to said rotary shaft, a pawl carrier journaled to rock upon said shaft, a pawl pivoted to said carrier and adapted to engage said ratchet, a rock-shaft, a projection upon said rock-shaft, and mechanism to rock said shaft and bring said projection alternately into and out of connection with said pawl, whereby said pawl is alternately moved into and out of engagement with said ratchet.

9. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, two rolls to which the opposite ends, respectively, of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a ratchet, a pawl carrier, a pawl pivoted to said carrier and adapted to engage said ratchet, mechanism to move said pawl out of engagement with said ratchet, and a catch supported upon said carrier adapted to engage said pawl and hold the same out of engagement with said ratchet.

10. In a printing press, a stationary platen, a web of paper constituting an offset web extending across the face of said platen, two rolls to which the opposite ends, respectively, of said offset web are fastened, a feed roll contacting with said offset web between one of said rolls and said platen, a ratchet, a pawl carrier, a pawl pivoted to said carrier, a lever pivoted to said carrier and connected to said pawl, and a rocking finger adapted to alternately engage said pawl and lever and throw said pawl into and out of engagement, respectively, with said ratchet.

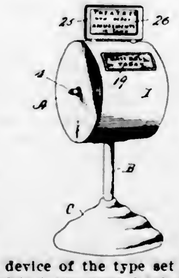
11. In a printing press, a platen, a web of paper constituting an offset web extending across the face of said platen, a feed roll for said offset web, a ratchet fast to said feed roll, a pawl carrier, a pawl pivoted to said carrier, a lever pivoted to said carrier and connected to said pawl, a rocking finger adapted to alternately engage said pawl and lever and throw said pawl into and out of engagement, respectively, with said ratchet, and means to lock said pawl out of engagement with said pawl carrier.

12. In a printing press, a platen, a web of paper extending across the face of said platen, guide blocks located upon opposite sides, respectively, of said platen provided with grooves adapted to engage the opposite edges, respectively, of said web of paper, rods extending transversely across said web of paper to which said guide blocks are fastened, and mechanism to move said rods transversely thereof, whereby said web of paper is moved laterally thereof toward and away from said platen.

13. In a printing press, a platen, a web of paper extending across the face of said platen, guide blocks located upon opposite sides, respectively, of said platen, provided with grooves adapted to engage the opposite edges, respectively, of said web of paper, rods extending transversely across said web of paper, to which said guide blocks are fastened, slides to which said rods are fastened at opposite ends thereof, respectively, and mechanism to impart a reciprocatory motion to said slides, whereby said web of paper is moved laterally thereof toward and away from said platen.

14. In a printing press a platen, a web of paper extending across the face of said platen, guide blocks located upon opposite sides, respectively, of said platen, provided with grooves adapted to engage the opposite edges, respectively, of said web of paper, rods extending transversely across said web of paper, to which said guide blocks are fastened, slides to which said rods are fastened at opposite ends thereof, respectively, cams adapted to move said slides in one direction, and springs to move said slides in the opposite direction to that in which they are moved by said cams, whereby said web of paper is moved laterally positively away from said platen and toward said platen with a yielding pressure.

857,754. ADVERTISING DEVICE. ROBERT B. POWERS, Fayetteville, Ark. Filed June 19, 1906. Serial No. 322,479.



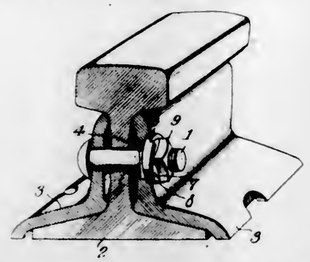
Claim.—1. A device of the type set forth comprising a stationary cylindrical structure having an open end and

formed with a peripheral opening, a rod carried axially of said structure, a second cylindrical structure received concentrically within said first named structure and revolubly mounted upon said rod, and card holders provided upon the periphery of said last named structure.

2. A device of the type set forth comprising a stationary cylindrical structure having an open end and formed with a peripheral opening, a rod carried axially of said structure, a second cylindrical structure received concentrically within said first named structure and loosely mounted for revoluble movement on said rod, means on the end of said rod engaging the end wall of said last named structure to prevent lateral displacement thereof and card holders provided in the periphery of said last named structure.

3. A device of the type set forth comprising a stationary cylindrical structure having an open end and formed with a peripheral opening, a rod carried by said structure axially thereof, a second cylindrical structure revoluble on said rod and concentrically received within said first named structure, card holders provided on the periphery of said second structure, means for holding said second structure against lateral displacement, and a braking device carried by said stationary structure and engaging said second structure.

857,755. NUT-LOCK. JAMES B. PURL, Charleston, Ill. Filed Nov. 24, 1906. Serial No. 344,924.



Claim.—1. In a nut lock the combination with a bolt; of a washer, an angular boss extending from one face thereof, the opening in the washer extending through the boss, shoulders upon the opposite face of the washer at the periphery thereof, there being inclined arcuate faces between the shoulders, yielding means for engaging the boss to hold it against rotation, and a bolt engaging nut, all of said shoulders being disposed to simultaneously lap the corners of the nut to hold it against rotation in one direction.

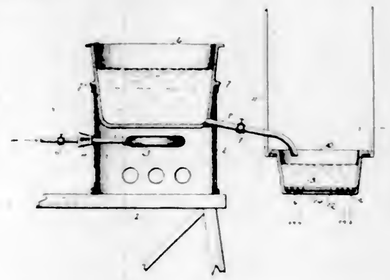
2. In a nut lock the combination with a bolt; of a washer, an angular boss extending from one face thereof and surrounding the opening in the washer, shoulders upon the opposite face of the washer at the periphery thereof, there being inclined faces between the shoulders and outstanding from the washer concentrically therewith, a nut upon the bolt, all of said shoulders being designed to simultaneously lap the corners of the nut, and a resilient holding device having an angular aperture constituting a seat for the boss.

857,756. METHOD OF MAKING SHOT. THOMAS E. REDDY, Pittsburg, Pa., assignor to George C. Erdner, Bellevue, Pa. Filed Aug. 29, 1906. Serial No. 332,443.

Claim.—1. The herein described method of manufacturing shot, which consists in discharging molten lead in globular form into a body of plumbago.

2. The herein described method of manufacturing shot, which consists in discharging molten lead in globular form into a body of plumbago or graphite, said body of graphite being in constant motion to prevent one globular particle from falling upon the other.

3. The herein described method of manufacturing shot, which consists in discharging molten lead in globular form into a body of graphite having a constant rotary motion, as described.



857,757. WOODWORKING-MACHINE. JAMES REID, Tacoma, Wash., assignor to James S. Reid, Tacoma, Wash. Filed Apr. 9, 1906. Serial No. 310,704.



Claim.—1. In a planing machine, the combination of a frame, a swinging table, and a rotating cutter mounted on the axis of said swinging table.

2. In a planing machine, the combination of a frame, a swinging table, guide rollers supported from the frame, and a rotating cutter mounted on the axis of said swinging table.

3. In a planing machine, the combination of a frame, a table swinging on a transverse horizontal axis, guide rollers mounted in an auxiliary frame and adjustable about a longitudinal horizontal axis, and a rotating cutter mounted on the axis of said swinging table.

4. In a planing machine, the combination of a frame, a table swinging on a transverse horizontal axis, guide rollers adjustably mounted in an auxiliary frame, said auxiliary frame being adjustable about a longitudinal horizontal axis, and a rotating cutter mounted on the axis of said swinging table.

5. In a planing machine, the combination of a supporting frame, a swinging cradle, a rotating cutter coaxially mounted thereon, a table formed of two sections one on each side of the cutter, and means secured to the swinging cradle whereby said table sections are adjustably supported.

6. In a planing machine, the combination of a supporting frame, a swinging cradle, a rotating cutter coaxially mounted thereon, a table formed of two sections one on each side of the cutter, and means secured to the swinging cradle and supporting said table sections whereby they are simultaneously equally and oppositely adjusted.

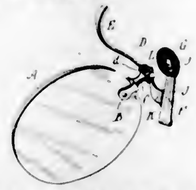
7. In a planing machine, the combination of a supporting frame, an auxiliary frame transversely pivoted thereto, adjustable means for holding said auxiliary frame in position, guide rollers mounted in said auxiliary frame and adapted to have their axes tipped transversely of the machine by the adjustment of said auxiliary frame, a swinging cradle supported by the main frame on a transverse horizontal axis, a rotating cutter coaxially mounted on said cradle, a table formed of two sections one on each side of the cutter, and means secured to the swinging cradle whereby said table sections are adjustably supported.

8. In a planing machine, the combination of a supporting frame, a swinging cradle, a rotating cutter coaxially mounted thereon, a table formed of two sections one on each side of the cutter and supported by said cradle, and means whereby one of said sections may be adjustably tipped relatively to the other section.

9. In a planing machine, the combination of a supporting frame, a rotating cutter, a table formed of two sections one on each side of the cutter, an inner supporting lever pivoted centrally below said cutter and having tines projecting on each side of said cutter and connected to the inner ends of said sections, end supporting levers corresponding with the respective sides of said inner lever and connected to the outer ends of said sections, a bar joining said levers, and an adjustable screw mechanism whereby said bar is held in any position.

10. In a planing machine, the combination of a supporting frame, a rotating cutter, a table formed of two sections one on each side of the cutter, an inner supporting lever pivoted centrally below said cutter and having tines projecting on each side of said cutter and connected to the inner ends of said sections, end supporting levers corresponding with the respective sides of said inner lever and connected to the outer ends of said sections, a bar joining said levers, an adjustable screw mechanism whereby the length of the bar may be adjusted to tip one of the table sections, and an adjustable screw mechanism whereby said bar is held in any position.

857,758. NOSE-GUARD. WILLIAM H. REISNER, Hagerstown, Md., assignor to W. H. Reisner Manufacturing Company, a Corporation of Maryland. Filed Apr. 26, 1904. Serial No. 204,985.



Claim.—1. In a nose guard, a main bearing plate comprising a straight portion and an annular end portion together affording a main bearing surface arranged to lie against the nose of the wearer, a presser plate arranged within said annular portion, and a spring connecting the presser plate and main bearing plate and permitting the face of the said presser plate to be pressed outwardly and away from the main bearing surface by the flesh rising within said annular portion, substantially as described.

2. In a nose guard, a main bearing plate comprising a straight portion and an inclined annular end portion together affording a main bearing surface arranged to lie against the nose of the wearer, a presser plate arranged within said annular portion, and a spring connecting the presser plate and main bearing plate and permitting the face of the said presser plate to be pressed outwardly and away from the main bearing surface by the flesh rising within said annular portion, substantially as described.

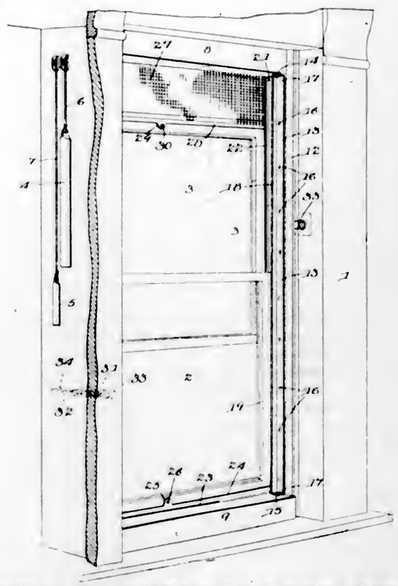
3. In a nose guard, a main bearing plate comprising a straight portion and an annular end portion together affording a main bearing surface arranged to lie against the nose of the wearer, a presser plate arranged within said annular portion, said plate having a depression *h*, and a spring connecting the presser plate and main bearing plate and permitting the face of the said presser plate to be pressed outwardly and away from the main bearing surface by the flesh rising within said annular portion, substantially as described.

4. In a nose guard, a main bearing plate comprising a straight portion and an annular end portion together affording a main bearing surface arranged to lie against the nose of the wearer, a presser plate normally lying within said annular portion, and a spring integral with the main bearing plate and connecting the presser plate and main bearing plate and permitting the face of the said presser plate to be pressed outwardly and away from the main bearing surface by the flesh rising within said annular portion, substantially as described.

5. In a nose guard, a long, flat main bearing plate adapted to lie along the nose of the wearer and merging at its upper end into an auxiliary bearing plate slightly inclined outwardly with respect to the main bearing plate to conform to the shape of the nose, and a presser plate having a central depressed portion adapted to afford a vacuum grip arranged within the auxiliary bearing plate in substantially the plane thereof and connected to the main bearing plate by a flexible spring tongue, whereby the flesh which rises within the auxiliary bearing plate is spread to gently and securely retain the glasses in place; substantially as described.

6. In a nose guard, a long, flat main bearing plate adapted to lie along the nose of the wearer and merging at its upper end into an annular auxiliary bearing plate slightly inclined outwardly with respect to the main bearing plate to conform to the shape of the nose, and a circular presser plate having a central conoidal depressed portion adapted to afford a vacuum grip, arranged within the annular auxiliary bearing plate in substantially the plane thereof and connected to the main bearing plate by a flexible spring tongue, whereby the flesh which rises within the auxiliary bearing plate is spread and gripped to gently and securely retain the glasses in place; substantially as described.

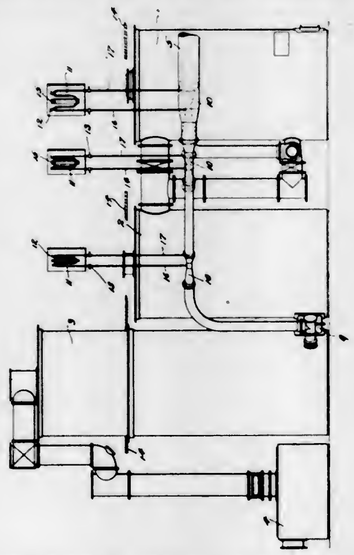
857,759. WINDOW-SCREEN. CHARLES W. RODECKER, New York, N. Y. Filed Nov. 25, 1905. Serial No. 289,132.



Claim.—1. The combination with a window casing of an upper and a lower sash mounted therein, screen casings secured within the window casing and constituting a window sill and window soffit, guide strips secured at their opposite ends to the said screen casings and also being secured to the stiles of the window casing and forming guides for the sash and screen rolls mounted within the screen casings and being connected with the sash.

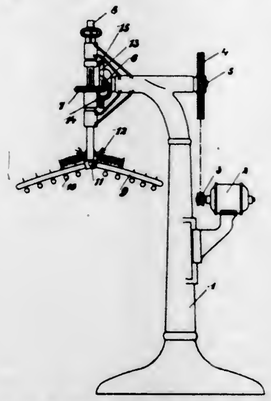
2. The combination with a window casing of an upper and lower sash mounted therein, screen casings secured within the window casing and constituting a window sill and window soffit, guide strips which are rectangular in horizontal section secured at their opposite ends to the said screen casings and also being secured to the stiles of the window casing and forming guides for the sash and screen rolls mounted within the screen casings and being connected with the sash.

857,760. WATER-GAS APPARATUS. JOHN M. RUSBY, Philadelphia, Pa., assignor to The United Gas Improvement Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 31, 1907. Serial No. 354,981.



Claim.—Means for definitely controlling the quantity and quality of the production of gas, which means comprise the gas generating apparatus and its regulatable air supply connections and an ajutage interposed in said connections and provided with a pressure gage, whereby the attendant is enabled to introduce a definite volume of air during the interval of each blow regardless of fire and other conditions in the apparatus, substantially as described.

857,761. MASSAGE APPARATUS. FERDINAND SCHMIDT, Schreiberhau, Germany. Filed Mar. 16, 1907. Serial No. 362,781.



Claim.—1. In a massage apparatus, in combination, a shaft, radial arms carried thereby, yielding socket-ended holders secured to the arms, massaging balls mounted in the sockets with capability of turning in all directions, and means for driving said shaft, substantially as and for the purpose set forth.

2. In a massage apparatus, in combination, a shaft, radial arms yieldingly carried thereby, spring actuated massaging means carried by said arms, and means for driving said shaft, substantially as and for the purpose set forth.

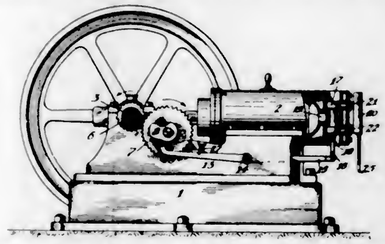
3. In a massage apparatus, in combination, a shaft, radial arms yieldingly carried thereby, massaging means carried by said radiating arms, and means for driving said shaft, substantially as and for the purpose set forth.

4. In a massage apparatus, in combination, a shaft, radial arms carried thereby, yieldable independently of one another, massaging means carried by said yielding radial arms, means for rotating said shaft, and means for reciprocating it in the direction of its axis during its rotation, substantially as and for the purpose set forth.

5. In a massage apparatus, in combination, a shaft, massaging means carried at the end thereof, a driving shaft, an eccentric mounted thereon, gearing for transmitting the motion of the driving shaft to the first said shaft, and means on the latter engaging with the eccentric, whereby the first said shaft is reciprocated in the direction of its axis during its rotation, substantially as and for the purpose set forth.

6. In a massage apparatus, in combination, a shaft, radial arms carried thereby, massaging means carried by said arms, a driving shaft, an eccentric mounted thereon, gearing for transmitting the motion of the driving shaft to the first said shaft, and means on the latter co-operating with the said eccentric, for reciprocating the first said shaft in the direction of its axis during its rotation, substantially as and for the purpose set forth.

857,762. GAS-ENGINE VALVE. BENJAMIN C. SKINNER, Oakland, Cal. Filed Jan. 19, 1905. Serial No. 241,817.

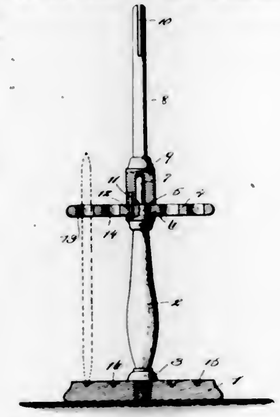


Claim.—In a gas engine, a cylinder having a piston chamber and a head, said head having a passage extending diametrically therethrough, said piston chamber having a single central port communicating with said passage, said head having inlet and outlet ports therein communicating with the passage, a small cylinder 20 arranged at right angles on the end of the cylinder head, said small cylinder having an exhaust space connected with the exhaust port and an inlet space surrounding the exhaust space and connected with the inlet port and a slide valve in said passage controlling the inlet and exhaust ports.

857,763. DISPLAY-STAND. HERBERT E. SMITH, Haverhill, N. H., assignor to Pike Manufacturing Company, Pike, N. H., a Corporation of New Hampshire. Filed May 18, 1907. Serial No. 374,398.

Claim.—1. In a display stand, a base; a supporting column carried thereby and having a shoulder and a reduced portion at its upper end; a perforated supporting disk adapted to rest upon said shoulder and having an opening through which said reduced portion extends; a standard extending above said disk, the lower end thereof being in engagement with said reduced portion and with the portion of said disk adjacent the opening therein and means whereby said disk is prevented from turning upon said column.

2. In a display stand, a base; a supporting column carried thereby and having a shoulder and a reduced portion at its upper end; a perforated supporting disk adapted to rest upon said shoulder and having an opening through which said reduced portion extends; a standard extending above said disk; the lower end thereof being in engagement with said reduced portion and with the portion of said disk adjacent the opening therein; a key-way formed in said reduced portion and opening; and a key carried by the lower end of said standard and adapted to enter said key-way when the stand is assembled.



3. In a display stand, a base; a supporting column carried thereby; an annular groove formed in said base concentric with said column; a supporting disk carried by said column and having a series of concentrically arranged openings in vertical alinement with said groove; a standard extending above said disk; and a slit in the upper end of said standard.

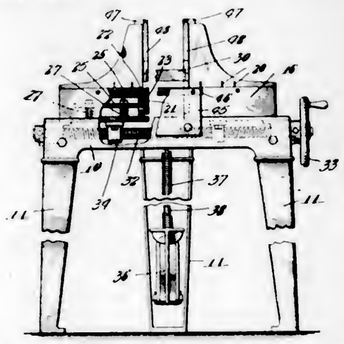
4. In a display stand, a base; a supporting column carried thereby and in threaded engagement therewith; an annular groove formed in said base concentric with said column; a shoulder formed at the upper end of said column; a reduced portion extending above said shoulder; a supporting disk adapted to rest upon said shoulder and having an opening through which said reduced portion extends; a standard extending above said disk, the lower end thereof being in engagement with said reduced portion and with the portion of said disk adjacent the aforesaid opening therein; a slit in the upper end of said standard; and a series of concentrically arranged openings in said disk in vertical alinement with the groove in said base.

5. In a display stand, a base; a supporting column carried thereby and in threaded engagement therewith; an annular groove formed in said base concentric with said column; a shoulder formed at the upper end of said column; a reduced portion extending above said shoulder; a supporting disk adapted to rest upon said shoulder and having an opening through which said reduced portion extends; a series of concentrically arranged openings in said disk; a standard in engagement with said reduced portion and extending above said disk; and a slit in the upper end of said standard.

857,764. METAL-BENDING MACHINE. HERBERT M. SMITH, Worcester, Mass. Filed Nov. 15, 1905. Serial No. 287,463.

Claim.—1. In a metal bending machine, the combination of an expansible bending frame, consisting of relatively adjustable side plates and a replaceable cross-piece, and means co-operating with the bending frame to simultaneously bend the wings projecting from the sides of a sheet-metal blank.

2. In a metal bending machine, the combination of two relatively movable tables, an expansible bending frame comprising a side plate carried by each of said tables and a replaceable cross-piece, and means co-operating with the bending frame for simultaneously bending the wings of a sheet-metal blank.



3. In a metal bending machine, the combination of an expansible bending frame consisting of relatively adjustable side plates, and a replaceable cross-piece, side strips co-operating with the bending frame to simultaneously bend the side wings of a sheet-metal blank, and spring-pressed clamp-plates co-operating with the side-plates of the bending frame to hold the work in place while being bent.

4. In a metal bending machine, the combination of two relatively adjustable tables, each having a guideway, a side-plate mounted in each of said guideways and forming parts of an expansible bending frame, a replaceable piece forming a third side of the expansible bending frame, and a spring-pressed clamp-plate carried by each of said tables and co-operating with a side-plate to clamp the work while the same is being bent.

5. In a metal bending machine, the combination of two relatively movable tables, each having a guideway, a side-plate guided in each of said tables and forming part of an expansible bending frame, a removable piece between the side-plates forming a third side of the bending frame, a front piece having an edge co-operating with the removable piece to bend one wing of the blank, and the tables having edges co-operating with the side-plates to bend the side wings of the blank, said front piece being removable so that the same may be taken off when desired.

6. In a metal bending machine, the combination of a machine frame, two relatively movable side plates thereon, and a removable piece supported by said side plates and forming therewith a three-sided bending frame.

7. In a metal bending machine, the combination of an expansible bending frame consisting of relatively adjustable side plates and a replaceable cross-piece, means co-operating with the bending frame to simultaneously bend the side wings of a sheet-metal blank, a treadle, and a toggle acting connection between the treadle and bending frame.

8. In a metal bending machine, the combination of two relatively adjustable box-like tables, a bending plate mounted in ways on each of said tables, and a clamp plate co-operating with each of said bending plates, each of said clamp-plates being carried by arms fitted onto guide-pins and supported by springs.

9. In a metal bending machine, the combination of two relatively movable tables, a bending plate movably mounted on each of said tables, a cross-shaft connecting the bending plates, and a treadle connected to the cross-shaft to operate the bending plates.

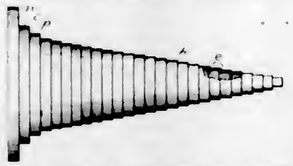
10. In a metal bending machine, the combination of two relatively adjustable tables, each having slots in its upper surface, gage-pins or stops adjustable in said slots for positioning the work, a bending plate carried by each of said tables, and means for simultaneously operating the bending plates.

11. In a metal bending machine, the combination of the machine frame, two relatively movable tables, a lead-screw having right and left-hand screw threads for mov-

ing the tables toward or away from each other, gaging-pins adjustable in the tables for positioning the work, a side plate mounted in guideways on each of said tables, a cross-piece connecting the side plates to form a third side of the bending frame, a spring-pressed clamp-plate carried by each of the tables, and co-operating with the corresponding plate for clamping the work while being acted upon, a cross-shaft connecting the bending plates, and a treadle connected to operate the cross-shaft.

12. In a metal bending machine, the combination of a machine frame, a removable front plate thereon, side pieces, and an expansible bending frame movable past the edges of the front plate and side pieces.

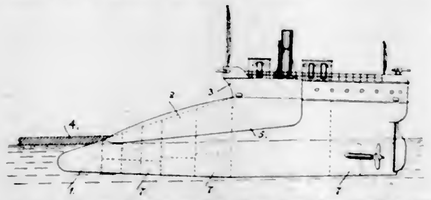
857,765. HARMONIC HORN. REUBEN J. SMITH, Waukegan, Ill. Filed Nov. 5, 1906. Serial No. 342,152.



Claim.—1. A sound amplifying horn in which is combined a series of successive, hollow, rigidly connected cylinders, each successive cylinder being larger than the preceding one in the order of succession from small to large.

2. A horn in which is combined a series of successively connected integral hollow cylinders proportioned to bear a vibratory ratio to each other substantially corresponding to that of a musical scale.

857,766. BOAT FOR ICE-BREAKING AND OTHER PURPOSES. CONRAD STANGERYE, San Francisco, Cal. Filed Apr. 7, 1906. Serial No. 310,481.



Claim.—1. In a boat of the character described a submerged bow portion having flotation compartments, an upper forward portion formed into a double inclined plane, and said planes extending into wings or shields beyond the sides of boat, also the upper body portion comprising the superstructure of said boat being formed into a blunt wedge in the forward part of said superstructure, for the purpose specified.

2. In an ice-breaking boat the combination of a submerged bow, a double inclined plane terminating in wings or shields beyond the sides of boat, also superstructure formed into an outwardly inclined concaved wedge in its forward portion and the forward lower portion of the boat being formed with tanks whereby the trim and waterline of same can be changed at will, and for the purpose specified.

3. A boat of the character described, comprising a body portion having a superstructure, and a forward portion, the forward portion having a submerged integral bow and being inclined from the said superstructure to said submerged bow and also inclined downwardly on its opposite sides, in combination with wings along either side thereof, substantially as set forth.

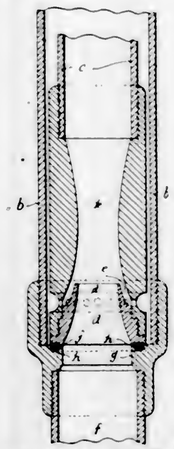
4. A boat of the character described, comprising a body portion having a superstructure, a submerged bow, and a long downwardly inclined forward portion extending from the superstructure to the submerged bow, the said forward portion being inclined transversely on opposite sides, and the front of the superstructure having a forwadly extending concaved wedge portion, substantially as set forth.

857,767. PACKAGE FOR IMPLEMENTS. AUGUSTUS W. STEPHENS, Waltham, Mass. Filed Mar. 21, 1907. Serial No. 363,764.



Claim.—A package for implements, comprising a relatively stiff body having a recess open at one edge of the body, and forming pocket edges, a relatively thin cover secured to the opposite sides of the body and extending across the open end of the recess, said cover forming rupturable pocket sides and a rupturable pocket guard or closure, and having an indicator on the portion which forms one of the pocket sides, and an article formed to occupy said pocket, the said article being confined by the said pocket edges, sides and guard, and having an opening registering with the indicator, the said pocket sides permitting a penetrating instrument inserted at the part occupied by the indicator to pass through said opening and engage the article, while the rupturability of the guard permits said instrument and the article engaged thereby to be withdrawn from the pocket.

857,768. METHOD AND APPARATUS FOR RAISING LIQUIDS BY COMPRESSED AIR. ROBERT STIRLING, Surrey, England. Filed June 20, 1905. Serial No. 266,181.



Claim.—1. In the raising of liquids by compressed air wherein a current of air is introduced into a discharge pipe which is in communication with the liquid below the level of the latter the method which consists in introducing the liquid into such pipe at approximately the same velocity as that attained by the upwardly moving mixture of liquid and air immediately beyond the point of introduction of said liquid.

2. In the raising of liquids by compressed air wherein a current of air is introduced into a discharge pipe which is in communication with the liquid below the level of the latter, the method which consists in introducing the liquid into such pipe through a nozzle, the sectional area of which is so restricted with relation to that of said pipe at a point immediately above such nozzle that the velocity of said liquid passing said nozzle is approximately equal to that of the mixture of air and liquid passing such point.

3. The method of raising liquid which consists in submerging the end of a pipe in such liquid, introducing a current of air thereinto at a point below the surface thereof, and restricting the inflow of liquid into such pipe so that its velocity is approximately equal to that of the upwardly moving current of air and liquid.

4. In an air lifting apparatus for liquids, a discharge pipe, an air inlet thereto, and a liquid inlet thereto, the cross sectional area of said liquid inlet and said discharge pipe being so proportioned that the fluid passing through said liquid inlet and that portion of said pipe immediately beyond the same shall move at approximately the same velocity.

5. In an air lifting apparatus for liquids, a discharge pipe, an air inlet thereto, and a nozzle adapted to introduce the liquid into such pipe, said pipe and nozzle having their cross-sectional areas so proportioned that the fluids passing through said nozzle and that portion of said pipe which is immediately beyond the same shall move at approximately the same velocity.

6. In an apparatus for raising liquid by compressed air wherein a current of air is introduced into a discharge pipe which is in communication with the liquid below the level of the latter, a discharge pipe so proportioned with relation to the liquid inlet that the liquid introduced into such pipe shall move at approximately the same velocity as that attained by the upwardly moving mixture of liquid and air immediately beyond the point of introduction of the liquid and air.

7. In the raising of liquids by compressed air wherein a current of air is introduced into a discharge pipe which is in communication with the liquid below the level of the latter the method which consists in introducing the liquid into such pipe at a velocity approximately equal to that of the mixture of liquid and air above the liquid inlet, but not greater than that due to a head of 10% of submergence.

8. In the raising of liquids by compressed air wherein a current of air is introduced into a discharge pipe which is in communication with the liquid below the level of the latter the method which consists in introducing the liquid into such pipe through a nozzle the sectional area of which is so restricted with relation to that of said pipe at a point immediately above such nozzle that the velocity of said liquid passing said nozzle is not greater than that due to a head of 10% of submergence.

9. The method of raising liquid which consists in submerging the end of a pipe in such liquid, introducing a current of air thereinto at a point below the surface thereof, and restricting the inflow of liquid into such pipe so that its velocity is not greater than that due to a head of 10% of submergence, whereby the velocity of the entering liquid approximates that of the mixture above it.

10. In an air lifting apparatus for liquids, a discharge pipe, an air inlet thereto, and a liquid inlet thereto, the cross-sectional areas of said liquid inlet and said discharge pipe being so proportioned that the fluids passing through said liquid inlet and that portion of said pipe immediately beyond the same shall move at a velocity not greater than that due to a head of 10% of submergence.

11. In an air lifting apparatus for liquids, a discharge pipe, an air inlet thereto, and a nozzle adapted to introduce the liquid into such pipe said pipe and nozzle having their cross-sectional areas so proportioned that the fluids passing through said nozzle and that portion of said pipe which is immediately beyond the same shall move at a velocity not greater than that due to a head of 10% of submergence.

12. In an apparatus for raising liquid by compressed air wherein a current of air is introduced into a discharge pipe which is in communication with the liquid below the level of the latter, a discharge pipe so proportioned with relation to the liquid inlet that the liquid introduced into such pipe shall move at a velocity not greater than that due to a head of 10% of submergence.

13. In the raising of liquids by compressed air wherein a current of air is introduced into a discharge pipe which is in communication with the liquid below the level of the latter, the method which consists in introducing the liquid into such pipe through a plurality of nozzles the sectional area of which is so restricted with relation to that of said pipe at a point immediately above such nozzles that the velocity of said liquid passing said nozzles is approximately equal to that of the mixture of air and liquid passing such point.

14. In an air lifting apparatus for liquids, a discharge pipe, an air inlet thereto, and a plurality of nozzles adapted to introduce the liquid into such pipe said pipe and nozzles having their cross-sectional areas so proportioned that the fluids passing through said nozzles and that portion of said pipe which is immediately beyond the same shall move at approximately the same velocity.

15. In the raising of liquids by compressed air wherein a current of air is introduced into a discharge pipe which is in communication with the liquid below the level of the latter, the method which consists in introducing the liquid into such pipe through a plurality of nozzles the sectional area of which is so restricted with relation to that of said pipe at a point immediately above such nozzles that the velocity of said liquid passing said nozzles is not greater than that due to a head of 10% of submergence.

16. In an air lifting apparatus for liquids, a discharge pipe, an air inlet thereto, and a plurality of nozzles adapted to introduce the liquid into such pipe said pipe and nozzles having their cross-sectional areas so proportioned that the fluids passing through said nozzles and that portion of said pipe which is immediately beyond the same shall move at a velocity not greater than that due to a head of 10% of submergence.

17. The combination with a well or the like, of an air lifting apparatus having a liquid inlet at a predetermined depth of submergence, and a discharge pipe for the mixture of air and liquid beyond said inlet, said inlet and discharge pipe immediately beyond said inlet being so proportioned with relation to the depth of submergence that the incoming liquid flows at approximately the same velocity as the mixture in such portion of the discharge pipe.

18. The combination with a well or the like, of an air lifting apparatus having a discharge pipe, and a nozzle adapted to introduce liquid into such pipe, such nozzle being arranged at a predetermined depth of submergence, said pipe and nozzle having their cross-sectional areas so proportioned with relation to the depth of submergence that the incoming liquid flows at approximately the same velocity as the mixture of air and liquid in said discharge pipe immediately beyond said nozzle.

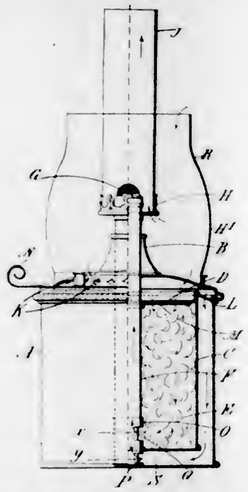
857,769. SAFETY-LAMP AND AIR-CARBURETING APPARATUS THEREFOR. FRANK W. SUTER and CHARLES WAYMAN, London, England. Filed Jan. 26, 1907. Serial No. 354,285.

Claim.—1. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner, inlets for air drawn from around the chimney leading to the chamber, and to the jacket space, and ports leading from the carbureting chamber and the jacket space respectively into the central tube, as set forth.

2. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner, inlets for air drawn from around the chimney leading to the chamber and to the jacket space, ports leading from the carbureting chamber and the jacket space respectively into the central tube, valves controlling these ports and means for simultaneously operating these valves as set forth.

3. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner, inlets

for air drawn from around the chimney leading to the chamber and to the jacket space, ports leading from the carbureting chamber and the jacket space respectively into the central tube, valves controlling these ports, a valve controlling the passage of air into the carbureting chamber and means for simultaneously operating all these valves as set forth.



4. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner, a chimney carried in a gallery on the upper end of the burner tube, an outer chimney carried on the outer casing, air inlets leading from the space between the inner and outer chimneys into the chamber and into the jacket space and ports leading from the carbureting chamber and the jacket space respectively into the central tube as set forth.

5. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner a chimney carried in a gallery on the upper end of the burner tube, an outer chimney carried on the outer casing, air inlets leading from the space between the inner and outer chimneys into the chamber and into the jacket space, ports leading from the carbureting chamber and the jacket space respectively into the central tube, valves controlling these ports, a valve controlling the passage of air into the carbureting chamber and means for simultaneously operating all these valves as set forth.

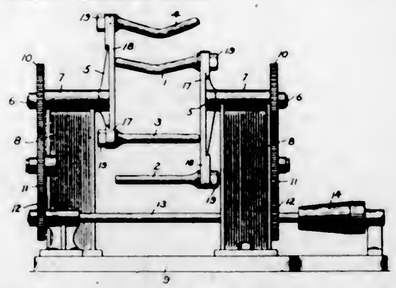
6. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner a chimney carried in a gallery on the upper end of the burner tube, an outer chimney carried on the outer casing, air inlets leading from the space between the inner and outer chimneys into the chamber and into the jacket space, ports leading from the carbureting chamber and the jacket space respectively into the central tube, valves carried by the burner tube and controlling these ports, a valve carried by the burner tube and controlling the passage of air into the carbureting chamber and means for moving the burner tube and simultaneously operating all these valves as set forth.

7. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner a chimney carried in a gallery on the upper end of the burner tube, an outer chimney carried on the outer casing, air inlets leading from the space between the inner and outer chimneys into the chamber and into the jacket space, ports leading from the carbureting chamber and the jacket space respectively into the central tube, valves carried by the burner tube and controlling these ports, a valve carried by the burner tube and controlling the passage of air into the carbureting chamber and means for rotating the burner tube and simultaneously operating all these valves as set forth.

8. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner, inlets for air drawn from around the chimney leading to the chamber and to the jacket space, ports leading from the carbureting chamber and the jacket space respectively into the central tube, valves carried by the burner tube and controlling these ports, a valve carried by the burner tube and controlling the passage of air into the carbureting chamber and means for moving the burner tube and simultaneously operating all these valves as set forth.

9. In a lamp for burning carbureted air the combination of a carbureting chamber containing absorbent material, an outer casing forming an air jacket and enveloping the chamber, a central tube terminating in a burner, inlets for air drawn from around the chimney leading to the chamber and to the jacket space, ports leading from the carbureting chamber and the jacket space respectively into the central tube, valves carried by the burner tube and controlling these ports, a valve carried by the burner tube and controlling the passage of air into the carbureting chamber and means for rotating the burner tube and simultaneously operating all these valves as set forth.

857,770. CANDY-PULLING MACHINE. CHARLES THIBODEAU, Somerville, Mass., assignor, by mesne assignments, to Edward A. Kitzmiller, Pittsburg, Pa., and Robert P. Duff, Swissvale borough, Pa., trading under firm-name of P. Duff & Sons, Pittsburg, Pa. Filed Nov. 26, 1900. Serial No. 37,734.



Claim.—1. In a candy pulling machine, the combination of a plurality of co-acting pulling members mounted for movement, some in intersecting paths, and others in non-intersecting paths.

2. In a candy-pulling machine, the combination of a plurality of co-acting sets of pins, said sets having pins mounted for movement, some in intersecting paths and others in non-intersecting paths.

3. In a candy pulling machine, the combination of a plurality of co-acting pulling members mounted to revolve, some in intersecting circles, and others in non-intersecting circles.

4. In a candy-pulling machine, the combination of a plurality of co-acting sets of pins, said sets having pins mounted to revolve, some in intersecting circles and others in non-intersecting circles.

5. In a candy pulling machine, the combination of two substantially parallel off-set rotary shafts each carrying co-acting pulling members, and means to rotate said shafts.

6. In a candy-pulling machine, the combination of two substantially parallel offset rotary shafts having co-acting pullers, and means to rotate said shafts in the same direction at equal speeds.

7. In a candy pulling machine, the combination of two substantially parallel off-set rotary shafts having co-acting sets of pulling members, said pulling members being mounted to revolve, some in intersecting circles, and others in non-intersecting circles.

8. In a candy-pulling machine, the combination of two substantially parallel offset rotary shafts having co-acting sets of pins, said pins being mounted to revolve, some in intersecting circles, and others in non-intersecting circles, and means to rotate said shafts in the same direction at equal speeds.

9. In a candy-pulling machine, the combination of a plurality of pins mounted for movement in substantially parallel relation to each other in intersecting paths.

10. In a candy pulling machine, the combination of a series of candy pulling members, and means for imparting to a part of said members continuous circular movement in one direction.

11. In a candy-pulling machine, the combination of a plurality of pins mounted to revolve in intersecting circles.

12. In a candy pulling machine, the combination of a plurality of pins mounted to revolve in intersecting circles and moving in the same direction and at equal angular speeds.

13. In a candy pulling machine, the combination of a pulling member mounted to move in a circular path in one direction, and co-operating means movable to intersect the path of first named pulling member.

14. In a candy pulling machine, the combination of a pulling member mounted to move in a circular path in one direction, and a plurality of movable co-operating pulling members, one of which moves to intersect the path of said first named member.

15. In a candy pulling machine, the combination of a plurality of pulling members mounted to move in circular paths in one direction, and co-operating means movable to intersect the paths of one of said first named members.

16. In a candy pulling machine, the combination of a plurality of pulling members mounted to revolve in intersecting circles, and a member co-operating therewith.

17. In a candy pulling machine, the combination of a plurality of pulling members mounted to revolve in intersecting circles, and another member mounted to revolve in a circle and co-operating therewith.

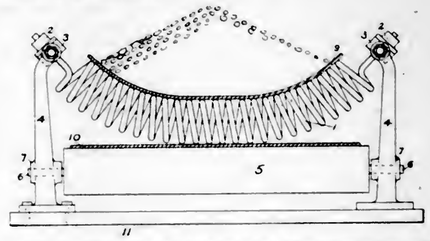
18. In a candy-pulling machine, the combination of two substantially parallel offset shafts terminating short of each other, levers mounted on the adjacent ends of said shafts, and two pins mounted on each lever on opposite sides of its shaft-axis and projecting toward the opposite lever, said two pins being located at different distances from their shaft-axes, the pins nearer the axis moving in non-intersecting paths, and those farther from the axis moving in intersecting paths.

19. In a candy-pulling machine, the combination of two substantially parallel offset shafts terminating short of each other, means for rotating said shafts in the same direction at equal speeds, levers mounted on the adjacent ends of said shafts, and two pins mounted on each lever on opposite sides of its shaft-axis and projecting toward the opposite lever, said two pins being located at different distances from their shaft-axis, the pins nearer the axis moving in non-intersecting paths, and those farther from the axis moving in intersecting paths.

857,771. BELT CONVEYER. EDWARD G. THOMAS, Brookline, Mass. Filed Sept. 27, 1906. Serial No. 336,398.

Claim.—1. In a belt conveyer support, the combination of a flexible roller, means for supporting the same; an inflexible roller beneath said flexible roller, and adjustable means for supporting said inflexible roller, substantially as described.

2. In a belt conveyer support the combination of a flexible roller, bearings for said roller; an inflexible roller, vertically adjustable bearings for said inflexible roller, and supporting means for the bearings of both rollers, substantially as described.



3. In a belt conveyer a troughing idler consisting of a flexible roller, pivoted bearings for said roller; an inflexible roller supporting said flexible roller, and bearings for said inflexible roller, substantially as described.

4. In a belt conveyer a troughing idler consisting of a spiral spring, flanges secured thereto and supported in rotational relation by pivoted bearings; an inflexible roller situated beneath said spiral spring, so as to support said spring when deflected under load, substantially as described.

5. In a conveyer the combination of a belt, flexible rollers supporting the working side of the belt and partially supported by the return side, pivoted bearings for said rollers, and inflexible rollers for supporting the return side.

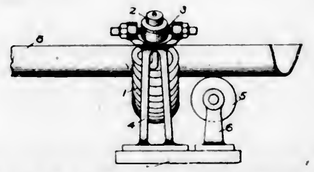
6. In a belt conveyer support a troughing roller, consisting of a spiral spring, having axially projecting ends integral with the coils of the spring, in combination with flanges attached to the ends of the spring, bearings for said flanges and supporting means, substantially as described.

7. An idle roll for belt conveyers consisting of a spiral spring, having axially projecting ends integral with the coils of the spring, substantially as described.

8. A belt conveyer having a load-carrying side, supported on flexible rollers, consisting of spiral springs, and a return side supporting said rollers, substantially as described.

9. In a conveyer-belt support, a flexible roller, means for supporting the same, an inflexible roller, bearings for said inflexible roller and means for varying the distance between the bearings of said flexible and said inflexible roller, substantially as described.

857,772. BELT CONVEYER. EDWARD G. THOMAS, Brookline, Mass. Filed Oct. 19, 1906. Serial No. 339,629.



Claim.—1. In a belt conveyer the combination of a belt, belt-supporting rollers and flexible belt-troughing rollers, in adjacent contact with the load-carrying side of said belt, substantially as described.

2. In a belt conveyer the combination of a belt, a belt-supporting roller, and a flexible belt-troughing roller, said supporting roller being pivoted below and to one side of the bearing for said troughing roller, substantialy as described.

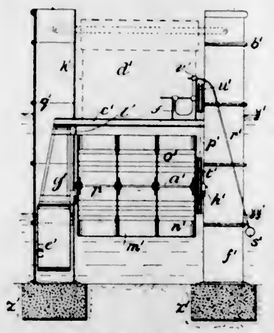
3. In a supporting device for the load-carrying side only of belt conveyers the combination of a belt-supporting roller and a flexible belt-troughing roller, substantially as described.

4. In a supporting device for the load-carrying side of belt conveyers the combination of a belt-supporting roller and a flexible belt-troughing roller, said supporting roller being pivoted below and to one side of said troughing roller, substantially as described.

5. In a supporting device for the load-carrying side of belt conveyers the combination of a belt-supporting roller, bearings for said roller, a flexible belt-troughing roller, bearings for said troughing roller and supporting means for all said bearings, substantially as described.

6. In a supporting device for the load-carrying side of belt conveyers the combination of a belt-supporting roller, bearings for said troughing roller and supporting means oted bearings for said troughing roller and supporting means for all said bearings, substantially as described.

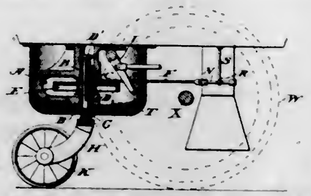
857,773. FLOATING TIDAL WATER-WHEEL. JOHN TIBBITTS, Walsall, and ALFRED W. TURNER, Birmingham, England. Filed July 18, 1904. Serial No. 217,154.



Claim.—1. In tidal motors having a floating water-wheel; four tubular float casings *f'* provided with slots *k'* each containing a float *c'*, carrying a standard *g'*; a machinery floor *c'* carried by the standards *g'*; guides *l'* and *l²* connected to standards *g'* and free to work in slots *k'*; a cross girder *j'* secured to standards *g'* and carrying bearings *h'*; in combination with a water wheel and its shaft *a'*, sheave or pulley *t'* and sheave or pulley *u'*.

2. In tidal motors, the combination of a water wheel, a bevel wheel reversing gear driven thereby, and a frame carrying said gear of a lever *r'* having its top end pivoted at *v'*, a submerged paddle *s'* attached to the lower end of lever *r'*, a lever *g* attached to the top pivoted end of lever *r'* and engaging with a crab *e* on the secondary shaft *d* of the reversing gear to engage and disengage the crab *e* with bevel wheels *b* and *c*, substantially as described.

857,774. MEANS FOR PREVENTION OF SKIDDING OR SIDE-SLIPPING OF MOTORS AND OTHER VEHICLES. HENRY TURNER, London, England. Filed Dec. 14, 1906. Serial No. 347,797.



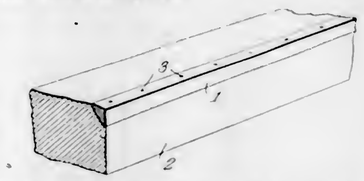
Claim.—1. The combination, in a motor vehicle or other road vehicle, of a caster normally pressed into effective contact with the ground, a support for its swiveled vertical stem attached underneath the vehicle body and movable laterally therewith, a sanding device, having one of its parts movable for the discharge of sand, and means for transmitting motion from said stem to such movable part of the sanding device when the caster is caused to turn in relation to its support, as by skidding.

2. The combination, in a motor vehicle or other road vehicle, of a caster normally pressed into effective contact with the ground, a support for its swiveled vertical stem attached underneath the vehicle body and movable laterally therewith, a pair of sand boxes correspondingly supported having outlets near a pair of main wheels respectively and each provided with a valve, and means for transmitting motion from said stem to said valves when the caster is caused to turn in relation to its support, as by skidding.

3. The combination, in a motor vehicle or other road vehicle, of a caster, a support for its swiveled vertical stem attached underneath the vehicle body and movable laterally therewith, a disk splined to said stem, a downwardly pressing spring beneath said bracket tending to keep the caster in effective contsct with the ground, a sanding device having one of its parts movable for the discharge of sand, and means for transmitting motion from said disk to such movable part of the sanding device when the caster is caused to turn in relation to its support, as by skidding.

4. The combination, in a motor vehicle or other road vehicle, of a caster, a support for its swiveled vertical stem attached underneath the vehicle body and movable laterally therewith, a disk splined to said stem, a downwardly pressing spring beneath said bracket tending to keep said caster in effective contact with the ground, a sanding device having one of its parts movable for the discharge of sand, means for transmitting motion from said disk to such movable part of the sanding device when the caster is caused to turn in relation to its support, as by skidding, and means for locking said disk and therewith said sanding device to render the same inoperative at will, substantially as hereinbefore specified.

857,775. REINFORCED CONCRETE CONSTRUCTION. CHARLES P. WALTER, Harrisburg, Pa. Filed Oct. 23, 1906. Serial No. 340,240.



Claim.—1. A structure comprising a concrete body, a combined wear and reinforcing strip embedded in one face of said body, said strip having an exposed face and being slotted and triangular in cross section, there being a plurality of apertures within said strip, and anchoring devices engaging the apertured portion of the strip and having bent ends embedded within the body.

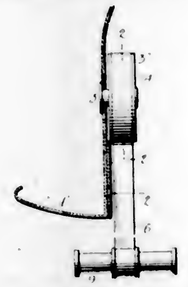
2. A structure comprising a concrete body, a combined wear and reinforcing strip embedded in one face of said body, said strip being solid and triangular in cross section and having a plurality of apertures therein, and anchoring means detachably engaging the apertured portion of the strip and embedded and concealed within the body.

3. A structure comprising a concrete body, a reinforcing strip embedded therein and having an exposed face, said strip being provided with apertures, an anchoring device upon the apertured portion of the strip and comprising integral members disposed at an angle to each other and having bent ends, said anchoring members being embedded within the body.

4. A structure comprising a concrete body, a plurality of separate reinforcing strips embedded therein, each strip having an exposed face, and separate interlocking anchoring means upon the respective strips and embedded within the body.

5. A structure comprising a concrete body, a plurality of separate reinforcing strips embedded therein, each strip having an exposed face and provided with a plurality of apertures, separate anchoring means upon each of the strips and embedded within the body, the anchoring means of the respective strips interlocking within the body.

857,776. HAT-GUARD. LAFAYETTE WEAVER, Jr., Philadelphia, Pa. Filed May 31, 1906. Serial No. 319,538



Claim.—1. A hat guard comprising a casing having an opening therein, a tubular rivet extending through the casing and projecting from one side thereof to secure the same to a hat, a revoluble drum in the casing, a cord attached to said drum and extending through the opening in the casing, and a coiled spring in said drum having one end attached thereto and the other end attached to the tubular rivet.

2. A hat guard comprising a casing having an opening, a tubular rivet extended through said casing and projecting beyond opposite sides thereof, one of said projecting ends being extended and secured to one side of a hat, a clip also attached to the hat and secured to the rivet, a revoluble drum in the casing, a coiled spring in said drum having one end attached thereto and the other end attached to the tubular rivet, and a cord attached to said drum and extending through the opening in the casing.

3. A hat guard comprising a casing having an opening, a tubular rivet extended through opposite sides of the casing to secure the same to a hat, said tubular rivet comprising telescopically related members, one bifurcated to form spring jaws having projections and the other formed with seats to receive said projections to detachably secure said members together and said casing to said hat, a revoluble drum in the casing, a coiled spring in said drum having one end attached thereto and the other end attached to said rivet, and a cord attached to said drum and extending through the opening in the casing.

857,777. CARPET-STRETCHER. VICTOR O. WHITE, Memphis, Mo. Filed Sept. 12, 1906. Serial No. 334,329.

Claim.—1. A carpet stretching device, comprising a fulcrum bar constructed in sections adapted to have their ends overlapped and adjustable lengthwise with respect to each other, said ends being formed with notches, a sleeve designed to encircle said overlapped ends and loosely slidable thereon, an arm connected to said sleeve and provided with a lateral bar adapted to enter registering notches of the said overlapped ends, one of said sections of the fulcrum bar being provided with a head arranged for engagement with the carpet and a lever fulcrumed on the other section and also provided with a head designed for engagement with the carpet.

2. In a device of the character described, the combination of a fulcrum bar formed in two sections, the inner end of each section being provided with a ring through which the opposite section slides and corresponding edges of the two sections being provided with notches, a sleeve slipped over the fulcrum bar, an arm loosely connected to the sleeve and provided with a lateral bar adapted to enter any registering pair of notches to lock the two sections of the fulcrum bar in a fixed position with relation to each other, a shoe at one end of the fulcrum bar provided with means for engaging with the carpet, an operating lever fulcrumed upon the opposite end of the fulcrum bar and provided with means for engaging with the carpet, and means for locking the lever to hold the carpet in a stretched position.



3. In a device of the character described, the combination of a fulcrum bar formed in two sections, the inner end of each section being provided with a ring through which the opposite section slides and corresponding edges of the two sections being provided with notches, a sleeve slipped over the fulcrum bar, an arm pivotally connected to the sleeve and provided with a lateral bar adapted to enter any pair of registering notches and lock the two sections of the fulcrum bar in a fixed position with relation to each other, a shoe located at one end of the fulcrum bar and provided with a series of teeth for engaging with the carpet, a lever fulcrumed upon the opposite end of the fulcrum bar, one end of the lever forming a handle while the opposite end is curved outwardly, a head formed in connection with the outwardly curved end of the lever and provided with a series of teeth for engagement with a carpet, and a locking arm pivotally connected to the handle and having a claw formed at the free end thereof which fits over the fulcrum bar and engages with a rack thereon to hold the carpet in a stretched position.

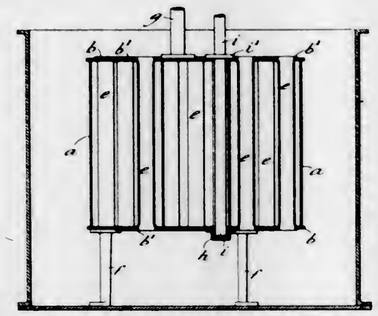
857,778. JEWELER'S TAG. CHARLES T. WITTSTEIN, Newark, N. J. Filed Aug. 1, 1906. Serial No. 328,666.



Claim.—As an article of manufacture, a jewelers' tag comprising a piece of flexible material having a middle connecting portion adapted to bend around a body to which the tag is to be applied and opposite end portions

adapted to be brought flatwise together by such bending and form a display tab, one side surface of said piece of flexible material being provided with a layer of cementitious matter at the said end portions thereof and devoid of the same at the said middle connecting portion, whereby said end portions may be joined into said display tab and are furthermore stiffened with respect to the middle connecting portion for the purposes set forth, and the other side of said piece of flexible material being adapted at the end portions thereof to constitute the outer exposed faces of the said display tab.

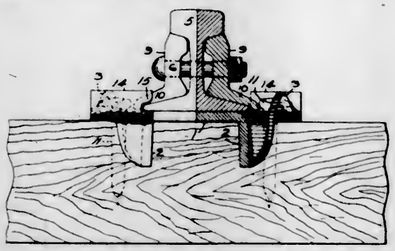
857,779. APPARATUS FOR HEATING OR BOILING BREWERS' WORT OR THE LIKE. HENRY J. WORSSAM, London, England, assignor to Henry John Worssam, Henry Hunt, and Henry Shoolbred Fox, trading as G. J. Worssam & Son, Wenlock road, City road, London county, England. Filed May 29, 1905. Serial No. 262,917.



Claim.—1. An apparatus for heating brewers wort or the like, adapted to be placed in a vessel containing the wort and to be surrounded thereby, consisting of a heating drum provided with supporting legs, a series of vertical tubes extending between the upper and lower ends of the drum open to the circulation of the liquid on which the drum is immersed, means for admitting steam within the drum around the tubes, and means for removing water of condensation; substantially as described.

2. In apparatus for heating liquids, a multiple steam drum arranged in tiers of diminishing diameter in an upward direction and having tubes extending through the lowest section of the drum and opening to the liquid at their upper ends at different levels, substantially as described.

857,780. BRIDGE AND GAGE PLATE FOR RAILROAD-RAILS. FRANKLIN E. ABBOTT, Buffalo, N. Y. Filed Aug. 20, 1906. Serial No. 331,401.



Claim.—1. A railway track plate consisting of a pressed plate having a flat body adapted for insertion between the ties and the rail base, and having edge portions at its end turned upwardly to provide vertical lugs, said upturned lugs having projection portions extending over the rail base.

2. A bridge plate having a body adapted for insertion between the ties and the rail base and having at its end upwardly projecting lugs arranged to contact with the ends of the fish plates, and having inwardly extending portions overhanging the base flange of the rail.

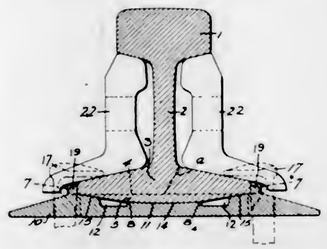
3. A bridge plate for railways having a body adapted for insertion between the ties and the rail base and having at its ends upwardly projecting lugs arranged to abut against the ends of the rail joint, the lugs on one side of the rail base having inwardly extending portions adapted to overhang the rail base.

4. A bridge plate having a body adapted for insertion between the ties and the rail base, and having at its ends upwardly projecting lugs for contacting with the ends of the rail joint, and having inwardly extending portions to overhang the base flange of the rail, said plate also having spike openings so arranged that the spike heads will not overhang the rail base or joint.

5. A railway bridge plate formed of pressed metal and having flanges on the side edges, and upturned portion at the ends arranged to contact with the ends of the rail joints, said upturned end portions having inwardly projecting portions overhanging the rail base, and the plate having spike openings arranged so that the head of the spike will not overhang the rail base or flange.

6. A bridge plate having a flat body and having pressed flanges on its side edges with upwardly bent end portions on each side of the rail base arranged to contact with the ends of the rail joint, said upwardly projecting portions at one side of the rail base having inwardly extending portions projecting over the base flange of the rail and said plate having spike openings so located that the spike heads will not overhang the rail base or joint.

857,781. COMBINED RAILROAD-RAIL AND RAIL-BASE PLATE. FRANKLIN E. ABBOTT, Buffalo, N. Y. Filed Sept. 24, 1906. Serial No. 335,955.



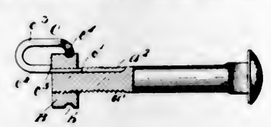
Claim.—1. A combined rail and rail base plate, comprising a rail having a comparatively wide base convex on its lower face, and a base plate provided with a counterpart rail seat.

2. A combined rail and rail base comprising a rail having a comparatively wide base convex on its lower face, and a base plate provided with a counterpart rail seat and with longitudinal grooves in said seat.

3. A combined railroad rail and rail base plate, comprising a rail having a comparatively wide base convex on its bottom, and a base plate having a counterpart seat provided with longitudinal grooves and having ribs at the sides of the seat to contact with the edges of the rail base.

4. A combined railroad rail and rail base plate, comprising a rail having a comparatively wide base convex on its bottom, and a base plate having a counterpart seat and provided on one edge with a rib overhanging the edge of the base.

857,782. NUT-LOCK. ROBERT D. BAKER, Las Vegas, Nev. Filed June 30, 1906. Serial No. 324,177.



Claim.—1. The combination with a bolt having a longitudinal groove at the threaded end thereof, and a nut having a groove on opposite faces thereof, and transversely with respect to the bolt, of a rod or wire having one end in the groove of the bolt, said end being cut away on one side to permit the passage of the nut, and provided with a shoulder at the end of the cut away portion for engaging the outer face of the nut whereby to limit the inward movement of the rod, the other end of the lock being bent upwardly and outwardly, and transversely whereby to lie in one of the grooves of the nut, when the shoulder is in engagement with the outer face of said nut.

2. The combination with a bolt having a longitudinal groove at the threaded end thereof, and a nut having a groove on the face thereof and transversely with respect to the bolt, of a rod or wire having one end in the groove of the bolt, and provided with a shoulder for engaging the outer face of the nut whereby to limit the inward movement of the rod, the other end of the rod being bent whereby to lie in the groove of the nut when the shoulder is in engagement with the outer face of said nut.

857,783. GEAR-ADJUSTING MECHANISM. ANDREW J. BENTON, Washington, D. C., assignor to Lanston Monotype Machine Company, Philadelphia, Pa., a Corporation of Virginia. Filed Nov. 14, 1905. Serial No. 287,291.



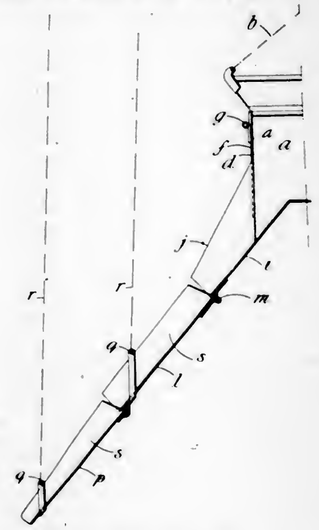
Claim.—1. The combination with the units wheel of a monotype keyboard, of an adjusting device such as described including a gear wheel movable into and out of engagement with said units wheel and provided with actuating devices for controlling both the rotation and advance of said wheel.

2. In a monotype keyboard and in combination with the units wheel thereof, an adjusting device for said units wheel comprising a gear movable toward and from the units wheel, a supporting frame for said gear movable in bearings on the main frame, and an actuating shaft extending in the direction of motion of said supporting frame and coupled with said gear for reciprocating and rotating the latter.

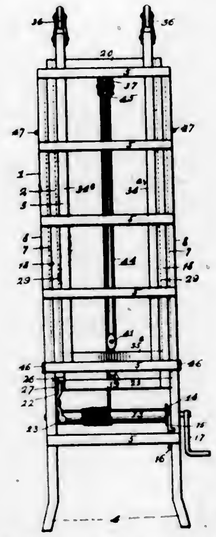
857,784. APPLIANCE FOR LOADING SHIPS WITH COAL OR THE LIKE. WILLIAM BISSET, Penarth, England. Filed Aug. 12, 1905. Serial No. 273,961.

Claim.—1. In a device of the character described, a receptacle, braces for the receptacle extending thereabove and terminating in eyes, supporting connections secured to the eyes and a chute depending from the receptacle.

2. An appliance for loading ships for coal or like material comprising an elevated bin with upright sides, a chute having an inclined bottom and upright sides arranged in connection with the upright sides of the bin, a gate pivoted to the upper portion of the bin side, and projecting down between the sides of the chute but leaving a discharge space between it and the bottom of the chute.



857,785. EXTENSION-LADDER. FRANK A. BOBBITT, Uniontown, Kans. Filed Aug. 30, 1906. Serial No. 332,612.



Claim.—1. In an extension ladder, a plurality of sections slidably arranged upon each other, a windlass mounted upon the outermost section, a cross-head for extending the innermost section, stops for limiting the upward movement of said cross-head, and a cable attached at its ends to the windlass and the outermost section, and suitably connected to the intermediate section and the cross-head.

2. In an extension ladder, a plurality of sections slid-

ably arranged upon each other, a windlass mounted upon the outermost section, a cross-head for extending the innermost section, a latch for holding the intermediate section while the innermost section is being extended, and a cable attached at its ends to the windlass and the outermost section, and suitably connected to the intermediate section and the cross-head.

3. An extension ladder consisting of a plurality of sections slidably arranged upon each other, the outermost and intermediate sections having longitudinal grooves, dogs which normally close the upper portions of said grooves, by-passes extending around one side of the dogs and communicating with the grooves, arms pivoted to the intermediate and innermost sections and having outturned ends which traverse the grooves and the by-passes, said ends being arranged to successively engage the dogs as they move upwardly and be guided by said dogs into the by-passes when the sections move downwardly.

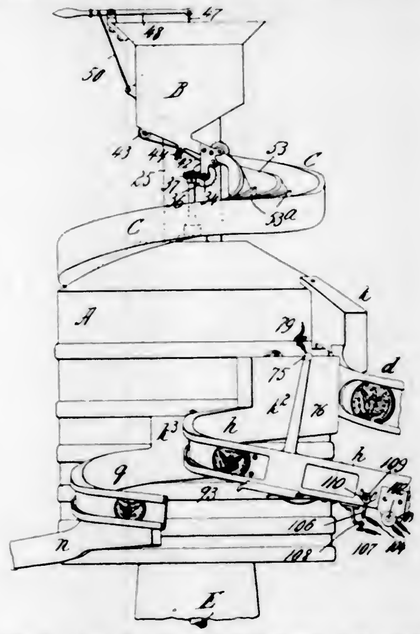
4. An extension ladder consisting of a plurality of sections slidably arranged upon each other, the outermost and intermediate sections having longitudinal grooves, dogs which normally close the upper portions of said grooves, said dogs having notches and extensions, by-passes extending around one side of the dogs and communicating with the grooves, arms pivoted to the intermediate and innermost sections and having out-turned ends which traverse the grooves and the by-passes, said ends being arranged to successively engage the dogs as they move upwardly and be guided by said dogs into the by-passes when the sections move downwardly, a cross-head for moving the innermost section upwardly, stops for limiting the upward movement of the cross-head, said stops being located at a point slightly higher than the dogs, and means for initially raising the intermediate section so that the cross-head will contact with the stops while the lower arms on the innermost section are in engagement with the dogs on the intermediate section.

5. In an extension ladder, a section having longitudinal grooves and by-passes which latter communicate with the former, dogs pivoted to said section between the grooves and the by-passes and provided with notches near their upper terminals which latter are normally held in engagement with one side of the grooves, a second section slidably mounted upon the first-mentioned one, and pivoted members carried by said second section arranged to traverse the grooves and the by-passes and successively engage the notches, substantially as described.

6. In an extension ladder, a section having longitudinal grooves and by-passes which latter communicate with the former, dogs pivoted to said section between the grooves and the by-passes and provided with notches near their upper terminals which latter are normally held in engagement with one side of the grooves, a second section slidably mounted upon the first-mentioned one, pivoted members carried by said second section arranged to traverse the grooves and the by-passes and successively engage the notches, and means for raising and lowering said second section.

7. An extension ladder consisting of a plurality of sections slidably arranged upon each other, the outermost and intermediate sections having longitudinal grooves, dogs which normally close the upper portions of said grooves, said dogs having notches and extensions, by-passes extending around one side of the dogs and communicating with the grooves, pivoted members carried by the intermediate and innermost sections arranged to traverse the grooves and the by-passes and engage the dogs as the sections move upwardly and be guided by said dogs into the by-passes when the sections move downwardly, a device for moving the innermost section upwardly, stops for limiting the upward movement of the device, said stops being at a point slightly higher than the dogs, and a latch for holding the intermediate section while the innermost one is being extended, said latch being provided with a member for initially raising the intermediate section so that the device will contact with the stops while the lower pivoted members on the innermost section are in engagement with the dogs on the intermediate section.

857,786. MACHINE FOR SEPARATING OR ASSORTING COINS. WILLIAM W. BROGA, Springfield, Mass. Filed Oct. 31, 1904. Serial No. 230,832.



Claim.—1. In a coin separating machine the combination with a coin receiving receptacle having a forwardly and downwardly inclined delivery passage and means in said receptacle, for discharging the coins therefrom facewise uppermost, and a conductor having its coin receiving portion adjacent and below the delivery passage of said receptacle, and comprising one or more troughs having inclined sides whereby the coins coming facewise thereinto are caused to assume edgewise upward positions, and said troughs extending with a downward inclination from their coin receiving ends, of a separating mechanism to which the coins are guided by said inclined troughs, and for assorting the same in their respective sizes.

2. In a coin separating machine, the combination with a coin receiving receptacle having a downwardly inclined delivery opening through which the coins may be discharged facewise uppermost, a pair of feed rolls at such delivery opening arranged and operable to have different surface speeds, in rotation, and a conductor having its coin receiving portion adjacent and below the delivery passage leading from said receptacle and operable to cause the coins to assume edgewise upward positions, of a separating mechanism to which the coins are guided by said conductor and for assorting the same in their respective sizes.

3. In a coin separating machine, the combination with a coin receiving receptacle having a downwardly inclined bottom, and a wide delivery opening through which the coins may be discharged facewise uppermost, an endless apron at the bottom of the receptacle and having a portion or course thereof running above and adjacent the said inclined bottom, a pair of feed rolls located adjacent the mouth of said delivery passage, and means for rotating the rolls and imparting a progressive movement to the apron, and a conductor having its coin receiving portion adjacent, and below the delivery passage of, said receptacle, and comprising means for causing the coins, coming facewise thereinto, to assume edgewise upward positions, of a separating mechanism, to which the coins are guided by said conductor, and for assorting the same as to sizes corresponding to their respective denominations.

4. In a coin separating machine, the combination with a coin receiving receptacle having a wide delivery opening, through which the coins may be discharged facewise uppermost, an endless apron in the lower portion of the receptacle, and having a portion thereof running in said passage, a pair of feed rolls, located adjacent the mouth of said delivery passage, arranged for rotation with differing surface speeds, and means for rotating the rolls and imparting a progressive movement to the apron, a conductor having its coin receiving portion adjacent and below the delivery passage of said receptacle and operable to cause the coins to assume edgewise upward positions, of a separating mechanism to which the coins are conducted and for assorting the same as to sizes corresponding to their respective denominations.

5. In a coin separating machine, the combination with a coin receiving hopper, having a wide downwardly inclined passage, opening through its bottom and through which the coins may be discharged facewise uppermost, and pivoted deflectors in the hopper extending downwardly inclined from opposite sides thereof, and at different heights, together with means for imparting swinging movements to the deflectors, and a conductor leading from said receptacle and operable to cause the coins to assume edgewise upward positions, of a separating mechanism to which the coins are conducted and for assorting the same in their respective denominational sizes.

6. In a coin separating machine, the combination with a coin receiving hopper, having a wide downwardly inclined passage, opening through its bottom and through which the coins may be discharged facewise uppermost, and pivoted deflectors in the hopper extending downwardly inclined from opposite sides thereof, and at different heights, a link connecting one deflector with the other, the lever 48 and a connection between the lever and one of the deflector, of a conductor leading from said receptacle and operable to cause the coins to assume edgewise upward positions and a separating mechanism to which the coins are conducted and for assorting the same in their respective denominational sizes.

7. In a coin separating machine, the combination with a coin receiving hopper, having a wide downwardly inclined passage, opening through its bottom and through which the coins may be discharged facewise uppermost, the apron, and the delivery rolls coöperating as described at the passaged bottom of the hopper, and pivoted deflectors in the hopper extending downwardly inclined and from opposite sides thereof, and at different heights, a link connecting the deflectors and a lever connected to one of the deflectors, of a conductor leading from said receptacle and operable to cause the coins to assume edgewise upward positions, and a separating mechanism to which the coins are conducted and for assorting the same in their respective denominational sizes.

8. In a coin separating machine in combination a hopper having a downwardly inclined passage through its bottom, a pair of peripherally running rolls adjacent said passage, spur gears connecting said rolls and one of said rolls having an endless apron running therearound, which apron has a course thereof along the bottom of said passage, the shaft 34 having the gear wheel 35 in mesh with one of the roll gears and having the worm wheel 36, a conduit leading from the coin delivery passage of the hopper and coin assorting devices comprising arc-shaped gratings arranged in separation one above another, rotary tables having apertures under each grating, an opening leading to the uppermost grating, and to which said conduit leads and a rotary shaft to which the apertured tables are connected, provided with the worm 37 in mesh with the worm wheel 36.

9. In a coin separating apparatus in combination, a hopper or receiver for coins having a comparatively wide delivery passage through which the coins are discharged facewise uppermost, a conductor leading downwardly inclined from the delivery passage and having initially one or more widely open V-shaped troughs with intermediate trough separating ribs, and further upstanding ribs subdividing the troughs, and an assorting mechanism comprising a casing having a series of gratings therein and movable structures having apertures therein of graded sizes under the respective gratings and means for moving such structures, said casing having an opening through its top over the uppermost grating and to which opening the said conduit leads.

10. The combination with the receiving and coin delivering hopper and with the separating mechanism including a casing having an upwardly open aperture in its top, and located below the hopper, of a conduit C,—leading in a spiral course from the hopper to the apertured top of the separating mechanism,—and comprising initially one or more troughways and having in intermediate portions of the length thereof upstanding partitions dividing the initial troughways into a greater number of narrower troughways parallel with and each to the side of the other, for the purposes set forth.

11. The combination with a receptacle for the reception thereinto and the delivery therefrom of mixed coins, of a conduit leading from the receptacle and comprising a plurality of sidewise adjacent channels having inclined sides, and for causing the coins to assume edgewise upward positions, all of said channels having their terminals adjacent each other, an assorting device to which the coins are conveyed through said adjacently terminating channels, and comprising means for assorting the coins therein according to their sizes at different levels and chutes leading from the assorting device at different levels for conducting the coins of their respective denominations.

12. In a coin assorting mechanism, a plurality of endwise open gratings, one above another and in separated relations combined with a plurality of movable structures, one under each grating, and having apertures therethrough, those of a given structure being somewhat narrower than the apertures in the one next thereabove, and means for imparting the movements to said structures relatively to the gratings.

13. In a coin assorting mechanism, the combination with a cylindrical casing having an aperture in its top, of a series of arc-shaped gratings supported within the casing under said aperture, one above another, and in separation, a series of rotatable tables, one of each closely under a grating, and having apertures the widths of which successively decrease in respect of the tables at successively lower levels, and means for rotating the tables.

14. In a coin assorting mechanism, the combination with a cylindrical casing having an aperture in its top, of a series of arc-shaped gratings supported within the casing under said aperture, one above another, and in separation, and each having the one end wall 62, and all oppositely endwise open, a series of rotatable tables, one of each closely under a grating, and having apertures the widths of which successively decrease in respect of the tables at successively lower levels, and means for rotating the tables.

15. In a coin assorting mechanism, the combination with a cylindrical casing having an aperture in its top, of a series of arc-shaped gratings supported within the casing under said aperture, one above another, and in separation, and each at one end open between the grate bars thereof, a series of rotatable tables, having frusto conical tops and located respectively closely under the gratings, and having apertures, the widths of which successively decrease in respect of the tables at successively lower levels, means for rotating the tables, and means for conducting coins edgewise upward into the said aperture in the casing top.

16. In a coin assorting mechanism, the combination with a cylindrical casing having an aperture in its top, of a series of arc-shaped gratings supported within the casing under said aperture, one above another, and in separation, and all having the one end wall 62, and all oppositely endwise open, a series of rotatable tables, having their surfaces downwardly inclined, one of each closely under a grating, and having apertures the widths of which successively decrease in respect of the tables at successively lower levels, means for rotating the tables, and means for conducting coins edgewise upward to the casing aperture.

17. In a coin assorting mechanism, the combination with a cylindrical casing having an aperture in its top, of a series of arc-shaped gratings supported within the casing under said aperture, one above another, and in separation, and all having the spaces between the grate bars open at one end, a series of rotatable tables, having downwardly inclined tops and respectively located closely under the gratings, and having apertures, the widths of which successively decrease in respect of the tables at successively lower levels, means for rotating the tables, chambers communicating with the interior of the casing at different heights corresponding to the levels of the tables, and for the reception of the assorted coins.

18. In a coin assorting mechanism, the combination with a cylindrical casing having an aperture in its top, of a series of arc-shaped gratings supported within the casing under said aperture, one above another, and in separation, and all having the spaces between the grate bars open at one end, a series of rotatable tables, having downwardly inclined tops and respectively located closely under the gratings, and having apertures, the widths of which successively decrease in respect of the tables at successively lower levels, means for rotating the tables, chambers communicating with the interior of the casing at different heights corresponding to the levels of the tables, and for the reception of the assorted coins, and variably sized coin chutes in continuation of said chambers.

19. In a coin assorting mechanism, the combination with a cylindrical casing having an aperture in its top, of a series of arc-shaped gratings supported within the casing under said aperture, one above another, and in separation, and all having the spaces between the grate bars open at one end, a series of rotatable tables, having downwardly inclined tops and respectively located closely under the gratings, and having apertures, the widths of which successively decrease in respect of the tables at successively lower levels, means for rotating the tables, chambers communicating with the interior of the casing at different heights corresponding to the levels of the tables, and for the reception of the assorted coins, a receptacle for the promiscuous coins and from which they are discharged face upward, and a conduit for receiving the coins, upedging the same and conducting them for entrance through the apertured top of the casing.

20. In a coin assorting mechanism, the combination with a cylindrical casing having an aperture in its top, of a series of arc-shaped gratings supported within the casing under said aperture, one above another, and in separation, and all having the spaces between the grate bars open at one end, a series of rotatable tables, having downwardly inclined tops and respectively located closely under the gratings, and having apertures, the widths of which successively decrease in respect of the tables at successively lower levels, means for rotating the tables, chambers communicating with the interior of the casing at different heights corresponding to the levels of the tables, and for the reception of the assorted coins, and having the lower portion trough shaped with an inward inclined side, and continued in a chute, for the purposes set forth.

21. In a coin assorting apparatus, in combination a casing, a series of gratings having the spaces between the bars thereof closed at one end and open at the other, and arranged one above the other in separation, a table, having apertures, under each grating, and means for imparting relative movements as between the tables and the gratings thereover, a conductor for bringing the coins edgewise upward into the spaces in the upper grating, and chambers, for the discharge thereinto of the assorted coins, connecting sidewise with the casing at different heights corresponding to the location of the tables.

22. In a coin assorting apparatus, in combination, a casing having a top aperture, a grating having the spaces between the bars thereof closed at one end and open at the other, a table, having apertures, under the grating, and means for imparting movement relatively between the table and the grating, a conductor for bringing the coins edgewise upward through the casing aperture into the spaces in the grating, and a sidewise located chamber for the discharge thereinto of the assorted coins.

23. In a coin assorting apparatus, in combination a casing having an apertured top, a series of gratings having the spaces between the bars thereof closed at one end and open at the other, and arranged one above the other in separation, a table having the surface thereof inclined and having apertures therethrough, under the respective gratings, means for imparting relative movements as between the tables and the gratings thereover, a conductor for bringing the coin edgewise upward into the spaces in the upper grating, and chambers for the discharge thereinto of the assorted coins, connecting sidewise with the casing at different heights corresponding to the locations of the tables.

24. In a coin assorting apparatus, in combination, a coin receiving and delivering hopper, and a conduit having branching troughways, for up-edging the coins and conducting them in distributed relations, a casing, having an opening thereinto, to which the conduit leads, a series of gratings in the casing, arranged one above the other in separation, tables having apertures respectively under the gratings, and means for causing movements of the coins for insuring the assorting thereof by the coöperative gratings and tables.

25. In a coin assorting apparatus, in combination, a coin receiving and delivering hopper, and a conduit having branching troughways, for up-edging the coins and conducting them in distributed relations, a casing, having an opening thereinto, to which the conduit leads, a series of gratings in the casing, arranged one above the other in separation, tables having apertures respectively under the gratings, means for causing movements of the coins for insuring the assorting thereof as subjected to the coaction of the gratings and tables, and discharge chutes in conjunction with each set of the gratings and tables for the outguiding of the graded coins.

26. In a coin assorting mechanism, a casing comprising the built up and united annular section 63, each having as an internal part thereof, a grating 4 of arc-shape having the wall 62 at one end, and with the spaces between the grate bars at its opposite end open, the central shaft extending through the casing and having a series of tables 7 with the apertures 67 of graded sizes therethrough and said casing having the aperture 57 through its top at a place over the vertically arranged series of gratings.

27. In a coin separating machine, the combination with an assorting mechanism and a chute for conducting the assorted coins of a given size, of a device automatically operable by the presence in the chute of a distorted coin to arrest the further passage of coins through the chute.

28. In a coin separating machine, the combination with an assorting mechanism, a motor for driving the movable parts of the same, and a chute for conducting the assorted coins of a given size away from the assorting mechanism, of a device automatically operable by the presence in the chute of a distorted coin to stop the driving motor for the coin assorting mechanism.

29. In a coin separating machine, the combination with an assorting mechanism and a chute for conducting therefrom the assorted coins of a given size, of a normally open electric circuit and an alarm device connected therein, and of a device automatically operable by the presence in the chute of a distorted coin, to close the electric circuit and actuate said alarm device.

30. In a coin separating machine, the combination with an assorting mechanism, and a chute for conducting therefrom the assorted coins of a given size, of a normally open electric circuit and an alarm device connected therein, and a device automatically operable by the presence in the chute of a distorted coin to arrest the further passage of coins, and to close the electric circuit to operate said alarm device.

31. In a coin separating machine, the combination with an assorting mechanism and a chute for conducting the assorted coins of a given size, of a device automatically operable by the presence in the chute of a distorted coin to arrest the further passage of coins in the chute, to energize an electro magnetic device controlling an electric motor, which is in driving connection with the coin assorting device.

32. A coin assorting mechanism comprising stationary and relatively movable parts, and an electric motor for the propulsion of the movable parts, a cut-out switch controlling said electric motor, in the line wire therefor, and a solenoid having the movable core thereof in connection with the said switch, of a chute leading from the assorting device and having at its side a movable feeler, a generator and circuit connections including said solenoid and having contacts, one of which is movably controlled by the actuation of the feeler for the purposes set forth.

33. A coin assorting mechanism comprising stationary and relatively movable parts, and an electric motor for the propulsion of the movable parts, a cut-out switch controlling said electric motor in the line wire therefor, and a solenoid having the movable core thereof in connection with said switch, a chute leading from the assorting device and having at its side a movable feeler, a generator and an electric alarm device and circuit connections including said solenoid and the alarm device and having contacts, one of which is movably controlled by the actuation of the feeler, for the purposes set forth.

34. In combination, a coin assorting mechanism, and a chute leading from the assorting device and having at its side a movable feeler, a battery, and an electric alarm device and circuit connections including the alarm device and having contacts, one of which is movably controlled by the actuation of the feeler, and an arrester movable across the chute way, and also controlled by the feeler.

35. The combination with a coin assorting mechanism of a chute for coins of uniform size having an apertured side and a feeler constituting a movable wall at such apertured side, a lever pivotally mounted adjacent the chute, having a finger adapted to be projected across the chute way and having an engagement with the feeler, to be actuated thereby.

36. The combination with a coin assorting mechanism, of a chute for coins of uniform size having an apertured side, and a feeler constituting a movable wall at such apertured side, a member 76 extended from the chute and carrying the electric circuit contact 75 and the intermediately pivoted lever 73 engaged with the feeler and carrying the electric circuit contact 74, as set forth.

37. The combination with a coin assorting mechanism, and a chute for coins of uniform size having an apertured side, the electric motor 85 for driving the assorting mechanism, in the line wire therefor, cut-out switch 90 controlling said electric motor, a solenoid 80 having the movable core 92 thereof in controlling connection with the switch, a feeler coacting with the chute way, the lever 73 controlled by the feeler and carrying the contact 74, a fixed contact 75 adjacent the one 74, a generator and circuit connections including the same, said contacts and the solenoid, for the purpose set forth.

38. The combination with a coin assorting mechanism, and a chute for coins of uniform size having an apertured side, the electric motor 85 for driving the assorting mechanism, the line wire therefor, the cut-out switch 90 for the wire, a solenoid 80 having the movable core 92 thereof in controlling connection with the switch, a feeler coacting with the chute way, the lever 73 controlled by the feeler and carrying the contact 74, a fixed contact 75 adjacent the one 74, an electric alarm device, a battery and circuit connections including the battery, said contacts, the alarm device and the solenoid, for the purposes set forth.

39. The combination with a coin assorting mechanism, and a chute for coins of uniform size, having an apertured side, the electric motor for driving the assorting mechanism, in the line wire therefor a cut-out switch 90, controlling said electric motor a solenoid having the movable core 92 thereof connected with the switch, a feeler provided at the chute way, the lever 73 controlled by the feeler and carrying the contact 74, the fixed contact 75, a battery and circuit connections including the same, said contacts and the solenoid, and the angular lever, pivotally mounted, engaged with the feeler, and having the finger 97 thereof arranged for projection across the chute way.

40. The combination with a coin assorting mechanism, of a coin conducting chute having an apertured side, and a feeler constituting a movable wall thereat,—and said chute having a coin extracting opening, a door 93 for closing said opening, and an arrester having a part arranged for projection across the chute way and operably engaged by the feeler.

41. The combination with an assorting mechanism, of a chute way for uniform sized coins having the aperture 98 through its wall and another aperture therethrough, and having an aperture for coin extraction through its bottom, the hinged door 93 at the bottom aperture having the closing spring 94 therefor, the angular lever 95 pivotally mounted at the side of the chute, and having the finger 97 for projection through the aperture 98, and the feeler arranged as described and having an operating engagement with the lever 95 substantially as described.

42. The combination with an assorting mechanism, and a chute having a continuation for proper, full weight, coins, and having a branching way for light weight coins, of a switch tongue movable at the junction of said ways, a device extending into the chute way and subject to actuation by the weight of the coin passing thereover and means operable by said device for shifting the switch, and directing the course of full weight and light weight coins.

43. The combination with an assorting mechanism, and a chute having a continuing way for proper, full weight, coins, and having a branching way for light weight coins, of a switch tongue movable at the junction of said ways, a device located at the bottom of the chute and extending thereinto and comprising a contact 106, another contact 108 beneath the one 106, an electro magnetic device operating the switch, a generator, and circuit connections including said contacts, the electro magnetic device, and said generator.

44. The combination with a coin assorting mechanism, and a chute having a way for proper, full weight, coins, and a way for light coins, of a switch tongue movable at the junction of said ways, a lever having an adjustable weight, pivotally mounted adjacent the chute, and having a finger projecting within the bottom of the chute, and a normally open electric circuit comprising a generator, an electro magnetic device controlling said switch and contacts, one of which is movable with said lever.

45. In a coin separating machine, the combination with an assorting mechanism, and a chute for conducting the assorted coins, of a device automatically operable by the passage of light weight coins to divert the course of such coins from the regular chute way and a device operable by the presence in the chute of distorted coins to arrest the further passage of coins through the chute.

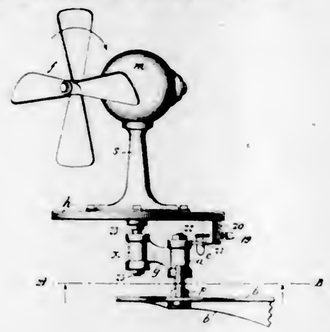
46. The combination with the coin separating mechanism and a chute way, for uniform sized coins, leading downwardly inclined therefrom, and having a continuing way for full weight coins and a branching way for light coins, of a switch tongue 100 at the junction of the ways, a solenoid 103 having the core 102 engaging the switch tongue, the retracting spring 113 for the tongue, the pivotally mounted lever 109 having the adjustable weight 110 provided with the finger 112 extended within the chute bottom, and also having the contact 106, the contact 108 beneath the first contact, the generator and wiring connections from the generator to the solenoid, from the solenoid to the one contact, and from the other contact to the generator, substantially as and for the purpose set forth.

857,787. OSCILLATING DEVICE FOR MOTOR-DRIVEN FANS. HERBERT S. BROWN, New York, N. Y. Filed June 26, 1902. Serial No. 113,216.

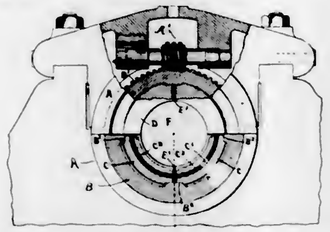
Claim.—1. A motor fan support in two sections connected by a pivot and supported on a pivot, both said pivots being located at an inclination to the vertical, and a motor and fan located on one section having its center of gravity to one side of the axes of both pivots.

2. A motor fan support in two sections connected by a pivot and supported on a pivot, both said pivots located at an inclination to the vertical and to each other, and a

motor and fan located on one section having its center of gravity to one side of the axes of both pivots.



857,788. ADJUSTABLE JOURNAL-BOX. FRANCIS E. BUXTON, Connersville, Ind. Filed Jan. 31, 1906. Serial No. 298,869.



Claim.—1. A journal box of the kind described comprising a fixed casing, a rotatable sleeve arranged within the casing, means for simultaneously rotating the sleeve and moving it longitudinally within the casing, and a plurality of bearing blocks arranged within the sleeve and rotatable therewith, the said sleeve moving longitudinally with respect to the bearing blocks and forcing them into engagement with a shaft during movement in one direction.

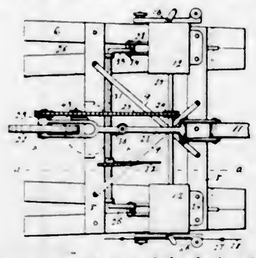
2. The combination with a fixed casing, a worm carried thereby, a rotatable sleeve, said sleeve being within the casing, there being a gear formed in the sleeve adapted to mesh with the worm, segmental bearing blocks held within the sleeve, said sleeve being adapted to move longitudinally with respect to both the casing and the bearing blocks, the said sleeve interlocking with the bearing blocks and rotating them during rotation of the sleeve and forcing them against a shaft when the sleeve is moved longitudinally in one direction.

3. An adjustable journal box comprising a plurality of segments adjustable with respect to each other and to a shaft, a rotatable sleeve inclosing said bearing blocks, the said sleeve being movable longitudinally with respect to the blocks and engaging said blocks and forcing them against a shaft during said movement in one direction, a casing inclosing the rotatable sleeve, and means carried by the casing for rotating the sleeve, there being means for advancing the sleeve longitudinally within the casing during its rotation.

4. An adjustable journal box comprising a fixed outer casing having an interior threaded portion, a worm carried by said casing, a sleeve rotatably held in the casing, and having a threaded portion engaging that of the casing, there being a gear carried by the sleeve in engagement with the worm, a plurality of bearing segments arranged within the sleeve, there being means for forcing said segments against a shaft, when the sleeve is rotated in one direction, the said bearing segments and sleeve interlocking thereby revolving the segments about the shaft during rotation of the sleeve.

5. An adjustable journal box comprising a casing, a rotatable sleeve held therein, there being wedge-shaped longitudinal shoulders formed within said sleeve, and a plurality of bearing segments arranged within the sleeve between the said shoulders, the said bearing segments being cut away along their marginal edges, to receive the said shoulders between the said segments, the said segments rotating with the sleeve and the sleeve having longitudinal movement with respect to the segments, there being means for imparting a longitudinal movement to the sleeve, and means carried by the casing for rotating the said sleeve.

857,789. CORN-PLANTER. ROBERT S. CARR, Oxford, Ohio. Filed Oct. 20, 1904. Serial No. 229,257.



Claim.—1. In a corn planter of the designated class, the combination of a trailing wheel, seed dropping mechanism actuated thereby, cutters movably pivoted at fixed points, and lever mechanism arranged to move and maintain the cutters in different vertical positions, said lever mechanism being also arranged to maintain the trailing wheel in a downward direction under a yielding pressure.

2. In a corn planter of the designated class, the combination of seed dropping mechanism, an arm hinged at a fixed point, a trailing wheel journaled thereon, means adapted to impart motion to seed dropping mechanism from said wheel, cutters hinged at fixed points, and lever mechanism adapted to simultaneously move and maintain the trailing wheel and the cutters in an elevated position.

3. In a corn planter of the designated class, the combination of seed boxes mounted at fixed points, seed dropping mechanism therein, an operating shaft therefor, means adapted to automatically actuate said shaft, cutters hinged at fixed points, and lever mechanism adapted to move and maintain the cutters in different elevated positions.

4. In a corn planter of the designated class, the combination of a sled, seed dropping mechanism exclusively mounted thereon, an operating shaft arranged to actuate said mechanism, an arm removably hinged on the sled, a traction wheel mounted on the arm, lever mechanism mounted on the sled and arranged to move and maintain the wheel in different positions of vertical adjustment and means arranged to communicate motion from the wheel to the operating shaft.

5. In a corn planter, the combination of a sled, dropping mechanism thereon, a traction wheel movable vertically, means arranged to transmit motion therefrom to the said mechanism, a spring arranged to increase the traction of the wheel, and lever mechanism arranged to increase the exertion of the spring and to lift the wheel.

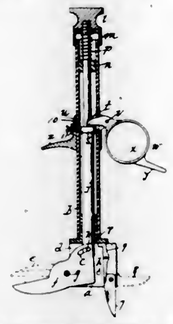
6. In a corn planter of the designated class, the combination of a sled, a traction wheel, seed dropping mechanism actuated thereby and supported exclusively on the sled, vertically adjustable cutters, and lever mechanism mounted on the sled and arranged to simultaneously raise both the cutters and the wheel.

7. In a corn planter of the designated class, the combination of straight bifurcated runners having wide plane soles, cutters hinged at fixed points and vertically movable through the bifurcations in the runners, and lever mechanism mounted at a fixed point above the runners and adapted to move and maintain the cutters in different vertical positions.

8. In a corn planter of the designated class, the combination of furrow openers, a trailing wheel, seed dropping mechanism actuated thereby, and lever mechanism adapted to simultaneously move and maintain the wheel and the furrow openers in different vertical positions.

9. In a corn planter of the designated class, the combination of straight bifurcated runners having wide plane soles, cutters hinged at fixed points and movable through the bifurcations in the runners, stationary seed boxes mounted thereover, spouts depending therefrom, seed dropping mechanism in the boxes, an operating shaft therefor, means adapted to automatically actuate said shaft, and lever mechanism adapted to move and maintain the cutters in different positions of vertical adjustment.

857,790. MANICURE IMPLEMENT. WALTER J. CARROLL, Detroit, Mich. Filed June 25, 1906. Serial No. 323,197.



Claim.—1. An implement embodying a supporting member, a tubular casing engaged with said member, a fixed cutter blade secured to said member, an oscillatory cutter blade fulcrumed to said member, a push rod reciprocatory within the casing engaged with the oscillatory cutter blade, and a lever to actuate the push rod.

2. An implement embodying a supporting member, a tubular casing engaged with said member, a fixed cutter blade secured to said member, an oscillatory cutter blade fulcrumed to said member, a push rod reciprocatory within said casing engaged with the oscillatory cutter blade, and a lever to actuate the push rod, said oscillatory cutter blade constructed with an arc shaped slot at the inner end thereof, and the push rod provided with a pin engaged in said slot.

3. An implement embodying a supporting member, a tubular casing engaged with said member, a fixed cutter blade secured to said member, an oscillatory cutter blade fulcrumed to said member, a push rod reciprocatory within said casing engaged with the oscillatory cutter blade, and a lever to actuate the push rod, said oscillatory cutter blade constructed with an arc shaped slot at the inner end thereof and the push rod provided with a pin engaged in said slot, said push rod cut away toward its lower end forming a shoulder above said pin, the strain of the oscillatory cutter blade being communicated to said shoulder.

4. An implement embodying a slotted supporting member, a fixed and an oscillatory cutter blade secured within the slot of said supporting member, a tubular casing engaged with said member, a push rod reciprocatory within the casing to actuate the oscillatory cutter blade, and a lever supported upon the casing to actuate said push rod.

5. An implement embodying a supporting member, a fixed and an oscillatory cutter blade engaged with said member, a tubular casing engaged with said member, a push rod reciprocatory within the casing to actuate the oscillatory cutter blade, a sleeve upon the casing, and a lever fulcrumed upon said sleeve to actuate the push rod, said sleeve provided with a fixed laterally projecting arm.

6. An implement embodying a supporting member, a fixed and an oscillatory cutter blade secured thereupon, a tubular casing engaged with said member, a push rod reciprocatory within the casing to actuate the oscillatory cutter blade, a sleeve upon the casing, and a lever fulcrumed upon said sleeve to actuate the push rod, said sleeve provided with a fixed laterally projecting arm.

7. An implement embodying a supporting member, a fixed cutter blade secured thereupon, an oscillatory cutter blade fulcrumed upon said member, a reciprocatory push rod engaged with the oscillatory cutter blade, a lever to actuate the push rod, and means to lock the push rod to hold the oscillatory cutter blade in closed position.

8. An implement embodying a slotted supporting member, a fixed and an oscillatory cutter blade secured within the slot of said member, a tubular casing engaged with said member, a self retracting push rod reciprocatory within the casing to actuate the oscillatory cutter blade, a sleeve upon the casing, and a lever supported upon the casing, the inner end of the lever projecting through the casing and engaging the push rod.

9. An implement embodying a supporting member, a tubular casing connected therewith, a fixed cutter blade secured upon said member, an oscillatory cutter blade fulcrumed upon said member, and means reciprocatory within the casing to actuate said oscillatory cutter blade.

10. An implement embodying a slotted supporting member, a tubular case engaged therewith, a fixed cutter blade secured within the slot of said member, an oscillatory cutter blade fulcrumed within said slot, and a push rod within said tube or case to actuate said oscillatory cutter blade.

11. An implement embodying a slotted supporting member, a tube or case engaged therewith, a fixed cutter blade secured within the slot of said member, an oscillatory cutter blade fulcrumed within the slotted member, and a push rod within said tube or case to actuate said oscillatory cutter blade, said push bar having a limited upward and downward movement, and means to lock the oscillatory blade in closed position.

12. An implement embodying a supporting member slotted at its lower end, a fixed cutter blade secured within the slotted member, an oscillatory cutter blade fulcrumed within said member, a tube or case engaged with said member, a reciprocatory push rod within said tube or case, and means secured upon said tube or case to actuate said push rod.

857,791. MACHINE FOR GRINDING LENSES. FRANK M. CLARK, Tilton, N. H., assignor of one-third to Charles H. Philbrick, Tilton, N. H., and one-third to Frank G. Balcom, Medford, Mass. Filed Mar. 19, 1906. Serial No. 306,722.

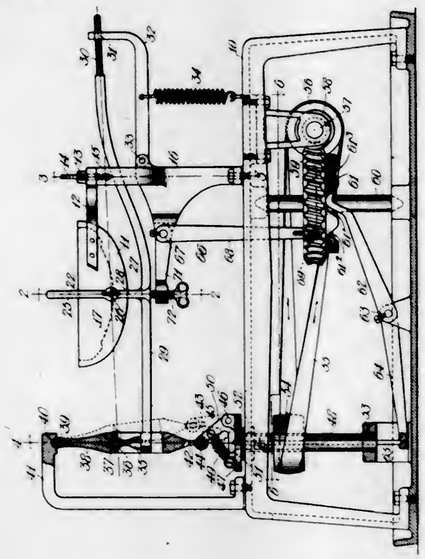
Claim.—1. A machine for grinding the surface of a lens comprising in its construction a grinder, a lens holder adapted to hold said lens in contact with said grinder, mechanism to impart to one of said parts a curvilinear motion relatively to the other about an axis substantially at right angles to said surface, and mechanism to move one of said parts away from the other, whereby said lens is moved out of contact with said grinder.

2. A machine for grinding the surface of a lens comprising in its construction a grinder, a lens holder adapted to hold said lens in contact with said grinder, mechanism to impart to one of said parts a curvilinear motion relatively to the other about an axis substantially at right angles to said surface, mechanism to rock one of said parts about an axis extending transversely of said lens, and mechanism to move one of said parts away from the other, whereby said lens is moved out of contact with said grinder.

3. In a machine for grinding lenses a rocker-arm, a rotary crank, a carrier constituting a link, one end thereof pivoted to said rocker-arm the other to said crank, a holder for a lens pivoted to said carrier, a stationary grinder against which the surface of said lens is adapted to be pressed, and mechanism to move said holder toward and away from said grinder.

4. In a machine for grinding lenses, a rocker-arm, a rotary crank, a carrier constituting a link, one end thereof

pivoted to said rocker-arm the other to said crank, a holder for a lens pivoted to said carrier, a stationary grinder against which the surface of said lens is adapted to be pressed, means to press said lens against said grinder, and mechanism to move said holder toward and away from said grinder.



5. A machine for grinding lenses comprising in its construction a carrier, a holder for a lens pivotally supported upon said carrier, a stationary grinder, means to press said lens against said grinder, mechanism pivotally connected to said carrier, whereby said holder is moved in a curvilinear path over the surface of said grinder, the median pivotal line of said holder extending transversely of and intersecting a portion of said grinding surface, and mechanism to move said holder toward and away from said grinder.

6. A machine for grinding lenses comprising in its construction a rocker-arm, a carrier pivoted thereto, a grinder, a holder for a lens pivoted to said carrier, and means to press said lens against the surface of said grinder with a spring pressure; in combination with mechanism constructed to impart a curvilinear motion to one end of said carrier, whereby said lens is carried in a curvilinear path over the surface of said grinder, and mechanism to move said holder toward and away from said grinder.

7. A machine for grinding lenses comprising in its construction a grinder having a curved grinding surface, a pivotally supported carrier, a holder for a lens pivoted to said carrier and adapted to hold said lens against said curved grinding surface, the median pivotal line of said holder extending transversely of and intersecting a portion of said grinding surface, and mechanism to move said holder toward and away from said grinder.

8. A machine for grinding lenses comprising in its construction a grinder having a curved grinding surface, a carrier constituting a link, one of the pivots of said link located above, the other below, said grinding surface, a holder for the lens pivoted to said carrier and adapted to hold said lens against said grinding surface, the median pivotal line of said holder extending transversely of and intersecting a portion of said grinding surface, and mechanism to move said holder toward and away from said grinder.

9. A machine for grinding lenses comprising in its construction a stationary grinder, a lens holder adapted to hold a lens in contact with said grinder, mechanism to impart to said lens holder a curvilinear motion relatively to said grinder, and mechanism to move said lens holder away from said grinder, whereby said lens is moved out of contact with said grinder.

10. In a machine for grinding lenses, a rocker-arm, a rotary crank, a carrier, one end pivotally and slidably supported upon said rocker-arm, the other end pivoted to said crank, a holder for a lens pivoted to said carrier, and a stationary grinder against which the surface of said lens is adapted to be pressed.

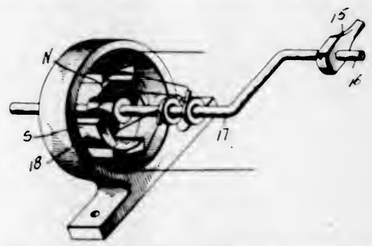
11. In a machine for grinding lenses, a rocker-arm, a rotary crank, a carrier, one end pivotally and slidably supported upon said rocker-arm, the other end pivoted to said crank, a holder for a lens pivoted to said carrier, a stationary grinder against which the surface of said lens is adapted to be pressed, and mechanism to move said holder toward and away from said grinder.

12. A machine for grinding lenses comprising in its construction a grinder, a holder for a lens, a carrier to which said holder is pivoted, a rocker-arm upon which one end of said carrier is pivotally supported, a rotary shaft, a second rocker-arm pivoted to one end of said shaft, and a link one end pivotally supported on said last named rocker-arm, the other end pivoted to the frame of said machine, said carrier pivotally supported at one end thereof upon said link.

13. A machine for grinding lenses comprising in its construction a grinder, a holder for a lens, a carrier to which said holder is pivoted, a rocker-arm upon which one end of said carrier is pivotally supported, a rotary shaft, a second rocker-arm pivoted to one end of said shaft, a link one end pivotally supported on said last named rocker-arm, the other end pivoted to the frame of said machine, said carrier pivotally supported at one end thereof upon said link, and mechanism to rock said last named rocker-arm and link, whereby one pivotal center of said carrier is moved into and out of alinement with the median axial line of said shaft.

14. A machine for grinding lenses comprising in its construction a grinder, a holder for a lens, a carrier to which said holder is pivoted, a rocker-arm upon which one end of said carrier is pivotally supported, a rotary shaft, a second rocker-arm pivoted to one end of said shaft, a link one end pivotally supported on said last named rocker-arm, the other end pivoted to the frame of said machine, said carrier pivotally supported at one end thereof upon said link, and mechanism to move said holder toward and away from said grinder.

857,792. RAILROAD-BRAKE. HOWARD A. COLEMAN, Sanborn, Iowa. Filed Mar. 4, 1907. Serial No. 360,392.



Claim.—The combination, with the movable brake-bar provided with brake-shoes normally held out of applied position with respect to the wheels, of a crank shaft, a rod connecting the crank of the crank-shaft with the brake-bar, armatures radially supported on the crank shaft, and electro-magnets disposed in proximity to said armatures, whereby when said electro-magnets are energized they will attract the armatures, rock the crank shaft and apply the brakes, and when the circuit of the electro-magnets is interrupted the brake-shoes will fall away from the wheels, and the rock-shaft and its armatures will assume their normal position.

857,793. METHOD OF RECOVERING SULFATE CRYSTALS. FRED H. DANIELS, AXEL F. BACKLIN, and HENRY K. SWINSCOE, Worcester, Mass., assignors to American Steel and Wire Company, Worcester, Mass., a Corporation of New Jersey. Filed Apr. 2, 1906. Serial No. 309,321.



Claim.—1. A process of obtaining in a continuous manner a crystalline metallic sulfate which consists in at least partially neutralizing an acid solution of a metallic sulfate by adding the same metal as the base of the sulfate, transferring the solution to a separate vessel where the impurities separate and then withdrawing and evaporating the solution in a vacuum to the crystallizing point, then transferring it to a crystallizing tank; substantially as described.

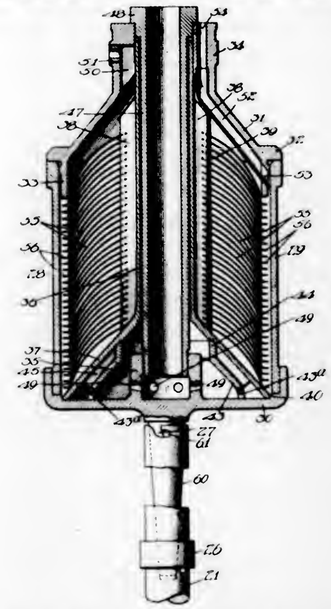
2. A process of obtaining in a continuous manner a crystalline metallic sulfate which consists in at least partially neutralizing an acid solution of a metallic sulfate by adding the same metal as the base of the sulfate, maintaining such solution at a temperature above the crystallizing point, then evaporating the solution in a vacuum to the crystallizing point, and then transferring it to a crystallizing tank; substantially as described.

3. A process of obtaining in a continuous manner a crystalline metallic sulfate which consists in at least partially neutralizing an acid solution of a metallic sulfate by adding the same metal as the base of the sulfate, transferring the solution to a separate vessel where the impurities separate and then continuously feeding the neutralized solution by gravity and evaporating the solution in a vacuum to the crystallizing point, then transferring it to a crystallizing tank; substantially as described.

4. A process of obtaining in a continuous manner a crystalline metallic sulfate which consists in at least partially neutralizing an acid solution of a metallic sulfate by adding the same metal as the base of the sulfate, continuously withdrawing the treated solution and concentrating it to the crystallizing point in successive steps under vacuum while maintaining a substantially constant current in the solution and then transferring the concentrated solution continuously to crystallizing tanks; substantially as described.

5. A process of obtaining in a continuous manner a crystalline metallic sulfate which consists in at least partially neutralizing an acid solution of a metallic sulfate by adding the same metal as the base of the sulfate, continuously withdrawing and hot concentrating the solution under vacuum, and transferring the concentrated solution to crystallizing tanks in a substantially continuous manner; substantially as described.

857,794. CENTRIFUGAL LIQUID-SEPARATOR. MORTON DECKER, Chicago, Ill., and CHARLES H. SHAW, Milwaukee, Wis. Filed Dec. 3, 1906. Serial No. 346,075.



Claim.—1. In a centrifugal cream-separator, the combination with a bowl, a milk-tube, a conical chamber surrounding the lower end of said milk-tube and provided with two series of annularly-disposed openings, of a substantially bell-shaped accelerator located within said conical chamber and provided with milk discharge openings at its lower edge, cream passages near its upper portion, and accelerating devices on its outer surface.

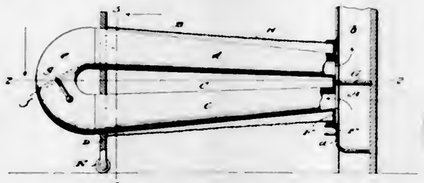
2. In a centrifugal cream-separator, the combination with a bowl, a milk-tube, a conical chamber surrounding the lower end of said milk-tube and provided with two series of annularly-disposed openings, of a substantially bell-shaped accelerator whose upper edge engages the inner surface of said conical chamber between said two series of openings and whose lower edge rests upon the bottom of the bowl, said accelerator being provided with milk discharge openings at its lower edge, cream passages near its upper portion, and accelerating devices on its outer surface.

3. In a centrifugal cream separator, the combination with a bowl, a milk tube, and a conical chamber surrounding the lower end of said milk tube and provided with a plurality of annularly-disposed openings, of a substantially bell-shaped accelerator located within said conical chamber and provided with milk discharge openings at its lower edge, cream passages near its upper portion, and accelerating devices on its outer surface, and a plurality of liner plates each provided with a central opening adapted to embrace said milk tube and having a plurality of radial extensions to said central opening registering with the openings of said conical chamber.

4. In a centrifugal cream separator, the combination

with a bowl, a milk tube, and a conical chamber surrounding the lower end of said milk tube and provided with a plurality of radially-disposed pairs of openings, of a substantially bell-shaped accelerator located within said conical chamber and provided with milk discharge openings at its lower edge, cream passages near its upper portion, an and accelerating devices on its outer surface, and a plurality of liner plates each having a central opening adapted to embrace said milk tube and a plurality of radial extensions of said central opening each registering with one pair of the radially-disposed pairs of openings in said conical chamber.

857,795. HEATING APPARATUS. FRANK A. DELPH, New Orleans, La., assignor to one-half to B. A. Colomb, St. James parish, La. Filed Apr. 18, 1906. Serial No. 312,396.



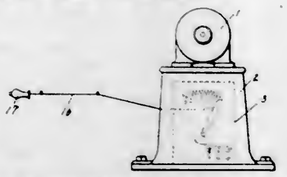
Claim.—A portable heating drum apparatus comprising a supporting frame, a plate carrying a horizontal partition, and one or more heating drums or conduits carried by the frame and plate and having lower and upper stretches open at their inner ends and communicating with the spaces above and below the horizontal partition and connected together at their outer ends and a foraminated or open-work cover surrounding the drum or drums and connected to the frame and the plate.

857,796. AUTOMOBILE-TIRE. GEORGE M. EWINS, Cedar Rapids, Iowa. Filed Nov. 5, 1906. Serial No. 342,143.



Claim.—A pneumatic tire or tire case, having embedded in the tread portion thereof a plurality of continuous elastic metal bands, conforming approximately in cross section to the curvature of the tire, separately wrapped with canvas intimately incorporated with the tire, the middle-outer band overlapping the side bands, the side-band wrappings having laterally extending flaps, substantially as described.

857,797. MOTOR-CONTROL APPARATUS. GEORGE W. EUKER, Pittsfield, Mass., assignor to Stanley G. I. Electric Mfg. Company, a Corporation of New Jersey. Filed Aug. 31, 1905. Serial No. 276,504.

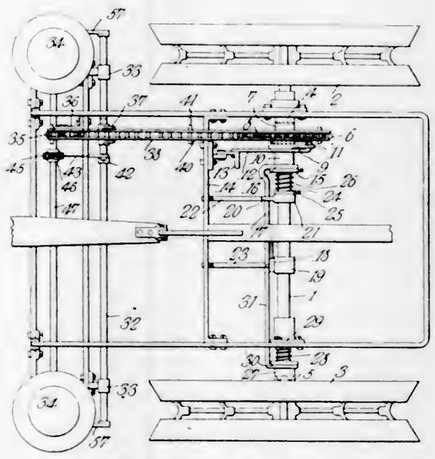


Claim.—1. In combination, a motor-starting rheostat having a movable contact member tending normally to assume its "off" position, electro-magnetic locking means for holding said contact member in a running position, a handle for operating said contact member, and a switch carried by said handle for controlling said electro-magnetic locking means.

2. In combination, a motor-starting rheostat having a spring returned arm, a catch for locking said arm in a running position, an electromagnet for moving said catch into operative relation with said arm, a handle for operating said arm, a switch in said handle, and electrical connections between the members of said switch and the terminals of said electromagnet.

3. In combination, a motor-starting rheostat having a movable contact member tending normally to assume its "off" position, electro-magnetically-actuated means for locking said contact member in a running position, a flexible operating member connected to said arm, a switch carried by said flexible member, and electrical connections extending from said switch to said electro-magnetically-actuated means.

857,798. PLANTER. MEREDITH E. FIDLER and HARLEY LINGENFELTER, Canton, Ill. Filed Feb. 21, 1907. Serial No. 358,673.

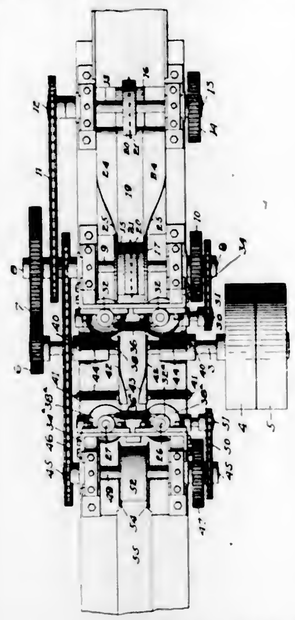


Claim.—1. A planter having a seed dropping mechanism and a ground marking mechanism, a rotatable shaft extending transversely of the planter for operating the dropping mechanism, a reciprocating rotatable shaft for operating the ground marking mechanism, means carried by the last said shaft for operating the first said shaft and means for operating the last said shaft.

2. In a planter, a ground marking mechanism comprising a rod mounted for longitudinal movement, a spring actuated blade attached to the rod and means for moving the rod simultaneously with the seed dropping mechanism.

857,799. MACHINE FOR COVERING WOODEN RAILS FOR BED-SPRINGS WITH METAL. CHARLES H. GANGELHOFF and MICHAEL JORDAN, Minneapolis, Minn. Filed Dec. 22, 1905. Serial No. 292,887.

Claim.—1. The combination, with a frame and feed table whereon a sheet of metal is placed and a wooden bar arranged centrally on said sheet, of lower feed rolls operating through openings in said table and engaging the under side of said metal sheet, upper feed rolls having toothed peripheries adapted to engage the top of said bar and whereby said sheet and bar are moved lengthwise, folding means adapted to engage the edges of said metal sheet and bend the same up and around the longitudinal edges of said bar and means for forcing said folded edges down upon the top of said bar and whereby said bar will be entirely inclosed by said metal sheet, substantially as described.



2. The combination, with a frame and feed table whereon a sheet of metal and a wooden bar centrally placed thereon are arranged, of a lower feed roll adapted to engage the under side of said metal sheet and having flanged ends, an upper feed roll having a toothed periphery to engage the said bar, plates mounted on said table and having upwardly turned wings projecting between the flanges of said lower feed roll and whereby the edges of said metal sheet will be folded up and around the edges of said wooden bar, substantially as described.

3. The combination, with a frame having a feed table whereon a metal sheet is placed with a wooden bar centrally arranged thereon, the edges of the sheet on each side projecting beyond said bar, of feed rolls between which said sheet and roll are moved lengthwise, and means for engaging the edges of said sheet and folding them up and over the longitudinal edges of said bar, and vertically yielding means for engaging and forcing the edges of said sheet down upon the top of said bar, substantially as described.

4. The combination with a suitable frame having a feed table, of upper and lower feed rolls, folding devices provided on one side of said rolls above said table and adapted to engage and bend upwardly the edges of sheet metal plates thereon, upright spools provided near said rolls and mounted in yielding bearings, and said spools having vertically yielding flanges at their upper ends, for the purpose specified.

5. The combination with a suitable frame having a feed table, of upright shafts and means for driving the same, spools mounted on said shafts, and said spools having vertically yielding flanges at their upper ends provided with conical under surfaces, for the purpose specified.

6. The combination, with a frame and feed table, of means for feeding a flat metallic sheet and a wooden bar centrally placed thereon, means for folding the edges of said sheet up over the longitudinal edges of said bar, vertical shafts having laterally yielding bearings, spools mounted on said shafts and having flanged upper ends provided with conical under surfaces and between which spools said bar and metal sheet are fed, substantially as described.

7. The combination, with a frame having a feed table and means for feeding a sheet of metal and a wooden bar centrally placed thereon, means for folding the edges of said plate up around the longitudinal edges of said bar and plates having inwardly turned wings yieldingly mounted on each side of said table and between which plates said bar is fed, substantially as described.

8. The combination with a suitable frame having a feed table, of rods provided on each side of said table, plates slidably mounted on said rods and having inwardly curved wings overhanging said table, and springs arranged to hold said plates toward said table with a yielding pressure, substantially as described.

9. The combination with a feed table, of horizontally arranged feed rolls, spools arranged vertically near said feed rolls and having yielding bearings, and plates having wings overhanging said table and yieldingly supported on each side thereof, substantially as described.

10. The combination with a feed table, of plates having inwardly curved wings yieldingly supported on each side of said table, upright shafts arranged in the front and rear of said plates and having yielding bearings and spools mounted upon said shafts, and having vertically yielding flanges at their upper ends, for the purpose specified.

11. The combination, with a feed table adapted to receive a metal sheet with a wooden bar or rail centrally placed thereon, of means for feeding said sheet and rail, means for folding the edges of said sheet up around the longitudinal edges of said bar, vertically yielding means having conical under surfaces for directing the edges of said sheet over the top of said bar, laterally yielding means having inwardly curved wings for pressing the edges of said metal sheet down toward said bar and means for folding the edges of said sheet upon the top of said bar, substantially as described.

12. The combination, with a feed table whereon a metal sheet is placed with a wooden bar centrally arranged thereon, the edges of said sheet on each side extending beyond the edges of said bar, means for bending the edges of said metal sheet up and around the edges of said bar, means for forcing the edges of said sheet when so bent, down upon the top of said bar and said forcing means comprising spools having vertically yielding flanges, substantially as described.

13. In a machine of the class described, the combination, with an upright pair of spools having vertically yielding flanges at their upper ends, of laterally yielding plates near said spools, having inwardly curved wings and a second pair of spools also upright but shorter than said first named pair and also having vertically yielding flanges at their upper ends, for the purpose specified.

14. The combination, of a feed table and means for feeding a sheet of metal and a wooden bar lengthwise thereon, of rods projecting laterally on each side of said table, plates mounted on said rods and having inwardly inclined wings overhanging said table and springs yieldingly holding said plates toward said table, substantially as described.

15. The combination, with a feed table and means for feeding a sheet of metal and a wooden bar lengthwise thereon, said table having horizontal recesses in its upper surface on each side of its middle line, plates secured in said recesses, the outer ends of said plates being flush substantially with the middle portion of said table and the inner ends of said plates upwardly and inwardly curved and adapted to engage the edges of said metal sheet, for the purpose specified.

16. In a machine of the class described, a pair of upright spools having vertically yielding flanges at their upper ends provided with conical under surfaces, substantially as described.

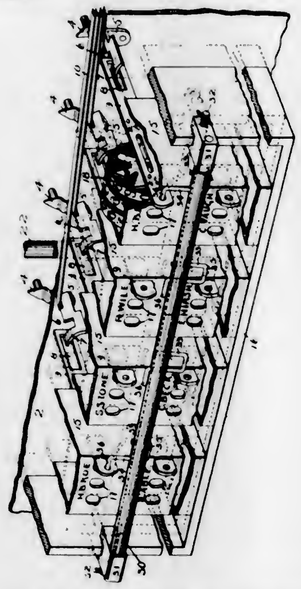
17. In a machine of the class described, the combination with the upright spools having vertically yielding flanges, and the laterally yielding plates having inwardly curved wings located near said spools.

18. In a machine of the class described, the combination, with a pair of spools having vertically yielding flanges and a second pair of spools, shorter than said first named pair and also having vertically yielding flanges.

19. The combination, with a feed table whereon a metal sheet is placed, and a wooden bar arranged centrally on said sheet, of means for bending the edges of the metal sheet around the edges of said bar and means comprising upright spools having vertically yielding flanges for engaging and pressing the edges of said sheet when so bent, against the surface of said bar, whereby it will be entirely inclosed by said metal sheet.

20. The combination, with a feed table, whereon a metal sheet is placed, and a wooden bar arranged centrally on said sheet, of feed rolls engaging the under side of said metal sheet, upper feed rolls engaging the top of said bar and whereby said sheet and bar are moved lengthwise, folding means adapted to engage the edges of said metal sheet and bend the same around the longitudinal edges of said bar, and means for forcing said folded edges against the surface of said bar, whereby it will be entirely inclosed by said metal sheet, substantially as described.

857,800. VOTING-MACHINE. ALFRED J. GILLESPIE, Rochester, N. Y., assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y., a Corporation of New York. Filed Aug. 17, 1898. Serial No. 688,802.



Claim.—1. In a voting machine, the combination with a support or plate, and a plurality of movable ballot indicators thereon, of a plurality of registering devices corresponding to the indicators, a support for the registering devices movable relatively to the indicator support to actuate the registering devices whose indicators have been operated, and connections mounted upon the register support and extending between two or more of the registering devices for causing their simultaneous operation when the indicators of either have been actuated.

2. In a voting machine, the combination of a series of ballot indicators, a series of registers controlled thereby, interlocking devices between the indicators for preventing the operation of more than a predetermined number, means for causing the simultaneous relative movements of all of the registers and their indicators to actuate the registers of the operated indicators, and connections between two or more of the registers to cause their simultaneous actuation by the relative movement of the indicators and registers aforesaid, when the indicator of either is operated.

3. In a voting machine, the combination with the support, a series of ballot indicators thereon independently adjustable to voting position, and interlocking devices for preventing the operation of more than a predetermined number, of the movable frame, a series of registers thereon corresponding to the indicators, each having an actuating member arranged to coöperate with an indicator when the latter is operated, and positive connections between two or more of the register actuating members for causing their positive operation.

4. In a voting machine, the combination with a series of registers, each having an actuating member of an independently journaled rock-shaft having the arms thereon adapted to connect positively with the actuating members of the registers to cause the simultaneous operation of two or more when any one of the actuators is operated.

5. In a voting machine, the combination with a series of registers, each having an actuating member, of a rock-shaft having independently adjustable arms thereon adapted to be connected with the register actuating members to couple two or more for simultaneous operation.

6. In a voting machine, the combination with a register frame, and a series of registers thereon, each having movable actuating members, of the brackets removably secured to the frame, the rock-shaft journaled on the brackets, and the adjustable arms adapted to be connected to the register actuators to couple two or more for simultaneous operation.

7. In a voting machine, the combination with a series of registers, each having an actuating member, of a rock-shaft, a series of arms thereon corresponding to the register actuators adjustable radially of the shaft and adapted to be connected to the register actuators.

8. In a voting machine, the combination with a series of registers, each having an actuating member, of the rock-shaft having the apertures, and the arms having the parallel portions passing through the shaft and adapted to be connected to the register actuators.

9. As an attachment for voting machines, a shaft having journals at the ends and a plurality of radially extensible arms mounted on said shaft having engaging hooks on their ends.

10. As an attachment for voting machines a shaft having journals at the ends and a plurality of staple shaped arms movable radially of the shaft each of said arms having a hook on its end.

857,801. MACHINE FOR SOLDERING CAPS ON CANS. HENRY F. HARFST and ROBERT B. PRATER, Meta, Mo. Filed Mar. 20, 1907. Serial No. 363,454.

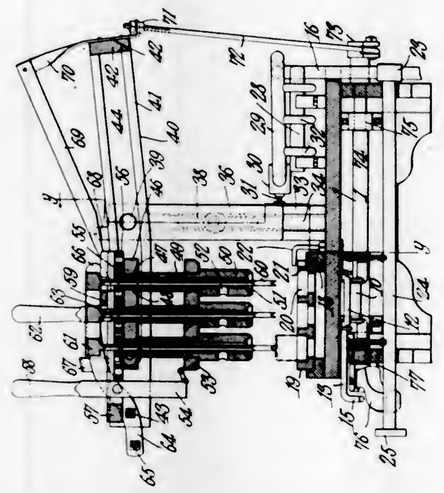
Claim.—1. In a machine of the character described the combination with a tiltable frame; of a gravity operated carriage movably mounted upon the frame, and a soldering device movable with the carriage.

2. In a machine of the character described the combination with a frame; of a carriage mounted to travel thereon, a soldering device supported by the carriage, and means for tilting the frame to actuate the carriage by gravity.

3. In a machine of the character described the combination with a tiltable frame; of a gravity operated carriage movably mounted thereon, a soldering device supported by the carriage, a cap holding device movably connected to the carriage, and means for automatically moving said device longitudinally during the movement of the carriage.

4. In a machine of the character described the combination with a tiltable frame; of a carriage movably mounted thereon, a soldering device movable with the carriage, a cap holding device longitudinally movable within the carriage, a deflecting device, and means for tilting the frame to actuate the carriage by gravity and to direct the cap holding device against the deflecting device.

5. In a machine of the character described the combination with a frame; of a carriage movably mounted thereon, a soldering device movable with the carriage, a cap holding device within the carriage, and means disposed, when the carriage is moved, to shift the cap holding device within the carriage.



6. In a machine of the character described the combination with a frame; of a carriage movably mounted thereon, a soldering device supported by the carriage, a cap holding device movably mounted within the carriage, means for tilting the frame to actuate the carriage by gravity, and means disposed, when the carriage is moved, to shift the cap holding device within the carriage.

7. In a machine of the character described the combination with a heater; of a frame supported above the heater, a carriage movably mounted thereon, a soldering device movable with the carriage, and means for tilting the frame to direct the carriage by gravity into, position above the heater.

8. In a machine of the character described the combination with a frame, and an inclined rail thereon; of a carriage movably mounted upon the frame, a soldering iron movable with the carriage, a cap holding device movably mounted within the carriage, and means for tilting the frame to actuate the carriage by gravity and to direct the cap holding device onto the rail.

9. In a machine of the character described the combination with a frame, and an inclined rail thereon and movable therewith; of a carriage movably mounted upon the frame, a soldering device supported by the carriage, a cap holding device movably mounted within the carriage, a head thereon, and means for tilting the frame to actuate the carriage by gravity and direct the head onto the rail.

10. In a machine of the character described the combination with a frame; of a carriage movably mounted thereon, a soldering device supported by the carriage, means for tilting the frame to actuate the carriage by gravity, and means for engaging the carriage to lock the same against movement.

11. In a machine of the character described the combination with a frame; of a roller supported carriage movably mounted upon the frame, a soldering device movable with and suspended from the carriage, means for tilting the frame to shift the carriage by gravity longitudinally of the frame, and means for locking the carriage against movement.

12. In a machine of the character described the combination with a vertically adjustable frame; of a carriage movably mounted thereon, a soldering device supported by and movable with the carriage, and adjustable means for tilting the frame to shift the carriage by gravity longitudinally of the frame.

13. In a machine of the character described the combination with a frame; of a carriage movably mounted thereon, a soldering device movable with the carriage, means for tilting the frame to shift the carriage by gravity longitudinally of the frame, and a lock for said means.

14. In a machine of the character described the combination with a tiltable frame, and means for actuating it; of a gravity operated carriage movably mounted upon the frame, a plurality of revoluble soldering devices supported by the carriage, and means upon the carriage for simultaneously rotating said devices.

15. In a machine of the character described the combination with a tiltable frame and means for actuating it; of a carriage movably mounted upon the frame, a plurality of tubular soldering devices revolubly mounted within and suspended from the carriage, gears secured to said devices, and racks movably mounted upon the carriage and engaging the gears to simultaneously rotate them.

16. In a machine of the character described the combination with a frame and a carriage movable longitudinally thereon; of a plurality of revoluble soldering devices mounted therein and suspended therefrom, gears revoluble with said devices, connected racks movably mounted upon the carriage and meshing with the gears to simultaneously rotate them, and a rack actuating lever movable with the carriage.

17. In a machine of the character described the combination with a frame; of a carriage movably mounted thereon, a plurality of tubular soldering devices supported by and movable with the carriage, a plurality of cap holding devices movably mounted within the soldering devices, a head connected to the cap holding device and movable therewith, means for tilting the frame to actuate the carriage by gravity, and means disposed, when the carriage is moved, to engage the head and shift the cap holding devices longitudinally.

18. In a machine of the character described the combination with a heater; of a frame supported thereabove, a carriage movably mounted upon the frame, a soldering device movable with the carriage, a cap holding device movably mounted within the carriage and normally projecting beyond the soldering device, means for tilting the frame to shift the carriage and soldering device by gravity into position above the heater, and means for automatically shifting the cap holding device away from the heater.

19. In a machine of the character described the combination with a heater; of a frame supported thereabove, a carriage movably mounted upon the frame, a plurality of revoluble soldering devices movable with the carriage, a plurality of connected cap holding devices movably mounted within the soldering devices and normally projecting therebeyond, means for shifting the frame to move the carriage by gravity into position above the heater, and means disposed to shift the cap holding devices away from the heater longitudinally within the soldering devices during the movement of the carriage.

20. In a machine of the character described the combination with a movable frame; of a carriage movably mounted upon the frame and disposed to be shifted thereon by the movement of the frame, and a soldering device movable with the carriage.

21. In a machine of the character described the combination with a base, a platform, and guide rails upon the platform and base; of a plurality of simultaneously rotating soldering devices supported above the platform, a rock shaft, means operated by the movement of said shaft to shift the platform toward or away from the soldering devices.

22. In a machine of the character described the combination with a base having a tray supporting platform movably mounted thereon, means for actuating the platform, and a heater; of a carriage movably supported within the base, a plurality of simultaneously rotatable soldering devices movable with the carriage, and gravity operated means for shifting the carriage into position above the heater and the platform.

23. In a machine of the character described the combination with a base; of a platform movably mounted thereon, an actuating lever, intermediate levers ful-

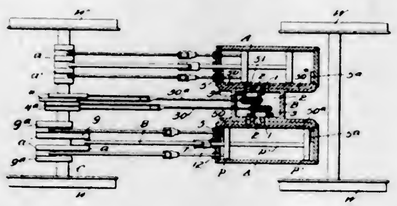
crumed upon the base and connected to the actuating lever, link connections between the intermediate levers and the corner portions of the platform, and means for depressing the actuating lever to raise the platform.

24. In a machine of the character described the combination with a base, a platform movably mounted thereon, and guide rails disposed upon the base and the platform; of an actuating lever, intermediate levers movably connected thereto and fulcrumed upon the base, pivotal connections between said intermediate levers and the corner portions of the platform, and manually operated means for moving the actuating lever to shift the platform.

25. In a machine of the character described the combination with a base, standards projecting therefrom, and extensions adjustably mounted upon the standards; of a tiltable frame supported by the extensions, said frame having inner longitudinal grooves, a carriage, rollers thereon mounted to travel within the grooves, soldering devices movable with the carriage, and manually operated means for tilting the frame to actuate the carriage by gravity.

26. In a machine of the character described the combination with a tiltable frame; of a carriage mounted to travel longitudinally thereof, a plurality o ftubular soldering devices mounted to rotate within the carriage, actuating holding devices movable longitudinally within the soldering devices, a head rigidly connected to the cap holding devices, a handle mounted to rotate therein, and means integral with the handle for supporting the head and the cap holding devices in raised positions.

857,802. ENGINE. FRANK HENNEBÖHLE, South Chicago, Ill. Filed May 5, 1906. Serial No. 315,367.

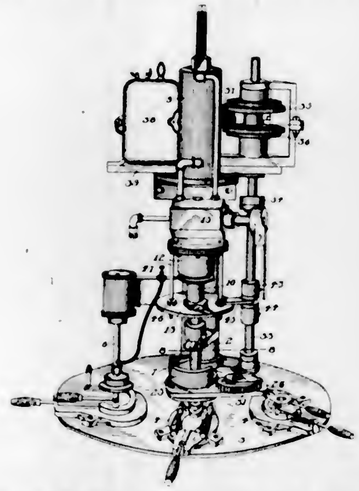


Claim.—1. In a locomotive engine; the combination with the bed or truck frame, of a pair of working cylinders arranged in parallel and located midway of and in the longitudinal plane of the truck frame, a steam chest located between and connecting the two cylinders and having communication with the two cylinders at points midway and at the opposite ends thereof, a driving shaft having two sets of oppositely projected crank members, a pair of pistons working in each cylinder, one of said pistons having a pair of piston rods that connect with a pair of like projected cranks of one set of cranks on the driven shaft, the other piston having its rod projected through the first named piston and connected with the other or oppositely projected crank of the set of cranks in the driven shaft, and means for controlling the steam intakes and exhausts for the two cylinders alternately, as set forth.

2. In an engine, the combination with the bed or truck frame; of a single casting located midway of and in the longitudinal plane of the truck frame, said casting being formed with a single steam chest and a working cylinder at each side of the said chest, end closures for the cylinders, the said cylinders being arranged in parallel, the said steam chest having communication with the cylinders midway and at the opposite ends thereof, a driving shaft having two sets of oppositely projected crank members, a pair of piston rods that connect with a pair of like projected cranks of one set of cranks on the driven shaft, the other piston having its rod projected through the first named piston and connected with the other or oppositely projected cranks of the set of cranks on the drive shaft, and a pair of slide valves alternately operable in the steam chest for controlling the steam intakes and exhausts for the cylinders, said valves being actuated by the driven shaft.

3. As an improvement in locomotive engines, the combination with the truck frame; of a single casting pendently supported therefrom midway and in the longitudinal plane thereof, the said casting having formed thereon a pair of parallelly disposed working cylinders and a steam chest between and connecting the said cylinders, end closure members for the cylinders,, the said steam chest having ports that connect with the two cylinders, said ports being located midway and at opposite ends of the said cylinders and in horizontal alinement with the driving shaft, a pair of pistons that work in each cylinder, a driving shaft having a plurality of cranks, means that connect the said pistons with the cranks on the driving shaft in such manner whereby to impart reverse alternate movements to the cranks, a pair of alternately and oppositely movable valves within the steam chest for controlling the steam ports in the cylinders and eccentrics on the shaft for actuating the valves, all being arranged substantially as shown and described.

857,803. GLASS PRESSING AND BLOWING MACHINE. GEORGE W. HENNING and ARTHUR W. BEESON, Washington, Pa. Filed June 16, 1906. Serial No. 321,999.



Claim.—1. Molding apparatus comprising in combination an internally threaded ring mold, a presser, presser actuating mechanism, and automatic mechanism for rotating the ring and simultaneously lifting the same.

2. Molding apparatus comprising in combination an internally threaded ring mold, a presser, presser actuating mechanism, and automatic mechanism for rotating the ring mold alternately in opposite directions.

3. Molding apparatus comprising in combination a mold, a rotatable internally threaded ring, a presser, presser actuating mechanism, and automatic mechanism for rotating the ring alternately in opposite directions and simultaneously raising or lowering the same.

4. Molding apparatus comprising in combination an internally threaded ring mold, a presser, presser reciprocating mechanism, and mechanism operated from the presser reciprocating mechanism for rotating the ring.

5. Molding apparatus comprising in combination an internally threaded ring mold, a presser, presser actuating mechanism, a controller for the presser actuating mechanism, and mechanism operated from said controller for rotating the ring mold.

6. Molding apparatus comprising in combination an internally threaded ring mold, a presser, presser actuating mechanism, ring rotating mechanism, and a hand operated controller arranged to render said mechanism active successively.

7. Molding apparatus comprising in combination an internally threaded ring mold, ring rotating mechanism and ring lifting mechanism operating simultaneously.

8. Molding apparatus comprising in combination an internally threaded ring mold, a presser, presser actuating mechanism, ring rotating mechanism and ring lifting means operating simultaneously.

9. Molding apparatus comprising in combination an internally threaded ring mold, a co-operating presser, and ring rotating and lifting mechanism arranged to move said mold in proportion to the pitch of the threads in the mold.

10. Molding apparatus comprising in combination an internally threaded ring mold, a co-operating presser, and ring rotating and lifting mechanism including a stationary support having an engagement with the ring by means corresponding to the pitch of the threads in the molds.

11. Molding apparatus comprising in combination an internally threaded ring mold, a co-operating presser, automatic mechanism for rotating the mold, and a stationary support having engagement with the ring by means of threads of the same pitch as those of the mold.

12. Molding mechanism comprising in combination an internally threaded ring mold provided with external threads of the same pitch as the internal threads, a threaded bearing member surrounding the mold and engaging the threads thereof, and mechanism for rotating said mold.

13. Molding apparatus comprising in combination an internally threaded ring mold provided with external threads of the same pitch as the internal threads, a threaded bearing surrounding said mold and engaging the external threads thereon, a gear on said mold, mechanism for engaging the gear and rotating the same, and a co-operating presser.

14. Molding mechanism comprising in combination an internally threaded ring mold, a co-operating presser, and automatic ring rotating mechanism, including stop mechanism for controlling the same.

15. Molding apparatus comprising in combination an internally threaded ring mold, a co-operating presser, automatic mechanism for rotating said mold, stop mechanism included in said mechanism, and a yielding connection between the mold and its rotating mechanism.

16 Molding apparatus comprising in combination an internally threaded ring mold, a co-operating presser, mechanism for rotating the mold comprising a source of power, stop mechanism in the train from the source of power to the mold, and a yielding element in the train between the source of power and stop mechanism.

17. Molding apparatus comprising in combination an internally threaded ring mold, a co-operating presser, a pair of cylinders, one thereof connected to the presser, ring rotating mechanism controlled from the other cylinder, and valve mechanism for rendering said cylinders active successively.

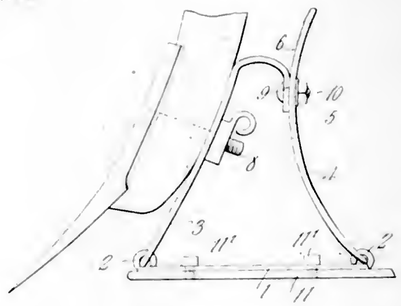
18. Molding apparatus comprising in combination an internally threaded mold, a co-operating presser, mechanism for rotating said mold, presser actuating mechanism, and mechanism operating alternately with the presser mechanism and arranged to reverse the ring rotating mechanism.

19. Molding apparatus comprising in combination an internally threaded ring mold, reversible rotating mechanism thereof, a co-operating presser, power means for actuating the presser and reversing the ring rotating mechanism, and a controller for rendering said mechanisms active in succession.

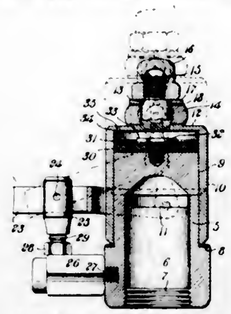
857,804. PLOW-HEEL. THOMAS H. HILLEY, Hugo, Ind. Ter. Filed Mar. 26, 1907. Serial No. 364,692.

Claim.—A plow heel comprising a base having at its ends upwardly disposed curls, sides hinged to said curls and means for adjustably securing the upper ends of the sides together.

857,804.



857,805. VALVE. DANIEL HINDERLITER, Catawissa, Pa. Filed Dec. 28, 1906. Serial No. 349,818.



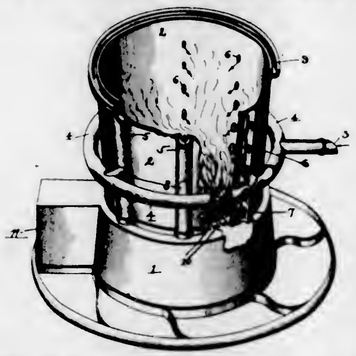
Claim.—1. A valve including a hollow body portion having a reduced cylindrical extension provided with ports, a packing disk secured to the top of the extension and conforming to the shape thereof, a screw piercing the packing and extension and provided with an enlarged head, a casing slidably mounted on the extension and having its closed end provided with an air vent, a cross-head mounted on the closed end of the casing, a pivoted float-carrying lever provided with forked arms embracing the casing and adapted to actuate the same to open and close the ports, and links forming a pivotal connection between the opposite ends of the cross-head and the forked arms of the float-carrying lever.

2. A valve including a hollow body portion provided with an annular shoulder defining a reduced cylindrical extension, the walls of which are formed with oppositely disposed ports, a lateral arm threaded in the base of the body portion, a standard threaded in the arm and having its free end bifurcated, a casing slidably mounted on the extension and having its upper end closed and provided with a vent opening, a cross-head carried by the closed end of the valve-casing, a packing secured to the upper end of the cylindrical extension, a screw engaging the packing and extension and provided with an enlarged head for spacing the closed end of the valve-casing from the adjacent end of the extension, a float-carrying lever pivoted in the bifurcated end of the standard and provided with forked arms for actuating the casing to open and close the ports, links forming a pivotal connection between the opposite ends of the cross-head and the forked arms, and a clamping nut engaging the threads on the standard and bearing against the laterally extending arm.

857,806. FURNACE FIRE-POT. WILLIAM A. HOHENADEL and WALTER KLINE, Akron, Ohio. Filed July 12, 1905. Serial No. 269,302.

Claim.—1. The combination with the fire pot, of an annular air tube arranged within the furnace around the fire-

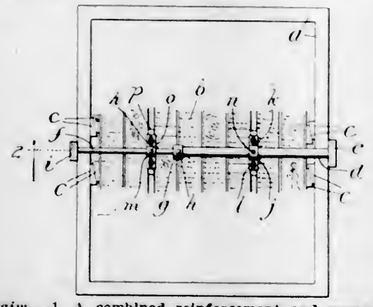
pot in spaced relation thereto, approximately midway between the top and the bottom of the fire-pot, and vertical tubes arranged at various points about said fire-pot connected with the annular air tube, extending in opposite directions therefrom and constructed to supply air from the air flue to the fire-pot at the top and at the bottom thereof.



2. The combination of the fire-pot, having a plurality of vertical series of openings, an annular air tube arranged within the furnace around the fire-pot in spaced relation thereto, approximately midway between the top and the bottom of the fire-pot, and vertical tubes integral with and arranged at various points about said fire-pot connected with the annular air tube and constructed to supply air from the air flue to the fire-pot through the opening in the fire-pot.

3. The combination with the fire-pot formed with integral vertical air tubes on its outer wall and with openings forming communication between the tubes and the interior of the fire-pot, of an annular air tube spaced from the fire-pot, and short tubes connecting the annular tube and the vertical tubes and acting to support the annular tube in spaced relation to the fire-pot.

857,807. AUXILIARY SUPPORT FOR PRINTERS' CHASES AND FORMS. JOHN F. HORN, Chicago, Ill. Filed Oct. 5, 1906. Serial No. 337,657.



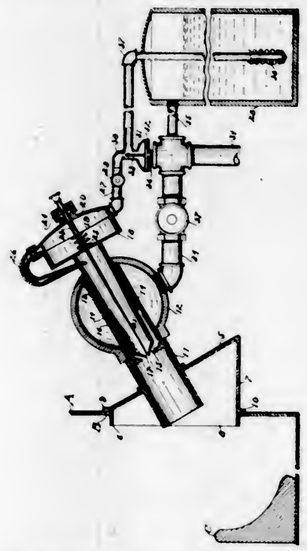
Claim.—1. A combined reinforcement and support for printer's chases and type forms in which is combined telescoping elements, each having a block upon its outer end to engage the edge of the chase, means for locking said telescoping elements together, and means upon said elements for detachably connecting the same with the form, whereby lateral reinforcement may be given to the chase and vertical support to the form.

2. A device of the class described, in which is combined two telescoping elements, each having a block or projection upon its outer end for engaging the edge of the chase, means for adjustably locking said elements, and adjustable means upon said elements for connecting the same with the form.

3. A device of the class described in which is combined a tube, a rod arranged to telescope therewith, said tube and rod respectively having a block or catch upon the outer end arranged at an angle thereto for engaging the outer edge of the chase, means for locking said tube and rod against longitudinal movement, adjustable cross-bars upon said rod and tube and means for detachably connecting the same with the "furniture" of the form.

4. In a device of the class described, the combination of a tube and rod arranged to telescope with each other, each having a catch upon its outer end arranged at right angles thereto, a set-screw for adjustably locking said rod and tube to each other, and transverse fittings loosely mounted upon said rod and tube, said fittings having slots therein for the reception of means for detachably engaging the "furniture" of the form.

857,808. HYDROCARBON-BURNER SYSTEM. BENJAMIN F. JACKSON, Boston, Mass., assignor to Boston Crude Oil Burner Co., Boston, Mass., a Corporation of Maine. Filed Dec. 5, 1904. Serial No. 235,425.



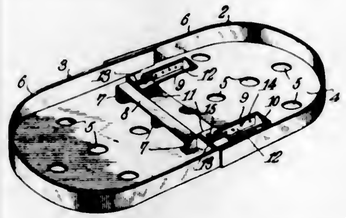
Claim.—1. A burner comprising an atomizer tube having an apertured end, a casing mounted on said tube, a flexible diaphragm in said casing, a clearer needle movably mounted in the tube and designed to be actuated by said diaphragm, and a fluid fuel conduit, of which said diaphragm forms one wall, communicating with said tube.

2. The combination with an atomizer tube, a casing mounted thereon, a flexible diaphragm in said casing, and a clearer needle secured to said diaphragm and extending into said tube, of a fluid fuel conduit extending across said diaphragm and communicating with said tube, and an extension from said needle working through an opening in the wall of said conduit.

3. The combination with a pressure chamber, and a pressure pipe connected therewith, of an atomizer tube within said chamber, a liquid fuel supply pipe communicating with said atomizer tube and furnished with a pressure controlled valve, and a connection between said valve controlling means and the pressure pipe.

4. The combination with a burner comprising a pressure chamber, and an atomizer tube, of a liquid fuel supply pipe communicating with the atomizer tube and having a valve seat, a casing connecting with said pipe, a diaphragm within said casing provided with a valve for said seat, and a pressure supply pipe connected with said pressure chamber and with the diaphragm casing.

857,809. AUXILIARY BOTTOM FOR WASHBOILERS. NELLIE KENJORA, Philipsburg, Pa. Filed Dec. 18, 1906. Serial No. 348,439.



Claim.—1. An auxiliary bottom for steaming vessels embodying a pair of slidable sections one overlapping the other, a tongue attached to the upper section and overlapping the lower section, said tongue extending longitudinally of the direction of relative movement of the sections, a web extending downwardly from the tongue and having locking apertures, and a guide adapted to cooperate with said tongue for guiding the sections both horizontally and vertically comprising a sheet of metal having an intermediate portion secured to the underside of the lower section and having its ends doubled toward one another to engage the under side of the said tongue, the web thereon operating in the space between the proximate edges of the doubled ends, and means coöperating with the perforations of the web for locking the sections in adjusted relation.

2. An auxiliary bottom for steaming vessels embodying a pair of coöperatively arranged sections movable relatively and engaging one beneath the other, and a locking device for securing the sections in fixed relation embodying a tongue on the upper section extending beneath the overlapping portion of the other section for supporting it, a web on said tongue extending in the direction of relative movement of the sections and having a series of locking apertures, a guide on the other section coöperating with said web and tongue, and means coöperating with said locking apertures for retaining the web and guide in fixed relation.

3. An auxiliary bottom for steaming vessels embodying a pair of relatively movable sections one lapping beneath the other, tongues attached to the bottom of the upper section and coöperating with the underside of the other section and serving to retain the sections in coöperative relation, a web carried by each tongue and having locking means thereon, a guide on the other section coöperating with each web, and means carried by the section having the guide thereon and coöperating with the locking means of the webs to retain the sections in fixed relation.

4. An auxiliary bottom for steaming vessels comprising a pair of relatively adjustable sections provided with supporting rims, a pair of longitudinally extending tongues on the under side of one section having webs extending longitudinally thereof, guides arranged on the under side of the other section and coöperating with the tongues and webs to guide the sections in both horizontal and vertical planes, and devices on the guides coöperating with said webs for locking the sections in fixed relation.

857,810. MICROMETER-GAGE. GEORGE KOHLHAAS, Washington, D. C. Filed June 6, 1904. Serial No. 211,641.

Claim.—1. In combination, a tubular body portion having a flanged head with semi-circular recesses in said head, a collar having angular recesses opposing said semi-circular recesses, pins guided in said semi-circular and angular recesses, means for pressing the collar against the pins, and means for forcing the pins outwardly, substantially as described.



2. In combination a tube, radially arranged pins at one end thereof, a cone extending between said pins and having a stem extending through the tube to the opposite end, an exteriorly-threaded sleeve secured to the rear end of the stem, an interiorly threaded sleeve connected to the rear end of the tube and having its interior threads engaged by the exteriorly threaded sleeve, and an operating sleeve rigidly connected to the rear end of the stem and having its forward end graduated and encircling a graduated member at the rear end of the tube, substantially as described.

3. In combination a tube, radially arranged pins at one end thereof, a cone extending between said pins and having a stem extending through the tube to the opposite end, an exteriorly threaded sleeve adjustably secured to the rear end of the stem, a sleeve threaded upon the rear end of the tube and an interiorly threaded sleeve carried thereby and having its interior threads engaged by the exteriorly threaded sleeve, and an operating sleeve connected to the rear end of the stem and having its forward end graduated and encircling the sleeve at the rear end of the tube, said last named sleeve having graduations, substantially as described.

4. In combination a tube, radially arranged pins at one end thereof, a cone extending between said pins and having a stem extending through the tube to the opposite end, an adjustable collar on said stem, an exteriorly threaded sleeve abutting against said collar, an operating sleeve on the rear end of the stem abutting against said exteriorly threaded sleeve and having its forward end graduated, a clamping nut on the rear end of the stem for clamping said operating sleeve, a sleeve threaded on the rear end of the tube, an interiorly threaded sleeve carried thereby engaging the exteriorly threaded sleeve, and a graduated sleeve encircling the sleeve on the rear end of the tube and projecting within the operating sleeve and lying between the micrometer means and the head, substantially as described.

5. In combination a tubular body portion having a flanged head, a collar opposed to said head, pins guided between said parts, means for forcing the collar toward the flange of the head to clamp the pins firmly, and means for gradually forcing the pins outwardly, substantially as described.

6. In combination a tubular body portion having a flanged head, a clamping collar opposed to said head, pins guided between said parts, a collar for forcing said collar against the pins to clamp them, means for forcing the pins gradually outward, and a spring for holding said pins when the forcing collar is disengaged from the clamping collar, substantially as described.

7. In a device of the character described, a tubular body portion having radially arranged measuring devices slidably carried at one end thereof, micrometer controlled means at the other end thereof having connections extending through the tube for operating said members, a non-conducting hand grasp portion encircling the tube and extending between the measuring devices and the micrometer means, and sleeves or ferrules on said tube for holding the non-conducting hand grasp portion in place, substantially as described.

8. In combination in an instrument of the class described, a tubular body portion having a head, pins movable radially of the head, means encircling the tubular body for holding the pins to the head by adjustable frictional pressure, and to permit the removal of the pins and means for forcing the pins outwardly, extending through said body portion, said means having longitudinal movement while the tubular body remains stationary substantially as described.

9. In combination, in an instrument of the class described, a tubular body having a head, pins guided in the head, means encircling the body portion, and adjustable in relation to the head, to hold the pins, and means for operating the pins extending through the tubular body, substantially as described.

10. In combination, in an instrument of the class described, the pins, a tubular body portion having a head a sleeve threaded on the outside of the tubular body portion for aiding in holding the pins, and means passing through the body portion for operating the said pins, substantially as described.

11. In combination, in an instrument of the class described, a tubular body having a head, pins movable radially therein, a stem extending through the hollow body, and having means for spreading the pins, a micrometer sleeve, a screw threaded sleeve associated with the micrometer sleeve, and means for adjusting the screw threaded sleeve, and micrometer sleeve in relation to the stem, substantially as described.

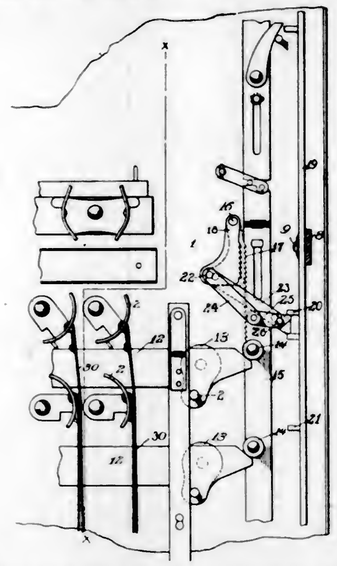
12. In combination, in a micrometer gage, a hollow body portion having a head, pins guided to move radially in said head, a rod extending through the hollow body portion, micrometer means on the said rod, an internally threaded sleeve on the body portion and carrying the micrometer means, a hand hold sleeve on the body portion, and an adjustable collar for holding the said hand hold sleeve in place and also serving to lock the internally threaded sleeve, substantially as described.

857,811. KEY-LOCKING MECHANISM FOR VOTING-MACHINES. WILLIAM J. LAUSTERER, Jamestown, N. Y., assignor to U. S. Standard Voting Machine Company, Rochester, N. Y., a Corporation of New York. Filed Jan. 2, 1906. Serial No. 294,068.

Claim.—1. In a voting machine, the combination with a plurality of series of registers, a plurality of series of ballot indicators therefor, operable to voted position without actuating the registers and means for actuating the registers whose indicators are in voted position, of operating devices for the several series of indicators and means for locking all said operating devices during the movement of the register actuating means.

2. In a voting machine, the combination with a plurality of series of registers, a plurality of series of ballot indicators therefor, operable to voted position without actuating their registers and means for actuating the registers whose indicators are left in voted position, of an operating device for each of the several series of indicators and automatic locking means for securing the said operating devices during the movement of the register actuating means and controlled by the latter to release said devices when in one position.

3. In a voting machine, the combination with a plurality of series of registers, a plurality of series of ballot indicators therefor, operable to voted position without actuating their registers and means for actuating the registers whose indicators are left in voted position, of an operating device for each of the several series of indicators, an automatic locking device for securing said operating devices with which the register actuating device coöperates to release said operating devices when in one position.



4. In a voting machine, the combination with a plurality of series of individual candidate indicators, a corresponding plurality of series of registers, straight ticket voting devices for operating the indicators of each series and actuating devices for the machine, of devices for locking the straight ticket operating devices and means for releasing said locking device when the actuating device is in one position.

5. In a voting machine, the combination with a plurality of series of separately operable candidate indicators, a plurality of series of registers, means for operating the different series of indicators and means for actuating the registerers whose indicators are left in voted position, of means for locking the series-operating devices during the movement of the actuating means.

6. In a voting machine, the combination with the actuating mechanisms, pluralities of series of indicators and registers, means for operating the series of indicators separately and a member operable by any of said series operating devices, of locking devices for securing said member from operation controlled by the actuating mechanism of the machine.

7. In a voting machine, the combination with a plurality of candidate voting mechanism, straight ticket mechanism and an actuating mechanism for the machine, of a lock for said straight ticket mechanism adapted to be released by the actuating mechanism when in one position.

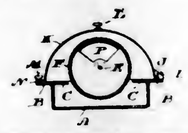
8. In a voting machine, the combination with a plurality of candidate voting mechanisms, a plurality of straight ticket voting mechanisms and actuating mechanism for the machine, of a member operable by any of the straight ticket mechanisms, an automatic lock therefor and releasing mechanism operable by the actuating mechanism.

9. In a voting machine, the combination with the straight ticket bars, and the universal bar operable by the latter, of an actuating mechanism for the machine, a pawl for securing the universal bar and connections between said pawl and the actuating mechanism for holding it out of action when the actuating mechanism is in two different positions.

10. In a voting machine, the combination with the straight ticket bars, the universal bar operated by the latter and the automatic locking pawl, of the reciprocatory bar and connections between it and the pawl for releasing the latter when at its extremes of movement.

11. In a voting machine, the combination with the universal bar and the automatic locking pawl coöperating therewith, the links coöperating with the pawl and the lever connected to one of them, of the reciprocatory bar having stops thereon coöperating with the link and lever to release the pawl at the extremes of movement.

857,812. CULINARY UTENSIL. JOHN J. LEYKAUF and ALFRED BARTH, Milwaukee, Wis. Filed Sept. 27, 1906. Serial No. 336,408.



Claim.—1. A culinary utensil comprising a pan provided with an endless outer upper horizontal flange, upper inner flanges, flush with the one aforesaid, and notched lugs constituting bearings for the turning spindle of a cylindrical rotary roasting shell; and a semi-cylindrical cover in hinge-connection with the outer flange of the pan, said cover being provided with end notches for engagement with said spindle.

2. A culinary utensil comprising a pan having an upper outer endless flange by which to suspend the same in a stove, inner flanges flush with the one aforesaid and upper lugs notched to constitute bearings, a cylindrical shell having a cranked center spindle engageable with the bearings aforesaid, said shell being between the inner pan-flanges, and a semi-cylindrical pan-cover having end notches engageable with said spindle.

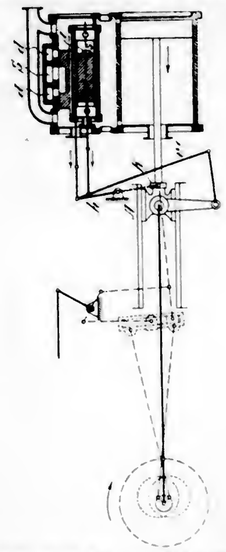
3. A culinary utensil comprising a pan provided with an endless outer upper horizontal flange, upper inner flanges, flush with the one aforesaid, and notched lugs; a rotary cylinder shell for which the lugs constitute journal-bearings between said inner pan-flanges, and a semi-cylindrical pan-cover having end notches engageable with the cylinder journals.

857,813. VALVE GEARING AND MOTION FOR LOCOMOTIVES. ROBERT LINDNER, Dresden, Germany. Filed May 14, 1906. Serial No. 316,685.

Claim.—1. A valve-gear especially suited for twin cylinder engines, comprising a main slide valve (S), means for operating said valve, a supplementary slide-valve (*s*) provided with small port holes (*i*) in direct connection to cylinder, means for operating the supplementary valve, in order to permit an additional steam charge to enter the cylinder through port-holes (*i*) after main slide-valve (S) has closed the steam admission ports (*d*) for the purpose of giving a supplementary charge to cylinder when the engine is starting.

2. A valve-gear especially suited for twin cylinder engines, comprising a main slide valve (S), means for operating said valve, a supplementary slide-valve (*s*) provided with small port holes (*i*) in direct connection to cylinder, means for operating the supplementary valve, a swinging lever (*v*,) connected to both slide valves and means for operating same in order to permit an additional steam-charge to enter the cylinder through port-holes (*i*) after main slide valve (S) has closed the steam admission ports (*d*) for the purpose of giving a supplementary charge to cylinder when the engine is starting.

3. A valve-gear especially suited for twin cylinder engines, comprising a main-slide-valve (S), means for operating said valve, a supplementary slide-valve (*s*) provided with small port holes (*i*) in direct connection to cylinder, means for operating the supplementary valve, a swinging lever (*v*) connected to both slide-valves, means for operating same, a suspended connection between the other end of this swinging lever and the cross-head in order to permit an additional steam charge to enter the cylinder through port-hole (*i*) after main-slide-valve (S) as has closed the steam admission ports (*d*) for the purpose of giving a supplementary charge to cylinder when the engine is starting.



4. A valve-gear especially suited for twin-cylinder engines, comprising a main-slide-valve (S) means for operating said valve, a supplementary slide-valve (*s*) stationary arranged on a special face in order to permit an additional steam charge to enter the cylinder through port holes (*i*) after main slide valve (S) has closed the steam admission ports (*d*) for the purpose of giving a supplementary charge to cylinder when the engine is starting.

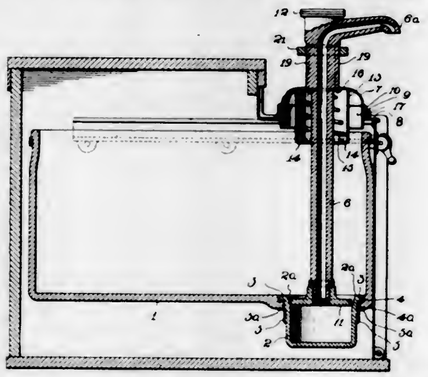
5. A valve-gear especially suited for twin-cylinder engines, comprising a main-slide-valve (S), means for operating said valve, a supplementary slide-valve (*s*), a chamber within the main slide-valve (S) for the supplementary slide-valve (*s*) to work in, means for operating the valves in order to permit an additional steam-charge to enter the cylinder through port-hole (*i*) after the main slide valve (S) has closed its steam admission ports (*d*) for the purpose of giving a supplementary charge to cylinder when the engine is starting.

857,814. SYRUP-DISPENSING APPARATUS. FISHER H. LIPPINCOTT, Philadelphia, Pa., assignor to American Soda Fountain Company, Boston, Mass., a Corporation of New Jersey. Filed Aug. 18, 1904. Serial No. 221,216.

Claim.—1. The combination of a jar open at the top, a stationary measuring chamber in the interior of the jar, a casing for the jar provided with an opening over the opening in the jar, a lid for the casing-opening supported by the casing, a tubular plunger-rod depending from and vertically movable in said lid, a plunger on the rod to reciprocate in the measuring chamber, and a delivery nozzle, in communication with the tubular plunger rod, to dispense liquid displaced by the plunger.

2. The combination of a casing, an opening in the top thereof, a jar within said casing having an opening registering with said casing-opening, a measuring chamber at the bottom of the jar, a detachable lid covering said casing opening, containing a hollow chamber and supported by the casing, a vertically movable, tubular plunger rod extending through said lid and chamber, a spring in said chamber to elevate the plunger-rod, and a plunger on the lower end of said rod to reciprocate in the measuring chamber.

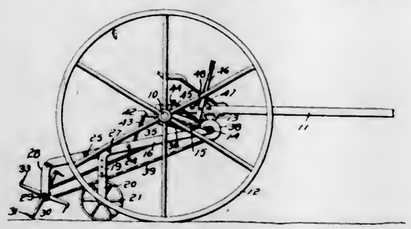
3. The combination of a jar open at the top, a casing, supports therein for the jar, an opening in the casing above the open top of the jar, a removable cover for said opening, displacement dispensing devices, including a plunger, a conduit, an external delivery nozzle, and external operating means for the plunger, all carried by said cover and removable therewith from the jar and casing.



4. The combination of a jar, open at the top, a casing, supports therein for the jar, a well in the bottom of the jar, an opening in the casing directly over the said well, a removable cover for said opening, displacement dispensing devices, including a plunger, a conduit, an external delivery nozzle, and external operating means for the plunger, all carried by said cover, and removable therewith from the jar and casing.

5. The combination of a jar, open at the top, a casing, supports therein for the jar, a well at the bottom of the jar, an opening in the casing directly over said well, a removable cover for said opening, a plunger to coöperate by sliding fit with the side of said well to displace liquid therefrom, operating means external to said cover for the plunger, and a dispensing conduit leading from the well to a point external to said casing to deliver liquid displaced by the plunger from the well, the cover, plunger and operating means being removable as a unit from said jar and casing.

857,815. BEET-THINNER. JAMES A. LONG, Kalispell, Mont. Filed Mar. 4, 1907. Serial No. 360,372.



Claim.—1. A machine of the class described comprising an axle mounted for rotation, a shaft driven from the axle, gage wheel standards loosely connected with the shaft, gage wheels journaled upon the standards, standards adjustably connected with the gage wheel standards, a shaft journaled in the last mentioned standards, cutting elements carried by the shafts, gear connections between the driven shaft and the shaft carrying the cutting elements, sleeve shafts arranged upon the axle for turning movement independent thereof, connections between the sleeve shafts and the gage wheel standards, and means for rocking the sleeve shaft for raising and lowering the standards.

2. A machine of the class described comprising an axle mounted for rotation, a shaft driven from the axle, gage wheel standards loosely connected with the shaft, gage wheels journaled upon the standards, standards adjustably connected with the gage wheel standards, a shaft journaled in the last mentioned standards, cutting elements carried by the shafts, gear connections between the driven shaft and the shaft carrying the cutting elements, sleeve shafts arranged upon the axle for turning movement independently thereof, arms carried by the sleeve shafts, connections between the arms and the gage wheel standards, and means for rocking the sleeve shafts to raise and lower the standards.

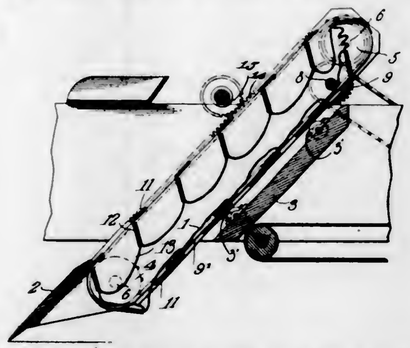
857,816. SPRING-HEEL. AUGUST F. LUZZI, Cleburne, Tex. Filed Aug. 1, 1906. Serial No. 328,790.



Claim.—1. In a device of the character described, the combination of a plate fitting within the heel of a shoe and provided with teeth for holding it in position, the said plate having a spring tongue stamped therefrom and bent slightly outward, a flexible covering fitting over the tongue, and a strip of material for holding the flexible covering in position, the ends of the before mentioned strip being passed through the flexible covering and bent into engagement with the base of the tongue.

2. In a device of the character described, the combination of a plate fitting within the heel of a shoe and having a tongue formed in conjunction therewith and bent slightly outward, the said tongue being formed with a strap located between two parallel cuts, and a coil spring fitting under the tongue and engaging with the strap, the portion of the spring adjacent the strap being flattened and coöperating with the strap to prevent any pivotal movement of the spring and hold the same securely against the tongue.

857,817. EXCAVATOR. WILLIAM R. MARTIN, Idaho Falls, Idaho. Filed Aug. 21, 1906. Serial No. 331,506.



Claim.—1. An excavator comprising sides, a cutting plow attached to the lower ends thereof, sprocket wheels journaled to said sides, chains passing around said wheels, flexible buckets located upon said chains, and a shaft extending across the excavator and engaging said buckets as they pass.

2. An excavator comprising sides, a plow attached to the lower ends thereof, sprocket wheels journaled upon the sides, chains passing around said wheels, cross-bars connecting said chains together, flaps hinged to the said bars, and aprons connecting said flaps together.

3. An excavator comprising sides, chains mounted for movement along the said sides, cross-bars connecting said chains together, flaps hinged to said cross-bars, and aprons connecting the said flaps together.

4. An excavator comprising sides, chains mounted for movement along said sides, cross-bars connecting said chains together, flaps hinged to said cross-bars, and aprons attached at their edges to the flaps of adjacent bars and at their ends to said chains.

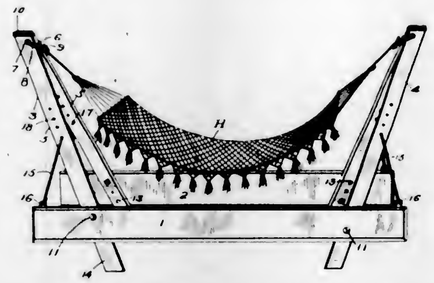
857,818. SHEET-METAL TYPE-RIBBON SPOOL OR HOLDER. GEORGE F. MILLER, Brooklyn, N. Y., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 18, 1907. Serial No. 362,849.



Claim.—1. In a sheet metal spool, the combination with the side disks having circular grooves to receive the ends of a hollow core, a hollow sheet metal core fitting between the side disks and provided with a ribbon retaining loop and tooth, and a central connecting thimble extending through and between the disks and rigidly connecting the disks and core, substantially as specified.

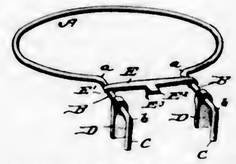
2. The sheet metal type ribbon spool consisting in the side disks having integral channels or grooves to receive the ends of the core, a hollow core fitting between the side disks and a connecting eyelet or thimble extending through and between the disks and clamping the core between them, said connecting eyelet being of less diameter than and separated from the hollow core substantially as specified.

857,819. HAMMOCK-SUPPORT. WILLIAM H. MOREHOUSE, Portland, Oreg. Filed Sept. 7, 1906. Serial No. 333,669.



Claim.—In a hammock support, two side bars, each provided near each end with a perforation adjacent to its edge, said perforations being diagonally opposite, two end frames pivotally connected with said bars at said perforations, the upper ends of the frames being each provided with a perforation and the intermediate portion provided with two series of perforations, the lower series being adapted to register with the perforations in the side bars, a hook formed from a single piece of metal passed through the upper perforations of each frame and bent into a loop and having its ends twisted together and bent into a hook, an eye in the upper edge of each bar near each end, and a brace pivotally connected with each eye and having its opposite end bent at substantially a right angle and of sufficient length to project through either of the perforations of the upper series in the end frames, whereby the upper ends of the frames will be held against movement inward or outward and the frames can be collapsed and folded together between the side bars with their connected ends overlapping each other.

857,820. GRAIN-BAG HOLDER. WALTER R. MOSHER, Granville, N. Y. Filed Oct. 26, 1905. Serial No. 284,588.

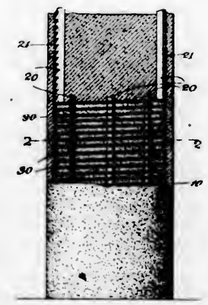


Claim.—1. A device of the kind described, comprising an open loop having parallel bent end portions, and a bracket slidable on each end portion and co-operating with the bent end to form an adjustable clutch.

2. A device of the kind described comprising an open loop having parallel end portions extending outwardly in the plane of the loop and then bent at right angles to form fixed foot portions, and brackets on the parallel portions in the plane of the loop, said brackets being adjustable with respect to the foot portions.

3. A bag holder comprising a strip of metal bent into an oval shaped loop and whose ends are bent outwardly in parallel directions to provide arms and downwardly at their extreme ends to provide foot portions, brackets having openings at their ends through which the arms extend and by which the said brackets are retained upon the arms, a bar supported upon the arms, said bar having slots at its ends adapted to receive the arms, a projection extending from one edge of the bar and a pin depending from the bar adjacent the said projection.

857,821. BUILDING CONSTRUCTION. EDWARD MCCLURE, Chicago, Ill., assignor of one-half to Franklin P. Smith, Chicago, Ill. Filed Dec. 17, 1906. Serial No. 348,119.



Claim.—1. In a concrete column construction, the combination of one or more upright bars or rods and a spiral encircling band extending throughout the entire length of the column, each bar or rod having a thin toothed longitudinally extending web adapted to form a connecting medium between the encircling band and the bars or rods.

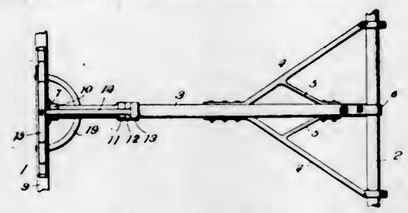
2. In a concrete column construction, the combination of a plurality of circumferentially disposed upright bars or rods, each having a thin toothed longitudinally extending fin or web, a spiral coil of wire wound upon the bars and extending throughout the entire length of the column, each turn of the wire being seated in the notches between the teeth of the fins, and a body of concrete in which the bars and wire are wholly embedded.

3. In a concrete column construction, the combination with a metal frame work, comprising upright bars or rods having thin longitudinally extending fins or webs that contain diagonally extending notches, and a spiral coil of wire wound upon said bars and extending throughout the entire length of the column, each turn of said wire resting in a notch in the fins or webs, of a body of concrete in which the frame work is wholly embedded.

4. In a concrete column construction, the combination of a plurality of upright bars or rods, each having a thin longitudinally extending toothed fin or web, the teeth extending diagonally with respect to the bar, and the teeth on the alternate bars extending upward, and on the others extending downward, a spiral coil of wire wound around the bars or rods and extending throughout the entire length of the column and seated in the spaces between the teeth, and a body of concrete in which the bars and wire are wholly embedded.

5. In a concrete column construction, the combination of a plurality of bars or rods, each having a longitudinally extending toothed web, a spiral coil of wire wound around the bars or rods and extending throughout the entire length of the column and seated in the spaces between the teeth, certain of which are clenched down upon the wire, and a body of concrete in which the bars and wire are wholly embedded.

857,822. VEHICLE-REACH. GEORGE J. MCCOY, Fossil, Oreg. Filed Oct. 16, 1906. Serial No. 339,201.



Claim.—1. In a vehicle running gear, the combination of front and rear axles, a reach having rigid connection at its rear end with the rear axle, a plate having connection with the front axle and provided with a stem fitted loosely within the front end of the reach, a fixed stop near the front end of the reach, collars loose upon the reach in the rear of said fixed stop, and connecting means between said collars and the front portion of the running gear.

2. In vehicle running gear, the combination of front and rear axles, a tubular reach having rigid connection with the rear axle and provided near its front end with a rigid stop and having its front end reinforced, a plate attached to the rear side of the bolster fitted upon the front axle, and provided with a stem fitted loosely within the reinforced end of the reach, a loose collar 12 mounted upon the reach in the rear of the fixed stop, connections 14 and 16 between the upper and lower portions of the loose collar and the front portion of the running gear, the connection 16 having a loop or keeper to receive the fifth wheel, a loose collar 13 likewise mounted upon the reach in the rear of the fixed stop and loose collar 12, and a connection 18 between the lower portion of the loose collar 13 and the front portion of the running gear and extending below the front axle, the several connections 14, 16 and 18 having king bolt connection with the front portion of the running gear.

857,823. SAP-CUP HOOK. THOMAS A. MCGREGOR, Halcyondale, Ga. Filed Mar. 5, 1907. Serial No. 360,657.

Claim.—1. As an article of manufacture, a hook made of a piece of wire having a body portion, a spur angularly disposed thereto on one end and a double hook on the opposite end formed by successive bends of the wire.

2. As an article of manufacture, a hook comprising a body portion having at one end a pointed spur projecting from one end of said body at an angle less than a right angle and at its other end a double hook.

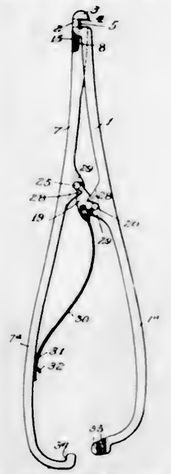
3. As an article of manufacture, a hook comprising a body portion having at one end a pointed spur and at its other end a succession of turns perpendicular to each other and forming two hooks.

4. As an article of manufacture, a hook comprising a body portion having at one end a pointed spur and at its other end a succession of turns perpendicular to each other and forming two hooks in different planes, said planes being at right angles to the plane of the body portion.



5. As an article of manufacture, a suspending hook comprising a body, having a pointed spur projecting from one end of said body at an angle less than ninety degrees, a hooked portion projecting perpendicularly from the opposite end of the body in the same plane as said spur, and a second hooked portion continuous with the first hooked portion and at a greater distance from the body portion.

857,824. NEEDLE-HOLDER. LUTHER C. MCNEAL, Rochester, N. Y. Filed Oct. 12, 1905. Serial No. 282,376.



Claim.—1. In a needle holder, the combination with two clamping members having coöperating ends at one extremity and operating handles at the other, one of said members being guided on the other, means connecting the members to move their clamping ends relatively longitudinally when the handles are adjusted toward and from each other.

2. In a needle holder, the combination with two members movable relatively toward and from each other and having clamping ends at one extremity and operating handles at the other, the end of one member being guided on the other, of means for moving said ends relatively when the handle portions of the members are adjusted relatively.

3. In a needle holder, the combination with an arm, a guide at the forward end thereof and a second arm having its forward end supported in the guide, of an abutment on one arm, a coöperating shoulder on the other arm and means connecting said arms to cause a relative longitudinal movement of the abutment and shoulder when the rear ends of the arms are moved toward and from each other.

4. In a needle holder, the combination with an arm having a clamping end, a guide located in proximity thereto, and a second arm having a coöperating clamping end supported by the guide, of a toggle connection between the arms operated by a relative lateral movement of the arms.

5. In a needle holder, the combination with two arms having clamping ends one of which is guided on the other, of a link pivotally connected to the arms in rear of said ends to cause a relative longitudinal movement of the arms.

6. In a needle holder, the combination with two arms having clamping ends one of which is guided on the other, of a link pivotally connected to the arms and positioned thereon to cause the clamping ends to be moved relatively toward each other when the opposite ends of the arms are moved toward each other.

7. In a needle holder, the combination with two arms having coöperating clamping shoulders and bosses on the proximate sides of the arms arranged one in front of the other, of a link pivoted on the bosses and connecting the arms.

8. In a needle holder, the combination with two arms having coöperating clamping ends, means for movably holding them in juxtaposition, of a link and pivot pins carried thereon and journaled on the arms.

9. In a needle holder, the combination with two arms having coöperating clamping shoulders, of a link pivotally connecting the arms and means normally operating the link in one direction to separate the arms.

10. In a needle holder, the combination with two arms having coöperating clamping shoulders, of a link pivotally connecting the arms and a spring secured to the link and engaging one of the arms.

11. In a needle holder, the combination with two arms having coöperating clamping shoulders, of a link pivotally connecting the arms and a spring finger secured to the link and engaging one of the arms and means for limiting the movement of the finger on the arm.

12. In a needle holder, the combination with two arms having coöperating clamping shoulders, of a link pivotally connecting the arms and a spring finger secured to the link having a slotted end engaging one of the arms and operating the link to separate the arms and a projection on said arm coöperating with the end of the slot to limit the movement of the link.

13. In a needle holder, the combination with two arms having coöperating clamping shoulders and bosses on the arms provided with longitudinally extending slots and having transversely extending perforations, of a link having its ends lying in the slots and pins engaging the perforations and pivotally securing the links.

14. In a needle holder, the combination with two arms having coöperating clamping shoulders and bosses on the arms divided into two sections by longitudinally extending slots and having transversely extending perforations, the perforations in one section of each boss forming an open bearing, of a link and laterally extending pivot pins thereon journaled in said perforations.

15. In a needle holder, the combination with two arms having coöperating clamping shoulders, perforated bosses on the arms, of a link pivoted on the bosses and locking projections on the arms extending over the side of the link when the latter is in normal position.

16. In a needle holder, the combination with two arms having coöperating clamping shoulders, perforated bosses on the arms, of a link, laterally extending pins on the ends of the link fitting said perforations and projections on the arms overlapping the link to prevent its removal from the bosses when in the normal position.

17. In a needle holder, the combination with an arm having an end provided with an aperture and an abutment extending transversely in front of said aperture, of a second arm having an end guided in the aperture and coöperating with the abutment and means for moving the arms relatively longitudinally of each other.

18. In a needle holder, the combination with an arm having an offset portion provided with an aperture and a slot leading therefrom and also provided with an abutment in alinement with the axis of the aperture, of a second arm movable relatively longitudinally of the other arm having a shoulder passing through the aperture and coöperating with the abutment and a web on said end guided in said slot.

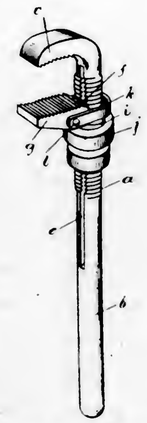
19. In a needle holder, the combination with an arm having an offset end provided with an aperture and forming supporting and clamping surfaces for a needle, of a second arm, an end thereon passing through the aperture and connections between the arms for moving the end of the second arm parallel with the supporting surface and relatively to the clamping surface.

20. In a needle holder, the combination with an arm having an offset end provided with an aperture, a supporting surface having a slot and a clamping surface located at the end of the slot in alinement with the axis of the aperture, of a second arm movable relatively longitudinally of the first mentioned arm, an end thereon fitting the aperture and coöperating with the clamping surface and a web on said end guided in said slot.

21. In a needle holder, the combination with a clamping member, a supporting surface thereon and a clamping surface having a lip provided with a portion overhanging the supporting surface, of a second member coöperating with the clamping surface and means for causing a relative longitudinal movement of the members.

22. In a needle holder, the combination with a clamping member, a supporting surface and a clamping surface extending substantially at right angles to the supporting surface at its edges and overhanging said surface at the center, of a second member coöperating with the clamping surface and means for moving the members relatively longitudinally.

857,825. PIPE-WRENCH. GEORGE NICHOLSON, Orangeville, Ontario, Canada. Filed May 19, 1906. Serial No. 317,766.

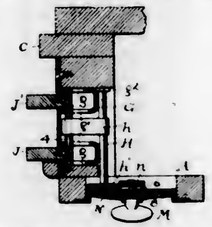


Claim.—1. In a pipe wrench, formed in combination with a threaded shank part, a handle and a fixed head or jaw, said fixed head or jaw formed at the outer end and at right angles to said shank part, said fixed head having its gripping face serrated, a longitudinal channel formed in inner side of said shank part, a slidable jaw at right angles to said shank part, said slidable jaw adapted to be adjusted by the adjusting nut, said slidable jaw having its gripping face serrated, a strap surrounding said shank said strap pivotally attached to said slidable jaw by rivets, a rib integral on the back of said slidable jaw, said rib adapted to engage in said channel, a lip integral with the lower part of said slidable jaw, said lip adapted to engage in the circumferential groove in the adjusting nut, in and for the purposes specified.

2. In a pipe wrench, formed in combination with a threaded shank part, a handle and a fixed head or jaw, said fixed head or jaw formed at the outer end and at right

angles to said shank part, said fixed head having its gripping face serrated, a longitudinal channel formed in inner side of said shank part, a slidable jaw at right angles to said shank part, said slidable jaw adapted to be adjusted by the adjusting nut, said slidable jaw having its gripping face serrated, a strap surrounding said shank, said strap pivotally attached to said slidable jaw by rivets, a rib integral on the back of said slidable jaw, said rib adapted to engage in said channel, a lip integral with the lower part of said slidable jaw, said lip adapted to engage in the circumferential groove in the adjusting nut, a circular twin threaded adjusting nut screwed on said shank, said adjusting nut having a circumferential groove, in and for the purposes specified.

857,826. REVERSIBLE WINDOW. HENRY J. OLIVER, Cleveland, Ohio. Filed Oct. 17, 1904. Serial No. 228,764.

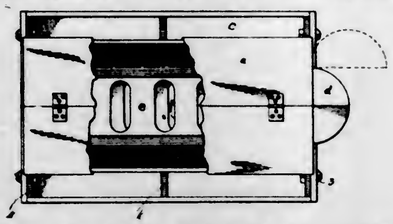


Claim.—1. In reversible windows, a window casing, jamb strips slidable back and forth in said casing, a metallic box having inclined slots in its rear, a crosspiece rigidly connecting said strips and slidably engaged in said slots and a rotatable shaft having a slotted arm engaging said cross pieces to raise and lower said strips, substantially as described.

2. In reversible windows, a window casing, jamb strips slidable back and forth therein, a rigid cross piece connecting said strips and inclined guides for said cross piece, in combination with a rotatable shaft having an arm engaging said cross piece and provided with a gear and a rotatable hand controlled pinion in mesh with said gear, whereby the said jamb strips are controlled, substantially as described.

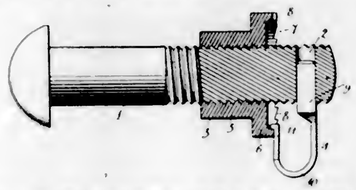
3. In reversible windows, a window casing, a set of adjustable jamb strips having inclined guiding edges at their upper ends and rigid cross strips connecting the same, a fixed rotatable shaft having an arm engaged with said cross piece and provided with a gear at one end, a pinion and an axially slidable spring pressed shaft carrying the pinion, and a fixed pin to engage in the teeth of said pinion and lock the same against rotation, substantially as described.

857,827. AUTOMATIC STOCK-FEEDER. FRANK B. PLATT, Hamilton, Kans. Filed Mar. 5, 1906. Serial No. 304,281.



Claim.—The hereindescribed stock feeder comprising, in combination, a feed trough, a feed box thereover having a removable top consisting of two complemental sections hinged together and having in its bottom a series of spaced feed apertures, a gage plate to normally close the aforesaid apertures and having a similar series of apertures and located directly above the said bottom, means connected with the gage plate to cause the two series of apertures to register, said means consisting of a link having an end eye and a lever pivoted to a fixed support and projected through said eye, and a semi-cylindrical hinged housing for said lever.

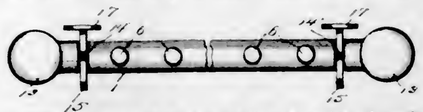
857,828. NUT-LOCK. JAMES J. POTTER, Staunton, Va. Filed Oct. 18, 1906. Serial No. 339,559.



Claim.—1. The combination with a bolt provided with a transverse seat, of a nut having an outstanding flange provided with ratchet teeth, and a locking member having a shank to engage the seat, and a resilient ratchet tooth engaging pawl having a terminal toe to engage the inner wall of the nut flange.

2. The combination with a bolt provided with a transverse seat, of a nut having one face socketed and provided with ratchet teeth, and a locking member having one terminal in engagement with the seat and its other terminal in engagement with the inner rim of the socket, and an intermediate portion in engagement with the ratchet teeth.

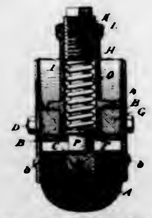
857,829. CURTAIN-POLE. JAMES A. POWELL, Wilmington, N. C. Filed Aug. 8, 1905. Serial No. 273,265.



Claim.—1. A curtain pole having a series of perforations formed transversely therethrough; a clasp arranged for endwise movement in each perforation and provided with a pair of movable legs; and a spring disposed within each perforation for normally holding the legs of the corresponding clasp together.

2. A curtain pole having a series of perforations formed transversely therethrough, each perforation having a shoulder; a clasp arranged for endwise movement in each perforation and a spring disposed within each perforation and connected with said clasp and shoulder, for holding the legs of the corresponding clasp together.

857,830. WHEEL-RIM. FREDERICK K. RAND and WILLIAM R. HINES, Cleveland, Ohio. Filed Feb. 20, 1906. Serial No. 302,062.

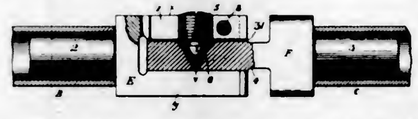


Claim.—1. A wheel rim comprising a felly having a series of tubular casings extending therethrough, plungers movable in and out in the casings, springs behind the plungers, adjusting plugs screwed into the inner ends of the casings against the springs, a rubber tire having a channeled metal ring thereunder which rests on the outer ends of the plungers, and retaining rings secured to each side of the felly and extending beside the tire.

2. A wheel rim having thereon a rubber tire provided on its inner side with a metal ring embedded therein, spring supported plungers bearing against said ring, and retaining rings secured to opposite sides of the wheel felly and extending out beside the tire and clamping the sides thereof against the ring, the retaining rings and tire having respectively a longitudinal groove and a rib fitting therein, on their adjacent surfaces.

3. A wheel rim having a series of spring supported radial plungers therein, a cushion tire mounted on the outer ends of the plungers and having embedded therein an inner ring of channeled metal against which the plungers bear.

857,831. PIVOT CONNECTION. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 7, 1901. Serial No. 77,777.



Claim.—1. A pivot connection comprising a bifurcated member, a member projecting thereinto, said members having a single pair of opposed, broad, flat bearing surfaces of substantially the same area, and a single pivot carried by the bifurcated member and projecting into a socket of the other member and engaging such member to one side of such flat bearing surfaces to hold said surfaces in engagement and maintain the said members in the same working plane and against torsional movement one relatively to the other and also acting as an axis for said members.

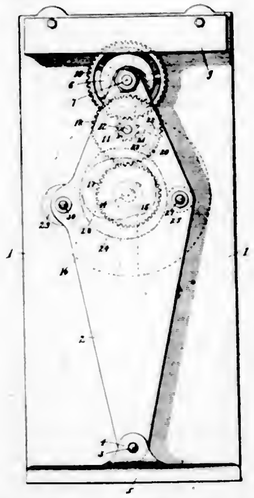
2. A pivot connection comprising a bifurcated member, a member projecting thereinto, said members having a single pair of opposed, broad flat bearing surfaces of substantially the same area, and a single conical pivot carried by the bifurcated member and projecting into a conical socket of the other member and engaging such member to one side of such flat bearing surface to hold said surfaces in engagement and maintain said members in the same working plane and against torsional movement one relatively to the other and also acting as an axis for said members.

3. The herein described pivot connection comprising a bifurcated member having one part thereof slotted, a member projecting into such bifurcated member, said members having a single pair of opposed, broad, flat bearing surfaces of substantially the same area, a single conical pivot threaded into one part of the bifurcated member and projecting into a conical socket of the other member and engaging such member to one side of such flat bearing surfaces to hold said flat surfaces in engagement and maintain said members in the same working plane and against torsional movement one relatively to the other and also acting as a pivot for said members, and a clamping screw projecting into said slotted part of the bifurcated member for locking said pivot screw in place.

857,832. MECHANICAL MOVEMENT. FRANCIS H. RICHARDS, Hartford, Conn. Filed Mar. 31, 1902. Serial No. 100,693.

Claim.—1. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks and means operatively connecting said driving shaft and carrier to effect a forward and backward movement of said carrier.

2. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank rotatably mounted in said support and driven from said driving shaft with its axis of rotation parallel to that of said driving shaft, a carrier mounted on said support for a forward and backward movement transversely of said driving shaft, a roll rotatably mounted on and carried by said carrier with its plane of rotation parallel to the path of movement of said carrier, a second crank mounted for rotation on said carrier with its axis parallel to that of said roll and connected with and to drive said roll, a link connecting said first and second cranks, and means operatively connecting said driving shaft and carrier to effect a forward and backward movement of said carrier.



3. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks and adapted to impart a complete rotation to the second crank from a full rotation of the first crank and means operatively connecting said driving shaft and said carrier to effect a forward and backward movement of said carrier within the limit of movement of said rotary-transmission link.

4. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks, and cam means operatively connecting said driving shaft and said carrier to effect a forward and backward movement of said carrier.

5. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks, and actuators mounted on said

driving shaft operatively connected with said carrier to effect a forward and backward movement of said carrier.

6. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks, and complemental cams on said driving shaft operatively connected with said carrier to effect a forward and backward movement of said carrier.

7. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks, cams on said driving shaft, and loose rolls upon said carrier engaging said cams to effect a forward and backward movement of said carrier.

8. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks, complemental cams on said driving shaft, and loose rollers on said carrier engaging said complemental cams to effect a forward and backward movement of said carrier.

9. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks and means driven from said driving shaft and operatively connected with said carrier organized to effect a forward and backward movement of said carrier developing during said backward movement velocities at the point of contact of the roll with its tangential path equivalent to the concurrent peripheral velocities of said roll.

10. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation in said carrier and connected with and to drive said roll, a link connecting said first and second cranks and cam means driven from said driving shaft and operatively connected with said carrier organized to effect a forward and backward movement of said carrier developing during said backward movement velocities at the point of contact of the roll with its tangential path equivalent to the concurrent peripheral velocity of said roll.

11. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted upon said support to oscillate transversely of said driving shaft, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks, and means operatively connecting said driving shaft and carrier to effect an oscillation of said carrier.

12. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support and driven from said driving shaft, a carrier mounted on said support to oscillate transversely of said driving shaft, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier and connected with and to drive said roll, a link connecting said first and second cranks, and means operatively connecting said driving shaft and said carrier to oscillate said carrier to a sufficiently limited extent to permit at all times the complete rotation of said second crank by said first crank.

13. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a crank mounted for rotation in said support, a gear train operatively connecting said driving shaft and said crank, a carrier mounted upon said support to oscillate transversely of said driving shaft, a roll rotatably mounted on and carried by said carrier, a second crank mounted for rotation on said carrier, a gear train operatively connecting said roll with said second crank, a link connecting said first and second cranks, complemental cams on said driving shaft and cam rolls on said carrier engaging said complemental cams, said complemental cams configured to effect a forward and backward movement of said carrier within limits permitting at all times the complete rotation of said second crank by said first crank and organized with said roll and connections described to effect a forward and backward movement of said roll developing during said backward movement velocities at the point of contact of the roll with its tangential path equivalent to the concurrent peripheral velocities of said roll.

14. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a carrier mounted on said support to oscillate transversely of said driving shaft, a roll rotatably mounted upon said carrier, a driving connection between said driving shaft and said roll, permitting the lateral oscillation of the axis of said roll relatively to said driving shaft and a cam on said driving shaft operatively engaging said carrier to effect an oscillation of said carrier.

15. In a mechanical movement, the combination of a stationary support, a driving shaft mounted in said support, a carrier mounted on said support to oscillate transversely of said driving shaft, a roll having rotation upon said carrier, a driving connection between said driving shaft and said roll permitting the lateral oscillation of the axis of said roll relatively to said driving shaft, a cam on said driving shaft operatively engaging said carrier to effect an oscillation of said carrier and organized to develop during the backward movement of said carrier velocities at the point of contact of said roll with its tangential path equivalent to the concurrent peripheral velocities of said roll.

16. In a mechanical movement, the combination of a support, a driving shaft mounted in said support, means mounted for rotation in said support and driven from said driving shaft, a carrier mounted for a forward and backward movement on said support, means rotatably mounted on and carried by said carrier, a crank mounted for rotation on said carrier and connected with said second mentioned means, a link connecting said first and second cranks and means operatively connecting said driving shaft and carrier to effect a forward and backward movement thereof.

17. In a mechanical movement, the combination with a support, of a carrier mounted for forward and backward movement on said support, means for imparting said movements thereto, a roll rotatably mounted on and carried by said carrier, and means for continuously rotating the roll with a tangential speed concurrent with the linear speed of the carrier in at least one of its said movements.

18. In a mechanical movement, the combination with a support, of a driving shaft mounted in said support, a carrier mounted for a forward and backward movement on said support, a roll rotatably mounted on and carried by said carrier, means operatively connecting the driving shaft to said roll, and complemental cams on said driving shaft operatively connected with said carrier formed and timed for effecting a forward and backward movement of said carrier relatively accelerated and retarded.

19. In a mechanical movement, the combination with a support, of a driving shaft mounted in said support, a carrier mounted for a forward and backward movement on said support, and connections between said driving shaft and carrier, embodying a roll rotatably mounted on and carried by said carrier and rotated by said driving shaft the relative timing of the said connections effecting a forward and a backward movement of said carrier and developing during said backward movement velocities at the point of contact of the roll with its tangential path equivalent to the concurrent peripheral velocity of said roll.

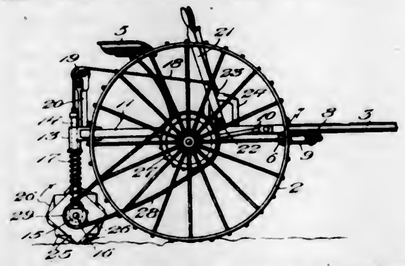
20. In a mechanical movement, the combination with a support, of a driving shaft mounted in said support, a carrier mounted on said support to oscillate transversely of said driving shaft, a roll rotatably mounted upon said carrier, a driving connection between said driving shaft and said roll permitting the lateral oscillation of the axis of said roll relatively to said driving shaft, and a cam on said driving shaft operatively engaging said carrier for effecting an accelerated and retarded oscillation of said carrier and justifying the variations in rotation of the roll incident to its oscillation relatively to the driving shaft.

21. In a mechanical movement, the combination with a stationary support, of a driving shaft mounted in said support, a carrier mounted on said support to oscillate transversely of said driving shaft, a rotary roll mounted upon said carrier, a driving connection between said driving shaft and said roll permitting the lateral oscillation of the axis of said roll relatively to said driving shaft, means actuated by the driving shaft for effecting an oscillation of said carrier and timed for developing during the backward movement of said carrier velocities at the point of contact of said roll with its tangential path equivalent to the concurrent peripheral velocities of said roll.

22. In a mechanical movement, the combination with a member and means for continuously forwardly rotating the same and for alternately moving the same perpendicularly of its axis of rotation for developing equivalent concurrent velocities in the periphery of the member in one direction and developing augmented velocities thereof in the opposite direction.

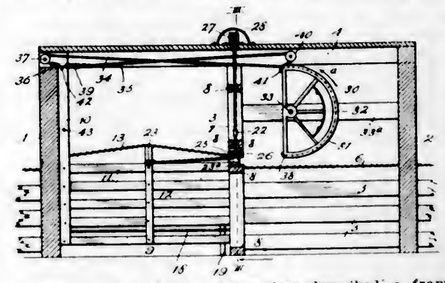
23. In a mechanical movement, the combination with a member, of means for continuously forwardly rotating the said member, means for moving said member along a path tangential thereto at the concurrent peripheral velocity thereof and back again, and comprising mechanism embodying an alternating member and a continuously forwardly rotating member carried by said alternating member, and means for simultaneously actuating these for producing motion of said alternating member in one direction at velocities coincident with the concurrent peripheral velocities of said rotating member and in the reverse direction.

857,833. WEED-CUTTER. THOMAS RICKETTS, Steele, Idaho. Filed Oct. 6, 1906. Serial No. 337,728.



Claim.—In a machine of the character described, vertically disposed shafts, a rotary cutter journaled in the ends of said shafts, springs surrounding said shafts to hold said cutter yieldingly upon the ground, cords secured to the upper ends of said shafts and passing over pulleys, brackets secured to the frame for supporting said pulleys, a lever to which said cords are secured, and a rack for holding said lever in position to raise the cutter from the ground.

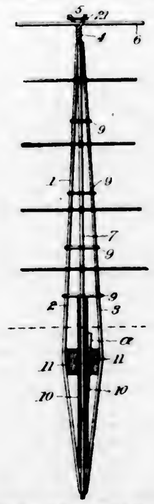
857,834. GATE. CHARLES E. RIFE, Kansas City, Kans., assignor of one-half to A. J. Murphy, Randolph, Mo. Filed Feb. 18, 1907. Serial No. 357,916.



Claim.—1. In a device of the class described, a frame including an intermediate post having an opening, a pair of guides located immediately above said opening, a pin secured to the gate and adapted to pass through said opening when the gate is opened or closed, cables for partly opening and closing said gate, which are attached to the pin and alternately engage the guides, means for conducting the cable in opposite directions from the gate, and means for completing the opening and closing movements of said gate.

2. In a device of the character described, a frame, a gate carried thereby, means for partly opening and closing said gate, a counterbalance rockingly mounted in the frame for completing the opening and closing movements of the gate, springs attached to the front end of the gate, cables attached to said counterbalance and the springs, and guide-pulleys over which said cables extend.

857,835. FENCE-POST. WELLS M. RUGGLES, Mellen, Wis. Filed Feb. 7, 1907. Serial No. 356,207.



Claim.—1. A fence post comprising inner and outer members, the inner member embracing the outer member at its upper and lower ends.

2. A fence post comprising inner and outer members, the outer member being composed of wire and bent inter-

mediate its ends with its upper ends twisted to provide a resilient upper end.

3. A fence post comprising a member formed of wire bent intermediate its ends and twisted together at its free end, an inner member sprung into engagement with the outer member, and a filling for the lower end of the post constituting a base.

4. A fence post comprising a member formed of wire bent intermediate its ends and twisted together at its free ends, an inner member sprung into engagement with the outer member, a filling for the lower end of the post constituting a base, and fence wire supporting elements removably secured to the post.

5. A fence post comprising a single piece of wire bent intermediate its ends and twisted together at its upper ends, and an inner member detachably fitted within the outer member.

6. A fence post comprising an inner and an outer member fitted together at opposite points, said members being flexible whereby they may yield only above the base line.

7. A fence post comprising an inner and an outer member fitted together at opposite points, one of said members being flexible whereby the post may yield only above the base line, and fence wire elements constructed for engagement with the post.

8. A resilient fence post comprising inner and outer members, a filling between the inner and outer members at their lower ends to form a base, and fence wire elements detachably mounted upon the fence post.

9. A resilient fence post including inner and outer members, a filling between the inner and outer members to form a base and to maintain its symmetry of proportion from the bottom to the top of the post.

10. A resilient fence post including inner and outer members, a filling between the inner and outer members to form a base and to maintain its symmetry of proportion from the bottom to the top of the post, and means for tensioning the post above the base line.

11. A resilient fence post composed of yieldable material, and means constructed to embrace the post, said means comprising elements of different size to correspond to the size of the post and adapted to render its base rigid to create a tension on the post from its top down to its base line.

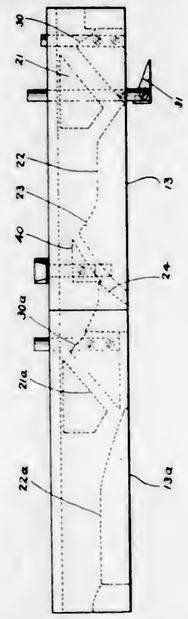
12. A resilient fence post constructed and arranged to provide a rigid base and a post portion embodying resiliency from its base line to its top to prevent breaking of the top strand wires attached thereto and stretched thereon on account of expansion and contraction of the wires incident to climatic conditions.

13. A fence post including a base portion and a post portion, the post portion including a member formed of a single piece of flexible material bent intermediate its ends with portions thereof near its free ends twisted together and terminating in a seat above the twisted portions.

14. A fence post including a base portion and a post portion, the post portion including a member formed of a single piece of flexible material bent intermediate its ends with portions thereof near its free ends twisted together and terminating in a seat above the twisted portions, and an inner member fitted within the aforesaid member.

857,836. CIRCULAR INDEPENDENT-NEEDLE KNITTING-MACHINE. CHARLES A. SANTMYERS, Philadelphia, Pa., assignor to Louis F. Liveright and Ellis Davidson, Philadelphia, Pa. Filed July 25, 1906. Serial No. 327,619.

Claim.—1. In a knitting machine, the combination with the knitting cylinder and the regular, tuck-stitch and drop-stitch needles, of the cam cylinder, the lace cam adapted when elevated, but not when depressed, to lift the tuck stitch needles a distance sufficient to cause their latches to clear their loops, the stitch cam, the clearing cam adapted to lift the drop stitch needles to cause their latches to clear their loops, cam devices adapted to thereafter withdraw said needles from action, a reinstating cam adapted to restore the needles thus rendered inactive into working position, means to render said cam devices inoperative to withdraw said needles, and means to depress the lace cam and to move said reinstating cam into inoperative position.



2. In a knitting machine, the combination with the knitting cylinder and the regular, tuck stitch and drop-stitch needles, of the cam cylinder, the lace cam adapted when elevated, but not when depressed, to lift the tuck-stitch needles a distance sufficient to cause their latches to clear their loops, the stitch cam, the clearing cam adapted to lift the drop stitch needles to cause their latches to clear their loops, the withdrawal cam, the deflecting cam adapted when depressed to engage the drop-stitch needles and move them into position to be acted upon by the withdrawal cam, the reinstating cam adapted when elevated to be moved into position to be engaged by the inactive drop-stitch needles and restore the latter to operative position, and means to elevate and depress the lace cam, reinstating cam and deflecting cam.

3. In a knitting machine, the combination with the knitting cylinder and the regular needles, the tuck-stitch needles having long latches and the drop-stitch needles having short latches and long butts, of the cam cylinder, the lace cam adapted to elevate all the needles but when depressed to lift the tuck-stitch needles a distance insufficient to cause their latches to clear their loops, the stitch cam, the clearing cam adapted to lift the drop-stitch needles to cause their latches to clear their loops, the withdrawal cam, the deflecting cam adapted when depressed to engage the long butts of the drop-stitch needles and move them into position to be acted upon by the withdrawal cam, the reinstating cam adapted when elevated to be moved into position to be engaged by the inactive drop-stitch needles and restore the latter to operative position, and means to elevate and depress the lace cam, reinstating cam and deflecting cam.

4. In a knitting machine, the combination with the knitting cylinder and the regular needles, the tuck-stitch needles having long latches, and the drop-stitch needles having short latches and long butts, of the cam cylinder, the lace cam adapted to elevate all the needles, means to depress the lace cam thereby causing it to lift the tuck stitch needles a distance less than that required to cause their latches to clear their loops, the stitch cam in advance of the lace cam, the guide cam in advance of the stitch cam, the clearing cam adapted to lift the drop-stitch needles to cause their latches to clear their loops, the deflecting cam adapted to engage the long butts of the drop-stitch needles, the withdrawal cam, means to depress the deflecting cam in line with the withdrawal cam, thereby causing the drop-stitch needles to be withdrawn from operation, the reinstating cam connected with the lace cam so as to move therewith and adapted, when elevated, to be moved in line with the guide cam and in position to be engaged by the inactive drop-stitch needles whereby the latter are caused to be moved into operative position, and means to elevate the lace cam and the deflecting cam.

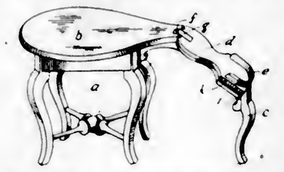
5. In a knitting machine, the combination with the knitting cylinder and the tuck-stitch and drop-stitch needles, of the cam cylinder, the lace cam adapted when elevated, but not when depressed, to lift the tuck-stitch needles a distance sufficient to cause their latches to clear their loops, the stitch cam, cam devices adapted to disengage the drop-stitch needles from their loops and withdraw them from action, a reinstating cam adapted, when elevated, but not when depressed, to restore the needles thus rendered inactive into working position, means connecting said lace cam and reinstating cam and causing them to move in unison, and devices actuating said means, thereby reinstating the drop-stitch needles when the tuck-stitch needles operate as regular needles and causing the drop-stitch needles to remain out of action when the tuck-stitch needles are operating to form tuck stitching.

6. In a knitting machine, the combination with the knitting cylinder and the tuck-stitch and drop-stitch needles, of the cam cylinder, the lace cam adapted when elevated, but not when depressed, to lift the tuck-stitch needles a distance sufficient to cause their latches to clear their loops, the stitch cam, cam devices adapted to disengage the drop-stitch needles from their loops and withdraw them from action, a reinstating cam adapted, when elevated, but not when depressed, to restore the needles thus rendered inactive into working position, pins, one secured to the lace cam and the other secured to both the lace cam and the reinstating cam, a third pin connected to one of the first mentioned pins, a spring normally upholding one of said pins thereby elevating the two last named cams, an arm, secured to the third pin, having a beveled face, and a lever adapted, when operated, to engage said beveled face and depress the third pin, thereby depressing the two last-named cams.

7. In a knitting machine, the combination with the knitting cylinder and the tuck-stitch and drop-stitch needles, of the cam cylinder adapted when elevated, but not when depressed, to lift the tuck stitch needles a distance sufficient to cause their latches to clear their loops, the stitch cam, the clearing cam adapted to lift the drop-stitch needles to cause their latches to clear their loops, the deflecting cam adapted when depressed to engage the drop stitch needles and move them into inoperative position, a reinstating-cam adapted, when elevated, but not when depressed, to restore the inactive drop-stitch needles into working position, a pin connected with both the lace cam and reinstating cam, a pin connected to the deflecting cam, levers adapted to be actuated to positively actuate said pins respectively, pattern mechanism and devices actuated by the pattern mechanism to actuate said levers.

857,837. SHOE-FITTING APPLIANCE. CHRISTIAN W. SCHELL, Cleveland, Ohio, assignor of one-half to William C. Taylor, Cleveland, Ohio. Filed Mar. 16, 1906. Serial No. 306,351.

Claim.—1. In an appliance of the class described, the combination with a support for the measured foot, of an abutment thereon, a scale of sizes and its co-acting indicator, in association with a movable measuring-stick, a folding stop adapted to be brought into engagement with the measured foot the support being suitably recessed normally to receive said folding-stop and a connection between said measuring-stick and the scale and indicator, whereby the correct size of the measured foot is at once designated upon the scale, substantially as set forth.



2. In an appliance of the class described, the combination with a stool or support for the user, of an angularly-positioned support for the measured foot attached thereto, a movable measuring-stick or part, a stop thereon, and a rigid abutment, between which the measured foot is adapted to be supported, a scale of sizes conveniently positioned to be read by the user, and a traveling indicator-part associated therewith, and with the measuring-stick adapted directly to designate the size or length of the measured foot, substantially as set forth.

3. In a foot-measuring appliance, the combination with a stool or support for the user, of an angularly positioned foot-rest and measuring appliance mounted at one side thereof, comprising a foot-rest, an abutment thereon for engaging the heel of the measured foot, a movable measuring-part provided with a stop for forwardly engaging the measured foot but adapted to be folded out of the way, a scale of sizes and a pointer connected with said measuring-part and adapted to travel over said scale, whereby the correct size is accurately indicated, substantially as set forth.

4. In a foot-measuring appliance, the combination with an angularly-mounted foot-form or support, of a measuring-stick movably mounted beneath the supporting-face thereof, a stop or upright carried thereon and normally folding into a recess provided in said foot-form, a scale and an indicator or pointer connected with said measuring-part and adapted to be moved thereby over said scale at the side of said foot-form to indicate the size of the measured foot, substantially as set forth.

5. In a shoe-fitting appliance of the class described, the combination with a stool or support for the user, of an angularly-positioned foot-form mounted thereon, a measuring-stick movably mounted beneath the supporting-face of said foot-form and provided with a stop or upright for engaging the measured foot; said stop normally folding out of the way, a conveniently positioned scale and an indicator connected with said measuring-part and caused to travel over said scale to indicate the correct size of a measured foot, substantially as set forth.

6. In a shoe-fitting appliance, the combination with a supporting-stool for the user; the same being equipped with an extension, a foot-form or support carried between said stool and extension, an abutment for engaging the heel of the measured foot, a movable measuring-stick disposed beneath the supporting-face of the foot-form, a stop or upright, hinged thereon; the foot-form being provided with a recess normally accommodating said stop, a scale of sizes conveniently positioned to be viewed by the user from the stool and a traveling pointer or indicator carried by the measuring-stick and caused to travel over said scale for indicating the size of a measured foot, substantially as set forth.

857,838. SPECTACLES, MOTOR-GOGGLES, AND THE LIKE. FREDERICK G. SHAW, London, England. Filed July 27, 1906. Serial No. 328,104.

Claim.—1. The combination with a pair of spectacles provided with side bars, of links secured to said side bars and means for pivoting said links to an article of head apparel whereby said links will move in a plane substantially

perpendicular to the article of head apparel, substantially as described.



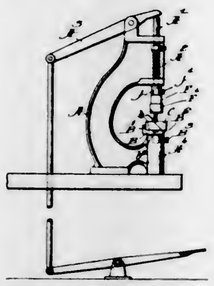
2. The combination with a pair of spectacles provided with side bars, of links secured to said side bars and means for detachably pivoting said links to an article of head apparel whereby said links will move in a plane substantially perpendicular to the article of head apparel, substantially as described.

3. The combination with a pair of spectacles provided with side bars, of links detachably secured to said side bars and means for pivotally securing said links to an article of head apparel whereby said links will move in a plane substantially perpendicular to the article of head apparel, substantially as described.

4. The combination with a pair of spectacles of the kind described provided with side bars, of links secured at one end to said side bars, and provided at their other end with an orifice, headed screws having shanks adapted to be forced through an article of head apparel and adapted to be inserted in the orifices in said links and nuts adapted to be screwed onto the ends of said shanks of said headed screws substantially as described.

5. The combination with a pair of spectacles of the kind described provided with side bars, of links, each of said links being provided at one end with a hinged member adapted to clamp said side bars of said spectacles to said links, means for retaining said hinged members of said links in engagement with said side bars and means for pivotally securing the other end of each of said links to an article of head apparel, substantially as described.

857,839. MACHINE FOR INSERTING ORNAMENTS. THOMAS L. SHERMAN, Boston, Mass., assignor to The Standard Rivet Company, Boston, Mass., a Corporation of New Hampshire. Filed Jan. 16, 1905. Serial No. 241,254.

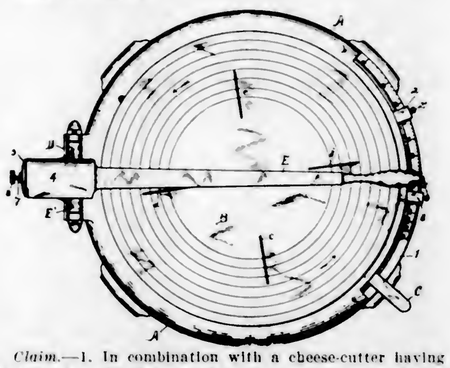


Claim.—1. In apparatus of the class described, a holder having a plurality of pockets to receive a plurality of ornaments, and grooved longitudinally at its lower side for the reception of stock into which the ornaments are to be set.

2. In apparatus of the class described, a holder having a plurality of pockets to receive a plurality of ornaments, said holder being grooved longitudinally at its under side to receive the stock in which the ornaments are to be set the side walls of the groove positioning the side edges of the stock.

3. In apparatus of the class described, a holder having a plurality of pockets to receive a plurality of ornaments, said holder being grooved longitudinally at its under side to receive the leather strip in which the ornaments are to be set, and a gage for the end of said strip.

857,840. COMPUTING CHEESE-CUTTER. JOHN A. SHUTZ and MADISON L. KIRKMAN, Richmond, Ind., assignors to Standard Pattern & Manufacturing Company, Richmond, Ind., a Corporation. Filed Feb. 28, 1907. Serial No. 359,834.



Claim.—1. In combination with a cheese-cutter having a table adapted to be rotated step-by-step by means of a lever, a scale-bar containing thereon a single series of graduations of constantly varying distances apart certain of which are indicated by characters, a half-pound stop adapted to be secured to the scale-bar, a second stop adapted to be secured to the scale-bar, a computer for determining by the weight and price per pound of a particular cheese the points where said stops should be secured to the scale-bar in order to gage the movements of said lever to produce the results desired, all substantially as set forth and for the purposes specified.

2. In a cheese-cutter, the combination, a revoluble table, a lever for actuating the table, a scale-bar over which said lever operates, stops for limiting the movements of the lever, said stops being secured on the scale-bar according to the weight, and the value per pound, of the cheese to be operated upon by the cutter, and a computer for determining the points where said stops should be secured, all substantially as set forth.

3. In a cheese-cutter, the combination, a revoluble table, means for actuating the table by a lever, a scale-bar over which the lever operates, a stop securable to the scale-bar according to the weight of a cheese in half-pounds, a second stop securable to the scale-bar according to the value of the cheese in twentieths of a dollar, and a computer for determining the points where said stops should be set according to a particular cheese.

4. In a cheese cutting device for dividing cheese into predetermined parts, a rotatable table, a lever for actuating the table, a scale-bar, stops for limiting the movements of the lever in one direction over the scale-bar, a computer independent of the scale-bar, for determining the location of said stops according to the total weight of a cheese and the price per pound for which it is to be sold, whereby the operation of the lever will space the cheese into fractions of a pound or fractions of a dollar's worth.

5. In a cheese-cutter, the combination of a rotary table for cheese of various weights, a lever for actuating said table, a scale-bar in connection with said lever and having graduations thereon, stops for limiting the movements of said lever whereby the cheese may be turned to be divided into either half-pound or five-cent cuts, an independent computer for determining where said stops should be set according to the weight and value per pound of the cheese which is contained on the table, all substantially as shown and described.

6. In combination with a cheese-cutter or the like, a computer comprising a cylinder containing thereround columns of figures, the first column having figures denoting total weight of cheeses, the second column having figures denoting the number of half-pounds into which the weight opposite thereto in the first column may be divided, a plurality of other columns having figures denoting the number of pieces of a certain money value a cheese may be divided into according to the weight given in the first column and the price per pound at which the cheese is to be sold, and a dial for said computer providing indicator for each of said columns on the cylinder, all substantially as shown and described.

7. In combination with a cheese-cutter having a lever for rotating the cheese, a scale-bar having a single scale thereon, a plurality of adjustable stops mounted on the scale-bar to limit the operation of said lever, and a computer for determining where said stops should be set according to the weight and the price per pound of a particular cheese, all substantially as shown and described.

8. In combination with a cheese-cutter having a lever for rotating a cheese, a single scale in connection with said lever, two independent stops each adapted to be secured over said scale to limit the operation of said lever in one direction, and means for computing the points for setting said stops according to the weight of a cheese and the price per pound at which it is to be sold.

9. In combination with a cheese-cutter having a lever for turning a cheese step-by-step, a scale formed in the arc of a circle for said lever to operate over, stops adapted to be adjusted over said scale a computer, independent of said lever and scale, having indices which are adapted to be brought into registering alinement with each other according to the total weight of a particular cheese and the price per pound at which the cheese is to be sold, which indices correspond to certain indices of said scale to denote the points where the stops should be set for a particular cheese as determined by said computer.

10. In combination with a cheese-cutter having a lever for turning a cheese, a single scale in conjunction with said lever, two independent stops adjustably mounted on said scale, means for allowing the lever to pass over one of said stops to engage the second stop beyond which it can not pass, a computer independent of the above for determining two distinct factors depending on the total weight of a cheese and the price per pound for which it is to be sold which factors denote the points where said stops should be secured on said scale.

857,841. APPARATUS FOR PRODUCING ICE. DUDLEY D. SPRAGUE, California, and PEARLEY J. SPRAGUE, Gashland, Mo.; said Dudley D. Sprague assignor to Sprague Ice Company, California, Mo. Filed June 16, 1906. Serial No. 322,038.

Claim.—1. In an apparatus for producing ice, the combination of a sprinkler, a pipe for conducting water or steam thereto a valve for controlling the flow of water or steam through said pipe, a force-pump to which said pipe is connected, an overflow-pipe communicating with the first-mentioned pipe, and a valve for controlling the flow of water through said overflow-pipe.

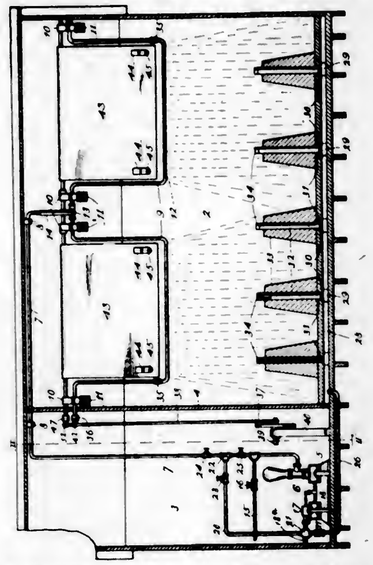
2. In an apparatus for producing ice, the combination with an inclosure, of a sprinkler for discharging water therein, ducts arranged at the bottom of the inclosure, means for conducting a heating agent to said ducts, and steam-pipes adapted to be placed in communication with the ducts, for the purpose described.

3. In an apparatus for producing ice, a vibratory sprinkler, a fan arranged adjacent thereto, means for connecting said fan to the sprinkler so that it will vibrate therewith, and means for vibrating said fan independently of the sprinkler.

4. In an apparatus for producing ice, the combination of sprinklers 9, a force pump 6, a conducting pipe connecting the sprinklers with the force pump, a by-pass pipe 20, communicating with the conducting pipe, an overflow pipe 15 also communicating with the conducting pipe, a valve 25, a valve 16, and steam valves 23 and 24, arranged and operated as shown and described.

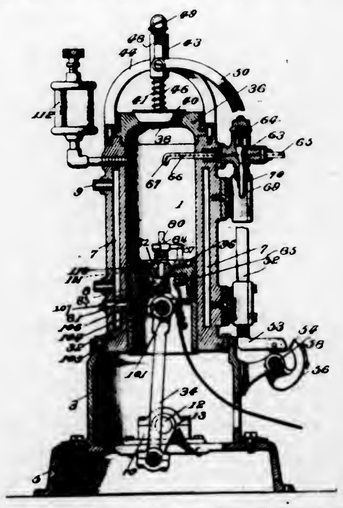
5. In an apparatus for producing ice, in combination, a vibratory sprinkler, a pipe for conducting water thereto, means for forcing water through said pipe, means for regulating the flow of water through said pipe, a fan, and clips for connecting said fan to the sprinkler.

6. In an apparatus for producing ice, a vibratory sprinkler, a fan arranged adjacent thereto, means for connecting said fan to the sprinkler so that it will vibrate therewith, and means for varying the sweep of the sprinkler.



7. In an apparatus for producing ice, a vibratory sprinkler, a fan arranged adjacent thereto, means which connect said fan to the sprinkler so that it will vibrate therewith, and columns arranged beneath the sprinkler to receive a portion of the spray discharged therefrom.

857,842. ENGINE. JOHN M. STADEL, Wilmington, Del., assignor of one-half to Jacob C. Lowrey, Wilmington, Del. Filed Nov. 2, 1904. Serial No. 231,124.



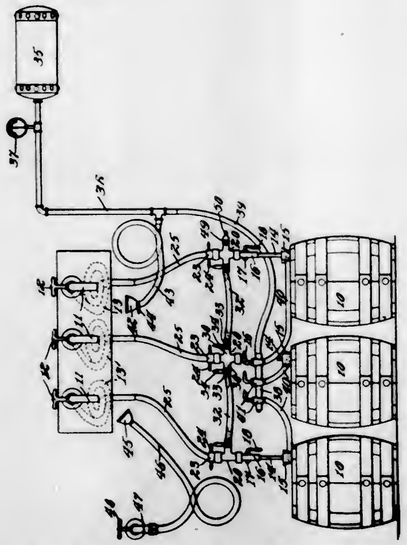
Claim.—1. In an engine, a working piston, a cylinder therefor having a fuel supply and an exhaust port near one end, a valve for said fuel supply, an igniter arranged to ignite the fuel when the piston is near the opposite end,

a valve controlling said exhaust port, means operating from the crank shaft for opening the valve supplying the fuel, and means for closing the exhaust valve immediately after the ignition and expulsion of the gases, said valve afterward opening to permit the entrance of a new supply of air, substantially as described.

2. In an engine, a working piston, a cylinder therefor having a fuel supply and an exhaust port near one end, a valve for said fuel supply, an igniter arranged to ignite the fuel when the piston is near the opposite end, a valve controlling said exhaust port, means operating from the crank shaft for opening the valve supplying the fuel, and means comprising a cam permitting the exhaust valve to close immediately after the ignition and expulsion of the gases, said cam afterward opening said exhaust valve to permit the entrance of a new supply of air, substantially as described.

3. In an engine, a working piston and its piston rod, a cylinder therefor having a fuel supply and an exhaust port near one end, a valve for said fuel supply, an igniter arranged to ignite the fuel when the piston is near the opposite end, said igniter having its circuit made and broken by the movement of the said piston rod, a valve controlling said exhaust port, and means operating from the crank shaft for opening the valve supplying the fuel and means for closing the exhaust valve immediately after the ignition and expulsion of the gases, said valve afterward opening to permit the entrance of a new supply of air, substantially as described.

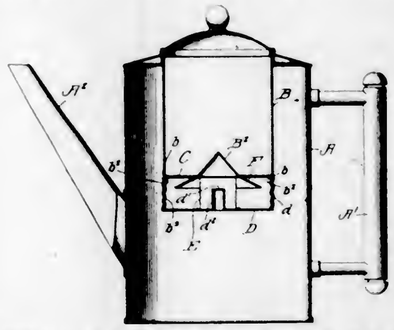
857,843. BEER-SERVICE APPARATUS. WILLIAM F. STARK, New York, N. Y., assignor of one-half to James English, New Haven, Conn. Filed Jan. 22, 1906. Serial No. 297,186.



Claim.—1. The beer service apparatus comprising a series of casks, a series of dispensing faucets, direct connection from the casks to the respective faucets and embodying valve controlled draw tubes and flexible hose, permanently attached flexible valve controlled connections coupling together the several cask-and-faucet connections each at a point between the hose and draw tube, a source of compressed air supply having connections with the respective casks, a slip joint connection for the faucet from the source of air supply, a source of water supply, and slip joint connection for the faucet from the source of water supply.

2. The beer service apparatus comprising a series of casks, a series of dispensing faucets, valve controlled draw tubes for entrance into the casks, piping directly connecting the faucets with the draw tubes and embodying flexible hose adjacent to the draw tubes, permanently attached valve controlled connections connecting the flexible hose adjacent to the draw tubes, a source of compressed air supply, means for conecting the source of air supply with the respective casks, means for connecting the source of air supply with a selected faucet, a source of water supply, and means for connecting this with a selected faucet.

857,844. COFFEE-POT. ALBERT H. STEBBINS, Little Rock, Ark. Filed May 11, 1906. Serial No. 316,241.



Claim.—1. In a coffee pot, the combination of a body, a drip reservoir fitted therein, a screen support comprising a ring section and a cone section and ribs or arms connecting said sections, said screen support as a whole being removable, a screen on said screen support and through which the leaching liquid passes, and a cup disposed below the screen and having a raised outlet for the leaching liquid.

2. In a coffee pot, the combination of a body, a drip reservoir fitted therein, a screen support comprising a cone section, a rim section, ribs or arms connecting said sections, wings attached to and extending below said support, a screen lying upon said support and surrounding the base of said cone section and a cup disposed below the screen and having a raised outlet for the leaching liquid.

3. In a coffee pot, the combination of a body, a drip reservoir fitted therein, a removable screen support having a cone centrally thereof and projecting into the drip reservoir, a removable screen resting on said support and surrounding the base of said cone, wings projecting from the screen support below said screen, and a cup disposed below the screen and having a raised outlet for the leaching liquid.

4. In a coffee pot, the combination of a body, a drip reservoir fitted therein, a screen support fitted in said reservoir, said screen support comprising a rim section, a cone section, ribs or arms connecting said rim and the base of said cone section, wing sections depending from said screen support, a vertical screen secured to the bottom of said cone section, a screen lying upon said support and surrounding the base of said cone section and a cup removably secured to the base of said reservoir, said cup having a raised overflow opening for the leaching liquid.

5. In a coffee pot, the combination of a body, a drip reservoir fitted therein, a bead on the interior of said reservoir, a removable screen support resting on said bead, said screen support comprising a rim section, a cone section, ribs or arms connecting said rim and the base of said cone sections, wings depending from said support, a vertical tubular screen depending from the bottom of said cone section and lying within said wings and a cup secured below said screen and provided with a raised outlet for the leaching liquid.

6. In a coffee pot, the combination of a body, a drip

reservoir fitted therein, a bead on the interior of said reservoir, a removable screen support resting on said bead, said screen support comprising a rim section, a cone section, ribs or arms connecting said rim and the base of said cone sections, wings depending from said support, a vertical tubular screen depending from the bottom of said cone section and lying within said wings and a cup secured below said screen and provided with a raised outlet for the leaching liquid, said raised outlet lying within said depending screen and the bottom of said cup contacting with the lower edge of said screen.

857,845. JOURNAL-BEARING AND PROCESS OF MAKING SAME. DAVID H. STEWART, Pittsburg, Pa. Filed Sept. 15, 1905. Serial No. 278,616.

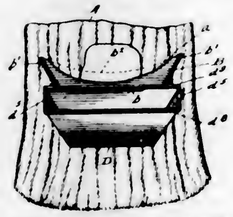


Claim.—1. A process of producing journal bearings, which consists of reducing a suitable anti-friction bearing metal into a shredded form, immersing the same in its shredded state in water, then coating same with graphite or other like lubricant and then compressing the moist and lubricant coated mass into a suitable receiver, as set forth.

2. A journal bearing comprising a hard metal shell, members of bearing metal detachably mounted over the lower ends of the hard metal shell and a bearing metal composition held in the shell and between the detachable bearing members, substantially as shown and described.

3. The combination in a journal bearing of the character described, with a hard metal shell; of a bearing metal member adapted to detachably fit over the lower side and end edges of the shell, said member having internal inwardly beveled flanges and a composition consisting of a highly compressed graphite coated shredded mass, held within the shell and the detachable bearing frame substantially as shown and described.

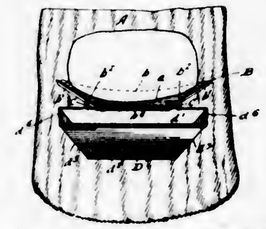
857,846. SHEET-METAL SAP RECEPTACLE OR VESSEL. CHARLES STOLLBERG, Toledo, Ohio, assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 8, 1907. Serial No. 356,296.



Claim.—A one piece sheet metal receptacle having integral bottom sides, ends and angle folds, the angle folds having integral locking lips turned over the upper edge of the receptacle, substantially as specified.

857,847. SAP-RECEIVING APRON AND RECEPTACLE. CHAS. STOLLBERG, Toledo, Ohio, and ERNEST R. PHILIP, Atlanta, Ga., assignors to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 14, 1907. Serial No. 362,292.

Claim.—1. In a sheet metal sap receiving receptacle and apron, the combination with a removable sap receiving receptacle furnished with supporting hangers, of an apron having at its outer end upwardly projecting divergent integral flanges provided with open slots therein for receiving the hangers, the lower portion of apron projecting between and under the hangers substantially as specified.



2. In a sheet metal sap receiving receptacle and apron, the combination with a sap receiving receptacle having wire supporting hangers secured to its inner side at the upper edge thereof, of an apron having upwardly projecting divergent integral flanges at its outer ends provided with integral hooks for receiving the hangers on the receptacle, substantially as specified.

3. The combination of a long, narrow, deep one piece sheet metal sap receptacle, provided with oppositely turned hangers on its inner side, of an apron having at its outer ends upwardly projecting flanges fitting between said hangers and furnished with slots to engage the same, substantially as specified.

4. The combination with a sheet metal sap receptacle having integral bottom, sides, ends and angle folds and furnished at the upper edge of its inner side with an outwardly curved flange embracing the wire hanger, of a wire hanger embraced at its body portion by said flange and having oppositely turned or facing hanger arms and an apron having at its outer ends upturned divergent flanges furnished with hooks fitting between and engaging the hanger arms, substantially as specified.

5. A one piece sheet metal sap receptacle having integral bottom, sides, ends and angle folds and locking lips folded over the angle folds, one of the upright longitudinal sides being substantially at right angles to the bottom, and the other flaring, substantially as specified.

6. A one piece sheet metal sap receptacle having integral bottom, sides, ends and angle folds and locking lips folded over the angle folds, one of the upright longitudinal sides being substantially at right angles to the bottom, and the other flaring, said receptacle being provided with hangers for supporting it, substantially as specified.

7. The combination with a sap collecting apron having divergent upturned end flanges provided with notches, of a removable sap receptacle having hangers fitting in the notches of the apron flanges, substantially as specified.

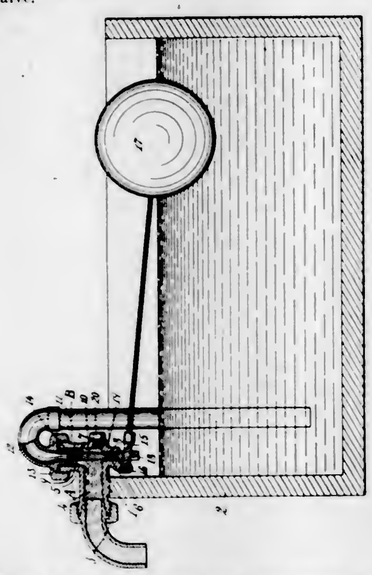
8. The combination with a sap collecting apron having divergent upturned end flanges provided with notches, of a removable sap receptacle having hangers fitting in the notches of the apron flanges, the lower portion or mouth of the apron projecting between and under the hangers, substantially as specified.

9. The combination with a sap collecting apron having divergent upturned flanges provided with notches, of a removable sap receptacle having hangers fitting in the notches of the apron flanges, the lower portion or mouth of the apron projecting between and under the hangers and over the upper edge of the receptacle, substantially as specified.

857,848. VALVE. GEORGE J. THOMAS, Watertown, Mass., assignor to Charles E. Chester, Boston, Mass. Filed June 26, 1906. Serial No. 323,486.

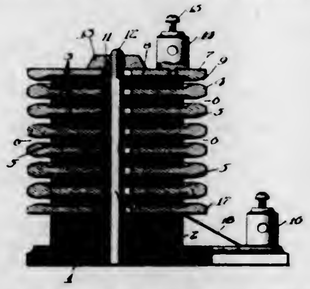
Claim.—1. In a valve, a casing having an inlet passage, two passages of different areas and at right angles to the inlet passage the larger passage forming the outlet passage of the casing, pistons in the latter passages of different areas, both acted upon by pressure within said casing, a piston rod connecting said pistons, a valve within

the larger passage carried by the larger piston normally held upon its seat by excess of pressure upon the larger piston, a seat for said valve, and means to allow of the withdrawal of the valve from its seat when desired to open the valve.



2. In a valve, a casing having an inlet passage, two passages of different areas and at right angles to the inlet passage the larger passage forming the outlet passage of the casing, pistons in the latter passages of different areas, both acted upon by pressure within said casing, a piston rod connecting said pistons, a valve within the larger passage carried by the larger piston normally held upon its seat by the excess of pressure upon the larger piston, a seat for said valve, a float rod fulcrumed to said casing and engaging said piston rod, and a float on the free end of said rod, whereby the valve is withdrawn from its seat or allowed to be seated dependent upon the position of said float.

857,849. LIGHTNING-ARRESTER. JOSEPH V. E. TITUS, Keokuk, Iowa, assignor to Electric Service Supplies Company, Philadelphia, Pa., a Corporation of New Jersey. Filed Oct. 20, 1904. Serial No. 229,296.



Claim.—1. In a lightning arrester, the combination with a plurality of plates arranged to have spark gaps formed between the same, of a layer of resistance material arranged between each of said plates out of the path formed by said gaps, and electrically connecting the same.

2. In a lightning arrester, the combination with a plurality of superimposed plates of conducting material having spark gaps formed between a portion thereof, of layers of resistance material interposed between said plates, and electrically connecting the same.

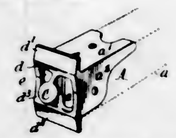
3. In a lightning arrester, the combination with a plurality of circular plates having annular beads formed on the periphery thereof, and arranged to have spark gaps formed between said beads, of layers of resistance material interposed between said plates and electrically connecting the same.

4. In a lightning arrester, the combination with a plurality of plates having spark gaps formed between a portion thereof, a layer of non-conducting material arranged between two of said plates, and layers of resistance material arranged between the remaining plates, and electrically connecting the same.

5. In a lightning arrester, the combination with a plurality of plates having spark gaps arranged between a portion thereof, of layers of resistance material interposed between said plates and electrically connecting the same, one of said plates being arranged in closer proximity to its neighbor than the remainder.

6. In a lightning arrester, the combination with a plurality of contacts having air gaps formed between the same, one of said gaps being smaller than the remainder and a resistance shunt extending around all but the smaller of said air gaps.

857,850. CORNER-FASTENING FOR BEDSTEADS. CHARLES VALLONE, Buffalo, N. Y., assignor to Barcalo Manufacturing Company, Buffalo, N. Y. Filed Feb. 7, 1907. Serial No. 356,153.



Claim.—1. In a corner fastening, the combination of a member having a headed stud and bearing surfaces facing the head of said stud and located above and below the center of the stud, and a second member having a slot to receive said stud, an internal straight bearing surface at the side of said slot for the head of said stud, and upper and lower external inclined bearing surfaces to co-operate with the upper and lower bearing surfaces of the first member, substantially as set forth.

2. In a corner fastening, the combination of a member having a headed stud and inclined bearing surfaces facing the head of said stud and located above and below the center of the stud, and a second member having a slot to receive said stud, internal straight bearing surfaces at the opposite sides of said slot for the head of said stud, and upper and lower external inclined bearing surfaces separated by a depression, substantially as set forth.

3. In a corner fastening, the combination of a member having a slotted wall with internal bearing surfaces at opposite sides of said slot and upper and lower external inclined bearing surfaces, and a co-operating member having a wall with upper and lower external bearing surfaces separated by a depression, and a headed stud to enter said slot of the first member, substantially as set forth.

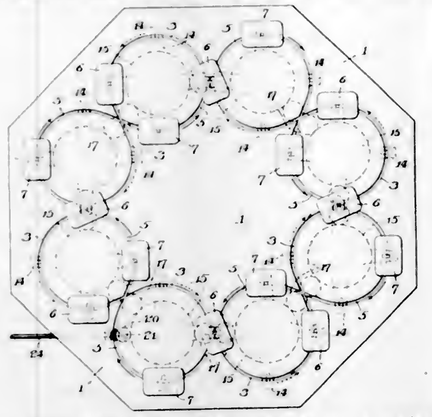
4. In a reversible corner fastening, the combination of a member having a slotted wall with internal bearing surfaces at opposite sides of said slot and upper and lower external inclined bearing surfaces, and a co-operating member having a headed stud to enter the slot of said other member and bear against said internal bearing surfaces, and a wall with salient bearing surfaces above and below the center of said stud, substantially as set forth.

5. In a reversible corner fastening, the combination of a member having a slotted wall with internal bearing surfaces at opposite sides of said slot and upper and lower external inclined bearing surfaces, and a co-operating member having a headed stud to enter the slot of said other member and bear against said internal bearing surfaces, and a wall with four inclined bearing surfaces, two of which incline in one direction and two in the opposite direction, substantially as set forth.

6. In a corner fastening, the combination of a member having a slotted wall with straight internal bearing surfaces at opposite sides of said slot and separated upper and lower external bearing surfaces, and a co-operating member having a wall with upper and lower inclined bearing surfaces separated by a depression, and a headed stud which enters said first member and has straight faces to bear on the straight internal bearing surfaces of said first member, substantially as set forth.

857,851. AMUSEMENT DEVICE. JAMES P. WETHERILL, Chester, Pa. Filed Oct. 31, 1905. Serial No. 285,328.

Claim.—1. In an amusement device, the combination of



a platform provided with a sinuous guide slot, a carriage above the platform, members pivotally connected to the carriage and carrying rollers adapted to support the carriage upon the platform, a guiding member depending from the carriage and through the slot, said member being of a length greater than the width of the slot, and means for moving the carriage.

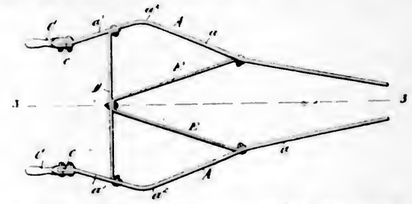
2. In an amusement device, the combination of a platform provided with a sinuous guide slot, a carriage mounted on the platform, a guiding member depending from the carriage and through the slot, gear wheels provided with means adapted to engage said member to move the carriage, and a pair of coacting pinions between each two adjacent gear wheels to transmit power from one to the other.

3. In an amusement device, the combination of a platform provided with a sinuous guide slot, a carriage above the platform, members pivotally connected to the carriage laterally of said slot, rollers on said members, and resting upon the platform away from the slot therein, a guiding member depending from the carriage and through the slot, said guiding member being of a length greater than the width of the slot, and means for moving the carriage.

4. In an amusement device, the combination of a platform provided with a sinuous guide slot, a carriage above the platform, members pivotally connected to the carriage laterally of said slot, rollers on said members and resting upon the platform away from the slot therein, said rollers being arranged rearwardly of the pivotal connection of the members with the carriage, a guiding member depending from the carriage and through the slot, said guiding member being of a length greater than the width of the slot, and means for moving the carriage.

857,852. PLOW. GEORGE WIARD, Batavia, N. Y., assignor to Wiard Plow Company, Batavia, N. Y. Filed Oct. 3, 1904. Serial No. 226,897.

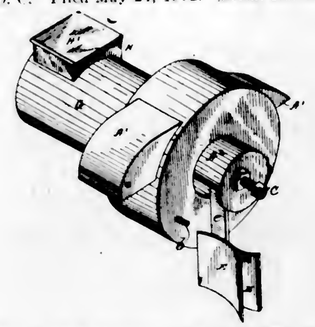
Claim.—1. A plow comprising handle bars which diverge from the handles forwardly to points located laterally further than the handles and converging from these points forwardly to the standard, substantially as set forth.



2. In a plow, the combination of handle bars comprising forwardly converging main portions and rearwardly converging rear portions, handles at the rear ends of said rear portions, and a cross brace connecting said rear portions in rear of their junctions with said main portions, substantially as set forth.

3. In a plow, the combination of handle bars comprising forwardly converging main portions and rearwardly converging rear portions, handles at the rear ends of said rear portions, a cross brace connecting said rear portions in rear of their junctions with said main portions, and forwardly diverging braces extending from said cross brace to said front portions in front of said junctions, substantially as set forth.

857,853. VENTILATOR. GILBERT F. WILLIAMS, Washington, D. C. Filed May 24, 1902. Serial No. 108,862.



Claim.—1. In a ventilator, the combination with a casing having an opening in its outer edge and an open side, of a flange surrounding said side opening, a support spanning said side opening, a shaft pivoted within the casing, and a removable extension on the side of the casing over the said side opening.

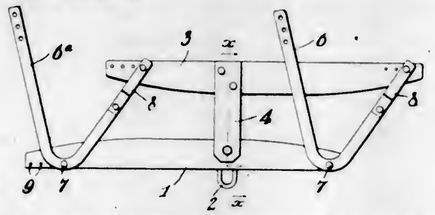
2. In a ventilator the combination with a casing having openings in its outer edges and an open side, a flange surrounding said opening in the side, a cross-bar spanning said side openings, a shaft pivotally mounted on the cross-bar, a cylinder mounted on the shaft within the casing having openings therein, a vane connected with said shaft, and a distributing member detachably connected with said flange.

3. In a ventilator the combination with a casing having openings in its outer edges and an open side, a flange surrounding said opening in the side, a cross-bar spanning said side opening, a shaft pivotally mounted on the cross-bar, a cylinder mounted on the shaft within the casing having openings therein, a vane connected with said shaft, and a distributing member connected with said flange.

857,854. DRAFT-EQUALIZER. JAMES K. WOOLCOTT, Alcester, S. D. Filed Aug. 2, 1906. Serial No. 328,920.

Claim.—1. In a draft equalizer the combination with a draw bar and an equalizer bar pivotally connected at a point removed from its center to one end portion of the

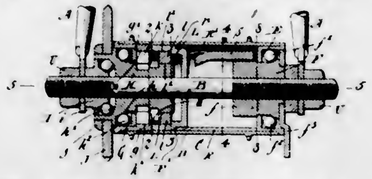
draw bar; of angular levers fulcrumed adjacent the ends of the draw bar and extending beyond the equalizer bar, and pivotal connections between said levers and the ends of the equalizer bar.



2. A draft equalizer comprising a draw bar, means removed from the center thereof for connecting it to an object to be moved, bell crank levers fulcrumed adjacent the ends of the draw bar, an equalizer bar, an arm extending rearwardly therefrom at a point removed from its center, said arm being pivoted to the draw bar adjacent the connecting means thereon, and links pivoted to the ends of the equalizer bar and levers, said levers projecting beyond the equalizer bar.

3. A draft equalizer comprising a draw bar, an equalizer bar disposed in front thereof, an arm extending from one end portion of the equalizer bar and pivoted to the opposite end portion of the draw bar, a bell crank lever adjustably pivoted to one end portion of the draw bar, a link pivoted to said lever and adjustably pivoted to one end portion of the equalizer bar, a bell crank lever pivoted to the other end portion of the draw bar, and a link connection between said lever and the adjoining end portion of the equalizer bar, said levers extending beyond the equalizer bar.

857,855. COASTER-BRAKE. GUSTAV ZINTER, Buffalo, N. Y. Filed June 19, 1906. Serial No. 322,429.



Claim.—1. The combination with the hub-barrel and a spindle fixedly supported, of a driving-member rotatable on said spindle and having opposite eccentric surfaces, an interior brake-device, and propelling and brake wedge-segments co-acting with said eccentric surfaces and adapted to impinge respectively against the surrounding hub-barrel and against said brake-device.

2. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve rotatable on said spindle and having opposite eccentric surfaces, an interior brake-device, propelling wedge-segments and brake wedge-segments co-acting with said eccentric surfaces and adapted to impinge respectively against the interior of the hub-barrel and against the brake-device, and means for retaining said wedge-segments in operative position.

3. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve rotatable on said spindle and having opposite eccentric surfaces, an interior brake-device, propelling wedge-segments and brake wedge-segments co-acting with said eccentric surfaces and adapted to impinge respectively against the interior of the hub-barrel and against the brake-device, each of said wedge-segments having its outer surface notched, and a retaining-ring having lateral extensions entering the notches in said wedge-segments.

4. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve between the two and rotatable on said spindle, said sleeve having two pair of opposite eccentric surfaces, two pair of oppositely positioned wedge-segments having corresponding inner eccentric bearing surfaces and concentric outer impinging surfaces, one pair of said segments being adapted to impinge against the surrounding hub-barrel, and an interior brake-device against which the other pair of said segments is adapted to impinge.

5. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve between the two and rotatable on said spindle, said sleeve having two pair of opposite eccentric surfaces, two pair of oppositely positioned wedge-segments having corresponding inner eccentric bearing surfaces and concentric outer impinging surfaces provided each with a notch, a retainer-ring between the two pair of wedges provided with lateral extensions fitting the notches in said segments, and an interior brake-device against which one pair of said segments is adapted to impinge to cause actuation thereof, the other pair of segments being adapted to impinge against the surrounding barrel-hub.

6. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve rotatable on said spindle and having two pair of opposite eccentric surfaces, two pair of wedge-segments co-acting with said eccentric surfaces and having notches in their outer surfaces, a split-retainer ring having opposite lateral extensions fitting the notches in said segments and having at one end a circular opening and at its other end a correspondingly shaped projection fitting said opening, and a brake-device within the hub-barrel adapted to be actuated by one pair of said segments, and the other pair of said segments being adapted to impinge against the hub-barrel.

7. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve between the two and rotatable on said spindle, means to cause the hub-barrel to rotate in a forward direction on forward rotation of said driving-sleeve, a longitudinally split brake-sleeve within the hub-barrel, a spreading-lever located between the longitudinal edges of said brake-sleeve, and means for actuating said lever on reverse rotation of the driving-sleeve.

8. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve between the two and rotatable on said spindle, means to cause the hub-barrel to rotate in a forward direction on forward rotation of the driving-sleeve, a longitudinally split brake-sleeve held against rotation within the hub-barrel, a spreading-lever between the longitudinal edges of said brake-sleeve, a brake-actuating sleeve capable of limited rotation and co-operating with said spreading-lever, and a device between the driving-sleeve and the brake-actuating sleeve for causing rotation of the latter to actuate said spreading-lever.

9. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve between the two and rotatable on said spindle, means to cause the hub-barrel to rotate in a forward direction on forward rotation of the driving-sleeve, a longitudinally split brake-sleeve held against rotation within the hub-barrel and having one of its longitudinal edges provided with a curved notch, a spreading-lever between the longitudinal edges of the brake-sleeve provided with a curved extension fitting said notch, a brake-actuating sleeve capable of limited rotation and co-operating with said spreading-lever, and a device between the driving-sleeve and the brake-actuating sleeve for causing rotation of the latter to actuate said spreading-lever.

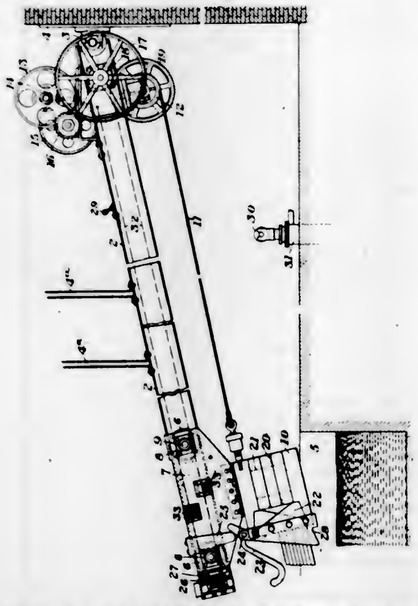
10. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve between the two and rotatable on said spindle, means to cause the hub-barrel to rotate in a forward direction on forward rotation of the driving-sleeve, a longitudinally split brake-sleeve held against rotation within the hub-barrel and having each of its longitudinal edges provided with a curved notch, said notches being at different points in the length of the sleeve, a spreading-lever between the longitudinal edges of said brake-sleeve and having curved extensions fitting said notches, a brake-actuating sleeve capable of limited rotation and co-operating with said spreading-lever, and a device between the driving-sleeve and the brake-actuating sleeve for causing rotation of the latter to actuate said spreading-lever.

11. The combination with the hub-barrel and a spindle fixedly supported, of a cone held against rotation on the spindle near one end thereof and having an extension provided with a longitudinal groove, a driving-sleeve near the other end of the spindle and rotatable thereon, means to cause the hub-barrel to rotate in a forward direction on forward rotation of the driving-sleeve, a longitudinally-split brake-sleeve having an inwardly directed ear at one end fitting into the longitudinal groove of said cone-extension, and means to spread the brake-sleeve on reverse movement of the driving-sleeve.

12. The combination with the hub-barrel and a spindle fixedly supported, of a driving-sleeve between the two and rotatable on said spindle, means to cause the hub-barrel to rotate in a forward direction on forward rotation of the driving-sleeve, a longitudinally split brake-sleeve held against rotation within the hub-barrel, a spreading-lever between the longitudinal edges of said brake-sleeve a brake-actuating sleeve having one end closed and provided with an aperture in said end into which said spreading-lever fits, and a device between the driving-sleeve and the brake-actuating sleeve for causing rotation of the latter to actuate said spreading-lever.

13. The combination with the hub-barrel and a spindle fixedly supported, a brake-device adapted to act against the inner surface of said hub-barrel and comprising a braking-element, a brake actuating-sleeve operatively connected with said braking-element, a sleeve on said spindle having eccentric surfaces, and wedge segments co-acting with said eccentric surfaces and adapted to be driven against the inner surface of said brake actuating-sleeve when rotating said spindle in a rearward direction.

857,856. MAGNETIC DRAWING APPARATUS FOR PIPES, &c. GEORGE BAEHR, McKeesport, and HARRY B. LYNCH, Versailles, Pa., assignors to National Tube Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Feb. 25, 1907. Serial No. 359,185.



Claim.—1. In an apparatus for drawing or pulling pipes or other objects in an endwise direction, a track-way, a carriage mounted to travel thereon, and a magnet carried by the carriage and having its polar surface in a plane substantially at right angles to the length of the track-way; substantially as described.

2. In apparatus for drawing or pulling pipes or other objects in an endwise direction, an inclined track-way, a carriage or trolley mounted for travel on the track-way, and an electro-magnet carried by the carriage or trolley and depending therefrom, said magnet having its polar surface in a plane substantially at right angles to the longitudinal plane of the track-way; substantially as described.

3. In apparatus for the purpose described, a track-way, a carriage mounted for travel thereon, and an electro-magnet rigidly secured to the carriage; substantially as described.

4. In apparatus for the purpose described, a track-way, a carriage or trolley mounted for travel thereon, an electro-magnet carried by the carriage or trolley and having its polar surface in a plane substantially at right angles to the plane of the track-way, a motor for operating the carriage or trolley, and means for controlling the speed of the motor; substantially as described.

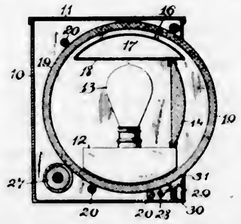
5. In drawing apparatus, a pivoted track or run-way, means for moving the track or run-way on its pivot to change its angular position, a carriage mounted thereon, and a magnet suspended from the carriage; substantially as described.

6. In apparatus for the purpose described, a movable carriage having a magnet suspended therefrom, said magnet having a pivotal magnetic clamping member; substantially as described.

7. In apparatus for the purpose described, a movable carriage, a magnet carried thereby, and an apron of non-magnetic material secured to the lifting end of the magnet, and arranged to form a support for the end portions of a plurality of pipes or other articles; substantially as described.

8. In apparatus for the purpose described, a lifting magnet having a clamping piece of magnetic material pivoted thereto; substantially as described.

857,857. INDICATOR. WILLIAM A. BANISTER and DAVID M. LAKE, Newark, N. J. Filed Feb. 27, 1907. Serial No. 359,637.



Claim.—1. An indicator comprising a casing having a legend therein, a rotating transparent cylinder passing over the legend, and a wiper to clean the cylinder as it rotates.

2. An indicator comprising a panel, a transparent movable cover for the panel, and a wiper to wipe the cover when it moves.

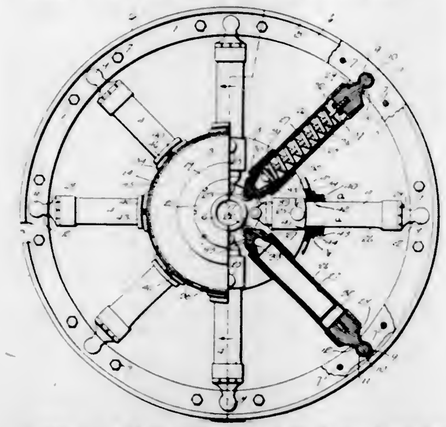
3. An indicator comprising a casing, an opalescent panel, a transparent cylinder inclosing the panel and projecting from the casing, means for rotating the cylinder, and a wiper installed to wipe the cylinder when it is rotated.

4. An indicator comprising a casing having lights therein, a support for the lights secured to the casing, a flue above the lights and leading to the outside of the casing, a panel within the casing, a transparent cylinder within the casing and projecting slightly therefrom and inclosing the flue, the panel and the support, means for rotating the cylinder, and a wiping device in engagement with the transparent cylinder.

5. An indicator comprising a casing, a support therein, lamps on the support, a shield above the lamps and communicating with the atmosphere, a panel secured in front of the lights and between the shield and the support, a transparent cylinder inclosing the lights and the panel, a wiping roll within the casing and engaging the cylinder, means for rotating the cylinder, and a wiping device in the casing and in engagement with the transparent cylinder.

6. An indicator comprising an indicating device, a transparent cylinder surrounding the same, means for rotating the cylinder, a casing for supporting the cylinder, a shaft in the casing, a pivoted leaf on the shaft, a spring between the leaf and the casing to normally throw the leaf toward the cylinder, and a wiping strip on the end of the leaf and in engagement with the cylinder.

857,858. WHEEL. JUSTUS W. BARNES, Jr., Pittsfield, Mass. Filed July 31, 1905. Serial No. 272,086.



Claim.—1. A wheel comprising a rim, a hub, a plurality of radial spokes having their ends pivotally connected to said rim and to said hub, each of said spokes consisting of elastically-connected slidable members connected by a spring, and means for distributing the stress among the several springs.

2. A wheel comprising a rim having sockets therein, a hub having a cam, spoke guides, spokes consisting of elastically-connected sliding members, one member of each of said spokes being pivoted in said rim sockets, and one member of each of said spokes being engaged with the cam upon said hub.

3. A wheel comprising a rim having sockets arranged at suitable points, a hub consisting of spaced plates, spoke guide blocks pivotally mounted between said plates, spokes consisting of slidable members, one of said members being slidable in one of said guide blocks and pivotally mounted in one of said rim sockets, the other of said members being engaged with said cam, and a spring connecting said members.

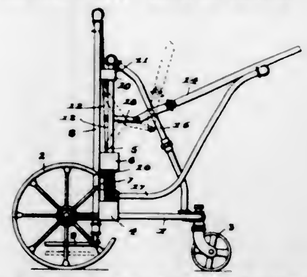
4. A wheel comprising a rim having sockets thereon, a hub consisting of spaced plates, a cam upon said hub, spoke guide blocks pivotally mounted between said plates, spokes consisting of inner and outer telescoping tubular members, said outer members being slidable in said guide blocks and having their outer ends pivotally mounted in said rim sockets, friction rollers upon the inner ends of said inner members and adapted to engage said cam, and coil springs for elastically connecting said members, substantially as described.

5. A wheel comprising a rim consisting of two opposing angle metal sections having sockets formed therein at suitable points, a hub consisting of two plates, one being formed with a sleeve to project through the other, means for securing the latter upon said sleeve, said plates being formed on their inner faces with concentrically arranged recesses and with pivot recesses, apertured spoke guide blocks disposed between said plates and formed with trunnions to enter said pivot recesses, spokes consisting of inner and outer telescoping tubular members, said outer members having their inner ends slidable in the apertures in said guide blocks, balls provided upon the outer ends of said outer members and pivotally mounted in the sockets in said rim, trunnions upon the inner ends of said inner members, friction rollers upon said trunnions and engaging with said concentrically-arranged recesses in said plates, guide rods extending into said inner members and secured to said outer members, and coil springs upon said rods for elastically connecting said members, substantially as described.

6. In a wheel, the combination with a rim, a hub and a movable spoke, of a dust guard comprising base and top plates clamped upon said hub, and an intermediate plate surrounding said spoke and slidable between said base and top plates, substantially as described.

7. In a wheel, the combination with a rim, a hub and movable spoke connecting the same, of dust guards comprising apertured base plates engaging with the periphery of said hub, top plates upon said base plates and formed with annular grooves to receive a packing, and an intermediate plate slidable between said base and top plate and having portions to engage said spokes, and annular grooves to receive packing washers, and clamping bands for securing said plates upon said hub, substantially as described.

857,859. BRICK-TRUCK. GEORGE BARNEY, Leesville, La. Filed June 4, 1906. Serial No. 320,103.



Claim.—1. A truck such as described consisting of a horizontally disposed U-shaped frame member, wheels journaled at the ends of said member, a caster pivotally attached at the intermediate portion of said member, a vertically extending frame member, a brace connecting the upper end of said vertical member with the rear end of said horizontal member, a handle member suitably attached to the frame members, and a vertically adjustable frame guided by the vertically extending frame member, and means for moving said adjustable frame.

2. A truck such as described consisting of a horizontally disposed U-shaped frame member, wheels journaled at the ends of said member, a caster pivotally attached at an intermediate portion of said member, a cross-beam connecting the forward portions of said horizontal member together, a vertically extending frame member erected from said cross-beam, a member connecting the upper end of said vertical member with the rear end of said horizontal member, a handle member suitably attached to the frame, a vertically movable frame slidably attached to said vertically extending frame member, and means for moving said movable frame.

3. A truck such as described consisting of a horizontally disposed U-shaped frame member, wheels journaled at the forward ends of said member, a caster pivoted at the intermediate point of said member, a cross-beam located near the forward end of said member, a vertically extending member erected from said cross-beam, a second cross-beam slidably mounted on said vertically extending frame member, and being adapted to move in parallel relation with the first said cross-beam, coil springs interposed between said cross-beams, a load supporting frame attached to the spring supported cross-beam, a lever fulcrumed to the frame members, toggle joints pivotally connecting the spring supported cross-beam with the load supporting frame, said lever being operatively connected with said toggle joint.

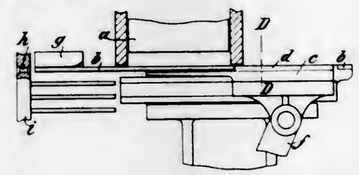
857,860. RAIL-JOINT. GEORGE J. BECKER, Buffalo, N. Y. Filed Mar. 18, 1907. Serial No. 362,830.



Claim.—1. In a rail-joint and support, the combination of three ties having transverse depressions therein, the depressions of the two outer ties extending through a portion of their width to form abutments and the depression of the intermediate tie extending from side to side thereof, a base-plate set into said depressions with the ends abutting against the abutments of the two outer ties and having longitudinal upstanding flanges, said plate having the ends of two adjacent rail-lengths seated thereon between its flanges, and means to secure said plate to the ties and the rail to said plate.

2. In a rail-joint and support, the combination of three ties having transverse depressions therein, the depressions of the two outer ties extending through a portion of their width to form abutments and the depressions of the intermediate tie extending from side to side thereof, a base-plate set into said depressions with the ends abutting against the abutments of the two outer ties and having longitudinal upstanding flanges, said plate having the ends of two adjacent rail-lengths seated thereon between its flanges and the latter projecting above the edges of the rail base with notches formed in the projecting portions thereof only, and spikes having their heads entering said notches and bearing against the bottom of the same and against the rail base.

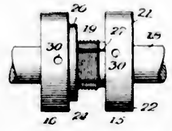
857,861. MATCH-MAKING MACHINE. HANS BEEG, Durlach, Germany, assignor to The Firm of Badische Maschinenfabrik und Eisengiesserei, vorm. G. Sebold und Sebold & Neff, Durlach, Germany. Filed Aug. 9, 1905. Serial No. 273,474.



Claim.—1. In a match-making machine, the combination of the splint-hopper or container, the stationary grating forming a bottom for the container and forming spaces into which some of the splints may drop, a movable plate arranged under the grating to support those splints which have dropped into said spaces, said plate being provided with bars or projections adapted to fill said spaces and lie flush with the upper surface of the grating so as to act both as pushers for moving the splints in said spaces and as supports for some of the splints, and a carrier-bar having sockets to receive the splints pushed by the projections of the said plate.

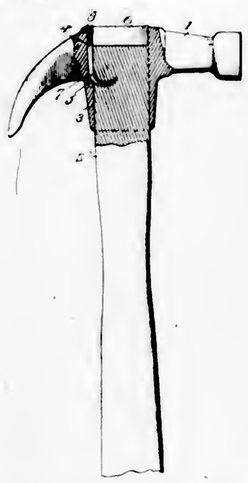
2. In a match-making machine, the combination of the splint-hopper or container, the stationary grating constituting a partial bottom for the container and forming spaces into which some of the splints may drop, a movable plate arranged under the grating to support those splints which have dropped into said spaces, said plate being provided on a portion of its width with bars or projections parallel with the bars of the stationary grating, and projecting into the spaces between said stationary bars, the ends of the movable bars acting as ejectors for those splints which have fallen into the spaces of the stationary grating, and the upper surfaces of the movable bars acting as supports for some of the splints, the said movable plate projecting beyond the bars it carries so as to support the splints during ejection, and a carrier having sockets to receive the ejected splints.

857,862. SET-RING. GEORGE H. BEST, Hampton, New Brunswick, Canada. Filed Oct. 10, 1906. Serial No. 338,331.



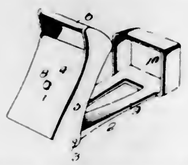
Claim.—A set-ring for shafts comprising a split ring having on one side a projecting flexible externally-threaded sleeve, and an annular groove at the base of said projection; a split nut screwed on the sleeve, and having on one side an annular shoulder entering the aforesaid groove; there being means for fastening the nut-sections together.

857,863. TOOL-HEAD-ATTACHING KEY OR WEDGE. CHARLES H. BOOTH, Boise, Idaho. Filed Sept. 5, 1906. Serial No. 333,361.



Claim.—The combination of a handle; a tool head having a handle receiving opening therein, said opening being formed with a longitudinal seat extending along one side thereof and terminating in a deflecting shoulder, a key embodying a wedge member designed to be driven into the extremity of the handle to expand the same, a tool engaging lug projecting laterally from the wedge, and an integral tongue at one end of the wedge, said tongue being designed to enter the before mentioned longitudinal seat and impinge against the deflecting shoulder at the termination thereof in such a manner that its end portion is bent laterally and caused to embed itself in the tool handle.

857,864. CROSS-LINE BUCKLE. HORACE A. BOWYER, Windsor, Ohio. Filed Nov. 26, 1906. Serial No. 345,136.

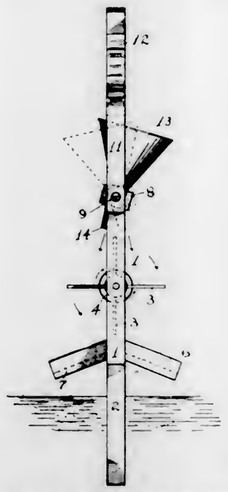


Claim.—1. A buckle of the character specified, comprising complemental members spaced apart and pivotally connected at one end, each member having a loop at its opposite, or free end, one of the loops being approximately in the plane of a member of the buckle, and the other loop extending across the space formed between the two members and arranged in front of the first mentioned member.

2. A buckle of the character specified, comprising complemental members, one of the members consisting of a plate, having longitudinal flanges and the other member comprising a plate arranged to come between the aforesaid longitudinal flanges and pivoted at one end thereto and having a loop projected from the opposite end of said plate and located in front of the first mentioned member.

3. The herein described buckle, comprising complemental members, one of the members comprising a plate and longitudinal flanges, the latter having end portions extended and curved away from the plane of the plate and connected by a cross-bar to form a loop, the opposite ends of said longitudinal flanges being downwardly curved and said plate having an inwardly extended stud and the other member comprising a plate of a width to come between said longitudinal flanges and pivoted at one end to the downwardly curved members of the aforementioned longitudinal flanges, and a box loop projected from the opposite end of said plate to extend across the buckle and in front of the first mentioned member thereof.

857,865. SAND-MILL TOY. THOMAS A. BRAMBERRY, Portsmouth, Va. Filed July 21, 1906. Serial No. 327,208.



Claim.—1. A device of the character described comprising a frame, a flutter wheel therein, a hopper above said wheel, and a tilting pivoted hopper for reversing the rotation of said wheel said hopper adapted to be set at any angle.

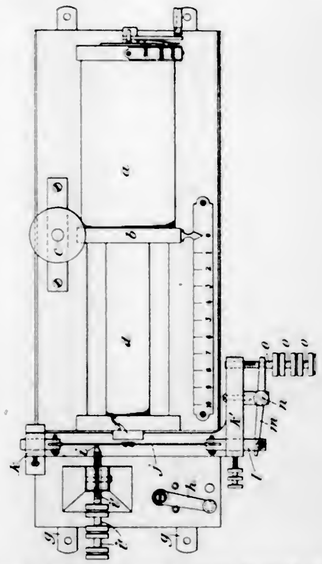
2. A device of the character described comprising a fork, a wheel mounted for rotation therein, a perforated rockable supported cross bar joining the free ends of said fork, a hopper in said perforation in the bar, said bar adapted to incline said hopper for depositing sand in each side of the wheel for rotating it in either direction.

3. A device of the character described comprising a bifurcated frame having a stake point at one end, a paddle or flutter wheel mounted for rotation in the frame, a tilting or rockably supported hopper above the wheel, and a sand discharge trough on each side of the frame below said flutter wheel.

4. A device of the class described comprising a fork having a pointed end, an apertured pivoted block joining the free ends of said fork, a hopper or funnel in said aperture, a paddle wheel below the funnel, discharge troughs on each side of the fork, and a yoke over said funnel and secured to said fork.

5. A device of the class described comprising a fork provided with a shank, a paddle or flutter wheel rotatorily mounted therein, a shaft for said wheel, balance disks on the shaft, a funnel or hopper above said wheel, a tilter support for the funnel, and means for discharging sand from said wheel at both sides of said fork.

857,866. INDUCTION-COIL. MORRIS W. BRINKMANN, New York, N. Y. Filed Mar. 14, 1905. Serial No. 249,978.



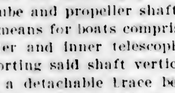
Claim.—1. An induction coil provided with two or more interrupters operating simultaneously to break the primary circuit.

2. An induction coil provided with two or more interrupters operating simultaneously to break the primary circuit and means for adjusting the tension of each of said interrupters.

3. An induction coil provided with two or more interrupters operating simultaneously to break the primary circuit, each interrupter and corresponding contact point controlling a predetermined current strength.

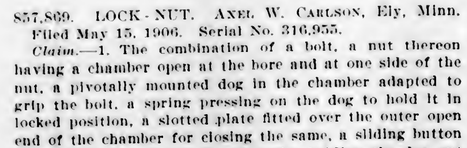
857,867. CLASP-PIN. GEORGE E. BURNS, Central Falls, R. I. Filed June 28, 1905. Serial No. 267,325.

Claim.—1. In a device of the class described, the combination with a body having rigid therewith a lug, of a hook separate from the lug and provided with an ear which is rigidly secured to the lug, and a pin pivoted to the body and adapted to engage the hook.



2. A catch for an article of jewelry comprising a bifurcated lug secured to said article, and a hook provided with an ear to be received between the legs of the lug and rigidly secured thereto, the upper edge of said ear lying against the inner wall of the body of the lug and the inner face of the stem of the hook lying against the side of the lug.

857,868. MEANS FOR PROPELLING BOATS. WILLIAM G. BUSSE, Brooklyn, N. Y. Filed Mar. 22, 1906. Serial No. 307,394.



Claim.—1. Propelling means for boats comprising an extensible shaft, means detachably supporting said shaft vertically from the gunwale of a boat, a propeller shaft disposed right angularly at the lower end of said vertical shaft, a propeller carried thereby, a bearing for said propeller shaft, an angularly disposed bracket supporting said bearing from the lower end of said vertical shaft, and means for turning said propeller shaft.

2. Propelling means for boats comprising an extensible shaft, means detachably supporting said shaft vertically from the gunwale of a boat, a detachable brace extending tangentially from a lower point on said shaft to the gunwale, a propeller shaft disposed right angularly at the lower end of said vertical shaft, a propeller carried thereby, a bearing for said propeller shaft extending from said vertical shaft, and means for turning said propeller shaft.

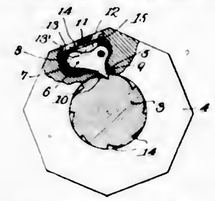
3. Propelling means for boats comprising a hollow shaft composed of outer and inner telescoping tubes, a clamp detachably supporting said shaft vertically from the gunwale of a boat, a rod rotatably supported within said hollow shaft, a gear upon said rod, a crank shaft mounted in bearings in said clamp, a gear on said crank shaft meshing with the gear upon said rotatable rod, an extensible tube sliding on said rotatable rod, a propeller shaft rotatably supported from and at right angles to said hollow vertical shaft, and intermeshing gears respectively upon said extensible tube and propeller shaft.

4. Propelling means for boats comprising a hollow shaft composed of outer and inner telescoping tubes, a clamp detachably supporting said shaft vertically from the gunwale of a boat, a detachable brace between said hollow shaft and the boat, a rod rotatably supported within said hollow shaft, a gear upon said rod, a crank-shaft mounted in bearings in said clamp, a gear on said crank-shaft meshing with the gear upon said rotatable rod, an extensible tube sliding on said rotatable rod, a propeller shaft rotatably supported from and at right angles to said hollow vertical shaft, and intermeshing gears respectively upon said extensible tube and propeller shaft.

857,869. LOCK-NUT. AXEL W. CARLSON, Ely, Minn. Filed May 15, 1906. Serial No. 316,955.

Claim.—1. The combination of a bolt, a nut thereon having a chamber open at the bore and at one side of the nut, a pivotally mounted dog in the chamber adapted to grip the bolt, a spring pressing on the dog to hold it in locked position, a slotted plate fitted over the outer open end of the chamber for closing the same, a sliding button mounted in the slot of the plate for holding the dog out of engagement with the bolt against the tension of the spring, and means for holding the plate in place.

2. The combination of a bolt, a single piece nut having a chamber provided with an opening communicating with the bore of the nut, a means mounted in the chamber and extending through the opening thereof for locking the nut on the bolt, a member arranged permanently in engagement with the said means and bodily slidable back and forth for moving the said means into an operative or inoperative position, and a leaf spring arranged with its ends engaging the wall of the chamber and said means for holding the latter yieldingly against the said member.

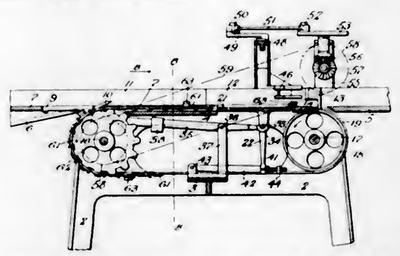


3. The combination of a bolt, a single piece nut having a chamber communicating with the bore of the nut and extending radially therefrom, a pivotally mounted dog arranged in the chamber for engaging the bolt, a spring within the chamber for actuating the dog in one direction, and a sliding button arranged in permanent engagement with the dog and projecting from one side of the nut for holding the dog in an inoperative position against the tension of the said spring.

4. The combination of a bolt, a nut having a chamber therein, a dog in said chamber which is adapted to engage the bolt, a spring pressing on the dog at one side, a plate arranged in the chamber over the dog, and a freely slidable member on said plate which is independent of and engages the dog on the side opposite from the spring for moving the dog to its inoperative position.

5. The combination of a grooved bolt, a nut having a chamber therein, a pivotally mounted member adapted to interlock with the grooves of the bolt, a spring for holding the said member in interlocked position, a plate which closes the chamber, and a sliding button carried by the plate and adapted to engage the said member for holding it in an inoperative position against the tension of the spring.

857,870. WEIGHING-MACHINE. GEORGE CASSADY, New Westminster, British Columbia, Canada. Filed Feb. 11, 1907. Serial No. 356,825.



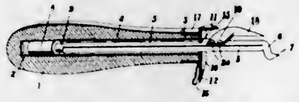
Claim.—1. In a weight sorting machine, a scale balance, means for maintaining said scale balance in a relatively fixed position, said scale balance having a platform normally at rest at a definite level, means for conveying articles to said platform, means for mechanically and positively depressing the platform to a definite lower level when a weight is deposited on the platform to depress it slightly below its normal level, means for moving the weight off the platform and directing it in predetermined channels, substantially as shown and described.

2. In a weight sorting machine, the combination with a table suitably supported and having tracks at different levels, a scale balance having a platform arranged adjacent

to both tracks, and normally at the level of the higher track, means for moving an article onto the platform of the balance, means for mechanically and positively preventing or confirming any downward movement of the platform to the lower level, means for moving an article off the scale platform and along the high level track if the weight of the article is insufficient to depress the platform of the balance, and means for directing the article off the scale platform onto the low level track if the weight of such article is sufficient to depress the weight of the balance, and means for conveying the full weight articles along the low level track.

3. In a weight sorting machine, the combination with a table suitably supported having parallel tracks at different levels, a scale balance the platform of which is adjacent to both tracks and moves through an aperture in the table the edge of the aperture through which the platform passes being laterally inclined from the high level toward the low level track, means for mechanically and positively preventing or confirming any downward movement of the platform to the lower level, means for moving an article onto the scale platform, means for conveying an article from the scale platform along the high level track if the weight of such article is unable to depress the platform but that will move the article against the inclined edge of the aperture through which the scale platform passes and deliver it onto the low level track if the weight of the article is sufficient to depress the platform, and means for conveying the article along the low level track.

857,871. CAN-OPENER. HENRY J. CASSARD, Westmount, Quebec, Canada. Filed Mar. 2, 1907. Serial No. 360,172.



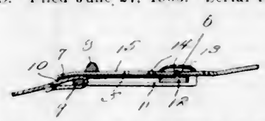
Claim.—1. A can opener comprising a recessed handle provided at its end with a plate having a non-circular opening and carrying knives angularly arranged in relation one to the other, a rod having a non-circular main part with an off-set at its outer end forming a piercing point and an enlarged part at its inner end with a narrow neck between the enlarged inner end and the main part, the said handle being rotatable on said rod for inversion of the knives upon engagement of the plate opening with the neck portion of the rod as described.

2. A can opener, comprising a handle having a central longitudinal and circular hole leading thereinto, a plate covering the open end and having a non-circular opening therethrough leading to said hole and pointed ends forming double edged knives arranged angularly one to the other and lugs projecting rearwardly and secured to said handle, and a rod having a cylindrical and enlarged inner end, a neck joining said enlarged end to the main portion of the rod formed correspondingly to said opening through the plate and an off-set from the outer end beyond said plate forming a piercing point, substantially as described.

3. A can opener, comprising a handle having a central hole leading thereinto, a plate rigidly secured to the open end of said handle and having a non-circular opening leading to said hole and forming at one end a double edged knife parallelly arranged with the axis of said handle and at the other end a double edged knife at right angles to the axis of said handle, the latter knife having a V-shaped lip stamped therefrom and extending laterally and forming a guide, and a rod slidably arranged in said handle and having an enlarged cylindrical inner end joined to the remaining part of said rod formed correspondingly to said non-circular hole by a neck rotatable in said non-circular opening and an off-set at the outer end thereof forming a piercing point, substantially as described.

4. In a device of the class described, in combination, a handle having a central longitudinal hole made thereinto from one end thereof, knives rigidly secured to the open end of said handle and at right angles and parallel respectively to the axis of said handle and forming therebetween an opening leading into said hole, a non-circular rod slidably arranged in said hole and formed correspondingly with said opening and having a portion thereof rotatable in said opening and an off-set forming a spear point, and a knife rigidly secured to said rod toward the outer end thereof having its cutting edge parallel with said rod and adjacent thereto, substantially as described.

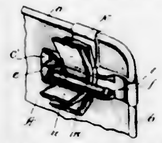
857,872. HARNESS-BUCKLE. ROLLIE B. CENTERS, Pine Ridge, S. D. Filed June 27, 1906. Serial No. 323,651.



Claim.—1. A harness buckle consisting of the side bars longitudinally grooved on their inner sides, a plate adapted at its ends to slide in the said grooves and provided on its upper side with a vertical tongue, a guard plate at the forward end rounded on top and extending across the upper edges of the side bars under which the tongue bar stops when the tongue is engaged with a strap, a strap-attaching bar at the rear, and a keeper bar.

2. A harness-buckle, comprising side-bars grooved on their inner sides from near their ends, said side-bars being connected at their ends and open and free of connections centrally, a tongue plate adapted at its ends to slide in said grooves, a guard plate at the rearward end, a cross-bar below said guard plate, and a housing plate across the top portions of the side-bars rounded on top, under which the tongue-bar is stopped in predeterminate position.

857,873. REIN-HOLDER. CHARLES S. CHAFFEE, Derby, Conn. Filed Sept. 28, 1906. Serial No. 336,546.



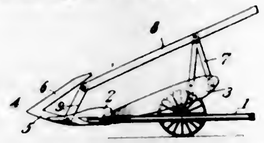
Claim.—1. A reinholder comprising a substantially rectangular body portion having a longitudinal recess and front face thereof bounded by relatively sharp longitudinally extending edges, a shelf closing the inner end of said recess, and projecting forwardly beyond said edges and a rigid prong rigidly mounted on said shelf in front of and between said edges and means for securing said holder to a vehicle.

2. A reinholder comprising a body portion made substantially rectangular in transverse section to present a flat engaging rear surface and having its front face recessed to form a narrow surface on each side thereof, the said recess being closed at its inner end by a shelf projecting forwardly beyond said front surfaces and a straight rigid prong rigidly mounted on said shelf in front of and between said surfaces, each of said surfaces being widened at its outer extremity and the said widened portions being sloped upwardly and rearwardly opposite the free end of said prong.

857,874. GRAIN-FENDER. GEORGE A. DEAN and SAMUEL E. HALL, Wayland, Tex. Filed Mar. 27, 1907. Serial No. 364,888.

Claim.—1. In combination with a grain table having a divider board and tail board pivoted to the divider board, a fender comprising a pointed member attached to the divider board, a standard erected upon the tail board, a bar pivoted to said standard and a link pivotally connecting the forward end of the bar to said member.

2. In combination with a grain table having a divider board and a tail board pivoted to the divider board, a fender comprising a member attached to the divider board and having an upwardly and rearwardly inclined portion, a standard erected upon the tail board, a bar pivoted to the said standard and a link pivotally connecting the forward end of the bar with said member, said link being shorter than the length of the standard.



3. In combination with a grain table having a divider board and a tail board pivoted to the divider board, a fender comprising a pointed member attached to the divider board, a standard erected upon the tail board, a bar pivoted to said standard, a link pivotally connecting the forward end of the bar with said member, the said member, the standard, the bar and the link being made from sheet metal, the plane surfaces of which are substantially vertically disposed.

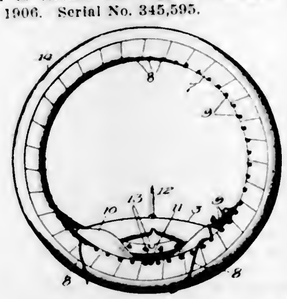
857,875. STUD. PETER DOSCH, Bridgeport, Conn. Filed Sept. 29, 1906. Serial No. 336,801.



Claim.—1. A shirt stud made from a single sheet metal blank whose lower part is split upwardly a short distance the portions thus formed being bent outwardly in reverse directions at right angles to the body of the blank to form the base of the stud, the upper edge of said blank being rounded and the stock near said edge displaced laterally in reverse directions to form the head of the stud.

2. A shirt stud made from a sheet metal blank having reversely extending flanges to form the base of the stud, a rounded upper edge and reversely disposed protuberances near said edge to form the head of the stud.

857,876. VEHICLE-TIRE. JEAN B. DUMAIS, Chicago, Ill., assignor of one-third to William L. Doggett and one-third to Arthur M. Doggett, Chicago, Ill. Filed Nov. 20, 1906. Serial No. 345,595.



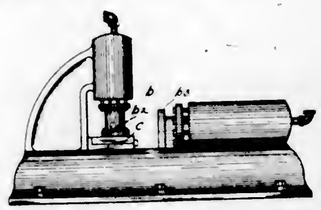
Claim.—1. A removable protective casing for inner tubes, said protetctive casing being formed by spirally winding two strips of material one upon the other in opposite directions, said strips being secured together, the tubular casing thus formed being longitudinally slitted.

2. A removable protective casing for inner tubes, formed by spirally winding two strips of textile material, one upon the other, in opposite directions, a layer of rubber being interposed between said strips, all of the layers thus formed being secured together, the tubular casing thus formed being longitudinally slitted.

3. A removable protective casing for inner tubes, formed by spirally winding two strips of material one upon the other in opposite directions, said strips being secured together, the tubular casing thus formed being longitudinally slitted and a strip extending about the outer periphery of said casing and secured thereto.

4. A removable protective casing for inner tubes formed by spirally winding two strips of textile material one upon the other in opposite directions, a layer of rubber being interposed between said strips, all of the layers thus formed being secured together, the annular tubular casing thus formed being longitudinally slitted in its rim portion, means for closing the edges of the slit portion, a flap adapted to extend across said slit and protect the inner tube from said closing means, said flap having an attaching portion extending inside the tread portion of the casing, and a tread strip extending about the tread portion of the casing and secured thereto.

857,877. APPARATUS FOR RESTORING WORN-OUT REAMERS. RALPH S. FETTER, Trenton, N. J. Filed Jan. 23, 1907. Serial No. 353,736.



Claim.—1. A die for use in upsetting worn reamers comprising two separate parts, said parts being provided in their adjacent faces and their opposite ends with cutaway portions forming longitudinal end chambers connected by a central longitudinal passage in which in practice, the reamer to be upset is placed, that part of said die in which said chambers and passage are formed being shorter than the reamer to be upset, a collar or sleeve adapted to be mounted on the fluted end of the reamer and to fit in one of the said chambers, and another collar or sleeve adapted to be mounted on the shank of the reamer and to fit in the other end chamber of the die and to project from said die.

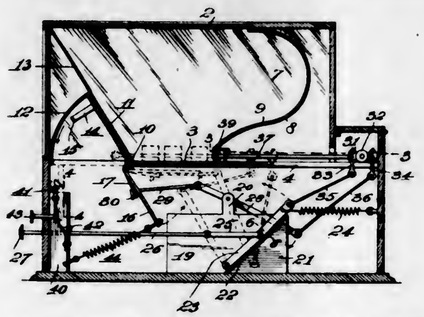
2. A die for use in upsetting worn reamers comprising two separate parts, said parts being provided in their adjacent faces and their opposite ends with cut-away portions froming longitudinal end chambers connected by a central longitudinal passage in which in practice, the reamer to be upset is placed, that part of said die in which said chambers and passage are formed being shorter than the reamer to be upset, a collar or sleeve adapted to be mounted on the fluted end of the reamer and to fit in one of the said chambers, and another collar or sleeve adapted to be mounted on the shank of the reamer and to fit in the other end chamber of the die and to project from said die, said die being provided with means to prevent the longitudinal movement of the reamer when pressure is applied to the shank end thereof.

857,878. GAME APPARATUS. WILLIAM S. HAYNES, St. Louis, Mo., assignor of one-fourth to Solomon S. Senne, St. Louis, Mo. Filed June 25, 1906. Serial No. 323,384.

Claim.—1. In a game apparatus, a housing, a series of counters, a spring actuated trap door arranged to operate therein for throwing the counters, means whereby said door is set and released, a pocket arranged in the housing opposite the door, and means whereby the counters are positioned on the door after their passage through the pocket; substantially as specified.

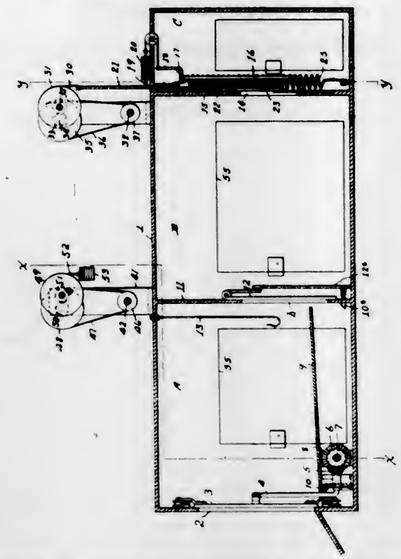
2. In a game apparatus, a housing, a series of counters, a spring actuated trap door arranged to operate therein and to throw the counters, a pocket arranged in the housing opposite the door, means whereby the trap door is

moved into a horizontal plane, a releasing mechanism which engages the trap door while in a horizontal position,



and means whereby the counters are moved from the bottom of the pocket onto the trap door while in a horizontal position; substantially as specified.

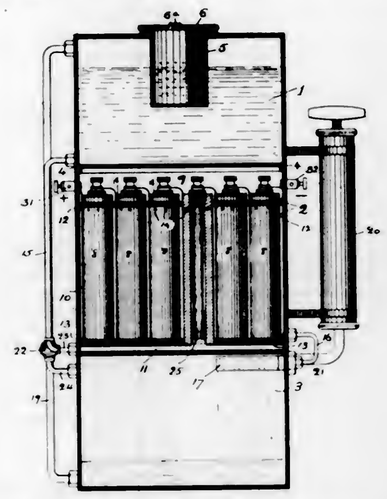
857,879. ANIMAL-TRAP. MILTON J. HILL, Virginsville, Pa. Filed Feb. 26, 1907. Serial No. 359,499.



Claim.—1. An animal trap having an entrance opening, sliding doors for closing said opening, a vertically movable platform, means connected to said platform for automatically opening and closing said doors, partitions in said trap dividing said trap into three compartments, each of said partitions having an opening therein, a swinging door secured to one of said partitions and adapted to close the opening therein, a vertically operating knife in close proximity to the opening in the second partition, springs secured to said knife to keep it under tension, a locking device for holding said knife in normal raised position, and means for automatically releasing said locking device.

2. An animal trap having an entrance opening, sliding doors for closing said opening, a platform movably mounted on a transverse shaft, bevel gears on said shaft, operating arms secured to said doors, gears connected with said operating arms adapted to mesh with the gears on said shaft, springs to keep said platform in normal raised position, partitions dividing said trap into three compartments, each of said partitions having an opening therein, a swinging door secured to one of said partitions adapted to close the opening therein, a vertically operating knife in close proximity to the opening in the second partition, springs secured to said knife to keep it under tension, a locking device for holding said knife in normal raised position, a depending plate in line with the opening in said second partition, a crank arm connected to said plate, and a locking bolt connected to said crank arm and engaging said knife.

857,880. PRIMARY BATTERY. CHARLES E. HITE, Philadelphia, Pa., assignor to Hite Electric Company, a Corporation of Delaware. Filed Nov. 15, 1904. Serial No. 232,796.



Claim.—1. In a primary battery the combination of a plurality of cells, a body of electrolyte, the cells opening at their bottoms into said body of electrolyte and means for causing a flow of electrolyte from said body upwardly through the cells and then downwardly upon the outside walls thereof.

2. In a primary battery the combination of a plurality of cells, a body of electrolyte common to all the cells, the cells opening at their bottoms into said body of electrolyte and means for causing a flow of electrolyte from said body upwardly through the cells and then downwardly upon the outside walls thereof.

3. In a primary battery the combination of a plurality of cells, a body of electrolyte having horizontal dimensions equal to or greater than the horizontal dimensions of the cells, the cells opening at their bottoms into said body of electrolyte and means for causing a flow of electrolyte upwardly through the cells and then downwardly upon the outside walls thereof.

4. In a primary battery the combination of a plurality of couples, one of each couple forming or contributing in the formation of a compartment open at the bottom, a body of electrolyte communicating with each compartment through the bottom thereof and having a horizontal dimension equal to or greater than the horizontal dimensions of the compartments, and means for causing a flow of the electrolyte upwardly through the compartments and then downwardly upon the outside walls thereof.

5. In a primary battery the combination of a reservoir, means for producing and introducing thereto an electrolyte, a plurality of cells, means for causing a flow of the electrolyte from the reservoir upwardly through the cells

and then downwardly upon the outside walls thereof, means for receiving the overflow of electrolyte from said cells and for returning the electrolyte back to the reservoir and means for arbitrarily interrupting the flow of electrolyte from the reservoir to the cells and at the same time drawing off electrolyte from the cells.

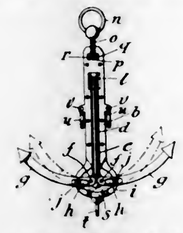
6. In a primary battery, the combination of a reservoir, means for producing and introducing thereto an electrolyte, a plurality of cells, means for causing the flow of the electrolyte from the reservoir upwardly through the cells and then downwardly upon the outside walls thereof, and, means for receiving the overflow of electrolyte from said cells and for filtering the same.

7. In a primary battery, the combination of a plurality of cells having insulated outer walls, a body of electrolyte, the cells opening at their bottoms into said body, and means for causing the flow of electrolyte from said body upwardly through the cells and then downwardly upon the ouside of said cells and over said insulation.

8. In a primary battery, the combination of a plurality of cells having insulated outer walls, a body of electrolyte, the cells opening at their bottoms into said body, means for causing the flow of electrolyte from said body upwardly through the cells and then downwardly upon the outside of said cells and over said insulation, and a common chamber or receptacle for receiving the overflow of electrolyte.

9. In a primary battery, the combination of a plurality of cells having insulated outer walls, a body of electrolyte, the cells opening at their bottoms into said body, means for causing the flow of electrolyte from said body upwardly through the cells and then downwardly upon the outside of said cells and over said insulation, a common chamber or receptacle for receiving the overflow of electrolyte, and means for filtering the electrolyte as it passes therefrom.

857,881. ANCHOR. JOHN E. JOHANNESSEN, Brooklyn, N. Y. Filed Jan. 22, 1907. Serial No. 353,515.



Claim.—In an anchor, a frame, a rod movable axially therein, engaging wings pivotally carried by said rod, and arms, arranged transversely of said wings, also carried by said rod; means between said rod and wings causing the latter to expand with the movement of said rod in one direction, and means between said arms and rod causing said movement to be communicated to said rod by said arms in the dragging action of the anchor.

857,882. INJECTOR. STRICKLAND L. KNEASS, Philadelphia, Pa., assignor to William Sellers & Company, Incorporated, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 27, 1906. Serial No. 313,939.

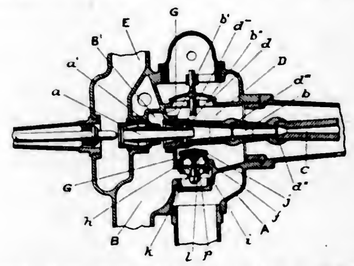
Claim.—1. In an injector, including a port between a water supply and an overflow chamber, a casing comprising two independent valve seats, a main check valve adapted to one seat, a supplemental valve adapted to the other seat, said valves together and separately controlling said port, both the main and the supplemental valves, in the open position, being in the overflow chamber.

2. In an injector, including a port between a water supply and an overflow chamber, a casing containing a stem, a check valve and a supplemental valve, one of said valves being connected to said stem, the other movable upon said stem, said valves together and separately controlling said port.

3. In an injector, including a port between a water supply and an overflow chamber, a casing containing a stem, a check valve and a supplemental valve, the stem guiding both the check valve and supplemental valve, said valves together and separately controlling said port.

4. In an injector, including a port between a water supply and an overflow chamber, a casing having two independent seats, a main check valve adapted to one seat, and a supplemental check valve adapted to the other seat, said valves together and separately controlling said port, the surface of the main check valve adjacent to the supplemental valve being dished.

5. In an injector, including a port between a water supply and an overflow chamber, a casing having two independent seats, a main check valve adapted to one seat, and a supplemental check valve adapted to the other seat, said valves together and separately controlling said port, the surface of the main check valve adjacent to the supplemental valve being dished, and means to prevent the supplemental valve contacting directly with the main check valve.

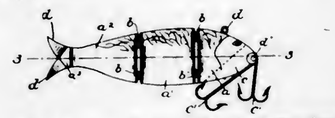


6. In an injector, including a port between a water supply and an overflow chamber, a casing containing a stem guiding a check valve, and a supplemental valve, the casing having two independent seats, one for each valve, said valves together and separately controlling said port.

7. In an injector, including a port between a water supply and an overflow chamber, a casing, a stem guiding a check valve and a supplemental valve, the surface of the check valve adjacent to the supplemental valve being dished, the casing having two independent seats, one for each valve, said valves together and separately controlling said port.

8. In an injector, including a port between a water supply and an overflow chamber, a casing, a stem guiding a check valve and a supplemental valve, the surface of the check valve adjacent to the supplemental valve being dished, and means to prevent the supplemental valve contacting directly with the check valve, the casing having two independent seats, one for each valve, said valves together and separately controlling said port.

857,883. ARTIFICIAL-MINNOW FISHING-BAIT. JOHN D. KREISSER, Cincinnati, Ohio. Filed Jan. 8, 1906. Serial No. 295,042.



Claim.—1. In a fishing bait of the character described, being an artificial minnow composed of independent separate sections, the sections being movably joined together, so that when the minnow bait is in the water it will simulate life, as and for the purposes set forth.

2. In a fishing bait of the character described, being an artificial minnow composed of independent separate hollow sections, said sections being movably joined together, so that when the minnow bait is in the water it will simulate life, as set forth.

3. In a fishing bait of the character described, being an artificial minnow composed of independent separate sections, movably joined together, in combination with a laterally flaring tail piece, as and for the purposes set forth.

4. In a fishing bait of the character described, a series of independent separate sections, said sections forming an artificial minnow, means interposed between the said sections for rendering them laterally movable in the water to simulate life without the use of extraneous means.

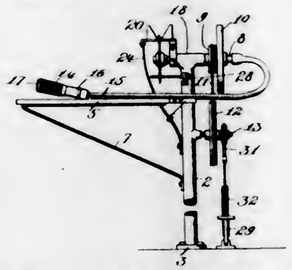
5. In a fishing bait of the character described, formed of independent separate movably joined sections, adapted to simulate life under water by assuming a wriggling motion, and means for holding the bait in a horizontal position in the water, as and for the purposes set forth.

6. In an artificial bait of the character described, being an artificial minnow composed of independent separate movably joined sections, in combination with a bifurcated tail, the forks of which diverge, as and for the purposes set forth.

7. A fishing bait of the character described, being an artificial minnow, said minnow composed of a series of sections, movably joined together, a weight, said weight made integral with the head section of the minnow, and a flared tail piece, as and for the purposes set forth.

8. A bait of the character described, being an artificial minnow composed of a series of sections, said sections joined together by eyes, the eyes of one section fitting the eyes of the adjacent section, so that the sections are movable, said sections being hollow, the head section carrying a weight and the tail section being flared, all combined and operating as set forth.

857,884. FISH SCALING AND SLITTING MACHINE. JAQUELIN M. MEREDITH, Jr., Norfolk, Va. Filed Mar. 6, 1906. Serial No. 304,530.



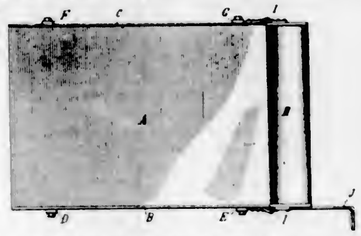
Claim.—1. In an apparatus of the class described, the combination of a trough for receiving a fish, having a slot, a cutting device to work through said slot, for slitting a fish in said trough, and a bracket supported in coöperative relation with said cutting device and to support the forepart of a fish for decapitation by said cutting device.

2. In an apparatus of the class described, the combination of a trough for receiving a fish and having a slot in its bottom, a rotary cutting device to work through said slot for slitting the fish in said trough, and a bracket having a slot to receive said cutting device and supported below the trough for upholding the forepart of a fish for decapitation by said cutting device.

3. In an apparatus of the class described, a support for a fish, a scaling device for scaling said fish, a flexible shaft to which the scaling device is rotatively connected, a rotative stiff shaft for turning said flexible shaft, and a slitting device for the fish connected with said stiff shaft.

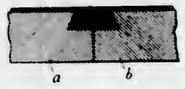
857,885. APPARATUS FOR CASTING METAL SHEETS. JOHN F. MILLER, Trail, British Columbia, Canada, assignor of one-half to Walter H. Aldridge, Trail, British Columbia, Canada. Filed May 24, 1905. Serial No. 261,923.

Claim.—1. In an apparatus for casting lead sheets, the combination of a flat surface disposed at an inclination to a horizontal plane, and means at the upper edge of the surface for discharging an unbroken stream of molten material thereupon.



2. In an apparatus for casting lead sheets, the combination of a table having a plane surface disposed at an inclination to a horizontal plane, flanges at the sides of the table projecting above the surface for confining the material under treatment and a ladle of the full width of the table hinged to the same at the upper edge thereof for discharging an unbroken stream of molten material upon the inclined surface.

857,886. METHOD OF LINING TANKS FOR ELECTROLYTIC WORK. JOHN F. MILLER, Trail, British Columbia, Canada. Filed Feb. 6, 1906. Serial No. 299,691.



Claim.—1. The method of coating the interior of an electrolytic tank, which consists in flowing upon the inner surface of the tank asphaltum liquefied by heat; passing a flame over the layer of asphaltum thus formed, to expel bubbles or other imperfections therefrom; flowing a second layer upon the first, and passing a flame over the same as described; and repeating these steps until a coating of the desired thickness is obtained; as set forth.

2. The method of coating the interior of an electrolytic tank composed of sections the joints between which are formed with grooves in the inner surface of the tank, which consists in depositing a layer of resistant material in the groove, treating the layer to eradicate imperfections therein and render it homogeneous, and repeating these steps until the coating in the grooves is thick as desired; and finally depositing resistant material over the entire inner surface of the tank; as set forth.

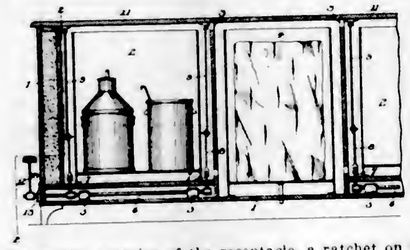
3. The method of coating the interior of an electrolytic tank composed of sections the joints between which are formed with grooves in the inner surface of the tank, which consists in flowing into the grooves layers of resistant material liquefied by heat; each layer being reheated, in the groove, to expel bubbles or other imperfections, and repeating these steps until the coating in the grooves is thick as desired; then flowing resistant material over the entire inner surface of the tank; heating the layer thus formed to expel bubbles or other imperfections, repeating these steps until the surface coating is thick as desired, as set forth.

4. The method of sealing the joints of an electrolytic tank composed of sections, said joints being formed with grooves in the inner surface of the tank, which consists in flowing melted asphaltum into the groove to form a layer; passing a flame over the layer to heat the same and thereby expel bubbles or other imperfections therefrom; and repeating these steps as often as may be necessary to produce a deposit of the desired thickness in the groove; as set forth.

857,887. REFRIGERATOR. ROSELLA E. MILLER, Pitcairn, Pa. Filed June 20, 1906. Serial No. 322,503.

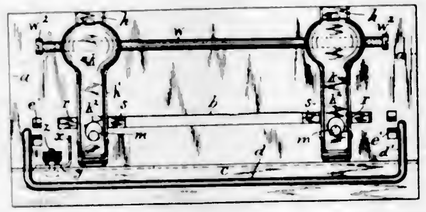
Claim.—In combination with a receptacle having a hinged cover and a double bottom, a rocker shaft mounted in the double bottom and extending to the exterior of the

casing, levers fixed to the shaft and extending through perforations in the bottom, links hinged to the levers, and additional links adjustably pivoted to the first named links and the cover of the receptacle, a pedal fixed to the shaft



on the portion exterior of the receptacle, a ratchet on the exterior of the receptacle and a lug on the lever to engage the ratchet.

857,888. LOOSE-LEAF PERFORATOR. LUCENA M. MORDEN, Waterbury, Conn. Filed May 5, 1904. Serial No. 206,489.



Claim.—1. A punch for a loose leaf perforator, comprising the foot *h* and hand-lever *k* formed of sheet metal and provided respectively with the integral cheeks *h'* and the flanges *k'*, the foot having the inverted perforating stud *j* and stripper *l* near its forward end, and the cheeks *h'* provided with the notch h^2 adjacent to such stud to gage the papers, the spring *n* attached to the rear end of the foot and extended over the stud *j* and provided with the die-hole *m*, the spring being guided by the cheeks *h'*, and the hand-lever *k* being pivoted to the cheeks by the pin *i* arranged above the stud *j* and having the heel *p* extended backward along the hand-lever in contact with the spring, to depress the same in a perforating operation.

2. A punch for a loose leaf perforator, comprising the foot *h* and hand-lever *k* formed of sheet metal and provided respectively with the integral cheeks *h'* and the flanges *k'*, the foot having the inverted perforating stud *j* and stripper *l* near its forward end and the cheeks *h'* provided with the notch h^2 adjacent to such stud to gage the papers, the spring *n* extended over the stud *j* and widened in the notch h^2 and having the die *m* coincident with the stud *j*, and a hand-lever *k* being pivoted to the cheeks by the pin *i* above the stud *j* and having the heel *p* extended backward along the hand-lever in contact with the spring, to depress the same in the perforating operation.

3. A punch for a loose leaf perforator, comprising the foot *h* and hand-lever *k* formed of sheet metal and provided respectively with the integral cheeks *h'* and the flanges *k'*, the foot having the punching stud *j* and stripper *l* near its forward end, the spring *n* guided by the cheeks *h'* and having the die coincident with the stud *j*, and the hand-lever *k* pivoted to the cheeks over the stud *j*, and having the heel *p* in the rear of the pivot adapted to press the spring downwardly, and the toe *p'* in advance of the pivot to contact with the spring and arrest the upward movement of the hand-lever.

4. A loose leaf perforator, comprising the base *a* having a plurality of punching devices held adjustably thereon with an inverted punching stud projected upward near the front end of the foot in each of such devices, a continuous seat *c* extended continuously at one edge of the base adjacent to the punching studs on a level with the same, lugs *c'* near the end of the base, the clamping yoke *d* having arms *d'* at the ends with pivots *e* fitted to such lugs, and means for pressing the yoke toward the seat *c*, the yoke and seat operating to hold the paper throughout its entire width during the punching operation.

5. A loose leaf perforator, comprising the sheet metal base *a* having a plurality of punching devices held adjustably thereon, with an inverted punching stud projected upward near the front end of the foot in each of such devices, a continuous offset in the sheet metal of the base adjacent to the front ends of the said devices with the seat *c* extended therefrom, forming with the base a continuous integral guide for the paper leaves, the clamping yoke *d* having arms *d'* at the ends with pivots upon the base, and means for pressing the yoke toward the seat *c*, the yoke and seat operating to hold the paper throughout its entire width during the punching operation.

6. The loose leaf perforator, comprising the base *a* provided near the ends with the lugs *c'* and having the inwardly turned flanges *c'* and c^2 with the continuous seat *c* connected to the flange *c'* by integral offset, the plurality of punching devices having each the foot *f* held elastically by the two flanges and having punch and die operating as set forth, the wire clamp yoke *d* having the arms *d'* provided with flatted pivots *e* fitted to the lugs *c'* and leaf springs *f* engaged with the flanges *c'* and c^2 and pressed upon such pivots to hold the clamp normally upon the seat.

7. In a loose leaf perforator, the combination, with the base *a* having slot *b* as set forth, of independent punching devices having each a shank projected through the slot, and the spring *s* and screw *t* for holding the shank elastically, to permit the free adjustment of the punching devices upon the base.

8. A loose leaf perforator having the base *a* with a plurality of independent punching devices held adjustably thereon, each punch having the foot *h* with the inverted perforating stud *j* and stripper *l* near the front end thereof, the spring *n* attached to the rear end of the foot and provided with the die *m* extended over the inverted stud, and the hand-lever *k* pivoted over the stud and extended backward along the hand-lever to depress the die in the perforating operation.

857,889. ADDING-MACHINE. LEROY S. MUNGER, Humboldt, Kans. Filed May 21, 1906. Serial No. 317,951.

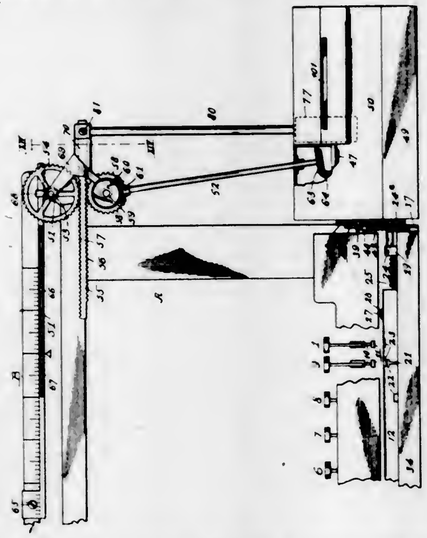
Claim.—1. In an adding-machine, a series of toothed adding-wheels having a single set of teeth, locking mechanism for normally engaging said teeth to hold them in alinement, a master-wheel adapted to successively engage the same set of teeth, means for rotating said master-wheel, a member for shifting the master-wheel, and means interposed between said member and the locking mechanism whereby the latter is operated by the former.

2. In an adding-machine, a series of toothed adding wheels having a single set of teeth, detents for normally engaging said teeth to hold them in alinement, a master-wheel adapted to engage said teeth, means for rotating said master-wheel, a member embracing said master-wheel, means for shifting the yoke and master-wheel for throwing the latter successively into engagement with the teeth, and means interposed between said member and the detents whereby the latter is operated by the former.

3. In an adding-machine, a series of toothed adding-wheels, detents for normally holding the teeth of said adding-wheels in alinement, a master-wheel adapted to engage said teeth, means for rotating said master-wheel, a member for successively shifting the master-wheel into engagement with the teeth, and means interposed between said member and the detents whereby the latter are successively disengaged from the teeth as the master-wheel shifts in one direction, and are successively thrown into engagement with said teeth when the master-wheel shifts in the opposite direction.

4. In an adding-machine, a series of toothed adding-wheels, detents for normally holding the teeth of said adding-wheels in alinement, a master-wheel adapted to

engage said teeth, means for rotating said master-wheel, a member for successively shifting the master-wheel into engagement with the teeth, bell-crank levers for operating the detents, and means interposed between the shiftable member and said bell-crank levers whereby the latter are actuated by the former.



5. In an adding-machine, a series of adding-wheels having a single set of teeth, locking mechanism for normally engaging said teeth to hold them in alinement, a master-wheel adapted to engage said teeth, and rotate the adding-wheels, a yoke embracing said master-wheel, means for shifting the yoke and master-wheel for throwing the latter successively into engagement with the teeth of the adding-wheels, and means interposed between said yoke and the locking mechanism whereby the latter is actuated by the yoke.

6. In an adding machine, the combination with a series of adding wheels having teeth, carrying mechanism between them, a master wheel, and means for successively moving the latter into engagement with said adding wheels and rotating them; of detents adapted to engage said teeth, means connected with the master-wheel for tripping the detents, resetting mechanism, and means connected therewith for engaging all the detents with their adding wheels.

7. In an adding machine, the combination with a series of adding wheels having teeth, carrying mechanism between them, a master-wheel, and means for successively moving the latter into engagement with said adding-wheels and rotating them; of detents adapted to engage said teeth, and means connected with the master-wheel for tripping the detents as it moves in one direction and resetting them as it returns.

8. In an adding-machine, the combination with a typewriter and its carriage, of a series of adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, a motor for turning said master-wheel, a rack-bar carried by the typewriter carriage, gear-wheels driven thereby for winding the motor, and means interposed between said gear-wheels and the master-wheel whereby the latter is shifted by the former.

9. In an adding-machine, the combination with a typewriter and its carriage, of a series of adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, a motor for turning said master-wheel, a rack-bar adjustably connected with the typewriter carriage, gear-wheels driven thereby for winding the motor, and means interposed between said rack-bars and the master-wheel whereby the latter is shifted by the former.

10. In an adding-machine, the combination with a typewriter and its carriage, of a series of adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, a motor for turning said master-wheel, a rack-bar carried by the typewriter carriage, gear-wheels driven thereby, a second rack-bar shifted by said gear-wheels, and means actuated by said second rack-bar for shifting the master-wheel.

11. In an adding-machine, the combination with a typewriter and its carriage, of a series of adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, independent means for turning said master-wheel, a rack-bar carried by the typewriter carriage, gear-wheels driven thereby, a second rack-bar shifted by said gear-wheels, an arm carried by the second rack-bar and means actuated by said arm for shifting the master-wheel.

12. In an adding-machine, the combination with a typewriter and its carriage, of a series of adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, independent means for turning said master-wheel, a rack-bar adjustably carried by the typewriter carriage, gear-wheels driven thereby, a second rack-bar shifted at an increased speed by said gear-wheels, an arm detachably secured thereto, and a yoke carried by said arm and embracing the master-wheel.

13. In an adding-machine, the combination with a typewriter and its carriage and key-levers; of a series of adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, a spring-motor for rotating said master-wheel, a train of gearing actuated by the typewriter carriage for winding said spring-motor, an escapement connected with said train for normally locking said motor, and means controlled by the key-levers of the typewriter for releasing said escapement.

14. In an adding machine, a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a roller controlling said motor and having a series of slots of different lengths with enlargements at their extremities, stems having heads adapted to said enlargements and limiting the rotation of said roller, key-levers carrying said stems, and means for restoring said roller to normal.

15. In an adding-machine, a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a roller controlling said motor and having a series of slots of different lengths with enlargements at their extremities, stems having heads adapted to said enlargements and limiting the rotation of said rollers, a spring for restoring the roller to normal, and means for limiting the action of said spring.

16. In an adding-machine, the combination with a typewriter and its carriage, and key-levers; of a series of adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, a motor for rotating said master-wheel, means for winding the motor from the carriage, means for normally locking said motor, a vibratory member for releasing said means, a roller carried by said vibratory member, and connections between key-levers and roller.

17. In an adding-machine, the combination with a typewriter and its key-levers; of a series of adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, a motor for rotating said master-wheel, means for normally locking said motor, a vibratory frame and a slotted roller therein actuated by key-levers of the typewriter for releasing said means.

18. In an adding-machine, the combination with a typewriter and its key-levers; of a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a spring-actuated roller for controlling the action of the motor by the degree of its rotation, and connections between certain key-levers and the roller for respectively limiting the rotation of the latter.

19. In an adding-machine, a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a check for the motor, a roller also controlling said motor, and means for alternating the connection of the check and roller with the motor.

20. In an adding-machine, a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a slotted roller controlling said motor, and a swinging frame supporting the roller normally out of engagement with said motor.

21. In an adding-machine, a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a slotted roller controlling said motor, gears between them normally disengaged, a swinging frame supporting the roller and permitting said gears to engage, an escape wheel connected with the motor, a detent, and means for disengaging the detent from the escape wheel when said gears engage.

22. In an adding-machine, a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a slotted roller controlling said motor, stems engaging the slots and limiting the rotation of said roller, and key-levers carrying said stems.

23. In an adding-machine, a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a roller controlling said motor and having peripheral slots of different lengths, key-levers, stems carried thereby for engaging said slots, and means for preventing more than one slot being engaged at a time.

24. In an adding-machine, a series of adding wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a roller controlling said motor, and having slots with enlargements, stems having heads adapted to said enlargements and limiting the rotation of said roller, key-levers carrying said stems, and means for restoring said roller to normal.

25. In an adding-machine, a series of adding-wheels, a member adapted to successively rotate said adding-wheels, a motor for actuating said member, a roller controlling said motor, and having slots with enlargements, stems having heads adapted to said enlargements and limiting the rotation of said roller, a spring for restoring the roller to normal, and means for limiting the action of said spring.

26. In an adding-machine, a series of toothed adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, rack-bars adapted to engage and hold the teeth of the adding-wheels in alinement, and means for throwing the rack-bars into engagement with the teeth.

27. In an adding-machine, a series of toothed adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, rack-bars adapted to engage and hold the teeth of the adding-wheels in alinement, and means for successively throwing the rack-bars into engagement with the teeth.

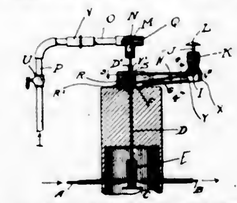
28. In an adding-machine, a series of toothed adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, pivotally mounted rack-bars adapted to engage and hold the teeth of the adding-wheels in alinement, crank-arms for throwing the rack-bars into engagement with the adding-wheels, and means for operating said crank-arms.

29. In an adding-machine, a series of toothed adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, pivotally mounted rack-bars adapted to engage and hold the teeth of the adding-wheels in alinement, crank-arms for throwing the rack-bars into engagement with the adding-wheels, connecting-bars for operating said crank-arms, bell-crank levers for actuating said connecting-bars, and means for operating said bell-crank levers.

30. In an adding-machine, a series of toothed adding-wheels, a master-wheel adapted to successively engage and rotate said adding-wheels, rack-bars adapted to engage and hold the teeth of the adding-wheels in alinement, a member for shifting the master-wheel, and means interposed between said member and the rack-bars whereby the latter are thrown into engagement with the teeth.

31. In an adding-machine, a series of toothed adding-wheels, rack-bars engaging said adding-wheels, means for throwing said rack-bars into engagement with the adding-wheels, connecting bars for operating said means, arms pivotally secured to the connecting-bars, bell-crank levers for operating said arms, a slidable master-wheel for successively engaging and rotating the adding-wheels, a member for sliding the master-wheel, and means carried by said member for actuating the bell-crank levers.

857,890. AUTOMATIC SAFETY STOP DEVICE FOR ELECTRIC VEHICLES. JOHN T. MCINTOSH, Chicago, Ill., assignor of one-third to Charles H. Roberts, Evanston, Ill. Filed June 14, 1902. Serial No. 111,592.



Claim.—1. An automatic safety stop device comprising a mechanism in the controller arm of an electric motor synchronously operated with an air-brake valve through a lever connection, substantially as described and shown.

2. In a united electric controller and air-brake having lever mechanism connecting the electric circuit switch with the air-brake valve, a pin-lock in the lever mechanism for locking the air-brake valve, substantially as described and shown.

3. In a united electric controller and fluid pressure brake, having lever mechanism within a controller handle connecting the electric circuit switch with the brake valve, means for locking the lever mechanism.

4. An automatic safety stop device comprising a mechanism in the controller arm of an electric motor, synchronously operated with an air-brake valve through a suitable connection, substantially as described and shown.

5. An automatic safety stop device comprising a mechanism in the controller arm of an electric motor synchronously operated with an air-brake valve and a circuit breaker, through a lever connection, substantially as described and shown.

6. In a safety stop device, a system of air-brakes working in conjunction with an electric controlling device, a controlling stand, a controlling arm and an air pipe, and mechanism so arranged that by the pressure of the hand on the controlling arm handle, the electric circuit and air passages are closed synchronously, substantially as described and shown.

7. An automatic safety stop device comprising a mechanism in a controller arm, the compressed air pipe of an air-brake, and a valve automatically operated by the automatic action of the mechanism in the controller arm to open the air-brake valve.

8. A safety stop device comprising a system of air-brakes working in conjunction with an electric controller device, a controlling stand, a controller arm, a mechanism in the controller arm, and an air pipe in which a mechanism is so arranged that by the removal of the hand from the mechanism in the controller arm, the electric circuit is broken and the air-brakes applied both synchronously and automatically.

9. In combination a motor circuit a jointly controlled power operated brake, and electric switch, normally, and in operation, holding the brake released and the current on, a controller having a handle to close and open the circuit and responsive to pressure to complete the circuit and hold the brake and switch in normal position, and means to synchronously and automatically break the cir-

cuit and set the brakes on removal of the pressure without removing the handle to off or to any position.

10. In an electrically propelled vehicle a jointly-controlled fluid pressure brake and electric switch normally and in operation holding the brake released and the current on, a controller having a handle to close and open the circuit and responsive to pressure to complete the circuit and hold the brake and switch in normal position, and means to synchronously, automatically and directly break the circuit and set the brakes on removal of the handle pressure without returning the handle to off position.

11. In an electrically propelled vehicle in combination, an electric circuit, a jointly controlled brake mechanism and electric switch both operated from a single handle, and means to complete the circuit and release the brakes on pressure upon the handle, and to simultaneously and automatically apply the brakes and break the circuit, on release of the handle pressure, without controller action.

12. In combination an electric circuit for the application of power, a controller for the circuit provided with a handle for closing and opening the circuit, a circuit breaker, an additional handle, and means to break the circuit and to restore the circuit by successive release and pressure of the additional handle, without movement of the controller handle.

13. In combination a motor control circuit, a controller in the circuit, a handle for the controller, a valve to operate an air brake, a circuit breaker in the motor control circuit, means to hold the valve and circuit breaker to joint action, and an additional spring-sustained handle, connected with the valve and switch, and holding the circuit normally broken and the valve normally open, but both responsive to pressure to close the circuit and close the valve.

14. A safety stop device for electric vehicles comprising the operative valve of a brake actuated by fluid pressure, an electric motor, an operating circuit therefor, a switch in said circuit, in operation normally closed by pressure, a controller and handle for closing and opening the circuit, and an additional handle connected with the switch and the operative valve, for actuating the switch and the operative valve, said additional handle acting automatically, synchronously and independently of controller action to break the circuit and apply the brakes on release of the said pressure.

15. In combination an electric circuit for the application of power, a controller for the circuit provided with a handle for closing and opening the circuit, a circuit breaker, a brake actuated by fluid pressure, an additional handle, and means to automatically and synchronously and jointly operate the brake and break the circuit independently of controller action from the additional handle.

16. In combination, an electric circuit for the application of power, a controller for the circuit provided with a handle for closing and opening the circuit, a circuit breaker, an air brake, an additional handle carried by the controller and means independently of controller action, to automatically set the brake, and open the circuit breaker, and to close the air brake valve and again complete the circuit from the additional handle.

17. In combination, an electric circuit, a motor in the circuit, a jointly controlled fluid pressure brake and electric switch, normally, when in operation, holding the brake released and the circuit closed, a controller having a handle to close and open the circuit controlling the motor and carrying a push-button responding to pressure to hold the brake and switch in normal position and control said brake and switch.

18. In a vehicle propelled by electric power and having a motor circuit, the valve of an air brake apparatus, a circuit breaker for the circuit, and connections, means controlled by a push-button for effecting successive joint automatic applications of the brakes and openings of the electric circuit, alternated with joint manual closing of the circuit and air brake valve.

19. The combination with an electric circuit used in giving power to electric vehicles, of a safety stop device comprising a brake actuated by fluid pressure, a push-button responsive to pressure and resilient thereunder, means to connect the push-button with the brake and a circuit breaking device, a circuit breaking device arranged to act in harmony with a brake to automatically break the circuit and automatically set the brake on release of the push-button.

20. In a vehicle propelled by electric power and having a motor circuit and a brake apparatus, means jointly controlled by a push-button for simultaneously and automatically robbing the circuit of power and automatically applying the brakes on release of the push-button.

21. In a vehicle propelled by electric power and having a motor circuit normally broken and the valve of an air brake normally open, means jointly controlled by a push-button for simultaneously closing the circuit and closing the air brake valve by pressure on the push-button.

22. In a vehicle propelled by electric power and having a motor circuit, a fluid pressure brake apparatus, a circuit breaker for the circuit, and connections, means controlled by a push-button for effecting successive joint applications of brake and circuit breaker by alternate pressure and release of the push-button.

23. In combination, an electric circuit for propelling vehicles, a controller in the circuit, a circuit breaker, and means, controlled from the controller, allowing successive repetitions of automatic breaking, and manual closing of the motor control circuit, with a still controller.

24. In a device for regulating the application of electric power, a controller, a controller handle therefor, a circuit breaker, and means controlled from said handle for automatically breaking the circuit and manually resetting the circuit breaker independently of controller action.

25. In a device for controlling the application of power, a controller, a controller handle therefor, a circuit breaker, the valve of an air brake, and means controlled from said handle to automatically open the circuit and air brake valve and to manually reset the circuit breaker and close the air brake valve all independently of controller action.

26. In a device for regulating the application of electric power an electric circuit, a controller therefor, a handle for the controller, a brake actuated by fluid pressure, and means, controlled from said handle to automatically set the brakes, independently of controller action on release of the handle.

27. In a device for regulating the application of electric power, an electric circuit, a controller therefor, a handle for the controller, a circuit breaker, a brake actuated by fluid pressure, and means controlled from said handle to automatically and to jointly set the brakes and break the circuit, independently of controller action, on release of the handle.

28. The combination with a controller for electric circuits of a circuit breaker normally in operation in series with the controller, means for opening the circuit at desired times by actuating the circuit breaker and means independent of controller action for resetting the circuit breaker.

29. In combination an electric circuit for the application of power, a controller for the circuit, a handle for the controller, a switch normally closed in operation, an air brake valve normally closed when the circuit is closed, an additional handle to operate the switch and the brake, and means to cause the switch and brake valve to assume their said normally closed positions, upon pressure on the additional handle.

30. In combination an electric circuit for the application of power, a controller, a handle for the controller, an air brake, a switch for the circuit, and an additional handle holding the circuit normally broken and the air brake pipe normally open, but responsive to pressure to close the circuit and air brake pipe.

31. In an electric mechanism having a motor controller, an operating circuit, a handle to close the circuit, a power actuated brake, a switch in operation maintained normally in circuit, means responsive to pressure and carried by the controller arm but operating independently thereof for maintaining said switch in circuit and the brakes released and to automatically throw the switch and break the circuit and apply the brakes, in all positions of the controller arm on release of the pressure.

32. In combination a fluid pressure brake, a motor controller having an independent mechanism carried by the controller arm and connected with the brake and automatically operative to set the brake in all positions of the controller, on release of the controller handle.

33. In combination, an electric circuit, a motor controller in the circuit, and an independent mechanism carried by the controller and operative to automatically break the circuit in all positions of the controller handle on release of said handle.

34. In combination, an electric circuit, a motor controller controlling the application of power, a circuit breaker operating independently of the controller action to break the circuit and means to cause automatic action of the circuit breaker on release of the controller in all positions of the controller.

35. In an automatic safety stop device for electric vehicles, in combination an electric circuit, a motor controller controlling the application of power, a brake to check the momentum, an emergency device in the controller arm operatively connected to the brake and means to automatically set the brake on release of the controller arm.

36. An automatic safety stop device comprising a motor controller having an operative arm, an air brake valve, a circuit, a circuit breaker in the circuit and means operating through mechanism in the controller arm to automatically set the brake and synchronously operate the circuit breaker.

37. In combination, a motor controller, a handle for said controller, a brake operated by compressed air, a valve for controlling the application of the brake, means carried by the controller, but acting independently thereof, for automatically operating the valve to apply said brake when the controlling handle is released.

38. In combination, a motor controller, a handle for said controller, an air brake, a valve for controlling the application of the brake, means carried by the controller but acting independently of controller action, for automatically operating said valve on release of the handle and means for operating said operating means.

39. A safety stop device for electric vehicles comprising an electric circuit, a controller for the circuit liable to be locked by an arc or defect in controller mechanism, and emergency means, carried by the controller, but operative independently of the controller and with a still controller shaft, to automatically set the brakes and break the circuit.

40. A safety stop device for electric vehicles comprising an electric circuit, a controller normally controlling the circuit but liable to be locked through an arc, defect or accident, and emergency means to automatically set the brake on release of the controller operating means.

41. In combination, an electric circuit for propelling vehicles, a controller in the circuit, a brake operated by fluid pressure, and means independent of controller action, for automatically setting the brake on release of the controller.

42. In combination, an electric circuit for propelling vehicles, a controller in the circuit, a valve operating an air brake, and means independently of controller action to close said air brake valve by pressure on the controller handle.

43. In combination an electric circuit for propelling vehicles, a circuit breaker in the circuit, a controller, an air brake valve, and means whereby said circuit breaker and valve are held closed, independently of controller action, by the weight upon the controller of the operating hand.

44. In combination an electric circuit for propelling vehicles, a circuit breaker in the circuit, a controller, an air brake valve, and means whereby said circuit breaker and valve are held closed by the weight on the controller of the operative hand, and are automatically opened, independently of controller action, upon removal of said weight.

45. In combination an electric circuit for propelling vehicles a controller in the circuit, an air brake valve, and means whereby said brake valve is held inactive by the weight upon the controller of the operative hand, and is automatically opened, independently of controller action, by removal of said weight.

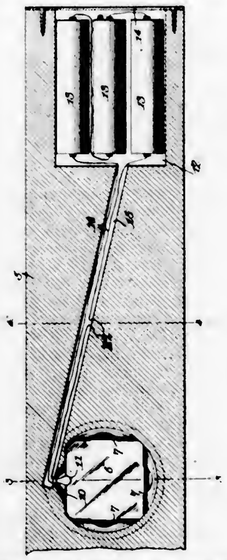
46. In combination an electric circuit for propelling vehicles, a controller in the circuit, a handle for the controller, a circuit breaker, an additional handle in the controller, and means whereby the grasp of the operative hand on the handles compresses the handles, and closes the circuit breaker.

47. In a safety stop device for electric vehicles, an electric circuit, a circuit breaker, a controller in the circuit, a handle for the controller, an air brake valve, an additional handle carried by the controller and means whereby the grasp of the operative hand on the handles closes the air brake valve.

48. In a safety stop device for electric vehicles in combination, an electric circuit for propelling the vehicle, a controller having a handle, a circuit breaker, an additional handle carried by the controller, an air brake valve and means whereby the grasp of the operative hand on the handles closes the air brake valve and circuit breaker.

49. In combination, a controller, means for operating said controller, a power actuated brake, means for controlling the operation of said brake, and means, independent of controller action, to automatically operate said brake-controlling means to cause said brake to be applied, when the controller operating means is released.

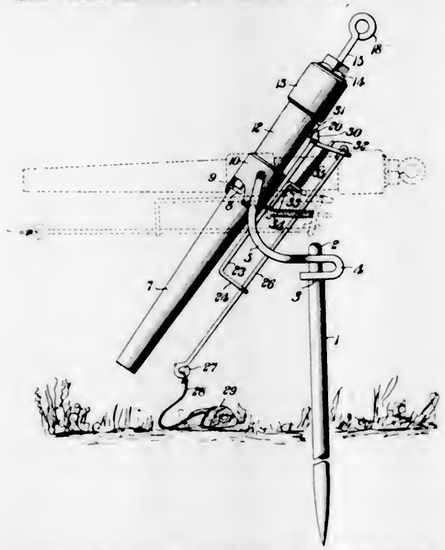
857,891. PLUMB-LEVEL. FRANK M. MCLEROY, Gainesville, Ga. Filed June 18, 1906. Serial No. 322,277.



Claim.—A leveling instrument comprising a body portion having a chamber formed in one end thereof and provided at its opposite end with a transverse recess the walls of which are formed with a conical shaped depression, a reflector of less width than the body portion engaging the walls of the depression and provided at its apex with an aperture, there being a longitudinal opening extending centrally through the body portion and connecting the chamber and aperture in the reflector and intersected by a transverse opening, spirit tubes seated within the recess, and arranged at right angles to each other, a battery disposed within the chamber, a lamp extending through the aperture in the reflector for illuminating the spirit tubes, conductors disposed within the longitudinal opening and connecting the lamp with the battery, transparent plates disposed on opposite sides of the body portion and bearing

against the reflector to form closures for the tube-receiving recess, clamping rings engaging the transparent plates, and a push button seated in the transverse opening and connected with the terminals of the battery circuit for controlling the lamp.

857,892. ANIMAL-TRAP. JOSEPH J. NANCE, Ozona, Tex., assignor of one-half to Jefferson B. Moore, Ozona, Tex. Filed Mar. 11, 1907. Serial No. 361,746.



Claim.—1. An animal trap comprising a gun having a separable barrel section, a breech-block to the rear thereof, a spring chamber back of the breech-block, a spring in the chamber a firing pin passing through the breech-block and surrounded by the spring, a trigger block fast on the firing pin, and a trigger in the path of the trigger block and arranged to be connected to the bait of the trap.

2. An animal trap comprising a gun composed of a separable barrel section, a breech-block to which the barrel section is removably attached, a slotted casing fast on the breech-block, a closure for the rear end of the casing, a firing pin extending through the breech-block and to and through the closure at the end of the casing, another block fast on the firing pin and provided with a guiding extension passing through a slot in the casing, a spring confined between the last-named block and the closure for the end of the casing, and a trigger in the path of the extension of the block carried by the firing pin.

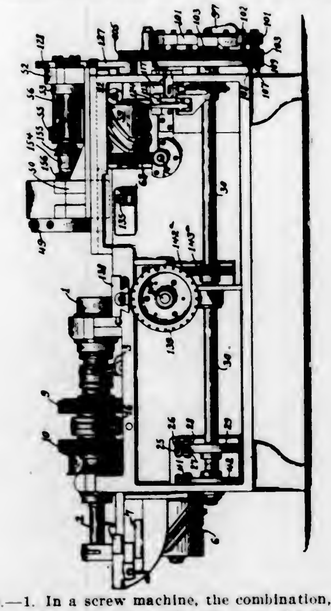
3. In an animal trap, a gun comprising a removable barrel section, a breech-block, a casing carrying the same and extending to the rear thereof, a longitudinally adjustable closure for the rear end of the casing, a firing pin extending through the breech-block and the casing and through and exterior to the closure and there provided with a manipulating handle, a block carried by the firing pin, a trigger mechanism coacting therewith, and a spring within the casing between the block on the firing pin and the closure at the end of the casing and adjustable as to tension by the adjustment of the closure at the end of the casing.

4. An animal trap gun comprising a barrel section arranged to receive a cartridge, a breech-block, a connection between the breech-block and the barrel section to which the latter is removably connected, a chamber to the rear of the breech-block having its rear end provided with an adjustable closure, a firing pin extending through the breech-block, the chamber and the adjustable closure therefor, a spring acting on the firing pin and confined in the chamber to the rear of the breech-block, and a trigger mechanism for holding the firing pin against the action of the spring and for releasing it to the action of the spring.

5. An animal trap gun comprising a barrel section, a breech-block, a connection fast on the breech-block and to which the barrel section is removably secured, a slotted chamber to the rear of the breech-block, an adjustable closure for the rear end of the chamber, a firing pin extending through the breech-block, the chamber and the adjustable closure therefor, another block fast on the firing pin and having an extension passing through the slot in the chamber, a spring surrounding the firing pin and engaging the block thereon and the adjustable block at the rear end of the chamber, a spring-actuated trigger in the path of the extension of the block on the firing pin, a rod extending from the trigger to a point near the muzzle of the gun, and means for attaching the bait to the rod controlling the trigger.

6. In an animal trap, a gun comprising a barrel section adapted to receive a cartridge, a breech-block to the rear thereof, a coupling carried by the breech-block and to which the barrel section is secured by a bayonet joint, a chamber to the rear of the breech-block, an adjustable closure for the rear end of the chamber, a firing pin extending through the breech-block, the chamber and the closure therefor and provided with a manipulating handle exterior to the rear end of the chamber, a block carried by the firing pin within the chamber and having a lug exterior to the chamber, a spring surrounding the firing pin within the chamber between the block on the firing pin and the adjustable closure at the rear end of the chamber, a spring-controlled trigger in the path of the lug on the block, and an operating rod for the trigger and provided with means for attaching a bait thereto.

857,893. SCREW-MACHINE. GEORGE H. NEWTON, Providence, R. I., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I., a Corporation of Rhode Island. Filed June 23, 1902. Serial No. 112,826.



Claim.—1. In a screw machine, the combination, with a turret, of means for reciprocating the same, having a uniform throw, and means for varying the extent to which said reciprocating means moves the turret for different tools, substantially as described.

2. In a screw machine, the combination, with a turret, of a device for reciprocating the same having a uniform throw, and means intermediate said device and the turret for varying the extent to which said device moves the turret for different tools, substantially as described.

3. In a screw machine, the combination, with a turret, of a device for reciprocating the same having a uniform throw, and a series of adjustable devices corresponding to the sockets in the turret for determining the extent to which said device moves the turret, substantially as described.

4. In a screw machine, the combination, with a turret, of a crank for reciprocating the same, and means for varying the extent to which the crank moves the turret for different tools, substantially as described.

5. In a screw machine, the combination, with a turret, of a crank for reciprocating the same, and means for producing a dwell in the movement of the turret at the end of its rearward movement, and for modifying the action of the crank during the advance of the turret, substantially as described.

6. In a screw machine, the combination, with a turret, of a crank for reciprocating the same, a slide intermediate the crank and turret provided with a transverse groove shaped to produce a dwell in the movement of the slide at the end of its rearward movement, and a series of adjustable abutments for connecting the turret and slide in different indexed positions of the turret, substantially as described.

7. In a screw machine, the combination, with a turret, of a reciprocating turret moving slide, and a series of adjustable abutments connected with the turret and successively engaged by said slide, substantially as described.

8. In a screw machine, the combination, with a turret, of a reciprocating turret moving slide, a series of adjustable abutments corresponding to the series of tool sockets on the turret and arranged to be successively brought into the path of the slide by the indexing of the turret, substantially as described.

9. In a screw machine, the combination, with a turret, of a series of adjustable abutments connected therewith, screw rods for adjusting said abutments, a turret moving slide arranged to successively engage the abutments as the turret is indexed, and means for reciprocating said slide, substantially as described.

10. In a screw machine, the combination, with a turret slide, of a turret mounted therein, a circularly arranged series of abutments mounted on adjusting screws, a turret moving slide arranged to engage a fixed abutment on its return stroke and to engage one of said adjustable abutments on its forward stroke, and means for reciprocating said slide, substantially as described.

11. In a screw machine, the combination, with a turret slide, of a turret mounted therein with its axis in the direction of movement of the turret slide, a series of adjustable abutments arranged about the axis of said turret, and a reciprocating turret moving slide arranged to engage said abutments, substantially as described.

12. In a screw machine, the combination, with a turret, of a shaft for reciprocating the turret which makes one revolution for each reciprocation of the turret, a segment carried by said shaft provided with a toothed portion and a locking segment and a disk connected with the turret provided with a series of toothed segments and locking segments, substantially as described.

13. In a screw machine, the combination, with a turret slide, of a turret mounted therein, a shaft which makes one revolution for each reciprocation of the turret slide, a device operated by said shaft which has a uniform throw, connections between said device and the turret slide, and mechanism for indexing the turret from said shaft, substantially as described.

14. In a screw machine, the combination, with a turret slide, of a turret mounted therein, a shaft which makes one revolution for each reciprocation of the turret slide, a device operated by said shaft which has a uniform throw, connections between said device and the turret slide, mechanism for indexing the turret from said shaft, and a turret locking device operated from said shaft, substantially as described.

15. A cam-disk for controlling the speed of the turret-advancing mechanism, said cam-disk being provided with a series of pins projecting laterally from said disk and with cam-blocks adjustably clamped on said pins, substantially as described.

16. In a screw machine, the combination, with mechanism for reciprocating the turret, of a high speed driving mechanism, an independent slow speed driving mechanism, mechanism for alternately connecting said driving mechanisms, with the reciprocating mechanism, and means for varying the speed of the slow speed mechanism, and spindle controlling mechanism driven by said high speed mechanism, substantially as described.

17. In a screw machine, the combination, with a turret, a worm shaft 70 and connections for operating the turret, of a shaft 72, a high speed clutch sleeve mounted on said shaft 72, a slow speed clutch sleeve also mounted on shaft 72, a clutch intermediate said clutch sleeves, and gearing between said clutch and shaft 70, substantially as described.

18. In a screw machine the combination with mechanism for reciprocating the turret, of high speed driving mechanism, an independent slow speed mechanism, mechanism for alternately connecting said driving mechanisms with the reciprocating mechanism, means for varying the speed of the slow speed mechanism, and mechanism for controlling the stock driven by the high speed mechanism, substantially as described.

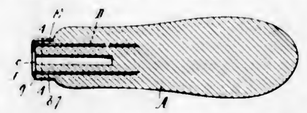
19. In a screw machine the combination with a turret, of a slide having a uniform reciprocation through which motion is transmitted to the turret, and means for varying the extent to which said slide moves the turret for different tools, substantially as described.

20. In a screw machine the combination with a turret, of a slide having a uniform reciprocation through which motion is transmitted to the turret, a series of adjustable devices corresponding to the socket in the turret for determining the extent to which said slide moves the turret, substantially as described.

21. In a screw machine the combination with a turret, of a rotary device having a uniform throw, a device given a uniform reciprocation thereby, connections between said reciprocating device and the turret for varying the extent to which said device moves the turret for different tools, substantially as described.

22. In a screw machine the combination with the turret provided with sockets, of a sleeve mounted in one of said sockets, a spindle mounted to revolve in said sleeve, a gear on the rear end of said spindle, a shaft to which the turret is secured, a driving sleeve loosely mounted on said shaft and gearing between said driving sleeve and spindle gear, substantially as described.

857,894. TOOL-HANDLE. JOHN L. OSGOOD, Buffalo, N. Y. Filed Mar. 28, 1906. Serial No. 308,448.



Claim.—1. A tool handle having a hole in one end to receive the tang of a tool, and a metal tube surrounding said tang hole in the body of the handle btween said hole and the exterior of the handle and extending continuously from the extreme end of the handle substantially to the inner end of said tang hole, the end portion of the handle being surrounded externally by an exposed metal ferrule part, substantially as set forth.

2. A tool handle having a reduced end and a hole in said end to receive the tang of a tool, a metal tube located in the body of the handle between said tang-hole and the exterior of the handle and surrounding said tang-hole, and an exposed ferrule part surrounding the reduced end of

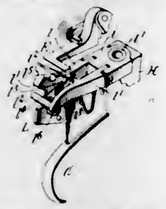
the handle and retained thereon by said tube, substantially as set forth.

3. A tool handle having a reduced end provided with a hole to receive the tang of a tool, a tube located in said reduced end of the handle between said tang-hole and the exterior of the handle, and a ferrule which is of larger diameter than said tube and surrounds said reduced end of the handle and is retained thereon by said tube, substantially as set forth.

4. A tool handle adapted to receive the tang of a tool in one end, a tube located in the tang-receiving portion of the handle to surround the tang when inserted in the handle, and a separate ferrule which surrounds the end of the handle and is retained thereon by said tube, substantially as set forth.

5. A tool handle having an end adapted to receive the tang of a tool, a short ferrule surrounding said end of the handle, and a separate tube extending into said end of the handle and having a flanged outer end which bears against said ferrule to retain the same on the handle, substantially as set forth.

857,895. SINGLE-TRIGGGER MECHANISM FOR FIREARMS. GEORGE H. PARKIN and WILLIAM B. PARKIN, Batavia, N. Y. Filed May 28, 1906. Serial No. 318,995.



Claim.—1. The combination of a plurality of hammers and controlling sears therefor, a single trigger, sear trippers movable to place either one in operative relation to the trigger, a tripper controller which is moved by one sear tripper into locking relation to the other sear tripper, and means actuated by said tripper controller for moving another sear tripper into operative relation to said trigger, substantially as set forth.

2. The combination of a plurality of hammers and controlling sears therefor, a single trigger, sear trippers movable into and out of operative relation to the trigger, means for normally placing one sear tripper in operative relation to the trigger, a tripper controller which is moved by the operative sear tripper, means actuated by said tripper controller to move the other sear tripper into operative relation to the trigger, and means acting upon the operation of said last mentioned sear tripper to return said tripper controller and sear trippers to the initial position, substantially as set forth.

3. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, sear trippers movable into and out of operative relation to the trigger, means for normally placing one sear tripper in operative relation to the trigger, a tripper controller which is engaged and moved by said operative sear tripper, means actuated by said tripper controller to move the other sear tripper into operative relation to the trigger, said last mentioned sear tripper having a part which returns said tripper controller to the initial position when said sear tripper is actuated to allow the return of the sear trippers to the normal position, substantially as set forth.

4. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, sear trippers movable into and out of operative relation to the trigger, a spring for normally holding one sear tripper in operative relation to the trigger, a tripper controller which is moved by said operative sear tripper, a spring which is strained by the movement of said tripper controller and moves said sear trippers against the action of said other spring to place the other sear tripper in operative relation to the trigger, and means acting upon the operation of said last mentioned sear tripper to return said tripper controller to the initial position, substantially as set forth.

5. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, a laterally movable switch block, sear trippers pivoted to said switch block to swing vertically, a spring for moving said switch block to place one sear tripper in operative relation to the trigger, a tripper controller which is moved by said operative sear tripper, a spring which is strained by the movement of said tripper controller and moves said switch block against the action of said other spring to place the other sear tripper in operative relation to the trigger, and means acting upon the operation of said last mentioned sear tripper to return said tripper controller to the initial position, substantially as set forth.

6. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, sear trippers movable into and out of operative relation to the trigger, means for normally placing one sear tripper in operative relation to the trigger, and controlling means which are actuated by the operation of one sear tripper to move the other sear tripper into operative relation to the trigger and which are returned to the normal position by the actuation of said other sear tripper, substantially as set forth.

7. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, sear trippers movable into and out of operative relation to the trigger, means for normally placing one sear tripper in operative relation to the trigger, controlling means which are actuated by the operation of one sear tripper to move the other sear tripper into operative relation to the trigger and which are returned to the normal position by the actuation of said other sear tripper, and a change device for placing the inoperative sear tripper in operative relation to the trigger, substantially as set forth.

8. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, sear trippers movable into and out of operative relation to the trigger, means for normally placing one sear tripper in operative relation to the trigger, controlling means which are actuated by the operation of one sear tripper to move the other sear tripper into operative relation to the trigger and which are returned to the normal position by the actuation of said other sear tripper, and a change device for shifting said controlling means to move either sear tripper out of operative relation to the trigger and place the other sear tripper into operative relation to the trigger, substantially as set forth.

9. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, sear trippers movable into and out of operative relation to the trigger, means for normally placing one sear tripper in operative relation to the trigger, controlling means which are actuated by the operation of one sear tripper to move the other sear tripper into operative relation to the trigger and which are returned to the normal position by the actuation of said other sear tripper, and means operated in opening the breech after the actuation of the first sear tripper for returning said controlling means to the normal position, substantially as set forth.

10. The combination of a plurality of hammers, controlling sears therefor, a single trigger, sear-trippers in operative relation to said sears, said sear-trippers being movable into and out of operative engagement with the trigger, means for normally placing one sear-tripper into operative engagement with the trigger, means for placing the other sear-tripper into operative engagement with the trigger after the actuation of the first-mentioned sear-tripper, and a change device for moving one sear-tripper out of and placing the other sear-tripper into engagement with the trigger, substantially as set forth.

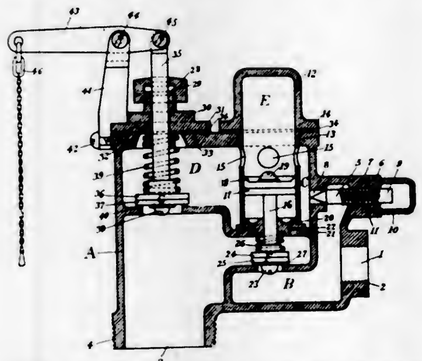
11. The combination of a plurality of hammers, controlling sears therefor, a single trigger, sear-trippers which are movable vertically to trip said sears, said sear-trippers being movable laterally into and out of operative relation to the trigger, means for normally placing one sear-tripper into operative relation to the trigger, means for placing the other sear-tripper into operative relation to the trigger after the actuation of said first-mentioned sear-tripper, and a change device for moving one sear-tripper out of and placing the other sear-tripper into operative relation to the trigger, substantially as set forth.

12. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, a sear tripper for each sear, which sear trippers are movable laterally into and out of operative relation to the trigger and are also movable vertically to actuate the sears, mechanism for normally placing one sear tripper in operative relation to the trigger and placing another sear tripper into operative relation to the trigger after the actuation of the trigger, and a change device for changing the position of the sear trippers at will, substantially as set forth.

13. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, a sear-tripper for each sear, which sear trippers are movable laterally into and out of operative relation to the trigger and are also movable vertically to actuate the sears, means for normally placing one sear tripper into operative relation to the trigger, a pivoted tripper controller having a cam face which is engaged by one sear tripper when actuated to move said tripper controller, means actuated by the movement of said tripper controller for placing another sear tripper into operative relation to the trigger, and another cam face on said tripper controller which is engaged by said other sear tripper when actuated to restore said tripper controller to the initial position, substantially as set forth.

14. The combination of a plurality of hammers, and controlling sears therefor, a single trigger, sear-trippers which are movable to place either one in position to be operated upon the actuation of the trigger, a tripper-controller which is moved by the actuation of one sear-tripper into position to lock another sear-tripper, and means actuated by said tripper-controller for moving another sear-tripper into position to be operated upon the actuation of the trigger, substantially as set forth.

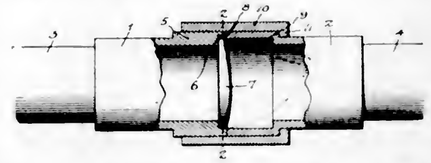
857,896. FLUSHING-VALVE. CHARLES A. PARKS, Baltimore, Md. Filed Jan. 7, 1907. Serial No. 351,082.



Claim.—1. In a flush valve, the combination with a casing having an inlet and an outlet, a reservoir passageway communicating by a valve port with said outlet and by restricted opening with said inlet, and a flushing passageway communicating with the inlet and by a valve port with the outlet, of a manually operated valve normally closing the valve port of the reservoir passageway, a reciprocating valve member comprising a valve head normally closing the valve port of the flushing passageway, a stem passing through an opening in the wall of the reservoir passageway, said opening being proportioned to permit the passage therethrough of said valve head, and a piston on the stem within the reservoir passageway, a cylinder within the reservoir passageway within which said piston is received and guided, and a collar loosely but closely encircling said valve stem and closing the opening in the wall of the reservoir passageway.

2. In a flush valve, the combination with a casing having an inlet and an outlet, a reservoir passageway communicating by a valve port with said outlet and by restricted opening with said inlet, and a flushing passageway communicating with the inlet and by a valve port with the outlet, of a manually operated valve normally closing the valve port of the reservoir passageway, a reciprocating valve member comprising a valve head normally closing the valve port of the flushing passageway, a stem passing through an opening in the wall of the reservoir passageway, said opening being proportioned to permit the passage therethrough of said valve head, and a piston on the stem within the reservoir passageway, a cylinder screw threaded through a wall of the reservoir passageway and receiving and guiding said piston, and a collar loosely encircling said valve stem and closing the opening in the wall of the reservoir passageway, being clamped between said wall and the inner end of the cylinder.

857,897. UNION-COUPLING CHECK-VALVE. LOUIS M. PATTERSON, Coalfield, Tenn. Filed Jan. 23, 1906. Serial No. 297,513.



Claim.—1. A union coupling comprising a pair of tubular open ended members having their outer ends adapted for connection with pipes, means for detachably connecting the members, one member having an internal valve seat at its inner end, and a swinging check valve hinged within said member in coöperative relation with the seat, whereby the valve is accessible when the coupling members are disconnected.

2. A union coupling including a pair of tubular members, one of the members being provided with an internal annular rabbet in its inner end forming a valve seat, a check valve pivoted upon said member and received within the rabbet when closed and coöperating with the seat, and a collar swiveled upon the other member and having a threaded connection with the first-mentioned member.

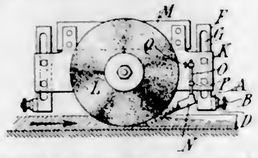
3. A combined coupling and check valve including opposite tubular coupling members, one of the members having an external threaded portion and an internal annular rabbet in its inner end forming a valve seat, a check valve pivoted to said member within the rabbet and coöperating with the seat, the other member having an external annular shoulder, and a collar swiveled upon the shoulder and provided with an internal annular flange engaging the back of the shoulder, said collar being projected in front of the adjacent member and internally threaded to engage the threaded portion of the first-mentioned member.

857,898. MACHINE FOR WORKING MARBLE. JOHN R. PEIRCE, New York, N. Y., assignor to Royden Marble Machinery Company, New York, N. Y., a Corporation of New Jersey. Original application filed Apr. 25, 1906, Serial No. 313,584. Divided and this application filed Nov. 10, 1906. Serial No. 342,815.

Claim.—1. The combination with a marble working machine having a rotating wheel of agglomerated material, of a gage adapted to be attached to the machine in line with the wheel and in advance thereof.

2. The combination with a marble working machine having a rotating wheel, of a gage adapted to be attached to the machine in line with the wheel and above the marble,

and adapted to be laterally adjusted for different widths of the wheel.

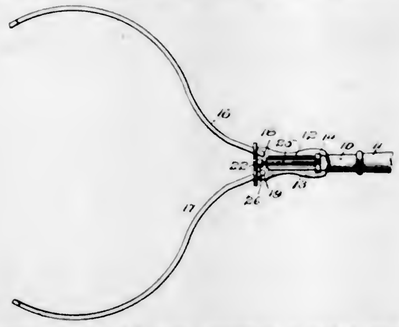


3. The combination with a marble working machine having a rotating wheel, of a gage adapted to be attached to the machine in line with the wheel and above the marble, and adapted to be vertically adjusted for different thicknesses of marble.

4. The combination with a marble working machine having a rotating wheel, of a gage adapted to be attached to the machine in line with the wheel and above the marble, and being adjustable laterally and vertically.

5. The combination with a marble working machine having a rotating wheel of agglomerated material, a stop A, a vertical slide F, and an arm K, said stop being laterally adjustable relatively to said slide, and said slide being vertically adjustable relatively to said arm, and said arm being attachable to the machine so as to support said stop in line with and in advance of the wheel.

857,899. PLATE-LIFTER. ALBERT E. PHILLIPS, Scranton, Pa. Filed Jan. 30, 1906. Serial No. 298,705.

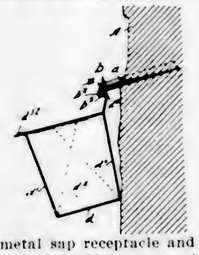


Claim.—1. A plate lifter comprising a handle, embodying spaced guides, elliptical fingers pivoted upon the handle, a slide mounted between the guides, a finger operator connected with the slide and provided with spaced openings each embracing one of the fingers, and a guide lug disposed upon the handle and positioned to act as a stop for the finger operator.

2. A plate lifter comprising a handle, spaced and approximately parallel extensions projecting from an end of the handle, a slide mounted between the extensions, curved fingers pivotally connected to the extremity of the extensions, a finger operator connected with the slide and provided with spaced openings each embracing one of the fingers, and a guide-lug carried by the extensions and positioned to act as a stop for the finger operator.

857,900. SHEET-METAL TURPENTINE-CUP OR SAP-RECEPTACLE. ERNEST R. PHILIP and JOHN KOHKE, Atlanta, Ga., assignors to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 14, 1907. Serial No. 362,293.

Claim.—1. In a sheet metal sap receiving receptacle and apron, the combination of an apron having divergent integral flanges at its ends and provided with a downwardly, inwardly and upwardly curved flange at its lower longitudinal edge, of a removable long, deep, narrow one piece sheet metal sap receiving receptacle, having integral bottom, upright sides and flaring ends, and integral angle folds at the flaring ends of the receptacle, the flaring ends being furnished with integral locking lips folded outwardly from the upper edge of the integral angle folds, the inner upright side of said receptacle having at its upper edge an inwardly and downwardly turned flange engaging said flange at the lower longitudinal edge of said apron, substantially as specified.



2. In a sheet metal sap receptacle and apron, the combination with an apron having an integral supporting hook at its lower longitudinal edge, of a removable one piece sheet metal sap receptacle having integral bottom, upright sides and flaring ends, and integral angle folds at the flaring ends, the inner side of the receptacle having at its upper longitudinal edge an integral hook engaging the hook at the lower longitudinal edge of the apron, substantially as specified.

3. The combination with a sheet metal apron having a downwardly and inwardly turned flange at its lower longitudinal edge, of a removable long, deep, narrow, one piece sheet metal sap receptacle having integral bottom, sides and ends and angle folds at the ends, and provided at the upper longitudinal edge of its inner side with an inwardly and downwardly turned flange engaging said flange at the lower longitudinal edge of the apron, substantially as specified.

4. The combination with a sheet metal apron having a downwardly and inwardly turned flange at its lower longitudinal edge, of a removable long, deep, narrow, one piece sheet metal sap receptacle having integral bottom, sides and ends and angle folds at the ends, and provided at the upper longitudinal edge of its inner side with an inwardly and downwardly turned flange engaging said flange at the lower longitudinal edge of the apron, said receptacle being furnished with integral locking lips to hold the angle folds in place at the ends of the receptacle, substantially as specified.

5. The combination with a sheet metal collecting apron of a removable sheet metal sap receptacle having integral bottom, upright sides and flaring ends, and integral overlapping angle folds at the flaring ends of the receptacle, and provided with integral locking lips, folded over the upper edges of the angle folds to hold the same in place and provided at the longitudinal upper edge of one of its upright sides with an inwardly turned flange to form a hook for supporting the receptacle, substantially as specified.

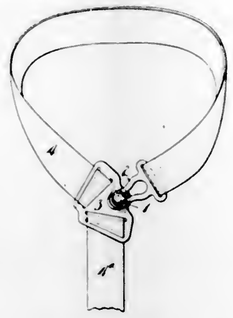
6. A one piece sheet metal sap receptacle having integral bottom, upright sides and flaring ends and integral angle folds at the flaring ends, the flaring ends having at their upper edges integral locking lips folded over the upper edges of the angle folds and one of the upright sides of the vessel being provided at its upper longitudinal edge with inwardly and downwardly turned flange for supporting the receptacle, substantially as specified.

7. The combination with a sheet metal collecting apron of a removable one piece sheet metal receptacle having bottom, sides, ends and angle folds, one of the sides having at its upper longitudinal edge a supporting hook and the vessel being furnished with integral locking lips turned over the upper edge of the receptacle to hold the angle folds in place, substantially as specified.

8. The combination with a sheet metal collecting apron of a removable one piece sheet metal sap receptacle having integral bottom sides ends, and angle folds and integral locking lips turned over the upper edge of the receptacle to hold the angle folds in place and provided with means for engaging the sap collecting apron, substantially as specified.

9. The combination with a sheet metal collecting apron of a removable one piece sheet metal sap receptacle having integral bottom, sides, ends and angle folds, the ends having integral locking lips folded outwardly over the upper edges of the angle folds to hold the same in place, the upper longitudinal edge of one of the sides having an inwardly turned flange and the upper edge of the other side of the receptacle having an outwardly projecting flange, substantially as specified.

857,901. LOOP-AND-STUD CONNECTION. JOSEPH H. PILKINGTON, Waterbury, Conn., assignor to The Smith & Griggs Manufacturing Company, Waterbury, Conn., a Corporation of Connecticut. Filed Feb. 20, 1907. Serial No. 358,398.



Claim.—1. A stud and loop connection comprising a stud, a support therefor, a loop having a key-hole opening adapted to receive the stud, the stud support having an opening therein, a projection on the loop arranged to normally stand in said opening when the parts are assembled.

2. A stud and loop connection comprising a stud, a support therefor, a loop having a key-hole opening adapted to receive the stud, the stud support having an opening therein, a projection on the loop arranged to normally stand in said opening when the parts are assembled, and a raised portion on the loop arranged to bear under the stud head to yieldingly hold said projection in said recess.

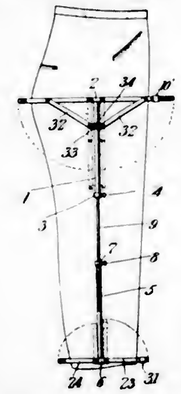
3. A stud and loop connection comprising a stud, a support therefor, a loop having a key-hole opening adapted to receive the stud, the stud support having an opening therein, a projection on the loop arranged to normally stand in said opening when the parts are assembled, said recess being curved to permit the loop to be freely self-adjusting.

4. A stud and loop connection comprising a stud, a support therefor, a loop having a key-hole opening adapted to receive the stud, the stud support having an opening therein, a projection on the loop arranged to normally stand in said recess when the parts are assembled, said opening and said projection being curved on an arc with the stud as the center, the projection being shorter than the opening.

5. A stud and loop connection comprising a stud, a support therefor, a loop having a key-hole opening adapted to receive the stud, the stud support having an opening therein, a projection on the loop arranged to normally stand in said opening when the parts are assembled, a portion of said loop bearing under the stud head when the parts are assembled to yieldingly hold the projection in said opening.

6. A stud and loop connection, comprising a stud, a support therefor, a loop having an opening adapted to receive the stud, said stud support having a semi-circular opening therein, a projection on the loop arranged to engage in said opening when the parts are assembled, and a raised portion on each side of the loop adapted to engage the under side of the stud at one side of the central line thereof opposite the said projection.

857,902. TROUSERS-STRETCHER. LEAMON S. PLUMMER, Swanton, Ohio. Filed Mar. 30, 1907. Serial No. 365,507.



Claim.—1. A trousers stretcher comprising a hollow stem carrying a trousers clamp at one end and provided with a clamp sleeve and screw at the other end, another hollow stem having a trousers clamp at one end and provided with a clamp screw and sleeve at the other end, and a rod insertible into each hollow stem through the clamping sleeve thereon and adapted to be held to said sleeves by the clamp screws.

2. A trousers stretcher comprising two hollow stems, clamp screws, an intermediate spacing rod adapted to enter each stem and be clamped thereto, clamps on each stem, each clamp comprising two hinged bars one of which is formed with a hinge member and the other of which is formed with another hinge member to engage the first-mentioned hinge member, and means for removably securing the two members of the clamp in contiguous relation.

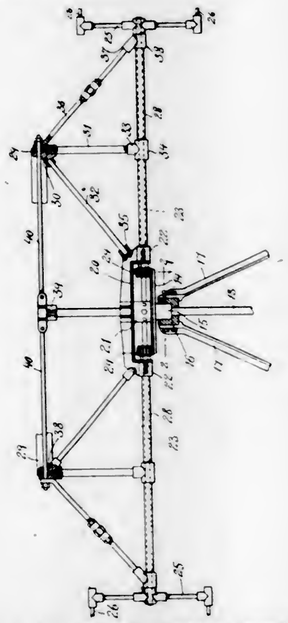
3. A clamp section for trousers stretchers comprising a suitable stem, two arms hinged to the stem at their contiguous ends and one arm having a hinge member formed therein at its free end, another arm having a hinge member adapted to the first-mentioned hinge member and movable into close parallel relation with the two arms, and a retaining clip or ring carried by one of the arms hinged to the stem and arranged to engage over and confine the ends of the said arm and the adjacent arm together.

4. In a trousers stretcher, a clamp end therefor comprising a suitable stem, arms each hinged at one end thereto and one of the arms having its free end formed with a hinge member, a locking slide carried by the stem, links each connected at one end to the locking slide and at the other end to a respective one of said arms, and a clamp member coacting with the aforesaid arms and composed of other two arms connected together at one end and one of said last-named arms having a hinge member coacting with the hinge member on one of the first-mentioned arms, a locking sleeve for the hinged connected ends of the second-named arms, and means for confining those ends of the clamp members remote from their hinge connection in contiguous relation.

5. A trousers stretcher comprising a hollow stem having a clamp sleeve secured at one end, two arms at the other end of the stem each pivoted at one end thereto and one of said arms having its free end formed with a hinge member, a locking slide on the stem, links connecting the aforesaid arms to the locking slide, a clamp member coacting with the arms on the stem and comprising two other arms pivotally joined together, a locking sleeve for the pivoted ends of these last-named arms, a hinge mem-

ber formed on the end of one of said last-named arms and arranged to engage the hinge member on the corresponding arm carried by the stem; another hollow stem having a clamp sleeve at one end, two arms pivoted to the other end of the stem, a hinge member formed on the end of one of these last-named arms, a bar adapted to coact with the last-named arms and provided with a hinge member for engagement with the hinge member of the corresponding arm carried by the second hollow stem, clips or rings adapted to those ends of the clamps remote from their hinged ends to hold them together, and a rod adapted to enter both hollow stems and to be clamped thereto.

857,903. AMUSEMENT APPARATUS. JAMES H. PORTER and HENRY S. PORTER, Boston, Mass. Filed Mar. 15, 1906. Serial No. 306,203.



Claim.—1. An amusement apparatus comprising an upright central driving shaft, means for supporting the same, a frame or spider affixed to said shaft and having horizontal shaft bearings, a trussed supporting frame having shaft bearings at its outer portions said trussed frame being engaged with the spider, and horizontal shafts supported in said spider bearings and truss-frame bearings and having seat supporting yoke frames at their outer ends.

2. An amusement apparatus comprising an upright central driving shaft, means for supporting the same, a frame or spider affixed to said shaft, elongated tubular bearings affixed to and radiating from the spider, a horizontal ring or band above the said bearings, inclined truss members connecting the said ring with the spider, inclined truss members connecting the ring with the outer portions of the elongated bearings, intermediate truss members connecting the ring with the central portions of the elongated bearings, radially arranged rods connecting the ring with the upper portion of the vertical shaft, radially arranged horizontal shafts in said elongated bearings, and seat-supporting yoke frames affixed to the outer portions of said horizontal shafts.

3. An amusement apparatus comprising an upright central driving shaft, means for supporting the same, a series of horizontal shafts radiating from the upright shaft, and provided at their outer ends with seat-supporting yoke frames, bearings for said horizontal shafts connected with the upright shaft, a driving gear normally loose on the upright shaft and meshing with gears affixed to the horizontal shafts, and means for locking and releasing said driving gear.

4. An amusement apparatus having radiating shafts, yoke frames mounted on the outer ends of said shafts and comprising radial arms, having angular sockets keyed to their outer ends and horizontal arms affixed to said sockets.

5. An amusement apparatus comprising an upright driving shaft, a series of horizontal shafts radiating therefrom and operatively connected therewith, said shafts having seat-supporting yoke frames at their outer ends, sleeves inclosing portions of said shafts, trussed frames connected with said sleeves whereby said shafts are prevented from springing or buckling, and means for supporting the outer portions of said horizontal shafts, said means including a fixed circular track and wheels or rollers movable thereon.

6. An amusement apparatus comprising an upright driving shaft, a series of horizontal shafts radiating therefrom and operatively connected therewith, said shafts having seat-supporting yoke-frames at their outer ends, and means for supporting the outer portions of said horizontal shafts, said means including a fixed circular track, a ring affixed to the bearings of the shafts above the track, and an independently rotatable circular frame having a series of rollers interposed between the said ring and track.

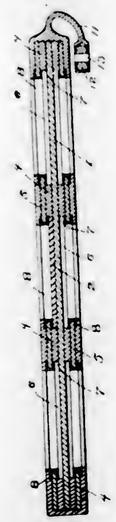
7. An amusement apparatus comprising an upright driving shaft, a series of horizontal shafts radiating from the upright shaft and operatively engaged therewith, said horizontal shafts having seat-carrying yoke-frames, and segmental platforms located at different heights, said platforms being at opposite sides of the upright shaft.

8. An amusement apparatus comprising an upright central driving shaft, having an elevated collar or enlargement, a spider supported on said enlargement, horizontal shafts radiating from the spider and having seat-supporting yoke frames at their outer ends, a fixed elevated step surrounding the shaft in close proximity to the said enlargement and spider, and anti-friction bearings interposed between the enlargement and the step, the elevation of the step preventing crushing pressure on the anti-friction bearings.

857,904. BALANCE-BOOK. WILLIAM E. PAUDHOMME, Portland, Oreg. Filed Aug. 11, 1905. Serial No. 273,820.

Claim.—1. As a new article of manufacture, a trial or balance sheet, comprising a main body or sheet, parallel spacing strips secured longitudinally of said main sheet, a frame secured upon each side of said main sheet and spaced therefrom by said parallel spacing strips, said frame provided with openings, metallic frames provided with sides and ends substantially U-shaped in cross section, said metallic frame secured upon the edges of the open portions of said frames, a removable strip provided with ruled lines positioned beneath each of said frames and between two of the parallel spacing strips, each of said removable strips provided with a silicate coating upon the ruled surface, and said parallel spacing strips producing open ends upon the main sheet, whereby the silicate coated strips are freely removable from either end of the main sheet.

2. As a new article of manufacture, a device of the character described, comprising a main sheet, a series of parallel spacing strips positioned upon each side of said main sheet, a frame provided with substantially rectangular openings positioned upon each side of said main sheet and spaced therefrom by means of said spacing strips, said spacing strips producing openings upon both ends of the main sheet, removable, ruled strips secured between each two of said spacing strips, said removable strips provided with a silicate coating covering the ruled surface thereof, the edges of each of the rectangular openings of the frames constituting raised edges for the removable strips, metallic reinforcing means positioned upon said reinforced edges, and said silicate coated strips being freely removable from either end of said main sheet from between the parallel spacing strips.



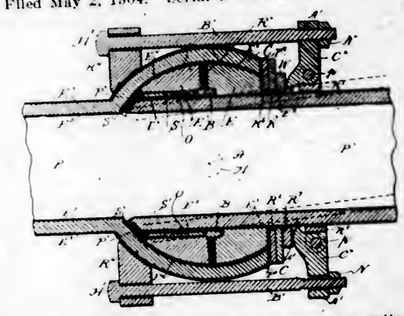
3. A device of the character described, comprising a main sheet, parallel spacing strips carried upon one side of said main sheet, a frame positioned upon said spacing strips, said frame provided with a substantially rectangular opening, the spacing strips and frame constituting compartments provided with open ends, metallic reinforcing means positioned upon the edges of the opening of said frame, and a strip ruled to form columns designated as debit and credit and balances, said strip covered with silicate or similar slate substance positioned between each two of said parallel spacing strips, said silicate coated strips being freely removable from either end of said compartments.

4. A device of the class described, comprising a frame embodying a longitudinal slide-way, and having a sight opening therein, a metal binding re-inforcing the inner edges of the frame at the sight opening and proportioned as a frame substantially U-shaped in cross section with outwardly extending flanges, a strip proportioned to be slidably inserted in the slide-way and beneath the metal frame and having ruling imprinted thereon, and with a transparent silicate coating superposed upon the ruled surface.

5. A device of the character described, comprising a main sheet, parallel spacing strips secured longitudinally of said sheet upon both sides thereof, a frame provided with rectangular openings secured upon each side of said main sheet and engaging said strips, the rectangular opened portion of said frames registering with the space between the spacing strips, said frames, spacing strips, and main sheet, producing compartments, rectangular, metallic frames positioned upon the edges of each of said openings of the frame, and strips provided with a transparent coating positioned between each two of said spacing strips and within said compartments, said coated strips capable of being removed from either end of said compartments.

6. A device of the character described, comprising a main sheet, frames positioned upon and spaced from each side of said sheet, said frames provided with substantially rectangular openings, the frames and sheet producing compartments provided with open ends, reinforcing means positioned upon the edges of the opened portions of said frames, and a coated strip positioned between said frames and sheet, within said compartments, and capable of being removed from either end of the same.

857,905. PIPE-JOINT. JOHN P. PUTNAM, Boston, Mass. Filed May 2, 1904. Serial No. 205,059.



Claim.—1. In a pipe joint consisting of a cylindrical shaped spigot on the end of one pipe, inserted within a cup shaped enlargement on the end of another pipe, the cup having a spherical inner surface, the combination with the spigot and cup of a soft cement lining on the inner surface of the cup and on the outer surface of the spigot, and of a hard cement filling between the two.

2. In a pipe joint consisting of a spigot on the end of one pipe inserted within a cupped end of another pipe, the combination with the spigot and cup of a ring between the two, a space between the ring and the spigot and a soft material filling this space.

3. In a pipe joint consisting of a spigot on the end of one pipe inserted within a cupped end of another pipe, the combination with the spigot and cup of two rings inserted between them the outer ring being of hard cement and the inner ring of soft cement.

4. In a pipe joint consisting of a spigot on the end of one pipe inserted within a cupped end of another pipe, the combination with the spigot and cup of two cement rings inserted between them, one ring surrounding the spigot at its end and filling the bottom of the cup, and the other ring surrounding the spigot below its end and filling the top or mouth end of the cup, the former being a soft ring and the latter a hard ring.

5. In a pipe joint consisting of a spigot on the end of one pipe inserted within a cupped end of another pipe, the combination with the spigot and cup of two cement rings inserted between them, one ring being of hard cement filling the outer part of the space between the cup and the spigot, and the other ring being of soft cement, adhesive and flexible, filling the inner part of the space between the cup and the spigot, and a soft adhesive and flexible lining between the hard cement ring and the surface of the pipes.

6. In a pipe joint consisting of a spigot on the end of one pipe inserted within a cupped end of another pipe the interior of the cup being spherical, the combination with the spigot and cup of a hard ring between the two, the outer surface of the ring being spherical and the inner surface cylindrical, and a soft adhesive and flexible material between the ring and the pipes.

7. In a pipe joint consisting of a spigot on the end of one pipe inserted within a cup-shaped enlargement on the end of another pipe, the combination of the spigot having its outer surface approximately cylindrical, and the cup having its inner surface approximately spherical in shape, but both having the roughness of surface and minor imperfections of contour usual with ordinary rough castings as of iron before it has been trued up by machine work, and a soft material forming a matrix or mold on one of the castings, and a cement ring cast in the mold between it and the other casting, the mold being of a thickness sufficient to cover all the imperfections of the rough surface of the casting.

8. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end a cupped enlargement into which the spigot is inserted; a ring within the cup having its lower edge resting on the

lower inside surface of the cup at its junction with the pipe, and its upper edge inclining at an angle with the central axis of the ring; and the spigot having its outer rim inclined at a similar angle.

9. In a pipe joint consisting of a spigot end of one pipe inserted into the cupped enlargement of another pipe, the combination with the spigot and cup of a ring between the two the ring having its upper end inclined at an angle with its axis and having index marks around its end.

10. In a pipe joint consisting of a spigot end of one pipe inserted into the cupped enlargement of another pipe, the combination with the spigot and cup of a ring between the two, the ring having its upper end inclined at an angle with its axis, and having degree marks around its circumference, and the spigot end of the pipe which is similarly inclined and has an index mark.

11. In a pipe joint consisting of a spigot end of one pipe inserted into the cupped enlargement of another pipe, the combination with the spigot and cup, of two rings between the two, the lower ring resting upon the interior surface of the cup at the point of its connection with its pipe, and having its upper surface inclined at an angle with its axis, and the upper ring having its lower surface inclined at a similar angle and resting upon the inclined surface of the lower ring: the upper ring having its other surface cut at a right angle with its axis, and supporting the end of the spigot.

12. In a pipe joint consisting of a spigot end of one pipe inserted into the cupped enlargement of another pipe, the combination with the spigot and cup, of two rings having an interior diameter corresponding with that of the pipes and placed between the spigot and bell, the rings having one end each inclined at an angle with its axis and having degree and index marks upon their outer surfaces.

13. The combination of the spigot S of the pipe P' placed within the cup C of the pipe P, rings R and R' between the end of the spigot and the base of the cup and the edges of the rings formed to interlock with each other so that their inner surfaces shall form an accurate alinement with the inner surfaces of the pipes P and P'.

14. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end a spherical shaped cup into which the spigot is inserted; a ring having an outer circumference substantially equal to the interior circumference of the cup at its point of greatest diameter, and an inner opening slightly larger than the spigot in cross section, and a cement filling between the spigot, ring, and cup.

15. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end a spherical shaped cup into which the spigot is inserted; a sheet metal ring surrounding the spigot, and having its outer circumference fitting against the largest part of the sphere, the ring being cut across its width; and a cement filling between the spigot and the bell cup.

16. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end a spherical shaped cup into which the spigot is inserted; a loose ring between the cup and the spigot; and a cement filling between the cup, spigot and ring.

17. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end a spherical shaped cup into which the spigot is inserted; two loose rings surrounding the spigot, one ring bearing on the inner surface of the cup, and the other ring bearing on the outer surface of the spigot; and a cement filling between the spigot and the cup.

18. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end a cup into which the spigot is inserted; a loose ring surrounding the spigot, the outer circumference of the ring bearing against the inner surface of the material of which the body of the cup and pipes are made, and a protecting coat cementing the ring to the cup applied to the pipes before the joint is made.

19. In a pipe joint consisting of a spigot end of one pipe inserted into the spherical shaped cupped end of another pipe, the combiantion with the cup and spigot of a loose ring disk surrounding the spigot and a hard cement on one side of the ring filling the space between the cup and spigot and extending from the ring to the mouth of the cup, and a soft cement on the other side extending from the ring to the end of the spigot.

20. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end a cup into which the spigot is inserted; a ring surrounding the spigot, the outer circumference of the ring bearing against the inner surface of the cup; a cement filling between the spigot and cup; and a pour hole in the side of the cup.

21. In a pipe joint consisting of a spigot end of one pipe inserted into the cupped end of another pipe, the combination with the cup and spigot of a hard cement filling between the two extending from the mouth of the cup all round the spigot and partly filling the space toward the end of the spigot, and soft cement filling the balance of the space.

22. The combination of the spigot end S of the pipe P', cup, C of the pipe P, hard cement E between the two around the spigot at the mouth end of the cup, and soft cement E' around the spigot at the base of the cup.

23. The combination of the spigot end S of the pipe P', cup C of the pipe P, hard cement E between the two at the mouth end of the cup, soft cement E' at the base of the cup and packing P^2 for retaining the soft cement when in a fluid state.

24. The combination of the spigot end S of the pipe P', cup C of the pipe P, hard cement E between the two at one end of the cup, soft cement E' at the other end of the cup, and granules G G in the soft cement.

25. In a pipe joint consisting of a spigot end of one pipe inserted into the cupped end of another pipe, the combination with the cup and spigot of a loose sleeve S' surrounding the end of the spigot, soft cement E^2 surrounding the sleeve, and a key surrounding the spigot to confine the soft cement in the joint.

26. The combination of the spigot S of the pipe P', cup C of the pipe P, loose sleeve S' surrounding the spigot, packing P^2 under both sleeve and spigot end, and soft cement E^2 between the sleeve and the spigot.

27. The combination of the spigot S of the pipe P', cup C of the pipe P, loose sleeve S' surrounding the spigot, the sleeve having a bead B round its upper end, the bead having its outer surface convex corresponding with the concave surface of the cup, and ring R surrounding the bead and the cement filling E^2 surrounding the sleeve.

28. The combination of the spigot S of the pipe P', cup C of the pipe P, loose sleeve S' surrounding the spigot, hard cement E around the mouth of the cup, soft cement E' below the hard cement, and packing P^2, the sleeve S' extending from the packing P^2 to the hard cement E.

29. In a pipe joint consisting of a spigot end of one pipe inserted into the cupped end of another pipe the combination with the cup and spigot of a pour hole passing through the side of the cup, a packing for closing the mouth of the cup half rings for pressing the packing against the mouth, and means for bringing the pressure to bear upon the half rings.

30. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end a cup into which the spigot is inserted; a packing ring between the end of the spigot and the base of the cup, and mechanical means for holding the spigot firmly against the packing ring.

31. The combination of the pipe P', spigot S at the end thereof, pipe P and cup C at its end, the spigot S being inserted into the cup C, and a mechanism for holding the spigot and cup together consisting of a half ring R^4, embracing cup C, and another half ring R^5 embracing the pipe P', cams C^2 pivoted to the ends of the half ring R^5, one on each side of the pipe, and bolts B' passing through the half rings R^4 and R^5 and means for straining the cams against the sides of the pipe P'.

32. The combination of the spigot S of the pipe P', cup C of the pipe P, hard cement E between the spigot and cup at the mouth end of the cup, and bituminous cement E' between the spigot and cup at the base end of the cup.

33. The combination of the spigot S of the pipe P', cup C of pipe P, hard cement E surrounding the spigot at mouth of C, soft bituminous cement E' surrounding the spigot at base of C, and hard bituminous cement E^2 and E^3 lining cup and spigot.

34. The combination of the spigot S of the pipe P', cup C of pipe P, hard cement E between spigot and cup and soft coating E^3 and paraffin lining E^4 above the coating E^3.

35. The combination of the spigot S of the pipe P', cup C of pipe P, hard cement E between spigot and cup, and coating E^3 thick enough to cover the irregularities of surface of the pipe castings and form at the same time a matrix in which the cement E is cast and a yielding lubricator permitting of its movement in the cup C.

36. The combination of the spigot S of the pipe P', cup C of pipe P, hard cement E between spigot and cup and soft cement E' below the hard cement, the soft cement being rendered permanently pliable by the admixture with it of a stable fluid.

37. The combination of the spigot S of the pipe P', cup C of pipe P, hard cement E between spigot and cup, and soft cement E' below the hard cement constructed of bituminous cement made pliable by admixture with a mineral oil, and having its melting point raised by the introduction of powdered materials whose melting points are much higher than that of the soft cement.

38. In a pipe joint consisting of a spigot end of one pipe inserted into a spherical shaped upper end of another pipe, the combination with the cup and spigot of a loose ring surrounding the spigot, the outer circumference of the ring being equal to the inner circumference of the interior of the cup at its largest point, the ring having a soft cement filling on one side between the disk and the base of the cup and surrounding the spigot.

39. The combination of the spigot S of the pipe P', cup C of the pipe P, ring R^2 extending from the interior of the cup at the plane of its largest diameter and surrounding the spigot S and cement between the spigot and the cup.

40. The combination of the spigot S of the pipe P', cup C of the pipe P, ring R^2 and hole H through the cup C the hole being partly on one side and partly on the other side of the ring R^2 and cement between the spigot and the cup.

41. The combination of the spigot S of the pipe P' cup C of the pipe P, sleeve S' surrounding the spigot S, perforations O in the sleeve and soft cement E'.

42. In a pipe joint consisting of a spigot on the end of one pipe inserted within a cupped end of another pipe, the combination with the spigot and cup of a ring between the two, a space between the ring and the spigot and cup, and a soft material filling this space.

43. In a pipe joint the combination with a spigot-ended pipe section, of another pipe section having an enlarged end into which the spigot is inserted; a ring between the spigot and the enlarged end having its plane substantially at right angles with the axis of the pipes; and a cement filling between the spigot and the enlarged end.

44. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having at its end an enlargement into which the spigot is inserted; a ring surrounding the spigot; cement filling between the spigot and enlargement; and a pour hole in the side of the enlargement, part of the hole being above and part below the ring.

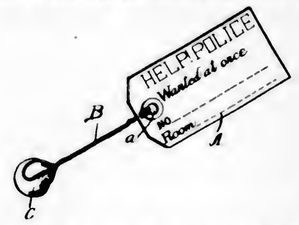
45. In a pipe joint the combination with a spigot ended pipe section, of another pipe section having an enlarged end into which the spigot is inserted; a ring between the spigot and the enlarged end; a pour hole in the side of the hub; and cement filling between the spigot and the hub.

46. In a pipe joint the combination with a spigot ended pipe section of another pipe section having an enlargement into which the spigot is inserted; a ring between the spigot and enlargement, surrounding the spigot; a pour hole in the side of the hub below the ring; and a soft cement filling below the ring.

857,906. ALARM DEVICE. GEORGE E. RIDEOUT, Boston, Mass. Filed June 25, 1906. Serial No. 323,410.

Claim.—1. In a device of the character described, a tag, and, attached thereto, a missile-carrying holder formed, at the outer or free end into a cup or cradle.

2. In a device of the character described, a tag, and, attached thereto, a missile-carrying holder, formed, at the outer or free end, into a cup or cradle, and a missile frictionally held by and disposed within the cradle or cup.

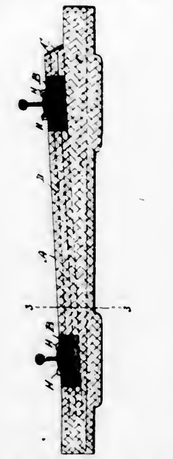


3. In a device of the character described, a tag, and a missile-carrying holder attached thereto and comprising two parts formed of wire, one part attached to the tag and the second part having its shank twisted around the shank of the first part.

4. In a device of the character described, a tag, and, attached thereto, a missile-carrying holder formed of wire, and comprising two parts, the shank of one part being twisted around the shank of the other part, and each part formed with a loop or coil at the outer end forming a cradle or cup for the missile.

5. In a device of the character described, a tag bearing a legend or inscription, and, removably connected with the tag, a missile-carrying holder formed of wire, and comprising two parts, the shank of one part being twisted around the shank of the other part, and each part formed with a loop or coil at the outer end forming a cradle or cup for the missile; and a missile frictionally held by and disposed within the cradle or cup.

857,907. CROSS-TIE. JOHN S. SCHAEFFER, Brookville, Pa. Filed Mar. 4, 1907. Serial No. 360,467.

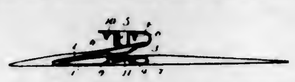


Claim.—In a cross tie, a concrete or plastic body, a reinforce extending under the bottom along the sides and over the top of said body, a cushion comprising alternate layers of netting and yielding fiber embedded in the concrete for supporting the rails.

857,908. METALLIC ENVELOP-SEAL. ANTONY SCHORNO, Passaic, N. J. Filed Nov. 6, 1906. Serial No. 342,260.

Claim.—1. A letter seal comprising a metal strip having an eyelet at one end and an anvil at the other end,

and a locking ring between them, said metal strip being bent to aline the anvil, locking ring and eyelet.



2. A letter seal comprising a metal strip having an eyelet at one end, an anvil at the other end and a locking ring between them, said metal strip being bent to aline the anvil, locking ring and eyelet and retaining means adjacent the anvil to engage the end of the eyelet when upset on the anvil.

3. A letter seal comprising a metal strip having an eyelet at one end, an anvil at the other end, and a locking ring between them and means above the anvil to engage the end of the eyelet when upset all formed of a single piece of metal.

4. A letter seal comprising a metal strip, an eyelet at one end, tongues on the head of the eyelet extending generally in the direction thereof, an anvil on the other end of the strip, a conical locking ring between them and engaging means proximate the eyelet to engage the end thereof when upset.

5. A letter seal comprising a metal strip having an eyelet at one end, an anvil at the other end a locking ring between them and a retaining ring connected to the anvil and bent to bring the parts into vertical alinement.

6. A letter seal comprising a metal strip having an eyelet at one end, an anvil at the other end, a locking ring between the ends and a retaining ring having supporting projections thereon, substantially as described.

7. A letter seal comprising a metal strip having at one end an eyelet whose head has a number of downward projecting pointed tongues, an anvil at the other end of the strip, a conical locking ring between the eyelet and anvil, and a retaining ring connected to the anvil and having a number of supporting projections substantially at right angles to the plane of the ring.

8. A letter seal comprising a metal strip having a headed eyelet at one end, a bead on the under side of the head, an anvil at the other end of the strip and a locking ring between the ends, said strip being bent to substantially axially aline the anvil, locking ring and eyelet.

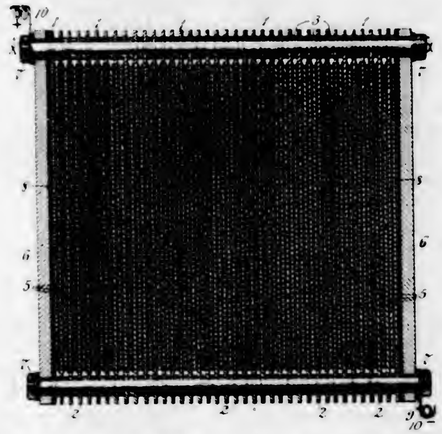
9. A letter seal comprising a metal strip having at one end an eyelet whose head has a number of downward projecting pointed tongues, and a bead on the under side of the head, an anvil at the other end of the strip, and a retaining ring connected to the anvil and having a number of supporting projections substantially at right angles to the plane of the ring.

10. A letter seal formed of a single piece of metal and comprising a strip having an eyelet formed at one end having a serrated head, the alternate tongues of which are bent down, an anvil punched up from the other end, a locking ring between the anvil and eyelet and connected to both, and a retaining member connected to the anvil and bent over the same, said eyelet arranged to pass through the locking and retaining rings to be upset by the anvil.

857,909. ELECTROLYTIC CELL. ALFRED O. TATE, New York, N. Y. Filed Sept. 28, 1904. Renewed Nov. 23, 1906. Serial No. 344,787.

Claim.—1. An electrode for an electrolytic cell embracing positive and negative conductors of relatively good conductivity located closely adjacent to each other and mechanically and electrically separated by an insulating medium, the lateral edges or faces only of the conductors being exposed to the electrolytic solution so as to constitute an electrolytic field therein, substantially as described.

2. An electrode for an electrolytic cell embracing a series of positive and a series of negative plates of relatively good conductivity, said plates being interleaved and located in close relation to each other; in combination with an insulating medium between each positive and negative plate, the lateral edges or faces only of the plates constituting two electrolytic fields in the electrolytic solution, substantially as described.



3. An electrode for an electrolytic cell embracing a series of positive and a series of negative plates of relatively good conductivity, located in close mechanical and electrical relation to each other, the positive and negative elements being separated by an insulating medium, either or both of the lateral edges or faces only of both sets of plates being exposed, substantially as described.

4. An electrode for an electrolytic cell embracing a series of positive and a series of negative elements of relatively good conductivity, separated from each other by insulating material and provided with means for binding all of the parts of the electrode together so that only the lateral edges or faces of all of the elements are exposed to the electrolytic solution, substantially as described.

5. An electrode for an electrolytic cell embracing a series of positive and a series of negative elements of relatively good conductivity, each series being electrically connected to a conducting bolt or bar of good conductivity and spaced from each other by conducting washers; in combination with insulating strips between the two series of elements; together with binding plates and nuts for the bolts whereby all of the parts are securely bound together in such manner that only the lateral edges or faces of all of the elements are exposed to the electrolytic solution, substantially as described.

6. An electrode for an electrolytic cell embracing a series of positive and a series of negative plates of relatively good conductivity, each series being provided with holes or openings at one end and threaded upon a conducting bolt; in combination with spacing conducting washers and insulating strips between the pairs of plates; together with end-plates of insulating medium; binding plates of metal, and nuts for securing all of the parts of the electrode together, the arrangement being such that the lateral edges or faces only of both sets of plates are exposed to the electrolytic solution, substantially as described.

7. An electrode for an electrolytic cell embracing a series of anode and a series of cathode conductors intervening each other, the anode conductors being connected in multiple to the + pole of an electrical generator and the cathode conductors similarly connected at their opposite ends to the negative pole thereof, in combination with insulating material between the anodes and cathodes and means for binding all of said parts together in such manner that the lateral edges or faces only of the anodes and cathodes are exposed to the electrolytic solution substantially as described.

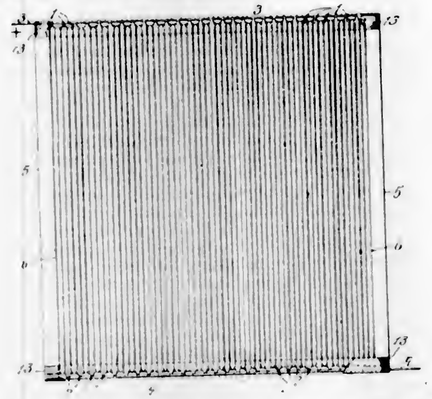
8. An electrode for an electrolytic cell embracing two series of carbon conductors located in close mechanical and electrical relation to each other but separated by insulating media, the lateral edges or faces only of the conductors being exposed, substantially as described.

9. An electrode for an electrolytic cell embracing two series of carbon conductors located in close relation to each other and separated by insulating media; in combination with means for binding all of said parts firmly together, the lateral edges or faces only of the conductors constituting the active surfaces of the electrodes, substantially as described.

10. An electrode for an electrolytic cell embracing two series of carbon plates which will not disintegrate under the influence of an electric current in an electrolytic solution, one series being provided with means at their upper ends for connecting them to the positive pole of an electrical generator and the other series being provided with means for connecting them at their lower ends to the negative pole thereof, substantially as described.

11. An electrode for an electrolytic cell embracing two series of carbon plates separated from each other by relatively thin insulating material, one series being provided with means at one end for connecting them in multiple to the positive pole of an electrical generator and the other series being provided with like means at the other end for similarly connecting them to the negative pole thereof, and all of said parts being bound together in such manner that the lateral edges or faces only of the carbon plates are exposed to the electrolytic solution, substantially as described.

857,910. APPARATUS FOR TREATING LIQUIDS ELECTROLYTICALLY. ALFRED O. TATE, New York, N. Y. Filed Sept. 28, 1904. Renewed Feb. 12, 1907. Serial No. 357,059.



Claim.—1. An electrode for an electrolytic cell embracing alternating sets of thin or strip-like conductors supported by a single insulating base, one set constituting a multiple anode and the other a multiple cathode, substantially as described.

2. An electrode for an electrolytic cell embracing alternating sets of thin strip-like conductors supported by a single insulating base, one set constituting a multiple anode and the other a multiple cathode, substantially as described.

3. An electrode for an electrolytic cell having the anode composed of one or more thin strips of platinum secured to an insulating base and the cathode of other conducting material secured to the same base and electrically insulated from the anode, substantially as described.

4. An electrode for an electrolytic cell embracing an insulating supporting base and a series of anode conductors of thin strips of platinum secured thereto; in combination with a series of conducting cathodes also secured to the base and electrically insulated from the anodes, substantially as described.

5. An electrode for an electrolytic cell embracing a supporting frame and a series of individual electrodes composed of independent anodes and cathodes supported in said frame, the arrangement being such that anyone of said series of independent electrodes may be removed or replaced, substantially as described.

6. An electrode for an electrolytic cell embracing a supporting frame having means for supporting a series of independent or unitary electrodes, and additional means for connecting said electrodes together in any desired relation, the arrangement being such that anyone of the unitary electrodes may be removed or replaced, substantially as described.

7. An electrode for an electrolytic cell embracing a supporting frame provided with individual supports for a series of independent or unitary electrodes having anodes and cathodes, and circuit connections such that any desired number of unitary electrodes may be placed in the frame and connected in circuit, substantially as described.

8. An electrode for an electrolytic cell embracing an insulating supporting frame and intermediate crossing strips constituting supports for individual or unitary electrodes; in combination with a series of individual or unitary electrodes embracing anodes and cathodes and circuit connections such that any desired number of such individual electrodes may be connected together, substantially as described.

9. An electrode for an electrolytic cell embracing an insulating supporting frame; a series of intermediate cross strips constituting supports for individual or unitary electrodes; in combination with such individual electrodes embracing each a series of anodes and a series of cathodes supported by the insulating base, the anodes all being connected together at one side of the electrode, and the cathodes correspondingly connected at the other side thereof; substantially as described.

10. An electrode for an electrolytic cell embracing an insulating base having alternating sets of conductors secured to its face and means at the opposite ends of said conductors for connecting them, the conductors, to the positive and negative poles of an electrical generator, substantially as described.

11. An electrode for an electrolytic cell embracing an insulating base provided with ridges or elevations on its opposite faces and intervening sets of conductors located between said ridges, one set of said conductors being provided with means for connecting them to the positive pole of an electrical generator and the other set with similar means for connecting them to the negative pole thereof, substantially as described.

12. An electrode for an electrolytic cell composed of two series of thin narrow strips of conducting material secured to an insulating base or frame, one set constituting a multiple anode and the other a multiple cathode, substantially as described.

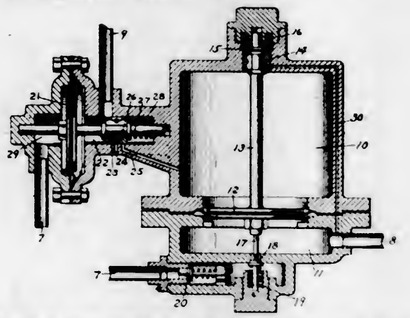
13. An electrode for an electrolytic cell embracing a multiple series of strips of platinum constituting the anode and a like multiple series of strips of other conducting material constituting the cathode, all of said strips being secured to a common base or support.

857,911. FLUID-PRESSURE BRAKE. WALTER V. TURNER, Wilkinsburg, and ROBERT H. BLACKALL, Edgewood Park, Pa., assignors to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Sept. 26, 1903. Serial No. 174,710.

Claim.—1. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve and brake cylinder, of a valve device operated by the pressure in a maintaining chamber for controlling the supply of fluid to the brake cylinder while the brakes are applied, and means operated by an increase in train pipe pressure for releasing fluid from said chamber.

2. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve and brake cylinder, of a valve device operated by the pressure in a maintaining chamber for controlling the supply of fluid to the brake cylinder while the brakes are applied, and means operated by an increase in train pipe pressure independent of the movement of the triple valve for releasing fluid from said chamber and from the brake cylinder.

3. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of a valve device having a diaphragm subject to the opposing pressures of the brake cylinder and a fluid pressure chamber for controlling the supply of fluid to the brake cylinder while the brakes are applied, and means operated by an increase of train pipe pressure for releasing the fluid from said chamber.



4. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of a maintaining chamber having a diaphragm exposed to brake cylinder pressure, a valve operated by the diaphragm for controlling the supply of fluid to the brake cylinder, and means operated by the train pipe and auxiliary reservoir pressures for releasing the fluid from the maintaining chamber.

5. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of a maintaining chamber, means subject to the opposing pressures of the maintaining chamber and the brake cylinder for controlling the supply of fluid from the train pipe to the brake cylinder, and means operated by an increase of train pipe pressure for releasing the fluid from the maintaining chamber.

6. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of a valve for controlling the supply of fluid to the brake cylinder while the brakes are applied, means subject to the opposing pressures of the brake cylinder and a constant pressure for operating said valve, and means operated by an increase of train pipe pressure for releasing said constant pressure.

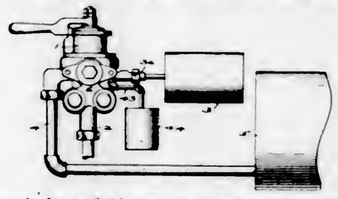
7. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of a maintaining chamber, means subject to the opposing pressures of said chamber and the brake cylinder for controlling the supply of fluid to the brake cylinder, and a valve device operated by the opposing pressures of the train pipe and the auxiliary reservoir for releasing the fluid from the maintaining chamber.

8. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of a maintaining chamber, means subject to the opposing pressures of said chamber and the brake cylinder for controlling the supply of fluid to the brake cylinder, means for charging said chamber with a pressure equal to the desired brake cylinder pressure, and a valve device operated by an increase of train pipe pressure for releasing said chamber.

9. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of a maintaining chamber having a valve controlled equalizing passage communicating with the brake cylinder, means operated by the opposing pressures of said chamber and the brake cylinder for controlling the supply of fluid to the brake cylinder, and a valve device operated by an increase of train pipe pressure for releasing the fluid from said chamber.

10. In a fluid pressure brake, the combination with a train pipe, auxiliary reservoir, triple valve, and brake cylinder, of a maintaining chamber, means subject to the opposing pressures of said chamber and the brake cylinder for controlling the supply of fluid to the brake cylinder, means for charging said chamber with a pressure equal to the desired brake cylinder pressure, a release valve for said chamber, and a diaphragm subject to the opposing pressures of the train pipe and the auxiliary reservoir for operating said release valve.

857,912. FLUID-PRESSURE BRAKE. WALTER V. TURNER, Wilkinsburg, and FRANCIS L. CLARK, Pittsburg, Pa., assignors to The Westinghouse Air Brake Company, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Dec. 27, 1904. Serial No. 238,356.



Claim.—1. In a fluid pressure brake, the combination with an engineer's brake valve, of a feed valve device for normally regulating the train pipe pressure and having additional means for maintaining the train pipe pressure substantially constant at any given degree of reduction from normal when the brake valve is in lap position.

2. In a fluid pressure brake, the combination with an engineer's brake valve, of a valve device governed by train pipe pressure for normally regulating the same, means for supplying air to said valve device when the brake valve is in lap position, and a maintaining valve mechanism for controlling the action of said valve device when the brake valve is in lap position.

3. A feed valve device for fluid pressure brakes comprising a main valve for controlling communication from the main reservoir to the train pipe in both the running and lap positions of the brake valve, a regulating valve subject to the train pipe pressure for normally governing the action of the main valve, and a maintaining valve mechanism for also governing the action of the main valve.

4. A feed valve device for fluid pressure brakes comprising a main valve for controlling communication from the main reservoir to the train pipe in both the running and lap positions of the brake valve, a movable abutment for actuating said valve, a regulating valve subject to the train pipe pressure for normally controlling the pressure on said abutment, and a maintaining valve for also controlling the pressure upon said abutment.

5. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a feed valve device comprising a main valve for controlling communication from the main reservoir to the train pipe in both the running and lap positions of the brake valve, a movable abutment for operating said valve, a regulating valve governed by the train pipe pressure for controlling the pressure upon the abutment, and a maintaining valve operated by the train pipe pressure when the engineer's brake valve is in lap position for also controlling the pressure upon said abutment.

6. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a valve device comprising a main valve for controlling communication from the main reservoir to the train pipe in both the running and lap positions of the brake valve, a movable abutment for operating said valve, a maintaining valve for controlling the pressure upon said abutment and operated by the opposing pressures of the train pipe and a controlling chamber or reservoir, and means operated by the movement of the brake valve in applying the brakes for reducing the pressure in the controlling chamber to that of the train pipe and then tightly closing said chamber.

7. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a feed valve device comprising a main valve with piston for controlling communication from the main reservoir to the train pipe in both the running and lap positions of the brake valve, a regulating valve governed by train pipe pressure for normally controlling the pressure upon one side of the piston, and a maintaining valve operated by the opposing pressures of a controlling chamber and the train pipe for also controlling the pressure upon the piston of the main valve.

8. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a feed valve device comprising a main valve with piston for controlling communication from the main reservoir to the train pipe, a regulating valve governed by train pipe pressure for normally controlling the pressure upon one side of the piston, a controlling reservoir or chamber, a maintaining valve operated by the opposing pressures of the train pipe and said chamber for also controlling the pressure upon one side of the main valve piston, and means operated by the movement of the brake valve in applying the brakes for cutting out the regulating valve.

9. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a feed valve device comprising a main valve with piston for controlling communication from the main reservoir to the train pipe, a regulating valve governed by train pipe pressure for normally controlling the pressure upon one side of the piston, a controlling reservoir or chamber, a maintaining valve operated by the opposing pressures of the train pipe and said chamber for also controlling the pressure upon one side of the main valve piston, means operated by the movement of the brake valve in applying the brakes for reducing the pressure in said control reservoir to the desired degree of train pipe pressure and then closing communication to or from said control reservoir.

10. In a fluid pressure brake, the combination with a main reservoir and train pipe, of a feed valve device comprising a main valve and piston for controlling communication from the main reservoir to the train pipe, a regulating valve governed by the train pipe pressure for controlling the pressure upon one side of the main valve piston, a controlling reservoir, and a maintaining valve operated by the opposing pressures of the said reservoir and the train pipe for also controlling the pressure upon one side of the main valve piston, an engineer's brake valve having an equalizing reservoir, ports for connecting the two reservoirs in service application position and means for closing communication to or from the control reservoir, and for cutting out the regulating valve when the brake valve is in lap position.

11. A feed valve device for fluid pressure brakes comprising a main valve for controlling communication from the main reservoir to the train pipe, a movable abutment subject to main reservoir pressure for actuating said valve, and a regulating valve operated by train pipe pressure for governing the release of air from one side of said abutment to the atmosphere.

12. A feed valve device for fluid pressure brakes comprising a main valve for controlling communication from the main reservoir to the train pipe, a piston exposed on one side to main reservoir pressure for operating said valve, means for equalizing the pressure around said piston, a regulating valve controlling communication from the piston chamber to the atmosphere, and a diaphragm subject to the opposing pressures of the train pipe, and an adjustable load device for operating said regulating valve.

13. A feed valve device for fluid pressure brakes comprising a main valve for controlling communication from the main reservoir to the train pipe, a movable abutment subject to main reservoir pressure for actuating said valve, and a regulating valve operated by train pipe pressure for governing the release of air from one side of said abutment to the atmosphere, and a maintaining valve operated by train pipe pressure for controlling communication from the same side of said abutment to the train pipe.

14. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a valve device comprising a main valve with piston for operating the same for controlling communication from the main reservoir to the train pipe, a maintaining valve operated by the train pipe pressure and an opposing fluid pressure for governing the pressure upon said piston, a regulating valve operated by train pipe pressure for controlling a port leading from one side of said piston, and means operated by the engineer's brake valve for opening and closing said port.

15. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a feed valve device comprising a main valve and its actuating piston, a regulating valve operated by train pipe pressure for governing the pressure acting upon said piston, a maintaining valve operated by the opposing pressures of the train pipe and a fluid pressure chamber for also governing the pressure acting on said piston, said brake valve having ports for opening communication from the main reservoir through the feed valve in running and lap positions, ports for reducing the pressure of said fluid pressure chamber to the desired degree of train pipe pressure in service application position, and means for closing said chamber and for cutting out the regulating valve in lap position.

16. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a feed valve device comprising a main valve for controlling the supply of air to the train pipe in two different positions of the brake valve, a regulating valve device subject to train pipe pressure for normally governing the action of the main valve when the brake valve is in one position, and a maintaining valve mechanism for governing the action of the main valve when the brake valve is in the other position.

17. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a feed valve device comprising a main valve for controlling the supply of air to the train pipe in two different positions of the brake valve, a movable abutment for operating said main valve, a regulating valve device subject to the train pipe pressure for controlling the pressure upon the abutment when the brake valve is in one position, and a maintaining valve mechanism operated by the train pipe pressure when the brake valve is in the other position for also controlling the pressure upon said abutment.

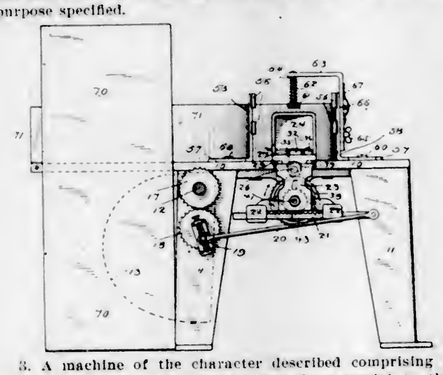
18. In a fluid pressure brake, the combination with a main reservoir, a train pipe, and an engineer's brake valve having an equalizing reservoir, of a main feed valve for controlling the supply of air to the train pipe, a regulating valve device subject to train pipe pressure for governing the action of the main valve, a control chamber or reservoir, a maintaining valve mechanism governed by the control reservoir pressure for also controlling the action of the main feed valve, and means acting at one time to open communication between the equalizing reservoir and the control reservoir, and at another time to close said communication.

19. In a fluid pressure brake, the combination with a main reservoir, engineer's brake valve, and train pipe, of a feed valve device comprising a main valve for controlling the supply of air to the train pipe in two positions of the brake valve, a regulating valve device subject to the train pipe pressure for normally governing the action of the main valve when the brake valve is in one position, a maintaining valve mechanism for also governing the action of the main valve, and means for cutting out communication through the regulating valve when the brake valve is moved to the other position.

857,913. BREAD, MEAT, AND VEGETABLE CUTTING MACHINE. CHARLES J. VANN, Brooklyn, N. Y. Filed May 2, 1906. Serial No. 314,761.

Claim.—1. A machine of the character described comprising a cutting knife, a pusher for feeding the material to the knife, a worm, a detachable connection intermediate the pusher and the worm, a reciprocating rack and connections intermediate the rack and the worm whereby the latter is intermittently rotated.

2. A machine of the character described comprising a cutting knife, a pusher for feeding the material to the knife, a worm, connections intermediate the pusher and the worm, a reciprocating rack, connections for intermittently actuating the worm by the rack, and means for adusting the throw of the rack, substantially as described, for the purpose specified.



3. A machine of the character described comprising a cutting knife, a pusher for feeding the material to the knife, a worm, a detachable connection intermediate the pusher and the worm, a rack, connections for intermittently actuating the worm by the rack, a rod connected to the rack and a shaft having an adjustable crank pin on which the rod is pivoted whereby the throw of the rack may be adjusted to regulate the movement of the pusher at each actuation.

4. In a machine of the character described the combination with a cutting knife, a pusher for feeding the material to the knife, a worm, a pinion carried thereby, a gear wheel 38 engaging said pinion and having a recess 48 in its face and a gear wheel 43 having a hub 44, of clutch dogs which engage the inner periphery of recess 48 and are provided with hubs socketed in hub 44, springs acting to normally hold said clutch dogs in operative engagement and a reciprocating rack engaging gear wheel 43, said clutch dogs acting when the rack is moved in one direction to carry gear wheel 38 forward and rotate the worm and moving backward over the inner periphery of recess 48 leaving said gear wheel stationary when the rack is moved in the opposite direction.

5. In a machine of the character described, the combination with a cutting knife, a pusher for feeding the material to the knife, a worm, a pinion carried thereby, a gear wheel 38 engaging said pinion and having a recess in its face, and a gear wheel 43 having a hub 44, of clutch dogs socketed in hub 44 and engaging the inner periphery of the recess, springs acting to normally hold said clutch dogs in operative engagement and means for imparting intermittent rotation to gear wheel 43.

6. In a machine of the character described, the combination with a cutting knife, a pusher for feeding the material to the knife, a worm, a pinion carried thereby, a gear wheel 38 engaging said pinion and having a recess in its face and a hub 40, and a gear wheel 43 having a hub 44, of clutch dogs which engage the wall of the recess and are provided with hubs socketed in hub 44, springs acting to normally hold said clutch dogs in operative engagement, a reciprocating rack engaging gear wheel 43, for the purpose set forth, and a friction device on hub 40 whereby gear wheel 38 is held against backward movement.

7. In a machine of the character described, the combination with a cutting knife, a pusher for feeding the material to the knife, a worm, a pinion carried thereby, a gear wheel 38 engaging said pinion and having a recess in its face and a hub 40, and a gear wheel 43 having a hub 44, of clutch dogs which engage the wall of the recess and are socketed in hub 44, springs acting to normally hold the clutch dogs in operative engagement, means for imparting intermittent rotation to gear wheel 43, and a friction device whereby gear wheel 38 is held against backward movement.

8. In a machine of the character described, the combination with a cutting knife, a pusher for feeding the material to the knife, a worm, a pinion carried thereby and a gear wheel engaging said pinion and having a hub, of mechanism for imparting intermittent movement to said gear wheel and worm and a friction ring and clamping ring inclosing said hub whereby the gear wheel is held against backward movement.

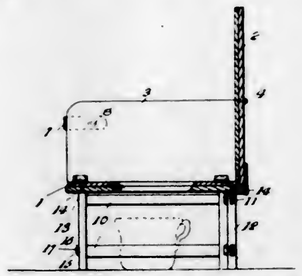
9. In a machine of the character described the combination with a shaft, a cutter carried thereby, a pusher, a worm and detachable connections intermediate the pusher and the worm, of a rack and connections intermediate the shaft and the rack whereby the latter is reciprocated and connections intermediate the rack and the worm for imparting intermittent rotation to the latter.

10. In a machine of the character described, a bed having a central, longitudinal slot; a shaft; a worm located beneath the slot in the bed; a connection between said shaft and worm whereby an intermittent rotation is imparted to the worm; a pusher slidingly mounted within the slot; a plate pivoted to said pusher; a bar depending from said plate through the slot in the bed and adapted to engage with the worm; means for normally holding the said plate in a position to cause the bar to engage with the worm, and a spring exerting pressure against the plate tending to cause it to swing to a position where the depending bar will be disengaged from the worm.

11. In a machine of the character described, a bed provided with a central, longitudinal slot; plates secured to the edges of said slot; a shaft; a worm; connections between the shaft and worm whereby an intermittent rotation may be imparted to the worm; a pusher; plates secured to the underside of the pusher and extending under the plates of the slot; a plate pivoted to the rear of said pusher; a bar depending from said pivoted plate through the bed slot, the lower end of said bar being ribbed to correspond with the worm; a spring latch for normally retaining the pivoted plate in a position where the depending bar will be in engagement with the said worm, and a spring acting against the said pivoted plate to cause it to move to a position where the depending bar will be disengaged from the worm.

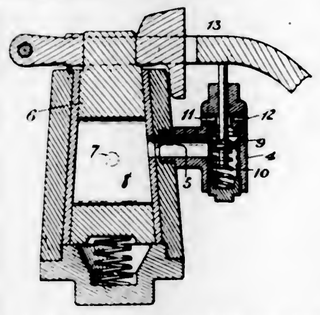
12. In a machine of the character described, a shaft; a worm; connections between the shaft and worm whereby an intermittent rotation may be imparted to the worm; a pusher; connections between the pusher and the worm whereby the pusher may be reciprocated; side guides for the material to be sliced; and top guides comprising a slide secured to the bed of the table the inner end of which is provided with a vertically extending portion; a vertical rod adjustably connected with the vertical portion of the slide and being provided with a central spring hinged portion; a horizontal portion extending from the said vertical rod, and a spring actuated rod extending through said horizontal portion and carrying a guide adapted to press upon the material to be sliced.

857,914. FOLDING TOILET-CHAIR. FRED C. WEBER, Los Angeles, Cal. Filed Jan. 23, 1906. Serial No. 297,488.



Claim.—A device of the character described, comprising a bottom provided with an opening therethrough, two sides hinged to said bottom, a back also hinged to said bottom and provided with a rabbet designed to receive the end edges of the sides, said back being provided with a transversely extending tie rod provided at its ends with eyes, and pivoted hooks secured to the sides and designed to take into the said eyes, as and for the purpose set forth.

857,915. ANGLE-COCK. WILLIAM H. WOODY, Chambersburg, Pa., and FRANKLIN P. CANBY and PALMER TENNANT, Hagerstown, Md. Filed Jan. 29, 1907. Serial No. 354,761.



Claim.—1. A device of the character described, having an air-pressure brake cock, and an exhaust valve effective in connection with said cock and with the hose or pipe coupling for applying the brakes and for exhausting the air-pressure from said hose or pipe coupling.

2. A device of the character described, having an air-brake pressure cock and a valve with its port-passage effective for co-operation with the usual passage or port of said cock and an additional port communicating with said angle-cock passage and with the hose or pipe coupling, for exhausting the air-brake pressure from the train-pipe including the hose or pipe coupling.

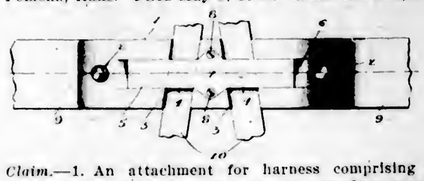
3. A device of the character described, having an air-brake pressure cock, provided with an additional port communicating with its usual air-passage or port, said cock also having its casting or casing provided with a lateral port or passage, and an exhaust valve having its casing provided with opposite ports and an upward seating valve proper, for controlling said opposite ports, said valve-casing communicating with the usual air-passage or port of said angle-cock via said lateral port and said additional port of said angle-cock communicating with the hose or pipe coupling.

4. A device of the character described, comprising an angle-cock having its plug provided with an additional port communicating with its usual air-passage or port, a relief or exhaust valve whose casing has communication with the usual passage-way of said angle-cock, and provided with an upward seating valve controlling opposite ports in said valve-casing, and means, in common with that for operating said angle-cock, for actuating said exhaust or relief valve.

5. A device of the character described, having an air-pressure brake-cock, and a relief or exhaust valve effective in connection with said air-pressure brake-cock for exhausting the air-pressure from the hose or pipe coupling, and means in common with that for turning or closing said air-pressure brake-cock, for depressing or opening said relief or exhaust valve.

6. A device of the character described, having an air-pressure brake-cock provided with an additional port communicating with its usual straight-away passage or port through a lateral wall of said passage, and a relief or exhaust valve effective for co-operative action with said air-pressure brake-cock, said additional port adapted to be brought into communication with the hose or pipe coupling as said air-pressure brake-cock is turned to close off communication between its usuel straight-away passage or port and the train-air pipe line.

857,916. HARNESS ATTACHMENT. BERT A. ADAMS, Pomona, Kans. Filed May 3, 1906. Serial No. 315,017.



Claim.—1. An attachment for harness comprising a plate having a strap receiving groove extending transversely therein, a strap engaging lug within the groove, and a resilient keeper secured upon the plate and extending over the lug and groove.

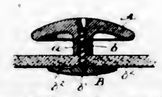
2. An attachment for harness comprising a plate having diverging strap receiving grooves therein, strap engaging lugs within the grooves, and a resilient keeper secured upon the plate between the grooves and extending over said grooves and lugs.

3. An attachment for harness comprising a plate having diverging grooves extending transversely therein, strap engaging lugs within the grooves, a resilient keeper secured at its center upon the plate between the grooves, said keeper extending across the grooves and over the lugs, said plate having recesses constituting seats for the ends of the keeper.

4. In a harness the combination with a hip breeching; of a plate secured thereon and having a groove extending transversely therein, a lug within the groove, a resilient keeper secured upon the plate and extending across the groove and over the lug, and a crupper strap within the groove and engaged by the lug, said strap being retained by the keeper.

5. In a harness the combination with a hip breeching; of a plate secured thereon and having diverging transversely extending grooves in one face, lugs within the grooves, crupper straps within the grooves and engaged by the lugs, and a resilient keeper secured upon the plate and bearing on the straps above the lugs, said plate having recesses constituting seats for the ends of the keeper.

857,917. EMERGENCY-BUTTON. URBAN S. ALZ, Mount Washington, Md. Filed Sept. 2, 1905. Serial No. 276,873.



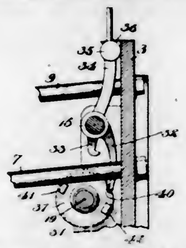
Claim.—In a removable emergency button, the combination, of a head having a hollow shank internally threaded and provided at its outer end with inclined teeth or penetrating points, and a back piece or disk having a screw-threaded stud with a shoulder at the inner end thereof adapted to be opposed to the teeth or points on the shank of the head, said back piece or disk also having two inclined teeth located at one side portion of the disk, whereby said head and back pieces are provided with oppositely inclined engaging points, and those on the back piece disposed to be readily disengaged for removing the button, as herein shown and described.

857,918. RELEASING MECHANISM FOR BUNDLING-PRESSES. CARL F. ANDERSON, Chicago, Ill. Filed Mar. 24, 1905. Serial No. 251,789.

Claim.—1. The combination, with a ratchet wheel, of a locking pawl tending to engage said ratchet wheel to prevent its rotation; means adapted to exert a tendency to move said pawl out of engagement with said ratchet wheel; and means operated upon the rotation of said ratchet wheel to prevent said pawl from engaging said ratchet wheel.

2. The combination, with a ratchet wheel, of a stationary locking pawl tending to engage said ratchet wheel

to prevent its rotation; a member arranged to move with said ratchet wheel, said member being adapted to support said pawl upon its periphery and having a notch therein adapted to permit said pawl to engage said ratchet wheel; and means for limiting the rotation of said member.



3. The combination, with a ratchet wheel, of a pawl tending to engage said ratchet wheel; means adapted to exert a tendency to move said pawl out of engagement with said ratchet wheel; a disk held in frictional contact with said ratchet wheel, said disk having a notch in its periphery; and two studs on said disk adapted to engage a fixed portion of the machine, for limiting the rotation of said disk.

4. The combination, with a ratchet wheel and a rotatable shaft on which said wheel is fixed, of a pawl adapted to engage the teeth of said wheel, a disk loosely mounted on said shaft, a spring for holding said disk in frictional contact with said ratchet wheel, said disk being adapted to support said pawl out of engagement with said ratchet wheel, and having a notch adapted to receive the point of said pawl when the latter is in engagement with the ratchet wheel; and means for limiting the rotation of said disk.

857,919. COLLAR-PIN AND NECKTIE-FASTENER. GEORGE A. BEIDLER, Oklahoma, Okla. Filed Dec. 22, 1906. Serial No. 349,078.

Claim.—1. A collar and neck tie fastener comprising a head and shank, said shank being bent intermediate its length to form an acute angle, and a hook projecting from the head.

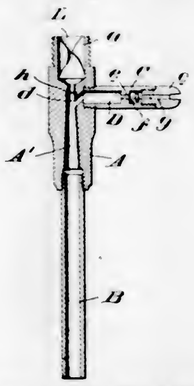
2. A collar and neck tie fastener comprising a head and a shank said shank being bent intermediate its length to form an acute angle and a hook projecting from the head, said hook lying in the plane of the bent shank.

857,920. ASPIRATOR. JULIUS BOEKEL, Philadelphia, Pa. Filed Nov. 22, 1906. Serial No. 344,654.

Claim.—1. In an aspirator, a water inlet, a branch air-inlet and an outlet, in combination with a spiral deflector in said water inlet and a tubular body having said inlets and said outlet connected thereto, the said air inlet being connected to the bore of said body by a downwardly inclined passage, and the said bore being small and of equal diameter from the said water inlet to the said passage, but flaring downwardly thereafter to the diameter of the outlet pipe which joins it substantially as set forth.

2. In an aspirator, a water inlet, a branch air-inlet and an outlet, in combination with a spiral deflector in said water inlet and a tubular body having said inlets and said outlet connected thereto, the longitudinal bore of said body being small and of equal diameter from the water inlet nearly to the air-inlet but flaring downwardly thereafter to the diameter of the outlet pipe which joins it as set forth.

3. In an aspirator, a water outlet, a branch air-inlet and an outlet, in combination with means in said water inlet for giving the current of water a rotary motion and a tubular body having said inlets and said outlet connected thereto, the longitudinal bore of said body being small and of equal diameter from the water inlet nearly to the air inlet, but flaring downwardly thereafter to the diameter of the outlet pipe which joins it substantially as set forth.

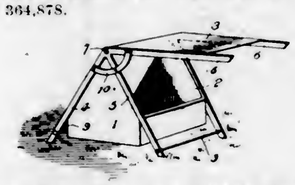


4. In an aspirator, a water inlet, a branch air-inlet and an outlet, in combination with a spiral deflector in said water inlet and a tubular body to which said inlets and outlet are attached, the longitudinal bore of said body extending beyond the said inlets and both it and the connected outlet being closed laterally, confining the aerated water to a single contracted channel substantially as set forth.

5. In an aspirator, a water-inlet, a branch air-inlet and an outlet in combination with a device for causing rotary motion of the current of water arranged within the water inlet and a tubular body to which said inlets and outlet are attached, the longitudinal bore of said body extending beyond the said inlets and both it and the connected outlet being closed laterally, confining the aerated water to a single contracted channel substantially as set forth.

6. In an aspirator, a water inlet, a tubular body and an outlet arranged end to end with closed sides, confining the current of water to a direct contracted channel, in combination with an air inlet discharging into the bore of said body and a spiral deflector in said water inlet, giving the current of water a rotary movement to prevent the return of the air substantially as set forth.

857,921. NESTING AND BROODING BOX. JOSEPH W. BRADFORD, Straws Mill, Tex. Filed Mar. 27, 1907. Serial No. 364,878.



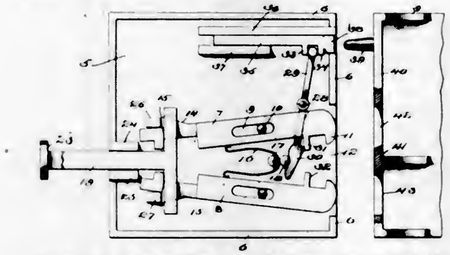
Claim.—1. In a device of the character described, the combination of a movable frame, a box carried by the movable frame, and a cover also carried by the movable frame and designed to close the box at one position of the said frame.

2. In a device of the character described, the combination of a movable frame comprising a pair of end pieces formed with corresponding radiating arms, a box loosely suspended from the movable frame, and a cover carried by the movable frame and designed to close the box at one position of the same.

3. In a device of the character described, the combination of a movable frame comprising a pair of end pieces formed with corresponding radiating arms, a cover carried by one pair of the radiating arms, and a box loosely suspended from the movable frame, the cover being designed to close the entrance to the box at one position of the movable frame.

4. In a device of the character described, the combination of a pair of end pieces each of which is formed with a series of arms radiating from an apex, a rod connecting the apex portions of the two end pieces, a cover connecting one pair of corresponding arms, and a box loosely suspended from the before mentioned rod and formed with an entrance designed to be closed by the cover when the end pieces are rocked into a predetermined position.

857,922. SLIDING-DOOR FASTENER. ROBERT CAMPBELL, Brooklyn, N. Y., assignor to Hugo Tollner, Brooklyn, N. Y. Filed Sept. 12, 1906. Serial No. 334,269.



Claim.—1. In a sliding door fastener, the combination, with a casing adapted to be connected to the door, of two latch bars mounted within said casing to have both pivotal and longitudinal movement, said bars being provided with inwardly-directed hooks at their outer ends adapted to engage a keeper when said outer ends are projected beyond the casing, yielding means acting against said bars and normally holding their outer ends in engagement with said keeper, manually operated means for first forcing the inner ends of said bars toward each other and thereby separate the outer ends and release said hooks and then moving said bars longitudinally to bring the hooked ends within the casing, and means automatically operated upon closing the door to return said bars to latching position.

2. In a sliding door fastener, the combination, with a casing adapted to be connected to the door, of two latch bars mounted within said casing to have both pivotal and longitudinal movement, said bars being provided with inwardly-directed hooks at their outer ends adapted to engage a keeper when said outer ends are projected beyond the casing, a spring acting against the inner ends of said bars to force said ends apart and thereby normally hold said hooks in engagement with said keeper, a reciprocating member provided with a handle for manual operation, and connecting means between said member and said bars to first force the inner ends of said bars toward each other and thereby release said hooks and then move said bars longitudinally to bring the hooked ends within the casing.

3. In a sliding door fastener, the combination, with a casing adapted to be connected to the door, of two latch bars mounted within said casing to have both pivotal and longitudinal movement, said bars being provided with inwardly-directed hooks at their outer ends adapted to engage a keeper when said ends are projected beyond the casing, yielding means acting against said bars to force their outer ends toward each other and hold said hooks in engagement with said keeper, a reciprocating member provided with a handle for manual operation, connecting means between said member and said bars to effect at one stroke of the former first a pivotal movement of the latter to release said hooks and, second, longitudinal movement thereof to bring the hooked ends within the casing, and means automatically operated upon closing the door to return said bars and hooks to latching position and said member to position for subsequent unlatching operation.

4. In a sliding door fastener, the combination, with a casing adapted to be secured to the door, of two latch bars having inwardly-directed hooks at their outer ends for engaging a keeper and slots intermediate their ends, fixed pins within the casing extending into said slots, a spring acting against the inner ends of said bars to force the outer ends thereof toward each other and normally hold said hooks in engagement with said keeper, and a slidably reciprocating member for manual operation, said member being provided with means operating during a portion of its stroke to force the inner ends of said bars toward each other thereby sprending apart the outer ends thereof and releasing said hooks, and during the remainder of its stroke to move said bars longitudinally to bring said hooked ends within the casing.

5. In a sliding door fastener, the combination, with a casing adapted to be secured to the door, of two latch bars having inwardly-directed hooks at their outer ends for engaging a keeper and slots intermediate their ends, fixed pins within the casing extending into said slots whereby each of said bars has both a pivotal and a longitudinal movement, yielding means acting against the inner ends of said bars to force the outer ends thereof toward each other and normally hold said hooks in engagement with said keeper, a slidably reciprocating member provided with a handle for manual operation, connecting means between said member and said bars to effect during a portion of the stroke of the former the release of said hooks and during the remainder of said stroke their complete withdrawal into said casing, and means automatically operated upon closing the door to return said bars and hooks to latching position and said member to position for subsequent unlatching operation.

6. In a sliding door fastener, the combination, with a casing adapted to be secured to the door, of two latch bars having inwardly-directed, keeper-engaging hooks at their outer ends and oppositely-inclined surfaces and stops at their inner ends, said bars being mounted for both pivotal and longitudinal movement, yielding means normally holding said hooks in engagement with the keeper, a reciprocating bar within said casing provided with means cooperating with said inclined surfaces to impart pivotal movement to said latch bars and thereby spread apart the outer ends thereof and release said hooks and with said stops to move said latch bars longitudinally and bring said hooks within the casing, means for manually operating said reciprocating bar, and means automatically operated by the closing door to return said latch bars and hooks to latching position and said reciprocating bar to position for subsequent unlatching operation.

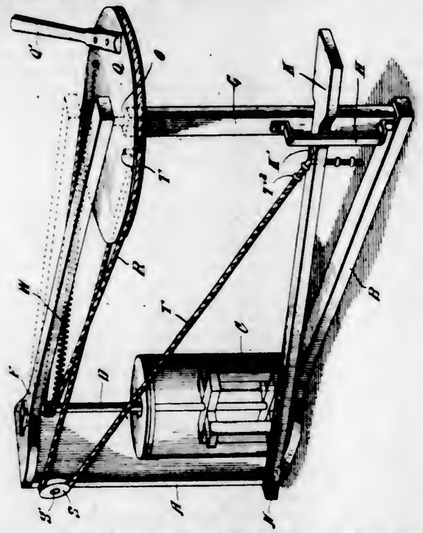
857,923. MEANS FOR OPERATING VIBRATING CHURNS. WALTER P. COLEMAN, Atlanta, Ga. Filed Apr. 29, 1907. Serial No. 370,926.

Claim.—1. An apparatus for operating rotary dasher churns, comprising, in combination, a base and a standard rising therefrom, a churn mounted upon said base, a dasher therein, a laterally projecting arm in which the upper end of said dasher has a bearing, a post rising from said base, a pivot pin at the upper end of said post, a horizontally journaled grooved wheel pivotally mounted upon said pin, a rope passing about said wheel and winding about the dasher shaft and tread mechanism, as set forth.

2. An apparatus for operating rotary dasher churns, comprising, in combination, a base and a standard rising therefrom, a churn mounted upon said base, a dasher therein, a laterally projecting arm in which the upper end of said dasher has a bearing, a post rising from said base, a pivot pin at the upper end of said post, a horizontally journaled grooved wheel pivotally mounted upon said pin and means for holding the grooved wheel upon said pivot pin, as set forth.

3. An apparatus for operating rotary dasher churns, comprising, in combination, a base and a standard rising therefrom a churn mounted upon said base, a dasher therein, a laterally projecting arm in which the upper end of said dasher has a bearing, a post rising from said base, a pivot pin at the upper end of said post, a horizontally journaled grooved wheel pivotally mounted upon said pin, said arm in which the dasher shaft has a bearing being

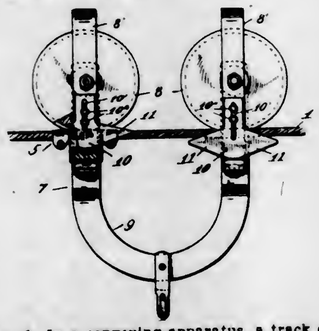
resilient and adapted to hold the said grooved wheel upon its pivot pin, as set forth.



4. An apparatus for operating rotary dasher churns, comprising a base plate, a standard rising therefrom, a laterally projecting resilient arm, a churn dasher shaft journaled in said arm, a post rising from the base plate, a pivot pin carried by said post, a wheel journaled upon said pin and held thereon by said resilient arm, a pulley upon said standard, a pivotally mounted tread, a rope adjustably connected to said tread and passing about said pulley and having one end eccentrically connected to said wheel, as set forth.

5. An apparatus for operating rotary dasher churns, comprising a base plate, a standard rising therefrom, a laterally projecting resilient arm, a churn and dasher shaft journaled in said arm, a post rising from the base plate, a pivot pin carried by said post, a wheel journaled upon said pin and held thereon by said resilient arm, a pulley upon said standard, a pivotally mounted tread, a rope, a series of knots near one end thereof and adapted to pass through a slot in said tread lever and engage the marginal edge of the slot, said rope passing about said pulley and fastened eccentrically to the wheel, as set forth.

857,924. CONVEYING APPARATUS. BERT C. CRANDALL and STEWART CRANDALL, Seattle, Wash. Filed May 7, 1906. Serial No. 315,704.



Claim.—1. In a conveying apparatus, a track consisting of a cable, a support for the track passing over the tread thereof, an approach arranged at one end of said support and being unsecured thereto, and means securing said approach to said track, for the purpose specified.

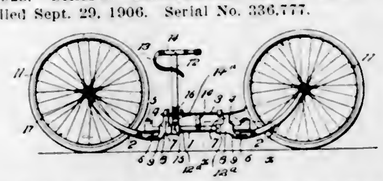
2. In a conveying apparatus, a track having portions extending at an angle, a support for the track passing over the tread thereof at the point of angle, and approaches arranged over the track at each end of said support, and being movable independently of said support.

3. In a conveying apparatus, in combination with an elevated track, and the supports therefor projecting from one side of the track, a carriage having a wheel engaged on said track, said carriage being open at one side, and sliding means for normally closing the open side of said carriage provided with cam portions engaged by abutment means arranged adjacent the track, whereby opening of said sliding means is effected, for the purpose specified.

4. In a conveying apparatus, a carriage comprising a frame consisting of uprights arranged one in advance of the other, said uprights consisting of spaced side pieces, wheels journaled in said uprights, and a bar having one of its ends rigidly connected to one of said uprights and its other end secured to the other upright, that portion of the bar intermediate its ends being bent to extend below the track.

5. In a conveying apparatus, a carriage provided with a frame formed in one of its sides with an opening, a wheel journaled in said frame above the opening thereof, and a gate for normally closing said opening of the frame, said gate being provided with forwardly and rearwardly disposed cam parts, in combination with a track on which said wheel rolls, and means arranged alongside of said track for engagement with the cam parts of said gate, for the purpose specified.

857,925. SKATE. BENJAMIN A. CURE, Clayton, Wash. Filed Sept. 29, 1906. Serial No. 336,777.



Claim.—1. In a skate, the combination of a bar having bearings at opposite ends thereof, wheel supporting members journaled in the bearings and provided with gearing, a foot plate, a support at each end of the foot plate, the said supports being formed with sleeves through which the bar passes loosely, and the sleeves having gearing thereon which meshes with the gearing on the wheel supporting members so that any lateral movement of the foot plate tends to swing the wheel supporting members with relation to the bar, and a spring for normally holding the foot plate in such a position that the wheels are in alinement with each other.

2. A skate comprising a longitudinally extending frame bar provided with vertically extending sleeves at its front and rear ends, wheel forks journaled in said sleeves and extending front and rear therefrom and provided with toothed segments, wheels mounted within said forks, sleeves 7 mounted to turn axially upon the said bar and provided with toothed plates meshing with the toothed segments of the forks, a foot plate supported by the sleeves 7, and a spring secured to the bar between the sleeve 7 and extending upwardly into engagement with the foot plate and designed to maintain the foot plate in a true vertical position with respect to the bar, as and for the purpose set forth.

3. A skate comprising a longitudinal bar, wheel forks journaled at the ends of said bar and provided with rack segments, wheels mounted in said forks, sleeves mounted to turn axially on the bar and provided with toothed plates meshing with said rack segments, ferrules on the bar and engaging with the respective sleeves, a foot plate supported by said sleeves, and an ankle brace pivotally connected at its lower end to the rearmost ferrule and adapted to swing in the longitudinal plane of the foot plate.

857,926. PROCESS OF PRODUCING STEEL DIES. GEORGE F. DIEZ, New York, N. Y. Filed Feb. 5, 1907. Serial No. 355,954.

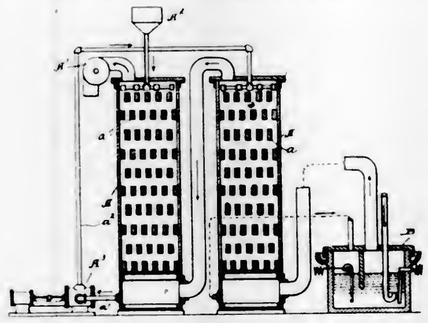
Claim.—1. The method of depositing iron upon a conducting surface consisting in subjecting the surface to be copied to the action of an electric current in an electrolyte containing iron sulfate and sodium bicarbonate.

2. The method of depositing iron upon a conducting surface consisting in subjecting the surface to be copied to the action of an electric current in an electrolyte composed of iron sulfate and sodium bicarbonate, and maintaining the strength of the bath constant by the presence of an iron anode.

3. The method of producing iron matrices of conducting surfaces consisting in depositing the iron electrolytically upon said surfaces in an electrolyte consisting of a saturated solution of iron sulfate and a saturated solution of sodium bicarbonate

4. The method of producing iron matrices of conducting surfaces consisting in depositing the iron electrolytically upon said surfaces in an electrolyte consisting of about eight parts of a saturated solution of iron sulfate and about one part of a saturated solution of sodium bicarbonate.

857,927. PROCESS OF RECOVERING THE NICKEL CONTAINED IN BASIC NICKEL PRECIPITATES. HERBERT H. DOW and WALTER S. GATES, Midland, Mich., and ARTHUR E. SCHAEFER, Cleveland, Ohio, assignors, by mesne assignments, to The Ontario Nickel Company, Limited, Worthington, Canada, a Corporation of Canada. Filed Apr. 18, 1906. Serial No. 312,501.



Claim.—1. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free halogen in the presence of sulfur.

2. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free halogen in the presence of finely-divided sulfur.

3. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free halogen in the presence of a sulfur-containing body.

4. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free halogen in the presence of a sulfur-containing compound.

5. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free halogen in the presence of a sulfur haloid.

6. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free halogen in the presence of sulfur chlorid.

7. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free bromin in the presence of sulfur.

8. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such precipitate with free bromin in the presence of finely-divided sulfur.

9. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free bromin in the presence of a sulfur-containing body.

10. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free bromin in the presence of a sulfur-containing compound.

11. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free bromin in the presence of a sulfur haloid.

12. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free bromin in the presence of sulfur chlorid.

13. In a process of recovering nickel from basic nickel precipitates, the steps which consist in treating such a precipitate with free halogen in the presence of a sulfur-containing body with the formation of nickel haloid; and, then, electrically dissociating such haloid.

14. In a process of recovering nickel from basic nickel precipitates, the steps which consist in treating such a precipitate with free halogen in the presence of a sulfur-containing body with the formation of nickel haloid; electrically dissociating such haloid with the formation of metallic nickel and the liberation of free halogen; and, then, treating a fresh quantity of said precipitate with such liberated halogen.

15. In a process of recovering the nickel contained in basic nickel precipitates, the steps which consist in treating such a precipitate in a dissolving apparatus with free halogen in the presence of a sulfur-containing body with the formation of nickel haloid; electrically dissociating in a cell such haloid with the formation of metallic nickel and the liberation of free halogen; and transferring the latter from the cell back to the dissolving apparatus.

16. In a process of recovering the nickel contained in basic nickel precipitates, the steps which consist in treating such a precipitate in a dissolving apparatus with free halogen in the presence of a sulfur haloid with the formation of nickel haloid; electrically dissociating in a cell such haloid with the formation of metallic nickel and the liberation of free halogen; and transferring the latter from the cell back to the dissolving apparatus.

17. In a process of recovering the nickel contained in basic nickel precipitates, the steps which consist in treating such a precipitate in a dissolving apparatus with free bromin in the presence of finely-divided sulfur with the formation of nickel bromid; electrically dissociating in a cell such bromid with the formation of metallic nickel and the liberation of free bromin; and transferring the latter from the cell back to the dissolving apparatus.

18. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free halogen in the presence of a sulfur-containing body and a reagent capable of precipitating the sulfate from nickel sulfate radical.

19. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free halogen in the presence of a sulfur containing body and a reagent capable of precipitating the sulfate radical from nickel sulfate as calcium sulfate.

20. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free bromin in the presence of a sulfur-containing body and a soluble calcium salt.

21. In a process of rendering soluble the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate with free bromin in the presence of a sulfur haloid and calcium hydrate.

22. In a process of rendering soluble the nickel contained in basic nickel precipitates, the steps which consist in treating such a precipitate with free halogen in the presence of sulfur, whereby nickel haloid and sulfate are formed; and, then, precipitating the sulfate radical from such nickel sulfate.

23. In a process of recovering the nickel contained in basic nickel precipitates, the steps which consist in treating such a precipitate with free halogen in the presence of sulfur, whereby nickel haloid and sulfate are formed; removing such sulfate; and, then, electrically dissociating such nickel haloid.

24. In a process of recovering the nickel contained in basic nickel precipitates, the steps which consist in treating such a precipitate with free halogen in the presence of sulfur, whereby nickel haloid and sulfate are formed; precipitating the sulfate from such nickel sulfate; electrically dissociating such nickel haloid with the formation of metallic nickel and the liberation of the halogen; and, then, treating fresh precipitate with such liberated halogen.

25. In a process of recovering the nickel contained in basic nickel precipitates, the step which consists in treating such a precipitate in a dissolving apparatus with free halogen in the presence of a sulfur-containing body and a reagent capable of precipitating the sulfate radical from nickel sulfate; decanting off the solution containing the nickel haloids thus formed; electrically dissociating in a cell such haloids with the formation of metallic nickel and the liberation of free halogen; and transferring the latter from the cell back to the dissolving apparatus.

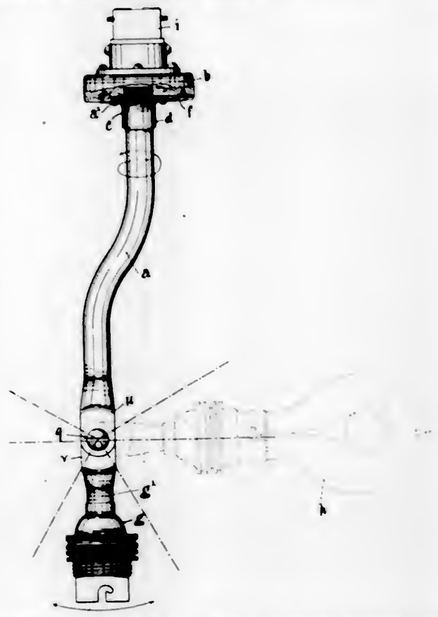
26. In a process of recovering the nickel contained in basic nickel precipitates, the steps which consist in treating such a precipitate in a dissolving apparatus with free bromin in the presence of finely-divided sulfur and a reagent capable of precipitating the sulfate radical from nickel sulfate as calcium sulfate; decanting off the solution containing the nickel bromid thus formed; electrically dissociating in a cell such bromid with the formation of metallic nickel and the liberation of free bromin; and transferring the latter from the cell back to the dissolving apparatus.

27. In a process of rendering soluble the nickel contained in basic nickel precipitates, the steps which consist in treating such a precipitate with free halogen in the presence of a sulfur-containing body and a reagent capable of precipitating the sulfate radical from nickel sulfate; decanting off the solution containing the nickel haloid thus formed; and evaporating the same to a consistency necessary to precipitate the last traces of sulfate.

28. In a process of recovering the nickel contained in basic nickel precipitates, the step which consists in treating such precipitate in a dissolving apparatus with free halogen in the presence of a sulfur-containing body and a reagent capable of precipitating the sulfate radical from nickel sulfate; decanting off the solution containing the nickel haloids thus formed; evaporating the same to a consistency necessary to precipitate the last traces of sulfate; electrically dissociating in a cell the nickel haloids with the formation of metallic nickel and the liberation of free halogens and transferring the latter from the cell back to the dissolving apparatus.

29. In a process of recovering the nickel contained in basic nickel precipitates, the steps which consist in treating such precipitate with free halogen in the presence of a sulfur-containing body and a soluble calcium salt; decanting off the solution containing the nickel haloid thus formed; evaporating the same to a consistency sufficient to precipitate the last traces of sulfate; electrically dissociating in a cell the nickel haloids with the formation of metallic nickel and the liberation of the halogens; transferring the latter from the cell back to fresh basic nickel precipitate to attack the same; and adding to the solution more of the sulfur-containing body and the soluble calcium salt.

857,928. FITTING FOR ELECTRIC LAMPS. JOHN DUGDILL, Failsworth, near Manchester, England. Filed Nov. 3, 1906. Serial No. 341,850.



Claim.—In electric fittings the improved knuckle joint consisting of overlapping outer forks *u* and inner forks *v* having holes bored therein dished inward to form conical friction surfaces, a tubular sleeve located between the members of the inner fork, a bolt inserted through the holes in the forks and the sleeve smaller in diameter than the sleeve and the holes in the inner forks, and a nut on such bolt substantially as described.

857,929. STORAGE-BATTERY ELECTRODE. THOMAS A. EDISON, Llewellyn Park, Orange, N. J., assignor to Edison Storage Battery Company, West Orange, N. J., a Corporation of New Jersey. Filed Mar. 30, 1905. Serial No. 252,935.

Claim.—1. An electrode mass for storage batteries employing alkaline electrolytes, comprising an intimate mixture of a suitable active material and metallic flakes, scales or films formed wholly or in part of metallic cobalt, substantially as set forth.

2. An electrode mass for storage batteries employing alkaline electrolytes, comprising an intimate mixture of nickel hydroxid and metallic flakes, scales or films formed wholly or in part of metallic cobalt, substantially as set forth.

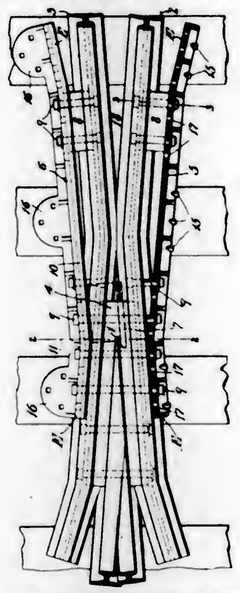
3. An electrode mass for storage batteries employing alkaline electrolytes, comprising an intimate mixture of a suitable active material, and flakes, scales or films of cobalt-nickel alloy, substantially as set forth.

4. An electrode mass for storage batteries employing alkaline electrolytes, comprising an intimate mixture of nickel hydroxid, and flakes, scales or films of cobalt nickel alloy, substantially as set forth.

5. A flake-like insoluble, conducting material for admixture with the active material of storage batteries employing alkaline electrolytes, comprising scales, flakes or foils formed wholly or in part of metallic cobalt, substantially as set forth.

6. A flake-like insoluble conducting material for admixture with the active material of storage batteries employing alkaline electrolytes, comprising scales, flakes or foils, formed of a nickel cobalt alloy, substantially as set forth.

857,930. RAILWAY-FROG. ROBERT E. EINSTEIN, St. Louis, Mo. Filed Aug. 6, 1906. Serial No. 329,448.



Claim.—1. A railway frog comprising a frog point, wing rails, and guard members comprising webs projecting upwardly from bases and having portions which extend over the heads of the wing rails adjacent the point of the frog; substantially as described.

2. A railway frog comprising a frog point, wing rails, and guard members having heads and bases which rest on the heads and bases of the wing rails adjacent the point of the frog, and means for securing said guard members in position; substantially as described.

3. A railway frog comprising a frog point, wing rails, and guard members of uniform shape and size adapted to be interchanged with each other, and each consisting of a base, web and a head which extends over the head of the wing rail with which it co-operates; substantially as described.

4. A railway frog comprising a frog point, wing rails, and guard members each of which has a central straight portion, and flared ends, one end of each guard member extending parallel with one face of the frog point, and spacing blocks interposed between the guard members and the wing rails at the toe end of the frog; substantially as described.

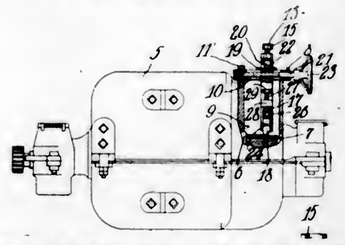
5. A railway frog, comprising a frog point, wing rails, and guard members which are so constructed that they can be moved longitudinally of the frog when their engaging faces have become worn to bring said engaging faces closer to the running lines of the frog and thus compensate for wear; substantially as described.

6. A railway frog comprising a frog point, wing rails, and guard members of uniform shape in cross section throughout their length and each consisting of a straight portion which is spaced away from the wing rails, and a flared portion which rests on the head of the wing rail adjacent the point of the frog; substantially as described.

7. As an article of manufacture, a guard member for a railway frog comprising a casting having a web provided at its upper end with a head which is adapted to project slightly over the head of one of the wing rails of the frog, and a base which is adapted to rest on the base of said wing rail; substantially as described.

8. As an article of manufacture, a guard member for a railway frog consisting of a casting having a web provided at its upper end with a head which is adapted to project slightly over the head of one of the wing rails of the frog, said casting having laterally projecting extensions provided with openings to receive fastening devices; substantially as described.

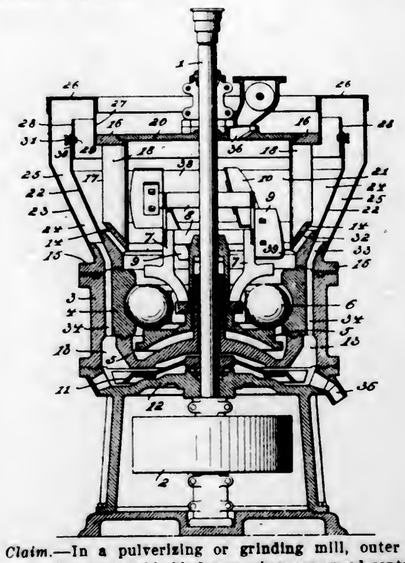
857,931. TOOL FOR TRUING AND DRESSING COMMUTATORS. CLAUS H. FRICK, San Antonio, Tex. Filed Oct. 2, 1906. Serial No. 337,113.



Claim.—1. A device of the class described comprising a supporting plate having a longitudinal slot formed therein, a cutter carrying bar extending through said slot and having its upper end provided with a transvere recess, a key extending through the transverse recess, a bearing plate interposed between the key and the upper surface of the supporting plate, and a clamping screw threaded in the bar and bearing against the key.

2. A tool of the class described comprising a supporting plate having a longitudinal slot formed therein, a cutter carrying bar extending through said slot and provided with a transverse recess, a shoulder formed on the bar and adapted to engage the supporting plate, a locking key seated in the transverse recess, a clamping screw carried by the bar and engaging the key, and a threaded rod journaled in the walls of the slot and extending through a correspondingly threaded opening in the bar for adjusting the latter longitudinally with respect to the supporting plate.

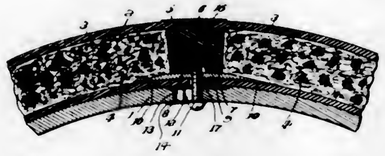
857,932. PULVERIZING OR GRINDING MILL. JAMES W. FULLER, Jr., Catasauqua, Pa. Filed July 5, 1906. Serial No. 324,717.



Claim.—In a pulverizing or grinding mill, outer and inner casings, rotatable blades or wings arranged centrally

in the mill within a casing arranged inside of said inner casing and forming by the operation of said blades or wings the suction chamber of the mill and said outer and inner casings forming separating and collecting chambers, said inner casing provided with a ring adjustably supported therefrom and adapted to increase or decrease the outflow of material from said separating into said collecting chamber, substantially as and for the purposes described.

857,933. TIRE STRUCTURE. PRESTON G. GESFORD, Orting, Wash. Filed Nov. 21, 1906. Serial No. 344,474.



Claim.—1. The combination with the felly of a wheel, of a tire mounted thereon and provided with a joint, a plug inserted within the opposite ends of the tire at the joint, said plug being provided in its innermost face with a socket, a ferrule adapted to encircle the tire at the joint, a yoke bar having its opposite ends inserted into the tire at the joint, and a bolt designed to extend through the felly and through the ferrule and into the said socket in the plug, said bolt having a threaded connection with the yoke bar.

2. A vehicle tire comprising an envelop provided with a joint, a plug inserted in the tire at the joint, a yoke bar having its opposite ends inserted in the tire at the joint, and a bolt secured to said yoke bar and extending through the same into the plug and adapted to secure the tire to the felly of a wheel.

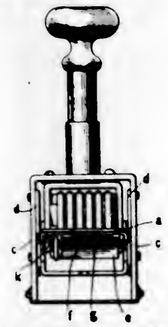
3. A vehicle tire comprising an envelop provided with a joint, a plug inserted in the ends of the tire at the joint, said plug being provided with a flange adapted to be interposed between the abutting ends of the tire at the joint, a yoke bar extending into the tire at the joint, and a bolt threaded in said yoke bar and arranged to secure the tire to the felly of the wheel.

4. A vehicle tire consisting of an envelop provided with a joint, a plug adapted to be inserted in the tire at the joint, a yoke bar extending across the joint of the tire and located within the same, an encircling ferrule for the joint, and a bolt threaded into the yoke bar and passing through said ferrule and adapted to secure the tire to the felly of the wheel.

5. The combination with the felly of a wheel provided with a slot, a tire encircling said felly and provided with a joint, a yoke bar extending across the joint and located within the tire and provided with a threaded aperture, a ferrule encircling the tire at the joint and constructed of a split band having overlapping forked ends adapted to produce a slot, and a bolt extending through the slot in the felly and through the slot in the ferrule and working in the yoke bar, as and for the purpose set forth.

6. The combination with the felly of a wheel provided with a slot and an enlarged opening communicating with said slot, of a tire provided with a joint and encircling said felly, a ferrule encircling the tire at the joint and provided with a slot, a bolt adapted to pass through the enlarged opening in the felly to rest in the slot of the same, said bolt extending through the slot in the ferrule, a bifurcated locking plate adapted to straddle the shank of the bolt and adapted to cover the enlarged opening of the felly, and a yoke bar extending across the joint and same, said bolt extending through the slot in the ferrule, located within the tire and provided with a threaded aperture, the bolt working in said aperture.

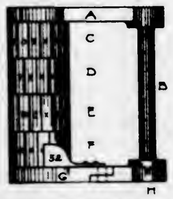
857,934. HAND NUMBERING-MACHINE. HENRY P. HAMBURG, Morris Park, Long Island, N. Y., assignor to Cushman & Denison Manufacturing Company, New York, N. Y., a Corporation of New York. Filed Oct. 10, 1906. Serial No. 338,236.



Claim.—1. A hand numbering machine comprising the combination of the rotatable numbering wheels, a swinging pawl frame carrying a projecting rod co-incident with its axis, a pawl carrying plate pivotally connected to the swinging frame, a laterally sliding plate mounted on said projecting rod, a spring acting normally to press the laterally sliding plate laterally toward the pawl carrying plate, means whereby the sliding plate and pawl carrying plate may be interlocked at different points and a recessed controlling wheel co-operating with the sliding plate in the different positions to which the latter may be adjusted, substantially as set forth.

2. A hand numbering machine comprising the combination of a swinging pawl frame carrying a rod parallel with the axis of the frame, a pawl carrying plate swinging upon said rod, a spring normally urging the pawl plate toward the numbering wheels, a segmental plate mounted to turn and slide upon said rod at one side of the pawl plate and having three spaced apertures therein adapted to engage a projection on the end of the pawl plate, a spring normally urging the segmental plate against the end of the pawl plate and a peripherally recessed controlling wheel with which the segmental plate co-operates, whereby adjustment may be made for repeating, duplicating, or consecutive numbering.

857,935. PERMUTATION-PADLOCK. HARRY HANDLER, Lawrence, Mass. Filed Mar. 25, 1907. Serial No. 364,449.



Claim.—1. In a permutation padlock, a top plate, a bolt carried thereby, a post carried by the top plate and having a longitudinal groove and a flange, tumblers carried by the post between the flange and the top plate each tumbler comprising a web with a post opening and notch therein, combined with a bottom plate, a receiver pivoted thereto and adapted to receive the free end of the bolt, a latch carried by the bottom plate having teeth adapted to register with the spaces between the webs of the tumblers and with the notches therein.

2. In a permutation padlock, a top plate, a bolt carried thereby, a post carried by the top plate and having a longitudinal groove and a flange, tumblers carried by the

post between the flange and the top plate each tumbler comprising a web with a post opening and notch therein, combined with a bottom plate, a receiver pivoted thereto and adapted to receive the free end of the bolt, a latch carried by the bottom plate having teeth adapted to register with the spaces between the webs of the tumblers and with the notches therein, and a spindle carried by the bottom plate and comprising two parts with a limited sliding connection between the same and provided with a pin whereby the movement of the bottom plate is limited.

3. In a permutation padlock, a top plate, a bolt carried thereby, a post carried by the top plate and having a longitudinal groove and a flange, tumblers carried by the post between the flange and the top plate each tumbler comprising a web with a post opening and notch therein, combined with a bottom plate, a receiver pivoted thereto and adapted to receive the free end of the bolt, a latch carried by the bottom plate having teeth adapted to register with the spaces between the webs of the tumblers and with the notches therein, a spindle carried by the bottom plate and comprising two parts with a limited sliding connection between the same and provided with a pin whereby the movement of the bottom plate is limited, and a spring which interposes between the bottom tumbler and the bottom plate when the lock is opened.

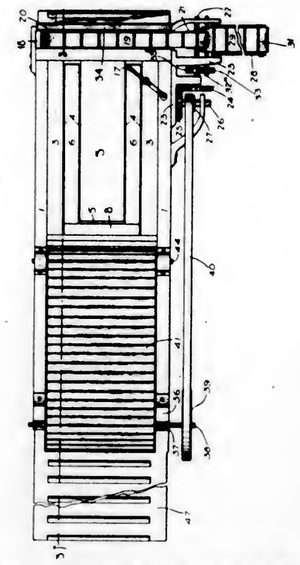
4. In a permutation padlock, a top plate, a bolt carried thereby, a post carried by the top plate and having a longitudinal groove and a flange, tumblers carried by the post between the flange and the top plate each tumbler comprising a web with a post opening and notch therein, combined with a bottom plate, a receiver pivoted thereto and adapted to receive the free end of the bolt, a latch carried by the bottom plate having teeth adapted to register with the spaces between the webs of the tumblers and with the notches therein, and means for limiting the outward movement of the latch and bottom plate when the teeth of the latch and the notches of the tumblers register.

5. In a permutation padlock, a top plate, a bolt carried thereby, a post carried by the top plate and having a longitudinal groove and a flange, tumblers carried by the post between the flange and the top plate each tumbler comprising a web with a post opening and notch therein, combined with a bottom plate, a receiver pivoted thereto and adapted to receive the free end of the bolt, a latch carried by the bottom plate having teeth adapted to register with the spaces between the webs of the tumblers and with the notches therein, means for limiting the outward movement of the latch and bottom plate when the teeth of the latch and the notches of the tumblers register, and a spring which interposes between the bottom tumbler and the bottom plate when the lock is opened.

6. In a permutation padlock, a top plate, a bolt carried thereby, a post carried by the top plate and having a longitudinal groove together with a spindle bore and a flange, tumblers carried by the post between the flange and the top plate each tumbler comprising a web with a post opening and notch therein, combined with a bottom plate, a receiver pivoted thereto and adapted to receive the free end of the bolt, a latch carried by the bottom plate having teeth adapted to register with the spaces between the webs of the tumblers and with the notches therein, a spindle carried by the bottom plate flattened and slotted near its free end and entering the spindle bore of the post, and a rod in said bore bifurcated to pass over the flattened end of the spindle and provided with a pin through the slot therein and at its other end with a pin which projects into a recess in the post.

7. In a permutation padlock, a top plate, a bolt carried thereby, a post carried by the top plate and having a longitudinal groove together with a spindle bore and a flange, tumblers carried by the post between the flange and the top plate each tumbler comprising a web with a post opening and notch therein, combined with a bottom plate, a receiver pivoted thereto and adapted to receive the free end of the bolt, a latch carried by the bottom plate having teeth adapted to register with the spaces between the webs of the tumblers and with the notches therein, a spindle carried by the bottom plate flattened and slotted near its free end and entering the spindle bore of the post, a rod in said bore bifurcated to pass over the flattened end of the spindle and provided with a pin through the slot therein and at its other end with a pin which projects into a recess in the post, and a spring which interposes between the bottom tumbler and the bottom plate when the lock is opened.

857,936. COMBINED DUMPING PLATFORM AND ELEVATOR. EDWARD W. HARMON, Kansas, Ill., assignor of one-third to Wm. C. Pinnell, Kansas, Ill. Filed July 2, 1906. Serial No. 324,486.



Claim.—A combined dumping platform and elevator comprising a main frame, a platform arranged in one end of said frame, parallel, longitudinally-disposed dumping bars arranged in said platform, a crank shaft connected to one end of said dumping bars, a worm gear on said crank shaft, a vertically-disposed worm adapted to engage said worm gear, a crank handle on the shaft of said worm, whereby the latter may be turned, thereby operating said gears and crank shaft to tilt said dumping bars, an endless conveyer arranged across the forward end of said platform, an elevator connecting with said conveyer, driving gears connected to said conveyer and elevator, a tread power arranged in the rear end of said frame, a drive pulley operated by said tread power, and a belt connecting said drive pulley to the operating gears of said conveyer and elevator, substantially as described.

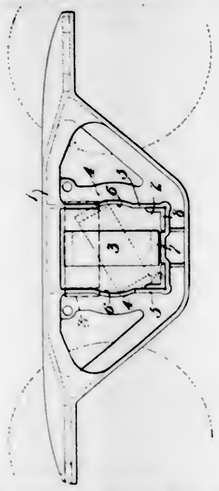
857,937. CAR-TRUCK. CLEMENT G. HARRINGTON, Maplewood, Mo., assignor to Wolff Truck Frame Company, Augusta, Me., a Corporation of Maine. Filed Apr. 27, 1907. Serial No. 370,659.

Claim.—1. A car truck side frame provided with an opening to receive the end of a bolster having integral column guides, said frame comprising columns which have curved portions intermediate their ends that permit the bolster to be turned from a vertical into a horizontal position; substantially as described.

2. A car truck side frame consisting of a casting that is provided with an opening to receive the end of a bolster, and columns forming the sides of said opening and provided at approximately their centers with curved portions; substantially as described.

3. A car truck side frame consisting of a casting having an opening to receive the end of a bolster, portions of the

side walls of said opening being curved to permit the bolster to be turned from a vertical into a horizontal position; substantially as described.



4. A car truck side frame consisting of a one-piece casting that is provided with an opening to receive the end of a bolster and with flanges forming the side walls of said opening, said side walls having curved portions that permit the bolster to be turned from a vertical into a horizontal position; substantially as described.

5. In a car truck, a side frame provided with an opening to receive the end of a bolster, said opening being so formed that the bolster can be inserted in a vertical position and thereafter turned into a horizontal position, and a bolster arranged in said opening and provided with laterally projecting column guides and flat side faces between said guides; substantially as described.

6. In a car truck, a side frame provided with an opening to receive the end of a bolster, and a bolster arranged in said opening and provided with laterally projecting column guides, a portion of said opening corresponding to the width of said bolster, and a portion of said opening being of greater width than the bolster to permit it to be turned from a vertical into a horizontal position; substantially as described.

7. In a car truck, a side frame comprising a casting that is provided with an opening to receive the end of a bolster, and a bolster arranged in said opening and provided with laterally projecting column guides, portions of the side walls of said opening being curved to permit the bolster to be turned from a vertical into a horizontal position; substantially as described.

8. In a car truck, a side frame comprising a casting provided with columns having curved portions, a bolster arranged between said columns above the curved portions thereof, and guides on said bolster which embrace the columns of the side frames; substantially as described.

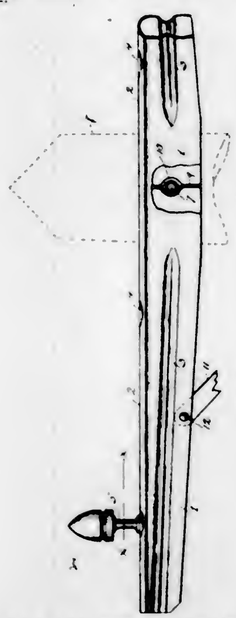
9. In a car truck, a side frame having columns provided on their inner sides with flanges, said columns having curved portions intermediate their ends, and a bolster arranged between said columns and provided with laterally projecting column guides that embrace the columns of the side frames and flat side faces that bear against the flanges on the insides of said columns; substantially as described.

10. In a car truck, a side frame provided with an opening to receive the end of a bolster and flanges forming the sides of said opening, and a bolster provided with column guides and with flat side faces between said guides, said bolster being adapted to be inserted edgewise in the opening in the side frame, and thereafter turned to cause its column guides to embrace the flanges on the side frame; substantially as described.

11. In a car truck, side frames provided with openings to receive the ends of a bolster and flanges forming the sides of said openings, a bolster provided with column guides and with flat faces between said guides, said bolster being adapted to be inserted edgewise in the openings in the side frames and thereafter turned to cause its column guides to embrace the flanges on the side frames, a spring plank, and springs interposed between the spring plank and the bolster; substantially as described.

12. In a car truck, side frames provided with openings to receive the ends of a bolster and flanges forming the sides of said openings, a bolster provided with column guides and with flat faces between said guides, said bolster being adapted to be inserted edgewise in the openings in the side frames and thereafter turned to cause its column guides to embrace the flanges on the side frames, a spring plank consisting of two angles that are connected to the side frames and project beyond said frames to form spring seats, and coiled springs interposed between said spring seats and the end portions of the bolster; substantially as described.

857,938. WROUGHT-METAL POLE-ARM. MARTIN E. HARRISON, Parnassus, Pa. Filed Jan. 11, 1906. Serial No. 295,552.



Claim.—1. As a new article, a pole arm, constructed from a single sheet of metal folded longitudinally to form spaced sides and a connecting web with said web portion reversely inclined to provide a water shed.

2. As a new article, a pole arm constructed from a single sheet of metal folded longitudinally to form spaced sides and a connecting web with said web reversely inclined to provide a water shed, a stay member transversely disposed between said sides.

3. As a new article, a pole arm constructed from a single sheet of metal folded longitudinally to form spaced sides and a connecting web with said web portion reversely inclined to form a water shed and with said sides corrugated longitudinally between the central portion and the ends of the same.

4. As a new article, a pole arm constructed from a single sheet of metal folded longitudinally to form spaced sides and a connecting web with said web reversely inclined to provide a water shed, a stay member disposed transversely between said sides centrally of the arm, and said sides corrugated longitudinally between said stay and the ends of the arm.

5. As a new article, a pole arm constructed from a single sheet of metal folded longitudinally to form spaced sides and a connecting web and with spaced insulator pin receiving apertures in said web portion and with said spaced sides compressed and with recesses corresponding to and in alinement with said insulator pin apertures and adapted to embrace said pins from opposite sides.

6. As a new article, a pole arm constructed from a single sheet of metal folded longitudinally to form spaced sides and a connecting web with said web portion reversely inclined to provide a water shed, a stay member extending between said sides centrally of the arm and provided with transverse sockets and a securing bolt extending through said sides and the sockets in said plate to provide means for fastening the arms to the pole.

7. As a new article, a pole arm constructed from a single sheet of metal folded longitudinally to form spaced sides and a connecting web and with spaced apertures in said web and with said sides compressed and provided with recesses corresponding to and in alinement with said apertures and adapted to partly embrace the insulator pins, a stay member extending between said sides centrally of the arm and provided with transverse sockets, and a securing bolt extending through said sides and said sockets and providing means for fastening the arm to the pole.

8. A new article of manufacture, comprising a pole-arm formed from wrought sheet metal bent in the form of the letter "U," in cross-section, said arm being provided on its top with an inclined surface to form a water-shed, means for attaching the insulator pins thereto and a means for attaching the arm to a pole.

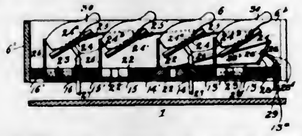
9. A new article of manufacture, comprising a pole arm formed from wrought sheet metal and substantially "U" shaped in cross-section, said arm being provided on the top with inclined surfaces to form a water-shed and with openings for the reception and support of insulator pins and a means for attaching said arm to a pole.

10. A new article of manufacture, comprising a pole-arm formed from wrought sheet metal, said arm being formed on its top with a water-shed and having a portion of its sides bent inwardly in parallel lines and a part of the center substantially "U" shaped in cross-section and a means for attaching said arm to a pole.

11. A new article of manufacture, comprising a pole-arm formed from wrought sheet metal, said arm being formed on its top with a water-shed and having a portion of its sides bent inwardly to engage with the shanks of the insulator pins and form a support and a means for attaching said arm to a pole.

12. A new article of manufacture, comprising a pole-arm formed from wrought sheet metal and substantially "U" shaped in cross-section, in combination with a means comprising a bolt and parting piece for attaching said arm to a pole.

857,939. PIN-SETTING APPARATUS FOR BOWLING-ALLEYS. ELMER E. HEATH, Smethport, Pa. Filed Nov. 25, 1905. Serial No. 289,106.



Claim.—1. In a pin setting apparatus for bowling alleys, the combination with a pin carrying and depositing frame, of means movable in the frame in planes substantially parallel with the surface of the alley, adapted to engage the pins after they are deposited upon the alley and to arrange them accurately in predetermined relation to each other.

2. In a pin setting apparatus for bowling alleys, the combination of a frame having side walls, for carrying the pins and depositing them in upright position upon the alley, and means carried by the side walls of the frame arranged to slide relatively thereto, for engaging the pins after they are in upright position upon the alley and arranging them accurately in predetermined relation to each other.

3. In a pin setting apparatus for bowling alleys, the combination of a frame for receiving, carrying and depositing the pins upon the alley, having the side walls and a perforated bottom through which the pins are arranged to pass, the said bottom being formed of separate parts movable relative to each other and arranged to engage with the pins when the frame is set upon the alley and accurately arrange the pins, substantially as set forth.

4. In a pin setting apparatus for bowling alleys, the combination of a frame adapted to receive the pins in inclined position having a perforated bottom through which the pins are adapted to pass formed of separate parts movable relative to each other, means for delivering the pins from the frame and depositing them upon the alley in upright position, and means for operating the movable parts of the bottom of the frame to cause them to engage with the pins after they are deposited upon the alley and to place them accurately in predetermined relation to each other.

5. In a pin setter for bowling alleys, the combination of a frame, a series of rocking pin receiving and depositing slats arranged within the said frame, means for rocking the said slats when the frame approaches the alley in order to deposit the pins on the alley in upright position, and means movable in the frame in planes substantially parallel with the surface of the alley for engaging the pins after they are deposited upon the alley and placing them accurately in predetermined relation to each other.

6. In a pin setting apparatus for bowling alleys, the combination of a frame having a perforated bottom through which the pins are adapted to pass formed of separate parts movable relative to each other, a series of rocking pin receiving and depositing plates arranged within said frame, a series of guiding plates arranged within said frame and adapted to co-operate with said rocking plates to deposit the pins in upright position upon the alley, means for actuating said rocking plates, and means for operating the movable parts of the bottom of the frame to cause them to engage with the pins after they have been deposited upon the alley to place them accurately in predetermined relation to each other.

7. In a pin setting apparatus for bowling alleys, the combination with a frame adapted to receive the pins having a perforated bottom through which the pins pass when being set and means carried by the frame adapted to deposit the pins upon an alley, of means carried by the frame and arranged in the plane of the bottom thereof, adapted to engage with the pins after they have been deposited upon the alley and to arrange them accurately in predetermined fixed relation to each other.

8. In a pin setting apparatus for bowling alleys, the combination with a triangular frame adapted to receive the pins having a bottom formed of pairs of slats movable relative to each other and between which the pins pass in being set and means carried by the frame adapted to deposit the pins upon an alley, of means carried by the frame adapted to operate the movable elements of the bottom of the frame to cause them to engage with the pins after they have been deposited upon the alley and to arrange them accurately in predetermined fixed relation to each other, and then to disengage the pins to permit the removal of the frame without disturbing the positions of the pins.

9. In a pin setting apparatus for bowling alleys, the combination of a frame, rocking plates arranged within said frame, adapted to receive the pins and to deposit them upon the alley, a series of pairs of co-operating slats having pin apertures therethrough through which the said pins are directed by the said rocking plates, means tending to normally hold the said slats of each co-operating pair of slats apart, and means tending to force the slats of each co-operating pair toward each other after the pins

have been deposited upon an alley, whereby the walls of the pin openings between the slats engage the pins therein and arrange them accurately in predetermined relation to each other.

10. In a pin setter for bowling alleys, the combination with a pair of alleys of a pin carrying and depositing frame for the said alleys, and means for swinging said pin carrying and depositing frame from working position in one alley to working position in the other.

11. In a pin setting apparatus for bowling alleys, the combination of two alleys, a pin setting frame constructed and arranged to be elevated above the alleys to receive the pins and to be lowered to the alleys to deposit the pins thereon, and means for swinging the said frame from working position in one alley to working position in the other.

12. In a pin setting apparatus for bowling alleys, the combination of two alleys, a pin setting frame constructed and arranged to be elevated above the alleys to receive the pins and to be lowered to the alleys to deposit the pins thereon, and means for swinging said frame from one alley to the other and adapted to permit the vertical adjustment of the frame relative to either of said alleys.

13. In a pin setting apparatus for bowling alleys, the combination of a bowling alley and a pit at the pin end thereof, a vertically adjustable pin receiving and depositing frame and a series of rocking plates in said frame adapted to be inclined to receive the pins and arranged in planes at an angle to the plane of said pit.

14. In a pin setting apparatus for bowling alleys, the combination of a triangular frame adjustable vertically relatively to the alley, and arranged to have one of its inclosing walls transverse to the longitudinal axis of the alley when it is in pin receiving and depositing position, and a series of rocking plates arranged parallel to the said inclosing wall of the frame, each plate of said series being adapted to be inclined to receive a pin or pins and to be rocked into vertical position to deposit the pins in upright position upon the alley.

15. In a pin setting apparatus for bowling alleys, the combination with two bowling alleys, of a rotatable standard arranged near the alleys, and a triangular pin receiving and depositing frame having one corner connected to said revoluble standard and adapted to be revolved with said standard from pin receiving position above the alley to pin receiving position above the other alley.

16. In a pin setting apparatus for bowling alleys, the combination with two alleys, of a pivotally supported triangular pin receiving and depositing frame arranged to be swung from one alley to the other, and carrying a series of rocking pin receiving and depositing plates arranged parallel to the base of said triangular frame whose apex is adjacent to the axis about which the frame swings.

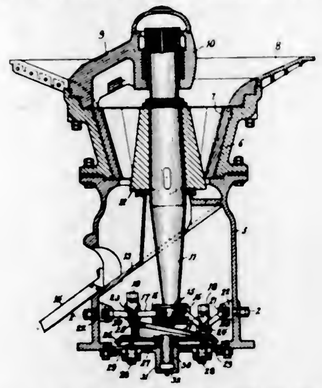
17. In a pin setting apparatus for bowling alleys, the combination with a pin receiving and depositing frame, of a series of pairs of co-operating slats carried by said frame, the slats of each pair being normally held yieldingly apart and being provided with mutually co-operating pin recesses or grooves, and means for forcing the slats of each co-operating pair toward each other after the pins are deposited upon an alley, to set them accurately in predetermined relation to each other, and then releasing the slats of each pair and allowing them to spring back into normal separated relation to each other.

18. In a pin setting apparatus for bowling alleys, the combination with two alleys, of a triangular pin-receiving and depositing frame, a pivotal support for the frame arranged between the two alleys and a support or connection between the said frame and pivotal support connected with the former at one of its corners whereby when the frame is in working position over one of the alleys one of its free corners is in the central vertical longitudinal plane of that alley and pointing to the front, and when the frame is swung over the other alley the other free corner of the frame is in the central longitudinal plane of the last said alley and pointing to the front thereof, substantially as set forth.

19. In a pin setting apparatus for bowling alleys, the combination of a vertical standard or support, a pin setting frame supported by the said standard and adjustable vertically thereupon and also free to turn about the vertical axis of the standard, and means for counterbalancing the frame, these means being also free to turn with the frame about the said vertical axis, substantially as set forth.

20. In a pin setting apparatus for bowling alleys, the combination of a vertical support or standard, a pin setting frame, a supporting arm for the frame mounted upon the support and vertically adjustable relatively thereto and free to swing about the vertical axis thereof, another arm extending out from the standard above the frame-carrying arm and free to turn therewith about the vertical axis of the standard, and counterbalancing mechanism for the frame supported by last said arm, substantially as set forth.

857,940. ROCK-CRUSHER. EDWARD A. HOFF, Milwaukee, Wis. Filed June 13, 1906. Serial No. 321,434.



Claim.—1. Means for producing a gyratory motion, comprising a pivotally mounted shaft, a series of toggles connected with the shaft, a stationary support to which the toggles are connected, and means for moving the toggles successively for causing them to exert pressure upon the shaft in different directions.

2. Means for producing a gyratory motion, comprising a pivotally mounted shaft, toggles connected with the shaft and extending in different directions, a stationary support to which the toggles are connected, and a rotatable cam bearing on the toggles and causing them to straighten successively to exert pressure upon the shaft.

3. Means for producing a gyratory motion, comprising a pivotally mounted shaft, toggles connected to the shaft and extending in different directions, a stationary support to which the toggles are connected, grooved rollers carried by the intermediate joints of the toggles, and a rotatable cam bearing on the rollers for causing the toggles to be straightened successively to exert pressure upon the shaft.

4. Means for producing a gyratory motion, comprising a pivotally mounted shaft, a series of toggles swivelly connected therewith and extending in different directions, a stationary support to which the toggles are pivotally connected, grooved caster rollers swivelly mounted at the intermediate joints of the toggles, a rotatable cam bearing on the caster rollers and adapted to force the toggles to straighten successively and exert pressure upon the shaft.

5. A rock crusher, comprising a concave, a pivotally mounted main shaft, a head carried by the main shaft to coöperate with the concave, and means for gyrating the main shaft, comprising a series of toggles connected with the main shaft, a stationary support to which the toggles are connected, and means for moving the toggles successively for causing them to exert pressure upon the shaft in different directions.

6. A rock crusher, comprising a concave, a pivotally mounted main shaft, a head carried by the main shaft to coöperate with the concave, and means for gyrating the main shaft, comprising toggles connected with the shaft and extending in different directions, a stationary support to which the toggles are connected, and a rotatable cam bearing on the toggles and causing them to straighten successively to exert pressure upon the shaft.

7. A rock crusher, comprising a concave, a pivotally mounted main shaft, a head carried by the main shaft to coöperate with the concave, and means for gyrating the main shaft, comprising toggles connected to the shaft and extending in different directions, a stationary support to which the toggles are connected, grooved rollers carried by the intermediate joints of the toggles, and a rotatable cam bearing on the rollers for causing the toggles to be straightened successively to exert pressure upon the shaft.

8. A rock crusher, comprising a concave, a pivotally mounted main shaft, a head carried by the main shaft to coöperate with the concave, and means for gyrating the main shaft, comprising a series of toggles pivotally connected therewith and extending in different directions, a stationary support to which the toggles are pivotally connected, grooved caster rollers swivelly mounted at the intermediate joints of the toggles, and a rotatable cam bearing on the caster rollers and adapted to force the toggles to straighten successively and exert pressure upon the shaft.

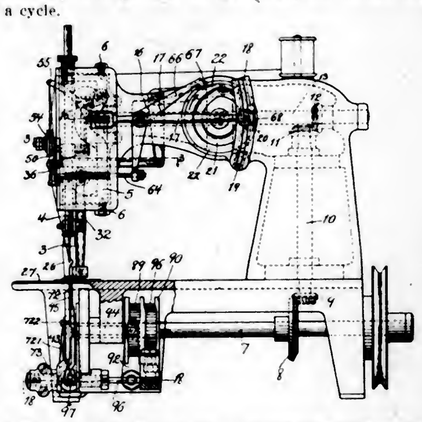
9. A rock crusher, comprising a concave, a pivotally mounted main shaft, a head carried by the main shaft to coöperate with the concave, and means for gyrating the main shaft, comprising a series of toggles pivotally connected therewith and extending in different directions, a stationary support to which the toggles are pivotally connected, grooved caster rollers swivelly mounted at the intermediate joints of the toggles, a rotatable cam means bearing on the caster rollers and adapted to force the toggles to straighten successively and exert pressure upon the shaft, and friction rollers on which the cam means bears.

10. A rock crusher, comprising a shell, a concave carried thereby, a pivotally mounted main shaft, a head on the main shaft coöperating with the concave, and means for gyrating the main shaft, comprising toggles pivotally connected with the main shaft and with the shell, caster nections, a beveled gear journaled in the shell, a cam nections, a beveled gear journaled in the shell, a cam flange thereon bearing against the caster rollers, friction rollers in the shell upon which the beveled gear bears, and a counter shaft entering the shell and having a pinion meshing with the beveled gear.

11. In a rock crusher, a shell, a concave carried thereby, a pivotally suspended main shaft, a head carried thereon coöperating with the concave, and means for gyrating the main shaft, comprising a pair of annular flanges on the main shaft, blocks pivotally mounted therebetween, pairs of toggle links pivotally connected to the blocks, yokes having trunnions on which the pairs of toggle links are loosely mounted, brackets connected to the shell, blocks pivotally mounted in the brackets, pairs of toggle links connecting the last mentioned blocks with the trunnions of the yokes, grooved caster rollers swiveled in the yokes, a bottom plate on the shell, a beveled gear journaled therein, a cam flange on the beveled gear bearing on the caster rollers, bearing rollers journaled in the bottom plate, a flange on the beveled gear riding on the bearing rollers, and a counter shaft entering the shell and having a beveled pinion meshing with the beveled gear for turning the beveled gear and causing the cam flange to force the toggles formed by the sets of toggle links so as to exert pressure upon the main shaft.

857,941. MACHINE FOR FORMING KNOTTED-THREAD FASTENINGS. CHARLES M. HORTON, Portsmouth, N. H., assignor to The Singer Manufacturing Campany, a Corporation of New Jersey. Filed Oct. 3, 1904. Serial No. 226,954.

Claim.—1. In a machine for making knotted thread-fastenings, in combination, a reciprocating thread-carrier adapted to pass thread-loops through the work, actuating means for imparting to said thread-carrier in each knot-forming cycle an initial reciprocation and a plurality of subsequent reciprocations, means for producing a relative lateral movement between the thread-carrier and the work, means for actuating the same once only for each knot-forming cycle, and means for passing the end of an initial thread-loop through each of the subsequent thread-loops of a cycle.



2. In a machine for making knotted thread-fastenings, in combination, a reciprocating thread-carrier adapted to pass thread-loops through the work, actuating means for imparting to said thread-carrier in each knot-forming cycle an initial reciprocation and a plurality of subsequent reciprocations, means for producing a relative lateral movement between the thread-carrier and the work, means for actuating the same once only for each knot-forming cycle, and means for passing the end of an initial thread-loop through each of the subsequent thread-loops of a cycle in the same direction.

3. In a machine for making knotted thread-fastenings, in combination, a reciprocating thread-carrier adapted to pass thread-loops through the work, actuating means for imparting a succession of reciprocations to said thread-carrier in each knot-forming cycle, a thread-nipping loop-taker adapted to coöperate with said thread-carrier in handling the thread-loops, means for actuating said loop-taker to nip the thread of the first loop formed by the thread-carrier and to pass it through a subsequent thread-loop, and means coöperating with said loop-taker in completing the thread-fastening.

4. In a machine for making knotted thread-fastenings, in combination, a reciprocating thread-carrier adapted to pass the thread-loops through the work, actuating means for imparting a succession of reciprocations to said thread-carrier in each knot-forming cycle, a thread-nipping loop-taker adapted to coöperate with said thread-carrier in handling the thread-loops, actuating means for said loop-taker acting initially to cause the same to nip the thread of the first loop presented thereto by the thread-carrier after the latter has risen above the work and to pass it through a subsequent thread-loop, and means coöperating with said loop-taker in completing the thread-fastening.

5. In a machine for making knotted thread-fastenings, in combination, a reciprocating thread-carrier adapted to pass the thread-loops through the work, actuating means for imparting a succession of reciprocations to said thread-carrier in each knot-forming cycle, a thread-nipping loop-taker adapted to coöperate with said thread-carrier in handling the thread-loops, a thread-holding device, and means for actuating said thread-nipping and holding members whereby the nipping member is caused to seize and nip the end of the thread of the initial thread-loop of a knot-forming cycle and pass it through a second thread-loop to the holding member, the holding member to retain such thread while the nipping member recedes from the second thread-loop and advances to grasp the thread-end, the nipping member to then pass said thread-end through

a third thread-loop to the holding member by which it is retained, and the nipping member to finally recede from the third thread-loop to permit the knot to be set.

6. In a machine for making knotted thread-fastenings, in combination, a reciprocating thread-carrier for passing thread-loops through the work, a coöperating loop-taker having a beak formed with relatively movable jaws, means for actuating said loop-taker whereby one thread-loop is entered by one jaw only of the loop-taker which is operated to nip the same, and a succeeding loop is entered by both jaws of said loop-taker, and means coöperating with said loop-taker in completing the thread-fastening.

7. In a machine for making knotted thread-fastenings, in combination, a reciprocating thread-carrier for passing thread-loops through the work, a coöperating loop-taker having a beak formed with relatively movable jaws, means for imparting to said loop-taker an operative loop-taking movement for each reciprocation of the thread-carrier, independent means for operating said jaws whereby one only of the latter is caused to enter one thread-loop upon which the other jaw is then closed and both jaws to enter a subsequent thread-loop, and means coöperating with said loop-taker in completing the thread-fastenings.

8. In a machine for making knotted stitches, the combination with means for passing the thread around a portion of the material and forming a succession of thread-loops at the same point on one side of the portion so embraced, of means for passing through each of said thread-loops the end of the thread from the opposite side of said embraced portion of the material, and means for drawing up the thread to complete the knotted stitch.

9. A machine for making knotted fastenings comprising a thread-carrier, means for reciprocating the same longitudinally and laterally, knot-tying devices comprising a pair of gripping members, means for simultaneously moving said gripping members laterally in one direction, means for moving said gripping members toward and away from each other in a direction transverse to the first-said motion, means for causing said gripping members alternately to grip and release a portion of the thread, and a cutter arranged to sever the thread on the completion of a cycle of knot-tying operations.

10. A machine for making knotted fastenings for connecting parts, comprising a laterally and longitudinally movable thread-carrier constructed and arranged to carry a thread around portions of the work, and knot-tying devices comprising two laterally movable gripping members, means for actuating one of said members to grip a loose end of thread extending from the carrier and carry it around said carrier and through a loop formed in the thread by said carrier, means for moving the second of said gripping members toward and away from said first gripping member, and means to cause said second gripping member to engage the end of thread held by the first gripping member.

11. A machine for making knotted fastenings for connecting parts comprising a thread-carrier, means for reciprocating said carrier longitudinally and laterally, and knot-tying devices comprising a pair of gripping members, means for simultaneously moving said gripping members laterally in one direction, means for moving said gripping members toward and away from each other in a direction transverse to their first said motion, and means for causing said gripping members alternately to grip and release a portion of the thread, whereby said members are caused to carry an end of thread partially around the carrier and draw the same through a loop in the thread formed by the retraction of the carrier.

12. In a machine of the character specified, knot-tying instrumentalities comprising gripping members each having a nipper pivoted thereto, a cam having engaging surfaces arranged to act on said members to move them toward and away from each other, a second cam connected to said members to move them transversely to their first motion, a reciprocating member having means for engaging the fingers of said gripping members and arranged to separate the fingers of one of said members in its movement in one direction and to separate the fingers of the other of said members in its movement in the opposite direction, and means for actuating said reciprocating member.

13. In a machine of the character specified, a holder journaled in the frame of the machine, a pair of knot-tying gripping members journaled in said holder, a nipper pivotally mounted on each of said gripping members and aranged to coact with said members to grip a thread, arms journaled in fixed bearings in alinement with the journal of the gripping members and each engaged with one of the gripping members, a cam having means for engaging said arms and moving them, and thereby the gripping members toward and from each other, a second cam, connections between said cam and the holder whereby the latter is oscillated about its journal, and means for operating the nippers alternately.

14. In a machine of the character specified, a holder journaled in a fixed bearing in the frame of the machine, gripping members journaled in a bearing in said holder perpendicular to the bearing for the holder, nippers carried by said gripping members and pivotally connected thereto, cam surfaces having connections with said gripping members and arranged to move the latter toward and away from each other, a cam connected to the holder and arranged to oscillate said holder in its bearing, a reciprocating rod having projections located and arranged to engage the nipper carried by one of the gripping members in its forward movement and to engage the nipper carried by the other of said gripping members on its backward reciprocation, and means for reciprocating said rod.

15. A machine of the character stated comprising a needle-bar, a needle carried thereby, means adapted to reciprocate said needle-bar at a uniform speed, a cam connected to said needle-bar to shift the same laterally and arranged to hold the bar in one position while the latter makes one reciprocation, then to shift the bar and hold it in the second position while it makes two subsequent reciprocations, the aforesaid motions constituting the cycle of operations in forming a complete knotted fastening, and knot-tying devices comprising a gripping member, operating means therefor arranged to hold said member in the path of the needle during the first reciprocation thereof and cause said member to grip the end of a thread carried by the needle, then to move said member to one side of the path of the needle and partially around the needle during the second reciprocation thereof, a second gripping member, and operating mechanism therefor arranged to advance the latter to the first gripping member while the needle is commencing the return stroke of its second reciprocation and cause said second member to grip the thread-end carried by the first member and draw the thread through a loop formed in the thread while the needle is being retracted, and then to deliver the thread-end to the first gripping member, said operating mechanism being further constructed and arranged to cause the said gripping members to repeat the above-mentioned cycle of operations during the third reciprocation of the needle.

16. A machine for making knotted connections, comprising a work-support, a thread-carrier and a plurality of coöperating gripping members all adapted for relative operative movement in parallel planes and positioning movements transversely thereof, and operating mechanism for passing the carrier and a thread through separated points in the work, and for causing the gripping members to carry one portion of the thread through a loop in the thread passed through the work by the carrier.

17. In a machine of the character specified having a needle and knot-tying devices comprising a thread-nipping loop-taker and arranged to perform a cycle of knot-tying operations, a take-up normally acting to set the knots, and means auxiliary thereto for providing at the end of each knot-tying cycle a measured supply of thread for beginning the next knot-forming operation, comprising relatively stationary thread-guides, the position of one of which is determined by the character of the work, a relatively movable thread-guide, and means for shifting the movable guide in respect of the relatively stationary guides to draw thread from the thread supply.

18. A machine of the character specified comprising a thread-carrier, means for longitudinally reciprocating said carrier, means for shifting the carrier laterally, said means being arranged to cause the carrier to make one reciprocation, then to shift the carrier and cause the carrier to make a plurality of reciprocations in its second position, thread-engaging means coöperating with said thread-carrier in forming a fastening, thread-guides, a thread-clamp, and means for operating said clamp to grip the thread during the first portion of the movement of the carrier in the third reciprocation of the cycle.

19. In a machine for making knotted stitches, the combination with a longitudinally reciprocating thread-carrier and a work-support and means for producing relative lateral movements of the one with reference to the other whereby the thread-carrier is caused in the cycle of operation of the machine to make a single reciprocation in one position, and two successive reciprocations in another position in respect of the work-support, complemental knot-tying means coöperating with said thread-carrier in forming knotted stitches and a thread-cutting device, of a normally-open thread clamp, and means for actuating the same to grip the thread during the first portion of the carrier's movement in its third reciprocation and again during the operation of said thread-cutting device in cutting the thread.

20. A machine of the character specified having instrumentalities adapted to cause a cycle of knot-tying operations, means for cutting the thread on the completion of the cycle comprising a knife, a guide in which said knife is movably mounted adjacent the work, and actuating mechanism therefor comprising a pivoted lever operatively connected thereto and provided with a cam surface, a lever pivoted to the machine-frame in engagement with said cam surface, and mechanism connected to oscillate said second lever.

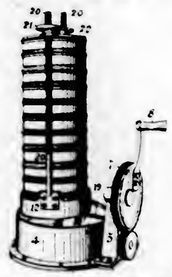
21. In a machine for making detached knotted thread fastenings, a carrier constructed and arranged to carry a thread-end through the work and to carry a loop of thread around a portion thereof, knot-tying gripping members arranged to grasp the thread-end and perform a series of knot-forming operations, a cutter for severing the thread at the conclusion of one series of knot-tying operations, a thread-supplying device for furnishing at the conclusion of one series of operations a sufficient supply of thread to begin the next knot-tying operation, and means for operating said cutter and thread-supplying device, arranged to operate first the supplying device and immediately thereafter the cutter.

22. In a machine for making detached knotted thread fastenings, a carrier constructed and arranged to carry a thread-end through the work and to carry a loop of thread around a portion thereof, knot-tying gripping members arranged to grasp the thread-end and perform a series of knot-forming operations, a cutter for severing the thread at the conclusion of one series of knot-tying operations, a thread-supplying device for furnishing at the conclusion of one series of operations a sufficient supply of thread to begin the next knot-tying operation, means for operating said thread-supplying device to draw off a supply of thread, and connections between said supplying device and cutter whereby the latter is actuated to sever the thread by the supplying device at the conclusion of the operative movement of said device.

23. A machine of the character specified comprising instrumentalities adapted to cause a cycle of knot-tying operations, a cutter for severing the thread, a lever having a thread guide, connections between the cutter and lever whereby the former is operated by the latter, and means for moving the lever at the conclusion of each cycle to draw thread from the supply and sever the thread.

24. A machine of the character specified comprising instrumentalities adapted to cause a cycle of knot-tying operations, a cutter for severing the thread, a lever having a thread guide and a projection, an arm connected with the cutter having a cam surface engaged by said projection, whereby the cutter is operated by the lever, and means for moving the lever at the conclusion of each cycle to draw thread from the supply and sever the thread.

857,942. SHAKING-BOLT. WILLIAM B. HOWARD, Brooklyn, N. Y., assignor to Howard & Morse, New York, N. Y., a Firm. Filed Oct. 12, 1906. Serial No. 338,563.



Claim.—In a self-contained shaking bolt the combination with a series of superposed and interchangeable sieves, of a carrier having a horizontal gyrating reversing movement on the vertical shaft 2 by means of the engaging circular disk 16 fixed eccentrically to said shaft; a vertical intermittent movement at each gyration by means of the bumpers 13 and engaging rollers 14; a supporting base beneath said carrier inclosing the transmitting operating devices for effecting the said movements, and a connected power device for operating the same.

857,943. DUMPING-WAGON. WILLIAM J. JUDD, Park Ridge, N. J. Filed July 6, 1903. Renewed Feb. 12, 1904. Serial No. 193,344.

Claim.—1. In a dumping wagon the combination with the bottom boards, of flexible supports secured to their outer edges and means adapted automatically to act upon said supports to lift the boards outside of the wagon body.

2. In a dumping wagon, the combination with separable bottom boards, of chain supports therefor, means for shortening the chains to hold the boards in position to close the bottom which automatically energizes other means, whereby when the bottom is opened the boards of which it is composed are moved outside of the sides of the wagon body away from its bottom.

3. In a dumping wagon, the combination with a body and bottom board, of means connected at or near its inner edge adapted to draw it under the body, means con-

nected at or near its outer edge adapted to draw it away from and alongside of the outside of the wagon body, said latter means consisting of a swinging hinged joint, and means for moving the bottom board on said hinged joint.

4. In a dumping wagon, the bottom boards provided with chains operatively connected to each edge of each board, a roller on which said chains are adapted to be wound in opposite directions, and a spring adapted to be energized when wound to rotate said roller in the opposite direction when unwound.

5. In a dumping wagon, the combination with a side board provided with a longitudinal scraper, of a bottom board, and means for drawing the same under, against, and away from, the side board.

6. In a dumping wagon, the combination with the bottom board, and the side board, of a lever hinged externally to the latter, a movable connection between the lever and the outer edge of the bottom board and means for raising the lever.

7. In a dumping wagon, the combination with the bottom board, and the side board, of a lever hinged externally to the latter, a movable connection between the lever and the outer edge of the bottom board and means for raising the lever consisting of a chain and a roller around which the same is wound.

8. In a dumping wagon, the combination with a bottom board and side board of a lever hinged externally said side board, a flexible connection between the lever and the outer edge of the board, and means for raising the lever, consisting of a chain and a spring actuated roller around which the chain is wound.

9. In a dumping wagon, the combination with the side boards, of bottom boards provided with longitudinally placed means, as angle irons, in contact with the lower edges of the bottom boards, whereby tight joints are formed between the side boards and bottom boards when the wagon is closed.

10. In a dumping wagon, the combination with a bottom board, of means secured at or near its inner edge adapted to draw it under and up edgewise alongside of the wagon body, comprising a swinging hinged joint, and means for moving the bottom board upon said hinge.

11. In a dumping wagon, bottom boards provided with chains, a drum on which said chains are adapted to be wound in opposite directions, and a spring within said roller, to rotate the roller.

12. In a dumping wagon, a side board provided with a longitudinal scraper.

13. In a dumping wagon, the combination with a bottom board, and a side board, of a lever hinged externally upon the latter, a connection between the lever and the outer edge of the bottom board, and manually operable means for raising the lever.

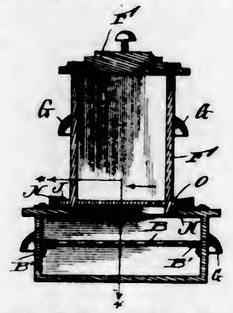
14. In a dumping wagon, the combination with a bottom board and a side board, of a lever hinged to the latter, a connection between the lever and the outer edge of the bottom board, and a chain and a drum.

15. In a dumping wagon, the combination with a side board, of a lever hinged externally thereto, a flexible connection between the lever and the outer edge of the board, and means for raising the lever, consisting of a chain and a drum.

16. In a dumping wagon, the combination with side boards, of bottom boards provided with longitudinal angle irons, in contact with the lower edges of the bottom boards, whereby tight joints are formed between the side boards and bottom boards when the wagon is closed, and crossed chains.

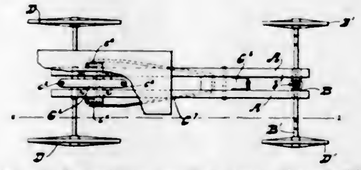
857,944. COMBINED REFRIGERATOR AND WATER-COOLER. ELLA KEENE, Washington, D. C. Filed Mar. 22, 1907. Serial No. 363,900.

Claim.—1. In combination with a provision chamber having an opening in the top thereof, the marginal wall of said opening being beveled, an ice and water receptacle having its lower end beveled and adapted to be positioned in said opening, a flange surrounding the lower portions of the water tank, bracket members fixed to the top of the refrigerator and having resilient angled portions adapted to engage over said flanges and hold the water tank with its lower end over said opening, as set forth.



2. In combination with a provision chamber having an opening in the top thereof, the marginal wall of said opening being beveled, an ice and water receptacle having its lower end beveled and adapted to be positioned in said opening, a flange surrounding the lower portions of the water tank, bracket members fixed to the top of the refrigerator and having resilient angled portions, the corresponding ends of which are slightly upwardly curved and adapted to guide the flanges of the water tank as the latter is slid under said members, the free ends of said members designed to bear yieldingly against the upper surface of said flange to hold the same in place, as set forth.

857,945. JUVENILE HAND-CAR. SAMUEL D. LATTY and HENRY T. LATTY, Cleveland, Ohio. Filed June 15, 1906. Serial No. 321,839.



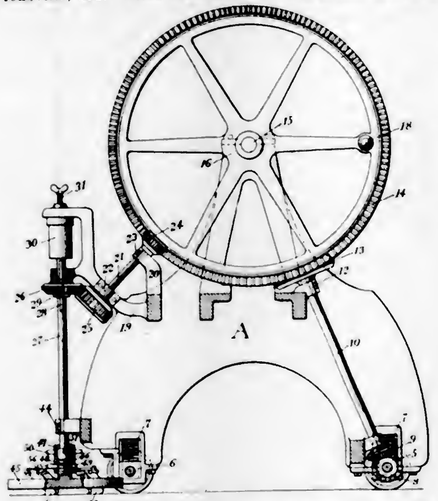
Claim.—1. In vehicle running gear, the combination with the front axle, of a bearing-plate mounted thereon, and a bolster provided with a plate adapted to rest on aforesaid bearing-plate, one of said plates being provided with an aperture consisting of two concentric segmental portions having unequal radii, and the other of said plates being provided with a pin fitting in the smaller portion of said aperture and provided with an arm extending into the larger portion thereof.

2. In vehicle running gear, the combination with the front axle, of a bearing-plate mounted thereon, and a bolster provided with a plate adapted to rest on aforesaid bearing-plate, one of said plates being provided with an aperture and the other thereof with a lug registering in said aperture, such aperture being formed to permit said pin a limited amount of rotation therein only.

3. In vehicle running gear, the combination with the front axle, of a bearing-plate mounted thereon, a bolster provided with a plate adapted to rest on aforesaid bearing plate, the upper of said plates being provided with an aperture consisting of two concentric segmental portions having unequal radii and the lower thereof being provided with a pin fitting in the smaller portion of said aperture and provided with an arm extending into the larger portion thereof, and means for securing said upper and said lower plates together.

4. In vehicle running gear, the combination with the front axle, of a bearing-plate mounted thereon, a bolster provided with a plate adapted to rest on aforesaid bearing plate, the upper of said plates being provided with an aperture consisting of two concentric segmental portions having unequal radii and the lower thereof being provided with a pin fitting in the smaller portion of said aperture and provided with an arm extending into the larger portion thereof, and means for securing said upper and said lower plate together, such means comprising a washer covering such aperture and pin and a bolt passing through said washer and said lower plate.

857,946. FLOOR-PLANER. CHARLES T. LEIMBACH, Catonsville, Md. Filed Feb. 9, 1907. Serial No. 356,501.

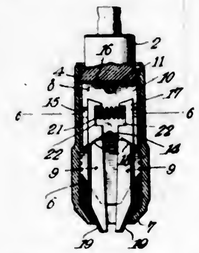


Claim.—1. A floor planer, comprising a frame, carrying wheels therefor, an upright hand-operable driving wheel mounted on the frame parallel and adjacent to one side thereof, a horizontal rotatable cutter head disposed at the base of the frame and at one of the corners thereof pertaining to the side opposite from the driving wheel, and operative connections between said driving wheel on the one hand and the carrying wheels and the cutter head on the other hand.

2. A floor planer, comprising a frame, pairs of carrying wheels at the ends thereof, an axle having a bevel gear connecting the members of one pair, an upright hand-operable driving wheel mounted on the frame parallel and adjacent to one side thereof and substantially centrally of the frame's longitudinal dimension, said driving wheel being formed as a bevel gear, an intermediate shaft mounted in boxes on the frame and inclined downward below said driving wheel, bevel gears on said shaft meshing with the driving wheel and the axle-gear respectively, a vertical cutter shaft journaled in boxes on the end of the frame remote from the geared axle and at the side of said end remote from the driving wheel, and having a bevel gear, a second intermediate shaft mounted in boxes on the frame and inclined downward and sidewise from the driving wheel, bevel gears connecting said shaft with the driving wheel and the cutter shaft gear respectively, and a horizontal cutter head carried by the lower end of the cutter shaft at the base of the frame.

3. A floor planer, comprising a frame having carrying wheels, a vertical cutter shaft mounted yieldably in the frame and carrying a horizontal cutter head at its lower end at the base of the frame, means for propelling the frame and rotating said shaft, a head on the upper portion of the shaft, an upright cylinder carried by the frame and inclosing said head, bearings between the head and the bottom of the cylinder, a collar loosely overlying said head, bearings between the head and collar, a plate screw adjustable vertically within the cylinder, and a spring between said plate and collar.

857,947. CHUCK. JOHN A. LELAND, Millers Falls, Mass., assignor of one-half to Herbert J. Leland and one-half to The Millers Falls Co., Millers Falls, Mass. Filed Dec. 5, 1906. Serial No. 346,470.



Claim.—1. A chuck embodying a stock having a portion provided with a passage extending transversely of the axis of the stock, a pair of clamping jaws having their inner and outer ends movable bodily toward and from one another to permit the jaws to occupy different relative positions in parallelism, the inner ends of the jaws resting in a transversely extending passage, and a device normally operating to separate the inner ends of the jaws and serving to limit their longitudinal movement.

2. A chuck embodying a stock having a portion provided with a passage extending transversely of the axis of the stock, the walls of the passage being provided with oppositely disposed grooves, a pair of clamping jaws having their inner ends resting in said passage and movable bodily toward and from one another and coöperating with the walls of the passage as guides, and a helical compression spring normally operating to separate the inner ends of the jaws and coöperating with the grooves to limit the longitudinal movement of the jaws.

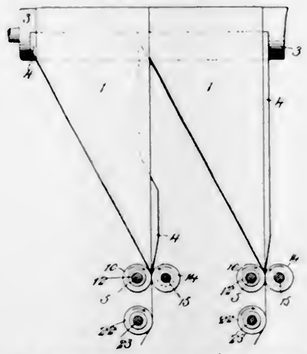
3. A chuck embodying a stock provided with a longitudinal slot, a follower mounted in said slot and having a pair of coöperatively arranged grooves extending transversely of the axis of the stock, the forward portion of the follower being provided with inwardly inclined surfaces, jaws mounted in the stock having shoulders arranged to coöperate with the inclined surfaces of the follower, and provided with longitudinal recesses at their proximate sides, the inner ends of the jaws being movable bodily toward and from one another, a helical spring engaging in said transverse grooves and coöperating at its ends with the recessed portions of said jaws to normally press the rear ends of the latter outwardly and permit a limited longitudinal movement thereof relatively to the follower, and means for operating the jaws.

4. A chuck embodying a stock, a follower therein having a transversely extending passage, the walls of the latter having oppositely disposed grooves formed therein, clamping jaws having their inner ends guided to operate in said passage in a direction transversely of the axis of the stock and movable bodily toward and from one another, the inner sides of the jaw ends being provided with longitudinally extending recesses, and a helical compression spring having its ends loosely engaging in the recesses of the inner ends of the jaws and coöperating with the grooves to limit the longitudinal movement of the jaws.

5. A chuck embodying a stock, a follower fitted therein and having a passage extending transversely therethrough, the walls of the passage being provided with grooves extending to the exterior of the stock, and the forward edges of the follower having inwardly inclined surfaces, a pair of clamping jaws having shoulders thereon coöperating with the inclined surfaces of the follower, and having reduced inner ends adapted to operate relatively toward and from one another within the transverse passage of the follower, a helical spring adapted to be inserted in the said grooves by a relative longitudinal movement and normally operating to separate the inner ends of the jaws, and a clamping sleeve mounted on the exterior of the stock and concealing the ends of the passage and grooves.

6. A chuck comprising a stock, a follower therein provided with a longitudinal slot whose walls have opposed grooves and with inclined faces at the slotted end, jaws each having curved shoulders abutting the inclined faces of the follower and tongues laterally movable in the slot and each provided with a longitudinally elongated recess, a helical compression spring disposed transversely of the slot and engaging in the opposed grooves thereof and loosely extending into the recesses of the tongues to permit of a limited longitudinal movement of the jaw members independently of the spring, and a clamping sleeve encompassing the stock and jaw members and having a threaded engagement with the stock.

857,948. WEB-FOLDING MACHINE. HENRY E. LEONARD, New York, N. Y., assignor to C. B. Cottrell & Sons Company, New York, N. Y., a Corporation of New Jersey. Filed May 8, 1906. Serial No. 315,818.



Claim.—1. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a driving roll for engaging one web, driving pulleys for engaging the other web and loose pulleys coacting with the driving pulleys.

2. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a driving roll for engaging the upper web, driving pulleys for engaging the lower web and loose pulleys coacting with the driving pulleys.

3. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging one web, a shaft having driving pulleys for engaging the other web and loose pulleys on the driving roll shaft coacting with the driving pulleys.

4. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging the upper web, a shaft having driving pulleys for engaging the lower web and loose pulleys on the driving roll shaft coacting with the driving pulleys.

5. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a driving roll for engaging one web, spring pressed driving pulleys for engaging the other web and loose pulleys coacting with the spring pressed driving pulleys.

6. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a driving roll for engaging the upper web, spring pressed driving pulleys for engaging the lower web and loose pulleys coacting with the spring pressed driving pulleys.

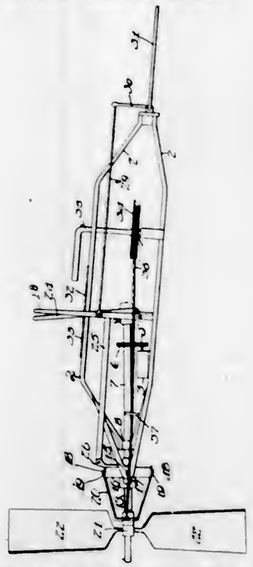
7. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging one web, a shaft having driving pulleys for engaging the other web, movable spring pressed bearings for the driving pulley shaft and loose pulleys on the driving roll shaft coacting with the driving pulleys.

8. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging the upper web, a shaft having driving pulleys for engaging the lower web, movable spring pressed bearings for the driving pulley shaft and loose pulleys on the driving roll shaft coacting with the driving pulleys.

9. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging one web, a shaft having driving pulleys for engaging the other web, a driving connection between the two shafts and loose pulleys on the driving roll shaft coacting with the driving pulleys.

10. In combination, a turner around which upper and lower webs are passed and a device arranged to drive both of the webs in unison comprising a shaft having a driving roll for engaging the upper web, a shaft having driving pulleys for engaging the lower web, a driving connection between the two shafts and loose pulleys on the driving roll shaft coacting with the driving pulleys.

857,949. PROPELLING AND STEERING MECHANISM FOR AIR-SHIPS. ARTHUR H. MALLOY, Chicago, Ill. Filed July 19, 1906. Serial No. 326,858.



Claim.—1. In a propelling mechanism, a motor, a sprocket-wheel carried thereby, a connecting shaft suitably supported and carrying a sprocket-wheel engaging the aforesaid sprocket-wheel, an auxiliary shaft coupled to said connecting shaft, propeller blades arranged on said auxiliary shaft, a hub 16 carried by supplementary framework of the air-ship, a swinging frame pinioned to said hub and carrying said auxiliary shaft in its bearings.

2. In an air-ship, a propeller comprising a motor, a sprocket-wheel carried thereby, a connecting shaft arranged directly above said motor and carrying a sprocket-wheel to engage the aforesaid sprocket-wheel, an auxiliary shaft coupled to said connecting shaft, propeller blades carried by said auxiliary shaft, a swinging hub carried by supplementary framework of the air-ship, a swinging frame pinioned to said hub and having said auxiliary shaft journaled therein and means for inclining said swinging hub to any angle desired.

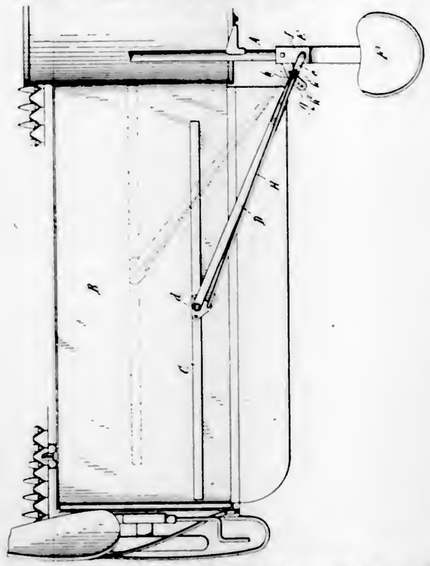
3. In an air-ship, a propeller comprising a motor, a sprocket-wheel carried thereby, a connecting shaft running longitudinally of the air-ship and carrying a sprocket-wheel on one extremity for engaging the aforesaid sprocket-wheel, an auxiliary shaft coupled to said connecting shaft, propeller blades arranged on said auxiliary shaft, a swinging hub carried by supplementary framework of the air-ship, a laterally swinging frame pinioned to said hub, an upright welded to said hub, an arm pivoted to said upright, a lever connected to said arm and a lever-rack carried by the upper framework of the machine for retaining said lever when at rest.

4. In an air-ship, a steering apparatus comprising a steering wheel and suitable supporting frame therefor and a controlling lever carried by said wheel, a cross rod carried by the framework of the machine and having eyes in its extremities, a laterally swinging frame supported at the front end of the air-ship and designed to steer it horizontally, ears carried by said swinging frame, a guide rope extending from the steering wheel, passing through the eyes of the cross rod and terminating in said ears.

5. In an air-ship, a steering apparatus comprising a steering wheel, a laterally swinging frame pivoted on the front of the air-ship, a guide rope connecting said steering wheel and swinging frame, a rudder arranged on the rear of the ship and means for raising or lowering the same to facilitate the upward or downward motion of the air-ship.

6. In an air-ship, a steering apparatus comprising a steering wheel and lever therefor, a laterally swinging frame pivoted to the front framework of the air-ship, means connecting said frame and steering wheel, a rudder arranged on the rear of the air-ship, an auxiliary arm welded thereto for raising or lowering said rudder, a connecting arm pivoted to said auxiliary arm, a lever carried by the framework of the air-ship and pivoted to said connecting arm and a lever-rack extending from the upper framework of the air-ship and designed to engage the said lever when the same is at rest.

857,950. BACK-WING SUPPORT FOR GRAIN-BINDERS. CHRISTIAN MAUL, Batavia, N. Y., assignor to The Johnston Harvester Company, Batavia, N. Y. Filed Nov. 20, 1905. Serial No. 288,201.



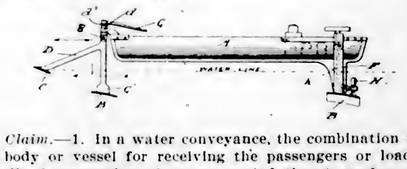
Claim.—1. The combination of a supporting arm pivoted at one end, a back-wing pivoted to said supporting arm, a rod connected to said back-wing and having a part passing through a slot in said arm, and a series of stops for the engagement of said part, substantially as set forth.

2. The combination of a bracket having a projecting arm provided with stops, a back-wing, a supporting arm for the back-wing pivoted to said bracket and resting upon said bracket arm, and a rod connected to said back-wing and having a part which passes through a slot in said supporting arm and engages with one of said stops, substantially as set forth.

3. The combination of a supporting arm pivoted at one end, a back-wing pivoted to said supporting arm, a stationary part adjacent to the pivot end of said supporting arm provided with a series of stop holes, and a rod pivoted at one end to said back-wing and having at its other end a down-turned portion which passes through a slot in said supporting arm into engagement with one of said stop holes, substantially as set forth.

4. The combination of a pivoted supporting arm, a back-wing mounted on said supporting arm to assume different angular positions relative thereto, a series of stops, and a rod connected to said back-wing and having a slidable and pivotal connection with said supporting arm and having a part for engagement with said stops to hold the supporting arm in different positions, substantially as set forth.

857,951. WATER-CONVEYANCE. WILLIAM M. MEACHAM and LARNED E. MEACHAM, Chicago, Ill. Filed Sept. 19, 1896. Serial No. 606,374.



Claim.—1. In a water conveyance, the combination with a body or vessel for receiving the passengers or load, of inclined supporting plates connected thereto and moving edgewise through the water at an inclination to the longitudinal horizontal line to give support to the body or vessel, and a regulating plate or float connected to the forward supporting plate for automatically regulating or adjusting the inclination of the supporting plate, substantially as specified.

2. In a water conveyance, the combination with a body or vessel for receiving the passengers or load, of inclined supporting plates connected thereto and moving edgewise through the water at an inclination to the longitudinal horizontal line to give support to the body or vessel, a regulating plate or float connected to the forward supporting plate for automatically regulating or adjusting the inclination of the supporting plate, and a propeller for imparting forward motion to the conveyance, substantially as specified.

3. In a water conveyance, the combination with a body or vessel A, of a front inclined supporting or carrying plate B, rear inclined carrying plates B^1 B^1, one at each side of the conveyance, and arranged at opposite angles to each other in respect to a transverse horizontal line, and a regulating plate or float connected to the front supporting or carrying plate, substantially as specified.

4. In a water conveyance, the combination with a body or vessel A, of a front inclined supporting or carrying plate B, rear inclined carrying plates B^1 B^1, one at each side of the conveyance and arranged at opposite angles to each other in respect to a transverse horizontal line, a regulating plate or float connected to the front supporting or carrying plate, and a connection or frame pivotally united to the boat and connecting the front supporting plate with the regulating plate or float, substantially as specified.

5. In a water conveyance, the combination with a body or vessel A, of a front inclined supporting or carrying plate B, rear inclined carrying plates B^1 B^1, one of the latter at each side of the conveyance and arranged at opposite angles to each other in respect to a transverse hori-

zontal line, a regulating plate or float connected to the front supporting or carrying plate, a pivoted connection or frame connecting the front supporting plate with the body, and a connection or frame rigid with the boat and connecting the rear supporting plates with the body, substantially as specified.

6. In a water conveyance, the combination with a body or vessel A, of a front inclined supporting or carrying plate B, rear inclined carrying plates B^1 B^1, one at each side of the conveyance, and arranged at opposite angles to each other in respect to a transverse horizontal line, a regulating plate or float connected to the front supporting or carrying plate, and a propeller, substantially as specified.

7. In a water conveyance, the combination with a body or vessel A, of a front inclined supporting or carrying plate B, rear inclined carrying plates B^1 B^1, one at each side of the conveyance and arranged at opposite angles to each other in respect to a transverse horizontal line, and a propeller, said front carrying plate having a pivotal connection to the boat enabling it to be turned for steering purposes, and said rear supporting plates being rigidly attached to the body, substantially as specified.

8. In a water conveyance, the combination with a body or vessel A, of a front inclined supporting or carrying plate B, rear inclined carrying plates B^1 B^1, one at each side of the conveyance and arranged at opposite angles to each other in respect to a transverse horizontal line, a regulating plate or float, said front carrying plate being pivotally attached to the boat by both vertical and horizontal pivots so that it can be turned laterally in steering and also assume different vertical positions, and a steering lever or device, substantially as specified.

9. In a water conveyance, the combination with a body or vessel A, of a forward inclined submerged supporting plate moving edgewise through the water at an inclination to the longitudinal horizontal line or direction of motion of the conveyance to give support to the body of the vessel, and two inclined submerged supporting plates projecting one at each side of the rear portion of the body or vessel and moving through the water, and means for automatically regulating or adjusting the inclination of all of said submerged plates according to their depth below the surface of the water as they move through the same, substantially as specified.

10. In a water conveyance, the combination with a body or vessel, of inclined supporting plates moving edgewise through the water at an inclination to the longitudinal horizontal line or direction of motion to give support to the body or vessel, and means for automatically regulating or adjusting the inclination of one of said submerged plates according to its depth below the surface as it moves through the water and incidentally regulating the inclination of the other plates by its action upon the boat.

11. The combination with a vessel, of a leveling plate adapted to ride upon the water, and means carried by said vessel arranged to support and adjust said leveling plate, substantially as described.

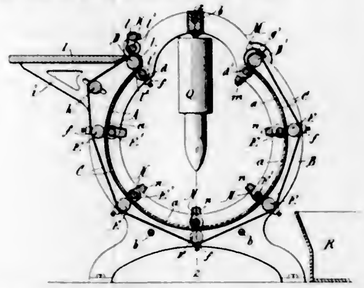
12. In a water conveyance, the combination of a hull or body, an inclined supporting plate, and means for automatically decreasing the angle of the plate as the speed increases and the hull rises out of the water.

13. In a water conveyance, the combination of a hull or body, a swinging standard attached to the hull, and a supporting plate rigidly secured to said standard.

14. The water conveyance having a supporting plate and a regulating device, operated by the surface of the water, by means of which said supporting plate is prevented, automatically, from rising above a given minimum depth of submergence.

857,952. PHOTOGRAPHIC-PRINTING MACHINE. WILLARD T. MEAD, Buffalo, N. Y. Filed Jan. 18, 1906. Serial No. 296,644.

Claim.—1. The combination of a light-transmitting printing bed, a traveling apron which presses the original and sensitized sheet against the bed while exposed to the light, and feed rollers which are located between the ends of said bed and between which the apron, original and sensitized sheet pass and by which the original and sensitized sheet are pressed against and positively moved with the apron, substantially as set forth.



2. The combination of a stationary curved printing bed, a traveling apron which presses the original and sensitized sheet against the bed while exposed to the light, and feed rollers which are located between the ends of said bed and between which the apron, original and sensitized sheet pass and by which the original and sensitized sheet are pressed against and positively moved with the apron, substantially as set forth.

3. The combination of a light-transmitting printing bed over which the original and sensitized sheet are passed while exposed to the light, said bed being in the form of a cylinder arranged with its axis substantially horizontal and open at its upper portion, a source of light within the cylinder, and feed rollers which are located between the ends of said bed and between which the original and sensitized sheet pass and by which they are positively moved over said bed, substantially as set forth.

4. The combination of a printing bed, a traveling apron which presses the original and sensitized sheet against the bed while exposed to the light, and feed rollers arranged intermediate of the ends of the bed between which the apron original and sensitized sheet pass and by which the original and sensitized sheet are pressed against and positively moved with the apron, substantially as set forth.

5. The combination of a printing bed composed of spaced panels over which the original and sensitized sheet are passed while exposed to the light, and feed rollers which are arranged in the spaces between the bed panels and between which the original and sensitized sheet pass and by which they are positively moved over the bed, substantially as set forth.

6. The combination of a printing bed composed of spaced panels, a traveling apron which presses the original and sensitized sheet against the bed while exposed to the light, and feed rollers arranged in the spaces between the bed panels between which the apron original and sensitized sheet pass and by which the original and sensitized sheet are pressed against and positively moved with the apron, substantially as set forth.

7. The combination of a curved printing bed composed of spaced light transmitting panels, a traveling apron which presses the original and sensitized sheet against the bed, while exposed to the light, and feed rollers arranged in the spaces between the bed panels between which the apron original and sensitized sheet pass and by which the original and sensitized sheet are pressed against and positively moved with the apron, substantially as set forth.

8. The combination of a printing bed, a traveling apron which presses the original and sensitized sheet against said bed while exposed to the light, one or more rollers arranged between the ends of said bed and between which and said apron the original and sensitized sheet pass, said roller or rollers and apron acting to press said original and sensitized sheet together and feed them positively with said apron over the printing bed, substantially as set forth.

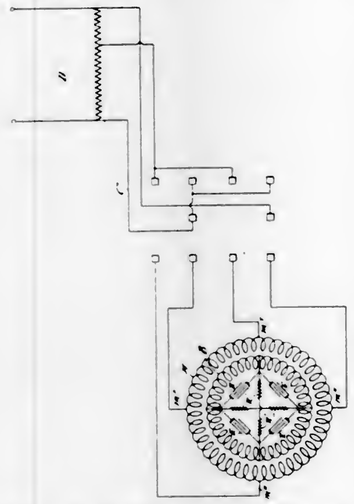
9. The combination of a printing bed, a traveling apron which presses the original and sensitized sheet against the bed while exposed to the light, and feed rollers which are arranged between the ends of the bed and between which the apron original and sensitized sheet are yieldingly grasped and pressed together and by which the original and sensitized sheet are positively moved with the apron, substantially as set forth.

10. The combination of a printing bed composed of spaced panels, a traveling apron which presses the original and sensitized sheet against the bed while exposed to the light, feed rollers arranged in the spaces between the bed panels between which the apron original and sensitized sheet pass and by which the original and sensitized sheet are pressed against and positively moved with the apron, and guide devices in the spaces between the bed panels to prevent the original and sensitized material from leaving the bed, substantially as set forth.

11. The combination of a curved printing bed, an endless traveling feed apron extending over said bed and passing around rollers near the opposite ends thereof, and guides partially surrounding said rollers for guiding the original and sensitized material around said rollers to introduce them between the apron and bed and discharge them therefrom, substantially as set forth.

12. The combination of a stationary curved printing bed, a traveling apron which presses the original and sensitized sheet against said bed while exposed to the light, one or more rollers arranged between the ends of said bed inside of the curve of said apron and between which and said apron the original and sensitized sheet pass, said roller or rollers and apron acting to press said original and sensitized sheet together and feed them positively with said apron over the printing bed, substantially as set forth.

857,953. ALTERNATING-CURRENT MACHINE. RALPH D. MERSHON, New York, N. Y. Filed July 5, 1904. Serial No. 215,238.



Claim.—1. In an alternating current machine, adapted for variation in the number of its poles, the combination with the primary element, of a secondary element, devices or sets of devices in the secondary element for modifying or improving the operation of the machine with two or more numbers of poles, and permanent connections for said devices or sets of devices with the secondary winding or windings at such points that said devices or sets of devices become successively more effective in their action as the number of poles is increased, as set forth.

2. In an alternating current machine, adapted for variation in the number of its poles, the combination with the primary element, of a secondary element, devices or sets of devices in the secondary element for modifying or improving the operation of the machine with two or more numbers of poles, and permanent connections from said devices or sets of devices to the secondary winding or windings at such points, relative to the number of poles, that said devices or sets of devices become successively more effective in their action as the number of poles is increased, as set forth.

3. In an alternating current machine, adapted for variation in the number of its poles, the combination with the primary element, of a secondary element, devices or sets of devices in the secondary element for modifying or improving the operation of the machine, permanent connections from said devices or sets of devices to the secondary winding or windings, at such points that the said devices or sets of devices are less effective or non-effective in their action for one number of poles and more effective for a greater number of poles, additional devices or sets of devices in the secondary element for modifying or improving the operation of the machine, and permanent connections therefrom to the secondary winding or windings at such points that said additional devices or sets of devices are less effective or non-effective for said greater number of poles and more effective for a still greater number of poles, as set forth.

4. In an alternating current machine, adapted for variation in the number of its poles, the combination with the primary element, of a secondary element, devices or sets of devices in the secondary element for modifying or improving the operation of the machine, permanent connections from said devices or sets of devices to the secondary winding or windings, along electrical diameters for one number of poles, additional devices or sets of devices in the secondary element for modifying or improving the operation of the machine, and permanent connections therefrom to the secondary winding or windings along electrical diameters for another number of poles, as set forth.

5. In an alternating current machine, adapted for variation in the number of its poles, the combination with the primary element, of a secondary element, resistances in the secondary element, and permanent connections for said resistances with the secondary winding or windings at such points that said resistances become successively more effective in their action as the number of poles is increased, as set forth.

6. In an alternating current machine, adapted for variation in the number of its poles, the combination with the primary element, of a secondary element, resistances in the secondary element, permanent connections from said resistances to the secondary winding or windings at such points that the said resistances are less effective or non-effective in their action for one number of poles and more effective for a greater number of poles, additional resistances in the secondary element, and permanent connections therefrom to the secondary winding or windings at such points that said additional resistances are less effective or non-effective for said greater number of poles and more effective for a still greater number of poles, as set forth.

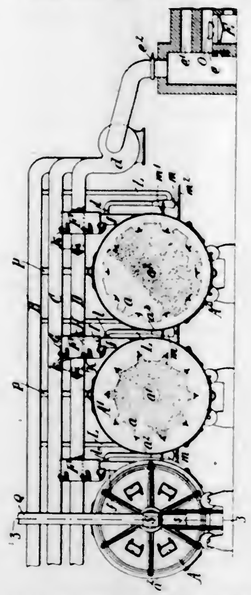
7. In an alternating current machine, adapted for variation in the number of its poles, the combination with the primary element, of a secondary element, resistances in the secondary element, and permanent connections from said resistances to the secondary winding or windings along electrical diameters for two or more numbers of poles, whereby said resistances become successively effective or more effective in their action as the number of poles is increased, as set forth.

8. In an alternating current machine, adapted for variation in the number of its poles, the combination with the primary element, of a secondary element, short circuits in the secondary element along electrical diameters for the minimum number of poles with which the machine is to be operated, devices in the secondary element for modifying or improving the operation of the machine with two or more numbers of poles, and permanent connections for

said devices with the secondary winding or windings at such points that such devices become effective or more effective in succession as the number of poles is increased, as set forth.

9. In an alternating current machine, adapted for variation in the number of its poles the combination with the primary element, of a secondary element, devices or sets of devices in the secondary for modifying or improving the operation of the machine with its maximum number of poles, additional devices or sets of devices in the secondary and permanent connections therefor with the secondary winding or windings across electrical diameters for the next smaller number of poles, as set forth.

857,954. PNEUMATIC MALTING AND PNEUMATIC DRYING APPARATUS. FREDERICK H. C. MEY, Buffalo, N. Y. Filed Sept. 14, 1906. Serial No. 334,668.



Claim.—1. The combination of a plurality of malting drums or receptacles, an air mixing box connecting with each drum, an atmospheric or cool air pipe connecting with each mixing box, a hot air pipe also connecting with each mixing box, dampers controlling the communications between said pipes and each mixing box, a damper in the connection between each mixing box and drum, a third air pipe connected by branches with the several drums, and separately controlled air moistening means for each of said branch pipes, whereby the temperature and humidity of the air supplied to the several drums can be independently regulated, substantially as set forth.

2. The combination of a plurality of malting drums or receptacles, an air mixing box connecting with each drum, an atmospheric or cool air pipe connecting with each mixing box, a hot air pipe passing through said mixing boxes and communicating with each mixing box by an opening within the box, said hot air pipe leaving a space around the same in the mixing box for the passage of the cold air, pipes for supplying moist air to said drums, and dampers for controlling the connections between each of said pipes and each drum, substantially as set forth.

3. The combination of a plurality of malting drums or receptacles, an air mixing box connecting with each drum, an atmospheric or cool air pipe connecting with each mixing box, a hot air pipe also connecting with each mixing box, dampers controlling the communications between said pipes and each mixing box, a damper in the connection between each mixing box and drum, dampers in said hot air pipe between the connections of the same with the several drums, pipes connected directly with the several drums independently of said air mixing boxes for supplying moist air to said drums, and dampers in said several moist air pipes, substantially as set forth.

4. The combination of a plurality of malting drums or receptacles, an air mixing box connecting with each drum, an atmospheric or cool air pipe connecting with each mixing box, a hot air pipe also connecting with each mixing box, dampers controlling the communications between said pipes and each mixing box, a damper in the connection between each mixing box and drum, dampers in said hot air pipe between the connections of the same with the several drums for cutting off one or more drums, and means for producing a bleaching agent in said hot air pipe, substantially as set forth.

5. The combination of a plurality of malting drums or receptacles, an air mixing box connecting with each drum, an atmospheric or cool air pipe connecting with each mixing box, a hot air pipe also connecting with each mixing box, dampers controlling said pipes, a third air pipe, branches connecting said third air pipe to the several drums and provided with means for regulating the moisture of the air therein, exhaust pipes for said drums, and branch pipes connecting said third air pipe with said exhaust pipes, substantially as set forth.

6. The combination of a malting drum or receptacle having a perforated outlet pipe for the air, means for forcing air through the grain in the drum to said outlet pipe, a spout and air separator connected to said perforated pipe, and a blast pipe connected to said perforated pipe to blow the sprouts collecting therein to said separator, substantially as set forth.

7. The combination of a malting drum or receptacle having a perforated outlet pipe for the air, means for forcing air through the grain in the drum to said outlet pipe, the perforations in said pipe being long and narrower than the grains, a spout and air separator connected to said perforated pipe, and a blast pipe connected to said perforated pipe to blow the sprouts collecting therein to said separator, substantially as set forth.

8. The combination of a rotary malting drum having perforated walls and a perforated outlet pipe for the air extending therethrough, a casing surrounding said drum, means for forcing air into said casing and through the drum and grain therein to said outlet pipe, a spout and air separator connected to said perforated pipe, and a blast pipe connected to said perforated pipe to blow the sprouts collecting therein to said separator, substantially as set forth.

857,955. MUSICAL-CHORD INDICATOR. CHARLES A. MILLER, Vernon, Fla. Filed Oct. 30, 1906. Serial No. 341,283.

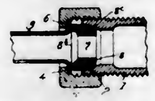
Claim.—1. A musical chord indicator comprising an appliance adapted to rest upon the key-board of an instrument and provided with a tonic key indicator and a longitudinal recess, two longitudinal rods in said recess, said rods being provided with indicating fingers spaced to indicate the tonic and sub-dominant chords of the key which is being played when the tonic key indicator is in place, means for indicating the relative dominant chord of said key when the tonic key indicator is in place, and means for adjusting a finger upon each of the rods, as and for the purpose specified.

2. A musical chord indicator consisting of an appliance adapted to rest upon the key-board of an instrument and provided with a tonic key indicator and a longitudinal recess, the rear wall of the recess displaying indicating devices spaced to indicate the dominant chord of the key which is being played when the tonic key indicator is in place, two longitudinal rods secured to the appliance in said recess, stationary indicating devices on each of said rods and designating certain keys in the tonic, and sub-dominant chords of the key when the tonic key indicator is in place, an adjusting rod mounted to slide longitudinally on the appliance, and fingers carried by said rod and mounted to move on the two first named rods, respectively, said fingers indicating keys that are embodied in the tonic and sub-dominant chords of the key that is being played when the tonic key indicator is in place and susceptible of movement longitudinally with the adjusting rod whereby to indicate the change from a major mode to a minor mode and vice versa.



3. A musical chord indicator consisting of an appliance adapted to rest upon the key-board of an instrument and provided with a tonic key indicator and a longitudinal recess, the rear wall of the recess displaying indicating devices spaced to indicate the dominant chord of the key which is being played when the tonic key indicator is in place, two longitudinal rods secured to the appliance in said recess, stationary devices on each of said rods and so spaced from the tonic key indicator as to represent certain keys in the tonic, and sub-dominant chords of the key that is being played, an adjusting rod mounted to slide longitudinally on the appliance, and fingers carried by said rod and mounted to move on the two first named rods, respectively, said fingers spaced to indicate keys that are embodied in the tonic and sub-dominant chords of the key that is being played when the tonic key indicator is in place and susceptible of movement longitudinally with the adjusting rod whereby to indicate the change from a major mode to a minor mode and vice versa, the adjusting rod being provided with laterally extending mode indicating fingers, and the appliance displaying the words major and minor which are intended for registry with one of said mode indicating fingers.

857,956. PIPE CONNECTION. HENRY MUELLER, Decatur, Ill., assignor to H. Mueller Manufacturing Company, Decatur, Ill. Filed May 7, 1906. Serial No. 315,702.



Claim.—1. A connecting ring for pipe joints comprising a stiff metal cylindrical sustaining ring and a soft metal joint-ring surrounding said sustaining ring for all of its length and having a tapered exterior and a salient projection at its thicker end which projection is rounded on its outer face.

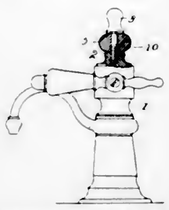
2. A connecting ring for pipe joints comprising a stiff metal cylindrical sustaining ring and a soft metal joint-ring surrounding said sustaining ring for all of its length and having a tapered exterior and a salient projection at its thicker end on a line at right angles to the face of the part to be brought against it.

3. A connecting ring for pipe joints comprising a stiff metal cylindrical sustaining ring and a soft metal joint-ring surrounding said sustaining ring for all of its length and having a tapered exterior and an annular salient projection at its thicker end extending beyond one end of the sustaining ring and parallel with its axis.

4. A pipe joint comprising an externally-threaded pipe section internally flared at its connecting end, a second pipe section having an exterior flange at its extremity, a coupling nut internally threaded to fit said external threads and having an internal shoulder at one end swiveled on said second pipe section behind its flange, a yielding joint-ring having a salient projection at one end adapted to rest against said flange and a tapered exterior adapted to fit into said flaring end, and a stiff sustaining ring within and no longer than said joint-ring.

5. A pipe joint comprising an externally threaded pipe section internally flared at its connecting end, a second pipe section having an exterior right angular flange at its extremity, a coupling nut internally threaded to fit said external threads and having an internal right angular shoulder at one end swiveled on said second pipe section behind its flange, a yielding joint-ring having a salient longitudinal projection at one end adapted to rest against said flange and a tapered exterior adapted to fit into said flaring end, and a stiff sustaining ring within and shorter than the joint-ring.

857,957. INDEX FOR COCKS. HENRY MUELLER, Decatur, Ill., assignor to H. Mueller Manufacturing Company, Decatur, Ill. Filed July 30, 1906. Serial No. 328,478.



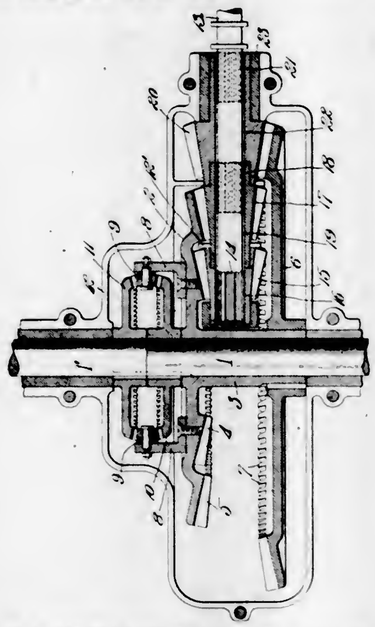
Claim.—1. The combination of a fixed cock body having a button seat in its upper end, said seat being centrally bored and screw-threaded, a centrally-bored index button adapted to rest on the seat of the cock and to be rotatably adjusted thereon, said button having different indications on its different sides, and a screw adapted to screw into the cock through the bore of the button and clamp the button in place, substantially as described.

2. The combination with a cock having a concave button seat bored and threaded, and a screw whose tip is adapted to engage said threaded bore; of a convexo-convex button of greater diameter than the seat or the head of the screw and whose projecting face has different indications on its different sides, said button being bored for the passage of the shank of the screw and clamped between said head and seat with the proper indication confronting the user, substantially as described.

857,958. CHANGEABLE-SPEED GEARING. ALBERT L. MUREN, Belleville, Ill. Filed Aug. 20, 1906. Serial No. 331,261.

Claim.—1. In a changeable speed gearing, the combination of a driven shaft, a driving gear wheel mounted on

said shaft and having gear faces, a plurality of pinions arranged to coöperate individually with the gear faces of said gear wheel, a reversing gear wheel having fixed connection with said first mentioned gear wheel, a pinion associated with said first named pinions and coöperating with said reversing gear wheel, and a shiftable driving shaft arranged to engage either of said pinions for driving action, substantially as set forth.

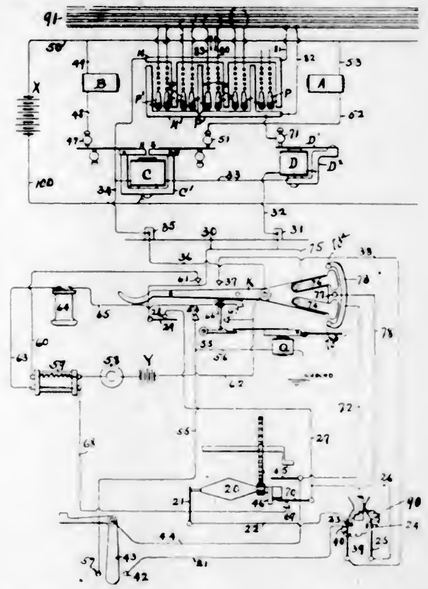


2. In a changeable speed gearing, the combination of a driven shaft, a driving gear wheel mounted on said shaft and having gear faces, a plurality of pinions arranged to coöperate individually with the gear faces of said gear wheel, a reversing gear wheel having fixed connection with said first mentioned gear wheel, a pinion associated with said first named pinions and coöperating with said reversing gear wheel, and a shiftable driving shaft arranged to engage either of said pinions for driving action; said pinions being provided with internal teeth and said driving shaft being provided with external teeth, substantially as set forth.

857,959. AUTOMATIC TELEPHONE-EXCHANGE. NILS E. NORSTROM, Junction City, Kans., assignor of one-half to John Anderson, Salina, Kans., and one-sixth to M. E. Richardson, Sterling, Kans. Filed May 31, 1900. Serial No. 18,519.

Claim.—1. The combination with a switching mechanism, and two magnets for operating it, of a relay and electrical connections for closing an electric circuit through either magnet according to the direction in which electrical impulses flow through said relay, a generator provided with a crank by the turning of which electrical impulses are sent through said relay, and automatically operating means for reversing the direction of the current when a predetermined number of impulses have been sent in one direction.

2. In a telephone exchange, the combination with electrically operated devices and two magnets therefor, of a relay adapted to close a circuit for either magnet according to the direction in which impulses flow through said relay, a generator provided with means by which electrical impulses are sent through said relay, and automatically operating means for reversing the direction of the current when a predetermined number of impulses have been sent in one direction.



3. The combination with electrically operated devices and two magnets therefor, of a relay adapted to close a circuit for either magnet according to the direction in which impulses flow through said relay, a generator provided with means by which electrical impulses are sent through said relay, and automatically operating means for reversing the direction of the current when a predetermined number of impulses have been sent in one direction and for stopping the impulses through the relay when a predetermined number of impulses have been sent in the reversed direction.

4. The combination with a switching mechanism and electrical devices for operating it, of a relay for controlling such operation, a generator, means for sending from said generator a series of electrical impulses in one direction and a second series in an opposite direction through said relay, and automatically operating means for dividing the two series in any desired proportion and extent from a larger and continuous series.

5. The combination with a switching mechanism and two magnets for operating it, of a relay and electrical connections for closing an electrical circuit through either magnet according to the direction in which electrical impulses flow through said relay, a generator and connections for sending impulses through said relay, a crank for operating said generator, an adjustable indicator for controlling the impulses sent by said generator, and means for operating said indicator by the movement of said generator.

6. The combination with a switching mechanism and magnets for operating it, of a generator and connections for sending electrical impulses for controlling said magnets, a crank for operating said generator, an adjustable indicator for controlling the impulses sent by said generator, and means for operating said indicator by the movement of said generator.

7. The combination with two magnets, a relay arranged to close an electric circuit through either magnet, and a bell ringing device, of a generator arranged to send a continuous series of electrical impulses of a like character, and an adjustable indicator provided with devices for controlling said impulses so as to cause successive operation of the two magnets and the bell ringing device.

8. The combination with a switching mechanism, two magnets for operating the switching mechanism, and a signaling device, of a generator provided with means for sending a series of impulses for causing the operation of said magnets and said signaling device, and automatically operating means for dividing such series of impulses so as to apportion any desired number of them to each magnet and the remainder to the signaling device.

9. The combination with two magnets, a relay arranged to close an electric circuit through either magnet, and a bell ringing device, of a generator arranged to send a continuous series of electrical impulses of a like character, and an adjustable indicator provided with devices for controlling said impulses so as to cause successive operation of the two magnets and the bell ringing device.

10. The combination with two or more electrically operated devices, and a generator arranged to send a series of impulses for controlling or operating said devices, of mechanism for controlling the distribution of said impulses to the said devices, and means for operating said mechanism by the movement of said generator.

11. In an automatic telephone exchange, the combination with a series of switches and a subscriber's station connected to each switch, of a selecting device and a bell ringing device located at each station, a generator provided with a crank and operatively connected to the selecting device, means for operating the selecting device by the movement of the generator so as to move its connected switch to electrical connection with any other station in the exchange and to operate the bell ringing device of the selected station, and a controlling device connected to the selecting device and so arranged that upon turning the generator crank, the connected switch will be automatically given the required number and kind of movements and the bell ringing device of the selected station will be automatically operated.

12. In a telephone exchange, the combination with a series of switches, means for operating them, and a subscriber's telephone station connected to each switch, of an indicator located at each station, an electrical generator connected to each indicator and provided with a crank by which it is operated, and means whereby upon turning the crank of said generator, the connected indicator will automatically control the number and kind of movements given to the connected switch so as to select the required station and will also automatically cause an alarm to be sounded at the required station as soon as the moved switch reaches the required connection.

13. The combination with a series of switching mechanisms located at a central office, a corresponding series of local stations, and a telephone circuit extending from each station to its switching mechanism, of a telephone set at each station normally disconnected from its telephone circuit, a magnet at each station for connecting its telephone set to its telephone circuit, and means controlled from each station and operating through its switching mechanism for establishing connections to a selected station and for operating the connecting magnet located thereat.

14. The combination with a series of telephone stations, and a pair of wires extending to each station over which pair of wires a telephonic connection may be completed between the station thereon and any of the other stations, of a telephone set at each station provided with a normally open connection to the wires running to the station, said open connection being separate from all connections operated by removing the receiver from its support, a magnet at each station, means by which an impulse sent to the magnet of a distant station will cause that magnet to complete the telephonic connection for that station, and means by which such impulse may be sent to the magnet of a selected one of said stations to the exclusion of stations not selected.

15. The combination with a series of telephone stations, a telephone set at each station, and a magnet at each station by the operation of which the station is placed in telephonic connection with any one of the other stations, of selective devices arranged to be moved to a series of successive positions, and means by which upon operating the selective devices impulses may be sent through the magnets of the two stations to the exclusion of the magnets of the other stations whereby the two stations are placed in telephonic connection with each other.

16. The combination with a telephone station, a telephone set thereat, and two metallic line limbs extending to the station, of a magnet at the station and provided with a ground connection, selective devices arranged to be moved to a series of successive positions so as to make electrical connections to any one of a series of such magnets, and means by which upon sending an impulse through the selected magnet by way of the ground connection and one of the line limbs the telephone set will be placed in telephonic connection with the two metallic line limbs.

17. The combination with the stations of a telephone exchange, a telephone set at each station, and two metallic line limbs extending to each station, of a magnet at each station, each magnet being provided with a ground connection, step-by-step selective devices arranged to be moved to successive positions so as to select anyone of a series of such magnets, means by which upon operating the selected magnet the associated telephone set will be placed in telephonic connection with the metallic line limbs running to the station, and means by which impulses may be sent through the magnets of two of said stations by way of their ground connection and one line limb without sending them through other stations whereby such two stations are placed in telephonic connection with each other.

18. The combination with a series of telephone stations, two conductors leading into each station, and a telephone set at each station, of a magnet at each station arranged to connect the associated telephone set in bridge of said conductors, an incomplete circuit for each magnet including a ground connection and one of the conductors leading to its station, a source of electricity, and electrically operated devices arranged to be moved step-by-step to complete the circuits for two of said magnets to said source so as to cause the operation of said magnets and thereby place the stations at which they are located in telephonic connection with each other.

19. In a telephone exchange, the combination with the subscriber's telephone stations, of a selecting device and a bell ringing device at each station, incomplete telephonic connections connecting the stations together, means by which an operation of the selecting device of any one station will serve to complete electrical connections from the bell ringing device of that station to the bell ringing device of any other desired station, and means by which the operation of the bell ringing devices of the called and calling stations will serve to automatically connect the two stations telephonically together.

20. In a telephone exchange, the combination with a series of switching mechanisms located at a central office, and a local station connected to each switching mechanism, of a signaling device at each station, means by which a calling subscriber at one of said stations can operate the connected switching mechanism so as to place his own signaling device in a circuit with the signaling device of any other station, and means whereby upon the calling subscriber operating the connected signaling devices the stations at which they are located will be automatically placed in telephonic connection with each other.

21. In an automatic telephone exchange, the combination with the subscriber's telephone stations thereof, of a crank and a signaling apparatus located at each station, and means whereby upon giving said crank a continuous series of rotations, any required station in the exchange will be automatically selected and the subscriber at the selected station will be automatically signaled.

22. In an automatic telephone exchange, the combination with the subscriber's telephone stations thereof, and a normally stationary crank at each station, of means whereby the selection by a subscriber at any one station of any other station in the exchange is automatically controlled from a continuous rotation of his crank by the subscriber thereat.

23. In an automatic telephone exchange, the combina-

tion with the subscriber's telephone stations thereof, of a normally stationary crank at each station adapted to be manually operated and automaticaaly operating means by which upon giving said crank of any station a continuous series of rotations of indeterminate extent, a desired and predetermined station will be placed in telephonic connection with the station at which the crank was operated.

24. The combination with a series of telephone stations, of a normally stationary crank at each station adapted to be manually operated, automatically operating means whereby a continuous series of rotations of any one crank will cause the station at which the rotated crank is located to be telephonically connected to a desired one of the other stations, and means for preventing such connection being made to a station at the time in telephonic connection with some third person.

25. The combination with a series of telephone stations, of a normally stationary crank and a signaling apparatus at each station, means whereby upon giving the crank of any station a continuous series of rotations of indeterminate length any required station in the exchange will be automatically selected and signaled, and means by which the selected station will not be signaled when it is in a previously established connection to some other station.

26. The combination with a switching mechanism, electrically operated devices for moving it, and a series of signaling devices, of a normally stationary crank adapted to be manually operated, and means whereby upon giving said crank a continuous series of rotations of indednite number, a corresponding series of impulses will be sent to first operate said switching mechanism so as to cause the selection of a desired signaling device and then to operate the selected signaling device.

27. The combination with a switching mechanism, electrically operated devices for moving it, and a series of signaling devices, of a normally stationary crank and devices operated thereby, electrical connections connecting the crank operated devices with the switching mechanism and the switching mechanism with the different signaling devices, means whereby a series of rotations given to said crank will cause a series of electrical impulses to be sent over said connections, and means whereby a long and continuous series of such impulses will be automatically divided so as to first operate said switching mechanism to cause the selection of a desired signaling device and then to operate the selected signaling device.

28. In an automatic telephone exchange, the combination with the subscriber's telephone stations thereof, a generator at each station, and means whereby a series of impulses greater than needed sent from the generator of any one station will be automatically controlled so as to select any desired one of the other stations, of means for preventing connections being made to a station in use, and means for automatically indicating to the subscriber at the calling station that such connection has not been made.

29. A switching mechanism forming part of a telephone exchange, magnets and a battery for operating said switching mechanism, a relay for controlling such operation, a subscriber's telephone station connected to the switching mechanism, a magneto-generator located at the station and arranged to control said relay, a receiver hook, and connections from said hook to said generator so that a descent of said hook will operate said generator so as to cause two electrical impulses to flow through said relay in opposite directions.

30. A switching mechanism and electrical devices for controlling its operation, a receiver hook and a generator provided with connections to each other, and means whereby a descent of said receiver hook will cause electrical impulses to flow from said generator successively in opposite directions through said electrical devices.

31. A series of switching mechanisms and electrical devices for controlling their operations, electrical connections from one of said electrical devices to a telephone station, a receiver hook and a generator provided with connections to each other and located at such station, and means whereby a descent of said receiver hook will cause electrical impulses to flow from said generator successively in opposite directions through said electrical devices and the connections thereto.

32. A switching mechanism and electrical devices for controlling its operation, electrical connections extending from said devices to a local telephone station, a magneto generator adapted to send electrical impulses over said connections and through said devices, a crank and a receiver hook, each of which is adapted to operate said generator, means by which an operation of said generator by said crank will cause said switching mechanism to be moved from its normal position to any desired position, and means by which an operation of said generator by said receiver hook will cause said switching mechanism to be returned to its normal position.

33. The combination with a series of telephone stations, a switching mechanism for each station, electrical conductors connecting each station to its switching mechanism, and other electrical conductors inter-connecting the switching mechanisms, of a selecting device at each station, each selecting device comprising a generator arranged to send a series of impulses to the associated switching mechanism, and a manually adjustable indicator arranged to automatically control the distribution of a continuous series of impulses sent by said generator.

34. The combination with a series of telephone stations, and means for establishing a talking circuit between any two of them, of a contact closing device for the talking circuit, a receiver hook, a bell ringing device, and a generator, said parts being so arranged that upon impulses being sent from said generator, said bell ringing device will close said contact closing device while a descent of the receiver hook will open said contact closing device.

35. The combination with a series of telephone stations, electrical devices thereat, and conductors connecting the stations together, of a call mechanism providing a series of holes indicating stations to be selected, a station indicating pin adapted to be inserted in any one of said holes, means whereby upon inserting said pin in one of said holes and operating said mechanism an electrical contact will be made causing an operation of the electrical device at the station indicated by the hole in which the pin was inserted, and means by which the operation of said electrical device will connect said station into a talking circuit.

36. The combination with a series of telephone receivers each located at a different station, of a magnet for each receiver by the operation of which the associated receiver is placed in a telephonic connection, selective mechanism arranged to be moved step by step to make individual electrical connections to said magnets in succession, and means by which an impulse is sent through a desired one of said magnets at the time connection is completed thereto by said selective mechanism.

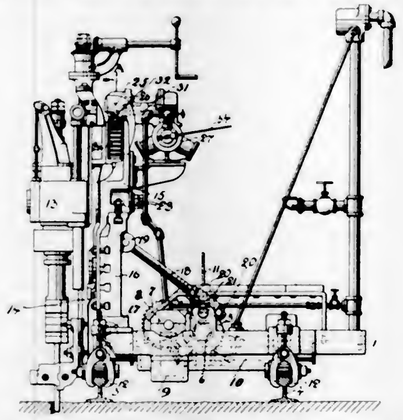
857,960. CHANNELING-MACHINE. WILLIAM PRELLWITZ, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Filed Jan. 4, 1907. Serial No. 350,735.

Claim.—1. A channeler comprising a wheeled truck, a frame, a drill pivotally carried thereby, means for moving the truck to cause the drill to cut a channel to a predetermined point and a motor carried by the frame and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

2. A channeler comprising a wheeled truck, a frame, a drill pivotally carried thereby, a motor mounted on the truck for moving it to cause the drill to cut a channel to a predetermined point and a motor carried by the frame and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

3. A channeler comprising a wheeled truck, a frame, a carriage adjustably mounted thereon, a drill, its shell pivoted on the carriage, a motor for moving the truck to cause the drill to cut a channel to a predetermined point and a motor carried by the carriage and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

4. A channeler comprising a wheeled truck, a frame, a drill pivotally carried thereby, means for locking the drill to and releasing it from the frame, a motor for driving the truck to cause the drill to cut a channel to a predetermined point while the drill is locked to the truck frame and a motor mounted on the frame and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point when the drill is released from the truck frame.



5. A channeler comprising a wheeled truck, a frame, a carriage adjustably mounted thereon, a drill pivoted on the carriage, means for locking the drill to and releasing it from the carriage, a motor for driving the truck to cause the drill to cut a channel to a predetermined point while the drill is locked to the carriage and a motor carried by the carriage and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point when the drill is released from the carriage.

6. A channeler comprising a wheeled truck, a frame hinged thereto, a drill, its shell pivotally carried by the frame, means for adjusting the frame into different angular positions with respect to the truck, a motor for driving the truck to cause the drill to cut a channel to a predetermined point and a motor carried by the frame and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

7. A channeler comprising a wheeled truck, a frame hinged thereto, a carriage adjustably mounted on the frame, means for adjusting the frame into different angular positions with respect to the truck, a drill, its shell pivoted on the carriage, a motor for driving the truck to cause the drill to cut a channel to a predetermined point and a motor carried by the carriage and connected to the drill for swinging it in the arc of a circle to cause the drill to complete the channel from said predetermined point.

857,961. ROLLER-GUIDE FOR CHANNELING-MACHINES. WILLIAM PRELLWITZ, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y., a Corporation of New Jersey. Original application filed Nov. 21, 1906, Serial No. 344,460. Divided and this application filed Jan. 23, 1907. Serial No. 353,583.

Claim.—1. In a roller guide for channeling machines, a guide roller and a support therefor having an oil chamber arranged to feed oil to the roller.

2. In a roller guide for channeling machines, an inner guide roller, a support therefor having an oil chamber arranged to feed oil to the said roller, an outer guide roller and a support therefor, having an oil chamber arranged to feed oil to the said roller.

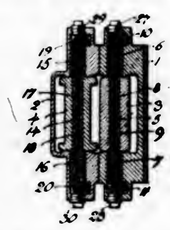
3. In a roller guide for channeling machines, a guide roller and a support therefor having a plurality of oil chambers arranged to feed oil to the said roller.

4. In a roller guide for channeling machines, an inner guide roller, a support therefor having a plurality of oil chambers arranged to feed oil to the said roller, an outer guide roller and a support therefor having a plurality of oil chambers arranged to feed oil to the said roller.

5. In a roller guide for channeling machines, a guide roller, its axle and a support therefor having an oil chamber arranged to feed oil along the axle to the said roller.

6. In a roller guide for channeling machines, a guide roller, its axle and a support therefor having oil chambers at the ends of the axle arranged to feed oil along the axle to the said roller.

7. In a roller guide for channeling machines, a guide



roller, its axle and a support therefor having an oil chamber at the end of the axle, said axle having an oil passage therein for feeding oil from the chamber to the roller.

8. In a roller guide for channeling machines, a guide roller, its axle, a support therefor having an oil chamber at the end of the axle, said axle having an oil passage therein for feeding oil from the chamber to the roller and an oil feeding wicking located in said chamber and passage.

9. In a roller guide for channeling machines, a guide roller, its axle and a support therefor having oil chambers at the ends of the axle, said axle having an oil passage therein for feeding oil from the said chambers to the roller.

10. In a roller guide for channeling machines, a guide roller, its axle, a support therefor having oil chambers at the ends of the axle, said axle having an oil passage therein for feeding oil from the said chambers to the roller and an oil feeding wicking located in said chambers and passage.

11. In a roller guide for channeling machines, guide rollers, their axles and supports therefor having oil chambers arranged to feed oil along the axles to the said rollers.

12. In a roller guide for channeling machines, guide rollers, their axles and supports therefor having oil chambers, said axles having oil passages arranged to feed oil from the said chambers to the said rollers.

13. In a roller guide for channeling machines, guide rollers, their axles, supports therefor having oil chambers, said axles having oil passages arranged to feed oil from the said chambers to the said rollers and oil feeding wicking located in said chambers and passages.

14. In a roller guide for channeling machines, a guide roller, a longitudinally removable axle therefor, its support, means for removably securing the axle to the support and a removable screw cap in the support in alinement with the axle.

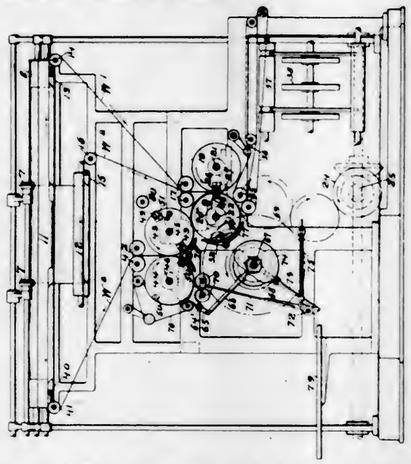
15. In a roller guide for channeling machines, guide rollers, longitudinally removable axles therefor, their supports, means for removably securing the axles to the supports and removable screw caps in the supports in alinement with the said axles.

16. In a roller guide for channeling machines, a guide roller, a longitudinally removable axle therefor, its support having an oil chamber at the end of the axle arranged to feed oil along the axle to the said roller and a removable screw cap in the support in alinement with the said axle.

17. In a roller guide for channeling machines, guide rollers, their longitudinally removable axles, supports therefor having oil chambers at the ends of the axles arranged to feed oil along the axles to the said rollers and

removable screw caps in the supports in alinement with the ends of the axles.

857,962. DELIVERY MECHANISM. OTTO L. RAABE, Jersey City, N. J., and GEORGE F. READ, New York, N. Y., assignors to Robert Hoe, New York, N. Y. Filed Aug. 10, 1905. Serial No. 273,530.



Claim.—1. The combination with two pairs only of printing and perfecting cylinders, of means for cutting and associating large sheets from a part of the product of said cylinders, means for cutting sheets less in size than the large sheets from the remainder of the product, means for associating a part only of said small sheets with the large sheets, means for folding said associated product, and means for directing the remainder of the small sheets unassociated with the large sheets out of the machine.

2. The combination with means for forwarding a plurality of webs at the same speed, of means for cutting the webs into sheets, the sheets cut from one web being less in size than the sheets cut from the other web or webs, means for associating a part of the small sheets with the large sheets and folding them therewith, and means for sending the other small sheets out of the machine in an unfolded condition and unassociated with large sheets.

3. In a printing machine, the combination with means for forwarding at the same speed a plurality of webs, the webs moving in a line substantially at right angles to the printed columns thereon, of means for cutting the webs into sheets, the sheets cut from one web being less in size than the sheets cut from the other web or webs, means for associating a part only of the small sheets with the large sheets and folding them therewith, and means for sending the other small sheets unassociated with large sheets out of the machine.

4. In a printing machine, the combination with means for forwarding at the same speed a plurality of webs, the webs moving in a line substantially at right angles to the printed columns thereon, of means for cutting the webs into sheets, the sheets cut from one web being less in size than the sheets cut from the other web or webs, means for associating a part only of the small sheets with the large sheets and folding them therewith, and means for sending the other small sheets out of the machine in an unfolded condition and unassociated with large sheets.

5. The combination with means for forwarding a plurality of webs at the same speed, of means for cutting the webs into sheets, the sheets cut from one web being less in size than the sheets cut from the other web or webs, means for associating a part only of the small sheets with the large sheets so that an edge of a small sheet will lie about on the fold line of a large sheet, means for folding the large sheets around the small sheets, means for collecting the unassociated small sheets, and means for directing such collected sheets out of the machine.

6. The combination with means for forwarding a plurality of webs at the same speed, of means for cutting the webs into sheets, the sheets cut from one web being less in size than the sheets cut from the other web or webs, means for associating a part only of the small sheets with the large sheets so that an edge of a small sheet will lie about on the fold line of a large sheet, means for folding the large sheets around the small sheets, means for collecting the unassociated small sheets, and a fly for delivering said collected sheets.

7. The combination with means for forwarding a web, said web having printed pages and blank spaces thereon, the blank spaces being substantially equal in size to the printed pages and alternating therewith, said web moving at right angles to the columns of the pages, means for slitting the web to form a plurality of webs, one of said webs containing the printed pages and blank spaces, means for cutting the blank space web into printed and blank sheets, means for cutting the other web or webs into sheets larger in size than the printed sheets cut from the blank space web, means for associating the small printed sheets with the large printed sheets so that an edge of the small sheet lies on about the fold line of the large sheet, means for folding the large sheets about the small sheets, and means for directing the blank sheets out of the machine.

8. The combination with means for forwarding a web, said web having printed pages and blank spaces thereon, the blank spaces being substantially equal in size to the printed pages and alternating therewith, said web moving at right angles to the columns of the pages, means for slitting the web to form a plurality of webs, one of said webs containing the printed pages and blank spaces, means for cutting the blank space web into printed and blank sheets, means for cutting the other web or webs into sheets larger in size than the printed sheets cut from the blank space web, means for associating the small printed sheets with the large printed sheets so that an edge of the small sheet lies on about the fold line of the large sheet, means for folding the large sheets about the small sheets, means for collecting a number of the blank sheets, and means for delivering the collected sheets.

9. The combination with means for forwarding a web, said web having printed pages and blank spaces thereon, the blank spaces being substantially equal in size to the printed pages and alternating therewith, said web moving at right angles to the columns of the pages, means for slitting the web to form a plurality of webs, one of said webs containing the printed pages and blank spaces, means for cutting the blank space web into printed and blank sheets, means for cutting the other web or webs into sheets larger in size than the printed sheets cut from the blank space web, means for associating the small printed sheets with the large printed sheets so that an edge of the small sheet lies on about the fold line of the large sheet, means for folding the large sheets about the small sheets, means for collecting a number of the blank sheets, and a fly for delivering the collected sheets.

10. The combination with means for forwarding a three wide web, two parts of the web bearing printed sheets succeeding each other as is usual, and the other part of the web having smaller size printed sheet alternating with blank spaces substantially equal in size to the printed sheets, the web moving substantially at right angles to the columns of the printed pages, of means for dividing the web into three parts, means for superposing the full printed webs and cutting full size sheets therefrom, means for cutting the other web into printed and blank sheets, means for associating one of the smaller printed sheets with each pair of sheets cut from the other webs, the edge of the smaller sheets being laid about on the fold line of the larger sheets, means for folding the larger sheets around the smaller sheets, and means for directing the blank sheets out of the machine.

11. The combination with means for forwarding a three wide web, two parts of the web bearing printed sheets succeeding each other as is usual, and the other part of the web having smaller size printed sheets alternating with blank spaces substantially equal in size to the printed sheets, the web moving substantially at right angles to the columns of the printed pages, of means for dividing the web into three parts, means for superposing the full printed webs and cutting full size sheets therefrom, means for cutting the other web into printed and blank sheets, means for associating one of the smaller printed sheets with each pair of sheets cut from the other webs, an edge of the smaller sheets being laid about on the fold line of the larger sheets, means for folding the larger sheets around the smaller sheets, means for collecting a number of the blank sheets and delivering them from the machine.

12. The combination with means for forwarding a three wide web, two parts of the web bearing printed sheets succeeding each other as is usual, and the other part of the web having smaller size printed sheets alternating with blank spaces substantially equal in size to the printed sheets, the web moving substantially at right angles to the columns of the printed pages, of means for dividing the web into three parts, means for superposing the full printed webs and cutting full size sheets therefrom, means for cutting the other web into printed and blank sheets, means for associating one of the smaller printed sheets with each pair of sheets cut from the other webs, an edge of the smaller sheets being laid about on the fold line of the larger sheets, means for folding the larger sheets around the smaller sheets, means for collecting a number of the blank sheets, and a fly for delivering the collected sheets.

13. The combination with a pair of cutting and folding cylinders, one of said pair of cylinders having sheet retaining devices, of web directing means coöperating with said cylinders, of a second pair of cylinders provided with cutting devices, sheet retaining devices on one cylinder of said pair, said devices being arranged to take alternate sheets and deliver said sheets to the sheet retaining devices of the first pair of cylinders, means for collecting the other sheets cut by said second pair of cylinders, means for delivering the collected sheets, and web directing devices coöperating with said second pair of cylinders.

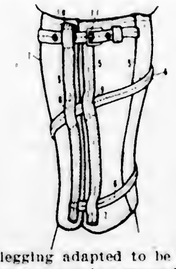
14. The combination with a pair of cutting and folding cylinders, one of said pair of cylinders having sheet retaining devices, of web directing means coöperating with said cylinders, of a second pair of cylinders provided with cutting devices, sheet retaining devices on one cylinder of said pair, said devices being arranged to take alternate sheets and deliver said sheets to the sheet retaining devices of the first pair of cylinders with an edge of the smaller sheets lying on about the fold line of the larger sheets, means for operating the folding devices of the first pair of cylinders so as to fold the larger sheets around the smaller sheets, means for collecting the other sheets cut by said second pair of cylinders, means for delivering the collected sheets, and web directing devices coöperating with said second pair of cylinders.

15. The combination with a pair of cutting and folding cylinders, one of said cylinders having sheet retaining devices, of a pair of cutting cylinders running at the same surface speed as the other cylinders and arranged to cut sheets less in size than the sheets cut by the first pair of cylinders, sheet retaining devices on the cylinders of said second pair, said devices being arranged to take alternate sheets cut by the cylinders, means for operating the sheet retaining devices of one of the cylinders of the second pair to cause it to deliver its sheets to the sheet retaining devices of the first pair of cylinders, means for removing the sheets from the other cylinder of the second pair, means for operating said removing means once in each predetermined number of revolutions of said cylinder, and web directing means coöperating with each pair of cylinders.

16. The combination with a pair of cutting and folding cylinders, one of said cylinders having sheet retaining devices, of a pair of cutting cylinders running at the same surface speed as the other cylinders and arranged to cut sheets less in size than the sheets cut by the first pair of cylinders, sheet retaining devices on the cylinders of said second pair, said devices being arranged to take alternate sheets cut by the cylinders, means for operating the sheet retaining devices of one of the cylinders of the second pair to cause it to deliver its sheets to the sheet retaining devices of the first pair of cylinders with an edge of the smaller sheets lying on about the fold line of the larger sheets, means for operating the folding devices of the first pair of cylinders so as to fold the larger sheets around the smaller sheets, means for removing the sheets from the other cylinder of the second pair, means for operating said removing means once in each predetermined number of revolutions of said cylinder, and web directing means coöperating with each pair of cylinders.

17. The combination with a pair of cutting and folding cylinders, one of said cylinders having sheet retaining devices, of a pair of cutting cylinders running at the same surface speed as the other cylinders and arranged to cut sheets less in size than the sheets cut by the first pair of cylinders, sheet retaining devices on the cylinders of said second pair, said devices being arranged to take alternate sheets cut by the cylinders, means for operating the sheet retaining devices of one of the cylinders of the second pair to cause it to deliver its sheets to the sheet retaining devices of the first pair of cylinders, with an edge of the smaller sheets lying on about the fold line of the larger sheets, means for operating the folding devices of the first pair of cylinders so as to fold the larger sheets around the smaller sheets, means for removing and delivering sheets from the other cylinder of said second pair, said removing and delivering means including a stripper and a fly, means for operating said removing and delivery means once in a predetermined number of revolutions of said cylinder, and web directing means coöperating with each pair of cylinders.

857,963. LEGGING. MORRIS ROSENWASSER, New York, N. Y. Filed Jan. 8, 1907. Serial No. 351,304.



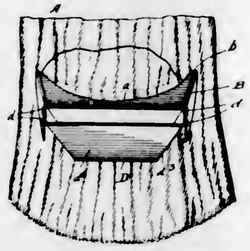
Claim.—1. A legging adapted to be wrapped about the leg having a fastening member secured to one of the free meeting edges near one of the extremities thereof, said member being adapted to be passed about the exterior of the legging and detachably secured to the other free edge of the legging near the opposite extremity thereof, and guides located upon the meeting edges intermediate the extremities of said legging through which said fastening member is adapted to extend.

2. A legging comprising a strip of flexible material adapted to be wrapped about the leg, a strap secured to the lower portion of one of the free edges thereof, a loop located upon the opposite free edge of the legging adjacent the point of fastening of said strap, said strap being adapted to be passed through said loop and then passed obliquely about the leg in an upward direction, a loop located upon the upper portion of the first mentioned free edge of the legging through which said strap is adapted to extend, a buckle upon the opposite free edge adjacent said last mentioned loop to which said strap may be adjustably secured, and a loop located upon each of the free edges of the legging intermediate the ends thereof through which said strap is adapted to extend.

3. A legging comprising a strip of material adapted to be passed about the leg and having free meeting edges, a plurality of relatively stiff members secured to the inner

surface of said legging and extending longitudinally thereof, a strap secured to one of the lower free edges of said legging, a loop located upon the opposite free edge thereof adjacent the point of fastening of said strap through which the same is adapted to extend, said strap being adapted to be passed obliquely about the leg, a loop upon the upper portion of the first mentioned free edge of said legging through which said strap is adapted to extend, a buckle upon the opposite free edge of the legging adjacent said last mentioned loop to which said strap may be adjustably secured, and a loop arranged upon each of the free edges of said legging intermediate the ends thereof through which said strap is adapted to extend.

857,964. SAP-RECEIVING RECEPTACLE AND APRON. FRANK RUDOLPHI, Chicago, Ill., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Feb. 8, 1907. Serial No. 356,364.



Claim.—1. In a sheet metal sap receiving receptacle and apron, the combination with a sap receiving receptacle having supporting hooks at its outer ends, of an apron having a curved upper longitudinal edge adapted to be inserted in the gash of a sap bearing tree, and provided at its outer ends with upwardly projecting divergent integral flanges having integral depending supporting arms furnished with hooks engaging the supporting hooks of the receptacle, substantially as specified.

2. In a sheet metal sap receptacle and apron, the combination with a receptacle having supporting hooks at its ends, of an apron having depending supporting arms at its ends furnished with hooks engaging the supporting hooks on the receptacle, substantially as specified.

3. A sheet metal sap receptacle supporting apron having integral upwardly projecting flanges at the ends thereof provided with integral depending supporting arms furnished with receptacle engaging devices, substantially as specified.

4. The combination with a sheet metal sap receptacle supporting apron having integral depending supporting arms at the ends thereof, of a sap receptacle fitting between said supporting arms of the apron, substantially as specified.

5. A one piece sheet metal sap receptacle having a bottom, upright sides and flaring ends, said flaring ends having integral folded locking lips to bind the integral folds of the flaring ends together, and said flaring ends having also integral supporting hooks for the receptacle, substantially as specified.

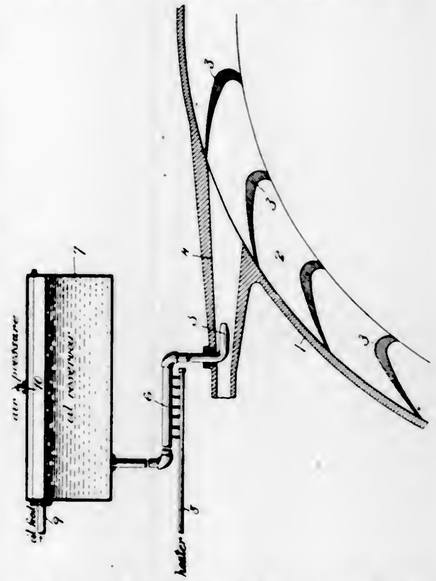
6. A one piece sheet metal sap receptacle having a bottom, upright sides and flaring ends, said flaring ends having integral folded locking lips to bind the integral folds of the flaring ends together, and said flaring ends having also integral supporting hooks for the receptacle, the upright sides of the receptacle having outwardly turned, rolled or curved edges, substantially as specified.

7. A sheet metal sap receptacle supporting apron having integral depending and forwardly projecting supporting arms adapted to engage the ends of the sap receptacle, substantially as specified.

8. A sheet metal sap receptacle supporting apron having integral depending and forwardly projecting supporting arms adapted to engage the ends of the sap receptacle, said supporting arms being provided with marginal stiffening beads, substantially as specified.

9. A sheet metal sap receptacle supporting apron having at the ends thereof integral downwardly and forwardly extending supporting arms furnished with seats to receive the sap receptacle, the lower longitudinal edge of the apron projecting over and beyond the inner portions of said seats, and a sap receptacle fitting between said supporting arms and at its inner longitudinal edge under the lower longitudinal edge of said apron, substantially as specified.

857,965. STEAM-TURBINE. ANDREW H. SMITH, New York, N. Y. Filed Jan. 2, 1906. Serial No. 294,058.



Claim.—1. In a steam turbine engine, a steam nozzle, a source of oil supply separate from the steam nozzle and means for introducing oil from said source of oil supply into the steam nozzle.

2. In a steam turbine engine, a steam nozzle, a source of oil supply separate from the steam nozzle and means for introducing oil at a high temperature from said source of oil supply into the steam nozzle.

3. In a steam turbine engine, a steam nozzle, a source of oil supply separate from the steam nozzle and means for introducing oil under pressure from the said source of oil supply into the steam nozzle.

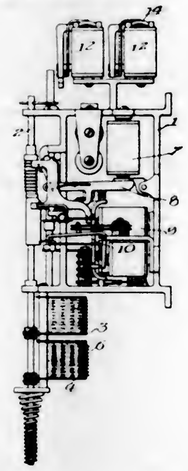
4. In a steam turbine engine, a steam nozzle, a source of oil supply, separate from the steam nozzle, and means for introducing oil at a high temperature and under pressure from said source of oil supply into the steam nozzle.

5. In a steam turbine engine, an expanding steam nozzle and means for introducing oil into the steam as it is expanding in the said nozzle.

857,966. AUTOMATIC TELEPHONE-SWITCH. CHARLES M. THOMPSON, Chicago, Ill., assignor to Charles M. Thompson Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 25, 1907. Serial No. 354,005.

Claim.—1. The combination with a motor magnet having two opposing windings, of a relay and contacts operated thereby, and circuit connections between the motor magnet and relay, whereby the relay by one and the same actuation closes the circuit first through one winding and then through the other.

2. In an automatic telephone switch, the combination of a motor magnet having two windings and an electromagnetic device combined with means for closing the circuit through both of said windings one after the other by a single operation of said device.



3. The combination of a motor magnet having two windings of the same or substantially the same inductive capacity, of a relay having an armature, and two sets of contacts controlled by said armature, one set of contacts being to close the circuit through one of said windings first, and the other set of contacts being to close the circuit through the other winding at a later time and the two sets of contacts being arranged to be operated to close said windings upon the same stroke of the armature.

4. The combination of a motor magnet having two opposing windings, a relay having an armature, contacts controlled by said relay and arranged to be closed one after the other by the same movement of the relay armature, and telephone switch mechanism actuated by said motor magnet.

5. The combination of vertical and rotary magnets, of an automatic telephone switch, each of said magnets having two opposing windings of substantially the same magnetic inductive capacity, telephone switching mechanism controlled by said magnets, relays combined with contacts, and circuit connections for closing the circuits through said magnets, each of said relays being provided with two sets of contacts for the two windings of the corresponding motor magnet and said contacts being arranged so that the windings of the magnet are closed one after the other by one and the same actuation of the corresponding relay.

857,967. PLOW. SAMUEL V. WEEKS, Highland Park, Tenn., assignor to Emerson Manufacturing Company, Rockford, Ill., a Corporation of Illinois. Filed Nov. 11, 1905. Serial No. 286,851.

Claim.—1. In gang plow, the combination with a chain of beams, of connections between the adjacent beams for permitting their relative movements, said connections being independent one of the other, a plowing device connected to each beam, and a supporting wheel connected to each beam and associated with each plowing device, said wheel supporting its particular beam and plowing device and permitting the relative movements of the different beams.

2. In a gang plow, the combination with a chain of connected beams, of a land side wheel located at each connection between the adjacent beams and constituting a support for the adjacent ends of both beams, and plowing devices associated with the different wheels.

3. In a gang plow, the combination with a chain of flexibly connected beams, of a land side wheel located at each connection between adjacent beams and constituting a support for the adjacent ends of both beams, and a plowing device located at each connection and associated with the land side wheel thereat.



4. In a gang plow, the combination with a plurality of beams, of plowing devices mounted on the beams, a plurality of land side wheels, each of which co-operates with one of the beams and with a plowing device and located adjacent to the point of connection between the beams, and independent connections between the adjacent beams, each connection engaging the front end of one beam and the rear end of another.

5. In a gang plow, the combination with a plurality of beams arranged with the rear end of one adjacent to the front end of the other, of a plurality of independent flexible connections between the front and rear ends of adjacent beams, a plowing device mounted on each connection and a land side wheel carrying each beam and co-operating with the plowing device mounted on said beam.

6. In gang plow, the combination with a frame, of a plurality of plowing devices mounted thereon, a plurality of ground wheels, each co-operating with one of the plowing devices, devices for elevating and lowering the plowing devices upon the various ground wheels, and a common actuating device for operating the elevating and lowering devices.

7. In a gang plow, the combination with a frame, of a plurality of plowing devices mounted thereon, ground wheels co-operating with the different devices, and common means for elevating and lowering the plowing devices upon the various ground wheels.

8. In a gang plow, the combination with a frame including a plurality of sections, of connections between the sections, a plowing device carried by each section, a separate land side wheel supporting each section, and means mounted on said connections for elevating and lowering the plowing devices with respect to the various wheels.

9. In a gang plow, the combination with a plurality of beams, of means connecting one beam to the other, a plowing device mounted on each beam, a separate land side wheel carrying each beam, and co-operating with the plowing device mounted on said beam, and means mounted on the connecting means for elevating and lowering the

beams and the plowing devices with respect to the various wheels.

10. In a gang plow, the combination with a plurality of standards, of ground wheels supporting the standards, a frame including a plurality of sections, each being slidable upon a standard, a plowing device carried by each section, and common means for simultaneously sliding the sections upon the standards.

11. In a gang plow, the combination with a plurality of standards, of ground wheels supporting the standards, a frame including a plurality of sections, each being slidable upon a standard, a plowing device carried by each section, and a raising and lowering device connected to the several standards and each section.

12. In a gang plow, the combination with a plurality of standards, of ground wheels supporting the standards, a frame including a plurality of sections, each being movable upon a standard, a plowing device carried by each section, an actuating lever, and a link connected to the lever and to the various standards and sections.

13. In a gang plow, the combination with a plurality of standards, of ground wheels supporting the standards, a frame including a plurality of supporting sections, each being movably associated with a standard, a plowing device carried by each supporting section, a link, and a bell crank connected to each of the standards and associated sections and being also connected to the link.

14. In a gang plow, the combination with a plurality of pivotally connected beams, of plowing devices carried thereby, a plurality of ground wheels and standards, each beam having a sliding connection with one of the standards, an actuating lever, a link connected to the lever, and a bell crank connected to each standard and to the beam associated therewith.

15. In a gang plow, the combination with a plurality of standards having offset axles at their lower ends, of ground wheels journaled on the axles, a plurality of pivotally connected beams slidably mounted on the standards, connections between the beams and standards for elevating and lowering the former, and common actuating means for said connections.

16. In a gang plow, the combination with a plurality of pivotally connected beams, of plowing devices carried thereby, guideways carried by the beams, standards on which said guideways slide, bell crank levers having link connections with the standards and pivoted upon the beams, a link connected to the various levers, and an actuating lever pivoted to the link.

17. In a gang plow, the combination with a draft appliance, of a plurality of draft connections attached thereto, a plurality of plowing devices attached to the draft connections, and independent connections between the plowing devices, said latter connections also constituting means for securing the draft connections to the plowing devices.

18. In a gang plow, the combination with a draft appliance, of a plurality of beams, a plurality of draft devices between the appliance and beams, a plurality of independent devices directly connecting adjacent beams said devices also constituting means for connecting the draft devices to the beams, and plows carried by the beams.

19. In a gang plow, the combination with a draft appliance, of a plurality of beams, a plurality of draft links connected to the draft appliance and associated with the front ends of the beams, said beams being disposed with the front end of one alongside the rear end of the beam adjacent, independent connections between said adjacent front and rear ends and a plowing attachment supporting each connection.

20. In a gang plow, the combination with a draft appliance, of a plurality of beams, a plurality of draft links between the appliance and the beams, connections between the beams engaging the same and also engaging the links to connect the links to said beams, and plowing devices carried by the beams.

21. In a gang plow, the combination with a draft appliance, of a series of beams, the front portion of one being associated with the rear portion of the next adjacent, a plurality of independent connections between said adjacent portions of the various beams, a plowing attachment supported by each connection, and a draft connection between the front end of each beam and the draft appliance.

22. In a gang plow, the combination with a draft appliance, of a series of beams, the front end of one being connected to the rear end of the next adjacent, a plowing attachment support and a supporting wheel attached to each connection, the foremost beam having a connection with the draft appliance, and a series of links connected to the front ends of the other beams and to the draft appliance.

23. In a gang plow, the combination with a plurality of beams, of separate pivotal connections between adjacent beams, plow disks mounted on the beams, and a land side wheel co-operating with each disk.

24. In a gang plow, the combination with a plurality of beams, of devices connecting adjacent beams, draft links connected to the devices, a draft appliance connected to the links, plowing devices mounted on the connecting devices, and ground wheels associated with the plowing devices and also mounted on the connecting devices.

25. In a gang plow, the combination with a plurality of connected beams, of a plowing disk carried by each beam and having its axis disposed on one side of the same, and a land side wheel connected to each beam and located on the opposite side thereof to the axis of the disk, and means for raising and lowering the beams upon their respective wheels.

26. In a gang plow, the combination with a plurality of beams, of a device connecting the beams, a plow mounted on the device, and a supporting wheel connected to said device.

27. In a gang plow, the combination with a plurality of beams, of a structure connecting the beams, said structure being carried by and movable independently of one of the same, a plowing device mounted on the structure, a ground wheel mounted on the structure, and means for elevating and lowering said structure and plow on the wheel.

28. In a gang plow, the combination with a beam, of a plow carrier connected thereto and having a horizontal pintle, a plow mounted on the carrier, another beam mounted on the pintle and adjustable longitudinally along the same, and another plow connected to the latter beam.

29. In a plow, the combination with a mounting, of a beam movably connected to the mounting, a pressure device movably carried on the mounting and acting on the beam to exert a downward pressure thereon, and draft mechanism connected to the pressure device.

30. In a plow, the combination with a mounting, of a beam pivotally connected to the mounting, a pressure device pivotally connected to the mounting and acting on the beam to exert a downward pressure thereon, and draft mechanism connected to the pressure device.

31. In a plow, the combination with a beam, of a plowing device connected thereto, a pressure member having a bearing on the beam, a mounting on which the pressure device is carried, said beam being movable with respect to said mounting and a draft device having a connection with the pressure member and causing the same to exert a downward pressure on the beam.

32. In a plow, the combination with a mounting of a beam having an upright swinging movement with respect to the mounting, a plowing device carried by the beam, and means bearing against the beam for exerting a downward pressure thereupon, said means including draft mechanism connected to the beam, and a bearing device movably supported on the mounting and also engaged with the beam.

33. In a plow, the combination with a mounting of a beam having an upright swinging movement with respect to the mounting, a plowing device carried by the beam, and draft mechanism bearing upon the beam for exerting a downward pressure thereupon.

34. In a plow, the combination with a pintle, of a swinging beam connected thereto at its front end, a pressure member bearing upon the beam in rear of its connection with the pintle, and a draft device for moving the plow connected to the pressure member.

35. In a gang plow, the combination with a pivot support, of a beam pivoted thereon, a plowing device connected to the beam, a pressure member also pivoted on the support and having a bearing on said beam to exert a downward pressure thereon, and a draft mechanism connected to the pressure member for moving the plow and exerting a downward pressure on the beam.

36. In a plow, the combination with a beam having an upright swinging movement, of a plowing device carried thereby, and a swinging pressure member bearing upon the beam, said member and beam having substantially coincident journal axes.

37. In a plow, the combination with a pintle, of a swinging beam connected at its front end thereto, a swinging pressure device mounted on the pintle, and bearing upon the beam in rear of its connection with said pintle, and a draft device connected to the pressure member.

38. In a plow, the combination with a beam, of an offset pintle carried thereby, another beam journaled on the pintle, a pressure member bearing on the latter beam, and a draft device connected to the pressure member.

39. In a plow, the combination with a beam, of an offset pintle carried thereby, another beam journaled on the pintle, and a pressure member journaled on the pintle and bearing on the latter beam.

40. In a gang plow, the combination with pivotally connected beams, of draft devices, and means actuated by the draft devices for exerting downward pressure on the beams.

41. In a gang plow, the combination with a plurality of pivotally connected plowing devices, of a plurality of pivotally mounted pressure members acting on the plowing devices to exert downward pressure thereupon, and draft means connected to the pressure member.

42. In a gang plow, the combination with a plurality of pivotally connected beams and plowing devices, each having an outstanding pintle upon which another is journaled, of a plurality of pressure members journaled on the pintles and bearing on the beams, and draft mechanism connected to the various pressure members.

43. In a gang plow, the combination with a plurality of beams, of a plowing device, and an outstanding pintle carried by each beam, said beams being journaled each on the adjacent pintle, a pressure member pivoted between its ends on each pintle and bearing at its rear end on the beam, a draft appliance, and draft links connecting the appliance and the pressure members.

44. In a plow, the combination with a plow beam, of a pressure member pivoted between its ends to the beam, the rear portion of the member bearing on the beam, and a draft device connected to the front end of the pressure member.

45. In a gang plow, the combination with a draft appliance, of a plurality of beams, a plowing disk and an outstanding pintle carried by each beam, said beams being each journaled on the pintle of the adjacent beam, a pressure member pivoted between its ends on each pintle and bearing at its rear end on the beam journaled on said pintle, and draft links connected to the pressure members and to the draft appliance.

46. In a gang plow, the combination with a beam, of a plowing device movably mounted thereon, another beam connected to the movable plowing device, and independently of the first mentioned beam, and another plowing device mounted on the latter beam.

47. In a gang plow, the combination with a beam, of a plowing device pivoted to the beam, another beam connected to the pivoted plowing device independently of the first mentioned beam, and another plowing device mounted on the latter beam.

48. In a gang plow, the combination with a beam, of a plowing device pivoted to the beam, a draft device connected to the pivoted plowing device, another beam connected to the pivoted plowing device, and another plowing device mounted on the latter beam.

49. In a gang plow, the combination with a beam, of a plowing device movably mounted thereon, another beam pivotally connected to the movable plowing device independently of the first mentioned beam, and another plowing device mounted on the latter beam.

50. In a gang plow, the combination with a beam, of a plowing device pivoted to the beam and having an outstanding pintle, another beam journaled on the pintle and having a plowing device, and a draft link connected to the pintle.

51. In a gang plow, the combination with a beam, of a disk carrier pivoted to the beam and having an outstanding pintle on one side, a disk mounted on the other side of the carrier, another beam journaled on the pintle, a disk connected to said latter beam, and a draft link connected to the pintle.

52. In a gang plow, the combination with a draft appliance, of a plurality of beams, a plurality of disk carriers, each pivoted to one beam and having an outstanding pintle to which the next adjacent beam is connected, disks mounted on the carriers, standards on which the disk carriers slide, land side wheels connected to the standards, and draft links connecting the draft appliance and the disk carriers.

53. In a gang plow, the combination with a plurality of beams, of a plow associated with each beam, and a plow carrier connecting one of the plows to its beam and connected directly to the next adjacent beam, said carrier thereby constituting a coupling between the adjacent beams.

54. In a gang plow, the combination with a plurality of beams, of a structure connecting the beams, said structure having a pivotal connection with one beam on a substantially horizontal axis, and a pivotal connection with the other beam on a substantially upright axis.

55. In a gang plow, the combination with a plurality of beams, a structure having two axles disposed at substantially right angles to one another, the forward end of one beam pivotally connected to one axle and the rear end of another beam pivotally connected to the other axle.

56. In a gang plow, the combination with a plurality of beams, of a plurality of plow carriers movably connecting the beams, plows mounted on the carriers, a draft appliance, and a plurality of separate draft devices connected to the draft appliance and to the plow carrier.

57. In a gang plow, the combination with a plurality of beams, of a plurality of plow carriers pivoted to the different beams, a draft appliance, and a plurality of separate draft links connecting the draft appliance and the carriers.

58. In a gang plow, the combination with a plurality of beams, of a plow associated with each beam, and a plurality of corresponding plow carriers, each carrier connecting one plow to its particular beam, certain of said carriers being also connected to the next adjacent beams and thereby constituting couplings between said beams.

59. In a gang plow, the combination with a plurality of beams, of a plow associated with each beam, a plow carrier connecting one of the plows to its beam and being connected directly to the adjacent beams, thereby constituting a coupling between the beams, and a ground wheel mounted on the carrier.

60. In a gang plow, the combination with a plurality of beams, disposed with the front end of one adjacent to and at one side of the rear end of the next, of independent pivoted connections between adjacent front and rear ends of the various beams, permitting the upright swinging movement thereof, plowing devices carried by the connections, a ground wheel carried by each beam, and draft devices connected to the front ends of the beams.

61. In a gang plow, the combination with a plurality of beams pivotally connected on horizontal axes and thus capable of upright swinging movement, of plowing disks supported by the connections, a land side wheel carried by each beam, said beams being vertically adjustable with respect to the wheels, and means for effecting such adjustment.

62. In a plow, the combination with a beam, of a plowing device and carrier having an offset portion, another beam adjustably mounted on the offset portion and slidable thereon toward and from the first mentioned beam.

means for holding the adjustable beam against its sliding movement and in different positions on the offset portion, and a plowing device carried by the latter beam.

63. In a plow, the combination with the beam, of a plowing device, an offset pintle carried by the beam, another beam slidably mounted on the pintle, toward and from the beam carrying it, and another plowing device carried by the latter beam.

64. In a plow, the combination with a beam, of a plowing device and an offset substantially horizontal pintle carried by the beam, another beam slidably mounted on the pintle and having an upright swinging movement thereon, and a plowing device carried by the latter beam.

65. In a gang plow, the combination with a beam, of a plowing device and an offset pintle having a connection with the beam, another beam mounted on the pintle and slidable thereon to different positions, means also slidable on the pintle for holding the latter beam in different adjusted positions on said pintle, and another plowing device carried by the said latter beam.

66. In a plow, the combination with a beam, of a plowing device, a transversely disposed pintle carried by the beam, another beam pivotally and adjustably mounted on the pintle, a yoke collar embracing the beam and slidable on the pintle, and a set screw for holding the collar against movement.

67. In a gang plow, the combination with an upright standard, of a beam slidably associated therewith, said standard having an upright collar, an axle having an upright end journaled on the collar, an intermediate portion that extends toward the front of the beam, and an offset pintle at its front end, a land side wheel journaled on the pintle, and means for maintaining the beam at different positions on the standard.

68. In a plow, the combination with a beam, of a plowing device carried thereby, an axle located at the rear of the plowing device and having a lower end portion that extends toward the front end of the beam and is capable of a limited swinging movement toward and from the plowing device, said forwardly projecting portion having a spindle at its front end, that is disposed transversely of the line of draft and a land side wheel journaled on the spindle.

69. In a plow, the combination with a beam, of a plow carrier mounted thereon and including a collar having depending lugs, an axle having an upright portion journaled in the collar, a forwardly projecting portion located between the lugs and an offset front end constituting a spindle, and a wheel journaled on said spindle.

70. In a gang plow, the combination with a plurality of pivotally connected beams having plowing devices, of a land side wheel co-operating with each device and having a swinging movement with respect thereto on a horizontal plane.

71. In a gang plow, the combination with a plurality of pivotally connected beams having plow carriers, of axles journaled on the carriers, and land side wheels journaled on the axles.

72. In a plow, the combination with a beam, of a plow carrier pivotally mounted thereon, and means for maintaining the beam and carrier against relative movement when the beam is swung in one direction and permitting such relative movement when the beam is swung in the opposite direction.

73. In a gang plow, the combination with a draft appliance, of a chain of beams adjustably connected at its front end to the draft appliance, and a plurality of draft devices connected to the various beams and adjustably connected to the draft appliance.

74. In a gang plow, the combination with a draft bar, of a chain of beams, an adjustable connection between the front end of the chain of beams and the bar, and draft means connected to the various beams and adjustably connected to the draft bar.

75. In a gang plow, the combination with a draft bar having a rearwardly extending portion provided with an offset, of a chain of beams extending diagonally across the line of draft in rear of the draft bar, an adjustable connection between the front end of the chain and the offset of the bar, a series of draft links connected to the beams, an adjustable connection between the links and the main portion of the bar, and plowing disks connected to the various beams.

76. In a plow, the combination with a beam, of a plow carrier pivotally mounted thereon, a plowing device mounted on the carrier, a standard on which the carrier is slidably mounted, a land side wheel pivotally connected to the standard, and means for sliding the carrier on the standard.

77. In a plow, the combination with a beam, of a plow carrier pivotally mounted thereon, a plowing device mounted on the carrier, a standard on which the carrier is slidably mounted, said standard having an upright collar and depending lugs at the lower end of the collar, an axle pivoted in the collar and having an offset portion located between the lugs, a spindle carried by the offset portion, a land side wheel journaled on the spindle, and means connecting the standard and the carrier for effecting a sliding movement of the latter.

78. In a gang plow, the combination with a plow beam, of a plow carrier pivoted thereto on a substantially upright axis, a plowing device mounted on the carrier at one side of said axis, a rearwardly extending arm rigidly fixed to the carrier and disposed substantially parallel to the line of draft, and a rear furrow wheel mounted on the rear end of the arm and disposed directly alongside the same.

79. In a gang plow, the combination with a plow beam, of a plow carrier pivoted thereto on a substantially upright axis, a plow disk journaled on the carrier at one side of its axis, a rearwardly extending arm rigidly fixed to the carrier below its pivoted connection with the beam, and a rear furrow wheel having a pivotal connection with the rear portion of the arm.

80. In a gang plow, the combination with a draft bar disposed transversely of the line of draft and having a rearwardly extending portion, of a chain of beams and plowing devices, a swinging connection between the chain and rearwardly extending portion, draft devices connecting the chain and the bar separately from the first mentioned connection, an outstanding arm having a connection with the bar at said swinging connection, and a front furrow wheel adjustably mounted on the arm.

81. In a gang plow, the combination with a draft bar, of a swinging rearwardly extending section pivoted thereto, an arm connected to the bar, an upright standard on which said arm is slidably mounted, an axle pivoted to the standard, a wheel journaled on the axle, means for raising and lowering the arm on the standard, a chain of plowing devices connected to the rearwardly extending pivoted section, and draft links connecting the draft bar, and plowing devices.

82. In a gang plow, the combination with a draft appliance having a rearwardly extending portion, of a chain of beams and plowing devices connected to the rearwardly extending portion, an arm pivoted to the rearwardly extending portion, means for limiting the swinging movement of the arm, a standard located at the outer end of the arm and having a slidable engagement therewith, a front furrow wheel connected to the standard, and means for effecting an upright swinging movement of the arm on the standard.

83. In a gang plow, the combination with a draft appliance, of a standard on which said appliance has a vertical sliding movement, a collar carried by the standard and having an outstanding finger, an axle having an upright portion journaled in the collar and an offset portion forming a spindle, a front furrow wheel journaled on the spindle, and a spring connecting the axle and finger.

84. In a gang plow, the combination with a chain of beams, the front end of one being associated with the rear end of the next, of means connecting said adjacent ends of the beams, a plurality of plowing devices associated with the beams, and a plurality of land side wheels carried by said chain of beams and located adjacent to the point of connection between the beams.

85. In a gang plow, the combination with a chain of beams, the front end of one being associated with the rear end of the next, of means connecting the said adjacent ends of the beams, a plurality of plowing devices associated with the beams, a plurality of land side wheels carried by said chain of beams and located adjacent to the point of connection between the beams, and furrow wheels located respectively at the front and rear ends of the chain of beams.

86. In a gang plow, the combination with a chain of beams, the front end of one beam being associated with the rear end of the next, of means connecting the said adjacent ends of the beams, plowing devices and associated land side wheels, carried by the connections between the beams, and furrow wheels located respectively at the front end of the first beam and rear end of the last beam.

87. In a gang plow, the combination with a chain of beams, the front end of one beam being associated with the rear end of the next, of means connecting the said adjacent ends of the beams, a plurality of plowing devices associated with the beams, and a land side wheel located and operating in a position between the connected ends of the adjacent beams.

88. In a gang plow, the combination of a plurality of relatively movable frame members, of separate connections between the members that permit their relative movement, and plowing devices mounted on said connections.

89. In a gang plow, the combination with a plurality of relatively movable beams, of plow carriers pivotally connecting the beams, and plowing disks journaled on the carriers.

90. In a gang plow, the combination with a plurality of frame members, of separate connections between the members, permitting their relative movement, plowing devices mounted on said connections and located on one side of the members, and supporting wheels for the different plowing devices located on the opposite side of the members.

91. A plow including a series of beams extending diagonally across the line of draft, said beams being disposed one in advance of another and parallel with the line of draft, connections between the respective beams, and plowing devices and land wheels mounted on the connections.

92. A plow including a series of interchangeable hingedly connected beam members, the hinge connections having substantially horizontal axes, and plowing devices carried by the hinge connections.

93. A plow including a series of hingedly connected beam members, the hinge connections having substantially horizontal axes, and plowing devices carried by the different hinge connections.

94. A plow including a series of hingedly connected beam members, the hinge connections having substantially horizontal axes, separate land wheels for the respective members, and a furrow-opening device carried by each member.

95. A plow including a series of beam members, a furrow-opener for each beam, and a series of rotary structures, each serving to connect two adjacent beam members and connect a furrow-opener to its beam.

96. A plow including a series of flexibly connected beam members having separate and independent connections to permit the relative upward flexion of the beam members, land and furrow wheels supporting said series of members, and furrow openers carried by said connections.

97. A plow including a series of beam elements, and connections between said elements permitting the same to flex relatively in either a vertical or a horizontal direction, and furrow-openers supported by the connections.

98. A plow including a beam member, a rotary furrow-opener support carried thereby, a second beam member laterally movable relatively to the first named member, and means whereby such relative lateral movement of the beam members will effect the turning of the furrow-opener support to change the angular relation of the furrow-opener with respect to the beam which supports it.

99. In a gang plow, the combination with a frame comprising relatively movable connected sections, of a plowing device movably mounted on each connection, and means operated by the sections on their relative movement to effect the adjustment of the plowing device relative to the connection on which it is movably mounted.

100. In a gang plow, the combination with a beam, of a plow carrier pivotally connected thereto on a substantially upright axis, a plow mounted on the carrier, another beam pivoted to the carrier on a substantially horizontal axis and having an upright swinging movement thereon, and another plow connected to the latter beam.

101. In a gang plow, the combination with a plurality of beams, of plowing devices carried thereby, a ground wheel for each device, and means for raising and lowering all the plowing devices upon and with respect to the wheels.

102. In a gang plow, the combination with a plurality of beams, of separate devices for pivotally connecting one beam to the beam next adjacent thereto, ground wheels associated with each beam, and means mounted on the connecting devices for effecting a relative movement between the beams and the wheels.

103. In a gang plow, the combination with a plurality of beams, of separate devices for connecting each beam to the next adjacent beam, a plowing device, and a ground wheel mounted on each connection, and means for raising and lowering the plowing devices and beams upon the wheels.

104. In a gang plow, the combination with plows, of a plurality of flexibly connected beams having plowing devices thereon, a draft appliance, a connection between the foremost beam and the draft appliance, a plurality of draft devices connected to the various beams, and a common fastener securing the draft device to the draft appliance and adjustable on the draft appliance toward and from the connection of the foremost beam therewith.

105. In a gang plow, the combination with pivotally connected beams, of plowing devices carried thereby, and pressure means for exerting downward pressure on the different beams.

106. In a gang plow, the combination with a plurality of beams, of a structure connecting the beams, said structure having a pivotal connection with each beam, said connections having axes disposed in annular planes, and a plow carried by the pivotal connection.

107. In a gang plow, the combination with a plurality of beams, of a structure connecting the beams, said structure having a pivotal connection with each beam and said connection having axes disposed in angular planes, and a plow and a ground wheel carried by the pivotal connection.

857,968. FABRIC. LUDWIG WERTHEIM, New York, N. Y., assignor to Perlman & Hirschfeld, New York, N. Y. Filed Mar. 23, 1907. Serial No. 364,080.



Claim.—As a new article of manufacture an elastic fabric having an elastic webbing and separate inner and outer coverings united by seams at their edges, the outer covering having a number of longitudinally extending plaits or raised portions each containing transverse or approximately transverse waves or undulations producing in the longitudinal plaits a serpentine effect and the inner covering having a number of transverse plaits or ridges, whereby an ornamental effect is attained and free contraction and elongation of the fabric is permitted.

857,969. ORGAN-PIPE. FREDERICK I. WHITE, Reading, Mass. Filed Mar. 30, 1907. Serial No. 365,608.

Claim.—1. An organ-pipe composed of a plurality of members which are circular in cross section, and one of

which is independently rotatable, one of said members having a longitudinal opening, while another member has a cam-shaped end overlapping the inner end of the opening, the said cam-shaped end being adapted to vary the length of the opening and the effective length and pitch of the pipe, as set forth.

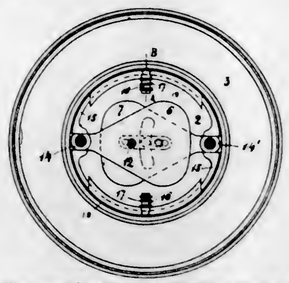


2. An organ pipe composed of an outer member having a longitudinal opening, an inner member having a peripheral shoulder below said opening, and a third member formed as a collar supported by and rotatable on said shoulder, said collar having a cam-shaped outer end which overlaps the inner end of the opening.

3. An organ pipe composed of a plurality of members which are circular in cross section, and of tapering form, one of said members having a longitudinal opening, while another member has a cam shaped end overlapping the inner end of the opening, one member being rotatable independently to cause the cam-shaped end to vary the length of the opening and the effective length and pitch of the pipe.

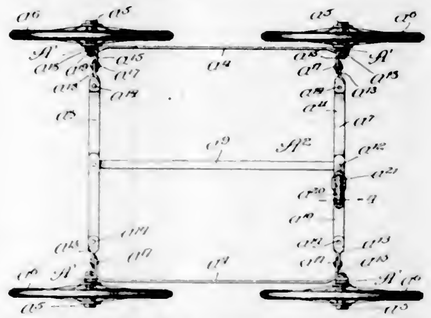
4. An organ pipe composed of a tapered outer member having a longitudinal opening, a tapered inner member, the outer end of which receives the inner end of the outer member, and forms a peripheral shoulder surrounding the outer member, and a third member formed as a tapered collar supported by and rotatable on said shoulder, the said collar having a cam-shaped outer end which overlaps the inner end of the opening.

857,970. FRICTION-CLUTCH. CASPAR WÜST-KUNZ, Seebach, near Zurich, Switzerland. Filed May 31, 1904. Serial No. 210,542.



Claim.—The combination of a friction clutch comprising an exterior driven member and segmental interior members, springs normally separating said interior members from the exterior member, a rotatory driving member carrying said segmental members, weighted levers pivoted eccentrically on said driving member, their pivots being symmetrically placed, means connecting said weighted levers to form a mutually balancing system when the driving member is at rest whereby the line connecting the center of gravity of each weighted lever and its pivotal center is radial to the axis of the driving member, and projecting shoulders on each side of each weighted lever adapted respectively to bear against and move into operative position the corresponding segmental clutch members when the driving member rotates at and above a predetermined speed in the one or other direction.

857,971. FOLDING CARRIAGE. ARTHUR J. ADAMS, Chicago, Ill., assignor to Fulton Manufacturing Company, Chicago, Ill., a Corporation of Illinois. Filed Feb. 12, 1907. Serial No. 356,971.



Claim.—1. In a folding carriage, the combination of a running-gear frame, wheel-supports pivotally connected with said frame, and link-mechanism connecting said wheel-supports and comprising a foldable member having jointed connection with the wheel-supports, and means for rendering said foldable member rigid, for the purpose set forth.

2. In a folding carriage, the combination of a running-gear frame, a pair of wheel-supports pivotally joined to said frame at each side thereof and connected to fold together beneath the frame, and link-mechanism connecting said wheel-supports and comprising foldable members having permanent jointed connection with the wheel-supports, and means for giving rigidity to said foldable members, for the purpose set forth.

3. In a folding carriage, the combination of a running-gear frame, wheel-supports pivotally connected therewith, and link-mechanism connecting said wheel-supports and comprising a pair of foldable cross members, links pivotally connected with the ends of said cross-members and pivotally connected with said wheel-supports, a link connecting said foldable cross-members, and means carried by one of said cross-members for imparting rigidity thereto in the extended position, for the purpose set forth.

4. In a folding carriage, the combination of a running-gear frame, a pair of a wheel-supports pivotally connected with each side of said frame and connected to swing together beneath said frame, and link-mechanism connecting said wheel-supports and comprising foldable cross-members, links connecting said cross-members with said wheel-supports, a link connecting the foldable cross-members, and a spring-held locking member mounted on one of the foldable cross-members and imparting rigidity thereto in the extended position thereof.

5. In a folding carriage, the combination of a running-gear frame, a pair of wheel-supports pivotally connected with each side thereof, a pair of foldable cross-members, links joined by vertical pivots to said cross-members and joined by horizontal pivots to said wheel-supports, a link connecting said foldable cross-members, and means for imparting rigidity to one of said cross-members in the extended condition thereof.

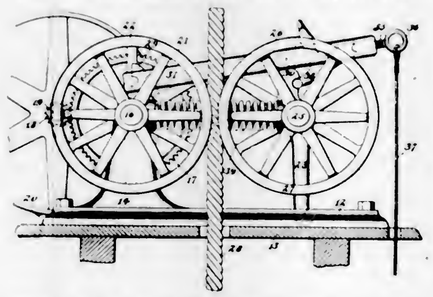
6. In a folding carriage, the combination of a running-gear frame, a pair of swinging wheel-supports joined to each side of said frame and connected to swing together, a pair of foldable cross-members, each comprising a pair of links connected by a vertical pivot, a longitudinal link connected with said vertical pivots, links having vertical pivotal connection with the outer ends of said first-named links and having horizontal pivotal connection with said wheel-supports, and releasable means for securing one of said cross-members against flexure, for the purpose set forth.

7. In a folding carriage, the combination of a running-gear frame, a pair of swinging wheel-supports pivotally joined to each side of said frame, and connecting means

comprising foldable cross-members, each foldable cross-member comprising a pair of links having overlapping ends joined by a vertical pivot, a longitudinal link connecting said vertical pivots, links having jointed connection with the outer ends of the links forming said foldable cross-members and with said wheel-supports, and a spring-held locking member mounted on one of the links of one of said cross-members and normally engaging the projecting end of the other link of said cross-member, for the purpose set forth.

8. In a folding carriage, the combination of a running-gear frame, a pair of connected wheel-supports pivotally connected with each side member of said frame, a clip connected with each wheel-support, a twisted link having horizontal pivotal connection with each clip, a link having vertical pivotal connection with the inner end of each twisted link, a vertical pivot connecting the free ends of said last-mentioned links at the median longitudinal plane of the running-gear frame, the links connecting said twisted links forming foldable cross-members, a longitudinal link connected with said last-named pivots, and a spring-held locking-member mounted on one of the links of a foldable cross-member and adapted to engage the adjacent link in the extended position.

857,972. HOISTING-MACHINE. DANIEL ARTHUR, New York, N. Y. Filed Mar. 7, 1907. Serial No. 361,126.



Claim.—1. In a device of the character described, the combination with a bed plate provided with a stationary cylindrical bearing, of a rotating shaft journaled in said bearing and having tightly secured thereto and near one end thereof, a frictional drive wheel, and at the opposite end a rope sheave, a support movably mounted on said bed plate and provided with a cylindrical bearing, a rotating shaft journaled in said latter bearing and having secured thereto a frictional drive wheel in alinement with said former drive wheel, and a rope sheave in alinement with said former rope sheave, means for moving said latter shaft rearwardly, thereby throwing said drive wheels and rope sheaves into operative positions, and a spring acting on said bearings for returning the several parts to their normal positions of rest, substantially as described.

2. In a device of the character described, the combination with a bed plate provided with supports carrying a rear cylindrical bearing, a rotating shaft journaled in said bearing, a frictional drive wheel secured to said shaft near one end thereof, and at the opposite end a rope sheave, a forward cylindrical bearing movably mounted on said bed plate, a shaft journaled in said forward bearing and having secured thereto and near one end thereof, a frictional drive wheel, and at the opposite end thereof a rope sheave, a toggle, one arm of which is fulcrumbed on said rear bearing, and the other arm on said forward bearing, whereby when said toggle is operated, said forward bearing is moved rearwardly, and a spring operating on said bearings to return said forward bearing to its normal position, substantially as described.

3. In a device of the character described, the combination with a bed plate provided with supports carrying a rear cylindrical bearing, a shaft rotating in said bearing and having secured near one end thereof a frictional drive wheel, and at the other end a rope sheave, a forward cylindrical bearing movably mounted on said bed, a shaft rotating in said latter bearing and having secured thereto near one end thereof a frictional drive wheel, and at the opposite end thereof a rope sheave, shifting devices located centrally between said rope sheaves on one side of the device and frictional wheels on the opposite side of said device, whereby to force said forward bearing rearwardly, and means for returning the parts to their normal positions, substantially as described.

4. In a device of the character described, the combination with a bed plate, of a rear rotating frictional drive wheel and rope sheave mounted thereon, of forward friction wheels and rope sheaves movably mounted on said bed plate, shifting devices centrally located on said device and adapted to move said forward friction wheels and rope sheaves rearwardly, and spring actuated means for returning the parts to their normal positions of rest, substantially as described.

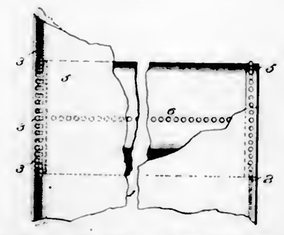
857,973. CONSTRUCTION OF REINFORCING-STEEL FOR REINFORCED CONCRETE BEAMS AND GIRDERS. GUNVALD AUS, Brooklyn, N. Y. Filed Nov. 27, 1906. Serial No. 345,339.



Claim.—1. A reinforcing means for concrete beams, comprising a plurality of tension bars, and stirrups coiled about the same and indentured between the bars to clamp and space the latter the proper distance apart, thus forming a unit, as set forth.

2. A reinforcing means for composition material, consisting of tension bars having indentures formed in the circumference thereof, stirrups each formed into an angular coil, the strands thereof seated in said indentures and having parallel arms projecting therefrom with angular ends, portions of the coils of the stirrups being indentured to hold the tension bars spaced apart, as set forth.

857,974. RECORD STRIP OR CONTROLLER FOR COMPOSING, TYPE-CASTING, AND OTHER MACHINES. WILFRED BANCROFT, Philadelphia, Pa., assignor to Lanston Monotype Machine Company, Philadelphia, Pa., a Corporation of Virginia. Filed Oct. 25, 1906. Serial No. 340,535.



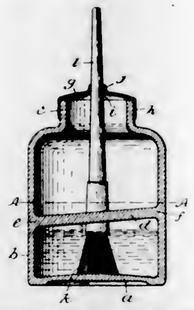
Claim.—1. A record strip or controller provided with parallel series of feeding and registering perforations along opposite margins, the perforations along one margin being elongated or extended laterally of the strip proportionally to the perforations along the opposite margin.

2. A record strip or controller comprising a strip or web of flexible material provided along one margin with a series of spaced circular perforations and along the opposite margin with a corresponding series of laterally elongated perforations.

3. A record strip or controller consisting of a flexible strip or web of paper wound into a roll and provided with two series of coincident perforations along opposite margins, the perforations of one series circular and of the other laterally elongated.

4. The combination with a plurality of pin wheels in parallel relation and at fixed distances apart, of a controller provided with a series of perforations to receive the pins of one wheel for feeding and registering purposes, and a second series of laterally elongated perforations in line with the other wheel.

857,975. MUCILAGE-BOTTLE. CHARLES E. BARRETT, Indianapolis, Ind. Filed Aug. 13, 1906. Serial No. 330,335.



Claim.—1. A mucilage bottle provided with an inclined bar-shaped clearer having two ends attached to the wall of the bottle.

2. A mucilage bottle comprising a side wall, and a bar-shaped clearer having two end portions attached to different parts of the wall and inclined thereto.

3. A mucilage bottle comprising a bottom and a side wall with a neck, and a bar-shaped clearer having two separate end parts thereof joined fixedly to the side wall between the bottom and the neck, the clearer extending across the major or vertical axis of the bottle and inclined to the plane of the bottom.

4. A mucilage bottle comprising a bottom and a side wall with a neck, a bar-shaped clearer having two ends attached to different parts of the wall between the bottom and the neck, the clearer having a curved surface inclined to the wall for the flow of the mucilage thereon, and a cover for the neck.

5. A mucilage bottle comprising a bottom and a side wall, and a bar-shaped clearer having two ends attached to different parts of the wall, the clearer being circular in cross-section and having at least one end portion thereof extending from its point of attachment with the wall obliquely therefrom in a direction away from the bottom of the bottle.

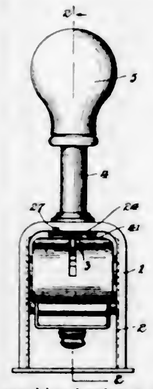
6. As an improved article of manufacture, the herein-described mucilage bottle with a bottom and a uniformly circular side wall, and the bar-shaped clearer having two separate end parts thereof attached fixedly to the side wall, the clearer being circular in cross-section and inclined to induce the flow of mucilage, as and for the purposes shown.

857,976. NUMBERING AND DATING MACHINE. EDWIN G. BATES, New York, N. Y., assignor to The Bates Machine Company, a Corporation of New Jersey. Filed July 2, 1906. Serial No. 324,304.

Claim.—1. In a numbering machine a frame, a notched plunger rod, a movable disk on the frame and a resilient friction device between the frame and disk, said disk being a pivoted washer through the center of which the rod passes.

2. In a numbering machine a frame, a notched plunger rod, a movable disk on the frame and a resilient friction device between the frame and disk, said resilient friction device comprising a coiled spring bearing against the washer and located in a recess in the frame.

3. In a numbering machine a frame, a notched plunger rod, a movable disk on the frame and a resilient friction device between the frame and disk, said disk being a pivoted washer through the center of which the rod passes, said resilient friction device comprising a coiled spring bearing against the washer and located in a recess in the frame.



4. A numbering machine having a plurality of printing plates and resilient means for securing them to the machine, said plates abutting against each other on a part of their center line and an opening between the plates, wheels and a shaft therefor said wheels having part of their periphery in said opening.

5. A numbering machine having a reciprocating frame, number wheels and resiliently held printing plate, in combination with a fulcrum carried by the reciprocating frame adapted for use with a tool for forcing the plate out of position.

6. A numbering machine having a reciprocating frame, number wheels and resiliently held printing plate, in combination with a fulcrum carried by the reciprocating frame adapted for use with a tool for forcing the plate out of position, and locking means for locking the reciprocating part in position with said fulcrum stationary.

7. A numbering machine having a reciprocating frame, number wheels and resiliently held printing plate, in combination with a fulcrum carried by the reciprocating frame adapted for use with a tool for forcing the plate out of position, said fulcrum being permanently located with relation to the said frame.

8. A numbering machine having a reciprocating frame, number wheels and resiliently held printing plate, in combination with a fulcrum carried by the reciprocating frame adapted for use with a tool for forcing the plate out of position, said fulcrum being permanently located with relation to the said frame, and a second fulcrum pivoted to said frame.

9. A numbering machine comprising a reciprocating wheel frame, an ink pad frame operated thereby and having a notch in its surface, an ink pad holder comprising a clamp for the pad, a lever having a nose pivoted on the holder, and a spiral spring between the lever and holder, a stationary arm on the clamp, whereby the arm and lever may be pressed together to place the pad in position and upon their release the nose caused to enter said notch.

10. A dating machine comprising month, units and tens wheels, exterior ratchet wheels attached to the sides of aforesaid wheels, a pawl mechanism, and ratchet means for advancing said tens wheel at a certain time without advancing the unit wheel, said tens and units wheels having their faces adjacent, said month and tens wheels having their ratchets adjacent, and connected pawls therefor.

11. A dating machine comprising month, units and tens wheels, a pawl mechanism, and ratchet means for advancing said tens wheel at a certain time without advancing the unit wheel, a notch between two ratchet teeth on the unit wheel and a pin tooth midway of the notch, a pawl therefor adapted to engage said pin tooth, ordinarily, a deep tooth on the tens wheel adapted to permit said pawl at times to freely ride under said tooth, a pawl operatively connected to first said pawl and operating the tens ratchet.

12. A dating machine comprising month, units and tens wheels, a pawl mechanism, and ratchet means for advancing said tens wheel at a certain time without advancing the unit wheel, a notch between two ratchet teeth on the unit wheel and a pin tooth midway of the notch, a pawl therefor adapted to engage said pin tooth ordinarily, a deep tooth on the tens wheel adapted to permit said pawl at times to freely ride under said tooth, a pawl operatively connected to first said pawl and operating the tens ratchet, the first said pawl comprising a blade and a nose at an angle thereto.

13. A machine of the kind described having a main frame, a reciprocating head, comprising an inner frame, a shaft therein and wheels on said shaft, a detachable die plate and resilient means for securing it to said inner frame, said plate traveling with said reciprocating head, between the sides of the main frame.

14. A machine of the kind described having a main frame, a reciprocating head, comprising an inner frame, a shaft therein and wheels on said shaft, a die plate and resilient means for securing it to said inner frame, said plate being of a length equal to the width of said inner frame.

15. A machine of the kind described having a main frame, a reciprocating head, comprising an inner frame, a shaft therein and wheels on said shaft, a die plate and resilient means for securing it to said inner frame, said plate being of a length equal to the width of said inner frame, and chambered on its inner under side to accommodate the wheels.

16. A machine of the kind described having a main frame, a reciprocating head, comprising an inner frame, a shaft therein and wheels on said shaft, a die plate and resilient means for securing it to said inner frame, notched end surfaces for the plate and projections on the frame adapted to engage said notched end surfaces.

17. A machine of the kind described having a main frame, a reciprocating head, comprising an inner frame, a shaft therein and wheels on said shaft, a die plate and resilient means for securing it to said inner frame, said resilient means comprising notches and engaging projections between the plate and frame and the inherent spring of the frame.

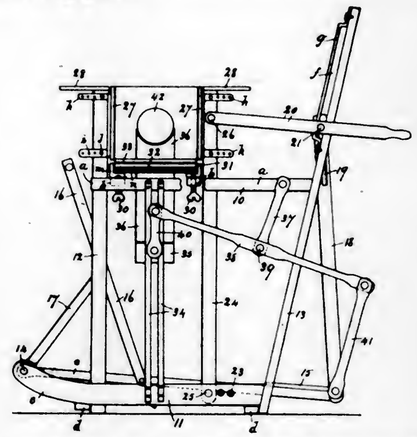
18. A machine of the kind described having a main frame, a reciprocating head, comprising an inner frame, a shaft therein and wheels on said shaft, a die plate and resilient means for securing it to said inner frame, said plate being of a length equal to the width of said inner frame, said resilient means comprising notches and engaging projections between the plate and frame and the inherent spring of the frame.

19. A machine of the kind described having a main frame, a reciprocating head, comprising an inner frame, a shaft therein and wheels on said shaft, a die plate and resilient means for securing it to said inner frame, said plate being of a length equal to the width of said inner frame, and chambered on its inner under side to accommodate the wheels, said resilient means comprising notches and engaging projections between the plate and frame and the inherent spring of the frame.

20. A machine of the kind described having a main frame, a reciprocating head, comprising an inner frame, a shaft therein and wheels on said shaft, a die plate and resilient means for securing it to said inner frame, said die plate being chambered on its inner under side to accommodate the wheels, said resilient means comprising notches and engaging projections between the plate and frame and the inherent spring of the frame.

857,977. CEMENT-BLOCK MACHINE. THOMAS D. BROCK, and CLARENCE W. P. BROCK, Waterford, Ontario, Canada. Filed May 14, 1906. Serial No. 316,877.

Claim.—1. In a device of the class described, a stationary supporting frame, a member constituting one side of a mold box and carried by said stationary frame, a swinging frame carried by said supporting frame, a member constituting the other side of said mold box and carried by said swinging frame, a pallet constituting the bottom of said mold box and supported upon said stationary frame, transverse members spaced apart and constituting the ends of said mold box, one of said ends having transverse apertures and the other of said ends having sockets corresponding to said apertures, and cores adapted to be disposed within said mold box and each with a pin at one end respectively engaging said sockets and with the other ends extending through said apertures, and means for operating said swinging frame.



2. In a device of the class described a stationary supporting frame, a member constituting one side of a mold box and carried by said stationary frame, a swinging frame carried by said stationary frame, a member constituting the other side of said mold box and carried by said swinging frame, a pallet constituting the bottom of said mold box and supported upon said stationary frame, transverse members spaced apart and constituting the ends of said mold box, one of said ends having a central aperture and the other of said ends having an internal socket, a core adapted to be disposed within said mold box with a pin at one end engaging said socket, and with the other end extending through said end aperture and means for operating said swinging frame.

3. In a device of the class described a stationary supporting frame, a member constituting one side of a mold box and carried by said stationary frame, a swinging frame carried by said stationary frame, a member constituting the other side of said mold box and carried by said swinging frame, a pallet constituting the bottom of said mold box and supported upon said stationary frame and provided with an intermediate aperture, transverse members spaced apart and constituting the ends of said mold box, one of said ends having a transverse aperture a core adapted to be disposed longitudinally within said mold box with one end extending through the apertures in one of said end members and the other end detachably supported upon the other end member, a branch core adapted to be disposed through the aperture in said pallet and with one end formed to engage the longitudinal core, and means for simultaneously operating said branch core and said swinging frame and the mold box side member carried thereby.

4. In a device of the class described a stationary frame, a member constituting one side of a mold box and carried by said stationary frame, a swinging frame carried by said stationary frame, a member constituting the opposite side of the mold box and carried by said swinging frame and provided with a transverse aperture, a pallet constituting the bottom of said mold box and carried by said swinging frame, spaced members constituting the ends of said mold box, one of said end members having a transverse aperture, a core disposed longitudinally within said mold

box with one end extending through the aperture in one of said end members and the other end detachably supported from the other end member, a branch core extending through the aperture in said movable side member and with the inner end formed to bear upon the longitudinal core, and means for operating said swinging frame and the mold box side member carried thereby.

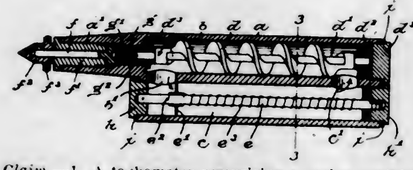
5. In a device of the class described, a stationary supporting frame having vertical guide ways and inclined guide ways, a member constituting one side of a mold box and carried by said stationary frame, a pallet carried by said frame and constituting the bottom of said mold box and provided with an intermediate aperture, a swinging frame carried by said stationary frame, a member constituting the opposite side of said mold box and carried by the swinging frame, spaced members constituting the ends of said mold box, an arm swinging at one end from said stationary frame, a bar swinging at one end from the free end of said swinging arm and with the other end slotted and engaging a pin extending through the inclined guide ways of said stationary frame, an operating lever pivoted at one end to said swinging frame and engaging the pin operating in said slotted and inclined guide ways, a longitudinal core adapted to be disposed within said mold box, a branch core operative through the aperture in said pallet and with one end adapted to engage said longitudinal core, and provided with guide devices engaging the vertical guide ways of said stationary frame, links swinging respectively from the free end of said core guide devices and the free end of said swinging arm, a rod movably connected to the free ends of said links, and a fulcrum link connected at one end to said rod intermediate its ends and at the other end to said stationary frame, whereby when said operating arm is actuated the swinging frame together with the mold box side member carried thereby and the movable core member will be simultaneously operated.

857,978. MANUFACTURE OF ANTIMONY COLORS. LÉON BRUNET, Brioude, France. Filed Aug. 22, 1905. Serial No. 275,297.

Claim.—1. The process of manufacturing antimony coloring matters which consists in the precipitation of solution of sulfo-antimoniate, by the action of sulfurous acid.

2. The process of manufacturing antimony coloring matters which consists in the precipitation of a solution of sulfo-antimoniate of the alkaline earth bases, by the action of sulfurous acid.

857,979. TACHOMETER. WILLIAM LE ROY BRYANT, Springfield, Vt. Filed Oct. 4, 1906. Serial No. 337,468.



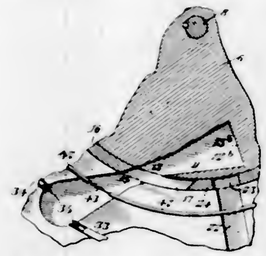
Claim.—1. A tachometer comprising a casing containing parallel chambers, connected at their ends by ports, and adapted to receive a fluid, a rotary screw in one of said chambers adapted to be rotated by the element whose speed is to be measured to effect a circulation of fluid through said chambers, a spring pressed piston in the other chamber, and means by which the position of the piston may be indicated.

2. A tachometer comprising a casing containing parallel cylindrical chambers connected at their ends by open ports, a screw fitting in one of said chambers and adapted to be rotated by the element whose speed is to be measured to effect the circulation of the fluid through said chamber and ports, a guide rod in the other of said chambers, a piston adapted to slide on said rod and being of less diameter than the chamber to permit the fluid to escape past it, a spring bearing against said piston, and means by which the position of the piston may be observed.

3. A tachometer comprising a casing containing parallel cylindrical chambers connected at their ends by open ports, a screw fitting in one of said chambers and adapted to be rotated by the element whose speed is to be measured to effect the circulation of the fluid through said chambers and ports, and a spring pressed piston in the other of said chambers adapted to be moved against the pressure of the spring by the pressure of the fluid, and less in diameter than the chamber to permit the fluid to flow past it, there being in the last-mentioned chamber a glazed slot to permit observation of the position of the piston.

4. A tachometer comprising a casing containing parallel chambers, connected at their ends by ports, and adapted to receive a fluid, a rotary screw in one of said chambers adapted to be rotated by the element whose speed is to be measured to effect a circulation of fluid through said chambers, a spring pressed piston in the other chamber, means by which the position of the piston may be indicated, a shaft for transmitting power to the screw alined therewith, a bearing for said screw, and a spring pressed thimble adjacent said bearing, substantially as described, to prevent the escape of the fluid.

857,980. AUTOMOBILE AND CAR MOTOR. MAX CAZIN, Cavite, Philippine Islands. Filed Jan. 7, 1899. Serial No. 701,535.



Claim.—1. In a rotary motor, the combination with a casing member having a piston chamber and an explosion chamber, the latter being provided with a mouth that communicates with the piston chamber, of means for introducing and exploding motive fluid charges in the explosion chamber, and a movable piston in the piston chamber having an expansion chamber provided with a contracted mouth that moves into and out of alinement with the explosion chamber on the movement of the piston.

2. In a rotary motor, the combination with relatively rotatable members, one of which has an explosion chamber provided with a contracted mouth that opens against the other, said other having an expansion chamber provided with a contracted mouth that alines with the mouth of the explosion chamber, of means for introducing a motive fluid charge into the explosion chamber, and means also located in said explosion chamber for exploding such charge.

3. In a rotary motor, the combination with a casing member having a piston chamber and an explosion chamber, the latter being provided with a mouth that communicates with the piston chamber, of means for introducing and exploding motive charges in the explosion chamber, and a rotary piston located in the piston chamber and having a plurality of expansion chambers provided with contracted mouths that successively move into and out of alinement with the explosion chamber on the rotation of the piston.

4. In a rotary motor, the combination with a casing member having a plurality of explosion chambers provided with mouths, of a rotary piston member having an expansion chamber provided with a contracted mouth that moves successively into alinement with the mouths of the explosion chambers, and means for delivering motive fluid charges into the explosion chambers and exploding such charges.

5. In a rotary motor, the combination with relatively rotatable members, one of which is provided with a plurality of spaced explosion chambers having mouths opening against the other member, said other member being provided with a plurality of spaced expansion chambers having contracted mouths arranged to aline successively with the mouths of the explosion chambers during the relative movement of the members, means for feeding motive charges to the explosion chambers, and means for exploding said charges.

6. The combination with a rotary motor comprising relatively rotatable members, one of which is provided with a plurality of spaced explosion chambers having contracted discharge mouths opening against the other member, said other member being provided with a plurality of spaced expansion chambers having contracted mouths arranged to aline successively with the mouths of the explosion chambers during the relative movement of the members, means for feeding air and fuel under pressure to the explosion chambers, and means for igniting the charges in said explosion chambers.

7. The combination with a rotary motor comprising a stationary case having a plurality of spaced explosion chambers provided with contracted discharge mouths, of a reservoir for containing air under pressure, a pipe leading from said reservoir and having branches communicating with the explosion chambers, a reservoir for containing fuel under pressure, a pipe leading from said fuel reservoir and having branches communicating with the explosion chambers, igniting means located in said explosion chambers, and a rotary piston journaled within the case and having an annular series of expansion chambers provided with contracted mouths that successively aline with the mouths of the explosion chambers during the revolution of the piston.

8. In an explosive motor, the combination with a rotary piston and support therefor, of narrow-necked substantially pear shaped chambers or cavities inclosed therein or attached thereto, which chambers in the support serve as explosion-chambers, and the piston as expansion-chambers, and which two classes of chambers connected one to the other with their neck-openings, when the wheel is revolving, have their resistance forces mainly in parallel planes, such faces of the expansion chamber or chambers being also mainly in a radial plane of the piston, substantially as set forth.

9. In a rotary motor, the combination with a casing having a piston chamber, of a rotary piston journaled therein, said casing having an explosion chamber and an exhaust passageway, that extends in the casing about the piston chamber, and means extending longitudinally in the exhaust passageway and communicating with the explosion chamber for introducing explosive charges to the latter.

10. In a rotary motor, the combination with a casing having a plurality of explosion chambers and an exhaust channel that extends in the casing past a plurality of the explosion chambers, of a piston, charge-feeding means including conduits extending through the said exhaust channel and having branches connecting with the explosion chambers, and ignition means located in said chambers.

11. In a rotary motor, the combination with a casing having a plurality of spaced explosion chambers and an exhaust channel extending through the casing past the exhaust chambers and having branches located between said explosion chambers, of a rotary piston having expansion chambers that communicate with the explosion chambers and exhaust branches, charge-conducting conduits extending through the exhaust channel and having branches that extend into the branches thereof, said conduit branches communicating with the explosion chambers, and means for igniting the charges in the explosion chambers.

12. In a rotary impulse motor, the combination with a revolnble main part, which contains expansion chambers, of a stable main part, which contains explosion chambers and exhaust passages and a ring, which ring is provided with apertures that serve two different functions, namely, of connecting explosion and expansion chambers with one another, and of connecting expansion chambers with exhaust-channels, the apertures, that connect the two classes of chambers with one another, being longer in a circumferential direction than the mouths of the expansion chambers, whereby, when the wheel is revolving, the communication between the explosion and expansion chambers is prolonged.

13. In a rotary impulse motor, the combination with a rotatable main part, which part contains expansion chambers, of a stable main part, which latter part contains explosion chambers, exhaust channels, feeding channels that lead to the explosion chambers, and conduits for wires conveying electrical current, and a ring, which ring is provided with apertures of two distinct classes and functions, one serving and being in register to connect explosion and expansion chambers with one another, and the other serving and being in register to connect the expansion chambers with the exhaust channels, the apertures, that connect the two classes of chambers with one another, being longer in a circumferential direction than the mouths of the expansion chambers in the revoluble part, whereby when the latter is revolving, the intercommunication between explosion and expansion chambers is prolonged.

14. In an impulse explosive rotary motor, the combination with a main rotatable part that contains expansion chambers, of a main stable part which contains explosion chambers, the outletting mouths of which are longer in a circumferential direction than the in and outletting mouths of the expansion chambers, whereby when the rotatable part is revolving, the communication between the explosion and the expansion chambers is prolonged.

15. In a motor, the combination with a stationary member, having explosion chambers provided with circumferentially prolonged ejecting mouths, of a rotary member having expansion chambers provided with receiving mouths that register with the ejecting mouths and are of less size than the same.

16. In a motor, the combination with a case having an annular exhaust passage provided with spaced inwardly extending branches, said case being furthermore provided between the branches with explosion chambers, means for feeding charges to and igniting the same in said explosion chambers, a rotary member journaled within the case and having expansion chambers successively alining with the explosion chambers and with the branches of the exhaust passage.

17. In a rotary motor, the combination with a casing having an explosion chamber and an exhaust port, of a web separating the same, and a rotary piston having an expansion chamber provided with a mouth, the width of which is greater than the web and permits communication between the explosion chamber and the exhaust port.

18. In a rotary motor, the combination with a casing, having a circular piston chamber, a plurality of explosion chambers communicating therewith, and a plurality of exhaust branches also communicating with the piston chamber, of a piston journaled in the chamber and having a plurality of expansion chambers provided with contracted mouths, and a ring interposed between the piston and casing, said ring being provided with inlet and exhaust ports separated by webs narrower than the mouths of the expansion chambers.

19. In a motor, the combination with a stationary member having a set of explosion chambers provided with mouths, of a rotary member having expansion chambers provided with mouths that register with the mouths of the explosion chambers, the mouths of one set of said chambers being of less size than those of the other set.

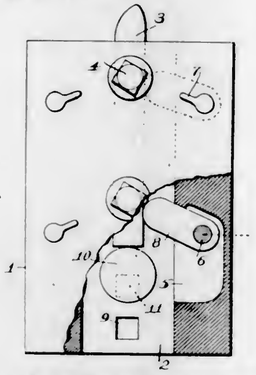
20. In a motor, the combination with a casing having a piston chamber and a plurality of spaced explosion chambers, said explosion chambers being provided with mouths communicating with the piston chamber, and said casing furthermore having an exhaust channel extending therethrough around the piston chamber and having branches communicating with the piston chamber between the explosion chambers, of a rotary piston having expansion chambers co-operating with the mouths of the explo-

sion chambers and with the branches of the exhaust channel.

21. In a rotary motor, the combination with a casing member, of a rotary piston member located therein, one of said members having an explosion chamber disposed at an inclination to the periphery of the piston member and opening at the same, separate reservoirs for air and fuel under pressure, independent conductors for separately conveying air and fuel to the chamber and discharging the same thereinto against each other, in opposite directions, and means located in the chamber for exploding the charge therein.

22. In a rotary motor, the combination with a casing member, of a rotary piston member located therein, one of said members having an explosion chamber disposed at an inclination to the periphery of the piston member and opening at the same, separate reservoirs for air and fuel under pressure, independent conductors for separately conveying the air and fuel to the rear portion of the chamber and discharging the same in opposing directions and in intersecting paths, and ignition means located between the said introducing means and the open end of the chamber.

857,981. TOOL-HOLDER FOR MACHINE-TOOLS. WALTER L. CLARK, New York, N. Y. Filed Jan. 18, 1907. Serial No. 352,871.



Claim.—1. A tool holder having a tool-receiving surface, means for clamping a tool to said surface, and a pivoted block supported by the tool holder in position to engage the side of the tool and adapted to be turned to inactive position away from the side of the tool, combined substantially as set forth.

2. A tool holder having a tool-receiving recess provided with a pocket in its side wall, means for clamping a tool to the floor of the recess, and a block pivoted within said pocket in position to engage the side of the tool and adapted to be turned back into the pocket away from the tool, combined substantially as set forth.

3. A tool holder having a tool-receiving recess provided with a pocket in one of its side walls, means for clamping a tool to the floor of the recess, a spindle journaled in the tool holder crossing said pocket, a handle on the spindle, and a pivoted block disposed in the pocket and fast with the spindle and adapted to project into the recess and engage the side of the tool or to be turned back into the pocket away from the side of the tool, combined substantially as set forth.

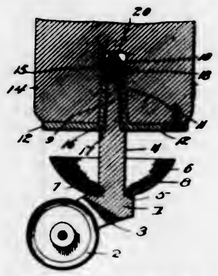
4. A tool holder having a tool-receiving recess provided with a pocket in one of its side walls, means for clamping a tool to the floor of said recess, a block pivoted in said pocket in position to engage the side of the tool and adapted to be turned back into the pocket away from the side of the tool, and a stop carried by an end wall of said pocket to be engaged by the block when in outward active position, combined substantially as set forth.

5. A tool holder having a tool-receiving surface, means for clamping a tool to said surface, and an angularly adjustable cam carried by said surface and adapted to engage the heel of the tool, combined substantially as set forth.

6. A tool holder having a tool-receiving surface provided with a non-circular mortise at the rear of the tool, means for clamping a tool to said surface, a cam adapted to engage the heel of the tool, and a non-circular stud projecting from the base of the cam and fitting the mortise, combined substantially as set forth.

7. A tool holder having a tool-receiving surface provided with a plurality of non-circular mortises at the rear of the tool, means for clamping a tool to said surface, a cam adapted to engage the heel of the tool, and a non-circular stud projecting from the base of the cam and selectively fitting the mortises, combined substantially as set forth.

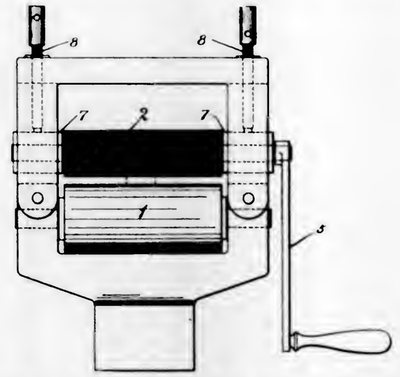
857,982. FURNITURE-CASTER. JOHN M. COLLINS, Rockmart, Ga. Filed Apr. 28, 1906. Serial No. 314,561.



Claim.—1. A device of the character described, comprising a body having a stem formed with the reduced upper portion 9 and the annular shoulder 17, the upper end of said reduced portion 9 being formed with a seat, a roller journaled upon the lower end of said body, a cup upon said body and surrounding said stem, a bearing sleeve to receive the reduced portion 9 of the stem and having its closed upper end formed with the centrally arranged aperture 19 and with the interior bearing surface 15 for the upper end of said reduced portion 9 of the stem, the annular aperture attaching flange 12 formed integral with the lower end of said bearing sleeve and forming a bearing surface for said shoulder 17 on the stem, and the soft metal rivet 18 projecting through the aperture 19 in the upper end of the bearing sleeve and having its lower end secured in the seat or recess formed in the reduced upper end 9 of the stem, the upper projecting end of said rivet being upset to retain the reduced portion 9 of the stem in said bearing sleeve and to prevent longitudinal movement of said portion of the stem in said bearing sleeve, substantially as shown and described.

2. A device of the character described, comprising a body having a bifurcated lower end, the concave seat 5 formed in its top and an integral stem projecting from the center of said seat and having the upper reduced portion 9 forming the annular shoulder 17, the upper end of the portion 9 being formed with a recess or seat, a roller journaled in the bifurcated end of said body, a semi-cylindrical cup 6 formed with a central aperture to receive said stem and adapted to fit said seat 5 and to be soldered therein, a bearing sleeve for the reduced portion 9 of the stem, said sleeve having at its bottom an annular apertured attaching flange adapted to provide a bearing for said shoulder 17 on the stem, said bearing sleeve having its upper closed end formed with the aperture 19 and with the interior bearing surface 15 for the upper end of the portion 9 of the stem, and the soft metal rivet 18 projecting through said aperture 19 and having its lower end secured in the seat or recess in the upper end of the portion 9 of the stem, the upper projecting end of said rivet being upset to retain the portion 9 of the stem in said bearing sleeve and to prevent longitudinal movement of the sleeve on the stem, substantially as shown and described.

857,983. PROCESS FOR BENDING CAST-IRON. BURTON S. COWLES, Plainville, Conn., assignor, by mesne assignments, to The National Engineering Co., New Haven, Conn., a Corporation. Filed July 25, 1905. Serial No. 271,155.



Claim.—1. The process of bending cast iron, consisting in supporting the iron upon a suitable fulcrum under pressure and applying downward pressure to one side of the iron at a plurality of points transverse to the line of movement of the iron and closely adjacent to the point of support, thereby expanding said surface without changing the length of the opposite side, substantially as described.

2. The process of bending cast iron, consisting in continuously passing the piece to be bent between two rolls, one of which is knurled, the metal having no other support, and successively applying pressure on one face thereof at separate points on a line parallel with the axis of said rolls and closely adjacent to line of support, thereby elongating said face without changing the finish or length of the opposite face.

3. The process of bending cold gray cast iron, consisting in supporting the piece to be bent upon a fulcrum and simultaneously applying downward pressure thereon at a plurality of points on two parallel lines adjacent to the fulcrum, thereby bending the piece and fixing said bend by swaging, or expanding, said side while maintaining the opposite side unchanged as to condition, finish and length.

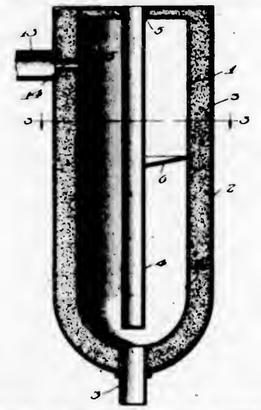
4. The process of bending cold gray cast iron, consisting in supporting the piece on a fulcrum and applying downward pressure on one face thereof at a plurality of points adjacent to said fulcrum, thereby bending said piece and fixing said bend, by elongating said face without changing the condition, finish or length of the opposite face, substantially as described.

857,984. STEAM-CALORIMETER. LEWIS M. ELLISON, Chicago, Ill., assignor to American Steam Gauge and Valve Manufacturing Company, Boston, Mass. Filed Mar. 30, 1905. Serial No. 252,883.

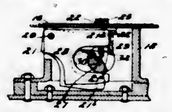
Claim.—1. In a calorimeter, the combination with a vessel or body, of a jacket surrounding the same, an entering pipe connected to said jacket and having a portion of smaller diameter located at and along the under side of said pipe and extending between said jacket and said vessel or body, and means to permit the insertion of a thermometer into said vessel or body.

2. In a calorimeter, the combination with a vessel or body, of a jacket surrounding the same, an entering pipe connected to said jacket and having a portion of smaller diameter having the walls thereof of substantially the same thickness extending between said jacket and said vessel or body, a pressure gage connected to said vessel or body by a swivel joint and extending at right angles to said entering pipe, and means to permit the insertion of a thermometer into said vessel or body.

3. In a calorimeter, the combination with a vessel or body, of a jacket surrounding the same, an entering pipe connected to said jacket and having a portion of smaller diameter extending between said jacket and said vessel or body, a deflector arranged within said vessel or body, a pressure gage connected to said body by a swivel joint and extending at right angles to said entering pipe, and means to permit the insertion of a thermometer into said vessel or body.



857,985. WATCHMAN'S TIME-DETECTOR. GEORGE B. FESSENDEN, Allston, Mass., assignor to Eco Magneto Clock Company, Boston, Mass., a Corporation of Maine. Filed Sept. 27, 1905. Serial No. 280,383.



Claim.—1. The combination with a watchman's time detector having a plurality of markers or recorders and a rotatable barrel having tumbler pins, of a plurality or set of keys, all of the keys being similarly irregular in cross section from end to end and having similar edge serrations to actuate said tumbler pins, and each key having an edge projection beyond the said serrations to actuate a marker or recorder, the projection of each key differing from that of all of the other keys of the set in distance from the serrations.

2. A watchman's time detector comprising in its construction a plurality of markers or recorders, each having two arms, a barrel extending through the space between the arms of the markers, means for normally locking said barrel against rotation, and means whereby the turning of the barrel in one direction will positively retract the markers.

3. A device of the character described comprising a plurality of pivoted markers or recorders, a barrel having an extension to engage said markers, means for normally locking said barrel against rotation, said extension being constructed to depress the markers.

4. A device of the character described comprising a plurality of pivoted markers, each having two arms, a barrel having an extension projecting through the space between the arms of the markers, means for normally locking said barrel against rotation, means carried by said extension for positively depressing the markers, and a stop for limiting the rotation of the barrel.

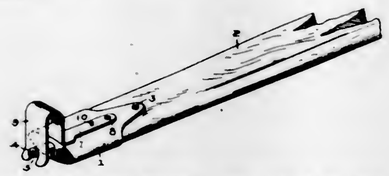
5. A device of the character described comprising in its construction a plurality of recessed pivoted markers, a lock barrel having a cylindrical portion and formed with an extension which is cut away, said extension being located in the recesses of the markers, a plate secured to the cut-

away portion of the lock barrel and projecting radially therefrom, said plate being adapted to engage one side of the recesses of the markers to depress them, and a stop to limit rotation of the barrel.

6. In a watchman's time detector, the combination with a barrel having an extension, of a plurality of pivoted recorders actuated by said extension, and a key adapted to fit said barrel and project beyond the same, said key having a serrated edge portion to engage tumblers in said barrel and having another edge portion provided with a recorder-actuating projection.

7. In a watchman's time detector, the combination with a plurality of markers or recorders, of a barrel having an extension to actuate said markers or recorders, said barrel having a slot for a key, and a key having one edge portion formed to actuate lock tumblers in said barrel and another edge portion to actuate one of the recorders.

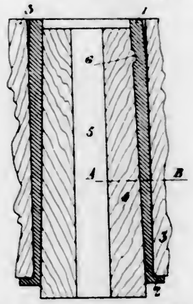
857,986. TRACE-FASTENER. SAMUEL B. FIELD, Scotch Plains, N. J. Filed Apr. 9, 1906. Serial No. 310,876.



Claim.—1. A trace fastener, comprising a socketed ferrule adapted to engage the end of a whiffletree and having an integrally formed pin on its closed end, a slotted flexible spring adapted to embrace the pin and secured to the ferrule and provided with a guide aperture, and a guide pin on the ferrule to engage the guide aperture in the spring to keep the slotted end of the latter and the pin in alinement.

2. A trace fastener, comprising a socketed ferrule adapted to engage the end of a whiffletree and provided with an integrally formed and longitudinally disposed pin, a flexible U-shaped spring provided with a slotted end to embrace the pin and provided with a guide aperture, means for securing said spring to the ferrule, and a pin in the ferrule to engage the guide aperture in the spring for directing the movement of the latter.

857,987. FASTENING DEVICE FOR RAILS. ARMAND FLAMACHE and JULES GERNAERT, Brussels, Belgium. Filed May 15, 1906. Serial No. 316,950.



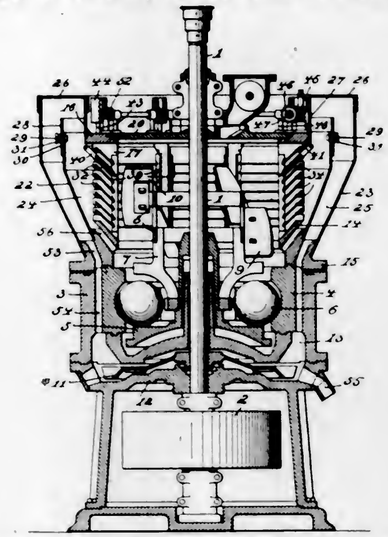
Claim.—1. In a fastening device for rails, a resilient socket or sleeve longitudinally slotted from end to end.

2. In a fastening device for rails, a screw-threaded socket or sleeve longitudinally slotted from end to end.

3. In a fastening device for rails, a sleeve or socket, longitudinally slotted from end to end, a screw-thread on the inner side of the sleeve or socket, and a flange at one of the ends of the sleeve or socket.

4. In a fastening device for rails, a sleeve or socket, longitudinally slotted from end to end, a screw-thread on the inside of the sleeve or socket, a screw-thread on the outside of the sleeve or socket, an expanded tapering top part on the sleeve or socket, and off-sets on the opposite end of the sleeve or socket.

857,988. AIR-SEPARATOR FOR PULVERIZING AND GRINDING MILLS. JAMES W. FULLER, Jr., Catasauqua, Pa. Filed July 28, 1906. Serial No. 328,232.

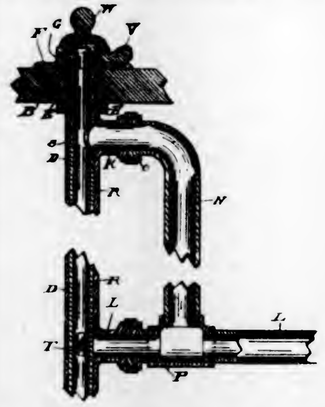


Claim.—1. In a pulverizing or grinding mill, a casing having outlets, a series of slats movably arranged in said outlets, bars connecting said slats with each other, levers connected with said bars, cross-bars for connecting the levers of two adjacent series of slats, rods carrying rack-bars connected with said cross-bars, a shaft consisting of a series of sections, each section having gear-wheels adapted to engage the rack-bars of said rods, said rack-bars adapted to couple two adjacent sections of said shaft and means for positively rotating one of said sections, said positively actuated section in conjunction with said rack-bars adapted to rotate the other sections of said shaft, substantially as and for the purposes described.

2. In a pulverizing or grinding mill, a casing having outlets, a series of slats movably arranged in said outlets, bars connecting said slats with each other, levers connected with said bars, cross-bars for connecting the levers of two adjacent series of slats, rods carrying rack-bars connected with said cross-bars, a shaft consisting of a series of sections, each section having gear-wheels adapted to engage the rack-bars of said rods, said rack-bars adapted to couple two adjacent sections of said shaft, and means for positively rotating one of said sections, said positively actuated section in conjunction with said rack-bars adapted to rotate the other section of said shaft, said rack-bars in conjunction with said rods, when actuated, adapted to raise and lower said cross-bars and said cross-bars arranged to actuate said levers and the connecting bars of said slats, to shift and hold the same in each given position, substantially as described.

857,989. BASIN-FIXTURE. GEORGE W. GANO, Cincinnati, Ohio. Filed Jan. 8, 1906. Serial No. 295,053.

Claim.—1. In a basin fixture of the character described, a stand pipe, said stand pipe connected to the wash stand, a barrel, said barrel adapted to partly turn in said stand pipe, a handle attached to the barrel at its upper extremity, a flange at the extremity of the stand pipe, a collar on said flange, a cap to secure over said collar, stops on said collar, a slot provided when said cap is screwed in place to allow the handle to move back and forth, said stops limiting the movement of the handle, said barrel provided with holes, lateral connecting pipes between said barrel and wash stand, the holes in the barrel meeting the mouths of the pipes, as said handle is turned forward and backward, one of said lateral connections being the overflow pipe and the other the waste water pipe and connecting parts, all combined and operating as set forth.



2. In a basin fixture of the character described, a stand pipe, a barrel, said barrel fitting said stand pipe, and adapted to be revolved thereon, holes provided in said barrel, lateral connecting pipes, the holes in the barrel meeting the mouths of said pipes as the barrel is turned in the stand pipe and connecting parts, in combination with a removable connection extending from the lateral waste pipe to the lateral overflow pipe, as and for the purposes set forth.

857,990. PICK-UP TABLE FOR MAIL-MATTER. GEORGE A. GASMAN and JOHN T. LYNCH, Chicago, Ill., assignors to Time Marking Machine Company, Chicago, Ill., a Corporation of the District of Columbia. Filed Jan. 3, 1905. Serial No. 239,490.

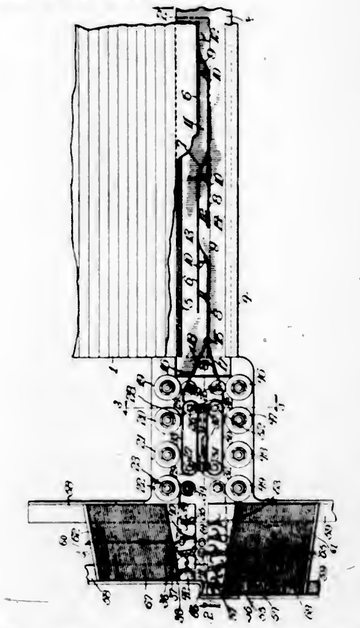
Claim.—1. In a device of the class described, the combination of a series of feed-pockets for receiving mail-pieces, said pockets being in communication with a chute or runway, means for conveying the mail-pieces to a common separator, a separator common to all of said pockets and a stacking mechanism.

2. In a device of the class described, the combination of a series of hoppers or feed-pockets arranged to communicate with a chute or runway, means common to both said hoppers and chute for conveying articles deposited in said hoppers to a common separator, a separator common to all of said pockets and mechanism for stacking said articles.

3. A stacking mechanism consisting of a series of revoluble winged deflectors varying in size or diameter with the larger deflector at or near the middle of the series, in combination with means for conveying thereto articles to be stacked.

4. The combination with a pick-up-table, a mail-chute and separating mechanism, of a stacking mechanism, consisting of a series of revoluble winged deflectors varying in size with the larger deflector at or near the middle of the series.

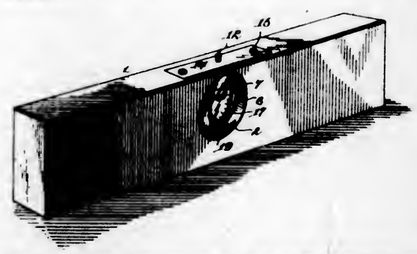
5. The combination with a pick-up-table, a mail-chute and separating mechanism, of a stacking mechanism consisting of revoluble deflectors having curved deflecting wings, the axes of said deflectors being placed in alinement while the wings of the different deflectors vary in length from short to long and from long to short in the successive order of their grouping.



6. The combination with a pick-up-table, a mail-chute and separating mechanism, of a stacking mechanism consisting of revoluble deflectors having curved deflecting wings, the axes of said deflectors being placed in alinement in a plane parallel to that of the letter path through the separator, the wings of the different deflectors being increased in length from the first to that at or near the middle of the group and thence decreased correspondingly to the end of the group whereby the mail pieces may be first deflected at a given angle from their path through the separator and finally stacked at a reverse angle thereto.

7. In a device of the class described, the combination with a separator of a series of revoluble deflectors having curved vanes of varying lengths, the length of said vanes being successively increased and then decreased in the order of their grouping, a stacking frame and a yielding mail-piece support arranged at an acute angle to the plane of the frame.

857,991. COMBINED LEVEL AND PLUMB. WILLIAM A. GIBSON, Enid, Okla. Filed Aug. 6, 1906. Serial No. 329,453.



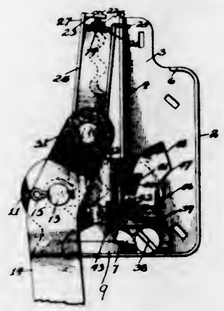
Claim.—1. An instrument of the class described comprising a body, a casing composed of separable sections having telescoping rims or flanges fitted together, a pivot

or spindle mounted between and extending through the sections of the casing, an exteriorly arranged indicator mounted on the pivot or spindle, and means for securing the casing within the body.

2. An instrument of the class described comprising a body, a casing composed of separable sections having telescoping rims fitted one within the other, a pivot or spindle extending across the space between and passing through the sections, hands or indicators mounted on the pivot or spindle, rims fitted against the opposite faces of the casing, and crystals covering the hands or indicators and mounted in the last mentioned rims.

3. An instrument of the class described comprising a body having a circular opening and provided with an interiorly arranged shoulder, indicating mechanism having a cylindrical casing fitted in said opening, crystals arranged at opposite sides of the indicating mechanism, one of the crystals being retained in place by the said shoulder, and a circular spring frictionally engaging the wall of the opening and the other crystal and retaining the casing and the crystals in the opening of the body.

857,992. CORK-EXTRACTOR. RAYMOND B. GILCHRIST, Chicago, Ill. Filed Oct. 16, 1901. Serial No. 78,773.



Claim.—1. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating said screw through the nut, a lock for said nut and means independent of the bottle operatively related to said screw reciprocating means whereby the nut shall be unlocked throughout a substantial part of each downward movement of the screw and locked during every alternate upward movement of the screw, substantially as set forth.

2. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating said screw through said nut, a lock for said nut and means independent of the bottle operatively related to said screw reciprocating means whereby the said lock shall be out of engagement with the nut throughout a substantial part of each downward movement of the screw and in engagement with the nut during every alternate upward movement of the screw, substantially as set forth.

3. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating said screw through said nut, a lock for the nut and means independent of the bottle operatively related to said screw reciprocating means whereby the said lock shall be out of engagement with the nut throughout a substantial part of each downward movement of the screw and alternately out of and in engagement with the nut during the upward movements of the screw, substantially as set forth.

4. In a cork extractor the combination with a suitable frame, a cork-screw reciprocating longitudinally therein and a reciprocable non-rotating nut, embracing the cork-screw, of an oscillating lever adapted at each oscillation in one direction to force the cork-screw downward and at each oscillation in the opposite direction to raise the cork-screw, a pawl adapted to engage the nut and when in such engagement to secure it in its lowest position and means independent of the bottle adapted to be actuated by the oscillating lever for actuating said pawl, whereby the pawl may be out of engagement with the nut throughout a substantial part of every movement of the handle in one direction and out of and in engagement with the nut alternately during the movements of the oscillating lever in the opposite direction, substantially as set forth.

5. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating the screw through the nut, a lock for said nut comprising a pivoted member having a recess or notch and a lug movable with the nut and adapted to be embraced by said notch, the lower edge of said notch being projected farther toward the line of movement of said lug than the upper edge thereof, substantially as set forth.

6. In a cork-extractor the combination of a nut, a cork-screw, and means for reciprocating said cork-screw through the nut, a lock for the nut comprising a pivoted member having two suitably spaced jaws or projections constituting a notch, and a lug movable with the nut and adapted to be embraced by the said notch when locked, the outer end of the upper edge of said notch being movable on an arc which falls substantially within the upper edge of the lug when the lower edge of the lug is at or opposite the lower edge of the notch, to prevent locking of the parts excepting when the lug is moving downwardly, substantially as set forth.

7. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating said screw through said nut, a lock for the nut comprising a pivoted member having a recess or notch and a lug movable with the nut and adapted to be embraced by said notch, the outer end of the operating edge of said notch being movable in an arc coinciding with the upper edge of the lug when the lower edge of the lug is at or opposite the lower edge of the notch and the lower edge of the notch being extended farther toward the line of movement of the lug than the upper edge of the notch, substantially as set forth.

8. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating the screw through the nut, a lock for the nut comprising a pivoted member having a recess or notch and a lug movable with the nut and adapted to be embraced by said notch, the lower edge of said notch being projected farther toward the line of movement of the lug than the upper edge and the outer side or mouth of the notch being contracted, substantially as set forth.

9. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating said screw through said nut, a lock for the nut comprising a lug on the nut and a pivoted member having a recessed side for receiving said lug, the lower edge of said recess being projected across the line of movement of the lug and adapted to be struck thereby as the nut descends, and to thereby pull the upper edge over the lug, substantially as set forth.

10. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating the screw through the nut, a lock for the nut comprising a lug on the nut and a pivoted member having a recessed side for receiving said lug, the lower edge of said recess being projected across the line of movement of the lug and adapted to be struck thereby as the nut descends and to thereby pull the upper edge of the recess over the lug and means operated by the screw actuating means for forcing said lower edge of the recess out of the line of movement of the lug when the screw approaches the limit of its upward movement, substantially as set forth.

11. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating the screw through the nut, a lock for said nut comprising a lug movable therewith and a pivoted member having a recessed side for receiving said lug, the lower edge of said recess being projected across the line of movement of the lug and adapted to be struck thereby as the nut descends and to thereby pull the upper edge of the recess over the lug, means operated by the screw actuating means for forcing said lower edge of the recess out of the line of movement of the lug when the screw approaches the limit of its upward movement, and means movable with the nut for re-setting said pivoted

member with the edge of its recess across the line of movement of the lug, substantially as set forth.

12. In a cork extractor the combination of a nut, a cork-screw, means for reciprocating the screw through the nut, a lock for the nut comprising a lug movable therewith and a pivoted member having a recessed side for receiving the lug, the edge of the recess being projected across the line of movement of the lug and adapted to be struck thereby as the nut descends for causing the recess to engage with the lug, and a cam movable with said lug and adapted to engage and deflect said pivoted member to a position with the edge of the recess across the line of movement of the lug, substantially as set forth.

13. In a cork-extractor the combination of a nut, a cork-screw, an operating lever for reciprocating the screw through the nut, a lock for the nut comprising a lug movable with the nut and a pivoted member adapted to engage and hold the lug and means on said lever for engaging said pivoted member and setting it in its unlocked or releasing position when the lever is in its initial position, and means operatively related to said screw reciprocating means for engaging and resetting said pivoted member in position to engage and hold the lug, substantially as set forth.

14. In a cork-extractor the combination of a nut, a cork-screw, an operating lever for reciprocating said screw through the nut, a lock for the nut comprising a lug movable with the nut and a pivoted member adapted to engage and hold the lug, and means on said lever for engaging said pivoted member and setting it in its unlocked or releasing position at the completion of every movement of the lever in one direction, and means operatively related to said screw reciprocating means for engaging and resetting said pivoted member in position to engage and hold the lug, substantially as set forth.

15. In a cork extractor the combination of a nut, a cork-screw, an operating lever for reciprocating said screw through the nut, a lug and a cam carried by said nut, a pivoted locking member having means for engaging said lug, said member being so positioned that the cam passes on one side and the lug on the other side thereof when the nut descends and said pivoted member having means for engaging and holding the lug, substantially as set forth.

16. In a cork extractor the combination of a nut, a cork-screw, a carrier for said screw, means for guiding said carrier and permitting of lateral oscillation thereof, an operating handle having a pivot member and a rigid connection between said pivot member and carrier, substantially as set forth.

17. In a cork extractor the combination of a nut, a cork-screw passing therethrough, a carrier for said screw movable with the screw and being oscillatory with reference to the screw and means for reciprocating and oscillating said carrier, substantially as set forth.

18. In a cork extractor the combination of a nut, a cork-screw, a carrier for said screw having flexible connection therewith, a guide for said carrier and with reference to which said carrier has transverse as well as longitudinal movement and means for reciprocating said carrier along said guide and limiting its said transverse movement, substantially as set forth.

19. In a cork extractor the combination of a nut, a cork-screw, an oscillatory and reciprocatory cork-screw carrier with which said screw has flexible connection, a guide for said carrier, an arm rigid with said carrier and an operating lever to which said arm is pivoted, substantially as set forth.

20. In a cork extractor the combination of a nut, a cork-screw, a cork-screw carrier, a recessed ball secured to said cork-screw and supported on said carrier, a bearing fixed with relation to said ball and engaging in the recess thereof, and means for reciprocating said carrier lengthwise of said screw, substantially as set forth.

21. In a cork extractor the combination of two frame members each formed with a part of the bottle socket, secured together so that said parts of the socket will constitute a whole socket, each of said members also having a straight flange and said flanges being projected in opposite directions from each other and constituting a track or guide-way when the frame members are secured together, a nut and a cork-screw carrier slidable on said guide-way and means for reciprocating said cork-screw carriers, substantially as set forth.

22. A cork-extractor comprising the combination of a base or frame provided with a cork-passage of considerably less length than the range of travel of the extracted-cork and having its upper end provided with a downwardly converging mouth, a cork-screw and a nut through which the same passes and means for reciprocating one upon the other to rotate the cork-screw, a guide for said nut, the extracted-cork being carried up through said cork-passage practically above the same and thence down again to be stripped from the cork-screw, said converging surface engaging the lower end of the extracted cork on its downward movement, substantially as and for the purpose set forth.

23. In a cork extractor the combination of a nut, a lock for said nut, a cork-screw, means for reciprocating said screw through said nut and means independent of the bottle, operatively related to said screw reciprocating means and also dependent for its operation upon the movement of the nut, whereby the nut shall be unlocked during all downward movements of the screw and locked during every alternate upward movement of the screw, substantially as set forth.

24. A cork-extractor comprising the combination of a base or frame provided with a cork-passage of considerably less length than the range of travel of the extracted-cork and having its upper end provided with a downwardly converging mouth, an exposed nut, an upwardly extending guide above said cork passage and upon which the said nut is slidingly mounted, a reciprocating cork-screw carrier provided with a cork-screw passing through said nut and means for reciprocating said carrier, the extracted-cork being carried up through said cork-passage practically above the same and thence down again to be stripped from the cork-screw, substantially as and for the purpose set forth.

25. A cork-extractor comprising the combination of a comparatively shallow frame provided with an upwardly extending exposed guide and having a cork-passage located wholly below the lower end of said guide, an exposed nut located above said frame and slidably mounted on said guide and a cork-screw passing through said nut for rotating said cork-screw, an exposed cork-screw carrier slidingly mounted on said guide above the nut, and an operating lever pivoted to the base of said frame and operatively connected with said cork-screw carrier above said frame, substantially as set forth.

26. A cork-extractor comprising the combination of a frame provided at its lower portion with an opening for the bottle head, an upwardly extending guide, an exposed nut slidingly mounted on said guide, a lever pivoted between its ends to the base of the frame, an exposed cork-screw carrier slidingly mounted at the upper end on said guide above the nut and pivoted at its lower end to the short arm of said lever, and a cork-screw swiveled at its upper end to the carrier and passing down through the nut, substantially as set forth.

27. A cork-extractor comprising the combination of a comparatively shallow frame provided with a cork-passage, an exposed guide mounted upon said frame and extending upwardly substantially parallel with the axis of the cork-passage and located to one side thereof and wholly above the same, an exposed nut located above said frame and a cork-screw passing through said nut, an exposed cork-screw carrier, the said nut and cork screw having a relatively reciprocating movement to rotate the cork-screw and the said reciprocating member being slidingly mounted upon said guide, and means for reciprocating it, substantially as set forth.

28. A cork-extractor comprising the combination of a comparatively shallow frame provided with a cork-passage, an exposed guide mounted upon said frame and extending upwardly substantially parallel with the axis of the cork-passage and located to one side thereof and wholly above the same, an exposed nut slidingly mounted on said guide above said frame and reciprocating on the axial line of

said cork-passage, a cork-screw passing through said nut and rotated thereby, an exposed cork-screw carrier slidingly mounted on said guide above the nut, and an operating-lever pivoted to the said frame and operatively connected with said cork-screw carrier, substantially as set forth.

29. A cork extractor comprising the combination of a nut, a cork-screw, a cork-screw carrier, said cork-screw having a bearing on said carrier and adapted to rotate and oscillate thereon, a guide for said carrier on which it has a reciprocating and oscillating movement, the said bearing between the carrier and guide being substantially in line with the bearing between the said cork-screw and carrier, and means for reciprocating said carrier, substantially as set forth.

30. A cork extractor comprising the combination of a comparatively shallow frame provided with a cork passage, a guide member having its guiding surface exposed and secured at one side of the cork passage and located wholly above the same and extending substantially parallel with the axis thereof, an exposed nut slidingly mounted at one side upon said guide member above said frame and reciprocating in line with the axis of the cork-passage, a cork-screw reciprocating through said nut, an exposed cork-screw carrier slidingly mounted upon said guide member above the nut, and means for reciprocating said cork-screw carrier, substantially as set forth.

31. A skeleton cork-extractor comprising the combination of a comparatively shallow frame provided with a cork-passage and having an attaching part or bracket secured thereto, a guide member having its guiding surface exposed and secured at one side of the cork-passage and located wholly above the same and extending substantially parallel with the axis thereof, an exposed nut slidingly mounted at one side upon said guide member above said frame and reciprocating in line with the axis of the cork passage, a cork-screw reciprocating through said nut, an exposed cork-screw carrier slidingly mounted upon said guide member above the nut, and means for reciprocating said cork-screw carrier, substantially as set forth.

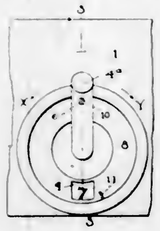
32. A skeleton cork-extractor comprising the combination of a comparatively shallow frame provided with a cork-passage, a bearing on said frame for the operating lever, a guide member having its guiding surface exposed and secured at one side of the cork-passage and located wholly above the same and extending substantially parallel with the axis thereof, an exposed nut slidingly mounted at one side upon said guide member above said frame and reciprocating in line with the axis of the cork-passage, a cork-screw reciprocating through said nut, an exposed cork-screw carrier slidingly mounted upon said guide member above the nut, an operating lever mounted on said bearing on the frame, and operatively connected with said cork-screw carrier, substantially as set forth.

33. A skeleton cork-extractor comprising the combination of a comparatively shallow frame provided with an attaching member for securing the frame to a fixed point and having a cork-passage, a suitable bearing on said frame for the operating lever, a guide member 4 secured to said frame to one side of the cork-passage and located wholly above the same and exposed upon all sides thereof and extending substantially parallel with the axis of the cork-passage, an exposed nut slidingly mounted upon said guide member above said frame and a cork-screw carrier also slidingly mounted upon said guide member, a cork-screw mounted on said carrier and reciprocating through said nut, and an operating lever mounted on said bearing on the frame and operatively connected with the said cork-screw carrier, substantially as set forth.

34. A cork-extractor comprising the combination of a comparatively shallow frame having an attaching bracket or plate 2 formed therewith, the said frame being provided with a cork-passage and a bearing 12 for the operating lever, a guide member 4 exposed upon all sides and secured to said frame and located wholly above said cork-passage, a cork-screw carrier 20 having a sliding and rocking bearing on said guide 4, and a cork-screw mounted on said carrier and adapted to be reciprocated through said cork-passage, a traveling nut slidingly mounted on said guide 4 above said frame and through which said cork-screw is reciprocated to rotate it, an operating lever 14 mounted on said bearing 12 of the frame and pivoted to said carrier, substantially as set forth.

35. A cork-extractor comprising the combination of a reciprocating carrier and means for reciprocating it, a cork-screw mounted on and reciprocated by said carrier, a nut through which said cork-screw reciprocates, a base or frame having a guide suitably secured thereto and having a cork-passage located below said guide, a suitable member provided with a slot through which said guide extends and the said member being a separate piece securely attached or riveted to said carrier and providing a sliding and rocking bearing between the carrier and said guide, substantially as set forth.

857,993. BALL-FEEDING MECHANISM. WILMER C. GILMORE, Bloomington, Ill., assignor to Universal Voting Machine Company, Bloomington, Ill., a Corporation of Maine. Filed Sept. 18, 1905. Serial No. 278,923.



Claim.—1. Ball-feeding mechanism comprising a ball reservoir, a tube, ball receptacles communicating with the ball reservoir, means for feeding balls successively downward through said tube; slides having holes registrable with the bore of said tube, and means for placing the holes in said slides in registry with the openings in ball-receptacles usable with said slides.

2. Ball-feeding mechanism comprising a ball reservoir, a tube communicating with the ball reservoir, means for feeding balls successively downward through said tube, slides having holes registrable with the bore of said tube, each of said holes being adapted to receive one ball, means for retracting balls from the holes in said slide, ball receptacles, and means for placing the holes in said slide in registry with the openings in ball receptacles usable with said slides.

3. Ball-feeding mechanism comprising a ball reservoir, a tube communicating with the ball reservoir, a wheel turning in an opening in said tube and having circumferential pockets each adapted to contain one ball, means for rotating said wheel step by step forward to feed downward the balls contained in said tube, a slide having holes registrable with the bore of said tube and each adapted to contain one ball, means for supporting balls in said tube, means for retracting balls from the holes in said slide and pushing them one at a time upward in said tube to turn said wheel backward, and an indicator in operative connection with said wheel and indicating the number of balls actually in the holes in said slide.

4. Ball-feeding mechanism comprising a ball reservoir, a tube communicating with the ball reservoir, a wheel turning in an opening in said tube and having circumferential pockets each adapted to contain one ball, means for turning said wheel step by step forward to feed downward the balls contained in said tube, a slide having holes registrable with the bore of said tube and each adapted to contain one ball, means for supporting balls in said tube, means for retracting balls from the holes in said slide and pushing them one at a time upward in said tube to turn said wheel backward, a movable indicator in operative connection with said wheel and means for limiting the movement of said indicator.

5. Ball-feeding mechanism comprising a ball reservoir, a tube communicating with a ball reservoir, a wheel having circumferential pockets and adapted to turn forward and backward in an opening in said tube, means for supporting balls in said tube, means for turning said wheel step by step forward, means for limiting the forward turning of said wheel, a slide having holes registrable with the bore of said tube, means for retracting balls from the holes in said slide and forcing the retracted balls upward in said tube to cause said wheel to turn one step backward for each retracted ball.

6. Ball-feeding mechanism comprising a shaft provided with a crank, a lifting-plate secured on said shaft, a ratchet wheel turning on said shaft and having an elongated hub, a dial plate turning in unison with said ratchet wheel, a feed wheel having ratchet teeth and pockets and turning on the hub of said ratchet wheel, a pawl mounted on said lifting-plate and engaging with the teeth on said feed wheel and ratchet wheel, means for disengaging said pawl from the teeth of said wheels, means for turning said lifting-plate to disengage said pawl, a pawl mounted on said ratchet wheel and engaging with the teeth of said feed wheel, a tube communicating with a ball-reservoir and having an opening in which said feed wheel turns and means for supporting balls in said tube; all coöperating to discharge balls one at time from said tube and indicate the number of balls so discharged.

7. Ball-feeding mechanism comprising an oscillative shaft, a lifting-plate secured on said shaft, a ratchet wheel turning on said shaft and having an elongated hub, a dial plate connected to turn with said ratchet wheel, means for limiting the turning of said dial plate, a feed-wheel having ratchet teeth and pockets and turning on the hub of said ratchet wheel, a pawl mounted on said lifting-plate and engaging with the teeth on said feed wheel and ratchet wheel, means for disengaging said pawl from the teeth of said wheels, means for turning said lifting plate to disengage said pawl, a pawl mounted on said ratchet wheel and engaging with the teeth of the feed wheel, a tube communicating with a ball reservoir and having an opening in which said feed wheel turns and means for supporting balls in said tube; all co-operating to discharge a predetermined number of balls one at a time from said tube and indicate the number of balls so discharged.

8. A retractor device for ball-feeding mechanisms, consisting of an oscillative plate provided with a finger, a tube adapted to conduct balls from a ball-reservoir, a retractor frame slidable on said tube and having a pin in line with the bore of said tube, and also having a finger with which the finger on said oscillative plate engages to raise said retractor frame, and means for returning said oscillative plate and retractor frame to their initial positions.

9. The combination of a ball reservoir, a conducting tube communicating with the ball reservoir, a retractor-frame slidable on said tube and having a pin in line with the bore of said tube and means for moving said retractor frame longitudinally to cause the pin thereof to move in line with the bore of said tube.

10. The combination of a ball reservoir, a conducting tube communicating with the ball reservoir, a retractor frame slidable on said tube and having a pin in line with the bore thereof, an oscillative plate connected to raise said retractive frame and a spring surrounding said tube and acting to move said frame downward.

11. The combination of a tube adapted to contain balls, a spring extending into said tube and normally supporting the balls contained therein, but yielding under pressure to permit the balls to pass said spring and means for forcing balls downward past said spring.

12. The combination of a tube adapted to contain balls, a yielding ball-support in said tube and means for forcing balls downward in said tube past said ball-support.

13. The combination of a tube adapted to contain balls, a yielding ball-support in said tube, means for forcing balls downward past said ball-support, and means for forcing balls upward past said ball-support.

14. The combination of tube adapted to contain balls, a yielding ball-support in said tube, a ball-receiving device having holes registrable with the bore of said tube and means for forcing balls downward in said tube past the ball-support and into the holes in said ball-receiving device.

15. The combination of a tube adapted to contain balls, a yielding ball-support in said tube, a ball-receiving device having holes registrable with the bore of said tube, means for forcing balls downward past the ball-support into the holes in said ball-receiving device, and means for forcing balls upward through the holes in the ball receiving device and past the ball-support.

16. The combination of an oscillative shaft, a dial plate turning on said shaft, a lifting plate secured on said shaft, a ratchet wheel turning on said shaft and having an elongated hub adapted to turn said dial plate, a feed wheel turning on the hub of said ratchet wheel and having ratchet teeth, a pawl mounted on said lifting plate and engaging with the teeth of said ratchet wheel and feed wheel to move said wheels forward during the forward movement of said lifting plate, means for disengaging said pawl during the return movement of said lifting plate, means to prevent accidental turning of said feed wheel, a ring secured on the hub of the ratchet-wheel and having a radial pin, a cog pinion turning on the hub of the ratchet wheel and having a laterally projecting pin engaging with the radial pin on said ring, and a slidable rack-bar meshing with said pinion, all coöperating to turn said dial plate forwardly in accord with said feed-wheel and reversely to turn said feed wheel backwardly in accord with said dial plate.

17. The combination of an oscillative shaft, a dial plate turning on said shaft, means for turning said dial plate forward in unison with said shaft, means for holding the dial plate at rest during the return movement of said shaft, means for turning the dial plate backward in unison with said shaft and means for turning the dial plate backward independently of said shaft.

18. A conducting tube adapted to contain balls, and a feed wheel having pockets and turning forward to propel balls in said tube and revoluble backward by the pressure of balls moving in said tube; in combination with a dial plate connected to turn forward and backward with said feed wheel.

19. The combination of a conducting tube communicating with a ball reservoir and adapted to contain balls, a feed wheel having pockets and turning forward to propel balls in said tube and revoluble backward by the pressure of balls moving in said tube and a ball receiver receiving the balls passing through said tube.

20. The combination of a conducting tube communicating with a ball reservoir and adapted to contain balls, a feed wheel having pockets and turning forward to propel balls in said tube and revoluble backward by the pressure of balls moving in said tube, a ball receiver communicating with said tube and a retractor adapted to force balls from the ball receiver into said tube.

21. The combination of a conducting tube communicating with a ball reservoir and adapted to contain balls, a feed wheel having pockets and turning forward to propel, balls in said tube and revoluble backward by the pressure of balls moving in said tube, a ball receiver communicating with said tube, a retractor adapted to force balls from the ball receiver into said tube and an indicator coöperating with said feed wheel to indicate the number of balls in said ball receiver.

22. The combination of a conducting tube communicating with a ball reservoir and adapted to contain balls, a feed wheel turning forward to propel balls in said tube, a ball receiver receiving balls from said tube, an indicator operatively connected with said feed-wheel and means for limiting the movement of said indicator to determine the number of balls which may be placed in said receiver.

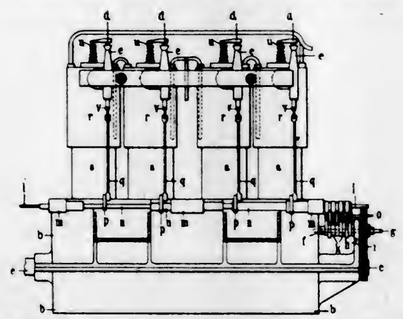
23. The combination of a ball reservoir, a ball receiver having chambers each adapted to contain one ball, a ball-propelling device adapted to propel balls from said ball reservoir, one at a time, into the chambers of said ball receiver, a retractor adapted to retract balls one at a time from the chambers of said ball receiver and an indicator operating forwardly through its connection with said ball

propelling device and operating backwardly through the intervention of a ball in the ball receiver causing reverse action of the ball-propelling device; all so constructed and arranged that the intervention of a ball from a ball receiver, between the retractor and the balls occupying the ball propelling device, is essential to the backward movement of the indicator.

24. The combination of a tube adapted to contain balls, means for feeding balls successively downward through the tube, ball-carriers having chambers registrable with the bore of the tube, ball-receptacles, and means for placing the chambers of the ball carriers in position to deposit balls in the ball-receptacles.

25. The combination of a conducting tube adapted to contain balls, a feed wheel having pockets and revoluble forward to propel balls in the tube and revoluble backward by the pressure of balls moving in the tube, and means for turning the feed wheel.

857,994. VALVE-OPERATING MECHANISM FOR INTERNAL-COMBUSTION ENGINES. GUSTAVUS GREEN, Bexhill-on-Sea, England, assignor of one-fourth to Francis Pelham Clinton Hope and one-fourth to Joseph Miller, Bexhill-on-Sea, England. Original application filed Sept. 15, 1905, Serial No. 278,596. Divided and this application filed July 9, 1906. Serial No. 325,384.



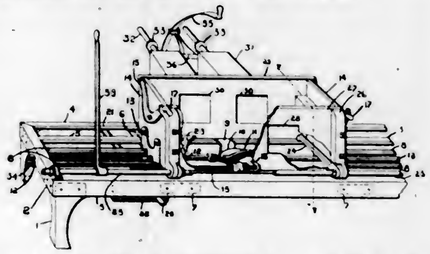
Claim.—1. In an internal combustion engine the combination of a short lay-shaft, means for driving the lay-shaft from the main-shaft of the engine, cams upon said lay-shaft, telescoping rotary shafts of different lengths each carrying at one end a tappet bearing on a cam, plungers adapted to operate the respective valves of the engine, means for guiding said plungers and connections between the plungers and the respective telescoping shafts.

2. In an internal combustion engine the combination of a short lay-shaft and cams upon said shaft, means for driving the shaft from the engine, two sets of telescoping shafts arranged one on either side of the engine, tappets each connected to one telescoping shaft and bearing on one of the cams, and connections between the respective telescoping shafts and the valves of the engine, whereby the latter are operated at the proper times.

3. In an internal combustion engine, the combination of a lay-shaft with cams thereon, tappets bearing on said cams, sets of telescoping shafts, one set at each side of the engine, each of said telescoping shafts carrying one of said tappets, means connecting the respective telescoping shafts with the respective valves of the engine, and rods extending through the respective sets of telescoping shafts, said rods adapted to be moved independently of said shafts.

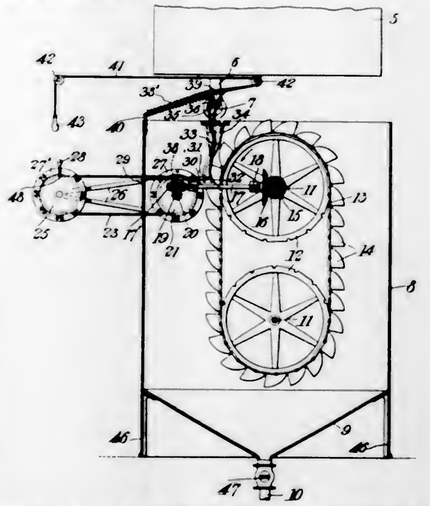
857,995. BLOCK-MACHINE. HENRY G. GRISIER, Stryker, Ohio. Filed July 7, 1906. Serial No. 325,081.

Claim.—1. A mold having block freeing mechanism comprising a fixed side wall, a core movable therethrough, simultaneously slidable end walls, recessed pivoted arms, a discharged-block-receiving side wall carried by the arms and a pivoted bottom wall having its movement relative to the side wall limited by engagement with the walls of the recessed arms whereby on tilting the side wall outward the bottom wall may move away from the block.



2. A block machine comprising a rock shaft, a mold having a wall fixed to the shaft, recessed arms carried by the shaft and a second wall loosely mounted on the shaft and having means engaging in the recessed arms to limit relative movement of the shaft carried walls, whereby in discharging the block from the machine upon the side wall the bottom wall may be freed from the block.

857,996. LIQUID WEIGHING OR MEASURING MACHINE. FRANK O. HAGUE, Hornell, N. Y., assignor of one-half to Frank J. Nelson, Hornell, N. Y. Filed Oct. 2, 1906. Serial No. 337,087.



Claim.—1. In a measuring machine, a storage-tank, a receiving tank, a valve for controlling the liquid in the storage-tank, a cut-off lever operatively connected with the valve, and a flexible endless conveyer actuated by the weight of the liquid for automatically tripping the cut-off lever thereby to close the valve.

2. In a measuring machine, a storage tank a receiving tank, a valve for controlling the liquid in the storage-tank, a cut-off lever operatively connected with the valve, a flexible endless conveyer mounted for rotation in the receiving tank and actuated by the weight of the liquid for automatically tripping the cut-off lever thereby to close the valve, and means for manually moving the valve to open position.

3. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the flow of liquid from the storage-tank to the receiving tank, a cut-off lever operatively connected with the valve, and a flexible endless conveyer arranged within the receiving-tank and actuated by the weight of the liquid for automatically tripping the cut-off lever thereby to close the valve.

4. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the flow of liquid in the storage-tank, a cut-off lever operatively connected with the valve, tripping mechanism for automatically moving the valve to closed position, a flexible endless conveyer disposed within the receiving tank for operating the tripping mechanism, and means for moving the valve to open position.

5. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the liquid in the storage-tank, a cut-off lever operatively connected with the valve, tripping mechanism for automatically closing the valve, an endless belt arranged within the receiving-tank and operated by the weight of the liquid for actuating the tripping mechanism, and means for manually opening the valve.

6. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the liquid in the storage-tank, a cut-off lever associated with the valve, tripping mechanism for automatically closing the valve, wheels mounted for rotation within the receiving tank, an endless belt engaging the wheels and provided with spaced buckets, said belt being operated by the weight of the liquid for actuating the tripping mechanism, and means for manually opening the valve.

7. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the flow of liquid in the storage-tank, a cut-off lever operatively connected with the valve, means for locking the valve in open position, wheels mounted for rotation within the receiving tank, and an endless belt engaging the wheels and provided with spaced buckets, said belts being actuated by the weight of the liquid for automatically releasing the locking means thereby to permit the valve to be moved to closed position.

8. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the liquid in the storage-tank, a cut-off lever operatively connected with the valve, a spring latch adapted to engage the cut-off lever for locking the valve in open position, a flexible endless conveyer operable by the weight of the liquid for releasing the locking means, and a spring connected to one end of the cut-off lever for automatically returning the valve to closed position when the locking means is released.

9. In a measuring machine, a storage-tank, a receiving tank, a valve for controlling the liquid in the storage-tank, a cut-off lever operatively connected with the valve, a spring latch adapted to engage the cut-off lever for locking the valve in open position, a disk having a lug secured thereto and adapted to engage the spring latch for automatically releasing the cut-off lever, and an endless carrier actuated by the weight of the liquid for rotating the disk.

10. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the liquid in the storage-tank, a cut-off lever operatively connected with the valve, a disk mounted for rotation within the receiving-tank, a spring latch spaced from one side of the disk and adapted to engage the cut-off lever for locking the valve in open position, a lug extending laterally from the disk and adapted to engage the latch for releasing the latter thereby to permit the valve to move to closed position, an endless carrier provided with a series of buckets and actuated by the weight of the liquid for rotating the disk, and a nozzle for directing the liquid from the storage-tank into said buckets.

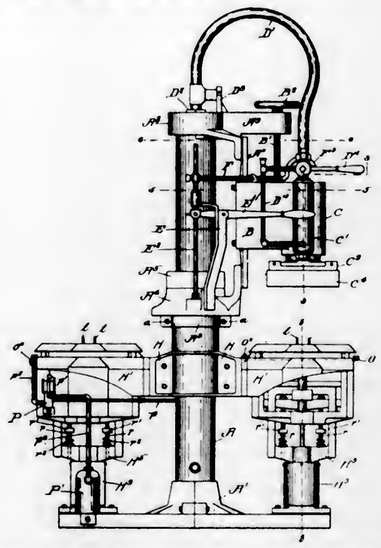
11. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the liquid in the storage-tank and provided with a laterally extending pin, a cut-off lever having its intermediate portion pivoted and one end thereof provided with an elongated slot for the reception of the pin, a spring latch adapted to engage the free end of the cut-off lever for locking the valve in open position, a disk mounted for rotation in the receiving-tank, a cam carried by the disk and adapted to engage the latch for releasing the latter from engagement with the cut-off lever, a spring for automatically closing the valve when the latch is released, and means operable by the weight of the liquid for rotating the disk.

12. In a measuring machine, a storage-tank, a receiving tank, a valve for controlling the flow of liquid in the storage-tank, a cut-off lever operatively connected with the valve, a locking member adapted to engage the adjacent end of the cut-off lever for locking the valve in open position, a pair of spaced revoluble disks one of which is provided with a laterally extending lug adapted to engage the locking member for automatically releasing the cut-off lever, a cable connecting said disks, and means actuated by the weight of the liquid for imparting movement to the lug carrying disk.

13. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the liquid in the storage-tank, a cut-off lever operatively connected with the valve, a locking member adapted to engage the adjacent end of the cut-off lever for locking the valve in open position, a shaft provided with a worm-wheel, a disk loosely mounted on the shaft, spaced sprocket-wheels mounted for rotation in the receiving-tank, an endless carrier engaging the sprocket-wheel and actuated by the weight of the liquid, a shaft operatively connected with one of the sprocket-wheels and provided with a worm meshing with the worm-wheel, a ratchet-wheel carried by the disk, and a pawl pivotally mounted on the worm-wheel and adapted to engage the teeth on the ratchet-wheel.

14. In a measuring machine, a storage-tank, a receiving-tank, a valve for controlling the liquid in the storage-tank, a cut-off lever operatively connected with the valve and actuated by the weight of the liquid for automatically tripping the cut-off valve thereby to close the valve, spaced revoluble disks provided with peripheral grooves, a belt connecting said disks and seated in the grooves, stationary collars surrounding the disks and provided with a series of graduations adapted to register with indices on the disks, and a handle secured to one of the disks for rotating the same thereby to impart movement to the opposite disk.

857,997. MOLDING-MACHINE. FREDERICK W. HALL, Camden, N. J., assignor of one-half to Howard M. Bougher and one-half to J. W. Paxson Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Apr. 24, 1906. Serial No. 313,399.



Claim.—1. In a molding machine of the character described, the combination of a hollow supporting column, a fixed sleeve thereon, a bracket rotatably mounted on said sleeve, ramming devices supported upon said rotatable bracket, and means to limit its radius of rotation, said

ramming devices comprising a plurality of cylinders and pistons, all said pistons acting simultaneously in the same direction and having one end connected to said ramming head and a main or throttle valve for controlling the admission and exhaust of a motor fluid to and from said column and cylinders.

2. In a molding machine, the combination of a hollow column or upright constituting a support and a reservoir for motor fluid, a sleeve fixedly mounted thereon, a bracket rotatably mounted on said fixed sleeve whereby it is adapted to swing about said column, ramming devices, comprising a main and auxiliary cylinders and pistons, mounted on said rotatable bracket, said pistons all acting in the same direction and each of said pistons being connected at one end to a single ramming head, means for directing and controlling the admission and exhaust of a motor fluid to and from the hollow upright column and said cylinders for actuating the ramming devices, a pair of oppositely disposed pattern-plate supports, means to support them from the upright column and means to limit the rotative movement of said rotatable bracket to bring the ramming devices into register with the pattern-plate supports alternately.

3. In a molding machine, the combination of a supporting column, ramming devices supported upon said column, said ramming devices comprising a main and auxiliary cylinders and pistons, a ramming head connected to said pistons, means for admitting a motor fluid above the respective pistons in said cylinders to cause them all to act during the ramming operation, and means for admitting a motor fluid below the pistons in the auxiliary cylinders to raise the ramming head after the ramming operation.

4. In a molding machine, the combination of a supporting column, ramming devices connected thereto, said ramming devices comprising a main and auxiliary cylinders and pistons, a ramming head connected to all of said pistons, a main or throttle valve for controlling the admission of a motor fluid above all of said pistons that they may all act simultaneously during the ramming operation, and for exhausting the fluid from above said pistons and admitting motor fluid below the auxiliary pistons to raise the ramming head after the ramming operation.

5. In a molding machine, the combination of a supporting column, ramming devices connected thereto and comprising a ramming head, a main ramming cylinder having an open lower end, a piston in said main cylinder and connected to the ramming head, auxiliary cylinders closed at their lower ends, pistons in said auxiliary cylinders, said pistons being also connected to the aforesaid ramming head, a single valve for admitting a motor fluid above all of said pistons to cause them to act in unison during the ramming operation, and means for admitting motor fluid below the pistons in the auxiliary cylinders to raise the ramming head after the ramming operation.

6. In a molding machine, the combination of a supporting column, ramming devices supported by and adapted to swing about said column, a lock for holding the ramming devices from swinging about the column during the ramming operation, and a safety device, operatively connected to the lock for preventing the operation of the ramming devices as they are being swung about said column.

7. In a molding machine, the combination of a supporting column, ramming devices adapted to swing about said column, a valve for controlling the operation of the ramming devices, means for operating the valve, a lock for holding the ramming devices from swinging during the ramming operation, and a safety device connected to said lock for maintaining the said means in inoperative position as the ramming devices are swung about the column.

8. In a molding machine, the combination of a supporting column, twin brackets projecting in opposite directions therefrom, a pattern plate support mounted upon each of said brackets, a movable flask frame superposed upon the pattern plate support, a stripping plate, a movable yoke carrying said stripping plate, posts or rods depending from the aforesaid flask frame and adapted to be engaged by the stripping plate to thereby raise the flask frame as the stripping plate is raised, means for raising and lowering said yoke and means for guiding said flask support in its movements.

9. In a molding machine, the combination of a column or support, a bracket mounted on said support, a stationary pattern-plate support mounted on said bracket, a flask support superposed upon said pattern-plate support, guide pins on said pattern-plate support, openings in said flask support for receiving said guide pins to thereby guide said flask-support in its upward movement, rods depending from the aforesaid flask-support, and a stripping plate, said stripping plate being adapted to engage said rods and through them raise the flask to withdraw the same from the molds.

10. In a molding machine, the combination of a supporting column, twin brackets projecting in opposite directions therefrom, a pattern plate support mounted upon each of said brackets, a flask frame superposed upon the pattern plate support, a stripping plate, a movable yoke carrying the stripping plate, posts connecting the flask frame and stripping plate, means for raising and lowering the yoke, and a single ramming device with means to bring it into register with either of said flask frames, said means consisting of a supporting bracket rotatably mounted intermediate the length of said column.

11. In a molding machine, the combination of a supporting column, twin brackets projecting in opposite directions therefrom, a pattern plate support mounted upon each of said brackets, a flask frame superposed upon the pattern plate support, a stripping plate, a movable yoke carrying the stripping plate, posts connecting the flask frame and stripping plate, means for raising and lowering the yoke, a single ramming device with means to bring it into register with either of said flask frames, said means consisting of a supporting bracket rotatably mounted intermediate the length of said column, and means for locking said ramming device in its adjusted position.

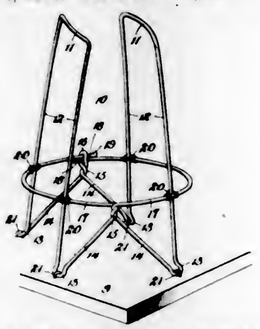
12. In a molding machine, the combination of a supporting column, a bracket mounted on said column, a stationary pattern-plate support mounted on said bracket, a flask support mounted on said pattern-plate support, a movable stripping plate, suitable connections between said flask support and said stripping plate, whereby the former is moved by means of the latter to raise said flask-support to thereby withdraw the flask from the molds.

13. In a molding machine, the combination of a supporting column, ramming devices adjustably and rotatably mounted thereon, twin brackets projecting in opposite directions from said column, a pattern plate support mounted on said brackets, flask pins secured to and projecting upward from the pattern plate support, a flask frame superposed upon the pattern plate support and having openings through which the flask pins project, said openings being provided with bushings, and means for raising the flask frame to strip the pins from the flask and said frame.

14. In a molding machine, the combination of a supporting column, ramming devices supported by and adapted to swing about said column, a lock for holding the ramming devices from swinging about the column during the ramming operation of the ramming devices as they are being swung about said column, twin brackets attached to said column, a stationary pattern plate support mounted upon each of said brackets, a flask frame superposed upon the pattern plate support, a stripping plate and a movable yoke carrying said stripping plate and connections between said stripping plate and flask frame for operating or raising the former by means of the latter.

15. In a molding machine, a supporting column, a bracket adapted to swing about said column, ramming devices supported by said column, a lock for holding the ramming devices from swinging about the column during the ramming operation, a safety device for preventing the operation of the ramming devices as they are being swung about said column, means for automatically operating said safety device upon the movement of the aforesaid lock, and an adjusting screw by which said ramming devices may be raised and lowered and securely held in such raised or lowered position.

857,998. HOLDER. MILLER H. HART, Marietta, Ohio. Filed Jan. 5, 1906. Serial No. 294,807.



Claim.—1. A holder of the class described composed of a single continuous wire, said wire having oppositely disposed upstanding yielding loops forming spring clip members and each having side arms provided with spaced lower ends, and spaced integral connections between the corresponding lower ends of the side arms of the loops.

2. In a holder of the class described, the combination with yielding clip members, of an expansible and contractible reinforcing ring connected thereto between the ends of said clip members, and supporting means for the rings located between the clip members and securing said ring against movement longitudinally of said members.

3. In a holder of the class described, the combination with yielding clip members, of an expansible and contractible ring associated therewith and having slidably overlapped ends.

4. In a holder of the class described, the combination with yielding clip members, of an expansible and contractible ring associated therewith and having slidably overlapped ends, and a keeper in which said overlapped ends slide.

5. In a holder of the class described, the combination with oppositely arranged spring clip members comprising upstanding yielding loops, of connections between the lower ends of the loops, an eye arranged between the loops at one side of the same, and an expansible and contractible reinforcing ring associated with the loops between their ends and having overlapped slidably associated terminals engaged in said eye.

6. In a holder of the class described, the combination with yielding clips, of braces between the clips, and a reinforcing ring mounted on the braces and associated with the clips.

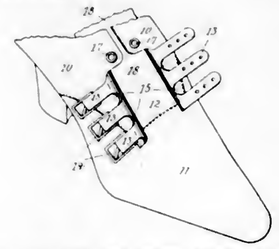
7. In a holder of the class described, the combination with yielding clips, of braces connecting the clips, one of the braces having an eye, and an expansible and contractible reinforcing ring mounted on the braces and connected to the clips, said ring having ends slidably located in the eye.

8. In a holder of the class described, the combination with spring clips comprising oppositely disposed yielding loops, of angularly disposed braces connected to the corresponding lower ends of the loops and forming connections between the same, one of said sets of braces having an eye, and a reinforcing ring extending from the other set, said ring surrounding the clips between their ends and having overlapped terminals slidably located in the eye.

857,999. SHOE. EDWARD HAYES, New York, N. Y. Filed Nov. 16, 1906. Serial No. 343,666.

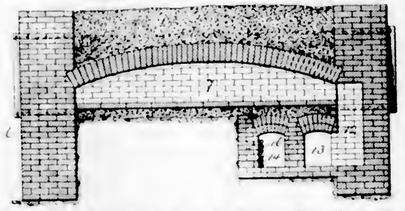
Claim.—1. A shoe having the lower portions of its quarters scalloped to provide a greater space between the quarters at the instep than at the upper portions of the quarters and also to provide a series of spaced overlapping straps to form an open work effect at the instep, means for adjustably connecting the straps together, and means independent of the straps to fasten the upper portions of the quarters together.

2. A shoe composed of a vamp and spaced quarters, the quarters being scalloped at their lower ends to provide oppositely disposed straps and spaces between the straps to give the shoe an open work effect at the instep, and means independent of the straps to fasten the quarters together above said scalloped portions.



3. A shoe composed of a vamp, a tongue connected to the vamp, and spaced quarters, the quarters being scalloped at their lower ends only to provide a greater space between the quarters at the instep of the shoe than at the upper portions of the quarters and also to provide oppositely disposed spaced straps to give the shoe an open work effect at the instep, means for connecting the straps together, and means for fastening the upper portions of the quarters together independently of said straps, the lowermost oppositely disposed straps covering the connection between said tongue and vamp.

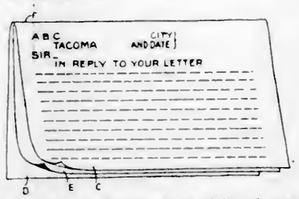
858,000. BAKER'S OVEN. CLARENCE W. HELLER, Galva, Ill. Filed Jan. 9, 1907. Serial No. 351,495.



Claim.—1. A bakers' oven having a fire place at one front corner of the baking chamber, down and up flues at the other front corner, and backwardly and forwardly extending flues under the baking chamber and communicating respectively with said flues.

2. A bakers' oven having a fire place in one corner of the front wall of the oven and down and up flues in the other front corner, and a brickwork structure extending partly under the baking chamber and having backwardly and forwardly extending flues therein communicating respectively with said up and down flues.

858,001. SEPARABLE DOUBLE LETTER-SHEET. MORTIMER A. HOWE, Tacoma, Wash. Filed Feb. 7, 1905. Serial No. 244,548.

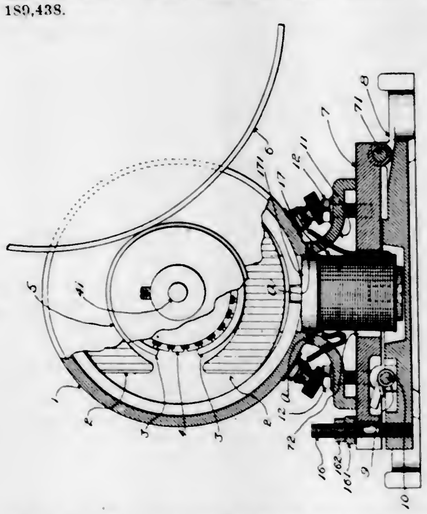


Claim.—1. As an improved article of manufacture, a letter sheet folded at its middle comprising two separable parts joined by a weakened line and one of said parts having printed on the outer face thereof a letter head and

having written on the outer face thereof a letter and having written on the inner face thereof a carbon copy of the reply to said letter and the other part having printed on the outer face thereof the name of the party sending the original letter and the commencement of a reply thereto and having written on the outer face thereof a reply to the original letter and having written on the inner face thereof a carbon copy of the original letter, substantially as described.

2. As an improved article of manufacture, a combination record, letter and reply set consisting of two parts, one of said parts being a single leaf, and the other part consisting of two separable leaves, folded together and joined by a weakened line and the two leaves so folded being interleaved with the single leaf, and the outer surface of the first leaf of the double part being printed with a letter head and having a blank space, and the inner surface of the second leaf of the double part having a blank space, and the outer surface of the second leaf of the double part being printed with the name and address of the person whose letter head is on the first leaf and being printed with a preamble to the reply to a letter, and having a blank space, and the inner surface of the first leaf of the double part having a blank space and the whole being interleaved with carbon sheets, substantially as described and for the uses and purposes as set forth.

858,002. SPEED-GOVERNOR FOR DYNAMOS. EDWARD B. JACOBSON, Pittsfield, Mass., assignor to Pittsfield Spark Coil Company, Pittsfield, Mass., a Corporation of Massachusetts. Filed Jan. 18, 1904. Serial No. 189,438.



Claim.—1. The combination with a movably-mounted dynamo, and driving devices controlled by the position of the dynamo to regulate the speed of the latter, of an electro-magnet acting to vary the position of the dynamo in accordance with variations in the intensity of the current generated thereby.

2. The combination with a dynamo, and a driving-train therefor comprising a friction-wheel connected therewith and a driver-wheel with which the periphery of the said friction-wheel makes driving-contact, of an electro-magnet deriving its energy from the current generated by the said dynamo, acting with a tendency to separate the elements of said train, and thereby regulating the speed of rotation of the dynamo.

3. In combination, a driver, a movably-mounted dynamo having a power-receiving or driven wheel connected therewith, and an electro-magnet acting to regulate the speed that is imparted to the dynamo, by varying the position of the dynamo in accordance with variations in the intensity of the current generated thereby.

4. In combination, a movably-mounted dynamo, an electro-magnet movable with the dynamo and deriving its energy from the current generated by the dynamo, a fixed magnet-armature, a rotating driver, and a driven-wheel connected with the dynamo and controlled as to its driving relations with the driver by the position of the dynamo.

5. In combination, a movably-mounted dynamo, a driver, a wheel connected with the said dynamo, means to hold the said wheel and driver yieldingly in engagement with each other, and an electro-magnet deriving its energy from the current generated by the dynamo and serving to control the position of the dynamo, whereby the speed of the dynamo is governed.

6. In combination, a dynamo having a stand, a movable carrier constituting with said stand one pole of an electro-magnet, a wound core applied to the stand and providing the other pole of the said electro-magnet, a relatively-fixed magnet-armature, a driver, and a wheel connected with the dynamo and controlled as to its driving relations with the driver by the position of the dynamo and carrier, whereby the speed of the dynamo is governed.

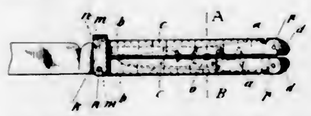
7. In combination, a dynamo, a carrier for the said dynamo having in connection therewith one pole of an electro-magnet, a wound core constituting the opposite pole of the electro-magnet, the said electro-magnet deriving its energy from the current generated by the dynamo, a base having in connection therewith an armature for the said electro-magnet, and having the said carrier pivotally connected therewith, a driver, and a driven-wheel connected with the dynamo and controlled as to its driving relations with the driver by the position of the dynamo and carrier, whereby the speed of the dynamo is controlled.

8. In combination, a dynamo, a stand for the said dynamo, a carrier with which said stand is connected, the said carrier constituting or having in connection therewith one pole of an electro-magnet, and having an opening therethrough, a wound core in magnetic connection with the said stand and projecting at one end through the opening in the carrier, a base with which said carrier is movably connected, the said base having in connection therewith a fixed magnet-armature, a driver, and a driven-wheel connected with the dynamo and controlled as to its driving relations with the driver by the position of the dynamo and carrier, whereby the speed of the dynamo is controlled.

9. The combination of a suitable support, an electric generator movably mounted upon said support and provided with a pulley by which it may be driven, means for yieldingly urging said generator upon the support in one direction, an electro-magnet deriving its energizing current from said generator, and means arranged within the range of said magnet for moving said generator in opposition to said yielding means.

10. The combination of a suitable support, an electric generator movably mounted thereon and provided with an element by which it may be driven, means for yieldingly urging the generator in one direction upon its support, an electro-magnet deriving its energizing current from the generator, and means affected by the electro-magnet for acting upon the generator in opposition to the aforesaid yielding means.

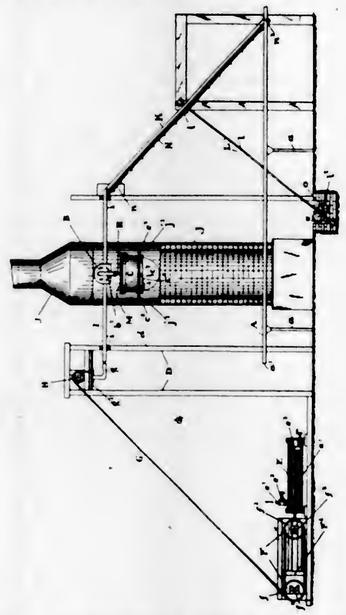
858,003. POCKET-TOOL SCISSORS. FRIEDRICH W. KLEVER, Solingen, Germany. Filed Aug. 9, 1906. Serial No. 329,853.



Claim.—In a pair of pocket scissors with two hollow handle parts folding over the blades, the combination of

pins at the end of each handle part, of tools provided with notches in their base ends adapted to fit behind said pins, and a collar hinged on one handle part adapted to fold over the other handle part and hold the said tools in position, substantially as described, and for the purpose specified.

858,004. CUPOLA-CHARGING MECHANISM. SHERWOOD S. KNIGHT, Birmingham, Ohio. Filed Jan. 28, 1905. Serial No. 243,068.

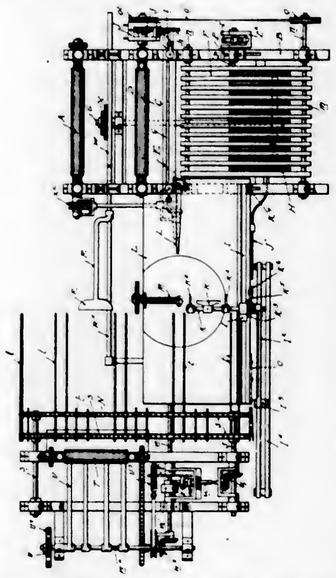


Claim.—1. In mechanism for charging cupolas, the combination of a cupola with opposite openings at the charging level, yard tracks, a conveyer, adapted to travel thereon, a charging bucket having a dumping bottom formed of swinging sections, means for latching said sections and allowing them to be released, means for elevating the conveyer and bucket, a track adapted to pass through the cupola openings, a track on the exit side of the conveyer adapted to return the conveyer and bucket to the yard track level, and means for retarding the travel of the conveyer along the return track.

2. In mechanism for charging cupolas, the combination of yard tracks, a conveyer adapted to travel thereon, a charging bucket with its bottom formed of two semicircular doors hinged to one shaft and held in horizontal position by spring catches attached to the bucket frame with means for disengaging said catches at will, means for elevating said conveyer and bucket, a cupola provided with opposite openings at the charging level, a removable track adapted to pass through said cupola openings; on the exit side of said cupola a track adapted to return conveyer and bucket to the yard track level and means for retarding the speed of said conveyer and attendant parts as they descend said return track, substantially as set forth.

3. The combination with a cupola and two tracks arranged at different levels one of said tracks passing through the cupola and the other track being a yard track, an inclined return track connecting with the other track, a conveyer adapted to travel on said tracks having a charging bucket adapted to deliver its load into the cupola, and means for retarding the travel of the conveyer and bucket along the inclined return track.

858,005. BAG-MACHINE. JAMES L. LOWE, Detroit, Mich. Filed May 26, 1904. Serial No. 209,963.



Claim.—1. In a bag machine, means for folding the blank, stitching means, and means for feeding the folded blank to said stitching means, including a finger and a clamping member engaging respectively between and over said folded blank.

2. In a bag machine, means for folding the blank, stitching means, and means for feeding the folded blank to said stitching means including a finger engaging between the folds, and a pivoted clamping member engaging the outer surface of one of the folds.

3. In a bag machine, the combination with means for feeding a strip of material, a cutter for severing a blank therefrom, and means for folding the outer end of the blank over the inner portion thereof, simultaneously with the severing operation, the outer edge of the folded portion of the blank contacting with the cutter, whereby it will be brought in alinement with the inner edge.

4. In a bag machine, the combination with means for intermittently feeding a strip of material, a cutter for severing a blank therefrom, stitching mechanism, and means for folding the outer end of the blank upon the inner portion, the cutter acting as an abutment for the respective edges, and means for feeding the same to said stitching mechanism.

5. In a bag machine, the combination with a feeding mechanism for a strip of material, of folding and stitching mechanism arranged in the plane of feed, and a severing cutter intermediate the strip feeding and folding mechanisms, the folding means alining the severed edges in contact with said cutter, whereby the same will be brought in approximate alinement with said stitching mechanism.

6. In a bag machine, the combination with feeding mechanism for a strip of material, a severing cutter, means for feeding the severed blank transversely of said first mentioned feeding mechanism, and stitching mechanism to which said blank is fed, in approximate alinement with said cutter and arranged in the plane of feed of said strip, and folding mechanism operating in the same plane intermediate the severing cutter, and stitching mechanism to aline the severed edges of the blank with said cutter.

7. In a bag machine, the combination with means for severing blanks of different length from a strip of material,

of adjustable means for folding one half of said blank upon the other half thereof.

8. In a bag machine, the combination with feeding mechanism for a strip of material, and a cutter for severing blanks of different lengths therefrom, of an adjustable folder for turning the outer edge of said blank into the plane of severance.

9. In a bag machine, the combination with means for severing a blank from a strip of material, a slotted support on which said blank is fed, and a series of folding fingers arranged to swing upward through the slots in said support to fold one portion of said blank over another portion thereof during said severing operation.

10. In a bag machine, the combination with means for severing a blank from a strip of material, of a slotted support on which said blank is fed, and a series of folding fingers pivoted to swing upward through the slots in said support to turn one portion of said blank over another portion thereof, and means for adjusting the pivotal points to shift the line of folding.

11. In a bag machine, the combination with means for severing a blank from a strip of material, of a slotted carrier on which said blank is fed, and a series of folding fingers pivoted to swing upward through the slots in said carrier to fold one portion of said blank upon another portion thereof, and means for adjusting the point of folding.

12. In a bag machine, the combination with a feed roll for advancing a strip of material, a slotted endless carrier in advance of said feed roll, means for driving said roll and carrier at the same speed, a series of swinging folding fingers operating in the slots of said carrier, a cutter between said feed roll and carrier, and means operated by said cutter in its cutting stroke for simultaneously arresting movement of said roll and carrier.

13. In a bag machine, the combination with means for severing a blank from a strip of material, of means for folding said blank in the plane of feed, means for folding adjacent edges of the folded blank, stitching mechanism, a single means for transferring the folded blank to said stitching mechanism and for continuing the feeding thereof beyond the same.

14. In a bag machine, the combination with a stitching mechanism, of means for folding a blank, a carrier for feeding the folded blanks to said stitching mechanism, fingers on said carrier arranged to be inserted between plies of said folded blank, a holder associated with said carrier for engaging between plies adjacent to said fingers during the stitching and feeding of said folded blank.

15. In a bag machine, the combination with means for feeding a folded blank longitudinally thereof, of stitching mechanism for seaming the edges of said blank, a holder over which said blank is fed during the stitching thereof, and means for moving said holder transversely during the stitching of said blank.

16. In a bag machine, the combination with means for feeding a folded blank in two directions at right angles to each other, of a stitching machine arranged at the intersection of the two paths of feed of the blank, and means for turning said stitching machine simultaneously with the change of direction of feed.

17. In a bag machine, the combination with mechanism for successively severing, folding and stitching a blank, of a holder with which the bag is engaged during its final stitching operation, and means for removing the bag from said holder and simultaneously turning the same.

18. In a bag machine, the combination with a periodically operating severing cutter, of a feed roller for advancing a strip of material across the path of the cutter, operating means for said roller, a wedge on said cutter engaging an anti-friction bearing on said operating means for spacing the same from the roller during the movement of the cutter, and folding mechanism for the severed blank.

19. The combination with a periodically operated severing cutter, of a feed roller for advancing a strip of material across the path of said cutter, drive mechanism for said feed roller including a worm and gear, a bearing for one of said members having slidable engagement with the shaft of the feed roller, means operated by the cutter for engaging said bearing and spacing the drive members apart, and folding mechanism for the severed blank.

20. In a bag machine, means for folding the blank and stitching means, in combination with means for feeding the folded blank to said stitching means including oppositely disposed fingers and an intermediately arranged clamp, and means whereby said fingers will assume a position which will be between the folds of the blank when unfolded, and said means also operating to place the clamp over the folded blank.

21. In a bag machine, means for feeding and folding the blank, a stitching means for the folded blank, in combination with means for feeding the folded blank transversely of said first mentioned feed to said stitching means, including oppositely disposed fingers and a pivoted clamp, and means for operating said fingers before the blank folding means whereby said fingers assume a position which will be between the folds of the blank when folded, and for automatically swinging the clamping means into and out of engagement with the outer surface of one of the folds.

22. In a bag machine, the combination with means for feeding a strip of material, a cutter for severing a blank therefrom, and folding means alining the severed edges in contact with said cutter for the purpose described.

23. In a bag machine, the combination with means for feeding a strip of material, a cutter for severing a blank therefrom, folding means for the blank, stitching instrumentalities, and the said cutter constituting a guide for approximately alining the folded edges of the blank with said stitching instrumentalities.

24. In a bag machine, the combination with means for feeding a strip of material, a cutter for severing a blank therefrom, folding means alining the severed edges in contact with said cutter, and stitching instrumentalities arranged in approximate alinement with the edge of said cutter.

25. In a bag machine, the combination with a feeding mechanism for a strip of material, of means for arresting the end portion of said strip and severing a blank therefrom, and means for holding said end portion simultaneously with the severing thereof.

26. In a bag machine, the combination with a continuous feeding mechanism for a strip of material, of means for periodically arresting the end portion of said strip, and severing a blank therefrom, and means for folding the end of said strip simultaneously with said severing.

858,006. STOCKING. FRANK W. LUM, Springfield, Mass. Filed Feb. 23, 1906. Serial No. 302,578.

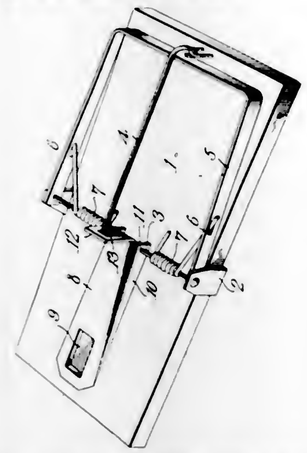


Claim.—1. A stocking including a leg member having heel and toe openings in the opposite sides of its lower end and forming a downwardly tapered foot-embracing strap between them, and spaced upwardly divergent elastic clamping elements secured to the marginal portions of the strap that surround the openings.

2. A stocking including a leg element having heel and toe openings in the opposite sides of its lower end, upwardly divergent elastic clamping elements surrounding the openings, and upwardly divergent bindings for the margins of the leg element about the openings, said bindings inclosing and constituting holding means for the elastic clamping elements.

3. A stocking comprising a foot member, and a separate leg member, said leg member having heel and toe-receiving openings in the opposite sides of its lower portion and, forming between them a foot-embracing strap that tapers toward its lower portion and is arranged to surround the foot member, spaced tubular bindings for the margins of the strap extending about the openings and disposed in upwardly divergent relation, and continuous spaced upwardly divergent elastic bands located in said tubular bindings and held in place on the leg member thereby.

858,007. TRAP. KNOX R. MARKS, Abingdon, Ill. Filed Sept. 26, 1906. Serial No. 336,319.



Claim.—1. A trap comprising a base, a stirrup passing under the base, and having its ends projecting above the upper surface thereof, a portion of said stirrup lying within a recess in the base, a pivoted bow mounted upon the stirrup, springs engaging said bow, a pivoted treadle mounted upon the base, and a pivoted trigger also mounted upon the base and adapted to engage said treadle.

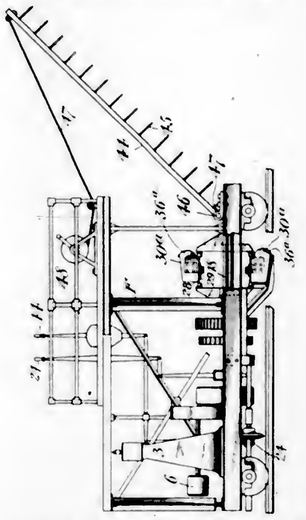
2. A trap comprising a base, a stirrup passing under the base and having its ends projecting above the upper surface thereof, the vertical portions of the stirrup being set in the edges of the base, a pivoted bow mounted upon the stirrup, springs engaging said bow, a pivoted treadle mounted upon the base, and a pivoted trigger also mounted upon the base and adapted to engage said treadle.

858,008. APPARATUS FOR RECLAIMING LOOSE MATERIALS. EDWIN H. MESSITER, New York, N. Y. Filed Apr. 8, 1905. Serial No. 254,483.

Claim.—1. In apparatus of the character specified, a gathering mechanism comprising a bed-plate, a flight conveyer having the leads superposed and having the flights extended beyond the forward margin of the bed-plate.

2. In apparatus of the character specified, the combination with a supporting carriage arranged to travel to and fro, of a gathering mechanism supported by said carriage and extending transversely of the line of movement of the carriage and comprising a bed plate and a series of flights arranged for travel over said bed plate and adapted to force material upward on the bed plate, said flights being extended beyond the forward margin of the bed plate.

3. In apparatus of the character specified, the combination with a traveling carriage, of a bed plate extending transversely of the line of travel of said carriage, and a gathering mechanism coöperating with the bed plate and including a series of flights which travel over the bed plate longitudinally thereof, said flights having their forward ends projecting beyond the front margin of the bed plate and being extended in the direction of their movement.



4. In apparatus of the character specified, the combination with a traveling carriage of a bed plate supported by said carriage and extending transversely of the direction of movement of the carriage, a plurality of curved flights arranged for travel over said bed plate longitudinally thereof, said flights having their forward ends bent in the direction of their movement in gathering material, and means for imparting gathering movement to said flights.

5. In apparatus of the character specified, the combination with a traveling carriage and a bed plate carried thereby and extending transversely of the line of travel of said carriage, of gathering mechanism coöperating with said bed plate and including a series of flights arranged for travel over said bed plate longitudinally thereof, and means for imparting movement to said flights, the flights having their forward ends extended beyond the forward edge of the bed plate and being curved in the direction of their movement over the bed plate.

6. In apparatus of the character specified, the combination with a traveling carriage and a bed plate extending transversely of the line of travel of the carriage, of gathering mechanism coöperating with said bed plate and comprising a series of flights arranged for travel longitudinally of the bed plate and having downwardly projecting portions beyond the front margin of the bed plate to maintain a clear space immediately in front of the bed plate.

7. In apparatus of the character specified, a material disturbing device comprising a forwardly inclined structure overhanging the material to be disturbed and means for imparting a lateral periodic movement to said structure.

8. In apparatus of the character specified, the combination with a traveling carriage and gathering mechanism carried thereby, said gathering mechanism being disposed transversely of the direction of travel of the carriage, and material-disturbing devices above said gathering mechanism for causing material to gravitate toward said gathering mechanism, said material-disturbing devices being extended over substantially the entire operative length of the gathering mechanism.

9. In apparatus of the character specified, the combination with a traveling carriage and gathering mechanism carried thereby, said gathering mechanism comprising a bed plate and an endless flight conveyer coöperating therewith, said gathering mechanism being disposed transversely of the line of travel of the carriage, of means

above the gathering mechanism for causing material to gravitate toward said bed plate throughout substantially its entire length.

10. In apparatus of the character specified, the combination with a traveling carriage and a gathering mechanism operating transversely of the line of travel of said carriage, of material-disturbing devices extending forward of said gathering mechanism to cause material to gravitate toward said gathering mechanism, said material-disturbing means comprising a frame and means for imparting a lateral periodic movement to said frame.

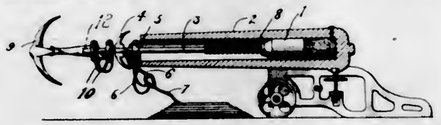
11. In apparatus of the character specified, the combination with a traveling carriage and gathering mechanism carried thereby and extending transversely of the line of travel of the carriage, of a toothed frame mounted above said gathering mechanism and extending at its base over substantially the entire operative length of said gathering mechanism, and means for agitating the said frame to cause material to gravitate toward said gathering mechanism.

12. In apparatus of the character specified, the combination with a traveling carriage, of gathering mechanism mounted on said carriage and disposed transversely of the line of travel thereof, and material-disturbing devices to cause material to gravitate toward said gathering mechanism, said material-disturbing devices comprising a forwardly inclined structure, means for adjusting the inclination of said structure, and means for imparting a lateral periodic movement to said structure.

13. In apparatus of the character specified, the combination with a traveling carriage, gathering mechanism mounted on said carriage and disposed transversely of its line of travel, and material-disturbing devices for causing material to gravitate toward said gathering mechanism, said material-disturbing devices comprising a toothed frame pivoted at its base on a horizontal axis above said gathering mechanism and means for varying the inclination of said frame.

14. In apparatus of the character specified, the combination with a traveling carriage and gathering mechanism carried thereby and disposed transversely of the line of travel of said carriage, of material-disturbing devices comprising a toothed frame pivoted at its base on a horizontal axis parallel to said gathering mechanism and susceptible of reciprocatory movement longitudinally of its pivotal axis, and means for imparting reciprocatory movement to said frame.

858,009. MEANS FOR PROJECTING AND ANCHORING LIFE-LINES. ALBERT MEYER and FRANK N. ROGERS, Seattle, Wash. Filed Nov. 24, 1906. Serial No. 344,955.



Claim.—1. A device of the type set forth consisting of a projectile, a weight, and a flexible connection securing said weight to the projectile, said weight being normally removably supported on the projectile and being held by said connection when it is removed from the projectile.

2. A device of the type set forth consisting of a projectile provided with a fixed support, a weight removably arranged on the support of said projectile, and flexible means secured to said weight and to said projectile, for the purpose specified.

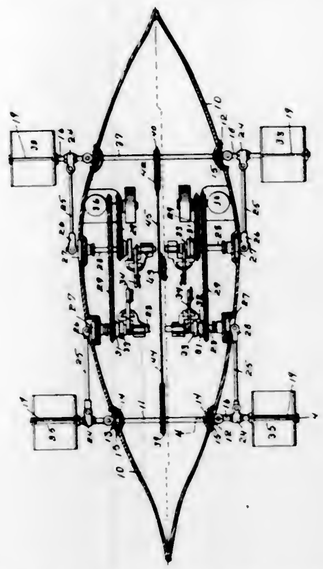
3. A device of the type set forth consisting of a projectile, a weight removably arranged on the forward end portion thereof, and means holding said weight to the projectile when the same falls from the forward end portion thereof.

4. A projectile consisting of a body portion, a forwardly projecting stem secured thereto, a weight removably supported on the free portion of said stem, a flexible connection between said weight and stem, and a life line connected to be carried by the projectile in its flight.

5. A projectile having a forward projecting stem, a weight having a seat in which the free portion of said stem is normally fitted, a flexible connection between said weight and the projectile, said connection being of sufficient length to permit of said weight being removed from said stem, and a life line connected to be carried by the projectile in its flight.

6. A device of the type set forth consisting of a projectile, prongs on the forward end portion thereof, a weight connected to the projectile by a flexible connection, said weight being normally removably supported on said projectile in advance of said prongs, and a life line connected to be carried by the projectile in its flight.

858,010. PROPELLER FOR BOATS. CHARLES A. MOLINE, Bancroft, Iowa. Filed June 2, 1906. Serial No. 320,202.



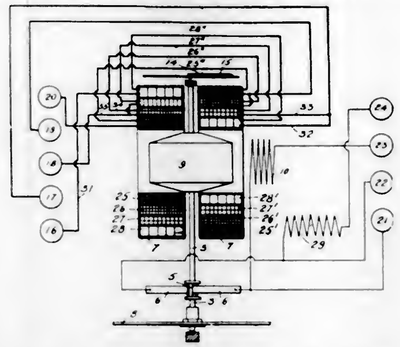
Claim.—1. In a device of the class described, a series of propellers, each comprising a propeller supporting shaft, propeller blades secured to said shaft and capable of opening and closing as the propeller shaft is swung forwardly and rearwardly, a buoyant support incasing the inner portion of the propeller blades for partially supporting them and the outer end of the propeller supporting shafts, and means for swinging the propeller shaft forwardly and rearwardly.

2. In a device of the class described, a series of propellers, each comprising a propeller supporting shaft, propeller blades secured to said shaft and capable of opening and closing as the propeller shaft is swung forwardly and rearwardly, a buoyant support incasing the inner portion of the propeller blades for partially supporting them and the outer end of the propeller supporting shafts, means for swinging the propeller shaft forwardly and rearwardly, and means for limiting the opening and closing movement of the propeller blades.

3. In a device of the class described, a series of propellers, each comprising a propeller supporting shaft, propeller blades secured to said shaft and capable of opening and closing as the propeller shaft is swung forwardly and rearwardly, a buoyant support incasing the inner portion of the propeller blades for partially supporting them and the outer end of the propeller supporting shafts, means for swinging the propeller shaft forwardly and rearwardly, and means for inverting the support for the propeller blades and the outer end of the propeller supporting shaft for reversing the operation of the blades.

4. In a device of the class described, a series of propellers, each comprising a pivotally mounted propeller supporting shaft, propeller blades secured to said shaft and capable of opening and closing after the propeller shaft is swung forwardly and rearwardly, a buoyant support for the propeller blades, means for swinging the propeller shaft forwardly and rearwardly, and means for turning the propeller shaft a partial turn for allowing it to swing downwardly.

858,011. METER. WILLIAM J. MOWBRAY, New York, N. Y. Filed Apr. 30, 1906. Serial No. 314,477.



Claim.—1. In a meter, a frame, a shaft rotatable in bearings carried by the frame, a commutator on said shaft, an armature mounted on said shaft and having its coils connected to the segments of the commutator, and a plurality of field coil sections mounted in inductive relation to the armature but at varying distances therefrom, said coil sections being so arranged as to compensate for differences in their inductive effect upon the armature due to the varying distances between them and the armature, substantially as described.

2. In a meter, a rotatable armature, two field coils mounted in inductive relation thereto, each of said coils comprising a plurality of coil sections arranged at progressively increased distances from said armature, and means connecting each section of one coil with a section of the other coil such that the average distance from the armature of all the pairs of coil sections so connected is the same, substantially as described.

3. In a meter, a rotatable armature, a field coil mounted in inductive relation thereto and having a plurality of coil sections each differing from the others in the number of turns and in the distance from the armature, a second coil mounted in inductive relation to the armature and having similar coil sections arranged inversely with relation to the distance from the armature, and connections between the similar coil sections, substantially as described.

4. In a meter, a rotatable armature, two field coils mounted in inductive relation thereto each consisting of a plurality of coil sections, binding posts, and means connecting in series between said posts a coil section of one coil and a coil section of the other coil at a distance from said armature different from said first-named coil section, substantially as described.

5. In a meter, a rotatable armature, two field coils mounted in inductive relation thereto each consisting of a plurality of coil sections, binding posts, and means connecting in series between said posts one or more pairs of said coil sections, each pair comprising a coil section of each coil one mounted at a distance from the armature different from the other, substantially as described.

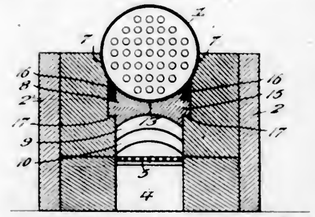
6. In a meter, a rotatable armature, two field coils mounted in inductive relation to said armature and each comprising a plurality of coil sections, a plurality of binding posts, and connections between said posts and said coil sections such that one or more pairs of said coil sections are connected in series between a pair of said posts, each pair comprising a coil section of each coil one mounted at a distance from the armature different from the other, substantially as described.

7. In a meter, a rotatable armature, a field coil mounted in inductive relation thereto, a shunt field coil also mounted in inductive relation to said armature, a resistance, binding posts to which said armature, shunt field coil and resistance are connected, and a connector for a wire arranged for connection with any one or any two adjacent binding posts, substantially as described.

8. In a meter, a support, a frame suspended from one side thereof, a shaft mounted for rotation in said frame perpendicular to said support, an armature carried thereby, a field coil mounted in inductive relation to said armature, a shunt field coil also mounted in inductive relation to said armature, and means permitting adjustment of said shunt field coil from the side of said support opposite to that to which said frame is secured, substantially as described.

9. In a meter, a support having a slot therein, a frame suspended from one side thereof, a shaft mounted for rotation in said frame perpendicular to said support, an armature carried by said shaft, a field coil mounted in inductive relation to said armature, a shunt field coil also mounted in inductive relation to said armature, and a supporting device for said shunt field coil extending through the slot in said support to permit adjustment of said shunt field coil from the side of said support opposite to that to which said frame is secured, substantially as described.

858,012. SMOKE-CONSUMING FURNACE. TERRENCE MURRIN, Chicago, Ill., assignor of one-half to C. J. De Boor and one-half to David Gelder, Chicago, Ill. Filed Oct. 17, 1906. Serial No. 339,409.



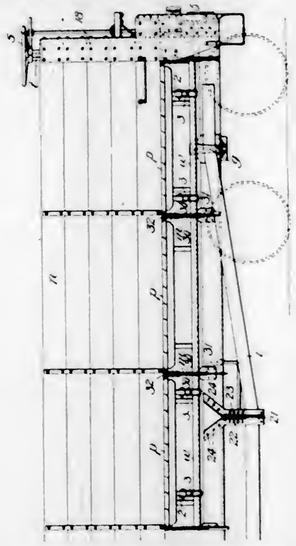
Claim.—1. A boiler furnace provided with a seat recess, and having guides communicating at their upper ends with said recess and provided at their lower ends with supporting shoulders, a boiler supported within the seat recess, and a smoke consuming retort arranged in the flue passage below the boiler, said retort comprising a series of reversible blocks bearing against the base of the boiler and provided with supporting lugs resting on said shoulders and slidably engaged with the guideways.

2. A boiler furnace setting provided with a boiler seat recess and having vertical guideways opening at their upper ends into said recess and terminating at their lower ends in shoulders, a boiler supported in said receiving recess, and a smoke consuming retort arranged in the flue passage below the boiler, said retort comprising a series of removable and reversible blocks having upper and lower concave faces to bear upon the bottom of the boiler, said blocks being also provided with end lugs resting on said shoulders and slidably engaging the guideways.

858,013. CAR. SPENCER OTIS, Chicago, Ill., assignor, by mesne assignments, to National Dump Car Company, a Corporation of Maine. Filed Sept. 15, 1905. Serial No. 278,649.

Claim.—1. In a car, the combination of longitudinal center sill mechanism, trussed longitudinal sills on oppo-

site sides thereof, and transverse beams extending beneath and supporting such longitudinal center sill mechanism and supported by the trussed longitudinal sills.



2. In a car, the combination of a pair of longitudinal center sills, trussed longitudinal sills mounted upon opposite sides thereof, transverse needle beams supported by such trussed sills and extending beneath and supporting the longitudinal center sills, and body bolsters upon which such longitudinal sill mechanism is supported.

3. In a car, the combination of a pair of longitudinal center sills, trussed longitudinal sills mounted upon opposite sides thereof, transverse needle beams supported by such trussed sills and extending beneath and supporting the longitudinal center sills, struts connecting the top and bottom chords of the trusses, and body bolsters provided with openings through which all of such longitudinal sills extend.

4. In a car, the combination of longitudinal center sill mechanism, longitudinal sills mounted on opposite sides thereof, body bolsters upon which such sills are supported, truss members extending longitudinally of the sills over the supporting portions of the bolsters and secured to the portions of the sills which extend endwise beyond the bolsters, and needle beams extending transversely beneath the center sill mechanism and secured to and supported by the trussed longitudinal sills.

5. In a car, the combination of longitudinal center sill mechanism, trussed longitudinal sills on opposite sides thereof, transverse beams secured to such trussed sills and extending beneath and supporting the longitudinal center sill mechanism, end sills having their main body portions formed of channel beams provided with flanges extending outward endwise of the car and having notches for admitting the draw-bar shank, a carrier arm secured to such channel beam member of each end sill and extending across the notched portion thereof, and body bolsters upon which such longitudinal sills are mounted.

6. In a car, the combination of longitudinal center sill mechanism, longitudinal sills mounted on opposite sides of such center sill mechanism, end sills to which such longitudinal sills are secured, body bolsters upon which the longitudinal sills are supported, truss members having their end portions secured to the longitudinal sills between the bolsters and end sills and extending over the sill supporting portions of the body bolsters, and needle beams secured to such truss members and extending beneath and supporting the longitudinal center sill mechanism.

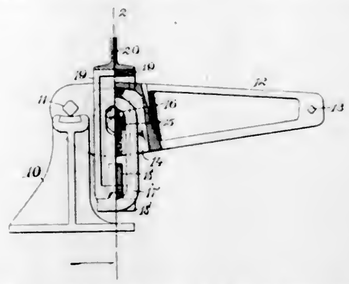
7. In a car, the combination of longitudinal center sill mechanism, trussed longitudinal sills mounted on opposite sides of such center sill mechanism, needle beams supported by such trussed longitudinal sills and extending beneath and supporting the center sill mechanism, and struts mounted upon the outside of such trussed beams opposite the ends of such needle beams.

8. In a car, the combination of longitudinal center sill mechanism, trussed longitudinal sills mounted on opposite sides of such center sill mechanism, needle beams supported by such trussed longitudinal sills and extending beneath and supporting the center sill mechanism, and struts having angle iron side members mounted upon the outside of and secured to such trussed longitudinal beams.

9. In a car, an underframe having a main supporting truss mechanism formed of a plurality of tension members, needle beams connecting such tension members and supported thereby, and integral longitudinal channel beams supported by the needle beams.

10. In a car, the combination of supporting bolsters, longitudinal center channel beams supported by the bolsters, longitudinal intermediate channel beams supported by the bolsters, longitudinal tension members directly supporting the intermediate channels between the bolsters, and needle beams supported by the tension members and supporting the center channels between the bolsters.

858,014. SCALE-LEVER. JOSEPH B. PAIGE, East Rutherford, N. J., assignor to The Fairbanks Co., a Corporation of New Jersey. Filed Oct. 10, 1906. Serial No. 338,216.



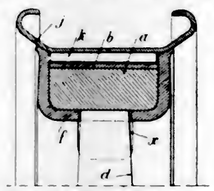
Claim.—1. The combination of a scale lever comprising a flat body portion arranged vertically, a widened portion intermediate of its ends and integral therewith, the widened portion having a recess opening downwardly and closed at the top, the side walls of the recess having alined perforations, and a block arranged in the perforations, with a link arranged in the recess and having one end suspended on the block.

2. A scale-lever comprising a body portion having knife-edges on its ends, a widened portion intermediate of the ends and integral with the body portion, the widened portion having a downwardly opening recess therein, the side walls of the recess having alined perforations, a knife-edge below the perforations, and a block on the knife-edge adapted to pass through the perforations.

3. A scale-lever for platform scales having knife-edges for engaging the support and the indicating mechanism, a recess in the scale-lever, the side walls of the recess having perforations arranged in line, a knife-edge projecting into the perforation, a block resting on the knife-edge and projecting through the perforations, a link straddling the block, a saddle arranged on the bottom of the link, and a yoke supported by the saddle and acting to support a platform scale.

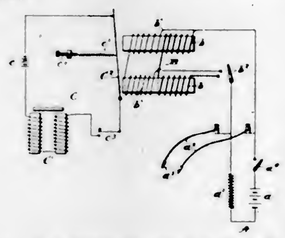
858,015. WHEEL-FELLY. HENRI PATAUD, Paris, France. Filed Mar. 5, 1907. Serial No. 360,742.

Claim.—1. A device for removable felloes comprising in combination an ordinary wooden felly *a* with an iron hoop *b*, an ordinary tire felly *j* adapted to be inserted sidewise over the wooden felly, metal plates *c* provided on the hoop *b* of the wooden felly, metal plates *k* provided on the tire felly *j*, registering with the plates *c* of the wooden felly and adapted to prevent circumferential movement of one felly with relation to the other, an open elastic steel ring of U-section *f* embracing the wooden felly and engaged by the spokes of the wheel, the circumference of said ring *f* being smaller than that of the wooden felly, and operative means adapted to expand the elastic steel ring *f* so as to lock and maintain the tire felly in place, substantially as described and for the purpose set forth.



2. A device for removable felloes comprising in combination an ordinary wooden felly, *a* with an iron hoop *b*, an ordinary tire felly *j* adapted to be inserted sidewise over the wooden felly, metal plates *c* provided on the hoop *b* of the wooden felly, metal plates *k* provided on the tire felly *j*, registering with the plates *c* of the wooden felly and adapted to prevent circumferential movement of one felly with relation to the other, an open elastic steel ring of U-section *f* embracing the wooden felly and engaged by the spokes of the wheel, the circumference of said ring *f* being smaller than that of the wooden felly, and two pieces *g* and *h* of the same profile as the ring *f*, attached one to the other by one of their ends by means of a rigid member *i* and jointed by their other suitably shaped ends respectively to the free ends of the open elastic ring *f*, substantially as described and for the purpose set forth.

858,016. ARMATURE-TESTING APPARATUS. VICTOR PATTON, Hastings, Colo. Filed May 24, 1906. Serial No. 318,546.



Claim.—1. In an armature testing apparatus, a test circuit a relay therein, a local signaling circuit, a circuit closer therefor, said circuit closer constituting the armature of the relay in the test circuit, a spring normally serving to hold said circuit closer in a closed position, and means for adjusting the tension of said spring.

2. In an armature testing apparatus, a test circuit, a relay having a plurality of windings thereon, means for cutting either of said windings into the test circuit, and signaling means controlled by said relay.

3. In an armature testing apparatus, a test circuit, a relay having a plurality of windings thereon, means for cutting either of said windings into the test circuit, a local signaling circuit, and means controlled by the relay in the test circuit for opening and closing the signaling circuit.

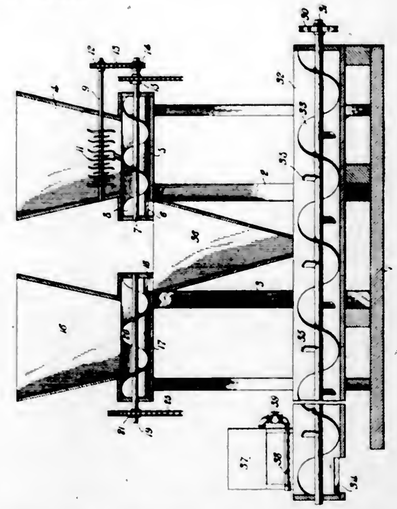
4. In an armature testing apparatus, a test circuit, a relay having a plurality of windings of varying resistance thereon, a switch for cutting either of said windings into the test circuit, a local signaling circuit, and means controlled by the relay in the test circuit for opening and closing said local signaling circuit.

5. In an armature testing apparatus, a test circuit, a relay having a plurality of windings of varying resistance thereon, a switch for cutting either of said windings into the test circuit, an armature for said relay, and a local signaling circuit adapted to be opened and closed by the movement of the relay armature.

6. A terminal for armature testing apparatus having an elongated flexible contact face, whereby the same may be caused to simultaneously contact with a plurality of commutator segments.

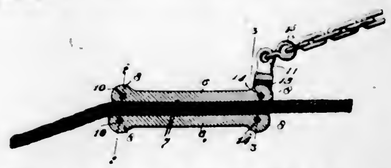
7. A terminal for armature testing apparatus comprising a bowed portion and a flexible contact face extending thereacross.

858,017. MACHINE FOR MIXING CONCRETE. GEORGE M. PENCE, Topeka, Ind. Filed Jan. 18, 1907. Serial No. 352,994.



Claim.—The combination with a mixing trough having an outlet, spraying means supported above the outlet, and a worm revoluble in the trough, said worm having reversely disposed paddles; of a main hopper opening into the trough, supply hoppers supported above and at opposite sides of the main hopper, a trough below and disposed to receive material from each supply hopper, each of said troughs extending over and opening into the main hopper, a worm revoluble in each of said troughs, agitating means in one of said hoppers, and driving mechanism for the worms.

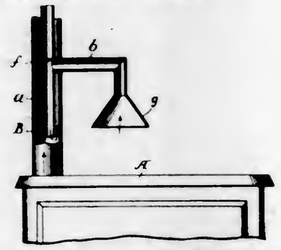
858,018. CLAMP OR GRIP. HENNING PETERSEN, Thief River Falls, Minn. Filed Nov. 17, 1906. Serial No. 343,946.



Claim.—As an article of manufacture, a grip or clamp comprising two straight and substantially parallel jaws having straight longitudinal seats in their opposing faces, and enlarged rounded ears at their ends forming rounded ends for a cable to bear against, links applied to the opposite outer sides and pivotally connecting the ears of the

jaws at one end, and a yoke comprising an article-engaging eye located at one side of the jaws, and spaced legs integral with the eye and straddling the opposite outer sides of the jaws at the other end, said legs being pivoted to the ears of both jaws at said end, and said yoke constituting means for applying power at one side of and to the corner of the grip or clamp.

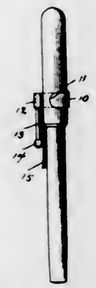
858,019. APPARATUS FOR REGULATING COMBUSTION. THOMAS D. PILCHER, Washington, D. C. Filed Dec. 15, 1905. Serial No. 291,946.



Claim.—1. In a furnace provided with a discharge flue, the combination with said flue, of a pipe arranged beyond the furnace and concentric with and within said flue, the inner discharge end of said pipe extending toward the furnace, and an extension of the said pipe projecting outward into the external atmosphere.

2. In a furnace provided with a discharge flue, the combination with said flue, of a pipe arranged beyond the furnace and concentric with and within said flue, the inner discharge end of said pipe extending toward the furnace, and an extension of the said pipe projecting outward into the external atmosphere and terminating in a hood arranged above the furnace.

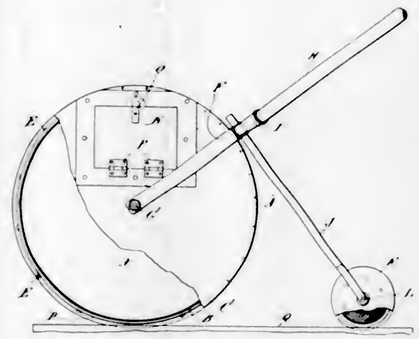
858,020. PEN AND PENCIL CLIP. JOSEPH H. PILKINGTON, Waterbury, Conn. Filed Jan. 19, 1907. Serial No. 353,080.



Claim.—A clip of the character described comprising an open band spring having an eye at one end, and a rigid rod having one end secured in said eye and having a knob at its free end, the inner side of the knob normally projecting inward to clamp a portion of a garment between it and the side of a pen or pencil removably mounted in said open band.

858,021. TRACK-SANDING DEVICE. SAMUEL A. PIPER, Newton Upper Falls, Mass. Filed Mar. 29, 1907. Serial No. 365,280.

Claim.—1. A track-sanding device comprising a circular sand-container having a perforated peripheral surface approximately equal in width to that of the rail to be sanded, flanges on either side of said sand-container constructed and arranged to retain the same on said rail, means maintaining said perforated surface slightly above the surface of said rail, a fork and means pivotally securing said sand-container thereto.



2. A track-sanding device comprising a circular sand-container having a perforated peripheral surface approximately equal in width to that of the rail to be sanded, flanges on either side of said sand-container constructed and arranged to retain the same on said rail, ribs on said peripheral surface arranged to maintain the same slightly above the surface of said rail, a fork, means pivotally securing said sand-container thereto and a handle secured to said fork.

3. A track-sanding device comprising a circular sand-container having a perforated peripheral surface approximately equal in width to that of the rail to be sanded, flanges on either side of said sand-container constructed and arranged to retain the same on said rail, a fork, means pivotally securing said sand-container thereto, and a handle secured to said fork and extending at an angle away from the direction of said rail.

4. A track-sanding device comprising a circular sand-container having a perforated peripheral surface approximately equal in width to that of the rail to be sanded, flanges on either side of said sand-container constructed and arranged to retain the same on said rail, a fork, means pivotally securing said sand-container thereto, and two handles secured to said fork, one handle extending substantially in the direction of said rail and the other extending away from the direction said rail.

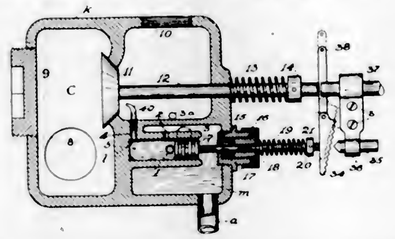
5. A track-sanding device comprising a circular sand-container having a perforated peripheral surface approximately equal in width to that of the rail to be sanded, flanges on either side of said sand-container constructed and arranged to retain the same on said rail, a fork, means pivotally securing said sand-container thereto, and a guide-wheel constructed to roll on said rail and adjustably secured to said fork.

6. A track-sanding device comprising a circular sand-container having a perforated peripheral surface approximately equal in width to that of the rail to be sanded, flanges on either side of said sand-container constructed and arranged to retain the same on said rail, a fork, means pivotally securing said sand-container thereto, and means whereby the rotation of said sand-container along said rail will impart an oscillatory movement thereto.

7. A track-sanding device comprising a circular sand-container having a perforated peripheral surface approximately equal in width to that of the rail to be sanded, flanges on either side of said sand-container arranged to retain the same on said rail, a fork, means pivotally securing said sand container thereto, and ribs on said peripheral surface provided with a series of projections.

858,022. FUEL-FEEDING DEVICE FOR INTERNAL-COMBUSTION MOTORS. HENRY J. PODLEŠÁK, Chicago, Ill., and TESLA E. PODLESAK, Morristown, N. J. Filed Dec. 6, 1904. Serial No. 235,770.

Claim.—1. The combination, in a fuel feeder for internal combustion motors, of a fuel receptacle, provided with fuel feed inlet, overflow outlet, fuel feed outlet, and adapted to contain a predetermined quantity of fuel; a fuel reservoir adapted to supply fuel to said receptacle through said inlet; means for opening and closing said inlet and said overflow outlet at predetermined intervals; and means for forcibly discharging a predetermined quantity of fuel from said receptacle through said fuel feed outlet when the said inlet and said overflow outlet are closed.

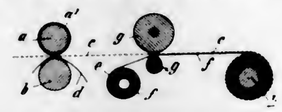


2. A casing, provided with an air passage, communicating with the combustion chamber of an internal combustion motor, a fuel receptacle, of a suitably determined capacity, and provided with fuel feed inlet, overflow outlet and fuel feed outlet, said feed outlet communicating with said air passage; a fuel reservoir adapted to supply fuel to said receptacle through said inlet; means for opening and closing alternately and at predetermined intervals said inlet and said overflow outlet; means for forcibly feeding a predetermined quantity of fuel from the receptacle and through said feed outlet at the interval when said inlet and said overflow outlet are closed.

3. An internal combustion motor; a governor operated by the power developed by said motor, a fuel feeder comprising: a fuel receptacle of a suitably determined capacity, and provided with fuel feed outlet, fuel feed inlet, and overthrow outlet, means for opening and closing alternately and at predetermined intervals, said inlet and said overflow outlet; means for forcibly feeding a predetermined quantity of fuel from said receptacle through said feed outlet and into the combustion chamber of said motor, at the interval when said inlet and said overflow outlet are closed; and a means, operatively connected with said governor, and adapted to control the operation of said means for feeding the fuel, as shown and specified.

4. A fuel feeding device, for internal combustion motors, comprising: a fuel receptacle of a suitably determined capacity, and provided with a fuel feed inlet, an overflow outlet, and fuel feed outlet; means for opening and for closing, alternately and at predetermined intervals, said inlet and said overflow outlet; means for forcibly feeding a predetermined quantity of fuel from said receptacle through fuel feed outlet and into a mixing or vaporizing chamber, at the intervals when said inlet and said overflow outlet are closed; an internal combustion motor, suitably adapted to receive, into its combustion chamber, combustible charges from said fuel feeding device; governor operated by the power developed by said motor; and means operatively connected with said governor and adapted to control the operation of said fuel feeding device.

858,023. METHOD OF PRODUCING MULTIPLE AND BACKED COPIES. FRIEDRICH G. J. POST, Hamburg, Germany, assignor to Julius H. W. Campe, Hamburg, Germany. Filed Feb. 3, 1905. Serial No. 244,017.



Claim.—1. The method of producing copies consisting in subjecting to pressure a dampened web of copying material accompanied by manuscript sheets and again subjecting the dampened web to pressure accompanied by an adhesive web.

2. The method of producing copies, consisting in subjecting to pressure a dampened web of copying material accompanied by manuscript sheets, again subjecting the dampened web to pressure accompanied by an adhesive web and then separating the dampened and adhesive webs.

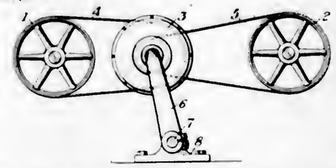
3. The method of producing copies, consisting in subjecting to pressure a dampened web of copying material accompanied by a manuscript, then subjecting the dampened web to pressure accompanied by an adhesive web, separating the dampened and adhesive webs and applying a transparent web to the separated adhesive web.

4. The method of producing copies, consisting in subjecting to pressure a dampened web of copying material accompanied by manuscript sheets, subjecting the dampened web to pressure accompanied by an adhesive web, separating the dampened and adhesive webs and applying a stiffening web to the separated dampened web.

5. The method of producing copies, consisting in subjecting to pressure a dampened web of copying material accompanied by manuscript sheets, subjecting the dampened web to pressure accompanied by an adhesive web, separating the dampened and adhesive webs, applying a stiffening web to the separated dampened web and applying a transparent web to the separated adhesive web.

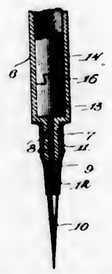
6. The method of producing copies, consisting in subjecting to pressure two webs of dampened copying material accompanied by a sheet of manuscript, applying an adhesive web to one of the webs of copying material, and separating the second copying web from the adhered copying and adhesive webs.

858,024. SPEED-CHANGING MECHANISM. CHARLES J. REED, Philadelphia, Pa. Filed Feb. 23, 1905. Serial No. 246,964.



Claim.—In a speed-changing mechanism, an expansible pulley having plural drums, a rock-shaft having arms carrying said pulley, journal-bearings at the ends of said shaft, and a spring engaging said shaft between said bearings and arranged to counterbalance the weight of said pulley as it rocks in either direction, as set forth.

858,025. HYPODERMIC INJECTOR. DANIEL S. REESE, Mahanoy City, Pa. Filed July 21, 1906. Serial No. 327,155.



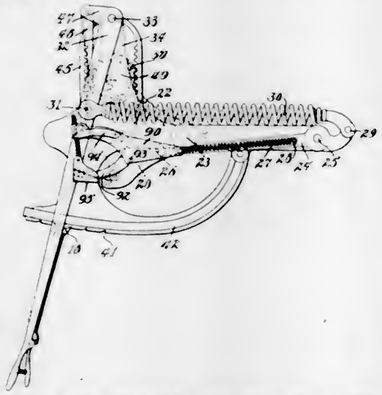
Claim.—1. A hypodermic injector, comprising a reservoir having a tapered nipple, a needle having its inner end portion interiorly and exteriorly tapered, said needle having its tapered portion fitted upon and surrounding the tapered nipple, and a cap detachably fitted on the nipple

and having an interiorly tapered portion that fits against the exteriorly tapered portion of the needle.

2. A hypodermic injector, comprising a reservoir having a nipple, the inner portion of which is threaded, the outer portion being tapered, a needle having its inner portion interiorly and exteriorly tapered, said needle having its tapered portion fitted upon and surrounding the tapered nipple, and a cap detachably screwed upon the threaded portion of the nipple and having its outer end portion interiorly tapered, said tapered portion of the cap surrounding and fitting against the exteriorly tapered portion of the needle.

3. A hypodermic injector, comprising a cylinder reservoir having a nipple, a needle detachably secured thereto, a reciprocatory plunger element operating in the reservoir, and a stem element, one of said elements being provided with a dovetailed socket that opens through one side and through one end of said element, the other element having a dovetailed projection extending through the open end thereof and being detachable through the open side, the open end of said dovetailed socket being closed by the wall of the cylinder reservoir when the parts are in place therein, to prevent their detachment.

858,026. TARGET-THROWING TRAP. ERNEST W. REYNOLDS, New York, N. Y., and ARTHUR J. REYNOLDS, New Britain, Conn. Filed June 28, 1906. Serial No. 323,877.



Claim.—1. In a target-throwing-trap, the combination of a supporting frame, a target throwing means, a tension device, and an operating lever having a back-and-forth motion, said members being organized whereby the movement of the lever in one direction will actuate the target throwing means to reset the trap, and the subsequent movement of the lever in the opposite direction will serve to put the throwing means under tension.

2. In a target-throwing-trap, the combination of a frame member, a throwing lever mounted on the frame, target carrying means on the lever, an operating lever movable on the frame, a trip device, and a resilient connection between the throwing lever and the operating lever organized to cause the operating lever to swing the throwing lever to the set position to engage the trip device, and upon subsequent swinging of the operating lever in the opposite direction, the resilient connection will be placed under tension.

3. In a target-throwing-trap, the combination of a base, a frame rotatably mounted on the base, target throwing mechanism on the frame, including a lever and organized to be reset by swinging the lever in one direction and placed under tension for ejectment upon swinging the lever in the opposite direction, a pawl carried by said lever, a rotatable member engaged by said pawl to be intermittently advanced in one direction, and said member being connected with the rotatable frame whereby the continuous rotation of said member in one direction will cause the frame to be oscillated by an intermittently advancing movement.

4. In a target-throwing trap, the combination of a base, a frame rotatably mounted on the base, target throwing mechanism on the frame including an oscillating lever, a pawl carried by said lever, a ratchet wheel pivoted on the frame and engaged by such pawl, a mutilated gear attached to the ratchet wheel, and a yoke member pivotally connected with the base and provided with rack portions on opposite inner sides arranged to be alternately engaged by the teeth of said gear, whereby the frame is oscillated on the base by the oscillations of said lever, with an intermittently advancing movement.

5. A trap target carrier, comprising a jaw member, a second jaw member pivoted to said jaw member, a stop portion on one of the jaw members, a stop pivotally mounted on the other jaw member, and a spring connected with said stop and arranged to yieldingly retain the stop in position to co-operate with the other stop to hold the target in the carrier during the swing of the throwing arm, the pivoted stop being arranged to engage the target by one end portion of its engaging face and swung under tension of the spring upon the target being thrown from the carrier, to cause a spinning movement of the target when ejected.

6. A trap target carrier, comprising a jaw member, a second jaw member pivoted to said jaw member, a stop portion on one of the jaw members, a stop pivotally mounted on the other jaw member, and a spring connecting said stop with the other jaw member and arranged to yieldably retain the stop in position to co-operate with the other stop to hold the target in the carrier during the swing of the throwing arm, the pivoted stop being arranged to engage the carrier by one end portion of its engaging face and swung under tension of the spring upon the target being thrown from the carrier, to cause a spinning movement of the target when ejected.

7. A trap target carrier comprising a jaw member, a second jaw member movably connected with said jaw member, a stop portion on one of the jaw members, a stop member pivotally mounted on the outer end of the other jaw member, and resilient means tending to prevent movement of the pivoted stop member.

8. A trap target carrier comprising a jaw member, a second jaw movably connected with said jaw member, a target engaging stop on one jaw member, a target engaging stop movably mounted on the outer end of the other jaw member, and resilient connection between the movable stop and the other jaw member, tending to draw the jaws together.

9. A trap target carrier comprising a jaw member, a second jaw member movably connected with said jaw member, a stop portion on one of the jaw members, a stop member movably mounted on the outer end of the other jaw member, resilient means tending to prevent movement of the movable stop member, and a stop limiting the approaching movement of the jaw members.

10. A trap target carrier comprising a jaw member, a second jaw pivoted to said jaw member, a target engaging stop on one jaw member, a target engaging stop pivoted on the outer end of the other jaw member provided with a plane engaging surface, and a resilient connection between the pivoted stop and the other jaw member tending to draw the jaws together.

11. A trap target carrier comprising a jaw member, a second jaw member movably connected with said jaw member, a stop portion on one of the jaw members, a stop pivotally mounted on the other jaw member, and a spring tending to prevent movement of the movable stop member, the engaging face of the stop being inclined to the path of movement of the target through the carrier whereby the stop will be swung by the target putting the spring under tension to cause spinning of the target.

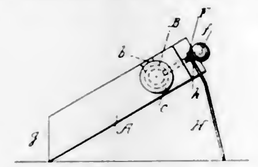
12. A trap target carrier comprising a jaw member, a second jaw member movably connected with the other jaw member, a stop portion on one of the jaw members, a stop member movably mounted on the other jaw member and having a greater frictional engagement with the target than the other stop member, and a resilient connection between the movable stop member and the other jaw member.

13. In a target-throwing trap, the combination with the carrier arm and the support on which the arm is pivoted, of a carrier member movable on the free end portion of the arm, and a resilient connection between the carrier arm support and the carrier member tending to retard swinging of the carrier member on the arm, said resilient connection being organized to decrease its tension as the carrier arm is swung from the set position to the discharging position.

14. In a target-throwing trap, the combination of a support, a carrier arm provided on the support, a lug on the support, a carrier member pivoted on the free end portion of the arm, and a resilient member connected to the carrier member eccentric of its pivot, and also connected with the said lug eccentric to the pivot of the carrier arm, whereby the tension of said connection decreases as the arm is thrown to eject the target.

15. In a target-throwing trap, the combination of a support, a carrier arm pivoted on the support, a lug on the support, a carrier member pivoted on the carrier arm, a post pivotally mounted on the lug in a position beyond the axis of the carrier arm and provided with a transverse aperture, a rod passing through the post aperture and having one end pivotally attached to the carrier member, and a coil spring on the rod between its free end and the post and being under compression, said lug being located on the support whereby the tension on said spring will be reduced as the trap arm is thrown to eject the target.

858,027. GAME-COUNTER. GEORGE B. RISLEY, Rockyhill, Conn. Filed Sept. 6, 1906. Serial No. 333,483.



Claim.—1. In a game counter, the combination, with a body portion provided with a cylindrical chamber and having also a sight-hole and a cross-hole connected with the said chamber, of a revoluble plug provided with a circumferential groove and engaging with the said chamber, and a stop peg arranged in the said cross-hole and projecting into the said groove.

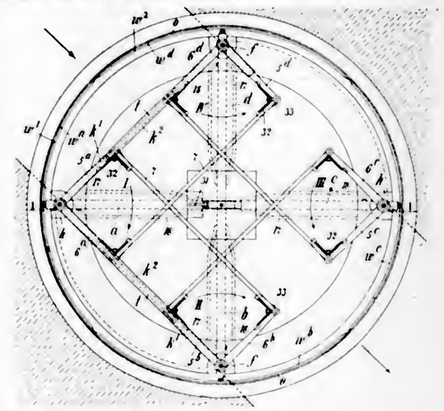
2. In a game counter, the combination, with a body portion provided with cylindrical chambers at its sides, and having also sight-holes in its face and cross-holes connected with the said chambers, of revoluble plugs provided with circumferential grooves and engaging with the said chambers, and stop pegs arranged in the said cross-holes and projecting into the said grooves.

3. In a game counter, the combination, with a body portion provided with cylindrical chambers in its sides and having also cross-holes in its top and sight holes in its face, of cylindrical plugs inserted in the said chambers and provided with means for revolving them and circumferential grooves, stop pegs provided with knobs and engaging with the said holes in the top of the said body portion and projecting into the said grooves, and a ball provided with eyes which engage with the said pegs between the said knobs and the body portion and supporting the said body portion in an inclined position.

858,028. REVOLVING DOOR. CHARLES H. ROECKNER, Hamburg, Germany. Filed Nov. 23, 1905. Serial No. 288,788.

Claim.—1. A revolving door comprising a plurality of wings adapted to revolve about a central axis and means to simultaneously swing said wings away from said axis.

2. A revolving door comprising a plurality of wings detachably connected at one edge and pivoted at their outer edges, and means connecting the pivots to swing the wings conjointly on their outer pivots.



3. A revolving door comprising a plurality of wings detachably connected at their inner edges, a shaft at the outer edge of each wing on which they are pivoted, and means for operatively connecting the shafts to compel the wings to swing conjointly about such shafts.

4. A revolving door comprising a plurality of wings, locking mechanism at the center for detachably connecting the wings, means for pivotally mounting the wings at their outer edges, and means for unlocking said mechanism by pressure against one wing to disconnect all the wings simultaneously.

5. A revolving door comprising a plurality of wings, locking mechanism at the center for detachably connecting the wings, shafts for pivotally mounting the wings at their outer edges, means for unlocking said mechanism arranged to be operated by pressure on the wings, and means for operatively connecting the shafts to compel the wings to swing conjointly outward.

6. A revolving door comprising a plurality of wings, locking mechanism at the center for detachably connecting the wings, shafts for pivotally mounting the wings at their outer edges, means for operatively connecting the shafts to compel the wings to swing conjointly, and mechanism to couple the connecting means to said shafts at certain position of the door wings.

7. A revolving door comprising a plurality of wings detachably connected by locking mechanism at the center, shafts on which the wings are pivoted at their edges, arms pivoted to the shafts, and links connecting the arms of the neighboring shafts.

8. A revolving door comprising a plurality of wings, detachably connected by locking mechanism at their center, shafts on which the wings are pivoted at their outer edges, arms pivoted to the shafts, links connecting the arms of the neighboring shafts, and means to couple the arms to said shafts at certain positions of the wings.

9. A revolving door comprising a plurality of wings detachably connected by locking mechanism at the center, shafts on which the wings are pivoted at their outer edges, arms pivotally mounted on each shaft, a link connecting two of the arms of neighboring shafts, a sliding connection for two other arms of neighboring shafts, and a coupling mechanism on each arm to couple the same to its shaft at certain positions of the wing.

10. A revolving door comprising a plurality of wings, mechanism for centrally locking the wings, shafts on which the wings are pivoted at their outer edges, arms pivoted on the shafts, links connecting corresponding arms of the neighboring shafts, a coupling piece in connection with each arm, and projections on fixed parts of the door for operating the coupling pieces on the rotation of the

door to couple the arms to said shafts at certain positions of the door.

11. A revolving door comprising a plurality of wings, mechanism for centrally locking the wings, shafts on which the wings are pivoted at their outer edges, arms pivoted on the shafts, a link connecting a corresponding arm on a neighboring shaft, a coupling piece arranged on the boss of each shaft, and projecting segmental ribs on fixed parts of the door for operating the coupling piece on the rotation of the door to couple the arms to said shafts at certain positions of the door.

12. A revolving door comprising a plurality of wings, mechanism for detachably locking the wings at the center, shafts on which the wings are pivoted at their outer edges, arms rotatably attached to the shafts, a link connecting each arm to a corresponding arm on a neighboring shaft, coupling mechanism to couple the arms to said shafts at certain positions of the door wing to enable the wings to swing outward conjointly and means to retract the arms into normal position when released from the shafts.

13. A revolving door comprising a plurality of wings, locking mechanism detachably connecting said wings at the center, shafts on which the wings are pivoted at their outer edges, a movable handle attached to and arranged to be pressed toward each wing, and means operated by any one of the handles to release the locking mechanism.

14. In a revolving door, the combination with a plurality of wings, of a central locking member adapted to engage each wing, and means on each door to withdraw the locking member from engagement with all the wings simultaneously.

15. In a revolving door, the combination with a plurality of wings, of a central locking member adapted to engage each wing, a movable handle attached to each wing, and means on each door operated by such handle to withdraw the locking member from engagement with all the wings simultaneously.

16. In a revolving door, the combination with a plurality of notched wings, of a locking member provided with a nose projecting into each notch, a plate rotatively mounted on the locking member adapted to engage apertures in the wings, and means for rotating the plate to release the locking member from the wings.

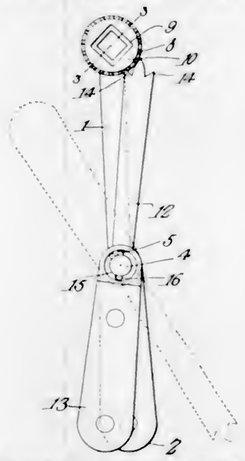
17. In a revolving door, the combination with a plurality of wings each having a notch in the corner and an aperture above the notch, a locking-piece having a nose for each notch, a plate rotatively attached to the locking member having corners projecting into the apertures, a movable handle on each door, a pawl connected with said handle adapted to rotate the plate on the handle being pressed inwardly.

858,029. PNEUMATIC TIRE. MARTIN V. RUSH, Anderson, Ind. Filed Nov. 10, 1906. Serial No. 342,856.



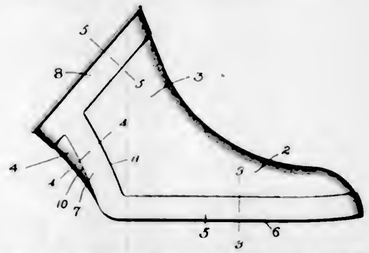
Claim.—As an improved article of manufacture, the herein described pneumatic tire, the same composed of an outer tube of elastic material, a concavo-convex air tube independent thereof and located therein and occupying more than one-half of the area thereof and having its opposite walls curved in the same direction, and a double convex core located between the air tube and the tread of the outer tube, said core upon one of its convex sides snugly fitting the concave side of the air tube, said outer tube and the air tube being laterally expansible whereby, when deflated, the double convex core will be forced to the center of the rim and constitute the entire tread portion.

858,030. RATCHET-WRENCH. JOHN L. SCHAD, Fortuna, Mo., assignor of one-half to Oliver W. Carter, Fortuna, Mo. Filed Feb. 9, 1907. Serial No. 356,622.



Claim.—A wrench comprising a stock having at an intermediate point a pivot pin and at one end a handle stock, a ratchet socket member journaled for rotation at the opposite end of the stock, a pawl member detachably journaled upon the pivot pin and lying in a plane parallel with the stock and having at one end a handle grip and at its opposite end, laterally disposed shoulders separated by an intervening projection.

858,031. OVERSHOE. SOLOMON SCHWARZSCHILD, Rochester, N. Y., assignor to Emergency Rubber Company, Rochester, N. Y., a Corporation of New York. Filed Mar. 29, 1907. Serial No. 365,237.

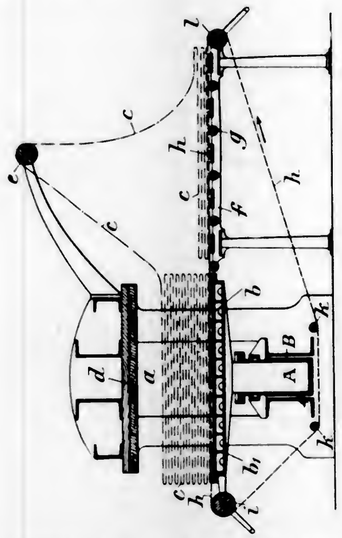


Claim.—An overshoe having an integral sole-edge extension forming a bead 6, around the edge of the bottom of the overshoe, a wear sole 9 over a portion of the bottom of the overshoe, a sole portion 1 in relief as to said wear sole and said bead, and a section 4 under the instep of thinner material than the adjacent portions of the overshoe.

858,032. APPARATUS FOR STEAMING CLOTH. EMIL SENKBEIL, Pankow, near Berlin, Germany. Filed Oct. 20, 1906. Serial No. 339,874.

Claim.—1. In apparatus for steaming cloth or the like the combination with a steaming press of a table for refolding the cloth and means for moving the top of said table into and out of the press, substantially as described and for the purpose set forth.

2. In apparatus for steaming cloth or the like the combination with a steaming press of a table for refolding the cloth, a carrier for carrying the cloth from the press onto the table and vice versa and means for moving said carrier, substantially as described and for the purpose set forth.



3. In apparatus for steaming cloth or the like the combination with a steaming press of a plurality of tables for refolding the cloth and means for moving the tops of said tables into and out of the press alternatively, substantially as described and for the purpose set forth.

4. In apparatus for steaming cloth or the like the combination with a steaming press of a table for refolding the cloth on one side of the press, a second refolding table on the other side and means for moving the tops of said tables into and out of the press alternatively, substantially as described and for the purpose set forth.

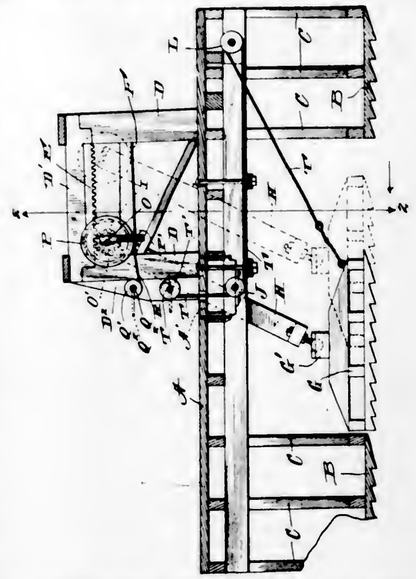
5. In apparatus for steaming cloth or the like the combination with a steaming press of a table for refolding the cloth and carriages having perforated top plates and adapted to be moved into the press and on to the table alternatively, substantially as described and for the purpose set forth.

858,033. APPARATUS FOR MOVING DREDGES. WILLIAM H. SILVER and CHARLES A. BUNTAN, Hammond, Ill. Filed Jan. 10, 1907. Serial No. 351,711.

Claim.—1. A dredge moving apparatus, etc., comprising, in combination with a frame, a shoe, a yoke swiveled thereto, a sheave mounted upon said yoke, a winding drum mounted in suitable bearings upon uprights from the frame, a cable fixed to and winding about said drum and also winding about said sheave, horizontally disposed rack bars, pinions meshing with said rack bars, and means for returning the movable shoe for a new purchase, as set forth.

2. A dredge moving apparatus comprising, in combination with a boat having upright standards thereon, cross-beams connecting the same, a movable shoe, a yoke swiveled to said shoe, a shaft journaled at the upper end of said yoke, a grooved sheave fixed to said shaft, anti-friction rollers upon said shaft and mounted to travel between horizontally disposed cross-beams connecting said standards, rack bars mounted upon the under surfaces of the upper of said cross-beams, pinions fixed to said shaft and meshing with the teeth of said rack bars, a winding drum, a cable thereon and adapted to wind upon said grooved sheave, and means for moving the sheave and rack bar to their starting positions, after the dredge boat has been moved forward, as set forth.

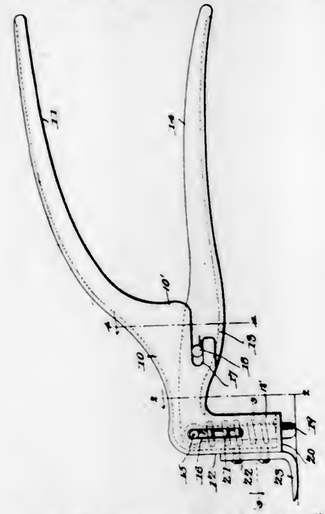
3. A dredge moving apparatus comprising, in combination with a boat having upright standards thereon, cross-beams connecting the same, a movable shoe, a yoke swiveled to said shoe, a shaft journaled at the upper end of said yoke, a grooved sheave fixed to said shaft, anti-friction rollers upon said shaft and mounted to travel between horizontally disposed cross-beams connecting said standards, rack bars mounted upon the under surfaces of the upper of said cross-beams, pinions fixed to said shaft and meshing with the teeth of said rack bars, a winding drum, a cable thereon and adapted to wind upon said grooved sheave, a second winding drum, a cable winding thereon, and a sheave over which said second cable turns and connected to said shoe, as set forth.



4. A dredge moving apparatus comprising, in combination with a boat having upright standards thereon, cross-beams connecting the same, a movable shoe, a yoke swiveled to said shoe, a shaft journaled at the upper end of said yoke, a grooved sheave fixed to said shaft, anti-friction rollers upon said shaft and mounted to travel between horizontally disposed cross-beams connecting said standards, rack bars mounted upon the under surfaces of the upper of said cross-beams, pinions fixed to said shaft and meshing with the teeth of said rack bars, a winding drum, a cable thereon and adapted to wind upon said grooved sheave, grooved sheave blocks mounted underneath the deck of the boat, a second winding drum, a cable passing about the latter and adapted to wind about the groove in said movable sheave and fastened to the forward end of said movable shoe, as set forth.

5. A dredge moving apparatus comprising, in combination with the boat having a deck with fixed shoes having standards mounted thereon and supporting said deck, a movable shoe intermediate the fixed shoes, a yoke swiveled to said movable shoe, the longitudinal beams of said yoke passing through elongated slots in the deck, a shaft journaled at the upper end of said yoke, standards rising from the deck, cross-beams connecting said standards and spaced apart, anti-friction rollers mounted upon said shaft and adapted to travel between said cross-beams connecting the standards, rack bars on the under surfaces of the upper of said cross-beams, pinions fixed to said shaft and meshing with said rack bars, a drum, a cable winding thereon and passing about said sheave a plurality of times, a second drum, and cable connections between the same and the forward end of the movable shoe, as set forth.

858,034. TACK AND NAIL PULLER. ROBERT R. SMITH, Philadelphia, Pa., assignor, by mesne assignments, to General Specialty Manufacturing Company, Philadelphia, Pa. Filed Aug. 22, 1904. Serial No. 221,761.



Claim.—1. An implement of the class described comprising a lever having a transversely extending head with cheeks, a claw attached to said head, a strut disposed between said cheeks, and a device pivotally connected to said strut, said lever being fulcrumed upon said device.

2. An implement of the class described comprising a lever having a transversely extending head with cheeks, a claw attached to said head, a strut disposed between said cheeks, and a lever having a pivotal connection to said strut and a pivotal connection to said first lever.

3. An implement of the class described comprising a lever having a transversely extending head, a claw connected to said head, a strut, a spring connected with said head and strut for moving one with reference to the other, and a device on which said lever is fulcrumed, said device being fulcrumed on said strut.

4. An implement of the class described comprising a lever having cheeks with parallel slots therein, a claw connected to said lever, a second lever having a fulcrum movably supported in said slots, and a strut to which said second lever is connected.

5. An implement of the class described comprising a lever having a transversely extending head with cheeks provided with guides, a claw connected to said head, a strut engaged to said guides, and a fulcrum by which said lever reciprocates said head relatively to said strut, substantially as specified.

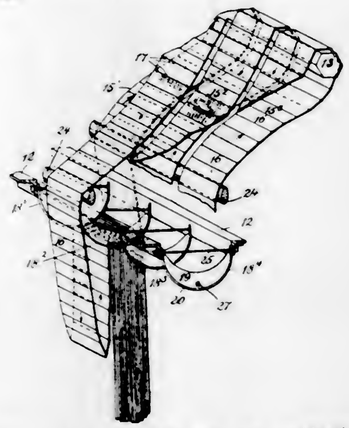
6. An implement of the class described comprising a lever having head cheeks with parallel slots therein and body cheeks with parallel slots therein, a claw connected to said head, a lever having a fulcrum movably supported in the slots of said body cheeks, and a bearing member extending between said head cheeks and having a fulcrum connection with said last named lever movable in the slots in said head cheeks, substantially as specified.

7. An implement of the class described comprising a lever having a transversely extending head, a claw connected to said head, a bearing member on which said head reciprocates, a second lever having a fulcrum connection with said first lever and a fulcrum connection with said bearing member, and a spring for drawing said head and bearing member together, substantially as specified.

8. An implement of the class described comprising a lever having head cheeks and body cheeks, said head having a base extending between its cheeks, a claw connected to said head, a lever extending between and fulcrumed in said body cheeks, a strut extending through said base into said head and having a fulcrum connection with said last named lever, and a spring supported within said head by said base and connected with said strut and last named lever, substantially as specified.

9. An implement of the class described comprising a strut, a lever fulcrumed on said strut, a second lever fulcrumed on said first lever and having a transversely disposed head, and a claw connected to said head, said head having means for engaging said strut and guiding the reciprocation of each with reference to the other.

858,035. JACQUARD LOOM. SAMUEL SMITH, Toronto, Ontario, Canada. Filed July 27, 1905. Serial No. 271,395.



Claim.—1. In a Jacquard loom, the combination with the card cylinder, of a multiplicity of circles of pattern cards adjusted to simultaneously contact with said cylinder while the same is being actuated and means for detachably supporting one of said circles on its way to said cylinder independent of the supporting means in contact with an adjoining circle of cards.

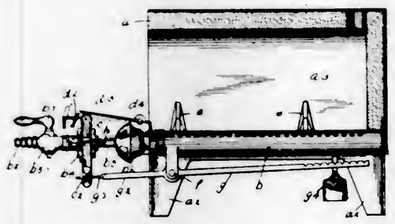
2. In a Jacquard loom, the combination with the card cylinder, of a multiplicity of circles of pattern cards adjusted to simultaneously contact with said cylinder while the same is being actuated, a hanger placed on one side of one of said circles and another hanger placed on the other side of said circle and between the same and another one of said circles, and means detachably mounted upon said hangers for supporting the first named circle of cards independent of the supporting means in contact with said other circles.

3. In a Jacquard loom, the combination with the card cylinder, of a multiplicity of circles of pattern cards adjusted to be simultaneously actuated while in contact with said cylinder, means for detachably supporting one of said circles on its way to said cylinder independent of the means for so supporting an adjoining circle of cards, and a guide interposed between said supports and said cylinder for simultaneously guiding said circles of cards.

4. In a Jacquard loom, the combination with the card cylinder, of two pattern cards adjusted to be simultaneously actuated while in contact with said cylinder, hangers placed along the outer sides of the cards, and a hanger placed between said cards and independent sets of wires extending between adjoining hangers for supporting said cards, one set of wires being supported upon the intermediate hanger and one of the outer hangers and the other set of wires being supported upon said intermediate hanger and the other outer hanger.

5. In a Jacquard loom, the combination with the card cylinder, of two pattern cards adjusted to be simultaneously actuated while in contact with said cylinder, hangers placed along the outer sides of said cards, and a hanger placed between said cards, and independent sets of wires extending between adjoining hangers for supporting said cards, the hanger placed between said cards being made of a substantially crescent shaped configuration and comprising a vertical web and curving flanges extending outward on opposite sides of said web for supporting the ends of such wires.

858,036. SOLDERING-IRON HOLDER AND HEATER. CHARLES SOMMER, New York, N. Y. Filed Jan. 9, 1907. Serial No. 351,430.



Claim.—1. A soldering iron heater, comprising a furnace having a chamber open at one end and provided at said end with a projecting table, a burner tube placed in the bottom portion of said chamber and ranging longitudinally thereof, a Bunsen burner attachment placed beneath said table and connected with the burner tube and adapted to supply gas and air thereto and provided with a vertically movable valve, automatic devices for raising said valve so as to cut off the supply of gas, and a door pivoted in said table and resting on the top of said valve and adapted to be depressed by the handle of a soldering iron and open said valve when the iron is placed in the furnace chamber, said Bunsen burner attachment being also provided with a hand operated valve.

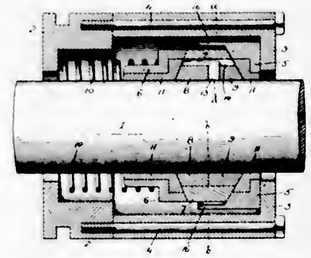
2. A soldering iron heater, comprising a furnace having a chamber open at one end and provided at said end with a projecting table, a burner tube placed in the bottom portion of said chamber and ranging longitudinally thereof, a Bunsen burner attachment placed beneath said table and connected with the burner tube and adapted to supply gas and air thereto and provided with a vertically movable valve, automatic devices for raising said valve so as to cut off the supply of gas, and a door pivoted in said table and resting on the top of said valve and adapted to be depressed by the handle of a soldering iron and open said valve when the iron is placed in the furnace chamber, said Bunsen burner attachment being also provided with a hand operated valve, and with a pilot burner by means of which a constant small flame is maintained in the furnace chamber.

858,037. ROD-PACKING. WILLIAM SUDEKUM, Nashville, Tenn., assignor of one-half to August Schmidt, Nashville, Tenn. Filed Nov. 20, 1906. Serial No. 345,084.

Claim.—1. A rod packing having rings abutting against each other, one ring having a lug projecting from its abutting face, and the other ring having a recess in its abutting face for the reception of said lug.

2. A rod packing having an outer ring and a pair of inner rings contained within said outer ring and having abutting faces, one of the inner rings having a lug which projects both beyond the abutting face of the ring and beyond its periphery, the other inner ring having, in its abutting face, a recess for the reception of said lug, and the outer ring having, in its inner face, a rceess for the reception of that portion of the lug which projects beyond the periphery of the inner ring.

3. Rod packing having an outer ring with recess in its inner face, and a pair of inner rings contained within said outer ring and abutting against each other, one of said inner rings having a projecting lug for entering the recess in the outer ring.



4. Rod packing having packing rings confined between two glands, each of which has segmental lining rings shouldered for longitudinal engagement with the glands and constituting the bearing surface between the latter and the rod.

5. Rod packing comprising inner and outer glands and a ring structure confined between the same, the outer gland having a flange surrounding said ring structure but free from contact therewith, whereby limited independent transverse movement of the ring structure and the outer gland is permitted.

6. Rod packing comprising an outer ring, a pair of inner rings inclosed within said outer ring, and abutting against each other, and a lug whereby all three of the ring members are locked against independent circumferential movement.

858,038. VERTICAL CHARGING-CRANE. CLARENCE L. TAYLOR, Alliance, Ohio, assignor to the Morgan Engineering Company, Alliance, Ohio. Filed May 25, 1906. Serial No. 318,707.

Claim.—1. In a vertical charging crane the combination with a depending guiding frame or casing, of a vertically movable frame within said guiding frame, flexible means suspending said vertically movable frame, a vertical stem mounted to rotate in said vertically movable frame and ingot tongs carried on the lower end of said vertically movable stem.

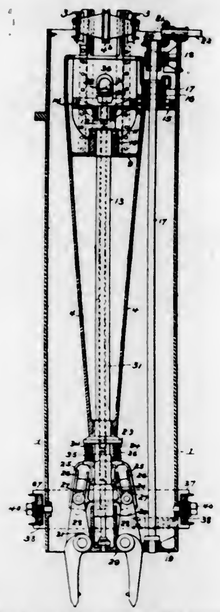
2. In a vertical charging crane, the combination with a vertically movable frame, guiding means therefor, and flexible means for raising and lowering said movable frame, of a vertical stem mounted in said frame, means for rotating said stem, and ingot tongs carried by the stem, the said tongs having a limited sliding movement on said stem.

3. In a vertical charging crane, the combination with a vertically movable frame, guiding means therefor, and flexible means for raising and lowering said movable frame, of a vertical stem mounted in said vertically movable frame, ingot tongs carried by said stem below the movable frame, means for rotating said stem, and means for opening and closing the tongs.

4. In a vertical charging crane, the combination with a vertically movable frame, guiding means and flexible supporting means for said frame, of a vertical stem carried by the vertically movable frame, means for rotating said stem, ingot tongs carried by the stem below the movable frame, and means for counterbalancing the movable frame and parts carried thereby.

5. In a vertical charging crane, the combination with a fixed guiding frame or casing, of a frame mounted to move vertically within said frame or casing, means on the vertically movable frame engaging ways on the fixed frame or casing for guiding the former in its movements, flexible suspension means for said movable frame, a stem mounted to rotate in said movable frame, ingot tongs carried by the

lower end of the stem and means for opening and closing the tongs.



6. In a vertical charging crane, the combination with a vertically movable frame, means for supporting same against lateral movement, and flexible suspension means for said frame, of a stem mounted to rotate in said frame, a two part tongs frame secured to the lower end of said stem and provided with inclined guide ways, tongs levers having sliding connection with said inclined guide ways, a cross head to which the tongs levers are pivotally connected and a tongs opening rod connected with said cross head and passing up through the stem.

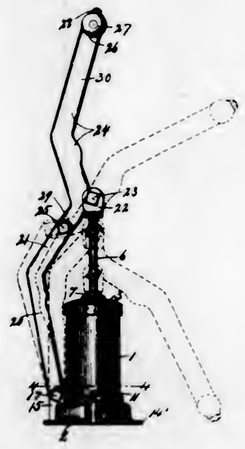
7. In a vertical charging crane, the combination with a vertically movable frame, and a vertical stem mounted to rotate therein, of tongs frame secured to the stem and having a limited sliding movement thereon, springs interposed between said tongs frame and a collar on the stem, tongs levers having sliding connection with inclined ways in said tongs frame, a cross head to which the tongs levers are pivoted and a rod connected to said cross head and passing up through the stem.

8. In a vertical charging crane the combination with a depending frame, an angular shaft mounted therein and means for rotating said shaft, of a frame flexibly suspended within said depending frame, connections between the two frames for guiding the movable frame, a vertical stem carried by the movable frame, tongs carried by said atem, means for opening and closing the tongs, a pinion on the upper end of said stem and pinion slidingly mounted on the angular shaft and meshing with the pinion on the stem.

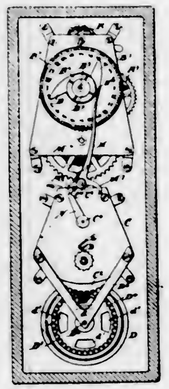
858,039. AIR-PUMP. FRANK E. TEN EYCK, Auburn, N. Y. Filed Aug. 30, 1902. Serial No. 121,617.

Claim.—A device of the character described comprising a cylinder, a base, said base extending substantially half way across the bottom of said cylinder, and having an enlarged portion forming a chamber wholly within said base, a piston operating in said chamber, a link pivoted to said base, and a handle pivoted to one extremity of said link at its own extremity and pivoted to said piston at a point between its two extremities, said handle and said link so formed as to conform to the upper surface of said cylinder, substantially as described.

858,039.



858,040. TIME-SWITCH. ALVIN TRESSELT, New York, N. Y. Filed Jan. 23, 1907. Serial No. 353,579.



Claim.—1. In a time-switch, a time-movement, a switch, and a switch-operating mechanism, each independent of the others and each removable independently of the other, a cam moved by said time-movement, a lever in the path of said cam, connections from said switch-operating mechanism to said switch for actuating the latter, an arm revolved by said switch-operating mechanism, and branches on said lever arranged in the path of said arm and constructed to arrest and release said arm and means operative after the movement of said arm has ceased and constructed to retard the movement of said arm.

2. In a time-switch, a switch-operating mechanism, an arm revolved thereby, means for arresting and releasing said arm, a fly-train operatively connected with said arm for retarding the movement of said arm, means permitting said arm to travel with full force through a short arc only and a ratchet-wheel and pawl in said fly-train constructed to permit said fly-train to run by momentum after said arm has stopped.

3. In a time-switch, a switch having a spring, and a switch-operating mechanism controlled by the movement of an arm thereon in opposition to said spring, and means for tempering the force of said arm and means for arresting said arm after the release of said spring and the movement of said switch and permitting said arm to travel with full force through a short arc only.

4. In a time-switch, a time-movement, a switch, and a switch-operating mechanism, each independent of the others and each removable independently of the other, a dial revolved by said time-movement, cams revolving with said dial and adjustable relatively thereto, a lever having a finger in the path of said cams, branches on said lever, an arm revolved by said switch-operating mechanism and arrested and released by said branches, means permitting said arm to travel with full force through a short arc only and connections from said switch-operating mechanism to said switch for actuating the latter.

5. In a time-switch, a time movement, a switch and an interposed switch-operating mechanism, an arm operated by said switch-operating mechanism, means operative after the movement of said arm has ceased and constructed to retard the movement of said arm, cams on the dial of the time movement, an oscillating lever interposed between said cams and arm, and means serving to cushion the contact between said arm and the coacting portions of said lever.

858,041. COMBINED SKIRT-SUPPORTER, PLACKET-CLOSER, AND WAIST-HOLDER. ROBERT S. VALENTINE, Richmond, Va., assignor of three-eighths to David Harris Leake, Richmond, Va. Filed Dec. 6, 1906. Serial No. 346,589.



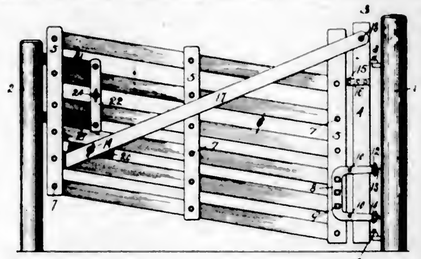
Claim.—1. A combined skirt supporter, placket closer, and waist holder comprising plates pivotally connected at their lower ends to each other, strips extending laterally from the upper ends of the plates, means for detachably holding the plates together, and tongues projecting laterally from the strips and having serrated inner longitudinal edges for engagement with the waist.

2. The combined skirt supporter, placket closer and waist holder comprising complemental flat plates pivotally connected at their lower ends to each other, integral strips extending laterally from the upper ends of said plates, tongues struck from said integral extensions and extending lengthwise of the same the longitudinal edges of the tongues being toothed.

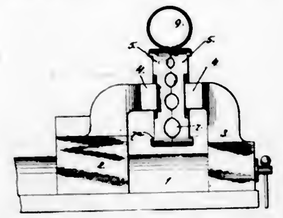
3. The combined skirt supporter, placket closer and waist holder comprising complemental flat plates pivotally connected at their lower ends to each other, integral strips extending laterally from the upper ends of said plates, and tongues bent inwardly from the central portions of the strips and extending lengthwise of the same, the inner longitudinal edges of said tongues being adapted to engage the waist.

858,042. GATE. CHARLES J. VAN VALKENBURG, Manchester, Mich. Filed Apr. 3, 1907. Serial No. 366,071.

Claim.—In combination, a support, a vertical member hinged to said support, a gate comprising longitudinal and transverse bars pivoted at their crossing points, brackets carried at one end of the gate and frictionally coöperating with said member, anti-friction rolls carried by the brackets between the contiguous faces of the gate and said member, means for tightening the brackets relative to the bar, opposing suspensory bars pivoted at one end to opposite sides of the upper end of the vertical member, a piece slidingly mounted between two of the longitudinal bars of the gate adjacent its free end, said piece being of less thickness than said gate bars, and means pivotally connecting the lower ends of the suspensory bars to said piece and adapted to be tightened to cause the lower ends of said suspensory bars to frictionally grip the opposite sides of the contiguous gate bars.



858,043. ATTACHMENT FOR VISES. JOHN E. WATKINS, Pittsburg, Pa., assignor of one-half to Albert H. Burchfield, Pittsburg, Pa. Filed Mar. 25, 1907. Serial No. 364,282.



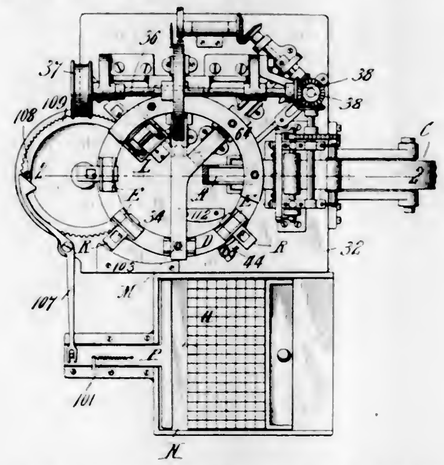
Claim.—An attachment for vises, comprising a pair of work-holding clamps adapted to be received between the jaws of a vise, and provided on their outer faces adjacent each end with substantially L-shaped flanges adapted to engage the jaws of a vise when the clamps are placed longitudinally between the vise jaws, and having transverse recesses on said outer faces, the said clamps at the ends of said transverse recesses having rounded bearing surfaces adapted to engage the upper face of the vise jaws when the clamps are placed vertically between said vise jaws, said work-holding clamps provided on their inner faces with work-receiving recesses, and a spring connected at its ends to the clamps at one end of each of the latter.

858,044. WRAPPING-MACHINE. GEORGE T. WARWICK, Springfield, Mass. Filed Nov. 21, 1905. Serial No. 288,485.

Claim.—1. In a wrapping machine, a movable table, having a trough-like folding box thereon, constructed with an apertured bottom, and a movable closure therefor, means respectively located adjacent the path of the box for imparting wrapping operations upon a wrapping sheet, and about a piece to be wrapped, which piece and sheet conducted to and carried by the box, means for displacing said movable closure to leave the aperture at the bottom of the folding box open, and means for forcing the wrapped pieces from the box through the said aperture.

2. The combination with a horizontal rotary table having an upwardly open trough-like folding box thereon, and means for imparting intermittent progressing movements to the table and box, of means for bringing a wrapper adjacent a given position, to which the folding box is brought by the table, across the top of the box, means for conducting a piece to a position over the box and wrapper, a plunger having a reciprocatory movement

vertically relatively to the position assumed by the folding box, the wrapper and the piece, and operable for forcing the piece and wrapper into the box, upturning the wrapper sides, and further means located adjacent the path of the box, and to which the latter, with the partially wrapped piece, is conveyed, operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece.



3. The combination with a horizontal rotary table having an upwardly open trough-like folding box thereon and means for imparting intermittent progressing movements to the table and box, of means for bringing a wrapper adjacent a given position to which the folding box is brought by the table, across the top of the box, means for conducting a piece to a position over the box and wrapper, a plunger having a reciprocatory movement vertically relatively to the position assumed by the folding box, the wrapper and the piece, for forcing the piece and wrapper into the box, upturning the wrapper sides, further means located adjacent the path of the box and to which the latter, with the partially wrapped piece, is conveyed, operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece, and a second plunger reciprocating vertically across the circular path of the box, suitably removed from the first named plunger, and operable to tuck the end extensions of the upper horizontal portions of the wrapper against the ends of the piece.

4. The combination with a horizontal rotary table having an upwardly open trough-like folding box thereon and means for imparting intermittent progressing movements to the table and box, of means for bringing a wrapper adjacent a given position to which the folding box is brought by the table across the top of the box, means for conducting a piece to a position over the box and wrapper, a plunger having a reciprocatory movement vertically relatively to the position assumed by the folding box, the wrapper and the piece, for forcing the piece and wrapper into the box, upturning the wrapper sides, further means located adjacent the path of the box, and to which the latter, with the partially wrapped piece, is conveyed, operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece, a second plunger reciprocating vertically across the circular path of the box, suitably removed from the position of the first named plunger, and operable to tuck the end extensions of the upper horizontal portions of the wrapper against the ends of the piece, and means located adjacent a further point in the path of the box oppositely operable to tuck extended side portions of the wrapper against the end or ends of the piece.

5. The combination with a horizontal rotary table having an upwardly open trough-like folding box thereon and means for imparting intermittent progressing movements to the table and box, of means for bringing a wrapper adjacent a given position to which the folding box is brought by the table across the top of the box, means for conducting a piece to a position over the box and wrapper, a plunger having a reciprocatory movement vertically relatively to the position assumed by the folding box, the wrapper and the piece, for forcing the piece and wrapper into the box, upturning the wrapper sides, further means located adjacent the path of the box and to which the latter, with the partially wrapped piece, is conveyed, operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece, a second plunger reciprocating vertically across the circular path of the box suitably removed from the first named plunger, and operable to tuck the end extensions of the upper horizontal portions of the wrapper against the ends of the piece, means located adjacent a further point in the path of the box oppositely operable to tuck extended side portions of the wrapper against the end or ends of the piece, and means for folding the final endwise extended portions of the wrapper against the end of the package.

6. The combination with a horizontal rotary table having an upwardly open trough-like folding box thereon and means for imparting intermittent progressing movements to the table and box, of means for bringing a wrapper adjacent a given position to which the folding box is brought by the table across the top of the box, means for conducting a piece to a position over the box and wrapper, a plunger having a reciprocatory movement vertically relatively to the position assumed by the folding box, the wrapper and the piece, for forcing the wrapper and piece into the box, upturning the wrapper sides, further means located adjacent the path of the box and to which the latter, with the partially wrapped piece, is conveyed, operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece, a second plunger reciprocating vertically across the circular path of the box suitably removed from the first named plunger, and operable to tuck the end extensions of the upper horizontal portions of the wrapper against the ends of the piece, means located adjacent a further point in the path of the box oppositely operable to tuck extended side portions of the wrapper against the end or ends of the piece, and means for gumming endwise extended portions of the wrapper.

7. The combination with a horizontal rotary table having an upwardly open trough-like folding box thereon and means for imparting intermittent progressing movements to the table and box, of means for bringing a wrapper adjacent a given position to which the folding box is brought by the table across the top of the box, means for conducting a piece to a position over the box and wrapper a plunger having a reciprocatory movement vertically relatively to the position assumed by a folding box, the wrapper and the piece, for forcing the piece and wrapper into the box, upturning the wrapper sides, further means located adjacent the path of the box and operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece, a second plunger reciprocating vertically across the circular path of the box suitably removed from the first named plunger rod, and operable to tuck the end extensions of the upper horizontal portions of the wrapper against the ends of the piece, means located adjacent a further point in the path of the box oppositely operable to tuck extended side portions of the wrapper against the end or ends of the piece, means for gumming endwise extended portions of the wrapper, and means for folding the final endwise extended portions of the wrapper against the end of the package.

8. The combination with a horizontal rotary table having an upwardly open trough shaped folding box thereon, and means for imparting intermittent progressing movements to the table and box, of horizontal slides located adjacent the path of the box, at the level of the top thereof, having means for moving them crosswise of the box, and operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece, and a plunger having a reciprocatory movement vertically relatively to the position assumed by the folding box, the wrapper and the piece, for forcing the piece and wrapper into the box, upturning the wrapper sides, further means located adjacent the path of the box and to which the latter, with the partially wrapped piece, is conveyed, operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece, a second plunger reciprocating vertically across the circular path of the box suitably removed from the first named plunger, and operable to tuck the end extensions of the upper horizontal portions of the wrapper against the ends of the piece, means located adjacent a further point in the path of the box oppositely operable to tuck extended side portions of the wrapper against the end or ends of the piece, and means for folding the final endwise extended portions of the wrapper against the end of the package.

plunger located, and having reciprocatory movements vertically adjacent said slides, and operable to tuck the end extensions of the upper horizontal portions of the wrapper against the ends of the piece.

9. The combination with a horizontal rotary table having thereon an upwardly open trough shaped folding box, and means for imparting intermittent progressing rotational movements to the table and box, of horizontal slides located adjacent the path of the box at the level of the top thereof, having means for moving them crosswise of the box, and operable to fold upwardly projecting side portions of the wrapper horizontally onto the top of the piece, a plunger located and having reciprocatory movements vertically adjacent said slides, and operable to tuck the end extensions of the upper horizontal portions of the wrapper against the ends of the piece, and means located adjacent a further point in the path of the receiver for tucking endwise extended side portions of the wrapper against the ends of the piece.

10. A horizontal rotary table and means for intermittently imparting thereto progressive rotational movements, and said table having thereon at regularly spaced intervals a plurality of upwardly open trough shaped folding boxes, a series of mechanisms having fixed locations adjacent the circular path of the boxes, and independent of which the table has its progressive movements, relatively to which the folding boxes are successively and respectively moved, viz: means for feeding a wrapper to one of the positions to which the boxes are successively brought, and means for conducting a piece to be wrapped above the wrapper and to such position of the box and a vertically reciprocating plunger for forcing the piece and wrapper downwardly into the box; slides for folding upstanding side portions of the wrapper horizontally onto the top of the piece, a second vertically reciprocatory plunger for inwardly folding top endwise extending portions of the wrapper against the ends of the piece; and opposite horizontally sliding tuckers for folding endwise projecting side portions of the wrapper against the ends of the piece.

11. A table and means for imparting thereto substantially progressive movements, and said table having thereon at regularly spaced intervals a plurality of folding boxes, having apertures through their bottoms which are also continued through the table, and movable closures for said apertures, a series of mechanisms relatively to which the folding boxes are successively and respectively moved, viz: means for feeding and receiving a wrapper, and means for conducting a piece to be wrapped adjacent a folding box and above the wrapper, and a plunger for forcing the piece and wrapper downwardly into the box; means for folding upstanding side portions of the wrapper horizontally onto the top of the piece, and a plunger for inwardly folding the top portions of the wrappers against the ends of the piece; and opposite horizontally operable tuckers for folding endwise projecting portions of the wrapper against the ends of the piece, and means for forcing each partially wrapped piece through the bottom opening of each folding box and folding the final end portions of the wrapper against the ends of the piece.

12. In a wrapping machine, a frame having thereon a horizontal rotary circular table having a plurality of upwardly open trough shaped folding boxes at regular spaced intervals therearound, means for imparting intermittent progressive movements to the table and boxes, means for bringing a wrapper adjacent a given position to which each folding box is successively brought by the table, across the top of the box, means for bringing a piece to be wrapped to position on the wrapper over a box, and further and respective means supported by the machine frame independently of the table, and relatively to which each folding box on the latter is successively moved, for forcing the wrapper and piece into the folding box, upturning the wrapper sides; for horizontally folding the opposite portions of the wrapper upstanding above the folding box horizontally onto the piece; for downwardly folding portions of the wrapper horizontally projecting endwise beyond the piece against the end of the latter; and for inwardly tucking opposite side portions of the wrapper endwise projecting beyond the piece against the end of the latter.

13. In a wrapping machine, a frame having thereon a horizontal rotary circular table having an annular marginal portion provided with a plurality of upwardly open trough shaped folding boxes at regular spaced intervals therearound, means for imparting intermittent progressive movements to the table and boxes, means for bringing a wrapper adjacent a given position to which each folding box is successively brought by the table, across the top of the box, a vertically reciprocatory plunger located adjacent one of the positions of the folding boxes, for forcing the wrapper and piece into the folding box, upturning the wrapper sides, and oppositely located horizontal slides, mounted on portions of the frame inside and outside of the annular marginal portion of the table, at a farther position to which a box is brought, movable inwardly over and away from over the box top, and means for moving said slides.

14. In a wrapping machine, a frame having thereon a horizontal rotary circular table having an annular marginal portion provided with a plurality of upwardly open trough shaped folding boxes at regular spaced intervals therearound, means for imparting intermittent progressive movements to the table and boxes, means for bringing a wrapper adjacent a given position to which each folding box is successively brought by the table, across the top of the box, a vertically reciprocatory plunger located adjacent one of the positions of the folding boxes, for forcing the wrapper and piece into the folding box, upturning the wrapper sides, and oppositely located slides, mounted on portions of the machine frame inside and outside of the annular portion of the table, at a farther position from the plunger, and around to which the table and box are brought, said slides having tuck folding members at their approached portions located between the planes of the bottom and top of the box, and means for moving said tucker slides horizontally crosswise of the trough opening in the box.

15. In a wrapping machine, a frame having thereon a horizontal rotary circular table having an annular marginal portion provided with a plurality of upwardly open trough shaped folding boxes at regularly spaced intervals therearound, the opposite side walls of said boxes having apertures therethrough between the intermediate and end portions, means for imparting intermittent progressive movements to the table and boxes, means for bringing a wrapper adjacent a given position to which each folding box is successively brought by the table, across the top of the box, a vertically reciprocatory plunger located adjacent one of the positions of the folding boxes, for forcing the wrapper and piece into the folding box, upturning the wrapper sides, oppositely located slides, mounted on portions of the machine frame inside and outside of the annular portion of the table, at a farther position from the plunger, and around to which a box carrying portion is brought, both of the slides having separated tuck folding members at their approached portions located between the planes of the bottom and top of the box and adapted to enter through, and be withdrawn from, said box side apertures, and means for moving said tucker slides horizontally transversely relatively to the folding box.

16. In a wrapping machine, a frame having thereon a horizontal rotary circular table having an annular marginal portion provided with a plurality of upwardly open trough shaped folding boxes at regularly spaced intervals therearound, means for imparting intermittent progressive movements to the table and boxes, means for bringing a wrapper adjacent a given position to which each folding box is successively brought by the table, across the top of the box, a vertically reciprocatory plunger located adjacent one of the positions of the folding boxes, for forcing the wrapper and piece into the folding box, upturning the wrapper sides, oppositely located horizontal slides, mounted on portions of the frame inside and outside of the annular marginal portion of the table, at a farther position to which a box is brought, movable inwardly over and away from over the box top, and means for moving said slides, and a vertically reciprocatory plunger add-

tional to, and at a position remote from the first named plunger movable transversely relatively to the folding box and operable to downwardly turn upper endwise projecting portions of the wrapper against the end of the piece, and means for reciprocating said plunger.

17. In a wrapping machine, a frame having thereon a horizontal rotary circular table having an annular marginal portion provided with a plurality of upwardly open trough shaped folding boxes at regularly spaced intervals therearound, means for imparting intermittent progressive movements to the table and boxes, means for bringing a wrapper adjacent a given position to which each folding box is successively brought by the table, across the top of the box, a vertically reciprocatory plunger located adjacent one of the positions of the folding boxes, for forcing the wrapper and piece into the folding box, upturning the wrapper sides, oppositely located horizontal slides, mounted on portions of the frame inside and outside of the annular marginal portion of the table, at a farther position to which a box is brought, movable inwardly over and away from over the box top, and means for moving said slides, and a vertically reciprocatory plunger additional to, and at a position remote from the first named plunger movable transversely relatively to the folding box and operable to downwardly turn upper endwise projecting portions of the wrapper against the end of the piece, means for reciprocating said plunger, another pair of oppositely located slides, mounted on portions of the machine frame inside and outside of the annular box carrying portion of the table at a position farther around from that of said first named slides and around to which the box on the table is brought, both of said latter slides having separated tuck folding members at their approached portions, located between the planes of the bottom and top of the box, and means for moving said tucker slides horizontally toward and from each other transversely relatively to the folding box.

18. In a wrapping machine, a frame having a horizontal top, a vertical stud, supported by, and projecting above, said top, and having a stationary circular frame section supported at an upper part of said stud, a horizontal rotary circular table journaled about said stud, having an annular upstanding marginal portion, surrounding the edge of said circular frame section, provided with a plurality of upwardly open trough shaped folding boxes at regularly spaced intervals therearound, means for imparting intermittent progressive movements to the table and boxes, means for bringing a wrapper adjacent a given position to which each folding box is successively brought by the table, across the top of the box, and further and respective means supported by the machine frame, independently of the rotary table and relatively to which each folding box on the latter is successively moved, for forcing the wrapper and piece onto the folding box, upturning the wrapper sides, horizontally folding the opposite portions of the wrapper upstanding above the folding box horizontally onto the piece, downwardly folding portions of the wrapper horizontally projecting endwise beyond the piece against the end of the latter, and inwardly tucking opposite side portions of the wrapper endwise projecting beyond the piece against the end of the latter.

19. In a wrapping machine, the combination with a rotary table having a folding box, of a horizontal slide G, cam operating and spring retracting mechanism for reciprocating said slide in a plane approximately coincident with the top of the folding box, and means for imparting intermittent rotational movements to the table to position the folding box thereon in coöperative relation to said slide.

20. A wrapper machine in combination with a rotary table having a trough-shaped folding box thereon, of a vertically reciprocatory plunger frame provided with a depending plunger for coöperation with the folding box, a wrapper folder slidable transversely relatively to the folding box and connection between the plunger frame to said folder whereby the latter has its sliding movements imparted thereto in conjunction with the movements of the plunger frame.

21. In a wrapping machine the combination with a rotary table having a trough-shaped folding box thereon, of a vertically reciprocatory plunger frame provided with a depending plunger having separated lower members, a pair of transversely slidable wrapper folders oppositely operable adjacent and transversely of the path of movement of the folding box on the progressive table, a rotary shaft having a cam thereon and a cam rod engaged therewith and connected to one of said slidable folders, and a bar pivotally connected to the plunger frame and to the other of said slidable folders and having a toggle-like action imparted thereto by the reciprocatory movements of the plunger frame.

22. In a wrapping machine the combination with an intermittently movable table having thereon an upwardly open folding box constructed with pairs of apertures through its opposite sides, of oppositely operable slide bars having separated tucking folders movable through the apertured sides of the folding box, and means for imparting reciprocating movements to said slide bars.

23. The combination with an intermittently rotatable table provided with a plurality of trough-shaped folding boxes thereon, each having a pair of apertures through each side thereof, of a vertically reciprocatory plunger frame provided with a depending plunger H recessed at its lower end, a pair of slidable folders oppositely operable transversely of the length of one folding box and near the plane of the top thereof, an oppositely operable pair of tucking folders at the position of another of the boxes and having separated folding members arranged for movements through pairs of said apertures, cam actuated means for respectively operating the slidable folders which are at one side of the path of movement of the folding boxes, and means actuated by the plunger frame for actuating the slidable folders which are at the other side of the path of the boxes.

24. In a wrapping machine the combination with an intermittently movable rotary table having a plurality of trough-shaped folding boxes thereon, of a vertically reciprocatory plunger frame provided with a plunger, coacting with one of the folding boxes, a pair of oppositely operable folders for tucking side portions of a wrapper for a piece in one of the folding boxes, leaving endwise projecting portions of the wrapper at the bottom of the box, a gummer comprising depending gumming members, and having its location near and above one of the folding boxes, pivotally hung to the plunger frame, gumming rollers adjacent the gummer, and means for alternately swinging said gummer to positions, to gum the endwise extending portions of a wrapper in a box and to contact on the gum supplying roll.

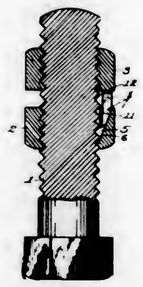
25. In a wrapping machine, the combination with a progressive table having a folding box thereon, of a stationary abutment 98 and gum supplying rolls 100, a vertically reciprocatory plunger frame having a fork-shaped depending gummer pivotally hung thereon and provided with an angular lever like extension 97 formed and arranged for coaction with the said abutment for the purposes set forth.

26. In a wrapping machine the combination with a rotary table having a folding box constructed with an apertured bottom, and a slide, provided to the folding box, having an aperture, and normally closing the box bottom of a cam relatively to which the box and its slide are brought by the table operable to force the slide to bring its recessed portion coincident with the folding box aperture.

27. In a wrapping machine the combination with a rotary table having a folding box constructed with an apertured bottom, and a slide, provided to the folding box, having an aperture, and normally closing the box bottom, of a cam relatively to which the box and its slide are brought by the table operable to force the slide to bring its recessed portion coincident with the folding box aperture, and means operable adjacent a portion to which the box is moved for forcing the piece therein downwardly through the opened apertured bottom thereof.

28. In a wrapping machine, the combination with a rotary table having a folding box constructed with an apertured bottom, and a slide, provided to the folding box, having an aperture, and normally closing the box bottom, of a cam relatively to which the box and its slide are brought by the table operable to force the slide to bring its recessed portion coincident with the folding box aperture, and means beyond the location of said cam, and relatively to which the box is moved, for imparting a bottom-closing movement to said slide.

858,045. NUT-LOCK. HARRY C. WERNER, Wheeling, W. Va. Filed Oct. 5, 1906. Serial No. 337,533.



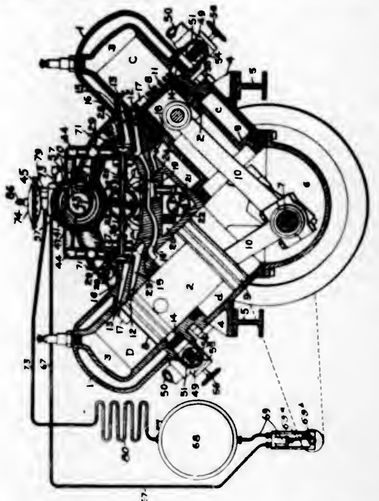
Claim.—1. In a nut-lock, the combination with a screw bolt, of a bearing-nut having an inwardly-inclined recess therein at one side of the central threaded aperture thereof and in open communication with said aperture, a tapered key seated in said recess, said key having a longitudinally beveled inner edge adapted to cut into the threads of the bolt upon the application of pressure to the outer end of the key, and having a beveled end projecting outwardly from said recess, said beveled end being adapted to be engaged by a jam-nut screwed upon said bolt and to cut into said jam-nut when the latter begins to retract.

2. In a nut-lock, the combination with a screw-bolt, of a bearing-nut having a recess therein, said recess being directed inwardly from the outer face of said nut and having its rear wall inwardly inclined, a tapered key of less width than said recess seated therein with its outer end projecting therefrom and having a beveled edge disposed in opposing relation to the threads of the bolt, said projecting outer end of the key being forwardly beveled to admit of a jam-nut sliding thereover in a forward direction exerting a wedging pressure on said key and adapted for interlocking engagement with said jam-nut when the latter is screwed up firmly therebehind to prevent the retraction of the jam-nut.

3. In a nut-lock, the combination with a screw-bolt, of a bearing-nut having a recess therein, said recess being directed inwardly from the outer face of said nut and having its rear wall inwardly inclined, a key seated in said recess with its outer end projecting therefrom, said key having a tapered inner end and having a beveled edge in opposing relation to the threads of the bolt, the outer end of said key having a forwardly beveled edge over which a jam-nut is adapted to slide in a forward direction to wedge said key in said recess and adapted to bite into and prevent the retraction of said jam-nut.

4. In a nut-lock, the combination with a screw-bolt, of a bearing-nut having a recess therein, said recess being directed inwardly from the outer face of said nut and having its rear wall inwardly inclined, a key seated in said recess with its outer end projecting therefrom, said key being of less width than said recess and adapted to lie in a forwardly inclined position therein, the inner edge of said key being beveled and disposed in opposing relation to the threads of the bolt, and the outer end of said key being provided with a bevel against which the pressure of a jam-nut screwed up therebehind is applied to drive said key inward, said bevel being adapted to bite into said jam-nut to prevent the retraction thereof.

858,046. VAPORIZER FOR EXPLOSIVE-ENGINES. HENRY O. WESTENDARP, Saugus, Mass., assignor to General Electric Company, a Corporation of New York. Original application filed Nov. 4, 1903, Serial No. 179,771. Divided and this application filed June 13, 1904. Serial No. 212,230.



Claim.—1. The combination of a vaporizer, a source of liquid fuel supply, means for heating the vaporizer, a by-pass between the vaporizer and source of supply, a regulator for the by-pass for coarse regulation which is controlled by vapor pressure under certain conditions, and automatically actuated means for controlling the regulator under other conditions for fine regulation.

2. The combination of a vaporizer, a source of liquid fuel supply, controllable means for heating the vaporizer, a by-pass between the source of supply and vaporizer, a regulator for the by-pass controlled by vapor pressure, a motor supplied by the vaporizer, and a speed responsive device which controls the by-pass regulator.

3. The combination of a vaporizer, a source of liquid fuel supply, means for heating the vaporizer, means for by-passing a portion of the vapor from the vaporizer, a regulator for the by-pass controlled by the pressure on the vaporizer under certain conditions, a motor supplied by vapor, a speed responsive device therefor, and means between said device and by-pass regulator which controls the action of the latter.

4. The combination with an explosive engine, of a heater connected with the exhaust ports of the engine, a vaporizer in co-operative relation with the same, means controlling the exhaust gases for maintaining the temperature of the vaporizer substantially constant, means for supplying liquid fuel to the vaporizer, and means for controlling the pressure of the vaporizer to vary it directly as the supply of vapor to the engine varies.

5. The combination with an explosive engine, of a vaporizer adapted to generate superheated vapor for fuel at a predetermined temperature and pressure, means for heating the vaporizer by the exhaust gases from the engine, means for controlling the heating of the vaporizer, means for supplying liquid fuel to the vaporizer in sufficient quantity to generate vapor equal to the maximum demand therefor and independently of variations in demand, and means sensitive to variations of vapor pressure and of the engine speed for by-passing a variable quantity of vapor from the vaporizer according to variations in demand therefor.

6. The combination with an explosive engine, of a vaporizer adapted to generate superheated vapor fuel, means

supplying liquid fuel to the vaporizer at a constant predetermined quantity dependent upon the maximum vapor demand of the engine, means for heating the vaporizer to a predetermined temperature, and means whereby the pressure in the vaporizer remains substantially constant at normal demand and varies during variation in demand in direct relation thereto.

7. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine, said vaporizer comprising means for gradually heating to the temperature of vaporization liquid fuel supplied thereto at substantially constant feed, means for supplying liquid fuel to the vaporizer in definite quantity, and means for maintaining the pressure in the vaporizer substantially constant during normal demand for vapor and for varying the pressure directly as the demand varies.

8. The combination with an explosive engine, of a vaporizer for supplying fuel vapor thereto, a heater adapted to maintain the vaporizer at substantially constant temperature, means supplying fuel to the vaporizer in definite quantitative relation to the vapor generating capacity of the vaporizer to generate sufficient vapor to meet the maximum demand therefor, means whereby a definite proportion of the vapor generated is permitted to escape from the vaporizer during normal demand, and automatic means cooperating with the last mentioned means for varying the quantity permitted to escape inversely as the demand for the vapor varies.

9. The combination with an explosive engine, of a vaporizer comprising means for gradually heating liquid fuel supplied to the vaporizer in definite quantity for generating vapor at a predetermined pressure, means responsive to the engine speed for varying the supply of vapor to the engine, and means responsive to the engine speed for normally by-passing a portion of the vapor at said predetermined pressure and varying the quantity by-passed as the demand for the vapor varies.

10. The combination with an explosive engine, of a vaporizer comprising means for gradually heating liquid fuel to the temperature of vaporization and means for superheating the vapor, means for supplying liquid fuel to the vaporizer in definite quantity for generating vapor at a predetermined pressure, and means responsive to the engine speed for by-passing a portion of the vapor at said predetermined pressure and capable automatically to vary the quantity by-passed in accordance with variation in demand for the vapor.

11. The combination with an explosive engine, of a vaporizer for supplying superheated vapor fuel to the engine, means for heating the vaporizer to substantially constant predetermined temperature, adjustable means supplying liquid fuel in definite quantitative relation to a predetermined temperature condition of the vaporizer, and means responsive to the vapor pressure and to the engine speed for by-passing vapor from the vaporizer in varying quantity as the vapor pressure tends to vary in accordance with variations in demand for vapor.

12. The combination with an explosive engine, of a vaporizer comprising means for gradually heating liquid fuel to the temperature of vaporization and means for superheating the vapor, means for supplying liquid fuel to the vaporizer in definite quantity sufficient to generate vapor equal to the maximum demand of the engine, and means responsive to speed changes for by-passing vapor from the vaporizer in varying quantity as the demand for vapor varies below the maximum.

13. The combination with an explosive engine, of a heater adapted to receive exhaust gases from the engine, a vaporizer inclosed in the heater, means for controlling the supply of exhaust gases to the heater for maintaining the temperature of the vaporizer substantially constant, a source of liquid fuel, means for supplying fuel therefrom to the vaporizer in definite quantity dependent upon the temperature of the vaporizer to generate vapor equal quantitatively to the maximum demands of the engine, an automatically-controlled by-pass leading from the vaporizer to the source of liquid fuel for permitting a definite portion of the vapor generated to by-pass at the normal demand for vapor, and a speed-responsive device for varying the portion by-passing inversely as the demand varies.

14. The combination with an explosive engine, of a vaporizer for supplying superheated vapor fuel to the engine at substantially constant pressure, means for maintaining the temperature of the vaporizer constant, a source of liquid fuel, means for supplying fuel therefrom to the vaporizer in definite quantitative relation to the temperature thereof for flashing into vapor at a predetermined pressure, a by-pass between the vaporizer and source of liquid fuel for delivering vapor fuel from the vaporizer, means dependent upon vapor pressure in the vaporizer for controlling the by-pass for permitting a definite proportion of the vapor generated to escape during the normal demand for vapor and dependent upon the speed of the engine for varying the proportion of the escaping vapor inversely as the demand varies, and a condenser in the by-pass for liquefying the vapor fuel delivered from the vaporizer.

15. The combination with an explosive engine, of a vaporizer adapted to be maintained at a constant temperature by a controlled supply of exhaust gases from the engine, said vaporizer comprising a vaporizing coil and a superheating chamber arranged in co-operative relation to each other for gradually heating liquid fuel supplied thereto successively to the temperature of vaporization and to a predetermined degree of superheat, a source of liquid fuel, means for supplying fuel to the vaporizing coil, a by-pass connecting the superheating chamber and source of liquid fuel, a valve controlling the by-pass for permitting a definite quantity of vapor to by-pass at normal demand, and means for varying the movement of said valve in accordance with variation in demand for vapor fuel relatively to the normal demand at which the engine operates.

16. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine at a predetermined pressure, means for supplying liquid fuel thereto in definite quantity for generating vapor sufficient to supply the maximum demand of the engine, means for heating the vaporizer to substantially constant temperature, automatic relief means for by-passing vapor from the vaporizer to maintain the pressure substantially constant during normal demand for vapor fuel, and automatic means cooperating with the relief means for varying the quantity of vapor by-passed inversely as the demand for vapor varies relatively to the normal demand.

17. The combination with an explosive engine, of a vaporizer comprising a vaporizing coil and a superheating chamber arranged in co-operative relation to each other and providing a continuous passage whereby liquid fuel supplied thereto vaporizes and superheats to a predetermined pressure and temperature, a source of liquid fuel, means for supplying fuel to the vaporizer, means for maintaining the temperature of the vaporizer substantially constant, a by-pass between the superheating chamber and source of liquid fuel, a needle valve controlling the by-pass, a pressure regulator for varying the movement of the needle valve when the pressure of vapor in the superheating chamber tends to vary, and an automatic device sensitive to the load changes for varying the set of the regulator for fine regulation.

18. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine at a predetermined pressure and temperature, means supplying liquid fuel thereto in definite quantity to generate vapor sufficient to supply the maximum demand of the engine, means for maintaining the temperature of the vaporizer substantially constant, automatic relief means having a limited range of operation to maintain the vapor pressure in the vaporizer substantially constant at normal demand for vapor, and means responsive to variation of speed of the engine coöperating with the automatic relief means for varying the quantity of vapor relieved in inverse proportion to the variations in demand for vapor.

19. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine at a predetermined pressure, means supplying liquid fuel thereto in definite quantity for generating vapor sufficient to supply the maximum demand of the engine, means for heating the vaporizer, automatic relief means for maintaining the vapor pressure in the vaporizer substantially constant at normal demand for vapor fuel, and means normally in neutral operative relation to the automatic relief means adapted to coact therewith upon abnormal speed of the engine for varying the operation of the relief means.

20. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine at a predetermined pressure, means for varying the supply of vapor fuel to the engine directly as the working load thereon varies, and means for maintaining the vapor pressure in the vaporizer substantially constant during normal demand for vapor fuel and for varying the pressure directly as the demand varies.

21. The combination with an explosive engine, of a flash vaporizer for supplying vapor fuel in superheated state to the engine at a predetermined pressure, means for varying the effective supply of vapor fuel to the engine to maintain the speed thereof substantially constant during variations in load, and means for maintaining the vapor pressure in the vaporizer substantially constant during normal demand for vapor fuel and for varying the pressure directly as the demand varies.

22. The combination with an explosive engine, of a flash vaporizer for supplying vapor fuel in a superheated state to the engine, at a predetermined pressure and temperature, means governing the speed of the engine by regulating the effective supply of vapor fuel thereto according to variations in load, means supplying liquid fuel to the vaporizer in definite quantitive relation to the vapor generating capacity thereof, means sensitive to the variation in vapor pressure of the vaporizer for maintaining the pressure substantially constant at normal demand, and means co-operating with the latter means for varying the vapor pressure directly as the demand varies.

23. The combination with an explosive engine, of a flash vaporizer for supplying vapor fuel to the engine in a superheated state and at a predetermined pressure and temperature, automatic means responsive to speed variation for regulating the effective supply of vapor fuel to the engine, means separate from the said automatic means and co-operating therewith to maintain the vapor flashing capacity of the vaporizer substantially constant irrespective of variations in demand for vapor, automatic means for maintaining the pressure of the vaporizer substantially constant at normal demand for vapor, and means actuated by the speed responsive means and co-operating with said latter automatic means for varying the pressure of vapor directly as the demand for vapor varies.

24. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine at a predetermined pressure, a speed responsive device, a variable cut-off mechanism operated thereby for controlling the supply of vapor fuel to the engine, automatic means for maintaining the pressure of the vaporizer substantially constant, means operatively connected with the speed responsive device for co-operating with said automatic means to vary the operative pressure of the vaporizer during abnormal speed of the engine.

25. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine at a predetermined pressure, a speed-responsive device, means operatively related thereto for varying the supply of vapor fuel to the engine, a source of fuel, a by-pass between the vaporizer and source of fuel, a needle-valve controlling the by-pass, a pressure chamber, a diaphragm therein carrying the needle-valve, a conduit connecting the vaporizer and pressure chamber, and means operatively related to the speed responsive device for varying the tension on the diaphragm simultaneously with the variation in supply of fuel vapor to the engine.

26. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine at a predetermined pressure, a speed-responsive device, means operatively related thereto for varying the supply of vapor fuel to the engine, a source of liquid fuel, a by-pass connecting the vaporizer with the source of liquid fuel, a needle-valve controlling the by-pass, a pressure chamber, a diaphragm therein carrying the needle-valve, a conduit connecting the vaporizer and pressure chamber to render the diaphragm sensitive to variation in pressure of vapor, and means operatively related to the speed-responsive device for varying the tension of the diaphragm to regulate the opening of the needle valve.

27. The combination with an explosive engine, of a vaporizer for supplying vapor fuel to the engine in a superheated state and at a predetermined pressure and temperature, said vaporizer comprising a vaporizing coil and superheating chamber, a source of liquid fuel, a by-pass connecting the superheating chamber and source of liquid fuel, a needle-valve controlling the by-pass, a pressure chamber, a diaphragm therein operating the needle valve, a conduit connecting the superheating chamber and pressure chamber for maintaining the needle-valve in partially open position by the vapor pressure of the vaporizer at a predetermined pressure and at normal demand for vapor, an adjustable spring impinging on the diaphragm, a speed-responsive device for varying the supply of vapor to the engine, and means operatively related to the speed-responsive device for varying the tension of the spring to control the action of the needle valve whereby the quantity of vapor by-passed varies inversely as the demand for vapor varies.

28. In an explosive engine, the combination of an explosive cylinder, a heating chamber, exhaust connections between the explosion cylinder and heating chamber, means in the exhaust connections controlling the discharge of exhaust gases into the heating chamber for regulating the temperature thereof, a vaporizer within the heating chamber in co-operative connection with the explosion cylinder, means for supplying fuel to the vaporizer in definite quantitative relation to the vaporizing capacity thereof, means for by-passing vapor from the vaporizer during normal demand for vapor, and means controlled by the speed of the engine for varying the quantity of vapor by-passed inversely as the demand for vapor varies.

29. In an explosive engine, the combination of an explosion cylinder, a heating chamber, exhaust connections between the explosion cylinder and heating chamber, a kerosene superheating chamber within the heating chamber, a source of liquid fuel supply, a fuel heating coil surrounding and connected with the superheating chamber and with the source of fuel supply, means for supplying vapor to the explosion cylinder, a by-pass between the superheating chamber and source of fuel supply, and means in the by-pass actuated by vapor pressure for by-passing the vapor generated in excess of the normal demand of the engine.

30. In an explosive engine, the combination of an explosion cylinder, a heating chamber, exhaust connections between the explosion cylinder and heating chamber, a superheating chamber within the heating chamber which supplies vapor unmixed with air to the engine, a source of liquid fuel supply, a fuel heating coil connected with the superheating chamber and source of fuel, means supplying fuel in constant quantity sufficient to generate vapor equal to the maximum demand therefor, means regulated by the pressure of the vapor for by-passing the excess of vapor from the super-heating chamber during variation in demand, and variably controlled means supplying vapor from the said chamber to the explosion cylinder.

31. In an explosive engine, the combination of an explosion cylinder, a heating chamber, exhaust connections between the heating chamber and explosion cylinder, a vapor superheating chamber within the heating chamber which delivers vapor unmixed with air to the cylinder, a fuel heating coil connected with the superheating chamber, means supplying fuel through the heating coil to the superheating chamber in predetermined quantity to generate vapor to the maximum demand therefor, means supplying the vapor from the chamber to the cylinder, and means controlled by the engine speed for by-passing the excess of vapor from the superheating chamber during variations in demand.

32. In an explosive engine, the combination of an explosion cylinder, a heating chamber, exhaust connections between the explosion cylinder and heating chamber, means in the exhaust connections controlling the discharge of ex-

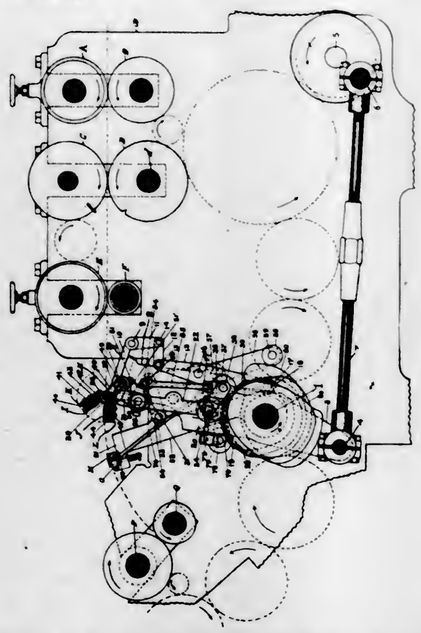
haust gases into the heating chamber to vary the temperature thereof, a vaporizer within the heating chamber which delivers vapor unmixed with air to the engine, means supplying liquid fuel to the vaporizer in definite quantitative relation to the vaporizing capacity thereof independent of the demand for vapor, and means for by-passing the excess of vapor from the vaporizer upon variation in demand for vapor.

33. In an explosive engine, the combination of an explosion cylinder, an exhaust chamber, a vaporizer, a heating chamber inclosing the vaporizer, exhaust connections between the exhaust chamber and ends of the heating chamber, an outlet pipe for the escape of gas from the heating chamber, and a relief exhanst pipe connecting with the exhaust chamber and leading directly to the atmosphere.

34. In an explosive engine, the combination of an explosion cylinder, an exhaust chamber, a vaporizer, a heating chamber surrounding the vaporizer, exhaust pipes connecting the exhaust chamber with the ends of the heating chamber, a discharge pipe for the outlet of the exhaust gases from the heating chamber, a relief exhaust pipe leading to the atmosphere from the exhaust chamber, and a valve for regulating the discharge of the exhaust gases to the heating chamber and discharge pipe.

35. In an explosive engine, the combination of a plurality of cylinders, each having an exhaust chamber, a vaporizer, a heating chamber surrounding the vaporizer, exhaust pipes connecting the exhaust chambers with the ends of the heating chamber, a discharge pipe for the outlet of the exhaust gases from the heating chamber, relief exhaust pipes extending from the exhaust chambers to the atmosphere, a damper in the discharge pipe, and valves in the relief exhaust pipes co-operating with the damper to control the exhaust gases passing to the heater for varying the temperature of the vaporizer.

858,047. PAPER-BAG MACHINE. EDMUND C. WESTERVELT, South Bend, Ind. Filed Aug. 7, 1905. Serial No. 273,096.



Claim.—1. In a bag machine, the combination of a folding bed, a front gripper adapted to grip both sides of one ply of the forward end of the bag blank, diamond folding mechanism, and means for moving the front gripper toward and away from said folding mechanism.

2. The combination with a front gripper adapted to grip the forward end of the bag blank and diamond folding mechanism, of means for moving the front gripper toward said folding mechanism during the formation of the diamond fold.

3. The combination with the front gripper adapted to grip the forward end of the bag blank and diamond folding mechanism, of means for moving the front gripper toward and away from the diamond folding mechanism, and means for lowering the forward portion of said folding mechanism during the formation of the diamond fold.

4. The combination with a front gripper adapted to grip the forward end of the bag blank and diamond folding mechanism, of means for moving the front gripper toward the folding mechanism during the formation of the diamond fold, and means for lowering the portion of the folding mechanism acting upon the lower portion of the bag blank during the folding operation.

5. The combination with a front gripper adapted to grip the forward end of the bag blank and means for opening and closing the said gripper, of diamond folding mechanism comprising folding devices for acting upon the upper and lower plies of the bag blank, means for opening said folding devices to admit the bag blank, means for swinging the upper folding devices upwardly, backwardly and downwardly and for swinging the lower folding devices downwardly, and means for moving the front gripper toward the folding mechanism during the downward movement of the lower folding devices.

6. The combination of a reciprocating folding bed, with means for reciprocating the same, of folding devices mounted to reciprocate with the folding bed and mounted also to swing back and forth in a sidewise direction relatively to the folding bed, means for swinging the folding devices back and forth relatively to the folding bed, means for actuating the same so as to fold the bag blank, a presser plate for forming the primary crease and a reciprocating front gripper, and means for reciprocating the same back and forth, said means being adapted to move the gripper toward the folding bed during the formation of the diamond fold, and then move the same forwardly away from the folding bed to its former position relatively thereto.

7. The combination with a folding bed, of a rocking support or frame therefor, a presser plate carried by said folding bed, upper and lower folding devices carried by swinging arms pivotally supported by the rocking frame of the folding bed, whereby said arms can swing back and forth transversely to the direction of movement of the folding bed to move the folding devices over and away from the folding bed, means for swinging the upper folding devices upwardly and backwardly and downwardly, means for swinging the lower folding devices downwardly, a front gripper carried by a swinging arm, means for swinging said arm so as to cause the front gripper to reciprocate back and forth with the folding bed, but to move toward the latter during the downward movement of the lower folding devices and thence away from the folding bed, and means for opening and closing the front gripper.

8. The combination with a folding bed, of a rocking support therefor, means for rocking said support so as to reciprocate the folding bed, a front gripper carried by a swinging arm, and means for reciprocating said swinging arm to cause the front gripper to reciprocate back and forth with the folding bed, but to move toward the folding bed during a portion of its reciprocation.

9. The combination with a folding bed, of a rocking support therefor, means for rocking said support so as to reciprocate the folding bed, a front gripper carried by a swinging arm, and mechanism for swinging said arm, comprising a link 54 pivoted to said arm, a lever 56 pivoted to said link, and a cam 60 for actuating said lever.

10. The combination with a folding bed, of a rocking support therefor, comprising uprights 2, 2' having extensions 3, 3', a rotary shaft 1 upon which said uprights are mounted, a link 7 connected with the lower ends of said extensions 3, 3', a crank for actuating said link, a swinging arm 52 carrying a front gripper, and means for reciprocating said arm, comprising a link 54 pivotally connected therewith, a lever 56 pivoted to the upright 2', and a cam 60 rigidly secured to said rock shaft 1 and adapted to actuate the lever 56.

11. The combination of a folding bed, a front gripper, comprising upper and lower gripping jaws, a swinging arm 52 carrying said front gripper, means for swinging said arm so as to reciprocate said gripper toward and away from the folding bed, and means for opening and closing the gripper during the swinging movement of said arm.

12. A front gripper, comprising gripping fingers M and N, a lower gripping jaw O adapted to open and close relatively to the fingers M and N, and means for spreading the fingers M and N as the jaw O closes.

13. A front gripper, comprising fingers M and N mounted on spindles 62 and 63, said spindles being also provided with projections 64 and 65, a lower pivotally mounted gripping jaw O arranged to open and close relatively to the fingers M and N, and provided with a wedge 72 adapted to pass between and separate the projections 64 and 65 and thereby spread the gripping fingers M and N.

14. The combination with a swinging support 52 and means for swinging the same, of a front gripper carried by said support and comprising gripping fingers M and N and a gripping jaw O pivotally supported below the fingers M and N, the gripping fingers being mounted on spindles 62 and 63 provided with projections 64 and 65, and the gripping jaw being provided with a wedge 72 adapted to separate the projections 64 and 65, a link 74 connected with the gripping jaw O, and means for actuating said link 74.

15. The combination with a swinging support 52 and means for swinging the same, of a front gripper carried by said support and comprising gripping fingers M and N and a gripping jaw O pivotally supported below the fingers M and N, the gripping fingers being mounted on spindles 62 and 63 provided with projections 64 and 65, and the gripping jaw being provided with a wedge 72 adapted to separate the projections 64 and 65, a link 74 connected with the gripping jaw O, a lever 76 pivotally connected with the link 74 and pivotally supported upon the swinging support, and a cam 19 for actuating the lever 76.

16. The combination of a folding bed, a rocking support carrying the same, a rotary shaft on which said support is loosely mounted, a crank and connecting rod for rocking said support, a swinging arm 52 carrying a front gripper comprising gripping fingers M and N mounted on spindles 62 and 63 provided with projections 64 and 65, springs 66 and 67 on said spindles, a lower gripping jaw O pivotally mounted upon said arm 52 below the fingers M and N, a wedge 72 carried by said gripping jaw O and adapted to act upon the projections 64 and 65, a link 74 connected with the lower gripping jaw O, a lever 76 pivoted at 75 to the arm 52, a cam 80 for acting upon the lever 76, said cam being rigidly secured to the rotary shaft 1, a link 54 connected with the arm 52, a lever 56 connected with the link 54, and a cam 60 rigidly secured to the shaft 1 for acting upon the lever 56 and thereby swinging the arm 52.

17. The combination with a folding bed carried by a rocking support, together with means for rocking said support, of a presser plate H carried by arms 10, 10' pivotally secured at the rear of the folding bed, an arm 11 secured to the pivotal support of the arms 10, 10', a link 12 connected with the arm 11, a lever 13 pivotally secured to the rocking support for the folding bed, and a cam 19 for actuating the lever 13.

18. The combination with a folding bed and rocking support therefor, of means for swinging said support, a pair of arms 22 and 22' pivotally connected with the rocking support so as to swing transversely to the movement thereof, upper and lower folding devices mounted on each of said arms, means for swinging said arms toward and away from the folding bed during the rocking movement of said support, means for swinging the upper folding devices upwardly, backwardly and downwardly, and means for swinging the lower folding devices downwardly.

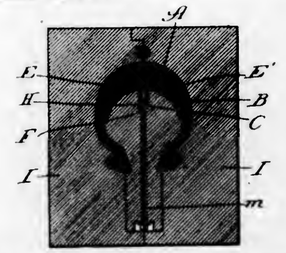
19. The combination with a folding bed carried by a rocking support, a rotary shaft on which said support is mounted, means for rocking said support, swinging arms 22, 22' pivotally connected at the sides of said support, lateral extensions 23 on said swinging arms, cams 26 co-operating with rollers 25 on said extensions for swinging said arms 22, 22', upper and lower folding devices carried by each of said arms 22, 22', rotary shafts 28 carrying the upper folding devices, pinions 29 on said shaft, rocker arms 31 having gear segments 30 meshing with said pinions, links 35 connected with the rocker arms 31, arms 36 carried by the extensions 23 and pivotally connected with the links 35, cams 39 rigidly secured to the rotary shaft 1 for actuating the links 35, cams 51 carried by the arms 31, and arms 48 actuated by said cams 51 and connected with the lower folding devices, said devices being mounted loosely upon the shafts 28.

20. The combination with the folding plate I and nipper K, of a finger 43 on the nipper K, and a rotary cam 42 with peripheral projections for acting upon the finger 43 and opening the nipper K.

21. The combination of upper and lower folding plates provided with nippers, the upper folding plate being secured to a rotary shaft and the upper nipper being pivotally secured to the upper folding plate, and the lower folding plate being loose on said shaft and having its nipper pivotally secured to it, springs tending to keep said nippers close upon their respective folding plates, fingers carried by said nippers, and cams co-operating with said fingers to open and close the nippers.

22. A front gripper having a gripping jaw and a pair of co-operating gripping fingers M and N provided with straight edge portions, in combination with means for swinging said fingers toward and away from each other, whereby when swung outwardly said edge portions will be at an inclination to form diverging front side edges of the diamond fold.

858,048. APPARATUS FOR THE MANUFACTURE OF ELASTIC TIRES. RALPH M. WHITMAN, Providence, R. I. Original application filed June 27, 1906, Serial No. 323,731. Divided and this application filed Dec. 26, 1906. Serial No. 349,402.



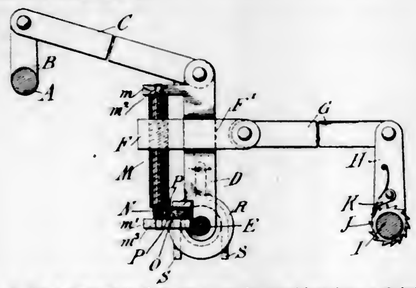
Claim.—1. In combination with a main core for forming the interior of an elastic tire, the supplemental core attached thereto by an engaging projection and a rod for locking and releasing the same, substantially as described.

2. In combination with a main core adapted to form the interior of an elastic tire, a supplemental mold connected thereto by a pin and recess, and made in sections, substantially as described.

858,049. MECHANICAL MOVEMENT. FREDERICK J. ZIEGLER, New York, N. Y. Filed Dec. 18, 1906. Serial No. 348,384.

Claim.—1. In a mechanical movement, the combination, with the driving and driven shafts, of a crank-arm mounted for oscillation between said shafts, a longitudinally-disposed, rotatably-mounted, threaded spindle carried by said crank-arm, a connection between said crank-arm and the driving-shaft whereby the crank-arm is oscillated by the latter, a block embracing said crank-arm and threaded on said spindle to move longitudinally of said

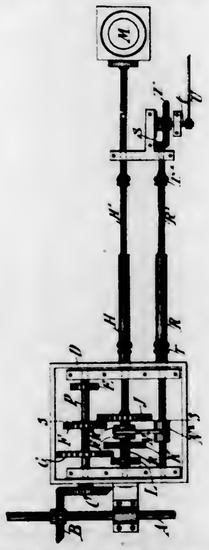
crank-arm, means whereby said spindle may be manually rotated, and an operative connection between said block and the driven-shaft.



2. In a mechanical movement, in combination, a driving-shaft, a driven-shaft, an intermediate shaft, a crank-arm mounted to oscillate on said intermediate shaft, a connection between the outer end of said crank-arm and said driving-shaft whereby the crank-arm is oscillated, a block guided longitudinally along said crank-arm, a threaded spindle carried by said crank-arm and by which said block is fed in either direction, a pinion carried by said spindle adjacent the intermediate shaft, a rack engaging said pinion, and operating mechanism for said rack guided on and movable longitudinally along said intermediate shaft.

3. In a mechanical movement, the combination of a driving-shaft, a driven-shaft, an intermediate shaft, a crank-arm mounted on said intermediate shaft and which is oscillated thereon by said driving-shaft, a block guided longitudinally along said crank-arm by means of a slot, a connection between said block and the driven-shaft, a threaded spindle disposed longitudinally of the crank-arm and which engages a threaded opening in said block, a pinion carried by said spindle, and means guided along said intermediate shaft whereby said pinion may be rotated.

858,050. SPEED-CHANGING MECHANISM FOR AUTOMOBILES. FREDERICK J. ZIEGLER, New York, N. Y. Filed Feb. 27, 1907. Serial No. 359,586.



Claim—1. In speed-changing mechanism for automobiles having transmission gears supported by the rear axle thereof, the combination, with a motor-shaft arranged at right angles to the rear axle and gears slidable on said motor-shaft to coöperate with said transmission gears, of a shifting fork for said motor-shaft gears, and a rotary extensible operating shaft parallel to the motor-shaft by which said shifting fork is operated.

2. In speed-changing mechanisms for automobiles, the combination with a motor-shaft and the gears slidable thereon, of a shifting fork for said gears, and an extensible operating shaft upon which the said shifting fork is threaded.

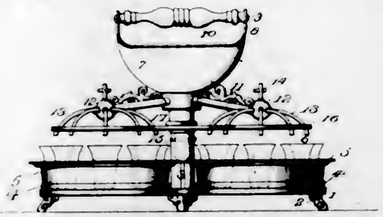
3. In speed-changing mechanisms for automobiles, the combination with a motor-shaft and the gears slidable thereon, of a shifting fork for said gears, and an operating shaft composed of two telescopic sections and upon which said shifting fork is threaded.

4. In speed-changing mechanisms for automobiles, the combination with a motor-shaft and the gears slidable thereon, of a shifting fork for said gears, and a rotary longitudinally-extensible universally-jointed operating device for said fork.

5. The combination, with a motor-shaft having speed-changing gears slidable thereon, of a telescopically arranged operating shaft having a threaded section, a shifting fork for said gears threaded on said section, and means whereby said shaft may be manually rotated.

6. In a speed-changing mechanism having gears, a shifting fork for said gears, a rotary extensible rod threaded within said fork, a beveled gear at one end of said rod, a second beveled gear meshing with said first-named gear, a shaft for said second gear, and an operating lever on said shaft.

858,051. COMMUNION OR EUCHARISTIC DEVICE. HENRY C. ALLEN, Northford, Conn., assignor to Mary E. Allen, Northford, Conn. Filed Aug. 10, 1906. Serial No. 330,074.



Claim.—1. In a eucharistic device, the combination of a carrier, trays removably fitted upon the carrier, each tray being provided with a series of receptacles, a reservoir connected with the carrier, pipes in communication with the reservoir and radiating therefrom, valved heads at the outer ends of said pipes, and tubes extended from the respective heads, one for each receptacle of a tray, there being one pipe, one valved head and a plurality of tubes for each tray.

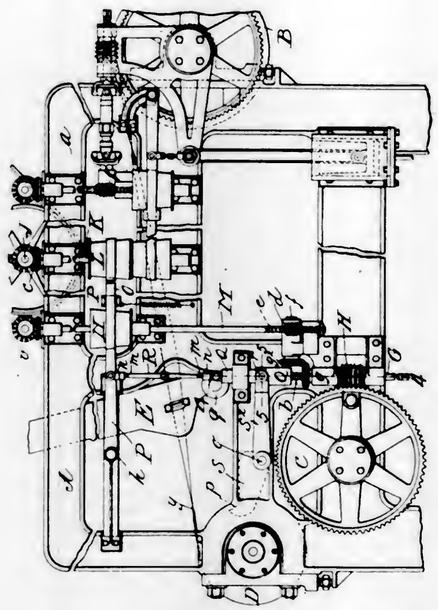
2. In a eucharistic device, the combination of a carrier, trays removably fitted upon the carrier, each tray being provided with a series of receptacles, a centrally disposed reservoir detachably connected with the carrier, a pipe for each tray extended from the reservoir, a valved head at the outer end of each pipe and a series of tubes radiating from each head, one for each receptacle of the tray.

3. In a eucharistic device, the combination of a carrier, a series of trays removably fitted upon the carrier, each tray being provided with a plurality of receptacles a centrally disposed reservoir connected with the carrier, pipes extended outward from the reservoir, one for each tray, valved heads at the outer ends of the pipes, a series of tubes radiating from each valved head, one for each receptacle of a tray and a band connecting the tubes of each series as well as the series of tubes themselves.

4. In a eucharistic device, the combination of a carrier provided with a centrally disposed post, and a series of rims grouped about said post, trays removably fitted to the rims and having openings to receive a plurality of receptacles, a reservoir having a stem to make detachable connection with the aforementioned post and likewise provided with a handle, pipes radiating from the reservoir, valved heads at the outer end of the pipes, a series of distributing tubes radiating from the respective valved heads, and a band connecting the tubes of each series, as well as the several series of tubes.

5. The herein described eucharistic device comprising a carrier provided with a centrally disposed post, and a series of rims grouped about the post, trays removably fitted to the rims and provided with openings to receive receptacles, a reservoir having a depressed portion from which projects a stem to make detachable connection with the aforementioned post and support the reservoir, the latter having upwardly extended portions at opposite sides, a handle attached at its ends to said upwardly extended portions of the reservoir, pipes radiating from the depressed portion of the reservoir, valved heads at the outer ends of said pipes, distributing tubes radiating from the respective valved heads and a band connecting the tubes of each series as well as the series of tubes.

858,052. CLOTH-TAKE-UP MECHANISM FOR LOOMS. CHARLES H. ATKINS, Springfield, Mass. Filed July 16, 1906. Serial No. 326,380.



Claim.—1. The combination with the cloth-beam of a loom, of a shaft having a rotation imparting connection with said cloth-beam, variable speed driving means for said shaft, and means, actuated by the lay according to the extents of its beating up movements, and controlling said variable speed driving means.

2. The combination with the cloth-beam of a loom, of a shaft having a rotation imparting connection with said cloth beam, variable speed driving means for said shaft, a screw rotatable in unison with said shaft, and a nut having detachable engagement with said screw, a carrier for the nut, means variably movably actuated by the lay according to the extents of its beating up movements, and controlling the position of said carrier and nut, and means connected with said carrier, and to have changed positions in unison therewith, and automatically controlling the said variable speed driving means.

3. The combination with the cloth-beam of a loom, of a shaft having a cone pulley thereon, and having a rotation imparting connection with said cloth-beam, a belt running around and driving said cone pulley, a shifter for said belt, a screw rotatable in unison with said shaft, and a nut having detachable engagement with said screw, a carrier for the nut, connected with said belt shifter, and means variably movably actuated by the lay according to the extents of its beating up movements, and controlling the position of said carrier nut.

4. The combination with the cloth-beam of a loom, of a shaft having a rotation imparting connection with said cloth-beam, variable speed driving means for said shaft, a screw rotatable in unison with said shaft, and a nut having detachable engagement with said screw, a carrier for the nut, a lever mounted for a swinging movement, having a portion thereof in the path of, and to be successively engaged, and to be more or less swung, by the lay according to the extents of the beating up movements, and said lever having connection with the nut carrier, and means connected with said carrier and to have changed positions in unison therewith, and controlling the said variable speed driving means.

5. The combination with the cloth-beam of a loom, of a shaft having a rotation imparting connection with said cloth-beam, and having screw-threads on a portion thereof, variable speed driving means for said shaft, a sleeve like part slidable on said shaft and having, supported thereby, a nut section engaging said screw threads, a lever, to be successively engaged and swung by the lay and having an engagement with said sleeve like part, and a connection between said sleeve like part and the said variable speed driving means.

6. The combination with the cloth-beam of a loom, of a shaft having a rotation imparting connection with said cloth-beam, and having ratchet shaped screw-threads on a portion thereof, variable speed driving means for said shaft, a sleeve like part slidable on said shaft and having, intermediately pivotally mounted thereon a lever like nut section, normally spring pressed with a toothed member thereof in engagement with said screw threads, a lever, to be successively engaged and swung by the lay and having an engagement with said sleeve like part, and a connection between said sleeve like part and the said variable speed driving means.

7. The combination with the cloth-beam of a loom and the shaft having a rotation imparting connection with said cloth-beam, and having screw threads on a portion thereof, another shaft having a driving connection with said first named shaft provided with a cone pulley, a belt running around and shiftable relatively to said cone pulley, means for driving said belt, and a shifter for said belt, a nut carrier slidable on said screw threaded shaft, having a nut engaging in the screw threads thereof, a lever to be successively engaged and swung by the lay and having an engagement with said nut carrier, and a longitudinally adjustable connecting rod between said nut carrier and said belt shifter.

8. In combination, the cloth beam of a loom having a worm wheel affixed thereon, a shaft having a screw threaded portion, also having a worm in mesh with said worm wheel and having an affixed bevel gear wheel, a shaft having a bevel gear wheel meshing with the first named bevel gear wheel, and having a worm wheel, another shaft having a worm in mesh with the last named worm wheel and having a cone pulley, a still further shaft having a reversely tapered cone pulley, and means for constantly rotating it, a belt running around and between both said cone pulleys, a shifter for said belt, a nut carrier slidable along said screw threaded shaft and having a nut detachably engaged with the threads thereof, a two membered lever pivotally mounted on the side of the loom having one member thereof in the path of, and to be successively engaged by, the forwardly swinging lay, and having the other member in engagement with the said nut carrier, and a connection between said nut carrier and the belt shifter.

858,053. ROTARY BAKING-OVEN. FREDERICK R. BARNHEISEL, Chicago, Ill. Filed Oct. 17, 1905. Serial No. 283,121.



Claim.—1. In a rotary bake oven having a baking chamber, a rotatable vertical shaft passing through the axial center of the baking chamber, a series of radiating arms for the baking plane, a central sleeve attached to the shaft, a series of spider arms radiating from the sleeve, a flat faced disk carried by the sleeve arms, a plurality of spacing ribs on the upper side of the disk, the ribs receiving the inner ends of the baking plane arms in the spaces between the ribs, and loosely connecting each arm to the shaft at its inner end, for the arms to rotate with the shaft and be retained at their inner ends in operative relation, a hub fixedly attached to the shaft above the baking plane arms, a plurality of spider arms radiating from the hub, a circular plate on the outer end of the spider arms and having a plurality of notches, one notch for each radial arm of the baking plane, adjustable vertical members, one for each radial arm of the baking plane and between the arm and the notched plate and engaging the notches of the plate, for independently raising and lowering each arm from its inner connected end, and properly positioning the individual arms with respect to each other, and a covering connected with the radial arms of the baking plane, substantially as described.

2. In a rotary bake oven having a baking chamber, a rotatable vertical shaft passing through the axial center of the baking chamber, a series of radiating arms for the baking plane, a central sleeve attached to the shaft, a series of spider arms radiating from the sleeve, a flat faced disk carried by the sleeve arm, a plurality of spacing ribs on the upper side of the disk, the ribs receiving the inner ends of the baking plane arms in the spaces between the ribs, and loosely connecting each arm to the shaft at its inner end, for the arms to rotate with the shaft and be retained at their inner ends in operative relation, a hub fixedly attached to the shaft above the baking plane arms, a plurality of spider arms radiating from the hub, a circular plate on the outer end of the spider arms and having a plurality of notches, one notch for each radial arm of the baking plane, adjustable vertical members, one for each radial arm of the baking plane and between the arm and the notched plate and engaging the notches of the plate, for independently raising and lowering each arm from its inner connected end, and properly positioning the individual arms with respect to each other, a covering connected with the radial arms of the baking plane, and cross arms connecting the radial arms of the baking plane and adapted to hold the arms in proper position in sidewise relation one to the other, substantially as described.

3. In a rotary bake oven having a baking chamber, a rotatable vertical shaft passing through the axial center of the baking chamber, a series of radiating arms for the baking plane, a central sleeve attached to the shaft, a series of spider arms radiating from the sleeve, a flat faced disk carried by the sleeve arms, a plurality of spacing ribs on the upper side of the disk and receiving the inner ends of the baking plane arms in the spaces between the ribs and loosely connecting each arm to the shaft at its inner end, for the arms to rotate with the shaft and be retained at their inner ends in operative relation, a hub fixedly attached to the shaft above the baking plane arms, a plurality of spider arms radiating from the hub, a circular plate on the outer ends of the spider arms and having a plurality of notches, one notch for each radial arm of the baking plane, a two-part connecting rod of turn-buckle formation for each radial arm of the baking plane and between the arm and the notched plate and engaging a notch of the plate, for independently raising and lowering each arm from its inner connected end, and properly positioning the individual arms with respect to each other, and a covering connected with the radial arms of the baking plane, substantially as described.

4. In a rotary bake oven having a baking chamber, a rotatable shaft extending vertically through the axial center of the chamber, a supporting hub fixedly secured to the shaft, a supporting spider fixedly secured to the shaft above the hub, a plurality of radiating arms having their inner ends entered between the hub and spider and loosely resting upon the hub, and adjustable hangers depending from the spider, one hanger for each arm and secured to its arm for independently raising and lowering the arm, substantially as described.

5. In a rotary bake oven having a baking chamber, a rotatable shaft extending vertically through the axial center of the chamber, a supporting hub fixedly secured to the shaft, a supporting spider fixedly secured to the shaft above the hub, a plurality of radiating arms having their inner ends entered between the hub and spider and loosely resting upon the hub, adjustable hangers depending from the spider, one hanger for each arm and secured to its arm for independently raising and lowering the arm, an abutment on each arm, and a ring common to and encircling all of the abutments for holding the arms against displacement, substantially as described.

6. In a rotary bake oven having a baking chamber, a rotatable shaft extending vertically through the axial center of the chamber, a supporting hub fixedly secured to the shaft, a supporting spider fixedly secured to the shaft above the hub, a plurality of radiating arms having their inner ends entered between the hub and spider and loosely resting upon the hub, adjustable hangers depending from the spider, one hanger for each arm and secured to its arm for independently raising and lowering the arm, an abutment on each arm, a ring common to and encircling all of the abutments for holding the arms against displacement, and cross arms extending between the radiating arms and adapted to sidewise lock the arms together, substantially as described.

7. In a rotary bake oven, having a baking chamber, a rotatable vertical shaft extending through the axial center of the baking chamber, a supporting hub fixedly secured to and rotatable with the shaft, radiating arms having their inner ends loosely resting upon the supporting hub, and held against side movement, a supporting spider fixedly secured to the shaft and horizontally extending above the arms and of larger diameter than the supporting hub, and adjustable hangers depending vertically from the periphery of the spider, one hanger for each arm and secured to the arm at a point beyond the periphery of the supporting hub for individually raising and lowering the arms and retaining the inner ends of the arms in operative relation, substantially as described.

8. In a rotary bake oven having a baking chamber, a rotatable vertical shaft extending through the axial center of the baking chamber, a supporting hub fixedly secured to and rotatable with the shaft, radiating arms having their inner ends loosely resting upon the supporting hub and held against side movement, a supporting spider fixedly secured to the shaft and horizontally extending above the arms and of larger diameter than the supporting hub, adjustable hangers depending vertically from the periphery of the spider, one hanger for each arm and secured to the arm at a point beyond the periphery of the supporting hub for individually raising and lowering the arm and retaining the inner ends of the arms in operative relation, sockets on the arms, and cross arms fitted into the sockets for connecting and rigidly securing together the radiating arms, substantially as described.

9. In a rotary bake oven having a baking chamber, a rotatable vertical shaft extending through the axial center of the baking chamber, a supporting hub fixedly secured to and rotatable with the shaft, radiating arms having their inner ends loosely resting upon the supporting hub and held against side movement, a supporting spider fixedly attached to the shaft and horizontally extending above the arms and of larger diameter than the supporting hub, adjustable hangers vertically depending from the periphery of the spider, one hanger for each arm and secured to the arm at a point beyond the periphery of the supporting hub for individually raising and lowering the arms and retaining the inner ends of the arms in operative relation, sockets on the arms, cross arms fitted into the sockets for connecting and rigidly securing together the radiating arms, abutments on the arms, and a ring or band common to and encircling all of the abutments, substantially as described.

10. In a rotary bake oven having a baking chamber, a rotatable vertical shaft passing through the axial center of the baking chamber, a supporting hub fixedly secured to the shaft, a supporting spider of larger diameter than the hub fixedly secured to the shaft above and in co-relation to the hub, a series of radially arranged spacing ribs on the upper face of the hub, radiating arms having their inner ends entered between the hub and spider and loosely inserted between the spacing ribs, adjustable hangers depending from the periphery of the supporting spider, one hanger for each arm and secured to the arm at a point beyond the periphery of the hub, sockets on the radiating arms, cross arms provided with notched ends adapted to be entered and held within the sockets for rigidly holding the arms properly positioned sidewise, and a sectional covering for the baking plane consisting of segmental shaped blocks of material supported by the radiating arms and cross arms, substantially as described.

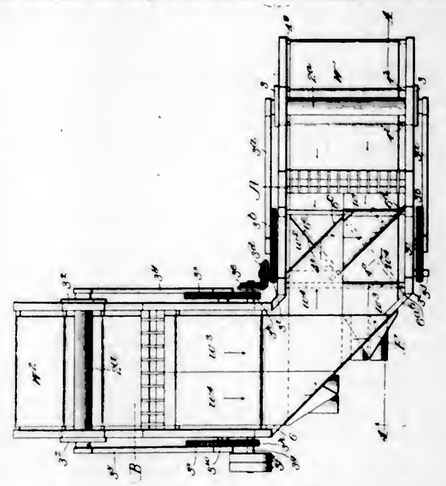
858,054. FLAT-BED WEB PRESS. HENRY F. BECHMAN, Battle Creek, Mich., assignor to Duplex Printing Press Company, Battle Creek, Mich., a Corporation of Michigan. Filed Sept. 12, 1906. Serial No. 334,270.

Claim.—1. In a printing press, the combination of two perfecting printing mechanisms arranged at right angles to each other, and each comprising two stationary beds and coacting impression cylinders, means for reciprocating the cylinders over the beds, gearing between the cylinder driving mechanisms, a folding mechanism at the angle of the press, and means for directing the webs printed in both mechanisms to said folder.

2. In a printing press, the combination of an L-shaped main frame, a pair of parallel stationary type beds secured in each leg of the main frame, reciprocating cylinders coacting with said beds, web feeding, looping and delivery mechanisms adjacent each pair of beds, guides for directing the web between the beds and cylinders, a folder in the angle of the press, and angle bars and deflectors adjacent the folder whereby the webs can be assembled at the folder.

3. In a printing press, the combination of two flat-bed-web-perfecting printing mechanisms arranged at substantially right angles and in the same plane, folding mechanism at the angle of the press, and means for assembling the products of both mechanisms.

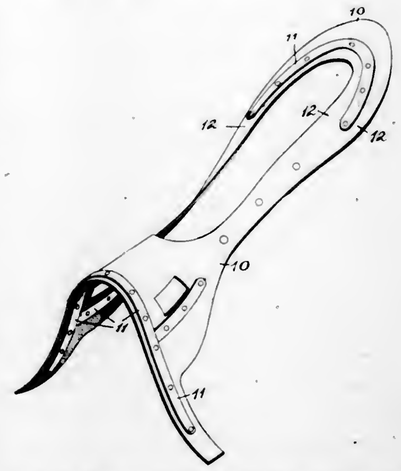
4. In a printing press, the combination of two perfecting printing mechanisms arranged at right angles to each other each comprising two stationary beds and coacting impression cylinders, means for reciprocating the pairs of cylinders at right angles to each other, gearing between the cylinder driving mechanisms, and folding mechanism.



5. In a printing press, the combination of two flat-bed-web-perfecting-printing mechanisms arranged at substantially right angles and in the same plane, each comprising two stationary beds and two reciprocating impression cylinders, means for operating the mechanism synchronously, and a folding mechanism at the angle of the press.

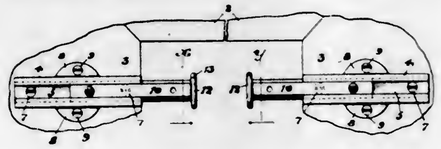
6. In a printing press, the combination of an L-shaped frame, a pair of parallel type beds secured in each ell of the frame, a cylinder operating on each type bed, folding mechanism at the angle of the press, and web guides substantially as described whereby the webs printed on both sets of type beds can be assembled at the folder.

858,055. SADDLETREE. JOSEPH BEVAN, Newark, N. J. Filed Feb. 15, 1907. Serial No. 357,478.



Claim.—A saddletree comprising a body portion cut to the required shape from a sheet of fiber, the fiber being bent into the required shape to form a saddletree, and braces secured to the inner and outer surfaces of the body portion and suitably disposed to strengthen it.

858,056. SHADE-ROLLER MOUNTING. JOHN J. BLOOMER, Rahway, N. J. Filed Apr. 30, 1904. Serial No. 205,667.



Claim.—1. A shade roller bracket comprising a member having a longitudinal groove open at both ends, the said member having perforations arranged longitudinally in the groove for the reception of screws, a second member approximately as long as the first member comprising an arm, and a second arm integral therewith and projecting therefrom, the second arm being arranged to receive the end of a shade roller, the first mentioned arm being provided with perforations near its opposed ends, and a fastening screw arranged to enter either of the perforations in the arm.

2. A shade roller bracket comprising a member having a long slot therein, the slot being open at its ends, means for attaching the member to a window casing, a second member comprising right angled integral arms, one arm being arranged to receive a shade roller, and the other approximately as long as the first member and engaged to slide in the slot and having a perforation near each of its ends, and a screw arranged to be inserted in either perforation and engage the back wall of the slot.

858,057. JEWEL-MOUNTING. ALFRED A. BOISMAURE, New York, N. Y., assignor to The Boismaure Oscillating Jewelry Company, New Jersey. Filed July 23, 1906. Serial No. 327,252.



Claim.—1. A jewel mounting comprising an outer frame member, a vibratory spring secured to one side of said frame member and ranging diametrically of said frame member, and a central vibratory member secured to the inner end of said spring.

2. A jewel mounting comprising two concentrically arranged members, the outer member being provided with a diametrically ranging spring secured to one side thereof and to the inner end of which the vibratory member is secured.

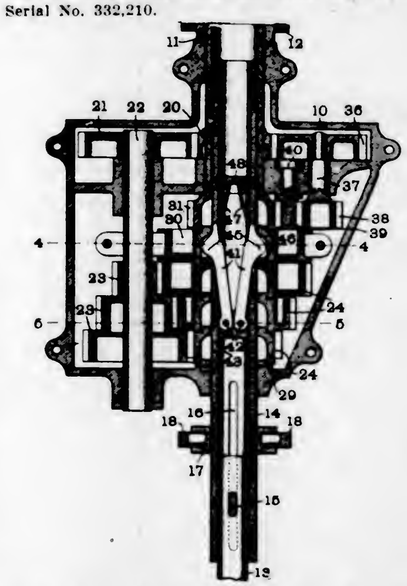
3. A jewel mounting comprising two concentrically arranged members, the outer member being provided with a vibratory spring which ranges diametrically thereof but does not extend entirely across said member, and to the inner end of which the inner member is secured.

4. A jewel mounting comprising two concentrically arranged members, the outer member being provided with a vibratory spring which ranges diametrically thereof but does not extend entirely across said member, and the inner member being provided with a diametric groove or opening in the inner end of which said spring is secured.

5. A jewel mounting comprising two concentrically arranged members, the outer member being provided with a vibratory spring which ranges diametrically thereof and extends across the center thereof, and to the inner end of which the inner member is secured.

6. A jewel mounting comprising two concentrically arranged members, the outer member being provided with a vibratory spring which ranges diametrically thereof and extends across the center thereof, and the inner member being provided with a diametric slot or opening, at the inner end of which said spring is secured.

858,058. SPEED-CHANGING GEARING. PAUL A. BREDSVOLD, St. Louis, Mo., assignor of one-half to Herbert A. Vrooman, St. Louis, Mo. Filed Aug. 27, 1906. Serial No. 332,210.



Claim.—1. In a speed changing gearing, the combination with a pair of shafts, of a countershaft geared to one of said first named shafts, a set of gears driven at varying speeds from said countershafts, means for independently connecting each of said gears to the other of said first named shafts, and a braking device also adapted to be connected to said latter shaft.

2. In a speed changing gearing, the combination with a pair of coaxial shafts, of a countershaft geared to one of said first named shafts, a set of gears driven at varying speeds from said countershaft, means for independently connecting each of said gears to the other of said first named shafts, and a braking device also adapted to be connected to said latter shaft.

3. In a speed changing gearing, the combination with a pair of shafts, of a countershaft geared to one of said first named shafts, a set of gears driven at varying speeds from said countershaft, means for connecting each of said gears independently to the other of said first named shafts, a reversing gear and a braking device also adapted to be connected to said latter shaft, and means for driving said reversing gear.

4. In a speed changing gearing, the combination with a pair of coaxial shafts, of a countershaft geared to one of said first named shafts, a set of gears driven at varying speeds from said countershaft, means for connecting each of said gears independently to the other of said first named shafts, a reversing gear and a braking device also adapted to be connected to said latter shaft, and means for driving said reversing gear.

5. In a speed changing gearing, the combination with a pair of coaxial shafts, of a connecting shaft non-rotatable relatively to one and telescoping with both of said first named shafts, a countershaft geared to one of said first named shafts, a set of gears driven at varying speeds from said countershafts and loosely mounted on said connecting shaft, and clutch mechanism carried by said connecting shaft and movable from one to another of said gears.

6. In a speed changing gearing, the combination with a pair of coaxial shafts, of a connecting shaft non-rotatable relatively to one and telescoping with both of said first named shafts, a countershaft geared to one of said first named shafts, a set of gears driven at varying speeds from said countershaft and loosely mounted on said connecting shaft, a braking device also loosely mounted on said connecting shaft, and clutch mechanism carried by said connecting shaft and movable from one to another of said gears.

7. In a speed changing gearing, the combination with a pair of coaxial shafts, of a connecting shaft non-rotatable relatively to one and telescoping with both of said first named shafts, a countershaft geared to one of said first named shafts, a set of gears driven at varying speeds from said countershaft and loosely mounted on said connecting shaft, a reversing gear also loosely mounted on said connecting shaft, means for driving said reversing gear and clutch mechanism carried by said connecting shaft and movable from one to another of said gears.

8. In a speed changing gearing, the combination with a pair of coaxial shafts, of a connecting shaft non-rotatable relatively to one and telescoping with both of said first named shafts, a countershaft geared to one of said first named shafts, a set of gears driven at varying speeds from said countershaft and loosely mounted on said connecting shaft, a reversing gear and a braking device also loosely mounted on said connecting shaft, means for driving said reversing gear and clutch mechanism carried by said connecting shaft and movable from one to another of said gears.

9. In a speed changing gearing, the combination with a shaft, of gears loosely mounted on said shaft and each having a bearing at one end on said shaft and at the other on an adjacent gear, said gears being provided with recesses in their inner faces between said bearings, a clutch member carried by said shaft, means for causing relative longitudinal movement between said gears and shaft to cause said clutch mechanism to engage with the recesses of different gears, and means for driving a plurality of said gears at varying speeds.

10. In a speed changing gearing, the combination with a shaft, of gears loosely mounted on said shaft and each having a bearing at one end on said shaft and at the other on an adjacent gear, said gears being provided with recesses in their inner faces between said bearings, a clutch member carried by said shaft, means for causing relative longitudinal movement between said gears and shaft to cause said clutch mechanism to engage with the recesses of different gears, means for driving a plurality of said gears at varying speeds, and a braking device on said shaft.

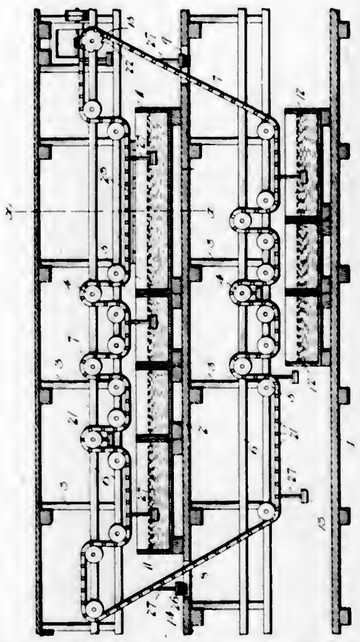
11. In a speed changing gearing, the combination with a shaft, of gears loosely mounted on said shaft and each having a bearing at one end on said shaft and at the other on an adjacent gear, said gears being provided with recesses in their inner faces between said bearings, a clutch member carried by said shaft, means for causing relative longitudinal movement between said gears and shaft to cause said clutch mechanism to engage with the recesses of different gears, means for driving a plurality of said gears at varying speeds, and means for driving one of said gears in a reverse direction.

12. In a speed changing gearing, the combination with a shaft, of gears loosely mounted on said shaft and each having a bearing at one end on said shaft and at the other on an adjacent gear, said gears being provided with recesses in their inner faces between said bearings, a clutch member carried by said shaft, means for causing relative longitudinal movement between said gears and shaft to cause said clutch mechanism to engage with the recesses of different gears, means for driving a plurality of said gears at varying speeds, a braking device on said shaft, and means for driving one of said gears in a reverse direction.

13. In a speed changing gearing, the combination with a pair of coaxial shafts, of a connecting shaft non-rotatable relatively to one and telescoping with both of said first named shafts, a pair of countershafts geared to one of said first named shafts, gears loosely mounted on said connecting shaft and each having a bearing at one end on said shaft and at the other on an adjacent gear, said gear being provided with recesses in their inner faces between said bearings, a clutch member carried by said connecting shaft and adapted to engage with the recesses of different gears, means for driving a plurality of said gears at varying speeds from one of said countershafts, and means for driving one of said gears in a reverse direction from the other of said countershafts.

14. In a speed changing gearing, the combination with a pair of coaxial shafts, of a connecting shaft non-rotatable relatively to one and telescoping with both of said first named shafts, a pair of countershafts geared to one of said first named shafts, gears loosely mounted on said connecting shaft and each having a bearing at one end on said shaft and at the other on an adjacent gear, said gears being provided with recesses in their inner faces between said bearings, a clutch member carried by said connecting shaft and adapted to engage with the recesses of different gears, means for driving a plurality of said gears at varying speeds from one of said countershafts, means for driving one of said gears in a reverse direction from the other of said countershafts, and a braking device on said shaft.

858,059. ELECTROPLATING APPARATUS. DAVID F. BRODERICK, New Britain, Conn., assignor of one-half to Lewis Sperry, South Windsor, Conn. Filed Aug. 10, 1906. Serial No. 330,046.



Claim.—1. In a plating apparatus, the combination with two series of tanks, one series disposed above the other, of an endless carrier, means for causing said carrier to travel over both series of tanks, means for suspending work holders from said carrier, and means for causing the carrier to rise and descend to dip the work successively in the tanks of the upper series and then to dip the work successively in the tanks of the other series when the work carried by the carrier is traveling toward the starting point, whereby the return travel of the carrier can be utilized in the plating operations.

2. In an apparatus of the character described, the combination of two parallel carrier chains, wheels on the pins connecting the links of said chain, trackways on which said wheels run, a tank below said trackways, cross bars mounted at their ends on connecting pins of the respective carriers, work holders having shanks hung on said cross

bars, and means for preventing lateral displacement of the work holder shanks on the cross bars.

3. In an apparatus of the character described, the combination with parallel carrier chains, cross bars removably mounted at their ends on pins of the respective carrier chains, work holders, and shanks for said work holders having hooks removably supported on said cross bars.

4. In an apparatus of the character described, the combination with wheels having lateral flanges and a central peripheral flange, of a carrier chain, rollers on the pins of the carrier chain to run on the lateral flanges of the wheels, collars on said chain to run on the central flanges of the wheels, a sprocket wheel having recesses to receive the rollers on carrier chain, and means for connecting a work holder with the carrier chain.

5. In an apparatus of the character described, the combination with two carrier chains and wheels over which said chains pass, of cross bars removably mounted on pins of said chains at intervals, and work holders suspended from said cross bars.

6. In an apparatus of the character described, the combination with two carrier chains, each comprising links connected by hinge pins, said pins having inward extensions, and wheels over which said chains pass, of cross bars mounted at their ends on the inward extensions of the hinge pins of the two chains, and work holders suspended from said cross bars.

7. In an apparatus of the character described, the combination with a series of tanks and a flexible carrier over the same, of work holders, each having a shank connected with the carrier, means for raising and lowering the carrier, conductor bars over said tanks, and brushes carried by the shank of the work holder to wipe against said conductor bars.

8. In an apparatus of the character described, the combination with a tank and anode plates therein, of a carrier to travel over the tank, trackways on said tank, rollers on the carrier to run on said trackways, means for suspending work from said carrier, means for raising and lowering the carrier to raise and lower the work, conductor bars supported over the tank, and brushes on the work-supporting means and adapted to wipe against said conductor bars.

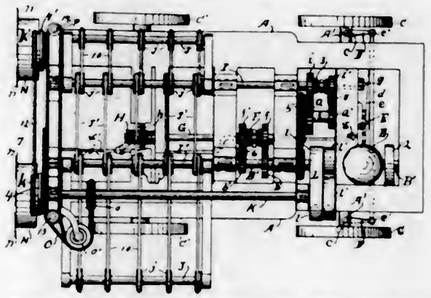
858,060. COMBINED CHURN AND BUTTER-WORKER. OLE CHRISTENSEN and CHRISTIAN P. SÖLBECK, Copenhagen, Denmark. Filed Nov. 17, 1906. Serial No. 343,926.



Claim.—1. In a combined churn and butter-worker, the combination of a driving-shaft, a drum through which said shaft extends and which is loosely supported at both ends on said shaft, a butter-working roller mounted directly on said shaft within the drum, a second butter-working roller supported indirectly from said shaft at the side of the first-named roller, means for locking said drum to the shaft, and means connecting said rollers with said shaft whereby they may be rotated on their axes from said shaft.

2. In a combined churn and butter-worker, the combination of a drum, a driving-shaft which extends completely through said drum and upon which the same is loosely mounted at each end, means for locking said drum to said shaft, a butter-working roller mounted directly on said shaft, a second roller, means for supporting said second roller from said shaft at the side of the first roller, and means connecting said rollers and which may connect the same with said drum whereby the movement of the shaft causes the rollers to be rotated on their axes and the drum to be rotated at reduced speed.

858,061. CANE-HARVESTER. (TRIMMER). JOHN D. COOPER, Grand Rapids, Mich. Filed Nov. 4, 1905. Serial No. 285,906.



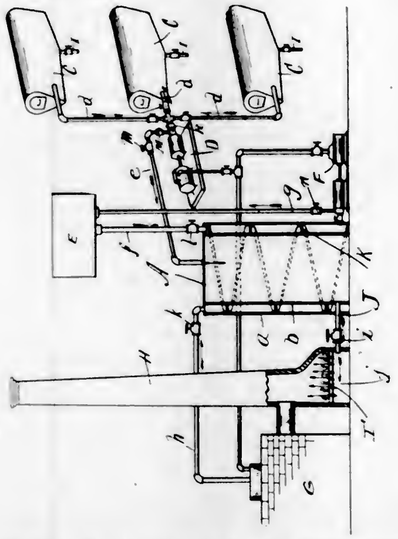
Claim.—1. In a cane harvester, front and hind wheels, axletrees supporting the same, a body mounted upon the axle trees, a motor on said body, a transmission gear connected with the motor and with the hind axletree to cause the axletree to revolve, shifting levers for actuating the transmission gear, a motor shaft, a line shaft run from the motor shaft, a driving pulley on the back end of the line shaft, an idler on the opposite side of the machine from the pulley, annular revoluble cylinders mounted below the pulley and idler, pulleys upon said cylinders, belts connecting said cylinder pulleys with the driving pulleys, spring actuated heads in said cylinders, rollers in the ends of said heads, cutting knives thereon, feed rolls back of said cylinders, knives secured to the face of said cylinders and radiating therefrom, and knives secured to the body of the machine in the line of travel of said first mentioned knives, and a conveyer adjacent to said cylinders and connected with the motor, and a steering gear.

2. In a cane harvesting machine, a truck having wheels and a body, a motor mounted thereon, a transmission gear connected with the motor and with the wheels, a steer-gear, a motor shaft, a tight and loose pulley thereon, a line shaft, a tight and loose pulley thereon, a belt leading from the pulleys on the motor shaft to the pulleys on the line shaft, revoluble cylinders having a central aperture and driven from the line shaft, knives radiating out from said cylinders, corresponding knives on the truck body, spring actuated heads in said cylinders, cutting knives thereon, rollers in the ends of said heads, cutting edges at the end of said rollers, a supporting post on the truck, a bearing integral with said post, a groove in said bearing, a key secured to the cylinders and traveling in said groove, feed rollers in said supporting post, means for revolving said feed rollers, means for adjusting said rollers to the diameter of the cane, a conveyer running crosswise of the machine, and a transmission and reverse gear connecting said conveyer with the motor.

3. In a cane harvester, a supporting truck, a motor mounted thereon and connected to propel the truck, a motor shaft having pulleys thereon, a line shaft having pulleys thereon and driven from the motor shaft, posts supporting the line shaft, cylinders mounted on said posts and having a central opening, spring actuated heads entering and radiating from said opening, rollers and knives carried by said heads, knives radiating from the cylinders, corresponding knives secured to the truck, feed rollers front of the cylinders, a vertical shaft and bevel gear for driving said rollers, an angled belt driven from the line shaft to said vertical shaft, means for holding the feed rollers adjustable to the cane passing between them, a conductor running crosswise of the truck and having a fixed horizontal portion and an adjustable wing at each side, a transmission and reversing gear connecting said conveyer with the motor, and steering gear upon the truck.

4. In a cane harvester, a supporting truck, a motor mounted thereon and connected to propel the truck, a steering gear on said truck, a motor shaft having pulleys thereon, a line shaft having pulleys thereon and driven from the motor shaft posts supporting said line shaft, cylinders supported on said posts to revolve and having a round opening through the center, spring actuated heads entering said opening and radiating therefrom, rollers and knives carried by said heads, feed rollers in the post supporting said cylinders, the top feed roller driven by a vertical shaft and a pair of bevel gear wheels, an angled belt driven from the line shaft to said vertical shaft, springs holding the lower feed roll to adjustable position with the upper roller, screws for adjusting said springs, a conveyer running crosswise of the truck and having an adjustable wing at each side of the truck, and transmission and reversing gear connecting said conveyer with the motor, and knives for trimming the tassels from the cane.

858,062. APPARATUS FOR TREATING NOXIOUS GASES. ALBERT C. DAY, Saugus, Mass., assignor to United States Garbage Reduction Company, Boston, Mass., a Corporation of Maine. Filed May 28, 1902. Serial No. 109,403.



Claim.—1. In an apparatus for the purpose described, the combination of a chamber for receiving noxious gases, a chimney, means for heating said gases in the base of said chimney, means for expanding the gases in said chamber and forcing them through said heating means, substantially as described.

2. In an apparatus for destroying the fumes of noxious gases, the combination of a receiving chamber, means for supplying said chamber with noxious gases, means for heating and cooling said chamber for the purpose of expelling and drawing said gases into the chamber, heating means through which the gases must pass for destroying the fumes, substantially as described.

3. In an apparatus for destroying the fumes of noxious gases, the combination of a receiving chamber, means for supplying said chamber with noxious gases, means for heating and cooling said chamber for the purpose of expelling and drawing gases into the chamber, a chimney, heating means in the base of said chimney, a conductor pipe for carrying the gases from the tank into the chimney below said heating means, substantially as described.

4. In an apparatus for the purpose described, the combination of a receiving chamber surrounded by a jacket, means for supplying steam and water to said jacket, a chimney, heating means located in the base of said chimney, a conductor pipe for transferring the expanded gases from said chamber to said chimney below said heating means, substantially as described.

5. In an apparatus for the purpose described, the combination of a receiving chamber surrounded by a jacket, means for causing a circulation of the heating and cooling medium in said jacket, means for supplying the heating and cooling medium to said jacket, a chimney, heating means in the base of said chimney, a conductor pipe for transferring the expanded gases from said chamber to said chimney below said heating means, substantially as described.

6. In an apparatus for destroying fumes of noxious gases, the combination of a receiving chamber, means for supplying said chamber with noxious gases, a jacket surrounding said chamber, a spiral conductor in said jacket, a boiler for supplying steam to said jacket, means for supplying water, and removing it from said jacket, a chimney, means for heating said gases located in the base of said chimney, a pipe for conducting the expanded gases from said chamber into said chimney below said heating means, substantially as described.

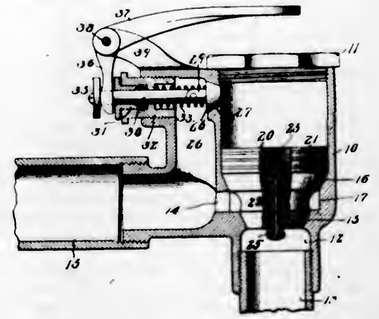
7. In combination, separator tanks, pumping mechanism for drawing the noxious gases from said separator tanks, a receiving tank, means for expanding the gases contained within said receiving tank, and means for conveying said expanded gases from said receiving tank to a point where they are consumed.

8. In combination, a receiving tank adapted to be alternately heated and cooled to create a partial vacuum therein to draw the noxious gases into said receiving tank, and means for conveying the said noxious gases from said receiving tank to a point where they are consumed.

9. In combination, a receiving tank, a jacket surrounding said receiving tank into which cooling and heating mediums are alternately forced to create a partial vacuum within said receiving tank to draw the noxious gases into said receiving tank, and means for conveying said noxious gases to a point where they are consumed.

10. In combination, separating tanks, a receiving tank, means for conveying the noxious gases from the separating tanks to the receiving tank, and means for heating the receiving tank to force said gases to the point where they may be consumed.

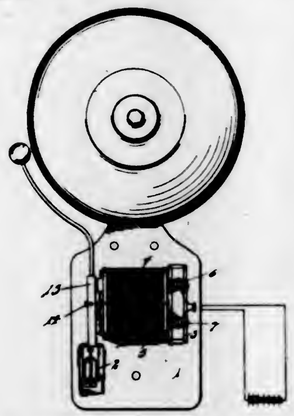
858,063. VALVE. JAMES H. DELANY, Wilkinsburg, Pa. Filed June 28, 1906. Serial No. 323,845.



Claim.—In a flushing or discharge valve, a valve casing having an inlet and an outlet port and provided with a pair of superposed tapered valve seats disposed upon opposite sides of the outlet port, said seats being formed along the lines of a cone, a cap removably mounted upon one end of the casing, a frusto-conical piston valve loosely mounted within the casing and disposed to simultaneously close against both seats, said valve having an annular groove therein disposed to register with the outlet port when the valve is seated, said valve having a port to permit leakage of water from the inlet to the casing above the piston to

equalize pressure upon opposite faces of the piston to close said piston, there being a by-pass within the casing and extending from the upper portion thereof and opening into the outlet, a valve between said by-pass and the upper portion of the casing, a spring within the by-pass for holding said valve normally upon its seat, said valve being disposed to open into the by-pass when subjected to a predetermined pressure from within the upper portion of the casing to permit the escape of the contents of the upper portion of the casing into the outlet, means for adjusting the tension of said spring, and manually operated means for actuating the valve to open communication between the upper portion of the casing and the by-pass.

858,064. SIGNAL. HAROLD W. EDEN, Detroit, Mich., assignor to P. R. Manufacturing Company, Detroit, Mich., a Corporation of Michigan. Filed Feb. 5, 1906. Serial No. 299,516.



Claim.—1. In combination with a base for mounting magneto bells, and provided with an integral post for holding the magnet, and an integral post for holding the armature, a cover adapted to engage along the sides of the base and across the end thereof, the engaging edge of the cover being provided with a groove, packing material laid therein, and means for securing the cover and the base together, substantially as described.

2. In combination, a base for magneto bells, having cast integral therewith a magnet-supporting post, magnetic coils carried thereby, an armature-supporting post, an armature, means whereby the armature is pivotally supported upon one of said posts, binding posts rising from the other of said posts though insulated therefrom, said binding posts being electrically connected with the coils, and an interrupter whereby the flow of current from one coil to the other is regulated, its contact with that coil with which it is separably in connection being adapted to be broken by the displacing engagement thereagainst of a projecting part of said armature, substantially as described.

3. In combination with a base for magneto bells, a cover engaging closely therearound, its edge being grooved to permit the insertion of a dust excluding substance, an interlocking piece secured to the base and interlocking with the cover, substantially as described.

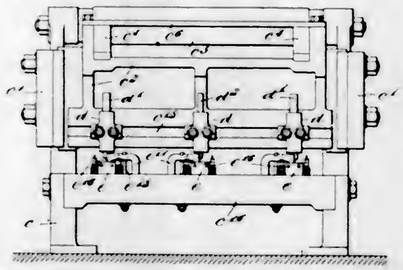
4. In combination with a base having integral brackets for supporting magnetic coils and an armature, magnetic coils, an armature, pivotal interconnecting means between said armature and its supporting bracket, binding posts supported by the post whereon the coils are mounted and insulated therefrom, and a resilient tongue in permanent electrical contact with one of said coils and normally engaging the other of said coils, the flow of current therethrough made possible by the continuance of its normal position being interrupted by the displacing engagement thereagainst of a projecting portion of said armature, substantially as described.

858,065. MONOAZO DYE FOR LAKES AND PROCESS OF MAKING SAME. OTTO ERNST and GILLIS GULLBRANSSON, Höchst-on-the-Main, Germany, assignors to Farbwerke, Vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany, a Corporation of Germany. Filed Mar. 26, 1907. Serial No. 364,589.

Claim.—1. The herein described process for the manufacture of a monoazo dyestuff specially suitable for preparing blue-red color-lakes, which consists in combining 2-diazonaphthaline-1-sulfonic acid with oxynaphthoic acid-2:3, melting point 216° C.

2. As new product, the dyestuff obtained by combining 2-diazonapthaline-1-sulfonic acid with beta-oxynaphthoic acid-2:3, being a dark red powder of which the aqueous solution is red; in concentrated sulfuric acid the solution in a thin layer is of a blue red shade; on addition of water the free acid of the dyestuff separates as a red brown precipitate; in alcohol the dyestuff is insoluble.

858,066. PUNCHING-MACHINE. WILLIAM FEHR, Philadelphia, Pa. Original application filed Dec. 22, 1905, Serial No. 292,946. Divided and this application filed Nov. 15, 1906. Serial No. 343,499.



Claim.—1. In a punching machine, a standard, a support reciprocating in said standard having a slot, knives, a series of punch holders, each consisting of an outer and inner section, whereof the inner section is arranged to slide in said support and whereof the outer section is arranged to hold one of said knives in engagement with said first section, means adapted to adjustably connect the inner section of said punch-holders with said support, means adapted to connect the outer section of said punch-holders independently of said inner section with said support, both of the connecting means arranged when loosened to permit of the sliding of both sections of said holders in the slot of said support, and the connecting means of the outer section arranged when separately loosened to permit of the disengagement of the knife held by both sections of each of said holders without necessitating the loosening of the inner section thereof from said support.

2. In a punching machine, a standard, a support reciprocating in said standard having a slot, knives, punch-holders, each consisting of an outer and inner section, whereof the inner section of said holders are arranged to slide in said support and whereof the outer section thereof are arranged to hold one of said knives in engagement with the first section of said holder, means interposed between the inner sections of said holders and said support, means carried by the inner section of said holders adapted to adjustably connect the same with said support by forcing the interposed means against said support, means adapted to connect the outer section of said holders independently of the inner section thereof by partially engaging the slot of said support, both of said means arranged when loosened to permit of the sliding of both sections of said holders in the slot of said support, and the connecting means of the outer sections arranged when separately loosened to permit of the disengagement of the knife of the knife held by both sections of each of said holders without necessitating the loosening of the inner section thereof from said support.

3. In a punching machine, a standard, a support reciprocating in said standard having a slot, knives, a series of punch-holders, each consisting of an outer and inner section whereof the inner section is arranged to slide in said support and whereof the outer section is arranged to hold one of said knives in engagement with said first section, means adapted to adjustably connect the inner section of said punch-holders with said support, means adapted to connect the outer section of said punch-holders independently of said inner section with said support, both of the connecting means arranged when loosened to permit of the sliding of both sections of said holders in the slot of said support, and the connecting means of the outer section arranged when separately loosened to permit of the disengagement of the knife held by both sections of each of said holders without necessitating the loosening of the inner section thereof from said support, dies adjustably arranged below the knife of each of said holders and adapted to be engaged by the same to permit of the punching or perforating the metal strip passing over said dies, guides consisting of a rigid and yielding member adapted to permit of the slotting of the metal strip in the longitudinal central axis thereof.

4. In a punching machine, a standard, a cross-bar carried by said standard, a support reciprocating in said standard having a slot, knives, a series of punch-holders, each consisting of an outer and inner section whereof the inner section is arranged to slide in the slot of said support, a bar interposed between the inner section of each of said holders and said support, means adapted to force said bar against said frame so as to clamp the inner section of each of said holders to said support, bolts passing through the outer and inner sections of each of said holders and adapted to removably clamp one of said knives to the inner section by engaging said support and by forcing the outer section of each of said holders against the inner sections thereof, a die-holder adjustably carried by said cross-bar and arranged below each of said punch-holders, dies, consisting of two blocks removably supported by said die-holder and forming an opening for the reception of the knife of one of said punch-holders, guides adjustably carried by said cross-bar and arranged at each side of said die-holder and dies thereof, each of said guides having an adjustably rigid and a yielding member, said guide members adapted to guide and hold a metal strip in position on said dies so as to permit of the slotting of the same in the central longitudinal axis by said knives and dies.

858,067. BRAKE-SHOE. JOSEPH D. GALLAGHER, Glenridge, N. J. Filed Feb. 19, 1906. Serial No. 301,732.



Claim.—1. The method hereinbefore described consisting in placing the plate upon the back of the wearing sole and secondly bringing the ends of said plate toward each other, whereby to lock the latter to said wearing sole and simultaneously form an attaching lug for the brake head.

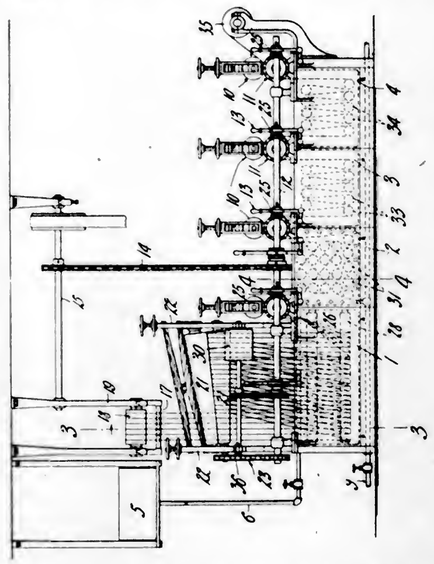
2. The method hereinbefore described consisting in first heating the plate, secondly placing the same on the back of the wearing sole, and finally bringing the ends of said plate toward each other, whereby to lock the same to the back of the wearing sole.

3. The method hereinbefore described consisting in placing the plate while hot, upon the back of the wearing sole and subsequently bringing the ends toward each other for locking said plate to the back of said wearing sole and bending the extreme ends of said plate to form end stops.

4. The method hereinbefore described, consisting in placing the plate while hot, on the back of the wearing sole and subsequently bringing the ends of said plate toward each other whereby to lock it to said wearing sole and simultaneously form end stops and a central lug for attachment to the brake head.

5. The method hereinbefore described, consisting in first placing the plate while hot, on the back of the wearing sole and subsequently bending said plate whereby to lock the same to said sole.

858,068. APPARATUS FOR DYEING, BLEACHING, AND SIZING COTTON WARPS. JONATHAN HARTLEY, Springfield, Mass. Filed Jan. 22, 1907. Serial No. 353,471.



Claim.—1. In apparatus for dyeing warp threads, means for holding liquid, means for causing the warp threads to pass through such liquid, and single means for progressively accelerating the speed of the successive portions of said threads during their passage.

2. In apparatus for dyeing warp threads, means for holding liquid, means for causing the warp threads to pass through such liquid, and rotatable means mounted on a single shaft for progressively accelerating the speed of the successive portions of said threads during their passage.

3. In apparatus for dyeing warp threads, means for holding liquid, means for causing the warp threads to pass through such liquid, and a single rotatable member about which the threads are designed to pass repeatedly during such passage and constructed to progressively accelerate the speed of the successive portions of said threads.

4. In apparatus for dyeing warp threads, means for holding liquid, means for causing the warp threads to pass repeatedly through such liquid, and a rotatable member disposed to be out of contact with said liquid and to receive the successive portions of the threads between individual immersions, and constructed to cause said successive portions to travel with progressively increased speeds.

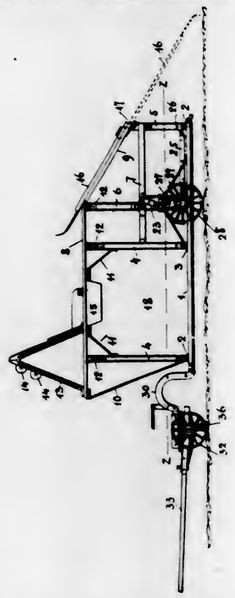
5. In apparatus for dyeing warp threads, means for holding liquid, means for causing the warp threads to pass repeatedly through such liquid, and a conical roll over which the successive portions of the threads are designed to pass between individual immersion.

6. In apparatus for dyeing warp threads, means for holding liquid, means for causing the warp threads to pass repeatedly through such liquid, and a pair of contacting squeeze and guide rolls tapering in the same direction and between which the successive portions of the threads are designed to pass between individual immersions.

7. In apparatus for dyeing warp threads, means for

holding liquid, and a pair of conical contacting squeeze and guide rolls tapering in the same direction.

858,069. EXCAVATING APPARATUS. WILLIAM HEFFRON, Cincinnati, Ohio, assignor to The Heffron Trenching Company, Cincinnati, Ohio, a Corporation of Ohio. Filed May 9, 1906. Serial No. 315,937.



Claim.—1. In an excavating apparatus of the character described, a framework, a platform, over which platform the shovels carrying the dirt operate, in combination with means consisting of axle and wheels for rendering said device portable, said axle and wheels adjustably connected to said device, as set forth.

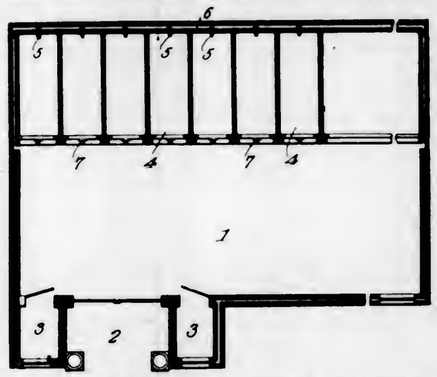
2. In an excavating apparatus of the character described, a frame work, a platform, said platform supported by said frame work, over which platform the shovels carrying the dirt operate, in combination with rods passing from the forward to the rear part of the bottom frame work, said rods diverging at the rear, and acting as brace rods, all combined and operating as set forth.

3. In an excavating apparatus of the character described, a frame work, a platform, over which platform the shovels carrying the dirt operate, in combination with shafts, said shafts connected at one end to the upright frame work, guide bars, said guide bars usually connected at one end to the frame work and at the other end supporting the said shafts, said shafts removably connected to said frame work, as and for the purposes set forth.

4. In an excavating apparatus of the character described, a frame work, a platform, said platform supporting said frame work, over which platform the shovels carrying the dirt operate, in combination with shafts, said shafts connected at one end to the upright frame work, guide bars, said guide bars usually connected at one end to the frame work and at the other end supporting the said shafts, said shafts removably connected to said frame work, goose necks, said goose necks connected to the forward end of the framework, a support connected to said goose necks to provide means for connecting a tongue, wheels and axle for rendering the apparatus portable, as and for the purposes set forth.

5. In an excavating apparatus of the character described, a framework, a platform, said platform supported on said framework, over which platform the shovels carrying the dirt operate, in combination with means at its forward end for attaching a tongue, axle, and wheels, and at its rear in combination with means for adjustably attaching to the framework, wheels and axle and supporting means therefor, to render the apparatus portable, as and for the purposes set forth.

858,070. BURIAL-CRYPT. WILLIAM I. HOOD, Norwalk, Ohio, assignor of one-half to John W. Chesrown, Norwalk, Ohio. Filed Mar. 14, 1907. Serial No. 362,399.



Claim.—1. A burial crypt comprising a structure with a reception hall-way, seamless catacombs arranged therein and spaced from the walls thereof whereby an air passage is formed, said catacombs being provided with valve-controlled ports at their ends which communicate with said air passage, said passage having an outlet at, or near, the top of the structure.

2. A burial crypt comprising a structure with a reception hall-way, seamless catacombs located therein and spaced from the walls thereof whereby an air passage is formed, said catacombs being provided with valve-controlled ports at their rear ends which communicate with said air passage, said passage being provided with an outlet at or near the top of the structure, also valve-controlled ports at the front ends of the catacombs through which the air may be exhausted therefrom after the same are sealed.

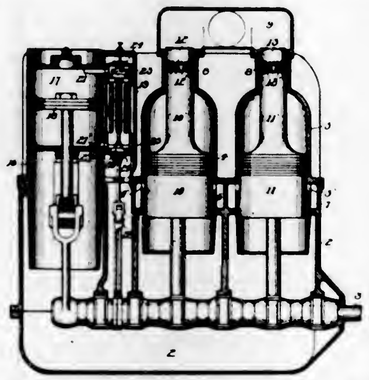
3. A burial crypt comprising a structure with a reception hall-way, seamless catacombs located therein and spaced from the walls thereof whereby an air passage is formed, said catacombs being provided with valve-controlled ports at their rear ends which communicate with said air passage, said passage being provided with an outlet, at or near the top of the structure, also valve-controlled ports at the front ends of the catacombs through which the air may be exhausted therefrom after the same are sealed and a horizontal shelf in front of each row of catacombs, the upper surfaces of the shelves lying in the same plane as the upper surfaces of the bottoms of the catacombs.

858,071. EXPLOSIVE-ENGINE. LORENZ IVERSEN, Pittsburg, Pa. Filed Dec. 18, 1905. Serial No. 292,241.

Claim.—1. In an explosive engine, the combination with an engine cylinder, and a piston and crank-shaft, of a compressed air reservoir communicating with the cylinder, a pump for the reservoir having its piston connected to the crank-shaft, and means for admitting air from the atmosphere and air under pressure to the pump.

2. In an explosive engine, the combination with an engine cylinder, and a piston and crank-shaft, of a compressed air reservoir communicating with the cylinder, a pump for the reservoir having its piston connected to the crank-shaft, reversible valve mechanism for the pump operatively connected to the crank-shaft, and means controlled by the valve mechanism for admitting air from

the atmosphere and air under pressure to the pump cylinder.



3. In an explosive engine, the combination with an engine cylinder, and a piston and crank-shaft, of a compressed air reservoir communicating with the cylinder, a pump for the reservoir having its piston connected to the crank-shaft, a valve case in communication at its ends with the pump cylinder and with the reservoir, connected valves in valve case for controlling communication with the cylinder, reversing gear connecting the valves and crank-shaft, and means for admitting air from the atmosphere and air under pressure to the valve case.

4. In an explosive engine, the combination with a crank-case adapted to form a compressed air-reservoir for the engine, and a crank-shaft, of an air-pump for the crank-case having its piston connected to the shaft, reversing valves for the pump, and valve-actuating means extending from the crank-shaft.

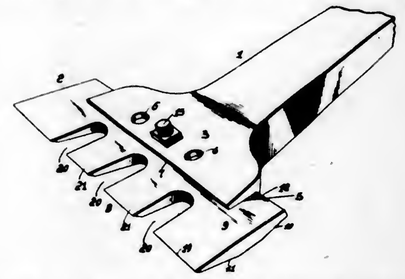
5. In an explosive engine, the combination with a crank-case adapted to form a compressed air-reservoir for the engine, and a crank-shaft, of an air-pump for the crank-case having its piston connected to the crank-shaft, a valve case communicating at its ends with the crank-case and pump-cylinder and between its ends having an air-supply, valves in the valve-case for controlling communication between the same and the pump-cylinder, and valve-operating means.

6. In an explosive engine, the combination with a crank-case adapted to form a compressed air-reservoir for the engine, and a crank-shaft, of an air-pump having its piston connected to the crank-shaft, a valve-case having its opposite ends in communication with the crank-case and with the pump-cylinder, connected valves in the valve-case for controlling communicating between the same and the pump-cylinder, an operative connection between the valves and the crank-shaft, and valve-reversing means.

7. In an explosive engine, a crank-case adapted to form a compressed air-reservoir, a crank-shaft, engine cylinders communicating with the crank-case, oppositely working pistons in the cylinders, the cylinders having lateral ports at one end communicating with each other independently of the crank-case and adapted alternately to be placed in communication with the latter by the movements of the pistons, the ports of one cylinder being open to that cylinder simultaneously with the ports of the other cylinder being open to the crank-case, an air-pump for the crank-case having its piston connected to the crank-shaft, a valve-case having its opposite ends communicating with the crank-case and pump-cylinder, reversible valves for the valve-case, and means for placing the valve-case in communication either with the atmosphere or with a source of air under pressure.

8. The combination of a cylinder, a piston, a valve-case, ports at opposite ends of the cylinder open to the valve-case, a compressed air-reservoir with which opposite ends of the valve-case communicate, separated check-valves in the valve-case each adapted to open toward said reservoir, connected valves operative in the valve-case between the check-valves for placing the cylinder-ends alternately in communication with the air-reservoir and with the valve-case between said port-controlling valves, and an air-inlet for the valve-case between said last mentioned valves.

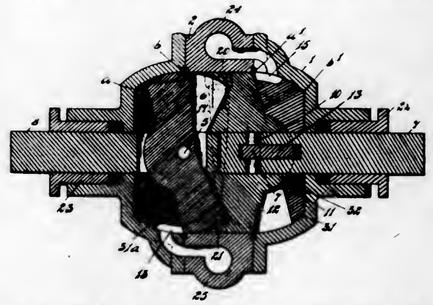
858,072. STONE-CUTTING BIT. CARL N. JOHNSON, Pittsburg, Pa. Filed Sept. 13, 1906. Serial No. 334,495.



Claim.—1. A bit for stone cutting machines, consisting of a shank, said shank having an enlarged, flattened and angularly disposed end, the end of said shank having a transverse tapering slot formed therein, said end having a plurality of openings formed therein intersecting said slot, a plate adapted to fit in said slot, said plate having a transverse beveled cutting edge, means to secure said plate in said shank, substantially as described.

2. A bit, consisting of a shank, said shank having an enlarged flattened and angularly disposed end, the end of said shank having a transverse tapering slot formed therein, said end having a plurality of openings formed therein intersecting said slot, a plate adapted to fit in said slot, said plate having a transverse beveled cutting edge, means to secure said plate in said shank, substantially as described.

858,073. ROTARY ENGINE. WALLACE C. KELLY, Hastings, Mich. Filed Jan. 16, 1907. Serial No. 352,502.



Claim.—1. In a rotary engine, in combination with a cylindrical casing provided with spaced inlet apertures adapted to admit a motive fluid, a bucket carrier engaging therewithin provided with a terminal having a conical surface and having sockets wherein buckets may engage, buckets pivotally supported by said carrier in planes transverse the one with the other, adapted by a withdrawal of one end within the socket in the carrier to avoid obstructing the flow of motive fluid past the same, and by the contemporaneous projection of the other end in the path of an advancing supply of motive fluid to receive its actuation therefrom, substantially as described.

2. In a rotary engine, in combination with a cylinder casing provided with a central cylindrical section and

with a terminal at the end of said cylindrical section formed as a zone of a sphere, a bucket carrier engaging in the cylindrical portion provided with a terminal having a conical surface, an abutment piece located in the spherical zone and having a plane face inclined to the axis of said cylinder with an inclination equal to the inclination of the coned terminal of said bucket carrier, a bucket carried by said bucket carrier pivoted therein, whereby the rotation of the said bucket carrier causes the bucket to swing with an edge in constant engagement with the inclined face of said abutment, substantially as described.

3. In a rotary engine, in combination with a cylinder casing provided with a central cylindrical section and with a terminal at the end of said cylindrical section formed as a zone of a sphere, a bucket carrier engaging in the cylindrical portion provided with a terminal having a conical surface, an abutment piece located in the spherical zone and having a plane face inclined to the axis of said cylinder with an inclination equal to the inclination of the coned terminal of said bucket carrier, a bucket carried by said bucket carrier pivoted thereto, whereby the rotation of the said bucket carrier causes the bucket to swing with an edge in constant engagement with the inclined face of said abutment, and suitable inlet and outlet ports, substantially as described.

4. In a rotary engine, in combination with a cylinder casing provided with a central cylindrical section and with terminals at each end of said cylindrical section formed as zones of a sphere, a bucket carrier engaging in the cylindrical portion provided with terminals having conical surfaces, abutment pieces located in the spherical zones and having plane faces inclined to the axis of said cylinder with an inclination equal to the inclination of the coned terminals of said bucket carrier, buckets carried by said bucket carrier pivoted thereto, whereby the rotation of the said bucket carrier causes each bucket to swing with an edge in constant engagement with an inclined face of its proper abutment, substantially as described.

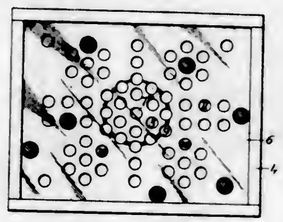
5. In a rotary engine, in combination with a cylinder casing provided with a central cylindrical section and with terminals at each end of said cylindrical section formed as zones of a sphere, a bucket carrier rotating in the cylindrical portion provided with terminals having conical surfaces, abutment pieces located in the spherical zones and having plane faces inclined to the axis of said cylinder with an inclination equal to the inclination of the coned terminals of said bucket carrier, buckets carried by said bucket carrier pivoted therein to swing, whereby the rotation of the said bucket carrier causes the bucket to swing with an edge in constant engagement with the inclined face of said abutment, and suitable inlet and outlet ports, substantially as described.

6. In a rotary engine, in combination with a steam tight casing a bucket carrier, a wedge-shaped abutment piece provided with a steam by-pass, that face thereof adjacent to the carrier being oblique to the plane of possible rotation thereof means whereby the bucket travels with one end thereof exposed to steam pressure and with the opposite end balanced while traveling along the by-pass through which steam is admitted, substantially as described.

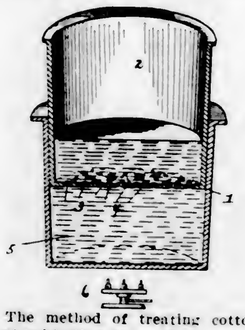
7. In a rotary engine, in combination with a casing provided with motive fluid inlets suitably spaced from one another, a rotary bucket carrier engaging therewithin, a wedge-shaped abutment having one face parallel and the other face oblique with respect to the plane of possible rotation of the carrier, and a rotating bucket pivotally supported by the carrier with its exposed edge in constant engagement with the obliquely disposed face of the abutment, whereby the end portions of the bucket are caused to alternate in their exposure to steam pressure within the casing, substantially as described.

858,074. PUZZLE. ROBERT W. KEMP, Jr., New York, N. Y. Filed Mar. 20, 1907. Serial No. 363,414.

Claim.—A box or casing having a number of rolling balls or objects and a false bottom provided with a raised central portion having a group of holes equal in number to the balls and constituting lodging places therefor, and surrounding grouped holes constituting obstacles to the lodging of the balls in the central holes.



858,075. TREATMENT OF COTTON-SEED. ISIDOR KITSEE, Philadelphia, Pa. Filed May 26, 1905. Serial No. 262,435.



Claim.—1. The method of treating cotton-seed which consists in first subjecting the seeds to a process whereby the hull is broken up, then to a process whereby the kernel is removed from said hull, then subjecting the broken-up hull with its adherent fiber to the action of a solution of chlorid of zinc for removing the fiber therefrom, and afterward removing said hull from said solution.

2. The method of treating cotton-seed which consists in first subjecting the seed to a process whereby the hull is broken up, then to a process whereby the kernel is removed from said hull, then subjecting the broken-up hull with its adherent fiber to the action of a solution of chlorid of zinc in the presence of high temperature for removing the fiber therefrom, and afterward removing said hull from said solution.

3. The method of treating cotton-seed which consists in first subjecting the seed to a process whereby the hull is broken up, then to a process whereby the kernel is removed from said hull, then subjecting the broken-up hull with its adherent fiber to a chemical process whereby the fiber is simultaneously made soluble and dissolved from the hull as an amorphous product.

4. In the method of treating cotton seed, the step of removing the adherent fiber therefrom, which consists in subjecting the hull with its adherent fiber to the action of a chemical agent capable of simultaneously rendering the fiber soluble and dissolving it from the hull.

5. In the method of treating cotton seed, the step of removing the adherent fiber therefrom, which consists in subjecting the hull with its adherent fiber to the action of a chemical agent capable of simultaneously rendering the fiber soluble and dissolving it from the hull, the temperature of the agent being raised during the period in which the hull is subjected to such action.

6. In the method of treating cotton seed, the step of removing the adherent fiber therefrom, which consists in subjecting the hull with its adherent fiber to the action of a solution of chlorid of zinc for simultaneously rendering the fiber soluble and dissolving it from the hull.

7. In the method of treating cotton seed, the step of removing the adherent fiber therefrom, which consists in subjecting the hull with its adherent fiber to the action of a solution of chlorid of zinc for simultaneously rendering the fiber soluble and dissolving it from the hull, the temperature of the chlorid of zinc being raised during the period in which the hull is subjected to such action.

8. The method of treating cotton seed, which consists in first breaking up the hulls, then removing the kernels from the hulls, and then subjecting the broken-up hulls with the adhering fiber to the action of a solution of chlorid of zinc for simultaneously rendering the fiber soluble and dissolving it from the hull, and then removing the hulls from said solution.

858,076. COAL-HANDLING APPARATUS. WILLIAM F. KLEMP, Chicago, Ill., assignor to Archer Iron Works, Chicago, Ill. Filed Feb. 4, 1905. Serial No. 244,241.



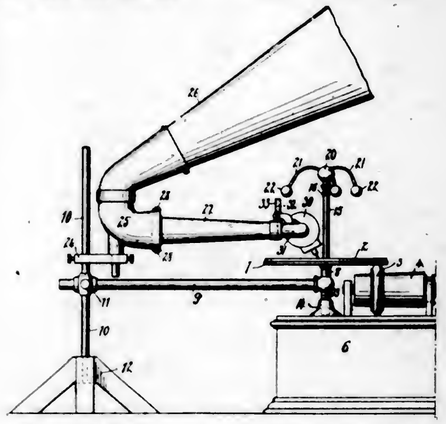
Claim.—A hand barrow having fixed handles projecting rearward from the body portion thereof, supporting wheels, a cranked axle disposed rearward of the center of the length of the barrow body and near the bottom thereof, the upper edges of the sides and the bottom of the forward portion of the body being inclined upward and of much greater length than the rear portion of the body to permit descent of the discharge end of the chute much below the bottoms of the wheels when dumping, the two portions of the body on opposite sides of the vertical plane of the axle being of approximately equal weight, and cubic content, whereby the load is maintained in unstable equilibrium with its center of gravity approximately in the vertical plane of the axle while the barrow is in load carrying position, the longer chute like forward portion of the barrow serving to maintain said barrow in tilted position when turned to dump its contents.

858,077. TALKING-MACHINE. DAVID KLINE, Philadelphia, Pa. Filed Jan. 31, 1907. Serial No. 354,958.

Claim.—1. In a talking machine, the combination of a sound-conveying-tube, a second sound-conveying-tube of smaller diameter adapted to fit loosely into the first mentioned tube, a pin on said larger tube, a bearing on said smaller tube, and a sleeve mounted in said bearing adapted to fit over said pin and suspend the end of said smaller tube within the end of said larger tube.

2. In a talking machine, the combination of a sound-conveying-arm, a sound-box, a tube connected with said sound-box, a pin on said sound-conveying-arm, a sleeve adapted to fit over said pin, a bearing secured on said tube, and means for pivotally mounting said sleeve in said bearing.

3. In a talking machine, the combination of a sound-conveying-arm, a sound-box, a tube connected with said sound-box, a pin on said sound-conveying-arm, a sleeve adapted to readily slip over said pin, a bearing secured on said tube, pivot points in said bearing to pivotally connect said sleeve and said bearing.



4. In a talking machine, the combination of a sound-box, a sound-conveying-member, a core inserted in said sound-conveying-member, and said core having a spiral groove formed in its surface to form a passageway for the sound.

5. In a talking machine, the combination of a record-disk-table, a sleeve secured in the latter, a pivot-post upon which said sleeve is loosely mounted, a shaft adapted to enter said sleeve and rest upon said pivot-post, and means for locking said sleeve and said shaft together.

6. In a talking machine, the combination of a record-disk-table, a sleeve secured in the latter, a pivot-post upon which said sleeve is loosely mounted, a shaft adapted to enter said sleeve and rest upon the end of said pivot-post, a projection on said shaft, and said sleeve having a slot formed therein to receive the projection on said shaft and lock the said shaft and sleeve together.

7. In a talking machine, the combination of a record-disk-table, means for rotating the latter, a pivot-post on which said record-disk is mounted, arms mounted upon said disk-table, and said arms having weights thereon.

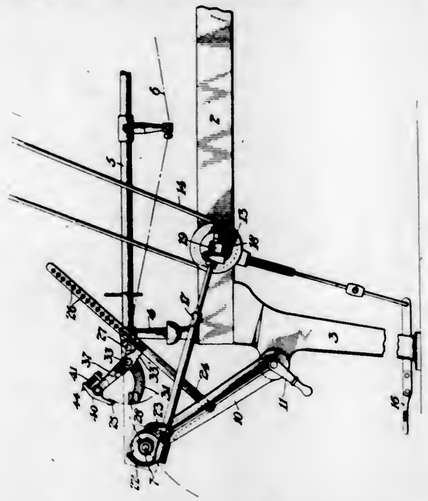
8. In a talking machine, the combination of a record-disk-table, a pivot-post on which the latter is mounted, an arm carrying said pivot-post, a stand-rod, means for adjustably securing said arm upon said stand-rod, a sound-box, sound-conveying-members, and means for supporting said sound-box and said sound-conveying-members upon said adjustable bearing.

9. In a talking machine, the combination of a record-disk-table, a pivot-post on which the latter is mounted, an arm carrying said pivot-post, a stand-rod, a base, means for adjustably securing said arm upon said stand-rod, said pivot-post having a portion projecting below the said arm, a nut adjustably mounted on the latter a sound-box, sound-conveying-members and means for supporting said sound-box and said sound-conveying-members upon said stand-rod.

858,078. CUTTING ATTACHMENT FOR BOX-COVERING MACHINES. MARK D. KNOWLTON, Rochester, N. Y.; ANNIE D. KNOWLTON and FREDERICK K. KNOWLTON, Rochester, N. Y., administrators of Mark D. Knowlton, deceased. Filed Mar. 4, 1903. Serial No. 146,089.

Claim.—1. In a machine of the character described, the combination with a fixed cutter, a movable cutter carrier, a cutter mounted on said cutter carrier and movable therewith to co-operate with the fixed cutter, means to move the carrier, and means constructed whereby the movable cutter may be moved into cutting position independently of the carrier moving means.

2. In a machine of the character described, the combination of a fixed cutter, a movable cutter-carrier, a cutter on said carrier and movable therewith to co-operate with the fixed cutter, means to move the carrier, and means to permit the cutter on the carrier to perform the cutting operation independently of the carrier moving means.



3. In a box-covering machine, the combination with a fixed cutter, of a movable cutter carrier, a movable cutter mounted on said carrier and normally movable therewith, power-operated means for actuating said carrier and its supported cutter to bring the latter into cutting position, and means for permitting movement of said movable cutter in its normal operative path of movement independent of its carrier to co-operate with the fixed cutter.

4. In a box-covering machine, the combination with a fixed cutter, of a movable cutter-carrier, a movable cutter mounted on said carrier and normally movable therewith, power-operated means for actuating said carrier and its supported cutter, and a yielding connection between said movable cutter and its carrier for permitting movement of the cutter in its normal operative path of movement independent of the carrier to co-operate with the fixed cutter.

5. In a machine of the character described, the combination of a fixed cutter, a movable cutter-carrier, a cutter on said carrier and movable therewith to co-operate with the fixed cutter, means to move the carrier, and means to permit the cutter on the carrier to perform the cutting operation independently of the carrier and the carrier moving means.

6. In a box-covering machine, the combination with a fixed cutter, of an oscillating cutter-carrier, a movable cutter loosely mounted on said carrier to swing about the axis thereof, power-operated means for actuating said movable carrier and its supported cutter, and a helical spring surrounding the common axis of, and connecting, said cutter and its carrier for permitting movement of the cutter into cutting position, independently of the movement of the carrier.

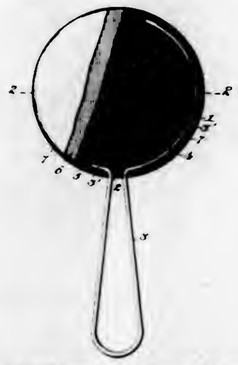
7. In a box-covering machine, the combination with a fixed cutter, of an oscillating cutter-carrier, a cutter-frame mounted on said carrier to swing about the axis thereof independently of said carrier, a movable cutter mounted to swing on said cutter-frame, power-operated means for actuating said cutter-carrier and with it the cutter-frame and the cutter, a yielding connection between the cutter-carrier and the cutter-frame, said connection operating to permit the cutter-frame to move with or independently of the cutter-carrier, and a yielding connection between the cutter-frame and the movable cutter.

8. In a box-covering machine, the combination with a fixed cutter, of a gravitating movable cutter, power-operated let-off mechanism for intermittently releasing said movable cutter, a cutter-actuating spring-bolt adapted to be put under tension by said let-off mechanism and releasable with said movable cutter for imparting an initial impulse thereto, and a support having a pocket within which said spring-bolt is seated.

9. In a machine of the character described, the combination of a cutter, a movable cutter-carrier, a cutter on said carrier and normally movable therewith to co-operate with the first-named cutter, means to move the cutter-carrier to bring the cutter carried thereby into cutting position and means whereby the cutter on the carrier may be manually operated to perform the cutting operation independently of the movement of the carrier.

10. In a machine of the character described, the combination of a fixed cutter, a movable cutter-carrier, a cutter on said carrier and a connection between said cutter and cutter-carrier constructed whereby the cutter may be moved to cutting position by the movement of the carrier or manually operated independently of said movement.

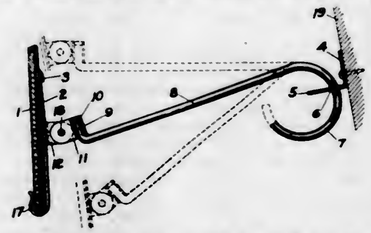
858,079. HAND-MIRROR. JOSEPH KOMOROUS, Jr., Chicago, Ill., assignor to Parisian Novelty Company, Chicago, Ill., a Corporation of Illinois. Filed Jan. 9, 1907. Serial No. 351,467.



Claim.—1. A hand mirror, comprising a rim, a wire handle having bent portions fitted inside the rim, a mirror disk within said bent portions, and a backing disk fitted within the rim and overlying said disk and bent portions.

2. A hand mirror, comprising a notched rim, a wire handle entering the notches and having bent portions fitted within the rim, a mirror disk within said bent portions, a backing disk fitted within the rim and overlying said disk and bent portions, and a retaining disk marginally secured to the rim.

858,080. LOOKING-GLASS HOLDER. FRANK B. LA MAY, Rochester, N. Y., assignor to Caldwell Manufacturing Company, Rochester, N. Y., a Corporation of New York. Filed Oct. 18, 1904. Serial No. 229,009.



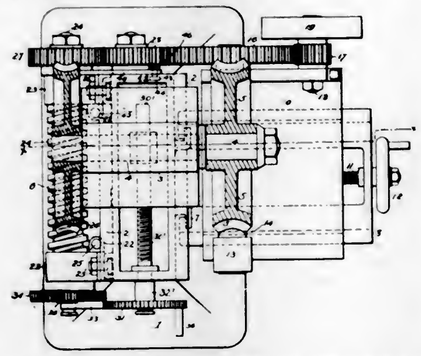
Claim.—1. The combination of a bracket, a rod carried thereby, a socket rotatable on the end of said rod, a mirror carrier having hooks at the lower end, a hinge connecting said carrier and said socket, and a mirror adapted to rest in said hooks.

2. The combination of a bracket, a rod carried thereby, a socket rotatable on the end of said rod, a mirror carrier having hooks at the lower end and a projection, a hinge connecting said carrier and said socket, and a mirror adapted to rest in said hooks and having a socket for the projection of said carrier.

3. The combination of a bracket, a rod carried thereby, a socket rotatable on the end of said rod, a mirror carrier consisting of a wire bent at the middle and having hooks at its ends, a hinged connection between said carrier and said socket, and a mirror adapted to rest in said hooks and having a socket for the end in said wire.

4. The combination of a bracket, a rod carried thereby, a socket rotatable on the end of said rod, a mirror carrier consisting of a wire bent at the middle and having hooks at the ends, hooked plates engaging said wire, a hinged connection between said plates and said socket, and a mirror adapted to rest in the hooks of said wire and having a socket for the bend thereof.

858,081. MACHINE FOR MAKING WORM AND SPIRAL GEAR. WILLIAM K. LIGGETT, Columbus, Ohio, assignor of one-half to Waldo T. Guy, Columbus, Ohio. Filed Feb. 24, 1903. Serial No. 144,747.



Claim.—1. In a gear cutting machine, the combination of a blank carrying mandrel, a cutter carrying mandrel, means for feeding the blank carried by the blank carrying mandrel, to the cutter tangentially with relation to said blank, and means for rotating said mandrels at speeds bearing a definite ratio to each other.

2. In a gear cutting machine, the combination of a blank carrying mandrel, a cutter mandrel, a single-toothed cutter carried by the cutter mandrel, means for feeding one of said mandrels in a direction parallel to the axis of the other mandrel, and means for simultaneously rotating said mandrels at speeds bearing a fixed ratio to each other.

3. In a gear cutting machine, the combination of a blank carrying mandrel, a cutter mandrel, a single cutter carried by the cutter mandrel, means for moving the blank carrying mandrel in a direction to impart a tangential feed of the blank to the cutter, and means for simultaneously rotating said mandrels at speeds bearing a fixed ratio to each other.

4. In a gear cutting machine, the combination of a blank carrying mandrel, a cutter carrying mandrel disposed at right angles to the blank carrying mandrel, a master worm wheel carried by the blank carrying mandrel and having the same pitch diameter as that of the proposed worm wheel to be cut, a worm meshing with said master wheel, means for feeding the blank carrying mandrel in a direction parallel to the axis of the cutter carrying mandrel, and gearing between said cutter mandrel and said worm, for imparting to said mandrels a speed having a fixed ratio to each other.

5. In a gear cutting machine the combination with a rotary mandrel and a cutter substantially such as described carried thereby, of a master worm wheel having the same pitch diameter as the worm wheel to be cut and adapted to transmit motion to the blank, a worm with which the master worm wheel meshes, means for feeding the master wheel and blank laterally, and gearing between the cutter mandrel and said worm, said gearing proportioned to rotate the tool mandrel as many times as there are to be teeth in the worm wheel, while the master wheel and worm wheel blank are making a single revolution.

6. In a gear cutting machine, the combination with two mandrels disposed at right angles to each other, of a cutter substantially such as described, carried by one of said mandrels, a master worm wheel carried by the other mandrel, said last mentioned mandrel also adapted to carry a blank, means for imparting lateral feed movement to the mandrel which carries the master wheel and blank, a long worm on which the master wheel rolls and gearing for rotating said worm to rotate the master wheel and blank, and for rotating the tool mandrel.

7. In a gear cutting machine, the combination with a blank carrying mandrel and a tool carrying mandrel disposed at right angles to each other, of a master wheel on the blank carrying mandrel and having a pitch diameter equal to the pitch diameter of the gear to be cut, gearing between said master wheel and the tool carrying mandrel arranged to drive the two mandrels at different speeds having a definite ratio to each other and means for feeding the blank-carrying mandrel in a direction parallel to the axis of the tool carrying mandrel.

8. In a gear cutting machine, the combination of a mandrel, a master wheel secured thereto, a long worm meshing with said master wheel, means for feeding said mandrel laterally and causing the master wheel to roll on the worm, a second mandrel disposed at right angles to the first, a cutter substantially such as described secured to said second mandrel, and gearing for rotating the worm and the two mandrels.

9. In a gear cutting machine, the combination with a blank-carrying mandrel and a mandrel disposed at right angles thereto and carrying a tool substantially such as described, of a master worm wheel secured to the blank carrying mandrel and having a pitch diameter equal to that of the proposed worm wheel, gearing for imparting rotation to said mandrels at a fixed ratio, and means for feeding the blank carrying mandrel in a direction parallel to the axis of the tool carrying mandrel.

10. In a gear cutting machine, the combination with a blank carrying mandrel and a mandrel disposed at right angles thereto and carrying a tool substantially such as described, of a master worm wheel secured to the blank carrying mandrel and having a pitch diameter equal to that of the proposed worm wheel, a worm to mesh with said master wheel, gearing for rotating said mandrels at predetermined speeds, and means for feeding the blank carrying mandrel in direction parallel to the axis of said worm.

11. In a gear cutting machine, the combination with a mandrel, a single-toothed cutter carried thereby and a worm disposed parallel with said mandrel and gearing for rotating said mandrel and worm at predetermined speeds, of a blank carrying mandrel disposed above said tool carrying mandrel and worm and at right angles to both, a master worm wheel of the same pitch diameter as the worm wheel to be cut secured to the blank carrying mandrel and meshing with said worm, and means for feeding the blank carrying mandrel in a direction parallel with the axes of the tool carrying mandrel and worm during the rotation of said mandrels and worm.

12. In a gear cutting machine, the combination with a frame and a sliding head thereon, of a blank carrying mandrel mounted on said sliding head, a master worm wheel secured to said mandrel and having a pitch diameter equal to the pitch diameter of the proposed worm wheel, a worm meshing with said worm wheel, a tool carrying mandrel disposed below and at right angles to the end of the first mentioned mandrel which carries the blank, gearing for rotating said mandrels at different speeds and means for

feeding the sliding head in a direction parallel to said worm and tool carrying mandrel.

13. In a gear cutting machine, the combination with a frame and a sliding head thereon, of a tool carrying mandrel mounted on the frame and disposed parallel with said sliding head, a blank carrying mandrel mounted on said sliding head and adapted at one end to receive a blank to be disposed over the tool carrying mandrel, a master worm wheel on the other end of said blank carrying mandrel, having a pitch diameter equal to that of the proposed worm wheel, and meshing with said mandrels at a predetermined ratio and means for feeding the sliding head in a direction parallel to the axes of the tool carrying mandrel and said worm.

14. In a gear cutting machine, the combination with a mandrel, a tool substantially such as described carried by said mandrel and a blank-carrying mandrel disposed at right angles to the mandrel carrying the tool, of a master worm wheel on the blank-carrying mandrel and having a pitch diameter equal to that of the proposed worm wheel, means for rotating said mandrels at predetermined speeds having a fixed ratio to each other, and means for feeding one of said mandrels in a direction parallel to the axis of the other.

15. In a gear cutting machine, the combination with a main frame, and a sliding head thereon, of a blank-carrying mandrel mounted on said sliding head, a laterally projecting frame attached to the main frame, a platform on said laterally projecting frame, a tool-carrying mandrel mounted on said platform, means for adjusting the laterally projecting frame vertically, means for adjusting the platform toward and away from the main frame, means for rotating said mandrels and means for simultaneously feeding the sliding head in a direction at right angles to the axis of the blank carrying mandrel during the rotation of said mandrels.

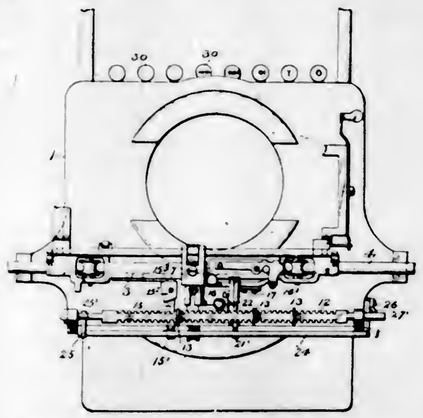
16. In a gear cutting machine, the combination with a main frame, and a sliding head thereon, of a blank-carrying mandrel mounted on the sliding head, a master worm wheel secured to said mandrel, a worm to mesh with said master wheel, means for moving said worm vertically into and out of mesh with the master wheel, a tool-carrying mandrel under one end of she blank carrying mandrel, means for adjusting the tool carrying mandrel, gearing for rotating said tool carrying mandrel and said worm at definite ratio of speed, and means for simultaneously feeding the sliding head in a direction parallel to the axes of the tool carrying mandrel and said worm.

17. In a gear cutting machine, the combination of a long driving screw, with a mandrel, a master worm wheel thereon of the same pitch diameter as the work or tool secured to the other end of the same mandrel with the master wheel and a feed device for moving the said mandrel parallel with the long driving screw, whereby the master wheel will be driven by the screw and also roll on the screw by virtue of the action of said feed device, each of said motions of the master wheel being independent of the other at any and every position.

18. In a gear cutting machine, the combination of mandrel bearings disposed at right angles to each other, mandrels mounted in said bearings, means for feeding one of said bearings in a direction at right angles to the axis of the mandrel mounted therein, means for feeding the other bearing in two directions at right angles to each other, a master wheel on one of said mandrels, means for imparting motion to said master wheel, means for imparting motion to the other mandrel, a blank secured to one of said mandrels and a tool carried by one of said mandrels.

858,082. TABULATING DEVICE FOR TYPE-WRITING MACHINES. EMILE LECOULTRE, Alexandria, Va., assignor to Charles C. Carlin, Alexandria, Va. Filed Mar. 26, 1904. Serial No. 200,114.

Claim.—1. In a typewriting machine, the combination of the frame, a longitudinally movable stop bar provided with a column stop mounted on the frame, means for moving the stop bar longitudinally, a carriage mounted to travel along the frame, an escapement mechanism carried by the frame for controlling the feed of the carriage, means for releasing the carriage from the escapement mechanism, a movable stop on the carriage normally out of line with the column stop, means for moving the movable stop into position to engage the column stop, and a key arranged to simultaneously operate the means for moving the stop bar, the means for releasing the carriage from the escapement mechanism and the means for moving the movable stop into position to engage the column stop.



2. In a typewriting machine, the combination of the frame, a longitudinally movable stop bar provided with a column stop mounted on the frame, means for moving the stop bar longitudinally, a carriage mounted to travel along the frame, an escapement mechanism carried by the frame for controlling the feed of the carriage, means for releasing the carriage from the escapement mechanism, a movable stop on the carriage normally out of line with the column stop, means for moving the movable stop into position to engage the column stop, and a series of keys arranged to simultaneously operate the means for moving the stop bar, the means for releasing the carriage from the escapement mechanism and the means for moving the movable stop into position to engage the column stop.

3. In a typewriting machine, the combination of the frame, a longitudinally movable stop bar provided with a column stop mounted on the frame, differential means for moving the stop bar longitudinally, a carriage mounted to travel along the frame, an escapement mechanism carried by the frame for controlling the feed of the carriage, means for releasing the carriage from the escapement mechanism, a movable stop on the carriage normally out of line with the column stop, means for moving the movable stop into position to engage the column stop, and a series of differential keys arranged to simultaneously operate the means for moving the stop bar, the means for releasing the carriage from the escapement mechanism and the means for moving the movable stop into position to engage the column stop.

4. In a typewriting machine, the combination of the frame, a longitudinally movable stop bar provided with a column stop detachably mounted on the frame, means for moving the stop bar longitudinally, comprising differential mechanisms secured to the frame, a carriage mounted to travel along the frame, an escapement mechanism carried by the frame for controlling the feed of the carriage, means for releasing the carriage from the escapement mechanism, a movable stop detachably secured on the carriage normally out of line with the column stop, means for moving the movable stop into position to engage the column stop, and a series of keys detachably connected to the frame arranged to simultaneously operate the differential mechanism for moving the stop bar, the means releasing the carriage from the escapement mechanism

and the means for moving the movable stop into position to engage the column stop.

5. In a tabulating device for use in connection with a typewriting machine a stop bar mounted on the frame and provided with a column stop, a movable stop on the carriage having a rearwardly extending arm and normally out of position to engage the column stop, a swinging rod adapted to depress the rearwardly extending arm to move the movable stop into position to engage the column stop, and a spring acting to resist the depression of the rearwardly extending arm and thus cause it to act as a brake, and means for releasing the carriage.

6. A stop bar for tabulating machines comprising a bar circular in cross section having a longitudinal groove formed therein, and a stop mounted to rotate on the bar provided with a lug adapted to enter the longitudinal groove, but of less width than the width of the groove, the lug being integral with said stop and operative to limit positively the rotary movement of said stop on said bar.

7. A stop bar for tabulating machines comprising a bar, a series of stops having limited movement of rotation on said bar and having a tongue and groove connection therewith whereby relative rotary movement between said stops and bar is limited, and non-rotary washers interposed between the stops.

8. A stop bar for tabulating machines comprising a bar circular in cross section having a longitudinal groove formed therein, a series of stops mounted to rotate on said bar each provided with a lug adapted to enter the groove, but of less width than the width of the groove, and washers interposed between the stops each having a lug adapted to enter and fit the groove.

9. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, carriage feeding mechanism, a stop mounted on the frame of the machine and movable lengthwise of the carriage, a stop on the carriage normally out of line with the first recited stop, and mechanism adapted at a single operation to move the stop on the carriage into line with the stop on the frame and to move the stop on the frame lengthwise of the carriage.

10. In a typewriting machine, the combination of a carriage, carriage feeding mechanism, a bar mounted on the frame of the machine, a stop arranged on said bar to define a columnar field, means for moving said bar longitudinally in order to bring the stop thereon to any selected one of a plurality of denominational positions in the columnar field, a stop mounted on the carriage and normally out of line with the first recited stop, means for moving said carriage stop into position to co-operate with said first recited stop, and means for releasing the carriage from said carriage feeding mechanism, the bar-moving, carriage-stop-moving and carriage-releasing means operating concurrently.

11. In a typewriting machine, the combination of a carriage, carriage feeding mechanism, a bar mounted on the frame of the machine, a stop arranged on said bar to define a columnar field, means for moving said bar longitudinally in order to bring the stop thereon to any selected one of a plurality of denominational positions in the columnar field, a stop mounted on the carriage and normally out of line with the first recited stop, means for moving said carriage stop into line with said first recited stop, means for releasing the carriage from said carriage feeding mechanism, and a plurality of keys, each adapted when actuated to operate the means for moving said stop bar, the means for moving said carriage stop and the means for releasing said carriage.

12. In a typewriting machine, the combination of a carriage, carriage escapement mechanism comprising a rack and pinion, a stop rack-bar slidably mounted on the frame of the machine, a column stop adjustably mounted on said bar, a carriage stop pivoted on said carriage and normally out of line with said column stop, a differential cam plate operable to move said rack bar predetermined extents lengthwise of said carriage, and a plurality of key levers each operable on said cam plate, each of said key levers being also adapted to move said carriage stop to operative position and to separate said rack and pinion to release the carriage.

13. In a typewriting machine, the combination of a stop bar mounted on the frame of the machine, a column stop on said stop bar, means for moving said stop bar longitudinally, a carriage, escapement mechanism for controlling the feed of the carriage, means for releasing the carriage from the escapement mechanism, a movable stop on the carriage normally out of line with the column stop, means for moving the movable carriage stop into position to engage the column stop, and a key adapted to operate the means for moving the stop bar, the means for releasing the carriage from the escapement mechanism, and the means for moving the carriage stop into operative position.

14. In a typewriting machine, the combination of a stop bar mounted on the frame of the machine, a column stop thereon, means for moving said stop bar longitudinally, a carriage, an escapement mechanism therefor, means for releasing the carriage from the escapement mechanism, a movable stop on said carriage normally out of line with the column stop, means for moving the movable stop into position to engage the column stop, and a series of keys each adapted to operate the means for moving said stop bar, the means for releasing the carriage from its escapement mechanism and the means for moving the movable stop into position to engage the column stop.

15. In a typewriting machine, the combination of a stop bar mounted on the frame of the machine, a column stop thereon, means for moving said stop bar longitudinally different extents, a carriage, an escapement mechanism therefor, means for releasing the carriage from the escapement mechanism, a movable stop on the carriage normally out of line with the column stop, means for moving the movable stop into position to engage the column stop, and a plurality of keys each adapted to move said stop bar a predetermined distance, to release said carriage from its escapement mechanism and to move said movable stop into position to engage said column stop.

16. In a typewriting machine, the combination of a carriage, a tabulator stop pivotally mounted on said carriage, one or more column stops mounted on the fixed framework of the machine, a rocking member mounted on the main frame of the machine and with its axis of motion fixed and parallel with the travel of the carriage and having an eccentric part fixed to it and maintained at all times in a fixed relation with said rocking member as a whole, said eccentric part being adapted when said rocking member is rocked to move said tabulator stop into position to engage one of said column stops, and a key for controlling said rocking member.

17. In a typewriting machine, the combination of a carriage, a tabulator bar mounted on the fixed framework of the machine, one or more column stops mounted on said tabulator bar, a tabulator stop movably mounted on said carriage, a member mounted on the main frame of the machine and adapted to rock about a fixed horizontal axis and having an eccentric part adapted when said member is rocked to engage said movable tabulator stop and to move it into position to engage one of said column stops said eccentric part being fixed to and having an unvarying relation with said rocking member as a whole, and a key for controlling said rocking member.

18. In a typewriting machine, the combination of a carriage, a tabulator bar mounted on the fixed framework of the machine, one or more column stops mounted on said tabulator bar, a tabulator stop movably mounted on said carriage, a rocking member mounted on the main frame of the machine and with its axis of motion fixed and parallel to the travel of the carriage and having an eccentric part adapted when said rocking member is rocked to engage said pivoted tabulator stop and to move it into position to engage one of said column stops said eccentric part being fixed to and having an unvarying relation with said rocking member as a whole, a key for controlling said rocking member, and a carriage release device operated by said key.

19. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, a tabulator stop

movably mounted on said carriage, a column stop bar mounted on the fixed framework of the machine, one or more column stops on said bar, a rocking member pivoted below and independently of said movable tabulator stop with its axis of motion fixed and parallel with the direction of movement of the carriage and having a fixed part adapted when rocked to move said stop into position to engage said column stop or stops, a key operatively connected with said rocking member, and a carriage release device operated by said key.

20. In a tabulating mechanism for typewriting machines, the combination with co-operative tabulating stops, of a rod or bar having rotary motion about a fixed axis and extending in the direction of the travel of the carriage, said tabulating stops being mounted independently of said rod or bar; and a key pivoted to a fixed part and operative to actuate said rod or bar, the latter operating to move certain of said tabulating stops to operative position.

21. In a tabulating mechanism for typewriting machines, the combination with co-operative tabulating stops, of a rod or bar having rotary motion about a fixed axis and extending in the direction of the travel of the carriage, and a set of tabulating keys mounted on the frame of the machine and each operative to actuate said rod or bar, the latter when operated being effective to move certain of said tabulating stops to operative position, said tabulating stops being mounted independently of said rod or bar.

22. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a stop on the carriage, a stop on the machine frame, said stops being normally out of line with each other, means for moving both said stops to positions where they will co-operate when the carriage is released or freed from the control of said step-by-step feeding mechanism, and a key for actuating said means prior to the release of said carriage.

23. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a stop on the carriage, a stop on the machine frame, said stops being normally out of line with each other, mechanism for moving one of said stops into position to co-operate with the other stop, mechanism for moving said other stops so that it will co-operate with the first stop to arrest the carriage at a predetermined denominational position when said carriage is released from the control of said step-by-step feeding mechanism, and a key operative to actuate both said mechanisms.

24. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a stop on the carriage, a stop on the machine frame, said stops being normally out of line with each other, mechanism for moving one of said stops into position to co-operate with the other stop, differential mechanism for moving said other stop different predetermined extents for different denominational positions, and a plurality of keys each operative to actuate both said mechanisms.

25. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a carriage stop, a co-operative stop on the machine frame, said stops being normally out of line with each other, mechanism for moving said carriage stop into line with said co-operative stop, mechanism for moving said co-operative stop so that it will co-operate with the carriage stop to arrest the carriage at a predetermined denominational position when said carriage is released from the control of said step-by-step feeding mechanism, and a key operative to actuate both said mechanisms.

26. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a carriage stop, a co-operative stop on the machine frame, said stops being normally out of line with each other, mechanism for moving said carriage stop into line with said co-operative stop, differential mechanism for moving said co-operative stop different predetermined extents for different denominational positions, and a plurality of keys each operative to actuate both said mechanisms.

27. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a stop on the carriage, a stop on the machine frame, said stops being normally out of line with each other, means for moving both said stops to positions where they will co-operate when the carriage is released or freed from the control of said step-by-step feeding mechanism, devices for releasing or freeing the carriage from the control of its step-by-step feeding mechanism, and a key for actuating said means and said devices.

28. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a stop on the carriage, a stop on the machine frame, said stops being normally out of line with each other, mechanism for moving one of said stops into position to co-operate with the other stop, mechanism for moving said other stop so that it will co-operate with the first stop to arrest the carriage at a predetermined denominational position when said carriage is released from the control of said step-by-step feeding mechanism, devices for releasing the carriage from the control of its step-by-step feeding mechanism, and a key operative to actuate both said mechanisms, said key being also operative to actuate the carriage releasing devices.

29. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a stop on the carriage, a stop on the machine frame, said stops being normally out of line with each other, mechanism for moving one of said stops into position to co-operate with the other stop, differential mechanism for moving said other stop different predetermined extents for different denominational positions, devices for releasing the carriage from the control of its step-by-step feeding mechanism, and a plurality of keys and each also operative to actuate both said mechanisms and also operative to actuate the carriage releasing devices.

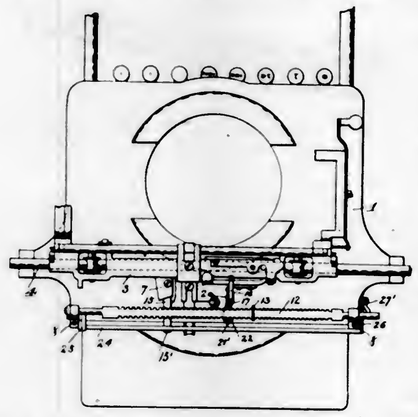
30. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a carriage stop, a co-operative stop on the machine frame, said stops being normally out of line with each other, mechanism for moving said carriage stop into line with said co-operative stop, mechanism for moving said co-operative stop so that it will co-operate with the carriage stop to arrest the carriage at a predetermined denominational position when said carriage is released from the control of said step-by-step feeding mechanism, devices for releasing the carriage from the control of its step-by-step feeding mechanisms, and a key operative to actuate both said mechanisms, said key being also operative to actuate the carriage releasing devices.

31. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, step-by-step carriage feeding mechanism, a carriage stop, a co-operative stop on the machine frame, said stops being normally out of line with each other, mechanism for moving said carriage stop into line with said co-operative stop, differential mechanism for moving said co-operative stop different predetermined extents for different denominational positions, devices for releasing the carriage from the control of its step-by-step feeding mechanism, and a plurality of keys each operative to actuate both said mechanisms each of said keys being also operative to actuate the carriage releasing devices.

858,083. TABULATING DEVICE FOR TYPE-WRITING MACHINES. EMILE LECOULTRE, Alexandria, Va., assignor to Charles C. Carlin, Alexandria, Va. Filed May 11, 1904. Serial No. 207,429.

Claim.—1. A typewriting machine including in combination a carriage, a bar, said elements being respectively provided with an arm and a stop, one of which elements lies in the path of the other and one of which is normally inoperative, and means for rendering operative the normally inoperative element.

2. A typewriting machine, including in combination, a carriage provided with a normally inoperative arm, a bar carrying a stop extending into the normal path of the arm and means for rendering said arm operative.



3. A typewriting machine including in combination a carriage, a bar, said carriage and bar being respectively provided with a stop arm and a stop, the stop being arranged in the path of a part of the stop arm, such part of the stop arm being normally flexible to permit the stop arm to pass the stop and means for rendering such part of the stop arm rigid.

4. A typewriting machine including in combination a carriage, a bar, said carriage and bar being respectively provided with a stop arm and a stop, the stop being arranged in the path of a part of the stop arm, such part of the stop arm being normally flexible to permit the stop arm to pass the stop and key operated means for rendering such part of the stop arm rigid.

5. A typewriting machine including in combination a carriage provided with a stop arm having a flexible end section a stop supported on the frame of the machine in the path of the end section of the stop arm, and means for temporarily holding the end section of the stop arm rigid.

6. A typewriting machine including in combination a carriage provided with a stop arm having a flexible end section, a stop supported on the frame of the machine in the path of the end section of the stop arm, and key operated means for temporarily holding the end section of the stop arm rigid.

7. A typewriting machine including in combination a carriage provided with a stop arm having a flexible end section, a stop supported on the carriage in the path of the end section of the stop arm, a locking device carried by the stop arm adapted when operated to engage the end section to hold it rigid, and means for operating the locking device.

8. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, a column stop, a co-operating stop, one of said stops being normally in the path of the other and said stops being normally inoperative to arrest the carriage, and means for rendering said stops operative to arrest said carriage.

9. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, a column stop, a co-operative stop, one of said stops being normally in the path of the other and one of said stops being flexible or yielding, and means for locking said flexible or yielding stop so that it may co-operate with the other of said stops to arrest said carriage.

10. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, a stop carried thereby, a co-operative stop on the frame of the machine, one of said stops being flexible, so that though normally in line with the other stop it is inoperative, and means for adapting said flexible stop to co-operate with the other stop to arrest the carriage.

11. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, a column stop, a co-operative stop, one of said stops being normally in the path of the other and said stops being normally inoperative to arrest the carriage, means for rendering said stops operative to arrest said carriage, and a key at the front of the machine adapted to operate said means.

12. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, a column stop, a co-operative stop, one of said stops being normally in the path of the other and one of said stops being flexible or yielding, means for locking said flexible or yielding stop so that it may co-operate with the other of said stops to arrest said carriage, and a key at the front of the machine adapted to operate said means.

13. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, a stop carried thereby, a co-operative stop on the frame of the machine, one of said stops being flexible, so that though normally in line with the other stop it is inoperative, means for adapting said flexible stop to co-operate with the other stop to arrest the carriage, and a key at the front of the machine adapted to operate said means.

14. In a typewriting machine and in a tabulating mechanism, the combination of a carriage, a column stop, a co-operative stop, said stops being normally inoperative to arrest the carriage and one of said stops being normally in the path of the other, and means for rendering said stops operative to arrest said carriage.

15. In a typewriting machine, the combination of a carriage, a step-by-step feed device for said carriage, a column stop and a tabulator stop, one of said stops being mounted on the carriage and the other of said stops being mounted on the frame of the machine and standing normally in the path of the stop on the carriage and said stops being normally inoperative to arrest the carriage, a tabulator key, means controlled by said key for rendering said stops operative to arrest the carriage, and means controlled by said key for releasing said carriage from the step-by-step feed mechanism.

16. In a typewriting machine, the combination of a carriage, a column stop and a tabulator stop, one of said stops being mounted on the carriage and the other being mounted on the frame of the machine and normally standing in the path of the stop on the carriage and one of said stops being flexible whereby it is inoperative to arrest the carriage, a tabulator key, a lock for said flexible stop operated by said tabulator key, and a carriage release device also operated by said tabulator key.

17. In a typewriting machine, the combination of a carriage, tabulator stops, one normally in the path of another, but said stops being normally inoperative to arrest the carriage, and means for releasing the carriage and for rendering said stops operative to arrest the carriage.

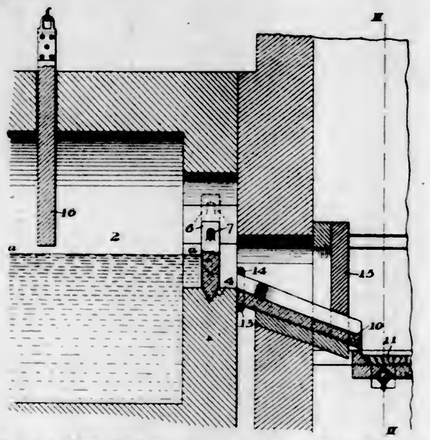
858,084. COMPOSITION OF MATTER. FERDINAND A. LORERT, National City, Cal. Filed July 12, 1906. Serial No. 325,942.

Claim.—The composition of matter consisting of brimstone, asbestos, charcoal, graphite and carbonate of lime, substantially in the proportions described and united together by heat and stirring.

858,085. FEED-OUT DEVICE FOR MOLTEN GLASS. JOHN H. LUBBERS, Allegheny, Pa., assignor to Window Glass Machine Company, Pittsburg, Pa., a Corporation of New Jersey. Filed Aug. 12, 1904. Serial No. 220,486.

Claim.—1. In a glass feed-out device, a melting furnace having a forehearth with a discharge opening in its wall, a refractory valve block for controlling the said opening, a cross-wall having an opening therethrough, an inclined trough supported in said opening, and means for confining the heat from the forehearth in the chamber around the trough formed by the cross wall; substantially as described.

2. In a glass feed-out device, a dam formed with a port extending below the level of the bath, a refractory valve for said port, and an inclined trough leading from the port, and having an inclosed heating atmosphere, together with a baffle arranged to cut off the heat from the receptacle into which the glass discharges; substantially as described.



3. In a glass feed-out device, a dam having an outlet port extending below the level of the bath, and a refractory valve arranged to control said port, said valve being arranged to be actuated from its ends; substantially as described.

4. In a glass feed-out device, a wall having a dam with an opening above it, and a port extending below the level of the bath, and a refractory valve for controlling said port, said valve having a reduced or beveled lower edge arranged to seat in a V-shaped recess of the dam; substantially as described.

5. In a glass feed-out device, a forehearth having an opening in its front wall, an inclined trough with which the opening communicates, a refractory valve for controlling the opening, and an inclosing chamber for the said trough terminating above its discharge end and acting to confine the heat from the forehearth; substantially as described.

6. In a glass feed-out device, a wall having a slot extending below the level of the bath, a vertically movable refractory gate therefor, a trough leading from the slot, and a cooling device for the joint between the trough and the wall; substantially as described.

7. In a glass feed-out device, a wall having a dam with an opening above it, and a port extending below the level of the bath, a receptacle, a trough leading from the port to the receptacle, and means for shutting off the heat of the glass bath from the receptacle; substantially as described.

8. In a glass feed-out device, a tank furnace having a forehearth, a feed-out device at the end of the forehearth, and a baffle arranged to cut off the heat from the feed-out device; substantially as described.

9. In a glass feed-out device, a forehearth having an opening in its front wall, a trough leading from the opening, and a water-cooling pipe which extends under the joint between the trough and wall, said pipe having reversely bent portions at each side of the trough; substantially as described.

858,086. TRAY FOR STEAMING YARN. WILLIAM E. LYFORD, Thompsonville, Conn., assignor to The Hartford Carpet Corporation, Thompsonville, Conn., a Corporation of Connecticut. Filed July 6, 1906. Serial No. 324,930.

Claim.—1. A yarn tray having a yarn support comprising a plate, spaced transverse ribs on the said plate and projecting beyond the sides of the said plate and means engaging the projecting ends of the ribs for supporting the plate.



2. A yarn tray having a yarn support comprising a plate, U-shaped ribs on the top of the plate and extending transversely thereof and means engaging the ribs for supporting the plate.

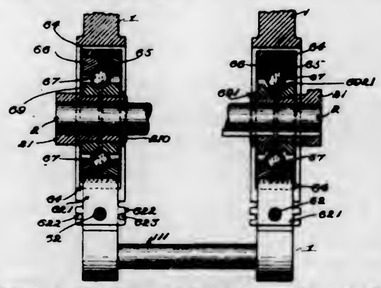
3. A yarn tray having a yarn support comprising a plate, U-shaped ribs on the top of the plate and extending transversely thereof, the ribs being spaced apart and projecting beyond the sides of the said plate and means engaging the projecting ends of the ribs for supporting the plate.

4. A yarn tray having a yarn support, comprising a plate, spaced transverse ribs on the said plate, spaced longitudinal ribs on the ends of the said plate and means engaging the transverse ribs for supporting the plate.

5. A yarn tray, comprising a skeleton frame and a yarn support, the said skeleton frame having end pieces, sides connecting the end pieces with each other, and cross bars connecting the sides with each other at points between the end pieces, and the said yarn support comprising a sheet metal plate adapted to rest on the said cross bars and having transverse ribs on top, the ribs projecting beyond the sides of the plate and being adapted to rest on the said frame sides.

6. A yarn tray, comprising a skeleton frame and a yarn support, the said skeleton frame having end pieces, sides connecting the end pieces with each other, and cross bars connecting the sides with each other at points between the end pieces, and the said yarn support comprising a sheet metal plate adapted to rest on the said cross bars and having transverse ribs on top, the ribs projecting beyond the sides of the plate and being adapted to rest on the said frame sides, the side edges of the plate being spaced from the inner edges of the said frame sides.

858,087. ENGINE-BEARING. WILLIAM B. MASON, Boston, Mass., assignor to The Mason Regulator Company, Saco, Me., a Corporation of Maine. Filed Dec. 28, 1903. Serial No. 186,784.



Claim.—1. The improved ball bearings for a shaft consisting essentially of a plurality of bearings, one of which comprises a ball-track, ball-cups and balls therefor, whereby lengthwise movement of the said shaft is prevented, and another of which comprises ball-cups, and has the balls and tracks therefor movable lengthwise of the shaft, thereby permitting longitudinal adjustment of the bearings with relation to each other upon the shaft, substantially as described.

2. The improved ball bearings for a shaft consisting essentially of a plurality of bearings, one of which comprises a ball-track, ball-cups, and balls therefor, whereby lengthwise movement of the said shaft is prevented, and

another of which comprises a ball-track having a flat bottomed groove therein, ball-cups and balls therefor, whereby a slight lengthwise movement of the shaft is allowed, thereby permitting longitudinal adjustment of the bearings with relation to each other upon the shaft, substantially as described.

3. The improved ball-bearings for a shaft consisting essentially of a bearing comprising a ball-track fast to said shaft and having therein a groove similar in cross-section to the balls therefor, ball-cups, balls to run in the grooves in the said track and cups, and another bearing consisting of a ball-track similarly fast to the main shaft and having therein a flat bottomed groove, ball-cups having grooves corresponding with the cross-section of the balls, and balls to run in the said track and cups, substantially as and for the purposes described.

4. In a ball bearing the combination of a ball-track, ball-cups threaded upon their peripheral surfaces and having notches or grooves cut transversely across the said peripheral surfaces and adapted for the reception of a tool to move the said ball-cups with relation to each other, and a bearing ring correspondingly threaded on its inside surface for the reception of the said ball-cups and having an opening therein, whereby the notches in the said ball-cups may be reached for adjustment, substantially as described.

5. In a ball bearing, the combination of balls, a ball-track, a pair of ball-cups threaded upon their peripheral surfaces, and having notches or grooves cut transversely across the said peripheral surfaces for the reception of locking means, locking means comprising a plate engaging said notches and a bearing ring threaded on its inside surface for the reception of the said ball-cups, substantially as described.

6. In a ball-bearing the combination of balls, a ball-track, a pair of ball-cups threaded upon their peripheral surfaces, and having notches or grooves cut transversely across the said peripheral surfaces for the reception of locking means, and for adjustment, a bearing ring having an opening therein providing access to the said notches for adjustment, and locking means in engagement with an opposite pair of the said notches, whereby the ball-cups are held from turning relatively to each other or to the bearing ring, substantially as described.

7. In a ball bearing the combination of a ball-track, balls therefor, ball-cups threaded upon their peripheral surfaces and having notches or grooves cut transversely across the said peripheral surfaces for the reception of locking means, a bearing ring correspondingly threaded on its inside surface for the reception of the said ball-cups, and having a slot for the admission of locking means into engagement with an opposite pair of notches in the ball-cups, and locking means in engagement with the said notches in the ball-cups whereby the ball-cups are held in position relatively to each other and the bearing ring, substantially as described.

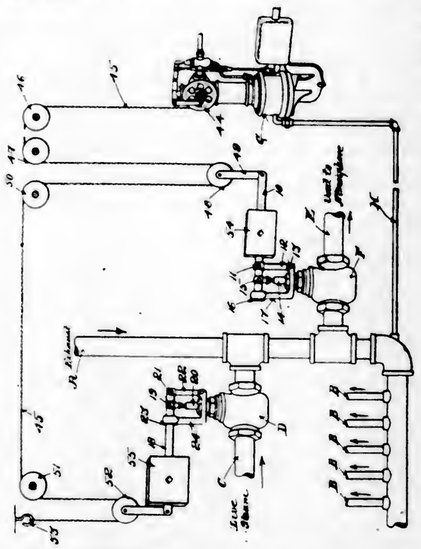
8. The improved ball bearings comprising, essentially, an exterior casing in two parts, ball-cups screwed into the said casing, and having notches at intervals in their threaded peripheral surface for the reception of locking means, locking means therefor projecting through a slot in the said casing into engagement with the notches in the said ball-cups, and holding means whereby the said locking means is held in engagement with the aforesaid notches, substantially as described.

9. The improved locking device for notched ball-cups of ball bearings comprising, essentially, a metal piece having a portion for engagement with the notches of the ball-cups, another portion for engagement with a pry tool in the insertion or removal of the said device, and having a hole therein for the reception of holding means, as a bolt, substantially as described.

10. The improved locking device for notched ball-cups of ball bearings comprising, essentially, a metal piece having a portion for engagement with the notches of the ball-cups, having projections for engagement with a pry tool in the insertion or removal of the said device, and having an oval hole therein for the reception of holding means, as a bolt, substantially as described.

11. The improved locking device for notched ball-cups of ball bearings comprising, essentially, a metal piece having a portion for engagement with the said notches, and having a portion thereof for engagement with a pry tool in the removal or insertion of the said piece, said locking piece having a hole therein for the reception of a holding means so located that the bolt can be inserted only when the locking piece is in engagement with the aforesaid notches of the ball-cups, substantially as described.

858,088. APPARATUS FOR MAINTAINING UNIFORM PRESSURE. WILLIAM B. MASON, Boston, Mass., assignor to The Mason Regulator Company, Saco, Me., a Corporation of Maine. Filed May 16, 1906. Serial No. 317,106.



Claim.—1. Controlling mechanism for maintaining a constant predetermined pressure in a chamber which is connected with two sources of supply, one source being normally of low variable pressure, and the other of high pressure, which comprises a vent valve and a high pressure valve, and operating means for the said valves comprising a pressure weighing device connected with said chamber and movable in response to changes in pressure therein, and operating to open or to close the said vent valve or the said high pressure valve as may be required to maintain the predetermined pressure in the chamber.

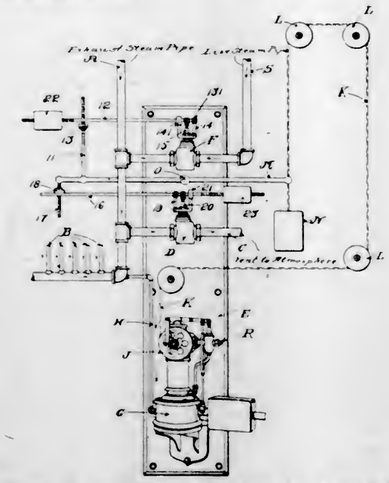
2. Controlling mechanism for maintaining a constant predetermined pressure in a chamber which is connected with two sources of supply, one source being normally of low variable pressure, and the other of high pressure, which comprises a vent valve and a high pressure valve, and operating means for the said valves comprising a pressure weighing device connected with said chamber and movable in response to changes in pressure therein, and operating to close the vent valve and open the high pressure valve when the pressure in the chamber falls below the predetermined point and to close the high pressure valve and open the vent valve when the pressure in the chamber rises above the said predetermined point.

3. Controlling mechanism for maintaining a constant predetermined pressure in a chamber supplied with fluid pressure from two sources of supply, one of which is variable and the other of which is of relatively high pressure, which comprises a vent valve, an operating lever therefor, a high pressure valve, an operating lever therefor, weights on the said valve levers, the weight on the said vent valve

being most effective, and operating means for said valves comprising a pressure weighing device connected with the said chambers and movable in response to changes in pressure therein, and flexible connecting means between the said operating means and the said valve levers and operating upon the said less effectively weighted lever arm first as the pressure rises and upon the more effectively weighted lever first as the pressure falls.

4. Controlling mechanism for maintaining a constant predetermined pressure in a chamber supplied with fluid pressure from two sources of supply, one of which is variable and the other of which is of relatively high pressure, a vent valve provided with a valve lever fulcrumed to open the said valve as the long arm of the lever rises, a high pressure valve provided with a valve lever fulcrumed to close the said valve as the long arm of the said valve lever rises, weights on the said valve levers, the weight on the said vent valve being most effective, and operating means for said valves comprising a pressure weighing device connected with the said chambers and movable in response to changes in pressure therein, and flexible connecting means between the said operating means and the said valve levers and operating upon the said less effectively weighted lever arm first to close the high pressure valve and open the vent valve when the pressure in the chamber rises above the predetermined point, and to close the vent valve and open the high pressure valve when the pressure in the chamber falls below the predetermined point.

858,089. APPARATUS FOR MAINTAINING UNIFORM PRESSURE IN DRIERS. WILLIAM B. MASON, Boston, Mass., assignor to The Mason Regulator Company, Saco, Me., a Corporation of Maine. Filed May 17, 1906. Serial No. 317,329.



Claim.—1. Controlling mechanism for maintaining a predetermined pressure in a chamber supplied from two sources, the main source of which is variable, and the auxiliary source of which is of relatively high pressure, which comprises a vent valve and a high pressure valve, a main operating lever, whose movement in one direction acts to close the high pressure valve and open the vent valve and whose movement in the other direction acts to close the vent valve and open the high pressure supply valve, and a pressure weighing device responsive to changes in pressure in the chamber and operating to move the said lever.

2. Controlling mechanism for maintaining a predetermined pressure in a chamber supplied from two sources, the main source of which is variable, the auxiliary source of which is of relatively high pressure, which comprises a vent valve, a high pressure valve, a main operating lever, connections between the main operating lever and the said two valves, and a pressure weighing device responsive to changes in pressure in the chamber, and operating to move the said main operating lever in one direction to close the vent valve and open the high pressure valve and in the other direction to close the high pressure valve and open the vent valve.

3. Controlling mechanism for maintaining a predetermined pressure in a chamber supplied from two sources, the main source of which is variable, the auxiliary source of which is of relatively high pressure, which comprises a vent valve and a valve lever therefor, a high pressure valve and valve lever therefor, a main operating lever, connections between the main operating lever and the said two valve levers, and a pressure weighing device responsive to changes in pressure in the chamber and operating to move the said main operating lever in one direction to close the vent valve and open the high pressure valve and in the other direction to close the high pressure valve and open the vent valve.

4. Controlling mechanism for maintaining a predetermined pressure in a chamber supplied from two sources, the main source of which is variable, and the auxiliary source of which is of relatively high pressure, which comprises a vent valve and a valve lever therefor, a high pressure valve and a lever therefor, rests for the said valve levers when the valves are closed, a main operating lever, intermediate connections between the said main operating lever and the said valve levers, tappets on the said intermediate connections alternately contacting with the said valve levers, and a pressure weighing device responsive to changes in pressure in the chamber and operating to move the said main operating lever in one direction to close the vent valve and open the high pressure valve, and in the other direction to close the high pressure valve and open the vent valve.

858,090. TOY ANIMAL. FRITZ K. T. MEINECKE, Philadelphia, Pa. Filed Aug. 16, 1906. Serial No. 330,825.



Claim.—1. A toy animal composed of a body member having sockets in its under side and a socket upon its upper side near one end, a separate head member having a dowel, a separate neck member having a socket and dowel at opposite ends, and leg members having dowels to engage the sockets in the under side of the body member.

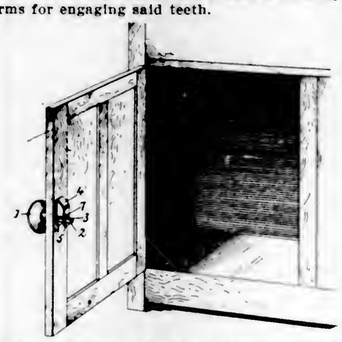
2. A toy animal comprising a body member with a socket at its upper portion near one end, a separate neck member having a dowel at one end and a socket at the other end, and a separate head member having a dowel to fit the socket of the neck member.

3. Toy animals composed of separate body, neck, head, and leg members simulating those of different animals and dowels and sockets on said members whereby the members may be set up and connected producing the simulation of a toy animal composed of simulated members of different animals.

858,091. LATCH. FREDERICK W. MERRIWEATHER, Kansas City, Mo. Filed Feb. 5, 1907. Serial No. 355,821.

Claim.—1. A latch comprising a handle having a shank, a button composed of two spring-arms spaced apart slidable on said shank, and means for holding said arms under compression.

2. A latch comprising a knob having a shank of angular cross section rigidly fixed thereto, ratchet-teeth in one edge of the shank, a button consisting of a strip of spring metal bent upon itself to provide spring arms spaced apart and slidable on said shank, and means carried by one of said arms for engaging said teeth.

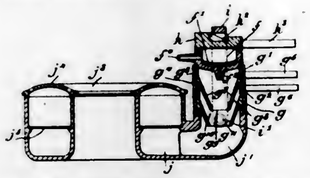


3. A latch comprising a handle having a shank, a button constructed of a strip of spring sheet metal bent upon itself to provide spring arms spaced apart and slidable on said shank, and means to prevent the retraction of the outer arm when pressed on said shank in the direction of the inner arm.

4. A latch comprising a handle having a shank fixed thereto, teeth carried by said shank, and a button comprising two spring arms spaced apart carried by said shank, one of said arms having means for engaging said teeth.

5. A latch comprising a handle having a shank, a button composed of two spring arms spaced apart and carried by said shank, and means carried by one of said arms for engaging with said shank.

858,092. GENERATING AND CARBURETING APPARATUS. DANIEL MILLIOR, Paris, France. Filed Mar. 27, 1906. Serial No. 308,286.



Claim.—1. The combination with a burner, of a carbureting device therefor comprising a carbureting chamber having a controlled air inlet, said carbureting chamber communicating with said burner, a removable injecting nozzle comprising a hollow top forming a reservoir having an opening communicating with said carbureting chamber, a cap for said hollow nozzle, means for jointly locking said cap on said nozzle and said nozzle securely on said carbureting chamber, and means for introducing vaporized fuel to said hollow nozzle, substantially as described.

2. The combination with a hollow burner, of a carbureting device communicating therewith and comprising a chamber having a controlled air inlet, of a hollow injecting nozzle removably mounted on and forming a top for said carbureting chamber, said nozzle being provided with a top having a cam surface thereon, and means pivoted to the side of said carbureting chamber and adapted to swing over and engage said cam surface for detachably securing said nozzle to said carbureting chamber, and means for introducing to said nozzle vaporized fuel, substantially as described.

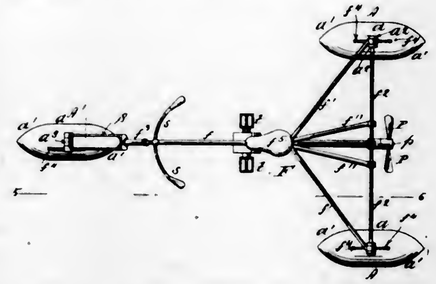
3. The combination with a hollow burner, of a carbureting device communicating therewith and comprising a chamber having a controlled air inlet, a hollow nozzle removably mounted on and forming a closure for said carbureting chamber, a cap for said hollow nozzle provided with a cam thereon, and a stirrup pivoted to the walls of said carbureting chamber and adapted to swing over and be engaged by said cam on said cap upon the rotation of the latter, for securely locking said nozzle on said carbureting chamber, and means for introducing vaporized fuel to said nozzle, substantially as described.

4. The combination with a hollow burner, of a carbureting device communicating therewith and comprising a chamber having a controlled air inlet, a hollow cover therefor comprising a reservoir and provided with a blast nipple directed into said carbureting chamber and a second nipple exterior of said carbureting chamber, a cap for said reservoir and locking means therefor, a vaporizing device connected with the fuel supply, and an intermediate conduit between said vaporizing device and said exterior nipple, substantially as described.

5. The combination with a closed hollow apertured burner, of a closed carbureting device communicating therewith, comprising a walled chamber provided with controlled air inlets, an air tight cover therefor, comprising a hollow receptacle, forming a reservoir and provided with a blast nipple disposed within said carbureting device and with a second nipple exterior of said carbureting device, an apertured diaphragm within said reservoir intermediate of said nipples, an air tight cap for said reservoir and locking means therefor, a vaporizer, and communicating means between said vaporizer and exterior nipple, substantially as described.

6. The combination with a closed hollow apertured burner, of a carbureting device communicating therewith, comprising a hollow shell, a plurality of conical partitions within said shell forming chambers communicating with each other and with said hollow burner, air inlets being formed to communicate with the interior of said conical chambers, means for regulating the supply of air through said air inlets, an air-tight cover for said carbureting chamber, comprising a hollow receptacle, forming a reservoir and provided with a blast nipple directed into said carbureting chamber and provided with a second nipple exterior of said carbureting chamber, an apertured diaphragm within said compressing reservoir intermediate of said nipples, an air-tight cap for said reservoir and locking means therefor, a vaporizing device, and a communicating conduit between said vaporizing device and exterior nipple, substantially as described.

858,093. NAUTICAL VELOCIPEDE. JOHN H. MITCHELL, New York, N. Y. Filed Aug. 7, 1906. Serial No. 329,552.



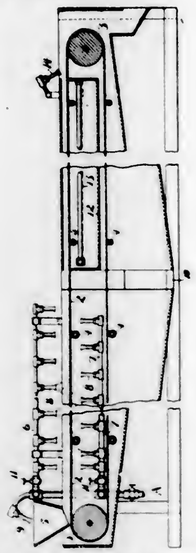
Claim.—1. In a nautical velocipede, the combination with suitable frame work and propelling mechanism, of three floats triangularly arranged with relation to each other, one at the front and the other two at the rear of the vehicle, and each pivoted to the frame by means which admit of vertical oscillation only, for the purpose described.

2. In a nautical velocipede, the combination with suitable framework and propelling mechanism, of three floats triangularly arranged with relation to each other, one at the front and the other two at the rear of the vehicle,

each pivoted to the frame by means which admit of vertical oscillation only, and stops upon the frame for limiting the extent of such vertical oscillation, for the purpose described.

3. In a nautical velocipede, the combination with suitable frame work and propelling mechanism, of three floats triangularly arranged with relation to each other, one at the front and the other at the rear of the vehicle, each float consisting of an elongated hollow shell having a cylindrical body with ogival ends and being pivoted to the frame by means which admit of vertical oscillation only, and stops upon the frame for limiting the extent of such vertical oscillation, for the purpose described.

858,094. APPARATUS FOR REMOVING THE SKINS OF FRUITS AND VEGETABLES. CIPRIANO D. MONTE, San Francisco, Cal.: Virginia J. Monte administratrix of said Cipriano D. Monte, deceased. Filed Apr. 6, 1905. Serial No. 254,138.



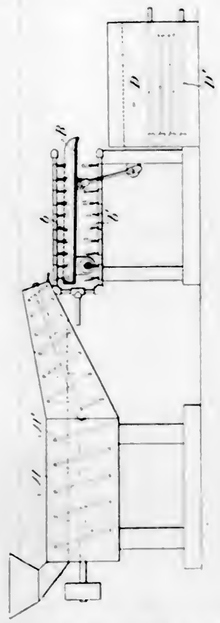
Claim.—1. A peeling and washing machine having in combination a supporting frame, a movable carrier mounted therein, and upon which the fruit or vegetable to be peeled is supported, fluid-supply pipes having nozzles adapted to discharge jets under pressure upon the fruit to remove the skin thereof, said nozzles being independently-adjustable to enable any one or all of the nozzles to be turned off to provide a more or less extended sprayed area according to the condition of the fruit.

2. A peeling and washing machine having in combination a supporting frame-work, an endless-carrier operable therein fluid jet-pipes at one end of the frame-work adapted to deliver jets upon the fruit supported on a conveyer, a steam chamber intermediate of the ends of the conveyer and through which the conveyer carries the fruit, and other fluid-jets beyond the steam chamber adapted to deliver jets upon the fruit after leaving said chamber whereby the fruit is chilled and set.

3. An apparatus for removing the skins of fruit and vegetables comprising a suitable perforated conveyer, one or more water pipes arranged above and parallel with the conveyer and provided with independently longitudinally adjustable nozzles discharging downward on the conveyer, and one or more water pipes arranged parallel with and below the conveyer and having a plurality of individually adjustable nozzles discharging upwardly against the conveyer.

4. In an apparatus of the character described, the combination of a suitable conveyer, a series of water pipes arranged above the conveyer and provided with a plurality of downwardly discharging nozzles, a second series of pipes disposed below the conveyer and provided with a series of upwardly discharging nozzles, said conveyer perforated to allow all of said nozzles to act directly upon the material on the conveyer, a steam box through which the conveyer passes, for heating the material on the conveyer after it leaves the sprays and a spray pipe beyond the steam box for suddenly chilling the material as it leaves said heating means.

858,095. PEELING OF FRUITS AND VEGETABLES. VIRGINIA J. MONTE, Woodland, Cal., administratrix of Cipriano D. Monte, deceased. Filed Feb. 23, 1907. Serial No. 358,834.



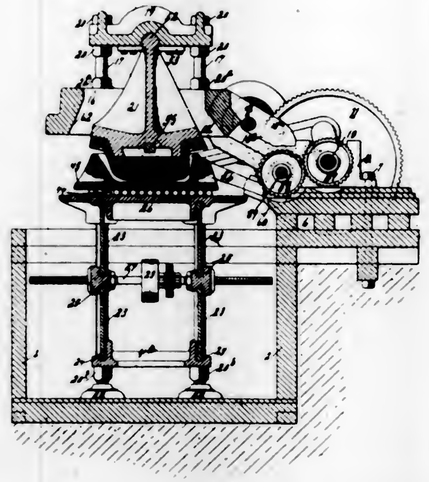
Claim.—1. The process herein described of peeling fruits and vegetables which process consists in subjecting the fruit or vegetable to a bath of disintegrating solution for the purpose of loosening the skin thereof; and then passing the fruit into the range of action of hydraulic sprays of sufficient force to remove the loosened skin.

2. The process herein described of peeling fruits and vegetables said process consisting in subjecting the fruit or vegetable to a bath of disintegrating solution for the purpose of loosening and breaking the skin of the fruit, or vegetable; then passing the fruit or vegetable into the range of action of opposed hydraulic sprays of sufficient force to remove the loosened skin; and then subjecting the peeled fruit or vegetable to a fluid bath of low temperature for the purpose of eliminating any remaining traces of solution.

3. The process herein described of peeling fruits and vegetables said process consisting of the subjection of the fruit or vegetable to a bath of disintegrating solution whereby the skin of the fruit or vegetable is broken and loosened; then passing the fruit or vegetable into the range of action of opposed hydraulic sprays of sufficient force to detach the loosened skin; then washing the peeled fruit or vegetable in cold water to eliminate any remaining traces of solution, and, if the fruit or vegetable is unripe, heating this final bath to blanch the fruit or vegetable.

4. The process herein described of peeling fruits and vegetables, which process consists in subjecting the fruit or vegetable to the action of a disintegrating solution having the capacity to disintegrate and loosen the skin thereof, and then subjecting the fruit or vegetable so treated to the action of fluid sprays and substantially coördinately therewith imparting motion to the fruit or vegetable.

858,096. ROCKER-PRESS FOR SHAPING METAL. CHARLES A. MURDOCK and CHARLES F. MURDOCK, Detroit, Mich., assignors, by direct and mesne assignments, to Eugene H. Sloman, Detroit, Mich. Filed Mar. 16, 1901. Renewed Apr. 11, 1904. Serial No. 202,520½.



Claim.—1. In a metal forming press, in combination with a matrix member, means for producing a reciprocating movement thereof, a punch member and means for producing an oscillatory movement thereof and means for producing a pressure of the one member toward the other, substantially as described.

2. In a metal forming press, the combination of a reciprocating member, an oscillating member, means for producing the reciprocation and the oscillation, and means for forcibly moving one member toward the other, substantially as described.

3. In a metal forming press, the combination of a reciprocating member, an oscillating member, and an abutment member arranged to engage against the oscillating member, substantially as described.

4. In a metal forming press, the combination of a punch member and a matrix member, the punch being mounted to oscillate and the matrix to reciprocate, and means to limit the oscillation of the punch member, and means for forcibly bringing the punch and matrix toward each other, substantially as described.

5. In a metal forming press, the combination of a punch and matrix, the punch being mounted to oscillate and the matrix to reciprocate, said punch and matrix being formed to register together in their respective reciprocal and oscillatory movements, and means to press them together and to reciprocate the matrix, substantially as described.

6. In a metal forming press, the combination of a punch and matrix, the punch being mounted to oscillate and the die to reciprocate, with means to limit the extent of the movement of the punch and means to reciprocate the matrix, and means to press the punch and die together, said punch and matrix being formed to register together as the matrix is reciprocated, substantially as described.

7. In a metal forming press, the combination of a punch and matrix, the punch being mounted to oscillate with means to control the rate and extent of its movement, the matrix being mounted to reciprocate with means to reciprocate the same, the punch and matrix being formed to register together under the operation of their respective controlling mechanism, with means to engage and disengage the punch and matrix and means to press the same together, substantially as described.

8. In a metal forming press, the combination of a punch and matrix, the punch being mounted to oscillate with means to control the rate and extent of its movement, the matrix being mounted to reciprocate with means to reciprocate the same, the punch being formed in an arc of less radial dimension than that of the matrix, with means to engage and disengage the punch and matrix and to press the same together, substantially as described.

9. In a metal forming press, the following elements in combination: a punch member axially mounted and carrying a convex punch on its periphery with abutments interposed in the path of the movement of the punch member to limit its pendulous movement, a table mounted to reciprocate vertically and levers interposed between said table and a fixed base, and means to operate the same to lower and raise the table and force the punch against the matrix, a concave matrix adapted to register with the punch in their coöperative movement herein described, the matrix being mounted to reciprocate and means to reciprocate the same, substantially as described.

10. In a metal forming press, the following elements in combination: a punch member axially mounted and carrying a punch on its oscillating extremity, abutments interposed in the path of said punch member to limit its movement, a table mounted to reciprocate vertically, and levers interposed between said table and a fixed base, said levers being controlled by right and left-hand screws, and means to operate said screws, a matrix mounted to reciprocate on the table and means to reciprocate the same, a controlling arm journaled to the punch member and to the driving mechanism, the operation of the same being so timed with reference to the reciprocal movement of the matrix as to insure registration between the punch and matrix, substantially as described.

11. In a metal forming press, the following elements in combination: a segment axially mounted with a punch secured to the periphery of said segment, abutments interposed in the path of said segment to limits its pendulous movement in each direction, with means to adjust the position of said punch, a table mounted to reciprocate vertically with a flat top and transverse sockets on its underside, an adjustable baseplate with corresponding sockets on its upper side, two pressure heads having transverse sockets in their upper and lower faces, and toggle plates having transverse socket heads at their upper and lower edges, said heads being mounted respectively in the sockets of the plate base, pressure head and table, screws with right and left-hand threads, suitably mounted in the pressure heads, and means to revolve said screws, a matrix mounted to reciprocate on the table with rollers interposed between it and the table, with means to reciprocate the matrix, suitable connecting rods journaled at one end to the segment and at the other to the driving mechanism of the press, the latter being so timed as to restrain the movement of the segment by its contact with the matrix within prescribed limits, the punch and matrix being formed to register together when the movement of the segment is controlled by the driving mechanism and by the abutments interposed in its path, and when the die is reciprocated by the driving mechanism, both being adjusted according to a fixed scale of movement, substantially as described.

12. In a machine for forming hollow ware from metal, the combination of a matrix member having an internal shape of the size and form of the exterior of the article to be formed, and a punch member having a face to engage with the metal on the interior of the matrix shaped to form with the motion employed the interior of the article, means for reciprocating one of said members, means for

oscillating the other of said members, and means for moving one of said members toward the other, substantially as described.

13. In a machine for forming hollow ware from metal, the combination of a matrix member having an internal shape of the size and form of the exterior of the article to be formed and a punch member having a face to engage with the metal on the interior of the matrix shaped to form with the motion employed the interior of the article, means for producing a relative reciprocating and oscillating motion of said members, substantially as described.

14. In a metal forming press, the combination of a matrix member, a punch member having oscillatory movement with relation thereto and means for causing relative reciprocation between said members, substantially as described.

15. In a metal forming press, the combination of a matrix member, a punch member, means for causing relative reciprocatory and rocking movement, and means for limiting the degree of oscillation, substantially as described.

16. In a metal forming press, the combination of a matrix member, a punch member, the area of whose active face is less than that of the matrix member, and means for producing a relative rocking and reciprocatory movement of the members and thereby varying the distance between them substantially as described.

17. In a forming press, in combination with a matrix member, a punch member, the area of whose active face is less than that of the matrix member, and means for producing relative oscillatory and reciprocatory movement of the members and thereby successively moving the punch into action with the entire matrix surface, substantially as described.

18. In a forming press, in combination with a matrix member, a punch member and means for varying the distance between them contemporaneously with the production of relative oscillation and reciprocation, substantially as described.

19. In a forming press, the combination of a matrix member, a complementary punch member, and means for producing a rocking and reciprocatory movement of one of said members with respect to the other, substantially as described.

20. In a forming press, in combination with a matrix member and a punch member, means for causing relative rocking and reciprocatory movement thereof, substantially as described.

21. In a metal forming press, a matrix member, a punch member, means whereby said punch member is caused to enter the matrix, means for rocking the punch member with respect to the matrix to successively contact all points in the active surface of the matrix, and means for producing contemporaneous relative reciprocation of said punch and said matrix, substantially as described.

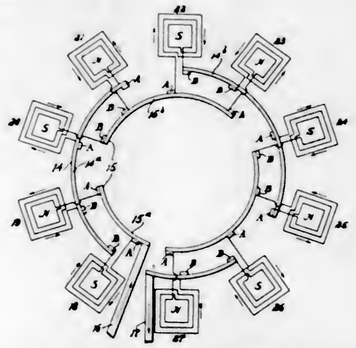
22. In a metal forming press, in combination with matrix and punch members, means for reciprocating one of said members, and means for bringing the other of said members into engagement therewith contemporaneously with the production of relative rocking motion thereof with respect to the other member, substantially as described.

23. In a forming press, the combination with a punch member, of a matrix, and means for reciprocating the matrix when the punch member is within the same.

24. In a forming press, in combination with a matrix member and a punch member, means for causing said punch to enter the matrix and for setting up relative rocking and reciprocatory movement while the members are thus adjacent, substantially as described.

858,097. DYNAMO-ELECTRIC MACHINE. BRADLEY T. MCCORMICK, Cincinnati, Ohio, assignor to The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Sept. 14, 1905. Serial No. 278,487.

Claim.—1. In a dynamo electric machine, field poles having series windings, the coils of the series winding being connected in multiple-series, and connectors for the coils, all the connectors being on the same side of the machine.



2. In a dynamo electric machine, field poles having a series winding the coils of which are connected in multiple-series, and connectors for the coils arranged approximately in two concentric circles on one side of the machine.

3. In a compound wound dynamo electric machine, field poles having series coils connected in multiple-series, and segmental strap connectors, each pair of coils on adjacent poles being wound in multiple and having their positive terminals connected to one segment and their negative terminals connected to another segment of said strap connectors.

4. In a compound wound dynamo electric machine, field poles having series coils connected in multiple-series, and two sets of segmental strap connectors for the series coils, the sets being arranged on one side of the machine in two concentric circles, the segments of one set overlapping the segments of the other set.

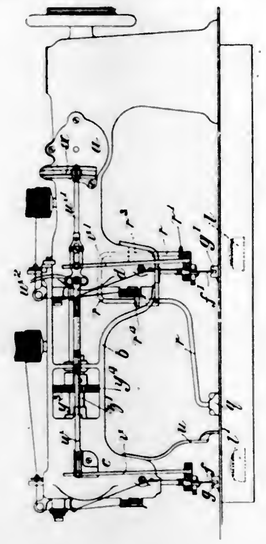
5. In a dynamo electric machine, a series field winding comprising coils connected in multiple-series, and segmental strap connectors for the coils, the positive terminals of one pair of multiple connected coils and the negative terminals of another pair of multiple connected coils being connected to the same segment.

6. In a dynamo electric machine, field poles, a series winding thereon the coils of which are connected in multiple-series, and segmental strap connectors for said coils arranged on one side of the machine, the segments having overlapping ends, the positive terminals of one pair of multiple connected coils and the negative terminals of another pair of multiple connected coils being connected to one segment, and the negative terminals of the first pair of coils and the positive terminals of the second pair of coils being connected respectively to the overlapping ends of oppositely extending adjacent segments.

7. In a compound wound dynamo electric machine, field poles, a series winding thereon having coils connected in multiple series, and segmental strap connectors for said coils arranged on one side of the machine, the segments of said connectors having overlapping ends, each pair of multiple connected coils having positive terminals connected to one segment and negative terminals connected to the overlapping ends of an adjacent segment, the adjacent pair of coils having positive terminals connected to the second segment and negative terminals connected to a third segment which overlaps the second segment, whereby the pairs of coils are connected in series, and between each pair of poles there is an equal number of turns.

858,098. HEMSTITCH SEWING-MACHINE. JOHN C. O'REILLY, Belfast, Ireland. Filed Dec. 5, 1905. Serial No. 290,370.

Claim.—1. A hemstitch sewing machine having two heads, one head being arranged in advance of the other, a cloth feed carrier for each head, a feed carrier disposed between said heads, and needle bars mounted in said heads coöperating with the feeding devices.



2. The combination with a hemstitch sewing mechanism and its head of an extension frame fitted thereto said frame having a head, a needle bar working in the head, means for operating the needle bar and needle and a cloth feed carrier for each head, and a feed carrier disposed between said heads.

3. A hemstitch sewing machine having two heads the one arranged in advance of the other, a needle bar in each head, a vibrating needle on each bar, means for operating the needle bars means for operating the vibrating needles a feed carrier intermediate said heads, and means for operating said carrier.

4. A hemstitch sewing machine having two heads the one arranged in advance of the other, a feed carrier intermediate said heads, and means for operating said carrier a needle bar in each head, a vibrating needle on each bar, a punch on each bar, needle blocks, arms connected to the needle blocks, a connecting rod for operating the arms, a quadrant for operating the connecting rod, means for operating the quadrant and means for operating the needle bars.

5. A hemstitch sewing machine having two heads the one arranged in advance of the other, a needle bar in each head, a vibrating needle on each bar, means for operating the needle bars, means for operating the needles, shuttle mechanism for each needle, feed mechanism for each needle a feed carrier intermediate said heads, and means for operating said carrier.

6. A hemstitch sewing machine having two heads the one arranged in advance of the other and being fitted on an extension frame, a feed carrier intermediate said heads, means for operating said feed carrier a needle bar in each head, mechanisms for operating the needles in each head, lever mechanism for taking up the thread in each head, a vibrating needle on each needle bar, mechanism for operating the needle bars and mechanism for operating the vibrating needles.

7. A hemstitch sewing machine having two heads the one arranged in advance of the other, a feed carrier intermediate said heads, means for operating said feed carrier a needle bar in each head, means for operating the needle bar in the one head, means for operating the needle bar in the other head and means connecting the said two means together so that the needle bars may be operated simultaneously, a vibrating needle on each needle bar and means for operating the vibrating needles simultaneously.

8. A twin hemstitch sewing machine embodying two heads, one arranged in advance of the other whereby a single operator can hemstitch two articles simultaneously, a needle bar in each head, means for operating said needle bars simultaneously, a cloth carrier intermediate said heads, and a presser foot arranged to act in conjunction with said intermediate carrier.

9. A twin hemstitch sewing machine embodying two heads, one arranged in advance of the other whereby a single operator can hemstitch two articles simultaneously, a needle bar in each head, means for operating said needle bars simultaneously, a cloth carrier intermediate said heads, a presser foot arranged to act in conjunction with said intermediate carrier, and a cloth guide arranged to act in conjunction with said presser foot.

858,099. DEVICE FOR FASTENING HEADS TO BUSTS. EMIL T. PALMENBERG, New York, N. Y. Filed Apr. 4, 1907. Serial No. 366,356.



Claim.—1. A device for fastening a hollow head to the bust of a display form comprising an elastic bridle secured to the inside of the said head and having an engaging loop provided with a handle, and a keeper secured to the top of the said bust and adapted to receive the said loop.

2. A display form comprising a bust, a hollow head adapted to be seated on the said bust, and means interior of the said head for fastening the head in place on the bust and for holding the head against movement on the said bust said means being elastic to permit tilting of the head with respect to the bust, whereby to gain access to said fastening device.

3. A display form comprising a bust having an inclined top, a hollow head adapted to seat on the said bust top, a keeper on the said bust top, a frame within the said head and abutting against the said keeper, and an elastic bridle secured to the said frame within the said head and having a loop engaging the said keeper.

858,100. EXPANSION-TUBE. OLAF S. PEDERSEN, New York, N. Y. Filed Nov. 23, 1906. Serial No. 344,733.

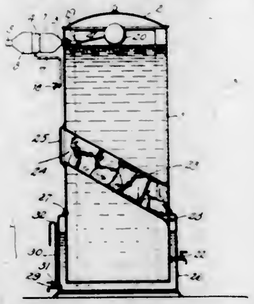
Claim.—1. A tube of the class described, having an expansion crimp extending continuously thereabout, presenting three layers of material, and formed intermediate of the ends thereof.

2. A tube of the class described, having an expansion crimp extending continuously thereabout by doubling the wall of the tube longitudinally upon itself, whereby three layers of material are formed at the wall of the tube, intermediate of the ends thereof.



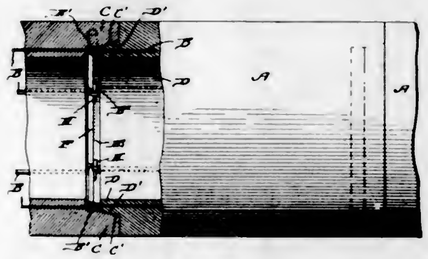
3. A tube of the class described, having an expansion crimp extending continuously thereabout, presenting three layers of material, and tube sheets receiving the ends of said tube.

858,101. WATER-COOLER. GEORGE P. PETROPULAS, Chicago, Ill. Filed Sept. 17, 1906. Serial No. 334,879.



Claim.—In a water cooler, the combination with a tank for holding water to be cooled, of an ice box extending into said tank for receiving ice to cool the water therein, said ice box being disposed at an angle within said tank and secured to the vertical sides thereof, one end of said ice box being open and extending through an opening in the side of the tank, thereby facilitating the insertion of ice, a door associated therewith for closing the opening of said ice box, a cylindrical drip pan concentric with the tank and receiving the lower end thereof, said drip pan being of larger diameter than the tank to form a compartment, a curved pipe for connecting the lower end of the ice box with the upper portion of the drip pan through the side of the tank whereby when the ice melts the water may flow into the drip compartment, a faucet secured to the lower portion of said drip pan, and a siphon overflow pipe extending upwardly from the faucet and adapted to periodically drain the drip pan to a certain level for each filling thereof.

858,102. SEWER-PIPE. JOHN M. PHELAN, Jackson, Mich., assignor to The Reinforced Concrete Pipe Company, Jackson, Mich., a Corporation of Ohio. Filed Sept. 18, 1906. Serial No. 335,118.



Claim.—1. A sewer pipe section having longitudinal reinforcing members, the ends of which are shaped for engagement with a locking band, one end of said pipe being flanged and the opposite end of the pipe provided with a collar, the collared end having an opening or orifice extending therethrough.

2. A sewer pipe section having longitudinal reinforcing bars, the opposite ends of which are shaped for engagement with a locking band, one end of said pipe being flanged, the opposite end having a collar, the collar of said pipe being deeper than the flange and an orifice extending through the collar of the pipe at its inner end for the purpose specified.

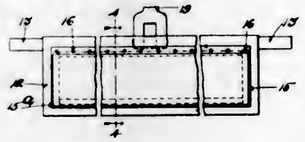
3. A sewer pipe section constructed with a beveled flange at one end, a flange at the opposite end, said collar being of greater depth than the flange, the outer portion of said collar being beveled to correspond with the bevel of the flange and a tangential orifice extending through the inner end of the collar for the purpose specified.

4. A sewer pipe section having a collar at one end and a flange at the opposite end, longitudinal reinforcing bars arranged in the pipe and having their ends projecting beyond said pipe, said ends being hooked, the collared end of the pipe having an orifice extending therethrough, and a band adapted to be inserted through said orifice and adapted to engage the hooked ends of the reinforcing bars when two sections are joined together as set forth.

5. A sewer pipe section having longitudinal reinforcing bars provided with hooked ends, said pipe having a collar at one end and a flange at the opposite end, the collar being deeper than the flange and provided with an orifice extending through its inner portion, a band adapted to be inserted through said orifice and adapted to engage the hooked ends of the reinforcing members and the wedges adapted to be inserted between the said band and hooked members for the purpose of making a tight joint when two sections are joined together, substantially as described.

6. A concrete pipe section having longitudinal reinforcing bars, the ends of which are shaped for engagement with a locking band, said pipe having a beveled flange at one end and a collar at the opposite end, said collar being of greater depth than the flange and beveled at its outer end to correspond with the bevel of the flange, the flange being adapted to fit into the collar when the pipe sections are assembled thereby providing an interior annular groove at the juncture of two pipe sections, the collared end of the pipe having an orifice which communicates with said interior groove, a band adapted to be inserted through said orifice, passed into the interior groove and brought into engagement with the ends of the reinforcing bars and wedges adapted to be inserted into the ends of said bars between the bands and said bars for the purpose specified when two section are joined together.

858,103. APPARATUS FOR MIXING LIQUOR IN TANVATS. GRIFFIN PLACE, Woburn, Mass. Filed Sept. 25, 1906. Serial No. 336,159.



Claim.—1. In combination with a tan vat, a valved paddle extending crosswise of the vat adjacent to one end and near the bottom thereof at right angles with the planes in which the skins are to be suspended, said paddle being pivoted at its upper edge on a horizontal axis, and means for oscillating the paddle on said axis, the arc of movement of the paddle at each stroke extending each side of the vertical plane passing through the axis.

2. In combination with a tan vat, a valved paddle extending crosswise of the vat adjacent to one end and near the bottom thereof at right angles with the planes in which the skins are to be suspended, said paddle being pivoted at its upper edge on a horizontal axis and means for oscillating the paddle on said axis, the arc of movement of the paddle at each stroke extending each side of the vertical plane passing through the axis, the paddle being provided with a valve which is closed by the resistance of the liquid when the paddle swings away from the most adjacent side of the vat and which is opened by the resistance of the liquid on the return stroke.

3. In combination with a tan vat, a valved paddle extending crosswise of the vat adjacent to one end and near the bottom thereof at right angles with the planes in which the skins are to be suspended, said paddle being pivoted at its upper edge on a horizontal axis, and means for oscillating the paddle on said axis, the arc of movement of the paddle at each stroke extending each side of the vertical plane passing through the axis, the paddle comprising an open frame and a clapper-valve on the forward side thereof covering the opening in the paddle, said valve being hinged on its upper edge to the frame on the upper side of the opening and free on its other edges and being closed by the resistance of the liquid when the paddle swings away from the most adjacent side of the vat and being opened by the resistance of the liquid on the return stroke.

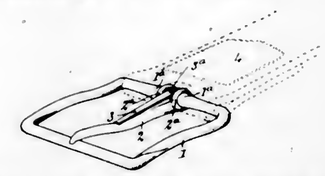
4. In combination with a tan vat, a valved paddle extending crosswise of the vat adjacent to one end and near the bottom thereof at right angles with the planes in which the skins are to be suspended, said paddle being pivoted at its upper edge on a horizontal axis, and means for oscillating the paddle on said axis, the arc of movement of the paddle at each stroke extending each side of the vertical plane passing through the axis, the paddle comprising an open frame and a clapper-valve on the forward side hinged on its upper edge to said frame and free on its other edges, whereby the valve is closed when the paddle swings forward and opened when it swings backward.

5. In combination with a tan vat, a valved paddle extending crosswise of the vat adjacent to one end and near the bottom thereof at right angles with the planes in which the skins are to be suspended, said paddle being pivoted at its upper edge on a horizontal axis, and means for oscillating the paddle on said axis, the arc of movement of the paddle at each stroke extending each side of the vertical plane passing through the axis, the paddle comprising an open frame and a clapper-valve on the forward side thereof covering the opening in the paddle, said valve being hinged on its upper edge to the frame on the upper side of the opening and free on its other edges and being closed by the resistance of the liquid when the paddle swings away from the most adjacent side of the vat and being opened by the resistance of the liquid on the return stroke, and vertical standards at each end of the vat having bearings in which the paddle is pivoted.

6. In combination with a tan vat, a valved paddle extending crosswise of the vat adjacent to one end and near the bottom thereof at right angles with the planes in which the skins are to be suspended, said paddle being pivoted at its upper edge on a horizontal axis, and means for oscillating the paddle on said axis, the arc of movement of the paddle at each stroke extending each side of the vertical plane passing through the axis, the paddle comprising an open frame pivoted at its upper corners in bearings at the sides of the vat and provided with a clapper-valve on the forward side, said valve being formed of flexible material secured along its upper edge to the portion of the frame above the opening therein and free at its other edges and provided with a facing of more rigid material below the line where the said flexible material is secured to the frame.

7. In combination with a tan vat, a valved paddle extending crosswise of the vat adjacent to one end and near the bottom thereof at right angles to the planes in which the skins are to be suspended, said paddle being pivoted at its upper corners on a horizontal axis, means for oscillating the paddle on said axis back and forward past a vertical plane, said oscillating means comprising a vertically reciprocating rod and a connecting arm, one end of which is pivotally connected with the lower end of said rod and the other end is rigidly connected with the upper edge of said paddle near the middle thereof, the paddle comprising an open frame provided with a clapper-valve on the forward side hinged at its upper edge to said frame and free at its other edges, whereby the valve is closed when the paddle swings forward and opened when it swings backward.

858,104. BUCKLE. GEORGE E. RAWSON, Louisville, Ky. Filed Sept. 1, 1906. Serial No. 332,955.



Claim.—1. The combination with a buckle frame, of a tongue hinged thereon and provided with oppositely disposed flanges forming an intermediate recess, and a spring having one end secured to the back bar of said frame and arranged within said recess, and its opposite end bearing against said tongue, substantially as shown and described.

2. The combination with a buckle frame having its back transverse bar provided with oppositely disposed shoulders, of a tongue provided with an eye mounted upon said back bar between said shoulders, and with oppositely disposed flanges forming an intermediate recess, and a spring secured to said back bar and arranged within said recess with its forward end bearing against said tongue, substantially as shown and described.

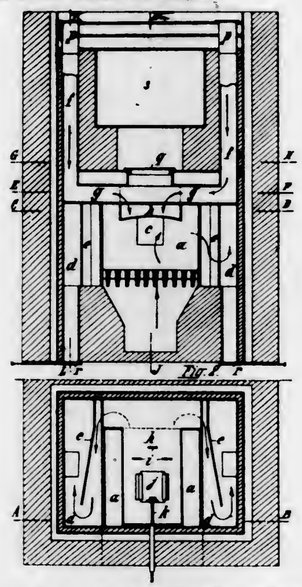
3. The combination with a buckle frame provided on its back transverse bar with oppositely disposed shoulders, of a tongue provided with oppositely disposed flanges forming an intermediate recess, a spring having one end secured to the back bar of said frame and its opposite end bearing against said tongue, and means for limiting the upward movement of said tongue, substantially as shown and described.

4. The combination with a buckle frame having a back transverse bar provided with oppositely disposed annular shoulders, of a tongue provided with an eye mounted on said back bar and having on one side of said back bar oppositely disposed flanges forming an intermediate recess, and a segmental slot formed on the opposite side of said tongue, a spring having one end arranged within said recess and its opposite end bearing against said tongue, and a rivet securing said spring and back bar together and projecting through said back bar into the segmental slot of

the tongue so as to limit the vertical movement of said tongue, substantially as shown and described.

5. The combination with a buckle frame, of a tongue hinged thereon and provided with oppositely disposed flanges forming an intermediate recess, and a spring adapted to exert a tension on said tongue having one of its ends arranged in said recess, substantially as shown and described.

858,105. DOMESTIC AND INDUSTRIAL HEATING APPLIANCE. CHARLES J. ROUX, Pantin, France. Filed July 15, 1903. Serial No. 165,574.



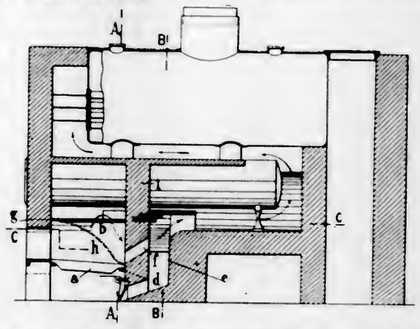
Claim.—1. In a heating apparatus, in combination, a fire place, a re-ignition or secondary combustion chamber projecting into the fire place, said chamber having orifices allowing a small portion of the hot gases to enter said chamber directly from the fire place, and further having orifices for the admission of secondary air, and channels or conduits for leading back indirectly or in a circuitous path the main body of gases coming from the fire place to the re-ignition chamber.

2. In a heating apparatus, in combination, a fire place, a re-ignition or secondary combustion chamber disposed in the fire place, said chamber having orifices allowing a small portion of the hot gases to enter said chamber directly from the fire place, and further having orifices for the admission of secondary air, and channels or conduits for leading back indirectly or in a circuitous path the main body of gases coming from the fire place to the re-ignition chamber.

858,106. APPARATUS FOR CONSUMING SMOKE IN STOVES AND FURNACES. CHARLES J. ROUX, Paris, France. Filed Oct. 14, 1904. Serial No. 228,419.

Claim.—1. A smoke consuming furnace, having the rear wall of its fire box provided with inclined openings on about a level with the grate, a reignition chamber in rear of the fire box and into which the said openings lead, flues for conveying the gases and smoke from the upper part of the fire box to the reignition chamber below the openings in the rear wall of the fire box, and flues for delivering air to the first named flues at the entrance of said flues to the reignition chamber.

2. A smoke-consuming furnace having in its fire box, walls spaced from its side walls and terminating short of the top of said side walls, the front wall of the furnace having openings leading to the spaces between the said walls and side walls of the heater, the rear wall of the fire box being provided with upwardly and rearwardly inclined openings between the said walls and just above the grate, chambers at the rear of the rear wall of the fire box and into which the openings in the rear wall lead, flues leading from the top of the spaces between the said walls and the side walls of the furnace to the bottom of the said chambers, and partitions in the said spaces and leading from above the openings in the front wall and terminating at the entrance to the said flues, substantially as herein shown and described.



3. A smoke-consuming furnace having on the sides of its fire box spaces communicating with the outer air through openings in the front wall of the furnace, the rear wall of the fire box being provided with inclined openings above the grate, chambers at the rear of the rear wall of the fire box and into which the openings in the rear wall lead, flues leading from the top of the side spaces of the fire box to the bottoms of the said chambers, the tops of the flues being in step form, and means for guiding the air entering the openings in the said spaces to the said flues, substantially as described.

4. A smoke-consuming furnace having on the sides of its fire box spaces communicating with the outer air through openings in the front wall of the furnace, the rear wall of the fire box being provided with openings above the grate, chambers at the rear of the rear wall of the fire box and into which the openings in the rear wall lead, flues leading from the said spaces of the fire box to the chambers, and means for guiding the air entering the said spaces to the said flues, substantially as described.

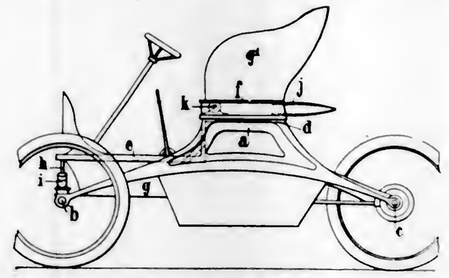
5. A smoke-consuming furnace, having spaces at the sides of its fire box and having the rear wall of the fire box provided with an upwardly inclined opening, opening into the fire box just above the grate, a reignition chamber at the rear of the fire box and into which the said opening leads, the opening being of a width equal to that of the chamber, flues leading from the top of the said spaces to the bottom of said chamber, and means for supplying air to said flues, substantially as herein shown and described.

858,107. TROUSERS. JACOB RUPPEL, Pittsburg, Pa., assignor to Louis Ruppel, Pittsburg, Pa. Filed Mar. 26, 1907. Serial No. 364,575.



Claim.—The combination with the trousers provided in the waist band thereof with V-shaped slits at the upper ends of the side-seams, tabs secured to the outer face of the trousers at one side of the slits, straps secured to the outer face of the trousers at the opposite side of said slits and adjustably-connected to said tabs, and belt-straps secured to the inner face of the trouser waist-band having widened rear ends overlying and closing said V-shaped slits.

858,108. FRAME FOR AUTOMOBILES. ENRIQUE SANCHIS, Paris, France. Filed Jan. 6, 1906. Serial No. 294,941.



Claim.—1. A motor car comprising a chassis composed of two frames provided in the middle with a projecting part forming the car-body and even if required the two sides of the seat, a seat mounted upon these two frames and bracing them and an elastic suspension device interposed between this chassis and the axles, substantially as described.

2. A motor car comprising a principal chassis composed of two frames so shaped as to constitute the car-body, a device bracing these two frames, a second chassis formed of two parts placed at different levels, the one serving as a floor of the car and the other as a seat, substantially as described.

3. A motor car comprising a principal chassis composed of two frames so shaped as to constitute the car-body, a device bracing these two frames, a second chassis formed of two parts placed at different levels, the one serving as a floor for the car and the other as a seat, an elastic suspension being interposed between the seat and the projecting part of the frames, substantially as described.

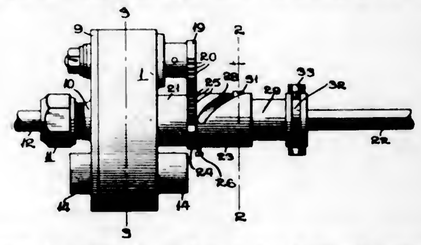
4. A motor car comprising a principal chassis composed of two frames so shaped as to constitute the car-body, a device bracing these two frames, a second chassis constituting the floor and the seat mounted upon the principal chassis, an elastic suspension device, a protector inclosing the motor open at both ends and provided with an outlet which is smaller than the inlet, substantially as described.

5. A motor car comprising a principal chassis composed of two frames so shaped as to constitute the car-body, recesses provided in the projecting parts of the two frames, radiating tubes arranged in front of these recesses, a cover box or protector open at the front and containing the motor and communicating with the space left between the projecting parts of the frames, substantially as described.

6. A chassis for automobiles, comprising standards, formed of a single sheet of metal indented and chased, and having at the upper edge thereof extensions for supporting the seat and other elevated parts of the carriage.

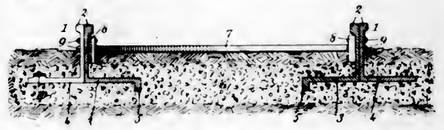
858,109. HYDRAULIC TRANSMISSION DEVICE. WILLIAM C. SCHWARZ, Edwardsville, Ill. Filed May 29, 1906. Serial No. 319,357.

Claim.—In a hydraulic transmission device, the combination with a pair of alined shafts, of a drum rigidly fixed on the end of one of the shafts, in which drum is formed a pair of oppositely arranged chambers, a pair of meshing pinions arranged for operation within the drum between the chambers therein, one of which pinions is fixed on the shaft opposite the shaft to which the drum is fixed, a rotary valve arranged between the two chambers within the drum, a toothed segment fixed on one end of the valve outside the drum, a hub integral with the drum, a toothed segment arranged for rotation on said hub, a sleeve integral with said second segment, in which sleeve is formed a spirally arranged slot, a collar arranged to rotate with and slide upon one of the shafts within the



sleeve, a pin seated in the collar and extending through the spirally arranged slot, there being a groove formed in the outer end of the collar, and a hook engaging in said groove for imparting movement to said collar.

858,110. RAILWAY-TRACK CONSTRUCTION. JOHN H. F. SHULZE, New York, N. Y. Filed Mar. 20, 1907. Serial No. 363,377.



Claim.—1. A railway construction, comprising rails longitudinally divided on a vertical plane forming each into two sections with flat inner faces, each section of said rails having extended base flanges, with downwardly-turned edges formed on the flanges of the inner sections, tie-bars, unitary means for connecting the sections of each rail together and attaching said tie-bars, whereby the flat faces of opposed sections are forced into contact throughout, and plates connecting the base flanges of alining sections together where the sections break joint.

2. A railway construction, comprising rails longitudinally divided on a vertical plane forming each into two sections with flat inner faces, said sections of each rail breaking joint with each other and provided with an extended base flange, means for connecting the opposed sections of each rail together, whereby the flat inner faces are forced into contact throughout, and plates bolted directly to the top of the base flanges of alining sections connecting the same together.

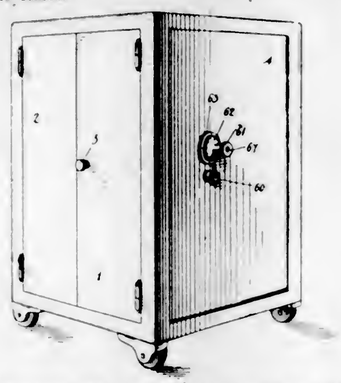
858,111. SAFE-LOCK. ENIS A. SIEGFREID, Lamar, Colo. Filed Sept. 17, 1906. Serial No. 334,910.

Claim.—1. A safe having a door in one of its faces and provided with locking means, and operating means for said locking means located on another face of the safe at an angle to that in which the door is hung and having shafts or spindles, the inner ends of which are opposed to one edge of the door when the latter is closed.

2. A safe having a door in one of its faces and provided with locking means carried thereby and movable independently thereof, operating means for said locking means located on another face of the safe at an angle to that in which the door is hung, and a locking mechanism for said operating means having shafts or spindles, the inner ends of which are opposed to one edge of the door when the latter is closed, and prevented by said closed door from being driven in.

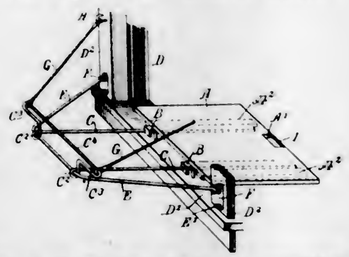
3. A safe having a door in one of its faces and provided with locking means carried thereby and movable independently thereof, operating means for said safe locking means located on another face of the safe at an angle to that in which the door is hung, and a permutation-

lock mechanism for said operating means said permutation lock mechanism having shafts or spindles, the inner ends of which are opposed to one edge of the door when the latter is closed.



4. In a safe lock, the combination with a shaft terminating flush with the outer face of the wall of the safe and having a threaded socket and stud receiving sockets, of a knob carrying studs to enter said stud receiving sockets and a screw in said knob to enter said threaded socket.

858,112. WINDOW-SHELF. RUPERT B. SMART, Chicago, Ill. Filed Aug. 28, 1906. Serial No. 332,344.



Claim.—1. A window attachment, comprising guide ways having lugs on their inner ends resting loosely on the window sill and extending outward therefrom, means attached to the ends of the guideways and detachably connected to the window frame for supporting the said guideways, and a platform slidably mounted on the said guideways.

2. A window attachment, comprising guide rods having their inner ends formed with lugs for engaging the window sill, the outer ends of the guide rods being connected with each other by an integral connecting rod, a supporting rod engaging the outer ends of the said guide rods and attached to the window frame, and braces connected with the cross bar and attached to the window frame.

2. A window attachment, comprising guide rods having their inner ends formed with lugs for engaging the window sill, the outer ends of the guide rods being connected with each other by an integral connecting rod, a supporting rod engaging the outer ends of the said guide rods, and sockets attached to the outside of the sides of the window frame and adapted to removably receive the ends of the said supporting rod.

858,113. DRILL-FEED. ELMER F. SMITH, Cripple Creek, Colo. Filed May 27, 1905. Serial No. 262,671.

Claim.—The combination of an outer tube closed at one end and provided with a stuffing box at the other end, said stuffing box having a projecting screw threaded end, an air hose connected to said tube, an inner tube telescoping freely in said outer tube and passing through said stuffing box, said inner tube being provided with a collar, and an annular collar surrounding said inner tube and



provided with an internal screw thread adapted to engage the screw on the projecting end of said stuffing box, substantially as described.

858,114. HARNESS. WADE H. SNEED, Pensacola, Fla. Filed Aug. 23, 1906. Serial No. 331,729.

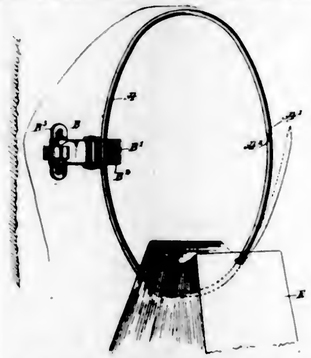


Claim.—A shaft collar, comprising a lower section and upper sections hinged to the ends of the lower section, one of said upper sections having at the free end thereof an open loop, the outer side of said loop being provided with a pin, the other of said upper sections being provided with a lip having a key hole slot for engagement by the pin, a billet connected with the lower section, and a strap connected with the loop, said sections being lined with leather for the purpose set forth.

858,115. FILE FOR PAPERS. EUGENE STEBBINGS, Spencer, Iowa. Filed Jan. 22, 1906. Serial No. 297,171.

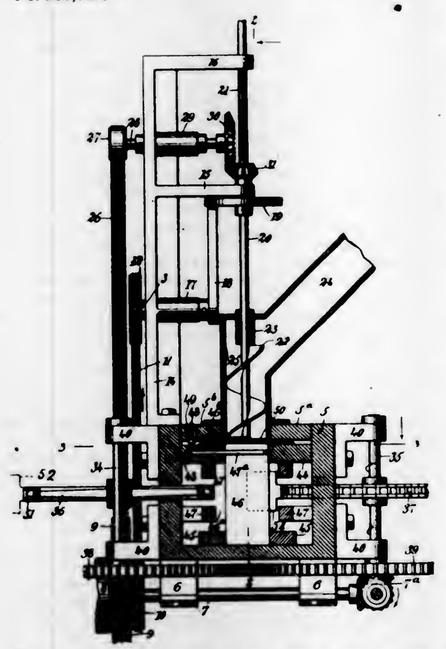
Claim.—A paper file comprising a bracket composed of a base provided with integral lugs projecting laterally therefrom and provided with openings whereby it may be attached to a support, arms projecting from the ends of the base, said arms being bent inwardly toward each other and extending from thence in parallel relation, each

of said arms near the free end thereof being provided with a groove, said grooves coacting to form a recess, and one of said arms having lugs projecting on each side of the other arm between the groove and the base, a lever



pivoted in the lugs and provided with a rounded cam portion for engaging the arm adjacent thereto whereby to clamp the arms together, and a file ring within the grooves.

858,116. CARTON-FILLING MACHINE. RICHARD SUNDERMAN, Buffalo, N. Y. Filed Mar. 14, 1905. Serial No. 250,012.



Claim.—1. The combination of means for holding a carton in position to be filled, an auger for forcing into said carton a material wherewith it is to be filled, automatic mechanism for throwing said auger into and out of action at predetermined intervals, and mechanism coacting with movements of said auger for moving said carton into and out of position.

2. The combination of a frame provided with a passageway along which a carton is adapted to travel, means for stopping and starting said carton, a feeding mechanism for forcing into said carton the material wherewith it is to be filled, said feeding mechanism being provided with a revoluble stem, a pinion encircling said stem and normally idle relatively thereto, and automatic mechanism for throwing said pinion into and out of action relatively to said stem.

3. The combination of a chute, an auger mounted therein and revoluble relatively thereto, means for supporting a carton at a point adjacent to said chute and in favorable position to be filled, means for actuating said auger so as to force a material into said carton, and automatic mechanism for raising said auger while in motion from said carton and for stopping said auger after being thus raised.

4. The combination of force-feed mechanism for filling a carton, automatic mechanism for stopping and starting said force-feed mechanism, and means controllable by movement of a carton for cutting off the supply of material delivered by said force-feed mechanism.

5. The combination of a frame work provided with a passage-way, means for moving a carton along said passage-way, mechanism for supplying to said carton a material to be filled thereinto, a shutter for cutting off the supply of said material, and mechanism provided with an arm projecting into said passage-way and partially obstructing the path of travel of said carton for operating said shutter.

6. The combination of a framework provided with a passage-way along which cartons are adapted to travel, a flight for moving a carton into a predetermined position, automatic mechanism for filling said carton while in such position, another flight for displacing said carton from such position, and means for automatically stopping and starting the supply of material.

7. The combination of means for holding a carton temporarily in a fixed position, a chute registering with said carton when in such fixed position, a movable shutter for cutting off and restoring communication between said chute and said carton, mechanism mounted within said chute for forcing a material therefrom into said carton, means for automatically stopping and starting said last-mentioned mechanism, and mechanism controllable by movements of said carton, after the filling thereof, for actuating said shutter.

8. The combination of a chute for supplying a material to be filled into cartons, a revoluble auger mounted within said chute for the purpose of propelling said material therein, cam mechanism for raising and lowering said auger, means for turning said auger, and mechanism for moving cartons into and out of a predetermined position relatively to said chute.

9. The combination of a chute for supplying a material to cartons to be filled, a revoluble auger mounted within said chute and adapted to propel said material, mechanism for turning said auger, and means for periodically disengaging said mechanism from said auger so as to stop the rotation of the latter.

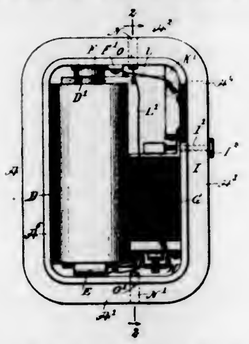
10. The combination of means for holding a carton, a chute associated with said means and adapted to permit the flow of material for filling said cartons, force-feed mechanism connected with said chute for propelling said material therein, means for stopping and starting said force-feed mechanism, and a movable shutter for cutting off and restoring communication between said chute and the carton to be filled.

858,117. MEDICAL BATTERY. CHARLES W. TAYLOR, New York N. Y. Filed Dec. 22, 1905. Serial No. 292,938.

Claim.—1. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery mounted in the said frame, an induction coil, mounted in the said frame, the battery and induction coil being electrically connected with each other and with the said covers.

2. A medical battery comprising an annular frame of a non-conducting material and having covers on opposite sides for forming electrodes, a battery mounted in the said

frame, an induction coil mounted in the said frame, the battery and coil being electrically connected with each other and with the said covers, and manually controlled means for regulating the power of the electrical current.



3. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery mounted in the frame, an induction coil, mounted in the frame, the battery and induction coil being electrically connected with each other and with the said covers, either of said covers forming a handle to be taken hold of by one hand of the user to bring the other cover in contact with another part of the body.

4. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery mounted in the said frame, an induction coil, mounted in the frame, the battery and induction coil being electrically connected with each other and with the said covers, one of the covers forming a handle to be taken hold of by one hand of the user to manipulate the device and bring the other cover in engagement with another part of the body of the user.

5. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery mounted in said frame, an induction coil, mounted in the frame, the battery and induction coil being electrically connected with each other and with the said covers, one of the covers forming a handle to be taken hold of by one hand of the user to manipulate the device, the other cover being provided with a removable device forming an electrode to engage another part of the body.

6. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery, an induction coil, the latter and the battery being arranged within the said frame and electrically connected with each other and with the said covers, one of the covers forming a handle to be taken hold of by one hand of the user to manipulate the device, the other cover being provided with a removable attachment forming an electrode to engage another part of the body, and a regulator for the current arranged within the frame and having a handle extending through a slot in the frame to the outside thereof, to be within convenient reach of the user.

7. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery, an induction coil, the latter and the battery being arranged within the said frame and electrically connected with each other and with the said covers, one of the covers forming a handle to be taken hold of by one hand of the user to manipulate the device, the other cover being provided with a removable attachment forming an electrode to engage another part of the body, a sleeve movable in the coil and having a handle, and contact plates adapted to be engaged by the said handle, to electrically connect the plates and switch in the current, the said handle extending through a slot in the frame to the outside thereof.

8. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery, an induction coil, the latter and the battery being arranged within the said frame and electrically connected with each other and with the said covers, one of the covers forming a handle to be taken hold of by one hand of the user to manipulate the device, interchangeable brush and sponge attachments for removable attachment to the other cover to engage another part of the body, a sleeve movable in the coil to regulate the strength of the current, the said sleeve having a handle, and contact plates adapted to be engaged by the handle to switch in the current, the said handle extending through a slot in the frame to the outside thereof, one of the said contact plates being extended beyond the other to form a yielding stop.

9. A medical battery comprising a frame of insulating material having interchangeable covers forming the electrodes, generating means within the said frame, plug sleeves carried by the frame and electrically connected with said generating means, and means for electrically connecting the said covers with the plug sleeves when the covers are in position on the frame.

10. A medical battery comprising a portable casing having interchangeable covers forming the electrodes, generating means within the said casing and connected with the said covers, and means inside the casing for regulating the force of the generated electric current, the said means also forming part of a switch for throwing the electric current on or off and having a controlling member extending to the outside of the casing to be under the control of the user.

11. A medical battery comprising an annular frame of a non-conducting material and having covers on opposite sides for forming electrodes, a battery mounted in the said frame, an induction coil mounted in the said frame, the battery and coil being electrically connected with each other and with the said covers, and manually controlled means for regulating the power of the electrical current, the said means also forming part of a switch for throwing the electric current on or off.

12. A medical battery provided with an induction coil, a movable sleeve for the same, switch contacts, and means connected with the movable sleeve and adapted to engage the switch contacts and to be disengaged therefrom to throw the electric current on or off.

13. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery, an induction coil, the latter and the battery being arranged within the said frame and electrically connected with each other and with the said covers, and interchangeable brush and sponge attachments for removable attachment to one of the covers.

14. A medical battery comprising a frame of insulating material and having covers on opposite sides for forming electrodes, a battery, an induction coil, the latter and the battery being arranged within the said frame and electrically connected with each other and with the said covers, a movable sleeve in the said induction coil having a handled arm extending to the outside of the frame, and switch plates adapted to be engaged by the said handled arm to throw the electric current on or off.

15. A medical battery comprising an open frame of insulating material, a battery mounted in said frame at one side and between the ends of the frame, the battery being removably secured to the frame, an induction coil mounted in the frame at the other side, and covers on opposite faces of the frame for forming electrodes, the said battery and induction coil being electrically connected with each other and with the said covers.

16. A medical battery comprising a frame of insulating material, a battery mounted in said frame, an induction coil mounted in the frame, plug sleeves arranged in the ends of said frame, transverse pins in the ends of the frame and engaging at their inner ends the plug sleeves, covers on opposite faces of the frame for forming electrodes, each cover when in position engaging the outer end of one of said pins, and electrical connections between the battery and induction coil and between the latter and the said plug sleeves.

858,118. HAT-PIN. JAMES THOMAS, Allegheny, Pa. Filed Mar. 5, 1907. Serial No. 360,638.



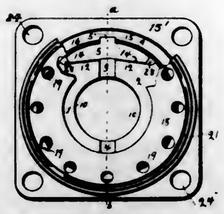
Claim.—1. The combination with a hat pin, of a fastener slidably mounted upon said pin, said fastener consisting of a recessed body, a head fitting in said body and having a tubular tapering extension, a spring pressed lever pivotally connected to said head and adapted to frictionally engage said pin, and a protruding handle carried by said head.

2. The combination with a hat pin, of a fastener slidably mounted upon said pin, and consisting of a slotted body, a head carried by said body and having a tubular extension, a spring pressed lever carried by said head and frictionally engaging said pin, and protruding through said slotted body, and a handle carried by said head and protruding through said slotted body.

3. The combination with a hat pin, of a fastener slidably mounted thereon, said fastener consisting of a recessed body, a head fitting in said body, a spring-pressed lever pivotally connected to said head and frictionally engaging said pin, and a handle fixedly secured to said head and protruding outside of said body.

4. The combination with a pin, of a fastener slidably mounted thereon, and comprising a recessed body, a head fitted thereon and secured thereto, a lever pivotally secured at one end to the inner face of said head and frictionally engaging said pin with its free end projecting beyond the periphery of the body, means carried by said head to facilitate the movement of said lever, and means to normally hold said lever in engagement with said pin.

858,119. METALLIC PACKING. HARRY THOMPSON, Council Bluffs, Iowa. Filed Mar. 7, 1906. Serial No. 304,692.



Claim.—1. In combination, a packing as described, a packing-box, a piston-rod; rings formed with flat end-surfaces contactingly seated in the packing-box and making a closure upon the piston-rod; an annular inclosing-band provided with intake ports and angularly-formed recessed portions and seated within the packing-box in a manner to inclose said rings and to form a chamber between the annular inclosing-band and the wall of the packing-box; each of said rings being composed of inner segments having oppositely-disposed flat and convergent end-portions and of outer segmentally-formed shoes seated upon oppositely-disposed flat and convergent end-portions of said segments; each of said outer segmentally-formed shoes having an outer head seated in one of the angularly-formed recessed portions of said annular inclosing-band, and having flat transverse inner walls formed convergingly and extending centrally from the circumference.

2. In combination, a packing as described, a packing-box, a piston-rod; rings formed with flat end-surfaces contactingly seated in the packing-box and making a closure upon the piston-rod; an annular inclosing-band having a less width than the combined thickness of said rings and provided with intake ports and angularly-formed recesses and seated within the packing-box in a manner to inclose said rings and to form a chamber between the annular inclosing band and the wall of the packing box; each of said rings comprised of inner segments formed with a groove on its concave surface and having oppositely-disposed flat and convergent end-portions and of outer segmentally-formed shoes seated upon said oppositely-disposed flat and convergent end-portions of said segments; each of said outer segmentally-formed shoes having an outer head seated in one of the angularly-formed recesses of said annular inclosing-band and having inner bearing faces formed parallel with the oppositely-disposed flat and convergent end-portions of the inner segments.

3. In combination, a packing as described, a packing-box, a piston-rod; rings formed with flat end-surfaces contactingly seated in the packing-box and making a closure upon the piston-rod; each of said rings being composed of inner segments having oppositely-disposed flat and convergent end-portions and of outer segmentally-formed shoes seated upon said oppositely-disposed flat and convergent end-portions of said segments; each of said outer segmentally-formed shoes having flat transverse inner walls formed convergingly and extending centrally from the circumference.

4. In combination, a packing as described, a packing-box, a piston-rod; rings formed with flat end-surfaces contactingly seated in the packing-box and upon the piston-rod; each of said rings consisting of inner segments formed with a groove upon its concave surface and having oppositely-disposed flat and convergent end-portions and of outer segmentally-formed shoes seated upon said oppositely-disposed flat and convergent end-portions of said segments; each of said outer segmentally-formed shoes having inner faces formed parallel with the oppositely-disposed flat and convergent end-portions of said inner segments.

5. In metallic packing, the combination of duplicate packing-ring segments and segmentally-formed shoes; each end of each segment having flat bearing-faces formed convergently from its inner perimeter to its circumference; said segmentally-formed shoes seated adjacent to and having inner bearing-faces formed parallel with said convergently-formed flat bearing-faces of said packing segment.

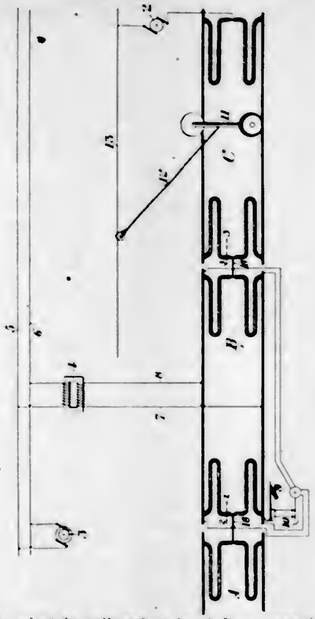
858,120. SIGNALING SYSTEM FOR ALTERNATING CURRENTS. LOUIS H. THULLEN, Edgewood Park, Pa., assignor to The Union Switch and Signal Company, Swissvale, Pa., a Corporation of Pennsylvania. Filed Mar. 2, 1906. Serial No. 303,773.

Claim.—1. A bond for electric roads containing magnetic and non-magnetic materials extending side by side longitudinally of the track; substantially as described.

2. A bond for electric roads containing magnetic and non-magnetic material side by side longitudinally of the track, the magnetic material being laminated; substantially as described.

3. A bond for electric roads arranged to connect adjacent sections and formed of copper and iron, or steel, ex-

tending side by side in electrical contact with each other; substantially as described.



4. In an electric railroad, a bond for connecting adjacent sections or blocks, said bond being formed of copper and iron, or steel, the iron or steel inclosing the copper and being laminated; substantially as described.

5. A bond having a non-magnetic core and a covering of magnetic laminated material; substantially as described.

6. In electric roads having a block signal system arranged for alternating currents, a bond arranged to connect adjacent sections of track and having portions extending adjacent to the rails and arranged to carry a current parallel with that passing through the adjacent rails; substantially as described.

7. In an electric road having a block signaling system arranged for alternating current, a bond having a limb extending alongside and adjacent to a conductor having a current flowing in the same direction as through the said limb or bond; substantially as described.

8. In electric roads having an alternating current block system, a bond having a limb extending alongside and adjacent to a rail, and connections for passing a current in the same direction through said limb and through the rail; substantially as described.

9. In electric roads, a bond arranged to connect adjacent sections of the track rails and having a limb in inductive relation to the rail; substantially as described.

10. In an electric road, a bond for connecting adjacent sections or blocks, said bond having a copper conductor, and iron, or steel, the iron or steel being in inductive relation to the copper; substantially as described.

11. An inductive bond for connecting adjacent track sections comprising a non-magnetic material and a laminated magnetic material and inclosing the non-magnetic material.

12. In an automatic block signal system, a closed track circuit, and an induction bond the conductors of which are composed of copper and magnetic material in inductive relation to each other; substantially as described.

13. A bond for electric roads, arranged to connect adjacent sections of track, and formed of copper and magnetic material, both the copper and the magnetic material forming a path for the signaling current between the rails of the same track section; substantially as described.

14. In an electric railroad, in which both rails are used for the return of the propulsion current, a closed track circuit, and a bond arranged to connect adjacent sections of the track and composed of copper and magnetic material in electric contact with each other and forming an impedance for the track current; substantially as described.

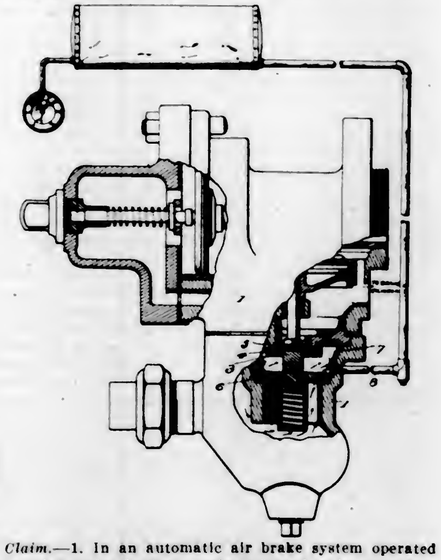
15. In electric roads having a block-signaling system with an alternating current closed track circuit, an inductive bond arranged to connect adjacent track sections and having portions which extend adjacent to the track rails, and which are so arranged as to increase the impedance in the bond by reason of the presence of the current in the rails; substantially as described.

16. In an automatic block signal system, a closed track circuit, and an inductive bond, the conductor of which is composed of copper, and thin plates of magnetic material surrounding the copper conductor and placed transversely thereto; substantially as described.

17. In an automatic block signaling system, a closed track circuit, and inductive bonds, the conductors of which are composed of copper, and magnetic material arranged to increase the self-induction of the copper; substantially as described.

18. An inductive bond, having a continuous conductor, one of whose limbs is arranged in inductive relation to another limb of the same conductor; substantially as described.

858,121. AIR-BRAKE SYSTEM. LEROY TUCKER, Peru, Ind., assignor of one-half to John A. Shunk and one-half to Thomas W. Annabal, Peru, Ind. Filed Oct. 19, 1906. Serial No. 339,717.



Claim.—1. In an automatic air brake system operated by a triple valve having a valve adapted to be opened to produce the emergency pressure in a brake cylinder, of a pressure gage so connected to the triple valve as to indicate the change in pressure due to the opening of the emergency valve.

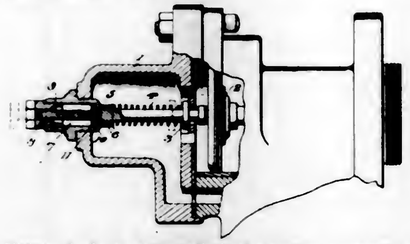
2. In an automatic air brake system operated by a triple valve having a valve adapted to be opened to produce the emergency pressure in a brake cylinder, of a pressure gage connected to the brake cylinder between the emergency valve and check valve to indicate the change in pressure due to the opening of the emergency valve.

3. In an automatic air brake system operated by a triple valve having a valve adapted to be opened to produce the emergency pressure in a brake cylinder, of an auxiliary cylinder connected to the triple valve to supply additional pressure when the emergency valve is opened.

4. In an automatic air brake system operated by a triple valve having a valve adapted to be opened to produce the emergency pressure in a brake cylinder, of an auxiliary reservoir connected to the triple valve between the emergency and check valve whereby when the emergency valve is opened, the brake cylinder will be furnished additional pressure from said auxiliary cylinder.

5. In an automatic air brake system operated by a triple valve having a valve adapted to be opened to produce the emergency pressure in a brake cylinder, of an auxiliary reservoir connected to the triple valve between the emergency and check valve whereby when the emergency valve is opened the brake cylinder will be furnished additional pressure from said auxiliary cylinder and a pressure gage connected to the auxiliary cylinder.

858,122. AIR-BRAKE SYSTEM. LEROY TUCKER and JOHN A. SHUNK, Peru, Ind.; said Tucker assignor to Thomas W. Annabal, Peru, Ind. Filed Oct. 19, 1906. Serial No. 339,718.



Claim.—1. In an automatic brake system operated by a triple valve having a valve adapted to be opened to produce the emergency pressure in the brake cylinder, of means adapted to be set to prevent the opening of the emergency valve, whereby the production of the emergency pressure in the brake cylinder is prevented.

2. In an automatic brake system operated by a triple valve having a valve adapted to be opened to produce the emergency pressure in the brake cylinder, of a moving part adapted to control the opening and closing of the emergency valve and means adapted to be moved into position to prevent the said moving part from so moving as to cause the emergency valve to open.

3. In an automatic brake system operated by a triple valve, having a valve adapted to be opened to produce the emergency pressure in the brake cylinder, of a bolt adapted to be so set as to prevent the parts of the triple valve moving to the position necessary to cause the application of the emergency pressure.

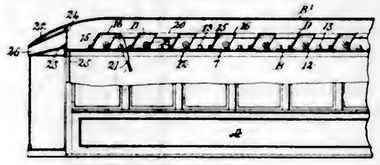
4. In an automatic brake system of the Westinghouse type, of means on the triple valve adapted to be moved in to position to prevent the movement of the graduating stem and thus prevent the valve from applying the emergency.

5. In an automatic brake system of the Westinghouse type, of a bolt tapped through the casing of the triple valve to hold the graduating stem in its normal position and thus preventing the application of the emergency.

858,123. VENTILATOR FOR CARS. HARRY VAN NESS, New York, N. Y. Filed Apr. 23, 1907. Serial No. 369,844.

Claim.—1. The combination with the body of a car, the ceiling therefor and the roof arched over the same, the said ceiling being provided with series of openings therein, a ventilating hood pivoted at each opening having a side and upper face closed including its ends, and the opposite side and bottom face open, and means for simultaneously shifting all of the said hoods.

2. The combination with a car, a ceiling therefor and a roof located over the ceiling, the ceiling being provided with a series of transverse openings therein, a hood pivotally mounted on the ceiling over each opening, each hood consisting of a closed side and top, closed ends and an opening opposing side and bottom, guard strips located at each side edge of each opening, the ventilating hoods being adapted for movement between the guard strips, a bar connecting all the hoods, and means for imparting end movement to the bar simultaneously to cause the closed portion of the hoods to face in the direction of either end of the car.



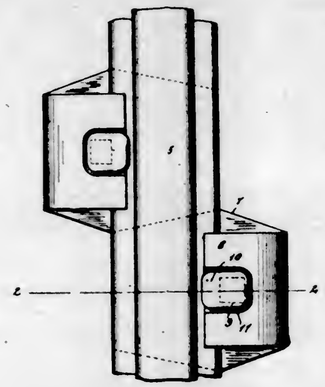
3. The combination with the body of a car, the ceiling therefor, having a flat central portion and provided with a series of transverse openings therein, a roof arched over the said ceiling and spaced therefrom, longitudinal partitions extending from the ceiling to the roof at each side of the central flat portion of the ceiling, forming thereby a central ventilating chamber, and pivoted panels adapted to cover and uncover the openings at the ends of the said chamber, of ventilating hoods pivoted one over each of the openings, and extending from end to end thereof, each hood consisting of a closed side and top member, said members being at acute angles to each other, and end sections closing said portions of the hoods, the opposing side and bottom portions of the hoods being open, a connecting bar pivotally attached to each of the said hoods, and a lever connected with the said bar and extending into the interior of the car.

4. The combination with the body of the car, a ceiling therefor extending from side to side having a flat central portion and transverse openings in said portion, a roof arched over the said ceiling, partitions connecting the ceiling and the roof and located at the sides of the central flat portion of the ceiling, providing a central ventilating chamber, the said chamber being provided with openings located in the end portions of the car body beneath the roof and above the ceiling, a pivotally mounted panel for each of the said openings, adapted to cover and uncover the same, means for operating the said panels, and hoods leading from the openings in the ends of the car downwardly and outwardly beneath the hood of the roof of the car, of ventilating hoods pivoted one over each of the openings in the ceiling, the hoods extending the length of the said openings, the pivotal connection between the hood and the ceiling being at the end portions of the openings in said ceiling, each hood consisting of a side and a top, the two members being at acute angles to each other, and substantially diamond-shaped end members, each hood having an open side portion and an open lower portion, guard strips located at each side of each opening in the ceiling, a connecting bar pivotally attached to an end portion of each hood, and means for operating the said connecting bar from the interior of the body of the car.

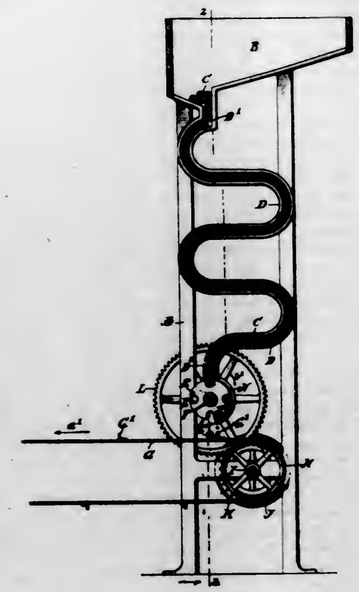
858,124. RAILWAY-TRACK FASTENER. WILLIAM H. WALDEN, East Macon, Ga. Filed Aug. 18, 1906. Serial No. 331,194.

Claim.—A rail-fastener comprising a plate between the rail-base and the tie, and having at one end a clip extending over the base flange of the rail, said plate having an opening to receive a spike the head of which is engageable with the base flange of the rail, and which opening is continued through the clip to form a recess

in the inner edge thereof which is countersunk to receive the head of the spike.

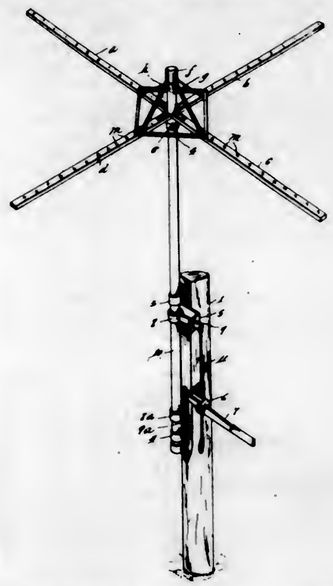


858,125. STICK-FEEDER. WILLIAM H. WALDRON, New Brunswick, N. J., assignor to John Waldron Company, New Brunswick, N. J. Filed Mar. 9, 1907. Serial No. 361,451.



Claim.—A stick feeder comprising a frame, a hopper mounted on the frame, an endless carrier having spaced lugs below the hopper and spaced apart therefrom, a sinuous guide leading from the hopper and terminating above the carrier, rotatable spacing wheels having notches for receiving the sticks arranged at the lower end of said sinuous guide for receiving the sticks therefrom and depositing them on the carrier, and guards partially inclosing the spacing wheels and means in connection with the carrier for rotating said spacing wheels.

858,126. LIFTING DEVICE FOR CLOTHES-DRYING REELS. JOSEPH G. WENDLING, Cheboygan, Mich. Filed Dec. 10, 1904. Serial No. 236,377.



Claim.—In a device of the character described, in combination with a supporting post, a stem, guides upon said post, through which said stem passes, brackets upon said post intermediate said guides and adjacent thereto, a locking clutch-loop engaging the upper part of said stem and having a lateral extension which engages a slotted portion in the end of the upper one of said brackets, an operating device attached to the end of said extension, a lifting clutch-loop engaging the lower part of said stem, an extension upon said lifting clutch loop and a link connecting the outer extremity of said extension and the inner extremity of a hand-lever pivoted at the extreme outer end of the lower one of the before mentioned brackets.

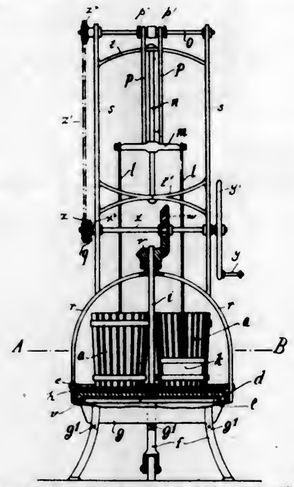
858,127. BAND-CUTTER AND FEEDER FOR THRESHING-MACHINES. HENRY J. WIESE, Rochester, Minn. Filed Dec. 6, 1906. Serial No. 346,647.



Claim.—In a threshing machine or grain separator, a crank shaft, boxes engaging with the cranks of said shaft, and flexible guard plates secured upon the under sides of the boxes and adapted to be deflected downwardly by engagement with the side members of the cranks when the latter rise above the axis of the shaft to mechanically deflect in a downward direction straw passing beneath the shaft.

858,128. VEGETABLE-CHIPPER. ROBERT WOERNER, Mannheim, Germany. Filed Jan. 4, 1906. Serial No. 294,599.

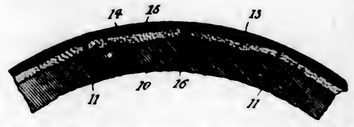
Claim.—1. In a vegetable chipper, the combination with a frame, of a horizontal chipping disk turnable on said frame, a vertical shaft connected with said horizontal chipping disk and mounted in said frame to turn, a horizontal driving shaft in said frame and adapted to rotate said vertical shaft, an upper horizontal rotary shaft, means for rotating said upper shaft by the rotation of the horizontal driving shaft, a plurality of receivers open at top and bottom and secured on said frame above said horizontal chipping disk and adapted to receive the vegetables, a plurality of pressers guided in said plurality of receivers and adapted to bear severally by their own weight on the vegetables, a plurality of vertical rods guided in said frame and connected with said plurality of pressers and means for flexibly connecting the vertical rods with the upper horizontal shaft whereby said pressers are adapted to be raised for the charge of said plurality of receivers.



2. In a vegetable chipper, the combination with a frame, of a horizontal chipping disk turnable with its periphery on balls in said frame, a vertical shaft detachably connected with said horizontal chipping disk and mounted in said frame to turn, a bevel wheel at the upper end of said vertical shaft, a bow on said frame above said bevel wheel, a horizontal shaft mounted in said bow to turn, a second bevel wheel fast on said horizontal shaft and meshing with said bevel wheel, a hand crank fast on said horizontal shaft, an upper horizontal rotary shaft, means for rotating said upper horizontal shaft by rotation of the horizontal driving shaft, a plurality of receivers open at top and bottom and secured on said frame above said horizontal chipping disk and adapted to receive the vegetables, a plurality of pressers guided in said plurality of receivers and adapted to bear severally by their own weight on the vegetables, a plurality of vertical rods guided in said frame and connected with said plurality of pressers, and means for flexibly connecting the vertical rods with the upper horizontal shaft whereby said pressers are adapted to be raised for the charge of said plurality of receivers.

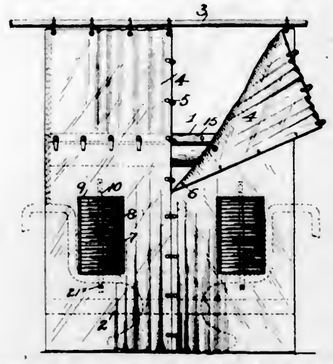
3. In a vegetable chipper, the combination with a frame comprising a ring with a groove on the upper side, of a plurality of balls movable in the groove of the ring of said frame, a horizontal chipping disk with a groove along its periphery on the lower side and adapted to turn on said plurality of balls, a vertical shaft detachably connected with said horizontal chipping disk and mounted in said frame to turn, a bevel wheel at the upper end of said vertical shaft, a horizontal shaft mounted in said frame to turn, a second bevel wheel fast on said horizontal shaft and meshing with said bevel wheel, a hand crank fast on said horizontal shaft, a chain wheel loose on said horizontal shaft, a clutch adapted to couple said chain wheel with said horizontal shaft, a vertical rod in said frame above said vertical shaft, a second horizontal shaft mounted to turn in said frame above said horizontal shaft and parallel thereto, a second chain wheel fast on said second horizontal shaft, an endless chain connecting said chain wheel with said first chain wheel, two belt-pulleys fast on said second shaft, a crosshead guided on said vertical rod and comprising a plurality of arms, two belts connecting said crosshead with said two belt-pulleys, a plurality of receivers open at top and bottom and secured on said frame above said horizontal chipping disk and adapted for receiving the vegetables, a plurality of pressers guided in said plurality of receivers and adapted to bear severally by their own weight on the vegetables, and a plurality of vertical rods slotted at the upper ends and carrying said plurality of pressers and guided by means of their slots on the pins of the arms of said crosshead.

858,129. LINING FOR PEBBLE-MILLS. MAX F. ABBÉ, New York, N. Y. Filed Nov. 1, 1906. Serial No. 341,570.



Claim.—A cylindrical pebble mill provided with a number of natural lining stones each embedded at its sides, ends and back in a coat of hardened cement, and means for securing adjoining coated stones to each other and also to the mill, substantially as specified.

858,130. SLEEPING-CAR. TWYMAN O. ABBOTT, Seattle, Wash. Filed Aug. 18, 1906. Serial No. 331,181.



Claim.—1. In combination with a berth for a sleeping car or the like, a removable flexible curtain for said berth and a ventilating device carried thereon substantially as described.

2. In combination with a berth for a sleeping car and the like, a removable flexible curtain for shielding said berth, and a ventilating device carried within the body of the curtain leaving free marginal portions to be thrown aside for entering or leaving the berth or to cover the person while in the aisle adjacent the berth substantially as described.

3. In combination with a berth for a sleeping car or the like, a pair of removable curtains for shielding the berth, each of said curtains having a ventilating device carried thereby and with their adjacent portions providing wide flexible margins substantially as described.

4. In combination with a removable flexible curtain for berths of sleeping cars and the like, ventilating device carried thereby and a supplemental curtain for varying the ventilating capacity of said device, said supplemental curtain being carried by the main curtain substantially as described.

5. In combination with the berth of a sleeping car or the like, a curtain, a ventilating device carried thereby and means connecting the ventilating device with the frame of the berth substantially as described.

6. In combination with the berth, a curtain, a ventilating device carried thereby and means adjacent the ventilating device for attaching the curtain to the frame of the berth substantially as described.

7. In combination with the berth, a curtain, a ventilating device carried thereby, means for attaching the curtain above the ventilating device, and means for attaching the curtain to the framework at a point below the ventilating device substantially as described.

8. In combination with the berth, a curtain therefor, a ventilating device carried by the curtain, means for securing the curtain to the frame at a point below the ventilating device, and means connecting the ventilating device with the frame at a point below the ventilating device.

9. In combination with the upper and lower berth, an attaching strip extending along the upper berth having means for attaching a curtain thereto, said strip being adapted to be folded over the berth or along the outer side thereof substantially as described.

10. In combination with the curtain, a ventilator carried thereby and consisting of a series of boards or slats pivotally mounted and a tape or strap attached to the free portions of said boards and having means of attachment to the frame substantially as described.

858,131. CAP FOR MAGAZINE-TOOLS. HENRY J. AICHELE, Philadelphia, Pa., assignor to North Brothers Manufacturing Company, Philadelphia, Pa., a Corporation of Pennsylvania. Filed Jan. 8, 1906. Serial No. 295,118.



Claim.—1. The combination of a magazine, a removable flanged cap, the flange extending into the magazine, means for locking the cap to the body of the magazine, said lock having lost motion so that on the inversion of the magazine the cap will be projected a sufficient distance to be grasped by the hand, substantially as described.

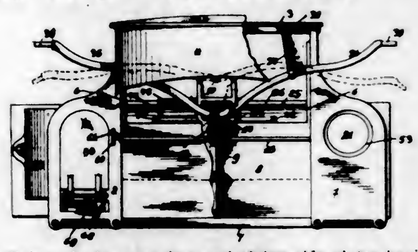
2. The combination of a magazine, a projection extending into the magazine, a removable flanged cap, the flange fitting in the magazine and having a wide groove into which the projection extends so as to lock the cap in position but to allow it to have a certain limited movement when the magazine is inverted, substantially as described.

3. The combination of a magazine having an interior recess in its wall some distance from the one end thereof, a ring mounted in the recess and projecting into the magazine, a removable flanged cap for closing the magazine, said flange having a wide annular groove to allow for a certain amount of lost motion whereby when said magazine is inverted the cap will project beyond the end of the magazine, substantially as and for the purpose described.

4. The combination of a magazine having an internal annular groove, a spring ring mounted in the groove and projecting into the hollow of the magazine, a removable cap having a flange adapted to enter the magazine, the said flange having a relatively wide annular groove into which the ring extends, said groove being so placed that when the magazine is upright the outer surface of the cap will be flush with the outside surface thereof, but will project when the magazine is inverted, substantially as described.

5. The combination of a magazine having an internal annular groove, a spring ring mounted in the groove, a removable cap having a relatively deep flange, a relatively wide annular recess in the flange of the cap having its edges beveled and the end of the flange being beveled so that the cap can be forced past the split ring and the ring will rest in the groove of the cap, there being sufficient lost motion to allow the cap to be flush with the outside surface of the ring when this is in an upright position and when said magazine is inverted to permit said cap to project beyond the end of the magazine so that it can be readily grasped, substantially as described.

858,132. OVEN-DOOR. FRANCIS J. ALBRECHT, Pittsburg, Pa. Filed Jan. 30, 1906. Serial No. 298,675.

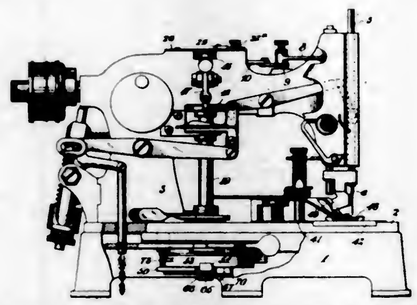


Claim.—1. An oven door embodying side plates having openings formed therein, a transverse shield carried by said side plates, a door slidably mounted between said side plates, a bracket carried by said door and projecting above the same, a guide-frame on the upper end of said bracket, and a guide-rib on the outer face of the bracket, a rod journaled in the side plates and having a roller engaging said guide-rib compartments formed in the rear of said side plates and embodying rear walls, said walls having openings formed therein, a curved plate supported by said rear walls, said plate having a sight opening formed therein, a movable shutter carried by said plate adjacent to said opening, a guide way supported by said plate and said shield, and receiving the guide-frame of said bracket, links carried by said shield, levers fulcrumed in said links and pivotally connected to said guide frame, a closure lid hinged to the rear of one of said compartments, a lever connected to said closure-lid and extending through the side plate of said compartment, a gas burner mounted in said compartment and having a suitable gas supply pipe, movable dampers carried in brackets on said guide way, means actuated by the movement of said closure lid lever to control the admission of gas to said burner, means comprising a lever carried by one of said dampers and actuated by the raising of said door to move said dampers, and means to guide said door in its movement, substantially as described.

2. In an oven front, two side-plates having guide-ways on their inner edges, a door mounted for vertical movement in said guide-ways, a bracket secured to the onter face of said door and having a vertically-disposed guide-rib, a rod journaled in the side-plates having a weight on one end and having a roller engaging said guide-rib, a guide-frame carried on the upper end of said bracket, a shield-plate secured to the inner faces of said side-plates and provided on its upper face with transverse vertically-disposed-flanges, a plate 29 secured to said flanges and provided with a vertically-disposed guide-way receiving the guide-frame of said bracket, a pin carried by said guide-frame, levers connected to said pin for elevating the door, a damper-bracket carried by the guide way of said plate 29, dampers carried in said damper-bracket, and a lever carried by one of said dampers to be engaged by the door as the latter is elevated to simultaneously operate the dampers.

858,133. BUTTONHOLE-SEWING MACHINE. EDWARD B. ALLEN, Elizabeth, N. J., assignor to The Singer Manufacturing Company, a Corporation of New Jersey. Filed Mar. 17, 1905. Serial No. 250,507.

Claim.—1. In a buttonhole sewing machine, the combination with stitch-forming mechanism, a non-rotatable work-holder movable longitudinally in respect of the stitch-forming mechanism, feeding mechanism including a continuously-rotating cam for imparting to said work-holder longitudinal feeding movements alternately in opposite directions to space the side-stitches, and means for effecting a relative lateral shifting movement of the work-holder and stitch-forming mechanism at the end of each longitudinal feeding movement, of actuating means, including a feed-dog, acting throughout the cycle of operation of the machine in imparting to said feed-cam its movements, and means controlled by said feed-cam and independently of its connections with said work-clamp for reducing the extent of effective movement of said feed-dog upon said feed-cam in the stitching of the ends of a buttonhole.



2. In a buttonhole sewing machine, the combination with a stitch-forming mechanism, a non-rotatable work-holder movable longitudinally in respect of the stitch-forming mechanism, feeding mechanism, including a continuously-rotating cam having a fixed bar-controlling portion for imparting to said work-holder longitudinal feeding movements alternately in opposite directions to space the side-stitches, and means for effecting a relative lateral shifting movement of the work-holder and stitch-forming mechanism at the end of each longitudinal feeding movement, of actuating means active throughout the cycle of operation of the machine for imparting to said feed-cam its movements, and a normally stationary shifting stop arranged for engagement by the bar-controlling portion of said cam and adapted to be thrown thereby into and out of the path of movement of the actuating means for the feed-cam.

3. In a buttonhole sewing machine, the combination with stitch-forming mechanism, of a feed-cam, actuating means therefor comprising a uniformly vibrating actuating arm pivoted concentrically therewith and a feed-dog in operative relation with said actuating arm and adapted to operatively engage said cam, a peripheral cam-projection carried by said feed-cam, a vibrating controlling lever having one arm in the path of movement of said cam projection and another arm affording a movable stop for determining the extent of movement of said feed-dog.

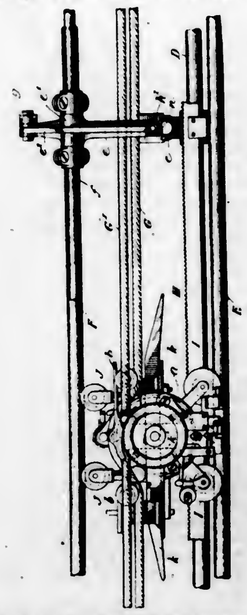
4. In a buttonhole sewing machine, the combination with stitch-forming mechanism, of a feed-cam, actuating means therefor comprising a uniformly vibrating concentrically-pivoted actuating arm and a feed-dog in operative relation with said actuating arm and adapted to operatively engage said cam, a peripheral cam-projection carried by said feed-cam, a vibrating controlling lever having one arm in the path of movement of said cam projection and another arm provided with an adjustable stop-screw or projection, and a detent member between said feed-dog and said stop-screw or projection, whereby the extent of movement of said feed-dog is determined.

5. In a buttonhole sewing machine, the combination with stitch-forming mechanism, of a feed-cam, actuating means therefor comprising a uniformly vibrating concentrically-pivoted actuating arm and a feed-dog in operative relation with said actuating arm and adapted to operatively engage said cam, a peripheral cam-projection carried by said feed-cam, a vibrating controlling lever having one arm provided with a longitudinally adjustable nose-piece and lying in the path of movement of said cam-projection and another arm affording a movable stop for determining the extent of movement of said feed-dog.

6. In a buttonhole sewing machine, the combination with stitch-forming mechanism, of a feed-cam, actuating means therefor comprising a uniformly vibrating concentrically-pivoted actuating arm and a pair of feed-dogs in operative relation with said actuating arm and adapted to operatively engage said cam, studs projecting from said feed-dogs, a lever-plate having two arms each of which is adapted to engage one of said studs, and having also a projecting horn, cam-projections upon said feed-cam, a controlling lever having one arm disposed in the path of movement of said cam projections and a second arm in the line of movement of the horn of said lever plate, and an adjustable stop-screw or projection carried by the second arm of said controlling lever and adapted to engage the horn of said lever-plate.

7. In a buttonhole sewing machine, the combination with the main-shaft and stitch-forming mechanism operatively connected therewith and actuated thereby, a non-rotatable work-holder movable longitudinally in respect of the stitch-forming mechanism, and feeding mechanism including a continuously-rotating cam for imparting to said work-holder longitudinal feeding movements alternately in opposite directions to space the side-stitches and having means for producing relative lateral shifting movements of the work-holder in respect of the stitch-forming mechanism at the end of each longitudinal feeding movement, of actuating means operatively connected with said main-shaft for producing the step-by-step rotary movement of said cam, and including two independent adjusting devices for controlling the operation of said cam of which one is controlled directly by said cam and the other is controlled independently thereof.

858,134. CARPET-SEWING MACHINE. EDWARD B. ALLEN, Elizabeth, N. J., assignor to The Singer Manufacturing Company, a Corporation of New Jersey. Filed Mar. 23, 1906. Serial No. 307,597.



Claim.—1. A sewing machine for stitching long lengths of fabric constructed with a frame comprising supporting

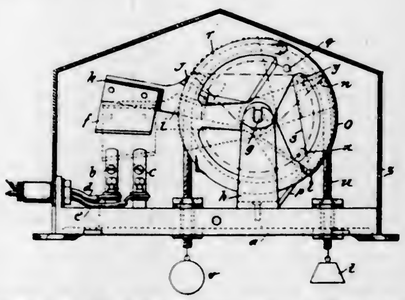
and steadying tracks and rigid standards upon which said tracks are secured in fixed parallel relation, a traveling carriage provided with supporting and steadying wheels resting upon said tracks, stitch-forming mechanism mounted in said carriage and including a laterally reciprocating needle having its working position above the point of support of said carriage, feeding mechanism for the propulsion of the carriage upon said tracks, an edge-guide mounted upon said carriage adjacent the needle path and disposed also above the point of support of the carriage, means for actuating the stitch-forming and feeding mechanisms including a driving belt-pulley mounted upon said carriage above said edge-guide, a driving belt leading to said pulley-wheel upon the carriage substantially in its direction of travel to supply power for actuating the stitch-forming and feeding mechanisms, a movable belt-support mounted upon said frame and disposed in the line of travel of said carriage beneath said belt, and automatically acting means for shifting aside said belt-support as the machine approaches the latter.

2. A sewing machine for stitching long lengths of fabric constructed with a frame comprising supporting and steadying tracks and rigid standards upon which said tracks are secured in fixed parallel relation, a traveling carriage provided with supporting and steadying wheels resting upon said tracks, stitch-forming mechanism mounted in said carriage and including a laterally reciprocating needle having its working position above the point of support of said carriage, feeding mechanism for the propulsion of the carriage upon said tracks, an edge-guide mounted upon said carriage adjacent the needle-path and disposed also above the point of support of the carriage, means for actuating the stitch-forming and feeding mechanisms including a driving belt-pulley mounted upon and at the front side of said carriage above said edge-guide, a driving belt leading to said belt-pulley upon the carriage substantially in its direction of travel to supply power for actuating the stitch-forming and feeding mechanisms, a movable belt-support mounted upon said frame and disposed in the line of travel of said carriage beneath said belt, a movable actuating member mounted upon said frame rearward of the line of travel of said carriage, an operative connection between the belt-support and said actuating member, and a cam-member mounted upon the rear side of said carriage and adapted to operatively engage said actuating member for shifting the belt-support.

3. A sewing machine for stitching long lengths of fabric constructed with a frame comprising supporting and steadying tracks and rigid standards upon which said tracks are secured in fixed parallel relation, a traveling carriage provided with supporting and steadying wheels resting upon said tracks, stitch-forming mechanism mounted in said carriage and including a laterally reciprocating needle having its working position above the point of support of said carriage, feeding mechanism for the propulsion of the carriage upon said tracks, an edge-guide mounted upon said carriage adjacent the needle-path and disposed also above the point of support of the carriage, means for actuating the stitch-forming and feeding mechanisms including a driving belt-pulley mounted upon and at the front side of said carriage above said edge-guide, a driving belt leading to said belt-pulley upon the carriage substantially in its direction of travel to supply power for actuating the stitch-forming and feeding mechanisms, a laterally swinging lever disposed at the front side of the path of movement of said carriage and fulcrumed in its upper portion upon said frame, a stud at the lower end of said lever normally extending beneath said belt and carrying a belt-supporting roll, a vibratory actuating lever fulcrumed upon said frame rearwardly of the path of movement of said carriage and provided with a forwardly extending lateral arm carrying a roller-stud, a link connection intermediate said levers, and a cam-plate secured to the rearward side of said carriage and adapted to engage the roller-stud of the lateral arm of said actuating lever.

4. A sewing machine for stitching long lengths of fabric constructed with a frame comprising supporting and steadying tracks and rigid standards upon which said tracks are secured in fixed parallel relation, a traveling carriage provided with supporting and steadying wheels resting upon said tracks, stitch-forming mechanism mounted in said carriage and including a laterally reciprocating needle having its working position above the point of support of said carriage, feeding mechanism for the propulsion of the carriage upon said tracks, an edge-guide mounted upon said carriage adjacent the needle-path and disposed also above the point of support of the carriage, means for actuating the stitch-forming and feeding mechanisms including a driving belt-pulley mounted upon and at the front side of said carriage above said edge-guide, a driving belt leading to said belt-pulley upon the carriage substantially in its direction of travel to supply power for actuating the stitch-forming and feeding mechanisms, a laterally swinging lever disposed at the front side of the path of movement of said carriage and fulcrumed in its upper portion upon said frame, a stud at the lower end of said lever normally extending beneath said belt and carrying a belt-supporting roll, a vibratory actuating lever fulcrumed upon said frame rearwardly of the path of movement of said carriage and provided with a forwardly extending lateral arm carrying a roller-stud, a link connection intermediate said levers, an adjustable stop in the path of movement of the lateral arm of said actuating lever to determine its normal position, a spring for yieldingly maintaining said arm in contact with said stop, and a cam-plate secured to the rearward side of said carriage and adapted to engage the roller-stud of the lateral arm of said actuating lever.

858,135. ELECTRIC TANK-SWITCH. JACOB T. ANDERSON, New York, N. Y. Filed May 17, 1906. Serial No. 317,287.

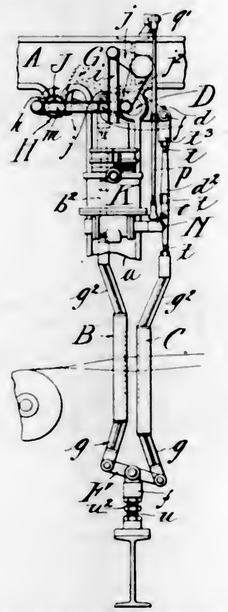


Claim.—1. An electric switch having a pivoted double arm lever with knife blade contact fixed to one arm and insulated therefrom, means for depressing either arm alternately in order to make or break contact between the terminal points of a circuit, such means consisting of an oscillating rope wheel with a pin attached thereto which latter will impart oscillatory motion to a pivoted weight which is brought to bear against one or the other arm of the pivoted lever so as to depress and hold such arm in its depressed position, substantially as shown and described.

2. An electric tank switch having terminal contact points of a circuit, a pivoted double arm lever, devices for depressing one or the other arm of the lever in order to close or break the circuit by the insertion or withdrawal of a knife blade forming part of one end of the lever, such devices being set in motion by means of a rope wheel, a contact pin attached thereto, an oscillating weight caused to bear against either arm of the lever and a rope transmitting rotary motion to the rope wheel and the thereto connected mechanism, substantially as shown and described.

3. In an electric tank switch, a float fastened to one end of a transmission rope and a counter-weight fastened to the other end of the rope, an oscillating rope wheel, means for causing a pivoted weight to oscillate and to bear against one or the other end of a double arm pivoted lever which latter is provided with an insulated knife blade arranged to enter into or to be withdrawn from the terminal contact points of a circuit, substantially as shown and described.

858,136. HARNESS-MOTION FOR LOOMS. CHARLES H. ATKINS, Springfield, Mass. Filed June 14, 1906. Serial No. 321,712.



Claim.—1. In a loom harness motion, the combination with a rockshaft having forwardly and rearwardly extending arms, a motor having a reciprocatory piston, an angular lever with one arm of which said piston is connected, a crank mounted for oscillation and having a gear wheel appurtenant thereto and a rod connecting said crank with the other arm of said angular lever, a gear toothed element secured on said rock shaft and in mesh with said gear wheel, harness frames below the rockshaft and members connecting the upper portions of the forward and rearward harness frames with the said forwardly and rearwardly extending rock shaft arms and equalizing lever below the harness frames, and members connecting the arms of said equalizing lever with lower portions of the harness frames.

2. In a loom harness motion, the combination with a rock-shaft provided with forwardly and rearwardly extending arms, and means for imparting rocking movements to said shaft, of harness frames arranged along and below the rock shaft, connectors secured to the rock shaft arms and upper portions of the harness frames, an equalizing lever below the harness frames, members connecting the lower portions of the harness frames with said equalizing lever and a vertically adjustable support for the equalizing lever.

3. In a loom harness motion, the combination with a rock shaft provided with forwardly extending arms and rearwardly extending arms at different portions of its length, and means for imparting rocking movements to said shaft, of harness frames ranging along and below the rock shaft and rigid connectors comprising members which are endwise adjustable relatively to each other for longitudinally distending and contracting said connectors, and said connectors being secured to the upper portions of both of the harness frames, and to the rock shaft arms, an equalizing lever below the harness frames, members connecting the lower portions of the harness frames with said equalizing lever and a vertically adjustable support on which the equalizing lever, is intermediately of its length, pivotally mounted.

4. In a loom harness motion, the combination with a rock shaft having forwardly and rearwardly extending arms, a motor having a reciprocatory piston, and a valve shaft, controlling the motor and piston strokes thereof, having a lever arm, a rotary cam, a pivoted lever in engagement with the cam, a retracting spring for said lever, and a rod connecting said lever with said valve shaft lever arm, an angular lever with one arm of which said piston is connected, a crank mounted for oscillation and having a gear wheel appurtenant thereto and a rod connecting said crank with the other arm of said angular lever, a gear toothed element secured on said rock shaft and in mesh with said gear wheel, harness frames below the rock shaft and members connecting the upper portions of the forward and rearward harness frames with the said forwardly and rearwardly extending rock shaft arms and equalizing lever below the harness frame, and members connecting the arms of said equalizing lever with lower portions of the harness frames.

5. In a loom harness motion, the combination with a horizontal rock shaft ranging from side to side of the loom, having a plurality of forwardly and rearwardly extending arms, a motor having a reciprocatory piston, an angular lever with one arm of which said piston is connected, a shaft mounted for oscillation parallel with said rock shaft having a crank, and a pinion gear affixed thereon, a rod connecting said crank with the other arm of said angular lever, a section gear secured on said rock shaft and in mesh with said pinion gear, harness frames lengthwise parallel with, and below, the rock shaft members connecting the upper portions of the harness frames with the said forwardly and rearwardly extending rock shaft arms, an equalizing lever below the harness frames, and members connecting the arms of said equalizing lever with lower portions of the harness frames.

6. In a loom harness motion, the combination with a motor having a backwardly and forwardly moving element, and a rock shaft connected with and to be oscillated by said element, and said rock shaft having forwardly and rearwardly extending arms, of the harness frames, and members connecting the upper portions of said harness frames with said forwardly and rearwardly extending arms, and means between the lower portions of the harness frames and operable to downwardly draw the elevated harness from the lifting of the lowered harness.

858,137. LOOM-SHUTTLE AND BOBBIN-TENSIONING MEANS THEREFOR. CHARLES H. ATKINS, Springfield, Mass. Filed June 18, 1906. Serial No. 322,319.

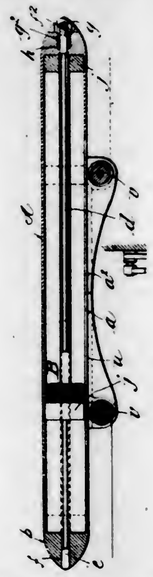
Claim.—1. A loom shuttle, the body of which is a permanent magnet, for the purpose set forth.

2. A loom shuttle consisting of a shuttle body and a bobbin rotatably fitted therein, and said bobbin comprising a soft iron portion capable of being attracted by a magnet, and adapted, by being magnetically attracted, to establish a frictional tensioning engagement between the bobbin and a portion of the shuttle relatively to which it turns.

3. A loom shuttle consisting of a shuttle body and a bobbin rotatably fitted therein, and said bobbin comprising a soft iron portion capable of being attracted by a magnet, and adapted, by being magnetically attracted, to establish a frictional tensioning engagement between the bobbin and a portion of the shuttle relatively to which it turns in combination with a shuttle receiver having a magnet subject to the attraction of which the shuttle is brought.

4. A loom shuttle consisting of a shuttle body and a bobbin rotatably fitted therein, and said bobbin comprising a soft iron portion capable of being attracted by a magnet, and adapted, by being magnetically attracted, to establish a frictional tensioning engagement between the bobbin and a portion of the shuttle relatively to which it turns, in combination with a shuttle receiver having an electro

magnet, and in proximity to which the shuttle, in the operation of a loom, may be brought, and means for alternately energizing and deënergizing the said electro magnet.



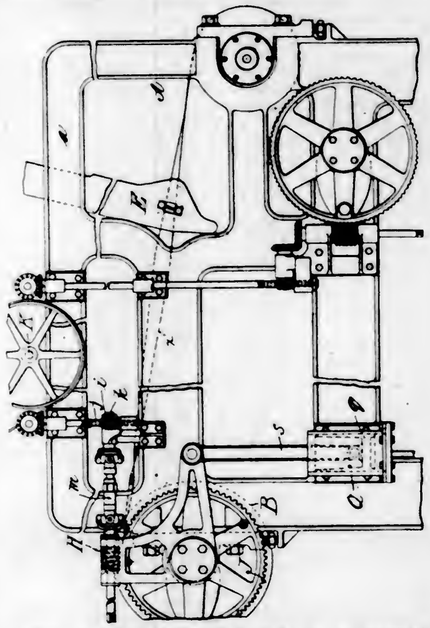
5. A loom shuttle consisting of a shuttle body and a bobbin rotatably fitted thereln, and said bobbin comprising a soft iron portion capable of being attracted by a magnet, and adapted, by being magnetically attracted, to establish a frictional tensioning engagement between the bobbin and a portion of the shuttle relatively to which it turns, in combination with a movable shuttle receiver having an electro magnet, and in proximity to which the shuttle, in the operation of a loom, may be brought, means for alternately energizing and deënergizing the said electro magnet.

6. A loom shuttle comprising a chambered shuttle body having end heads, a rod extending longitudinally through said chamber and supported by said end heads, and a spool or bobbin having a tubular body, and circular end heads of soft iron, and loosely fitted about, said rod, said heads being peripherally adjacent the wall of the shuttle body, and adapted to be frictionally tensioned against said wall by magnetic attraction externally of the shuttle.

7. In a shuttle a chambered shuttle body consisting of sections separable between the ends of the body, and said sections having outer end heads, a rod having an engagement with an end head extending longitudinally through both sections and through an opening therefor within the head of the other section, and confinement means therefor, and a tubular spool or bobbin having circular end heads of soft iron, loosely fitted about, said rod, said heads being peripherally adjacent the wall of the shuttle body and adapted to be magnetically frictioned, for the bobbin tension, against such wall.

8. In a loom shuttle two axially alined separable shuttle body sections having end heads and at their matching portions made, the one with a flaring mouth and the other with its end wall beveled, and one of the sections having an endwise outwardly opening nut-receiving hole therein, and having a cylindrical hole of smaller diameter in inward continuation of such hole, the bobbin having a tubular body and a rod having one end thereof in engagement with one of said end heads, and having its other extremity screw threaded, and extending centrally to and within said nut receiving hole, and a binding nut screw engaging the threaded extremity of the rod and having an inner end cylindrical extension, for the purpose explained.

858,138. WARP-LET-OFF MECHANISM FOR LOOMS. CHARLES H. ATKINS, Springfield, Mass. Filed July 16, 1906. Serial No. 326,379.



Claim.—1. A warp beam journaled for an unwinding warp let off, a support provided with a feeding element in connection with the warp-beam, mounted for a swinging movement and relatively to which the warp beam has an independent movement, and said support, by means of said feeding element having an engagement with the warp beam whereby both have partial revoluble movements together, means for imparting a feeding motion to said feeding element, and means of elastic resistance against which the warp beam and said support have their revoluble movements in one direction, and by which a return movement is imparted thereto.

2. A warp beam journaled for an unwinding worp let off, a support provided with a feeding element in connection with the warp-beam, mounted for a swinging movement and relatively to which the warp beam has an independent movement, and said support, by means of said feeding element having an engagement with the warp beam whereby both have partial revoluble movements together, means for imparting a variable feeding motion to said feeding element, means of elastic resistance against which the warp beam and said support have their revoluble movements in one direction, and by which a return movement is imparted thereto, said swinging support having a controlling connection with the said variable speed imparting means for the warp beam feeding element.

3. A warp-beam journaled for rotative movement, and having a worm-wheel thereon, a support mounted for an oscillatory movement, and relatively to which the warp beam has an independent movement, and having, mounted thereon, a worm in engagement with the warp-beam worm-wheel, means for imparting a rotative motion to said worm, a cylinder for containing an elastic fluid, a piston movable in said cylinder against, and to be retracted by such elastic fluid, and a connection between said piston and said oscillatory worm carrying support.

4. A warp-beam journaled for rotative movement and having a worm-wheel thereon, a support mounted for an oscillatory movement, and relatively to which the warp-beam has an independent movement, and having, mounted

thereon, a worm in engagement with the warp-beam worm-wheel, a shaft having a driving connection with said worm wheel and having a cone pulley thereon, a belt having a running engagement around said cone pulley and means for driving such belt, and a shifter for said belt, a connection between said oscillatory worm carrying support and said belt shifter, a cylinder for containing an elastic fluid, a piston movable in said cylinder against, and to be retracted by, said elastic fluid and a connection between said piston and said oscillatory worm carrying support.

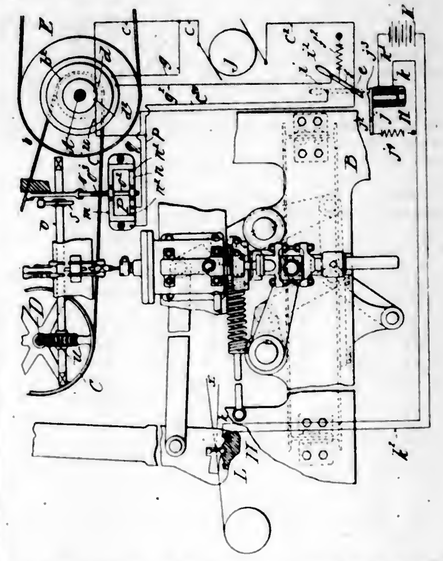
5. A warp beam journaled for rotative movement and having a worm wheel thereon, a support mounted for an oscillatory movement, and relatively to which the warp beam has an independent movement, and having, mounted thereon, a worm in engagement with the warp beam worm wheel, a shaft having a cone pulley thereon, a belt having a running engagement around said cone pulley and means for driving said belt, a shifter for said belt, a connection between said worm carrying support and said shifter, and said cone-pulley carrying-shaft having a worm thereon, and a shaft having a worm-wheel in mesh with said shaft-carried worm, a shaft comprising telescopic sections constrained to rotate in unison, and universal-joint-connected to said worm wheel shaft and to the worm on said oscillatory support.

6. A warp beam journaled for rotative movement and having a worm wheel thereon, a support mounted for an oscillatory movement, and relatively to which the warp beam has an independent movement, and having, mounted thereon, a worm in engagement with the warp beam worm wheel, a shaft having a cone pulley thereon, a belt having a running engagement around said cone pulley and means for driving said belt, a shifter for said belt, a connection between said worm carrying support and said shifter, and said cone-pulley carrying-shaft having a worm-wheel in mesh with said shaft-carried worm, a shaft comprising telescopic sections constrained to rotate in unison, and universal-joint-connected to said worm wheel shaft and to the worm on said oscillatory support, a cylinder for containing an elastic fluid, a piston movable in said cylinder against and to be retracted by said elastic fluid and a connection between said piston and said oscillatory worm carrying support.

7. In a let-off mechanism for a loom, in combination, a warp beam journaled for rotative movement and having affixed thereto a worm wheel, a worm carrying support mounted for oscillation concentrically with the warp beam axis and having a worm mounted for rotation thereon and in mesh with the warp beam worm wheel, a shaft having a cone pulley thereon, and means for rotating it, another shaft having a reversely tapered cone pulley, having a worm thereon, a belt running around both said cone pulleys and a shifter for said belt, a shaft having a worm wheel in mesh with said worm on the one of the cone pulley carrying shafts, a shaft universal-joint-connected to the last named worm wheel carrying shaft and to the worm on said oscillatory support, and comprising telescopic sections constrained for rotation in unison, a connection between said oscillatory support and said belt shifter, a cylinder, for containing an elastic fluid, having a piston therein, and a connection between said piston and said oscillatory support.

858,139. WARP STOP-MOTION FOR WIRE-WEAVING LOOMS. CHARLES H. ATKINS, Springfield, Mass. Filed July 31, 1906. Serial No. 328,611.

Claim.—1. In an electric warp stop-motion for a wire weaving loom, a driving shaft for operating the movable parts of a loom, a driver therefor, and a magnetic device for connecting and disconnecting said shaft with and from the driver therefor, an electric generator, circuit conductors connected with said generator and with said magnetic device, normally closed, and having a circuit closing switch or cut-out, an insulated metallic piece extending transversely of the loom and in relation to the warps,—to be contacted against upon a severing of one thereof,—an electro magnet controlling said cut-out switch, and circuit conductors, having a generator connected therewith, and connected with said electro magnet, and connected with said metallic piece, and with a part of the loom with which the warp wires are in metallic or electrical connection.



2. In an electric warp stop-motion for a wire weaving loom, a driving shaft for operating the movable parts of a loom, a driver therefor, and a magnetic brake operable to stop the said shaft, an electric generator, circuit conductors connected with said generator and with said magnetic brake, normally open, and having a closing switch therefor, an insulated metallic piece extending transversely of the loom and in relation to the warps,—to be contacted against by a severed warp,—an electro magnet controlling said switch for maintaining the brake circuit open, circuit conductors, comprising a generator, connected with said electro magnet, connected with said transverse metallic piece, and with a part of the loom with which the warp wires are in electrical connection.

3. In an electric warp stop-motion, a driving shaft for operating the movable parts of a loom, a driver therefor, a magnetic device for connecting and disconnecting said shaft and driver, and a magnetic brake operable to stop the said shaft, circuit conductors connected with said magnetic device, circuit conductors connected with said magnetic brake, and a dynamo or generator connected in each of said circuits, the magnetic connecting device circuit being normally closed and the magnetic brake circuit being normally open, a cut out switch, for maintaining the one said circuit closed and the other circuit open, an insulated metallic piece extending transversely of the loom and in relation to the warps, and to be contacted against by a severed warp, an electro magnet for controlling said switch, circuit conductors, comprising a generator, connected with said electro magnet, and connected with said transverse metallic piece and with a part of the loom with which the warp wires are in metallic connection.

4. In an electric warp stop motion, a driving shaft for operating the movable parts of a loom, a driving pulley loosely revoluble relatively thereon, a clutch magnet for connecting and disconnecting said pulley and shaft, a dynamo, circuit conductors oppositely connected with said dynamo and with said clutch magnet, normally closed, and having a circuit closing switch or cut-out, an insulated metallic piece extending transversely of the loom adjacent the run of the warps—and to be contacted against, by a warp upon a severing thereof,—an electro magnet control-

ling said cut-out switch, and circuit conductors comprising a generator connected with said electro magnet, and connected with said transverse metallic piece and with a portion of the loom with which the warp wires are in electrical connection.

5. In an electric warp stop motion, a driving shaft, for operating the movable parts of a loom, having a brake disk affixed thereon, driving means for said shaft and a brake magnet mounted on a stationary support adjacent said brake magnet, and relatively to which the latter revolves, an electric generator, circuit conductors connected with said generator and with said brake magnet, normally open, and having a closing switch therefor, an insulated metallic piece extending transversely of the loom and adjacent the warps, an electro magnet controlling said switch, and circuit conductors, comprising a generator, connected with said electro magnet, and connected with said transverse metallic piece and with a part of the loom with which the warp wires are in electrical connection.

6. In an electric warp stop-motion for a wire weaving loom, a driving shaft for operating the movable parts of a loom, a driver therefor, and a magnetic device for connecting and disconnecting said shaft with and from the driver therefor, a metallic lay an electric generator, circuit conductors connected with said generator and with said magnetic device, normally open, and having a circuit closing switch or cut-out, a metallic piece mounted on the lay and insulated therefrom, and extending transversely of the loom, and to be contacted against by a severed warp, an electro magnet controlling said cut-out switch, and circuit conductors, oppositely in electrical connection with said insulated metallic piece and with the metallic beam of the lay, and connected with said electro magnet, and having a generator connected therein.

7. In an electric warp stop motion for a wire weaving loom, a shaft for driving the movable parts of the loom, a driver therefor, and a magnetic device for connecting and disconnecting the driver and said shaft, an electric generator, circuit-conductors connected with said generator and with said magnetic device, having a cut out switch, a circuit opening and closing controller, and conductors connecting it in circuit with the generator and said magnetic connecting device, an electro-magnet controlling said cut out switch and normally open circuit conductors therefor, comprising a generator and adapted to be closed by a severed warp, and means for periodically actuating said controller for opening the said circuit in which it is comprised.

8. In an electric warp stop-motion for a wire weaving loom, a driving shaft for operating the movable parts of a loom, a driver therefor, and a magnetic device for connecting and disconnecting said shaft with and from the driver therefor, an electric generator, circuit conductors connected with said generator and with said magnetic device, normally closed at one place therein, and having a switch or cut-out at such place, a circuit opening and closing controller, and conductors connecting it in circuit with the generator and said magnetic connecting device, an insulated metallic piece extending transversely of the loom,—to be contacted against by a severed warp,—an electro magnet controlling said cut-out switch, circuit conductors,—having a generator connected therewith,—connected with said electro magnet, connected with said metallic pieces, and with a part of the loom with which the warp wires are in metallic or electrical connection, and means for periodically operating said controller for its circuit opening action when the loom lay is in a given required position.

9. In a warp stop motion for a wire weaving loom, a shaft in driving connection with the movable parts of the loom, having a disk affixed thereon, a brake magnet at one side of said disk, and a pulley loosely rotatable on the shaft at the other side of said disk and carrying a clutch magnet, an insulated metallic piece extending transversely of the loom to be contacted against upon the severing of a warp wire, a dynamo and an electric conductor connected with said dynamo and with said switch, separated contacts, and a conductor running from one of said contacts to said clutch magnet, and a conductor running from said clutch magnet back to the dynamo, an electric conductor running from the other of said contacts to said brake magnet, and another contact, connected with said brake magnet and with the dynamo, an electro magnet, and an armature therefor engaging the said switch and holding the same on the one of said contacts in the clutch magnet circuit, means for throwing the switch, when released, onto the contact in the brake magnet circuit, and circuit conductors, comprising a generator, connected with said electro magnet, connected with said insulated metallic piece, and with a part of the loom with which the warp wires are in metallic or electrical connection.

10. In an electric warp stop motion for a wire weaving loom, a driving shaft for operating the movable parts of the loom, a driver therefor, a magnetic device for connecting and disconnecting said shaft and driver, and a magnetic brake operable to stop the said shaft, circuit conductors connected with said magnetic connecting device, circuit conductors connected with said magnetic brake, and a dynamo connected in each of said circuits, the magnetic-connecting-device-circuit having a cut out opening at one place therein, and a circuit opening and closing controller comprising separated insulated metallic pieces, and a movable bar consisting of metallic and insulating portions, operable to connect, and also to leave electrically cut-out, one of said metallic portions of the controller with and from the other, and conductors connecting said controller in circuit with said generator and said magnetic connecting device, a switch for normally closing the first named cut out opening, and for leaving normally open the magnetic brake circuit, and movable for reversing its relations, an insulated metallic piece extending transversely of the loom and to be contacted against by a severed warp, an electro magnet for controlling said switch, circuit conductors comprising a battery connected with said electro magnet and connected with said insulated metallic piece and with part of the loom with which the warp wires are in metallic connection, and a rotary cam for periodically moving said bar of the controller for cutting-out the magnetic connecting device circuit in which such controller is comprised at a given predetermined time in each operation of the loom.

11. In an electric warp stop motion for a wire weaving loom, a shaft for driving the movable parts of the loom, a driving pulley therefor, and a magnetic clutch for connecting and disconnecting said pulley and shaft, a dynamo, circuit conductors connected with said dynamo and with said magnetic clutch, having a cut out switch, an electro magnet having an armature for engaging, and holding said switch in its circuit closing position, and normally open circuit conductors for said electro magnet comprising a battery, and adapted to be closed by a severed warp.

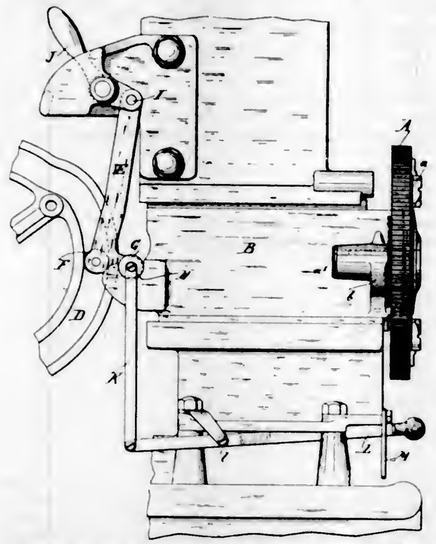
858,140. HANGER. ROBERT W. BEATON, Chicago, Ill. Filed July 3, 1906. Serial No. 324,626.



Claim.—1. A pipe hanger comprising in combination, a supporting bar, slotted longitudinally adjacent one end, and a substantially U-shaped clamp, the arms of which project through the slot in the bar and are movable therein, one of said arms having a head on its free end and the other being threaded, and a nut on said threaded end.

2. A pipe hanger, comprising a single strip of metal formed with a longitudinal slot, and a plurality of perforations, in combination with a U-shaped clamp movably mounted within said slot, and provided with a head at one end, and screw-threaded at its opposite end, said headed-end and screw-threaded end projecting through the slot, and a nut on said threaded end.

858,141. LINOTYPE-MACHINE. RICHARD M. BEDELL, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Nov. 1, 1906. Serial No. 341,560.



Claim.—1. In a linotype machine, the combination of the main-frame, the mold-slide B, the mold-disk A carried thereby at the front of the machine, the actuating cam at the rear, connecting devices between the cam and slide, means for controlling the connecting devices extended to the front of the machine, and a locking device co-operating therewith to maintain the disconnection of the parts.

2. In a linotype machine, the combination of the main-frame, the slide B, the mold-carrying disk sustained by the slide at the front of the machine, the actuating cam, a connection E between the cam and slide, a hand-lever L extending to the front of the machine, a link K between said lever and the connecting device E, and means for locking said lever in position; whereby the operator, at the front of the machine, is enabled to connect the slide with and disconnect it from the operating cam, and to lock the parts out of connection.

858,142. METHYLENE CITRYL SALICYLIC ACID. RUDOLPH BERENDES and JÜRGEN CALLSEN, Elberfeld, Germany, assignors to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed July 27, 1906. Renewed May 4, 1907. Serial No. 371,818.

Claim.—The herein described new methylene citryl salicylic acid having probably the above formula, obtainable by the action of the acid dichlorid of methylene citric acid upon salicylic acid, and being a white crystalline powder melting at from about 157 to 161 centigrade, melting point not being sharply defined; being easily soluble in alcohol and acetone, soluble in chloroform and ether and being scarcely soluble in water, salicylic acid being regenerated by heating it with caustic alkalies; and exhibiting valuable therapeutic properties, substantially as hereinbefore described.

858,143. SALTS OF METHYLENE CITRYL SALICYLIC ACID. RUDOLPH BERENDES and JÜRGEN CALLSEN, Elberfeld, Germany, assignors to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, a Corporation of Germany. Filed Sept. 11, 1906. Renewed May 4, 1907. Serial No. 371,819.

Claim.—1. The herein-described new salts of methylene citryl salicylic acid obtainable by the action of bases upon methylene citryl salicylic acid, being solid compounds yielding the free methylene citryl salicylic acid when treated with mineral acids; and exhibiting valuable therapeutic properties, substantially as described.

2. The herein-described new neutral sodium salt of methylene citryl salicylic acid, obtainable by the action of sodium bicarbonate upon methylene citryl salicylic acid, being a white crystalline powder readily soluble in water with a neutral reaction, insoluble in ether and benzene; methylene citryl salicylic acid being regenerated by the addition of hydrochloric acid to the aqueous solution; and exhibiting valuable therapeutic properties; substantially as hereinbefore described.

858,144. ROTARY ENGINE. MUHLTDIN BEY, Constantinople, Turkey. Filed Aug. 15, 1906. Serial No. 330,632.

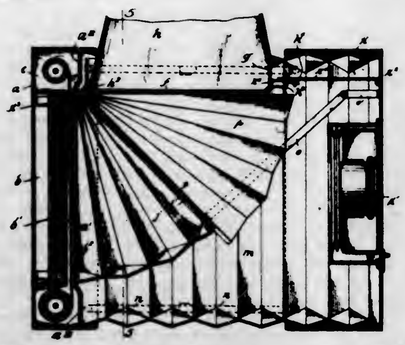


Claim.—1. In a compound rotary engine of crescent-chamber type; the combination of a casing extending longitudinally, and partitions dividing the casing transversely of its axis into two outer high pressure chambers and two centrally located low pressure chambers, a revoluble shaft extending eccentrically through the said chambers, the casing having a slot above the line of contact of the shaft with the interior of the casing and extending the length of each chamber, a spring-pressed friction bar located in the slot and bearing upon the periphery of the shaft, the shaft having a diametric slot at each chamber extending the length thereof, the direction of the slot in the shaft in one high pressure chamber being at right angles to the slot in the second high pressure chamber, and the slot in the shaft in one low pressure chamber being at right angles to the slot in the shaft in the second low pressure chamber, a sliding plate piston passing through each slot, the edges of each piston contacting with the wall of its chamber and the ends contacting with the ends of said chamber, end covers to the casing and bearings in the end covers to carry the shaft, the casing having steam passages to conduct steam to the high pressure chambers upon one side of the shaft, to exhaust from the high pressure chambers to the low pressure chambers upon the other side of the shaft and to exhaust from the low pressure chambers substantially as set forth.

2. In a compound reversible rotary engine of crescent-chamber type; the combination of a casing extending longitudinally, and partitions dividing the casing transversely of its axis into high and low pressure chambers, a revoluble shaft extending eccentrically through the said chambers with its periphery in contact with the interior wall, the shaft having a diametric through slot at each chamber extending the length thereof, a sliding plate piston passing through each slot in each chamber, the edges of each piston contacting with the wall of its chamber and the ends contacting with the ends of said chamber, end covers to the casing, and bearings in the end covers to carry the shaft, the casing having two steam passages in different transverse vertical planes extending to the high pressure chamber on one side of the shaft, and two similar passages from the high pressure chamber on the other side of the shaft, a transmitting passage to conduct the steam from the high to the low pressure chambers and similar double passages on each side of the shaft communicating with the low pressure chambers, means for directing the inlet of steam into the chambers onto either side of the shaft according to the direction of motion required, and simultaneously closing one of the passages upon the inlet side of the shaft so as to admit steam by one passage and exhaust by two passages in each chamber, substantially as set forth.

3. In a compound reversible rotary engine of crescent-chamber type; the combination of a casing extending longitudinally, and partitions dividing the casing transversely into chambers of differing cubical capacity, a revoluble shaft extending eccentrically through the said chambers with its periphery in contact therewith and having a diametric slot at each chamber, a sliding plate piston passing through each slot in each chamber, end covers to the casing, bearings in the end covers to carry the shaft, the casing having a boring to receive a cylindrical valve, two steam passages in different transverse planes extending from the boring to the high pressure chamber upon one side of the shaft, and two passages in different transverse planes extending from the boring to the high pressure chamber on the other side of the shaft, the casing having similar passages extending from the boring to the low pressure chamber, a transmitting passage extending from the valve boring above the high pressure chamber to above the low pressure chamber and opening to the boring in the plane of the inlet passage to said chamber, a steam pressure inlet passage to the boring in a plane with the inlet passage to the high pressure chamber, and exhaust passages communicating with the boring above the low pressure chamber and in the same planes as the passages communicating with the latter chamber; of a cylindrical valve in the boring having channels formed in its circular wall, whereby pressure steam is admitted by one passage on one side of the shaft and exhausted by two passages on the opposite side, or vice versa, according to the direction of rotation of the engine, and means for adjusting the valve through a rotary angle for reversing or stopping the engine, substantially as set forth.

858,145. PHOTOGRAPHIC CAMERA. LOUIS BORSUM, Plainfield, N. J. Filed Apr. 17, 1905. Serial No. 256,139.



Claim.—1. A photographic camera comprising the combination with front and rear sections of a camera box and an extensible and collapsible light tight structure connecting them, of a downwardly foldable focusing glass hinged to the rear section of the box and observable through an opening in the collapsible structure when the latter is extended, a downwardly foldable reflector also hinged to the rear section, and a segmental bellows applied around the exposure opening of such section and having an open front closed by the reflector when the camera is in condition for a picture to be focused.

2. A photographic camera comprising the combination with the front and rear sections of a camera box and an extensible and collapsible light tight structure connecting them, of a downwardly foldable focusing glass hinged to the rear section of the box and observable through an opening in the collapsible structure when the latter is extended, a downwardly foldable reflector also hinged to the rear section, a segmental bellows applied around the exposure opening in such section and having an open front closed by the reflector when the camera is ready for a picture to be focused, and means connected with the front section of the box operating to draw the segmental bellows and reflector into proper angular position when the camera is extended for use.

3. A photographic camera comprising the combination with the focal-plane section of the box, the lens section of the box, and a light-tight bellows connecting them whereby the two sections may be extended for use or collapsed of a downwardly foldable focusing box occupying an opening in the top of the bellows when the camera is extended and whose bottom is formed by the focusing glass, a segmental bellows applied around the exposure opening in the focal plane section of the box and having its curved lower end closed and its front side open, a second segmental bellows having its front end open and its sides connected to the focusing box and to the first named segmental bellows, and a downwardly foldable hinged reflector movable in said second segmental bellows and serving in one position to close the open front side of the first named bellows and in another position to exclude light entering the camera through the focusing glass.

4. A photographic camera comprising the combination with the focal-plane section of the box, the lens section of the box, and a light-tight bellows connecting them whereby the two sections may be extended for use or collapsed, of a downwardly foldable focusing box occupying an opening in the top of the bellows when the camera is extended and whose bottom is formed by the focusing glass, a segmental bellows applied around the exposure opening in the focal plane section of the box and having its curved lower end closed and its front side open, a second segmental bellows having its front end open and its sides connected to the focusing box and to the first named segmental bellows, a downwardly foldable hinged reflector movable in said second segmental bellows and serving in one position to close the open front side of the first named bellows and in another position to exclude light entering the camera through the focusing glass, and means connected with the lens section of the box operating to draw the segmental bellows that is applied around the exposure opening and also the reflector into proper angular position when the camera is extended for use.

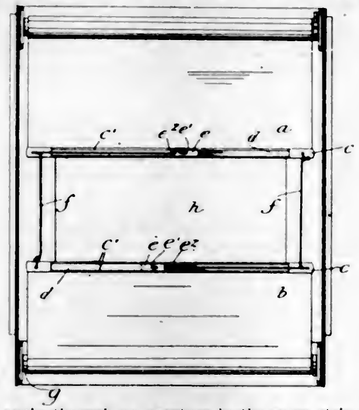
5. A photographic camera comprising the combination with the lens section and focal plane section of a camera box and an extensible and collapsible light tight structure connecting them, of a downwardly foldable focusing ground-glass hinged to the focal plane section of the box and observable through an opening in the collapsible structure when the latter is extended, a downwardly foldable reflector also hinged to said section, a segmental bellows applied around the exposure opening in said section and whose open front is closed by the reflector when the camera is ready to focus a picture, links connecting the two box sections and constructed to hold them properly separated when the camera is extended, and interior links connecting the front section to said segmental bellows whereby the latter and the reflector are drawn into proper angular position when the camera is extended for use.

6. A photographic camera comprising the combination with a focal plane section, a lens section and an extensible and collapsible structure interposed between them in either extended or collapsed condition, of a focusing glass and a reflector both foldable toward the focal plane and contained within said structure between the said two sections when the camera is collapsed.

7. A photographic camera comprising the combination with a focal plane section, a lens section and an extensible and collapsible bellows interposed between them of a box adapted to occupy an opening in the bellows when the latter is extended, an observation hood attached to the box and foldable thereinto, a focusing glass constituting the bottom of the box and a reflector, the box and reflector being adapted to fold downwardly toward the focal plane when the camera is collapsed.

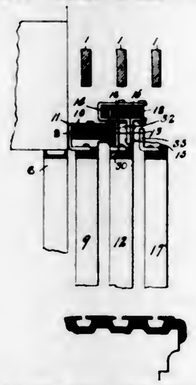
858,146. PHOTOGRAPHIC FOCAL-PLANE SHUTTER. LOUIS BORSUM, Plainfield, N. J. Filed Oct. 19, 1905. Serial No. 283,421.

Claim.—In a photographic focal plane shutter, the combination with the shutter sections, of stiffening strips applied to their edges, slides movable on such strips, and a flexible cord connection extending from each slide through the end of the strip on which it is mounted, thence to the



front again through an aperture in the same strip nearer the slide, and then to the corresponding end of the opposite strip to which it is secured.

858,147. DOOR OR GATE OPENING AND CLOSING DEVICE. RICHARD B. BROWNE, New York, N. Y., assignor to Richey, Browne and Donald, Brooklyn, N. Y. Filed Apr. 5, 1904. Serial No. 201,674.



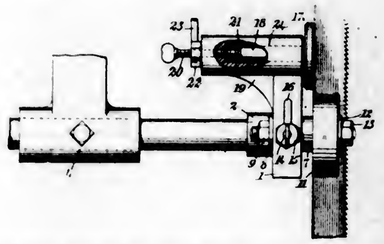
Claim.—1. The combination of a door composed of two or more sections, a gear mounted upon each section except the last, a gear rack secured to each section in operative connection with a gear, and a rack secured to the door casing or jamb and in operative connection with a gear on one of the door sections.

2. The combination of a door composed of multiple sections, gears mounted upon the sections in different horizontal planes and racks upon the sections meshing with the gears in planes corresponding to the gears.

3. The combination of a door composed of multiple sections, a series of tracks, wheels upon the sections running upon the tracks, toothed gears mounted upon the sections in different horizontal planes and toothed racks upon the sections meshing with the gears in planes corresponding to the gears.

858,148. BAND-SAW GUIDE. JOHN J. CALLAHAN, St. Johns, Newfoundland. Filed Sept. 15, 1906. Serial No. 334,716.

Claim.—1. A band saw guide, comprising a suitable support provided with two rectangular openings, a square bolt extending through each of said openings, screw bolts in engagement with the sides of each of said square bolts for laterally adjusting the position of said square bolts within said openings, a guide roller rotatably mounted on the end of each of the square bolts, said guide rollers adapted to engage with the opposite sides of a saw, and a guide disk carried by said support and adapted to engage with the back of the saw.



2. A band saw guide, comprising a plate, a rod secured to said plate, means for securing said rod to the frame of a machine, said plate having two rectangular openings, square bolts extending through said openings, said bolts being provided with collars in engagement with one face of the plate and washers in engagement with the opposite face, screw bolts in engagement with the oppositely-disposed faces of the square bolts for laterally adjusting the position of said square bolts within the openings, means for locking the screw bolts in their adjusted positions, a spindle on the end of each square bolt and integral therewith, and guide rollers supported on said spindles adapted to engage with opposite sides of the saw.

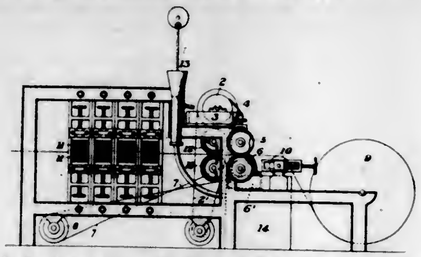
3. A band saw guide, comprising a plate, a rod secured to said plate, means for securing said rod to the frame of a machine, said plate having two rectangular openings, square bolts extending through said openings, said bolts being provided with collars in engagement with one face of the plate and washers in engagement with the opposite face, screw bolts in the plane of the plate and intersecting the rectangular openings for contacting with the lateral surfaces of the square bolts and adjusting their position within said openings, lock nuts on said screw bolts, a spindle on the end of each square bolt and integral therewith, guide rollers rotatably mounted on said spindles and adapted to engage with the opposite sides of a saw, and a guide disk mounted upon said plate and adapted to engage with the back of the saw.

4. A band saw guide, comprising a plate, a rod secured to said plate, means for securing said rod to the frame of a machine, said plate having two rectangular openings, square bolts extending through said opening, said bolts being provided with collars in engagement with one face of the plate, and washers in engagement with the opposite face, screw bolts in the plane of the plate and intersecting the rectangular openings for contacting with the lateral surface of the square bolts and adjusting their positions within said openings, locking nuts on said screw bolts, a spindle on the end of each square bolt and integral therewith, guide rollers rotatably mounted on said spindle and adapted to engage with the opposite sides of a saw, a bracket carried by said plate and having a socket, a guide disk, a spindle rigidly secured to said disk and mounted within said socket, a screw bolt carried by said bracket and adapted to engage with the end of the spindle for adjusting the longitudinal position thereof, and means for locking the screw bolt in its adjusted position.

858,149. MACHINE FOR COATING PAPER. MARTIN CANTINE, Saugerties, N. Y. Filed Sept. 28, 1906. Serial No. 336,657.

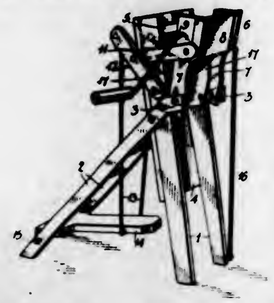
Claim.—1. Apparatus for coating paper, having color rolls between which the paper passes, means for applying the color to the rolls, and rotating brushes in contact with

the rolls and adapted to receive color therefrom and to apply it as an additional coating to the paper.



2. Apparatus for coating paper, having color rolls between which the paper passes, means for applying the color to the rolls, and rotating color applying members in contact with the rolls and adapted to receive color therefrom and to apply it as an additional coating to the paper.

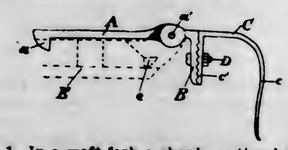
858,150. MOP-WRINGER. JAMES D. CARTER, Baker City, Oreg. Filed Oct. 25, 1906. Serial No. 340,519.



Claim.—1. A mop wringer embodying legs, a drip board and roller combined with the legs, angularly-disposed braces secured to the legs and projecting at their upper ends beyond the same, a head pivotally-connected with the projecting ends of the braces and carrying a crank driven roller, links connected with the head, levers pivotally connected with the legs, and with the links, and means for actuating the levers to cause the head to be rocked upon its supports.

2. A mop wringer comprising legs, a drip board and roller carried thereby, angularly-disposed braces secured to the legs and projecting at their upper ends beyond the same, a head having side arms pivotally-connected to the projecting ends of the braces, a crank driven roller carried by the head, a spring connected with the head and with the legs to hold the head normally in position to permit insertion of the mop between the rollers, links pivotally connected with the side arms of the head, levers pivotally-connected with the legs and with the links, a treadle, and a connection between the treadle and levers.

858,151. WEFT FORK AND SLIDE FOR LOOMS. FREDERICK D. CHESBOROUGH, Fall River, Mass. Filed Jan. 5, 1906. Renewed May 25, 1907. Serial No. 375,694.

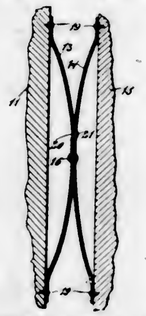


Claim.—1. In a weft-fork a shank portion having a vertical front face in combination with the separate tine portion, having a base adapted to engage the face of said shank portion, and reaching forward and downward from said base, and shaped into pointed tines of the usual form and means for securing the tine portion to the shank portion.

2. In a weft-fork a shank portion having a vertical front face, in combination with a tine portion, having means for securing a vertical adjustment thereon, said tine portion having a base adapted to engage the face of said shank portion, and reaching forward and downward from said base, and shaped into pointed tines of the usual form.

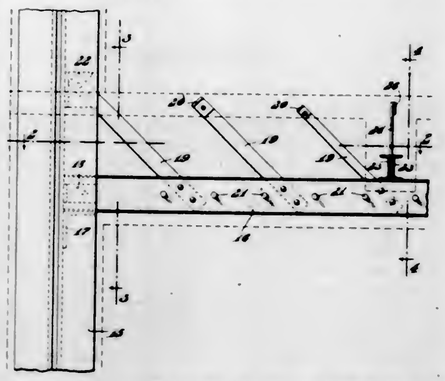
3. In a weft fork in combination a slide, a shank portion adapted to be pivoted in the slide, a separable tine portion having a base adapted to engage said shank portion and extending forward and downward from said base and shaped into pointed tines, and means for securing a vertical adjustment of said tine portion on said shank portion.

858,152. MIRROR-SUPPORT. FRED N. COFFMAN, Westplains, Mo. Filed Aug. 30, 1906. Serial No. 332,686.



Claim.—The combination with a mirror and its supporting frame, of pivotally connected resilient strips secured to and extending from the mirror and the supporting frame respectively, said strips having stop lugs and recesses.

858,153. REINFORCEMENT FOR CONCRETE. WINFIELD W. CONARD, Norristown, Pa. Filed Feb. 15, 1907. Serial No. 357,512.

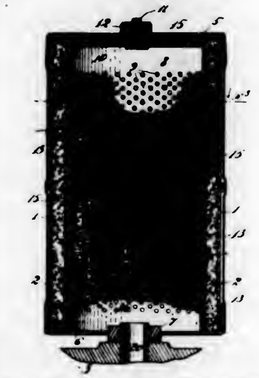


Claim.—1. A reinforcement in concrete consisting of a column, a tension member secured thereto, and shear members secured to said tension member, the shear member adjacent to the column being secured thereto, the various parts consisting of rolled shapes of the usual types. All substantially as set forth.

2. A reinforcement for concrete comprising a column,

main beam tension members carried by said column, shear members secured to the main beam tension members, the shear member adjacent the column being secured thereto, cross beam tension members supported by the main beam tension members, shear members secured to the cross beam tension members, the shear members adjacent the main beam tension member being secured together at their upper ends over the main beam tension member.

858,154. FILTER. JOSEPH CONVERSY, New York, N. Y., assignor of one-half to Joseph Bouquet, New York, N. Y. Filed July 13, 1906. Serial No. 326,076.

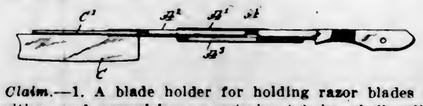


Claim.—1. A filter-element, having an inner perforated drum closed at one end, an outer perforated drum having a joint at one side and provided with detachable means for holding said joint closed while the filter is in use, caps for closing the respective ends of said outer drum, one of said caps having in it a screw-threaded outlet for the filtered liquid, textile covers for the respective drums, and a packing of fibrous material in the annular space between the two drums.

2. A filter-element, having an outer, perforated drum of resilient sheet-metal provided with keeper-plates at its margins and a removable locking rod to engage said plates and hold the joint closed, removable caps on the respective ends of said drum, one of said caps having in it a screw-threaded outlet-aperture, an inner, perforated drum closed permanently at one end by a cover-plate and secured at this end to the outer cap of the outer drum, textile covers for the respective drums, and paper-pulp packed into the annular space between said drums.

3. A filter-element, having two perforated drums of sheet material, of different diameters, said drums being disposed one within the other, and fibrous material filling the annular space between the drums, the outer drum having a locked side joint adapted to be readily opened to permit the outer drum to expand by its own resiliency.

858,155. BLADE-HOLDER FOR RAZOR-BLADES. TERENCE F. CURLEY, New York, N. Y. Filed Oct. 26, 1906. Serial No. 340,652.



Claim.—1. A blade holder for holding razor blades in position, and comprising an exterior tubular shell cylindrical in shape and a removable tubular inner lining cylindrical in shape and closely fitting the shell, the lining and shell having registering longitudinal slots for the passage of the razor blade, the said external shell being provided at the walls of its slot with outwardly extending clamping flanges adapted to engage opposite faces of the razor blade.

2. A blade holder for holding razor blades in position, and comprising an exterior hollow metal shell formed of resilient material, the said shell being cylindrical in shape and having a longitudinal slot, the shell being provided at the walls of said slot with outwardly extending clamping members, and a removable hollow cylindrical lining for said shell formed of a metal different from that of the shell, the said lining fitting closely within the shell and having a longitudinal slot registering with the slot in the shell.

3. The combination with a razor blade having a cylindrical back, of a blade holder comprising an exterior hollow cylindrical shell slotted in the direction of its length and provided at the walls of its slot with integral clamping arms adapted to engage opposite faces of the razor blade, and an interior cylindrical lining fitting within the said shell, the cylindrical back of the razor blade snugly fitting into the lining of the shell.

4. The combination with a razor blade having a cylindrical back provided with an exterior covering, of a blade holder comprising an exterior tubular shell cylindrical in shape, the said shell being slotted in the direction of its length and provided with integral clamping arms, and a removable interior cylindrical lining for the said shell having a registering slot, the covered back of the blade fitting closely within the said lining.

858,156. HEATER FOR TORPEDOES. GREGORY C. DAVISON, U. S. Navy. Filed Nov. 24, 1906. Serial No. 344,977.



Claim.—1. In a torpedo, the combination of an air flask, a stove therein provided with air inlet openings located underneath the center of said stove, a pipe connected to said stove near its top and adapted to lead compressed air from said stove to the engines, said stove being completely closed except for said openings and said air pipe, and means for heating the air in said stove, substantially as described.

2. In a torpedo, the combination with the air flask, of a stove therein provided with air inlet openings located below its center, a pipe connected to said stove near its top and adapted to lead compressed air from said stove to the engines, said stove being completely closed except for said air inlet openings and said pipe, a burner located within said stove, and means for regularly supplying fuel to said burner, substantially as described.

3. In a torpedo, the combination with the air flask, of a stove, provided with openings, mounted in said air flask, and having a depression at its bottom, a pipe leading from said stove to the engines through which all the air for operating the engines must pass, a burner located in the depression at the bottom of said stove, and a plurality of fuel receptacles located at different heights and connected to said burner, substantially as described.

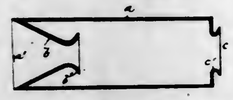
4. In a torpedo, the combination with the air flask, of a stove located therein and supported by said flask, said stove being provided with holes for the entrance of air thereinto, and with a depression at its bottom, a burner provided with radial holes located in said depression, fuel receptacles arranged at different heights, all connected with said burner, and an air pipe leading from said stove to the engines, substantially as described.

5. In a torpedo, the combination of a plurality of receptacles arranged at different levels, a burner, connections between said receptacles and said burner, a depressed portion in the torpedo casing, connections between said depressed portions and the tops of the respective fuel receptacles, and a plug adapted to open or close all of said last named connections, subatantially as described.

6. In a torpedo, the combination of a stove provided with openings for the entrance of air thereinto, a pipe for conducting air from said stove to the engines, a burner located in the lower part of said stove, a plurality of receptacles arranged at different levels, a pipe connected to said burner and to all of said receptacles, and a valve in said pipe, substantially as described.

7. In a torpedo, the combination with the air flask thereof, of a stove centrally located in said air flask and provided with openings for the entrance of air thereinto, a pipe adapted to deliver air from said stove to the engines, a jet burner located in said stove near the bottom thereof, a plurality of fuel receptacles arranged at different levels, connections between said receptacles and said burner, a valve in said connections, and igniting means, substantially as described.

858,157. ROACH-TRAP. ALBERT G. DAY, Philadelphia, Pa. Filed Feb. 16, 1907. Serial No. 358,291.



Claim.—As an improved article of manufacture, a roach trap comprising an elongated body portion having at one end an opening, having rounded walls and outwardly tapered outside the end of the body portion, and providing shoulders within the body portion and at the other end a mouth extending from the outer walls of said body inward within the same, inclinedly and having the end within the body oppositely tapered and held concentrically within the body out of contact with the walls of the latter.

858,158. METHOD OF INKING PRINTING-FILMS. BENJAMIN DAY, West Hoboken, N. J. Filed Apr. 20, 1906. Serial No. 312,799.



Claim.—1. The method herein described, of printing designs, which consists in providing a printing film having a textured relief printing face, bringing said printing face into contact with the freshly inked printing face of a design-carrying surface, thereby inking portions only of the textured relief printing face of the printing film, next applying said printing film, thus prepared, to a surface to be operated upon, then by pressure on the back of said printing film reproducing in texture upon said surface the area so inked.

2. The method herein described, of preparing shaded prints, which consists in imparting to a surface an ink-yielding design, pressing upon said surface a textured relief printing film, so as to ink in a texture corresponding to that of said printing film certain portions of said film, corresponding to said design, and then pressing said printing film upon a different surface to be operated upon.

3. The method herein described of producing shaded prints, which consists in providing a surface with a design, inking the design on said surface, pressing upon said surface a transparent printing film provided with a relief texture so as to cause ink to adhere, in the form of a texture, to certain parts of said printing film while other parts thereof are free from ink, removing said printing film, and finally pressing said film upon another surface.

4. The method herein described of preparing shaded prints, which consists in providing a surface with a design, inking said surface, pressing upon said surface a printing film so as to ink certain portions of said film, the portions to be inked having a textured relief, removing said printing film, pressing said printing film upon a surface to be shaded, replacing said printing film upon the surface carrying the design, registering said film relatively to said design, providing said film with additional ink from said design, again removing said film, again registering it upon the surface to be shaded but swerved slightly aside from its first position thereon, and pressing it upon said surface so as to broaden and deepen the color of the texture first produced thereon.

5. The method herein described of reproducing designs, which consists in providing a surface with a design, said surface having portions capable of receiving ink and other portions capable of repelling ink, next inking the entire design thus produced, pressing upon said inked design a printing film so as to take ink from the inked parts only, of said design, and finally pressing said film upon a surface to be operated upon.

6. The method herein described of forming impressions, which consists in producing a design, inking the same, applying to said design a printing film having a textured relief surface so as to ink said printing film with said inked design, removing said printing film, causing the same to register upon a surface, and finally pressing said printing film against said surface so as to ink said surface with said inked design.

7. The method herein described, of forming impressions, which consists in inking a design, applying thereto a transparent film having a textured relief surface and capable of receiving ink from said design, placing said film adjacent to a surface to be operated upon, looking at said surface through said transparent film, and moving the latter so as to bring the ink thereupon into registry with predetermined portions only, of said surface, and finally applying said film to said surface so as to ink only said predetermined portions of the latter.

8. The method herein described, of forming impressions, which consists in producing a design, inking the same, applying to said design a transparent printing film having a textured relief surface so as to ink said textured relief by aid of said inked design, removing said printing film, placing said printing film adjacent to a surface bearing a design, looking through said printing film at said surface, and moving said printing film so as to bring said design into a predetermined position relatively to the design upon said surface, and finally bringing said printing film into contact with said surface so as to ink the latter.

9. The method herein described, of reproducing in shaded texture a design, which consists in charging with ink certain predetermined portions only on an exposed face bearing said design, pressing upon said face, a printing film provided with a textured relief, so as to receive upon said printing film a charge of ink covering only predetermined portions of said film corresponding to the ink-covered areas of said face, the charge of ink upon said film appearing in the texture characteristic of said film, next placing said film face to face upon a surface to be operated upon, and pressing said film upon said last-mentioned surface.

10. The method herein described, of copying solid areas so as to make the same appear in texture, which consists in charging with ink a surface having predetermined areas in solids, applying to said surface thus inked a printing film having a textured relief surface, and then pressing said printing film upon a surface capable of receiving an ink impression therefrom.

11. The method herein described, of printing a design having a textured relief printing face, which consists in bringing said printing face into contact, by pressure, with the freshly inked printing face of a printable design or map of the surfaces or areas required in the texture of the printing film in order to shade a surface, the design or map of the required areas being charged with ink, next placing the printing film with its charge of ink thus yielded up by the inked design, printing face downward upon the surface to be printed upon, then, by pressure on the back of said printing film, printing the areas embraced in the inked portions of the texture in relief of the printing film.

12. The method herein described of converting the solid areas of an inked design or map into textured areas, which consists in charging said design or map with ink and pressing into engagement therewith a printing film provided with a textured surface so as to ink the latter, and pressing said printing film into engagement with a surface to be operated upon, thus conferring a texture thereupon.

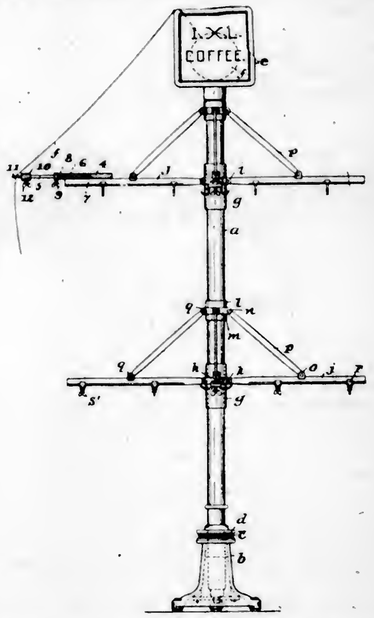
13. The method herein described of producing shaded prints with predetermined areas in the texture of the molded relief surfaces of a printing film, by inking said film with printable ink yielding areas of a design or map, rolled up with suitable ink, on which the textured side of printing film is pressed to charge it with ink, removing the film so inked, recharging the design or map with a fresh rolling of ink, replacing the film, registering it so that it falls directly over the inked map or design, pressing it against the freshly inked design or map, so that it receives an additional charge of ink, and repeating this operation until the film is sufficiently inked to print directly the design or map with its textured areas on the surface to be printed on.

14. The method herein described, of converting the solid areas of a design or map into various inked textured areas, which consists in providing a surface with a design or map, said surface having portions capable of receiving printing ink and other portions capable of repelling printing ink, next inking the design or map thus produced, pressing upon said inked design or map a textured printing film until it takes up the requisite ink from the inked parts of the design or map, and finally pressing said film upon a surface to be operated upon.

15. The method herein described, of deepening the color of the textured areas of a design, which consists in providing a printing film having a textured area, inking said printing film, impressing said printing film upon said design so as to leave thereupon a part of its ink, then re-inking said printing film, bringing the same into registry with said design as before, and pressing said printing film into engagement with said design so as to increase the amount of ink placed thereupon.

858,159. FOLDING RACK FOR POULTRY, &c. PHILIP H. DEIS, Washington, D. C. Filed Feb. 27, 1907. Serial No. 359,664.

Claim.—In a folding rack, the combination of a tubular upright, radial sustaining arms, braces pivotally connected with said arms, means for pivotally connecting said braces with the upright, a sleeve arranged on said upright and movable longitudinally thereof, said arms being pivotally connected with the sleeve and said upright being vertically slotted, a pin carried by said sleeve and extending through the slot of said upright, a pulley journaled in said upright, a weight arranged to move in said upright, and a flexible connection between said pin and the weight, said connection being extended over the pulley.

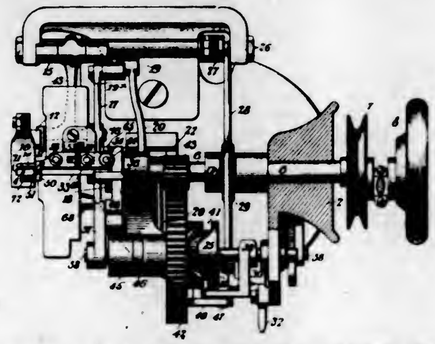


858,160. ANODE. ALEXANDER J. DELOYE, Torrington, Conn. Filed Jan. 31, 1907. Serial No. 355,091.



Claim.—As a new article of manufacture, an anode comprising a body portion or core of gradually diminishing taper from its upper to its lower end, said core being substantially oval or elliptically-shaped in cross-section and having a series of integral outwardly-projecting obliquely disposed spurs or projections formed one above the other and on the narrow edges or sides of said body portion, said projections being of gradually decreasing length from the upper to the lower end of the anode.

858,161. SEWING-MACHINE FOR PRODUCING SCALLOPED TUCKS. ALBERT H. DE VOE, Elizabeth, N. J., assignor to The Singer Manufacturing Company, a Corporation of New Jersey. Filed Nov. 24, 1905. Serial No. 288,838.



Claim.—1. In a sewing machine, the combination with the stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work undergoing the stitching operation, a work-clamp adapted to engage the work adjacent said pusher, and means acting during the production of one stitch for effecting the engagement of the work by said pusher and work-clamp but inactive during the production of a succeeding stitch.

2. In a sewing machine, the combination with the stitch-forming mechanism, feeding mechanism and actuating means therefor inoperative during a complete stitch-forming cycle in the production of a succession of stitches, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work undergoing the stitching operation, a work-clamp adapted to engage the work adjacent said pusher, and means for actuating said pusher and work-clamp to engage the work during the period of inaction of the feeding mechanism.

3. In a sewing machine, the combination with the stitch-forming mechanism, feeding mechanism and actuating means therefor inoperative during a complete stitch-forming cycle in the production of a succession of stitches, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work undergoing the stitching operation, a work-clamp adapted to engage the work adjacent said pusher, means for actuating said pusher and work-clamp to engage the work during the period of inaction of the feeding mechanism, and means connected with the feeding mechanism whereby the pusher and work-clamp are disengaged from the work after operative engagement therewith.

4. In a sewing machine, the combination with the stitch-forming mechanism and feeding-mechanism comprising a reciprocating feed-bar and a lifting bar connected therewith and provided with means for lowering the working position of said feed-bar during a complete stitch-forming cycle and maintaining the same raised in operative position in a succeeding stitch-forming cycle, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work undergoing the stitching operation, a work-clamp adapted to engage the work adjacent said pusher, and means for actuating said pusher and work-clamp for engagement of the work during the stitch-forming cycle in which the feed-bar is lowered from working position.

5. In a sewing machine, the combination with the stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, a work-clamp adapted to engage the work adjacent said pusher, and means active during a stitch-forming cycle and inactive during a plurality of subsequent complete stitch-forming cycles in the production of a succession of stitches in actuating said pusher and work-clamp to engage the work.

6. In a sewing machine, the combination with the stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, a work-clamp adapted to engage the work adjacent said pusher, means for effecting and maintaining the operative engagement of said pusher and work-clamp with the work for a complete stitch-forming cycle or cycles and rendering and maintaining the same inoperative for a succeeding stitch-forming cycle in the production of a succession of stitches, and controlling means for the feeding-mechanism whereby its action upon the work is interrupted for the stitch-forming cycle or cycles while the pusher and work-clamp are in operative engagement with the work.

7. In a sewing machine, the combination with stitch-forming mechanism and feeding mechanism comprising a reciprocating feed-bar and a lifting bar mounted upon a movable fulcrum at one end and provided at the other end with means for raising and lowering the same and having intermediate its ends a pivotal connection with said feed-bar, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, an intermittingly-acting work-clamp mounted independently of said pusher but adapted to engage the work adjacent thereto, means for alternately moving said pusher and work-clamp respectively into and out of operative engagement with the work in the production of successive stitches, and means for lowering the fulcrum of the feed-lifting lever to change the working position of the feeding member while the pusher and work-clamp are in engagement with the work.

8. In a sewing machine, the combination with stitch-forming mechanism and feeding mechanism comprising a reciprocating feed-bar and a lifting bar pivotally connected intermediate its ends with said feed-bar, a rotary main shaft from which the operative movements of the stitch-forming and feeding mechanisms are derived, a rotary cam-wheel geared to and adapted to rotate at a slower speed than said main shaft, and a shift lever pivotally mounted upon a fixed bearing intermediate its ends and carrying at one end a fulcrum for said lifting bar and engaging at the other end said cam-wheel, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, a work-clamp mounted independently of said pusher but adapted to engage the work adjacent thereto, and means for alternately moving said pusher and work-clamp respectively into and out of operative engagement with the work in the production of successive stitches while the fulcrum-carrying end of said shift lever is in its lowered position under the action of said cam-wheel.

9. In a sewing machine, the combination with stitching-forming and feeding mechanism, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, actuating means for alternately moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, an intermittently-acting work-clamp mounted independently of said pusher but adapted to engage the work adjacent thereto, actuating means for said work-clamp, and means acting in conjunction therewith for controlling the duration of the operative relation of said work-clamp with the work.

10. In a sewing machine, the combination with stitch-forming and feeding mechanisms, and means for actuating the same, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, actuating means for alternately moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, an intermittently-acting work-clamp mounted independently of said pusher but adapted to engage the work adjacent thereto, actuating means for said work-clamp deriving its movements from the feed-actuating means, and means acting in conjunction therewith for controlling the duration of the operative relation of said work-clamp with the work.

11. In a sewing machine, the combination with stitch-forming and feeding mechanisms, and means for actuating the same, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, actuating means for moving said pusher into operative engagement with the work during one stitch-forming cycle and out of such operative engagement for a succeeding stitch-forming cycle, a work-clamp adapted to engage the work adjacent said pusher, actuating means including a positively moving element for producing an initial clamping action of said work-clamp, and a holding device operative in conjunction with the actuating means for the work-clamp but independent of said positively moving element whereby the engagement of the work-clamp with the work may be maintained after its initial actuation.

12. In a sewing machine, the combination with stitch-forming and feding mechanisms, and means for actuating the same, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, actuating means for moving said pusher into operative engagement with the work during one stitch-forming cycle and out of such operative engagement for a succeeding stitch-forming cycle, a work-clamp adapted to engage the work adjacent said pusher, actuating means for producing an initial clamping action of said work-clamp, and including a member carried by and movable in respect of the pusher-actuating means for controlling the duration of the operative relation of said work-clamp and its actuating means, and a holding device independent of the work-clamp actuating means and acting upon said member whereby the engagement of the latter with the work may be maintained after its initial actuation, and subsequently interrupted upon the retraction of the pusher-actuating means operating to carry said member out of engagement with said holding device.

13. In a sewing machine, the combination with stitch-forming and feeding mechanisms, and means for actuating the same, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, a reciprocating carrier for said pusher, a pivoted work-clamping lever mounted upon a fixed fulcrum and adapted to engage the work adjacent said pusher, a clamp-actuating member mounted upon the pusher carrier and adapted to be carried thereby into operative relation with said work-clamping lever, and means independent of said pusher-carrier for actuating said member.

14. In a sewing machine, the combination with stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, an intermittingly-acting work-clamping lever mounted independently of said pusher but adapted to engage the work adjacent thereto, means for alternately-moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, actuating means for moving said clamping lever into engagement with the work substantially simultaneously with the pusher, and a yielding connection between said clamping lever and its actuating means.

15. In a sewing machine, the combination with stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, an intermittingly-acting work-clamping lever adapted to engage the work adjacent said pusher, a fixed bearing block carrying a fulcrum-pin upon which said clamping lever is mounted, a tilting block also mounted upon said fulcrum-pin, a yielding connection between said tilting block and said clamping lever, and means adapted to engage said tilting block for moving the clamping lever yieldingly upon the work while said pusher is in engagement therewith.

16. In a sewing machine, the combination with stitch-forming and feeding mechanisms, a throat-plate and a presser-foot provided with a plurality of transverse slots extending inwardly from one edge thereof, of a pusher movable transversely of the direction of feed and adapted to enter one of said transverse slots in the presser-foot to engage the edge of the work adjacent that portion undergoing the stitching operation, an intermittingly-acting work-clamp mounted independently of said pusher and provided with a pair of work-engaging jaws adapted to enter transverse slots in said presser-foot upon opposite sides of the pusher for engagement with the work and with a projecting finger extending above said presser-foot, actuating means for alternately moving said pusher and work-clamp respectively into and out of operative engagement with the work in the production of successive stitches, and a yielding connection between said work-clamp and its actuating means.

17. In a sewing machine, the combination with stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, actuating means for alternately moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, and means whereby the action of the feeding mechanism may be interrupted throughout a complete stitch-forming cycle during the engagement of said pusher with the work.

18. In a sewing machine, the combination with stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, actuating means for alternately moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, and means connected with the pusher-actuating means whereby the action of the feeding mechanism may be interrupted throughout a complete stitch-forming cycle during the engagement of said pusher with the work.

19. In a sewing machine, the combination with stitch-forming mechanism comprising a reciprocating needle and complemental stitch-forming devices, and feeding mechanism, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, means for alternately moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, a throat-plate provided with a needle aperture and a transverse pusher-clearance channel extending across the same to receive the lower edge of said pusher, and a presser-foot for holding the work upon said throat-plate.

20. In a sewing machine, the combination with stitch-forming mechanism comprising a reciprocating needle and complemental stitch-forming devices, and feeding mechanism, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, means for alternately moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, a throat-plate provided with a needle aperture and a transverse pusher-clearance channel extending across the same to receive the lower edge of said pusher, and a presser-foot having a transverse needle-slot with clearance recess in its lower face around the inner end of said slot and adjacent the needle-path.

21. In a sewing machine, the combination with stitch-forming mechanism comprising a reciprocating needle and complemental stitch-forming devices, and feeding mechanism, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, means for alternately moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, a throat-plate provided with a

needle aperture and with an elevated portion embracing the same and a laterally-depressed portion connected therewith by a beveled portion and having a transverse pusher-clearance channel extending across said needle-hole, and a presser-foot for holding the work upon said throat-plate and having its lower or operative face shaped to fit the top of said throat-plate.

22. In a sewing machine, the combination with stitch-forming mechanism comprising a reciprocating needle and complemental stitch-forming devices, and feeding mechanism, of a pusher having a nose which is forked to embrace said needle and undercut in the work-engaging extremity, said pusher being movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, means for alternately moving said pusher respectively into and out of operative engagement with the work in the production of successive stitches, a throat-plate provided with a needle aperture and a transverse pusher-clearance channel extending across the same to receive the lower edge of said pusher, and a presser-foot for holding the work upon said throat-plate.

23. In a sewing machine, the combination with the stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work adjacent that portion undergoing the stitching operation, a tuck-folding blade disposed in advance of the line of movement of said pusher and adapted to present a folded edge of fabric thereto, cord-guiding means for laying a cord along the edge of said fold and in the path of movement of said pusher, and means for alternately moving said pusher respectively into and out of operative engagement with said folded edge of fabric in the production of successive stitches.

24. In a sewing machine, the combination with stitch-forming and feeding mechanisms, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work undergoing the stitching operation, means for actuating said pusher for engagement with the work for a stitch-forming cycle and remaining inactive thereafter during a plurality of stitch-forming cycles, and means for actuating the stitch-forming mechanism to produce stitches both during and intermediate the periodical engagements of the pusher with the work.

25. In a sewing machine, the combination with stitch-forming mechanism and a feeding member, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work undergoing the stitching operation, means for actuating said pusher for engagement with the work, actuating means for imparting an operative movement to said feeding member for each stitch-forming cycle, and means whereby the working position of said feeding member is automatically shifted to prevent engagement with the work throughout a complete stitch-forming cycle in which the pusher engages the work.

26. In a sewing machine, the combination with stitch-forming mechanism and a feeding member, of a pusher movable transversely of the direction of feed and adapted to engage the edge of the work undergoing the stitching operation, a work-clamp adapted to engage the work adjacent said pusher, means for periodically actuating said pusher and work-clamp for engagement with the work, actuating means for imparting an operative movement to said feeding member for each stitch-forming cycle, and means whereby the working position of said feeding member is automatically shifted to prevent engagement with the work throughout a complete stitch-forming cycle in which the pusher and work-clamp engage the work.

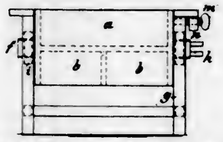
858,162. PROCESS FOR THE PRODUCTION OF PHOTOGRAPHS WITH ANY DESIRED BACKGROUND. FRIEDRICH J. DISCHNER, Zurich, Switzerland, assignor of one-half to John Henry Smith, Zurich, Switzerland. Filed Dec. 28, 1905. Serial No. 293,319.

Claim.—1. The herein-described process for the production of photographs with any desired background consisting in giving to the subject a double exposure, interposing between the subject and the sensitive plate a positive picture transparency during one of said exposures and simultaneously presenting to the sensitive plate a light background, and removing said transparency during the other exposure and simultaneously presenting to the sensitive plate a dark background, substantially as described.



2. The herein-described process for the production of photographs with any desired background consisting in giving to the subject a double exposure, interposing between the subject and the sensitive plate and in close proximity to the latter a positive picture transparency during one of said exposures and simultaneously presenting to the sensitive plate a light background, and removing said transparency during the other exposure and simultaneously presenting to the sensitive plate a dark background, substantially as described.

858,163. COMBINATION-TABLE FOR KITCHENS. THEODOR DRUZBACH, Flensburg, Germany. Filed Oct. 25, 1906. Serial No. 340,529.



Claim.—1. A table in combination with a revoluble box longitudinally journaled in the frame of said table, and of a square cross-section having two opposite sides open, divided by a middle partition, and having the other two sides closed, substantially as described.

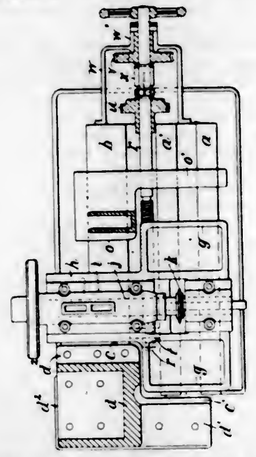
2. A table in combination with a revoluble box longitudinally journaled in the frame of said table, and of a square cross-section, having two opposite sides open divided by a partition, and having outlet pipes secured in one of the pivots, extending to the inner space of the box at or near the separating middle partition.

858,164. FRAMING FOR GEAR-CUTTERS. HENRY E. EBERHARDT and ELMER G. EBERHARDT, Newark, N. J., assignors to Eberhardt Brothers Machine Company, Newark, N. J., a Corporation of New Jersey. Filed Jan. 8, 1907. Serial No. 351,306.

Claim.—1. A gear-cutter bed having the top formed with double carriage-ways *a*, *a'*, extended along one side and the supporting guideway *b* of less length extended along the opposite side, with the seat *c* for the column *d* at the end of such guideway and at the side of the double carriage-ways, the bed being thus adapted for use with a tee-shaped carriage.

2. A gear-cutter bed having the top formed with double carriage-ways *a*, *a'*, extended along one side and the supporting guideway *b* of less length extended along the opposite side, with the seat *c* for the column *d* at the end of such guideway and at the side of the double carriage-ways, and having an extension-seat *c'* across the end of the carriage-ways, the bed being thus adapted for use with a tee-shaped carriage.

3. In a gear-cutter, a frame having the top of the bed formed with double carriage-ways *a*, *a'*, extended along one side and the supporting guideway *b* of less length extended along the opposite side, the seat *c* for the column *d* at the end of such guideway and at the side of the double carriage-ways, and having an extension-seat *c'* across the end of the carriage-ways, the column *d* having foot d^2 fitted to the seat *c* and auxiliary foot *d'* fitted to the seat *c'*, and having the bearing *e* with mandrel *f* for the gear-blanks supported above the carriage-ways, and the tee-shaped carriage having its crossbar *g* engaged movably with the carriage-ways and its arm *h* extended across the guideway *b* with the arbor-bearing *i* mounted on the arm *h* with the arbor *j* therein carrying the cutter *k* below the gear-blank mandrel.

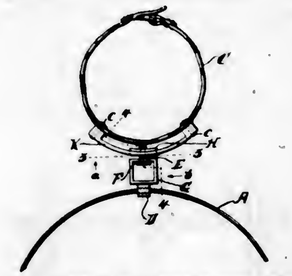


4. In a gear-cutter, a frame having the top of the bed formed with double carriage-ways *a*, *a'*, extended along one side and the supporting guideway *b* of less length extended along the opposite side, the seat *c* for the column *d* at the end of such guideway and at the side of the double carriage-ways, and having an extension-seat *c'* across the end of the carriage-ways, the column *d* having foot d^2 fitted to the seat *c* and auxiliary foot *d'* fitted to the seat *c'*, and having the bearing *e* with mandrel *f* for the gear-blanks supported above the carriage-ways, and the tee-shaped carriage having its crossbar *g* engaged movably with the carriage-ways and its arm *h* extended across the guideway *b* with the arbor-bearing *i* mounted on the arm *h* with the arbor *j* therein carrying the cutter *k* below the gear-blank mandrel, the column *d* having the notch *l* at the bottom above the foot *d'*, to clear the crossbar *g* of the carriage.

5. In a gear-cutter, a frame having the top of the bed formed with double carriage-ways *a*, *a'*, extended along one side and the supporting guideway *b* of less length extended along the opposite side, the seat *c* for the column *d* at the end of such guideway and at the side of the double carriage-ways with the column *d* upon such seat carrying the bearing *e* with mandrel *f* for the gear-blanks over the carriage-ways, the tee-shaped carriage having its crossbar *g* engaged movably with the carriage-ways and its arm *h* extended across the guideway *b* and provided with the bearing and arbor carrying the cutter *k* over the carriage-ways beneath the mandrel, and the mandrel-guide *m* having standard *n* and foot *o* engaged movably with the guide *b*.

6. In a gear-cutter, a frame having the top of the bed formed with double carriage-ways *a*, *a'*, extended along one side and the supporting guideway *b* of less length extended along the opposite side, the seat *c* for the column *d* at the end of such guideway and at the side of the double carriage-ways, with the column *d* upon such seat carrying the bearing *e* with mandrel *f* for the gear-blanks over the carriage-ways, the tee-shaped carriage having its crossbar *g* engaged movably with the carriage-ways and its arm *h* extended across the guideway *b* and provided with the bearing and arbor carrying the cutter *k* over the carriage-ways beneath the mandrel, and the mandrel-guide *m* having standard *n* and foot *o* engaged movably with the guide *b*, such foot having a narrow extension *o'* projected from its outer edge over the carriage-way, and the mandrel-guide being projected beyond its inner edge toward the column *d*.

858,165. TRAMMEL FOR ANIMALS. WALTER D. EDMONDS, Boonville, N. Y. Filed Dec. 31, 1906. Serial No. 350,248.



Claim.—1. A trammel for animals comprising a collar, a ring of greater diameter than said collar, a swivel, means to attach said swivel to said collar and means to suspend said ring from said swivel.

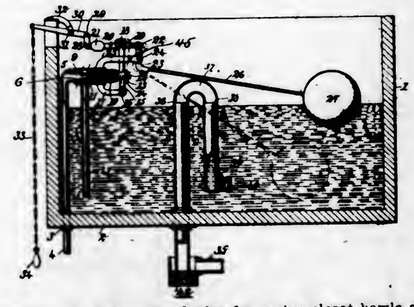
2. A trammel for animals comprising a collar, a ring having a greater diameter than said collar and a swivel secured to said collar and to said ring.

3. The combination of a collar, a ring having a greater diameter than said collar, and a swivel secured to said collar and having a link in which said ring is movably suspended.

4. The combination of a collar, a ring having a greater diameter than said collar, a swivel movably secured to said collar and having a link in which said ring is movably suspended.

5. A trammel for animals comprising a collar, a ring of greater diameter than said collar and a swivel by which said ring is movably suspended to said collar.

858,166. FLUSHING DEVICE FOR WATER-CLOSET BOWLS AND THE LIKE. LEWIS W. EGGLESTON, Appleton, Wis. Filed Sept. 7, 1905. Serial No. 277,328.



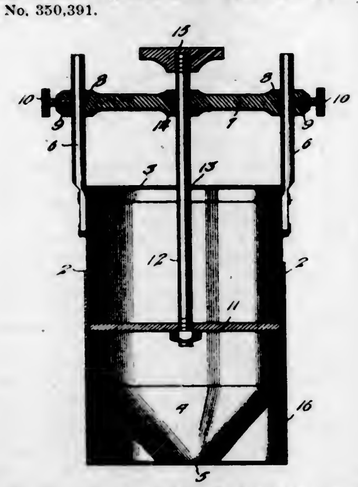
Claim.—1. A flushing device for water closet bowls and the like, comprising a tank, a siphon therein, a water supply pipe extending into the tank, a valve for opening and closing the water supply pipe, a swinging lever for operating the valve, a weighted lever for moving the swinging lever, a link pivoted to one end of the weighted lever, a rod having a float pivoted to the other end of the weighted lever and a pull lever connected with the link.

2. In flushing-devices for water-closet bowls and the like, a tank, a water-supply pipe extending thereinto, a valve for opening and closing the outlet for said pipe, and means for controlling the movements of said valve, comprising a swinging lever in direct movable connection with the valve, and a weighted member having independent

movable relation with said lever, the lever having an angular slot therein and the said member a portion working in the slot.

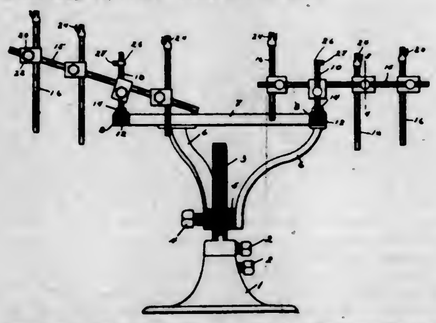
3. In flushing-devices for water-closet bowls and the like, a water-supply pipe extending thereinto, a valve for opening and closing the outlet for said pipe, and means for controlling the movements of the valve, comprising a swinging lever in movable connection with the valve, provided with an angular slot, an operating lever, a weighted member having a pin working in said slot, a float, a link, and a rod therebetween.

858,167. DEVICE FOR FILLING GREASE-CUPS. HARRY S. ERD, Saginaw, Mich. Filed Jan. 2, 1907. Serial No. 350,391.



Claim.—In combination, a body having an opening in one of its ends, standards projecting from the opposite end of the body, a cross strip having perforations through which the standards extend and having a central opening, said cross strip also having threaded recesses in its ends communicating with the perforations, screws engaging the threaded recesses to bind against the standards, a plunger within the body and a rod for the plunger passing through the opening of the cross strip.

858,168. HAT-FRAME MACHINE. WILLIAM B. FOSTER, Norwood, Ohio, assignor of one-fourth to Adolph Waldner and one-fourth to Julius Waldner, Cincinnati, Ohio. Filed May 26, 1906. Serial No. 318,850.



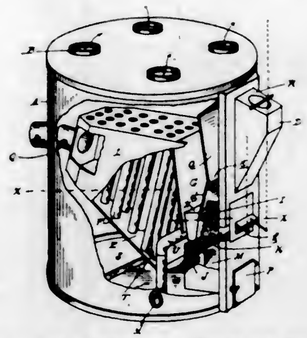
Claim.—1. In a hat frame machine, the combination with a standard or support, and a series of radial arms mounted thereon, of a series of crown wire rods, with adjustable catches to receive the round and round crown-wires, with catches having side notches for the head wire, and a similar series of brim-wire rods to receive the brim wires, and clamps for adjusting said rods laterally, vertically and angularly, substantially as described.

2. In a hat frame machine, the combination with a suitable standard, and an integral ring supported thereon, of a series of radially disposed rods, with means for securing same angularly and circumferentially adjustable on said ring, with vertically disposed rods, and clamps for securing same to said radial rods angularly and longitudinally adjustable thereon, substantially as described.

3. In a hat frame machine, a standard with an integral ring supported thereon, a series of vertical rods mounted on and circumferentially adjustably around said ring, a series of radially disposed rods with clamps for securing same angularly and longitudinally adjustable on said vertical rods, and a series of vertically disposed rods, with clamps for securing same angularly and longitudinally adjustable on said vertical rods.

4. In a hat frame machine, the combination with a standard or support, and a series of radial arms mounted thereon, of a series of rods laterally, vertically and angularly adjustable on said radial arms, with catches for the wires frictionally mounted on said vertical rods and adjustable longitudinally thereon.

858,169. FURNACE. CHARLES E. GARNER, Lansing, Mich. Filed Nov. 3, 1903. Serial No. 179,684.



Claim.—1. In a furnace, the combination with a substantially vertical magazine having an inclined bottom plate mounted for rocking movement, said magazine comprising front and rear walls, the front wall of the furnace constituting the front wall of the magazine, and having an outwardly extended portion adjacent its upper end for forming a narrowed passage intermediate the ends of said rear wall, of a combustion chamber into which the magazine discharges, and a grated bottom for the combustion chamber carried by said inclined plate and adapted to rock therewith.

2. In a furnace, the combination with a substantially vertical magazine having an inclined bottom plate mounted for rocking movement, said magazine comprising front and rear walls, the front wall of the furnace constituting the front wall of the magazine and having an outwardly extending portion for forming a narrowed passage intermediate the ends of said rear wall, of a combustion chamber beneath the magazine into which the latter discharges, a grated bottom for the combustion chamber secured to and adapted to rock with the inclined plate, and a lever connected to said plate projecting through an opening in the inclosing casing.

3. In a furnace, the combination with an inclosing casing, of a substantially vertical magazine therein, a combustion chamber below said magazine into which the latter discharges, a flue chamber within the casing having an upwardly inclined wall in adjacence to the magazine, a water chamber having complementary inclined surfaces the water chamber being supported between the flue chamber and magazine by the adjoining walls of the flue chamber and magazine engaging with said surfaces, and the water chamber projecting below said magazine to form a continuation of the front wall of the magazine and constituting the front wall of the combustion chamber, and pipes communicating with the water chamber and adapted to be connected at their upper ends to form a water circulating system.

858,170. HIGH BUILDING. JULES GERNAERT, Brussels, Belgium. Filed Apr. 26, 1906. Serial No. 313,748.



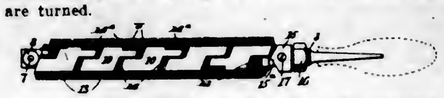
Claim.—1. A building of the character described comprising a plurality of bases, brace rods connecting said bases, circular metallic ribs connecting said bases and forming an arch between same, a column supporting each of said ribs, suitable walls closing the spaces between said ribs, and a framework inserted at the top of the arch and forming a key for same, substantially as described.

2. A building of the character described comprising a plurality of foundations, braces connecting said foundations, circular metallic ribs connecting said foundations and forming an arch between same, a column supporting each of said circular ribs, radial brace rods connecting said circular ribs, and a tapered framework at the top of said arch forming a key for same.

3. A series of buildings of the character described, united to form an elevated district, comprising a plurality of bases, brace rods connecting said bases, circular metallic ribs fixed to said bases and forming an arch between same, a column supporting each of said circular ribs, and a tapered framework inserted at the top of said arch and forming a key for same.

858,171. FILE. HENRY GETAZ, Schenectady, N. Y. Filed Aug. 21, 1906. Serial No. 331,490.

Claim.—1. A file having teeth composed of a series of cutting blades removably held together, deflecting plates placed at predetermined points between the blades, and locking plates secured to the deflecting plates and to each other to regulate the angle at which the cutting blades are turned.



2. A file comprising a divided core of two members, a series of apertured cutting blades composing the file teeth assembled on the core, and means associated with the blades to regulate the angle at which they are turned, said means causing the members of the core to slide transversely upon each other and contact at all sides of the apertures in the blades.

3. A file having a core diagonally divided, a series of apertured cutting blades adapted to be passed over the core and held thereon in an angular relation, and means associated with the cutting blades to regulate the angle at which they are held, said means comprising a system of deflecting plates arranged at suitable points between the blades and locking plates attached to the deflecting plates at one side of the blade.

4. A file comprising a core diagonally divided, a series of apertured cutting blades adapted to be clamped thereon in angular relation, a plurality of deflecting plates inserted between the blades at predetermined points, and means in fixed relation to the deflecting plates to regulate the angle thereof as described.

5. A file comprising a core, a series of cutting blades forming the teeth of the file adapted to be removably attached to the core, and a series of deflecting plates arranged between the blades having means to regulate the angle at which the cutting blades are secured.

6. A file comprising a core of two members of substantially triangular section adapted to transversely slide upon each other, and a series of apertured cutting blades adapted to be passed over the core and held in an angular position thereto, whereby the members of the core slide upon each other, contacting at all sides of the apertures in the blades.

7. A file comprising a core composed of two members of substantially right angle triangular section, a plurality of cutting blades having square apertures adapted to be passed over the core, and means for forcing the blades in an angular position whereby the members of the core slide upon each other and contact at all sides of the apertures in the blades.

8. A file comprising a core, a series of apertured cutting blades forming the teeth of the file adapted to be fixed in angular relation to the core, a series of U-shaped deflecting plates inserted at predetermined points between the blades, locking plates in fixed relation to the deflecting plates, and means carried by the locking plates for adjusting the angularity of the deflecting plates and blades.

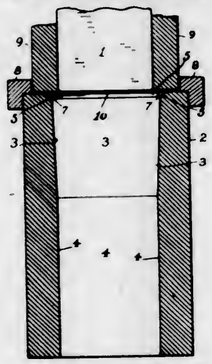
9. A file comprising a core composed of two triangular members adapted to transversely slide upon each other to change its dimension, a series of apertured cutting blades adapted to be passed over the core and held in fixed relation thereto in an angular position, and means associated with the blades for regulating their inclination, as described.

10. A file comprising a core composed of two members substantially triangular in cross section, a series of apertured cutting blades adapted to be passed over the core and held in an angular relation thereto, a plurality of U-shaped deflecting plates between the blades and astride the core, a locking plate in fixed relation to each deflecting plate, and means carried by the locking plates for adjusting the angularity of the deflecting plates.

858,172. DIE FOR FORMING BOXES FROM PASTEBOARD. JONATHAN GODFREY, Bridgeport, Conn., assignor to The Compressed Paper Box Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Apr. 10, 1906. Serial No. 310,978.

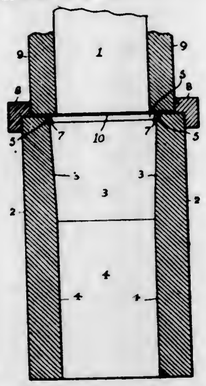
Claim.—In an apparatus of the type set forth, a female die composed of a long straight lower portion whose walls conform in shape to the shape of the completed box and

which provide ironing surfaces, a long gradually flaring upper portion merging into said straight portion, the mouth of said upper portion being rounded and being formed at each of its corners with substantially circular recesses which gradually taper and merge into said



mouth, a stationary keeper ring on said female die forming a chamber for the blank, a presser ring for operating into and out of said chamber, and a male die for operation in said presser ring.

858,173. PROCESS OF MAKING BOXES FROM PASTEBOARD. JONATHAN GODFREY, Bridgeport, Conn., assignor to The Compressed Paper Box Company, Bridgeport, Conn., a Corporation of Connecticut. Filed Aug. 6, 1906. Serial No. 329,436.



Claim.—The process of making boxes from a pasteboard blank, which consists in bending the edges of the blank into substantially vertical position, and simultaneously forcing the surplus stock at the corners into a series of plaits, drawing the same between gradually approximating dies thereby folding the plaits upon each other and the stock at such corners and then ironing the same to compress the plaits into a condensed and permanent form.

858,174. BOTTLE-CAP. EWALD GOLTSTEIN, Cologne, Germany. Filed June 26, 1906. Serial No. 323,427.

Claim.—1. The combination with a receptacle, of a cap having an annular portion surrounding the neck of the receptacle, and inwardly bent portion located above said annular portion and resting on the end surface of the neck, and a sealing portion extending across the receptacle's mouth, and located above said inwardly bent portion and projecting outwardly so as to overhang the same and form a contraction between the sealing portion and said inwardly bent portion.



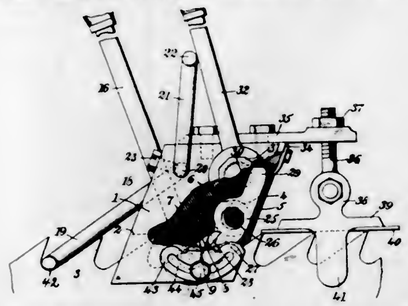
2. The combination with a receptacle, of a cap having an annular portion surrounding the neck of the receptacle, an inwardly bent portion located above said annular portion and engaging the end surface of the neck, a sealing portion located above said inwardly bent portion and projecting outwardly so as to overhang the same, and to form a contraction or groove between the sealing portion and said inwardly bent portion, and a strengthening member in the sealing portion of the cap.

3. A cap for sealing bottles and other receptacles, comprising an annular edge portion adapted to fit around the bottle neck, and a central sealing portion connected with the said annular portion by a contraction forming a groove to guide the tool used in opening the bottle.

4. A cap for sealing bottles and other receptacles, comprising an annular edge portion adapted to fit around the bottle neck, and a central sealing portion connected with the said annular portion by a contraction forming a groove to guide the tool used in opening the bottle, and a strengthening member in the upper portion of the cap.

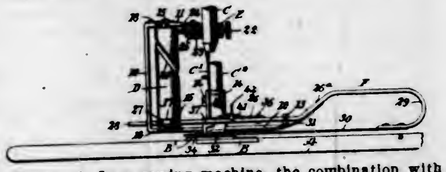
858,175. SAW-SWAGE. JOHN HANCHETT, Sheridan, Mich. Filed Mar. 14, 1906. Serial No. 305,984.

Claim.—In a saw swage, in combination, a block having



a channel in the under face thereof adapted to receive the edge of the saw blade, an anvil mounted in said block, a swaging device attached to said block and coöperating with said anvil, a lever actuating said swaging device, a brace rotatably mounted in said block having an arm engaging between the saw teeth of said blade, and having a second arm projecting into the path of said lever and constituting a stop therefor.

858,176. SEWING-MACHINE ATTACHMENT. ELLA D. HARRIS, New York, N. Y. Filed Jan. 3, 1907. Serial No. 350,625.



Claim.—1. In a sewing machine, the combination with a barrel, a support in which the barrel revolves, and means for imparting rotary motion to the barrel by the movement of the needle bar of the machine, of a feed device auxiliary to the feed device of the machine to which attachment is to be made, the said auxiliary feed device having action in direction of the right and left-hand side of the machine, and comprising an upper gripping member, a lower guide member, a spring loop connection between the two said members, a spacing finger carried by the said auxiliary feed, and means for adjusting the said finger.

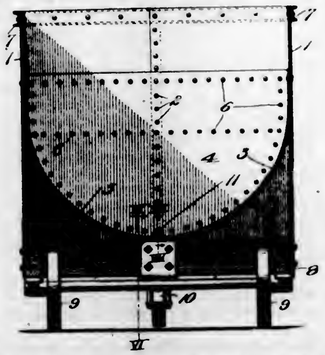
2. In sewing machines, a barrel, a support therefor, a feed adapted to feed material at an angle to the line of feed of the machine, comprising an upper gripping member and a lower guide member, and connections between the two at a point beyond the feed bar, means for operating the feed bar from the said barrel, a device attachable to the needle bar for imparting rotary movement to the barrel, a spacing device for the material operated on, and means for bringing the spacing device into and out of action.

3. In a sewing machine, the combination with the needle bar, and the presser foot bar, of a support secured to the presser foot bar, a barrel mounted to revolve in said support, the said barrel being provided with opposing longitudinal grooves and connecting spiral grooves, a spring controlled finger connected with the needle bar and adapted to travel in the grooves of the barrel, a feed bar, means for reciprocating the feed bar by the rotation of the barrel, the feed bar being provided with means for holding material and having a movement at right angles to the movement of the regular feed.

4. In a sewing machine, the combination with the needle bar and presser foot bar, a support attached to the presser foot bar, a barrel mounted to revolve in the said support, means for imparting a rotary movement to the barrel at the up movement of the needle bar, and a cam located on the said barrel, of a feed bar provided with an elongated opening to receive the said cam, whereby to impart a reciprocating movement to the feed by the rotation of the barrel, a clamping device for the material carried by the feed bar, and a spacer for material likewise carried by the feed bar.

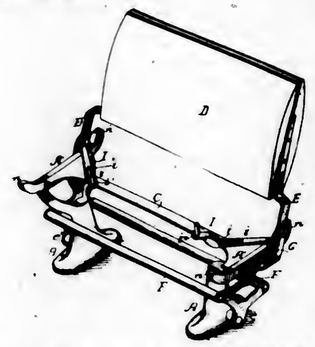
5. In a sewing machine, the combination with the needle bar and presser foot bar, a support attached to the presser foot bar, a barrel mounted to revolve in the said support, means for imparting an oscillating movement to the barrel at the up and down movement of the needle bar, and the cam located on the said barrel, of a feed bar provided with an elongated opening to receive the said cam, whereby to impart a reciprocating movement to the feed bar by the rotation of the barrel, a clamping device for material carried by the feed bar, a spacer for material likewise carried by the feed bar, guides for the feed bar and means for raising and lowering the said spacer.

858,177. TRUCK OR TANK. OWEN K. HARRY, St. Louis, Mo. Filed Apr. 28, 1905. Renewed Dec. 12, 1906. Serial No. 347,514.



Claim.—A tank truck comprising sheet metal side and end walls forming a continuous casing, a sheet metal trough permanently mounted between said side and end walls, a rectangular frame located within the lower ends of said side and end walls, and rollers journaled to said frame, substantially as set forth.

858,178. CAR-SEAT. FRED H. HENRY, Philadelphia, Pa., assignor to John A. Brill, Philadelphia, Pa. Filed Dec. 15, 1906. Serial No. 348,017.



Claim.—1. The combination in a seat having a shifting back, of a frame, a back section pivoted to the frame, a seat section movable on the frame, a horizontally arranged lever pivoted to the frame and connected to the back section and the seat section so that the seat section will be moved when the back section is shifted, substantially as described.

2. The combination in a seat, of a frame, a back section having arms pivoted to the frame and arranged to swing from one extreme position to the other, two horizontally arranged levers pivoted to the frame, a seat section movable on the frame, said levers engaging the back section and the seat section so that when the back section is shifted the seat section will be moved, substantially as described.

3. The combination in a seat, of a frame, a back section having arms pivoted to the lower end of the frame, said back section being arranged to swing on its pivots from one extreme to the other, two horizontal levers mounted on the frame, one lever engaging one arm of the back section and the other lever engaging the other arm of the back section, a seat section arranged to slide on the frame and engaged by the levers so that when the back section is shifted the seat section will move in the reverse direction, substantially as described.

4. The combination in a seat, of a frame, a back section having arms pivoted to the lower end of the frame and arranged to swing from one extreme position to the other, a seat section arranged to slide on the frame, two horizontally arranged levers pivoted to the frame, said levers having long and short arms, the long arms of the levers being connected to the back section and the short arms of the levers being connected to the seat section so that when the back section is shifted the seat section is moved a limited distance, substantially as described.

5. The combination in a seat, of a frame, a back section having arms pivoted to the frame near the floor, a seat section slotted on its under side, and two horizontally arranged levers having pins extending into the slots of the seat section, said levers being connected to the back section, substantially as described.

6. The combination in a seat, of a frame having a pedestal, a back section having arms at each side pivoted to the frame near the floor, two bars forming foot rests, one bar extending on one side of the pedestal and the other bar extending on the other side of the pedestal, both bars being connected to the frames of the back section near the pivot point, one bar contacting with the outer side of the pedestal when the back section is in one position and the other contacting with the outer side of the pedestal when the

back section is in the opposite position, substantially as described.

7. The combination in a car seat, of a frame, a back section having arms pivoted to the frame near the floor line, a seat section arranged to slide on the frame, two horizontally arranged levers pivoted to the frame and connected to the arms of the seat section, slotted plates on the underside of the seat section, pins on the levers entering the slots in said plates, each lever being slotted for the passage of its pivot pin so that when the back section is shifted the levers will turn and slide on their pivots and shift the seat section, substantially as described.

8. The combination in a seat structure, of a frame, a back section pivoted to the frame, said frame having projections at each edge, a seat section having flanges cut away near each end and arranged to rest upon the projections of the frame, horizontally arranged levers connecting the seat section with the back section and pivoted to the frame so that when the back section is moved the seat will be shifted, the flanges of the seat being so proportioned that when they are resting on the projections at one side of the seat structure they are clear of the projections on the opposite side, substantially as described.

9. The combination in a seat structure, of a frame having plates at each end, each plate having projections at each end, a seat section having flanges cut away near each end and so proportioned that when the flanges are resting on the projections at one side of the seat structure the flanges on the opposite side of the seat structure are clear of the projections, a back section arranged to be shifted from one position to the other, means for connecting the back section with the seat section, and means for locking the rear portion of the seat section to the frame, substantially as described.

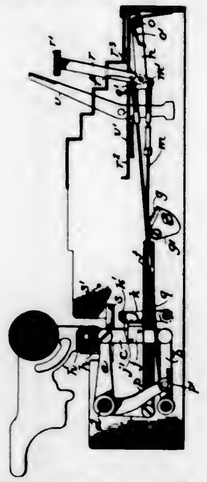
10. The combination in a car seat structure, of a frame having plates at each end and projections at each end of each plate, a seat section having flanges arranged to slide on the plates, the said flanges being cut away at each end and so proportioned that when the seat section is in one position one end of the seat section will be raised by the flanges resting upon the projections on the frame, lipped lugs on each end of each flange, said lugs arranged to engage the frame at the depressed side or the rear of the seat, a movable back section, and means connecting the back section with the seat section, substantially as described.

11. The combination in a car seat, of a frame, a back section having arms pivoted to the frame near the floor line, a seat section arranged to slide on the frame, horizontally arranged levers pivoted to the frame and engaging the said seat section, a box set in each arm of the said back section, and a pivot pin secured to the box and passing through the opening in the end of the horizontal lever, substantially as described.

12. The combination in a car seat structure, of a frame consisting of a pedestal and wall end support, a cross member connecting the wall end support with the pedestal, plates forming part of the pedestal and wall end support, a back section having arms secured thereto, said arms being pivoted one to the base of the pedestal and the other to the lower portion of the wall end support, horizontally arranged levers pivoted to the frame and arranged to slide on their pivots, the long arms of the levers being connected to the arms of the back section, a seat section arranged to slide on the frame with which the short arms of the levers engage, stops on the wall end support to limit the movement of the back section at that end of the seat structure, and stops on the pedestal section to limit the movement of that end of the back section, substantially as described.

13. The combination in a car seat structure, of a frame consisting of a pedestal and wall end support and a cross member connecting the two, a plate and webs connecting the plate to the wall end support, a plate carried by the pedestal, projections on each end of each plate, a seat section arranged to slide on the said plates so that the front end of the seat will be raised higher than the rear end of the seat, a back section having arms, one arm being pivoted to the wall end support and the other arm being pivoted to the pedestal, the arm at the wall end support end of the seat being limited in movement by the webs connecting the plate with the wall end support, two horizontal levers pivoted to the cross member under the seat section, pivot pins on the arms of the back section with which the levers engage, the seat section being slotted, and pins on the levers entering the slots in the seat section, substantially as described.

858,179. WRITING-MACHINE. EDWARD B. HESS, New York, N. Y., assignor to Royal Typewriting Company, Hoboken, N. J., a Corporation of New Jersey. Filed Jan. 30, 1905. Serial No. 243,441.



Claim.—1. The combination with the shifting member of a typewriting machine, of a shift key, and an operative connection between the key and said member comprising two pivotally connected links which, on the action of the shift key, act as a reverse toggle to thereby effect the shifting of said member.

2. The combination with the shifting member of a writing machine, of a flexing connection comprising two pivotally connected links arranged end to end and means for flexing the links as a reverse toggle to effect a shifting of said member.

3. The combination with the shifting member of a typewriting machine, of a latch locking the member in normal position, a rearwardly extending link rocking about a point located at the front of the machine, and two links pivotally connected therewith, one operatively connected with the latch and the other to said shifting member, and means for depressing the front link to thereby withdraw the latch and then shift said member.

4. The combination with the shifting member of a typewriting machine, of a shift key, an operative connection between the key and said member comprising two pivotally connected links which, on the action of the shift key, act as a reverse toggle to thereby effect the shifting of said member, and a spring for counterbalancing the weight of the shifting member.

5. The combination with the shifting member of a writing machine, of a flexing connection comprising two pivotally connected links arranged end to end and means for flexing the links as a reverse toggle to effect a shifting of said member, and a spring for counterbalancing the weight of the shifting member.

6. The combination with the shifting member of a typewriting machine, of a latch locking the member in normal position, a rearwardly extending link rocking about a point located at the front of the machine, and two links pivotally connected therewith, one operatively connected with the latch and the other to said shifting member, and means for depressing the front link to thereby withdraw the latch and then shift said member and a spring for counterbalancing the weight of the shifting member.

7. The combination of the shifting member of a typewriting machine, a latch locking it in normal position, a rearwardly extending link rocking about an axis at the front of the machine, a link extending from the lower side of the first named link to the latch, and a link extending from the upper side of the first named link to the shifting member, the point of connection between the first and second named links and the point of connection between the first and third named links, being respectively above and below a line joining the axis of the first named link and the point of connection between the shifting member and its operating link.

8. The combination of the shifting member of a typewriting machine, of a latch locking it in normal position, a rearwardly extending link turning about an axis in the front of the machine, a link pivotally connected thereto and extending rearwardly to the latch, the two links constituting a toggle, and the pivotal connection between the two being located to one side of the center line of the toggle, a third link pivotally connected to the first named link and extending rearwardly to the shifting member, said first and third named links constituting a toggle and the pivotal connection between the two being located on the opposite side of the center line of the toggle, and means for swinging the first named link about its axis to thereby first operate the latch and then move the shifting member.

9. The combination with the shifting member of a typewriting machine, of a rock shaft mounted at the front of the machine, an arm or link extending rearwardly therefrom at each side of the machine, a shift key operatively connected with each of said arms, and a link pivotally connected with one of said arms and extending rearwardly to the shifting member whereby said member may be shifted by depression of the shift key at either side of the machine.

10. The combination with the shifting member of a typewriting machine, of a rock shaft mounted at the front of the machine, an arm or link extending rearwardly therefrom at each side of the machine, a shift key operatively connected with each of said arms, a link pivotally connected with one of said arms and extending rearwardly to the shifting member whereby said member may be shifted by depression of the shift key at either side of the machine, and a friction latch adapted to engage one of said arms when depressed to thereby hold the shifting member in shifted position, and a spring for automatically withdrawing said latch when strain is exerted upon the rearwardly extending arm to which the latch is applied.

11. The combination with the shifting member of a typewriting machine, of a rock shaft mounted at the front of the machine, an arm or link extending rearwardly therefrom at each side of the machine, a shift key operatively connected with each of said arms, a link pivotally connected with one of said arms and extending rearwardly to the shifting member whereby said member may be shifted by depression of the shift key at either side of the machine, and a friction latch adapted to engage one of said arms when depressed to thereby hold the shifting member in shifted position, and a spring for automatically withdrawing said latch when pressure is exerted upon the shift key connected with the rearwardly extending arm to which the latch is applied.

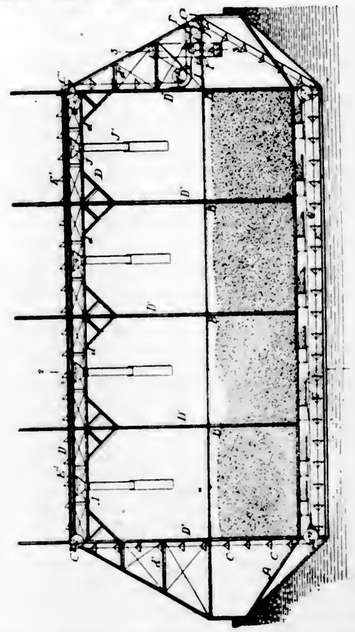
12. The combination with the shifting member of a writing machine of a latch locking it in normal position, a shift key and two links operatively connected with the shift key, and with the latch and shifting member respectively, and having unequal endwise movement, whereby on depression of the key the latch is first disengaged from the shifting member and then said member is shifted.

13. In a front-stroke writing machine, the shifting member thereof adapted to shift vertically, in combination with a shifting draw-bar operatively connected with the shifting member and extending forward to the front of the machine, a part pivoted at the front of the machine and to which the draw-bar is flexibly connected, and means applied over the connection formed by said part and draw-bar to rock said part about its pivot and draw the draw-bar toward the front of the machine.

14. In a front stroke writing machine, the combination of the shifting member thereof adapted to shift vertically, a shift key, a locking device for locking the shiftable member in normal position and an operative connection between the key and the shifting member and locking device, comprising three links two of which are movable endwise longitudinally of the machine whereby, on actuation of the key, the shiftable member is first unlocked and then shifted.

15. A writing machine comprising a shifting member, a latch for locking it in normal position, two forwardly extending links one connected to the latch and the other connected to the shifting member and a swinging part at the front of the machine with which the front ends of such links are so connected that on actuation of such part the latch is first operated to release the shifting member by the endwise movement of one link and then said member shifted by the endwise movement of the other link.

858,180. LOADING-BARGE FOR VESSELS. FREDERIC V. HETZEL, Philadelphia, Pa., assignor to Link-Belt Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 5, 1907. Serial No. 360,688.



Claim.—1. The combination of a barge, an upper and a lower run, an endless conveyer arranged to travel on the said runs, a crusher, midway between the upper and lower runs for crushing the coal to size, said conveyer being deflected so as to discharge the coal into the crusher as it is conveyed from the lower to the upper run, and means for discharging the crushed coal onto the conveyer at a point beyond the crusher so that it can be carried to the upper run, substantially as described.

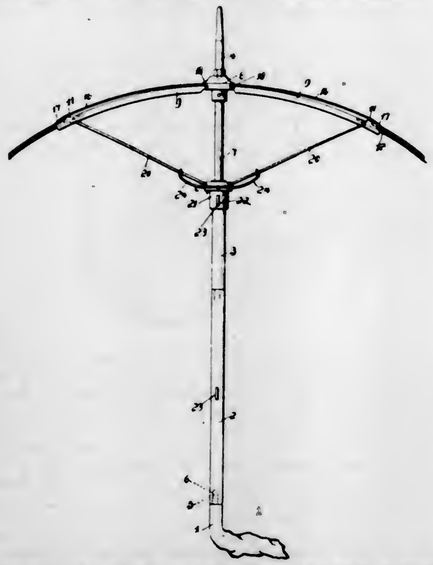
2. The combination of a barge, a bin in the barge, an elevated structure mounted on the barge, a trough below the bin, and a trough carried by the elevated structure, an endless conveyer having buckets and arranged to travel on the upper and lower runs, means for deflecting the elevat-

ing section of the conveyer between the upper and the lower runs, a crusher mounted under the deflected portion of the said conveyer and receiving coal from the said conveyer, and a secondary conveyer for delivering the crused coal to the main conveyer at a point beyond the crusher, substantially as described.

3. The combination of a barge, a bin in the barge, a conveyer trough in the bin, a structure mounted upon the barge, a conveyer trough carried by the said structure, a chute leading from the said structure, an endless conveyer arranged to travel on the upper and the lower troughs, means for discharging coal from the bin to the lower trough in front of the buckets of the conveyer, a trough situated between the upper and lower runs at one end of the barge, means for deflecting the conveyer at this point so that the buckets will carry the coal from the lower trough and discharge it onto the mid trough, an opening at the end of said trough, a crusher directly below the opening through which the coal must pass so that it will be crushed to size, a transversely arranged conveyer for lifting the crushed coal to a point above the deflected portion of the main conveyer, and a chute delivering the crushed coal to the main conveyer at a point beyond the crusher, substantially as described.

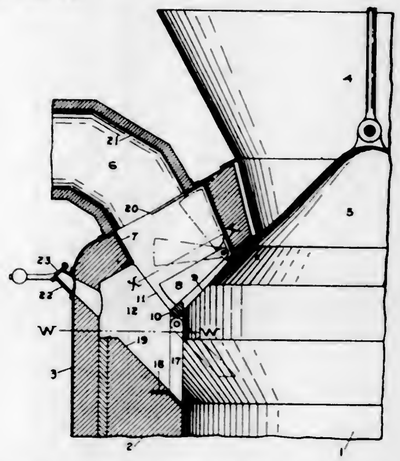
4. The combination of a barge, a bin in the barge, a conveyer trough under the bin, a structure mounted on the barge, a conveyer trough on said structure, an endless conveyer arranged to travel on the upper and lower troughs, means for deflecting the elevating portion of the conveyer, two troughs directly under this deflected portion of the conveyer, a crusher mounted under the troughs so that the material carried from the lower trough will be discharged onto the first of the two troughs, and pushed by the conveyer over the end and into the crusher, a transversely arranged endless conveyer having buckets, a boot for said conveyer into which the crushed coal falls, a platform above the said troughs, and having an opening and a chute leading from the opening to a point above the second of the two troughs so that the coal will be crushed and redelivered to the main conveyer before its discharge into the vessel, substantially as described.

858,181. FOLDING UMBRELLA. GEORGE HEUER, Greensburg, Pa. Filed Jan. 23, 1907. Serial No. 353,740.



Claim.—The combination with a jointed stick, a notch carried thereby, and a runner slidable on the stick, of ribs, each embodying a tubular inner section pivoted at its inner end to the notch and slotted throughout its length, the said inner rib-section having a seat near its outer end, an outer rib-section telescoping the inner rib-section, a stretcher pivoted to the outer rib-section and to the runner having its outer end seated when extended in the seat in said inner rib-section, a lug carried by the outer end of said inner rib-section to limit the outward movement of the outer rib-section, and a spring carried by the runner and bearing directly upon the stretcher to hold the outer end thereof in the seat provided therefor in the inner rib-section.

858,182. BLAST-FURNACE, TRAP FOR FURNACE-TOP CONSTRUCTION. SAMUEL E. HITT and GEORGE M. BLACK, Cleveland, Ohio. Filed Mar. 18, 1907. Serial No. 363,069.



Claim.—1. In a blast furnace, a gas flue and port opening to the said gas flue, and a movable grating in the said port opening.

2. In a blast furnace, a gas flue and port opening, and movable arms in the said port opening.

3. In a blast furnace, a gas flue and port opening and a grating within the port movable toward the flue.

4. In a blast furnace, a gas flue and port opening and pivoted arms within the port movable toward the flue.

5. In a blast furnace, a gas flue and port opening, pivoted arms or grating within the port movable toward the flue, a collecting chamber under the port and pivoted door, grating or arms in said chamber movable toward the furnace shaft.

6. In a blast furnace, a gas flue and port box, pivoted arms or grating within the box movable toward the flue, a collecting chamber under the box and pivoted door, grating or arms in said chamber movable toward the furnace shaft.

7. In a blast furnace, a gas flue, port box, pivoted grating or arms within the box, movable toward the flue, a collecting chamber under the box, an opening in the box leading to the said chamber and pivoted door, grating or arms in the said chamber movable toward the furnace shaft.

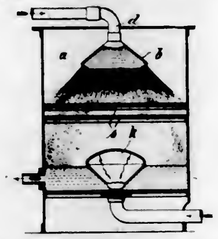
8. In a blast furnace, a gas flue, port box, port openings in the said box to the gas flue and furnace shaft, pivoted grating or arms within the box movable toward the flue, a collecting chamber under the box, an opening in the box leading to the said chamber and pivoted door, grating or arms in the chamber movable toward the furnace shaft.

9. In a blast furnace, a gas flue, port box secured to and supported by the furnace shell, port openings in the said box to the gas flue and furnace shaft, pivoted grating or arms within the box movable toward the flue, a collecting chamber under the box, an opening in the box leading to the said chamber, masonry side walls of the said chamber built upon the furnace side wall, and a pivoted door closing the chamber to the furnace shaft and movable toward the shaft.

10. In a blast furnace, a gas flue, port box secured to and supported by the furnace shell, port openings in the said box to the gas flue and furnace shaft, pivoted grating or arms within the box movable toward the flue, a collecting chamber under the box, an opening in the box leading to the said chamber, masonry side walls of the said chamber built upon the furnace side wall, and pivoted grating or arms between the said chamber and furnace shaft movable toward the said shaft substantially as specified.

11. In a blast furnace, a gas flue 6, port box 7, secured to and supported by the furnace shell 3, port openings 9 and 20 in said box, pivoted grating or arms 8, movable toward the flue, chamber 12 under the box, opening 11 in the box, masonry side walls 14, pivoted door 17 movable toward the shaft 1, poke hole 22 in the shell 3 and wall 2 and coverlid 23 substantially as specified.

858,183. APPARATUS FOR WATER PURIFICATION. AUGUST HOLLE, Düsseldorf, Germany. Filed Oct. 20, 1906. Serial No. 339,737.



Claim.—1. An apparatus of the kind referred to comprising the combination of a tank, a hollow body provided with densely disposed, fine perforations, a fluid supply pipe opening into the said perforated body, a screen placed in face of the perforations of the said body in such way that the fluid forced in through the said supply-pipe is thrown against it at an approximate right angle, and admission orifices adapted to conduct any air blown therethrough against the said screen, substantially as described.

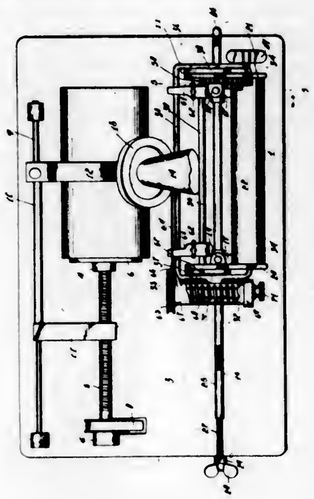
2. In an apparatus of the kind referred to a rose-head provided with densely disposed, fine perforations secured to and vertically suspended from the end of a fluid supply pipe, and a horizontal screen beneath the said rose-head and facing the perforations therein, substantially as described.

3. In an apparatus of the kind referred to the combination of a rose-head provided with densely disposed, fine perforations secured to and vertically suspended from the end of a fluid supply pipe, a horizontal screen beneath the said rose-head and facing the perforations therein, and another rose-head, in the bottom of the apparatus, secured to the end of a gas supply pipe, the said second rose head facing the said screen, substantially as described.

4. In a device of the character described, a screen, combined with a liquid sprayer, and an opposed gas discharge nozzle arranged at opposite sides of the screen, substantially as specified.

858,184. PHONOGRAPH ATTACHMENT. CHRISTIAN L. HOLM, Spokane, Wash. Filed Sept. 20, 1906. Serial No. 335,387.

Claim.—1. In a mechanism for repeating phonograph records, the combination of a reproducer, a vertically-movable support to raise and lower the reproducer and serve as a guide for the same when elevated, a motor, a pair of revoluble devices operated thereby and each having a lifter and projections, said lifters coacting with said support to raise and lower the latter, and a longitudinally-movable trip device operated directly by the reproducer to alternately engage projections of the respective revoluble devices and control the revolution thereof.

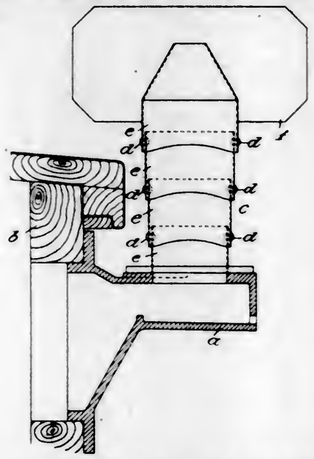


2. In a mechanism for repeating phonograph records, a supporting frame, a spring actuated shaft therein, a second shaft in said frame geared to said spring-actuated shaft, plates upon the ends of said second shaft having projections and cams, a substantially U-shaped swinging frame pivoted upon the first-mentioned frame and having end portions to engage said cams, and a connecting portion to raise and lower a reproducer and serve as a guide for the latter when elevated, a shiftable trip rod slidably mounted in said frame and having detents at its ends to be moved into and out of the paths of the projections on said plates, adjustable stop arms upon said trip rod adapted to be engaged by the reproducer, and means for returning the reproducer when elevated by said support.

3. In a mechanism for repeating phonograph records, a supporting frame, a spring-actuated shaft therein, a second shaft in said frame geared to said spring-actuated shaft, plates upon the ends of said second shaft having projections and cams, a substantially U-shaped swinging frame pivoted upon the first-mentioned frame and having end portions to engage said cams, and a connecting portion to raise and lower a reproducer and serve as a guide for the latter when elevated, a shiftable trip rod slidably mounted in said frame and having detents at its ends to be moved into and out of the paths of the projections on said plates, adjustable stop arms upon said trip rod adapted to be engaged by the reproducer, and spring-actuated means upon said support for returning the reproducer when the latter is elevated by said support.

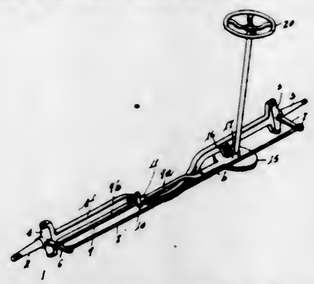
4. In a mechanism for repeating phonograph records, a supporting frame, a spring-actuated shaft therein, a second shaft in said frame geared to said spring-actuated shaft, plates upon the ends of said second shaft having projections and cams, a substantially U-shaped swinging frame pivoted upon the first-mentioned frame and having end portions to engage said cams, and a connecting portion to raise and lower a reproducer and serve as a guide for the latter when elevated, a shiftable trip rod slidably mounted in said frame and having detents at its ends to be moved into and out of the paths of the projections on said plates, adjustable stop arms upon said trip rod adapted to be engaged by the reproducer, means for returning the reproducer when elevated by said shaft, and means for adjustably mounting said frame upon a phonograph.

858,185. VENTILATOR. AUGUST HOLTZHEUER, Cassel, Germany. Filed Oct. 9, 1906. Serial No. 338,132.



Claim.—In combination with a car, a box shaped overhanging structure thereon, a tubular portion connected to and communicating with the said structure, a second tubular portion having its lower end pivoted to the upper end of the first portion at two diametrically opposite points, a third portion pivoted to the second portion in a similar manner and a vane carried by the top portion.

858,186. STEERING-GEAR. EMIL HUBER, Detroit, Mich. Filed Sept. 11, 1905. Serial No. 277,839.



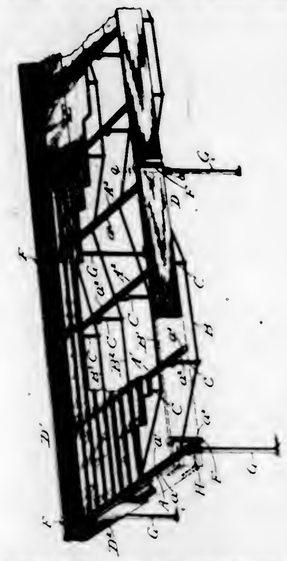
Claim.—1. In connection with the cross bar of a vehicle, provided with pivoted wheel axles at the ends thereof, the casing pivotally connected thereto, a scroll cam in said casing, a reach rod and rollers thereon engaging said scroll cam, said reach rod being pivotally connected to the crank arm on the wheel axle, substantially as described.

2. In connection with a cross bar of a vehicle provided with pivoted wheel axles at the ends thereof, a casing pivotally connected to said cross bar, a scroll cam in said casing, a reach rod engaging said scroll cam, and a crank arm on the wheel axle, substantially as and for the purpose described.

858,187. GREENHOUSE-BENCH. ROBERT O. KING, North Tonawanda, N. Y. Filed Dec. 1, 1906. Serial No. 345,924.

Claim.—1. In a green-house bench, the combination of end cross bars, tension rods connected with and extended between said end bars, an intermediate supporting cross bar arranged above and sustained wholly by the tension rods, and a bottom mounted on and sustained by said cross bars.

2. In a green-house bench, the combination of end cross bars, tension rods extended between and connected with said cross bars, an intermediate cross bar arranged above and sustained wholly by the tension rods, and a sectional bottom mounted on and sustained by said cross bars.



3. In a green-house bench, the combination of end cross bars, tension rods extended between and connected with said cross bars, an intermediate cross bar, struts interposed between said intermediate bar and rods for supporting the latter wholly by the former, and a bottom mounted on and sustained by said cross bars.

4. In a green-house bench, the combination of end cross bars, tension rods extended between and connected with said cross bars, a plurality of intermediate cross bars arranged above and sustained wholly by the tension rods, and a bottom mounted on and sustained by the cross bars and adapted to receive an edgewise compression when the rods are tensioned under the weight of a load on the bottom.

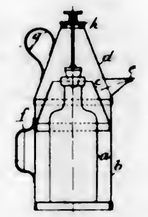
5. In a green-house bench, the combination of end cross bars provided with horizontal supporting ledges, tension rods extended between and connected with said cross bars, an intermediate cross bar arranged above and sustained wholly by the tension rods and having horizontal supporting ledges and bottom sections arranged between the cross bars and seated on the supporting ledges.

6. In a green-house bench, the combination of a frame embodying end cross bars, tension rods extended between and connected with said end bars, an intermediate cross bar arranged above and sustained wholly by the tension rods and adapted, together with the end bars, to support a bottom, and side boards mounted on and connected with the end cross bars and serving to prevent twisting of the frame.

7. In a green-house bench, the combination of end cross bars, tension rods extended between and connected with said cross bars, an intermediate cross bar arranged above and sustained wholly by the tension rods, said cross bars having horizontal supporting ledges and vertical webs, and bottom sections arranged between the cross bars with their ends resting on the ledges and abutting against the vertical webs.

858,188. HAND FIRE-EXTINGUISHING APPARATUS. ALEXANDRE G. LAURENT, St. Petersburg, Russia. Filed Sept. 22, 1906. Serial No. 335,718.

Claim.—1. A fire-extinguishing apparatus, comprising a receptacle containing separated gas-producing fire-extinguishing substances and a foam-producing substance which causes the substances to produce a gas-filled foam simultaneously with the evolution of gases.



2. A fire-extinguishing apparatus, comprising a receptacle containing separated gas-producing fire-extinguishing substances and a foam-producing substance and having a mixing chamber in which the substances, when mingled, produce a gas-filled foam simultaneously with the evolution of gases.

3. A fire-extinguishing apparatus, comprising a receptacle containing separated gas-producing fire-extinguishing substances and a foam-producing substance mixed with one of said fire-extinguishing substances to cause a gas-filled foam to be produced simultaneously with the evolution of gases.

4. A fire-extinguishing apparatus, comprising a receptacle containing separated gas-producing fire-extinguishing substances and a foam-producing substance mixed with said fire-extinguishing substances to cause a gas-filled foam to be produced simultaneously with the evolution of gases.

5. A fire-extinguishing apparatus, comprising a receptacle having a nozzle and a mixing chamber, and containing separated gas-producing fire-extinguishing substances and a foam-producing substance mixed with one of the fire-extinguishing substances to cause a gas-filled foam to be produced simultaneously with the evolution of gases.

6. A fire-extinguishing apparatus, comprising a receptacle containing separated gas-producing fire-extinguishing substances and an extract of licorice root (*succus liquiritiæ*) which is mixed with one of said substances to produce a gas-filled foam simultaneously with the evolution of gases.

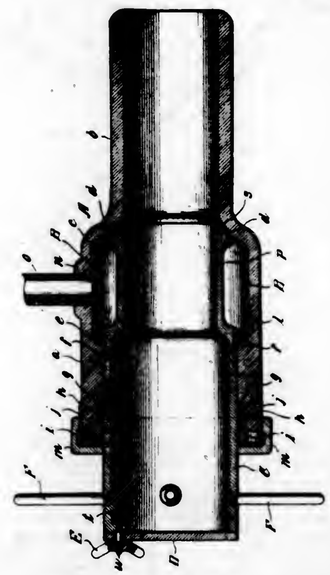
7. A fire-extinguishing apparatus, comprising a receptacle containing a mixing chamber with a nozzle and compartments having narrow discharge openings into the mixing chamber and holding gas-producing fire-extinguishing substances and a foam-producing substance causing the substances to produce a gas-filled foam simultaneously with the evolution of gases.

858,189. BURNER FOR NATURAL GAS. HENRY M. LEPS, Grafton, W. Va. Filed Nov. 24, 1906. Serial No. 344,942.

Claim.—1. A gas burner comprising a cylindrical shell having an interior annular recess and a reduced cylindrical section, the latter forming a mixing chamber, a cylindrical air tube having its discharge end contracted in diameter to the diameter of the bore of the reduced section of the shell and having an exterior recess combining with the interior recess of said shell to form an annular gas chamber, and means for adjusting said air tube to regulate the escape of the gas from the gas chamber.

2. A gas burner comprising a cylindrical shell having an interior annular recess and a reduced cylindrical section, the latter forming a mixing chamber, a cylindrical air tube adjustably arranged in said shell and formed with an exterior annular recess which combines with the recess in the shell to form a gas chamber, an oblique annular escape opening for said gas chamber to deflect the gas at an angle to and across the incoming air, means for adjusting the air tube to regulate the size of said opening, and means for controlling the quantity of air admitted to the air tube.

3. A gas burner comprising a cylindrical shell having an interior annular recess and a reduced cylindrical section, the latter forming a mixing chamber, a cylindrical air tube having an exterior annular recess adapted to co-act with the recess in the shell to form a gas chamber, the bore of said tube being reduced for a portion of its length at one end, an oblique annular escape opening for said gas chamber to deflect the gas across the end of the air tube, means for adjusting the air tube to regulate the escape of gas from the chamber, an inlet pipe for said chamber, and adjustable means for forming a gas tight joint between the shell and the air tube.

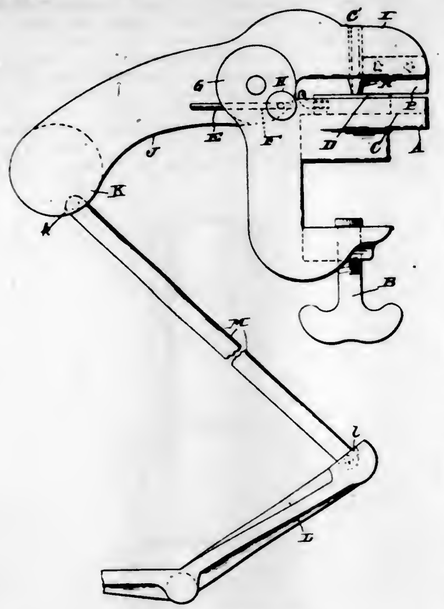


858,190. BUTTONHOLE-CUTTING MACHINE. SAMUEL LEWIS, Rochester, N. Y. Filed July 2, 1906. Serial No. 324,520.

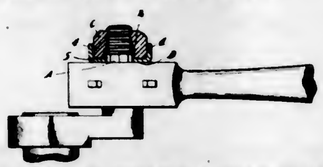
Claim.—1. In a buttonhole cutting machine, a base jaw having upwardly projecting ears, one of said ears having a hole therethrough, a block adjustably mounted on said base jaw, a rod secured to said block and slidably mounted in the hole aforesaid, a jaw pivotally mounted between said ears having a weighted arm integral therewith, a treadle suitably secured, and a rod connecting said arm and treadle, substantially as shown and described.

2. In a buttonhole cutting machine, a base jaw having upwardly projecting ears, one of said ears having a hole therethrough, a block slidably mounted on said base jaw, a rod secured to said block and slidable in the hole in said ear, a set screw to engage said rod, a jaw pivotally mounted between said ears, an arm extending from said pivoted jaw having a weighted end with a socket therein, a treadle having a socket and suitably secured, a rod having its ends resting in said sockets, and a tubular punch and blade secured in said pivoted jaw and positioned above said block, substantially as shown and described.

858,190.



858,191. NUT-LOCK. ALBERT J. LOGAN, Clearfield, Pa. Filed June 15, 1906. Serial No. 321,919.



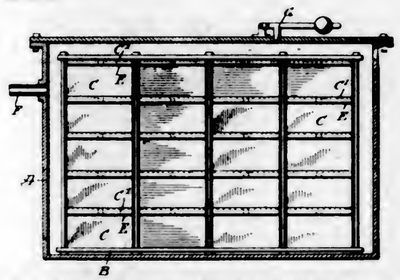
Claim.—A nut lock comprising a rounded or cylindrical bolt having a head at one end and a thread at the other and provided with an angular formation of limited extent at the end of the bolt immediately adjacent to the thread, a locking plate having an orifice of corresponding shape adapted to fit this angular formation whereby it is prevented from turning thereon, and a nut adapted to screw on the threads and portions of the lock adapted to be bent against the side or sides of the nut, the threaded bore of the nut enlarged at the inner end to afford clearance for the angular formation on the bolt.

858,192. MANUFACTURE OF BLOCKS. IGNATIUS LUCAS, Passaic, N. J. Filed Aug. 31, 1906. Serial No. 332,742.

Claim.—1. The herein described method for manufacturing blocks of plastic material consisting in pressing the material in a mold covering the material with a flexible covering and permitting it to set and harden in the mold and applying pressure to the flexible covering during the setting and hardening of the material.

2. The herein described method for curing blocks of plastic material pressed in a mold, consisting in covering the material with a flexible covering permitting the material to set and harden in the mold, and subjecting the covering to pressure during the setting and hardening.

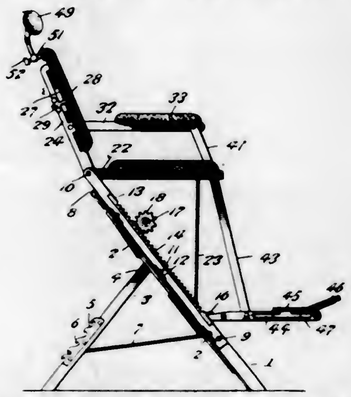
3. In the manufacture of blocks of plastic material, a mold for containing the material in the pressed state, and having a flexible pressure medium for contact with that part of the material not supported by the mold, and a source of pressure supply for exerting pressure on the said medium whereby the latter will press the said material and keep it under pressure during the setting and hardening thereof.



4. In the manufacture of blocks of plastic material, a chamber conected with a fluid pressure supply, a plurality of molds contained within the said chamber and each filled with a plastic material pressed into shape, and a flexible pressure medium in engagement at one side with the said material and subjected at the other side to the fluid pressure in the said chamber.

5. In the manufacture of blocks of plastic material, a mold containing the plastic material pressed into shape by a previous operation, an apertured and grooved cover for the said mold, a diaphragm interposed between the cover and the plastic material, and means for supplying fluid pressure to the said diaphragm by way of the aperture in the said cover.

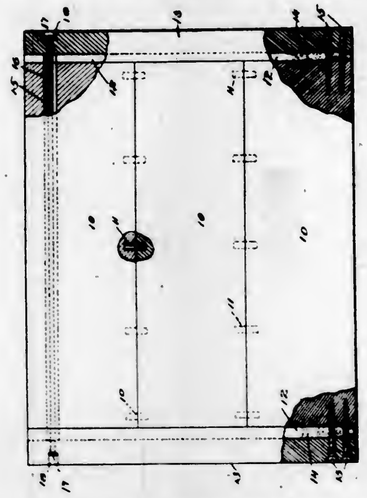
858,193. DENTAL CHAIR. LOGAN L. MALLARD, Atlanta, Ga. Filed Jan. 23, 1906. Serial No. 297,484.



Claim.—1. A dental chair comprising main legs, slide bars movably mounted in the legs, means for adjusting the slide bars relative to the legs, a seat pivotally connected to the slide bar, a foot rest connected to and supported solely by the seat, and a projection formed on each slide bar beneath which the rear end of the foot rest is adapted to be removably engaged, whereby to prevent a forward tilting of said foot rest when in operative position.

2. A dental chair comprising main legs, slide bars movably mounted in the legs, means for adjusting the slide bars relative to the legs, a seat pivotally connected to the slide bar, a foot rest connected to and supported solely by the seat, and a projection formed on each slide bar beneath which the rear end of the foot rest is adapted to be removably engaged, whereby to prevent a forward tilting of said foot rest when in operative position, a portion of said foot rest being slidably mounted relative to the remaining portion to provide for adjustment of the foot rest to and from the slide bars.

858,194. DRAWING-BOARD. GEORGE S. MANUEL, Turlock, Cal. Filed Sept. 24, 1906. Serial No. 336,034.

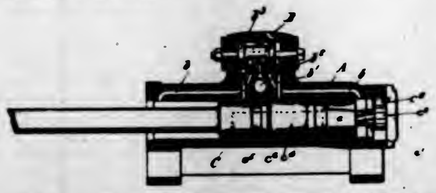


Claim.—1. In a drawing board, a plane body provided with an elongated opening extending longitudinally through one edge, cleats disposed transversely across the ends of the body and secured thereto at the edge opposite the elongated opening, and a bar extending through the elongated opening and connecting the cleats.

2. A drawing board, comprising a plurality of plane strips rigidly connected together at their adjacent edges and with one of said strips provided with an elongated opening extending longitudinally therethrough adjacent one edge, cleats extending transversely of the body, and rigidly connected with the strip opposite the strip provided with an elongated opening, and a bar extending through the elongated opening and connecting the cleats.

3. A drawing board comprising a body composed of a plurality of plane strips rigidly connected together at their adjacent edges, and one of said strips provided with an elongated opening extending longitudinally therethrough adjacent one edge, cleats extending along the end of the associated strips and associated therewith by tongue and groove connection, means rigidly securing the cleats to the strip opposite the strip provided with the elongated opening, and a bar extending through the elongated opening and connecting the ends of the cleats.

858,195. ROCK-DRILL. JOHN B. MARSHALL, Broken Hill, New South Wales, Australia. Filed Dec. 13, 1905. Serial No. 291,549.

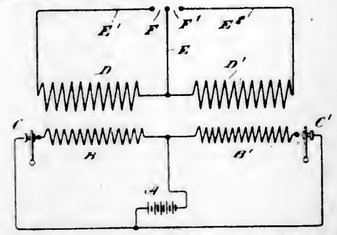


Claim.—1. In a rock drill having a valve, a piston having an annular recess for controlling the operation of the valve, said recess comprising spaced annular grooves and a tapered portion connecting the grooves, whereby to operate said valve with a gradually increasing velocity on the outward stroke of the piston.

2. In a rock drill of the type specified, a piston having an annular recess varying in depth, being of greater depth toward the back end of the piston and tapering off toward the front end but with a deeper groove in advance of the shallower part and forming the immediate front end of the recess substantially as described and illustrated and for the purpose set forth.

3. In a rock drill of the type specified, a piston having an annular recess in two portions one portion at the forward end of the recess comprising a small groove of suitable depth and width, and the other portion extending from the edge of such groove to the rear end of the recess and gradually increasing in depth from the edge of such groove to the rear end substantially as described and illustrated and for the purpose set forth.

858,196. APPARATUS FOR PRODUCING ELECTRIC SPARKS. WILLIAM MARSHALL, New York, N. Y., assignor of one-fourth to John A. Bullinger, New York, N. Y. Original application filed May 2, 1906, Serial No. 314,765. Divided and this application filed Oct. 29, 1906. Serial No. 340,066.



Claim.—1. An electric oscillator comprising a source of electricity, two primary coils connected therewith in parallel, an interrupter in the circuit of each coil, a secondary coil in inductive relation to each primary, a conductor connected with like terminals of both secondaries, and two additional conductors each connected with one of the remaining terminals, said conductors having portions arranged adjacent to each other to produce spark gaps.

2. An electric oscillator comprising a source of electricity, two primary coils connected therewith in parallel, an interrupter in the circuit of each coil, a secondary coil in inductive relation to each primary, a conductor connected with one terminal of each secondary, and two additional conductors each connected with one of the remaining terminals, said conductors having portions arranged adjacent to each other to produce spark gaps.

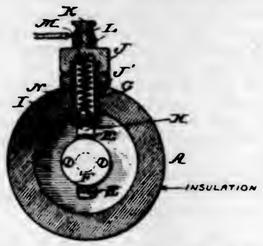
3. An electric oscillator comprising two primary coils, means for interrupting the current, two secondary coils in inductive relation to said primary coils, a conductor connected with like terminals of both secondaries, and two additional conductors connected with the remaining terminals, said conductors having portions arranged adjacent to each other to produce spark gaps.

4. An electric oscillator comprising two primary coils, means for interrupting the current, two secondary coils in inductive relation to said primary coils, a conductor connected with one terminal of each secondary, and two additional conductors each connected with one of the remaining terminals, said conductors having portion arranged adjacent to each other to produce spark gaps.

858,197. CIRCUIT-CONTROLLER. EDWARD S. MASSIE and JOHN H. HAWKINS, Quincy, Ill. Filed Apr. 11, 1906. Serial No. 311,101.

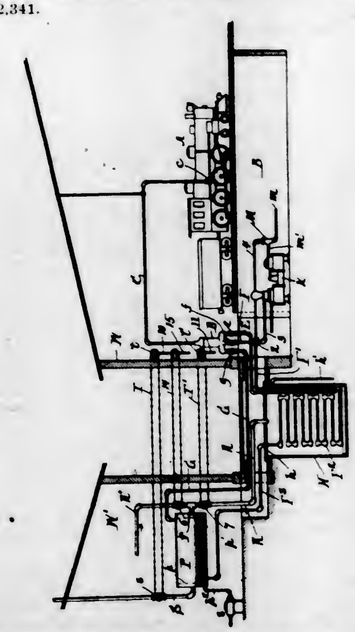
Claim.—In a circuit controller and in combination, a casing, a rotatable shaft extending into the casing, a rigid

circuit contact device in the casing, said contact device being arranged on the rotatable shaft adapted to be rotated thereby, a tube arranged extending into the casing, having inner and outer projecting ends, the tube being provided with screw-thread adjustment, an inner flange or seat on the inner end of said tube, a conductive ball



device arranged in the tube to be seated on said flange and project beyond the tube, adapted to be engaged by the rigid rotatable contact device, adjusting nuts on the outer end of the tube, a spring holding the ball device yieldingly seated, and a binding post on the outer end of the adjustable tube.

858,198. APPARATUS FOR BLOWING OFF, WASHING, AND RECHARGING BOILERS. WILLIAM L. MILLER, Chicago, Ill., assignor of one-half to Frederick A. Gale, Chicago, Ill. Filed Apr. 9, 1904. Serial No. 202,341.



Claim.—1. An apparatus of the character described comprising a water-heater, a reservoir having a closed top and adapted to receive blow-off water from the boiler, a pipe arranged to conduct water from the boiler to said reservoir, a steam pipe leading from the upper part of said reservoir to the water-heater and a pipe for conducting the hot water from the water heater to the boiler.

2. An apparatus of the character described comprising a reservoir having a closed top, a water-heater, a steam-pipe leading from the top of said reservoir to said water-heater, a heating-coil within said reservoir having a pipe for admitting fresh water thereto, a pipe connecting said coil with the water-heater, a pipe arranged to receive blow-off water from the boiler, and a pipe for delivering hot water from the water-heater to the boiler.

3. An apparatus of the character described comprising a water-heater, a reservoir to receive blow-off water from the boiler, a heating coil for fresh water located within said reservoir, a pipe for admitting fresh water to said coil, a pipe connecting said coil to the water heater, a steam pipe leading from the top of said reservoir to the water heater and a pipe whereby hot water may be delivered from the water heater to the boiler to be washed.

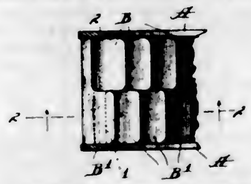
4. An apparatus of the character described comprising a water-heater, a pipe for delivering hot water from said heater, a mixing chamber provided with a revoluble blade, a pipe for delivering cold water to said mixing chamber and a pipe arranged to deliver water from said mixing chamber to the boiler to be washed.

5. An apparatus of the character described comprising a water-heater, a reservoir to receive blow-off water from the boiler, a pipe whereby blow-off water may be admitted to said reservoir, a steam pipe leading from the upper part of said reservoir to the water heater, an exhaust pipe leading from the water-heater, a steam pipe whereby live steam may be admitted to said water-heater and a pipe leading from said water-heater and through which water may be conducted to the boiler, said several pipes being provided with suitable cocks.

6. An apparatus of the character described comprising a water-heater, a reservoir to receive blow-off water from a boiler, a mixing chamber, a pipe leading from said mixing chamber and having its free end arranged to connect with the blow-off cock of a locomotive boiler, a heating coil within said reservoir, a pipe connecting said heating coil with the water-heater, a pipe connecting the upper end of the reservoir with the water-heater, a pipe for admitting fresh water to said heating coil, a pipe for delivering cold water to the mixing chamber, a hot water pipe leading from the water-heater to the mixing chamber and a pipe leading from the mixing chamber to said reservoir, the several pipes connected to said mixing chamber being provided with cocks.

7. An apparatus of the character described comprising a water-heater, a mixing chamber, a pipe for delivering hot water from said heater to said mixing chamber, a pipe for delivering cold water to said mixing chamber, means for maintaining a substantially uniform pressure in the cold and hot water pipes leading to the mixing chamber, and a pipe arranged to deliver water from said mixing chamber to the boiler to be washed.

858,199. STAIRWAY. FELIX B. MODJESKI, Chicago, Ill. Filed Nov. 10, 1906. Serial No. 342,801.



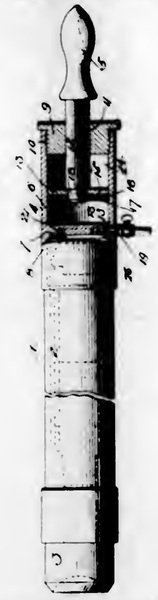
Claim.—1. A stairway comprising stairs the front edges of which extend beyond the rear edges of the stairs below them, respectively, the front edges of adjacent stairs being cut away at opposite sides to expose the corresponding portions of the treads of the stairs next below them.

3. A stairway comprising stairs the front edges of which extend beyond the rear edges of the stairs below them, respectively, the front edges of adjacent stairs being cut away at opposite sides of the center line of said stairway to expose the corresponding portions of the treads of the stairs next below them.

3. A stairway comprising stairs the front edges of which extend beyond the rear edges of the stairs below them, respectively, the front edges of adjacent stairs being cut away at opposite sides substantially to the line of the rear edges of the stairs next below them to expose the corresponding portions of the treads of said next lower stairs.

4. A stairway comprising stairs the front edges of which extend beyond the rear edges of the stairs below them, respectively, the front edges of adjacent stairs being cut away at opposite sides of the center line of said stairway substantially to the line of the rear edges of the stairs next below them to expose corresponding portions of the treads of said next lower stairs.

858,200. PNEUMATIC HAMMER. JOHN C. MCCAVENY, Superior, Wis. Filed Feb. 5, 1906. Serial No. 299,606.



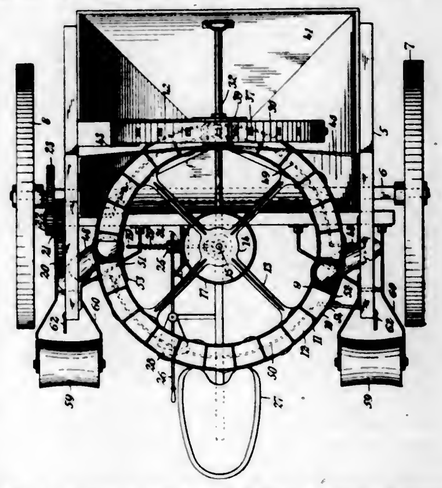
Claim.—1. The hereindescribed holding attachment for pneumatic hammers comprising a cylindrical body for attachment to one end of the hammer barrel and having a partition provided with an air passage and ports leading therefrom to the interior of the hammer barrel and to the interior of said body, a piston in said body, a cap at the outer end of said body and a rod extending from said piston through an opening in said cap, for the purpose set forth.

2. In combination with a pneumatic hammer, a cylindrical body attached to one end thereof and having a partition provided with an air passage and ports leading therefrom to the interior of the hammer barrel and to the interior of said body; and a rod extending from said piston through an opening in said cap, substantially as described.

858,201. PLANTING-MACHINE. BRADLEY C. MCCOY, Pontiac, Mich. Filed Oct. 11, 1906. Serial No. 338,438.

Claim.—1. A planting machine comprising a wheel-mounted body, a hopper carried by the body, a feeding device extended into the hopper, means for rotating said feeding device, a rotary carrier for receiving seed from the feeding device, and means for directing the seed from the carrier to the ground.

2. A planting machine comprising a wheel-mounted body, a hopper supported on the body, a feeding device mounted to rotate in the hopper, scoops carried by the feeding device, ejecting devices arranged in the scoops, means for operating the ejecting devices, and a rotary carrier for receiving material from the feeding device.



3. A planting machine comprising a wheel-mounted body, a hopper connected to the body, a feeding device comprising a wheel arranged to rotate in the hopper, scoops carried by the wheel, a carrier mounted to rotate at right-angles to the feeding device and having a plurality of pockets and swinging bottom plates for said pockets.

4. A planting machine comprising a wheel-mounted body, a hopper arranged in the body, a feeding device comprising a wheel mounted to rotate in the body, gear connections between said feeding device and one of the supporting wheels of the machine, a carrier mounted to rotate at right-angles to the feeding device, and having driving connection with said supporting wheel, the said carrier having a plurality of pockets, swinging bottom plates for said pockets, tubes at opposite sides of the machine, for receiving material from the pockets, and means for releasing the swinging bottom plates of the pockets alternately at opposite sides of the machine.

5. A planting machine comprising a wheel-mounted body, a hopper attached to the body, a wheel mounted to rotate in the hopper, scoops carried by the wheel, the rim of said wheel having openings, ejecting plates mounted to swing in the scoops and having projections passing through said openings, a device for engaging with said projections to rock the plates, and a carrier provided with pockets for receiving material discharged from the scoops.

6. A planting machine comprising a wheel-supported body, a hopper arranged in the body and having its several walls downwardly convergent, a feed-wheel mounted to rotate in the hopper, means for rotating said feed-wheel, a carrier arranged to rotate in a horizontal plane and having a plurality of pockets, swinging bottom plates for the pockets, segmental tracks for normally holding said bottom plates in closed position, the adjacent ends of said segmental tracks being spaced apart, tubes mounted in the machine and having their upper ends within said spaces, and means for releasing said bottom plates to discharge material alternately into the opposite tubes.

7. A planting machine comprising a wheel-mounted body, a hopper arranged in said body, a carrier mounted to rotate in a substantially horizontal plane, the said carrier having a plurality of pockets, a rotary part at right angles to the carrier for discharging material from the hopper into said pockets, tubes extended downward and adapted to receive material from the pockets of the carrier, and plow points arranged forward of the lower ends of said tubes.

8. A planting machine comprising a wheel-mounted

body, a hopper arranged in the body, a carrier on the body, means for rotating the said carrier in a substantially horizontal plane, a rotary part at right angles to the carrier for discharging seed from the hopper into said carrier, downwardly extended tubes at opposite sides of the machine, for receiving seed from the carrier, plow points forward of the lower ends of said tubes, plates reaward of the lower ends of said tubes and rollers rearward of said plates.

9. A planting machine comprising a wheel-mounted body, a hopper arranged in the body, a carrier mounted to rotate in a horizontal plane on the body, a scoop carrying wheel for discharging seed from the hopper into said carrier, tubes extended downward from the machine at opposite sides and adapted to receive seed from the carrier, each tube consisting of telescopic sections, furrow cutting devices forward of the lower end of said tubes, and covering devices rearward of said tubes.

10. A planter comprising a frame, supporting wheels for said frame, a hopper arranged in the frame, the said hopper having four walls downwardly convergent, guide boards in the lower portion of the hopper, a feed wheel movable in the hopper, and between said guide boards, scoops carried by the wheel, ejecting plates mounted to swing in the scoops, and a rotary carrier for receiving material from the scoops.

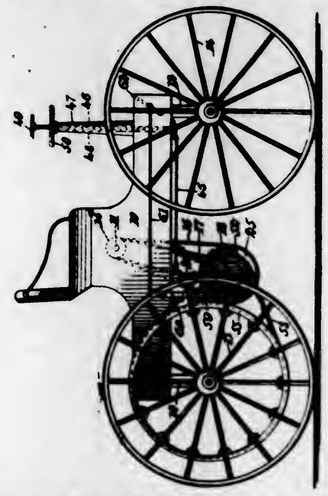
11. A planting machine comprising a frame, wheels on which the frame is mounted, a hopper carried by the frame, a carrier mounted to rotate in a substantially horizontal plane, and having a plurality of pockets, means for discharging seed from the hopper into said pockets, segmental track members, swinging bottom plates for the pockets held normally closed by said track members, the two track members being spaced apart one from the other at the ends, a short track member arranged at the outer side of the space at one side of said segmental track members, a short track member arranged along the inner side of the space at the opposite side of the segmental track members, lugs extended outward from the swinging bottom plates of certain of the pockets, lugs extended inward from the other swinging bottom plates and alternating with the first-named plates, the outwardly extended lugs being adapted for engagement with the outer short track members while the inwardly extended lugs are designed for engagement with the inner short track members, and tubes carried by the machine for receiving seed from the pockets.

12. A planter comprising a wheel mounted frame, a rotary carrier on said frame, a hopper, a rotary part carrying scoops for discharging seed from the hopper onto said carrier, tubes leading downward and adapted to receive seed from the carrier at opposite sides of the machine, plow points having swinging connection with the frame, the said plow points being forward of the lower ends of the tubes, covering plates rearward of the tubes and having swinging connection with the frame, and rollers rearward of said plates, said rollers also having swinging connection with the frame.

13. A planting machine comprising a frame, wheels on which the frame is mounted, seed-feeding devices mounted to rotate in the frame, a seed-carrying device mounted to rotate on the frame, its axis being at right-angles to the feeding device, and means for directing seed from the carrying device to the ground.

858,202. AUTOMOBILE DRIVING-GEAR. ROBERT S. MCINTYRE, Riverside, Cal. Filed Feb. 23, 1905. Serial No. 246,891.

Claim.—1. The combination with a support of a revolubly driven sleeve, a countershaft on which the sleeve is loosely carried, a clutch member fastened to the shaft at one end of the sleeve, an internal gear clutch member loose on the shaft at the other end of the sleeve, a gearing connecting said internal gear, clutch member with the shaft to drive the shaft reversely with respect to the direction of rotation of the clutch member, clutch members carried by the sleeve and coacting respectively with the first named clutch members, means for alternately throwing the last named members into action, a driven element and means for connecting the shaft with said element.



2. The combination with a support of a revolubly driven sleeve, a revoluble countershaft on which the sleeve is loosely mounted, a clutch member fastened to the shaft at one end of the sleeve, a clutch member carried by said end of the sleeve and coacting with the first named clutch member, a collar sliding on the sleeve and adapted to actuate the clutch member of the sleeve, means for operating the collar, a second collar connected to the first collar to move in unison therewith, a third clutch member loosely mounted on the countershaft, means connecting the third clutch member with the countershaft to drive the shaft reversely with respect to the direction of rotation of said clutch member, a fourth clutch member carried on the sleeve, means for operating the fourth clutch member from the second named collar, a driven element, and means connecting the driving element with said driven element.

3. In a motor vehicle, the combination with a source of power, of a counter-shaft revolubly mounted on the vehicle, a sleeve loosely mounted on the counter-shaft, means for driving the sleeve at varying speed from the source of power, means for driving the counter-shaft from the sleeve in either direction, and devices adapted to connect the counter-shaft with the traction wheels of the vehicle.

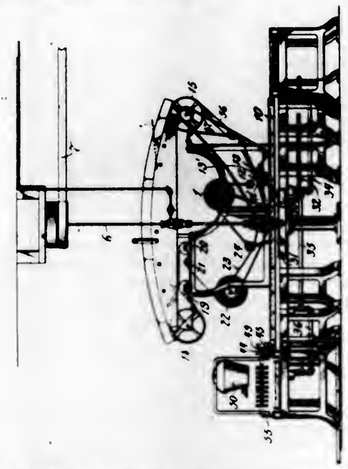
4. The combination with a support, of a shaft, a sleeve loosely mounted thereon, means for driving the sleeve at varying speed, and means for driving the shaft from the sleeve in either direction.

5. The combination with a support, of a shaft, a sleeve loosely mounted thereon, means for driving the sleeve at varying speed, said means including gears of different diameter secured to the sleeve, and means for driving the shaft from the sleeve in either direction.

6. The combination with a support, of a rotary shaft mounted therein, a sleeve loose on the shaft, means for revolubly driving the sleeve, a clutch for directly connecting the sleeve and shaft to drive the latter from the former, an internal gear loose on the shaft, a clutch for connecting said gear with the sleeve, an intermediate gear meshed with the internal gear, and a third gear meshed with the intermediate gear and fixed to the shaft.

858,203. MACHINE FOR MARBLING PAPER. JOHN W. NEWBERY, JOSIAH M. REED, and MARTIN T. KUHLKIN, New York, N. Y., assignors, by direct and mense assignments, to Monarch Coated Paper Company, existing under the laws of Maine. Filed Nov. 2, 1905. Serial No. 285,539.

Claim.—1. In a marbling machine, the combination of a tank adapted to contain a sizing solution, a carriage adapted to carry the paper to be marbleized, a drying chamber, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said sizing solution and through said drying chamber.



2. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a revolving carriage carrying the paper to be marbleized and having a drying chamber in connection therewith, a rotating brush adapted to be revolved in advance of said carriage, and means for passing the paper successively into contact with the color film carried by said sizing solution and through said drying chamber, substantially as described.

3. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, means for maintaining a constant amount of said sizing solution in said tank, a revolving carriage adapted to carry the paper to be marbleized, means for distributing coloring matter over said solution, and means for passing the paper successively into contact with the color film carried by said solution.

4. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a reservoir adapted to contain surplus solution, a pumping device adapted to transfer said solution to said reservoir, a supply pipe leading from said reservoir for maintaining a constant amount of said sizing solution in said tank, a revolving carriage carrying the paper to be marbleized, a rotating brush adapted to be revolved in advance of said carriage, and means for passing the paper successively into contact with the color film carried by said sizing solution, substantially as described.

5. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a reservoir adapted to contain surplus solution, a pumping device adapted to transfer said solution to said reservoir, a plurality of supply pipes leading from said reservoir for maintaining a constant amount of said sizing solution in said tank, a revolving carriage carrying the paper to be marbleized, a rotating brush adapted to be revolved in advance of said carriage, and means for passing the paper successively into contact with the color film carried by said sizing solution, substantially as described.

6. In a marbling machine, the combination of a tank adapted to contain a sizing solution, a rotating brush, a supply roll operating in conjunction with said brush to distribute coloring matter over the surface of said sizing solution, and means for passing the paper successively into contact with the color film carried by said sizing solution, substantially as described.

7. In a marbling machine, the combination of a tank adapted to contain a sizing solution, a plurality of rotating brushes, a plurality of supply rolls operating in conjunction with said brushes to distribute coloring matter over the surface of said sizing solution, and means for passing the paper sucessively into contact with the color film carried by said sizing solution, substantially as described.

8. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a revolving carriage carrying the paper to be marbleized, a rotating brush and roll adapted to be revolved in advance of said carriage, means for supplying coloring material to said brush and roll, and means for passing the paper successively into contact with the color film carried by said sizing solution, substantially as described.

9. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a revolving carriage carrying the paper to be marbleized, a brush and roll adapted to be revolved in advance of said carriage, means for supplying coloring material to said brush and roll, and means for passing the paper successively into contact with the color film carried by said sizing solution, substantially as described.

10. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a revolving carriage carrying the paper to be marbleized, a series of color distributing devices each comprising a rotating roll and brush adapted to be revolved in advance of said carriage and means for passing the paper successively into contact with the color film carried by said sizing solution, substantially as described.

11. In a marbling machine, the combination of a tank adapted to contain a sizing solution, a rotating brush, a supply roll operating in conjunction with said brush to distribute coloring matter over the surface of said sizing solution, a supply receptacle containing coloring matter located in proximity to said supply roll, a drip pan located under said supply receptacle, and means for passing the paper successively into contact with the color film carried by said sizing solution, substantially as described.

12. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a rotating brush and roll driven by means of a rack and gear, a circular rack by means of which said brush and roll are rotated, means for revolving said brush and roll over said rack and tank, means for supplying coloring material to said brush and roll, and means for passing the paper sucessively into contact with the color film carried by said sizing solution, substantially as described.

13. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a revolving carriage carrying the paper to be marbleized, a scraper roll adapted to remove the adhering sizing solution from the paper, and means for passing the paper successively into contact with the color film carried by said sizing solution and said roll, substantially as described.

14. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a rotating brush and roll driven by means of a rack and gear, a roll adapted to be revolved by the aforesaid roll to agitate the color solution, a circuinr rack by means of which said brush and roll are rotated, means for revolving said brush and roll over said rack and tank, means for supplying coloring material to said brush and roll, and means for passing the paper successively into contact with the color film carried by said sizing solution, substantially as described.

15. In a marbling machine, the combination of a circular tank adapted to contain a sizing solution, a revolving carriage carrying the paper to be marbleized, a scraper roll, a scraper, a pressure roll co-operating with said scraper roll and scraper to remove the adhering sizing solution from the paper, and means for passing the paper successively into contact with the color film carried by said sizing solution and said roll and scraper, substantially as described.

16. A machine for marbling paper provided with a tank or vessel, a rotatable frame mounted thereover, a support mounted on said rotatable frame and open at the bottom, a roller mounted in said support, means for supplying

coloring material to said roller and a brush operating in connection with said roller and adapted to discharge the coloring material into the tank.

17. A machine for marbling paper provided with a tank or vessel, a rotatable frame mounted thereover, a support mounted on said rotatable frame and open at the bottom, a roller mounted in said support, means for supplying coloring material to said roller and a brush operating in connection with said roller and adapted to discharge the coloring material into the tank, said rotatable frame being also provided rearwardly of said support with means for drawing paper through the top portion of the tank.

18. In a machine for marbling paper, an annular tank, a rotatable frame mounted thereover, a roller mounted over said rotatable frame, a brush mounted forwardly of and operating in connection with said roller, and means for supplying coloring material to said roller.

19. In a machine for marbling paper, an annular tank, a rotatable frame mounted thereover, a roller mounted over said rotatable frame, a brush mounted forwardly of and operating in connection with said roller, and means for supplying coloring material to said roller, said rotatable frame being also provided rearwardly of said roller with a supplemental frame, paper rollers mounted therein, and means for drawing paper from one of said rollers onto another and for passing it through the top portion of the tank.

20. In a machine of the class described, an annular tank, a rotatable frame mounted thereover, a support mounted on said rotatable frame and open at the bottom, a roller mounted in said support and turnable in a receiver, means for discharging coloring material into said receiver, a brush mounted in front of said roller and operating in connection therewith and designed to remove the material therefrom and deposit it in said tank.

21. In a machine of the class described, a main frame, an annular tank mounted therein, an annular gear mounted concentrically within said annular tank and provided with upwardly directed teeth, a rotatable frame mounted over the main frame, a roller mounted over the main frame, means for supplying coloring material to said roller, and a brush mounted in front of said roller, said roller and said brush being geared in connection with said annular gear.

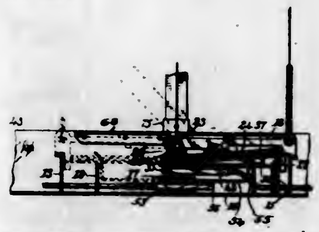
22. In a marbling machine, the combination of a tank adapted to contain a sizing solution, a carriage traveling over said tank, a rotating brush mounted on said carriage, a stop adapted to retard the rotation of the outer ends of the bristles of said brush to distribute coloring matter over said sizing solution, and means for passing a strip of paper successively into contact with said coloring matter.

23. In a marbling machine, the combination of a tank adapted to contain a sizing solution, a carriage traveling over said tank, a rotating brush mounted on said carriage, an adjustable stop adapted to retard the rotation of the outer ends of the bristles of said brush to distribute coloring matter over said sizing solution, and means for passing a strip of paper successively into contact with said coloring matter.

24. In a marbling machine, the combination of a tank adapted to contain a sizing solution, a carriage traveling over said tank, a rotating brush mounted on said carriage, a wire interposed in the path of the outer ends of the bristles of said brush to retard the rotation of the same to distribute coloring matter over said sizing solution, and means for passing a strip of paper successively into contact with said coloring matter.

858,204. MUSIC-LEAF TURNER. JOHN O'CONNOR, New York, N. Y., assignor of one-half to Tyrone Realty Improvement Company, New York, N. Y., a Corporation of New York. Filed Nov. 1, 1905. Serial No. 285,502.

Claim.—1. A music leaf turner comprising a post, leaf carrying arms mounted to rotate on said post, turning arms mounted to rotate on the post and having notches at the free ends, fingers extended downward from the free ends of the leaf-carrying arms and adapted to engage in said notches, an arm mounted to rotate on the post, a spring-yielding finger on said arm for engaging with the turning arms and a pneumatic for operating said arm carrying the finger.



2. A music leaf turner comprising a post, leaf carrying arms mounted to rotate on the post, having downwardly extended fingers at the free ends, turning arms mounted to rotate on the post, and having notches for receiving said fingers, an inclined wall upon which the turning arms are designed to rest when in normal position, and means for moving the turning arms one at a time from said incline.

3. A music leaf turner comprising a post, leaf-carrying arms mounted to rotate on the post and having downwardly extended fingers, turning arms mounted to rotate on the post and having notches for receiving said fingers, a shifting arm mounted to rotate on the post, a spring-yielding finger on said shifting arm for engaging with the turning arms and means for operating said finger-carrying arm for shifting the turning arms one at a time.

4. A music leaf turner comprising a post, a plurality of leaf-carrying arms mounted to rotate thereon and having downwardly extended fingers at the free ends, turning arms mounted to rotate on the post and having notches at the ends for receiving the said fingers, the said turning arms being normally one upon another, an inclined surface on which said turning arms are designed to rest, a spring for holding the turning arms yieldingly downward, and means for shifting each turning arm independently and carrying its leaf-carrying arm.

5. A music leaf turner comprising a post, a plurality of leaf-carrying arms mounted to rotate on said post and having downwardly extended fingers, turning arms mounted to swing on the post and having notches for receiving said fingers, a wall formed in the arc of a circle and having an inclined upper surface upon which said turning arms are designed to rest, a spring for yieldingly holding the turning arms in connection with said inclined surface, a detent plate for the turning arms, a shifting arm, a finger on said shifting arm for engaging successively with the turning arms and means operated by said shifting arm for releasing the detent plate from the turning arms, one at a time.

6. A music leaf turner comprising a post, a plurality of leaf turning arms mounted to rotate on said post, each of said arms having a downwardly extended finger, a turning arm for each leaf turning arm and having a notch at its end for receiving the finger of its leaf turning arm, a wall formed in the arc of a circle and having an inclined top surface upon which the turning arms are designed to rest, a detent plate for holding the turning arms in normal position, a shifting arm mounted to swing on the post, a spring-yielding finger on said shifting arm for engaging successively with the turning arms, a shaft on which the detent plate is mounted, an angular portion on said shaft and a lug on the shifting arm for engaging with said angular portion to raise the detent plate from engagement with the turning arms one at a time.

7. A music leaf turner comprising a post, a plurality of leaf-carrying arms mounted to rotate on the post, downwardly extended fingers on the free ends of said arms, turning arms having rotary relation to the post and having notches for receiving said fingers, a shifting arm for the turning arms, a pinion on the post to which said shifting arm is attached, a rack engaging with said pinion, and a pneumatic for operating the said rack in one direction.

8. A music leaf turner comprising a post, a plurality of leaf-carrying arms mounted to rotate on the post, downwardly extended fingers on said arms, turning arms mounted to rotate on the post and having notches for receiving said fingers, a shifting arm mounted to rotate on the post, a spring-yielding finger on said shifting arm for engaging with the turning arms one at a time, a wall formed in the arc of a circle and having an inclined upper surface on which the turning arms are designed to rest, a pinion to which said shifting arm is connected, a rack engaging the said pinion, a cylinder, a piston in the cylinder having connection with said rack and a pneumatic for moving the piston in one direction.

9. A music leaf turner comprising a post, a plurality of leaf-carrying arms mounted to rotate on the post, downwardly extended fingers on said arms, turning arms having rotary connection with the post, the said turning arms being provided with notches for receiving said fingers, a wall formed in the arc of a circle and having an inclined upper surface upon which the turning arms are designed to rest, a shifting arm having rotary connection with the post, a finger yieldingly mounted on said shifting arm and adapted for engagement with the turning arms one at a time, a detent for the turning arms, means carried by the shifting arm for releasing the detent plate from the turning arms one at a time, a pneumatic for operating the shifting arm, and a pneumatic for turning the turning arms and leaf-carrying arms to normal position.

10. A music leaf turner comprising a post, a plurality of leaf-carrying arms mounted to rotate on said post, downwardly extended fingers on said arms, turning arms having rotary connection to the post and provided with notches for receiving said fingers, a wall formed in the arc of a circle and having an inclined upper surface upon which the turning arms are designed to rest, turning arms held yieldingly in connection with said inclined surface, a shifting arm mounted to rotate on the post, a spring-yielding finger carried by said shifting arm and adapted to engage with the turning arms one at a time, a pinion to which the shifting arm is connected, a rack engaging the said pinion, a cylinder, a piston in said cylinder having connection with said rack, a pneumatic, and a pipe connection between said pneumatic and said cylinder.

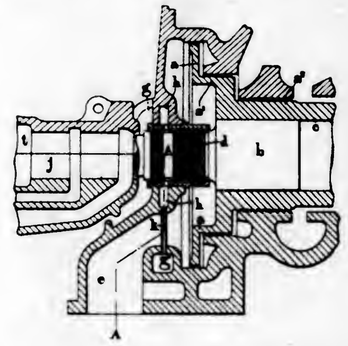
11. A music leaf turner comprising a post, a plurality of leaf-carrying fingers mounted to swing on said post, downwardly extended fingers on said arms, turning arms having rotary connection with the post and provided with notches for receiving said fingers, a shifting arm mounted to rotate on the post, a spring-yielding finger on said shifting arm for engaging with the turning arms, a pneumatic for moving said arm in one direction, a returning arm mounted to swing on the post, and a pneumatic for operating said returning arm.

858,205. STEAM-TURBINE. CHARLES A. PARSONS, Newcastle-upon-Tyne, England. Filed July 12, 1906. Serial No. 325,881.

Claim.—1. In combination in an axial flow turbine a shaft, a drum and casing, a thrust block on the turbine shaft, packings arranged at various distances along the turbine shaft and drum, means for equalizing the expansions of fixed and moving parts from said thrust block, substantially as described.

2. In combination in an axial flow steam turbine a shaft, a drum and casing, a thrust block on the turbine shaft, packings arranged at various distances along the shaft and turbine drum, heating chambers in the turbine casing arranged to cause equal expansion of fixed and rotating parts relative to said thrust block, substantially as described.

3. In combination with an axial flow steam turbine a shaft, a drum and casing, a thrust block on the turbine shaft, labyrinth packings arranged at various distances along the shaft or turbine drum, a fluid circulating chamber on the end of the turbine case the fluid circulating through which maintains a uniform expansion throughout the case shaft and drum, substantially as described.



4. In a turbine of the axial flow type, means for maintaining the predetermined clearances at the packings arranged at various distances apart along the turbine drum and shaft, comprising a steam jacket on the end casing, a lantern space (*h*) around the gland packing, a communicating passage between said lantern space and said jacket, substantially as described.

5. In a turbine of the axial flow type, means for maintaining the predetermined clearances at the packings arranged at various distances apart along the turbine drum and shaft, comprising a steam jacket on part of the end casing, a lantern space (*h*) around the gland packing, a communicating passage between said lantern space and said jacket, substantially as described.

6. In a turbine of the axial flow type, means for maintaining the predetermined clearances at the packings arranged at various distances apart along the turbine drum and shaft, comprising a steam jacket on the lower part of the end casing where the metal is thick, a lantern space (*h*) around the gland packing, a communicating passage between said lantern space and said jacket, substantially as described.

7. In a turbine of the axial flow type, means for maintaining the predetermined clearances at the packings arranged at various distances apart along the turbine drum and shaft, comprising near the packing gland where the shaft passes out of the turbine case a steam jacket on the end casing, a steam connection to said jacket, an independent steam connection to the lantern space (*h*) around the packing gland, substantially as described.

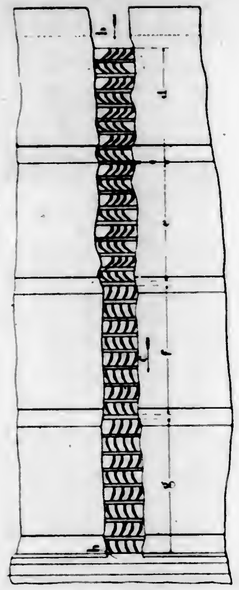
858,206. TURBINE. CHARLES A. PARSONS, Newcastle-upon-Tyne, England. Filed Aug. 6, 1906. Serial No. 329,444.

Claim.—1. In turbines, rows of blades, at considerable angles to the impinging fluid and bi-laterally non-symmetrical near the high pressure end of the turbine, rows of blades at lesser angles to the fluid flow and approximately bi-laterally symmetrical near the low pressure end of the turbine.

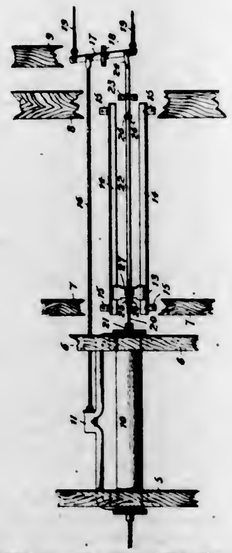
2. In turbines, rows of blades near the inlet end, set at considerable angles to the impinging fluid and bi-laterally non-symmetrical, successive rows of blades at diminishing angles to the fluid flow, substantially as described.

3. In a turbine in which steam passes through rows of blades in series, rows of blades near the high pressure end, set at considerable angles to the impinging fluid and bi-laterally non-symmetrical, successive groups of rows (*e*, *f*, and *g*) at decreasing angles to the impinging fluid and approximating to bi-lateral symmetry, substantially as described.

858,206.



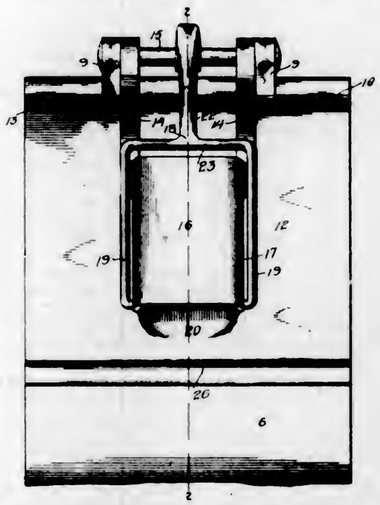
858,207. STEERING-ENGINE. FRANKLIN DE VERE PATTEN, Portland, Oreg. Filed Apr. 30, 1907. Serial No. 371,175.



Claim.—1. The combination with the valve-operating mechanism and a reciprocating part of an engine, of a fixed rod, a hollow rod into which said fixed rod projects and supported thereby at one end, a pivotal connection between the other end of said hollow rod and the valve-operating mechanism, and stops on said hollow rod and arranged to be engaged by said reciprocating part as the latter nears a limit of reciprocatory movement.

2. The combination with the cylinder, valve, valve-rod, and cross-head of an engine, of a pivoted arm connected with said valve-rod and with means for its manual operation, a rod fixed to the cylinder and projecting therefrom, a hollow rod into which said fixed rod projects and one end of which is supported thereby, said hollow rod being disposed parallel and adjacent to the path of the cross-head, a pivotal connection between said pivoted arm and hollow rod, stops on said hollow rod, and a member on said cross-head and arranged to engage one or the other of said stops as the cross-head nears either limit of its reciprocatory movement.

858,208. JOURNAL-BOX LID. JAMES S. PATTEN, Baltimore, Md. Filed June 8, 1906. Serial No. 320,781.



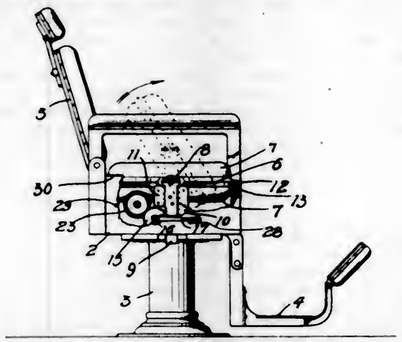
Claim.—1. The combination with a journal box having an opening therein, of a lid for said opening hinged to the box to close said opening with its upper edge in contact with the adjacent face of the box, a slotted housing carried by the lid, a spring within the housing, and a stirrup pivoted to the box and embracing the housing, said stirrup including a member lying in the slots of the housing and against the spring.

2. The combination with a journal box having an opening therein, of a lid for said opening arranged for sliding movement, a stirrup pivoted to the box and slidably connected with the lid, and a spring engaged between the foot piece of the stirrup and a portion of the lid and arranged to hold the lid yieldably against sliding movement.

3. The combination with a journal box having an opening therein, of a lid for said opening hinged to the box to close said opening with its upper edge in contact with the adjacent face of the box, a stirrup pivoted to the box and slidably and pivotally connected with the lid, and a spring disposed between the foot-piece of the stirrup and a portion of the lid thereabove.

4. The combination with a journal box having an opening therein, of a lid for said opening hinged to the box to close said opening with its upper edge in contact with the adjacent face of the box, said lid being also bodily movable with its upper edge into and out of said contact, said lid having a housing provided with a guide slot in its sides, a stirrup comprising legs embracing the housing, a foot-piece connecting the legs and lying in the housing and in the slots thereof, and a spring disposed between the upper end of the housing and the foot-piece of the stirrup, said stirrup comprising a stem pivotally connected with the box.

858,209. REVERSIBLE CHAIR-SEAT. RICHARD N. B. PETERSEN, Mankato, Minn. Filed Sept. 29, 1906. Serial No. 336,658.



Claim.—1. The combination, with a chair frame, of a reversible seat or bottom therefor, mechanism for raising or lowering the said seat and mechanism set in operation by the movement of said raising means and adapted to turn said seat at a certain predetermined elevation, substantially as described.

2. The combination, with a chair frame, of a reversible seat or bottom, vertically movable bars whereon said seat is pivoted, a gear mechanism for raising or lowering said bars and means becoming operative during the upward movement of said seat for turning or reversing it at a certain elevation.

3. The combination, with a chair frame, of bars vertically movable therein and having rack teeth on their edges, a seat frame journaled on said bars and capable of being turned or reversed thereon, a shaft mounted in said chair frame, and having an operating lever, gears secured on said shaft and engaging said bars, and mechanism normally inoperative and becoming operative during the last part of the upward movement of said bars for reversing or turning said seat, substantially as described.

4. The combination, with a chair frame, of a reversible seat or bottom, means for raising and lowering the said seat, and mechanism normally inoperative and becoming operative during the last part of the upward movement of said seat for turning or reversing the same, said mechanism comprising a sprocket chain and wheels, and means for locking them to impart a rotary movement to said seat.

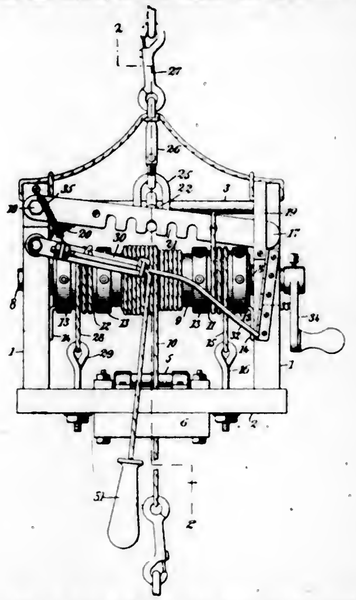
5. The combination, with a chair frame, of vertically movable bars, a seat or bottom pivoted on said bars, mechanism comprising a rack and gears for raising said bars and seat, and means becoming operative during the upward movement of said seat, for turning or reversing it at a certain elevation, substantially as described.

858,210. FIRE-ESCAPE. GEORGE J. PITTS, New York, N. Y. Filed May 15, 1906. Serial No. 316,986.

Claim.—1. A fire-escape comprising a frame, a winding drum mounted in the frame, a cable engaging with said drum, a flexible sleeve engaging loosely around the drum, means for holding the sleeve from longitudinal or rotary movement, a brake cable attached at one end to the frame, a lever pivoted to the frame, and to which the other end of said brake cable it attached, and a suspending device for engaging with said lever.

2. A fire-escape comprising a frame, a winding drum mounted in the frame, a lowering cable on the drum, a sleeve of flexible material engaging around the drum, a brake cable attached at one end to a member of the frame, a lever mounted to swing on the frame, and to which the other end of said brake cable is attached, the said lever having a plurality of notches at its inner edge, a rod comprised in the frame, an arm slidable along said rod and adapted to engage in any one of the notches in said lever, and a suspending device for engaging with the arm.

3. In a fire-escape, a frame, a drum mounted to rotate therein, a lowering cable attached to the drum, a yielding sleeve engaging around the drum at one end, a brake cable attached at one end to the frame, a lever mounted to swing on the frame, and to which the other end of said



brake cable is attached, the said lever being provided at its inner edge with a plurality of notches, a rod forming a portion of the frame, a ring movable along said rod, and a notched arm extended from said ring and adapted to engage in any one of the notches in said lever.

858,211. ELECTROMAGNETIC LOCOMOTIVE. JOSEPH L. POTTER, Indianapolis, Ind., assignor to Harry G. Hawekotte, Indianapolis, Ind. Filed Dec. 11, 1905. Serial No. 291,213.



Claim.—1. An electro-magnetic locomotive including carrying wheels, a frame mounted on the wheels, a battery cell mounted on the frame, a rotative crank-shaft mounted on the frame, an electro-magnet mounted fixedly on the frame, an armature mounted movably opposite to the electro-magnet and operatively connected with the crank-shaft, gearing operatively connecting the crank-shaft with one of the carrying wheels, an electric circuit between the battery cell and the electro-magnet, a movable circuit-breaker, a brush mounted movably with respect to the circuit-breaker, means for controlling the movements of the brush, and an electric circuit to the circuit-breaker and to the brush.

2. An electro-magnetic locomotive including a hollow body provided with carrying wheels and having a battery cell, and also an electro-magnet mounted therein adjacent to the cell, frame members mounted on the top of the hollow body, a rotative crank-shaft mounted on the frame members, an armature mounted movably opposite to the

electro-magnet and operatively connected with the crank-shaft, gearing operatively connecting the crank-shaft with one of the carrying wheels, an electric circuit between the cell and the electro-magnet, a movable circuit-breaker, a brush for coöperating with the circuit-breaker, and an electric circuit to the circuit-breaker and to the brush.

3. An electro-magnetic locomotive including carrying wheels, a hollow body mounted on the wheels, a plurality of battery cells mounted within the hollow body, a plurality of electro-magnets mounted within the hollow body at the ends of the cells with their cores projecting through the top of the hollow-body, frame members mounted upon the top of the hollow body, a rotative crank-shaft mounted on the frame members, an armature mounted movably opposite to the plurality of electro-magnets and operatively connected with the crank-shaft, gearing operatively connecting the crank-shaft with one of the carrying wheels, an electric circuit between the plurality of cells and the plurality of electro-magnets, and a make-and-break device for the circuit.

4. An electro-magnetic locomotive including carrying wheels, a hollow body mounted on the wheels, a plurality of battery cells and a plurality of electro-magnets mounted within the hollow body, an armature mounted movably opposite to the electro-magnets, a rotative shaft operatively connected with the armature, a support for the rotative shaft, a gear wheel secured to the rotative shaft, a gear wheel operatively connected with one of the carrying wheels, a counter-shaft supported by the hollow body and having a pair of gear wheels secured thereto, gear connections between the gear wheel of the rotative shaft and one of the gear wheels of the counter-shaft, gear connections between the other gear wheel of the counter-shaft and the gear wheel that is connected with the carrying wheel, an electric circuit, and a make-and-break device for the circuit.

5. An electro-magnetic locomotive including carrying wheels, a hollow body mounted on the wheels, a plurality of battery cells mounted in the hollow body, a plurality of electro-magnets supported by the hollow body, frame members mounted upon the top of the hollow body, a rotative crank-shaft mounted on the frame members, an armature mounted movably opposite to the electro-magnets and operatively connected with the crank-shaft, a sprocket-wheel secured to the crank-shaft, a sprocket-chain extending from the sprocket wheel through the hollow body and operatively connected with one of the carrying wheels, an electric circuit between the cells and the electro-magnets and a make-and-break device for the circuit.

6. An electro-magnetic engine including a framework, a rotative shaft mounted in the framework, a movable circuit-breaker, a brush for co-operation with the circuit-breaker, a movable beam operatively connected with the rotative shaft and provided with a multiple compound armature comprising a plurality of separate magnetic bars magnetically separated and secured fixedly to the beam and an armature comprising a plurality of separate magnetic bars magnetically separated and secured fixedly together and connected to the beam movably with respect thereto, an electro-magnet mounted on the framework opposite to the multiple compound armature, a source of electricity; and an electric circuit to the circuit-breaker and the brush.

7. An electro-magnetic engine including a framework, a rotative shaft mounted in the framework, a movable circuit breaker, a brush for co-operation with the circuit breaker, a movable beam operatively connected with the rotative-shaft and provided with a compound armature comprising a plurality of separate magnetic bars and non-magnetic material between the separate bars secured fixedly together and to the beam collectively, an electro-magnet fixed in the framework opposite to the compound armature, a source of electricity, and an electric circuit to the circuit-breaker and the brush.

8. An electro-magnetic engine including a framework, a rotative-shaft mounted in the framework, a movable circuit breaker, a brush for co-operation with the circuit breaker, a movable armature beam operatively connected with the rotative shaft and provided with a compound armature comprising a plurality of separate magnetic bars and non-magnetic material between the bars secured fixedly together collectively and provided with a connecting device operatively connecting the compound armature with the armature beam movably with respect thereto, an electro-magnet, a source of electricity, and an electric circuit to the circuit breaker and the brush.

9. An electro-magnetic engine including a framework, a rotative-shaft mounted in the framework, a movable circuit-breaker, a brush for co-operation with the circuit-breaker, a movable multiple armature comprising a plurality of separate groups of magnetic bars, each group of bars having non-magnetic material between the bars thereof, the groups of bars being operatively connected together and with the rotative-shaft, an electro-magnet, a source of electricity, and an electric circuit to the circuit-breaker and the brush.

10. An electro-magnetic engine including a hollow body, a plurality of battery cells mounted in the hollow body, a plurality of electro-magnets mounted in the body in proximity to the ends of the cells in a plane between two of the cells, a framework mounted upon the body, a rotative shaft mounted on the framework, a beam guided on the framework in a plane between the cells and operatively connected with the rotative shaft, arms pivoted to the beam, a plurality of armatures having links fixed thereto and pivoted to the arms, the armatures being opposite to the electro-magnets, a movable circuit-breaker, a brush for co-operation with the circuit-breaker, an electric circuit between the cells, and an electric circuit to the circuit-breaker and the brush.

11. An electro-magnetic engine including a framework, a rotative-shaft mounted in the framework, an electro-magnet, an armature movable opposite to the electro-magnet and connected operatively with the rotative shaft, a source of electricity, a circuit-breaker comprising a movable part and an adjustable part for co-operation with the movable part, means for adjusting and controlling the adjustable part with respect to the movable part of the circuit-breaker, and an electric circuit to the circuit-breaker.

12. An electro-magnetic engine including a framework, a rotative-shaft mounted in the framework, an electro-magnet, an armature movable opposite to the electro-magnet and connected operatively with the rotative-shaft, a source of electricity, an eccentric cam mounted on the rotative shaft, a brush-holder mounted adjustably on the framework, a brush mounted on the brush-holder opposite to the eccentric cam, and an electric circuit to the cam and the brush.

13. An electro-magnetic engine including a framework, a rotative-shaft mounted in the framework, an electro-magnet, an armature movable opposite to the electro-magnet and connected operatively with the rotative shaft, a source of electricity, an eccentric cam mounted on the rotative-shaft, a brush-holder mounted on the framework, a brush mounted adjustably on the brush-holder, means co-operating with the brush-holder for controlling and adjusting the position of the brush with respect to the eccentric cam, and an electric circuit to the cam and the brush.

14. An electro-magnetic engine including an electro-magnet, a source of electricity, a rotative shaft, an armature movable opposite to the electro-magnet and connected operatively with the rotative-shaft, variable circuit-breaker apparatus adjustable to increase or decrease the periods of time of closed circuit, and circuit wires suitably arranged.

858,212. FOLDING UMBRELLA. ALBERT V. RANSON, Johnstown, Pa. Filed May 10, 1906. Serial No. 316,186.

Claim.—1. In an umbrella of the character described, the combination with a supporting rod comprising an outer tubular section and an inner telescoping section, of a socket secured on the inner end of said telescoping section, said socket having formed therein adjacent to its opposite ends bayonet slots, a tubular handle slidably mounted on said socket, studs formed on the inner wall of said handle to engage said bayonet slots and thereby hold said handle in an extended or retracted position, ribs secured to said rod at their outer ends, said ribs being formed in telescoping sections, means to hold said sections of the rib in position, and spreaders to support the ribs when the umbrella is open, substantially as described.



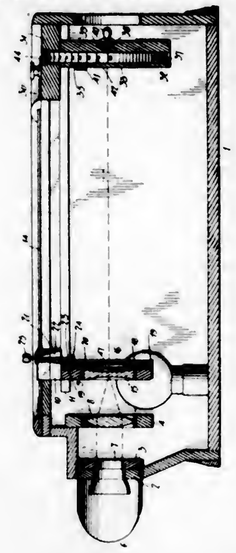
2. In an umbrella of the character described, the combination with a supporting rod having a tubular outer section and a telescoping inner section, of a tubular handle slidably mounted on the inner end of said inner section of the rod, a notch on the outer end of said rod, a spring catch to hold said sections of the rod in an extended position, a runner catch secured to the outer section of the rod, a runner adapted to be engaged with said catch when the umbrella is in an open position, ribs connected at their outer ends to said rib connection, said ribs comprising an inner channel-shaped section having on its inner end a band or collar and an outer section slidably engaged with said channel-shaped section to telescope therein, a clip arranged on the upper end of said outer rib section, a spring tongue formed on said clip to engage the side of said channel section of the rib to hold the sections in position, and spreaders pivotally connected to said clip and to said runner, on the supporting rod, substantially as described.

858,213. EYESCOPE. HENRY D. REESE, Abbeville, S. C., assignor of one-third to John William Harris, Elberton, Ga., and one-third to William Douglas Bewley, Union, S. C. Filed Nov. 19, 1906. Serial No. 344,144.

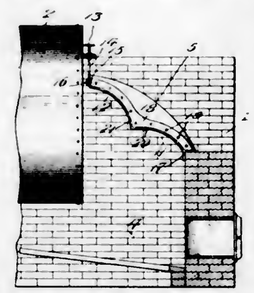
Claim.—1. In apparatus of the class described, a casing, a relatively-fixed lens therein, slides removably mounted in the casing and having openings to aline with the said lens, a lens and test device movable toward and from the first-mentioned lens, a pointer movable with said movable lens and test device, and a scale with which said pointer coacts, substantially as described.

2. In apparatus of the class described, the combination of a casing having at one end an alining opening, and a slide provided with eye-openings, either of which may be caused to register with the alining opening, a distance object near the other end of the casing, a relatively fixed lens near the alining opening, a movable lens and a test device movable toward and from the first-mentioned lens, a pointer movable with said movable lens and test device, and a scale with which said pointer coacts, substantially as described.

3. In apparatus of the class described, the combination of a distance object, a lens, spaced therefrom, a lens and a test device movable toward and from the first-mentioned lens, said test device being movable into and out of alinement with the lenses, a pointer movable with said movable lens and test device, and a scale with which said pointer coacts, substantially as described.



858,214. BOILER-SETTING. CHARLES B. RISLEY, Princeton, Ind. Filed Nov. 7, 1906. Serial No. 342,422.



Claim.—1. In a device of the class described, a boiler having tubes, a boiler setting provided with a smoke chamber, and an arch arranged above said smoke chamber and having upper and lower arched portions adapted to direct substantially equal proportions of the products of combustion respectively into the upper and lower rows of tubes.

2. In a device of the class described, a boiler having tubes, a boiler setting provided with a smoke chamber and an arch sustained above said chamber and having upper and lower arched portions designed to direct substantially equal proportions of the products of combustion respectively into the upper and lower rows of tubes, the line of juncture of said arched portions being disposed in a plane common with the plane of the central horizontal row of tubes.

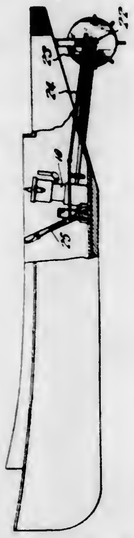
3. In a device of the class described, a rear-arch for boilers comprising a plurality of arch bars having horizontal portions and vertical flanges, said flanges being pierced by a series of transverse perforations arranged at spaced intervals and the horizontal portions of the bars having their edges notched at intervals, and masonry sustained by the bars.

4. In a device of the class described, a rear-arch for boilers comprising a plurality of arch bars of compound

curvature from end to end and having horisontal supporting portions and a plurality of blocks designed to seat between the bars and having their lower faces of compound curvature to conform to and fit upon the horizontal supporting portions of the bars.

5. In a device of the class described, a rear-arch for boilers comprising a plurality of individual blocks arranged side by side, a plurality of arch bars arranged for supporting said blocks and having vertical webs to project upward between the latter and horizontal flanges on which the blocks rest, said bars being of compound curvature from end to end and the blocks having their lower faces of compound curvature to conform to and fit upon the horizontal flanges, and means for sustaining the bars.

858,215. MARINE PROPELLER. OSCAR D. ROBINSON and ROLLO L. BENNETT, Olivet, Mich. Filed May 23, 1906. Serial No. 318,397.

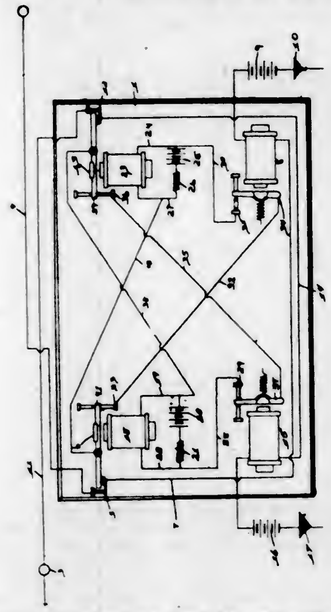


Claim.—1. A marine propeller embodying a rotary drum, an eccentric shaft within said drum, a series of blades slidable through slots in the drum, a common hub for said blades journaled on said shaft, spokes extending from the opposite ends of the blades inward and pivotally connected to said hub, and guides through which the blades slide pivotally mounted within the drum and having enlarged ways through which the spokes of the blades slide, substantially as described.

2. A marine propeller embodying a rotary slotted drum, an eccentric shaft therein having cranked end portions on which the drum is journaled, blades sliding through the slots in the drum, a common hub to which said blades are connected journaled on said shaft, a pinion on one of the cranked ends of said shaft, and a rack bar meshing with said pinion for turning the shaft to shift the eccentric portion thereon and change the throw of the blades relatively to the periphery of the drum, substantially as described.

858,216. TELEGRAPH-REPEATER. WORTH ROGERS, St. Louis, Mo. Filed Dec. 13, 1904. Serial No. 236,767.

Claim.—The improved method of preserving at the repeating station, continuity of the main line from which the signals are being transmitted, which consists in keeping closed the transmitter controlled by the main line being repeated into, by opening at the front contact point of the repeating transmitter controlling the line being repeated into the shunt around the magnet of the transmitter controlled by the main line being repeated into before said shunt can be closed by the opening of the armature of the relay of the main line being repeated into,



and thereby preventing the local battery of the second transmitter from being shunted around the coils of the second transmitter at any time.

858,217. COAL-MINING DRILL-POST. PAUL ROMMES, Pittsburg, Kans. Filed July 19, 1906. Serial No. 326,846.

Claim.—1. In a coal drilling machine, a supporting post, means for anchoring the same at its upper and lower ends, an adjustable arm carried by said post, brackets slidably mounted on said arm, and a threaded box and auger shaft supported by said brackets.

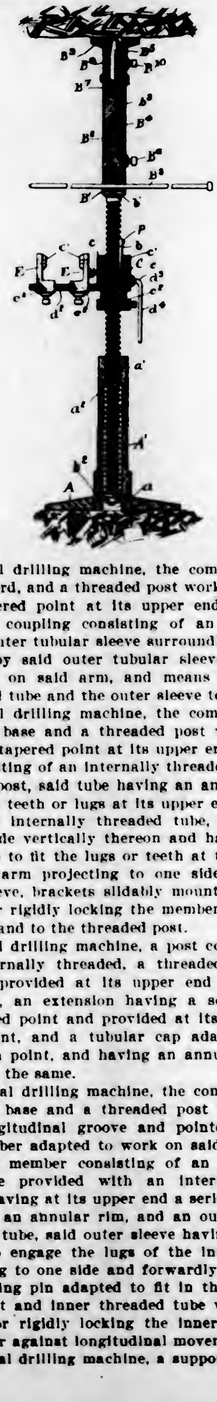
2. In a coal drilling machine, a post having separable sections at its upper end means for anchoring the same at its upper and lower ends, an adjustable and rotatable arm carried by said post, brackets slidably mounted on said arm, and a threaded box and auger shaft supported by said brackets.

3. In a coal drilling machine, a post having separable and longitudinally extensible sections at its upper end, means for anchoring said post at its upper and lower ends, an adjustable and rotatable arm carried by said post, brackets slidably mounted on said arm, and a threaded box and auger shaft supported by said brackets.

4. In a coal drilling machine, a supporting post means for anchoring the same at its upper and lower ends, a separable coupling member carried by said post, an arm carried by said coupling member, brackets slidably mounted on said arm, and a threaded box and auger shaft supported by said brackets.

5. In a coal drilling machine, an internally threaded base member, a threaded shaft working in said base member and provided at its upper end with a tapered point, an adjustable and rotatable arm carried by said threaded shaft, brackets slidably mounted on said arm, and a threaded box and auger shaft supported by said brackets.

6. In a coal drilling machine a sectional post means for anchoring the same at its upper and lower ends, an adjustable and rotatable arm mounted on said post, brackets slidably mounted on said arm, and a threaded box and auger shaft supported by said brackets.



7. In a coal drilling machine, the combination with a base or standard, and a threaded post working therein, and having a tapered point at its upper end, of a coupling member, said coupling consisting of an inner threaded tube and an outer tubular sleeve surrounding the same, an arm carried by said outer tubular sleeve, brackets slidably mounted on said arm, and means for locking the inner threaded tube and the outer sleeve together.

8. In a coal drilling machine, the combination with a standard and base and a threaded post working therein, and having a tapered point at its upper end, of a coupling member consisting of an internally threaded tube engaging the threaded post, said tube having an annular rim at its lower end and teeth or lugs at its upper end, a sleeve surrounding said internally threaded tube, and adapted to rotate and slide vertically thereon and having notches in its upper edge to fit the lugs or teeth at the upper end of the tube, an arm projecting to one side and forwardly from said sleeve, brackets slidably mounted on said arm, and means for rigidly locking the member of the coupling to each other and to the threaded post.

9. In a coal drilling machine, a post comprising a base standard internally threaded, a threaded shaft working therein, and provided at its upper end with a reduced tapered point, an extension having a socket therein to fit said tapered point and provided at its upper end with a tapered point, and a tubular cap adapted to fit over said extension point, and having an annular flange forming a head for the same.

10. In a coal drilling machine, the combination with a standard and base and a threaded post working therein, having a longitudinal groove and pointed upper end, a coupling member adapted to work on said threaded shaft, said coupling member consisting of an inner internally threaded tube provided with an internal longitudinal groove, and having at its upper end a series of lugs and at its lower end an annular rim, and an outer sleeve fitting on said inner tube, said outer sleeve having notches in its upper edge to engage the lugs of the inner tube and an arm projecting to one side and forwardly from said outer sleeve, a locking pin adapted to fit in the grooves of the threaded shaft and inner threaded tube when in register, and means for rigidly locking the inner tube and outer sleeve together against longitudinal movement.

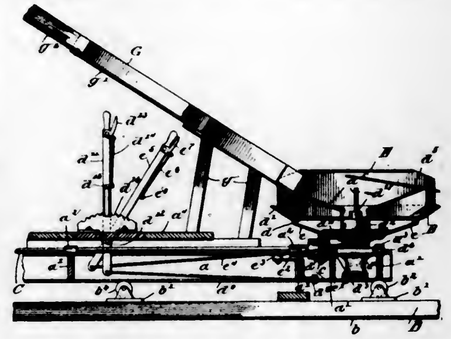
11. In a coal drilling machine, a supporting post means for anchoring the same at its upper and lower ends, an adjustable and rotatable arm carried by said post, brackets slidably mounted on said arm, and a drill supported by said brackets.

12. In a coal mining machine, a separable post means for anchoring the same at its upper and lower ends, an adjustable and rotatable arm carried by said post, brackets slidably mounted on said arm and a drill supported by said brackets.

13. In a coal drilling machine, a separable and longitudinally extensible supporting post means for anchoring the same at its upper and lower ends, an adjustable and rotatable arm carried by said post, brackets slidably mounted on said arm, and a drill supported by said brackets.

14. In a coal drilling machine, a longitudinally extensible supporting post means for anchoring the same at its upper and lower ends, an adjustable and rotatable arm carried by said post, brackets slidably mounted on said arm, and a threaded box and auger shaft supported by said brackets.

858,218. LOADING APPARATUS. EMIL ROSENVALL, Salt Lake City, Utah. Filed Nov. 6, 1906. Serial No. 342,232.



Claim.—1. An apparatus of the class described, comprising a track, a carriage movable upon the track, bearings arranged longitudinally of the carriage, a vertical shaft having trunnions engaging the bearings, a circular table having a sleeve journaled on the shaft, the upper face of the table being provided with radial vanes, and the lower end of the sleeve being provided with a bevel gear, a shaft journaled longitudinally of the carriage, a bevel gear on the shaft meshing with the bevel gear of the sleeve, a crank arm pivoted to the carriage and having one of its arms connected with the lower end of the vertical shaft, means connected with the other arm for rocking the shaft upon its trunnions, whereby to incline the table with respect to the carriage, a pulley journaled on the vertical shaft between the sleeve and the trunnions, bracket arms connected with the pulley, a shield at the periphery of the table and connected with the bracket arms, a rock arm pivoted on the carriage, a chain having its ends connected with the ends of the rock arm and passing around the pulley, means connected with the rock arm for rocking the same, whereby to swing the shield, and a chute delivering to the table.

2. An apparatus of the class described, comprising a track, a carriage movable upon the track, bearings arranged longitudinally of the carriage, a vertical shaft having trunnions engaging the bearings, a circular table having a sleeve journaled on the shaft, the upper face of the table being provided with radial vanes, and the lower end of the sleeve being provided with a bevel gear, a shaft journaled longitudinally of the carriage, a bevel gear on the shaft meshing with the bevel gear of the sleeve, a crank arm pivoted to the carriage and having one of its arms connected with the lower end of the vertical shaft, means connected with the other arm for rocking the shaft

upon its trunnions whereby to incline the table with respect to the carriage, a shield at the periphery of the table, and means for swinging the shield on a center coinciding with the center of the table.

3. An apparatus of the class described, comprising a track, a carriage movable upon the track, bearings arranged longitudinally of the carriage, a vertical shaft having trunnions engaging the bearings, a circular table having a sleeve journaled on the shaft, the upper face of the table being provided with radial vanes, means engaging the sleeve for rotating the table, a crank arm pivoted to the carriage and having one of its arms connected with the lower end of the vertical shaft, and means connected with the other arm for rocking the shaft upon its trunnions, whereby to incline the table with respect to the carriage.

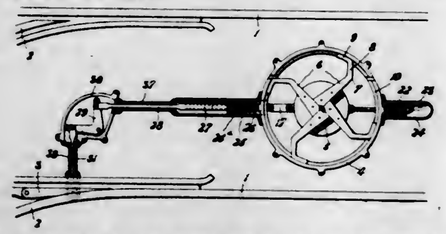
4. An apparatus of the class described, comprising a track, a carriage movable upon the track, bearings arranged longitudinally of the carriage, a vertical shaft having trunnions engaging the bearings, a circular table having a sleeve journaled on the shaft, the upper face of the table being provided with radial vanes, means connected with the shaft for rocking said shaft upon its trunnions whereby to incline the table with respect to the carriage, a shield arranged adjacent to the periphery of the table, and means for swinging the shield from side to side of said table.

5. An apparatus of the class described, comprising a track, a carriage movable upon the track, a circular table mounted at one end of the carriage, the upper face thereof being provided with radial vanes, means for rocking the table upon an axis parallel with the longitudinal center of the carriage, a shield arranged at the periphery of the table, and means for swinging the shield upon a center coinciding with the center of the table.

6. An apparatus of the class described, comprising a track, a carriage movable upon the track, a rocking table at one end of the carriage and provided on its upper face with radial vanes, and means for rocking the table upon an axis parallel to the longitudinal center of the carriage.

7. In apparatus of the class described, a movable carriage, a circular table at one end of the carriage, means for feeding material to the table, means for rotating the table, and means for swinging the table on an axis parallel with the longitudinal center of the carriage and with a diameter of the table.

858,219. AUTOMATIC RAILWAY-SWITCH. JOHN G. RYAN, Montreal, Quebec, Canada. Filed Oct. 25, 1906. Serial No. 340,498.



Claim.—1. In an automatic switch, a rotatable member, an eccentric track thereon, a reciprocatable member, a pair of rollers mounted thereon and engaging opposite sides of said track, a spring tensioning said reciprocatable member, means connecting said reciprocatable member and switch point, and means carried by a car for engaging said rotatable member.

2. In an automatic switch, a rotatable member, an approximately elliptical track thereon, depressions in said track at the extremities of its minor and major axes, a reciprocatable member, means mounted on said member adapted to engage the track, a spring tensioning said member, means connecting said reciprocatable member and switch point, and means carried by a car for engaging said rotatable member.

3. In an automatic switch, a rotatable member, an eccentric track on one side of said member, a plurality of radial arms on the other side of said member, a reciprocatable member, means mounted on said member adapted to engage the track, a spring tensioning said member, means connecting said reciprocatable member and switch point, and means carried by a car for engaging said rotatable member.

4. In an automatic switch, a rotatable member, a track mounted thereon, a plurality of radial arms attached to said member, shoes at the extremities of said arms, a tensioned reciprocatable member, means mounted thereon for engaging said track, means connecting said reciprocatable member and switch point, and means carried by a car for engaging said rotatable member.

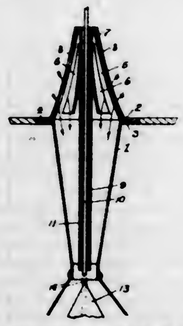
5. In an automatic switch, a rotatable member, a track mounted thereon, a plurality of radial arms fixed to said rotatable member, a tensioned reciprocating member, means mounted thereon for engaging said track, a casing inclosing said mechanism, a slot in the top thereof, a pair of gates adapted to close said slot, springs normally maintaining said gates closed, yieldable means connecting said reciprocating member and the switch point, and means carried by a car adapted to enter said slot and engage said radial arms.

6. In an automatic switch, a rotatable member, an elevated track on one side thereof, a plurality of radial arms on the opposite side thereof, a tensioned reciprocatable member, means mounted thereon for engaging opposite sides of said track, means connecting said reciprocatable member and the switch point, and means carried by a car for engaging the radial arms.

7. In an automatic switch, a rotatable member, a raised track on one side thereof, a plurality of shoe-bearing radial arms on the opposite side thereof, a tensioned reciprocatable member, rollers mounted thereon for engaging opposite sides of said track, a casing inclosing said mechanism, a slot in the top thereof, spring actuated gates normally closing said slot, yieldable means connecting said reciprocatable member and the switch point, and means carried by a car adapted to traverse said slot and engage the radial arms.

8. In an automatic switch, a rotatable member, an eccentric track on one side thereof, a plurality of radial arms curved toward their extremities to be tangential to said rotatable member on the opposite side thereof, shoes on the extremities of the arms, a tensioned reciprocatable member, rollers mounted thereon for engaging opposite sides of said track, a casing inclosing said mechanism, a slot in the top thereof, spring actuated gates normally closing said slot, yieldable means connecting said reciprocatable member and the switch point, and means carried by a car adapted to traverse said slot and engage the radial arms.

858,220. LIQUID-FUEL BURNER. EMANUEL D. SCHMUCKER, Nappanee, Ind. Filed Feb. 20, 1906. Serial No. 302,030.



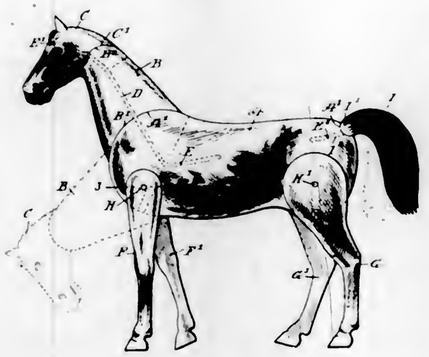
Claim.—1. The combination with a stove, of an oil burner comprising an air chamber depending within the stove, a sleeve depending within said chamber, an oil supply pipe passing through said sleeve, the oil pipe and sleeve being arranged to form an air space between them, outwardly diverging arms secured to the lower end of the chamber, a fuel receiving and gas generating member supported by said arms, and means for regulating the admission of air to said chamber.

2. The combination with a stove, of a burner comprising an air chamber having a dome extending above the top of the stove and provided with openings, a revoluble cap inclosing said dome of the chamber and provided with openings adapted to coincide with the openings of the dome, a fuel supply pipe, and a fuel receiving member suspended from the lower end of the air chamber.

3. The combination with a stove, of an oil burner comprising an air chamber depending within the stove, the chamber having its walls converging at each end, an oil supply pipe extending through the chamber and means arranged to coöperate with the supply pipe to receive the fluid for combustion.

4. The combination with a stove, of an oil burner comprising an air chamber depending within said stove, said chamber having its walls converging at each end, one end having openings, a sleeve disposed within said chamber, an oil supply pipe extending through said sleeve and spaced from the latter, a revoluble cap embracing the perforated end of said chamber and provided with openings adapted to coincide with the first mentioned openings, and means arranged to coöperate with the supply pipe to receive the fluid for combustion.

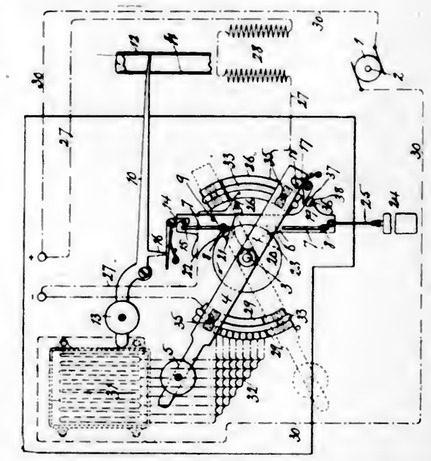
858,221. TOY. WILLIAM F. SCHOENHUT, Philadelphia, Pa. Filed Aug. 30, 1906. Serial No. 332,676.



Claim.—1. A toy of the class described, comprising a body having a segmental front shoulder, a head having its neck fitting the front shoulder, and an elastic cord under tension and attached to the said body and the said head to hold the same together, and to allow swinging the head and neck on the said body, the sides of the neck and body being flush with each other, and legs pivoted to the sides of the body whereby to permit of the head swinging therebetween.

2. A toy of the class described comprising a body having a segmental front shoulder, a head having its neck fitting the front shoulder, and an elastic cord under tension attached to said body and said head to hold the same together and to permit of swinging the head and neck on said body, the said head being mounted to swing on the said neck and held to the latter by the cord, the said body having a vertical slit to permit the movement of the cord, and legs joined to the sides of the body and spaced apart from each other whereby to permit the movement of the neck therebetween.

858,222. ELECTRIC-CIRCUIT CONTROLLER. MAX SCHUPPE, New York, N. Y., assignor to Bernard F. Seadler, New York, N. Y. Filed Jan. 7, 1905. Serial No. 240,091.



Claim.—1. An electric circuit controller for an electric motor, comprising two branch circuits, one for connection with the motor armature and the other with its field, and means for completing it through the field before completing it through the armature, and for breaking the circuit through the armature before breaking it through the field, and mechanical connections between the motor and switch whereby the latter is actuated.

2. In an electric circuit controller, the combination of a motor, two sets of terminals, one for the motor armature circuit and one for the field circuit, a shaft, connections between the motor and the shaft for revolving the latter, a lever loosely journaled between its ends on said shaft, means for normally holding the lever with its contacts in connection with the terminals during the greater part of the revolution of said shaft, and means connected with said shaft for releasing the lever at a period of the shaft's revolution, whereby the lever may turn and move the contacts first out of connection with the armature circuit terminals and then out of connection with the field circuit terminals.

3. In an electric circuit controller, the combination of a motor, two sets of terminals, one for the motor armature circuit and one for the field circuit, a shaft, connections between the motor and the shaft for revolving the latter, a lever loosely journaled between its ends on said shaft, means for normally holding the lever with its contacts in connection with the terminals during the greater part of the revolution of said shaft, and means connected with said shaft for releasing the lever at a period of the shaft's revolution, whereby the lever may turn and move the contacts first out of connection with the armature circuit terminals and then out of connection with the field circuit terminals.

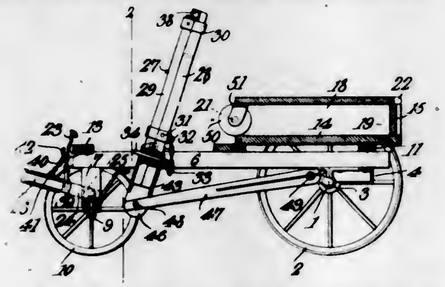
858,223. EXPRESS-WAGON. JAMES A. SHERRY, Fall River, Mass. Filed July 13, 1906. Serial No. 326,126.

Claim.—1. A wagon having a rear body member, a forward body member connected with said rear body member, and propelling mechanism located partly under said forward body member and having a removable handle.

2. A wagon having a rear body member provided with side walls, and a forward body member having side walls pivotally connected with the side walls of said rear body member.

3. A wagon having a rear body member provided with side walls, a forward body member having side walls pivotally connected with the side walls of the rear body mem-

ber, and an overlapping member connected with one of said body members for covering the joint therebetween.



4. A wagon having a rear body member provided with side walls, a forward body member having side walls pivotally connected with the side walls of the rear body member, a cross piece for covering the lower end of the joint between said body members, and an overlapping member for covering the upper portion of the joint between said body members.

5. A wagon having a rear body member provided with side walls having rounded forward ends, and a forward body member provided with side walls having rounded rear ends pivotally connected with the forward ends of the side walls of the rear body member.

6. A wagon having longitudinally extending sills, rear, intermediate and forward cross pieces on said sills, a rear body member connected with said rear and intermediate cross pieces, a forward body member pivotally connected with said rear body member and adapted normally to rest upon said intermediate and forward cross pieces and to be folded rearward upon said rear body member, and propelling mechanism located partly beneath said forward body member.

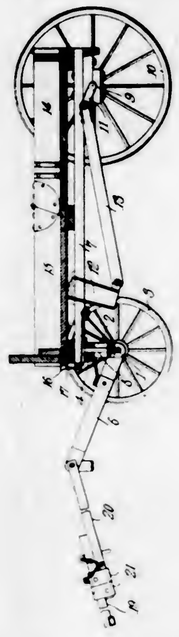
7. A wagon having longitudinal sills, rear, intermediate and forward cross pieces upon said sills, a rear body member connected with said rear and intermediate cross pieces, a forward body member pivotally connected with said rear body member and adapted to rest normally upon said intermediate and forward cross pieces, and a catch mounted upon said forward cross piece and adapted to hold said forward body member normally in position.

8. A wagon having a drive axle provided with drive wheels, a U-shaped bracket, L-shaped in cross section, connected with said drive axle, a pair of longitudinal sills connected with said U-shaped bracket, a guide axle pivotally connected with said longitudinal sills at the forward ends thereof, guide wheels upon said guide axle, a yoke pivotally connected with said guide axle and having a socket, a handle adapted to be connected with said socket and consisting of rear and forward sections slidably connected with each other, a retaining pin for securing the rear section of said handle in the socket of said yoke, a second retaining pin for holding said sections in extended position, a second socket pivotally mounted between said sills and having a crank connection with said drive axle, said second socket being adapted to receive said extensible handle and having perforations to receive said second retaining pin for securing the handle in position, a rear body member mounted upon said sills and having side walls, a forward body member having side walls pivotally connected with the side walls of the rear body member, and a catch for locking the said forward body member in its forward position.

838,224. VEHICLE PROPELLING AND STEERING MECHANISM. JAMES A. SHERRY, Fall River, Mass. Filed Dec. 1, 1906. Serial No. 345,887.

Claim.—1. A vehicle having a propelling mechanism, steering mechanism and a combined tongue and lever adapted to be interchangeably used in connection with either the propelling or steering mechanism.

2. A vehicle having propelling mechanism, steering mechanism, and an extensible combined tongue and lever adapted to be interchangeably used in connection with either the propelling or steering mechanism.



3. A vehicle having propelling mechanism, steering mechanism and a combined tongue and lever adapted to be interchangeably used in connection with either the propelling or steering mechanism and means for varying the length and thickness of said tongue and lever.

4. A vehicle having propelling mechanism provided with a connecting member, steering mechanism provided with a connecting member and a combined tongue and lever adapted to be interchangeably connected with either of said connecting members.

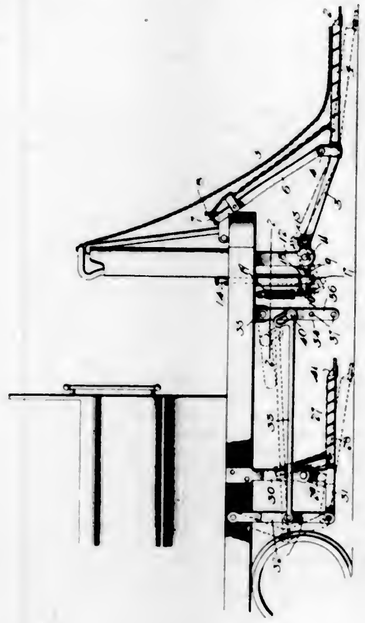
5. A vehicle having drive wheels and guide wheels, a pivotally mounted socket connected with the drive wheels, a stub tongue connected with the guide wheels and a combined lever and handle adapted to be interchangeably used with either the socket or the stub tongue.

6. A vehicle having drive wheels and guide wheels, a pivotally mounted socket connected with the drive wheels, a superstructure carried by the guide wheels, foot-pedals mounted upon said structure and a combined lever and tongue adapted to be interchangeably applied to the socket or the guide wheels.

7. A vehicle having drive wheels and an axle supported by guide wheels, said axle having a superstructure, the frame of the vehicle being pivotally mounted upon said superstructure, said structure having a cross bar lying parallel with said axles, said cross bar having foot-pedals at its ends, a stub tongue fixed to the superstructure, a socket pivotally mounted and being operatively connected with the drive wheels, a combined lever and tongue adapted to be interchangeably applied to said socket or said stub tongue.

8. A vehicle having propelling mechanism, steering mechanism and a combined lever and tongue consisting of longitudinally slidable sections held together by bands, said combined lever and tongue adapted to be applied to the propelling or steering mechanism.

858,225. CAR-FENDER. EARL SHERWOOD, Honesdale, Pa. Filed Mar. 15, 1907. Serial No. 362,438.



Claim.—1. A car fender embodying a scoop, and means for supporting and tilting the scoop comprising a trip carried by the car and having the scoop pivotally supported thereon, and manually operated means for operating said trip.

2. A car fender comprising hangers for rigid attachment to a car, a trip fulcrumed on said hangers, means for operating said trip, and a scoop having a detachable pivotal connection with said trip.

3. A car fender comprising hangers for rigid attachment to a car, a trip fulcrumed on said hangers, a manually operated plunger for operating said trip, and a scoop having a detachable pivotal connection with said trip.

4. A car fender comprising hangers for rigid attachment to a car, a trip fulcrumed on said hangers, a scoop having a detachable pivotal connection with said trip, a manually operated device for operating said trip, and a spring for restoring the trip and scoop to their normal positions.

5. A car fender comprising a tilting wheel guard fulcrumed intermediate its front and rear end, toggle levers connecting said guard in rear of its fulcrum with a fixed part of the car, a swinging guard-operating gate, and one or more operating rods connecting the toggle levers and gate, whereby the gate actuates the wheel guard with a positive movement.

6. A car fender comprising a tilting wheel guard, toggle-levers connecting said guard with the car, a swinging guard-operating gate, and one or more rods connecting the toggle-levers and gate and having their ends slotted to permit the gate to swing out of the way after tripping the wheel guard.

7. A car fender comprising a scoop embodying a front cross bar, and a buffer secured to said cross bar and embodying superimposed clamping strips one of which is provided with an inclined upper portion, a resilient strip held between the clamping strips and projecting in advance thereof, and means for detachably securing said buffer to the front cross bar of the scoop.

858,226. WATER-MOTOR. JOSEPH P. SHEVLIN and HENRY P. SHEVLIN, Denver, Colo. Filed Oct. 2, 1906. Serial No. 337,077.



Claim.—1. In a water motor, a valve cylinder, having cylinder heads at its opposite ends, a hollow piston rod in said cylinder, a hollow piston connected to said piston rod, an automatic water controlled inlet valve in said piston head arranged to discharge water into the opposite ends of said cylinder, a reciprocating sleeve surrounding said valve, pins on the opposite ends of said sleeve adapted to engage the opposite cylinder heads of said cylinder, and a pair of exhaust water ports in the opposite sides of said hollow piston, having valve seats in their outer ends, valves mounted on the opposite ends of a single valve stem arranged to extend through said piston head, said valves being arranged on the opposite sides of said piston head and adapted to control said valve seats, and sleeves surrounding said valves adapted to be moved by engagement with said cylinder heads to control said valve ports and arranged to exhaust the water from the opposite ends of said cylinder.

2. In a water motor, a cylinder having cylinder heads, a hollow piston head in said water cylinder divided into two compartments, a reciprocating valve sleeve mounted in one of said compartments in said hollow cylinder head, having pins that project slidably through said piston head, and are adapted to engage said cylinder heads, valve ports through the opposite ends of said piston head in line with said sleeve, a double-ended valve in said sleeve, exhaust ports in said piston head, and suitable automatic water exhaust valves for alternately opening and closing said ports.

3. In a water motor, the combination with the cylinder and cylinder heads, of the piston-head having two compartments in it, a hollow piston rod on each side of said piston head, extending operatively through said cylinder heads, one of which forms a water inlet, while the other forms an exhaust water outlet, said water inlet piston rod being connected to one of said compartments of said piston head, and said exhaust water piston rod being connected to the other compartment of said piston head, water ports leading from said water inlet compartment through the opposite sides of said piston head, a double-ended valve arranged to open said ports in alternate order, a movable sleeve supporting said valve and provided with pins projecting in opposite directions through said piston-head

and arranged to contact with said cylinder heads at the opposite ends of the piston's strokes and reverse said water inlet valve, a water inlet chamber surrounding said water inlet piston and secured to the adjacent cylinder head, and valve-controlled ports for permitting the escape of the exhaust water.

4. In a water motor, a headed cylinder, a piston within said cylinder, provided with two interior compartments separated by a partition, having ports which communicate with the cylinder, double-acting valves for controlling the ports in the compartment, an inlet communicating with one compartment, an outlet communicating with the other compartment, and longitudinally movable sleeves for supporting said valves.

5. In a water motor, a headed cylinder, a piston in said cylinder having two separate compartments, having ports communicating with the cylinder, a tubular piston rod secured to one end of the piston in communication with one of its compartments, and forming a water inlet, a longitudinally movable plug valve in said compartment for controlling its ports, and a longitudinally movable sleeve for supporting said valve, a tubular piston forming an exhaust for the other compartment, a valve in said compartment for controlling its ports, and a longitudinally removable sleeve for supporting the valve, and a cylinder surrounding said inlet tube, and provided with an inlet.

6. In a water motor, a cylinder having cylinder heads, a hollow piston head in said water cylinder divided into two compartments, means including a tubular member in one end of said cylinder and a tube on the adjacent end of said piston slidably mounted in said cylinder tube for admitting water to said piston, and an exhaust tube connected to the opposite side of said piston for supplying and exhausting water to said cylinder and piston, a reciprocating valve sleeve mounted in one of said compartments in said hollow cylinder head, having pins that project slidably through said piston head, and are adapted to engage said cylinder heads, valve ports through the opposite ends of said piston head in line with said sleeve, a double-ended valve in said sleeve, exhaust ports in said piston head, having seats at their outside ends, a valve stem extending loosely through said valve ports, a valve on each of the opposite ends of said valve stem adapted to fit said valve seat and movable sleeves slidably surrounding said valves on opposite sides of said piston, provided with pins adapted to engage said cylinder heads and move said sleeve to open and close said ports.

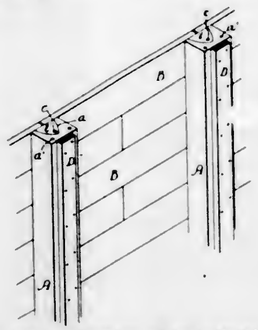
7. In a water motor, the combination with the cylinder and cylinder heads, of the piston-head having two compartments in it, a hollow piston rod on each side of said piston head, extending operatively through said cylinder heads, one of which forms a water inlet, while the other forms an exhaust water outlet, said water inlet piston rod being connected to one of said compartments of said piston head, and said exhaust water piston rod being connected to the other compartment of said piston head, water ports leading from said water inlet compartment through the opposite sides of said piston head, a double-ended valve arranged to open said ports in alternate order, a movable sleeve supporting said valve and provided with pins projecting in opposite directions through said piston-head and arranged to contact with said cylinder heads at the opposite ends of the piston's strokes and reverse said water inlet valve, a water inlet chamber surrounding said water inlet piston rod and secured to the adjacent cylinder head, and exhaust water ports through the opposite ends of said piston, a valve stem extending loosely through said ports, a valve at each end of said valve stem adapted to control said ports, sliding pins extending through said piston, and sleeves mounted on the opposite ends of said pins and surrounding said valves and adapted to be moved by the engagement of said pins with said cylinder heads to open and close said ports in conjunction with said double ended valve.

8. In a water motor, a cylinder having ends, a reciprocating piston in said cylinder having water inlet and outlet ports, a double-ended valve arranged to control said outlet ports, and a pair of sleeves arranged to move in unison, each sleeve surrounding one end of said valve loosely and adapted to move reciprocally over said valve, said sleeves and valves being arranged to engage the ends of said cylinder at the ends of said piston's reciprocal stroke means including a valve within said piston for controlling said inlet ports and means including oppositely extending hollow piston rods attached to opposite sides of said piston for conveying pressure fluid to and from said piston.

9. In a water motor, the combination of the cylinder, provided with cylinder heads, the hollow piston provided with water inlet and outlet ports extending axially through said piston, an oblique partition in said piston between said inlet and outlet ports and the hollow water inlet and exhaust piston rods, with a valve within said hollow piston at one side of said partition of less length than the space in said piston arranged to control said inlet ports, and provided with projecting pins at each end extending slidably through the inlet ports in the opposite sides of said piston in position to strike said cylinder heads, and move said valve axially in said piston, and a sleeve in said piston head of less length than the space in said piston arranged to surround loosely said valve and provided with projections on its opposite ends extending slidably through said piston, and of enough greater length than the pins of said valve to strike said cylinder heads before said valve pins and a valve arranged to control said outlet ports on the opposite side of said partition.

10. In a water motor adapted to be operated by water pressure, a cylinder, a reciprocating piston in said cylinder, having water inlet and outlet passages, reciprocating valves arranged to strike the ends of said cylinder at the ends of said piston's reciprocal strokes, and reciprocal sleeves surrounding said valves and arranged to engage the ends of said cylinder in advance of the engagement therewith of said valves, whereby said piston is actuated and its movement is automatically reversed in said cylinder by said water pressure co-operating with said sleeves.

858,227. CONCRETE CONSTRUCTION. WALTER S. SHOURDS, Philadelphia, Pa. Filed May 31, 1906. Serial No. 319,611.



Claim.—1. The combination of an integral stud of concrete having a longitudinal groove in one face, with slabs of concrete resting against said face, and secured thereto by concrete filling in the groove, substantially as described.

2. The combination in an integral concrete stud having a groove in one face, slabs of concrete mounted against said face, the slabs having their abutting edges in line with the groove, with a filling mounted in the groove and uniting the slabs to the stud, substantially as described.

3. The combination of a stud having a longitudinal groove in one face, slabs mounted against said face, the ends of the slabs bearing against the face, and overlapping the groove, and spaced apart with cement poured into the groove while in a fluid state, and uniting the slabs to the stud, the said cement filling the space between the ends of the slabs, substantially as described.

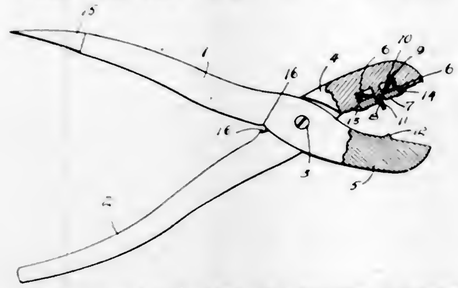
4. The combination of a stud having a groove in one face thereof, slabs resting against the grooved face of the stud, a reinforcing rod mounted within the groove, and cement in the groove embedding the tie rod and uniting the slabs to the stud, substantially as described.

5. The combination of a stud having a groove in one face thereof, slabs resting against the said face of the stud, reinforcing rods in the said stud, and a reinforcing rod in the groove of the stud, cement poured into the groove while in a fluid state, the cement embedding the rod and uniting the slabs to the stud, and uniting the end of one slab to the other, substantially as described.

6. The combination of a concrete stud having a groove in its face, reinforced slabs secured to the grooved face of the stud by cement poured into the groove while in a fluid state, the reinforcing members of the slabs being turned into the groove, substantially as described.

7. As a new article of manufacture, a concrete stud having a groove in one face thereof, lugs projecting into the groove and so arranged that a tie rod placed in the groove will be held away from the back of the groove so that it will be embedded in cement placed in the groove, substantially as described.

858,228. COMBINATION-TOOL. JAMES T. SLAUGHTER, Colfax, Iowa. Filed Nov. 1, 1905. Serial No. 285,401.

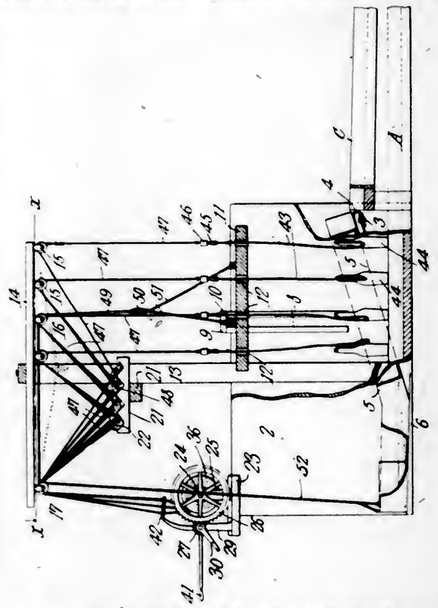


Claim.—1. A device of the class described, comprising pivoted jaws, one of said jaws having a recess in its inner face and having a central projection in the recess, a centrally perforated plate slidably engaged in the recess for movement into and out of the latter, said projection being engaged in the perforation of the plate, a bowed spring plate disposed with its ends against the bottom of the recess and lying with its convex side against the first named plate, to hold said plate at the outward limit of its movement, said bowed plate having an opening in which the projection is slidably received, springs secured to the inner face of the recessed jaw and extending over the first named plate, to prevent disengagement of said plate from the recess.

2. A device of the class described comprising pivoted jaws, one of said jaws having a recess in its inner face and having a central projection in the recess, a plate slidably engaged in the recess for movement into and out of the latter, and having a central opening in which the projection is slidably engaged, a bowed spring plate disposed with its ends against the bottom of the recess and having an opening in which the projection is received, the convex side of said spring contacting with the plate to hold the latter yieldably against inward movement, and retaining devices arranged to limit the downward movement of the first-mentioned plate, said plate being arranged to receive a rivet within its opening when at the outward limit of its movement.

858,229. BOWLING-PIN-SETTING APPARATUS. JOSEPH M. STOKES, Okeene, Okla. Filed Feb. 28, 1907. Serial No. 359,777.

Claim.—1. The combination with a setting frame having pin receiving openings; of a plurality of separate flexible lifting devices extending through the openings, a pin connected to each of said devices, a drum, means for rotating the drum to simultaneously actuate the lifting devices and center the pins within the openings, and means upon said devices for taking up slack during the centering operation.



2. The combination with a setting frame having pin receiving openings; of movably supported lifting devices extending through the openings, a pin at one end of each of said devices, an actuating device connected to the other end of said lifting devices, a weight upon each of the lifting devices to hold one end portion thereof normally slack, weights loosely mounted on the lifting devices for holding the remaining portions thereof normally taut, and a rack normally supporting the loosely mounted weights.

3. The combination with a vertically movable setting frame having pin receiving openings, and means for actuating the frame; of a plurality of separate flexible lifting devices extending through the openings, means upon each of said devices for holding one end portion thereof normally slack, a pin connected to the slack portion of each lifting device, means for actuating the lifting devices to center the pins within the openings, and separate means upon the lifting devices for taking up slack during the centering operation.

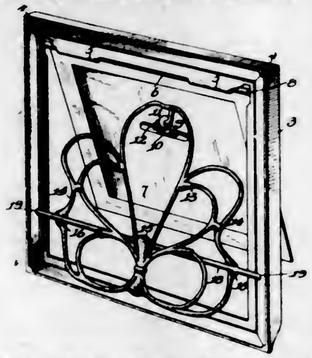
4. The combination with a rotatable element, winding devices mounted thereon, and means for locking said devices to the element; of a setting frame having a plurality of pin receiving openings, a flexible actuating device connected to the frame and one of the winding devices, a plurality of flexible lifting devices secured to the other winding device and supported within the openings in the setting frame, and a pin connected to each of the lifting devices.

5. The combination with a setting frame having pin receiving openings; of a plurality of separate flexible lifting devices, a pin detachably connected to each of said devices, means for simultaneously actuating the lifting devices to direct the pins into the openings and separate means slidable upon the lifting devices for taking up slack therein while directing pins into the openings.

858,230. WALL-REGISTER. HERBERT SYMONDS, East St. Louis, Ill. Filed May 19, 1906. Serial No. 317,723.

Claim.—1. In a wall register, the combination of a frame, a single valve pivotally and loosely mounted in the

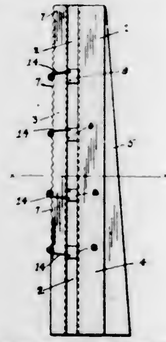
frame, a horizontal transverse rod rigidly mounted in the frame, a grill pivotally mounted upon said rod and having frictional engagement therewith, and a link connecting the valve with the grill, substantially as specified.



2. In a wall register, the combination of a frame, a single valve pivotally mounted at the upper inner edge of the frame, a rod horizontally and rigidly mounted across the frame, a grill having a body portion whose rear face contacts with said rod, and side-members whose front faces contact with said rod, and a link connecting the valve to the grill so that the valve is held in open, closed or intermediate positions by the frictional engagement of the grill with the rod, substantially as specified.

3. In a wall register, the combination of a frame, a single valve pivotally mounted at the upper inner edge of the frame, a rod horizontally and rigidly mounted in the frame, a grill pivotally mounted within the frame upon said rod, and a link connecting the valve to the grill so that the valve is held in open, closed or intermediate positions by the frictional engagement of the grill with the rod, substantially as specified.

858,231. CONCRETE POST AND ADJUSTABLE FASTENER FOR WIRE FENCES. ALFRED J. TAYLOR, Waterville, Ohio, assignor of one-half to Joseph H. McClure, Waterville, Ohio. Filed Sept. 7, 1906. Serial No. 333,638.



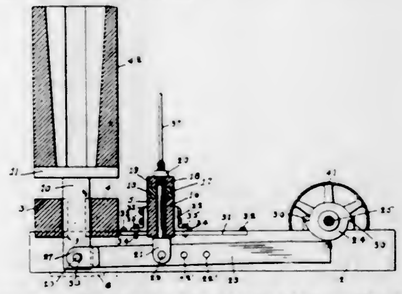
Claim.—1. In a concrete post and adjustable fastener for wire fences, the combination with a post provided, along one side and extending from one end, with a lengthwise groove having sides diverging inward from the outer side opening, and a plurality of fasteners insertible in the end of the groove and movable along the groove when parallel with the groove sides, and adapted to be locked in the grooves when out of parallel, each comprising a plate formed complementary to and adapted to be retained by the sides of the groove, except at the end opening, and a flexible wire eccentrically secured to the plate and extending through the side opening of the groove.

2. In a post and adjustable fastener for wire fences, the combination of a post provided, along one side and extending from one end, with a groove having a contracted opening along the side, and a plurality of fasteners, each insertible into the groove at the end opening and movable along the groove in one relation thereto, and to be wedged therein when out of such relation, each fastener comprising a metal body adapted to be retained in the groove by the post, except at the end opening, and means to secure the metal body to a line wire of a fence and adapted thereby to wedge the body in the groove, substantially as set forth.

3. In a post and adjustable fastener for wire fences, the combination of a post provided, along one side and extending from one end, with a groove having sides diverging inward at an angle from the side opening of the groove, and a plurality of fasteners insertible into the groove at the end opening, and movable along the groove in one relation to the sides, each fastener comprising a plate having end portions angled complementary to the sides of the groove, and a central portion extending across the side opening of the groove and provided with perforations at one side above and below a center line, and a flexible wire extending through one of the perforations of the plate and looped at its inner end.

4. In a post and adjustable fastener for wire fences, the combination of a post provided, along one side and extending from one end, with a groove having sides diverging inward at an angle from the side opening of the groove, and a plurality of fasteners insertible into the groove at the end opening, and movable along the groove in one relation to the sides, each fastener comprising a plate having end portions angled complementary to the sides of the groove, one of said end portions being slightly convexed outwardly and the other inwardly, and a central portion extending across the side opening of the groove, and provided with perforations adjacent to the outwardly convexed end portion and above and below a center line of the plate, and a flexible wire extending through one of the perforations of the plate and looped at its inner end.

858,232. GRAVITY TAMPING AND MOLDING MACHINE FOR PLASTICS. ALFRED J. TAYLOR and JOSEPH H. MCCLURE, Waterville, Ohio. Filed Sept. 7, 1906. Serial No. 333,639.



Claim.—1. In a machine for tamping and molding semi-fluid and plastic materials, the combination with a bumper, a mold base movably mounted on the bumper, a mold mounted on the mold base, and means to successively at short intervals raise and drop the mold base on the bumper while the mold is being filled, of means to gradually reduce the height of the lift and drop of the mold base during the filling of the mold.

2. In a machine for tamping and molding semi-fluid and plastic materials, the combination with a bumper, a mold base mounted on the bumper and adapted to be raised and dropped thereon, a mold mounted on the mold base, a lever adapted to lift the mold base, and means adapted to engage and disengage the lever and operate the lever to successively lift and drop the mold base at short intervals on the bumper while the mold is being filled, of means to gradually reduce the height of the lift of the lever during the filling of the mold, by gradually shifting the fulcrum of the lever, substantially as set forth.

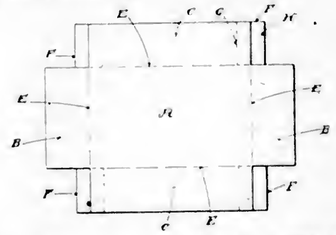
3. In a machine for tamping and molding semi-fluid and plastic materials, the combination with a bumper, a mold base mounted on the bumper and adapted to be raised and dropped thereon, a mold mounted on the mold base, a lever adapted to lift the mold base, and a wheel having cam projections adapted to successively engage and disengage the lever at short intervals, and operate the lever to successively lift and drop the mold base on the bumper while the mold is being filled, of means to gradually reduce the height of the lift of the lever during the filling of the mold, comprising a stationary support, a horizontally movable lower bearing support mounted on the stationary support, and having an incline bearing face, a vertically movable upper bearing support mounted on the horizontally movable lower bearing support, and having an incline face complementary to and engaging the incline face of the horizontally movable support, a suspension rod pendently supported by the upper bearing support and pendently supporting and fulcruming the lever, and means connected to the horizontally movable lower bearing support, adapted to adjust it to gradually lower the upper bearing support and thereby lower the body of the lever, and gradually diminish the height of its lift of the mold base.

4. In a machine for tamping and molding plastic and semi-fluid materials, the combination with a bumper, a vertically movable mold base normally supported by the bumper, a mold mounted on the mold base and a lifting beam pivoted at one end to the mold base, of a stationary support, a lower bearing block mounted on and horizontally movable on the stationary support, and provided with an upper bearing face inclined to the horizontal, a vertically movable upper bearing block, having an inclined lower bearing face reversely inclined complementary to and engaged with the inclined face of the lower bearing block, means to pendently and centrally support and fulcrum the lifting beam on the upper bearing block, a shaft revolubly mounted on the stationary support, a wheel mounted on the shaft over the free end of the lifting beam, a wheel having a plurality of wiper cams adapted to successively engage and depress the free end portion of the lifting beam, and disengage themselves therefrom, whereby the beam is operated to successively lift and drop the mold base on the bumper, and a lever connected to the lower bearing block, adapted to move it along the stationary support and gradually lower the upper bearing block and the lifting beam, substantially as set forth.

5. In a machine for tamping and molding plastic and semi-fluid materials, the combination with a plurality of bumpers each having a vertically movable mold support normally supported thereon, of a plurality of lever beams, one for each mold support, and having one end portion pivotally connected to the mold support, a stationary support, a cam shaft journaled on the stationary support, a plurality of cam wheels mounted on the shaft, one for each lever beam, each cam wheel having a plurality of cam projections, provided with abrupt terminations at their points of greatest eccentricity, and means to fulcrum each lever beam between its mold support and its cam wheel, with its free end in engagement with its cam wheel in position to be depressed and then released by each cam projection as the wheel revolves, substantially as set forth.

6. In a machine for tamping and molding plastic and semi-fluid materials, the combination with a plurality of bumpers each having a vertically movable mold support normally supported thereon, of a plurality of lever beams, one for each mold support, and having one end portion pivotally connected to the mold support, a stationary support, a cam shaft journaled on the stationary support, a plurality of cam wheels mounted on the shaft, one for each lever beam, each cam wheel having a plurality of cam projections, provided with abrupt terminations at their points of greatest eccentricity, and means to adjustably fulcrum each lever beam between its mold support and its cam wheel, with its free end in engagement with the cam wheel in positions to be variably depressed and then released by each cam projection as the wheel revolves, substantially as set forth.

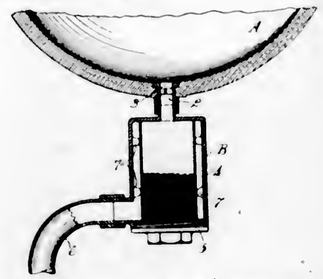
858,233. METHOD OF MAKING PAPER BOXES. EUGENE H. TAYLOR, Hyde Park, Mass. Filed May 9, 1906. Serial No. 315,925.



Claim.—1. The improved method of making paper boxes which consists in simultaneously attaching to the appropriate portions of the material for a box a portion of a piece of stay strip for each corner of the box, forming the box, and then simultaneously attaching the previously unattached portions of said pieces of stay strip.

2. The improved method of making paper boxes which consists in simultaneously attaching to the appropriate portions of the material for a box when in a flat condition a portion of a piece of stay strip for each corner of the box, forming the box, and then simultaneously attaching the previously unattached portions of said pieces of stay strip.

858,234. ATTACHMENT FOR WASHBASINS AND THE LIKE. JACOB TREAGER, Oakland, Cal. Filed June 7, 1906. Serial No. 320,591.

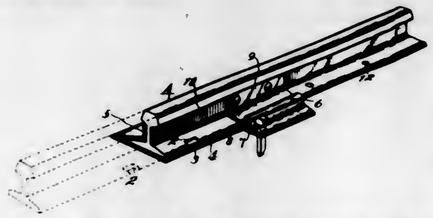


Claim.—The combination with a basin, of a receptacle open at the bottom and having a restricted neck-portion at the top provided with an inlet opening, said neck externally threaded to receive a union for the connection of the receptacle to the basin, said receptacle having a lateral discharge, the interior of the receptacle provided with inwardly projecting spacing lugs, a cylindrical screen fitting up through the bottom of the receptacle and supported by said lugs out of contact with the sides of the receptacle, said cylindrical screen surrounding the inlet in said neck, and a screw plug fitting the receptacle and supporting the lower end of the screen and holding the same against the top of the receptacle.

858,235. RAIL-JOINT AND ANTICREEPING DEVICE. FRANCIS M. VOLK, Minturn, Cal. Filed Nov. 1, 1906. Serial No. 341,568.

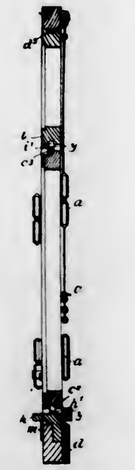
Claim.—1. The combination of a rail chair having a base portion and a fixed integral angle plate, said base portion having a flange between which and said fixed angle plate the rail is adapted to seat, and a movable angle plate

having its outer edge turnably fitted to the inner wall of the flange of the chair.



2. A rail chair having a base portion provided with upwardly extending lugs adapted to fit corresponding recesses in the base flange of a rail to prevent the rail from creeping, and said base portion having a fixed integral angle plate, and a removable angle plate, said base portion of the angle plate having a flange and said removable portion of said angle plate having its outer edge hingedly mounted to the inner wall of the flange of the fixed angle plate.

858,236. WINDOW. CARL WALCHNER, Ermadingen, Switzerland, assignor to Jacob Emanual, Frankfort-on-the-Main, Germany. Filed Mar. 14, 1905. Serial No. 250,119.



Claim.—1. In a window of the class described, the combination with a frame, of a supporting ledge vertically guided therein and periodically resting on the sill, means for raising and lowering said supporting ledge, an upper sash vertically guided in said frame, means for raising and lowering said upper sash, a lower sash adapted to be vertically guided in said frame when resting on said supporting ledge, a plurality of external hinges, the pivots of which are adapted to engage in their loops only in the lowermost position of said supporting ledge, and a plurality of internal hinges, the pivot in the upper internal hinge being adapted to engage in its loop only in the uppermost and an intermediary position of said supporting ledge and either member of the lower internal hinges being adapted to be shifted aside when not required.

2. In a window of the class described, the combination with a frame, of a longitudinal recess in the sill of said frame, a supporting ledge vertically guided in said longitudinal recess and in said frame, a dust and water guard on the external side of said supporting ledge, a shaft mounted in the sill of said frame to turn, a cam and a hand crank on said shaft for raising and lowering said supporting ledge, an upper sash vertically guided in said frame, means for raising and lowering said upper sash, a lower sash adapted to be vertically guided in said frame when resting on said supporting ledge, a plurality of external hinges, the pivots of which are adapted to engage in their loops only in the lowermost position of said supporting ledge, and a plurality of internal hinges, the pivots of which are adapted to engage in their loops only in the uppermost and an intermediate position of said supporting ledge and either member of the lower internal hinges being adapted to be shifted aside when not required.

3. In a window of the class described, the combination with a frame, of a supporting ledge vertically guided therein and periodically resting on the sill, means for raising and lowering said supporting ledge, an upper sash vertically guided in said frame, means for raising and lowering said upper sash, two lower sashes adapted to be vertically guided in said frame when resting on said supporting ledge, a plurality of external hinges, the pivots of which are adapted to engage in their loops only in the lowermost position of said supporting ledge, and a plurality of internal hinges, the pivots of which are adapted to engage in their loops only in the uppermost and an intermediary position of said supporting ledge and either member of the lower internal hinges being adapted to be shifted aside when not required.

4. In a window of the class described, the combination with a frame, of a longitudinal recess in the sill of said frame, a supporting ledge vertically guided in said longitudinal recess and in said frame, a dust and water guard on the external side of said supporting ledge, a shaft mounted in the sill of said frame to turn, a cam and a hand crank on said shaft for raising and lowering said supporting ledge, an upper sash vertically guided in said frame, means for raising and lowering said upper sash, two lower sashes adapted to be vertically guided in said frame when resting on said supporting ledge, a plurality of external hinges, the pivots of which are adapted to engage in their loops only in the lowermost position of said supporting ledge, and a plurality of internal hinges, the pivots of which are adapted to engage in their loops only in the uppermost and an intermediary position of said supporting ledge and either member of the lower internal hinges being adapted to be shifted aside when not required.

5. In a window of the class described, the combination with a frame, of a longitudinal recess in the sill of said frame, a supporting ledge vertically guided in said longitudinal recess and in said frame, a dust and water guard on the external side of said supporting ledge, a shaft mounted in the sill of said frame to turn, a cam on said shaft within a widened out part of said longitudinal recess and adapted to bear against said supporting ledge for raising and lowering same, a hand crank on said shaft, an upper sash vertically guided in said frame by means of tongues and grooves, means for raising and lowering said upper sash, two lower sashes adapted to be vertically guided in said frame by means of tongues and grooves when resting on said supporting ledge, a plurality of external hinges the pivots of which are adapted to engage in their loops only in the lowermost position of said supporting ledge, and a plurality of internal hinges, the pivots of which are adapted to engage in their loops only in the uppermost and an intermediary position of said supporting ledge and either member of the lower internal hinges being adapted to be turned aside when not required, said two lower sashes being adapted to engage said supporting ledge and said upper sash by means of tongues and grooves.

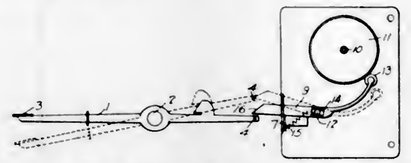
6. In a window of the class described, the combination of a frame, two independently movable sashes fitted within the frame, the lower sash comprising two sections each having hinge members on both its inner and outer faces adapted to engage with hinge members on the frame, and means for moving said lower sash vertically when closed, the parts being so arranged that when the lower sash is in its highest position all of the hinge members except those of the upper internal hinges are disengaged, and when said sash is in its lowest position, the members of the external hinges only are engaged, substantially as and for the purpose described.

7. In a window of the class described, the combination of a frame, two sashes arranged within the frame, the lower sash comprising two sections each adapted to swing both outwardly and inwardly, means for moving the upper sash vertically, and independent means for raising and lowering the lower sash to effect a connection of the members of one set of hinges and disengagment of the members of the other set.

8. In a window of the class described, the combination of a frame, two sashes mounted in the frame, the lower sash being adapted to swing both outwardly and inwardly, independent sets of hinges for supporting said lower sash when swinging outwardly and inwardly, and means for raising the lower sash to disconnect it from one of said sets of hinges and holding said sash in such position.

9. In a window of the class described, the combination of a frame, two independently movable sashes fitted within the frame, the lower sash comprising two sections, two sets of hinges arranged on opposite sides of each section of the lower sash for supporting the sash when swinging outwardly and inwardly respectively, the frame members of the lower inner hinges being adapted to swing to and from alinement with the pivot members of said hinges, and means for moving the lower sash vertically when in closed position, substantially as and for the purpose described.

858,237. CASH-REGISTER AND ATTACHMENT. HARRY T. WATSON, Tacoma, Wash. Filed Oct. 31, 1906. Serial No. 341,444.



Claim.—1. In a device of the character described, the combination of a finger lever, a sounding device, and a hammer operated by the finger lever and having a pivotal movement enabling it to be swung against the sounding device, and also having a sliding movement enabling it to be brought into engagement with the finger lever.

2. In a device of the character described, the combination of a finger lever, a sounding device, a hammer operated by the finger lever and having a pivotal movement enabling it to be swung against the sounding device, and also having a sliding movement enabling it to be moved longitudinally into engagement with the finger lever, and means for holding the hammer normally in operative position.

3. In a device of the character described, the combination of a finger lever, a sounding device, a hammer for operating the sounding device, the said hammer having a pivotal movement enabling it to be swung against the sounding device, and also having a sliding movement enabling one end thereof to be brought into engagement with the finger lever, the said engaging end being beveled.

4. In a device of the character described, the combination of a finger lever, a sounding device, a fulcrum rod, a hammer operated by the finger lever and provided with a slot for the reception of the fulcrum rod, the said hammer being thereby enabled to have a pivotal movement for being swung against the sounding device, and a sliding movement whereby it can be moved longitudinally into engagement with the finger lever.

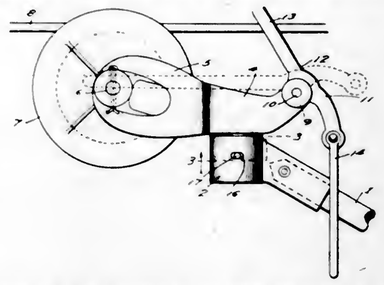
5. In a device of the character described, the combination of a finger lever, a sounding device, a fulcrum rod, a hammer provided with a longitudinal slot through which the fulcrum rod passes, the said hammer being thereby enabled to have both a swinging and a sliding movement and being adapted to operate the sounding device, the free end of the hammer being engaged by the free end of the finger lever, and a spring operating to throw the hammer against the sounding device and to hold the hammer in position for engagement with the finger lever.

6. In a device of the character described, the combination of a sounding device, a hammer adapted to operate the sounding device and having both a sliding and a swinging movement the free end of the hammer being beveled, and a finger lever provided with a lateral projection engaging the free end of the hammer and causing the hammer to have a sliding movement when brought into contact with the beveled surface.

7. In a device of the character described, the combination of a sounding device, a hammer for operating the sounding device, the said hammer having both a sliding and a swinging movement, a finger lever adapted to engage the free end of the hammer for operating the same, and a spring which serves the double function of causing the hammer to operate the sounding device and of holding the same normally in position to be engaged by the finger lever.

8. In a device of the character described, the combination of a pair of sounding devices, a pair of hammers for operating the sounding devices, a pair of finger levers for operating the before mentioned hammers, an intermediate finger lever, and a hammer engaging with the intermediate finger lever and provided with means for operating the two before mentioned hammers on opposite sides thereon.

858,238. TROLLEY-FINDER. FREDERICK G. WEBER, Ashland, Ky. Filed Feb. 19, 1907. Serial No. 358,182.



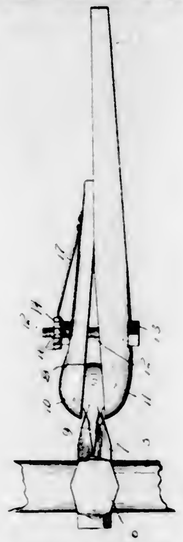
Claim.—1. In a device of the class described, a pole, a head attached to the upper end thereof and provided with rearwardly extending spaced side portions, a trolley wheel journaled between said side portions, a substantially Y-shaped trolley-finding member pivoted to the forward end of the head and having one end heavier than the other to cause said finder to normally lie in a horizontal position, and means for moving the finder to active position for engagement with the wire.

2. In a device of the class described, a pole, a vertical tubular bearing sleeve attached to the upper end of the pole, a head having a bearing spindle swiveled in said sleeve, a trolley wheel journaled on the head and adapted for engagement with a trolley wire, a trolley finder pivoted to the head at a point in advance of the wheel and having a pair of divergent arms adapted to engage at opposite sides of the wire, and means for moving the finder to wire-engaging position.

858,239. THILL-COUPLING. HORACE H. WEIGART, Inwood, Cal. Filed June 5, 1906. Serial No. 320,326.

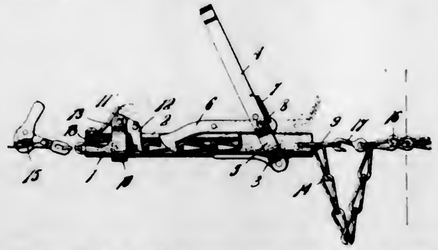
Claim.—In a thill-coupling, a bar having a ball or sphere-shaped end, strengthening ribs leading from opposite sides of the bar to the ball, combined with the thill-iron divided longitudinally into two members, each provided on its rear end with a ball or cup-shaped socket to engage the sphere or ball on the end of the bar between them, a bolt and nut for clamping said two members on said ball or sphere, notches in the head of the said nut, and a spring secured at one end to one of said members and at the other free end engaging one of the notches on

the bolt to keep it from turning, a pivot-pin passed horizontally through said cup-shaped clamps and the bail be-



tween them, and means for connecting the two thill-iron members.

858,240. WIRE-STRETCHER. FREDERICK B. WERNER, David City, Nebr. Filed Sept. 13, 1906. Serial No. 334,460.



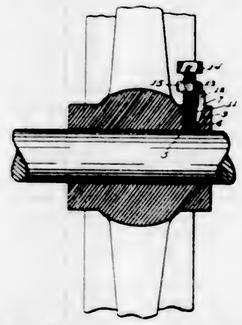
Claim.—1. A wire stretcher comprising a tubular sleeve having an elongated opening, a lever fulcrumed upon said sleeve, a hook pivoted to said lever at a point between the fulcrum and the power end thereof and entering the opening of said sleeve, a dog pivotally mounted upon the sleeve and entering the opening thereof, a chain passing through the sleeve and having at its ends means for attachment.

2. A wire stretcher comprising a tubular sleeve having an elongated opening, a lever fulcrumed to the sleeve, a hook pivoted to the lever and entering the opening of the sleeve, means for adjusting the pivotal point of the hook upon the sleeve, a dog pivotally mounted upon the sleeve and entering the opening thereof, a chain passing through the sleeve and carrying at its ends attaching means.

3. A wire stretcher comprising a tubular sleeve having an elongated opening, a lever having bowed bifurcations which receive the sleeve and which are fulcrumed to the sleeve, a hook pivoted to the lever and entering the opening of the sleeve, a dog pivotally mounted upon the sleeve and entering the opening thereof, a chain passing through the sleeve and carrying at its ends attaching means.

4. A wire stretcher comprising a sleeve having an elongated opening, a lever fulcrumed to the sleeve, a hook pivoted to the lever and entering the opening of the sleeve a spring attached at one end to said hook and at its other end to said lever, a dog pivotally mounted upon the sleeve and adapted to enter the opening thereof, a spring mounted upon the sleeve and engaging said dog and adapted to hold the same within the sleeve opening or elevated above said opening, a chain passing through the sleeve and carrying at its ends attaching means.

858,241. LOCK FOR SET-SCREWS. HARRY C. WERNER, Wheeling, W. Va. Filed Oct. 5, 1906. Serial No. 337,534.



Claim.—1. In a device of the character described, a set-screw mounted in the hub of a wheel in impinging relation to the shaft, a tapered key mounted in an inwardly inclined recess provided in said hub which recess is in communication throughout its length with the set-screw hole, said key having a beveled edge in opposing relation to the threads of the set-screw, a nut carried by said set-screw between its head and the outwardly projecting end of said key whereby said key is forced inward in said recess, and means carried by said projecting end whereby said nut is held against retraction.

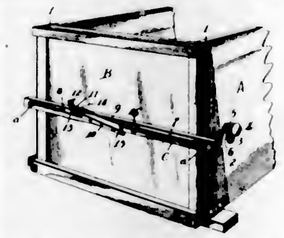
2. In a lock for set-screws, a set-screw projected through the hub of the wheel and having its point impinging upon the wheel shaft, a key seated in an inclined recess provided in said hub, which recess is in open communication with the screw-hole, the rear wall of said key being inclined to correspond with the inclination of the recess, said key having a beveled edge adapted to sink into the threads of said set-screw upon the application of pressure to the outer end of the key, the outer end of the key projecting beyond said recess and having a forwardly directed bevel radial to said set-screw, and an adjustable nut carried by said set-screw in binding engagement with said radial bevel.

3. In a device of the character described, the combination with a set-screw mounted in a wheel-hub in impinging relation to its shaft, of a wedge-shaped key mounted in said hub substantially parallel to the set-screw, said key having a beveled edge in opposing relation to the threads of the set-screw and having its outer end projected beyond the face of the hub, said outer end having a bevel substantially radial to said set-screw, and a nut carried by said set-screw, said nut being adapted to be manipulated to force said key inward into thread-mutilating engagement with the set-screw and to be held against retraction on said set-screw by the radially directed bevel of the key.

858,242. SHOVELING-BOARD. DANIEL WILDE, Washington, Iowa. Filed Nov. 27, 1905. Serial No. 289,267.

Claim.—1. The combination with a wagon box, of an end gate pivotally secured thereto, rods pivotally connected with the end gate at one end and to the wagon box at the other, these rods having hooks by which they are removably pivoted to the wagon box, the ends of the rods after forming hooks terminating in eyes and a flexible connection connected with said eyes and adapted to ex-

tend around the end gate and be secured together at their free ends whereby to fasten the gate in its closed position.



2. The combination with a wagon box, of an end gate having a cross bar secured thereto, the ends of which cross bar protrude beyond the side edges of the gate and have holes in said protruding ends, flexible devices connected with the sides of the wagon box and passed through the holes in the cross bar on the end gate and means for drawing the free ends of the flexible devices together.

3. The combination with a wagon body and end gate, of rods pivotally connected to the end gate and having hooks on their upper ends, studs secured to the wagon box to which said hooks are removably connected and flexible devices connected with the hooks and adapted to extend around the end gate and be drawn and fastened together at their inner ends whereby the end gate is held in its closed position.

4. The combination with a wagon box and an end gate removably connected therewith, of rods pivotally connected to the sides of the end gate and adapted to be removably hooked to the wagon box and flexible devices connected with the hooked ends of the rods and adapted to have permanent sliding connection with the end gate.

5. The combination with a wagon box and an end gate removably connected therewith, of rods pivotally connected to the sides of the end gate and adapted to be removably hooked to the wagon box, flexible devices connected with the hooked ends of the rods and adapted to have permanent sliding connection with the end gate and means for drawing the free ends of said connection together and locking them.

858,243. DOOR OPENER AND CLOSER. DANIEL WILDE, Washington, Iowa. Filed Sept. 22, 1906. Serial No. 333,752.

Claim.—1. A door opener and closer comprising a track, a runner fitted to slide therein, a rod connected with the runner and door, an endless rope or cable secured to the runner, and a drum connected with the rope or cable for opening and closing the door.

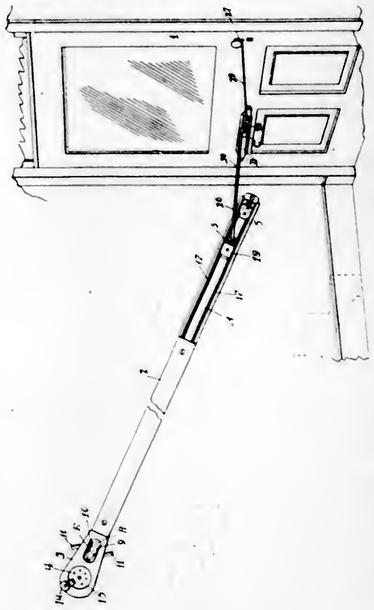
2. A door opener and closer comprising a track, a runner fitted to slide within the track, a cable secured to the runner, means connecting the runner and door and means for fastening the cable for securing the door in an open, closed, or intermediate position.

3. A door opener and closer comprising a track, a runner adapted to slide in the track, a cable secured to the runner, a rod connected to the runner and door, a drum or wheel, said cable secured to the drum, and means for rotating the drum to open or close the door.

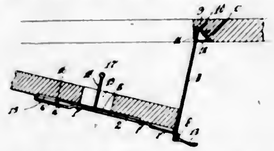
4. The combination of a door opener and closer, a track, a runner adapted to slide therein, an endless cable secured to the runner, of a slide, a rod connected to the runner and slide, and means for operating the slide whereby the door can be opened.

5. The combination of a door opener and closer, a track, a runner adapted to slide therein, a cable secured to the runner, means connecting the door and runner, of a drum or wheel, said cable connected to the drum, dogs engaging the drum, and means for rotating the drum whereby the door can be opened or closed.

6. The combination of a door opener and closer, a track, a runner adapted to slide therein, of a slide, a door knob, means for connecting the knob and slide, and means connected to the slide and runner whereby the knob is operated and the door opened or closed.



858,244. DOOR-FASTENER. DANIEL WILDE, Washington, Iowa. Filed Sept. 22, 1906. Serial No. 333,753.



Claim.—1. A door fastener comprising a base plate, a bolt slidably received therein, projections on the bolt adapted to be received beneath the base plate, and a slide adapted to engage the bolt.

2. A door fastener comprising a base plate having a slot therein, a bolt received therein, a slide adapted to engage the bolt, and means whereby the bolt can be removed from the slot and prevent the door being locked by the slide.

3. A door fastener, comprising a base portion, a bolt slidable therein, a jamb catch in which the bolt is adapted to enter, projections on the bolt, said projections adapted to be received beneath the base plate and means for throwing the bolt in locked position.

4. A door fastener, comprising a base portion, a bolt slidable therein, a jamb catch in which the bolt is adapted to enter, projections on the bolt, said projections adapted to be received beneath the base plate, and means for reciprocating the bolt whereby to throw it into locked or unlocked position.

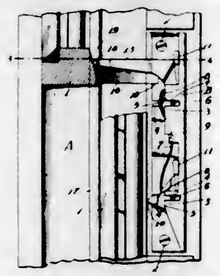
5. A door fastener comprising a base plate, a bolt slidable therein, a jamb catch in which the bolt is received, integral projections on the ends of the bolt and notches intermediate the projections, said projections and notches adapted to engage the base plate to hold the door in open or closed position.

6. A door fastener, comprising a base plate, a bolt slid-

ably received therein, a slide adapted to engage the bolt, whereby to throw the bolt in locked position.

7. A door fastener, comprising a base portion, the ends of said base portion being offset, a bolt slidably received in the base portion, and having projections which are received under the offset portions.

858,245. SASH-FASTENER. DANIEL WILDE, Washington, Iowa. Filed Sept. 22, 1906. Serial No. 335,754.



Claim.—1. A sash fastener comprising locking means, a spring connecting the locking means together, and slides for throwing the locking means in locked or unlocked position.

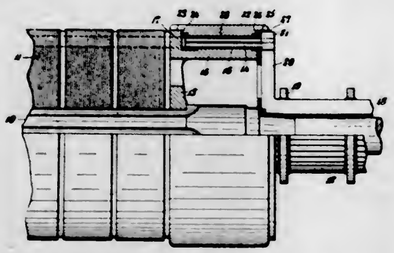
2. A sash fastener comprising locking means, a spring connecting the locking means, and recesses in the locking means for the ends of the spring and means for operating the locking means.

3. A sash fastener comprising a plate folded over upon itself forming a hollow casing, said plate having slots formed therein, locking means received in the slots, and means for operating the locking means.

4. A sash fastener comprising a plate folded over upon itself forming a hollow casing, said plate having slots formed therein, locking means having pins formed thereon, said locking means received in the casing and the pins in the slot, and means for operating the locking means.

5. A sash fastener comprising a plate, and locking means for locking the upper and lower sash of a window, the plate having slots formed therein, said locking means received in the slots, one of the locking means of a greater length than the other, and means for operating the locking means to hold the windows in locked or unlocked position.

858,246. DIRECT-CURRENT DYNAMO-ELECTRIC MACHINE. EDWIN C. WRIGHT, Newport, Ky., assignor to Allis-Chalmers Company, a Corporation of New Jersey, and The Bullock Electric Manufacturing Company, a Corporation of Ohio. Filed Nov. 30, 1906. Serial No. 345,600.



Claim.—1. In combination, an armature, a core, coils carried by said core and projecting beyond the end thereof, a ring surrounding the projecting portions of the coils, a commutator, and commutator leads or necks connecting the coils and commutator bars, said leads or necks serving to retain the ring in position.

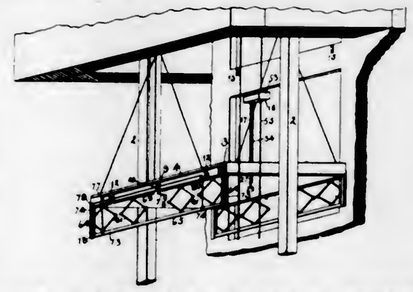
2. In combination, an armature, a core, coils carried by said core and projecting beyond the end thereof, a ring surrounding the projecting portions of the coils, a commutator, and commutator leads or necks connecting the coils and commutator bars, said ring being supported and retained in position by said commutator leads.

3. In combination, an armature, a core, coils carried by said core and projecting beyond the end thereof, a ring surrounding the projecting portions of the coils, a commutator, and commutator leads or necks connecting the coils and commutator bars, said commutator leads extending outward beyond the ends of the coils and serving to support and retain the ring in position.

4. In combination, an armature of a dynamo-electric machine, comprising a core, coils projecting beyond the core, and a ring surrounding the projecting portions of the coils and commutator, and commutator leads or necks integral with the commutator bars, said leads or necks serving to retain the ring in position.

5. In combination, an armature core, coils carried by the core and projecting beyond the end thereof, a ring surrounding the projecting portions of the coils, said ring having a grooved or recessed portion adjacent the outer ends of the coils, and rigid commutator leads or necks integral with the commutator bars, the ends of said commutator leads or necks being located within the grooved or recessed portion of the ring so as to support and retain the ring in position.

858,247. SAFETY DEVICE FOR ELEVATORS. RAYMOND E. ACKLEY, Rockford, Ill. Filed Aug. 22, 1906. Serial No. 331,664.



Claim.—1. A safety device for elevators comprising a platform, a yielding guard, a movable jaw adapted to grip a rope, means whereby the jaw is liberated by a movement of the guard, a slidable plate having a cam groove, a pin extending from the jaw and located in the cam-groove, and means for moving the slidable plate in both directions.

2. A safety device for elevators comprising a platform, a yielding guard, two movable jaws adapted to grip a rope, means whereby the jaws are liberated by a movement of the yielding guard, a slidable plate having two cam grooves, a pin extending from each jaw and located in a cam groove, and means for moving the slidable plate in both directions.

3. A safety device for elevators comprising a platform, a yielding guard, a movable jaw adapted to grip a rope, a slidable plate, a connection between the plate and jaw, a dog holding the plate against movement, a connection between the dog and yielding guard, and means for moving the plate when liberated.

4. A safety device for elevators, comprising a platform, a yielding guard, a movable jaw adapted to grip a rope, a movable plate, a connection between the plate and jaw, means holding the plate against movement, a connection between the holding means and yielding guard, and means for moving the plate when liberated.

5. A safety device for elevators, comprising a platform, a yielding guard, two independent jaws movable toward and from each other and adapted to grip a rope between them, a movable plate, a connection between each jaw and

the plate, means holding the plate against movement, a connection between the plate and yielding guard and means for moving the plate when liberated.

6. A safety device for elevators comprising a platform, a yielding guard, a jaw slidable on suitable supports and adapted to grip a rope, a movable plate, a connection between the plate and jaw, means holding the plate against movement, a connection between the holding means and yielding guard and means for moving the plate when liberated.

7. A safety device for elevators comprising a platform, a yielding guard, a movable jaw adapted to grip a rope, means whereby the jaw is liberated by a movement of the yielding guard, a slidable plate having a cam groove extending diagonal to the length of movement of the plate and a portion extending in the direction of the movement of the plate, a pin extending from the jaw and located in the cam groove and means for moving the slidable plate in both directions.

8. A safety device for elevators comprising a platform, a yielding guard, a movable jaw adapted to grip a rope, means whereby the jaw is liberated by a movement of the yielding guard, a movable plate, a connection between the plate and jaw, means holding the plate against movement, means for moving the plate in both directions and a lever for moving the plate in one direction.

9. A safety device for elevators comprising a platform, a yielding guard, a movable jaw adapted to grip a rope, means for adjusting the jaw bodily toward and from the rope, means holding the jaw against movement, a connection between the holding means and yielding guard, and means for moving the jaw in both directions.

10. A safety device for elevators comprising a platform, a yielding guard located adjacent the edge of the platform, a support pivotally connected to the platform and a stationary cam surface with which the support engages for moving the support beneath the yielding guard.

11. A safety device for elevators comprising a platform, a yielding guard located adjacent to the edge of the platform, an arm pivoted to the platform, a weight connected to one end of the arm and the other end of the arm having an engagement with the yielding guard by which the weight of the yielding guard is counterbalanced.

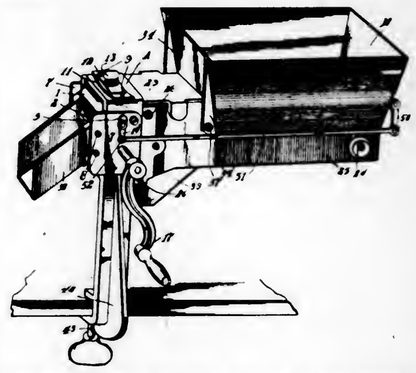
12. A safety device for elevators comprising a platform, two guards, one located adjacent to the upper edge of the platform and the other located adjacent to the lower edge of the platform, a movable jaw adapted to grip a rope, a movable plate a connection between the jaw and plate, means holding the plate against movement, means for moving the plate in both directions, and a connection between both yielding guards, and the holding means.

13. A safety device for elevators comprising a platform, two yielding guards, one located adjacent to the upper edge of the platform and the other located adjacent to the lower edge of the platform, a movable jaw adapted to grip a rope, means holding the jaw against movement, a vertical slidable rod having one end located beneath the upper yielding guard, a connection between the rod and holding means, a connection between the lower yielding guard and rod, and means for moving the jaw in both directions.

14. A safety device for elevators comprising a platform, a yielding guard located adjacent to the upper edge of the platform, a movable jaw adapted to grip a rope, means holding the jaw against movement, a horizontal rock shaft supported beneath the platform, a vertical movable rod supported by the platform having one end located beneath the upper yielding guard, an arm extending from the rock shaft upon which the lower end of the rod rests, a connection between the rock shaft and holding means, and means for moving the jaw in both directions.

15. A safety device for elevators, comprising a platform, two yielding guards, one located adjacent to the upper edge of the platform and the other located adjacent to the lower edge of the platform, a movable jaw adapted to grip a rope, means for holding the jaw against movement, a horizontal rock shaft supported beneath the platform, a vertical movable rod supported by the platform having one end located beneath the upper yielding guard, an arm extending from the rock shaft upon which the lower end of the rod rests, a connection between the rock shaft and holding means, and means for moving the jaw in both directions.

858,248. PEA-SHELLING MACHINE. AGNES S. ADAM, Washington, D. C. Filed Apr. 28, 1906. Serial No. 314,156.

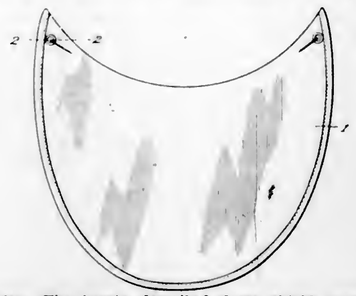


Claim.—1. The combination of frame A, side plates connected thereto, and carrying the shelling rolls, extension plates secured at one end to the side plates, a cap plate bridging the extension plates, and carrying guide fingers, and a hopper mounted on and secured to said extension plates, and holding the cap plate and guides in position.

2. In a pea shelling machine, the combination with a frame, shelling rolls supported thereby, a hopper and an endless feed belt in the bottom of the hopper, of shafts journaled at one end of the hopper, agitators secured to the shafts, and extending into the hopper, crank arms extending from the shafts, gearing for giving motion to the rolls and connecting rods through which the shaft of one of said rolls gives motion to said crank arms to operate said agitators.

3. In a pea shelling machine, the combination with a frame, shelling rolls supported thereby, a hopper, an endless feed belt in the bottom of the hopper, and means for insuring the endwise feed of the unshelled peas to the rolls, of shafts journaled at one end of the hopper, agitators secured to the shafts, and extending into the hopper, crank arms extending from the shafts, gearing for giving motion to the rolls and connecting rods through which the shaft of one of said rolls gives motion to said crank arms to operate said agitators.

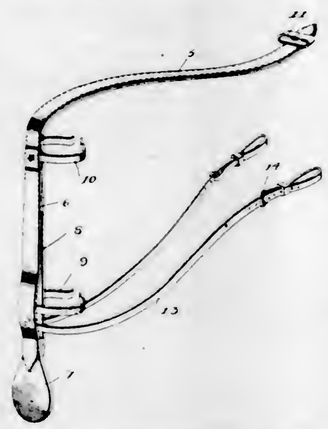
858,249. DRESS-SHIELD. VIOLET G. ALEXANDER, Charlotte, N. C. Filed Jan. 7, 1907. Serial No. 351,151.



Claim.—The herein described dress shield comprising arm flaps, one of said flaps at its upper corners being provided with eyelets, and clench pins of flexible metal pro-

vided with flat heads secured to the other flap of the shield in line with the eyelets, said pins being inserted through the eyelets and clenched behind the same, essentially as described.

858,250. TAIL-HOLDER. ALLIE B. ALLEN, Hattiesburg, Miss. Filed Apr. 2, 1906. Serial No. 309,571.



Claim.—1. A tail-holder comprising a supporting strap for attachment to a harness and provided with fastening devices adapted to embrace a horse's tail, and a flexible connection slidably mounted for vertical movement on the supporting strap and detachably secured to the harness.

2. A tail-holder comprising a supporting strap for attachment to a harness and having a slot formed in one end thereof, spaced fastening devices secured to the strap and adapted to embrace a horse's tail, and a retaining strap detachably secured to the harness and passing through the slot in the supporting strap.

3. A tail-holder comprising a supporting strap for attachment to a harness and having a slot formed in one end thereof, spring clasps secured to one wall of the slot and adapted to embrace a horse's tail, and a retaining strap having its intermediate portion slidably mounted for vertical movement between the walls of said slot and its terminal portions detachably secured to the harness.

4. A tail-holder comprising a supporting strap having a slot formed in one end thereof, spaced fastening devices carried by the strap and adapted to embrace a horse's tail, a retaining strap having its intermediate portion slidably mounted for vertical movement in said slot and its free ends provided with fastening devices for detachable connection with the harness, and a loop secured to one end of the supporting strap for attachment to said harness.

5. A tail-holder comprising a supporting strap for attachment to a harness and formed of a plurality of superposed lifts spaced apart at one end of the strap to form a vertical slot, fastening devices secured to the interior walls of the slot and adapted to embrace a horse's tail, an attaching loop secured to one end of the supporting strap, and a retaining strap having its intermediate portion slidably mounted for vertical movement between the walls of the slot and having its opposite ends provided with means for attachment to the harness.

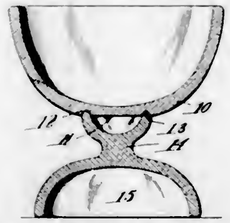
6. A tail-holder comprising a supporting strap formed of a plurality of superposed lifts, a tail-piece interposed between the lifts at one end of the strap and defining a vertically disposed slot, spring-clasps carried by the supporting strap and adapted to embrace a horse's tail, means carried by one end of the strap for engagement with the harness, and a retaining strap threaded through the slot in the supporting strap and having its opposite ends provided with means for engaging the harness.

858,251. LAMP. OLIVER S. ATTERHOLT, Jermyn, Pa. Filed Nov. 2, 1906. Serial No. 341,785.



Claim.—A lamp having separable base and globe elements, the former being centrally open from top to bottom and having its bore contracted at an intermediate point to engage a burner element, and the globe element being closed at the top and having an open bottom, and a depending edge seating within the upper edge of the base element.

858,252. BOWL. OLIVER S. ATTERHOLT, Jermyn, Pa. Filed Nov. 6, 1906. Serial No. 342,264.



Claim.—1. In combination, a bowl having a flat base, an invertible compote having a bowl and a base, the base portions having interfitting ribs and grooves held together by the weight of the bowl, such ribs and grooves positioned to hold the members against independent lateral movement.

2. A bowl having a flat base in which a groove is formed, the groove being polygonal in contour, and an invertible compote, the base of which is provided with a polygonal rib adapted to enter said groove when the compote is used as a stand for the bowl, the interfitting rib and groove serving to prevent independent rotative or lateral movement of the members.

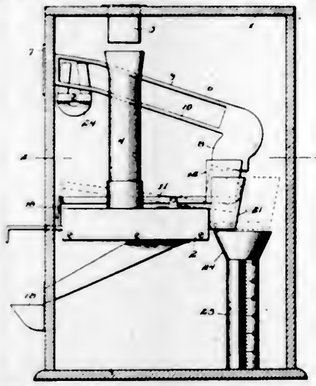
3. A composite vessel comprising a bowl, and a compote having their base portions of approximately coextensive area, the base portions having interfitting ribs and grooves held together by the weight of the upper vessel, such ribs and grooves positioned to hold the members against independent lateral movement.

858,253. CHANGE APPARATUS. BENJAMIN F. BEASLEY, Lexington, Ky., assignor of one-half to Rurick N. Beasley, Paint Lick, Ky. Filed Jan. 23, 1906. Serial No. 297,487.

Claim.—1. A change apparatus comprising a magazine, a discharge chute formed with a coin receiving opening, a discharge slide adapted for manual manipulation and formed with an opening to register with the magazine in the normal position of the slide and with the discharge chute in the operative position of the slide, a coin chute to receive the deposited coin, the discharge end of said chute being open, a trip to lock the slide against movement, a main coin holder carried by the trip and underlying the open end of the chute, said coin holder being opened at one end for the discharge of the coin, and an auxiliary coin holder normally closing the open end of the main coin holder and movable with the slide to uncover the open end of the main coin holder and permit delivery of the coins therefrom.

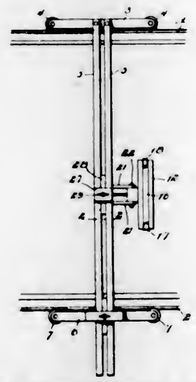
2. A change apparatus comprising a magazine, a discharge chute formed with a coin receiving opening, a discharge slide adapted for manual manipulation and formed with an opening to register with the magazine in

the normal position of the slide and with the discharge chute in the operative position of the slide, a coin chute to receive the deposited coin, the discharge end of said chute being open, a trip to lock the slide against movement, a main coin holder carried by the trip and underlying the open end of the chute, said main coin holder be-



ing formed with an open end to permit discharge of the coins, a coin receiver, and an auxiliary coin holder formed with a projecting end to normally close the open end of the main coin holder and movable with the slide to uncover the open end of the main coin holder for delivering the coins from the main coin holder to the receiver.

858,254. BLACKBOARD-RULER. MYRON C. BENEDICT, Los Angeles, Cal. Filed Nov. 10, 1906. Serial No. 342,867.



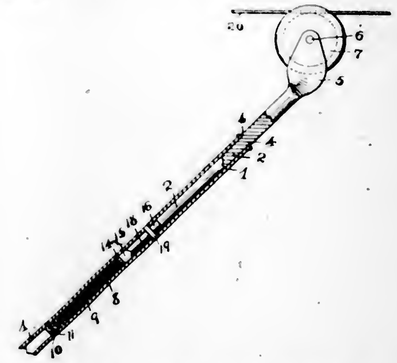
Claim.—1. In a blackboard ruler, a chalk holder comprising a block having a groove therein, a series of perforations in the block, a hinged cover, arms pivotally connected to the chalk holder and to the ruler, and a spring connected to said chalk holder at one end and to the ruler at the other end.

2. In combination with a blackboard provided with a molding strip, of a ruler comprising parallel spaced bars, rollers carried by said bars to move upon said molding strip, a hinged chalk holder connected to the parallel bars, means for holding said chalk holder in vertical adjustment, and means for holding the chalk or crayon in contact with the blackboard.

3. The combination of a blackboard provided with molding strips, of a blackboard ruler comprising parallel bars supported upon rollers adapted to move upon said strips, an adjustably mounted crayon holder connected to said bars, and means for holding the crayon in contact with the blackboard, said means permitting the crayons to ride over inequalities in the board, substantially as described.

4. The combination of a blackboard provided with molding strips, of a ruler comprising parallel bars, rollers for supporting said bars and moving upon said strips, a chalk holder, means for holding the said chalk holder in vertically adjusted position between the parallel bars, said means comprising a plate, a spacing block, and a bearing block and binding screw, substantially as described.

858,255. TROLLEY FOR ELECTRIC RAILWAYS. HARRY BENNETT, Newark N. J., assignor to The Bennett Inventing and Manufacturing Company, a Corporation of New Jersey. Filed Apr. 17, 1906. Serial No 312,102.



Claim.—1. In a trolley for electric railways, the combination, with a tubular trolley-pole, of a carrier-rod having a longitudinally extending open or recessed portion, said portion being provided with a flat face and a pair of angularly arranged surfaces, said angularly arranged surfaces terminating in a sharp ridge or apex, the said ridge or apex and said flat face being located in the same plane, and a pin connected with the trolley-pole and extending across the said open or recessed portion of a carrier-rod, said pin being slidable longitudinally upon said ridge or apex and upon said flat-face, substantially as and for the purposes set forth.

2. In a trolley for electric railways, the combination, with a tubular trolley-pole, of a carrier-rod having a longitudinally extending open or recessed portion, said portion being provided with a flat face and a pair of angularly arranged surfaces, said angularly arranged surfaces terminating in a sharp ridge or apex, the said ridge or apex and said flat face being located in the same plane, and a pin connected with the trolley-pole and extending across the said open or recessed portion of the carrier-rod, said pin being slidable longitudinally upon said ridge or apex and upon said flat-face, a fixed stop in said tubular trolley-pole and a spring in said trolley-pole between the said stop and the lower end-portion of said carrier-rod, substantially as and for the purposes set forth.

3. In a trolley for electric railways, the combination, with a tubular trolley-pole, of a carrier-rod having a longitudinally extending open or recessed portion, said portion being provided with a flat face and a pair of angularly arranged surfaces, said angularly arranged surfaces terminating in a sharp ridge or apex, said ridge or apex and said flat face being located in the same plane, and a pin connected with the trolley-pole and extending across the said open or recessed portion of the carrier-rod, said pin being slidable longitudinally upon said ridge or apex and upon said flat face, a fixed stop in said tubular trolley-pole, a stem extending upon the lower end-portion of said carrier-rod terminating at a point near said fixed stop,

and a spring in said trolley-pole encircling the said stem and having its lower end in engagement with said stop and its upper end in engagement with a portion of said carrier-rod, substantially as and for the purposes set forth.

4. In a trolley for electric railways, the combination, with a tubular trolley-pole, of a carrier-rod having a shoulder-portion 4 and a trolley-harp at its upper end integrally connected with said carrier-rod, said carrier-rod being provided with a longitudinally extending open or recessed portion, formed with shoulders 13 and 14 at its opposite ends, said portion being provided with a flat face 15 extending from said shoulder 14, and a pair of angularly arranged surfaces 16 and 17 between the upper edge of said flat face 15 and the shoulder 13, said surfaces terminating in a sharp ridge or apex 18, the said ridge or apex of said flat face 15 being located in the same plane, and a pin connected with the trolley-pole and extending across the said open or recessed portion of the carrier-rod, said pin being slidable longitudinally upon said ridge or apex and upon the flat face 15, substantially as and for the purposes set forth.

5. In a trolley for electric railways, the combination, with a tubular trolley-pole, of a carrier-rod having a shoulder-portion 4 and a trolley-harp at its upper end integrally connected with said carrier-rod, said carrier-rod being provided with a longitudinally extending open or recessed portion formed with shoulders 13 and 14 at its opposite ends, said portion being provided with a flat face 15 extending from said shoulder 14, and a pair of angularly arranged surfaces 16 and 17 between the upper edge of said flat face 15 and the shoulder 13, said surfaces terminating in a sharp ridge or apex 18, the said ridge or apex and said flat face 15 being located in the same plane, and a pin connected with the trolley-pole and extending across the said open or recessed portion of the carrier-rod, said pin being slidable longitudinally upon said ridge or apex and upon the flat face 15, a fixed stop in said tubular trolley-pole, and a spring in said trolley-pole between the said stop and the lower end portion of said carrier-rod, substantially as and for the purposes set forth.

6. In a trolley for electric railways, the combination, with a tubular trolley-pole, of a carrier-rod having a shoulder-portion 4 and a trolley-harp at its upper end integrally connected with said carrier-rod, said carrier-rod being provided with a longitudinally extending open or recessed portion, formed with shoulders 13 and 14 at its opposite ends, said portion being provided with a flat face 15 extending from said shoulder 14, and a pair of angularly arranged surfaces 16 and 17 between the upper edge of said flat face 15 and the shoulder 13, said surfaces terminating in a sharp ridge or apex 18, the said ridge or apex and said flat face 15 being located in the same plane, and a pin connected with the trolley-pole and extending across the said open or recessed portion of the carrier-rod, said pin being slidable longitudinally upon said ridge or apex and upon the flat face 15, a fixed stop in said tubular trolley-pole, a stem extending from the lower end portion of said carrier-rod terminating in a point near said fixed stop, and a spring in said trolley-pole encircling the said stem and having its lower end in engagement with said stop, and its upper end in engagement with a portion of said carrier-rod, substantially as and for the purposes set forth.

858,256. BEATING-ROLL FOR PAPER-PULP OR OTHER ENGINES. HARRY BENNETT, Latrobe, Pa. Filed Aug. 23, 1906. Serial No. 331,806.

Claim.—1. A beating roll comprising heads and removable bars having means formed therewith to lock the bars to the heads against accidental endwise play.

2. A beating roll comprising heads and bars having longitudinally tapering projections for interlocking connection with the heads to prevent accidental endwise play of the bars.

3. A beating engine roll comprising heads, and having tapering socket and projection interlocking connection with the heads to prevent accidental endwise play of the bars.

4. A beating engine roll comprising heads having recesses in their peripheries, and bars having tapering projections for interlocking connection in the recesses of the head, the projections of each bar tapering longitudinally of the bars.

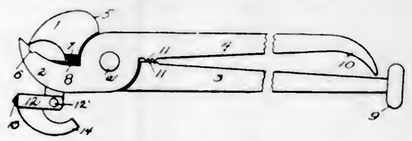


5. A beating engine roll comprising heads, bars having interlocking engagement with the heads, and screw-threaded rods connecting the heads, the rods having their threads confined within the heads.

6. A beating roll comprising heads and removable bars constructed and arranged for interlocking connection with the heads to prevent accidental endwise and lateral play of the bars.

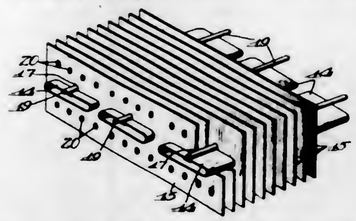
7. A bar of the character described comprising a body provided with spaced, longitudinally tapering locking projections.

858,257. STAPLE-PULLER. HENRY BREIDING, Sterling, Ill. Filed Jan. 15, 1906. Serial No. 296,097.



Claim.—A staple puller, comprising two handle members pivotally connected so that they may be brought to a substantially parallel position, one having a pointed jaw projecting longitudinally of its member so that it may be driven into a surface at one side of a staple and the other having a jaw projecting longitudinally beyond the first mentioned jaw and extending laterally to overlap the point of said other jaw when the two handles are brought substantially parallel to each other.

858,258. PROCESS OF MANUFACTURING RADIATORS. FRANK BRISCOE and JAMES M. ANGUISH, Detroit, Mich., assignors to Briscoe Mfg. Company, Detroit, Mich., a Corporation of Michigan. Filed Sept. 28, 1906. Serial No. 336,627.

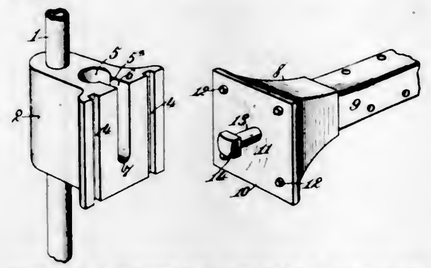


Claim.—1. The process of manufacturing radiators and similar cooling devices comprising tubes and fins thereon, said process consisting in perforating the fins at the tubes, threading a filament of solder through the perforations in said fins, and subjecting the solder filament to melting heat while said filament is in place.

2. The process of manufacturing radiators and similar cooling devices comprising tubes and flanged fins fitting over them, said process consisting in perforating the fins and flanges at the tube apertures, assembling the fins on the tubes, threading a filament of solder through the perforations in said fins and subjecting the whole structure to a temperature sufficient to melt the solder.

3. The process of manufacturing radiators and similar cooling devices comprising tubes and flanged fins fitting over them, said process consisting of perforating the fins and flanges at the tube apertures, stringing the fins on the tubes so that the perforations in said fins register with each other, then threading a solder filament through said registering perforations and finally heating the entire solder filament to melting point to thereby simultaneously sweat all of the fin flanges onto their tubes.

858,259. BEDSTEAD-LOCK. ENOCH H. BURRAGE, Winston Salem, N. C. Filed May 4, 1907. Serial No. 371,849.



Claim.—1. A bedstead lock comprising a casting having a key-hole-shaped opening and a flat bearing face, and a casting having its bearing face dished out so as to provide a smooth marginal portion extending entirely around said face and said latter casting furthermore provided with a headed coupling pin adapted to engage in the key-hole-shaped opening, thereby connecting the castings together.

2. A bedstead lock comprising a casting having a flat bearing face and provided with a pair of grooves, said casting further having a key-hole-shaped opening in the top thereof, a casting having its bearing face dished out and further having dowels adapted to engage in said grooves, and further provided with a headed coupling pin adapted to engage in said key-hole-shaped opening.

3. A bedstead lock comprising two castings each formed with a bearing face, one of said bearing faces dished out to form marginal bearing portions, combined with means carried by one of said castings and adapted to engage in the other casting for detachably connecting the castings together.

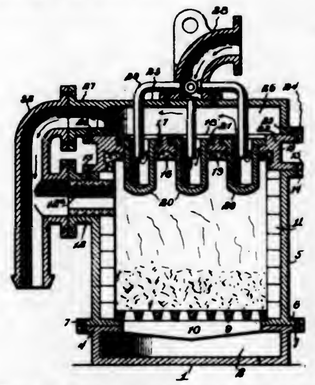
4. A bedstead lock comprising two castings each formed with a bearing surface, one of said surfaces provided with a pair of grooves and the other of said surfaces dished out to form marginal portions, means carried by one of the castings and adapted to engage in said grooves to prevent lateral play of said casting, and means carried by one of the castings and adapted to engage in the other casting for detachably connecting the castings together.

858,260. DRYING-FURNACE. JOHN CAYGILL, Wheeling, W. Va. Filed Dec. 1, 1906. Serial No. 345,934.

Claim.—1. A drying furnace having a fire box provided with an outlet flue, a heating chamber arranged above the fire box and having an outlet, heating vessels extending into the fire box and in open communication with the heating chamber, air conductors leading to said vessels, and a discharge pipe connecting with said outlets.

2. A drying furnace having a fire box with an outlet leading therefrom, an air heater arranged above the fire box and provided with an outlet, means for conducting air to the heater, and a discharge pipe connected at its upper end with the air heater and below the same with the fire box outlet.

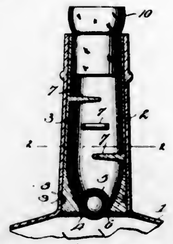
3. A drying furnace having a fire box provided with an outlet, an air chamber above the same and also having an outlet, a series of heating cells closing communication between said fire box and chamber and projecting into the box and communicating with the chamber, and an outlet flue connected with said outlet.



4. A furnace of the character described having a fire box, a head supported thereon and provided with openings, a cap carried by the head and forming an air chamber, the fire box and air chamber being provided with outlets, heating cells supported by the head and projecting into the fire box, said cells being in communication at their upper ends with the air chamber, a source of air supply, conducting pipes leading therefrom to the air cells, and a downwardly extending discharge pipe communicating at its upper end with the outlet from the air chamber and below the same with the outlet from the fire box.

5. A drying furnace having a fire box provided with an outlet flue, a heating chamber arranged above the fire box and separated therefrom by a partition, said chamber being provided with an outlet and the partition with openings, heating vessels fitted in said openings and projecting into the fire box, said vessels being closed at their lower ends and open at their upper ends, means for supplying air to said vessels, and a discharge pipe communicating at its upper end with the outlet of the heating chamber and below the same with the flue inlet.

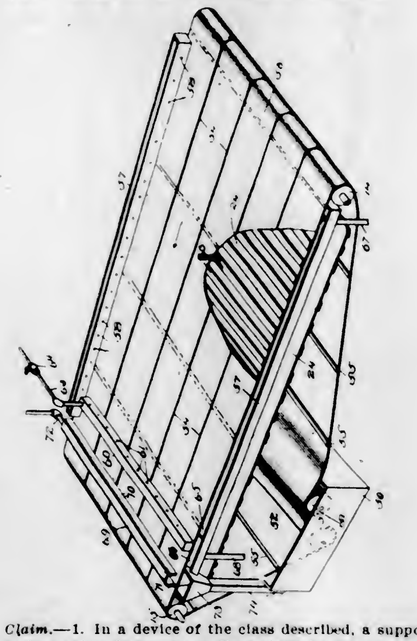
858,261. NON-REFILLABLE BOTTLE. BENJAMIN A. CHEW, Augusta, Ga., assignor of one-fourth to James T. Heard, Augusta, Ga., one-eighth to George Watkins, one-sixteenth to Charles B. Hervey, and one thirty-second to E. M. Johnson, Mobile, Ala. Filed June 30, 1906. Serial No. 324,259.



Claim.—1. The combination with a bottle neck, of a tubular member of a corresponding length fitted in said neck forming an inner wall its entire length, and provided with an opening at its lower end, a valve seat around the opening, a series of blades or projections intermediate of its ends, a valve adapted to rest upon said valve seat, and means for securing the tubular member to the bottle neck.

2. The combination with a bottle neck tapered internally of a tubular member correspondingly tapered and of the same length as the neck and provided with an opening at its lower end, a valve seat around the opening, a series of vertically spaced inwardly projecting radial blades disposed in staggered order alternately at right angles to one another and having approximately parallel edges and inclined sides, a valve adapted to rest upon said valve seat, and means for securing the tubular member to the bottle neck.

858,262. ORE-SLIMER. PETER H. CRAVEN, Spokane, Wash. Filed June 29, 1906. Serial No. 324,043.



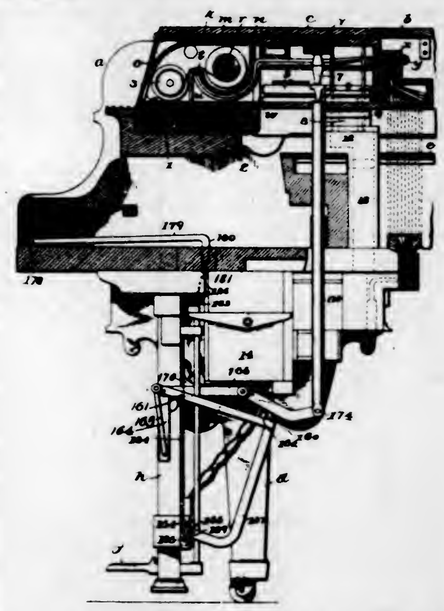
Claim.—1. In a device of the class described, a support, a reciprocating frame, an endless slatted apron mounted upon the frame, an endless concentrator belt carried upon the upper span of the slatted apron, slats secured transversely of and upon the innerside of the concentrator belt, and riffles formed upon and longitudinally of the belt.

2. In a device of the class described, a support, a reciprocating frame mounted upon the support, sprockets carried by the frame, an endless slatted apron mounted upon the frame and to move upon the sprockets, an endless concentrator belt carried upon the upper span of the slatted apron, slats secured transversely of and upon the innerside of the concentrator belt, riffles formed upon and longitudinally of the belt, means to operate the slatted apron and reciprocate the frame independently of each other, and means to vary the relative speed of the apron and frame.

858,263. PEDAL FOR SELF-PLAYING GRAND PIANOS. JOHN W. DARLEY, Jr., Baltimore, Md., assignor to Ernest J. Knabe, Jr., Baltimore, Md. Original application filed July 9, 1906, Serial No. 325,409. Divided and this application filed Oct. 19, 1906. Serial No. 339,712.

Claim.—1. In a self-playing grand piano, the combination with a horizontally disposed case, pneumatic mechanism and a depending pedal support, of pedals and connections for actuating the pneumatic mechanism, said pedals being foldably secured to said pedal support, substantially as described.

2. In a self-playing grand piano, the combination with a horizontally disposed case, pneumatic mechanism and a depending pedal support, of pedals and folding connections for actuating the pneumatic mechanism, said pedals being foldably secured to said pedal support, substantially as described.



3. In a self-playing grand piano, the combination with a horizontally disposed case, pneumatic mechanism and a depending pedal support, of pedals and connections for actuating the pneumatic mechanism, said pedals being foldably secured to said pedal support, and means for supporting said pedals beneath the frame when folded up, substantially as described.

4. In a self-playing grand piano, the combination with a horizontally disposed case and a depending pedal support and pneumatic mechanism supported by said case, of pedals and connections for actuating the pneumatic mechanism, said pedals being foldably secured to said pedal support, and provided with folding connections, and means for supporting said pedals beneath the frame, substantially as described.

5. In a self-playing grand piano, a horizontally disposed case, strings and a string supporting frame a pedal support, a bellows mounted above the strings of said piano and overlying the front portion of the string supporting frame, a lever for operating said bellows extending forwardly beneath said case, a bellows pedal, and links connecting said pedals to said support and to said lever, whereby said pedals may have movement from an operative to a non-operative position, substantially as described.

6. In a self-playing grand piano, a horizontally disposed case, strings and a string supporting frame a pedal support, a bellows mounted above the strings of the piano and overlying the front portion of the string supporting frame, a lever for operating said bellows and extending forwardly beneath said case and links, one of which is jointed, connecting said pedals to said support and to said lever, whereby said pedals may have movement from an operative to a non-operative position, substantially as described.

7. In a self-playing grand piano, a horizontally disposed case, strings and a string supporting frame a pedal support, a bellows mounted above the strings of said piano and overlying the front portion of the string supporting

frame, a lever for operating said bellows and extending forwardly beneath said case, a bellows pedal, a link connecting said pedal to said support, and a jointed link connecting said pedal to said lever, whereby said pedal may have movement from an operative to a non-operative position, substantially as described.

8. In a self-playing grand piano, a horizontally disposed case, strings and a string supporting frame a pedal support including two vertically disposed portions, a bellows mounted above the strings and overlying the front portion of the string supporting frame, a lever for operating said bellows, and extending forwardly beneath said case, a bellows pedal, a link connection from the rear end of said bellows pedal to said lever, and a second link connection from the forward end of said bellows pedal to said pedal support, whereby said bellows pedal may be moved downwardly into operative position, and upwardly and rearwardly into inverted position between said vertically disposed portions, substantially as described.

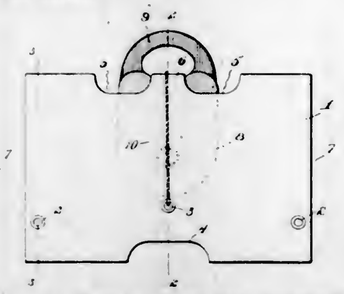
9. In a self-playing grand piano, the combination with a horizontally disposed case, pneumatic mechanism and a depending pedal support, of pedals and connections with actuating pneumatic mechanism, said pedals being foldably secured to said pedal support, means for locking said pedals when folded up, and means for resiliently resisting the action of gravity on said pedals when unlocked, substantially as described.

10. In a self-playing grand piano, the combination with a horizontally disposed case, pneumatic mechanism and a depending pedal support, of pedals and connections for actuating the pneumatic mechanism, said pedals being foldably secured to said pedal support, means for locking said pedals when folded up, and means for forcing out the said pedals from the piano case when unlocked, substantially as described.

11. In a self-playing grand piano, the combination with a horizontally disposed case, pneumatic mechanism and a depending pedal support, of pedals and connections for actuating the pneumatic mechanism, said pedals being foldably secured to said pedal support, means for locking said pedals when folded up, and a single means for throwing out said pedals a short distance when unlocked, and for then resisting the further opening movement of said pedals, substantially as described.

12. In a self-playing grand piano, the combination with a horizontally disposed case, pneumatic mechanism and a depending pedal support, of pedals and means for actuating the pneumatic mechanism, said pedals being foldably secured to said pedal support, means for locking said pedals when folded up, and a spring for forcing said pedals outward a short distance when unlocked, and for resisting the further opening movement of said pedals, substantially as described.

858,264. COMBINED TAG AND SEAL. JAMES A. DAUGHERTY, Indianapolis, Ind. Filed Apr. 3, 1907. Serial No. 366,220.

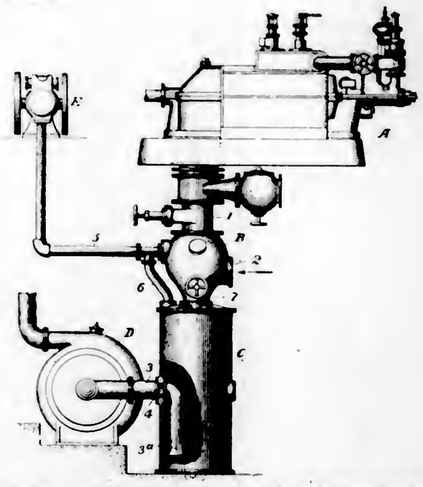


Claim.—1. A combined tag and seal comprising layers of sheet material secured together near the outer ends thereof and provided with recesses cut from the body of the blank, and provided with a projection between said recesses, the ends of the tag and seal being open, substantially as described.

2. A combined seal and tag consisting of a front and back portion having open ends, a projection upon one edge and recesses at opposite sides of said projection.

3. A combined tag and seal for padlocks comprising a front and back portion, open ends, a projecting portion provided with oppositely disposed recesses, and a cord passing through an eyelet, and adapted to go around the seal and padlock, substantially as described.

858,265. CONDENSER APPARATUS. IRVING S. DAVIS, Bayonne, N. J. Filed Nov. 23, 1906. Serial No. 344,730.



Claim.—1. The combination with a steam turbine and a jet condenser connected thereto, of a closed hot well connected to the discharge end of the condenser, a centrifugal pump connected to the hot well below the mean water level and means for exhausting air from the upper part of the hot well.

2. The combination with a steam turbine and a jet condenser connected thereto, of a closed hot well connected to the discharge end of the condenser, said well having a larger sectional area than the sectional area of the discharge end of the condenser, means for exhausting air form the upper part of the hot well, and a centrifugal pump connected to the hot well below the mean water level.

3. The combination with a jet condenser, of a closed hot well connected to the discharge end of the condenser, a centrifugal pump connected to the hot well below the mean water level and means for exhausting air from the upper part of the hot well.

858,266. AUTOMOBILE TORPEDO. GREGORY C. DAVISON, U. S. Navy. Filed Oct. 19, 1906. Serial No. 339,710.

Claim.—1. The method of compensating torpedoes driven by turbines or other forms of rotary engines or rotary devices, against errors in direction occasioned by gyroscopic action of the rotating parts, which consists in so arranging the rotating parts as to cause the moments of inertia in one direction to neutralize the moments of inertia in the opposite direction so that the sum of the moments of inertia of the system shall be zero, substantially as described.

2. The method of compensating torpedoes driven by turbines or other forms of rotary engines or rotary devices, against errors in direction occasioned by gyroscopic action

of the rotating parts, which consists in mounting the rotating parts symmetrically in pairs about a common axis, in driving the two members of each pair of parts in reverse directions at equal speeds and in proportioning the weights and dimensions of these parts so that the sum of the moments of inertia in one direction may neutralize the sum of the moments of inertia in the reverse direction, causing a resultant dynamic stability, substantially as described.



3. In an automobile torpedo, the combination with two driving wheels rotating in opposite directions at equal speeds and having the same moments of inertia, of balanced reduction gearing driven by said wheels in opposite directions and having the sum of the moments of inertia zero, and a pair of propellers driven by said reduction gearing in reverse directions and with equal angular velocity, substantially as described.

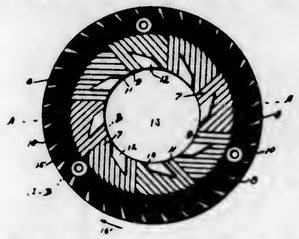
4. In a submarine torpedo, the combination with a double staged turbine engine having turbine wheels of equal moments of inertia revolving in opposite directions and at equal angular velocities, of a double system of reduction gearing driven by said wheels, the sum of the moments of inertia of said system being zero, and propellers driven in reverse directions and at equal speeds by said reduction gearing, substantially as described.

5. In an automobile torpedo, the combination with two driving wheels rotating in opposite directions at equal speeds and having the same moments of inertia, of balanced reduction gearing driven by said wheels in opposite directions and having the sum of the moments of inertia zero, and a pair of propellers driven by said reduction gearing in reverse directions and with equal angular velocity, with the weights of the propellers and propeller shafts and other parts driven by said reduction gearing so arranged as to cause the sum of the moments of inertia of the same to become zero, substantially as described.

858,267. GRINDING-MILL. ABRAHAM M. DELLINGER, Lancaster, Pa. Filed Apr. 15, 1904. Serial No. 203,309.

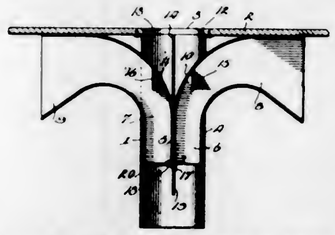
Claim.—1. A grinding disk having feed drifts and groups of parallel ribs cast on the bosom and narrower groups of finer and substantially parallel ribs cut upon the land.

2. A grinding disk having an inwardly inclined bosom provided with groups of parallel ribs and feed drifts raised at intervals about its eye, leaving passages or conveyer flights between them, said blocks having horizontal tops and outer edges which incline inwardly in the direction



of rotation and a land provided with groups of finer and substantially parallel ribs as above set forth.

858,268. CAR-VENTILATOR. EDWARD N. DILLMAN, St. Louis, Mo. Filed Jan. 3, 1907. Serial No. 350,579.



Claim.—1. A ventilator of the character described having a pair of air conductors and suction passages communicating therewith and adapted for communication with a car, and a valve or shutter automatically operated when either conductor is in action to close the other conductor.

2. A ventilator of the character described comprising a casing having suction passages, conductors extending therein and communicating at one end with the suction passages and at their opposite ends with the outer end of the casing, and a pivoted valve operative when either conductor is in action to automatically open said conductor and close the other conductor.

3. A ventilator of the character described comprising a discharge pipe or casing provided at its inner end with suction passages, conductors extending into said chamber and having passages communicating at one end with the suction chambers and at the opposite end with the outer end of the discharge pipe, and a pivoted shutter adapted to close the outer ends of the conductor passages, said shutter being automatically operative to open the passage of the active and close the passage of the inactive conductor.

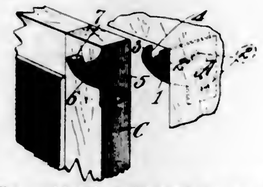
4. A ventilator of the character described provided with a pair of suction and a single outlet passage, conductors communicating with the said passages, and an automatic valve controlling communication between the conductors and outlet passage.

5. A ventilator of the character described comprising a discharge pipe provided at its inner end with suction chambers and having its outer end forming a discharge passage, air conductors entering said pipe and provided with passages opening at their outer ends into said discharge passage and provided at their inner ends with ports communicating with said suction chambers and having deflectors guarding said ports, and a valve for automatically controlling communication between said conductor passages and the discharge passage.

6. A ventilator of the character described comprising a discharge pipe or casing having suction chambers, air conductors communicating with said suction chambers, and a valve controlling communication between the conductors and outlet end of the discharge pipe, said valve being provided with angularly arranged portions operative to

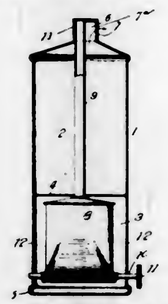
open one conductor and close the other conductor, substantially as described.

858,269. HINGE FOR WINDOW-SCREENS. BENJAMIN F. DOUGLASS, St. Louis, Mo. Filed June 4, 1906. Serial No. 319,993.



Claim.—The combination with a window screen, of means for securing the screen to a window frame; said means comprising a flat bracket hook for application to a window frame and having a notch and termineting in a hook point having an inwardly curved rear edge adjacent to said notch, and a hanger bracket attached to the window screen and terminating in a flat lip extending at a right angle to its body and adapted to engage said hook point and seat in said notch; said lip being approximately of the same width as the bottom of the notch.

858,270. TOILET-RECEPTACLE. HOMER EMERSON, Milton, Mass. Filed Sept. 29, 1906. Serial No. 336,790.



Claim.—1. In a device of the character described, the combination of a receptacle, a partition dividing the receptacle into two compartments, the uppermost of said compartments having an outlet at the upper end of the receptacle, a collapsible tube arranged in the lower of said compartments and having an outlet stem leading therefrom through the partition and terminating at the outlet, and means operable from the exterior of the receptacle for expelling the contents of the collapsible tube.

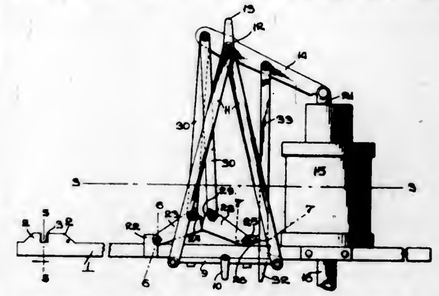
2. In a device of the character described, the combination of a receptacle subdivided into compartments, one of said compartments being provided with an outlet spout having a discharge opening in one side thereof while the opposite compartment has an outlet passage communicating eccentrically with the before mentioned outlet spout, and a cap fitting over the outlet spout and normally closing the outlet opening in the side of the spout and the outlet passage, the said cap being formed with openings designed to register with either of the outlets when it is desired to remove the contents of the receptacle.

3. In a toilet receptacle of the class described embodying separate compartments, one of said compartments being provided with an outlet at one end, a receptacle arranged in the other compartment, means for preventing displacement of the receptacle last mentioned, an outlet stem leading from the last mentioned receptacle to the outlet aforesaid, and a closure common to both the outlet and the outlet passage, substantially as set forth.

4. In a toilet receptacle or box of the class described, the combination of an intermediate partition separating said receptacle into two compartments, the uppermost of said compartments having an outlet at the upper end of the receptacle, a collapsible tube arranged in the lowermost of said compartments and having an outlet stem leading therefrom through the partition and terminating at the outlet, and a key passing through a side of the receptacle and adapted to twist the collapsible tube in order to expel the contents thereof.

5. In a toilet receptacle or box of the class described, the combination of an intermediate partition separating said receptacle into two compartments, the uppermost of said compartments having an outlet at the upper end of the receptacle, a collapsible tube arranged in the lowermost of said compartments and having an outlet stem leading therefrom through the partition and terminating at the outlet, and a key passing through a side of the receptacle and adapted to twist the collapsible tube in order to expel the contents thereof, the opposite sides of the receptacle being formed with vertical slots receiving opposite portions of the key to direct the same in its movement, said key being provided with a finger piece at one end thereof for manipulation of the same.

858,271. STAY-BOLT CUTTER. JOHN W. FAESSLER, Moberly, Mo. Filed Oct. 30, 1906. Serial No. 341,325.



Claim.—1. A stay bolt cutter, constructed with a U-shaped member, a cutting jaw, detachably secured to one end of said member, a bar arranged to slide in said member, a jaw integral with the sliding bar opposite the first mentioned jaw, and means carried by the U-shaped member for imparting a reciprocating movement to the sliding bar; substantially as specified.

2. A stay bolt cutter, constructed with a member, a cutting jaw fixed to one end thereof, a bar arranged to slide on said member, a cutting jaw carried by the bar and arranged opposite the fixed jaw, means carried by the member for imparting reciprocating motion to the sliding bar, a cylinder carried by the member, and a piston operating in said cylinder and connected to the sliding bar operating members; substantially as described.

3. In a machine of the class described, a U-shaped member, a jaw fixed in said member, a bar arranged to slide in the member, a jaw arranged on the sliding bar, segments pivotally connected to the member which segments have eccentrically curved faces, a second set of segments pivotally connected to the sliding bar and the faces of the pairs of segments engaging one another, and means whereby the segments are actuated to impart motion to the sliding bar; substantially as specified.

4. In a machine of the class described, a member, a jaw fixed in said member, a bar arranged to slide on the member, a jaw arranged on the sliding bar, segments pivotally connected to the member which segments have eccentrically curved faces, a second set of segments pivotally connected to the sliding bar and the faces of the pairs of segments engaging one another, means whereby the segments are actuated to impart motion to the sliding bar, means whereby said segments are actuated to shift the bar in one direction, and means arranged on the member for

shifting the bar in the opposite direction; substantially as specified.

5. In a machine of the class described, a member, a jaw fixed in said member, a bar arranged to slide on the member, a jaw arranged on the sliding bar, segments pivotally connected to the member, which segments have eccentrically curved faces, a second set of segments pivotally connected to the sliding bar and the faces of the pairs of segments engaging one another, a fulcrumed lever carried by the member, connections between one end thereof and the segments, and means carried by the member whereby said lever is moved upon its fulcrum; substantially as specified.

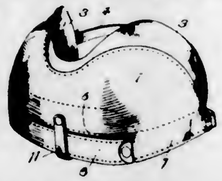
858,272. HORSE-BOOT. JOSEPH FENNELL, Cynthiana, Ky. Filed Mar. 1, 1908. Serial No. 360,011.



Claim.—1. As an improved article of manufacture, a horse boot embodying a single sheet of leather provided with gores resulting from cutting the leather at its edge with recesses of the shape of isosceles triangles, a portion of the leather within such triangle being riveted and constituting a tab riveted to the opposite portion of the cut.

2. As an improved article of manufacture, a gored horse boot, the gores of which result from cuts, the side edges of which form dihedral angles, the said side edges being drawn together and stitched for a portion of their length, and a tab projecting from one side edge of the gore and overlapping the other edge and to which it is riveted.

858,273. HORSE-BOOT. JOSEPH FENNELL, Cynthiana, Ky. Filed Mar. 1, 1907. Serial No. 360,012.



Claim.—1. A quarter-boot for horses, comprising a body portion provided at its rear lower edge with a transversely elongated recess, a heel strap adapted to fit in said recess, and means for detachably connecting said heel strap to the body portion of the boot.

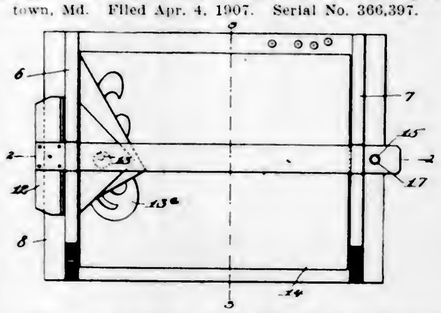
2. A quarter-boot for horses comprising a body portion, a lining secured thereto, said body portion being provided at its rear lower edge with a transversely elongated recess, and the body portion and lining forming slots between them at the ends of said recess, a heel strap adapted to fit in said recess, and attaching straps adapted to be passed through the said slots and designed for connection over the front of the boot, whereby to secure the heel strap to the said body portion.

3. A quarter-boot for horses, comprising a body portion formed at its rear lower edge with a transversely elongated recess, a retaining loop secured to the body portion and extending within the recess, a heel strap fitted in said recess and extending through said loop, and straps secured to the end of said heel strap and adapted to secure the latter to the body portion of the boot, in connection with the retaining loop.

4. A quarter-boot for horses, comprising a body portion provided with a transversely elongated recess, a lining secured to said body portion, the lining and the body portion forming between them slots at the ends of said recess, a retaining loop secured to the rear end of the body portion and projecting within said recess, a heel strap extending through said loop and fitting in said recess, attaching straps secured to the ends of said heel strap and passing through said slots, a buckle secured to the body portion of the boot at one front side thereof, and a loop secured to the attaching strap at the opposite side of the boot, the other attaching strap being adapted to be passed through said loop and brought back into engagement with said buckle, as and for the purpose set forth.

5. A quarter-boot for horses consisting of a body portion formed at its rear lower edge with a transversely elongated recess, a retaining loop secured to said body portion at the middle of said recess, a heel strap extending through said loop and fitting in said recess, means connected to the ends of said strap for securing the strap to the boot, and a block 15 secured to the inner side of said retaining loop.

858,274. DRAWING KIT. LUTHER FORSYTH, Hagerstown, Md. Filed Apr. 4, 1907. Serial No. 366,397.



Claim.—1. A drawing board provided with supports having rectangular slots, a lug secured to the board and arranged in proximity to one of the slots and adapted to have mounted thereon drafting appliances, a dowel arranged in proximity to the other of the slots and a T-square extending through the slots, over the lug, and adapted to take in the dowel thereby retaining in position the appliances mounted upon the lug.

2. A drawing board provided with supports having slots, a lug carried by the board and adapted to have drafting appliances mounted thereon, a T-square extending through the slots and over the lug for retaining the drafting appliances against the board, means carried by the board and engaging the T-square to prevent shifting thereof.

3. A drawing board having supports therefor, means carried by the board for receiving drafting appliances, means extending through the supports for retaining the drafting appliances against the board, and means carried by the board and engaging said retaining means to prevent the shifting thereof.

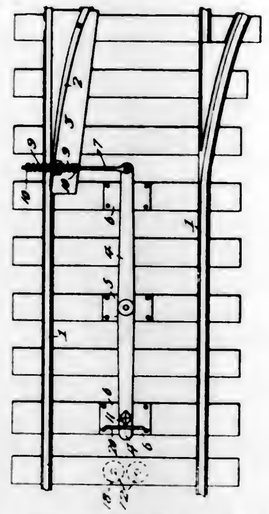
858,275. FASTENER. LUCIA J. FRANKLIN, Devils Lake, N. D. Filed June 24, 1905. Serial No. 266,855.



Claim.—1. In a fastener, the combination with a button, of a clasp having a socket and a throat communicating with the socket for the passage of the button therethrough into the socket, the portions at the sides of the throat being constructed to lie yieldably in mutual engagement, said clasp having a loop arranged to lie at the opposite side of a piece of material from the portion in which the socket and throat are formed, said loop being connected between its ends with the socket.

2. The combination with an article having portions adapted for attachment to each other, of a button carried by one of the portions, a clasp secured to the other portion and including parts lying at opposite sides of said portion, one of said parts being constructed and arranged to receive and hold the button, and a flexible member secured to the button-carrying portion and adapted for engagement around the other part of the clasp and for movement with respect thereto to bring the button-carrying portion into position for engagement of the button in the clasp.

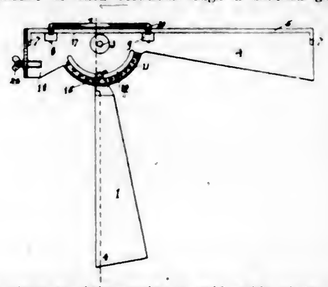
858,276. SWITCH. CHARLES E. FRYE, Flora, Ind. Filed Aug. 22, 1906. Serial No. 331,680.



Claim.—In combination with the point of a switch, of a lever suitably pivoted to a wear plate intermediate its length, a rod pivoted to one end of the lever and being in yielding engagement with the point, said rod being provided with a coil spring encircling the same and a fixed stop at the end and intermediate the length of the rod, said stops holding the spring in operative position, said spring passing through an opening in the switch point and through an opening in the web of the rail, a post angular in cross section projecting upwardly from the lever and positioned adjacent the opposite end thereof, and a guiding member for the lever arranged thereabove, said member being suitably secured at both sides of the lever and limiting the movement thereof.

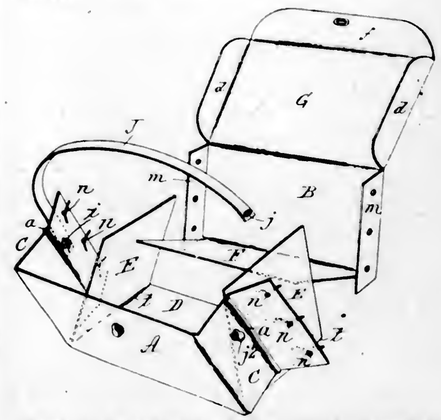
858,277. SAW-GUIDE. OSCAR F. GIFFIN, San Francisco, Cal. Filed Nov. 27, 1906. Serial No. 345,292.

Claim.—In combination, a guide-supporting plate adapted to rest upon the upper surface of the piece of wood to be sawed, a supporting plate having its lower surface in the same plane as the guide-supporting plate, and also adapted to rest upon the upper surface of said wood, a bar secured to the under side of said supporting plate and pivoted to the guide-supporting plate, said bar being adapted to rest against the edge of said wood, a guide plate having its lower edge hinged to the edge of the guide-supporting plate remote from the supporting plate, and a saw guide carried thereby, said guide-supporting plate being formed with a main portion for so resting upon the surface of the wood, a portion having a circular slot around said pivot and an extension beyond the latter portion, with a terminal edge at right angles to the hinged edge, the bar having a clamp bolt passing through said slot, the guide plate having secured to its end adjacent to said terminal edge a slotted graduated



arc in a plane at right angles to said guide plate, whereby it is adapted to move in contact with said terminal edge, and a clamp bolt carried by the guide-supporting plate at the latter edge and passing through said latter slot, substantially as described.

858,278. FOLDING LUNCH-BOX. MYRON A. GILMAN, Westfield, Mass. Filed Jan. 20, 1905. Serial No. 241,996.

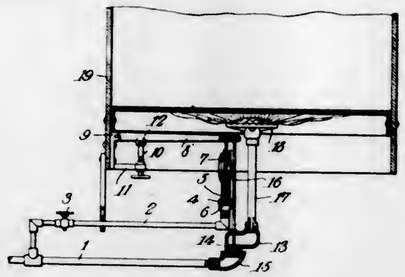


Claim.—1. A rectangular folding lunch-box essentially composed of opposite side-sections, and opposite end sections permanently connected with, and extending between, the side sections, and foldable vertically at their middle portions, a bottom section hinge-connected with and extended from the lower edge of, and foldable relatively to, one of the side sections, and having spreader flaps at its opposite ends, foldable against the said end sections, and also against the said bottom section, a secondary bottom section hinge connected to the lower edge of the side section opposite the one to which said first named bottom section is foldably hinged, and foldable against the side section to which it is connected, and adapted, when the box is set up, to overlie the first named bottom section inside of the said spreader flaps,—one of the side sections having a cover section hinge-connected, and foldable relatively, thereto.

2. A folding box consisting of two blanks of semi-rigid material, one of said blanks comprising a side section A, and as opposite end continuations thereof, the end sections with creases centrally, and from top to bottom, thereof, and said side section having transversely therebeyond a bottom section D which is provided at the opposite ends thereof with spreader flaps which are foldable

against said bottom section, and said bottom section with such spreader flaps being foldable against the side section A; and the other of said blanks comprising the side section B having at the ends thereof stay sections, and having in sidewise extension thereof a secondary bottom flap F which may overlie the other bottom section D, and also be folded against the side section B, the said stay sections being folded to lap beyond the vertical edges of the end sections of the blank A, and means connecting the stay sections and end sections.

858,279. AUTOMATIC SHUT-OFF. JACOB G. HALL, Buckhannon, W. Va. Filed May 21, 1906. Serial No. 317,996.



Claim.—1. The combination with a burner and a pilot burner adjacent thereto; of a normally closed valve for controlling the flow of gas to the burner, a normally closed valve for controlling the flow of gas to the pilot burner, and a thermostat adapted to be heated by the pilot light to open the valves.

2. The combination with a main burner and a pilot burner adjacent thereto; of a normally closed valve for controlling the flow of gas to the main burner, a thermostat extending from the valve and adapted to be heated by the pilot light to open the valve, a lever constituting a support for the thermostat, and means for adjusting the lever upon its fulcrum.

3. The combination with a main burner and a pilot burner adjacent thereto; of valves for controlling the supply of fuel to the main burner and pilot burner, a lever, means for swinging the lever upon its fulcrum, and thermostats connecting the valves with the lever, said thermostats being adapted to be heated by the pilot light.

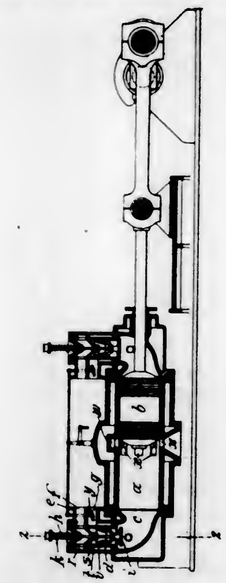
858,280. TWO-CYCLE GAS-ENGINE. FRANZ VON HANDORFF, Frankfort-on-the-Main, Germany. Filed Dec. 12, 1904. Serial No. 236,542.

Claim.—1. In a two cycle gas engine, the combination of an explosive chamber, an inlet valve thereto, a supply pipe for air under pressure, a gas supply pipe, a valve controlling the gas supply, an injector in the air supply arranged to exert suction on the gas supply pipe, and means for automatically opening the inlet and gas supply valves in sequence in the order named.

2. In a two-cycle gas engine, the combination, of an explosion chamber, an inlet valve thereto, a supply pipe for air under pressure, a gas supply pipe, a valve controlling the gas supply, an injector in the air supply concentric of the gas supply, and means for automatically and positively opening the inlet and gas supply valves in sequence in the order named.

3. In a two-cycle gas engine, the combination, of an explosion chamber, an inlet valve thereto, a supply pipe for air under pressure, a gas supply pipe, an annular valve controlling the gas supply, an injector in the air supply concentric of the gas supply valve, and means for automatically and positively opening the valves in sequence in the order named.

4. In a two-cycle gas engine, the combination, of an explosion chamber, an inlet valve thereto, a supply pipe for air under pressure, a nozzle arranged as a terminus of the air supply pipe, a supply pipe for fuel under substantial atmospheric pressure, an annular slide valve concentric with the nozzle and admitting gas to the interior of said valve around the nozzle, and means for opening the inlet valve to the explosion chamber and the gas valve concentric of the nozzle in sequence in the order named.



5. In a two-cycle gas engine, the combination, of an explosion chamber, a supply pipe for air under pressure, a nozzle arranged as a terminus of the air supply pipe, an inlet valve to the explosion chamber with its stem loosely in the nozzle, a gas supply pipe discharging concentrically of the nozzle, an annular slide valve carried by the inlet valve stem and arranged to free the gas discharge openings after the opening of the inlet valve, said annular valve having an interior conical surface concentric with the nozzle and arranged in advance thereof, and means for automatically and positively operating the inlet valve.

6. In an internal combustion engine, the combination, with a cylinder and a piston moving therein, of exhaust ports controlled by the piston and having their walls lying obliquely to the coacting piston surface and forming therewith an angle of more than 45°.

7. In an internal combustion engine, the combination, with a cylinder and a piston moving therein, of exhaust ports controlled by the piston and arranged in the walls of the cylinder with their walls lying obliquely to the axis of the cylinder.

8. In an internal combustion engine, the combination, with a cylinder and a piston moving therein, of exhaust ports controlled by the piston and arranged in the walls of the cylinder with inclined approaches.

9. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein, and exhaust ports controlled by the piston, of an explosion chamber, a supply pipe for air under pressure, a nozzle forming the terminus of the air pipe, an inlet valve, an annular gas inlet valve arranged to discharge the gas concentrically of the nozzle, and means for automatically and positively operating said valves in sequence in the order named.

10. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein, exhaust ports controlled by the piston and having their walls lying obliquely to the coacting piston surface and forming therewith an angle of more than 45°, of an explosion chamber, an inlet valve for air under pressure, a gas inlet valve, and means for automatically and positively operating said gas inlet valve.

11. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein, and exhaust ports controlled by the piston and arranged in the walls of the cylinder with their walls lying obliquely to the axis of the cylinder, of an explosion chamber, an inlet valve for air under pressure, a gas inlet valve, and means for automatically and positively operating said valves in sequence in the order named.

12. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein, exhaust ports controlled by the piston and arranged in the walls of the cylinder with their walls lying obliquely to the axis of the cylinder, of an explosion chamber, a supply pipe for the air under pressure, an inlet valve from said pipe to the explosion chamber, a gas supply pipe discharging into the air supply pipe, a valve controlling the discharge from the gas pipe, and means for operating said gas valve automatically and positively.

13. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein, and exhaust ports controlled by the piston and arranged in the walls of the cylinder with their walls lying obliquely to the axis of the cylinder, of an explosion chamber, a supply pipe for air under pressure, an inlet valve from said pipe to the explosion chamber, a gas supply pipe discharging into the air supply pipe and means for operating said valves in sequence in the order named.

14. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein, and exhaust ports controlled by the piston and arranged in the walls of the cylinder with their walls lying obliquely to the axis of the cylinder, of an explosion chamber, an inlet valve thereto, a supply pipe for air under pressure, a gas supply pipe, a valve controlling the gas supply, an injector in the air supply adjacent to the gas supply, and means for automatically and positively operating the gas supply valve.

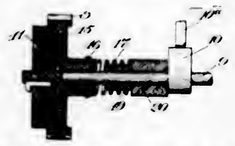
15. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein, and exhaust ports controlled by the piston and arranged in the walls of the cylinder with their walls lying obliquely to the axis of the cylinder, of an explosion chamber, an inlet valve thereto, a supply pipe for air under pressure, a gas supply pipe, a valve controlling the gas supply, an injector in the air supply adjacent to the gas supply, and means for automatically and positively operating the valves in sequence in the order named.

16. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein and exhaust ports controlled by the piston and arranged in the walls of the cylinder with their walls lying obliquely to the axis of the cylinder, of an explosion chamber, an inlet valve thereto, a supply pipe for air under pressure, a nozzle arranged within the air supply pipe, a gas supply pipe, an annular slide valve concentric with the nozzle and admitting gas to the air supply pipe, and means for opening the inlet valve to the explosion chamber and the gas valve adjacent to the nozzle in sequence in the order named.

17. In a two-cycle gas engine, the combination, with a cylinder, a piston moving therein, and exhaust ports controlled by the piston and arranged in the walls of the cylinder with their walls lying obliquely to the axis of the cylinder, of an explosion chamber, a supply pipe for air under pressure, a nozzle arranged within the air supply pipe, an inlet valve to the explosion chamber with its stem in the air supply pipe, a gas supply pipe discharging into the air supply pipe concentric with the nozzle, a slide valve carried by the inlet valve stem and arranged to free the gas discharge openings after the opening of the inlet valve, and means for automatically and positively operating the inlet valve.

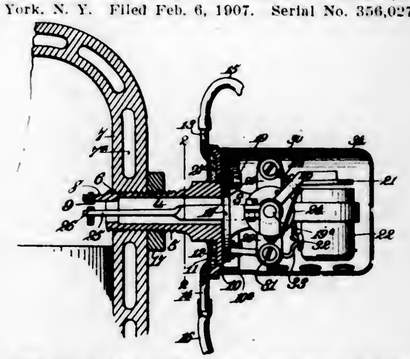
858,281. GAS-ENGINE-REVERSING MECHANISM. WILLIAM A. HANSEN, San Francisco, Cal. Filed Feb. 23, 1906. Serial No. 302,520.

Claim.—1. In an internal combustion engine, a crank shaft, a cam shaft and a cam whereby the engine valve is opened, a gear fixed upon the crank shaft, a gear loosely turnable upon the cam shaft and receiving motion from the crank shaft gear, a disk fixed upon the cam shaft having clutch members 90° apart, a clutch member upon the gear adapted to engage either of the disk clutch members, a spring acting upon the gear and normally holding the engaged clutch in place, a lever by which the gear may be retracted, and the clutch members disengaged whereby the cam shaft and cam are released and idle, and the clutch members are re-engaged in position to reverse the engine movements.



2. In an internal combustion engine, a means for changing the position of the valve-opening cam to reverse the engine, said means consisting of a disk fixed to the cam shaft having clutch members corresponding to the forward and reverse position of the valve-opening cam, a gear loosely turnable upon the cam shaft and normally engaged with one of the disk clutches, a gear fixed to the crank shaft and transmitting motion to revolve the cam shaft gear, an intermediate gear, and means for disengaging one clutch member and engaging the other, and stops or shoulders on the disk between the clutch members thereof whereby the movement between the two clutch engagements is limited.

858,282. SPARKING PLUG. WILLIAM B. HAYDEN, New York, N. Y. Filed Feb. 6, 1907. Serial No. 356,027.



Claim.—1. An electrical sparking plug for explosive engines comprising an inner and an outer section, said inner section having a fixed electrode, a vibratory electrode cooperating with the fixed electrode, means carried by the outer section of the plug for actuating the vibratory electrode, and means carried by the inner section of the plug and independent of the engine cylinder for cooling the actuating means for the vibratory electrode.

2. An electrical sparking plug comprising both terminals an inner section having a recessed offset, a plate secured to the offset and forming in connection with the recessed portion of the offset a water chamber, means for establishing communication between the water chamber and a source of supply, means for conducting the water from said chamber, an outer section carrying an electrically-operated device, and means for securing the outer section to the offset.

3. A sparking plug for explosive engines adapted to extend through the wall of the cylinder of the engine and provided with an electrically-operated device for actuating an electrode, said plug further comprising a fixed electrode, a lock nut for the plug, and a water jacket surrounding a portion of the plug and independent of the water jacket of the cylinder of the engine for cooling said device.

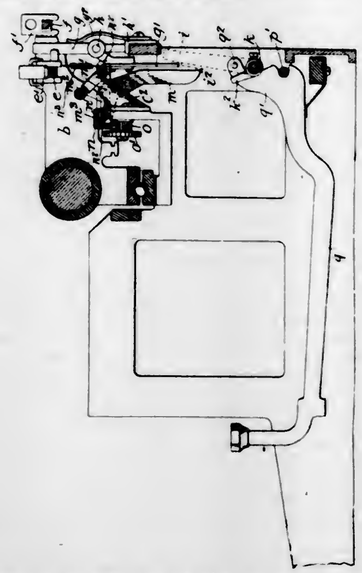
858,283. BRACE FOR FREIGHT-CARS. HENRY HEARD, Athens, and EDWARD D. TREANOR, Milledgeville, Ga. Filed Sept. 12, 1905. Serial No. 278,145.



Claim.—1. In combination, frames opposite door openings of a freight car, a fastening plate secured to the frame, a brace having one end fastened to the plate, and a slot formed in the frame behind the plate and opening into the car above and below the plate.

2. In combination, a freight car of box type having opposite side door openings at or near the center of the car, frames surrounding the door openings and connected by the car roof, a brace on one side the door opening which connects the frames on opposite sides of the car, a second brace connecting the other two sides of the frames on opposite sides of the car, each of said braces comprising means for pivotally connecting it to the door frame, means for detachably securing the other end of said brace to the frame on the opposite side of the car, and a device forming a part of the brace for taking up slack and adjusting said brace between the door frames.

858,284. WRITING-MACHINE. EDWARD B. HESS, New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J., a Corporation of New Jersey. Filed Nov. 9, 1905. Serial No. 286,466.



Claim.—1. In a writing machine, the combination with the carriage having a margin stop and tabular stops arranged in line parallel with the axis of the platen, a co-operating stop lever pivoted upon the frame and movable transversely to the platen axis, a rock shaft arranged transversely of the machine, an arm extending therefrom and adapted to engage the end of the stop lever, two pivoted levers and operative connections between them and the rock shaft whereby the respective levers may, when operated, impart different ranges of movement respectively to the rock shaft for the purpose set forth.

2. In a writing machine, the combination of a carriage provided with a margin stop and tabular stops arranged in different transverse lines, a co-operating stop lever pivoted on the frame of the machine and disposed between the two lines in which said carriage stops are mounted, a rack release lever, a rock shaft, an extension from the rock shaft adapted to engage the stop lever and rack release lever, two rock shaft operating levers and operative connections between the latter and the rock shaft whereby the respective levers may, when operated, impart different ranges of movement to the rock shaft, one to carry the stop lever out of the path of the margin stop and the other to operate the rack release lever and carry the stop lever into the paths of the tabular stops.

3. In a writing machine, the combination with the carriage having a margin stop and tabular stops arranged in line parallel with the axis of the platen, a co-operating stop lever pivoted upon the frame and movable transversely to the platen axis, a rock shaft arranged transversely of the machine, an arm extending therefrom and adapted to engage the end of the stop lever, and means whereby the operator may at will impart different ranges of movement to the rock shaft for the purpose set forth.

4. In a writing machine, the combination of a carriage provided with a margin stop and tabular stops arranged in different transverse lines, a co-operating stop lever pivoted on the frame of the machine and disposed between the two lines in which said carriage stops are mounted, a rack release lever, a rock shaft, an extension from the rock shaft adapted to engage the stop lever and rack release lever, and means whereby the operator may at will impart different ranges of movement to the rock shaft, one to carry the stop lever out of the path of the margin stop and the other to operate the rack release lever and carry the stop lever into the paths of the tabular stops.

5. In a writing machine, the combination of the carriage having a margin stop and tabular stops arranged in line parallel with the axis of the platen, a co-operating stop lever pivoted upon the frame of the machine with its upper end disposed between said two lines, a rock shaft arranged transversely of the machine and having a projecting arm adapted to engage the lower end of said stop lever, a lever operating upon the rock shaft, a horizontally disposed push pin mounted at the front of the machine and an operative connection between it and said lever whereby when the push pin is operated the lever is actuated.

6. In a writing machine, the combination of the carriage having a margin stop and tabular stops arranged in different transverse lines, a stop lever pivoted upon the frame of the machine with its upper end disposed between said two lines, a rock shaft arranged transversely of the machine and having a projecting arm adapted to engage the lower end of said stop lever, a lever operating upon the rock shaft and having a finger piece in the key board, a horizontally disposed push pin mounted at the front of the machine and an operative connection between it and said lever whereby when the push pin is operated the lever is actuated.

7. Tabular stops and a margin stop, combined with a co-operating stop, means comprising a lever for moving the co-operating stop different distances according to the extent of movement of said lever, and means whereby the operator may at will move the lever to disengage the co-operating stop from the margin stop, and give the lever a greater movement to cause the co-operating stop to engage a tabular stop.

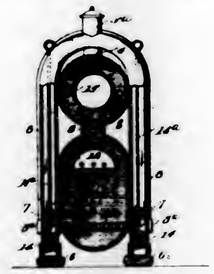
8. Tabular stops and a margin stop carried by the carriage, combined with a co-operating stop mounted in the frame, means comprising a lever for moving the co-operating stop different distances according to the extent of movement of said lever, and means whereby the operator may at will move the lever to disengage the co-operating stop from the margin stop, and give the lever a greater movement to cause the co-operating stop to engage a tabular stop.

9. Tabular stops and a margin stop combined with a co-operating stop, a horizontally disposed lever extending toward the front of the machine and operatively connected with the co-operating stop whereby the latter stop may be moved different distances according to the movement of said lever, means for moving the lever one distance to disengage the co-operating stop from the margin stop and means for moving it a further distance to engage the co-operating stop with a tabular stop.

10. Tabular stops and a margin stop combined with a co-operating stop and a lever operatively connected with the co-operating stop to impart to it different ranges of movement according to the extent of movement of said lever, for the purpose set forth.

11. Tabular stops and a margin stop combined with a co-operating stop and a lever operatively connected with the co-operating stop to impart to it different ranges of movement to either merely disengage the co-operating stop from the margin stop or to move it to engage a tabular stop.

858,285. HEATING-STOVE. WILLIAM HEUERMANN, Sedalia, Mo. Filed Mar. 27, 1907. Serial No. 364,778.



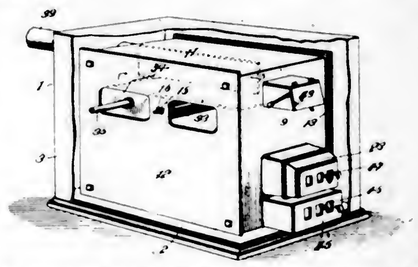
Claim.—1. The improved heating stove comprising a combustion chamber, and a superposed heating chamber, the same having connecting passages and one depending from the other, two pairs of down draft pipes connected with the top of the heating chamber and extending below the combustion chamber so as to serve as legs for the stove proper, and an up-draft pipe connecting with such down-draft pipes, substantially as described.

2. The improved heating stove comprising a heating chamber, a combustion chamber supported from and below said heating chamber, and the two having a connecting passage, a series of inverted U-shape down-draft pipes connected with the top of the heating chamber and extending below the combustion chamber whereby they are adapted to serve also as legs for the stove proper, a U-shape up-draft pipe arranged between the down-draft pipes and connected with the same, as shown and described.

3. In a heating stove the combination with down-draft pipes, and a heating chamber connected with the upper ends of said pipes and supported therefrom, of a combustion chamber attached to and depending from the heating chamber, and a baffle-plate arranged lengthwise in the combustion chamber a short distance below the passage leading into the heating chamber above, as and for the purpose specified.

858,286. FURNACE. JAMES M. HEVERLY, Altoona, Pa., assignor of one-half to Henry A. Heverly, Altoona, Pa. Filed Jan. 23, 1906. Serial No. 297,498.

Claim.—1. A furnace of the character described, comprising an inner and outer casing forming a hot air space between the same, a grate within the lower end of the inner casing, a horizontal air passage intermediate the grate and the upper end of the casing, and of a size to leave a vertical smoke flue at the rear of the casing, the said inner casing having openings opposite the horizontal passage and forming communication between the same and the hot air space, a tank within said passage, pipes connected to the tank and passing through the openings in the inner casing, and through the outer casing, and adapted to be used for hot water heating purposes, and divisional plates carried by the upper face of the horizontal air passages to cause the products of combustion to travel twice across the same before entering the smoke pipe.



2. A furnace of the character described, comprising an inner and outer casing forming a hot air space between the same, a grate within the lower end of the inner casing, a horizontal air passage dividing the inner casing intermediate the grate and the upper end, and cut away at one side at the rear to form a smoke flue, the inner casing having oppositely arranged openings opposite the air passage, and forming a communication between the same and the hot air space, a vertically arranged plate extending from the rear wall of the casing at the inner edge of the smoke flue, and extending partially over the air passage and dividing the space above the air passage into two horizontal passages, substantially as shown.

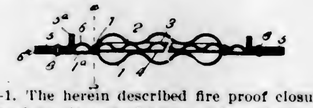
3. A furnace of the character described, comprising an inner and outer casing forming a hot air space between the same, a grate within the lower end of the inner casing, a horizontal air passage dividing the inner casing intermediate the grate and the upper end and cut away at one side to form a vertical smoke flue, a tank within said air passage, pipes connected to the tank and passing through the openings and through the outer casing, and adapted to be used for hot water heating purposes, a vertically-arranged divisional plate extending from the rear wall of the casing on the inside of the smoke flue and extending forward dividing the space between the upper face of the air passage and the top of the inner casing into two horizontal passages communicating with each other at their forward end, and the rear end of one passage in communication with the vertical smoke flue and the rear end of the other passage in communication with the smoke pipe.

4. A furnace of the character described, comprising an inner and outer casing forming a hot air space between the same, a grate in the lower end of the inner casing, an air passage above the grate and dividing the inner casing into an upper and lower horizontal compartment, connected at the rear and one side by a vertical smoke flue, a tank within said air passage and adapted to be used for hot water heating purposes, and means carried by the upper face of the air passage for causing the products of combustion to travel twice back and forth within the upper compartment before they pass therefrom.

5. A furnace of the character described, comprising an inner and outer casing forming a hot air space between the same, a grate in the lower end of the inner casing, an air passage above the grate and dividing the inner casing into an upper and lower horizontal compartment, said air passage being in communication with the hot air space at its sides, a vertical flue at the rear end of the lower compartment and the air passage, and being in communication with the upper compartment through an opening adjacent one side wall of the inner casing, a vertical divisional plate extending from the rear wall of the inner casing between the upper face of the air passage and the top of the inner casing, and forming a forwardly-extending pas-

sage in communication with the smoke flue, the forward end of said plate cut away to form a communication with the passage on the opposite side of the divisional plate, a smoke pipe in communication with the last named passage, and a door communicating with the forward end of the upper compartment for regulating the draft through the same to the smoke pipe.

858,287. FIREPROOF DOOR OR SHUTTER. HENRY T. HIGINBOTHAM, New Orleans, La. Filed Aug. 23, 1906. Serial No. 331,813.



Claim.—1. The herein described fire proof closure, consisting of an inner layer and an outer layer both of which are corrugated and have their corrugations extending longitudinally, an intermediate corrugated layer, the corrugations of which extend obliquely to the corrugations of the other two layers, and an asbestos sheet interposed between the inner layer and the intermediate layer, whereby there are produced three intermediate series of air channels namely, the longitudinally extending series between the outer layer and the intermediate layer, the longitudinally extending series between the asbestos sheet and the inner layer, and the obliquely extending series between the asbestos sheet and the intermediate layer.

2. The herein described fire proof closure, comprising corrugated layers, one of which is provided with marginal extensions, angle bars secured to said extensions, and corrugated strips secured to said angle bar and marginal extensions and lying between the angle bar and the corrugated layers.

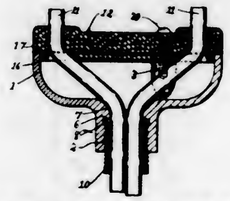
3. The herein described improved fire proof closure, comprising corrugated layers, one of which is provided with flat longitudinal extensions, angle bars secured to said extensions with one member outstanding therefrom, and corrugated strips located in the space between said outstanding members of the angles and the said corrugated layers, said corrugated strips being also provided with flat marginal extensions interposed between the angle bars and the first named marginal extensions.

4. The herein described improved fire proof closure, comprising corrugated layers, one of which is provided with flat longitudinal extensions, binding strips secured to said extensions, and corrugated strips located between said binding strips and the said corrugated layers and secured to the latter and to the said flat extension of one of said layers.

5. The herein described fire proof closure, comprising corrugated layers, one of which is provided with marginal extensions and spaced from the main portion of the corrugated layers, and corrugated strips provided with side edge extensions, one of which is interposed between the adjacent binding strip and the marginal extension of one of the corrugated layers, and the other of which is interposed between the marginal extension of one of the layers and the edges of the other layers.

858,288. BRANCH BOX. ALBERT F. HILLS, Syracuse, N. Y., assignor to Crouse-Hinds Company, Syracuse, N. Y., a Corporation of New York. Filed Oct. 19, 1905. Serial No. 283,388.

Claim.—1. The combination of a branch box comprising a hollow metallic body having an internal chamber for branching of wires, said body being formed with one side open, and having another side formed with a passage provided with an inwardly projecting shoulder, and surfaces diverting inwardly from said shoulder toward opposing walls of the body, and a closure of insulating material for the open side of the body, the closure having perforations for permitting the passage of the wires through the closure and spacing said wires, and also having faces converging from opposing sides of the perforations inwardly toward the center of the closure, and a conduit supported within the passage at the outer side of the shoulder, said conduit serving to incase wires passing through the conduit and diverging therefrom and passing over said diverging surfaces of the body and the converging faces of the closure through the perforations in said closure, substantially as and for the purposes set forth.



2. A branch box for wires, comprising a hollow body formed with one side open, a closure of insulating material for the open side of the body, said closure having perforations for permitting the passage of the wires through the closure and spacing the wires, and said closure being provided with surfaces arranged at an angle to each other for respectively engaging the inner face of the body and an external face of the open side thereof, the greater portion of the external surface surrounding the opening of said open side being separated from the opposing surface of the closure, and means for securing the closure to the body, said means being arranged in proximity to a portion of said external surface in contact with the opposing surface of the closure, substantially as and for the purpose set forth.

3. A branch box for wires, comprising two elements, one a hollow body formed with one side open, and the other, a closure for the open side of the body, said closure having perforations for permitting the passage of the wires through the closure and spacing the wires, said closure being provided with surfaces arranged at an angle to each other and respectively opposed to the inner face of the body and the external surface of the open side thereof, one of said elements having raised faces for engaging opposing faces of the other element, substantially as and for the purpose described.

4. A branch box for wires, comprising a hollow body formed with one side open, and having its inner face provided with ribs arranged at an angle to the open side of the body, a closure of insulating material for said open side, the closure having perforations for permitting the passage of the wires through the closure and spacing the wires and raised faces for engaging the outer ends of the ribs and means for securing the closure to the body at said ribs, substantially as and for the purpose specified.

5. A branch box for wires, comprising a hollow body formed with one side open, and having its inner face provided with ribs arranged at an angle to the open side of the body, a closure of insulating material for said open side, the closure being formed with a reduced portion inserted in to the opening of said open side and having perforations for the wires, said closure being also formed with raised faces for engaging the outer ends of the ribs and means for securing the closure to the body at said ribs, substantially as and for the purpose set forth.

6. A branch box for wires, comprising a hollow body formed with one side open, and having its inner face provided with ribs arranged at an angle to the open side of the body, a closure of insulating material for said open side, the closure being formed with a reduced portion inserted into the opening of said open side, and having perforations for permitting the passage of the wires through the closure and spacing the wires, said closure having cutouts for receiving the ribs and means for securing the closure to the body at said ribs, substantially as and for the purpose described.

7. A branch box for wires, comprising a hollow elongated body formed with one side open, and having its inner face provided with ribs arranged at an angle to the open side of the body, an elongated closure of insulating material for said open side, the closure being formed with a reduced portion inserted into the opening of said open side, and having perforations in its ends for permitting the passage of the wires through the closure and spacing the wires, said closure having cutouts in the intermediate portions of its longitudinal sides between the perforations, the cutouts receiving the ribs and being formed with raised faces for engaging the outer ends of the ribs, and said closure having portions of its inner surface separated from the opposing surface of the body, and means for securing the closure to the body, said means being passed through the closure and the raised faces thereof into the ribs, substantially as and for the purpose specified.

8. In a branch box for wires, a hollow body formed with one side open, and a closure of insulating material for the open side of the body, said closure having perforations for permitting the passage of the wires through the closure and spacing the wires, an inner surface of the closure having grooves leading from the opposing sides of the perforations and decreasing in depth from said perforations, substantially as and for the purpose described.

9. A branch box for wires, comprising an elongated body formed with one side open, and having its opposite side formed with a substantially central passage provided with an inwardly projecting shoulder and with an annular groove at the outer side of the shoulder, said body having an internal surface inclining from the shoulder, a closure of insulating material for the open side of the body, the closure having perforations at opposite sides of the axis of the passage, for permitting the passage of the wires through the closure and spacing the wires an inner surface of the closure having grooves leading from the opposing sides of the perforations and decreasing in depth from the perforations, the grooves receiving the wires, and a conduit supported within the passage at the outer side of the shoulder and projecting into the annular groove, said conduit serving to incase wires passing over the shoulder between the conduit and the perforations, substantially as and for the purpose described.

858,289. PROCESS OF IMPREGNATING TOBACCO BY MEANS OF NATURAL OR ARTIFICIAL AROMATIC SUBSTANCES. PIETER HONDIUS, Utrecht, Netherlands. Filed Aug. 31, 1905. Serial No. 276,623.

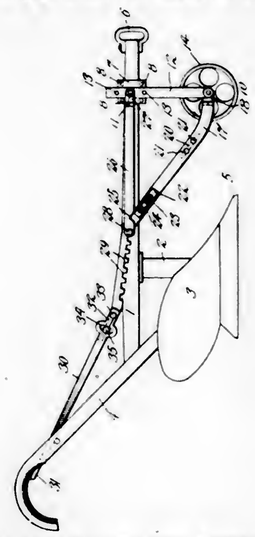
Claim.—The method of improving the burning quality and flavor of badly burning cigars, consisting in impregnating parts thereof with an extract of tobacco of good burning quality and of a flavor superior to that of the cigars treated.

858,290. GAGE-WHEEL. AUSTIN W. HOWELL, Hanover township, Licking county, Ohio. Filed Apr. 12, 1906. Serial No. 311,204.

Claim.—1. A gage wheel, a bar to which said gage wheel is journaled, said bar being pivoted near its upper end at the side of the beam, and an operating lever connected to the axle of the gage wheel and extending up between the handles of the plow, and provided with a hand hold for raising and lowering said wheel, and means for holding said lever in adjusted position, substantially as described.

2. A gage wheel for plows comprising a bar pivoted at the side of the beam upon a stud projecting outward from a plate bolted to the beam, a gage wheel journaled to the lower end of said bar, an operating lever connected to the axle of said gage wheel, an angular brace connected to said operating lever and to said axle, said operating lever being provided with a series of notches, a bolt extending laterally from the beam to engage said notches, and a pivoted handle portion provided with a handle, substantially as described.

3. A gage wheel for plows comprising a bar, a plate secured at the side of the beam and provided with an outwardly extending stud, said bar having adjusting perforations therein, and being pivotally mounted upon said stud, a gage wheel journaled in the lower end of said bar, an operating lever connected to the axle of said gage wheel and extending up within reach of the plowman, means for holding said adjusting lever in adjusted position to raise and lower the gage wheel, and means for adjusting said gage wheel at an angle to the beam, substantially as described.



858,291. SKIMMER. JAMES F. IMBY, Baltimore, Md. Filed Dec. 14, 1906. Serial No. 347,809.



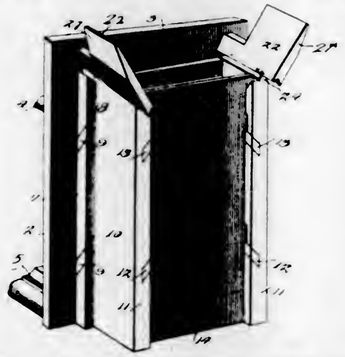
Claim.—1. A skimmer substantially as herein described, having a body portion or rim, a handle projecting upwardly therefrom, a bell shape flange projecting outwardly and sloping downwardly from the lower edge of the body or rim, a conical bottom inclining upwardly within the body or rim, and forming an annular space within the body or rim and below the apex or point of the conical bottom, and having an opening at its point or apex for the passage of grease and the like into the body or rim, and a strainer extending between one side of the body or rim at the upper edge thereof and the handle, all substantially as and for the purposes set forth.

2. A skimmer comprising a body portion or rim, a conical bottom sloping upwardly thereinto, and provided at its apex with an opening for the passage of grease and the like, and a bell shape flange projecting outwardly and downwardly from the lower end of the body portion or rim, substantially as set forth.

3. A skimming device comprising a body portion or rim, a handle fixed to and projecting upwardly therefrom, a strainer extending between said handle and one side of the body or rim at the top of the latter, said strainer extending up along the handle and being fixed to the skimmer whereby it will form a permanent strainer at one side of the handle, the upper end of the body or rim being unobstructed at the other side of the handle, and a bottom for said body or rim having an opening through which grease or the like will pass from the surface of the soup,

and sloping downwardly from said opening forming within the body a space for the reception of grease and the like, substantially as set forth.

858,292. FIREPLACE. WALTER S. JACKSON, Birmingham, Ala. Filed Dec. 4, 1905. Serial No. 290,286.

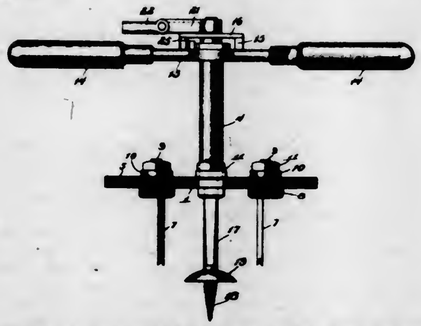


Claim.—1. A fireplace comprising a front piece provided upon its rear side with parallel vertical ribs formed with transverse slots, side pieces bearing at their forward edges against the front piece and inner faces of the ribs and provided with laterally projecting lugs engaging said slots, said side pieces being provided at their rear ends with inturned flanges formed with slots, and a back piece resting against the inner faces of said flanges and provided on its rear face with locking lugs engaging the slots therein.

2. A fireplace comprising a front, a back and sides having a detachable interlocking connection, the upper ends of the sides being beveled to a V-edge, and guards or deflectors provided in their lower edges with V-shaped recesses, said guards being obliquely supported upon the V-shaped edges of the sides, and interconnecting means for supporting said guards in position.

3. A fireplace comprising a front, a back and sides having a detachable interlocking connection, the upper ends of the sides being beveled or tapered to form V-seats, guards having recessed lower edges resting on said seats and provided with beveled outer faces, and means for detachably securing the guards in position.

858,293. BORING-TOOL. JOHN H. JOHNSON, Winnipeg Junction, Minn. Filed July 18, 1906. Serial No. 326,755.



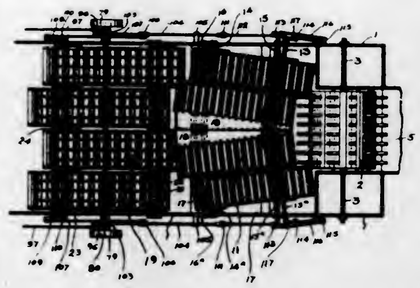
Claim.—1. In a tool of the character described, the combination of a cutter head, a tubular shank extending upwardly therefrom, an operating handle applied to the shank, a spindle journaled in the shank and provided with a fastening screw at its lower end and having feed threads, means for adjusting the spindle, a nut engaging the feed threads, and a pawl on the handle for locking said nut against rotation.

2. In a tool of the class described, the combination of a cutter head, a tubular shank extending upwardly therefrom, a spindle journaled in the shank and having a fastening screw at its lower end and provided above the same with feed threads, a nut held from longitudinal movement on the shank and engaging said feed threads, a handle on the shank, means carried by the handle to lock the nut thereto, radially adjustable cutters on the cutter head, and means for adjusting said cutters.

3. In a tool of the class described, the combination of a cutter head having a tubular shank extending upwardly therefrom, a spindle extending through and journaled in the shank and having a fastening screw at its lower end and feed threads at its upper end, a handle fixed to the upper end of the tubular shank, a yoke carried by the handle, a nut arranged within the yoke and engaging the feed threads, said nut being provided with rack teeth, a pawl pivotally mounted upon the yoke to engage said teeth, and an operating handle connected with the upper end of the stem.

4. In a tool of the class described, the combination of a cutter head having a tubular shank extending upwardly therefrom, a spindle extending through and journaled in the shank and having a fastening screw at its lower end and feed threads at its upper end, a cutter operating handle applied to the shank, an operating device applied to the upper end of the spindle, a nut held from longitudinal movement on the shank and engaging said feed threads, said nut being provided with peripheral teeth, and a pawl pivotally mounted upon the handle and adapted to engage the teeth to lock the nut against rotation, said pawl being reversible to lock the nut against rotation in either direction.

858,294. GRAIN-SEPARATOR. WILLIAM KOESTER, Boyd county, Nebr. Filed Aug. 7, 1906. Serial No. 329,602.



Claim.—1. In a separator mechanism, adjustable straw racks each comprising a frame, transversely extending slats pivotally held therein, longitudinally extending rods connecting all of said slats, springs secured to each of the slats, a rod connecting said springs with means for maintaining a tension thereon, and means for adjusting the angular position of the slats without varying the tension upon said springs.

2. In a separator, the combination with a threshing cylinder of a plurality of divergent straw racks mounted side by side upon actuating multiple crank shafts adapted to receive straw from said cylinder and distribute the same over a space wider than the length of the cylinder, and actuating means for imparting to each of said racks a longitudinal reciprocating motion.

3. In a separator, a housing, a threshing cylinder arranged near one end thereof, a plurality of longitudinally reciprocating straw racks adapted to receive straw from the cylinder and carry the same rearwardly, the said straw racks being arranged in sets of which the one nearest the cylinder consists of divergent sections mounted side by side upon actuating multiple crank shafts and the other sections consisting of parallel sections, and means for actuating said racks whereby the alternate sections of each set will be moved in directions opposite to the other sections of the set.

4. In a separator, the combination with a threshing cylinder, shaking racks and cleaning devices, of a table arranged to receive materials passing through the racks, transversely extending slats movable longitudinally of the table to convey materials received thereon to the cleaning devices, and divergent longitudinally extending slats arranged above the transverse slats to direct materials piled above the transverse slats toward the sides of the table.

5. In a separator, the combination with a threshing cylinder, of a plurality of reciprocating straw racks adapted to receive straw from the cylinder and carry the same rearwardly, said racks being arranged in sets, of which the set nearest the cylinder consists of divergent sections mounted upon actuating multiple crank shafts adapted to spread the straw toward the sides of the seperator, and the other sets being arranged in separate parallel sections, means for actuating the racks whereby the alternate sections of each set will be moved in directions opposite to the other sections of the set, a chaffer, a distributing conveyer table having one end arranged over the chaffer for coöperation with the latter, a sieve beneath the chaffer, a fan arranged adjacent the sieve, and an auxiliary fan above the first mentioned fan, for the purpose specified.

6. In a separator, the combination with a threshing cylinder, of a plurality of reciprocating straw racks adapted to receive straw from the cylinder and carry the same rearwardly, said racks being arranged in separate sets, the set nearest the cylinder consisting of diverging sections, other sets in the rear of the diverging sets consisting of parallel sections, a forward and a rearward section, each arranged across the machine beneath the aforesaid racks, another rack arranged in the rear of the machine beneath the aforesaid rearward rack, a chaffer, a sieve beneath the chaffer, a fan arranged beneath the chaffer and disposed at one end of said sieve, a distributing conveyer table arranged beneath said diverging racks and the aforesaid forward rack and having one end disposed over the forward end of the chaffer, the said rearward rack and the rack immediately beneath the latter rack carrying pans, and an auxiliary fan arranged above the chaffer for disposition at the end of the last mentioned rack to direct a blast of air over said pans and through all of the racks in the rear of the machine, substantially as described.

7. In a separator, the combination with a threshing cylinder, of sets of racks arranged in the machine to spread the straw over an area greater than the length of the cylinder, the rack sections adjacent the cylinders being arranged in divergent pairs.

8. In a grain separator, the combination with a threshing cylinder and grain cleaning devices, of separate sets of reciprocating straw racks, one set of racks comprising pairs of divergent straw racks adapted to receive straw from said cylinder and distribute the same over a space wider than the length of the cylinder, and means for operating the racks.

9. In a separator, the combination with a threshing cylinder, of sets of racks arranged in pairs at each side of the central axis of the machine, the racks of each pair lying parallel with each other and diverging from said axis of the machine toward the sides of the latter.

10. In a separator, the combination with a threshing cylinder; of pairs of divergent straw racks adapted to receive straw from said cylinder and distribute the same over a space wider than the length of the cylinder; and means for shaking the racks.

11. In a separator, the combination with a threshing cylinder; of pairs of divergent straw racks adapted to receive straw from said cylinder and distribute the same over a space wider than the length of the cylinder; means for shaking the racks; and a shield disposed between the innermost racks of each pair to prevent material dropping between said innermost racks.

12. In a separator, the combination with a threshing cylinder; of pairs of divergent straw racks adapted to receive straw from said cylinder and distribute the same over a space wider than the length of the cylinder; means for shaking the racks; and substantially triangular shaped overlapping shields disposed between the innermost rack of each pair to prevent material dropping between the innermost racks.

13. In a separator mechanism, adjustable straw racks each comprising a frame, slats pivotally held within the frame, a rod connecting all of the slats, a spring secured to each slat, a rod connecting said springs, and means for adjusting the angular position of the slats without varying the resistance upon said springs.

14. In a separator, the combination with a threshing cylinder, shaking racks and cleaning devices; of a table arranged to receive materials passing through the racks; transversely extending slats movable longitudinally of the table to convey materials received thereon to the cleaning devices; and separate sets of series of divergent, longitudinally extending slats arranged over the transverse slats to direct materials piled above the slats toward the sides of the table.

15. In a separator, the combination with a threshing cylinder, shaking racks and cleaning devices; of a table arranged to receive materials passing through the racks; transversely extending slats movable longitudinally of the table to convey materials received thereon to the cleaning devices; and separate sets of yieldable, divergent, longitudinally extending slats arranged above the transverse slats to direct materials piled above the slats toward the sides of the tables.

16. In a separator, the combination with a cylinder, shaking racks and cleaning devices; of upper and lower tables, the upper table arranged to receive materials passing through the rack; transversely extending slats movable rearwardly over the upper table and returning over the lower table; and divergently extending slats arranged above the transverse slats to direct materials piled above the slats toward the sides of the upper table.

858,295. MANUFACTURE OF SOAP. PETER KREBITZ, Munich, Germany. Filed Nov. 2, 1904. Serial No. 231,086.

Claim.—1. The process of making an insoluble soap which consists in thoroughly incorporating hot fat and a suitable base forming insoluble soaps with a limited quantity of water, heating the mixture to start the reaction and in then allowing the mixture to stand and cool while said reaction progresses.

2. The process of making a lime soap which consists in thoroughly incorporating hot fat with lime and a limited quantity of water, heating the mixture to start the reaction and in then allowing the mixture to stand and cool while said reaction progresses.

3. The process of making an insoluble soap which consists in thoroughly incorporating hot fat and a suitable base forming insoluble soaps with a limited quantity of water containing glycerin, heating the mixture to start the reaction, and in then allowing the mixture to stand and cool while said reaction progresses.

4. The process of making lime soap which consists in thoroughly incorporating hot fat with lime and a limited quantity of water containing glycerin, heating the mixture to start the reaction and in then allowing the mixture to stand and cool while said reaction progresses.

5. The process of making an insoluble soap which consists in thoroughly incorporating hot fat containing a free acid with a suitable base forming insoluble soaps and a limited amount of water, heating the mixture to start the reaction, and in then allowing the mixture to stand and cool while said reaction progresses.

6. The process of making lime soap which consists in thoroughly incorporating hot fat containing free acid with lime and a limited amount of water, heating the mixture to start the reaction and in then allowing the mixture to stand and cool while said reaction progresses.

7. The process of making an insoluble soap which consists in thoroughly incorporating hot fat containing a

free acid with a suitable base forming insoluble soaps and a limited amount of water containing glycerin, heating the mixture to start the reaction, and in then allowing the mixture to stand and cool while said reaction progresses.

8. The process of forming lime soap which consists in thoroughly incorporating hot fat containing a free acid with lime and a limited amount of water containing glycerin, heating the mixture to start the reaction, and in then allowing the mixture to stand and cool while said reaction progresses.

9. The process of making soap which consists in thoroughly incorporating hot fat with a base forming an insoluble soap and with a limited quantity of water, heating the mixture to start the reaction, allowing the mixture to stand and cool while the reaction progresses, washing it free of glycerin and soluble impurities and decomposing by boiling with a lye containing an alkaline carbonate in amount at least 2 per cent in excess of that equivalent to said insoluble soap.

10. The process of making soap which consists in forming a granular insoluble soap of a suitable base and decomposing said soap by boiling with a lye containing an alkaline carbonate in amount between 2 and 6 per cent in excess of that equivalent to said insoluble soap.

11. The process of making soap which consists in forming a granular insoluble soap of a suitable base and decomposing said soap by boiling with a lye containing sodium carbonate in amount between 2 and 6 per cent in excess of that equivalent to said insoluble soap and also containing a few per cent of salt.

12. The process of making soap which consists in forming an insoluble soap of a suitable base and decomposing said soap by boiling with sodium carbonate dissolved in a salt lye resulting from a previous operation of the same character, said sodium carbonate being in amount at least 2 per cent in excess of that equivalent to said insoluble soap.

13. The process of making and recovering soap which consists in forming an insoluble soap of a suitable base, decomposing said soap by boiling with a lye containing an alkaline carbonate in amount between 2 and 6 per cent in excess of that equivalent to said insoluble soap, separating the insoluble carbonate formed and washing the same with hot water to remove and recover co-precipitated alkaline carbonate and soap.

14. The process of making soap which consists in forming an insoluble soap of a suitable base, decomposing said soap by boiling with a lye containing sodium carbonate in amount between 2 and 6 per cent in excess of that equivalent to said insoluble soap, adding salt in salting-out amount after completion of the decomposition, and separating the curd soap and insoluble carbonate formed.

15. The process of making soap which consists in forming lime soap, decomposing said lime soap by boiling with sodium carbonate dissolved in diluted salt lye resulting from a previous similar operation, said carbonate being in amount at least 2 per cent in excess of that equivalent to said lime soap, adding salt in salting out amount after completion of the decomposition and separating the curd soap and insoluble calcium carbonate formed.

16. The process of making soap which consists in forming lime soap by thoroughly incorporating hot fat, lime and a limited quantity of water, heating to start the reaction and allowing to stand and cool while said reaction progresses, washing the so-formed lime soap free of glycerin and soluble impurities with hot water, decomposing said purified lime soap by boiling with a salt lye containing sodium carbonate in amount at least 2 per cent in excess of that equivalent to said lime soap, adding salt in salting out proportions after completion of the decomposition, and separating the curd soap and insoluble calcium carbonate formed.

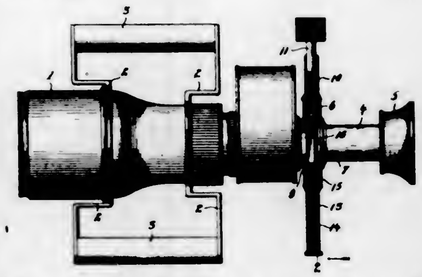
858,296. KNEE-PROTECTOR. INGEBORG D. LARSEN, Chicago, Ill. Filed Sept. 5, 1906. Serial No. 333,323.

Claim.—The herein described knee protector consisting of a curved metal plate provided with oppositely disposed slots at one end of said plate, a holding strap passed through said slots and provided with a buckle on one end for securing the pad above the calf of the leg with the free end of the pad projecting beyond the knee, and a



curved pad secured to the inner concaved surface of said plate to permit a free movement of the leg of the wearer and to protect the knees, essentially as described.

858,297. INSTRUMENT FOR MEASURING AND CORRECTING ERRORS OF GUN-FIRE. JULIAN L. LATIMER, Washington, D. C. Filed May 8, 1906. Serial No. 315,840.



Claim.—1. In an instrument of the class described, a transparent scale provided with indicating characters extending laterally of the instrument, a hair line crossing said scale, and means for adjusting said scale laterally of said line.

2. In an instrument of the class described, a transparent scale graduated to correspond with the lateral or azimuth scale of a piece of ordnance, a hair line crossing said scale corresponding to the pointer of the sight, and means for adjusting said scale laterally of said line.

3. In an instrument of the class described, a transparent scale provided with successively increasing indicating characters extended laterally thereon, a hair line crossing said scale, and means for adjusting said scale laterally of said line.

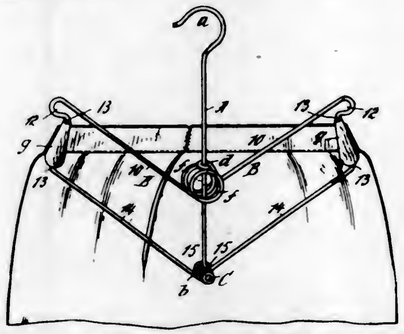
4. In an optical instrument of the class described, a casing disposed laterally of the eye-piece thereof, a graduated sliding plate mounted within said casing, a hair line supported by the casing at one side of said plate, an adjusting screw having a threaded bearing at one end of said casing and adapted to move said plate in one direction, and a restoring spring at the opposite side of the casing adapted to move said plate in the opposite direction.

5. In an optical instrument of the class described, a transparent scale graduated to indicate equal angles radiating laterally from the optical center of the instrument, a hair line crossing said scale, and means for adjusting said scale laterally of said line.

6. In an optical instrument of the class described, a transparent scale graduated to correspond with the lateral graduations of a gun sight and provided with controlling means whereby the angular lateral distance of the fall of a shot from the object aimed at may be read directly from said scale in the terms of the sight graduations.

7. In an optical instrument of the class described, a transparent scale graduated to correspond with the lateral graduations of a gun sight and provided with controlling means constructed to adjust said scale in azimuth across a hair line to the successive movements of the gun sight whereby each successive angular error in the fall of the shot may be read directly from the scale in the terms of the lateral graduations of the sight.

858,298. SKIRT-HANGER. JERRY C. LIBERTY, Easthampton, Mass., assignor of one-half to Thomas F. Lynn, Easthampton, Mass. Filed Oct. 15, 1906. Serial No. 338,912.



Claim.—1. A skirt supporter consisting of a central vertical suspension rod, and a pair of oppositely arranged frame-like arms, each consisting of separated upwardly and outwardly extended, approximately parallel, upper and lower portions of wire, having a uniting portion at their outer ends upwardly and inwardly inclined, the lower portions of both arms having connections with a lower portion of the suspension rod, and the upper wire portions of the arms having coils at the middle of the device, and means of engagement between an intermediate portion of the suspension rod and the coil-provided portions of said arms, whereby the latter are restrained in symmetrically opposite positions.

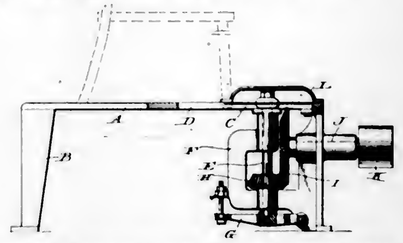
2. A skirt supporter consisting of a central vertical suspension rod, having a hook at its upper end, and a pair of oppositely arranged frame-like arms, each consisting of separated upwardly and outwardly approximately parallel upper and lower portions of wire having a uniting portion at their outer ends upwardly and inwardly inclined, and provided with tubular non-metallic pieces in encircling engagement therearound, the lower wire portions of both arms having connections with a lower portion of the suspension rod, and the upper wire portions of the arms having coils at the middle of the device, and means of engagement between an intermediate portion of the suspension rod and the coil provided portions of said arms, for the purpose set forth.

3. A skirt support comprising a single length of wire, the intermediate portion thereof being formed into a plurality of coils, and having portions oppositely upwardly and outwardly extended, and thence return bent and extended with a downward and outward inclination, and having their extremities downwardly and inwardly bent and arranged substantially parallel with the aforesaid portions incliningly extended from the coils, together with a supporting rod to the lower portion of which the proximate extremities of the said wire are connected, said supporting rod having at its intermediate portion a disposition between said coils, and means for retaining said rod centrally relatively to the coil comprising wire formed parts.

4. A skirt support comprising a single length of wire, the middle portion of which is formed in a horizontal eye, having portions near the middle formed into a plurality of vertical coils, having portions oppositely upwardly and outwardly extended, from said coils, and formed with return bent loops, thence extended with a downward and outward inclination, and having their extremities downwardly and inwardly bent and arranged substantially parallel with the aforesaid portions oppositely extended from the coils, together with a supporting rod to the lower portion of which the proximate extremities of the said wire are connected, said supporting rod having at its intermediate portion an engagement through said horizontal eye, and having a hook at its upper end.

5. In a skirt support the combination with a single length of wire, the intermediate portion thereof being formed into a plurality of coils, and having portions oppositely upwardly and outwardly extended, thence return bent and extended with a downward and outward inclination, and having their extremities downwardly and inwardly, bent, arranged substantially parallel with the aforesaid portions oppositely extended from the coils, and formed with eyes at their ends, of a connection piece about which said eyes are engaged, and having a lower end eye engaged with said connection piece, having at its intermediate portion a disposition between said coils, and means for retaining said rod centrally relatively to the coil comprising wire formed parts.

858,299. MACHINE FOR LEVELING CHAIRS, TABLES, AND THE LIKE. ARTHUR LYON, High Point, N. C. Filed May 9, 1907. Serial No. 372,743.



Claim.—1. In a machine of the character specified, the combination of a bed having an opening therein; and a saw working in said opening, the cutting edge of the saw lying in a plane substantially flush with the upper face of the bed, whereby a table or chair may be mounted upon and moved over said bed and the longest leg of said table or chair brought into working relation with the saw, so as to cut off so much of said leg as will cause the table to set evenly.

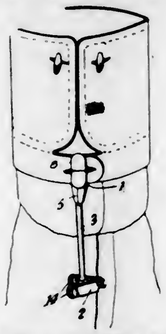
2. In a machine of the character specified, the combination of a flat bed adapted to sustain a chair or table upon three legs, with the fourth or longer leg extending below the upper face of the bed; and a saw mounted with its cutting edge in substantial alinement with the upper face of the bed, whereby the longest leg of a table or chair may be cut off while the other legs are resting upon the bed, substantially as described.

3. In a machine of the character specified, the combination of a flat bed adapted and designed to support a chair or table upon three legs, with the fourth or longer leg extending below the upper face of the bed; a saw having its cutting edge working in a plane coincident with the upper face of the bed; and means for securing proper adjustment of said saw.

4. In a machine of the character specified, the combination of a bed provided with an opening; a saw working in said opening, with its cutting edge lying in substantially the same plane as the upper face of the bed; and a guide or stop arranged to one side of the opening and adapted to guide the leg of a chair or table, which is to be cut, to the saw.

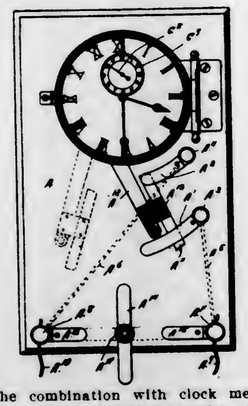
5. In a machine of the character specified, the combination of a flat bed provided with an opening adapted to receive a saw so that the working edge of said saw may be brought into alinement with the upper face of the bed, said bed being likewise provided with a second opening or extension proceeding from said first opening and into which a leg of a chair or table may be projected; and a guide arranged to one side of said lateral opening and adapted to guide the table-leg to the saw.

858,300. CUFF-HOLDER. LOGAN L. MALLARD, Atlanta, Ga., assignor of one-half to Wm. A. Sims, Atlanta, Ga. Filed May 24, 1906. Serial No. 318,578.



Claim.—A cuff holder, comprising a plate having overhanging marginal edges and formed at opposite points in said edges with apertured ears, and also formed at one end with curled over flanges, two transversely extending wings pivoted to said ears, said wings being provided at their pivoted edges with lugs, a spring plate mounted within the first named plate between the bottom of the latter and the said wings and retained in said first named plate by the said overhanging edges, a sleeve engaging member, and a rod-like connecting member secured at one end to the sleeve engaging member and provided at its other end with a tapered head received in and held by the said curled over flanges.

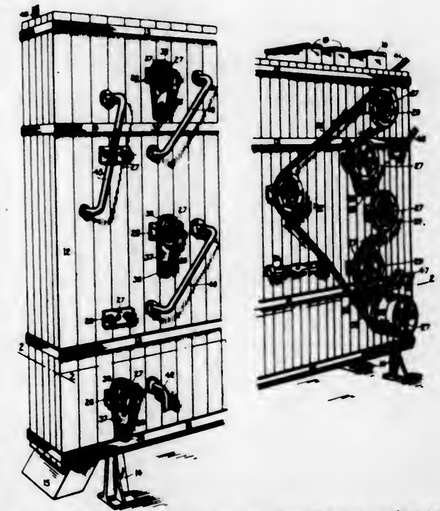
858,301. AUTOMATIC TIME CIRCUIT-BREAKER. WALTER N. MARTIN, ANDREW J. THOMAS, and EARL F. L. RUSSELL, Denver, Colo. Filed July 25, 1904. Serial No. 218,120.



Claim.—The combination with clock mechanism provided with alarm actuating devices, of a circuit breaker connected with the said devices and arranged to be actuated thereby, the circuit breaker having a part arranged to engage a part of the alarm mechanism and lock the latter against movement when the circuit breaker has reached its limit of movement after breaking the circuit.

858,302. APPARATUS FOR TREATING FORAGE. THOMAS H. MAPP, Surry Hills, near Sydney, New South Wales, Australia. Filed Aug. 6, 1906. Serial No. 329,464.

Claim.—1. In an apparatus of the class described, a casing, a plurality of substantially parallel oppositely movable endless conveyers in said casing, heating pipes disposed between the upper and lower runs of the respective conveyers, shields within and secured at opposite sides of the casing to form heating spaces, heating pipes arranged within the spaces formed by the sides of the casing and shields, and cleaning brushes engaging the lower run of the conveyers substantially at the delivery ends of the latter.



2. In an apparatus of the class described, a casing surrounded by suitable non-conducting material, a plurality of substantially parallel horizontally disposed endless conveyers, sprocket gearing for driving said conveyers oppositely to each other, each conveyer serving to deliver material on to the next lower conveyer, shields within and secured to the opposite side walls of the casing and adapted to form heating chambers, heating pipes arranged within each of the spaces, said casing having a feed opening to supply material to the top conveyer and also having a discharge opening for the passage of material from the lowermost conveyer, heating pipes disposed between the upper and lower runs of the respective conveyers, and cleaning brushes in contact with the respective conveyers and rotatable oppositely thereto.

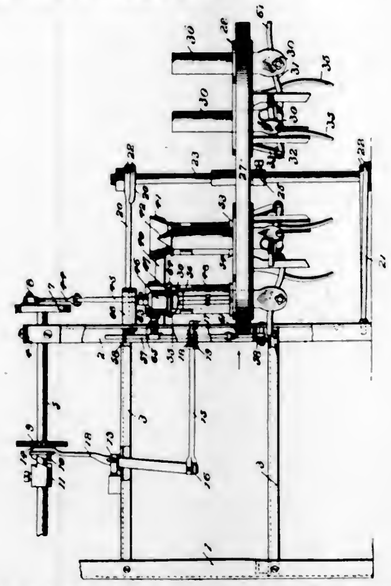
858,303. TILE-MOLDING MACHINE. JAMES I. MCLIMANS, Sherburn, Minn. Filed Mar. 7, 1907. Serial No. 361,114.

Claim.—1. In a machine for molding hollow tiles, the combination with a platform provided with an opening, of a core movably mounted in said opening, a jacket adapted to be placed on the platform and surround the core, and a plunger having a solid head adapted to be forced into the jacket to compress the material therein and simultaneously force down the core as the material is compressed.

2. In a machine for molding hollow tiles, the combination with a wheel, of a plurality of cores movably mounted in the wheel, movable jackets adapted to be supported around the cores, and a plunger under which the cores and jackets can be successively moved, said plunger being adapted to press the material contained by the core and the jacket and simultaneously force down the core as the material is compressed.

3. In a machine for molding hollow tiles, the combination with a mold casing, of a core movably mounted within the casing, a filling funnel provided with means for covering the top of the core, fins holding said means in position in the funnel, said fins being provided with projections adapted to enter between the casing and core to center the core in the casing.

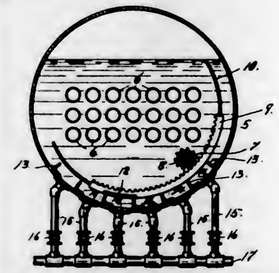
4. In a machine for molding hollow tiles, the combination with a wheel, of a plurality of cores movably mounted in the wheel, movable jackets adapted to be supported around the cores, a plunger under which the cores and jackets can be successively moved, said plunger being adapted to press the material contained by the core and the jacket and simultaneously force down the core as the material is compressed, and means for locking the wheel in the successive pressing positions.



5. In a machine for molding hollow tiles, the combination with a platform provided with an opening, of a link pivoted to the platform, a lever pivoted to the link, a core adapted to pass through said opening pivoted to said lever, and a guide for said lever to cause the core to move in a right line through said opening.

6. In a machine for molding hollow tiles, the combination with a platform provided with an opening, of a link pivoted to the platform, a lever pivoted to the link, a core adapted to pass through said opening pivoted to said lever, and springs bearing on the sides of said lever to yieldingly hold said core in any position to which it may be moved.

858,304. BOILER-CLEANER. LAFAYETTE M. PETTIT, Cripple Creek, Colo. Filed Mar. 19, 1907. Serial No. 363,274.



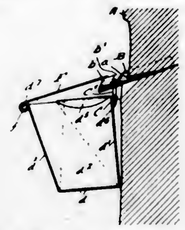
Claim.—1. In a boiler cleaner, the combination with a boiler provided with a number of channels formed in its lower portion, a plate for closing said channels separately, means for manipulating the plate from the exterior of the boiler whereby the said plate is caused to close any desired channel, one extremity of the channel being in communication with the boiler while the other is provided with a discharge outlet.

2. The combination with a boiler provided with a number of sediment channels formed in its lower portion, curved rack bars slidably mounted in the opposite extremities of the boiler, a longitudinally disposed plate connecting said bars and adapted to close any channel, a shaft journaled in the boiler and having gears engaging the rack bars for adjusting the said plate, and a crank connected with the said shaft for operating the latter from the outside of the boiler, each channel when its top is closed by the plate being in communication with the boiler at one extremity while its opposite extremity is provided with a valve-controlled outlet for the purpose set forth.

3. In a boiler cleaner, the combination with a boiler provided with a plurality of longitudinally disposed channels formed in its lower portion, the shell of the boiler forming the bottoms of the channels, a plate for closing said channels at the top, the plate being of a width to close the channel separately, and means operated from the outside of the boiler for shifting said plate from one channel to another, the channel when the plate is in place being in communication with the boiler at one extremity and having a valve-controlled outlet at the opposite extremity.

4. In a boiler cleaner, the combination with a boiler provided with a number of longitudinally disposed partitions attached to the lower portion of the shell, the said partitions being separated to form a series of longitudinally disposed channels, a cover plate for closing the channels at the top, the width of the plate being such as to close a single channel at a time, each channel when the plate is in place being open at one extremity whereby it is in communication with the boiler and having an outlet at the opposite extremity, means operated from the outside of the boiler for shifting the said plate from one channel to another, and exteriorly located indicating means actuated by the operating mechanism, for indicating the position of the cover plate within the boiler at all times, substantially as described.

858,305. SHEET-METAL SAP-COLLECTING APRON AND RECEPTACLE. ERNEST R. PHILIP, Atlanta, Ga., assignor to American Can Company, New York, N. Y., a Corporation of New Jersey. Filed Mar. 14, 1907. Serial No. 362,291.



Claim.—1. In a sheet metal sap receiving apron and receptacle, the combination with an apron having divergent end flanges furnished with hanger receiving slots, of a receptacle having an integral bottom, upright sides and flaring ends and angle folds, and furnished at the upper longitudinal edge of its inner side with a roll, a wire hanger embraced by said roll and having oppositely turned hanger arms embracing the lower or mouth portion of the apron and fitting in the slots of the apron end flanges, said receptacle having a roll at the upper longitudinal edge of its outer side, and a cover overlapping at its upper edge the apron, and having a roll at its lower longitudinal edge telescoped with and embracing said roll at the upper edge of the outer side of the receptacle, substantially as specified.

2. The combination with a sap collecting apron, of a receptacle supported thereby and a detachable cover for the removable receptacle overlapping the lower portion of the apron, substantially as specified.

3. The combination with a sap collecting apron, of a receptacle supported by the apron and fitting at its inner upper edge under the apron and a cover hinged to the upper edge of the outer side of the receptacle and overlapping the lower portion of the apron, substantially as specified.

4. The combination with a sap collecting apron having divergent end flanges, a receptacle, means for removably supporting the receptacle from the apron and a removable cover overlapping the lower end of the apron, substantially as specified.

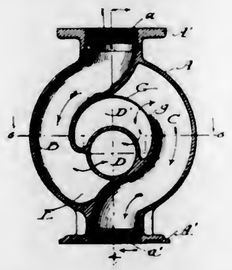
5. The combination with a sap collecting apron having divergent end flanges, a receptacle, means for removably supporting the receptacle from the apron and a cover, said cover being removably connected to the receptacle and overlapping the lower end of the apron, substantially as specified.

6. The combination with a sap collecting apron and a removable sap receptacle having a roll at its upper edge, of a removable cover having a roll telescoped with the roll on the receptacle, substantially as specified.

7. The combination with a sap collecting apron and a removable one piece sheet metal sap receptacle having an integral bottom, upright sides, ends and angle folds, and provided at the upper longitudinal edge of its outer side with an integral curved flange and a removable cover having at its lower edge a curved flange telescoped with said curved flange on the receptacle, substantially as specified.

8. The combination with a one piece sheet metal sap receptacle having an integral bottom, upright sides, ends and angle folds, and provided at the upper longitudinal edge of its outer side with an integral curved flange and a cover having at its lower edge a curved flange telescoped with said curved flange on the receptacle, said receptacle having at the upper longitudinal edge of its inner side a curved flange and a wire hanger embraced thereby, substantially as specified.

858,306. TRAP. LEO H. PLEINS, Chicago, Ill., assignor to James B. Clow & Sons, Chicago, Ill., a Corporation. Filed June 24, 1905. Serial No. 266,889.



Claim.—1. A trap, having two horizontal branches located one above the other, an inlet branch extending below the top of the lower horizontal branch, a branch extending upward from the lower end of the inlet branch and communicating with the lower horizontal branch, a branch connecting adjacent ends of the two horizontal branches, and an outlet branch communicating with the upper horizontal branch and at a point above the top of the lower horizontal branch.

2. A trap having two horizontal branches located one above the other, an inlet branch extending below the top of the lower horizontal branch, a branch extending upward obliquely from the lower end of the inlet branch and communicating with one end of the lower horizontal branch, a branch connecting the other end of the lower horizontal branch with the corresponding end of the upper horizontal branch and an outlet branch communicating with the upper horizontal branch at a point above the top of the lower horizontal branch.

3. A trap, having two horizontal branches located one above the other, an inlet branch, the lower end of which communicates with the lower horizontal branch, a branch connecting the two horizontal branches, and an outlet branch communicating laterally with the upper side of the upper horizontal branch at a point above the top of the lower horizontal branch, the upper horizontal branch being extended, horizontally, beyond the vertical plane of the inlet and outlet branches.

4. A trap, having two horizontal branches located one above the other, an inlet branch extending below the top of the lower horizontal branch, a branch connecting the lower end of the branch with the lower horizontal branch, a branch connecting the ends of the two horizontal branches, and an outlet branch communicating with the upper horizontal branch at a point above the top of the lower horizontal branch, the branch connecting the two horizontal branches being located at one side of the vertical plane of the inlet and outlet branches and extended vertically above the overflow lip of the upper horizontal branch, and said upper horizontal branch also being extended above said lip and extended also beyond the vertical plane of the inlet and outlet branches.

5. A trap having inlet and outlet branches; two horizontal branches located between the inlet and outlet branches, a branch extending upward from the lower end of the inlet branch and communicating with one end of the lower horizontal branch, and a branch connecting the other ends on the horizontal branches, the inlet and outlet branches being arranged with their vertical axes in a plane which is perpendicular to the axes of the horizontal branches and which is intermediate of the ends of the horizontal branches, and the outlet branch communicating laterally with the upper horizontal branch at a point above the top of the lower horizontal branch.

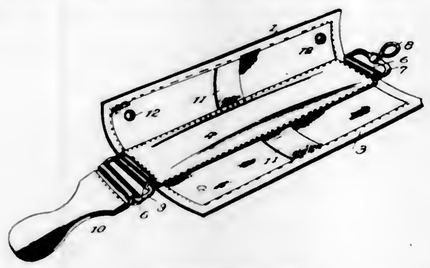
6. A trap, having a circular shell, said shell containing inlet and outlet branches following the circular contour of the walls of the shell and having their axes located in a common vertical plane, two horizontal branches located between the inlet and outlet branches and having their axes perpendicular to the vertical plane aforesaid, a branch connecting the lower end of the inlet branch with one end of the lower horizontal branch, a branch connecting the other end of the lower horizontal branch with the corresponding end of the upper horizontal branch, the latter being in communication with the outlet branch at a level above the level of the top of the upper horizontal branch.

7. A trap, having a circular shell, said shell containing inlet and outlet branches following the circular contour of the opposite walls of the shell and having their axes located in a common vertical plane, two horizontal branches located one above the other and between the inlet and outlet branches, a branch extending upward from the lower end of the inlet branch and communicating with the lower horizontal branch, a branch connecting the adjacent ends of the two horizontal branches, the upper portion of the upper horizontal branch being in communication with the outlet branch through a lateral port located above the level of the top of the lower horizontal branch.

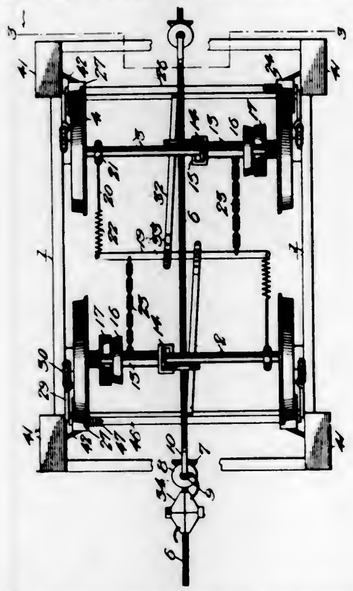
8. A trap, having a circular shell, said shell containing two centrally located horizontal branches, located one above the other, an inlet branch following the circular contour of the shell and communicating with the lower horizontal branch, a branch connecting the adjacent ends of the two horizontal branches and an outlet branch following the circular contour of the shell and communicating with the upper horizontal branch at a point above the level of the top of the lower horizontal branch.

858,307. COMBINED RAZOR STROP AND CASE. JEAN L. REED, Little Valley, N. Y. Filed Nov. 22, 1906. Serial No. 344,612.

Claim.—As an improved article of manufacture, a razor strop provided with flaps at its side edges, and means for fastening said flaps over the face of the strop, the strop being also provided with a foldable swiveled eye and handle adapted to fold upon its face underneath the said flaps.



858,308. BRAKING MECHANISM. JAMES E. SCHEPER, Baltimore, Md. Filed Dec. 8, 1906. Serial No. 346,923.



Claim.—1. The combination with a braking mechanism including brake shoes arranged to co-operate with the wheels and track rails, of a sanding mechanism, and means to deliver the material through the shoes to the wheels or to the rails.

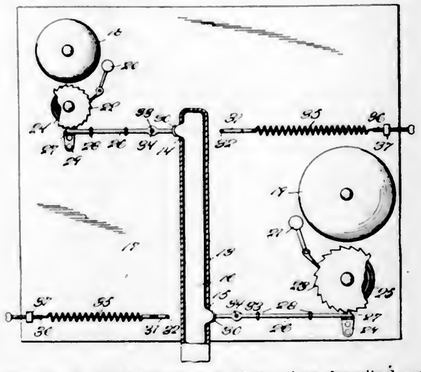
2. A braking mechanism including shoes arranged to co-operate with the wheels and with the track rails, of sanding mechanism arranged to deliver the material through the shoes, and means for controlling the delivery of material to direct the same to the wheels or to the rails.

3. A braking mechanism for a wheeled vehicle comprising brake shoes, a clutch member secured upon the wheel axle, a clutch member operatively connected to the shoes and movably mounted on the wheel axle, a brake rod, and cam plates carried by the brake rod and adapted to operate the movable clutch member in both directions.

4. Braking mechanism including brake shoes, clutch members, one of said members being positively driven in the movement of the vehicle, a brake rod extending longitudinally of the vehicle, cam plates formed with cam slots and secured on said rod, and a connection between each of said plates and the remaining member of the clutch.

5. A braking mechanism for wheeled vehicles comprising brake shoes, a clutch including a member fixed on the axle and a member movably mounted thereon, a brake rod extending longitudinally of the car, a cam plate carried by the rod and formed with a slot, a frame connected to the movable clutch member and engaging the slot in the cam plate, a brake beam supported on the vehicle, a connection between the brake beam and shoe, and a connection between said beam and the movable clutch member, whereby upon engagement of the clutch members the brake shoes are forced into contact with the wheels.

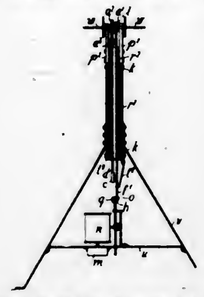
858,309. JAIL-CELL. JAMES B. SMITH, Jackson, Miss. Filed Nov. 16, 1906. Serial No. 343,749.



Claim.—1. An alarm system of the class described comprising an inclosure formed of interconnected pipe sections, a hollow door frame having communication with certain of the pipe sections, a hollow door hinged to the frame, a flexible pipe establishing communication between the door and the frame, means for supplying a fluid under pressure to the system, and an alarm adapted to be actuated by a reduction in pressure in the system.

2. An alarm system of the class described comprising an inclosure formed of hollow intercommunicating sections, means for supplying fluid under pressure to the sections, a rigid pipe connected with the last-named means, an inflatable tube located in the pipe, said pipe being provided with an opening, an alarm, and means extending through the opening in the pipe and into engagement with the inflatable tube for releasing the alarm when the pressure in the system is reduced.

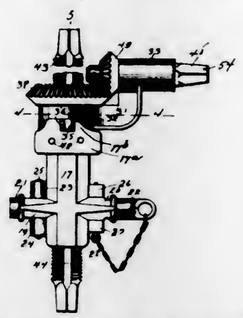
858,310. APPARATUS FOR AUTOMATICALLY RECORDING THE DIRECTION OF THE WIND IN THE VERTICAL PLANE. EDUARD A. SPERBER, Dresden, Germany. Filed July 29, 1904. Serial No. 218,762.



Claim.—An apparatus for automatically recording the direction of the wind in a vertical plane comprising a ro-

tatably supported tube having supporting plates fixed thereto at one end, a horizontal shaft rotatably journaled in said supporting plates, one or more vanes fixed to said shaft to rotate therewith, two pulleys also fixed on said shaft, a counter-weight connected with one of said pulleys, a guided rod suspended from the other of said pulleys and reciprocating according to the degree of rotation of said vanes in a vertical plane, a time rotated record drum and a marker coacting therewith and adjustably carried by said guided rod substantially as described.

858,311. DRILLING-MACHINE. JOHN S. SURBAUGH, Terre Haute, Ind. Filed Feb. 19, 1906. Serial No. 301,927.



Claim.—1. A frame for a driving mechanism, comprising bearing boxes arranged at right angles to each other, one of said bearing boxes formed with a peripheral flange and also formed with plurality of lugs at diametrically opposite points on and radiating from said box and independent of and auxiliary to said flange, a driven gear journaled in one of said bearing boxes, a journal mounted in the other bearing box, and a driving gear mounted on said journal, said gears in mesh with each other.

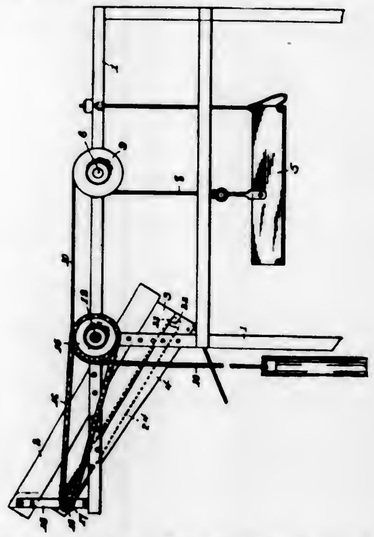
2. A frame for a driving mechanism, comprising bearing boxes arranged at right angles to each other, one of said bearing boxes formed with a peripheral flange and also formed with a plurality of lugs at diametrically opposite points on and radiating from said box and independent of and auxiliary to said flange.

3. In a drilling machine, a feeding-box formed in sections hinged together, each section having a boss on one end, each boss formed with a mating half of an annular groove, a bearing-box formed with an annular flange mounted in said annular groove, one of the bosses formed with a longitudinal projection having a notch in its extremity, lugs opposite each other on the bearing-box, one or the other of said lugs in engagement with said notch, a gear in said bearing box, a thread-bar in said feeding-box and splined to said gear, means for rotating said gear and means for latching together the sections of the feeding-box.

4. In a drilling machine, a feeding-box formed in sections hinged together, one of said sections formed with trunnions, each section having a boss on one end, each boss formed with a mating half of an annular groove, one of the bosses formed with a longitudinal projection having a notch in its extremity, and means for latching said sections together.

5. In a drilling machine, a feeding-box formed in sections hinged together, one section formed with lateral trunnions adapted to support the box, each section having a boss on one end, each boss formed with a mating half of an annular groove, a bearing-box formed with an annular flange mounted in said annular groove, one of the bosses formed with a longitudinal projection having a notch in its extremity, lugs opposite each other on the bearing-box, one or the other of said lugs in engagement with said notch, a gear in said bearing-box, a thread-bar in said feeding-box and splined to said gear, means for rotating said gear and means for latching together the sections of the feeding-box.

858,312. SCREEN-SCRAPER FOR COAL-TIPPLES. WILLIAM E. THOENEN, McMechen, W. Va. Filed July 12, 1906. Serial No. 325,886.



Claim.—1. In a device of the character described, the combination with an ore or coal screen of a scraper mounted over said screen, a receiving basket for the coal or ore passing from said screen, means for lowering said basket, and means intermediate said basket and said scraper whereby the lowering of said basket automatically communicates motion to said scraper and causes it to travel downward over the screen and whereby the raising of said basket returns said scraper to the upper end of the screen.

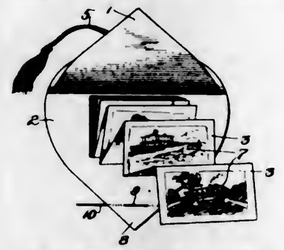
2. In a device for removing coal from the screens of coal tipples, the combination with a tipple of a suitable frame, a shaft journaled in said frame, pulleys on said shaft, a basket, basket supporting cables on said pulleys, a scraper mounted to slide over the screen, operative connections between said shaft and said scraper, and means intermediate said shaft and said basket whereby the lowering of the latter revolves the former and, through said connections, causes said scraper to move downward over said screen.

3. In scraping mechanism for coal screens, the combination with a tipple and a screen, of a shaft journaled in the upper end of said screen, a sprocket wheel on said shaft, intermediate its ends, a second sprocket wheel mounted in the lower end of said screen, said sprockets projecting above the screen, a sprocket chain connecting said sprockets, a scraper mounted on said chain, a basket for receiving coal from the screen, means intermediate said shaft and the basket whereby the lowering of the latter revolves the former and carries said scraper downward over the face of the screen, whereby the raising of said basket actuates said scraper to return to the upper end of the screen and means for automatically raising the basket when empty.

4. In a screen scraper, the combination with a tipple and screen, of a shaft journaled in said tipple, pulleys keyed on said shaft, a receiving basket, basket supporting ropes passed over said pulleys, pulleys on the ends of said shaft, a second shaft journaled in said tipple, pulleys on the ends of the second shaft, cables extending from the pulleys on the ends of the first mentioned shaft over the pulleys carried by the second shaft, weights upon the ends of said cables, a suitably journaled shaft extending across the upper end of the screens, a sprocket wheel mounted centrally on the last mentioned shaft, a shaft journaled at the lower end of said screens, and having a sprocket wheel thereon, a sprocket chain connecting the two last mentioned sprocket wheels, a scraping member carried by said sprocket chain, and gearing intermediate the second shaft and the shaft which extends across the upper end of the screen whereby the lowering of the basket actuates said scraping member to travel downward over the face of one of the screens, and the raising of the basket returns said scraping member to its original position at the upper end of the screen.

5. In a device for removing coal from the screens of coal tipples, the combination with a tipple, of a suitably located shaft journaled in said tipple, pulleys on said shaft intermediate its ends, a basket, cables wound about said pulleys and supporting said basket, pulleys upan the ends of said shaft, a second shaft journaled in front of the first mentioned shaft, pulleys upon said second shaft, cables wound about the pulleys upon the ends of the first mentioned shaft and extending to and over the pulleys on the second shaft, weights upon the ends of said cables, for normally holding the basket in an elevated position, a sprocket wheel upon the end of said second shaft, a shaft journaled in the upper end of said screen, a shaft in the lower end of said screen, sprocket wheels upon each of said shafts intermediate their ends, said sprocket wheels being projected through the screen, a sprocket chain connecting said sprocket wheels, a scraper mounted upon said chain, means for holding said scraper in a transverse position with reference to said screen, and means connecting one of the shafts and the screen with the second shaft of the tipple, whereby motion in the latter is communicated to the former and said scraper is actuated to travel over said screen.

858,313. DISPLAY NOVELTY. RAYMOND L. WELLS, Attleboro, Mass. Filed May 1, 1907. Serial No. 371,274.



Claim.—1. The herein described novelty, comprising front and back covers having suggestive shape in imitation of physical objects, fastening suspending means at their upper ends for holding said covers normally substantially together, a display strip folded in accordion plaits and secured at one end to the front side of the back cover, the successive plane portions of said strip being adapted to receive a series of related display symbols and to come successively into view when the strip is pulled slowly from between said covers.

2. The herein described novelty, comprising front and back covers having suggestive shape in imitation of physical objects, fastening suspending means at their upper ends for holding said covers normally substantially together, a display strip folded in accordion plaits and secured at one end to the front side of the back cover, the successive plane portions of said strip being adapted to receive a series of related display symbols and to come successively into view when the strip is pulled slowly from between said covers, and means carried by the lower end of the rear cover for detachably securing thereto the corresponding lower end of the front cover.

3. The herein described novelty, comprising front and back covers having suggestive shape in imitation of physical objects, fastening suspending means at their upper ends for holding said covers normally substantially together, a display strip folded in accordion plaits and secured at one end to the front side of the back cover, the successive plane portions of said strip being adapted to receive a series of related display symbols and to come successively into view when the strip is pulled slowly from between said covers, and means carried by the lower end of the rear cover for detachably securing thereto the corresponding lower end of the front cover, the front cover containing a space adapted to receive a designation co-operating with the suggestive shape in designating the contents of the article.

858,314. COAL-HANDLING BRIDGE. CHARLES S. WILLIAMSON, Pittsburg, Pa., assignor of one-half to Heyl & Patterson Incorporated, Pittsburg, Pa., a Corporation of Pennsylvania. Filed Oct. 27, 1906. Serial No. 340,928.



Claim.—1. In apparatus for storing and handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, one of said piers being movable longitudinally of said bridge, the points of contact of said bridge and pier being variable as regards the bridge and longitudinally fixed as regards the pier, and loading and unloading apparatus carried by said bridge.

2. In apparatus for storing and handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, one of said piers being movable longitudinally of said bridge and having a swivel connection therewith, the points of contact of said bridge and pier being variable as regards the bridge and longitudinally fixed as regards the pier and loading & unloading apparatus carried by said bridge.

3. In apparatus for storing and handling coal or like material, the combination of a bridge, traveling piers supporting said bridge and traveling on tracks on, or substantially on, a level with the base of the storage pile, a turn-table on one of said piers, wheels on said turn-table upon which said bridge rests, said wheels having a fixed relation with reference to said pier, and loading and unloading apparatus carried by said bridge.

4. In apparatus for storing and handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, one of said piers being movable lon-

858,315. CARD-HOLDER. GEORGE T. H. WILLING, Dames Quarter, Md., assignor of one-half to S. J. Windsor, Dames Quarter, Md. Filed June 27, 1906. Serial No. 323,613.

mounted upon the corner posts of the sides and arranged for detachable engagement with the opposite corner post whereby to hold the two sides together, flexible connecting members secured at their ends to the upper ends of the

electrical heating means within said chamber, and means for revolving the pan.

5. In a device of the character described, in combination, a pan having a heating chamber formed thereunder,

4. In apparatus for storing and handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, one of said piers being movable longitudinally of said bridge, the points of contact of said bridge on said movable pier remaining constant with reference to said pier, and loading and unloading apparatus carried by said bridge.

5. In apparatus for storing or handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, one of said piers being longitudinally movable of said bridge and having a plurality of points of contact with said bridge, the center of such points of contact being fixed as regards the pier, and loading and unloading apparatus carried by said bridge.

6. In apparatus for handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, one of said piers being V-shaped in form and movable longitudinally of said bridge, the points of support of said bridge on said V-shaped pier lying outside the point of support of said pier, and loading and unloading apparatus carried by said bridge.

7. In apparatus for handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, one of said piers traveling on a single rail, the points of support of the bridge on said pier lying on opposite sides of said rail, said pier being longitudinally movable of said bridge, and loading and unloading apparatus carried by said bridge.

8. In apparatus for handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, loading and unloading apparatus carried by said bridge, a carriage on one of said piers supporting said bridge and traveling longitudinally thereof, a swivel connection between said carriage and said pier, shoes on said carriage and guide rails on said pier with which said shoes are engaged.

9. In apparatus for handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, loading and unloading apparatus carried by said bridge, a carriage on one of said piers, wheels on said carriage having intermediate flanges formed on their treads, and a slot formed in said bridge adapted to receive said flanges, said bridge resting on said wheels and a swivel connection between said pier and said carriage.

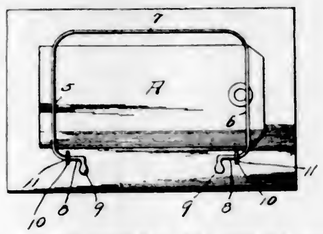
10. In apparatus for handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, loading and unloading apparatus carried by said bridge, a carriage on one of said piers supporting said bridge and traveling longitudinally thereof, and idlers carried by said carriage and engaging inwardly projecting flanges formed on the longitudinal beams of said bridge and a swivel connection between said pier and said carriage.

11. In apparatus for handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, loading and unloading apparatus carried by said bridge, the rear pier being longitudinally movable of said bridge and swiveled thereto, a swivel connection between the front pier and said bridge, a wear plate on said front pier and shoes on said bridge resting on said wear plate.

12. In apparatus for handling coal or like material, the combination of a bridge, traveling piers supporting said bridge, loading and unloading apparatus carried by said bridge, the rear pier traveling longitudinally of said bridge and swiveled thereto, a swivel connection between front pier and said bridge, a bearing plate on said front pier and curved shoes carried by said bridge resting on said bearing plate.

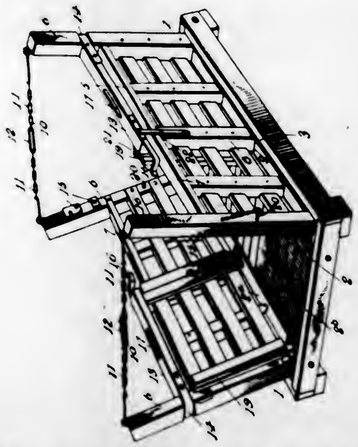
13. In apparatus for handling coal or like material, a combination of a bridge, traveling piers supporting said bridge, loading and unloading apparatus carried by said bridge, the rear pier traveling longitudinally of said bridge and swiveled thereto, a bearing plate on the front pier, shoes carried by said bridge resting upon said bearing plate, a frame on said front pier projecting above said bearing plate and a swivel connection between said frame and the bridge proper.

858,315. CARD-HOLDER. GEORGE T. H. WILLING, Dames Quarter, Md., assignor of one-half to S. J. Windsor, Dames Quarter, Md. Filed June 27, 1906. Serial No. 323,613.



Claim.—A clip comprising end members occupying a common plane, and a front member bowed out of the plane of the end members and having their rearward end portions turned inwardly toward each other and then outwardly away from the front member, and fasteners including eyes in which the inwardly turned portions of the end members are revolubly engaged, the rearwardly turned portions being flattened to prevent disengagement of the fasteners therefrom.

858,316. ADJUSTABLE SCALE-RACK. CHARLES W. WORTHINGTON, Rushville, Ill. Filed Oct. 3, 1906. Serial No. 337,263.



Claim.—1. An adjustable scale rack, comprising a platform, a rack embodying opposite sides mounted to swing on the platform in vertical planes, flexible connecting members between said two sides of the rack and adapted to limit the movement of said sides away from each other, and tie bars adapted to hold said sides together at the inner limit of their movement and arranged for detachable connection with the flexible members.

2. An adjustable scale rack, comprising a platform, a rack embodying opposite sides hinged at their lower ends to said platform, with their upper ends adapted to swing toward and from each other, flexible connecting members secured to the upper ends of said sides, and tie bars pivotally connected to the respective sides and arranged for detachable engagement with an opposite side whereby to hold said sides together, said tie bars being also arranged for connection with the flexible connecting members.

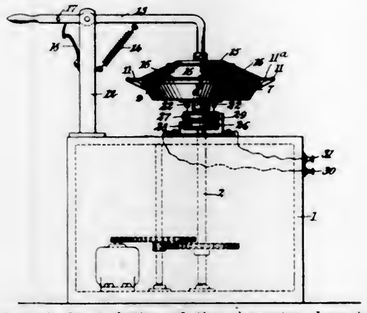
3. An adjustable scale rack, comprising a platform, a rack embodying two sides hinged at their lower ends to the platform and including corner posts, tie bars pivotally mounted upon the corner posts of the sides and arranged for detachable engagement with the opposite corner post whereby to hold the two sides together, flexible connecting members secured at their ends to the upper ends of the opposite corner post, the tie bars being provided with slots, and the flexible connecting members being provided with links adapted to pass through said slots for engagement with the tie bars.

4. An adjustable scale rack, comprising opposite sides, gates hinged to the respective sides, tie bars pivotally connected at one end to the respective sides above the gates, and adapted for detachable engagement with the other side, and means for effecting a sliding engagement between said pivoted tie bars and the gates the latter serving to support the former.

5. An adjustable scale rack, comprising a platform, a rack embodying opposite sides hinged to said platform and end gates hinged to the respective sides, each gate being provided at its free end with an upwardly projecting lug, and tie bars pivotally connected to the sides of the rack and formed in their lower sides with grooves designed to receive said lugs, said tie bars being arranged to lock the sides of the rack together in upright position, substantially as described.

6. An adjustable scale rack, comprising a platform, a rack embodying opposite sides hinged to said platform, and flexible connecting members between the two opposite sides and adapted in straight relation or position to hold the two sides outwardly tilted, said flexible connection being adapted to be held in a flexed condition, whereby to hold the two sides upright.

858,317. CORN-POPPER. GEORGE B. YOUNG and JOSEPH H. YOUNG, El Paso, Tex. Filed Nov. 30, 1906. Serial No. 345,690.



Claim.—1. In a device of the character described, in combination, a vertical shaft, means for revolving said shaft, a cup removably connected with said shaft, a pan telescoped within the cup forming a heating chamber therebetween, electrical heating means within said chamber, and means connecting said heating means with a suitable source of electrical supply.

2. In a device of the character described, in combination, a cup, a pan telescoped within the cup providing a chamber therebetween, means rigidly connecting the pan and cup together, a resistance coil in said chamber, means for revolving the pan and cup, and means connecting the resistance coil with a suitable source of electrical supply.

3. In a device of the character described, in combination, a vertical shaft, means for revolving said shaft, a cup, a pan telescoped within the cup providing a chamber therebetween, a heating coil contained within the chamber, a thimble attached to the cup providing a socket for removably engaging the upper end of said shaft, an insulating cylinder surrounding the thimble, contact rings carried by the cylinder, conductors leading from said rings to the terminals of said heating coil, and brushes for engaging with said rings.

4. In a device of the character described, in combination, a pan having a heating chamber formed thereunder, electrical heating means within said chamber, and means for revolving the pan.

5. In a device of the character described, in combination, a pan having a heating chamber formed thereunder, electrically heating means within said chamber, a vertical shaft, means for revolving said shaft, and means for removably connecting the pan and shaft together.

6. In a device of the character described, in combination, a pan having a heating chamber formed thereunder, electrical heating means within said chamber, a vertical shaft, means for revolving said shaft, and a thimble providing a socket in fixed relation to the pan adapted to be passed over said shaft acting to detachably connect the pan thereto.

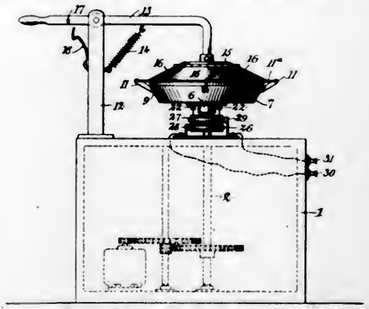
7. In a device of the character described, in combination, a pan having a heating chamber, a resistance coil within said chamber for heating the same, a revoluble shaft, a thimble providing a socket in fixed relation to the pan adapted to be removably connected to the shaft, and means fixed to said thimble connected with said coil adapted to feed the coil from a suitable source of electrical supply.

8. In a device of the character described, in combination, a pan having a heating chamber, a resistance coil, a revoluble shaft, a thimble providing a socket in fixed relation to the pan adapted to removably connect it with the shaft, an insulating cylinder surrounding the thimble, contact rings carried by the cylinder, conductors leading from said rings to the terminals of the resistance coil, and brushes engaging with said rings.

9. In a device of the character described, in combination, a pan having a heating chamber, insulating sheets lining said chamber, a heating coil within the chamber, revoluble means, means for detachably connecting the pan with said revoluble means, and contact rings and brushes for supplying said coil from a suitable source of electrical supply.

10. In a device of the character described, in combination, a pan having a heating chamber, electrical heating means within the chamber, revoluble means, means connecting said pan with said revoluble means, contact rings in fixed relation to the pan connected with the terminals of the electrical heating means, and brushes engaging said rings for feeding the heating means from a suitable source of electrical supply.

858,318. CORN-POPPER. GEORGE B. YOUNG and JOSEPH H. YOUNG, El Paso, Tex. Original application filed Nov. 30, 1906, Serial No. 345,690. Divided and this application filed Feb. 20, 1907. Serial No. 358,352.



Claim.—1. In a device of the character described, in combination, a cup and a pan telescoped together providing a heating chamber therebetween, and means for revolving said pan.

2. In a device of the character described, in combination, a vertical shaft, a cup removably seated over the shaft and held against relative rotation thereon, a pan telescoped within the cup thus providing a heating chamber therebetween, and means for revolving said shaft.

3. In a device of the character described, in combina-

tion, a vertical shaft, a cup having a thimble adapting it to be removably connected with the shaft, a pan seated in the cup thus providing a heating chamber therebetween, and a stirring device co-operating with the pan, for the purpose described.

4. In a device of the character described, in combination, a cup and a pan telescoped together, providing a heating chamber therebetween, a conical lid for said pan provided with hingedly connected sectors, a stirring device, and means for revolving said stirring device and pan relatively to each other.

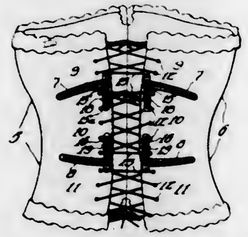
5. In a device of the character described, in combination, a pan, means for heating said pan, a lever having a downwardly-turned end overhanging said pan, and a lid and a stirring device attached to said downwardly-turned end.

6. In a device of the character described, in combination, a pan, means for heating said pan, a lever having a downwardly-turned end overhanging the pan, a lid attached to said downwardly-turned end, means for forcing said lid in contact with the pan, and means for holding said lid in an elevated position.

7. In a device of the character described, in combination, a pan, means for heating said pan, a hand lever having a downwardly-turned end overhanging said pan, a stirring device and a lid secured to said overhanging end, and means for holding the lid and pan in contact.

8. In a device of the character described, in combination, a vertical shaft, means for revolving said shaft, a pan, means adapting the pan to be removably attached to the shaft, and means for heating said pan.

858,319. CORSET. EVA B. ADAMS, Santa Ana, Cal. Filed Jan. 21, 1907. Serial No. 353,190.



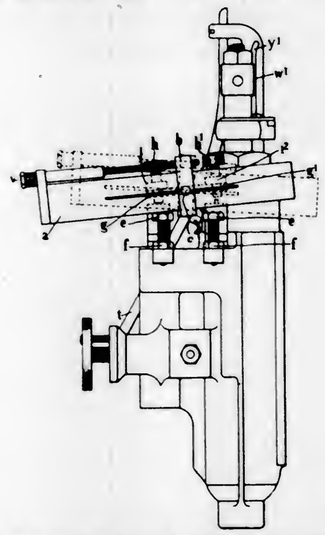
Claim.—1. A corset composed of two halves, each half having an upper, a middle and a lower back section, each section being independently laceable; and pivotal connections securing the back edges of the upper and lower sections to the middle section.

2. A corset composed of two halves, each half having an upper, a middle and a lower back section; slidable connections securing the back edges of the upper and lower sections to the middle section.

858,320. GOVERNOR. CHARLES ANDREWS and THOMAS JACKSON, London, England, assignors to Andrews Governor Patents Limited, London, England. Filed July 31, 1906. Serial No. 328,527.

Claim.—1. In a governing device in which the controlling element is operated by fluid pressure, the combination of a tiltable device mounted upon an axis and adapted to rock thereon, a mobile body or bodies carried by said device and adapted to move on said device from one side of the axis of movement to the other under the action of gravity, with means for controlling the fluid pressure of the controlling element of the governor, substantially as described.

2. In a governing device in which the controlling element is operated by fluid pressure, the combination of a tube pivoted on a transverse axis at or near its center, a mobile body or bodies contained in said tube and a liquid control device adapted to control the passage of the fluid from under the controller piston, with means for operating said liquid control device by the movement of the pivoted tube, substantially as described.



3. In a governing device in which the controlling element is operated by fluid pressure, the combination of a tube pivoted on a transverse axis at or near its center, a mobile body or bodies contained in said tube, and a liquid control device adapted to control the passage of the fluid from under the controller piston, with means for operating said liquid control device by the movement of the pivoted tube, means for adjusting the pivoted tube relative to the axis of movement and adjustable stops for controlling the angular motion of said tube and its coaction with the control valve, substantially as described.

4. In a governing device in which the controlling element is operated by fluid pressure, the combination of a tube pivoted on a transverse axis at or near its center, a mobile body or bodies contained in said tube, and two liquid control devices adapted to control the passage of the liquid from under the controller piston, in combination with means for putting either one or other liquid control device into action when the pivoted tube is tilted either to one side or the other side on its pivot as the case may be, substantially as described.

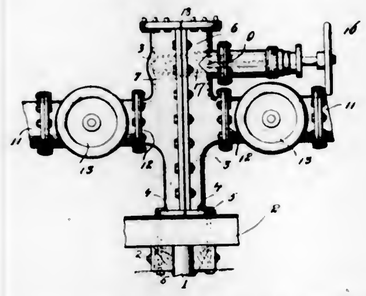
5. In a governing device in which the controlling element is operated by fluid pressure, the combination of a tube pivoted on a transverse axis at or near its center, a mobile body or bodies contained in said tube, and a liquid control device adapted to control the passage of the fluid from under the controller piston, with means for operating said liquid control device by the movement of the pivoted tube, and means controlled by the pivoted tube adapted to disengage the connecting means between the liquid control valve and the controller piston, substantially as described.

858,321. CASING-HEAD. HENRY AUCHU, Emporium, Pa. Filed Feb. 27, 1907. Serial No. 359,599.

Claim.—1. A casing head formed of segmental sections one of which is provided with a cut off valve and the opposite section with a coöperating seat.

2. A casing head formed of independent sections each provided with abutting flanges, a valve carried by one of said sections, a seat upon an opposite section to coöperate with said valve, and means for securing said flanges in contact.

3. A casing head formed in independent sections each provided with abutting flanges, a valve carried by one of said sections, a seat upon an opposite section to coöperate with said valve, means for securing said flanges in contact, a packing sheet disposed within said sections, an anchor, and means connecting each of said sections to said anchor to resist longitudinal movement thereof.



4. A casing head formed in segmental sections one of which is provided with a lateral connection, means for securing said sections against longitudinal movement relative to a well casing, and a valve carried by said lateral connection on one of said sections to control the flow from said casing.

5. A casing head formed in segmental sections, means for securing said sections in contact with each other and with a well casing, a valve carried by one of said sections to control the flow from said casing, an anchor for said head, and means for securing said sections to the anchor.

6. A casing head formed in segmental sections each provided with flanges at their abutting edges, means for securing said flanges together, an anchor, means for securing said sections to said anchor, and a cut off valve carried by one of said sections.

7. A casing head formed in segmental sections each provided with flanges upon their abutting edges, means for securing said flanges in contact with each other, a flange upon the lower end of each section, an anchor, and means for securing said end flanges to the anchor.

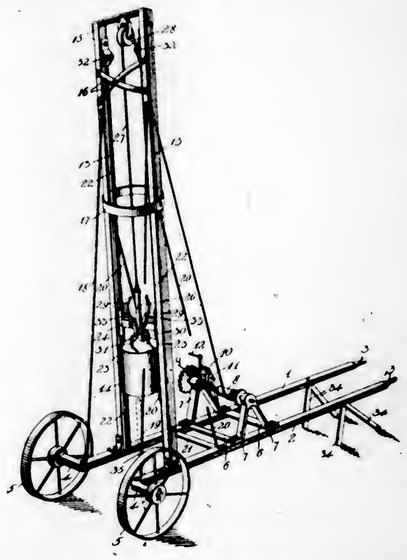
8. A casing head formed in sections adapted to embrace a well casing, packing interposed between said sections and casing, means for securing said sections in engagement with the well casing and with each other, means for securing each section to an anchor, a cut off valve in said casing head, and conducting pipes communicating with each section.

9. A casing head formed in sections to embrace the casing of a well, bolts for securing said sections together and in contact with said well casing, means for attaching each section to an anchor, and a cut off valve in said sections.

10. A casing head formed in sections, flanges formed on said sections, securing means passing through said flanges to secure said sections together and in engagement with the well casing, flanges formed on the lower ends of said sections, and securing means passing therethrough to secure said sections to an anchor.

858,322. POST-DRIVER. CHARLES BANDIMERE, Carver, Minn., assignor to Fred E. Bandimere, Groton, S. D. Filed Mar. 4, 1907. Serial No. 360,461.

Claim.—1. In a post driver, two handles, the forward end of each of which is provided with a stub axle and the rear end with oppositely extending pivoted legs, a wheel on each axle, cross pieces rigidly secured to the handles intermediate their ends for rigidly spacing them apart, inclined uprights secured to the handles at the ends of said cross pieces, one of which is provided with a bracket, a roller mounted in the ends of said uprights, one end of which is provided with a pinion, a gear wheel mounted in said bracket and provided with means for rotating it, upright guides secured to said handles at a distance from their forward ends, a pulley at the upper ends of said guides, a weight between the guides, and a cable connected with said roller at one end and adapted to be detachably connected with the weight at the other and having its intermediate portion passed over said pulley.



2. In a post driver, two handles rigidly secured at a distance from each other, supporting wheels secured to the forward ends of said handles and adjustable legs to the rear end, a roller mounted upon the intermediate portions of said handles, an upright guide secured to each handle at a distance from its forward end, a cross piece and braces at the upper ends of said guide, a ring secured to the guides near their middles, two brace rods extending from said ring to the rear and connected at their lower ends with said handles, and two brace rods secured to the forward ends of the handles at their lower ends, and to the upper portions of the guides at their other ends, a pulley and stops at the upper ends of the guides, a weight between the guides, and a cable over said pulley having one end connected with said roller and its other end adapted to be detachably connected with said weight.

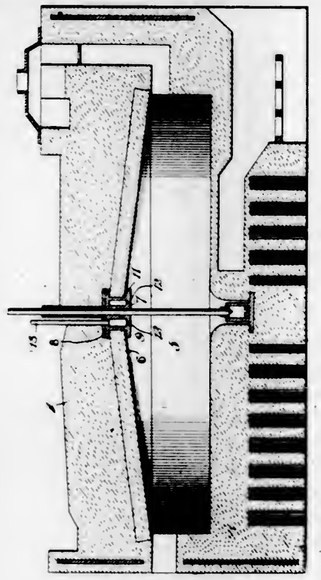
858,323. COMBINED BEARING AND STEAM-FEEDING MECHANISM FOR ROTARY BAKE-OVENS. FREDERICK R. BARNHEISEL, Chicago, Ill. Original application filed Oct. 17, 1907, Serial No. 283,121. Divided and this application filed Jan. 19, 1907. Serial No. 353,107.

Claim.—1. In a rotary bake oven, a baking chamber, a bearing in the top of said chamber provided with a passage therethrough leading to the baking chamber, and a steam pipe adapted to supply steam to said passage for discharge into the baking chamber, substantially as described.

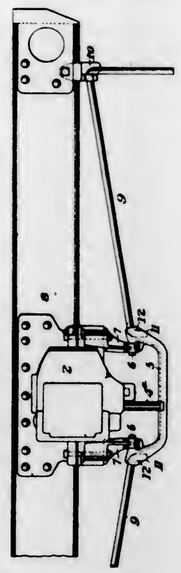
2. In a rotary bake oven, the combination of a baking chamber, a bearing in the top of said chamber provided on its interior with an annular steam chamber having a plurality of openings for discharging the steam into the baking chamber, and a steam pipe leading to the annular chamber, substantially as described.

3. In a rotary bake oven, the combination of a baking chamber, a bearing located in the center of the roof of the baking chamber and provided with upper and lower flanges embracing the masonry of the roof, the bearing being further provided on its interior with an annular steam chamber having a plurality of openings for discharging

steam into the baking chamber, and a steam pipe leading to the annular chamber, substantially as described.



858,324. UNCOUPLING DEVICE. ARTHUR J. BAZELEY, Cleveland, Ohio, assignor to The National Malleable Castings Company, Cleveland, Ohio, a Corporation of Ohio. Filed Oct. 10, 1906. Serial No. 338,275.



Claim.—1. Uncoupling mechanism for car couplers comprising, in combination with a coupler having a head and shank, an elbow lever pivotally connected to the coupler-shank and having an arm which extends upwardly to operate the coupler lock.

2. Uncoupling mechanism for car couplers, comprising, in combination with a coupler having a head and shank, an elbow-lever pivotally connected to the coupler-shank and having an arm which extends upwardly and enters a hole in the bottom of the coupler-head, and an operating crank by which the elbow-lever is operated.

3. An operating crank for actuating a coupler lock, comprising a crank-shaped piece of general U-shape, with trunnions journaled in fixed bearings and having a socket for the reception of an actuating rod.

4. An operating crank for actuating a coupler-lock, comprising a crank piece of general U-shape having its middle portion 5 extending in a direction transverse to the length of the car and adapted to have a floating connection with a lock-operating device, said piece being journaled in suitable bearings, and having means for attachment of a separate operating shaft.

5. An uncoupling device for couplers, comprising an uncoupling lever and a lug to which it is pivoted, said lug being secured to the coupler-shank by means of attachments which are common to the lug and to the coupler-yoke.

858,325. PROCESS OF PRODUCING VANADIUM AND ITS ALLOYS. FREDERICK M. BECKET, Niagara Falls, N. Y., assignor to Electro Metallurgical Company, a Corporation of West Virginia. Original application filed June 19, 1906, Serial No. 322,449. Divided and this application filed Nov. 26, 1906. Serial No. 345,222.

Claim.—1. The process of producing vanadium which consists in reacting on a vanadium compound reducible by silicon and carbon with silicon and carbon.

2. The process of producing vanadium which consists in reacting on a vanadium compound reducible by silicon and carbon with silicid of carbon.

3. The process of producing vanadium which consists in reacting on a vanadium compound containing oxygen with silicid of carbon, the silicid of carbon being present in substantially the proportion required to combine with the oxygen of the reducible oxids, whereby a substantially complete oxidation of the silicon and carbon is secured and a product low in silicon and carbon is obtained.

4. The process of producing vanadium which consists in passing an electric current through a molten bath containing vanadium oxid, silicon and carbon.

5. The process of producing vanadium which consists in passing an electric current through a molten bath containing vanadium oxid and silicid of carbon.

6. The process of producing vanadium which consists in passing an electric current through a molten bath containing vanadium oxid, silicid of carbon and a basic flux.

7. The process of producing vanadium which consists in passing an electric current through a molten bath containing vanadium oxid and silicid of carbon, the silicid of carbon being present in substantially the proportion required to combine with the oxygen of the reducible oxids, whereby a substantially complete oxidation of the silicon and carbon is secured and a product low in silicon and carbon is obtained.

8. The continuous process of producing vanadium which consists in passing an electric current through a molten bath containing vanadium oxid, silicid of carbon, and a basic flux, adding fresh portions of the charge and withdrawing the product as desired.

9. The process of producing vanadium alloys which consists in reacting on a vanadium compound with carbon and silicon in presence of an alloying metal.

10. The process of producing vanadium alloys which consists in reacting on a vanadium compound with silicid of carbon in presence of an alloying metal.

11. The process of producing ferrovanadium which consists in reacting on vanadium oxid with silicid of carbon in presence of iron.

12. The process of producing ferrovanadium which consists in passing an electric current through a molten bath containing vanadium oxid, silicid of carbon and iron.

858,326. METHOD OF TREATING IRON OR STEEL. FREDERICK M. BECKET, Niagara Falls, N. Y., assignor to Electro Metallurgical Company, a Corporation of West Virginia. Filed Mar. 13, 1907. Serial No. 362,224.

Claim.—1. The method of treating iron or steel which consists in incorporating with the molten metal an alloy containing titanium and calcium.

2. The method of treating iron or steel which consists in incorporating with the molten metal an alloy containing titanium, calcium and aluminium.

3. The method of treating iron or steel which consists in incorporating with the molten metal an alloy containing titanium, calcium, aluminium and silicon.

4. The method of treating iron or steel which consists in incorporating with the molten metal an alloy containing titanium, calcium, aluminium, silicon, and carbon.

5. The method of treating iron or steel which consists in incorporating with the molten metal an alloy containing titanium, calcium, aluminium, silicon, carbon, and iron.

858,327. ALLOY AND METHOD OF PRODUCING IT. FREDERICK M. BECKET, Niagara Falls, N. Y., assignor to Eelctro Metallurgical Company, a Corporation of West Virginia. Filed Mar. 20, 1907. Serial No. 363,481.

Claim.—1. An alloy containing titanium and calcium.

2. An alloy containing titanium, calcium and aluminium.

3. An alloy containing titanium, calcium, aluminium, and silicon.

4. An alloy containing titanium, calcium, aluminium, silicon, and carbon.

5. An alloy containing titanium, calcium, aluminium, silicon, carbon, and iron.

6. The method of producing an alloy containing titanium and calcium, which consists in reducing a charge containing the oxids or oxygen compounds of titanium and calcium.

7. The method of producing an alloy containing titanium and calcium, which consists in reducing by carbon in an electric furnace a charge containing the oxids or oxygen compounds of titanium and calcium.

8. The method of producing an alloy containing titanium, calcium and silicon, which consists in reducing a charge containing the oxids or oxygen compounds of titanium, calcium and silicon.

9. The method of producing an alloy containing titanium, calcium and silicon, which consists in reducing by carbon in an electric furnace a charge containing the oxids or oxygen compounds of titanium, calcium and silicon.

10. The continuous method of producing an alloy containing titanium and calcium, which consists in reducing a charge containing the oxids or oxygen compounds of titanium and calcium, adding fresh portions of the charge, and withdrawing the products as desired.

11. The continuous method of producing an alloy containing titanium and calcium, which consists in reducing by carbon in an electric furnace a charge containing the oxids or oxygen compounds of titanium and calcium, adding fresh portions of the charge, and withdrawing the products as desired.

12. The continuous method of producing an alloy containing titanium and calcium, which consists in reducing by carbon in an electric furnace a charge containing the oxids or oxygen compounds of titanium, calcium and silicon, adding fresh portions of the charge and withdrawing the products as desired.

858,328. PROCESS OF REDUCING VANADIUM SULFID. FREDERICK M. BECKET, Niagara Falls, N. Y., assignor to Electro Metallurgical Company, a Corporation of West Virginia. Original application filed Mar. 5, 1907, Serial No. 360,712. Divided and this application filed Apr. 11, 1907. Serial No. 367,619.

Claim.—1. The process of reducing vanadium sulfid which consists in reacting thereon with silicon.

2. The process of reducing vanadium sulfid which consists in reacting thereon with a silicon alloy.

3. The process of reducing vanadium sulfid which consists in reacting thereon with ferro-silicon.

4. The process of reducing vanadium sulfid which consists in reacting thereon with silicon in substantially the proportion required to unite with the sulfur of the sulfid.

5. The process of reducing vanadium sulfid which consists in reacting thereon with ferro-silicon in substantially the proportion required to unite with the sulfur of the sulfid.

6. The continuous process of reducing vanadium sulfid which consists in smelting a mixture of said sulfid and silicon, adding fresh portions of the charge, and withdrawing the product as desired.

858,329. PROCESS OF EFFECTING CHEMICAL REDUCTIONS AND PRODUCING METALS AND ALLOYS. FREDERICK M. BECKET, Niagara Falls, N. Y., assignor to Electro Metallurgical Company, a Corporation of West Virginia. Filed Apr. 12, 1907. Serial No. 367,723.

Claim.—1. The process of effecting chemical reductions, which consists in effecting partial reduction by a non-metallic reagent and further reduction by silicon carbid.

2. The process of reducing oxids, which consists in effecting partial reduction by a relatively-oxidizable non-metal and further reduction by silicon carbid.

3. The process of reducing oxids, which consists in effecting partial reduction by carbon and further reduction by silicon carbid.

4. The process of reducing vanadic oxid, which consists in effecting reduction to vanadous oxid by a non-metallic reagent and reduction to vanadium by silicon carbid.

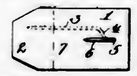
5. The process of reducing vanadic oxid, which consists in effecting reduction to vanadous oxid by carbon and reduction to vanadium by silicon carbid.

6. The process of reducing refractory metallic oxids, which consists in effecting partial reduction by electrically smelting a mixture of the oxid and carbon, and effecting complete reduction of the product by silicon carbid.

7. The process of reducing refractory metallic oxids, which consists in effecting partial reduction by electrically smelting a mixture of the oxid and carbon, and effecting complete reduction of the product by silicon carbid and electrically-supplied heat.

8. The process of effecting chemical reductions, which consists in effecting partial reduction by a non-metallic reagent and further reduction by silicon carbid, and electrically supplying heat for both reductions.

858,330. MARKING OR PIN TAG. LOUIS N. BISHOP, Dayton, Ky., and LOUIS MAPES, Cincinnati, Ohio, assignors of one-fourth to John S. Storrs, Fort Thomas, Ky., and one-fourth to W. E. North, Cincinnati, Ohio. Filed June 13, 1905. Serial No. 265,086.



Claim.—1. A marking or pin tag having an attaching pin held exclusively against the inner portion thereof and formed with a pointed hook which normally projects outwardly from the said inner side of the tag, and a folding member to cover the pointed end of the hook, a portion of the pin also projecting over the said member.

2. A marking or pin tag having a body, an attaching pin extending longitudinally over and held against the inner side of the body and having a fixed hook terminal projecting outwardly from the inner side of the body, a folding member carried by the body adapted to cover the pointed end of the hook and engaged by a portion of the pin, and a covering applied over a portion of the pin to secure it in place, the hook terminal being preserved in its original shape when the tag is applied.

3. A marking or pin tag having a body, a pin applied to and extending longitudinally over the inner side thereof and provided with a fixed hook terminal and a deflection adjacent to said terminal, the hook terminal projecting outwardly from the inner side of the body and remaining in its original shape when the tag is applied, and a body having a folding member to cover the pointed end of the hook terminal, and means secured to the body over a portion of the pin and the deflection to hold the said pin in fixed position.

4. A marking or pin tag having a body and a folding member at one extremity, and a pin applied to the inner side of the body and having a shank extending over the member and the line of fold of the latter and a hook extremity which normally stands outwardly from the side of the tag to which it is applied, the said hook extremity being covered by the folding member of the tag when the latter is in use.

5. A marking or pin tag having a body with a folding member at one extremity, and a pin having a shank applied to the inner or rear side of the body and extending across the line of fold between the body and the said member, the attaching extremity of the pin normally standing outwardly from the body of the tag.

6. A marking tag having a body with a folding member at one extremity and an attaching means having a portion thereof projecting over the line of fold between the body and the member and another portion for securing the tag in applied position normally standing outwardly from the body of the tag.

7. A marking or pin tag having a body with a folding member at one extremity, and a pin extremity held against the inner side of the body of the tag and projecting toward the folding member and normally standing outwardly from the body of the tag, the folding member covering the point of the pin extremity when folded.

8. A marking or pin tag having a body, an attaching pin applied to the inner side of the body and provided with a pointed hooked terminal normally projecting outwardly from the said inner side of the body and also having a shank secured to and projecting longitudinally over the latter, the hooked terminal remaining in its original shape when the tag is applied and a portion of the shank deflected laterally adjacent to said hooked terminal, and a covering applied over the shank, deflected part of the latter and a portion of the hooked terminal, one extremity of the tag being bendable over the pointed end of the hooked terminal to shield the latter.

9. A marking or pin tag having a body with a folding tongue at one extremity, and hooked pins normally projecting outwardly from the body and having shanks projected over the latter and the fold line of the tongue.

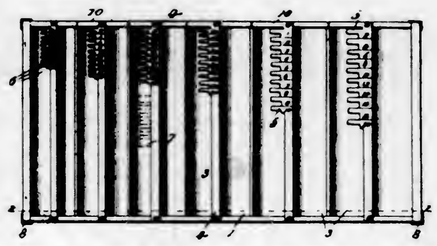
10. A marking or pin tag having a body and a folding tongue at one extremity, and securing means normally projected outwardly from one side of the tag body and which is partially covered by the tongue when the latter is turned over the body, the body and tongue also having means extending across the line of fold between said parts to maintain the tongue in positive applied position.

11. A marking or pin tag, having a body with a foldable tongue at one extremity, the body of the tag having a securing pin carried thereby and normally projected outwardly from one side thereof, said securing pin having its point covered by the tongue when the latter is folded, and a reinforcing bendable means extending across the line of fold between the tongue and body to hold the tongue against loose movement when folded or bent over the body.

12. A marking or pin tag, comprising a body and a folding member, an attaching means extending over the line of fold between the body and folding member having a portion thereof extending outwardly from the body, and means for securing the attaching means to said body.

13. A marking or pin tag, comprising a body and a folding member at one extremity thereof, a pin extremity held against the inner side of the body projecting toward the folding member and normally standing outwardly from said body, the folding member covering the point of the pin extremity when folded, and means engaging the line of fold between the body and member to maintain the folding member in folded position.

858,331. COIN TRAY AND TILL. BERTRAM F. BREWSTER, Burrton, Kans. Filed Jan. 15, 1907. Serial No. 253,402.



Claim.—1. A device of the character described, embodying a trough for the reception of coins, and a gage bar projecting over said trough from one edge and terminating short of the opposite edge and formed with a series of alternating teeth and notches which are of substantially the thickness of the individual coins adapted to be received in said trough and which are adapted to hold a series of coins upright in alternating arrangement between the ends of the notches and the opposite edge of the trough and the ends of the teeth and the opposite edge of the trough.

2. A device of the character described, embodying troughs arranged side by side and gage bars separating said troughs one from the other, each gage bar being provided at one end with a widened portion projecting over one trough, said widened portions being provided with alternating teeth and notches approximately of a width equal to the width of the coins adapted to stand edgewise between the ends of the notches and teeth and the opposing edge of the trough.

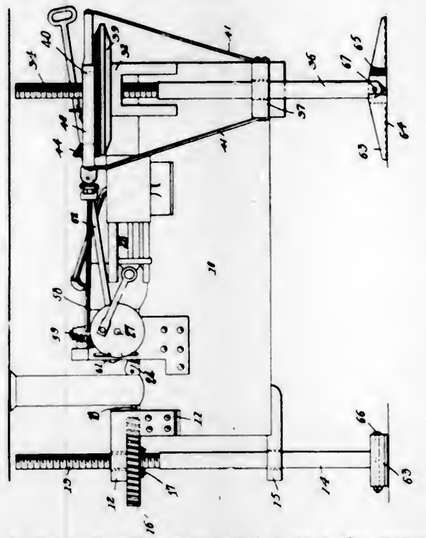
3. A device of the character described, comprising a box and a series of troughs of different curvatures arranged in said box and adapted to receive coins of different denominations and gage bars projecting over sundry of said troughs from one edge and terminating short of the opposite edge, each of said gage bars being formed at one end with a series of alternating teeth and notches, whereby a column of coins rolled edgewise over the said end of the gage bar will fall alternately between the ends of the notches and the opposing edge of the trough, and the ends of said teeth and the opposing edge of the trough.

4. A device of the character described, embodying a coin trough and a gage bar projecting over said trough from one edge and terminating short of the opposite edge and formed with a series of alternating teeth and notches for the purpose specified, said gage bar displaying at its opposite notched portion numbers indicating the amount of coins adapted to slide partially through said notches and also to rest upon said teeth, respectively.

5. A device of the character described, embodying a coin trough and a gage bar projecting over the trough and provided with a series of notches forming teeth between them, the teeth and notches being adapted to hold the coins in an alternate arrangement between the ends of the teeth and notches and the opposing edge of the trough, said gage bar being also formed at one end with a laterally extending finger, as and for the purpose set forth.

858,332. LEVELING DEVICE FOR BOILERS. FREDERICK I. CASS, Clintonville, Wis., assignor of one-half to Edward Felschow, Clintonville, Wis. Filed Mar. 25, 1907. Serial No. 364,523.

Claim.—1. The combination with a boiler, an engine mounted thereon, and its crank-shaft, of a bracket on the boiler and having a vertical opening, a screw-stem passing through said opening, a traveling nut on the screw and engageable with the aforesaid bracket, said nut being in the form of a worm-wheel, a counter-shaft having a worm meshing with the worm-wheel, a worm-wheel on the counter-shaft, and a worm on the crank-shaft meshing with the last mentioned worm-wheel.



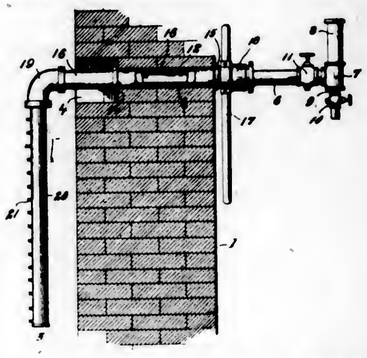
2. The combination with a boiler, an engine mounted thereon, and its crank-shaft, of a bracket on the boiler and having a vertical opening, a screw-stem passing through said opening, a traveling nut on the screw and engageable with the aforesaid bracket, said nut being in the form of a worm-wheel, a sectional counter-shaft, a universal joint connecting said sections, a worm on one of the sections meshing with the aforesaid worm-wheel, a worm-wheel on the other shaft-section, a worm on the crank-shaft meshing with the last mentioned worm-wheel, and means for throwing the last mentioned worm and worm-wheel out of gear.

3. The combination with a boiler, an engine mounted thereon, and its crank-shaft, of a screw-stem, a traveling nut on the screw, said nut being in the form of a bevel gear, an abutment carried by the boiler and engageable by the nut, a counter-shaft having a bevel pinion meshing with the aforesaid gear, a worm-wheel on the counter-shaft, and a worm on the crank-shaft meshing with the worm-wheel.

4. The combination with a boiler, an engine mounted thereon, and its crank-shaft, of a screw-stem, a traveling nut on the screw, said nut being in the form of a bevel gear, an abutment carried by the boiler and engageable by the nut, a sectional counter-shaft, a universal joint connecting said section, a bevel pinion on one of the sections meshing with the aforesaid gear-wheel, a worm-wheel on the other section, a worm on the crank-shaft meshing with the worm-wheel, and means for throwing said worm and worm-wheel out of gear.

858,333. SOOT-CLEANER FOR BOILERS. WILLIAM EICHELBERGER and DELOS E. HIBNER, Dubois, Pa., and MARVIN J. BACON, Boston, Mass., assignors to The Vulcan Soot Cleaner Company of Pittsburg, Pa., Dubois, Pa., a Corporation of New Jersey. Filed Apr. 9, 1907. Serial No. 367,205.

Claim.—1. The combination with a flue boiler, and a boiler setting having a recess therein, of a delivery pipe for gaseous fluid extending into the boiler setting, an expansion joint comprising a stationary member and a member slidably mounted on the steam delivery pipe, the said slidable member being rotatable on the steam delivery pipe, a steam delivering nozzle connected to said slidable member and adapted to be withdrawn within the recess of said boiler setting when not in use, and a handle connected to said rotatable slidable member of the expansion joint, substantially as described.



2. In a boiler flue cleaner, the combination with a boiler setting having a longitudinal recess in the inner face thereof, of a steam delivery pipe extending into the boiler setting, a steam delivering nozzle slidably mounted on said steam delivery pipe to be rotated with respect thereto and moved toward and away from the recess in the boiler setting and when not in use to be housed within said recess.

3. In combination with a boiler setting or furnace wall having a longitudinal recess, a flue cleaner comprising a stationary steam delivery pipe extending into the boiler setting or furnace wall, an expansion joint surrounding said steam delivery pipe, a steam delivering nozzle connected to said expansion joint and adapted to be projected outwardly beyond the inner face of the boiler setting or furnace wall for rotation and withdrawn within the recess of said boiler or furnace wall when not in use.

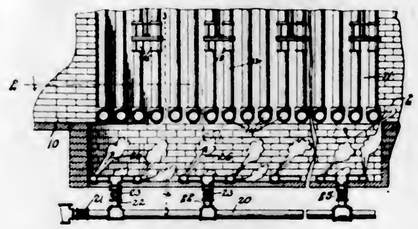
4. In combination a boiler setting or furnace wall having a longitudinal recess in the inner face thereof, a steam delivery pipe extending into said boiler setting or furnace wall and terminating adjacent said recess, a barrel or sleeve mounted in the boiler setting or furnace wall, a pipe extending through said barrel or sleeve beyond both ends thereof and being slidable and rotatable on the steam delivery pipe, a steam delivering nozzle connected to the inner end of said pipe for rotation with the pipe when the latter is projected inwardly and adapted to be housed within said recess when the pipe is drawn outwardly of the boiler setting, and means connected to said pipe for rotating the same and sliding it longitudinally on the steam delivery pipe.

5. The combination with a boiler setting or furnace wall, of two spaced concentrically-arranged stationary pipes located within the boiler setting, and a flue-cleaner having a pipe section passing through the annular space formed between said stationary pipes, the outer end of said pipe section being closed against the escape of the cleaning agent, said pipe section being of greater length than the outer stationary pipe, whereby said pipe section may have a relative movement on the inner stationary pipe both longitudinally and rotatively without decreasing the size of the passageway for the cleaning agent.

6. The combination with a boiler setting or furnace wall having an elongated recess in its inner face, of two spaced concentrically-arranged stationary pipes located within the boiler setting, and a flue-cleaner having a pipe section passing through the annular space formed between said stationary pipes, the outer end of said pipe section being closed against the escape of the cleaning agent, said pipe section being of greater length than the outer stationary pipe, said pipe section extending through the elongated

recess, the longitudinal movement of said pipe section moving the discharge nozzle of the cleaner toward or from said recess to house the nozzle therein or project it therefrom.

858,334. FUEL-ECONOMIZER SOOT-CLEANER. WILLIAM EICHELBERGER, Dubois, Pa., assignor to The Vulcan Soot Cleaner Company of Pittsburg, Pa., Dubois, Pa., a Corporation of New Jersey. Filed Apr. 22, 1907. Serial No. 369,633.



Claim.—1. A fuel-economizer system including an inclosed water-circulating structure located within the path of travel of the products of combustion, movable means for clearing the exposed surfaces of the main portion of said structure, and auxiliary means for clearing the surfaces of the lower portion of said structure.

2. A fuel-economizer system including an inclosed water-circulating structure located within the path of travel of the products of combustion, movable means for clearing the exposed surfaces of the main portion of said structure, and auxiliary means for clearing the surfaces of the lower portion of said structure, said means assisting the natural draft passing through said structure.

3. A fuel-economizer system including an inclosed water-circulating structure located within the path of travel of the products of combustion, movable means for clearing the exposed surfaces of the main portion of said structure, and auxiliary means for clearing the surfaces of the lower portion of said structure, said means being located out of the normal path of travel of the products.

4. A fuel-economizer system including an inclosed water-circulating structure located within the path of travel of the products of combustion, movable means for clearing the exposed surfaces of the main portion of said structure, and auxiliary means for clearing the surfaces of the lower portion of said structure, said means being located out of the normal path of travel of the products and operating to assist the natural draft passing through said structure.

5. A fuel-economizer system including an inclosed water-circulating structure located within the path of travel of the products of combustion, movable means for clearing the exposed surfaces of the main portion of said structure, and auxiliary means for clearing the surfaces of the lower portion of said structure, said means being located below the bottom of said structure.

6. The combination with a fuel-economizer system having an inclosed water-circulating structure located in the path of travel of the products of combustion, and also having a soot-chamber located below said path of travel, of means, located in said soot-chamber for projecting steam toward said structure and said path of travel.

7. The combination with a fuel-economizer system having an inclosed water-circulating structure located in the path of travel of the products of combustion, and also having a soot-chamber located below said path of travel, of means located in said soot-chamber for projecting a plurality of steam jets.

8. The combination with a fuel-economizer system having an inclosed water-circulating structure located in the path of travel of the products of combustion, and also having a soot-chamber located below said path of travel, of means located in said soot-chamber for projecting a plurality of steam jets in a direction angular with respect to said path of travel.

9. The combination with a fuel-economizer system having an inclosed water-circulating structure located in the path of travel of the products of combustion, and also having a soot-chamber located below said path of travel, of means located in said soot-chamber for projecting a plurality of steam jets in a direction angular with respect to said path of travel, the angle inclining toward the direction of flow of the products passing through said structure.

10. The combination with an inclosed water-circulating structure located in the path of travel of the products of combustion, of means located without said path for controllably projecting steam into contact with said structure to clear it from collected soot particles.

11. The combination with a fuel economizer system having a water-circulating structure located in the path of travel of the products of combustion and having a soot-chamber located therebelow, of means for carrying the soot contained within said chamber into the path of travel of the products of combustion.

12. The combination with a fuel economizer system having a water-circulating structure located in the path of travel of the products of combustion and having a soot-chamber located therebelow, of means located within the soot-chamber for carrying the soot contained within said chamber into the path of travel of the products of combustion.

13. The combination with a fuel economizer system having a water-circulating structure located in the path of travel of the products of combustion and having a soot-chamber located therebelow, of means located at the bottom of the soot-chamber for carrying the soot contained within said chamber into the path of travel of the products of combustion.

14. The combination with a fuel economizer system having a water-circulating structure located in the path of travel of the products of combustion and having a soot-chamber located therebelow, of means for projecting a plurality of steam jets in a direction to carry the soot contained within the soot-chamber into the path of travel of the products of combustion.

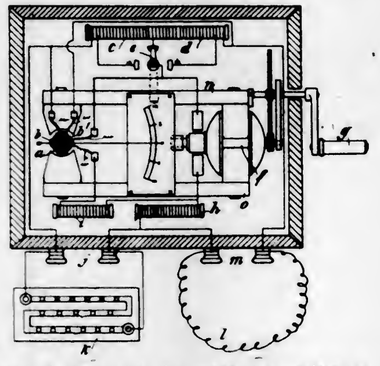
15. The combination with a fuel economizer system having a water-circulating structure located in the path of travel of the products of combustion and having a soot-chamber located therebelow, of means for projecting one series of steam jets in a direction angular with respect to the plane of the bottom of the soot-chamber and projecting another series of jets in a direction parallel with said bottom to carry the soot contained within the soot-chamber into the path of travel of the products of combustion.

16. The combination with a fuel economizer system having a water-circulating structure located in the path of travel of the products of combustion and having a soot-chamber located therebelow, of means for projecting one series of steam jets in a direction angular with respect to the plane of the bottom of the soot chamber and projecting another series of jets in a direction parallel with said bottom, means for forming a plurality of vertical steam jets adjacent the rear wall of the soot-chamber, being provided, the combined action of said steam jets being to carry the soot contained within said chamber into the path of travel of the products of combustion.

17. The combination with a fuel economizer system having a water-circulating structure located in the path of travel of the products of combustion and having a soot-chamber located therebelow, of means for cleaning the surfaces of the lower portion of said water-circulating structure and the soot-chamber, the soot being carried into the path of travel of the products of combustion.

18. The combination with a fuel economizer system having a water-circulating structure located in the path of travel of the products of combustion and having a soot-chamber located therebelow, of means located within the soot-chamber for cleaning the surfaces of the lower portion of said water-circulating structure and the soot-chamber, the soot being carried into the path of travel of the products of combustion.

858,335. APPARATUS FOR MEASURING ELECTRICAL RESISTANCE. SYDNEY EVERSHED, Chiswick, England, assignor to himself, and Evershed and Vignoles Limited, Chiswick, England, a Corporation of Great Britain and Ireland. Filed Feb. 28, 1906. Serial No. 303,555.



Claim.—1. Apparatus for measuring resistance, consisting of in combination, a hand dynamo, a Wheatstone bridge, a resistance box, a line of which the resistance is to be tested, and a coil controlled galvanometer in which the control coil is directly connected between the two poles of a dynamo, the working coil being connected to opposite points of the Wheatstone bridge, a single pole of the dynamo being divided between the resistance box and the line to be measured, coming back to the Wheatstone bridge and the working coil of the galvanometer, and thence passing to the other pole of the dynamo.

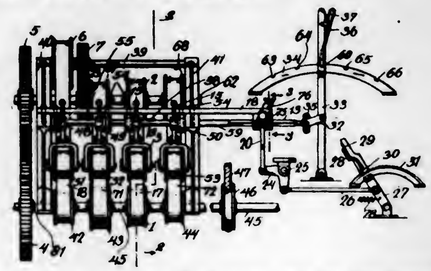
2. In combination, a hand dynamo, a Wheatstone bridge, and a coil controlled galvanometer, in which the control coil is connected between the two poles of the said dynamo, and the working coil is connected to either end of the said Wheatstone bridge.

3. In apparatus for locating faults, in combination, a high voltage dynamo of high resistance, a Wheatstone bridge and a dead beat coil controlled galvanometer, in which the control coil is connected to the two poles of the said dynamo, and the working coil of the galvanometer is connected to either end of the said Wheatstone bridge.

4. In combination, a hand dynamo, and a coil controlled galvanometer, the control coil being connected between two poles of the dynamo, the working coil composed of two differentially wound coils, the connection of these coils being distinct from the connections to the control coil, receiving a charge from one pole divided between the resistance box and the line to be tested, while the return is from the line between the two said resistances back to the other pole of the dynamo.

858,336. VARIABLE-SPEED-TRANSMISSION GEAR. PATRICK F. FOLEY, New York, N. Y. Filed Apr. 5, 1907. Serial No. 366,620.

Claim.—1. In variable speed transmission gear for automobiles and the like, a drive shaft, a countershaft and a reverse shaft mounted in bearings pairs of co-operating pulleys mounted on said shafts, reverse gears connecting said reverse shaft and said countershaft, belts normally loosely engaging each of said pairs of drive pulleys, a bracket provided with bearing lugs, a key shaft revolubly and slidably mounted on said bracket and provided with a non-circular portion, a bearing sleeve engaging said non-circular portion and revolubly supported in a bearing in the said bracket, a crank engaging the non-circular portion of said key shaft and supported between lugs on said bracket, spring-pressed operating mechanism to oscillate said crank and key shaft, tightener levers provided with slots rotatably mounted on said bracket and inclosing said key shaft, springs to normally hold said tightener levers in inoperative position, pivoted tightener arms, tightener pulleys mounted on said arms and connectors between said arms and tightener levers, a speed lever connected to said key shaft to cause the keys on said key shaft to selectively engage the tightener levers and oscillate the corresponding tightener into engagement with, its belt when said key shaft is oscillated and a speed sector.



2. In variable speed transmission gear for automobiles and the like, a drive shaft, a countershaft and a reverse shaft mounted in suitable bearings pairs of co-operating pulleys mounted on said shafts, reverse gears connecting said reverse shaft and said countershaft, drive belts normally loosely engaging each of said pairs of drive pulleys, a bracket provided with bearing lugs, a key shaft revolubly and slidably mounted on said bracket, slotted tightener levers mounted on said bracket and having sleeves inclosing said key shaft, springs to hold said levers in position, tightener pulleys coöperating with each of said belts and connected with said tightener levers, keys on said key shaft spaced to selectively coöperate with the slots in said tightener sleeves, a speed lever connected with said key shaft and coöperating with a speed sector to move and hold said key shaft and keys in engagement with said tightener levers and an operating lever connected to said key shaft to oscillate the same and force the connected tightener lever and tightener into coöperation with the corresponding belt.

3. In variable speed transmission gear, a drive shaft, a countershaft and a reverse shaft mounted in suitable bearings pairs of co-operating drive pulleys mounted on said shafts, reverse gears connecting said reverse shaft and countershaft, drive belts normally loosely engaging each of said pairs of drive pulleys, a bracket provided with bearing lugs, a key shaft revolubly and slidably mounted on said bracket, slotted tightener levers mounted on said bracket and coöperating with said shaft, pivoted tighteners to coöperate with each of said belts and connected with said tightener levers, means to hold said tighteners and levers in inoperative position, keys on said key shaft to coöperate with the slots in said tightener levers, a speed lever to longitudinally move said key shaft and keys with respect to said tightener levers and an operating lever, connected to said key shaft to oscillate the same and force the engaged tightener lever and tightener into co-operation with the corresponding belt.

4. In variable speed transmission gear, a drive shaft and a countershaft mounted in suitable bearings pairs of co-operating drive pulleys mounted on said shaft, drive belts normally loosely engaging each of said pairs of drive pulleys, a bracket, slotted tightener levers mounted on said key shaft, tighteners to coöperate with said belts and connected with said tightener levers, means to normally hold said tighteners and tightener levers in inoperative position, keys on said key shaft spaced to selectively coöperate with said tightener levers, a speed lever to longitudinally move said key shaft and keys with respect to said tightener levers and means to oscillate said key shaft to force the engaged levers and tightener into co-operation with the corresponding belt.

5. In variable speed transmission gear, a drive shaft and a countershaft pairs of co-operating drive pulleys mounted upon said shafts, frictional drive members normally loosely engaging each of said pairs of drive pulleys,

a key shaft revolubly and slidably mounted, slotted tight-

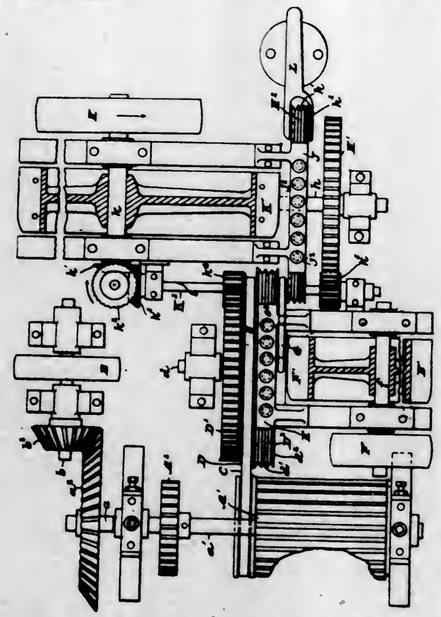
nect the said roller and grip wheel, and cleaning means

a key shaft revolubly and slidably mounted, slotted tightener levers mounted on said key shaft, tighteners to cooperate with said drive members and connected with said tightener levers, means to normally hold said tighteners and levers in inoperative position, keys on said key shaft to coöperate with the slots in said tightener levers, a speed lever to longitudinally move said key shaft and keys with respect to said tightener levers and operating means to oscillate said key shaft and tightener and force the engaged tightener into coöperation with the corresponding drive member.

6. In variable speed transmission gear, a drive shaft and a countershaft pairs of co-operating drive pulleys mounted upon said shafts, frictional drive members normally loosely engaging each of said pairs of drive pulleys, an operating shaft revolubly and slidably mounted, tightener levers coöperating with said operating shaft, tighteners connected with said levers to coöperate with said drive members, means to normally hold said tighteners and levers in inoperative position, means on said operating shaft to selectively coöperate with said tightener levers to actuate the same, means to move said operating shaft and means to oscillate said operating shaft to force the engaged tightener into coöperation with the corresponding drive member.

7. In variable speed transmission gear, a drive shaft and a countershaft pairs of coöperating drive pulleys mounted on said shafts, frictional drive members normally loosely engaging each of said pairs of drive pulleys, an operating shaft revolubly and slidably mounted, tightener levers coöperating with said operating shaft, tighteners connected with said levers and coöperating with each of said drive members, means on said operating shaft to selectively engage the tightener levers, means to longitudinally move and hold in adjusted position said operating shaft and means to oscillate said operating shaft to force the engaged tightener lever and tightener into coöperation with the corresponding drive member.

858,337. FIBER-CLEANING MACHINE. JOSEPH GARCIA, Brooklyn, N. Y. Filed May 27, 1904. Serial No. 210,055.



Claim.—1. In a fiber cleaning machine, crushing rollers, a wheel to directly grip the leaves, a belt to directly connect the said roller and grip wheel, and cleaning means located opposite the said grip wheel.

2. In a fiber cleaning machine, a cleaning mechanism, means located opposite the same to grip the leaves and to move the same transversely of or across the machine in a practically horizontal direction and at right angles to the axis of the cleaning mechanism, a second gripping device, and a cleaning mechanism located opposite the latter.

3. In a fiber cleaning machine, a gripping device, an oppositely disposed cleaning mechanism, a second gripping device to receive the leaves treated by the first cleaning mechanism, a cleaning mechanism located opposite the second gripping device, and means located adjacent to the first gripping device to coact with the said device to cause the leaves to be drawn transversely and practically horizontally across the plane of the second gripping device, while still held in the first gripping mechanism.

4. In a fiber cleaning machine, a gripping device, and an oppositely disposed cleaning mechanism, a second gripping device and an oppositely disposed cleaning mechanism, and means intermediate the two gripping devices to cause parts of the leaves to be drawn transversely across the plane of the second gripping device so that the second gripping device will bite the cleaned portion or fiber of the leaves treated by the first cleaning mechanism, and consisting of an arm or plate constructed and arranged to support the leaves in such a manner that the action of the first named gripping device will draw the leaves across the said arm.

5. In a fiber cleaning machine, a cleaning device, a support for the leaves the rear portion of which extends downwardly, and a gripping device to hold the leaves while being cleaned, and to draw them across the support, and then entirely release the said leaves to allow the same to slide downwardly on the said support in combination with a second gripping and cleaning mechanism.

6. In a fiber cleaning machine, a gripping device, a second gripping device, and an intermediate leaf supporting arm or plate, the rear portion of which extends downwardly, the first gripping device being constructed and arranged to hold the leaves while being cleaned, and to move the leaves transversely across the said arm relative to the second gripping device, and to deliver the moved leaves to the latter.

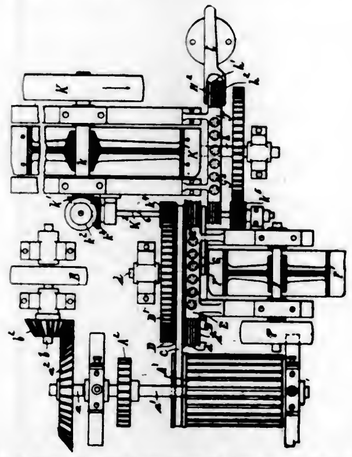
7. In a fiber cleaning machine, a gripping device, a second gripping device, an intermediate leaf supporting arm or plate the rear portion of which extends downwardly, the first gripping device being constructed and arranged to hold the leaves while being cleaned, and to move the leaves transversely across the said arm and to deliver the moved leaves to the second gripping device, each of said gripping devices consisting of a wheel and a series of superimposed yielding devices.

8. In a fiber cleaning machine, a gripping device, cleaning means, crushing rollers to crush a portion of the leaves, and leaf supporting gears to hold the uncrushed portion of the leaves placed in alinement with the crushing roller.

858,338. FIBER-CLEANING MACHINE. JOSEPH GARCIA, Brooklyn, N. Y. Original application filed May 27, 1904, Serial No. 210,055. Divided and this application filed June 4, 1906. Serial No. 320,210.

Claim.—1. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen superimposed on, and constructed and arranged to present a practically continuous surface to the said wheel, and consisting of a plurality of sections having a division therebetween and forming each a segment of an arc whose center is the same as that of said wheel, the carrier or conveyer and platen being relatively movable, and the said parts or sections having a differential or separate movement or action at said division.

2. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, and co-operating means superimposed upon, and constructed and arranged to approximately conform in contour with, and to present a practically continuous bearing surface to the carrier or conveyer, and consisting of a plurality of parts or sections having a division therebetween, the carrier or conveyer and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division.



3. In a fiber cleaning machine, a leaf cleaning or beating device, a wheel carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to present a practically continuous surface to and to coact with and to work in the same plane as the carrier or conveyer, and consisting of a plurality of parts or sections, having a division therebetween, the carrier or conveyer and co-operating means being relatively movable and the said parts or sections having a differential or separate movement or action at said division.

4. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to present a practically continuous surface to and to coact with and to work in the same plane as the carrier or conveyer, and consisting of a plurality of parts or sections having a division therebetween, the carrier or conveyer and co-operating means being relatively movable and the said parts or sections having a differential or separate movement or action at said division, in combination with elastic means for pressing the co-operating means toward the carrier or conveyer.

5. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to present a practically continuous surface to and to coact with and to work in the same plane as the carrier or conveyer, and consisting of a plurality of parts or sections having a division therebetween, the carrier or conveyer and co-operating means being relatively movable and the said parts or sections having a differential or separate movement or action at said division, in combination with elastic means for pressing the co-operating means toward the carrier or conveyer, and means for increasing or decreasing such elastic pressure.

6. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located directly in front of or within the verticle planes of the faces or edges of the cleaning or beating device, the carrier or conveyer and platen being relatively movable, and the said parts or sections having a differential or separate movement or action at said division.

7. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and conconstructed and arranged to approximately conform in contour with and to present a practically continuous surface to and to coact with and to work in the same plane as the carrier or conveyer, and consisting of a plurality of parts or sections having a division therebetween located directly in front of, or within the vertical planes of the faces or edges of, the cleaning or beating device, the carrier or conveyer and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division.

8. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to present a practically continuous surface to and to coact with and to work in the same plane as the carrier or conveyer, and consisting of a plurality of parts or sections having a division therebetween located directly in front of, or within the vertical planes of the faces or edges of, the cleaning or beating device, the carrier or conveyer and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division, in combination with elastic means for pressing the co-operating means toward the carrier or conveyer, and means for increasing or decreasing such elastic pressure.

9. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to present a practically continuous surface to and to coact with and to work in the same plane as the carrier or conveyer, and consisting of a plurality of parts or sections having a division therebetween located directly in front of, or within the vertical planes of the faces or edges of, the cleaning or beating device, the carrier or conveyer and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division, in combination with elastic means for pressing the co-operating means toward the carrier or conveyer, and means for increasing or decreasing such elastic pressure.

10. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and non-rotative co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to work in the same plane as the carrier or conveyer, and consisting of a plurality of parts or sections having a division therebetween located directly in front of, or within the vertical planes of the faces or edges of, the cleaning or beating device,

and the said parts or sections having a differential movement or action at said division.

11. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each segment of an arc whose center is the same as that of the said wheel, the adjacent ends of two sections being constructed and arranged to engage each other with a friction movement and to work with a differential movement or action.

12. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, and co-operating means superimposed on the carrier or conveyer and consisting of a plurality of parts or sections, the adjacent ends of two sections being constructed and arranged to engage each other with a friction movement, and to work with a differential movement or action.

13. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, and co-operating means superimposed on the carrier or conveyer and consisting of a plurality of parts or sections, the adjacent ends of two sections being constructed and arranged to engage each other with a friction movement, and to work with a differential movement or action, in combination with elastic means for pressing the co-operating means toward the carrier or conveyer.

14. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, and co-operating means superimposed on the carrier or conveyer and consisting of a plurality of parts or sections, the adjacent ends of two sections being constructed and arranged to engage each other with a friction movement, and to work with a differential movement or action, in combination with elastic means for pressing the co-operating means toward the carrier or conveyer, and means for increasing or decreasing such elastic pressure.

15. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, and co-operating means superimposed on the carrier or conveyer and consisting of a plurality of parts or sections, the adjacent ends of two sections being located directly in front of or within the vertical planes of the edges or faces of the cleaning or beating device, said ends being constructed and arranged to engage each other with a friction movement, and to work with a differential movement or action.

16. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, co-operating means superimposed on the carrier or conveyer and consisting of a plurality of parts or sections, the adjacent ends of two sections being located directly in front of or in the vertical planes of the edges or faces of the cleaning or beating device, said ends being constructed and arranged to engage each other with a friction movement, and elastic means located adjacent to each part or section for pressing the same toward the carrier or conveyer.

17. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, co-operating means superimposed on the carrier or conveyer and consisting of a plurality of parts or sections, the adjacent ends of two sections being located directly in front of or in the vertical planes of the edges or faces of the cleaning or beating device, said ends being constructed and arranged to engage each other with a friction movement, and elastic means located adjacent to each part or section for pressing the same toward the carrier or conveyer, and means for increasing or decreasing such elastic pressure.

18. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located directly in front of or in the vertical planes of the edges or faces of the cleaning or beating device, the said section ends being constructed and arranged to engage each other with a friction movement.

19. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of non-rotative parts or sections, forming each a segment of an arc whose center is the same as that of said wheel, the carrier or conveyer and platen being relatively movable, and the said parts or sections being each rounded off at the lower part of one corner or edge adjacent to the carrier.

20. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier or conveyer, and consisting of a plurality of non-rotative sections, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf.

21. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier or conveyer, and consisting of a plurality of non-rotative sections, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf, in combination with elastic means located adjacent to each section for pressing the same toward the carrier.

22. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier or conveyer, and consisting of a plurality of non-rotative sections, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf, in combination with elastic means located adjacent to each section for pressing the same toward the carrier, and means for increasing or decreasing such elastic pressure.

23. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier or conveyer, and consisting of a plurality of non-rotative sections, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action, and each being rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf.

24. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier and consisting of a plurality of sections, the adjacent ends of two sections being located directly in front of, or beween the vertical planes of the edges or faces of, the cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less degree according to the thickness of a leaf by the passage thereunder of the said leaf.

25. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier and consisting of a plurality of sections, the adjacent ends of two sections being located directly in front of, or between the vertical planes of the edges or faces of, the cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf, in combination with elastic means for pressing the co-operating means toward the carrier.

26. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier and consisting of a plurality of sections, the adjacent ends of two sections being located directly in front of, or between the vertical planes of the edges or faces of, the cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf, in combination with elastic means for pressing the co-operating means toward the carrier, and means for increasing or decreasing such elastic pressure.

27. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier located in front of the same, and adapted to carry the leaves on its upper face and a non-rotative platen consisting of a plurality of sections held downward on the carrier in sliding engagement therewith and forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located directly in front of, or between the vertical planes of the edges or faces of, the cleaning or beating device, the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier wheel, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf.

28. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and a non-horizontally movable co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween, the carrier and co-operating means being relatively movable, and the sections having a differential or separate vertical movement caused by the passage thereunder of leaves of different thickness.

29. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and a non-horizontally movable co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween, the carrier and co-operating means being relatively movable, and the sections having a differential or separate vertical movement caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the co-operating means toward the carrier.

30. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and a non-horizontally movable co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the carrier and co-operating means being relatively movable, and the sections having a differential or separate vertical movement caused by the passage thereunder of leaves of different thickness.

31. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and a non-horizontally movable co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the carrier and co-operating means being relatively movable, and the sections having a differential or separate vertical movement caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the co-operating means toward the carrier.

32. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections, the carrier wheel and platen being relatively movable, and the said sections having a differential or separate movement or action at said division.

33. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections, the carrier wheel and platen being relatively movable, and the said sections having a differential or separate movement or action at said division, in combination with elastic means for pressing the platen toward the carrier.

34. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division caused by the passage thereunder of leaves of different thickness.

35. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face,

the vertical planes of the faces or edges of the cleaning leaf conveyer, and co-operating means having a vertical

and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division caused by the passage thereunder of leaves of different thickness, in combination with elactic means for pressing the co-operating means toward the carrier.

36. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located directly in front of or in the vertical planes of the faces or edges of the cleaning or beating device, the carrier wheel and platen being relatively movable, and the said sections having a differential or separate movement or action at said division.

37. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located directly in front or in the vertical planes of the faces or edges of the cleaning or beating device, the carrier wheel and platen being relatively movable, and the said sections having a differential or separate movement or action at said division, in combination with elastic means for pressing the platen toward the carrier.

38. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division caused by the passage thereunder of leaves of different thickness.

39. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the co operating means toward the carrier.

40. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer located in front of the same, and adapted to carry the leaves on its upper face and co-operating means consisting of a plurality of sections superimposed and held in sliding engagement on the carrier, and each having a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, a plurality of divisions between the sections being located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, and each being constructed and arranged to coact with and to work in the plane of the said carrier.

41. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer located in front of the same, and adapted to carry the leaves on its upper face and co-operating means consisting of a plurality of sections superimposed and held in sliding engagement on the carrier, and each having a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, a plurality of divisions between the sections being located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, and each being constructed and arranged to coact with and to work in the plane of the said carrier, in combination with elastic means for pressing the co-operating means toward the carrier.

42. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and adapted to carry the leaves on its upper face and a platen consisting of a plurality of sections held downward on the carrier in sliding engagement therewith and forming each a segment of an arc whose center is the same as that of the said wheel, and each having a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, a plurality of divisions between the sections being located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, and each being constructed and arranged to coact with and to work in the plane of the said carrier.

43. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and adapted to carry the leaves on its upper face and a platen consisting of a plurality of sections held downward on the carrier in sliding engagement therewith and forming each a segment of an arc whose center is the same as that of the said wheel, and each having a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, a plurality of divisions between the sections being located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, and each being constructed and arranged to coact with and to work in the plane of the said carrier, in combination with elastic means for pressing the co-operating means toward the carrier.

44. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and working in the plane of the carrier, and consisting of a plurality of sections having a plurality of divisions between the sections located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the said sections having a differential or separate movement or action at each division, caused by the passage thereunder of leaves of different thickness.

45. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and working in the plane of the carrier, and consisting of a plurality of sections having a plurality of divisions between the sections located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the said sections having a differential or separate movement or action at each division caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the platen toward the carrier.

46. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer adapted to carry the leaves on its upper face, and a non-rotative co-operating means held downward on the carrier in sliding engagement therewith and consisting of a plurality of superimposed sections each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and constructed and arranged to coact with and work in the plane of the said carrier, and elastic means to press the two parts of the gripping device toward each other located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device.

47. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer adapted to carry the leaves on its upper face, and a non-rotative co-operating means held downward on the carrier in sliding engagement therewith and consisting of a plurality of superimposed sections each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and constructed and arranged to coact with and to work in the plane of the said carrier, and elastic means to press the two parts of the gripping device toward each other located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, and means for increasing or decreasing such elastic pressure.

48. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer adapted to carry the leaves on its upper face, and co-operating means held downward on the carrier in sliding engagement therewith and having a vertical movement only, and constructed and arranged to coact with and work in the plane of the said carrier, the said co-operating means consisting of a plurality of sections superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and elastic means to press the two parts of the gripping device toward each other located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device.

49. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer, and a co-operating means consisting of a plurality of devices superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrrier, and each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and elastic means to press the two parts of the gripping device toward each other located directly in front of, or between the vertical planes of the face or edge of, the cleaning or beating device, the carrier and co-operating means being relatively movable.

50. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer and adapted to carry the leaves on its upper face, and a non-rotative co-operating means consisting of a plurality of devices superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier and constructed and arranged to coact with and work in the plane of the said carrier when moved by the passage thereunder of leaves of different thickness, and elastic means to press the two parts of the gripping device toward each other located adjacent to the said superimposed devices and directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device.

51. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer and adapted to carry the leaves on its upper face, and a non-rotative co-operating means consisting of a plurality of devices superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier and constructed and arranged to coact with and work in the plane of the said carrier when moved by the passage thereunder of leaves of different thickness, and elastic means to press the two parts of the gripping device toward each other located adjacent to the said superimposed devices and directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, in combination with means for increasing or decreasing such elastic pressure.

52. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer, and co-operating means having a vertical movement only, and constructed and arranged to coact with and work in the plane of the said carrier, and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, the said co-operating means consisting of a plurality of sections, each having respectively a differential or separate movement caused by the passage thereunder of leaves of different thickness, and a plurality of elastic means to press the two parts of the gripping device toward each other, one positioned near each one of a pair of adjacent ends of sections located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device.

53. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer adapted to carry the leaves on its upper face, and a co-operating means consisting of a plurality of devices superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to coact with and work in the plane of the said carrier, and a plurality of elastic means to press the two parts of the gripping device toward each other located adjacent to the said superimposed devices and directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device.

54. In a fiber cleaning machine, the combination with a leaf cleaning or beating device, and a rotary wheel carrier for moving the leaf to be treated, and adapted to carry the leaves on its upper face of a platen consisting of a plurality of sections held downward on the carrier in sliding engagement therewith and forming each a segment of an arc whose center is the same as that of the said wheel, each of said segments having elastic means for pressing it toward the wheel carrier when moved by the passage thereunder of leaves of different thickness, a plurality of said elastic means being located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device.

55. In a fiber cleaning machine, the combination with a leaf cleaning or beating device, and a rotary wheel carrier for moving the leaf to be treated, of a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of said wheel, each of the said segments having elastic means for pressing it toward the wheel carrier when moved by the passage thereunder of leaves of different thickness, a plurality of said elastic means being located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, and means for increasing or decreasing such elastic pressure.

56. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer having a longitudinally grooved face located in front of the same, a platen superimposed on the carrier or conveyer and consisting of a plurality of sections having a division between the sections located directly in front of or in the vertical planes of the faces or edges of the cleaning or beating device, the carrier or conveyer and platen being relatively movable, the said parts or sections having a differential or separate movement or action at said division.

57. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer having a longitudinally grooved face located in front of the same, a platen superimposed on the carrier or conveyer and consisting of a plurality of sections having a division between the sections located directly in front of or in the vertical planes of the faces or edges of the cleaning or beating device, the carrier or conveyer and platen being relatively movable, the said parts or sections having a differential or separate movement or action at said division, in combination with elastic means located adjacent to each part or section for pressing the same toward the carrier.

58. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer having a longitudinally grooved face located in front of the same, and co-operating means superimposed on and held downward on the

carrier in sliding engagement therewith, to press the

means toward the carrier, and means for increasing or

the same and adapted to carry the leaves on its upper face,

passage thereunder of the said leaf, in combination with

carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division, caused by the passage thereunder of leaves of different thickness.

59. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer having a longitudinally grooved face located in front of the same, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division, caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the same toward the carrier.

60. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and working in the plane of the carrier, and consisting of a plurality of elastic sections located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the said sections having a differential or separate movement or action at each division caused by the passage thereunder of leaves of different thickness.

61. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and working in the plane of the carrier, and consisting of a plurality of sections located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the said sections having a differential or separate movement or action at each division caused by the passage thereunder of leaves of different thickness, in combination with a plurality of elastic means for pressing the same toward the carrier also located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device.

62. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel and having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier or conveyer and platen being relatively movable, and the said parts or sections having a differential or separate movement or action at said division.

63. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with, and to present a practically continuous surface to, and to coact with and to work in the same plane as the carrier, and consisting of a plurality of parts or sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division.

64. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to present a practically continuous surface to and to coact with and to work in the same plane as the carrier, and consisting of a plurality of parts or sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division, in combination with elastic means for pressing the co-operating means toward the carrier.

65. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to work in the same plane as the carrier, and consisting of a plurality of parts or sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division, in combination with elastic means for pressing the co-operating means toward the carrier, and means for increasing or decreasing such elastic pressure.

66. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and non-rotary co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to work in the same plane as the carrier, and consisting of a plurality of parts or sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the said parts or sections having a differential or separate movement or action at said division.

67. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, and co-operating means superimposed on the carrier and consisting of a plurality of parts or sections, the adjacent ends of two sections being located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, said ends being constructed and arranged to engage each other with a frictional movement and to work with a differential action.

68. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, and co-operating means superimposed on the carrier and consisting of a plurality of parts or sections, the adjacent ends of two sections being located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, said ends being constructed and arranged to engage each other with a friction movement, in combination with elastic means for pressing the co-operating means toward the carrier.

69. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same, and co-operating means superimposed on the carrier and consisting of a plurality of parts or sections, the adjacent ends of two sections being located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, said ends being constructed and arranged to engage each other with a friction movement, in combination with elastic means for pressing the co-operating means toward the carrier, and means for increasing or decreasing such elastic pressure.

70. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the said section ends being constructed and arranged to engage each other with a friction movement.

71. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the said section ends being constructed and arranged to engage each other with a friction movement, in combination with elastic means for pressing the platen toward the carrier.

72. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections, the adjacent ends of two sections being located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf.

73. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections, the adjacent ends of two sections being located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf, in combination with elastic means for pressing the co-operating means toward the carrier or conveyer.

74. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections, the adjacent ends of two sections being located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf, in combination with elastic means for pressing the co-operating means toward the carrier, and means for increasing or decreasing such elastic pressure.

75. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier located in front of the same, and adapted to carry the leaves on its upper face and a non-rotative platen consisting of a plurality of sections held downward on the carrier in sliding engagement therewith and forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the said sections being each rounded off at the lower part of one corner or end adjacent to the carrier wheel, the other corner of the sections being angular in contour, the said sections being constructed and arranged to be respectively moved away from the carrier a greater or less distance according to the thickness of a leaf by the passage thereunder of the said leaf.

76. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and a non-horizontally movable co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and co-operating means being relatively movable, and the sections having a differential or separate vertical movement caused by the passage thereunder of leaves of different thickness.

77. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and a non-horizontally movable co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and co-operating means being relatively movable, and the sections having a differential or separate vertical movement caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the co-operating means toward the carrier.

78. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier wheel and platen being relatively movable, the said sections having a differential or separate movement or action at said division.

79. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel, and having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier wheel and platen being relatively movable, the said sections having a differential or separate movement or action at said division, in combination with elastic means for pressing the platen toward the carrier.

80. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith,

to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division, caused by the passage thereunder of leaves of different thickness.

59. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer having a longitudinally grooved face located in front of the same, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division, caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the same toward the carrier.

60. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and working in the plane of the carrier, and consisting of a plurality of elastic sections located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the said sections having a differential or separate movement or action at each division caused by the passage thereunder of leaves of different thickness.

61. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and working in the plane of the carrier, and consisting of a plurality of sections located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device, the said sections having a differential or separate movement or action at each division caused by the passage thereunder of leaves of different thickness, in combination with a plurality of elastic means for pressing the same toward the carrier also located directly in front of, or between the vertical planes of the faces or edges of, the cleaning or beating device.

62. In a fiber cleaning machine, a leaf cleaning or beating device, a rotary wheel carrier or leaf conveyer located in front of the same, and a platen consisting of a plurality of sections forming each a segment of an arc whose center is the same as that of the said wheel and having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier or conveyer and platen being relatively movable, and the said parts or sections having a differential or separate movement or action at said division.

63. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with, and to present a practically continuous surface to, and to coact with and to work in the same plane as the carrier, and consisting of a plurality of parts or sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division.

64. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and constructed and arranged to approximately conform in contour with and to present a practically continuous surface to and to coact with and to work in the same plane as the carrier, and consisting of a plurality of parts or sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and co-operating means being relatively movable, and the said parts or sections having a differential or separate vertical movement or action at said division, in combination with elastic means for pressing the co-operating

toward each other, one located adjacent to each side of

2. In a machine for the purpose specified, the combina-

to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division caused by the passage thereunder of leaves of different thickness.

81. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, and co-operating means superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division therebetween located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the co-operating means and the carrier being relatively movable, and the said sections having a differential or separate movement or action at said division caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the co-operating means toward the carrier.

82. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer, adapted to carry the leaves on its upper face and a non-rotative co-operating means held downward on this carrier in sliding engagement therewith, and consisting of a plurality of superimposed sections, each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and constructed and arranged to coact with and work in the plane of the said carrier, and elastic means to press the two parts of the gripping device toward each other located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device.

83. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer, adapted to carry the leaves on its upper face and a non-rotative co-operating means held downward on this carrier in sliding engagement therewith and consisting of a plurality of superimposed sections, each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and constructed and arranged to coact with and work in the plane of the said carrier, and elastic means to press the two parts of the gripping device toward each other located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, and means for increasing or decreasing such elastic pressure.

84. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer, adapted to carry the leaves on its upper face and co-operating means held downward on this carrier in sliding engagement therewith and having an upward movement only, and constructed and arranged to coact with and work in the plane of the said carrier, the said co-operating means consisting of a plurality of sections, each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and elastic means to press the two parts of the gripping device toward each other located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device.

85. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer, adapted to carry the leaves on its upper face and co-operating means held downward on this carrier in sliding engagement therewith and consisting of plurality of superimposed sections, each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and elastic means to press the two parts of the gripping device toward each other located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and co-operating means being relatively movable.

86. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer, adapted to carry the leaves on its upper face and a non-rotative co-operating means held downward on this carrier in sliding engagement therewith and consisting of a plurality of superimposed devices constructed and arranged to coact with and work in the plane of the said carrier when moved by the passage thereunder of leaves of different thickness, and elastic means to press the two parts of the gripping device toward each other located adjacent to the said superimposed devices and on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device.

87. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer, adapted to carry the leaves on its upper face and a non-rotative co-operating means consisting of a plurality of superimposed devices, held downward on this carrier in sliding engagement therewith and each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and elastic means to press the two parts of the gripping device toward each other located adjacent to the said superimposed devices and on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device.

88. In a fiber cleaning machine, a leaf cleaning or beating device, a gripping device consisting of a carrier or leaf conveyer adapted to carry the leaves on its upper face and a plurality of superimposed devices held downward on the carrier in sliding engagement therewith and each having respectively a differential or separate movement or action caused by the passage thereunder of leaves of different thickness, and constructed and arranged to coact with and work in the plane of the said carrier, and a plurality of elastic means to press the two parts of the gripping device toward each other located near the sides of the cleaning or beating device, and adjacent to the vertical planes of the faces or edges of the said cleaning or beating device.

89. In a fiber cleaning machine, the combination with a leaf cleaning or beating device, and a rotary wheel carrier for moving the leaf to be treated, adapted to carry the leaves on its upper face of a platen consisting of a plurality of sections held downward on the carrier in sliding engagement therewith and forming each a segment of an arc whose center is the same as that of said wheel, each of said segments having elastic means for pressing it toward the wheel carrier when moved by the passage thereunder of leaves of different thickness, a plurality of said elastic means being located near the sides of the cleaning or beating device, and adjacent to the vertical planes of the faces or edges of the said cleaning or beating device.

90. In a fiber cleaning machine, the combination with a leaf cleaning or beating device, and a rotary wheel carrier for moving the leaf to be treated, adapted to carry the leaves on its upper face of a platen consisting of a plurality of sections held downward on the carrier in sliding engagement therewith and forming each a segment of an arc whose center is the same as that of said wheel, each of said segments having elastic means for pressing it toward the wheel carrier when moved by the passage thereunder of leaves of different thickness, a plurality of said elastic means being located near the sides of the cleaning or beating device, and adjacent to the vertical planes of the faces or edges of the said cleaning or beating device.

91. In a fiber cleaning machine, a cleaning or beating device, a gripping device consisting of a carrier or conveyer, and adapted to carry the leaves on its upper face and a series of superimposed devices held downward on the carrier in sliding engagement therewith and each having respectively a differential movement or action caused by the passage thereunder of leaves of different thickness, and being constructed and arranged to coact with and work in the plane of the said carrier, and a plurality of elastic means to press the two parts of the gripping device toward each other, one located adjacent to each side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device.

92. In a fiber cleaning machine, a cleaning or beating device, a carrier or leaf conveyer having a longitudinally grooved face located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and platen being relatively movable, the said parts or sections having a differential or separate movement at such division.

93. In a fiber cleaning machine, a cleaning or beating device, a carrier or leaf conveyer having a longitudinally grooved face located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and consisting of a plurality of sections having a division between the sections located on one side of the cleaning or beating device, and adjacent to the vertical plane of one face or edge of the said cleaning or beating device, the carrier and platen being relatively movable, the said parts or sections having a differential or separate movement at such division, in combination with elastic means located adjacent to each part or section for pressing the same toward the carrier.

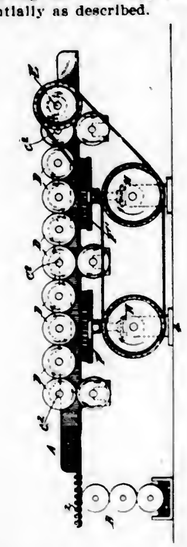
94. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and working in the plane of the carrier, and consisting of a plurality of sections having a plurality of divisions between the sections, a pair of adjacent ends of sections being located on each side of the cleaning or beating device, and adjacent to the vertical planes of the faces or edges of the said cleaning or beating device, the said sections having a differential or separate movement or action at each division caused by the passage thereunder of leaves of different thickness.

95. In a fiber cleaning machine, a leaf cleaning or beating device, a carrier or leaf conveyer located in front of the same and adapted to carry the leaves on its upper face, a platen superimposed on and held downward on the carrier in sliding engagement therewith, to press the leaves in contact with the carrier, and working in the plane of the carrier, and consisting of a plurality of sections having a plurality of divisions between the sections, a pair of adjacent ends of sections being located on each side of the cleaning or beating device, and adjacent to the vertical planes of the faces or edges of the said cleaning or beating device, the said sections having a differential or separate movement or action at each division caused by the passage thereunder of leaves of different thickness, in combination with elastic means for pressing the platen toward the carrier.

858,339. MACHINE FOR VARNISHING EYELETS. ISAAC W. GILES, New Bedford, and CHARLES W. TOBEY, Fairhaven, Mass., assignors to Atlas Tack Company, Fairhaven, Mass., a Corporation of Massachusetts. Filed Oct. 8, 1906. Serial No. 337,938.

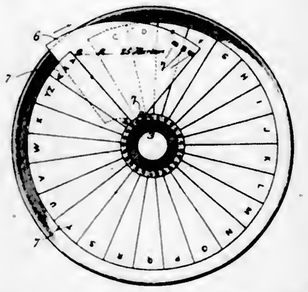
Claim.—1. A machine for varnishing eyelets, comprising a frame having horizontal supports and side guides for cards holding eyelets, feed disks for advancing the eyelet cards, said disks being spaced apart and arranged close alongside the side guides so as to bear on the edges of the cards outside the eyelets themselves, means for rotating said disks, flat brushes arranged in a horizontal plane in the path of the eyelets, means for revolving such brushes horizontally, and guards arranged over the brushes for resisting upward movement of the eyelet cards while being brushed, substantially as described.

2. In a machine for the purpose specified, the combination, with a frame having guides for eyelet cards and means for feeding the same therethrough, of two horizontal flat brushes arranged in the path of the eyelets, and means for revolving them in opposite directions horizontally, substantially as described.



3. In a machine for the purpose specified, the combination with a frame having supports and guides for eyelet cards and means for feeding the same therethrough, of a flat horizontal brush having an annular form and arranged in the path of the eyelets, and means for imparting rotation thereto in a horizontal plane, substantially as described.

858,340. INDEX OR DIRECTORY. HERBERT S. HARDE, New York, N. Y. Filed Jan. 14, 1905. Serial No. 241,085.



Claim.—1. An index or directory comprising a flat base, leaves independently pivoted on the base and arranged to overlap so that each leaf has when in normal position only a small portion exposed to view, and each leaf being susceptible of movement edgewise independently of all the other leaves so as to expose nearly the entire leaf.

2. An index or directory comprising a base, and a plurality of overlapping leaves pivotally mounted on the base, each leaf being susceptible of edgewise swinging movement independently of all the other leaves, and each leaf lying in direct contact with the base at the pivotal point.

3. An index or directory comprising a base and a plurality of leaves independently pivoted upon the base and arranged in such manner that each leaf when in normal

858,343. WRITING-MACHINE. EDWARD B. HESS, New

with bearings arranged in an arc for the type bars and a

position overlaps one immediately adjacent leaf and is overlapped by the other immediately adjacent leaf.

4. In an index or directory, a base, and a plurality of leaves arranged in a ring on said base, said leaves being secured to the base by a series of separate pivots upon which the leaves are secured so as to swing edgewise, and each leaf being pivoted adjacent to one corner.

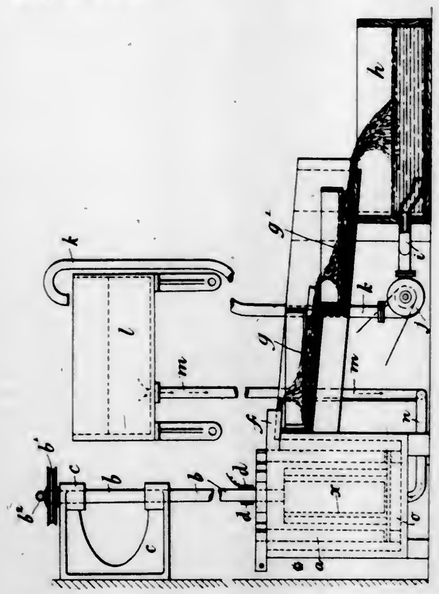
5. In an index or directory, a base, and a plurality of substantially sector shaped leaves arranged in a ring on said base and pivotally secured thereto so as to swing edgewise, each leaf being pivoted at a point adjacent to its outer margin.

6. In an index or directory, a base, a plurality of leaves radially arranged on the base and pivotally secured thereto, and an annular clip carried by the base and adapted to hold said leaves normally in overlapped position.

7. In an index or directory, a base having a central aperture, a plurality of overlapping leaves arranged around said aperture, and a plurality of pivots also arranged around said aperture upon which said leaves are mounted to swing edgewise.

8. An index or directory comprising a base, a plurality of overlapping leaves arranged around a point on said base, and a series of pivots for said leaves arranged substantially in a circle, said leaves when in normal position being radially arranged with reference to the circle in which the pivots are set and being symmetrically placed in relation to the center of said circle.

858,341. APPARATUS FOR ELECTROLYTIC DEPOSITION OF METALS. HERBERT C. HARRISON, London, and JOSEPH DAY, Weston-super-Mare, England; said Day assignor to said Harrison. Filed Aug. 7, 1902. Serial No. 118,801.



Claim.—1. In the electrolytical deposition of metals upon a cathode, the combination with a cathode, of a plurality of anodes arranged around the cathode in elements consisting of one or more anode bars, and means parallel to the axis of the cathode for producing jets of electrolyte adapted to impinge against the cathode so that the greatest action of the jets upon the cathode will take place at those points of the cathode nearest the elements of the anode where the resistance between the electrodes is least and, consequently, the current density greatest.

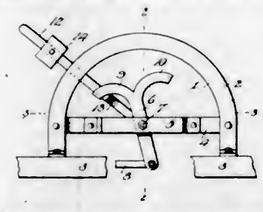
2. In the electrolytical deposition of metals, the combination with a vertically-mounted cathode, of a plurality of perforated pipes parallel to the axis of the cathode, disposed equidistant from one another, and disposed concentrically around and spaced apart equally all around said cathode, adapted to issue jets of electrolyte so as to impinge in a tangential direction against the surface of the cathode all around the latter and throughout the length thereof, and a plurality of anodes exterior to said vertical pipes.

3. In the electro deposition of metals upon a revolving cathode of circular cross-section—the combination with such cathode of the anode arranged round the cathode in elements consisting of one or more anode bars, and pipes for directing the jets of electrolyte arranged in suchwise that the greatest action of the jets upon the cathode will take place at those points on the cathode nearest the elements of the anode where the resistance between the electrodes is least and consequently the current density greatest, and means to revolve the said cathode during electro deposition thereon.

4. In an apparatus for electrolytically depositing metals, the combination, with a cathode of circular cross-section, of a series of pipes spaced apart equidistant from one another and disposed concentrically about said cathode and provided with a series of holes or nozzles which direct the jets of electrolyte issuing from said pipes in a direction tangential to the surface of the cathode, and an anode located exteriorly of said series of pipes.

5. In an apparatus for electrolytically depositing metals, a vat, a revoluble cathode of circular cross-section vertically mounted in said vat, a plurality of spaced electrolyte-discharging pipes arranged concentrically about and parallel to said cathode, each of said pipes being perforated so as to cause the electrolyte to be projected in jets against the cathode in a direction approximately tangential thereto, and an outer series of spaced, depending, inter-connected anode-bars also arranged concentrically about and parallel to said cathode, said bars being disposed opposite the points of impingement of the jets upon the cathode.

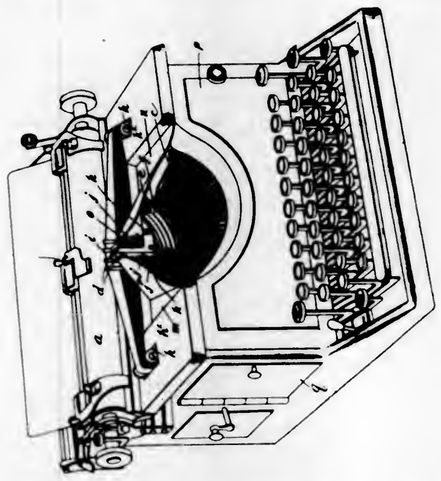
858,342. SWITCH. ALLEN C. HIGGINBOTHAM, Decota, W. Va. Filed Jan. 3, 1907. Serial No. 350,605.



Claim.—1. A switch stand, an operating lever mounted thereon and connected to the switch points, the upper end of the lever being provided with oppositely projecting arms terminally bent to provide lips, and a setting lever initially moved in the operation of the operating lever, the movement of the setting lever being completed by gravity, said setting lever engaging the lips of the operating lever during movement of the setting lever under the influence of gravity.

2. A switch stand including a supporting bar, a pivot bar secured to the supporting bar and centrally spaced therefrom, an operating lever connected to the switch points and pivotally secured between the supporting bar and pivot bar, the upper end of said lever being formed with oppositely projecting arms terminally bent to provide lips, and a weighted setting lever mounted on the pivot of the operating lever and arranged beyond the pivot bar, said setting lever being offset above its pivotal connection to arrange the upper portion thereof in the plane of the lips of the operating lever, whereby said setting lever under the influence of gravity will engage said lips and actuate the operating lever.

858,343. WRITING-MACHINE. EDWARD B. HESS, New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J., a Corporation of New Jersey. Original application filed Sept. 1, 1906, Serial No. 332,940. Divided and this application filed Apr. 11, 1907. Serial No. 367,645.



Claim.—1. In a front strike writing machine, a platen, a vertically arranged type bar segment, in which the type bars (that normally lie in substantial parallel lines with their heads toward the front) are pivoted, constructed to overlie the pivots of the bars projecting in front and rear thereof to protect them from dirt of erasure, a dust shed composed of two sections arranged respectively with their inner ends closely adjacent the printing point and extending laterally therefrom with their front edges inclined outwardly whereby the type bar segment and type bar bearings therein are protected from dirt of erasure occurring at either side of the printing point.

2. In a front strike machine, type bars normally lying toward the front of the machine in substantially parallel lines, a segment in which they are pivoted constructed to overhang the pivots at both the front and rear, and a dust shed arranged above the segment and composed of two sections whose inner ends are closely adjacent the printing point and which extend laterally and forwardly being widely separated at their front ends to permit access to the type bar heads.

3. In a front strike writing machine, a dust shed lying within the chord of the arc in which the type bars are pivoted and a second dust shed arranged above the chord of the arc and extending from closely adjacent the printing point laterally toward the sides of the machine.

4. In a front strike machine, a platen, a centrally disposed ribbon vibrator and a centrally disposed type bar guide in front of the vibrator, a dust shed composed of two sections having their narrow inner ends contiguous the guide and extending laterally with their front edges inclined outwardly, combined with a vertically disposed type bar segment having bearings for the type bars and constructed to overhang said bearings in front and rear.

5. A front strike writing machine comprising a platen, a centrally disposed ribbon vibrator and type bar guide, a dust shed composed of two sections whose narrow inner ends are contiguous to the guide and which extend laterally with their front edges inclined outwardly, combined with a type bar segment located below said dust guard, provided with bearings for the type bars and formed to project forwardly over said bearings.

6. In a front strike writing machine, a platen, a vertically disposed support located below the platen provided with bearings arranged in an arc for the type bars and a forward projection overhanging the bearings, type bars pivoted in said bearings and normally lying substantially parallel with their heads toward the front, and a dust shed arranged above the segment and extending on either side of the printing point.

7. In a front strike writing machine, a centrally disposed ribbon vibrator, a centrally disposed type bar guide composed of two adjustable sections and a dust shed composed of two sections whose inner ends are closely adjacent the guide and which extend laterally therefrom.

8. In a front strike writing machine, a platen, a transversely arranged segment below the platen and substantially in line below the printing line thereon, type bars pivoted therein in an arc the segment being provided with means for protecting the type bar pivots from dirt of erasure, and a dust shed located above a chord passing through the pivots of the end type bars and composed of two sections whose inner ends are arranged closely adjacent the printing point and which extend laterally and forwardly with their front edges inclined outwardly.

9. A front strike writing machine comprising the combination of a segment located in a plane below the platen, type bars pivoted therein, side cover plates at each side of the assemblage of type-bars, ribbon guide rolls mounted in apertures in the cover plates, a ribbon guide and vibrator at the printing point through which the ribbon passes, a type bar guide at the printing point, and dust sheds extending from the side plates inwardly and upwardly to the horns of the type-bar guide and having rear vertical flanges *o*.

10. A front strike writing machine comprising the combination of a segment located in a plane below the platen, type-bars pivoted therein, side cover plates at each side of the assemblage of type-bars, ribbon guide rolls mounted in apertures in the cover plates, a ribbon guide and vibrator at the printing point through which the ribbon passes, a type bar guide at the printing point, dust sheds extending from the side plates inwardly and upwardly to the horns of the type bar guide and having rear vertical flanges *o*, a front plate closing the frame in front of the type-bar heads and plates closing the sides of the frame having panels or doors adapted to be opened to afford access to the interior of the frame.

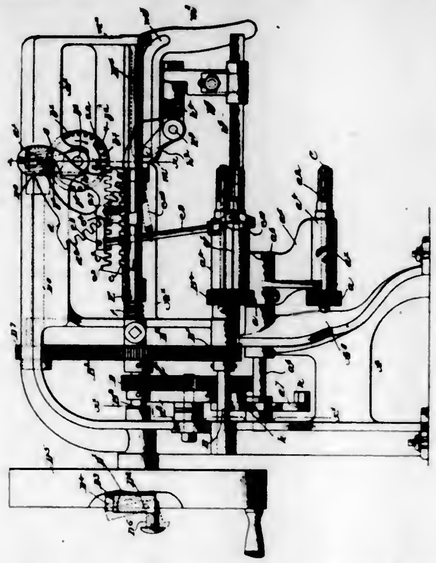
858,344. FRUIT-PARING MACHINE. DAVID F. HUNT, Antrim, N. H., assignor to Goodell Company, Antrim, N. H. Filed Nov. 11, 1903. Serial No. 180,741.

Claim.—1. In a fruit paring machine, a carriage having an open center and provided with two series of rack-teeth, a rod for carrying a paring knife sustained by said carriage and depending through the open center thereof, a mutilated gear to engage the rack-teeth of one series thereby to give the carriage its forward movement, a sector-shaped gear constantly in mesh with the teeth of the other series, means to give the sector-shaped gear a positive movement while the teeth of the first series are out of mesh with the mutilated gear thereby to give the carriage its return movement, and a spring adapted to be placed under tension by the final forward movement of the carriage and operating to effect automatically the initial return movement of the carriage.

2. In a fruit paring machine, a carriage having two series of rack-teeth, a continuously-rotating mutilated gear co-operating with the teeth of one series to move the carriage forward, an oscillating sector-shaped gear constantly in mesh with the teeth of the other series, said sector-shaped gear being turned in one direction by the movement of the carriage, and means to give said sector-shaped gear a quick positive movement in the opposite direction while the mutilated gear is out of mesh with the rack-teeth of the first series thereby to give the carriage a return movement.

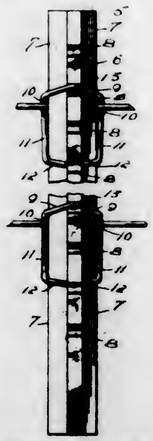
3. In a fruit paring machine, a frame having a trackway, a carriage slidably mounted on the frame, a turn-table on the carriage, a knife carried by the turn-table, said turn-table having teeth to engage teeth on the frame, and also having on each side thereof two separated feet

to lie against the track and hold the knife in proper position.



4. In a fruit paring machine, a frame having a trackway, a carriage slidably mounted on the frame, said carriage having an open center, a turn-table mounted on the carriage, said turn-table having an open slot to receive the stem of the knife, teeth to engage teeth on the frame, and feet to lie against the track as the carriage is moved, and a knife having a stem secured to the turn-table and received in the open slot thereof, the walls of the opening in the carriage preventing the stem from being disengaged from the slot.

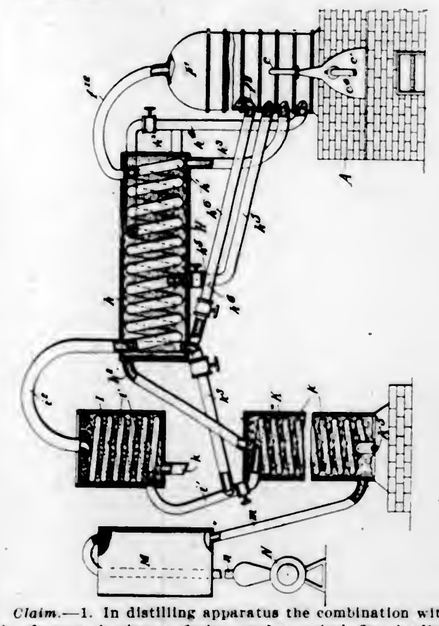
858,345. FENCE-POST. GEORGE H. KAUFMAN, Marienville, Pa., assignor of one-half to Isaac A. Grubbs, Marienville, Pa. Filed Oct. 13, 1906. Serial No. 338,795.



Claim.—1. In combination with a T-shaped post including a web provided with a series of notches in its outer edge, and a pair of oppositely extending wings disposed at right angles to said web, of a clamp removably secured to said post and comprising a horizontal V-shaped member having looped ends projecting beyond the edges of said wings and adapted to receive the line wires, and vertical side members adapted to bear against the inner face of said wings, the apex of said V-shaped member fitting in one of the notches in said web.

2. In combination with a T-shaped post including a web provided with a series of notches in its outer edge, and a pair of oppositely extending wings disposed at right angles to said web, of a clamp removably secured to said post and formed of a single strip of spring wire, said clamp comprising a horizontal V-shaped member having looped ends projecting beyond the edges of said wings and adapted to receive the line wires, and vertical side members adapted to bear against the inner face of said wings, said side members having inbent ends adapted to bear against opposite faces of said web, the apex of said V-shaped member fitting in one of the notches in said web.

858,346. DISTILLING APPARATUS. MIGUEL LLODRA, Manila, Philippine Islands. Filed Dec. 4, 1905. Serial No. 290,142.



Claim.—1. In distilling apparatus the combination with the furnace having a firebox and a spiral flue leading therefrom, of a caldron arranged above the fire box, a caldron arranged behind the fire box and within the winding of the spiral flue, a partition dividing the second caldron into upper and lower communicating sections, a pipe forming a communication from the top of the first caldron to the lower part of the lower section of the second caldron, a distilling column above the second caldron and comprising a plurality of communicating sections, pipes forming a communication between the lower section of the distilling column and the upper section of the second caldron, receptacles within the second caldron below the said pipes, a condensing cylinder adjacent to the distilling column and communicating with the second section thereof, a spiral worm within the condensing cylinder and communicating with the upper section of the distilling column, a refrigerating column adjacent to the condensing cylinder and communicating therewith, a spiral worm therein and communicating with the worm of the condensing cylinder, an auxiliary refrigerating tank adjacent to the refrigerating column and communicating therewith and with the condensing cylinder, a spiral worm within the auxiliary refrigerating tank and communicating with the worms in the refrigerating column and in the condensing cylinder, a receiving tank adjacent the refrigerating column and communicating therewith, and a force pump communicating with the receiving tank.

2. In drilling apparatus the combination with a furnace having a fire box and a spiral flue leading therefrom, of a caldron arranged above the fire box, a caldron arranged behind the fire box and within the winding of the spiral flue, a partition dividing the second caldron into upper and lower communicating sections, a distilling column above the second caldron and comprising a plurality of communicating sections, a condensing cylinder adjacent to the distilling column, a spiral worm within the condensing cylinder, a refrigerating column adjacent the condensing cylinder, a spiral worm therein, a receiving tank adjacent to the refrigerating column, means whereby the wash may be conducted from the receiving tank through the refrigerating column and the condensing cylinder, the distilling column and the caldrons, and whereby vapor may be conducted from the first caldron through the lower section of the second caldron, the upper section thereof, the distilling column and the worm in the condensing cylinder and in the refrigerating column in the order named.

3. In distilling apparatus, the combination with the furnace, a plurality of caldrons arranged within the furnace, a distilling column above one of the caldrons, a condensing cylinder adjacent to the distilling column, a refrigerating tank adjacent to the condensing cylinder, a receiving tank adjacent to the refrigerating column, worms in the condensing cylinder and refrigerating column, and a communication between the receiving tank, refrigerating column, the condensing cylinder, the distilling column and the caldrons, and a communication between the caldrons and the distilling column, and the worms of the condensing cylinder and the refrigerating column.

4. In distilling apparatus and in combination, a furnace provided with a fire box having a spiral flue leading therefrom, a caldron arranged above the fire box, a second caldron arranged behind the fire box and within the winding of the spiral flue, a partition dividing the second caldron into upper and lower sections, and means whereby the vapor may pass from the first caldron into the lower section of the second caldron and from thence to the upper section of the same.

5. In distilling apparatus and in combination, a furnace having a fire box and a spiral flue leading therefrom, a caldron arranged above the fire box, a second caldron arranged behind the fire box and within the winding of the spiral flue, a partition within the second caldron dividing it into upper and lower sections, means connected with the partition whereby to prevent the flow of wash from the upper to the lower section, and whereby to allow the passage of vapor from the upper to the lower section.

6. In distilling apparatus and in combination, a furnace having a fire box and a spiral flue leading therefrom, a caldron arranged above the fire box, a second caldron arranged behind the fire box within the winding of the spiral flue, means for permitting the passage of wash from the second caldron to the first caldron, and means whereby vapor may pass from the first caldron to the second caldron.

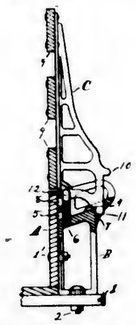
7. In distilling apparatus and in combination, a furnace having a fire box and a spiral flue leading from the fire box, a caldron arranged above the fire box, a second caldron arranged behind the fire box and within the winding of the spiral flue, a partition dividing the second caldron into upper and lower sections, a distilling column arranged upon the second caldron, means for maintaining the wash at a predetermined level in the sections of the distilling column, and means for permitting the passage of vapor from the caldrons to the distilling column.

8. In distilling apparatus and in combination, a furnace, a plurality of caldrons arranged within the furnace, a distilling column connected with one of the caldrons, means for supplying wash to the distilling column, means for maintaining the wash at a predetermined level in the sections of the distilling column, and means for permitting the passage of vapor from the caldron to the distilling column.

9. In distilling apparatus and in combination, a caldron, a second caldron adjacent thereto and comprising upper and lower sections, means for connecting the lower parts of the upper and lower sections with the lower part of the first caldron, and means for connecting the upper part of the first caldron with the lower part of the lower section of the second caldron, and the upper part of the lower section with the lower part of the upper section.

10. In distilling apparatus and in combination, a furnace, a caldron above the furnace, a second caldron behind the furnace and comprising upper and lower sections, a distilling column above the second caldron, a condensing cylinder adjacent to the distilling column, a worm within the condensing cylinder, means for permitting the passage of wash through the condensing cylinder and the distilling column to the caldron, means for permitting the passage of vapor from the caldron through the distilling column to the worm of the condensing cylinder, and means whereby the passage of wash may condense the vapor.

858,347. COMBINATION FARM-RACK. HENRY M. MORRILL and FRED A. RANDALL, Tekonsha, Mich. Filed June 8, 1906. Serial No. 320,717.

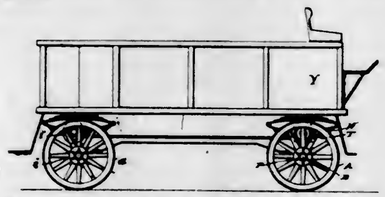


Claim.—1. In combination with a vehicle-box and rack-boards, brackets attached to the vehicle-box, each of said brackets having at its upper extremity a horizontal, T-shaped slot with an inwardly and downwardly sloping bottom, said slot having holes intersecting both its vertical, inner wall and its bottom; arms to which the rack-boards are attached, each of said arms having lugs adapted to fit within the inner vertical extremity of the T-shaped slot and a finger adapted to fit within a hole near the outer extremity of said sloping bottom when said arm is in a vertical position, and a lug on the under side of said arm adapted to fit within the hole near the outer extremity of said sloping bottom and said finger adapted to fit within the holes intersecting the vertical wall of said T-shaped slot when in a horizontal or an inclined position, substantially as, and for the purposes set forth.

2. The combination of the box-bracket having a horizontal, T-shaped slot, 3, with an inwardly and downwardly sloping bottom, 4, having holes, the inner vertical extremity of said slot having the holes 5 and 8, an arm having the finger 11 and a lug 12, the lug 12 and the finger 11 adapted to fit the vertical, inner extremity of the T-shaped slot and the hole 7, respectively when said arm is in a vertical position, and the finger, 11, and lug, 10, adapted to fit within the holes 5 and 8 and the hole 7, respectively, when the arm is in a horizontal or sloping position, substantially as, and for the purpose set forth.

3. The combination of the box-bracket having a horizontal, T-shaped slot at its upper extremity provided with an inner, vertical, transverse extremity and a top-box arm having a shank adapted to fit within said vertical, transverse extremity, substantially as and for the purpose set forth.

858,348. RUNNING-GEAR FOR VEHICLES. FRANK R. OWENS, Bureau, Ill. Filed Oct. 20, 1905. Serial No. 283,644.



Claim.—1. In a vehicle, a short axle and one of the vehicle wheels thereon, a plate arranged vertically and rigid with said short axle, a pintle on said plate, a face plate pivoted to said pintle and hinged to the body support of the vehicle, a rigid axle on this plate, and a cushion tired wheel on said second axle with its periphery bearing on the hub of said vehicle wheel, all combined.

2. In a vehicle, the combination of two plates hinged together near their ends and each having a rigid short axle, said axles being parallel, a vehicle wheel on one of said short axles, a cushion tired wheel on the other axle and with its tire on the hub of said vehicle wheel, and the wagon body connected to the plate on which the cushion-tired wheel is supported.

3. In a vehicle, the combination of two plates each having a projecting short axle, said plates held side by side so as to permit independent vertical movement of said short axles, a vehicle wheel on one of the axles and a cushion tired wheel on the other axle with its tire resting on the hub of the wheel, and the vehicle body yieldingly connected to the plate on which the cushion tired wheel is supported.

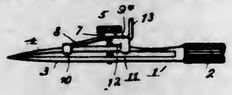
4. The combination with a vehicle wheel provided with a drum hub, of a cushion tired wheel with its tire resting on said drum, the axle of said cushion tired wheel being independently supported to move in an arc above the drum, and the vehicle body connected to axle of the cushion tired wheel.

858,349. CIGAR-HOLDER. BENTON N. PHILLIPPI, Wilkinsburg, Pa., assignor of one-half to J. F. Rudy, Pittsburg, Pa. Filed July 5, 1906. Serial No. 324,862.



Claim.—A cigar holder for hats, comprising a plate attachment to fit in the crown of the hat, legs carried by said plate and received between the head band and crown of said hat for securing the plate in position in the hat, elastic strips stretched across the lower face of said plate with their ends extending over on the other face thereof, and wire clips engaged with the edges of the plate with one prong thereof passed through the elastic strips and securing the end of said strips to the plate.

858,350. DRAWING-PEN. WALTER B. PHILLIPS, Kansas City, Kans. Filed Nov. 12, 1906. Serial No. 342,994.



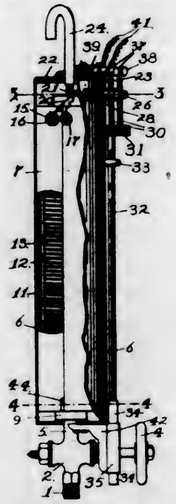
Claim.—1. The combination with a drawing-pen, and a set-screw for adjusting the blades thereof, of an attachment slidably mounted upon the pen to secure the opening and closing of the blades and consisting of an inclined surface adapted to engage the set-screw, and a portion substantially parallel with the upper surface of the pen adapted to engage the set-screw.

2. The combination with a drawing-pen, and a set-screw for adjusting the blades thereof, of an attachment slidably mounted upon the pen to secure the opening and closing of the blades and consisting of an inclined surface adapted to engage the set-screw, a portion substantially parallel with the upper surface of the pen adapted to engage the set-screw, and guide members slidably engaging the pen.

3. The combination with a drawing-pen, and a set-screw for adjusting the blades thereof, of an attachment slidably mounted upon the pen consisting of an inclined surface adapted to engage the set-screw, a portion substantially parallel with the upper surface of the pen adapted to engage the set-screw, and a bridge slidably mounted upon the upper blade.

4. The combination with a drawing-pen, and a set-screw for adjusting the blades thereof, of an attachment slidably mounted upon the pen to secure the opening and closing of the blades and consisting of an inclined surface adapted to engage the set-screw, a portion substantially parallel with the upper surface of the pen adapted to engage the set-screw, and a handle at the rear of the attachment.

858,351. INSTANTANEOUS ELECTRIC WATER-HEATER. HERBERT N. ROCHE and FRED F. BREESE, San Francisco, Cal., assignors of one-half to The James W. Edwards Co., one-fourth to said Herbert N. Roche, and one-fourth to Thomas B. Gray, San Francisco, Cal. Filed Oct. 20, 1904. Serial No. 229,227.



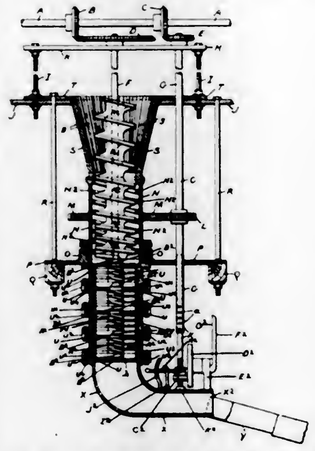
Claim.—1. In an apparatus of the character described, the combination of a casing, a plurality of heating tubes therein, a lining of insulating material on the inside of each tube, a tube of non-conducting material within each tube, a coil of high resistance wire within the inner tube, said wire being continued in a coil on the outside of the tube, a rod of non-conducting material within the inner coil, means for connecting the ends of the coils of the several tubes in series, means for connecting the ends of the series thus formed with an electric circuit, means for admitting water in succesion through the outer tubes, and an operative connection between said means whereby they act in unison, substantially as described.

2. In an apparatus of the character described, the combination of a casing, a water conduit therein, an electric heating coil in the water conduit, terminals on the casing connected to the ends of said coils, a second pair of terminals on the casing connected with an electric circuit, a valve supplying water to the water conduit, and a pair of slide bars sliding through the one pair of terminals and operatively connected with the valve to contact with the other terminals respectively when the valve is open, substantially as described.

3. In an apparatus of the character described, the combination of a casing, a plurality of parallel heating tubes therein each having an end closed except for a small opening therein, all of the openings being arranged near to each other, a cover inclosing all of said openings, a pipe leading therefrom, electric heaters in the several tubes, means for supplying water to the tubes, and means for supplying electricity to the heaters, substantially as described.

4. In an apparatus of the character described, the combination of a casing, a plurality of parallel heating tubes therein, each tube having a large opening in its supply end and a small opening in its discharge end, all the openings at each end being arranged near to each other, a cover inclosing the openings at each end, means for supplying water to the cover at the supply end and discharging it from the cover at the discharge end, electric heaters in the several tubes, and means for supplying electricity to the same, substantially as described.

858,352. MACHINE FOR FORMING AND COMPRESSING PEAT, &c., INTO BLOCKS OR CAKES. MATTHEW C. SHARPNECK, Boston, Mass., assignor to The American Peat Machinery Company, Portland, Me., a Corporation of Maine. Filed Oct. 13, 1906. Serial No. 338,871.



Claim.—1. In a machine or apparatus for preparing peat for use as fuel, the combination of a spirally-flanged and rotatable shaft, and an interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell.

2. In a machine or apparatus for preparing peat for use as fuel, the combination of a spirally-flanged and rotatable-shaft having its spiral increasing in pitch from one end-portion toward its opposite end-portion, and an interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell.

3. In a machine or apparatus for preparing peat for use as fuel, a spirally-flanged and rotatable-shaft, an interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary-hopper in communication with one end of said shell and having said rotatable-shaft in part axially contained therein.

4. In a machine or apparatus for preparing peat for use as fuel, a spirally-flanged and rotatable-shaft, and interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary-hopper in communication with one end of said shell and having said rotatable-shaft in part axially contained therein, and its side-walls grooved and ribbed along its length.

5. In a machine or apparatus for preparing peat for use as fuel, a spirally-flanged and rotatable-shaft, an interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary perforated-plate at and across an open end of said shell, and a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate.

6. In a machine or apparatus for preparing peat for use as fuel, a spirally-flanged and rotatable-shaft, and interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary-hopper in communication with an open end of said shell and having said rotatable shaft in part axially contained therein, a stationary perforated plate at and across an open end of said shell opposite to said stationary-hopper and a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate.

7. In a machine or apparatus for preparing peat for use as fuel, a spirally-flanged rotatable-shaft, and interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary perforated-plate at and across one open end of said shell, a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate, a stationary-shell extending outside of, and beyond and axially coincident with said rotatable-shaft, a stationary perforated-plate at the further end of said stationary-shell, and an axial rotatable-shaft continuous with said spirally flanged-shaft and crossing between and turning in said perforated plates and having wings or blades spirally arranged thereon and rotating therewith.

8. In a machine or apparatus for preparing peat for use as a fuel, a spirally-flanged rotatable-shaft, an interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary perforated-plate at and across one open end of said shell, a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate, a stationary-shell extending outside of and beyond and axially coincident with said perforated plate, a stationary perforated-plate at the further end of said stationary-shell, and an axial rotatable-shaft continuous with said spirally flanged-shaft and crossing between and turning in said

perforated-plates and having radial-wings or blades spirally arranged thereon and rotating therewith, and also a radial-cutting-blade arranged to move across the inner open ends of the perforations of said plate which are at the further end of said stationary-shell.

9. In a machine or apparatus for preparing peat for use as a fuel, a spirally flanged rotatable-shaft, an interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary perforated-plate at and across one open end of said shell, a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate, a stationary-shell extending outside of and beyond and axially coincident with said perforated plate, and having ribs or grooves extending along the length of its internal wall, a stationary perforated-plate at the further end of said stationary-shell, and an axial rotatable-shaft continuous with said spirally flanged-shaft and crossing between and turning in said perforated-plates apd having radial-wings or blades spirally arranged thereon and rotating therewith, and also a radial cutting-blade arranged to move across the inner open ends of the perforations of said plate which is at the further end of said stationary-shell.

10. In a machine or apparatus for preparing peat for use as a fuel, a spirally-flanged rotatable-shaft, an interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary perforated-plate at and across one open end of said shell, a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate, a stationary-shell extending outside of and beyond and axially coincident with said perforated-plate, and divided along its length into sections detachably attached together, a stationary perforated-plate at the further end of each section of said stationary-shell, and axial rotatable-shaft continuous with said spirally flanged-shaft and crossing between and turning in said perforated-plates and in each of its said sections having radial-wings or blades spirally arranged thereon and rotating therewith, and also a radial cutting-blade arranged to move across the inner open ends of the perforations of said plate which is at the further end of each section of said stationary-shell.

11. In a machine or apparatus for preparing peat for use as a fuel, a spirally-flanged rotatable-shaft, and interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary perforated-plate at and across one open end of said shell, a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate, a stationary-shell extending outside of and beyond and axially coincident with said perforated-plate, a stationary perforated-plate at the further end of said stationary-shell, an axial rotatable-shaft continuous with said spirally flanged-shaft and crossing between and turning in said perforated-plates and having radial-wings or blades spirally arranged thereon and rotating therewith, and also a radial cutting-blade arranged to move across the inner open ends of the perforations of said plate which is at the further end of said stationary-shell, and a spout leading from the discharging end of said stationary-shell which is contracted in its transverse area from end to end.

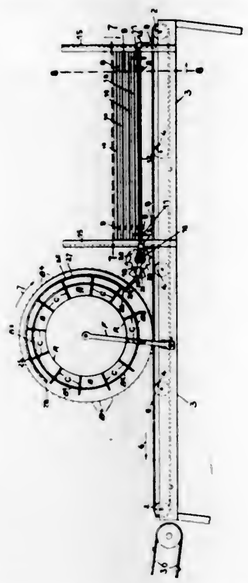
12. In a machine or apparatus for preparing peat for use as a fuel, a spirally-flanged rotatable-shaft, and interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary perforated-plate at and across one open end of said shell, a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate, a stationary-shell extending outside of and beyond and axially coincident with said perforated-plate, a stationary perforated-plate at the further end of said stationary-shell, an axial rotatable-shaft continuous with said spirally flanged-shaft and crossing between and turning in said perforated-plates and having radial-wings or blades spirally arranged thereon and rotating therewith, and also a radial cutting-blade arranged to move across the inner open ends of the perforations of said plate which is at the further end of said stationary-shell, and means arranged to sever the peat as it is discharged into separate cakes or blocks.

13. In a machine or apparatus for preparing peat for use as fuel, a spirally-flanged rotatable-shaft, and interiorly spirally-flanged and rotatable-shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and those of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with a stationary perforated-plate at and across one open end of said shell, a cutting-blade carried by said rotatable-shaft and arranged to move across the inner open ends of the perforations of said plate, a stationary-shell extending outside of and beyond and axially coincident with said perforated-plate, a stationary perforated-plate at the further end of said stationary-shell, an axial rotatable-shaft continuous with said spirally flanged-shaft and crossing between and turning in said perforated-plates and having radial-wings or blades spirally arranged thereon and rotating therewith, and also a radial cutting-blade arranged to move across the inner open ends of the perforations of said plate which is at the further end of said stationary-shell, a spout leading from the discharging end of said stationary-shell which is contracted in its transverse area from end to end, and means arranged at the discharging end of said spout to sever the peat, as it is discharged, into separate cakes or blocks.

14. In a machine or apparatus for preparing peat for use as a fuel and having means for feeding, mixing, disintegrating, pressing and compressing the peat, the combination with the delivery of said so prepared peat from the machine, of means consisting of a continuously rotating cutting-blade for severing the peat as it is delivered, arranged to operate at intervals thereon, and thereby to divide it into separate cakes or blocks, and means for operating said blade arranged for adjustment to vary the speed of rotation of said cutting-blade.

858,353. PEAT-MACHINE. MATTHEW C. SHARPNECK, Boston, Mass., assignor to The American Peat Machinery Company, Portland, Me., a Corporation of Maine. Filed Dec. 28, 1906. Serial No. 349,916.

Claim.—1. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the said peat as delivered or discharged, a series of peat cutting- or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial-movement as to the axis of rotation of said wheel-frame, and means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, substantially as described, for the purposes specified.



2. The combination with the delivery spout, or other discharge of a machine otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the said peat as delivered or discharged, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, and a continuous rectilinear traveling endless-carrier, positioned as to said wheel-frame to receive from its said sections the blocks of peat contained therein and as they are discharged therefrom, substantially as described, for the purposes specified.

3. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the said peat as delivered or discharged, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, and a continuous rectilinear traveling endless-carrier, positioned as to said wheel-frame to receive from its said sections the blocks of peat contained therein and as they are discharged therefrom, and said carrier and said wheel-frame relatively adapted for the latter to actuate or drive the former, substantially as described, and for the purposes specified.

4. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the said peat as delivered or discharged, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, a continuous rectilinear traveling endless-carrier, positioned as to said wheel-frame to receive from its said sections the blocks of peat contained therein and as they are discharged therefrom, separate boards disposed lengthwise on and along said carrier, one following the other in regular order, and between it and said wheel-frame, substantially as described, and for the purposes specified.

5. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the said peat as delivered or discharged, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, a continuous rectilinear traveling endless-carrier, positioned as to said wheel-frame to receive from its said sections the blocks of peat contained therein and as they are discharged therefrom, separate boards disposed lengthwise on and along said carrier, one following the other in regular order, and between it and said wheel-frame, and means to automatically deliver said boards one after another to said carrier and to dispose them along the length thereof in regular order, substantially as described, for the purposes specified.

6. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the said peat as delivered or discharged, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, a continuous rectilinear traveling endless-carrier, positioned as to said wheel-frame to receive from its said sections the blocks of peat contained therein and as they are discharged therefrom, a pile of separate superimposed boards normally held above said carrier for being delivered, one after another, thereto and along the length thereof, and means adapted at regular times relative to the travel of said carrier to automatically free the lower board of said pile of boards for it to drop onto said carrier, and at the same time to hold the boards of said pile which were over and resting on it from dropping, all substantially as described, and for the purposes specified.

7. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the said peat as delivered or discharged, a series of peat cutting or severing-blades and

a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, a continuous rectilinear traveling endless-carrier, positioned as to said wheel-frame to receive from its said sections the blocks of peat contained therein and as they are discharged therefrom, a pile of separate superimposed boards normally held above said carrier for being delivered one after another thereto and along the length thereof, and means adapted at regular times relatively to the travel of said carrier to automatically free the lower board of said pile of boards, for it to drop onto said carrier, and at the same time to hold the boards of said pile which were over and resting on it from dropping, and which said means and said wheel-frame are relatively adapted to each other to secure, from and under the rotation of the wheel-frame, an action of said means to permit the lower board of said pile of boards to drop and to hold the boards which were above it from dropping, all substantially as described, and for the purposes specified.

8. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the peat as delivered or discharged, a forward extension of the upper side of said spout or discharge positioned and adapted to resiliently bear and press on and to extend across and cover a portion of the open perimeter of the wheel-frame, as it, the wheel-frame, passes from said discharge, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, and means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, substantially as described, for the purposes specified.

9. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the peat as delivered or discharged, a forward extension of the upper side of said spout or discharge positioned and adapted to resiliently bear and press on and to extend across and cover a portion of the open perimeter of the wheel-frame, as it, the wheel-frame, passes forward from said discharge, means carried by said discharge and projecting therefrom over said forward extension thereof and adapted to adjust the bearing and pressure of said extension on the perimeter of the wheel-frame, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, and means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, substantially as described, for the purposes specified.

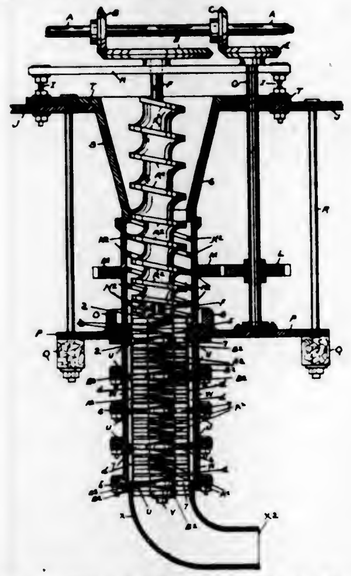
10. The combination with the delivery spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame arranged to rotate on a stationary axial shaft and divided into separate equi-distant sections severally open at its perimeter and at said perimeter in position to receive in its said sections the peat as delivered or discharged, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, and means, consisting of cam-acting disks fixed on said shaft, a separate cam for said blades and a separate cam for said bottoms, and connections between said cams and said blades and bottoms adapted and arranged to be operated by them as the wheel-frame rotates and thus to move said blades and bottoms in and out of said wheel-frame sections, and in determined radial lines thereof, substantially as described for the purposes specified.

11. The combination with the delivery-spout, or other discharge of a machine, otherwise suitable to prepare peat, etc., for use as fuel, and to continuously deliver or discharge it therefrom, preferably, under a more or less forcible pressure, of a circular wheel-frame free to rotate and divided into separate equi-distant sections, severally open at its perimeter and at said perimeter in position to receive in its said sections the said peat as delivered or discharged, a series of peat cutting or severing-blades and a series of movable-bottoms for said wheel-sections, severally free and separately adapted for radial movement as to the axis of rotation of said wheel-frame, means to so move said blades and said bottoms, adapted and arranged to be actuated from and by the rotation of said wheel, a continuous rectilinear traveling endless-carrier, positioned as to said wheel-frame to receive from its said sections the blocks of peat contained therein and as they are discharged therefrom, a pile of separate superimposed boards normally held above said carrier for being delivered, one after another, thereto and along the length thereof, and means consisting of a circular flange or rib fixed on and laterally projecting from one side of and extending partially around, and axially coincident with the axis of said wheel-frame, a pallet fulcrumed on a suitable support and adapted to be rocked in one direction and held against rocking by said flange or rib and escaping from said rib left free to rock in the opposite direction, an escape-wheel arranged to act in conjunction and coöperation with said pallet and having its shaft suitably journaled on a stationary support for the rotation thereof, a series of toothed-wheels carried by shafts journaled on suitable stationary supports and adapted and arranged to rotate and to engage by their teeth the lower board of said pile of boards, and therethrough to hold the pile against dropping while said toothed wheels are held from rotation, and gear-wheels, in part carried by the escape-wheel shaft and in part otherwise suitably carried and as a whole adapted to make connection between said toothed-wheels and said escape-wheel, all substantially as described, and for the purposes specified.

858,354. PEAT-MACHINE. MATTHEW C. SHARPNECK, Boston, Mass., assignor to The American Peat Machinery Company, Portland, Me., a Corporation of Maine. Filed Mar. 18, 1907. Serial No. 362,998.

Claim.—1. In a machine or apparatus for preparing peat for use as fuel, a spirally-flanged and rotatable shaft, an interiorly spirally-flanged and rotatable shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and by the inner edges of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with sets of radially extending cutting-blades, the one set carried by said shaft and the other set carried by said shell and arranged for coöperative action, substantially as described, for the purpose specified.

2. In a machine or apparatus for preparing peat for use as fuel, a spirally-flanged and rotatable shaft, an interiorly spirally-flanged and rotatable shell, the one rotating in a direction opposite to that of the other, and the shaft arranged within and axially coincident with the axis of the shell, and the outer edges of the flanges of the shaft and by the inner edges of the flanges of the shell adapted to pass by each other in the rotation of the shaft and shell, in combination with sets of radially extending cutting-blades, the one set carried by said shaft and having an under cut 5, and the other set carried by said shell and arranged for coöperative action, substantially as described, for the purpose specified.



3. In a machine or apparatus for preparing peat for use as fuel, of otherwise suitable construction, a stationary plate or partition having round, or such like apertures, and radial slots through its thickness, substantially as described, for the purpose specified.

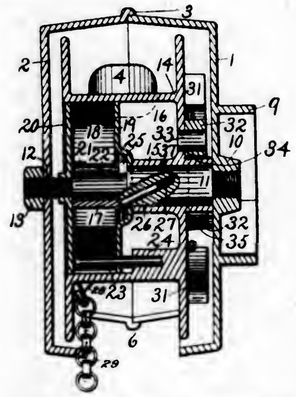
4. In a machine or apparatus for preparing peat for use as fuel, of otherwise suitable construction, a stationary plate or partition having apertures through its thickness, in combination with radially extending cutting-blades in two sets, and a rotating shaft carrying the same and both sets of said blades arranged to act the one set at one side and the other set at the other side of said partitions, and in coöperation with the apertures thereof, substantially as described, for the purpose specified.

858,355. TROLLEY-CATCHER. ROBERT SHIELDS, South Boston, Mass., assignor to Frank Ridlon Company, Boston, Mass., a Corporation of Massachusetts. Filed Mar. 14, 1906. Serial No. 305,986.

Claim.—1. In a trolley catcher, the combination of a suitable supporting case having therein a fixed inwardly projecting stop, a rotating reel mounted in said case, a spring to rotate the reel in one direction, a pawl pivotally mounted on the face of the reel and arranged when outwardly disposed to engage said fixed stop on the case, an abutment on said reel located in the path of the head of the pawl to limit the extent of the outward movement of the pawl and take the thrust or blow caused by the impact of the pawl against the fixed stop on the case, and means to normally hold the pawl out of the path of the fixed stop.

2. In a trolley catcher, the combination of a suitable case, a fixed stop projecting inwardly from the case, a rotating reel mounted in the case, a plurality of pawls pivotally mounted on the face of the reel adjacent the central portion of the reel, abutments mounted on the reel in the path of and at the limits of movement of the pawls whereby their movement is limited in both directions and the abutments receive the blows or impacts caused by the engagement of the pawls with the fixed stop on the case, and means to normally hold the pawls out of the path of the fixed stop.

3. The combination, in a trolley catcher, of a case having an internal fixed stop, an axial stud mounted in the case, a reel mounted to revolve on said stud, inwardly spring-actuated pawls mounted on said reel, and abutments also mounted on the reel against which abutments the pawls bear when outwardly disposed, said stop being located out of the path of said pawls when the reel revolves excepting when said pawls are thrown outward by centrifugal force at which time one of the pawls is caught between said stop and one of said abutments, substantially as shown.



4. In a trolley catcher, the combination of a suitable case, a reel mounted to revolve therein, a fixed stop on the case, a pawl mounted on the face of the reel said pawl being normally held out of the path of said fixed stop when the reel revolves, and adapted to be moved into the path of the fixed stop by centrifugal force when the reel revolves with sufficient rapidity to overcome the force holding the pawl normally out of such path, an abutment mounted on said reel adjacent the head of the pawl and in recurring right line relation with the fixed stop whereby the force of the blow caused by the sudden stoppage of the revolution of the reel by the pawl engaging the fixed stop will be borne by the abutment, substantially as shown.

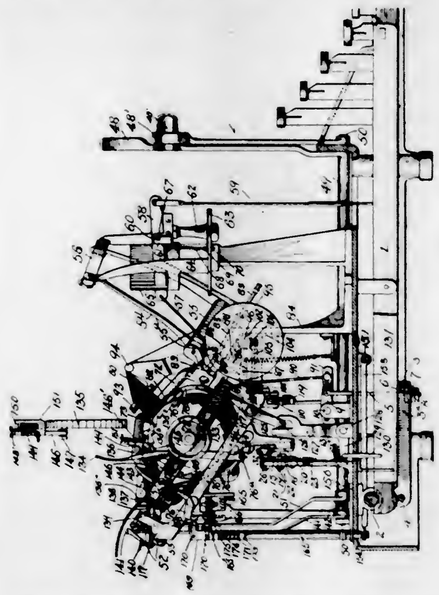
5. The combination, in a trolley catcher, of a case, an axial stud therein, a revoluble reel mounted on such stud, a revoluble anchorage sleeve on the stud, ratchet-teeth on such sleeve, a spring-pressed pin projecting from said stud into engagement with said ratchet-teeth, and a mainspring having one end connected with said wheel and the other end attached to said sleeve.

6. The combination, in a trolley catcher, of a case, an axial stud therein, a hollow revoluble reel mounted on such stud, a revoluble anchorage sleeve also mounted on the stud and held against endwise movement thereon, ratchet-teeth on the inner end of such sleeve, a spring-pressed pin projecting from said stud into engagement with said ratchet-teeth to limit the revolution of said sleeve in one direction, a mainspring in the reel chamber having one end connected with said reel and the other end attached to the sleeve, and plates on the stud between which said mainspring is located.

7. The combination, in a trolley catcher, of a case, an axial stud therein, a revoluble reel mounted on such stud, a revoluble sleeve also mounted on the stud, ratchet-teeth on such sleeve, means to prevent endwise movement of the sleeve, a spring-pressed pin in said stud, extending into the path of said ratchet-teeth to limit the revolution of said sleeve in one direction, and a mainspring having one end connected with the reel and the other end attached to the sleeve.

8. A trolley catcher, comprising an outer case, a centrally recessed reel mounted to revolve in the case, a plate separating said recess into two non-communicating compartments, a spring in one of said compartments, the other compartment forming an oil reservoir, and a conduit leading from the oil reservoir to the reel bearing, substantially as shown.

858,356. TYPE-WRITER. GEORGE H. SMITH, Cedar Rapids, Iowa, assignor to Union Typewriter Company, Jersey City, N. J., a Corporation of New Jersey. Filed July 1, 1898. Serial No. 684,991.



Claim.—1. In a typewriting machine, the combination of a universal frame, an escapement mechanism, a link extending from the frame to the said mechanism, and a connection between the link and the said frame, said connection comprising a lug and collar, one having a concave and the other a convex bearing surface, and the holding nuts, substantially as described.

2. In combination, the escapement, the rock shaft having a loose arm connected therewith, an adjustable clutch section on the rock shaft to engage a clutch section on the loose arm, and key mechanism for operating the rock shaft, substantially as described.

3. In combination, the escapement, the rock shaft having a loose arm, the link connection between the loose arm and the escapement, said link being adjustable, an adjustable clutch member on the rock shaft to engage a clutch member on the loose arm, and key mechanism for operating the rock shaft, substantially as described.

4. In a typewriting machine, the combination of a carriage, a feed rack, a pivoted holding dog with means for moving the same, a sliding detent, or feeding dog having a pin, a narrow projection or cam on the holding dog and which is adapted to engage the said pin and allow the pin to immediately fall therefrom, with means for sliding the detent, whereby as soon as the detent is released by the pawl it will slide forwardly into engagement with the next tooth of the rack irrespective of the return of the holding dog to normal position, substantially as described.

5. In a typewriting machine, the combination of a carriage, a feed rack therefor, a dog which co-operates with said rack, a bar connected to said dog, a second fixed bar, and a spring connected to said bars and adjustable along them.

6. In combination, the carriage, the double rack bar, a pivoted pawl engaging one set of teeth, a sliding detent for engaging the other set of teeth, means whereby the detent is operated by the movement of the pawl, and a carriage release bar for operating the detent independently of the pawl with means for operating the release bar from the key board, the said pawl being normally out of engagement with the rack bar, substantially as described.

7. In combination, the carriage having a double rack bar, the pawl normally out of engagement therewith with means for operating the same, the sliding detent with the pin 30 and projection 31 for operating the same, a pin 36 on the detent, a carriage release rod 34 having a bent upper end extending under the pin 36 and means for operating the release bar, substantially as described.

8. In combination in a typewriter, the platen, the paper scale, the type bar guides adjacent to the printing point, and line gages consisting of projections extending from said type bar guides to the line of printing, said gages being independent of the scale, substantially as described.

9. In combination in a typewriter, the platen, the paper scale, projections extending to the line of printing on each side of the printing point and constituting line gages, said projections being independent of the paper scale, substantially as described.

10. In combination with the platen, the paper scale, the line gages arranged on each side of the printing point and extending to the printing line and independent of the paper scale, and the gages near the ends of the platen in line with the printing line, substantially as described.

11. In combination with the platen, the line gages arranged on each side of the printing point and extending to the printing line, the scale and the paper finger thereon and having marks in line with the printing point, substantially as described.

12. In combination, the type bar guides, the line gages extending therefrom on each side of the printing point, the bar extending longitudinally of the platen, the paper fingers adjustable on said bar and having marks in line with the printing line, substantially as described.

13. In combination, the carriage, the platen, the line space mechanism, a pair of levers at the key board, rock shafts extending from the levers rearwardly, and connections between the said rock shafts and the carriage and line space mechanism respectively, whereby the carriage can be returned with or without turning the platen, substantially as described.

14. In combination, the carriage, the platen, the line space mechanism, a pair of levers at the key board, the rock shafts extending therefrom one within the other, the levers at the rear of said rock shafts and the connections between the said last mentioned levers and the line space mechanism and the carriage respectively, substantially as described.

15. In combination, the platen, the paper feed rollers 76 at the front, the pivoted supports therefor, the feed rollers 76' at the rear, the pivoted supports therefor, the springs in connection with said supports, the rock shaft journaled in the platen frame and the projections thereon for operating the supports to adjust the position of the rollers, substantially as described.

16. In combination with the platen, the line space pawl and a pivotal locking lever having one end arranged in the path of the said pawl, said locking lever having its other end arranged to engage the teeth of the ratchet after the line space pawl has made a certain movement, substantially as described.

17. In combination, the platen, the ratchet, the line space pawl, the locking lever to engage the ratchet, said locking lever being in the path of the pawl to be operated thereby, the pivotal arm 146 under spring pressure and the roller carried by said arm and engaging the teeth of the ratchet, said locking lever being pivoted intermediate of its length and independent of the line space pawl, substantially as described.

18. In combination, the paper roll with its ratchet, a pawl for operating the same, and a locking lever for engaging the ratchet, both the operating pawl and locking lever being normally out of engagement with the ratchet and said locking lever being moved into engagement with the ratchet by the operation of and contact with said pawl and by the same movement of the pawl which turns the ratchet, substantially as described.

19. In combination, the pawl, the line space ratchet, the spring pressed roller bearing on the ratchet teeth and the two armed locking lever to engage the ratchet teeth and arranged with one arm in the path of the pawl to be operated by the same, substantially as described.

20. In combination, the platen, the ratchet, the line space pawl, the spring pressed pivoted arm 146 having a guide for the pawl said pawl having a notch adapted to engage the guide when lifted whereby the said pawl together with the arm 146 and its roller 145 will be held elevated from the ratchet, substantially as described.

21. In combination, the ratchet, the line space pawl, and a controlling piece consisting of a rock shaft having a bent end adapted to engage the lower edge of the pawl and a finger button whereby the controlling piece may be turned to co-operate with the pawl and the line space varied, substantially as described.

22. In combination, the platen, the pivoted arms carrying the paper feed roller, the second pair of arms arranged outside of the first pair and carrying the cross rod with sliding blocks and paper fingers, the rollers in said paper fingers, the springs *a* for applying tension to the outer pair of arms carrying the paper fingers, means for operating the inner pair of arms, said inner pair being arranged to lift the paper fingers from the platen simultaneously with the release of the feed roll by the movement of the second pair of arms, substantially as described.

23. In a typewriting machine, the combination of a carriage, a feed rack therefor, a holding dog and a feed or stepping dog normally in engagement with the rack and which is disengaged therefrom by the holding dog and which re-engages the rack independently of the movement of the holding dog.

24. In a typewriting machine, the combination of a carriage, a feed rack therefor, a holding dog, and a feed or stepping dog which moves independently of the holding dog in two directions and which is released from the rack by a movement of the holding dog and which re-engages the rack by a movement independent of the holding dog.

25. In a typewriting machine, the combination of a carriage, a feed rack therefor, a holding dog which is normally out of engagement with the rack, a feed or stepping dog which is normally in engagement with the rack and with which the holding dog contacts during the movement of the latter into engagement with the rack, and means which permit the stepping dog to free itself from contact with the holding dog and to re-engage the rack before the return movement of said holding dog.

26. In a typewriting machine, the combination of a carriage, a feed rack therefor, a holding dog which is normally out of engagement with the rack, a cam on said holding dog, a feed or stepping dog which is normally in engagement with the rack and with which the cam on the holding dog contacts during the movement of the latter into engagement with the rack, and means which permit the stepping dog to ride on said cam and to re-engage the rack before the return movement of said holding dog.

27. In a typewriting machine, the combination of a carriage, a feed rack therefor, a holding dog which is adapted to move at right angles to the rack and which is normally out of engagement therewith, a projection on said holding dog and a feed or stepping dog which is adapted to move at right angles to the rack and in the direction of the travel thereof and which is provided with a pin that is adapted to be engaged by the projection on the holding dog during the movement of the latter into engagement with the rack and to clear itself of said projection during the movement of the stepping dog in the direction of the travel of the rack, whereby said stepping dog may re-engage the rack before the return movement of the holding dog.

28. In a typewriting machine, the combination of a carriage, a line lock stop, and a margin stop carried by said carriage, a vertically disposed longitudinally movable rock shaft, line lock mechanism controlled by said shaft, a line lock stop and a margin stop carried by the shaft and with which the line lock and margin stops on the carriage co-operate to lock the machine out of action when the carriage reaches the end of a line or to arrest the carriage in its movement to the right, and key actuated means for moving said shaft longitudinally to release the line lock mechanism or to permit the margin stop on the carriage to move to the right of the margin stop on the shaft.

29. In a typewriting machine, the combination of a carriage, adjustable line lock and margin stops carried thereby at different heights, a vertically disposed longitudinally movable rock shaft, line lock mechanism controlled by said shaft, a pivoted line lock stop and a pivoted margin stop carried by the shaft at different heights and with which the adjustable line lock and margin stops on the carriage co-operate to lock the meahine out of action when the carriage reaches the end of a line or to arrest the carriage in its movement to the right, and key actuated means for moving said shaft longitudinally to release the line lock mechanism or to permit the margin stop on the carriage to move to the right of the margin stop on the shaft.

30. In a typewriting machine, the combination of a carriage, a margin stop carried thereby, a vertically disposed longitudinally movable rock shaft, line lock mechanism controlled by said shaft, a margin stop carried by the shaft and with which the margin stop on the carriage co-operates to arrest the carriage in its movement to the right, and key actuated means for moving said shaft longitudinally to permit the margin stop on the carriage to move to the right of the margin stop on the shaft.

31. In a typewriting machine, the combination of a carriage, escapement mechanism therefor, margin and line lock stops carried by said carriage, a vertically disposed longitudinally movable rock shaft, a line lock and a margin stop carried by said rock shaft and with which the associated stops on the carriage are adapted to co-operate, a line locking arm controlled by said rock shaft and adapted to be interposed in the path of a moving part of said escapement mechanism, and key actuated means for moving said shaft in a longitudinal direction to carry the stops thereon out of the path of the stops on the carriage and thus release the line lock or permit writing within the left hand margin on the paper.

32. In a typewriting machine, the combination of a platen, independently movable spring-pressed pivoted carriers, parallel feed rollers carried by said carriers, whereby pressure may be applied to maintain one roller or set of rollers in contact with the platen or the paper thereon without affecting the pressure applied to the other parallel roller or set of rollers, and hand actuated means for simultaneously moving said carriers and feed rollers away from the platen.

33. In a typewriting machine, the combination of a platen, parallel feed rollers, a plurality of independent spring pressed pivoted carriers, which carry said feed rollers and are independently movable to force the feed rollers into contact with the platen or the paper thereon, and hand actuated means for simultaneously moving the pivoted carriers on their pivots to simultaneously move the parallel feed rollers out of contact with the platen or the paper thereon.

34. In a typewriting machine, the combination of a platen, parallel feed rollers, a plurality of independent spring pressed carriers for and which are pivoted intermediate of the parallel feed rollers and are independently movable to force the feed rollers into contact with the platen or the paper thereon, and hand actuated means for simultaneously moving the pivoted carriers on their pivots to simultaneously move the parallel feed rollers out of contact with the platen or the paper thereon.

35. In a typewriting machine, the combination of a platen, a plurality of parallel feed rollers, a plurality of independently movable pivoted carriers for said parallel feed rollers, said carriers being pivoted intermediate of the feed rollers, a rod that extends longitudinally of the platen, hand actuated means for moving said rod, and means associated with said rod and operative to simultaneously move the parallel feed rollers away from the platen.

36. In a typewriting machine, the combination of a

platen, a plurality of parallel feed rollers, a plurality of independently movable pivoted carriers for said parallel feed rollers, a rock shaft with operative connections to said carriers, and hand actuated means for turning said rock shaft.

37. In a typewriting machine, the combination of a platen, a plurality of parallel feed rollers, a plurality of independently movable pivoted carriers for said parallel feed rollers, said carriers being pivoted intermediate of the parallel feed rollers, a rock shaft with operative connections to said carriers, and hand actuated means for turning said rock shaft to effect a movement of the parallel feed rollers away from the platen.

38. In a typewriting machine, the combination of a platen, a plurality of parallel feed rollers, a plurality of independently movable pivoted independently spring pressed carriers for said parallel feed rollers, a rod with operative connections to said carriers, and hand actuated means for moving said rod to effect a movement of the parallel feed rollers away from the platen.

39. In a typewriting machine, the combination of a platen, a plurality of parallel feed rollers, independent pivoted independently spring pressed carriers for said parallel feed rollers, a rock shaft, means for affording a simultaneous movement of the different carriers away from the platen when said rock shaft is turned, and hand actuated means for turning said rock shaft.

40. In a typewriting machine, the combination of parallel feed rollers, independent carriers for said feed rollers, said carriers being pivoted intermediate of the feed rollers, means for affording independent pressure on the different parallel feed rollers, a rock shaft located intermediate the parallel feed rollers, operative connections from the rock shaft to the feed rollers for simultaneously moving all of said feed rollers away from the platen when said rock shaft is turned, and a finger piece for turning said rock shaft.

41. In a typewriting machine, the combination of parallel feed rollers, at least one of said parallel feed rollers being divided to provide a series of independently rotatable rollers on the same shaft, independent carriers for said parallel feed rollers, said carriers being pivoted intermediate of the feed rollers, means for affording independent pressure on the different parallel feed rollers, and hand actuated means for simultaneously moving the feed rollers away from the platen.

42. In a typewriting machine, the combination of parallel feed rollers, at least one of said parallel feed rollers being divided to provide a series of independently rotatable rollers on the same shaft, independent carriers for said parallel feed rollers, said carriers being pivoted intermediate of the feed rollers, means for affording independent pressure on the different parallel feed rollers, a rock shaft located intermediate the parallel feed rollers, operative connections from the rock shaft to the feed rollers for simultaneously moving all of said feed rollers away from the platen when said rock shaft is turned, and a finger piece for turning said rock shaft.

43. In a front strike typewriting machine, the combination of main feed rollers at the rear of the platen where the paper is introduced, margin feed rollers at the front of the platen near each end thereof, and hand actuated means for simultaneously moving said main and margin feed rollers out of contact with the platen.

44. In a typewriting machine, the combination of a platen, pivoted spring-pressed carriers, parallel feed rollers carried by said carriers and extending substantially throughout the length of the platen, margin feed rollers carried by said carriers, and hand actuated means that coöperate with said carriers to simultaneously move the rollers away from the platen.

45. In a typewriting machine, the combination of a platen, pivoted spring-pressed carriers, parallel feed rollers that co-operate with said platen and which are carried by said carriers, hand operated means for moving said rollers away from the platen, and paper guiding fingers that are also simultaneously moved away from the platen.

46. In a typewriting machine, the combination of a platen, pivoted spring-pressed carriers, parallel feed rollers that co-operate with said platen and which are carried by said carriers, hand operated means for moving said carriers, paper guiding fingers that are moved away from the platen by said carriers, and margin feed rollers carried by said guide fingers.

47. In a typewriting machine, the combination of a platen, main paper feed rollers, independently supported margin feed rollers which coöperate with the paper at the margin thereof, and means for simultaneously moving all of said feed rollers away from the platen.

48. In a typewriting machine, the combination of a platen, parallel spring-pressed main paper feed rollers, independent spring-pressed margin feed rollers, and means for simultaneously moving the parallel main paper feed rollers and margin feed rollers away from the platen.

49. In a typewriting machine, the combination of a platen, pivoted spring-pressed carriers, parallel feed rollers that are carried by said carriers, spring paper guide fingers, margin feed rollers carried by said guide fingers, and hand operated means for simultaneously moving all of said feed rollers away from the platen.

50. In a typewriting machine, the combination of a platen, paper feed rollers, a rock shaft on which said feed rollers are supported, paper guide fingers that extend transversely of the platen and that conform to the curvature thereof, crank arms that extend from the rock shaft and which are adapted to throw the guide fingers out of contact with the platen, and a finger piece connected to said rock shaft and by which it may be rocked to simultaneously move the feed rollers and paper guide fingers away from the platen.

51. In a typewriting machine, the combination of a platen, paper fingers co-operating with the forward side of said platen, feed rollers co-operating with said platen, and a hand operated rock shaft and connections for simultaneously moving said feed rollers and said paper fingers away from said platen.

52. In a typewriting machine, the combination of a platen, paper fingers that are curved to conform substantially to the curvature of the platen, main feed rollers co-operating with said platen, and a single hand operated device for simultaneously moving said paper fingers and said feed rollers away from the platen.

53. In a typewriting machine, the combination of a platen, paper feed rollers, independent paper guide fingers that are curved to conform substantially to the curvature of the platen and that are pivoted beneath the platen independently of said feed rollers and extend up in front thereof transversely of the platen, and hand operated means for simultaneously moving said guide fingers and feed rollers away from the platen.

54. In a typewriting machine, the combination of a platen, paper feed rollers engaging the rear side of said platen, paper fingers extending transversely of said platen and engaging the forward side of the same, levers pivoted beneath the platen and operable to move said paper fingers away from said platen, and a hand operated rock shaft, and connections for simultaneously moving said feed rollers away from said platen and operating said levers to move said paper fingers away from said platen.

55. In a front strike typewriting machine, the combination of a platen, a platen frame, parts pivoted to said platen frame beneath the platen and extending toward the rear of the platen and having a paper feed roller mounted thereon, other parts pivoted to said platen frame beneath the platen and extending toward the front of the platen and having front paper feed devices thereon, and hand operated means for simultaneously moving said rear and front paper feed devices away from the platen.

56. In a typewriting machine, the combination with a carriage stop, of a second stop mounted on the frame of the machine and adapted to have three motions, one caused by the carriage at the end of a line, another motion out of the path of the carriage stop, and a third motion to permit said carriage stop to pass said second stop freely in one direction.

57. In a typewriting machine, the combination of two co-operating stops, one of said stops being mounted on the carriage and the other on the frame of the machine, and one of said stops being adapted to have three motions, one motion caused by the other stop at one end of a line, another motion out of the path of said other stop, and a third motion to permit said stops to pass one another freely in one direction.

58. In a typewriting machine, the combination of two co-operating carriage stops, one of which is mounted on a movable bar, said stop being adapted to move said bar when the two stops come into engagement at one end of a line by the movement of the carriage in one direction, and to yield freely without moving said bar when said stops come into engagement by the movement of the carriage in the opposite direction.

59. In a typewriter, the combination with a platen provided with a line-spacing ratchet wheel, of a reciprocating dog to engage therewith and having an inclined face, and an adjustable device that is adapted to be maintained in a relatively fixed position in the path of said inclined face on the dog and adapted to be turned to one position to lift the dog for single line spacing or to be turned to another position to allow it to engage with another tooth of the ratchet for double line spacing.

60. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel connected thereto, line spacing mechanism co-operating with said ratchet wheel, a bearing roller which normally bears upon the teeth of said ratchet wheel, means for moving said roller away from the teeth by a movement of a part of the line spacing mechanism, a locking pawl which is normally out of engagement but co-operates with said ratchet wheel, and means controlled by the movement of the line spacing mechanism for forcing the locking pawl by a positive pressure into engagement with the ratchet wheel.

61. In a typewriting machine, the combination with a carriage of an independently movable platen frame, and line spacing mechanism, said line spacing mechanism comprising a rock shaft, a finger piece for operating said rock shaft, an actuating arm connected to the shaft, an actuating lever carried by the platen frame, and a line feed dog operated by said actuating lever, whereby a single movement of the finger piece will actuate the line spacing mechanism and will restore the carriage to the right-hand side of the machine to begin a line of writing.

62. In a typewriting machine, the combination with a carriage and a platen carried thereby, of a ratchet wheel for said platen; a dog for operating said ratchet wheel; means situated behind said ratchet wheel for operating said dog; and a rock shaft extending fore and aft of the machine for operating said dog operating means.

63. In a typewriting machine, the combination of a platen, a carriage, an independently shiftable platen frame, a line spacing ratchet wheel connected with the platen, a line spacing pawl, an angular lever for actuating said pawl, and a rock shaft that extends fore and aft of the machine and is operatively connected to said angular lever to vibrate the lever through a turning of the rock shaft.

64. In a typewriting machine, the combination of a platen, a carriage, an independently shiftable platen frame, a line spacing ratchet wheel connected with the platen, a line spacing pawl which moves in substantially the same plane as the line spacing ratchet wheel, an angular lever for actuating said pawl, and a rock shaft that extends fore and aft of the machine and is mounted in bearings on a fixed portion of the machine, said rock shaft being operatively connected to said angular lever to vibrate the lever through a turning of the rock shaft, and a finger piece connected with said rock-shaft.

65. In a typewriting machine, the combination of a platen, a line spacing wheel connected therewith, a line spacing pawl that moves in the same plane as the line spacing wheel, an angular lever connected to said pawl, and a rock shaft that extends fore and aft of the machine and actuates said angular lever.

66. In a typewriting machine, the combination of a platen, a line spacing wheel connected therewith, a line spacing pawl that moves fore and aft of the machine in the same plane as the line spacing wheel, an angular lever to which said pawl is pivoted, and a rock shaft that extends fore and aft of the machine and actuates said angular lever.

67. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel connected therewith, a line spacing pawl that moves fore and aft of the machine in the same plane as the line spacing wheel, an angular lever pivoted to the carriage and to which said pawl is pivoted, a rock shaft that extends fore and aft of the machine, connections from said rock shaft to said angular lever, and a finger piece on the rock shaft and which effects a line spacing movement of the pawl by a swinging movement of the finger piece from left to right, whereby a single movement of the finger piece will effect a line spacing of the platen and a movement of the carriage to the right to begin a new line of writing.

68. In a typewriting machine, the combination of a platen, a line spacing wheel connected therewith, a line spacing pawl that moves in the same plane as the line spacing wheel, an angular lever connected to said pawl, a rock shaft that extends fore and aft of the machine and actuates said angular lever, and an adjustable device on which the pawl bears for determining the extent of line spacing movement to be transmitted to the platen.

69. In a typewriting machine, the combination of a platen, a line spacing wheel connected therewith, a line spacing pawl that moves for and aft of the machine in the same plane as the line spacing wheel, an angular lever to which said pawl is pivoted, a rock shaft that extends fore and aft of the machine and actuates said angular lever, and an adjustable device on which the pawl bears for determining the extent of line spacing movement to be transmitted to the platen.

70. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel connected therewith, a line spacing pawl that moves fore and aft of the machine in the same plane as the line spacing wheel, an angular lever pivoted to the carriage and to which said pawl is pivoted, a rock shaft that extends fore and aft of the machine, connections from said rock shaft to said angular lever, a finger piece on the rock shaft and which effects a line spacing movement of the pawl by a swinging movement of the finger piece from left to right, whereby a single movement of the finger piece will effect a line spacing of the platen and a movement of the carriage to the right to begin a new line of writing, and an adjustable device on which the pawl bears for determining the extent of line spacing movement to be transmitted to the platen.

71. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel connected therewith, a lever pivoted to the carriage, a pawl pivoted to said lever, the pivot of the pawl being parallel to the axis of the platen, an adjustable piece that supports the pawl and determines at what part of the movement of the pawl it may engage the line spacing wheel, so as to regulate the extent of line spacing movement to be given the platen, and a rock shaft that transmits movement to said lever.

72. In a typewriting machine, the combination of a carriage, a platen, a line spacing wheel connected therewith, a lever pivoted to the carriage, a substantially horizontally disposed pawl pivoted to said lever, the pivot of the pawl being horizontally disposed, an adjustable device that supports the pawl and determines at what part of the movement of the pawl it may engage the line spacing wheel, so as to regulate the extent of line spacing movement to be given the platen, a rock shaft that extends fore and aft of the machine and transmits movement to said lever, and a finger piece on said rock shaft, a single swinging movement of said finger piece from left to right transmitting a line spacing movement to the pawl and a return of the carriage to the right to begin a new line of writing.

73. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel connected therewith, a line spacing pawl that moves in the same plane as the wheel and co-operates therewith, a rock shaft that extends fore and aft of the machine, an angular extension on said shaft that constitutes a finger piece for turning the shaft, and intermediate mechanism between said pawl and shaft for causing the turning movement of the shaft to effect the movement of the pawl in the general direc-

tion of the axis of said shaft, said intermediate mechanism including a universal joint between the parts.

74. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel connected therewith, a line spacing pawl that co-operates with said ratchet wheel, a rock shaft, a finger piece for actuating said rock shaft, and an intermediate universal joint between the rock shaft and pawl for transmitting a rotary movement of the shaft to the pawl to effect a vibratory movement thereof.

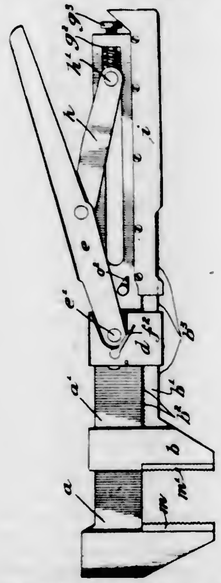
75. In a typewriting machine, the combination of a platen, a line spacing wheel connected therewith, a line spacing pawl, a rock shaft that extends fore and aft of the machine, a finger piece for turning said shaft, an angular lever that is actuated by said shaft and moves the pawl, and a universal joint between said angular lever and pawl.

76. In a typewriting machine, the combination of a platen, a line spacing wheel connected therewith, a line spacing pawl co-operating with said line spacing wheel, and hand actuated means for actuating said pawl, said hand actuated means comprising a universal joint.

77. In a typewriting machine, the combination of a carriage, a platen that shifts independently thereof, a line spacing wheel connected with the platen, a line spacing pawl co-operating with said wheel, a hand actuated rock shaft, and intermediate connections between the rock shaft and line spacing pawl, said connections comprising means for affording a shifting movement of the platen without affecting the line spacing mechanism.

78. In a typewriting machine, the combination of a carriage, a platen that shifts independently thereof, a line spacing wheel connected with the platen, a line spacing pawl co-operating with said wheel, a hand actuated rock shaft, and intermediate connections between the rock shaft and line spacing pawl, said connections comprising a universal joint and means for affording a shifting movement of the platen without affecting the line spacing mechanism.

858,357. WRENCH. GEORGE A. MCINTIRE, Port Chester, N. Y., assignor of one-half to Charles F. Dalton, Port Chester, N. Y. Filed Apr. 4, 1906. Serial No. 309,843.



Claim.—1. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism mounted on said shank and adapted to engage said sliding jaw, a lever handle pivotally connected with said clutch mechanism, and a toggle lever carried by said shank and pivotally connected to said lever handle.

2. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism mounted on said shank and adapted to engage said sliding jaw, a lever handle pivotally connected with said clutch mechanism, a toggle lever carried by said shank and pivotally connected to said lever handle, and means whereby said clutch mechanism will be set through the movement thereof in one direction and released through such movement in the opposite direction.

3. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism mounted on said shank and adapted to engage said sliding jaw, a lever handle pivotally connected with said clutch mechanism, a toggle lever carried by said shank and pivotally connected to said lever handle, means whereby said clutch mechanism will be set through the movement thereof in one direction and released through such movement in the opposite direction, and means whereby one set, said clutch mechanism may be locked to permit only a limited reciprocation of the sliding jaw therethrough.

4. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism mounted on said shank and adapted to engage said sliding jaw, a lever handle pivotally connected with said clutch mechanism, a toggle lever carried by said shank and pivotally connected to said lever handle, means whereby the said clutch mechanism will be set through the movement thereof in one direction and released through such movement in the opposite direction, and means whereby said sliding jaw is permitted to feed forwardly, but is held against a return movement.

5. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism, mounted on said shank and adapted to engage said sliding jaw, a lever handle pivotally connected with said clutch mechanism, a toggle lever carried by said shank and pivotally connected to said lever handle, means whereby said clutch mechanism will be set through the movement thereof in one direction and released through such movement in the opposite direction, a resilient support carried by said shank for said toggle lever and a rigid buffer whereby the lever handle will automatically adjust itself to the quantity of feeding movement of the sliding jaw.

6. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism mounted on said shank and adapted to engage said sliding jaw, a lever handle pivotally connected with said clutch mechanism, a toggle lever carried by said shank and pivotally connected to said lever handle, means whereby said clutch mechanism will be set through the movement thereof in one direction and released through such movement in the opposite direction, a resilient support carried by said shank for said toggle lever, and a rigid, and adjustable buffer whereby the lever handle will automatically adjust itself to the quantity of feeding movement of the sliding jaw, and the power applied therethrough may be regulated.

7. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism comprising a toothed bar carried by said sliding jaw, a strap inclosing said shank and said bar, a pawl carried by said strap, a lever handle pivotally connected with said strap, a toggle lever carried by said shank and pivotally connected to said lever handle, and means whereby said pawl will be caused or permitted to engage said rack when said strap is moved in one direction and to disengage said rack, when moved in the opposite direction.

8. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism comprising a toothed bar carried by said sliding jaw, a strap inclosing said shank and said bar, a pawl carried by said strap, a locking pin carried by said strap above said pawl having a recess therein, means whereby said pin may be turned so as to either permit said pawl to rise out of engagement with said rack bar, or to lock it in engagement therewith, a lever handle pivotally connected with said strap, a toggle lever carried by said shank and pivotally connected to said lever handle, means whereby said pawl will be caused or permitted to engage said rack when said strap is moved in one direction and to disengage said rack when moved in the opposite direction, a pawl carried by said shank, and means whereby said pawl may be thrown into mesh with said rack, or out of mesh therewith.

9. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism comprising a toothed bar carried by said sliding jaw, a strap inclosing said shank and said bar, a pawl carried by said strap, a locking pin carried by said strap above said pawl having a recess therein, means whereby said pin may be turned so as to either permit said pawl to rise out of engagement with said rack bar, or to lock it in engagement therewith, a lever handle pivotally conneced with said strap, a toggle lever carried by said shank and pivotally connected to said lever handle and means whereby said pawl will be caused or permitted to engage said rack when said strap is moved in one direction, and to disengage said rack when moved in the other direction.

10. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism comprising a toothed bar carried by said sliding jaw, a strap inclosing said shank and said bar, a pawl carried by said strap, a lever handle pivotally connected with said strap, a toggle lever carried by said shank and pivotally connected to said lever handle and means whereby said pawl will be caused or permitted to engage said rack when said strap is moved in one direction and to disengage said rack, when moved in the opposite direction, a pawl carried by said shank and means whereby said pawl may be thrown into or out of mesh with said rack.

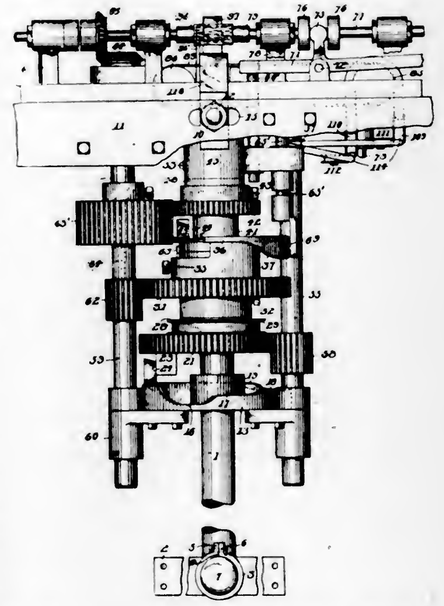
11. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism comprising a toothed bar carried by said sliding jaw, a strap inclosing said shank and said bar, a pawl carried by said strap, a lever handle pivotally connected with said strap, a toggle lever carried by said shank and pivotally connected to said lever handle, and means whereby said pawl will be caused or permitted to engage said rack when said strap is moved in one direction and to disengage said rack when moved in the opposite direction, a pawl carried by said shank and means whereby said pawl may be thrown into or out of engagement with said rack comprising an eccentric bearing for said last mentioned pawl, a handle whereby it may be turned, and a pin located beneath said bearing whereby with the shifting of the axis of said pawl, it will be caused to ride upon, or drop from said pin.

12. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism mounted on said shank and adapted to engage said sliding jaw, a lever handle pivotally connected with said clutch mechanism, a rigid buffer carried by said shank, a reciprocating block mounted in a way in said shank, a spring between said block and said buffer, a toggle lever the opposite ends of which are respectively pivotally connected to said lever handle and said block, and means whereby said clutch mechanism will be set through movement thereof in one direction, and released through movement in the opposite direction.

13. A wrench comprising a fixed jaw having a shank, a sliding jaw having a spring seat therein, mounted relative thereto, a spring in said seat bearing against said shank, a sliding clutch mechanism mounted on said shank and adapted to engage said sliding jaw, a lever handle pivotally connected with said clutch mechanism, a toggle lever carried by said shank and pivotally connected to said lever handle, and means whereby said clutch mechanism will be set through the movement thereof in one direction, and released through such movement in the opposite direction.

14. A wrench comprising a fixed jaw having a shank, a sliding jaw mounted relative thereto, a sliding clutch mechanism comprising a toothed bar carried by said sliding jaw, a strap inclosing said shank and said bar, a pawl carried by said strap, a lever handle pivotally connected with said strap, a toggle lever carried by said shank and pivotally connected to said lever handle and means whereby said pawl will be caused or permitted to engage said rack when said strap is moved in one direction and to disengage said rack when moved in the opposite direction, a pawl carried by said shank, means whereby said pawl may be thrown into or out of mesh with said rack, and a hollow handle casing inclosing the lower end of said rack bar and having a foot projecting over the end of said shank.

858,358. LATHE. FRANK J. BARNETT, Wilkinsburg, Pa. Filed Sept. 26, 1906. Serial No. 336,354.



Claim.—1. In a lathe, a cutting tool, a vertical stationary post-like standard, a chuck-table vertically movable thereon, a feeding device to present the blanks to the chucks, a chuck opening and closing device, and cams sleeved on said standard for raising and lowering said table to present the blanks in the chucks to the cutting tool, for controlling the opening and closing of the chucks, and for controlling the blank feeding device in combination with means for intermittently rotating the chucks.

2. In a lathe, a vertical fixed standard, a stationary cutting tool, a feeding device below said tool, a pair of chucks, a chuck-table movable vertically on said standard to carry the blanks from the feeding device to the cutting tool, a sleeve slidable on said standard, and a cam on said standard, said sleeve and cam co-operating for raising said table to carry the blanks to the cutting tool.

3. In a lathe, a vertical fixed standard, a stationary cutting tool, a feeding device below said tool, a pair of chucks, a chuck-table movable vertically on said standard to carry the blanks from the feeding device to the cutting tool, and means vertically reciprocable and sleeved on

said standard for raising said table to carry the blanks to the cutting tool.

4. In a lathe, a vertical fixed standard, a stationary cutting tool, a feeding device below said tool, a pair of chucks, a chuck-table movable vertically on said standard to carry the blanks from the feeding device to the cutting tool, a sleeve on said standard, a cam on said standard and co-operating with the sleeve for raising said table to carry the blanks to the cutting tool, and means also sleeved on said standard for raising and lowering said table during the cutting operation.

5. In a lathe, a vertical fixed standard, a stationary cutting tool, a feeding device below said tool, a pair of chucks, a chuck-table movable vertically on said standard to carry the blanks from the feeding device to the cutting tool, means sleeved and slidable vertically on said standard for raising said table to carry the blanks to the cutting tool, and means sleeved on and rotatable about said standard for opening and closing the chucks.

6. In a lathe, a fixed vertical standard, a chuck-carrying table movable vertically thereon, a cutter to which the chucks on said table present the blanks to be cut, a sleeve encircling said standard, and a cam on said sleeve adapted to raise and lower said table during the cutting operation to vary the depth of the cut.

7. In a lathe, a fixed vertical standard, a chuck-carrying table supported thereon, a cam rotatable around said standard, a feeding table, means on said table to place the blanks between the chucks, and operating connections between said cam and said placing means.

8. In a lathe, a fixed vertical standard, a pair of chucks supported thereby, a cam rotatable around said standard as a center, a lever for closing the chucks, a pair of reciprocable rods, one being in engagement with said lever to actuate the same and the other being operatively connected to said cam, and a rocking lever connecting said rods.

9. In a lathe, a fixed vertical standard, a stationary cutter, a blank feeder below the cutter, two sleeves rotatable and slidable on the standard, a pair of chucks, a table supported by the sleeves, slidable on the standard, and supporting the chucks, means for raising both sleeves to cause the chucks to raise a blank from the feeding device to the cutter, and means for independently raising and lowering the upper sleeve to vary the depth of the cut of the cutter in the blank.

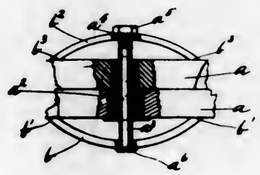
10. In a lathe, a fixed vertical standard, a stationary cutter, a blank feeder below the cutter, a pair of chucks, a table supporting the chucks and slidable on the standard, means on the standard for raising the chucks with a blank from the feeding device to the cutter, and other means on the standard for varying the depth of the cut in the blank.

11. In a lathe, a fixed vertical standard, a pair of chucks, a chuck-supporting table movable vertically on said standard, means for opening and closing the chucks, means rotatable on the standard for raising and lowering the chucks, a shaft for rotating the chucks, a driven gear thereon, a driving gear rotatable and slidable on said standard and meshing with the said driven gear, a portion of the teeth on the driving gear being omitted, and means on said two gears to advance the driven gear so that both gears may accurately mesh when the first tooth of the driving gear engages the driven gear.

12. In a lathe, a vertical standard, a chuck-carrying table vertically movable thereon, a sleeve slidable and rotatable on said standard for raising and lowering said table, a cam secured to said sleeve, a feeding device to present the blanks to the chucks, a lever to operate the feeding device, and a connection between said cam and said lever movable up and down in operative engagement with said cam as the latter rises and sinks with the sleeve.

13. In a lathe, a vertical standard, a chuck-carrying table vertically movable thereon, a sleeve slidable and rotatable on said standard for raising and lowering the table, a cam secured to said sleeve, a feeding device to present the blanks to the chucks, a lever to operate the feeding device, a connection between said cam and said lever movable up and down in operative engagement with said cam, and means permitting the lower end of the lever to move while the other end remains stationary.

858,350. SHEARS. ALBERT N. EASTMAN, Chicago, Ill., Filed Nov. 16, 1903. Renewed June 3, 1907. Serial No. 377,049.



Claim.—1. In combination with a pair of shears, the pivot screw of which has a circular hole or channel through its center, a pin mounted in said channel, having a head at one end and a thread cut upon its other end, a nut mounted upon said thread, two flat springs formed in a bow having an opening at the center of the bow, mounted upon the said pin at each side of the shears, the ends of the bows bearing against the sides of the shears, for the purpose set forth substantially as described.

2. In combination with a pair of shears, a hollow pivot screw, two flat springs formed in the shape of a bow, having a hole at the center of the bow, mounted upon a pin which passes through the hollow pivot screw, the ends of said bows bearing against the sides of the shears, means to adjust the tension of said bow springs, for the purpose set forth substantially as described.

3. In combination with a pair of shears, a hollow pivot screw, spring actuated means exerting an equal pressure upon both sides of the shears said means being mounted on a pin passing through said hollow pivot screw for the purpose set forth substantially as described.

4. In combination with a pair of shears, a hollow pivot screw, spring actuated means mounted upon a pin passing through said hollow pivot screw exerting an equal pressure upon both sides of the shears, means to adjust the tension of said springs, for the purpose set forth substantially as described.

5. In combination with a pair of shears, a hollow pivot screw, a pin passing through said hollow pivot screw spring actuated means mounted upon said pin exerting an equal pressure upon both sides of the shears, means to adjust the tension of said springs, means to make said adjustment permanent, for the purpose set forth substantially as described.

6. In combination with a pair of shears, a hollow pivot screw, two flat springs formed in the shape of a bow, having a hole at the center of the bow, mounted upon a pin which passes through the hollow pivot screw, the ends of said bows bearing against the sides of the shears, means to adjust the tension of said bow springs, means to lock said adjustment when made, for the purpose set forth substantially as described.

7. In combination with a pair of shears, the pivot screw of which has a circular hole or channel through its center, a pin mounted in said channel, having a head at one end and a thread cut upon its other end, a nut mounted upon said thread, a flat spring formed in a bow having an opening at the center of the bow, mounted upon the said pin of the shears, the ends of the bow bearing against the side of the shears, for the purpose set forth substantially as described.

8. In combination with a pair of shears, a hollow pivot screw, a flat spring formed in the shape of a bow, having a hole at the center of the bow, mounted upon a pin which passes through the hollow pivot screw, the ends of said bow bearing against the side of the shears, means to adjust the tension of said bow spring, for the purpose set forth substantially as described.

9. In combination with a pair of shears, a hollow pivot screw, a flat spring formed in the shape of a bow, having a hole at the center of the bow, mounted upon a pin which passes through the hollow pivot screw, the ends of said bow bearing against the side of the shears, means to adjust the tension of said bow spring, and means to lock said adjustment when made, for the purpose set forth substantially as described.

858,360. CLAMPING-RING FOR PIPE-COUPLINGS. JAMES CLARK, Bradford, Pa., assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Filed Dec. 3, 1906. Serial No. 346,144.



Claim.—1. A clamping ring for pipe couplings comprising a flat plate member disposed perpendicularly to the axis of the ring and provided with a central pipe aperture, and an annular flange member extending from the edge of said pipe aperture outwardly, and then substantially perpendicularly to said plate member, to form a packing recess, substantially as described.

2. A clamping ring for pipe couplings comprising a flat plate member, disposed perpendicularly to the axis of the clamping ring and provided with a central pipe aperture, and an annular flange member, extending from the edge of said pipe aperture outwardly and then substantially perpendicularly to the plate member, the outwardly extending portion of the flange member having portions in contact with the plate member, whereby said flange member and plate member reinforce each other, substantially as described.

3. A clamping ring for pipe couplings formed in one piece, of wrought metal, comprising a plate member disposed perpendicularly to the axis of the clamping ring and provided with a central pipe aperture, and a flange member, bent sharply back from the edge of said aperture, and extending outwardly therefrom, and then substantially perpendicularly to said plate member, substantially as described.

4. A clamping ring for pipe couplings formed in one piece, of wrought metal, comprising a plate member disposed perpendicularly to the axis of the clamping ring and provided with a central pipe aperture, and a flange member, bent sharply back from the edge of said aperture and having annular curved portions extending outwardly from said aperture, an annular portion extending from said curved portions substantially perpendicularly to said plate member, substantially as described.

5. A clamping ring for pipe couplings formed in one piece, of wrought metal, comprising a plate member disposed perpendicularly to the axis of the clamping ring and provided with a central pipe aperture, and a flange member, bent sharply back from the edge of said aperture and having annular portions extending outwardly from said aperture and annular portions disposed substantially perpendicularly to said plate member, said outwardly extending portions of the flange member being in direct contact with portions of the plate member surrounding said pipe aperture whereby said plate and flange members mutually reinforce each other, substantially as described.

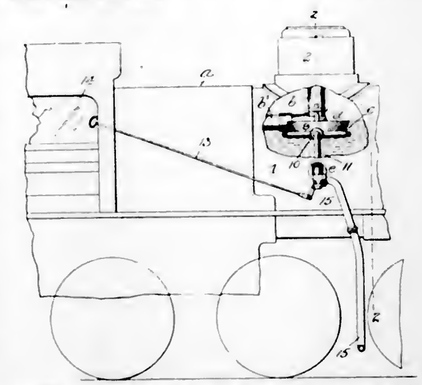
6. A clamping ring for pipe couplings, formed in one piece from wrought metal, and having a flat plate member disposed perpendicularly to the axis of the clamping ring and provided with a pipe aperture, and an annular flange member bent sharply back from the inner edge of said aperture, and being curved outwardly and then extending substantially perpendicularly to the plate member to form a packing recess, said curved portion of the flange member being in direct contact with the plate member adjacent to the inner edge thereof whereby said flange member and said plate member mutually reinforce each other, the inner edge of said flange member and said plate member at their union, being substantially parallel to the axis of the clamping ring, substantially as described.

7. A clamping ring for pipe couplings formed in one piece, from wrought metal, having a plate member disposed perpendicularly to the axis of the clamping ring and provided with a central pipe aperture and at its outer edge with an annular reinforcing flange, and an annular flange member bent sharply back from the inner edge of said plate member on the same side as the reinforcing flange, and having a curved portion lying for part of its length in contact with the plate member, and a portion extending substantially perpendicularly to the said plate member to form a packing recess, substantially as described.

8. A clamping ring for pipe couplings formed in one piece, from wrought metal, and having a flat annular plate member disposed perpendicularly to the axis of the clamping ring and an annular flange member extending sharply outwardly from the inner edge of the said plate member, and then substantially perpendicularly to the said plate member, the inner face of the said flange member inclined slightly outwardly toward its outer edge, substantially as described.

REISSUES.

12,663. SCUMMER AND BLOW-OFF FOR STEAM-BOILERS. JOSHUA B. BARNES, Springfield, Ill. Filed May 2, 1907. Serial No. 371,552. Original No. 842,164, dated Jan. 29, 1907.



Claim.—1. In a steam boiler the combination with the dry pipe of a scum collecting device having portions located on diametrically opposite sides of said dry pipe so as to collect the scum and floating impurities drawn thither by the steam in its flow toward the outlet, and a blow-off connected with said collector, substantially as described.

2. In combination with a steam boiler, an annular scum collecting device located in proximity to the steam outlet and a blow-off pipe communicating with said scum collecting device, substantially as described.

3. In combination with a steam boiler having a steam dome and dry pipe, a scum collecting trough concentrically arranged with relation to said dome, and a blow-off pipe for removing the scum and impurities collected by said trough, substantially as described.

4. In combination with a steam boiler having a steam dome and dry pipe constituting the steam outlet, a scum collecting trough encircling said dry pipe and means for removing the scum and impurities collected by said trough, substantially as described.

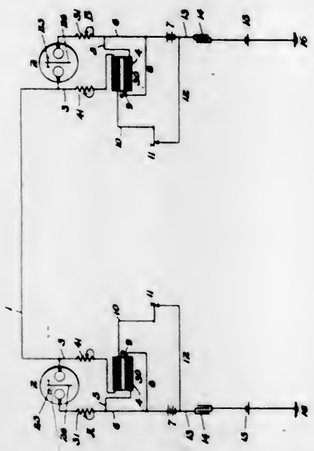
5. In a device of the character described, the combination with a steam boiler, of an endless pipe, arranged horizontally therein, a trough located above the said pipe adjacent to the steam outlet from the boiler, and having openings through the bottom into the said pipe, the said trough having its upper edge on a level or thereabout with the surface of the water in the boiler, a suitable blow-off valve fixed to the outside of the boiler and in communication with the said pipe, means for supporting the said pipe within the boiler, and for operating the said

valve, substantially as described and for the purpose set forth.

6. In a device of the character described, the combination with a steam boiler, of an endless pipe arranged horizontally circularwise within the boiler adjacent to the steam outlet therefrom, and having perforations through its wall along the top, a trough having its bottom formed by the perforated portion of the said pipe and having its upper edge on a level or thereabout with the surface of the water in the boiler, a suitable blow-off valve fixed to the outside of the boiler and in communication with the said pipe, means for supporting the said pipe within the boiler, and for operating the said valve, substantially as described and for the purpose set forth.

7. In a device of the character described, the combination with a steam boiler, of a pipe arranged horizontally therein, and having perforations through its wall along the top, a trough having its bottom formed by the perforated portion of the said pipe, and having its upper edge on a level or thereabout with the surface of the water in the boiler, and a suitable blow-off valve in communication with said pipe substantially as described.

12,664. DUPLEXING TELEGRAPH-LINE. ISIDOR KITSEE, Philadelphia, Pa. Filed May 25, 1907. Serial No. 375,749. Original No. 850,305, dated Apr. 16, 1907.



Claim.—1. In duplex telegraphy without artificial line, the combination with the line, of a receiving instrument having a single winding, and means for preventing response of the receiving instrument to current transmitted from the same station comprising an induction-coil, the secondary of said induction-coil connected to the winding of said receiving instrument, the primary including a source of energy and transmitting-key.

2. In duplex telegraphy, the combination with the line, of a receiving instrument having a single winding connected in series therewith and with a source of energy, an induction-coil having its secondary connected to said receiving instrument, and its primary including said source of energy and a key.

3. In duplex telegraphy, the combination with the line, of a receiving instrument having a single winding, an induction-coil having its secondary connected to said receiving instrument, its primary including a key and a source of current, and means for adjusting the mutual induction between said primary and secondary windings.

4. In duplex telegraphy without artificial line, the combination with the line, of a receiving instrument connected in series therewith, and in series with two oppositely-disposed sources of energy of different magnitudes, a shunt-circuit including one of said sources of energy, a key and the primary of an induction-coil, the secondary of said induction-coil connected to said receiving instrument.

5. In duplex telegraphy without artificial line, the combination with the line, of a receiving instrument connected in series therewith and with a condenser and with two sources of energy oppositely disposed and of different magnitudes, a shunt-circuit including one of said sources of energy, a key and the primary of an induction-coil, the secondary of said induction-coil being connected to said receiving instrument.

6. In duplex telegraphy without artificial line, the combination with the line, of a return-circuit, a receiving instrument, a source of energy, a condenser and another source of energy connected in series between said line and return circuit, said sources of energy being of different magnitudes, a circuit in shunt to one of said sources of energy and including a key and primary of an induction-coil, the secondary of said induction-coil being connected to said receiving instrument.

7. In duplex telegraphy, the combination with the line, of a receiving instrument, a transmitter for impressing upon the line successive impulses of approximately equal duration and opposite polarities, and means for rendering ineffective in the receiving instrument impulses transmitted from the same station.

8. In duplex telegraphy, the combination with the line, of a polarized receiving device, means for transmitting to line successive impulses of approximately equal duration and alternating in polarity, and an induction-coil associated with said transmitting means for rendering the receiving instrument unresponsive to impulses transmitted from the same station.

9. In duplex telegraphy, the combination with the line, of a receiving device having a single winding, means for transmitting to line impulses of different polarities, and an induction-coil associated with said transmitting means and having its secondary connected to the winding of said receiving instrument.

10. In duplex telegraphy, the combination with the line, of a polarized receiving device, means for transmitting to line impulses of different polarities, and an induction-coil associated with said transmitting means and having its secondary connected to the winding of said receiving device.

11. In duplex telegraphy, the combination with the line, of a receiving device, oppositely-disposed sources of energy, a shunt-circuit including only one of said sources of energy, and means controlled by said shunt-circuit for rendering said receiving instrument unresponsive to current transmitted from the same station.

12. In duplex telegraphy, the combination with the line, of a receiving instrument having a single winding, a plurality of sources of electrical energy, a circuit in shunt to one of said sources of energy, and means controlled by said circuit for delivering current to the winding of said receiving instrument to render it unresponsive to current transmitted from the same station.

13. In duplex telegraphy, the combination with the line, of a receiving instrument, a plurality of unequal sources of energy, a circuit in shunt to only one of said sources of energy and including the primary of an induction-coil, the secondary of said induction-coil being connected to said receiving instrument.

14. In duplex telegraphy, the combination with the line, of a receiving instrument, a plurality of sources of energy connected in series with the winding of said instrument, a circuit in shunt to only one of said sources, a key and the primary of an induction-coil included in said circuit, the secondary of said induction-coil connected to said receiving instrument.

15. In duplex telegraphy, the combination with the line, of a receiving instrument at each station, oppositely-disposed sources of energy at each station, a circuit in shunt to only one of said sources of energy, and means controlled by said circuit for rendering said receiving instrument unresponsive to current transmitted from the same station.

16. In duplex telegraphy, the combination with the line, of a receiving instrument, oppositely-disposed sources of energy, a condenser intervening between said sources, a circuit in shunt to one of said sources, and means controlled by said shunt-circuit for rendering said receiving instrument unresponsive to current transmitted from the same station.

17. In duplex telegraphy, the combination with the line, of a receiving instrument, oppositely-disposed sources of energy, a condenser intervening between said sources, a circuit in shunt to one of said sources and including the primary of an induction-coil, the secondary being connected to said receiving instrument.

18. In duplex telegraphy, the combination with the line, of a transmitter for impressing upon said line impulses of different polarities, a receiving instrument associated with said line, and means for impressing upon said receiving instrument impulses of opposite polarity to those transmitted to line.

19. In duplex telegraphy, the combination with the line, of a transmitter for impressing upon the line impulses of different polarities, a receiving instrument associated with said line, the winding of said receiving instrument being connected with the secondary of an induction-coil.

20. In duplex telegraphy, the combination with the line, of oppositely-disposed sources of energy, a circuit in shunt to one of said sources and including a key, a receiving instrument associated with said line, and means for rendering said receiving instrument unresponsive to current transmitted from the same station.

21. In duplex telegraphy, the combination with the line, of oppositely-disposed sources of energy, a condenser intervening between said sources, a circuit in shunt to one of said sources and including a key, a receiving instrument associated with said line, and means for rendering said receiving instrument unresponsive to current transmitted from the same station.

22. In duplex telegraphy, the combination with the line, means for transmitting to line impulses of different polarities, a receiving device having a single winding, and an induction-coil having its secondary connected with the winding of said receiving device, the primary and secondary windings of said induction-coil being adjustable with respect to each other.

23. In duplex telegraphy, the combination with the line, of a polarized receiving instrument, means for impressing upon the line impulses of different polarities, and an induction-coil having its secondary connected to said receiving instrument, the primary and secondary windings of said induction-coil being adjustable with respect to each other.

24. In duplex telegraphy, the combination with the line, of branched circuits, a branch circuit including a receiving instrument having a single winding, another branch including the secondary of an induction-coil, and means for transmitting to line impulses of different polarities and the primary of said induction-coil associated with said transmitting means.

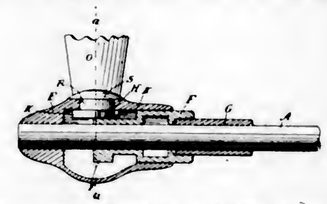
25. In duplex telegraphy, the combination with the line, of branched circuits, a branch including a receiving instrument having a single winding, another branch including the secondary of an induction-coil, a source of energy associated with said line, and the primary of said induction-coil included in a circuit with said source of energy.

26. In duplex telegraphy, the combination with the line, of a receiving instrument, and secondary of an induction-coil connected in parallel, a current-limiting device in the circuit of said secondary, a source of energy associated with said line, and a circuit including said source of energy and the primary of said induction-coil.

27. In duplex telegraphy, the combination with the line, of a receiving instrument having a single winding, the secondary of an induction-coil connected in parallel therewith, a source of energy associated with said line, and a circuit including said source of energy and the primary of said induction-coil, the primary and secondary windings of said induction-coil being adjustable with respect to each other.

28. In duplex telegraphy, the combination with the line, of means for impressing upon said line impulses of different polarities, a polarized receiving instrument associated with said line and having a single winding, the secondary of an induction-coil connected to said receiving instrument the primary associated with said impressing means.

12,665. PROPELLER-WHEEL. HARRY J. PERKINS, Grand Rapids, Mich., assignor of one-third to Frederick L. Perkins and one-third to Charles E. Perkins, Grand Rapids, Mich. Filed Apr. 25, 1907. Serial No. 370,330. Original No. 801,685, dated Oct. 10, 1905.



Claim.—1. The combination of a shaft, a hub fixed on the shaft, a blade rotative in the hub to a limited extent for reversal, and further rotative for detachment from the hub, means for rotating the blade slidable longitudinally on the shaft and detachably engaging the blade, a lever attached to said means to slidably adjust the same, and a removable stop to limit the movement of the lever and prevent detachment of the blades.

2. The combination of a shaft, a hub fixed on the shaft, a blade rotative in the hub and detachable therefrom, a lateral projection on the blade and having a radial recess, a sleeve slidable longitudinally of the shaft, a pin moved by the sleeve, and engaging the recess to adjust and hold the blade during a limited longitudinal movement of the sleeve, said pin also being detached from the recess by a further movement of the sleeve, a lever attached to the sleeve to adjust the same, and a removable stop to limit the movement of the lever and prevent detachment of the pin from the slot.

3. The combination of a shaft, a hub fixed on the shaft, blades rotative on a radial axis, means for detachably securing the blades to the hub, said means being engaged and disengaged by rotation of the blades about said axis, a projection on each blade and having a radial recess, a collar slidable on the shaft, pins in the collar and engaging the recesses, a sleeve slidable on the shaft and attached to the collar, a lever to adjust the sleeve, and a removable stop to limit the movement of the lever, and prevent detachment of the pins from the recesses.

4. In combination with a propeller-shaft, a hollow hub fixed to said shaft and having a plurality of irregular openings, a plurality of blades having shouldered shanks at the inner ends thereof, said shanks inserted in said openings in the hub, and the shoulders adapted to engage the latter by turning the said blades, movable means within said hub for engaging the shoulders for moving the blades, and means for co-operating with said first-mentioned means for actuating the same.

5. In combination with a propeller-shaft, a hub rigidly secured to the said shaft, said hub provided with a plurality of irregular-shaped openings, said hub having enlarged spaces with the openings, a plurality of propeller blades, each propeller-blade provided with a shank and an enlarged portion at the inner end of the shank which passes through the shell of the said hub and is locked therein by shifting the blade, a sliding collar within the hub, means for connecting the said collar to the shanks of the propeller-blades, and means for giving a sliding motion to the said collar for the purpose of shifting the said propeller-blades to the required position.

6. In combination with a propeller-shaft, a hollow hub secured to the said shaft and having a plurality of flat faces, said faces having a key-shaped opening, an enlarged opening below the said key-shaped opening, a plurality of propeller-blades, each blade provided with a shouldered portion, a shank having an enlarged portion extending into the said propeller-hub and locked therein by turning the blade, a sliding collar within the hub, means for connecting the collar to the shanks of the blades, and means for giving the longitudinal movement to the said collar upon the propeller-shaft for the purpose of shifting the blades.

7. In combination with a propeller-shaft, a hub secured

thereto and having a plurality of irregular openings, a plurality of blades, each provided with a shank adapted to fit into its corresponding opening in the hub and to be locked therein by turning the same, a sliding collar within the hub, means for connecting the collar to the shanks of the blades, a shifting device whereby the said collar is shifted to give the required pitch to the blades, and a removable stop to prevent the blades from being shifted in a position for removal from the said hub.

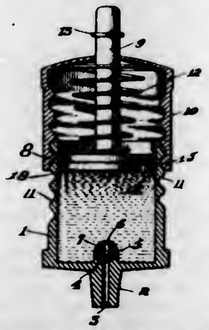
8. In combination with a propeller-shaft, a hub mounted upon the shaft and rigidly secured thereto, a sliding collar within the said hub, a sleeve connected to said sliding collar and operated by a lever, said hub having openings of irregular shape, propeller-blades having shanks adapted to fit the irregular-shaped openings and to be locked therein, means for detachably connecting the sliding collar to the said propeller-blades, and a removable stop for limiting the throw of the lever when shifting the propeller-blades.

9. In combination with a shaft of a propeller-wheel, a hub rigidly mounted thereon, a sliding collar partially within the said hub having a water-tight joint between the said hub and the said collar, said hub having a plurality of openings, each opening adapted to receive a shank of a propeller blade, a plurality of propeller-blades, each blade having a shank adapted to fit into the said opening and to be locked therein by turning, means for detachably connecting the said shanks to the said sliding collar, and means for shifting the said collar for the purpose of giving the required pitch to the propeller-blades, and also for shifting the collar so as to disconnect the same from the propeller-blades.

10. In combination with the shaft of a propeller-wheel a hub rigidly secured thereto, a plurality of openings, a plurality of propeller-blades having shanks adapted to fit the said openings so as to be locked therein when the said blades are shifted, a sliding collar within the said hub and having means for detachably connecting the said propeller-blades to the said sliding collar, a sleeve surrounding the said propeller-shaft and securely attached to the sliding collar, a lever and quadrant for operating the said shaft, and a removable stop, as N, for limiting the inward throw of the said lever.

11. In a propeller-wheel the combination: a propeller-shaft, a hub rigidly secured to the shaft, a plurality of blades detachably secured to the hub, a sleeve detachably connected to the blades, a lever for operating the said blades whereby the said blades may be tilted to a position for giving it a backward motion, to a neutral point and to a position for unlocking the said sleeve from the blades, and a removable stop for arresting the movement of the lever when it is not desirable to unlock or detach the sleeve from the blades.

12,666. GREASE-CUP. JAMES POWELL, Cincinnati, Ohio, assignor to The Wm. Powell Co., Cincinnati, Ohio, a Corporation of Ohio. Filed Jan. 12, 1907. Serial No. 352,066. Original No. 824,882, dated July 3, 1906.



Claim.—1. A lubricating device comprising a grease container, or cup having a feeding vent, an adjustable cap therefor, and an automatically operated feeding follower fitted within the cup and having an expansible packing and a fixed support adapted to project beyond the edge of said packing to prevent said edge from being turned back and reversed or mutilated in the act of inserting the follower within the cup, and serving also to guide the follower in the cup.

2. A lubricating device comprising a grease container, or cup having a feeding vent, an adjustable cap therefor, and an automatically operated feeding follower fitted within the cup and having an expansible packing provided with a depending lip, and a fixed support adapted to project beyond the edge of said lip to prevent it from being turned back and reversed or mutilated in the act of inserting the follower within the cup, and serving also to guide the follower in the cup.

3. A lubricating device comprising a grease container or cup having a feeding vent, an adjustable cap therefor and an automatically operated feeding follower fitted within the cup, and having an expansible packing and a lining plate therefor having a flange adapted to project beyond the edge of said packing to prevent said edge from being turned back and reversed or mutilated in the act of inserting the follower within the cup, said plate serving also to guide the follower in the cup.

4. A lubricating device comprising a grease container, or cup having a feeding vent, an adjustable cap therefor and an automatically operated feeding follower fitted within the cup and having an expansible packing provided with a depending lip and a lining plate for said packing having a flange adapted to project beyond the edge of said lip to prevent said edge from being turned back and reversed or mutilated in the act of inserting the follower within the cup, said plate serving also to guide the follower in the cup.

5. A lubricating device comprising a grease container or cup having a feeding vent, an adjustable cap therefor and an automatically operated feeding follower fitted within the cup and having an expansible packing provided with a depending lip and a lining plate also having a depending lip to support said packing lip, and having means adapted to project beyond the edge of said packing lip to prevent the said edge from being turned back and reversed or mutilated in the act of inserting the follower within the cup, said plate serving also to guide the follower in the cup.

6. A lubricating device comprising a grease container, or cup having a feeding vent, an adjustable cap therefor and an automatically operated feeding follower fitted within the cup and having an expansible packing provided with a depending lip and a lining plate for said packing having a flange adapted to project beyond the edge of said lip to prevent said edge from being turned back and reversed or mutilated in the act of inserting the follower within the cup, said lining plate having apertures to permit access of the grease to the inner side of and to cause expansion of said packing lip against the walls of the cup when under feeding pressure, said plate serving also to guide the follower in the cup.

7. A lubricating device comprising a grease container, or cup having a feeding vent, an adjustable cap therefor and an automatically operated feeding follower fitted within the cup and having an expansible packing provided with a depending lip and a lining plate also having a depending lip to support said packing lip, and having means adapted to project beyond the edge of said packing lip to prevent said edge from being turned back and reversed or mutilated in the act of inserting the follower within the cup, the lip of the lining plate having apertures to permit access of the grease to the inner side of and to cause expansion of said packing lip against the walls of the cup when under feeding pressure, said plate serving also to guide the follower in the cup.

8. A lining plate for the flexible packing of a feeding follower having means adapted to project beyond the edge of said flexible packing to facilitate insertion of the follower in its containing vessel.

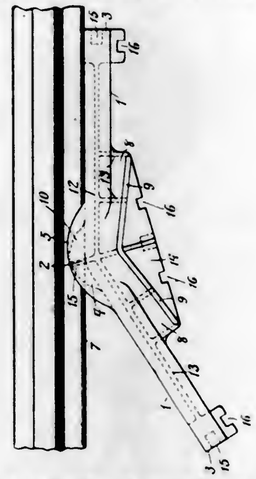
9. A lining plate for the flexible packing of a feeding follower having a depending lip to support said packing, and means adapted to project beyond the edge of said packing and facilitate insertion of said follower in its containing vessel.

10. A lining plate for the flexible packing of a feeding follower having means adapted to project beyond the edge of said flexible packing to facilitate insertion of the follower in its containing vessel, and having perforations near its periphery to permit the material being fed to expand the flexible packing against the walls of said vessel.

11. A lining plate for the flexible packing of a feeding follower having a depending lip to support the periphery of said flexible packing, and means adapted to project beyond the edge of said packing to facilitate insertion of the follower in its containing vessel, said lip being perforated to permit the material being fed to expand the flexible packing against the walls of said vessel.

12. In a lubricator of the kind described, the combination with the essential parts thereof which comprise a container and a follower fitted thereinto to expel the contents, of a cup-leather packing secured to said follower which has a yielding flange fitted to bear directly against the side of the container and a cup-shaped lining secured within the cup-leather and projecting over the free edge of its flange for the purpose described.

12,667. CAR-REPLACER. GEORGE H. SARGENT, Flushing, N. Y. Filed Apr. 2, 1907. Serial No. 366,046. Original No. 804,983, dated Nov. 21, 1905.



Claim.—1. A wrecking frog provided with two inclined extensions set at an angle with each other and connected by a rounded nose projecting over the rail flange and beyond the lines of the extensions, for throwing the wheel upon the rail.

2. A wrecking frog provided with two inclined extensions set at an angle with each other and connected by a nose projecting over the rail flange and beyond the lines of the extensions, for throwing the wheel upon the rail.

3. In a wrecking frog the combination with the two end inclines set at an angle with each other, and a rounded sloping nose projecting beyond the side lines of the inclines.

4. In a wrecking frog the combination with the two end inclines set at an angle with each other, and a sloping nose projecting beyond the side lines of the inclines.

5. A wrecking frog adapted to fit alongside the rail and independent of the rail head, comprising an inclined portion to engage the tread of the wheel and a laterally flared flange to engage the flange of the wheel when the tread is elevated to the height of the rail, substantially as described.

6. A wrecking frog adapted to fit alongside the rail and independent of the rail head, comprising an inclined portion to engage the tread of the wheel and a laterally extending flange to engage the flange of the wheel, and means to deliver the wheel so elevated onto the track.

7. In a wrecking frog the combination of the inclined surface 1, the supplementary incline 8, and the rounded outwardly projecting head 2 having the guard flange 9, substantially as described.

8. A wrecking frog comprised of two inclined portions and a rounded outwardly projecting bearing surface on top and a base plate, and vertical webs connecting the two, one of which directly supports the projection, whereby the metal is used only at the point where pressure is to be withstood, substantially as described.

9. A wrecking frog comprised of two inclined portions and an outwardly projecting bearing surface on top and a base plate, and vertical webs connecting the two, one of which directly supports the projection, whereby the metal is used only at the point where pressure is to be withstood, substantially as described.

10. A wrecking frog having an inclined bearing face, a rounded head, and an inwardly projecting nose thereon extending over the rail flange, and a cross web and base directly supporting said nose on the rail flange substantially as described.

11. A wrecking frog having an inclined bearing face, a throwing off nose, and an inwardly projecting nose thereon extending over the rail flange, and a cross web and base directly supporting said nose on the rail flange substantially as described.

12. A pair of wrecking frogs having means for engaging both wheels upon the tread portion, a guard to prevent the sliding backward off the frog, and means for throwing the wheels upon the rail, including a projecting nose extending over the flange of the rail, substantially as described.

13. A wrecking frog comprising a flat supporting base to engage the ties, vertical webs to support the bearing surfaces, an inclined bearing surface, and a rounded head at the center of the frog having a forwardly projecting point extending over the flange of the rail.

14. A car replacer comprising two inclined angularly disposed extensions and a connecting head of rounded contour having a round nose projecting over the rail flange.

15. A car replacer comprising two angularly disposed extensions and a connecting head of rounded contour having a nose projecting over the rail flange, and supported directly on the rail flange, to avoid sinking into the soft wooden ties when in action.

16. A car replacer having a wheel flange engaging surface, and a wheel tread engaging surface at a slant such that by the engagement therewith of the wheel tread, the wheel is gradually elevated, and the flange engaging surface being so disposed as to engage the flange only after the wheel has been appreciably raised by the tread surface.

17. A car replacer having a wheel tread engaging surface, and a wheel flange engaging surface, the tread engaging surface being disposed in advance of the flange engaging surface whereby the wheel is first engaged and lifted by the tread engaging portion of the replacer.

18. A car replacer having a wheel tread engaging surface, and a wheel flange engaging surface, the tread engaging surface extending outward beyond the flange engaging surface whereby the wheel is first engaged and lifted by the tread engaging portion of the replacer.

19. A car replacer having a wheel tread engaging surface, and a wheel flange engaging surface, the tread engaging surface being disposed below the flange engaging surface whereby the wheel is first engaged and lifted by the tread engaging portion of the replacer.

20. A car replacer having a wheel tread engaging surface, a wheel flange engaging surface, and a throw-off nose or surface sloping laterally toward the rail to deliver the wheel thereto, the tread and the flange engaging surface extending downward from the throw off surface at different angles or curves, such that the wheel is first engaged and lifted at the tread, and then engaged at the flange and by the latter lifted to the delivery surface.

21. A car replacer having means for engaging the tread of the wheel and lifting the wheel from the ground and means for subsequently engaging the flange of the wheel,

removing the wheel from its first engaging means and lifting it to the proper height for delivery to the rail.

22. A car replacer having means for engaging the tread of the wheel and lifting the wheel from the ground, and means for subsequently engaging the flange of the wheel, removing the wheel from its first engaging means and lifting it to the proper height for delivery to the rail, and means for sliding the wheel onto the rail.

23. A car replacer comprising an inclined extension by which the wheel is first engaged at its tread and lifted on to the frog and a sloping throw-off surface projecting beyond the side lines of the extension.

24. A car replacer having a wheel tread-engaging surface, a wheel flange engaging surface, and a sloping throw-off surface or nose, the flange engaging surface having a laterally flaring flange for guiding the wheel to proper position on the throw-off surface.

25. A car replacer having a wheel tread engaging surface and being cut away at either side of said surface, a throw-off surface or nose, and a wheel flange engaging surface, the flange engaging surface extending from the throw-off surface to a point on the replacer alongside of and intermediate the tread engaging surface and arranged to transfer the weight of the car from the tread to the flange engaging surface at said point on the replacer, and an outwardly flaring guide on the flange engaging surface for guiding the wheel flange to proper position on the throw-off nose regardless of the position originally assumed by the wheel on the tread engaging surface.

26. A car replacer having a bearing surface, a sloping throw-off surface or nose, a base and a brace extending longitudinally of said bearing surface and uniting the same to the base, whereby the whole forms an I rail structure.

27. A car replacer having a bearing surface, a sloping throw-off surface or nose, a base and a brace uniting the bearing surfaces to the base and extending in the line of advance of the wheel over the bearing surfaces, whereby lateral strains and turning moments on the brace are avoided.

28. A car replacer having a surface for advancing the wheel up the replacer, a throw-off surface or nose sloping transversely to the wheel lifting surface, a base, a brace uniting the lifting surface to the base and extending in the line of advance of the wheel up the replacer, a second brace uniting the throw-off surface to the base, and extending in the line of the advance of the wheel whereby turning moments on the supporting brace are avoided.

29. A car replacer provided with means consisting of a tapering wedge adapted to pass under the tread of the wheel when placed in position and to elevate the wheel as it advances on such tapering support in combination with means to receive and support the wheel by its flange when the wheel is advanced on the tapering tread and means to deliver the wheel to the track.

30. In a car replacer a wedge having a gradually inclined tread engaging surface and an extremity sufficiently narrow to be inserted under the wheel tread when the wheel is resting on its flange, in combination with means for engaging the wheel flange to lift the wheel from the wedge and deliver it to the rail.

31. In a car replacer, a wheel tread-engaging portion in the form of a wedge located entirely to one side of the rail and having an extremity sufficiently narrow to be inserted under the wheel tread when the wheel is resting on its flange, in combination with means for relieving the tread-engaging surface of the wheel and delivering the latter laterally to the rail.

32. A car replacer provided with means consisting of a tapering wedge adapted to pass under the tread of the wheel when placed in position and to elevate the wheel as it advances on such tapering support in combination with a laterally sloping surface or throw-off nose for delivering the wheel to the rail, and a flange engaging surface extending from the throw off nose alongside of the tapering wedge and so inclined as to lift the wheel from the wedge and onto the throw-off nose.

33. A car replacer comprising a casting having a double wedge form, each end of the wedge having an incline with a surface to engage the flange of the wheel but with a short portion of the surface being raised to engage the tread only of the wheel, and the apex of the wedge being a continuous slanting surface to allow of freely sliding the flange on to the rail after it has been elevated, substantially as described.

DESIGNS.

38,631. MEDAL. SAMUEL FREUND-BALLA, Los Angeles, Cal. Filed May 28, 1907. Serial No. 376,214. Term of patent 14 years.





Claim.—The ornamental design for a medal, as shown.

38,632. BADGE OR SIMILAR ARTICLE. ALFRED SCHICKERLING, New York, N. Y. Filed May 2, 1907. Serial No. 371,548. Term of patent 3½ years.



Claim.—The ornamental design for a badge or similar article, as shown.

38,633. LOCKET OR A SIMILAR ARTICLE. FRANK W. ARNOLD, Providence, R. I., assignor to Wightman and Hough Company, a Corporation of Rhode Island. Filed May 11, 1907. Serial No. 373,182. Term of patent 3½ years.



Claim.—The ornamental design for a locket or a similar article as shown.

38,634. COMB. JOSEPH E. DE WYNGAERT, Newark, N. J., assignor to Scofield & De Wyngaert, Newark, N. J., a Firm. Filed May 25, 1907. Serial No. 375,748. Term of patent 3½ years.





Claim.—The new and ornamental design for a comb, as shown.

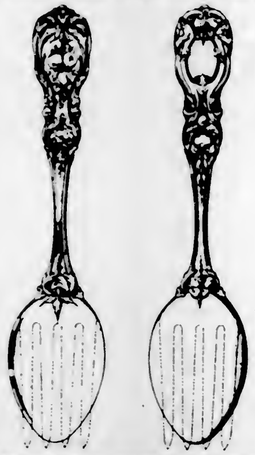
38,635. HANDLE OF SPOONS OR SIMILAR ARTICLES. SAMUEL J. LARGE, Bristol, Conn., assignor to American Silver Company, Bristol, Conn., a Corporation. Filed Mar. 6, 1907. Serial No. 360,988. Term of patent 7 years.





Claim.—The ornamental design for the handle of a spoon or similar article, as shown.

38,636. SPOON OR FORK. ERNEST MEYERS, Taunton, Mass., assignor to Reed & Barton Corporation, a Corporation of Massachusetts. Filed May 23, 1907. Serial No. 375,363. Term of patent 14 years.



Claim.—The ornamental design for a spoon or fork as shown.

38,637. CANDELABRUM. HENRY B. BEACH and HENRY J. KAYSER, Meriden, Conn., assignors to International Silver Co., Meriden, Conn., a Corporation of Connecticut. Filed May 7, 1907. Serial No. 372,443. Term of patent 7 years.



Fig 2

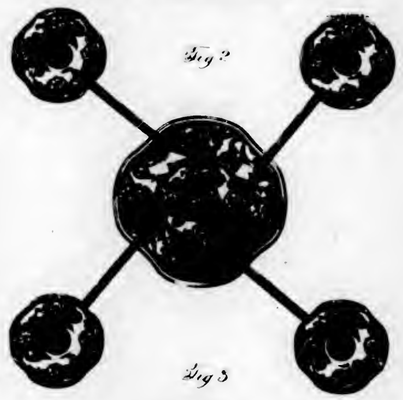
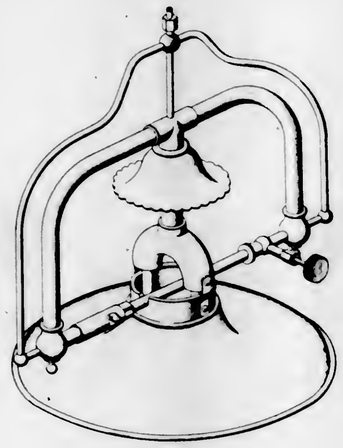


Fig 3



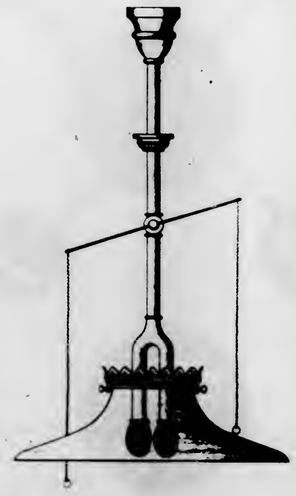
Claim.—The ornamental design for candelabrum, as shown.

38,638. LAMP. JOSEPH J. WEYER, Chicago, Ill. Filed May 27, 1907. Serial No. 376,028. Term of patent 7 years.



Claim.—The ornamental design for a lamp, as shown.

38,639. LAMP. JOSEPH J. WEYER, Chicago, Ill. Filed May 27, 1907. Serial No. 376,029. Term of patent 7 years.



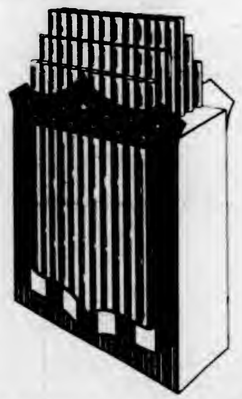
Claim.—The ornamental design for a lamp, as shown.

38,640. CHAIR. JAMES O. WALKER, Burlington, Vt., assignor to Porter Screen Manufacturing Company, Burlington, Vt. Filed May 31, 1907. Serial No. 376,741. Term of patent 7 years.



Claim.—The ornamental design for a chair, as shown.

38,641. DISPLAY-SIGN. SAMUEL J. RECKENDORFER, New York, N. Y. Filed Apr. 8, 1907. Serial No. 367,131. Term of patent 7 years.



Claim.—The ornamental design for a display sign as shown.

38,642. SET OF SILK-WOVEN INITIALS. ADOLF CARL KLUGE, New York, N. Y. Filed May 22, 1907. Serial No. 375,178. Term of patent 14 years.



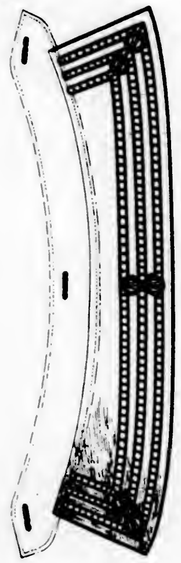
Claim.—The ornamental design for a set of "silk woven initials," as shown.

38,643. BOOK OR BOOKLET COVER. RAYMOND H. GARMAN, Chicago, Ill. Filed May 24, 1907. Serial No. 375,554. Term of patent 3½ years.



Claim.—The ornamental design for a book or booklet cover, as shown.

38,644. COLLAR. HERBERT EDWARD TREVOR, New York, N. Y. Filed May 20, 1907. Serial No. 374,796. Term of patent 14 years.



Claim.—The ornamental design for a collar, as shown.

TRADE-MARKS

PUBLISHED JUNE 25, 1907.

The following trade-marks have been adjudged entitled to registration under the act of February 20, 1905, and are published in compliance with section 6 of said act. Said section provides:

"Any person who believes he would be damaged by the registration of a mark may oppose the same by filing notice of opposition, stating the grounds therefor, in the Patent Office within thirty days after the publication of the mark sought to be registered, which said notice of opposition shall be verified by the person filing the same before one of the officers mentioned in section two of this act. If no notice of opposition is filed within said time the Commissioner shall issue a certificate of registration therefor, as hereinafter provided for."

Marks which are stated to have been "Used ten years" are registrable under the last proviso of section 5 of said act, which is as follows:

"And provided further, That nothing herein shall prevent the registration of any mark used by the applicant or his predecessors, or by those from whom title to the mark is derived, in commerce with foreign nations or among the several States, or with Indian tribes, which was in actual and exclusive use as a trade-mark of the applicant or his predecessors from whom he derived title for ten years next preceding the passage of this act."

Section 14 of said act provides for the following fee:

"On filing notice of opposition to the registration of a trade-mark, ten dollars."

Ser. No. 1,426. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) M. EWING FOX & CO., New York, N. Y. Filed Apr. 14, 1905. Used ten years.

MURALITE

Particular description of goods.—A Decorative Wall-Finish or Calcimine.

Ser. No. 2,338. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) PHILIP FREILER, Elgin, Ill. Filed Apr. 20, 1905.

GOLDEN ROD

Particular description of goods.—Whisky.

Ser. No. 3,824. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) GRAND UNION TEA CO., Brooklyn, N. Y. Filed May 1, 1905.

GRAND UNION

Particular description of goods.—Coffees and Teas.

Ser. No. 4,448. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) AMERICAN STOVE COMPANY, St. Louis, Mo. Filed May 6, 1905.

QUICK MEAL

Particular description of goods.—Coal and Wood Cooking Stoves and Ranges and Gas, Gasolene, and Oil Stoves and Ranges.

Ser. No. 4,449. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) AMERICAN STOVE COMPANY, St. Louis, Mo. Filed May 6, 1905.



QUICK MEAL

Particular description of goods.—Stoves and Their Parts.

Ser. No. 5,166. (CLASS 38. RUBBER AND MINOR PLASTICS NOT OTHERWISE CLASSIFIED.) AMERICAN HARD RUBBER CO., New York, N. Y. Filed May 11, 1905.



Particular description of goods.—Sheet-Rubber.

Ser. No. 5,404. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) AMERICAN BAR-LOCK COMPANY, Philadelphia, Pa. Filed May 13, 1905.

Bar-Lock

Particular description of goods.—Illuminating-Prisms, Vault-Lights, Sidewalk-Lights, Door-Lights, and Sky-lights.

Ser. No. 5,821. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) AITKEN, SON & CO., New York, N. Y. Filed May 16, 1905.



Particular description of goods.—Ladies' Hats and Hat-Frames.

Ser. No. 6,152. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) TIFFANY & CO., New York, N. Y. Filed May 20, 1905. Used ten years.

TIFFANY & CO.

Particular description of goods.—Paper for Writing and Printing Purposes, Envelops, Visiting-Cards, Wedding-Cards, Menu-Cards, Paper Card-Boxes Composed in Whole or in Part of Paper, Blank-Paper Folders, and Paper Folders Having Printed Matter Thereon, Excluding Advertisements, Envelop and Writing-Paper Bands and Wrappers for Envelops and Writing-Paper.

Ser. No. 7,512. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE WESTERN STAR MILL Co., Salina, Kans. Filed June 5, 1905.



Particular description of goods.—Wheat, Rye, and Buckwheat Flour.

Ser. No. 7,875. (CLASS 30. CROCKERY, EARTHENWARE, AND PORCELAIN.) CRANE & BACKUS, Newark, N. J. Filed June 10, 1905.

ELJER

Particular description of goods.—Earthenware Lavatories, Bath-Tubs, Water-Closets, Urinals, and Sinks.

Ser. No. 8,438. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) KOPS BROS., New York, N. Y. Filed June 17, 1905.

RELIEF

Particular description of goods.—Corsets.

Ser. No. 9,893. (CLASS 59. HOROLOGICAL INSTRUMENTS.) GEORGES FAVRE-JACOT & COMPANY, Le Locle, Switzerland. Filed July 7, 1905.

"ZENITH"

Particular description of goods.—Watches and Parts of Watches.

Ser. No. 11,197. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) VAN VLEET-MANSFIELD DRUG CO., Memphis, Tenn. Filed Aug. 2, 1905.

PLANTATION



Particular description of goods.—A Remedy for the Cure and Alleviation of Colic and Bots.

Ser. No. 11,997. (CLASS 37. PAPER AND PAPER MANUFACTURES NOT OTHERWISE CLASSIFIED.) JAMES R. CROMPTON & BROTHERS LIMITED, Elton Paper Mills, near Bury, Lancashire, England. Filed Aug. 25, 1905.



Particular description of goods.—Tissue-Paper.

Ser. No. 12,407. (CLASS 23. HAND-TOOLS NOT OTHERWISE CLASSIFIED.) COES WRENCH CO., Worcester, Mass. Filed Sept. 9, 1905. Used ten years.

COES

Particular description of goods.—Wrenches.

Ser. No. 14,548. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) AITKEN, SON & CO., New York, N. Y. Filed Nov. 13, 1905.



Particular description of goods.—Ladies' and Children's Cloaks, Coats, Dresses, Skirts, and Waists.

Ser. No. 14,989. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE GLIDDEN VARNISH COMPANY, Cleveland, Ohio. Filed Nov. 25, 1905. Used ten years.

TURPINE SPIRITS

Particular description of goods.—Liquid Ingredient or Thinner for Paints, Oils, and Varnishes, or a Substitute for Turpentine.

Ser. No. 15,145. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ANTI-SEPTO MEDICINE COMPANY, Chicago, Ill. Filed Dec. 2, 1905.

Anti-Septo

Particular description of goods.—Remedies for Catarrh, Colds, Dyspepsia, Fever, Headaches, Kidney and Liver Disease, Coughs, Piles, Rheumatism, and Worms, and also for Tonics and Anti-fats.

Ser. No. 15,157. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) MARSHALL FIELD & COMPANY, Chicago, Ill. Filed Dec. 4, 1905.



Particular description of goods.—Linen, Cotton, and Linen and Cotton Piece Goods.

Ser. No. 16,228. (CLASS 8. DETERGENTS.) A. & F. PEARS LIMD., London, England. Filed Jan. 17, 1906.



A & F Pears

Particular description of goods.—Perfumed Soap.

Ser. No. 16,776. (CLASS 58. GAMES AND TOYS, AND SPORTING GOODS NOT OTHERWISE CLASSIFIED.) AMERICAN HARD RUBBER CO., New York, N. Y. Filed Feb. 6, 1906.

AHR

Particular description of goods.—Hard-Rubber Bowling-Balls.

Ser. No. 18,489. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) THE DIAMOND RUBBER CO., Akron, Ohio. Filed Apr. 4, 1906.



Particular description of goods.—Rubber Hose, Belting, and Packing.

Ser. No. 19,274. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE ENGINEER COMPANY, New York, N. Y. Filed May 3, 1906.

BALANCED

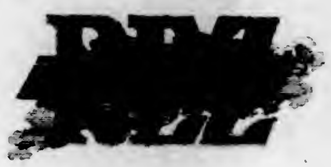
Particular description of goods.—Stoves and Furnaces.

Ser. No. 19,830. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE RAILWAY LOCK-NUT COMPANY, Chicago, Ill. Filed May 24, 1906.



Particular description of goods.—Lock-Nuts.

Ser. No. 20,000. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) SHAROOD SHOE CORP., St. Paul, Minn. Filed June 2, 1906. Used ten years.



Particular description of goods.—Leather Shoes.

Ser. No. 20,256. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) THE DURST MILLING COMPANY, Dayton, Ohio. Filed June 14, 1906.



Particular description of goods.—Wheat-Flour.

Ser. No. 20,681. (CLASS 19. BOATS AND ROAD-VEHICLES.) H. H. FRANKLIN MFG. CO., Syracuse, N. Y. Filed June 30, 1906.



Particular description of goods.—Automobiles and Parts Thereof other Than Rubber Tires.

Ser. No. 20,823. (CLASS 52. PACKING-HOUSE PRODUCTS.) NEW ENGLAND SUPPLY CO., Providence, R. I., and Philadelphia, Pa. Filed July 10, 1906.



Particular description of goods.—Dried Beef and Bacon.

Ser. No. 20,945. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) H. H. HAY'S SONS, Portland, Me. Filed July 16, 1906.



Particular description of goods.—A Dressing for Hard-Wood Floors.

Ser. No. 21,530. (CLASS 19. BOATS AND ROAD-VEHICLES.) GEORGE WHITE BUGGY COMPANY, Rock Island, Ill. Filed Aug. 13, 1906.



Particular description of goods.—Buckboards, Driving-Wagons, Speeding-Wagons, Handy Wagons, Business-Wagons, Buggies, and Surreys.

Ser. No. 21,601. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) JOHN LUCAS & CO., Philadelphia, Pa. Filed Aug. 16, 1906. Used ten years.



Particular description of goods.—Paints, Stains, Primers, Fillers, Dry Colors, Enamels, Fresco Colors, White Zinc, White Lead, Varnishes, and Japans.

Ser. No. 22,480. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) CARLO ERBA, Milan, Italy. Filed Oct. 4, 1906.



Particular description of goods.—Extracts of Fruits.

Ser. No. 22,540. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) EDWARD L. MEGILL, New York, N. Y. Filed Oct. 5, 1906.



Particular description of goods.—Gage-Pins, Feed-Guides, Registry Apparatus, and Gripper-Fingers Used in Printing-Presses.

Ser. No. 23,111. (CLASS 59. HOROLOGICAL INSTRUMENTS.) WEBSTER C. BALL, Cleveland, Ohio. Filed Nov. 5, 1906. Used ten years.

STANDARD

Particular description of goods.—Clocks and Watch-Movements.

Ser. No. 23,437. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) RYELAND DISTILLING COMPANY, Louisville, Ky. Filed Nov. 17, 1906.



Particular description of goods.—Whisky.

Ser. No. 23,449. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) GRACE BENNETT FEAHNEY, New Orleans, La. Filed Nov. 19, 1906.



Particular description of goods.—Coffee.

Ser. No. 23,562. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) FRED. L. SHEPARD, New York, N. Y. Filed Nov. 23, 1906.

OHB

Particular description of goods.—Bread.

Ser. No. 23,712. (CLASS 71. TOBACCO PRODUCTS.) F. RODRIGUEZ Y CA., New York, N. Y. Filed Dec. 1, 1906.



Particular description of goods.—Cigars.

Ser. No. 23,941. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) JOS. PFEIFER CLOTHING CO., Little Rock, Ark. Filed Dec. 11, 1906.



Particular description of goods.—Men's and Boys' Hats and Caps, Except Rubber and Knit Hats and Caps.

Ser. No. 24,139. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) R. DIETRICH & CIE., Zürich, Switzerland. Filed Dec. 19, 1906.

TOROSAN

Particular description of goods.—A Remedy for the Cure of Tuberculosis.

Ser. No. 24,216. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) STARKWEATHER & WILLIAMS CO., Providence, R. I. Filed Dec. 22, 1906.



Particular description of goods.—Mixed Paint.

Ser. No. 24,526. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, New York, N. Y. Filed Jan. 9, 1907.



Particular description of goods.—Rubber and Rubber Gums That Have Been Washed or Otherwise Treated to Eliminate Dirt, Refuse, or other Extraneous Matters.

Ser. No. 24,527. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, New York, N. Y. Filed Jan.

Ser. No. 24,530. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, New York, N. Y. Filed Jan.

Ser. No. 25,045. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND

Ser. No. 25,710. (CLASS 68. PUBLICATIONS.) ARTHUR J. SAALFIELD, Akron, Ohio. Filed Mar. 2, 1907.

Ser. No. 24,527. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, New York, N. Y. Filed Jan. 9, 1907.



Particular description of goods.—Rubber and Rubber Gums That Have Been Washed or Otherwise Treated to Eliminate Dirt, Refuse, or other Extraneous Matters.

Ser. No. 24,528. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, New York, N. Y. Filed Jan. 9, 1907.



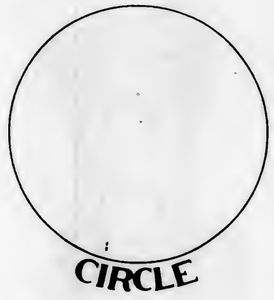
Particular description of goods.—Rubber and Rubber Gums That Have Been Washed or Otherwise Treated to Eliminate Dirt, Refuse, or other Extraneous Matters.

Ser. No. 24,529. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, New York, N. Y. Filed Jan. 9, 1907.

C M R Co

Particular description of goods.—Rubber and Rubber Gums That Have Been Washed or Otherwise Treated to Eliminate Dirt, Refuse, or other Extraneous Matters.

Ser. No. 24,530. (CLASS 3. VEGETABLE.) CONTINENTAL RUBBER COMPANY, New York, N. Y. Filed Jan. 9, 1907.



Particular description of goods.—Rubber and Rubber Gums That Have Been Washed or Otherwise Treated to Eliminate Dirt, Refuse, or other Extraneous Matters.

Ser. No. 24,535. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ANDOLIN GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG, Berlin, Germany. Filed Jan. 9, 1907.

ANDOLIN

Particular description of goods.—Anesthetics in Fluid, Solid, or Plastic Form.

Ser. No. 24,950. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) FRANK MOSSBERG COMPANY, Attleboro, Mass. Filed Jan. 28, 1907.



Particular description of goods.—Gongs and Bells, With the Exception of Electric Bells.

Ser. No. 25,032. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) HERBERT P. RICHARDSON, Spokane, Wash. Filed Jan. 31, 1907.



Particular description of goods.—A Consumption Cure, Cough-Syrup, Cure for Whooping-Cough, Croup, Hoarseness, Pneumonia, Bronchitis, Cold on Lungs and Chest, Hacking Cough, Cigarette-Cough, and Tobacco and Whisky Cough.

Ser. No. 25,045. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ORRIN C. BOWERS, Oklahoma City, Okla. Filed Feb. 1, 1907.

KAMPHENE

Particular description of goods.—A Medicinal Compound for Chapped Hands, Rough Skin, Cracked Lips, Cuts, Sores, and Burns.

Ser. No. 25,065. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) NOYES-NORMAN SHOE CO., St. Joseph, Mo. Filed Feb. 2, 1907.

SHARK SKIN



Particular description of goods.—Leather Shoes.

Ser. No. 25,162. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE GENERAL FIREPROOFING CO., Youngstown, Ohio. Filed Feb. 6, 1907.

Trussit

Particular description of goods.— Expanded-Metal Structures.

Ser. No. 25,491. (CLASS 8. DETERGENTS.) ANNA FREDERIKA THOMPSON, London, England. Feb. 20, 1907.

TAROMA

Particular description of goods.—Perfumed Soap.

Ser. No. 25,571. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) DEAMOR R. DRAKE, Lagrange, Ind. Filed Feb. 16, 1907.



R DRAKE

Particular description of goods.—Remedies for Female Diseases and Weaknesses, General Debility, Blood, Kidney, and Liver Trouble, Croup, Colds, Coughs, Burns, Cuts, Sores, Internal Sprains, Lung Diseases, External Injuries, Pains, Flux, Cholera Morbus, Diarrhea, Cramps, Scalp and Hair Diseases, Rheumatism, Sprains, and Galls.

Ser. No. 25,710. (CLASS 68. PUBLICATIONS.) ARTHUR J. SAALFIELD, Akron, Ohio. Filed Mar. 2, 1907.



Particular description of goods.—Printed and Printed and Illustrated Books Containing Fanciful Stories of the Life and Adventures of an Imaginary Goat.

Ser. No. 25,770. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) E. & H. MANUFACTURING COMPANY, Jamaica, N. Y. Filed Mar. 5, 1907.



The letters in the words "All in One" and the diamond-shaped figure being printed in red.

Particular description of goods.—A Solution for Removing Ink.

Ser. No. 25,842. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) AUG. ELHARDT SÖHNE, Dietmannsried, Germany. Filed Mar. 8, 1907.

Elhardtumon

Particular description of goods.—A Color-Setting Compound Used in Dyeing.

Ser. No. 26,075. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) THE WM. CRAMP & SONS SHIP & ENGINE BUILDING CO., Philadelphia, Pa. Filed Mar. 19, 1907. Used ten years.

CRAMP

Particular description of goods.—Metals, Comprising Brass, Babbitt Metal, Bearing-Bronze, Phosphor-Bronze, Copper, Type-Metal, Copper and Tin Composition, German Silver, Gun-Metal, Copper and Zinc Composition, Aluminum Bronze, Manganese Bronze, Mangnesium, Aluminum Alloy, Special Hydraulic Metal, Ordnance-Bronze, Nickel Composition, Manganese-Bronze Rolled Rods, Manganese-Bronze Rolled Plates or Sheets, and Manganese-Bronze Wire.

Ser. No. 26,080. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) EDWARD V. ROGERS, Covington, Ky. Filed Mar. 19, 1907.



Particular description of goods.—Kidney, Blood, and Bowel Remedy.

Ser. No. 26,134. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIED.) MICKELSON CHEMICAL CO., Minot, N. D. Filed Mar. 21, 1907.



Particular description of goods.—A Poison for Gophers and Prairie-Dogs.

Ser. No. 26,135. (CLASS 35. BELTING, HOSE, AND MACHINERY, PACKING.) NEW YORK LEATHER BELTING CO., New York, N. Y. Filed Mar. 21, 1907.

TITANIC

Particular description of goods.—Leather Belting.

Ser. No. 26,260. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) FRANK JOSEPH GOLDSOLL, New York, N. Y. Filed Mar. 26, 1907.

Tecla

Particular description of goods.—Pearls and Precious Stones, Both Artificial and Natural, and for Jewelry Comprising Pearls and Precious Stones.

Ser. No. 26,313. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) THE RISDON IRON & LOCOMOTIVE WORKS, San Francisco, Cal. Filed Mar. 28, 1907. Used ten years.

BRYAN

Particular description of goods.—Ore-Crushers.

Ser. No. 26,314. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) A SCHILLING AND COMPANY, San Francisco, Cal. Filed Mar. 28, 1907.



Particular description of goods.—Coffee.

Ser. No. 26,346. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JULES CHAMON DE ST. HUBERT, Hollister, Cal. Filed Mar. 30, 1907.

St. Hubert

Particular description of goods.—Tonics.

Ser. No. 26,374. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN W. SHULTS, Wichita, Kans. Filed Mar. 30, 1907.



Particular description of goods.—An Ointment.

Ser. No. 26,421. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) FREEBURG MILLING CO., Freeburg, Ill. Filed Apr. 2, 1907.



Particular description of goods.—Wheat-Flour.

Ser. No. 26,567. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) WILLIAM H. PATTERSON, Dallas, Tex. Filed Apr. 8, 1907.



Particular description of goods.—A Liniment.

Ser. No. 26,575. (CLASS 47. CONFECTIONARY.) WM. WRIGHLEY JR & CO., Chicago, Ill. Filed Apr. 8, 1907.



Particular description of goods.—Chewing-Gum.

Ser. No. 26,665. (CLASS 12. MASONRY MATERIALS.) SUNDERLAND BROTHERS COMPANY, Omaha, Nebr. Filed Apr. 12, 1907.

ANCHOR BRAND

Particular description of goods.—Wall-Plaster.

Ser. No. 26,740. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) CHARLES E. BRENNING, Indianapolis, Ind. Filed Apr. 16, 1907.



Particular description of goods.—Remedies for Constipation, Muscular and Sciatic Rheumatism, Kidney Trouble, Liver Complaint, Hay-Fever, Heart Troubles, Chills, Fever, La Grippe, Catarrh of the Head and Stomach, Paralysis, Headache, Bright's Disease, Blood Disease, Cuts, Bruises, Sores and Burns, Coughs, Colds and Croup, Nerve Troubles.

Ser. No. 26,743. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN LEESON, Cadillac, Mich. Filed Apr. 16, 1907.

TIGER OIL



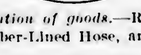
Particular description of goods.—A Medical Preparation or Remedy for Nervous Debility, Restlessness, Rheumatism, Neuralgia, Colds, Colic, Cramps, Diarrhea, Inflammation, Fevers, and for the Elimination of All Pain.

Ser. No. 26,843. (CLASS 68. PUBLICATIONS.) ROGERS & COMPANY, Chicago, Ill., and New York, N. Y. Filed Apr. 20, 1907.



Particular description of goods.—Printed Books, Pamphlets, and Circulars.

Ser. No. 26,870. (CLASS 8. DETERGENTS.) MICHAEL MACMAHON, Brooklyn, N. Y. Filed Apr. 23, 1907.



Particular description of goods.—Detergent Cleansing Compositions for Ale and Beer Pipes.

Ser. No. 26,912. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) BLOOMINGDALE BROS., New York, N. Y. Filed Apr. 25, 1907.



Particular description of goods.—Leather Boots and Shoes.

Ser. No. 26,921. (CLASS 35. BELTING, HOSE, AND MACHINERY PACKING.) W. S. NOTT COMPANY, Minneapolis, Minn. Filed Apr. 25, 1907.



Particular description of goods.—Rubber Belting, Rubber and Cotton Rubber-Lined Hose, and Rubber Packings.

Ser. No. 26,923. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) WILMOT D. PORCHER, Charleston, S. C. Filed Apr. 25, 1907.

HEAD

Particular description of goods.—Rice.

Ser. No. 26,940. (CLASS 54. SEA FOODS.) THE BERGEN CANNING CO., Bergen, Norway. Filed Apr. 26, 1907.



Particular description of goods.—Canned Smoked Sardines.

Ser. No. 26,973. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) ROBERT H. WETMORE, New Orleans, La. Filed Apr. 27, 1907.

FAVO

Particular description of goods.—A Remedy for Purifying the Blood.

Ser. No. 27,013. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

No 9

Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,018. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

No 20

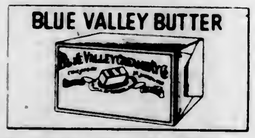
Particular description of goods.—Oil-Burning Lamps.

Ser. No. 27,020. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) C. T. HAM MANUFACTURING COMPANY, Rochester, N. Y. Filed Apr. 30, 1907. Used ten years.

GEM

Particular description of goods.—Oil-Burning Lanterns.

Ser. No. 27,039. (CLASS 48. DAIRY PRODUCTS.) BLUE VALLEY CREAMERY COMPANY, St. Joseph, Mo., and Chicago, Ill. Filed May 1, 1907.



Particular description of goods.—Butter.

Ser. No. 27,040. (CLASS 48. DAIRY PRODUCTS.) BLUE VALLEY CREAMERY COMPANY, St. Joseph, Mo., and Chicago, Ill. Filed May 1, 1907.

BLUE VALLEY

Particular description of goods.—Butter.

Ser. No. 27,066. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) HENNESSY MERCANTILE CO., Butte, Mont. Filed May 2, 1907.

MONTANA BOY

Particular description of goods.—Leather Shoes.

Ser. No. 27,074. (CLASS 36. LEATHER AND LEATHER MANUFACTURES NOT OTHERWISE CLASSIFIED.) RICHARD W. OWEN, Sr., Chicago, Ill. Filed May 2, 1907.



Particular description of goods.—Leather Trunks, Suit-Cases, Hat-Boxes, Golf-Bags, Satchels, Collar and Cuff Boxes, Name-Tags, Shawl-Straps, and Leggings.

Ser. No. 27,096. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y. Filed May 4, 1907.



Particular description of goods.—Unbleached Sheetings, Shirtings, Drills, and Flannels Woven of Cotton Yarn.

Ser. No. 27,106. (CLASS 40. FANCY GOODS, FURNISHINGS, AND NOTIONS.) THE CASTLE BRAID COMPANY, New York, N. Y. Filed May 4, 1907.



Particular description of goods.—Hat-Pin Receptacles.

Ser. No. 27,126. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) E. MARTIN & CO., San Francisco, Cal. Filed May 4, 1907. Used ten years.



Particular description of goods.—Whisky.

Ser. No. 27,131. (CLASS 51. MALT PREPARATIONS NOT OTHERWISE CLASSIFIED.) ST. LOUIS BREWING ASSOCIATION, St. Louis, Mo. Filed May 4, 1907. The feather being printed in red.



Particular description of goods.—Beer.

Ser. No. 27,157. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE KELLY & JONES COMPANY, Pittsburg and Greensburg, Pa.. Filed May 6, 1907.

OCTA

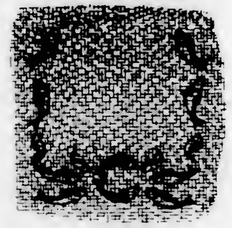
Particular description of goods.—Pipe-Unions.

Ser. No. 27,158. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE KELLY & JONES COMPANY, Pittsburg and Greensburg, Pa. Filed May 6, 1907.

JEWEL

Particular description of goods.—Valves and Cocks.

Ser. No. 27,174. (CLASS 54. SEA FOODS.) COLEMAN'S MUSTARD SARDINE COMPANY, New York, N. Y. Filed May 6, 1907.



The background is yellow.
Particular description of goods.—Mustard Sardines.

Ser. No. 27,177. (CLASS 54. SEA FOODS.) PILLAR ROCK PACKING COMPANY, Vancouver and Pillar Rock, Wash. Filed May 6, 1907. Used ten years.



Particular description of goods.—Canned Salmon.

Ser. No. 27,204. (CLASS 71. TOBACCO PRODUCTS.) JOSEPH J. SCHAEFER, Dayton, Ohio. Filed May 7, 1907.



Particular description of goods.—Cigars.

Ser. No. 27,230. (CLASS 26. MACHINERY AND PARTS OF MACHINERY NOT OTHERWISE CLASSIFIED.) AMERICAN-LA FRANCE FIRE ENGINE CO., Elmira, N. Y. Filed May 8, 1907.

20TH CENTURY

Particular description of goods.—Chemical Fire-Extinguishers.

Ser. No. 27,232. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE KELLY & JONES COMPANY, Pittsburg and Greensburg, Pa. Filed May 8, 1907.

UNIVERSAL

Particular description of goods.—Valves and Cocks.

Ser. No. 27,233. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE KELLY & JONES COMPANY, Pittsburg and Greensburg, Pa. Filed May 8, 1907.

SSS

Particular description of goods.—Hose-Nozzles.

Ser. No. 27,234. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE KELLY & JONES COMPANY, Pittsburg and Greensburg, Pa. Filed May 8, 1907.

HJK

Particular description of goods.—Valves, Cocks, and Unions.

Ser. No. 27,250. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) ALABAMA CONSOLIDATED COAL & IRON CO., Birmingham, Ala. Filed May 9, 1907. Used ten years.

CLIFTON

Particular description of goods.—Pig-Iron.

Ser. No. 27,258. (CLASS 63. MEASURING AND SCIENTIFIC APPARATUS, APPLIANCES, AND INSTRUMENTS.) THE HEALTH-RAY LENS COMPANY, Topeka, Kans. Filed May 9, 1907.



Particular description of goods.—Spectacle and Eyeglass Lenses.

Ser. No. 27,298. (CLASS 21. ELECTRICAL APPARATUS, MACHINES, AND SUPPLIES.) STANDARD VARNISH WORKS, New York, N. Y. Filed May 11, 1907.

O. B.

Particular description of goods.—Solid Insulating Compounds for Electrical Purposes.

Ser. No. 27,305. (CLASS 47. CONFECTIONERY.) M. E. ABEL ESTATE, Easton, Pa. Filed May 11, 1907. Used ten years.

Abel's

Particular description of goods.—Candy, Bonbons, and Ice-Cream.

Ser. No. 27,308. (CLASS 22. FIREARMS, AND EQUIPMENTS AND PROJECTILES NOT OTHERWISE CLASSIFIED.) HARRINGTON & RICHARDSON ARMS CO., Worcester, Mass. Filed May 11, 1907.

PIPER MODEL

Particular description of goods.—Revolvers, Pistols, Rifles, and Shotguns.

Ser. No. 27,324. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS AND YEAST.) THE REA-PATTERSON MILLING COMPANY, Coffeyville, Kans. Filed May 13, 1907.

S AND P

Particular description of goods.—Wheat-Flour.

Ser. No. 27,337. (CLASS 39. CLOTHING NOT OTHERWISE CLASSIFIED.) IRA J. LIEBENSTEIN, Peoria, Ill. Filed May 13, 1907.

CHIC

Particular description of goods.—Ladies' and Children's Aprons.

Ser. No. 27,363. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE KELLY & JONES COMPANY, Pittsburg and Greensburg, Pa. Filed May 14, 1907.

EXCELSIOR

Particular description of goods.—Valves and Cocks.

Ser. No. 27,364. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) THE KELLY & JONES COMPANY, Pittsburg and Greensburg, Pa. Filed May 14, 1907.



Particular description of goods.—Valves and Cocks.

Ser. No. 27,382. (CLASS 68. PUBLICATIONS.) W. R. HEARST, New York, N. Y. Filed May 15, 1907.

SEATTLE AMERICAN

Particular description of goods.—A Newspaper.

Ser. No. 27,411. (CLASS 42. TEXTILES NOT OTHERWISE CLASSIFIED.) MORRIS ROSENBAUM'S SONS, New York, N. Y. Filed May 16, 1907.



ROYAL

Particular description of goods.—Cloth and Piece Goods, Consisting of Woolens and Velvets Available for Use in Manufacturing Men's, Ladies', and Children's Garments and Wraps.

Ser. No. 27,413. (CLASS 8. DETERGENTS.) IOWA SOAP COMPANY, Burlington, Iowa. Filed May 16, 1907.

RIN YON

Particular description of goods.—Soap.

Ser. No. 27,435. (CLASS 45. BEVERAGES, NON-ALCOHOLIC.) JOSHUA S. MCDANIEL, Fort Worth, Tex. Filed May 17, 1907.

Wina Vina

Particular description of goods.—A Non-Alcoholic Carbonated Beverage.

Ser. No. 27,437. (CLASS 61. JEWELRY AND SOLID AND PLATED PRECIOUS-METAL WARE.) JOHN J. SOMMER, North Attleboro, Mass. Filed May 17, 1907.

J.J.S

Particular description of goods.—Chains, Brooches, Bracelets, Scarf-Pins, Cuff-Pins, in Solid Gold, Rolled Plate, and Sterling Silver.

Ser. No. 27,484. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) THE FULLER CANNERIES COMPANY, Cleveland, Ohio, and South Dayton, N. Y. Filed May 18, 1907.

JUNE ROSE

Particular description of goods.—Canned Vegetables.

Ser. No. 27,485. (CLASS 54. SEA FOODS.) ISIDOR LEVIN, Philadelphia, Pa. Filed May 18, 1907.



Particular description of goods.—Smoked Sardines.

Ser. No. 27,486. (CLASS 54. SEA FOODS.) ISIDOR LEVIN, Philadelphia, Pa. Filed May 18, 1907.



Particular description of goods.—Smoked Sardines.

Ser. No. 27,487. (CLASS 54. SEA FOODS.) ISIDOR LEVIN, Philadelphia, Pa. Filed May 18, 1907.



Particular description of goods.—Smoked Sardines.

Ser. No. 27,488. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) ISIDOR LEVIN, Philadelphia, Pa. Filed May 18, 1907.

Climax

Particular description of goods.—Canned Fruits and Vegetables.

Ser. No. 27,492. (CLASS 33. GLASSWARE NOT OTHERWISE CLASSIFIED.) LIVERMORE & KNIGHT CO., Providence, R. I. Filed May 18, 1907.

Spookie Shades

Particular description of goods.—Decorative Lamp-Shades.

Ser. No. 27,499. (CLASS 71. TOBACCO PRODUCTS.) ROBERT ULMER & SON, New York, N. Y. Filed May 18, 1907.



Particular description of goods.—Cigars, Cigarettes, and Chewing and Smoking Tobacco.

Ser. No. 27,506. (CLASS 6. CHEMICALS NOT OTHERWISE CLASSIFIELD.) S. HAMILL COMPANY, Keokuk, Iowa. Filed May 20, 1907.



Particular description of goods.—Baking-Powder, Lye, Soda, Salt, and Bluing.

Ser. No. 27,511. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) S. HAMILL COMPANY, Keokuk, Iowa. Filed May 20, 1907.



Particular description of goods.—Coffee.

Ser. No. 27,545. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE WM. H. PAGE BOILER CO., Norwich, Conn. Filed May 21, 1907.

MONARCH

Particular description of goods.—Hot-Water Boilers and Steam-Boilers.

Ser. No. 27,546. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE WM. H. PAGE BOILER CO., Norwich, Conn. Filed May 21, 1907.

VOLUNTEER

Particular description of goods.—Hot-Water Boilers and Steam-Boilers.

Ser. No. 27,554. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE LE COMPTE & GAYLE COMPANY, Frankfort, Ky. Filed May 21, 1907.

VIN. VIGORANS

Particular description of goods.—A Blood and Nerve Tonic.

Ser. No. 27,564. (CLASS 49. DISTILLED ALCOHOLIC LIQUORS.) THOMAS W. DE ROUSSE, Philadelphia, Pa. Filed May 22, 1907.



Particular description of goods.—Ginger-Brandy Cordial.

Ser. No. 27,565. (CLASS 34. HEATING, LIGHTING, AND VENTILATING APPARATUS NOT INCLUDED IN CLASS 21.) THE ESTATE STOVE COMPANY, Hamilton, Ohio. Filed May 22, 1907.



Particular description of goods.—Stoves and Furnaces.

Ser. No. 27,577. (CLASS 47. CONFECTIONERY.) PACIFIC COAST BISCUIT CO., Portland, Oreg. Filed May 22, 1907.



Particular description of goods.—Candy.

Ser. No. 27,578. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) JOHN S. EVANS, Brookfield, Mo. Filed May 22, 1907.

CHESTOLA

Particular description of goods.—A Topical Remedy for Throat and Lung Affections.

Ser. No. 27,580. (CLASS 13. METAL MANUFACTURES NOT OTHERWISE CLASSIFIED.) FRANCIS EUGENE SLOAN, Baltimore, Md. Filed May 22, 1907.

O.K.

Particular description of goods.—Sash-Pulleys.

Ser. No. 27,587. (CLASS 59. HOROLOGICAL INSTRUMENTS.) A. WITTNAUER CO., New York, N. Y. Filed May 23, 1907.

MONOPOL

Particular description of goods.—Watches, Parts of Watches, and Watchcases.

Ser. No. 27,588. (CLASS 59. HOROLOGICAL INSTRUMENTS.) A WITTNAUER CO., New York, N. Y. Filed May 23, 1907.

MAJESTIC

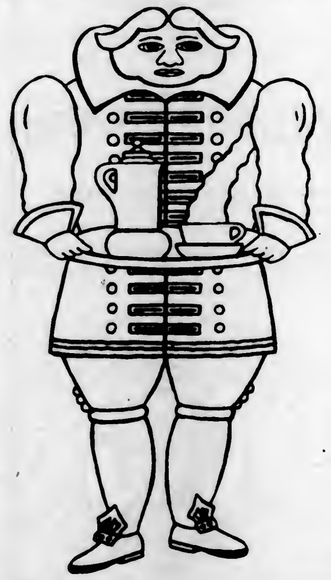
Particular description of goods.—Watches, Parts of Watches, and Watchcases.

Ser. No. 27,589. (CLASS 59. HOROLOGICAL INSTRUMENTS.) A WITTNAUER CO., New York, N. Y. Filed May 23, 1907.

SUBURBAN

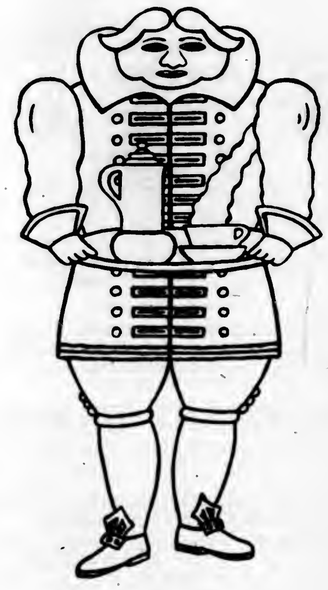
Particular description of goods.—Watches, Parts of Watches, and Watchcases.

Ser. No. 27,590. (CLASS 47. CONFECTIONERY.) WILLIAM M. CAHILL, Hoboken, N. J. Filed May 23, 1907.



Particular description of goods.—Cocoa and Chocolate.

Ser. No. 27,591. (CLASS 50. FOODS NOT OTHERWISE CLASSIFIED.) WILLIAM M. CAHILL, Hoboken, N. J. Filed May 23, 1907.



Particular description of goods.—Spices.

Ser. No. 27,596. (CLASS 47. CONFECTIONERY.) TOURAINE CONFECTIONERY CO., Boston, Mass. Filed May 23, 1907.



Particular description of goods.—Chocolates.

Ser. No. 27,602. (CLASS 16. PAINTS AND PAINTERS' MATERIALS.) THE PAYSON VARNISH CO., New York, N. Y. Filed May 23, 1907.



Particular description of goods.—Varnishes, Varnish Stains, Driers, Japans, and Wood-Fillers.

Ser. No. 27,603. (CLASS 14. METALS, UNWROUGHT AND PARTLY WROUGHT.) THE PHOSPHOR-BRONZE SMELTING CO., LIMITED, Philadelphia, Pa. Filed May 23, 1907.

ELEPHANT BRAND

Particular description of goods.—Metallic Alloys.

Ser. No. 27,605. (CLASS 1. ANIMAL.) C. SCHMITZ & Co., New York, N. Y. Filed May 23, 1907.



Particular description of goods.—Sheep's Wool.

Ser. No. 27,618. (CLASS 32. FURNITURE AND UPHOLSTERY NOT OTHERWISE CLASSIFIED.) THE SOUTHERN COTTON OIL COMPANY, Jersey City, N. J.; New York, N. Y., and Charlotte, N. C. Filed May 24, 1907.



Particular description of goods.—Mattresses.

Ser. No. 27,620. (CLASS 47. CONFECTIONERY.) ALLEN-DAY COMPANY, New York, N. Y. Filed May 24, 1907.

SAVILLE

Particular description of goods.—Chocolates and Candies.

Ser. No. 27,622. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DAVIS CHEMICAL COMPANY, Denver, Colo. Filed May 24, 1907.

Curalgia

Particular description of goods.—A Headache Remedy.

Ser. No. 27,623. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) THE DAVIS CHEMICAL COMPANY, Denver, Colo. Filed May 24, 1907.

Ricilax

Particular description of goods.—A Tasteless Castor-Oil.

Ser. No. 27,624. (CLASS 67. PHARMACEUTICAL PREPARATIONS, PLASTERS, AND PROPRIETARY AND VETERINARY MEDICINES.) MARY L. BABCOCK, New York, N. Y. Filed May 24, 1907.



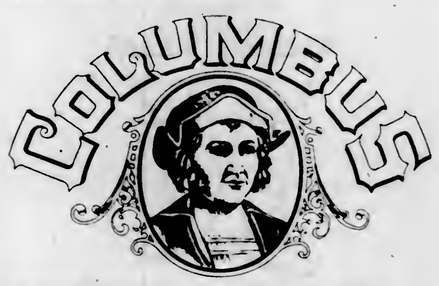
Particular description of goods.—Perfumeries, Triple Extract, Toilet Water, Toilet or Talcum Powder.

Ser. No. 27,628. (CLASS 48. DAIRY PRODUCTS.) THE LEON C. MAGAW CHEESE COMPANY, Meadville, Pa. Filed May 24, 1907.

MAGAW'S FAVORITE

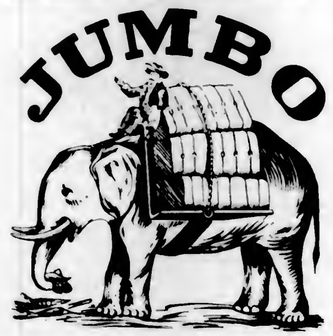
Particular description of goods.—Cheese.

Ser. No. 27,633. (CLASS 44. BAKERY PRODUCTS, CEREAL FOODS, AND YEAST.) DAVID STOTT, Detroit, Mich. Filed May 24, 1907.



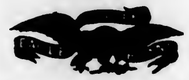
Particular description of goods.—Wheat-Flour.

Ser. No. 27,635. (CLASS 10. FERTILIZERS.) VIRGINIA-CAROLINA CHEMICAL COMPANY, Jersey City, N. J.; Richmond and Norfolk, Va.; Charleston, S. C.; Savannah and Atlanta, Ga.; Montgomery, Ala.; Durham, N. C., and Memphis, Tenn. Filed May 24, 1907.



Particular description of goods.—Fertilizers.

Ser. No. 27,643. (CLASS 47. CONFECTIONERY.) BORDEN'S CONDENSED MILK COMPANY, Jersey City, N. J., and New York, N. Y. Filed May 25, 1907. Used ten years.



Particular description of goods.—Caramels and Caramel Paste.

Ser. No. 27,644. (CLASS 47. CONFECTIONERY.) BORDEN'S CONDENSED MILK COMPANY, Jersey City, N. J., and New York, N. Y. Filed May 25, 1907. Used ten years.

BORDEN'S

Particular description of goods.—Chocolate, Caramels, and Caramel Paste.

Ser. No. 27,646. (CLASS 5. ADHESIVES.) COMMONWEALTH GLUE COMPANY, Boston, Mass. Filed May 25, 1907.

ACME

Particular description of goods.—Solid and Liquid Glue.

Ser. No. 27,654. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) MERCHANTS COFFEE CO., Baltimore, Md. Filed May 25, 1907.

HYGEIA

Particular description of goods.—Coffee.

Ser. No. 27,662. (CLASS 47. CONFECTIONERY.) THE BRADLEY, SMITH CO., New Haven, Conn. Filed May 27, 1907. Used ten years.

YALE

Particular description of goods.—Chocolates, Bonbons, Hard-Boiled Candies, Chewing-Candies, and Molasses Candy.

Ser. No. 27,664. (CLASS 47. CONFECTIONERY.) THE BRADLEY, SMITH CO., New Haven, Conn. Filed May 27, 1907.



Particular description of goods.—Chocolates, Bonbons, and Chewing-Candies.

Ser. No. 27,665. (CLASS 20. CUTLERY NOT INCLUDED IN CLASS 61, AND EDGE-TOOLS.) FARWELL, OZMUN, KIRK & Co., St. Paul, Minn. Filed May 27, 1907. Used ten years.

QUEEN

Particular description of goods.—Shears, Scissors, Razors, and Pocket-Knives.

Ser. No. 27,699. (CLASS 53. SACCHARINE FOODS NOT INCLUDED IN CLASS 47.) OLIVER-FINNIE CO., Memphis, Tenn. Filed May 28, 1907.

SILVER MOON

Particular description of goods.—Maple Syrup and Table-Syrups.

Ser. No. 27,700. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) OLIVER-FINNIE CO., Memphis, Tenn. Filed May 28, 1907.

MEMPHI

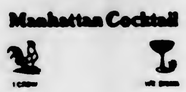
Particular description of goods.—Coffee and Tea.

Ser. No. 27,706. (CLASS 46. COFFEE, TEA, AND SUBSTITUTES.) OLIVER-FINNIE CO., Memphis, Tenn. Filed May 28, 1907.

KETCHME

Particular description of goods.—Coffee and Tea.

Ser. No. 27,735. (CLASS 71. TOBACCO PRODUCTS.) FALK TOBACCO CO., New York, N. Y., and Richmond, Va. Filed May 28, 1907.



Particular description of goods.—Smoking-Tobacco.

Ser. No. 27,736. (CLASS 71. TOBACCO PRODUCTS.) FALK TOBACCO CO., New York, N. Y., and Richmond, Va. Filed May 28, 1907.



Particular description of goods.—Smoking Tobacco.

TRADE-MARKS

REGISTERED JUNE 25, 1907.

63,466. DRY AND MIXED PAINTS AND PIGMENT COLORS. BENJAMIN MOORE & COMPANY, New York, N. Y.
Filed May 27, 1905. Serial No. 6,789. PUBLISHED APRIL 30, 1907.

63,467. LIQUID CHEMICAL PREPARATION. HENRY B. CABOT and HELEN N. CABOT, Boston, Mass., executors of Samuel Cabot, deceased.
Filed March 4, 1907. Serial No. 25,726. PUBLISHED APRIL 30, 1907.

63,468. BOOTS AND SHOES OF LEATHER. ENDICOTT-JOHNSON COMPANY, Endicott, N. Y.
Filed March 26, 1907. Serial No. 26,254. PUBLISHED APRIL 30, 1907.

63,469. SAPONACEOUS SCOURING AND CLEANSING PREPARATION. GIBSON SOAP COMPANY, South Omaha, Nebr., assignor to The Cudahy Packing Company, Chicago, Ill., a Corporation of Illinois.
Filed March 27, 1907. Serial No. 26,279. PUBLISHED APRIL 30, 1907.

63,470. PAINTS. LEFRANC & CO., Paris, France.
Filed April 2, 1907. Serial No. 26,409. PUBLISHED APRIL 30, 1907.

63,471. SOAP POWDER. LEVER BROTHERS COMPANY, Portland, Me., and Cambridge, Mass.
Filed August 2, 1905. Serial No. 11,135. PUBLISHED APRIL 30, 1907.

63,472. LEATHER BOOTS AND SHOES. MICHIGAN SHOE COMPANY, Detroit, Mich.
Filed April 2, 1907. Serial No. 26,412. PUBLISHED APRIL 30, 1907.

63,473. LEATHER BOOTS AND SHOES. PAYNE SHOE COMPANY, Charleston, W. Va.
Filed March 16, 1907. Serial No. 26,016. PUBLISHED APRIL 30, 1907.

63,474. LEATHER SHOES. EDWARD PERLBERG, Jersey City and Hoboken, N. J.
Filed April 5, 1907. Serial No. 26,483. PUBLISHED APRIL 30, 1907.

63,475. ROPE, CORD, AND TWINE. THE PORTLAND CORDAGE CO., Portland, Oreg.
Filed January 23, 1907. Serial No. 24,858. PUBLISHED APRIL 30, 1907.

63,476. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,292. PUBLISHED APRIL 30, 1907.

63,477. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,294. PUBLISHED APRIL 30, 1907.

63,478. SOAP. ROBINSON BROS. & COMPANY INCORPORATED, Portland, Me., and Malden, Mass.
Filed March 28, 1907. Serial No. 26,296. PUBLISHED APRIL 30, 1907.

63,479. COLD-WATER PAINT. TROY COLD WATER KALSOMINE COMPANY, Green Island, N. Y.
Filed March 21, 1907. Serial No. 26,133. PUBLISHED APRIL 03, 1907.

63,480. LEATHER SHOES. WILLIAMS-KNEELAND COMPANY, South Braintree, Mass.
Filed April 3, 1907. Serial No. 26,434. PUBLISHED APRIL 30, 1907.

63,481. CERTAIN PAINTS AND PAINTERS' MATERIALS. ACME WHITE LEAD & COLOR WKS., Detroit, Mich.
Filed March 26, 1907. Serial No. 26,255. PUBLISHED APRIL 30, 1907.

63,482. GLASS BOTTLES FOR AERATED WATERS OR OTHER LIQUIDS. AERATORS LIMITED, London, England.
Filed March 20, 1906. Serial No. 18,053. PUBLISHED APRIL 30, 1907.

63,483. METAL PARTS OF SELTZOGENES AND SIPHONS. AERATORS LIMITED, London, England.
Filed December 28, 1906. Serial No. 24,313. PUBLISHED APRIL 30, 1907.

63,484. CANNED, SMOKED, PICKLED, AND PRESERVED FISH. BERGENS VARMROGERI MOLT & CO., Bergen, Norway.
Filed March 26, 1907. Serial No. 26,252. PUBLISHED APRIL 30, 1907.

63,485. SHOE-POLISH AND SHOE-BLACKING. BOYER & COMPANY, Philadelphia, Pa.
Filed March 2, 1907. Serial No. 25,695. PUBLISHED APRIL 30, 1907.

63,486. SHOE-POLISH AND SHOE-BLACKING. BOYER & COMPANY, Philadelphia, Pa.
Filed March 2, 1907. Serial No. 25,696. PUBLISHED APRIL 30, 1907.

63,487. METALLIC FASTENERS FOR BELTS. THE BRISTOL COMPANY, Waterbury, Conn.
Filed April 1, 1907. Serial No. 26,384. PUBLISHED APRIL 30, 1907.

63,488. CERTAIN TEXTILES. CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y.
Filed March 30, 1907. Serial No. 26,370. PUBLISHED APRIL 30, 1907.

63,489. JEWELRY. DENTON BROTHERS, Wellesley, Mass.
Filed March 6, 1907. Serial No. 25,797. PUBLISHED APRIL 30, 1907.

63,490. METALLIC PENS. THE ESTERBROOK STEEL PEN MFG. CO., Camden, N. J., and New York, N. Y.
Filed April 4, 1907. Serial No. 26,452. PUBLISHED APRIL 30, 1907.

63,491. CORDIAL. FRATELLI CAMPARI, Milan, Italy.
Filed February 15, 1906. Serial No. 17,038. PUBLISHED APRIL 30, 1907.

63,492. BEER. G. HEILEMAN BREWING CO., La Crosse, Wis.
Filed June 23, 1906. Serial No. 20,526. PUBLISHED APRIL 16, 1907.

63,493. RUBBER BOOTS AND SHOES. GOODYEAR RUBBER COMPANY, New York, N. Y.
Filed March 16, 1907. Serial No. 26,006. PUBLISHED APRIL 30, 1907.

63,494. WHISKY. SAML. P. HALLER, Pittsburg, Pa.
Filed April 1, 1907. Serial No. 26,389. PUBLISHED APRIL 30, 1907.

63,495. RUBBER WHEEL-TIRES. THE HARTFORD RUBBER WORKS COMPANY, Hartford, Conn., and New York, N. Y.
Filed April 4, 1907. Serial No. 26,473. PUBLISHED APRIL 30, 1907.

63,496. STEEL. PERCY F. HOGAN, New York, N. Y.
Filed March 29, 1907. Serial No. 26,329. PUBLISHED APRIL 30, 1907.

63,497. COFFEE. JOHN BLAUL'S SONS COMPANY, Burlington, Iowa.
Filed March 20, 1907. Serial No. 26,090. PUBLISHED APRIL 30, 1907.

63,498. LEAD AND CRAYON PENCILS. JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
Filed March 11, 1907. Serial No. 25,888. PUBLISHED APRIL 30, 1907.

63,499. CERTAIN METAL GOODS. KELLEY-HOW-THOMSON Co., Duluth, Minn.
Filed March 25, 1907. Serial No. 26,230. PUBLISHED APRIL 30, 1907.

63,500. LAWN-MOWERS. KELLEY-HOW-THOMSON Co., Duluth, Minn.
Filed March 25, 1907. Serial No. 26,235. PUBLISHED APRIL 30, 1907.

63,501. DISK PLOWS. LA CROSSE PLOW COMPANY, La Crosse, Wis.
Filed March 18, 1907. Serial No. 26,035. PUBLISHED APRIL 30, 1907.

63,502. SEEDING-MACHINES AND GRAIN-DRILLS. LA CROSSE PLOW COMPANY, La Crosse, Wis.
Filed March 18, 1907. Serial No. 26,036. PUBLISHED APRIL 30, 1907.

63,503. DRIVE-CHAINS, CONVEYER-CHAINS, AND CHAIN CABLES. LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind.
Filed November 3, 1906. Serial No. 23,059. PUBLISHED APRIL 30, 1907.

63,504. CONVEYER-CHAINS AND DRIVE-CHAINS. LINK-BELT COMPANY, Chicago, Ill.; Philadelphia, Pa., and Indianapolis, Ind.
Filed November 3, 1906. Serial No. 23,061. PUBLISHED APRIL 30, 1907.

63,505. CERTAIN TEXTILES. MASSACHUSETTS COTTON MILLS, Lowell, Mass.
Filed May 11, 1905. Serial No. 5,242. PUBLISHED APRIL 30, 1907.

63,506. PORTLAND CEMENT. OKLAHOMA PORTLAND CEMENT COMPANY, Ada, Ind. Ter.
Filed January 30, 1907. Serial No. 25,020. PUBLISHED APRIL 30, 1907.

63,507. OIL-BURNING LAMPS. R. E. DIETZ COMPANY, New York, N. Y.
Filed September 14, 1906. Serial No. 22,093. PUBLISHED APRIL 30, 1907.

63,508. ROLL-PAPER HOLDERS AND CUTTERS. UNITED STATES PAPER CUTTER CO., St. Louis, Mo.
Filed March 30, 1907. Serial No. 26,362. PUBLISHED APRIL 30, 1907.

63,509. SILK PIECE GOODS. VALENTINE & BENTLEY SILK CO., Newton, N. J., and New York, N. Y.
Filed March 30, 1907. Serial No. 26,363. PUBLISHED APRIL 30, 1907.

63,510. LOGGING AND HOISTING ENGINES. WASHINGTON IRON WORKS CO., Seattle, Wash.
Filed March 4, 1907. Serial No. 25,755. PUBLISHED APRIL 30, 1907.

63,511. CANDY. A. SLAUSON & CO., New York, N. Y.
Filed March 27, 1907. Serial No. 26,286. PUBLISHED APRIL 30, 1907.

63,512. TOILET BRUSHES. ALFRED H. SMITH CO., New York, N. Y.
Filed March 26, 1907. Serial No. 26,266. PUBLISHED APRIL 30, 1907.

63,513. OLIVE-OIL. BASILEA & CALANDRA, New York, N. Y.
Filed March 1, 1907. Serial No. 25,677. PUBLISHED APRIL 30, 1907.

63,514. BELTS. BAUM, COHEN AND SHIRE, New York, N. Y.
Filed March 30, 1907. Serial No. 26,349. PUBLISHED APRIL 30, 1907.

63,515. WOODEN TRUNKS. THE BELBER TRUNK & BAG CO., Philadelphia, Pa.
Filed February 20, 1906. Serial No. 17,200. PUBLISHED APRIL 30, 1907.

63,516. MONTHLY MAGAZINE FOR LAWYERS. THE BENCH AND BAR COMPANY, New York, N. Y.
Filed March 28, 1907. Serial No. 26,303. PUBLISHED APRIL 30, 1907.

63,517. CERTAIN BEVERAGES. THE BROOKLYN TURKISH BATH COMPANY, New York, N. Y.
Filed March 11, 1907. Serial No. 25,897. PUBLISHED APRIL 30, 1907.

63,518. BUILDERS' SHEATHING AND MORTAR-COLORING. HENRY B. CABOT, AND HELEN N. CABOT, Boston, Mass., executors of Samuel Cabot, deceased.
Filed March 4, 1907. Serial No. 25,725. PUBLISHED APRIL 30, 1907.

63,519. CERTAIN COTTON TEXTILES. CHINA & JAPAN TRADING COMPANY, LIMITED, New York, N. Y.
Filed March 30, 1907. Serial No. 26,365. PUBLISHED APRIL 30, 1907.

63,520. FLUID WASHING AND CLEANING COMPOUNDS. DOCKTER & BARNDOLLAR, Tarentum, Pa.
Filed December 29, 1906. Serial No. 24,335. PUBLISHED APRIL 30, 1907.

63,521. CUTLERY AND ALL OTHER HAND-TOOLS HAVING A CUTTING EDGE. EDGAR ALLEN & CO. LIMITED, Sheffield, England.
Filed September 14, 1905. Serial No. 12,590. PUBLISHED APRIL 30, 1907.

63,522. CHOCOLATE. JAMES DE FREMERY & CO., Oakland, Cal.
Filed April 3, 1907. Serial No. 26,429. PUBLISHED APRIL 30, 1907.

68,523. PERIODICAL. THE GARFIELD SAVINGS BANK CO., Cleveland, Ohio.
Filed March 25, 1907. Serial No. 26,195. PUBLISHED APRIL 30, 1907.

63,524. CHINA FOR DOMESTIC AND HOUSEHOLD PURPOSES. GEO. BORGFELDT & CO., New York, N. Y.
Filed March 14, 1907. Serial No. 25,967. PUBLISHED APRIL 30, 1907.

63,525. AXLE-GREASE. GREAT WESTERN OIL REFINING COMPANY, Erie, Kans.
Filed March 21, 1907. Serial No. 26,141. PUBLISHED APRIL 30, 1907.

63,526. CERTAIN SILVERWARE. JOHN HASSELBRING, New York, N. Y.
Filed February 15, 1907. Serial No. 25,322. PUBLISHED APRIL 30, 1907.

63,527. SEWING-COTTON ON SPOOLS AND REELS. JAS. CHADWICK & BROS. LTD., Bolton, England.
Filed October 17, 1905. Serial No. 13,686. PUBLISHED APRIL 30, 1907.

63,528. LEAD AND CRAYON PENCILS. JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J.
Filed March 11, 1907. Serial No. 25,889. PUBLISHED APRIL 30, 1907.

63,529. CERTAIN AGRICULTURAL MACHINERY. LA CROSSE PLOW CO., La Crosse, Wis.
Filed March 28, 1907. Serial No. 26,319. PUBLISHED APRIL 30, 1907.

63,530. WHEAT-FLOUR. LYON & GREENLEAF, Wauseon, Ohio, and Ligonier, Ind.
Filed March 30, 1907. Serial No. 26,340. PUBLISHED APRIL 30, 1907.

63,531. WHEAT-FLOUR. LYON & GREENLEAF, Wauseon, Ohio, and Ligonier, Ind.
Filed March 30, 1907. Serial No. 26,342. PUBLISHED APRIL 30, 1907.

63,532. KEROSENE-OIL-LAMP BURNERS. MANHATTAN BRASS CO., New York, N. Y.
Filed March 18, 1907. Serial No. 26,029. PUBLISHED APRIL 30, 1907.

63,533. MINERAL WATER. NATIONAL WATER CO., Waukesha, Wis.
Filed February 9, 1907. Serial No. 25,224. PUBLISHED APRIL 30, 1907.

63,534. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,459. PUBLISHED APRIL 30, 1907.

63,535. CANNED FISH. NORTHWESTERN FISHERIES COMPANY, Seattle, Wash.
Filed February 20, 1907. Serial No. 25,469. PUBLISHED APRIL 30, 1907.

63,536. LIME. ROGERS WHITE LIME COMPANY, Rogers, Ark.
Filed April 5, 1907. Serial No. 26,475. PUBLISHED APRIL 30, 1907.

63,537. LIME. ROGERS WHITE LIME COMPANY, Rogers, Ark.
Filed April 5, 1907. Serial No. 26,476. PUBLISHED APRIL 30, 1907.

63,538. YEAST. ROYAL BAKING POWDER CO., Jersey City, N. J., and New York, N. Y.
Filed October 25, 1906. Serial No. 22,907. PUBLISHED April 30, 1907.

63,539. RAW CATGUT AND SEWING-SILK FOR SURGICAL PURPOSES. ERNST SCHEFFLER, Zwota, Germany.
Filed March 22, 1906. Serial No. 18,164. PUBLISHED APRIL 30, 1907.

63,540. CERTAIN MASONRY MATERIALS. STANDARD ASPHALT AND RUBBER COMPANY, Jersey City, N. J., and Chicago, Ill.
Filed February 12, 1907. Serial No. 25,281. PUBLISHED APRIL 30, 1907.

63,541. MINERAL RUBBER AND ASPHALTIC INSULATION FOR ELECTRICAL PURPOSES. STANDARD ASPHALT AND RUBBER COMPANY, Jersey City, N. J., and Chicago, Ill.
Filed February 12, 1907. Serial No. 25,282. PUBLISHED APRIL 30, 1907.

63,542. CERTAIN GRAPHITE LUBRICANTS. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich.
Filed January 19, 1907. Serial No. 24,764. PUBLISHED APRIL 30, 1907.

63,543. CHEWING-GUM. WENDAL V. MOSEE, Canton, Ohio.
Filed March 25, 1907. Serial No. 26,198. PUBLISHED APRIL 30, 1907.

63,544. HACKSAW BLADES. THE WEST HAVEN MFG. CO., West Haven, Conn.
Filed March 18, 1907. Serial No. 26,031. PUBLISHED APRIL 30 1907.

63,545. SYRUP. CRESCENT MANUFACTURING CO., Seattle, Wash.
Filed September 4, 1906. Serial No. 21,900. PUBLISHED APRIL 30, 1907.

63,546. SEDATIVE, ANTISPASMODIC, AND NERVE TONIC. JNO. B. DANIEL, Atlanta, Ga.
Filed March 28, 1907. Serial No. 26,306. PUBLISHED APRIL 30, 1907.

63,547. RICE. S. EWART & CO., Pittsburg, Pa.
Filed March 21, 1906. Serial No. 18,083. PUBLISHED APRIL 30, 1907.

63,548. TOOTH-POWDER. SAMUEL H. GUNDER, Richmond, Va.
Filed March 30, 1907. Serial No. 26,344. PUBLISHED APRIL 30, 1907.

63,549. TOOTH-POWDER. SAMUEL H. GUNDER, Richmond, Va.
Filed March 30, 1907. Serial No. 26,345. PUBLISHED APRIL 30, 1907.

63,550. PERIODICALS. THE JEWELERS CIRCULAR PUBLISHING CO., New York, N. Y.
Filed December 5, 1906. Serial No. 23,779. PUBLISHED APRIL 30, 1907.

63,551. JAMS, JELLIES, AND MARMALADES. DAVID JONES, New York, N. Y.
Filed September 27, 1906. Serial No. 22,354. PUBLISHED APRIL 30, 1907.

63,552. REMEDY FOR SCREW-WORMS. JULIUS LEWENTHAL, Sonora, Tex.
Filed February 25, 1907. Serial No. 25,596. PUBLISHED APRIL 30, 1907.

63,553. PROPRIETARY PREPARATION. FRANK M. PITTS, Jr., Hubbard, Tex., assignor to Gyn-A-Septin Company, Hubbard, Tex., a Corporation of Texas.
Filed August 23, 1906. Serial No. 21,729. PUBLISHED APRIL 30, 1907.

63,554. LOCAL ANESTHETIC. HUGO ROSENBERG, Charlottenburg, Germany.
Filed March 1, 1907. Serial No. 25,668. PUBLISHED APRIL 30, 1907.

63,555. CHOCOLATE, COCOA, AND CHOCOLATE CANDIES. RUSS-SUCHARD & CIE., Neuchatel, Switzerland, assignors to Suchard Societe Anonyme, Neufchatel, Switzerland.
Filed May 27, 1905. Serial No. 6,765. PUBLISHED JANUARY 22, 1907.

63,556. CHOCOLATE, COCOA, AND CHOCOLATE CANDIES. RUSS-SUCHARD ET CIE, Neuchatel, Switzerland, assignors to Suchard Societe Anonyme, Neufchatel, Switzerland.
Filed June 21, 1905. Serial No. 8,678. PUBLISHED JANUARY 22, 1907.

63,557. POROUS PLASTERS. T. A. SLOCUM CO., New York, N. Y.
Filed February 4, 1907. Serial No. 25,135. PUBLISHED APRIL 30, 1907.

63,558. DRIED FRUITS, CANNED FRUITS, AND CANNED VEGETABLES. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,211. PUBLISHED APRIL 23, 1907.

63,559. ANTIPYRETIC, SEDATIVE, AND ANODYNE. FREDERICK AUGUST LUYTIES, St. Louis, Mo.
Filed March 30, 1907. Serial No. 26,358. PUBLISHED APRIL 30, 1907.

63,560. WHOOPING-COUGH SYRUP. HAROLD G. REINICKER, Baltimore, Md.
Filed March 25, 1907. Serial No. 26,200. PUBLISHED APRIL 30, 1907.

63,561. LIQUID REMEDIES FOR BURNS. LUIGI RONCORONI, West Hoboken, N. J.
Filed December 18, 1906. Serial No. 24,121. PUBLISHED APRIL 30, 1907.

63,562. SUBCUTANEOUS INJECTIONS. HUGO ROSENBERG, Charlottenburg, Germany.
Filed March 1, 1907. Serial No. 25,669. PUBLISHED APRIL 30, 1907.

63,563. REMEDY FOR CERTAIN DISEASES. HUGO ROSENBERG, Charlottenburg, Germany.
Filed March 1, 1907. Serial No. 25,670. PUBLISHED APRIL 30, 1907.

63,564. CANDY. ELIE SHEETZ, Washington, D. C.
Filed July 23, 1906. Serial No. 21,077. PUBLISHED OCTOBER 9, 1906.

63,565. CANDY. ELIE SHEETZ, Washington, D. C.
Filed July 23, 1906. Serial No. 21,078. PUBLISHED OCTOBER 9, 1906.

63,566. CANDY. ELIE SHEETZ, Washington, D. C.
Filed July 23, 1906. Serial No. 21,079. PUBLISHED OCTOBER 9, 1906.

63,567. REMEDY FOR TOOTHACHE. ALBERT W. YOUNG, Philadelphia, Pa.
Filed February 20, 1907. Serial No. 25,484. PUBLISHED APRIL 30, 1907.

63,568. CIGARS. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,201. PUBLISHED APRIL 23, 1907.

63,569. CIGARS. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,202. PUBLISHED APRIL 23, 1907.

63,570. WHEAT-FLOUR. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,205. PUBLISHED APRIL 23, 1907.

63,571. CERTAIN FOOD PREPARATIONS. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,207. PUBLISHED APRIL 23, 1907.

63,572. CANNED FRUITS AND CANNED VEGETABLES. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,214. PUBLISHED APRIL 23, 1907.

63,573. TEAS. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,215. PUBLISHED APRIL 23, 1907.

63,574. TEAS. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,216. PUBLISHED APRIL 23, 1907.

63,575. COFFEE. T. C. BRUNNER & SON, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,194. PUBLISHED APRIL 23, 1907.

63,576. FIREPROOFING LIQUID AND FIREPROOFING-STARCH. CHICAGO SAFETY STARCH COMPANY, Chicago, Ill.
Filed March 18, 1907. Serial No. 26,034. PUBLISHED APRIL 30, 1907.

63,577. CERTAIN HEADWEAR. CHRISTY & COMPY. LIMITED, London, England.
Filed November 6, 1906. Serial No. 23,133. PUBLISHED MARCH 26, 1907.

63,578. KNIT UNDERWEAR. FRANK BROS. & CO., New York, N. Y.
Filed January 28, 1907. Serial No. 24,970. PUBLISHED APRIL 30, 1907.

63,579. COMPOUND OILS FOR MAKING PERFUMES. GEORGE LUEDERS & CO., New York, N. Y.
Filed April 1, 1907. Serial No. 26,391. PUBLISHED APRIL 30, 1907.

63,580. COTTON SHEETINGS, SHIRTINGS, AND DRILLS, BROWN AND BLEACHED. THE MONOHANSETT M'F'G. CO., Putnam, Conn.
Filed March 2, 1907. Serial No. 25,708. PUBLISHED APRIL 30, 1907.

63,581. EMULSIONS OF COD-LIVER OIL. OZOMULSION CO., New York, N. Y.
Filed February 2, 1907. Serial No. 25,081. PUBLISHED APRIL 30, 1907.

63,582. HAIR REMEDY. THE PANDROCOL MFG. CO., New York, N. Y.
Filed February 23, 1907. Serial No. 25,560. PUBLISHED APRIL 23, 1907.

63,583. ANTISEPTIC COMPOUND. LOUISA F. PIQUETT, Baltimore, Md.
Filed March 14, 1907. Serial No. 25,972. PUBLISHED APRIL 30, 1907.

63,584. CERTAIN MEDICINES. FRIEDRICH ADOLF RICHTER, New York, N. Y., and Rudolstadt, Germany.
Filed April 15, 1905. Serial No. 1,623. PUBLISHED APRIL 30, 1907.

63,585. CHOCOLATES AND BONBONS. HENRY ROLLER, Muncie, Ind.
Filed March 15, 1907. Serial No. 25,994. PUBLISHED APRIL 23, 1907.

63,586. LINIMENT. MATTHEW K. SCHILLING, New Orleans, La.
Filed March 27, 1907. Serial No. 26,285. PUBLISHED APRIL 30, 1907.

63,587. CERTAIN MEDICINE. T. A. SLOCUM CO., New York, N. Y.
Filed February 2, 1907. Serial No. 25,067. PUBLISHED APRIL 30, 1907.

63,588. LICE POWDER AND PAINT. TAYLOR BROS., Camden, N. J.
Filed February 5, 1907. Serial No. 25,148. PUBLISHED APRIL 30, 1907.

63,589. CAUSTIC SODA. CHANCE & HUNT, LD., Oldbury, England.
Filed August 29, 1905. Serial No. 12,077. PUBLISHED APRIL 30, 1907.

63,590. BITTERS. FRATELLI CAMPARI, Milan, Italy.
Filed February 15, 1906. Serial No. 17,039. PUBLISHED APRIL 30, 1907.

63,591. REMEDY FOR DYSPEPSIA. K. D. C. COMPANY LIMITED, New Glasgow, Nova Scotia, Canada, and Boston, Mass.
Filed October 31, 1905. Serial No. 14,134. PUBLISHED APRIL 30, 1907.

63,592. PREPARATION FOR THE TREATMENT OF CATARRH AND CATARRHAL DISEASES. KATARNO COMPANY, New York, N. Y.
Filed July 18, 1906. Serial No. 20,994. PUBLISHED APRIL 30, 1907.

63,593. PREPARATION FOR THE TREATMENT OF CATARRH AND CATARRHAL DISEASES. KATARNO COMPANY, New York, N. Y.
Filed July 18, 1906. Serial No. 20,995. PUBLISHED APRIL 30, 1907.

63,594. PREPARATION FOR THE TREATMENT OF CATARRH AND CATARRHAL DISEASES. KATARNO COMPANY, New York, N. Y.
Filed July 18, 1906. Serial No. 20,996. PUBLISHED APRIL 30, 1907.

63,595. REMEDIES FOR DISEASES OF WOMEN. HARTLAND LAW, HERBERT E. LAW, San Francisco, Cal.
Filed October 10, 1905. Serial No. 13,477. PUBLISHED APRIL 30, 1907.

63,596. MOUTH-WASH. MEADE & BAKER CARBOLIC MOUTH WASH CO., Richmond, Va.
Filed December 6, 1906. Serial No. 23,804. PUBLISHED APRIL 30, 1907.

63,597. CANNED FRUITS AND CANNED VEGETABLES. ALLEN BROTHERS COMPANY, Omaha, Nebr.
Filed March 25, 1907. Serial No. 26,213. PUBLISHED APRIL 23, 1907.

63,598. CERTAIN VEGETABLE MATERIALS. CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y.
Filed August 30, 1906. Serial No. 21,819. PUBLISHED APRIL 30, 1907.

63,599. CERTAIN VEGETABLE MATERIALS. CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y.
Filed August 30, 1906. Serial No. 21,820. PUBLISHED APRIL 30, 1907.

63,600. CERTAIN VEGETABLE MATERIALS. CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y.
Filed August 30, 1906. Serial No. 21,821. PUBLISHED APRIL 30, 1907.

63,601. CERTAIN VEGETABLE MATERIALS. CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y.
Filed August 30, 1906. Serial No. 21,822. PUBLISHED APRIL 30, 1907.

63,602. CHOCOLATE, COCOA, AND CHOCOLATE CANDIES. RUSS-SUCHARD & CIE., Neuchatel, Switzerland, assignors to Suchard Societe Anonyme, Neuchatel, Switzerland.
Filed May 26, 1905. Serial No. 6,739. PUBLISHED MAY 1, 1906.

63,603. CERTAIN VEGETABLE MATERIALS. CONTINENTAL RUBBER COMPANY, Jersey City, N. J., and New York, N. Y.
Filed August 30, 1906. Serial No. 21,823. PUBLISHED APRIL 30, 1907.

TRADE-MARKS CANCELED

59,801. RADIATORS UNITED STATES RADIATOR COMPANY, Dunkirk, N. Y. Registered January 15, 1907. Canceled June 13, 1907.

LABELS

REGISTERED JUNE 25, 1907.

13,623.—*Title:* "BRIGHT-SPOT." (For Beer.) JOSEPH JUNK BREWING COMPANY, Chicago, Ill. Filed June 3, 1907.

13,624.—*Title:* "GOLDEN SUN BRAND." (For Spices.) WOOLSON SPICE COMPANY, Toledo, Ohio. Filed May 31, 1907.

13,625.—*Title:* "PILGRIM BRAND." (For Citrus Fruits.) R. J. RICHARDSON, Fullerton, Cal. Filed April 11, 1907.

13,626.—*Title:* "UNCTISOL." (For a Medicated Unction.) C. E. GATES CO., (LTD.,) New York, N. Y. Filed May 29, 1907.

13,627.—*Title:* "LOTIOL." (For a Medicated Oily Lotion.) C. E. GATES CO., (LTD.,) New York, N. Y. Filed May 29, 1907.

13,628.—*Title:* "THE MARVELOUS BEAUTIFIER FLEUR DE LIS CRÈME." (For a Face-Cream.) EDGAR BLOCH, Brooklyn, N. Y. Filed May 29, 1907.

13,629.—*Title:* "FLEUR DE LIS LIQUID ROUGE, FOR MAKING A RUBY COMPLEXION." (For Rouge.) EDGAR BLOCH, Brooklyn, N. Y. Filed May 29, 1907.

13,630.—*Title:* "WANOUS' SHAMPOO-BAG." (For Hair-Tonic.) JOSIE A. WANOUS, Minneapolis, Minn. Filed April 18, 1907.

13,631.—*Title:* "RIGALICO." (For Statuary.) DAPRATO STATUARY COMPANY, Chicago, Ill. Filed May 22, 1907.

13,632.—*Title:* "JEWEL." (For Cigars.) THE TRAVELERS CIGAR CO., Hutchinson, Kans. Filed June 5, 1907.

PRINTS

REGISTERED JUNE 25, 1907.

2,034.—*Title:* "DR. PEPPER." (For a Beverage.) ARTESIAN MFG. & BOTTLING CO., Waco, Tex. Filed May 20, 1907.

2,035.—*Title:* "'YES MAM' FLEISCHMANN'S YEAST MAKES THE BEST ROOT BEER." (For Yeast.) STAHL AND JAEGER, New York, N. Y. Filed June 1, 1907.

2,036.—*Title:* "BOYSEN'S BATH SOLUTION." (For a Bath Solution.) IWER BOYSEN, New York, N. Y. Filed May 29, 1907.

2,037.—*Title:* "THE MONROE SYSTEM." (For Clothing.) MOE LEVY & CO., New York, N. Y. Filed May 20, 1907.

2,038.—*Title:* "WEAR COLLEGE BRAND CLOTHES." (For Clothes.) E. L. BLIMLINE & COMPANY, New York, N. Y. Filed May 31, 1907.

2,039.—*Title:* "MEN'S AND BOYS' APPAREL." (For Men's and Boys' Apparel.) H. C. LYTTON, Chicago, Ill. Filed June 3, 1907.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

THE PETERS CARTRIDGE COMPANY *v.* THE WINCHESTER REPEATING ARMS COMPANY.

Decided June 3, 1907.

TRADE-MARK OPPOSITION—"SELF LOADING" AS APPLIED TO CARTRIDGES A DESCRIPTIVE TERM.

Where an applicant desires to register the words "Self Loading" as a trade-mark for cartridges adopted for use on a rifle placed upon the market by applicant and called a "self-loading" rifle from the fact that the gun reloads itself, *Held* that the words as applied to the cartridges state the purpose for which they are made and sold, that the reasons for the prohibition of the statute to the registration of marks which consist merely of descriptive matters are applicable to this case, and that the mark is, in fact, nothing more than a descriptive term.

ON APPEAL.

TRADE-MARK FOR CARTRIDGES.

Messrs. Seymour & Earle for the applicant.

Messrs. Brown, Darby & Hopkins for the Peters Cartridge Company.

MOORE, *Commissioner:*

This is an appeal by the Winchester Repeating Arms Company from the decision of the Examiner of Interferences sustaining the opposition to its registration brought by The Peters Cartridge Company.

The applicant seeks to register the words "Self Loading" as a trade-mark for cartridges. The opposer contends that these words should not be registered, on the ground that they are descriptive. It appears that the applicant has placed upon the market a rifle which is called a "self-loading" rifle, which words are descriptive of the performance of the gun in reloading itself. The trade-mark registration sought here is intended to cover the use of these words in connection with cartridges adapted for use with that rifle. These words when so applied obviously tell to those in the trade and those using such goods the purpose for which they are made and sold. They convey this information in a simple and direct manner by the use of ordinary words. The reasons for the prohibition of the statute to the registration of marks which consist merely of descriptive matter are all applicable to this case, and it is believed that the mark is, in fact, nothing more than a clearly descriptive term. The *Circular Loom Case* (127 O. G., 393, court of appeals,) is entirely pertinent. The mark in that case told nothing about the goods except that they were made upon a particular kind of a machine. The statement of the kind of a machine with which the goods are to be used in this case is descriptive in the same manner, and as much so.

Appellant's contention that the opposer has not made out a case of probable injury is immaterial. The statute prohibits registration of a mark which consists merely of a descriptive term. The Examiner of Interferences has found that the applicant's mark is such a term, and I am of the opinion that this conclusion is right. No registration can be had upon the appellant's application, therefore, unless this conclusion is reversed upon appeal.

The decision of the Examiner of Interferences adjudging that the applicant is not entitled to registration is affirmed.

EX PARTE DOEBLER.

Decided June 12, 1907.

INTERFERENCE—SUGGESTION OF CLAIMS UNDER RULE 96—PRACTICE—INVENTOR AND ASSIGNEES PERSONALLY NOTIFIED.

In all cases where claims are suggested for the purpose of interference under the provisions of Rule 96 copies of the letter containing the suggested claims will be sent to the applicant and to the assignees, if the invention is assigned, as well as to the attorney of record.

ON REFERENCE.

APPLICATION FOR PATENT.

DRILL-CHUCK.

Mr. Harrie E. Hart for the applicant.

MOORE, *Commissioner:*

This case has been referred to me by the Examiner for instructions as to whether personal notice should be given to the applicant, as well as to his attorney of record, of certain claims which are to be suggested to him under the provisions of Rule 96.

It appears from a communication in this case from the attorney of record that he has received letters in two other cases in which he is attorney for the inventors in which the same claims are suggested. He states that these three applications are the property of a single corporation and that he wishes to be advised whether there is a fourth party to the prospective interference, so that he—

may arrange the three applications in order not to conflict with one another.

While there appears to be no reason to doubt the statement of the attorney that these three applications are owned by the same corporation, there are no assignments of record in this Office in two of said applications.

Rule 97 provides that—

Whenever it shall be found that two or more parties whose interests are in conflict are represented by the same attorney, the Examiner will notify each of said principal parties, and also the attorney of the fact.

The reasons upon which this rule is based equally

warrant the notification of the principal parties of claims which are suggested in applications of different inventors who are represented by the same attorney.

In view of the fact that under the provisions of Rule 96 the failure or refusal to make claims which are suggested for the purpose of interference within the time specified acts as a disclaimer of the invention covered by such claims it is believed that notification of suggested claims should be given to all parties of interest of record in the application.

Rule 107 provides that—

An applicant involved in an interference may, with the written consent of the assignee, when there has been an assignment, before the date fixed for the filing of his preliminary statement (see Rule 110), in order to avoid the continuance of the interference, disclaim under his own signature, attested by two witnesses, the invention of the particular matter in issue, and upon such disclaimer and the cancelation of any claims involving such interfering matter judgment shall be rendered against him, and a copy of the disclaimer shall be embodied in and form part of his specification. (See Rule 182.)

While it is not deemed expedient to require the same formality of disclaimer to avoid an interference in respect to suggested claims as to claims already incorporated in a party's application or to require an applicant to personally sign an amendment incorporating suggested claims into his application it is believed that in all cases the applicant and his assignees, if the invention is assigned, should be personally notified of suggested claims. The Examiner will therefore send copies of the letter suggesting claims to the applicant and to the assignees, as well as to the attorney of record in each case, and this practice will be followed in all cases where claims are suggested for the purpose of interference under the provisions of Rule 96.

O'BRIEN *v.* GALE, SR., *v.* MILLER *v.* ZIMMER *v.* CALDERWOOD.

Decided June 17, 1907.

1. INTERFERENCE—MOTIONS FOR DISSOLUTION—SETTING LIMIT OF APPEAL—PRACTICE.

Where the decision of the Examiner upon motions for dissolution includes an adverse decision upon the merits of a party's case which is subject to reconsideration under the provisions of Rule 124, no limit of appeal should be set in any of the motions until the decision is rendered upon the rehearing.

2. SAME—SAME—HEARING OF APPEALS BY COMMISSIONER.

Where appeals are taken from the decision of the Examiner upon motions for dissolution both to the Commissioner and to the Examiners-in-Chief, action upon the appeal to the Commissioner will be suspended until after the decision of the Examiners-in-Chief is rendered, in order that all appeals upon the motions may be considered at the same time. Where the Examiner upon the rehearing entirely dissolves the interference the question of irregularity in declaration of the interference, becomes a moot question and will not be entertained unless the decision dissolving the interference is reversed on appeal.

APPEAL on motion.

CURRENT-CONTROLLING APPARATUS.

Mr. Robert Watson for O'Brien.

Messrs. Brown & Darby and *Mr. C. M. Nissen* for Gale, Sr.

Messrs. Jones & Addington and *Mr. E. B. H. Tower, Jr.*, for Miller.

Mr. Albert G. Davis for Zimmer. (*Mr. Robert H. Read* and *Mr. Frank J. Seabolt* of counsel.)

Mr. G. F. De Wein for Calderwood.

MOORE, *Commissioner:*

This is an appeal by O'Brien from the decision of the Primary Examiner denying his motion to dissolve the interference on the ground of informality in declaring the same.

The record shows that O'Brien's motion to dissolve the interference is based on each of the grounds specified in Rule 122. A decision on this motion, as well as on motions to dissolve by Zimmer and Miller, two other parties to this interference, was rendered by the Primary Examiner on April 4, 1907. The motion by O'Brien to dissolve was denied; but the other motions to dissolve were granted in part, and the interference, at least as to the party Calderwood, was dissolved on grounds relating to the merits. In the decision on each motion April 25, 1907, was fixed by the Examiner as the limit of appeal. On April 13 the Primary Examiner set May 1, 1907, as the date for rehearing the motions of Zimmer and Miller, in conformity to the provisions of Rule 124, and set aside the limit of appeal previously fixed from the decisions on these motions. O'Brien, however, filed this appeal to the Commissioner from the refusal of the Examiner to dissolve the interference on the ground of informality in its declaration, which appeal also came on for hearing on May 1, 1907. Final decisions following the rehearing on the motions of Zimmer and Miller have not as yet been rendered by the Primary Examiner.

While the Examiner did not set aside the limit of appeal, April 25, 1907, fixed in his decision on O'Brien's motion, and O'Brien, therefore, had to take his appeal to the Commissioner within the time fixed in order to save his right of appeal, it is thought that the Primary Examiner should have also set aside the limit of appeal on O'Brien's motion, so that all the appeals could go forward at the same time. It is considered the proper practice where a time is fixed for reconsideration under Rule 124 to set no limit of appeal on any of the motions for dissolution until the decision is rendered on the rehearing. Otherwise the appeals will be taken piecemeal, although ordinarily no material advance can be made in the interference until all the motions for dissolution have been finally disposed of by the Primary Examiner.

In the present case while O'Brien's motion is not set for rehearing the decision already rendered by the Primary Examiner on his motion may be affected by the final decision of the said Examiner on the other motions. Furthermore, Miller has also alleged in his motion to dissolve irregularity in the declaration of the interference, and it is possible an appeal may be taken to the Commissioner from the Examiner's decision on this ground of Miller's motion. Obviously the appeals on this ground should be considered together, and not piecemeal. Again, in case the Primary Examiner on the rehearing should entirely dissolve the interference the question appealed would become a moot question. Under the practice announced in *Story* v. *Criswell*, (100 O. G., 683,) *Fickinger and Blake* v. *Hulett*, (111 O. G., 2492,) and *Newell* v. *Hubbard* (115 O. G., 1847) an appeal on the question of irregularity in the declaration of the interference will not be entertained and determined unless a decision dissolving the interference is reversed on appeal.

For the reasons stated above action on this appeal is

suspended until the question of dissolution of the interference on grounds relating to the merits is determined. In case the Examiners-in-Chief should sustain a decision of the Primary Examiner dissolving the interference and an appeal be taken to this tribunal both appeals on the question of dissolution will be considered at the same time.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

ROBINSON *v.* MCCORMICK.

Filed February 5, 1907.

1. INTERFERENCE—PRIORITY—EMPLOYER AND EMPLOYEE.

Inventors are often compelled to have their conceptions embodied in construction by skilled mechanics and manufacturers, whose practical knowledge often enables them to suggest and make valuable improvements in simplifying and perfecting machines or devices, and the inventor is entitled to protection from their efforts to claim his invention. At the same time an employee is to be protected from the rapacity of his employer also, and if in doing the work assigned him the employee goes farther than mechanical skill enables him to do and makes an actual invention he is equally entitled to the benefit of his invention.

2. SAME—SAME—SAME—BURDEN ON EMPLOYEE TO SHOW INVENTION.

Where an employee claims protection for an improvement which he devised while working upon a general conception of his employer, the burden is generally upon him to show that he made an invention in fact.

3. SAME—SAME—SAME—EMPLOYER MUST DISCLOSE MORE THAN FINAL RESULT.

To claim the benefit of the employee's skill and achievement, it is not sufficient that the employer had in mind a desired result and employed one to devise means for its accomplishment. He must show that he had an idea of the means to accomplish the particular result, which he communicated to the employee, in such detail as to enable the latter to embody the same in some practical form.

4. SAME—SAME—REDUCTION TO PRACTICE BY AGENT.

The reduction to practice of an invention by an original inventor cannot be taken as a reduction to practice by another merely because the ownership of the claims of both may afterward become vested in the same person or persons. It is not enough to entitle an applicant to a patent that some one else, not his agent, has shown the practicability of the invention by reducing it to practice. (*Hunter* v. *Stikeman*, 13 App. D. C., 214, 226.)

Mr. Melville Church for Robinson.

Mr. A. C. Paul for McCormick.

SHEPARD, *J.:*

This is an appeal from the decision of the Commissioner of Patents in an interference proceeding with the following issue:

A device for use in keeping accounts comprising a casing, a series of file-holders therein, each adapted to carry loose files, and an indicator for each file-holder normally in a position from which it must be moved in order to withdraw from or deposit a file within its holder, whereby the indicator is certainly changed from normal to indicating position whenever access is had to said file without having to remember to make such change, and whereby it may be certainly determined, after a certain period at a glance which file-holders have been used during said period.

2. A device for use in keeping accounts comprising a casing, a series of file-holders therein, each adapted to carry files, and indicators for the file-holders, each normally in a position from which it must be moved in order to withdraw from or deposit a file within its holder, whereby the movement of the indicator from normal position is not dependent on the memory of the operator, and whereby after a certain period it may be certainly determined at a glance which file-holders have had their indicators moved from normal to indicating position during said period.

As stated by the Examiner of Interferences:

The invention in issue is an indicator for duplicate-sales-slip files. In the use of a short account system a case or cabinet is provided wherein file-holders are kept each containing duplicate sales-slips whereon the customer's account and daily balances appear. It is customary to enter daily the totals of each individual's account in a book kept for that purpose. In order to obviate the necessity of handling all the file-holders in the cabinet every day an indicator was devised so that it could be told at a glance which file-holders had been removed from the cabinet during the day.

Robinson, whose application was filed January 12, 1904, alleged conception September 6, 1903, disclosure November 6, 1903, and reduction to practice November 10, 1903.

McCormick's application was filed February 16, 1905; he alleged conception, March 20, 1903, and reduction to practice December 22, 1903.

Each tribunal of the Patent Office substantially agreed that Robinson's evidence was not sufficient to show conception and reduction to practice prior to the date of filing his application. Apparently, he must at least have conceived the same some time in December, 1903, but under the conditions of the case it is unnecessary to determine the exact date of his conception. They all agreed in holding also that McCormick had a complete conception of the invention on or before December 1, 1903. All concurred in awarding priority to McCormick, on the ground that his invention had been reduced to practice by one Lumbard in December, 1903.

Assuming the correctness of the findings that McCormick was the first to conceive the invention, and that Robinson is only entitled to the benefit of his filed application as a constructive reduction to practice, we pass to the consideration of the finding that McCormick reduced the invention to actual practice in December, 1903. If the decision of the Commissioner on this point is without proper support, it must be reversed; otherwise affirmed.

It appears by recitals in the decision referred to, that one M. A. Lumbard had filed an application for a patent for a file-holder with automatic indicator, and had been placed in interference with Robinson. The Examiner of Interferences states that two of the counts of the issue of that interference were the same as the counts of the present issue; and counsel for McCormick state in their brief that Lumbard's application made claims on "one feature of the structure or combination constituting the issue." The record of that proceeding, however, is not incorporated in the record before us. In view of the evidence and the production, in connection therewith, of Lumbard's construction, the omission is not material. It is also stated that Lumbard took no evidence in the case, and the decision went against him on the record. The reason assigned for his abandonment of the controversy, by the counsel for McCormick, who represented Lumbard, is, the discovery by them, and the realization by Lumbard that McCormick, and not he, was the actual inventor of the broad issue of the interference.

The evidence shows that since some time prior to Lumbard's alleged conception, both he and McCormick were connected with the Complete Book-keeper Company of Des Moines, which had been organized as a corporation for the purpose of manufacturing a bookkeeping system devised by McCormick. Lum-

bard was its president and McCormick its general manager. Both were stock-holders. The corporation appears to be owner of McCormick's rights as involved in this interference.

In testifying, McCormick explained the original sketch of the invention claimed to have been conceived by him early in 1903, as follows:

No. 1 is a perpendicular shaft running up and down on the left-hand side of the first row of files facing the cabinet. No. 2 is a small ratchet-wheel on the shaft No. 1 opposite each and every individual file. No. 3 is the indicator extending out over the individual file and attached to shaft No. 1 above and below the ratchet-wheel No. 2, said ratchet-wheel being fastened solid on the shaft No. 1 and said indicator No. 3 being loose on shaft No. 1 with a spring attached, when the indicator is pulled out, catches in said ratchet No. 2 and prevents it from being pushed back, said indicator also having a guard attached to it which goes clear around the ratchet-wheel with square or flat surface that locks it from being pulled out farther than at right angles with the cabinet or file. No. 4 is a lever attached to the top of shaft No. 1. No. 5 is a pin in the outer end of said lever. No. 6 is a horizontal bar put on the pins in lever on shafts No. 1, and which was designed to lock at one end so that when all balances were taken in the evening it could be unlocked and pushed so as to revolve shafts No. 1 until indicators that had been used during the day returned to place over the file. No. 7 is intended to mark the place where spring catches in ratchet. No. 8 indicates the individual customer's file and 9 the frame of the cabinet. This being the first rough pencil sketch when I first conceived the idea only gave the merest outlines so as to help me fix it in my mind and put it before my eyes.

He also testified that shortly after the formation of the company, early in December, 1903, he described the invention to Lumbard, as follows:

I described that my idea consisted of an indicator attached exclusively to the cabinet constructed by means of a perpendicular shaft commencing at the outside of the left end of rows in the cabinet when facing the cabinet putting one of these shafts between each row of files, having on these shafts a small ratchet-wheel opposite to each individual file, said ratchet-wheel fastened solid to the shaft; the attaching of an indicator for each file, said indicator being loose on the shaft with a spring attached which would work in the teeth on the ratchet-wheel: also attached to the indicator a yoke which would go clear around the ratchet-wheel outside, having at one point a flat surface which when the indicator was turned out at right angles with the cabinet to permit of the taking out of the book or file, said indicator could not go farther: that is, than to stand at right angles with the cabinet, said spring standing in the teeth of the ratchet would not permit of the indicator going back. The upper end of all of these horizontal shafts to be connected by cranks with a horizontal rod locked at one end so that indicators could only be thrown back at the close of the day by unlocking said rod and revolving said perpendicular shafts one-half circle so as to replace indicators that had been used over the ends of files.

Again, he said that he told Lumbard that it must be an "absolutely automatic device." Lumbard objected to it on the ground that it would be too expensive to construct, and said, from the ideas witness had given him, he thought he could make one to answer the purpose that would not be so expensive to construct.

The conversation was dropped at that point. I was going out of town for a few days, and when I returned Mr. Lumbard showed me a device which he had evolved, he said, from my idea.

What he meant by an "absolutely automatic device." is indicated in his statement of a previous disclosure to Long who also became an incorporator. He said that he told Long it would work—

automatically, that is, that when the indicator is set to get a book on file out of the cabinet, it would be impossible to throw it back to place over the file until the indicator device was unlocked and all indicators used that day thrown back at one time.

The actual working of the device as indicated in the foregoing descriptions was this: A person desiring to remove a file-holder from its pigeonhole would turn out the corresponding "flap" or "flipper" by hand; and when so turned out it remained an indicator until turned back with all other indicators by a movement of the rod which was under the control of the bookkeeper.

With this knowledge, Lumbard went to work and, without further disclosure, or any assistance by McCormick, constructed a file-holder with an automatic "flap" or "flipper" to serve as an indicator, that had been made an exhibit in the case. This device is simple, useful and of cheap construction. It is an ordinary file-holder with a small metal "flap" or "flipper" attached to the back of the book and lying flat on the cover when that book or file-holder is in place. It comes into view when the book or file-holder is withdrawn. It works loosely on the hinge of the cover, so that when the cover is opened or turned back for the deposit of a sales-slip or other memorandum in the files, it moves with it and stands straight out as an indicator when the cover is turned back and the file-holder returned to its pigeonhole or compartment. The file-holder may then be withdrawn and opened any number of times, without disturbing the indicator. When the bookkeeper has examined the file-holder, and made his entry, he turns the "flap" or "flipper" back to its normal position upon the cover and returns the file-holder to its place. The file-holder can be removed and returned without disturbing the "flap" or "flipper," which only turns back when the file-holder is opened by raising the cover to obtain access to the files underneath it. This arrangement is entirely independent of the cabinet-case, and the file-holder answers its particular purpose when laid upon a table or arranged with others upon a shelf. No matter where or how the file-holder is placed, the "flap" or "flipper" performs its functions as an indicator to the bookkeeper whenever the cover is opened to deposit a file. It is essentially different from the construction that McCormick, prior thereto, had in mind. That McCormick and Lumbard regarded it as patentably distinct is apparent from their action. Lumbard, with the knowledge and approval of McCormick, immediately sent it to a solicitor for the purpose of preparing the application of a patent therefor. It is this application which, after some amendments suggested in the Office, was later placed in interference with Robinson, with the result before mentioned. McCormick, as the holder of a previously-issued patent, was not altogether ignorant of the law that a patent can only be issued to the real inventor. The same solicitors were employed, subsequently, to make the present application for McCormick.

In the course of his cross-examination in relation to the abandonment of Lumbard's application, McCormick was asked this question:

When did you find out that Lumbard's application for patent would not give your company a monopoly of the indicator feature?

His reply was:

We found out when Mr. Robinson was put in interference with Lumbard that there was a question as to the priority of the conception of the idea between Mr. Lumbard and Mr. Robinson, and accepted as a fact, without any demand of proof, that Mr. Robinson stated the truth when he fixed the date of his conception as September, 1903, Mr. Lumbard frankly admitting that he did not conceive the idea of his until December, 1903.

After receiving a copy of Robinson's application and preliminary statement, he said that considerable time was spent in corresponding with their attorneys as to the advisability of contesting the interference between Robinson and Lumbard.

We shall not consume time with a review of the evidence explanatory of the prosecution of Lumbard's application, its final abandonment, and the presentation of McCormick's application, which, to say the least, is not completely satisfactory. In our view of the case, the question of McCormick's estoppel, or abandonment of his invention need not be considered.

The substantial question for determination is this: Does the benefit of the reduction to practice of Lumbard's construction in December, 1903, inure to McCormick? All three of the tribunals held that it did. The Examiner of Interferences said:

It is true the specific device made by Lumbard is different from that disclosed by McCormick and shown in his application, but it is no less a reduction to practice of the generic invention. (See *Slaughter* v. *Halle*, 99 O. G., 2771; 21 App. D. C., 19; *Wyman* v. *Donnelly*, 104 O. G., 310; 21 App. D. C., 81. * * * This reduction to practice is held to inure to the benefit of McCormick.

In support of this conclusion he cites, and quotes from, *Milton* v. *Kingsley*, (75 O. G., 2193; 7 App. D. C., 531.)

The Examiners-in-Chief briefly indorsed this conclusion, saying:

While this description does not comprehend every detail of the device shown in McCormick's application drawing, it is in our opinion sufficient to identify that construction as the one which McCormick had in contemplation in June, 1903. This testimony, at least, shows that prior to the time when in December, 1903, McCormick made his alleged disclosure to Lumbard he was devising an indicator for file-holders which is substantially like that revealed by him to Lumbard.

The Commissioner, who agreed generally with the others, said:

In the device made by Lumbard, as shown in Exhibit 4, the indicator is mounted upon the file-holder in such position that the opening of the file-holder will operate the indicator. This structure differs in detail from the disclosure by McCormick to him which contemplated mounting the indicators on the casing in such position that the indicator must be operated to withdraw a file-holder from the casing.

After holding substantially that the work of Lumbard in improving upon McCormick's idea was no more than the work of a skilled mechanic in the execution of a general idea communicated to him for the purpose, he proceeds as follows:

Admitting that Lumbard is entitled to patent the specific structure invented by him in carrying out his own conception, it is not seen why this structure does not at the same time contain a reduction to practice of McCormick's invention which shall inure to McCormick as the sole conceiver thereof. The invention in issue is a broad one. Each count includes a casing, a series of file-holders and an indicator for each holder. The specific form or location of the indicator is not stated. The only limitation is that it shall be normally in a position from which it must be moved to gain access to the file-holder. Many forms of indicators would answer this purpose. The counts of the issue read equally well upon a device including the indicator located as shown in Lumbard's Exhibit 4, McCormick's application drawings or Figures 3, 4, 5 and 6 of the drawing of Robinson. Lumbard's device may be cheaper to make and an improvement upon the McCormick device, but there is no change in the operation of the system as a whole. It is well established where a different form of invention is made and tested from that disclosed by an applicant in his application and the claims are sufficiently broad to cover both forms, that the form made and tested is a reduction to practice of the broad invention. (*Wyman* v. *Donnelly*, 104 O. G., 310.) Similarly, the embodiment of the McCormick invention by Lumbard in structure, although of a different specific form, is a reduction to practice of the broad invention of McCormick.

It was urged by counsel for Robinson at the hearing that there was no proper combination between the casing and the file-holder in the device wherein the indicator was attached to the file-holder. It does not appear that this contention is entitled to any weight. The main object of the invention disclosed by the issue is to provide a device, whereby it may be determined which of a number of holders employed in a system of keeping accounts have been open and used during the day. The casing becomes an essential element as a means for supporting the number of holders which it is necessary to use in the system. While it may be true that there is no direct coöperation between the indicator and the casing in this form of the invention, it is not necessary in a new combination of old elements that each element should modify or change the mode of operation of all the others, but only that the combination should produce a new and useful result as a product of the combination. (*National Cash Register Company et al.* v. *American Cash Register Company*, 62 O. G., 449.)

We have stated the grounds of the concurring decisions at some length to show that the question under consideration is practically of law rather than fact. In this consideration it must be borne in mind that the question of invention, as between McCormick and Lumbard, depends upon the thing disclosed by the former to the latter prior to the latter's construction, and not upon what is now shown in McCormick's application, in accordance with which the issue in controversy was framed. This application not only includes the structure of Lumbard, but also improvements upon McCormick's original conception as disclosed by Lumbard.

Because of the relation between these two, who were officers and stock-holders of the corporation, it is held that the benefit of Lumbard's work inures to McCormick because it merely carried out the idea given him by the latter. Regarding the two as occupying substantially the relation of employer and employee at the time, the well-established principle is applied: that an inventor who employs another to embody his conception in practical form is entitled to any improvement thereon due to the mechanical skill of the employee. The latter must invent something, not merely improve, by the exercise of mechanical skill, upon a conception which he has been employed to work out. (*Agawam* v. *Jordan*, 7 Wall., 583, 603; *Milton* v. *Kingsley*, 7 App. D. C., 531, 537; *Huebel* v. *Bernard*, 15 App. D. C., 510, 514; *Gedge* v. *Cromwell*, 19 App. D. C., 192, 198; *Gallagher* v. *Hastings*, 21 App. D. C., 88, 99; *Flather* v. *Weber*, *idem*, 179; *Sendelbach* v. *Gillette*, 22 App. D. C., 168, 177.) The reason of this rule is obvious. Inventors are often compelled to have their conceptions embodied in construction by skilled mechanics or manufacturers, whose practical knowledge often enables them to suggest and make valuable improvements in simplifying and perfecting machines or devices. These are things they are employed and paid to do. The inventor is entitled to protection from their efforts to claim his invention. At the same time, an employee is to be protected from the rapacity of his employer also; and if in doing the work assigned him, he goes farther than mechanical skill enables him to do, and makes an actual invention, he is equally entitled to the benefit of his invention. Necessarily the relations between them generally impose upon him the burden of showing that he has made an invention in fact. To claim the benefit of the employee's skill and achievement it is not sufficient that the employer had in mind a desired result, and employed one to devise means for its accomplishment. He must show that he had an idea of the means to accomplish the particular result, which he communicated to the employee, in such detail as to enable the latter to embody the same in some practical form. Tested by these principles we are of the opinion that the construction of Lumbard was more than a mechanical improvement upon the idea of means communicated to him by McCormick. It is admitted by all that the structure differs from that of McCormick; and the Commissioner admits that Lumbard would be entitled "to patent the specific structure invented by him in carrying out his own conception." He then rests his decision that McCormick is entitled to claim the benefit of the reduction to practice, upon the construction of the issue, the invention of which he said was a broad one:

Each count includes a casing, a series of file-holders, and an indicator for each holder. The specific form or location of the indicator is not stated.

As before suggested, the casing and the series of file-holders kept therein had been long in use and perform no new function in a bookkeeping system of any kind. McCormick's communicated idea comprehended nothing more than the attachment of indicators to the casing through means of a rod, one opposite or adjacent to each pigeonhole in the series of file-holders; and it seems quite clear that these indicators were intended to be moved out by hand, according to the original idea, before the corresponding file-holder could be withdrawn to deposit a slip in it. When out, they could not be turned back except by moving the rod. McCormick had no idea at that time of attaching the indicator to the file-holder itself. This was the conception of Lumbard. He rejected the complicated and expensive combination of McCormick and devised a simple "flap" or "flipper," for attachment to the file-holder itself, which was automatically operated whenever the cover of the file-holder was raised or turned back to deposit a slip. This had no necessary connection with a casing or a series of file-holders. It operated in the same way by itself, with others placed upon a shelf, or with an indefinite number of others arranged in series in a case of any size. Whether, then, Lumbard be regarded as the employee of McCormick, or his partner, or as a mere stock-holder of the same corporation, which was the actual relation, we are of the opinion that he must be held to be the inventor of the automatic indicator attached to the file-holder, as shown in his construction.

If Lumbard had proceeded with his application, and been included in an interference with McCormick, he would be regarded as an independent inventor and not a mechanical developer and improver of an idea of means disclosed by the latter. In such case his reduction to practice would not, of course, be available by McCormick. That he was considered by himself, as well as by McCormick, an independent inventor, was shown by the first application for patent; and McCormick's conduct would have estopped him to thereafter claim the invention as against a continued claim by Lumbard. That they have, now, the same interest in establishing McCormick's present claim, had a natural tendency to cause Lumbard, as a witness in this case, to minimize his own claim of invention as far as he could fairly do so. We think, too, that the substantial cause of abandoning the prosecution of Lumbard's application was the apprehension that Robinson might be able to go back several months behind the date to which Lumbard was necessarily confined, namely, December, 1903. Had Lumbard persisted in prosecuting the interference with Robinson, he would, under the view taken of the latter's evidence of conception by all of the tribunals of the Office, have obtained an award of priority. The reduction to practice of an invention by an original inventor cannot be taken as a reduction to practice by another merely because the ownership of the claims of both may afterward become vested in the same person or persons. It is not enough to entitle an applicant to a patent that some one else, not his agent, has shown the practicability of the invention by reducing it to practice. (*Hunter* v. *Stiteman*, 13 App. D. C., 214, 226.)

Wyman v. *Donnelly* (21 App. D. C., 81, 85) is relied on to show that a machine first devised may be regarded as reduced to practice by the successful operation of another machine, with a change in a part of the complicated mechanism, which did not, however, change or affect the necessary elements of the issue. Without pausing to point out what may be other material differences between that case and this, it is only necessary to say that Donnelly was not only the conceiver of the invention, but the constructor, also, of both machines. There was no question of another inventor and constructor.

For the reasons given, we are constrained to reverse the decision appealed from. It is so ordered; and that this decision be certified to the Commissioner of Patents as the statute requires. Reversed.

Interference Notices.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 20, 1907.

Morris D. Stevens, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of The Elk Eye Milling Company, of McConnelsville, Ohio, and an application of The Longmont Farmers Milling & Elevator Company, of Longmont, Colo., for registration of a trade-mark and a trade-mark registered to Morris D. Stevens, whose known address is 18 Mercantile Exchange, Hudson and Harrison streets, New York, N. Y. The notices of declaration of said interference mailed by the Patent Office in the usual manner to the said Morris D. Stevens and also to his attorney of record have been returned by the Post-Office Department with the statement that neither can be found.

Notice is therefore hereby given to Morris D. Stevens, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will proceed as in case of default.

E. B. MOORE, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 8, 1907.

Jacob Ross, his assigns or legal representatives, take notice:

An interference has been declared by this Office between an application of Ferdinand Westheimer & Sons, of St. Joseph, Mo., for registration of a trade-mark and a trade-mark registered to Jacob Ross, of Chippewa Falls, Wis., and the attorneys of record for said Jacob Ross state that they have been unable to locate their client.

Notice is therefore hereby given to Jacob Ross, his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Commissioner.*

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 15, 1907.

Charles H. Palmer, Jr., his assigns or legal representatives, take notice:

An interference having been declared by this Office between the application of The Columbia Carriage Company, of Hamilton, Ohio, for registration of a trade-mark and a trade-mark registered to Charles H. Palmer, Jr., of Amesbury, Mass., and the notice of said declaration mailed by the Patent Office in the usual manner to the said Charles H. Palmer, Jr., and also the copy mailed to his attorney of record, together with the letter setting times for taking testimony, having been returned undelivered, notice is hereby given to the said Charles H. Palmer, Jr., his assigns or legal representatives, that if they or any of them desire to contest the said interference they should immediately put themselves in communication with the Commissioner of Patents in order that the notices of declaration heretofore sent by and returned to the Office may be forwarded to them.

This notice will be published in the OFFICIAL GAZETTE for six consecutive weeks. If no appearance shall be entered at the expiration of the period of publication, the interference will be proceeded with as in case of default.

E. B. MOORE, *Acting Commissioner.*

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AND OF

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, ETC.

OFFICIAL GAZETTE—MAY-JUNE, 1907.

DIGEST OF DECISIONS.

[Decisions of the United States courts are indicated by an asterisk (*) and of the Secretary of the Interior by a dagger (†).

ABANDONMENT OF APPLICATIONS.

1. FAILURE TO TAKE RESPONSIVE ACTION.
Where the action taken near the close of the year was not a proper action, *Held* that the applicant has a perfect right to delay action until the close of the year allowed by law therefor; but in doing so he assumes the risk of any mistake in the character of the action. [*Ex parte* Grant, 885.

2. SAME.
Since earlier action by applicant would have permitted correction of the mistake within the year and since it does not appear that earlier action could not have been taken, the failure to duly prosecute the application cannot be regarded as unavoidable, and it is therefore abandoned under the statute. [Id.

3. DELAY NOT UNAVOIDABLE.
Where it is alleged that the case was inadvertently crossed off the attorney's docket, and therefore overlooked until after the period for action had expired, but it does not appear that there was any intention to respond to the last Office action until near the close of the year allowed therefor or that action could not have been taken in the earlier part of this period had it been so desired, *Held* that the delay was not unavoidable and the case is abandoned. [*Ex parte* Duryea, 1291.

ABBREVIATIONS.

(See Name of Applicant.)

ADOPTION AND USE.

(See Trade-Marks, 6, 21.)

AFFIDAVITS.

(See Interference, 8; Name of Applicant; Public Use.)

AGENT.

(See Reduction to Practice, 2.)

AMENDMENTS.

(See Appeal to the Commissioner of Patents, 1; Examination of Applications; Motion to Dissolve Interference, 1.)

INTERFERENCE.
Where during the interference proceeding one of the parties filed an amendment canceling the claims rejected under Rule 124 and substituted a substitute specification and drawing, *Held* that the amendment is not of the character permitted under the rules during the interference proceeding and that the special circumstances are not such as to warrant its admission.
[Harnisch *v.* Gueniffet, Benoit, and Nicault, 455.

AMENDMENT TO OPPOSITION.

(See Trade-Marks, 33.)

ANTICIPATION.

(See Trade-Marks, 1, 9, 10, 29, 30.)

APPEAL.

(See Appeal to the Commissioner of Patents; Motion for leave to take Testimony; Motion to Take Testimony in Foreign Countries.)

APPEAL FROM THE EXAMINER OF INTERFERENCES.

(See Motion for Leave to Take Testimony.)

APPEAL TO THE COMMISSIONER OF PATENTS.

1. NEW REFERENCE DISCOVERED SUBSEQUENT TO.
Where a reference was discovered by the Office subsequent to a hearing by the Commissioner on an *ex parte* appeal from a decision of the Examiners-in-Chief affirming a rejection by the Primary Examiner, decision on the appeal was suspended for thirty days and applicant was notified that he might amend or take other action in view of the citation within the time stated, that a failure to amend within the time would amount to a waiver of the right to amend, and that upon failure to act a decision would be rendered upon consideration of the old and the new references. He was further notified that if he did not desire to amend a rehearing would be granted for argument upon the new reference upon request therefor. [*Ex parte* Fortuny, 886.

2. MOTION TO DISSOLVE—HEARING.
Where appeals are taken from the decision of the Examiner upon motions for dissolution both to the Commissioner and to the Examiners-in-Chief, action upon the appeal to the Commissioner will be suspended until after the decision of the Examiners-in-Chief is rendered, in order that all appeals upon the motions may be considered at the same time. Where the Examiner upon the rehearing entirely dissolves the interference, the question of irregularity in declaration of the interference becomes a moot question and will not be entertained unless the decision dissolving the interference is reversed on appeal.
[O'Brien *v.* Gale, Sr., *v.* Miller *v.* Zimmer *v.* Calderwood, 3288.

APPEAL TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

(See Reopening of Interference.)

APPEAL TO THE EXAMINERS-IN-CHIEF.

(See Appeal to the Commissioner of Patents, 2; Motion to Dissolve Interference, 1.)

APPLICATIONS.

(See Abandonment of Applications; Amendments; Examination of Applications; Formal Objections; Name of Applicant.)

ATTORNEYS.

UNITED STATES COMMISSIONERS INELIGIBLE TO ACT AS BEFORE THE PATENT OFFICE.
Held that under section 1782 of the Revised Statutes a person holding the office of United States commissioner is ineligible to practice as an attorney representing applicants for patents before the United States Patent Office. [†*In re* Bloch, 457.

BAR TO PATENT.

(See Public Use.)

BAR TO REGISTRATION.

(See Trade-Marks, 22.)

BILL IN EQUITY UNDER SECTION 4915, REVISED STATUTES.

FILING BY DEFEATED PARTY TO INTERFERENCE WILL NOT STAY ISSUE OF PATENT TO SUCCESSFUL PARTY.
The filing of a bill in equity under section 4915, Revised Statutes, by the defeated party to an interference will not operate to stay the issue of a patent to the successful party, nor will it justify the Commissioner of Patents in withholding it until the equity proceeding is terminated, (citing case of *Sargent*, 12 O. G., 475, and *Wells* v. *Boyle*, 43 O. G., 783.)
[Dunbar v. Schellenger, 2087.

BURDEN OF PROOF.

(See Employer and Employee, 2, 3.)

CANCELATION OF REGISTRATION.

(See Trade-Marks, 12, 13, 24, 25, 26.)

CERTIFIED COPIES OF PARTS OF APPLICATIONS.

(See Motion to Amend Application.)

COMMISSIONER OF PATENTS.

(See Appeal to the Commissioner of Patents; Bill in Equity Under Section 4915, Revised Statutes; Examination of Applications, 2; Motion to Amend Application.)

CONCEALMENT OF INVENTION.

(See Interference, 9.)

CONSTRUCTION OF CLAIMS.

1. INTERFERENCE.
A claim should be given the broadest interpretation which it will support, and limitations should not be imported into the claim from the specification to meet the exigencies of the particular situation in which the claim may stand at a given time.
[*Miel v. Young, 2532.

2. SAME—LIMITATIONS NOT IMPORTED FROM PATENT SPECIFICATION.
Where in a stone-saw construction the claim calls for "removable means for reinforcing the lower ends of the blades during the initial part of a cutting operation" and it appears that the device of Miel, a patentee, was designed to prevent the blades from "chattering or wabbling" laterally, while Young's structure is for the purpose of enabling the blades of the saw "to stand the strain for their work" and to support the saw longitudinally, *Held* that there is no limitation in the claim, which refers broadly to reinforcing means, which necessitates the reading into the claim of structural features found only in the specification of the patent.
[*Id.

CONSTRUCTION OF RULES.

(See Amendments; Interference, 3, 10; Motion for Leave to Take Testimony; Motion to Amend Application; Motion to Dissolve Interference, 2, 6.)

CONSTRUCTION OF STATUTES.

(See Attorneys; Bill in Equity Under Section 4915, Revised Statutes; Labels.)

CONSTRUCTION OF TRADE-MARK STATUTES.

(See Trade-Marks, 13, 14, 15, 20, 21, 22, 24, 25, 30, 34.)

CONTINUOUS USE.

(See Trade-Marks, 26.)

CROSS-EXAMINATION.

(See Interference, 5, 6, 7, 8.)

DECISIONS OF THE EXAMINER.

(See Formal Objections; Motion to Dissolve Interference 1, 6.)

DECISIONS OF EXAMINER OF INTERFERENCES.

(See Motion for Leave to Take Testimony; Motion to Take Testimony in Foreign Countries.)

DECISIONS OF PATENT OFFICE TRIBUNALS.

(See Interference, 4; Reopening of Interferences.)

DECLARATION OF INTERFERENCE.

(See Appeal to the Commissioner of Patents, 2.)

DECREE.

(See Infringement, 1, 2, 4.)

DELAY IN FILING APPLICATIONS.

(See Interference, 1.)

DELAY IN FILING MOTIONS.

(See Motion to Amend Applications.)

DELAY IN PROSECUTING APPLICATIONS.

(See Abandonment of Applications; Public Use, 2.)

DELAY IN REDUCTION TO PRACTICE.

(See Interference, 2.)

DEPOSITION.

(See Interference, 5, 8.)

DESCRIPTIVE TERMS

(See Trade-Marks, 2, 3, 5, 8, 18, 19, 22, 23, 27, 34.)

DILIGENCE.

(See Interference, 2, 9.)

DISCLOSURE OF INVENTION.

(See Interference, 4.)

DISSOLUTION OF INTERFERENCE.

(See Appeal to the Commissioner of Patents, 2; Motion to Dissolve Interference.)

EMPLOYER AND EMPLOYEE.

1. INTERFERENCE—PRIORITY.
Inventors are often compelled to have their conceptions embodied in construction by skilled mechanics and manufacturers, whose practical knowledge often enables them to suggest and make valuable improvements in simplifying and perfecting machines or devices, and the inventor is entitled to protection from their efforts to claim his invention. At the same time an employee is to be protected from the rapacity of his employer also, and if in doing the work assigned him the employee goes farther than mechanical skill enables him to do and makes an actual invention he is equally entitled to the benefit of his invention.
[*Robinson v. McCormick, 2069.

2. SAME—SAME—BURDEN ON EMPLOYEE TO SHOW INVENTION.
Where an employee claims protection for an improvement which he devised while working upon a general conception of his employer, the burden is generally upon him to show that he made an invention in fact.
[*Id.

3. SAME—SAME—EMPLOYER MUST DISCLOSE MORE THAN FINAL RESULT.
To claim the benefit of the employee's skill and achievement, it is not sufficient that the employer had in mind a desired result and employed one to devise means for its accomplishment. He must show that he had an idea of the means to accomplish the particular result, which he communicated to the employee in such detail as to enable the latter to embody the same in some practical form.
[*Id.

EQUITY.

(See Infringement, 4.)

EQUIVALENTS.

(See Invention.)

ESTOPPEL.

(See Infringement, 3.)

EVIDENCE.

(See Interference, 5, 7, 8; Reduction to Practice, 1; Rejection of Claims.)

EXAMINATION OF APPLICATIONS.

1. AMENDMENT AFTER FINAL REJECTION—EXPLANATION BY EXAMINER PRIOR TO FINAL REJECTION.
Where after a rejection by the Primary Examiner an applicant requests a reconsideration and files an argument fully presenting the case upon the merits and the Examiner in view thereof finally rejects the claims, he cannot submit new claims and have them entered and considered thereafter upon the allegation that the letter asking for reconsideration was in fact a request for an explanation of the Examiner's position.
[*Ex parte* Knapp and Cade, 1687.

2. RES ADJUDICATA—PRACTICE—REJECTION.
Where an application is filed the specification and claims of which the Examiner holds to be substantially the same as those of a prior application of the same party the claims of which have been declared unpatentable by the Commissioner and the courts, *Held* that the application should be examined and the claims rejected on the ground that the question of their patentability is *res adjudicata*.
[*Ex parte* Millett and Reed, 2836.

EXCLUSIVE USE.

(See Trade-Marks, 13, 14, 15, 20 21, 24, 30.)

FORMAL OBJECTIONS.

DISCOVERED BY ISSUE AND GAZETTE DIVISION—DECISION OF EXAMINER CONTROLLING.
When in the revision of the application in the Issue and Gazette Division supposed formal objections are discovered, the Examiner's attention should be called thereto; but the Examiner's decision, indorsed upon the reference-slip, that a supposed objection is not in fact one or that correction is not necessary should settle the matter for this Office.
[*Ex parte* Faulkner, 886.

FORMER DECISIONS CITED.

(See Bill in Equity Under Section 4915, Revised Statutes; Interference, 4; Reduction to Practice, 2; Trade-Marks, 22, 28.)

FORMER DECISIONS MODIFIED.

(See Motion for Leave to Take Testimony.)

GEOGRAPHICAL TERMS.

(See Trade-Marks, 7, 16, 17, 23, 27.)

INDEFINITENESS.

(See Motion to Dissolve Interference, 3.)

INFRINGEMENT.

1. PATENTS—DECREE OF NON-INFRINGEMENT—QUESTION RES ADJUDICATA THROUGHOUT THE UNITED STATES.
Held that a final decree for the defendant in one circuit in a suit upon a patent upon the ground of non-infringement entitled the defendant to continue the business of making and selling throughout the United States the article which he had theretofore been making and selling without molestation by the complainant through the patent in suit.
[*Kessler v. Eldred, 1690.

2. SAME—SAME—SUBSEQUENT SUIT AGAINST DEFENDANT'S CUSTOMERS WRONGFUL.
Held that said decree makes a suit by the complainant against any of defendant's customers for alleged infringement of the patent sued upon a wrongful interference with defendant's business.
[*Id.

3. SAME—ASSUMPTION OF DEFENSE OF SUIT AGAINST CUSTOMER—NO ESTOPPEL FROM PROCEEDING DIRECTLY AGAINST COMPLAINANT.
Where a suit upon a patent terminates for the defendant and complainant thereafter sues a customer of the defendant upon the same patent and the aforesaid defendant assumes the defense of his customer's suit, *Held* that he is not thereby estopped from proceeding against the complainant for wrongfully interfering with his business.
[*Id.

4. SAME—SAME—SAME—MAY PROCEED IN EQUITY.
Held that the aforesaid defendant was entitled to proceed against the complainant in equity.
[*Id.

INTERFERENCE.

(See Amendments; Bill in Equity Under Section 4915, Revised Statutes; Construction of Claims; Employer and Employee; Motion for Leave to Take Testimony; Motion to Amend Application; Motion to Dissolve Interference; Motion to Take Testimony in Foreign Countries; Public Use; Reduction to Practice; Rejection of Claims; Reopening of Interference; Trade-Marks, 9, 10, 14, 15, 28.)

1. PRIORITY—DELAY AFTER ALLEGED CONCEPTION AND REDUCTION TO PRACTICE.
Where an inventor after an alleged reduction to practice of his invention lays it aside for five years, during which time he files several domestic and foreign applications and develops another system to accomplish the same purpose which he regards as superior, and fails to file an application until after the grant of a patent to another for the same invention who was proceeding in good faith, he is guilty of inexcusable laches.
[*Bliss v. McElroy, 458.

2. SAME—DILIGENCE.
F. conceived the invention in September, 1900, and disclosed it in September, 1903, but did nothing toward reducing it to practice until April, 1904. C. conceived the invention in January, 1904, and reduced it to practice in the following March. The excuse offered by F. for his delay was that he was too busy earning his living to attend to it, and, moreover, he did not have the means to reduce it to practice unless he borrowed the money, which he did not want to do. *Held* that F. was lacking in diligence, it being shown by the evidence that subsequent to his conception he borrowed $3,000 with which to engage in a venturesome undertaking, while a small amount of money would have enabled him to construct the invention.
[*Feinberg v. Cowan, 889.

3. TESTIMONY—RIGHT TO MAKE CLAIMS—PRIORITY.
In an interference proceeding where, in addition to the taking of testimony as to who was the first inventor, permission was obtained to take testimony concerning the right of one of the parties to make the claims for use at the first hearing on priority under Rule 130, *Held* that the rule contemplates but one contest, and that leading to an award of priority, and not two distinct contests and two separate proceedings. The taking of testimony on the question of priority should not therefore be suspended until the question of the right to make the claims has been determined.
[Hewitt v. Weintraub v. Hewitt and Rogers, 1689.

4. PRIORITY—SUFFICIENCY OF DISCLOSURE—CONCLUSIVENESS OF PATENT OFFICE DECISIONS.
The decisions of the expert tribunals of the Patent Office on the question of the sufficiency of the disclosure of a party to an interference will be accepted by the court of appeals as conclusive, except in extreme cases where palpable error has been committed. (*Seeberger* v. *Dodge*, 114 O. G., 2382; 24 App. D. C., 481; *Podlesak and Podlesak* v. *McInnerney*, 120 O. G., 2127; 26 App. D. C., 405.)
[*Kilbourn v. Hirner, 1689.

5. EVIDENCE—CONSIDERATION OF DEPOSITION—FAILURE TO AFFORD OPPORTUNITY FOR CROSS-EXAMINATION.
Where the direct examination of a witness is completed and after answering certain questions upon cross-examination he is withdrawn from the stand on account of sickness and his counsel refuses to take any steps to produce him again in order that the cross-examination may be completed, on the ground that he had been sick for over a year, had undergone several operations, and that there was no probability that he would be able to testify at any definite time in the future, if at all, *Held* that in so far as the answers given on direct examination were not tested by cross-examination the deposition should not be considered.
[Munster v. Ashworth 2085.

6. DEPOSITIONS—NOTICE OF TAKING—NOTICE WAIVED.
Where a record as made up by the officer before whom testimony is taken in an interference proceeding shows that counsel for one of the parties desired to examine certain witnesses as to whom no notice had been given by opposing counsel and the latter stated that while he had no objection to their direct examination he did not care to cross-examine and thereupon went away, *Held* that the depositions of such witnesses will not upon motion be stricken out because of lack of notice, notwithstanding an affidavit by counsel stating that he had refused to take the testimony of such witnesses. [Id.

7. EVIDENCE—CONSIDERATION OF DEPOSITION—FAILURE TO AFFORD OPPORTUNITY FOR CROSS-EXAMINATION.
Where a witness after testifying on his own behalf and after answering a few questions on cross-examination states that he is unable to withstand the strain of cross-examination and leaves the stand and his counsel refuses to ask for an extension of time for taking testimony in order that the witness may be cross-examined at some time in the future, alleging that the witness is in such bad physical condition that there is no prospect of his being able to testify within a year, if at all, *Held* that counsel, knowing the condition of the witness, should either have refrained from offering him as a witness in his own behalf or, having done so, should have consented to some reasonable postponement. Under such circumstances the direct examination should have been excluded upon motion.
[*Munster v. Ashworth, 2088.

8. SAME—AFFIDAVIT ATTACHED TO DEPOSITION.
An affidavit of a physician attached to a deposition, setting forth the physical condition of a witness who has left the stand during cross-examination because of inability to stand the strain of cross-examination, forms no part of such deposition. The affiant should have been called and sworn to testify as a witness. [*Id.

9. PRIORITY—CONCEALMENT OF INVENTION.
If there be concealment or suppression of the invention, the field lies open to be occupied by a more diligent, though later, inventor, who when he has not only put the invention into public use, but has also obtained a patent for it, cannot be divested of his right to hold the field except upon proof beyond a reasonable doubt that the earlier and more negligent inventor has not gone back to an abandoned device or a device suppressed or concealed in order to establish a prior right.
[*Richards v. Burkholder, 2533.

10. SUGGESTION OF CLAIMS UNDER RULE 96—PRACTICE—INVENTOR AND ASSIGNEES PERSONALLY NOTIFIED.
In all cases where claims are suggested for the purpose of interference under the provisions of Rule 96 copies of the letter containing the suggested claims will be sent to the applicant and to the assignees, if the invention is assigned, as well as to the attorney of record. [*Ex parte* Doebler, 3287.

INTERFERENCE PROCEEDINGS.

(See Amendments; Interference, 3, 6; Motion to Dissolve Interference 4.)

INVALID REGISTRATION.

(See Trade-Marks, 11.)

INVENTION.

PATENTABILITY—SUBSTITUTION OF EQUIVALENTS.
Where it is old to heat exhaust-air as it passes from the high-pressure to the low-pressure cylinder of a compound air-engine by means of a liquid substance and it is also old to use atmospheric air to impart heat to air within a receptacle, it does not amount to invention to substitute the latter heating medium for the former. [*In re* Hodges, 887.

LABELS.

THE WORDS "RED CROSS" REFUSED REGISTRATION IN VIEW OF THE ACT OF JANUARY 5, 1905.
The words "Red Cross," whether construed as "the sign of the Red Cross" expressed in language or as the alternative of the sign "Red Cross," clearly come within the spirit and intent of the provisions of section 4 of the act entitled "An act to incorporate the American National Red Cross," approved January 5, 1905, prohibiting the use of "such sign or any insignia colored in imitation thereof for the purposes of trade or as an advertisement to induce the sale of any article whatsoever.
[*Ex parte* Strauss, 865.

LACHES.

(See Interference, 1; Trade-Marks, 21.)

LIMITATION OF CLAIMS.

(See Construction of Claims.)

LIMIT OF APPEAL.

(See Motion to Dissolve Interference, 6.)

LIMIT OF TIME.

(See Trade-Marks, 33.)

MECHANICAL SKILL.

(See Employer and Employee.)

MERITS OF THE CASE.

(See Motion to Dissolve Interference, 6.)

MISTAKE.

(See Abandonment of Application, 1, 2.)

MOTION FOR LEAVE TO TAKE TESTIMONY.

INTERFERENCE—APPEAL.
Where a motion for permission to take testimony in opposition to an opponent's right to make the claims in issue for use at final hearing under the provisions of Rule 130 is denied by the Examiner of Interferences, *Held* that an appeal will be permitted from his adverse decision. (Practice announced in *Lowry and Cowley* v. *Spoon*, 124 O. G., 1846, and *Hanan and Gates* v. *Marshall*, 126 O. G., 3423, modified.) [Pym v. Hadaway, 457.

MOTION TO AMEND APPLICATION.

1. INTERFERENCE—TRANSMISSION.
Where a certified copy of a part of an application was filed under Rule 105, but later the entire case was thrown open to inspection by order of the Commissioner, *Held* to excuse delay in bringing a motion to amend under Rule 109 as to claims which were not in certified copy. [Bastian v. Champ, 2837.

2. SAME—PRACTICE.
Where a sufficient excuse is offered for the delay in bringing a motion to amend as to certain claims thereof, *Held* that the entire motion should be transmitted, as no additional delay will be occasioned. [Id.

MOTION TO DISSOLVE INTERFERENCE.

(See Appeal to the Commissioner of Patents, 2.)

1. INTERFERENCE—TRANSMISSION.
Where on appeal from the decision of the Primary Examiner dissolving an interference the Examiners-in-Chief affirmed the decision of the Examiner as to claims 2, 3, and 4 and reversed it as to claim 1, and thereupon one party filed an amendment to his case, while the other party brought a motion to dissolve, *Held* that the decision of the Examiner of Interferences refusing to transmit the motion to dissolve to the Primary Examiner is correct, since the motion is based on the proposed amendment and presupposes its entry.
[Harnisch v. Guenniffet, Benoit, and Nicault, 455.

2. SAME—DIFFERENCE IN MEANING OF CLAIMS.
The provision in Rule 122 for dissolution upon the ground of difference in the meaning of claims was placed there to cover a clean-cut class of cases which theoretical considerations show may arise, but which, in fact, are of very rare occurrence. To justify transmission of a motion brought upon this ground, facts must be alleged indicating something more than a possible lack of right upon the part of one or the other of the parties to use the language of the claim in issue. [Cushman v. Edwards, 456.

3. SAME—DEFINITENESS.
A motion to dissolve on the ground of non-patentability, which states that a given count "does not involve patentable invention over each of the following Letters Patent," after which certain patents are specified, is not open to the objection of indefiniteness. [McCanna v. Morris, 1292.

4. SAME—TRANSMISSION—GROUND OF PUBLIC USE.
Public use is considered in the practice of this Office as a separate question requiring an investigation independent of the question of priority of invention involved in an interference proceeding. A motion for dissolution based upon the ground of public use should not therefore be transmitted.
[Barber v. Wood, 2835.

5. SAME—BASED UPON CONTINGENCY—NOT TRANSMITTED.
A motion by one party to an interference to dissolve the interference as to certain counts in case certain other counts are found to be unpatentable in view of the same references upon a motion to dissolve brought by his opponent should not be transmitted. [*Dunbar v. Schellenger 2837

6. SAME—SETTING LIMIT OF APPEAL—PRACTICE.
Where the decision of the Examiner upon motions for dissolution includes an adverse decision upon the merits of a party's case which is subject to reconsideration under the provisions of Rule 124, no limit of appeal should be set in any of the motions until the decision is rendered upon the rehearing.
[*Ex parte* Doebler, 3287.

MOTION TO STRIKE OUT TESTIMONY.

(See Interference, 6, 7.)

MOTION TO TAKE TESTIMONY IN FOREIGN COUNTRIES.

INTERFERENCE—SUFFICIENCY OF SHOWING—APPEAL.
The sufficiency of a showing in support of a motion to take testimony abroad is a matter which should be left largely to the discretion of the Examiner of Interferences, and his decision granting such a motion should not be reviewed except where clear error is made to appear.
[Keith, Erickson, and Erickson v. Lundquist, 2835.

NAME OF APPLICANT.

"RAY" FULL CHRISTIAN NAME—NO AFFIDAVIT NECESSARY.
The name "Ray" is commonly used as a full Christian name, and no affidavit should be required in connection therewith.
Ex parte Faulkner, 886.

NEW CLAIMS.

(See Examination of Applications, 1.)

NEWLY-DISCOVERED EVIDENCE.

(See Reopening of Interference.)

NEW REFERENCES.

(See Appeal to the Commissioner of Patents, 1.)

NOTICE OF SUGGESTED CLAIMS.

(See Interference, 10.)

NOTICE OF TAKING TESTIMONY.

(See Interference, 6.)

OPPOSITION.

(See Trade-Marks, 20, 21, 25, 32, 33, 34.)

PATENTABILITY.

(See Examination of Applications, 2; Invention; Motion to Dissolve Interference, 3, 5; Reopening of Interference.)

PATENTEE AND APPLICANT.

(See Interference, 9.)

POVERTY.

(See Interference, 2.)

PRIMA FACIE CASE.

(See Public Use.)

PRIORITY OF INVENTION.

(See Employer and Employee; Interference, 1, 2, 3, 4, 9; Motion to Dissolve Interference; Rejection of Claims; Reopening of Interference.)

PROPERTY RIGHTS.

(See Trade-Marks, 23.)

PUBLIC USE.

(See Motion to Dissolve Interference, 4.)

1. PRIMA FACIE CASE—SHOWING REQUIRED.
Where the single affidavit upon which the protest rests sets forth the conclusions of the affiant that the machine alleged to have been in public use corresponded to a certain claim of the application instead of giving a description of the machine itself, *Held* that the showing made is entirely insufficient to justify the institution of a public-use proceeding.
[*In re* Booth Brothers, 1291.

2. SAME—SAME.
In a public-use protest the facts should be set forth as fully as possible, so that the Office may pass upon the identity of the machine used with that claimed by the applicant and upon the success of its operation in determining whether proceedings shall be instituted. Corroborating affidavits should also be filed if other witnesses are to be relied upon. Altogether, the protestants should present their *prima facie* case as well as may be done by affidavits, so as to give the applicant opportunity to intelligently oppose the institution of the proceeding and the consequent delay in the prosecution of his application.
[Id.

PUBLIC-USE PROCEEDINGS.

(See Public Use.)

REDUCTION TO PRACTICE.

(See Interference, 1, 2.)

1. INTERFERENCE—SIMPLE DEVICE—ORIGINAL DEVICE NOT PRODUCED.
Where the device in issue is said to belong to that class of simple devices the mere production of which without test is regarded as an actual reduction to practice, but the device originally made was not produced in evidence, and the testimony tending to establish the identity of a later device, which was introduced in evidence, with the original device is so general as to leave it uncertain whether this later device is of the same strength, size, shape, and proportion as the original, *Held* that actual reduction to practice is not proved.
[Richards v. Burkholder, 2529.

2. SAME—BY AGENT.
The reduction to practice of an invention by an original inventor cannot be taken as a reduction to practice by another merely because the ownership of the claims of both may afterward become vested in the same person or persons. It is not enough to entitle an applicant to a patent that some one else, not his agent, has shown the practicability of the invention by reducing it to practice. (*Hunter* v. *Stikeman*, 85 O. G., 610; 13 App. D. C., 214, 226.) [*Robinson v. McCormick, 3289.

REGISTRABILITY.

(See Labels; Trade-Marks, 2, 3, 4, 7, 8, 9, 10, 16, 17, 18, 19, 20, 21, 25, 27, 30, 31, 32, 34.)

REGISTRATION.

(See Trade-Marks, 11, 12, 13, 14, 15, 20, 21, 24, 25, 26.)

REHEARING.

(See Appeal to the Commissioner of Patents; Motion to Dissolve Interference, 6.)

REJECTION OF CLAIMS.

(See Examination of Applications.)

CANNOT BE BASED UPON EVIDENCE TAKEN IN SECOND INTERFERENCE WHICH HAS BEEN HELD TO BE RES ADJUDICATA.
Where in a second interference the question of priority was held to be *res adjudicata* and a decision rendered in favor of Blackford, Blackford's claims corresponding to the issue of the interference cannot be rejected upon the ground that they are anticipated by an exhibit introduced into the second interference by Wilder. Inasmuch as the second interference should not have been declared, the testimony taken therein is of no force and is to be given no effect for any purpose whatever.
[*In re* Wilder, 455.

REOPENING OF INTERFERENCE.

1. FOR INTRODUCTION OF NEWLY-DISCOVERED EVIDENCE—REVIEW BY COURT OF APPEALS.
Where the tribunals of the Patent Office in the exercise of their discretion have refused to reopen a case for the introduction of newly-discovered evidence, their conclusions will be reviewed by the court of appeals only in case of an abuse of discretion. [*Dunbar v. Schellenger, 2837.

2. PRIORITY—APPEAL TO COURT—CONSIDERATION OF PATENTABILITY.
"As regards the contention of the appellant that 'the structure in interference differs from the prior structure of Roberts in but two particulars,' * * * it is sufficient to say, that in so far as it appears to raise a question of patentability, that question has been settled by the allowance of the claims."
[*Id.

RES ADJUDICATA.

(See Examination of Applications, 2; Infringement; Rejection of Claims; Trade-Marks, 25.)

RESPONSIVE ACTION BY APPLICANT.

(See Abandonment of Applications, 1, 3.)

SIMILARITY OF MARKS.

(See Trade-Marks, 1, 28, 29, 30.)

SPECIFICATIONS.

(See Construction of Claims.)

SUFFICIENCY OF EVIDENCE.

(See Public Use.)

SUGGESTED CLAIMS.

(See Interference, 10.)

SUITS FOR INFRINGEMENT.

(See Infringement.)

SUSPENSION OF PROCEEDINGS.

(See Appeal to the Commissioner of Patents.)

TEN-YEARS' CLAUSE.

(See Trade-Marks, 14, 15, 20, 21, 22, 30.)

TESTIMONY.

(See Interference, 3, 6; Reduction to Practice, 1; Rejection of Claims.)

TESTS.

(See Reduction to Practice.)

TRADE-MARKS.

1. "OLIVOINT" ANTICIPATED BY "OLIVEINE."
"Olivoint" used as a trade-mark for ointment for skin affections so closely resembles the mark "Oliveine" registered as a trade-mark for ointments and salves as to be likely to cause confusion or mistake in the mind of the public or to deceive purchasers. [*Ex parte* Cross, 455.

2. "RUST? NEVER!" FOR HOOKS AND EYES—DESCRIPTIVE—NOT REGISTRABLE.
The phrase "Rust? Never!" is clearly the predominant feature of the mark presented for registration and indicates that the hooks and eyes are so treated that they will never rust and that therefore "rust" will never be transmitted to the goods to which they are applied.
[*Ex parte* The De Long Hook & Eye Company, 895.

3. SAME—SAME—RED RECTANGULAR BACKGROUND NOT A DISTINCTIVE FEATURE.
The fact that the words "Rust? Never!" appear upon a red rectangular background does not confer registrability upon the mark. It is not an unusual configuration which would impress itself upon the memory of the purchaser, but merely serves to throw the words "Rust? Never!" into bold relief. [Id.

4. "ATWOOD" ASSOCIATED WITH AN ARROW-HEAD AND THE LETTER "A"—NOT REGISTRABLE.
Where the name "Atwood" is the predominating feature of the mark and it appears from applicant's specimens to be applied to the goods merely as raised capital letters in the casting bearing the mark, the association with the name of the fanciful symbol is not considered sufficient to render the mark registrable as a whole.
[*Ex parte* Pittsburgh Valve, Foundry and Construction Company, 887.

5. DESCRIPTIVE.
A statement which does not purport to be a description of the mark, but indirectly states the nature of the principal feature of applicant's mark, was properly objected to by the Examiner of Trade-Marks. [Id.

6. DATE OF ADOPTION.
The date of adoption and use of applicant's mark means the whole mark presented for registration, and it is not apparent that any useful purpose can be subserved by a statement as to the date of use of the various features of the mark. [Id.

7. "ORIENTAL CREAM" FOR SKIN-LOTION—GEOGRAPHICAL IN SIGNIFICANCE—NOT REGISTRABLE.
Held that a trade-mark comprising the words "'Oriental Cream,' associated with an eagle holding a scroll in its beak," is not registrable as a trade-mark for a skin-lotion because of its geographical significance. [*In re* Hopkins, 890.

8. "DULL BLACK" FOR HOOKS AND EYES—DESCRIPTIVE—NOT REGISTRABLE.
The words "Dull Black" as applied to hooks and eyes are obviously descriptive of the color of these articles, and therefore not registrable.
[*Ex parte* The De Long Hook & Eye Company, 1291.

9. ANTICIPATION—CONSIDERATION OF THE MARK AS A WHOLE.
The right to registration of a mark in view of earlier registrations must be determined from consideration of the entire mark shown upon the application drawing. It is the mark shown which is registered and not any supposed distinguishing feature thereof. However, in determining the substantial identity or non-identity of two marks it is obviously necessary to consider the comparative prominence in each mark of those features which it has in common with the other mark and those features in which it differs therefrom. [*Ex parte* Golden & Co., 1292.

10. SAME—SAME—ELK'S HEAD, ETC.
Where in an interference involving marks having elks' heads prominently displayed thereon the decision was adverse to the appellant, *Held* that registration of the appellant's mark, which comprises the picture of an elk's head standing out prominently thereon and having in addition thereto the inscription "Elk Grove Creamery, Manufacturers of finest pasteurized Elgin Butter" presented in various styles of lettering and set off in circles and scrolls with other minor ornamentation, should be refused. [Id.

11. REGISTRATION FOR CARTONS—INVALID.
Where a mark is registered for cartons, but the actual trade which the mark represents is in merchandise contained in the cartons, *Held* that the registration is invalid.
[Pioneer Suspender Company v. Lewis Oppenheimer's Sons, 1293.

12. NOT USED ON GOODS—CANCELATION.
Where certain words were registered as a trade-mark for merchandise of certain characteristics and the words as used by the registrant in trade represented goods of different characteristics, *Held* that the registration should be canceled. [Id.

13. SAME—SAME—SECTION 13 ACT OF 1905 CONSTRUED.
Held that the right to use referred to in the first ground of cancelation set forth in section 13 of the Trade-Mark Act means a right of exclusive use and that the use referred to in the second ground is a use of the mark as a trade-mark for the goods mentioned in the registration. [Id.

14. "TEN-YEAR" PROVISO—EXCLUSIVE USE BUT NOT NECESSARILY SOLE USE REQUIRED.
The word "exclusive" in the ten-year proviso of section 5 of the Trade-Mark Act is believed to necessarily imply the right to exclude. Provided there is a clear right to exclude, however, it is not thought that there must necessarily have been sole use, otherwise, use by another, no matter how fraudulent or trivial, would defeat the right to registration under this provision of the statute.
[Beech Hill Distilling Company v. Brown-Forman Company, 1293.

15. SAME—SAME.
Where it appears that each party to this interference independently originated the mark and neither party had knowledge of the use of the mark by the other party until nearly two years after the Beech Hill Distilling Company began using the mark and that then the Brown-Forman Company made no objection, but acquiesced in the use of the mark by the former company, *Held* that these circumstances do not show such exclusive use on the part of the Brown-Forman Company as to entitle it to register the mark in issue under the ten-year proviso of section 5 of the Trade-Mark Act. [Id.

16. GEOGRAPHICAL—"ORIENT."
The word "Orient" as applied to ink-ribbons and carbon-paper is primarily geographical in significance, and therefore not registrable.
[*Ex parte* Crescent Typewriter Supply Company, 1295.

17. SAME—ASSOCIATION WITH ARBITRARY SYMBOL—"ORIENT" WITHIN A WREATH.
The fact that the geographical word "Orient" is printed in a certain manner and inclosed within a wreath does not make the word registrable as a trade-mark. [Id.

18. "STANDARD" DESCRIPTIVE—NOT REGISTRABLE.
Held that the word "Standard" as applied to phonographs is descriptive, and therefore not registrable.
[*In re* National Phonograph Company, 1295.

19. SAME—IMMATERIAL WHETHER TRULY OR FALSELY DESCRIPTIVE.
The applicant's claim to the use of "Standard" as a trade-mark is in no wise strengthened, because the word is applied only to machines of inferior design which are not in any sense standard. The word cannot be appropriated as a trade-mark whether it is truly descriptive or falsely descriptive. [*Id.

20. TEN-YEAR PROVISO—EXCLUSIVE USE DOES NOT NECESSARILY REQUIRE SOLE USE.
The word "exclusive" in the ten-year proviso is believed to necessarily imply the right to exclude. But provided there is a clear right to exclude it is not thought that there must necessarily have been sole use. Otherwise use by another, no matter how fraudulent or trivial, would defeat the right to registration under this proviso of the act.
[Worcester Brewing Corporation v. Rueter & Company, 1687.

21. SAME—SAME.
Where it appears that the opposer at the time of its adoption of the mark was aware of the fact that it had been used for a long time as a trade-mark by the applicant and that said applicant had built up a large business thereon and it further appears that the applicant has not acquiesced in the use of the mark by the opposer and that it has been guilty of no laches in asserting its rights, *Held* that the applicant has established a case of "exclusive use" within the meaning of the last proviso of section 5 and is entitled to register its mark. [Id.

22. SAME—DESCRIPTIVE MARK.
The fact that a mark is descriptive is not in itself a bar to its registration under the ten-year proviso. (Citing the decision of the Court of Appeals of the District of Columbia, *in re Cahn, Belt & Company*, 122 O. G., 354.) [Id.

23. SAME—SAME—RIGHT TO EXCLUDE.
It has been repeatedly held by the courts that where a party was the first to apply a certain mark to a particular class of goods and by long and extensive use the mark has become indicative of the origin of the goods he may acquire a property right in the mark, even though it be a descriptive or geographical term, which the courts will uphold by requiring others who use the mark to so qualify it so as to distinguish their goods from those of the original user. [Id.

24. CANCELATION—REGISTRANT'S RIGHT TO THE USE OF THE MARK.
The right registered is a supposed right to exclusive use. The evident intention of Congress was to permit any person deeming himself to be injured by a registration to question the validity in the Patent Office and to obtain cancelation thereof if the registrant had no trade-mark right therein at the time of his application for registration or if, having had such a right at that time, he has subsequently lost the same.
[Magic Curler Company v. Porter, 2088.

25. SAME—NEED NOT SHOW WHY OPPOSITION WAS NOT FILED.
The applicant for cancelation need not show why an opposition was not filed. The question as to the registrability of a mark is not *res adjudicata* by reason of its registration.
[Id.

26. SAME—ALLEGATION OF CONTINUOUS USE.
The allegation of continuous use of the mark by the applicant for cancelation is immaterial, as the applicant is not seeking registration and may establish a case for cancelation without such use. [Id.

27. THE WORD "UNION" GEOGRAPHICAL AND DESCRIPTIVE.
The word "Union" refused registration as a trade-mark for heel-plates for boots and shoes on the ground that it is a geographical term, also for the reason that it is commonly used as a descriptive term to designate the goods made by members of a trade-union. [*Ex parte* Sacks, 2530.

28. INTERFERENCE IN FACT—BULL'S HEAD AND ENTIRE BULL.
Where the registrant's mark comprised the picture of the head of a bull and the words "Doherty's Short Horn" and the applicant's mark presented for registration consisted only of a full-length picture of a bull, although the words "Old Durham Rye" appear on the label, *Held* that inasmuch as it is probable that the goods of both parties would be known as "bull" whisky interference in fact exists. (*Coleman v. Crump*, 70 N. Y., 573, 580, cited.) [The Ellison-Harvey Co. v. Monarch, 2630.

29. "SPRING HILL" ANTICIPATED BY "SPRING VALLEY."
Held that the words "Spring Hill" as a trade-mark for whisky so nearly resembles a prior registered mark which is described as a "crescent" or "new moon" and the words "Spring Valley" as to cause confusion in trade.
[*Ex parte* L. & A. Scharff, 2631.

30. ANTICIPATION OF "TEN-YEAR" MARKS.
The allegation of ten years' exclusive use next preceding the passage of the act of February 20, 1905, does not confer registrability upon the mark if it so nearly resembles a registered or known trade-mark owned and in use by another upon merchandise of the same descriptive properties as to be likely to cause confusion in trade. [Id.

31. REPRESENTATION OF MERCHANDISE WITH MERE NAME OF AN INDIVIDUAL APPEARING THEREON—NOT REGISTRABLE.
When the trade-mark shown in the drawing comprises the representation of an ingot of bearing metal of a particular form with the name "Dodge" cast thereon and similar bars of metal are shown in prior registrations, *Held* that since the applicant can have no trade-mark in the form or appearance of the merchandise or in the mere name of an individual appearing thereon the mark is not registrable.
[*Ex parte* Dodge Manufacturing Company, 2531.

32. OPPOSITION—ALLEGATION OF USE OF MARK.
An alleged use of the mark sought to be registered by the opposer as a part of its name and in its advertising is not a trade-mark use, and therefore forms no basis for refusing registration to the applicant.
[*In re* Battle Creek Sanitarium Company, Limited, 2837.

33. SAME—AMENDMENT.
Amendment to an opposition subsequent to the expiration of thirty days after publication will not be permitted where it would result in presenting a new ground in an opposition which is otherwise invalid. [Id.

34. SAME—"SELF LOADING" AS APPLIED TO CARTRIDGES A DESCRIPTIVE TERM.
Where an applicant desires to register the words "Self Loading" as a trade-mark for cartridges adopted for use on a rifle placed upon the market by applicant and called a "self-loading" rifle from the fact that the gun reloads itself, *Held* that the words as applied to the cartridges state the purpose for which they are made and sold, that the reasons for the prohibition of the statute to the registration of marks which consist merely of descriptive matters are applicable to this case, and that the mark is, in fact, nothing more than a descriptive term.
[The Peters Cartridge Company v. The Winchester Repeating Arms Company, 3287.

TRANSMISSION OF MOTIONS.

(See Motion to Amend Applications; Motion to Dissolve Interference, 1, 2, 4, 5.)

UNITED STATES COMMISSIONER.

(See Attorneys.)

WAIVER.

(See Interference, 6.)

WITHHOLDING PATENT.

(See Bill in Equity Under Section 4915, Revised Statutes.)

WITNESSES.

(See Interference, 5, 6, 7, 8.)

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED DURING THE MONTH OF MAY, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
A. Kimball Company. (See Wallin, Gustaf A., assignor.)						
A. B. Dick Company. (See Shannon, Grant H., assignor.)						
Aalborg, Christian, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Pivotally-mounted member	854,790	May 28	4861	1010	128	1339
Aaron, Samuel F., and S. H. Hamilton; said Aaron assignor to Scientific Preservation Company, Philadelphia, Pa. Gas-generator for fumigation	854,617	May 21	4491	936	128	1216
Aaron, Samuel F., and S. H. Hamilton; said Aaron assignor to Scientific Preservation Company, Philadelphia, Pa. Siphon gas-generator	854,681	May 21	4615	962	128	1247
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Abbott, Ira, Wyandotte, Mich. Steam-turbine	854,447	May 21	4191	868	128	1143
Abbott, John. (See Browne, Ralph C., assignor.)						
Abbott, Warren M., Philadelphia, Pa. Stair-carpet fastener	854,864	May 28	5019	1044	128	1380
Abraham, Elias, assignor of one-half to H. Hartman, D. T. K. McEwan, A. A. Morgan, M. Abraham, W. Taylor, K. Abraham, and F. L. Smiley, New Liskeard, Canada. Hotel-indicator	853,851	May 14	2997	616	128	800
Abraham, Kalil, *et al.* (See Abraham, Elias, assignor.)						
Abraham, Michael, *et al.* (See Abraham, Elias, assignor.)						
Abrahamson, Gustav. (See Sakurai, Keizo, assignor.)						
Abrahamson, Joseph, Detroit, Mich. Electrical measuring instrument	854,709	May 28	4705	979	128	1299
Abrames, Harvey. (See Hayden, John M., assignor.)						
Abrams, Fred, and W. A. Doyle, Minden, Nebr. Wagon-tongue supporter	853,391	May 14	2072	429	128	564
Ackley, Thurlow A. D., Minneapolis, Minn. Composition of matter for polishing	854,448	May 21	4193	.....	128	1144
Adam, John L., New Orleans, La. Heater and cooker	852,754	May 7	758	149–50	128	198
Adams, Carl, Easton, Pa. Warp stop-motion for looms	855,034	May 28	5368	1114–15	128	1469
Adams, Eugene G., assignor to Postal Insurance Corporation, Lynchburg, Va. Insurance system	853,852	May 14	2999	616	128	801
Adams, Eugene G., assignor to Postal Insurance Corporation, Lynchburg, Va. Souvenir postal card	853,853	May 14	3000	617	128	801
Adams, Harry. (See Whitehead, David, assignor.)						
Adams, Harry E., Pittsburg, Pa. Cable-bonding device	852,691	May 7	649	125	128	170
Adams, James R., Kenosha, Wis. Cooking apparatus	853,147	May 7	1556	323	128	393
Adams, John Q., Pittsford, Vt. Brush	852,755	May 7	760	150	128	199
Adams, John Q., Sr., Allegheny, Pa. Folding umbrella	855,214	May 28	5734	1193	128	1561
Adams, Robert C. (See Watres, Lewis S., assignor.)						
Adams, Roy E., Indianapolis, Ind. Vehicle	853,614	May 14	2516	521–2	128	680
Addressograph Company. (See Duncan, Joseph S., assignor.)						
Addressograph Company. (See Duncan and Hall, assignors.)						
Adt, Gustav, Forbach, Germany. Centrifugal machine	852,865	May 7	1020	211	128	260
Aeolian Company. (See Rees, William H., assignor.)						
Ageron, Jules A., and B. J. M. Remy, Lyon, France. Explosion-motor-starting mechanism	853,615	May 14	2518	522	128	680
Ahlers, George F., Covington, Ky. Cattle food and making same	854,791	May 28	4862	.....	128	1340
Ainley, John S., and E. Sykes, Huddersfield, England. Winding-machine for yarn or thread	853,392	May 14	2072	430	128	564
Ainley, Thomas E., Uxbridge, Mass. Carding-machine	853,854	May 14	3001	617	128	801
Akarman, John N., assignor of one-half to C. F. Underwood, Newark, N. J. Railway-rail	853,209	May 14	1703	353	128	463
Akeson, Anders, and V. G. Anderson, Worcester, Mass. Carburter	853,196	May 7	1645	342	128	416
Akimoff, Nicholas W., West Lynn, Mass. Runner for turbines and fluid-pumps	854,012	May 21	3341	686	128	926
Akridge, George H., Pelham, Ga. Mop	853,941	May 14	3196	655	128	850
Aktiebolaget Separator. (See Ljungström, Birger, assignor.)						
Albaugh, William A., Baltimore, Md. Mat for ticket or other stamping devices	853,393	May 14	2075	430	128	564
Alberti, Rudolf, Goslar, Germany. Preparation of lithopones	854,011	May 21	3340	.....	128	926
Aldrich, Truman H., Jr., Birmingham, Ala. Car-dumping apparatus	852,643	May 7	541	103–4	128	142
Alexander Gebrueder. (See Miersch, Albert, assignor.)						
Alexander, Theophilus W., Burlington, Iowa. Oil or gasolene can	854,618	May 21	4494	937	126	1217
Alger, George A., Manchester, N. H. Nutmeg-pulverizer	855,423	May 28	6102	1275	128	1653
Allan, Frederick W., Buffalo, N. Y. Gas-absorber	855,035	May 28	5369	1115	128	1469
Allen, Albert B., assignor to A. C. Clark, Chicago, Ill. Inhaler	853,431	May 14	2130	444–5	128	579
Allen, Frederick E., San Leandro, Cal. Excavating and elevating apparatus	854,920	May 28	5137	1070	128	1412
Allen, James M., assignor of one-half to C. H. Howard, St. Louis, Mo. Crucible	854,861	May 21	4370	906	128	1185
Allender, Charles W. J., Washington, Pa. Combined colander and cake-pan	854,304	May 21	4076	843	128	1113
Allendorfer, John H., Westmont, Pa. Hydraulic valve	855,215	May 28	5735	1193–4	128	1562

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Abbott, Ira, Wyandotte, Mich. Steam-turbine	854,447	May 21	4191	868	128	1143
Abbott, John. (See Browne, Ralph C., assignor.)						
Abbott, Warren M., Philadelphia, Pa. Stair-carpet fastener	854,864	May 28	5019	1044	128	1380
Abraham, Elias, assignor of one-half to H. Hartman, D. T. K. McEwan, A. A. Morgan, M. Abraham, W. Taylor, K. Abraham, and F. L. Smiley, New Liskeard, Canada. Hotel-indicator	853,851	May 14	2997	616	128	800
Abraham, Kalil, *et al.* (See Abraham, Elias, assignor.)						
Abraham, Michael, *et al.* (See Abraham, Elias, assignor.)						
Abrahamson, Gustav. (See Sakurai, Keizo, assignor.)						
Abrahamson, Joseph, Detroit, Mich. Electrical measuring instrument	854,709	May 28	4705	979	128	1299
Abrames, Harvey. (See Hayden, John M., assignor.)						
Abrams, Fred, and W. A. Doyle, Minden, Nebr. Wagon-tongue supporter	853,391	May 14	2072	429	128	564
Ackley, Thurlow A. D., Minneapolis, Minn. Composition of matter for polishing	854,448	May 21	4193	.....	128	1144
Adam, John L., New Orleans, La. Heater and cooker	852,754	May 7	758	149-50	128	198
Adams, Carl, Easton, Pa. Warp stop-motion for looms	855,034	May 28	5368	1114-15	128	1469
Adams, Eugene G., assignor to Postal Insurance Corporation, Lynchburg, Va. Insurance system	853,852	May 14	2999	616	128	801
Adams, Eugene G., assignor to Postal Insurance Corporation, Lynchburg, Va. Souvenir postal card	853,853	May 14	3000	617	128	801
Adams, Harry. (See Whitehead, David, assignor.)						
Adams, Harry E., Pittsburg, Pa. Cable-bonding device	852,691	May 7	649	125	128	170
Adams, James R., Kenosha, Wis. Cooking apparatus	853,147	May 7	1556	323	128	393
Adams, John Q., Pittsford, Vt. Brush	852,755	May 7	760	150	128	199
Adams, John Q., Sr., Allegheny, Pa. Folding umbrella	855,214	May 28	5734	1193	128	1561
Adams, Robert C. (See Watres, Lewis S., assignor.)						
Adams, Roy E., Indianapolis, Ind. Vehicle	853,614	May 14	2516	521-2	128	680
Addressograph Company. (See Duncan, Joseph S., assignor.)						
Addressograph Company. (See Duncan and Hall, assignors.)						
Adt, Gustav, Forbach, Germany. Centrifugal machine	852,865	May 7	1020	211	128	260
Aeolian Company. (See Rees, William H., assignor.)						
Ageron, Jules A., and B. J. M. Remy, Lyon, France. Explosion-motor-starting mechanism	853,615	May 14	2518	522	128	680
Ahlers, George F., Covington, Ky. Cattle food and making same	854,791	May 28	4862	.....	128	1340
Ainley, John S., and E. Sykes, Huddersfield, England. Winding-machine for yarn or thread	853,302	May 14	2072	430	128	564
Ainley, Thomas E., Uxbridge, Mass. Carding-machine	853,854	May 14	3001	617	128	801
Akarman, John N., assignor of one-half to C. F. Underwood, Newark, N. J. Railway-rail	853,209	May 14	1703	353	128	463
Akeson, Anders, and V. G. Anderson, Worcester, Mass. Carburter	853,196	May 7	1645	342	128	416
Akimoff, Nicholas W., West Lynn, Mass. Runner for turbines and fluid-pumps	854,012	May 21	3341	686	128	926
Akridge, George H., Pelham, Ga. Mop	853,941	May 14	3196	655	128	850
Aktiebolaget Separator. (See Ljungström, Birger, assignor.)						
Albaugh, William A., Baltimore, Md. Mat for ticket or other stamping devices	853,203	May 14	2075	430	128	564
Alberti, Rudolf, Goslar, Germany. Preparation of lithopones	854,011	May 21	3340	.....	128	926
Aldrich, Truman H., Jr., Birmingham, Ala. Car-dumping apparatus	852,643	May 7	541	103-4	128	142
Alexander Gebrueder. (See Mierzsch, Albert, assignor.)						
Alexander, Theophilus W., Burlington, Iowa. Oil or gasolene can	854,618	May 21	4494	937	128	1217
Alger, George A., Manchester, N. H. Nutmeg-pulverizer	855,428	May 28	6102	1275	128	1653
Allan, Frederick W., Buffalo, N. Y. Gas-absorber	855,035	May 28	5369	1115	128	1469
Allen, Albert B., assignor to A. C. Clark, Chicago, Ill. Inhaler	853,431	May 14	2130	444-5	128	579
Allen, Frederick E., San Leandro, Cal. Excavating and elevating apparatus	854,920	May 28	5137	1070	128	1412
Allen, James M., assignor of one-half to C. H. Howard, St. Louis, Mo. Crucible	854,551	May 21	4370	905	128	1185
Allender, Charles W. G., Washington, Pa. Combined colander and cake-pan	854,204	May 21	4076	843	128	1113
Allendorfer, John H., Westmont, Pa. Hydraulic valve	855,215	May 28	5735	1193-4	128	1562

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Allis-Chalmers Company *et al.* (See Brown, Arthur J., assignor.)						
Allis-Chalmers Company *et al.* (See Richards, Walter J., assignor.)						
Allis-Chalmers Company *et al.* (See Stull, Emmett W., assignor.)						
Allith Manufacturing Company. (See Smith, Henry C., assignor.)						
Alrite Duplicating Supply Company. (See Hilliker, George L., assignor.)						
Alsobrook, James S., Wood Station, Ga. Telephone-switch	854,562	May 21	4370	906	128	1185
Alson, Louis A., Water Valley, Miss. Display-rack	853,051	May 7	1391	290	128	354
Alter, Isidor, Boston, Mass. Horn	853,148	May 7	1558	324	128	394
Alyea, Charles B., Indianapolis, Ind. Anchor	853,331	May 14	1966	407	128	537
Amacker, John R., Oak Park, assignor to Creamery Package Mfg. Company, Chicago, Ill. Bottle-washing machine	855,036	May 28	5370	1116–17	128	1470
Amberg File & Index Co. (See Amberg, Theodore J., assignor.)						
Amberg, Theodore J., assignor to Amberg File & Index Co., Chicago, Ill. Sliding-drawer construction for furniture	855,037	May 28	5374	1117	128	1470
Amboy Machine Company. (See Milliken, John A., assignor.)						
American Automatic Disinfectant Company (See Blackmore, Henry S., assignor.)						
American Bank Protection Co. (See Robins, William H., assignor.)						
American Brake Shoe & Foundry Company. (See Grant, William G., assignor.)						
American Bridge Company. (See Donovan, Richard J., assignor.)						
American Can Company. (See Carnes, Edward W., assignor.)						
American Can Company. (See Stollberg, Charles, assignor.)						
American Can Company. (See Weber, George W., assignor.)						
American Car & Foundry Company. (See Brown, Thomas R., assignor.)						
American Car & Foundry Company. (See Ostrander, Allen E., assignor.)						
American Clay Machinery Co. (See Cunningham, William R., assignor.)						
American Concrete Machinery Company. (See Campbell, Joseph D., assignor.)						
American Cotton Separator Company. (See Patterson, Warren A., assignor.)						
American Cylinder Brace and Tool Manufacturing Company. (See Holley, James, assignor.)						
American Electrical Process Company. (See Burton, George D., assignor.)						
American Enameled Brick & Tile Co. (See Jacquart, Bernard, assignor.)						
American Farm Products Company. (See Roos, Robert, assignor.)						
American Fog Signal Company. (See Dutcher, Frank, assignor.)						
American Grain Meter Company. (See Sonander, Andrew, assignor.)						
American Horse Shoe Grip Company. (See Hallman and Harnden, assignors.)						
American Inventions Company. (See Carver and Stout, assignors.)						
American Music Company. (See Kiessig, Bernhard R., assignor.)						
American Paper Feeder Company. (See Hallstream, Henning, assignor.)						
American Paper Goods Company. (See Johnston, William G., assignor.)						
American Planograph Company. (See Cornwall, George R., assignor.)						
American Railway Appliance Company. (See Hachmann, Frederick, assignor.)						
American Sintering Company. (See Bergquist, John G., assignor.)						
American Soda Fountain Company. (See Tracey, Ernest C., assignor.)						
American Steel & Wire Company. (See Cocker, John A., assignor.) (Reissue.)						
American Telephone and Telegraph Company. (See Falk, Oscar F., assignor.)						
American Thread Company. (See Cook, Richard H., assignor.)						
American Typographic Corporation. (See Richards, Francis H., assignor.)						
American Water Softener Company. (See Garrett, George S., assignor.)						
Anderson, Lauritz W., assignor to Plume & Atwood Mfg. Co., Waterbury, Conn. Means for carding articles of merchandise	855,216	May 28	5737	1194	128	1562
Anderson, Alfred, Minneapolis, Minn. Guard for switch-frogs, guard-rails, or the like	855,424	May 28	6103	1275	128	1653
Anderson, August, Birmingham, Ala. Nut-lock	852,535	May 7	310	56	128	84
Anderson, Charles O., assignor of one-half to A. T. Austin, Omaha, Nebr. Slack-adjuster	853,210	May 14	1706	353	128	463
Anderson, Elmer, Tustin, Mich. Spring-seat attachment	853,616	May 14	2519	522	128	681
Anderson, Emil, assignor to F. H. Noble & Co., Chicago, Ill. Pin	853,211	May 14	1708	354	128	464
Anderson, George. (See Berger, John L., assignor.)						
Anderson, Hans J., Lakemills, Wis. Pin-setter	853,212	May 14	1709	354–5	128	464
Anderson, James C., Highland Park, Ill. Stamp-mill machinery	852,756	May 7	762	150–1	128	199
Anderson, John, *et al.* (See Norstrom, Nils E., assignor.)						
Anderson, Thomas, Glasgow, Scotland. Lace	854,619	May 21	4495	937–8	128	1217
Anderson, Verner G. (See Akeson and Anderson.)						
Anderson, William B., *et al.* (See Winchell, James F., assignor.)						
Andrews, Leon C. (See Halstead and Andrews.)						
Andriano, Albert K., assignor to Direct-Line General Telephone Company, San Francisco, Cal. Desk-telephone and switching mechanism	853,855	May 14	3003	617	128	801
Anger, Robert E., Weyauwega, Wis. Tobacco-booker	854,191	May 21	3718	769	128	1021
Anker-Holth, Severin C., Riverside, Ill. Journal-bearing for centrifugal machines	853,911	May 14	3134	641	128	834
Annable, Henry W. C., London, assignor to Ferro Alloys Syndicate Limited, London, England. Manufacture of ferro-molybdenum	852,920	May 7	1135	.....	128	289
Ansell Company. (See Ansell, John A., assignor.)						
Ansell, John A., Seattle, Wash. Chart-frame with adjustable slide	855,217	May 28	5738	1194	128	1562
Ansell, John A., assignor to Ansell Company, Seattle, Wash. Computing device	855,218	May 28	5739	1194–5	128	1563
Anthony, Joseph S., Jr., Newport, R. I. Stand for revolubly supporting articles to be painted	855,219	May 28	5741	1195	128	1563
Antoine, Roubaud, Jersey City Heights, N. J. Mason's implement	852,991	May 7	1276	265	128	325
Appleton, Robert M., Boston, Mass. Undergarment	854,865	May 28	5021	1044	128	1390
Appliance Manufacturing Company. (See Granaden, William H., assignor.)						
Apstein, David, Bridgeport, Conn. Pneumatic-tire plug. (Reissue)	12,645	May 7	1695	351	128	427
Arden, Harry B., New York, N. Y. Digging apparatus	854,306	May 21	4076	843	128	1113
Arden, Harry B., New York, N. Y. Conveyer	855,425	May 28	6104	1276	128	1653
Ardito, Victor, Hoboken, N. J. Cuspidor	853,617	May 14	2521	523	128	681
Ardito, Victor, Hoboken, N. J. Cuspidor	853,912	May 14	3136	642	128	835
Armitage, Annie M. (See Armitage, Henry E., assignor.)						
Armitage, Henry E., Prescott, Ariz. Ter., assignor to A. M. Armitage. Oil-burner	854,553	May 21	4372	906	128	1185
Armstrong Cork Company. (See Irwin, Oscar, assignor.)						
Armstrong, Robert A., Avonmore, Ontario, Canada. Plow	854,921	May 28	5141	1070	128	1413
Arno, Riccardo, Milan, Italy. Electric meter	855,220	May 28	5742	1196	128	1563
Arnold, Engelbert, Karlsruhe, Germany, and J. L. la Cour, Edinburgh, Scotland. Single-phase alternating-current motor with commutating-poles	853,491	May 14	2261	469	128	614
Aronson, Frank, Evanston, Ill. Resistance-box for electrical measurements	852,536	May 7	312	57	128	85
Arts, Frederick. (See Watson and Arts.)						
Aseptic Drinking Cup Company. (See Shea, John J., assignor.) (Reissue.)						
Ashbaugh, James W., Bremen, Ohio. Valve	852,591	May 7	445	82	128	118
Ashley, Edward E., New York, N. Y. Automatic door-closer for elevator-shafts	855,376	May 28	6016	1256	128	1634
Ashley, Frank M. (See Boos, August, assignor.)						
Ashley, Frank M., New York, N. Y. Inkstand	853,213	May 14	1714	355	128	466
Ashley, Robert W., New York, N. Y. Mail-chute	854,866	May 28	5023	1044	128	1391
Ashmead, Charles R., Nevada, Mo. Strainer	853,052	May 7	1392	290	128	354

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Asleson, Erick, Chatfield, Minn. Device for preventing flax-straw from winding about beaters	852,488	May 7	204	37	128	59
Aspinwall, Lewis A., assignor to Aspinwall Manufacturing Company, Jackson, Mich. Clutch device for agricultural machines	852,921	May 7	1136	234	128	289
Aspinwall Manufacturing Company. (See Aspinwall, Lewis A., assignor.)						
Assenbeck, Frank. (See Davies, George W., assignor.)						
Atkinson, Hobert F. (See Denio, William L., assignor.)						
Atlantic Rubber Shoe Company. (See Doughty, Henry J., assignor.)						
Attanasio, Sylvie, New York, N. Y. Shaving-cup	853,751	May 14	2803	576	128	753
Augustine, Walter A., Alameda, Cal. Sign-painting machine	852,692	May 7	650	125	128	170
Aurora Manufacturing Company. (See Smith, John W., assignor.)						
Austin, A. T. (See Anderson, Charles O., assignor.)						
Austin, Albert D., Stilwell, Kans. Valve-gear	852,757	May 7	766	151–2	128	200
Austin, Anna V., and N. M. Purviance, assignors of one-third to E. N. Sims, Spokane, Wash. Paper-hanging machine	855,426	May 28	6106	1276–7	128	1654
Austin, William L., assignor to Burnham, Williams & Company, Philadelphia, Pa. Brake mechanism for pivoted car-trucks	854,449	May 21	4193	868	128	1144
Automatic Button Company. (See Fack, Henry H., assignor.)						
Autopiano Co. (See Danquard, Thomas, assignor.)						
Averill, Edward S. (See Kerrigan, Philip, assignor.)						
Avery Manufacturing Company. (See Bartholomew, John B., assignor.)						
Ayars, Charles H., Salem, N. J., assignor to Ayars Machine Company. Can-filling machine	854,683	May 21	4619	962–3	128	1248
Ayars Machine Company. (See Ayars, Charles H., assignor.)						
Ayer, James I., Cambridgeport, assignor to Simplex Electric Heating Company, Boston, Mass. Danger-signal for portable electric tools	854,013	May 21	3342	686	128	926
Ayer, James I., Cambridgeport, assignor to Simplex Electric Heating Company, Boston, Mass. Safety attachment for electrically-heated vessels	854,396	May 21	4078	843	128	1115
Ayers, Elmer C., assignor of one-half to M. V. Nicholson, Valentine, Nebr. Tongue-support	853,197	May 7	1646	343	128	416
Ayers, Robert G., Orion, Ill. Swimming-shoe	855,377	May 28	6018	1256	128	1635
Aylor, Walter C., Madison Mills, Va. Turbine attachment	854,620	May 21	4497	938	128	1217
B. F. Sturtevant Company. (See Osborne, William S., assignor.)						
Babbe, Cornelius H., and J. T. Hrody, Chicago, Ill. Producing signs and labels	852,693	May 7	652	125	128	171
Babbitt, Vernard A., *et al.* (See Garbe, William F., assignor.)						
Babcock, Eliza C., Binghamton, N. Y. Lamp-burner	853,856	May 14	3006	618	128	802
Babcock, Garrison, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Telephone system	853,291	May 14	1864	388	128	506
Babcock, Washington I., New York, N. Y. Ship construction	855,154	May 28	5626	1170–1	128	1535
Bachman, Joseph W. R., and E. M. Green, Erick, Okla. Ter. Window-shade hanger	854,014	May 21	3343	686	128	926
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Turbine-nozzle valve	853,332	May 14	1967	407	128	537
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Coil-clamp for rotary magnets	853,333	May 14	1968	407	128	538
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Turbine-vane	853,334	May 14	1969	407	128	538
Backstrom, Charles A., and P. G. Roesti, Milwaukee, Wis.; said Backstrom assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Condenser	853,335	May 14	1971	408	128	539
Backstrom-Smith Steam Turbine & Manufacturing Company. (See Backstrom, Charles A., assignor.)						
Backstrom-Smith Steam Turbine & Manufacturing Company. (See Backstrom and Roesti, assignors.)						
Backus, Oscar J., Jr., and R. E. Crane, Oakland, Cal. Slow-closing valve	854,138	May 21	3607	744	128	989
Bacon, Charles C., Philadelphia, Pa. Stopper	852,644	May 7	545	104	128	143
Badische Anilin & Soda Fabrik. (See Isler, Max, assignor.)						
Baeger, Richard. (See Güttner and Baeger.)						
Baehr, George, McKeesport, Pa., assignor to Electric Controller and Supply Company, Cleveland, Ohio. Limit-switch	854,015	May 21	3344	687	128	927
Baehr, John J. (See Smith, Lester C., assignor.)						
Baekeland, Leo H., Yonkers, assignor to Development and Funding Company, New York, N. Y. Electrolytic diaphragm and making same	855,221	May 28	5744	.....	128	1564
Baggett, Robert A., Belton, Tex. Vegetable-cutter	854,621	May 21	4499	938	128	1218
Baggett, Robert A., Belton, assignor of one-half to E. F. Lanham, Temple, Tex. Knife	855,378	May 28	6019	1256	128	1635
Bailey, Frank, and F. H. Jackson, London, England. Clutching device	854,139	May 21	3609	744	128	990
Bailey, William E., and W. D. Reed, Chicago, Ill. Foot-rest for pianos	853,671	May 14	2620	544	128	706
Bailley, Albert A., Cohoes, N. Y. Bur-wheel support for knitting-machines	853,394	May 14	2076	431	128	564
Bainbridge, Richard W., New York, N. Y. Brake	855,271	May 28	5836	1217	128	1580
Baird, Daniel S., assignor to Business Systems Limited, Toronto, Ontario, Canada. Loose-leaf binder	854,622	May 21	4500	938–9	128	1218
Bäker, Carl, Berlin, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Time-fuse	854,977	May 28	5237	1091	128	1437
Baker, Fred R., Chicago, Ill. Animal-trap	854,867	May 28	5025	1045	128	1381
Baker, George S., Hammersmith, London, England. Pump particularly adapted for use with wafer-biscuit machines	852,694	May 7	653	126	128	171
Baker, Hubert L., Greenville, and L. E. Irish, Belding, assignors to said Baker, P. Van Deinse, R. F. Sprague, and F. E. Ramey, Greenville, Mich. Rotary engine	852,992	May 7	1276	265–6	128	325
Baker, Richard W. (See Marsal and Baker.)						
Baker-Vawter Company. (See Shoemaker, George A., assignor.)						
Baldwin, Charles L., Waterloo, Iowa. Concrete-mixer	853,945	May 21	3219	660	128	893
Baldwin, Rollin A., New Haven, Conn., assignor to Baldwin & Rowland Switch & Signal Company. Circuit-closing device	853,618	May 14	2522	523	128	681
Baldwin & Rowland Switch & Signal Company. (See Baldwin, Rollin A., assignor.)						
Baldwin, William J., New York, N. Y. Separating fine suspended particles from air and other gases	853,619	May 14	2525	523	128	682
Bales, Thomas M., Dublin, Ind. Grain cleaner and separator	854,623	May 21	4502	939	128	1218
Balkwill, George W., assignor to Semisteel Company, Cleveland, Ohio. Brick-press	855,222	May 28	5745	1196–7	128	1564
Ball, F. E., *et al.* (See Dennis, John J., assignor.)						
Ball, Henry P., New York, N. Y., assignor of one-half to S. Insull, Chicago, Ill. Music-roll for mechanical musical instruments	855,038	May 28	5376	1117	128	1471
Ball, James, Chicago, Ill. Combined shoe shank and ventilator	853,336	May 14	1972	408	128	539
Ballewski, Albert, Magdeburg, and W. Wessel, Berlin, Germany. Spark-arrester	854,016	May 21	3347	687	128	927
Bane, Roy F. (See Bowles and Kammerich, assignors.)						
Banga, David E., Medford, Mass. Briquet-machine	855,379	May 28	6020	1256	128	1635
Banks, Charles H., Norfolk, Va. Means for throwing life-lines	854,624	May 21	4504	939	128	1219
Bantz, José F. y, Barcelona, Spain. Apparatus for utilizing the motion of sea-water for motive-power purposes	852,661	May 7	582	111	128	152
Barber Asphalt Paving Company. (See Richardson and Forrest, assignors.)						
Barber Asphalt Paving Company. (See Smith, Frank B., assignor.)						
Bardon, Thomas. (See Wiberg, Charles E., assignor.)						
Baringer, Willy, Berlin, Germany. Rendering Manila copal, &c., insoluble in oil	854,071	May 21	3476	.....	128	989

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Barker, George H., Pasadena, Cal. Game-counter	852,758	May 7	769	152	128	200
Barker, James, Detroit, Mich. Ledger-leaf	854,710	May 28	4706	979	128	1299
Barman, Arthur, *et al.* (See Rodgers, John F., assignor.)						
Barnes, Everitte K., Rockford, Ill. Lubricator	853,946	May 21	3321	660–1	128	893
Barnes, George I., assignor of two-thirds to J. H. Yerkes and A. E. Frye, Highlands, Cal. Ball-bearing rail	853,620	May 14	2526	524	128	682
Barnett, Jacob, New York, N. Y. Tailor's measuring apparatus	855,272	May 28	5837	1217	128	1589
Baron, Bernhard, London, England. Apparatus for pressing leaf-tobacco	852,409	May 7	1	1	128	3
Baron, Bernhard, London, England. Intermittent-feed apparatus	855,039	May 28	5380	1117–18	128	1472
Baron, Louis B., London, England. Cigarette-making machine	854,140	May 21	3611	745–6	128	990
Baron, Max D., New York, N. Y. Adjustable outlet-box	855,155	May 28	5628	1171	128	1535
Barr, John C., Tacoma, Wash. Circular conveyer for ships	854,684	May 21	4620	963	128	1248
Barr, William J., Cleveland, Ohio. Circuit-controlling mechanism for electrically-heated tools	852,537	May 7	313	57–8	128	85
Barratt, William T. (See Hurley and Barratt.)						
Barrett, Glenn J. (See Fox and Barrett.)						
Barrett, John F., Chicago, Ill. Electric-light fixture	854,554	May 21	4373	906	128	1185
Barry, Thomas D. (See Hadsell, Dorr H., assignor.)						
Barthel, Alvin W., Viroqua, Wis. Railway-switch	855,156	May 28	5630	1171	128	1536
Bartholomew, Charles, Newark, Ohio. Pump	854,711	May 28	4707	979	128	1299
Bartholomew, John B., assignor, by mesne assignments, to Avery Manufacturing Company, Peoria, Ill. Grain-feeding apparatus for threshing-machines	855,273	May 28	5840	1218	128	1590
Bartlett, Fred, Chatham, Ontario, Canada. Flexible top for salt-cellars	854,792	May 28	4865	1010	128	1340
Bartlett, John C., Philadelphia, Pa. Liquid-heating system	854,450	May 21	4194	869	128	1144
Bartlett, Robert W. G. (See Cousino, George, assignor.)						
Barton, Earl S., Newton, Iowa. Railway-rail brace	853,149	May 7	1559	324	128	394
Barton, Eugene E., Cogayan, Philippine Islands. Machine for treating Manila hemp	852,410	May 7	2	1	128	3
Bartrum, Charles W., assignor to Sweet, Orr & Company, Newburgh, N. Y. Combination-garment	852,695	May 7	655	127	128	171
Bartz, Frank E., Jackson Center, Pa. Nut-lock	853,150	May 7	1560	324	128	394
Barwis, Thomas S., Vancouver, British Columbia, Canada. Rotary engine	854,141	May 21	3613	746	128	991
Bassett, Norman C., Lynn, Mass., assignor to General Electric Company. Controlling motors at a distance	854,712	May 28	4708	979–80	128	1300
Bastin, Thomas H., East Molesey, England. Speed-gear for motor-vehicles	853,947	May 21	3322	661–2	128	894
Batchelder, Frank R., assignor to Mills Woven Cartridge Belt Company, Worcester, Mass. Cartridge-pocket	854,017	May 21	3348	688	128	927
Bates, Edmund C., Alliance, Ohio. Pipe-wrench	855,380	May 28	6021	1257	128	1635
Baudenon, Francis, Vorey, France. Embroidery in divers cords	855,274	May 28	5845	1219	128	1591
Bauer & Black. (See Bauer, Perry S., assignor.)						
Bauer & Black. (See Schulz, Otto C., assignor.)						
Bauer, Perry S., assignor to Bauer & Black, Chicago, Ill. Folding display-box	852,696	May 7	657	127	128	172
Bauer, William F. (See Ford and Bauer.)						
Baughman, Ezekiel S. Quincy, Ohio. Mail-box-delivery apparatus	854,192	May 21	3719	770	128	1021
Bauman, Edward L., Saxonburg, Pa. Whiffletree-coupling	852,592	May 7	447	82	128	118
Baumann, Emil, St. Louis, Mo. Air-ship	854,555	May 21	4375	906–7	128	1186
Baumgarten, Albert, Freeport, Ill. Bottle-holder	853,151	May 7	1561	324	128	394
Bausch & Lomb Optical Company. (See Klein, Rudolph, assignor.)						
Bausch and Lomb Optical Company. (See Lomb, Henry C., assignor.)						
Baxter, Berry A., Mansfield, Ohio. Valve	853,621	May 14	2529	524	128	683
Baxter, Seeley J., Wamego, Kans., and J. L. Carlyle, Doniphan, Mo. Railway-switch	853,857	May 14	3006	618	128	802
Baxter, Thomas W., *et al.* (See Passavant, Philip L., assignor.)						
Beach, Charles S. (See White and Beach.)						
Beach, Fitch H. (See Beach, Fred S. and F. H.)						
Beach, Fred S. and F. H., Charlotte, Mich. Culvert	854,397	May 21	4080	843–4	128	1115
Beal, Epaphras L., Fredericksburg, Tex. Shaft and pulley collar	853,214	May 14	1716	355	128	466
Beal, Micheal L., Pasadena, Cal. Sandpapering and polishing machine	854,625	May 21	4506	940	128	1220
Beal, Samuel T., Conway Springs, Kans. Attachment for automobiles	855,275	May 28	5845	1219	128	1591
Beals, Charles H. (See Jenney, Walter R., assignor.)						
Beard, Jerome L., Victor, Colo., assignor of one-half to R. M. Turner, Lost Cabin, Wyo. Pipe-cutter	852,697	May 7	657	127	128	172
Beardsley, Moss W., Fremont, Ohio. Storm-front for buggies	854,324	May 21	3948	816	128	1082
Bearse, Aaron, Syracuse, assignor of one-half to N. C. Pangburn, Albany, N. Y. Guy-wire fastener	855,381	May 28	6024	1257	128	1636
Beasley, Ralleigh L., Gordon, Ala. Stump-pulling apparatus	852,411	May 7	3	1	128	3
Beattie, William H. (See Minifie, William A., assignor.)						
Beatty, George, W. G., and M. J., Fergus, Ontario, Canada. Carrier	854,556	May 21	4376	907–8	128	1186
Beatty, Milton J. (See Beatty, George, W. G., and M. J.)						
Beatty, William G. (See Beatty, George, W. G., and M. J.)						
Beavan, William A., Philadelphia, Pa. Holder for the receiver of a telephone	853,672	May 14	2621	544	128	707
Beazley, William D. (See Moss, John I., assignor.)						
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Machine or casting-box for making stereotype-plates	853,752	May 14	2804	576	128	754
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Inking mechanism	853,753	May 14	2806	576	128	754
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Stereotyping and type-metal-founding apparatus	853,754	May 14	2808	577	128	755
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Rotary web-press	854,142	May 21	3615	746–7	128	992
Bechtal, Byron E., Waterloo, Ontario, Canada. Brick, block, or tile cutter	853,858	May 14	3006	618	128	803
Bechtel, William D., Washington, Mich. Clock-winding indicator	854,868	May 28	5028	1045	128	1382
Beck, Heinrich, Meiningen, Germany. Process and device for controlling electric circuits	853,402	May 14	2263	469	128	614
Beckst, Frederick M., Niagara Falls, N. Y. Reducing metallic sulfids	855,157	May 28	5632	.....	128	1536
Beckst, Frederick M., Niagara Falls, N. Y., assignor to Electro Metallurgical Company. Reducing metallic oxids	854,018	May 21	3349	.....	128	928
Beckett, James A., assignor to Walter A. Wood Mowing and Reaping Machine Company, Hoosick Falls, N. Y. Automatic grain-binder	853,432	May 14	2133	445	128	580
Beckner, Horace G. (See Henricks, Isaac M., assignor.)						
Beh, Augustus E. and E., West Solvay, N. Y. Music-leaf turner	853,571	May 14	2414	503	128	652
Beh, Estella. (See Beh, Augustus E. and E.)						
Beitler, Otto, Pittsburg, Pa. Vehicle-hub	852,412	May 7	4	2	128	4
Belcher Brothers Company. (See Belcher, Henry F., assignor.)						
Belcher, Henry F., Irvington, N. J., assignor to Belcher Brothers Company. Desk-ruler	854,325	May 21	3949	816	128	1063
Belin, Edouard, Paris, France. Apparatus for transmitting to a distance real optical images	853,755	May 14	2809	577	128	755
Belisle, James. (See Bolton and Belisle.)						
Bell, Emil G. (See Gray, Harry M., assignor.)						
Bell, Endo L., Norfolk, Va. Safety appliance for railways	854,398	May 21	4082	844	128	1116
Bellows, Benjamin F., Cleveland, Ohio. Telegraph-key	855,085	May 28	5490	1138–9	128	1501
Ben Steele Weigher Manufacturing Company. (See Steele, Benjamin M., assignor.)						
Benbow, Richard J., Milligan, Fla. Saddle-cushion	852,893	May 7	447	82	128	118

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Benét, Laurence V., and H. A. Mercié, Paris, France. Firing-gear	854,557	May 21	4380	908–9	128	1187
Benét, Laurence V., and H. A. Mercié, Paris, France. Apparatus for sighting ordnance	854,558	May 21	4386	909–11	128	1190
Benjamin Electric Manufacturing Company. (See Benjamin, Reuben B., assignor.)	852,816	May 7	905	184–6	128	231
Benjamin, Reuben B., Chicago, Ill. Twin lamp-socket	852,490	May 7	210	38	128	61
Benjamin, Reuben B., Chicago, Ill. Connection for electrical sockets and conduits	854,978	May 28	5238	1091	128	1437
Benjamin, Reuben B., assignor to Benjamin Electric Manufacturing Company, Chicago, Ill. Cluster lamp-socket	852,489	May 7	205	38	128	59
Benjamin, Reuben B., assignor to Benjamin Electric Manufacturing Company, Chicago, Ill. Plural lamp-socket	852,491	May 7	213	39	128	62
Benner, Glenn, and B. S. Rogers, Lindsey, Ohio. Mail-bag catcher	853,572	May 14	2415	503	128	653
Bennett, Abijah B., Opelika, Ala. Lock attachment	852,645	May 7	546	104	128	143
Bennett, Edwin R., and M. I. Ekern, Flandreau, S. D. Safety gas cock or valve	853,053	May 7	1393	290	128	354
Bennett, Ernest C., New York, N. Y. Removable dental bridgework	852,413	May 7	5	2	128	4
Bennett, James, Cleveland, Ohio. Boiler-flue cleaner	853,152	May 7	1562	325	128	395
Bennett, Joseph A. (See Kinsler, George B., assignor.)						
Bensing, Jacob, Malinta, Ohio. Brick and tile cutting machine	853,573	May 14	2417	504	128	653
Benson, Victor A., Los Angeles, Cal. Elevator-door mechanism	853,859	May 14	3014	619	128	804
Benstead, Fred L., Hoxie, Ark. Pen and pencil holder	854,019	May 21	3351	688	128	928
Bentley, Alfred D., assignor of one-half to R. H. Schultz, Toronto, Ontario, Canada. Seal-lock	855,086	May 28	5492	1139	128	1502
Benton, Josiah S. (See Shaffer and Benton.)						
Berg, Carl I., Rushford, Minn. Display-table	853,215	May 14	1716	356	128	466
Bergell, Peter, assignor to Firm of J. A. Wülfing, Berlin, Germany. Hexamethylene-tetramin-sodium acetate double salt	852,993	May 7	1283	.....	128	326
Bergener, Charles, assignor to C. T. Ham Manufacturing Company, Rochester, N. Y. Lamp-holder	852,759	May 7	770	152	128	201
Berger, John L., assignor of one-fourth to G. Anderson, Denver, Colo. Hot-air furnace	853,153	May 7	1563	325	128	395
Bergmann, Leo, Newark, N. J. Punching-bag platform	854,264	May 21	3848	795	128	1055
Bergner, Carl, Sande, near Bergedorf, near Hamburg, Germany. Centrifugal milk-separator	853,054	May 7	1395	291	128	355
Bergquist, Claes W., Chicago, Ill. Fire-escape apparatus	854,922	May 28	5142	1070	128	1413
Bergquist, John G., assignor to American Sintering Company, Chicago, Ill. Apparatus for sintering fine ore	853,433	May 14	2137	446	128	580
Berkemeir, Martin H. (See Schultz and Berkemeir.)						
Bernes, John, assignor of one-fourth to D. Crossley, Union, N. J. Propeller	854,685	May 21	4622	963	128	1248
Berrenberg, Reinold, and A. S. Driske, Boston, Mass. Air-compressor	852,817	May 7	907	186	128	231
Berry, James M., Detroit, Mich. Curtain-roller cap	853,622	May 14	2531	524	128	683
Berwick, Frederick C., New York, N. Y. Nautical signal	852,504	May 7	448	83	128	119
Best, Thomas C., Chicago, Ill. Boiler-hanger	854,143	May 21	3618	748	128	992
Bétis, Victor, West Ealing, England. Educational appliance	853,756	May 14	2811	577	128	756
Bettendorf Metal Wheel Company. (See Elnfeldt, Emil, assignor.)						
Betts, Joseph, Wintersct, Iowa. Gate latch and holder	854,193	May 21	3720	770	128	1022
Betz, William G., *et al.* (See Wells, Ralph N., assignor.)						
Bevans, William H., Bridgeport, Conn. Electric and percussion firing mechanism	855,427	May 28	6110	1277	128	1655
Beydler, Omer A., Rossville, Ind. Engine-lubricator	853,757	May 14	2813	578	128	756
Bickel, Henry F., Plainfield, N. J., assignor to New York Air Brake Company. Air-brake apparatus	853,673	May 14	2622	544	128	707
Bideau, Maurice, Paris, France. Jointed-spindle axle	854,451	May 21	4196	869	128	1145
Biederman, Jake. (See Gray, Gardner L., assignor.)						
Bierd, William G., Colon, Panama. Track-shifting machine	853,948	May 21	3230	662	128	897
Bigelow, William S., Boston, Mass. Fastening for doors, blinds, shutters, &c.	853,860	May 14	3017	619	128	805
Biggers, Lee P., Palmersville, Tenn. Paddle-wheel	853,055	May 7	1396	291	128	355
Bijur, Joseph, New York, N. Y., assignor to General Storage Battery Company. Battery-plate and making same	854,326	May 21	3951	817	128	1083
Billings, Edward E. (See Parker, John, assignor.)						
Billow, Elmer E., Chicago, Ill. Burner for gas-lamps	852,538	May 7	321	58	128	89
Binney, Harold, New York, N. Y., assignor to Nealon Company. Hose-supporter clasp	853,758	May 14	2814	578	128	756
Binnig, Jacob, Boston, assignor of one-half to Mason & Hamlin Company, Cambridge, Mass. Pneumatic action for wind instruments	853,949	May 21	3232	663	128	897
Birch, John H. (See Birch, John H. and J. H.)						
Birch, John H. and J. H., Crawfordsville, Ind. Gas-engine	855,223	May 28	5748	1197	128	1564
Bird, Benjamin F., Kingston, N. Y. Combination-tool	854,979	May 28	5240	1091	128	1437
Bird, Maurice, Sugar Land, Tex. Extracting cotton-seed oil	853,759	May 14	2816	.....	128	757
Bird & Son, F. W. (See Wyman, George R., assignor.)						
Birsfield, Jules A. (See Forsberg and Birsfield.)						
Birsfield, Jules A., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Circuit-changing apparatus	853,292	May 14	1873	388	128	509
Birsfield, Jules A., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Breast-transmitter	853,337	May 14	1973	408	128	539
Bishop, Amaricus A. (See Gilmer, Joseph, assignor.)						
Bishop, Rookwood C., Christchurch, New Zealand. Gas-heated boiler	852,608	May 7	658	128	128	173
Bishop, Sydney E., Cambridge, Mass. Soap-holder	855,428	May 28	6112	1278	128	1655
Bissell, Clinton S., Flushing, N. Y. Sun time-card	853,338	May 14	1978	409	128	541
Bissell, William G. (See Vaughn and Bissell.)						
Bitner, Harry, Estes Park, Colo. Connecting device for elevator-doors	853,950	May 21	3234	663	128	898
Bitzer, Gottlieb, Turners Falls, Mass. Hub-attaching device	852,492	May 7	215	39	128	62
Bivort, Charles, Paris, France. Stenographic or reporting machine	852,994	May 7	1284	266–7	128	326
Blackburn, Ernest C. (See McDermand and Blackburn.)						
Blackett, Charles W., *et al.* (See Sparkes, James M., assignor.)						
Blackman, Henry, Belmar, N. J. Ventilating tunnels	852,995	May 7	1286	267	128	327
Blackmore, Henry S., Mount Vernon, N. Y. Formaldehyde preparation	854,452	May 21	4198	.....	128	1145
Blackmore, Henry S., Mount Vernon, N. Y., assignor to American Automatic Disinfectant Company, Washington, D. C. Automatic disinfecting or odorizing apparatus	853,434	May 14	2141	446	128	581
Blackmore, Henry S., Mount Vernon, N. Y., assignor to American Automatic Disinfectant Company, Washington, D. C. Automatic apparatus for sterilizing, disinfecting, or odorizing vehicles	853,435	May 14	2144	447	128	582
Blackmore, Henry S., Mount Vernon, N. Y., assignor to American Automatic Disinfectant Company, Washington, D. C. Apparatus for disinfecting, odorizing, or other purposes	853,913	May 14	3137	642	128	835
Blain, Edwin E., Columbus, Ohio. Torpedo signaling device	854,194	May 21	3722	770	128	1022
Blaisdell, Hiram W., Los Angeles, Cal. Excavator	854,626	May 21	4507	940–1	128	1220
Blake, Lucien I., Lawrence, Kans., assignor to Submarine Signal Company, Boston, Mass. System of submarine signaling	852,646	May 7	548	104	128	144
Blake, Lucien I., assignor to Submarine Signal Company, Boston, Mass. Submarine signaling	852,647	May 7	550	105	128	144
Blake, Lucien I., assignor to Submarine Signal Company, Boston, Mass. Submarine signaling	852,648	May 7	553	105	128	145

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Blake, Lucien L., assignor to Submarine Signal Company, Boston, Mass. Transmitter for systems of submarine signaling	852,649	May 7	556	106	128	145
Blake, Lucien L., assignor to Submarine Signal Company, Boston, Mass. Receiver for systems of submarine signaling	852,760	May 7	771	152-3	128	201
Blass, Talmadge, West Seneca, N. Y., and J. L. Haehnlen and W. W. Cox, Lebanon, Pa. Producing salts of volatile bases	854,453	May 21	4200	869	128	1146
Blathy, Otto T., Budapest, Austria-Hungary. Method of and apparatus for measuring electric currents	853,216	May 14	1717	356	128	467
Blaw Collapsible Steel Centering Company. (See Blaw, Jacob B., assignor.)						
Blaw, Jacob B., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa. Mold and centering device	853,951	May 21	3235	663	128	898
Blaw, Jacob B., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa. Centering-mold	853,952	May 21	3237	663	128	899
Blaw, Jacob B., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa. Centering-mold	853,953	May 21	3239	664	128	899
Blaw, Jacob B., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa. Centering-mold	853,954	May 21	3240	664-5	128	899
Blaw, Jacob B., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa. Ceiling-mold	853,955	May 21	3242	665	128	900
Blaw, Jacob B., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa. Centering-mold	853,956	May 21	3243	665	128	900
Blaw, Jacob B., assignor to Blaw Collapsible Steel Centering Company, Pittsburg, Pa. Ceiling-mold	853,957	May 21	3244	666	128	900
Bleimeyer, Peter B., assignor to Zucker & Levett & Loeb Company, New York, N. Y. Brush	855,040	May 28	5381	1118	128	1473
Blodgett, Warren K., Cambridge, Mass. Hasp-lock	855,158	May 28	5633	1171	128	1536
Bloom, Nicklas H., Nashua, Iowa. Riding attachment for agricultural implements	855,087	May 28	5494	1139-40	128	1502
Bloomfield, Sigmund, *et al.* (See Sokal, Edward, assignor.)	853,574	May 14	2420	504	128	654
Bloxam, Hugh C. L., assignor to South African Maganite Explosives Syndicate Limited, Cape Town, Cape Colony. Manufacture of explosives	853,056	May 7	1399	.....	128	356
Bluebaum, Gottlieb S., Billings, Mo. Power transmission	853,154	May 7	1565	325	128	395
Blum, Jules R., assignor to Company "L'Aspirator," Paris, France. Filtering device for dust-removing pneumatic machines	853,914	May 14	3140	642	128	836
Blumer, Jacob, Peekskill, N. Y. Manufacturing yeast	855,276	May 28	5648	.....	128	1502
Blumer, James, New York, N. Y. Molding-machine	853,861	May 14	3018	620	128	805
Boardman, Arthur E., Warrington, England. Cooling-frame for soap or other material	855,088	May 28	5498	1140	128	1503
Boardman, Frederick E., West Somerville, Mass., assignor of one-half to J. J. Jung, Brooklyn, N. Y. Amusement apparatus	853,155	May 7	1566	326	128	396
Bock, William E., assignor to Toledo Glass Company, Toledo, Ohio. Fire-polishing machine	854,793	May 28	4867	1010	128	1340
Bodell, Allen W., Wilmette, Ill. Dish-washing machine	852,866	May 7	1021	211-12	128	260
Bodenstab, Theodolinde, *et al.*, executors. (See Ilch, Edward and M.)						
Bodine, Harry E., assignor to United States Sample Book Company, Philadelphia, Pa. Strip-applying machine	852,761	May 7	775	153-4	128	201
Bogart, Frank A., San Jose, Cal. Shingling-gage attachment for hatchets	853,198	May 7	1647	343	128	416
Bohrer, Godfrey E., South Bend, Wash. Pipe and bolt cutting machine	854,072	May 21	3476	717	128	959
Bohrssen, Conrad, Gross Munzel, near Wunstorf, Germany. Plow	852,762	May 7	777	154	128	202
Boileau, James W., assignor of one-half to J. B. Knoblock, Denver, Colo. Treating ores	852,996	May 7	1287	268-9	128	327
Boismaure, Alfred A., New York, N. Y., assignor to Boismaure Oscillating Jewelry Company. Jewel-mounting	853,575	May 14	2422	504	128	654
Boismaure Oscillating Jewelry Company. (See Boismaure, Alfred A., assignor.)	852,922	May 7	1138	235	128	290
Bold, George, Plainfield, N. J. Air-ship	853,760	May 14	2816	578-9	128	757
Bolton, Newton H., and J. Belisle, Minneapolis, Minn. Brick-molding machine	855,382	May 28	6026	1257-8	128	1636
Bonar, Lewis J. (See Roe and Bonar.)						
Bonathan, David E., Lake Linden, Mich. Combined dish and drip pan	855,089	May 28	5499	1140	128	1503
Bonnin, Alfred O. (See Roch and Bonnin.)						
Bonowitz, Jacob. (See Dantzig and Bonowitz.)						
Bonsall, Seymour W., New York, N. Y. Knockdown wardrobe	852,699	May 7	660	128-9	128	173
Bonus, George Y., Chicago, Ill. Power system	854,980	May 28	5242	1092	128	1438
Bonus, William, Orient, Iowa. Carriage for harvesters	853,674	May 14	2624	545	128	707
Boon, Horace J., Hartford, Conn., assignor to Veeder Manufacturing Company. Supporting-bracket for odometers, &c	853,339	May 14	1980	409	128	542
Booe, August, assignor of one-tenth to F. M. Ashley, New York, N. Y. Time-stamp	852,818	May 7	909	195-7	128	232
Boquist, John A., Minneapolis, Minn. Automatic street-railway switch	855,090	May 28	5500	1141	128	1503
Borbeck, Julius, Altena, Germany. Crucible-furnace	852,867	May 7	1024	212	128	261
Borden, Mary S., New York, N. Y. Toilet cream	853,436	May 14	2147	.....	128	583
Borders, William A. (See Kloetzer and Borders.)						
Bordigoni, Victor, Paris, France. Apparatus for the automatic destruction of fecal matter and purification of residual liquids	853,217	May 14	1720	357	128	467
Borneman, Andrew G. (See Borneman, Henry, assignor.)						
Borneman, Henry, Paterson, assignor to A. G. Borneman, Athenia, N. J. Jar-holder	854,686	May 21	4624	964	128	1249
Borsen, Bernhard I., Garneill, Mont. Combined wrench, threading-die, and pipe-cutter	853,761	May 14	2820	579-80	128	758
Borst, Frank A., assignor to Ideal Concrete Machinery Company, South Bend, Ind. Concrete-mixer	853,623	May 14	2531	524-5	128	683
Borsum, Louis. (See Hoist and Borsum.)						
Bortzner, Johann. (See Schwarz and Bortzner.)						
Bossert, Leon W., Utica, N. Y. Branch conduit-box for electric wires	854,020	May 21	3352	688	128	928
Bossert, Leon W., Utica, N. Y. Junction or outlet box	854,195	May 21	3724	771	128	1023
Botsford, Charles S. (See Elliot, Adam S., assignor.)						
Botsford, Charles S., Peterboro, Ontario, Canada. Display-stand	853,762	May 14	2821	580	128	758
Bouton, Samuel, Lynn, assignor of one-half to A. B. Black, Concord, Mass. Circuit making and breaking device	842,414	May 7	7	2-3	128	4
Bowden-Smith, Edward C., Brockenhurst, England. Razor-stropping machine	853,958	May 21	3245	666	128	901
Bowdoin, Harry L., New York, N. Y. Theatrical apparatus	854,265	May 21	3849	795	128	1055
Bower, Clarence E., Denver, Colo. Baling-press	854,454	May 21	4202	870	128	1146
Bower, Robert L., Blandburg, Pa. Railway-tie	855,277	May 28	5849	1219	128	1592
Bowles, John D., and G. H. Kammerich, assignors of one-third to R. F. Bane, Tipton, Mo. Apparatus for extracting gas from gasolene	853,915	May 14	3141	642-3	128	836
Bowsher, Peter A., assignor to Modern Concrete Machine Company, Terre Haute, Ind. Mold	855,091	May 28	5501	1141	128	1503
Box, Alfred, Philadelphia, Pa. Mechanical stoker	852,763	May 7	779	154	128	202
Boyd, Benjamin F. (See Long and Boyd.)						
Boyd, Edwin S., Norris City, Ill. Ditching-machine	854,559	May 21	4302	911	128	1192
Boyd, John, Malden, Mass. Smoke-preventer	854,794	May 28	4968	1011	128	1341
Boyden, George A. (See Brown, Hanrahan, and Boyden.)						
Braby, Henry, Annandale, near Sydney, New South Wales, Australia. Heating and illuminating burner	853,057	May 7	1400	292	128	35[illegible]

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Bradbury, Charles H., Boston, Mass. Ice-cream scraper	853,493	May 14	2265	470	128	615
Bradshaw, John J., Jersey City, N. J. Lifting-jack	853,437	May 14	2147	447	128	583
Bradshaw, William M. (See Conrad and Bradshaw.)						
Bradshaw, William M., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electric motor	853,218	May 14	1723	357	128	468
Bradshaw, William M., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Terminal block for electrical apparatus	853,219	May 14	1725	357-8	128	468
Bradshaw, William M., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Winding for electromagnets	853,340	May 14	1982	409	128	542
Brady, James H., assignor to himself and D. A. Keller, Louisville, Ky. Wrapping-machine	854,021	May 21	3353	689-91	128	921
Brady, James H., assignor of one-half to D. A. Keller, Louisville, Ky. Wrapper cutting and registering apparatus	854,022	May 21	3360	691	128	930
Brady, James H., assignor of one-half to D. A. Keller, Louisville, Ky. Wrapping-machine	854,023	May 21	3363	692-3	128	931
Brady, John F. (See Cook and Brady.)						
Brady, Patrick J. (See Cordrey and Brady.)						
Bran, Friedrich, and G. van Oordt, Mannheim, Germany. Separating beryllia from alumina and iron	854,560	May 21	4394	.....	128	1193
Brandell, Claus O., Chicago, Ill. Machine for making concrete blocks	852,764	May 7	780	155-6	128	203
Brandow, Frank W., Pittsfield, Mass. Lock for electric switches	854,455	May 21	4203	870	128	1147
Brandram, Andrew G., Southsea, England. Joint for sewer and like pipes	852,997	May 7	1289	269	128	327
Brannock, Arthur L., Neosho, Mo. Grain-drier	852,765	May 7	784	156	128	203
Brebach, Rudolf, Leipzig-Reudnitz, Germany. Automatic electrical cut-out device	852,766	May 7	786	157	128	204
Brehm, William F., Rochester, Pa. Gas-engine	854,981	May 28	5244	1092-3	128	1438
Brennan, John, Louisville, Ky. Dumping-wagon	853,494	May 14	2267	470	128	615
Brenton, Frank Y., Belleville, Ontario, Canada. Fountain-pen	853,156	May 7	1569	326	128	396
Breul, Richard A., Bridgeport, Conn. Try-square	853,157	May 7	1570	327	128	397
Brewer, Governor L., assignor to P. N. Staff, Terre Haute, Ind. Shade and curtain hanger	855,429	May 28	6113	1278	128	1655
Brewster, Charles W., Sierra Madre, Cal. Fruit sack or tray	853,763	May 14	2822	580	128	759
Brian, William S. (See Tucker, Junius E., assignor.)						
Brick, Thomas, New York, N. Y. Valve	852,819	May 7	912	187	128	232
Brickman, Alrik. (See Hammar and Brickman.)						
Bridenbaugh, Elmer H. (See Ohmer and Bridenbaugh.)						
Bridge, Walter G., Boston, Mass. Syringe	854,399	May 21	4085	845	128	1116
Bridgeport Brass Company. (See Stapley, William S., assignor.)						
Bridgers, Burke H., Wilmington, N. C. Automobile-wheel	852,998	May 7	1291	269	128	327
Bridges, Jonas O., Mooresboro, N. C. Rail-joint	853,293	May 14	1877	389	128	511
Brill, John A. (See Benjamin, Charles W., assignor.)						
Brill, John A. (See Curwen, Samuel M., assignor.)						
Brill, John A. (See Haddock, Harry E., assignor.)						
Brill, John A. (See Smith, Warren M., assignor.)						
Brill, John A., Philadelphia, Pa. Convertible car	852,767	May 7	786	157	128	204
Brill, John A., Philadelphia, Pa. Convertible car	852,768	May 7	788	157	128	204
Brill, John A., Philadelphia, Pa. Convertible car	854,687	May 21	4625	964	128	1249
Brindley, George F. (See Foregger and Brindley.)						
Brinkman, Louis H., Hartford, assignor to Whitlock Coil Pipe Company, West Hartford, Conn. Flanged pipe	854,869	May 28	5029	1045	128	1382
Brinnhäuser, Albrecht, Nuremberg, Germany. Machine for slicing meat, sausages, and other edibles	853,294	May 14	1878	389	128	511
Brittain, John W., Kilmainham, Dublin, Ireland, assignor to A. Harry & Co., Ltd., London, England. Shirt-starching machine	853,295	May 14	1882	389-90	128	513
Broad, Harry L., assignor of one-half to G. F. McRae, J. F. and A. M. Eales, Alpena, Mich. Bullet	854,923	May 28	5144	1071	128	1413
Broadbooks, Peter, Batavia, N. Y. Drill-bit	854,144	May 21	3619	748	128	993
Broadbooks, Peter, Batavia, N. Y. Pipe and rod gripping attachment for vises	854,145	May 21	3621	748	128	993
Broadwater, Luke H., Findlay, Ohio, assignor to E. I. du Pont de Nemours Powder Company, Wilmington, Del. Apparatus for firing explosives in wells	855,224	May 28	5749	1198	128	1565
Brock, Frank T. (See Evans, Fred C., assignor.)						
Brock, Frans W., Tombstone, Ariz. Ter. Hair-tonic and dandruff preventive	855,383	May 28	6027	.....	128	1636
Brod, Carl F., *et al.* (See Kuersten, Hugo R., assignor.)						
Brodie, Patrick S., assignor of one-half to F. W. Martin, Boston, Mass. Saddle	853,675	May 14	2625	545	128	708
Bromley, Robert C., Pittsburg, Pa. Elevator valve mechanism	854,795	May 28	4870	1011-12	128	1341
Brooke, William M., assignor to New Era Metallic Packing Manufacturing Company, New York, N. Y. Metallic packing	854,400	May 21	4086	845	128	1116
Brookes, Henry J. (See Brookes, Josiah and H. J.)						
Brookes, Josiah and H. J., Smethwick, England. Metallic bedstead	854,561	May 21	4396	912	128	1193
Brooks, Charles P. (See Cheek and Brooks.)						
Brooks, John B., Birmingham, England. Water-bottle, water-cushion, water-bed, and like receptacle	852,999	May 7	1293	270	128	328
Brooks, Reuben, assignor to Russia Cement Company, Gloucester, Mass. Paste-jar	855,092	May 28	5503	1141	128	1504
Brooks, Zetta L., Des Moines, Iowa. Heating-frame for lamps	854,266	May 21	3851	795	128	1055
Brothen, Andrew A., Mountain Home, Idaho. Surveying instrument	854,796	May 28	4874	1012	128	1342
Brown, Arthur J., Norwood, Ohio, assignor to Allis-Chalmers Company, and Bullock Electric Manufacturing Company. Controller-operating means	854,688	May 21	4627	964	128	1250
Brown, Beaufort C., Ionia, Kans. Stovepipe-fastener	854,713	May 28	4711	980	128	1300
Brown, Charles C., Revelstoke, British Columbia, Canada. Window-shade support	854,714	May 28	4713	980	128	1301
Brown Clutch Company. (See Brown, George L., assignor.)						
Brown, Frank H., and J. E. Hanrahan, Baltimore, and G. A. Boyden, Mount Washington, assignors to National Compositype Company, Baltimore, Md. Producing matrices	854,456	May 21	4205	870	128	1147
Brown, Frank H., and J. E. Hanrahan, Baltimore, and G. A. Boyden, Mount Washington, assignors to National Compositype Company, Baltimore, Md. Matrix-making master-block	854,457	May 21	4206	871	128	1147
Brown, Frank H., and J. E. Hanrahan, Baltimore, and G. A. Boyden, Mount Washington, assignors to National Compositype Company, Baltimore, Md. Master-block for producing matrices	854,458	May 21	4208	871	128	1147
Brown, Frank H., and J. E. Hanrahan, Baltimore, and G. A. Boyden, Mount Washington, assignors to National Compositype Company, Baltimore, Md. Master-block for making matrices	854,459	May 21	4209	871	128	1148
Brown, Frank H., and J. E. Hanrahan, Baltimore, and G. A. Boyden, Mount Washington, assignors to National Compositype Company, Baltimore, Md. Type-matrix	854,460	May 21	4210	871	128	1148
Brown, Frank H., and J. E. Hanrahan, Baltimore, and G. A. Boyden, Mount Washington, assignors to National Compositype Company, Baltimore, Md. Mold for type-casting machines	855,225	May 28	5752	1198	128	1566
Brown, George L., assignor to Brown Clutch Company, Elyria, Ohio. Friction-clutch mechanism	853,676	May 14	2627	545	128	708
Brown, Harry, Buffalo, N. Y. Combination-tool	853,495	May 14	2268	470	128	615
Brown, Herbert H., Lynn, Mass. Umbrella	852,493	May 7	216	39	128	63
Brown, Horace S., Springfield, Mass. Racket for tennis, &c	854,024	May 21	3368	694	128	931

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Brown, John S., Ohiowa, Nebr. Gate or door latch	853,764	May 14	2834	581	128	759
Brown, Michael F., Seattle, Wash. Log-rafting appliance	855,159	May 28	5635	1172	128	1537
Brown, Peabody A., Denver, Colo. Automatic device for producing intermittent motion	852,700	May 7	662	129	128	173
Brown, Robert H., assignor of one-fourth to D. P. McMahon, Los Angeles, Cal. Car-truck	853,531	May 14	2338	487	128	634
Brown and Sharpe Manufacturing Company. (See Parker, John, assignor.)						
Brown, Sidney G., London, England. Electric conductor or cable	854,562	May 21	4368	913	128	1193
Brown, Thomas R., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Tank-car	853,576	May 14	2423	505	128	655
Brown, Walter F., assignor to F. L. Maytag, Newton, Iowa. Coupling for traction-engines	854,196	May 21	3726	771	128	1023
Brown, William M., Johnstown, Pa., assignor to Lorain Steel Company. Electric switch	853,220	May 14	1727	358	128	469
Brown, William M., Johnstown, Pa., assignor to Lorain Steel Company. Rail-joint	853,221	May 14	1728	358	128	469
Browne, E. E. (See Randall, Frank D., assignor.)						
Browne, Ralph C., Salem, assignor to J. Abbott, Winchester, Mass. Telephone-transmitter	854,025	May 21	3369	694	128	931
Brownell, Frank A., assignor to Eastman Kodak Company, Rochester, N. Y. Clip	852,923	May 7	1140	235	128	290
Brownell, Frank A., assignor to Eastman Kodak Company, Rochester, N. Y. Photographic shutter	853,000	May 7	1295	270–1	128	328
Brownell, Frank A., assignor to Eastman Kodak Company, Rochester, N. Y. Photographic developing-machine	854,026	May 21	3372	694	128	932
Brownell-Trebert Company. (See Trebert, Henry L. F., assignor.)						
Browning, John M., Ogden, Utah. Automatic firearm	853,438	May 14	2149	447	128	583
Brüchle, Karl, New York, N. Y. Pneumatic elevator	853,677	May 14	2629	545–6	128	709
Bruckner, Arthur F., and G. Sayre, Elgin, Ill. Curtain-fastening device	854,073	May 21	3479	717–18	128	959
Bruckner, Rudolph E., Mount Vernon, assignor to Commercial Acetylene Company, New York, N. Y. Gas-lamp	854,027	May 21	3376	695	128	933
Brunke, Benjamin J., Campbell, Nebr. Draft-equalizer	854,924	May 28	5145	1071	128	1414
Bruns, Richard E., Chicago, Ill. Pressure-regulating valve	852,924	May 7	1141	235	128	291
Brunswick Refrigerating Company. (See Whitaker, Richard, assignor.)						
Brussow, Herman F., Whittier, Cal. Plow	853,168	May 7	1572	327	128	397
Bryan, John H. B., Buffalo, assignor to Bryan Vacuum Moulding Machine Company, Lockport, N. Y. Molding-machine	852,494	May 7	218	39–40	128	63
Bryan, Thomas F., Ponca, Okla. Ter. Side-draft attachment for road-graders	852,595	May 7	449	83	128	119
Bryan Vacuum Moulding Machine Company. (See Bryan, John H. B., assignor.)						
Bryant, Charles H., Hammersmith, England. Trembler for induction-coils	853,001	May 7	1302	271	128	330
Bryant, Clyde J. St. Louis, Mo. Temporary binder	854,074	May 21	3480	718	128	960
Bryant, Eugene A., Minneapolis, Minn. Metallic rod-packing	852,701	May 7	664	129	128	174
Bryant, Frank L., New York, N. Y. Armillary sphere	855,226	May 28	5754	1196–9	128	1567
Bryant, Richard S., Columbus, Ohio. Wheel-rim	853,058	May 7	1401	292	128	356
Bryant, William E., assignor to Michigan Lubricator Co., Detroit, Mich. Automatic oil-check for lubricator drain-passages	854,797	May 28	4875	1012–13	128	1343
Bucey, Finley A., Rayland, Ohio. Wrench	853,222	May 14	1729	359	128	470
Buchanan, John D., Rubyville, assignor of one-half to J. K. Jeffries, Memphis, Tenn. Excavating-machine	854,925	May 28	5145	1071–2	128	1414
Buchanan, Leonard B., Woburn, Mass. Indicating device for electric fuses or cut-outs	852,539	May 7	325	58	128	89
Buchanan, Leonard B., Woburn, Mass. Electric fuse or cut-out	853,296	May 14	1884	390	128	513
Buchanan, Leonard B., Woburn, Mass. Indicating mechanism for electric fuses or cut-outs	854,327	May 21	3953	817	128	1084
Buchanan, Leonard B., Woburn, Mass. Rail-bond protector	854,328	May 21	3956	817	128	1084
Bücher, William F., Washington, D. C. Milk-sampler	854,563	May 21	4401	913	128	1194
Buchheit, John, Fair Grove, Mo. Vehicle-shaft	853,395	May 14	2078	431	128	565
Buchner, Max, Mannheim, Germany. Manufacture of ceramic products	853,241	May 14	1963	.....	128	543
Buck, Arthur A., Schenectady, N. Y., assignor to General Electric Company. Operating bulkhead-doors	853,765	May 14	2825	581	128	759
Buck, Joseph F. and L. F., Camden, N. J. Window-screen and the like	853,862	May 14	3020	620	128	806
Buck, Leo F. (See Buck, Joseph F. and L. F.)						
Buckland, Alfred L., Marietta, Minn. Salt and pepper shaker	855,278	May 28	5851	1219	128	1592
Buckner, Edmund G. (See Winter, Augustus G., assignor.)						
Bucyrus Company. (See Ferris, Walter, assignor.)						
Budden, Henry. (See Nourse, Rufus C., assignor.)						
Buerger, Karl B., Beaver, Pa. Needle-threading device	853,766	May 14	2828	581	128	760
Buffalo Forge Company. (See Carrier, Willis H., assignor.)						
Bull, Harcourt W., Springfield, Mass. Hammer-retracting device	855,227	May 28	5757	1199	128	1567
Bullard, Robert G., Bremen, Ga. Door-hanger for car-doors	854,564	May 21	4403	913–14	128	1195
Bullock, Amasa M., Vancouver, British Columbia, Canada. Clothes-drying device	854,267	May 21	3852	796	128	1056
Bullock Electric Manufacturing Company *et al.* (See Brown, Arthur J., assignor.)						
Bullock Electric Manufacturing Company. (See Richards, Walter J., assignor.)						
Bullock Electric Manufacturing Company *et al.* (See Stull, Emmett W., assignor.)						
Bumbaugh, Albert A., Fort Wayne, Ind. Horseshoe	852,540	May 7	327	58	128	90
Bunce, Earl M., Fenton, Mich. Apparatus for burning fuel in furnaces	854,798	May 28	4877	1013	128	1343
Bunet, Paul, Paris, France, assignor to General Electric Company. Induction-motor	852,702	May 7	666	130	128	174
Bunge, Julius H. O., Buffalo, N. Y. Stuffing-box	853,059	May 7	1403	292	128	356
Burden, William H., Detroit, Mich. Hat-holding device	855,279	May 28	5853	1220	128	1593
Burk, Lemon O. (See Thomas and Burk.)						
Burke, Charles R. (See Ryan and Burke.)						
Burke, Edward J., Brooklyn, N. Y. Telephone system	853,002	May 7	1303	272	128	330
Burke, Richard W. (See Georgenson and Burke.)						
Burmester, Fredrick H., assignor to William A. Miller Elevator Manufacturing Company, St. Louis, Mo. Controller for electric motors	855,093	May 28	5504	1142	128	1504
Burnell, John C., Chicago, Ill. Advertising or other air-ship	854,461	May 21	4212	872	128	1143
Burnett, Curtis R., *et al.* (See Montrose, Samuel T., assignor.)						
Burnham, Williams & Company. (See Austin, William L., assignor.)						
Burnham, Williams & Company. (See Van Kirk, Benjamin R., assignor.)						
Burns, Nicholas, Johnstown, Pa., assignor to Lorain Steel Company. Switch-tongue operating and retaining device	853,223	May 14	1731	359	128	470
Burpee, Frank W., assignor to Burpee and Letson, Limited, Bellingham, Wash. Canalting machine	854,075	May 21	3462	718–19	128	960
Burpee and Letson. (See Burpee, Frank W., assignor.)						
Burrall, Arthur, *et al.* (See Perkins, George E., assignor.)						
Burrell, Loomis, assignor to D. H. Burrell & Company, Little Falls, N. Y. Milking-machine	854,208	May 21	3854	796	128	1056
Burrough, Draper C., Liverpool, W. Va. Rail-joint	852,415	May 7	9	3	128	5
Burrows, William R., Newark, N. J., assignor to General Electric Company. Vapor electric apparatus	853,678	May 14	2631	546	128	709
Burry, John, Ridgefield Park, N. J. Multiplex telegraphy	852,495	May 7	228	41	128	66
Burry, John, Ridgefield Park, N. J. Telegraph-transmitter	854,601	May 21	4066	845–6	128	1117
Burt, Edward W., Philadelphia, Pa., and H. S. Chapin, Hempstead, N. Y., assignors to S. L. Allen and Company, Philadelphia, Pa. Cardboard sled	853,624	May 14	2533	526	128	683

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Burton, George D., assignor to American Electrical Process Company, Boston, Mass. Electric wool washing and cleansing apparatus	854,028	May 21	3377	695–6	128	933
Busby, E. A. G. (See Busby, Nahum J., assignor.)						
Busby, Nahum J., Boston, assignor to E. A. G. Busby, Chelsea, Mass. Shipping-case	853,532	May 14	2340	487	128	634
Buscher, Hermann, Langerfeld, near Barmen, Germany. Jacquard mechanism for lace bobbin-machines	853,396	May 14	2078	431	128	565
Busenbenz, Jacob J., assignor to Industrial Gas Construction Co., Chicago, Ill. Gas-manufacturing process	855,094	May 28	5507	1142–3	128	1504
Bush, Abraham L., East Orange, N. J. Railway train-shed	855,160	May 28	5636	1172	128	1537
Business Systems Limited. (See Baird, Daniel S., assignor.)						
Buskey, George M., Cumberland, Md. Sack-packer	853,679	May 14	2632	546	128	709
Buss, Jakob, Munich, assignor of one-half to C. Fohr, Schloss, Wallenburg, near Miesbach, Germany. Manufacturing briquets from coal, peat, and bog-earth	854,565	May 21	4405	914	128	1195
Bussinger, William J., assignor to National Specialty Manufacturing Company, Philadelphia, Pa. Coffee-mill	855,228	May 28	5758	1199	128	1568
Butcher, John F., Mount Pleasant, Mich. Folding crate or box	852,416	May 7	10	3	128	5
Butler, Jacob W., Blaney, S. C. Umbrella-support	853,397	May 14	2080	432	128	566
Butler, William W. (See Pick, Alfred, assignor.)						
Buttenshaw, George E., Manchester, England. Manufacture of alloys	854,462	May 21	4215	.....	128	1149
Butterfield, Durell J., Marine City, Mich. Basin-fitting	852,596	May 7	451	83	128	119
Butz, John E. P. (See Hall, Frank M., assignor.)						
Byrd, Atvill, Kansas City, Mo. Foot-bath for horses and mules	853,533	May 14	2342	487	128	635
C. E. Tayntor Granite Company. (See Tayntor, Charles E., assignor.)						
C. T. Ham Manufacturing Company. (See Bergener, Charles, assignor.)						
Cable, Daniel A., Bonami, La. Cotton-chopper	854,269	May 21	3857	796	128	1057
Cage, John M., assignor of one-half to J. C. Harvey, Denver, Colo. Submarine boat	854,146	May 21	3623	748–9	128	994
Cahn, Louis M. (See Hall, Charles F., assignor.)						
Caille, Charles, Le Perreux, France. Apparatus for the utilization in a reheater of the exhaust-steam of locomotives	852,868	May 7	1025	212	128	261
Caldwell, Alfred B., Evansville, Ind. Vehicle-brake	853,496	May 14	2270	470–1	128	616
Caldwell, James S., Kansas City, Mo. Accounting apparatus	854,402	May 21	4091	846	128	1117
Caldwell, William R., Keyser, W. Va. Wheel	853,767	May 14	2830	582	128	761
Calhoun, Joseph C., Holland, assignor of one-half to G. P. Hummer, Grand Rapids, Mich. Photographic-printing machine	854,076	May 21	3457	719	128	962
Calkins, Almon B., Belleville, N. J. Match-making machinery	854,871	May 28	5039	1047–9	128	1385
Calkins, Almon B., Belleville, N. J., assignor to F. C. Dininny, New York, N. Y. Match-making machinery	854,870	May 28	5031	1045–7	128	1383
Callahan, Thomas H., Harrison, N. J. Pool-ball frame	854,799	May 28	4880	1013	128	1344
Calian, John G., Lynn, and R. H. Rice, Swampscott, Mass., assignors to General Electric Company. Combined coupling and bearing	854,715	May 28	4714	981	128	1301
Cameron, Henry T., New York, N. Y. Steering-gear socket for automobiles	854,566	May 21	4406	914	128	1195
Cameron, James A., Butte, Mont., assignor to Cameron Manufacturing and Development Company. Water-current motor	855,041	May 28	5382	1118–19	128	1473
Cameron Manufacturing and Development Company. (See Cameron, James A., assignor.)						
Campbell, Angus, Pittsburg, Pa. Cotton-harvester	853,916	May 14	3143	643–4	128	836
Campbell, Angus, Pittsburg, Pa. Seed-cotton drying and cleaning apparatus	853,942	May 14	3198	655–6	128	850
Campbell, Argyle, assignor to Enterprise Railway & Equipment Company, Chicago, Ill. Metallic car-roof	853,342	May 14	1984	409	128	543
Campbell, Charles H., New York, N. Y., assignor, by mesne assignments, to National Nutrient Company, Jersey City, N. J. Obtaining concentrated milk containing cream. (Reissue)	12,649	May 14	3203	657	128	852
Campbell, Frank, and G. E. Wilson, Stillwater, Minn. Stock-car	852,417	May 7	12	3–4	128	6
Campbell, James C. (See Leichter, Edward, assignor.)						
Campbell, James W., Cheviot, N. Y., assignor, by mesne assignments, to Ferguson Brothers Mfg. Co., Hoboken, N. J. Sectional bookcase	852,769	May 7	789	158	128	205
Campbell, James W., Cheviot, N. Y., assignor, by mesne assignments, to Ferguson Brothers Mfg. Co., Hoboken, N. J. Sectional bookcase	852,770	May 7	791	158	128	205
Campbell, Joseph D., assignor to American Concrete Machinery Company, Columbus, Ohio. Mixing-machine	854,029	May 21	3379	696–7	128	934
Campbell, Victor E., Portland, Oreg. Interchangeable and adjustable screw-driver and combined tool-holder	855,280	May 28	5854	1220	128	1593
Canavera, Baptiste F., Coulterville, Ill. Brick-kiln	855,384	May 28	6028	1258–9	128	1636
Cannon, Corodon S., Chicago, Ill. Oil-burner	852,597	May 7	453	83–4	128	120
Cannon, Corodon S., Chicago, Ill. Ventilating mechanism	852,650	May 7	558	106	128	146
Cannon, Corodon S., Chicago, Ill. Oil-burner wick	852,651	May 7	560	106	128	146
Cannon, William H. (See Scroxton and Cannon.)						
Canter, F. C., *et al.* (See Cummins, Clarence R., assignor.)						
Carey, Enos, Grant county, Ind. Harvesting-machine	852,496	May 7	232	41	128	66
Carhart, John W., Austin, Tex. Laminated tire	854,463	May 21	4215	872	128	1149
Carillon, Charles P. (See Carillon, Lewis G. and C. P.)						
Carillon, Lewis G. and C. P., Millersburg, Ohio. Sewing-awl	854,147	May 21	3625	749	128	994
Carlon, George H. (See Swintek, Martin, assignor.)						
Carlyle, Joseph L. (See Baxter and Carlyle.)						
Carnes, Edward W., Chicago, Ill., assignor to American Can Company, New York, N. Y. Sectional or compartment can	853,497	May 14	2272	471	128	616
Carnes, George M., Rochester, N. Y. Wheeling and edge-setting machine	852,703	May 7	668	130	128	175
Carr, James, Memphis, Tenn. Car-door	852,925	May 7	1143	235	128	291
Carrier, Willis H., assignor to Buffalo Forge Company, Buffalo, N. Y. Heating and humidifying air	854,270	May 21	3858	797	128	1057
Carroll, John, Chicago, Ill. Curtain-rod point	853,680	May 14	2635	547	128	710
Carrom-Archarena Company. (See Haskell, Henry L., assignor.)						
Carter, Joel F., Kaufman, Tex. Animal-poke	854,567	May 21	4408	914	128	1196
Carter, Rice & Company. (See Leitch, Samuel G., assignor.)						
Carter, William E., Huntington, Oreg. Hay-stacker	855,281	May 28	5856	1220	128	1594
Carter Wilson L., Gulfport, Miss. Rotary waffle-iron	853,060	May 7	1404	292–3	128	357
Carver, Allen F., and J. N. Stout, assignors to American Inventions Company, New York, N. Y. Electric tool-driver	852,926	May 7	1144	236	128	291
Casale, Antonio, Scranton, Pa. Electric railway signaling system	854,926	May 28	5150	1072–3	128	1415
Casale, Giuseppe, Saltillo, Mexico. Lunar calendar	853,959	May 21	3247	666	128	901
Case, John M., Louisville, Ky. Gyratory sifter	853,061	May 7	1405	293	128	357
Casler, Herman. (See Marvin and Casler.)						
Cass, Cyrus N., Spangle, Wash. Disk harrow	853,160	May 7	1575	327–8	128	398
Castle, Wilmot, assignor to Wilmot Castle Company, Rochester, N. Y. Sterilizer	853,498	May 14	2274	471	128	617
Cator Dump Wagon Company. (See Cator, Richard G. and L., assignors.)						
Cator, Leon. (See Cator, Richard G. and L.)						
Cator, Richard G. and L., assignors to Cator Dump Wagon Company, Palmyra, N. Y. Dumping-wagon	855,161	May 28	5638	1173	128	1538
Cattlin, Alfred, Akaroa, New Zealand. Rolling-pin	855,042	May 28	5386	1119	128	1475
Cavey, Charles W. (See Winks, Walter H., assignor.)						
Cavigila, Octavio, Habana, Cuba. Measuring device	853,766	May 14	2831	582	128	761

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Caviglia, Octavio, Habana, Cuba. Distributing device	853,769	May 14	2833	582	128	762
Cerruti, Antonio San Francisco, Cal. Solder-feed for can-soldering machines	852,809	May 7	1026	213	128	262
Chadderton, Frank W., Oldham, England. Combing-machine for cotton, wool, &c	855,430	May 28	6114	1278	128	1656
Chambers, Cyrus, Jr., Overbrook, Pa. Mixing dough	852,497	May 7	235	42	128	67
Chamblee, Wilson G., Van Zandt county, Tex. Evaporating-pan	853,398	May 14	2081	432	128	566
Chandlee, William H., Washington, D. C. Figure toy	854,271	May 21	3860	797	128	1057
Chapin, Henry S. (See Burt and Chapin.)						
Charlton, James, Houston, Tex. Hydraulic drill	854,464	May 21	4216	872	128	1149
Charron, Ferdinand, Puteaux, France. Automobile vehicle for military purposes	853,625	May 14	2535	526	128	684
Charron, Ferdinand, Puteaux, France. Portable bridge	854,339	May 21	3958	818	128	1085
Chase and Baker Company. (See Chase, Joseph H., assignor.)						
Chase, Joseph H., assignor to Chase and Baker Company, Buffalo, N. Y. Pneumatic motor	852,820	May 7	913	187	128	233
Cheek, Henry M., and C. P. Brooks, Pleasant Plains, Ark. Nut-lock	854,900	May 28	4881	1014	128	1344
Cheltz, Roy B., Earl Park, Ind. Combined hay and stock rack	852,870	May 7	1029	213	128	262
Chemical Products Company. (See Mork, Harry S., assignor.)						
Cheney, George K., New York, N. Y., assignor, by meane assignments, to Victor Talking Machine Company. Composition of matter for sound-records	854,801	May 28	4882	1014	128	1345
Cheney, Norman T., Batavia, Ill. Letter-box	854,627	May 21	4512	942	128	1221
Cheney, Samuel A., Keene, N. H. Lawn-mower sharpener	853,399	May 14	2082	432	128	566
Chicago Tape & Label Company. (See Christoph, Emil A., assignor.)						
Childs, Samuel S., Bernardsville, N. J. Spring-wheel	854,982	May 28	5248	1093	128	1439
Chippendale, Peter A., Auburn, Me. Brooder	853,224	May 14	1734	360	128	471
Christ, Ludwig, and A. Megner, Merchingen, near Osterburken, Germany. Harvesting-machine	853,343	May 14	1985	410	128	543
Christensen, John, Ann Arbor, Mich. Hay-press	854,465	May 21	4217	872–3	128	1149
Christenson, Martin, Minneapolis, Minn. Shoe-polisher	854,407	May 21	4107	849–50	128	1122
Christianson, Andrew, Butler, assignor to Standard Steel Car Company, Pittsburg, Pa. Passenger and like car	854,330	May 21	3958	818	128	1085
Christianson, Andrew, Butler, assignor to Standard Steel Car Company, Pittsburg, Pa. Passenger and like car	854,331	May 21	3962	819	128	1086
Christianson, Andrew, Butler, assignor to Standard Steel Car Company, Pittsburg, Pa. Underframe for passenger and like cars	854,403	May 21	4095	846–7	128	1118
Christianson, Andrew, Butler, assignor to Standard Steel Car Company, Pittsburg, Pa. Frame for passenger and like cars	854,404	May 21	4098	847	128	1119
Christianson, Andrew, Butler, assignor to Standard Steel Car Company, Pittsburg, Pa. Passenger and like car	854,405	May 21	4102	848	128	1120
Christianson, Andrew, Butler, assignor to Standard Steel Car Company, Pittsburg, Pa. Metallic compartment construction for passenger and like cars	854,406	May 21	4104	848–9	128	1121
Christoph, Emil A., assignor to Chicago Tape & Label Company, Chicago, Ill. Tape-measure	852,771	May 7	792	158	128	205
Christy, Russ J., Fremont, Ohio. Safety-razor	853,960	May 21	3248	667	128	902
Chronik, August, New York, N. Y. Weighing-scale	853,770	May 14	2834	583	128	762
Chrystie, John A., *et al.* (See Stone, John S., assignor.)						
Church, William A., Providence, R. I. Tentering-machine	852,418	May 7	15	4	128	7
Churchill, Charles O., Bloomfield, N. J., assignor to Fairbanks Company, New York, N. Y. Valve	855,385	May 28	6029	1259	128	1637
Circuit Protecting Relay Company. (See Wright, Selden R., assignor.)						
Clarisey, Patrick H., Dalton, Mass. Gun-stock	855,229	May 28	5759	1199	128	1568
Clark, Albert C. (See Allen, Albert B., assignor.)						
Clark, Albert C., Chicago, Ill. Inhaler	853,439	May 14	2150	448	128	584
Clark, Cornelius S., Norfolk, Va. Nut-lock	853,062	May 7	1406	293	128	357
Clark, Cyrus J. (See Glazier and Parker, assignors.)						
Clark, Ernest E., St. Louis, Mo. Temporary binder	854,902	May 28	4883	1014	128	1345
Clark, Francis L., Pittsburg, and W. V. Turner, Wilkinsburg, assignors to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure brake	854,148	May 21	3627	749	128	995
Clark, Francis W. (See Thomson and Clark.)						
Clark, Frederick, Newburgh, N. Y. Clothes-line support	854,568	May 21	4409	915	128	1196
Clark, Norris E., Plainville, Conn. Reticulated metal	854,927	May 28	5152	1073	128	1415
Clark, Reuben M., Webb City, Mo. Eccentric	855,282	May 28	5858	1221	128	1594
Clark, Richard V., St. Louis, Mo. Massage-machine	854,983	May 28	5249	1093	128	1439
Clarke, Hobart O., Pittsburg, and A. G. Ross, Wilkinsburg, Pa. Hanging staging-hoist	853,161	May 7	1577	328	128	398
Clarkin, Eugene F. (See Hodgkinson and Clarkin.)						
Clauss, Henry, *et al.* (See Kaufman, Everett G., assignor.)						
Clauss, John H., *et al.* (See Kaufman, Everett G., assignor.)						
Clawson, Charles F., assignor of one-half to A. Weir and J. T. Corcoran, Mount Pleasant, Iowa. Rail-clip	852,927	May 7	1146	236	128	292
Clawson, Charles F., assignor of one-half to A. Weir and J. T. Corcoran Mount Pleasant, Iowa. Nut-lock for rail-joint fastenings	852,928	May 7	1147	236	128	292
Clendinen, Benjamin W., Dothan, Ala. Back-band for harness	854,628	May 21	4513	942	128	1222
Click, Joseph S., Bridgewater, Va. Plow	853,961	May 21	3250	667	128	902
Clifford, William P., Iconium, and W. W. Rankin, Ottumwa, Iowa. Ore separating and concentrating machine	853,917	May 14	3147	644	128	837
Clifton Manufacturing Company. (See Thoma, Andrew, assignor.)						
Cline, Watson H., Cleveland, Ohio. Paper-bag machine	853,918	May 14	3150	644	128	838
Cloud, John W., London, England, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. High-speed brake apparatus	854,803	May 28	4885	1014–15	128	1345
Coale, Frank W., *et al.*, executors. (See Coale, Joseph M.)						
Coale, Joseph M., deceased, F. W. and M. L. Coale, executors, assignors to Coale Muffler and Safety Valve Co., Baltimore, Md. Safety-valve	855,431	May 28	6116	1278	128	1656
Coale, Mary L., *et al.*, executors. (See Coale, Joseph M.)						
Coale Muffler and Safety Valve Co. (See Coale, Joseph M., assignor.)						
Coates, Joseph S., Denver, Colo., and G. F. Hart, Helper, Utah Lubricating device	855,386	May 28	6032	1259	128	1637
Coates, Thomas, Youngstown, Ohio. Turbine for flue-cleaners	854,718	May 28	4715	981	128	1301
Coates, Walter A., Providence, R. I. Eyeglass-frame	852,929	May 7	1148	236	128	292
Coburn, Harry H. (See De Land, Frank A., assignor.)						
Cochran, Andrew J., Indianapolis, Ind. Broom	852,772	May 7	794	159	128	206
Cochran, Charles H., assignor of twenty-four and one-half one-hundredths to C. L. Owen, Avalon, and fifty-one one-hundredths to W. H. Shinn, Carnegie, Pa. Pressed-steel journal-box for railway-cars. (Reissue)	12,646	May 7	1697	351–2	128	427
Cochrane, Josephine G., Chicago, Ill. Dish-washing machine	852,419	May 7	19	5	128	8
Cocker, John A., Joliet, assignor to American Steel & Wire Company, Chicago, Ill. Crimping mechanism for wire-fence machines. (Reissue)	12,656	May 28	6132	1282	128	1660
Cockrell, Francis M., *et al.* (See Passavant, Philip L., assignor.)						
Codling, George S. (See Cordrey and Brady, assignors.)						
Coe, James L. (See Coe, William A. and J. L.)						
Coe, Walter S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	852,822	May 7	917	188	128	234
Coe, William A. and J. L., Mannsville, Ind. Ter. Weaning-bit	852,821	May 7	916	187	128	234
Coffey, Barton H., Boston, Mass. Dredging and excavating machine. (Reissue)	12,650	May 14	3207	657	128	853

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Coffield, Peter T., Dayton, Ohio. Means for imparting rotary reciprocating motion	853,440	May 14	2152	448	128	585
Coffin, Charles L., assignor to Electric Metal Working Company, Detroit, Mich. Metallic vessel	855,043	May 28	5387	1119	128	1475
Coffin, Edouard, Grandvilliers, France. Tile	853,063	May 7	1408	294	128	358
Coffman, Walter M., Madison, Wis., assignor to Northern Electrical Manufacturing Company. Dynamo-electric machine	854,717	May 28	4717	981	128	1302
Cogan, Patrick A., New York, N. Y. Bench	855,387	May 28	6034	1260	128	1638
Cohn, Max M., San Francisco, Cal. Loose leaf for temporary binders	852,871	May 7	1030	213	128	263
Colburn, Joseph B., Washington, D. C. Joint-marking tool	855,044	May 28	5388	1120	128	1475
Coldwell, William H., Newburgh, N. Y. Shaft-bearing	853,225	May 14	1736	360	128	471
Cole, Frank, *et al.* (See Cole, Joseph J., assignor.)						
Cole, Henry, *et al.* (See Cole, Joseph J., assignor.)						
Cole, Joseph J., assignor of four-fifths to M., W., H., and F. Cole, Patton, Pa. Water-tube boiler	853,064	May 7	1409	294	128	358
Cole, Michael, *et al.* (See Cole, Joseph J., assignor.)						
Cole, Thomas H., Southsea, England. Apparatus for generating and storing products of combustion under pressure	854,466	May 21	4219	873	128	1150
Cole, William, *et al.* (See Cole, Joseph J., assignor.)						
Coleman, Arnold D., and C. Stecher, Chicago, Ill. Lock-seaming machine	854,872	May 28	5045	1049–51	128	1387
Coles, Charles H., Sandwich, Ill. Inhaler	853,626	May 14	2537	527	128	685
Colgate, Arthur E., New York, N. Y. Picture apparatus	853,441	May 14	2154	448–9	128	585
Collett, Emil, Christiania, Norway. Concentrating nitric acid	854,928	May 28	5153	1073	128	1416
Collins, Dave W., assignor of one-half to W. M. Roy, Wilson, Ark. Car-repairer's tool	852,704	May 7	671	130	128	176
Collins, Jeremiah W., Sherrill, assignor to Oneida Community, Limited, Kenwood, N. Y. Animal-trap	855,230	May 28	5762	1200	128	1569
Collins, John S., Custer, Okla. Ter. Adjustable umbrella-support	852,872	May 7	1032	213	128	263
Collins, Michael, assignor of one-half to J. P. McCann, Philadelphia, Pa. Packing	853,003	May 7	1305	272	128	331
Collom, Arthur W., Meadville, Pa. Signal-light	853,499	May 14	2275	471–2	128	617
Colt's Patent Fire Arms Manufacturing Company. (See Cutts, Richard M., assignor.)						
Columbus Brass Company. (See Lindenberg and Delany, assignors.)						
Combustion Utilities Company. (See Eldred, Byron E., assignor.)						
Combustion Utilities Company. (See Ellis and Eldred, assignors.)						
Combustion Utilities Company. (See Mangelsdorff, Max F., assignor.)						
Commercial Acetylene Company. (See Bruckner, Rudolph E., assignor.)						
Companhia Manufactora Fluminense. (See Coutinho, João M. D., assignor.)						
Company "L'Aspirator." (See Blum, Jules R., assignor.)						
Comptograph Company. (See Felt and Wetmore, assignors.)						
Compton, William H., Minneapolis, Minn. Manure-fork	855,283	May 28	5859	1221	128	1595
Conant, Charles B., assignor of one-half to F. A. Grabner, Adrian, Mich. Tie for wire fences	852,420	May 7	21	5	128	8
Conklin, Edward D., assignor to Whitehead & Hoag Company, Newark, N. J. Bill-hook	854,197	May 21	3727	771	128	1023
Conlee, Frederick M., Madison, Wis., assignor to Northern Electrical Manufacturing Company. Brush-holder	852,705	May 7	672	131	128	176
Connell, Isaac N., Baileys Mills, Ohio. Washing-machine	853,162	May 7	1579	328–9	128	399
Connell, John J., Lexington, Ky. Implement-holder	853,577	May 14	2426	505	128	655
Connell, William J., assignor of two-thirds to A. E. Youmans and J. W. Koontz, Huntingdon, W. Va. Check-holder for mine-cars	855,388	May 28	6035	1260	128	1638
Connolly, Joseph B. (See Connolly, Thomas A. and J. B.)						
Connolly, Thomas A. and J. B., Washington, D. C. Producing pictures, designs, &c	853,863	May 14	3021	620	128	806
Conrad, Frank, Edgewood Park, and W. M. Bradshaw, Wilkinsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company. Alternating-current electrical apparatus	853,226	May 14	1737	360–1	128	472
Conroy, James P., Pittsburg, Pa. Vending-machine	855,231	May 28	5763	1200	128	1569
Conter, Michael J., Chicago, Ill. Automatic book-mark	854,873	May 28	5052	1051	128	1389
Cook, Abner S., Burlington, Iowa. Plate	853,065	May 7	1413	295	128	358
Cook, Charles W., Holyoke, Mass. Stationery-box	855,045	May 28	5391	1120	128	1476
Cook, Frank A. (See Pfunder and Cook.)						
Cook, Frank B., Chicago, Ill. Heat-coil	854,272	May 21	3861	797	128	1058
Cook, John, and J. F. Brady, New Paynesville, Minn. Shears	853,681	May 14	2036	547	128	710
Cook, Miles, Ottawa, Kans. Corn-harvester	854,629	May 21	4514	942	128	1222
Cook, Richard H., assignor to American Thread Company, Fall River, Mass. Stop mechanism for bobbins	855,162	May 28	5640	1173	128	1538
Cook, Willis A., Sturgis, S. D. Hay-dropper	854,920	May 28	5154	1073–4	128	1416
Coon, George, Mount Vernon, Wash. Stamp-mill	855,284	May 28	5861	1221	128	1595
Cooper, Charles. (See Hurley and Barratt, assignors.)						
Cooper, John W., Boston, Mass. Spring-wheel	855,095	May 28	5508	1143	128	1505
Cooper, John W., Boston, Mass. Spring-wheel	855,096	May 28	5510	1143–4	128	1505
Copeman, Lloyd G., Spokane, Wash., assignor of one-half to C. A. Walker, Coeur d'Alene, Idaho. Electrothermostatic heat-regulator	852,773	May 7	795	159	128	206
Corbett, John G., assignor to Emmert Manufacturing Company, Waynesboro, Pa. Swiveled base	854,984	May 28	5251	1094	128	1440
Corbin Cabinet Lock Company. (See Townsend, Harry P., assignor.)						
Corboy, James M., Edgewood Park, Pa. Filing system	853,864	May 14	3025	621	128	806
Corcoran, John T., *et al.* (See Clawson, Charles F., assignor.)						
Cordrey, John C., La Junta, Colo., and P. J. Brady, Harvey; said Brady assignor to G. S. Codling, Chicago, Ill. Trolley-wheel	854,804	May 28	4889	1015	128	1346
Corlew, Charles C., Fresno, Cal. Hose-coupling	855,232	May 28	5765	1200	128	1569
Cormier, Donat S., Waltham, Mass. Square	855,233	May 28	5766	1200	128	1570
Cornelison, Robert W., Bloomfield, N. J., assignor to H. B. Wiggin's Sons Company. Composition of water-colors	854,332	May 21	3964		128	1087
Cornell, William N., Massena, N. Y. Apparatus for making imitation wood	854,149	May 21	3629	750	128	995
Cornely, Robert, Paris, France. Sewing and embroidering machine	852,598	May 7	457	84	128	121
Cornwall, George R., Rye, assignor to American Planograph Company, New York, N. Y. Repairing transfer-surfaces for receiving printing impressions	852,706	May 7	673	131	128	176
Côté, Henry, West Warren, assignor to Draper Company, Hopedale, Mass. Warp-stop-motion mechanism	853,163	May 7	1580	329	128	399
Cotter, Cornelius J., Buffalo, N. Y. Spring-insole for shoes	855,163	May 28	5641	1173	128	1538
Cottrell, Charles W., Washougal, Wash. Combined measuring, winding, and weighing machine	854,467	May 21	4223	874	128	1161
Cottrell, James F., Rochester, N. Y. Lubricator for trolley-wheels	853,771	May 14	2836	583	128	763
Courtney, Patrick J., Elizabeth, N. J. Masonry-tool	853,164	May 7	1581	329	128	399
Cousans, Louis B. (See Cousans, Reginald A. and L. B.)						
Cousans, Louis B., Lincoln, England. Starter for blowers	855,046	May 28	5392	1120	128	1476
Cousans, Reginald A. and L. B., Lincoln, England. Air-compressor	852,541	May 7	328	59	128	90
Cousino, George, assignor of one-half to R. W. G. Bartlett, Toledo, Ohio. Scribe-gage	854,333	May 21	3965	819	128	1087
Coutinho, João M. D., assignor to Companhia Manufactora Fluminense, Rio de Janeiro, Brazil. Printing-machine for all kinds of cloths or paper	853,150	May 7	1574	327	128	398
Coutts, James R., Toronto, Ontario, Canada, assignor of one-half to C. A. Eaton, Cleveland, Ohio. Generating gas	852,930	May 7	1150	237	128	293

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Couture, Eusebe P., Knightsen, Cal. Current-motor	855,164	May 28	5642	1173	128	1539
Cox, Charles F., Bridgeton, N. J. Glass-melting furnace	854,273	May 21	3866	798	128	1060
Cox Multi-Mailer Co. (See Cox, Sandford C., assignor.)						
Cox, Robert W., and J. H. Ontrich, Washington, D. C. Pocket check-punch	854,630	May 21	4515	942	128	1222
Cox, Sandford C., Chicago, Ill., assignor to Cox Multi-Mailer Co., Sioux Falls, S. D. Galley for addressing-machines	855,097	May 28	5513	1144	128	1506
Cox, Thomas, Jr. (See Perkins and Cox.)						
Cox, Walter W. (See Blass, Haehlen, and Cox.)						
Coyle, William, Devonport, assignor of part interest to H. Gentles and J. M. Morran, Auckland, New Zealand. Automatic safety-pin	853,865	May 14	3027	621	128	807
Craft, Edward B. (See McBerty and Craft.)						
Cragg, Slade E., *et al.* (See Sappington, Paul, assignor.)						
Crawhead, William H., Brigham, Utah. Ice-cutting machine	854,631	May 21	4516	943	128	1222
Craig, Archibald F. M. (See Fellroth, Erick O., assignor.)						
Craig, David, Canton, Ohio. Tool-holder	852,931	May 7	1153	237	128	293
Cram, Edwin B., assignor to Cram Writing Machine Company, St. Louis, Mo. Typewriting attachment for adding-machines	853,297	May 14	1885	390–4	128	513
Cram, Edwin B., assignor to Cram Writing Machine Company, St. Louis, Mo. Typewriting attachment for adding-machines	853,298	May 14	1899	394–5	128	519
Cram Writing Machine Company. (See Cram, Edwin B., assignor.)						
Cram Writing Machine Company. (See Meier, Adolphus G., assignor.)						
Cramer, Stuart W., Charlotte, N. C. Humidifying and air-conditioning apparatus	852,823	May 7	919	188–9	128	235
Crandall, Jay E., assignor to National Sewing Machine Company, Belvidere, Ill. Lubricator	854,874	May 28	5053	1051	128	1389
Crandell, George T., Omaha, Nebr. Horseshoe	854,198	May 21	3729	772	128	1024
Crane, Closser A. and L. F., and F. M. Hentig, Topeka, Kans. Butter-mold	854,930	May 28	5155	1074	128	1417
Crane Company. (See Doolittle, William W., assignor.)						
Crane Company. (See Hayden, George W., assignor.)						
Crane, Lafayette F. (See Crane and Hentig.)						
Crane, Raymond E. (See Backus and Crane.)						
Crane, Theron I. (See Maignen and Crane.)						
Crawford, Clifton A., Zion City, Ill. Stamp-affixer	853,500	May 14	2279	472	128	619
Crawford, Hugh L., Bristol, Tenn. Refrigerator display-rack and meat-hanger	854,805	May 28	4890	1015	128	1346
Creamery Package Mfg. Company. (See Amacker, John R., assignor.)						
Crellin, John C., Liverpool, England. Nut grading and shelling machine	853,066	May 7	1414	296	128	359
Criddle, Thomas B., Waxahachie, Tex. Hoe-sharpening device	854,632	May 21	4518	943	128	1223
Crippen, George F., Ypsilanti, Mich. Bean-picking machine	855,432	May 28	6118	1279	128	1656
Crittenden, Simeon, Chatfield, Minn. Building-block	854,806	May 28	4892	1016	128	1346
Crocker-Wheeler Company. (See Dunn, Gano S., assignor.)						
Crompton & Knowles Loom Works. (See Forbes and Fraker, assignors.)						
Crompton & Knowles Loom Works. (See Ryon, Eppa H., assignor.)						
Crone, Seth A., New York, N. Y. Brake-shoe	854,985	May 28	5252	1094	128	1440
Cronholm, Oscar, Fairfield township, Palo Alto county, Iowa. Bag-holder	854,077	May 21	3489	720	128	962
Crook, Jesse, and J. Schwartz, deceased, (W. J. Schwartz administrator,) Minden, Ohio. Attachment for shoes	854,274	May 21	3869	798	128	1060
Crosby, Charles F., Burlington, Vt. Grass-cutter	854,468	May 21	4225	874	128	1151
Croskey, John H., assignor to Duquesne Glass Co., Pittsburg, Pa. Charging mechanism for glass-molds	852,932	May 7	1155	237–8	128	293
Cross, Frank L., Mystic, Conn., assignor to Cross Paper Feeder Company, Boston, Mass. Controlling mechanism for machines acting on sheets	854,078	May 21	3490	720	128	962
Cross, Frank L., Mystic, Conn., assignor to Cross Paper Feeder Company, Boston, Mass. Sheet-feeding machine	854,079	May 21	3493	720	128	963
Cross, Frank L., Mystic, Conn., assignor to Cross Paper Feeder Company, Boston, Mass. Controlling mechanism for machines acting on sheets	854,080	May 21	3495	721	128	964
Cross Paper Feeder Company. (See Cross, Frank L., assignor.)						
Crossley, Daniel. (See Bermes, John, assignor.)						
Crossley, Francis M., Detroit, Mich. Railway-tie and fastener	852,542	May 7	330	59	128	90
Crotchett, Alonzo, Iola, Kans. Plumb-bob	854,931	May 28	5156	1074	128	1417
Crouch & Fitzgerald. (See Gilmore, John W., assignor.)						
Crouch, Frank J. (See Hoey and Crouch.)						
Crow, Goodlet C., Kansas City, Mo. Furnace-feed	854,875	May 28	5056	1052	128	1390
Crump, Frank H., Los Angeles, Cal. Loose-leaf binder	855,285	May 28	5983	1222	128	1595
Cruse, Henry, Blackley, near Manchester, England. Construction of valve-casings	854,314	May 21	3966	819	128	1087
Cruse, Henry, Blackley, near Manchester, England. Construction of valve-casings	854,469	May 21	4227	874	128	1151
Cryder & Co. (See Verdeau, Emile, assignor.)						
Cubine, James H., Wash, Okla. Ter., and L. A. Hacker, Spruie, Ky. Cotton-chopper	854,335	May 21	3966	820	128	1087
Cuff, John K., Spanish, Mont. Loading and unloading apparatus	854,275	May 21	3869	798	128	1060
Culp, Alva. (See Feather and Culp.)	853,227	May 14	1741	361	128	473
Cummins, Clarence R., assignor of one-half to F. F. Fritz and F. C. Canter Erie, Pa. Apparatus for generating and administering gases for general anæsthesia	853,165	May 7	1582	329	128	400
Cunningham, John W., Leominster, Mass. Hat-pin fastener	854,718	May 28	4718	981	128	1302
Cunningham, William R., assignor to American Clay Machinery Co., Bucyrus, Ohio. Interchangeable mold-box	853,442	May 14	2155	449	128	585
Cunningham, William R., assignor to American Clay Machinery Company, Bucyrus, Ohio. Elevator-boot bearing	853,443	May 14	2157	449	128	586
Cupola Cleaning Company. (See Peacock, Joseph, assignor.)						
Curlett, William, San Francisco, Cal. Building block and wall	855,047	May 28	5394	1121	128	1477
Curlett, William, San Francisco, Cal. Building-wall	855,048	May 28	5396	1121	128	1477
Curtice, Irvin O. Kansas City, Mo. Kitchen-cabinet	854,569	May 21	4410	915	128	1196
Curtis Edward B., Parker, S. D. Reel for wagons	854,981	May 21	3499	721	128	965
Curwen, Samuel M., Haverford, assignor to I. A. Brill, Philadelphia, Pa. Car	852,774	May 7	797	159–60	128	207
Curwen, Samuel M., assignor to J. A. Brill, Philadelphia, Pa. Automatic brake-hanger	852,933	May 7	1158	238	128	294
Cutter Electric & Manufacturing Company. (See Scott William M., assignor.)						
Cutter, William O., Natick, Mass. Device for propelling and steering vessels	855,165	May 28	5643	1174	128	1539
Cuttle, Matthew C., Norwich, Conn. Dyer's vat	853,627	May 14	2538	527	128	685
Cutts, Richard M., U. S. Marine Corps, assignor to Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Cartridge-pouch	855,098	May 28	5514	1144	128	1506
Czarra & Proctor. (See Proctor, Maro L., assignor.)						
Czerny, Josef, assignor to M. Lempert, New York, N. Y. Composition for treating paper	854,470	May 21	4228	.....	128	1152
D. H. Burrell & Company. (See Burrell, Loomis, assignor.)						
D. T. Owen Company. (See Owen, David T., assignor.)						
D'Unger, Robert, Chicago, Ill., assignor to Electric Loop and Cable Company. Electric cable	852,778	May 7	808	162	128	210
D'Yarmett, Edward C., Bartlesville, Ind. Ter. Game apparatus	854,937	May 28	5169	1077	128	1420
Dages, Louis P., assignor of one-half to G. P. Zulauf, Baltimore, Md. Mold-preparing machine	854,932	May 28	5157	1075–6	128	1417
Daimler-Motoren-Gesellschaft. (See Moewes, Ernst, assignor.)						
Dalmer, Robert, London, England. Vehicle-wheel and pneumatic tire for same	853,228	May 14	1742	361–2	128	473
Damman, Henry H., Kiowa, Kans. Poultry-brooder	852,653	May 7	563	107	128	147

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Damman, Henry H., assignor of one-half to J. H. Kane, Kiowa, Kans. Poultry-brooder	852,652	May 7	561	107	128	147
Danford, Tad, Granby, Colo. Wave-power motor	854,082	May 21	3500	721–2	128	965
Daniels, Clinton C., Grants Pass, Oreg. Railway-tie	853,773	May 14	2838	584	128	764
Daniels, Fred H., Worcester, Mass. Steam-engine condenser system	853,772	May 14	2837	583	128	763
Daniels, Fred H., Worcester, Mass. Apparatus for treating wire rods	854,807	May 28	4893	1016	128	1347
Daniels, Fred H., Worcester, Mass. Treatment of wire rods	854,808	May 28	4894	1017	128	1347
Daniels, Fred H., Worcester, Mass. Wire-coiling apparatus	854,809	May 28	4897	1017	128	1348
Daniels, Fred H., Worcester, Mass. Manufacture of wire rods	854,810	May 28	4898	1017–19	128	1348
Daniels, Johann J., New Rochelle, N. Y. Window-blind fastener	852,654	May 7	564	107–8	128	147
Danielsen, Wilhelm G., Logan, Utah. Plow	853,004	May 7	1306	272	128	331
Danielson, Albin, Chicago, Ill. Door-holder	852,655	May 7	567	108	128	148
Danquard, Thomas, assignor to Autopiano Co., New York, N. Y. Spring-catch	852,422	May 7	23	5	128	9
Dantzig, David, New York, N. Y., and J. Bonowitz, Philadelphia, Pa. Sewing-machine gage	855,286	May 28	5865	1222	128	1596
Dardis, William J. (See Haggerty and Dardis.)						
Darke, Jesse M. (See McArthur and Darke.)						
Darlington, Frederick, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Temperature-regulator	854,276	May 21	3870	799	128	1061
Darlington, Frederick, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Means for cooling transformers	854,277	May 21	3873	799	128	1062
Darlington, Frederick, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Radiator	854,278	May 21	3875	799	128	1062
Darrington, George H., Honey Creek, Iowa. Clevis	854,633	May 21	4519	943	128	1223
Darst, Luther E., Louisiana, and W. H. Harrelson, Cyrene, Mo. Adjusting-wheel for swingletrees or doubletrees	854,150	May 21	3631	750	128	996
Dashiell, Milton, assignor of two-thirds to J. W. Woodland, Baltimore, Md. Elevator	853,534	May 14	2343	488	128	635
Datow, Emile P., New Orleans, La. Can-seaming machine	855,287	May 28	5866	1222–3	128	1596
Davenport Wagon Company. (See Hecht, Joseph L., assignor.)						
Davidson, John B., Derby, Conn. Steel for sharpening knives	852,873	May 7	1033	214	128	263
Davies, Charles W. T., London, England, assignor to Good Form Manufacturing Company. Necktie	852,824	May 7	922	189	128	235
Davies, George W., assignor of one-half to F. Assenbeck, New York, N. Y. Hydraulic motor	853,774	May 14	2839	584	128	764
Davies, John M., Plattsburg, N. Y. Soap-holder	853,067	May 7	1416	295	128	359
Davis, Abner F. H., Oakland, Cal., assignor to National Telegraphone Company, Rochester, N. Y. Telephone-receiver	853,578	May 14	2427	506	128	656
Davis, Alexander C., Battle Ground, Ind. Fence-post	852,421	May 7	22	5	128	8
Davis, George A., San Francisco, Cal. Puzzle	854,719	May 28	4719	982	128	1303
Davis, George H., West Orange, N. J. Controlling device for automatic musical instruments	854,689	May 21	4629	965	128	1250
Davis, James M. (See Moss, Benjamin B., assignor.)						
Davis, Joseph E. (See Smith and Davis.)						
Davis, Julius, *et al.* (See Hainlin, Carl, assignor.)						
Davis Locomotive Wheel Company. (See Westlake, Charles T., assignor.)						
Dawes, Edward L., and J. F. Whitehead, New Brighton, assignors to Standard Sanitary Manufacturing Company, Pittsburg, Pa. Molding-machine	854,690	May 21	4637	965–7	128	1254
Dawkins, James, Yager, Cal. Nut-lock	853,005	May 7	1308	272	128	331
Dawkins, John R., McKinney, Tex. Electric attachment for movable objects	855,389	May 28	6037	1260	128	1638
Dawson, James C., St. Louis, Mo., assignor to Sieber & Trussell Manufacturing Company. Loose-leaf binder	853,962	May 21	3252	667	128	903
Dawson, James C., St. Louis, and T. E. Heeter, Maplewood, Mo., assignors to Sieber & Trussell Mnfg. Co. Loose-leaf binder	853,963	May 21	3253	667	128	903
Dawson, William F., Rugby, England, assignor to General Electric Company. Dynamometer	854,720	May 28	4721	982	128	1303
Day, Maxwell W., Schenectady, N. Y., assignor to General Electric Company. Motor control	854,721	May 28	4722	982	128	1303
Day, William C., Winchester, Ky. Water elevator and carrier	854,336	May 21	3968	820	128	1088
Dayton, George W., King City, Cal. Acetylene-gas generator	853,400	May 14	2083	433	128	566
De Bar, William L., Union, N. J. Fabric-frame-moving mechanism for embroidery-machines	855,187	May 28	5690	1184–5	128	1550
De Cook, Cornelius, Bangor, Mich. Ladder	854,152	May 21	3632	751	128	996
De Graff, Henry W., East Syracuse, N. Y. Wrench	852,874	May 7	1034	214	128	263
De Land, Frank A., assignor of one-half to H. H. Coburn, Memphis, Mich. Trigger mechanism	853,229	May 14	1744	362	128	474
De Long, John W. (See Merrill and De Long.)						
De Ramus, William G., Petronia, Ala. Cotton-press	852,825	May 7	923	189	128	235
De Reamer, Frank C., Schenectady, N. Y., assignor to General Electric Company. Attaching plug and receptacle	852,708	May 7	677	131	128	177
De Remer, William L., Chicago, Ill. Tie-plate	853,683	May 14	2656	548	128	717
De Remer, William L., Chicago, Ill. Tie-plate	853,684	May 14	2658	548	128	718
De Weese, James W., Hoopeston, Ill. Flue-stopper	854,986	May 28	5254	1094	128	1441
De Young, Bastian, Los Angeles, Cal. Awning	854,933	May 28	5162	1076	128	1418
Dean Electric Company. (See Dean, William W., assignor.)						
Dean Electric Company. (See Manson, Ray H., assignor.)						
Dean, Frederick W., Des Moines, Iowa. Handpiece for dental engines	855,288	May 28	5871	1223	128	1597
Dean, John, Racine, Wis. Apparel-pocket	853,068	May 7	1417	296	128	359
Dean, William W., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	853,682	May 14	2637	547–8	128	710
Dean, William W., assignor to Kellogg Switchboard and Supply Company. Trunk-line telephone system	854,337	May 21	3972	821	128	1089
Dean, William W., assignor to Dean Electric Company, Elyria, Ohio. Telephone-exchange system	854,279	May 21	3876	799–800	128	1063
Dearing, David M., Jackson, Mich. Motor-vehicle	852,707	May 7	675	131	128	177
Deasy, John, Detroit, Mich. Window-cleaner	854,151	May 21	3632	750	128	996
Deckebach, Henry E., Cincinnati, Ohio. Apparatus for purifying, cooling, and drying air	852,543	May 7	332	59	128	91
Deeves, Griffen H., Chicago, Ill. Wrench	854,338	May 21	3976	821	128	1090
Degner, Otto, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Compound of silver and nucleinic acids	852,544	May 7	333	.....	128	91
Degner, Otto, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Compound of silver and formonucleinic acid	852,545	May 7	334	.....	128	91
Delmel, Rudolph, Chicago, Ill. Sofa-bed	854,722	May 28	4725	982–3	128	1306
Delany, Charles B. (See Lindenberg and Delany.)						
Delaunay-Belleville, L. M. G., Neuilly-sur-Seine, France. Water-circulating apparatus	853,866	May 14	3028	621	128	807
Dellinger, Abraham M., Lancaster, Pa. Vertical-disk grinding-mill	855,099	May 28	5516	1145	128	1308
Dempster, John T. H., Schenectady, N. Y., assignor to General Electric Company. Thermal cut-out	854,723	May 28	4727	983	128	1305
Dempster, John T. H., Schenectady, N. Y., assignor to General Electric Company. Thermal cut-out	854,724	May 28	4728	983	128	1306
Denio, William L., assignor of one-half to H. F. Atkinson, Rochester, N. Y. Support for phonograph-horns	852,656	May 7	568	108	128	148

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Denio, William L., assignor of one-half to H. F. Atkinson, Rochester, N. Y. Horn-support	852,657	May 7	570	109	128	148
Dennis, John J., assignor of one-half to F. W. Fullmer and F. E. Ball, Chicago, Ill. Adjustable scaffold-bracket	853,344	May 14	1987	410	128	543
Dennison, Robert L., Kansas City, Mo. Machine for making fence-posts	853,089	May 7	1419	296	128	359
Dentists Supply Company. (See Gibson, Joseph F., assignor.)						
Detrick, Jacob S., and J. W. Neidhardt, Baltimore, Md. Stone turning and cutting machine	855,234	May 28	5767	1201-2	128	1570
Detroit Auto Specialty Co. (See Wilson, John A., Jr., assignor.)						
Detroit Trust Co., trustee. (See Southgate, Louis W., assignor.)						
Detwiler, Charles N., Delta, Ohio. Sharpener for band-cutters	855,390	May 28	6038	1261	128	1639
Deutsch, John H., De Berry, assignor of one-half to J. T. Strange, Elysian Fields, Tex. Piano-action	854,280	May 21	3881	800	128	1064
Deutsche Waffen & Munitionsfabriken. (See Geschke, Ernst, assignor.)						
Development and Funding Company. (See Baekeland, Leo H., assignor.)						
Devers, Nathan H., Washington, D. C. Woodworking-tool	854,725	May 28	4730	983-4	128	1306
Devoe, Warren H., Pittsburg, Pa. Nut-lock	854,471	May 21	4228	875	128	1152
Dey, Gilbert S., assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y. Voting-machine	853,867	May 14	3029	621-3	128	807
Di Tullio, Tommaso, assignor to O. Pace, trustee, Quincy, Mass. Boiler compound	853,535	May 14	2345	.....	128	635
Diehmann, William, Oshkosh, Wis. Machine for making packing-strips	855,245	May 28	5774	1202-3	128	1573
Dick, Arthur. (See Holtz and Dick.)						
Dickey, Lester O. (See Stotts and Dickey.)						
Dickey, Walter S. (See Sherman, Harry E. and L. A., assignors.)						
Dickinson, Arthur S., Atlanta, Ga. Cuff-holder	853,230	May 14	1745	362	128	474
Dickson, John F., Binghamton, N. Y. Paint and varnish remover	853,685	May 14	2659	.....	128	718
Diefendorf, Orvis G., Watertown, N. Y. Brickmaking-machine	852,934	May 7	1159	238-9	128	295
Diehl, John J., assignor of two-thirds to H. N. McClain and W. Hollowell, Chicago, Ill. Flat-opening leaf for books	855,049	May 28	5397	1121	128	1477
Diehl Manufacturing Company. (See Marx, Gustave C., assignor.)						
Diemmer, Maximillian, J., Augusta, Ga. Hanger for incandescent lamps	853,444	May 14	2159	449	128	587
Dietrich, Charles W., Chicago, Ill. Compressor	855,050	May 28	5398	1121	128	1477
Dietrich, Emil, Burgstädt, near Chemnitz, Germany. Split pulley	854,934	May 28	5164	1076	128	1418
Dietrick, Matthias S., Six Mile Run, Pa. Show-case	852,875	May 7	1034	214	128	293
Dill, Fredrick W., and J. R. Hill, Lincoln, Kans. Device for overcoming dead-centers	852,775	May 7	799	160	128	207
Dingman, Frank, Berwyn, Md. Bottle-closure	853,775	May 14	2841	584	128	765
Dinkelspiel, Joe L. (See Steinhardt, Jacob M., assignor.)						
Dininny, Ferral C. (See Calkins, Almon B., assignor.)						
Dinsmore, John J. (See Vickery and Dinsmore.)						
Direct-Line General Telephone Company. (See Andriano, Albert K., assignor.)						
Dixon, Edward T., Southampton, England. Bottle-washing machinery	853,776	May 14	2842	585	128	765
Dixon, George L., Waterloo, Iowa. Laundry-marker	854,339	May 21	3977	921	128	1090
Dixon, Jonas F., Carthage, Mo. Wire-working tool	854,811	May 28	4900	1019	128	1348
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating & Lighting Company. Pressure-regulator	854,340	May 21	3979	822	128	1091
Doarn, James, *et al.* (See Van Dyke, Thomas H., assignor.)						
Dobbs, La Fayette G., Watertown, S. D. Whipping device	852,498	May 7	236	42	128	67
Dodds, Ethan L., Pullman, Ill. Electromagnetic means for transporting non-magnetic materials	854,153	May 21	3634	781-2	128	996
Dodds, Ethan L., Avalon, Pa., assignor to Pullman Company, Chicago, Ill. Metallic-car construction	852,935	May 7	1164	239	128	296
Dodds, Ethan L., Pullman, assignor to Pullman Company, Chicago, Ill. Door-operating mechanism for gondola cars	852,936	May 7	1165	240	128	296
Dodge Coal Storage Company. (See Titcomb, George E., assignor.)						
Dodge, James B., Jacksonville, Fla. Cork-extractor	854,812	May 28	4902	1019	128	1349
Doherty, Daniel F., and H. A. Palmer, assignors to New England Whip Company, Westfield, Mass. Ratan-straightening machine	852,826	May 7	924	189-90	128	236
Dokkenwadel, Frederick G., Coshocton, Ohio, assignor of one-half to H. M. Grant, New York, N. Y. Fertilizer	853,919	May 14	3154	.....	128	839
Dolson, Josiah W., New York, N. Y. Sanitary attachment for telephone-transmitters	854,472	May 21	4229	975	128	1152
Domsgen, Emil, and F. L. Kujawa, Magdeburg, Germany. Portable chair	854,154	May 21	3635	752	128	997
Donaldson, William H., Joliet, Ill. Headlight for locomotives	854,876	May 28	5059	1052	128	1391
Donham, Charles M. (See Fullard and Donham.)						
Donovan, Richard J., Ambridge, assignor to American Bridge Company, Pittsburg, Pa. Rake corner or knuckle for steel barges	853,920	May 14	3155	645	128	839
Doolittle, William W., Evanston, assignor to Crane Company, Chicago, Ill. Expansion-joint	853,964	May 21	3255	668	128	903
Doree, James A., Cloquet, Minn. Stovepipe-elbow	854,935	May 28	5164	1076	128	1419
Dorgeloh, George H. (See Emerson and Dorgeloh.)						
Dorment, Frank C., Detroit, Mich. Eye massage apparatus and medicator combined	852,827	May 7	927	190	128	236
Dorment, Frank C., and G. C. McVoy, Detroit, Mich. Atomizer	852,828	May 7	929	190	128	237
Dormoy, Emile A. (See Georges and Dormoy.)						
Dorris, Joseph F., assignor of one-half to S. Florey, Overton, Tex. Fan attachment for chairs	854,634	May 21	4520	944	128	1223
Dosbaugh, John M., Cedar Vale, Kans. Telephone-switchboard	855,391	May 28	6039	1261	128	1639
Doubleday, Ulysses F., Kalamazoo, Mich. Account-book	852,876	May 7	1036	214	128	264
Doughton, Charles F., Lebanon, Oreg. Musical instrument	853,536	May 14	2345	488	128	635
Doughty, Henry J., assignor to Atlantic Rubber Shoe Company, Providence, R. I. Die-cutting machine	853,501	May 14	2282	472-4	128	620
Douglas, James A., Yates Landing, Ill. Envelop	853,070	May 7	1424	297	128	361
Douglass, William W., Salt Lake City, Utah. Water elevating and storage apparatus	855,100	May 28	5518	1145-6	128	1507
Dove-Smith, Joseph, Toronto Junction, and F. E. Lauer, Niagara Falls, Ontario, Canada. Antifriction-bearing	854,877	May 28	5061	1052	128	1391
Dowd, Elmer W., Ottawa, Kans. Rake	853,502	May 14	2287	474	128	621
Dowd, James F., Hillsboro Bridge, N. H. Fulling-mill	854,030	May 21	3381	697	128	934
Downey, James H., Gainesville, Ga. Hoisting device	852,877	May 7	1039	215	128	265
Downie, Robert M., assignor to Keystone Driller Co., Beaver Falls, Pa. Core-drill	854,570	May 21	4413	916	128	1197
Doxsie, George W., Cadillac, Mich. Oar-blade	853,401	May 14	2085	433	128	567
Doyle, William A. (See Abrams and Doyle.)						
Draper, Clare H., assignor to Draper Company, Hopedale, Mass. Filling-replenishing loom	853,199	May 7	1648	343-4	128	417
Draper Company. (See Côté, Henry, assignor.)						
Draper Company. (See Draper, Clare H., assignor.)						
Draper Company. (See Goodnow, Robert M., assignor.)						
Draper Company. (See Hollins, Denis M., assignor.)						
Draper Company. (See Smith and Langley, assignors.)						
Draper Company. (See Stimpson, Edward S., assignor.)						
Draper Company. (See Stimpson, Wallace I., assignor.)						
Dresser, Solomon R., assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Coupling for bell and spigot pipes	854,936	May 28	5166	1077	128	1419

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Dressler, Charles E. and R., New York, N. Y. Air-purifying device	852,423	May 7	25	6	128	9
Dressler, Robert. (See Dressler, Charles E. and R.)						
Drew, Harry E., *et al.* (See Kimber, Abraham, assignor.)						
Drewsen, Viggo, New York, N. Y. Manufacturing products from cornstalks, sugar-cane, &c	853,943	May 14	3199	656	128	850
	852,599	May 7	459	85	128	122
Dripps, Mary E., Washington, D. C. Eyeglass-holder						
Drisko, Alonzo S. (See Berrenberg and Drisko.)						
Driver, Harry B. (See Lowry, Robert L., assignor.)						
Dronsfield, James, Oldham, England. Apparatus for grinding or surfacing calender-bowls and the like	854,341	May 21	3980	822-3	128	1091
	852,776	May 7	900	190	128	208
Druding, Edward J., New York, N. Y. Bed	854,408	May 21	4108	850	128	1122
Druen, Bernard D., New Haven, Conn. Motor-vehicle	853,968	May 14	3032	623	128	808
Drummond, Henry J., Etna, Pa. Drop-rail for roundhouses	853,537	May 14	2347	488	128	636
Dubisee, Joseph, Philadelphia, Pa. Handle-thimble						
Ducas, Francis. (See Molière, Mederic C., assignor.)						
Ducco, Antonio, Turin, Italy. Furnace	855,289	May 28	5873	1223-4	128	1597
Dudgeon, William M., executor. (See Weeks, John, assignor.)						
Dudley, Job, Hamilton, Ontario, Canada. Window-shade roller	854,878	May 28	5063	1053	128	1392
Dudley, Thomas J., assignor to E. S. Hughes, Abilene, Tex., and H. C. Stahl, Bellevue, Ohio. Planter	852,499	May 7	239	43-4	128	68
Dudley, Thomas J., assignor to E. S. Hughes, Abilene, Tex., and H. C. Stahl, Bellevue, Ohio. Combined lister plow and planter	852,777	May 7	801	160-1	128	208
	854,635	May 21	4522	944	128	1223
Duerst, Casper, Bellevue, Pa. Faucet						
Duff, John. (See Howell and Duff.)						
Duffield, William A., Hartranft, Tenn. Link	855,290	May 28	5874	1224	128	1598
Duffy, James F., assignor to himself, J. A. and J. F. Duffy, Jr., Chicago, Ill. Apparatus for refining, aging, mellowing, and purifying alcoholic liquors	853,071	May 7	1425	297	128	361
Duffy, John A., *et al.* (See Duffy, James F., assignor.)						
Duke, Joseph H. (See Swan, Charles, assignor.)						
Dummer, Edward, Newton, Mass. Sheet-registering device	853,628	May 14	2539	527	128	685
Duncan, Frank R., Ghent, Ky. Boot and shoe	854,571	May 21	4415	916	128	1198
Duncan, James R., New York, N. Y. Apparatus for extracting moisture from compressed air	853,345	May 14	1989	411	128	544
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Printing device	853,538	May 14	2348	489	128	636
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Frame for stencils or other articles	853,539	May 14	2349	489	128	636
	853,540	May 14	2351	489	128	637
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Metal type						
Duncan, Joseph S., and J. B. Hall, Chicago, Ill., assignors to Addressograph Company	855,236	May 28	5777	1203	128	1574
Quadrat						
Duncan, Louis, *et al.* (See Stone, John S., assignor.)	854,155	May 21	3637	752	128	997
Dunkle, David P., and J. N. Whetstone, Keokuk, Iowa. Railway-tie	853,006	May 7	1309	273	128	332
Dunlap, Joseph B., Tulsa, Ind. Ter. Pulley						
Dunn, Gano S., East Orange, assignor to Crocker-Wheeler Company, Ampere, N. J. Belt-tightening idler	855,237	May 28	5778	1204	128	1574
	854,987	May 28	5255	1094-5	128	1441
Dunning, Halsey H., Marysville, Cal. Grain and seed cleaner	854,813	May 28	4903	1019	128	1349
Dunwoody, Henry H. C., Washington, D. C. Wireless-telegraph system						
Duplex Printing Press Company. (See Bechman, Henry F., assignor.)						
Duquesne Glass Co. (See Croskey, John H., assignor.)						
Duquett, Maxim A., assignor to J. M. Skinner Bending Company, Toledo, Ohio. Machine for trimming and wiring wheelbarrow-trays	854,691	May 21	4641	967-8	128	1254
Durham, Thomas C. (See Prescott, Sydney L., assignor.)						
Durham, Thomas C., New York, N. Y. Razor	854,814	May 28	4904	1020	128	1349
Durler, William F., Allegheny, Pa. Metallic tie and rail-fastener	853,869	May 14	3033	623	128	808
Dutcher, Frank, Versailles, assignor to American Fog Signal Company, Pittsburg, Pa. Railway signal-fuse	853,777	May 14	2843	585	128	765
Dyer, Frank L., Montclair, and D. Holden, Orange, assignors to Edison Manufacturing Company, West Orange, N. J. Exhibiting apparatus for moving pictures	854,199	May 21	3731	772	128	1024
E. Goldman & Co. (See Gohrband, Bernard, assignor.)						
E. Green and Son. (See Slade, Harry, assignor.)						
E. Ingraham Co. (See Porter, Arthur H., assignor.)						
E. Ingraham Co. (See Stockton and Porter, assignors.)						
E. Jenckes Manufacturing Company. (See Groupe, Andrew V., assignor.)						
E. C. Atkins & Company. (See Wallace, Thomas L., assignor.)						
E. I. du Pont de Nemours Powder Company. (See Broadwater, Luke H., assignor.)						
E. I. Horsman Co. (See Hoyt, William H., assignor.)						
E. R. Thomas Motor Company. (See Hass, Herman J., assignor.)						
E. and T. Fairbanks and Company. (See Gagnon, Thomas, assignor.)						
Eagle Lock Co. (See Murphy, James J., assignor.)						
Eales, Allen M., *et al.* (See Broad, Harry L., assignor.)						
Eales, John F., *et al.* (See Broad, Harry L., assignor.)	853,072	May 7	1426	297-8	128	362
Eames, John M., Medford, Mass. Combination weed gatherer and cutter	854,726	May 28	4731	984	128	1306
Eames, Prescott W., Delphos, Kans. Time-controlling mechanism						
Earhart Steel and Iron Works. (See Earhart, Thomas B., assignor.)						
Earhart, Thomas B., assignor to Earhart Steel and Iron Works, Sacramento, Cal. Thread-cutting machine	855,051	May 28	5399	1122	128	1478
Earle, Wilfred N. (See Magee and Earle.)						
Eastman, John B. (See Osterholm and Eastman.)						
Eastman Kodak Company. (See Brownell, Frank A., assignor.)						
Eaton, Charles A. (See Coutts, James R., assignor.)	855,438	May 28	6129	1281	128	1659
Ebel, John V., Pittsburg, Pa. Machine for manufacturing macaroni, &c	853,299	May 14	1901	395	128	519
Ebner, Peter, Columbus, Ohio. Wheel rim and tire	854,938	May 28	5170	1077	128	1420
Eckstein, Francis X., Steger, Ill. Lock						
Ecseghy, Stefan K. v., assignor of sixty-five one-hundredths to Handelsgesellschaft Kleinberg & Co., Vienna, Austria-Hungary. Aiming device for ordnance	853,007	May 7	1310	273-4	128	332
Eddy, Arthur H., Windsor, assignor of one-half to C. E. Shepard, Hartford, Conn. Expansion-valve	853,503	May 14	2289	474	128	622
Eddy, Arthur H., Windsor, assignor of one-half to C. E. Shepard, Hartford, Conn. Regulating-valve	853,504	May 14	2290	475	128	622
Eddy, Arthur H., Windsor, assignor of one-half to C. E. Shepard, Hartford, Conn. Automatic expansion-valve for refrigerating apparatus	853,505	May 14	2292	475	128	623
Eddy, Arthur H., Windsor, assignor of one-half to C. E. Shepard, Hartford, Conn. Shaft-packing	853,506	May 14	2295	475	128	623
Eddy, Arthur H., Windsor, assignor of one-half to C. E. Shepard, Hartford, Conn. Automatic expansion-valve	853,541	May 14	2352	489	128	637
Eden, Harold W., assignor to P. R. Manufacturing Company, Detroit, Mich. Electrically-actuated signal-bell	852,937	May 7	1167	240	128	297
Eden, James A., Jr., Brooklyn, assignor, by mesne assignments, to Rees Hook Company, Elmira, N. Y. Sheet-metal punching-press	854,706	May 21	4682	975-6	128	1263

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Edison Manufacturing Company. (See Dyer and Holden, assignors.)						
Edison Storage Battery Company. (See Edison, Thomas A., assignor.)						
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, Orange, N. J. Secondary battery	852,424	May 7	26	6	128	9
Edison, Thomas A., Llewellyn Park, assignor to Edison Storage Battery Company, West Orange, N. J. Making storage-battery electrodes	854,200	May 21	3734	.....	128	1025
Edwards, Albert M., Jr., Lawrence, Mass. Bottle-stopper	854,201	May 21	3735	772	128	1025
Edwards, Alice V. (See Edwards, Edgar A., assignor.)						
Edwards, Daniel R., Orange, Tex. Track-cleaner	854,409	May 21	4110	851	128	1123
Edwards, Edgar A., assignor to A. V. Edwards, Cincinnati, Ohio. Magnetic ore-separator	855,166	May 28	5645	1174	128	1539
Edwards, Oliver M., Syracuse, N. Y. Window	854,988	May 28	5257	1095	128	1442
Edwards, Victor E., assignor to Morgan Construction Company, Worcester, Mass. Mechanism for adjusting bearings	854,879	May 28	5064	1053	128	1392
Edwards, William E., Irvington, assignor of one-half to A. O. Schuster, Newark, N. J. Pocket and other case	854,989	May 28	5264	1095	128	1442
Edwards, William E., Irvington, assignor to A. O. Schuster, Newark, N. J. Pocket and other case	854,990	May 28	5266	1096	128	1443
Edwards, William E., Irvington, assignor of one-half to A. O. Schuster, Newark, N. J. Match-box	854,991	May 28	5269	1096	128	1444
Effert, Edward, Philadelphia, Pa. Gas-stove attachment	854,202	May 21	3736	772	128	1025
Egge, Frederick, Bridgeport, Conn. Soap-shaving device	855,291	May 28	5875	1224–5	128	1598
Eggers, Henry, Denver, Colo. Ore-feeder	853,346	May 14	1993	412	128	545
Egyesillt Izzólampá és Villamossági Részvény Társaság. (See Just and Hanaman, assignors.)						
Ehemann, George F., Chicago, Ill. Flash-light	854,880	May 28	5067	1054	128	1393
Ehert, Cornelius D. (See Shoemaker, Harry, assignor.)						
Ehni, Jacob, Bloomfield, N. J. Centering device	854,992	May 28	5273	1096	128	1445
Eichenser, William R., Johnstown, Pa. Lubricator	854,636	May 21	4523	944	128	1224
Eide, Arent, Knox, N. D. Mason's pointing-tool	854,939	May 28	5171	1077	128	1420
Eidson, William M. (See Terhune, Eidson, and Huston.)						
Eighmey, Frank J. (See Will, Charles E., assignor.)						
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Mechanism for truing metal wheels	852,829	May 7	932	190–1	128	238
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Traction-wheel	852,830	May 7	935	191	128	239
Einfeldt, Emil, Davenport, Iowa, assignor to Bettendorf Metal Wheel Company. Traction-wheel	852,831	May 7	937	192	128	239
Ekern, Melvin L. (See Bennett and Ekern.)						
Eldred, Byron E., Bronxville, assignor to Combustion Utilities Company, New York, N. Y. Conducting combustion	854,156	May 21	3638	752–3	128	998
Eldred, Byron E. (See Ellis and Eldred.)						
Electric Boat Company. (See Spear, Lawrence Y., assignor.)						
Electric Controller and Supply Company. (See Baehr, George, assignor.)						
Electric Filter Company. (See Gilmore, George, assignor.)						
Electric Filter Company. (See McDowell, Robert H., assignor.)						
Electric Loop and Cable Company. (See D'Unger, Robert, assignor.)						
Electric Metal Working Company. (See Coffin, Charles L., assignor.)						
Electro Metallurgical Company. (See Becket, Frederick M., assignor.)						
Elkus, Laurence, Indianapolis, Ind. Manufacturing bricks	852,500	May 7	245	.....	128	69
Elleau, Pauline, Seattle, Wash. Sign	855,392	May 28	6043	1262	128	1640
Ellerton, George C., U. S. Navy. Distributing apparatus	853,870	May 14	3034	624–5	128	806
Ellicott, Francis, Baltimore county, Md. Governing mechanism for prime motors	852,658	May 7	571	109–10	128	149
Ellicott, Francis, Baltimore county, Md. Governor for prime motors	852,779	May 7	809	162–6	128	211
Ellicott, Francis, Baltimore county, Md. Method of and means for governing prime motors	853,200	May 7	1656	344–6	128	418
Elliot, Adam S., assignor of one-half to C. S. Botsford, Peterborough, Ontario, Canada. Electric-lamp hanger	853,871	May 14	3038	625	128	810
Elliott, Elias L., New York, N. Y. Multiple socket for incandescent lamps	853,231	May 14	1745	362	128	474
Ellis, Augustus L., Los Angeles, Cal. Automatic gasolene-gas machine	852,789	May 7	828	166	128	211
Ellis, Carleton, White Plains, and B. E. Eldred, Bronxville, assignors to Combustion Utilities Company, New York, N. Y. Generating hydrogen	854,157	May 21	3640	753	128	998
Ellis, Franklin, San Francisco, Cal. Gas-governor	852,425	May 7	29	7	128	10
Ellis, Thaddeus, and J. Finnell, Tacoma, Wash. Cattle-guard	854,083	May 21	3503	722	128	965
Elirich, Robert C., assignor to Peck, Stow & Wilcox Company, Southington Conn. Ratchet mechanism	855,292	May 28	5876	1225	128	1598
Emerson, Henry B., and G. H. Dorgeloh, Schenectady, N. Y., assignors to General Electric Company. Device for controlling electric currents	854,727	May 28	4733	984	128	1306
Emerson, Lowell, Pawtucket, R. I. Cardboard and manufacturing the same	852,938	May 7	1167	240	128	297
Emerson Manufacturing Company. (See Hurt, Joel J., assignor.)						
Emmert Manufacturing Company. (See Corbett, John G., assignor.)						
Enders, Frank. (See McNabb and Enders.)						
Engelquist, Andrew, Hardwood, Mich. Lock	852,832	May 7	938	192	128	240
Engelsman, Monroe, New York, N. Y. Gem-holder	854,158	May 21	3643	753	128	999
Engineering Specialty Company. (See Bliss, Donald M., assignor.)						
Englert, Charles J., Allegheny, Pa. Latch	854,473	May 21	4231	875	128	1152
Enocha, Claude D., La Crosse, Wis., assignor to Vote-Berger Company. Telephone-exchange apparatus	854,203	May 21	3737	773	128	1025
Enocha, Claude D., La Crosse, Wis., assignor to Vote-Berger Company. Telephone-exchange apparatus	854,204	May 21	3739	773	128	1026
Enterprise Railway & Equipment Company. (See Campbell, Argyle, assignor.)	854,342	May 21	3982	823	128	1092
Erickson, Christina, Chicago, Ill. Laundry-stand	853,300	May 14	1902	395	128	520
Erickson, Erick H., Minneapolis, Minn. Supporter for artificial legs	854,282	May 21	3885	801	128	1065
Erickson, Frederic W., New York, N. Y. Circuit-closing device	854,206	May 21	3741	773	128	1026
Erickson, Harry. (See Newbaker, William L., assignor.)						
Erickson, John E., St. Paul, Minn. Self-feed for mortise and tenon sawing machines	854,410	May 21	4111	851–2	128	1123
Ericson, John, Chicago, Ill. Time-recorder	854,281	May 21	3882	800–1	128	1065
Ericson, John V., Chicago, Ill. Sail-reefing apparatus	855,238	May 28	5779	1204	128	1574
Erste Wiener Export-Malzfabrik Hauser & Sobotka. (See Pollak, Isidor, assignor.)						
Esbelman, Stephen F., Sardis, Ohio, assignor of one-half to D. E. Thomsen, Sistersville, W. Va. Belt-stretcher	854,343	May 21	3988	824	128	1092
Esser, John W., Gravelly Hill, Birmingham, England. Breech-loading small-arms	853,073	May 7	1427	296	128	382
Essex, George B., Detroit, Mich. Multiple sight-feed oiler	855,167	May 28	5648	1175	128	1540
Ethridge, Martin V. B., New York, N. Y. Postmarking and canceling machine	854,815	May 28	4905	1020–1	128	1350
Eubank Indicator Manufacturing Company. (See Eubank, Reuben B., Jr., assignor.)	855,293	May 28	5879	1225	128	1599
Eubank, Reuben B., Jr., Kansas City, Kans., assignor to Eubank Indicator Manufacturing Company. Annunciator for cars	855,398	May 28	6044	1262	128	1640

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Eureka Tempered Copper Works. (See Risbridger, John, assignor.)						
Evans, Fred C., assignor of one-half to F. T. Brock, Ithaca, N. Y. Railway-tie and rail-fastener	854,993	May 28	5274	1097	128	1445
Evans, James A., and J. F. Wolff, Deer Lodge, Mont. Finger-guide	853,074	May 7	1430	299	128	363
Evans, James S., Lovelace, Tex. Cultivator attachment	854,474	May 21	4232	875	128	1153
Evans, John, Jr. (See Steiner and Evans.)						
Evans, Richard J., Van Wert, Ohio. Lacing device	853,075	May 7	1431	299	128	363
Everest, Homer A., Mattapoisett, Mass. Bottle	852,426	May 7	31	7	128	10
Evers, Christian H., Birmingham, Ala. Portable test-meter	854,881	May 28	5071	1054–5	128	1394
Evey, John M., Monmouth, Ill. Dental root-impression and crown-mounting instrument	854,283	May 21	3886	801	128	1065
Ewing, Charles H., Reading, Pa. Rail-fastening	854,728	May 28	4735	984	128	1307
Exterkamp, George J., assignor of one-half to J. A. Thobe, Covington, Ky. Electrical signaling apparatus for engines	854,344	May 21	3990	824	128	1093
F. Hohlfelder Company. (See Kroenke, Alfred J., assignor.)						
F. Wesel Manufacturing Company. (See Renken, Henry A., assignor.)						
F. Wesel Manufacturing Company. (See Winter, Herman, assignor.)						
F. A. Hardy & Company. (See Troppman, Charles J., assignor.)						
F. C. Austin Drainage Excavator Company. (See Jacobs, Charles C., assignor.)						
F. H. Noble & Co. (See Anderson, Emil, assignor.)						
Faber, Frank M., Pittsburg, Pa., assignor to Pittsburg Pneumatic Company, Canton, Ohio. Fluid-pressure tool	853,201	May 7	1672	346	128	421
Fack, Henry H., assignor to Automatic Button Company, Muscatine, Iowa. Display-stand	854,994	May 28	5276	1097	128	1446
Fadden, Ren W., assignor to B. E. Zeiss, Omaha, Nebr. Guide for placing eyelets in hats	854,637	May 21	4524	945	128	1224
Faehrmann, Hermann, New York, N. Y. Air-ship	853,542	May 14	2353	490	128	637
Failor, William H., Carlisle, Pa. Puzzle	854,031	May 21	3383	697	128	934
Fairbanks Company. (See Churchill, Charles O., assignor.)						
Fairbanks Company. (See Kemp, Jabez P., assignor.)						
Fairbanks, David H., Nashville, Tenn. Key for brake-shoes	854,475	May 21	4233	876	128	1153
Fairbanks, Morse & Company. (See Hobart, Franklin G., assignor.)						
Fairchild, Henry C., assignor to Fairchild & Shelton Company, Bridgeport, Conn. Soap-powder canister	854,411	May 21	4115	852	128	1124
Fairchild & Shelton Company. (See Fairchild, Henry C., assignor.)						
Fairman, Francis E., Allegheny, Pa. Reversing-gear	852,939	May 7	1169	241	128	297
Falk, Oscar F., Boston, Mass., assignor to American Telephone and Telegraph Company. Telephone	855,394	May 28	6046	1263	128	1640
Falk, Oscar F., Boston, Mass., assignor to American Telephone and Telegraph Company. Telephone-transmitter	855,395	May 28	6047	1263	128	1641
Fall, James, *et al.* (See Keyes, William W. W., assignor.)						
Faller, Ernest A., New York, N. Y. Electrotype or the like	854,995	May 28	5278	1097–8	128	1447
Fallows, Edward H., trustee. (See Remelius, Charles A., assignor.)						
Falter, Richard, New York, N. Y. Brake	852,659	May 7	580	110	128	151
Farbenfabriken vorm. Friedr. Bayer & Co. (See Degner, Otto, assignor.)						
Farbenfabriken vorm. Friedr. Bayer & Co. (See Thomaschewski, Paul, assignor.)						
Fardee, Alden M. (See Marshall, Joseph B., assignor.)						
Faries, James F., Decatur, Ill. Radiator for explosive-engines and making same	855,239	May 28	5780	1204–5	128	1574
Farmer, Clyde C., Chicago, Ill., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Load brake apparatus	854,816	May 28	4918	1021	128	1354
Farmer Manufacturing Company. (See Kutz, Louis J., assignor.)						
Farquhar, Henry S., Washington, D. C. Means for compressing and removing snow	852,833	May 7	939	192–3	128	240
Faulkner, Robert P. (See Faulkner, William J., assignor.)						
Faulkner, Walter E. (See Keith and Faulkner.)						
Faulkner, William J., assignor to R. P. Faulkner, Chicago, Ill. Mold for hollow building-blocks	854,692	May 21	4646	968–9	128	1255
Faust, Jacob W., Jr., Martins Ferry, Ohio. Folding suit and hat holder	852,940	May 7	1169	241	128	297
Fayol, Amedée, Bordeaux, France. Boat	853,347	May 14	1996	412	128	545
Feather, Daniel, and A. Culp, Marion, Ind. Stringed musical instrument	853,686	May 14	2660	548	128	718
Feather, Markus D., *et al.* (See Laube, Godfried, assignor.)						
Febiger, Henry B., Philadelphia, Pa. Attachment for type-writers	855,052	May 28	5400	1122	128	1478
Feil, Abe, New York, N. Y. Embroidery-frame	853,232	May 14	1747	363	128	475
Feitu, Pierre, and J. Rebeyrolle, New York, N. Y. Bottle	855,294	May 28	5881	1225	128	1599
Feldmann, Gustav, Berlin, Germany. Dyeing granulated leather in different colors or shades	854,032	May 21	3384	.....	128	935
Feldt, Ferdinand J., assignor to J. A. Engel & Co., Peoria, Ill. Wagon-jack	853,008	May 7	1316	274	128	334
Fellroth, Erick O., assignor of one-half to A. F. M. Craig, San Francisco, Cal. Clothes-hanger	855,295	May 28	5882	1226	128	1600
Felt, Dorr E., and C. P. Wetmore, assignors to Comptograph Company, Chicago, Ill. Tabulating-machine	853,543	May 14	2357	491–3	128	638
Felton, Samuel K., Jr., Philadelphia, Pa. Treating hides or skins	853,166	May 7	1583	.....	128	400
Fenlan, Patrick A., Pittsburg, Pa. Bracket for windows	852,941	May 7	1170	241	128	297
Fenn, George M., and C. D. Young, Charlotte, Mich. Lathe	855,101	May 28	5523	1146–7	128	1508
Ferguson, Archie R., Colton, Wash. Grain separating and vitriolizing machine	853,076	May 7	1432	299–300	128	363
Ferguson Brothers Mfg. Co. (See Campbell, James W., assignor.)						
Fernald, George H., North East, Pa. Rein-holder	853,544	May 14	2367	493	128	640
Ferris, Hiram G., Leavenworth, Kans. Automatic dumping mechanism for aerial-tramway buckets	852,546	May 7	335	60	128	92
Ferris, Walter, assignor to Bucyrus Company, South Milwaukee, Wis. Machine-brake	853,348	May 14	1997	413	128	545
Ferro Alloys Syndicate. (See Annable, Henry W. C., assignor.)						
Fetters, Arthur H., Omaha, Nebr. Bolster	853,545	May 14	2367	493	128	640
Fetzer, William, Middletown, Ohio. Truck mechanism. (Reissue)	12,653	May 21	4696	978	128	1267
Field, Charles W., Freeport, Me. Baling-press	854,345	May 21	3991	825	128	1093
Fielding, Christopher, South Bethlehem, Pa. Hinge	853,507	May 14	2296	475	128	624
Fields, George W., Chicago, Ill. Hair-straightening device	853,349	May 14	2000	413	128	546
Fields, Madison B., Jr., Paris, Ill. Fruit-picker	854,208	May 21	3742	773	128	1027
Finegan, Christopher P., Sheridan, Ill. Currycomb	852,547	May 7	338	60	128	92
Finn, William P., Dansville, N. Y. Lightning-conductor	852,548	May 7	339	60–1	128	92
Finnell, John. (See Ellis and Finnell.)						
Fischer, Adalbert W., and P. W. Knauf, assignors to Schutte and Koerting Company, Philadelphia, Pa. Stop-valve construction	852,709	May 7	678	132	128	177
Fischer, Christoph, Cassel, Germany. Painter's utensil	854,638	May 21	4525	945	128	1224
Fisher, Daniel C., Boston, Mass. Massage apparatus	852,549	May 7	340	61	128	93
Fisher, Frederick P., Boston, Mass. Portable mirror-holder	852,660	May 7	581	110	128	152
Fisher, Frederick W., Collingswood, N. J. Water-gage for boilers	852,781	May 7	831	167	128	212
Fisher, James N., Springfield, assignor to J. Stevens Arms & Tool Company, Chicopee Falls, Mass. Set-trigger for firearms	852,942	May 7	1171	241–2	128	298
Fisher, Martin E. (See Upton and Fisher.)						
Fishmann, Arthur, New York, N. Y. Sanitary cuspidor	855,296	May 28	5883	1226	128	1600
Fitch, Abbie R., Denver, Colo. Scale and chord circle	854,572	May 21	4417	916–17	128	1198
Fitzgerald, Henry P., Jamestown, Kans. Ramrod	855,207	May 28	5864	1226	128	1600
Flad, Alois, New York, N. Y. Propeller	853,233	May 14	1749	363	128	475

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Fleming, William T., Los Angeles, Cal. Roller-bearing	853,445	May 14	2161	450	128	587
Fletcher, James H., Bridport, Vt. Advertising-stand	852,710	May 7	680	132	128	178
Fletcher, Orland C., Chicago, Ill. Broom-rack	854,084	May 21	3504	722	128	966
Flint & Walling Manufacturing Company. (See Macomber, Herbert H., assignor.)						
Floquet, Gaston, Paris, France. Elastic wheel	852,600	May 7	460	85	128	122
Flora, Ellsworth E., assignor to Zorge Safety Railway Equipment Company, Chicago, Ill. Alarm-signal	853,579	May 14	2429	506	128	656
Florey, Spencer. (See Dorris, Joseph F., assignor.)						
Floyd, Edward J., Kirkland, Ga. Harness-buckle	852,601	May 7	462	85	128	123
Flynn, Patrick J., Boston, Mass. Liquid-dispensing apparatus	854,412	May 21	4116	853	128	1124
Fogle, William C., Williamsburg, Kans., assignor to A. E. Putnam, Milan, Mich. Measuring device	854,476	May 21	4234	876	128	1153
Fohr, Carl. (See Buss, Jakob, assignor.)						
Foley, Arthur R., Trenton, N. J. Combined pump valve and cap	854,729	May 28	4737	985	128	1308
Forbes, George R., and G. W. Fraker, Spray, N. C., assignors to Crompton & Knowles Loom Works. Multiplier mechanism for box-looms	855,102	May 28	5526	1147	128	1509
Ford, Bruce, Philadelphia, Pa. Flexible electric connection for storage batteries	854,817	May 28	4921	1022	128	1355
Ford, Edward T., and F. F. Wassam, Dunkirk, Ind. Combined cross-tie and rail-fastening	854,477	May 21	4237	876–7	128	1154
Ford, Ethelbert T., and W. F. Bauer, assignors to St. Louis Car Lighting Company, St. Louis, Mo. Device for controlling the output of a generator	853,301	May 14	1904	396	128	520
Ford, Tullius E., Philadelphia, Pa. Copy-holder attachment	854,478	May 21	4238	877	128	1154
Foregger, Richard von, New York, N. Y., and G. F. Brindley, Niagara Falls, Ontario, Canada, assignors to Roessler & Hasslacher Chemical Company, New York, N. Y. Regenerating and purifying air	853,402	May 14	2086	433–4	128	567
Foreman, David H., assignor to Herr Dump Car Company, Denver, Colo. Dump-car door mechanism	854,639	May 21	4526	945–6	128	1225
Foreman, Ernest J., Trinidad, assignor of one-half to F. H. Hee, Trinchera, Colo. Nut-lock	855,396	May 28	6048	1263	128	1641
Forgie, James, *et al.* (See Vandevort, Frank F., assignor.)						
Forrest, Charles N. (See Richardson and Forrest.)						
Forrester, Ell T., Washington, D. C. Railway-tie	853,629	May 14	2545	528	128	686
Forsberg, Oscar F., and J. A. Birsfield, assignors to Western Electric Company, Chicago, Ill. Signaling-key	855,168	May 28	5650	1175–6	128	1541
Forster, John, Los Angeles, Cal. Ornamental fence	854,479	May 21	4240	877	128	1155
Forsyth, William D., Pittsburg, Pa., assignor to Trussed Concrete Steel Company, Detroit, Mich. Reinforcing member for concrete construction	855,240	May 28	5782	1205	128	1575
Fortner, Louis B., Philadelphia, Pa. Fixing or setting the colors of dyed fibers and fabrics	852,943	May 7	1173	.....	128	298
Foster, Charles H., St. Louis, Mo. Gate-latch	852,550	May 7	342	61	128	93
Foster, Charles H., St. Louis, Mo. Sash-pulley	852,551	May 7	343	61	128	94
Foster, James F., Buffalo, N. Y. Stovepipe-elbow	853,580	May 14	2431	507	128	657
Foster, Robert H., Union Course, Long Island, N. Y. Music-turner	852,944	May 7	1174	242	128	298
Fourtner, S. (See Knowles, Joseph, assignor.)						
Fow, Raymond S. C., Trenton, N. J. Dumping-wagon	855,241	May 28	5783	1205–6	128	1575
Fox, Benjamin O., Milwaukee, Wis. Floor-scraper	853,446	May 14	2163	450	128	588
Fox, John H. (See Healy and Fox.)						
Fox, Tobias, Toronto, Ontario, Canada. Antifriction-bearing	854,573	May 21	4419	917	128	1199
Fox Typewriter Co. (See Fox and Barrett, assignors.)						
Fox, William R., Grand Rapids, Mich. Type-bar and hanger and constructing same	852,428	May 7	37	8	128	13
Fox, William R., Grand Rapids, Mich. Line-lock mechanism for type-writers	853,965	May 21	3256	668	128	904
Fox, William R., Grand Rapids, Mich. Ribbon mechanism for type-writers	854,207	May 21	3744	774	128	1027
Fox, William R., and G. J. Barrett, assignors to Fox Typewriter Co. Ltd., Grand Rapids, Mich. Carriage-stop mechanism for type-writing machines	852,427	May 7	32	7	128	11
Fraker, George W. (See Forbes and Fraker.)						
Fraley, Ernest L. F., Rockville, Md. Funnel	855,397	May 28	6050	1263–4	128	1641
Francisco, Ferris L. R., and J. C. Thom, New York, N. Y. Concrete insert	854,818	May 28	4921	1022	128	1355
Francoeur, Jeanne E., San Francisco, Cal. Bath-cabinet	853,009	May 7	1319	274–5	128	335
Frank, John J., Schenectady, N. Y., assignor to General Electric Company. Telephone-transformer	852,711	May 7	681	132	128	178
Frank, John J., Schenectady, N. Y., assignor to General Electric Company. Transformer-core	852,712	May 7	682	132	128	178
Frank, John J., Schenectady, N. Y., assignor to General Electric Company. Transformer	853,778	May 14	2844	585	128	765
Frank, John J., Schenectady, N. Y., assignor to General Electric Company. Three-phase transformer	853,779	May 14	2845	585	128	766
Frank, John J., and J. S. Pevear, Schenectady, N. Y., assignors to General Electric Company. Control of electric cars	854,730	May 28	4738	985	128	1308
Fraser, Alexander T., Butte, Mont. Dredge-bucket joint	854,731	May 28	4739	985	128	1308
Fraser, Spencer L., Chicago, Ill. Apparatus for making molasses feed	854,159	May 21	3644	754	128	999
Frayer, Lee A., and W. J. Miller, assignors to Oscar Lear Automobile Company, Columbus, Ohio. Shifting device for gearing	854,480	May 21	4241	878	128	1155
Frederick, Joseph, Stroudsburg, Pa. Pneumatic hammer	853,508	May 14	2298	476	128	624
Fredet, Henri, Brignoud, France. Production of active matter for accumulators with mixed oxids	854,940	May 28	5172	.....	128	1421
Freeman, Howard W., Newark, Ohio. Bridle-rod for railway-track rails	854,941	May 28	5174	1078	128	1421
Freeman, James J. (See Freeman, Miles E., assignor.)						
Freeman, Miles E., assignor of one-half to J. J. Freeman, Bradford, Pa. Pneumatic dust-remover	855,433	May 28	6121	1279	128	1657
Freer, Phelps M., Barberton, assignor of two-fifths to H. C. Parsons, Akron, Ohio. Automatic gage	854,481	May 21	4245	878	128	1156
French, Alfred W., and P. G. Weidner, assignors to French Oil Mill Machinery Company, Piqua, Ohio. Automatic choker-valve for presses	853,167	May 7	1585	330	128	400
French Oil Mill Machinery Company. (See French and Weidner, assignors.)						
French, Walter W., Duluth, Minn., assignor of one-half to C. A. Nye, Cornucopia, Wis. Wheel for roller-skates	853,447	May 14	2164	450	128	588
Frenier, Albert B., Davenport, Iowa. Wheeled plow	853,448	May 14	2165	450–1	128	588
Freshour, Henry C., assignor to H. O. Canfield Company, Bridgeport, Conn. Bath and basin stopper	852,501	May 7	245	44	128	69
Freund, Vilhelm J. G., Brooklyn, N. Y. Bottle-closure	853,449	May 14	2172	451	128	591
Fried. Krupp Aktiengesellschaft. (See Bäker, Carl, assignor.)						
Fried. Krupp Aktiengesellschaft. (See Grauhoring, Oskar, assignor.)						
Fried. Krupp Aktiengesellschaft. (See Schwartz, Wilhelm, assignor.)						
Friend, John E., Annandale, New South Wales, Australia. Rotary engine	854,574	May 21	4421	917–19	128	1199
Frigon, Louis T., assignor of one-half to A. A. Rousselle, Montreal, Quebec, Canada. Snow-melting apparatus	852,945	May 7	1176	242	128	299
Fritz, F. Fenner, *et al.* (See Cummins, Clarence R., assignor.)						
Froehlich, David, New York, N. Y. Combination furniture	853,630	May 14	2546	528	128	686
Fromholtz, Rolf, Philadelphia, Pa. Spring-cleat for boats and the like	852,946	May 7	1178	242	128	299
Frost, Clinton E., Cleveland, Ohio. Earth-anchor	855,298	May 28	5886	1226	128	1601

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Frost, Joseph W., Washington, D. C. Neckwear	854,284	May 21	3888	802	128	1066
Frye, Alexis E., *et al.* (See Barnes, George L., assignor.)						
Fryer, George G., Syracuse, N. Y. Apparatus for inserting piles	853,581	May 14	2432	507	128	657
Fullard, William, Plainfield, N. J., and C. M. Donham, Portland, Me. Device for removing static electricity from stock	854,413	May 21	4118	853	128	1125
Fuller, Louis D. H., Saxonville, Mass. Game apparatus	854,640	May 21	4535	946	128	1227
Fuller, Walter R., Atlanta, Ga. Electric block system for railways	853,403	May 14	2087	434	128	567
Fullerton, Robert, Des Moines, Iowa. Pneumatic log-saw	853,350	May 14	2000	414	128	546
Fullmer, F. W., *et al.* (See Dennis, John J., assignor.)						
Fulton Company. (See Fulton, Weston M., assignor.)						
Fulton, Nellis H., Franklin, Pa. Reference-book holder	854,414	May 21	4119	854	128	1125
Fulton, Weston M., assignor to Fulton Company, Knoxville, Tenn. Electric brazing-machine	853,351	May 14	2002	414–15	128	546
G. R. Lynch Manufacturing Company. (See Stover, Frank E., assignor.)						
G. W. J. Murphy Co. (See Murphy, George W. J., assignor.)						
Gabbert, Fredrick E., Kelly, Kans. Computing-scale	852,552	May 7	345	62	128	94
Gaede, Wolfgang, Freiburg, Germany. Means for producing high vacuums	852,947	May 7	1179	243	128	299
Gagnon, Thomas, assignor to E. and T. Fairbanks and Company, St. Johnsbury, Vt. Weighing-scale	854,285	May 21	3890	802	128	1066
Gaines, Albert, Saco, Me. Collar-button	854,575	May 21	4425	919	128	1200
Gamon, Ernest E., assignor to Neptune Meter Company, Long Island City, N.Y. Water-meter	854,882	May 28	5075	1055–6	128	1395
Garbe, William F., assignor of one-half to J. J. Platt and V. A. Babbitt, Fort Collins, Colo. Head-gate	853,168	May 7	1588	330	128	401
Gardiner, Charles G. (See Klostzer and Bordera, assignors.)						
Gardiner, Thomas M., *et al.* (See Matthews, Francis I., assignor.)						
Gardiner, William C., Aberdeen, Scotland. Reversing steam-turbine	854,482	May 21	4246	878–9	128	1156
Gardner, Raymond A., Los Angeles, Cal. Caisson-dredger	852,713	May 7	683	133	128	179
Gare, Thomas, New Brighton, England. Resilient wheel	854,286	May 21	3891	802	128	1067
Garland, Claude M., Urbana, Ill. Dynamometer	854,996	May 28	5282	1098	128	1447
Garland, William H. (See Williams and Garland.)						
Garlock, Olin J., Palmyra, N. Y. Rod-packing	852,714	May 7	687	133	128	180
Garlock, Olin J., Palmyra, N. Y. Rod-packing	854,287	May 21	3892	802	128	1067
Garmisa, George. (See Herdrich and Garmisa.)						
Garretson, Eugene, Buffalo, N. Y. Signaling system	852,502	May 7	246	45	128	70
Garrett, George S., Lansdowne, assignor to American Water Softener Company, Philadelphia, Pa. Feed-water purifier	854,160	May 21	3646	754–5	128	1000
Gartenberg, Abraham. (See Ginaca, Henry G., assignor.)						
Gas Bench Construction Company. (See Hamlink, Lazruby C., assignor.)						
Gass, South W., Evart, Mich. Manifolding-pad	854,483	May 21	4250	879	128	1157
Gates, Elmer, Chevy Chase, Md., assignor, by mesne assignments, to Washington Loan & Trust Company. Apparatus for separating gold from magnetic sands	854,997	May 28	5285	1098–9	128	1448
Gauch, Orlando S., assignor to Shelby Printing Company, Shelby, Ohio. Press	852,429	May 7	39	8	128	13
Gaume, August, *et al.* (See Perrey, Edward J., assignor.)						
Gaume, Victor, *et al.* (See Perrey, Edward J., assignor.)						
Gebhardt, Friedrich, assignor of one-half to T. M. Harrington, Baltimore, Md. Locking device for hinges	853,872	May 14	3040	625	128	810
Gehris, William P., Reading, Pa. Lathe-tool	852,948	May 7	1181	243	128	300
Geiger, Charles A., assignor to Troy Wagon Works Company, Troy, Ohio. Dump-wagon	854,085	May 21	3505	723	128	966
Geisenhöner, Henry, Schenectady, N. Y., assignor to General Electric Company. Switch-controlling mechanism	853,780	May 14	2846	586	128	766
Geltz, Albert H., Alliance, and L. L. Hosack, Youngstown, Ohio, assignors to C. B. McLean, Pittsburg, Pa. Air-brake apparatus	852,949	May 7	1184	244	128	300
General Electric Company. (See Bassett, Norman C., assignor.)						
General Electric Company. (See Buck, Arthur A., assignor.)						
General Electric Company. (See Bunet, Paul, assignor.)						
General Electric Company. (See Burrows, William R., assignor.)						
General Electric Company. (See Callan and Rice, assignors.)						
General Electric Company. (See Dawson, William F., assignor.)						
General Electric Company. (See Day, Maxwell W., assignor.)						
General Electric Company. (See De Reamer, Frank C., assignor.)						
General Electric Company. (See Dempster, John T. H., assignor.)						
General Electric Company (See Emerson and Dorgeloh, assignors.)						
General Electric Company. (See Frank, John J., assignor.)						
General Electric Company. (See Frank and Pevear, assignors.)						
General Electric Company. (See Gelsenhöner, Henry, assignor.)						
General Electric Company. (See Hawkins, Lawrence A., assignor.)						
General Electric Company. (See Heath, Harry E., assignor.)						
General Electric Company. (See Hewlett, Edward M., assignor.)						
General Electric Company. (See Holden, Frank, assignor.)						
General Electric Company. (See Kidd, Andrew, Jr., assignor.)						
General Electric Company. (See Latour, Marius C. A., assignor.)						
General Electric Company. (See Lemp, Hermann, assignor.)						
General Electric Company. (See Mackintosh, Frederick, assignor.)						
General Electric Company. (See Macmillan, Campbell, assignor.)						
General Electric Company. (See Marshall, John T., assignor.)						
General Electric Company. (See McArthur and Darke, assignors.)						
General Electric Company. (See Merrill, Wilbur L., assignor.)						
General Electric Company. (See Moody, Walter S., assignor.)						
General Electric Company. (See Noeggerath, Jacob E., assignor.)						
General Electric Company. (See Reist, Henry G., assignor.)						
General Electric Company. (See Riddell and Painter, assignors.)						
General Electric Company. (See Sargent, Howard R., assignor.)						
General Electric Company. (See Savage, Arthur C., assignor.)						
General Electric Company. (See Seabolt, Frank J., assignor.)						
General Electric Company. (See Semenza, Guido, assignor.)						
General Electric Company. (See Shaver, Harry W., assignor.)						
General Electric Company. (See Stewart, Samuel B., Jr., assignor.)						
General Electric Company. (See Stone, Charles W., assignor.)						
General Electric Company. (See Taylor, John B., assignor.)						
General Electric Company. (See Thomson, Elihu, assignor.)						
General Electric Company. (See Thornton, George A., assignor.)						
General Electric Company. (See Troy, Matthew O., assignor.)						
General Electric Company. (See Underwood, Louis E., assignor.)						
General Electric Company. (See Whitney, Eddy R., assignor.)						
General Electric Company. (See Wiard, John B., assignor.)						
General Electric Company. (See Wilson, Robert, assignor.)						
General Storage Battery Company. (See Bijur, Joseph, assignor.)						
Gentle, William M., Southport, Ind. Rotary engine	852,950	May 7	1187	244–5	128	301

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Gentles, Herbert, *et al.* (See Coyle, William, assignor.)						
George A. McKeel & Company. (See Sparks, William, assignor.)						
George Metal Extracting Company. (See George, William L., assignor.)						
George, William L., Williams, Ariz. Ter., assignor to George Metal Extracting Company. Extracting metals from their ores	854,998	May 28	5287	.....	128	1449
Georgenson, George, and J. E. Hennen, Fond du lac, Wis. Reinforced concrete construction for buildings and other structures	855,299	May 28	5887	1227	128	1601
Georgenson, Martin, and R. W. Burke, Manitowoc, Wis. Lock-strike	852,553	May 7	347	62	128	94
Georges, Jacques, and E. A. Dormoy, Algiers, Algeria. Device for removing scale from boiler-tubes	854,819	May 28	4923	1022	128	1355
Gerstenbergk-Zech, Leo von, Bergsulza, near Stadtsulza, Germany. Storing hydraulic power	853,146	May 7	1554	323	128	393
Geschke, Ernst, Charlottenburg, assignor to Deutsche Waffen & Munitionsfabriken, Berlin, Germany. Roller-bearing	855,169	May 28	5654	1176	128	1542
Geyer, William E., Cambridge, Mass. Steering device	854,883	May 28	5079	1056	128	1396
Ghira, Andrea, Trieste, Austria-Hungary. Rotary engine	854,348	May 21	3992	825	128	1093
Gibbs, Charles, New York, N. Y. Type-writer	854,484	May 21	4251	880	128	1158
Gibbs, Edward F. G., Washington, D. C. Fire-escape	853,302	May 14	1907	396	128	521
Gibbs, Stephen W., Jr., Frankfort, Ky. Portable battery-lamp	853,352	May 14	2007	415	128	547
Gibson, Edward, Freneau, N. J. Furnace-grate	854,485	May 21	4253	880	128	1158
Gibson, Joseph F., York, Pa., assignor to Dentists Supply Company, New York, N. Y. Display-carrier for artificial teeth	854,486	May 21	4255	880	128	1158
Giehler, Arthur, Chemnitz, Germany. Production of transparent patterns and the like on tissues	853,966	May 21	3258	.....	128	906
Gifford, Albert J. (See Morgan and Gifford.)						
Gifford, William, Thompsonville, Mich. Lightning-arrester	855,300	May 28	5888	1227	128	1602
Gift, William D., Vernon, Ind. Rowing device	853,234	May 14	1749	363–4	128	475
Gilbert, Ada E., Brooklyn, and V. A. Phoebus, New York, N. Y. Hair-curling iron or tongs	853,450	May 14	2174	452	128	591
Gilbert, Frank N., Binghamton, N. Y. Compartment-case	853,404	May 14	2091	435	128	567
Giles, Isaac W., New Bedford, and C. W. Tobey, Fairhaven, Mass. Wheel	853,687	May 14	2662	549	128	718
Gillespie, John H., Beallsville, Ohio. Saddle	854,086	May 21	3507	723	128	966
Gilman, George H., assignor to Sullivan Machinery Company, Claremont, N. H. Fluid-pressure tool	853,921	May 14	3156	645	128	839
Gilmer, Joseph, assignor of one-half to A. A. Bishop, Aucilla, Fla. Gin-rib	853,235	May 14	1750	364	128	475
Gilmore, George, assignor to Electric Filter Company, Alliance, Ohio. Switch	853,922	May 14	3159	646	128	840
Gilmore, John W., New York, N. Y., assignor to Crouch & Fitzgerald. Garment receptacle, rack, and the like	852,554	May 7	348	62	128	95
Gilmore, Wilmer C., assignor to Universal Voting Machine Company, Bloomington, Ill. Slide-moving device for voting-machines	853,169	May 7	1591	331	128	402
Ginaca, Henry G., assignor of two-fifths to A. Gartenberg, Honolulu, Hawaii. Machine for cutting sugar-cane	853,967	May 21	3259	668–70	128	905
Ginaca, Henry G., assignor of two-fifths to A. Gartenberg, Honolulu, Hawaii. Machine for cutting and conveying sugar-cane	854,208	May 21	3747	774–5	128	1029
Girard, Joseph T., Deer River, Minn. Steering-gear for vehicles	853,968	May 21	3263	670	128	906
Githens, George S., Boston, Mass. Fracturing rock	853,546	May 14	2370	494	128	640
Glanville, Paul A. (See Hardy, Jesse I., assignor.)						
Glasel, Charles J., Boston, Mass., assignor to T. Latzisperger, Sault aux Recollets, Canada. Coloring and tanning apparatus	854,415	May 21	4121	854	128	1125
Glasgow, Walter S., Toledo, Ohio. Railway-rail fastener	855,053	May 28	5403	1122	128	1479
Glassco, Robert C., Anderson, Ind. Fence-post	852,555	May 7	351	63	128	96
Glazier, John T., and C. C. Parker, assignors of one-third to C. J. Clark, Indianapolis, Ind. Window-ventilator	854,033	May 21	3385	697	128	935
Glor, Alvin J. (See Glor and West.)						
Glor, Robert M. and A. J., and W. P. West, Attica, N. Y. Carrier for ensilage and other things	855,398	May 28	6051	1264	128	1642
Gminder, Wilhelm, New York, N. Y. Electric controlling-switch	852,698	May 14	2664	549	128	719
Gobie, Edwin E., Brattleboro, Vt. Paper-hanger's trimmer	855,301	May 28	5890	1228	128	1602
Goddu, Louis, Winchester, Mass., assignor to Goddu Sewing Machine Company, Portland, Me. Welt-shaping machine	853,509	May 14	2300	476	128	625
Goddu Sewing Machine Company. (See Goddu, Louis, assignor.)						
Godward, Ernest R., Invercargill, New Zealand. Tooth-powder retainer	853,405	May 14	2092	435	128	568
Goebler, John A., Albany, Ind. Bottle-wire cutter	853,960	May 21	3264	670	128	906
Goff, David P., De Soto, Mo. Hitching device	853,631	May 14	2548	528	128	687
Gohrband, Bernard, assignor to E. Goldman & Co., Inc., Chicago, Ill. Bottle-washer brush	853,562	May 14	2438	507	128	650
Golt, William R., Oklahoma, Okla. Ter. Dumping-body	855,302	May 28	5892	1228	128	1602
Golbert, Robert L. (See Howe, Henry E., assignor.)						
Gold, Egbert H. (See Reniff, James R., assignor.)						
Goldsmith, Alpha O., *et al.* (See Spitzer, Emanuel, assignor.)						
Goldsmith, Byron B., New York, N. Y. Eraser-holder for lead-pencils	854,487	May 21	4256	881	128	1158
Goldsmith, Byron B., New York, N. Y. Eraser-tip for lead-pencils	854,488	May 21	4258	881	128	1159
Goldsmith, Oliver J., Portsmouth, N. H. Coupling for air-brake hose	855,242	May 28	5785	1206	128	1576
Golombek, Sigmund, New York, N. Y. Watch-protector	854,347	May 21	3995	825	128	1094
Good Form Manufacturing Company. (See Davies, Charles W. T., assignor.)						
Goodier, James H., Utica, N. Y. Street-indicator	854,416	May 21	4122	854	128	1126
Goodman, William L., St. Joseph, Mo. Ruling apparatus	852,430	May 7	41	9	128	14
Goodnow, Robert M., assignor to Draper Company, Hopedale, Mass. Bobbin-turning apparatus	854,693	May 21	4649	969	128	1256
Goodwin, Daniel W., Lynn, Mass. Shoe-stretcher	853,077	May 7	1433	300	128	364
Goodwin, William B., Columbus, Ohio. Holder for cigars and the like	854,520	May 28	4925	1022	128	1356
Gordon, William V., New York, N. Y. Valve for draining-pipes, &c.	854,345	May 21	3996	826	128	1094
Goreau, Thomas W., New Orleans, La. Filter	854,288	May 21	3893	803	128	1067
Goss, John H., and A. F. Wolff, assignors to Scovill Manufacturing Company, Waterbury, Conn. Box for watch-movements	853,236	May 14	1751	364	128	476
Goss, William, assignor to Northwestern Expanded Metal Company, Chicago, Ill. Clip for metal building construction	854,269	May 21	3751	776	128	1030
Goucher, Joseph W., Stites, Idaho. Roller and collet resetter tool for watchmakers' use.	854,732	May 28	4741	986	128	1308
Gould Coupler Company. (See Turbayne, William A., assignor.)						
Gould Storage Battery Company. (See Turbayne, William A., assignor.)						
Grabner, Frederick A. (See Conant, Charles B., assignor.)						
Graeber, Louis. (See Osborn and Graeber.)						
Graessle, John E., Detroit, Mich. Bifocal-lens grinder	853,970	May 21	3265	671	128	906
Graham, William S., Canton, Ill. Sulky-plow	854,321	May 28	4926	1033–4	128	1356
Gramsden, William H., assignor to Appliance Manufacturing Company, Chicago, Ill. Idle-tire holder	852,834	May 7	943	193	128	240
Grant, Harry M. (See Dokkenwadei, Frederick G., assignor.)						
Grant, James, Cobram, Victoria, Australia. Disk cultivator	853,510	May 14	2302	476	128	625
Grant, William G., Suffern, N. Y., assignor, by mesne assignments, to American Brake Shoe & Foundry Company, Jersey City, N. J. Brake-shoe	854,783	May 28	4742	986	128	1309

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Grantham, John H., Jr. (See Inman, Charlie C., assignor.)						
Gratta, Hermann. (See Schaeffer, Ernst, assignor.)						
Grauhering, Oskar, Essen-Rüttenscheid, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Screw-gear for gun-sight devices, &c.	854,999	May 28	5288	1099	128	1449
Grauvogl, Josef, Plain, Wis. Railway-car coupling	853,923	May 14	3161	646	128	841
Graves, Patrick H., Sharps Chapel, Tenn. Wheel-spindle	855,303	May 28	5894	1229	128	1603
Graves, Ralph L., Sumpter, Oreg. Miner's lamp	853,078	May 7	1435	300	128	364
Gravity Conveyor Company. (See Schwab, Martin C., assignor.)						
Gray, Budd D., New York, N. Y. Carbureter	855,170	May 28	5655	1177	128	1542
Gray, Davie A., Chattanooga, Tenn. Post-hole digger	853,010	May 7	1321	275	128	335
Gray, Gardner L., assignor of one-half to J. Biederman, Paducah, Ky. Composition for removing soot from chimneys	853,873	May 14	3041	.....	128	810
Gray, George S., Beloit, Wis. Nut-lock	853,237	May 14	1752	364	128	476
Gray, Harry M., assignor of one-half to E. G. Bell, Pittsburg, Pa. Bottle-stopper	853,079	May 7	1436	300	128	364
Gray, Henry F., Columbus, Ohio. Clip for whiffletrees	853,353	May 14	2008	415	128	547
Gray, James W., Tacoma, Wash. Planer-head	853,170	May 7	1593	331	128	403
Green, Arthur H., Portsmouth, N. H. Cash-register	853,011	May 7	1324	276	128	336
Green, Dallas F., Fort Wayne, Ind. Guard for eyeglasses	853,680	May 14	2666	549	128	719
Green, Elbert M. (See Bachman and Green.)						
Green, Frank D., and J. P. MacLearn, Philadelphia, Pa.; said MacLearn assignor to said Green. Apparatus for charging liquids with carbonic-acid gas	855,243	May 28	5790	1207	128	1577
Green, Harland C., South Bend, Ind. Garment-supporter	853,080	May 7	1437	301	128	364
Green, Thomas W., assignor to Wilbraham-Green Blower Company, Philadelphia, Pa. Packing for rotary blower-shafts	853,632	May 14	2549	528	128	687
Green, Thomas W., assignor to Wilbraham-Green Blower Company, Philadelphia, Pa. Rotary blower	853,690	May 14	2668	550	128	719
Green, Willard R., Muscatine, Iowa, assignor to United States Textile Company, Boston, Mass. Flax-breaking apparatus	852,503	May 7	251	45	128	71
Greene, Frank C., Cleveland, Ohio. Device for collecting miners' checks	853,971	May 21	3267	671	128	907
Greenfield, Elwin T., Kiamsha, N. Y. Junction-box	852,431	May 7	43	9	128	14
Greenspan, Abraham, Philadelphia, Pa. Fastener for horse-collars	855,171	May 28	5657	1177	128	1543
Greenwell, Robert L. (See Wilson and Greenwell.)						
Greenwood, John R., Boothwyn, Pa. Dyeing-machine	854,417	May 21	4126	855	128	1126
Greer, Ada B., Wheeling, W. Va. Clothes-line prop and holder	852,602	May 7	462	85	128	123
Gregg, Harriet L., Plainfield, N. J. Garment-stay	855,399	May 28	6052	1264	128	1642
Greist, John M., deceased; M. F. W. and P. R. Greist, administrators, New Haven, Conn., assignors to Greist Manufacturing Company. Sewing-machine hemmer	855,304	May 28	5895	1229	128	1603
Greist Manufacturing Company. (See Greist, John M., assignor.)						
Greist Manufacturing Company. (See Greist, Percy R., assignor.)						
Greist, Mary F. W., *et al.*, administrators. (See Greist, John M.)						
Greist, Percy R., *et al.*, administrators. (See Greist, John M.)						
Greist, Percy R., New Haven, Conn., assignor to Greist Manufacturing Company. Sewing-machine tuck-creaser	854,942	May 28	5175	1078	128	1421
Greist, Percy R., New Haven, Conn., assignor to Greist Manufacturing Company. Plating-separating device	854,943	May 28	5176	1078	128	1421
Gribben, John, Sharpsburg, assignor of one-half to D. J. Morgan, Pittsburg, Pa. Trolley-pole support	854,489	May 21	4259	881	128	1159
Griffith, Thomas K., Nocona, Tex. Cotton-topper	852,715	May 7	688	133–4	128	180
Griffith, William B. (See Porter, James A., assignor.)						
Grimes, Curtis C., Haskell, Ind. Ter. Equalizing apparatus	853,081	May 7	1438	301	128	365
Grimmer, Frederic H., Brooklyn, N. Y. Baby-wagon or go-cart	855,000	May 28	5290	1099-1100	128	1449
Groash, Harrison M., deceased, St. Louis, Mo.; H. Troll, public administrator. Slack-adjuster for electric lamps	853,238	May 14	1753	365	128	476
Grocott, Frederick C., Walthamstow, England. Hair-curling device	854,884	May 28	5080	1056	128	1397
Groenig, August, Holloway, Minn. Running-gear for automobiles	854,210	May 21	3752	776	128	1030
Groenig, August, Holloway, Minn. Lever-actuated buggy-top	854,211	May 21	3753	776	128	1030
Gros, Hermann C., Leipzig-Leutzsch, Germany. Machine for uniting welts to stock	855,244	May 28	5794	1207	128	1578
Gross, August, and A. C. Horn, New York, N. Y.; said Gross assignor to said Horn. Waterproofing compound	853,354	May 14	2009	.....	128	548
Grossmith, Alfred R. (See Lloyd and Grossmith.)						
Groupe, Andrew V., Philadelphia, Pa., assignor to E. Jenckes Manufacturing Company, Pawtucket, R. I. Knitting-machine	854,885	May 28	5081	1056–7	128	1397
Grout, Edward A., Medford, assignor to W. Read & Sons, Boston, Mass. Artificial bait	853,972	May 21	3269	671	128	907
Grover, William B., Vineland, N. J. Lamp-burner	854,576	May 21	4426	919	128	1200
Grubl, Carl, Brühl, Germany. Conveying device	852,504	May 7	254	46	128	71
Grumbar, George, London, England. Hair-net	853,012	May 7	1328	276	128	337
Grunert, Albert J., and W. S. Whitney, Fort Smith, Ark. Station-indicator	855,001	May 28	5292	1100	128	1450
Gudgeon, Benjamin O., Pittsburg, Kans. Carpenter's gage	852,432	May 7	45	9	128	15
Gudmundson, Niels W., Salt Lake City, Utah. Wrench	854,289	May 21	3896	803	128	1068
Guil, Albert, Swissvale, Pa. Garbage-wagon	853,355	May 14	2010	416	128	548
Gundy, Robert K. (See Kamp and Gundy.)						
Gunn, Edwin S., Lincoln, Nebr. Headlight	852,505	May 7	255	46	128	72
Gurney, Amelia, assignor to W. Sylvester, Pittsburg, Pa. Locking-cover for cooking utensils, &c.	853,691	May 14	2670	550	128	720
Gurry, Edward, Hamilton, Ontario, Canada. Machine for forming pig-iron molds	853,633	May 14	2550	529	128	687
Gustafson, Andrew S., Chattanooga, Tenn. Car-wheel	853,082	May 7	1439	301	128	365
Gustafson, Carl A. (See Johnson and Gustafson.)						
Guthrie, William S., Terrell, Tex. Secondary electric clock	855,002	May 28	5294	1100	128	1450
Guttery, Lewis C., Lebanon, Ohio. Corn-shock compressor	853,013	May 7	1327	277	128	337
Güttner, Max, Chemnitz, and R. Baeger, Ehrenberg, near Altenburg, Germany. Centrifugal machine	853,583	May 14	2439	508	128	650
H. Hartman *et al.* (See Abraham, Elias, assignor.)						
H. Mueller Manufacturing Company. (See Schuermann, Anton, assignor.)						
H. B. Wiggin's Sons Company. (See Cornelison, Robert W., assignor.)						
H. C. White Co. (See White and Beach, assignors.)						
H. D. Smith & Company. (See Ward, William S., assignor.)						
H. H. Franklin Manufacturing Company. (See Underwood, Herbert G., assignor.)						
H. O. Canfield Company. (See Freshour, Henry C., assignor.)						
Haag, Albert. (See Haag, George and A.)						
Haag, George and A., Peoria, Ill. Wagon-jack	854,490	May 21	4260	881–2	128	1160
Haas, Philip J. (See Regner, Wilson H., assignor.)						
Hachmann, Frederick, St. Paul, assignor, by mesne assignments, to American Railway Appliance Company, Minneapolis, Minn. Journal-box	855,400	May 28	6053	1265	128	1642
Hacker, Larkin A. (See Cubine and Hacker.)						
Hadaway, John B., Brockton, Mass. Impression-stitch machine	855,401	May 28	6054	1265	128	1642
Haddock, Harry E., Collinwood, Ohio, assignor to J. A. Brill, Philadelphia, Pa. Convertible car	852,782	May 7	833	167	128	213
Hadsell, Dorr H., assignor of one-half to T. D. Barry, Brockton, Mass. Presser-foot attachment for sewing-machines	853,874	May 14	3042	625	128	811

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Haehnlen, Jacob L. (See Blass, Haehnlen, and Cox.)						
Haessler, Charles H., New York, N. Y., and A. H. Taylor, Easton, Pa., assignors to Ingersoll-Rand Company. Portable pneumatic tool	854,694	May 21	4652	969–71	128	1257
Haggerty, William H., and W. J. Dardis, New York, N. Y. Fire-kindler	854,491	May 21	4265	882	128	1161
Hallman, George F, and E. S. Harnden, Washington, D. C., assignors to American Horse Shoe Grip Company, Incorporated. Horseshoe-calk	855,245	May 28	5796	1208	128	1579
Haines, Albert L., Fort Fairfield, Me. Conveyer	854,734	May 28	4743	986	128	1309
Haines, George T., Philadelphia, Pa. Coin-operated vending-machine	855,054	May 28	5405	1122–3	128	1479
Hainlin, Carl, New York, N. Y., assignor of one-half to E. E. Von Seyfried, Newark, N. J., and J. Davis, New York, N. Y. Spring device	854,087	May 21	3508	724	128	967
Halse, George I., Birmingham, Ohio. Vehicle-tongue	853,781	May 14	2849	586	128	766
Hale, Henry S., assignor to Hale and Kilburn Manufacturing Company, Philadelphia, Pa. Cushion	854,161	May 21	3651	755	128	1001
Hale, John O. (See Pennick and Hale.)						
Hale and Kilburn Manufacturing Company. (See Hale, Henry S., assignor.)						
Hale, Thomas H., Fayetteville, N. C. Safety device for locomotives	854,290	May 21	3897	803	128	1068
Haley, Thomas, Boston, Mass. Controlling-nozzle for hose and hose-pipe	854,641	May 21	4537	947	128	1227
Hall, Bicknell, assignor to Huber-Hodgman Printing Press Company, Taunton, Mass. Mechanical movement	852,783	May 7	836	168	128	214
Hall, Charles F., assignor to L. M. Cahn, Chicago, Ill. Stripping tobacco	853,511	May 14	2304	477	128	626
Hall, Charles K., Johannesburg, Transvaal. Governor for windmills	854,735	May 28	4745	986	128	1309
Hall, Frank M., assignor to J. E. P. Butz, Potomac, Ill. Strap-splicer	855,305	May 28	5897	1229	128	1604
Hall, Harry F., Philadelphia, Pa. Egg-boiler	852,556	May 7	353	63	128	98
Hall, John A. (See Phelps, Sidney W., assignor.)						
Hall, John B. (See Duncan and Hall.)						
Hall, Lon D. and S. P., Prescott, Ariz. Ter. Ore-separator	853,782	May 14	2850	586	128	767
Hall, Merton W., Gloversville, N. Y. Tire-repairing plug	852,716	May 7	689	134	128	181
Hall, Milan W., assignor, by mesne assignments, to Noiseless Compressor and Air Brake Company, New York, N. Y. Air-compressor and similar device	853,356	May 14	2012	416	128	548
Hall, Samuel P. (See Hall, Lon D. and S. P.)						
Hall, Stephen S., assignor to Pickering Governor Co., Portland, Conn. Engine-governor	854,418	May 21	4128	855	128	1127
Hall, William, Marion, Oreg. Lock for milk-can lids	853,406	May 14	2093	435	128	569
Halladay, Lewis P., Streator, Ill. Phonographic-horn support	853,357	May 14	2017	416	128	550
Hallam, John T., Reiceing, Pa. Metallic tie and rail fastening	854,492	May 21	4266	882	128	1161
Hallstream, Henning, East Bridgewater, assignor to American Paper Feeder Company, Boston, Mass. Sheet-feeding machine	854,088	May 21	3509	724	128	967
Halstead, Francis D., and L. C. Andrews, Lock Haven, Pa. Furnace-roof	852,835	May 7	945	193	128	241
Ham, George W. (See Peay and Ham.)						
Hamilton, Addington B., assignor of two-thirds to J. F. O'Brien, Boston, Mass. Feed-bag	853,875	May 14	3044	626	128	811
Hamilton, Harry. (See McCoy, John I., assignor.)						
Hamilton, James W., Weatherford, Tex. Hay-press	854,736	May 28	4747	987	128	1310
Hamilton, John R., Auburn, Iowa. Wire-stretcher	854,089	May 21	3512	725	128	968
Hamilton, Samuel H. (See Aaron and Hamilton.)						
Hamlink, Lazruby C., assignor to Gas Bench Construction Company, St. Louis, Mo. Recuperative muffle-furnace	852,506	May 7	256	46–7	128	72
Hammar, Carl A., and A. Brickman, Worcester, Mass. Window-catch	853,358	May 14	2018	417	128	550
Hammond, Forrest. (See Krenrich and Hammond.)						
Hanaman, Franz. (See Just and Hanaman.)						
Hance, Young D., Adelina, Md. Strap-fastener	854,577	May 21	4427	920	128	1200
Hancock, Newton F., Fayetteville, Tenn. Fertilizer-distributer	853,692	May 14	2671	550	128	720
Handelsgesellschaft Kleinberg & Co. (See Ecseghy, Stefan K. v., assignor.)						
Handlan, Alexander H., Jr., St. Louis, Mo. Lamp-burner	855,055	May 28	5409	1123	128	1481
Handschumacher, John, San Francisco, Cal. Door-hanger and track therefor	855,172	May 28	5658	1177	128	1543
Handy, Frank S., and W. J. Hickey, Bay City, Mich. Hoof-pad	854,034	May 21	3387	698	128	936
Hanks, Joseph C., Amethyst, Colo. Hay-rake	852,433	May 7	46	10	128	15
Hanks, William W. (See Kintner and Hanks.)						
Hanley, John, Laurel, Miss. Log-car dog	855,103	May 28	5529	1147	128	1509
Hanlon, James W., Wichita, Kans. Soap-dispensing device	852,603	May 7	463	86	128	123
Hanna, Nellie E., New York, N. Y. Shirt-waist attachment	854,737	May 28	4753	987	128	1312
Hannaford, Alfred, Chicago, Ill. Overhead carrier	852,784	May 7	838	168	128	214
Hannaford, Alfred, Chicago, Ill. Carcass-elevator	852,785	May 7	839	168	128	215
Hannig, Carl. (See Lewicki, Taddäus, assignor.)						
Hannon, James J., Logansport, Ind. Piston-packing former and replacer	853,973	May 21	3270	671–2	128	907
Hanrahan, John E. (See Brown, Hanrahan, and Boyden.)						
Hansel, John J., Muskegon, Mich. Sled-propeller	855,306	May 28	5899	1230	128	1604
Hansel, John J., Muskegon Mich. Stand for motor-cycles, &c	855,307	May 28	5900	1230	128	1604
Hansen, August J., Walnut, Iowa. Hay-loader	854,090	May 21	3514	725	128	968
Hansen, Charles E., Providence, R. I. Button or stud	855,173	May 28	5660	1177	128	1543
Hansen, Hans H., Pittsburg, Kans. Monument	853,407	May 14	2094	436	128	569
Hansen, Ingvart, Orofino, Idaho. Fly-trap	855,308	May 28	5902	1230	128	1605
Hansen, John M., Pittsburg, Pa. Metallic car-underframe	854,349	May 21	3997	826	128	1094
Hansen-Ellehammer, Jacob C., Copenhagen, Denmark. Starting device for explosion-engines	854,035	May 21	3388	698	128	936
Hansen, Peter J., Seattle, Wash. Mast-hoop	855,246	May 28	5797	1208	128	1579
Hanson, Bernard, Shroyer, Kans. Engine-valve	854,036	May 21	3389	698	128	936
Harbeck, Jervis R., assignor to Kemiweld Can Company, Detroit, Mich. Container-top	853,547	May 14	2371	494	128	641
Hardee, Asberry P., Milton, Fla. Window-sash	852,604	May 7	464	86	128	123
Harding, Charles, Forestgrove, assignor to A. Jackman, Lewistown, Mont. Shepherd's crook	853,876	May 14	3046	626	128	811
Hardman, Mark, Afton, Wyo. Hay-loader	852,605	May 7	466	86	128	123
Hardman, Peck & Company. (See Lundberg and Hattemer, assignors.)						
Hardy, Jesse I., assignor of one-half to P. A. Glanville, St. Louis, Mo. Fire-extinguisher	853,451	May 14	2175	452	128	591
Hardy, Thomas M., Jr. (See McKelver, William H., assignor.)						
Harmer, John, Toronto, Ontario, Canada. Railway-switch	854,944	May 28	5178	1078	128	1422
Harmon, Willis E., assignor to Nungesser Electric Battery Co., Cleveland, Ohio. Can-bottoming machine	853,239	May 14	1755	365–6	128	477
Harnden, Enos S. (See Hallman and Harnden.)						
Harnischfeger, August A., New York, N. Y. Suspension-clamp for bacon	852,961	May 7	1191	245	128	303
Harper, Charles E., assignor to M. Harper & Son, Whitby, Ontario, Canada. Feed-roll for wood-planing machines	854,642	May 21	4538	947	128	1228
Harper & Son, Major. See Harper, Charles E., assignor.)						
Harrelson, William H. (See Darst and Harrelson.)						
Harrington, Norman T., assignor to Olds Motor Works, Detroit, Mich. Starting device for explosion-engines	852,557	May 7	354	63–4	128	96
Harrington, Thomas M. (See Gebhardt, Friedrich, assignor.)						
Harris Calorific Company. (See Harris, John, assignor.)						
Harris, Clifford B. (See Snapp, William A., assignor.)						
Harris, Harvey D., Denver, Colo. Sash-ventilator	852,717	May 7	602	134	128	181

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Harris, John, assignor to Harris Calorific Company, Cleveland, Ohio. Acetylene-blowpipe	853,634	May 14	2553	529	128	688
Harris, Marshall C., *et al.* (See Matthews, Francis I., assignor.)						
Harris, Varian M., Chicago, Ill. Manufacture of cylindrical phonograph record-blanks	854,886	May 28	5064	1057	128	1397
Harris, Varian M., Chicago, Ill. Molding phonograph-records	854,887	May 28	5065	1057	128	1398
Harris, William F., Detroit, Mich. Self-locking seal	853,240	May 14	1757	366	128	477
Harrison, Harry W. (See McLalin and Harrison.)						
Harry & Co., Aublet. (See Brittain, John W., assignor.)						
Hart, Alvin L., Burlington, Iowa. Perforating-machine	854,822	May 28	4929	1024	128	1357
Hart, Benjamin F., Jr., Hoboken, N. J. Automobile life-guard or fender	854,162	May 21	3653	755	128	1002
Hart, George F. (See Coates and Hart.)						
Harter, Gustav A., Chicago, Ill. Cluster-socket	854,498	May 21	4267	882–3	128	1161
Hartle, Edda G., Columbus, Ohio. Axle	854,212	May 21	3754	777	128	1030
Hartman, William J., Chicago, Ill. Perpetual calendar	854,888	May 28	5087	1057	128	1398
Hartnett, John, Balwyn, and D. M. Robison, St. Kilda, Victoria, Australia. Cow-milking apparatus	854,643	May 21	4541	948	128	1228
Hartwell, Sidney R. (See Tompkins and Hartwell.)						
Harty, Roger J., St. Louis, Mo. Car-ventilator	854,945	May 28	5180	1079	128	1422
Harvey, Edward, New York, N. Y. Steam-turbine	854,494	May 21	4269	883	128	1162
Harvey, James C. (See Cage, John M., assignor.)						
Harvey, Olin F., Wilkes-Barre, Pa. Battery element	853,877	May 14	3046	626	128	812
Haskell, Frederick F., Cambridge, Mass. Folding scaffold-bracket	854,163	May 21	3655	755	128	1002
Haskell, Henry L., assignor to Carrom-Archarena Company, Ludington, Mich. Billiard or pool table	853,635	May 14	2555	529	128	688
Haskell, Henry L., assignor to Carrom-Archarena Company, Ludington, Mich. Pool-table	853,636	May 14	2556	529–30	128	689
Hass, Herman J., assignor to E. R. Thomas Motor Company, Buffalo, N. Y. Liquid-filter	854,738	May 28	4754	987	128	1312
Hassel, Gustav A., McKeesport, assignor to Pittsburgh Equipment Company, Pittsburg, Pa. Metallic bolster	853,584	May 14	2442	508	128	660
Hasty, Charles, La Fayette, Ind. Sign-displaying device	853,083	May 7	1440	302	128	365
Hattemer, Justus. (See Lundberg and Hattemer.)						
Hattersley and Sons, George. (See Leeming and Hudson, assignors.)						
Hattersley and Sons, George. (See Perks, Thomas, assignor.)						
Hauxwell, William, Canal Fulton, Ohio. Mining-drill	854,350	May 21	3999	826	128	1095
Hawes, Herbert A., Coldwater, Mich. Carriage-top	852,434	May 7	47	10	128	15
Hawkins, George E., Columbus, Ohio. Device for recording the reading of meters	853,637	May 14	2557	530	128	689
Hawkins, Laurence A., Schenectady, N. Y., assignor to General Electric Company. Alternating-current motor	854,739	May 28	4755	988	128	1312
Hawley, Charles G., Chicago, Ill. Journal-box and lid	852,952	May 7	1193	245–6	128	303
Hawley, Charles T., assignor to Simplex Time Recorder Company, Gardner, Mass. Workman's time-recorder	853,878	May 14	3049	626–8	128	812
Hawthorne and Sheble Manufacturing Company. (See Kraemer and Sheble, assignors.)						
Hay, Addie. (See Radcliff, Lee, assignor.)						
Hayden, Arthur C., assignor to Hayden Photographic Manufacturing Company, Brockton, Mass. Photographic developing and fixing apparatus	855,402	May 28	6057	1266	128	1643
Hayden, George W., Oak Park, assignor to Crane Company, Chicago, Ill. Expansion-joint	853,974	May 21	3272	672	128	908
Hayden, John M., assignor of one-half to H. Abrames, Norfolk, Va. Closet-bowl and sink connection	854,695	May 21	4657	971	128	1258
Hayden Photographic Manufacturing Company. (See Hayden, Arthur C., assignor.)						
Hays, Morris, Monmouth, Ill. Wire-working tool	852,836	May 7	946	194	128	241
Hazelton, Simon A., Pavilion, N. Y. Whiffletree	854,495	May 21	4271	884	128	1162
Hazlett, David H., Dendron, Va. Cotton-chopper	853,014	May 7	1328	277	128	337
Heabler, Martin S., McComb, Ohio. Window-cleaner	853,783	May 14	2851	586	128	767
Heale, James E., Anaconda, Mont. Tire-protector	854,213	May 21	3755	777	128	1031
Healey, Frank F., New York, N. Y. Pressure-regulating valve	853,693	May 14	2673	551	128	721
Healy, Frank V., and J. H. Fox, Sac City, Iowa. Cement-sidewalk cleaner	853,171	May 7	1594	331	128	403
Healy, John J., assignor of one-half to S. F. Hess, Rochester, N. Y. Self-playing piano	855,104	May 28	5531	1148–50	128	1510
Heart, Charles, assignor to Keefer-Heart Iron and Steel Company, Alexandria, Ind. Sheet-metal rim or felly	853,452	May 14	2176	452	128	592
Heath, Edward J., St. Louis, Mo. Pick-up for non-insulated electric wires	851,578	May 21	4428	920	128	1201
Heath, Frank S., Corry, Pa. Evaporator	852,435	May 7	49	10	128	16
Heath, Harry E., Lynn, Mass., assignor to General Electric Company. Resistance unit	853,784	May 14	2852	587	128	767
Hecht, George M., *et al.* (See Kuersten, Hugo R., assignor.)						
Hecht, Joseph L., Davenport, Iowa, assignor to Davenport Wagon Company. Tongue-support	852,837	May 7	948	194	128	242
Hedberg, Peter L., Chicago, Ill. Weatherproof window-sill	854,889	May 28	5088	1058	128	1399
Hedrich, Martha. (See Hedrich, Richard, assignor.)						
Hedrich, Richard, assignor to M. Hedrich, Milwaukee, Wis. Manufacturing roofing-tiles	854,823	May 28	4932	1025	128	1358
Hee, Fred H. (See Foreman, Ernest J., assignor.)						
Heeter, Thomas E., Maplewood, Mo., assignor to Sieber & Truesell Manufacturing Company. Loose-leaf binder	853,975	May 21	3273	672	128	908
Heeter, Thomas E. (See Dawson and Heeter.)						
Hegeman, Benjamin A., Jr. (See Johnson, George A., assignor.)						
Hein & Möller-Holst, Hj. (See Schlödt; Frederik V., assignor.)						
Heineman, Charles H., Falls City, Nebr. Wheelbarrow-body	854,496	May 21	4273	884	128	1163
Heineman, Charles H., Falls City, Nebr. Wheelbarrow	855,309	May 28	5903	1231	128	1605
Heisdorf, Francis, Irvington, N. Y. Fastening device	853,638	May 14	2559	530	128	690
Heisel, Charles T., Cleveland, Ohio. Centrifugal concentrator	852,558	May 7	357	64	128	97
Heiser, Johannes P., Denver, Colo. Trace loop or buckle	853,879	May 14	3065	628	128	816
Heisler, Charles L., Erie, Pa. Pumping-engine	853,359	May 14	2019	417	128	550
Helberger, Hugo, Munich, Germany. Step-by-step electric seam-welding apparatus	853,241	May 14	1760	366	128	478
Heller Tool Co. (See Lyons, William W., assignor.)						
Helmbach, Albert, Saarbrücken, Germany. Shaving-brush	852,878	May 7	1043	215	128	266
Helmond, William F., Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	853,242	May 14	1761	367	128	478
Hemptinne, Alexandre de, Ghent, Belgium. Eliminating the odors of fish-oils	852,662	May 7	585	111	128	152
Hemstreet, George P., Hastings-upon-Hudson, N. Y., assignor to International Pavement Company, Hartford, Conn. Measuring apparatus	852,718	May 7	603	134	128	182
Hendershot, Fuller R., Plymouth, Pa. Attachment for dump-carts	853,512	May 14	2307	478	128	626
Hendler, Bernard. (See Sheridan, John J., assignor.)						
Henkelman, Frederick. (See Kindig, Samuel C., assignor.)						
Hennen, Joseph E. (See Georgenson and Hennen.)						
Hennion, Amzi G., Houston, Tex. Composite roofing	854,740	May 28	4757	988	128	1313
Henricks, Isaac M., assignor of one-half to H. G. Beckner, Greenfield, Ind. Conveying apparatus	853,976	May 21	3274	672	128	909
Henry, Francis M., Minneapolis, Minn. Mold for concrete construction	855,174	May 28	5661	1178	128	1544
Henry, George J., Jr., San Francisco, Cal. Safety means for fluid-pressure lines	853,785	May 14	2853	587	128	767
Henry, George J., Jr., San Francisco, Cal. Regulating means for hydraulic nozzles	853,786	May 14	2856	587	128	768
Henry, George J., Jr., San Francisco, Cal. Stream-deflector	853,787	May 14	2858	587	128	768
Henry, Harvey J., Massillon, Ohio. Gas-engine	853,303	May 14	1911	397	128	822

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Henry, James, New York, N. Y. Binder's stamp	855,105	May 28	5538	1150	128	1512
Henry, James E., Ashland, Wis. Flue-blow-out device for boilers	853,360	May 14	2020	417–18	128	551
Henry, John P., Franklin, Pa. Wedge-adjusting device for connecting-rod heads	855,003	May 28	5297	1101	128	1451
Hensel, Emil, Berlin, Germany. Flexible link-shaft	855,106	May 28	5539	1150	128	1512
Hentgen, Theodor, New York, N. Y. Measuring-pump	855,310	May 28	5904	1231	128	1605
Hentig, Frank M. (See Crane and Hentig.)						
Henwood, Horace E., New York, N. Y. Bedstead	852,507	May 7	259	47	128	72
Henwood, Horace E., New York, N. Y. Bedstead attachment	852,508	May 7	261	47–8	128	73
Henzel, Casper H., Allegheny, Pa. Heater	854,497	May 21	4275	884	128	1163
Herbeck, Frank, Orange, Mass. Curtain-fixture	855,311	May 28	5906	1231	128	1606
Herdrich, William F., and G. Garmisa, Chicago, Ill. Cigar-cutter	853,924	May 14	3162	646	128	841
Herman, Adah D., Hemet, Cal. Combination toilet-box	853,361	May 14	2021	418	128	551
Herr Dump Car Company. (See Foreman, David H., assignor.)						
Hershiser, Orel L., Buffalo, N. Y. Beehive	855,175	May 28	5664	1178–9	128	1544
Herz, Gustave L., New York, N. Y. Antivibration device	853,548	May 14	2372	494	128	641
Herzog, Arnold, Berne, Switzerland. Device for non-refillable bottles	853,084	May 7	1442	302	128	366
Hesketh, William T., Hayfield, England. Machine for printing cloth, wall-paper, and other materials	852,719	May 7	695	135	128	182
Hess, Solomon F. (See Healy, John J., assignor.)						
Hewitt, Herbert H. (See Smith, William R., assignor.)						
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company. Reverse-phase relay	854,741	May 28	4758	988	128	1313
Hiatt, Harry, Alexandria, Ind. Mixer and feeder for boiler compounds	852,953	May 7	1195	246	128	304
Hickey, William J. (See Handy and Hickey.)						
Higdon, Joseph A., Henderson, Ky. Grain-drier	855,312	May 28	5907	1232	128	1606
Higgins, John G., Chattanooga, Tenn. Comb	854,498	May 21	4276	885	128	1163
Hight, Albert W., Ballard, Wash., assignor to Hight Manufacturing Company, Toledo, Ohio. Combination-square	854,351	May 21	4000	827	128	1095
Hight Manufacturing Company. (See Hight, Albert W., assignor.)						
Hilberg, Mitchell J., Cincinnati, Ohio. Vise	854,091	May 21	3516	726	128	989
Hildebrand, Paul, Munich, Germany. Automatic switch for telephone installations	854,164	May 21	3656	756	128	1002
Hill, Charles E., Foster, Ohio. Adjustable extension-bit holder	854,742	May 28	4760	989	128	1314
Hill, Charles V., St. Louis, Mo. Electrical sad-iron heater	853,694	May 14	2676	551	128	722
Hill, Ivan R., Reading, Mich. Wire-fence lock	854,946	May 28	5181	1079	128	1423
Hill, James F., and C. M. Peckham, Norwalk, Ohio. Mold	854,214	May 21	3756	777	128	1031
Hill, John C., Chicago, Ill. Sight-feed	857,695	May 14	2677	551	128	722
Hill, John P., Baltimore, Md. Tooth brush and powder receptacle	853,549	May 14	2373	495	128	641
Hill, John R. (See Dill and Hill.)						
Hill, Louis A., Washington, D. C. Vehicle-wheel. (Reissue)	12,647	May 7	1698	352	128	428
Hill, Thomas, Joggin Mines, Nova Scotia, Canada. Cheese-cutter	853,408	May 14	2094	436	128	569
Hill, Thomas G., Portland, Oreg. Metallic beam or girder	854,947	May 28	5182	1079	128	1423
Hilliker, George L., assignor to Alrite Duplicating Supply Company, Chicago, Ill. Rotary duplicating-machine	854,499	May 21	4277	885	128	1164
Himalaya, Manuel A. G., Washington, D. C. Making smokeless powder	853,085	May 7	1443	302	128	366
Hinck, Jess F., Devils Lake, assignor of two-thirds to O. W. and J. L. Larsen, Lakota, N. D. Friction-gearing	854,037	May 21	3390	699	128	936
Hincks, Elizabeth T., Andover, Mass. Doll	853,630	May 14	2560	530	128	690
Hipwell, John B., assignor to Windsor Machine Co., Reading, Pa. Machine for sewing looped fabrics	853,015	May 7	1329	277	128	337
Hirschfeld, Friedrich, New York, N. Y. Bell-piano	855,056	May 28	5410	1123–4	128	1481
Hirsh, Fred, New York, N. Y. Hose-supporter	852,954	May 7	1197	246	128	304
Hirth, Albert, Cannstatt, Germany. Feed mechanism for leather skiving and splitting machines	854,500	May 21	4279	886	128	1164
Hiss, John D., Omaha, Nebr. Washing-machine	852,720	May 7	697	135	128	183
Hitch, Frank M., assignor of one-half to G. B. Wyckoff, Juniata, Nebr. Hay-cap	852,606	May 7	467	86	128	124
Hobart, Franklin G., Beloit, Wis., assignor to Fairbanks, Morse & Company, Chicago, Ill. Sprayer	854,352	May 21	4002	827	128	1096
Hobart, Franklin G., Beloit, Wis., assignor to Fairbanks, Morse & Co., Chicago, Ill. Pump	854,353	May 21	4003	827	128	1096
Hockensmith, Franklin C., Pittsburg, assignor to Hockensmith Wheel & Mine Car Company, Penns Station, Pa. Mine-car	852,879	May 7	1044	215	128	266
Hockensmith Wheel & Mine Car Company. (See Hockensmith, Franklin C., assignor.)						
Hodge, Madison F., assignor of one-half to H. W. Wolcott, Leavenworth, Kans. Trolley-retriever	853,452	May 14	2178	452–3	128	592
Hodge, Neely B., Dallas, Tex. Planting mechanism	854,165	May 21	3657	756	128	1003
Hodges, Clarence B., Detroit, Mich. Force-feed lubricator	854,948	May 28	5183	1079–80	128	1423
Hodgkinson, William, and E. F. Clarkin, Waterbury, Conn. Necktie-fastener	853,880	May 14	3066	629	128	817
Hodgman, Willis K., assignor to Huber-Hodgman Printing Press Company, Taunton, Mass. Printing-plate holder	852,786	May 7	840	168	128	215
Hodson, Clara M., Baltimore, Md. Bottle-holder	853,362	May 14	2023	418	128	551
Hoefer, Emil A., assignor to Hoefer Manufacturing Company, Freeport, Ill. Wire-knotting machine	854,354	May 21	4004	827–8	128	1097
Hoefer Manufacturing Company. (See Hoefer, Emil A., assignor.)						
Hoerner, Arthur G., Dayton, Ohio. Ironing-board	852,787	May 7	842	169	128	216
Hoey, John, San Francisco, Cal. Bed-couch. (Reissue.)	12,652	May 14	3214	650	128	854
Hoey, John, and F. J. Crouch, San Francisco, Cal.; said Crouch assignor to said Hoey. Couch	855,176	May 28	5668	1179	128	1545
Hogan, William J., assignor of one-half to H. Stewart, Wilmington, Del. Aerial railway	853,788	May 14	2859	588	128	768
Hogbin, Joseph, and F. Ketley, Pittsburg, Pa. Metallic tie and rail-fastener	854,501	May 21	4281	886	128	1165
Holbine, Gottlieb K., Eustis, Nebr. Wrench	854,949	May 28	5185	1080	128	1424
Holbrook, Charles E., Carson City, Nev. Furrow plow and roller	855,313	May 28	5909	1232	128	1606
Holden, Delos. (See Dyer and Holden.)						
Holden, Frank, London, England, assignor to General Electric Company. Mercury-meter	853,789	May 14	2860	588–9	128	769
Holden, Frank, London, England, assignor to General Electric Company. Electric measuring instrument	853,790	May 14	2864	589	128	769
Holder, Henry A., West Lynn, Mass. Hide and leather working machine	854,419	May 21	4129	856	128	1127
Holley, James, assignor to American Cylinder Brace and Tool Manufacturing Company, West Palmbeach, Fla. Brace	853,243	May 14	1766	367	128	480
Hollingsworth, Joseph C., assignor of one-half to G. C. Walsh, Dallas, Tex. Gin-saw cleaner	854,166	May 21	3658	757	128	1003
Hollins, Denis M., Blackburn, England, assignor to Draper Company, Hopedale, Mass. Warp stop-motion for looms for weaving	854,167	May 21	3660	757	128	1003
Hollowell, Walter, *et al.* (See Diehl, John J., assignor.)						
Holmén, Axel R., Columbus, Ohio. Loading and unloading apparatus	854,890	May 28	5089	1058	128	1399
Holmer, Anders, Chicago, Ill. Suit-hanger	854,420	May 21	4133	856	128	1128
Holmes, Alba L., Grand Rapids, Mich. Meter connection	855,314	May 28	5910	1233	128	1607
Holmgren, Gustaf, Bloomfield, N. J. Atomiser	853,455	May 14	2183	453	128	594
Holmgren, Gustaf, Newark, N. J., assignor to United States Butter Extractor Company. Clutch for centrifugal machines	853,454	May 14	2181	453	128	593

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Holscher, J. J., *et al.* (See Speer, Robert G., assignor.)						
Holsclaw, Thomas C., Etowah, N. C. Saw-setting machine	852,838	May 7	949	194	128	242
Holst, Lodewyk J. R., New York, N. Y., and L. Borsum, Plainfield, N. J. Photographic camera	855,004	May 28	5298	1101	128	1451
Holtz, Edward W. A., and A. Dick, Evansville, Ind. Saw or cutter guard for wood-working-machines	854,355	May 21	4006	828–9	128	1097
Holtzheuer, August, Cassel, Germany. Chimney and ventilating-shaft top and the like	854,291	May 21	3899	803	128	1069
Holzmark, Max A., Kansas City, Kans. Pneumatic-cushion wheel	852,436	May 7	51	10	128	16
Holzwarth, Hans, assignor to Hooven, Owen, Rentschler Company, Hamilton, Ohio. Turbo-blower	853,363	May 14	2023	418–19	128	552
Holzwarth, Hans, Hamilton, Ohio, assignor of one-half to E. Junghaus, Sr., Schramberg, Germany. Gas-turbine	853,925	May 14	3164	646–7	128	841
Honeywell, Mark C., Wabash, Ind. Valve	853,364	May 14	2025	419	128	552
Hood, John D. (See Liverett and Hood.)						
Hooper, William H., and F. S. Hutchins, San Francisco, Cal.; said Hutchins assignor to said Hooper. Gas-engine	854,092	May 21	3518	726	128	989
Hooven, Clement W. (See McMullen, Frank C., assignor.)						
Hooven, Owen, Rentschler Company. (See Holzwarth, Hans, assignor.)						
Hope, John, Jr., assignor to Hope Lock Company, Providence, R. I. Tumbler mechanism for locks	853,926	May 14	3165	648	128	842
Hope Lock Company. (See Hope, John, Jr., assignor.)						
Hopewell, Frank B., Newton, Mass. Tire-case	854,215	May 21	3759	778	128	1031
Horn, Aaron C. (See Gross and Horn.)						
Hornung, Anton N., Jr., assignor to Louis Hanson Company, Chicago, Ill. Hydraulic chair	852,559	May 7	359	64	128	97
Horspool, Francis L., Cheyenne, Wyo., assignor of one-half to G. J. Kelly, Ogden, Utah. Locomotive-tender	852,509	May 7	264	48	128	73
Hosack, Lee L. (See Geltz and Hosack.)						
Hoskins Company. (See Marsh, Albert L., assignor.)						
Houghton, Andrew C., Winnipeg, Manitoba, Canada. Boot-cleaner	852,955	May 7	1198	247	128	305
Houston, George D., Rushville, Ill. Riding-cultivator	853,409	May 14	2097	437	128	570
Howard, C. H. (See Allen, James M., assignor.)						
Howe, Edward A., New York, N. Y. Hat-frame former	854,216	May 21	3761	778	128	1032
Howe, Henry E., Auburn, assignor of one-half to R. L. Golbert, Worcester, Mass. Bushing or thimble for lasts	855,403	May 28	6061	1266	128	1644
Howell, Charles W., assignor to Sun Typewriter Company, Newark, N. J. Type-writing machine	852,721	May 7	698	135–6	128	183
Howell, Harry H., Hope, Ark., assignor of one-fifth to W. C. Wilson, Brice, Ohio Machine for molding plastic material	852,839	May 7	950	195	128	242
Howell, Harvey, and J. Duff, Wheeling, W. Va. Assorting device	854,356	May 21	4008	829	128	1098
Hoyt, William H., Stamford, Conn., assignor of one-half to E. I. Horsman Co., New York, N. Y. Mechanical changeable picture	855,057	May 28	5413	1124	128	1482
Hrody, Joseph T. (See Babbe and Hrody.)						
Hromadko, Frank. (See Slonka, John, assignor.)						
Hubbard, Arthur O., Minneapolis, Minn. Silo	853,606	May 14	2679	651–2	128	723
Huber, Emil, Detroit, Mich. Clutch	852,956	May 7	1199	247	128	305
Huber-Hodgman Printing Press Company. (See Hall, Bicknell, assignor.)						
Huber-Hodgman Printing Press Company. (See Hodgman, Willis K., assignor.)						
Hubert, Theodore, assignor to C. F. Splitdorf, New York, N. Y. Magneto-armature	854,421	May 21	4133	856	128	1128
Hückel, Hugo, Neutitschein, Austria-Hungary. Machine with revolving wings or blades, applicable either as propeller, motor, pump, or blowing-engine	854,038	May 21	3392	699–700	128	937
Huckleby, B., Bonham, Tex. Hoof-trimming device	854,644	May 21	4545	949	128	1229
Hudson, Charles. (See Leeming and Hudson.)						
Huebner, Ernest D., Milwaukee, Wis. Surgical appliance	853,410	May 14	2099	437	128	570
Huffman, Daniel B., White, Idaho. Combination-tool	854,891	May 28	5091	1058	128	1399
Huffman, Robert C., Baltimore, Md. Concrete-heating machine	853,456	May 14	2185	453–4	128	594
Hughes, Ed. S., *et al.* (See Dudley, Thomas J., assignor.)						
Hughes, Owen P., New Castle, Pa. Machinist's wrench-hammer	853,172	May 7	1595	332	128	403
Hughes, William B., Chestnut Hill, Pa. Gas-producer	852,957	May 7	1200	247–8	128	305
Hughes, William B., Cleveland, Ohio. Gas-producer	852,958	May 7	1201	248	128	305
Hughes, William E., Seattle, Wash. Door-lock electric switch	853,791	May 14	2866	589	128	770
Huguley, George E., Atlanta, Ga. Vehicle-tire	853,792	May 14	2868	589	128	770
Hulse, Jerome E., Albany, N. Y. Mop	853,793	May 14	2869	590	128	770
Hummer, George P. (See Calhoun, Joseph C., assignor.)						
Humphrey, Alfred H., New York, N. Y. Gas-lamp	855,315	May 28	5911	1233	128	1607
Hunger, Henry J., *et al.* (See Richmond, Louis E., assignor.)						
Hungerford, Oliver T., Belleville, N. J. Electric conductor	854,217	May 21	3762	778	128	1032
Hungerford, Oliver T., Belleville, N. J. Insulated electric conductor	854,218	May 21	3763	779	128	1032
Hunt & Co., M. A. (See Stedman, Arthur, assignor.)						
Hunt, Frederic O., Darlington, England. Controlling device for electrically-driven machinery	853,585	May 14	2443	508–9	128	660
Hunt, John B., Trenton, N. J. Window holding and antirattling device	853,697	May 14	2680	552	128	723
Hunt, William, Cottageville, Ky. Wagon-body	853,794	May 14	2871	590	128	771
Hunt, William F., Lincoln, Nebr. Calculator	853,411	May 14	2100	438	128	571
Hunter, Joseph L., Roanoke, Va. Stack-furnace construction	853,698	May 11	2682	552–3	128	723
Huntington, George D., Watertown, and A. R. O'Neill and F. P. Noone, assignors to Raquette Foundry & Supply Company, Potsdam, N. Y. Digester-cover	853,795	May 14	2874	591	128	772
Hurd, James W., Dona, Va. Match-box	854,579	May 21	4429	920	128	1201
Hurley, Daniel, and W. T. Barratt, assignors to C. Cooper, Bennington, Vt. Yarn measuring and feeding device for knitting-machines	855,316	May 28	5913	1233	128	1607
Hurley, George A., Rockland, Mass. Lip-turning machine	854,168	May 21	3662	757	128	1004
Hurt, Joel J., South Omaha, Nebr., assignor to Emerson Manufacturing Company, Rockford, Ill. Agricultural implement	855,247	May 28	5798	1208–9	128	1579
Huston, William B. (See Terhune, Eidson and Huston.)						
Hutchins, Frederick S. (See Hooper and Hutchins.)						
Hutchins, Vernon C., Falls Creek, Pa. Steel railway-tie	852,437	May 7	53	11	128	17
Hutton, Joel W., Tony, Mont. Land-leveler	853,457	May 14	2187	454	128	595
Hutton, William, Milwaukee, Wis. Trunk	853,412	May 14	2102	438	128	571
Hysom, Cornelius B., Everett, Wash. Fruit-picker	853,458	May 14	2188	454	128	595
Ibson, Carl C., Astor, Iowa. Nest	854,219	May 21	3764	779	128	1032
Ideal Concrete Machinery Company. (See Borst, Frank A., assignor.)						
Igou, Dennis T., Springfield, assignor to Standard Candy Machine Company, Columbus, Ohio. Machine for forming and wrapping confections and other articles	852,560	May 7	363	65–9	128	99
Igou, Dennis T., Springfield, assignor to Standard Candy Machine Company, Columbus, Ohio. Feeding and cutting attachment for wrapping-machines	852,663	May 7	585	111–12	128	152
Igou, Dennis T., Springfield, assignor to Standard Candy Machine Company, Columbus, Ohio. Machine for wrapping confections and other articles	852,664	May 7	590	112–14	128	154
Ilch, Edward, New York, N. Y. Machine for producing water-mark effects on paper	852,788	May 7	843	169	128	216
Ilch, Edward, and M. Ilch, deceased; (E. Ilch and T. Bodenstab, New York, N. Y., executors.) Protecting checks and other papers	852,840	May 7	953	195	128	243

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Ilch, Michael, deceased. (See Ilch, Edward and M.)						
Imes, Una A., and H. A. Skillin, Ames, Colo. Vegetable-slicer	853,796	May 14	2875	591	128	772
Industrial Gas Construction Co. (See Busenbenz, Jacob J., assignor.)						
Ingersoll-Rand Company. (See Haeseler and Taylor, assignors.)						
Ingham, Howard T., Fairfield, Iowa. Coupling	854,292	May 21	3900	804	128	1069
Ingram, Wesley E., Tonopah, Nev. Wrench	853,244	May 14	1767	367	128	481
Inman, Charlie C., assignor of one-half to J. H. Grantham, Jr., Roachdale, Ind. Vending-machine	853,977	May 21	3275	673	128	909
Insull, Samuel. (See Ball, Henry P., assignor.)						
Interlocking Fence Company. (See Oberholtzer, Henry R., assignor.)						
International Pavement Company. (See Hemstreet, George P., assignor.)						
International Separator Company. (See Snyder, Frederick T., assignor.)						
International Sprinkler Company. (See Scott, John C., assignor.)						
Irish, Lemuel E. (See Baker and Irish.)						
Irwin, Oscar, assignor to Armstrong Cork Company, Pittsburg, Pa. Machine for grinding or polishing the ends of corks	853,881	May 14	3068	629–30	128	817
Isaacs, George. (See Seitz, Henry A., assignor.)						
Isbell, Alfonso H. (See Leonard, Thomas, assignor.)						
Isbell, John F., Denver, Colo. Concentrator	853,459	May 14	2189	455	128	595
Isler, Max, Mannheim, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the-Rhine, Germany. Making anthracene dye	855,248	May 28	5801	.....	128	1579
J. Stevens Arms & Tool Company. (See Fisher, James N., assignor.)						
J. A. Engel & Co. (See Feldt, Ferdinand J., assignor.)						
J. M. Skinner Bending Company. (See Duquett, Maxim A., assignor.)						
Jack, Thomas B., Herminie, Pa. Door-lock	855,177	May 28	5670	1179	128	1546
Jackman, A. (See Harding, Charles, assignor.)						
Jackson, Benjamin A. (See Ochoa, Victor L., assignor.)						
Jackson, Clarence S., assignor of one-half to S. S. Sanguinette, New York, N. Y. Cellular bottle or container	854,357	May 21	4010	829	128	1098
Jackson Fence Company. (See Mills, Anson C., assignor.)						
Jackson Fence Company. (See Withington, Sherman S., assignor.)						
Jackson, Frederick H. (See Bailey and Jackson.)						
Jackson, Peter H., San Francisco, Cal. Floor, sidewalk, roof, and like support	854,502	May 21	4282	886	128	1165
Jackson, Ray P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electromagnetically-actuated device	854,824	May 28	4934	1025	128	1358
Jackson, William S., Detroit, Mich. Stove	854,358	May 21	4012	829	128	1099
Jacobi, Karl, assignor of one-half to C. Jordan, New Rochelle, N. Y. Culinary vessel	853,173	May 7	1596	332	128	403
Jacobs, Charles C., Amboy, assignor to F. C. Austin Drainage Excavator Company, Chicago, Ill. Cleaner for buckets of excavating-machines	852,789	May 7	846	169–70	128	216
Jacobs, Charles C., assignor to F. C. Austin Drainage Excavator Company, Chicago, Ill. Trench-excavator	852,790	May 7	848	170–1	128	217
Jacobs, Charles C., assignor to F. C. Austin Drainage Excavator Company, Chicago, Ill. Levee-building machine	852,791	May 7	852	172–3	128	218
Jacobsen, Jacob T., Metropolitan, Cal. Pole-tip	852,561	May 7	383	69	128	101
Jacobson, Edward B., assignor to Pittsfield Spark Coil Company, Pittsfield, Mass. Commutator-switch	854,039	May 21	3395	700	128	937
Jacobson, William, Sawyer, Wis. Railway-tie	853,978	May 21	3278	673	128	910
Jacquart, Bernard, South River, N. J., assignor to American Enameled Brick & Tile Co., New York, N. Y. Brick-supporting pallet	853,086	May 7	1446	302	128	366
Jäger, Fritz, Gladbeck, Germany. Fire-escape	854,645	May 21	4546	949	128	1230
James, Daniel P., Eureka, Ill. Toy	854,646	May 21	4547	949	128	1230
James, Henry D., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. System of electric-motor control	854,825	May 28	4935	1025	128	1359
James, Henry D., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. System of control for electric motors	854,892	May 28	5092	1058–9	128	1400
James, John E. (See King and James.)						
Jamison, Thomas M., and A. Petrtyl, Chicago, Ill.; said Jamison assignor to said Petrtyl. Convertible couch and bed	855,058	May 28	5416	1124	128	1483
Janson, Carl A., Chicago, Ill. Apparatus for melting and purifying butter and fats	854,422	May 21	4136	856	128	1128
Janssen, Henry, assignor to Textile Machine Works, Wyomissing, Pa. Drive and stop mechanism for braiding-machines	852,722	May 7	703	136	128	185
Japp, Henry, *et al.* (See Vandevort, Frank F., assignor.)						
Jaretski, Sam. (See Padernacht, William, assignor.)						
Jayne, George W., Washington, D. C. Railway safety appliance	854,503	May 21	4283	887	128	1165
Jeffries, James K. (See Buchanan, John D., assignor.)						
Jenkins, Marion R., Browning, Mo. Hay-stacker	855,005	May 28	5302	1102	128	1452
Jenkins, Marion R., Browning, Mo. Hay-rake	855,006	May 28	5305	1102–3	128	1453
Jenness, Peter, Philadelphia, Pa. Carburetor	855,179	May 28	5673	1180	128	1546
Jenney, Walter R., assignor of one-half to C. H. Beals, Westfield, Mass. Automatic switch	853,882	May 14	3071	630–1	128	818
Jenney, Walter R., assignor of one-half to C. H. Beals, Westfield, Mass. Automatic safety-switch	853,944	May 14	3201	656	128	851
Jennings, John J., Reidville, S. C. Nut-lock	852,841	May 7	954	196	128	243
Jensen, Aage, Eureka, Cal. Combined churn and butter-worker	855,178	May 28	5672	1180	128	1546
Jensen, Aage, Eureka, Cal. Butter-cutter	855,404	May 28	6062	1267	128	1644
Jeppesen, Jens N., and N. Michelsen, Monroe, Utah. Hay-loader	855,317	May 28	5915	1234	128	1608
Johansson, Karl J., Seattle, Wash. Life-preserver	855,180	May 28	5676	1180	128	1547
John, Edgar E. (See John, William S., assignor.)						
John Stephenson Company. (See Kling, Peter M., assignor.)						
John, William S., Humansville, Mo., assignor of one-half to E. E. John, Billings, Mont. Hinge	854,580	May 21	4431	920	128	1201
Johns, Albert K., and W. Lansing, Cedar Rapids, Iowa. Poultry-fountain	854,647	May 21	4548	949	128	1230
Johnson, Albin, and C. A. Gustafson, Moline, Ill. Horse-guiding belt	853,596	May 14	2446	509	128	660
Johnson, Charles, Auburn, N. Y. Manure-spreader	853,587	May 14	2446	509–10	128	660
Johnson, Charles E., Cleveland, Ohio. Envelop-feeder	854,826	May 28	4938	1026	128	1360
Johnson, Charles J., Lanham, assignor of one-half to J. J. Lumpkin, Meridian, Tex. Traction gang-plow	854,423	May 21	4137	857	128	1129
Johnson, Edward, Milwaukee, Wis. Thumb-notch indexing-machine	853,087	May 7	1448	303	128	367
Johnson, George A., Paterson, assignor to B. A. Hegeman, Jr., North Plainfield, N. J. Car-truck bolster	854,360	May 21	4014	830	128	1099
Johnson, George P., Story City, Iowa. Veterinary appliance	855,007	May 28	5307	1103	128	1453
Johnson, Guy R., Clarksville, Tenn. Blast-furnace-charging apparatus	853,016	May 7	1330	277–8	128	338
Johnson, Henry E., Yeadon, Pa. Fan	854,359	May 21	4013	830	128	1099
Johnson, John E., Seattle, Wash. Snap-hook	854,293	May 21	3901	804	128	1069
Johnson, Manander M., Clay Center, Nebr. Regulator-support for incubators	854,648	May 21	4549	950	128	1230
Johnson, Thomas C., assignor to Winchester Repeating Arms Co., New Haven, Conn. Take-down gun	855,181	May 28	5677	1181	128	1547
Johnson, Warren S., Milwaukee, Wis. Steam-generator	854,649	May 21	4550	950	128	1231
Johnson, Warren S., Milwaukee, Wis. Condenser	854,650	May 21	4553	950	128	1231
Johnston, Alva S., Belgrade, Mont. Hay and grain loader	853,797	May 14	2876	591	128	772

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Johnston, Edward H., Philadelphia, Pa. Bridge and railway-rail lock and signal	852,959	May 7	1202	248	128	306
Johnston, James, Medford, Mass. Box-cover opener	854,893	May 28	5098	1059	128	1402
Johnston, William G., Woodbury, N. J., assignor, by mesne assignments, to American Paper Goods Company, Kensington, Conn. Mechanism for feeding sheet material	854,040	May 21	3397	701	128	938
Jolly, Asa, Seward, Kans. Disk cultivator	853,798	May 14	2880	592	128	773
Jones, Albert E., Salem, Mass. Stone-cutting machine	852,502	May 7	383	69	128	101
Jones, Albert M., Hagerstown, Md. Railway-crossover	852,723	May 7	704	137	128	185
Jones, Belden D., Chicago, Ill. Car-door hanger	855,182	May 28	5679	1181	128	1548
Jones, Hugh L., Ione, Ark. Gate	853,088	May 7	1451	303–4	128	367
Jones, Jesse E., West Middleton, Ind. Stable appliance	853,174	May 7	1597	332	128	404
Jones, Samuel S. (See Searles and Jones.)						
Jones, Thomas, Acme, Tex. Cement	853,175	May 7	1598	.....	128	404
Jones, Walter A., Coolidge, Ga. Grading-machine for building and repairing roads	854,894	May 28	5099	1059–60	128	1402
Jones, Walter C., and G. E. Perry; said Perry assignor to Perry Time Stamp Company, Chicago, Ill. Time-stamp	852,563	May 7	385	70	128	101
Jones, William, Minneapolis, Minn. Stay-bolt clutch	854,169	May 21	3663	757	128	1004
Jones, William, assignor to Jones-Julia Mfg. Co., New York, N. Y. Apparatus for analyzing gases	854,696	May 21	4660	971	128	1258
Jones-Julia Mfg. Co. (See Jones, William, assignor.)						
Jonte, Peter N., Cincinnati, Ohio. Crank mechanism for steam and other engines	852,960	May 7	1203	248–9	128	306
Jordan, Charles. (See Jacobi, Karl, assignor.)						
Jordan, Oswald F., Chicago, Ill. Railway-spreader	852,880	May 7	1045	215–17	128	266
Jose, Charles A., Argyle, Minn. Wagon-loader	854,651	May 21	4554	951	128	1232
Jung, John J. (See Boardman, Frederick E., assignor.)						
Junghaus, Erhard, Sr. (See Holzwarth, Hans, assignor.)						
Juruick, Maximilian, New York, N. Y. Self-winding electric clock	855,240	May 28	5803	1200	128	1580
Just, Alexander, and F. Hanaman, Budapest, assignors to Egyesült Izzólampa és Villamossági Részvény Társaság, Új-Pest, Austria-Hungary. Manufacture of incandescent bodies for electric lamps	855,060	May 28	5419	.....	128	1484
Juszczeski, John, Chicago, Ill. Piano-zither	855,059	May 28	5417	1125	128	1483
Kahl, Arthur R., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Telephone-exchange system	853,304	May 14	1912	397	128	522
Kahle, William, Boston, Mass. Machine for attaching fabric to boxes	853,883	May 14	3074	631	128	819
Kaisling, William, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Circuit-changing apparatus	853,305	May 14	1919	397	128	525
Kalamazoo Tank & Silo Company. (See Youmans, George P., assignor.)						
Kammerich, George H. (See Bowles and Kammerich.)						
Kamp, Frank F., Jr., and R. K. Gundy, Lawrence, Pa. Metallic tie and rail-fastener	854,504	May 21	4286	887	128	1166
Kando, Coloman de, Budapest, Austria-Hungary. Electric machine	853,550	May 14	2374	495	128	641
Kane, John H. (See Damman, Henry H., assignor.)						
Karrer, Armand, St. Joseph, Mo. Thread-cutter	853,979	May 21	3279	674	128	910
Kaspar, Henry, Lynch, Nebr. Double-pointed safety-pin	853,799	May 14	2881	592	128	773
Kaufman, Everett G., Yonkers, N. Y., assignor of three-fourths to J. H. Clauss, Toledo, Ohio, U. J. Ulery, Yonkers, N. Y., and H. Clauss, Fremont, Ohio. Razor-stropping machine	853,800	May 14	2882	592	128	774
Kaufmann, Gustav, St. Johann-on-the-Saar, Germany. Illustrated guide	853,089	May 7	1452	304	128	368
Kauntze, Edward, Hanford, Cal. Door-releasing mechanism	853,588	May 14	2448	510	128	661
Kaylor, Jacob F. (See Kaylor, John, assignor.)						
Kaylor, John, Decatur, assignor to J. F. Kaylor, Tazewell, Ill. Metallic railway-tie	853,176	May 7	1601	332	128	404
Kazmeier, August, Ulm, Germany. Perambulator	853,980	May 21	3280	674	128	910
Keating, H., *et al.* (See Norstrom, Nils E., assignor.)						
Keating, J. H. (See Stassart, Joseph M., assignor.)						
Keck, Peter S., Allentown, Pa. Sand-box	855,183	May 28	5680	1181	128	1548
Keefer-Heart Iron and Steel Company. (See Heart, Charles, assignor.)						
Keeler, Herbert E., New York, N. Y. Stay-roller for car-doors and other purposes	853,551	May 14	2378	495	128	643
Keen, Eliot, New York, N. Y. Device for producing moving-picture effects	853,699	May 14	2683	553	128	724
Keeports, David B., Philadelphia, Pa. Sander	852,564	May 7	389	70	128	103
Keiper, Henry B., Lancaster, Pa. Ball-bearing	854,505	May 21	4287	887	128	1166
Keith, John D., and W. E. Faulkner, Santa Anna, Tex. Cold-iron straightener	853,513	May 14	2308	478	128	626
Keller, David A. (See Brady, James H., assignor.)						
Kelley, Irving W. (See Voshardt, Herman F., assignor.)						
Kellogg, Charles H., Buffalo, N. Y. Separator for girders	852,665	May 7	603	114	128	157
Kellogg, Homer G., Chicago, Ill. Coin-controlled apparatus	855,008	May 28	5308	1103	128	1454
Kellogg Switchboard and Supply Company. (See Dean, William W., assignor.)						
Kellogg Switchboard and Supply Company. (See Webster, Harry G., assignor.)						
Kelly, George A., Longview, Tex. Rotary engine	855,009	May 28	5311	1103–4	128	1455
Kelly, George J. (See Horspool, Francis L., assignor.)						
Kelly, John A., New York, N. Y. Wet-proof footwear	854,361	May 21	4015	830	128	1100
Kelly, John F., Pittsfield, Mass. Generation and distribution of energy	854,362	May 21	4017	831	128	1100
Kelly, Mary A., New York, N. Y. Device for turning bottoms of skirts	854,294	May 21	3902	804	128	1069
Kemlweld Can Company. (See Harbeck, Jervis R., assignor.)						
Kemmerling, Warren, Hitchcock, Tex. Window-screen	855,250	May 28	5805	1210	128	1580
Kemp, Jabez P., Baltimore, Md., assignor to Fairbanks Company, New York, N. Y. Hoist for oyster-dredges	855,184	May 28	5682	1182	128	1548
Kemp, Solomon M., Baltimore, Md. Chimney	854,885	May 28	5101	1060	128	1403
Kendis, Michael B., Omaha, Nebr. Bass-drum and cymbal beater	852,881	May 7	1054	217	128	269
Kenna, Michael P., Dubuque, Iowa. Envelop addressing and printing machine	854,041	May 21	3403	701–2	128	939
Kennedy, David S., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	853,801	May 14	2884	592–3	128	774
Kennedy, Frank, Detroit, Mich. Neuroptometer	854,093	May 21	3520	726	128	970
Kennedy, J. Fred. (See Martin, Charles B., assignor.)						
Kennedy, Martin, assignor of one-half to W. Renshaw, Chicago, Ill. Draft-rigging	854,042	May 21	3405	702	128	940
Kent, Arthur C., assignor to H. M. Kent, Janesville, Wis. Potato-eye remover	853,306	May 14	1923	398	128	526
Kent, H. M. (See Kent, Arthur C., assignor.)						
Kenyon, Otis A., New York, N. Y. Electric tool	853,552	May 14	2379	495	128	643
Kepplinger, George J., Dwight, Ill. Planing and sandpapering machine for floors	854,950	May 28	5186	1081	128	1424
Kerr, Charles V., assignor to Kerr Turbine Company, Wellsville, N. Y. Speed-governor	852,882	May 7	1055	217	128	270
Kerr, James E., Philadelphia, Pa. Woven fabric	854,220	May 21	3766	779	128	1033
Kerr Turbine Company. (See Kerr, Charles V., assignor.)						
Kerrigan, Philip, assignor to himself and E. S. Averill, Chicago, Ill. Truck	855,405	May 28	6066	1268	128	1645
Ketchledge, James T., Tunkhannock, Pa. Adjustable tongue	852,607	May 7	468	87	128	124
Ketley, Frank. (See Hogbin and Ketley.)						
Ketterer, Max, Springfield, Ohio. Attachment for lawn-mowers	854,424	May 21	4139	857–8	128	1129
Keyes, Frederick S., Warren, Mass. Transmitting mechanism	852,883	May 7	1059	218	128	271
Keyes, James A., New York, N. Y., assignor to United Wrapping Machine Company, Chicago, Ill. Machine for wrapping articles	852,961	May 7	1209	249–50	128	307
Keyes, John A., *et al.* (See Keyes, William W. W., assignor.)						
Keyes, William W. W., assignor of one-half to J. A. Keyes, J. F. Merker, and J. Fall, Alexandria, Ind. Machine for making sheet or plate glass	855,185	May 28	5684	1182–3	128	154

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Keyser, William H., Wills Point, Tex. Building construction	853,902	May 14	2886	593	128	774
Keystone Driller Co. (See Downie, Robert M., assignor.)						
Keystone Telephone Company. (See Stakes, David F., assignor.)						
Kidd, Andrew, Jr. Schenectady, N. Y., assignor to General Electric Company. Motor-control device	854,743	May 28	4761	989	128	1314
Kidd, William C. (See Snow and Kidd.)						
Kiesig, Bernhard R., assignor to American Music Company, Chicago, Ill. Key-action for musical instruments	853,884	May 14	3078	632	128	820
Kiesig, Bernhard R., assignor to American Music Company, Chicago, Ill. Key-action for musical instruments	853,885	May 14	3080	632	128	820
Klewicz, John, Hyde Park, Mass., assignor to Wheeler Manufacturing Company. Buttonhole-sewing machine	855,186	May 28	5688	1183–4	128	1550
Killen, Edward B., London, England. Rail-joint	853,090	May 7	1452	304	128	368
Kimber, Abraham, assignor of three-fifths to E. R. Treat, H. E. Drew, and F. C. Lory, Indianapolis, Ind. Mail catching and discharging apparatus	852,792	May 7	856	173	128	219
Kimche, Fisel, Detroit, Mich. Pipe-fitting	853,413	May 14	2103	439	128	571
Kinander, Peter, Minneapolis, Minn. Piston-valve	853,803	May 14	2888	593	128	775
Kinberg, Eric G., New York, N. Y. Cover for journal-boxes	853,460	May 14	2192	456	128	596
Kind, Maurice, *et al.* (See Loewenstein, Maxmilian, assignor.)						
Kindig, Samuel C., assignor to F. Henkelman, Baltimore, Md. Spike	855,318	May 28	5917	1234	128	1608
King, Henry R., Hinsdale, assignor to Western Electric Company, Chicago, Ill. Dynamo-electric machine with commutating-poles	854,425	May 21	4141	858	128	1130
King, Howard G., Denver, Colo. Rotary screen, ore sizer, and sampler	854,744	May 28	4764	989–90	128	1315
King, John, Oakland, Me. Combined fork and spoon	854,745	May 28	4768	990	128	1316
King, Michael, Wickham, and J. E. James, Islington, New South Wales, Australia. Coin-slot meter and machine	855,061	May 28	5420	1125	128	1484
King, Roswell B. (See McVoy and King.)						
King, Walter H. G., Denver, Colo. Safety-razor	854,506	May 21	4290	887	128	1167
Kingsbury, Frederick C. (See Orbison, Kingsbury, and Pray.)						
Kingsley, George E., Toronto, Ontario, Canada. Apparatus for the treatment of sulfids and other ores	852,510	May 7	265	49	128	73
Kinkead, James I., Redding, Cal. Device for transmitting power	853,553	May 14	2382	496	128	644
Kinney, William J., Seaforth, Ontario, Canada. Wind-wheel	854,652	May 21	4556	951	128	1232
Kinsler, George B., assignor of one-half to J. A. Bennett, Hartford, Conn. Shaft-coupling	853,307	May 14	1924	398	128	526
Kintner, Samuel M. (See Skinner and Kintner.)						
Kintner, Samuel M., Pittsburg, Pa., and W. W. Hanks, Durham, N. C., assignors to Westinghouse Electric & Manufacturing Company. Separating liquids	854,295	May 21	3903	805	128	1070
Kirby, Robert C., assignor of one-half to R. H. Turner, Rockford, Ill. Buckle	855,251	May 28	5806	1210	128	1580
Kirk, Wallace R., Kansas City, Mo. Drop-switch railway-siding	852,565	May 7	391	71–2	128	103
Kirkpatrick, Alexander K. (See Lamb and Kirkpatrick.)						
Kirkpatrick, Wallace, Savage, Minn. Boat	855,062	May 28	5422	1125	128	1485
Kiser, Sebastian C. (See Smith, Joseph E., assignor.)						
Kistler, Florentine R., Youngstown, Ohio. Game apparatus	854,951	May 28	5189	1081	128	1425
Klaiber, Maximilian, New York, N. Y., assignor, by mesne assignments, to Prosch Photographic Shutter and Optical Company. Photographic shutter	854,221	May 21	3768	780	128	1033
Klatzl, John C. (See Robertson, James H., assignor.)						
Klein, Charles B., Denver, Colo. Shears	854,952	May 28	5192	1082	128	1426
Klein, Charles H., Chaska, Minn. Brick-conveyer	853,365	May 14	2027	419–20	128	552
Klein, Charles J., assignor to R. A. Schoenberg, New York, N. Y. Electrical conductor and armor therefor	854,094	May 21	3522	727	128	970
Klein, Rudolph, assignor to Bausch & Lomb Optical Company, Rochester, N. Y. Photographic shutter	852,962	May 7	1214	250	128	309
Kling, Peter M., assignor to John Stephenson Company, Elizabeth, N. J. Walk-over car-seat	853,245	May 14	1769	368	128	482
Klinge, William, Washington, D. C. Toy	853,091	May 7	1454	304–5	128	368
Klipfel, Robert, Larimore, N. D. Pencil-holder and point-protector	854,507	May 21	4291	888	128	1167
Kloetzer, Otto F., and W. A. Borders, assignors of one-third to C. G. Gardiner, Washington, Ind. Safety device for railways	853,896	May 14	3082	632–3	128	821
Klose, Adolph, Berlin, Germany. Engine	854,896	May 28	5103	1060–1	128	403
Knapp, Albert M., Portland, Oreg. Car-coupling	853,017	May 7	1332	278	128	338
Knapp, David R., Philadelphia, Pa. Device for electrically operating bulkhead-doors	852,724	May 7	706	137	128	186
Knapp, George W., Baltimore, Md., assignor to National Enameling and Stamping Company. Flue-hole stopper	853,177	May 7	1602	333	128	405
Knapp, George W., Stoneham, assignor to Smith and Anthony Company, Boston, Mass. Water-closet bowl	854,653	May 21	4557	952	128	232
Knapp, J. Herbert. (See Murray, William M., assignor.)						
Knapp, Joseph P., Bellport, N. Y. Mechanism for separating sheets	854,222	May 21	3775	780–1	128	1035
Knauf, Paul W. (See Fischer and Knauf.)						
Kneppler, Charles M., New York, assignor to L. E. Kneppler, Brooklyn, N. Y. Apparatus for graining metallic plates	854,953	May 28	5193	1082	128	1426
Kneppler, Louis E. (See Kneppler, Charles M., assignor.)						
Kneuper, George, *et al.* (See Kneuper, George M., assignor.)						
Kneuper, George M., New York, N. Y., assignor of two-thirds to G. and K. Kneuper. Filtering material	853,981	May 21	3280	674–5	128	911
Kneuper, George M., New York, N. Y., assignor of two-thirds to G. and K. Kneuper. Making filtering material	854,043	May 21	3407	702–3	128	940
Kneuper, Kate, *et al.* (See Kneuper, George M., assignor.)						
Knight, Alfred J. (See Thomas, Jesse B., assignor.)						
Knoblock, James B. (See Bolleau, James W., assignor.)						
Knoth, Peter S., New York, N. Y. Shield for heating-coils	853,092	May 7	1456	305	128	368
Knothe, Bruno, Dömitz, Germany. Fastening-hook	854,746	May 28	4769	990	128	1317
Knott, Louie E., assignor to L. E. Knott Apparatus Company, Boston, Mass. Apparatus for determining the strength of cords, &c	852,963	May 7	1218	251	128	310
Knowles, Joseph, assignor of one-half to S. Fourtner, Edmonds, Wash. Wrench	853,414	May 14	2105	439	128	572
Knutson, John, Denver, Colo. Station-indicator	855,319	May 28	5917	1235	128	1608
Koegel, Charles, Holyoke, Mass. Slitting-cutter for paper-machines	852,964	May 7	1120	251	128	311
Koelner, John, Milwaukee, Wis. Apparatus for mixing and kneading dough	852,965	May 7	1222	251	128	311
Koenig, Joseph, Two Rivers, Wis. Fish-net float	855,063	May 28	5425	1126	128	1485
Koepp, Julius H. (See Zastrow and Koepp.)						
Kohl, Max, Chemnitz, Germany. Air-pump	854,954	May 28	5195	1082	128	1426
Kohler, Walter W., Lexington, Nebr. Game apparatus	854,581	May 21	4432	931	128	1201
Koob, Adam J., Cedar Rapids, Iowa. Ditching-machine	853,804	May 14	2890	594–5	128	775
Koontz, J. W., *et al.* (See Connell, William J., assignor.)						
Kost, Mary B., administratrix. (See Kost, William J.)						
Kost, William A. (See Ott and Kost.)						
Kost, William J., deceased; M. B. Kost, administratrix, Evansville, Ind. Rail-tie and fastening	853,554	May 14	2383	496	128	644
Kotraschek, Mathias, New York, N. Y. Snow shovel and wagon	853,178	May 7	1603	333	128	405

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Kraemer, Thomas, and H. Sheble, assignors to Hawthorne and Sheble Manufacturing Company, Philadelphia, Pa. Talking-machine	852,725	May 7	708	137–8	128	186
Kraft, Henry P. (See Schweinert and Kraft.)						
Kraft, Henry W., Arcadia, Mich. Weather-strip	853,982	May 21	3282	675	128	911
Kramer, Andrew A., Kansas City, Mo. Dipping-tank	854,223	May 21	3785	781	128	1039
Kramer, Charles H., Allegheny, Pa. Vehicle	855,064	May 28	5426	1126	128	1486
Krantz, Hubert, New York, N. Y. Construction for panel-boards and the like	854,654	May 21	4558	952	128	1232
Kreisle, Arthur M. E., *et al.* (See Luthy, Joseph O., assignor.)						
Kreisle, William C., *et al.* (See Luthy, Joseph O., assignor.)						
Krell, Emil F., Detroit, Mich. Vehicle-wheel	854,655	May 21	4560	952	128	1233
Kremer, Franklin W. (See Thomson and Kremer.)						
Krenrich, William, Bloomfield, N. J., and F. Hammond, Essex, Conn. Holder for graphophone-cylinders	853,805	May 14	2894	595	128	776
Kroenke, Alfred J., Lakewood, assignor to F. Hohlfelder Company, Cleveland, Ohio. Corner-lock for metallic bedsteads	852,726	May 7	710	138	128	187
Krupp, Fried. (See Mothes, Georg, assignor.)						
Krusius, Edward, New York, N. Y. Safety-razor	855,252	May 28	5807	1210	128	1580
Kuderer, Charles, Allegheny, Pa. Ventilating apparatus	854,582	May 21	4433	921	128	1202
Kuersten, Hugo R., assignor of two-thirds to G. M. Hecht and C. F. Brod, Chicago, Ill. Sausage-linking machine	854,044	May 21	3408	703–4	128	941
Kügelgen, Franz von, and G. O. Seward, Holcombs Rock, Va., assignors, by mesne assignments, to Tin Products Company. Detinning	853,461	May 14	2194	.....	128	596
Kuhne, Ernest, New York, N. Y. Suspending device for electric-arc lamps and similar objects	854,827	May 28	4939	1026	128	1360
Kujawa, Friedrich L. (See Domagen and Kujawa.)						
Kutnow Bros. (See Powers, Timothy B., assignor.)						
Kutz, Louis J., assignor to Fanner Manufacturing Company, Cleveland, Ohio. Corner-fastening for beds	853,927	May 14	3167	649	128	843
L. E. Knott Apparatus Company. (See Knott, Louie E., assignor.)						
La Cour, Jens L. (See Arnold and La Cour.)						
La Paugh, Louie T., Utica, N. Y. Outlet-box	854,045	May 21	3412	704	128	942
La Paugh, Louie T., Utica, N. Y. Outlet-box	854,046	May 21	3414	705	128	942
La Tremouille, David and H. G., Oswego, N. Y. Poison-bottle	853,887	May 14	3085	633	128	821
La Tremouille, Huldege G. (See La Tremouille, David and H. G.)						
Laas & Sponenburg Co. (See Sponenburg, Hiram H., assignor.)						
Labonty, Napoleon, Pawtucket, R. I. Dyeing-machine	853,700	May 14	2685	553	128	724
Lackmann, Raymond A., Portland, Oreg. Mercury or quicksilver still	853,701	May 14	2687	554	128	725
Ladd, William C., Mendota, Ill. Skirt-supporter	852,511	May 7	268	49	128	74
Ladish, Herman C., Milwaukee, Wis. Fish-hook	852,793	May 7	858	173	128	219
Lallemand, Albertina L. (See Lallemand, Frederick A., assignor.)						
Lallemand, Frederick A., assignor to A. L. Lallemand, Montreal, Quebec, Canada. Shortening composition	852,966	May 7	1223	.....	128	311
Lally, John, Waltham, Mass. Wall structure	853,702	May 14	2689	554	128	726
Lamb, Henry J., London, and A. K. Kirkpatrick, Kingston, Ontario, Canada. Drilling or boring machine	853,018	May 7	1333	278	128	338
Lamb, Richard, New York, N. Y. Extraction of metals from their ores	852,438	May 7	54	11	128	17
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Armature for dynamo-electric machines	853,806	May 14	2895	595–6	128	776
Lampe, Henry C., Jr., St. Louis, Mo. Toy savings-bank	854,807	May 28	5104	1062	128	1404
Lamping, John F., Cincinnati, Ohio. Stop-cock	855,406	May 28	6068	1268	128	1646
Lamprey, Louise, New York, N. Y. Toy novelty	853,246	May 14	1770	368	128	482
Lamson Consolidated Store Service Company. (See Taisey, Fred R., assignor.)	854,224	May 21	3786	781	128	1039
Lamson, John D. R., Toledo, Ohio. Motor-vehicle	852,884	May 7	1061	218	128	271
Lamson, John D. R., Toledo, Ohio. Pencil	853,983	May 21	3283	675	128	911
Landis, Abraham B., Waynesboro, Pa. Eccentric work-holder for grinding-machines	855,320	May 28	5921	1235–6	128	1609
Landry, Joseph H., Appleton, Wis. Core for concrete walls	853,640	May 14	2562	531	128	690
Lane, Edwin H., Kansas City, Mo. Pie-pan	852,566	May 7	395	72	128	104
Lang, George A., Omaha, Nebr. Pool and billiard table cushion-rail	854,225	May 21	3788	781	128	1039
Langley, Joseph V. (See Smith and Langley.)						
Lanham, Edwin F. (See Baggett, Robert A., assignor.)						
Lanning, Charles D., Boston, Mass. Magnet-box and armature of magnets contained therein	854,363	May 21	4020	831	128	1100
Lansing, William. (See Johns and Lansing.)						
Lapalme, John, Central Falls, R. I. Loom	853,641	May 14	2563	531	128	691
Lapham, Herbert L., Wilmington township, Houston county, Minn. Spark-arrester	852,727	May 7	711	138	128	187
Larivee, Joseph, New Haven, Conn. Ventilating means for roundhouses, shops, stations, &c	852,794	May 7	860	174	128	220
Larsen, Andrii, Chicago, Ill. Hoof-pad	855,188	May 28	5683	1185	128	1550
Larsen, Christian, Chicago, Ill. Plumb-level	852,512	May 7	269	49	128	74
Larsen, James L., *et al.* (See Hinck, Jess F., assignor.)						
Larsen, Oluf W., *et al.* (See Hinck, Jess F., assignor.)						
Latimer, Frank, assignor of one-half to Taylor Iron & Steel Company, High Bridge, N. J. Car-wheel	854,828	May 28	4941	1027	128	1360
Latour, Marius C. A., Paris, France, assignor to General Electric Company. Alternating-current motor	855,010	May 28	5313	1104	128	1456
Latrobe Steel and Coupler Company. (See Warner, Edward O., assignor.)						
Lattin, Marshall, Lockwood, Ohio. Swinging stanchion for cattle	852,439	May 7	57	11	128	18
Latzlsperger, T. (See Glasel, Charles J., assignor.)						
Laube, Godfried, Santa Monica, assignor of one-half to J. C. Miller, Los Angeles, Cal. Door-holder	852,513	May 7	270	50	128	74
Laube, Godfried, Santa Monica, assignor of one-half to J. C. Miller, Los Angeles, Cal. Umbrella-stand	852,567	May 7	396	72	128	105
Laube, Godfried, assignor to M. D. Feather and H. R. Laube, Santa Monica, Cal. Combined pen and pencil holder	852,514	May 7	271	50	128	74
Laube, Hattie R., *et al.* (See Laube, Godfried, assignor.)						
Lauderdale, Chapin F., Milwaukee, Wis. Tooth-crown model	853,984	May 21	3285	676	128	912
Lauer, Frank E. (See Dove-Smith and Lauer.)						
Lautenschlager, William F., Cincinnati, Ohio. Motor-drive	853,703	May 14	2691	554–5	128	726
Laval, Carl G. P. de, Stockholm, Sweden, assignor to Société Anonyme Métallurgique Procédés de Laval, Frankfort-on-the-Main, Germany. Reducing zinc ores	852,440	May 7	59	12	128	18
Le Blanc, Arthur, Worcester, Mass. Headlight for vehicles	853,247	May 14	1773	368	128	482
Leake, Richard C., assignor of one-half to D. J. Strickland, Auburn, N. Y. System for electrical distribution	853,888	May 14	3086	633	128	822
Lear, Arthur F., assignor to Underwood Typewriter Company, New York, N. Y. Typewriting machine	855,011	May 28	5316	1104	128	1456
Lear, Arthur F., assignor to Underwood Typewriter Company, New York, N. Y. Typewriting machine	855,012	May 28	5318	1105	128	1457
Leary, William, New Bedford, Mass. Combined parallel rocker and picking-stick check for looms	852,515	May 7	272	50	128	75

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Leatherland, Walter I. (See Pulman and Leatherland.)						
Leathers, Allison H. (See Malugen, Levi, assignor.)						
Leavenworth, Alson E., New Haven, Conn. Automatic ventilation-regulator for incubators	855,107	May 28	5540	1151	128	1512
Leber, George J., Cleveland, Ohio. Shut-off valve	854,047	May 21	3415	705	128	942
Lebrun, Louis, Spa, Belgium. Type setting and distributing machine	854,095	May 21	3524	727	128	970
Leddell, William A. (See Leddell William J. and W. A.)						
Leddell, William J. and W. A., Summit, N. J. Rotary pump	852,568	May 7	397	72–3	128	105
Lee, John D., Santa Barbara, Cal. Fastening device for ladies' collars	854,583	May 21	4435	922	128	1202
Lee, William, Griffith, Tenn. Railway-track construction	853,308	May 14	1925	398	128	526
Lee, William S., Jr., Charlotte, N. C. Insulator-pin	855,253	May 28	5809	1210	128	1581
Leeds Stamping Company. (See Morgan, John H., assignor.)						
Leeming, Frank, Bradford, and C. Hudson, Ingrow, near Keighley, assignors to G. Hattersley and Sons Limited, Keighley, England. Mechanical movement	853,514	May 14	2310	478–9	128	627
Leetham, Sidney, York, assignor to Ozonized Oxygen Company Limited, Manchester, England. Producing a bleaching, sterilizing, or conditioning agent	854,508	May 21	4293	888	128	1168
Lefler, Allan G., Belleville, Mich. Clamp for stretchers for stretching fences	852,842	May 7	955	196	128	243
Lehner, Friedrich, Zurich, Switzerland. Manufacture of artificial hemp fiber	853,093	May 7	1457	.....	128	369
Lehr, Edwin, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Potential-regulator	854,829	May 28	4942	1027–8	128	1361
Leichter, Edward, assignor of one-half to J. C. Campbell, Nevada City, Cal. Rock-drill	853,555	May 14	2384	496	128	645
Leisenring, Henry G., Wayne, Nebr. Acetylene-gas generator	853,807	May 14	2897	596	128	776
Leiser, Charles W., Salt Lake City, Utah. Telegraph-transmitter	853,556	May 14	2386	496	128	645
Leitch, Samuel G., Somerville, Mass., assignor to Carter, Rice & Company, Incorporated. Stay-strip	853,094	May 7	1458	305	128	369
Lemen, Clarence A., Detroit, Mich. Low-water alarm	853,309	May 14	1926	398	128	527
Lemp, Hermann, Lynn, Mass., assignor to General Electric Company. Automobile control	852,728	May 7	712	139	128	187
Lemp, Hermann, Lynn, Mass., assignor to General Electric Company. Valve mechanism for engines	853,095	May 7	1460	305	128	369
Lemp, Hermann, Lynn, Mass., assignor, by mesne assignments, to General Electric Company. Burner-regulator	853,808	May 14	2899	596	128	777
Lemp, Hermann, Lynn, Mass., assignor to General Electric Company. Fuel-regulation system for steam-generators	854,048	May 21	3417	705	128	943
Lempert, Moses. (See Czerny, Josef, assignor.)						
Leonard, John N., trustee. (See Mitchell, Albert W., assignor.)						
Leonard-Stuart, Charles, New York, N. Y. Roller-mount	855,254	May 28	5810	1211	128	1581
Leonard, Thomas, assignor of one-half to A. H. Isbell, Champaign, Ill. Grain-car door	854,049	May 21	3421	706	128	944
Lesar, Moses. (See Loeschner and Lesar.)						
Leske, Gustav, Berlin, Germany. Device for disengagable coupling of two objects	854,656	May 21	4561	953	128	1233
Lester, James S., Atlanta, Ga. Hoe	853,179	May 7	1604	334	128	405
Levering, Richmond, New York, N. Y. Gas-engine	854,096	May 21	3526	727	128	971
Levy, Henry B., New York, N. Y. Fountain-pen	854,226	May 21	3789	782	128	1040
Lewicki, Taddäus, Warsaw, Russia, assignor to C. Hannig, Frankenstein, Silesia, Germany. Clarifier	853,704	May 14	2697	555	128	728
Lewis Blindstitch Machine Company. (See Lewis, John G., assignor.)						
Lewis, Frank M., Brighton, England. Electromotor of the induction type	854,296	May 21	3904	805	128	1070
Lewis, Henry H., Louisville, Ky. Depilatory instrument	853,096	May 7	1463	306	128	370
Lewis, John G., assignor to Lewis Blindstitch Machine Company, St. Louis, Mo. Sewing-machine	852,967	May 7	1224	251–2	128	311
Lewis, Lynn R. (See Main, Marvin D., assignor.)						
Lichtenstein, Morris. (See Rosenthal, Julius, assignor.)						
Lidgerwood Manufacturing Company. (See Miller and Wachter, assignors.)						
Liebeskind, Charles K., New York, N. Y. Automobile-cap	853,809	May 14	2902	597	128	778
Liebhart, Jacob F., Toluca, Cal. Combined hay buck and stacker	853,557	May 14	2388	497	128	645
Limacher, Pius F., Los Angeles, Cal. Device for cutting moldings	854,297	May 21	3906	806	128	1070
Limbacher, Jacob, Newark, N. J. Bag	852,729	May 7	714	139	128	188
Lincoln, Robert E., Jersey City, N. J. Speed-changing gearing	854,747	May 28	4770	991	128	1317
Lindenberg, Frank H., and C. B. Delany, assignors to Columbus Brass Company, Columbus, Ohio. Flush-tank	853,705	May 14	2699	556	128	728
Lindenschmidt, Joseph B., Evansville, Ind. Iron-fence construction	853,810	May 14	2904	597	128	778
Lindholm, Oscar E., Roy, N. Mex. Ter. Swivel rope-socket for well-drills	853,706	May 14	2701	556	128	728
Lindsay, Sam F. (See Sanborn, Hamilton, assignor.)						
Lindsey, W. B. (See Wilson, Harry, assignor.)						
Linga, Torbjörn, Thor, Iowa. Ditching-machine	853,985	May 21	3286	676	128	912
Linker, Moses, New York, N. Y. Bottle-stopper	853,097	May 7	1465	306	128	371
Lippert, Samuel, Cleveland, Ohio. Well pumping and pulling device	853,180	May 7	1605	334	128	405
Lippincott, Fisher H., assignor to Lippincott Pencil Company, Philadelphia, Pa. Pencil	853,098	May 7	1466	306	128	371
Lippincott Pencil Company. (See Lippincott, Fisher H., assignor.)						
Lipschutz, Arthur, Chicago, Ill. Side frame for car-trucks	852,968	May 7	1227	252	128	312
Littlefield, C. W. (See Osborn, Winfield S., assignor.)						
Liverett, Robert N., and J. D. Hood, Boaz, Ala.; said Liverett assignor of one-half to said Hood. Self-loading dump-cart	853,181	May 7	1607	335	128	406
Livergood, Gerald R., St. Joseph, Mo. Trolley circuit-former	852,969	May 7	1229	253	128	313
Livermore, Ephraim W., Bellingham, Wash. Exhibiting-reel for mutoscopes	853,811	May 14	2906	597–8	128	779
Livingstone, John, Montreal, Quebec, Canada. Fire-box for steam-boiler furnaces	853,099	May 7	1469	306–7	128	372
Ljungström, Birger, assignor to Aktiebolaget Separator, Stockholm, Sweden. Centrifugal machine	852,666	May 7	604	115	128	158
Ljungström, Birger, assignor to Aktiebolaget Separator, Stockholm, Sweden. Centrifugal liquid-separator	855,189	May 28	5693	1185	128	1551
Lloyd, Samuel, Birmingham, and A. R. Grossmith, Corby, near Kettering, England. Machinery for conveying earth, &c	852,885	May 7	1063	218–19	128	271
Lo Casto, Tony, Chicago, Ill. Music-leaf turner	853,366	May 14	2029	420	128	553
Locke, Fred M., Victor, N. Y. Insulator	852,730	May 7	716	140	128	188
Lockhart, Charles C., Brookfield, Nova Scotia, Canada. Mining-auger	855,108	May 28	5542	1151	128	1512
Lockwood, George S., Saginaw, Mich. Combined lantern or lamp post for use on small water-craft	853,310	May 14	1927	399	128	527
Lockwood, Stephen T., Buffalo, N. Y. Refining lard and recovering waste lard from spent fullers' earth	852,441	May 7	60	12	128	18
Lockwood, Stephen T., Buffalo, N. Y. Refining lard and recovering waste lard from spent fullers' earth	852,442	May 7	62	12	128	19
Loeschner, Henry F., and M. Lesar, Tamms, Ill. Car-jack	855,255	May 28	5811	1211	128	1582
Loetzer, Christian E., Sayre, Pa. Tamper-proof water-meter	855,190	May 28	5695	1185	128	1551
Loewenstein, Maxmilian, assignor of two-thirds to J. Stork, Brussels, Belgium, and M. Kind, New York, N. Y. Carburetor	855,407	May 28	6070	1269	128	1646
Logan, Thomas E., Sault Ste. Marie, Mich. Bath-tub trap	855,109	May 28	5542	1151	128	1513
Lohner, John G., Sparks, Okla. Ter. Brake-lever	853,248	May 14	1774	368	128	483
Löhrs, Frederick H., Elizabeth, N. J. Fixture for lamp-chimneys	853,462	May 14	2195	456	128	596
Lomb, Henry C., assignor to Bausch and Lomb Optical Company, Rochester, N. Y. Eyepiece	853,812	May 14	2908	598	128	779

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Lombard, Alvin O., Waterville, Me. Log-hauler	854,364	May 21	4020	832	128	1101
Long, Clark, Paha, Wash. Cattle-guard	853,100	May 7	1472	307	128	372
Long, Jacob, and B. F. Boyd, Bellaire, Ohio. Switch-operating mechanism	852,886	May 7	1064	219	128	272
Lorain Steel Company. (See Brown, William M., assignor.)						
Lorain Steel Company. (See Burns, Nicholas, assignor.)						
Lorain Steel Company. (See Miller, Howard E., assignor.)						
Lorain Steel Company. (See Stiff, Henry C., assignor.)						
Lorenz, Carl, Redfern, New South Wales, Australia. Governor	854,658	May 21	4566	954	128	1235
Lorenz, Hans, Rochester, N. Y. Mouth-brace	854,898	May 28	5106	1062	128	1404
Lorenz, William A., Hartford, Conn., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine. (Reissue)	12,651	May 14	3210	657–8	128	853
Lorraine, Clarence L., East Jordan, Mich. Voting-machine	854,657	May 21	4562	953	128	1234
Lory, Frank C., *et al.* (See Kimber, Abraham, assignor.)						
Lossing, William, Phœnix, Ariz. Ter. Cover for comb-carrying boxes	853,101	May 7	1473	307	128	372
Louis Hanson Company. (See Hornung, Anton N., Jr., assignor.)						
Low, Abbot A., Horseshoe, N. Y. Hydrocarbon-motor	855,191	May 28	5696	1186	128	1551
Lowe, Richard, Brunswick, Victoria, assignor of one-half to R. Varley, South Melbourne, Australia. Revolving or rotary-action maze	853,642	May 14	2565	531	128	691
Lowenstein, Bernard. (See Shoenberg, Milton H., assignor.)						
Lowry, Robert K. (See Matthews, Richard M., assignor.)						
Lowry, Robert L., assignor of one-half to H. B. Driver, Louisville, Ky. Shaft-coupling	854,426	May 21	4142	858	128	1130
Lowther, Thomas, Ekaterinoslaf, Russia. Steam-generator	853,182	May 7	1610	335–7	128	406
Lucke, Thomas W., Chicago, Ill. Playing-cards	855,192	May 28	5697	1186	128	1551
Ludewig, William H., Rock Island, Ill. Flushing-valve-operating device	853,813	May 14	2910	598–9	128	780
Ludlow, James T., and D. Mosher, San Francisco, Cal. Continuous boiling-out still	853,986	May 21	3289	677	128	913
Ludvigsen, Christ and E., Jackson, Minn. Horseshoe-calk and making the same	853,019	May 7	1336	278	128	339
Ludvigsen, Eric. (See Lugvigsen, Christ and E.)						
Lueckenbach, Anton T., Neenah, Wis. Water-closet-ventilating device	854,365	May 21	4025	833	128	1102
Lumière, Auguste and L., Lyon-Monplaisir, France. Photographic paper	853,643	May 14	2565	.....	128	691
Lumière, Louis. (See Lumière, Auguste and L.)						
Lumpkin, James J. (See Johnson, Charles J., assignor.)						
Lundberg, Endfred, Westfield, N. Y., and J. Hattemer, West New York, N. J., assignors to Hardman, Peck & Company, New York, N. Y. Expression-box	853,814	May 14	2913	599	128	781
Lundberg, Oscar W., Le Mars, Iowa. Tool-handle fastener	852,731	May 7	717	140	128	188
Lundeberg, Carl F., Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	853,249	May 14	1774	369	128	483
Lunkenheimer Co. (See Ritter, Henry, assignor.)						
Luten, Daniel B., Indianapolis, Ind. Bridge of concrete or other analogous material	852,970	May 7	1231	253	128	313
Luten, Daniel B., Indianapolis, Ind. Masonry and concrete structure	852,971	May 7	1235	254	128	315
Luten, Daniel B., Indianapolis, Ind. Concrete or similar arch	853,183	May 7	1614	337	128	407
Luten, Daniel B., Indianapolis, Ind. Arch structure	853,202	May 7	1675	346	128	422
Luten, Daniel B., Indianapolis, Ind. Arch	853,203	May 7	1677	347	128	423
Luten, Daniel B., Indianapolis, Ind. Arch structure	853,204	May 7	1679	347	128	423
Luther, William C., Newark, N. J. Fountain-pen	854,227	May 21	3790	782	128	1040
Luthy, Joseph A., *et al.* (See Luthy, Joseph O., assignor.)						
Luthy, Joseph O., assignor of three-fourths to J. A. Luthy, W. C. and A. M. E. Kreisle, Austin, Tex. Electric heater for metal-workers	852,732	May 7	718	140	128	189
Lutz, John, and J. McKellar, Columbus, Ohio. Weather-strip	854,899	May 28	5107	1062	128	1404
Lybeck, Nils A., New York, N. Y. Shoe-stretcher	855,110	May 28	5543	1151	128	1513
Lyle, Henry C., assignor of one-half to S. V. Weeks, Chattanooga, Tenn. Clutch mechanism	855,193	May 28	5699	1186	128	1552
Lyndon, Lamar, New York, N. Y. Secondary battery	852,569	May 7	398	73	128	105
Lynes, John J., Toronto, Ontario, Canada. Horseshoe	852,887	May 7	1065	219	128	272
Lyon, James W., Evanston, Ill. Window-fastener	853,020	May 7	1337	279	128	339
Lyons, John A. (See Radford, Henry B., assignor.)						
Lyons, Michael H., Brockton, Mass. Lathe for turning irregular shapes	853,987	May 21	3291	677	128	914
Lyons, Peter F., Boston, Mass. Flexible connection for water-closets, &c	853,515	May 14	2311	479	128	627
Lyons, William W., Newark, N. J., assignor to Heller Tool Co. Farrier's tool	855,111	May 28	5545	1152	128	1513
Maass, Francis H., Clinton, Iowa. Attachment for roll-paper cutters	855,321	May 28	5923	1236	128	1609
Mabey, Charles W., Indianapolis, Ind. Forehead-band	854,509	May 21	4296	888	128	1168
Mabus, John. (See Thomas, James, assignor.)						
MacCanlis, Harry, *et al.* (See Rodgers, John F., assignor.)						
MacKay, Alexander S. (See White and MacKay.)						
MacLaughlin, William G., Walkerville, Ontario, Canada. Railway-rail	853,815	May 14	2916	599–600	128	782
MacLearn, John P. (See Green and MacLearn.)						
MacMullan, Charles S., Oakland, Cal. Handhold-strap for automobiles	855,112	May 28	5547	1152	128	1514
Maccallum, James, St. Louis, Mo. Flexible back for paper pads and books	855,322	May 28	5924	1236	128	1610
Macdonald, Harry P., Montclair, assignor to Snead & Company Iron Works, Jersey City, N. J. Door-hanger	853,250	May 14	1779	370	128	484
Macdonald, Harry P., Montclair, assignor to Snead & Company Iron Works, Jersey City, N. J. Sliding-door fastener	583,251	May 14	1781	370	128	485
Machen & Mayer Electrical Manufacturing Company. (See Mayer, Walter S., assignor.)						
Mackay, Daniel, Pittsburg, Pa. Glove	852,972	May 7	1237	254	128	315
Mackeown, Joseph J., New York, N. Y. Coin-controlled liquid-dispensing apparatus	854,097	May 21	3527	728	128	971
Mackintosh, Frederick, Schenectady, N. Y., assignor to General Electric Company. Resistance unit	854,748	May 28	4773	991	128	1318
Macmillan, Campbell, assignor to General Electric Company. Power-transmission mechanism	854,749	May 28	4774	991–2	128	1318
Macomber, Herbert H., assignor to Flint & Walling Manufacturing Company, Kendallville, Ind. Frost-proof conduit	854,366	May 21	4026	833	128	1103
Madsen, Mads H., Kimballton, Iowa. Hay-handling mechanism	852,733	May 7	720	140	128	189
Madsen, Rasmus, Hartford, Conn. Combination-tool	853,558	May 14	2389	497	128	646
Magazine and Book Company of New York. (See Reohr, John H., assignor.)						
Magee, Alexander M., and W. N. Earle, St. John, New Brunswick, Canada. Ribbon-fastening machine	853,816	May 14	2918	600	128	782
Magoun, Abner B., Brant Rock, Mass. Self-fastening postal card	853,889	May 14	3092	634	128	823
Magoun, Abner B., Brant Rock, Mass. Right-angle-triangle letter-sheet envelop	853,890	May 14	3093	634	128	823
Mahaffey, James W., Pueblo, Colo. Artificial foot	854,510	May 21	4297	888	128	1168
Maignen, Prosper A., and T. I. Crane, Philadelphia, Pa. Desiccating air	853,559	May 14	2391	498	128	646
Main, Marvin D., assignor of one-half to L. R. Lewis, Cortland, N. Y. Plow	852,843	May 7	956	196	128	244
Mainster, Samuel F., and F. E. Wilson, Baltimore, Md. Feed-bag	855,194	May 28	5702	1187	128	1553
Mallett, Baker, Edwards, Miss. Wrench	853,102	May 7	1474	308	128	373
Maloney, John L., and E. S. Springer, Leavenworth, Kans. Gas-burner	853,021	May 7	1338	279	128	340
Maloney, Oscar D., *et al.* (See Perkins, George E., assignor.)						
Malory, James A., Halls, Mo. Combined brier-cane pruner and grapnel	853,367	May 14	2033	421	128	554
Malugen, Levi, Centerville, assignor of one-half to A. H. Leathers, Dickson, Tenn. Engine	853,252	May 14	1783	370–1	128	485
Mangelsdorff, Max F., New York, N. Y., assignor to Combustion Utilities Company. Generating producer-gas	854,228	May 21	3792	782	128	1040
Mann, Henrietta. (See Mann, Oscar F., assignor.)						
Mann, Orville C., Oak Park, Ill. Railway-grading machine	853,928	May 14	3169	649–51	128	843

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Mann, Oscar F., assignor to H. Mann, Indianapolis, Ind. Concrete-wall form	854,008	May 21	3531	729	128	972
Manning, Thomas M., Rome, Ga. Means for attaching plow-handles to beams	854,750	May 28	4779	992	128	1320
Mansfield, William A., Washington, Pa. Machine for feeding glass	854,511	May 21	4298	889	128	1169
Manson, Ray H., assignor to Dean Electric Company, Elyria, Ohio. Call-register for telephone systems	854,830	May 28	4946	1028	128	1362
Mantell, William, Brooklyn, N. Y. Checking-rack	855,113	May 28	5548	1152	128	1514
Mapes, Clarence T., Pittsburg, Pa. Yoke and yoke-screw	854,512	May 21	4300	889	128	1169
Marbach, Frank G., Medina, Ohio. Punch-press	852,443	May 7	64	13	128	20
Marga, Uldarique A., Dieghem, Belgium. Impermeable, incombustible, insulating, and acid-proof material	854,367	May 21	4028	.....	128	1103
Margadant, Abram, Minneapolis, Minn. Pump-crank	853,707	May 14	2702	556	128	729
Marhoff Reel Co. (See Marhoff, Walter E., assignor.)						
Marhoff, Walter E., assignor to Marhoff Reel Co., Kalamazoo, Mich. Fishing-reel	853,311	May 14	1928	399	128	528
Marks Automatic Wood Reproducing Company. (See Marks, Bennett D., assignor.)						
Marks, Bennett D., assignor to Marks Automatic Wood Reproducing Company, Chicago, Ill. Graining-machine	853,644	May 14	2566	531-3	128	691
Marr, George C., Washington, D. C. Expansion-post and show-window fastener	855,195	May 28	5704	1187	128	1553
Marsal, Louis P., and R. W. Baker, Cleveland, Ohio. Wheel for children's carriages	852,667	May 7	606	116	128	158
Marsal, Louis P., and R. W. Baker, Cleveland, Ohio. Vehicle-wheel	852,668	May 7	607	116	128	158
Marsh, Albert L., Lake Bluff, assignor to Haskins Company, Chicago, Ill. Electric resistance element	853,891	May 14	3094	.....	128	823
Marsh, Wilbur W. (See Morgan, Thomas W., assignor.)						
Marshall, John T., Metuchen, N. J., assignor to General Electric Company. Cut-out	854,751	May 28	4780	9[illegible]	128	1320
Marshall, Joseph B., assignor of one-third to A. M. Fardee, Bridgeport, Conn. Lady's hat-fastener	854,368	May 21	4029	833	128	1103
Marshall, Norman, Newton, Mass. Assembling apparatus	854,697	May 21	4662	971-2	128	1259
Martell, Louis H., Elwood City, Pa. Valve structure	854,698	May 21	4685	972	128	1259
Martin, Charles B., assignor of one-tenth to J. F. Kennedy, Portland, Oreg. Tellurian	854,513	May 21	4301	890	128	1169
Martin, Charles F., Evansville, Ind. Veterinary tooth-cutter or dental float	854,955	May 28	5197	1083	128	1427
Martin, Charles F., Evansville, Ind. Veterinary surgical instrument	854,956	May 28	5199	1083	128	1427
Martin, Edouard. (See Monnot, John F., assignor.)						
Martin, Francis W. (See Brodie, Patrick S., assignor.)						
Martin, John H., *et al.* (See Norstrom, Nils E., assignor.)						
Martinelli, Arnold, West Hoboken, N. J. Clip or sustaining device for fountain-pens	854,584	May 21	4436	922	128	1202
Marvin, Harry N., and H. Casler, Canastota, N. Y. Apparatus for delineating character according to the character of the hand	854,752	May 28	4781	992-4	128	1320
Marx, Gustave C., Elizabeth, N. J., assignor to Diehl Manufacturing Company. Electrical driving mechanism	854,050	May 21	3423	706	128	944
Mason, William, assignor to Winchester Repeating Arms Co., New Haven, Conn. Automatic firearm	854,707	May 21	4685	976-8	128	1264
Mason & Hamlin Company. (See Binnig, Jacob, assignor.)						
Massie, Walter W., Providence, R. I. Wireless telegraphy	853,929	May 14	3176	651	128	845
Mather Game Company. (See Mather, Joseph S., assignor.)						
Mather, Joseph S., assignor to Mather Game Company, St. Louis, Mo. Game apparatus	853,463	May 14	2196	456-7	128	596
Mathis, Frank X., Jr., and L. Simon, Philadelphia, Pa. Catamenial sack	853,708	May 14	2703	557	128	729
Matson, Charles I., Chicago, Ill. Motor-skate	854,299	May 21	3909	806	128	1071
Matthews, Francis I. (See Wilson and Matthews.)						
Matthews, Francis I., Oakland, assignor to T. M. Gardiner and M. C. Harris, San Francisco, Cal. Graining-machine	854,170	May 21	3665	758	128	1004
Matthews, George, Riga, Mich. Mold box or pan	852,606	May 7	469	87	128	124
Matthews, George, Riga, Mich. Peat-working machine	852,609	May 7	471	87-8	128	125
Matthews, John H., Hollister, Cal. Folding square	854,659	May 21	4568	954	128	1235
Matthews, Richard M., assignor of one-half to R. K. Lowry, Metropolis, Ill. Machine for glazing pottery	852,734	May 7	721	141-2	128	189
Matthews, Robert, Seattle, Wash. Chair	854,298	May 21	3908	806	128	1071
Mautz, John. (See Stavenik and Mautz.)						
May, Augustus G., Denver, Colo. Feed-bag	853,103	May 7	1475	308	128	373
May, Elihu, Magee, Miss. Buggy-step	854,753	May 28	4788	994	128	1321
May, Moritz von, and C. Werkenthin, Berlin, Germany. Wooden barn and shed	854,514	May 21	4302	890	128	1170
Mayberry, Reuben D., Findlay, Ohio. Window-shade fixture	854,515	May 21	4304	890	128	1170
Mayer, Adolph, Winton, Minn. Vertical-spindle mounting for woodworking-machines	853,104	May 7	1477	308	128	373
Mayer, Joseph, Rutherford, N. J. Suspender for contact-wires of electric railways	855,114	May 28	5549	1152	128	1514
Mayer, Joseph, Rutherford, N. J. Strain-adjuster for contact-wires of electric railways	855,323	May 28	5925	1237	128	1610
Mayer, Otto G., Stuttgart, Germany. Drawing-pen	854,585	May 21	4438	922	128	1202
Mayer, Otto G., Stuttgart, Germany. Compass-handle-adjusting device	854,586	May 21	4439	922	128	1203
Mayer, Walter S., assignor to Machen & Mayer Electrical Manufacturing Company, Philadelphia, Pa. Receptacle and plug for electrical connections	854,369	May 21	4030	833	128	1103
Mayer, William G., Pittsburg, Pa. Dumping-wagon	853,817	May 14	2919	600	128	782
Mayn, George S., Tipton, Ind. Cultivator	852,649	May 7	609	116	128	159
Maytag, Fred L. (See Brown, Walter F., assignor.)						
Mazer, Alfred M., Jeannette, Pa. Fuse	853,105	May 7	1479	309	128	373
McAdam, Quentin, assignor to Utica Knitting Company, Utica, N. Y. Knitted undergarment	855,329	May 28	5936	1238	128	1613
McArthur, Alonzo W., Swampscott, and J. M. Darke, Lynn, Mass., assignors to General Electric Company. Metal mold for casting iron and steel	852,671	May 7	611	117	128	160
McArthur, Andrew J., Collins, Ga. Apparatus for distilling wood	855,330	May 28	5937	1238	128	1613
McArthur, Daniel, Jersey City, N. J. Turbine	852,672	May 7	612	117-18	128	160
McArthur, Finlay, Montreal, Quebec, Canada. Wrench	854,376	May 21	4043	835	128	1106
McAtlin, William D., Sioux Falls, S. D. Horse-power	855,434	May 28	6122	1279-80	128	1657
McAuliff, John. Boston, Mass. Driving-gear for bicycles	853,187	May 7	1621	338	128	409
McBerty, Frank R., Evanston, and E. B. Craft, assignors to Western Electric Company, Chicago, Ill. Spring-jack for telephone-switchboards	853,370	May 14	2036	421	128	555
McBride, Frank H. (See McDonald and McBride.)						
McCabe, John M., *et al.* (See Stoops, William B., assignor.)						
McCain, William B., Clearlake, Wash. Saw-handle	854,517	May 21	4306	891	128	1170
McCall, Donald T., Jackson, Mich. Mold for making building-blocks	852,892	May 7	1073	221	128	274
McCallum, William A. F., Philadelphia, Pa. Wheel for motor-vehicles	852,893	May 7	1074	221	128	275
McCalmont, Mabel E., Warren, Pa. Safety or restraining device	853,025	May 7	1346	280	128	341
McCann, James P. (See Collins, Michael, assignor.)						
McCarthy, Justin G., Chicago, Ill. Match-lighter	854,960	May 28	5205	1085	128	1429
McCarthy Portable Elevator Company. (See McCarthy, Thomas J., assignor.)						
McCarthy, Thomas J., Los Angeles, Cal., assignor to McCarthy Portable Elevator Company, Jersey City, N. J. Revolving portable elevator	854,961	May 28	5206	1085	128	1429
McCarty, John B., Des Moines, Iowa. Foot-rest for buggies	854,103	May 21	3539	730	128	973
McCaskey Register Company. (See Staples and Potter, assignors.)						
McCauley, William T., Osgoode, Ontario, Canada. Pole-tip	852,671	May 7	402	73	128	106
McClain, Hoyt N., *et al.* (See Diehl, John J., assignor.)						
McClave-Brooks Company. (See McClave, William, assignor.)						
McClave, William, Scranton, Pa., assignor to McClave-Brooks Company. Furnace	853,721	May 14	2742	563-4	128	726
McClintock, Charles T., Oil City, Pa. Clock-movement	854,518	May 21	4307	891	128	1171

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McCloskey, Joseph A., Mount Vernon, N. Y. Carpenter's square	855,257	May 28	5814	1211	128	1583
McComas, Mark. (See McElvaney, Charles T., assignor.)						
McConkey, Louis G., Goodhope, W. Va. Penholder	855,331	May 28	5939	1239	128	1614
McConnell, Mary E., Seattle, Wash. Shirt-waist holder and skirt-supporter	854,301	May 21	3913	807	128	1072
McCormick, Albert L. (See Reif and McCormick.)						
McCormick, Junius A., Pittsburg, Pa. Man and hand hole connection for boilers	853,821	May 14	2937	603	128	786
McCormick Lewis M., New York, N. Y. Lantern-slide and mat therefor	855,121	May 28	5567	1156	128	1518
McCoy, Clyde, and W. Morton, Los Angeles, Cal. Automatic curtain hook and release for vestibule-cars	853,188	May 7	1623	339	128	409
McCoy, John I., assignor of one-half to H. Hamilton, Pittsburg, Pa. Curtain hanger or support	852,894	May 7	1077	222	128	275
McCullough, William H., Chicago, Ill. Lightning-conductor	852,572	May 7	403	74	128	106
McCutcheon, James, Edinburgh, Scotland. Apparatus for detecting the presence and volume of fire-damp and other light gas in mines, &c.	852,895	May 7	1079	222	128	276
McDermand, George R., and E. C. Blackburn, Dayton, Ohio. Draft-controlling device for furnaces	854,428	May 21	4147	859	128	1131
McDonald, John, and F. H. McBride, Blair township, Washington county, Nebr. Mud-toe for traction-wheels	852,573	May 7	404	74	128	107
McDowell, Robert H., assignor to Electric Filter Company, Alliance, Ohio. Automatic electrical cut-off	853,900	May 21	3301	679	128	916
McElvaney, Charles T., assignor of one-half to M. McComas, Denison, Tex. Headlight attachment	855,122	May 28	5568	1157	128	1518
McEntire, James H., Williamston, Mich. Bean-harvester	854,591	May 21	4449	925	128	1205
McEwen, Daniel T. K., *et al.* (See Abraham, Elias, assignor.)						
McGlone, William, Mount Iron, Minn. Wrench	855,014	May 28	5321	1105	128	1458
McGuire, Michael G., Niagara Falls, N. Y. Umbrella	854,663	May 21	4575	955-6	128	1237
McInnerney, Benjamin, Omaha, Nebr. Means of control for an electrically-actuated body	855,066	May 28	5431	1127	128	1487
McIntosh, Angus A., Alexandria Ontario, Canada. Hoisting mechanism	855,332	May 28	5940	1239-40	128	1614
McIntosh, Clayton A., assignor to B. S. Wilson, Washington, Kans. Carrier	855,333	May 28	5944	1240	128	1615
McKelver, William H., Indianapolis, Ind., assignor to T. M. Hardy, Jr., Pendleton, Ohio. Door or sash lock	853,991	May 21	3303	679	128	916
McKellar, James. (See Lutz and McKellar.)						
McKellar, John F., Storden, Minn. End-gate	852,673	May 7	615	118	128	160
McKelvey, William W., assignor to William B. Pollock Company, Youngstown, Ohio. Lock for dumping-cars	853,189	May 7	1625	339	128	410
McKennan, Jacob B., Pueblo, Colo. Hot-blast valve	853,722	May 14	2747	564-5	128	739
McKenzie, Angus, Jamestown, assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y. Voting-machine	853,822	May 14	2939	603-4	128	787
McKenzie, Angus, Jamestown, assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y. Voting-machine	855,334	May 28	5945	1241	128	1615
McKiel, James B., Marshall, Tex. Truck	852,738	May 7	732	143-4	128	192
McKinney, Eva J., Hallsville, Ill. Waist and skirt supporter	853,646	May 14	2572	534	128	693
McLain, Albert D., and H. W. Harrison, Detroit, Mich. Templet	854,832	May 28	4953	1029-30	128	1363
McLean, C. B. (See Goltz and Hosack, assignors.)						
McLoughlin, Edgar. (See Milligan, Thomas, assignor.)						
McMahon, Daniel P. (See Brown, Robert H., assignor.)						
McMaster, Catherine J., Corfield, North Queensland, Queensland, Australia. Windmotor	854,664	May 21	4577	956	128	1238
McMillan, Margaret I., Denver, Colo. Oil-cloth protector	853,190	May 7	1626	340	128	410
McMillan, William D., Union, Oreg. Puzzle	855,196	May 28	5706	1187	128	1554
McMullen, Andrew, Westport, Conn. Device for covering graves	854,833	May 28	4955	1030	128	1364
McMullen, Frank C., Minneapolis, Minn., assignor to C. W. Hooven, Anderson, Ind. Cream-separator bowl	854,519	May 21	4308	892	128	1171
McMurry, Emmet H., Pedee, Ark. Baling-press	855,015	May 28	5323	1105-6	128	1458
McMurtry, Alden L., New York, N. Y. Motor-driven vehicle	852,674	May 7	617	118	128	161
McNabb, William T., Ben Avon, and F. Enders, Kittanning, Pa. Ice-tongs	855,123	May 28	5569	1157	128	1518
McNitt, Fred L., California, Mich. Drinking-fountain	854,902	May 28	5110	1063	128	1405
McPartland, James H., Houlton, Me. Heating apparatus	852,797	May 7	868	176-7	128	222
McQueen, Finlay R., Minneapolis, Minn. Grain unloading sink for elevators	854,377	May 21	4044	836	128	1106
McRae, George F., *et al.* (See Broad, Harry L., assignor.)						
McVay, William, Bellaire, Ohio. Casting and conveying machine	854,520	May 21	4310	892	128	1171
McVoy, George C. (See Dorment and McVoy.)						
McVoy, Vincen P., and R. B. King, Pensacola, Fla. Means for calking vessels	853,723	May 14	2748	565	128	740
Meacher, George W., and S. L. Montgomery, Los Angeles, Cal. Brooder	854,587	May 21	4440	923	128	1203
Mead, George A., Mansfield, Ohio. Manufacture of rail-bonds	854,099	May 21	3533	729	128	972
Mead, Marvin, Pueblo, Colo. Hay-baling device	853,415	May 14	2106	439	128	572
Meadowcroft, Charles W., Sr., Philadelphia, Pa. Pneumatic tool	853,416	May 14	2107	439	128	573
Meadowcroft, Charles W., Sr., Philadelphia, Pa. Tool-holder	854,100	May 21	3535	730	128	972
Meany, Edward. (See Terry, Eugene, assignor.)						
Megner, Alois. (See Christ and Megner.)						
Mehaffey, Carl A., Bloomington, Ind. Scythe-blade attachment	854,051	May 21	3426	706	128	945
Meier, Adolphus G., assignor to Cram Writing Machine Company, St. Louis, Mo. Type-writing attachment for adding-machines	853,709	May 14	2704	557-8	128	729
Melkrantz, Henry A., Oilvers Mills, Pa. Lock-shoe	852,888	May 7	1067	219-20	128	272
Melchers, John H., Decatur, Ill. Electrical advertising-clock	853,710	May 14	2706	558-9	128	730
Mellin, Carl J., Schenectady, N. Y. Locomotive	852,444	May 7	65	13-14	128	20
Mellin, Carl J., Schenectady, N. Y. Reversing mechanism for locomotives	852,445	May 7	71	14-15	128	21
Mellin, Carl J., Schenectady, N. Y. Locomotive-cylinder	852,446	May 7	75	16	128	22
Mellin, Carl J., Schenectady, N. Y. Return-crank for valve-gears	852,447	May 7	78	16	128	23
Mellin, Carl J., Schenectady, N. Y. Steam-dome	852,735	May 7	727	142	128	191
Mellin, Carl J., Schenectady, N. Y. Reversing mechanism for locomotive and other engines	852,795	May 7	862	174-5	128	220
Mercer, Charles, Potomac, Ill. Gate	854,370	May 21	4032	834	128	1104
Mercié, Henri A. (See Benét and Mercié.)						
Mergenthaler Linotype Company. (See Coe, Walter S., assignor.)						
Mergenthaler Linotype Company (See Kennedy, David S., assignor.)						
Mergenthaler Linotype Company. (See Van Wie, Byron, assignor.)						
Merk, Friedrich, Berlin, Germany. Automatic telephone system	853,818	May 14	2921	601	128	783
Merkelbach, Albert J., Oskaloosa, Iowa. Burial-casket	855,324	May 28	5927	1237	128	1610
Merker, John F., *et al.* (See Keyes, William W. W., assignor.)						
Merle & Heaney Manufacturing Company. (See Nix, Martin, assignor.)						
Merrick, Frank W., assignor to Union Lock Stitch Company, Boston, Mass. Blind-stitching sewing-machine	854,660	May 21	4569	954-5	128	1236
Merrill, Ernest J., and J. W. De Long, Ironton, Ohio. Bottle-closure	853,022	May 7	1340	279	128	340
Merrill, Nathan C., Vancouver, British Columbia, Canada. Means for mounting furniture in rooms	854,171	May 21	3669	758	128	1005
Merrill, Wilbur L., Schenectady, N. Y., assignor to General Electric Company. Motor control	853,711	May 14	2708	556	128	731
Merrow Machine Company. (See Stedman, William H., assignor.)						
Mershon, Ralph D., New York, N. Y. Alternating-current apparatus	853,106	May 7	1480	309	128	374

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Mershon, Ralph D., New York, N. Y. Operating electric motors	853,107	May 7	1494	310	128	375
Mershon, Ralph D., New York, N. Y. Commutating electric motor	853,464	May 14	2199	457	128	598
Mershon, Ralph D., New York, N. Y. Induction-motor and generator	853,465	May 14	2202	458	128	598
Mershon, Ralph D., New York, N. Y. Alternating-current apparatus	854,831	May 28	4948	1028-9	128	1362
Mershon, Ralph D., New York, N. Y., assignor to Westinghouse Electric & Manufacturing Company. Means for extinguishing fires in oil-filled receptacles	853,253	May 14	1784	371	128	486
Mettler, Charles, Munich, Germany. Production of aromatic alcohols and their derivatives. (Reissue)	12,654	May 21	4699	.....	128	1268
Mettler, Lee B., *et al.* (See Van Dyke, Thomas H., assignor.)						
Metzler, Paul, Jersey City, N. J., assignor of one-half to J. Minck, Brooklyn, N. Y. Internal-combustion engine	855,115	May 28	5551	1153	128	1515
Meyer, Berthold, New York, N. Y. Window-refrigerator	853,589	May 14	2451	511	128	662
Meyer, Eugene, New York, N. Y. Vibratory apparatus for ear treatment	853,645	May 14	2570	533-4	128	692
Michael, John B., Knoxville, Tenn. Device and method for repairing locomotives	853,312	May 14	1933	399	128	529
Michelin, André, Paris, France. Air-compressor combined with an explosive-motor	854,371	May 21	4034	834	128	1104
Michelsen, Niels. (See Jeppesen and Michelsen.)						
Michigan Lubricator Co. (See Bryant, William E., assignor.)						
Miehle, Robert, Chicago, Ill. Piston for air-compressors	852,889	May 7	1005	220	128	273
Miehle, Robert, Chicago, Ill. Printing-press	852,973	May 7	1238	254	128	316
Miersch, Albert, assignor to Firm of Gebrueder Alexander, Breslau, Germany. Motor-plow	853,206	May 7	1681	347	128	424
Miles, Edward C., Denver, Colo. Electric water-heater	853,892	May 14	3095	634	128	824
Miles, Perry B., Jackson, Mich. Mold	852,448	May 7	79	17	128	23
Miller, Charles, Syracuse, N. Y. Ratchet-wrench	853,930	May 14	3178	651	128	845
Miller, Charles L., Bellaire, Ohio. Chair	853,893	May 14	3097	634	128	824
Miller, Charles M., Alameda, Cal. Talking-machine attachment	855,116	May 28	5553	1153	128	1515
Miller, Cornelius F., Hamilton, Ohio. Roller-skate truck	852,570	May 7	399	73	128	105
Miller, Frank J., Williamsport, Pa. Saw-filing apparatus	853,988	May 21	3294	677-8	128	914
Miller, Hiram W., Detroit, Mich. Book-holder	853,184	May 7	1618	338	128	408
Miller, Howard E., Johnstown, Pa., assignor to Lorain Steel Company. Adjustable guard-rail chock	853,254	May 14	1785	371	128	486
Miller, James M., and C. J. Murray, Newton Square, Pa. Apparatus for testing telephone-wires	855,117	May 28	5554	1153	128	1516
Miller, John C. (See Laube, Godfried, assignor.)						
Miller, John E. Western Springs, Ill. Wheeled cultivator	854,754	May 28	4789	994-5	128	1321
Miller, Oliver N., assignor of one-half to O. F. Turner, Florenceville, New Brunswick, Canada. Chimney-cleaner	854,101	May 21	3536	730	128	973
Miller, Otto H. Green Bay, Wis. Vegetable-cutter	854,229	May 21	3793	782-3	128	1041
Miller, Philip C., Chicago, Ill. Dust-collector	854,516	May 21	4305	891	128	1170
Miller, Richard W., Perry, Iowa. Mattress-frame	854,900	May 28	5108	1062	128	1405
Miller, Thomas S., South Orange, and C. L. Wachter, Hoboken, N. J.; said Wachter assignor to Lidgerwood Manufacturing Company. Rope fastening or button	854,957	May 28	5201	1083-4	128	1428
Miller, William A., Wapinitia, Oreg. Saw	853,255	May 14	1786	372	128	486
Miller, William J. (See Frayer and Miller.)						
Milligan, Thomas, assignor of one-half to E. McLoughlin, Fortuna, Cal. Axle-nut	853,712	May 14	2711	559	128	732
Milliken, John A., Flushing, N. Y., assignor to Amboy Machine Company, Perth Amboy, N. J. Nail-chuck	853,931	May 14	3180	651-2	128	846
Mills, Anson C., assignor to Jackson Fence Company, Jackson, Mich. Expansible winding-drum	854,661	May 21	4573	955	128	1236
Mills, James N., Oak Station, Pa. Combination-lock	853,368	May 14	2033	421	128	554
Mills, John, Toronto, Ontario, Canada. Filtering-machine	854,588	May 21	4441	923-4	128	1203
Mills Novelty Company. (See Sandell, Henry K., assignor.)						
Mills Woven Cartridge Belt Company. (See Batcheider, Frank R., assignor.)						
Milne, Walter O., Stockton, Cal. Wool-scouring machine	854,372	May 21	4036	834	128	1105
Mims, George W., assignor of two-thirds to C. Reed and C. J. Smith, Paducah, Ky. Nut-lock	855,408	May 28	6071	1269	128	1646
Minck, Julius. (See Metzler, Paul, assignor.)						
Minifie, William A., assignor to W. H. Beattie, Little Falls, N. J. Woven pile fabric	853,713	May 14	2712	559	128	732
Mireau, Margaret M. (See Vidal, Philippe, assignor.)						
Mitchell, Albert W., assignor, by mesne assignments, to J. N. Leonard, trustee, New Haven, Conn. Paper-box machine	852,974	May 7	1241	255-6	128	316
Mitchell, Albert W., assignor to J. N. Leonard, trustee, New Haven, Conn. Cutting mechanism for paper-box machines	853,714	May 14	2712	560	128	732
Mitchell-Bissell Co. (See Mitchell, John R., assignor.)						
Mitchell, John R., assignor to Mitchell-Bissell Co., New York, N. Y. Guide for thread, yarn, &c.	855,325	May 28	5929	1237	128	1611
Mitchell Robert J. (See Smith, Joseph A., assignor.)						
Mitchell, Thomas W., Chicago, Ill. Conical-ring rod-packing	854,589	May 21	4446	924	128	1204
Mobley, Edwin H., Rutledge, Pa. Sound-box for talking-machines	855,326	May 28	5930	1237	128	1611
Modern Concrete Machine Company. (See Bowsher, Peter A., assignor.)						
Moewes, Ernst, Stuttgart-Cannstatt, assignor to Daimler-Motoren-Gesellschaft, Untertürkheim-Stuttgart, Germany. Hinged shaft-coupling	852,890	May 7	1070	220	128	273
Moir, Ernest W., *et al.* (See Vandevort, Frank F., assignor.)						
Moir, Ernest W., London, England, assignor to S. Pearson & Son, Inc., Long Island City, N. Y. Means for lining tunnels	852,891	May 7	1071	220-1	128	274
Mollere, Mederic C., assignor of one-half to F. Ducos, Larose, La. Brier-hook	853,417	May 14	2111	440	128	573
Mollier, Walther, Hamburg, assignor to Siemens-Schuckert Werke Gesellschaft mit Beschränkter Haftung, Berlin, Germany. Apparatus for conveying loads between points of varying distance	854,052	May 21	3427	707	128	945
Monarch Typewriter Company. (See Pool, Morris W., assignor.)						
Moncrief, Olin P., Trussville, Ala. Car-coupling	853,023	May 7	1341	279	128	340
Mondragon, Manuel, Tacubaya, Mexico. Firearm	853,715	May 14	2714	560-2	128	732
Monnot, John F., New York, N. Y. Producing compound metal bodies	853,716	May 14	2722	562	128	734
Monnot, John F., New York, N. Y., and E. Martin, Paris, France; said Martin assignor to said Monnot. Making bimetallic products	853,932	May 14	3183	653	128	846
Monson, Henry T., Mayville, N. D. Planter	853,256	May 14	1791	373	128	486
Montgomery, James M., Berl, W. Va., assignor of one-half to F. W. Sine, Bond, Md. Combined burglar-alarm and sash-holder	854,958	May 28	5202	1084	128	1428
Montgomery, Stanley L. (See Meissner and Montgomery.)						
Montrose, Alfred, *et al.* (See Montrose, Samuel T., assignor.)						
Montrose, Samuel T., New York, N. Y., assignor of three-fourths to C. R. Burnett and A. Montrose, Newark, N. J. Lock	853,717	May 14	2735	562	128	734
Moody, Walter S., Schenectady, N. Y., assignor to General Electric Company. System of motor control	853,930	May 14	2936	603	128	786
Moores, Cully W., *et al.* (See Moores, Fred J., assignor.)						
Moores, Fred J., assignor of one-half to C. W. and P. L. Moores, Orofino, Idaho. Hair-pin	854,901	May 28	5109	1083	128	1405
Moores, Pearl L., *et al.* (See Moores, Fred J., assignor.)						
Moore, Arthur, War Eagle, W. Va. Dumping apparatus	852,796	May 7	866	175-6	128	221
Moore, Charles R., Elmira, N. Y. Pump-governor	855,085	May 28	5427	1126	128	1486

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Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Vacuum-tube lamp	853,989	May 21	3299	679	128	916
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Vacuum-tube lamp	854,104	May 21	3540	731	128	974
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Vacuum-tube electric apparatus	854,300	May 21	3911	806-7	128	1072
Moore Electrical Company. (See Moore, Daniel M., assignor.)						
Morand, Le Roy, Newark, N. J. Advertising-holder	853,108	May 7	1488	310	128	376
Morey, Frank, Scrafford, W. Va. Internal-combustion engine	855,256	May 28	5812	1211	128	1582
Morgan, Albert A., *et al.* (See Abraham, Elias, assignor.)						
Morgan, Benjamin W., Tampa, Fla., assignor to Simplex Press Company, Atlanta, Ga. Printing-press	853,590	May 14	2452	511	128	662
Morgan, Charles H., and A. J. Gifford, Worcester, Mass.; said Gifford assignor to said Morgan. Gas-producer	852,516	May 7	274	50-1	128	75
Morgan Construction Company. (See Edwards, Victor E., assignor.)						
Morgan, David J. (See Gribben, John, assignor.)						
Morgan Engineering Company. (See Taylor, Clarence L., assignor.)						
Morgan, John H., Harrogate, assignor to Leeds Stamping Company, Limited, London, England. Shelf-bracket	852,975	May 7	1244	256	128	317
Morgan, Thomas W., assignor to W. W. Marsh, Waterloo, Iowa. Centrifugal cream-separator	854,373	May 21	4037	834	128	1105
Morisse, Lucien, Paris, France. Treatment of the milks or lactiferous juices of caoutchouc, gutta-percha, and balata and the like	853,718	May 14	2737	.....	128	737
Mork, Harry S., assignor to Chemical Products Company, Boston, Mass. Cellulose ester	854,374	May 21	4038	.....	128	1105
Morran, John M., *et al.* (See Coyle, William, assignor.)						
Morris, Charles A., Bloomfield, N. J. Ventilating tunnels	855,118	May 28	5555	1153-4	128	1516
Morris, Charles A., Bloomfield, N. J. Apparatus for ventilating tunnels	855,409	May 28	6072	1269-70	128	1646
Morrison, John C., New York, N. Y. Hat-fastener	855,013	May 28	5520	1105	128	1458
Morrow, William E., Steubenville, Ohio. Paper-bag holder	853,185	May 7	1619	338	128	408
Morton, Joseph, Lindon, Utah. Sliding-jaw wrench	853,369	May 14	2035	421	128	554
Morton, William. (See McCoy and Morton.)						
Moscicki, Ignacy, Fribourg, Switzerland. Electric condenser	854,662	May 21	4574	955	128	1237
Mosher, David. (See Ludlow and Mosher.)						
Mosley, Thomas, Lawton, Okla. Ter. Stovepipe-lock	855,327	May 28	5933	1238	128	1612
Moss, Benjamin B., St. Louis, Mo., assignor of one-half to J. M. Davis, Lorain, Ohio. Caramel-wrapping machine	855,119	May 28	5559	1154-6	128	1517
Moss, John I., assignor of one-half to W. D. Beazley, Abbotsford, Victoria, Australia. Self-locking window-fastener	852,517	May 7	276	51	128	76
Mothes, Georg, Rüttenscheid, near Essen-on-the-Ruhr, assignor to Fried. Krupp, Essen-on-the-Ruhr, Germany. Production of globoidal worm-wheels	852,736	May 7	729	142-3	128	191
Moyer, James C. (See Vorhels and Moyer.)						
Moyle, Edward H., Los Angeles, Cal. Revolving distributer for pulp or liquid	855,328	May 28	5934	1238	128	1612
Mueller, Christian F., Jr., and S., Jersey City, N. J. Press for forming thick fluid substances	854,375	May 21	4040	835	128	1105
Mueller, Samuel. (See Mueller, Christian F., Jr., and S.)						
Mueller, Theodore J. F., Portland, Oreg. Car-fender	852,610	May 7	475	88	128	126
Mühlbach, Max C., Newport News, Va. Compasses	855,120	May 28	5565	1156	128	1517
Muirhead, Andrew E., Glasgow, Scotland. Boiler-flue scraper	852,737	May 7	732	143	128	192
Müller, Fritz, Neunkirchen, Germany. Clothes-drier	853,257	May 14	1793	373	128	486
Müller, Max, Remscheid-Hasten, Germany. Apparatus for washing bottles and glasses	852,670	May 7	610	116-17	128	159
Munro, Robert M. A. B., Paris, France. Steering and controlling device	853,719	May 14	2738	562-3	128	737
Murdock, William J., Boston, Mass. Telephone	853,186	May 7	1620	338	128	409
Murphy, George W. J., Merrimac, Mass., assignor to G. W. J. Murphy Co. Curtain-fastener	853,206	May 7	1682	347	128	424
Murphy, James J., assignor to Eagle Lock Co., Terryville, Conn. Permutation-lock	854,427	May 21	4143	858-9	128	1130
Murray, Alexander W., assignor of one-half to J. A. Salmon, Chicago, Ill. Valve	852,518	May 7	277	51	128	76
Murray, Clinton J. (See Miller and Murray.)						
Murray, William J., New York, N. Y. Adjustable scaffold	854,959	May 28	5203	1084	128	1428
Murray, William M., assignor to himself and J. H. Knapp, Sawtelle, Cal. Oil-spreader	853,720	May 14	2740	563	128	738
Musser, Erwin H., York, Pa. Lock-nut	854,590	May 21	4448	924	128	1206
Mustin, Henry C., Washington, D. C., and G. N. Saegmuller, Rochester, N. Y.; said Mustin assignor to said Saegmuller. Sight for ordnance	853,024	May 7	1342	280	128	340
Mitsch, Louis, Spokane, Wash. Crosscut-saw	854,102	May 21	3537	730	128	973
Myers, Jacob A., Greenville, Ill. Car-door hanger	853,207	May 7	1683	348	128	425
Myers, John H., West Philadelphia, Pa. Pile-wire hook	853,819	May 14	2934	602	128	786
Myers, William C., Springfield, Oreg. Fruit-clipper	853,313	May 14	1934	400	128	530
Nagle, Henry J., Abbottstown, Pa. Protected cushioned wheel	853,466	May 14	2206	458	128	599
Naramore, Frank J., Bridgeport, Conn. Garment-supporter	854,230	May 21	3795	783	128	1041
Nash, John, assignor of one-half to J. J. Tyler, North Yakima, Wash. Vehicle-wheel	854,699	May 21	4666	972	128	1260
Nash, Richard G., Lucan, near Dublin, Ireland. Machine for washing bottles and the like	854,172	May 21	3670	758-9	128	1006
Nash, Richard G., Lucan, near Dublin, Ireland. Machine for washing bottles	854,173	May 21	3672	759-60	128	1006
National Brake & Electric Company. (See Waters, William L., assignor.)						
National Compositype Company. (See Brown, Hanrahan, and Boyden, assignors.)						
National Dump Car Company. (See Otis, Spencer, assignor.)						
National Enameling and Stamping Company. (See Knapp, George W., assignor.)						
National Nutrient Company. (See Campbell, Charles H., assignor.) (Reissue.)						
National Sewing Machine Company. (See Crandall, Jay E., assignor.)						
National Specialty Manufacturing Company. (See Russinger, William J., assignor.)						
National Telegraphone Company. (See Davis, Abner F. H., assignor.)						
National Tube Company. (See Saunders, Augustus M., assignor.)						
Nawn, Phil J., St. Louis, Mo. Combined cigar cutter and lighter	853,314	May 14	1935	400	128	530
Neal, John W., Kealia, Hawaii. Wave-motor	855,258	May 28	5815	1212	128	1583
Nealon Company. (See Binney, Harold, assignor.)						
Nee, James A., New York, N. Y. Closure for bottles, jars, and the like	852,519	May 7	278	51	128	76
Neff, Richard H., Indianapolis, Ind. Computing cheese-cutter	854,521	May 21	4311	893	128	1172
Neidhardt, Joseph W. (See Detrick and Neidhardt.)						
Neidig, Clement and O. A., Bourbon, Ind. Metallic window-sash	854,665	May 21	4578	956	128	1238
Neidig, Ora A. (See Neidig, Clement and O. A.)						
Neifer, Lloyd D., Traverse City, Mich. Clothes-pin machine	853,823	May 14	2947	604-5	128	789
Neighbour, William W., Denison, Tex. Journal-box	853,026	May 7	1348	280	128	342
Nellen, Friedrich, Essen, Germany. Superstructure for narrow-gage railways	854,902	May 28	5211	1085-6	128	1430
Nelson, Albert J., Waseca, Minn. Pole-support	852,806	May 7	1080	223	128	276
Nelson, Louise, Oakland, Cal. Baking utensil for cakes and pies	854,592	May 21	4452	925	128	1206
Nelson, Louise, Oakland, Cal. Pessary	854,593	May 21	4452	926	128	1206
Nelson, Peter A., Wyanet, Ill. Hoisting-bracket	854,302	May 21	3914	807	128	1072
Neptune Meter Company. (See Gamon, Ernest E., assignor.)						
Nethery, William G., Toronto, Ontario, Canada. Locking-file	854,303	May 21	3915	807	128	1073
Neubart, Henry, Chicago, Ill. Spring-wheel	853,418	May 14	2112	440	128	573
Neumeyer, Horace F., Macungie, Pa. Flash-light lamp	853,027	May 7	1349	281	128	342

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Neumeyer, Horace F. (See Singmaster, James W., assignor.)						
Neversiip Manufacturing Company. (See Whitaker, Richard, assignor.)						
Neville, Frank, Mina, Nev. Insect-trap	853,315	May 14	1937	400	128	530
New Cyanide Process Company. (See Pitts, Thomas D., assignor.)						
New Departure Manufacturing Company. (See Rockwell, Edward D., assignor.)						
New England Whip Company. (See Doherty and Palmer, assignors.)						
New Era Metallic Packing Manufacturing Company. (See Brooke, William M., assignor.)						
New York Air Brake Company. (See Bickel, Henry F., assignor.)						
Newbaker, William L., assignor of one-half to H. Erichson, Wilkinsburg, Pa. Automatic slide-valve lubricator	853,724	May 14	2749	564	128	740
Newberry, Jefferson, Lumberton, N. C. Leather-polish	854,755	May 28	4791	.....	128	1322
Newberry, John T., Norfolk, Va. Hedge-trimmer	854,594	May 21	4453	926	128	1206
Newell, Frank C., Wilkinsburg, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Electric heater or rheostat	854,834	May 28	4957	1031	128	1365
Newey, Alfred H., Sutton Coldfield, assignor of one-half to W. J. Seal, Birmingham, England. Ventilator	854,595	May 21	4454	926	128	1206
Newman, Martin F., Wilkinsburg, assignor to Wm. B. Scaife & Sons Company, Pittsburg, Pa. Feeding device for water-purifying apparatus	854,522	May 21	4314	893	128	1172
Newman, Thomas H., Pittsburg, Pa. Inkstand	855,124	May 28	5570	1157	128	1518
Newton, Charles L., Cincinnati, Ohio. Nutmeg container and grater	853,725	May 14	2751	566	128	740
Newton, William G., assignor to Peck Bros. & Co., New Haven, Conn. Knee-action supply-fixture for lavatories	853,726	May 14	2752	566	128	741
Nicholson, Milton V. (See Ayers, Elmer C., assignor.)						
Nichoson, Elmer, Lansing, Mich. Vibrating roller for printing-presses	853,109	May 7	1489	311	128	376
Niedermier, Peter L., Harvey, La. Grapple	852,897	May 7	1061	223	128	277
Niles-Bement-Pond Company. (See Sears, Willard T., assignor.)						
Niles-Bement-Pond Company. (See Teas, Daniel H., assignor.)						
Niles-Bement-Pond Company. (See Wood, Augustus, assignor.)						
Nilsson, Valfrid, assignor to C. O. Rydholm & Co., Stockholm, Sweden. Cravat-holder	853,591	May 14	2456	512	128	663
Nims, Francis W., assignor to himself, A. Thomas, and W. Richardson, Worcester, Mass. Tape-pulley for spinning or twisting machines	853,371	May 14	2038	422	128	555
Nishimoto, Kenzaemon, Oakland, Cal. Soap-box	853,824	May 14	2950	605	128	790
Nix, Martin, assignor to Merle & Heaney Manufacturing Company, Chicago, Ill. Combined billiard and pool table	853,316	May 14	1939	401	128	531
Noble, Frank H., Chicago, Ill. Pin	853,258	May 14	1794	373	128	487
Noeggerath, Jacob E., Schenectady, N. Y., assignor to General Electric Company. Dynamo-electric machine	854,756	May 28	4792	995-7	128	1322
Noel, Louis, Indian Orchard, Mass. Gate-valve	854,523	May 21	4315	893	128	1173
Noiseless Compressor and Air Brake Company. (See Hall, Milan W., assignor.)						
Nolan, James M., assignor of two-thirds to W. H. Wilson and C. Rasmussen, New Haven, Conn. Folding seat for automobiles	855,125	May 28	5571	1157	128	1519
Nolan, Thomas F., New York, N. Y. Platen or roller for type-writing machines	854,429	May 21	4149	859	128	1131
Nolen, Hilry B., Lamar, Wash. Wagon-tongue	853,110	May 7	1490	311	128	376
Noone, Francis P. (See Huntington, O'Neill, and Noone.)						
Norden, Emil, assignor to H. A. Streeter, Chicago, Ill. Railway-switch	855,067	May 28	5439	1127	128	1489
Norrington, Henry H., Bay City, Mich. Coin-wrapping device	852,574	May 7	405	74	128	107
Norstrom, Nils E., Chicago, Ill., assignor to J. Anderson, Salina, M. E. Richardson, Sterling, Kans., J. H. Martin, and H. Keating. Telephone-exchange	852,575	May 7	407	74-5	128	107
Norstrom, Nils E., Chicago, Ill., assignor to J. Anderson, Salina, M. E. Richardson, Sterling, Kans., J. H. Martin, and H. Keating. Telephone-exchange	852,675	May 7	618	118-19	128	161
North & Judd Manufacturing Company. (See Whiteley, William, assignor.)						
Northern Electrical Manufacturing Company (See Coffman, Walter M., assignor.)						
Northern Electrical Manufacturing Company. (See Conlee, Frederick M., assignor.)						
Northrup, Elmer C., assignor of one-half to E. Ross, Riverside, Cal. Automatic railway-switch	854,700	May 21	4668	972	128	1260
Northway Motor and Manufacturing Company. (See Northway, Ralph E., assignor.)						
Northway, Ralph E., assignor to Northway Motor and Manufacturing Company, Detroit, Mich. Clutch mechanism	852,798	May 7	871	177	128	222
Northwestern Expanded Metal Company. (See Goss, William, assignor.)						
Norton, Fred E., Youngstown, Ohio. Automatic regulator for air and gas compressors	852,976	May 7	1247	256-7	128	317
Nothe, Herman, Philadelphia, Pa. Fountain-brush	854,231	May 21	3796	783	128	1041
Nourse, Rufus C., assignor of one-half to H. Budden, Boston, Mass. Head-rest for use in shampooing	853,592	May 14	2457	512	128	664
Novess, Alonzo G., Rochester, N. Y. Photographer's light-regulator	853,467	May 14	2208	459	128	599
Noyer, Joseph N., Gould City, Wash. Ratchet-wrench	854,174	May 21	3674	760	128	1007
Nuernberger, Philip G., and G. Rettig, Jr., Chicago, Ill. Type-casting mold	853,647	May 14	2572	534-5	128	693
Null, Paschal H., St. Louis, Mo. Attachment for vessels, &c	854,835	May 28	4959	1031	128	1365
Nungesser Electric Battery Co. (See Harmon, Willis E., assignor.)						
Nute, John H., Portland, Me. Machine for making wooden toothpicks	853,372	May 14	2039	422	128	555
Nye, C. A. (See French, Walter W., assignor.)						
Nygren, Oroph, Weston, Nebr. Map-holder	853,468	May 14	2209	459	128	600
O'Brien, Harry, Mount Carroll, Ill. Horse-boot	853,259	May 14	1795	374	128	487
O'Brien, James F. (See Hamilton, Addington B., assignor.)						
O'Brien, Michael J., New York, N. Y. Basin or trap for stable-floors	855,017	May 28	5330	1106	128	1460
O'Bryan, William A., Philpot, Ky. Attachment for harness	852,576	May 7	413	75	128	110
O'Connor, Charles. (See Twitchell and O'Connor.)						
O'Neill, Alexander R. (See Huntington, O'Neill, and Noone.)						
O'Neill, George F., assignor of one-half to J. T. Willoughby, Brooklyn, N. Y. Apparatus for pitching kegs or barrels	853,516	May 14	2313	479-80	128	627
O'Neill, James A., New York, N. Y. Grate-bar	852,739	May 7	734	144	128	192
O'Neill, Thomas, Brooklyn, assignor of one-half to Royal Embroidery Works, New York, N. Y. Sewing and embroidering machine	854,105	May 21	3542	731	128	974
O'Neill, William F. (See Wright and O'Neill.)						
Oberholtzer, Henry R., Nebraska City, Nebr., assignor, by mesne assignments, to Interlocking Fence Company, Morton, Ill. Fence-machine	853,028	May 7	1351	281-2	128	343
Ochoa, Victor L., assignor of one-half to B. A. Jackson, New York, N. Y. Pen or pencil clip	854,378	May 21	4046	836	128	1107
Oelschlaeger, Friedrich W., Watertown, Wis. Building-block	854,708	May 21	4695	978	128	1267
Offenbacher, William L., Zanesville, Ohio. Belt	853,317	May 14	1941	401	128	531
Ogilvie, David D., Lee, Nev. Hay-stacker	853,111	May 7	1491	311	128	377
Ohmer Fare Register Company. (See Ohmer and Bridenbaugh, assignors.)						
Ohmer, John F., and E. H. Bridenbaugh, Dayton, Ohio, assignor to Ohmer Fare Register Company, Rochester, N. Y. Ticket issuing and recording machine	854,666	May 21	4581	957	128	1239
Olds Motor Works. (See Harrington, Norman T., assignor.)						
Olds, Philo G., Elyria, Ohio. Water-heater	855,197	May 28	5707	1188	128	1554
Oleson, Albert, Toledo, Ohio, assignor to Ruedy Bushing Company. Boring-tool	855,411	May 28	6079	1270	128	1648
Oleson, Albert, W. A. and C. C. Williams, Toledo, Ohio; said Oleson assignor to said W. A. and C. C. Williams. Water-heater	855,410	May 28	6077	1270	128	1648
Oleson, Frank L., Chicago, Ill. Skating-rink	854,903	May 28	5111	1063	128	1405

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Oliver, Frederick, Portsmouth, Va. Wrecking device	854,596	May 21	4455	927	128	1207
Oliver, William, Lockport, N. Y. Machine for delinting cotton-seed hulls	854,232	May 21	3797	783-4	128	1042
Oneida Community. (See Collins Jeremiah W., assignor.)						
Ono, Zenkichi, Masury, Ohio. Vegetable-cutting machine	852,844	May 7	957	197	128	244
Ontrich, John H. (See Cox and Ontrich.)						
Orbison, James B., F. C. Kingsbury, and A. J. Pray, Columbus, Ohio. Seal-bolt	853,727	May 14	2754	566	128	741
Oronhyatekha, Acland, Deseronto, Ontario, Canada. Steam-boiler	853,992	May 21	3304	679-80	128	916
Orr, Robert P., Pleasantville, N. Y. Portable tent-frame	853,560	May 14	2392	496	128	647
Orsborn, William, and L. Graeber, Kansas City, Mo. Lifting-jack	854,904	May 28	5113	1063	128	1406
Orth, Frederick W., Portland, Oreg. Meat-chopping machine	853,894	May 14	3060	635	128	824
Orthwein, William R., St. Louis, Mo. Golf-club	855,016	May 28	5329	1106	128	1460
Osborn Manufacturing Company. (See Rice, Edward E., assignor.)						
Osborn, William L., York, Nebr. Curtain-operator	854,963	May 28	5213	1086	128	1430
Osborn, Winfield S., assignor of one-half to C. W. Littlefield, Remington, Ind. Button	854,233	May 21	3799	784	128	1042
Osborne, William S., Hyde Park, assignor of one-half to B. F. Sturtevant Company, Boston, Mass. Dust-collector	853,517	May 14	2314	480	128	628
Osborne, William S., Hyde Park, assignor of one-half to B. F. Sturtevant Company, Boston, Mass. Separator for fibrous materials	853,518	May 14	2316	480-1	128	628
Oscar Lear Automobile Company. (See Frayer and Miller, assignors.)						
Oskamp, Clemens, Cincinnati, Ohio. Automatic pie trimming and crimping machine	854,304	May 21	3917	808	128	1073
Osterberg, Robert, Norway, Mich. Folding combination desk-chair and couch	854,379	May 21	4046	836-7	128	1107
Osterholm, Oscar C., and J. B. Eastman, Clarinda, Iowa. Gage-pin for platen-presses	854,106	May 21	3545	732	128	974
Ostrander, Allen E., Paterson, N. J., assignor to American Car & Foundry Company, St. Louis, Mo. Hopper-bottom car	852,845	May 7	960	197-8	128	244
Otis, Spencer, Chicago, Ill., assignor to National Dump Car Company. Railway-car	854,305	May 21	3920	808	128	1074
Otis, Spencer, Chicago, Ill., assignor to National Dump Car Company. Car	854,701	May 21	4670	973	128	1261
Ott, Frank C., and W. A. Kost, Swissvale, Pa. Nut-lock	854,380	May 21	4049	837	128	1108
Owen, Charles L., *et al.* (See Cochran, Charles H., assignor.) (Reissue.)						
Owen, David T., assignor to D. T. Owen Company, Cleveland, Ohio. Combined bed and couch	854,175	May 21	3676	761	128	1007
Owen, David T., assignor to D. T. Owen Company, Cleveland, Ohio. Combined bed and couch	855,412	May 28	6080	1271	128	1649
Owens, Ira L., Effingham, Kans. Washing-machine	854,597	May 21	4457	927	128	1207
Owens, John J., Randolph, Wis. Whiffletree attachment	854,306	May 21	3922	809	128	1075
Owens, Michael J., assignor to Toledo Glass Company, Toledo, Ohio. Fire-glazing machine	854,836	May 28	4960	1031-2	128	1365
Owens, William E., and J. E. Wright, Omaha, Nebr. Truss for reinforcing concrete construction	852,898	May 7	1082	223	128	277
Oxley, Herbert D. (See Ruse and Oxley.)						
Ozonized Oxygen Company. (See Leetham, Sidney, assignor.)						
P. R. Manufacturing Company. (See Eden, Harold W., assignor.)	852,899	May 7	1084	223	128	278
Paasche, Jens A., Chicago, Ill. Air-brush						
Pace, Orlando, trustee. (See Di Tullio, Tommaso, assignor.)						
Padernacht, William, assignor of one-half to S. Jaretski, New York, N. Y. Skirt or attachment therefor	853,993	May 21	3306	680	128	917
Page, John W. (See Wiles, Russell, assignor.)						
Paige, David O., Detroit, Mich., assignor to Pfaudler Company, Rochester, N. Y. Crane	854,837	May 28	4961	1032-3	128	1366
Paige, James H., Manchester, N. H. Combined name-plate and register for doors	854,598	May 21	4458	927	128	1208
Painter, George B. (See Riddell and Painter.)						
Palm, Erik, Eldred, Minn. Manure-spreader	855,126	May 28	5572	1158	128	1519
Palmer, Chester R., *et al.* (See Palmer, Edward E., assignor.)						
Palmer, Edward E., assignor of one-half to C. R. Palmer and H. G. Payrow, Lynn, Mass. Coat-hanger	853,895	May 14	3102	635	128	825
Palmer, Henry A. (See Doherty and Palmer.)						
Palmer, John E., Wayne, Me. Fender	853,728	May 14	2756	567	128	742
Pangburn, N. C. (See Bearse, Aaron, assignor.)						
Papot, James A., Los Angeles, Cal. Transmitting mechanism	854,176	May 21	3678	761	128	1008
Parcaut, Edward F., Sutherland, Iowa. Supporting structure for building culverts and the like	854,524	May 21	4317	894	128	1173
Park, James G., Alligator, Miss. Cotton cleaner and separator	854,905	May 28	5114	1064	128	1406
Parker, Charles C., Baltimore, Md. Metal sealing cap	855,198	May 28	5707	1188	128	1554
Parker, Columbus C. (See Glazier and Parker.)						
Parker, John, assignor of one-eighth to E. E. Billings, Bay City, Mich. Rail-chair	852,449	May 7	80	17	128	24
Parker, John, assignor to Brown and Sharpe Manufacturing Company, Providence, R. I. Gearing	855,068	May 28	5440	1128-9	128	1489
Parkerson, James G., Jr., La Fayette, La. Railway-tie	853,593	May 14	2458	512	128	664
Parouitaud, Adulph, New York, N. Y. Non-refillable bottle	853,729	May 14	2758	567	128	742
Parsons, Alzamon M., Caney, Kans. Plumb-bob support	852,676	May 7	622	119	128	162
Parsons, Harold C. (See Freer, Phelps M., assignor.)						
Parsons, James A., Chicago, Ill. Shovel-tooth	854,838	May 28	4964	1033	128	1366
Partington, John, Saltaire, England. Resilient wheel for vehicles	855,199	May 28	5709	1188	128	1554
Pascoe, Edward, Sioux City, Iowa. Safe-door	853,825	May 14	2951	605	128	790
Passavant, Philip L., assignor of one-half to F. M. Cockrell and T. W. Baxter, Connellsville, Pa. Automatic lubricating device	853,469	May 14	2210	459	128	600
Passburg, Emil, Berlin, Germany. Vacuum drying apparatus	853,260	May 14	1796	374	128	487
Pataud, Henri, Paris, France. Wheel rim or felly	853,584	May 14	2460	512	128	664
Patten, James. (See Patten, William and J.)						
Patten, William and J., New York, N. Y. Phonograph system	854,525	May 21	4318	894	128	1174
Patterson, Warren A., assignor to American Cotton Separator Company, St. Louis, Mo. Cotton-separator	851,470	May 14	2212	460	128	600
Patzold, Hugo L., Meriden, Conn. Pencil-holding device	854,053	May 21	3430	707	128	946
Paul, Arthur, Newark, N. J. Tip for cues	855,127	May 28	5575	1158	128	1519
Paulson, Charles E., New York, N. Y. Stairway	854,667	May 21	4586	957	128	1241
Paulson, Eleck, Osage, Iowa. Rural mail-delivery cabinet	853,318	May 14	1942	401-2	128	532
Payrow, Harry G., *et al.* (See Palmer, Edward E., assignor.)						
Peacock, Joseph, Savanna, assignor to Cupola Cleaning Company, Chicago, Ill. Grain-cleaner	854,757	May 28	4799	997	128	1323
Pearsall, William, assignor to M. J. Whittall, Worcester, Mass. Tufting mechanism for looms	853,471	May 14	2215	461-2	128	601
Pearson, William H., Passaic, and R. A. Wernan, Clifton, N. J. Toy	853,730	May 14	2759	567-8	128	742
Pease, Charles E., *et al.* (See Winchell, James F., assignor.)						
Pease, John D., New York, N. Y. Pedal for automatic pianos	854,307	May 21	3923	809	128	1075
Peay, William G., and G. W. Ham, Willard, Ky. Miner's blast-charger	852,900	May 7	1066	224	128	278
Peck Bros. & Co. (See Newton, William G., assignor.)						
Peck, Cassius C., Rochester, N. Y. Circulating hot water in a heating system	854,054	May 21	3430	707-8	128	947
Peck, Stow & Wilcox Company. (See Ellrich, Robert C., assignor.)						
Peckham, Charles M. (See Hill and Peckham.)						
Pedersen, Mikael, Dursley, England. Gearing for bicycles, &c	854,599	May 21	4459	928	128	1208
Pedersen, Mikael, Dursley, England. Gearing for motor-vehicles, &c	854,600	May 21	4462	928-30	128	1209

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Peet, Edward B. (See Peet, Walter F., assignor.)						
Peet, Walter F., assignor of one-half to E. B. Peet, Philadelphia, Pa. Garment-fastener	853,561	May 14	2393	498	128	647
Pélissier, Fénelon, Gonaïves, Haïti. Means for repeating piano-notes	853,595	May 14	2461	513	128	665
Peltzer, Albert, Chicago, Ill. Dumping-car	855,128	May 28	5576	1159	128	1520
Pennick, James E., and J. O. Hale, Topeka, Kans. Portable placer-mining machine	855,200	May 28	5710	1188–9	128	1555
Percy, William R. (See Taylor, David, Jr., assignor.)						
Perkins, George E., assignor of three-fourths to O. D. Maloney and P. D. Ransom, Atkinson, and A. Burrall, Rock Island, Ill. Combined mail-bag catcher and deliverer	853,472	May 14	2218	462	128	601
Perkins, Walter G., San Francisco, Cal. Desulfurizing and subsequent smelting	852,612	May 7	478	88	128	126
Perkins, Walter G., San Francisco, Cal. Smelting-furnace	852,613	May 7	481	89	128	127
Perkins, Walter G., and T. Cox, Jr., San Francisco, Cal. Agglomerating minerals	852,611	May 7	477	.....	128	126
Perks, Thomas, assignor to George Hattersley and Sons Limited, Keighley, England. Warp stop mechanism	853,519	May 14	2317	481 3	128	629
Perolin Company of America. (See Singer, Berthold, assignor.)						
Perrey, Edward J., Chamois, assignor of one-half to V. and A. Gaume, Crook, Mo. Gun-stock	853,933	May 14	3186	653	128	847
Perry, Edward L., Paterson, N. J. Packing or gasket	854,234	May 21	3801	784	128	1043
Perry, George E. (See Jones and Perry.)						
Perry, James A., Burgaw, N. C. Log-cart	854,601	May 21	4467	930–1	128	1210
Perry Time Stamp Company. (See Jones and Perry, assignors.)						
Person, Charles J., St. Joseph, Mo. Belt-lacer's tool	852,614	May 7	483	89	128	127
Pestalozzi, Heinrich T., Zurich, Switzerland. Device for cross-weaving	852,520	May 7	280	52	128	76
Peter, George W., St. Louis, Mo. Combination elevator-truck	853,896	May 14	3102	636	128	826
Peters, Edwin T., Lincoln, Nebr. Bicycle	853,112	May 7	1404	312	128	377
Peters, John, Milan, Italy. Metal wall for buildings, masonry-work, and the like	853,261	May 14	1797	374	128	487
Peterson, George W., Leonardville, Kans. Trunk	854,602	May 21	4469	931	128	1211
Peterson, John N., Hazelton, N. D. Compound tool	853,520	May 14	2321	483	128	629
Peterson, Olaus G., Dallas, Wis. Tally for pool-tables	853,029	May 7	1357	282	128	345
Peterson, Per A., New York, N. Y. Oscillating propeller	852,521	May 7	282	52	128	77
Petri, Gunther H., Boston, Mass. Forming-machine	854,308	May 21	3924	809–10	128	1076
Petrtyl, August. (See Jamison and Petrtyl.)						
Pettit, Silas W. (See Waddell, Montgomery, assignor.)						
Pevear, Jesse S. (See Frank and Pevear.)						
Pfaff, Richard, Zurich, Switzerland. Bottling-machine	852,977	May 7	1250	257	128	318
Pfaudler Company. (See Paige, David O., assignor.)						
Pfunder, Emil L., and F. A. Cook, Hartford, Conn., assignors to Underwood Typewriter Company, New York, N. Y. Type-writing machine	853,562	May 14	2394	499	128	647
Phelps, Sidney W., Globe Village, assignor of one-fourth to J. A. Hall, Southbridge, Mass. Suspenders	854,758	May 28	4801	997	128	1324
Philadelphia Tapestry Mills. (See Zimmerman, John, assignor.)						
Philbrick, James A., and A. Ray, Anacortes, Wash. Curtain-fixture	853,113	May 7	1495	312	128	378
Phillip, Peter, Rogers Park, Ill. Turbine	853,563	May 14	2398	499–500	128	648
Phillips, Charles H., Maplewood, Mass. Clasp	854,430	May 21	4150	860	128	1131
Phillips, William H., assignor of one-fourth to M. S. Wahrhaftig, Sacramento, Cal. Nut-lock	855,018	May 28	5331	1107	128	1460
Phillips, William H., and O. G. Williams, Sacramento, Cal. Fly-exit for window and door screens	853,419	May 14	2113	440	128	574
Phoebus, Virginia A. (See Gilbert and Phoebus.)						
Platt, James J., *et al.* (See Garbe, William F., assignor.)						
Pick, Alfred, assignor of fifteen one-hundredths to W. W. Butler, Yonkers, N. Y. Magnetic clutch	854,107	May 21	3546	732	128	975
Pickering Governor Co. (See Hall, Stephen S., assignor.)						
Pierce, William A., Topeka, Kans. Hat holder and band	854,906	May 28	5116	1064	128	1407
Pigott, William, Chicago, Ill. Suspender-clasp	854,907	May 28	5117	1064	128	1407
Piguet, Louis A., Chanute, Kans. Spring-support for buggy-bows	853,114	May 7	1497	312	128	378
Pilling, Luther, Danielson, Conn. Lug-strap for loom picker-sticks	852,522	May 7	284	52	128	77
Pitts, Thomas D., assignor to New Cyanide Process Company, New York, N. Y. Apparatus for treating ores	854,526	May 21	4321	894	128	1174
Pittsburg Pneumatic Company. (See Faber, Frank M., assignor.)						
Pittsburgh Equipment Company. (See Hassel, Gustav A., assignor.)						
Pittsfield Spark Coil Company. (See Jacobson, Edward B., assignor.)						
Plass, William F., New York, N. Y. Skylight structure	854,235	May 21	3802	784	128	1043
Platt, Henry, Hazleton, Pa. Ash-screener	855,335	May 28	5950	1241	128	1616
Plume & Atwood Mfg. Co. (See Andersen, Lauritz W., assignor.)						
Plym, Francis J., Kansas City, Mo. Store-front construction	852,450	May 7	81	17	128	24
Plym, Francis J., Kansas City, Mo. Wall-plug	855,129	May 28	5577	1159	128	1520
Pogue, James C., Findlay, Ill. Safety-valve	854,908	May 28	5118	1065	128	1407
Polakoskey, Frank V., Peekskill, N. Y. Clothes-line pulley	852,740	May 7	736	144	128	193
Polishook, Samuel N., New York, N. Y. Traveler's cycle	854,528	May 21	4324	895	128	1175
Polk, Calvin L., Marlin, Tex. Plow attachment	854,909	May 28	5119	1065	128	1408
Pollacsek, Emil, New York, N. Y. Preparing and reducing ores	854,527	May 21	4323	.....	128	1174
Pollak, Isidor, assignor to Erste Wiener Export-Malzfabrik Hauser & Sobotka, Vienna, Austria-Hungary. Solidified diastatic malt extract	853,934	May 14	3187	.....	128	848
Pollock, Arthur R., Piqua, Ohio. Registering system for telephone-exchanges	853,373	May 14	2040	422	128	555
Pond, Linnaeus C., and G. C. Wagner, Los Angeles, Cal. Windmill-oiler	854,964	May 28	5214	1086–7	128	1431
Pool, Morris W., Brooklyn, assignor to Monarch Typewriter Company, Syracuse, N. Y. Type-writing machine	852,799	May 7	872	177	128	222
Pope, M. J., *et al.* (See Thorne, George L., assignor.)						
Porter, Arthur, Galena, Ill. Sanitary automatic cuspidor	852,901	May 7	1088	224	128	278
Porter, Arthur H. (See Stockton and Porter.)						
Porter, Arthur H., assignor to E. Ingraham Co., Bristol, Conn. Clock	855,130	May 28	5579	1159–60	128	1520
Porter, James A., assignor of one-half to W. B. Griffith, Crawfordsville, Ind. Chimney-back	853,807	May 14	3106	636	128	827
Posakony, William J., Pocahontas, Iowa. Fly-trap for attachment to windows	854,910	May 28	5120	1065	128	1408
Post, Ezra L., Wallingford, Conn. Clutch for leather-stretching machines	852,800	May 7	875	178	128	223
Postal Insurance Corporation. (See Adams, Eugene G., assignor.)						
Postel, Saul W., New York, N. Y. Device for fitting garments	853,731	May 14	2760	568	128	743
Potter, Charles W. (See Staples and Potter.)						
Potter, Henry N., New Rochelle, N. Y., assignor to G. Westinghouse, Pittsburg, Pa. Ozoniser	854,965	May 28	5219	1087	128	1432
Poulter, Micajah L., Stockport, Iowa. Fire-alarm or temperature-indicator	853,826	May 14	2952	606	128	790
Powell, Jacob W. W., Akron, Ohio. Buckle	853,792	May 14	2761	568	128	743
Powell, William, Hume, Ill. Sawing-machine	853,030	May 7	1349	282	128	345
Power, Jeffrey J., Madison, Wis., assignor of one-half to L. W. Stevens, Syracuse, N. Y. Rotary discharging apparatus. (Reissue)	12,655	May 21	4700	978	128	1268
Powers, Timothy B., assignor to Kutnow Bros., New York, N. Y. Electric clock	853,648	May 14	2576	535	128	694
Pratt, Charles R., Montclair, N. J. Elevator safety device	853,733	May 14	2762	568–9	128	743
Pray, Alvah J. (See Orbison, Kingsbury, and Pray.)						
Preidel, Wenzel, London, England. Screw-propeller	855,131	May 28	5580	1160	128	1521

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Premier Last Company. (See Prindle, Edwin J., assignor.)						
Premier Motor Mfg. Co. (See Weldely, George A., assignor.)						
Prentice, George W., Providence, R. I. Placket-closure	852,902	May 7	1090	224	128	279
Prentis, Augustus B., Marshfield, Oreg. Dental instrument	853,031	May 7	1360	282–3	128	346
Prescott, Sydney I., assignor to T. C. Durham, New York, N. Y. Razor	854,839	May 28	4965	1033	128	1367
Prescott, Sydney I., assignor to T. C. Durham, New York, N. Y. Razor	854,840	May 28	4966	1033	128	1367
Prescott, Sydney I., assignor to T. C. Durham, New York, N. Y. Razor	854,841	May 28	4968	1034	128	1367
Priest, Fred K., Hillsboro, N. H. Tool-operating mechanism	853,564	May 14	2401	500	128	649
Prindle, Edwin J., Washington, D. C., assignor to Premier Last Company, Great River, Long Island, N. Y. Last	853,827	May 14	2955	606	128	791
Proctor, Maro L., assignor to Czarra & Proctor, Elkhart, Ind. Machine for handling dirt and saving gold	854,702	May 21	4671	973–4	128	1261
Prosch Photographic Shutter and Optical Company. (See Klaiber, Maximilian, assignor.)						
Pryce, Edmund H., Yonkers, N. Y. Electric gas-lighter	854,177	May 21	3679	761	128	1008
Pugerud, Ola S. New York, N. Y. Rotatable eraser	853,994	May 21	3307	680	128	917
Pullman Company. (See Dodds, Ethan I., assignor.)						
Pulman, Fred, and W. I. Leatherland, Alexandria, Va. Amusement device	855,132	May 28	5581	1160–1	128	1522
Purviance, Nathan M. (See Austin and Purviance.)						
Putnam, Alfred E. (See Fogle, William C., assignor.)						
Putnam, Alfred E., Milan, Mich. Computing-callipers	853,262	May 14	1798	375	128	488
Putt, Harlie O., Millbury, Ohio. Sound-wave intensifier	852,615	May 7	485	89–90	128	128
Quackenboss, Leonard G., Chicago, Ill. Detachable bay-window	854,055	May 21	3433	708–9	128	947
Quertier, Hilary, Dunedin, New Zealand. Rail-cleaner	854,668	May 21	4588	958	128	1241
Rabey, James, Detroit, Mich. Device for facilitating the removal of valves	852,846	May 7	962	198	128	245
Radcliff, Lee, Danvers, assignor of one-half to A. Hay, Bloomington, Ill. Trolley-pole	854,759	May 28	4803	997	128	1324
Radford, Henry B., assignor to J. A. Lyons, Chicago, Ill. Cleaning and polishing compound	852,903	May 7	1091	.....	128	279
Railroad Supply Company. (See Vogel, Eugene W., assignor.)						
Raithel, Friedrich, Windsheim, Germany. Gypsum-burning kiln	852,616	May 7	487	90	128	128
Ramage, Alexander S., Detroit, Mich. Regenerating waste liquors from the manufacture of chrome pigments	855,019	May 28	5332	.....	128	1461
Ramey, F. E., *et al.* (See Baker and Irish, assignors.)						
Ramsey, Basil P., Louisville, Ga. Display-case	855,201	May 28	5713	1189	128	1555
Ramsperger, Joseph, York, Pa. Artificial tooth	854,842	May 28	4969	1034	128	1368
Randall, Frank D., assignor of one-third to E. E. Browne, Waupaca, Wis. Die for cutting screw-threads	853,596	May 14	2463	513	128	665
Randall, John. (See Randall, Wellington and J.)						
Randall, Karl C., Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company. Cooling system	853,263	May 14	1800	375	128	488
Randall, Karl C., Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company. System of distribution	853,374	May 14	2042	423	128	556
Randall, Karl C., Edgewood Park, Pa., assignor to Westinghouse Electric & Manufacturing Company. Cooling and ventilating system	853,375	May 14	2043	423	128	556
Randall, Wellington and J., Marysville, Wash. Earth-scraping machine	855,336	May 28	5952	1242	128	1617
Rankin, Antonie S. (See Rankin, William A., assignor.)						
Rankin, William A., assignor of one-third to A. S. Rankin, Toledo, Ohio. Manifolding attachment	854,703	May 21	4673	974	128	1261
Rankin, William W. (See Clifford and Rankin.)						
Ransom, Paul D., *et al.* (See Perkins, George E., assignor.)						
Raquette Foundry & Supply Company. (See Huntington, O'Neill, and Noone, assignors.)						
Rasmussen, Charles, *et al.* (See Nolan, James M., assignor.)						
Rasor, Harry F., Barberton, Ohio. Hot-air furnace	852,617	May 7	489	90–1	128	129
Rathbone, Sard & Co. (See Van Buren, Jafew S., assignor.)						
Rathbun, Charles B., Canton Junction, Mass. Leather-clamp	854,603	May 21	4470	931	128	1211
Raupach, Fritz, London, England. Fastening device	855,337	May 28	5953	1242	128	1617
Rawlinson, Charles, St. Louis, Mo. Combined truck and supporting-stand	854,381	May 21	4050	837	128	1108
Ray, Alonzo. (See Philbrick and Ray.)						
Ray, Charles M., Lake City, Fla. Pump-piston	854,382	May 21	4052	837	128	1108
Ray, Daniel J., *et al.* (See Wells, Ralph N., assignor.)						
Rayer, Carl, Esslingen, Germany. Gas-boiler	853,995	May 21	3309	681	128	918
Raymond, Marshall C., Rutland, Vt. Combination-tool	855,338	May 28	5955	1242	128	1617
Razall, Henry G., Milwaukee, Wis. Perforating and creasing attachment for printing-presses	855,339	May 28	5956	1243	128	1618
Read & Sons, William. (See Grout, Edward A., assignor.)						
Ream, Solomon, Millcreek, Ill. Operating mechanism for washing-machines	852,618	May 7	490	91	128	129
Reaser, Lewis, Reading, Pa. Lid for cooking vessels	852,677	May 7	623	119	128	162
Rebeyrolle, Jules. (See Feitu and Rebeyrolle.)						
Redpath, Robert C., Johnson county, Kans. Baling attachment for threshing-machines	853,376	May 14	2046	423–5	128	557
Reed, Cecil, *et al.* (See Mims, George W., assignor.)						
Reed, Charles J., Philadelphia, Pa., assignor to Reed Morrill Electric Co. Expansible pulley	853,264	May 14	1802	375	128	489
Reed, Emerson G., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Supporting means for electric apparatus	854,309	May 21	3928	810	128	1076
Reed, Harry E., Salem, Mass. Game apparatus	852,904	May 7	1092	224–5	128	279
Reed Morrill Electric Co. (See Reed, Charles J., assignor.)						
Reed, William D. (See Bailey and Reed.)						
Rees Hook Company. (See Eden, James A., Jr., assignor.)						
Rees, William H., Worcester, Mass., assignor to Aeolian Company, New York, N. Y. Music-sheet	855,413	May 28	6082	1271	128	1649
Reeves, Asa W., Corydon, Pa. Stanchion	854,966	May 28	5221	1087	128	1432
Regner, Wilson H., assignor to W. H. Regner and P. J. Haas, York, Nebr. Skirt stay and fastener	855,340	May 28	5958	1244	128	1618
Rehmann, Hugo, Mülheim-on-the-Ruhr, Germany. Device for charging furnaces, gas-generators, &c.	853,420	May 14	2114	441	128	574
Reichel, Alvin S., assignor of two-thirds to W. H. Smart and M. L. Titus, Point Marion, Pa. Machine for manufacturing glassware	854,236	May 21	3804	785–6	128	1043
Reichenbach, Henry M., New York, N. Y. Carbureter	854,604	May 21	4471	931–2	128	1211
Reichenberger, Benedict F., Township 4, Brown county, Kans. Clutch	854,529	May 21	4328	895	128	1175
Reichert, Ferdinand W., Granton, Wis. Wire-stretcher	853,734	May 14	2766	569	128	745
Reid, Arthur B., Chicago, Ill. Garment-fastener	853,319	May 14	1944	402	128	532
Reid, Arthur B., Chicago, Ill. Hook and eye	853,320	May 14	1946	402	128	533
Reid, Arthur B., Chicago, Ill. Hook and eye	853,377	May 14	2054	425	128	560
Reidy, Michael D., Worcester, Mass. Tool-holder	854,669	May 21	4589	958	128	1241
Reif, Alfred J., Allegheny, and A. L. McCormick, Knoxville, Pa. Trolley	852,978	May 7	1251	258	128	318
Reinohl, David C. (See Smith and Reinohl.)						
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company. Back-geared motor	852,678	May 7	624	120	128	163
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company. Induction-motor	854,760	May 28	4804	998	128	1324

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Remelius, Charles A., assignor to E. H. Fallows, trustee, New York, N. Y. Separable brake shoe and head	854,761	May 28	4806	998	128	1323
Rempis, John H., Grand Rapids, Mich. Mold for concrete building-blocks	854,843	May 28	4971	1034	128	1368
Remy, Blaise J. M. (See Ageron and Remy.)						
Reniff, James R., assignor of one-half to E. H. Gold, Chicago, Ill. Draft-rigging	852,801	May 7	877	178	128	223
Renken, Henry A., New York, assignor to F. Wesel Manufacturing Company, Brooklyn, N. Y. Routing-machine and the like	852,577	May 7	415	76	128	110
Renshaw, William. (See Kennedy, Martin, assignor.)						
Reohr, John H., Yonkers, N. Y., assignor, by mesne assignments, to Magazine and Book Company of New York. Means for coöperative advertising	853,473	May 14	2221	462	128	602
Replogle, James B., Chicago, Ill. Press or sad iron	854,431	May 21	4151	860	128	1132
Requa, John J., New York, N. Y. Display-stand	852,451	May 7	83	17	128	24
Rettig, George, Jr. (See Nuernberger and Rettig.)						
Reulmann, William F., Cincinnati, Ohio. Sole-edge trimmer	855,133	May 28	5583	1162	128	1522
Reuss, Theodor, Kötzschenbroda, Germany. Cycle-wheel guard	853,115	May 7	1498	313	128	378
Reuter, Ludwig H., New York, N. Y. Preventing oxidation of formaldehyde and product thereof	853,265	May 14	1804	.....	128	489
Revere, Paul, New York, N. Y. Blind-fastener	853,735	May 14	2767	570	128	745
Reynolds, Harry M., Grand Rapids, Mich. Lining for tanks	853,828	May 14	2957	606	128	792
Reynolds, Henry J., Cleveland, Ohio. Combined gage and stop-cock	854,108	May 21	3551	732	128	976
Reynolds, Henry S., Brooklyn, N. Y. Barrel or receptacle	854,237	May 21	3810	786	128	1045
Rheinische Metallwaren-und Maschinenfabrik. (See Völler, Karl, assignor.)						
Rheutan, Abram A., Worcester, Mass. Envelop-cutting mechanism	853,597	May 14	2463	513	128	665
Rhoden, Robert E., Graniteville, S. C. Thin-place-detector mechanism for looms	855,341	May 28	5959	1244	128	1618
Rhodes, Joseph B., Harrisburg, Pa. Automatic stop-motion for knitting-machines	853,032	May 7	1362	283	128	346
Rice, Edward E., New Durham, N. H., assignor to Osborn Manufacturing Company, Cleveland, Ohio. Rotary brush	853,378	May 14	2056	425	128	560
Rice, Richard H. (See Callan and Rice.)						
Rice, Robert F., Bridgeport Conn. Amusement device	853,898	May 14	3107	636–7	128	827
Rice, Thomas B., Jr., Philadelphia, Pa. Indicator	852,979	May 7	1252	258	128	318
Rich, Frank, Crawley, England. Detachable inner tube for pneumatic tires	852,619	May 7	491	91	128	129
Richards, Enoch C., Portland, Me. Storm-window fastener	855,259	May 28	5817	1213	128	1583
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation. Machine for making impressions	852,452	May 7	85	18–22	128	25
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation. Typographic machine	852,905	May 7	1093	225–9	128	280
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation. Mechanical movement	853,191	May 7	1628	340	128	411
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation. Typographic machine	853,208	May 7	1684	348–51	128	425
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, of one-half to American Typographic Corporation. Mechanical movement	854,056	May 21	3438	709–10	128	948
Richards, Herbert W., Chicago, Ill. Grain-door for cars	852,906	May 7	1109	229	128	282
Richards, Victor I., East Orange, N. J. Gas-log	852,679	May 7	626	120	128	163
Richards, Walter J., Norwood, Ohio, assignor to Allis-Chalmers Company and Bullock Electric Manufacturing Company. Dynamo-electric machine	854,704	May 21	4677	975	128	1202
Richardson, Artemas P. (See Wootten and Richardson.)						
Richardson, Clifford, New York, and C. N. Forrest, Brooklyn, N. Y., assignors to Barber Asphalt Paving Company, Philadelphia, Pa. Bituminous paving-block	853,116	May 7	1499	.....	128	379
Richardson, Clifford, New York, and C. N. Forrest, Brooklyn, N. Y., assignors to Barber Asphalt Paving Company, Philadelphia, Pa. Bituminous composition	853,117	May 7	1501	.....	128	379
Richardson, M. E., *et al.* (See Norstrom, Nils E., assignor.)						
Richardson, William, *et al.* (See Nims, Francis W., assignor.)						
Richey, Harry E., Perrysville, Pa. Telephone receiver-holder	853,118	May 7	1502	313	128	379
Richley, John W., York, Pa. Automobile	854,530	May 21	4329	895–6	128	1176
Richmond, George G., Norwalk, Conn. Pattern-maker's tool	853,321	May 14	1948	402	128	533
Richmond, Louis E., assignor of two-thirds to H. J. Hunger and G. Scheidegger, Cleveland, Ohio. Movement-cure device	855,342	May 28	5961	1244	128	1619
Ricketts, James R., assignor to H. G. Thomas, Fort Worth, Tex. Acetylene-gas machine	852,620	May 7	402	91	128	129
Riddell, John, and G. B. Painter, Schenectady, N. Y., assignors to General Electric Company. Electric rock-drill	852,680	May 7	627	120–1	128	163
Riechmann, William. (See Zierlein, Richard W., assignor.)						
Rielly, James E., Newark, N. J. Spring-wheel	854,238	May 21	3811	787	128	1045
Riemer, Frank, assignor of one-half to E. H. Vogt, Denver, Colo. Car-ventilator	853,935	May 14	3188	653	128	848
Riffo, Marion B., Philadelphia, Pa. Pneumatic-service carrier	853,936	May 14	3190	654	128	848
Riffo, Marion B., Philadelphia, Pa. Pneumatic carrier	853,937	May 14	3191	654	128	848
Rigby, Clark F., New Martinsville, W. Va. Hydraulic packing	854,239	May 21	3812	787	128	1046
Rile, Frank H., Buffalo, N. Y. Sump	853,598	May 14	2466	513	128	666
Rine, William J., Silver Hill, W. Va. Churn	854,240	May 21	3813	787	128	1046
Ripley, William B. (See Williamson and Ripley.)						
Risbridger, John, assignor of fifty-five one-hundredths to Eureka Tempered Copper Works, North East, Pa. Commutator assembling and finishing device	855,134	May 28	5585	1162	128	1522
Rishel, John A., Homestead, Pa. Track-scale	852,980	May 7	1254	258–9	128	319
Ritter, Frank, Rochester, N. Y. Dental chair	853,421	May 14	2116	441–2	128	575
Ritter, Henry, assignor to Lunkenheimer Co., Cincinnati, Ohio. Steam-trap	854,911	May 28	5121	1065–6	128	1408
Ritter, Theodor, West Hoboken, N. J. Combined fan and eye-protector	855,202	May 28	5714	1189	128	1556
Roberts, David, Grantham, England. Internal-combustion engine	853,422	May 14	2120	442	128	576
Roberts, Harvey H., Lexington, Ky. Portable electric-light cabinet	853,033	May 7	1364	283–4	128	347
Roberts, John G., assignor to Western Electric Company, Chicago, Ill. Automatic telephone-exchange	852,523	May 7	285	53	128	77
Roberts, John W., San Angelo, Tex. Axle-setting machine	852,453	May 7	128	22	128	40
Roberts, Lyman R., Detroit, Mich., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	853,266	May 14	1806	376	128	489
Robertson, James H., Arlington, N. J., assignor of one-half to J. C. Klatzl, New York, N. Y. Electrode	853,521	May 14	2322	483	128	630
Robertson, William H., St. Louis, Mo. Sighting apparatus for moving vehicles	854,310	May 21	3929	810–11	128	1077
Robeson, Russell E. (See Schauweker and Robeson.)						
Robins, William H., assignor to American Bank Protection Co., Minneapolis, Minn. Circuit-closing device for burglar-alarm systems	853,736	May 14	2768	570	128	745
Robinson, Aaron J., Fremont, N. H. Quick release for grinding-mills	855,343	May 28	5963	1244–5	128	1619
Robinson, Charles F., Montpelier, Vt. Mail-handling device for railway-mail service	854,705	May 21	4680	975	128	1203
Robinson, Charles M., New York, N. Y. Therapeutic and other electric lamps	853,839	May 14	2958	606	128	792
Robinson, Ellsworth, Kellogg, Iowa. Check-row corn-planter	855,435	May 28	6124	1280	128	1658
Robinson, Frank T., Chicago, Ill., assignor to Twin Bottle-Cap Company. Frangible seal for bottles	854,844	May 28	4972	1034	128	1368
Robinson, Frank T., Chicago, Ill., assignor to Twin Bottle-Cap Company. Closure for bottles and the like	854,845	May 28	4974	1035	128	1369
Robinson, Joshua, Lawrence, Mass. Shuttle	854,531	May 21	4333	896	128	1176

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Robison, David M. (See Hartnett and Robison.)						
Roch, Francis X., and A. O. Bonnin, Holyoke, Mass.; said Bonnin assignor to said Roch. Clothes-line support	853,599	May 14	2467	514	128	666
Rockefeller, David P., Sunbury, Pa. Extension-table	853,474	May 14	2223	463	128	603
Rockwell, Arthur E., Oswego, N. Y. Steering-gear for automobiles	852,847	May 7	963	198	128	245
Rockwell, Edward D., assignor, by mesne assignments, to New Departure Manufacturing Company, Bristol, Conn. Trolley-harp	853,322	May 14	1949	403	128	533
Rockwell, Hubert R., assignor of two-thirds to J. C. Wall, Jr., and H. F. Temple, Chattanooga, Tenn. Fluid-pressure-operated stop-valve mechanism for engines	855,414	May 28	6084	1272	128	1650
Rockwell, Hubert R., assignor of two-thirds to J. C. Wall, Jr., and H. F. Temple, Chattanooga, Tenn. Fluid-pressure-operated stop-valve mechanism for engines	855,415	May 28	6089	1272–3	128	1650
Rockwell, Hubert R., assignor of two-thirds to J. C. Wall, Jr., and H. F. Temple, Chattanooga, Tenn. Fluid-pressure-operated stop-valve mechanism for engines	855,416	May 28	6092	1273	128	1651
Rockwell, Hubert R., assignor of two-thirds to J. C. Wall, Jr., and H. F. Temple, Chattanooga, Tenn. Fluid-pressure-operated stop-valve mechanism for boilers	855,417	May 28	6094	1273–4	128	1651
Rodgers, John F., New York, assignor of one-half to M. MacCanlis and A. Barman, Brooklyn, N. Y. Electric alarm-clock	853,119	May 7	1503	313	128	379
Roe, Lewis W., and L. J. Bonar, Mansfield, Ohio. Pipe-cleaner	853,423	May 14	2121	442	128	576
Roessler & Hasslacher Chemical Company. (See Foregger and Brindley, assignors.)						
Roesti, Paul G. (See Backstrom and Roesti.)						
Roewer, Friedrich J. H., Hamburg, Germany. Nitroglycerin explosive	853,830	May 14	2960	.....	128	792
Rogers, Burr S. (See Benner and Rogers.)						
Ross, Robert, Chicago, Ill., assignor to American Farm Products Company, Jersey City, N. J. Manufacture of process butter	854,383	May 21	4053	838	128	1109
Roseboom, Jesse G., Cincinnati, Ohio. Sash-frame and sash	852,621	May 7	495	92	128	130
Roseboom, Jesse G., Cincinnati, Ohio. Window-sash	852,622	May 7	497	92	128	130
Rosen, Carl. (See Wickland, Algot A., assignor.)						
Rosenbaum, Louis, St. Louis, Mo. Ironing-machine	854,109	May 21	3552	733	128	976
Rosenberg, Adolph. (See Spencer, Aubrey F., assignor.)						
Rosenthal, Julius, assignor of one-half to M. Lichtenstein, Atlanta, Ga. Stove	854,605	May 21	4474	932–3	128	1212
Ross, Arthur G. (See Clarke and Ross.)						
Ross, Evalyn. (See Northrup, Elmer C., assignor.)						
Ross, George S., Riverside, Ill. Bag for pulverizing slice plug-cut tobacco	854,384	May 21	4055	838	128	1109
Ross, Lee C., West Point, Miss. Fire dog or iron	853,831	May 14	2961	607	128	792
Roth, John A. Hannibal, Ohio. Pole-climbing apparatus	852,623	May 7	498	92	128	131
Rothgiesser, Georg, Berlin, Germany. Motor-vehicle	854,432	May 21	4154	860–1	128	1132
Rounds, Herbert G., Bay City, Mich. Building-block	852,578	May 7	417	76	128	111
Rounds, Herbert G., Bay City, Mich. Block-making plant	852,579	May 7	419	77–8	128	111
Roundy, Abial B., Winslow, Me. Cow-tail holder	853,996	May 21	3310	681	128	918
Rourke, James, Independence, Kans. Well-drilling machine	854,606	May 21	4477	932	128	1212
Rousselle, Andre A. (See Frigon, Louis T., assignor.)						
Rowan, Harry B., North Attleboro, Mass. Jeweler's cutting-pliers	854,433	May 21	4155	861	128	1133
Roy, William M. (See Collins, Dave W., assignor.)						
Royal, Charlton H. (See Taluau, Julius, assignor.)						
Royal Embroidery Works. (See O'Neill, Thomas, assignor.)						
Rubber and Celluloid Harness Trimming Co. (See Walker, George, assignor.)						
Ruddick, William B., New York, N. Y. Clamp	852,681	May 7	629	121	128	164
Ruedy Bushing Company. (See Oleson, Albert, assignor.)						
Ruff, Joseph H., Hollywood, Cal. Nozzle-holder	854,178	May 21	3681	762	128	1009
Ruff, Solon Z., Atlanta, Ga. Pavement-block and making the same	853,034	May 7	1365	284	128	347
Rugg, De Leonard, Catskill, N. Y. Broiling and toasting device	852,624	May 7	500	92	128	131
Ruggles, Clifton P., Osawatomie Kans. Signal	853,737	May 14	2770	570	128	746
Runge, William, assignor to Seneca Falls Manufacturing Company, Seneca Falls, N. Y. Carriage feed mechanism for lathes	854,532	May 21	4334	896–7	128	1177
Runner, John B., Indianapolis, Ind. Wrench	855,135	May 28	5586	1162	128	1523
Ruse, Bert M., and H. D. Oxley, St. Paul, Minn. Mechanical motor	854,607	May 21	4478	933–4	128	1213
Russel, Edgar, U. S. Army. Flash-light photography	853,035	May 7	1366	284	128	347
Russell & Erwin Manufacturing Company. (See Voight, Henry G., assignor.)						
Russia Cement Company. (See Brooks, Reuben, assignor.)						
Rutherford, Frank H., Chicago, Ill. Flexible metallic pipe	852,580	May 7	425	78	128	112
Rutherford, Frank H., Chicago, Ill. Automatic air-brake coupling for railway-cars	853,424	May 14	2122	443	128	576
Rütt, Heinrich, Rheydt, Germany. Can-opener	854,434	May 21	4156	861	128	1133
Ruud, Edwin, Pittsburg, Pa. Storage water-heater	853,738	May 14	2773	570	128	747
Ryan, Charles N., *et al.* (See Ryan, John H., assignor.)						
Ryan, John G., Montreal, Quebec, Canada. Head-rest for beds	852,454	May 7	129	23	128	40
Ryan, John H., assignor of two-thirds to O. B. Stubbs and C. N. Ryan, Portland, Oreg. Electromagnetic machine or concentrator	853,475	May 14	2224	463	128	603
Ryan, Martin M., Oberlin, Ohio. Nail-trimming device	853,832	May 14	2962	607	128	792
Ryan, William J., Chester, and C. R. Burke, Overbrook, Pa. Obtaining lubricating-oil from crude oil	854,057	May 21	3446	710	128	951
Rydholm & Co., C. O. (See Nilsson, Valfrid, assignor.)						
Ryon, Eppa H., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Loom pick-finder	853,600	May 14	2469	514	128	667
S. Pearson & Son. (See Moir, Ernest W., assignor.)						
S. Twitchell Co. (See Twitchell and O'Connor, assignors.)						
S. L. Allen and Company. (See Burt and Chapin, assignors.)						
S. R. Dresser Manufacturing Company. (See Dresser, Solomon R., assignor.)						
Saegmuller, George N. (See Mustin and Saegmuller.)						
Safety Car Heating & Lighting Company. (See Dixon, Robert M., assignor.)						
Saffell, Frank H., Garfield, Va. Trap for beehives	852,907	May 7	1110	229–30	128	283
Sahlsten, Nestor, Mount Iron, Minn. Clasp-knife	852,524	May 7	291	53	128	79
Sakurai, Keizo, San Francisco, Cal. Fireproof material	852,908	May 7	1112	.....	128	283
Sakurai, Keizo, assignor of one-third to G. Abrahamson, San Francisco, Cal. Fireproof material	855,136	May 28	5587	.....	128	1523
Salmon, John A. (See Murray, Alexander W., assignor.)						
Salsich, Nell E., Hartland, Wis. Rail-anticreeper	854,435	May 21	4157	861	128	1133
Salter, William A., Cedar Point, Kans. Reverse-gear for motor-vehicles	853,120	May 7	1504	313–14	128	388
Sample, Laura A., Worthington, Ind. Fruit-picker	854,912	May 28	5123	1066	128	1409
Samuels, Barney, St. Joseph, Mo., and D. Samuels, Leavenworth, Kans. Railway-signal	855,020	May 28	5333	1107	128	1461
Samuels, David. (See Samuels, Barney and D.)						
Sanborn, Frank B., Cambridge, Mass. Nozzle-piezometer	852,581	May 7	428	78	128	113
Sanborn, Hamilton, assignor of one-half to S. F. Lindsay, Rhyolite, Nev. Fume-destroying composition	854,533	May 21	4336	.....	128	1177
Sandell, Henry K., assignor to Mills Novelty Company, Chicago, Ill. Coin-actuated device for controlling the operation of coin-operated machines	852,848	May 7	965	199	128	246
Sandell, Henry K., Chicago, Ill., assignor to Mills Novelty Company. Electric self-playing violin	855,021	May 28	5335	1107–9	128	1461
Sander, Wilhelm, Zurich, Switzerland. Electric igniter for explosion-motors	853,425	May 14	2124	443	128	578
Sanders, Henry M., Waco, Tex. Water-distributing apparatus	854,395	May 21	4056	838	128	1109

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Sanderson, Harold W., assignor to Wall Paper Manufacturers Limited, London, England. Paper measuring and cutting machine	854,179	May 21	3682	762-3	128	1009
Sandler, Jacob, assignor to Sandler Mfg. Co., Boston, Mass. Instep-support or arch-prop	852,625	May 7	501	93	128	132
Sandler Mfg. Co. (See Sandler, Jacob, assignor.)						
Sanguinette, Septime S. (See Jackson, Clarence S., assignor.)						
Sappington, Paul, assignor of two-thirds to S. E. Cragg and J. Webb, Carthage, Mo. Bed-spring	852,455	May 7	131	23	128	40
Sargent and Company. (See Sargent, Edward R., assignor.)						
Sargent, Edward R., assignor to Sargent and Company, New Haven, Conn. Handle	852,741	May 7	737	144	128	193
Sargent, Edward R., assignor to Sargent & Company, New Haven, Conn. Handle	852,742	May 7	738	145	128	193
Sargent, Edward R., assignor to Sargent & Company New Haven, Conn. Handle	853,192	May 7	1637	340-1	128	414
Sargent, Howard R., Schenectady, N. Y., assignor to General Electric Company. Lamp-trimming	853,809	May 14	3109	637	128	828
Saum, George, Jr., Sherwood, Oreg. Fruit-gatherer	853,833	May 14	2963	607	128	793
Saunders, Augustus M., McKeesport, assignor to National Tube Company, Pittsburg, Pa. Pipe-joint	853,900	May 14	3110	637	128	828
Saundry, Henry, New York, N. Y. Hat-guard	853,121	May 7	1506	314	128	380
Sauter, Carl, Baltimore, Md. Repeating action for upright pianos	854,058	May 21	3447	710	128	951
Sautter, Ernest, Paris, France. Means for closing receptacles	852,981	May 7	1255	259	128	319
Sauvage Safety Brake Company. (See Sauvage, William H., assignor.)						
Sauvage, William H., New York, N. Y., assignor to Sauvage Safety Brake Company. Fluid-pressure brake	852,525	May 7	292	53	128	79
Sauvage, William H., New York, N. Y., assignor to Sauvage Safety Brake Company. Fluid-pressure brake	852,526	May 7	294	53-4	128	80
Sauvage, William H., New York, N. Y., assignor to Sauvage Safety Brake Company. Fluid-pressure brake	852,527	May 7	296	54	128	81
Savage, Arthur C., Schenectady, N. Y., assignor to General Electric Company. Fuse-box of molded insulation	854,846	May 28	4975	1035	128	1369
Saxon, Andrew L., Soso, Miss. Automatic truck brake appliance	853,122	May 7	1508	314	128	380
Sayers, Thomas J., West Philadelphia, Pa. Car-fender	853,123	May 7	1510	314	128	381
Sayre, George. (See Bruckner and Sayre.)						
Schade, John, Jr., New York, N. Y. Loose-leaf binder	853,901	May 14	3112	637	128	829
Schaefer, E. (See Yearwood, Byrd O., assignor.)						
Schaeffer, Ernst, Rixdorf, near Berlin, assignor to H. Gratta, Berlin, Germany. Measuring instrument	854,762	May 28	4807	999	128	1323
Schafer, Samuel A., Sterling, Kans. Land leveler or ridger	853,036	May 7	1369	285	128	348
Schauber, John, near Church Hill, Md. Corn-cutting machine	853,997	May 21	3311	681-2	128	918
Schaun, Edward L., Baltimore, Md. Turbine	853,124	May 7	1511	315	128	381
Schauweker, Francis F., and R. E. Robeson, Cleveland, Ohio. Clutch mechanism for automobile-drives	855,137	May 28	5589	1162	128	1523
Schedin, Alfred, Moscow, Idaho. Combined ironing-board and wash-bench	853,998	May 21	3313	682	128	919
Scheidegger, G., *et al.* (See Richmond, Louis E., assignor.)						
Schenck, Peirce D., Dayton, Ohio. Journal-box	853,476	May 14	2226	464	128	604
Schenck, Wilkens A., Allegheny, Pa. Pencil-sharpener	855,346	May 28	5969	1246	128	1621
Scherf, Carl, Saarburg, Germany. Pawl-press	852,528	May 7	298	54	128	82
Scherzer, Leopold, Vienna, Austria-Hungary. Producing sparkling wines from grapes	853,037	May 7	1370	.....	128	348
Scheve, Henry W., Jansen, Nebr. Nail-driver	854,180	May 21	3685	763	128	1010
Schickerling, Alfred, New York, N. Y. Cigar-cutter	855,203	May 28	5715	1190	128	1556
Schies, John, Anderson, Ind. Apparatus for manufacturing glassware	855,344	May 28	5964	1245	128	1620
Schies, John, Anderson, Ind. Apparatus for manufacturing glassware	855,345	May 28	5967	1245-6	128	1620
Schild, Charles F., Cambridge, Ohio. Drying-hanger	853,739	May 14	2775	571	128	747
Schiödt, Frederik V., assignor to Hj. Hein & Möller-Holst, Copenhagen, Denmark. Apparatus for the extraction of dust from carpets and other articles	854,670	May 21	4591	958-9	128	1242
Schlesinger, Louis, Milwaukee, Wis. Spacing mechanism for type-writing machines	852,456	May 7	132	23-5	128	41
Schmid, Wilhelm, Schaffhausen, Switzerland. Propeller	853,999	May 21	3315	682	128	919
Schmitt, Frederick J., Petoskey, Mich. Butcher's chopping-block	855,347	May 28	5970	1246	128	1621
Schmitt, Henry, Chicago, Ill. Latch-lock	854,847	May 28	4976	1035-6	128	1369
Schmitt, Mathlea, Austin, Minn. Weed-exterminator	853,267	May 14	1809	376-7	128	490
Schmolinski, Adolph O., assignor to Security Register Company, St. Louis, Mo. Fare-register	852,849	May 7	969	200-2	128	247
Schmolinski, Adolph O., assignor to Security Register & Manufacturing Company, St. Louis, Mo. Ribbon-feeding mechanism	852,850	May 7	981	202-3	128	249
Schneible, Joseph. (See Weaver, Robert T., assignor.)						
Schneider, Jacob, Newport, Ky. Curtain-fastening	854,848	May 28	4980	1036	128	1370
Schober, August, Chicago, Ill. Candy-working machine	853,740	May 14	2776	571	128	747
Schobert, George G., Birmingham, England. Paint for ships' bottoms	854,241	May 21	3814	.....	128	1046
Schoen, August C., assignor to Stinson Brothers, Philadelphia, Pa. Warp holder or sustainer	855,418	May 28	6097	1274	128	1652
Schoenberg, Ralph A. (See Klein, Charles J., assignor.)						
Schorr, Robert, San Francisco, Cal. Briqueting-machine	852,457	May 7	145	25-6	128	44
Schreiber, Ernst G., Hammond, Ind. Potato-digging machine	853,601	May 14	2471	514-15	128	667
Schroeder, Charles D., Kansas City, Kans. Machine for making cement tiles, posts, pickets, &c	854,000	May 21	3317	683	128	920
Schuermann, Anton, assignor to H. Mueller Manufacturing Company, Decatur, Ill. Soft-metal gasket for service-clamps	852,682	May 7	681	121	128	164
Schultz, Charles L., Wheeling, W. Va. Steam-engine	853,565	May 14	2402	501	128	650
Schultz Ferdinand H., and M. H. Berkemeir, Treynor, Iowa. Index-machine	854,110	May 21	3553	733	128	977
Schultz, Robert H. (See Bentley, Alfred D., assignor.)						
Schultz, William J., Cincinnati, Ohio. Loose-leaf book-back	854,181	May 21	3688	763	128	1011
Schulz, Otto, Pittsburg, Pa. Vehicle-brake	854,336	May 21	4058	828	128	1110
Schulz, Otto C., assignor to Bauer & Black, Chicago, Ill. Box	852,458	May 7	147	26	128	45
Schulze, Edmund, Lyons, Nebr. Hay-stacker	853,649	May 14	2579	536	128	695
Schumacher, Wilhelm, Osnabrück, Germany, assignor to E. Thalmann, New York, N. Y. Production of coherent bodies from comminuted substances	855,419	May 28	6097	.....	128	1652
Schürmann, Eduard, Kötzschenbroda, near Dresden, Germany. Cigarette-making machine	853,650	May 14	2581	536	128	695
Schuster, August O. (See Edwards, William E., assignor.)						
Schutt, Charles, Bay Port, Mich. Device for leveling hay	854,608	May 21	4479	934	128	1213
Schutte and Koerting Company. (See Fischer and Knauf, assignors.)						
Schwab, Martin C., Baltimore, Md., assignor to Gravity Conveyor Company. Door for conveyers	852,459	May 7	149	26	128	46
Schwab, Martin C., Baltimore, Md., assignor to Gravity Conveyor Company. Combination-door for conveyers	852,460	May 7	150	27	128	46
Schwartz, John. (See Crook and Schwartz.)						
Schwartz, Wilhelm, Essen-Rüttenscheid, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Percussion-fuse	852,803	May 7	881	179	128	225
Schwartz, William J., administrator. (See Schwartz, John.)						
Schwarz, Conrad, and J. Bortzmer, assignors to N. Wiederer & Co., Fürth, Germany. Grinding-machine for glass plates	852,626	May 7	802	93	128	132

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Schweinert, Maximilian C., West Hoboken, N. J., and H. P. Kraft, New York, N. Y. Tire or other valve	854,182	May 21	3691	764	128	1012
Schweinler, Henry R., New York, N. Y., assignor to Voightmann and Company, Chicago, Ill. Window	853,902	May 14	3113	638	128	829
Scientific Preservation Company. (See Aaron and Hamilton, assignors.)						
Sciple, Henry M., San Francisco, Cal. Cross-arm for carrying telegraph, telephone, or other wires and ropes	855,138	May 28	5591	1163	128	1524
Scofield, Edson M., Philadelphia, Pa. Reinforcing-bar for concrete structures	855,204	May 28	5716	1190	128	1556
Scollard, Thomas F., Warsaw, Ind. Steam-generator	854,913	May 28	5124	1066	128	1409
Scott, George W., *et al.* (See Stoops, William B., assignor.)						
Scott, Herbert G., Sydney, New South Wales, Australia. Automatic water-feed for acetylene-gas generators	852,461	May 7	153	27	128	47
Scott, James E., Rugby, N. D. Bake-oven	853,323	May 14	1951	403	128	534
Scott, James W., Oswego, N. Y. Card-feeder	853,602	May 14	2474	515	128	668
Scott, John C., assignor to International Sprinkler Company, Philadelphia, Pa. Hood for automatic sprinkler-heads	855,205	May 28	5718	1190	128	1556
Scott, John R., Oakland, Cal. Handhold-strap for automobiles	855,139	May 28	5592	1163	128	1524
Scott, Robert W. (See Williams, Louis N. D., assignor.)						
Scott, William M., assignor to Cutter Electric & Manufacturing Company, Philadelphia, Pa. Electrical switch	854,436	May 21	4160	802-3	128	1134
Scott, William S., Pueblo, Colo. Device for holding air-brake pistons and cylinder-heads	854,242	May 21	3815	787	128	1047
Scovill Manufacturing Company. (See Goss and Wolff, assignors.)						
Scovill Manufacturing Company. (See Wolff, Adrian F., assignor.)						
Scribner, Walter, Columbus, Ohio. Electromagnetic switch	852,582	May 7	430	79	128	114
Scriven, Jeremiah A., New York, N. Y. Undergarment	854,763	May 28	4810	999	128	1326
Scroxton, Albert H., Battersea, and W. H. Cannon, London, England. Apparatus for cleansing textile fabrics	852,804	May 7	882	179	128	225
Scullin, Terence, and S. R. Skov, Cleveland, Ohio. Convertible car	852,683	May 7	632	122	128	165
Seabolt, Frank J., Schenectady, N. Y., assignor to General Electric Company. Motor-controlling rheostat	852,851	May 7	984	203	128	250
Seal, William J. (See Newey, Alfred H., assignor.)						
Searles, Henry R., and S. S. Jones, Carbondale, Pa.; said Searles assignor to said Jones. Vaginal syringe	854,534	May 21	4337	897	128	1177
Sears, Willard T., Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Valve	852,802	May 7	880	179	128	224
Seavey, Fred H., *et al.* (See Sparkes, James M., assignor.)						
Security Register Company. (See Schmolinski, Adolph O., assignor.)						
Security Register & Manufacturing Company. (See Schmolinski, Adolph O., assignor.)						
Sedgwick, Hiram G., Mill Valley, Cal. Automatic electrical train-stop	852,627	May 7	504	93-4	128	132
Sedgwick, Hiram G., Mill Valley, Cal. Automatic electrical train-stop	852,628	May 7	509	94-5	128	133
Sedgwick, Hiram G., Mill Valley, Cal. Electrical switch-lock for railways	852,629	May 7	512	95-6	128	134
Sedgwick, Hiram G., Mill Valley, Cal. Railway-signal	852,630	May 7	514	96	128	135
Sedgwick, Hiram G., Mill Valley, Cal. Electrical train-stop	852,631	May 7	516	96	128	135
Sedgwick, Hiram G., Mill Valley, Cal. Electrical train-stop	852,632	May 7	517	97	128	136
Sedgwick, Hiram G., Mill Valley, Cal. Train-stopping apparatus	852,633	May 7	518	97	128	136
Sedgwick, Hiram G., Mill Valley, Cal. Electrical train-stop	852,634	May 7	523	98	128	137
Sedgwick, Hiram G., Mill Valley, Cal. Automatic electrical train-stop	852,635	May 7	524	98-100	128	137
Seidel, William, Wheeling, Ill. Bottle washing and scrubbing mechanism	854,535	May 21	4340	897-8	128	1178
Seitz, Henry A., Brooklyn, assignor of one-half to G. Isaacs, New York, N. Y. Rotary engine	854,849	May 28	4981	1036	128	1370
Selg, Otto, New York, N. Y. Fan	853,477	May 14	2227	464	128	604
Selley, Frederick A., Nashville, Tenn. Scale	854,609	May 21	4480	934	128	1213
Semenza, Guido, Milan, Italy, assignor to General Electric Company. Three-phase-current arc-lamp	854,764	May 28	4812	999	128	1327
Semisteel Company. (See Balkwill, George W., assignor.)						
Seneca Falls Manufacturing Company. (See Runge, William, assignor.)						
Seubert, Louis H., East Orange, N. J. Antifriction-bearing	852,462	May 7	154	27	128	47
Seward, George O. (See Kügelgen and Seward.)						
Seyfried, Eugene E. Von, *et al.* (See Hainlin, Carl, assignor.)						
Seymour, Charles E., Winsted, Conn. Slow-feeding device for horses	854,850	May 28	4983	1036-7	128	1371
Seymour, Dudley S., Oak Park, assignor to Union Special Machine Company, Chicago, Ill. Power-transmitting device	854,671	May 21	4504	959	128	1242
Shaffer, Norman D., and J. S. Benton, Johnstown, Pa. Carbid-feed for acetylene-gas generators	853,125	May 7	1512	315	128	381
Shanklin, John R., Charleston, W. Va. Vent-valve for steam-heating systems	852,852	May 7	986	203	128	251
Shannen, Harry J., Atlanta, Ga. Refrigerator	853,834	May 14	2964	607-8	128	793
Shannon, Grant H., assignor to A. B. Dick Company, Chicago, Ill. Duplicating-machine	854,111	May 21	3557	734	128	977
Shaver, Harry W., Pocahontas, Va., assignor to General Electric Company. Cable-reel apparatus for mining-locomotives	853,522	May 14	2323	484	128	630
Shaver, Thomas A., Toronto township, Peel county, Ontario, Canada. Harness for producing free action of the limbs of horses	854,536	May 21	4343	898	128	1179
Shaw, George F., *et al.* (See Shaw, Henry F., assignor.)						
Shaw, George F., Dedham, Mass. Draft device for wagons	854,967	May 28	5223	1087-8	128	1433
Shaw, Henry F., West Roxbury, assignor of two-thirds to G. F. Shaw, Dedham, and G. F. Whipple, West Roxbury, Mass. Scale	853,903	May 14	3115	638	128	830
Shaw, Hugh R., Rosseau, Ontario, Canada. Propeller for vessels	854,112	May 21	3559	734	128	978
Shaw, John H., New Haven, Conn. Mold for casting metals	853,324	May 14	1953	404	128	534
Shea, John J., Beverly, assignor to Aseptic Drinking Cup Company, Cambridge, Mass. Aseptic drinking-cup. (Reissue)	12,648	May 7	1701	352	128	429
Sheble, Horace. (See Kraemer and Sheble.)						
Shed, William H. (See Snyder, John, assignor.)						
Sheffield Car Company. (See Thomas, Frank A., assignor.)						
Shelby Printing Company. (See Gauch, Orlando S., assignor.)						
Sheldon, Elmer N., Middletown, Conn. Watchmaker's tool	852,909	May 7	1114	230	128	283
Sheldon, Samuel B., Buffalo, N. Y. Coking coal	855,069	May 28	5445	1129-30	128	1490
Shepard, Charles B., Galena, Kans. Packing	854,672	May 21	4596	959	128	1244
Shepard, Charles E. (See Eddy, Arthur H., assignor.)						
Shepard, Charles H., New York, assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	855,206	May 28	5719	1190	128	1557
Shepard, Charles H., New York, assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	855,207	May 28	5725	1191-2	128	1559
Shepard, Charles U., Summerville, S. C. Mineral-separator	853,603	May 14	2477	515	128	669
Shepard, Leroy C., Irwin, Iowa. Breeding-crate	854,113	May 21	3560	734	128	978
Sheppard, John P., Salem, N. J. Knitting-machine	853,325	May 14	1954	404-5	128	535
Sheridan, John J., assignor of one-half to B. Hendler, Cassandra, Pa. Belt-holding device	855,420	May 28	6098	1274	128	1652
Sherman, Harry E. and L. A., assignors, by mesne assignments, to W. S. Dickey, Kansas City, Mo. Target-trap	852,910	May 7	1115	230	128	284

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Sherman, Louie A. (See Sherman, Harry E. and L. A.)						
Sherwood, Eliza S. (See Sherwood, Josiah W., assignor.)						
Sherwood, Josiah W., assignor of one-half to E. S. Sherwood, Green Lake, Mich. Thill-support	853,904	May 14	3117	638	128	830
Shinn, W. H., *et al.* (See Cochran, Charles H., assignor.) (Reissue.)						
Shires, Joseph A., Denver, Colo. Rail-spread-indicating device	853,126	May 7	1514	316	128	382
Shoemaker, George A., Chicago, Ill., assignor to Baker-Vawter Company, Portland, Me. Binder-lock	853,379	May 14	2057	426	128	560
Shoemaker, Harry, Jersey City, N. J., assignor of one-half to C. D. Ehert, Philadelphia, Pa. Tachometer	854,437	May 21	4164	863	128	1135
Shoenberg, Milton H., assignor of one-half to B. Lowenstein, San Francisco, Cal. Electrical heater	852,853	May 7	988	204	128	251
Shoenberg, Milton H., assignor of one-half to B. Lowenstein, San Francisco, Cal. Electrical fluid-heater	852,854	May 7	989	204	128	251
Short, Noah B., Kansas City, Mo. Floor-scraper	852,583	May 7	432	79	128	114
Shoup, Samuel R., Wilmington, Del. Voting-machine	852,911	May 7	1117	231	128	284
Shoup, Samuel R., Wilmington, Del. Voting-machine	853,127	May 7	1515	316	128	382
Shrock, Thomas M., Gardnersville, Ky. Tobacco-hanger	852,463	May 7	156	28	128	48
Sieber & Trussell Mnfg. Co. (See Dawson and Heeter, assignors.)						
Sieber & Trussell Manufacturing Company. (See Dawson, James C., assignor.)						
Sieber & Trussell Manufacturing Company. (See Heeter, Thomas E., assignor.)						
Siemens-Schuckert Werke Gesellschaft mit Beschränkter Haftung. (See Mollier, Walther, assignor.)						
Sievers, Hans H. A., Davenport, Iowa. Mechanical movement	853,478	May 14	2228	464	128	604
Simmerly, Anthony R., Cleveland, Ohio. Die	852,636	May 7	529	100	128	138
Simmonds, James E., Camp Point, Ill. Corn-shocking mechanism	854,059	May 21	3449	710–12	128	952
Simmons, Calvin L., Davenport, Wash. Clamping device	853,128	May 7	1522	317	128	384
Simmons, George W., Yellow River, Ga. Adjustable plow-heel	855,348	May 28	5973	1246	128	1622
Simon, Gottlieb H., Kiel, Wis. Milk-vat	854,537	May 21	4345	899	128	1179
Simon, Lewis. (See Mathis and Simon.)						
Simon, William, McKees Rocks, Pa. Display-case	852,982	May 7	1256	259	128	319
Simplex Electric Heating Company. (See Ayer, James L., assignor.)						
Simplex Press Company. (See Morgan, Benjamin W., assignor.)						
Simplex Time Recorder Company. (See Hawley, Charles T., assignor.)						
Simpson, Alfred L., New York, N. Y. Traveling platform, grate, or surface	853,129	May 7	1523	317	128	384
Simpson, La Verne, and J. Stein, Pittsburg, Pa. Metallic tie and rail-fastener	853,741	May 14	2777	571	128	747
Simpson, Ray C., Dallas, Tex. Water-cock for water-heaters	854,538	May 21	4346	899	128	1180
Sims, Emma N. (See Austin and Purviance, assignors.)						
Sinclair, Herbert, Trenton, N. J. Insulator	855,208	May 28	5727	1192	128	1559
Sine, Franklin W. (See Montgomery, James M., assignor.)						
Singer, Berthold, assignor to Perolin Company of America, Chicago, Ill. Manufacture of sweeping compounds	854,114	May 21	3362		128	979
Singleton, George, Dover, N. J. Thread-guide	855,349	May 28	5973	1247	128	1622
Singmaster, James W., assignor of one-half to H. F. Neumeyer, Macungie, Pa. Hydrant	855,350	May 28	5975	1247	128	1622
Sirrine, Joseph E., Greenville, S. C. Forebay construction	854,539	May 21	4347	899–900	128	1180
Sitts, Frank J., Herkimer, N. Y. Type-writer cabinet	852,805	May 7	883	180	128	225
Sivertson, Lucas K., Willow City, N. D. Rotary engine	854,001	May 21	3320	683	128	920
Sizemore, Thomas A., Greenville, S. C. Banding-machine	855,351	May 28	5977	1247	128	1623
Skelly, Thomas V., Chicago, Ill. Phonograph-record holder	854,002	May 21	3322	683	128	921
Skillin, Hattie A. (See Imes and Skillin.)						
Skinner, Charles E., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Transformer-coil support	854,311	May 21	3931	811	128	1077
Skinner Charles E., Wilkinsburg, and S. M. Kintner, Pittsburg, Pa., assignors to Westinghouse Electric & Manufacturing Company. Means for cooling transformers	854,312	May 21	3933	812	128	1078
Skinner, Charles W., Troy, Ohio. Sprinkling-pipe connection	852,584	May 7	436	79	128	115
Skov, Soren R. (See Scullin and Skov.)						
Slade, Harry, assignor to E. Green and Son Limited, Wakefield, England. Pipe-pattern	854,765	May 28	4814	1000	128	1327
Slater, John F., Avoca, Iowa. Fire-box for kilns	853,130	May 7	1524	317	128	385
Slaymaker, Samuel R., Lancaster, Pa. Packing and display device	855,070	May 28	5452	1130–1	128	1491
Slazenger, Frank L., New York, N. Y. Game appliance	854,313	May 21	3934	812	128	1078
Slick, Edwin E., Pittsburg, Pa. Rerolling rails	852,983	May 7	1257	260	128	320
Slick, Edwin E., Pittsburg, Pa. Rolling interlocking sheet-piling	852,984	May 7	1259	260–1	128	320
Slick, Edwin E., Pittsburg, Pa. Roiling flanged shapes	852,985	May 7	1261	261	128	321
Slomka, John, assignor of one-half to F. Hromadko, New York, N. Y. Bottle-closure	854,243	May 21	3816	788	128	1047
Sloper, Robert. (See Sloper, Thomas and R.)						
Sloper, Thomas and R., Devizes, England. Machinery for use in the manufacture of pneumatic tires	852,855	May 7	990	204–8	128	252
Smalley, William H., Yonkers, N. Y. Attachment for hammers	855,140	May 28	5593	1163	128	1524
Smart, William H., *et al.* (See Reichel, Alvin S., assignor.)						
Smiley, Francis L. (See Abraham, Elias, assignor.)						
Smith and Anthony Company. (See Knapp, George W., assignor.)						
Smith, Carrol J., *et al.* (See Mims, George W., assignor.)						
Smith, Charles H., New Bedford, assignor to United Shoe Machinery Company, Boston, Mass. Machine for inserting metallic fastenings	853,742	May 14	2778	571	128	748
Smith, Charles W., Sandusky, Ohio. Shipping-crate	854,244	May 21	3817	788	128	1047
Smith, Datus C., New York, N. Y. Barbed-wire machine	853,604	May 14	2478	516–17	128	669
Smith, Datus C., New York, N. Y. Barbed wire	853,938	May 14	3193	654	128	849
Smith, Dave, Villisca, Iowa. Mail-bag-delivery apparatus	854,115	May 21	3363	735	128	979
Smith, Douglas S., Casselton, N. D. Combined curtain and shade holder	852,684	May 7	635	122	128	165
Smith, Ernest N., Burns, Kans. Loader	854,245	May 21	3818	788–9	128	1047
Smith, Ezra O., Galesburg, Ill. Means for operating pumps	854,314	May 21	3935	812	128	1079
Smith, Francis S. K., and D. C. Reinohl, assignors to R. E. Walker, Washington, D. C. Locking device for telephones	852,806	May 7	886	180	128	226
Smith, Frank B., assignor to Barber Asphalt Paving Company, Philadelphia, Pa. Paving machinery	853,131	May 7	1526	318	128	385
Smith, Henry C., assignor to Allith Manufacturing Company, Chicago, Ill. Door-hanger	855,352	May 28	5978	1247–8	128	1623
Smith, Herbert, and J. V. Langley, New Bedford, assignors to Draper Company, Hopedale, Mass. Weft-replenishing loom	854,673	May 21	4597	960	128	1244
Smith, John C., Norwich, Conn. Slat-adjuster	852,856	May 7	1003	208	128	256
Smith, John W., Aurora, Iowa, assignor to Aurora Manufacturing Company, Aurora, Ill. Carbureter	854,246	May 21	3820	789	128	1048
Smith, John W. C., West Lafayette, Ind. Trial-frame for opticians' use	855,022	May 28	5345	1110	128	1463
Smith, Joseph A., Denver, Colo., assignor of one-half to R. J. Mitchell. Burglar-alarm	855,023	May 28	5347	1110	128	1463
Smith, Joseph E., Fort Wayne, assignor of one-half to S. C. Kiser, Huntington, Ind. Meat-saw	853,479	May 14	2229	464	128	605
Smith, Lafayette E., Halsey, Oreg. Motor-vehicle	853,132	May 7	1529	318–19	128	386
Smith, Lester C., assignor of one-half to J. J. Baehr, New Orleans, La. Transom-lifter	855,260	May 28	5818	1213	128	1584
Smith, Marcellus K., and J. E. Davis, Ames, Iowa. Husking-peg	854,247	May 21	3821	789	128	1048
Smith, Martin V., New York, N. Y. Furnace	854,851	May 28	4983	1037	128	1371
Smith, Nathan, Stevenville, Md. Wrench	854,248	May 21	3822	789–90	128	1048

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Smith, Oakley G., Iowa City, Iowa. Mounting for anatomical specimens	852,807	May 7	887	180	128	226
Smith, Philip S., assignor to Stokes & Smith Company, Philadelphia, Pa. Machine for gluing blanks	853,480	May 14	2230	465	128	605
Smith, Robert T., Jr., Warrington, England. Wheel for vehicles	854,914	May 28	5126	1066–7	128	1409
Smith, Theodore E., Weehawken, N. J. Combining oils and fats with heavier fluids	855,071	May 28	5454	1131	128	1491
Smith, Thomas E., Winthrop, Mass. Perpetual account-book	853,905	May 14	3118	639	128	830
Smith, Ulysses G., Lansford, Pa. Lock-bolt	853,133	May 7	1530	319	128	386
Smith, Warren M., Prospect Park, assignor to J. A. Brill, Philadelphia, Pa. Metallic car	852,808	May 7	889	181	128	226
Smith, Warren M., Prospect Park, assignor to J. A. Brill, Philadelphia, Pa. Car	852,912	May 7	1122	231–2	128	285
Smith, William R., assignor of one-half to H. H. Hewitt, Buffalo, N. Y. Cushioned horseshoe	854,852	May 28	4985	1038	128	1372
Smyth, William H., Berkeley, Cal. Ore-roasting furnace	854,766	May 28	4815	1000–1	128	1327
Snapp, William A., assignor of one-half to C. B. Harris, Harris, Mo. Automatic switch	853,835	May 14	2966	608	128	793
Snead & Company Iron Works. (See Macdonald, Harry P., assignor.)						
Snow, Frank P., Los Angeles, Cal. Crushing-rolls	853,481	May 14	2234	465	128	606
Snow, Fred W., Hillburn, and W. C. Kidd, Suffern, assignors to Standard Equipment Company, Mahwah, N. J. Switch-stand	854,767	May 28	4818	1001	128	1329
Snyder, Frederick T., assignor to International Separator Company, Chicago, Ill. Shaking-table separator	854,768	May 28	4820	1001–2	128	1329
Snyder, John, Spokane, Wash., assignor of one-third to W. H. Shed, Pueblo, Colo. Larding-needle	854,387	May 21	4059	839	128	1110
Snyder, William E., Lagrange, Ind. Post-forming device	855,353	May 28	5979	1248	128	1624
Sobers, Eugene F., Bethlehem, Pa. Tire	855,024	May 28	5348	1110	128	1464
Société Anonyme Métallurgique Procédés de Laval. (See Laval, Carl G. P. de, assignor.)						
Sokal, Edward, Binghamton, N. Y., assignor of one-half to S. Bloomfield, Elkhart Lake, Wis., S. B. Wolf and C. Wolff, Chicago, Ill. Storage battery	852,464	May 7	157	28	128	48
Somers, Michael, East Pittsburg, Pa. Retaining-valve	853,906	May 14	3120	639	128	831
Somersall, William H., Boston, Mass. Chicken-brooder	853,038	May 7	1371	285	128	348
Somló, Karl L., Temesvár, Austria-Hungary. Malting grain	854,003	May 21	3325		128	922
Sommers, Bernhardt F., Evansville, Ind. Barrel elevator and trip	855,141	May 28	5594	1163–4	128	1525
Sonander, Andrew, assignor to American Grain Meter Company, Springfield, Ohio. Grain-meter	853,268	May 14	1811	377	128	491
Soucey, Frank B., Collegeview, Nebr. Bracket	855,354	May 28	5980	1248	128	1624
Soupeset, Fredrick P., Rocky Ford, Colo. Stove-grate	854,968	May 28	5224	1088	128	1433
South African Maganite Explosives Syndicate. (See Bloxam, Hugh C. L., assignor.)						
Southgate, Louis W., Worcester, Mass., assignor, by mesne assignments, to Detroit Trust Co., trustee, Detroit, Mich. Traveling-cylinder web-printing machine	852,465	May 7	162	28–9	128	49
Sparkes, James M., Lynn, assignor of one-half to F. H. Seavey, Boston, and C. W. Blackett, Lynn, Mass. Rotary engine	855,072	May 28	5457	1131–3	128	1492
Sparkes, James M., Lynn, assignor of one-half to F. H. Seavey, Boston, and C. W. Blackett, Lynn, Mass. Rotary engine	855,073	May 28	5463	1133–5	128	1494
Sparks, William, assignor to George A. McKeel & Company, Limited, Jackson, Mich. Ferrule attachment for handles	853,566	May 14	2405	501	128	651
Spear, Lawrence Y., Quincy, Mass., assignor to Electric Boat Company, New York, N. Y. Submarine boat	854,004	May 21	3325	684	128	922
Speece, Charles W., Chicago, Ill. Razor-blade holder	854,915	May 28	5128	1067	128	1410
Speer, Robert G., assignor to J. J. Holscher and S. B. Speer, St. Louis, Mo. Carbureting apparatus	852,685	May 7	636	122	128	166
Speer, Sarah B., *et al.* (See Speer, Robert G., assignor.)						
Spellman, Thomas W., Worcester, Mass. Bevel, protractor, and square	854,853	May 28	4987	1038	128	1372
Spencer, Aubrey F., Margate, assignor of one-half to A. Rosenberg, London, England. Heel for boots and shoes	853,193	May 7	1638	341	128	414
Spice, Alfred, New York, N. Y. Swing	854,183	May 21	3692	764–5	128	1012
Spicer, Charles R., Springfield, Ill. Inker	854,674	May 21	4692	960	128	1245
Spicer, William F., Dayton, Ohio. Adjustable shoe-display device	854,769	May 28	4823	1002	128	1330
Spitzer, Emanuel, Munich, assignor of three-fourths to A. O. Goldsmith, Berlin, and S. Spitzer, Munich, Germany. Printing-plate	854,675	May 21	4603		128	1245
Spitzer, Emanuel, Munich, assignor of three-fourths to A. O. Goldsmith, Berlin, and S. Spitzer, Munich, Germany. Printing-plate	854,676	May 21	4606		128	1245
Spitzer, Sophie, *et al.* (See Spitzer, Emanuel, assignor.)						
Spivey, Fred, Heckmondwike, England. Fiber-oiling machine	855,025	May 28	5350	1111	128	1464
Spontorf, Charles F., New York, N. Y. Magneto-armature	854,438	May 21	4167	863	128	1136
Spiltdorf, Charles F. (See Hubert, Theodore, assignor.)						
Sponenburg, Hiram H., Wadsworth, Ill., assignor to Laas & Sponenburg Co. Railway-rail stay	854,060	May 21	3456	712	128	953
Sprague, Rufus F., *et al.* (See Baker and Irish, assignors.)						
Spray, Charles H., Indianapolis, Ind. Saw-clamp	854,540	May 21	4349	900	128	1180
Sprenger, Emil L., New Kensington, Pa. Lock for pins	853,907	May 14	3121	639	128	831
Springer, Edward S. (See Maloney and Springer.)						
Spurlin, Charles L., Ensley, assignor of one-half to W. H. Tharpe, Birmingham, Ala. Carchute	854,249	May 21	3825	790	128	1049
St. Clair, Loyd D., Vanvoorhis, W. Va. Ink-well	854,542	May 21	4353	901	128	1181
St. Louis Car Company. (See Witte, Hubert, assignor.)						
St. Louis Car Lighting Company. (See Ford and Bauer, assignors.)						
Stadtherr, John, Gibbon, Minn. Ignition device for explosive-engines	855,209	May 28	5728	1192	128	1560
Staff, Peter N. (See Brewer, Governor L., assignor.)						
Stahl, H. C., *et al.* (See Dudley, Thomas J., assignor.)						
Stakes, David F., assignor to Keystone Telephone Company, Philadelphia, Pa. Apparatus for registering telephonic calls	852,743	May 7	739	145	128	193
Stakes, David F., assignor to Keystone Telephone Company, Philadelphia, Pa. Apparatus for registering telephonic calls	852,744	May 7	742	146	128	194
Stalder, John J., Meade, Kans. Cultivator	853,039	May 7	1373	285–6	128	349
Stamey, De Keller, New York, N. Y. Pencil-sharpener	853,836	May 14	2969	608	128	794
Stancliff, George W., Houston, Tex. Wire-winding machine	854,541	May 21	4350	900–1	128	1181
Standard Candy Machine Company. (See Igou, Dennis T., assignor.)						
Standard Equipment Company. (See Snow and Kidd, assignors.)						
Standard Sanitary Manufacturing Company. (See Dawes and Whitehead, assignors.)						
Standard Scale and Foundry Co. (See Tuttle, Josiah S., assignor.)						
Standard Steel Car Company. (See Christianson, Andrew, assignor.)						
Standart, Nelson K., Detroit, Mich. Sklameter	852,857	May 7	1004	208	128	256
Stanford, Arthur L., Chicago, Ill. Rail-joint	854,770	May 28	4826	1002	128	1331
Stanley Electric Manufacturing Company. (See Wright, Gilbert, assignor.)						
Stanley, George P., and W. W. Tainter, Dixfield, Me. Toothpick-machine	854,116	May 21	3565	735–6	128	979
Stanley, Lionel W., Bromley, England. Means or apparatus for burning or fixing the colors upon printed or decorated tiles, glass, &c.	854,005	May 21	3327	684	128	922
Staples, Albert F., Brockton, and C. W. Potter, Waltham, Mass., assignors to McCaskey Register Company, Alliance, Ohio. Account-register	853,651	May 14	2583	537	128	696
Stapley, William S., assignor to Bridgeport Brass Company, Bridgeport, Conn. Tire-pump	855,026	May 28	5352	1111–12	128	1464
Stapp, Frederick. (See Swaney, Fletcher D., assignor.)						
Stark, Charlie W., Mountain Lake, Minn. Wire-reel	854,117	May 21	3569	736–7	128	980

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Stark, Summerfield B., Newsite, Ala. Harrow	853,523	May 14	2325	484	128	630
Starr, Hillyard A., East Chattanooga, Tenn. Stove-top member	853,524	May 14	2326	484–5	128	630
Stassart, Joseph M., assignor to J. H. Keating, Portland, Oreg. Non-refillable bottle	853,939	May 14	3195	654	128	849
Staub, Nicolaus, Schiffweiler, Germany. Boring-bit	852,745	May 7	743	146	128	194
Staudt, John F., Staudtsville, Pa. Heating system	854,969	May 28	5225	1088	128	1434
Stauffer, Henry D., Oregon, Ill. Insulator	854,315	May 21	3936	813	128	1079
Stavenik, Victor, and J. Mautz, Mansfield, Ohio. Tube-expander	854,118	May 21	3571	737	128	981
Steber, Henry A., Utica, N. Y. Mold for concrete	853,837	May 14	2970	609–10	128	794
Stecher, Charles. (See Coleman and Stecher.)						
Stedman, Arthur, assignor to M. A. Hunt & Co., Cincinnati, Ohio. Spring structure	853,380	May 14	2058	426	128	560
Stedman, William H., assignor to Merrow Machine Company, Hartford, Conn. Sewing-machine slack-thread controller	854,119	May 21	3572	737	128	981
Steele, Benjamin M., assignor to Ben Steele Weigher Manufacturing Company, Peoria, Ill. Conveyer	853,652	May 14	2587	537–8	128	697
Steele, Lawrence C., Pittsburg, Pa. Tinning or coating metal sheets	854,006	May 21	3330	684	128	923
Steenstrup, Olaf N., Mabel, Minn. Holding-pliers	853,426	May 14	2125	443	128	578
Steiber, Charles F., New York, N. Y. Stringer for staircases	853,134	May 7	1532	319	128	387
Stein, Jacob. (See Simpson and Stein.)						
Steinberger, Louis, New York, N. Y. Insulating device	853,743	May 14	2783	572	128	749
Steinberger, Louis, New York, N. Y. High-tension insulator	853,744	May 14	2785	572	128	749
Steinberger, Louis, New York, N. Y. Horizontal support for conductors	853,745	May 14	2787	572	128	750
Steinberger, Louis, New York, N. Y. Insulator-pin	855,261	May 28	5819	1213	128	1584
Steinberger, Louis, New York, N. Y. Spiral-core insulator	855,262	May 28	5821	1213	128	1585
Steinberger, Louis, New York, N. Y. High-potential insulator	855,355	May 28	5981	1248–9	128	1624
Steiner, George A., and J. Evans, Jr., Salt Lake City, Utah. Basin and bath-tub attachment	854,184	May 21	3701	765	128	1016
Steiner, Harry A., Pittsburg, Pa. Pen-extractor	854,610	May 21	4482	935	128	1214
Steinhardt, Jacob M., Newark, N. J., assignor to J. L. Dinkelspiel, New York, N. Y. Garment-supporter	852,858	May 7	1006	209	128	256
Steininger, Andrews, Allegheny, Pa. Folding umbrella	855,142	May 28	5596	1164	128	1525
Steinway, Frederick T., New York, N. Y. Case for upright pianos	855,143	May 28	5597	1164	128	1526
Stephens, William, Redding, Cal. Sash-lock	854,250	May 21	3827	790	128	1049
Stephens, William E., Wallisville, Tex. Drying-kiln	854,251	May 21	3829	791	128	1050
Steuer, Frederick W., Plainfield, N. J. Clothes-line hanger	854,611	May 21	4483	935	128	1214
Stevens, Frank N., Rutherford, N. J. Tire-plug	852,986	May 7	1263	262	128	322
Stevens, Le Roy W. (See Power, Jeffrey J., assignor.) (Reissue.)						
Stevens, Richard C., assignor of one-half to R. D. Stevens, Heflin, Ala. Rail-brace	854,252	May 21	3830	791	128	1050
Stevens, Richard D. (See Stevens, Richard C., assignor.)						
Stevens, Robert C., Indianapolis, Ind. Hand-hole plate for boilers	854,061	May 21	3458	713	128	964
Stevig, William T., Pulaski, Iowa. Draft appliance for farm implements	852,746	May 7	744	146–7	128	195
Stewart, Archibald, Keota, Iowa. Boiler-flue cleaner	855,210	May 28	5729	1192	128	1560
Stewart, Clarence F., Vassar, Mich. Conveyer	853,269	May 14	1815	378	128	492
Stewart, Emmor J., New York, N. Y. Sweeping and scrubbing machine	853,525	May 14	2328	485	128	631
Stewart, Hamilton. (See Hogan, William J., assignor.)						
Stewart, John K., Chicago, Ill. Sheep-shearing machine	852,809	May 7	893	182	128	228
Stewart, Morse, Detroit, Mich. Gasifier	853,653	May 14	2592	538	128	699
Stewart, Ronald. (See Stewart, Thomas Y., assignor.)						
Stewart, Samuel, Newark, N. J. Gas-burner	853,654	May 14	2594	538	128	699
Stewart, Samuel B., Jr., Schenectady, N. Y., assignor to General Electric Company. Current-collector	853,838	May 14	2974	610	128	795
Stewart, Thomas Y., St. Paul, Minn., assignor of five-sixths to said Thomas Y. Stewart and R. Stewart. Feed-water heater	852,466	May 7	166	29	128	50
Stickney, Burnham C., Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Stenciling-machine	853,605	May 14	2490	517	128	673
Stickney, Burnham C., Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Stenciling-machine	853,606	May 14	2493	517–18	128	674
Stickney, Burnham C., Elizabeth, assignor to Union Typewriter Company, Jersey City, N. J. Type-writing machine	855,144	May 28	5598	1165	128	1526
Stiepel, Friedrich, Essen-on-the-Ruhr, Germany. Coal-cutting machine	854,612	May 21	4484	935	128	1214
Stiff, Henry C., Johnstown, Pa., assignor to Lorain Steel Company. Derailing-switch	853,270	May 14	1818	378	128	493
Stiff, Henry C., Johnstown, Pa., assignor to Lorain Steel Company. Switch structure	853,271	May 14	1819	379	128	493
Stimpson, Edward S., Hopedale, Mass., assignor to Draper Company, Portland, Me. Shuttle-changing loom with swinging front-plate for the shuttle-boxes	855,356	May 28	5985	1249	128	1625
Stimpson, Wallace I., Milford, Mass., assignor to Draper Company, Portland, Me. Automatic shuttle-changing loom with sliding front plate for the shuttle-boxes	853,839	May 14	2976	610	128	796
Stimson, Frank A., Page, N. D. Bridle	854,677	May 21	4608	960	128	1245
Stinson Brothers. (See Schoen, August C., assignor.)						
Stockton, Elmer E., and A. H. Porter, assignors to E. Ingraham Co., Bristol, Conn. Alarm-clock	852,859	May 7	1008	209	128	257
Stoddard, Samuel G., Waterbury, Conn. Drawing instrument	853,381	May 14	2059	426	128	561
Stodden, Thomas W., Hancock, Mich. Door-catch	853,272	May 14	1820	379	128	494
Stodders, John W., Morden, Manitoba, Canada. Insect-trap	852,637	May 7	530	100	128	139
Stoewsand, Robert C., Chicago, Ill. Combined funnel and measuring-receptacle	853,427	May 14	2125	444	128	578
Stokes & Smith Company. (See Smith, Philip S., assignor.)						
Stollberg, Charles, Toledo, Ohio, assignor to American Can Company. Bailed sheet-metal keg for white lead or other heavy materials	853,382	May 14	2060	426	128	561
Stone, Charles W., Schenectady, N. Y., assignor to General Electric Company. Protective means for parallel feeders	853,655	May 14	2596	539	128	700
Stone, John S., Cambridge, Mass., assignor to J. A. Chrystie, L. Duncan, and W. H. Turner, New York, N. Y. Device for amplifying electrical currents	854,120	May 21	3574	737–8	128	961
Stoner, Sylvan E., Ottosen, Iowa. Ditch-leveling device	854,916	May 28	5130	1067	128	1410
Stoops, William B., assignor of one-half to G. W. Scott and J. M. McCabe, Coraopolis, Pa. Attachment to swinging scaffolds	854,253	May 21	3831	792	128	1051
Storer, Simon B., Syracuse, N. Y. System of electrical distribution	854,121	May 21	3576	738	128	962
Storer, Simon B., Syracuse, N. Y. System of electrical distribution	854,122	May 21	3580	738–9	128	963
Storer, Simon B., Syracuse, N. Y. Voltage-regulator	854,123	May 21	3582	739	128	963
Stork, Jonas, *et al.* (See Loewenstein, Maxmillan, assignor.)						
Stotts, Elza S., and L. O. Dickey, Omaha, Nebr. Electrical block-signal	854,970	May 28	5227	1089	128	1434
Stout, James N. (See Carver and Stout.)						
Stover, Frank E., assignor to G. R. Lynch Manufacturing Company, Chattanooga, Tenn. Acetylene-gas generator	853,746	May 14	2790	573–4	128	751
Strange, J. T. (See Deutsch, John H., assignor.)						
Strasburg, Charles A., Cridersville, Ohio. Automatic firearm	854,771	May 28	4827	1003	128	1331
Strauss, Edwin M., Chicago, Ill. Button	853,607	May 14	2496	518	128	675
Strauss, Maurice M., Chicago, Ill. Shipping package and holder for garments or the like	854,062	May 21	3460	713	128	955
Streeter, Herbert A. (See Norden, Emil, assignor.)						
Strenge, Oltmann, and W. K., Elizabethfehn, near Augustfehn, Germany. Excavator	855,357	May 28	5986	1249–50	128	1626
Strenge, Wubbo K. (See Strenge, Oltmann and W. K.)						
Strickland, Dwight J. (See Leake, Richard C., assignor.)						
Stromberg, Alfred, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Portable combination telephone set	854,439	May 21	4169	864	128	1137

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Stromberg-Carlson Telephone Manufacturing Company. (See Babcock, Garrison, assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Birsfield, Jules A., assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Kahl, Arthur R., assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Kaisling, William assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Stromberg, Alfred, assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Webster, Harry G., assignor.)						
Strombom, John V., New York, N. Y. Saw-set	853,747	May 14	2796	574	128	752
Strothman, Edward E. and H. L., Superior, Wis. Shaking and dumping grate	852,467	May 7	167	30	128	51
Strothman, Herbert L. (See Strothman, Edward E. and H. L.)						
Stubbs, O. B., *et al.* (See Ryan, John H., assignor.)						
Stull, Emmett W., Norwood, Ohio, assignor to Allis-Chalmers Company and Bullock Electric Manufacturing Company. Motor-controller	852,468	May 7	170	30	128	51
Stumpf, Johann, Charlottenburg, Germany. Locomotive with steam-turbine drive	855,436	May 28	6125	1280	128	1658
Sturtevant Mill Company. (See Sturtevant, Thomas L. and T. J., assignors.)						
Sturtevant, Thomas J. (See Sturtevant, Thomas L. and T. J.)						
Sturtevant, Thomas L., Quincy, and T. J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me. Crushing-machine	853,656	May 14	2598	539	128	700
Sturtevant, Thomas L. and T. J., Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me. Roll-crushing machine	855,358	May 28	5989	1250	128	1626
Submarine Signal Company. (See Blake, Lucien L., assignor.)						
Sudduth, James M., Manhattan, Kans. Draft attachment for vehicles	855,263	May 28	5823	1214	128	1585
Sullivan Machinery Company. (See Gilman, George H., assignor.)						
Sumerwell, Edward K., East Orange, N. J. Clasp	854,254	May 21	3832	792	128	1051
Sun Typewriter Company. (See Howell, Charles W., assignor.)						
Sundman, Fredreck. (See Switzer and Sundman.)						
Supiee, De Witt C., Philadelphia, Pa. Elevator	855,074	May 28	5468	1135	128	1495
Sutphen, Clarence H. (See Wottring and Sutphen.)						
Sutton, John W., New York, N. Y. Controller for mechanical musical instruments	855,145	May 28	5601	1165	128	1527
Svenson, Albin, New York, N. Y. Clutch mechanism for dumb-waiters and the like	852,469	May 7	173	30	128	52
Swan, Charles, assignor to J. H. Duke, Corry, Pa. Wood-shaving tool	852,470	May 7	175	31	128	53
Swaney, Fletcher D., assignor of one-half to F. Stapp, Denver, Colo. Removable guide for metal window-sash	855,359	May 28	5990	1250	128	1627
Sweet, Orr & Company. (See Bartrum, Charles W., assignor.)						
Swift, George W., Jr., Bordentown, N. J. Tag-machine	854,388	May 21	4060	839–40	128	1110
Swift, George W., Jr., Bordentown, N. J. Envelop-machine	854,440	May 21	4172	864–5	128	1138
Swinehart, James A., Akron, Ohio. Wheel-tire	852,529	May 7	299	54	128	82
Swingle, Martin L., Roseville, Ohio. Rail-brace	855,264	May 28	5825	1214	128	1586
Swingle, Martin L., Roseville, Ohio. Horse-releaser	855,360	May 28	5992	1251	128	1627
Swintek, Martin, Des Moines, assignor of one-half to G. H. Carlon, Oskaloosa, Iowa. Adjustable boring and sawing machine	853,908	May 14	3123	640	128	831
Switzer, Christopher, and F. Sundman, Doe Run, Mo. Combined railway cattle-guard and metallic cross-tie	853,135	May 7	1533	319–20	128	387
Sykes, Edwin. (See Ainley and Sykes.)						
Sylvester, William. (See Gurney, Amelia, assignor.)						
Symington, Thomas H., assignor to T. H. Symington Company, Baltimore, Md. Railway journal-box	855,361	May 28	5992	1251	128	1627
Symington, Thomas H., assignor to T. H. Symington Company, Baltimore, Md. Lid for journal-boxes	855,362	May 28	5993	1251	128	1627
T. H. Symington Company. (See Symington, Thomas H., assignor.)						
Taber, Henry C., Ware, Mass. Pipe-hanger	853,040	May 7	1374	286	128	349
Tainter, Willis W. (See Stanley and Tainter.)						
Talsey, Fred R., Indianapolis, Ind. Pneumatic-despatch apparatus	852,914	May 7	1125	222–3	128	286
Talsey, Fred R., Indianapolis, Ind., assignor to Lamson Consolidated Store Service Company, Boston, Mass. Pneumatic-despatch apparatus	852,913	May 7	1123	232	128	286
Talbot, James B., Edwardsville, Ill. Apparatus for molding cement blocks	853,606	May 14	2496	518	128	675
Taluau, Julius, assignor of one-half to C. H. Royal, Philadelphia, Pa. Treating casein and compound obtained therefrom	852,915	May 7	1128		128	287
Tank, William, New Orleans, La. Baker's oven	853,748	May 14	2798	574–5	128	752
Taylor, Albert H. (See Haeseler and Taylor.)						
Taylor, Alexandrina, New York, N. Y. Adjusting device for camera lucidas	853,136	May 7	1537	320	128	368
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Ingot-charging crane	853,482	May 14	2236	466	128	606
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Charging-bar for open-hearth charging-machines	853,483	May 14	2238	466	128	607
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Overhead traveling crane	853,484	May 14	2239	466	128	607
Taylor, Clarence W., Oak Park, Ill. Train-pipe coupling	854,124	May 21	3584	739–40	128	964
Taylor, David, Jr., assignor of one-half to W. R. Percy, St. Francisville, La. Grubber	853,840	May 14	2977	610–11	128	796
Taylor, Frank H., Toronto, Ohio. Oil-well pump	854,255	May 21	3835	792	128	1051
Taylor Iron & Steel Company. (See Lattimer, Frank, assignor.)						
Taylor, John B., Schenectady, N. Y., assignor to General Electric Company. Reversing the polarity of dynamo-electric machines	854,772	May 28	4829	1003	128	1332
Taylor, John B., Schenectady, N. Y., assignor to General Electric Company. Equalizing loads on motor-generator sets	854,773	May 28	4831	1003	128	1332
Taylor, John B., Schenectady, N. Y., assignor to General Electric Company. High-voltage transformer	854,774	May 28	4833	1004	128	1333
Taylor, Lawrence M., Mulvane, W. Va. Gage for saw-teeth	854,775	May 28	4834	1004	128	1333
Taylor, William, *et al.* (See Abraham, Elias, assignor.)						
Tayntor, Charles E., Brooklyn, N. Y. Roof for mausoleums, tombs, vaults, &c	853,909	May 14	3126	640–1	128	832
Tayntor, Charles E., New York, N. Y., assignor to C. E. Tayntor Granite Company, Hallowell, Me. Roof for mausoleums, vaults, &c	853,657	May 14	2601	540	128	701
Teas, Daniel H., New Haven, Conn., assignor to Niles-Bement-Pond Company, Jersey City, N. J. Lathe-driver	853,273	May 14	1820	379	128	494
Teeple, Stephen, Chicago, Ill. Arch-holder	853,841	May 14	2979	611	128	796
Temple, Henry F., *et al.* (See Rockwell, Hubert R., assignor.)						
Terhune, Guy E., W. M. Eidson, and W. B. Huston, Willow Hill, Ill. Party-line telephone system	854,543	May 21	4354	902	128	1182
Terry, Eugene, assignor to E. Meany, Ithaca, N. Y. Powder-dispensing receptacle	853,658	May 14	2603	540	128	702
Terry, William H., Fall River, Mass. Door-check	852,585	May 7	436	79	128	115
Textile Machine Works. (See Janssen, Henry, assignor.)						
Textile Machine Works. (See Thun, Ferdinand, assignor.)						
Thalmann, Ernst. (See Schumacher, Wilhelm, assignor.)						
Tharpe, William H. (See Spurlin, Charles L., assignor.)						
Theiss George W Pittsburg, Pa. Barge, boat, and similar vessel	852,987	May 7	1264	262	128	322

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Thobe, John A. (See Exterkamp, George J., assignor.)						
Thoenen, David E. (See Eshelman, Stephen F., assignor.)						
Thom, James C. (See Francisco and Thom.)						
Thoma, Andrew, Cambridge, Mass., assignor to Clifton Manufacturing Company, Jersey City, N. J. Applying reinforcing fabric to innersoles and the like	853,326	May 14	1958	405	128	535
Thomas, A. R. (See Thomas, Clifford E., assignor.)						
Thomas, Alfred, *et al.* (See Nims, Francis W., assignor.)						
Thomas, Benjamin A., Paducah, Ky. Land-roller	855,075	May 28	5474	1136	128	1496
Thomas, Clifford E., Syracuse, N. Y., assignor of one-half to A. R. Thomas, Kalamazoo, Mich. Sash-fastener	854,854	May 28	4988	1038	128	1372
Thomas, David N., and L. O. Burk, Corning, Ark. Mold	854,613	May 21	4485	935	128	1214
Thomas, Edward B., Columbus, Ohio. Telephone attachment	854,971	May 28	5229	1089	128	1435
Thomas, Frank A., assignor to Sheffield Car Company, Three Rivers, Mich. Valve-gear for gas engines or motors	855,146	May 28	5603	1166	128	1527
Thomas, H. G. (See Ricketts, James R., assignor.)						
Thomas, James, Joliet, assignor of one-fourth to J. Mabus, East Peoria, Ill. Rail-splice	855,265	May 28	5826	1214	128	1586
Thomas, Jesse B., Boston, assignor of one-half to A. J. Knight, Brookline, Mass. Chemical fire-extinguisher	854,614	May 21	4486	936	128	1215
Thomas, John, near Coventry, England. Means for imparting motion or power	854,776	May 28	4835	1004	128	1333
Thomas, Otto E., Auburn, Cal. Bottle-washer	852,471	May 7	175	31	128	53
Thomas, Thomas, Mountain Ash, England. Belt and shield	852,638	May 7	531	100–1	128	139
Thomaschewski, Paul, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Anthraquinone derivative	853,041	May 7	1377		128	350
Thompson, Albert, Fullerton, Nebr. Chair attachment	854,544	May 21	4360	903	128	1182
Thompson, Everett L., New York, N. Y. Dry-pipe valve for automatic-sprinkler systems	855,076	May 28	5474	1136	128	1497
Thompson, Everett L., New York, N. Y. Sprinkler alarm device	855,077	May 28	5477	1136	128	1498
Thompson, Harvey W., Atlantic City, N. J. Carpenter's square	854,125	May 21	3587	740	128	984
Thompson, Nels P., Chicago, Ill. Baby folding bed	854,441	May 21	4176	865–6	128	1139
Thompson, Wilbur H., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electrical apparatus	854,316	May 21	3937	813	128	1079
Thoms, Charles F., Chicago, Ill. Egg-carrier	853,383	May 14	2061	427	128	561
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company. Electric meter	854,777	May 28	4836	1004–5	128	1333
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company. Apparatus for muffling the exhaust of gas-engines	854,778	May 28	4839	1005–6	128	1334
Thomson, John, Wilkinsburg, Pa. Educational device	853,042	May 7	1378	286	128	350
Thomson, John, and F. W. Kremer, assignors to Trident Tire Company, New York, N. Y. Wheel	854,063	May 21	3462	713–14	128	955
Thomson, William, Largs, and F. W. Clark, Glasgow, Scotland. Navigational sounding-machine	852,810	May 7	895	182	128	228
Thorne, Frank D., *et al.* (See Thorne, George L., assignor.)						
Thorne, George L., assignor to M. J. Pope and F. D. Thorne, St. Louis, Mo. Advertising device	854,779	May 28	4842	1006	128	1334
Thornton, Frederick, Huntington, W. Va. Machine for cutting barrel-veneers	854,256	May 21	3837	793	128	1052
Thornton, George A., Schenectady, N. Y., assignor to General Electric Company. Brush	852,686	May 7	638	123	128	166
Thorschmidt, Ernest C., New York, N. Y. Automatic stop for pistons	855,266	May 28	5829	1215	128	1587
Thun, Ferdinand, assignor to Textile Machine Works, Incorporated, Wyomissing, Pa. Shoe-lacing	852,747	May 7	746	147	128	195
Tideman, Henry, Menominee, Mich. Combined annunciator and ringer for telephone-lines	854,780	May 28	4844	1006	128	1335
Tilden, James A., Hyde Park, Mass. Valve	853,274	May 14	1821	380	128	494
Tilson, William H. Plainview, Tex. Binding mechanism for corn-harvesters	854,917	May 28	5131	1068	128	1410
Tin Products Company. (See Kügelgen and Seward, assignors.)						
Tingley, Philo B., Glenridge, N. J. Type-writer tabulator	852,988	May 7	1266	262–3	128	323
Tingley, Philo B., Glenridge, N. J. Type-writer tabulator	852,989	May 7	1270	263–4	128	323
Tinnes, Lewie A., Bird Island, Minn. Flue-beater tool	855,363	May 28	5995	1251	128	1628
Titcomb, George E., Philadelphia, Pa., assignor to Dodge Coal Storage Company, Naugatuck, Conn. Locomotive-crane	853,842	May 14	2980	611–12	128	796
Titus, Montie L., *et al.* (See Reichel, Alvin S., assignor.)						
Tobey, Charles W. (See Giles and Tobey.)						
Tobler, Frederick A., San Francisco, Cal. Electric heater for curling-irons	854,257	May 21	3838	793	128	1052
Toledo Glass Company. (See Bock, William E., assignor.)						
Toledo Glass Company. (See Owens, Michael J., assignor.)						
Toledo Metal Wheel Company. (See Weber, John, Jr., assignor.)						
Tolnes, Carl J., Maplebay, Minn. Detachable hinge	853,384	May 14	2062	427	128	562
Tompkins, John A. B., Wauwatosa, and S. R. Hartwell, Milwaukee, Wis. Boring apparatus	852,586	May 7	437	80	128	115
Torrey, Francis B., Portland, Me. Casting trolley-wheels	854,380	May 21	4065	841	128	1111
Totten, Robert C., Pittsburg, Pa. Manufacture of cast metal	854,126	May 21	3588		128	985
Towler, Maximilian J. L., Detroit, Mich. Automatic clutch	852,587	May 7	440	80	128	117
Townsend, Harry P., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Lock	853,485	May 14	2240	467	128	608
Toy, Robert M., Jones Station, Pa. Metallic tie and rail fastener	853,043	May 7	1380	287	128	351
Tracey, Ernest C., Newton, assignor to American Soda Fountain Company, Boston, Mass. Dispensing apparatus	852,472	May 7	178	31	128	54
Transom Draft Gear Company. (See Westlake, Charles T., assignor.)						
Traver, Harry G., East Orange, N. J. Trolley amusement	854,185	May 21	3702	765–6	128	1016
Treat, Edward R., *et al.* (See Kimber, Abraham, assignor.)						
Treat, James E., Boston, Mass. Calendar	854,127	May 21	3590	740	128	985
Trebert, Henry L. F., assignor to Brownell-Trebert Company, Rochester, N. Y. Carbureter	853,428	May 14	2127	444	128	578
Treviranus, George, Duluth, Minn. Car sweeper or scraper	853,385	May 14	2063	428	128	562
Trewhella, Benjamin. (See Trewhella, William, assignor.)						
Trewhella, William, assignor to himself and B. Trewhella, Trentham, Victoria, Australia. Lever-jack	853,526	May 14	2330	485–6	128	632
Trident Tire Company. (See Thomson and Kremer, assignors.)						
Troll, Harry, administrator. (See Groash, Harrison M.)						
Troppman, Charles J., Marquette, Mich., assignor to F. A. Hardy & Company, Chicago, Ill. Adjustable means for attaching lenses	852,588	May 7	442	81	128	117
Troy, Matthew O., Schenectady, N. Y., assignor to General Electric Company. Transformer	853,843	May 14	2983	612	128	797
Troy Wagon Works Company. (See Geiger, Charles A., assignor.)						
True, Jacob, Castile, N. Y. Barrel-cleaner for breech-loading firearms	852,748	May 7	747	147	128	195
Trussed Concrete Steel Company. (See Forsyth, William D., assignor.)						
Tucker, Junius E., assignor of one-half to W. S. Brian, Memphis, Tenn. Paper-sheet-feeding mechanism for printing-presses	852,473	May 7	179	32	128	54
Tucker, Junius E., assignor of one-half to W. S. Brian, Memphis, Tenn. Paper-sheet-feeding mechanism for printing-presses	852,530	May 7	300	55	128	82
Tueckmantel, Hugo, Newark, N. J. Bag-fastener	854,128	May 21	3591	740	128	985
Tull, Francis S., Houston, Tex. Bottle	855,211	May 28	5730	1193	128	1560
Tungate, Samuel D., Des Moines, Iowa. Attachment for dust-pans	853,486	May 14	2242	467	128	608
Tunstall, Charles A., Kamloops, British Columbia, Canada. Reversing-switch	855,147	May 28	5605	1166	128	1528

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Turbayne, William A., Lancaster, N. Y., assignor to Gould Storage Battery Company. Electrical system of distribution	852,639	May 7	532	101	128	139
Turbayne, William A., Lancaster, N. Y., assignor to Gould Coupler Company. Electrical system of distribution	852,687	May 7	639	123	128	166
Turner, G. Fred. (See Miller, Oliver N., assignor.)						
Turner, Robert H. (See Kirby, Robert C., assignor.)						
Turner, Robert M. (See Beard, Jerome L., assignor.)						
Turner Tanning Machinery Company. (See Turner, William B., assignor.)						
Turner, Walter H. *et al.* (See Stone, John S., assignor.)						
Turner, Walter V. (See Clark and Turner.)						
Turner, William B., Melrose, assignor to Turner Tanning Machinery Company, Boston, Mass. Leather-dressing machine	854,855	May 28	4989	1038–9	128	1372
Tuttle, Josiah S., assignor to Standard Scale and Foundry Co., Kansas City, Mo. Baling-press	854,678	May 21	4609	960–1	128	1246
Tuttle, Merritt L., Fort Morgan, Colo. Dumping device for vehicles	855,267	May 28	5830	1215	128	1587
Tuttle, Washington I., Baltimore, Md. Box or receptacle	853,844	May 14	2084	613	128	797
Tuttle, William L., Marengo, Iowa. Valve-operating mechanism for automatic air and gas mixers	853,487	May 14	2243	467	128	608
Twigg, Henry A., Denver, Colo. Combined turn-down-collar folder, shaper, and edge-ironer	853,845	May 14	2087	613	128	798
Twin Bottle-Cap Company. (See Robinson, Frank T., assignor.)						
Twitchell, Selden, Bryn Mawr, Pa., and C. O'Connor, assignors to S. Twitchell Co., Camden, N. J. Apparatus for carbonating liquids	854,390	May 21	4066	841	128	1112
Tyden, Emil, Hastings, Mich. Fiber-mixer	852,474	May 7	181	32	128	55
Tyden, Emil, Hastings, Mich. Sheet-separating device for sheet-feeding machines	853,910	May 14	3130	641	128	833
Tye, Reginald H., Goderich, Ontario, Canada. Trousers-hanger	853,527	May 14	2332	486	128	632
Tyler, George B., assignor of one-half to W. R. Waters, Hastings, Nebr. Apparatus for manufacturing concrete blocks	854,856	May 28	4994	1040	128	1374
Tyler, John E., Roxobel, N. C. Fence	853,846	May 14	2088	614	128	798
Tyler, John J. (See Nash, John, assignor.)						
Tyree, William, Nelson, New Zealand. Automatic spray for painting, agricultural, disinfecting, and other analogous purposes	854,317	May 21	3938	813	128	1080
Tyson, Frank, Canton, Ohio. Pasteurizing apparatus	853,659	May 14	2605	540	128	702
Tyson, Frank, Canton, Ohio. Ice-cream freezer	855,364	May 28	5996	1252	128	1629
U. S. Standard Voting Machine Co. (See Dey, Gilbert S., assignor.)						
U. S. Standard Voting Machine Co. (See MacKenzie, Angus, assignor.)						
Ueberle, August, New York, N. Y. Toy	854,545	May 21	4362	903	128	1183
Ulery, Ulysses J., *et al.* (See Kaufman, Everett G., assignor.)						
Ullmann, Albert, Macon, Ga. Cock and faucet	854,007	May 21	3332	684	128	923
Underhill, Walter A., Auburn, N. Y. Dump-wagon	853,275	May 14	1823	380	128	494
Underwood, Charles F. (See Akarman, John N., assignor.)						
Underwood, Herbert G., Stamford, Conn., assignor to H. H. Franklin Manufacturing Company, Syracuse, N. Y. Casting apparatus	852,811	May 7	897	182	128	229
Underwood, Louis E., Lynn, Mass., assignor to General Electric Company. Commutator	854,781	May 28	4846	1006	128	1335
Underwood, Louis E., Lynn, Mass., assignor to General Electric Company. Dynamo-electric machine	854,782	May 28	4848	1007	128	1336
Underwood Typewriter Company. (See Helmond, William F., assignor.)						
Underwood Typewriter Company. (See Lear, Arthur F., assignor.)						
Underwood Typewriter Company. (See Lundeberg, Carl F., assignor.)						
Underwood Typewriter Company. (See Pfunder and Cook, assignors.)						
Underwood Typewriter Company. (See Roberts, Lyman R., assignor.)						
Underwood Typewriter Company. (See Stickney, Burnham C., assignor.)						
Underwood Typewriter Company. (See Wagner, Hernan L., assignor.)						
Union Lock Stitch Company. (See Merrick, Frank W., assignor.)						
Union Paper Bag Machine Company. (See Lorenz, William A., assignor.) (Reissue.)						
Union Special Machine Company. (See Seymour, Dudley S., assignor.)						
Union Typewriter Company. (See Stickney, Burnham C., assignor.)						
United Shoe Machinery Company. (See Smith, Charles H., assignor.)						
United States Butter Extractor Company. (See Holmgren, Gustaf, assignor.)						
United States Sample Book Company. (See Bodine, Harry E., assignor.)						
United States Textile Company. (See Green, Willard R., assignor.)						
United Wrapping Machine Company. (See Keyes, James A., assignor.)						
Universal Voting Machine Company. (See Gilmore, Wilmer C., assignor.)						
Upton, Edmund F., and M. E. Fisher, assignors of one-half to D. O. and E. Yankirk, Mineral City, Ohio. Making a solution for hard-rubber coating	853,429	May 14	2120		128	579
Usina, Edmund A., Newtonville, Mass. Manufacture of belting	853,567	May 14	2406	502	128	651
Utica Knitting Company. (See McAdam, Quentin, assignor.)						
Utz, Charles A., Rochester, N. Y. Station-indicator	852,475	May 7	183	32–3	128	55
Van Buren, Jafew S., assignor to Rathbone, Sard & Co., Albany, N. Y. Tilting frame for cooking-stoves	853,847	May 14	2090	614	128	798
Van Choate, Sylvanus F., Boston, Mass. Rotary engine	855,148	May 28	5607	1166–8	128	1529
Van Deinse, Paul, *et al.* (See Baker and Irish, assignors.)						
Van Doorn, Henry D., Providence, R. I. Hand-windlass	853,045	May 7	1381	287–8	128	351
Van Dyke, Thomas H., assignor of two-thirds to J. Doarn and L. B. Mettler, Kansas City, Mo. Air-brake	854,857	May 28	4996	1040–1	128	1374
Van Kirk, Benjamin R., assignor to Burnham, Williams & Company, Philadelphia, Pa. Electric-motor truck	854,442	May 21	4178	866	128	1140
Van Oordt, Gabriel. (See Bran and Van Oordt.)						
Van Vleck, Henry E., Great Bend, Pa. Combined music-rack and leaf-turner	854,129	May 21	3592	741	128	985
Van Wie, Byron, New York, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	853,749	May 14	2799	575	128	753
Van Yorx, Percival K., New York, N. Y., assignor to Wilcox & White Company, Meriden, Conn. Marking for note-sheets	854,064	May 21	3464	714	128	955
Van Zile, Harry L., New York, N. Y. Superheater	852,640	May 7	534	101–2	128	140
Vandevort, Frank F., Germantown, Pa., assignor of three-fourths to H. Japp, New York, J. Forgie, Richmond Hill, N. Y., and E. W. Moir, London, England. Tunnel-segment	852,916	May 7	1129	233	128	288
Vandiver, John W., *et al.* (See Vandiver, Leslie A., assignor.)						
Vandiver, Leslie A., Hannibal, assignor of one-half to J. W. Vandiver, Hagers Grove, Mo., and R. H. Visger, Chicago, Ill. Vending-machine	853,194	May 7	1639	341–2	128	415
Vaniman, Jesse W., Wichita, Kans. Steam-plow	853,046	May 7	1383	288	128	352
Vankirk, Daniel O., *et al.* (See Upton and Fisher, assignors.)						
Vankirk, Eben, *et al.* (See Upton and Fisher, assignors.)						
Varley, Reginald. (See Lowe, Richard, assignor.)						
Vartmann, Walter, St. Paul, Minn. Saw	853,609	May 14	2498	519	128	675
Vaughn, Benjamin A., and W. G. Bissell, Corning, Cal. Attachment for tripod-cameras	855,149	May 28	5618	1168	128	1533
Veeder Manufacturing Company. (See Boon, Horace J., assignor.)						
Verbeck, William, Manlius, N. Y. Photographic apparatus	852,476	May 7	185	33	128	55
Verdeau, Emile, assignor to Cryder & Co., New York, N. Y. Eye-protector	854,546	May 21	4362	903	128	1183
Verner, Walter W., Delmont, S. D. Concrete-block machine	854,130	May 21	3594	741–2	128	986
Vernon, Frederick R., Freeport, N. Y. Knockdown box	852,812	May 7	899	183	128	229

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Vickery, Richard J., and J. J. Dinsmore, Clark, S. D. Plow	853,047	May 7	1385	288–9	128	352
Victor Electric Company. (See Wantz, Julius B., assignor.)						
Victor Talking Machine Company. (See Cheney, George K., assignor.)						
Vidal, Philippe Ste. Cunegonde, Quebec, assignor of one-half to M. M. Mireau, Montreal, Canada. Smoke-consumer	854,679	May 21	4613	961	128	1246
Viel, Arthur H., Fenton, Mich. Bath-tub	853,276	May 14	1826	380	128	495
Villacampa, Miguel V. y, Buenos Ayres, Argentina. Ventilating-shoe	853,386	May 14	2065	428	128	562
Vines, David, Mechanicsville, N. Y. Boiler-furnace	855,212	May 28	5731	1193	128	1561
Vining, William E., West Haven, Conn. Game apparatus	853,278	May 14	1828	381–2	128	495
Visger, Robert H., *et al.* (See Vandiver, Leslie A., assignor.)						
Vogel, Eugene W., Chicago, Ill., assignor, by mesne assignments, to Railroad Supply Company. Relay	855,365	May 28	5699	1252–3	128	1629
Vogelsang, Carl, Solingen, Germany. Screw-cutting machine	852,641	May 7	537	102	128	141
Vogt, Harry V., Philadelphia, Pa. Perpetual calendar	855,078	May 28	5480	1136–7	128	1498
Voigt, Edward H. (See Riemer, Frank, assignor.)						
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Casement-adjuster	852,477	May 7	187	33–4	128	55
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Latch mechanism	854,008	May 21	3335	685	128	924
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Latch	854,065	May 21	3466	715	128	956
Voightmann and Company. (See Schweinler, Henry R., assignor.)						
Voisard, Harrison A., Sidney, Ohio. Roller	853,277	May 14	1827	381	128	495
Voith, George, Baltimore, Md. Rotary engine	854,783	May 28	4850	1007–8	128	1336
Volkenant, William F., Lester Prairie, Minn. Fence-making machine	853,660	May 14	2606	540–1	128	703
Völler, Karl, Düsseldorf, assignor to Rheinische Metallwaren-und Maschinenfabrik, Düsseldorf-Derendorf, Germany. Gun with recoiling barrel	855,366	May 28	6002	1253	128	1630
Vollmer, Gustav C., St. Louis, Mo. Rotary air-compressor	852,749	May 7	748	147–8	128	195
Voorhees, John K. and J. R., Cedar Falls, Iowa. Grain-assorter	854,443	May 21	4180	866–7	128	1140
Voorhees, John R. (See Voorhees, John K. and J. R.)						
Vorheis, Addison, and J. C. Moyer, Burlington, Iowa. Watering device	854,615	May 21	4489	930	128	1215
Voris, Clifford D., assignor to F. M. Voris, Crawfordsville, Ind. Corrugated-metal culvert	852,478	May 7	188	34	128	56
Voshardt, Herman F., assignor of one-half to I. W. Kelley, Chicago, Ill. Structural I-beam	854,391	May 21	4068	841–2	128	1112
Vote-Berger Company. (See Enochs, Claude D., assignor.)	854,186	May 21	3709	767	128	1019
Wachter, Charles L. (See Miller and Wachter.)						
Waddell, Montgomery, New York, N. Y., assignor, by mesne assignments, to S. W. Pettit, Philadelphia, Pa. Manufacture of viscose	855,213	May 28	5733		128	1561
Wade, Erwin M., Los Angeles, Cal. Filter	854,972	May 28	5230	1089–90	128	1435
Wade, Henry J., Winona, Minn. Manufacturing heat-insulating bodies	852,688	May 7	643	123	128	168
Wadsworth, William, Wichita, Kans. Tobacco-booking machine	853,279	May 14	1829	382	128	496
Wagner, George C. (See Pond and Wagner.)						
Wagner, Herman L., Mount Vernon, assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	853,280	May 14	1831	382	128	496
Wagner, Herman L., Mount Vernon, assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	853,281	May 14	1834	383	128	497
Wagner, Herman L., Mount Vernon, assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	855,027	May 28	5355	1112	128	1465
Wahrhaftig, M. S. (See Phillips, William H., assignor.)						
Waite, Ralph B., Springville, N. Y. Starting device for automobiles	854,858	May 28	5006	1041	128	1377
Walbrecker, Albert, assignor to C. Wilfing, Jr., Elberfeld, Germany. Locking-nut	853,661	May 14	2608	541	128	703
Walker, Chas. A. (See Copeman, Lloyd G., assignor.)						
Walker, George, Newark, N. J., assignor to Rubber and Celluloid Harness Trimming Co. Means for attaching harness-trimmings	853,568	May 14	2408	502	128	651
Walker, James C., Waco, Tex. Rotary engine	855,028	May 28	5356	1112–13	128	1466
Walker, John S., Trenton, N. J. Hoisting apparatus	853,387	May 14	2066	428	128	562
Walker, Ralph E. (See Smith and Reinohl, assignors.)						
Wall, Joshua C., Jr., *et al.* (See Rockwell, Hubert R., assignor.)						
Wall Paper Manufacturers. (See Sanderson, Harold W., assignor.)						
Wall, Patrick, Ithaca, N. Y. Toe-spreading retainer	853,327	May 14	1960	405	128	536
Wallace, Edward F., Burgess, Miss. Prescription-cabinet	853,528	May 14	2333	486	128	632
Wallace, John M., New Castle, Pa. Wrench	855,367	May 28	6003	1253	128	1630
Wallace, Roston S., Birmingham, Ala. Air-cleaner for air-brake systems	853,137	May 7	1540	320	128	389
Wallace, Thomas L., assignor to E. C. Atkins & Company, Indianapolis, Ind. Saw	853,282	May 14	1838	383	128	499
Wallin, Gustaf A., assignor to A. Kimball Company, New York, N. Y. Pin-ticket	852,531	May 7	402	55	128	83
Walsh, George C. (See Hollingsworth, Joseph C., assignor.)						
Walsh, James D., St. Louis, Mo. Roundabout	854,859	May 28	5006	1041	128	1377
Walsh, John M., Henrico county, Va. Fastener for vehicle-curtains and the like	855,029	May 28	5360	1113	128	1467
Walter A. Wood Mowing and Reaping Machine Company. (See Beckett, James A., assignor.)						
Wantz, Julius B., assignor to Victor Electric Company, Chicago, Ill. Electric sterilizer	853,318	May 21	3940	814	128	1090
Ward, William S., assignor to H. D. Smith & Company, Plantsville, Conn. Forged-steel hammer	855,079	May 28	5483	1137	128	1499
Warner, Edward O., Haverford, Pa., assignor to Latrobe Steel and Coupler Company, Camden, N. J. Car-coupling	854,444	May 21	4184	867	128	1142
Warner, Frank O., Baltimore, Md. Clock mechanism for signals	854,066	May 21	3467	715	128	956
Warner, Robert B. (See Warner, Samuel C. and R. B.)						
Warner, Samuel C. and R. B., Holyoke, Mass.; said Robert B. Warner assignor to said Samuel C. Warner. Paper-finishing machine	853,610	May 14	2499	519	128	676
Washington Loan & Trust Company. (See Gates, Elmer, assignor.)						
Wassam, Frank F. (See Ford and Wassam.)						
Waters, William L., assignor to National Brake & Electric Company, Milwaukee, Wis. Commutator	853,283	May 14	1840	384	128	500
Waters, William L., assignor to National Brake & Electric Company, Milwaukee, Wis. Elastic-fluid turbine	853,284	May 14	1841	384–5	128	500
Waters, William L., assignor to National Brake & Electric Company, Milwaukee, Wis. Dynamo-electric machine	853,285	May 14	1846	385	128	500
Waters, William R. (See Tyler, George B., assignor.)						
Watres, Lewis S., assignor of fifty-one one-hundredths to R. C. Adams, Scranton, Pa. Brake	853,848	May 14	2991	614–15	128	799
Watson, Charles S., Newcastle-upon-Tyne, England. Type-writer	854,187	May 21	3711	767–8	128	1019
Watson, Elmer W. (See Willey and Watson.)						
Watson, Thomas, Evanston, Ill. Snap-hook	855,368	May 28	6005	1253	128	1631
Watson, William S., and F. Artz, Galesburg, Ill. Puzzle	855,266	May 28	5832	1215–16	128	1588
Watts, Asa O., Windsor Mills, Quebec, Canada. Weighing apparatus	853,388	May 14	2067	429	128	563
Way, David R., Fairfield, Iowa. Mail-bag catcher and deliverer	853,899	May 7	1009	209–10	128	257
Weaver, Eugene M., New York, N. Y. Drawbridge rail-lock	853,611	May 14	2504	519–20	128	677
Weaver, Robert T., assignor to J. Schneible, Weehawken, N. J. Apparatus for the treatment of refractory water	854,445	May 21	4186	867	128	1142

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Webb, James, *et al.* (See Sappington, Paul, assignor.)						
Webber, Oakman A., Manchester, N. H. Cementing-machine	852,861	May 7	1015	210	128	258
Webber, William O., Boston, Mass. Automatic tidal air-compressor	854,009	May 21	3336	685	128	924
Weber, George W., assignor to American Can Company, New York, N. Y. Open-mouth friction-cover can or vessel	853,488	May 14	2244	468	128	609
Weber, Herman, Colorado Springs, Colo. Electric governor	854,918	May 28	5135	1069	128	1411
Weber, Jacob, Chelsea, Mass. Valve	854,319	May 21	3942	814	128	1080
Weber, John, Jr., assignor to Toledo Metal Wheel Company, Toledo, Ohio. Assembling wheels	855,369	May 28	6007	1254	128	1631
Weber, Peter, Orange, N. J. Support for shaft-hangers	853,662	May 14	2608	541	128	703
Weber, Rudolph J., Detroit, Mich. Vehicle	854,188	May 21	3715	769	128	1020
Weber, William L., Boston, Mass. Vegetable-peeling apparatus	854,258	May 21	3840	793	128	1053
Webster, Harry G., assignor to Kellogg Switchboard and Supply Company, Chicago, Ill. Telephone trunking system	853,286	May 14	1850	386	128	503
Webster, Harry G., Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company. Rochester, N. Y. Supervisory signaling system	853,287	May 14	1856	386	128	504
Weeber, Christian F., Albany, N. Y. Tool for removing engine-valves	854,860	May 28	5009	1042	128	1378
Weeks, Charles E., Carterville, Mo. Metal-bending machine	854,067	May 21	3470	715	128	957
Weeks, John, Brooklyn, N. Y., assignor to W. M. Dudgeon, executor of R. Dudgeon, deceased. Hydraulic rail-bond compressor	852,532	May 7	304	55	128	83
Weeks, Samuel V. (See Lyle, Henry C., assignor.)						
Weidely, George A., assignor to Premier Motor Mfg. Co., Indianapolis, Ind. Lubricating and cooling system for engines	853,288	May 14	1860	386–7	128	505
Weidner, Paul G. (See French and Weidner.)						
Weir, Adam, *et al.* (See Clawson, Charles F., assignor.)						
Weir, Roderick, Winnipeg, Manitoba, Canada. Clothes-wardrobe	852,862	May 7	1016	210	128	259
Weir, William, Cathcart, Scotland. Lift-valve and its guard for gas and liquid pumps	852,589	May 7	443	81	128	117
Weir, William, Cathcart, Scotland. Direct-acting pump	855,150	May 28	5620	1168–9	128	1533
Weisbrod, John, New York, N. Y. Temporary binder	853,663	May 14	2610	541	128	704
Welskopf, Harry, Chicago, Ill. Paste-applying machine	853,048	May 7	1386	289	128	353
Weiss, Karl, Waterbury, Conn. Revolving pliers	852,479	May 7	189	34	128	56
Weisse, Carl, Altenburg, Germany. Till	853,430	May 14	2129	444	128	579
Welch, Edmund F., Termo Station, Cal. Plate-lifter	853,529	May 14	2335	486	128	633
Wells, Harold, Norman, Okla. Ter. Gate	854,392	May 21	4072	842	128	1113
Wells, Ralph N., assignor of two-thirds to W. G. Betz and D. J. Ray, Newcastle, Ind. Piano	852,917	May 7	1130	233–4	128	288
Welsh, Harvey H., Jr., Wilmerding, assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Opening die	853,289	May 14	1862	387	128	505
Weman, Klas, Buffalo, N. Y. Telephone calling or signaling device	853,389	May 14	2069	429	128	563
Wemlinger, Julius R., Brooklyn, N. Y. Metal sheet-piling	855,030	May 28	5362	1113	128	1467
Wendt, Fred H., Marshfield, Wis. Railway-signal	853,489	May 14	2246	468	128	609
Wentworth Company. (See Wentworth, Samuel J., assignor.)						
Wentworth, Samuel J., Newport, Ky., assignor to Wentworth Company, Cincinnati, Ohio. Heel-seat-forming machine	854,320	May 21	3944	814	128	1081
Wera, Eugene L. J., Liege, Belgium. Steam-generator	853,290	May 14	1863	387–8	128	505
Werkenthin, Carl. (See May and Werkenthin.)						
Wern, Gustaf P., New York, N. Y. Top-fitting for derricks	854,189	May 21	3715	769	128	1021
Wernau, Robert A. (See Pearson and Wernau.)						
Werner, Walter, New York, N. Y. Puzzle	854,547	May 21	4363	904	128	1183
Weser, John A., New York, N. Y. Automatic piano	855,370	May 28	6008	1254	128	1632
Wessel, Wilhelm. (See Ballewski and Wessel.)						
West, Ralph H., Cleveland, Ohio. Mold for casting chilled rolls	853,490	May 14	2253	468–9	128	612
West, William P. (See Glor and West.)						
Westerbeck, Frederick, St. Louis, Mo. Sheet-metal can	855,080	May 28	5484	1137	128	1500
Western Electric Company. (See Forsberg and Birsfield, assignors.)						
Western Electric Company. (See King, Henry R., assignor.)						
Western Electric Company. (See McBerty and Craft, assignors.)						
Western Electric Company. (See Roberts, John G., assignor.)						
Westinghouse Air Brake Company. (See Clark and Turner, assignors.)						
Westinghouse Air Brake Company. (See Cloud, John W., assignor.)						
Westinghouse Air Brake Company. (See Farmer, Clyde C., assignor.)						
Westinghouse Air Brake Company. (See Newell, Frank C., assignor.)						
Westinghouse Air Brake Company. (See Welsh, Harvey H., Jr., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Aalborg, Christian, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Bradshaw, William M., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Conrad and Bradshaw, assignors.)						
Westinghouse Electric & Manufacturing Company. (See Darlington, Frederick, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Jackson, Ray P., assignor.)						
Westinghouse Electric & Manufacturing Company. (See James, Henry D., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Kintner and Hanks, assignors.)						
Westinghouse Electric & Manufacturing Company. (See Lamme, Benjamin G., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Lehr, Edwin, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Mershon, Ralph D., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Randall, Karl C., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Reed, Emerson G., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Skinner, Charles E., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Skinner and Kintner, assignors.)						
Westinghouse Electric & Manufacturing Company. (See Thompson, Wilbur H., assignor.)						
Westinghouse, Geo. (See Potter, Henry N., assignor.)						
Westlake, Charles T., assignor to Davis Locomotive Wheel Company, St. Louis, Mo. Locomotive buffer-beam	854,131	May 21	3595	742	128	986
Westlake, Charles T., assignor to Transom Draft Gear Company, St. Louis, Mo. Draft-gear for railway-cars	854,132	May 21	3597	742	128	987
Weston, Sarah H., Congaree, S. C. Mattress	853,049	May 7	1388	289	128	353
Wetmore, Charles P. (See Felt and Wetmore.)						
Wheat, Elmer. (See Wheat, William D., assignor.)						
Wheat, William D., assignor of one-half to E. Wheat, Jamestown, Ky. Bottle-stopper	853,195	May 7	1644	342	128	415
Wheeler, Edward W., Cedar Springs, Mich. Holder for razor-blades	852,750	May 7	750	148	128	196
Wheeler Manufacturing Company. (See Kiewicz, John, assignor.)						
Whelden, Percy W., Norcatur, Kans. Animal-yoke	854,973	May 28	5233	1090	128	1436
Whetstone, Jasper N. (See Dunkle and Whetstone.)						
Whipple, Allen D., Chicago, Ill. Electrically insulating wire and other electrical conductors	855,081	May 28	5485		128	1500
Whipple, Charles B., Springfield Center, N. Y. Means for collecting and carrying off smoke and odors from stoves	853,530	May 14	2336	487	128	633
Whipple, George E., *et al.* (See Shaw, Henry F., assignor.)						
Whitaker, Richard, New Brunswick, N. J., assignor to Brunswick Refrigerating Company. Valve	854,133	May 21	3596	742	128	987

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Whitaker, Richard, New Brunswick, N. J., assignor to Brunswick Refrigerating Company. Valve	854,134	May 21	3600	743	128	987
Whitaker, Richard, assignor to Neverslip Manufacturing Company, New Brunswick, N. J. Making horseshoe-calks	855,082	May 28	5486	1138	128	1500
White, Charles H., and A. S. MacKay, Vancouver, British Columbia, Canada. Milk cooler and aerator	855,371	May 28	6011	1254	128	1633
White, Edward L., Englewood, N. J. Paper	852,918	May 7	1131	.....	128	288
White, Frank C., assignor to Wilcox & White Company, Meriden, Conn. Autopneumatic musical instrument	852,751	May 7	751	148	128	196
White, Frank C., assignor to Wilcox & White Company, Meriden, Conn. Autopneumatic music-playing instrument	852,752	May 7	754	149	128	197
White, Frank C., assignor to Wilcox & White Company, Meriden, Conn. Autopneumatic music-playing instrument	852,813	May 7	901	183	128	230
White, Hawley C., North Bennington, and C. S. Beach, Bennington, assignors to H. C. White Co., North Bennington, Vt. Folding handle for stereoscopes	853,664	May 14	2610	542	128	704
Whitehead, David, assignor of one-half to H. Adams, Perth, Western Australia, Australia. Combined chimney-cowl and ventilator	852,480	May 7	192	35	128	57
Whitehead & Hoag Company. (See Conklin, Edward D., assignor.)						
Whitehead, John F. (See Dames and Whitehead.)						
Whiteley, William, assignor to North & Judd Manufacturing Company, New Britain, Conn. Razor-strop fastener	854,068	May 21	3471	716	128	958
Whiteman, George W., Philadelphia, Pa. Rail-joint	852,990	May 7	1274	264	128	324
Whitlock Coil Pipe Company. (See Brinkman, Louis H., assignor.)						
Whitney, Eddy R., Lynn, Mass., assignor to General Electric Company. Friction-clutch	853,849	May 14	2992	615	128	799
Whitney, William S. (See Grunert and Whitney.)						
Whittall, Matthew J. (See Pearsall, William, assignor.)						
Whittemore, John R., Indianapolis, Ind. Gasket	854,135	May 21	3603	743	128	988
Whittemore, Zenas, Morton, Pa. Self-loading cart	852,919	May 7	1132	234	128	288
Whorrall, Edwin, Loda, Ill. Grain-conveyer	853,750	May 14	2802	575	128	753
Wiard, John B., Lynn, Mass., assignor to General Electric Company. Dynamo-electric machine	854,784	May 28	4854	1008	128	1337
Wiberg, Charles E., assignor of one-half to T. Bardon, Ashland, Wis. Street-flushing apparatus	854,680	May 21	4614	962	128	1247
Wickland, Algot A., assignor to C. Rosen, Chicago, Ill. Pneumatic massage-machine	854,548	May 21	4364	904	128	1183
Wicks, Charles E., Norfolk, Va. Automatic davit fall-block	852,533	May 7	307	35	128	84
Wickstrum, Peter M., Lincoln, Nebr. Lamp-bracket	854,785	May 28	4856	1008	128	1338
Wiecke, Adolf, Düsseldorf, Germany. Furnace for heating disk wheels or the like	854,974	May 28	5234	1090	128	1436
Wiedemann, Joseph A., Eldorado, Kans. Mechanically-operated sign	854,190	May 21	3717	769	128	1021
Wiederer & Co., N. (See Schwarz and Bortzner, assignors.)						
Wieland, Charles G., Hoboken, N. J. Steam-boiler	853,665	May 14	2612	542	128	704
Wiesehomeier, Friedrich, Rinteln, Germany. Machine for the automatic insertion of glass balls into bottle-necks	852,590	May 7	444	81	128	118
Wiet, Eugene, assignor to Wiet-Goethe Company, Sacramento, Cal. Tube-forming machine	854,136	May 21	3604	743	128	988
Wiet-Goethe Company. (See Wiet, Eugene, assignor.)						
Wigert, David, Greenbush, Ill. Steam-boiler	852,481	May 7	193	35	128	57
Wiking, Anders F., Stockholm, Sweden. Floating dock	853,328	May 14	1961	405-6	128	536
Wilbraham-Green Blower Company. (See Green, Thomas W., assignor.)						
Wilcox & White Company. (See White, Frank C., assignor.)						
Wilcox & White Company. (See Van Yorx, Percival K., assignor.)						
Wild, William P., Osmabrock, N. D. Draft-equalizer	854,786	May 28	4857	1009	128	1338
Wiles, Russell, assignor to J. W. Page, Chicago, Ill. Excavating-scoop	852,863	May 7	1018	211	128	259
Wilkinson, Andrew D., Wellsville, Ohio. Electric igniter	855,269	May 28	5833	1216	128	1588
Will, Charles E., assignor of one-fourth to F. J. Eighmey, Waterloo, Iowa. Railway-tie	853,390	May 14	2070	429	128	564
Willey, John F., and E. W. Watson, Versailles, Ill. Sad-iron	853,138	May 7	1541	321	128	389
William A. Miller Elevator Manufacturing Company. (See Burmester, Fredrick H., assignor.)						
William B. Pollock Company. (See McKelvey, William W., assignor.)						
Williams, Charles C. (See Oleson and Williams.)						
Williams, Cortez L., Steubenville, Ohio. Tire-fastener	854,549	May 21	4366	904	128	1184
Williams, Edgar J., Cincinnati, Ohio. Credit-account-filing system	854,069	May 21	3471	716	128	958
Williams, Fillmore, Columbus, Ohio. Amusement device	853,666	May 14	2613	542	128	704
Williams, Irvin, Nelson, and W. H. Garland, Kansas City, Mo.; said Garland assignor to said Williams. Permutation-padlock	853,569	May 14	2410	502	128	652
Williams, Joseph A., Cleveland, Ohio. Dynamo-electric machine	854,321	May 21	3945	875	128	1081
Williams, Louis N. D., Ogontz, assignor of one-half to R. W. Scott, Philadelphia, Pa. Knitted fabric	853,667	May 14	2614	543	128	705
Williams, Louis N. D., Ogontz, assignor of one-half to R. W. Scott, Philadelphia, Pa. Knitting-machine	853,668	May 14	2616	543	128	705
Williams, Ora G. (See Phillips and Williams.)						
Williams, William A. (See Oleson and Williams.)						
Williamson, Benjamin M., and W. B. Ripley, Stockton, Cal. Lubricating means	854,975	May 28	5235	1090	128	1436
Willis, James A., assignor of three-fourths to F. E. Wire, Libertyville, Ill. Railway-tie	854,787	May 28	4857	1009	128	1338
Willoughby, John T. (See O'Neill, George E., assignor.)						
Wilmot Castle Company. (See Castle, Wilmot, assignor.)						
Wilmshöfer, Carl, Erfurt, Germany. Stiffening-cap for shoes	853,140	May 7	1545	321	128	390
Wilshusen, August E., Stafford, Kans. Lister-cultivator	855,372	May 28	6012	1255	128	1633
Wilson, Barton S. (See McIntosh, Clayton A., assignor.)						
Wilson, Dalton K., Gladbrook, Iowa. Combined hog-stop and cattle-pass	854,322	May 21	3946	815	128	1081
Wilson, Dwight O., Yankton, S. D. Mold for hollow-wall construction	852,534	May 7	309	56	128	84
Wilson, Frederick E. (See Mainster and Wilson.)						
Wilson, George E. (See Campbell and Wilson.)						
Wilson, Harry, assignor of one-half to W. B. Lindsey, Washington, D. C. Indicator	853,612	May 14	2506	520	128	677
Wilson, Harry, and R. L. Greenwell, Washington, D. C. Cuspidor	852,482	May 7	194	35	128	57
Wilson, John A., Jr., assignor to Detroit Auto Specialty Co., Detroit, Mich. Radiator for automobiles	855,373	May 28	6014	1255	128	1633
Wilson, John A., Jr., assignor to Detroit Auto Specialty Co., Detroit, Mich. Radiator for automobiles	855,374	May 28	6015	1255	128	1634
Wilson, Lewis, and F. I. Matthews, Oakland, Cal. Power-hammer	855,151	May 28	5621	1169	128	1533
Wilson, Myron I., Ohlman, Ill. Gear-evener and power-indicating means	854,070	May 21	3474	716	128	958
Wilson, Robert, West Lynn, Mass., assignor to General Electric Company. Steam-turbine	854,788	May 28	4858	1009	128	1338
Wilson, Stephen G., Philadelphia, Pa. Broom-handle	855,152	May 28	5623	1170	128	1534
Wilson, Thomas, Hull, England. Valve-motion for engines	853,139	May 7	1543	321	128	390
Wilson, William C. (See Howell, Harry H., assignor.)						
Wilson, William H., *et al.* (See Nolan, James M., assignor.)						
Wilson, William H., Norwalk, Ohio. Die-stock	853,329	May 14	1962	406	128	536
Winchell, James F., deceased, Springfield; L. L. Winchell, administratrix, assignor to C. E. Pease and W. B. Anderson, Dayton, Ohio. Grinding-mill	854,861	May 28	5010	1042	128	1378

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Winchell, Lida L., administratrix. (See Winchell, James F.)						
Winchester Repeating Arms Co. (See Johnson, Thomas C., assignor.)						
Winchester Repeating Arms Co. (See Mason, William, assignor.)						
Windsor Machine Co. (See Hipwell, John B., assignor.)						
Winks, Walter H., assignor of one-half to C. W. Cavey, Baltimore, Md. Injector	855,421	May 28	6099	1274	128	1652
Winter, Augustus G., Chicago, Ill., assignor of one-half to E. G. Buckner, Philadelphia, Pa. Means for cleaning and cooling gun-barrels by fluid under pressure	854,323	May 21	3947	816	128	1082
Winter, Herman, New York, assignor to F. Wesel Manufacturing Company, Brooklyn, N. Y. Apparatus for making stereotype-plates	852,642	May 7	528	103	128	141
Winter, Oscar, Elyria, Ohio. Piston-ring expander	855,031	May 28	5363	1114	128	1468
Wire, Frank E. (See Willis, James A., assignor.)						
Wirt, Reuben D., Philadelphia, Pa. Regulator	854,393	May 21	4075	842	128	1113
Wisener, George E., Munhall, Pa. Pit-furnace cover and making same	853,669	May 14	2617	543	128	706
Wisner, Percy, Goshen, N. Y. Candle-shade support	855,032	May 28	5365	1114	128	1468
Wistar, Joseph W., Philadelphia, Pa. Breast-chain spreader for harness	855,270	May 28	5835	1216	128	1588
Withington, Sherman S., Adrian, assignor to Jackson Fence Company, Jackson, Mich. Equalizer for wire-fence machines	854,616	May 21	4490	936	128	1215
Witt, Julius F., Chicago, Ill. Interchangeable umbrella-handle	854,259	May 21	3841	793	128	1053
Witte, Hubert, assignor to St. Louis Car Company, St. Louis, Mo. Door opening and closing device	852,814	May 7	902	183-4	128	230
Wm. B. Scaife & Sons Company. (See Newman, Martin F., assignor.)						
Wogaman, Harry H., Greenville, Ohio. Turret-head	853,570	May 14	2413	503	128	652
Wolcott, George M., Detroit, Mich. Lubricator	852,689	May 7	644	124	128	168
Wolcott, Herbert W. (See Hodge, Madison F., assignor.)						
Wolf, Sigmund B., *et al.* (See Sokal, Edward, assignor.)						
Wolfe, Samuel C., Angola, Ind. Tire-protector	854,137	May 21	3605	744	128	989
Wolff, Adrian F. (See Goss and Wolff.)						
Wolff, Adrian F., assignor to Scovill Manufacturing Company, Waterbury, Conn. Powder-can top	853,141	May 7	1546	321	128	390
Wolff, Charles, *et al.* (See Sokal, Edward, assignor.)						
Wolff, John F. (See Evans and Wolff.)						
Wollensak, Andrew, assignor to Wollensak Optical Company, Rochester, N. Y. Loose-leaf binder	855,033	May 28	5366	1114	128	1469
Wollensak Optical Company. (See Wollensak, Andrew, assignor.)						
Wood, Augustus, Hamilton, Ohio, assignor to Niles-Bement-Pond Company, Jersey City, N. J. Machine-tool	854,446	May 21	4188	868	128	1143
Woodall, George, Flushing, N. Y. Automatic cellar-drain	853,850	May 14	2995	616	128	800
Woodbridge, John S., Detroit, Mich. Match-machine	854,863	May 28	5016	1043	128	1379
Woodbridge, Joseph L., Philadelphia, Pa. System of electrical distribution	854,862	May 28	5014	1042	128	1379
Woodbury, Urban A., Burlington, Vt. Railway-switch	855,437	May 28	6126	1281	128	1658
Woodcock, Willard J., Brooklyn, N. Y. Refrigerator-condenser	854,976	May 28	5236	1091	128	1436
Wooddell, Grover C., Linwood, W. Va. Nut-lock	854,260	May 21	3842	794	128	1053
Woodland, John W. (See Dashiell, Milton, assignor.)						
Woodson, George T., Huntington, W. Va. Emergency-coupling	853,142	May 7	1547	322	128	390
Woodward, Tolly R., Augusta, Ga. Spring for beds, seat-bottoms, &c.	854,919	May 28	5136	1069	128	1411
Wootten, Charles T., and A. P. Richardson, Philadelphia, Pa.; said Wootten assignor to said Richardson. Sheet-metal box	853,143	May 7	1548	322	128	391
Worrest, Alfred H., Lancaster, Pa. Thill-coupling	852,753	May 7	756	149	128	197
Wottring, Sylvanus L., Prospect, and C. H. Sutphen, Columbus, Ohio. Chemical-engine	852,815	May 7	904	184	128	231
Woyak, Joseph, Milwaukee, Wis. Door-hanger and means to prevent the swaying of doors	854,789	May 28	4860	1010	128	1339
Wright, George C., Cleveland, Ohio. Glass-fastening device	852,483	May 7	196	35	128	57
Wright, Gilbert, Pittsfield, Mass. Variable-speed-transmission device	853,144	May 7	1549	322-3	128	391
Wright, Gilbert, Pittsfield, Mass., assignor to Stanley Electric Manufacturing Company. Remote control device for electric switches	852,690	May 7	647	124	128	169
Wright, James E. (See Owens and Wright.)						
Wright, John A., Irwin, and W. F. O'Neill, Wilkinsburg, Pa. Combined hand and stand mirror	852,864	May 7	1019	211	128	260
Wright, Selden R., Morton, assignor to Circuit Protecting Relay Company, Rochester, N. Y. Telegraphic safety device	852,484	May 7	197	36	128	58
Wroblewski, Ignacy, Krakow, Austria-Hungary. Casement-window	852,485	May 7	199	36	128	58
Wülfing, Carl. (See Walbrecker, Albert, assignor.)						
Wülfing, Johann A., Firm of. (See Bergell, Peter, assignor.)						
Wyckoff, George B. (See Hitch, Frank M., assignor.)						
Wyckoff, Seamans & Benedict. (See Shepard, Charles H., assignor.)						
Wyman, George R., assignor to F. W. Bird & Son, East Walpole, Mass. Paper-box machine	853,613	May 14	2509	520-1	128	678
Yanacopoulo, George, New York, N. Y. Liquid-measuring pump	853,670	May 14	2619	544	128	706
Yates, Robert T., Lytton Springs, Tex. Motor-car traffic system	854,261	May 21	3843	794	128	1053
Yearwood, Byrd O., Portsmouth, Va., assignor of one-half to E. Schaefer, Toccoa, Ga. Valve	855,422	May 28	6101	1275	128	1653
Yerkes, James H., *et al.* (See Barnes, George L., assignor.)						
Yoba, William, Mansfield, Ohio. Closure for cans or similar receptacles	855,083	May 28	5487	1138	128	1500
Yorke, Patrick, Washington, Pa. Derrick	852,486	May 7	201	36	128	58
Youmans, A. E., *et al.* (See Connell, William J., assignor.)						
Youmans, George P., Galesburg, assignor to Kalamazoo Tank & Silo Company, Kalamazoo, Mich. Silo	854,010	May 21	3337	685-6	128	925
Young, James M., assignor of one-half to W. J. Young, Spring Creek, Pa. Device to open doors	854,262	May 21	3846	794	128	1054
Young, W. J. (See Young, James M., assignor.)						
Young, William B., Brandon, Manitoba, Canada. Printing-frame	855,375	May 28	6015	1255	128	1634
Youngs, Clinton D. (See Fenn and Youngs.)						
Zachaira, Therese S., New York, N. Y. Sewing-machine hemmer	853,145	May 7	1553	323	128	392
Zastrow, Herman E., and J. H. Koepp, Portage, Wis. Reversing-gear for gasolene engines	854,550	May 21	4368	905	128	1184
Zeiss, B. Edward. (See Fadden, Ren W., assignor.)						
Zelley, Samuel S., Philadelphia, Pa. Triplicate sales-check	853,050	May 7	1389	290	128	354
Zepnick, Robert C., Milwaukee, Wis. Glazier's tack	854,263	May 21	3847	794	128	1054
Zierlein, Richard W., St. Louis, Mo., assignor of forty-five one-hundredths to W. Riechmann. Vapor-burning lamp	853,330	May 14	1964	406	128	536
Zimmerman, John, Philadelphia, Pa., assignor to Philadelphia Tapestry Mills. Pile fabric	855,153	May 28	5624	1170	128	1534
Zimmermann, Otto, Ludwigshafen-on-the-Rhine, Germany. Bleaching and sterilizing corn and its products	853,940	May 14	3196	.....	128	850
Zorge Safety Railway Equipment Company. (See Flora, Ellsworth E., assignor.)						
Zschech, Gustavus H., Berwyn, Ill. Feed-water heater and purifier	852,487	May 7	201	37	128	59
Zucker & Levett & Loeb Company. (See Bleimeyer, Peter B., assignor.)						
Zulauf, George P. . (See Dages, Louis P., assignor.)						
Zurbuch, Henry A., Marion, Ind. Mold for making plastic blocks	855,084	May 28	5488	1138	128	1500

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED DURING THE MONTH OF MAY, 1907.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Specification.	Drawing.	Volume.	Page.
Account-register	A. F. Staples and C. W. Potter	853,651	May 14	2583	537	128	696
Accounting apparatus	J. S. Caldwell	854,402	May 21	6091	846	128	1117
Acid. Concentrating nitric	E. Collett	854,928	May 28	5153	1073	128	1416
Addressing and printing machine. Envelop	M. P. Kenna	854,041	May 21	3403	701–2	128	939
Addressing-machines. Galley for	S. C. Cox	855,097	May 28	5513	1144	128	1506
Advertising device	G. L. Thorne	854,779	May 28	4842	1006	128	1334
Advertising-holder	L. Morand	853,108	May 7	1488	310	128	378
Advertising means. Cooperative	J. H. Reohr	853,473	May 14	2221	462	128	602
Advertising-stand	J. H. Fletcher	852,710	May 7	680	132	128	178
Agricultural implement	J. J. Hurt	855,247	May 28	5798	1208–9	128	1579
Agricultural implements. Riding attachment for	N. H. Bloom	853,574	May 14	2420	504	128	654
Air and gas compressors. Automatic regulator for	F. E. Norton	852,976	May 7	1247	256–7	128	317
Air and gas mixers. Valve-operating mechanism for automatic.	W. L. Tuttle	853,487	May 14	2243	467	128	608
Air and other gases. Separating fine suspended particles from	W. J. Baldwin	853,619	May 14	2525	523	128	682
Air. Apparatus for extracting moisture from compressed	J. R. Duncan	853,345	May 14	1989	411	128	544
Air-brake	T. H. Van Dyke	854,857	May 28	4996	1040–1	128	1374
Air-brake apparatus	A. H. Geltz and L. L. Hosack	852,949	May 7	1184	244	128	300
Air-brake apparatus	H. F. Bickel	853,673	May 14	2622	544	128	707
Air-brake coupling for railway-cars. Automatic	F. H. Rutherford	853,424	May 14	2122	443	128	576
Air-brake hose-coupling	O. J. Goldsmith	855,242	May 28	5785	1206	128	1576
Air-brake pistons and cylinder-heads. Device for holding	W. S. Scott	854,242	May 21	3815	787	128	1047
Air-brake systems. Air-cleaner for	R. S. Wallace	853,137	May 7	1540	320	128	389
Air-compressor	R. A. and L. B. Cousans	852,541	May 7	328	59	128	90
Air-compressor	R. Berrenberg and A. S. Drisko	852,817	May 7	907	186	128	231
Air-compressor and similar device	M. W. Hall	853,356	May 14	2012	416	128	548
Air-compressor. Automatic tidal	W. G. Webber	854,009	May 21	3336	685	128	924
Air-compressor combined with an explosive-motor	A. Michelin	854,371	May 21	4034	834	128	1104
Air-compressor. Rotary	G. C. Vollmer	852,749	May 7	748	147–8	128	195
Air-compressors. Piston for	R. Miehle	852,889	May 7	1068	220	128	273
Air. Desiccating	P. A. Maignen and T. I. Crane	853,559	May 14	2391	498	128	646
Air. Heating and humidifying	W. H. Carrier	854,270	May 21	3858	797	128	1057
Air purifying, cooling, and drying apparatus	H. E. Deckebach	852,543	May 7	332	59	128	91
Air-purifying device	C. E. and R. Dressler	852,423	May 7	25	6	128	9
Air. Regenerating and purifying	R. von Foregger and G. F. Brindley.	853,402	May 14	2086	433–4	128	567
Air-ship	H. Faehrmann	853,542	May 14	2353	490	128	637
Air-ship	G. Bold	853,760	May 14	2816	578–9	128	757
Air-ship	E. Baumann	854,555	May 21	5375	906–7	128	1186
Air-ship. Advertising or other	J. C. Burnell	854,661	May 21	4212	872	128	1148
Alarm: *See* Burglar-alarm. Low-water alarm. Fire-alarm.							
Alarm-signal	E. E. Flora	853,579	May 14	2429	506	128	665
Alcoholic liquors. Apparatus for refining, aging, mellowing, and purifying.	J. F. Duffy	853,071	May 7	1425	297	128	361
Alcohols and their derivatives. Production of aromatic	C. Mettler. (Reissue)	12,654	May 21	4699	.....	128	1268
Alloys. Manufacture of	G. E. Buttenshaw	854,462	May 21	4215	.....	128	1149
Amusement apparatus	F. E. Boardman	853,155	May 7	1566	326	128	396
Amusement device	F. Williams	853,666	May 14	2613	542	128	704
Amusement device	R. F. Rice	853,898	May 14	3107	636–7	128	827
Amusement device	F. Pulman and W. I. Leatherland	855,132	May 28	5581	1160–1	128	1521
Anatomical specimens. Mounting for	O. G. Smith	852,807	May 7	887	180	128	226
Anchor	C. B. Alyea	853,331	May 14	1966	407	128	537
Anchor. Earth-	C. E. Frost	855,298	May 28	5886	1226	128	1601
Animal-trap	F. R. Baker	854,867	May 28	5025	1045	128	1381
Animal-trap	J. W. Collins	855,230	May 28	5762	1200	128	1569
Anthraquinone derivative	P. Thomaschewski	853,041	May 7	1377	.....	128	350
Antivibration device	G. L. Herz	853,548	May 14	2372	494	128	641
Arch	D. B. Luten	853,203	May 7	1677	347	128	423
Arch. Concrete or similar	D. B. Luten	853,183	May 7	1614	337	128	407
Arch-holder	S. Teeple	853,841	May 14	2979	611	128	796
Arch structure	D. B. Luten	853,202	May 7	1675	346	128	422
Arch structure	D. B. Luten	853,204	May 7	1679	347	128	423
Armature for dynamo-electric machines	B. G. Lamme	854,897	May 28	5104	1062	128	1404
Armature. Magneto-	T. Hubert	854,421	May 21	4133	856	128	1128
Armature. Magneto-	C. F. Splitdorf	854,438	May 21	4167	863	128	1136

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Armillary sphere	F. L. Bryant	$55,226	May 28	5754	1198–9	128	1567
Ash-screener	H. Platt	$55,335	May 28	5950	1241	128	1616
Assorting device	N. Marshall	$54,697	May 21	4662	971–2	128	1259
Atomizer	H. Howell and J. Duff	$54,356	May 21	4008	839	128	1008
Atomizer	F. C. Dorment and G. C. McVoy	$52,828	May 7	920	190	128	207
Automatic gage	G. Holmgren	$53,455	May 14	2183	453	128	594
Automatic switch	I. M. Freer	$54,481	May 21	4245	878	128	1156
Automatic switch	W. A. Snapp	$53,835	May 14	2966	608	128	793
Automobile	W. R. Jenney	$53,882	May 14	3071	630–1	128	818
Automobile attachment	J. W. Richley	$54,550	May 21	4329	895–6	128	1176
Automobile-cap	S. T. Beal	$55,275	May 28	5845	1219	128	1591
Automobile control	C. K. Liebeskind	$53,809	May 14	2902	597	128	778
Automobile folding seat	H. Lemp	$52,728	May 7	712	139	128	187
Automobile life-guard or fender	J. M. Nolan	$55,135	May 28	5571	1157	128	1519
Automobile-radiator	B. F. Hart, Jr.	$54,162	May 21	3653	755	128	1002
Automobile-radiator	J. A. Wilson, Jr.	$55,373	May 28	6014	1255	128	1634
Automobile running-gear	J. A. Wilson, Jr.	$55,374	May 28	6015	1255	128	1634
Automobile-starting device	A. Groenig	$54,210	May 21	3752	776	128	1030
Automobile steering-gear	R. B. Waite	$54,858	May 28	5069	1041	128	1377
Automobile-steering-gear socket	A. E. Rockwell	$52,847	May 7	963	198	128	245
Automobile vehicle for military purposes	H. T. Cameron	$54,509	May 21	4405	914	128	1195
Automobile-wheel	F. Charron	$53,625	May 14	2535	526	128	684
Automobiles. Handhold-strap for	B. H. Bridgers	$52,998	May 7	1291	269	128	327
Automobiles. Handhold-strap for	C. S. MacMullan	$55,112	May 28	5547	1152	128	1514
Awl. Sewing-	J. R. Scott	$55,139	May 28	5592	1163	128	1524
Awning	L. G. and C. P. Carillon	$54,147	May 21	3625	749	128	994
Axle	B. De Yonng	$54,933	May 28	5162	1076	128	1418
Axle. Jointed-spindle	E. G. Hartle	$54,212	May 21	3754	777	128	1030
Axle-setting machine	M. Bideau	$54,451	May 21	4196	869	128	1145
Back-geared motor	J. W. Roberts	$52,453	May 7	128	22	128	40
Bacon-suspension clamp	H. G. Reist	$52,678	May 7	624	120	128	163
Bag: *See* Feed-bag.	A. A. Harnischfeger	$52,951	May 7	1191	245	128	303
Bag	J. Limbacher	$52,729	May 7	714	139	128	188
Bag-fastener	H. Tueckmantel	$54,128	May 21	3501	740	128	985
Bag-holder	O. Cronholm	$54,077	May 21	3489	720	128	962
Bait. Artificial	E. A. Grout	$53,972	May 21	3209	671	128	907
Baking utensil. Cake and pie	L. Nelson	$54,592	May 21	4452	925	128	1206
Baling device. Hay-	M. Mead	$53,415	May 14	2106	439	128	572
Baling-press	C. W. Field	$54,345	May 21	3991	825	128	1093
Baling-press	C. E. Bower	$54,454	May 21	4202	870	128	1146
Baling-press	J. S. Tuttle	$54,678	May 21	4609	960–1	128	1246
Banding-machine	E. H. McMurry	$55,015	May 28	5523	1105–6	128	1458
Bar: *See* Charging-bar. Type-bar. Grate-bar.	T. A. Sizemore	$55,351	May 28	5977	1247	128	1623
Barge, boat, &c	G. W. Theiss	$52,987	May 7	1264	262	128	322
Barges. Rake corner or knuckle for steel	R. J. Donovan	$53,920	May 14	3155	645	128	839
Barn and Shed. Wooden	M. von May and C. Werkenthin	$54,514	May 21	4302	890	128	1170
Barrel elevator and trip	B. F. Sommers	$55,141	May 28	5594	1163–4	128	1525
Barrel or receptacle	H. S. Reynolds	$54,237	May 21	3810	786	128	1045
Basin and bath-tub attachment	G. A. Steiner and J. Evans, Jr.	$54,184	May 21	3701	765	128	1016
Basin-fitting	D. J. Butterfield	$52,506	May 7	451	83	128	119
Bath and basin stopper	H. C. Freshour	$52,501	May 7	245	44	128	69
Bath-cabinet	J. E. Francoeur	$53,009	May 7	1319	274–5	128	335
Bath-tub	A. H. Viel	$53,276	May 14	1826	380	128	495
Bath-tub trap	T. E. Logan	$55,109	May 28	5542	1151	128	1513
Batteries. Flexible electric connection for storage	B. Ford	$54,817	May 28	4921	1022	128	1355
Battery: *See* Secondary battery. Storage battery.							
Battery element	O. F. Harvey	$53,877	May 14	3046	626	128	812
Battery-plate and making same	J. Bijur	$54,326	May 21	3951	817	128	1083
Beam or girder. Metallic	T. G. Hill	$54,947	May 28	5182	1079	128	1423
Beam-picking machine	H. F. Voshardt	$54,391	May 21	4008	841–2	128	1112
Bearing. Antifriction-	G. F. Crippen	$55,432	May 28	6118	1279	128	1656
Bearing. Antifriction-	L. H. Seubert	$52,462	May 7	154	27	128	47
Bearing. Antifriction-	T. Fox	$54,573	May 21	4419	917	128	1199
Bearing. Ball-	J. Dove-Smith and F. E. Lauer	$54,877	May 28	5061	1052	128	1391
Bearing. Roller-	H. B. Keiper	$54,505	May 21	4287	887	128	1166
Bearing. Roller-	W. T. Fleming	$53,445	May 14	2161	450	128	587
Bearings. Mechanism for adjusting	E. Geschke	$55,169	May 28	5654	1176	128	1542
Bed	V. E. Edwards	$54,879	May 28	5064	1053	128	1392
Bed and couch. Combined	E. J. Druding	$52,776	May 7	800	160	128	208
Bed and couch. Combined	D. T. Owen	$54,175	May 21	3676	761	128	1007
Bed. Baby folding	D. T. Owen	$55,412	May 28	6080	1271	128	1649
Bed corner-fastening	N. P. Thompson	$54,441	May 21	4176	865–6	128	1139
Bed-couch	L. J. Kutz	$53,927	May 14	3167	649	128	843
Bed. Sofa-	J. Hoey. (Reissue)	12,652	May 14	3214	659	128	854
Bed-spring	R. Delmel	$54,722	May 28	4725	982–3	128	1305
Beds. Head-rest for	P. Sappington	$52,455	May 7	131	23	128	40
Bedstead	J. G. Ryan	$52,454	May 7	129	23	128	40
Bedstead attachment	H. E. Henwood	$52,507	May 7	259	47	128	72
Bedstead corner-lock. Metallic	H. E. Henwood	$52,508	May 7	261	47–8	128	73
Bedstead. Metallic	A. J. Kroenke	$52,726	May 7	710	138	128	187
Beehive	J. and H. J. Brookes	$54,561	May 21	4395	912	128	1193
Beehive-trap	O. L. Hershiser	$55,175	May 28	5664	1178–9	128	1544
Bell. Electrically-actuated signal-	F. H. Saffell	$52,907	May 7	1110	229–30	128	283
Belt	H. W. Eden	$52,937	May 7	1167	240	128	297
Belt and shield	W. L. Offenbacher	$53,317	May 14	1941	401	128	531
Belt-holding device	T. Thomas	$52,638	May 7	531	100–1	128	139
Belt. Horse-guiding	J. J. Sheridan	$55,420	May 28	6098	1274	128	1652
Belt-lacer's tool	A. Johnson and C. A. Gustafson	$53,586	May 14	2446	509	128	660
Belt-stretcher	C. J. Person	$52,614	May 7	483	89	128	127
Belt-tightening idler	S. F. Eshelman	$54,343	May 21	3988	824	128	1092
Belting. Manufacture of	G. S. Dunn	$55,237	May 28	5778	1204	128	1574
Bench	E. A. Usina	$53,567	May 14	2406	502	128	651
Beryllia from alumina and iron. Separating	P. A. Cogan	$55,387	May 28	6034	1260	128	1638
	F. Bran and G. Van Oordt	$54,560	May 21	4394		128	1193

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Bevel, protractor, and square	T. W. Spellman	$54,853	May 28	4987	1038	128	1372
Bicycle	E. T. Peters	$53,112	May 7	1494	312	128	377
Bicycle driving-gear	J. McAuliff	$53,187	May 7	1621	338	128	409
Bicycles, &c. Gearing for	M. Pedersen	$54,599	May 21	4459	928	128	1208
Bill-hook	E. D. Conklin	$54,197	May 21	3727	771	128	1023
Billiard and pool table. Combined	M. Nix	$53,316	May 14	1939	401	128	531
Billiard or pool table	H. L. Haskell	$53,635	May 14	2555	529	128	688
Bimetallic products. Making	J. F. Monnot and E. Martin	$53,932	May 14	3183	653	128	846
Binder-lock	G. A. Shoemaker	$53,379	May 14	2057	426	128	560
Binder. Loose-leaf	J. Schade, Jr.	$53,901	May 14	3112	637	128	829
Binder. Loose-leaf	J. C. Dawson	$53,962	May 21	3252	667	128	903
Binder. Loose-leaf	J. C. Dawson and T. E. Hecter	$53,963	May 21	3253	667	128	903
Binder. Loose-leaf	T. E. Hecter	$53,975	May 21	3273	672	128	908
Binder. Loose-leaf	D. S. Baird	$54,622	May 21	4500	908–9	128	1218
Binder. Loose-leaf	A. Wollensak	$55,033	May 28	5366	1114	128	1469
Binder. Loose-leaf	F. H. Crump	$55,285	May 28	5863	1222	128	1595
Binder. Temporary	J. Weisbrod	$53,663	May 14	2610	541	128	704
Binder. Temporary	C. J. Bryant	$54,074	May 21	3480	718	128	960
Binder. Temporary	E. E. Clark	$54,802	May 28	4883	1014	128	1345
Binders. Loose-leaf for temporary	M. M. Cohn	$52,871	May 7	1030	213	128	263
Biscuit machines. Pump particularly adapted for use with wafer-	G. S. Baker	$52,694	May 7	653	126	128	171
Bit: *See* Boring-bit. Weaning-bit. Drill-bit.							
Bit holder. Adjustable extension-	C. E. Hill	$54,742	May 28	4760	989	128	1314
Bituminous composition	C. Richardson and C. N. Forrest	$53,117	May 7	1501		128	379
Bleaching, sterilizing, or conditioning agent. Producing a	S. Leetham	$54,508	May 21	4293	888	128	1168
Blind-fastener	P. Revere	$53,725	May 14	2767	570	128	745
Blind fastener. Window-	J. J. Daniels	$52,654	May 7	564	107–8	128	147
Block: *See* Building-block. Matrix-making master-block. Butcher's chopping-block. Pavement-block. Davit fall-block. Paving-block.							
Block-making plant	H. G. Rounds	$52,579	May 7	419	77–8	128	111
Block-signal. Electrical	E. S. Stotts and L. O. Dickey	$54,970	May 28	5227	1089	128	1434
Blower. Rotary	T. W. Green	$53,096	May 14	2668	550	128	719
Blower-starter	L. B. Cousans	$55,046	May 28	5392	1120	128	1476
Blower. Turbo-	H. Holzwarth	$53,363	May 14	2023	418–19	128	552
Blowpipe. Acetylene-	J. Harris	$53,634	May 14	2553	529	128	688
Board: *See* Ironing-board.							
Boat	A. Fayol	$53,347	May 14	1996	412	128	545
Boat	W. Kirkpatrick	$55,062	May 28	5422	1125	128	1485
Boat. Submarine	L. Y. Spear	$54,004	May 21	3325	684	128	922
Boat. Submarine	J. M. Cage	$54,146	May 21	3623	748	128	994
Boats and the like. Spring-cleat for	R. Fromholtz	$52,946	May 7	1178	242	128	299
Bobbin-machines. Jacquard mechanism for lace	H. Buscher	$53,396	May 14	2078	431	128	565
Bobbin-turning apparatus	R. M. Goodnow	$54,693	May 21	4649	969	128	1256
Bobbins. Stop mechanism for	R. H. Cook	$55,162	May 28	5640	1173	128	1538
Boiler: *See* Egg-boiler. Steam-boiler. Gas-boiler. Water-tube boiler. Gas-heated boiler.							
Boiler compound	T. Di Tullio	$53,535	May 14	2345		128	635
Boiler-compound mixer and feeder	H. Hiatt	$52,953	May 7	1195	246	128	304
Boiler-flue cleaner	J. Bennett	$53,152	May 7	1562	325	128	395
Boiler-flue cleaner	A. Stewart	$55,210	May 28	5729	1192	128	1560
Boiler-flue scraper	A. E. Muirhead	$52,737	May 7	732	143	128	192
Boiler-furnace	D. Vines	$55,212	May 28	5731	1193	128	1561
Boiler-hanger	T. C. Best	$54,143	May 21	3618	748	125	992
Boiler-tubes. Device for removing scale from	J. Georges and E. A. Dormoy	$54,819	May 28	4923	1022	128	1355
Boiler water-gage	F. W. Fisher	$52,781	May 7	831	167	128	212
Boilers. Flue-blow-out device for	J. E. Henry	$53,360	May 14	2020	417–18	128	551
Boilers. Hand-hole plate for	R. C. Stevens	$54,061	May 21	3458	713	128	954
Boilers. Man and hand hole connection for	J. A. McCormick	$53,821	May 14	2937	603	128	786
Bolster	A. H. Fetters	$53,545	May 14	2367	493	128	640
Bolster. Metallic	G. A. Hassel	$53,584	May 14	2442	508	128	660
Bolt: *See* Lock-bolt. Seal-bolt.							
Book. Account-	U. F. Doubleday	$52,876	May 7	1036	214	128	264
Book back. Loose-leaf-	W. J. Schultz	$54,181	May 21	3688	763	128	1011
Book-holder	H. W. Miller	$53,184	May 7	1618	338	128	408
Book holder. Reference-	N. H. Fulton	$54,414	May 21	4119	854	128	1125
Book-mark. Automatic	M. J. Conter	$54,873	May 28	5052	1051	128	1389
Book. Perpetual account-	T. E. Smith	$53,905	May 14	3118	639	128	830
Books. Flat-opening leaf for	J. J. Diehl	$55,049	May 28	5397	1121	128	1477
Bookcase. Sectional	J. W. Campbell	$52,769	May 7	789	158	128	205
Bookcase. Sectional	J. W. Campbell	$52,770	May 7	791	158	128	205
Boot and shoe	F. R. Duncan	$54,571	May 21	4415	916	128	1198
Boot-cleaner	A. C. Houghton	$52,955	May 7	1198	247	128	305
Boring and sawing machine	M. Swintek	$53,908	May 14	3123	640	128	831
Boring apparatus	J. A. B. Tompkins and S. R. Hartwell.	$52,586	May 7	437	80	128	115
Boring-bit	N. Staub	$52,745	May 7	743	146	128	194
Boring-tool	A. Oleson	$55,411	May 28	6079	1270	128	1648
Bottle	H. A. Everest	$52,426	May 7	31	7	128	10
Bottle	F. S. Tull	$55,211	May 28	5730	1193	128	1560
Bottle	P. Feitu and J. Rebeyrolle	$55,294	May 28	5881	1225	128	1599
Bottle and glass washing apparatus	M. Müller	$52,670	May 7	610	116–17	128	159
Bottle and the like closure	F. T. Robinson	$54,845	May 28	4974	1035	128	1369
Bottle-closure	E. J. Merrill and J. W. De Long	$53,022	May 7	1340	279	128	340
Bottle-closure	V. J. G. Freund	$53,449	May 14	2172	451	128	591
Bottle-closure	F. Dingman	$53,775	May 14	2841	584	128	765
Bottle-closure	J. Slonka	$54,243	May 21	3816	788	128	1047
Bottle-holder	A. Baumgarten	$53,151	May 7	1561	324	128	394
Bottle-holder	C. M. Hodson	$53,362	May 14	2023	418	128	551

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Bottle-necks. Machine for the automatic insertion of glass balls into	F. Wiesehomeier	852,590	May 7	444	81	128	118
Bottle. Non-refillable	A. Paroutaud	853,729	May 14	2758	567	128	742
Bottle. Non-refillable	J. M. Stassart	853,939	May 14	3195	654	128	849
Bottle or container. Cellular	C. S. Jackson	854,357	May 21	4010	829	128	1098
Bottle. Poison	D. and H. G. La Tremouille	853,887	May 14	3385	633	128	821
Bottle-stopper	H. M. Gray	853,079	May 7	1436	300	128	364
Bottle-stopper	M. Linker	853,097	May 7	1465	306	128	371
Bottle-stopper	W. D. Wheat	853,195	May 7	1644	342	128	415
Bottle-washer	A. M. Edwards, Jr	854,201	May 21	3735	772	128	1025
Bottle washing and scrubbing mechanism	O. E. Thomas	852,471	May 7	175	31	128	53
Bottle-washing machine	W. Seidel	854,535	May 21	4340	897–8	128	1178
Bottle-washing machine	R. G. Nash	854,173	May 21	3672	759–60	128	1006
Bottle-washing machinery	J. R. Amacker	855,036	May 28	5370	1116–17	128	1470
Bottle-wire cutter	E. T. Dixon	853,776	May 14	2842	585	128	765
Bottles and the like. Machine for washing	J. A. Goebler	853,909	May 21	3264	670	128	906
Bottles. Device for non-refillable	R. G. Nash	854,172	May 21	3670	758–9	128	1006
Bottles, jars, and the like. Closure for	A. Herzog	853,084	May 7	1442	302	128	366
Bottling-machine	J. A. Nee	852,519	May 7	278	51	128	76
Box:	R. Pfaff	852,977	May 7	1250	257	128	318
See Display-box. Expression-box. Furnace fire-box. Junction-box. Junction or outlet box. Kiln fire-box. Knockdown box. Letter-box. Magnet-box. Match-box. Mold-box. Outlet-box. Resistance-box. Sand-box. Sheet-metal box. Soap-box. Stationery-box. Stuffing-box. Talking-machine sound-box. Toilet-box. Watch-movement box.							
Box	O. C. Schulz	852,458	May 7	147	26	128	45
Box cover. Comb-carrying	W. Lossing	853,101	May 7	1473	307	128	372
Box-cover opener	J. Johnston	854,893	May 28	5098	1059	128	1402
Box or receptacle	W. I. Tuttle	853,844	May 14	2984	613	128	797
Boxes. Machine for attaching fabric to	W. Kahle	853,883	May 14	3074	631	128	819
Brace:							
See Mouth-brace. Rail-brace. Railway-rail brace.							
Brace	J. Holley	853,243	May 14	1766	367	128	480
Bracket:							
See Hoisting-bracket. Lamp-bracket. Scaffold-bracket. Shelf-bracket. Supporting-bracket. Window-bracket.							
Bracket	F. B. Soucey	855,354	May 28	5080	1248	128	1624
Braiding-machines. Drive and stop mechanism for	H. Janssen	852,722	May 7	703	136	128	185
Brake:							
See Air-brake. Fluid-pressure brake. Machine-brake. Vehicle-brake.							
Brake	R. Falter	852,659	May 7	580	110	128	151
Brake	L. S. Watres	853,848	May 14	2991	614–15	128	799
Brake apparatus. High-speed	R. W. Bainbridge	855,271	May 28	5836	1217	128	1589
Brake apparatus. Load	J. W. Cloud	854,903	May 28	4985	1014–15	128	1345
Brake-hanger. Automatic	C. C. Farmer	854,816	May 28	4918	1021	128	1354
Brake-lever	S. M. Curwen	852,933	May 7	1158	238	128	294
Brake-shoe	J. G. Lohner	853,248	May 14	1774	368	128	483
Brake-shoe	W. G. Grant	854,733	May 28	4742	986	128	1309
Brake shoe and head. Separable	S. A. Crone	854,985	May 28	5252	1094	128	1440
Brake-shoe key	C. A. Remelius	854,761	May 28	4808	998	128	1325
Brazing-machine. Electric	D. H. Fairbanks	854,475	May 21	4233	876	128	1153
Brick and tile cutting machine	W. M. Fulton	853,351	May 14	2692	414–15	128	546
Brick, block, or tile cutter	J. Bensing	853,573	May 14	2817	504	128	653
Brick-conveyer	B. E. Bechtel	853,858	May 14	3008	618	128	803
Brick-kiln	C. H. Klein	853,365	May 14	2927	419–20	128	552
Brick-molding machine	B. F. Canavera	855,384	May 28	6028	1258–9	128	1636
Brick-press	N. H. Bolton and J. Belisle	855,382	May 28	6026	1257–8	128	1636
Brick-supporting pallet	G. W. Balkwill	855,222	May 28	5745	1196–7	128	1564
Bricks. Manufacturing	B. Jacquart	851,986	May 7	1446	302	128	366
Brickmaking-machine	L. Elkus	852,500	May 7	245		128	69
Bridge and railway-rail lock and signal	O. G. Diefendorf	852,934	May 7	1159	238–9	128	295
Bridge of concrete, &c	E. H. Johnston	852,959	May 7	1202	248	128	306
Bridge. Portable	D. B. Luten	852,970	May 7	1231	253	128	313
Bridge rail-lock. Draw-	F. Charron	854,329	May 21	3658	818	128	1085
Bridle	E. M. Weaver	853,611	May 14	2504	519–20	128	677
Brier-cane pruner and grapnel. Combined	F. A. Stimson	854,677	May 21	4008	900	128	1245
Brier-hook	J. A. Malory	853,367	May 14	2933	421	128	554
Briquet-machine	M. C. Mollere	853,417	May 14	2111	440	128	573
Briquets from coal, peat, and bog-earth. Manufacturing	D. E. Bangs	855,379	May 28	6020	1256	128	1635
Briqueting-machine	J. Buss	854,565	May 21	4405	914	128	1195
Broiling and toasting device	R. Schorr	852,457	May 7	145	25–6	128	44
Brooder	D. Rugg	852,624	May 7	500	92	128	131
Brooder	P. A. Chippendale	853,224	May 14	1734	360	128	471
Brooder. Chicken	G. W. Meacher and S. L. Montgomery	854,587	May 21	4440	923	128	1203
Brooder. Poultry	W. H. Somersall	853,038	May 7	1371	285	128	348
Brooder. Poultry	H. H. Damman	852,652	May 7	561	107	128	147
Broom	H. H. Damman	852,653	May 7	563	107	128	147
Broom-handle	A. J. Cochran	852,772	May 7	794	159	128	206
Broom-rack	S. G. Wilson	855,152	May 28	5623	1170	128	1534
Brush	O. C. Fletcher	854,084	May 21	3504	722	128	966
Brush	G. A. Thornton	852,686	May 7	638	123	128	166
Brush	J. Q. Adams	852,755	May 7	760	150	128	199
Brush. Air-	P. B. Bleimeyer	855,040	May 28	5381	1118	128	1473
Brush and powder receptacle. Tooth-	J. A. Paasche	852,899	May 7	1084	223	128	278
Brush. Bottle-washer	J. P. Hill	853,540	May 14	2373	495	128	641
Brush. Fountain-	B. Gohrband	853,582	May 14	2438	507	128	659
	H. Nothe	854,231	May 21	3796	783	128	1041

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Brush-holder	F. M. Conlee	852,705	May 7	672	131	128	176
Brush. Rotary	E. E. Rice	853,378	May 14	2056	425	128	560
Brush. Shaving-	A. Helmbach	852,878	May 7	1043	215	128	266
Bucket joint. Dredge-	A. T. Fraser	854,731	May 28	4739	985	128	1308
Buckets. Automatic dumping mechanism for aerial-tramway	H. G. Ferris	852,546	May 7	335	60	128	92
Buckle	J. W. W. Powell	853,732	May 14	2761	568	128	743
Buckle	R. C. Kirby	855,251	May 28	5806	1210	128	1580
Buckle. Harness-	E. J. Floyd	852,601	May 7	462	85	128	123
Buggies. Foot-rest for	J. B. McCarty	854,103	May 21	3539	730	128	973
Buggy-bow spring-support	L. A. Piguet	853,114	May 7	1497	312	128	378
Buggy-step	E. May	854,753	May 28	4788	994	128	1321
Buggy storm-front	M. W. Beardsley	854,324	May 21	3948	816	128	1082
Buggy-top. Lever-actuated	A. Groenig	854,211	May 21	3753	776	128	1030
Building-block	H. G. Rounds	852,578	May 7	417	76	128	111
Building-block	F. W. Oelschlaeger	854,708	May 21	4695	978	128	1267
Building-block	S. Crittenden	854,806	May 28	4892	1016	128	1346
Building block and wall	W. Curlett	855,047	May 28	5304	1121	128	1477
Building-block mold	D. T. McCall	852,892	May 7	1073	221	128	274
Building-block mold. Hollow-	W. J. Faulkner	854,662	May 21	4046	968–9	128	1255
Building construction	W. H. Keyser	853,802	May 14	2958	593	128	774
Building construction. Clip for metal	W. Goss	854,209	May 21	3751	776	128	1030
Bullet	H. L. Broad	854,923	May 28	5144	1071	128	1413
Burglar-alarm	J. A. Smith	855,023	May 28	5347	1110	128	1463
Burglar-alarm and sash-holder. Combined	J. M. Montgomery	854,958	May 28	5202	1084	128	1428
Burglar-alarm systems. Circuit-closing device for	W. H. Robins	853,736	May 14	2768	570	128	745
Burial-casket	A. J. Merkelbach	855,324	May 28	5927	1237	128	1610
Burner:							
See Gas-burner. Heating and illuminating burner. Lamp-burner. Oil-burner.							
Burner-regulator	H. Lemp	853,808	May 14	2899	596	128	777
Butcher's chopping-block	F. J. Schmitt	855,347	May 28	5970	1246	128	1621
Butter and fats. Apparatus for melting and purifying	C. A. Janson	854,422	May 21	4136	856	128	1128
Butter-cutter	A. Jensen	855,404	May 28	6062	1267	128	1644
Butter. Manufacture of process	R. Roos	854,383	May 21	4053	838	128	1109
Butter-mold	C. A. and L. F. Crane and F. M. Hentig.	854,930	May 28	5155	1074	128	1417
Button	E. M. Strauss	853,607	May 14	2496	518	128	675
Button	W. S. Osborn	854,233	May 21	3799	784	128	1042
Button. Collar-	A. Gaines	854,575	May 21	4425	919	128	1200
Button or stud	C. E. Hansen	855,173	May 28	5660	1177	128	1543
Cabinet. Kitchen-	I. O. Curtice	854,560	May 21	4410	915	128	1196
Cabinet. Prescription-	E. F. Wallace	853,528	May 14	2333	486	128	632
Cable-bonding device	H. E. Adams	852,691	May 7	649	125	128	170
Calculator	W. F. Hunt	853,411	May 14	2100	438	128	571
Calendar	J. E. Treat	854,127	May 21	3500	740	128	985
Calendar. Lunar	G. Casale	853,959	May 21	3247	666	128	901
Calendar. Perpetual	W. J. Hartman	854,888	May 28	5087	1057	128	1398
Calendar. Perpetual	H. V. Vogt	855,078	May 28	5480	1136–7	128	1498
Calipers. Computing-	A. E. Putnam	853,262	May 14	1798	375	128	488
Calking vessels. Means for	V. P. McVoy and R. B. King	853,723	May 14	2748	565	128	740
Camera attachment. Tripod-	B. A. Vaughn and W. G. Bissell	855,149	May 28	5618	1168	128	1533
Camera lucidas. Adjusting device for	A. Taylor	853,136	May 7	1537	320	128	388
Camera. Photographic	L. J. R. Holst and L. Borsum	855,004	May 28	5208	1101	128	1451
Can:							
See Oil or gasolene can. Sheet-metal can. Sectional or compartment can.							
Can-bottoming machine	W. E. Harmon	853,239	May 14	1755	365–6	128	477
Can-filling machine	C. H. Ayars	854,683	May 21	4619	962–3	128	1248
Can-lid lock. Milk-	W. Hall	853,406	May 14	2093	435	128	569
Can-opener	H. Rütt	854,434	May 21	4156	861	128	1133
Can top. Powder-	A. F. Wolff	853,141	May 7	1546	321	128	390
Cans or similar receptacles. Closure for	W. Yoha	855,083	May 28	5487	1138	128	1500
Candle-shade support	P. Wisner	855,032	May 28	5365	1114	128	1468
Candy-working machine	A. Schober	853,740	May 14	2776	571	128	747
Cane cutting and conveying machine. Sugar-	H. G. Ginaca	854,208	May 21	3747	774–5	128	1029
Cane-cutting machine. Sugar-	H. G. Ginaca	853,967	May 21	3259	668–70	128	905
Canister. Soap-powder	H. C. Fairchild	854,411	May 21	4115	852	128	1124
Caoutchouc, gutta-percha, and balata, &c. Treatment of the milks or lactiferous juices of	L. Morisse	853,718	May 14	2737		128	737
Car	S. M. Curwen	852,774	May 7	797	159–60	128	207
Car	C. W. Benjamin	852,816	May 7	905	184–6	128	231
Car	W. M. Smith	852,912	May 7	1122	231–2	128	285
Car	S. Otis	854,701	May 21	4670	973	128	1263
Car-annunciator	R. B. Eubank, Jr	855,393	May 28	6044	1262	128	1640
Car-chute	C. L. Spurlin	854,249	May 21	3825	790	128	1040
Car construction. Metallic-	E. I. Dodds	852,935	May 7	1164	239	128	296
Car control. Electric-	J. J. Frank and J. S. Pevear	854,730	May 28	4738	985	128	1308
Car. Convertible	T. Scullin and S. R. Skov	852,683	May 7	632	122	128	163
Car. Convertible	J. A. Brill	852,767	May 7	786	157	128	204
Car. Convertible	J. A. Brill	852,768	May 7	788	157	128	204
Car. Convertible	H. E. Haddock	852,782	May 7	833	167	128	213
Car. Convertible	J. A. Brill	854,687	May 21	4625	964	128	1249
Car-coupling	A. M. Knapp	853,017	May 7	1332	278	128	338
Car-coupling	O. P. Moncrief	853,023	May 7	1341	279	128	340
Car-coupling	E. O. Warner	854,444	May 21	4184	867	128	1142
Car coupling. Railway-	J. Grauvogl	853,923	May 14	3161	646	128	841
Car-door	J. Carr	852,925	May 7	1143	235	128	291
Car door. Grain-	T. Leonard	854,040	May 21	3421	706	128	944
Car-door hanger	J. A. Myers	853,207	May 7	1693	348	128	425
Car-door hanger	R. G. Bullard	854,564	May 21	4403	913–14	128	1195
Car-door hanger	B. D. Jones	855,182	May 28	5679	1181	128	1548
Car door mechanism. Dump-	D. H. Foreman	854,639	May 21	4526	945–6	128	1225
Car door-operating mechanism. Gondola-	E. I. Dodds	852,936	May 7	1165	240	128	296
Car-doors and for other purposes. Stay-roller for	H. E. Keeler	853,551	May 14	2378	495	128	643
Car draft-gear. Railway-	C. T. Westlake	854,132	May 21	3597	742	128	987
Car. Dumping-	A. Peltzer	855,128	May 28	5576	1159	128	1520
Car-dumping apparatus	T. H. Aldrich, Jr	852,643	May 7	541	103–4	128	142

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car-fender	T. J. F. Mueller	852,610	May 7	475	88	128	126
Car-fender	T. J. Sayers	853,123	May 7	1510	314	128	381
Car frame. Passenger and like	A. Christianson	854,404	May 21	4098	847	128	1119
Car grain-door	H. W. Richards	852,906	May 7	1109	229	128	282
Car. Hopper-bottom	A. E. Ostrander	852,845	May 7	960	197-8	128	244
Car-jack	H. F. Loeschner and M. Lesar	855,255	May 28	5811	1211	128	1582
Car lock. Dumping	W. W. McKelvey	853,189	May 7	1625	339	128	410
Car. Metallic	W. M. Smith	852,808	May 7	889	181	128	226
Car-roof. Metallic	A. Campbell	853,342	May 14	1984	409	128	543
Car. Mine	F. C. Hockensmith	852,879	May 7	1044	215	128	266
Car. Passenger and like	A. Christianson	854,330	May 21	3958	818	128	1085
Car. Passenger and like	A. Christianson	854,331	May 21	3962	819	128	1086
Car. Passenger and like	A. Christianson	854,405	May 21	4102	848	128	1120
Car. Railway	S. Otis	854,305	May 21	3920	808	128	1074
Car-repairer's tool	D. W. Collins	852,704	May 7	671	130	128	176
Car-seat. Walk-over	P. M. Kling	853,245	May 14	1760	368	128	482
Car. Stock	F. Campbell and G. E. Wilson	852,417	May 7	12	3-4	128	6
Car sweeper or scraper	G. Treviranus	853,385	May 14	2063	428	128	562
Car. Tank	T. R. Brown	853,576	May 14	2421	505	128	655
Car traffic system. Motor	R. T. Yates	854,261	May 21	3843	794	128	1053
Car-underframe. Metallic	J. M. Hansen	854,349	May 21	3997	826	128	1094
Car underframe. Passenger and like	A. Christianson	854,403	May 21	4095	846-7	128	1118
Car-ventilator	F. Riemer	853,035	May 14	3188	653	128	848
Car-ventilator	R. J. Harty	854,945	May 28	5180	1079	128	1422
Car-wheel	A. S. Gustafson	853,082	May 7	1439	301	128	365
Car-wheel	F. Latimer	854,828	May 28	4941	1027	128	1360
Cars. Automatic curtain hook and release for vestibule	C. McCoy and W. Morton	853,188	May 7	1623	339	128	409
Cars. Check-holder for mine	W. J. Connell	855,388	May 28	6035	1260	128	1638
Cars. Electric-lighting system for railway	W. J. Bohan	854,072	May 21	3476	717	128	959
Cars. Metallic compartment construction for passenger and like	A. Christianson	854,406	May 21	4104	848-9	128	1121
Caramel-wrapping machine	B. B. Moss	855,119	May 28	5559	1154-6	128	1517
Carbonating apparatus. Liquid	S. Twitchell and C. O'Connor	854,390	May 21	4096	841	128	1112
Carbureter	A. Akeson and V. G. Anderson	853,196	May 7	1645	342	128	416
Carbureter	H. L. F. Trebert	853,428	May 14	2127	444	128	578
Carbureter	J. W. Smith	854,246	May 21	3820	789	128	1048
Carbureter	H. M. Reichenbach	854,604	May 21	4471	931-2	128	1211
Carbureter	B. D. Gray	855,170	May 28	5655	1177	128	1542
Carbureter	P. Jenness	855,179	May 28	5673	1180	128	1546
Carbureter	M. Loewenstein	855,407	May 28	6070	1269	128	1646
Carbureting apparatus	R. G. Speer	852,685	May 7	636	122	128	166
Carcass-elevator	A. Hannaford	852,785	May 7	839	168	128	215
Card-feeder	J. W. Scott	853,602	May 14	2474	515	128	668
Cards. Playing	T. W. Lucke	855,192	May 28	5697	1186	128	1551
Cardboard and manufacturing the same	L. Emerson	852,938	May 7	1167	240	128	297
Carding articles of merchandise. Means for	L. W. Andersen	855,216	May 28	5737	1194	128	1562
Carding-machine	T. E. Ainley	853,854	May 14	3001	617	128	801
Carpenter's gage	B. O. Gudgen	852,432	May 7	45	9	128	15
Carpet fastener. Stair	W. M. Abbott	854,864	May 28	5019	1044	128	1340
Carriage-top	H. A. Hawes	852,434	May 7	47	10	128	15
Carriage wheel. Child's	L. P. Marsal and R. W. Baker	852,667	May 7	606	116	128	158
Carrier: *See* Egg-carrier. Overhead carrier. Pneumatic carrier. Pneumatic-service carrier.							
Carrier	G., W. G., and M. J. Beatty	854,556	May 21	4376	907-8	128	1186
Carrier	C. A. McIntosh	855,333	May 28	5944	1240	128	1615
Carrier for ensilage and other things	R. M. and A. J. Glor and W. P. West.	855,398	May 28	6051	1264	128	1642
Cart attachment. Dump	F. R. Hendershot	853,512	May 14	2307	478	128	626
Cart. Log	J. A. Perry	854,601	May 21	4467	930-1	128	1210
Cart. Self-loading	Z. Whittemore	852,919	May 7	1132	234	128	288
Cart. Self-loading dump	R. N. Liverett and J. D. Hood	853,181	May 7	1607	335	128	406
Cartridge-pocket	F. R. Batchelder	854,017	May 21	3348	688	128	927
Cartridge-pouch	R. M. Cutts	855,098	May 28	5514	1144	128	1506
Case: *See* Compartment-case. Display-case. Piano-case. Pocket and other case. Shipping-case. Show-case. Tire-case.							
Casein and compound obtained therefrom. Treating	J. Taluau	852,915	May 7	1128	.....	128	287
Casement-adjuster	H. G. Voight	852,477	May 7	187	33-4	128	55
Cash-register	A. H. Green	853,011	May 7	1324	276	128	336
Casting and conveying machine	W. McVay	854,520	May 21	4310	892	128	1171
Casting apparatus	H. G. Underwood	852,811	May 7	897	182	128	229
Casting chilled rolls. Mold for	R. H. West	853,480	May 14	2253	468-9	128	612
Casting iron and steel. Metal mold for	A. W. McArthur and J. M. Darke	852,671	May 7	611	117	128	160
Casting metals. Mold for	J. H. Shaw	853,324	May 14	1953	404	128	534
Catamenial sack	F. X. Mathis, Jr., and L. Simon	853,708	May 14	2703	557	128	729
Catch. Spring	T. Danquard	852,422	May 7	23	5	128	9
Cattle-guard	C. Long	853,100	May 7	1472	307	128	372
Cattle-guard	T. Ellis and J. Finnell	854,083	May 21	3503	722	128	965
Ceiling-mold	J. B. Blaw	853,955	May 21	3242	665	128	900
Ceiling-mold	J. B. Blaw	853,957	May 21	3244	666	128	900
Cellar-drain. Automatic	G. Woodall	853,850	May 14	2095	616	128	800
Cellulose ester	H. S. Mork	854,374	May 21	4038	.....	128	1105
Cement	T. Jones	853,175	May 7	1598	.....	128	404
Cement-block-molding apparatus	J. B. Talbot	853,608	May 14	2496	518	128	675
Cement. Manufacture of hydraulic	B. Enright	854,342	May 21	3982	823	128	1092
Cement tiles, posts, pickets, &c. Machine for making	C. D. Schroeder	854,000	May 21	3317	683	128	920
Cementing-machine	O. A. Webber	852,861	May 7	1015	210	128	258
Centering device	J. Ehnl	854,992	May 28	5273	1096	128	1445
Centering-mold	J. B. Blaw	853,952	May 21	3237	663	128	899
Centering-mold	J. B. Blaw	853,953	May 21	3239	664	128	899
Centering-mold	J. B. Blaw	853,954	May 21	3240	664-5	128	899
Centering-mold	J. B. Blaw	853,956	May 21	3243	665	128	900
Centrifugal machine	B. Ljungström	852,666	May 7	604	115	128	158
Centrifugal machine	G. Adt	852,865	May 7	1020	211	128	260
Centrifugal machine	M. Güttner and R. Baeger	853,583	May 14	2439	508	128	659

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ceramic products. Manufacture of	M. Buchner	853,341	May 14	1983	.....	128	543
Chair: *See* Deck-chair. Dental chair. Hydraulic chair. Portable chair. Rail-chair.							
Chair	C. L. Miller	853,893	May 14	3097	634	128	824
Chair	R. Matthews	854,298	May 21	3908	806	128	1071
Chair attachment	A. Thompson	854,544	May 21	4360	903	128	1182
Chair fan attachment	J. F. Dorris	854,634	May 21	4520	944	128	1223
Charging-bar for open-hearth charging-machines	C. L. Taylor	853,483	May 14	2238	466	128	607
Chart-frame with adjustable slide	J. A. Ansell	855,217	May 28	5738	1194	128	1562
Check. Triplicate sales	S. S. Zelley	853,050	May 7	1389	290	128	354
Checks and other papers. Protecting	E. and M. Ilch	852,840	May 7	953	195	128	243
Checking-rack	W. Mantell	855,113	May 28	5548	1152	128	1514
Cheese-cutter	T. Hill	853,408	May 14	2004	436	128	569
Cheese-cutter. Computing	R. H. Neff	854,521	May 21	4311	893	128	1172
Chemical-engine	S. L. Wottring and C. H. Sutphen	852,815	May 7	904	184	128	231
Chimney	S. M. Kemp	854,895	May 28	5101	1060	128	1403
Chimney and ventilating-shaft top and the like	A. Holtzheuer	854,291	May 21	3899	803	128	1069
Chimney-back	J. A. Porter	853,897	May 14	3106	636	128	827
Chimney-cleaner	O. S. Miller	854,101	May 21	3536	730	128	973
Chimney-cowl and ventilator. Combined	D. Whitehead	852,480	May 7	192	35	128	57
Chimneys. Composition for removing soot from	G. L. Gray	853,873	May 14	3041	.....	128	810
Chopper: *See* Cotton-chopper.							
Churn	W. J. Rine	854,240	May 21	3813	787	128	1046
Churn and butter-worker. Combined	A. Jensen	855,178	May 28	5672	1180	128	1546
Cigar and the like holder	W. B. Goodwin	854,820	May 28	4925	1022	128	1356
Cigar-cutter	W. F. Herdrich and G. Garmisa	853,924	May 14	3162	646	128	841
Cigar-cutter	A. Schickerling	855,203	May 28	5715	1190	128	1556
Cigar cutter and lighter. Combined	P. J. Nawn	853,314	May 14	1935	400	128	530
Cigarette-making machine	E. Schürmann	853,650	May 14	2581	536	128	695
Cigarette-making machine	L. B. Baron	854,140	May 21	3611	745-6	128	990
Circuit-changing apparatus	J. A. Hirshfeld	853,292	May 14	1873	388	128	509
Circuit-changing apparatus	W. Kaisling	853,305	May 14	1919	397	128	525
Circuit-closing device	R. A. Baldwin	853,618	May 14	2592	523	128	681
Circuit-closing device	F. W. Erickson	854,205	May 21	3741	773	128	1026
Circuit-controlling mechanism for electrically-heated tools.	W. J. Barr	852,537	May 7	313	57-8	128	85
Circuit making and breaking device	S. Bouton	852,414	May 7	7	2-3	128	4
Clamp: *See* Bacon-suspension clamp. Leather-clamp. Saw-clamp.							
Clamp	W. B. Ruddick	852,681	May 7	629	121	128	164
Clamps. Soft-metal gasket for service	A. Schuermann	852,682	May 7	631	121	128	164
Clamping device	C. L. Simmons	853,128	May 7	1522	317	128	384
Clarifier	T. Lewicki	853,704	May 14	2697	555	128	728
Clasp: *See* Hose-supporter clasp. Suspender-clasp.							
Clasp	E. K. Sumerwell	854,254	May 21	3832	792	128	1051
Clasp	C. H. Phillips	854,430	May 21	4150	860	128	1131
Clasp-knife	N. Sahlsten	852,524	May 7	291	53	128	79
Cleaner: *See* Boiler-flue cleaner. Boot-cleaner. Chimney-cleaner. Cotton-cleaner. Gin-saw cleaner. Grain-cleaner. Grain and seed cleaner. Pipe-cleaner. Rail-cleaner. Sidewalk-cleaner. Track-cleaner. Window-cleaner.							
Cleaning and polishing compound	H. B. Radford	852,903	May 7	1091	.....	128	279
Clevis	G. H. Darrington	854,633	May 21	4519	943	128	1223
Clip: *See* Pen-clip. Pen or pencil clip. Rail-clip. Whiffletree-clip.							
Clip	F. A. Brownell	852,923	May 7	1140	235	128	290
Clock	A. H. Porter	855,130	May 28	5579	1159-60	128	1520
Clock. Alarm	E. E. Stockton and A. H. Porter	852,859	May 7	1008	209	128	257
Clock. Electric	T. B. Powers	853,648	May 14	2576	535	128	694
Clock. Electric alarm	J. F. Rodgers	853,119	May 7	1503	313	128	379
Clock. Electrical advertising	J. H. Melchers	853,710	May 14	2706	558-9	128	730
Clock-movement	C. T. McClintock	854,518	May 21	4307	891	128	1171
Clock. Secondary electric	W. S. Guthrie	855,002	May 28	5294	1100	128	1450
Clock. Self-winding electric	M. Juruick	855,249	May 28	5803	1209	128	1580
Clock-winding indicator	W. D. Bechtel	854,868	May 28	5028	1045	128	1382
Closet-bowl and sink connection	J. M. Hayden	854,695	May 21	4657	971	128	1258
Clothes-drier	F. Müller	853,257	May 14	1793	373	128	486
Clothes-drying device	A. M. Bullock	854,267	May 21	3852	796	128	1056
Clothes-hanger	E. O. Fellroth	855,295	May 28	5882	1226	128	1600
Clothes-line hanger	F. W. Steuer	854,611	May 21	4483	935	128	1214
Clothes-line prop and holder	A. B. Greer	852,602	May 7	462	85	128	123
Clothes-line support	F. X. Roch and A. O. Bonnin	853,599	May 14	2467	514	128	666
Clothes-line support	F. Clark	854,568	May 21	4409	915	128	1196
Clothes-pin machine	L. D. Neifer	853,823	May 14	2947	604-5	128	789
Cluster-socket	G. A. Harter	854,493	May 21	4267	882-3	128	1161
Clutch	E. Huber	852,956	May 7	1199	247	128	305
Clutch	H. F. Reichenberger	854,529	May 21	4328	895	128	1175
Clutch. Automatic	M. J. L. Towler	852,587	May 7	440	80	128	117
Clutch device for agricultural machines	L. A. Aspinwall	852,921	May 7	1136	234	128	289
Clutch for centrifugal machines	G. Holmgren	853,454	May 14	2181	453	128	593
Clutch. Friction	E. R. Whitney	853,849	May 14	2982	615	128	799
Clutch. Magnetic	A. Pick	854,107	May 21	3546	732	128	975
Clutch mechanism	R. E. Northway	852,798	May 7	871	177	128	222
Clutch mechanism	H. C. Lyle	855,193	May 28	5699	1186	128	1552
Clutch mechanism for automobile-drives	F. F. Schauweker and R. E. Robeson.	855,137	May 28	5589	1162	128	1523
Clutch mechanism for dumb-waiters and the like	A. Svenson	852,469	May 7	173	30	128	52
Clutch mechanism. Friction	G. L. Brown	853,676	May 14	2627	545	128	708
Clutch. Stay-bolt	W. Jones	854,169	May 21	3663	757	128	1004
Clutching device	F. Bailey and F. H. Jackson	854,139	May 21	3609	744	128	990
Coal. Coking	S. B. Sheldon	855,069	May 28	5445	1129-30	128	1490

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Coal-cutting machine	F. Stiepel	854,612	May 21	4484	935	128	1214
Coat-hanger	E. E. Palmer	853,895	May 14	3102	635	128	825
Cock and faucet	A. Ullmann	854,007	May 21	3332	684	128	923
Cock. Combined gage and stop	H. J. Reynolds	854,108	May 21	3551	732	128	976
Cock for water-heaters. Water-	R. C. Simpson	854,538	May 21	4346	899	128	1180
Cock or valve. Safety gas	E. R. Bennett and M. I. Ekern	853,053	May 7	1393	290	128	354
Cock. Stop-	J. F. Lamping	853,246	May 14	1770	368	128	492
Coffee-mill	W. J. Bussinger	855,228	May 28	5758	1199	128	1568
Coin-controlled apparatus	H. G. Kellogg	855,008	May 28	5308	1103	128	1454
Coin-operated machines. Coin-actuated device for controlling the operation of	H. K. Sandell	852,848	May 7	965	199	128	246
Coin-slot meter and machine	M. King and J. E. James	855,061	May 28	5420	1125	128	1484
Coin-wrapping device	H. H. Norrington	852,574	May 7	405	74	128	107
Colander and cake-pan. Combined	C. W. G. Allender	854,394	May 21	4076	843	128	1114
Collar fastener. Horse-	A. Greenspan	855,171	May 28	5657	1177	128	1543
Collar-fastening device. Lady's	J. D. Lee	854,583	May 21	4435	922	128	1202
Collar folder, shaper, and edge-ironer. Combined turn-down-	H. A. Twigg	853,845	May 14	2987	613	128	798
Coloring and tanning apparatus	C. J. Glasel	854,415	May 21	4121	854	128	1125
Comb: *See* Currycomb.							
Comb	J. G. Higgins	854,498	May 21	4276	885	128	1163
Combination-lock	J. N. Mills	853,368	May 14	2933	421	128	554
Combing-machine for cotton, wool, &c	F. W. Chadderton	855,430	May 28	6114	1278	128	1656
Combustion. Conducting	B. E. Eldred	854,156	May 21	3638	752–3	128	998
Combustion under pressure. Apparatus for generating and storing products of	T. H. Cole	854,406	May 21	4219	873	128	1150
Comminuted substances. Production of coherent bodies from	W. Schumacher	855,419	May 28	6097	.....	128	1652
Commutator	W. L. Waters	853,283	May 14	1840	384	128	500
Commutator	L. E. Underwood	854,781	May 28	4846	1006	128	1335
Commutator assembling and finishing device	J. Risbridger	855,134	May 28	5585	1162	128	1522
Commutator-switch	E. B. Jacobson	854,039	May 21	3395	700	128	937
Compartment-case	F. N. Gilbert	853,404	May 14	2091	435	128	568
Compasses	O. G. Mayer	854,586	May 21	4430	922	128	1203
Compressor	M. C. Mühlbach	855,120	May 28	5565	1156	128	1517
Computing device	C. W. Dietrich	855,050	May 28	5398	1121	128	1478
Concentrator	J. A. Ansell	855,218	May 28	5739	1194–5	128	1583
Concentrator. Centrifugal	J. F. Isbell	853,439	May 14	2180	455	128	596
Concrete-block machine	C. T. Heisel	852,558	May 7	357	64	128	97
Concrete-block-making machine	W. W. Verner	854,130	May 21	3594	741–2	128	986
Concrete-block-manufacturing apparatus	C. O. Brandell	852,764	May 7	780	155–6	128	203
Concrete-building-block mold	G. B. Tyler	854,856	May 28	4994	1040	128	1374
Concrete construction for buildings and other structures. Reinforced	J. H. Rempis	854,843	May 28	4971	1034	128	1368
Concrete-construction mold	G. Georgenson and J. E. Hennen	855,299	May 28	5887	1227	128	1601
Concrete construction. Reinforcing member for	F. M. Henry	855,174	May 28	5661	1178	128	1547
Concrete construction. Truss for reinforcing	W. D. Forsyth	855,240	May 28	5782	1205	128	1575
Concrete-heating machine	W. E. Owens and J. E. Wright	852,898	May 7	1082	223	128	277
Concrete insert	R. C. Huffman	853,456	May 14	2185	453–4	128	594
	F. L. R. Francisco and J. C. Thom	854,818	May 28	4921	1022	128	1355
Concrete-mixer	F. A. Borst	853,623	May 14	2531	524–5	128	685
Concrete-mixer	C. L. Baldwin	853,945	May 21	3219	660	128	893
Concrete-mold	H. A. Steber	853,837	May 14	2970	609–10	128	794
Concrete structures. Reinforcing-bar for	E. M. Scofield	855,204	May 28	5716	1190	128	1556
Concrete-wall core	J. H. Landry	853,640	May 14	2562	531	128	690
Concrete-wall form	O. F. Mann	854,098	May 21	3531	729	128	972
Condenser	C. A. Backstrom and F. G. Roesti	853,335	May 14	1971	408	128	539
Condenser	W. S. Johnson	854,650	May 21	4553	950	128	1231
Condenser. Electric	I. Moscicki	854,662	May 21	4574	955	128	1237
Condenser. Refrigerator-	W. J. Woodcock	854,976	May 28	5236	1091	128	1436
Condenser system. Steam-engine	F. H. Daniels	853,772	May 14	2837	583	128	763
Conductors. Horizontal support for	L. Steinberger	853,745	May 14	2787	572	128	750
Conduit. Frost-proof	H. H. Macomber	854,366	May 21	4026	833	128	1103
Confections and other articles. Machine for wrapping	D. T. Igou	852,664	May 7	590	112–14	128	154
Confections and other articles. Machine for forming and wrapping	D. T. Igou	852,560	May 7	363	65–9	128	99
Connecting-rod heads. Wedge-adjusting device for	J. P. Henry	855,003	May 28	5297	1101	128	1451
Container-top	J. R. Harbeck	853,547	May 14	2371	494	128	641
Controller-operating means	A. J. Brown	854,688	May 21	4627	964	128	1250
Conveyer	C. F. Stewart	853,269	May 14	1815	378	128	492
Conveyer	B. M. Steele	853,652	May 14	2587	537–8	128	697
Conveyer	A. L. Haines	854,734	May 28	4743	986	128	1309
Conveyer-door	H. B. Arden	855,425	May 28	6104	1276	128	1653
Conveyer-door. Combination	M. C. Schwab	852,459	May 7	149	26	128	46
Conveying apparatus	M. C. Schwab	852,460	May 7	150	27	128	46
Conveying device	I. M. Henricks	853,976	May 21	3274	672	128	909
Conveying earth, &c. Machinery for	C. Gruhl	852,504	May 7	254	46	128	71
Conveying loads between points of varying distance. Apparatus for	S. Lloyd and A. R. Grossmith	852,885	May 7	1063	218–19	128	271
Cooking apparatus	W. Möllier	854,052	May 21	3427	707	128	945
Cooking utensils, &c. Locking-cover for	J. R. Adams	853,147	May 7	1556	323	128	393
Cooking-vessel lid	A. Gurney	853,691	May 14	2670	550	128	720
Cooler: *See* Milk-cooler.	L. Reaser	852,677	May 7	623	119	128	162
Cooling and ventilating system	K. C. Randall	853,375	May 14	2043	423	128	556
Cooling system	K. C. Randall	853,263	May 14	1800	375	128	488
Copy-holder attachment	T. E. Ford	854,478	May 21	4238	877	128	1154
Cords, &c. Apparatus for determining the strength of	L. E. Knott	852,963	May 7	1218	251	128	310
Corn-drill	R. M. Downie	854,570	May 21	4413	916	128	1197
Cork-end grinding or polishing machine	O. Irwin	853,881	May 14	3068	629–30	128	817
Cork-extractor	J. B. Dodge	854,812	May 28	4902	1019	128	1349
Corn and its products. Bleaching and sterilizing	O. Zimmermann	853,940	May 14	3196	.....	128	850
Corn-cutting machine	J. Schauber	853,997	May 21	3311	681–2	128	918
Corn-shock compressor	L. C. Guttery	853,013	May 7	1327	277	128	337
Corn-shocking mechanism	J. E. Simmonds	854,059	May 21	3449	710–12	128	952

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Cornstalks, sugar-cane, &c. Manufacturing products from	V. Drewsen	853,943	May 14	3199	.....	128	850
Cotton-chopper	D. H. Hazlett	853,014	May 7	1328	277	128	337
Cotton-chopper	D. A. Cable	854,269	May 21	3857	796	128	1057
Cotton-chopper	J. H. Cubine and L. A. Hacker	854,335	May 21	3966	820	128	1087
Cotton cleaner and separator	J. G. Park	854,905	May 28	5114	1064	128	1406
Cotton drying and cleaning apparatus. Seed-	A. Campbell	853,942	May 14	3198	655–6	128	850
Cotton-press	W. G. De Ramus	852,825	May 7	923	189	128	235
Cotton-separator	W. A. Patterson	853,470	May 14	2212	460	128	600
Cotton-topper	T. K. Griffith	852,715	May 7	688	133–4	128	180
Couch	J. Hoey and F. J. Crouch	855,176	May 28	5668	1179	128	1545
Couch and bed. Convertible	T. M. Jamison and A. Petrtyl	855,058	May 28	5416	1124	128	1483
Coupling: *See* Air-brake coupling. Air-brake hose-coupling. Car-coupling. Disengageable coupling. Emergency-coupling. Engine-coupling. Hose-coupling. Pipe-coupling. Shaft-coupling. Thill-coupling. Whiffletree-coupling.							
Coupling	H. T. Ingham	854,292	May 21	3900	804	128	1060
Coupling and bearing. Combined	J. G. Callan and R. H. Rice	854,715	May 28	4714	981	128	1301
Cow-tail holder	A. B. Roundy	853,996	May 21	3310	681	128	918
Crane	D. O. Paige	854,837	May 28	4961	1032–3	128	1366
Crane. Ingot-charging	C. L. Taylor	853,482	May 14	2236	466	128	606
Crane. Overhead traveling	C. L. Taylor	853,484	May 14	2239	466	128	607
Crate	A. S. Cook	853,065	May 7	1413	295	128	358
Crate. Breeding-	L. C. Shepard	854,113	May 21	3560	734	128	978
Crate or box. Folding	J. F. Butcher	852,416	May 7	10	3	128	5
Crate. Shipping-	C. W. Smith	854,244	May 21	3817	788	128	1047
Cravat-holder	V. Nilsson	853,501	May 14	2456	512	128	663
Cream-separator bowl	F. C. McMullen	854,519	May 21	4308	892	128	1171
Cream-separator. Centrifugal	T. W. Morgan	854,373	May 21	4037	834	128	1105
Cross-tie and rail-fastening. Combined	E. T. Ford and F. F. Wassam	854,477	May 21	4237	876–7	128	1154
Crucible	J. M. Allen	854,551	May 21	4370	905	128	1185
Crucible-furnace	J. Borbeck	852,867	May 7	1024	212	128	261
Crushing-machine	T. L. and T. J. Sturtevant	853,656	May 14	2508	530	128	700
Crushing-machine. Roll	T. L. and T. J. Sturtevant	855,358	May 28	5989	1250	128	1626
Crushing-rolls	F. P. Snow	853,481	May 14	2234	465	128	606
Cue-tip	A. Paul	855,127	May 28	5575	1158	128	1519
Cuff-holder	A. S. Dickinson	853,230	May 14	1745	362	128	474
Culinary vessel	K. Jacobi	853,173	May 7	1596	332	128	403
Cultivator	G. S. Mayn	852,669	May 7	609	116	128	159
Cultivator	J. J. Stalder	853,039	May 7	1373	285–6	128	349
Cultivator attachment	J. S. Evans	854,474	May 21	4232	875	128	1153
Cultivator. Disk	J. Grant	853,510	May 14	2302	476	128	625
Cultivator. Disk	A. Jolly	853,798	May 14	2880	592	128	773
Cultivator. Lister-	A. E. Wilshusen	855,372	May 28	6012	1255	128	1633
Cultivator. Riding-	G. D. Houston	853,409	May 14	2097	437	128	570
Cultivator. Wheeled	J. E. Miller	854,754	May 28	4789	994–5	128	1321
Culvert	F. S. and F. H. Beach	854,397	May 21	4080	843–4	128	1115
Culvert. Corrugated-metal	C. D. Voris	852,478	May 7	188	34	128	56
Culverts and the like. Supporting structure for building	E. F. Parcaut	854,524	May 21	4317	894	128	1173
Cup: *See* Drinking-cup. Shaving-cup.							
Curling-iron heater. Electric	F. A. Tobler	854,257	May 21	3838	793	128	1052
Curling iron or tongs. Hair-	A. E. Gilbert and V. A. Phoebus	853,450	May 14	2174	452	128	591
Current apparatus. Alternating-	R. D. Mershon	853,106	May 7	1480	309	128	374
Current apparatus. Alternating-	R. D. Mershon	854,831	May 28	4948	1028–9	128	1362
Current-collector	S. B. Stewart, Jr	853,838	May 14	2974	610	128	795
Current-motor	E. P. Couture	855,164	May 28	5642	1173	128	1539
Current motor. Alternating-	L. A. Hawkins	854,739	May 28	4755	988	128	1312
Current motor. Alternating-	M. C. A. Latour	855,010	May 28	5313	1104	128	1456
Current motor. Water-	J. A. Cameron	855,041	May 28	5382	1118–19	128	1473
Current motor with commutating-poles. Single-phase alternating-	E. Arnold and J. L. La Cour	853,491	May 14	2261	469	128	614
Currycomb	C. P. Finegan	852,547	May 7	338	60	128	92
Curtain and shade holder. Combined	D. S. Smith	852,684	May 7	635	122	128	163
Curtain-fastener	G. W. J. Murphy	853,206	May 7	1682	347	128	424
Curtain-fastening	J. Schneider	854,848	May 28	4980	1036	128	1370
Curtain-fastening device	A. F. Bruckner and G. Sayre	854,073	May 21	3479	717–18	128	959
Curtain-fixture	J. A. Philbrick and A. Ray	853,113	May 7	1495	312	128	378
Curtain-fixture	F. Herbeck	855,311	May 28	5906	1231	128	1606
Curtain hanger or support	J. I. McCoy	852,894	May 7	1077	222	128	276
Curtain-operator	W. L. Osborn	854,963	May 28	5213	1086	128	1430
Curtain-rod point	J. Carroll	853,680	May 14	2635	547	128	710
Curtain-roller cap	J. M. Berry	853,622	May 14	2531	524	128	683
Cushion: *See* Saddle-cushion.							
Cushion	H. S. Hale	854,161	May 21	3651	755	128	1001
Cushioned wheel. Protected	H. J. Nagle	853,466	May 14	2206	458	128	599
Cuspidor	H. Wilson and R. L. Greenwell	852,482	May 7	194	35	128	57
Cuspidor	V. Ardito	853,617	May 14	2521	523	128	681
Cuspidor	V. Ardito	853,912	May 14	3136	642	128	835
Cuspidor. Sanitary	A. Fishmann	855,296	May 28	5883	1226	128	1600
Cuspidor. Sanitary automatic	A. Porter	852,901	May 7	1088	224	128	278
Cut-out	J. T. Marshall	854,751	May 28	4780	992	128	1329
Cutter: *See* Bottle-wire cutter. Brick, block, or tile cutter. Butter-cutter. Cheese-cutter. Cigar-cutter. Grass-cutter. Paper-machine slitting-cutter. Pipe-cutter. Thread-cutter. Vegetable-cutter. Veterinary tooth-cutter.							
Cycle. Traveler's	S. N. Polishook	854,528	May 21	4324	895	128	1175
Cycle wheel-guard	T. Reuss	853,115	May 7	1498	313	128	378
Cycles, &c. Stand for motor-	J. J. Hansel	855,307	May 28	5900	1230	128	1604
Davit fall-block. Automatic	C. E. Wicks	852,533	May 7	307	55	128	84

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Dead-centers. Device for overcoming	F. W. Dill and J. R. Hill	852,775	May 7	799	100	128	207
Deck-chair and couch. Folding combination	R. Osterberg	854,379	May 21	4046	836–7	128	1107
Demagnetizer	D. M. Bliss	855,158	May 28	5633	1171	128	1536
Dental bridgework. Removable	E. C. Bennett	852,413	May 7	5	2	128	4
Dental chair	F. Ritter	853,421	May 14	2116	441–2	128	575
Dental-engine handpiece	F. W. Dean	855,288	May 28	5871	1223	128	1597
Dental instrument	A. B. Prentis	853,031	May 7	1360	282–3	128	346
Dental root-impression and crown-mounting instrument	J. M. Evey	854,283	May 21	3886	801	128	1065
Depilatory instrument	H. H. Lewis	853,096	May 7	1463	306	128	370
Derailing-switch	H. C. Stiff	853,270	May 14	1818	378	128	493
Derrick	P. Yorke	852,486	May 7	201	36	128	58
Derricks. Top-fitting for	G. P. Wern	854,189	May 21	3715	769	128	1021
Desulfurizing and subsequent smelting	W. G. Perkins	852,612	May 7	478	88	128	126
Detinning	F. von Kügelgen and G. O. Seward	853,461	May 14	2194	.....	128	596
Die: *See* Screw-thread-cutting die.							
Die	A. R. Simmerly	852,636	May 7	529	100	128	138
Die-cutting machine	H. J. Doughty	853,501	May 14	2282	472–4	128	620
Die-stock	W. H. Wilson	853,329	May 14	1962	406	128	536
Digester-cover	G. D. Huntington, A. R. O'Neill, and F. P. Noone	853,795	May 14	2874	591	128	772
Digger: *See* Post-hole digger.							
Digging apparatus	H. B. Arden	854,395	May 21	4076	843	128	1114
Dipping-tank	A. A. Kramer	854,223	May 21	3785	781	128	1039
Discharging apparatus. Rotary	J. J. Power. (Reissue)	12,655	May 21	4700	978	128	1268
Disengageable coupling	G. Leske	854,656	May 21	4561	953	128	1233
Dish and drip pan. Combined	D. E. Bonathan	855,089	May 28	5499	1140	128	1503
Dish-washing machine	J. G. Cochrane	852,419	May 7	19	5	128	8
Dish-washing machine	A. W. Bodell	852,866	May 7	1021	211–12	128	260
Disinfecting, odorizing, or other purposes. Apparatus for	H. S. Blackmore	853,913	May 14	3137	642	128	835
Disinfecting or odorizing apparatus. Automatic	H. S. Blackmore	853,434	May 14	2141	446	128	581
Dispensing apparatus	E. C. Tracey	852,472	May 7	178	31	128	54
Display-box. Folding	F. S. Bauer	852,696	May 7	657	127	128	174
Display-case	W. Simon	852,982	May 7	1256	259	128	316
Display device. Adjustable shoe	B. P. Ramsey	855,201	May 28	5713	1189	128	1555
Display-rack	W. F. Spicer	854,769	May 28	4823	1002	128	1330
Display-rack and meat-hanger. Refrigerator	L. A. Alson	853,051	May 7	1391	290	128	354
Display-stand	H. L. Crawford	854,805	May 28	4890	1015	128	1346
Display-stand	J. J. Requa	852,451	May 7	83	17	128	24
Display-stand	C. S. Botsford	853,702	May 14	2821	580	128	758
Display-table	H. H. Fack	854,904	May 28	5276	1097	128	1446
Distilling apparatus. Wood-	C. I. Berg	853,215	May 14	1716	356	128	466
Distributing apparatus	A. J. McArthur	855,330	May 28	5037	1238	128	1613
Distributing device	G. C. Ellerton	853,870	May 14	3034	624–5	128	808
Distribution system	O. Cavigila	853,769	May 14	2833	582	128	762
Ditch-leveling device	K. C. Randall	853,374	May 14	2042	423	128	556
Ditching-machine	S. E. Stoner	854,916	May 28	5130	1067	128	1410
Ditching-machine	A. J. Koob	853,804	May 14	2890	594–5	128	775
Ditching-machine	T. Linga	853,985	May 21	3286	676	128	912
Dock. Floating	E. S. Boyd	854,559	May 21	4302	911	128	1192
Doll	A. F. Wiking	853,328	May 14	1961	405–6	128	536
Door-catch	E. T. Hinecks	853,639	May 14	2560	530	128	690
Door-check	T. W. Stodden	853,272	May 14	1820	379	128	494
Door fastener. Sliding-	W. H. Terry	852,585	May 7	436	79	128	115
Door-hanger	H. P. Macdonald	853,251	May 14	1781	370	128	485
Door-hanger	H. P. Macdonald	853,250	May 14	1779	370	128	484
Door-hanger and means to prevent the swaying of doors.	H. C. Smith	855,352	May 28	5078	1247–8	128	1623
Door-hanger and track therefor	J. Woyak	854,789	May 28	4890	1010	128	1339
Door-holder	J. Handschumacher	855,172	May 28	5658	1177	128	1543
Door-holder	G. Laube	852,513	May 7	270	50	128	74
Door-lock	A. Danielson	852,655	May 7	567	108	128	148
Door-lock electric switch	T. B. Jack	855,177	May 28	5670	1179	128	1546
Door opening and closing device	W. E. Hughes	853,791	May 14	2866	589	128	770
Door or sash lock	H. Witte	852,814	May 7	902	183–4	128	230
Door-releasing mechanism	W. H. McKeiver	853,991	May 21	3303	679	128	916
Doors, blinds, shutters, &c. Fastening for	E. Kauntze	853,588	May 14	2448	510	128	661
Doors. Device for electrically operating bulkhead-	W. S. Bigelow	853,360	May 14	3017	619	128	805
Doors. Device to open	D. R. Knapp	852,724	May 7	706	137	128	186
Doors. Operating bulkhead-	J. M. Young	854,262	May 21	3846	794	128	1054
Dough. Mixing	A. A. Buck	853,765	May 14	2825	581	128	759
Dough mixing and kneading apparatus	C. Chambers, Jr	852,497	May 7	235	42	128	67
Draft appliance for farm implements	J. Koelner	852,965	May 7	1222	251	128	311
Draft-equalizer	W. T. Stevig	852,746	May 7	744	146–7	128	195
Draft-equalizer	W. P. Wild	854,786	May 28	4857	1009	128	1338
Draft-rigging	B. J. Brunke	854,924	May 28	5145	1071	128	1414
Draft-rigging	J. R. Reniff	852,801	May 7	877	178	128	223
Drawer construction for furniture. Sliding-	M. Kennedy	854,042	May 21	3405	702	128	940
Drawing instrument	T. J. Amberg	855,037	May 28	5374	1117	128	1470
Dredger. Caisson-	S. G. Stoddard	853,381	May 14	2059	426	128	561
Dredging and excavating machine	R. A. Gardner	852,713	May 7	683	133	128	179
Drier: *See* Clothes-drier. Grain-drier.	B. H. Coffey. (Reissue)	12,650	May 14	3307	657	128	853
Drying apparatus. Vacuum	E. Passburg	853,260	May 14	1796	374	128	487
Drying-hanger	C. F. Schild	853,739	May 14	2775	571	128	747
Drying-kiln	W. E. Stephens	854,251	May 21	3829	791	128	1050
Drill: *See* Core-drill. Mining-drill. Hydraulic drill. Rock-drill.							
Drill-bit	P. Broadbooks	854,144	May 21	3619	748	128	993
Drilling or boring machine	H. J. Lamb and A. K. Kirkpatrick	853,018	May 7	1333	272	128	338
Drinking-cup. Aseptic	J. J. Shea. (Reissue)	12,648	May 7	1701	352	128	429
Drinking-fountain	F. L. McNitt	854,902	May 28	5110	1063	128	1405
Dropper: *See* Hay-dropper.							
Drum and cymbal beater. Bass-	M. B. Kendis	852,881	May 7	1054	217	128	209

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dumping apparatus	A. Moore	852,796	May 7	866	175–6	128	221
Dumping-body	W. R. Gott	855,302	May 28	5892	1228	128	1602
Duplicating-machine	G. H. Shannon	854,111	May 21	3557	734	128	977
Duplicating-machine. Rotary	G. L. Hilliker	854,499	May 21	4277	885	128	1164
Dust-collector	W. S. Osborne	853,517	May 14	2314	480	128	638
Dust-collector	P. C. Miller	854,516	May 21	4305	891	128	1170
Dust from carpets, &c. Apparatus for the extraction of	F. V. Schlödt	854,670	May 21	4591	958–9	128	1242
Dust-pan attachment	S. D. Tungate	853,486	May 14	2242	467	128	608
Dust-remover. Pneumatic	M. E. Freeman	855,433	May 28	6121	1279	128	1657
Dust-removing pneumatic machines. Filtering device for	J. R. Blum	853,914	May 14	3140	642	128	836
Dye. Making anthracene	M. Isler	855,248	May 28	5801	.....	128	1579
Dyed fibers and fabrics. Fixing or setting the colors of	L. B. Fortner	852,943	May 7	1173	.....	128	298
Dyer's vat	M. C. Cuttle	853,627	May 14	2338	527	128	685
Dyeing-machine	N. Labonty	853,700	May 14	2685	553	128	724
Dyeing-machine	J. R. Greenwood	854,417	May 21	4126	855	128	1126
Dynamometer	W. F. Dawson	854,720	May 28	4721	982	128	1303
Dynamometer	C. M. Garland	854,906	May 28	5282	1096	128	1447
Earth-scraping machine	W. and J. Randall	855,336	May 28	5052	1242	128	1617
Eccentric	R. M. Clark	855,282	May 28	5858	1221	128	1594
Educational appliance	V. Bétis	853,756	May 14	2811	577	128	756
Educational device	J. Thomson	853,042	May 7	1378	286	128	350
Egg-boiler	H. F. Hall	852,556	May 7	353	63	128	96
Egg-carrier	C. F. Thoms	853,383	May 14	2061	427	128	561
Elastic wheel	G. Floquet	852,600	May 7	460	85	128	122
Electric apparatus supporting means	E. G. Reed	854,309	May 21	3928	810	128	1076
Electric apparatus. Vacuum-tube	D. M. Moore	854,300	May 21	3911	806–7	128	1072
Electric apparatus. Vapor	W. R. Burrows	853,678	May 14	2631	546	128	709
Electric attachment for movable objects	J. R. Dawkins	855,380	May 28	6037	1260	128	1638
Electric cable	R. D'Unger	852,778	May 7	808	162	128	210
Electric-circuit-controlling process and device	H. Beck	853,492	May 14	2263	469	128	614
Electric conductor	O. T. Hungerford	854,217	May 21	3762	778	128	1032
Electric conductor or cable	S. G. Brown	854,562	May 21	4398	913	128	1193
Electric controlling-switch	W. Gminder	853,688	May 14	2664	549	128	719
Electric-current-controlling device	H. B. Emerson and G. H. Dorgeloh.	854,727	May 28	4732	984	128	1306
Electric governor	H. Weber	854,918	May 28	5135	1069	128	1411
Electric heater or rheostat	F. C. Newell	854,824	May 28	4957	1031	128	1365
Electric-light cabinet. Portable	H. H. Roberts	853,033	May 7	1364	283–4	128	347
Electric-light fixture	J. F. Barrett	854,554	May 21	4373	906	128	1185
Electric machine	C. de Kando	853,550	May 14	2374	495	128	641
Electric machine. Dynamo-	W. L. Waters	853,285	May 14	1846	385	128	500
Electric machine. Dynamo-	J. A. Williams	854,321	May 21	3945	815	128	1081
Electric machine. Dynamo-	W. J. Richards	854,704	May 21	4677	975	128	1262
Electric machine. Dynamo-	W. M. Coffman	854,717	May 28	4717	981	128	1302
Electric machine. Dynamo-	J. E. Noeggerath	854,756	May 28	4792	995–7	128	1322
Electric machine. Dynamo-	L. E. Underwood	854,782	May 28	4848	1007	128	1336
Electric machine. Dynamo-	J. B. Wiard	854,782	May 28	4854	1008	128	1337
Electric machine with commutating-poles. Dynamo-	H. R. King	854,425	May 21	4141	858	128	1130
Electric machines. Reversing the polarity of dynamo-	J. B. Taylor	854,772	May 28	4829	1003	128	1332
Electric meter	E. Thomson	854,777	May 28	4836	1004–5	128	1333
Electric meter	R. Arno	855,220	May 28	5742	1196	128	1563
Electric motor	W. M. Bradshaw	853,218	May 14	1723	357	128	468
Electric motor. Commutating	R. D. Mershon	853,464	May 14	2199	457	128	598
Electric-motor-control system	H. D. James	854,825	May 28	5035	1025	128	1359
Electric-motor-control system	H. D. James	854,892	May 28	5092	1058–9	128	1400
Electric-motor controller	F. H. Burmester	855,093	May 28	5504	1142	128	1504
Electric motors. Operating	R. D. Mershon	853,107	May 7	1484	310	128	375
Electric resistance element	A. L. Marsh	853,891	May 14	3094	.....	128	823
Electric switch	W. M. Brown	853,220	May 14	1727	358	128	469
Electric switches. Remote control device for	G. Wright	852,690	May 7	647	124	128	169
Electric tool	O. A. Kenyon	853,552	May 14	2379	495	128	643
Electric wires. Branch conduit-box for	L. W. Bossert	854,020	May 21	3352	688	128	928
Electric wires. Pick-up for non-insulated	E. J. Heath	854,578	May 21	4428	920	128	1201
Electrical apparatus	W. H. Thompson	854,316	May 21	3937	813	128	1079
Electrical apparatus. Alternating-current	F. Conrad and W. M. Bradshaw	853,226	May 14	1737	360–1	128	472
Electrical apparatus. Terminal block for	W. M. Bradshaw	853,219	May 14	1725	357–8	128	468
Electrical conductor and armor therefor	C. J. Kleh	854,094	May 21	3522	727	128	970
Electrical connections. Receptacle and plug for	W. S. Mayer	854,369	May 21	4030	833	128	1103
Electrical currents. Device for amplifying	J. S. Stone	854,120	May 21	3574	737–8	128	981
Electrical cut-off. Automatic	R. H. McDowell	853,990	May 21	3301	679	128	916
Electrical cut-out device. Automatic	R. Brebach	852,766	May 7	786	157	128	204
Electrical-distribution system	W. A. Turbayne	852,639	May 7	532	101	128	139
Electrical-distribution system	W. A. Turbayne	852,687	May 7	639	123	128	166
Electrical-distribution system	R. C. Leake	853,888	May 14	3086	633	128	822
Electrical-distribution system	S. B. Storer	854,121	May 21	3576	738	128	982
Electrical-distribution system	S. B. Storer	854,122	May 21	3580	738–9	128	983
Electrical-distribution system	J. L. Woodbridge	854,802	May 28	5014	1042	128	1379
Electrical driving mechanism	G. C. Marx	854,050	May 21	3423	706	128	944
Electrical heater	M. H. Shoenberg	852,853	May 7	988	204	128	251
Electrical sockets and conduits. Connection for	R. B. Benjamin	854,978	May 28	5238	1091	128	1437
Electrical switch	W. M. Scott	854,436	May 21	4160	862–3	128	1134
Electrically-actuated body. Means of control for an	B. McInnerney	855,066	May 28	5231	1127	128	1487
Electrically-driven machinery. Controlling device for	F. O. Hunt	853,585	May 14	2443	508–9	128	660
Electrically-heated vessels. Safety attachment for	J. I. Ayer	854,396	May 21	4078	843	128	1115
Electricity from stock. Device for removing static	W. Fullard and C. M. Donham	854,413	May 21	4118	853	128	1125
Electrode	J. H. Robertson	853,521	May 14	2322	483	128	630
Electrodes. Making storage-battery	T. A. Edison	854,200	May 21	3734	.....	128	1025
Electrolytic diaphragm and making same	L. H. Backeland	855,221	May 28	5744	.....	128	1564
Electromagnetic machine or concentrator	J. H. Ryan	853,475	May 14	2224	463	128	603
Electromagnetic means for transporting non-magnetic materials.	E. I. Dodds	854,153	May 21	3634	751–2	128	996
Electromagnetic switch	W. Scribner	852,582	May 7	430	79	128	114
Electromagnetically-actuated device	R. P. Jackson	854,824	May 28	4934	1025	128	1358
Electromagnets. Winding for	W. M. Bradshaw	853,340	May 14	1982	409	128	542
Electromotor of the induction type	F. M. Lewis	854,296	May 21	3904	805	128	1070
Electrotype or the like	E. A. Faller	854,995	May 28	5278	1097–8	128	1447

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Elevator: *See* Barrel-elevator. Portable elevator. Carcass-elevator. Water-elevator. Pneumatic elevator.							
Elevator	M. Dashiell	853,534	May 14	2343	488	128	635
Elevator	D. C. Suplee	855,074	May 28	5468	1135	128	1495
Elevator-boot bearing	W. R. Cunningham	853,443	May 14	2157	449	128	586
Elevator-door-connecting device	H. Bitner	853,950	May 21	3234	663	128	898
Elevator-door mechanism	V. A. Benson	853,859	May 14	3014	619	128	804
Elevator safety device	C. R. Pratt	853,733	May 14	2762	568–9	128	743
Elevator-shafts. Automatic door-closer for	E. E. Ashley	855,376	May 28	6016	1256	128	1634
Elevator valve mechanism	R. C. Bromley	854,795	May 28	4870	1011–12	128	1341
Elevators. Grain-unloading sink for	F. R. McQueen	854,377	May 21	4044	836	128	1106
Embroidery-frame	A. Feil	853,242	May 14	1747	363	128	475
Embroidery in divers cords	F. Baudenon	855,274	May 28	5845	1219	128	1591
Embroidery-machines. Fabric-frame-moving mechanism for	W. L. De Bar	855,187	May 28	5690	1184–5	128	1550
Emergency-coupling	G. T. Woodson	853,142	May 7	1547	322	128	397
End-gate	J. F. McKellar	852,673	May 7	615	118	128	160
Energy. Generation and distribution of	J. F. Kelly	854,362	May 21	4017	831	128	1100
Engine: *See* Chemical-engine. Pumping-engine. Gas-engine. Rotary engine. Internal-combustion engine. Steam-engine.							
Engine	L. Malugen	853,252	May 14	1783	370–1	128	485
Engine	A. Klose	854,896	May 28	5 03	10 0–1	128	1403
Engine coupling. Traction-	W. F. Brown	854,196	May 21	3726	771	128	1023
Engine crank mechanism. Steam and other	P. N. Jonte	852,960	May 7	1203	248–9	128	306
Engine ignition device. Explosive-	L. Stadthert	855,209	May 28	5728	1192	128	1560
Engine lubricating and cooling system	G. A. Weidely	853,288	May 14	1860	386–7	128	505
Engine-lubricator	O. A. Beydler	853,757	May 14	2813	578	128	756
Engine reversing-gear. Gasolene-	H. E. Zastrow and J. H. Koepp	854,550	May 21	4368	905	128	1184
Engine reversing mechanism. Locomotive and other	C. J. Mellin	852,795	May 7	862	174–5	128	220
Engine starting device. Explosion-	N. T. Harrington	852,557	May 7	354	63–4	128	96
Engine-starting device. Explosion-	J. C. Hansen-Ellehammer	854,035	May 21	3388	698	128	936
Engines and making same. Ka fitor for explosive-	G. E. Faries	855,249	May 28	5780	1204–5	128	1574
Engines. Apparatus for muffling the exhaust of gas-	C. Thomson	854,778	May 28	4885	1005–6	128	1334
Engines. Electrical signaling apparatus for	G. J. Exterkamp	854,344	May 21	3990	824	128	1093
Envelop	J. A. Douglas	853,070	May 7	1424	297	128	361
Envelop-cutting mechanism	A. A. Rheutan	853,597	May 14	2463	513	128	665
Envelop-feeder	L. E. Johnson	854,834	May 28	4938	1026	128	1360
Envelop-machine	G. W. Swift, Jr.	854,440	May 21	4172	864–5	128	1138
Envelop. Right-angle-triangle letter-sheet	A. B. Magoun	853,800	May 14	3093	634	128	823
Equalizing apparatus	C. C. Grimes	853,081	May 7	1438	301	128	365
Eraser. Rotatable	O. S. Pugerud	853,994	May 21	3307	690	128	917
Evaporating-pan	W. G. Chambiee	853,398	May 14	2081	432	128	566
Evaporator	F. S. Heath	852,435	May 7	49	10	128	16
Excavating and elevating apparatus	F. E. Allen	854,920	May 28	5137	1070	128	1412
Excavating-machine	J. D. Buchanan	854,925	May 28	5145	1071–2	128	1414
Excavating-machines. Cleaner for buckets of	C. C. Jacobs	852,789	May 7	846	169–70	128	216
Excavating-scoop	R. Wiles	852,863	May 7	1018	211	128	259
Excavator	H. W. Blaisdell	854,626	May 21	4507	940–1	128	1220
Excavator	O. and A. K. Strenge	855,455	May 28	5986	1249–50	128	1626
Excavator. Trench-	C. C. Jacobs	852,790	May 7	845	170–1	128	217
Expansion-joint	W. W. Doolittle	853,964	May 21	3255	668	128	903
Expansion-joint	G. W. Hayden	853,974	May 21	3272	672	128	908
Explosive. Nitroglycerin	F. J. H. Roewer	853,830	May 14	2960	.....	128	792
Explosives in wells. Apparatus for firing	L. H. Broadwater	855,224	May 28	5749	1198	128	1595
Explosives. Manufacture of	H. C. L. Bloxam	853,056	May 7	1399	.....	128	356
Expression-box	E. Lundberg and J. Hattemer	853,814	May 14	2913	599	128	781
Extension-table	D. P. Rockefeller	853,474	May 14	2223	463	128	603
Extractor: *See* Cork-extractor. Pen-extractor.							
Eye massage apparatus and medicator combined	F. C. Dorment	852,827	May 7	927	190	128	236
Eye-protector	E. Verdeau	854,546	May 21	4362	903	128	1183
Eyeglass-frame	W. A. Coates	852,929	May 7	1148	236	128	292
Eyeglass-guard	D. F. Green	853,680	May 14	2866	549	128	719
Eyeglass-holder	M. E. Dripps	852,599	May 7	459	85	128	122
Eyepiece	H. C. Lomb	853,812	May 14	2908	598	128	779
Fabric: *See* Knitted fabric. Woven fabric. Pile fabric.							
Fabric-cleansing apparatus. Textile-	A. H. Scroxton and W. H Cannon	852,804	May 7	882	179	128	225
Fan	O. Selg	853,477	May 14	2227	464	128	604
Fan	H. E. Jonnson	854,459	May 21	4003	830	128	1099
Fan and eye-protector. Combined	T. Ritter	855,202	May 28	5714	1189	128	1558
Fare-register	A. O. Schmolinski	852,849	May 7	989	200–2	128	247
Farrier's tool	W. W. Lyons	855,111	May 28	5545	1152	128	1513
Fastening device	F. Heisdorf	853,638	May 14	2559	530	128	690
Fastening device	F. Raupach	855,437	May 28	5953	1242	128	1617
Fastening-hook	B. Knothe	854,746	May 28	4760	990	128	1317
Fastenings. Machine for inserting metallic	C. H. Smith	853,742	May 14	2778	571	128	748
Faucet	C. Doerst	854,635	May 21	4522	944	128	1223
Fecal matter and purification of residual liquids. Apparatus for the automatic destruction of	V. Bordigoni	853,217	May 14	1720	357	128	467
Feed. Apparatus for making molasses	S. L. Fraser	854,159	May 21	3644	754	128	990
Feed apparatus. Intermittent-	B. Baron	855,030	May 28	5380	1117–18	128	1472
Feed-bag	A. G. May	853,103	May 7	1475	308	128	373
Feed-bag	A. B. Hamilton	853,875	May 14	3044	626	128	811
Feed-bag	S. F. Mainster and F. E. Wilson	855,194	May 28	5702	1187	128	1554
Feed-water heater	T. Y. Stewart	852,466	May 7	166	29	128	50
Feed-water heater and purifier	G. H. Zscheeh	852,487	May 7	201	37	128	59
Feed-water purifier	G. S. Garrett	854,060	May 21	3846	794–5	128	1000
Feeders. Protective means for parallel	C. W. Stone	853,655	May 14	2596	539	128	700
Feeding device for horses. Slow-	C. E. Seymour	854,850	May 28	4883	1008–7	128	1371
Fence	J. E. Tyler	853,846	May 14	2988	614	128	798
Fence construction. Iron-	J. B. Lindenschmidt	853,810	May 14	2904	597	128	778
Fence lock. Wire-	I. R. Hill	854,946	May 28	5181	1079	128	1423
Fence-machine	H. K. Oberholtser	853,028	May 7	1351	281–2	128	343

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Fence-machine equalizer. Wire-	S. S. Withington	854,616	May 21	4490	936	128	1215
Fence machines. Crimping mechanism for wire-	J. A. Cocker. (Reissue)	12,656	May 28	6132	1282	128	1600
Fence-making machine	W. F. Volkenant	853,660	May 14	2606	540–1	128	703
Fence. Ornamental	J. Forster	854,440	May 21	4240	87.	128	1155
Fence-post	A. C. Davis	852,421	May 7	22	5	128	8
Fence-post	R. C. Glasco	852,555	May 7	351	63	128	96
Fence-post-making machine	R. L. Dennison	853,069	May 7	1419	296	128	389
Fence tie. Wire-	C. B. Conant	852,420	May 7	21	5	128	8
Fences. Clamp for stretchers for stretching	A. G. Lefler	852,842	May 7	955	196	128	243
Fender: *See* Car-fender.							
Fender	J. E. Palmer	853,728	May 14	2756	567	128	742
Ferro-molybdenum. Manufacture of	H. W. C. Annable	852,920	May 7	1135	.....	128	289
Ferrule attachment for handles	W. Sparks	853,566	May 14	2405	501	128	651
Fertilizer	F. G. Dokkenwadel	853,919	May 14	3154	.....	128	839
Fertilizer-distributer	N. F. Hancock	853,692	May 14	2671	550	128	720
Fiber-mixer	E. Tyden	852,474	May 7	181	32	128	55
Fibrous-material separator	W. S. Osborne	853,518	May 14	2316	480–1	128	628
File. Locking-	W. G. Nethery	854,703	May 21	3915	807	128	1073
Filing system	J. M. Corboy	853,864	May 14	3025	621	128	806
Filing system. Credit-account	E. J. Williams	854,060	May 21	3971	716	128	958
Filter	T. W. Goreau	854,288	May 21	3893	803	128	1067
Filter	E. M. Wade	854,972	May 28	5230	1089–90	128	1435
Filter. Liquid-	H. J. Hass	854,738	May 28	4754	987	128	1312
Filtering-machine	J. Mills	854,588	May 21	4441	923–4	128	1203
Filtering material	G. M. Kneuper	853,981	May 21	3280	674–5	128	911
Filtering material. Making	G. M. Kneuper	854,043	May 21	3407	702–3	128	940
Finger-guide	J. A. Evans and J. F. Wolff	853,074	May 7	1430	299	128	363
Fire-alarm or temperature-indicator	M. L. Poulter	853,828	May 14	2952	606	128	790
Fire dog or iron	L. C. Ross	853,831	May 14	2961	607	128	792
Fire-escape	E. F. G. Gibbs	853,302	May 14	1907	396	128	521
Fire-escape	F. Jäger	854,645	May 21	4546	940	128	1230
Fire-escape apparatus	C. W. Bergquist	854,922	May 28	5142	1070	128	1413
Fire-extinguisher	J. I. Hardy	853,451	May 14	2175	452	128	591
Fire-extinguisher. Chemical	J. B. Thomas	854,6 4	May 21	4486	936	128	1215
Fire-glazing machine	M. J. Owens	854,836	May 28	4960	1031–2	128	1365
Fire-kindler	W. H. Haggerty and W. J. Dardis	854,491	May 21	4265	882	128	1161
Fire-polishing machine	W. E. Bock	854,703	May 28	4807	1010	128	1340
Fires in oil-filled receptacles. Means for extinguishing	R. D. Mershon	853,253	May 14	1784	371	128	486
Firearm	M. Mondragon	853,715	May 14	2714	560–2	128	732
Firearm. Automatic	J. M. Browning	853,438	May 14	2149	447	128	583
Firearm. Automatic	W. Mason	854,707	May 21	4085	976–8	128	1264
Firearm. Automatic	C. A. Strasburg	854,771	May 28	4827	1003	128	1331
Firearms. Barrel-cleaner for breech-loading	J. N. Fisher	852,942	May 7	1171	241–2	128	298
Fireproof material	J. True	852,748	May 7	747	147	128	195
Fireproof material	K. Sakurai	852,908	May 7	1142	.....	128	283
Firing-gear	K. Sakurai	855,136	May 28	5587	.....	128	1523
Firing mechanism. Electric and percussion	L. V. Benét and H. A. Mercié	854,557	May 21	4380	908–9	128	1187
Fish-hook	W. H. Bevans	855,427	May 28	6110	1277	128	1655
Fish-net float	H. C. Ladish	852,793	May 7	858	173	128	219
Fishing-reel	J. Koenig	855,0 3	May 28	5425	1126	128	1485
Flanged ripe	W. E. Marhoff	853,311	May 14	1928	399	128	528
Flash-light	L. H. Brinkman	854,8 0	May 28	5020	1045	128	1382
Flax-breaking apparatus	G. F. Ehemann	854,880	May 28	5067	1054	128	1393
Flax-straw from winding about beaters. Device for preventing	W. R. Green	852,503	May 7	251	45	128	71
Floor-scraper	E. Asleson	852,488	May 7	204	37	128	59
Floor-scraper	N. B. Short	852,583	May 7	432	79	128	114
Floor-scraper	B. O. Fox	853,446	May 14	2163	450	128	588
Floor, sidewalk, roof, and like support	P. H. Jackson	854,302	May 21	4282	886	128	1165
Flue-beater tool	L. A. Tinnes	855,363	May 28	5995	1251	128	1628
Flue-cleaners. Turbine for	T. Coates	854,716	May 28	4715	981	128	1301
Flue-hole stopper	G. W. Knapp	853,177	May 7	1602	333	128	406
Flue-stopper	J. W. De Weese	854,986	May 28	5254	1064	128	1441
Fluid-heater. Electrical	M. H. Shoenberg	852,854	May 7	989	204	128	251
Fluid-pressure brake	W. H. Sauvage	852,525	May 7	292	53	128	79
Fluid-pressure brake	W. H. Sauvage	852,526	May 7	294	53–4	128	80
Fluid-pressure brake	W. H. Sauvage	852,527	May 7	296	54	128	81
Fluid-pressure brake	F. L. Clark and W. V. Turner	854,148	May 21	3627	749	128	995
Fluid-pressure lines. Safety means for	G. J. Henry, Jr	853,785	May 14	2853	587	128	767
Fluid-pressure tool	F. M. Faber	853,201	May 7	1672	346	128	421
Fluid substances. Press for forming thick	C. F. Jr., and S. Mueller	854,375	May 21	4020	835	128	1105
Flush-tank	F. H. Lindenberg and C. B. Delany	853,705	May 14	2099	556	128	728
Fly-trap	L. Hansen	855,308	May 28	5902	1230	128	1605
Fly-trap for attachment to windows	W. J. Posakony	854,910	May 28	5120	1065	128	1408
Food and making same. Cattle	G. F. Ahlers	854,791	May 28	4862	.....	128	1340
Foot. Artificial	J. W. Mahaffey	854,510	May 21	4207	888	128	1168
Footwear. Wet-proof	J. A. Kelly	854,761	May 21	4015	830	128	1100
Force-feed lubricator	C. B. Hodges	854,948	May 28	5183	1079–80	128	1423
Forebay construction	J. E. Sirrine	854,539	May 21	4347	899–900	128	1180
Forehead-band	C. W. Mabey	854,509	May 21	4296	888	128	1168
Fork: *See* Manure-fork.							
Fork and spoon. Co bined	J. King	854,745	May 28	4768	990	128	1316
Formaldehyde and product thereof. Preventing oxidation of	L. H. Reuter	853,265	May 14	1804	.....	128	489
Formaldehyde preparation	H. S. Blackmore	854,452	May 21	4198	.....	128	1145
Forming-machine	G. H. Petri	854,308	May 21	3924	809–10	128	1076
Fountain: *See* Drinking-fountain. Poultry-fountain.							
Frame: *See* Chart-frame. Pool-ball frame. Concrete-wall frame. Printing-frame. Embroidery-frame. Sash-frame. Eyeglass-frame. Tent-frame. Mattress-frame. Truck side frame.							
Friction-cover can or vessel. Open-mouth	G. W. Weber	853,488	May 14	2244	468	128	609
Fruit-clipper	W. C. Myers	853,313	May 14	1934	400	128	530
Fruit-gatherer	G. Saum, Jr	853,833	May 14	2963	607	128	793
Fruit-picker	C. B. Hysom	853,458	May 14	2188	454	128	595

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Fruit-picker	M. B. Fields, Jr.	854,206	May 21	3742	773	128	1027
Fruit-picker	L. A. Sample	854,912	May 28	5123	1066	128	1409
Fruit sack or tray	C. W. Brewster	853,763	May 14	2822	580	128	759
Fulling-mill	J. E. Dowd	854,040	May 21	3381	697	128	934
Fume-destroying composition	H. Sanborn	854,533	May 21	4336		128	1177
Funnel	E. L. F. Fraley	855,397	May 28	6050	1263–4	128	1641
Funnel and measuring-receptacle. Combined	R. C. Stoewsand	853,427	May 14	2125	444	128	578
Furnace: *See* Boiler-furnace. Muffle-furnace. Crucible-furnace. Ore-roasting furnace. Glass-melting furnace. Smelting-furnace. Hot-air furnace.							
Furnace	W. McClave	853,721	May 14	2742	563–4	128	738
Furnace	M. V. Smith	854,851	May 28	4983	1037	128	1371
Furnace	A. Ducco	855,280	May 28	5873	1223–4	128	1597
Furnace-charging apparatus. Blast-	G. R. Johnson	854,016	May 7	1330	277–8	128	338
Furnace construction. Stack-	J. L. Hunter	853,698	May 14	2682	552–3	128	723
Furnace cover and making same. Pit-	G. E. Wisener	853,689	May 14	2617	542	128	706
Furnace draft-controlling device	G. R. McDermand and E. C. Blackburn	854,428	May 21	4147	859	128	1131
Furnace-feed	G. C. Crow	854,875	May 28	5056	1052	128	1390
Furnace fire-box. Steam-boiler-	I. Livingstone	853,099	May 7	1469	306–7	128	372
Furnace for heating disk wheels or the like	A. Wiecke	854,974	May 28	5234	1090	128	1430
Furnace-grate	E. Gibson	854,485	May 21	4257	880	128	1118
Furnace-roof	F. D. Halstead and L. C. Andrews	852,835	May 7	945	193	128	241
Furnaces. Apparatus for burning fuel in	E. M. Bunce	854,798	May 28	4877	1013	128	1343
Furnaces, gas-generators, &c. Device for charging	H. Rehmann	853,420	May 14	2114	441	128	574
Furniture. Combination	D. Froehlich	853,630	May 14	2546	528	128	686
Furniture in rooms. Means for mounting	N. C. Merrill	854,171	May 21	3660	758	128	1005
Fuse	A. M. Mazer	853,105	May 7	1479	309	128	373
Fuse or cut-out. Electric	L. B. Buchanan	853,296	May 14	1884	390	128	513
Fuse. Percussion-	W. Schwartz	852,903	May 7	881	179	128	225
Fuse. Time-	C. Baker	854,977	May 28	5237	1091	128	1437
Fuses or cut-outs. Indicating device for electric	L. B. Buchanan	852,539	May 7	325	58	128	89
Fuses or cut-outs. Indicating mechanism for electric	L. B. Buchanan	854,327	May 21	3953	817	128	1084
Gage: *See* Automatic gage. Saw-tooth gage. Boiler water-gage. Scribe-gage. Carpenter's gage. Sewing-machine gage.							
Game apparatus	H. E. Reed	852,904	May 7	1092	224–5	128	279
Game apparatus	W. F. Vining	854,278	May 14	1828	381–2	128	495
Game apparatus	J. S. Mather	853,463	May 14	2196	456–7	128	596
Game apparatus	W. W. Kohler	854,581	May 21	4432	921	128	1201
Game apparatus	L. D. H. Fuller	854,640	May 21	4535	946	128	1227
Game apparatus	E. C. D'Yarmett	854,937	May 28	5169	1077	128	1420
Game apparatus	F. R. Kistler	854,951	May 28	5189	1081	128	1425
Game appliance	F. L. Slazenger	854,313	May 21	3934	812	128	1078
Game-counter	G. H. Barker	852,758	May 7	769	152	128	200
Garment. Combination-	C. W. Bartrum	852,695	May 7	655	127	128	171
Garment-fastener	A. B. Reid	853,319	May 14	1944	402	128	532
Garment-fastener	W. F. Peet	853,561	May 14	2393	498	128	647
Garment-fitting device	S. W. Postel	853,731	May 14	2760	568	128	743
Garment receptacle, rack, and the like	J. W. Gilmore	852,554	May 7	348	62	128	95
Garment-supporter	J. M. Steinhardt	852,858	May 7	1006	209	128	256
Garment-supporter	H. C. Green	853,080	May 7	1437	301	128	364
Garment-supporter	F. J. Naramore	854,230	May 21	3795	783	128	1041
Gas-absorber	F. W. Allan	855,035	May 28	5369	1115	128	1409
Gas-analyzing apparatus	W. Jones	854,696	May 21	4660	971	128	1258
Gas. Apparatus for charging liquids with carbonic-acid	F. D. Green and J. P. MacLearn	855,243	May 28	5790	1207	128	1577
Gas-boiler	C. Rayer	853,995	May 21	3309	681	128	918
Gas-burner	J. L. Maloney and E. S. Springer	853,021	May 7	1338	279	128	340
Gas-burner	S. Stewart	853,654	May 14	2594	538	128	699
Gas-engine	H. J. Henry	853,303	May 14	1911	397	128	522
Gas-engine	W. H. Hooper and F. S. Hutchins	854,092	May 21	3518	726	128	969
Gas-engine	R. Levering	854,096	May 21	3526	727	128	971
Gas-engine	W. F. Brehm	854,981	May 28	5244	1092–3	128	1438
Gas-engine	J. H. and J. H. Birch	855,223	May 28	5748	1197	128	1564
Gas from gasolene. Apparatus for extracting	J. D. Bowles and G. H. Kammerich	853,915	May 14	3141	642–3	128	836
Gas. Generating	J. R. Coutts	852,930	May 7	1150	237	128	293
Gas. Generating producer-	M. F. Mangelsdorff	854,228	May 21	3792	782	128	1040
Gas generator. Acetylene-	G. W. Dayton	853,400	May 14	2083	433	128	566
Gas generator. Acetylene-	F. E. Stover	853,746	May 14	2790	573–4	128	751
Gas generator. Acetylene-	H. G. Leisenring	853,807	May 14	2897	596	128	776
Gas-generator for fumigation	S. F. Aaron and S. H. Hamilton	854,617	May 21	4491	936	128	1216
Gas-generator. Siphon-	S. F. Aaron and S. H. Hamilton	854,681	May 21	4615	962	128	1247
Gas-generator. Siphon-feed	S. F. Aaron and S. H. Hamilton	854,682	May 21	4617	962	128	1247
Gas generators. Automatic water-feed for acetylene-	H. G. Scott	852,701	May 7	153	27	128	47
Gas generators. Carbid-feed for acetylene-	N. D. Shaffer and J. S. Benton	853,125	May 7	1512	315	128	381
Gas-governor	F. Ellis	852,425	May 7	29	7	128	10
Gas-heated boiler	R. C. Bishop	852,698	May 7	658	128	128	173
Gas-lighter. Electric	E. H. Pryer	854,177	May 21	3679	761	128	1008
Gas-log	V. I. Richards	852,679	May 7	626	120	128	165
Gas machine. Acetylene-	J. R. Ricketts	852,690	May 7	492	91	128	129
Gas machine. Automatic gasolene-	A. L. Ellis	852,780	May 7	826	166	128	211
Gas. Manufacturing	J. J. Busenbenz	855,094	May 28	5507	1142–3	128	1504
Gas-producer	C. H. Morgan and A. J. Gifford	852,516	May 7	274	50–1	128	75
Gas-producer	W. B. Hughes	852,957	May 7	1200	247–8	128	305
Gas-producer	W. B. Hughes	852,958	May 7	1201	248	128	305
Gases for general anæsthesia. Apparatus for generating and administering	C. R. Cummins	853,165	May 7	1582	329	128	400
Gasifier	M. Stewart	853,653	May 14	2592	538	128	699
Gasket	J. R. Whittemore	854,135	May 21	3603	743	128	988
Gate: *See* End-gate. Head-gate.							
Gate	H. L. Jones	853,088	May 7	1451	304	128	367
Gate	C. Mercer	854,370	May 21	4032	834	128	1104
Gate	H. Wells	854,392	May 21	4072	842	128	1113
Gear-evener and power-indicating means	M. I. Wilson	854,070	May 21	3474	716	128	958

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Gear for motor-vehicles. Reverse-	W. A. Salter	853,120	May 7	1504	313–14	128	380
Gear. Reversing-	F. E. Fairman	852,939	May 7	1169	241	128	297
Gearing	J. Parker	855,068	May 28	5440	1128–9	128	1489
Gearing. Friction-	J. F. Hinck	854,037	May 21	3390	699	128	936
Gearing-shifting device	L. A. Frayer and W. J. Miller	854,480	May 21	4241	878	128	1155
Gearing. Speed-changing	R. E. Lincoln	854,747	May 28	4770	991	128	1317
Gem-holder	M Engelsman	854,158	May 21	3643	753	128	999
Generator: *See* Gas-generator. Steam-generator.							
Generator. Device for controlling the output of	E. T. Ford and W. F. Bauer	853,301	May 14	1904	396	128	520
Gin-rib	J. Gilmer	853,235	May 14	1750	364	128	475
Gin-saw cleaner	J. C. Hollingsworth	854,166	May 21	3658	757	128	1003
Girder-separator	C. H. Kellogg	852,665	May 7	603	114	128	157
Glass-fastening device	G. C. Wright	852,783	May 7	196	35	128	57
Glass-feeding machine	W. A. Mansfield	854,511	May 21	4208	880	128	1169
Glass making machine. Sheet or plate	W. W. Keyes	855,185	May 28	5684	1182–3	128	1549
Glass-melting furnace	C. F. Cox	854,273	May 21	3866	798	128	1060
Glass-mold-charging mechanism	J. H. Croskey	852,932	May 7	1155	237–8	128	293
Glass-plate-grinding machine	C. Schwarz and J. Bortzner	852,626	May 7	502	93	128	132
Glassware-manufacturing apparatus	J. Schies	855,344	May 28	5964	1245	128	1620
Glassware-manufacturing apparatus	J. Schies	855,345	May 28	5967	1245–6	128	1620
Glassware-manufacturing machine	A. S. Reichel	854,236	May 21	3804	785–6	128	1043
Glazier's tack	R. C. Zepnick	854,263	May 21	3847	794	128	1054
Glove	D. Mackay	852,972	May 7	1237	254	128	315
Gluing blanks. Machine for	P. S. Smith	853,480	May 14	2230	465	128	605
Gold from magnetic sands. Apparatus for separating	E. Gates	854,997	May 28	5285	1098–9	128	1448
Golf-club	W. R. Orthwein	855,016	May 28	5329	1106	128	1460
Governor	C. R. Cude	854,275	May 21	3869	798	128	1060
Governor	C. Lorenz	854,658	May 21	4566	954	128	1235
Governor. Engine-	S. S. Hall	854,418	May 21	4128	853	128	1127
Graders. Side-draft attachment for road-	T. F. Bryan	852,565	May 7	449	83	128	119
Grading-machine for building and repairing roads	W. A. Jones	854,894	May 28	5090	1059–60	128	1402
Grain and seed cleaner	H. H. Dunning	854,987	May 28	5255	1094–5	128	1441
Grain-assorter	J. K. and J. R. Voorhees	854,443	May 21	4180	866–7	128	1140
Grain-binder. Automatic	J. A. Beckett	853,432	May 14	2133	445	128	580
Grain-cleaner	J. Peacock	854,757	May 28	4799	997	128	1323
Grain-cleaner and separator	T. M. Bales	854,623	May 21	4502	939	128	1218
Grain-conveyer	E. Whorrall	853,750	May 14	2802	575	128	753
Grain-drier	A. L. Brannock	852,765	May 7	784	156	128	204
Grain-drier	J. A. Higdon	855,312	May 28	5907	1232	128	1606
Grain-meter	A. Sonander	853,268	May 14	1811	377	128	491
Grain separating and vitriolizing machine	A. R. Ferguson	853,076	May 7	1432	299–300	128	363
Graining-machine	B. D. Marks	853,644	May 14	2566	531–2	128	691
Graining-machine	F. I. Matthews	854,170	May 21	3665	758	128	1004
Graining metallic plates. Apparatus for	C. M. Kneppler	854,953	May 28	5103	1082	128	1426
Graphophone-cylinder holder	W. Kreurich and F. Hammond	853,805	May 14	2894	595	128	776
Grapple	P. L. Niedermier	852,807	May 7	1081	223	128	277
Grass-cutter	C. F. Crosby	854,468	May 21	4225	874	128	1151
Grate-bar	J. A. O'Neill	852,739	May 7	734	144	128	192
Grate. Shaking and dumping	E. E. and H. L. Strothman	852,467	May 7	167	30	128	51
Grave-covering device	A. McMullen	854,833	May 28	4955	1030	128	1364
Grinding-machines. Eccentric work-holder for	A. B. Landis	855,320	May 28	5921	1235–6	128	1609
Grinding-mill	J. F. Winchell	854,861	May 28	5010	1042	128	1378
Grinding-mill quick release	A. J. Robinson	855,343	May 28	5963	1244–5	128	1619
Grinding-mill. Vertical-disk	A. M. Dellinger	855,099	May 28	5516	1145	128	1506
Grinding or surfacing calender bowls and the like. Apparatus for	I. Dronsfield	854,341	May 21	3980	822–3	128	1091
Grubber	D. Taylor, Jr.	853,840	May 14	2977	610–11	128	796
Guide. Illustrated	G. Kaufmann	853,089	May 7	1452	304	128	368
Gun-barrels by fluid under pressure. Means for cleaning and cooling	A. G. Winter	854,323	May 21	3947	816	128	1082
Gun-sight devices, &c. Screw-gear for	O. Grathering	854,999	May 28	5288	1099	128	1449
Gun-stock	E. J. Perrey	853,933	May 14	3186	653	128	847
Gun-stock	P. H. Clarisey	855,229	May 28	5759	1199	128	1568
Gun-stock	T. C. Johnson	855,181	May 28	5677	1181	128	1547
Gun. Take-down	K. Voller	855,366	May 28	6002	1253	128	1630
Gun with recoiling barrel	A. Bearse	855,381	May 28	6024	1257	128	1636
Guy-wire fastener	F. Raithel	852,610	May 7	487	90	128	128
Gypsum-burning kiln	F. C. Grocott	854,884	May 28	5080	1056	128	1397
Hair-curling device	F. J. Mooers	854,901	May 28	5109	1063	128	1405
Hair-pin	G. W. Fields	853,349	May 14	2000	413	128	546
Hair-straightening device	F. W. Brock	855,383	May 28	6027		128	1636
Hair-tonic and dandruff preventive	W. H. Smalley	855,140	May 28	5593	1163	128	1524
Hammer attachment	W. S. Ward	855,079	May 28	5483	1137	128	1499
Hammer. Forged-steel	O. P. Hughes	853,172	May 7	1505	332	128	403
Hammer. Machinist's wrench-	J. Frederick	853,508	May 14	2298	476	128	624
Hammer. Pneumatic	L. Wilson and F. I. Matthews	855,151	May 28	5621	1169	128	1533
Hammer. Power-	H. W. Bull	855,227	May 28	5757	1199	128	1567
Hammer-retracting device	H. N. Marvin and H. Casler	854,752	May 28	4781	992–4	128	1320
Hand. Apparatus for delineating character according to the character of the							
Handle: *See* Broom-handle. Umbrella-handle. Saw-handle. Stereoscope folding handle.							
Handle	E. R. Sargent	852,741	May 7	737	144	128	193
Handle	E. R. Sargent	852,742	May 7	738	145	128	193
Handle	E. R. Sargent	853,192	May 7	1637	340–1	128	414
Handling dirt and saving gold. Machine for	M. L. Proctor	854,702	May 21	4671	973–4	128	1261
Hanger: *See* Boiler-hanger. Lamp-hanger. Brake-hanger. Pipe-hanger. Car-door hanger. Shade-hanger. Clothes-hanger. Shade and curtain hanger. Clothes-line hanger. Coat-hanger. Suit-hanger. Curtain-hanger. Tobacco-hanger. Door-hanger. Trousers-hanger. Drying-hanger.							
Harness attachment	W. A. O'Bryan	852,576	May 7	413	75	128	110

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Harness back-band	B. W. Clendinen	854,628	May 21	4513	942	128	1222
Harness. Breast-chain spreader for	J. W. Wistar	855,270	May 28	5833	1216	128	1588
Harness for producing free action of the limbs of horses.	T. A. Shaver	854,536	May 21	4343	898	128	1179
Harness-trimmings. Means for attaching	G. Walker	853,568	May 14	2408	502	128	651
Harrow	S. B. Stark	853,523	May 14	2325	484	128	630
Harrow. Disk	C. N. Cass	853,160	May 7	1575	327–8	128	398
Harvester. Bean-	J. H. McEntire	854,591	May 21	4440	925	128	1205
Harvester binding mechanism. Corn-	W. H. Tilson	854,917	May 28	5131	1068	128	1410
Harvester. Corn-	M. Cook	854,629	May 21	4514	942	128	1222
Harvester. Cotton-	A. Campbell	853,916	May 14	3143	643–4	128	836
Harvesters. Carriage for	W. Bonus	853,674	May 14	2624	545	128	707
Harvesting-machine	E. Carey	852,496	May 7	232	41	128	66
Harvesting-machine	L. Christ and A. Megner	853,343	May 14	1985	410	128	543
Hasp-lock	W. K. Blodgett	855,087	May 28	5494	1139–40	128	1502
Hat-fastener	J. C. Morrison	855,013	May 28	5320	1105	128	1458
Hat-fastener. Lady's	J. B. Marshall	854,368	May 21	4029	833	128	1103
Hat-frame former	E. A. Howe	854,216	May 21	3761	778	128	1032
Hat-guard	H. Saundry	853,121	May 7	1506	314	128	380
Hat holder and band	W. A. Pierce	854,906	May 28	5116	1064	128	1407
Hat-holding device	W. H. Burden	855,279	May 28	5853	1220	128	1593
Hat-pin fastener	J. W. Cunningham	854,718	May 28	4718	981	128	1302
Hats. Guide for placing eyelets in	R. W. Fadden	851,637	May 21	4524	945	128	1224
Hatchets. Shingling-gage attachment for	F. A. Bogart	853,198	May 7	1647	343	128	416
Hay and grain loader	A. S. Johnston	853,797	May 14	2876	591	128	772
Hay and stock rack. Combined	R. B. Cheltz	852,870	May 7	1029	213	128	262
Hay buck and stacker. Combined	J. E. Liebhart	853,557	May 14	2388	497	128	645
Hay-cap	F. M. Hitch	852,606	May 7	467	86	128	124
Hay-dropper	W. A. Cook	854,929	May 28	5154	1073–4	128	1416
Hay-handling mechanism	M. H. Madsen	852,733	May 7	720	140	128	189
Hay-leveling device	C. Schutt	854,668	May 21	4479	934	128	1213
Hay-loader	M. Hardman	852,805	May 7	466	86	128	123
Hay-loader	A. J. Hansen	854,090	May 21	3514	725	128	968
Hay-press	J. N. Jeppesen and N. Michelsen	855,317	May 28	5915	1234	128	1608
Hay-press	J. Christensen	854,465	May 21	4217	872–3	128	1149
Hay-rake	J. W. Hamilton	854,736	May 28	4747	987	128	1310
Hay-rake	J. C. Hanks	852,433	May 7	46	10	128	15
Head-gate	M. R. Jenkins	855,006	May 28	5305	1102–3	128	1453
Head-rest for use in shampooing	W. F. Garbe	853,168	May 7	1588	330	128	401
Headlight	R. C. Nourse	853,592	May 14	2457	512	128	664
Headlight attachment	E. S. Gunn	852,505	May 7	255	46	128	72
Headlight for vehicles	C. T. McElvaney	855,122	May 28	5568	1157	128	1518
Headlight. Locomotive-	A. Le Blanc	852,247	May 14	1773	368	128	482
Heat-coil	W. H. Donaldson	854,876	May 28	5059	1052	128	1391
Heat-regulator. Electrothermostatic	F. B. Cook	854,272	May 21	3861	797	128	1058
Heater:	L. G. Copeman	852,773	May 7	795	159	128	206
See Curling-iron heater. Electric heater. Electrical heater. Feed-water heater. Fluid-heater. Sad-iron heater. Water-heater.							
Heater	C. H. Henzel	854,497	May 21	4275	884	128	1163
Heater and cooker	J. L. Adam	852,754	May 7	758	149–50	128	198
Heating and illuminating burner	H. Braby	853,057	May 7	1400	292	128	356
Heating apparatus	J. H. McPartland	852,797	May 7	968	176–7	128	292
Heating-coil shield	P. S. Knoth	853,092	May 7	1456	305	128	368
Heating system	J. F. Staudt	854,969	May 28	5225	1088	128	1434
Heating system. Circulating hot water in a	C. C. Peck	854,054	May 21	3430	707–8	128	947
Hedge-trimmer	J. T. Newberry	854,594	May 21	4453	926	128	1206
Heel for boots and shoes	A. F. Spencer	853,193	May 7	1638	341	128	414
Heel-seat-forming machine	S. J. Wentworth	854,320	May 21	3944	814	128	1081
Hemp fiber. Manufacture of artificial	F. Lehner	853,093	May 7	1457	.....	128	369
Hemp-treating machine. Manila-	E. E. Barton	852,410	May 7	2	1	128	3
Hexamethylenetetramin-sodium acetate double salt	P. Bergell	852,993	May 7	1283	.....	128	326
Hide and leather working machine	H. A. Holder	854,419	May 21	4129	856	128	1127
Hides or skins. Treating	S. K. Felton, Jr.	853,166	May 7	1583	.....	128	400
Hinge	C. Fielding	853,507	May 14	2396	475	128	624
Hinge	W. S. John	854,580	May 21	4431	920	128	1201
Hinge. Detachable	C. J. Tolnes	853,384	May 14	2062	427	128	562
Hinge-locking device	F. Gebhardt	853,872	May 14	3040	625	128	810
Hitching device	D. P. Goff	853,631	May 14	2549	528	128	687
Hoe	J. S. Lester	853,179	May 7	1604	334	128	405
Hog-stop and cattle-pass. Combined	D. K. Wilson	854,322	May 21	3946	815	128	1081
Hoist. Hanging staging-	H. O. Clarke and A. G. Ross	853,161	May 7	1577	328	128	398
Hoisting apparatus	J. S. Walker	853,387	May 14	2066	428	128	562
Hoisting-bracket	P. A. Nelson	854,302	May 21	3914	807	128	1072
Hoisting device	J. H. Downey	852,877	May 7	1039	215	128	265
Hoisting mechanism	A. A. McIntosh	855,332	May 28	5940	1239–40	128	1614
Hoof-pad	F. S. Handy and W. J. Hickey	854,034	May 21	3387	696	128	936
Hoof-pad	A. Larsen	855,188	May 28	5693	1185	128	1550
Hoof-trimming device	B. Huckleby	854,644	May 21	4545	949	128	1229
Hook:							
See Bill-hook. Brier-hook. Fastening-hook. Fish-hook. Pile-wire hook. Snap-hook.							
Hook and eye	A. B. Reid	853,320	May 14	1946	402	128	533
Hook and eye	A. B. Reid	853,377	May 14	2054	425	128	560
Hoop:							
See Mast-hoop.							
Horn	I. Alter	853,148	May 7	1558	324	128	394
Horn-support	W. L. Denlo	852,657	May 7	570	109	128	148
Horse-boot	H. O'Brien	853,259	May 14	1795	374	128	487
Horse-power	W. D. McAtlin	855,434	May 28	6122	1279–80	128	1657
Horse-releaser	M. L. Swingle	855,360	May 28	5992	1251	128	1627
Horses and mules. Foot-bath for	A. Byrd	853,533	May 14	2342	487	128	635
Horseshoe	A. A. Bumbaugh	852,540	May 7	327	58	128	90
Horseshoe	J. J. Lynes	852,887	May 7	1065	219	128	272
Horseshoe	G. T. Crandell	854,198	May 21	3720	772	128	1024
Horseshoe-calk	G. F. Hallman and E. S. Harnden	855,245	May 28	5796	1208	128	1579
Horseshoe-calk and making the same	C. and E. Ludvigsen	853,019	May 7	1336	278	128	339

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Horseshoe-calks. Making	R. Whitaker	855,082	May 28	5486	1138	128	1500
Horseshoe. Cushioned	W. R. Smith	854,852	May 28	4985	1038	128	1372
Hose and hose-pipe controlling-nozzle	T. Haley	854,641	May 21	4537	947	128	1227
Hose-coupling	C. C. Corlew	855,232	May 28	5765	1200	128	1569
Hose-supporter	F. Hirsh	852,954	May 7	1197	246	128	304
Hose-supporter	H. Binney	853,758	May 14	2814	578	128	756
Hose-supporter clasp	H. F. Rasor	852,617	May 7	489	90–1	128	129
Hot-air furnace	J. L. Berger	853,153	May 7	1563	325	128	395
Hot-air furnace	E. Abraham	853,851	May 14	2997	616	128	800
Hotel-indicator	G. Bitzer	852,492	May 7	215	39	128	62
Hub-attaching device	O. Beitler	852,412	May 7	4	2	128	4
Hub. Vehicle-	S. W. Cramer	852,823	May 7	919	188–9	128	235
Humidifying and air-conditioning apparatus	M. K. Smith and J. E. Davis	854,247	May 21	3821	789	128	1048
Husking-peg	J. W. Singmaster	855,350	May 28	5975	1247	128	1622
Hydrant	A. N. Hornung, Jr.	852,550	May 7	359	64	128	97
Hydraulic chair	J. Charlton	854,464	May 21	4216	872	128	1149
Hydraulic drill	G. W. Davies	853,774	May 14	2839	584	128	764
Hydraulic motor	A. A. Low	855,191	May 28	5696	1186	128	1551
Hydrocarbon-motor	C. Ellis and B. E. Eldred	854,157	May 21	3640	753	128	998
Hydrogen. Generating	F. Tyson	855,364	May 28	5996	1252	128	1628
Ice-cream freezer	C. H. Bradbury	853,493	May 14	2365	470	128	615
Ice-cream scraper	W. H. Craghead	854,631	May 21	4516	943	128	1222
Ice-cutting machine	W. T. McNabb and F. Enders	855,123	May 28	5569	1157	128	1518
Ice-tongs	A. D. Wilkinson	855,269	May 28	5833	1216	128	1588
Igniter. Electric	W. Sander	853,425	May 14	2124	443	128	578
Igniter for explosion-motors. Electric	U. A. Marga	854,367	May 21	4028	.....	128	1103
Impermeable, incombustible, insulating, and acid-proof material	J. J. Connell	853,577	May 14	2426	505	128	656
Implement-holder	F. H. Richards	852,452	May 7	85	18–22	128	25
Impressions. Machine for making	M. M. Johnson	854,648	May 21	4549	950	128	1230
Incubator-regulator support	A. E. Leavenworth	855,107	May 28	5540	1151	128	1512
Incubators. Automatic ventilation-regulator for	F. H. Schultz and M. H. Berkemeir.	854,110	May 21	3553	733	128	977
Index-machine	E. Johnson	853,087	May 7	1448	303	128	367
Indexing-machine. Thumb-noteh							
Indicator:							
See Clock-winding indicator. Hotel-indicator. Station-indicator. Street-indicator.							
Indicator	T. B. Rice, Jr.	852,979	May 7	1252	258	128	318
Indicator	H. Wilson	853,612	May 14	2506	520	128	677
Indicator	C. H. Bryant	853,001	May 7	1302	211	128	330
Induction-coil trembler	P. Bunet	852,702	May 7	666	130	128	174
Induction-motor	H. G. Reist	854,760	May 28	4804	998	128	1324
Induction-motor	R. D. Mershon	853,405	May 14	2202	458	128	596
Induction-motor and generator	A. B. Allen	853,451	May 14	2130	444–5	128	579
Inhaler	A. C. Clark	853,439	May 14	2150	448	128	584
Inhaler	C. H. Coles	853,626	May 14	2537	527	128	685
Inhaler	W. H. Winks	855,421	May 28	6099	1274	128	1652
Injector	L. D. St. Clair	854,542	May 21	4353	901	128	1181
Ink-well	C. R. Spicer	854,674	May 21	4602	960	128	1245
Inker	H. F. Beckman	853,753	May 14	2806	576	128	754
Inking mechanism	F. M. Ashley	853,213	May 14	1714	355	128	466
Inkstand	T. H. Newman	855,124	May 28	5570	1157	128	1518
Inkstand	A. Thoma	853,326	May 14	1958	405	128	535
Innersoles and the like. Applying reinforcing fabric to	J. W. Stodders	852,637	May 7	530	100	128	139
Insect-trap	F. Neville	853,315	May 14	1937	400	128	520
Insect-trap	C. J. Cotter	855,163	May 28	5641	1173	128	1538
Insole for shoes. Spring-	J. Sandler	852,625	May 7	501	93	128	132
Instep-support or arch-prop	O. T. Hungerford	854,218	May 21	3763	779	128	1032
Insulated electric conductor	H. J. Wade	852,688	May 7	643	123	128	168
Insulating bodies. Manufacturing heat-	L. Steinberger	853,743	May 14	2780	572	128	749
Insulating device	A. D. Whipple	855,081	May 28	5485	.....	128	1500
Insulating wire and other electrical conductors. Electrically	A. C. Savage	854,846	May 28	4975	1035	128	1369
Insulation. Fuse-box of molded	F. M. Locke	852,770	May 7	716	140	128	188
Insulator	H. D. Stauffer	854,315	May 21	3936	813	128	1079
Insulator	H. Sinclair	855,208	May 28	5727	1192	128	1559
Insulator	L. Steinberger	855,355	May 28	5981	1248–9	128	1624
Insulator. High-potential	L. Steinberger	853,744	May 14	2785	572	128	749
Insulator. High-tension	W. S. Lee, Jr.	855,253	May 28	5809	1210	128	1581
Insulator-pin	L. Steinberger	855,261	May 28	5819	1213	128	1584
Insulator-pin	L. Steinberger	855,262	May 28	5821	1213	128	1585
Insulator. Spiral-core	E. G. Adams	853,852	May 14	2999	616	128	801
Insurance system	D. Roberts	853,422	May 14	2120	442	128	576
Internal-combustion engine	P. Metzler	855,115	May 28	5551	1153	128	1515
Internal-combustion engine	F. Morey	855,256	May 28	5812	1211	128	1582
Internal-combustion engine							
Iron:							
See Curling-iron. Press or sad iron. Sad-iron. Waffle-iron.							
Iron straightener. Cold-	J. D. Keith and W. E. Faulkner	853,513	May 14	2308	478	128	626
Ironing-board	A. G. Hoerner	852,787	May 7	842	169	128	216
Ironing-board and washbench. Combined	A. Schedin	853,998	May 21	3313	682	128	919
Ironing-machine	L. Rosenbaum	854,169	May 21	3552	733	128	976
Jack:							
See Car-jack. Lever-jack. Lifting-jack. Wagon-jack.							
Jar:							
See Paste-jar.							
Jar-holder	H. Borneman	854,686	May 21	4624	964	128	1249
Jaw wrench. Sliding-	J. Morton	853,369	May 14	2035	421	128	554
Jewel-mounting	A. A. Boismaure	852,922	May 7	1138	235	128	290
Joint:							
See Bucket-joint. Expansion-joint. Pipe-joint. Rail-joint.							
Joint-marking tool	J. B. Colburn	855,044	May 28	5388	1120	128	1475
Journal-bearing for centrifugal machines	S. C. Anker-Holth	853,911	May 14	3134	641	128	834
Journal-box	W. W. Neighbour	853,026	May 7	1348	280	128	342
Journal-box	P. D. Schenck	853,476	May 14	2226	464	128	604
Journal-box	F. Hachmann	855,400	May 28	6053	1265	128	1642

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Journal-box and lid	C. G. Hawley	852,952	May 7	1193	245–6	128	303
Journal-box cover	E. G. Klnberg	853,460	May 14	2192	456	128	596
Journal-box for railway-cars. Pressed-steel	C. H. Cochran. (Reissue)	12,646	May 7	1607	351–2	128	427
Journal-box lid	T. H. Symington	855,362	May 28	5993	1251	128	1627
Journal-box. Railway	T. H. Symington	855,361	May 28	5992	1251	128	1627
Junction-box	E. T. Greenfield	852,431	May 7	43	9	128	14
Junction or outlet box	L. W. Bossert	854,195	May 21	3724	771	128	1023
Keg for white lead or other heavy materials. Bailed sheet-metal	C. Stollberg	853,382	May 14	2060	426	128	561
Kegs or barrels. Apparatus for pitching	G. E. O'Neill	853,516	May 14	2313	479–80	128	627
Key: *See* Brake-shoe key. Telegraph-key. Signaling-key.							
Kiln: *See* Brick-kiln. Gypsum-burning kiln. Drying-kiln.							
Kiln fire-box	J. F. Slater	853,130	May 7	1524	317	128	385
Knife: *See* Clasp-knife.							
Knife	R. A. Buggett	855,378	May 28	6019	1256	128	1635
Knitted fabric	L. N. D. Williams	853,667	May 14	2614	543	128	705
Knitted undergarment	Q. McAdam	855,320	May 28	5936	1238	128	1613
Knitting-machine	J. P. Sheppard	853,725	May 14	1954	404–5	128	535
Knitting-machine	L. N. D. Williams	853,668	May 14	2616	543	128	705
Knitting-machine	A. V. Groupe	854,885	May 28	5081	1056–7	128	1397
Knitting-machine bur-wheel support	A. A. Bailley	853,394	May 14	2076	431	128	564
Knitting-machine stop-motion. Automatic	J. B. Rhodes	853,032	May 7	1362	283	128	346
Knitting-machine yarn measuring and feeding device	D. Hurley and W. T. Barratt	855,316	May 28	5913	1233	128	1608
Knockdown box	F. R. Vernon	852,812	May 7	899	183	128	229
Lace	T. Anderson	854,619	May 21	4495	937–9	128	1217
Lacing device	R. J. Evans	853,075	May 7	1431	299	128	363
Lacing. Shoe	F. Thun	852,747	May 7	746	147	128	195
Ladder	C. De Cook	854,152	May 21	3632	751	128	996
Lamp-bracket	P. M. Wickstrum	854,785	May 28	4856	1008	128	1338
Lamp-burner	E. C. Babcock	853,856	May 14	3006	618	128	802
Lamp-burner	W. B. Grover	854,576	May 21	4426	919	128	1200
Lamp-burner	A. H. Handlan, Jr	855,055	May 28	5409	1123	128	1481
Lamp burner. Gas	E. E. Billow	852,538	May 7	321	58	128	89
Lamp-chimney fixture	F. H. Löhrs	853,462	May 14	2195	456	128	596
Lamp. Flash-light	H. F. Neumeyer	853,027	May 7	1349	281	128	342
Lamp. Gas	R. E. Bruckner	854,027	May 21	3376	695	128	933
Lamp. Gas	A. H. Humphrey	855,315	May 28	5911	1233	128	1607
Lamp hanger. Electric	A. S. Elliot	853,871	May 14	3038	625	128	810
Lamp hanger. Incandescent	M. J. Diemmer	853,444	May 14	2159	449	128	587
Lamp-holder	C. Bergener	852,759	May 7	770	152	128	201
Lamp. Miner's	R. L. Graves	853,078	May 7	1435	300	128	364
Lamp. Portable battery	S. W. Gibbs, Jr	853,352	May 14	2007	415	128	547
Lamp slack-adjuster. Electric	H. M. Grosch	853,238	May 14	1753	365	128	476
Lamp-socket. Cluster	R. B. Benjamin	852,489	May 7	205	38	128	59
Lamp-socket. Plural	R. B. Benjamin	852,491	May 7	213	39	128	62
Lamp-socket. Twin	R. B. Benjamin	852,490	May 7	210	38	128	61
Lamp. Three-phase-current arc	G. Seguenza	854,764	May 28	4812	999	128	1327
Lamp-trimming	H. R. Sargent	853,899	May 14	3109	637	128	828
Lamp. Vacuum-tube	D. M. Moore	854,089	May 21	3299	679	128	916
Lamp. Vacuum-tube	D. M. Moore	854,104	May 21	3540	731	128	974
Lamp. Vapor-burning	R. W. Zierlein	853,330	May 14	1964	406	128	536
Lamps and similar objects. Suspending device for electric-arc	E. Kuhne	854,827	May 28	4929	1026	128	1300
Lamps. Heating-frame for	Z. L. Brooks	854,266	May 21	3851	795	128	1055
Lamps. Manufacture of incandescent bodies for electric	A. Just and F. Hanaman	855,060	May 28	5419	.....	128	1484
Lamps. Multiple socket for incandescent	E. L. Elliott	853,231	May 14	1745	362	128	474
Lamps. Therapeutic and other electric	C. M. Robinson	853,829	May 14	2958	606	128	792
Land-leveler	J. W. Hutton	853,457	May 14	2187	454	128	595
Land leveler or ridger	S. A. Schafer	853,036	May 7	1369	285	128	348
Land-roller	B. A. Thomas	855,075	May 28	5474	1136	128	1490
Lantern or lamp post for use on small water-craft. Combined	G. S. Lockwood	853,310	May 14	1927	399	128	527
Lantern-slide and mat therefor	L. M. McCormick	855,121	May 28	5567	1156	128	1518
Lard and recovering waste lard from spent fullers' earth. Refining	S. T. Lockwood	852,441	May 7	60	12	128	18
Lard and recovering waste lard from spent fullers' earth. Refining	S. T. Lockwood	852,442	May 7	62	12	128	19
Larding-needle	J. Snyder	854,387	May 21	4059	839	128	1110
Last	E. J. Prindle	853,827	May 14	2955	606	128	791
Lasts. Bushing or thimble for	H. E. Howe	855,403	May 28	6061	1266	128	1644
Latch	H. G. Voight	854,065	May 21	3466	715	128	956
Latch	C. J. Englert	854,473	May 21	4231	875	128	1152
Latch and holder. Gate	J. Betts	854,193	May 21	3720	770	128	1022
Latch. Gate	C. H. Foster	852,550	May 7	342	61	128	93
Latch. Gate or door	J. S. Brown	853,764	May 14	2624	581	128	759
Latch-lock	H. Schmitt	854,847	May 28	4976	1035–6	128	1369
Latch mechanism	H. G. Voight	854,008	May 21	3335	685	128	924
Lathe	G. M. Fenn and C. D. Youngs	855,101	May 28	5523	1146–7	128	1508
Lathe carriage-feed mechanism	W. Runge	854,532	May 21	4334	896–7	128	1177
Lathe-driver	D. H. Teas	853,273	May 14	1820	379	128	494
Lathe for turning irregular shapes	M. H. Lyons	853,987	May 21	4291	877	128	914
Lathe-tool	W. P. Gehris	852,948	May 7	1181	243	128	300
Laundry-marker	G. L. Dixon	854,339	May 21	3977	821	128	1090
Laundry-stand	C. Erickson	853,300	May 14	1902	395	128	520
Lavatories. Knee-action supply-fixture for	W. G. Newton	853,726	May 14	2752	566	128	741
Leather-clamp	C. B. Rathbun	854,603	May 21	4470	931	128	1211
Leather-dressing machine	W. B. Turner	854,855	May 28	4989	1038–9	128	1372
Leather in different colors or shades. Dyeing granulated	G. Feldmann	854,032	May 21	3384	.....	128	935
Leather-polish	J. Newberry	854,755	May 28	4791	.....	128	1322
Leather skiving and splitting machines. Feed mechanism for	A. Hirth	854,500	May 21	4279	896	128	1164
Leather-stretching-machine clutch	E. L. Post	852,800	May 7	875	178	128	223
Ledger-leaf	J. Barker	854,710	May 28	4706	979	128	1299

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Leg supporter. Artificial	E. H. Erickson	854,282	May 21	3885	801	128	1065
Lens grinder. Bifocal	J. E. Graessle	853,970	May 21	3265	671	128	906
Lenses. Adjustable means for attaching	C. J. Troppman	852,588	May 7	442	81	128	117
Letter-box	N. T. Cheney	854,627	May 21	4512	942	128	1221
Levee-building machine	C. C. Jacobs	852,791	May 7	852	172–3	128	218
Level. Plumb	C. Larsen	852,512	May 7	269	49	128	74
Lever-jack	W. Trewhella	853,526	May 14	2330	485–6	128	632
Life-lines. Means for throwing	C. H. Banks	854,624	May 21	4504	939	128	1219
Life-preserver	K. J. Johansson	855,180	May 28	5676	1180	128	1547
Lifter: *See* Plate-lifter. Transom-lifter.							
Lifting-jack	J. J. Bradshaw	853,437	May 14	2147	447	128	583
Lifting-jack	W. Orsborn and L. Graeber	854,904	May 28	5113	1063	128	1406
Light: *See* Flash-light. Signal-light.							
Lightning-arrester	W. Gifford	855,300	May 28	5888	1227	128	1602
Lightning-conductor	W. P. Finn	852,548	May 7	339	60–1	128	92
Lightning-conductor	W. H. McCullough	852,572	May 7	403	74	128	106
Limit-switch	G. Baehr	854,015	May 21	3244	687	128	927
Link	W. A. Duffield	855,240	May 28	5874	1224	128	1598
Linotype-machine	W. S. Coe	852,822	May 7	917	188	128	234
Linotype-machine	B. Van Vlie	853,740	May 14	2790	575	128	753
Linotype-machine	D. S. Kennedy	853,801	May 14	2884	592–3	128	774
Linotype-machine	G. A. Hurley	854,168	May 21	3692	757	128	1004
Lip-turning machine	P. J. Flynn	854,412	May 21	4116	853	128	1124
Liquid-dispensing apparatus	J. J. Mackeown	854,097	May 21	3527	728	128	971
Liquid-dispensing apparatus. Coin-controlled	J. C. Bartlett	854,450	May 21	4194	869	128	1144
Liquid-heating system	B. Ljungström	855,189	May 28	5693	1185	128	1551
Liquid-separator. Centrifugal	S. M. Kintner and W. W. Hanks	854,295	May 21	3903	805	128	1070
Liquids. Separating	R. Alberti	854,011	May 21	3340	.....	128	926
Lithopones. Preparation of	E. N. Smith	854,245	May 21	3818	788–9	128	1047
Loader	J. K. Cuff	853,227	May 14	1741	361	128	473
Loading and unloading apparatus	A. R. Holmén	854,810	May 28	5089	1058	128	1399
Lock: *See* Bedstead corner-lock. Latch-lock. Binder-lock. Nut-lock. Bridge-rail lock. Padlock. Can-lid lock. Permutation-lock. Combination-lock. Pin-lock. Door-lock. Sash-lock. Door or sash lock. Seal-lock. Fence-lock. Stovepipe-lock. Hasp-lock. Switch-lock.							
Lock	A. Engelquist	852,832	May 7	938	192	128	240
Lock	H. P. Townsend	853,485	May 14	2250	467	128	608
Lock	S. T. Montrose	853,717	May 14	2735	562	128	736
Lock	F. X. Eckstein	854,638	May 28	5170	1077	128	1420
Lock attachment	A. B. Bennett	852,645	May 7	546	104	128	143
Lock-bolt	U. G. Smith	853,133	May 7	1530	319	128	386
Lock-shoe	H. A. Meikrantz	852,888	May 7	1067	219–20	128	272
Lock-strike	M. Georgenson and R. W. Burke	852,553	May 7	347	62	128	94
Lock tumbler mechanism	J. Hope, Jr	853,926	May 14	3165	648	128	842
Locomotive	C. J. Mellin	852,444	May 7	65	13–14	128	20
Locomotive buffer-beam	U. T. Westlake	854,131	May 21	3595	742	128	986
Locomotive-crane	G. E. Titcomb	853,842	May 14	2980	611–12	128	796
Locomotive-cylinder	C. J. Mellin	852,446	May 7	75	16	128	22
Locomotive reversing mechanism	C. J. Mellin	852,445	May 7	71	14–15	128	21
Locomotive safety device	T. H. Hale	854,290	May 21	3897	803	128	1068
Locomotive-tender	F. L. Horspool	852,509	May 7	264	48	128	73
Locomotive with steam-turbine drive	J. Stumpf	855,436	May 28	6125	1280	128	1658
Locomotives. Cable-reel apparatus for mining	H. W. Shaver	853,522	May 14	2323	484	128	630
Locomotives. Device and method for repairing	I. B. Michael	853,312	May 14	1933	399	128	529
Log-car dog	J. Hanley	855,103	May 28	5529	1147	128	1509
Log-hauler	A. O. Lombard	854,264	May 21	4020	832	128	1101
Loom	J. Lapalme	853,641	May 14	2503	521	128	691
Loom. Filling-replenishing	C. H. Draper	853,199	May 7	1648	343–4	128	417
Loom pick-finder	E. H. Ryon	853,400	May 14	2249	514	128	667
Loom picker-sticks. Lug-strap for	L. Pilling	852,522	May 7	284	52	128	77
Loom tufting mechanism	W. Pearsall	853,471	May 14	2215	461–2	128	601
Loom warp stop-motion	D. M. Hollins	854,167	May 21	3660	757	128	1003
Loom warp stop-motion	C. Adams	855,034	May 28	5368	1114–15	128	1469
Loom. Weft-replenishing	H. Smith and J. V. Langley	854,673	May 21	4597	960	128	1244
Loom with sliding front plate for the shuttle-boxes. Automatic shuttle-changing	W. I. Stimpson	853,839	May 14	2976	610	128	796
Loom with swinging front-plate for the shuttle-box. Shuttle-changing	E. S. Stimpson	855,356	May 28	5985	1249	128	1625
Looms. Combined parallel rocker and picking-stick check for	W. Leary	852,515	May 7	272	50	128	75
Looms. Multiplier mechanism for box	G. R. Forbes and G. W. Fraker	855,102	May 28	5526	1147	128	1509
Looms. Thin-place-detector mechanism for	R. E. Rhoden	855,341	May 28	5959	1244	128	1618
Low-water alarm	C. A. Lemen	853,309	May 14	1926	398	128	527
Lubricating device	J. S. Coates and G. F. Hart	855,386	May 28	6032	1259	128	1637
Lubricating device. Automatic	P. L. Passavant	853,469	May 14	2210	459	128	600
Lubricating means	B. M. Williamson and W. B. Ripley	854,975	May 28	5235	1070	128	1436
Lubricator: *See* Engine-lubricator. Valve-lubricator. Force-feed lubricator. Trolley-wheel lubricator.							
Lubricator	G. M. Wolcott	852,089	May 7	644	124	128	168
Lubricator	E. K. Barnes	853,946	May 21	3221	660–1	128	893
Lubricator	W. R. Eichenser	854,636	May 21	4523	914	128	1224
Lubricator	J. E. Crandall	854,874	May 28	5053	1051	128	1390
Macaroni, & . Machine for manufacturing	J. V. Ebel	855,438	May 28	6129	1281	128	1659
Machine-brake	W. Ferris	853,348	May 14	1997	413	128	545
Magnet-box and armature of magnet contained therein	C. D. Lanning	854,363	May 21	4020	831	128	1100
Magnets. Coil-clamp for rotary	C. A. Backstrom	853,333	May 14	1968	407	128	538
Mail-bag catcher	G. Benner and B. S. Rogers	853,572	May 14	2415	503	128	653
Mail-bag catcher and deliverer	D. R. Way	852,900	May 7	1009	209–10	128	257
Mail-bag catcher and deliverer. Combined	G. E. Perkins	853,472	May 14	2218	402	128	601

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Mail-bag-delivery apparatus	D. Smith	854,115	May 21	3563	735	128	979
Mail-box-delivery apparatus	E. S. Baughman	854,192	May 21	3719	770	128	1021
Mail catching and discharging apparatus	A. Kimber	852,792	May 7	856	173	128	219
Mail-chute	R. W. Ashley	854,866	May 28	5023	1044	128	1381
Mail-delivery cabinet. Rural	E. Paulson	853,318	May 14	1942	401–2	128	532
Mail-handling device for railway mail-serivce	C. F. Robinson	854,705	May 21	4680	975	128	1263
Malt extracts. Solidified diastatic	I. Pollak	853,934	May 14	3187	.....	128	848
Malting grain	K. I. Somló	854,003	May 21	3325	.....	128	922
Manifolding attachment	W. A. Rankin	854,703	May 21	4673	974	128	1261
Manifolding-pad	S. W. Gass	854,483	May 21	4250	879	128	1157
Manila copal, &c., insoluble in oil. Rendering	W. Baringer	854,071	May 21	3476	.....	128	959
Manure-fork	W. H. Compton	855,283	May 28	5859	1221	128	1595
Manure-spreader	C. Johnson	853,587	May 14	2946	599–10	128	690
Manure-spreader	E. Palm	855,126	May 28	5572	1158	128	1519
Map-holder	O. Nygren	853,468	May 14	2300	459	128	600
Masonry and concrete structure	D. B. Luten	852,971	May 7	1235	254	128	315
Masonry-tool	P. J. Courtney	853,164	May 7	1581	329	128	399
Mason's implement	R. Antoine	852,901	May 7	1276	265	128	325
Mason's pointing-tool	A. Elde	854,939	May 28	5171	1077	128	1420
Massage apparatus	D. C. Fisher	852,549	May 7	340	61	128	93
Massage-machine	R. V. Clark	854,963	May 28	5249	1093	128	1439
Massage-machine. Pneumatic	A. A. Wickland	854,548	May 21	4264	904	128	1183
Mast-hoop	P. J. Hansen	855,246	May 28	5797	1208	128	1579
Match-box	J. W. Hurd	854,579	May 21	4429	920	128	1201
Match-box	W. E. Edwards	854,991	May 28	5289	1096	128	1444
Match-lighter	J. G. McCarthy	854,960	May 28	5205	1085	128	1429
Match-machine	J. S. Woodbridge	854,863	May 28	5016	1043	128	1379
Match-making machinery	A. B. Calkins	854,870	May 28	5031	1045–7	128	1383
Match-making machinery	A. B. Calkins	854,871	May 28	5039	1047–9	128	1385
Matrices. Master-block for making	F. H. Brown, J. E. Hanrahan, and G. A. Boyden.	854,459	May 21	4209	871	128	1148
Matrices. Master-block for producing	F. H. Brown, J. E. Hanrahan, and G. A. Boyden.	854,458	May 21	4208	871	128	1147
Matrix-making master-block	F. H. Brown, J. E. Hanrahan, and G. A. Boyden.	854,456	May 21	4205	870	128	1147
Mattress	F. H. Brown, J. E. Hanrahan, and G. A. Boyden.	854,457	May 21	4206	871	128	1147
Mattress-frame	S. H. Weston	853,049	May 7	1388	289	128	353
Maze. Revolving or rotary-action	R. W. Miller	854,900	May 28	5108	962	128	1405
Measure. Tape	R. Lowe	855,642	May 14	2565	531	128	941
Measuring apparatus	E. A. Christoph	852,771	May 7	792	158	128	205
Measuring apparatus. Tailor's	G. P. Hemstreet	852,718	May 7	693	134	128	182
Measuring device	C. Cavaglia	855,272	May 28	5837	1217	128	1589
Measuring device	W. C. Fogle	853,768	May 14	2831	582	128	761
Measuring electric currents. Method of and apparatus for	O. T. Blathy	854,476	May 21	4234	876	128	1153
Measuring instrument	E. Schaeffer	853,216	May 14	1717	356	128	467
Measuring instrument. Electric	F. Holden	854,762	May 28	4807	999	128	1325
Measuring instrument. Electrical	J. Abrahamson	853,790	May 14	2864	589	128	769
Measuring, winding, and weighing machine. Combined	C. W. Cottrell	854,709	May 28	4705	979	128	1299
Meat-chopping machine	F. W. Orth	854,467	May 21	4223	874	128	1151
Meat-saw	J. E. Smith	853,394	May 14	3099	635	128	824
Mechanical motor	B. M. Ruse and H. D. Oxley	853,479	May 14	2229	464	128	605
Mechanical movement	B. Hall	854,607	May 21	4478	933–4	128	1213
Mechanical movement	F. H. Richards	852,783	May 7	836	168	128	213
Mechanical movement	H. H. A. Sievers	853,191	May 7	1628	340	128	411
Mechanical movement	F. Loenning and C. Hudson	853,478	May 14	2228	464	128	604
Mechanical movement	F. H. Richards	853,514	May 14	2310	478–9	128	627
Mercury-meter	F. Holden	854,056	May 21	3438	709–10	128	948
Metal-bending machine	C. E. Weeks	853,790	May 14	2860	588–9	128	769
Metal bodies. Producing compound	J. F. Monnot	854,067	May 21	3470	715	128	957
Metal. Manufacturer of cast	R. C. Totten	853,716	May 14	2722	562	128	734
Metal. Reticulated	N. E. Clark	854,126	May 21	3588	.....	128	985
Metal sheets. Tinning or coating	L. C. Steele	854,927	May 28	5152	1073	128	1415
Metal-workers. Electric heater for	J. O. Luthy	854,006	May 21	3330	684	128	923
Metals from their ores. Extracting	W. L. George	852,732	May 7	718	140	128	189
Metals from their ores. Extraction of	R. Lamb	854,998	May 28	5287	.....	128	1449
Metallic oxids. Reducing	F. M. Becket	852,478	May 7	54	11	128	17
Metallic pipe. Flexible	F. H. Rutherford	854,018	May 21	3340	.....	128	928
Metallic tie and rail-fastener	R. M. Toy	852,580	May 7	425	78	128	112
Metallic tie and rail-fastener	L. Simpson and J. Stein	853,043	May 7	1380	287	128	351
Metallic tie and rail-fastener	W. F. Durfee	853,741	May 14	2777	571	128	747
Metallic tie and rail-fastener	J. Hogbin and F. Ketley	853,869	May 14	3033	623	128	808
Metallic tie and rail-fastener	F. F. Kamp, Jr., and R. K. Gundy	854,501	May 21	4281	886	128	1165
Metallic tie and rail-fastening	J. T. Hallam	854,504	May 21	4286	887	128	1166
Meter: *See* Coin-slot meter. Electric meter. Grain-meter. Mercury-meter. Test-meter. Water-meter.		854,492	May 21	4266	882	128	1161
Meter connection	A. L. Holmes	855,314	May 28	5910	1233	128	1607
Meters. Device for recording the reading of	G. E. Hawkins	853,637	May 14	2557	530	128	690
Milk containing cream. Obtaining concentrated	C. H. Campbell. (Reissue)	12,649	May 14	3203	657	128	852
Milk cooler and aerator	C. H. White and A. S. MacKay	855,371	May 28	6011	1254	128	1633
Milk-sampler	W. F. Bücher	854,563	May 21	4401	913	128	1194
Milk-separator. Centrifugal	C. Bergner	853,054	May 7	1395	291	128	355
Milk-vat	G. H. Simon	854,537	May 21	4345	899	128	1179
Milking apparatus. Cow-	J. Hartnett and D. M. Robison	854,643	May 21	4541	948	128	1228
Milking-machine	L. Burrell	854,268	May 21	3854	796	128	1056
Mill: *See* Coffee-mill. Fulling-mill. Grinding-mill. Stamp-mill.							
Mineral-separator	C. U. Shepard	853,603	May 14	2477	515	128	669
Minerals. Agglomerating	W. G. Perkins and T. Cox, Jr.	852,611	May 7	477	.....	128	126
Miner's blast-charger	W. G. Peay and G. W. Ham	852,900	May 7	1086	224	128	278
Miner's checks. Device for collecting	F. C. Greene	853,971	May 21	3267	671	128	907
Mines, &c. Apparatus for detecting the presence and volume of fire-damp and other light gas in	J. McCutcheon	852,805	May 7	1079	222	128	276
Mining-auger	C. C. Lockhart	855,108	May 28	5842	1151	128	1512

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Mining-drill	W. Hauxwell	854,350	May 21	3999	826	128	1095
Mining machine. Portable placer-	J. E. Penrick and J. O. Hale	855,200	May 28	5710	1188–9	128	1555
Mirror. Combined hand and stand	J. A. Wright and W. F. O'Neill	852,864	May 7	1019	211	128	260
Mirror-holder. Portable	F. P. Fisher	852,600	May 7	581	110	128	152
Mixer: *See* Boiler-compound mixer. Fiber-mixer. Concrete-mixer.							
Mixing-machine	J. D. Campbell	854,029	May 21	3379	696–7	128	934
Mold: *See* Building-block mold. Butter-mold. Ceiling-mold. Centering-mold. Concrete-mold. Concrete-building-block mold. Concrete-construction mold. Plastic-block mold. Type-casting mold. Type-casting-machine mold.							
Mold	P. B. Miles	852,448	May 7	79	17	128	23
Mold	J. F. Hill and C. M. Peckham	854,214	May 21	3756	777	128	1031
Mold	D. N. Thomas and L. O. Burk	854,613	May 21	4485	935	128	1214
Mold	P. A. Bowaher	855,091	May 28	5501	1141	128	1503
Mold and centering device	J. B. Blaw	853,951	May 21	3235	663	128	898
Mold-box. Interchangeable	W. R. Cunningham	853,442	May 14	2155	449	128	585
Mold box or pan	G. Matthews	852,608	May 7	409	87	128	124
Mold-preparing machine	L. P. Dages	854,932	May 28	5157	1075–6	128	1417
Molds. Machine for forming pig-iron	E. Gurry	853,633	May 14	2550	529	128	687
Molding-machine	J. H. B. Bryan	852,494	May 7	218	39 40	128	63
Molding-machine	J. Blumer	853,861	May 14	3018	620	128	806
Molding-machine	E. L. Dawes and J. F. Whitehead	854,690	May 21	4637	965–7	128	1254
Moldings. Device for cutting	P. F. Limacher	854,297	May 21	3906	806	128	1070
Monument	H. H. Hansen	853,407	May 14	2094	436	128	569
Mop	J. E. Hulse	853,793	May 14	2869	590	128	770
Mop	G. H. Akridge	853,941	May 14	3196	655	128	850
Motion. Automatic device for producing intermittent	P. A. Brown	852,700	May 7	662	129	128	173
Motion. Means for imparting rotary reciprocating	P. T. Cofield	853,440	May 14	2152	448	128	585
Motion or power. Means for imparting	J. Thomas	854,776	May 28	4835	1004	128	1333
Motive-power purposes. Apparatus for utilizing the motion of sea-water for	J. Fortuny y Banús	852,661	May 7	582	111	128	152
Motor: *See* Back-geared motor. Current-motor. Electric motor. Hydraulic motor. Hydrocarbon-motor. Induction-motor. Mechanical motor. Pneumatic motor. Wave-motor. Wave-power motor. Wind-motor.							
Motor control	W. L. Merrill	853,711	May 14	2708	559	128	731
Motor control	M. W. Day	854,721	May 28	4722	982	128	1303
Motor-control device	A. Kidd, Jr.	854,743	May 28	4761	989	128	1314
Motor-control system	W. S. Moody	853,830	May 14	2935	603	128	786
Motor-controller	F. W. Stull	852,468	May 7	170	30	128	51
Motor-drive	W. F. Lautenschlager	853,703	May 14	2691	554–5	128	726
Motor-generator sets. Equalizing loads on	J. B. Taylor	854,773	May 28	4831	1003	128	1332
Motor-governing mechanism. Prime-	F. Ellicott	852,658	May 7	571	109–10	128	149
Motor governor. Prime-	F. Ellicott	852,779	May 7	809	162–6	128	211
Motor-starting mechanism. Explosion-	J. A. Ageron and B. J. M. Remy	853,615	May 14	2518	522	128	680
Motors at a distance. Controlling	N. C. Bassett	854,712	May 28	4708	979–80	128	1300
Motors. Method of and means for governing prime	F. Ellicott	853,230	May 7	1656	344–6	128	418
Mouth-brace	H. Lorenz	854,898	May 28	5106	1062	128	1404
Movement-cure device	L. E. Richmond	855,342	May 28	5961	1244	128	1619
Mower attachment. Lawn-	M. Ketterer	854,424	May 21	4139	857–8	128	1129
Muffle-furnace. Recuperative	L. C. Hamlink	852,506	May 7	256	46–7	128	72
Music-leaf turner	T. Lo Casto	853,366	May 14	2029	420	128	553
Music-leaf turner	A. E. and E. Beh	853,571	May 14	2414	503	128	652
Music-playing instrument. Autopneumatic	F. C. White	852,752	May 7	754	149	128	197
Music-playing instrument. Autopneumatic	F. C. White	852,813	May 7	901	183	128	230
Music-rack and leaf-turner. Combined	H. E. Van Vleck	854,129	May 21	3592	741	128	985
Music-sheet	W. H. Rees	855,413	May 28	6082	1271	128	1649
Music-turner	R. H. Foster	852,944	May 7	1174	242	128	298
Musical instrument	C. F. Doughton	853,536	May 14	2345	488	128	635
Musical instrument. Autopneumatic	F. C. White	852,751	May 7	751	148	128	196
Musical-instrument controller. Mechanical	J. W. Sutton	855,145	May 28	5601	1165	128	1527
Musical-instrument key-action	B. R. Kiessig	853,884	May 14	3078	632	128	820
Musical-instrument key-action	B. R. Kiessig	853,885	May 14	3080	632	128	820
Musical instrument. Stringed	D. Feather and A. Culp	853,686	May 14	2660	548	128	718
Musical instruments. Controlling device for automatic	G. H. Davis	854,689	May 21	4629	965	128	1250
Musical instruments. Music-roll for mechanical	H. P. Ball	855,038	May 28	5376	1117	128	1471
Mutoscopes. Exhibiting-reel for	E. W. Livermore	853,811	May 14	2906	597–8	128	779
Nail-chuck	J. A. Milliken	853,931	May 14	3180	651–2	128	846
Nail-driver	H. W. Scheve	854,180	May 21	3685	763	128	1010
Nail-trimming device	M. M. Ryan	853,832	May 14	2962	607	128	792
Name-plate and register for doors. Combined	J. H. Palge	854,598	May 21	4458	927	128	1208
Nautical signal	F. C. Berwick	852,594	May 7	448	83	128	119
Necktie	C. W. T. Davies	852,824	May 7	922	180	128	235
Necktie-fastener	W. Hodgkinson and E. F. Clarkin	853,880	May 14	3066	629	128	817
Neckwear	J. W. Frost	854,284	May 21	3888	802	128	1046
Needle-threading device	K. B. Buerger	853,706	May 14	2828	581	128	760
Nest	C. C. Ibson	854,219	May 21	3764	779	128	1032
Net. Hair-	G. Grumbar	853,012	May 7	1326	216	128	337
Neuroptometer	F. Kennedy	854,093	May 21	3520	726	128	970
Note-sheets. Marking for	P. K. Van Yorx	854,064	May 21	3464	714	128	955
Nozzle-holder	J. H. Ruff	854,178	May 21	3681	762	128	1009
Nozzle-pleasometer	F. B. Sanborn	852,581	May 7	428	78	128	113
Nozzles. Regulating means for hydraulic	G. J. Henry, Jr.	853,786	May 14	2856	587	128	768
Nut. Axle-	T. Milligan	853,712	May 14	2711	550	128	732
Nut grading and shelling machine	J. C. Crellin	853,056	May 7	1414	295	128	359
Nut-lock	A. Anderson	852,535	May 7	310	56	128	84
Nut-lock	J. J. Jennings	852,841	May 7	954	196	128	242
Nut-lock	J. Dawkins	853,005	May 7	1308	272	128	331
Nut-lock	C. S. Clark	853,062	May 7	1406	293	128	357

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Nut-lock	F. E. Bartz	853,150	May 7	1560	324	128	394
Nut-lock	G. S. Gray	853,237	May 14	1752	364	128	476
Nut-lock	G. C. Wooddell	854,260	May 21	3842	794	128	1053
Nut-lock	F. C. Ott and W. A. Kost	854,380	May 21	3049	857	128	1108
Nut-lock	W. H. Devoe	854,471	May 21	4228	875	128	1152
Nut-lock	H. M. Cheek and C. P. Brooks	854,800	May 28	4881	1014	128	1344
Nut-lock	W. H. Phillips	855,018	May 28	5331	1107	128	1460
Nut-lock	E. J. Foreman	855,396	May 28	6048	1263	128	1641
Nut-lock	G. W. Mims	855,408	May 28	6071	1269	128	1646
Nut. Lock-	E. H. Musser	854,580	May 21	4448	924	128	1205
Nut-lock for rail-joint fastenings	C. F. Clawson	852,928	May 7	1147	236	128	292
Nutmeg container and grater	A. Walbrecker	853,661	May 14	2608	541	128	703
Nutmeg-pulverizer	C. L. Newton	853,725	May 14	2751	566	128	740
Oar-blade	G. A. Alger	855,423	May 28	6702	1275	128	1653
Oil-burner	G. W. Doxsie	853,401	May 14	2095	433	128	567
Oil-burner	C. S. Cannon	852,597	May 7	453	83–4	128	120
Oil-burner	H. E. Armitage	854,553	May 21	4372	906	128	1185
Oil-check for lubricator drain-passages. Automatic	W. E. Bryant	854,797	May 28	4875	1012–13	128	1343
Oil-cloth protector	M. I. McMillan	853,190	May 7	1626	340	128	410
Oil. Extracting cotton-seed	M. Bird	858,759	May 14	2816	.....	128	757
Oil from crude oil. Obtaining lubricating-	W. J. Ryan and C. R. Burke	854,057	May 21	3446	710	128	951
Oil or gasolene can	T. W. Alexander	854,618	May 21	4494	937	128	1217
Oil-spreader	W. M. Murray	853,720	May 14	2740	563	128	738
Oils and fats with heavier fluids. Combining	T. E. Smith	855,071	May 28	5454	1131	128	1491
Oils. Eliminating the odors of fish-	A. de Hemptinne	852,662	May 7	585	111	128	152
Older. Multiple sight-feed	G. B. Essex	855,167	May 28	5648	1175	128	1540
Older. Windmill-	L. C. Pond and G. C. Wagner	854,964	May 28	5214	1086–7	128	1431
Oiling machine. Fiber-	F. Spivey	855,025	May 28	5350	1111	128	1464
Opening die	H. H. Welsh, Jr.	853,289	May 14	1862	387	128	505
Optical images. Apparatus for transmitting to a distance real	E. Belin	853,755	May 14	2809	577	128	755
Opticians' use. Trial-frame for	J. W. C. Smith	855,022	May 28	5345	1110	128	1461
Ordnance aiming device	S. K. v. Eeseghy	853,007	May 7	1310	273–4	128	332
Ordnance-sight	H. C. Mustin and G. N. Saegmuller.	853,024	May 7	1342	280	128	340
Ordnance sighting apparatus	L. V. Benét and H. A. Mercié	854,558	May 21	4386	909–11	128	1190
Ore. Apparatus for sintering fine	J. G. Bergquist	853,433	May 14	2137	446	128	580
Ore-feeder	H. Eggers	853,346	May 14	1993	412	128	545
Ore-roasting furnace	W. H. Smyth	854,760	May 28	4815	1000–1	128	1327
Ore separating and concentrating machine	W. P. Clifford and W. W. Rankin	853,917	May 14	3147	644	128	837
Ore-separator	L. D. and S. P. Hall	853,782	May 14	2850	586	128	767
Ore-separator. Magnetic	E. A. Edwards	855,166	May 28	5645	1174	128	1539
Ore-treating apparatus	T. D. Pitts	854,526	May 21	4321	894	128	1174
Ores. Preparing and reducing	E. Pollacsek	851,527	May 21	4323	.....	128	1175
Ores. Treating	J. W. Boileau	853,575	May 14	2422	504	128	654
Outlet-box	L. T. La Paugh	854,045	May 21	3412	704	128	942
Outlet-box	L. T. La Paugh	854,046	May 21	3414	705	128	942
Outlet-box. Adjustable	M. D. Baron	855,155	May 28	5628	1171	128	1535
Oven. Bake-	J. E. Scott	853,323	May 14	1951	403	128	534
Oven. Baker's	W. Tank	853,748	May 14	2798	574–5	128	752
Overhead carrier	A. Hannaford	852,784	May 7	838	168	128	214
Oxids. Production of active matter for accumulators with mixed	H. Fredet	854,940	May 28	5172	.....	128	1421
Oyster-dredge hoist	J. P. Kemp	855,184	May 28	5682	1182	128	1548
Ozonizer	H. N. Potter	854,965	May 28	5219	1087	128	1432
Package and holder for garments or the like. Shipping	M. M. Strauss	854,062	May 21	3360	713	128	955
Packing	M. Collins	853,003	May 7	1305	272	128	331
Packing	C. B. Shepard	854,672	May 21	4596	959	128	1244
Packing and display device	S. R. Slaymaker	855,070	May 28	5452	1130–1	128	1491
Packing. Conical-ring rod-	T. W. Mitchell	854,580	May 21	4466	924	128	1204
Packing for rotary blower-shafts	T. W. Green	853,632	May 14	2549	528	128	687
Packing former and replacer. Piston-	J. J. Hannon	853,973	May 21	3370	671–2	128	907
Packing. Hydraulic	C. F. Rigby	854,239	May 21	3812	787	128	1026
Packing. Metallic	W. M. Brooke	854,409	May 21	4096	855	128	1110
Packing. Metallic rod-	E. A. Bryant	852,701	May 7	664	129	128	174
Packing or gasket	E. L. Perry	854,234	May 21	3801	784	128	1043
Packing. Rod-	O. J. Garlock	852,714	May 7	687	133	128	180
Packing. Rod-	O. J. Garlock	854,287	May 21	3892	802	128	1057
Packing. Shaft-	A. H. Eddy	853,506	May 14	2295	475	128	623
Packing-strips. Machine for making	W. Diehmann	855,235	May 28	5774	1202–3	128	1573
Pad: *See* Hoof-pad. Manifolding pad.							
Paddle-wheel	L. P. Biggers	853,055	May 7	1396	291	128	355
Padlock. Permutation-	I. Williams and W. H. Garland	853,569	May 14	2410	502	128	652
Paint and varnish remover	J. F. Dickson	853,685	May 14	2659	.....	128	718
Paint for ships' bottoms	G. G. Scholbert	854,241	May 21	3814	.....	128	1046
Painted. Stand for revolubly supporting articles to be	J. S. Anthony, Jr.	855,219	May 28	5741	1195	128	1563
Painter's utensil	C. Fischer	854,638	May 21	4525	945	128	1224
Painting machine. Sign-	W. A. Augustine	852,692	May 7	650	125	128	170
Pan: *See* Dish and drip pan. Pie-pan. Evaporating-pan.							
Panel boards and the like. Construction for	H. Krantz	854,654	May 21	4558	952	128	1232
Paper	E. L. White	852,918	May 7	1131	.....	128	288
Paper-bag holder	W. E. Morrow	853,185	May 7	1619	338	128	408
Paper-bag machine	W. H. Cline	853,918	May 14	3150	645	128	838
Paper-bag machine	W. A. Lorenz. (Reissue)	12,651	May 14	3210	657–8	128	853
Paper-box machine	A. W. Mitchell	852,974	May 7	1241	255–6	128	316
Paper-box machine	G. R. Wyman	853,613	May 14	2509	520–1	128	678
Paper-box-machine cutting mechanism	A. W. Mitchell	853,714	May 14	2712	560	128	732
Paper-cutter attachment. Roll-	F. H. Maass	855,321	May 28	5923	1236	128	1609
Paper-finishing machine	S. C. and R. B. Warner	853,610	May 14	2499	519	128	676
Paper-hanger's trimmer	E. E. Gobie	855,301	May 28	5880	1228	128	1602
Paper-hanging machine	A. V. Austin and N. M. Purviance	855,426	May 28	6106	1276–7	128	1654
Paper. Machine for producing water-mark effects on	E. Ilch	852,788	May 7	843	169	128	216
Paper-machine slitting-cutter	C. Koegel	852,964	May 7	1230	251	128	311
Paper measuring and cutting machine	H. W. Sanderson	854,179	May 21	3682	762–3	128	1009
Paper pads and books. Flexible back for	J. Maccallum	855,322	May 28	5924	1236	128	1610
Paper-treating composition	J. Czerny	854,470	May 21	4228	.....	128	1152

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Paste-applying machine	H. Weiskopf	853,048	May 7	1386	289	128	353
Paste-jar	R. Brooks	855,092	May 28	5503	1141	128	1504
Pasteurizing apparatus	F. Tyson	853,659	May 14	2605	540	128	702
Pattern-maker's tool	G. G. Richmond	853,321	May 14	1948	402	128	533
Patterns and the like on tissues. Production of transparent	A. Giehler	853,966	May 21	4258	.....	128	905
Pavement-block and making the same	S. Z. Ruff	853,034	May 7	1365	284	128	347
Paving-block. Bituminous	C. Richardson and C. N. Forrest	853,116	May 7	1499	.....	128	379
Paving machinery	F. B. Smith	853,131	May 7	1526	318	128	385
Pawl-press	C. Scherf	852,528	May 7	208	54	128	82
Peat-working machine	G. Matthews	852,609	May 7	471	87–8	128	125
Peeling apparatus. Vegetable	W. L. Weber	85[illegible],258	May 21	38[illegible]0	793	128	1053
Pen and pencil holder	F. L. Benstead	85[illegible],049	May 21	3351	688	128	928
Pen and pencil holder. Combined	G. Laube	852,514	May 7	271	50	128	74
Pen-clip or sustaining device. Fountain-	A. Martinelli	85[illegible],583	May 21	4456	922	128	1202
Pen. Drawing-	O. G. Mayer	85[illegible],595	May 21	4458	922	128	1202
Pen-extractor	H. A. Steiner	85[illegible],610	May 21	4482	935	128	1214
Pen. Fountain-	F. Y. Brenton	853,156	May 7	1569	326	128	396
Pen. Fountain-	H. B. Levy	854,226	May 21	3789	782	128	1040
Pen. Fountain-	W. C. Luther	854,227	May 21	3790	782	128	1040
Pen or pencil clip	V. L. Ochoa	854,378	May 21	4046	836	128	1107
Penholder	L. G. McConkey	855,331	May 28	5949	1239	128	1614
Pencil	F. H. Lippincott	853,098	May 7	1466	306	128	371
Pencil	J. D. R. Lamson	853,983	May 21	3283	75	128	911
Pencil-holder and point-protector	R. Klipfel	854,507	May 21	4291	888	128	1167
Pencil-holding device	H. L. Patzold	854,053	May 21	3430	707	128	946
Pencil-sharpener	D. Stamey	853,836	May 14	2969	608	128	794
Pencil-sharpener	W. A. Schenck	855,346	May 28	5939	1246	128	1621
Pencils. Eraser-holder for lead-	B. B. Goldsmith	851,487	May 21	4256	81	128	1155
Pencils. Eraser-tip for lead-	B. B. Goldsmith	854,488	May 21	4258	881	128	1159
Perambulator	A. Kazmeier	853,980	May 21	3280	674	128	910
Perforating-machine	A. L. Hart	854,822	May 28	4929	1024	128	1357
Permutation-lock	J. J. Murphy	854,427	May 21	4143	858–9	128	1130
Pessary	L. Nelson	854,593	May 21	4452	926	128	1206
Phonograph-horn support	W. L. Denio	852,656	May 7	568	108	128	148
Phonograph record-blanks. Manufacture of cylindrical	V. M. Harris	854,886	May 28	5084	1057	128	1397
Phonograph-record holder	T. V. Skelly	854,002	May 21	3322	683	128	921
Phonograph-records. Molding	V. M. Harris	854,887	May 28	5085	1057	128	1398
Phonograph system	W. and J. Patten	854,525	May 21	4318	894	128	1174
Phonographic-horn support	L. P. Halladay	853,357	May 14	2017	416	128	550
Photographer's light-regulator	A. C. Noveese	853,407	May 14	2208	459	128	599
Photographic apparatus	W. Verbeck	852,476	May 7	185	33	128	75
Photographic developing and fixing apparatus	A. C. Hayden	855,402	May 28	6057	1266	128	1643
Photographic developing-machine	F. A. Brownell	854,026	May 21	3372	694	128	932
Photographic paper	A. and L. Lumière	853,643	May 14	2565	.....	128	691
Photographic-printing machine	J. C. Calhoun	854,076	May 21	3487	719	128	962
Photographic shutter	R. Klein	852,962	May 7	1214	250	128	309
Photographic shutter	F. A. Brownell	853,000	May 7	1295	270–1	128	328
Photographic shutter	M. Klaiber	854,221	May 21	3768	780	128	1033
Photography. Flash-light	E. Russel	853,035	May 7	1366	284	128	347
Piano	R. N. Wells	852,917	May 7	1130	233–4	128	288
Piano-action	J. H. Deutsch	854,280	May 21	3881	800	128	1064
Piano. Automatic	J. A. Weser	855,370	May 28	6008	1251	128	1632
Piano. Bell-	F. Hirschfeld	855,056	May 28	5110	1123–4	128	1481
Piano case. Upright-	F. T. Steinway	855,143	May 28	5597	1164	128	1526
Piano-notes. Means for repeating	F. Pélissier	853,505	May 14	2461	513	128	665
Piano-pedal. Automatic	J. D. Pease	854,307	May 21	3923	809	128	1075
Piano. Self-playing	J. J. Healy	855,104	May 28	5531	1148–50	128	1510
Piano-zither	J. Juszczeski	855,059	May 28	5417	1125	128	1483
Pianos. Foot-rest for	W. E. Bailey and W. D. Reed	853,671	May 14	2620	544	128	706
Pianos. Repeating action for upright	C. Sauter	854,058	May 21	3447	710	128	951
Picker: *See* Fruit-picker.							
Picture apparatus	A. E. Colgate	853,441	May 14	2154	448–9	128	585
Picture effects. Device for producing moving-	E. Keen	853,609	May 14	2683	553	128	724
Picture exhibiting apparatus. Moving-	F. L. Dyer and D. Holden	854,199	May 21	3731	772	128	1024
Picture. Mechanical changeable	W. H. Hoyt	855,057	May 28	5413	1124	128	1482
Pictures, designs, &c. Producing	T. A. and J. B. Connolly	853,963	May 14	3021	620	128	806
Pie-pan	E. H. Lane	852,566	May 7	395	72	128	104
Pie trimming and crimping machine. Automatic	C. Oskamp	854,304	May 21	3917	808	128	1073
Pigments. Regenerating waste liquors from the manufacture of chrome	A. S. Ramage	855,019	May 28	5332	.....	128	1461
Pile fabric	J. Zimmerman	855,153	May 28	5624	1170	128	1534
Pile fabric. Woven	W. A. Minifie	853,713	May 14	2712	559	128	732
Pile-wire hook	J. H. Myers	853,819	May 14	2934	602	128	786
Piles. Apparatus for inserting	G. G. Fryer	853,581	May 14	2432	507	128	657
Piling. Metal sheet-	J. R. Wemlinger	855,030	May 28	5362	1113	128	1467
Pin: *See* Hair-pin. Rolling-pin. Insulator-pin. Safety-pin.							
Pin	E. Anderson	853,211	May 14	1708	354	128	464
Pin	F. H. Noble	853,258	May 14	1794	373	128	487
Pin-lock	E. L. Sprenger	853,907	May 14	3121	639	128	831
Pin-setter	H. J. Anderson	853,212	May 14	1709	354–5	128	464
Pipe: *See* Flanged pipe. Metallic pipe.							
Pipe and bolt cutting machine	G. E. Bohrer	852,762	May 7	777	154	128	202
Pipe-cleaner	L. W. Roe and L. J. Bonar	851,423	May 14	2121	442	128	576
Pipe connection. Sprinkling-	C. W. Skinner	852,584	May 7	436	79	128	115
Pipe coupling. Bell and spigot	S. R. Dresser	854,938	May 28	5166	1077	128	1419
Pipe coupling. Train-	C. W. Taylor	854,124	May 21	3584	739–40	128	984
Pipe-cutter	J. L. Beard	852,697	May 7	657	127	128	172
Pipe-fitting	F. Kinche	853,413	May 14	2103	439	128	571
Pipe-hanger	H. C. Taber	853,040	May 7	1374	286	128	349
Pipe-joint	A. M. Saunders	858,900	May 14	3110	637	128	828
Pipe-joint. Sewer and like	A. G. Brandram	852,997	May 7	1289	269	128	327
Pipe-pattern	H. Slade	854,765	May 28	4814	1000	128	1327
Pipe-wrench	E. C. Bates	855,380	May 28	6021	1257	128	1635
Piston-ring expander	O. Winter	855,031	May 28	5363	1114	128	1468

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Pistons. Automatic stop for	E. C. Thorschmidt	855,266	May 28	5829	1215	128	1587
Pivotally-mounted member	C. Aalborg	854,790	May 28	4861	1010	128	1339
Placket-closure	G. W. Prentice	852,902	May 7	1090	224	128	279
Planer-head	J. W. Gray	853,170	May 7	1593	331	128	403
Planing and sandpapering machine. Floor	G. J. Kepplinger	854,950	May 28	5186	1081	128	1424
Planing machine feed-roll. Wood-	C. E. Harper	854,642	May 21	4538	947	128	1228
Planter	T. J. Dudley	852,499	May 7	239	43-4	128	68
Planter	H. T. Monson	853,256	May 14	1791	373	128	486
Planter. Check-row corn-	E. Robinson	855,435	May 28	6124	1280	128	1658
Planting mechanism	N. B. Hodge	854,165	May 21	3657	756	128	1003
Plastic-block mold	H. A. Zurtuch	855,084	May 28	5488	1138	128	1500
Plastic-material-molding machine	H. H. Howell	852,839	May 7	950	195	128	242
Plate-lifter	E. F. Welch	853,529	May 14	2335	486	128	633
Platform, grate, or surface. Traveling	A. L. Simpson	853,129	May 7	1523	317	128	384
Plating-separating device	P. R. Greist	854,943	May 28	5176	1078	128	1421
Pliers. Holding-	O. N. Steenstrup	853,426	May 14	2125	443	128	578
Pliers. Jewelers' cutting-	H. B. Rowan	854,433	May 21	4155	861	128	1133
Pliers. Revolving	K. Weiss	852,479	May 7	189	34	128	56
Plow	M. D. Main	852,843	May 7	956	196	128	244
Plow	C. Bohrssen	852,996	May 7	1287	268-9	128	327
Plow	W. G. Danielsen	853,004	May 7	1306	272	128	331
Plow	R. J. Vickery and J. J. Dinsmore	853,047	May 7	1385	288-9	128	352
Plow	H. F. Brussow	853,158	May 7	1572	327	128	397
Plow	J. S. Click	853,961	May 21	3250	667	128	902
Plow	R. A. Armstrong	854,921	May 28	5141	1070	128	1413
Plow and planter. Combined lister	T. J. Dudley	852,777	May 7	801	160-1	128	208
Plow and roller. Furrow	C. E. Holbrook	855,313	May 28	5999	1232	128	1606
Plow attachment	C. L. Polk	854,909	May 28	5119	1065	128	1408
Plow-handles to beams. Means for attaching	T. M. Manning	854,750	May 28	4779	992	128	1320
Plow-heel. Adjustable	G. W. Simmons	855,148	May 28	5973	1246	128	1622
Plow. Motor-	A. Miersch	853,205	May 7	1681	347	128	424
Plow. Steam-	J. W. Vaniman	853,046	May 7	1383	288	128	352
Plow. Sulky-	W. S. Graham	854,821	May 28	4926	1021-4	128	1356
Plow. Traction gang-	C. J. Johnson	854,423	May 21	4137	857	128	1129
Plow. Wheeled	A. B. Frenier	853,448	May 14	2165	450-1	128	588
Plug and receptacle. Attaching	F. C. De Reamer	852,708	May 7	677	131	128	177
Plumb-bob	A. Crotchett	854,931	May 28	5156	1074	128	1417
Plumb-bob support	A. M. Parsons	852,676	May 7	622	119	128	162
Pneumatic carrier	M. B. Riffo	853,937	May 14	3191	654	128	848
Pneumatic-cushion wheel	M. A. Holzmark	852,436	May 7	51	10	128	16
Pneumatic-despatch apparatus	F. R. Talsey	852,913	May 7	1123	232	128	286
Pneumatic-despatch apparatus	F. R. Talsey	852,914	May 7	1125	232-3	128	286
Pneumatic elevator	K. Brüchle	853,677	May 14	2629	545-6	128	709
Pneumatic motor	J. H. Chase	852,820	May 7	913	187	128	233
Pneumatic-service carrier	M. B. Riffo	853,936	May 14	3190	654	128	848
Pocket and other case	W. E. Edwards	854,989	May 28	5264	1095	128	1442
Pocket and other case	W. E. Edwards	854,990	May 28	5266	1096	128	1443
Pocket. Apparel-	J. Dean	853,068	May 7	1417	296	128	359
Poke. Animal-	J. F. Carter	854,567	May 21	4408	914	128	1106
Pole-climbing apparatus	J. A. Roth	852,623	May 7	498	92	128	131
Pole-support	A. J. Nelson	852,896	May 7	1080	223	128	276
Pole-tip	J. T. Jacobsen	852,561	May 7	383	69	128	101
Pole-tip	W. T. McCauley	852,571	May 7	402	73	128	106
Polishing composition	T. A. D. Ackley	854,448	May 21	4195	.....	128	1144
Pool and billiard table cushion-rail	G. A. Lang	854,225	May 21	3788	781	128	1039
Pool-ball frame	T. H. Callahan	854,799	May 28	4880	1013	128	1344
Pool-table	H. L. Haskell	853,636	May 14	2556	529-30	128	680
Portable chair	E. Domagen and F. L. Kujawa	854,154	May 21	3635	752	128	997
Portable elevator. Revolving	T. J. McCarthy	854,961	May 28	5206	1085	128	1429
Post: *See* Fence-post. Lantern or lamp post.							
Post and show-window fastener. Expansion-	G. C. Marr	855,195	May 28	5704	1187	128	1553
Post-forming device	W. E. Snyder	855,353	May 28	5979	1248	128	1624
Post-hole digger	D. A. Gray	853,010	May 7	1321	275	128	335
Postal card. Self-fastening	A. B. Magoun	853,889	May 14	3042	634	128	823
Postal card. Souvenir	E. G. Adams	853,853	May 14	3000	617	128	801
Postmarking and canceling machine	M. V. B. Ethridge	854,815	May 28	4905	1020-1	128	1350
Potato-digging machine	E. G. Schreiber	853,601	May 14	2471	514-15	128	667
Potato-eye remover	A. C. Kent	853,306	May 14	1923	398	128	526
Potential-regulator	E. Lehr	854,829	May 28	4942	1027-8	128	1361
Pottery-glazing machine	R. M. Matthews	852,734	May 7	721	141-2	128	189
Poultry-fountain	A. K. Johns and W. Lansing	854,647	May 21	4548	949	128	1230
Powder-dispensing receptacle	E. Terry	853,658	May 14	2603	540	128	702
Powder. Making smokeless	M. A. G. Himalaya	853,085	May 7	1443	302	128	366
Power: *See* Horse-power							
Power. Storing hydraulic	L. Von Gerstenbergk-Zech	853,146	May 7	1554	323	128	393
Power system	G. Y. Bonus	854,980	May 28	5242	1092	128	1438
Power transmission	G. S. Binebaum	853,154	May 7	1565	325	128	396
Power-transmission mechanism	C. Macmillan	854,749	May 28	4774	991-2	128	1318
Power-transmitting device	J. I. Kinkead	853,553	May 14	2382	496	128	644
Power-transmitting device	D. S. Seymour	854,671	May 21	4594	959	128	1242
Press: *See* Baling-press. Brick-press. Cotton-press. Hay-press. Pawl-press. Printing-press. Punch-press. Punching-press. Web-press.							
Press	O. S. Gauch	852,629	May 7	30	8	128	13
Press or sad iron	J. B. Replogle	854,431	May 21	4151	860	128	1132
Presses. Gage-pin for platen-	O. C. Osterholm and J. D. Eastman	854,106	May 21	3545	732	128	974
Pressure-regulator	R. M. Dixon	854,340	May 21	3979	822	128	1091
Printing cloth, wall-paper, and other materials. Machine for	W. T. Hesketh	852,719	May 7	695	135	128	182
Printing device	J. S. Duncan	853,538	May 14	2348	489	128	636
Printing-frame	W. B. Young	855,375	May 28	6015	1255	128	1634
Printing impressions. Preparing transfer-surfaces for receiving	G. R. Cornwall	852,706	May 7	673	131	128	176
Printing-machine for all kinds of cloths or paper	J. M. D. Coutinho	853,159	May 7	1574	327	128	396

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Printing machine. Traveling-cylinder web-	L. W. Southgate	852,465	May 7	162	28-9	128	49
Printing-plate	E. Spitzer	854,675	May 21	4003	.....	128	1245
Printing-plate	E. Spitzer	854,676	May 21	4006	.....	128	1245
Printing-plate holder	W. K. Hodgman	852,786	May 7	840	168	128	215
Printing-press	R. Miehle	852,973	May 7	1238	254	128	316
Printing-press	B. W. Morgan	853,500	May 14	2452	511	128	662
Printing-press paper-sheet-feeding mechanism	J. E. Tucker	852,473	May 7	179	32	128	54
Printing-press paper-sheet-feeding mechanism	J. E. Tucker	852,530	May 7	209	55	128	82
Printing-press perforating and creasing attachment	H. G. Razall	855,339	May 28	5956	1243	128	1618
Printing-press vibrating roller	E. Nicholson	853,109	May 7	1489	311	128	376
Propeller	A. Flad	853,233	May 14	1740	363	128	475
Propeller	W. Schmid	853,999	May 21	3315	682	128	919
Propeller	J. Bermes	854,685	May 21	4022	963	128	1248
Propeller for vessels	H. R. Shaw	854,112	May 21	3550	734	128	978
Propeller, motor, pump, or blowing-engine. Machine with revolving wings or blades, applicable either as	H. Hückel	854,038	May 21	3392	699-700	128	937
Propeller. Oscillating	P. A. Peterson	852,521	May 7	282	52	128	77
Propeller. Screw-	W. Preidel	855,131	May 28	5580	1160	128	1521
Propelling and steering device. Vessel	W. O. Cutter	855,165	May 28	5643	1174	128	1539
Pulley	J. B. Dunlap	852,906	May 7	1309	273	128	332
Pulley. Clothes-line	F. V. Polakoskey	852,740	May 7	736	144	128	193
Pulley. Expansible	C. J. Reed	853,264	May 14	1802	375	128	489
Pulley. Sash-	C. H. Foster	852,551	May 7	343	61	128	94
Pulley. Split	E. Dietrich	854,934	May 28	5164	1076	128	1418
Pulp or liquid distributer. Revolving	E. H. Moyle	855,328	May 28	5934	1238	128	1612
Pump	F. G. Hobart	853,653	May 21	4003	827	128	1098
Pump	C. Bartholomew	854,711	May 28	4707	979	128	1299
Pump. Air-	M. Kohl	854,954	May 28	5195	1082	128	1426
Pump-crank	A. Margadant	853,707	May 14	2702	556	128	720
Pump. Direct-acting	W. Weir	855,150	May 28	5620	1168-9	128	1533
Pump. Electric	W. Lambert	853,806	May 14	2835	595-6	128	776
Pump-governor	C. R. Moore	855,065	May 28	5427	1126	128	1486
Pump. Liquid-measuring	G. Yanacopoulo	853,670	May 14	2689	544	128	706
Pump. Measuring-	T. Hentgen	855,310	May 28	5994	1231	128	1605
Pump. Oil-well	F. H. Taylor	854,255	May 21	3935	797	128	1051
Pump-operating means	E. O. Smith	854,314	May 21	3937	812	128	1079
Pump-piston	C. M. Ray	854,382	May 21	4052	837	128	1108
Pump. Rotary	W. J. and W. A. Leidell	852,508	May 7	397	72-3	128	105
Pump valve and cap. Combined	A. R. Foley	854,720	May 28	4737	985	128	1308
Pumps. Lift-valve and its guard for gas and liquid	W. Weir	852,589	May 7	443	81	128	117
Pumping and pulling device. Well	S. Lippert	853,180	May 7	1605	334	128	405
Pumping-engine	C. L. Heisler	853,350	May 14	2019	417	128	550
Punch. Pocket check-	R. W. Cox and J. H. Onirich	854,930	May 21	4515	942	128	1222
Punch-press	F. G. Marbach	852,413	May 7	464	13	128	20
Punching-bag platform	L. Bergmann	854,264	May 21	3848	795	128	1055
Punching press. Sheet-metal-	J. A. Eden, Jr.	854,706	May 21	4682	975-6	128	1263
Puzzle	W. H. Fallor	854,031	May 21	3383	697	128	934
Puzzle	W. Werner	854,547	May 21	4363	904	128	1163
Puzzle	G. A. Davis	854,719	May 28	4719	982	128	1303
Puzzle	W. D. McMillan	855,195	May 28	5706	1187	128	1554
Puzzle	W. S. Watson and F. Artz	855,268	May 28	5832	1215-16	128	1588
Quadrat	J. S. Duncan and J. B. Hall	855,236	May 28	5777	1203	128	1574
Rack: *See* Broom-rack. Checking-rack. Display-rack. Hay and stock rack. Music-rack.							
Radiator	F. Darlington	854,278	May 21	3875	799	128	1062
Rafting appliance. Log-	M. F. Brown	855,159	May 28	5635	1172	128	1537
Rail-anticreeper	N. E. Salsich	854,435	May 21	4157	861	128	1133
Rail. Ball-bearing	G. I. Barnes	853,620	May 14	2536	524	128	682
Rail-bond compressor. Hydraulic	J. Weeks	852,532	May 7	304	55	128	83
Rail-bond protector	L. B. Buchanan	854,328	May 21	3956	817	128	1064
Rail-bonds. Manufacture of	G. A. Mead	854,098	May 21	3533	725	128	972
Rail-brace	R. C. Stevens	854,252	May 21	3830	791	128	1050
Rail-brace	M. L. Swingle	855,264	May 28	5825	1214	128	1586
Rail-chair	J. Parker	852,449	May 7	80	17	128	24
Rail chock. Adjustable guard-	H. E. Miller	853,254	May 14	1785	371	128	486
Rail-cleaner	H. Quertier	854,068	May 21	4588	958	128	1241
Rail-clip	C. F. Clawson	852,927	May 7	1146	236	128	292
Rail-fastening	C. H. Ewing	854,728	May 28	4735	984	128	1307
Rail for roundhouses. Drop-	H. J. Drummond	853,808	May 14	3032	623	128	808
Rail-joint	D. C. Burrough	852,415	May 7	9	3	128	5
Rail-joint	G. W. Whiteman	852,990	May 7	1274	264	128	324
Rail-joint	E. B. Killen	853,090	May 7	1452	304	128	368
Rail-joint	W. M. Brown	853,221	May 14	1728	358	128	409
Rail-joint	J. O. Bridges	853,293	May 14	1877	389	128	511
Rail-joint	A. L. Stanford	854,770	May 28	4826	1002	128	1331
Rail-splice	J. Thomas	855,265	May 28	5826	1214	128	1586
Rail-spread-indicating device	J. A. Shires	853,126	May 7	1514	316	128	382
Rail-tie and fastening	W. J. Kost	853,554	May 14	2383	496	128	644
Rails. Rerolling	E. E. Slick	852,983	May 7	1257	260	128	320
Railway. Aerial	W. J. Hogan	853,788	May 14	2859	588	128	768
Railway cattle-guard and metallic cross-tie. Combined	C. Switzer and F. Sundman	853,135	May 7	1533	319-20	128	387
Railway-crossover	A. M. Jones	852,723	May 7	701	137	128	185
Railway-grading machine	O. C. Mann	853,928	May 14	3169	649-51	128	843
Railway-rail	J. N. Akarman	853,209	May 14	1703	353	128	463
Railway-rail	W. G. MacLaughlin	853,815	May 14	2916	599-600	128	782
Railway-rail brace	E. S. Barton	853,149	May 7	1558	324	128	394
Railway-rail fastener	W. S. Glasgow	855,053	May 28	5403	1122	128	1479
Railway-rail stay	H. H. Sponsenburg	854,190	May 21	3456	712	128	953
Railway safety appliance	E. L. Bell	854,398	May 21	4082	844	128	1116
Railway safety appliance	O. W. Jayne	854,503	May 21	4283	887	128	1165
Railway safety device	O. F. Kloetzer and W. A. Borders	853,886	May 14	3082	632-3	128	821
Railway-skiing. Drop-switch	W. R. Kirk	852,505	May 7	391	71-2	128	103
Railway-signal	H. G. Sedgwick	852,630	May 7	514	96	128	135
Railway-signal	F. H. Wendt	853,499	May 14	2246	468	128	609
Railway-signal	B. and D. Samuels	855,020	May 28	5333	1107	128	1461
Railway signal-fuse	F. Dutcher	853,777	May 14	2843	585	128	765

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Railway signaling system. Electric	A. Casale	854,926	May 28	5150	1072–3	128	1415
Railway-spreader	O. F. Jordan	852,880	May 7	1045	215–17	128	266
Railway-switch	S. J. Baxter and J. L. Carlyle	853,857	May 14	3006	618	128	802
Railway-switch	J. Harmer	854,944	May 28	5178	1078	128	1422
Railway-switch	E. Nordeg	855,067	May 28	5430	1127	128	1489
Railway-switch	A. W. Barthel	855,156	May 28	5030	1171	128	1536
Railway-switch	C. A. Woodbury	855,437	May 28	6126	1281	128	1658
Railway-switch. Automatic	S. C. Northrup	854,700	May 21	4985	972	128	1260
Railway switch. Automatic street-	J. A. Boquist	855,090	May 28	5500	1141	128	1503
Railway-tie	C. E. Will	853,390	May 14	2070	429	128	664
Railway-tie	J. G. Parkerson, Jr	853,593	May 14	2458	512	128	664
Railway-tie	E. T. Forrester	853,629	May 14	2545	528	128	686
Railway-tie	C. C. Daniels	853,773	May 14	2838	584	128	764
Railway-tie	W. Jacobson	853,978	May 21	3278	673	128	910
Railway-tie	D. P. Dunkle and J. N. Whetstone.	854,155	May 21	3637	752	128	997
Railway-tie	J. A. Willis	854,787	May 28	4857	1009	128	1338
Railway-tie	R. L. Bower	855,277	May 28	5840	1219	128	1592
Railway-tie and fastener	F. M. Crossley	852,542	May 7	330	59	128	90
Railway-tie and rail-fastener	F. C. Evans	854,993	May 28	5274	1097	128	1445
Railway-tie. Metallic	J. Kavier	853,176	May 7	1601	332	128	404
Railway-tie. Steel	V. C. Hutchins	852,437	May 7	53	11	128	17
Railway-track construction	W. Lee	853,308	May 14	1925	398	128	526
Railway-track rails. Bridle-rod for	H. W. Freeman	854,941	May 28	5174	1078	128	1421
Railway train-shed	A. L. Bush	855,160	May 28	5636	1172	128	1537
Railways. Electric block system for	W. R. Fuller	853,403	May 14	2087	434	128	667
Railways. Electrical switch-lock for	H. G. Sedgwick	852,629	May 7	512	95–6	128	134
Railways. Strain-adjuster for contact-wires of electric	J. Mayer	855,323	May 28	5925	1237	128	1610
Railways. Superstructure for narrow-gage	F. Nellen	854,962	May 28	5211	1085–6	128	1430
Railways. Suspender for the contact-wires of electric	J. Mayer	855,114	May 28	5549	1152	128	1514
Rake: *See* Hay-rake.							
Rake	E. W. Dowd	853,502	May 14	2287	474	128	621
Ramrod	H. P. Fitzgerald	855,297	May 28	5884	1226	128	1600
Ratan-straightening machine	D. F. Doherty and H. A. Palmer	852,896	May 7	924	189–90	128	259
Ratchet mechanism	R. C. Ellrich	855,292	May 28	5876	1225	128	1598
Ratchet-wrench	C. Miller	853,930	May 14	3178	651	128	845
Ratchet-wrench	J. N. Noyer	854,174	May 21	3674	750	128	1007
Razor	T. C. Durham	854,814	May 28	4904	1020	128	1349
Razor	S. I. Prescott	854,839	May 28	4965	1033	128	1367
Razor	S. I. Prescott	854,840	May 28	4966	1033	128	1367
Razor	S. I. Prescott	854,841	May 28	4968	1034	128	1367
Razor-blade holder	E. W. Wheeler	852,750	May 7	750	148	128	196
Razor-blade holder	C. W. Spence	854,915	May 28	5128	1067	128	1410
Razor. Safety-	R. J. Christy	853,940	May 21	3248	667	128	902
Razor. Safety-	W. H. G. King	854,506	May 21	4290	887	128	1167
Razor. Safety-	E. Krushus	855,252	May 28	5807	1210	128	1580
Razor-strop fastener	W. Whiteley	854,068	May 21	3471	716	128	958
Razor-stropping machine	E. G. Kaufman	853,800	May 14	2882	592	128	774
Razor-stropping machine	F. C. Bowden-Smith	853,958	May 21	3245	666	128	901
Receptacles. Means for closing	E. Sautter	852,981	May 7	1255	259	128	319
Recorder: *See* Time-recorder.							
Reel: *See* Fishing-reel. Wire-reel. Wagon-reel.							
Refrigerator	H. J. Shannen	853,834	May 14	2964	607–8	128	793
Refrigerator. Window-	B. Meyer	853,589	May 14	2451	511	128	662
Register: *See* Account-register. Fare-register. Cash-register.							
Regulator: *See* Burner-regulator. Temperature-regulator. Heat-regulator. Potential-regulator. Voltage-regulator. Pressure-regulator.							
Regulator	L. O. Wirt	854,893	May 21	4075	842	128	1114
Rein-holder	G. H. Fernald	853,544	May 14	2367	493	128	640
Relay	E. W. Vogel	855,365	May 28	5990	1252–3	128	1629
Relay. Reverse-phase	E. M. Hewlett	854,741	May 28	4758	988	128	1313
Resilient wheel	I. Gare	854,286	May 21	3891	802	128	1067
Resistance-box for electrical measurements	F. Aronson	852,536	May 7	312	57	128	85
Resistance unit	H. E. Heath	853,784	May 14	2852	597	128	767
Resistance unit	F. Mackintosh	854,748	May 28	4773	991	128	1318
Reversing-switch	C. A. Tunstall	855,147	May 28	5605	1166	128	1528
Rheostat. Motor-controlling	F. J. Seabolt	852,851	May 7	984	213	128	250
Ribbon-fastening machine	A. M. Magee and W. N. Earle	853,816	May 14	2918	600	128	752
Ribbon-feeding mechanism	A. O. Schmoliuski	852,850	May 7	981	202–3	128	249
Rock-drill	E. Leichter	853,555	May 14	2384	496	128	645
Rock-drill. Electric	J. Riddell and G. B. Painter	852,680	May 7	627	129–1	128	163
Rock. Fracturing	G. S. Githens	853,546	May 14	2370	494	128	640
Roller: *See* Land-roller.							
Roller	H. A. Volsard	853,277	May 14	1827	381	128	495
Roller-mount	C. Leonard-Stuart	855,254	May 28	5810	1211	128	1581
Rolling flanged shapes	E. E. Slick	852,985	May 7	1261	261	128	321
Rolling interlocking sheet-piling	E. E. Slick	852,984	May 7	1259	260–1	128	320
Rolling-pin	A. Cattlin	855,042	May 28	5386	1119	128	1475
Roof for mausoleums, tombs, vaults, &c	C. E. Tayntor	853,909	May 14	3126	640–1	128	832
Roof for mausoleums, vaults, &c	C. E. Tayntor	853,657	May 14	2601	540	128	701
Roofing. Composite	A. G. Hennion	854,740	May 28	4757	988	128	1313
Rope fastening or button	T. S. Miller and C. L. Wachter	854,957	May 28	5201	1083–4	128	1428
Rotary engine	W. M. Gentle	852,950	May 7	1187	244–5	128	301
Rotary engine	H. L. Baker and L. E. Irish	852,992	May 7	1276	265–6	128	325
Rotary engine	K. Sivertson	854,001	May 21	3320	683	128	920
Rotary engine	J. S. Barwis	854,141	May 21	3613	746	128	991
Rotary engine	A. Ghira	854,346	May 21	3992	825	128	1063
Rotary engine	J. E. Friend	854,374	May 21	4421	917–19	128	1199

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Rotary engine	G. Voith	854,783	May 28	4850	1007–8	128	1336
Rotary engine	H. A. Seitz	854,849	May 28	4981	1036	128	1370
Rotary engine	G. A. Kelly	855,009	May 28	5311	1103–4	128	1455
Rotary engine	J. C. Walker	855,028	May 28	5356	1112–13	128	1466
Rotary engine	J. M. Sparkes	855,072	May 28	5457	1131–3	128	1492
Rotary engine	J. M. Sparkes	855,073	May 28	5463	1133–5	128	1494
Rotary engine	S. F. Van Choate	855,148	May 28	5607	1166–8	128	1529
Rotary screen, ore sizer, and sampler	H. G. King	854,744	May 28	4764	989–90	128	1315
Roundabout	J. D. Walsh	854,859	May 28	5008	1041	128	1377
Routing-machine and the like	H. A. Renken	852,577	May 7	415	76	128	110
Rowing device	W. D. Gift	853,234	May 14	1749	363–4	128	475
Rubber coating. Making a solution for hard-	E. F. Upton and M. E. Fisher	853,429	May 14	2129	.....	128	579
Ruler. Desk-	H. F. Belcher	854,325	May 21	3949	816	128	1083
Ruling apparatus	W. L. Goodman	852,430	May 7	41	9	128	14
Sack-packer	G. M. Buskey	853,679	May 14	2632	546	128	709
Sad-iron	J. F. Willey and E. W. Watson	853,188	May 7	1541	321	128	389
Sad-iron heater. Electrical	C. V. Hill	853,694	May 14	2676	551	128	722
Saddle	P. S. Brodie	853,675	May 14	2625	545	128	708
Saddle	J. H. Gillespie	854,086	May 21	3507	723	128	966
Saddle-cushion	R. J. Benbow	852,593	May 7	447	82	128	118
Safe-door	E. Pascoe	853,825	May 14	2951	605	128	790
Safety or restraining device	M. E. McCalmont	853,025	May 7	1346	280	128	341
Safety-pin. Automatic	W. Coyle	853,865	May 14	3027	621	128	807
Safety-pin. Double-pointed	H. Kaspar	853,799	May 14	2881	592	128	773
Safety-switch. Automatic	W. R. Jenney	853,944	May 14	3201	656	128	851
Sail-reefing apparatus	J. V. Ericson	855,238	May 28	5779	1204	128	1574
Salt and pepper shaker	A. L. Buckland	855,278	May 28	5851	1219	128	1592
Salt-cellar top. Flexible	F. Bartlett	854,792	May 28	4865	1010	128	1340
Salts of volatile bases. Producing	T. Blass, J. L. Haehnlen, and W. W. Cox.	854,453	May 21	4200	869	128	1146
Salting machine. Can-	F. W. Burpee	854,075	May 21	3482	718–19	128	960
Sand-box	P. S. Keck	855,183	May 28	5680	1181	128	1548
Sander	D. B. Keesports	852,564	May 7	389	70	128	103
Sandpapering and polishing machine	M. L. Beal	854,625	May 21	4506	940	128	1220
Sash-fastener	C. E. Thomas	854,854	May 28	4988	1038	128	1372
Sash-frame and sash	J. G. Roseboom	852,621	May 7	495	92	128	130
Sash-lock	W. Stephens	854,250	May 21	3827	790	128	1049
Sash. Metallic window-	C. and D. A. Neidig	854,665	May 21	4578	956	128	1238
Sash. Removable guide for metal window-	F. D. Swaney	855,359	May 28	5980	1250	128	1627
Sash-ventilator	H. D. Harris	852,717	May 7	692	134	128	181
Sash. Window-	A. P. Hardee	852,604	May 7	464	86	128	123
Sash. Window-	J. G. Roseboom	852,622	May 7	497	92	128	130
Sausage-linking machine	H. R. Kuersten	854,044	May 21	3408	703–4	128	941
Saw	W. A. Miller	853,255	May 14	1786	372	128	496
Saw	T. L. Wallace	853,282	May 14	1838	383	128	499
Saw	W. Vartmann	853,609	May 14	2498	519	128	675
Saw-clamp	C. H. Spray	854,540	May 21	4349	900	128	1180
Saw. Crosscut-	L. Mütsch	854,102	May 21	3537	730	128	973
Saw-filing apparatus	F. J. Miller	853,988	May 21	3294	677–8	128	914
Saw-handle	W. B. McCain	854,517	May 14	4306	891	128	1170
Saw. Pneumatic log-	R. Fullerton	853,350	May 14	2000	414	128	546
Saw-set	J. V. Stromblom	853,747	May 14	2796	574	128	752
Saw-setting machine	T. C. Holselaw	852,838	May 7	949	194	128	242
Saw-tooth gage	L. M. Taylor	854,775	May 28	4834	1004	128	1333
Sawing-machine	W. Powell	853,030	May 7	1359	282	128	345
Sawing-machines. Self-feed for mortise and tenon	J. E. Erickson	854,410	May 21	4111	851–2	128	1123
Scaffold. Adjustable	W. J. Murray	854,059	May 28	5203	1084	128	1428
Scaffold attachment. Swinging-	W. B. Stoops	854,253	May 21	3831	792	128	1051
Scaffold-bracket. Adjustable	J. J. Dennis	853,944	May 14	1987	410	128	543
Scaffold-bracket. Folding	F. F. Haskell	854,163	May 21	3655	755	128	1002
Scale	H. F. Shaw	853,903	May 14	3115	638	128	830
Scale	F. A. Selley	854,009	May 21	4480	934	128	1213
Scale and chord circle	A. R. Fitch	854,572	May 21	4417	916–17	128	1198
Scale. Computing-	F. E. Gabbert	852,532	May 7	345	62	128	94
Scale. Track-	J. A. Rishel	852,980	May 7	1254	258–9	128	319
Scale. Weighing-	A. Chronik	853,770	May 14	2834	583	128	762
Scale. Weighing-	T. Gagnon	854,285	May 21	3880	802	128	1066
Screen: *See* Rotary screen. Window-screen.							
Screens. Fly-exit for window and door	W. H. Phillips and O. G. Williams	853,419	May 14	2113	440	128	574
Screw-cutting machine	C. Vogelsang	852,641	May 7	537	102	128	141
Screw-driver and combined tool-holder. Interchangeable and adjustable	V. E. Campbell	855,280	May 28	5854	1220	128	1593
Screw-thread-cutting die	F. D. Randall	853,506	May 14	2463	513	128	665
Scribe-gage	G. Cousino	854,333	May 21	3965	819	128	1087
Scythe-blade attachment	C. A. Mehaffey	854,051	May 21	3426	706	128	945
Seal-bolt	J. B. Orbison, F. C. Kingsbury, and A. J. Pray.	853,727	May 14	2754	566	128	741
Seal for bottles. Frangible	F. T. Robinson	854,844	May 28	4972	1034	128	1368
Seal-lock	A. D. Bentley	855,086	May 28	5492	1139	128	1502
Seal. Self-locking	W. F. Harris	853,240	May 14	1757	366	128	477
Sealing-cap. Metal	C. C. Parker	855,198	May 28	5707	1188	128	1554
Seaming machine. Can-	E. P. Datow	855,287	May 28	5866	1222–3	128	1596
Seaming machine. Lock-	A. D. Coleman and C. Stecher	854,872	May 28	5045	1049–51	128	1387
Seat: *See* Automobile folding seat. Car-seat.							
Seat attachment. Spring-	E. Anderson	853,616	May 14	2519	522	128	681
Secondary battery	T. A. Edison	852,424	May 7	26	6	128	9
Secondary battery	L. Lyndon	852,569	May 7	398	73	128	105
Sectional or compartment can	E. W. Carnes	853,497	May 14	2272	471	128	616
Seed-hull delinting-machine. Cotton-	W. Oliver	854,232	May 21	3797	783–4	128	1042
Separator: *See* Cotton-separator. Liquid-separator. Cream-separator. Milk-separator. Fibrous-material separator. Mineral-separator. Ore-separator. Girder-separator. Shaking-table separator. Ice-cream separator.							
Sewing and embroidering machine	A. Cornely	852,598	May 7	457	84	128	121

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sewing and embroidering machine	T. O'Neill	854,105	May 21	3542	731	128	974
Sewing-machine	J. G. Lewis	852,967	May 7	1224	251–2	128	311
Sewing-machine. Blindstitching	F. W. Merrick	854,660	May 21	4569	954–5	128	1236
Sewing machine. Buttonhole-	J. Klewicz	855,186	May 28	5688	1183–4	128	1550
Sewing-machine gage	D. Dantzig and J. Bonowitz	855,286	May 28	5865	1222	128	1596
Sewing-machine hemmer	T. S. Zachaira	853,145	May 7	1553	323	128	392
Sewing-machine hemmer	J. M. Greist	855,304	May 28	5895	1229	128	1603
Sewing machine. Looped-fabric-	J. B. Hipwell	853,015	May 7	1529	277	128	337
Sewing-machine presser-foot attachment	D. H. Hadsell	853,874	May 14	3042	625	128	811
Sewing-machine. Slack-thread-controller	W. H. Stedman	854,119	May 21	3572	737	128	981
Sewing-machine tuck-creaser	P. R. Greist	854,942	May 28	5175	1078	128	1421
Shade and curtain hanger	G. L. Brewer	855,429	May 28	6113	1278	128	1655
Shade fixture. Window-	R. D. Mayberry	854,515	May 21	4304	890	128	1170
Shade hanger. Window-	J. W. R. Bachman and E. M. Green	854,014	May 21	3343	686	128	926
Shade roller. Window-	J. Dudley	854,878	May 28	5063	1053	128	1392
Shade support. Window-	C. C. Brown	854,714	May 28	4713	980	128	1301
Shaft and pulley collar	E. L. Beal	853,214	May 14	1716	355	128	466
Shaft-bearing	W. H. Coldwell	853,225	May 14	1736	360	128	471
Shaft-coupling	G. B. Kinsler	853,307	May 14	1924	398	128	526
Shaft-coupling	R. L. Lowry	854,426	May 21	4142	858	128	1130
Shaft-coupling	E. Moewes	852,890	May 7	1070	220	128	273
Shaft-coupling. Hinged	E. Hensel	855,106	May 28	5539	1150	128	1512
Shaft. Flexible link-	P. Weber	853,662	May 14	2608	541	128	703
Shaft-hanger support	J. Buchheit	853,395	May 14	2078	431	128	565
Shaft. Vehicle-	F. T. Snyder	854,768	May 28	4820	1001–2	128	1329
Shaking-table separator	C. N. Detwiler	855,390	May 28	6038	1261	128	1639
Sharpener. Band-cutter	S. A. Cheney	853,399	May 14	2082	432	128	566
Sharpener. Lawn-mower	T. B. Criddle	854,632	May 21	4518	943	128	1223
Sharpening device. Hoe-	J. B. Davidson	852,873	May 7	1033	214	128	263
Sharpening knives. Steel for	S. Attanasio	853,751	May 14	2803	576	128	753
Shaving-cup	J. Cook and J. F. Brady	853,681	May 14	2636	547	128	710
Shears	C. B. Klein	854,952	May 28	5192	1082	128	1426
Sheep-shearing machine	J. K. Stewart	852,809	May 7	893	182	128	228
Sheet-feeding machine	F. L. Cross	854,079	May 21	3493	720	128	963
Sheet-feeding machine	H. Hallstream	854,088	May 21	3509	724	128	967
Sheet-feeding machines. Sheet-separating device for	E. Tyden	853,910	May 14	3130	641	128	833
Sheet-material feeding mechanism	W. G. Johnston	854,040	May 21	3397	701	128	938
Sheet-metal box	C. T. Wootten and A. P. Richardson.	853 143	May 7	1548	322	128	391
Sheet-metal can	F. Westerbeck	855,080	May 28	5484	1137	128	1500
Sheet-metal rim or felly	C. Heart	853,452	May 14	2176	452	128	592
Sheet-registering device	E. Dummer	853,628	May 14	2539	527	128	685
Sheet-separating mechanism	J. P. Knapp	854,222	May 21	3775	780–1	128	1035
Sheets. Controlling mechanism for machines acting on	F. L. Cross	854,078	May 21	3490	720	128	962
Sheets. Controlling mechanism for machines acting on	F. L. Cross	854,080	May 21	3495	721	128	964
Shelf-bracket	J. H. Morgan	852,975	May 7	1244	256	128	317
Shepherd's crook	C. Harding	853,876	May 14	3046	626	128	811
Ship construction	W. I. Babcock	855,154	May 28	5626	1170–1	128	1535
Ships. Circular conveyer for	J. C. Barr	854,684	May 21	4620	963	128	1248
Shipping-case	N. J. Busby	853,532	May 14	2340	487	128	634
Shirt-waist attachment	N. E. Hanna	854,737	May 28	4753	987	128	1312
Shirt-waist holder and skirt-supporter	M. E. McConnell	854,301	May 21	3913	807	128	1072
Shoe attachment	J. Crook and J. Schwartz	854,274	May 21	3869	798	128	1060
Shoe-polisher	M. Christenson	854,407	May 21	4107	849–50	128	1122
Shoe shank and ventilator. Combined	J. Ball	853,336	May 14	1972	408	128	539
Shoe-stretcher	O. W. Goodwin	853,077	May 7	1433	300	128	364
Shoe-stretcher	N. A. Lybeck	855,110	May 28	5543	1151	128	1513
Shoe. Swimming-	R. G. Ayers	855,377	May 28	6018	1256	128	1635
Shoe. Ventilating-	M. Villacampa y Villacampa	853,386	May 14	2065	428	128	562
Shoes. Stiffening-cap for	C. Wilmshöfer	853,140	May 7	1545	321	128	390
Shortening composition	F. A. Lallemand	852,966	May 7	1223	.....	128	311
Shovel: *See* Snow-shovel.							
Shovel-tooth	J. A. Parsons	854,838	May 28	4964	1033	128	1306
Show-case	M. S. Dietrick	852,875	May 7	1034	214	128	263
Shuttle	J. Robinson	854,531	May 21	4333	896	128	1176
Sidewalk cleaner. Cement-	F. V. Healy and J. H. Fox	853,171	May 7	1594	331	128	403
Sifter. Gyratory	J. M. Case	853,061	May 7	1405	293	128	357
Sight-feed	J. C. Hill	853,695	May 14	2677	551	128	722
Sign	P. Elleau	855,392	May 28	6043	1262	128	1640
Sign-displaying device	C. Hasty	853,083	May 7	1440	302	128	365
Sign. Mechanically-operated	J. A. Wiedemann	854,190	May 21	3717	769	128	1021
Signs and labels. Producing	C. H. Babbe and J. T. Hrody	852,693	May 7	652	125	128	171
Signal: *See* Alarm-signal. Block-signal. Nautical signal. Railway-signal.							
Signal	C. P. Ruggles	853,737	May 14	2770	570	128	746
Signal-light	A. W. Collom	853,499	May 14	2275	471–2	128	617
Signals. Clock mechanism for	F. O. Warner	854,066	May 21	3467	715	128	956
Signaling device. Torpedo	E. E. Blain	854,194	May 21	3722	770	128	1022
Signaling-key	O. F. Forsberg and J. A. Birsfield.	855,168	May 28	5650	1175–6	128	1541
Signaling. Receiver for systems of submarine	L. I. Blake	852,760	May 7	771	152–3	128	201
Signaling. Submarine	L. I. Blake	852,647	May 7	550	105	128	144
Signaling. Submarine	L. I. Blake	852,648	May 7	553	105	128	145
Signaling system	E. Garretson	852,502	May 7	246	45	128	70
Signaling system. Submarine	L. I. Blake	852,646	May 7	548	104	128	144
Signaling system. Supervisory	H. G. Webster	853,287	May 14	1856	386	128	504
Signaling. Transmitter for systems of submarine	L. I. Blake	852,649	May 7	556	106	128	145
Silo	A. O. Hubbard	853,606	May 14	2679	551 2	128	723
Silo	G. P. Younians	854,010	May 21	3337	685–6	128	925
Silver and formonucleinic acids. Compound of	O. Degner	852,543	May 7	334	.....	128	91
Silver and nucleinic acids. Compound of	O. Degner	852,544	May 7	333	.....	128	91
Skate. Motor	C. I. Matson	854,290	May 21	3909	806	128	1071
Skate truck. Roller-	C. F. Miller	852,570	May 7	399	73	128	105
Skate wheel. Roller-	W. W. French	853,447	May 14	2164	450	128	588
Skating-rink	F. L. Oleson	854,903	May 28	5111	1063	128	1405
Skiameter	N. K. Standart	852,857	May 7	1004	208	128	256

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Skirt-bottom-turning device	M. A. Kelly	854,204	May 21	3902	804	128	1069
Skirt or attachment therefor	W. Padernacht	853,993	May 21	3306	680	128	917
Skirt-supporter	W. C. Ladd	852,511	May 7	268	49	128	74
Skylight structure	W. F. Plass	854,235	May 21	3802	784	128	1043
Slack-adjuster	C. O. Anderson	853,210	May 14	1706	353	128	463
Slat-adjuster	J. C. Smith	852,856	May 7	1003	208	128	256
Sled. Cardboard	E. W. Burt and H. S. Chapin	853,624	May 14	2533	525	128	683
Sled-propeller	J. J. Hansel	855,306	May 28	5899	1230	128	1604
Sled-propeller	U. A. Imes and H. A. Skillin	853,796	May 14	2875	591	128	772
Slicer. Vegetable-	A. Brinnhäuser	853 294	May 14	1878	389	128	511
Slicing meat, sausages, and other edibles. Machine for	J. W. Esser	853,073	May 7	1427	298	128	362
Small-arms. Breech-loading	W. G. Perkins	852,613	May 7	481	89	128	127
Smelting-furnace	P. Vidal	854,670	May 21	4613	961	128	1246
Smoke-consumer	J. Boyd	854,794	May 28	4868	1011	128	1341
Smoke-preventer	J. E. Johnson	854,293	May 21	3901	804	128	1069
Snap hook	T. Watson	855,368	May 28	6005	1253	128	1631
Snap-hook	H. S. Farquhar	852,833	May 7	939	192–3	128	240
Snow-compressing and removing means	L. T. Frigon	852,945	May 7	1176	242	128	299
Snow-melting apparatus	M. Kotraschek	853,178	May 7	1603	333	128	405
Snow shovel and wagon	K. Nishimoto	853,824	May 14	2950	605	128	790
Soap-box	J. W. Hanlon	852,603	May 7	463	86	128	123
Soap-dispensing device	J. M. Davies	853,067	May 7	1416	295	128	359
Soap-holder	S. E. Bishop	855,428	May 28	6112	1278	128	1655
Soap-holder	A. E. Boardman	855,088	May 28	5498	1140	128	1503
Soap or other material. Cooling-frame for	F. Egge	855,291	May 28	5875	1224–5	128	1598
Soap-shaving device	A. Cerruti	852,869	May 7	1026	213	128	262
Soldering machines. Solder-feed for can-	W. F. Reulmann	855,133	May 28	5583	1162	128	1522
Sole-edge trimmer	G. K. Cheney	854,801	May 28	4882	1014	128	1345
Sound-records. Composition of matter for	H. O. Putt	852,615	May 7	485	89–90	128	128
Sound-wave intensifier	W. Thomson and E. W. Clark	852,810	May 7	895	182	128	228
Sounding-machine. Navigational	H. L. Lapham	852,727	May 7	711	138	128	187
Spark-arrester	A. Ballewski and W. Wessel	854,016	May 21	3347	687	128	927
Spark-arrester	C. V. Kerr	852,882	May 7	1055	217	128	270
Speed-governor	G. Wright	853,144	May 7	1549	322–3	128	391
Speed-transmission device. Variable-	S. C. Kindig	855,318	May 28	5917	1234	128	1608
Spike							
Spindle: *See* Wheel-spindle.							
Spinning or twisting machines. Tape-pulley for	F. W. Nims	853,371	May 14	2038	422	128	555
Spray for painting agricultural disinfecting, and other analogous purposes. Automatic	W. Tyree	854 317	May 21	3938	813	128	1080
Sprayer	F. G. Hobart	854,352	May 21	4002	827	128	1096
Spring: *See* Bed-spring.							
Spring device	C. Hainlin	854,087	May 21	3508	724	128	967
Spring for beds, seat-bottoms, &c	T. R. Woodward	854,919	May 28	5136	1069	128	1411
Spring structure	A. Stedman	853,384	May 14	2058	426	128	560
Spring-wheel	H. Neubert	853,418	May 14	2112	440	128	573
Spring-wheel	J. E. Rielly	854,238	May 21	3811	787	128	1045
Spring-wheel	S. S. Childs	854,982	May 28	5248	1093	128	1439
Spring-wheel	J. W. Cooper	855,095	May 28	5508	1143	128	1505
Spring-wheel	J. W. Cooper	855,096	May 28	5510	1143–4	128	1505
Spring-wheel	E. L. Thompson	855,077	May 28	5477	1136	128	1498
Sprinkler alarm device	J. C. Scott	855,205	May 28	5718	1190	128	1556
Sprinkler-heads. Hood for automatic	D. S. Cormier	855,233	May 28	5766	1200	128	1570
Square	H. W. Thompson	854,125	May 21	3587	740	128	984
Square. Carpenter's	J. A. McCloskey	855,257	May 28	5814	1211	128	1583
Square. Carpenter's	A. W. Hight	854,351	May 21	4000	827	128	1095
Square. Combination	J. H. Matthews	854,659	May 21	4568	954	128	1235
Square. Folding	R. A. Breul	853,157	May 7	1570	327	128	397
Square. Try-	J. E. Jones	853,174	May 7	1597	332	128	404
Stable appliance	M. J. O'Brien	855,017	May 28	5330	1106	128	1460
Stable-floors. Basin or trap for	D. D. Ogilvie	853,111	May 7	1491	311	128	377
Stacker. Hay-	E. Schulze	853,649	May 14	2579	536	128	695
Stacker. Hay-	M. R. Jenkins	855,005	May 28	5302	1102	128	1452
Stacker. Hay-	W. E. Carter	855,281	May 28	5856	1220	128	1594
Stacker. Hay-	C. F. Steiber	853,134	May 7	1532	319	128	387
Staircase-stringer	C. E. Paulson	854,667	May 21	4586	957	128	1241
Stairway	C. A. Crawford	853,560	May 14	2279	472	128	619
Stamp-affixer	J. Henry	855,284	May 28	5838	1150	128	1512
Stamp. Binder's	G. Coon	855,284	May 28	5861	1221	128	1595
Stamp-mill	J. C. Anderson	852,756	May 7	762	150–1	128	199
Stamp-mill machinery	W. C. Jones and G. E. Perry	852,563	May 7	385	70	128	101
Stamp. Time-	A. Boos	852,818	May 7	909	186–7	128	232
Stamp. Time-	W. A. Albaugh	853,392	May 14	2075	430	128	564
Stamping devices. Mat for ticket or other	A. W. Reeves	854,966	May 28	5221	1087	128	1432
Stanchion	M. Lattin	852,439	May 7	57	11	128	18
Stanchion for cattle. Swinging							
Stand: *See* Advertising-stand. Display-stand. Laundry-stand. Switch-stand. Umbrella-stand.							
Starching machine. Shirt-	J. W. Brittain	853,295	May 14	1882	389–90	128	513
Station-indicator	C. A. Utz	852,475	May 7	183	32–3	128	55
Station-indicator	A. J. Grunert and W. S. Whitney.	855,001	May 28	5292	1111	128	1450
Station-indicator	J. Knutson	855,319	May 28	5917	1235	128	1608
Stationery-box	C. W. Cook	855,045	May 28	5391	1120	128	1476
Stay and fastener. Skirt	W. H. Regner	855,340	May 28	5958	1244	128	1618
Stay. Garment-	H. L. Gregg	855,399	May 28	6052	1264	128	1642
Stay-strip	S. G. Leitch	853,094	May 7	1458	305	128	369
Steam-boiler	D. Wigert	852,481	May 7	193	35	128	57
Steam-boiler	C. G. Wieland	853,665	May 14	2612	542	128	704
Steam-boiler	A. Oronhyatekha	853,992	May 21	3304	679–80	128	916
Steam-boiler	C. J. Mellin	852,735	May 7	727	142	128	191
Steam-dome	C. L. Schultz	853,565	May 14	2402	501	128	650
Steam-engine	T. Lowther	855,182	May 7	1610	335–7	128	406
Steam-generator	E. L. J. Wera	853,290	May 14	1863	387–8	128	505
Steam-generator	W. S. Johnson	854,649	May 21	4550	950	128	1231
Steam-generator	T. F. Scollard	854,913	May 28	5124	1066	128	1409
Steam-generator fuel-regulation system	H. Lemp	854,048	May 21	3417	705	128	943

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Steam of locomotives. Apparatus for the utilization in a reheater of the exhaust-	C. Caille	$52,868	May 7	1025	212	128	261
Steam-trap	H. Ritter	$54,911	May 28	5121	1065-6	128	1408
Steering and controlling device	R. M. A. B. Munro	$53,719	May 14	2738	562-3	128	737
Steering device	W. E. Geyer	$54,883	May 28	5079	1056	128	1396
Stenciling-machine	B. C. Stickney	$53,605	May 14	2490	517	128	673
Stenciling-machine	B. C. Stickney	$53,606	May 14	2493	517-18	128	674
Stencils or other articles. Frame for	J. S. Duncan	$53,539	May 14	2349	489	128	636
Stenographic or reporting machine	C. Bivort	$52,994	May 7	1284	266-7	128	320
Stereoscope folding handle	H. C. White and C. S. Beach	$53,664	May 14	2610	542	128	704
Stereotype-plate-making apparatus	H. Winter	$52,642	May 7	538	103	128	141
Stereotype-plates. Machine or casting-box for making	H. F. Beehman	$53,752	May 14	2804	576	128	754
Stereotyping and type-metal-founding apparatus	H. F. Beehman	$53,754	May 14	2808	577	128	755
Sterilizer	W. Castle	$53,498	May 14	2274	471	128	617
Sterilizer. Electric	J. B. Wantz	$54,318	May 21	3940	814	128	1080
Sterilizing, disinfecting, or odorizing vehicles. Automatic apparatus for	H. S. Blackmore	$53,435	May 14	2144	447	128	582
Still. Continuous boiling-out	J. T. Ludlow and D. Mosher	$53,986	May 21	3289	677	128	913
Still. Mercury or quicksilver	R. A. Lackmann	$53,701	May 14	2687	554	128	725
Stitch machine. Impression-	J. B. Hadaway	$55,401	May 28	6054	1265	128	1642
Stoker. Mechanical	A. Box	$52,763	May 7	779	154	128	202
Stone-cutting machine	A. F. Jones	$52,562	May 7	383	99	128	101
Stone turning and cutting machine	J. S. Detrick and J. W. Neidhardt	$53,234	May 28	5767	1201-2	128	1570
Stopper: *See* Bath and basin stopper. Flue-stopper. Bottle-stopper. Flue-hole stopper.							
Stopper	C. C. Bacon	$52,644	May 7	545	104	128	143
Storage battery	E. Sokal	$52,464	May 7	157	28	128	48
Store-front construction	F. J. Plym	$52,450	May 7	81	17	128	24
Stove	W. S. Jackson	$54,358	May 21	4012	820	128	1099
Stove	J. Rosenthal	$54,605	May 21	4474	932-3	128	1212
Stove attachment. Gas-	E. Effert	$54,202	May 21	3736	772	128	1025
Stove-grate	F. P. Souperet	$54,968	May 28	5224	1088	128	1433
Stove-top member	H. A. Starr	$53,524	May 14	2326	484-5	128	630
Stoves. Means for collecting and carrying off smoke and odors from	C. B. Whipple	$53,530	May 14	2336	487	128	633
Stoves. Tilting frame for cooking-	J. S. Van Buren	$53,847	May 14	2990	614	128	798
Stovepipe-elbow	J. F. Foster	$53,580	May 14	2431	507	128	657
Stovepipe-elbow	J. A. Dorve	$54,935	May 28	5164	1076	128	1419
Stovepipe-fastener	B. C. Brown	$54,713	May 28	4711	980	128	1300
Stovepipe-lock	T. Mosley	$55,327	May 28	5933	1228	128	1612
Strainer	C. R. Ashmead	$53,052	May 7	1392	290	128	354
Strap-fastener	Y. D. Hance	$54,577	May 21	4427	920	128	1200
Strap-splicer	F. M. Hall	$55,305	May 28	5897	1229	128	1604
Stream-deflector	G. J. Henry, Jr	$53,787	May 14	2858	587	128	768
Street-flushing apparatus	C. E. Wiberg	$54,680	May 21	4614	962	128	1247
Street-indicator	J. H. Goodier	$54,416	May 21	4122	854	128	1126
Strip-applying machine	H. E. Bodine	$52,761	May 7	775	153-4	128	201
Stuffing-box	J. H. O. Bunge	$53,059	May 7	1403	292	128	356
Stump-pulling apparatus	R. L. Beasley	$52,411	May 7	3	2	128	3
Suit and hat holder. Folding	J. W. Faust, Jr	$52,940	May 7	1169	241	128	297
Suit-hanger	A. Holmer	$54,420	May 21	4133	856	128	1128
Sulfids and other ores. Apparatus for the treatment of	G. E. Kingsley	$52,510	May 7	265	49	128	73
Sulfids. Reducing metallic	F. M. Becket	$55,157	May 28	5632		128	1536
Sump	F. H. Rife	$53,398	May 14	2466	513	128	666
Superheater	H. L. Van Zile	$52,640	May 7	534	101-2	128	140
Supporting-bracket for odometers, &c	H. J. Boon	$53,329	May 14	1980	409	128	542
Surgical appliance	E. D. Huebner	$53,410	May 14	2099	437	128	570
Surveying instrument	A. A. Brothen	$54,796	May 28	4874	1012	128	1342
Suspender-clasp	W. Pigott	$54,907	May 28	5117	1064	128	1407
Suspenders	S. W. Phelps	$54,758	May 28	4801	997	128	1324
Sweeping and scrubbing machine	E. J. Stewart	$53,525	May 14	2328	485	128	631
Sweeping compounds. Manufacture of	B. Singer	$54,114	May 21	3562		128	979
Swing	A. Spice	$54,183	May 21	3692	764-5	128	1012
Swingletrees or doubletrees. Adjusting-wheel for	L. E. Darst and W. H. Harrelson	$54,150	May 21	3631	750	128	996
Switch: *See* Automatic switch. Electrical switch. Commutator-switch. Electromagnetic switch. Derailing-switch. Door-lock electric switch. Limit-switch. Railway-switch. Electric switch. Reversing-switch. Electric controlling-switch. Safety-switch. Telephone-switch.							
Switch	G. Gilmore	$53,922	May 14	3159	646	128	840
Switch-controlling mechanism	H. Geisenhöner	$53,780	May 14	2846	586	128	766
Switch-frogs, guard-rails, or the like. Guard for	A. Anderson	$55,424	May 28	6103	1275	128	1653
Switch-lock. Electric	F. W. Brandow	$54,455	May 21	4203	870	128	1147
Switch-operating mechanism	J. Long and B. F. Boyd	$52,886	May 7	1064	219	128	272
Switch-stand	F. W. Snow and W. C. Kidd	$54,767	May 28	4818	1001	128	1329
Switch structure	H. C. Stiff	$53,271	May 14	1819	379	128	493
Switch-tongue operating and retaining device	N. Burns	$53,223	May 14	1731	359	128	470
Swiveled base	J. G. Corbett	$54,984	May 28	5251	1094	128	1440
Syringe	W. G. Bridge	$54,399	May 21	4065	845	128	1116
Syringe. Vaginal	H. R. Searles and S. S. Jones	$54,534	May 21	4337	897	128	1177
Table: *See* Billiard and pool table. Extension-table. Billiard or pool table. Pool-table. Display-table.							
Tabulating-machine	D. E. Felt and C. P. Wetmore	$53,543	May 14	2357	491-3	128	635
Tachometer	H. Shoemaker	$54,437	May 21	4161	863	128	1135
Tag-machine	G. W. Swift, Jr	$54,988	May 21	4060	839-40	128	1110
Talking-machine	T. Kraemer and H. Sheble	$52,725	May 7	706	137-8	128	186
Talking-machine attachment	C. M. Miller	$55,116	May 28	5553	1153	128	1515
Talking-machine sound-box	E. H. Mobley	$55,326	May 28	5930	1237	128	1611
Tally. Pool-table	O. G. Peterson	$53,029	May 7	1357	282	128	345
Tank: *See* Dipping-tank. Flush-tank.							
Tank-lining	H. M. Reynolds	$53,828	May 14	2957	606	128	792

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Target-trap	H. E. and L. A. Sherman	$52,910	May 7	1115	230	128	284
Teeth. Display-carrier for artificial	J. F. Gibson	$54,486	May 21	4255	880	128	1158
Telegraph-key	B. F. Bellows	$55,085	May 28	5490	1138-9	128	1501
Telegraph system. Wireless	H. H. C. Dunwoody	$54,813	May 28	4903	1019	128	1349
Telegraph, telephone, or other wires and ropes. Cross-arm for carrying	H. M. Seiple	$55,138	May 28	5591	1163	128	1524
Telegraph-transmitter	C. W. Leiser	$53,576	May 14	2386	496	128	645
Telegraph-transmitter	J. Burry	$54,401	May 21	4088	845-6	128	1117
Telegraphic safety device	S. R. Wright	$52,484	May 7	197	36	128	58
Telegraphy. Multiplex	J. Burry	$52,495	May 7	228	41	128	66
Telegraphy. Wireless	W. W. Massie	$53,939	May 14	3176	651	128	845
Telephone	W. J. Murdock	$53,186	May 7	1620	338	128	409
Telephone	O. F. Falk	$55,394	May 28	6046	1263	128	1640
Telephone and switching mechanism. Desk-	A. K. Andriano	$53,855	May 14	3003	617	128	801
Telephone attachment	E. B. Thomas	$54,971	May 28	5229	1089	128	1435
Telephone calling or signaling device	K. Weman	$53,389	May 14	2069	429	128	563
Telephone-exchange	N. E. Norstrom	$52,575	May 7	407	74-5	128	107
Telephone-exchange	N. E. Norstrom	$52,675	May 7	618	118-19	128	161
Telephone-exchange apparatus	C. D. Enochs	$54,203	May 21	3737	773	128	1025
Telephone-exchange apparatus	C. D. Enochs	$54,204	May 21	3739	773	128	1026
Telephone-exchange. Automatic	J. G. Roberts	$52,523	May 7	285	53	128	77
Telephone-exchange system	A. R. Kahl	$53,304	May 14	1912	397	128	522
Telephone-exchange system	W. W. Dean	$54,270	May 21	3876	799-800	128	1063
Telephone-exchanges. Registering system for	A. R. Pollock	$53,373	May 14	2040	422	128	555
Telephone installations. Automatic switch for	P. Hildebrand	$54,164	May 21	3656	756	128	1002
Telephone-lines. Combined annunciator and ringer for	H. Tideman	$54,780	May 28	4844	1006	128	1335
Telephone-locking device	F. S. K. Smith and D. C. Reinohl	$52,806	May 7	886	180	128	226
Telephone-receiver	A. F. H. Davis	$55,578	May 14	2427	506	128	656
Telephone-receiver holder	H. E. Richey	$53,118	May 7	1502	313	128	379
Telephone-receiver holder	W. A. Benyan	$53,672	May 14	2621	544	128	707
Telephone set. Portable combination	A. Stromberg	$54,430	May 21	4169	864	128	1137
Telephone-switch	J. S. Alsobrook	$54,552	May 21	4370	906	128	1185
Telephone-switchboard	J. M. Dostaugh	$55,391	May 28	6059	1261	128	1639
Telephone-switchboards. Spring-jack for	F. R. McBerty and E. H. Craft	$53,370	May 14	2036	421	128	555
Telephone system	E. J. Burke	$53,002	May 7	1303	272	128	330
Telephone system	G. Habcock	$53,291	May 14	1864	388	128	506
Telephone system. Automatic	F. Merk	$53,818	May 14	2921	601	128	783
Telephone system. Party-line	G. E. Terhune, W. M. Eidson, and W. B. Huston.	$54,543	May 21	4354	902	128	1182
Telephone system. Trunk-line	W. W. Dean	$54,337	May 21	3972	821	128	1089
Telephone systems. Call-register for	R. H. Manson	$54,830	May 28	4946	1028	128	1362
Telephone-transformer	J. J. Frank	$52,711	May 7	681	132	128	178
Telephone-transmitter	R. C. Browne	$54,025	May 21	3360	694	128	931
Telephone-transmitter	O. F. Falk	$55,395	May 28	6047	1263	128	1641
Telephone-transmitters. Sanitary attachment for	L. W. Dolson	$54,472	May 21	4220	875	128	1152
Telephone trunking system	H. G. Webster	$53,286	May 14	1850	386	128	503
Telephone trunking system	W. W. Dean	$53,682	May 14	2637	547-8	128	710
Telephone-wires. Apparatus for testing	J. M. Miller and C. J. Murray	$55,117	May 28	5554	1153	128	1516
Telephonic-call-registering apparatus	D. F. Stakes	$52,743	May 7	739	145	128	193
Telephonic-call-registering apparatus	D. F. Stakes	$52,744	May 7	742	146	128	194
Tellurian	C. B. Martin	$54,513	May 21	4301	890	128	1169
Temperature-regulator	F. Darlington	$54,276	May 21	3870	799	128	1061
Templet	A. D. McLalin and H. W. Harrison.	$54,832	May 28	4953	1029-30	128	1363
Tennis &c. Racket for	H. S. Brown	$54,024	May 21	3368	694	128	931
Tent-frame. Portable	R. P. Orr	$53,569	May 14	2392	498	128	647
Tentering-machine	W. A. Church	$52,418	May 7	15	4	128	7
Test-meter. Portable	C. H. Evers	$54,881	May 28	5071	1054-5	128	1394
Theatrical apparatus	H. H. Bowdoin	$54,295	May 21	3849	795	128	1055
Thermal cut-out	J. T. H. Dempster	$54,723	May 28	4727	983	128	1305
Thermal cut-out	J. T. H. Dempster	$54,724	May 28	4728	983	128	1306
Thill-coupling	A. H. Worrest	$52,753	May 7	756	149	128	197
Thill-support	J. W. Sherwood	$53,904	May 14	3117	638	128	830
Thimble. Handle-	J. Dullisee	$53,537	May 14	2347	488	128	636
Thread-cutter	V. Kutrer	$53,779	May 21	3279	674	128	910
Thread-cutting machine	T. B. Earhart	$55,051	May 28	5399	1122	128	1478
Thread-guide	G. Singleton	$55,349	May 28	5973	1247	128	1622
Thread, yarn, &c. Guide for	J. R. Mitchell	$55,325	May 28	5929	1237	128	1611
Threshing-machine baling attachment	R. C. Redrath	$53,376	May 14	2046	423-5	128	557
Threshing-machine grain-feeding apparatus	J. B. Bartholomew	$55,273	May 28	5840	1218	128	1590
Ticket issuing and recording machine	C. F. Onner and E. H. Bridenbaugh	$54,666	May 21	4581	957	128	1239
Ticket. Pin-	G. A. Wallin	$52,531	May 7	302	55	128	83
Tie: *See* Cross-tie. Metallic tie. Fence-tie. Rail-tie. Metal tie. Railway-tie.							
Tie-plate	W. L. De Remer	$53,683	May 14	2656	548	128	717
Tie-plate	W. L. De Remer	$53,684	May 14	2658	548	128	718
Tile	E. Coffin	$53,063	May 7	1408	294	128	356
Tiles, glass, &c. Means or apparatus for burning or fixing the colors upon printed or decorated	L. W. Stanley	$54,005	May 21	3327	684	128	822
Tiles. Manufacturing roofing-	R. Hedrich	$54,823	May 28	4932	1025	128	1358
Till	C. Weisse	$53,430	May 14	2129	444	128	579
Time-card. Sun	C. S. Bissell	$53,338	May 14	1978	409	128	541
Time-controlling mechanism	P. W. Eames	$54,726	May 28	4731	984	128	1306
Time-recorder	J. Ericson	$54,281	May 21	3882	800-1	128	1065
Time recorder. Workman's	C. T. Hawley	$53,878	May 14	3040	626-8	128	812
Tire	E. F. Sobers	$55,024	May 28	5348	1110	128	1464
Tire-case	F. B. Hopewell	$54,215	May 21	3759	778	128	1031
Tire-fastener	C. L. Williams	$54,549	May 21	4366	904	128	1184
Tire holder. Idle-	W. H. Gransden	$52,834	May 7	943	193	128	246
Tire. Laminated	J. W. Garhart	$54,463	May 21	4215	872	128	1149
Tire or other valve	M. C. Schweinert and H. P. Kraft	$54,182	May 21	3691	764	128	1012
Tire-plug	F. N. Stevens	$52,986	May 7	1263	262	128	322
Tire plug. Pneumatic-	D. Apstein. (Reissue)	12,645	May 7	1605	351	128	427
Tire-protector	S. C. Wolfe	$54,137	May 21	3695	744	128	989
Tire-protector	H. L. Voss	$54,186	May 21	3709	767	128	1019
Tire-protector	J. E. Heele	$54,213	May 21	3755	777	128	1031

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Tire-pump	W. S. Stapley	855,026	May 28	5352	1111-12	128	1464
Tire-repairing plug	M. W. Hall	852,716	May 7	689	134	128	181
Tire. Vehicle-	G. E. Hinguley	853,792	May 14	2868	589	128	770
Tire. Wheel-	J. A. Swinehart	852,529	May 7	290	54	128	82
Tires. Detachable inner tube for pneumatic	F. Rich	852,619	May 7	491	91	128	129
Tires. Machinery for use in the manufacture of pneumatic	T. and R. Sloper	852,855	May 7	990	204-8	128	252
Tobacco. Bag for pulverizing slice plug-cut	G. S. Ross	854,384	May 21	4055	878	128	1109
Tobacco-booker	R. E. Anger	854,191	May 21	3718	769	128	1021
Tobacco-booking machine	W. Wadsworth	853,279	May 14	1829	382	128	496
Tobacco-hanger	T. M. Shrock	852,463	May 7	156	28	128	48
Tobacco-pressing apparatus. Leaf-	B. Baron	852,409	May 7	1	1	128	3
Tobacco. Stripping	C. F. Hall	853,511	May 14	2304	477	128	626
Toe-spreading retainer	P. Wall	853,327	May 14	1960	405	128	536
Toilet-box. Combination	A. D. Herman	853,361	May 14	2021	418	128	551
Toilet cream	M. S. Borden	853,436	May 14	2147		128	583
Tongue. Adjustable	J. T. Ketchledge	852,607	May 7	468	87	128	124
Tongue-support	J. L. Hecht	852,837	May 7	948	194	128	242
Tongue-support	E. C. Ayers	853,197	May 7	1646	343	128	416
Tongue supporter. Wagon-	F. Abrams and W. A. Doyle	853,391	May 14	2072	429	128	564
Tongue. Vehicle-	G. I. Haise	853,781	May 14	2849	586	128	766
Tongue. Wagon-	H. B. Nolen	853,110	May 7	1460	311	128	376
Tool. Combination-	H. Brown	853,495	May 14	2298	470	128	615
Tool. Combination-	R. Madsen	853,558	May 14	2389	497	128	646
Tool. Combination	D. B. Huffman	854,891	May 28	5091	1058	128	1399
Tool. Combination-	B. F. Bird	854,979	May 28	5240	1091	128	1437
Tool. Combination-	M. C. Raymond	855,338	May 28	5955	1242	128	1617
Tool. Compound	J. N. Peterson	853,520	May 14	2321	483	128	629
Tool-driver. Electric	A. F. Carver and J. N. Stout	852,926	May 7	1144	236	128	291
Tool. Fluid-pressure	G. H. Gilman	853,921	May 14	3156	645	128	839
Tool-handle fastener	O. W. Lundberg	852,731	May 7	717	140	128	188
Tool-holder	D. Craig	852,931	May 7	1153	237	128	293
Tool-holder	C. W. Meadowcroft, Sr.	854,100	May 21	3535	730	128	972
Tool-holder	M. D. Reidy	854,669	May 21	4589	958	128	1241
Tool. Machine	A. Wood	854,446	May 21	4188	868	128	1143
Tool-operating mechanism	F. K. Priest	853,564	May 14	2401	500	128	649
Tool. Pneumatic	C. W. Meadowcroft, Sr.	853,416	May 14	2107	439	128	573
Tool. Portable pneumatic	C. H. Haeseler and A. H. Taylor	854,694	May 21	4632	969-71	128	1257
Tools. Danger-signal for portable electric	J. I. Ayer	854,013	May 21	3342	636	128	926
Tooth. Artificial	J. Ramsperger	854,842	May 28	4969	1034	128	1368
Tooth-crown model	C. F. Lauderdale	853,984	May 21	3285	676	128	912
Tooth-powder retainer	E. R. Godward	853,405	May 14	2092	435	128	568
Toothpick-machine	G. P. Stanley and W. W. Tainter	854,116	May 21	3565	735-6	128	979
Toothpick-making machine. Wooden-	J. H. Nute	853,372	May 14	2039	422	128	555
Toy	W. Klinge	853,091	May 7	1454	304-5	128	368
Toy	W. H. Pearson and R. A. Wernau	853,730	May 14	2759	567 8	128	742
Toy	A. Ueberle	854,545	May 21	4362	903	128	1183
Toy	D. P. James	854,646	May 21	4547	949	128	1230
Toy. Figure	W. H. Chandlee	854,271	May 21	3860	797	128	1057
Toy novelty	L. Lamprey	854,224	May 21	3786	781	128	1039
Toy savings-bank	H. C. Lampe, Jr.	855,406	May 28	6068	1265	128	1646
Trace loop or buckle	J. P. Heiser	853,879	May 14	3065	628	128	816
Track-cleaner	D. R. Edwards	854,409	May 21	4110	851	128	1123
Track-shifting machine	W. G. Bierd	853,948	May 21	3230	662	128	897
Traction-wheel	E. Einfeldt	852,830	May 7	935	191	128	239
Traction-wheel	E. Einfeldt	852,831	May 7	937	192	128	239
Train-stop. Automatic electrical	H. G. Sedgwick	852,627	May 7	504	93-4	128	132
Train-stop. Automatic electrical	H. G. Sedgwick	852,628	May 7	509	94-5	128	133
Train-stop. Automatic electrical	H. G. Sedgwick	852,635	May 7	524	98-100	128	137
Train-stop. Electrical	H. G. Sedgwick	852,631	May 7	516	96	128	135
Train-stop. Electrical	H. G. Sedgwick	852,632	May 7	517	97	128	136
Train-stop. Electrical	H. G. Sedgwick	852,634	May 7	523	98	128	137
Train-stopping apparatus	H. G. Sedgwick	852,633	May 7	518	97	128	136
Transformer	J. J. Frank	853,778	May 14	2844	585	128	765
Transformer	M. O. Troy	853,843	May 14	2983	612	128	797
Transformer-coil support	C. E. Skinner	854,311	May 21	3931	811	128	1077
Transformer-cooling means	F. Darlington	854,277	May 21	3873	799	128	1062
Transformer-cooling means	C. E. Skinner and S. M. Kintner	854,312	May 21	3933	812	128	1078
Transformer-core	J. J. Frank	852,712	May 7	682	132	128	178
Transformer. High-voltage	J. B. Taylor	854,774	May 28	4833	1004	128	1333
Transformer. Three-phase	J. J. Frank	853,779	May 14	2845	585	128	766
Transmitter. Breast-	J. A. Birsfield	853,337	May 14	1973	408	128	539
Transmitting mechanism	F. S. Keyes	852,883	May 7	1059	218	128	271
Transmitting mechanism	J. A. Papot	854,176	May 21	3678	761	128	1008
Transom-lifter	L. C. Smith	855,260	May 28	5818	1213	128	1584
Trap: *See* Animal-trap. Bath-tub trap. Beehive-trap. Fly-trap. Insect-trap. Steam-trap. Target-trap.							
Trigger mechanism	F. A. De Land	853,229	May 14	1744	362	128	474
Trimmer: *See* Hedge-trimmer. Paperhanger's trimmer. Sole-edge trimmer.							
Trolley	A. J. Reif and A. L. McCormick	852,978	May 7	1251	258	128	318
Trolley amusement	H. G. Traver	854,185	May 21	3702	765-6	128	1016
Trolley circuit-former	G. R. Livergood	852,969	May 7	1229	253	128	313
Trolley-harp	E. D. Rockwell	853,322	May 14	1949	401	128	533
Trolley-pole	L. Radcliff	854,759	May 28	4803	997	128	1324
Trolley-pole support	J. Gribben	854,489	May 21	4259	881	128	1159
Trolley-retriever	M. F. Hodge	853,453	May 14	2178	452-3	128	592
Trolley-wheel	J. C. Cordrey and P. J. Brady	854,804	May 28	4889	1015	128	1346
Trolley-wheel lubricator	J. F. Cottrell	853,771	May 14	2836	583	128	765
Trolley-wheels. Casting	F. B. Torrey	854,380	May 21	4065	841	128	1111
Trousers-hanger	R. H. Tye	853,527	May 14	2372	486	128	632
Truck	J. B. McKiel	852,738	May 7	732	143-4	128	192
Truck	P. Kerrigan	855,405	May 28	6066	1268	128	1645
Truck and supporting-stand. Combined	C. Rawlinson	854,381	May 21	4050	837	128	1108
Truck bolster. Car-	G. A. Johnson	854,360	May 21	4014	830	128	1099
Truck brake appliance. Automatic	A. L. Saxon	853,122	May 7	1508	314	128	380

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Truck. Car-	R. H. Brown	853,531	May 14	2338	487	128	634
Truck. Combination elevator-	G. W. Peter	853,806	May 14	3102	636	128	826
Truck. Electric-motor	B. R. Van Kirk	854,442	May 21	4178	866	128	1140
Truck mechanism	W. Fetzer. (Reissue)	12,653	May 21	4696	978	128	1267
Truck side frame. Car-	A. Lipschutz	852,968	May 7	1227	252	128	312
Trucks. Brake mechanism for pivoted car-	W. L. Austin	854,449	May 21	4193	868	128	1144
Trunk	W. Hurton	852,412	May 14	2102	458	128	571
Trunk	G. W. Peterson	854,602	May 21	4469	931	128	1211
Tub: *See* Bath-tub.							
Tube-expander	V. Stavenik and J. Mautz	854,118	May 21	3571	737	128	981
Tube-forming machine	E. Wiet	854,136	May 21	3604	743	128	988
Tunnel-segment	F. F. Vandevort	852,916	May 7	1120	233	128	288
Tunnel-ventilating apparatus	C. A. Morris	855,409	May 28	6072	1269-70	128	1646
Tunnels. Means for lining	E. W. Moir	852,891	May 7	1071	220-1	128	274
Tunnels. Ventilating	H. Blackman	852,995	May 7	1286	667	128	327
Tunnels. Ventilating	C. A. Morris	855,118	May 28	5555	1153-4	128	1516
Turbine	D. McArthur	852,672	May 7	612	117-18	128	160
Turbine	E. L. Schaun	853,124	May 7	1511	315	128	391
Turbine	P. Phillip	853,563	May 14	2388	499-500	128	648
Turbine attachment	W. C. Aylor	854,620	May 21	4497	938	128	1217
Turbine. Elastic-fluid	W. L. Waters	853,284	May 14	1841	384-5	128	500
Turbine. Gas-	H. Holzwarth	853,925	May 14	3164	646-7	128	841
Turbine. Reversing steam-	W. C. Gardiner	854,482	May 21	4246	878-9	128	1156
Turbine. Steam-	I. Abbott	854,447	May 21	4191	868	128	1143
Turbine. Steam-	E. Harvey	854,494	May 21	4269	883	128	1162
Turbine. Steam-	R. Wilson	854,788	May 28	4858	1009	128	1338
Turbine vane	C. A. Backstrom	853,334	May 14	1969	407	128	538
Turbines and fluid-pumps. Runner for	N. W. Akimoff	854,012	May 21	3341	686	128	926
Turret-head	H. H. Wogaman	853,570	May 14	2413	503	128	652
Type-bar and hanger and constructing same	W. R. Fox	852,428	May 7	37	8	128	13
Type-casting-machine mold	F. H. Brown, J. E. Hanrahan, and G. A. Boyden.	855,225	May 28	5752	1198	128	1566
Type-casting mold	P. G. Nuernberger and G. Rettig, Jr.	853,647	May 14	2572	534-5	128	663
Type-matrix	F. H. Brown, J. E. Hanrahan, and G. A. Boyden.	854,460	May 21	4210	871	128	1148
Type, Metal	J. S. Duncan	852,540	May 14	2351	489	128	637
Type setting and distributing machine	L. Lebrun	854,095	May 21	3524	727	128	970
Type-writer	C. S. Watson	854,187	May 21	3711	767-8	128	1019
Type-writer	C. Gibbs	854,484	May 21	4251	880	128	1158
Type-writer attachment	H. B. Febiger	855,052	May 28	5400	1122	128	1478
Type-writer cabinet	F. J. Sitts	852,805	May 7	883	180	128	225
Type-writer line-lock mechanism	W. R. Fox	853,965	May 21	3256	668	128	904
Type-writer-ribbon mechanism	W. R. Fox	854,207	May 21	3744	774	128	1027
Type-writer tabulator	P. B. Tingley	852,988	May 7	1266	262-3	128	323
Type-writer tabulator	P. B. Tingley	852,989	May 7	1270	263-4	128	323
Type-writing attachment for adding-machines	E. H. Cram	853,247	May 14	1885	390-4	128	513
Type-writing attachment for adding-machines	E. H. Cram	853,248	May 14	1889	394-5	128	519
Type-writing attachment for adding-machines	A. G. Meier	853,319	May 14	2704	557-8	128	729
Type-writing machine	C. W. Howell	852,721	May 7	698	135-6	128	183
Type-writing machine	M. W. Pool	852,799	May 7	872	177	128	222
Type-writing machine	W. F. Helmond	853,242	May 14	1761	367	128	478
Type-writing machine	C. F. Lundeberg	853,249	May 14	1774	369	128	483
Type-writing machine	I. R. Roberts	853,266	May 14	1806	376	128	489
Type-writing machine	H. L. Wagner	853,280	May 14	1831	382	128	496
Type-writing machine	H. L. Wagner	853,281	May 14	1834	383	128	497
Type-writing machine	E. J. Pfunder and F. A. Cook	853,562	May 14	2394	499	128	647
Type-writing machine	A. F. Lear	855,011	May 28	5316	1104	128	1456
Type-writing machine	A. F. Lear	855,012	May 28	5318	1105	128	1457
Type-writing machine	H. L. Wagner	855,027	May 28	5355	1112	128	1465
Type-writing machine	B. C. Stickney	855,144	May 28	5598	1165	128	1526
Type-writing machine	C. H. Shepard	855,206	May 28	5719	1190	128	1557
Type-writing machine	C. H. Shepard	855,207	May 28	5725	1191-2	128	1559
Type-writing-machine carriage-stop mechanism	W. R. Fox and G. J. Barrett	852,427	May 7	32	7	128	11
Type-writing-machine platen or roller	T. F. Nolan	854,429	May 21	4149	859	128	1131
Type-writing-machine spacing mechanism	L. Schlesinger	852,406	May 7	122	23-5	128	41
Typographic machine	F. H. Richards	852,905	May 7	1093	225-9	128	280
Typographic machine	F. H. Richards	853,208	May 7	1684	348-51	128	435
Umbrella	H. H. Brown	852,493	May 7	216	39	128	62
Umbrella	M. G. McGuire	854,663	May 21	4575	955-6	128	1237
Umbrella. Folding	A. Steininger	855,142	May 28	5596	1164	128	1525
Umbrella. Folding	J. Q. Adams, Sr.	855,214	May 28	5734	1193	128	1561
Umbrella-handle. Interchangeable	J. F. Witt	854,259	May 21	3841	793	128	1053
Umbrella-stand	G. Laube	852,767	May 7	796	72	128	105
Umbrella-support	J. W. Butler	853,397	May 14	2080	432	128	566
Umbrella-support. Adjustable	J. S. Collins	852,872	May 7	1002	213	128	263
Undergarment	J. A. Scriven	854,763	May 28	4810	999	128	1326
Undergarment	R. M. Appleton	854,865	May 28	5021	1044	128	1380
Vacuums. Means for producing high	W. Gaede	852,947	May 7	1179	243	128	259
Valve	A. W. Murray	852,518	May 7	277	51	128	76
Valve	J. W. Ashbaugh	852,591	May 7	445	82	128	118
Valve	W. T. Sears	852,802	May 7	880	179	128	224
Valve	T. Brick	852,819	May 7	912	187	128	232
Valve	J. A. Tilden	853,274	May 14	1821	380	128	494
Valve	M. C. Honeywell	853,364	May 14	2025	419	128	552
Valve	B. A. Baxter	853,621	May 14	2529	524	128	683
Valve	R. Whitaker	854,133	May 21	3598	742	128	987
Valve	R. Whitaker	854,134	May 21	3600	743	128	987
Valve	J. Weber	854,319	May 21	3942	814	128	1080
Valve	C. O. Churchill	855,385	May 28	6029	1259	128	1637
Valve	B. O. Yearwood	855,422	May 28	6101	1275	128	1653
Valve. Automatic expansion-	A. H. Eddy	853,541	May 14	2352	489	128	637
Valve-casings. Construction of	H. Cruse	854,334	May 21	3966	819	128	1087
Valve-casings. Construction of	H. Cruse	854,469	May 21	4227	874	128	1151
Valve construction. Stop-	A. W. Fischer and P. W. Knauf	852,709	May 7	678	172	128	177
Valve. Engine-	B. Hanson	854,006	May 21	3289	698	128	926
Valve. Expansion-	A. H. Eddy	853,503	May 14	2389	474	128	622
Valve for automatic-sprinkler systems. Dry-pipe	E. L. Thompson	855,076	May 28	5474	1136	128	1497
Valve for draining pipes, &c	W. V. Gordon	854,348	May 21	3996	826	128	1094

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Valve for presses. Automatic choker-	A. W. French and P. G. Weidner	853,167	May 7	1585	530	128	400
Valve for refrigerating apparatus. Automatic expansion-	A. H. Eddy	853,505	May 14	2292	475	128	623
Valve for steam-heating systems. Vent-	J. R. Shanklin	852,852	May 7	986	203	128	251
Valve. Gate-	L. Noel	854,523	May 21	4315	893	128	1173
Valve-gear	A. D. Austin	852,757	May 7	766	151–2	128	240
Valve-gear for gas engines or motors	F. A. Thomas	855,146	May 28	5603	1166	128	1527
Valve-gears. Device for turning crank for	C. J. Mellin	852,447	May 7	78	16	128	23
Valve. Hot-blast	J. B. McKeeman	853,722	May 14	2747	564–5	128	739
Valve. Hydraulic	J. H. Allendorfer	855,215	May 28	5735	1193–4	128	1562
Valve indicator. Automatic slide-	W. L. Newbaker	853,724	May 14	2749	565	128	740
Valve mechanism for boilers. Fluid-pressure-operated stop-	H. R. Rockwell	855,417	May 28	6094	1273–4	128	1651
Valve mechanism for engines	H. Lemp	853,095	May 7	1460	305	128	369
Valve mechanism for engines. Fluid-pressure-operated stop-	H. R. Rockwell	855,414	May 28	6084	1272	128	1650
Valve mechanism for engines. Fluid-pressure-operated stop-	H. R. Rockwell	855,415	May 28	6089	1272–3	128	1650
Valve mechanism for engines. Fluid-pressure-operated stop-	H. R. Rockwell	855,416	May 28	6092	1273	128	1651
Valve-motion for engines	T. Wilson	853,139	May 7	1543	321	128	390
Valve-operating device. Flushing-	W. H. Ludewig	853,813	May 14	2910	598–9	128	780
Valve. Piston-	P. Kinander	853,803	May 14	2888	593	128	775
Valve. Pressure-regulating	R. E. Brins	852,924	May 7	1141	235	128	291
Valve. Pressure-regulating	F. F. Healey	853,693	May 14	2873	551	128	721
Valve. Regulating-	A. H. Eddy	853,504	May 14	2290	475	128	622
Valve. Retaining-	M. Somers	853,906	May 14	3120	639	128	831
Valve. Safety-	J. C. Pogue	854,908	May 28	5118	1065	128	1407
Valve. Safety-	J. M. Coale	855,431	May 28	6116	1278	128	1656
Valve. Shut-off	G. J. Leber	854,047	May 21	3415	705	128	942
Valve. Slow-closing	O. J. Backus, Jr., and R. E. Crane	854,138	May 21	3607	744	128	989
Valve structure	L. H. Martell	854,698	May 21	4665	972	128	1259
Valve. Turbine-nozzle	C. A. Backstrom	853,332	May 14	1967	407	128	547
Valves. Device for facilitating the removal of	J. Rabey	852,846	May 7	962	198	128	245
Valves. Tool for removing engine-	C. F. Weeber	854,860	May 28	5009	1042	128	1378
Vat: *See* Dyer's vat. Milk-vat.							
Vegetable-cutter	O. H. Miller	854,229	May 21	3793	782–3	128	1041
Vegetable-cutter	R. A. Baggett	854,621	May 21	4499	938	128	1248
Vegetable-cutting machine	Z. Ono	852,844	May 7	957	197	128	244
Vehicle	R. E. Adams	853,614	May 14	2516	521–2	128	680
Vehicle	R. J. Weber	854,188	May 21	3715	769	128	1020
Vehicle	C. H. Kramer	855,064	May 28	5426	1126	128	1486
Vehicle-brake	A. B. Cudwell	853,456	May 14	2240	470–1	128	616
Vehicle-brake	O. Schulz	854,286	May 21	4058	838	128	1110
Vehicle-curtains and the like. Fastener for	J. M. Walsh	855,029	May 28	5360	1113	128	1467
Vehicle draft attachment	J. M. Sudduth	855,263	May 28	5823	1214	128	1585
Vehicle-dumping device	M. I. Tuttle	855,267	May 28	5830	1215	128	1587
Vehicle. Motor-	D. M. Dearing	852,707	May 7	675	131	128	177
Vehicle. Motor-	J. D. R. Lamson	852,884	May 7	1061	218	128	271
Vehicle. Motor-	L. E. Smith	853,132	May 7	1529	318–19	128	386
Vehicle. Motor-	B. D. Druen	854,408	May 21	4108	850	128	1122
Vehicle. Motor-	G. Rothgiesser	854,432	May 21	4154	860–1	128	1132
Vehicle. Motor-driven	A. L. McMurtry	853,674	May 7	617	118	128	161
Vehicle speed-gear. Motor-	T. H. Bastin	853,947	May 21	3222	661–2	128	894
Vehicle steering-gear	J. T. Girard	853,968	May 21	3263	670	128	906
Vehicle-wheel	L. P. Marsal and R. W. Baker	852,668	May 7	607	116	128	158
Vehicle-wheel	L. A. Hill. (Reissue)	12,647	May 7	1698	352	128	428
Vehicle-wheel	E. F. Krell	854,655	May 21	4560	952	128	1233
Vehicle-wheel	J. Nash	854,699	May 21	4666	972	128	1260
Vehicle-wheel	R. T. Smith, Jr	854,914	May 28	5126	1066–7	128	1409
Vehicle-wheel	E. Garner	853,528	May 14	1742	361–2	128	473
Vehicle wheel. Motor-	W. A. F. McCallum	852,893	May 7	1074	221	128	275
Vehicle-wheel. Resilient	J. Partington	855,199	May 28	5709	1188	128	1554
Vehicles, &c. Gearing for motor-	M. Pedersen	854,600	May 21	4462	928–30	128	1209
Vehicles. Sighting apparatus for moving	W. H. Robertson	854,310	May 21	3929	810–11	128	1057
Vending-machine	L. A. Vandiver	853,194	May 7	1639	341–2	128	415
Vending-machine	C. C. Inman	853,977	May 21	3275	673	128	909
Vending-machine	J. P. Conroy	855,231	May 28	5763	1200	128	1569
Vending-machine. Coin-operated	G. T. Haines	855,054	May 28	5405	1122–3	128	1479
Veneers. Machine for cutting barrel-	F. Thornton	854,256	May 21	3837	793	128	1052
Ventilating apparatus	C. Kuderer	854,582	May 21	4433	921	128	1202
Ventilating means for roundhouses, shops, stations, &c.	J. Larivee	852,794	May 7	860	174	128	220
Ventilating mechanism	C. S. Cannon	852,650	May 7	558	106	128	146
Ventilator: *See* Car-ventilator. Window-ventilator. Sash-ventilator.							
Ventilator	A. H. Newey	854,595	May 21	4454	926	128	1206
Vessel. Metallic	C. L. Coffin	855,043	May 28	5387	1119	128	1475
Vessels, &c. Attachment for	P. H. Null	854,835	May 28	4959	1031	128	1365
Veterinary appliance	G. P. Johnson	855,007	May 28	5307	1103	128	1453
Veterinary surgical instrument	C. F. Martin	854,956	May 28	5199	1083	128	1427
Veterinary tooth-cutter or dental float	C. F. Martin	854,955	May 28	5197	1083	128	1427
Vibratory apparatus for ear treatment	E. Meyer	853,645	May 14	2570	533–4	128	662
Violin. Electric self-playing	H. K. Sandell	855,021	May 28	5335	1107–9	128	1461
Viscose. Manufacture of	M. Waddell	855,213	May 28	5733		128	1561
Vise	M. J. Hilberg	854,091	May 21	3516	726	128	969
Vises. Pipe and rod gripping attachment for	P. Broadbooks	854,145	May 21	3621	748	128	993
Voltage-regulator	S. B Storer	854,123	May 21	3582	739	128	983
Voting-machine	S. R. Shoup	852,911	May 7	1117	231	128	284
Voting-machine	S. R. Shoup	853,127	May 7	1515	316	128	382
Voting-machine	A. McKenzie	853,822	May 14	2939	603–4	128	787
Voting-machine	G. S. Dey	853,867	May 14	3029	621–3	128	807
Voting-machine	C. L. Lorraine	854,657	May 21	4562	953	128	1234
Voting-machine	A. McKenzie	855,334	May 28	5945	1241	128	1615
Voting-machines. Slide-moving device for	W. C. Gilmore	853,109	May 7	1591	331	128	402
Waffle-iron. Rotary	W. L. Carter	853,060	May 7	1404	292–3	128	357
Wagon-body	W. Hunt	853,794	May 14	2871	590	128	771
Wagon draft device	G. F. Shaw	854,967	May 28	5223	1087–8	128	1433

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Wagon. Dump-	W. A. Underhill	853,275	May 14	1823	380	128	494
Wagon. Dump-	C. A. Geiger	854,085	May 21	3505	723	128	966
Wagon. Dumping-	J. Brennan	853,404	May 14	2267	470	128	615
Wagon. Dumping-	W. G. Mayer	853,817	May 14	2919	600	128	782
Wagon. Dumping-	R. G. and L. Cator	855,151	May 28	5638	1173	128	1538
Wagon. Dumping-	R. S. C. Fow	855,241	May 28	5783	1205–6	128	1575
Wagon. Garbage-	A. Gull	853,355	May 14	2010	416	128	548
Wagon-jack	F. J. Feldt	853,008	May 7	1316	274	128	334
Wagon-jack	G. and A. Haag	854,490	May 21	4260	881–2	128	1160
Wagon-loader	C. A. Jose	854,651	May 21	4554	951	128	1232
Wagon or go-cart. Baby-	F. H. Grimmer	855,000	May 28	5290	1099–1100	128	1449
Wagon-reel	E. B. Curtis	854,081	May 21	3499	721	128	965
Waist and skirt supporter	E. J. McKinney	853,646	May 14	2572	534	128	693
Wall. Building-	W. Curlett	855,048	May 28	5396	1121	128	1477
Wall construction. Mold for hollow-	D. O. Wilson	852,534	May 7	309	56	128	84
Wall for buildings, masonry-work, and the like. Metal	J. Peters	853,261	May 14	1797	374	128	487
Wall-plug	F. J. Plym	855,129	May 28	5577	1159	128	1520
Wall structure	J. Lally	853,702	May 14	2689	554	128	726
Wardrobe. Clothes-	R. Weir	852,802	May 7	1016	210	128	269
Wardrobe. Knockdown	S. W. Bonsall	852,699	May 7	960	128–9	128	173
Warp holder or sustainer	A. C. Schoen	855,418	May 28	6097	1274	128	1652
Warp stop mechanism	T. Perks	853,519	May 14	2317	481–3	128	629
Warp-stop-motion mechanism	H. Côté	853,163	May 7	1580	329	128	399
Washer: *See* Bottle-washer.							
Washing-machine	J. D. Hiss	852,720	May 7	697	135	128	183
Washing-machine	I. N. Connell	853,162	May 7	1579	328–9	128	399
Washing-machine	I. L. Owens	854,597	May 21	4457	927	128	1207
Washing-machine-operating mechanism	S. Ream	852,618	May 7	490	91	128	129
Watch-movement box	J. H. Goss and A. F. Wolff	853,236	May 14	1751	364	128	476
Watch-protector	S. Golombek	854,347	May 21	3995	825	128	1094
Watchmaker's roller and collet resetter tool	J. W. Goucher	854,732	May 21	4741	986	128	1308
Watchmaker's tool	E. N. Sheldon	852,909	May 7	1114	230	128	283
Water. Apparatus for the treatment of refractory	R. T. Weaver	854,445	May 21	4186	867	128	1142
Water bottle, cushion, bed, &c	J. B. Brooks	852,999	May 7	1293	270	128	328
Water-circulating apparatus	L. M. G. Delaunay-Belleville	853,866	May 14	3028	621	128	807
Water-closet bowl	G. W. Knapp	854,651	May 21	4557	952	128	1232
Water-closet-ventilating device	A. T. Lueckenbach	854,365	May 21	4025	833	128	1102
Water-closets, &c. Flexible connection for	P. F. Lyons	853,515	May 14	2311	479	128	627
Water-colors. Composition of	R. W. Cornelison	854,332	May 21	3964		128	1087
Water-distributing apparatus	H. M. Sanders	854,385	May 21	4056	838	128	1109
Water elevating and storage apparatus	W. W. Douglass	855,100	May 28	5518	1145–6	128	1507
Water elevator and carrier	W. C. Day	854,336	May 21	3968	820	128	1088
Water-heater	P. G. Olds	855,197	May 28	5707	1188	128	1554
Water-heater	A. Oleson, W. A. and C. C. Williams.	855,410	May 28	6077	1270	128	1648
Water-heater. Electric	E. C. Miles	853,892	May 14	3095	634	128	824
Water-heater. Storage	E. Ruud	853,738	May 14	2773	570	128	747
Water-meter	E. E. Gamon	854,882	May 28	5075	1055–6	128	1395
Water-meter. Tamper-proof	C. F. Loetzer	855,190	May 28	5695	1185	128	1551
Water-purifying apparatus. Feeding device for	M. F. Newman	854,522	May 21	4314	893	128	1172
Water-tube boiler	J. J. Cole	853,064	May 7	1409	294	128	358
Watering device	A. J. Vorhèis and J. C. Moyer	854,615	May 21	4489	936	128	1215
Waterproofing compound	A. Gross and A. C. Horn	853,354	May 14	2009		128	548
Wave-motor	J. W. Neal	855,258	May 28	5815	1212	128	1583
Wave-power motor	T. Danford	854,082	May 21	3500	721–2	128	965
Weaning-bit	W. A. and J. L. Coe	852,821	May 7	916	187	128	234
Weather-strip	H. W. Kraft	853,982	May 21	3282	675	128	911
Weather-strip	J. Lutz and J. McKellar	854,899	May 28	5107	1062	128	1404
Weather-strip and guide. Combined	W. H. Etter	855,293	May 28	5879	1225	128	1599
Weaving device. Cross-	H. T. Pestalozzi	852,520	May 7	280	52	128	76
Web-press. Rotary	H. F. Bechman	854,142	May 21	3615	746–7	128	992
Weed-exterminator	M. Schmitt	853,267	May 14	1809	376–7	128	490
Weed-gatherer and cutter. Combination	J. N. Eames	853,072	May 7	1426	297–8	128	362
Weighing apparatus	A. O. Watts	853,388	May 14	2067	429	128	563
Welding apparatus. Step-by-step electric seam-	H. Helberger	853,241	May 14	1760	366	128	478
Well-drilling machine	J. Rourke	854,606	May 21	4477	933	128	1212
Well-drills. Swivel rope-socket for	O. E. Lindholm	853,706	May 14	2701	556	128	728
Welt-shaping machine	L. Goddu	853,509	May 14	2300	476	128	625
Welts to stock. Machine for uniting	H. C. Gros	855,244	May 28	5794	1207	128	1578
Wheel: *See* Automobile-wheel. Car-wheel. Carriage-wheel. Cushioned wheel. Elastic wheel. Paddle-wheel. Pneumatic-cushion wheel. Resilient wheel. Skate-wheel. Spring-wheel. Traction-wheel. Trolley-wheel. Vehicle-wheel. Wind-wheel.							
Wheel	I. W. Giles and C. W. Tobey	853,687	May 14	2662	549	128	718
Wheel	W. R. Caldwell	853,767	May 14	2830	582	128	761
Wheel	J. Thomson and F. W. Kremer	854,063	May 21	3462	713–14	128	955
Wheel-rim	R. S. Bryant	853,058	May 7	1401	292	128	356
Wheel rim and tire	P. Ebner	853,299	May 14	1901	395	128	519
Wheel rim or felly	H. Pataud	853,524	May 14	2460	512	128	664
Wheel-spindle	P. H. Graves	855,303	May 28	5894	1220	128	1603
Wheel-truing mechanism. Metal-	E. Einfeldt	852,829	May 7	932	190–1	128	238
Wheels. Assembling	J. Weber, Jr	855,369	May 28	6007	1254	128	1561
Wheels. Mud-toe for traction-	J. McDonald and F. H. McBride	852,573	May 7	404	74	128	107
Wheels. Production of globoidal worm-	G. Mothes	852,736	May 7	729	142–3	128	191
Wheeling and edge-setting machine	G. M. Carnes	852,703	May 7	668	130	128	175
Wheelbarrow	C. H. Heineman	855,309	May 28	5903	1231	128	1605
Wheelbarrow-body	C. H. Heineman	854,496	May 21	4273	884	128	1163
Wheelbarrow-trays. Machine for trimming and wiring	M. A. Duquett	854,691	May 21	4641	967–8	128	1254
Whiffletree	S. A. Hazelton	854,496	May 21	4271	884	128	1162
Whiffletree attachment	J. J. Owens	854,306	May 21	3922	809	128	1075
Whiffletree-clip	H. F. Gray	853,353	May 14	2008	416	128	547
Whiffletree-coupling	E. L. Bauman	852,592	May 7	447	82	128	118

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Whipping device	L. G. Dobbs	852,498	May 7	236	42	128	67
Wick. Oil-burner	C. S. Cannon	852,651	May 7	560	106	128	146
Wind instruments. Pneumatic action for	J. Binnig	853,949	May 21	3232	663	128	897
Wind-motor	C. J. McMaster	854,664	May 21	4577	956	128	1238
Wind-wheel	W. J. Kinney	854,652	May 21	4556	951	128	1232
Winding-drum. Expansible	A. C. Mills	854,661	May 21	4571	955	128	1236
Winding machine. Yarn or thread	J. S. Ainley and E. Sykes	853,392	May 14	2072	430	128	564
Windlass. Hand-	H. D. Van Doorn	853,045	May 7	1381	287–8	128	351
Windmill-governor	C. K. Hall	854,735	May 28	4745	986	128	1309
Window	H. R. Schweinler	853,902	May 14	3113	638	128	829
Window	O. M. Edwards	854,988	May 28	5257	1095	128	1442
Window-bracket	P. A. Fenlan	852,941	May 7	1170	241	128	297
Window. Casement-	I. Wroblewski	852,485	May 7	199	36	128	58
Window-catch	C. A. Hammar and A. Brickman	853,358	May 14	2018	417	128	550
Window-cleaner	M. S. Heabler	853,783	May 14	2851	586	128	767
Window-cleaner	J. Deasy	854,151	May 21	3632	750	128	996
Window. Detachable bay-	L. G. Quackenboss	854,055	May 21	3433	708–9	128	947
Window-fastener	J. W. Lyon	853,020	May 7	1337	279	128	339
Window-fastener. Self-locking	J. I. Moss	852,517	May 7	276	51	128	76
Window-fastener. Storm-	E. C. Richards	855,259	May 28	5817	1213	128	1583
Window holding and antirattling device	J. B. Hunt	853,607	May 14	2680	552	128	723
Window-screen	W. Kemmerling	855,250	May 28	5805	1210	128	1580
Window-screen and the like	J. F. and L. F. Buck	853,862	May 14	3020	620	128	806
Window-sill. Weatherproof	P. L. Hedberg	854,889	May 28	5088	1058	128	1399
Window-ventilator	J. T. Glazier and C. C. Parker	854,033	May 21	3385	697	128	935
Wines from grapes. Producing sparkling	L. Scherzer	853,037	May 7	1370	.....	128	348
Wire. Barbed	D. C. Smith	853,938	May 14	3103	654	128	849
Wire-coiling apparatus	F. H. Daniels	854,809	May 28	4897	1017	128	1348
Wire-knotting machine	E. A. Hoefer	854,354	May 21	4004	827–8	128	1097
Wire machine. Barbed-	D. C. Smith	853,604	May 14	2478	516–17	128	669
Wire-reel	C. W. Stark	854,117	May 21	3569	736–7	128	980
Wire-rod-treating apparatus	F. H. Daniels	854,807	May 28	4893	1016	128	1347
Wire rods. Manufacture of	F. H. Daniels	854,810	May 28	4898	1017–19	128	1348
Wire rods. Treatment of	F. H. Daniels	854,808	May 28	4894	1017	128	1347
Wire-stretcher	F. W. Reichert	853,734	May 14	2766	569	128	745
Wire-stretcher	J. R. Hamilton	854,089	May 21	3512	725	128	968
Wire-winding machine	G. W. Stancliff	854,541	May 21	4350	900–1	128	1181
Wire-working tool	M. Hays	852,836	May 7	946	194	128	241
Wire-working tool	J. F. Dixon	854,811	May 28	4900	1019	128	1348
Wood. Apparatus for making imitation	W. N. Cornell	854,140	May 21	3620	750	128	995
Wood-shaving tool	C. Swan	852,470	May 7	175	31	128	53
Woodworking-machines. Saw or cutter guard for	E. W. A. Holtz and A. Dick	854,355	May 21	4006	828–9	128	1097
Woodworking-machines. Vertical-spindle mounting for	A. Mayer	853,104	May 7	1477	308	128	373
Woodworking-tool	N. H. Devers	854,735	May 28	4730	983–4	128	1306
Wool-scouring machine	W. O. Milne	854,372	May 21	4036	834	128	1105
Wool washing and cleansing apparatus. Electric	G. D. Burton	854,028	May 21	3377	695–6	128	933
Woven fabric	J. E. Kerr	854,220	May 21	3766	779	128	1033
Wrapper cutting and registering apparatus	J. H. Brady	854,022	May 21	3360	691	128	930
Wrapping-machine	J. H. Brady	854,021	May 21	3353	689–91	128	928
Wrapping-machine	J. H. Brady	854,023	May 21	3363	692–3	128	931
Wrapping machine. Article-	J. A. Keyes	852,961	May 7	1209	249–50	128	307
Wrapping-machine feeding and cutting attachment	D. T. Igou	852,663	May 7	585	111–12	128	152
Wrecking device	F. Oliver	854,596	May 21	4455	927	128	1207
Wrench: *See* Jaw-wrench. Ratchet-wrench. Pipe-wrench.							
Wrench	H. W. De Graff	852,874	May 7	1034	214	128	263
Wrench	B. Mallett	853,102	May 7	1474	308	128	373
Wrench	F. A. Bucey	853,222	May 14	1729	359	128	470
Wrench	W. E. Ingram	853,244	May 14	1767	367	128	481
Wrench	J. Knowles	853,414	May 14	2105	439	128	572
Wrench	N. Smith	854,248	May 21	3822	789–90	128	1048
Wrench	N. W. Gudmundson	854,289	May 21	3896	803	128	1068
Wrench	G. H. Deeves	854,338	May 21	3976	821	128	1090
Wrench	F. McArthur	854,376	May 21	4043	835	128	1106
Wrench	G. K. Holbine	854,949	May 28	5185	1080	128	1424
Wrench	W. McClone	855,014	May 28	5321	1105	128	1458
Wrench	J. B. Runner	855,135	May 28	5586	1162	128	1523
Wrench	J. M. Wallace	855,367	May 28	6003	1253	128	1630
Wrench, threading-die, and pipe-cutter. Combined	B. I. Borsen	853,761	May 14	2820	579–80	128	758
Yeast. Manufacturing	J. Blumer	855,276	May 28	5848	.....	128	1592
Yoke and yoke-screw	C. T. Mapes	854,512	May 21	4300	889	128	1169
Yoke. Animal-	F. W. Wheiden	854,973	May 28	5233	1090	128	1436
Zinc ores. Reducing	C. G. P. de Laval	852,440	May 7	59	12	128	18

ALPHABETICAL LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED DURING THE MONTH OF JUNE, 1907.

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
A. B. Chase Co. (See Cooper, William F., assignor.)						
A. Kimball Company. (See Edwards, John C., assignor.)						
A. Kimball Company. (See Kimball, Alonzo, assignor.)						
Abbé, Max F., New York, N. Y. Lining for pebble-mills	858,120	June 25	5282	1122	128	3133
Abbott, Franklin E., Buffalo, N. Y. Bridge and gage plate for railway-rails	857,780	June 25	4550	961–2	128	2948
Abbott, Franklin E., Buffalo, N. Y. Combined railway-rail and rail-base plate	857,781	June 25	4552	962	128	2948
Abbott, Twyman O., Seattle, Wash. Sleeping-car	858,130	June 25	5283	1122	128	3133
Abernethy, Harry M., assignor to American Railway Signal Company, Cleveland, Ohio. Railway semaphore-signal	856,506	June 11	2100	431–2	128	2260
Abrams, Frederic, Ennis, Tex. Seal-padlock	856,197	June 11	1447	305	128	2093
Acker, Charles E., Niagara Falls, N. Y. Detinning	855,491	June 4	94	.....	128	1718
Acker, Charles E., Niagara Falls, N. Y., assignor to Tin Products Company. Treating detinned iron and residues	856,753	June 11	2583	.....	128	2383
Ackley, Raymond E., Rockford, Ill. Safety device for elevators	858,247	June 25	5496	1172–3	128	3188
Adam, Agnes S., Washington, D. C. Pea-shelling machine	858,248	June 25	5499	1174	128	3189
Adams, Alfred, Brooklyn, N. Y. Interchangeable partition-section	856,198	June 11	1448	305–6	128	2093
Adams, Arthur J., assignor to Fulton Manufacturing Company, Chicago, Ill. Folding carriage	857,971	June 25	4956	1047	128	3050
Adams, Bert A., Pomona, Kans. Harness attachment	857,916	June 25	4824	1023	128	3015
Adams, Chas. S. (See Williams, Thomas A., assignor.)						
Adams, Eva B., Santa Ana, Cal. Corset	858,319	June 25	5618	1203	128	3218
Adams, Francis S., Pueblo, Colo. Apparatus for treating molten steel	855,603	June 4	306	63	128	1773
Adams, William T. (See Culmer, John W., assignor.)						
Addressograph Company. (See Duncan, Joseph S., assignor.)						
Adkins, Maurice C., Deer Head Cove, Ala. Plow-clevis	855,740	June 4	581	119	128	1845
Adlercreutz, Anders G. (See Ringbom, Ossian, assignor.)						
Adrianson, John, Chicago, Ill. Extensible jacket for revolvers	855,439	June 4	1	1	128	1695
Ahlen, William. (See Camp and Ahlen.)						
Aichele, Henry J., assignor to North Brothers Manufacturing Company, Philadelphia, Pa. Cap for magazine-tools	858,131	June 25	5285	1122	128	3134
Aiken, Edward L. (See Durand and Aiken.)						
Aiken, Edward L., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Phonograph recorder and reproducer	855,828	June 4	748	154	128	1883
Ajello, Gaetan, New York, N. Y. Armored cement or concrete construction	856,013	June 4	1097	227	128	1971
Ajello, Gaetan, New York, N. Y. Armored cement or concrete construction	856,615	June 11	2332	479	128	2319
Aktiebolaget Gasaccumulator. (See Dalén, Gustaf, assignor.)						
Aktiebolaget Separator. (See Forsberg, Erik A., assignor.)						
Aktiebolaget Separator. (See Ljungström, Birger, assignor.)						
Alber, Erhard T., Ann Arbor, Mich. Antifriction gear-tooth	857,144	June 18	3317	699	128	2606
Albert, James W., Oneida, N. Y. Shaft-coupling	856,199	June 11	1452	306	128	2093
Albert, John J., Danvers, Ill. Wire-working tool	855,741	June 4	582	119	128	1845
Albertson, Benjamin, Mantoloking, N. J. Lock for shutter-fasteners	856,669	June 11	2427	500	128	2342
Albin, John L., Colorado Springs, Colo. Fence-tool	855,549	June 4	208	40	128	1749
Albrecht, Francis J., Pittsburg, Pa. Oven-door	855,132	June 25	5287	1123	128	3134
Albrecht, Joseph, Esslingen, Germany. Drill and like clamping chuck	855,829	June 4	750	155	128	1884
Aldrich, Frank, assignor of one-half to E. L. Ebert, Detroit, Mich. Dumping-wagon	856,831	June 11	2716	562	128	2416
Aldridge, Walter H. (See Miller, John F., assignor.)						
Alexander, John S., New York, N. Y. Conduit for electric railways	855,492	June 4	95	20	128	1719
Alexander, Violet G., Charlotte, N. C. Dress-shield	858,249	June 25	5501	1174	128	3189
Allan, Edward T., Carthage, Ohio, assignor to Union Special Sewing Machine Company, Chicago, Ill. Presser-foot for sewing-machines	857,431	June 18	3856	819	128	2740
Allen, Aaron, Philadelphia, Pa. Slitting-machine	855,742	June 4	583	119–20	128	1846
Allen, Allie B., Hattiesburg, Miss. Tall-holder	858,250	June 25	5502	1175	128	3190
Allen, Charles M., Lo Lo Mont., assignor to R. Baggaley, Pittsburg, Pa. Forehearth	856,616	June 11	2334	479	128	2319
Allen, Edward B., Bridgeport, Conn., assignor to Singer Manufacturing Company. Needle-bar mechanism for buttonhole-stitching machines	856,617	June 11	2335	480	128	2319
Allen, Edward B., Bridgeport, Conn., assignor to Singer Manufacturing Company. Buttonhole-stitching machine	857,145	June 18	3318	699–700	128	2606
Allen, Edward B., Elizabeth, N. J., assignor to Singer Manufacturing Company. Buttonhole-sewing machine	858,133	June 25	5290	1124	128	3134
Allen, Edward B., Elizabeth, N. J., assignor to Singer Manufacturing Company. Carpet-sewing machine	858,134	June 25	5293	1125	128	3135
Allen, Edward B., Elizabeth, and W. E. Goodyear, Newark, N. J., assignors to Singer Manufacturing Company. Buttonhole-sewing machine	856,014	June 4	1098	228	128	1971
Allen, Henry C., assignor to M. E. Allen, Northford, Conn. Communion or eucharistic device	858,051	June 25	5132	1085	128	3094
Allen, Isabell, Kansas City, Mo., and G. Hanlon, Shawneetown, Ill. Electric curling-iron	857,569	June 25	4141	877	128	2843
Allen, Lewis C., assignor to M. Werk Company, Cincinnati, Ohio. Tag-rest for soap	857,570	June 25	4142	877	128	2843
Allen, Mary E. (See Allen, Henry C., assignor.)						
Allen, Matthew F., Nashville, Tenn. Base for stoves or ranges	856,754	June 11	2584	530	128	2384
Allen, William D., and G. A. Johnson, assignors to Marlin Fire Arms Company, New Haven, Conn. Cutting-tool	857,710	June 25	4412	932	128	2614

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Alley, Charles J., Farndon, New Zealand. Machine for use in chiming and crozing barrels.	856,561	June 11	2218	456	128	2289
Allin, Joseph H. and R. L., Pecan Gap, Tex. Adjustable colter-clamp	856,200	June 11	1454	306–7	128	2094
Allin, Robert L. (See Allin, Joseph H. and R. L.)						
Allis-Chalmers Company *et al.* (See Wright, Edwin C., assignor.)						
Alma Manufacturing Company of Baltimore City. (See Kerngood, Herman, assignor.)						
Alves, Walter S., Henderson, Ky. Gun-stock	856,507	June 11	2102	432	128	2260
Alz, Urban S., Mount Washington, Md. Emergency-button	857,917	June 25	4825	1023	128	3015
American Can Company. (See Hodgson, John G., assignor.)						
American Can Company. (See Miller, George F., assignor.)						
American Can Company. (See Philip, Ernest R., assignor.)						
American Can Company. (See Philip and Kohke, assignors.)						
American Can Company. (See Rudolphi, Frank, assignor.)						
American Can Company. (See Stollberg, Charles, assignor.)						
American Can Company. (See Stollberg and Philip, assignors.)						
American Car & Foundry Company. (See Ames, John M., assignor.)						
American Car & Foundry Company. (See Frame, Robert E., assignor.)						
American Clay Machinery Co. (See Cunningham, William R., assignor.)						
American Cotton Separator Company. (See Patterson, Warren A., assignor.)						
American Electrical Process Company. (See Burton, George D., assignor.)						
American Harrow Company. (See Wells, Robert S., assignor.)						
American Horse Shoe Company. (See Smith, Arthur, assignor.)						
American Lacing Hook Co. (See Bartel and Taft, assignors.)						
American News Company. (See La May, Arthur C., assignor.)						
American Pearl Button Company. (See Sawyer, Frank P., assignor.)						
American Peat Machinery Company. (See Sharpneck, Matthew C., assignor.)						
American Pin Company. (See Newell, Thomas, assignor.)						
American Pulley Company. (See Brinley, Charles A., assignor.)						
American Railway Signal Company. (See Abernethy, Harry M., assignor.)						
American Seeding Machine Company. (See Packham, Frank R., assignor.)						
American Serial Lock Company. (See Townsend, Harry P., assignor.)						
American Sheet & Tin Plate Company. (See Marks, Herbert E., assignor.)						
American Soda Fountain Company. (See Lippincott, Fisher H., assignor.)						
American Steam Gauge and Valve Manufacturing Company. (See Ellison, Lewis M., assignor.)						
American Steel & Wire Company. (See Condon, William R., assignor.)						
American Steel and Wire Company. (See Daniels, Backlin, and Swinscoe, assignors.)						
American Typographic Corporation. (See Richards, Francis H., assignor.)						
American Wheel Company. (See Plummer, William S., assignor.)						
Ames, John M., New York, N. Y., assignor to American Car & Foundry Company, St. Louis, Mo. Tank-car	857,571	June 25	4144	877–8	128	2843
Amey, Clement I., Toronto, Ontario, Canada. Track lifting, leveling, ballasting, and tamping machine	857,572	June 25	4145	878–9	128	2844
Amphion Piano Player Company. (See Doman, Lewis B., assignor.)						
Amon, Joseph, New York, N. Y. Electric-lamp socket	856,755	June 11	2585	531	128	2384
Andersen, Theodore C. J., New York, N. Y., assignor to Macallen Company, Boston, Mass. Adjustable fixture-support	855,830	June 4	751	155	128	1884
Anderson, Anders L., Gayville, S. D. Filter	856,832	June 11	2117	562	128	2416
Anderson, Andrew M., *et al.* (See Stenstrom, John P., assignor.)						
Anderson, Carl F., Chicago, Ill. Releasing mechanism for bundling-presses	857,918	June 25	4827	1023	128	3015
Anderson, Charles A., and E. A. Erickson, Chicago, Ill., assignors, by mesne assignments, to Reeves & Company, Columbus, Ind. Multiple-feed lubricator	857,221	June 18	3463	730–1	128	2644
Anderson Computing Scale Company. (See Braskett, Thomas C., assignor.)						
Anderson, David F., assignor to E. Children's Sons Manufacturing Co., Council Bluffs, Iowa. Hay-rake	857,374	June 18	3751	794	128	2716
Anderson, Jacob T., New York, N. Y. Electric tank-switch	858,135	June 25	5296	1125	128	3136
Anderson, John, *et al.* (See Norstrom, Nils E., assignor.)						
Anderson, Roy, Charleston, Ill. Safety-valve for locomotives	856,562	June 11	2220	457	128	2289
Anderson Tool Company. (See Burkhardt, Franklin P., assignor.)						
Anderson, William, assignor to A. A. Strange and W. O. White, Memphis, Tenn. Switch-lock	856,437	June 11	1986	409	128	2232
Andrews, Charles, and T. Jackson, assignors to Andrews Governor Patents Limited, London, England. Governor	858,320	June 25	5619	1203–4	128	3218
Andrews Governor Patents. (See Andrews and Jackson, assignors.)						
Anguish, James M. (See Briscoe and Anguish.)						
Annabal, Thomas W., *et al.* (See Tucker, Leroy, assignor.)						
Annabal, Thomas W. (See Tucker and Shunk, assignors.)						
Anthony, Charles C., Philadelphia, Pa. Block-signal system	856,670	June 11	2428	501	128	2343
Anthony, Paul H. (See Hindman and Anthony.)						
Anthony, Robert T., Slatington, Pa. Easel	855,743	June 4	584	120	128	1846
App, Eva B., Moorestown, N. J. Swing	855,493	June 4	97	20	128	1719
Appell, Edward A., New York, N. Y. Apparatus for cooling or heating beer	856,015	June 4	1100	228	128	1972
Apple, Vincent G., Dayton, Ohio, assignor to National Brake and Clutch Company, Boston, Mass. Friction device	856,563	June 11	2223	457	128	2290
Appleby, James P., Hopkins, Minn. Electrical switch	855,494	June 4	98	20	128	1719
Appleby, Joseph, Aston, England. Spinning-frame	855,921	June 4	935	194	128	1930
Apt, Richard, Berlin, Germany, assignor to General Electric Company. Electrical safety device	855,440	June 4	3	1	128	1695
Arburn, David F., Evansville, Ind. Polishing-machine	856,331	June 11	1746	361–2	128	2169
Archer, Gleason L., Boston, Mass. Car-ventilator	856,934	June 11	2899	607	128	2458
Archer Iron Works. (See Klemp, William F., assignor.)						
Argall, Philip, Denver, Colo. Ore-distributer	855,744	June 4	586	120–1	128	1846
Argall, Philip, Denver, Colo. Radial ore-distributer	855,745	June 4	589	121	128	1847
Armbruster, William J., St. Louis, Mo. Building-block machine	856,383	June 11	1877	387–8	128	2205
Armbruster, William J., St. Louis, Mo. Chlorination-barrel	856,384	June 11	1881	388	128	2206
Armstrong, Martin, and A. A. Coup, St. Louis, Mo. Explosive toy	857,008	June 18	3051	643	128	2537
Arnold, Charles P. (See Jones, Thomas E., assignor.)						
Arnold, Jesse E., Hico, Tex. Harrow	857,711	June 25	4413	932	128	2914
Arnold, Philip C., assignor to Bevin Brothers Manufacturing Company, East Hampton, Conn. Bell	856,995	June 11	3020	635	128	2491
Arnot, John Y., Oakland, Cal. Combined refrigerator and filter	856,508	June 11	2103	432	128	2261
Arnson, Ludwig, New York, N. Y. Receiving apparatus for wireless telegraphy	857,375	June 18	3753	794–5	128	2716
Arter, Alpheus, Lisbon, Ohio. Hay-loader	856,833	June 11	2719	583	128	2417
Arthur, Daniel, New York, N. Y. Hoisting-machine	857,972	June 25	4958	1048	128	3051
Aschbrenner, Frank G., Stratford, Wis. Can-opener	857,009	June 18	3052	643	128	2537
Ash, Charles S. (See Best, Ash, and Samson.)						
Askanasy, Paul, and L. Stockem, Nuremberg, assignors to Elektrochemische Werke, Gesellschaft M. B. H., Berlin, Germany. Producing calcium hydrid	857,146	June 18	3322		128	2607
Atkins, Charles H., Springfield, Mass. Cloth-take-up mechanism for looms	858,052	June 25	5133	1085–6	128	3095
Atkins, Charles H., Springfield, Mass. Harness-motion for looms	858,136	June 25	5298	1126	128	3137

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Atkins, Charles H., Springfield, Mass. Loom-shuttle and bobbin-tensioning means therefor	858,137	June 25	5301	1126–7	128	3137
Atkins, Charles H., Springfield, Mass. Warp-let-off mechanism for looms	858,138	June 25	5303	1127–8	128	3138
Atkins, Charles H., Springfield, Mass. Warp stop-motion for wire-weaving looms	858,139	June 25	5306	1128	128	3139
Atkins, William, assignor of two-thirds to A. W. MacRae, St. John, New Brunswick, Canada. Nut-lock	857,573	June 25	4151	879	128	2845
Atkinson, William R., New York, N. Y. Electric switch-box	855,550	June 4	209	40	128	1749
Atlantic Coast Amusement Company. (See Hafner, Frederick J., assignor.)						
Atlantis Fountain Pen Company. (See Moore, Morris W., assignor.)						
Atlas Tack Company. (See Giles and Tobey, assignors.)						
Atterholt, Oliver S., Jermyn, Pa. Lamp	858,251	June 25	5503	1175	128	3190
Atterholt, Oliver S., Jermyn, Pa. Bowl	858,252	June 25	5504	1175	128	3190
Auchu, Henry, Emporium, Pa. Casing-head	858,321	June 25	5621	1205	128	3218
Audley, Francis H., assignor to F. J. Audley and B. Schlesinger, New York, N. Y. Whip	857,511	June 18	4013	854	128	2781
Audley, Francis J., *et al.* (See Audley, Francis H., assignor.)						
Aufsesser, Ferdinand M., assignor to Mohawk Brush Company, Albany, N. Y. Brush	856,834	June 11	2720	563	128	2417
Aus, Gunvald, Brooklyn, N. Y. Construction of reinforcing-steel for reinforced concrete beams and girders	857,973	June 25	4960	1049	128	3051
Automatic Oscillating Loom Company. (See Poalk, James L., assignor.)						
Auvert, Louis R., and A. F. E. Ferrand, Paris, France. Redressing and regulating device enabling to transform a single-phase current into a continuous one	857,267	June 18	3547	752	128	2665
Avara, Theresa D., Rushings Store, Miss. Infant-protector	855,551	June 4	210	41	128	1750
Avery, Augustus W., Cove, N. C. Rail-fastening	856,835	June 11	2721	563	128	2417
Avey, Charles H., San Francisco, Cal. Feed receptacle or bag	856,756	June 11	2587	531	128	2384
Axelstrom, John, Chicago, Ill. Windmill	857,376	June 18	3755	795	128	2717
Axford, Harris W., Chicago, Ill. Incubator	855,871	June 4	834	173	128	1905
Aylsworth, Jonas W., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Composition for phonographic records	855,552	June 4	211	41	128	1750
Aylsworth, Jonas W., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Making duplicate phonograph-records	855,553	June 4	212	41	128	1750
Aylsworth, Jonas W., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Making duplicate phonograph-records	855,554	June 4	214	42	128	1751
Aylsworth, Jonas W., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Making duplicate sound-records	855,555	June 4	215	42	128	1751
Aylsworth, Jonas W., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Duplicate sound-record	855,556	June 4	218	42	128	1752
Aylsworth, Jonas W., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Making phonograph-blanks	855,557	June 4	219	42	128	1752
Aylsworth, Jonas W., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Making duplicate phonograph-records	855,605	June 4	309	63	128	1774
Aylsworth, Jonas W., East Orange, assignor to New Jersey Patent Company, West Orange, N. J. Making duplicate sound-records	855,606	June 4	312	64	128	1775
Aylsworth, Jonas W., East Orange, and F. L. Dyer, Montclair, assignors to New Jersey Patent Company, West Orange, N. J. Phonograph	855,604	June 4	307	63	128	1773
B. F. Goodrich Company. (See Shaw, Edwin C., assignor.)						
B. F. Perkins and Son. (See Perkins and Stanley, assignors.)						
Babcock & Wilcox Company. (See Bell, John E., assignor.)						
Bach, John A., Philadelphia, Pa. Cigar bunching and wrapping machine	856,201	June 11	1456	307	128	2094
Bachmann, Siegmund, Chicago, Ill. Box	855,746	June 4	591	122	128	1848
Bacigalupo, Peter, Haverhill, Mass. Buffing-roll	855,922	June 4	939	194	128	1930
Backlin, Axel F. (See Daniels, Backlin, and Swinscoe.)						
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Automatic exhaust relief-valve	856,202	June 11	1459	308	128	2096
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Turbine running-wheel	856,203	June 11	1461	308	128	2097
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Turbine nozzle-valve	856,204	June 11	1462	308	128	2097
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Turbine nozzle-partition and running-wheel	856,205	June 11	1463	308	128	2097
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Turbine nozzle-valve	856,206	June 11	1464	309	128	2098
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Turbine running-wheel	856,207	June 11	1465	309	128	2098
Backstrom, Charles A., Milwaukee, Wis., assignor to Backstrom-Smith Steam Turbine & Manufacturing Company. Turbine nozzle-partition and nozzle	856,208	June 11	1466	309	128	2098
Backstrom-Smith Steam Turbine & Manufacturing Company. (See Backstrom, Charles A., assignor.)						
Bacon, George W., Grand Junction, Colo. Horse hay-rake	855,686	June 4	465	98	128	1814
Bacon, Marvin J. (See Eichelberger, Hibner, and Bacon.)						
Bacon, Mary C., and M. Baldridge, Los Angeles, Cal. Cooking utensil	856,509	June 11	2104	432	128	2261
Badische Anilin & Soda Fabrik. (See Scholl, Roland H., assignor.)						
Badische Maschinenfabrik und Eisengiesserei, vorm. G. Sebold und Sebold & Neff. (See Beeg, Hans, assignor.)						
Baehr, George, McKeesport, and H. B. Lynch, Versailles, assignors to National Tube Company, Pittsburg, Pa. Magnetic drawing apparatus for pipes, &c.	857,856	June 25	4701	997–8	128	2985
Baese, Charles E., Wilmington, Ill. Feed-trough for poultry	856,564	June 11	2224	457	128	2291
Baggaley, Arthur, Chicago, Ill. Ventilator	855,607	June 4	315	65	128	1775
Baggaley, Ralph. (See Allen, Charles M., assignor.)						
Bagley, Marion L., Santa Barbara, Cal. Hair-retaining device	857,222	June 18	3465	731	128	2644
Bailey, D. H., *et al.* (See Milburn, William M., assignor.)						
Baines, Frederick E. V., Blackheath, England. Pencil-sharpener	857,574	June 25	4152	879	128	2845
Baird, Frank S. (See Carroll and Baird.)						
Baker, Abram O., St. Louis, Mo. Sash-fastener	857,322	June 18	3647	773	128	2680
Baker, Francis R., Birmingham, assignor to J. Walker, London, England. Temporary binder	857,377	June 18	3757	795	128	2717
Baker, John, Hoopeston, Ill. Fruit and vegetable corer	857,512	June 18	4014	855	128	2781
Baker, John W. (See Parker, George H., assignor.)						
Baker, Robert D., Las Vegas, Nev. Nut-lock	857,782	June 25	4553	963	128	2949
Baker, William H., assignor of three-fifths to J. Peterson, Lockport, N. Y. Insulating covering or sheathing for contact-rail conductors	856,385	June 11	1884	388	128	2207
Balken, Albert T., McIntosh, Minn. Threshing-machine	857,147	June 18	3322	700–1	128	2607
Balch, Ulin S., Carterville, Mo. Steel metallic belting	856,565	June 11	2225	458	128	2291
Balcom, Frank G., *et al.* (See Clark, Frank M., assignor.)						
Balding, Victor C., Little Rock, Ark. Telegraph apparatus	856,837	June 11	2725	565	128	2417
Baldridge, May. (See Bacon and Baldridge.)						
Baldwin, James L., Chicago, Ill. Cash and parcel carrier	856,189	June 4	1421	301	128	2060
Baldwin, Major E., Chicago, Ill. Arch for furnaces and fire-boxes	855,495	June 4	100	20	128	1720
Bale, John M. (See Roach, John R., assignor.)						
Ball, Wilson S., *et al.* (See Hanlon, Daniel B., assignor.)						
Ballentine, William I., Philadelphia, Pa. Testing the hardness and density of metals and other materials	855,923	June 4	940	196	128	1931

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Ballreich, Charles, Pueblo, Colo. Safety-razor	855,608	June 4	317	65	128	1776
Balson, Frank, Omaha, Nebr. Gun-stock	856,016	June 4	1101	229	128	1972
Banana Food Products Company. (See Lewis, Sylvester G., assignor.)						
Bancroft, John S., assignor to Lanston Monotype Machine Company, Philadelphia, Pa. Mold for type-machines	857,712	June 25	4415	932–3	128	2914
Bancroft, Wilfred, assignor to Lanston Monotype Machine Company, Philadelphia, Pa. Record strip or controller for composing, type-casting, and other machines	857,974	June 25	4961	1049	128	3051
Bandimere, Charles, Carver, Minn., assignor to F. E. Bandimere, Groton, S. D. Post-driver	858,322	June 25	5623	1205	128	3219
Bandimere, Fred E. (See Bandimere, Charles, assignor.)						
Banister, William A., and D. M. Lake, Newark, N. J. Indicator	857,857	June 25	4703	998	128	2985
Bánó, Ladislas de. (See Gálocsy, Bánó, and Terény.)						
Barber, Charlie C. (See Barber, William T. and C. C.)						
Barber, Earl E. (See Grover and Barber.)						
Barber, Herman, Elwood, Ind. Liquid-distributing apparatus	855,496	June 4	101	21	128	1720
Barber, Howard M., Stonington, Conn., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Web-folding machine	857,575	June 25	4153	879–80	128	2845
Barber, Sherman, Chicago, Ill. Nut-lock	857,223	June 18	3466	731	128	2644
Barber, William T. and C. C., Shelbyville, Tenn. Photographic shutter	856,836	June 11	2722	564	128	2417
Barcalo Manufacturing Company. (See Vallone, Charles, assignor.)						
Barcus, Miner, Schenectady, N. Y., assignor to General Electric Company. Windings for electrical apparatus	856,566	June 11	2226	458	128	2291
Barker, James R., Green Valley, Ill. Automobile-wheel	856,757	June 11	2590	531	128	2385
Barnes, Joshua B., Springfield, Ill. Scummer and blow-off for steam-boilers. (Reissue)	12,663	June 25	5736	1223	128	3253
Barnes, Justus W., Jr., Pittsfield, Mass. Wheel	857,858	June 25	4704	998	128	2986
Barnett, Frank J., Wilkinsburg, Pa. Lathe	858,358	June 25	5729	1222	128	3251
Barnett, Ira S., Louisville, Ky. Heat-radiating ring	855,687	June 4	467	98	128	1815
Barney, George, Leesville, La. Brick-truck	857,859	June 25	4706	999	128	2986
Barnheisel, Frederick R., Chicago, Ill. Rotary baking-oven	858,053	June 25	5136	1086–8	128	3096
Barnheisel, Frederick R., Chicago, Ill. Combined bearing and steam-feeding mechanism for rotary bake-ovens	858,323	June 25	5625	1205	128	3219
Barr, James J., assignor of one-half to C. S. Walker, Slidell, La. Automatic retort-cover	857,148	June 18	3325	701	128	2608
Barrett, Charles E., Indianapolis, Ind. Muscilage-bottle	857,975	June 25	4963	1049	128	3052
Barriere, Wilfrid H., Worcester, Mass. Window	855,609	June 4	319	65	128	1776
Barry, Walter H., Chicago, Ill. Window frame and sash	856,017	June 4	1102	229	128	1973
Bartel, William P., Waltham, and S. E. Taft, South Framingham, Mass., assignors to American Lacing Hook Co. Automatic lacing-hook-setting machine	855,497	June 4	103	21–2	128	1720
Barth, Alfred. (See Leykauf and Barth.)						
Barth, Richard, Oklahoma, Okla. Ter. Fire-escape	857,513	June 18	4016	855	128	2781
Barthel, Hermann, Schweinfurt, Germany. Ball-bearing	856,209	June 11	1467	309	128	2399
Bassett Martha B., St. Louis, Mo. Combined cooking-utensil holder and sad-iron heater	856,935	June 11	2901	606	128	2459
Bates, Edwin G., New York, N. Y., assignor to Bates Machine Company. Numbering and dating machine	857,976	June 25	4964	1049–50	128	3052
Bates, George A., Fall River, Mass. Machine for raising flutes on drawing and other rolls	857,576	June 25	4155	880	128	2846
Bates Machine Company. (See Bates, Edwin G., assignor.)						
Bathrick, Ellsworth R., Akron, Ohio. Safety device for starting explosive-engines	855,610	June 4	321	66	128	1777
Batten-Hayes Company. (See Batten and Hayes, assignors.)						
Batten, William, and W. Hayes, Auburn, assignors to Batten-Hayes Company, Lewiston, Me. Traveling-flat carding-engine	857,713	June 25	4418	933	128	2915
Battensby, William, assignor to Lumsden Machine Company, Limited, Gateshead, England. Mitering-machine	856,210	June 11	1468	310	128	2099
Bauer & Black. (See Schulz, Otto C., assignor.)						
Baum, Jacob, trustee. (See Winfield, Edward F., assignor.)						
Baumann, Robert. (See Wurmb and Baumann.)						
Baumer, Francis, assignor to Will & Baumer Company, Syracuse, N. Y. Lamp-shade	856,190	June 4	1425	301	128	2051
Baumgartner, Charles B., Rochelle, assignor to Loraine Manufacturing and Tool Company, Chicago, Ill. Door-latch	856,936	June 11	2902	608	128	2459
Baus, Burton A., Gloversville, N. Y. Self-dumping bucket	856,211	June 11	1469	310	128	2099
Bayard, Emery, Rochester, N. Y., assignor to United Shoe Machinery Company, Paterson, N. J. Making shoes	855,831	June 4	752	155	128	1884
Beasley, Arthur J., assignor to National Malleable Castings Company, Cleveland, Ohio. Uncoupling device	858,324	June 25	5626	1205–6	128	3220
Beach, Harry L., Coshocton, Ohio. Sign	855,747	June 4	594	122	128	1848
Bean, Charles F., Port Tampa City, Fla. Adjustable swing	857,432	June 18	3857	819	128	2741
Beard, George M., Warsaw, Ind. Exhaust-valve mechanism for explosive-engines	857,149	June 18	3327	701	128	2608
Beasley, Benjamin F., Lexington, assignor of one-half to R. N. Beasley, Paint Lick, Ky. Change apparatus	858,253	June 25	5505	1175	128	3190
Beasley, Noah N., Greeley, Colo. Gage attachment for planes	857,514	June 18	4017	855	128	2782
Beasley, Rurick N. (See Beasley, Benjamin F., assignor.)						
Beaton, Robert W., Chicago, Ill. Fastener for pipe and conduit supports	855,924	June 4	942	195	128	1931
Beaton, Robert W., Chicago, Ill. Hanger	858,140	June 25	5311	1129	128	3140
Beatty, Orah T., assignor of one-third to T. S. Filson, East Brady, Pa. Air-brake	857,010	June 18	3053	643	128	2537
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Printing-press	855,748	June 4	595	122	128	1848
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Printing-press	856,126	June 4	1300	272–3	128	2021
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Flat-bed web-printing press	856,758	June 11	2590	532	128	2385
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Type-metal melting-pot	857,433	June 18	3859	820	128	2741
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Flat-bed web-press	858,054	June 25	5141	1088	128	3097
Beck, William O., assignor to Western Electric Company, Chicago, Ill. Automatic calling device	856,386	June 11	1886	389	128	2207
Becker, Archibald L., assignor to Vulcan Iron Works Company, Toledo, Ohio. Dipper-mounting	857,577	June 25	4157	880	128	2847
Becker, George J., Buffalo, N. Y. Rail-joint	857,860	June 25	4708	999	128	2987
Becket, Frederick M., Niagara Falls, N. Y., assignor to Electro Metallurgical Company. Cooling-jacket for electric-furnace electrodes	855,441	June 4	4	1	128	1696
Becket, Frederick M., Niagara Falls, N. Y., assignor to Electro Metallurgical Company. Producing vanadium and its alloys	858,225	June 25	5627	.....	128	3220
Becket, Frederick M., Niagara Falls, N. Y., assignor to Electro Metallurgical Company. Treating iron or steel	858,226	June 25	5628	.....	128	3221
Becket, Frederick M., Niagara Falls, N. Y., assignor to Electro Metallurgical Company. Alloy and producing it	858,227	June 25	5630	.....	128	3221
Becket, Frederick M., Niagara Falls, N. Y., assignor to Electro Metallurgical Company. Reducing vanadium sulfid	858,228	June 25	5631	.....	128	3221
Becket, Frederick M., Niagara Falls, N. Y., assignor to Electro Metallurgical Company. Effecting chemical reductions and producing metals and alloys	858,229	June 25	5632	.....	128	3221

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Bedell, Richard M., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company. Linotype-machine	858,141	June 25	5312	1129	128	3141
Bedford, Milton T., assignor of one-half to R. V. Jones, Sidney, Ohio. Folding chair	855,872	June 4	835	173	128	1905
Beebe, Robert H., and J. R. Concoff, assignors to Hydraulic Wood Lift Company, St. Johns, Oreg. Hydraulic elevator	856,759	June 11	2593	533	128	2386
Beede, Herbert G., Pawtucket, R. I. Adjusting device	856,567	June 11	2228	458	128	2291
Beeg, Hans, assignor to Firm of Badische Maschinenfabrik und Eisengiesserei, vorm. G. Sebold und Sebold & Neff, Durlach, Germany. Match-making machine	857,861	June 25	4709	999	128	2987
Beeson, Arthur W. (See Henning and Beeson.)						
Behning, Gustave, *et al.* (See Winter, Frederick W., assignor.)						
Behringer, Emil, Brooklyn, N. Y. Collapsible hat	857,434	June 18	3861	820	128	2741
Behringer, John, Chicago, Ill. Cooking utensil	856,671	June 11	2437	501	128	2345
Beidler, George A., Oklahoma, Okla. Ter. Collar-pin and necktie-fastener	857,919	June 25	4828	1024	128	3016
Belanger, John D. (See Dion and Belanger.)						
Belanger, Joseph, assignor to J. Belanger, Labine & Company, Springfield, Mass. Inner-sole for shoes	856,387	June 11	1889	389	128	2208
Belanger, Labine & Company, J. (See Belanger, Joseph, assignor.)						
Belcher Brothers Company. (See Stimpson, Edwin B., assignor.)						
Belden, Robert, Spanish Ranch, Cal. Power-shovel	856,018	June 4	1103	229–30	128	1973
Belfield, T. Broom. (See Goehring, John R., assignor.)						
Bell, Alexander G., and H. P. McNeil, Washington, D. C. Connection device for the frames of aerial vehicles and other structures	856,838	June 11	2727	565	128	2418
Bell, George W., Liverpool, England. Pneumatic vehicle-spring	856,510	June 11	2106	433	128	2261
Bell, John E., Barberton, Ohio, assignor to Babcock & Wilcox Company, New York, N. Y. Traveling-grate stoker	857,011	June 18	3055	644	128	2538
Bell, John E., Barberton, Ohio, assignor to Babcock & Wilcox Company, New York, N. Y. Traveling-grate system	857,012	June 18	3057	644	128	2538
Bell, John E., Barberton, Ohio, assignor to Babcock & Wilcox Company, New York, N. Y. Superheater-boiler	857,013	June 18	3059	645	128	2538
Bell, John E., Barberton, Ohio, assignor to Babcock & Wilcox Company, New York, N. Y. Superheater-boiler	857,014	June 18	3060	646	128	2539
Bell, John E., Barberton, Ohio, assignor to Babcock & Wilcox Company, New York, N. Y. Superheater-boiler	857,015	June 18	3063	647	128	2540
Bell, John E., assignor to Babcock & Wilcox Company, New York, N. Y. Water-tube boiler	857,016	June 18	3064	647	128	2540
Bell, John E., assignor to Babcock & Wilcox Company, New York, N. Y. Water-tube boiler	857,017	June 18	3065	648	128	2541
Bell, Oro A., New York, N. Y., assignor to Western Electric Company, Chicago, Ill. Locking-hinge	856,937	June 11	2903	608	128	2459
Bell, William, Montreal, Quebec, Canada. Banana-package	857,435	June 18	3861	820	128	2742
Bellamy, Alfred R., Stockport, England. Internal-combustion engine	855,611	June 4	325	66	128	1777
Beller, Charles J., Bedford, assignor of one-half to J. Beller, Cleveland, Ohio. Anchor for tape-lines	856,938	June 11	2904	.....	128	2460
Beller, John. (See Beller, Charles J., assignor.)						
Belt, William R., *et al.* (See Harris, Edward, assignor.)						
Beltrame, Pietro, and P. Falchi, Terni, Italy. Safety-razor	856,438	June 11	1987	409	128	2232
Bemelmans, Leon, Schaerbeek, near Brussels, Belgium. Gas-generator furnace	855,749	June 4	508	123	128	1849
Bendix, Emile and F. O., New Orleans, La. Filter	856,332	June 11	1748	362	128	2169
Bendix, Frederick O. (See Bendix, Emile and F. O.)						
Benedict, Myron C., Los Angeles, Cal. Blackboard-ruler	858,254	June 25	5507	1176	128	3191
Bennett, Harry, Latrobe, Pa. Beating-roll for paper-pulp or other engines	858,256	June 25	5511	1176	128	3192
Bennett, Harry, Newark, N. J., assignor to Bennett Inventing and Manufacturing Company. Trolley for electric railways	858,255	June 25	5509	1176	128	3191
Bennett Inventing and Manufacturing Company. (See Bennett, Harry, assignor.)						
Bennett, Orin F. (See Stone, Frederick B., assignor.)						
Bennett, Raymond F., Portland, Me. Boom-point for derricks	856,212	June 11	1471	310–11	128	2099
Bennett, Rolla L. (See Robinson and Bennett.)						
Benolt, Ida V., New York, N. Y. Storm-garment	857,578	June 25	4158	880–1	128	2847
Bense, John H. and J. W., Oakharbor, Ohio. Combustion-engine	856,760	June 11	2595	532	128	2386
Bense, John W. (See Bense, John H. and J. W.)						
Benton, Andrew J., Washington, D. C., assignor to Lanston Monotype Machine Company, Philadelphia, Pa. Gear-adjusting mechanism	857,783	June 25	4554	963	128	2949
Benton, William A., Fort Worth, Tex. Mold for making concrete blocks and artificial stone	856,213	June 11	1473	311	128	2100
Berendes, Rudolph, and J. Callsen, assignors to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Methylene citryl salicylic acid	858,142	June 25	5314	.....	128	3141
Berendes, Rudolph, and J. Callsen, assignors to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Salts of methylene citryl salicylic acid	858,143	June 25	5315	.....	128	3141
Berg, Harold, Jacobsville, Mich. Boat-lashing device	856,439	June 11	1988	410	128	2232
Berger, Anton J., Milwaukee, Wis. Door-lock	856,214	June 11	1474	311	128	2100
Bergsten, Adolph L., Mount Union, Iowa. Fastener for doors	855,498	June 4	112	22	128	1722
Bergstrom, John, and C. A. Wahleen, Washburn, Wis. Pump	856,215	June 11	1475	312	128	2100
Berlin Machine Works. (See Ross, Harry B., assignor.)						
Bernhardt, August E., Guelph, Ontario, Canada. Carriage-curtain fastener	857,018	June 18	3067	648	128	2541
Bernier, John B., assignor of one-half to F. H. Roche, Manville, R. I. Picker-stick check for looms	855,873	June 4	836	173	128	1905
Berry, William D., Louisville, Ky. Catamenial appliance	857,019	June 18	3068	648	128	2541
Bery, Henry J. (See Bryant and Bery.)						
Best, Ezra, *et al.* (See Best, William N., assignor.)						
Best, George H., Hampton, New Brunswick, Canada. Set-ring	857,862	June 25	4710	999	128	2987
Best, John H., *et al.* (See Best, William N., assignor.)						
Best, Otto, C. S. Ash, and E. Samson, San Francisco, Cal. Baking-powder and making the same	856,672	June 11	2438	.....	128	2346
Best, Otto, C. S. Ash, and E. Samson, San Francisco, Cal. Baking-powder and making the same	856,673	June 11	2439	.....	128	2346
Best, William N., Los Angeles, Cal., assignor to J. H. and E. Best, Quincy, Ill. Air-carbureting oil-burner	856,674	June 11	2441	501	128	2346
Bethlehem Steel Company. (See Stout and Hughes, assignors.)						
Betts, Anson G., Troy, N. Y. Electrolytically refining metals	857,378	June 18	3758	796	128	2717
Betts, Lewis F., New York, assignor of one-half to H. B. Gilmore and J. A. Kennedy, Brooklyn, N. Y. Sheet-metal receptacle	855,925	June 4	943	195	128	1931
Beugler, Edwin F., assignor to E. B. Holmes, Buffalo, N. Y. Barrel-hoop-nailing machine	857,516	June 18	4019	856	128	2782
Bevan, Joseph, Newark, N. J. Saddletree	858,055	June 25	5143	1088	128	3097
Bevin Brothers Manufacturing Company. (See Arnold, Philip C., assignor.)						
Bewley, William D., *et al.* (See Reese, Henry D., assignor.)						
Bey, Muhitdin, Constantinople, Turkey. Rotary engine	858,144	June 25	5316	1129–30	128	3141
Bickel, Winfield S., Shryock, W. Va. Stovepipe-joint	856,839	June 11	2728	566	128	2419
Bickerton, Henry N., H. W. Bradley, Ashton-under-Lyne, and D. Clerk, Ewhurst, England. Explosion-engine	855,442	June 4	5	2	128	1696
Bigelow, Claude, assignor to R. J. White, Chicago, Ill. Coin-operated vending-machine	856,019	June 4	1105	230	128	1974

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Bigelow, Wesley, assignor of forty-nine one-hundredths to J. Hadcock, New York, N. Y. Ventilator	856,020	June 4	1109	231	128	1975
Bingman, John C. (See Breakenridge, Nelson, assignor.)						
Birch, John H. (See Birch, John H. and J. H.)						
Birch, John H. and J. H., Crawfordsville, Ind. Suspended drill-press	857,020	June 18	3069	649	128	2542
Bird, Frederick A., Erdington, near Birmingham, England. Stopper or closure for bottles and jars	856,840	June 11	2729	566	128	2419
Bird, John C., assignor to Union Steam Pump Company, Battle Creek, Mich Valve-gear	857,579	June 25	4159	881–2	128	2847
Birnbach, Heinrich, Vienna, Austria-Hungary. Memorandum-block	856,841	June 11	2731	566	128	2419
Bishop, Albert T., Southington, assignor to Hurwood Manufacturing Company, Incorporated, Bridgeport, Conn. Tubular lantern	855,443	June 4	7	2	128	1696
Bishop, Albert T., Southington, and J. L. McCann, assignors to Hurwood Manufacturing Company, Incorporated, Bridgeport, Conn. Tubular lantern	855,612	June 4	326	67	128	1778
Bishop, Louis N., Dayton, Ky., and L. Mapes, Cincinnati, Ohio, assignors of one-half to J. S. Storrs, Fort Thomas, Ky., and W. E. North, Cincinnati, Ohio. Marking or pin tag	858,330	June 25	5633	1206	128	3221
Bisset, William, Penarth, England. Appliance for loading ships with coal or the like	857,784	June 25	4556	963–4	128	2949
Bivens, E. D., *et al.* (See Snider, David W., assignor.)						
Black, David G., Brooklyn, N. Y. Game apparatus	856,216	June 11	1476	313–14	128	2100
Black, Francis M., Kincaid, Kans. Signaling system for railways	857,021	June 18	3071	649–51	128	2542
Black, George M. (See Hitt and Black.)						
Blackall, Robert H. (See Turner and Blackall.)						
Blacow, William H. (See Walker, DeWitt D., assignor.)						
Blain, James. (See Hill and Blain.)						
Blair, Thomas S., Jr., Elmhurst, Ill. Car-wheel	856,675	June 11	2443	502	128	2347
Blair, Thomas S., Jr., Elmhurst, Ill. Rolling-mill practice	856,676	June 11	2444	502	128	2347
Blair, Thomas S., Jr., Elmhurst, Ill. Car-wheel	856,677	June 11	2447	502	128	2347
Blake, Charles C., Brookline, Mass. Tag	856,388	June 11	1890	389	128	2208
Blake, Gene S., Potomac, Ill. Brake mechanism	857,150	June 18	3328	701	128	2608
Blauvelt, William A., Mount Vernon, N. Y. Lamp-burner	856,021	June 4	1111	231	128	1976
Bleitz, Louis and R., Sandwich, Ill. Speed varying and reversing mechanism	855,613	June 4	328	67	128	1778
Bleitz, Rollen. (See Bleitz, Louis and R.)						
Bliss, Elmer F., Schenectady, N. Y., assignor to General Electric Company. Block-signal system	856,440	June 11	1990	410	128	2233
Blobel, Oscar, Villach, Austria-Hungary. Clip for turning over music-sheets, &c	855,874	June 4	838	173	128	1905
Blome, Rudolph S. (See Sinek and Blome.)						
Bloomer, John J., Rahway, N. J. Shade-roller mounting	858,056	June 25	5143	1089	128	3098
Blowers, Alonzo S., Portland, Ind. Reinforcing buckle-strap	855,750	June 4	599	123	128	1850
Blubaugh Burner Company. (See Blubaugh, Leegora A., assignor.)						
Blubaugh, Leegora A., San Fernando, assignor to Blubaugh Burner Company, Los Angeles, Cal. Oil-burner	855,688	June 4	469	99	128	1815
Blye, Harry C. (See Hull, Joseph V., assignor.)						
Bobbitt, Frank A., Uniontown, Kans. Extension-ladder	857,785	June 25	4557	964	128	2949
Boch, Philipp, New York, N. Y. Brush for bottle-washing machines	856,191	June 4	1427	302	128	2051
Bode, Joseph, assignor to J. W. Ivory, Philadelphia, Pa. Dentimeter	855,875	June 4	839	174	128	1906
Boekel, Julius, Philadelphia, Pa. Aspirator	857,920	June 25	4829	1024	128	3016
Boiler and Engineering Company. (See Del Mar, Harry, assignor.)						
Boismaure, Alfred A., New York, N. Y., assignor to Boismaure Oscillating Jewelry Company. Jewel-mounting	858,057	June 25	5145	1089	128	3098
Boismaure Oscillating Jewelry Company. (See Boismaure, Alfred A., assignor.)						
Bolt, Emilio F., Copenhagen, Denmark. Obtaining medicine from carrots	857,224	June 18	3467	.....	128	2645
Bolton, Herbert D., assignor to Elliott-Fisher Company, New York, N. Y. Manifolding mechanism	856,333	June 11	1749	362–4	128	2170
Bond, Alfred T., Rexburg, Idaho. Musical instrument	856,939	June 11	2905	609	128	2460
Bond, Isaac M., Tacoma, Va. Track-spreading signal	857,436	June 18	3862	821	128	2742
Bonnet, Ernest, assignor to Mermod Frères, St. Croix, Switzerland. Globe-closure for electric-arc lamps	855,926	June 4	945	195	128	1932
Bonny, Howard R., Brooklyn, assignor of one-half to R. L. Pritchard, New York, N. Y. Preparing vegetable fibers	856,751	June 4	601	123	128	1850
Boone, Thomas R., Rochester, N. Y. Folding partition	856,217	June 11	1490	314	128	2105
Booth, Alice E., Logansport, Ind. Work-holder	856,022	June 4	1112	231	128	1976
Booth, Charles H., Boise, Idaho. Tool-head-attaching key or wedge	857,963	June 25	4711	1000	128	2987
Booth, Charles W., Milwaukee, and C. Gaspar, Fond du Lac, Wis. Lifting-jack	857,225	June 18	3467	732	128	2645
Booth, Thomas, Boise, Idaho. Scraper	857,226	June 18	3469	732	128	2645
Booth, Thomas, Boise, Idaho. Nut-lock	857,227	June 18	3471	732	128	2646
Booth, Ulysses S., Portland, Oreg., assignor to Champion Blower & Forge Company, Lancaster, Pa. Drill-bit holder	857,151	June 18	3329	702	128	2609
Borden, Bradford, assignor to Borden Company, Warren, Ohio. Adjustable die-stock	855,752	June 4	603	123–4	128	1850
Borden Company. (See Borden, Bradford, assignor.)						
Borsum, Louis, Plainfield, N. J. Photographic camera	858,145	June 25	5319	1130–1	128	3142
Borsum, Louis, Plainfield, N. J. Photographic focal-plane shutter	858,146	June 25	5321	1131	128	3142
Bosenbury, Joseph M., Decatur, Ill., assignor to St. Louis Car Company, St. Louis, Mo. Ratchet brake mechanism	855,876	June 4	840	174	128	1906
Boshardt, Edwin, Cologne, assignor of one-half to H. Garda, Leipzig, Germany Smelting-furnace	855,927	June 4	945	196	128	1932
Boston Automatic Fire Alarm Company. (See Bowen, George H., assignor.)						
Boston Crude Oil Burner Co. (See Jackson, Benjamin F., assignor.)						
Boswall, Robert A. (See Walter, Harry E., assignor.)						
Bouché, William F. (See Lord and Bouché.)						
Bougher, Howard M., *et al.* (See Hall, Frederick W., assignor.)						
Bougher, James S., assignor of one-half to S. Hirsh, Pittsburg, Pa. Clothes-drier	857,714	June 25	4421	934	128	2916
Bouma, Jacob, assignor of one-half to S. B. Selhorst, The Hague, Netherlands. Manufacturing a sugarless food product	855,928	June 4	946	.....	128	1932
Bouquet, Joseph. (See Conversy, Joseph, assignor.)						
Bourne, James D., Stuttgart, Ark. Uncoiling device for wire	856,761	June 11	2597	533	128	2337
Bowen, Frank E. W., London, England. Explosive	857,580	June 25	4162	.....	128	2848
Bowen, George H., assignor to Boston Automatic Fire Alarm Company, Boston, Mass. Signaling system	856,511	June 11	2109	433–4	128	2262
Bowers, Fred M. (See Orange and Bowers.)						
Bowers, James, Caldwell, N. J. Wire-clamp	856,512	June 11	2116	434	128	2264
Bowes, John F., North Adams, Mass. Ventilator	856,762	June 11	2598	533	128	2337
Bowman, Francis H., Pittsfield, Mass., assignor to Stanley G. I. Electric Manufacturing Company. Maximum-demand indicator	856,441	June 11	1993	410	128	2234
Bowman, James M., Denison, Tex. Car-replacer	857,437	June 18	3864	821	128	2742
Bowman, Lewis H., Los Angeles, Cal. Track-fastening device	858,462	June 11	1997	411	128	2235
Bowman, Newton K., North Lawrence, Ohio. Mail-receiver	857,022	June 18	3063	651	128	2547
Bowser, Samuel W., Junction City, Oreg. Rail-joint	856,448	June 11	1999	411	128	2235
Bowyer, Horace A., Windsor, Ohio. Cross-line buckle	857,884	June 25	4712	1000	128	2988
Boyd, John M., Fond du Lac, Wis. Horse hay-fork	857,379	June 18	3759	796	128	2717
Boyd, Leander F., Toledo, Ohio. Action for stringed musical instruments	857,380	June 18	3761	796	128	2718
Boyd, Thomas, Elgin Oreg. Baking-pan	857,228	June 18	3472	732	128	2646

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Boyden, George A. (See Brown, Hanrahan, and Boyden.)						
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Molding hollow objects from cement	857,581	June 25	4163	882	128	2849
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Apparatus for molding hollow objects from cement	857,582	June 25	4164	882	128	2849
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Core for molding hollow cement objects	857,583	June 25	4166	882	128	2849
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Apparatus for and method of molding hollow objects from cement	857,584	June 25	4167	883	128	2850
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Means for preventing self-sealing of fluid-distended flexible tubes during exhaustion	857,585	June 25	4169	883	128	2850
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Apparatus for continuously making monolithic objects	857,586	June 25	4170	883	128	2850
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Apparatus for continuously making monolithic hollow objects	857,587	June 25	4171	883	128	2851
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Apparatus for and method of continuously making monolithic hollow objects	857,588	June 25	4173	884	128	2851
Boyle, James M., New York, N. Y., assignor to Monolithic Duct Company. Means and method for continuously making tube-lined monolithic hollow objects	857,589	June 25	4175	884	128	2852
Bradford, Joseph W., Strawn Mill, Tex. Nesting and brooding box	857,921	June 25	4831	1024	128	3016
Bradford, McDuffee, Nocona, Tex. Water-closet attachment	855,614	June 4	330	67	128	1779
Bradley, Henry W. (See Bickerton, Bradley, and Clerk.)						
Bradley, Herbert E., Hillsboro, N. D. Pneumatic cushion for vehicle-wheels	855,929	June 4	947	196	128	1933
Bradley, Jerome, Lancaster, Mass. Blind-fastener	857,023	June 18	3085	651	128	2547
Bradshaw, Walter L., Cambridgeport, assignor, by mesne assignments, to J. E. R. Hayes, Melrose, Mass. Pendent electric fixture	857,024	June 18	3086	651	128	2547
Brady, Philip. (See Rose and Brady.)						
Bragg, Willis N., Davenport, Iowa. Shipping-tag	856,218	June 11	1492	314	128	2104
Bramberry, Thomas A., Portsmouth, Va. Sand-mill toy	857,865	June 25	4713	1000	128	2988
Branch, Thomas O., assignor of one-fourth to M. C. Priddy, Little Rock, Ark. Laundry registering device	857,590	June 25	4176	884	128	2853
Brann, William F., Des Moines, Iowa. Car-replacer	856,192	June 4	1429	302	128	2052
Braschi, Victor M., Mexico, Mexico. Cooking-stove	856,023	June 4	1114	231–2	128	1976
Braskett, Thomas C., assignor to Anderson Computing Scale Company, Anderson, Ind. Computing cheese-cutter	856,389	June 11	1891	390	128	2209
Brassington, Jonathan L., Mount Carmel, Pa. Placket-closer	855,689	June 4	473	99	128	1817
Breakenridge, Nelson, assignor of one-half to J. C. Bingman, Redlands, Cal. Sanitary head-rest	857,323	June 18	3049	773	128	2690
Bredsvold, Paul A., assignor of one-half to H. A. Vrooman, St. Louis, Mo. Speed-changing gearing	858,058	June 25	5146	1089	128	3098
Breese, Fred F. (See Roche and Breese.)						
Breese, Joseph H. (See Crites and Breese.)						
Breiding, Henry, Sterling, Ill. Staple-puller	858,257	June 25	5513	1176	128	3192
Breitweg, Anton B. (See Saunders and Breitweg.)						
Brennan, James J., Fort Wayne, Ind. Rail-bond	856,127	June 4	1303	273	128	2022
Brewer, Albert G., Natick, Mass. Welt-slitting machine	855,753	June 4	605	124	128	1851
Brewery Equipment & Supply Co. (See Griesser, Wilhelm, assignor.)						
Brewster, Bertram F., Burrton, Kans. Coin tray and till	858,331	June 25	5635	1206	128	3222
Briggs, George E. (See Mayo and Houlehan, assignors.)						
Brill, John A. (See Bucknam, Ezra S., assignor.)						
Brill, John A. (See Henry, Fred H., assignor.)						
Brillié, Auguste E., assignor to Société Anonyme des Automobiles Eugène Brillié, Paris, France. Means for automatically timing the spark for producing ignition in explosion-motors	857,715	June 25	4423	934	128	2916
Brinkmann, Morris W., New York, N. Y. Induction-coil	857,866	June 25	4714	1000–1	128	2988
Brinley Charles A., assignor to American Pulley Company, Philadelphia, Pa. Pulley casing or housing	857,548	June 18	4087	867	128	2801
Briscoe, Frank, and J. M. Anguish, assignors to Briscoe Mfg. Company, Detroit, Mich. Manufacturing radiators	858,258	June 25	5514	1177	128	3192
Briscoe Mfg. Company. (See Briscoe and Anguish, assignors.)						
Brittain, Arlington D., Youngstown, Ohio. Trolley-harp	857,591	June 25	4177	884	128	2853
Broadbent, James E. and J., assignors to R. Broadbent & Son Limited, Staleybridge, England. Winding-machine	855,930	June 4	949	196–7	128	1933
Broadbent, Joseph. (See Broadbent, James E. and J.)						
Broadbent & Son, Robert. (See Broadbent, James E. and J., assignors.)						
Broadfoot, Jacob O., Gordon, Tex. Nut-lock	856,219	June 11	1493	314	128	2104
Brock, Clarence W. P. (See Brock, Thomas D. and C. W. P.)						
Brock, Thomas D. and C. W. P., Waterford, Ontario, Canada. Cement-block machine	857,977	June 25	4968	1050–1	128	3053
Broderick, David F., New Britain, assignor of one-half to L. Sperry, South Windsor, Conn. Electroplating apparatus	858,059	June 25	5149	1090	128	3099
Broga, William W., Springfield, Mass. Machine for separating or assorting coins	857,786	June 25	4559	964–6	128	2950
Bronnert, Emil. (See Fremery, Bronnert, and Urban.)						
Brooking, Frederick V., Macomb, Ill. Apparatus for administering anesthetics	855,931	June 4	950	197	128	1933
Brooks, L. L. C., *et al.* (See Lappen, James E., assignor.)						
Brooks, Robert J., Teddington, England. Driving and reversing gear	856,763	June 11	2600	533–4	128	2338
Brooner, Allen D., Pomona, Mo. Wagon running-gear	856,024	June 4	1116	232	128	1976
Brosius, Edgar E., assignor to Morgan Engineering Company, Alliance, Ohio. Overhead traveling crane	857,025	June 18	3089	652	128	2547
Brougham, Archibald L., New York, N. Y. Heating-bar for electric furnaces	857,381	June 18	3763	797	128	2718
Brouyette, Charles D., Cincinnati, Ohio, assignor of one-half to F. Karr, Holland, Mich. Spring bed-bottom	857,324	June 18	3650	773	128	2691
Brown, Alexander E., assignor to Brown Hoisting Machinery Company, Cleveland, Ohio. Support for crown or antenna wires for electric masts	857,152	June 18	3330	702–3	128	2609
Brown, Alexander T., Syracuse, N. Y. Type-writing machine	855,832	June 4	756	156	128	1885
Brown, Alice H., Ludlow, Ky. Head-rest	856,025	June 4	1116	232	128	1977
Brown, Benjamin F. (See Gowin and Brown.)						
Brown, Charles, Canton, Ohio. Window-sash-operating device	857,592	June 25	4178	885	128	2853
Brown, Charles A. (See Leopold and Brown.)						
Brown, Edwin F., Chicago, Ill. Envelop	856,390	June 11	1894	390	128	2209
Brown, Emmet, Mitchell, Ind. Display-holder for rugs	857,716	June 25	4424	934	128	2916
Brown, Frank H., and J. E. Hanrahan, Baltimore, and G. A. Boyden, Mount Washington, assignors to National Composltype Company, Baltimore, Md. Pump mechanism for type-casting machines	856,026	June 4	1118	233	128	1977
Brown, Glenn C., Bessemer, Ala. Rope-thimble	857,717	June 25	4425	935	128	2916
Brown, Herbert S., New York, N. Y. Oscillating device for motor-driven fans	857,787	June 25	4569	966	128	2953
Brown Hoisting Machinery Company. (See Brown, Alexander E., assignor.)						
Brown, Joseph N., Dodgeville, Wis. Artificial snake, &c	857,593	June 25	4180	885	128	2854
Brown, Laura L., Brooklyn, N. Y. Glove-sustainer	855,833	June 4	758	156	128	1886
Brown, Lewis W., Port Norfolk, and A. W. Chappelle, Ivor, Va. Load-releasing mechanism for logging-cars	857,026	June 18	3090	652	128	2548

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Brown, Mark A., Savannah, Ga. Non-refillable bottle	$55,690	June 4	474	99	128	1817
Brown, Robert E., Wiggs, Ark. Animal-trap	$57,325	June 18	3653	774	128	2691
Brown and Sharpe Manufacturing Company. (See Newton, George H., assignor.)						
Browne, Richard B., New York, assignor to Richey, Browne and Donald, Brooklyn, N. Y. Door or gate opening and closing device	$58,147	June 25	5322	1131–2	128	3143
Brownell, Frank A., assignor to Eastman Kodak Company, Rochester, N. Y. Focusing-screen for cameras	$56,618	June 11	2337	480–1	128	2320
Brueckner, Friedrich E., Lawrence, Mass. Beer-faucet	$56,220	June 11	1494	315	128	2104
Brugel, Ludwig, and O. Passmann, Baltimore, Md. Fly-trap	$56,128	June 4	1305	273	128	2022
Brunet, Léon, Brioude, France. Manufacture of antimony colors	$57,978	June 25	4971	.....	128	3054
Bryan, Daniel, Walton, Liverpool, England. Hardening leather	$57,153	June 18	3334	.....	128	2610
Bryant, Arthur S., *et al.* (See Teague, Charles C., assignor.)						
Bryant, Ellsworth, and H. J. Bery, Detroit, Mich. Commutator-grinder	$55,877	June 4	843	174–5	128	1907
Bryant, John M., Cleveland, Ohio. Thill-coupling	$57,154	June 18	3334	704	128	2610
Bryant, William E., assignor to Michigan Lubricator Co., Detroit, Mich. Float-valve for drain-cock plugs	$55,932	June 4	952	197	128	1934
Bryant, William L., Springfield, Vt. Tachometer	$57,979	June 25	4972	1051	128	3054
Bryson, William, Fifield, Wis. Saw-tool	$57,438	June 18	3895	821	128	2742
Bubb, William T., Montoursville, Pa. Carpenter's tool	$55,834	June 4	760	156	128	1886
Buch, Edward F. (See Rehfuss and Buch.)						
Buch, William F., Cleveland, Ohio. Safety appliance for hoisting mechanisms	$57,382	June 18	3766	797	128	2719
Buchanan, John J., assignor to Waterbury Buckle Co., Waterbury, Conn. Buckle	$56,678	June 11	2447	503	128	2348
Buckel, Henry J., Mishawaka, Ind. Segment-mitering machine	$56,842	June 11	2732	567	128	2419
Buckland, Annie J. (See Buckland, Henry and A. J.)						
Buckland, Charles, Habana, Cuba. Auxiliary felly and tire	$56,027	June 4	1120	233	128	1977
Buckland, Henry and A. J., Kiatoa, Waikouaiti, New Zealand. Adjustable stand	$56,679	June 11	2448	503	128	2348
Bucknam, Ezra S., assignor to J. A. Brill, Philadelphia, Pa. Car-window	$55,933	June 4	953	197–8	128	1934
Buckwalter, Elliott R., Laurens, Iowa. Windlass attachment	$57,326	June 18	3654	774	128	2692
Buda Foundry & Manufacturing Company. (See Gard, John J., assignor.)						
Bufe, Arno, Moline, Ill. Screen	$56,221	June 11	1496	315	128	2105
Buffalo Forge Company. (See Gerlach, Robert, assignor.)						
Builders Iron Foundry. (See Gregory, Jackson, and Connet, assignors.)						
Bullinger, John A. (See Marshall, William, assignor.)						
Bullington, Levi B., Dexter, Kans. Fluid and oil burner	$56,334	June 11	1754	364	128	2171
Bullock Electric Company. (See Pomeroy, William D., assignor.)						
Bullock Electric Manufacturing Company. (See Lord and Bouché, assignors.)						
Bullock Electric Manufacturing Company. (See McCormick, Bradley T., assignor.)						
Bullock Electric Manufacturing Company *et al.* (See Wright, Edwin C., assignor.)						
Bulman, Elvah O., Grand Rapids, Mich. Curtain-supporting bracket	$56,391	June 11	1895	390	128	2209
Bundy Cyrus L., Chicago Heights, Ill. Combined door hanger and track	$55,691	June 4	476	99	128	1817
Bunnell, Marcellus J., Taylor, Tex. Refrigerator	$56,568	June 11	2230	459	128	2292
Bunyan, Charles A. (See Silver and Bunyan.)						
Burchard, Seneca B. (See Farrington and Burchard.)						
Burchfield, Albert H. (See Watkins, John E., assignor.)						
Burdett-Rowntree Manufacturing Company. (See Forman, Paris R., assignor.)						
Burgess, Charles, Jr., Wenona, Ill. Vehicle-spring	$57,383	June 18	3768	797	128	2720
Burkhardt, Franklin P., Springfield, Ohio, assignor to Anderson Tool Company, Anderson, Ind. Meat-slicer	$57,155	June 18	3336	704	128	2610
Burkhead, Charles W., Cincinnati, Ohio. Attachment for safes	$55,499	June 4	112	23	128	1722
Burnham, Williams & Co. (See McCarroll, William J., assignor.)						
Burns, George E., Central Falls, R. I. Clasp-pin	$57,867	June 25	4716	1001	128	2988
Burrage, Enoch H., Winston Salem, N. C. Bedstead-lock	$58,259	June 25	5516	1177	128	3193
Burroughes, William J. and William J., Jr., London, England. Radiator for heating apparatus	$55,692	June 4	476	100	128	1818
Burrows, William R., Newark, N. J., assignor to General Electric Company. Machine for basing incandescent lamps	$56,129	June 4	1306	273–4	128	2022
Burton, George D., Boston, Mass., assignor to American Electrical Process Company. Washing-machine	$57,027	June 18	3092	652	128	2548
Buschmann, William, Haledon, N. J. Scale	$55,754	June 4	606	125	128	1851
Bush, Corydon L., Portsmouth, Ohio. Attachment for horse-brushes	$57,268	June 18	3550	752	128	2665
Bush, Russell D., *et al.* (See Livesay, Gentry F., assignor.)						
Bush, Samuel P., Columbus, Ohio. Draft and buffing apparatus	$57,327	June 18	3655	774	128	2692
Busse, William G., Brooklyn, N. Y. Means for propelling boats	$57,868	June 25	4717	1001–2	128	2989
Buxbaum, Emanuel L., Chicago, Ill. Cigar and tobacco moistener	$55,615	June 4	331	68	128	1779
Buxton, Francis E., Connersville, Ind. Adjustable journal-box	$57,788	June 25	4571	967	128	2954
Byers, Firm B., Williamsport, Pa. Railway-rail holder	$55,755	June 4	607	125	128	1851
C. B. Cottrell & Sons Company. (See Barber, Howard M., assignor.)						
C. B. Cottrell & Sons Company. (See Cottrell, Edgar H., assignor.)						
C. B. Cottrell & Sons Company. (See Leonard, Henry E., assignor.)						
C. B. Cottrell & Sons Company. (See McKee, Milton A., assignor.)						
C. B. Cottrell & Sons Company. (See Seymour, Ralph C., assignor.)						
C. W. Seaward Company. (See Seaward, Charles W., assignor.)						
Cady, John P., San Antonio, Tex. Lawn-trimming machine	$56,940	June 11	2906	609	128	2460
Calaway, Samuel G., Centerville, Miss. Harrow and cultivator	$56,028	June 4	1121	233	128	1978
Caldwell Manufacturing Company. (See La May, Frank B., assignor.)						
Caldwell, William J., *et al.* (See Neuhard, Samuel A., assignor.)						
Calicchio, Carmeno, New York, N. Y. Lock	$57,439	June 18	3866	822	128	2743
Caliga, Isaac H., Salem, Mass. Car-fender	$55,558	June 4	220	43	128	1752
Calkins, Seward H., Baltimore, Md. Sheet-metal tile	$57,718	June 25	4426	935	128	2917
Callahan, John J., St. Johns, Newfoundland. Band-saw guide	$58,148	June 25	5323	1132	128	3143
Callahan, William, Quincy, Ill. Cable-roller	$56,335	June 11	1755	364	128	2171
Callsen, Jürgen. (See Berendes and Callsen.)						
Cameron, Alexander G., assignor of one-half to F. J. Irwin, Winnipeg, Manitoba, Canada. Wire-spring fabric	$57,156	June 18	3339	704	128	2611
Camp, James G. (See Heintzelman and Camp.)						
Camp, James M., Pittsburg, and W. Ahlen, Duquesne, Pa. Shaking-machine	$56,619	June 11	2338	481	128	2320
Campbell, Charles E., Lynn, Mass. Rotary dressing implement	$56,680	June 11	2450	503	128	2348
Campbell, Charles W., Macon, Ga. Horse-collar	$57,594	June 25	4181	885	128	2854
Campbell, Charles W., Macon, Ga. Collar-pad	$57,595	June 25	4183	885	128	2854
Campbell, David N. E, Baltimore, Md. Portable window fire-escape ladder	$57,440	June 18	3868	822	128	2743
Campbell, Elizabeth F., Andalusia, Ala Gate-latch	$57,028	June 18	3093	653	128	2549
Campbell, Henry, Karns City, Pa. Antirefillable bottle	$57,596	June 25	4187	886	128	2855
Campbell, Robert, assignor to H. Tollner, Brooklyn, N. Y. Sliding-door fastener	$57,922	June 25	4832	1024	128	3017
Campbell, Robert G., Greensboro, N. C. Apparatus for treating textile fibers	$56,029	June 4	1122	233–5	128	1978
Campbell, Sterling H., Detroit, Mich. Journal-box	$57,597	June 25	4188	886	128	2855
Campe, Julius H. W. (See Post, Friedrich G. J., assignor.)						
Canby, Franklin P. (See Woody, Canby, and Tennant.)						
Canda, Ferdinand E., New York, N. Y. Grating	$56,130	June 4	1310	274	128	2023
Canda, Ferdinand E., New York, N. Y. Grating	$56,131	June 4	1312	274	128	2024
Cantine, Martin, Saugerties, N. Y. Machine for coating paper	$58,149	June 25	5325	1132	128	3143
Canty, Patrick M., and H. W. Schoenfelt, Altoona, Pa. Metallic railway-tie	$57,328	June 18	3657	774	128	2693

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Carey, William, assignor, by mesne assignments, to N. T. Jolliffe, Seattle, Wash. Cooking-kettle	$57,329	June 18	3660	775	128	2693
Carlin, Charles C. (See Lecoultre, Emile, assignor.)						
Carlisle, Alphonso B., Atlanta, Ga. Indicator for locks	$56,843	June 11	2736	568	128	2420
Carlson, Axel W., Ely, Minn. Lock-nut	$57,869	June 25	4718	1002	128	2989
Carlson, John A., Chicago, Ill. Sprayer for hose-nozzles	$55,444	June 4	9	3	128	1697
Carman, Alvin O., Homer, Mich. Friction-gearing	$55,500	June 4	113	23	128	1723
Carpenter, Charles E., Cleveland, Ohio. Clutch device for automobiles	$55,501	June 4	114	23	128	1723
Carpenter, Frank D., *et al.* (See Miesse, Americus, assignor.)						
Carpenter, Richard H., *et al.* (See Miesse, Americus, assignor.)						
Carr, Elmer E., Chicago, Ill. Steam-boiler	$55,934	June 4	955	198	128	1934
Carr, Robert S., Oxford, Ohio. Corn-planter	$57,789	June 25	4573	968	128	2954
Carroll, Edward W., and F. S. Baird, Congress, Ariz. Ter. Trunk-rope fastener	$57,441	June 18	3870	822	128	2743
Carroll, Walter J., Detroit, Mich. Manicure implement	$57,790	June 25	4575	968	128	2955
Carse, Sandford R. (See Weimer, James, assignor.)						
Carter, Charles H. (See Wheeler, George L., assignor.)						
Carter, James D., Baker City, Oreg. Mop-wringer	$58,150	June 25	5326	1132	128	3144
Carter, Melon J. D., London, England. Rotary duplicator	$56,444	June 11	1999	411	128	2235
Carter, Oliver W. (See Schad, John L., assignor.)						
Carter William, Clinton, Ky. Switch-stand	$56,336	June 11	1757	364–5	128	2172
Carver, Thomas A. B., Glasgow, Scotland. Lease-rod for looms, warping-machines, and the like	$57,442	June 18	3872	822	128	2744
Case, Alfred H., assignor of one-half to F. H. Case, St. Johnsville, N. Y. Rotary stand cabinet	$56,764	June 11	2601	534	128	2386
Case, Fred H. (See Case, Alfred H., assignor.)						
Cass, Frederick I., assignor of one-half to E. Felschow, Clintonville, Wis. Leveling device for boilers	$58,332	June 25	5637	1206–7	128	3222
Cassady, George, New Westminster, British Columbia, Canada. Weighing-machine	$57,870	June 25	4720	1002	128	2989
Cassard, Henry J., Westmount, Quebec, Canada. Can-opener	$57,871	June 25	4722	1003	128	2990
Catlin, Abel D., Chattanooga, Tenn., assignor to Chattanooga Machinery Company. Steam-feed valve	$56,569	June 11	2231	459	128	2292
Catlin, F. M., *et al.* (See Lappen, James E., assignor.)						
Caulfield, Edwin J. (See Welton, Park E., assignor.)						
Cavargna, Joseph, Birmingham, England. Cigarette	$56,030	June 4	1125	235	128	1979
Caygill, John, Wheeling, W. Va. Drying-furnace	$58,260	June 25	5517	1177–8	128	3193
Cazin, Max, Cavite, Philippine Islands. Automobile and car motor	$57,980	June 25	4974	1051–2	128	3054
Cedarstrom, Robert, St. Louis, Mo. Tongs	$56,681	June 11	2451	504	128	2348
Celenza, Domenico, and M. Rosen, New York, N. Y. Umbrella	$57,157	June 18	3340	705	128	2611
Centers, Rollie B., Pine Ridge, S. D. Harness-buckle	$57,872	June 25	4724	1003	128	2990
Chaffee, Charles S., Derby, Conn. Rein-holder	$57,873	June 25	4725	1003	128	2990
Chambaud, Alexandre, Paris, France. Aluminium alloy	$56,392	June 11	1896	.....	128	2210
Chamberlin, Harry W., *et al.* (See Neuhard, Samuel A., assignor.)						
Chamberlin Metal Weather Strip Company. (See Kenny, Hugh E., assignor.)						
Chambers, Solomon R. (See Chambers, William R., S. R., and W. H.)						
Chambers, Wade H. (See Chambers, William R., S. R., and W. H.)						
Chambers, William R., S. R., and W. H., May, Texas. Knee-pad	$57,719	June 25	4428	935	128	2917
Champion Blower & Forge Company. (See Booth, Ulysses S., assignor.)						
Chandler, George E. (See Meats and Chandler.)						
Chandler, Gilbert E., Cambridge, Mass. Box for pens, &c	$56,941	June 11	2908	610	128	2460
Chapin, James C., Englewood, N. J. Tennis-net	$57,598	June 25	4190	886	128	2855
Chapin, Murray H., Bridgeport, Conn., assignor to Union Typewriter Company, Jersey City, N. J. Inking-ribbon for type-writing machines	$55,559	June 4	222	43	128	1753
Chapman, Fred M., R. W., and H. W., Oldtown, Me. Work-gage	$57,443	June 18	3873	823	128	2744
Chapman, Harry W. (See Chapman, Fred M., R. W., and H. W.)						
Chapman, Ralph W. (See Chapman, Fred M., R. W., and H. W.)						
Chappelle, Albert W. (See Brown and Chappelle.)						
Charles E. Hancock Company. (See Patten, Charles H., assignor.)						
Charles M. Thompson Company. (See Thompson, Charles M., assignor.)						
Charron, Ferdinand, Puteaux, France. Chain-driving-gear case for automobiles	$55,878	June 4	845	175	128	1907
Chattanooga Machinery Company. (See Catlin, Abel D., assignor.)						
Chemische Fabrik Grünau Landshoff & Meyer Aktiengesellschaft Manufacturing Chemists. (See Franke, Emil, assignor.)						
Chenu, Charles A. A., Etampes, France. Rail and other like joint	$57,229	June 18	3474	733	128	2646
Chesborough, Frederick D., Fall River, Mass. Weft fork and slide for looms	$58,151	June 25	5327	1133	128	3144
Chesrown, John W. (See Hood, William L., assignor.)						
Chester, Charles E. (See Thomas, George J., assignor.)						
Chew, Benjamin A., assignor of one-fourth to J. T. Heard, Augusta, Ga., one-eighth to G. Watkins, one-sixteenth to C. B. Hervey, and one thirty-second to E. M. Johnson, Mobile, Ala. Non-refillable bottle	$58,261	June 25	5519	1178	128	3193
Chicago Pneumatic Tool Company. (See Kimman, Henry J., assignor.)						
Chila, Mike, Whiting, Ind. Frog	$55,879	June 4	846	175	128	1908
Chrisman, Clarence C., St. Louis, Mo. Shifting mechanism for type-writers	$56,942	June 11	2909	610	128	2461
Christensen, Ole, and C. P. Sölbeck, Copenhagen, Denmark. Combined churn and butter-worker	$58,060	June 25	5151	1091	128	3100
Christian, Edward, Waterbury, Conn. Picture-frame	$55,935	June 4	957	199	128	1935
Church, Melvin B., Grand Rapids, Mich., and K. Knudsen, Chicago, Ill., assignors to Holson Motor Patents Company, Ltd., Grand Rapids, Mich. Driving mechanism	$56,943	June 11	2912	610–11	128	2461
Church, William, Chicago, Ill. Exhibiting device to show harmonious color combinations in rooms	$56,222	June 11	1497	315	128	2105
Churchill, Arthur A., Portland, Oreg. Safety device for gas-burners	$55,936	June 4	958	199	128	1935
Churchill, Arthur A., Portland, Oreg. Track-sanding device	$56,765	June 11	2602	534	128	2386
Churchward, James, New York, N. Y. Heat treatment of steel alloys	$55,756	June 4	608	125	128	1852
Cincinnati Machine Tool Company. (See Schauer, Sherman C., assignor.)						
Cizkovsky, Bert J., Chicago, Ill. Electric burglar-alarm	$56,132	June 4	1314	275	128	2025
Clark, Charles H., Ensley, Ala., Furnace-top	$57,158	June 18	3341	705	128	2611
Clark, Daniel R., Purdin, Mo. Wire-stretcher	$57,444	June 18	3874	823	128	2744
Clark, Francis L. (See Turner and Clark.)						
Clark, Frank M., assignor of two-thirds to C. H. Philbrick, Tilton, N. H., and F. G. Balcom, Medford, Mass. Machine for grinding lenses	$57,791	June 25	4577	968–9	128	2955
Clark, James, assignor to S. R. Dresser Manufacturing Company, Bradford, Pa. Clamping-ring for pipe-couplings	$58,360	June 25	5734	1222	128	3253
Clark, James W., Janesville, Wis. Package-carrier	$57,720	June 25	4429	935–6	128	2917
Clark, Walter L., New York, N. Y. Tool-holder for machine-tools	$57,981	June 25	4978	1052	128	3050
Clark, William M., Philadelphia, Pa. Printing-press	$57,721	June 25	4431	936	128	2918
Clarke, Anna M., Scranton, Pa. Sad-iron heater	$56,223	June 11	1498	316	128	2105
Clarke, Frank H. L., Cannes, France. Food product and making the same	$57,445	June 18	3876	.....	128	2745
Clarke, George E., Toronto, Ontario, Canada. Belt, apron, canvas, or conveyer tightener	$56,620	June 11	2340	481	128	2321
Clarke, H. A. (See Hinkle, Paris R., assignor.)						
Clarkson, Philip S. (See Metz and Clarkson.)						
Clayton, Frederick W., assignor of two-thirds to E. E. Rogers and A. N. Sims, San Jose, Cal. Expressman's truck	$55,835	June 4	761	157	128	1886

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Clement, Walter L., Indianapolis, Ind. Railway-track equipment	856,766	June 11	2604	535	128	2389
Clendenon, William H., Rockville, Md. Saw-set	855,616	June 4	332	68	128	1779
Clerk, Dugald. (See Bickerton, Bradley, and Clerk.)						
Cleveland, Benjamin F., Sac City, Iowa. Combined cart and hog-chute	857,029	June 18	3094	653	128	2549
Clift, Christopher, New York, N. Y., assignor to Clift Company, Cleveland, Ohio. Garment-hanger	856,337	June 11	1758	365	128	2172
Clift Company. (See Clift, Christopher, assignor.)						
Clifton, Walter L., Pilotmountain, N. C. Churn	856,844	June 11	2738	568	128	2420
Cline, Harry, Idaville, Pa. Pump	856,845	June 11	2739	568	128	2421
Clingman, Archer D., Oakdale, Nebr. Paste-applying machine	856,224	June 11	1501	316	128	2106
Closser, Fred D., *et al.* (See Miesse, Americus, assignor.)						
Clough, Charles. (See Holgate and Clough.)						
Clyde Iron Works. (See McGiffert, John R., assignor.)						
Coats, Harry M., Jersey City, N. J. Ash-separator	857,722	June 25	4439	937	128	2921
Cobb, Lyman H., assignor to M. E. Johnson, trustee, Fitchburg, Mass. Safety-razor	855,560	June 4	223	43	128	1753
Coffey, Harry R., Chicago, Ill. Electric-light switch	857,384	June 18	3771	798	128	2721
Coffman, Fred N., Westplains, Mo. Mirror-support	858,152	June 25	5328	1133	128	3144
Coffman, Samuel A., Marietta, Ohio. Mattress-stuffing machine	856,445	June 11	2000	411–12	128	2236
Cogswell, George M. (See Knight and Cogswell.)						
Colby, Harold, Spokane, Wash. Mop-wringer	856,225	June 11	1503	316	128	2107
Cole, John C., assignor to Fisk Rubber Company, Chicopee Falls, Mass. Apparatus for vulcanizing tires	855,691	June 4	477	100	128	1818
Cole, Ray, Syracuse, N. Y. Variable-speed power-transmitting mechanism	856,846	June 11	2740	568	128	2421
Cole, Robert C., assignor to Johns-Pratt Company, Hartford, Conn. Inclosed fuse	856,393	June 11	1897	391	128	2210
Coleman, Clyde J., Rockaway, N.J., assignor to C. Hubert, New York, N.Y. Engine-starter	857,599	June 25	4191	887	128	2856
Coleman, Howard A., Sanborn, Iowa. Railway-brake	857,792	June 25	4581	969	128	2956
Coleman, Walter P., Atlanta, Ga. Means for operating vibrating churns	857,923	June 25	4834	1025	128	3017
Collier, Arthur T., St. Albans, England. Worm-gearing	855,937	June 4	960	199	128	1936
Collins, Cornelius, Niles, Ohio. Fireproof building construction	855,694	June 4	479	100	128	1818
Collins, James H., Harrisburg, Pa. Culinary utensil	856,446	June 11	2003	412	128	2237
Collins, John M., Rockmart, Ga. Furniture-caster	857,982	June 25	4980	1052	128	3056
Colla, Marina D., Orangeburg, Ky. Fanning-mill	856,226	June 11	1505	317	128	2107
Cöln-Musener-Bergwerks-Actien-Verein. (See Menne, Adolph E., assignor.)						
Colomb, B. A. (See Delph, Frank A., assignor.)						
Colthar, William C., Springfield, Ohio. Paper-hanger's tool	857,600	June 25	4198	888	128	2857
Colvin, Andrew J., C. G. Hockett, and J. W. Fitzpatrick, Grants Pass, Oreg. Handhold-forming machine	856,767	June 11	2005	535–6	128	2389
Colvin, Clarence K., Denver, Colo. Right and left hand distinguishing suspenders	855,502	June 4	116	23	128	1723
Comins, Frank B., Sharon, Mass. Spoon	856,768	June 11	2008	536	128	2390
Compressed Paper Box Company. (See Godfrey, Jonathan, assignor.)						
Comstock, Homer G., San Francisco, Cal. Block-signal system for railways	857,446	June 18	3877	843–4	128	2745
Conant, Francis J., Los Angeles, Cal. Vehicle-wheel	857,330	June 18	3661	775	128	2694
Conard, Winfield W., Norristown, Pa. Reinforcement for concrete	858,153	June 25	5328	1133	128	3144
Concannon, Sherman, Lenexa, Kans., assignor of one-half to E. C. Sooy, Kansas City, Mo. Car-fender	855,938	June 4	961	199 200	128	1936
Concoff, Isaak R. (See Beebe and Concoff.)						
Condon, William R., Worcester, Mass., assignor to American Steel & Wire Company, Chicago, Ill. Rail-bond punch	856,621	June 11	2343	482	128	2322
Conner, George F., Port Huron, Mich. Beet-harvesting machine	856,394	June 11	1899	391–2	128	2211
Connet, Frederick N. (See Gregory, Jackson, and Connet.)						
Connor, Miles, Pueblo, Colo. Steam-generator	857,723	June 25	4439	937–8	128	2921
Connors, Patrick J., Greenville, Pa. Pipe-bending machine	856,847	June 11	2742	569 70	128	2421
Conrad, Max, Aschaffenburg, assignor to Firm of E. Merck, Darmstadt, Germany. Manufacturing dialkylbarbituric acid	856,622	June 11	2345	....	128	2322
Consolidated Car Heating Company. (See McElroy, James F., assignor.)						
Consolidated Electric Appliance Companies. (See Shroenberg, Milton H., assignor.)						
Continuous Glass Press Company. (See Shuman, Arno, assignor.)						
Converse, Maschil D., Newark, N. J., assignor, by mesne assignments, to Howland Metallic Cap Company, New York, N. Y. Closure for jars, bottles, and like receptacles	855,695	June 4	480	100	128	1819
Conversy, Joseph, assignor of one-half to J. Bouquet, New York, N. Y. Filter	858,154	June 25	5329	1134	128	3145
Cook, Edward M., Oberlin, Ohio. Metallic packing	857,020	June 18	3096	653	128	2550
Cook, Frank B. (See Parker, Frederick R., assignor.)						
Cook, Frank B., and J. G. Nolen, Chicago, Ill.; said Nolen assignor to said Cook. Telephone system	856,570	June 11	2233	459	128	2233
Cook, Frederick D. G., Chippewa Falls, Wis. Automobile-tire	856,147	June 11	2 004	412	128	2247
Cooper, Alfred J., Liverpool, England. Turbine	856,623	June 11	2346	482	128	2322
Cooper, Harry, Roscoe, Pa. Gutter and valley-trough for roofs	857,601	June 25	4201	888	128	2858
Cooper Hewitt Electric Company. (See Hewitt, Peter C., assignor.)						
Cooper, John D., Grand Rapids, Mich. Cane-harvester. (Trimmer)	858,061	June 25	5153	1091	128	3100
Cooper, John J., New York, N. Y. Exercising apparatus	857,447	June 18	3881	824–5	128	2746
Cooper, William, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Control system for electric vehicles	856,448	June 11	2008	413	128	2237
Cooper, William F., assignor of one-half to A. B. Chase Co., Norwalk, Ohio. Tracker-box for mechanical musical instruments	856,769	June 11	2008	536–7	128	2390
Corbett, William, Smiths Falls, Ontario, Canada. Metallic window-sill	855,696	June 4	483	101	128	1819
Corbin Cabinet Lock Company. (See Corbin, Wilbur R., assignor.)						
Corbin Cabinet Lock Company. (See Townsend and Corbin, assignors.)						
Corbin, Wilbur R. (See Townsend and Corbin.)						
Corbin, Wilbur R., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Center for locks	857,031	June 18	3097	654	128	2550
Cordingley, Samuel, Pudsey, England. Carding-machine	856,031	June 4	1126	236	128	1979
Cormack, Maurice H., assignor to Standard Brake Company, New York, N. Y. Clutch for automobiles and other purposes	857,032	June 18	3098	654	128	2550
Cornilleau, Gustave, and A. Sainte-Beuve, Paris, France. Change-speed gear for motor-vehicles	857,033	June 18	3101	654	128	2551
Corns, Philip H., Delphos, Ohio. Oil-can pump	856,624	June 11	2348	483	128	2323
Cornwall, George R., Rye, N. Y. Printing-press	857,331	June 18	3663	775–6	128	2694
Correy, Robert M., Rochester, N. Y. Machine for straightening shafting	856,625	June 11	2350	483	128	2323
Costello, George J. (See Moore and Costello.)						
Cottrell, Edgar H., Stonington, Conn., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Machinery for cutting and folding paper and other material	856,571	June 11	2240	409	128	2295
Coup, Albert A. (See Armstrong and Coup.)						
Coursey, William B. (See Hudson, Parks, and Coursey.)						
Courter, John R., Montclair, N. J. Mold for concrete blocks	857,159	June 18	3344	706	128	2612
Couseau, Louis B., Lincoln, England. Air-compressor	855,697	June 4	484	101	128	1819
Cowern, Lyle L., Aitkin, Minn. Rail-tie	856,032	June 4	1127	236	128	1979
Cowles, Burton S., Plainville, assignor, by mesne assignments, to National Engineering Co., New Haven, Conn. Bending cast-iron	857,983	June 25	4981	1053	128	3057
Cowles, William H., *et al.* (See Williams, Charles, assignor.)						
Cox, Joseph. (See Read, James W., assignor.)						
Crabb, Alfred P., London, England. Metal receptacle for holding liquids	856,513	June 11	2117	435	128	2284

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Crabb, George L., Champaign, Ill. Sign	856,227	June 11	1506	317	128	2108
Crabbs, George D., Hartwell, and W. H. Pendery, assignors to Philip Carey Manufacturing Company, Lockland, Ohio. Ready-made roofing	855,757	June 4	611	125	128	1852
Craig, Alvin, M., New Haven, Conn., assignor to Royal Glass Jar and Bottle Company, New York, N. Y. Jar or bottle closure	855,503	June 4	117	24	128	1723
Cramer, Stuart W., Charlotte, N. C. Hygrometer for regulating humidifying and heating systems	856,944	June 11	2916	611	128	2463
Crandall, Bert C. and S., Seattle, Wash. Conveying apparatus	857,924	June 25	4836	1025	128	3018
Crandall, Stewart. (See Crandall, Bert C. and S.)						
Crane, Marion, Lake Odessa, Mich. Clothes-hanger	857,602	June 25	4202	888	128	2858
Craven, Peter H., Spokane, Wash. Ore-slimer	858,262	June 25	5520	1178–9	128	3194
Crawford, McGregor & Canby Company. (See Eastman, Ernest A., assignor.)						
Cremer, Henry M., Gad, Wis. Gun-sight	857,160	June 18	3347	707	128	2613
Crisler, Joseph L., Perth, Kans. Harrow attachment for plows	856,033	June 4	1128	236–7	128	1979
Crites, Clarence J., and J. H. Breese, Washington, Pa. Continuous glass-melting pot	856,449	June 11	2010	413	128	2238
Crompton & Knowles Loom Works. (See Ryon, Eppa H., assignor.)						
Cromwell, John C., Cleveland, Ohio. Bearing	856,228	June 11	1508	317	128	2108
Cronk, Charles H., Curtis, Nebr. Egg-carrier	855,939	June 4	964	200	128	1937
Cronstedt, Elias. (See Furru, Ole O., assignor.)						
Crosby, Albert L., Portland, Oreg. Means for propelling and steering vessels	856,338	June 11	1759	365–6	128	2172
Crosby, John D., *et al.* (See McClintock, Edward H., assignor.)						
Crouse-Hinds Company. (See Hills, Albert F., assignor.)						
Crouse, John N., Chicago, Ill. Manufacturing fusible dental fillings, inlays, and crowns	856,034	June 4	1130	237	128	1980
Crum, Samuel H., Orangeburg, S. C. Horse-collar	857,034	June 18	3102	655	128	2551
Cullen, Ernest, and G. Sjolander, assignors of one-third to J. H. Johnson, Midland, Mich. Shoe-lace holder	857,448	June 18	3883	825	128	2746
Culmer, John W., Cleveland, Ohio, assignor to W. T. Adams, Corinth, Miss. Cheese-cutter	856,514	June 11	2118	435	128	2284
Culver, Arthur C., Detroit, Mich. Valve mechanism	855,617	June 4	333	68	128	1779
Culver, John E., Los Angeles, Cal. Scraper	857,269	June 18	3552	752	128	2666
Cummer, William M., Cleveland, Ohio. Cylinder for mechanical driers	856,770	June 11	2613	537	128	2391
Cummer, William M., Cleveland, Ohio. Mechanical drier	857,161	June 18	3349	707	128	2613
Cunneen, Peter, New Rochelle, N. Y. Washing-machine	856,229	June 11	1510	318	128	2108
Cunniff, John V. (See Lacroix and Cunniff.)						
Cunning, James, Indianapolis, Ind. Apparatus for treating meats	855,618	June 4	335	69	128	1780
Cunning, James, Indianapolis, Ind. Machine for splitting pigs' feet	857,332	June 18	3670	776	128	2696
Cunningham, Frank R., Medford, Mass. Means for attaching dials to watch-movements	857,333	June 18	3672	776	128	2667
Cunningham, Frank R., Medford, Mass. Dial-rim	857,516	June 18	4022	856	128	2763
Cunningham, William R., assignor to American Clay Machinery Co., Bucyrus, Ohio. Drying-car for clay products	857,270	June 18	3553	753	128	2666
Cunningham, William R., assignor to American Clay Machinery Co., Bucyrus, Ohio. Wire attachment for brick and tile cutting machines	857,603	June 25	4203	888	128	2859
Cure, Benjamin A., Clayton, Wash. Skate	857,925	June 25	4837	1025	128	3018
Curley, Terence F., New York, N. Y. Blade-holder for razor-blades	858,155	June 25	5331	1134	128	3145
Current, Elmer S., Bristol, R. I. Fountain-brush	855,758	June 4	612	126	128	1852
Currie, Horace T., Chicago, Ill. Chain	857,449	June 18	3884	825	128	2746
Curtain Supply Company. (See Houghtaling, Paul A., assignor.)						
Curtin, James R. N., Alexandria, Va. Sash-weight	856,035	June 4	1132	236	128	1980
Curtis, Leverett L., *et al.* (See Rittman, Christian A., assignor.)						
Curtis, Willard A., St. Paul, Minn. Truck	855,619	June 4	338	69	128	1781
Cushman, Albert H., Chicago, Ill., assignor to Morley Manufacturing Company, Boston, Mass. Tool for placing shanked buttons	857,385	June 18	3772	798	128	2721
Cushman & Denison Manufacturing Company. (See Hamburg, Henry P., assignor.)						
Custer, Edgar A., and R. A. Pitman, assignors to Tacony Iron Works, Philadelphia, Pa. Apparatus for coating pipes and other articles	856,996	June 11	3022	635–7	128	2491
Cutter, William M., and W. A. Sutfin, Marysville, Cal.; said Sutfin assignor of one-half to said Cutter. Voting-machine	856,997	June 11	3027	638	128	2492
Cutter, William O., Natick, Mass. Brush-holder	856,515	June 11	2121	436	128	2265
Cyclone Grate Bar Company. (See Truesdell, Henry, assignor.)						
Dahl, August H., and A. E. Whitely, assignors of one-tenth to C. O. Dahl, New York, N. Y. Conveyer	856,682	June 11	2451	504–5	128	2349
Dahl, Charles O. (See Dahl and Whitely, assignors.)						
Dahlin, August, Stockholm, Wis. Manure and straw gatherer	855,445	June 4	10	3	128	1697
Dailey, Carolus E., Brooklyn, N. Y. Machine for decorticating manila fiber, &c	857,386	June 18	3775	798	128	2722
Daimler-Motoren-Gesellschaft. (See Schnaitmann, Karl, assignor.)						
Dain, Joseph, Ottumwa, Iowa. Hay-press	857,604	June 25	4206	889	128	2859
Dalén, Gustaf, assignor to Aktiebolaget Gasaccumulator, Stockholm, Sweden. Fluid-pressure-regulating device	855,620	June 4	339	69	128	1781
Dalén, Gustaf, assignor to Aktiebolaget Gasaccumulator, Stockholm, Sweden. Signal-light apparatus	857,035	June 18	3103	655	128	2551
Dalrymple, James C., Charleston, S. C. Device for measuring standing timber	855,759	June 4	613	126	128	1852
Dalrymple, James W., Solsberry, Ind. Soil pulverizer, lister, and marker	857,036	June 18	3105	665	128	2552
Dalton, Charles F. (See McIntire, George A., assignor.)						
Dancel, Christian, Brooklyn, N. Y. Mechanism for feeding blanks	856,771	June 11	2615	538	128	2391
Daniels, Fred H., A. F. Backlin, and H. K. Swinscoe, assignors to American Steel and Wire Company, Worcester, Mass. Recovering sulfate crystals	857,793	June 25	4582	969–70	128	2957
Daniels, George E., Rowley, Mass. Cutting-block	855,940	June 4	966	200	128	1937
Daniels, Leroy W., Brooklyn, N. Y. Bookbinder's-leaf-applying machine	855,621	June 4	340	70	128	1781
Danzenbaker, Francis, Washington, D. C. Bee-smoker	856,133	June 4	1315	275	128	2025
Darley, John W., Jr., assignor to E. J. Knabe, Jr., Baltimore, Md. Pedal for self-playing grand pianos	858,263	June 25	5522	1197–80	128	3194
Darling, George W., Marshalltown, Iowa. Nut-lock	855,698	June 4	487	101	128	1820
Daugherty, James A., Indianapolis, Ind. Combined tag and seal	858,264	June 25	5525	1180	128	3194
Davenport, John H., Grand Island, Nebr. Boiler-flue	856,516	June 11	2122	436	128	2265
Davenport, Retta P., *et al.* (See Lewis, Sherman T., assignor.)						
Davenport Wagon Company. (See Hecht, Joseph L., assignor.)						
Davidson, Ellis, *et al.* (See Santmyers, Charles A., assignor.)						
Davidson, Marshall T. (See Lovekin, Luther D., assignor.)						
Davis, Cleveland G., Manistee, Mich. Combination-ladder	856,450	June 11	2011	413	128	2238
Davis, Frank E., La Crosee, Wis. Cultivator	857,162	June 18	3351	707–8	128	2614
Davis, Irving S., Bayonne, N. J. Condenser apparatus	858,265	June 25	5526	1180	128	3195
Davis, John B., Dayton, Ohio. Self-measuring oil-pump	855,504	June 4	118	24	128	1724
Davis, John J., Bucyrus, Ohio. Tie-plate and rail-fastener	855,941	June 4	967	201	128	1937
Davis, John R., Waynesburg, Pa. Extension-ladder	856,683	June 11	2454	505	128	2349
Davison, Clinton F., Little Rock, Iowa. Vending-machine	857,037	June 18	3106	665–6	128	2552
Davison, Gregory C., U. S. Navy. Heater for torpedoes	858,156	June 25	5332	1134	128	3145
Davison, Gregory C., U. S. Navy. Automobile torpedo	858,266	June 25	5527	1180–1	128	3195
Dawe, Charles, Plymouth, England. Oscillating steam or air engine	856,517	June 11	2123	436–7	128	2266
Day, Albert C., Saugus, assignor to United States Garbage Reduction Company, Boston, Mass. Apparatus for treating noxious gases	858,082	June 25	5156	1092	128	3101

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Clement, Walter L., Indianapolis, Ind. Railway-track equipment	856,766	June 11	2604	535	128	2389
Clendenon, William H., Rockville, Md. Saw-set	855,616	June 4	332	68	128	1779
Clerk, Dugald. (See Bickerton, Bradley, and Clerk.)						
Cleveland, Benjamin F., Sac City, Iowa. Combined cart and hog-chute	857,029	June 18	3094	653	128	2549
Clift, Christopher, New York, N. Y., assignor to Clift Company, Cleveland, Ohio. Garment-hanger	856,337	June 11	1758	365	128	2172
Clift Company. (See Clift, Christopher, assignor.)						
Clifton, Walter L., Pilotmountain, N. C. Churn	856,844	June 11	2738	568	128	2420
Cline, Harry, Idaville, Pa. Pump	856,845	June 11	2739	568	128	2421
Clingman, Archer D., Oakdale, Nebr. Paste-applying machine	856,224	June 11	1501	316	128	2106
Closser, Fred D., *et al.* (See Miesse, Americus, assignor.)						
Clough, Charles. (See Holgate and Clough.)						
Clyde Iron Works. (See McGiffert, John R., assignor.)						
Coats, Harry M., Jersey City, N. J. Ash-separator	857,722	June 25	4439	937	128	2921
Cobb, Lyman H., assignor to M. E. Johnson, trustee, Fitchburg, Mass. Safety-razor	855,560	June 4	223	43	128	1753
Coffey, Harry R., Chicago, Ill. Electric-light switch	857,384	June 18	3771	798	128	2721
Coffman, Fred N., Westplains, Mo. Mirror-support	858,152	June 25	5328	1133	128	3144
Coffman, Samuel A., Marietta, Ohio. Mattress-stuffing machine	856,445	June 11	2000	411–12	128	2236
Cogswell, George M. (See Knight and Cogswell.)						
Colby, Harold, Spokane, Wash. Mop-wringer	856,225	June 11	1503	316	128	2107
Cole, John C., assignor to Fisk Rubber Company, Chicopee Falls, Mass. Apparatus for vulcanizing tires	855,697	June 4	477	100	128	1818
Cole, Ray, Syracuse, N. Y. Variable-speed power-transmitting mechanism	856,846	June 11	2740	568	128	2421
Cole, Robert C., assignor to Johns-Pratt Company, Hartford, Conn. Inclosed fuse	856,383	June 11	1897	391	128	2210
Coleman, Clyde J., Rockaway, N. J., assignor to C. Hubert, New York, N. Y. Engine-starter	857,599	June 25	4191	887	128	2856
Coleman, Howard A., Sanborn, Iowa. Railway-brake	857,792	June 25	4581	969	128	2956
Coleman, Walter P., Atlanta, Ga. Means for operating vibrating churns	857,923	June 25	4834	1025	128	3017
Collier, Arthur T., St. Albans, England. Worm-gearing	855,937	June 4	960	199	128	1936
Collins, Cornelius, Niles, Ohio. Fireproof building construction	855,694	June 4	479	100	128	1818
Collins, James H., Harrisburg, Pa. Culinary utensil	856,446	June 11	2003	412	128	2237
Collins, John M., Rockmart, Ga. Furniture-caster	857,982	June 25	4980	1052	128	3056
Colls, Marina D., Orangeburg, Ky. Fanning-mill	856,226	June 11	1505	317	128	2107
Cöln-Musener-Bergwerks-Actien-Verein. (See Menne, Adolph E., assignor.)						
Colomb, B. A. (See Delph, Frank A., assignor.)						
Colthar, William U., Springfield, Ohio. Paper-hanger's tool	857,600	June 25	4198	888	128	2857
Colvin, Andrew J., C. G. Hockett, and J. W. Fitzpatrick, Grants Pass, Oreg. Handhold-forming machine	856,767	June 11	2005	535–6	128	2389
Colvin, Clarence K., Denver, Colo. Right and left hand distinguishing suspenders	855,502	June 4	116	23	128	1723
Comins, Frank B., Sharon, Mass. Spoon	856,768	June 11	2008	536	128	2390
Compressed Paper Box Company. (See Godfrey, Jonathan, assignor.)						
Comstock, Homer G., San Francisco, Cal. Block-signal system for railways	857,446	June 18	3877	843–4	128	2745
Conant, Francis J., Los Angeles, Cal. Vehicle-wheel	857,330	June 18	3661	775	128	2694
Conard, Winfield W., Norristown, Pa. Reinforcement for concrete	858,153	June 25	5328	1133	128	3144
Concannon, Sherman, Lenexa, Kans., assignor of one-half to E. C. Sooy, Kansas City, Mo. Car-fender	855,938	June 4	961	199 200	128	1936
Concoff, Isaak R. (See Beebe and Concoff.)						
Condon, William R., Worcester, Mass., assignor to American Steel & Wire Company, Chicago, Ill. Rail-bond punch	856,621	June 11	2343	482	128	2322
Conner, George F., Port Huron, Mich. Beet-harvesting machine	856,394	June 11	1899	391–2	128	2211
Connet, Frederick N. (See Gregory, Jackson, and Connet.)						
Connor, Miles, Pueblo, Colo. Steam-generator	857,723	June 25	4439	937–8	128	2921
Connors, Patrick J., Greenville, Pa. Pipe-bending machine	856,847	June 11	2742	569 70	128	2421
Conrad, Max, Aschaffenburg, assignor to Firm of E. Merck, Darmstadt, Germany. Manufacturing dialkylbarbituric acid	856,622	June 11	2345	....	128	2322
Consolidated Car Heating Company. (See McElroy, James F., assignor.)						
Consolidated Electric Appliance Companies. (See Shroenberg, Milton H., assignor.)						
Continuous Glass Press Company. (See Shuman, Arno, assignor.)						
Converse, Maschil D., Newark, N. J., assignor, by mesne assignments, to Howland Metallic Cap Company, New York, N. Y. Closure for jars, bottles, and like receptacles	855,695	June 4	480	100	128	1819
Convery, Joseph, assignor of one-half to J. Bouquet, New York, N. Y. Filter	858,154	June 25	5329	1134	128	3145
Cook, Edward M., Oberlin, Ohio. Metallic packing	857,020	June 18	3096	653	128	2550
Cook, Frank B. (See Parker, Frederick R., assignor.)						
Cook, Frank B., and J. G. Nolen, Chicago, Ill.; said Nolen assignor to said Cook. Telephone system	856,570	June 11	2233	459	128	2293
Cook, Frederick D. G., Chippewa Falls, Wis. Automobile-tire	856,147	June 11	2004	412	128	2237
Cooper, Alfred J., Liverpool, England. Turbine	856,623	June 11	2346	482	128	2322
Cooper, Harry, Roscoe, Pa. Gutter and valley-trough for roofs	857,601	June 25	4201	888	128	2858
Cooper Hewitt Electric Company. (See Hewitt, Peter C., assignor.)						
Cooper, John D., Grand Rapids, Mich. Cane-harvester. (Trimmer)	858,061	June 25	5153	1091	128	3100
Cooper, John J., New York, N. Y. Exercising apparatus	857,447	June 18	3881	824–5	128	2746
Cooper, William, Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Control system for electric vehicles	856,448	June 11	2006	413	128	2237
Cooper, William F., assignor of one-half to A. B. Chase Co., Norwalk, Ohio. Tracker-box for mechanical musical instruments	856,769	June 11	2008	536–7	128	2390
Corbett, William, Smiths Falls, Ontario, Canada. Metallic window-sill	855,696	June 4	483	101	128	1819
Corbin Cabinet Lock Company. (See Corbin, Wilbur R., assignor.)						
Corbin Cabinet Lock Company. (See Townsend and Corbin, assignors.)						
Corbin, Wilbur R. (See Townsend and Corbin.)						
Corbin, Wilbur R., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Center for locks	857,031	June 18	3097	654	128	2550
Cordingley, Samuel, Pudsey, England. Carding-machine	856,031	June 4	1126	236	128	1979
Cormack, Maurice H., assignor to Standard Brake Company, New York, N. Y. Clutch for automobiles and other purposes	857,032	June 18	3098	654	128	2550
Cornilleau, Gustave, and A. Sainte-Beuve, Paris, France. Change-speed gear for motor-vehicles	857,033	June 18	3101	654	128	2551
Corns, Phillip H., Delphos, Ohio. Oil-can pump	856,624	June 11	2348	483	128	2323
Cornwall, George R., Rye, N. Y. Printing-press	857,331	June 18	3663	775–6	128	2694
Correy, Robert M., Rochester, N. Y. Machine for straightening shafting	856,625	June 11	2350	483	128	2323
Costello, George J. (See Moore and Costello.)						
Cottrell, Edgar H., Stonington, Conn., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Machinery for cutting and folding paper and other material	856,571	June 11	2240	409	128	2295
Coup, Albert A. (See Armstrong and Coup.)						
Coursey, William H. (See Hudson, Parks, and Coursey.)						
Courter, John R., Montclair, N. J. Mold for concrete blocks	857,159	June 18	3344	706	128	2612
Cousans, Louis B., Lincoln, England. Air-compressor	855,697	June 4	484	101	128	1819
Cowen, Lyle L., Aitkin, Minn. Rail-tie	856,032	June 4	1127	236	128	1979
Cowles, Burton S., Plainville, assignor, by mesne assignments, to National Engineering Co., New Haven, Conn. Bending cast-iron	857,963	June 25	4981	1053	128	3057
Cowles, William H., *et al.* (See Williams, Charles, assignor.)						
Cox, Joseph. (See Reed, James W., assignor.)						
Crabb, Alfred P., London, England. Metal receptacle for holding liquids	856,513	June 11	2117	435	128	2264

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Crabb, George L., Champaign, Ill. Sign	856,227	June 11	1506	317	128	2108
Crabbs, George D., Hartwell, and W. H. Pendery, assignors to Philip Carey Manufacturing Company, Lockland, Ohio. Ready-made roofing	855,757	June 4	611	125	128	1852
Craig, Alvin M., New Haven, Conn., assignor to Royal Glass Jar and Bottle Company, New York, N. Y. Jar or bottle closure	855,503	June 4	117	24	128	1723
Cramer, Stuart W., Charlotte, N. C. Hygrometer for regulating humidifying and heating systems	856,944	June 11	2916	611	128	2463
Crandall, Bert C. and S., Seattle, Wash. Conveying apparatus	857,924	June 25	4836	1025	128	3018
Crandall, Stewart. (See Crandall, Bert C. and S.)						
Crane, Marion, Lake Odessa, Mich. Clothes-hanger	857,602	June 25	4202	888	128	2858
Craven, Peter H., Spokane, Wash. Ore-slimer	858,262	June 25	5520	1178–9	128	3194
Crawford, McGregor & Canby Company. (See Eastman, Ernest A., assignor.)						
Cremer, Henry M., Gad, Wis. Gun-sight	857,160	June 18	3347	707	128	2613
Crisler, Joseph L., Perth, Kans. Harrow attachment for plows	856,033	June 4	1128	236–7	128	1979
Crites, Clarence J., and J. H. Breese, Washington, Pa. Continuous glass-melting pot	856,449	June 11	2010	413	128	2238
Crompton & Knowles Loom Works. (See Ryon, Eppa H., assignor.)						
Cromwell, John C., Cleveland, Ohio. Bearing	856,228	June 11	1508	317	128	2108
Cronk, Charles H., Curtis, Nebr. Egg-carrier	855,939	June 4	964	200	128	1937
Cronstedt, Elias. (See Furru, Ole O., assignor.)						
Crosby, Albert L., Portland, Oreg. Means for propelling and steering vessels	856,338	June 11	1759	365–6	128	2172
Crosby, John D., *et al.* (See McClintock, Edward H., assignor.)						
Crouse-Hinds Company. (See Hills, Albert F., assignor.)						
Crouse, John N., Chicago, Ill. Manufacturing fusible dental fillings, inlays, and crowns	856,034	June 4	1130	237	128	1980
Crum, Samuel H., Orangeburg, S. C. Horse-collar	857,034	June 18	3102	655	128	2551
Cullen, Ernest, and G. Sjolander, assignors of one-third to J. H. Johnson, Midland, Mich. Shoe-lace holder	857,448	June 18	3883	825	128	2746
Culmer, John W., Cleveland, Ohio, assignor to W. T. Adams, Corinth, Miss. Cheese-cutter	856,514	June 11	2118	435	128	2264
Culver, Arthur C., Detroit, Mich. Valve mechanism	855,617	June 4	333	68	128	1779
Culver, John E., Los Angeles, Cal. Scraper	857,269	June 18	3552	752	128	2666
Cummer, William M., Cleveland, Ohio. Cylinder for mechanical driers	856,770	June 11	2613	537	128	2391
Cummer, William M., Cleveland, Ohio. Mechanical drier	857,161	June 18	3349	707	128	2613
Cunneen, Peter, New Rochelle, N. Y. Washing-machine	856,229	June 11	1510	318	128	2108
Cunniff, John V. (See Lacroix and Cunniff.)						
Cunning, James, Indianapolis, Ind. Apparatus for treating meats	855,618	June 4	335	69	128	1780
Cunning, James, Indianapolis, Ind. Machine for splitting pigs' feet	857,332	June 18	3670	776	128	2696
Cunningham, Frank R., Medford, Mass. Means for attaching dials to watch-movements	857,333	June 18	3672	776	128	2697
Cunningham, Frank R., Medford, Mass. Dial-rim	857,516	June 18	4022	856	128	2783
Cunningham, William R., assignor to American Clay Machinery Co., Bucyrus, Ohio. Drying-car for clay products	857,270	June 18	3553	753	128	2666
Cunningham, William R., assignor to American Clay Machinery Co., Bucyrus, Ohio. Wire attachment for brick and tile cutting machines	857,603	June 25	4203	888	128	2859
Cure, Benjamin A., Clayton, Wash. Skate	857,925	June 25	4837	1025	128	3018
Curley, Terence F., New York, N. Y. Blade-holder for razor-blades	858,155	June 25	5331	1134	128	3145
Current, Elmer S., Bristol, R. I. Fountain-brush	855,758	June 4	612	126	128	1852
Currie, Horace T., Chicago, Ill. Chain	857,449	June 18	3884	825	128	2746
Curtain Supply Company. (See Houghtaling, Paul A., assignor.)						
Curtin, James R. N., Alexandria, Va. Sash-weight	856,035	June 4	1132	236	128	1980
Curtis, Leverett L., *et al.* (See Rittman, Christian A., assignor.)						
Curtis, Willard A., St. Paul, Minn. Truck	855,619	June 4	338	69	128	1781
Cushman, Albert H., Chicago, Ill., assignor to Morley Manufacturing Company, Boston, Mass. Tool for placing shanked buttons	857,385	June 18	3772	798	128	2721
Cushman & Denison Manufacturing Company. (See Hamburg, Henry P., assignor.)						
Custer, Edgar A., and R. A. Pitman, assignors to Tacony Iron Works, Philadelphia, Pa. Apparatus for coating pipes and other articles	856,996	June 11	3022	635–7	128	2491
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Dahl, Charles O. (See Dahl and Whitely, assignors.)						
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Dailey, Carolus E., Brooklyn, N. Y. Machine for decorticating manila fiber, &c	857,396	June 18	3775	798	128	2722
Daimler-Motoren-Gesellschaft. (See Schnaitmann, Karl, assignor.)						
Dain, Joseph, Ottumwa, Iowa. Hay-press	857,604	June 25	4206	889	128	2859
Dalén, Gustaf, assignor to Aktiebolaget Gasaccumulator, Stockholm, Sweden. Fluid-pressure-regulating device	855,620	June 4	339	69	128	1781
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Daniels, George E., Rowley, Mass. Cutting-block	855,940	June 4	966	200	128	1937
Daniels, Leroy W., Brooklyn, N. Y. Bookbinder's-leaf-applying machine	855,621	June 4	340	70	128	1781
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Darley, John W., Jr., assignor to E. J. Knabe, Jr., Baltimore, Md. Pedal for self-playing grand pianos	858,263	June 25	5522	1197–80	128	3194
Darling, George W., Marshalltown, Iowa. Nut-lock	855,698	June 4	487	101	128	1820
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Davenport, John H., Grand Island, Nebr. Boiler-flue	856,516	June 11	2122	436	128	2265
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Davis, Irving S., Bayonne, N. J. Condenser apparatus	858,265	June 25	5526	1180	128	3195
Davis, John B., Dayton, Ohio. Self-measuring oil-pump	855,504	June 4	118	24	128	1724
Davis, John J., Bucyrus, Ohio. Tie-plate and rail-fastener	855,941	June 4	967	201	128	1937
Davis, John R., Waynesburg, Pa. Extension-ladder	856,683	June 11	2454	505	128	2349
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Davison, Gregory C., U. S. Navy. Heater for torpedoes	858,156	June 25	5332	1134	128	3145
Davison, Gregory C., U. S. Navy. Automobile torpedo	858,266	June 25	5527	1180–1	128	3195
Dawe, Charles, Plymouth, England. Oscillating steam or air engine	856,517	June 11	2123	436–7	128	2266
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Day, Albert G., Philadelphia, Pa. Roach-trap	858,157	June 25	5334	1135	128	3146
Day, Benjamin, West Hoboken, N. J. Inking printing-films	858,158	June 25	5335	1135	128	3146
Day, Chester S., *et al.* (See McClintock, Edward H., assignor.)						
Day, Joseph. (See Harrison and Day.)						
Day, Leonard, New York, N. Y. Anti-lost-motion device for pull-out shelves	857,271	June 18	3555	753	128	2666
Dayton, Ansel J., Tacoma, Wash. Amusement apparatus	857,605	June 25	4209	889	128	2860
De Boor, C. J., *et al.* (See Murrin, Terrence, assignor.)						
De Land, Ambrose D., Sheboygan, Wis. Filter	857,450	June 18	3885	825–6	128	2747
De Lamey, George P., Baltimore, Md. Horseshoe	856,848	June 11	2744	570	128	2422
De Remer, William L., Chicago, Ill. Tie-plate	856,396	June 11	1909	393	128	2213
De Tray, Floyd W., Aurora, Ill. Vise	855,447	June 4	13	4	128	1698
De Voe, Albert H., Elizabeth, N. J., assignor to Singer Manufacturing Company. Sewing-machine for producing scalloped tucks	858,161	June 25	5343	1136	128	3148
Dean, George A., and S. E. Hall, Wayland, Tex. Grain-fender	857,874	June 25	4726	1003	128	2990
Dean, George E., Albion, Mich. Shelf or rack	857,724	June 25	4442	938	128	2921
Dean, Whitney, Greenwood, Nebr. Dropping device	856,518	June 11	2127	437	128	2266
Dean, William R., McKeesport, Pa. Knockdown furniture	856,036	June 4	1133	236–8	128	1980
Decker Electrical Manufacturing Company. (See Decker, Frank A., assignor.)						
Decker, Frank A., Philadelphia, Pa., assignor, by mesne assignments, to Decker Electrical Manufacturing Company, Wilmington, Del. Battery	857,606	June 25	4210	890	128	2861
Decker, Frank A., Philadelphia, Pa., assignor, by mesne assignments, to Decker Electrical Manufacturing Company, Wilmington, Del. Electrochemical apparatus	857,607	June 25	4213	890	128	2862
Decker, Morton, Chicago, Ill., and C. H. Shaw, Milwaukee, Wis. Centrifugal liquid-separator	857,794	June 25	4584	970–1	128	2957
Deckert, James W., Oakville, Ontario, Canada. Machine for splitting raw hides and skins	856,395	June 11	1903	392	128	2212
Deddens, George. (See Mains, Claude P., assignor.)						
Deeks, Hiram C. J., Paterson, N. J. Colored picture and making same	856,519	June 11	2129	437	128	2266
Deis, Philip H., Washington, D. C. Folding rack for poultry, &c.	858,159	June 25	5340	1135	128	3147
Dekle, James M. (See Dukes and Dekle.)						
Del Mar, Harry, New York, N. Y., assignor to Boiler and Engineering Company, Jersey City, N. J. Boiler	855,446	June 4	12	3	128	1698
Delany, James H., Wilkinsburg, Pa. Valve	858,063	June 25	5157	1092	128	3101
Delavergne Machine Company. (See Franchetti, Alessandro, assignor.)						
Dellinger, Abraham M., Lancaster, Pa. Grinding-mill	858,267	June 25	5330	1182	128	3196
Deloye, Alexander J., Torrington, Conn. Anode	858,160	June 25	5342	1136	128	3147
Delph, Frank A., New Orleans, assignor of one-half to B. A. Colomb, St. James parish, La. Heating apparatus	857,795	June 25	4588	971	128	2958
Delpire, Firmin, Chicago, Ill. Vegetable washing and peeling machine	856,037	June 4	1135	238	128	1981
Demory, Alexander F., assignor of one-third to C. J. Suhm, Houston, Tex. Oil-can	857,517	June 18	4024	856	128	2783
Derby, Egbert H., Winnebago, Minn. Wrench	857,163	June 18	3355	708	128	2616
Dern, George H. (See Janney and Dern.)						
Derr, Edward. (See Pickford and Derr.)						
Desmond, Joseph F., *et al.* (See Gilroy, Frank J., assignor.)						
Destrée, Louis, Haren, Belgium. Dyeing apparatus	856,134	June 4	1317	275–6	128	2025
Dettwyler, Johann J., Sissach, Switzerland. Newspaper-holder	857,608	June 25	4215	891	128	2862
Deuerling, Fred, Chicago, Ill. Pie-machine	857,609	June 25	4215	891–2	128	2863
Devineau, Louis, Cleveland, Ohio. Phonograph-reproducer	856,038	June 4	1136	238	128	1981
Dexter, George B., Brookline, Mass. Device for restoring nap to fabrics	857,038	June 18	3109	656	128	2553
Dial, Robert E., assignor of one-half to D. C. Strean, Fontanet, Ind. Automatic railway-signal	856,849	June 11	2745	570–1	128	2422
Diboll, Collins C. (See McMichael, Samuel, assignor.)						
Diehl, Jacob, assignor to Standard Sewing Machine Company, Cleveland, Ohio. Rotary take-up for sewing-machines	856,572	June 11	2243	460–1	128	2295
Diez, George F., New York, N. Y. Producing steel dies	857,926	June 25	4838		128	3019
Dillman, Edward N., St. Louis, Mo. Car-ventilator	858,268	June 25	5331	1182	128	3196
Dillon, Frederick N., Fitchburg, Mass. Shaking mechanism for grates	856,397	June 11	1911	393	128	2213
Dillon, John, Milwaukee, Wis., assignor, by mesne assignments, to Otis Elevator Company, Jersey City, N. J. Compound brake	857,549	June 18	4088	868	128	2801
Dillon, John, Milwaukee, Wis., assignor to Otis Elevator Company, Jersey City, N. J. Compound brake	857,550	June 18	4091	868	128	2802
Dillon, John, Milwaukee, Wis., assignor to Otis Elevator Company, Jersey City, N. J. Compound brake	857,551	June 18	4094	868	128	2802
Dillon, Washington M., Sterling, Ill. Wire fence	856,039	June 4	1137	239	128	1981
Dillon, Washington M., Sterling, Ill. Wire-fence tie	856,339	June 11	1760	366	128	2173
Dion, Joseph, and J. D. Belanger, Chicago, Ill. Oil-cake trimmer	855,836	June 4	764	157–8	128	1887
Dischner, Friedrich J., assignor of one-half to J. H. Smith, Zurich, Switzerland. Production of photographs with any desired background	858,162	June 25	5350	1137	128	3150
Dittman, Charles D., Pittsburg, Pa. Clothes-line reel	856,684	June 11	2455	505	128	2350
Dix, T. M. (See McClain, Andrew E., assignor.)						
Doak, Egbert O., assignor to W. T. Jones, Cedar Rapids, Iowa. Five-horse equalizer	856,193	June 4	1430	302	128	2053
Dobbins, Walter E., *et al.* (See Hudson, Parks, and Coursey, assignors.)						
Dobe, Frederick W., assignor to Foyer Manufacturing Company, Chicago, Ill. Go-cart	856,850	June 11	2749	571	128	2423
Dodd, Hayne M., Moultrie, Ga. Hand-lever	856,451	June 11	2012	414	128	2239
Dodds, Ethan I., Pullman, assignor to Pullman Company, Chicago, Ill. Door-operating mechanism for gondola cars	855,837	June 4	767	158–9	128	1888
Dodds, Ethan I., Pullman, assignor to Pullman Company, Chicago, Ill. Car construction	855,838	June 4	771	159–60	128	1889
Dodds, Ethan I., Pullman, assignor to Pullman Company, Chicago, Ill. Combination metal and wood car	855,839	June 4	774	160–1	128	1890
Dodds, Ethan I., Pullman, assignor to Pullman Company, Chicago, Ill. Railway dumping-car	855,840	June 4	776	161–3	128	1891
Dodge, William H., Montclair, N. J. Cover or cap for jars, cans, bottles, &c.	856,230	June 11	1512	318	128	2109
Doehler, Herman H., New York, N. Y. Casting apparatus	856,772	June 11	2616	539	128	2391
Doehler, Herman H., New York, N. Y. Casting apparatus	856,773	June 11	2622	539	128	2393
Doggett, Arthur M., *et al.* (See Dumais, Jean B., assignor.)						
Doggett, William L., *et al.* (See Dumais, Jean B., assignor.)						
Doherty, Henry L., Madison, Wis. Apparatus for washing and cooling gas	855,448	June 4	17	4	128	1699
Dolan, Charles P., Boston, Mass. Tuning instrument	857,334	June 18	3673	777	128	2697
Doman, Lewis B., assignor to Amphion Piano Player Company, Elbridge, N. Y. Pneumatic self-playing musical instrument	856,774	June 11	2626	539	128	2394
Dönitz, Emil, assignor to Firm of C. Zeiss, Jena, Germany. Gun-sight telescope	856,520	June 11	2130	437	128	2267
Donohoe, Hugh, New York, N. Y. Elevator guide-shoe	857,725	June 25	4444	939	128	2922
Dorn, Victor, Wilmersdorf, near Berlin, Germany. Ameliorating wines and spirits and sterilising liquids	855,449	June 4	20	5	128	1700
Dörr, Clemens. (See Wirsmann and Dörr.)						
Dorsey, Archie L., Russell township, Putnam county, Ind. Valve-gear for engines	856,851	June 11	2751	571–2	128	2424
Dorsey, Dana A., and A. R. Mitchell, Miami, Fla. Ice-cutting machine	856,040	June 4	1138	239	128	1982
Dorward, William B., Lawrence, Kans. Cistern-mold	856,852	June 11	2754	572	128	2424
Dosch, Oliver L., Dayton, Ohio. Drill-press	855,841	June 4	780	163–4	128	1892
Dosch, Peter, Bridgeport, Conn. Stud	857,875	June 25	4727	1004	128	2901

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Doss, John N., Wingate, Ind. Horseshoe-nail clencher	855,505	June 4	121	25	128	1724
Douglass, Benjamin F., St. Louis, Mo. Hinge for window-screens	858,269	June 25	5532	1182	128	3197
Douglass, Clinton A., *et al.* (See Patton, Oliver C., assignor.)						
Dove, Charles E., Doveaville, Va. Thread-cabinet	856,945	June 11	2918	612	128	2463
Dow, Herbert H., W. S. Gates, Midland, Mich., and A. E. Schaefer, Cleveland, Ohio, assignors, by mesne assignments, to Ontario Nickel Company, Limited, Worthington, Canada. Recovering the nickel contained in basic nickel precipitates	857,927	June 25	4840	1025	128	3019
Dowe, Daniel O., Montgomery, Ala. Coffee-urn	855,842	June 4	782	164	128	1892
Downs, Alfred B., Memphis, Tenn. Crop-thinner	856,685	June 11	2456	505	128	2350
Downs, Bertram B., St. Paul, Minn. Battery	855,880	June 4	847	176	128	1908
Doyle, James S. (See Hedley, Doyle, and Wallerstedt.)						
Drake, Frank W., *et al.* (See Miesse, Americus, assignor.)						
Draper, Charles W., Washington, D. C. Computing device	856,573	June 11	2246	401–2	128	2296
Dressel, Frederick W. (See Eklund, Gustav, assignor.)						
Drew, Herbert H., assignor of one-half to E. M. Snow, Waterloo, Wis. Railway-car truck	856,626	June 11	2352	484	128	2324
Drum, George E. (See Smith and Drum.)						
Druzbach, Theodor, Flensburg, Germany. Combination-table for kitchens	858,163	June 25	5351	1137	128	3150
Du Brau, Anna, Baltimore, Md. Heater for smoothing-irons	855,760	June 4	615	126	128	1853
Du Brau, Otto M., Baltimore, Md. Tile	856,231	June 11	1514	319	128	2109
Duenkel, Felix, assignor to Western Electric Company, Chicago, Ill. Carrier for braiding-machines	856,946	June 11	2919	812	128	2463
Duffin, James F. (See Goodnight and Duffin.)						
Dugdill, John, Failsworth, near Manchester, England. Fitting for electric lamps	857,928	June 25	4845	1026	128	3020
Dukes, William B., and J. M. Dekle, Moultrie, Ga. Compost and cotton-seed distributer	857,518	June 18	4025	857	128	2784
Dull, Raymond W., Aurora, Ill., assignor to Stephens-Adamson Mfg. Co. Chain	856,398	June 11	1912	393	128	2214
Dull, Raymond W., Aurora, Ill., assignor to Stephens-Adamson Mnfg. Co. Carrying-roll for belt conveyers, &c.	857,610	June 25	4220	892	128	2864
Dumais, Jean B., assignor of two-thirds to W. L. and A. M. Doggett, Chicago, Ill. Vehicle-tire	857,876	June 25	4728	1004	128	2991
Duncan, James H., assignor of one-half to J. W. Kaye, St. Louis, Mo. Potential-regulator	855,450	June 4	21	5	128	1700
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Printing device	856,452	June 11	2014	414	128	2239
Duncan, Joseph S., assignor to Addressograph Company, Chicago, Ill. Printing device	857,039	June 18	3110	657	128	2553
Dunks, Jesse C., Boulder, Mont. Bit	856,574	June 11	2248	462	128	2296
Dunlap, Nora, Chicago, Ill. Bust-girdle	856,232	June 11	1516	319	128	2110
Dunn, Augusta D., Sanford, Fla. Counting-board	856,041	June 4	1140	239	128	1982
Dunn, Frank P., assignor of one-fourth to G. P. Louiso, one-fifth to H. F. Dunn, one-eighth to M. Dunn, and one-eighth to E. W. Louiso, Anderson, Ind. Scale	856,998	June 11	3031	638	128	2494
Dunn, Henry F., *et al.* (See Dunn, Frank P., assignor.)						
Dunn, Martin, *et al.* (See Dunn, Frank P., assignor.)						
Dunstone, Harry T., Hubbell, Mich. Kettle-lid	856,453	June 11	2015	414	128	2239
Duplessis, Mary, New Orleans, La. Satchel	856,042	June 4	1141	240	128	1982
Duplex Printing Press Company. (See Beehman, Henry F., assignor.)						
Dupont, Amos, Champlain, N. Y. Shade-roller support	856,521	June 11	2131	438	128	2267
Durand, Nelson C., East Orange, and E. L. Aiken, Orange, assignors to New Jersey Patent Company, West Orange, N. J. Phonograph	855,622	June 4	343	70	128	1782
Durando, Pascal, Lyon, France. Machine for manufacturing celluloid combs	857,387	June 18	3776	798–801	128	2722
Duret, Francois, Paris, France. Disinfection	855,942	June 4	968	201	128	1938
Durham, Thomas C., New York, N. Y. Razor	855,561	June 4	224	44	128	1753
Durio, Achille. (See Durio and Martina.)						
Durio, Giacomo and A., and G. Martina, Turin, Italy. Making leather tires	857,726	June 25	4446	939	128	2922
Duryea, Otho C. (See White and Duryea.)						
Dyer, Frank L. (See Aylsworth and Dyer.)						
E. Children's Sons Manufacturing Co. (See Anderson, David F., assignor.)						
E. Clemens Horst Co. (See Clemens and Ehrhorn, assignors.)						
Eagle Generator Company. (See Einstein, Alfred C., assignor.)						
Earll, Charles I., New York, N. Y. Trolley-retriever	857,040	June 18	3112	657–8	128	2553
Eastman, Albert N., Chicago, Ill. Shears	858,359	June 25	5733	1222	128	3252
Eastman, Ernest A., Chicago, Ill., assignor of one-half to Crawford, McGregor & Canby Company, Dayton, Ohio. Last	857,552	June 18	4095	869	128	2803
Eastman Kodak Company. (See Brownell, Frank A., assignor.)						
Eaton, Arthur W., Boston, Mass., assignor to United Shoe Machinery Company, Paterson, N. J. Hand-tacker	856,399	June 11	1914	393	128	2214
Eberhardt Brothers Machine Company. (See Eberhardt, Henry E. and E. G., assignors.)						
Eberhardt, Elmer G. (See Eberhardt, Henry E. and E. G.)						
Eberhardt, Henry E. and E. G., assignors to Eberhardt Brothers Machine Company, Newark, N. J. Framing for gear-cutters	858,164	June 25	5352	1137–8	128	3150
Eberle, John M. (See Shaw and Eberle.)						
Ebert, Edmund L. (See Aldrich, Frank, assignor.)						
Eccles, Richard, Auburn, N. Y. Thill-coupling	856,233	June 11	1517	319	128	2110
Eckart, Friedrich, Rommerode, Germany. Freezing apparatus	856,234	June 11	1518	319	128	2110
Ecker, Christian, *et al.* (See Woods, Edward D., assignor.)						
Eckstein, Henry G., assignor to Rueckheim Bros. & Eckstein, Chicago, Ill. Manufacture of moisture-proof cartons	856,853	June 11	2755	573	128	2425
Eco Magneto Clock Company. (See Fessenden, George B., assignor.)						
Ecseghy, Stefan K. von, assignor to Handelsgesellschaft Kleinberg & Co., Vienna, Austria-Hungary. Weldless chain	856,947	June 11	2921	612	128	2464
Eden, Harold W., assignor to P. R. Manufacturing Company, Detroit, Mich. Signal	858,064	June 25	5159	1092	128	3102
Edison Storage Battery Company. (See Edison, Thomas A., assignor.)						
Edison, Thomas A., Llewellyn Park, assignor to New Jersey Patent Company, West Orange, N. J. Diaphragm for talking-machines	855,562	June 4	225	44	128	1753
Edison, Thomas A., Llewellyn Park, Orange, assignor to Edison Storage Battery Company, West Orange, N. J. Can or receptacle for storage batteries	857,041	June 18	3119	658	128	2555
Edison, Thomas A., Llewellyn Park, Orange, assignor to Edison Storage Battery Company, West Orange, N. J. Storage-battery electrode	857,929	June 25	4846		128	3020
Edman, John, assignor of one-half to A. M. Hovland, Minneapolis, Minn. Grain-door for cars	856,775	June 11	2628	540	128	2394
Edmonds, Walter D., Boonville, N. Y. Trammel for animals	858,165	June 25	5354	1138	128	3151
Edmondson, Robert, South Bend, Ind. Machine for molding concrete building-blocks and artificial stone	856,340	June 11	1761	366–7	128	2173
Edtbauer, Petronella, Chicago, Ill. Automatic weighing device	857,164	June 18	3355	708–9	128	2616
Edwards, Earnest E. (See Edwards, George W. and E. E.)						
Edwards, George W. and E. E., Cambridge, Nebr. Adjusting-box	857,042	June 18	3120	658	128	2562
Edwards, John C., Brookline, Mass., assignor to A. Kimball Company, New York, N. Y. Pin ticket or tag	857,727	June 25	4448	939	128	2923
Edwards, Thomas C., Salinas, Cal. Surgical needle	856,686	June 11	2458	506	128	2350
Eggleston, Lewis W., Appleton, Wis. Flushing device for water-closet bowls and the like	858,166	June 25	5355	1138	128	3151
Ehrhorn, John. (See Horst and Ehrhorn.)						
Ehrlich, John D., and F. F. Escoffier, Berwick, La. Sugar-cane harvester	857,451	June 18	3886	826–8	128	2747
Eichberg, Friedrich, Berlin, Germany, assignor to General Electric Company. Motor control	857,165	June 18	3361	709	128	2617

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Eichelberger, William, Dubois, assignor to Vulcan Soot Cleaner Company of Pittsburg, Pa., Dubois, Pa. Fuel-economizer soot-cleaner						
Eichelberger, William, and D. E. Hibner, assignors to Vulcan Soot Cleaner Company of Pittsburg, Pa., Dubois, Pa. Boiler-flue cleaner	858,334	June 25	5641	1207	128	3224
Eichelberger, William, D. E. Hibner, Dubois, Pa., and M. J. Bacon, Boston, Mass., assignors to Vulcan Soot Cleaner Company of Pittsburg, Pa., Dubois, Pa. Soot-cleaner for boilers	855,563	June 4	226	44	128	1754
Einstein, Alfred C., St. Louis, Mo., assignor to Eagle Generator Company. Acetylene-gas-generating apparatus	858,333	June 25	5639	1207	128	3223
Einstein, Robert E., St. Louis, Mo. Railway-frog	855,843	June 4	784	164	128	1893
Ekker, Charles. (See Laczay, Fohn, and Ekker.)	857,930	June 25	4847	1026	128	3021
Eklund, Gustav, assignor to F. W. Dressel, New York, N. Y. Signal-lantern	856,854	June 11	2757	573	128	2425
Electric Service Supplies Company. (See Titus, Joseph V. E., assignor.)						
Electric Vehicle Company. (See Lambert, Charles O., assignor.)						
Electro-Dynamic Company. (See Mudge, Charles A., assignor.)						
Electro Metallurgical Company. (See Becket, Frederick M., assignor.)						
Elektrochemische Werke, Gesellschaft M. B. H. (See Askenasy and Stockem, assignors.)						
Elfering, John H. Camden, N. J., assignor to Victor Talking Machine Company. Talking-machine	855,761	June 4	616	127	128	1853
Elliott, Annie M. (See Elliott, George F., assignor.)						
Elliott, Charles W., Northfork, W. Va. Bottling-machine	856,135	June 4	1320	276	128	2026
Elliott, Claud B., J. T. Loggins, and W. B. Straughan, Hempstead, Tex. Spring-motor apparatus	855,506	June 4	122	25	128	1724
Elliott-Fisher Company. (See Bolton, Herbert D., assignor.)						
Elliott-Fisher Company. (See Halle, Hiram J., assignor.)						
Elliott-Fisher Company. (See Julihn, Louis G., assignor.)						
Elliott-Fisher Company. (See Turley, Patrick H., assignor.)						
Elliott, George F., U. S. Marine Corps, assignor to A. M. Elliott, Washington, D. C. Intrenching-tool	856,575	June 11	2249	462-3	128	2296
Elliott, Milo A., Waterville, Me. Mop-wringing machine	856,235	June 11	1519	320	128	2111
Elliott, Sterling, Newton, assignor to National Binding Machine Company, Boston, Mass. Strip-serving device	856,136	June 4	1321	276	128	2026
Elliott, William S., Pittsburg, Pa. Boiler-tube cleaner	856,627	June 11	2353	484	128	2324
Elliott, William S., Pittsburg, Pa. Boiler-tube cleaner	856,628	June 11	2353	484	128	2324
Ellison, Lewis M., Chicago, Ill., assignor to American Steam Gauge and Valve Manufacturing Company, Boston, Mass. Steam-calorimeter	857,984	June 25	4982	1053	128	3057
Emanuel, Jacob. (See Walchner, Carl, assignor.)						
Emergency Rubber Company. (See Schwarzschild, Solomon, assignor.)						
Emerson Electric Manufacturing Company. (See Winter, William G., assignor.)						
Emerson, Henry B., Schenectady, N. Y., assignor to General Electric Company. Motor control	855,623	June 4	345	71	128	1782
Emerson, Homer, Milton, Mass. Toilet-receptacle	858,270	June 25	5533	1182	128	3197
Emerson Manufacturing Company. (See Weeks, Samuel V., assignor.)						
Emig, Edward K., Emigsville, Pa. Dumping-wagon	855,762	June 4	618	127	128	1854
Endemann Hubert, Vienna, Austria-Hungary. Screw-press for molding tablets	857,043	June 18	3121	.658	128	2556
Engi, Gadient, assignor to Society of Chemical Industry in Basle, Basel, Switzerland. Tribromo derivative of indigo and making same	856,687	June 11	2459	.....	128	2351
Engi, Gadient, assignor to Society of Chemical Industry in Basle, Basel, Switzerland. Tetrabromo derivative of indigo and making same	856,776	June 11	2630	.....	128	2395
English, James. (See Stark, William F., assignor.)						
Eno, Edward S., Elgin, Ill. Testing filled and closed cans	857,388	June 18	3780	801	128	2723
Enrico, Giovanni, assignor to F. I. A. T. Fabbrica Italiana Automobili Torino, Turin, Italy. Brake for motor-vehicles	857,272	June 18	3559	753	128	2667
Enright, Isaac N., San Francisco, Cal. Gas-generator	855,699	June 4	488	102	128	1820
Epeneter, John C., Denver, Colo. Adding and subtracting machine	856,236	June 11	1520	320-2	128	2111
Ephraim, Ferdinand, San Francisco, Cal. Vehicle-wheel	857,335	June 18	3676	777	128	2698
Erd, Harry S., Saginaw, Mich. Device for filling grease-cups	858,167	June 25	5358	1139	128	3152
Erdner, George C. (See Reddy, Thomas E., assignor.)						
Erickson, Erick A. (See Anderson and Erickson.)						
Erickson, Lauritz H., Gunnison, Utah. Ditching-machine	855,507	June 4	124	25	128	1725
Ernst, Otto, and G. Gullbransson, assignors to Farbwerke, vorm. Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Monoazo dye for lakes and making same	858,065	June 25	5161	.....	128	3102
Eschinger, Edward A., assignor to Lanston Monotype Machine Company, Philadelphia, Pa. Type-mold	857,728	June 25	4449	940	128	2923
Escoffier, Fernand F. (See Ehrlich and Escoffier.)						
Estep, Simeon R., Lake Butler, Fla. Vehicle	855,508	June 4	125	25-6	128	1725
Ettinger, Edwin. (See Stanfield, William T., assignor.)						
Euker, George W., Pittsfield, Mass., assignor to Stanley G. I. Electric Mfg. Company. Motor-control apparatus	857,797	June 25	4590	972	128	2958
Eureka Vibrator Co. (See Stecker, Alfred J., assignor.)						
Evans, Harry F., Hynes, Iowa. Curtain-roller	856,454	June 11	2015	414	128	2239
Evard, John S. (See Lorenz, Jacob, assignor.)						
Eversbed, Sydney, assignor to himself and Eversbed and Vignoles Limited, Chiswick, England. Apparatus for measuring electrical resistances	858,335	June 25	5645	1208	128	3225
Eversbed and Vignoles. (See Eversbed, Sydney, assignor.)						
Ewins, George M., Cedar Rapids, Iowa. Automobile-tire	857,796	June 25	4589	972	128	2958
F. C. Austin Drainage Excavator Company. (See Jacobs, Charles C., assignor.)						
F. I. A. T. Fabbrica Italiana Automobili Torino. (See Enrico, Giovanni, assignor.)						
Faessler, John W., Moberly, Mo. Stay-bolt cutter	858,271	June 25	5535	1183	128	3197
Fairbanks Co. (See Paige, Joseph B., assignor.)						
Faix, John, San Francisco, Cal. Saw-set	856,522	June 11	2132	438	128	2267
Falchi, Pietro. (See Beltrame and Falchi.)						
Fallon, John B., Jr., Boston, Mass. Carton for nutmegs and the like	857,336	June 18	3676	777	128	2698
Falls Machine Company. (See Joecken, Peter J., assignor.)						
Falter, Richard, New York, N. Y. Waterproofing compound	856,855	June 11	2759	.....	128	2426
Fanders, Martin, Diller, Nebr. Incubator	856,043	June 4	1142	240	128	1982
Farbenfabriken vorm. Friedr. Bayer & Co. (See Berendes and Calisen, assignors.)						
Farbenfabriken vorm. Friedr. Bayer & Co. (See Lommel, Wilhelm, assignor.)						
Farbwerke, vorm. Meister, Lucius & Brüning. (See Ernst and Gullbransson, assignors.)						
Farkas, Armand, and J. Kieffer, Paris, France. Joint	856,777	June 11	2631	540	128	2395
Farmer, John P., Montavilla, Oreg. Heat-regulator for ovens	857,452	June 18	3804	828	128	2750
Farmer, Samuel, Anderson, Ind. Hinge	856,856	June 11	2760	573	128	2426
Farquhar, George, and R. North, London, England. Device for hermetically sealing metal receptacles for food	856,688	June 11	2460	506	128	2351
Farrington, Fred W., and S. B. Burchard, Minneapolis, Minn. Plaster-lath	857,611	June 25	4221	893	128	2864
Fawkes, Wilbert C., Minneapolis, Minn. Washing-machine	857,337	June 18	3677	777-8	128	2698
Feehery, John, Campus, Ill. Grain-seperator	856,455	June 11	2016	415	128	2239
Feehery, John, Campus, Ill. Grain-conveyer	856,456	June 11	2017	415	128	2240
Feehery, John, Campus, Ill. Grain-bin ventilator	856,457	June 11	2018	415	128	2240
Fehr, William, Philadelphia, Pa. Punching-machine	858,098	June 25	5161	1093	128	3102
Fehrenbach, Charles F., Cleveland, Ohio. Label-package	856,699	June 11	2462	506	128	2351

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Feinberg, Sachary I., New York, N. Y. Structure of glass	857,230	June 18	3475	733-4	128	2647
Fell, Frank S. (See Griffin, Frank B., assignor.)						
Fellows, Edward R., and A. Hubbard, Youngstown, Ohio. Rolling-mill	856,044	June 4	1143	240-2	128	1983
Felschow, Edward. (See Cass, Frederick I., assignor.)						
Felten & Guilleaume-Lahmeyerwerke Actien Gesellschaft. (See Mattausch, Karl, assignor.)						
Felts, Fletcher E., Los Angeles, Cal. Flying-machine	857,166	June 18	3363	709	128	2618
Fennell, Joseph, Cynthiana, Ky. Horse-boot	858,272	June 25	5537	1183	128	3198
Fennell, Joseph, Cynthiana, Ky. Horse-boot	858,273	June 25	5538	1183	128	3198
Fenwick, Leonard S., Toronto, Ontario, Canada. Non-refillable bottle	857,231	June 18	3477	734	128	2647
Ferguson, William C., Flushing, assignor to General Chemical Company, New York, N. Y. Contact-chamber	857,389	June 18	3780	801	128	2723
Ferrand, Alphonse F. E. (See Auvert and Ferrand.)						
Ferree, Isaac C. (See Miller, Hezekiah, assignor.)						
Ferriott, Charles L., Temple, Tex. Cultivator-foot	856,237	June 11	1537	322	128	2116
Fessenden, George B., Allston, assignor to Eco Magneto Clock Company, Boston, Mass. Watchman's time-detector	857,985	June 25	4984	1053	128	3057
Fetta, Robert H., Richmond, Ind. Metal step-ladder	857,453	June 18	3895	828	128	2751
Fetta, Robert H., assignor to Fetta Water Softener Company, Richmond, Ind. Chemical and water feed mechanism for steam-boilers	856,948	June 11	2922	612	128	2464
Fetta Water Softener Company. (See Fetta, Robert H., assignor.)						
Fetter, Ralph S., Trenton, N. J. Apparatus for restoring worn-out reamers	857,877	June 25	4729	1004	128	2991
Fetzer, Allen R., Galion, Ohio. Fence-post brace	855,624	June 4	348	71	128	1783
Fidler, Meredith E., and H. Lingenfelter, Canton, Ill. Planter	857,798	June 25	4591	972	128	2958
Field, Samuel B., Scotch Plains, N. J. Trace-fastener	857,986	June 25	4986	1053	128	3058
Fiers, William T., and B. F. Tigner, Redkey, Ind. Boiler-truck	857,454	June 18	3897	828	128	2751
Filson, T. S. (See Beatty, Orah T., assignor.)						
Fine, Samuel, Arcadia, Pa. Cooking utensil	857,167	June 18	3366	710	128	2618
Finkbeiner, Charles T., Wilkinsburg, Pa. Fan	856,690	June 11	2463	506	128	2352
Firennan, Peter, Braddock Heights, Va. Production of printing-ink pigments	857,044	June 18	3123	659	128	2556
Fischer, Hugo, New York, N. Y. Muff-bed	856,691	June 11	2465	507	128	2352
Fish, John, Manchester, England. Apparatus for doubling cloth, &c	855 881	June 4	848	176	128	1908
Fisher, Frank, Des Moines, Iowa. Smoke-consuming furnace	856,341	June 11	1763	367	128	2174
Fisher, S. S. (See Roth, Charles C., assignor.)						
Fisk Rubber Company. (See Cole, John C., assignor.)						
Fitch, Arden S., New York, N. Y. Amusement apparatus	857,338	June 18	3678	778	128	2699
Fitzgerald, Jesse R., Toronto, Ontario, Canada. Composition for furniture and piano polishing	855,451	June 4	23	.....	128	1701
Fitzpatrick, John W. (See Colvin, Hockett, and Fitzpatrick.)						
Fixler, Edgar L., Delta, Ohio. Trolley-stand	857,612	June 25	4222	893	128	2864
Flamache, Armand, and J. Gernaert, Brussels, Belgium. Fastening device for rails	857,987	June 25	4987	1054	128	3058
Flanagan, Denis, Clayton-le-Moors, England. Blindstitch sewing-machine	856,999	June 11	3034	638	128	2495
Fletcher, Morris D., Springfield, Mass. Safety-razor-blade holder	857,390	June 18	3782	801	128	2723
Flicker, Louis, Los Angeles, Cal. Device for setting, shaping, and renovating hats	856,458	June 11	2019	416	128	2240
Fling, Robert G., St. Paul, assignor of one-half to G. L. Mohrbacher, Cologne, Minn. Smoking-pipe	856,045	June 4	1146	242	128	1983
Fohn, Charles. (See Laczay, Fohn, and Ekker.)						
Foley, Patrick F., New York, N. Y. Variable-speed-transmission gear	858,336	June 25	5647	1209	128	3225
Follett, Charles M., Montgomery, Mich. Stone and grit separator for clover-hullers	855,625	June 4	349	71	128	1783
Follows, George H., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Oil-distributing ring	856 459	June 11	2020	416	128	2241
Folwell, Russell H., and W. R. Sinks, Chicago, Ill. Apparatus for raising concrete forms	855,452	June 4	24	5	128	1701
Foote, George L., assignor to Foote, Pierson & Company, New York, N. Y. Lightning-arrester	857,045	June 18	3124	659	128	2556
Foote, Pierson & Company. (See Foote, George L., assignor.)						
Forman, Paris R., assignor to Burdett-Rowntree Manufacturing Company, Chicago, Ill. Door-operating apparatus	857,232	June 18	3479	734-5	128	2647
Forsberg, Erik A., assignor to Aktiebolaget Separator, Stockholm, Sweden. Centrifugal cream-separator	857,273	June 18	3559	753	128	2668
Forsyth, Luther, Hagerstown, Md. Drawing kit	858,274	June 25	5539	1184	128	3198
Fort Collins Implement Manufacturing Company. (See Smith, Edward A., assignor.)						
Foster, Charles H., St. Louis, Mo. Boiler-support	855,453	June 4	26	6	128	1701
Foster, Frank M., Cincinnati, Ohio. Switch-stand	855,763	June 4	619	127	128	1854
Foster, Well & Parkes. (See Parkes, James H., assignor.)						
Foster, William, Higby, Ohio. Sod trimming and marking device	855,844	June 4	785	165	128	1893
Foster, William B., Norwood, assignor of one-half to A. and J. Waldner, Cincinnati, Ohio. Hat-frame machine	858,168	June 25	5358	1139	128	3152
Foster, William S., Richford, Vt. Strainer-support for water-pipes	857,519	June 18	4026	857	128	2784
Foulilloux Ballon Passoirs Company. (See Latsch, Charles, assignor.)						
Fowler, Henry A. (See Thurston, Charles H., assignor.)						
Fox, John F. (See Nichols, Robert W., assignor.)						
Fox, William R., Grand Rapids, Mich. Paper clamp or guide for front-strike type-writing machines	855,509	June 4	126	26	128	1726
Fox, William R., Grand Rapids, Mich. Auxiliary stop for type-writer carriages	856,629	June 11	2355	485	128	2324
Foyer Manufacturing Company. (See Dobe, Frederick W., assignor.)						
Frame, Robert E., assignor to American Car & Foundry Company, St. Louis, Mo. Combined stake-pocket and shaft-bearing	855,943	June 4	969	201	128	1938
Franchetti, Alessandro, assignor to Delavergne Machine Company, New York, N. Y. Atomizing spray-nozzle	857,566	June 18	4131	875	128	2809
Francis, Adolphus S., London, England. Inverted incandescent gas-burner	857,233	June 18	3482	735-6	128	2648
Frank, Albrecht. (See Mittelstrass and Frank.)						
Frank Ridlon Company. (See Shields, Robert, assignor.)						
Franke, Emil, Astoria, N. Y. Electric brake	857,729	June 25	4453	940	128	2924
Franke, Emil, assignor to Chemische Fabrik Grünau Landshoff & Meyer Aktiengesellschaft Manufacturing Chemists, Grünau, near Berlin, Germany. Producing concentrated formic acid from formates	857,046	June 18	3126	.....	128	2557
Franklin, Lucia J., Devils Lake, N. D. Fastener	858,275	June 25	5540	1184	128	3198
Fraser, George, Jersey City, N. J., assignor to J. M. Winkler, New York, N. Y. Non-refillable bottle	857,166	June 18	3367	710	128	2618
Fraser, George A., Winnipeg, Manitoba, Canada. Combined brush and mop holder	856,238	June 11	1539	322	128	2117
Fraser, Simon A., and M. Jackson, Lorain, Ohio. Anchor-compartment	856,239	June 11	1540	322	128	2117
Frazer, Walter L., National City, Cal. Combined lock and latch	856,046	June 4	1147	242-3	128	1983
Fredrikson, Adolf, assignor of one-half to A. Malm, Soudan, Minn. Gage-cock	856,047	June 4	1150	243	128	1983
Freeborn, Grant E., Belfast, N. Y. Dental-plate swage	857,339	June 18	3682	778	128	2700
Fremery, Max, Oberbruck, E. Bronnert, Mülhausen-Niedermorschweiler, Germany, and J. Urban, St. Polten, Austria-Hungary. Manufacture of threads, films, or other forms of cellulose	856,857	June 11	2761	.....	128	2426
French, Frederick W., Oakland, Cal. Nut-lock	856,700	June 4	499	102	128	1820
French, George B., Fremont, Nebr. Hydraulic motor	856,858	June 11	2762	574	128	2426
Frenier, Albert B., Davenport, Iowa. Wheeled plow	856,240	June 11	1541	323	128	2117
Freund, Vilhelm J. G., Brooklyn, N. Y. Bottle-closure	856,342	June 11	1764	367	128	2174

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Frick, Claus H., San Antonio, Tex. Tool for truing and dressing commutators	857,931	June 25	4849	1026	128	3021
Frick, George W., Syracuse, N. Y. Apparatus for handling newspapers	856,460	June 11	2021	416–17	128	2241
Fried. Krupp Aktiengesellschaft. (See Mayer, Wilhelm, assignor.)						
Fried. Krupp Aktiengesellschaft, Grusonwerk. (See Lehmann, Hermann, assignor.)						
Frost, Henry H., London, England. Portable self-contained vulcanizing apparatus	856,241	June 11	1546	324	128	2118
Frost and Wood Company. (See Maloney, William, assignor.)						
Frye, Charles E., Flora, Ind. Switch	858,276	June 25	5541	1184	128	3199
Fullenlove Elevator Company. (See Fullenlove, McClellan, assignor.)						
Fullenlove, McClellan, assignor to Fullenlove Elevator Company, Louisville, Ky. Elevator-brake	856,576	June 11	2252	463	128	2291
Fuller, James W., Jr., Catasauqua, Pa. Pulverizing or grinding mill	857,932	June 25	4850	1027	128	3021
Fuller, James W., Jr., Catasauqua, Pa. Air-separator for pulverizing and grinding mills	857,988	June 25	4989	1054	128	3058
Fuller, Rodolphus, Detroit, Mich. Self-propelled vehicle-truck	856,242	June 11	1548	324–5	128	2119
Fulton Manufacturing Company. (See Adams, Arthur J., assignor.)						
Funcke, Robert. (See Mattar and Funcke.)						
Funk, Alexander W., Cleveland, Ohio. Watch-holder	856,243	June 11	1551	325	128	2120
Furman, Cornelius, Decatur, Ill. Railway-brake	856,461	June 11	2027	417	128	2242
Furru, Ole O., assignor of one-half to E. Cronstedt, St. Paul, Minn. Pump-jack	855,626	June 4	350	72	128	1783
Furst, Peter, Anderson, Ind. Gas and gasolene engine	857,455	June 18	3899	829	128	2752
G. J. Worssam & Son. (See Worssam, Henry J., assignor.)						
Gabasio, Marco, Turin, Italy. Pocket match-box	857,274	June 18	3561	754	128	2668
Gabrielson, Otto W., assignor of one-third to N. Wester, Issaquah, Wash. Burglar-trap	857,456	June 18	3900	829	128	2752
Gadd, Charles J., Steelton, Pa. Friction-clutch	856,692	June 11	2406	507	128	2352
Gagarine, Andrew, St. Petersburg, Russia. Machine to test materials, principally for compression	857,613	June 25	4224	893	128	2865
Gaillard, Antonio, Barcelona, Spain. Apparatus for concentrating sulfuric acid	856,048	June 4	1151	243	128	1984
Gaither, Charles T., Youngstown, Ohio. Carbureter	857,275	June 18	3562	754	128	2668
Gale, Frederick A. (See Miller, William L., assignor.)						
Gallagher, Joseph D., Glenridge, N. J. Brake-shoe	858,067	June 25	5165	1093–4	128	3103
Gálocsy, Árpád de, L. de Bánó, and J. Terény, Budapest, Austria-Hungary. Gas-producer	855,845	June 4	787	165	128	1893
Gálocsy, Árpád de, L. de Bánó, and J. Terény, Budapest, Austria-Hungary. Gas-producer	856,137	June 4	1324	277	128	2027
Galvin, John F., New York, N. Y. Thill-coupling	857,340	June 18	3684	779	128	2700
Gamon, Ernest E., assignor to Neptune Meter Company, Long Island City, N. Y. Disk meter	856,244	June 11	1552	325–6	128	2120
Gamon, Ernest E., assignor to Neptune Meter Company, Long Island City, N. Y. Bearing for water-meters	856,245	June 11	1556	326	128	2121
Gamon, Ernest E., assignor to Neptune Meter Company, Long Island City, N. Y. Nut-ring	856,246	June 11	1557	326	128	2121
Gangelhoff, Charles H., and M. Jordan, Minneapolis, Minn. Machine for covering wooden rails for bed-springs with metal	857,799	June 25	4903	973	128	2958
Gano, George W., Cincinnati, Ohio. Basin-fixture	857,989	June 25	4991	1055	128	3058
Garcia, Joseph, Brooklyn, N. Y. Fiber-cleaning machine	858,337	June 25	5649	1209	128	3226
Garcia, Joseph, Brooklyn, N. Y. Fiber-cleaning machine	858,338	June 25	5652	1210	128	3226
Gard, John J., Harvey, assignor to Buda Foundry & Manufacturing Company, Chicago, Ill. Switch and semaphore mechanism	856,523	June 11	2134	438	128	2267
Garda, Henry. (See Bosshardt, Edwin, assignor.)						
Gardner, Harry B. (See Slaybaugh, Eli H., assignor.)						
Gardner, Joshua G., Lake Butler, Fla. Extracting-retort	856,049	June 4	1153	243	128	1984
Garman, Adrian S. (See Werner, Emil, assignor.)						
Garner, Charles E., Lansing, Mich. Furnace	858,169	June 25	5360	1139	128	3152
Garver, Albert. (See Hare, William W. and H. H., assignors.)						
Garver, Charles, Fort Wayne, Ind. Automatic wagon-brake	856,693	June 11	2467	507	128	2352
Gaskell, William, and T. Vale, Fayette City, Pa. Hat-pin	857,614	June 25	4226	893	128	2865
Gasman, George A., and J. T. Lynch, assignors to Time Marking Machine Company, Chicago, Ill. Pick-up table for mail-matter	857,990	June 25	4992	1055	128	3059
Gaspar, Charles. (See Booth and Gaspar.)						
Gasque, Baker F., Dillon, S. C. Broom-shield	857,615	June 25	4227	894	128	2866
Gates, Walter S. (See Dow, Gates, and Schaefer.)						
Gatti, Tonny C., Scranton, Miss. Spike-puller	855,564	June 4	229	45	128	1754
Gault, Charles A. (See O'Brien, Alexander J., assignor.)						
Gault, John H., Philadelphia, Pa., assignor to International Silver Company. Forming seamless metallic hollow vessels	857,616	June 25	4228	894	128	2866
Gayler, Leonard B., Boston, Mass. Carbureter	855,764	June 4	623	127	128	1854
Gayner, Thomas H. B., South Melbourne, Victoria, Australia. Air-tube for pneumatic tires for wheels	855,627	June 4	351	72	128	1784
Geddes, Horatio, Cleveland, Ohio. Mail-box	857,234	June 18	3486	736	128	2649
Gehre, Max, Rath, near Düsseldorf, Germany. Construction of measuring apparatus	855,846	June 4	789	165	128	1894
Gehrer, Konrad, Elgg, Switzerland. Hand weapon	857,047	June 18	3127	659–60	128	2557
Gelder, David, *et al.* (See Murrin, Terrence, assignor.)						
General Acoustic Company. (See Turner, Kelley M., assignor.)						
General Chemical Company. (See Ferguson, William C., assignor.)						
General Electric Company. (See Apt, Richard, assignor.)						
General Electric Company. (See Barcus, Miner, assignor.)						
General Electric Company. (See Bliss, Elmer F., assignor.)						
General Electric Company. (See Burrows, William R., assignor.)						
General Electric Company. (See Eichberg, Friedrich, assignor.)						
General Electric Company. (See Emerson, Henry B., assignor.)						
General Electric Company. (See Hawkins, Laurence A., assignor.)						
General Electric Company. (See Lemp, Hermann, assignor.)						
General Electric Company. (See Martin, Arthur J., assignor.)						
General Electric Company. (See Mittelstrass and Frank, assignors.)						
General Electric Company. (See Mix, Edgar W., assignor.)						
General Electric Company. (See Reist, Henry G., assignor.)						
General Electric Company. (See Robinson, Albert D., assignor.)						
General Electric Company. (See Samuelson, Frederick, assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.)						
General Electric Company. (See Thomson, Elihu, assignor.)						
General Electric Company. (See Tornberg, Knut, assignor.)						
General Electric Company. (See Westendarp, Henry O., assignor.)						
General Electric Company. (See Wiard, John B., assignor.)						
General Electric Company. (See Yates, William C., assignor.)						
General Fire Extinguisher Company. (See Meloon, Jonathan C., assignor.)						
General Railway Signal Company. (See Macomber, William, assignor.)						
General Specialty Manufacturing Company. (See Smith, Robert R., assignor.)						
Gentieu, George W., Peoria, Ill. Apparatus for manufacturing smokeless powder	856,859	June 11	2764	574	128	2426
George Burroughs and Sons. (See Seaman, Alonso D., assignor.)						
Gerhardt, Henry, Hazleton, Pa. Creasing and folding machine for collars, cuffs, and the like	856,695	June 11	2471	508–9	128	2353

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Geriach, Robert, assignor to Buffalo Forge Company, Buffalo, N. Y. Punching and shearing machine	855,765	June 4	624	128	128	1855
Geriach, Robert, assignor to Buffalo Forge Company, Buffalo, N. Y. Shearing-machine	855,766	June 4	626	128	128	1855
Germain, Peter J. (See Kelly and Germain.)						
Gernaert, Jules. (See Flamache and Gernaert.)						
Gernaert, Jules, Brussels, Belgium. High building	858,170	June 25	5362	1140	128	3153
Gersant, Jules, Clapham, London, and G. J. J. Legrand, Lancing, England. Turbine	857,048	June 18	3128	660	128	2557
Gesford, Preston G., Orting, Wash. Fire structure	857,933	June 25	4852	1027	128	3022
Getaz, Henry, Schenectady, N. Y. File	858,171	June 25	5363	1140–1	128	3153
Gibbens, William J. (See Stream and Gibbens.)						
Gibson, Marion E., Portland, Oreg. Credit-accounting device	855,767	June 4	628	128	128	1856
Gibson, William A., Enid, Okla. Ter. Combined level and plumb	857,991	June 25	4995	1055	128	3059
Gideon, James L., Haskell, Ind. Ter. Clothes-press and wardrobe	855,628	June 4	352	72	128	1784
Glerding, Charles E., assignor to Sterling-Meaker Company, Newark, N. J. Bell-hammer	855,701	June 4	491	102	128	1820
Gies, Frank G., assignor to Gies Gear Company, Detroit, Mich. Reversing-gear	856,462	June 11	2028	417	128	2242
Gies Gear Company. (See Gies, Frank G., assignor.)						
Giesler, Arthur, assignor to Platt Iron Works Company, Dayton, Ohio. Turbine water-wheel	856,949	June 11	2923	613	128	2464
Giffin, Oscar F., San Francisco, Cal. Saw-guide	858,277	June 25	5543	1185	128	3199
Gilbert, George H., Germantown, Pa., assignor to Kilbourn Knitting Machine Company, New Brunswick, N. J. Knitting-machine	856,860	June 11	2766	574–5	128	2427
Gilbert, Harris & Company. (See Gilbert, James E., assignor.)						
Gilbert, James E., assignor to Gilbert, Harris & Company, Chicago, Ill. Fan attachment for rocking-chairs	856,247	June 11	1558	326–7	128	2121
Gilbert, William N., assignor to Osgood Scale Company, Binghamton, N. Y. Railway-track scale	856,248	June 11	1560	327	128	2122
Gilchrist, Raymond B., Chicago, Ill. Cork-extractor	857,992	June 25	4996	1055–6	128	3060
Giles, Isaac W., New Bedford, and C. W. Tobey, assignors to Atlas Tack Company, Fairhaven, Mass. Machine for varnishing eyelets	858,339	June 25	5667	1210–11	128	3235
Gillespie, Alan K., Pittsburg, Pa. Cheese-cutter	856,950	June 11	2925	613	128	2465
Gillespie, Alfred J., assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y. Voting-machine	857,800	June 25	4596	973–4	128	2960
Gillett, Henry M., Grand Rapids, Mich. Fire-extinguisher	856,050	June 4	1154	244	128	1985
Gillette, King C., Boston, Mass. Bottle-seal	856,400	June 11	1916	394	128	2214
Gilman, Myron A., Westfield, Mass. Folding lunch-box	858,278	June 25	5544	1185	128	3199
Gilmore, H. Blake, *et al.* (See Betts, Lewis F., assignor.)						
Gilmore, Wilmer C., assignor to Universal Voting Machine Company, Bloomington, Ill. Ball-feeding mechanism	857,993	June 25	5003	1056–7	128	3062
Gilroy, Frank J., Buffalo, assignor of three-fourths to A. H. Smith, New York, N. Y., J. J. H. Southard, Toledo, Ohio, J. F. Desmond, New York, N. Y., and W. Greene, Washington, D. C. Refrigerating-car	855,768	June 4	629	128–9	128	1856
Gimson, Arthur J. (See Gimson, Josiah M., J., A. J., and S. A.)						
Gimson, Josiah. (See Gimson, Josiah M., J., A. J., and S. A.)						
Gimson, Josiah M., J., A. J., and S. A., Leicester, England. Nailing or riveting machine	855,454	June 4	27	6–7	128	1702
Gimson, Sydney A. (See Gimson, Josiah M., J., A. J., and S. A.)						
Ginn, Robert J. (See Hall, John R., assignor.)						
Giroux, Jean F., Montreal, Quebec, Canada. Furnace	857,617	June 25	4229	894	128	2866
Glass, Mendel L., assignor to Gram & Glass Cap Company, St. Louis, Mo. Cap	857,000	June 11	3035	639	128	2495
Glen, Mary A., Elizabeth, N. J. Transformable toy	855,944	June 4	971	202	128	1939
Gloe, John F., Manning, Iowa. Loose-leaf indexed ledger	856,861	June 11	2769	576	128	2428
Goddard, Fred D., Everett, assignor to Walker-Pratt Manufacturing Company, Boston, Mass. Urn	855,702	June 4	492	102	128	1821
Godfrey, Jonathan, assignor to Compressed Paper Box Company, Bridgeport, Conn. Dies for forming boxes from pasteboard	858,172	June 25	5365	1141	128	3153
Godfrey, Jonathan, assignor to Compressed Paper Box Company, Bridgeport, Conn. Making boxes from pasteboard	858,173	June 25	5367	1141	128	3154
Goe, David E., Madison, Wis., assignor, by mesne assignments, of three-fifths to Steel Products Company, Chicago, Ill. Safety-razor	856,343	June 11	1765	367	128	2174
Goehring, John R., assignor to T. B. Belfield, Philadelphia, Pa. Pressure-gage	857,049	June 18	3135	660	128	2561
Gold, Adolf J., Helena, Mont. Machine for traveling on snow	855,882	June 4	852	176	128	1909
Goldberg, Samuel, New York, N. Y. Merchandise-exhibitor	857,391	June 18	3783	802	128	2724
Goldsmith, Charles B., Waterbury, Conn. Garment-supporter	856,249	June 11	1562	327–8	128	2123
Goldstein, Ewald, Cologne, Germany. Bottle-cap	858,174	June 25	5368	1142	128	3154
Goodale, Marion J., Toledo, Ohio. Miter-box	857,520	June 18	4028	858	128	2785
Goodale, Warren H., and A. L. Preston, Leominster, Mass. Hair-pin cutter	856,577	June 11	2253	403	128	2298
Goodell Company. (See Hunt, David F., assignor.)						
Goodnight, Frank H., Dallas, Tex., and J. F. Duffin, assignors to Kingman Plow Company, Peoria, Ill. Cotton and corn planter	855,883	June 4	852	177	128	1909
Goodpasture, Thomas B. (See Harmon and Goodpasture.)						
Goodspeed, Arthur B., East Orange, N. J., assignor to Industrial Development Company, New York, N. Y. Internal-combustion engine	857,730	June 25	4454	940–1	128	2924
Goodwin, William, Decatur, Ill. Cut-off valve for engines	857,457	June 18	3903	829	128	2752
Goodyear, William E. (See Allen and Goodyear.)						
Gormly, Robert W., Troy, N. Y. Needle-arm for looping-machines	855,847	June 4	791	165	128	1894
Gorton, Robert, Newton, Mass. Garment-supporter	856,524	June 11	2135	438	128	2268
Goserud, Ole, Jr. (See Goserud, Ole O. and O., Jr.)						
Goserud, Ole O. and O., Jr., Summit, S. D. Rotary engine	855,629	June 4	353	73	128	1784
Goss, John H., and A. F. Wolff, assignors to Scovill Manufacturing Company, Waterbury, Conn. Box for watch-movements	856,463	June 11	2029	417	128	2242
Gossweiler, Karl, Vienna, Austria-Hungary. Means for drawing hollow articles	857,235	June 18	3487	737	128	2649
Gossweiler, Karl, Vienna, Austria-Hungary. Ink-blotter	857,236	June 18	3488	737	128	2650
Gottschalk, Felix, New York, N. Y. Book-carrier	857,050	June 18	3137	661	128	2562
Gotty, George, New York, N. Y. Self-lighting incandescent mantle	856,578	June 11	2254	463	128	2298
Gourley, John L., Uhrichsville, Ohio, assignor of two-thirds to L. S. Nicholls and T. D. Healea. Metallic railway-tie	857,051	June 18	3140	661	128	2563
Gowin, Arnest E., Morrisonville, and B. F. Brown, Litchfield, Ill. Stovepipe-holder	855,703	June 4	493	102	128	1821
Grace, Sergius P., and R. A. L. Snyder, Pittsburg, Pa., assignors to Western Electric Company, Chicago, Ill. Terminal-box for electric cables	857,341	June 18	3685	779	128	2707
Graf, Raimund, Pohrlitz, Austria-Hungary, assignor to Minimax Consolidated Limited, London, England. Protecting device for chemical fire-extinguishers	857,553	June 18	4097	869	128	2803
Graham, Frederick S., Philadelphia, Pa., assignor of two-thirds to R. M. Seaman and C. A. Struntz. Pneumatic-tool handle	856,194	June 4	1431	302	128	2053
Graham, James, Roseberry, Manitoba, Canada. Sheaf-loading machine	856,051	June 4	1155	244	128	1985
Graham, Ulysses G. (See Lorig and Graham.)						
Gram & Glass Cap Company. (See Glass, Mendel L., assignor.)						
Grandjean, Arthur, San Diego, Cal. Bedclothes-clamp	856,052	June 4	1158	244	128	1986
Granger, John W., Philadelphia, Pa. Carrier-plate for hooks and eyes	857,731	June 25	4459	942	128	2926
Grant, John A., Emerado, N. D. Screen	855,780	June 4	631	129	128	1856
Grasberger, Julius A., Richmond, Va. Fifth-wheel	857,052	June 18	3141	661	128	2563
Grassfield, John S., Rogers, Iowa. Fence-post	856,138	June 4	1325	277	128	2027

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Gray, Edgar S., Greenfield, Ohio. Ribbon-holder	855,848	June 4	793	166	128	1895
Gray, Hubert M., Minneapolis, Minn. Grain-sampler	855,849	June 4	794	166	128	1895
Gray, Thomas B., *et al.* (See Roche and Breese, assignors.)						
Green, Felix G., Sedalia, Mo. Seed-planter	855,630	June 4	357	74	128	1785
Green, Gustavus, assignor of one-half to F. P. C. Hope and J. Miller, Bexhill-on-Sea, England. Valve-operating mechanism for internal-combustion engines	857,994	June 25	5011	1057	128	3064
Green, John, assignor to T. W. Remmers, St. Louis, Mo. Razor	857,342	June 18	3687	780	128	2701
Green, John H., Springfield, Ill. Pneumatic tire	855,884	June 4	854	177	128	1909
Green, Jonathan S., Pittsburg, Pa., assignor to Westinghouse Machine Company. Turbine blade and vane	856,630	June 11	2357	485	128	2326
Green, R. George, *et al.* (See Winter, Frederick W., assignor.)						
Green, Robert J., St. Louis, Mo. Carpet-beater	856,139	June 4	1326	277	128	2028
Greenawalt, David F., York, Pa. File-cabinet	856,862	June 11	2772	576–7	128	2428
Greene, Wallace, *et al.* (See Gilroy, Frank J., assignor.)						
Greenfield, Edwin T., Kiamesha, N. Y. Junction-box	857,053	June 18	3142	662	128	2563
Greenhouse, John, Cambridge Springs, Pa. Tray	855,565	June 4	230	45	128	1755
Greenwald Bros. (See Greenwald, Jacob, assignor.)						
Greenwald, Jacob, assignor to Greenwald Bros., Philadelphia, Pa. Lady's skirt	855,885	June 4	856	177	128	1910
Greer, Franklin M., Winona, Minn. Game	855,455	June 4	30	7	128	1702
Gregory, Fred L., Chicago, Ill. Rotary motor	856,631	June 11	2359	485–6	128	2326
Gregory, John H., W. W. Jackson, Columbus, Ohio, and F. N. Connet, Providence, R. I., assignors to Builders Iron Foundry, Providence, R. I. Automatic flow-regulator for liquids and gases	857,343	June 18	3689	780	128	2701
Greth, John C. W., assignor to Wm. B. Scaife & Sons Company, Pittsburg, Pa. Mixing device	855,631	June 4	359	74	128	1786
Grey, John W. (See Smith, Joseph, assignor.)						
Gribben, John, Sharpsburg, assignor of one-half to D. J. Morgan, Pittsburg, Pa. Apparatus for forming tapering tubes	856,694	June 11	2470	508	128	2353
Griesser, Wilhelm, Joplin, Mo., assignor to Brewery Equipment & Supply Co., New York, N. Y. Triple-pipe beer-cooler	856,140	June 4	1327	277–8	128	2028
Griesser, Wilhelm, Pittsburg, Pa., assignor to Brewery Equipment & Supply Co., New York, N. Y. Feed-water heater	856,141	June 4	1330	278	128	2028
Griffin, Frank B., assignor to F. S. Fell and W. R. Hill, Oshkosh, Wis. Contact-breaker for induction-coils	857,458	June 18	3904	830	128	2753
Griffin, James C., assignor to Griffin Manufacturing Company, Erie, Pa. Hasp	855,566	June 4	231	45	128	1755
Griffin, Judson M., Detroit, Mich. Check-protector	857,618	June 25	4233	895	128	2868
Griffin Manufacturing Company. (See Griffin, James C., assignor.)						
Griffiths, William U., Philadelphia, Pa. Valve-support for outdoor water-closets	856,579	June 11	2255	464	128	2298
Griggs, Charles C., and J. C. Jensen, Eureka, Utah. Shock-absorbing hub	856,525	June 11	2136	439	128	2268
Grinberg, Lassar J., New York, N. Y. Stove-leg fastening	855,567	June 4	232	45	128	1755
Griner, Calvin C., Macungie, Pa. Shoe cleaning and blackening device	856,863	June 11	2774	577	128	2429
Grisier, Henry G., Stryker, Ohio. Block-machine	857,995	June 25	5012	1057	128	3064
Griswold, Chester W., Milan, Kans. Automatic feed-trough	855,568	June 4	232	46	128	1755
Griswold, Glen G., Madison, Ohio. Manure-spreader	856,632	June 11	2361	486	128	2326
Grob, Julius, Horgen, Switzerland. Heddle for weaving-looms	857,732	June 25	4460	942	128	2926
Groene, William F. (See Le Blond and Groene.)						
Groff, David K., Cerro Gordo, Ill. Brooder	856,696	June 11	2476	509	128	2350
Grosjean, James E., Lima, Ohio. Horseshoe	857,554	June 18	4098	869	128	2803
Grothe, Walter, assignor to White Sewing Machine Company, Cleveland, Ohio. Shock-reducer for automobiles	856,053	June 4	1160	245	128	1986
Grover, Albert D., Malden, and E. E. Barber, Boston, Mass. Coin-operated registering mechanism	855,850	June 4	797	166–7	128	1896
Groves, James R., assignor to Herr Dump Car Company, Denver, Colo. Dump-car-door-operating mechanism	857,521	June 18	4030	858	128	2785
Grubbs, Isaac A. (See Kaufman, George H., assignor.)						
Gruber, Ignace, New York, N. Y. Sustaining device for aerial vessels	855,945	June 4	972	202	128	1939
Gude, Adolphus, *et al.* (See Oehmler, Oscar A. C., assignor.)						
Gude, William F., *et al.* (See Oehmler, Oscar A. C., assignor.)						
Gudgell, Lycurgus, Lockridge, Iowa. Replanter attachment	856,633	June 11	2363	486	128	2327
Gullbransson, Gillis. (See Ernst and Gullbransson.)						
Gunnell, Elias, Manitowoc, Wis. Floating dry-dock	857,733	June 25	4461	942	128	2926
Gutjahr, Fritz, Berlin, Germany. Electrically-heated stove	856,054	June 4	1161	245	128	1986
Gutsch, Louis, *et al.* (See Linton, Ernest O., assignor.)						
Guy, Waldo T. (See Liggett, William K., assignor.)						
Gymer, William, Boulder Creek, Cal. Folding chair	855,726	June 4	632	129	128	1857
H. Mueller Manufacturing Company. (See Mueller, Henry, assignor.)						
Haan, Gilbert T., Holland, assignor of one-half to H. W. Melenbacker, Grand Rapids, Mich. Fly-trap	856,055	June 4	1162	245	128	1987
Habbema-Horak, Erna, Enschede, Netherlands. Hat-fastener	857,392	June 18	3784	802	128	2724
Hadcock, John. (See Bigelow, Wesley, assignor.)						
Hadfield, Robert A., Sheffield, England. High manganese steel with low carbon	856,250	June 11	1564		128	2123
Hadley, Dana G., West Newbury, Mass. Building construction	855,704	June 4	494	103	128	1821
Haeske, Charles M., South Bend, Ind. Seat-spring	857,054	June 18	3144	662	128	2564
Hafner, Frederick J., Philadelphia, Pa., assignor to Atlantic Coast Amusement Company, Inc., Camden, N. J. Illusion apparatus	856,951	June 11	2927	614	128	2465
Hageter, Michael R., Cranford, N. J. Music-roll fastener	855,851	June 4	800	167	128	1896
Hagman, William J., Philadelphia, Pa., assignor to Niles-Bement-Pond Company, Plainfield, N. J. Clutch mechanism	857,393	June 18	3786	802	128	2724
Hagstrom, Carl, Lynn, Mass. Mold for making steel castings	856,251	June 11	1565	328	128	2123
Hague, Frank O., assignor of one-half to F. J. Nelson, Hornell, N. Y. Liquid weighing and measuring machine	857,996	June 25	5014	1058	128	3064
Hahn, Howard H., assignor to Western Engineering Company, Denver, Colo. Wall-mold	856,932	June 11	2929	614–15	128	2466
Halnes, Thomas, St. Louis, Mo. Truck-ladder	855,771	June 4	635	130	128	1857
Haley, Thomas, Philadelphia, Pa. Valve-guard for gas-stoves	856,057	June 4	1165	246	128	1987
Halgren, Charles C., New York, N. Y. Nut-lock	855,946	June 4	973	202	128	1939
Hall, Frederick W., Camden, N. J. Bottle-sealing device	857,619	June 25	4234	895	128	2868
Hall, Frederick W., Camden, N. J., assignor to H. M. Bougher and J. W. Paxson Company, Philadelphia, Pa. Molding-machine	857,997	June 25	5017	1058–60	128	3065
Hall, Hartwell & Co. (See Schoen, Paul, assignor.)						
Hall, Jacob G., Buckhannon, W. Va. Automatic shut-off	858,279	June 25	5546	1186	128	3200
Hall, John R., Forest Grove, Oreg., assignor of one-half to R. J. Ginn, Longbeach, Cal. Door-securer	855,569	June 4	234	46	128	1755
Hall, Samuel E. (See Dean and Hall.)						
Hall, Stephen S., assignor to Pickering Governor Co., Portland, Conn. Engine-governor	856,056	June 4	1163	245–6	128	1987
Halladay, Lewis P., Streator, Ill. Phonograph-horn support	857,169	June 18	3370	710	128	2619
Halle, Hiram J., assignor to Elliott-Fisher Company, New York, N. Y. Type-writing machine	856,344	June 11	1767	368	128	2175
Hallock, William, New York, N. Y. Generator for alternating electric currents	857,394	June 18	3788	802–3	128	2725
Halstead, Charles, New York, N. Y. Alcohol-lamp	856,142	June 4	1333	279	128	2030

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Halterman, John, Portland, Ind. Stuffing-box	857,395	June 18	3790	803	128	2725
Hamburg, Henry P., Morris Park, Long Island, assignor to Cushman & Denison Manufacturing Company, New York, N. Y. Hand numbering-machine	857,934	June 25	4854	1027	128	3022
Hamburger, Harry, *et al.* (See Riecke, John C. A., assignor.)						
Hamburger, Mark, *et al.* (See Riecke, John C. A., assignor.)						
Hamburger, Philip, Jr., *et al.* (See Riecke, John C. A., assignor.)						
Hamelback, Jacob A., Newark, Ohio. Dish-washing machine	855,570	June 4	235	46–7	128	1756
Hamilton, John R., Mount Kisco, assignor to Manufacturers Automatic Sprinkler Company, New York, N. Y. Dry-pipe valve	857,276	June 18	3566	754	128	2269
Hamilton, John W. (See Stamps, Lorenzo D., assignor.)						
Hamilton, Thomas F., Chicago, Ill. Tire for vehicle-wheels	856,526	June 11	2139	439	128	2268
Hammarberg, Arndt L., Youngstown, Ohio. Gas-valve	856,252	June 11	1566	328	128	2123
Hammond, Isaac B., Portland, Oreg. Dredge-bucket	857,396	June 18	3792	804	128	2725
Hanchett, John, Sheridan, Mich. Saw-swage	858,175	June 25	5369	1142	128	3154
Handelsgesellschaft Kleinberg & Co. (See Ecseghy, Stefan K. von, assignor.)						
Handlan, Alexander H., Jr., St. Louis, Mo. Torpedo-placer for railways	855,772	June 4	639	131	128	1858
Handlan, Alexander H., Jr., St. Louis, Mo. Adjustable support for signal-lamps	857,397	June 18	3793	804	128	2726
Handler, Harry, Lawrence, Mass. Permutation-padlock	857,935	June 25	4855	1027	128	3022
Handorff, Franz von, Frankfort-on-the-Main, Germany. Two-cycle gas-engine	858,280	June 25	5547	1186	128	3200
Hanger, James E., Washington, D. C. Chair	856,058	June 4	1167	246	128	1988
Hanlon, Daniel B., assignor of one-half to W. S. Ball and T. H. North, New Liberty, Ky. Nut-lock	857,398	June 18	3794	804	128	2726
Hanlon, George. (See Allen and Hanlon.)						
Hannagan, Paul, Lawrence, Mass. Snow-plow	855,886	June 4	857	178	128	1910
Hannold, Ed J., assignor, by mesne assignments, to C. A. Witherspoon, trustee, Mexico, Mo. Hose-coupling	856,401	June 11	1918	394	128	2215
Hannum, Ellis J., assignor to Newton Machine Tool Works, Incorporated, Philadelphia, Pa. Speed-box for metal-working machines	857,399	June 18	3795	804–5	128	2726
Hanrahan, John E. (See Brown, Hanrahan, and Boyden.)						
Hansen, Frank J., and H. J., Minneapolis, Minn. Ball-bearing wheel	856,634	June 11	2366	487	128	2327
Hansen, Hans J. (See Hansen, Frank J. and H. J.)						
Hansen, John S., Brockton, Mass. Adjustable shoe tree or stretcher	857,055	June 18	3144	662	128	2564
Hansen, John S., Brockton, Mass. Ventilating tree	857,734	June 25	4463	943	128	2927
Hansen, William A., San Francisco, Cal. Gas-engine-reversing mechanism	858,281	June 25	5550	1186	128	3201
Hansford, Otis M., Americus, Ga. Wrench	857,237	June 18	3489	737	128	2650
Hanson, Bengt M. W., assignor to Pratt & Whitney Company, Hartford, Conn. Cam	855,773	June 4	640	131	128	1859
Hantske, Leo C., Baltimore, Md. Self-rocking cradle	856,580	June 11	2256	464	128	2299
Harde, Herbert S., New York, N. Y. Index or directory	858,340	June 25	5668	1211	128	3235
Harden, James H., Anniston, Ala. Ratchet-power	856,143	June 4	1334	279	128	2030
Harding, Dell, Oswego, N. Y. Stovepipe-thimble and flue-stopper	857,522	June 18	4034	859	128	2786
Hare, Henry H. (See Hare, William W. and H. H.)						
Hare, William W. and H. H., Noblesville, assignors of one-third to A. Garver, Otisco, Ind. Mower	856,697	June 11	2477	510	128	2354
Harfst, Henry F., and R. B. Prater, Meta, Mo. Machine for soldering caps on cans	857,801	June 25	4599	974–5	128	2960
Harmon, Edward W., assignor of one-third to W. C. Pinnell, Kansas, Ill. Combined dumping platform and elevator	857,936	June 25	4857	1028	128	3023
Harmon, William E., and T. B. Goodpasture, Houston, Tex. Oil-can	857,056	June 18	3145	662	128	2564
Harper, Charles C., Elmira, N. Y., and J. Harper, Duncannon, Pa. Block system	855,571	June 4	236	47	128	1756
Harper, Frank, Jackson, Ohio. Cooking-stove	856,581	June 11	2258	464	128	2299
Harper, Frank, Jackson, Ohio. Valve mechanism	856,582	June 11	2260	465	128	2300
Harper, John. (See Harper, Charles C. and J.)						
Harrah, Philip J., Bloomfield, Ind. Machine for forming metallic fence-posts	856,864	June 11	2775	577–8	128	2429
Harrigan, Patrick J., McKeesport, Pa. Journal-box	856,059	June 4	1168	246	128	1988
Harrington, Anthony, Custer, Ky. Weighing apparatus	855,887	June 4	862	178	128	1911
Harrington, Charles D., Southbridge, Mass., assignor to Harrington Cutlery Company. Knife-handle	857,400	June 18	3796	805	128	2727
Harrington, Clement G., Maplewood, Mo., assignor to Wolff Truck Frame Company, Augusta, Me. Car-truck	857,937	June 25	4859	1028	128	3023
Harrington Cutlery Company. (See Harrington, Charles D., assignor.)						
Harris, Andrew F., *et al.* (See Patton, Oliver C., assignor.)						
Harris, Edward, assignor of two-thirds to A. Leet, McAlester, and W. R. Belt, Wapanucka, Ind. Ter. Curtain raiser and controller	856,144	June 4	1335	279–80	128	2030
Harris, Ella D., New York, N. Y. Sewing-machine attachment	858,176	June 25	5371	1142	128	3154
Harris, Frederick F., Cleveland, Ohio. Fastener for loose sheets	857,238	June 18	3491	737	128	2650
Harris, John T., New York, N. Y. Electrolytic process of purifying liquids	857,277	June 18	3568	755	128	2670
Harris, John W., *et al.* (See Reese, Henry D., assignor.)						
Harris, Marvin L., Newport News, Va. Door-check	856,865	June 11	2777	578	128	2429
Harrison, Herbert C., London, and J. Day, Weston-super-Mare, England; said Day assignor to said Harrison. Apparatus for electrolytic deposition of metals	858,341	June 25	5670	1211–12	128	3236
Harrison, Martin E., Parnassus, Pa. Wrought-metal pole-arm	857,938	June 25	4861	1028–9	128	3024
Harry, Owen K., St. Louis, Mo. Truck or tank	858,177	June 25	5374	1142–3	128	3155
Harshbarger, Elmer B., Bellefontaine, Ohio. Cooling device for engines	857,620	June 25	4237	895	128	2868
Hart, Miller H., Marietta, Ohio. Holder	857,998	June 25	5022	1060	128	3067
Hart, Walter V., Maywood, and F. J. Novak, Chicago, Ill. Hand-hole for pneumatic-tube systems	856,145	June 4	1338	280	128	2031
Hart, William L., West Liberty, Ill. Portable mold	856,866	June 11	2778	578–9	128	2430
Hartford Carpet Corporation. (See Lyford, William E., assignor.)						
Hartin, Richard B., McCrory, Ark. Wire-stretcher	855,632	June 4	360	75	128	1786
Hartley, James. (See Hodgson and Hartley.)						
Hartley, Jonathan, Springfield, Mass. Apparatus for dyeing, bleaching, and sizing cotton warps	858,068	June 25	5166	1094	128	3103
Hartlove, Emory F., Baltimore, Md. Can-soldering machine	856,698	June 11	2479	510	128	2355
Hartman, William L. (See Kirk, Leotis W., assignor.)						
Hartmann, Kate E., Collinsville, Ill. Burglar-alarm	856,953	June 11	2930	615	128	2466
Hartnett, John B. (See Rosenberg and Hartnett.)						
Hartog, Louis N., New York, N. Y. Machine for immersing the cores or centers of confections	857,401	June 18	3798	805–6	128	2727
Harvey, Joseph B. (See Tripp, James H., assignor.)						
Haskell, Henry L., Ludington Mich. Pool-table	857,057	June 18	3147	663	128	2565
Hastings, Reuben C. M., and T. Matheny, Athens, Ohio. Lock-out device for telephones	856,146	June 4	1339	280–1	128	2031
Hatfield, Charles B., Rochester, assignor to Hatfield Motor Vehicle Company, Cortland, N. Y. Power-transmitting mechanism	855,774	June 4	642	131	128	1859
Hatfield Motor Vehicle Company. (See Hatfield, Charles B., assignor.)						
Hatt, Joseph A. H., Brooklyn, N. Y. Printing in colors	855,705	June 4	496		128	1822
Hattersley, Will C., Norwood, assignor to Victor Safe & Lock Co., Cincinnati, Ohio. Safe-door	855,706	June 4	499	104	128	1822
Hatzel, John C., and E. L. Morley, New York, N. Y. Fused plug and receptacle	857,735	June 25	4465	943	128	2927
Haubrich, Alexander M., Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Switching device	857,621	June 25	4238	895	128	2869
Hauff, Gustav, Kimberley, Cape Colony. Safety guard or fender for tramway-cars and the like	856,253	June 11	1567	329	128	2124

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Haun, Edgar T., Sacramento, Cal. Rotary engine	855,852	June 4	801	167	128	1896
Haven, Robert H., and F. Rockwell, Grand Rapids, Mich. Lawn-rake	856,464	June 11	2031	418	128	2243
Hawekotte, Harry G. (See Potter, Joseph L., assignor.)						
Hawk, Walter D., Chicago, Ill. Motor-car	855,572	June 4	239	48	128	1756
Hawkins Car Oiler and Specialty Manufacturing Company. (See Hawkins, Fred L., assignor.)						
Hawkins, Fred L., Gardner, Mass., assignor to Hawkins Car Oiler and Specialty Manufacturing Company. Lubricating system	856,954	June 11	2032	615-16	128	2466
Hawkins, John H. (See Massie and Hawkins.)						
Hawkins, Joseph W., Passaic, N. J. Water-color brush	857,239	June 18	3493	738	128	2651
Hawkins, Laurence A., Schenectady, N. Y., assignor to General Electric Company. Block-signal system	856,465	June 11	2032	418	128	2243
Hawkins, Laurence A., Schenectady, N. Y., assignor to General Electric Company. Block-signal system	856,466	June 11	2034	418	128	2244
Hawkins, Laurence A., Schenectady, N. Y., assignor to General Electric Company. Block-signal system	856,467	June 11	2037	418	128	2244
Hawkins, Laurence A., Schenectady, N. Y., assignor to General Electric Company. Block-signal system	856,583	June 11	2261	465	128	2300
Hawks, Ira S. (See Holliday and Hawks.)						
Hawley, Charles G., Chicago, Ill. Journal-box and lid	855,947	June 4	974	203	128	1939
Hawthorne & Sheble Manufacturing Company. (See Sheble, Horace, assignor.)						
Hawthorne, William S., Peru, assignor to Western Clock Manufacturing Company, La Salle, Ill. Repeating alarm-clock	855,775	June 4	644	132	128	1859
Hawver, J. C. (See Weston, Edwin J., Jr., assignor.)						
Hay, William H., *et al.* (See Miesse, Americus, assignor.)						
Hayden, William B., New York, N. Y. Sparking plug	858,282	June 25	5551	1187	128	3201
Hayden, Winfield S., Palmyra, Mo. Fertilizer-spreader	856,147	June 4	1343	281-2	128	2032
Hayes, Edward, New York, N. Y. Shoe	857,939	June 25	5024	1061	128	3067
Hayes, John E. R. (See Bradshaw, Walter L., assignor.)						
Hayes, Richard, Salt Lake City, Utah. Pounder-washer	857,567	June 18	4133	875	128	2809
Hayes, William. (See Batten and Hayes.)						
Haynes, William S., assignor of one-fourth to S. S. Senne, St. Louis, Mo. Game apparatus	857,878	June 25	4730	1004-5	128	2891
Haynie, Brooks, assignor to King Manufacturing Co., Austin, Tex. Water-heater	857,555	June 18	4100	870	128	2804
Hays, Parx O., Gainesville, Tex. Acetylene-gas generator	856,148	June 4	1344	282	128	2032
Hayward, John W., St. Johns, Newfoundland. Attachment for bait-hooks, jiggers, and like angling devices	856,867	June 11	2780	579	128	2430
Hazzard, William, Lorain Ohio. Fork	856,635	June 11	2367	487	128	2327
Healea, T. D., *et al.* (See Gourley, John L., assignor.)						
Healey, Owen. (See Price, Henry, assignor.)						
Heard, Henry, Athens, and E. D. Treanor, Milledgeville, Ga. Brace for freight-cars	858,283	June 25	5553	1187	128	3202
Heard, James T., *et al.* (See Chew, Benjamin A., assignor.)						
Heart, Charles, assignor to Keefer-Heart Iron and Steel Company, Alexandria, Ind. Metal wheel-spoke	857,001	June 11	3037	639	128	2496
Heath, Albert C., St. Paul, Minn. Medical appliance	855,573	June 4	243	48	128	1757
Heath, Albert C., St. Paul, Minn. Automobile and other vehicle	855,776	June 4	645	132	128	1860
Heath, Elmer E., Smethport, Pa. Pin-setting apparatus for bowling-alleys	857,939	June 25	4863	1029	128	3025
Heath, Noble, Antioch, Cal., assignor of three-fourths to W. S. Wright, J. W. Stewart, Chicago, and J. H. Winslow, Glencoe, Ill. Apparatus for making bisulfite liquor	856,195	June 4	1433	303	128	3054
Heberger, William P., Cincinnati, Ohio. Corner-brace for chair-seat frames	855,777	June 4	646	132	128	1860
Hecht, Joseph L., Davenport, Iowa, assignor to Davenport Wagon Company. Vehicle-tongue	857,278	June 18	3572	755	128	2671
Hecht, Joseph L., Davenport, Iowa, assignor to Davenport Wagon Company. Wagon-reach	857,279	June 18	3574	756	128	2671
Hecker, Friedrich, Munich, Germany. Suction-mouthpiece for exhaust devices	855,888	June 4	863	178	128	1912
Heddon, Georgina, London, England. Optical apparatus	856,778	June 11	2632	541	128	2395
Hedley, Frank, J. S. Doyle, and H. Wallerstedt, New York, N. Y. Automatic interlocking contact mechanism for electric-railway systems	857,058	June 18	3150	663-4	128	2566
Hedley, Frank, J. S. Doyle, and H. Wallerstedt, New York, N. Y. Automatic contact mechanism for electric-railway systems	857,059	June 18	3156	664-5	128	2567
Heene, George W., Cleveland, Ohio. Printing apparatus for checks, drafts, &c.	855,707	June 4	500	104	128	1827
Heffner, Louis, Minneapolis, Minn. Ratchet-bolt	856,968	June 11	2782	579	128	2431
Heffron Trenching Company. (See Heffron, William, assignor.)						
Heffron, William, assignor to Heffron Trenching Company, Cincinnati, Ohio. Excavating apparatus	858,069	June 25	5168	1094-5	128	3104
Heinzelman, Taylor W., and J. G. Camp, Sacramento, Cal. Oil-burning steam-boiler	857,170	June 18	3371	710-11	128	2620
Heisler, Charles L., St. Marys, Ohio. Pumping machinery	856,636	June 11	2367	487	128	2328
Heizmann, Jules, Strassburg, Germany. Heating apparatus	857,060	June 18	3162	665	128	2569
Held, Robert, St. Louis, Mo. Safety-float for ships	856,402	June 11	1920	394	128	2215
Heller, Abraham, and J. Roman, New York, N. Y. Oil-guard for sewing-machines	856,779	June 11	2633	541	128	2395
Heller, Clarence W., Galva, Ill. Baker's oven	858,000	June 25	5025	1061	128	3067
Heller, Noah M., Sharpsburg, Pa. Bucket	857,622	June 25	4241	896	128	2869
Helmond, William F., Hartford, Conn., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	856,254	June 11	1569	329	128	2124
Henabray, Frank E., Utica, N. Y. Carbureter	855,574	June 4	244	49	128	1758
Henderson, Rufus C., Kankakee, Ill. Straddle or gang plow	857,061	June 18	3163	665-6	128	2569
Hendrickson, John A., Stedman, Cal. Combination-tool	857,459	June 18	3905	830	128	2753
Hendriks, Bartholomeus J., Lienden, near Kesteren, Netherlands. Steam cooking apparatus	857,523	June 18	4035	859	128	2786
Henerlau, Otto L., Newark, N. J. Button	855,575	June 4	246	49	128	1758
Henkel, George, Springfield, Ohio. Water cut-off	857,171	June 18	3373	711	128	2620
Hennebohle, Frank, South Chicago, Ill. Engine	857,902	June 25	4603	975-6	128	2962
Henning, George W., and A. W. Beeson, Washington, Pa. Glass pressing and blowing machine	857,903	June 25	4605	976-7	128	2962
Henning, James A., Beardstown, Ill. Dental tray	857,240	June 18	3494	738	128	2651
Henry, Fred H., assignor to J. A. Brill, Philadelphia, Pa. Car-seat	858,178	June 25	5374	1143	128	3155
Henry, John H., Brattleboro, Vt. Combined countersinking and counterboring attachment	857,344	June 18	3691	780	128	2702
Hepburn, Rufus I., Portland, Oreg. Toy fireplace	856,060	June 4	1169	247	128	1988
Hepp, Charles, Shelbyville, Ind. Fastening device for tables	856,255	June 11	1570	329	128	2124
Herbert, Charles H., Chicago, Ill. Rope-holder	856,256	June 11	1571	330	128	2125
Herbert, Henry J., *et al.* (See Ward, Dell, assignor.)						
Hermann, Seymour, New York, N. Y. Treating cloth	855,708	June 4	502	105	128	1823
Héroult, Paul L. T., La Praz, France. Navigation	855,510	June 4	128	26	128	1726
Héroult, Paul L. T., La Praz, assignor to Sté. Electro Metallurgique Francaise, Froges, Isère, France. Electric furnace and process. (Reissue)	12,658	June 4	1440	304	128	2056
Herpolsheimer, Paul. (See McDonald, John, assignor.)						
Herr Dump Car Company. (See Groves, James E., assignor.)						
Herring, James C., Greensboro, N. C. Shingle-mold	855,633	June 4	362	75	128	1786
Herron, Al H. (See Ward and Herron.)						
Hertg, Adam F., Newark, N. J. Leather-splitting machine	855,576	June 4	248	49	128	1758

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Hertzler, John. (See Pendergast, Thomas, assignor.)						
Hervey, Charles B., *et al.* (See Chew, Benjamin A., assignor.)						
Hess, Charles F., Scranton, Pa. Coin separating, counting, and packaging machine	857,172	June 18	3377	712	128	2621
Hess, Edward B., New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J. Writing-machine	856,869	June 11	2783	579-80	128	2431
Hess, Edward B., New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J. Writing-machine	856,870	June 11	2785	580	128	2432
Hess, Edward B., New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J. Writing-machine	858,179	June 25	5377	1144	128	3156
Hess, Edward B., New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J. Writing-machine	858,284	June 25	5554	1187-8	128	3202
Hess, Edward B., New York, N. Y., assignor to Royal Typewriter Company, Hoboken, N. J. Writing-machine	858,343	June 25	5674	1212	128	3237
Hetherington, John, Belleville, N. J., assignor to New Jersey Screw Works. Pyrographic burner	855,577	June 4	250	50	128	1759
Hetzel, Frederic V., Philadelphia, Pa., assignor to Link-Belt Company, Chicago, Ill. Loading-barge for vessels	858,180	June 25	5381	1145	128	3157
Heuer, George, Greensburg, Pa. Folding umbrella	858,181	June 25	5383	1146	128	3158
Heuermann, William, Sedalia, Mo. Heating-stove	858,285	June 25	5556	1188	128	3203
Heuser, Herman, Chicago, Ill. Malting	856,637	June 11	2370	487	128	2329
Heverly, Henry A. (See Heverly, James M., assignor.)						
Heverly, James M., assignor of one-half to H. A. Heverly, Altoona, Pa. Furnace	858,286	June 25	5558	1189	128	3203
Hewitt, Herbert H. (See Smith, William R., assignor.)						
Hewitt, Peter C., assignor to Cooper Hewitt Electric Company, New York, N. Y. Aerial radiating-circuit	856,149	June 4	1348	283	128	2033
Hewitt, Peter C., assignor to Cooper Hewitt Electric Company, New York, N. Y. Radiating electromagnetic waves	856,150	June 4	1350	283	128	2034
Heyl & Patterson. (See Williamson, Charles S., assignor.)						
Heynau, Felix G. H., Dotzheim, near Wiesbaden, Germany. Drill-chuck	856,699	June 11	2480	510	128	2355
Hibbard, Harry P., assignor to Western Electric Company, Chicago, Ill. Spring-jack-mounting plate	856,955	June 11	2934	616	128	2467
Hibner, Delos E. (See Eichelberger and Hibner.)						
Hibner, Delos E. (See Eichelberger, Hibner, and Bacon.)						
Hickey, Joseph A., Philadelphia, Pa. Ventilator	855,778	June 4	647	133	128	1860
Hicks, James A., Atlanta, Ga. Means for lubricating valves	857,280	June 18	3576	756	128	2672
Hides, Horace C. (See Southam and Hides.)						
Higbe, James M., Manson, Iowa. Gate	855,948	June 4	976	203	128	1940
Higginbotham, Allen C., Decota, W. Va. Switch	858,342	June 25	5673	1212	128	3236
Higginbotham, Don J., assignor of one-third to L. H. Locklar, Rialto, Fla. Bottle	857,460	June 18	3906	830	128	2753
Higgins, Aldus C., Worcester, Mass. Electric furnace	856,061	June 4	1170	247	128	1988
Higgins, William H. C., Jr., Orange, N. J. Carburetor	856,638	June 11	2372	488	128	2329
High Speed Ring Company. (See Pierce, George L., assignor.)						
Highbotham, Henry T., New Orleans, La. Fireproof door or shutter	858,287	June 25	5560	1189	128	3204
Hill, George H., Worcester, Mass. Tongue-depressor	856,257	June 11	1572	330	128	2125
Hill, Harry, and J. Blain, Dunedin, New Zealand. Combined miter-box and cramp	857,345	June 18	3692	780-1	128	2702
Hill, Milton J., Virginsville, Pa. Animal-trap	857,879	June 25	4732	1005	128	2992
Hill, William R. (See Griffin, Frank B., assignor.)						
Hillenbrand, Herman A., Louisville, Ky. Lathe-chuck	855,456	June 4	31	7	128	1702
Hilley, Thomas H., Hugo, Ind. Ter. Plow-heel	857,804	June 25	4610	977	128	2963
Hilliard, John D., Albany, N. Y. Electrical transformer	857,062	June 18	3165	666	128	2570
Hills, Albert F., assignor to Crouse-Hinds Company, Syracuse, N. Y. Branch box	858,288	June 25	5561	1189	128	3204
Hinderliter, Daniel, Catawissa, Pa. Valve	857,805	June 25	4610	977	128	2963
Hindman, William B., Newman, Ga. Combined cotton chopper and cultivator	855,634	June 4	363	75	128	1787
Hindman, William S., Edgeworth, and P. H. Anthony, Ben Avon, Pa. Mold for fireproof construction	857,524	June 18	4036	859	128	2787
Hines, William R. (See Rand and Hines.)						
Hinkle, Paris R., assignor of one-half to H. A. Clarke, Mayer, Ariz. Ter. Nut-lock	855,779	June 4	649	133	128	1861
Hinton, Thomas W. (See Schuh and Hinton.)						
Hirsch, Hyman. (See Langlumé, George, assignor.)						
Hirsh, Sidney. (See Bougher, James S., assignor.)						
Hitchcock, Orion B., Horton, Kans., and J. L. Wilson, St. Joseph, Mo. Trace-carrier	856,639	June 11	2374	488	128	2330
Hite, Charles E., Philadelphia, Pa., assignor to Hite Electric Company. Primary battery	857,880	June 25	4734	1006	128	2992
Hite Electric Company. (See Hite, Charles E., assignor.)						
Hitt, Samuel E., and G. M. Black, Cleveland, Ohio. Blast-furnace, trap for furnace-top construction	858,182	June 25	5384	1146	128	3158
Hittle, Jonas H., Mackinaw, Ill. Harness-hook	857,241	June 18	3495	738	128	2651
Hoag, Arthur W., New York, N. Y. Combination-lock	856,700	June 11	2481	510	128	2355
Hobbs, John S., Seaford, Del. Collapsible step-ladder	856,956	June 11	2935	616	128	2467
Hockett, Claude G. (See Colvin, Hockett, and Fitzpatrick.)						
Hodges, Emery C., Bloomington, Ill. Power mechanism	856,258	June 11	1573	330	128	2125
Hodges Fiber Carpet Company. (See Stevenson, William M., assignor.)						
Hodgson, Henry E., Cleckheaton, and J. Hartley, Manchester, England. Molding-machine	857,173	June 18	3381	713-14	128	2622
Hodgson, John G., Maywood, Ill., assignor to American Can Company, New York, N. Y. Making sheet-metal preserving-cans	857,736	June 25	4466	943	128	2927
Hoe, Robert. (See Raabe and Read, assignors.)						
Hoepner, George, Chicago, Ill. Automatic weighing-machine	855,578	June 4	251	50-1	128	1759
Hoerr, Louis A., St. Louis, Mo. Door-hanger	857,174	June 18	3384	714	128	2623
Hoff, Edward A., Milwaukee, Wis. Rock-crusher	857,940	June 25	4868	1029	128	3026
Hoffer, James M. (See Long and Hoffer.)						
Hoffheins, Frank G., York, Pa., and F. S. Stanfield, Cleveland, Ohio. Curtain-stretcher	857,623	June 25	4242	896	128	2870
Hoffman, Charles F., Lansing, Mich. Rack	856,584	June 11	2206	465	128	2301
Hoffman, Willis L., Jersey City, N. J. Snapping device for marbles	855,949	June 4	977	203	128	1940
Hofmann, Kaspar, Munich, Germany. Heating device for camp cooking apparatus	857,063	June 18	3167	666	128	2570
Hogben, Walter, Leominster, Mass. Ball-bearing tube for tires	857,281	June 18	3577	756	128	2673
Hohensdel, William A., and W. Kline, Akron, Ohio. Furnace fire-pot	857,806	June 25	4612	977	128	2963
Hoke, Henry E., Hanover, Pa. Hinge	857,175	June 18	3385	714	128	2624
Holden, William G., Corpus Christi, Tex. Preserving apparatus	857,346	June 18	3694	781	128	2703
Holgate, George H., Philadelphia, Pa. Carbureting-lamp	857,064	June 18	3167	666-7	128	2570
Holgate, Jacob B., and C. Clough, Blackburn, England; said Clough assignor to said Holgate. Grain-cleaning apparatus	857,065	June 18	3169	667	128	2571
Holland, Franklin. (See Holland, James M. and F.)						
Holland Furnace Company. (See Kolla, John P., assignor.)						
Holland, George N., Hampden, assignor of one-half to R. M. Nason, Bangor, Me. Potato-digger	855,457	June 4	32	7-8	128	1703
Holland, James M. and F., Baltimore, Md. Bed-riser for woven-wire mattresses	856,701	June 11	2483	511	128	2356
Holland, Newman H., assignor to E. H. Stolz, Chicago, Ill. Microphone	855,458	June 4	34	8	128	1703
Holle, August, Düsseldorf, Germany. Apparatus for water purification	858,183	June 25	5385	1146	128	3159
Holliday, Grove L., and I. S. Hawks, Curtiss, Wis. Stone-picker	856,780	June 11	2633	541	128	2395

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Hollister, Clarence P. (See Whyland and Hollister.)						
Hollman, Charles. (See Stump, Hollman, and Nicholas.)						
Holm, Christian L., Spokane, Wash. Phonograph attachment	858,184	June 25	5387	1147	128	3159
Holmes, Edward B. (See Beugler, Edwin F., assignor.)						
Holson Motor Patents Company. (See Church and Knudsen, assignors.)						
Holt, Thomas C., Minneapolis, Minn. Brick-molding machine	857,624	June 25	4245	896–7	128	2871
Holtzheuer, August, Cassel, Germany. Ventilator	858,185	June 25	5389	1147	128	3160
Hondius, Pieter, Utrecht, Netherlands. Impregnating tobacco by means of natural or artificial aromatic substances	858,289	June 25	5564		128	3205
Hood, William I., assignor of one-half to J. W. Chesrown, Norwalk, Ohio. Burial-crypt	858,070	June 25	5170	1095	128	3104
Hook, Theodore C., Philadelphia, Pa. Stamp or label affixing machine	857,625	June 25	4247	897	128	2871
Hooke, Harvey L., assignor to Muncie Auto Parts Company, Muncie, Ind. Device for controlling motor-cars	855,780	June 4	650	133–4	128	1861
Hoople, Charles I., Anaheim, Cal. Necktie device	857,402	June 18	3802	806	128	2728
Hope, Francis P. C., *et al.* (See Green, Gustavus, assignor.)						
Hope, John, Jr., Edgewood, assignor to Hope Lock Company, Providence, R. I. Adjustable frame for door locks and latches	857,347	June 18	3695	781–2	128	2703
Hope Lock Company. (See Hope, John, Jr., assignor.)						
Hopkins & Allen Arms Co. (See Murphy, John J., assignor.)						
Hopkins, Charles L., Chicago, Ill. Curtain-fixture	855,781	June 4	655	134	128	1862
Hopkins, Thomas J., Soda Springs, Idaho. Milk-pail	856,585	June 11	2267	466	128	2302
Hoppe, George O., Cullom, Ill. Hedge-trimmer	856,871	June 11	2787	580	128	2432
Horn, Ernest H., assignor to Waterbury Clock Co., Waterbury, Conn. Lever-escapement for watches and clocks	855,950	June 4	978	204	128	1940
Horn, John F., Chicago, Ill. Auxiliary support for printers' chases and forms	857,807	June 25	4613	978	128	2964
Horon, Nicholas, Pen Argyl, Pa. Beer-tap register	856,872	June 11	2788	581	128	2432
Horrell, John B., *et al.* (See Teague, Charles C., assignor.)						
Horst, Emil C., San Francisco, Cal. Drying apparatus	855,853	June 4	802	168	128	1897
Horst, Emil C., San Francisco, and J. Ehrhorn, Perkins, assignors to E. Clemens Horst Co., San Francisco, Cal. Hop-picker	857,461	June 18	3906	830–1	128	2754
Horton, Charles M., Portsmouth, N. H., assignor to Singer Manufacturing Company. Machine for forming knotted-thread fastenings	857,941	June 25	4870	1030–1	128	3027
Horton, George T., Chicago, Ill. Water-tank	857,626	June 25	4249	897	128	2872
Horton, Walbridge G., Brattleboro, Vt. Phonograph attachment	856,873	June 11	2790	581	128	2433
Houghton, Louis S., Baltimore, Md. Blotter or pad	857,462	June 18	3908	831	128	2754
Houghtaling, Paul A., Riverton, assignor to Curtain Supply Company, Newark, N. J. Curtain-fixture	856,874	June 11	2792	581	128	2433
Houlehan, John. (See Mayo and Houlehan.)						
Hovland, Alfred M. (See Edman, John, assignor.)						
Howard & Morse. (See Howard, William B., assignor.)						
Howard, William B., Brooklyn, assignor to Howard & Morse, New York, N. Y. Shaking-bolt	857,942	June 25	4877	1031	128	3029
Howe, Frank T., New Bedford, Mass. Work-box	855,635	June 4	364	75	128	1787
Howe, George M., Chicago, Ill. Automatic switch-stand	856,062	June 4	1172	247–8	128	1989
Howe, Mortimer A., Tacoma, Wash. Separable double letter-sheet	858,001	June 25	5025	1002	128	3067
Howell, Arlington W., Texico, N. Mex. Ter. Chart-exhibitor	855,636	June 4	366	75–6	128	1787
Howell, Austin W., Hanover township, Licking county, Ohio. Gage-wheel	858,290	June 25	5665	1190	128	3205
Howell, Lewis O., assignor, by mesne assignments, to Sanitary Appliance Company, Philadelphia, Pa. Expansible pipe-cleaner	856,063	June 4	1176	248	128	1990
Howell, Lewis O., assignor, by mesne assignments, to Sanitary Appliance Company, Philadelphia, Pa. Cleaning device	857,627	June 25	4251	898	128	2872
Howells, J. O. (See Matheney, George L., assignor.)						
Howland, Charles C., Hyde, near Manchester, England. Weaving-shuttle	855,511	June 4	130	27	128	1727
Howland Metallic Cap Company. (See Converse, Maschil D., assignor.)						
Howley, Martin F., Pittsburg, Pa. Concrete gutter	856,702	June 11	2485	511	128	2356
Hubbard, Alfred. (See Fellows and Hubbard.)						
Hubbard, Arthur R., London, England. Spring-tire for wheels	856,957	June 11	2937	617	128	2468
Hubbard, Fred W., and T. A. Morton, Columbus, Ohio. Shade-cutting device	856,403	June 11	1920	395	128	2215
Hubbard, George M., assignor to W. & E. T. Fitch Co., New Haven, Conn. Snap-hook	857,403	June 18	3804	807	128	2728
Hubbard, Joseph C., Georgetown, S. C. Automatic drainage attachment for lubricators	856,151	June 4	1352	283	128	2034
Hubbard, Joseph C., Georgetown, S. C. Automatic drainage attachment for lubricators	856,152	June 4	1354	283	128	2035
Hubbell, Harvey, Bridgeport, Conn. Flush attachment-plug	857,176	June 18	3387	715	128	2624
Hubbell, Harvey, Bridgeport, Conn. Flush switch	857,177	June 18	3388	715	128	2624
Huber, Emil, Detroit, Mich. Steering-gear	858,186	June 25	5390	1148	128	3160
Huber, Sigmund V., Pittsburg, Pa. Feed-table for rolling-mills	857,282	June 18	3578	756–7	128	2673
Huber, Sigmund V., Pittsburg, Pa. Feed-table for rolling-mills	857,283	June 18	3581	757–8	128	2673
Huber, Sigmund V., Pittsburg, Pa. Cutting-tool	857,284	June 18	3582	758	128	2674
Huber, Sigmund V., Pittsburg, Pa. Apparatus for manufacturing tubes	857,348	June 18	3697	782	128	2704
Huber, Tony, Billancourt, France. Carbureter for hydrocarbon-engines	856,958	June 11	2940	617–18	128	2468
Hubert, Conrad. (See Coleman, Clyde J., assignor.)						
Hudson, William T., J. R. Parks, and W. H. Coursey, assignors of one-half to said Hudson, one-third to said Coursey, and one-sixth to W. E. Dobbins, Atlanta, Ga. Candy-making machine	856,959	June 11	2941	618	128	2469
Huffman, David A., Paris, Ill. Buckle-sleeve	855,459	June 4	36	8	128	1704
Hughes, Alexander A., Gunn, assignor of one-half to T. J. Walker, Magee, Miss. Landside	856,153	June 4	1356	284	128	2035
Hughes, Benjamin, Montreal, and H. N. Young, Rockfield, Quebec, assignors to G. A. Morris, Montreal, Canada. Extension-ladder	856,875	June 11	2793	582	128	2434
Hughes, Frederick G. (See Stout and Hughes.)						
Hughes, Henry E., Central Falls, R. I. Bobbin-clutching device for spindles	857,556	June 18	4102	870	128	2804
Hughes, Johnson, Wissahickon, Pa. Heating-furnace	857,285	June 18	3584	758–9	128	2674
Hughes, Wallace B., Dallas, Tex. Venetian blind or shade	857,066	June 18	3170	667	128	2571
Hughey, Dallas D., Upper Alton, assignor to Illinois Glass Company, Alton, Ill. Glass-mold	856,154	June 4	1357	284	128	2036
Hugo, Thedor, assignor to Tellschow Gebrüder, Berlin, Germany. Device for manufacturing paper bags	857,067	June 18	3173	668	128	2572
Hull, John W., East Brady, Pa. Revolving table	855,951	June 4	979	204	128	1941
Hull, Joseph V., Brooklyn, assignor to H. C. Blye, New York, N. Y. Closure for bottles, jars, and other receptacles	855,782	June 4	657	134	128	1863
Hull, William, Souris, Manitoba, Canada. Air-ship	856,876	June 11	2794	582–3	128	2434
Hultquist, Charles A., Lowell, Ariz. Ter. Rock-drill chuck	856,877	June 11	2797	583	128	2432
Humphrey, Alfred H. and H. R., New York, N. Y. Gas-lamp	856,960	June 11	2949	619	128	2471
Humphrey, Edgar, and M. R. Williams, Cordova, Ill. Sectional propeller	856,586	June 11	2268	466	128	2302
Humphrey, Ernest N., assignor to Traut and Hine Manufacturing Company, New Britain, Conn. Buckle	855,637	June 4	369	76	128	1788
Humphrey, Hubert R. (See Humphrey, Alfred H. and H. R.)						
Hunt, David F., assignor to Goodell Company, Antrim, N. H. Fruit-paring machine	858,344	June 25	5677	1213	128	3237
Hunt, Ozello R., Kenosha, Wis. Cabinet	856,155	June 4	1359	284–5	128	2036
Hunter, David E., Cambridge, assignor to Library Bureau, Boston, Mass. Roller-support for movable doors and other objects	857,557	June 18	4102	870	128	2805

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Hunter, Frederick G., Moncton, New Brunswick, Canada. Grease-cup	855,889	June 4	864	179	128	1912
Hunter, John B., Pittsburg, Pa. Vehicle-wheel	856,156	June 4	1361	285	128	2037
Huntting, Samuel E., San Francisco, Cal. Outlet-box	856,640	June 11	2375	488	128	2330
Hurd, Herbert J., Berlin, Ontario, Canada. Machine for molding cement bricks, blocks, and the like	857,737	June 25	4470	944	128	2928
Hurley, John W., Portland, Oreg., assignor of one-half to H. C. Jordan. Meat-tenderer	857,568	June 18	4134	876	128	2809
Hurwood Manufacturing Company. (See Bishop, Albert T., assignor.)						
Hurwood Manufacturing Company. (See Bishop and McCann, assignors.)						
Husser, Jules, Pittsburg, Pa. Life-saving device for boats	855,890	June 4	867	179	128	1913
Hutchins, Edward J., New Haven, Conn. Apparatus for feeding cables into conduits	855,952	June 4	980	204	128	1941
Hutchins, Frederick, Harleaden, England. Apparatus used in covering wires or other cores with fibrous material	856,878	June 11	2798	583–4	128	2435
Hutson, Frank E., and R. H. Neal, Delancey, N. Y. Nut-lock	855,512	June 4	132	27	128	1727
Hutton, George H., Baltimore, Md. Thill-coupling	856,879	June 11	2801	584	128	2436
Hydraulic Wood Lift Company. (See Beebe and Concoff, assignors.)						
Hyle, William A., *et al.* (See Woods, Edward D., assignor.)						
Hyman, Abraham D., Grand Rapids, Mich. Fountain glue-brush	856,641	June 11	2376	488–9	128	2330
Idanha Machine Company. (See Jayne, Benaiah G., assignor.)						
Illinois Glass Company. (See Hughey, Dallas D., assignor.)						
Indiana Manufacturing Company. (See Sellers, Traves N., assignor.)						
Industrial Development Company. (See Goodspeed, Arthur B., assignor.)						
Ingersoll Milling Machine Company. (See Smith, George W., assignor.)						
Ingersoll-Rand Company. (See Prellwitz, William, assignor.)						
International Harvester Company. (See Latimer, John W., assignor.)						
International Harvester Company. (See Sharp, Charles S., assignor.)						
International Patent Corporation. (See Radcliffe, Carlton R., assignor.)						
International Postal Supply Company of New York. (See Jalm, Frederick G., assignor.)						
International Silver Company. (See Gault, John H., assignor.)						
International Switch and Signal Company. (See Shaw, Francis G., assignor.)						
Irby, James F., Baltimore, Md. Skimmer	858,291	June 25	5566	1190	128	3205
Irving, Ronald P., Quincy, Mass. Reciprocating electric motor	855,513	June 4	133	27	128	1727
Irwin, Frederick J. (See Cameron, Alexander G., assignor.)						
Irwin, Guy W., Bradford, Pa. Valve for explosive-engines	857,463	June 18	3909	831	128	2754
Isaacs, John D., Oakland, and J. B. Speed, Berkeley, assignors to Rifled Pipe Company, San Francisco, Cal. Helically-rifled pipe	857,464	June 18	3911	832	128	2755
Israel, Charles W., Paris, Ill. Rail-tie	857,068	June 18	3175	668	128	2572
Ivatts, Ernest A., assignor to La Compagnie Generale De Phonographes, Cinematographes & Appareils De Precision, Paris, France. Arrangement for the centering of the images in kinematograph projection apparatus	857,069	June 18	3177	668	128	2572
Iversen, Lorenz, Pittsburg, Pa. Driving-gear for motor-cars, &c	856,703	June 11	2486	511	128	2357
Iversen, Lorenz, Pittsburg, Pa. Explosive-engine	858,071	June 25	5171	1096	128	3104
Ives, Edwin S., *et al.* (See Whitmarsh, Charles E., assignor.)						
Ivory, James W. (See Bode, Joseph, assignor.)						
Ivory, John C., Newton, N. H., assignor to D. E. Kempster, trustee, Boston, Mass. Seam for uniting materials	857,465	June 18	3912	832	128	2755
J. W. Paxson Company *et al.* (See Hall, Frederick W., assignor.)						
Jackson, Amy E., Chicago, Ill. Dress-shield	855,638	June 4	371	77	128	1788
Jackson, Arthur J., Ashton-on-Mersey, England. Shuttle for looms	855,514	June 4	136	27	128	1728
Jackson, Arthur J., Toronto, Ontario, Canada. Pneumatic tire	856,065	June 4	1177	249	128	1990
Jackson, Benjamin F., Jersey City, N. J. Gas-burner	856,781	June 11	2635	542	128	2396
Jackson, Benjamin F., assignor to Boston Crude Oil Burner Co., Boston, Mass. Hydrocarbon-burner system	857,808	June 25	4614	978	128	2964
Jackson Cushion Spring Company. (See Phelps, Macy A., assignor.)						
Jackson, Harvey W., Weed, Cal. Combination salt and pepper shaker	856,064	June 4	1176	249	128	1990
Jackson, Herbert H., Detroit, Mich. Cuspidor cleaner and lifter	857,178	June 18	3390	715	128	2625
Jackson, John. (See Jackson, Loftus and J.)						
Jackson, Julius, Kingfisher, Okla. Ter. Combined cotton-chopping and corn-hoeing machine	855,639	June 4	371	77	128	1789
Jackson, Loftus and J., assignors to themselves and Resilient Hub (Jackson's Foreign Patents) Syndicate Limited, London, England. Spring-wheel for motor-cars and other vehicles	856,880	June 11	2802	584–5	128	2436
Jackson, Mathew. (See Fraser and Jackson.)						
Jackson, Thomas. (See Andrews and Jackson.)						
Jackson, Walter S., Birmingham, Ala. Fireplace	858,292	June 25	5567	1190–1	128	3206
Jackson, Walter W. (See Gregory, Jackson, and Connet.)						
Jacob, Francis M., Columbus, Miss. Attachment for closets	856,468	June 11	2041	419	128	2246
Jacobs, Charles C., assignor to H. D. Wells, Akron, Ohio. Friction-clutch. (Reissue)	12,657	June 4	1438	303	128	2055
Jacobs, Charles C., assignor to F. C. Austin Drainage Excavator Company, Chicago, Ill. Combined trench-excavator and levee-builder	856,404	June 11	1922	395–6	128	2216
Jacobs, William F., Ottawa, Ill. Pump	855,783	June 4	658	134	128	1863
Jacobsen, Jens N., Ferndale, Cal. Wrapping-machine	857,466	June 18	3914	832–3	128	2755
Jacobson, Edward B., assignor to Pittsfield Spark Coil Company, Pittsfield, Mass. Speed-governor for armature-shafts, &c	856,961	June 11	2952	619	128	2473
Jacobson, Edward B., assignor to Pittsfield Spark Coil Company, Pittsfield, Mass. Speed-governor for dynamos	858,002	June 25	5027	1062	128	3068
Jacolucci, Alexander S., Providence, R. I. Confectionery-machine	857,179	June 18	3391	716	128	2625
Jaeger, Otto, Ogontz, Pa. Medicine-cabinet	856,587	June 11	2269	466	128	2302
Jahn, Frederick G., New York, assignor to International Postal Supply Company of New York, Brooklyn, N. Y. Mail-marking machine	856,345	June 11	1770	368–70	128	2176
Jahn, Frederick G., New York, assignor to International Postal Supply Company of New York, Brooklyn, N. Y. Feeding mechanism	856,346	June 11	1777	370–1	128	2177
Jahn, Frederick G., New York, assignor to International Postal Supply Company of New York, Brooklyn, N. Y. Feeding mechanism	856,347	June 11	1781	371	128	2178
James B. Clow & Sons. (See Plelps, Leo H., assignor.)						
James W. Edwards Co. *et al.* (See Roche and Breese, assignors.)						
James, William T., Chicago, Ill. Conveyer	856,527	June 11	2141	439–40	128	2269
James, William T., Chicago, Ill. Chain	856,528	June 11	2143	440–1	128	2270
James, William T., Chicago, Ill. Chain	856,529	June 11	2146	441–2	128	2271
James, William T., Chicago, Ill. Chain	857,467	June 18	3920	834	128	2756
Janney, Walter T., and G. H. Dern, Mercur, Utah. Filter	856,405	June 11	1927	306	128	2217
Janson, Carl A., Chicago, Ill. Spiral gearing	855,854	June 4	805	168	128	1898
Janssen, Theodor B., Hanover, Germany. Locking apparatus to prevent theft and unauthorized use of bicycles and the like	857,070	June 18	3179	668–9	128	2573
Jasper, William, assignor of one-half to A. Wolf, New York, N. Y. Sewing-machine	856,642	June 11	2378	499	128	2231
Jay, Harry B., Kalamazoo, Mich. Tuning-slide for horns and like instruments	855,640	June 4	373	77	128	1789
Jayne, Benaiah G., New York, N. Y., assignor to Idanha Machine Company. Gold-washer	856,066	June 4	1178	249	128	1991
Jeffrey, Joseph A. (See Kingston, James, assignor.)						
Jenney, Robert T., De Pere, Wis. Post-hole digger	856,157	June 4	1363	286–8	128	2037
Jennings, Andrew R., London, England. Adding-machine						

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Jensen, Jens C. (See Griggs and Jensen.)						
Jensen, Ragnvald, East Rand, Transvaal. Safety mechanism for hoisting or hauling apparatus for mines	857,286	June 18	3585	759	128	2674
Jensen, William. (See Raymond and Jensen.)						
Joecken, Peter J., assignor to Falls Machine Company, Sheboygan Falls, Wis. Jointing-machine	857,071	June 18	3183	670	128	2574
Johannessen, John E., Brooklyn, N. Y. Anchor	857,881	June 25	4736	1006	128	2993
John C. Winston Company. (See Kirk, Mahlon Z., assignor.)						
John Waldron Company. (See Waldron, William H., assignor.)						
Johns, John B., *et al.* (See Johns, Robert, assignor.)						
Johns-Pratt Company. (See Cole, Robert C., assignor.)						
Johns, Robert, assignor of two-thirds to J. B. and W. C. Johns, Fairmont, W. Va. Plunger for bottle-machines	856,067	June 4	1180	249–50	128	1991
Johns, William C., *et al.* (See Johns, Robert, assignor.)						
Johnson, Carl N., Pittsburg, Pa. Stone-cutting bit	858,072	June 25	5174	1096	128	3105
Johnson, Duval, Pine Bluff, Ark. File	856,881	June 11	2807	585	128	2438
Johnson, E. M., *et al.* (See Chew, Benjamin A., assignor.)						
Johnson, Eldridge R., Merion, Pa., assignor to Victor Talking Machine Company. Talking-machine	856,704	June 11	2489	511	128	2358
Johnson, Emery, Newberg, Oreg. Electric-lamp regulator	857,404	June 18	3805	807	128	2728
Johnson, Ernest O., Madison, Wis. Rifle or shotgun	857,468	June 18	3922	834–5	128	2757
Johnson, Frederick W., Waltham, Mass. Non-refillable bottle	856,406	June 11	1928	397	128	2217
Johnson, Gustave A. (See Allen and Johnson.)						
Johnson, James H. (See Cullen and Sjolander, assignors.)						
Johnson, John, Salt Lake City, Utah. Axle-spindle-turning machine	857,242	June 18	3496	738–9	128	2651
Johnson, John H., Winnipeg Junction, Minn. Boring-tool	858,293	June 25	5568	1191	128	3306
Johnson, John I. (See Moore and Johnson.)						
Johnson, John P., Storden, Minn. Draft-forcing device	855,460	June 4	37	8	128	1704
Johnson, Mary E., trustee. (See Cobb, Lyman H., assignor.)						
Johnson, Wallace W., *et al.* (See Ward, Dell, assignor.)						
Johnson, William, Fremont, Ohio. Combined brace and stretcher	855,641	June 4	376	78	128	1790
Johnston Harvester Company. (See Maul, Christian, assignor.)						
Jolliffe, N. T. (See Carey, William, assignor.)						
Jonas, Theodore, Republic, Mo. Building-wall construction	857,628	June 25	4252	898	128	2873
Jones, Alexander N., San Diego, Cal. Current-operated water-elevator	855,855	June 4	807	168	128	1898
Jones, David W., Athens, Ohio. Cage	855,784	June 4	660	135	128	1863
Jones, Fred L., *et al.* (See Patton, Oliver C., assignor.)						
Jones, James M., Dundas, Ontario, Canada. Guard for planers or jointers	856,588	June 11	2270	467	128	2303
Jones, James T., Columbus, Ohio. Mail-bag catching and delivering mechanism	856,407	June 11	1930	397	128	2217
Jones, Jefferson D., Temple, Tex. Rail-joint	856,892	June 11	2808	585	128	2438
Jones, Richard, Bay City, Mich. Vehicle-wheel	857,629	June 25	4253	898	128	2873
Jones, Robert V. (See Bedford, Milton T., assignor.)						
Jones, Thomas E., assignor of one-half to C. P. Arnold, Chicago, Ill. Dish-washer	855,785	June 4	662	135	128	1864
Jones, William D. (See Martin and Jones.)						
Jones, William T. (See Doak, Egbert O., assignor.)						
Jones, William T., Hamilton, Ontario, Canada. Ambulatory wheel	856,259	June 11	1574	330	128	2126
Jonsson, Carl P. J. (See Thompson, Lars O. T., assignor.)						
Jordan, Harry W., assignor to Semet-Solvay Company, Syracuse, N. Y. Preparing fuel briquets	857,287	June 18	3589	.....	128	2675
Jordan, Henry C. (See Hurley, John W., assignor.)						
Jordan, Michael. (See Gangelhoff and Jordan.)						
Josewski, Henry P., Seattle, Wash. Steam ice-cutter	856,348	June 11	1783	371	128	2178
Judd, William J., Park Ridge, N. J. Dumping-wagon	857,943	June 25	4879	1031	128	3029
Juhász Josef, Szemlak, Austria-Hungary. Apparatus for teaching and learning arithmetic	856,068	June 4	1182	250	128	1992
Julihn, Louis G., Washington, D. C., assignor to Elliott-Fisher Company, New York, N. Y. Calculating-machine	856,349	June 11	1784	371–4	128	2178
Kahle, August W., Tompkinsville, and L. Rensman, New York, N. Y. Marcel-waving iron	855,709	June 4	504	105	128	1824
Kahle, Dorsey P., Venus, Pa. Wrench	855,891	June 4	868	180	128	1913
Kahne, Henry J., Ashland, Ky. Chain wrench	856,589	June 11	2271	467	128	2303
Kaisling, William, Chicago, Ill., assignor to Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y. Telephone apparatus	856,260	June 11	1576	331	128	2126
Kamenstein, Myer, New York, N. Y. Boiler-cover	857,350	June 18	3704	783	128	2704
Kapheim, Frederick W., Milwaukee, Wis. Mixing apparatus	856,469	June 11	2042	419	128	2246
Karger, Heinrich L., assignor to Selas Gesellschaft mit beschränkter Haftung, Berlin, Germany. Apparatus for producing mixtures of gases or of gas and air for illuminating purposes	855,953	June 4	982	204–5	128	1941
Karr, Francis. (See Brouyette, Charles D., assignor.)						
Karron, Aleks. (See Margolin and Karron.)						
Karstens, Herman R., Ladysmith, Wis. Machine for making lath-boards	857,738	June 25	4473	944	128	2929
Karth, Heinrich F., Hamburg, Germany. Waterproof boot and shoe	857,072	June 18	3186	671	128	2574
Katz, Abraham. (See Knöchel, Philipp, assignor.)						
Kaufman, Adolph G., New York, N. Y. Horizontal light	856,408	June 11	1933	397	128	2218
Kaufman, Adolph G., assignor of one-half to B. L. and B. Weil, New York, N. Y. Bottle-seal	856,158	June 4	1368	288	128	2038
Kaufman, George H., assignor of one-half to I. A. Grubbs, Marienville, Pa. Fence-post	858,345	June 25	5679	1213	128	3238
Kavanagh, Frank C., Seattle, Wash. Hat-fastener	856,705	June 11	2491	512	128	2358
Kaye, James W. (See Duncan, James H., assignor.)						
Kayser, John W., assignor of one-half to G. Nelson, Madison, Wis. Cowl for chimney-tops.	855,710	June 4	505	105	128	1824
Keefer-Heart Iron and Steel Company. (See Heart, Charles, assignor.)						
Keeler, Henry L., Lundys Lane, Pa. Station-indicator	857,630	June 25	4255	898–9	128	2873
Keenan, Thomas, assignor of one-half to F. W. Sparks, Brooklyn, N. Y. Rotary engine.	857,558	June 18	4104	871	128	2805
Keene, Ella, Washington, D. C. Combined refrigerator and water-cooler	857,944	June 25	4881	1032	128	3030
Keibler, Luther Y., Saltsburg, Pa. Traction-engine	857,180	June 18	3393	716	128	2625
Keiper, Frank, Jamestown, assignor, by mesne assignments, to U. S. Standard Voting Machine Co., Rochester, N. Y. Voting-machine	857,469	June 18	3925	835–6	128	2757
Keist, Walter J., *et al.* (See McCormick and Miller, assignors.)						
Keller, Frederick, assignor of two-thirds to C. E. Roberts and B. Petzold, Paterson, N. J. Wireless burglar-alarm	857,351	June 18	3704	783	128	2704
Keller, Gustav, Eisenach, Germany. Adjustable strut with toggle action	856,159	June 4	1370	288–9	128	2039
Keller, William H., Philadelphia, Pa. Pneumatic tool	856,706	June 11	2492	512	128	2358
Kellogg, James M., Bozeman, Mont. Animal-trap	856,863	June 11	2810	585–6	128	2439
Kellogg, Milo G. (See Webster, Harry G., assignor.)						
Kelly, David J., Aberdeen, Wash. Collar	856,069	June 4	1184	250	128	1992
Kelly, James. (See Minto and Kelly.)						
Kelly, John, Chicago, Ill. Water-closet flush-valve device	855,786	June 4	664	135–6	128	1864
Kelly, Wallace C., Hastings, Mich. Rotary engine	858,073	June 25	5175	1096–7	128	3105
Kelly, William J., and P. J. Germain, assignors of one-third to D. Ogilvie, Denver, Colo. Ironing-board	856,962	June 11	2956	619–20	128	2474

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Kelsey, John, *et al.* (See Ward, Dell, assignor.)						
Kemmerer, Charles, Barberton, Ohio. Nut-lock	857,405	June 18	3806	807	128	2729
Kemmler, Frederick B., St. Louis, Mo. Temperature-regulator	857,073	June 18	3187	671	128	2575
Kemp, Robert W., Jr., New York, N. Y. Puzzle	858,074	June 25	5178	1097	128	3106
Kemper, William F., Chicago, Ill. Third-rail cover for electric railways	856,782	June 11	2636	542	128	2306
Kempster, Daniel E., trustee. (See Ivory, John C., assignor.)						
Kendal, Ramsey, Darlington, assignor of one-half to J. Stone and Company Limited, Deptford, England. Means for operating the valves of motive-power engines	855,892	June 4	870	180–1	128	1914
Kendall, Festus W., Elmira Heights, N. Y. Cuspidor	857,470	June 18	3930	836	128	2759
Kenjora, Nellie, Philipsburg, Pa. Auxiliary bottom for washboilers	857,809	June 25	4616	978	128	2965
Kenna, Patrick A., Sydney, New South Wales, Australia. Tobacco-pipe	855,893	June 4	874	181	128	1914
Kennedy, Joseph A., *et al.* (See Betts, Lewis F., assignor.)						
Kennedy, Walter. (See Sample, Charles H., assignor.)						
Kennerly, Charles W., and B. E. Stockwell, St. Louis, Mo. Antiseptic case for thermometers	857,631	June 25	4257	899	128	2874
Kennerly, Charles W., and B. E. Stockwell, St. Louis, Mo. Fountain hypodermic syringe.	857,739	June 25	4474	944	128	2930
Kenny, Hugh E., assignor to Chamberlin Metal Weather Strip Company, Detroit, Mich. Weather-strip	856,070	June 4	1184	251	128	1992
Kern, Bernard, Jr., Toledo, Ohio. Rotary brush	857,525	June 18	4038	860	128	2788
Kerngood, Herman, assignor to Alma Manufacturing Company of Baltimore City, Baltimore, Md. Snap-fastener stud	857,559	June 18	4105	872	128	2805
Kerouse, Otto, San Francisco, Cal. Cuspidor-cleaner	856,160	June 4	1372	289	128	2039
Kerr, Edward G. (See Young and Kerr.)						
Ketchum, Jesse B., Joplin, Mo. Kodak-film	856,783	June 11	2637	542	128	2306
Keystone Brake Shoe Company. (See Lamb, Van Buren, assignor.)						
Kieffer, Joseph. (See Farkas and Kieffer.)						
Kiesel, William F., Jr., Altoona, Pa. Car-coupling	856,530	June 11	2148	442	128	2271
Kihlgren, David, Springfield, Mass. Tap-holder	857,632	June 25	4258	899–900	128	2874
Kilbourn Knitting Machine Company. (See Gilbert, George H., assignor.)						
Kiley, Thomas R., Chicago, Ill. Horseshoe	856,261	June 11	1578	331	128	2127
Kimball, Alonzo, assignor to A. Kimball Company, New York, N. Y. Pin ticket or tag	857,740	June 25	4476	945	128	2930
Kime, Pierson R., Grand Rapids, Mich. Steam-boiler furnace	855,642	June 4	377	78	128	1790
Kimman, Henry J., Cleveland, Ohio, assignor to Chicago Pneumatic Tool Company, Chicago, Ill. Reciprocating tool	855,515	June 4	137	28	128	1729
King, Alphonse, San Antonio, Tex. Railway-rail	857,741	June 25	4478	945	128	2930
King, Charles B., assignor to Northern Motor Car Company, Detroit, Mich. Apparatus for transmitting motion	857,002	June 11	3038	639–40	128	2496
King, George W., assignor to Marion Steam Shovel Company, Marion, Ohio. Excavating-dipper	856,707	June 11	2497	512–13	128	2360
King, Henry C., Swindon, England. Valve	856,470	June 11	2043	419–20	128	2246
King Machine Tool Company. (See Muller, Edward A., assignor.)						
King Manufacturing Co. (See Haynie, Brooks, assignor.)						
King, Robert O., North Tonawanda, N. Y. Greenhouse-bench	858,187	June 25	5391	1148	128	3160
King, Tom C. (See Kroencke, Alfred J., assignor.)						
Kingman Plow Company. (See Goodnight and Duffin, assignors.)						
Kingston, James, assignor to J. A. Jeffrey, Columbus, Ohio. Chain	856,350	June 11	1810	375	128	2189
Kinnear, Peter. (See Loftus, John, assignor.)						
Kirk, Leotis W., assignor of one-half to W. L. Hartman, Pueblo, Colo. Machine for charging retorts	857,074	June 18	3188	671	128	2575
Kirk, Mahlon Z., Denver, Colo., assignor to John C. Winston Company, Philadelphia, Pa. Adjustable bookbinder	855,894	June 4	875	181	128	1914
Kirkelberg, Carl J., Eagle Grove, Iowa. Harrow attachment for corn-cultivators	856,471	June 11	2044	420	128	2247
Kirkegaard, Georg, New York, N. Y. Bottle-stopper	856,472	June 11	2046	420	128	2247
Kirkman, Madison L. (See Shutz and Kirkman.)						
Kirn, William, Rossville, Kans. Corn-drill	855,787	June 4	665	136	128	1865
Kirschner, Adolphe F., Pittsburg, Pa. Separating minerals	855,895	June 4	877	182	128	1915
Kitchener, Samuel A., Los Angeles, Cal. Telephone-index	856,161	June 4	1373	289	128	2040
Kitsee, Isidor, Philadelphia, Pa. Fire-alarm circuit	856,162	June 4	1374	289	128	2040
Kitsee, Isidor, Philadelphia, Pa. Electric relay	856,163	June 4	1376	290	128	2040
Kitsee, Isidor Philadelphia, Pa. Treatment of cotton-seed	858,075	June 25	5178	1097	128	3106
Kitsee, Isidor, Philadelphia, Pa. Duplexing telegraph-line. (Reissue)	12,664	June 25	5738	1223	128	3254
Kittel, William J., Jersey City, N. J. Head for hat-pins and the like	857,406	June 18	3807	807	128	2729
Kleinschmidt, Frank, Doyle, N. Y. Evaporator	856,262	June 11	1579	331	128	2127
Klemp, William F., assignor to Archer Iron Works, Chicago, Ill. Coal-handling apparatus	858,076	June 25	5180	1097–8	128	3107
Klever, Friedrich W., Solingen, Germany. Pocket-tool scissors	858,003	June 25	5030	1062	128	3068
Kline, David, Philadelphia, Pa. Talking-machine	858,077	June 25	5182	1098	128	3107
Kline, Harry E., Shamokin, Pa. Road-vehicle	857,633	June 25	4260	900	128	2874
Kline, Henry E., assignor of one-third to H. Meyer, Terre Haute, Ind. Cultivator	857,352	June 18	3707	783	128	2705
Kline, Walter. (See Hohenadel and Kline.)						
Knabe, Ernest J., Jr. (See Darley, John W., Jr., assignor.)						
Knabeschuh, John C., Louisville, Ky. Awning	855,579	June 4	259	51	128	1761
Knapp, Milton H., Saginaw, Mich. Attachment for dental articulators	856,884	June 11	2813	586	128	2439
Kneass, Strickland L., assignor to William Sellers & Company Incorporated, Philadelphia, Pa. Injector	857,882	June 25	4737	1006	128	2993
Kneedler, John D., Sioux City, Iowa. Road-bed equipment	855,643	June 4	378	79	128	1791
Knickle, Adam. (See Moss Myer, assignor.)						
Knight, Alfred J. (See Thomas, Jesse B., assignor.)						
Knight, Henry B., Battle Creek, and G. M. Cogswell, Dowagiac, Mich. Fifth-wheel	855,954	June 4	984	205	128	1941
Knight, Sherwood S., Birmingham, Ala. Cupola-charging mechanism	858,004	June 25	5030	1063	128	3069
Knoblauch, Henry. (See Long, William T., assignor.)						
Knöchel, Philipp, Hanau, Germany, assignor to A. Katz, St. Louis, Mo. Window-sash-operating device	855,788	June 4	666	136	128	1865
Knopf, Albert H., Oak Hall, assignor of one-half to C. M. McCurdy, Bellefonte, Pa. Nut-lock	857,526	June 18	4041	860	128	2789
Knowlton, Annie D., *et al.*, administrators. (See Knowlton, Mark D.)						
Knowlton, Frederic K., *et al.*, administrators. (See Knowlton, Mark D.)						
Knowlton, Mark D., deceased; A. D. and F. K. Knowlton, administrators, Rochester, N. Y. Cutting attachment for box-covering machines	858,078	June 25	5183	1098–9	128	3107
Knudsen, Karsten. (See Church and Knudsen.)						
Koehler, A. Robert. (See Koehler, George D., assignor.)						
Koehler, George D., assignor of one-half to A. R. Koehler, Macedonia, Iowa. Feed-trough	856,164	June 4	1378	290	128	2040
Koehnle, Louis H. (See Orlikowski and Koehnle.)						
Koester, William, Boyd county, Nebr. Grain-separator	858,294	June 25	5570	1191–2	128	3206
Kohke, John. (See Philip and Kohke.)						
Köhler, Hermann, Altenburg, Germany. Shuttle and feeder driving mechanism for sewing-machines	856,531	June 11	2149	442–3	128	2271

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Kohlhaas, George, Washington, D. C. Micrometer-gage	857,810	June 25	4617	978	128	2965
Koichney, Emil E. (See Morgan, Robert, assignor.)						
Kolla, John P., assignor to Holland Furnace Company, Holland, Mich. Hot-air furnace	856,263	June 11	1581	332	128	2127
Kolouch, Joseph, Milwaukee, Wis. Combined ash and garbage receptacle	856,264	June 11	1582	332	128	2127
Kolstram, John, Garrison, N. D. Valve-gear	856,784	June 11	2638	542	128	2396
Komorous, Joseph, Jr., assignor to Parisian Novelty Company, Chicago, Ill. Hand-mirror	858,079	June 25	5187	1099	128	3106
Konsel, John, New York, N. Y. Bosom stretcher and holder	855,780	June 4	667	137	128	1865
Kost, Felix, New York, N. Y. Grate	856,560	June 11	2272	467	128	2303
Koy, August, Peters, Tex. Protecting vegetable matter	857,075	June 18	3186	.....	128	2575
Kraemer, Paul, Jersey City, N. J. Shirt	856,591	June 11	2273	467	128	2303
Krantz, Hubert, New York, N. Y. Floor-box for electric wiring	856,165	June 4	1379	290	128	2041
Kraus, Georg, Cleveland, Ohio. Flour-bin	857,076	June 18	3190	671	128	2575
Krause, Daniel E., Chase, Wis. Drilling-machine	856,473	June 11	2048	421	128	2247
Krebitz, Peter, Munich, Germany. Manufacture of soap	858,295	June 25	5575	.....	128	3207
Kreisser, John D., Cincinnati, Ohio. Artificial-minnow fishing-bait	857,883	June 25	4739	1007	128	2993
Kremer, Irving I., New York, N. Y. Non-refillable bottle	856,785	June 11	2639	543	128	2397
Krentler-Arnold Hinge Last Company. (See Shainsey, Frederick J., Sr., assignor.)						
Kriesel, Gustave F., Minneapolis, Minn. Cheese-cutter	856,474	June 11	2051	421-2	128	2248
Kriner, William H., Hagerstown, Md. Gage-cock	857,634	June 25	4262	900	128	2875
Kroencke, Alfred J., Pittsburg, Pa., assignor to T. C. King, East Orange, N. J. Forming book-backs	857,003	June 11	3039	640	128	2496
Krüger, Ernst, Berlin, Germany. Polishing-machine	855,644	June 4	380	79	128	1791
Krummen, George. (See McNamara and Krummen.)						
Krupp, Frank, New Orleans, La. Bedstead	857,407	June 18	3808	808	128	2729
Kryger, Henry H., Minneapolis, Minn. Cutting mechanism for harvesters and similar machines	855,645	June 4	383	80	128	1792
Kryger, Henry H., Minneapolis, Minn. Cover for journal-boxes	857,243	June 18	3498	739	128	2652
Kübler, Carl F., Düsseldorf, Germany. Apparatus for applying fluids to fabrics	856,885	June 11	2814	586	128	2440
Kübler, Carl F., Düsseldorf, Germany. Applying small quantities of fluids on fabrics	856,886	June 11	2815	586	128	2440
Kügelgen, Franz von, and G. O. Seward, Holcombs Rock, Va. Production of calcium alloys	856,475	June 11	2053	422	128	2248
Kuhlkin, Martin T. (See Newbery, Reed, and Kuhlkin.)						
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	857,288	June 18	3590	760	128	2675
Kunath, Edward F., Jersey City, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	857,635	June 25	4263	901	128	2875
Kundtz, Theodor, Lakewood, and J. Rehor, Cleveland, Ohio; said Rehor assignor to said Kundtz. Machine-bearing cabinet	857,181	June 18	3394	716-17	128	2626
Kunkle, John C., Brooklyn, N. Y. Keyboard-transmitter	856,265	June 11	1584	332	128	2128
Kunzinger, Philip. (See Miller and Kunzinger.)						
Kuykendall, Leander, Riverside, Cal. Truck	856,887	June 11	2815	587	128	2440
La Bauve, Odelon J., Edna, Tex. Coop or crate	855,790	June 4	668	137	128	1866
La Compagnie Generale De Phonographes, Cinematographes & Appareils De Precision. (See Ivatts, Ernest A., assignor.)						
La May, Arthur C., Rochester, assignor, by mesne assignments, to American News Company, New York, N. Y. Display-rack	855,462	June 4	40	9-10	128	1705
La May, Frank B., assignor to Caldwell Manufacturing Company, Rochester, N. Y. Looking-glass holder	858,080	June 25	5187	1100	128	3108
Labreck, Louis, Millbury, Mass. Tool	857,077	June 18	3192	672	128	2576
Lacroix, Joseph, and J. V. Cunniff, Fall River, Mass. Loom-shuttle	855,791	June 4	670	137	128	1866
Laczay, George, C. Fohn, and C. Ekker, Hammond, La. Threshing-machine	855,461	June 4	38	9	128	1704
Laflin, Frank S., Sears, Ill. Stroke-adjuster for windmills	856,888	June 11	2816	587	128	2441
Laird, George, and G. P. Todd, Manchester, England, assignors to Westinghouse Electric & Manufacturing Company. Electrical controller	856,476	June 11	2054	422-3	128	2249
Lake, David M. (See Banister and Lake.)						
Lamb, Van Buren, New Haven, Conn., assignor to Keystone Brake Shoe Company, New York, N. Y. Brake construction	856,266	June 11	1588	333	128	2128
Lambert, Charles O., Bridgeport, assignor, by mesne assignments, to Electric Vehicle Company, Hartford, Conn. Automatic stop for automobiles	855,711	June 4	506	105	128	1824
Lambotte, Elie D. H., Brussels, Belgium. Mattress	857,078	June 18	3193	672	128	2576
Lamley, Job H., Tacoma, Wash. Thawing-point	856,786	June 11	2640	543	128	2397
Lamme, Benjamin G., Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Alternating-current motor	856,477	June 11	2056	423	128	2249
Lamp, Charles F., Durant, Iowa. Animal-trap	856,889	June 11	2818	587-8	128	2441
Lancaster, Frank R., South Whitley, Ind. Hand potato-digger	857,182	June 18	3397	717	128	2627
Lance, Ora L., Chattanooga, Tenn. Automatic railway-switch	856,787	June 11	2642	543-4	128	2397
Landry, Alcée, Mark, La. Grapple	856,708	June 11	2498	513	128	2360
Lang, Adolph, assignor of two-thirds to H. F. Smith and C. H. Zink, Philadelphia, Pa. Water-motor	856,709	June 11	2500	513-15	128	2360
Langenhop, Herman F., New York, N. Y. Heater	855,955	June 4	986	205-6	128	1943
Langlumé, George, assignor of one-half to H. Hirsch, New Orleans, La. Electric signal	856,071	June 4	1187	251	128	1993
Langrill, William, Bay City, Mich. Auxiliary resetting mechanism	856,267	June 11	1591	333	128	2129
Lanouette, Edith, Boston, Mass. Drawers	856,268	June 11	1595	333	128	2130
Lanquist, Andrew, Chicago, Ill. Measuring and mixing machine	857,742	June 25	4479	945	128	2931
Lanston Monotype Machine Company. (See Bancroft, John S., assignor.)						
Lanston Monotype Machine Company. (See Bancroft, Wilfred, assignor.)						
Lanston Monotype Machine Company. (See Benton, Andrew J., assignor.)						
Lanston Monotype Machine Company. (See Eschinger, Edward A., assignor.)						
Lappen, James E., Decorah, Iowa, assignor to L. L. C. Brooks and F. M. Catlin, St. Paul, Minn. Compo-board and producing same	855,792	June 4	672	138	128	1866
Laramie, Mitchell, Willimantic, Conn. Muzzle	855,856	June 4	809	168	128	1898
Larisey, Henry L., Charleston, S. C. Smoke and cinder conductor	857,471	June 18	3933	836	128	2759
Larsen, Anders, Odense, Denmark, assignor to J. P. Larson, Baldwin, Wis. Coaster-brake	856,532	June 11	2152	443	128	2271
Larsen, George, San Leandro, Cal. Oil-burner	855,857	June 4	810	169	128	1899
Larsen, Ingeborg D., Chicago, Ill. Knee-protector	858,296	June 25	5578	1192	128	3208
Larson, Andrew, Ottawa, Kans. Fraser-cleaner	856,643	June 11	2379	489	128	2331
Larson, James P. (See Larsen, Anders, assignor.)						
Larson, Olof, Portland, Oreg. Tail-stock for wood-turning lathes	855,858	June 4	811	169	128	1899
Lash, Horace W., Cleveland, Ohio. Reducing iron oxids	856,351	June 11	1812	.....	128	2189
Latimer, John W., Chicago, Ill., assignor to International Harvester Company. Mowing-machine	856,269	June 11	1596	334	128	2131
Latimer, Julian L., Washington, D. C. Instrument for measuring and correcting errors of gun-fire	858,297	June 25	5579	1192	128	3208
Latsch, Charles, assignor to Fouilloux Ballon Passoire Company, Cleveland, Ohio. Soup-straining apparatus	856,963	June 11	2967	620	128	2474
Latty, Henry T. (See Latty, Samuel D. and H. T.)						
Latty, Samuel D. and H. T., Cleveland, Ohio. Juvenile hand-car	857,945	June 25	4882	1032	128	3030

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Lauber, Josef, Vienna, Austria-Hungary. Magazine-rifle	855,896	June 4	879	182	128	1915
Laubscher, Alexander, Bridgeport, Conn., assignor, by mesne assignments, to Singer Manufacturing Company. Sewing-machine for circular hemming	856,166	June 4	1380	290-1	128	2041
Laughlin, Homer, Jr. (See Schuyler and Laughlin.)						
Laughlin, Homer, Jr., Los Angeles, Cal., and D. Schuyler, Bridgeport, Conn., assignors to Perfect Sliding Door Company, Los Angeles, Cal. Track-rail	856,592	June 11	2273	468	128	2304
Laughlin, William W., Luxor, Pa. Nut-lock	856,710	June 11	2508	515	128	2363
Laurent, Alexandre G., St. Petersburg, Russia. Hand fire-extinguishing apparatus	858,188	June 25	5393	1149	128	3160
Lausterer, William J., Jamestown, assignor to U. S. Standard Voting Machine Company, Rochester, N. Y. Key-locking mechanism for voting-machines	857,811	June 25	4620	979	128	2966
Laverty, Arthur F., administrator. (See Laverty, Charles E.)						
Laverty, Charles E., deceased, Pittsburg, Pa.; A. F. Laverty, administrator. Pickling-bath	856,644	June 11	2380	.....	128	2331
Lavigne, Joseph P., assignor to Lavigne Manufacturing Company, Detroit, Mich. Pump	857,004	June 11	3041	640	128	2496
Lavigne Manufacturing Company. (See Lavigne, Joseph P., assignor.)						
Lawrence, Arthur, Chicago, Ill. Tilting bed-spring	857,353	June 18	3709	784	128	2705
Lawrence, Louis, Dallas, Tex. Composition of matter for improving the tone of a violin	856,533	June 11	2153	.....	128	2272
Lawrence, Zephaniah S., West Shefford, Quebec, Canada. Storage and cooling vat for milk or cream	857,473	June 18	3935	837	128	2760
Lawson, Richard F., Effingham, Ill. Currycomb	857,472	June 18	3934	836	128	2760
Le Blond, Richard K., and W. F. Groene, Cincinnati, Ohio. Speed-changing device	857,562	June 18	4121	873	128	2807
Le Grand, Jean J. P., Paris, France. Protective cover for pneumatic or elastic tires	855,712	June 4	509	106	128	1825
Le Pontois, Leon J., New Rochelle, N. Y., assignor to Poly-Phase Ignition System Company. Self-exciting alternator	855,713	June 4	510	106	128	1825
Leach, James C. E., Norwich, Conn. Hinge-joint for revolvers	855,793	June 4	673	138	128	1867
Leake, David H. (See Valentine, Robert S., assignor.)						
Leblanc, Maurice, Paris, France, assignor to Westinghouse Electric and Manufacturing Company. Multiplex telephony	857,079	June 18	3195	672-3	128	2576
Leblanc, Maurice, Paris, France, assignor to Westinghouse Electric & Manufacturing Company. Apparatus for transforming continuous currents	857,080	June 18	3200	673	128	2577
Leblanc, Maurice, Paris, France, assignor to Westinghouse Electric & Manufacturing Company. Generating high-frequency alternating currents	857,560	June 18	4107	872	128	2806
Leblanc, Maurice, Paris, France, assignor to Westinghouse Electric & Manufacturing Company. Apparatus for generating high-frequency alternating currents	857,561	June 18	4114	872-3	128	2806
Lecoultre, Emile, assignor to C. C. Carlin, Alexandria, Va. Tabulating device for type-writing machines	858,082	June 25	5192	1101-2	128	3110
Lecoultre, Emile, assignor to C. C. Carlin, Alexandria, Va. Tabulating device for type-writing machines	858,083	June 25	5199	1102	128	3112
Lee, Annie, Three Oaks, assignor of one-half to G. E. Pooler, Burr Oak, Mich. Rack or holder	856,593	June 11	2275	468	128	2304
Lee, John E., Conshohocken, Pa. Device for opening boxes	856,964	June 11	2959	620	128	2475
Lees, Fanny D., Philadelphia, Pa. Tongue-scraper	856,711	June 11	2509	515	128	2363
Leet, Albert, *et al.* (See Harris, Edward, assignor.)						
Legrand, George J. J. (See Gersant and Legrand.)						
Lehman, Frank H., Lebanon, Pa., assignor to Ullman Manufacturing Company, New York, N. Y. Puzzle	856,196	June 4	1436	303	128	2055
Lehman, John F., Huntsville, Ala. Card-grinding machine	856,072	June 4	1188	252	128	1993
Lehmann, Hermann, Magdeburg, assignor to Fried. Krupp Aktiengesellschaft Grusonwerk, Magdeburg-Buckau, Germany. Feed mechanism for automatic magazine-guns	857,244	June 18	3500	739-40	128	2652
Lehn, Bernard, Escanaba, Mich. Safety device for elevators	855,646	June 4	385	80	128	1793
Leidecker, Frank W., Marietta, Ohio. Water-gage	857,183	June 18	3398	717	128	2627
Leiger, George F., Chicago, Ill. Speed-regulating mechanism	857,636	June 25	4266	901-2	128	2876
Leiger, George F., Chicago, Ill. Speed-regulating mechanism	857,637	June 25	4269	902	128	2877
Leimbach, Charles T., Catonsville, Md. Floor-planer	857,946	June 25	4884	1032-3	128	3031
Leitch, James F., *et al.* (See Wetherbee, Herbert E., assignor.)						
Leland, Herbert J., *et al.* (See Leland, John A., assignor.)						
Leland, John A., assignor to H. J. Leland and Millers Falls Co., Millers Falls, Mass. Chuck	857,947	June 25	4886	1033	128	3031
Lemp, Hermann, Lynn, Mass., assignor to General Electric Company. Steering-check	855,463	June 4	41	10	128	1705
Leonard, Charles A., Eve, Mo. Harness-hook	855,464	June 4	43	10	128	1706
Leonard, Harry W., Bronxville, N. Y. Controller for electric motors and similar devices	855,897	June 4	880	182-3	128	1915
Leonard, Henry E., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Web-folding machine	857,948	June 25	4888	1033	128	3032
Leopold, Frederick B., Evanston, Ill., and C. A. Brown, Lorain, Ohio; said Leopold assignor to Pittsburgh Filter Manufacturing Company, Pittsburg, Pa. Apparatus for feeding lime to water	857,563	June 18	4123	874	128	2807
Leopold, Frederick B., Evanston, Ill., and C. A. Brown, Lorain, Ohio; said Leopold assignor to Pittsburgh Filter Manufacturing Company, Pittsburg, Pa. Feeding lime to water	857,564	June 18	4125	874	128	2808
Leps, Henry M., Grafton, W. Va. Burner for natural gas	858,189	June 25	5394	1149	128	3161
Lestina, Otto, Newport, Ky. Pedal for pianos	857,638	June 25	4272	902	128	2877
Letombe, Léon A. C., Paris, France. Apparatus for automatically starting explosive-motors or the like	857,639	June 25	4272	902	128	2877
Levy, Henry H., New York, N. Y. Table	856,788	June 11	2644	544	128	2398
Levy, Simon, Youngstown, Ohio. Garment-holder	855,956	June 4	988	206	128	1943
Lewis, Elizabeth C., Oak Grove, Ala. Pot-cleaner	857,527	June 18	4043	860	128	2789
Lewis, Fitz J., Empire, Panama. Excavating-machine	856,965	June 11	2960	620	128	2475
Lewis, George D. (See Lewis, Robert S. and G. D.)						
Lewis, Lewis C., assignor to Monarch Manufacturing Company, Columbus, Ohio. Motor for washing-machines	856,270	June 11	1599	334	128	2132
Lewis, Robert S. and G. D., Russell, Iowa. Hay-stacker	856,966	June 11	2962	621	128	2476
Lewis, Samuel, Rochester, N. Y. Buttonhole-cutting machine	858,190	June 25	5396	1149	128	3161
Lewis, Sherman T., Milwaukee, Wis., assignor of two-thirds to R. P. Davenport and E. C. Rockwell, Chicago, Ill. Variable-speed gear	856,967	June 11	2966	621	128	2477
Lewis, Sylvester G., St. Louis, Mo., assignor to Banana Food Products Company. Evaporating apparatus	856,478	June 11	2058	423	128	2250
Lewis, Sylvester G., St. Louis, Mo., assignor to Banana Food Products Company. Evaporator	856,479	June 11	2059	424	128	2250
Lewitz, Reinhold, New York, N. Y. Flying-machine	856,073	June 4	1189	252-3	128	1994
Leykauf, John J., and A. Barth, Milwaukee, Wis. Culinary utensil	857,812	June 25	4622	979	128	2967
Liberty, Jerry C., assignor of one-half to T. F. Lynn, Easthampton, Mass. Skirt-hanger	858,298	June 25	5581	1193	128	3209
Library Bureau. (See Hunter, David E., assignor.)						
Lied, Ole S., Christiania, Norway. Igniting and extinguishing device for gas-burners	856,534	June 11	2154	444	128	2272
Liggett, William K., assignor of one-half to W. T. Guy, Columbus, Ohio. Machine for making worm and spiral gear	858,081	June 25	5188	1100-1	128	3109
Limberg, William H., Plymouth, Wis. Mold for making solid concrete silos	857,474	June 18	3937	837	128	2761
Limoneria Company *et al.* (See Teague, Charles C., assignor.)						
Lincoln, Robert E., Jersey City, N. J. Variable-speed transmission	857,081	June 18	3206	674	128	2578
Lindfors, Olaf E., Fruita, Colo. Fruit-picker	857,475	June 18	3939	837	128	2761

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Lindgren, Erick W., Hagalund, near Stockholm, Sweden. Automatic sale-machine for bread and butter	855,516	June 4	139	28	128	1729
Lindner, Robert, Dresden, Germany. Valve-gearing and motion for locomotives	857,813	June 25	4623	979-80	128	2967
Lindsay, Alexander, and J. Meinert, Davenport, Iowa. Mechanical movement	857,408	June 18	3810	808	128	2730
Lindsay, John. (See Lindsay, Robert and J.)						
Lindsay, Robert and J., Dunedin, New Zealand. Trolley-pole for conducting electric current to vehicles	856,535	June 11	2155	444	128	2273
Lindsay, Thomas J., Indianapolis, Ind. Wheel spindle and axle	855,898	June 4	891	183-4	128	1919
Lindstrom, Carl A., Seattle, Wash. Elevator	855,957	June 4	990	206-7	128	1944
Lingenfelter, Harley. (See Fidler and Lingenfelter.)						
Link-Belt Company. (See Hetzel, Frederic V., assignor.)						
Link-Belt Company. (See Waechter, Ferdinand F., assignor.)						
Linkmeyer, Rudolf, Brussels, Belgium. Manufacture of silk-like threads	857,640	June 25	4275	.....	128	2878
Lintern, William, West Park, assignor to Nichols-Lintern Company, Cleveland, Ohio. Means for operating pneumatic valves. (Reissue)	12,661	June 18	4135	876	128	2809
Linthicum, Frank, Aurora, Mo. Pump	856,271	June 11	1600	335	128	2132
Lintner, William T., W. C. Robbins, Mount Vernon, and J. P. Weis, assignors to Manhattan Machine Supply Company, New York, N. Y. Sewing-machine	857,082	June 18	3209	674-5	128	2579
Linton, Ernest O., assignor of two-thirds to L. Gutsch and D. T. Phalen, Sheboygan, Wis. Liquid-measuring apparatus	857,083	June 18	3211	675-6	128	2579
Lippert, Samuel, assignor to Reciprocating Power and Pump Company, Cleveland, Ohio. Transmission mechanism	856,272	June 11	1602	335	128	2132
Lippincott, Fisher H., Philadelphia, Pa., assignor to American Soda Fountain Company, Boston, Mass. Syrup-dispensing apparatus	857,814	June 25	4626	981	128	2967
Lippy, David, and A. Nicodemus, assignors of one-third to A. K. Shauck, Mansfield, Ohio. Valve	855,517	June 4	141	28	128	1730
Lisk, Julius N. and N. J., Troy, Ohio. Grinder	856,167	June 4	1383	292	128	2042
Lisk Nelson J. (See Lisk, Julius N. and N. J.)						
Littlefield, Charles E., Jesup, Ga. Seed-planter and fertilizer-distributer	856,789	June 11	2645	544-5	128	2398
Litzenberger, William H., and L. A. Tornquist, New Windsor, Ill. Screw-wrench	855,714	June 4	512	106	128	1826
Liveright, Louis F., *et al.* (See Santmyers, Charles A., assignor.)						
Livesay, Gentry F., St. Louis, Mo., assignor of one-third to J. S. Livesay and R. D. Bush, Ceresco, Nebr. Curtain-fixture	857,743	June 25	4483	946	128	2931
Livesay, James S., *et al.* (See Livesay, Gentry F., assignor.)						
Livignano, Dna, Cleveland, Ohio. Arch-support	856,712	June 11	2509	516	128	2363
Ljungström, Birger, assignor to Aktiebolaget Separator, Stockholm, Sweden. Centrifugal machine	855,580	June 4	260	52	128	1761
Llewellyn, Morgan, *et al.* (See Senter, John F., assignor.)						
Llodra, Miguel, Manila, Philippine Islands. Distilling apparatus	858,346	June 25	5680	1213-14	128	3238
Lobert, Ferdinand A., National City, Cal. Composition of matter	858,084	June 25	5202	.....	128	3113
Lockett, Andrew M., New Orleans, La. Apparatus for elevating water by means of compressed air	855,518	June 4	143	29	128	1730
Lockhart, Richard J., Pittsburg, Pa. Attachment for vises	856,074	June 4	1192	253	128	1994
Locklar, Lewis H. (See Higginbotham, Don J., assignor.)						
Loeble, Gottlob E., New York, N. Y. Cartridge	855,958	June 4	992	207	128	1944
Loftus, John, assignor of one-half to P. Kinnear, Albany, N. Y. Steam-spray motor	856,968	June 11	2967	621-2	128	2478
Logan, Albert J., Clearfield, Pa. Nut-lock	858,191	June 25	5397	1149	128	3162
Loggins, John T. (See Elliott, Loggins, and Straughan.)						
Lommel, Wilhelm, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Leuco derivative from gallocyanin	856,536	June 11	2156	.....	128	2273
Lommel, Wilhelm, assignor to Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany. Gallocyanin dye	856,537	June 11	2157	.....	128	2273
Long, James A., Kalispell, Mont. Beet-thinner	857,815	June 25	4029	981-2	128	2968
Long & Koch. (See Long, Philip H., assignor.)						
Long & Koch. (See Wriggins, Charles, assignor.)						
Long, Malcolm W., Harrisburg, and J. M. Hoffer, Steelton, assignors to Pennsylvania Steel Company, Philadelphia, Pa. Switch-stand	857,289	June 18	3593	760-1	128	2676
Long, Malcolm W., Harrisburg, assignor to Pennsylvania Steel Company, Philadelphia, Pa. Switch-stand	857,290	June 18	3596	761	128	2677
Long, Malcolm W., Harrisburg, assignor to Pennsylvania Steel Company, Philadelphia, Pa. Switch-stand	857,291	June 18	3598	762	128	2678
Long, Philip H., assignor to Long & Koch, Newark, N. J. Fastener	856,480	June 11	2061	424	128	2250
Long, William T., assignor of one-half to H. Knoblauch, Sumner, Wash. Train-order delivering and receiving apparatus	857,641	June 25	4275	903	128	2878
Loraine Manufacturing and Tool Company. (See Baumgartner, Charles B., assignor.)						
Lord, Charles E., and W. F. Bouché, Norwood, Ohio, assignors to Bullock Electric Manufacturing Company. Shaft-oscillator	856,538	June 11	2158	444-5	128	2273
Lorenz, Jacob, assignor of one-third to J. S. Evard, St. Louis, Mo. Ventilator	857,642	June 25	4278	903	128	2879
Lorig, Emanuel V., and U. G. Graham, South Omaha, Nebr. Device for protecting safe-vaults	856,075	June 4	1193	253	128	1994
Locie, Thomas M., Jr., Elmira, N. Y. Device for preventing the fraudulent refilling of cigar-boxes	856,481	June 11	2062	424	128	2251
Louiso, Edward W., *et al.* (See Dunn, Frank P., assignor.)						
Louiso, George P., *et al.* (See Dunn, Frank P., assignor.)						
Love, William C., Florence, Tex. Ironing-table	856,800	June 11	2820	588	128	2441
Lovekin, Luther D., Philadelphia, Pa., assignor to M. T. Davidson, Brooklyn, N. Y. Valve mechanism for engines	856,594	June 11	2277	468-9	128	2304
Lovell, Albert K., New York, N. Y. Toilet device	856,482	June 11	2063	424-5	128	2251
Lovley, Edward, Sarnia, Ontario, Canada. Wrecking appliance	856,713	June 11	2510	516	128	2364
Lowe, James L., Detroit, Mich. Bag-machine	858,005	June 25	5033	1083-5	128	3069
Lowe, Waldo H., Urbana, Ohio. Combination table and rack for clothing	856,595	June 11	2278	469	128	2305
Lowenthal, Harry N., Philadelphia, Pa. Window-shutter-operating device	856,969	June 11	2969	622	128	2478
Lowrey, Jacob C. (See Stadel, John M., assignor.)						
Lubbers, John H., Allegheny, assignor to Window Glass Machine Company, Pittsburg, Pa. Feed-out device for molten glass	858,085	June 25	5202	1103	128	3113
Lubin, Siegmund. (See Weiser, Orville T., assignor.)						
Lucas, Ignatius, Passaic, N. J. Manufacture of blocks	858,192	June 25	5308	1150	128	3162
Ludlow Typograph Company. (See Ludlow, Washington I., assignor.)						
Ludlow, Washington I., Cleveland, Ohio, assignor, by mesne assignments, to Ludlow Typograph Company, Pittsburg, Pa. Typograph	856,530	June 11	2160	445-6	128	2273
Ludwig, John H. (See Salyer, Harry M., assignor.)						
Ludwig, Thomas, Barmen, Germany. Suspension device particularly adapted for curtains	856,076	June 4	1195	253	128	1995
Lull, Lynn C., Kalamazoo, Mich. Motor-vehicle	857,084	June 18	3214	676	128	2579
Lum, Frank W., Springfield, Mass. Stocking	858,006	June 25	5038	1055	128	3070
Lumsden Machine Company. (See Battensby, William, assignor.)						
Lundell, Robert, New York, N. Y. Dynamo-electric machine or electric motor	857,184	June 18	3400	717	128	2627
Lundstrom, Carl J., Little Falls, N. Y. Aligning device for sectional bookcases	856,970	June 11	2970	622	128	2478
Luzzi, August F., Cleburne, Tex. Spring-heel	857,816	June 25	4630	982	128	2968
Lycan, William S., Marshall, Ill. Triple-expansion engine	855,959	June 4	994	207-8	128	1944

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Lyford, William E., assignor to Hartford Carpet Corporation, Thompsonville, Conn. Tray for steaming yarn	858,086	June 25	5204	1103	128	3114
Lykken, Henry G., University, N. D. Cleaning implement	856,168	June 4	1385	292	128	2042
Lynch, Harry B. (See Baehr and Lynch.)						
Lynch, John T. (See Gasman and Lynch.)						
Lynn, Thomas F. (See Liberty, Jerry C., assignor.)						
Lyon, Arthur, High Point, N. C. Machine for leveling chairs, tables, and the like	858,299	June 25	5582	1193	128	3209
Lyons, Robert L., Waltham, Mass. Stitch-forming device for sewing-machines	856,645	June 11	2381	490	128	2331
M. Werk Company. (See Allen, Lewis C., assignor.)						
MacClyment, Harry A., Burlington, Iowa. Stoker for furnaces	855,581	June 4	262	52-3	128	1762
MacDonald, Donald G., Detroit, Mich. Concrete sidewalk	856,409	June 11	1935	398	128	2218
MacDonald, William H., Boston, assignor to J. S. Wilson, Chelsea, Mass. Clutch	856,971	June 11	2971	622	128	2479
MacRae, Alexander W. (See Atkins, William, assignor.)						
Macallen Company. (See Andersen, Theodore C. J., assignor.)						
Macdonald, Murdoch, Cleveland, Ohio, assignor to Macdonald Ticket and Ticket Box Company. Holder for tickets, checks, &c	856,410	June 11	1936	398	128	2219
Macdonald Ticket and Ticket Box Company. (See Macdonald, Murdoch, assignor.)						
Machen & Mayer Electrical Manufacturing Company. (See Mayer, Walter S., assignor.)						
Machlet, Adolph W. and F. W., Elizabeth, N. J. Furnace	857,292	June 18	3600	762	128	2678
Machlet, Fritz W. (See Machlet, Adolph W. and F. W.)						
Macke, Robert C. (See Myers, Harry H., assignor.)						
Macleod, Arthur W. (See Plato, Marcus, assignor.)						
Macomber, Isaac B., Portsmouth, R. I. Trousers-stretcher	855,794	June 4	674	138	128	1867
Macomber, William, assignor to General Railway Signal Company, Buffalo, N. Y. Railway switching system	856,273	June 11	1604	336	128	2133
Magenheimer, Franklin C., Evansville, Ind. Wrench	856,169	June 4	1386	292	128	2042
Magoon, Roy L., Graceville, Minn. Mouth-prop	856,352	June 11	1813	375	128	2189
Mahar, Matthew H., Bay City, Mich. Derailing-switch	856,274	June 11	1617	336	128	2137
Mahoney, Stephen. (See Sciple, Henry M., assignor.)						
Mains, Claude P., assignor of one-half to G. Deddens, Cincinnati, Ohio. Sectional pneumatic tire	856,411	June 11	1939	398	128	2220
Malick, Henry, Belmont, W. Va. Ink-well	856,077	June 4	1196	254	128	1995
Mallard, Logan L., Atlanta, Ga. Dental chair	858,193	June 25	5399	1150	128	3162
Mallard, Logan L., assignor of one-half to W. A. Sims, Atlanta, Ga. Cuff-holder	858,300	June 25	5584	1193	128	3210
Mallonee, James W., Benedict, Nebr. Pump-piston	855,647	June 4	386	80	128	1793
Malloy, Arthur H., Chicago, Ill. Propelling and steering mechanism for air-ships	857,949	June 25	4889	1033-4	128	3032
Malm, Andrew. (See Fredrikson, Adolf, assignor.)						
Malocsay, Frank X., assignor to himself, E. F. and L. F. Roos, Jr., P. Schnitger, L. F. Roos, Sr., and E. P. Schnitger, New York, N. Y. Labeling-machine	855,715	June 4	513	107-8	128	1826
Malone, David H., Kelso, Wash. Grocery-bin	856,646	June 11	2383	490	128	2331
Malone, Thomas B., Buffalo, Ind. Burial-vault	857,245	June 18	3503	740	128	2653
Malone, William M., Wandi Narrabri, New South Wales, Australia. Fastening for boots and shoes and leggings, &c	856,714	June 11	2512	516	128	2364
Maloney, William, assignor of one-half to Frost and Wood Company Limited, Smith's Falls, Ontario, Canada. Combined cutting-knife and distributer for harvesting-threshers	855,519	June 4	147	29	128	1731
Manahan, Joseph A., New York, N. Y. Shaft-hanger	857,528	June 18	4044	861	128	2789
Maneas, T. D., *et al.* (See Snider, David W., assignor.)						
Manhattan Machine Supply Company. (See Lintner, Robbins, and Weis, assignors.)						
Manuel, George S., Turlock, Cal. Drawing-board	858,194	June 25	5401	1151	128	3163
Manufacturers Automatic Sprinkler Company. (See Hamilton, John R., assignor.)						
Mapes, Louis. (See Bishop and Mapes.)						
Mapp, Thomas H., Surry Hills, near Sydney, New South Wales, Australia. Apparatus for treating forage	858,302	June 25	5587	1194-5	128	3210
Marble, Webster L., Gladstone, Mich. Pivoted nail-claw for axes	855,859	June 4	812	169	128	1899
Margolin, Meyer, and A. Karron, New York, N. Y. Combination furniture	855,520	June 4	148	29	128	1732
Margolin, Meyer, and A. Karron, New York, N. Y. Grate	855,795	June 4	676	138	128	1867
Marion Steam Shovel Company. (See King, George W., assignor.)						
Markmann, Carl, Unna, Germany. Vise	857,007	June 11	3045	642	128	2497
Marks, Herbert E., Poughkeepsie, N. Y., assignor to American Sheet & Tin Plate Company, Pittsburg, Pa. Wrapper for metal sheets	857,744	June 25	4484	946	128	2932
Marks, Knox R., Abingdon, Ill. Trap	858,007	June 25	5039	1065	128	3071
Marlin Fire Arms Company. (See Allen and Johnson, assignors.)						
Marshall, Frank L., Boston, Mass. Playing attachment for musical instruments	855,465	June 4	44	10-11	128	1706
Marshall, John B., Broken Hill, New South Wales, Australia. Rock-drill	858,195	June 25	5402	1151	128	3163
Marshall, Norman, Newton, Mass. Machine for making lamp-bases	856,972	June 11	2972	623	128	2479
Marshall, Norman, Newton, Mass. Glass-severing machine	856,973	June 11	2976	624	128	2480
Marshall, Norman, Newton, Mass. Machine for making lamp-bases	856,974	June 11	2981	625	128	2480
Marshall, Norman, Newton, Mass. Assembling apparatus	857,005	June 11	3042	641	128	2497
Marshall, William, assignor of one-fourth to J. A. Bullinger, New York, N. Y. Apparatus for producing electric sparks	858,196	June 25	5404	1151	128	3163
Marten, Albert S., East Orange, assignor to Tea Tray Company, Newark, N. J. High-tension electric fixture	856,275	June 11	1618	336-7	128	2137
Martin, Arthur J., Rugby, England, assignor to General Electric Company. Electric meter	856,412	June 11	1940	398	128	2220
Martin, Arthur S., *et al.* (See McClintock, Edward H., assignor.)						
Martin, Charles C., and W. D. Jones, Denver, Colo.; said Jones assignor to said Martin. Renovating and refining butter	856,353	June 11	1814	375	128	2190
Martin, Charles C., and W. D. Jones, Denver, Colo.; said Jones assignor to said Martin. Pneumatic agitating-tank for butter-oils	856,354	June 11	1818	375	128	2190
Martin, Charles C., and W. D. Jones, Denver, Colo.; said Jones assignor to said Martin. Apparatus for renovating and refining butter, oils, lard, and fats	856,355	June 11	1821	376	128	2191
Martin, Earl L., Woodburn, Iowa. Brickmaking-machine	855,716	June 4	515	108-9	128	1827
Martin, Edward B., *et al.* (See McClintock, Edward H., assignor.)						
Martin, John E., Bethany, Ill. Trace-shield	857,085	June 18	3215	676	128	2580
Martin, Ross, Fairmont, W. Va. Safety-razor	856,078	June 4	1197	254	128	1995
Martin, Walter N., A. J. Thomas, and E. F. L. Russell, Denver, Colo. Automatic time circuit-breaker	858,301	June 25	5585	1194	128	3210
Martin, William R., Idaho Falls, Idaho. Excavator	857,817	June 25	4631	982	128	2968
Martina, Giovanni. (See Durio and Martina.)						
Marvin, Arthur, Panola, Ill. Conveyer-truck	857,409	June 18	3813	808	128	2730
Mascart, Charles, Paris, France. Fare-indicator	856,891	June 11	2821	588	128	2441
Mason Machine Works. (See Meats and Chandler, assignors.)						
Mason Regulator Company. (See Mason, William B., assignor.)						
Mason, William B., Boston, Mass., assignor to Mason Regulator Company, Saco, Me. Reducing-valve	855,796	June 4	677	139	128	1868
Mason, William B., Boston, Mass., assignor to Mason Regulator Company, Saco, Me. Slowing device for rheostats	855,797	June 4	678	139	128	1868
Mason, William B., Boston, Mass., assignor to Mason Regulator Company, Saco, Me. Engine-bearing	856,170	June 4	1387	293	128	2043

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Mason, William B., Boston, Mass., assignor to Mason Regulator Company, Saco, Me. Engine-bearing	858,087	June 25	5205	1103–4	128	3114
Mason, William B., Boston, Mass., assignor to Mason Regulator Company, Saco, Me. Apparatus for maintaining uniform pressure	858,088	June 25	5209	1104	128	3115
Mason, William B., Boston, Mass., assignor to Mason Regulator Company, Saco, Me. Apparatus for maintaining uniform pressure in driers	858,089	June 25	5212	1104	128	3116
Massie, Edward S., and J. H. Hawkins, Quincy, Ill. Circuit-controller	858,197	June 25	5405	1151	128	3163
Massing, Wilhelm, Borbeck, Germany. Miner's cage	856,276	June 11	1620	337	128	2137
Matheney, George L., assignor of one-half to J. O. Howells, Bridgeport, Ohio. Trolley-guard	857,643	June 25	4290	904	128	2879
Matheny, Thurston. (See Hastings and Matheny.)						
Mathis, August, Chicago, Ill., assignor to Mathis Brothers Company. Pressure-blower	856,171	June 4	1389	293	128	2043
Mathis Brothers Company. (See Mathis, August, assignor.)						
Mattar, Stephan, Leipzig, and R. Funcke, Lorch, Germany. Manufacturing means from wood-tar for preventing dust on streets, roads, and the like	855,860	June 4	813	.....	128	1900
Mattausch, Karl, Ketzelsdorf, near Königinhof, Austria-Hungary, assignor to Felten & Guilleaume-Lahmeyer-Werke Actien Gesellschaft, Mülheim-on-the-Rhine, Germany. Drawing-hook for warp-threads in weaving-looms	855,521	June 4	151	30	128	1733
Matthews, George, Granville, Ohio. Automatic switch	856,892	June 11	2822	588–9	128	2442
Matthews, Henry E., Salida, Colo. Railway-tie	855,960	June 4	998	209	128	1945
Matthews, Malcolm C., Chicago, Ill. Tramway-switch	856,715	June 11	2513	516	128	2364
Mattocks, Homer H., Stella, N. C. Nail-extractor	855,522	June 4	151	30	128	1733
Maud, Charles E., Monterey, Cal. Explosive-engine	856,647	June 11	2384	491	128	2332
Maul, Christian, assignor to Johnston Harvester Company, Batavia, N. Y. Back-wing support for grain-binders	857,950	June 25	4891	1034	128	3033
Maxim, Hudson, Brooklyn, N. Y. Cartridge. (Reissue)	12,660	June 11	3046	642	128	2498
May, Elihu, Magee, Miss. Baling-press	857,086	June 18	3216	677	128	2580
Mayer, Adolph, New York, N. Y. Hat	857,644	June 25	4281	904	128	2880
Mayer, Emma, Sunbury, Pa. Garment-hanger	857,645	June 25	4282	904	128	2880
Mayer, Frederic W., assignor to Perfected Self-Lighting Mantle Company, New York, N. Y. Producing self-lighting gas-mantles	855,798	June 4	680	.....	128	1868
Mayer, Moritz, New York, N. Y. Metal sign	857,646	June 25	4283	904	128	2880
Mayer, Otto G., Stuttgart, Germany. Compass-handle-adjusting device	857,185	June 18	3403	718	128	2628
Mayer, Walter S., assignor to Machen & Mayer Electrical Manufacturing Company, Philadelphia, Pa. Electric snap-switch	857,087	June 18	3217	677	128	2580
Mayer, Walter S., assignor to Machen & Mayer Electrical Manufacturing Company, Philadelphia, Pa. Electric switch	857,186	June 18	3404	718	128	2628
Mayer, Wilhelm, assignor to Fried. Krupp Aktiengesellschaft, Essen-on-the-Ruhr, Germany. Ammunition-vehicle	857,246	June 18	3504	740	128	2653
Mayo, William C., and J. Houlehan, assignors of one-third to G. E. Briggs, El Paso, Tex. Starter for electric motors	856,540	June 11	2167	446–7	128	2276
Mayville, Peter M., Green Bay, Wis. Rifle attachment	855,648	June 4	388	80	128	1793
Mazer, Alfred M., Jeannette, Pa. Projectile	855,466	June 4	46	11	128	1706
Mazey, John T., Coventry, England. Draft device for furnaces	857,354	June 18	3711	784	128	2706
McAlpine, Adam H., Columbus, Ohio. Meter	855,473	June 4	59	13	128	1709
McArdle, John, San Francisco, Cal. Vessel	857,478	June 18	3948	838–9	128	2764
McBride, William, assignor to Thomas Laughlin Company, Portland, Me. Anchor	857,094	June 18	3233	680	128	2584
McCall, Thaddeus D., Chicago, Ill. Receptacle-cover	857,746	June 25	4485	946	128	2932
McCann, Joseph L. (See Bishop and McCann.)						
McCarroll, William J., assignor to Burnham, Williams & Co., Philadelphia, Pa. Means for hydraulically operating valves and cocks	856,981	June 11	2093	630	128	2484
McCarty, Francis J., deceased; H. A. McCarty, administrator, assignor to McCarty Wireless Telephone Co., San Francisco, Cal. Wireless telephone	857,530	June 18	4046	861	128	2790
McCarty, Henry A., administrator. (See McCarty, Francis J.)						
McCarty, Lewis C. (See McCarty, Thomas F. and L. C.)						
McCarty, Thomas F. and L. C., Fall Creek township, Hamilton county, Ind. Clod-fender adjuster	857,095	June 18	3254	680	128	2584
McCarty Wireless Telephone Co. (See McCarty, Francis J., assignor.)						
McCaskey Register Company. (See Staples, Albert F., assignor.)						
McCauley, William T., Osgoode, Ontario, Canada. Mud-guard for vehicles	857,747	June 25	4487	947	128	2933
McCaulley, Frank F., Sistersville, W. Va. Swing	857,653	June 25	4292	906	128	2882
McCaveny, John C., Superior, Wis. Pneumatic hammer	858,200	June 25	5409	1152	128	3165
McClain, Andrew F., Syracuse, N. Y., assignor of five-eighths to T. M. Dix, Chelmsford, Mass. Making salt	856,507	June 11	2283	470	128	2306
McClean Arms and Ordnance Company. (See McClean, Samuel N., assignor.)						
McClean, Samuel N., assignor to McClean Arms and Ordnance Company, Cleveland, Ohio. Breech-operating mechanism for ordnance	856,653	June 11	2397	493–4	128	2334
McClintock, Charles, Elwood, Ind. Convertible halter and twitch	856,415	June 11	1946	399–400	128	2221
McClintock, Edward H., West Somerville, assignor of three-fourths to E. B. Martin, J. D. Crosby, C. S. Day, and A. S. Martin, Boston, Mass. Mold for plastic material	856,982	June 11	2995	630	128	2484
McClure, Edward, assignor of one-half to F. P. Smith, Chicago, Ill. Building construction	857,821	June 25	4035	983	128	2909
McClure, Ernest. (See Newman, Albert T., assignor.)						
McClure, Joseph H. (See Taylor, Alfred J., assignor.)						
McClure, Joseph H. (See Taylor and McClure.)						
McCord, Alvin C., Chicago, Ill. Conveying system	857,096	June 18	3235	680	128	2584
McCormack, Frank J., Milwaukee, Wis. Toy	857,097	June 18	3238	681	128	2586
McCormick, Bradley T., Cincinnati, Ohio, assignor to Bullock Electric Manufacturing Company. Dynamo-electric machine	858,097	June 25	5229	1108–9	128	3120
McCormick, Thomas, and A. Miller, Mount Pleasant, assignors of three-fifths to G. A. Schaefer, J. F. Miller, H. H. Schaefer, and W. J. Keist, Allegheny, Pa. Carburetor	856,654	June 11	2401	494	128	2335
McCormick, Washington, Hillyard, Wash. Tube expanding and beading tool	856,896	June 11	2834	591	128	2444
McCoy, Bradley C., Pontiac, Mich. Planting-machine	858,201	June 25	5410	1152–3	128	3165
McCoy, Elijah, and C. H. H. Wheeler, said McCoy assignor to N. S. Praigg, Detroit, Mich. Scaffold-support	856,084	June 4	1206	255	128	1997
McCoy, George J., Fossil, Oreg. Vehicle-reach	857,822	June 25	4037	984	128	2970
McCracken, Charles C., McComb, Ohio. Window-cleaner	856,267	June 11	1643	341	128	2143
McCracken, Isaac E., Wilkinsburg, Pa., and E. S. Woods, assignors to J. L. Woods, Chicago, Ill. Steel-tired wheel	856,598	June 11	2284	470	128	2307
McCurdy, Charles M. (See Knopf, Albert H., assignor.)						
McDonald, John, Blair, assignor of one-half to P. Herpolsheimer, Seward, Nebr. Valve-gear	855,654	June 4	397	83	128	1795
McDonald, William, Claremont, Minn. Door-hanger	856,796	June 11	2960	548	128	2402
McElfatrick, Samuel, Princeton, Ky. Railway-track clamp	857,479	June 18	3951	840	128	2765
McElroy, James F., assignor to Consolidated Car Heating Company, Albany, N. Y. Electric regulating device	855,723	June 4	532	112	128	1831
McGiffert, John R., assignor to Clyde Iron Works, Duluth, Minn. Log-loader	857,188	June 18	3410	719	128	2630
McGiffert, John R., assignor to Clyde Iron Works, Duluth, Minn. Log-loader	857,654	June 25	4293	907	128	2883
McGiffert, John R., assignor to Clyde Iron Works, Duluth, Minn. Frame for log-loaders	857,655	June 25	4296	907	128	2884
McGill, George W., New York, N. Y. Metallic paper-fastener	857,748	June 25	4488	947	128	2933
McGill, George W., Riverdale-on-Hudson, N. Y. Metallic fastener	857,749	June 25	4490	947	128	2933

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McGregor, Thomas A., Halcyondale, Ga. Sap-cup hook	857,823	June 25	4038	984	128	2970
McIntire, George A., assignor of one-half to C. F. Dalton, Port Chester, N. Y. Wrench	858,357	June 25	5724	1220	128	3250
McIntire, Hervey H., South Bend, Ind. Photographic-printing machine	856,716	June 11	2514	517	128	2364
McIntire, Hervey H., South Bend, Ind. Timing device	856,717	June 11	2517	517	128	2365
McIntosh, John T., Chicago, assignor of one-third to C. H. Roberts, Evanston, Ill. Automatic safety stop device for electric vehicles	857,890	June 25	4755	1010	128	2907
McIntyre, Robert S., Riverside, Cal. Automobile driving-gear	858,202	June 25	5413	1153–4	128	3166
McKee, Edwin F., and E. Oftedahl, St. Louis, Mo. Eyeglasses	856,897	June 11	2836	592	128	2445
McKee, Milton A., assignor to C. B. Cottrell & Sons Company, New York, N. Y., and Stonington, Conn. Printing-plate and preparing the same	857,531	June 18	4048	861–2	128	2791
McKeen, William R., Jr., Omaha, Nebr. Clutch	855,524	June 4	155	30–1	128	1734
McLarty, Archie P., Denver, Colo. Hydraulic clamp	856,416	June 11	1947	400–1	128	2222
McLaughlin, George W., Hoquiam, Wash. Gage	855,964	June 4	1003	210	128	1947
McLean, Archie, Rowland, N. C. Horse-releaser	857,189	June 18	3413	719	128	2631
McLean, Edmund S., Tower Hill, Ill. Lamp-burner	856,358	June 11	1833	376	128	2194
McLeroy, Frank M., Gainesville, Ga. Plumb-level	857,891	June 25	4761	1010	128	2909
McLimans, James L., Sherburn, Minn. Tile-molding machine	858,303	June 25	5589	1195	128	3210
McMahon, Francis, Cambridge, Mass. Ingot-mold	855,555	June 4	399	84	128	1796
McMaster, Samuel O., Rochester, N. Y. Button-turning machinery	855,901	June 4	897	186	128	1921
McMichael, Samuel, Newark, N. J., assignor of one-half to C. C. Diboll, New Orleans, La. Combined easel and plate-holder	856,797	June 11	2661	548	128	2402
McMillan, John L., Syracuse, N. Y. Loose-leaf binder	857,252	June 18	3511	742	128	2655
McMillan, John L., Syracuse, N. Y. Loose-leaf binder	857,253	June 18	3514	743	128	2656
McMillan, John L., Syracuse, N. Y. Loose-leaf binder	857,254	June 18	3516	743	128	2656
McMillin, Frank B., and M. F. Morrissey, Mount Gilead, Ohio. Valve	856,655	June 11	2403	494–5	128	2336
McNabb, John G., Sonora, Cal. Buckle	857,297	June 18	3608	763	128	2680
McNally, Philip T., Mandan, N. D. Electrical cut-out	856,085	June 4	1209	256	128	1998
McNamara, James, Montreal, Quebec, Canada, assignor to Mergenthaler Linotype Company. Monoline-machine	856,898	June 11	2837	592	128	2445
McNamara, James H., Chicago, Ill. Trunk-leg attachment	856,718	June 11	2519	518	128	2366
McNamara, Thomas J., Jr., and G. Krummen, assignors to Phoenix Carriage Co., Cincinnati, Ohio. Adjustable back for cushion-seats	855,656	June 4	401	84	128	1797
McNeal, Luther C., Rochester, N. Y. Needle-holder	857,824	June 25	4040	984	128	2970
McNees, John N., Hughesville, Mo. Grain-bin ventilator, grain-sampler, and weevil-exterminator	857,098	June 18	3239	681	128	2586
McNeil, Chester, Chicago, Ill., and C. L. Sturtevant, Washington, D. C., assignors to Union Special Sewing Machine Company, Chicago, Ill. Sewing-machine	857,532	June 18	4050	862–3	128	2794
McNeil, Hector P. (See Bell and McNeil.)						
McNeill, John F., Melbourne, Victoria, Australia. Gate	857,099	June 18	3240	681	128	2586
McNutt, William H., New York, N. Y. Safety can-nozzle	855,525	June 4	156	31	128	1734
McPeek, John B., Pine Grove, W. Va. Writing-tablet	855,965	June 4	1004	210	128	1947
McQueen, Daniel P., Saratoga Springs, N. Y. Metallic tie for railways	857,656	June 25	4299	908	128	2885
McReynolds, Samuel L., Boise, Idaho. Yielding draft attachment for vehicles	855,724	June 4	535	112	128	1831
McVoy, Charles L., Pensacola, Fla. Rail-joint	856,086	June 4	1211	256	128	1999
McVoy, Charles L., Pensacola, Fla. Rail-joint	856,087	June 4	1212	256	128	1999
McWhorter, Alfred D., Atlanta, Ga. Valve	856,899	June 11	2839	592–3	128	2445
Meacham, Larned E. (See Meacham, William M. and L. E.)						
Meacham, William M. and L. E., Chicago, Ill. Water-conveyance	857,951	June 25	4892	1034	128	3033
Mead, Willard T., Buffalo, N. Y. Photographic-printing machine	857,952	June 25	4897	1035	128	3034
Meats, John T., and G. E. Chandler, assignors to Mason Machine Works, Taunton, Mass. Rotary ring spinning or twisting apparatus	857,088	June 18	3220	677	128	2581
Mechanical Rubber Company. (See Sanders, Walter E., assignor.)						
Meehan, John J., Denver, Colo. Safety-razor	856,172	June 4	1390	293	128	2044
Mehaffey, Kirkham, Williamsport, Ind. Wire-cloth reel	857,099	June 18	3222	677	128	2581
Meinecke, Fritz K. T., Philadelphia, Pa. Toy animal	858,090	June 25	5214	1105	128	3116
Meinert, John. (See Lindsay and Meinert.)						
Meisel, Francis, Dorchester, Mass. Lubricating device	855,467	June 4	49	11	128	1707
Melenbacker, Henry W. (See Haan, Gilbert T., assignor.)						
Melland-Smith, Joseph, London, England. Coupling for railway and other vehicles	855,649	June 4	389	81	128	1794
Meloon, Jonathan C., Providence, R. I., assignor to General Fire Extinguisher Company, New York, N. Y. Dry-pipe valve	857,187	June 18	3407	718	128	2629
Memphis Column Company. (See Neudorff, Fredrick, assignor.)						
Menefee, Robert A., Albright, W. Va. Device for handling and scalding hogs	856,893	June 11	2824	589	128	2442
Menne, Adolph E., assignor to Cöln-Musener-Bergwerks-Actien-Verein, Crenzthal, Germany. Apparatus for fusing metals	857,247	June 18	3505	741	128	2654
Mercer, Frederick D., Toronto Junction, Ontario, Canada. Tension-regulating means for belts	855,899	June 4	893	184	128	1920
Merck, Firm of E. (See Conrad, Max, assignor.)						
Meredith, Jaquelin M., Jr., Norfolk, Va. Fish scaling and slitting machine	857,884	June 25	4741	1007	128	2904
Mergenthaler Linotype Company. (See Bedell, Richard M., assignor.)						
Mergenthaler Linotype Company. (See McNamara, James, assignor.)						
Mermod Frères. (See Bonnet, Ernest, assignor.)						
Merrell, Cyrus W., *et al.* (See Wetherbee, Herbert E., assignor.)						
Merrell, Irving S., assignor to Merrell-Soule Company, Syracuse, N. Y. Pea-separating machine	856,356	June 11	1827	376	128	2192
Merrell, Irving S., assignor to Merrell-Soule Company, Syracuse, N. Y. Corn-silking machine	856,894	June 11	2825	589	128	2443
Merrell-Soule Company. (See Merrell, Irving S., assignor.)						
Merrick, Lycortes D., New York, N. Y. Aerial vessel	856,895	June 11	2827	590–1	128	2443
Merrick, William, Hartford, Conn. Horseshoe-calk	855,717	June 4	520	109	128	1828
Merrill, Charles W., Lead, S. D. Container for pressure-filters	856,596	June 11	2280	469–70	128	2305
Merring, Manning D., East Stroudsburg, Pa. Door-fastener	855,961	June 4	999	209	128	1946
Merritt, Benjamin F., East Orange, N. J., assignor to New York Telephone Company. Elapsed-time stamp	855,900	June 4	895	185–6	128	1920
Merriweather, Frederick W., Kansas City, Mo. Latch	858,091	June 25	5215	1105	128	3116
Mershon, Ralph D., New York, N. Y. Alternating-current machine	857,953	June 25	4900	1035–6	128	3035
Mertens, Eduard, Gross-Lichterfelde, near Berlin, Germany. Rotary printing-machine	856,079	June 4	1199	254	128	1996
Mesinger, Frederick, New York, N. Y. Tire	857,745	June 25	4485	946	128	2932
Messiter, Edwin H., New York, N. Y. Apparatus for reclaiming loose materials	858,008	June 25	5040	1065–6	128	3071
Metcalf, William B., Humboldt, Nebr. Corn-husking machine	857,565	June 18	4126	874–5	128	2808
Metropolitan Engineering Company. (See Sprong, Severn D., assignor.)						
Metz, Herman A., Brooklyn, N. Y., and P. S. Clarkson, Beverly, N. J. Bleaching oils and fats	856,357	June 11	1829	.....	128	2192
Mey, Frederick H. C., Buffalo, N. Y. Pneumatic malting and pneumatic drying apparatus	857,954	June 25	4904	1036–7	128	3036
Meyer, Albert, and F. N. Rogers, Seattle, Wash. Means for projecting and anchoring life-lines	858,009	June 25	5044	1066	128	3072
Meyer, Albert G., assignor of two-fifths to H. R. Newbauer, San Francisco, Cal. Treating creosote and product thereof	856,975	June 11	2984	.....	128	2481

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Meyer, Henry. (See Kline, Henry E., assignor.)						
Meyer, Willy, Hameln, Germany. Seed-separator	857,248	June 18	3506	741	128	2654
Meyers, Charles L., Jersey City, N. J. Braid-packet	857,293	June 18	3602	762	128	2679
Meyrowitz, Emil B., New York, N. Y. Eyeglasses	856,080	June 4	1200	254	128	1996
Michigan Lubricator Co. (See Bryant, William E., assignor.)						
Micklewood, Edmund H., and H. Whidbourne, Plymouth, England. Internal-combustion engine	856,790	June 11	2648	545	128	2399
Middleton, George, assignor to Middleton Pneumatic Hub Company, (1906,) Limited, London, England. Pneumatic hub for vehicles	857,092	June 18	3231	679	128	2583
Middleton Pneumatic Hub Company, (1906.) (See Middleton, George, assignor.)						
Midgley, Thomas, Hartford, Conn. Wheel-tire	855,468	June 4	50	12	128	1707
Midgley, Thomas, Hartford, Conn. Vehicle-wheel	856,081	June 4	1202	255	128	1996
Miesse, Americus, assignor of three-fourths to F. D. Carpenter, F. D. Closser, F. W. Drake, W. H. Hay, R. H. Carpenter, H. M., J. W., and J. F. Reed, Lima, Ohio. Headlight	857,249	June 18	3507	741	128	2654
Milburn, William M., Sherman, assignor of two-thirds to D. H. Bailey and S. W. Ruyle, Grayson county, Tex. Ice-cream freezer	856,648	June 11	2386	491	128	2332
Miller, Ananias. (See McCormick and Miller.)						
Miller, Charles A., Vernon, Fla. Musical-chord indicator	857,955	June 25	4908	1037	128	3036
Miller, Emil F., Chicago, Ill. Automatic controller for dampers	857,648	June 25	4285	905	128	2881
Miller, George F., Brooklyn, assignor to American Can Company, New York, N. Y. Sheet-metal type-ribbon spool or holder	857,818	June 25	4432	982	128	2909
Miller, George T., Jamisonville, Pa. Gasket-cutter	857,647	June 25	4284	905	128	2881
Miller, Hezekiah, Fort Morgan, assignor of one-half to I. C. Ferree, Sterling, Colo. Nut-lock	856,976	June 11	2985	625	128	2481
Miller, John A., Tarrytown, N. Y. Speed-controlling mechanism for explosive-motors	855,582	June 4	263	53–4	128	1762
Miller, John F., Trail, British Columbia, Canada. Electrolytic tank	856,277	June 11	1620	337	128	2138
Miller, John F., Trail, British Columbia, Canada. Lining tanks for electrolytic work	857,886	June 25	4743	1007	128	2994
Miller, John F., assignor of one-half to W. H. Aldridge, Trail, British Columbia, Canada. Apparatus for casting metal sheets	857,885	June 25	4742	1007	128	2994
Miller, Joseph, *et al.* (See Green, Gustavus, assignor.)						
Miller, Josiah F., *et al.* (See McCormick and Miller, assignors.)						
Miller, Lewis, Elwood, Ind. Stove	857,649	June 25	4286	905	128	2881
Miller, Otto, and P. Kunzinger, Brooklyn, N. Y. Alarm-lock	855,469	June 4	51	12	128	1707
Miller, Rosella E., Pitcairn, Pa. Refrigerator	857,887	June 25	4745	1008	128	2994
Miller, Sidney W., Chicago, Ill. Plural alternating siphon	857,355	June 18	3712	784–5	128	2706
Miller, Theodore H., Poughkeepsie, N. Y. Centrifugal machine	855,718	June 4	522	109–10	128	1828
Miller, William L., assignor of one-half to F. A. Gale, Chicago, Ill. Apparatus for blowing off, washing, and recharging boilers	858,198	June 25	5406	1152	128	3164
Miller, Wilson W., Newton, Kans. Stacker	855,650	June 4	391	82	128	1794
Millers Falls Co. *et al.* (See Leland, John A., assignor.)						
Millior, Daniel, Paris, France. Generating and carbureting apparatus	858,092	June 25	5216	1105–6	128	3117
Mills Novelty Company. (See Sandell, Henry K., assignor.)						
Milne, William A., Brown's Corners, Ontario, Canada. Tubular conveyer for peat-collecting machines	855,651	June 4	394	82	128	1795
Milton, John, Washington, D. C. Device for feeding air to locomotive and other furnaces	856,541	June 11	2171	447	128	2277
Mincer, Louis L., Rochester, N. Y. Eyeglasses	855,861	June 4	814	169–70	128	1900
Mingus, Everett, Marshfield, Oreg. Anchor-projectile	856,791	June 11	2651	546	128	2400
Minimax Consolidated. (See Graf, Raimund, assignor.)						
Minto, James D., and J. Kelly, Providence, R. I. Air cooling and humidifying apparatus	855,719	June 4	524	110	128	1829
Mitchell, Augustus R. (See Dorsey and Mitchell.)						
Mitchell, Charles H., and J. F. Wineland, Crafton, Pa. Refrigerator	855,962	June 4	1000	209	128	1946
Mitchell, Charles P., Arlington Heights, Mass. Package	856,173	June 4	1392	293	128	2044
Mitchell, John F., Topeka, Kans. Fluid-pressure engine	855,799	June 4	681	139–40	128	1868
Mitchell, John H., New York, N. Y. Nautical velocipede	858,093	June 25	5220	1106	128	3117
Mitchill, Joseph D., Apopka, Fla. Non-refillable bottle	855,800	June 4	684	140–1	128	1869
Mittelstrass, Carl, Hermsdorf, and A. Frank, Berlin, Germany, assignors to General Electric Company. Motor-controlling device	855,470	June 4	54	12	128	1708
Mix, Edgar W., Paris, France, assignor to General Electric Company. Insulating-stud and making the same	855,471	June 4	56	13	128	1708
Modjeski, Felix B., Chicago, Ill. Stairway	858,199	June 25	5408	1152	128	3164
Moews, Paul, Detroit, Mich. Mounting for eyeglasses or spectacles	857,650	June 25	4288	906	128	2882
Mohawk Brush Company. (See Aufsesser, Ferdinand M., assignor.)						
Mohrbacher, Adolph, Cripple Creek, Colo. Adjustable drill-support	857,529	June 18	4044	861	128	2789
Mohrbacher, Godfrey L. (See Fling, Robert G., assignor.)						
Molas, Jean, assignor of one-half to J. A. Smeeton, London, England. Reversible turbine	857,090	June 18	3223	678	128	2582
Moline, Charles A., Bancroft, Iowa. Propeller for boats	858,010	June 25	5044	1067	128	3072
Möller, Fritz, Hamburg, Germany. Brake and buffer	857,651	June 25	4289	906	128	2882
Molloy, James T., Albion, Iowa. Can for incubator-lamps	855,523	June 4	152	30	128	1733
Monarch Coated Paper Company. (See Newbery, Reed, and Kuhlkin, assignors.)						
Monarch Manufacturing Company. (See Lewis, Lewis C., assignor.)						
Monarch Seal Company. (See Schmitt, Edward D., assignor.)						
Monks, Archibald G., Brookline, Mass. Grab	856,413	June 11	1942	399	128	2220
Monolithic Duct Company. (See Boyle, James M., assignor.)						
Monte, Cipriano D., deceased, San Francisco, Cal.; V. J. Monte, administratrix. Apparatus for removing the skins of fruits and vegetables	858,094	June 25	5221	1107	128	3118
Monte, Cipriano D., deceased; V. J. Monte, administratrix, Woodland, Cal. Peeling of fruits and vegetables	858,095	June 25	5223	1107	128	3118
Monte, Virginia J., administratrix. (See Monte, Cipriano D.)						
Montgomery, David M., Fleetwood, Pa. Seam for ball-covers, &c	857,294	June 18	3603	763	128	2679
Moody, Edward W., Lewistown, Mont. Ditching-plow	855,720	June 4	526	110–11	128	1829
Mooney, Thomas H., Houston, Tex. Flexible stay-bolt	856,977	June 11	2986	626	128	2481
Mooney, William, Philadelphia, Pa. Vending-machine	856,278	June 11	1622	337	128	2138
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Co., New York, N. Y. Gas-valve	858,801	June 4	688	141	128	1870
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Co., New York, N. Y. Automatic gas-feed for vacuum-tube lamps	856,483	June 11	2065	425	128	2252
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Co., New York, N. Y. Automatic gas-feed for vacuum-tubes	856,484	June 11	2067	425	128	2252
Moore Electrical Co. (See Moore, Daniel M., assignor.)						
Moore, George N., assignor to J. Nathan, New York, N. Y. Bathing-chair	856,279	June 11	1623	338	128	2139
Moore, Harry R., Wichita, Kans. Binder for loose-leaf ledgers	857,250	June 18	3508	742	128	2655
Moore, Jefferson B. (See Nance, Joseph J., assignor.)						
Moore, John N. B., Ipswich, England. Wheel for cycles, motor-cars, carriages, and other vehicles	857,091	June 18	3228	679	128	2583
Moore, John O., and J. I. Johnson, Culverton, Ga. Crate-body for wagons	855,721	June 4	529	111	128	1830
Moore, Louis E., and G. J. Costello, Philadelphia, Pa. Drilling device	856,792	June 11	2653	546	128	2400
Moore, Morris W., assignor to Atlantis Fountain Pen Company, Everett, Mass. Fountain-pen	856,082	June 4	1204	255	128	1996
Moore, William J., Washington, D. C. Safety-razor	856,793	June 11	2654	546	128	2401

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Morden, Lucena, M., Waterbury, Conn. Loose-leaf perforator	857,888	June 25	4746	1008	128	2995
Morehouse, William H., Portland, Oreg. Hammock-support	857,819	June 25	4633	983	128	2909
Morey, William, Jr., New York, N. Y. Internal-combustion engine	857,410	June 18	3814	809	128	2731
Morgan, David J. (See Gribben, John, assignor.)						
Morgan Engineering Company. (See Broaius, Edgar E., assignor.)						
Morgan Engineering Company. (See Taylor, Clarence L., assignor.)						
Morgan, Robert, assignor of one-half to E. E. Kolochney, Ellsworth, Kans. Piano-player	856,794	June 11	2656	546–7	128	2401
Morgan, Windfrey S., Lewisville, Ark. Hand fertilizer-distributer	856,485	June 11	2069	425	128	2262
Mori, Herman, Hartville, Ohio. Drain-tile	855,652	June 4	395	83	128	1795
Morith, Joseph G. (See Siegrist, Benjamin F., assignor.)						
Morley, Edgar L. (See Hatzel and Morley.)						
Morley Manufacturing Company. (See Cushman, Albert H., assignor.)						
Morrill, Henry M. and F. A. Randall, Tekonsha, Mich. Combination farm-rack	858,347	June 25	5683	1215	128	3239
Morris, G. Alfred. (See Hughes and Young, assignors.)						
Morris, Ora A., Salem, Ind. Coupling	856,795	June 11	2658	547–8	128	2401
Morris, William J., Waurika, Okla. Ter. Music-chart	856,358	June 11	1830	376	128	2192
Morrison, John L., Joliet, Ill. Collapsible pail	855,963	June 4	1001	210	128	1946
Morrison, Okey J. (See Sanford, Charles L., assignor.)						
Morrissey, Michael F. (See McMillin and Morrissey.)						
Morse, Frank H. G., Malden, Mass. Receptacle-opener	856,280	June 11	1624	338	128	2139
Morse, Frank H. G., Cambridge, Mass. Box	856,281	June 11	1626	338	128	2139
Morse, Lester L., San Francisco, Cal. Seed-display rack	855,862	June 4	816	170	128	1900
Morton, Henry E. (See Morton, Matthew and H. E.)						
Morton, Matthew and H. E., Muskegon Heights, Mich. Work-holder for shapers or planers	855,583	June 4	265	54	128	1763
Morton, Thomas, Crompton, R. I. Rotary cutter-shaft for pile-cutting machines	857,356	June 18	3717	785	128	2707
Morton, Thomas A. (See Hubbard and Morton.)						
Moseley, Frederick W., St. Hyacinthe, Quebec, Canada. Game device	857,411	June 18	3816	809	128	2731
Moses, Herbert B., New York, N. Y. Hose-supporter	857,251	June 18	3510	742	128	2655
Mosher, Walter R., Granville, N. Y. Grain-bag holder	857,820	June 25	4634	983	128	2909
Moss, Myer, assignor to A. Knickle, Lunenburg, Nova Scotia, Canada. Wrist-protector	856,282	June 11	1628	338	128	2140
Mott, John F., Cleveland, Ohio. Horse-collar	856,649	June 11	2388	492	128	2332
Motz, Heinrich, and E. Müller, Düsseldorf, assignors to Rheinische Metallwarenund Maschinen Fabrik, Düsseldorf-Derendorf, Germany. Fluid-recoil brake for guns	856,174	June 4	1394	294	128	2044
Mowat, Oliver M., McKeesport, assignor to National Tube Company, Pittsburg, Pa. Tap-grinding machine	856,978	June 11	2987	626	128	2482
Mowbray, William J., New York, N. Y. Meter	858,011	June 25	5046	1067	128	3073
Mudge, Charles A., New York, N. Y., assignor to Electro-Dynamic Company, Bayonne, N. J. Dynamo-electric machine	856,414	June 11	1944	399	128	2221
Mudge, Henry H., Bristol, R. I. Bolt	857,295	June 18	3604	763	128	2679
Muehleisen, Thomas, San Diego, Cal. Hydrocarbon-burner	857,652	June 25	4291	906	128	2882
Mueller, Henry, assignor to H. Mueller Manufacturing Company, Decatur, Ill. By-pass and waste for tapping-machines	856,650	June 11	2390	492	128	2333
Mueller, Henry, assignor to H. Mueller Manufacturing Company, Decatur, Ill. Pipe connection	857,956	June 25	4911	1037	128	3037
Mueller, Henry, assignor to H. Mueller Manufacturing Company, Decatur Ill. Index for cocks	857,957	June 25	4913	1038	128	3037
Muir, James, Springfield, Mass. Composite building-block	856,176	June 4	1396	294–5	128	2045
Mulcahy, Bertha, San Jose, Cal. Hat-fastener	855,722	June 4	531	112	128	1830
Muller, Edward A., Madisonville, assignor to King Machine Tool Company, Winton Place, Ohio. Speed-changing mechanism	857,357	June 18	3719	785	128	2708
Muller, Edward A., Madisonville, assignor to King Machine Tool Company, Winton Place, Ohio. Tool-holding device	857,358	June 18	3721	786	128	2708
Müller, Emil. (See Motz and Müller.)						
Müller, Friederich, Elizabeth, N. J. Power-transmitter	856,283	June 11	1629	339	128	2140
Müller, Heinrich J., Schaffhausen, Switzerland. Ticket-case	855,653	June 4	396	83	128	1795
Mumford, Joseph F., Philadelphia, Pa. Brush	856,284	June 11	1638	340	128	2142
Muncie Auto Parts Company. (See Hooke, Harvey L., assignor.)						
Munger, Leroy S., Humboldt, Kans. Adding-machine	857,889	June 25	4748	1008–10	128	2995
Munsing, George D., New York, N. Y. Speed-changing mechanism	857,476	June 18	3943	838	128	2762
Munzner, Max, Los Angeles, Cal. Transit	856,979	June 11	2988	627	128	2482
Murdock, Charles A. and C. F., assignors to E. H. Sloman, Detroit, Mich. Rocker-press for shaping metal	858,096	June 25	5225	1107–8	128	3119
Murdock, Charles F. (See Murdock, Charles A. and C. F.)						
Murdock, George J., Newark, N. J. Pumping apparatus	857,477	June 18	3946	838	128	2763
Muren, Albert L., Belleville, Ill. Changeable-speed gearing	857,958	June 25	4914	1038	128	3037
Murphy, A. J. (See Rife, Charles E., assignor.)						
Murphy, Albert C., assignor to Standard Railway Equipment Company, East St. Louis, Ill. Pneumatic drill	856,285	June 11	1639	340	128	2142
Murphy, John J., assignor to Hopkins & Allen Arms Co., Norwich, Conn. Firearm	856,286	June 11	1643	340	128	2143
Murphy, Peter H., St. Louis, Mo. Pneumatic drill	856,083	June 4	1205	255	128	1997
Murphy, Peter H., St. Louis, Mo. Pneumatic drill	856,651	June 11	2391	492–3	128	2333
Murphy, Peter H., St. Louis, Mo. Reversing-valve	856,652	June 11	2395	493	128	2334
Murray, James E., McKeesport, Pa. Vehicle wheel and axle	857,296	June 18	3606	763	128	2680
Murray, Robert J., Cambridge, Mass. Hammer-supporting flange for piano-actions	857,359	June 18	3722	786	128	2708
Murrin, Terrence, assignor to C. J. De Boor and D. Gelder, Chicago, Ill. Smoke-consuming furnace	858,012	June 25	5050	1068	128	3073
Musgrove, Robert G., Jackson, Miss. Railway-rail fastening	855,472	June 4	58	13	128	1709
Myers, Ebenezer. (See Skinner and Myers.)						
Myers, George F., Columbus, Ohio, assignor to J. C. Pennie, Montclair, N. J. Coke-working apparatus	856,980	June 11	2991	627–9	128	2483
Myers, Harry H., Hoboken, N. J., assignor of one-half to R. C. Macke. Memorandum-tablet for telephones	856,177	June 4	1398	295–6	128	2045
Myers, Henry B., Marshfield, Mo. Railway cattle-guard	857,093	June 18	3232	680	128	2584
Nagle, William E., Wilmerding, Pa. Shearing-knife	856,719	June 11	2520	518	128	2366
Nahlik, Georg, Budapest, Austria-Hungary. Apparatus for addition	856,360	June 11	1835	377	128	2194
Nance, Joseph J., assignor of one-half to J. B. Moore, Ozona, Tex. Animal-trap	857,892	June 25	4762	1011	128	3000
Nason, Richard M. (See Holland, George N., assignor.)						
Nathan, Joseph. (See Moore, George N., assignor.)						
National Binding Machine Company. (See Elliott, Sterling, assignor.)						
National Brake and Clutch Company. (See Apple, Vincent G., assignor.)						
National Compositype Company. (See Brown, Hanrahan, and Boyden, assignors.)						
National Dump Car Company. (See Otis, Spencer, assignor.)						
National Engineering Co. (See Cowles, Burton S., assignor.)						
National Gas Drill Company. (See White and Duryea, assignors.)						
National Malleable Castings Company. (See Baxley, Arthur J., assignor.)						
National Tube Company. (See Bashr and Lynch, assignors.)						
National Tube Company. (See Mowat, Oliver M., assignor.)						
Neal, Robert H. (See Hutson and Neal.)						
Neale David, near Fort Calhoun, Nebr. Anchor-revetment for shores or banks	855,584	June 4	266	54	128	1763

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Neale, David, near Fort Calhoun, Nebr. Cellulated fascine	855,585	June 4	271	55	128	1765
Needham, Leslie H., Des Moines, assignor to Mrs. J. M. Parker, Oskaloosa, Iowa. Hinge-plate for tilting posts	857,190	June 18	3414	720	128	2631
Nelburg, Gustave L., Westpoint, Nebr. Apparatus for electrochemically and mechanically purifying liquids	856,361	June 11	1836	377	128	2194
Nell, Harry E. (See Nell, Joseph B., assignor.)						
Nell, Joseph B., assignor of one-half to H. E. Nell, Filbert, S. C. Cotton-picker	856,178	June 4	1399	296	128	2045
Nelson, Frank E., Santa Barbara, Cal. Liquid-fuel-burning apparatus	857,657	June 25	4301	908	128	2885
Nelson, Frank J. (See Hague, Frank O., assignor.)						
Nelson, Frederick, Driscoll, N. D. Sweep-rake	857,412	June 18	3817	809	128	2732
Nelson, Frederick, Monoken, N. D. Mold for artificial stone	857,413	June 18	3820	810	128	2733
Nelson, George. (See Kayser, John W., assignor.)						
Nelson, Knute, Chicago, Ill. Pattern for ornamental posts	857,255	June 18	3518	743	128	2657
Neptune Meter Company. (See Gamon, Ernest E., assignor.)						
Neudorff, Fredrick, Sheffield, Ala., assignor to Memphis Column Company, Memphis, Tenn. Carriage-feed mechanism	856,656	June 11	2406	495	128	2337
Neuhard, Samuel A., assignor of two-thirds to W. J. Caldwell and H. W. Chamberlin, Milton, Pa. Railway-rail joint	855,725	June 4	536	113	128	1831
Neuman, Daniel. (See Orosz, Ludwig M., assignor.)						
Neuman, Nathan, Philadelphia, Pa. Neck and chest protector	856,720	June 11	2521	518	128	2366
Neville, Robert J., Nashville, Tenn. Car-door	857,360	June 18	3723	786	128	2709
New Era Machinery Company. (See Pierce, George H., assignor.)						
New Haven Clock Co. (See Porter, Wilson E., assignor.)						
New Jersey Patent Company. (See Aiken, Edward L., assignor.)						
New Jersey Patent Company. (See Aylsworth, Jonas W., assignor.)						
New Jersey Patent Company. (See Aylsworth and Dyer, assignors.)						
New Jersey Patent Company. (See Durand and Aiken, assignors.)						
New Jersey Patent Company. (See Edison, Thomas A., assignor.)						
New Jersey Screw Works. (See Hetherington, John, assignor.)						
New Jersey Wire Cloth Company. (See Scammell, Charles H., assignor.)						
New York Telephone Company. (See Merritt, Benjamin F., assignor.)						
Newbauer, Henry R. (See Meyer, Albert G., assignor.)						
Newbery, John W., Brooklyn, N. Y. Machine for marbling paper	855,474	June 4	61	13–14	128	1710
Newbery, John W., J. M. Reed, and M. T. Kuhlkin, New York, N. Y., assignors to Monarch Coated Paper Company. Machine for marbling paper	858,203	June 25	5416	1154–5	128	3166
Newell, Frederick W., Hastings-upon-Hudson, N. Y., assignor to Otis Elevator Company, Jersey City, N. J. Automatic motor-controlling apparatus	857,191	June 18	3415	720	128	2631
Newell, Thomas, Waterbury, assignor to American Pin Company, Waterville, Conn. Curtain-rod ornament	857,658	June 25	4303	908	128	2885
Newman, Albert T., assignor of one-half to E. McClure, Greeley, Kans. Water and gas separator	856,088	June 4	1213	257	128	1999
Newman, Frederick J., Chicago, Ill. Window-frame for flexible curtains	856,542	June 11	2173	447	128	2277
Newman, Frederick J., assignor to Woods Motor Vehicle Company, Chicago, Ill. Driving mechanism for automobiles	856,486	June 11	2071	426	128	2252
Newsome, Ben F. (See Petterson and Newsome.)						
Newton, George H., assignor to Brown and Sharpe Manufacturing Company, Providence, R. I. Screw-machine	857,893	June 25	4765	1011–13	128	3000
Newton Machine Tool Works. (See Hannum, Ellis J., assignor.)						
Nice, William, Jr., Ogontz, Pa. Ball-bearing	856,599	June 11	2286	470	128	2307
Nicholas, George E. (See Stump, Hollman, and Nicholas.)						
Nicholls, L. S., *et al.* (See Gourley, John L., assignor.)						
Nichols, Atherton B., Hastings, Minn. Interlocking building-block	855,657	June 4	402	84	128	1797
Nichols, Charles H., Ruby, Wis. Pump-rod coupling	857,659	June 25	4304	909	128	2885
Nichols, Henry B., Philadelphia, Pa. Grinding-machine	856,721	June 11	2522	518–19	128	2366
Nichols-Lintern Company. (See Lintern, William, assignor.) (Reissue.)						
Nichols, Robert W., assignor to J. F Fox, Indianapolis, Ind. Water-circulating means	856,900	June 11	2842	593	128	2446
Nicholson, George, Orangeville, Ontario, Canada. Pipe-wrench	857,825	June 25	4643	984	128	2971
Nicodemus, Abraham. (See Lippy and Nicodemus.)						
Niemann, Lewis B., Staplehurst, Nebr. Telephone system	857,480	June 18	3952	840	128	2765
Niles-Bement-Pond Company. (See Hagman, William J., assignor.)						
Nix, James L., Homer City, Pa. Thermostat	857,208	June 18	3609	764	128	2680
Nixholm, Calle P., Melrose, assignor of one-half to C. A. Nixholm, Butte, Mont. Lock	857,192	June 18	3418	720	128	2632
Nixholm, Carl A. (See Nixholm, Calle P., assignor.)						
Noble, Bion E. G., Baldwin, Me. Garment-supporter clasp	855,802	June 4	660	141	128	1871
Noe, Benjamin S., Berrien Center, Mich. Basket-machine	856,901	June 11	2843	594	128	2446
Nolan, George E., Chehalis, Wash. Bottle	856,543	June 11	2174	448	128	2278
Nolen, James G. (See Cook and Nolen.)						
Norcross, Levi W., Fort Worth, Tex. Piano-pedal	857,299	June 18	3610	764	128	2681
Norlund, Olof A., Williamsport, Pa. Ice-creeper	856,089	June 4	1215	257	128	2000
Norman, John E., Leicester, England. Manifolding device	857,100	June 18	3241	682	128	2586
Norman, William F., Nevada, Mo. Pipe-seaming machine	857,750	June 25	4492	948	128	2933
Norris, John R., Savannah, Ga. Rail-joint	856,090	June 4	1216	257	128	2000
Norstrom, Nils E., Junction City, assignor of two-thirds to J. Anderson, Salina, and M. E. Richardson, Sterling, Kans. Automatic telephone-exchange	857,959	June 25	4915	1038–41	128	3038
North Brothers Manufacturing Company. (See Aichele, Henry J., assignor.)						
North, Robert. (See Farquhar and North.)						
North, Thos. H., *et al.* (See Hanlon, Daniel B., assignor.)						
North, W. E., *et al.* (See Bishop and Mapes, assignors.)						
Northern Motor Car Company. (See King, Charles B., assignor.)						
Northwestern Expanded Metal Company. (See Rush, Amos W., assignor.)						
Norwood, John E., Baltimore, Md. Caster	857,660	June 25	4306	909	128	2886
Nourse, Harold A., St. Paul, Minn. Feed-hopper for poultry	855,526	June 4	158	31	128	1734
Novak, Frank J. (See Hart and Novak.)						
Noyes, Edward P., Winchester, Mass. Continuous-combustion generating apparatus	855,726	June 4	537	113	128	1832
Noyes, La Verne W., Chicago, Ill. Cross-arm for towers	857,101	June 18	3242	682	128	2587
Nugent, George, Toronto, Ontario, Canada. Track-sander	856,963	June 11	2997	630	128	2484
Nusum, Benjamin M., Grafton, W. Va. Reamer	857,661	June 25	4307	909	128	2886
O'Brien, Alexander J., assignor of one-half to C. A. Gault, Beloit, Wis. Oil-burner	856,798	June 11	2663	549	128	2403
O'Brien, Edward J., St. Louis, Mo., assignor to Proctor and Gamble Company. Apparatus for nuriing cylinders	855,658	June 4	404	85	128	1798
O'Brien, Walter A., assignor of one-half to W. R. Templeton, Boston, Mass. Float	855,659	June 4	408	85	128	1799
O'Conner, John P., and J. E. Wright, Omaha, Nebr. Stamp	856,799	June 11	2664	549	128	2403
O'Connor, John, assignor of one-half to Tyrone Realty Improvement Company, New York, N. Y. Music-leaf turner	858,204	June 25	5420	1155	128	3168
O'Reilly, John C., Belfast, Ireland. Hemstitch sewing-machine	858,096	June 25	5231	1109	128	3120
Obrecht, Charles F., Baltimore, Md. Automobile-tire	856,657	June 11	2409	496	128	2338
Odor, Guy C., Lima, Ohio. Telephone-directory	857,662	June 25	4309	910	128	2887
Oehmler, Oscar A. C., assignor of one-third to W. F. and A. Gude, Washington, D. C. Life-saving apparatus for submarine boats	857,198	June 18	3420	721–2	128	2633
Oftedahl, Einar. (See McKee and Oftedahl.)						
Ogburn, Rollin C., Flora, Ill. Speed-changing device	857,200	June 18	3611	764–5	128	2681

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Ogilvie, David. (See Kelly and Germain, assignors.)						
Oglesby, Charles B. (See Tiffany, Albert R., assignor.)						
Ohlson, Olof, Newton, Mass., assignor, by mesne assignments, to Waltham Watch Company. Escapement	856,091	June 4	1218	258	128	2001
Ohlson, Olof, Newton, Mass., assignor, by mesne assignments, to Waltham Watch Company. Dial-holder	856,092	June 4	1222	258	128	2002
Okey, George B., assignor of eight-ninths to J. C. Sharp and L. B. Zaring, Indianapolis, Ind. Non-refillable-bottle stopper	856,902	June 11	2845	594	128	2446
Oliver, Henry J., Cleveland, Ohio. Reversible window	857,826	June 25	4644	985	128	2972
Oliver, Wilbur C., Bath, Me. Cigar-holding attachment	856,362	June 11	1838	377	128	2194
Ollrich, John F., San Francisco, Cal. Dredger-cutter	856,487	June 11	2073	426	128	2254
Ollrich, John F., San Francisco, Cal. Dredge-cutter	856,544	June 11	2175	448	128	2278
Olson, John A., Minneapolis, Minn. Electrical controller for steam plants, &c	856,417	June 11	1953	401	128	2223
Oman, Charles G., Jonesboro, Ind. Lawn-mower	855,527	June 4	159	32	128	1735
Ong, Harlon F., Portland, Oreg. Syringe-nozzle	856,093	June 4	1223	258	128	2002
Ontario Nickel Company. (See Dow, Gates, and Schaefer, assignors.)						
Orange, Verne C., and F. M. Bowers, Pueblo, Colo. Air-brake-locking device	855,863	June 4	818	170–1	128	1900
Orcutt, Edward L. and R. Sheldon, New York, N. Y., assignor to Railway Electric Signal Company. Electric signaling system	855,727	June 4	546	113	128	1835
Orcutt, Edward L., New York, N. Y., assignor to Railway Safety Signal Company. Electric signaling device	855,966	June 4	1005	211	128	1947
Orcutt, Edward L., New York, N. Y., assignor to Railway Safety Signal Company. Electric signaling device	855,967	June 4	1010	211	128	1949
Orcutt, Edward L., New York, N. Y., assignor to Railway Safety Signal Company. Electric signaling device	855,968	June 4	1013	211	128	1950
Orcutt, Edward L., New York, N. Y., assignor to Railway Safety Signal Company. Electrical signaling device for railways	856,094	June 4	1224	259	128	2002
Orcutt, Edward L., New York, N. Y., assignor to Railway Safety Signal Company. Electric semaphore	856,095	June 4	1227	259	128	2003
Orlikowski, Frank, and L. H. Koehnle, Cleveland, Ohio. Earthenware shingle	855,475	June 4	65	14	128	1711
Ormsby, George S., Xenia, Ohio. Mortar-gage	856,363	June 11	1839	377	128	2195
Orosz, Ludwig M., assignor of one-half to D. Neuman, Arad, Austria-Hungary. Automatic coupling for railway-vehicles	856,418	June 11	1956	402	128	2223
Orr, Edward J., Nodaway, Iowa. Window-sash	856,419	June 11	1957	402	128	2224
Orr, William J., Westplains, Mo. Agricultural implement	855,902	June 4	900	187	128	1921
Osborn, Alexander C., Clarksburg, W. Va. Sawmill set-works	857,663	June 25	4310	910	128	2887
Osborne, Heman, Springfield, Mass. Transom-lifter	856,288	June 11	1644	341	128	2143
Osgood, John L., Buffalo, N. Y. Tool-handle	857,894	June 25	4772	1014	128	3001
Osgood Scale Company. (See Gilbert, William N., assignor.)						
Oswald, Eugene, United States Navy. Means for recovering submarine boats	856,096	June 4	1229	259	128	2003
Otis Elevator Company. (See Dillon, John, assignor.)						
Otis Elevator Company. (See Newell, Frederick W., assignor.)						
Otis Elevator Company. (See Venn, Isaac H., assignor.)						
Otis, Spencer, Chicago, Ill., assignor, by mesne assignments, to National Dump Car Company. Car	858,013	June 25	5051	1068–9	128	3073
Overman, David R., St. Louis, Mo. Electromedical appliance	857,664	June 25	4312	911	128	2887
Owens, Frank R., Bureau, Ill. Running-gear for vehicles	858,348	June 25	5685	1215	128	3240
P. Belersdorf & Co. (See Weber, Alfred H. W., assignor.)						
P. R. Manufacturing Company. (See Eden, Harold W., assignor.)						
Pabst William F., and W. West, assignors to B. F. Seymour, Jr., Denver, Colo. Self-locking safety-cock	857,194	June 18	3424	721	128	2633
Pacific Wireless Telegraph Company. (See Yarnell, Harold A., assignor.)						
Packard Electric Company. (See Wolcott, Newton A., assignor.)						
Packer, James W., Glens Falls, assignor to Sandy Hill Iron and Brass Works, Sandy Hill, N. Y. Journal-bearing	855,903	June 4	902	187	128	1922
Packham, Frank R., assignor to American Seeding Machine Company, Springfield, Ohio. Seed-distributer	857,195	June 18	3425	721–2	128	2634
Packwood, Flemion B., Lincoln, Nebr. Circuit-breaker for gas-engines	857,196	June 18	3429	723	128	2634
Page, Richard D., Howard City, Mich. Automatic crossing-gate	855,660	June 4	411	86	128	1799
Paige, Joseph B., East Rutherford, N. J., assignor to Fairbanks Co. Scale-lever	858,014	June 25	5054	1069	128	3074
Paine, John S., Brockton, and E. E. Winkley, assignors of one-third to B. Phillips, Lynn, Mass. Machine for lacing the uppers of shoes	855,969	June 4	1017	211–12	128	1951
Palmenberg, Emil T., New York, N. Y. Device for fastening heads to busts	858,099	June 25	5233	1109	128	3121
Palmer, Frank H., New York, N. Y. Closure	856,903	June 11	2847	594	128	2447
Palmer, Isaac E., Middletown, Conn. Thread-guide	855,803	June 4	691	141	128	1871
Palmer, Ole E., Osgood, N. D. Claw-hammer	856,097	June 4	1231	259	128	2004
Palmer, Truman G., Chicago, Ill. Heater	855,904	June 4	903	187	128	1922
Panoulias, Pansyiotis, New York, N. Y. Dipping-frame for coating candles	855,804	June 4	693	142	128	1871
Parant, Jules R., Neuilly-sur-Seine, France. Change-speed and reversing gear	857,102	June 18	3243	682	128	2587
Parisian Novelty Company. (See Komorous, Joseph, Jr., assignor.)						
Park, Kennedy, assignor to Toledo Boiler Works Company, Toledo, Ohio. Water-tube boiler	855,661	June 4	414	86	128	1800
Parker, Edwin W., Rochester, N. Y. Photographic shutter	856,600	June 11	2287	471	128	2307
Parker, Franklen P., Chicago, Ill. Music-leaf turner	856,420	June 11	1958	402	128	2224
Parker, Frederick R., assignor to F. B. Cook, Chicago, Ill. Land-anchor	857,751	June 25	4495	948–9	128	2934
Parker, George H., Arlington, N. J., assignor to J. W. Baker, Stamford, Conn. Window-swinging device	857,103	June 18	3245	682	128	2588
Parker, John M. (See Needham, Leslie H., assignor.)						
Parker, William H., Jr., Elgin, Nebr. Hammer	857,104	June 18	3248	683	128	2589
Parkes, James H., assignor to Foster, Well & Parkes, Nashville, Tenn. Temporary binder	856,800	June 11	2665	549	128	2403
Parkin, George H. and W. B., Batavia, N. Y. Single-trigger mechanism for firearms	857,895	June 25	4773	1014	128	3002
Parkin, William B. (See Parkin, George H. and W. B.)						
Parks, Charles A., Baltimore, Md. Flushing-valve	857,896	June 25	4778	1014	128	3003
Parks, James R. (See Hudson, Parks, and Coursey.)						
Parrish, Stephen E., Hillsdale, Mich. Winding and measuring device	856,289	June 11	1647	341–2	128	2144
Parsons, Charles A., Newcastle-upon-Tyne, England. Steam-turbine	858,205	June 25	5424	1156–7	128	3169
Parsons, Charles A., Newcastle-upon-Tyne, England. Turbine	858,206	June 25	5426	1157	128	3169
Parsons, Frederick D., Hammondsville, Ohio. Nut-lock	856,658	June 11	2409	496	128	2338
Parsons, Reginald B., Hull, England. Automatic coupling for railway-vehicles	856,098	June 4	1232	260	128	2004
Passmann, Otto (See Brugel and Passmann.)						
Pataud, Henri, Paris, France. Wheel-felly	858,015	June 25	5055	1069–70	128	3074
Patten, Charles H., Providence, R. I., assignor to Charles E. Hancock Company. Attachment for holding ear ornaments	857,105	June 18	3249	683	128	2589
Patten, Franklin D., Portland, Oreg. Steering-engine	858,207	June 25	5427	1157–8	128	3170
Patten, James S., Baltimore, Md. Journal-box lid	858,208	June 25	5428	1158	128	3170
Patterson, Henry J., St. Johns, Mich. Trunk-strap fastener	857,197	June 18	3430	723	128	2634
Patterson, James R., New Comerstown, Ohio. Toy	857,481	June 18	3954	840	128	2765
Patterson, John, Aurora, Ill. Coat-hook	855,588	June 4	273	55	128	1765
Patterson, Louis M., Coalfield, Tenn. Union-coupling check-valve	857,897	June 25	4779	1015	128	3003

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Patterson, Warren A., assignor to American Cotton Separator Company, St. Louis, Mo. Cotton-separator	856,421	June 11	1959	402–3	128	2224
Patton, Oliver C., assignor to F. L. Jones, C. A. Douglass, Denver, and A. F. Harris Dolores, Colo. Automatic weighing-machine	857,301	June 18	3614	765	128	2682
Patton, Victor, Hastings, Colo. Armature-testing apparatus	858,016	June 25	5058	1070	128	3075
Paul, Edward A., *et al.* (See Woods, Edward D., assignor.)						
Peacock, John R., Nottingham, England. Means or device for operating tramway and other points and the like	857,533	June 18	4060	863	128	2795
Peacock, John R., Nottingham, England. Means or device for operating tramway and other points and the like	857,534	June 18	4062	863	128	2795
Pearce, Walter A., London, England. Signaling mechanism	856,290	June 11	1649	342	128	2144
Pearl Laundry Machinery Company. (See Taylor, Tom L., assignor.)						
Pearson, Walter B., Detroit, Mich. Side-curtain support	855,970	June 4	1025	213	128	1953
Peck, Levi T. Honolulu, Hawaii. Transfer-ticket	856,904	June 11	2848	594	128	2447
Pedersen, Olaf S., New York, N. Y. Expansion-tube	858,100	June 25	5234	1110	128	3121
Pedersen, Otto, Chicago Heights, Ill. Automatic grip-cord adjuster	856,722	June 11	2527	519	128	2368
Pederson, Lars, Manitowoc, Wis. Lawn-mower	855,587	June 4	275	55–6	128	1765
Peirce, Charles L., Jr., Chicago, Ill., assignor to W. G. Nagel Electric Company, Toledo, Ohio. Cable-hanger	856,099	June 4	1234	260	128	2004
Peirce, Charles L., Jr., assignor to Peirce Specialty Company, Chicago, Ill. Insulator	856,488	June 11	2074	427	128	2254
Peirce, Charles L., Jr., assignor to Peirce Specialty Company, Chicago, Ill. Insulator	856,801	June 11	2667	550	128	2404
Peirce, John R., assignor to Royden Marble Machinery Company, New York, N. Y. Machine for working marble	857,898	June 25	4780	1015	128	3003
Peirce Specialty Company. (See Peirce, Charles L., Jr., assignor.)						
Pelham, Alphonzo E. (See Sill, Richard V., assignor.)						
Pence, George M., Topeka, Ind. Machine for mixing concrete	858,017	June 25	5059	1070	128	3075
Pendergast, Thomas, assignor of fifty-one one-hundredths to J. Hertzler, Lancaster, Pa. Gasket for pipe-couplings	857,106	June 18	3250	683	128	2589
Pendery, William H. (See Crabbs and Pendery.)						
Pendexter, Edward F., Milford, Mass. Car-coupling	856,489	June 11	2075	427	128	2254
Pennie, John C. (See Myers, George F., assignor.)						
Pennsylvania Steel Company. (See Long, Malcolm W., assignor.)						
Pennsylvania Steel Company. (See Long and Hoffer, assignors.)						
Pentecost, Arthur, assignor to Pike Adding Machine Company, East Orange, N. J. Attachment for adding-machines	856,905	June 11	2850	595–6	128	2447
Perez, Miguel, Chicago, Ill. Toy	857,198	June 18	3431	723	128	2635
Perfect Sliding Door Company. (See Laughlin and Schuyler, assignors.)						
Perfect Sliding Door Company. (See Schuyler and Laughlin, assignors.)						
Perfected Self-Lighting Mantle Company. (See Mayer, Frederic W., assignor.)						
Perkin, William H., Jr., assignor of one-half to Whipp Brothers & Tod, Limited, Manchester, England. Fireproofing textile materials	856,906	June 11	2855	.....	128	2449
Perkins, Charles E., *et al.* (See Perkins, Harry J., assignor.) (Reissue.)						
Perkins, Frederick L., *et al.* (See Perkins, Harry J., assignor.) (Reissue.)						
Perkins, Harry J., assignor of two-thirds to F. L. and C. E. Perkins, Grand Rapids, Mich. Propeller-wheel. (Reissue)	12,665	June 25	5742	1223–4	128	3255
Perkins, John L., and J. O. Stanley, assignors to B. F. Perkins and Son, Incorporated, Holyoke, Mass. Paper-slitting machine	856,984	June 11	3000	630	128	2485
Perkins, Julius A., Omaha, Nebr., assignor, by mesne assignments, to United States Roller Bearing Company, Jersey City, N. J. Roller-bearing	856,291	June 11	1650	343	128	2145
Perkins, Walter H., assignor to Waterbury Mfg. Co., Waterbury, Conn. Tooth-powder box	857,414	June 18	3821	810	128	2733
Perkins, Walter H., assignor to Waterbury Mfg. Co., Waterbury, Conn. Parasol-top	857,665	June 25	4313	911	128	2888
Periman & Hirschfeld. (See Wertheim, Ludwig, assignor.)						
Perruchon, Georges, Epernay, France. Elastic wheel	856,100	June 4	1236	260	128	2004
Perry, Alonzo H., Kinloch Park, Mo. Water-wheel	857,482	June 18	3655	841	128	2766
Perry, Herbert W., Trichinopoli, India. Permanent-way rail	857,199	June 18	3432	724	128	2635
Petersen, Henning, Thief River Falls, Minn. Clamp or grip	858,018	June 25	5061	1071	128	3075
Petersen, Richard N. B., Mankato, Minn. Reversible chair-seat	858,209	June 25	5429	1158–9	128	3171
Peterson, Anton, *et al.* (See Stenstrom, John P., assignor.)						
Peterson, James, Glenrock, Nebr. Grain elevator and dump	856,545	June 11	2176	448–9	128	2278
Peterson, Jesse. (See Baker, William H., assignor.)						
Petropulas, George P., Chicago, Ill. Water-cooler	858,101	June 25	5235	1110	128	3122
Petterson, Erik S., and B. F. Newsome, Leavenworth, Kans. Emergency clamp rail-brake	856,907	June 11	2856	596–7	128	2449
Pettijohn, John W., Montesano, Wash. Latch	855,662	June 4	415	87	128	1800
Pettit, Lafayette M., Cripple Creek, Colo. Boiler-cleaner	858,304	June 25	5591	1196	128	3211
Petzold, Bernhard, *et al.* (See Keller, Frederick, assignor.)						
Peyton, William W., Carlisle, Ark. Shoe-dauber	856,908	June 11	2858	597	128	2449
Pfeil, Frederick C., assignor of one-fourth to E. Sperry, Buffalo, N. Y. Gate-valve	856,546	June 11	2177	449	128	2278
Pfeil, Robert, Grunewald, assignor to Siemens & Halske Aktiengesellschaft, Berlin, Germany. Electric signal	856,179	June 4	1402	297	128	2046
Pfingst Electric Manufacturing Company. (See Pfingst, Louis, assignor.)						
Pfingst, Louis, Boston, Mass., assignor to Pfingst Electric Manufacturing Company, Kittery, Me. Mechanical power-brake	857,752	June 25	4499	949	128	2935
Phalen, D. T., *et al.* (See Linton, Ernest O., assignor.)						
Pharr, John K., Catherine, Ala. Canning apparatus	856,909	June 11	2859	597–8	128	2450
Pharroh, John W., Memphis, Tenn. Ironing apparatus	856,802	June 11	2668	550	128	2404
Phelan, John M., assignor to Reinforced Concrete Pipe Company, Jackson, Mich. Sewer-pipe	858,102	June 25	5237	1110	128	3122
Phelps, Charles W., University Place, Nebr. Oil-burner	856,547	June 11	2179	449	128	2279
Phelps, Macy A., assignor to Jackson Cushion Spring Company, Jackson, Mich. Spring-cushion work	857,666	June 25	4313	911	128	2888
Phelps, William J., Detroit, Mich. Safety-fuse	856,292	June 11	1655	343	128	2146
Philbrick, Charles H., *et al.* (See Clark, Frank M., assignor.)						
Philip Carey Manufacturing Company. (See Crabbs and Pendery, assignors.)						
Philip, Ernest R. (See Stollberg and Philip.)						
Philip, Ernest R., Atlanta, Ga., assignor to American Can Company, New York, N. Y. Sheet-metal sap-collecting apron and receptacle	858,306	June 25	5593	1196	128	3211
Philip, Ernest R., and J. Kohler, Atlanta, Ga., assignors to American Can Company, New York, N. Y. Sheet-metal turpentine-cup or sap-receptacle	857,900	June 25	4783	1015	128	3004
Phillippi, Benton N., Wilkinsburg, assignor of one-half to J. F. Rudy, Pittsburg, Pa. Cigar-holder	858,349	June 25	5686	1216	128	3240
Phillips, Albert E., Scranton, Pa. Plate-lifter	857,899	June 25	4782	1015	128	3004
Phillips, Benjamin. (See Palms and Winkley, assignors.)						
Phillips, Charles C., Owensboro, Ky. Railway-signal	855,971	June 4	1027	213	128	1954
Phillips, John W., Austin, Tex. Portable cotton compress or baling machine	856,303	June 11	2849	580–1	128	2404
Phillips, Walter B., Kansas City, Kans. Drawing-pen	858,350	June 25	5687	1216	128	3240
Phillips, William, Chicago, Ill. Frying-machine	856,910	June 11	2861	598	128	2450
Phoenix Carriage Co. (See McNamara and Krumsen, assignors.)						
Platt, Frank B., Hamilton, Kans. Automatic stock-feeder	857,827	June 25	4648	986	128	2972

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Pickering Governor Co. (See Hall, Stephen S., assignor.)						
Pickett, Lester D., Fredonia, N. Y. Lubricator	856,659	June 11	2411	496–7	128	2336
Pickford, William, and E. Derr, Segundo, Colo. Ironing-board	856,490	June 11	2077	427	128	2254
Pieper, Alphonse F., Rochester, N. Y. Governor for electric motors	855,806	June 4	697	142	128	1872
Pieper, Matthias, Blankenese, Germany. Skittle	855,806	June 4	699	142	128	1872
Pierce, George H., Quincy, assignor to New Era Machinery Company, Boston, Mass. Offset-web-feed mechanism for printing-presses	857,753	June 25	4501	949–50	128	2936
Pierce, George L., Manchester, N. H., assignor, by mesne assignments, to High Speed Ring Company, Boston, Mass. Ring-holder for spinning and twisting rings	857,535	June 18	4063	863	128	2795
Pike Adding Machine Company. (See Pentecost, Arthur, assignor.)						
Pike Manufacturing Company. (See Smith, Herbert E., assignor.)						
Pilain, Francois, Lyon, France. Gearing	857,361	June 18	3725	787	128	2709
Pilcher, Thomas D., Washington, D. C. Apparatus for regulating combustion	858,019	June 25	5061	1071	128	3076
Pilkington, Joseph H., Waterbury, Conn. Pen and pencil clip	858,020	June 25	5062	1071	128	3076
Pilkington, Joseph H., assignor to Smith & Griggs Manufacturing Company, Waterbury, Conn. Loop-and-stud connection	857,901	June 25	4784	1016	128	3005
Pinnell, Wm. C. (See Harmon, Edward W., assignor.)						
Pingrey, Darius C., Janesville, Iowa. Game	855,728	June 4	550	114	128	1837
Pinson, Benjamin F., Jr., Skiatook, Ind. Ter. Truss-braced tree	855,528	June 4	160	32	128	1735
Piper, Frank B., Redbourn, England. Banjo-support	856,804	June 11	2672	551	128	2405
Piper, Samuel A., Newton Upper Falls, Mass. Track-sanding device	858,021	June 25	5063	1071	128	3076
Pitman, Robert A. (See Custer and Pitman.)						
Pitts, George J., New York, N. Y. Fire-escape	858,210	June 25	5431	1159	128	3171
Pittsburgh Filter Manufacturing Company. (See Leopold and Brown, assignors.)						
Pittsfield Spark Coil Company. (See Jacobson, Edward B., assignor.)						
Place, Griffin, Woburn, Mass. Apparatus for mixing liquor in tan-vats	858,103	June 25	5238	1110–11	128	3123
Plato, Marcus, assignor of one-half to A. W. Macleod, London, England. Electric bell	855,729	June 4	551	114	128	1837
Platt Iron Works Company. (See Giesler, Arthur, assignor.)						
Platt, John W., Sterling, assignor to Sterling Manufacturing Company, Rock Falls, Ill. Tongue-truck for agricultural implements	855,807	June 4	700	143	128	1873
Pleins, Leo H., assignor to James B. Clow & Sons, Chicago, Ill. Trap	858,306	June 25	5594	1196–7	128	3212
Plummer, Leamon S., Swanton, Ohio. Trousers-stretcher	857,902	June 25	4785	1016	128	3005
Plummer, William S., assignor to American Wheel Company, St. Louis, Mo. Felly for vehicle-wheels	857,200	June 18	3433	724	128	2635
Plunkett, Martin. (See Schall and Plunkett.)						
Plympton, Charles D., Needles, Cal. Windmill	856,364	June 11	1841	378	128	2195
Poalk, James L., Philadelphia, Pa., assignor to Automatic Oscillating Loom Company of America. Loom-shuttle	857,107	June 18	3251	683	128	2589
Podlesák, Henry J., Chicago, Ill., and T. E. Podlesák, Morristown, N. J. Fuel-feeding device for internal-combustion motors	858,022	June 25	5064	1072	128	3076
Podlesak, Tesla E. (See Podlesák, Henry J. and T. E.)						
Politowski, Paul, Chicago, Ill. Rotary meter	855,663	June 4	417	87	128	1801
Poly-Phase Ignition System Company. (See Le Pontois, Leon J., assignor.)						
Pomeroy, William D., Norwood, Ohio, assignor, by mesne assignments, to Bullock Electric Company. Controller for electric motors	855,972	June 4	1029	213	128	1954
Pooler, George E. (See Lee, Annie, assignor.)						
Porter, Henry S. (See Porter, James H. and H. S.)						
Porter, James H. and H. S., Boston, Mass. Amusement apparatus	857,903	June 25	4787	1016–17	128	3006
Porter, Joseph Y., Detroit, Mich. Mechanical movement	855,973	June 4	1032	214	128	1955
Porter Screen Manufacturing Company. (See Southworth, Henry E., assignor.)						
Porter, Wilson E., assignor to New Haven Clock Co., New Haven, Conn. Watch	857,667	June 25	4315	912	128	2888
Porter, Wilson E., assignor to New Haven Clock Co., New Haven, Conn. Watch	857,668	June 25	4316	912	128	2888
Possons, Minard A., Cleveland, Ohio. Sound-box for talking-machines	857,483	June 18	3958	841	128	2766
Post, Friedrich G. J., assignor to J. H. W. Campe, Hamburg, Germany. Producing multiple and backed copies	858,022	June 25	5067	1073	128	3077
Potter, James J., Staunton, Va. Nut-lock	857,828	June 25	4646	986	128	2972
Potter, Joseph L., assignor to H. G. Hawekotte, Indianapolis, Ind. Electromagnetic locomotive	858,211	June 25	5432	1159–60	128	3171
Pounds, William J., Holt, Ala. Axle-nut	855,664	June 4	419	87	128	1801
Powell, James, assignor to Wm. Powell Co., Cincinnati, Ohio. Grease-cup. (Reissue)	12,666	June 25	5745	1224	128	3256
Powell, James A., Wilmington, N. C. Curtain-pole	857,829	June 25	4647	986	128	2972
Powell, John M., Stockton, Utah. Railway-switch	856,805	June 11	2673	551–2	128	2405
Powers, Robert B., Fayetteville, Ark. Advertising device	857,754	June 25	4506	950	128	2937
Prahar, Louis B., New York, N. Y. Bag-lock	855,974	June 4	1034	214	128	1955
Praigg, Nelson S. (See McCoy and Wheeler, assignors.)						
Prater, Robert B (See Harlst and Prater.)						
Pratt, Francis E., New Rochelle, N. Y. Vehicle-spring	857,256	June 18	3519	744	128	2657
Pratt, Louis L., Salt Lake City, Utah. Fork	856,806	June 11	2676	552	128	2406
Pratt, Wallace, Jr. (See White, Raleigh P., assignor.)						
Pratt & Whitney Company. (See Hanson, Bengt M. W., assignor.)						
Prellwitz, William, Easton, Pa., assignor to Ingersoll-Rand Company, New York, N. Y. Channeling-machine	857,960	June 25	4926	1041–2	128	3040
Prellwitz, William, Easton, Pa., assignor to Ingersoll-Rand Company. New York, N. Y. Roller-guide for channeling-machines	857,961	June 25	4928	1042	128	3041
Prendergast, Alois P. (See Tatum, John J., assignor.)						
Prentiss, Andrew L., Buffalo, N. Y. Trolley-pole controller	856,293	June 11	1657	344	128	2146
Prescott, De Witt C., Chicago, Ill. Pawl-and-ratchet mechanism	856,365	June 11	1843	378	128	2196
Preston, Alston L. (See Goodale and Preston.)						
Preston, Leonard Z., Scottsville, Kans. Switch-operating device	857,201	June 18	3434	724	128	2636
Prestwich, John A., London, England. Cash-registering till	856,294	June 11	1659	344–5	128	2147
Prevost, Magnus, Haverhill, Mass. Buffing-roll	856,601	June 11	2295	471	128	2310
Price, Edgar F., Niagara Falls, N. Y. Smelting refractory ores and producing ferro-alloys	855,478	June 4	70	15	128	1712
Price, Edgar F., Niagara Falls, N. Y. Smelting refractory ores and producing ferro-alloys	855,479	June 4	72	15	128	1713
Price, Edgar F., Niagara Falls, N. Y. Electric-resistance furnace	855,480	June 4	74	15	128	1714
Price, Edgar F., assignor to Union Carbide Company, Niagara Falls, N. Y. Producing calcium carbid	855,476	June 4	66	14	128	1711
Price, Edgar F., assignor to Union Carbide Company, Niagara Falls, N. Y. Producing calcium carbid	855,477	June 4	68	15	128	1712
Price, Henry, Elizabeth, Ill. Automatic cut-off	855,808	June 4	701	143	128	1873
Price, Henry, assignor of one-half to O. Healey, Elizabeth, N. J. Lavatory	857,006	June 11	3044	641	128	2497
Price, William, *et al.* (See Shaw, Ira C., assignor.)						
Priddy, Mark C. (See Branch, Thomas O., assignor.)						
Priebe, Herman C., Blue Island, Ill. Automatic air-signal, air-brake, and steam coupling	857,362	June 18	3726	787	128	2709
Prindle, Harold R., Philadelphia, Pa. Pneumatic tool	855,975	June 4	1036	214	128	1955
Prindle, Henry U., assignor to Rotary Machine Company, San Francisco, Cal. Cutting and mixing mill	856,295	June 11	1666	345–6	128	2149

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Pritchard, Reuben L. (See Bonny, Howard R., assignor.)						
Probst, Joseph F. A., Sharpsburg, Pa. Fan attachment for chairs	857,669	June 25	4317	912	128	2889
Prochaska, Mathias, Fulton, Ill. Nail-clipper	855,665	June 4	420	87	128	1802
Proctor and Gamble Company. (See O'Brien, Edward J., assignor.)						
Prött, Carl, Hagen, Germany. Drop-hammer	855,976	June 4	1039	215	128	1956
Prudden, Thomas N., San Francisco, Cal. Method and apparatus for protecting marine wooden structures	855,588	June 4	276	56	128	1766
Prudhomme, William E., Portland, Oreg. Balance-book	857,904	June 25	4790	1017-18	128	3006
Prutton, Frederick, Cleveland, Ohio. Display-holder	857,108	June 18	3252	684	128	2560
Pullman Company. (See Dodds, Ethan I., assignor.)						
Pum, Georg, Vienna, Austria-Hungary. Street-sweeping machine	857,415	June 18	3822	810	128	2733
Punches, Bert W., Plymouth, Mich. Magazine-rifle	855,589	June 4	277	56	128	1766
Purdie, Robert, Chicago, Ill. Dust-guard for axle-boxes	855,666	June 4	421	88	128	1802
Purl, James B., Charleston, Ill. Nut-lock	857,755	June 25	4507	951	128	2938
Purnell, Richard H., Rosedale, Miss. Combined cotton chopper and cultivator	855,977	June 4	1040	215-16	128	1956
Putnam, John P., Boston, Mass. Pipe-joint	857,905	June 25	4793	1018	128	3007
Quack, Eduard, Elberfeld, Germany. Gas-stove	856,366	June 11	1844	378-9	128	2196
Quinn, Albert G., Cleveland, Ga. End-gate	857,302	June 18	3619	766	128	2683
Raabe, Otto L., Jersey City, N. J., and G. F. Read, assignors to R. Hoe, New York, N. Y. Delivery mechanism	857,962	June 25	4930	1042-4	128	3042
Radcliffe, Carlton R., New York, N. Y., assignor, by mesne assignments, to International Patent Corporation, Jersey City, N. J. Mechanical oiler	856,180	June 4	1406	297	128	2047
Radcliffe, Carlton R., New York, N. Y., assignor to International Patent Corporation, Jersey City, N. J. Mechanical oiler	856,181	June 4	1409	297	128	2048
Rahm, Robert C., assignor to Textile Machine Works, Incorporated, Wyomissing, Pa. Braiding machine	856,985	June 11	3002	631	128	2485
Railway Electric Signal Company. (See Orcutt and Sheldon, assignors.)						
Railway Safety Signal Company. (See Orcutt, Edward L., assignor.)						
Ralph, Joseph E., Newark, N. J. Card-index	857,202	June 18	3435	725	128	2636
Ramby, Charles E. (See Reser, William S., assignor.)						
Rand, Charles A. A., Chicago, Ill. Platform-folding device for reapers	856,986	June 11	3004	631	128	2486
Rand, Frederick K., and W. R. Hines, Cleveland, Ohio. Wheel-rim	857,830	June 25	4648	986	128	2972
Randall, Clayton, Mabel, Minn. Telephone-lineman's grab-seat	857,203	June 18	3438	725	128	2637
Randall, Fred A. (See Morrill and Randall.)						
Rankin, Hiram S., assignor to Rankin Lubricating Valve Co., Cripple Creek, Colo. Valve	857,484	June 18	3962	841	128	2767
Rankin Lubricating Valve Co. (See Rankin, Hiram S., assignor.)						
Ranson, Albert V., Johnstown, Pa. Folding umbrella	858,212	June 25	5436	1160	128	3172
Rapke, Victor H., New York, N. Y. Horn-support	855,978	June 4	1043	216	128	1957
Rashkin, Joseph, New York, N. Y. Chain-attaching bracket for elevator-shaft doors	857,109	June 18	3253	684	128	2560
Rateau, Auguste C. E., Paris, France, assignor to Rateau Turbine Company, Chicago, Ill. Turbine-driven blower	855,809	June 4	703	143	128	1873
Rateau Turbine Company. (See Rateau, Auguste C. E., assignor.)						
Rattle, William, *et al.* (See Wetherbee Herbert E., assignor.)						
Rawlings, J. C. (See Wright, James C., assignor.)						
Rawson, George E., Louisville, Ky. Buckle	858,104	June 25	5241	1111	128	3123
Raymond, Edward A., and W. Jensen, Chicago, Ill. Garment-supporter	855,529	June 4	161	32	128	1735
Razoux, Theodore W., Brooklyn, N. Y. Attachment for bicycles and motor-cycles	855,979	June 4	1044	216	128	1958
Read, George F. (See Raabe and Read.)						
Reardon, James A., Seattle, Wash. Electric heater	857,485	June 18	3963	841	128	2768
Reaves, William D., South Bend, Ind. Keyboard for pianos	856,723	June 11	2528	520	128	2368
Reavis, Albert S., Washington, D. C. Railway-tie	857,363	June 18	3728	788	128	2710
Rebhun, Charles A. (See Thain, William, assignor.)						
Reciprocating Power and Pump Company. (See Lippert, Samuel, assignor.)						
Reddy, Thomas E., Pittsburg, assignor to G. C. Erdner, Bellevue, Pa. Making shot	857,756	June 25	4508	951	128	2938
Redemer, Jacob C., Beaver, Okla. Ter. Hub	857,304	June 18	3439	725	128	2637
Redford, John G., Milwaukee, Wis. Oven for heating flat-irons	857,670	June 25	4319	912	128	2889
Redrup, Charles B., Barry Dock, England. Gas, oil, and like engine	857,536	June 18	4064	864	128	2796
Reed, Benjamin H., assignor of one-half to J. H. Roy, Chicago, Ill. Artificial fuel	856,101	June 4	1237		128	2005
Reed, Charles E., Jr., Chicago, Ill. Electric sparking plug	856,602	June 11	2296	472	128	2311
Reed, Charles J., Philadelphia, Pa. Electrolytically removing scale and producing iron sulfate	855,667	June 4	422		128	1802
Reed, Charles J., Philadelphia, Pa. Speed-changing mechanism	858,024	June 25	5068	1073	128	3077
Reed, Henry M., *et al.* (See Miesse, Americus, assignor.)						
Reed, James F., *et al.* (See Miesse, Americus, assignor.)						
Reed, James W., Berwind, assignor of one-half to J. Cox, Tabasco, Colo. Automatic car-stop	857,205	June 18	3440	725-6	128	2637
Reed, Jean L., Little Valley, N. Y. Combined razor strop and case	858,307	June 25	5597	1197	128	3212
Reed, John A., Monon, Ind. Door-check	857,486	June 18	3966	842	128	2768
Reed, John W., *et al.* (See Miesse, Americus, assignor.)						
Reed, Josiah M. (See Newberry, Reed, and Kuhlkin.)						
Rees, Thomas H., Louisville, Ky. Awning	855,668	June 4	424	88	128	1803
Reese, Daniel S., Mahanoy City, Pa. Hypodermic injector	858,025	June 25	5069	1073	128	3077
Reese, Henry D., Abbeville, S. C., assignor of two-thirds to J. W. Harris, Elberton, Ga., and W. D. Bewley, Union, S. C. Eyescope	858,213	June 25	5438	1160-1	128	3173
Reeves & Company. (See Anderson and Erickson, assignors.)						
Rehfuss, Martin O., Philadelphia, Pa., and E. F. Buch, Astoria, N. Y., assignors, by mesne assignments, to Sanitary Sectional Brush Company. Machine for drilling and tufting brushes	855,810	June 4	704	144-6	128	1874
Rehfuss, Martin O., Philadelphia, Pa., and E. F. Buch, Astoria, N. Y., assignors, by mesne assignments, to Sanitary Sectional Brush Company. Appliance for feeding brush-blocks	855,811	June 4	710	146-7	128	1875
Rehor, Joseph. (See Kundta and Rehor.)						
Reich, William J., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Gear-case	856,422	June 11	1962	404	128	2225
Reid, James, assignor to J. S. Reid, Tacoma, Wash. Woodworking-machine	857,757	June 25	4509	951-2	128	2938
Reid, James S. (See Reid, James, assignor.)						
Reid, James V., Clarion, Pa. Key-ring	855,530	June 4	162	33	128	1735
Reidy, Matthew J., Mechanicsville, Iowa. Harmonica	856,491	June 11	2078	427	128	2255
Reinforced Concrete Pipe Company. (See Phelan, John M., assignor.)						
Reiser, Alfred W., Toledo, Ohio. Heat-conductor for drop-light fixtures	856,368	June 11	1848	379	128	2197
Reisner, William H., Hagerstown, Md., assignor to W. H. Reisner Manufacturing Company. Nose-guard	857,758	June 25	4513	952	128	2939
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company. Ventilating dynamo-electric machines	856,423	June 11	1963	404	128	2225
Remmers, Theodore W. (See Green, John, assignor.)						
Rempe, Jacob E., assignor to Rempe-Shidler Manufacturing Company, Kankakee, Ill. Semirotary motor	856,182	June 4	1410	298	128	2048
Rempe-Shidler Manufacturing Company. (See Rempe, Jacob E., assignor.)						
Rensman, Ludwig. (See Kahle and Rensman.)						
Requa, John J., New York, N. Y. Caustic-pencil holder	856,296	June 11	1669	346	128	2150

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Reser, William S., assignor of one-third to C. E. Ramby, Dayton, Ohio. Sewing-machine bearing	857,537	June 18	4066	864	128	2796
Resilient Hub (Jackson's Foreign Patents) Syndicate. (See Jackson, Loftus and J., assignors.)						
Reyburn, Amedee V., Jr., St. Louis, Mo. Reinforcing-bar for concrete	857,671	June 25	4320	913	128	2889
Reynolds, Arthur J. (See Reynolds, Ernest W. and A. J.)						
Reynolds, Ernest W., New York, N. Y., and A. J. Reynolds, New Britain, Conn. Target-throwing trap	858,026	June 26	5070	1073-4	128	3078
Reynolds, Joseph S., Santa Barbara, Cal. Electric heater	856,807	June 11	2677	553	128	2402
Reynolds, Oliver B., Elgin, Ill. Power-hammer	855,730	June 4	532	114-15	128	1837
Reynolds, Samuel W., West Toledo, Ohio. Spot-setting machine	856,730	June 11	2539	522	128	2371
Rhea, Josiah L. (See Wise and Rhea.)						
Rheinische Metallwaren-und Maschinen Fabrik. (See Motz and Müller, assignors.)						
Rhoads, Hilbert C., Chester, Pa. Screw-eye driver	855,905	June 4	905	188	128	1922
Rhodabarger, Ulysses S. (See Shear and Rhodabarger.)						
Rhodes, James L., Green Forest, Ark. Desk	857,110	June 18	3254	684	128	2560
Rhodovi, Edward, Stanford, Ill. Baling-press	855,669	June 4	425	88-9	128	1803
Rice, Ernest J. A., Harvard, Nebr. Gate	855,980	June 4	1045	217	128	1958
Rice, John V., Jr., Bordentown, N. J. Vaporizer for gas-engines	857,111	June 18	3256	685	128	2560
Rice, John V., Jr., Bordentown, N. J. Valve-gear for explosion-engines	857,672	June 25	4322	913-14	128	2890
Rice, Louis E., Salem, Ohio, assignor to Silver Manufacturing Company. Automatic drilling-machine	857,538	June 18	4068	864	128	2793
Rice, Orlie A., Eldred, Pa. Tug-holder	856,297	June 11	1670	346	128	2151
Rice, Thomas B., Jr., Philadelphia, Pa. Device for handling material	857,673	June 25	4324	914	128	2891
Rich, George H., Chicago, Ill. Grain-grader	855,981	June 4	1047	217	128	1959
Rich, William A., Pittsburg, Pa. Combination wrench and can-opener	855,982	June 4	1048	217	128	1960
Richards, Francis H., Hartford, Conn. Pivot connection	857,831	June 25	4650	987	128	2973
Richards, Francis H., Hartford, Conn. Mechanical movement	857,832	June 25	4652	987-8	128	2973
Richards, Francis H., Hartford, Conn., assignor, by mesne assignments, to American Typographic Corporation. Typographic machine	855,731	June 4	556	115-16	128	1838
Richards, George, Philadelphia, Pa. Belt-pulley	857,303	June 18	3620	766	128	2683
Richards, George, Philadelphia, Pa. Pulley	857,304	June 18	3621	766	128	2683
Richards, George, Philadelphia, Pa. Belt-pulley	857,305	June 18	3622	767	128	2684
Richards, George, Philadelphia, Pa. Pulley	857,306	June 18	3624	767	128	2684
Richardson, Henry, New York, N. Y. Weighing and assorting apparatus	856,724	June 11	2530	520	128	2369
Richardson, Henry, and A. L. Senesac, Chicago, Ill.; said Senesac assignor to said Richardson. Wire bed-bottom fabric	856,298	June 11	1671	347	128	2151
Richardson, M. E., *et al.* (See Norstrom, Nils E., assignor.)						
Richie, Browne and Donald. (See Browne, Richard B., assignor.)						
Richmond, Henry E., Westwood, N. J. Stereoscope	857,539	June 18	4071	865	128	2797
Ricker, Adolph J., assignor to Stowell Manufacturing and Foundry Company, South Milwaukee, Wis. Door-hanger	856,299	June 11	1673	347	128	2151
Ricketts, Thomas, Steele, Idaho. Weed-cutter	857,833	June 25	4657	988	128	2975
Rideout, George E., Boston, Mass. Alarm device	857,906	June 25	4800	1018	128	3009
Rider, Frank A., Pittsburg, Pa. Refrigerating apparatus	855,983	June 4	1049	217-18	128	1959
Ridings, William H. (See Rogers and Ridings.)						
Riecke, John C. A., assignor to H., P., and M. Hamburger, Baltimore, Md. Bottle-filling apparatus	857,674	June 25	4327	915	128	2891
Rife, Charles E., Kansas City, Kans., assignor of one-half to A. J. Murphy, Randolph, Mo. Gate	857,834	June 25	4658	988-9	128	2975
Rifled Pipe Company. (See Isaacs and Speed, assignors.)						
Riley, Hiram. (See Stransky and Riley.)						
Riley, John C. (See Woolley, Leonidas G., assignor.)						
Ringbom, Ossian, Borgå, assignor to A. G. Adlercreutz, Skuru, Finland, Russia. Hot-air engine	856,102	June 4	1238	261	128	2005
Ripberger, Jacob, Bellevue, assignor of one-half to W. R. Thiem, Newport, Ky. Rotary motor	855,590	June 4	281	57	128	1767
Risley, Charles B., Princeton, Ind. Boiler-setting	858,214	June 25	5440	1161	128	3173
Risley, George B., Rockyhill, Conn. Game-counter	858,027	June 25	5074	1074	128	3079
Ritter, Adam, Cincinnati, Ohio. Door	856,369	June 11	1849	380	128	2198
Rittman, Christian A., assignor of one-half to L. L. Curtis and J. Whitworth, Sandusky, Ohio. Vehicle-wheel	856,367	June 11	1846	379	128	2196
Rivara, James, Natchez, Miss. Plow	857,487	June 18	3967	842-3	128	2769
Roach, John R., Cale, assignor of one-half to J. M. Bale, Bedford, Ind. Fence-post or telephone-pole	856,725	June 11	2533	520	128	2370
Roadifer, Erastus. (See Smith and Roadifer.)						
Roath, William S., Canton, Ohio. Trolley-catcher	857,112	June 18	3258	685	128	2591
Robbins, William. (See Staub, Jacob, assignor.)						
Robbins, Willis C. (See Lintner, Robbins, and Weis.)						
Roberts, Charles E., *et al.* (See Keller, Frederick, assignor.)						
Roberts, Charles H. (See McIntosh, John T., assignor.)						
Roberts, Edmund D., Jr., Detroit, Mich. Making a design painting	855,812	June 4	716	148	128	1876
Roberts, Ferdinand C., Detroit, Mich., and H. J. Titus, Jackson, Tenn. Live-animal race	855,670	June 4	426	89	128	1804
Roberts, Frank C., Philadelphia, Pa. Regenerative hot-blast stove	856,300	June 11	1675	347-8	128	2152
Roberts, Frank C., Philadelphia, Pa. Condenser	857,675	June 25	4329	915	128	2892
Roberts, Howard S., Philadelphia, Pa. Valve	856,911	June 11	2365	599	128	2451
Robertson Manufacturing Company. (See Robertson, William, assignor.)						
Robertson, William, Milton, Mass. Steam-boiler	857,206	June 18	3442	726	128	2637
Robertson, William, assignor to Robertson Manufacturing Company, Buffalo, N. Y. Engine	856,808	June 11	2678	553	128	2407
Robichon, Peter A., New York, N. Y. Vending-machine	857,257	June 18	3521	744	128	2658
Robinson, Albert D., Lynn, Mass., assignor to General Electric Company. Controlling an electric candy-spinning machine	856,424	June 11	1965	404-5	128	2226
Robinson, Edwin L., North Attleboro, Mass. Snap-hook for watch-chains	856,913	June 11	2370	600	128	2452
Robinson, Frank W., assignor of one-half to O. B. Wetherhold, Reading, Pa. Machine for cutting ribbed fabrics	857,540	June 18	4073	865	128	2798
Robinson, Henry, Brooklyn, N. Y. Machine for peeling vegetables	855,481	June 4	76	16	128	1714
Robinson, Henry H., Des Moines, Iowa. Joint for folding buggy-tops	855,864	June 4	821	171	128	1902
Robinson, Oscar D., and R. L. Bennett, Olivet, Mich. Marine propeller	858,215	June 25	5441	1161	128	3174
Roche, Frederick H. (See Bernier, John B., assignor.)						
Roche, Herbert N., *et al.* (See Roche and Breese, assignors.)						
Roche, Herbert N., and F. F. Breese, assignors to James W. Edwards Co., H. N. Roche, and T. B. Gray, San Francisco, Cal. Instantaneous electric water-heater	858,251	June 25	5688	1216	128	3240
Roche, William, Jersey City, N. J. Gas-lighter attachment	855,531	June 4	163	33	128	1736
Rockwell, Everett C., *et al.* (See Lewis, Sherman T., assignor.)						
Rockwell, Frank. (See Haven and Rockwell.)						
Rodecker, Charles W., New York, N. Y. Window-screen	857,759	June 25	4514	952	128	2939
Rodesch Piano and Player Co. (See Rodesch, Robert A., assignor.)						
Rodesch, Robert A., Dixon, Ill., assignor to Rodesch Piano and Player Co. Automatic piano	855,671	June 4	428	89-90	128	1804

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Rodesch, Robert A., Dixon, Ill., assignor to Rodesch Piano and Player Co. Automatic piano	856,672	June 4	435	90	128	1807
Roeckner, Charles H., Hamburg, Germany. Revolving door	858,028	June 25	5075	1074–5	128	3079
Rogers, Charles S., Hot Springs, Ark. Coffee-making device	857,676	June 25	4332	916	128	2893
Rogers, Enoch E., *et al.* (See Clayton, Frederick W., assignor.)						
Rogers, Frank N. (See Meyer and Rogers.)						
Rogers, Frederick S., Kyle, Tex. Gate	856,370	June 11	1851	390	128	2198
Rogers, Joseph T., New York, N. Y., and W. H. Ridings, Milwaukee, Wis. Star-finder	856,912	June 11	2868	599–600	128	2451
Rogers, Worth, St. Louis, Mo. Telegraph-repeater	858,216	June 25	5443	1162	128	3174
Rohlfing, John M., St. Louis, Mo. Railway-truck	856,492	June 11	2080	428	128	2255
Rollins, George D., Philadelphia, Pa. Metallic packing	856,103	June 4	1240	261	128	2095
Roman, Joseph. (See Heller and Roman.)						
Rommes, Paul, Pittsburg, Kans. Coal-mining drill-post	858,217	June 25	5445	1162	128	3174
Roos, Edward F., *et al.* (See Malocsay, Frank X., assignor.)						
Roos, Louis F., Jr., *et al.* (See Malocsay, Frank X., assignor.)						
Roos, Louis F., Sr., *et al.* (See Malocsay, Frank X., assignor.)						
Roost, Hermann, Le Locle, Switzerland. Measuring instrument	855,865	June 4	822	171	128	1902
Root, Wilber L., Cincinnati, Ohio. Apparatus for atomization	856,301	June 11	1677	348	128	2152
Rosback, Frederick P., Benton Harbor, Mich. Brickmaking-machine	857,364	June 18	3729	788–91	128	2710
Rose, Roderick, Yonkers, and P. Brady, North Tarrytown, N. Y. Hat and coat rack	855,732	June 4	568	117	128	1842
Rosen, Max. (See Calenza and Rosen.)						
Rosenbaum, Louis, Boston, Mass. Hat or cap	857,258	June 18	3524	745	128	2658
Rosenberg, David, and J. B. Hartnett, Providence, R. I. Window-shade fixture	856,302	June 11	1682	349	128	2154
Rosenthal, Abraham, Altoona, Pa. Clasp	857,488	June 18	3969	843	128	2766
Rosenvall, Emil, Salt Lake City, Utah. Loading apparatus	858,218	June 25	5447	1162–3	128	3175
Rosenwasser, Morris, New York, N. Y. Legging	857,963	June 25	4936	1044	128	3043
Ross, Harry B., assignor to Berlin Machine Works, Beloit, Wis. Cutter-head knife-sharpener	856,726	June 11	2534	521	128	2370
Rotary Machine Company. (See Prindle, Henry U., assignor.)						
Roth, Charles C., Barberton, assignor of one-half to S. S. Fisher, Doylestown, Ohio. Device for holding glass and similar articles in place	855,813	June 4	717	148	128	1877
Rothenbucher, George, New York, N. Y. Piston-rod packing	856,303	June 11	1684	349	128	2154
Roux, Charles J., Pantin, France. Domestic and industrial heating appliance	858,105	June 25	5242	1111–12	128	3124
Roux, Charles J., Paris, France. Apparatus for consuming smoke in stoves and furnaces	858,106	June 25	5244	1112	128	3124
Roy, John H. (See Reed, Benjamin H., assignor.)						
Royal Glass Jar and Bottle Company. (See Craig, Alvin M., assignor.)						
Royal Typewriter Company. (See Hess, Edward B., assignor.)						
Royden Marble Machinery Company. (See Peirce, John R., assignor.)						
Royle, Vernon E., Paterson, N. J. Combined jig-saw and drill	855,814	June 4	718	148–9	128	1877
Rucker, Benjamin P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Circuit-breaker	856,425	June 11	1967	405	128	2226
Rudolphi, Frank, Chicago, Ill., assignor to American Can Company, New York, N. Y. Sap-receiving receptacle and apron	857,964	June 25	4938	1044	128	3044
Rudy, J. F. (See Phillippi, Benton N., assignor.)						
Rueckheim Bros. & Eckstein. (See Eckstein, Henry G., assignor.)						
Ruger, William, Jr., Janesville, Wis., assignor to Underwood Typewriter Company, New York, N. Y. Platen-releasing device	855,532	June 4	165	33	128	1736
Ruggles, Wells M., Mellen, Wis. Fence-post	857,835	June 25	4659	989	128	2975
Runyon, Vandalia R., Plainfield, N. J. Bosom-form	856,914	June 11	2871	601	128	2452
Ruppel, Jacob, assignor to L. Ruppel, Pittsburg, Pa. Trousers	858,107	June 25	5246	1113	128	3124
Ruppel, Louis. (See Ruppel, Jacob, assignor.)						
Rusby, John M., assignor to United Gas Improvement Company, Philadelphia, Pa. Water-gas apparatus	857,760	June 25	4516	953	128	2940
Rush, Amos W., Grand Rapids, Mich., assignor to Northwestern Expanded Metal Company, Chicago, Ill. Expanded-metal-splicing device	857,307	June 18	3626	767	128	2685
Rush, Martin V., Anderson, Ind. Pneumatic tire	858,029	June 25	5079	1075	128	3080
Russell, Earl F. L. (See Martin, Thomas, and Russell.)						
Russell & Erwin Manufacturing Company. (See Voight, Henry G., assignor.)						
Russell, Fred J., Newberry, S. C. Medicine-receptacle	855,984	June 4	1050	218	128	1959
Russell, George, McKeesport, Pa. Conduit	855,985	June 4	1051	218	128	1959
Russell, George A., deceased, Worcester, Mass.; M. C. Russell, administratrix. Lamp-protector	857,541	June 18	4076	865	128	2799
Russell, Mary C., administratrix. (See Russell, George A.)						
Rust, William F., Joliet, Ill. Chimney-valve for hot-blast stoves	856,603	June 11	2298	472	128	2311
Ruth, Samuel D., Beatrice, Nebr. Paper and envelop feeding attachment for type-writers	857,677	June 25	4333	916	128	2893
Ruthven, Arthur T., Topeka, Kans. Means for releasing and leading animals from stables	856,727	June 11	2535	521–2	128	2370
Ruyle, S. W., *et al.* (See Milburn, William M., assignor.)						
Ryan, John G., Montreal, Quebec, Canada. Automatic railway-switch	858,219	June 25	5449	1163	128	3176
Ryan, Thomas J., *et al.* (See Whitmarsh, Charles E., assignor.)						
Ryon, Eppa H., Worcester, Mass., assignor to Crompton & Knowles Loom Works. Loom	855,815	June 4	721	149	128	1877
Rystrom, Charles, Rockford, Ill. Lock-nut	856,728	June 11	2538	522	128	2371
Rystrom, Charles, Rockford, Ill. Lock-nut	856,729	June 11	2539	522	128	2371
S. R. Dresser Manufacturing Company. (See Clark, James, assignor.)						
Saaler, Gustav, New York, N. Y. Gas-washer	856,731	June 11	2542	523	128	2372
Saaler, Gustav, New York, N. Y. Purifying gases	856,732	June 11	2546	523	128	2373
Saffold, Reuben E., Rochester, N. Y. Shoe-dauber	856,733	June 11	2549	523	128	2374
Sagendorph, Longley L., Philadelphia, Pa. Ceiling construction	855,816	June 4	723	150	128	1878
Sainte-Beuve, Augusta. (See Cornilleau and Sainte-Beuve.)						
Salyer, Harry M., assignor to J. H. Ludwig, New York, N. Y. Automatic piano	857,260	June 18	3527	746	128	2659
Salyer, Harry M., assignor to J. H. Ludwig, New York, N. Y. Self-playing musical instrument	857,261	June 18	3529	746–8	128	2660
Sample, Charles H., Homestead, assignor to W. Kennedy, Bellevue, Pa. Blast-furnace-charging apparatus	857,259	June 18	3525	745	128	2659
Samson, Edgar. (See Best, Ash, and Samson.)						
Samuelson, Frederick, Rugby, England, assignor to General Electric Company. Elastic-fluid turbine	856,426	June 11	1970	405	128	2228
Sanchis, Enrique, Paris, France. Frame for automobiles	858,108	June 25	5247	1113–14	128	3126
Sandell, Henry K., assignor to Mills Novelty Company, Chicago, Ill. Electric self-playing violin	856,604	June 11	2299	472–5	128	2312
Sanders, Joel, Bliss, Idaho. Wire stretcher and splicer	857,489	June 18	3970	843	128	2770
Sanders, Walter E., Cleveland, Ohio, assignor to Mechanical Rubber Company, New York, N. Y. Packing	856,605	June 11	2300	475	128	2313
Sandos, Henri, Tavannes, Switzerland. Winding and setting mechanism for watches	856,183	June 4	1411	298	128	2048
Sandusky, Charles, *et al.* (See Shaw, Ira C., assignor.)						
Sandy Hill Iron and Brass Works. (See Packer, James W., assignor.)						
Sanford, Charles L., Washington, Pa., assignor of one-fourth to O. J. Morrison, Ripley, W. Va. Rolling-pin	857,308	June 18	3626	768	128	2685

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Sanitary Appliance Company. (See Howell, Lewis O., assignor.)						
Sanitary Sectional Brush Company. (See Rehfuss and Buch, assignors.)						
Santmyers, Charles A., assignor to L. F. Liveright and E. Davidson, Philadelphia, Pa. Circular independent-needle knitting-machine	857,836	June 25	4662	989–90	128	2976
Sargent, George H., Flushing, N. Y. Car-replacer. (Reissue)	12,667	June 25	5747	1224–5	128	3257
Satterthwaite, William W., Washington, N. C. Speed-regulator for pumps	857,490	June 18	3971	844	128	2770
Sauerbier, Anthony J., Wellsville, Ohio. Hand-stamp	856,915	June 11	2873	601	128	2453
Saunders, Charles R., and A. B. Breitweg, Cleveland, Ohio. Guard for tires	857,365	June 18	3737	791	128	2712
Savage, Ernest L., Fairfield, Me. Means for guiding a moving web or apron	855,482	June 4	78	17	128	1715
Savastano, Antonio, New York, N. Y. Lady's comb with adjustable ornament	857,113	June 18	3259	685	128	2591
Sawyer, Frank P., Muscatine, Iowa, assignor to American Pearl Button Company. Display-rack	856,809	June 11	2679	553	128	2407
Scammell, Charles H., New York, N. Y., assignor to New Jersey Wire Cloth Company, Trenton, N. J. Centering construction	856,371	June 11	1852	381	128	2199
Scanlan, Joseph F., New York, N. Y. Brush for cleaning horses. (Reissue)	12,662	June 18	4137	876	128	2810
Scanlon, Patrick J., Newark, N. J. Chain-snap	856,606	June 11	2310	475	128	2313
Schaal, Karl, Seward, Nebr. Harrow attachment	856,916	June 11	2874	601	128	2453
Schad, John L., assignor of one-half to O. W. Carter, Fortuna, Mo. Ratchet-wrench	858,030	June 25	5080	1075	128	3080
Schaefer, Arthur E. (See Dow, Gates, and Schaefer.)						
Schaefer, George A., *et al.* (See McCormick and Miller, assignors.)						
Schaefer, Henry H., *et al.* (See McCormick and Miller, assignors.)						
Schaeffer, John S., Brookville, Pa. Cross-tie	857,907	June 25	4901	1019	128	3009
Schafer, Frank, Philadelphia, Pa. Machine for making tubes	857,678	June 25	4335	916–17	128	2894
Schalek, Alfred, Chicago, Ill. Photographic-film holder	855,591	June 4	283	57	128	1768
Schall, Fred H., and M. Plunkett, Galesburg, Ill.; said Plunkett assignor to said Schall. Wrench	856,660	June 11	2414	497	128	2339
Schardt, August. (See Sudekum, William, assignor.)						
Schauer, Sherman C., assignor to Cincinnati Machine Tool Company, Cincinnati, Ohio. Stop mechanism for drill-presses	857,207	June 18	3442	726	128	2638
Schauwecker, Edgar J., Clay City, Ind. Concrete steel suspension-arch	855,986	June 4	1053	218	128	1959
Scheffler, Theodore, Paterson, N. J. Variable-speed and power-transmitting device	857,679	June 25	4339	917–18	128	2895
Scheif, Charles A., Beechwood, Pa. Window-shade pull	856,987	June 11	3007	631	128	2487
Schell, Christian W., assignor of one-half to W. C. Taylor, Cleveland, Ohio. Shoe-fitting appliance	857,837	June 25	4666	990	128	2977
Scheper, James E., Baltimore, Md. Braking mechanism	858,308	June 25	5598	1197	128	3213
Schieren, George A., Bristol, Tenn. Leather-rolling machine	856,810	June 11	2682	554	128	2406
Schillinger, Christian, Scranton, Pa. Register	857,309	June 18	3628	768–9	128	2685
Schlageter, Andrew B., Ottumwa, Iowa. Combination-square	855,987	June 4	1054	219	128	1960
Schlesinger Baldwin, *et al.* (See Audley, Francis H., assignor.)						
Schmachtenberger, Ottomer, Roodhouse, Ill. Saw-filing machine	855,673	June 4	436	90–2	128	1807
Schmidt, Ferdinand, Schreiberhau, Germany. Massage apparatus	857,761	June 25	4517	953	128	2940
Schmidt, Max, on board of the hulk "Kronprinz," in Kiel-Wik, Germany. Rotary engine	855,906	June 4	906	188	128	1923
Schmitt, Edward D., Brooklyn, assignor to Monarch Seal Company, New York, N. Y. Bottle-seal	856,304	June 11	1685	349	128	2154
Schmitt, Edward D., Brooklyn, assignor to Monarch Seal Company, New York, N. Y. Applying bottle-seals	856,917	June 11	2875	602	128	2453
Schmucker, Emanuel D., Nappanee, Ind. Liquid-fuel burner	858,220	June 25	5451	1163	128	3176
Schnaitmann, Karl, assignor to Daimler-Motoren-Gesellschaft, Untertürkheim, Germany. Gear for automobiles, &c	857,114	June 18	3260	686	128	2591
Schneider, Henry J., and H. Tietz, Eau Claire, Wis.; said Tietz assignor to said Schneider. Sleigh-runner	856,988	June 11	3008	632	128	2487
Schnitger, Edward P., *et al.* (See Malocsay, Frank X., assignor.)						
Schnitger, Paul, *et al.* (See Malocsay, Frank X., assignor.)						
Schoen, Paul, assignor to Hall, Hartwell & Co. and P. E. Schoen, Troy, N. Y. Plaiting-gage	857,208	June 18	3444	726	128	2638
Schoen, Paul E. (See Schoen, Paul, assignor.)						
Schoenecke, August J., Chicago, Ill. Bench-back-attaching bracket	855,817	June 4	725	150	128	1878
Schoenfelt, Harry W. (See Canty and Schoenfelt.)						
Schoenhut, William F., Philadelphia, Pa. Toy	858,221	June 25	5452	1163	128	3177
Schoenner, Georg, Nuremberg, Germany. Compasses	855,592	June 4	283	57	128	1768
Scholl, Roland H., Karlsruhe, assignor to Badische Anilin & Soda Fabrik, Ludwigshafen-on-the Rhine, Germany. Dye of the anthraquinone series and making same	856,811	June 11	2684		128	2406
Schönleber, Wilhelm, Strassburg, Germany. Heat-conductor	857,115	June 18	3262	687	128	2592
Schoonmaker, John D., Camden, N. J., Trimmer for sewing-machines	857,491	June 18	3973	844–5	128	2771
Schorno, Antony, Passaic, N. J. Metallic envelop-seal	857,908	June 25	4803	1019	128	3009
Schreck, Michael, Cincinnati, Ohio. Grinding-mill	856,918	June 11	2876	602	128	2453
Schroeder, John, Davenport, Iowa. Gearing	856,812	June 11	2686	554–5	128	2409
Schuh, George H., and T. W. Hinton, Earl Park, Ind. Air-pump	856,372	June 11	1854	381	128	2199
Schultz, John, Chicago, Ill. Blow-gun	856,813	June 11	2688	555	128	2409
Schultz, John A., Jr., Newark, N. J. Pressure-regulator	856,989	June 11	3009	632–3	128	2488
Schultz, William L., New York, N. Y. Non-refillable bottle	857,366	June 18	3739	791	128	2712
Schulz, Otto C., assignor to Bauer & Black, Chicago, Ill. Receptacle for antiseptic bandages	857,680	June 25	4342	918	128	2896
Schulz, Wilhelm, Houston, Tex. Flexible metallic hose	856,427	June 11	1971	405–6	128	2228
Schuppe, Max, assignor to B. F. Seadler, New York, N. Y. Electric-circuit controller	858,222	June 25	5452	1164	128	3177
Schuring, Harm, Washington, D. C. Saw-oiling device	856,734	June 11	2550	524	128	2374
Schuyler, Daniel. (See Laughlin and Schuyler.)						
Schuyler, Daniel, Bridgeport, Conn., and H. Laughlin, Jr., assignors to Perfect Sliding Door Company, Los Angeles, Cal. Combination hanger and track for edgewise-movable doors	856,607	June 11	2311	475–6	128	2314
Schwartz, Morris M., North Bergen, N. J. Scale	857,416	June 18	3825	811	128	2734
Schwarz, William C., Edwardsville, Ill. Hydraulic transmission device	858,109	June 25	5249	1114	128	3125
Schwarzschild, Solomon, assignor to Emergency Rubber Company, Rochester, N. Y. Overshoe	858,031	June 25	5081	1076	128	3080
Schweder, Kurt W. O., Johannesburg, Transvaal. Instrument for surveying boreholes	856,990	June 11	3011	633	128	2488
Schwene, William, Ogden, Iowa. Sheet-metal coaster brace and beam	856,919	June 11	2877	602	128	2454
Sciple, Henry M., San Francisco, Cal., assignor of one-half to S. Mahoney, Minneapolis, Minn. Vibrator	856,920	June 11	2878	602	128	2454
Scofield, Hyrum P., Fishhaven, Idaho. Guard	856,814	June 11	2689	555	128	2410
Scott, George, Amsterdam, N. Y., assignor to Union Special Machine Company, Chicago, Ill. Necking garments	857,492	June 18	3975	845	128	2771
Scott, John A., Marinette, Wis. Wrench	855,866	June 4	8 3	172	128	1902
Scovill Manufacturing Company. (See Goss and Wolff, assignors.)						
Seacrist Emerson F. (See Williams and Seacrist.)						
Seadler, Bernard F. (See Schuppe, Max, assignor.)						
Seaman, Alonzo D., assignor to George Burroughs and Sons, Milwaukee, Wis. Wardrobe-trunk	857,116	June 18	3	687	128	2592

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Seaman, Ralph M., *et al.* (See Graham, Frederick S., assignor.)						
Seaward, Charles W., Malden, assignor to C. W. Seaward Company, Boston, Mass. Gas-governor for type-machines and the like	856,815	June 11	2690	555	128	2410
Seddon, Harry L., Syracuse, N. Y. Loose-leaf book	855,398	June 4	1055	219	128	1960
Sedivy, Frank, Globe, Ariz. Ter. Power-transmission mechanism	857,493	June 18	3077	845	128	2771
Seeler, Alfred A. O., Newark, N. J. Watch	856,608	June 11	2315	476	128	2314
Seibel, Oscar E., Bloomington, Ill. Voting-machine	857,081	June 25	4344	918–19	128	2896
Selas Gesellschaft mit beschränkter Haftung. (See Karger, Heinrich L., assignor.)						
Selhorst, Sikko B. (See Bouma, Jacob, assignor.)						
Sellers, Traves N., Munro, Ontario, Canada, assignor to Indiana Manufacturing Company, Indianapolis, Ind. Pneumatic straw-stacker	856,609	June 11	2316	476	128	2315
Sellon, Henry, Bridger, Wyo. Whiffletree	857,310	June 18	3632	769	128	2696
Semet-Solvay Company. (See Jordan, Harry W., assignor.)						
Senesac, Arthur L. (See Richardson and Senesac.)						
Senkbeil, Emil, Pankow, near Berlin, Germany. Apparatus for steaming cloth	858,032	June 25	5082	1076	128	3080
Senne, Solomon S. (See Haynes, William S., assignor.)						
Senter, John F., assignor of one-half to M. Llewellyn, M. G. Weidner, and J. H. Street, Chattanooga, Tenn. Boiler-feeder	856,548	June 11	2182	449–50	128	2280
Senter, John F., assignor of one-half to M. Llewellyn, M. G. Weidner, and J. H. Street, Chattanooga, Tenn. Valve-operating mechanism	856,549	June 11	2185	450–1	128	2280
Senter, John F., assignor of one-half to M. Llewellyn, M. G. Weidner, and J. H. Street, Chattanooga, Tenn. Valve mechanism for tanks and reservoirs	856,550	June 11	2190	451	128	2281
Senter, John F., assignor of one-half to M. Llewellyn, M. G. Weidner, and J. H. Street, Chattanooga, Tenn. Separator	856,551	June 11	2193	452	128	2289
Seperak, Florio, Lead, S. D. Splicing wire cables	856,493	June 11	3082	428	128	2255
Seward, George O. (See Kügelgen and Seward.)						
Seymour, Benjamin F., Jr. (See Pabst and West, assignors.)						
Seymour, Ralph C., assignor to C. B. Cottrell & Sons Company, New York, N. Y. Cutting and folding machine	856,991	June 11	3014	633–4	128	2489
Shainsey, Frederick J., Sr., Dayton, Ohio, assignor to Krentler-Arnold Hinge Last Company, Detroit, Mich. Last	857,117	June 18	3264	687	128	2592
Shank, Augustus W., Detroit, Mich., assignor to C. E. Walker, Windsor, Ontario, Canada. Dress-placket closer	856,373	June 11	1855	381	128	2200
Sharp, Charles S., Auburn, N. Y., assignor to International Harvester Company. Riding attachment for harrows	856,305	June 11	1686	349–50	128	2155
Sharp, John C., *et al.* (See Okay, George B., assignor.)						
Sharpneck, Matthew C., Boston, Mass., assignor to American Peat Machinery Company, Portland, Me. Machine for forming and compressing peat, &c., into blocks or cakes	858,352	June 25	5090	1216–17	128	3241
Sharpneck, Matthew C., Boston, Mass., assignor to American Peat Machinery Company, Portland, Me. Peat-machine	858,353	June 25	*5095	1217	128	3241
Sharpneck, Matthew C., Boston, Mass., assignor to American Peat Machinery Company, Portland, Me. Peat-machine	858,354	June 25	5704	1217	128	3244
Shauck, Albert K. (See Lippy and Nicodemus, assignors.)						
Shaw, Charles H. (See Decker and Shaw.)						
Shaw, Edwin C., assignor to B. F. Goodrich Company, Akron, Ohio. Pneumatic-tire clip	856,494	June 11	2083	428	128	2256
Shaw, Francis G., assignor to International Switch and Signal Company, Boston, Mass. Means for keeping switch and signal apparatus free from snow and ice	856,184	June 4	1413	298–9	128	2049
Shaw, Frank B., and J. M. Eberle, Warsaw, Ind. Track-alining apparatus	855,733	June 4	569	117	128	1842
Shaw, Frederick G., London, England. Spectacles, motor-goggles, and the like	857,838	June 25	4668	990	128	2977
Shaw, Ira C., assignor of two-thirds to C. Sandusky and W. Price, Mount Pleasant, Pa. Tapping-machine	856,907	June 4	908	188–9	128	1923
Shear, Harry D., and U. S. Rhodabarger, Mannington, W. Va. Clamp	855,989	June 4	1057	219	128	1961
Sheble, Horace, assignor to Hawthorne & Sheble Manufacturing Company, Philadelphia, Pa. Talking-machine	855,674	June 4	440	92	128	1808
Shedlock, James J., London, England. Apparatus for making artificial fuel	857,417	June 18	3827	811	128	2734
Shelden, Levi R., Cestos, Okla. Ter. Lifting apparatus	855,990	June 4	1058	220	128	1961
Sheldon, Richard. (See Orcutt and Sheldon.)						
Sherman, Howard B., Battle Creek, Mich. Nozzle	856,816	June 11	2692	556	128	2410
Sherman, Thomas L., assignor to Standard Rivet Company, Boston, Mass. Machine for inserting ornaments	857,839	June 25	4669	991	128	2978
Sherry, James A., Fall River, Mass. Express-wagon	858,223	June 25	5455	1164	128	3177
Sherry, James A., Fall River, Mass. Vehicle propelling and steering mechanism	858,224	June 25	5458	1164–5	128	3178
Sherwood, Earl, Honesdale, Pa. Car-fender	858,225	June 25	5459	1165	128	3179
Shevlin, Henry P. (See Shevlin, Joseph P. and H. P.)						
Shevlin, Joseph P. and H. P., Denver, Colo. Water-motor	858,226	June 25	5462	1165–6	128	3179
Shields, Robert, South Boston, assignor to Frank Ridlon Company, Boston, Mass. Trolley-catcher	858,355	June 25	5707	1218	128	3245
Shilling, Edward C., assignor of one-third to E. M. West, Columbus, Ohio. Non-refillable bottle	856,735	June 11	2551	524	128	2375
Shoenberg, Milton H., assignor to Consolidated Electric Appliance Companies, Ltd., San Francisco, Cal. Electrical heater and expansion coil	856,736	June 11	2553	524	128	2375
Shore, Albert F. and W., New York, N. Y. Multo-conductor	857,367	June 18	3742	791	128	2713
Shore, William. (See Shore, Albert F. and W.)						
Short, Thomas J., Danville, Ill. Cleaner for car-windows	856,428	June 11	1973	406	128	2228
Shourds, Walter S., Philadelphia, Pa. Concrete construction	858,227	June 25	5465	1166	128	3180
Shulze, John H. F., New York, N. Y. Railway-track construction	858,110	June 25	5251	1114	128	3125
Shuman, Arno, Connellsville, Pa., assignor to Continuous Glass Press Company. Machine for making wire-glass	856,661	June 11	2415	497	128	2339
Shunk, John A., *et al.* (See Tucker, Leroy, assignor.)						
Shunk, John A. (See Tucker and Shunk.)						
Shutz, John A., and M. L. Kirkman, assignors to Standard Pattern & Manufacturing Company, Richmond, Ind. Computing cheese-cutter	857,840	June 25	4670	991	128	2978
Siegfreid, Enis A., Lamar, Colo. Safe-lock	858,111	June 25	5252	1115	128	3125
Siegfried, Robert, Pittsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Commutator-brush	856,429	June 11	1974	406	128	2228
Siegrist, Benjamin F., assignor of one-half to J. G. Morith, Buffalo, N. Y. Valve	856,552	June 11	2196	452	128	2283
Sielaff, Max, Berlin, Germany. Post-stamp-vending apparatus	856,104	June 4	1341	261–2	128	2005
Siemens & Halske Aktiengesellschaft. (See Pfeil, Robert, assignor.)						
Sikes, Newton C., Dallas City, Ill. Harness attachment	856,495	June 11	2085	429	128	2256
Sill, Richard V., Newark, N. J., assignor of two-thirds to A. E. Pelham, New York, N. Y. Electric controller	856,737	June 11	2554	524	128	2375
Silver Manufacturing Company. (See Rice, Louis E., assignor.)						
Silver, William H., and C. A. Bunyan, Hammond, Ill. Apparatus for moving dredges	858,033	June 25	5083	1076–7	128	3081
Silvey, William L., Dayton, Ohio. Making storage-battery plates	855,991	June 4	1059	220	128	1961
Simms, Henry W., Bay City, Mich. Wrench	855,483	June 4	81	17	128	1715
Simons, Isaac M., Youngstown, Ohio. Electric fire-alarm	856,921	June 11	2680	603	128	2454
Simplex Time Recorder Company. (See Stowell, Desrie A., assignor.)						
Simpson, Charles C. W., Wigan, England. Brake for railway-vehicles	856,738	June 11	2555	535	128	2376

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Sims, Albert N., *et al.* (See Clayton, Frederick W., assignor.)						
Sims, Wm. A. (See Mallard, Logan L., assignor.)						
Sinclair, Alexander, *et al.*, trustees and executors. (See Sinclair, George.)						
Sinclair, George, deceased; R. Sinclair, Edinburgh, A. and G. Sinclair, Leith, J. C. and W. Sinclair, Edinburgh, Scotland, trustees and executors. Water-tube boiler	856,185	June 4	1415	299	128	2049
Sinclair, James C., *et al.*, trustees and executors. (See Sinclair, George.)						
Sinclair, Robert, *et al.*, trustees and executors. (See Sinclair, George.)						
Sinclair, William, *et al.*, trustees and executors. (See Sinclair, George.)						
Sinek, William J., and R. S. Blome, Chicago, Ill. Pavement and making the same	856,105	June 4	1243	262	128	2006
Singer Manufacturing Company. (See Allen, Edward B., assignor.)						
Singer Manufacturing Company. (See Allen and Goodyear, assignors.)						
Singer Manufacturing Company. (See De Voe, Albert H., assignor.)						
Singer Manufacturing Company. (See Horton, Charles M., assignor.)						
Singer Manufacturing Company. (See Laubscher, Alexander, assignor.)						
Sinks, William R. (See Folwell and Sinks.)						
Sisson, Arthur C., Pawtucket, R. I. Alarm-bell for elevators	857,368	June 18	3743	792	128	2713
Sjolander, Gustaf. (See Cullen and Sjolander.)						
Skelton, Enoch, Tacoma, Wash. Nipple attachment for points	855,992	June 4	1061	220	128	1962
Skinner, Benjamin C., Oakland, Cal. Gas-engine valve	857,762	June 25	4518	953–4	128	2940
Skinner, Lewis C., and E. Myers, Catawba, N. C. Hitching-strap clamp	855,675	June 4	441	92	128	1808
Slack, Harriet A., *et al.* (See Woods, Edward D., assignor.)						
Slade, Basil A., London, England. Rotary engine	856,739	June 11	2557	525–6	128	2377
Slater, Albert G., Viele, Iowa. Match-box	855,993	June 4	1063	220	128	1962
Slater, William E., San Francisco, Cal. Motor-vehicle steering-gear	857,494	June 18	3979	846	128	2772
Slaughter, James T., Colfax, Iowa. Combination-tool	858,228	June 25	5467	1166	128	3181
Slaybaugh, Eli H., assignor of one-half to H. B. Gardner, Alliance, Ohio. Truck-brake	857,118	June 18	3266	687	128	2593
Sloman, Eugene H. (See Murdock, Charles A. and C. F., assignors.)						
Smart, Rupert B., Chicago, Ill. Window-shelf	858,112	June 25	5255	1116	128	3126
Smeeton, John A. (See Molas, Jean, assignor.)						
Smith, Alfred H., *et al.* (See Gilroy, Frank J., assignor.)						
Smith, Andrew H., New York, N. Y. Steam-turbine	857,965	June 25	4939	1044	128	3044
Smith, Arthur, Easton, Pa., assignor to American Horse Shoe Company, Phillipsburg, N. J. Apparatus for rolling billets in the manufacture of machine-made horseshoes	855,533	June 4	167	33–4	128	1737
Smith, Arthur, Easton, Pa., assignor to American Horse Shoe Company, Phillipsburg, N. J. Horseshoe-calk	855,534	June 4	171	35	128	1738
Smith, Arthur, Easton, Pa., assignor to American Horse Shoe Company, Phillipsburg, N. J. Horseshoe-machine	855,535	June 4	172	35	128	1738
Smith, Charles P., Canton, Ohio. Brake head and shoe	856,186	June 4	1417	300	128	2049
Smith, Chetwood, Worcester, Mass. Regulating attachment for electric lights	857,311	June 18	3633	769	128	2687
Smith, Curtis P. (See Stinchfield, Frank E., assignor.)						
Smith, David C., Kalgoorlie, Western Australia, Australia. Electric cooking-stove	855,536	June 4	174	35	128	1738
Smith, Edmond F., Shinnston, W. Va. Wrench	855,537	June 4	175	35–6	128	1738
Smith, Edward A., Loveland, Colo., assignor to Fort Collins Implement Manufacturing Company. Beet-pulling machine	856,817	June 11	2694	556	128	2411
Smith, Elmer F., Cripple Creek, Colo. Drill-feed	858,113	June 25	5256	1116	128	3126
Smith, Frank D., Springfield, Mass. Cutter-head for milling-machines	856,306	June 11	1688	350	128	2155
Smith, Franklin P. (See McClure, Edward, assignor.)						
Smith, Frederick C., New Milford, Conn. Balance-staff for watches	857,312	June 18	3634	769	128	2687
Smith, George H., Cedar Rapids, Iowa, assignor to Union Typewriter Company, Jersey City, N. J. Type-writer	858,356	June 25	5710	1218–20	128	3246
Smith, George W., assignor to Ingersoll Milling Machine Company, Rockford, Ill. Face-mill grinder	856,662	June 11	2418	498	128	2340
Smith & Griggs Manufacturing Company. (See Pilkington, Joseph H., assignor.)						
Smith, Harper F., *et al.* (See Lang, Adolph, assignor.)						
Smith, Henry A., Gurley, Ala. Grate	855,538	June 4	176	36	128	1739
Smith, Herbert E., Haverhill, assignor to Pike Manufacturing Company, Pike, N. H. Display-stand	857,763	June 25	4520	954	128	2940
Smith, Herbert M., Worcester, Mass. Metal-bending machine	857,764	June 25	4521	954	128	2941
Smith, James B., Jackson, Miss. Jail-cell	858,309	June 25	5601	1198	128	3213
Smith, John G., Chicago Heights, Ill. Wire-working machine	856,307	June 11	1690	350–1	128	2156
Smith, John H. (See Dischner, Friedrich J., assignor.)						
Smith, Joseph, Loami, assignor to J. W. Grey, Maxwell township, Sangamon county, Ill. Churn	856,187	June 4	1418	300	128	2050
Smith, Lambert H., Denver, Colo. Mucilage-bottle	856,496	June 11	2086	429	128	2257
Smith, Reuben J., Waukegan, Ill. Harmonic horn	857,765	June 25	4524	955	128	2942
Smith, Robert P., and G. E. Drum, Philadelphia, Pa. Return-liquor system for dyeing and bleaching machines	856,922	June 11	2881	603	128	2455
Smith, Robert R., assignor, by mesne assignments, to General Specialty Manufacturing Company, Philadelphia, Pa. Tack and nail puller	858,034	June 25	5085	1077	128	3082
Smith, Samuel, Wabasso, Minn. Harvester-needle	855,539	June 4	178	37	128	1739
Smith, Samuel, Toronto, Ontario, Canada. Jacquard loom	858,035	June 25	5087	1077	128	3082
Smith, Thomas F., Blackburn, England. Humidifier for moistening the warp-threads of looms when weaving	856,923	June 11	2883	603–4	128	2455
Smith, Wesley F., Bandana, Ky. Rope and bucket coupling	856,308	June 11	1696	352	128	2157
Smith, William C., Paterson, N. J. Sound-producing device	857,209	June 18	3445	727	128	2639
Smith, William C. N., Lincoln, Nebr., and E. Roadifer, Logan, Iowa. Grain-door for cars	856,663	June 11	2420	499	128	2340
Smith, William R., assignor of one-half to H. H. Hewitt, Buffalo, N. Y. Pneumatic tire	855,818	June 4	726	150	128	1879
Smith, William R., assignor of one-half to H. H. Hewitt, Buffalo, N. Y. Machine for filling fabric for tires	857,495	June 18	3981	846–7	128	2773
Sneed, Wade H., Pensacola, Fla. Harness	858,114	June 25	5257	1116	128	3126
Snider, David W., assignor of two-thirds to T. D. Maness and E. D. Bivens, Salisbury, N. C. Dust-pan	856,740	June 11	2560	526	128	2377
Snow, Ada E. (See Snow, Peter E., assignor.)						
Snow, Edwin M. (See Drew, Herbert H., assignor.)						
Snow, Peter E., assignor to A. E. Snow, Denver, Colo. Means for calking pipe-joints	856,106	June 4	1246	262	128	2006
Snyder, Charles D., Dixon, Iowa. Seed-corn hanger	856,818	June 11	2695	556	128	2411
Snyder, Richard A. L. (See Grace and Snyder.)						
Société Anonyme des Automobiles Eugène Brillié. (See Brillié, Auguste E., assignor.)						
Society of Chemical Industry in Basle. (See Engi, Gadient, assignor.)						
Sölbeck, Christian P. (See Christensen and Sölbeck.)						
Sommer, Charles, New York, N. Y. Soldering-iron holder and heater	858,036	June 25	5089	1077	128	3083
Sooy, Ephraim C. (See Concannon, Sherman, assignor.)						
Sorrell, Henry T., Baltimore, Md. Shelf-bracket	855,994	June 4	1064	221	128	1963
Southam, Arthur D., and H. C. Hides, Hartford, Conn. Illuminating-mirror	856,497	June 11	2087	429	128	2257
Southard, James H., *et al.* (See Gilroy, Frank J., assignor.)						
Southworth, Henry E., Colchester, assignor to Porter Screen Manufacturing Company, Burlington, Vt. Curtain-stretcher	855,908	June 4	910	189	128	1923
Sparks, Frederick W. (See Keenan, Thomas, assignor.)						
Sparks, Thomas H., Wichita, Kans. Apparatus for heading Kafir corn	855,819	June 4	728	150–1	128	1879
Sparks, Thomas H., Wichita, Kans. Collar or cuff button	856,819	June 11	2697	557	128	2412

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Spears, Ralph R., Wheeling, W. Va. Piston-packing	856,992	June 11	3016	635	128	2489
Speed, James B. (See Isaacs and Speed.)						
Spence, David C., *et al.* (See Winter, Frederick W., assignor.)						
Sperber, Eduard A., Dresden, Germany. Apparatus for automatically recording the direction of the wind in the vertical plane	858,310	June 25	5603	1198	128	3213
Sperling, Max. (See Weinstein, Moritz, assignor.)						
Sperry, Edward. (See Pfeil, Frederick C., assignor.)						
Sperry, Lewis. (See Broderick, David F., assignor.)						
Spiro, Charles, New York, N. Y. Paper-clip	857,418	June 18	3829	812	128	2734
Sponsel, Charles W., Hartford, Conn., assignor to William H. Brodie Company, New York, N. Y. Clutch	855,867	June 4	824	172	128	1903
Sprague, Dudley D., California, and P. J. Sprague, Gashland; said Dudley D. Sprague assignor to Sprague Ice Company, California, Mo. Apparatus for producing ice	857,841	June 25	4674	991-2	128	2979
Sprague Ice Company. (See Sprague, Dudley D. and P. J., assignors.)						
Sprague, Perley J. (See Sprague, Dudley D. and P. J.)						
Sprong, Severn D., Brooklyn, N. Y., assignor of one-half to Metropolitan Engineering Company. Load-equalizer for generators	856,741	June 11	2562	526-7	128	2378
St. John, James W., Janesville, Iowa. Adjustable clamp for cultivator-shovels	855,487	June 4	89	19	128	1717
St Louis Car Company. (See Bosenbury, Joseph M., assignor.)						
Stackhouse, John A., Dover, N. J. Grate for bakers' ovens	857,210	June 18	3447	727	128	2639
Stackpole, Charles F., Lynn, assignor, by mesne assignments, to Turner Tanning Machinery Company, Boston, Mass. Scarfing-machine	857,682	June 25	4350	920	128	2897
Stadel, John M., assignor of one-half to J. C. Lowrey, Wilmington, Del. Engine	857,842	June 25	4676	992	128	2979
Stadtmuller, Max F., Pomeroy, Iowa. Combined churn and butter-worker	857,119	June 18	3267	688	128	2593
Stallings, Samuel, Fountain Inn, S. C. Cotton-chopper	855,995	June 4	1065	221	128	1963
Stamps, Lorenzo D., assignor to himself and J. W. Hamilton, Anahuac, Tex. Spark-producing mechanism for explosive-engines	855,996	June 4	1066	221-2	128	1963
Stancliff, George W., El Campo, assignor to Stancliff Well Screen and Mfg. Co., Houston, Tex. Well-screen	857,313	June 18	3636	770	128	2687
Stancliff Well Screen and Mfg. Co. (See Stancliff, George W., assignor.)						
Standard Brake Company (See Cormack, Maurice H., assignor.)						
Standard Pattern & Manufacturing Company. (See Shuts and Kirkman, assignors.)						
Standard Railway Equipment Company. (See Murphy, Albert C., assignor.)						
Standard Rivet Company. (See Sherman, Thomas L., assignor.)						
Standard Sewing Machine Company. (See Diehl, Jacob, assignor.)						
Stanfield, Frank S. (See Hoffheins and Stanfield.)						
Stanfield, William T., assignor of one-half to E. Ettinger, St. Louis, Mo. Belt-shifting mechanism	857,314	June 18	3637	770	128	2688
Stangebye, Conrad, San Francisco, Cal. Boat for ice-breaking and other purposes	857,766	June 25	4525	955	128	2942
Stanley-G. I. Electric Manufacturing Company. (See Bowman, Francis H., assignor.)						
Stanley G. I. Electric Mfg. Company. (See Euker, George W., assignor.)						
Stanley, John O. (See Perkins and Stanley.)						
Staples, Albert F., Brockton, Mass. Cash-recorder	856,374	June 11	1856	381-2	128	2200
Staples, Albert F., Brockton, Mass., assignor to McCaskey Register Company, Alliance, Ohio. Manifolding book or pad	855,997	June 4	1068	222	128	1964
Stapp, David W., Phillipsburg, Kans. Draft device	857,211	June 18	3448	728	128	2639
Stark, William F., New York, N. Y., assignor of one-half to J. English, New Haven, Conn. Beer-service apparatus	857,843	June 25	4679	993	128	2980
Starkweather, Oakley B., Grand Rapids, Mich. Bed-lounge	857,315	June 18	3639	770	128	2688
Starling, Robert W., Berrian county, Ga. Guano-distributer	855,593	June 4	284	57	128	1768
Starr, Hillyard A., East Chattanooga, Tenn. Damper mechanism	856,107	June 4	1247	262	128	2007
Staub, Bernard, New York, N. Y. Fire and burglar alarm	856,924	June 11	2884	604	128	2456
Staub, Jacob, assignor of one-half to W. Robbins, Hinsdale, Ill. Starting mechanism for hydrocarbon-engines	855,909	June 4	912	189	128	1924
Ste. Electro Metallurgique Francaise. (See Héroult, Paul L. T., assignor.) (Reissue.)						
Stebbings, Eugene, Spencer, Iowa. File for papers	858,115	June 25	5258	1116	128	3126
Stebbins, Albert H., Little Rock, Ark. Coffee-pot	857,844	June 25	4681	993	128	2980
Stebbins, Roswell O., New York, N. Y. Combined drinking-cup and filter	855,820	June 4	729	151	128	1880
Stecker, Alfred J., assignor to Eureka Vibrator Co., Detroit, Mich. Vibrator	855,594	June 4	285	58	128	1768
Steel Products Company. (See Goe, David E., assignor.)						
Steindorf, Otto W., Wheeling, W. Va. Tripod	856,610	June 11	2318	477	128	2315
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Constant-current generator	855,484	June 4	83	17-18	128	1716
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company. Constant-current generator	855,485	June 4	85	18	128	1716
Steits, Jacob R., Lake, Wis. Potato-planter	856,309	June 11	1696	352	128	2157
Stelter, Francis, Astoria, N. Y. Umbrella-mender	856,664	June 11	2421	499	128	2334
Stenstrom, John P., Brunswick, assignor of two-thirds to A. M. Anderson and A. Peterson, Mora, Minn. Pail-clamp	855,540	June 4	178	37	128	1739
Stephens-Adamson Mnfg. Co. (See Dull, Raymond W., assignor.)						
Stephens, Augustus W., Waltham, Mass. Package for implements	857,767	June 25	4527	955	128	2942
Sterling Manufacturing Company. (See Platt, John W., assignor.)						
Sterling-Meaker Company. (See Glerding, Charles E., assignor.)						
Stern, Lionel M., Cleveland, Ohio. Agitator	857,683	June 25	4356	921	128	2898
Stevens, Charles S., Conneaut, Ohio. Garden implement	857,684	June 25	4359	921	128	2900
Stevens, Charles W., Jr., New Brunswick, N. J. Garment-hook eye	857,369	June 18	3744	792	128	2714
Stevens, Robert C., Indianapolis, Ind. Feed-water heater	855,486	June 4	86	18	128	1717
Stevens, Schuyler C., Smith Center, Kans. Hen's nest	857,213	June 18	3451	728	128	2640
Stevens, William F., Saginaw, Mich. Step-ladder	856,108	June 4	1249	263	128	2007
Stevenson, Robert T., Aurora, Ill. Can-opener	857,212	June 18	3449	728	128	2640
Stevenson, William M., assignor to Hodges Fiber Carpet Company, Indian Orchard, Mass. Woven fabric	856,925	June 11	2886	604	128	2456
Stevick, Eva, Grover Hill, Ohio. Ventilator	856,926	June 11	2887	605	128	2456
Stewart, Benjamin F., Chicago, Ill. Gas-engine	857,120	June 18	3270	688-9	128	2594
Stewart, David H., Pittsburg, Pa. Journal-bearing and making same	857,845	June 25	4683	993	128	2981
Stewart, James W. *et al.* (See Heath, Noble, assignor.)						
Stewart, John K., Chicago, Ill. Speedometer	855,676	June 4	442	92	128	1809
Stickel, Harry C., Star Junction, Pa. Draft-rigging for freight-cars	855,998	June 4	1070	222	128	1964
Stickney, Burnham C., Elizabeth, N. J., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	855,541	June 4	180	37-8	128	1740
Stillwell, Wayne L., Millersburg, Ohio. Means for recording sounds	856,553	June 11	2200	452	128	2284
Stimpson, Edwin B., New York, N. Y., assignor to Belcher Brothers Company. Measuring instrument	856,820	June 11	2698	557	128	2412
Stinchfield, Frank E., assignor of one-half to C. P. Smith, Norfolk, Va. Furnace construction	857,685	June 25	4360	922	128	2900
Stirling, Robert, Surrey, England. Method and apparatus for raising liquids by compressed air	857,708	June 25	4528	965-6	128	2942
Stoekum, Lorenz. (See Askenasy and Stoekum.)						
Stockhill, George, Fort Keogh, Mont. Rein-holder	856,554	June 11	2202	453	128	2285
Stocking, Milton D., Lindenwood, Ill. Storm protection for carriages	856,375	June 11	1851	388-3	128	2201

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Stockwell, Benjamin E. (See Kennerly and Stockwell.)						
Stoetzel, Joseph J., Chicago, Ill. Pneumatic transmission system	856,109	June 4	1250	263	128	2006
Stöhrer, Oscar E. W., Charlottenburg, Germany. Manufacturing nitroglycerin explosives of reduced freezing-point	855,595	June 4	287	.....	128	1768
Stokes, Joseph M., Okeene, Okla. Ter. Bowling-pin-setting apparatus	858,229	June 25	5468	1166-7	128	3181
Stokoe, Carl E., Grand Haven, Mich. Mold for cement blocks	857,214	June 18	3453	728	128	2641
Stolliberg, Charles, Toledo, Ohio, assignor to American Can Company, New York, N. Y. Sheet-metal sap receptacle or vessel	857,846	June 25	4685	994	128	2981
Stolliberg, Charles, Toledo, Ohio, and E. R. Philip, Atlanta, Ga., assignors to American Can Company, New York, N. Y. Sap-receiving apron and receptacle	857,847	June 25	4686	994	128	2981
Stolz, Ernest H. (See Holland, Newman H., assignor.)						
Stone and Company, J. (See Kendal, Ramsey, assignor.)						
Stone, Frederick B., assignor of one-half to O. F. Bennett, Salem, Mass. Binder for looms	856,310	June 11	1697	352	128	2158
Storer, Simon B., Syracuse, N. Y., assignor to Westinghouse Electric & Manufacturing Company. System of electrical distribution	856,430	June 11	1975	406	128	2229
Storrs, John S., *et al.* (See Bishop and Mapes, assignors.)						
Stout, Robert P., and F. C. Hughes, assignors to Bethlehem Steel Company, South Bethlehem, Pa. Naval landing gun and carriage	856,376	June 11	1863	383-4	128	2201
Stowell, Desaix A., assignor to Simplex Time Recorder Company, Gardner, Mass. Time-recorder	857,419	June 18	3830	812	128	2735
Stowell, Edward R., Adams county, Ind. Reinforcement for cement fence-posts	855,999	June 4	1072	223	128	1965
Stowell Manufacturing and Foundry Company. (See Ricker, Adolph J., assignor.)						
Strange, A. A., *et al.* (See Anderson, William, assignor.)						
Stransky, John A., Pukwana, and H. Riley, Viroqua, S. D. Construction of buildings	856,000	June 4	1073	223	128	1965
Straughan, William B. (See Elliott, Loggins, and Straughan.)						
Straw, Edwin E., Marshfield, Oreg. Tonsilotome	856,927	June 11	2888	605	128	2456
Strayer, William, Axtell, Kans. Safety-pin	856,821	June 11	2700	557	128	2412
Stream, Edgar L., and W. J. Gibbens, New Orleans, La. Oil-burner	857,496	June 18	3983	847	128	2773
Strean, David C. (See Dial, Robert F., assignor.)						
Street, J. Harry, *et al.* (See Senter, John F., assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Haubrich, Alexander M., assignor.)						
Stromberg-Carlson Telephone Manufacturing Company. (See Kaisling, William, assignor.)						
Struntz, Charles A., *et al.* (See Graham, Frederick S., assignor.)						
Stuhag, Soren S., New York, N. Y. Hammer	856,822	June 11	2700	557	128	2412
Stump, Ira E., C. Hollman, and G. E. Nicholas, Cleveland, Ohio. Automobile-horn	856,001	June 4	1074	223	128	1965
Sturtevant, Charles L. (See McNeil and Sturtevant.)						
Sturtevant Mill Company. (See Sturtevant, Thomas L. and T. J., assignors.)						
Sturtevant, Thomas J. (See Sturtevant, Thomas L. and T. J.)						
Sturtevant, Thomas L., Quincy, and T. J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me. Vertical crushing and grinding mill	856,311	June 11	1699	352-3	128	2158
Sturtevant, Thomas L., Quincy, and T. J. Sturtevant, Wellesley, Mass., assignors to Sturtevant Mill Company, Portland, Me. Crushing and grinding mill	857,121	June 18	3271	689	128	2594
Sudekum, William, assignor of one-half to A. Schardt, Nashville, Tenn. Rod-packing	858,037	June 25	5090	1078	128	3083
Suhm, Arthur J. and E. A., Milwaukee, Wis. Bottle-holder	856,431	June 11	1976	407	128	2229
Suhm, Carl J. (See Demory, Alexander F., assignor.)						
Suhm, Edgar A. (See Suhm, Arthur J. and E. A.)						
Sullivan, John F., New York, N. Y. Appliance for theatrical and similar purposes	855,910	June 4	913	190	128	1924
Summers, Edgar W., Wilkinsburg, Pa. Metal-punching machine	855,821	June 4	734	151-2	128	1880
Summers, Edgar W., Wilkinsburg, Pa. Metal-punching machine	856,110	June 4	1253	263-4	128	2009
Sunderman, Richard, Buffalo, N. Y. Carton-filling machine	858,116	June 25	5259	1117	128	3127
Surbaugh, John S., Terre Haute, Ind. Drilling-machine	858,311	June 25	5604	1199	128	3214
Suter, Frank W., and C. Wayman, London, England. Safety lamp and air-carbureting apparatus therefor	857,709	June 25	4531	956-7	128	2943
Sutfin, Willis A. (See Cutter and Sutfin.)						
Svanberg, Gustaf A., Fort Lee, N. J. Collapsible baby-carriage	857,420	June 18	3833	813	128	2735
Sweeney, Zachary T., Columbus, Ind. Roadway for vehicles	856,928	June 11	2860	605	128	2457
Swinscoe, Henry K. (See Daniels, Backlin, and Swinscoe.)						
Sykes, Hubert W., Norfolk, Va. Hedge-trimmer	856,312	June 11	1701	353	128	2159
Symonds, Herbert, East St. Louis, Ill. Wall-register	858,230	June 25	5470	1167	128	3181
Symons, Wilson E., Chicago, Ill. Car-truck	856,111	June 4	1254	264-5	128	2009
Symons, Wilson E., Cleburne, Tex. Compound engine	857,316	June 18	3640	770-1	128	2688
T. J. Thorp Mfg. Company. (See Thorp, Thomas J., assignor.)						
Tacony Iron Works. (See Custer and Pitman, assignors.)						
Taft, Sydney E. (See Bartel and Taft.)						
Talbot, James B., Edwardsville, Ill. Apparatus for molding cement blocks	855,822	June 4	737	152	128	1881
Tate, Alfred O., New York, N. Y. Electrolytic cell	857,909	June 25	4804	1019	128	3010
Tate, Alfred O., New York, N. Y. Apparatus for treating liquids electrolytically	857,910	June 25	4807	1019-20	128	3011
Tatge, George H., Randolph, Nebr. Wrench	856,498	June 11	2089	429	128	2258
Tatum, John J., assignor of one-half to A. P. Prendergast, Baltimore, Md. Brake-shoe	856,188	June 4	1419	300	128	2060
Tavastila, Emil, Donora, Pa. Automatic shut-off for gas-burners	856,742	June 11	2564	527	128	2379
Taylor, Alfred J., assignor of one-half to J. H. McClure, Waterville, Ohio. Concrete post and adjustable fastener for wire fences	858,231	June 25	5471	1167	128	3182
Taylor, Alfred J., and J. H. McClure, Waterville, Ohio. Gravity tamping and molding machine for plastics	858,232	June 25	5473	1167-8	128	3182
Taylor, Charles W., New York, N. Y. Medical battery	858,117	June 25	5262	1117	128	3127
Taylor, Clarence L., assignor to Morgan Engineering Company, Alliance, Ohio. Vertical charging-crane	858,038	June 25	5092	1078-9	128	3083
Taylor, Eugene H., Hyde Park, Mass. Making paper boxes	858,233	June 25	5477	1168	128	3183
Taylor, Joseph R., *et al.* (See Ward, Dell, assignor.)						
Taylor, Tom, Devonport, near Auckland, New Zealand. Bottle	856,002	June 4	1076	223	128	1966
Taylor, Tom L., assignor to Pearl Laundry Machinery Company, Atlanta, Ga. Laundry-marking machine	857,421	June 18	3835	813-14	128	2736
Taylor, Tom L., assignor to Pearl Laundry Machinery Company, Atlanta, Ga. Laundry-marking machine	857,497	June 18	3985	847	128	2774
Taylor, William C. (See Schell, Christian W., assignor.)						
Tea Tray Company. (See Marten, Albert S., assignor.)						
Teague, Charles C., assignor to J. B. Harrell, A. S. Bryant, and Limoneria Company, Santa Paula, Cal. Fruit-crater	856,993	June 11	3017	635	128	2490
Tellschow Gebrüder. (See Hugo, Theodor, assignor.)						
Templeton, William G., Colorado Springs, Colo. Cheese-cutter	856,499	June 11	2090	430	128	2286
Templeton, William G., Colorado Springs, Colo. Cheese-cutter	857,498	June 18	3993	850	128	2776
Templeton, William R. (See O'Brien, Walter A., assignor.)						
Ten Eyck, Frank E., Auburn, N. Y. Air-pump	858,039	June 25	5094	1079	128	3084
Tennant, Palmer. (See Woody, Canby, and Tennant.)						
Terday, John. (See Odlecoy, Edsel, and Terday.)						
Terrell, Albert C., Beaver Dam, Wis. Flue construction for ranges	856,313	June 11	1702	353	128	2159

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Terry, Coleman A., New York, N. Y. Drawing instrument	855,734	June 4	571	117	128	1842
Testor, Fredrik, Stockholm, Sweden. Apparatus for automatic lighting of gas-jets and their extinction after a predetermined time	857,215	June 18	3454	729	128	2641
Textile Machine Works. (See Rahm, Robert C., assignor.)						
Thain, William, Newport, Ky., assignor of one-half to C. A. Rebhun, Norwood, Ohio. Measuring-tool	857,542	June 18	4077	866	128	2799
Tharp, Benaiah, Jr. (See Tharp, Ernest and B.)						
Tharp, Ernest, Norfolk, Va., and B. Tharp, Jr., Harrington, Del. Pea and bean harvesting and threshing machine	856,929	June 11	2891	605-6	128	2457
Thayer, Russell, Philadelphia, Pa. Electrically-propelled vehicle	857,686	June 25	4362	922	128	2900
Thibodeau, Charles, Somerville, Mass., assignor, by mesne assignments, to P. Duff & Sons, Pittsburg, Pa. Candy-pulling machine	857,770	June 25	4535	957	128	2944
Thiel, Martin A., Milwaukee, Wis. Single-piece spring-valve	856,314	June 11	1703	354	128	2159
Thiem, William R. (See Ripberger, Jacob, assignor.)						
Thoenen, William E., McMechen, W. Va. Screen-scraper for coal-tipples	858,312	June 25	5606	1199-1200	128	3214
Thoma, Andrew, Cambridge, Mass., assignor to Thoma Corporation, Portland, Me. Cement composition and making the same	855,868	June 4	827	.....	128	1903
Thoma Corporation. (See Thoma, Andrew, assignor.)						
Thomas, Andrew J. (See Martin, Thomas and Russell.)						
Thomas Bros. Mfg. Co. (See Thomas, Horatio, assignor.)						
Thomas, David, San Francisco, Cal. Anchor for air-ships	856,003	June 4	1078	224	128	1966
Thomas, Edward G., Brookline, Mass. Belt conveyer	857,771	June 25	4537	958	128	2945
Thomas, Edward G., Brookline, Mass. Belt conveyer	857,772	June 25	4539	958	128	2945
Thomas, George J., Watertown, assignor to C. E. Chester, Boston, Mass. Valve	857,848	June 25	4687	994	128	2981
Thomas, Horatio, assignor to Thomas Bros. Mfg. Co., Chicago, Ill. Self-locking shelf-bracket	857,543	June 18	4078	866	128	2799
Thomas, James, Allegheny, Pa. Hat-pin	858,118	June 25	5265	1118	128	3129
Thomas, Jesse B., Boston, assignor of one-half to A. J. Knight, Brookline, Mass. Chemical fire-extinguisher	857,544	June 18	4079	866	128	2799
Thomas Laughlin Company. (See McBride, William, assignor.)						
Thompson, Albert, Newburgh, N. Y. Pick having detachable points	855,677	June 4	445	93	128	1810
Thompson, Charles M., assignor to Charles M. Thompson Company, Chicago, Ill. Automatic telephone-switch	857,966	June 25	4940	1045	128	3044
Thompson, Garfield O., Sanborn, N. D. Stamp-affixing machine	857,499	June 18	3995	850-1	128	2777
Thompson, Harry, Council Bluffs, Iowa. Metallic packing	858,119	June 25	5266	1118	128	3129
Thompson, Lars O. T., assignor to C. P. J. Jonsson, Stockholm, Sweden. Automatic selling and delivering apparatus for liquids	857,545	June 18	4082	866-7	128	2800
Thomson, Charles A., Belleville, N. J. Dough-molding machine	856,555	June 11	2203	453-4	128	2285
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company. Electric heater	857,122	June 18	3275	690	128	2596
Thomson, George M., London, England. Device for developing the lungs	856,432	June 11	1977	407	128	2229
Thomson, Hedley J., Lincoln, England. Portable stretcher, couch, hammock, or chair	856,315	June 11	1705	354	128	2160
Thomson, Jesse O., Philadelphia, Pa. Pneumatic tire	856,743	June 11	2567	528	128	2379
Thorburn, Walter, Seattle, Wash. Combination hand-level and triangle	857,687	June 25	4364	923	128	2901
Thorburn, Walter, Seattle, Wash. Hand-level and triangle	857,688	June 25	4366	923	128	2901
Thoré, Wendell P., Boston, Mass. Heel and toe stiffener for boots and shoes	856,930	June 11	2893	606	128	2458
Thorp, Thomas J., assignor to T. J. Thorp Mfg. Company, Corvallis, Oreg. Agricultural machine	855,596	June 4	287	58-60	128	1769
Thorp, Thomas J., assignor to T. J. Thorp Mfg. Company, Corvallis, Oreg. Motor-vehicle	855,597	June 4	293	60-1	128	1770
Thos. H. Dallett Co. (See Van Sickel, Wilber H., assignor.)						
Thullen, Louis H., Edgewood Park, assignor to Union Switch and Signal Company, Swissvale, Pa. Signaling system for alternating currents	858,120	June 25	5268	1118	128	3129
Thürrid, Frank, St. Louis, Mo. Plow and seeder	855,678	June 4	446	93-4	128	1810
Thurston, Charles H., assignor to H. A. Fowler, Worcester, Mass. Extensible curtain-rod and making it	856,316	June 11	1707	354	128	2160
Tibbits, John, Walsall, and A. W. Turner, Birmingham, England. Floating tidal water-wheel	857,773	June 25	4540	958	128	2946
Tichborne, William H., New Castle, Pa. Ironing-table	857,422	June 18	3840	815	128	2737
Tickner, George, Jr., London, England. Pasting apparatus for cigarette-machines	856,323	June 11	2702	558	128	2413
Tieck, Max A., Denver, Colo. Hinge	856,112	June 4	1261	265	128	2011
Tietz, Herman. (See Schneider and Tietz.)						
Tiffany, Albert R., Dayton, assignor to C. B. Oglesby, Middletown, Ohio. Press for forming internal grooves in paper vessels	857,123	June 18	3277	690	128	2596
Tigner, Benjamin F. (See Flora and Tigner.)						
Tileston, Henry M., Chicago, Ill. Flexible eye-guard	857,689	June 25	4370	923	128	2902
Timby, Theodore R., Brooklyn, N. Y. Lines for vessels	857,317	June 18	3643	771-2	128	2689
Time Marking Machine Company. (See Gasman and Lynch, assignors.)						
Tin Products Company. (See Acker, Charles E., assignor.)						
Tirrell, Leslie L., Buchanan, Mich. Watch-guard	857,216	June 18	3455	729	128	2641
Tisch, William, La Crosse, Wis. Box-fastener	857,217	June 18	3456	729	128	2642
Tisch, William, La Crosse, Wis. Cigar-moistening box	857,218	June 18	3458	729	128	2642
Titus, Hasen J. (See Roberts and Titus.)						
Titus, Joseph V. E., Keokuk, Iowa, assignor to Electric Service Supplies Company, Philadelphia, Pa. Lightning-arrester	857,849	June 25	4689	994	128	2982
Tobey, Charles W. (See Giles and Tobey.)						
Tobey, Fred W., Grand Rapids, Mich. Filing-cabinet	856,113	June 4	1262	265	128	2011
Tobey, Fred W., Grand Rapids, Mich. Adjustable support for sectional bookcases	857,318	June 18	3644	772	128	2689
Tobriner, Leon, Oakland, Cal. Embroidery-stand	856,824	June 11	2704	558	128	2413
Todd, John P. (See Laird and Todd.)						
Toledo Boiler Works Company. (See Park, Kennedy, assignor.)						
Tollner, Hugo. (See Campbell, Robert, assignor.)						
Toon, William C., Chicago, Ill. Multiple-drill press	857,690	June 25	4372	924	128	2902
Torchio, Philip, and T. W. Varley, New York, N. Y. Ground and fault detector for electric distribution systems	857,262	June 18	3537	748-9	128	2662
Torda, Theodore, London, England. Photometer	857,124	June 18	3278	691	128	2596
Tornberg, Knut, Lynn, Mass., assignor to General Electric Company. Centrifugal switch for electric motors	856,433	June 11	1978	407	128	2230
Tornquist, Ludvig A. (See Litzenberger and Tornquist.)						
Towlson, Edward, Chatteris, England. Rotary motor	856,317	June 11	1708	354	128	2161
Townsend, Harry P., New Britain, assignor to American Serial Lock Company, Hartford, Conn. System-lock	857,691	June 25	4373	924	128	2902
Townsend, Harry P., and W. R. Corbin, assignors to Corbin Cabinet Lock Company, New Britain, Conn. Lock	856,556	June 11	2207	454	128	2286
Townsend, Rosella W., Salem, Ohio. Vermin-exterminator	856,557	June 11	2210	454	128	2287
Tracy, William H., Folkston, Ga. Flue-plugging device	855,735	June 4	573	117	128	1843
Trent and Hine Manufacturing Company. (See Humphrey, Ernest N., assignor.)						
Travis, Anna L., Virginia, Minn. Garment-form	856,004	June 4	1079	224	128	1967
Treadwell, Munson H., New York, N. Y. Ladle	856,744	June 11	2568	528	128	2379
Treager, Jacob, Oakland, Cal. Attachment for washbasins and the like	858,334	June 25	5478	1168	128	3183

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Treanor, Edward D. (See Heard and Treanor.)						
Tresselt, Alvin, New York, N. Y. Time-switch	858,040	June 25	5096	1079	128	3084
Tripp, James H., assignor to J. B. Harvey, Vanceboro, N. C. Virgin-ground plow	857,319	June 18	3645	772	128	2689
Triamen, John H., New York, N. Y. Pasting-machine	857,423	June 18	3841	815	128	2737
Truesdell, Henry, assignor to Cyclone Grate Bar Company, Limited, Toronto, Ontario, Canada. Grate-bar	855,823	June 4	739	153	128	1881
Tucker, Leroy, assignor to J. A. Shunk and T. W. Annabal, Peru, Ind. Air-brake system	858,121	June 25	5271	1119	128	3130
Tucker, Leroy, and J. A. Shunk; said Tucker assignor to T. W. Annabal, Peru, Ind. Air-brake system	858,122	June 25	5273	1119	128	3131
Turley, Patrick H., Harrisburg, Pa., assignor to Elliott-Fisher Company, New York, N. Y. Automatic key-connecting means for a combined type-writer and adder	856,318	June 11	1709	355-6	128	2161
Turman, Robert L., Atlanta, Ga. Trunk	857,500	June 18	3999	851	128	2778
Turner, Alfred W. (See Tibbitts and Turner.)						
Turner, Henry, London, England. Means for prevention of skidding or side slipping of motors or other vehicles	857,774	June 25	4541	959	128	2946
Turner, Kelley M., New York, N. Y., assignor to General Acoustic Company. Telephone-receiver	855,911	June 4	917	190	128	1925
Turner Tanning Machinery Company. (See Stackpole, Charles F., assignor.)						
Turner, Walter V., Wilkinsburg, and F. L. Clark, assignors to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure brake	857,912	June 25	4813	1020	128	3012
Turner, Walter V., Wilkinsburg, and R. H. Blackall, Edgewood Park, assignors to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure brake	857,911	June 25	4811	1020	128	3011
Tuttle, George R., Sacramento, Cal. Restraining wall or levee	855,598	June 4	297	61	128	1771
Tuttle, William R., Asotin, Wash. Hydraulic motor	857,501	June 18	4000	851	128	2778
Twigg, John F., San Francisco, Cal. Modeling for speed-boats	856,745	June 11	2570	528	128	2380
Twist, Evan A. (See Wysong, Ansel S., assignor.)						
Tyndall, Jessie C., St. Louis, Mo. Kindergarten-loom	856,319	June 11	1716	356	128	2162
Tyndall, Jessie C., St. Louis, Mo. Kindergarten-loom	856,320	June 11	1717	357	128	2163
Tyrone Realty Improvement Company. (See O'Connor, John, assignor.)						
U. S. Standard Voting Machine Co. (See Gillespie, Alfred J., assignor.)						
U. S. Standard Voting Machine Co. (See Kelper, Frank, assignor.)						
U. S. Standard Voting Machine Company. (See Lausterer, William J., assignor.)						
Ulett, George, Waltham, Mass. Household-tool	857,320	June 18	3646	772	128	2690
Ullman Manufacturing Company. (See Lehman, Frank H., assignor.)						
Underwood Typewriter Company. (See Helmond, William F., assignor.)						
Underwood Typewriter Company. (See Kunath, Edward F., assignor.)						
Underwood Typewriter Company. (See Ruger, William, Jr., assignor.)						
Underwood Typewriter Company. (See Stickney, Burnham C., assignor.)						
Underwood Typewriter Company. (See Van Anden, Frederick I., assignor.)						
Union Carbide Company. (See Price, Edgar F., assignor.)						
Union Special Machine Company. (See Scott, George, assignor.)						
Union Special Machine Company. (See Zimmermann, Bernard H., assignor.)						
Union Special Sewing Machine Company. (See Allan, Edward T., assignor.)						
Union Special Sewing Machine Company. (See McNeil and Sturtevant, assignors.)						
Union Steam Pump Company. (See Bird, John C., assignor.)						
Union Switch and Signal Company. (See Thullen, Louis H., assignor.)						
Union Switch and Signal Company. (See Wilson, Asbury G., assignor.)						
Union Typewriter Company. (See Chapin, Murray H., assignor.)						
Union Typewriter Company. (See Smith, George H., assignor.)						
United Gas Improvement Company. (See Rusby, John M., assignor.)						
United Shoe Machinery Company. (See Bayard, Emery, assignor.)						
United Shoe Machinery Company. (See Eaton, Arthur W., assignor.)						
United States Construction and Utilization Company. (See Wiselogel Frederick G., assignor.)						
United States Garbage Reduction Company. (See Day, Albert C., assignor.)						
United States Roller Bearing Company. (See Perkins, Julius A., assignor.)						
Universal Voting Machine Company. (See Gilmore, Wilmer C., assignor.)						
Urban, Johann. (See Fremery, Bronnert, and Urban.)						
Urie, George M., Kansas City, Mo. Sad-iron	856,825	June 11	2705	559	128	2414
Vallancourt, Napoléon, Lewiston, Me. Picker-stick check	857,424	June 18	3844	815	128	2738
Vale, Thomas. (See Gaskell and Vale.)						
Valentine, Joseph R., Salt Lake City, Utah. Mattress	856,746	June 11	2573	529	128	2381
Valentine, Robert S., assignor of three-eighths to D. H. Leake, Richmond, Va. Combined skirt-supporter, placket-closer, and waist-holder	858,041	June 25	5098	1080	128	3085
Valiquet, Louis P., New York, N. Y., assignor to Victor Talking Machine Company. Sound-box for talking-machines	855,736	June 4	574	118	128	1843
Vallone, Charles, assignor to Barcalo Manufacturing Company, Buffalo, N. Y. Corner-fastening for bedsteads	857,850	June 25	4690	995	128	2982
Van Anden, Frederick I., Washington, D. C., assignor to Underwood Typewriter Company, New York, N. Y. Type-writing machine	855,542	June 4	190	38	128	1744
Van der Heyden, Willem, Nanterre, France. Emulsioning and solidification of hydrocarbons	857,425	June 18	3845	.....	128	2738
Van Gale, Louis, Newark, N. J. Toilet article	856,500	June 11	2091	430	128	2258
Van Hall, Julius, New York, N. Y. Bottle-holder	856,114	June 4	1264	266	128	2012
Van Ness, Harry, New York, N. Y. Ventilator for cars	858,123	June 25	5274	1120	128	3131
Van Sickel, Wilber H., Philadelphia, Pa., assignor to Thos. H. Dallett Co. Stone-dressing machine	857,692	June 25	4383	924	128	2906
Van Slyke, Le Grand M., San Francisco, Cal. Elevator-engine	855,543	June 4	191	38	128	1744
Van Valkenburg, Charles J., Manchester, Mich. Gate	858,042	June 25	5099	1080	128	3085
Vann, Charles J., Brooklyn, N. Y. Bread, meat, and vegetable cutting machine	857,913	June 25	4818	1021	128	3013
Varley, Thomas W. (See Torchio and Varley.)						
Venn, Isaac H., Yonkers, N. Y., assignor to Otis Elevator Company, East Orange, N. J. Traveling conveyer	857,125	June 18	3280	691-2	128	2597
Vickery, Frederick W., London, England. Paper-feeding machine for printing or like machines	857,426	June 18	3846	816-17	128	2738
Victor Safe & Lock Co. (See Hattersley, Will C., assignor.)						
Victor Talking Machine Company. (See Elfering, John H., assignor.)						
Victor Talking Machine Company. (See Johnson, Eldridge R., assignor.)						
Victor Talking Machine Company. (See Valiquet, Louis P., assignor.)						
Victor Talking Machine Company. (See Wickes, Clarence S., assignor.)						
Vogel, Henry C., Philadelphia, Pa. Bottle-washer	855,912	June 4	919	190	128	1926
Vogel, Hermann P., Neukirchen, Crimmitschau, Germany. Fire-lighter	855,488	June 4	90	19	128	1717
Vogelmann, Reinhard, Stuttgart, Germany. Watchman's clock	857,502	June 18	4001	852	128	2778
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock and latch mechanism	855,679	June 4	449	94	128	1810
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Secret-latch mechanism	856,558	June 11	2211	454	128	2288
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Corridor-door lock	857,126	June 18	3283	692	128	2598
Voigt Adolf, Hamm-on-the-Sieg, Germany. Nitrating cellulose	856,809	June 4	831	.....	128	1904

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Volk, Francis M., Minturn, Cal. Rail-joint and anticreeping device	858,235	June 25	5479	1168	128	3183
Völker, Jean, Neu-Isenburg, assignor to P. Weil & Co., Rodelheim, near Frankfort-on-the-Main, Germany. Type-writer	856,377	June 11	1865	384	128	2202
Vollmer, Charles, Dunnigan, Cal. Shingling-gage for hatchets	856,434	June 11	1981	407	128	2230
Vrooman, Herbert A. (See Bredsvold, Paul A., assignor.)						
Vulcan Iron Works Company. (See Becker, Archibald L., assignor.)						
Vulcan Soot Cleaner Company of Pittsburg, Pa. (See Eichelberger, William, assignor.)						
Vulcan Soot Cleaner Company of Pittsburg, Pa. (See Eichelberger and Hibner, assignors.)						
Vulcan Soot Cleaner Company of Pittsburg, Pa. (See Eichelberger, Hibner, and Bacon, assignors.)						
W. & E. T. Fitch Co. (See Hubbard, George M., assignor.)						
W. G. Nagel Electric Company. (See Peirce, Charles L., Jr., assignor.)						
W. H. Reisner Manufacturing Company. (See Reisner, William H., assignor.)						
Wadagaki, Yasuzo, Sasebo, Japan. Marine propulsion	856,115	June 4	1265	266	128	2012
Waddell, John, Grand Rapids, Mich. Handle for caskets	855,544	June 4	193	38–9	128	1745
Waechter, Ferdinand F., Philadelphia, Pa., assignor to Link-Belt Company, Chicago, Ill., and Philadelphia, Pa. Belt-conveyer idler	857,370	June 18	3746	793	128	2714
Wagenhals, William G., St. Louis, Mo. Pressed-steel car	856,435	June 11	1982	408	128	2231
Wagenschieffer, Robert, Hanover-Linden, Germany. Spark and soot arrester	857,093	June 25	4385	925	128	2906
Wagner, Constantin, New York, N. Y. Testing-tube	857,127	June 18	3286	692	128	2598
Wagner, Godwin, San Antonio, Tex. Feed-valve for air-brake systems	856,665	June 11	2423	409	128	2341
Wagner, Peter F., Greensburg, Ind. Step-ladder	856,116	June 4	1267	266	128	2012
Wagner, Theodore B., Chicago, Ill. Brewing material	855,599	June 4	298	.....	128	1772
Wahleen, Carl A. (See Bergstrom and Wahleen.)						
Wahnsiedler, Charles, Evansville, Ind. Pipe-cutter	857,694	June 25	4386	925	128	2907
Walbaum, Edward, Webster, S. D. Riding attachment for plows	857,503	June 18	4003	852	128	2778
Walchner, Carl, Ermadingen, Switzerland, assignor to J. Emanuel, Frankfort-on-the-Main, Germany. Window	858,236	June 25	5480	1169	128	3184
Walden, Frederick E., Worcester, Mass. Ratchet-clamp	856,436	June 11	1985	409	128	2231
Walden, William H., East Macon, Ga. Railway-track fastener	858,124	June 25	5276	1120	128	3131
Waldmire, Harry W., Philadelphia, Pa. Louver	856,117	June 4	1268	267	128	2012
Waldner, Adolph, *et al.* (See Foster, William B., assignor.)						
Waldner, Julius, *et al.* (See Foster, William B., assignor.)						
Waldron Company, John. (See Waldron, William H., assignor.)						
Waldron, William H., assignor to John Waldron Company, New Brunswick, N. J. Stick-feeder	857,427	June 18	3848	817	128	2738
Waldron, William H., assignor to John Waldron Company, New Brunswick, N. J. Stick-feeder	858,125	June 25	5277	1120	128	3132
Waldteufel, Manuel, Philadelphia, Pa. Portable music-rest	857,504	June 18	4004	852	128	2778
Walker, Clarence E. (See Shank, Augustus W., assignor.)						
Walker, Cliff S. (See Barr, James J., assignor.)						
Walker, De Witt D., assignor of forty-nine one-hundredths to W. H. Blacow, Irvington, Cal. Hydrocarbon-burner	856,747	June 11	2574	529	128	2381
Walker, John. (See Baker, Francis R., assignor.)						
Walker, John, Jr., Putney, London, England. File, temporary binder, loose-leaf book, and the like	857,371	June 18	3747	793	128	2714
Walker-Pratt Manufacturing Company. (See Goddard, Fred D., assignor.)						
Walker, T. J. (See Hughes, Alexander A., assignor.)						
Walker, Thomas C., Jr., Denver, Colo. Crushing-roll for ore, rock, and other material	856,559	June 11	2212	455	128	2288
Walker, Thomas C., Jr., Denver, Colo. Rotary-die machine for making slotted screens	856,560	June 11	2215	456	128	2289
Wallace, John W., Jersey City, N. J. Game apparatus	856,118	June 4	1268	267	128	2013
Wallerstedt, Hjalmar. (See Hedley, Doyle, and Wallerstedt.)						
Walter, Advil M., Summerton, S. C. Buggy-top supporter	855,680	June 4	453	95	128	1812
Walter, Charles P., Harrisburg, Pa. Reinforced concrete construction	857,775	June 25	4543	959	128	2946
Walter, Harry E., assignor of one-third to R. A. Boswell, Washington, D. C. Window-cleaning device	857,263	June 18	3540	749–50	128	2663
Waltham Watch Company. (See Ohlson, Olof, assignor.)						
Walther, Robert E., Werdau, Germany. Incandescent burner for liquid hydrocarbons	855,824	June 4	741	153	128	1882
Waltho, Alfred, Liscard, England. Bottle-stopper, electrical fitting, and the like	857,695	June 25	4387	925–6	128	2907
Waltz, Thomas, Newton, Ill. Globe, angle, and check valve	857,321	June 18	3646	773	128	2690
Wambsgans, Jacob, Peoria, and W. H. Wambsgans, Aurora, Ill. Valve	856,005	June 4	1080	224	128	1967
Wambsgans, William H. (See Wambsgans, Jacob and W. H.)						
Wappler, Reinhold H., New York, N. Y. Electrical contact-joint	856,321	June 11	1718	357	128	2163
Ward, Dell, Grand Rapids, assignor of four-fifths to J. Kelsey, H. J. Herbert, Detroit, J. R. Taylor, Grand Rapids, Mich., and W. W. Johnson, Chicago, Ill. Vehicle-wheel	857,546	June 18	4065	867	128	2800
Ward, Edgar P., and A. H. Herron, St. Louis, Mo. Mechanical vibrator	856,378	June 11	1866	384	128	2202
Ward, Henry C., Chippewa Lake, Mich. Playing-cards	855,681	June 4	454	96	128	1812
Ward, Joseph A., Lockport, N. Y. Book or pamphlet	856,748	June 11	2576	529	128	2382
Ware, Ora, Muskogee, Ind. Ter. Powder-compacting device for druggists	856,006	June 4	1082	225	128	1967
Warner, C. Frederick, deceased; R. L. Warner administrator, Rockford, Ill. Support for electric switchboards	856,666	June 11	2424	409	128	2341
Warner, Romaine L., administratrix. (See Warner, C. Frederick.)						
Warren, Admiral J., Kansas City, Mo. Brush-handle socket	855,600	June 4	299	62	128	1772
Warwick, George T., Springfield, Mass. Wrapping-machine	858,044	June 25	5102	1081–2	128	3085
Waterbury Buckle Co. (See Buchanan, John J., assignor.)						
Waterbury Clock Co. (See Horn, Ernest H., assignor.)						
Waterbury Mfg. Co. (See Perkins, Walter H., assignor.)						
Waters, George A., Eldorado, Ill. Horse-detacher	857,128	June 18	3287	693	128	2599
Watkins, George, *et al.* (See Chew, Benjamin A., assignor.)						
Watkins, John E., assignor of one-half to A. H. Burchfield, Pittsburg, Pa. Attachment for vises	858,043	June 25	5101	1080	128	3085
Watson, David A. (See Watson, David W. and D. A.)						
Watson, David W. and D. A., Dover, N. H. Pruning implement	857,129	June 18	3288	693	128	2599
Watson, Harry T., Tacoma, Wash. Cash-register and attachment	858,237	June 25	5483	1169	128	3185
Way, Allan J., Wellington, New Zealand. Carburetor	857,130	June 18	3289	693–4	128	2599
Wayman, Charles. (See Suter and Wayman.)						
Weaver, Lafayette, Jr., Philadelphia, Pa. Hat-guard	857,776	June 25	4544	959	128	2947
Webb, Robert, Howard, Kans. Stump-sawing machine	856,826	June 11	2707	559–60	128	2414
Weber, Alfred H. W., assignor to P. Beiersdorf & Co., Hamburg, Germany. Emptying device for collapsible tubes	857,547	June 18	4086	867	128	2801
Weber, Fred C., Los Angeles, Cal. Folding toilet-chair	857,914	June 25	4921	1021–2	128	3014
Weber, Frederick G., Ashland, Ky. Trolley-finder	858,238	June 26	5486	1170	128	3185
Webster, Harry G., Chicago, Ill. Railway-puzzle	856,749	June 11	2577	529	128	2382
Webster, Harry G., assignor to M. G. Kellogg, Chicago, Ill. Telephone-exchange system	855,545	June 4	195	39	128	1745
Webster, Harry G., assignor to M. G. Kellogg, Chicago, Ill. Telephone-exchange system	855,546	June 4	202	39	128	1745
Webster, William A., Monmouth, Ill. Muffler for engines or motors	855,913	June 4	920	191	128	1926

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Weeks, Samuel V., Highland Park, Tenn., assignor to Emerson Manufacturing Company, Rockford, Ill. Plow	857,967	June 25	4942	1045–6	128	3045
Weidner, Michael G., *et al.* (See Senter, John F., assignor.)						
Weigart, Horace H., Inwood, Cal. Thill-coupling	858,239	June 25	5486	1170	128	3185
Weil, Benjamin L., *et al.* (See Kaufman, Adolph G., assignor.)						
Weil, Berthold, *et al.* (See Kaufman, Adolph G., assignor.)						
Weil & Co., Peter. (See Völker, Jean, assignor.)						
Weimer, James, Swissvale, assignor of one-half to S. R. Carse, Pittsburg, Pa. Jam-dolly	856,750	June 11	2579	530	128	2382
Weinstein, Moritz, assignor of one-half to M. Sperling, St. Louis, Mo. Baby-buggy and the like	857,906	June 25	4388	926	128	2907
Weir, Samuel G., Economy, Pa. Rail-joint	855,914	June 4	923	191	128	1927
Welrich, Martin J., Baraboo, Wis. Wire-reel	856,322	June 11	1720	357–8	128	2163
Wels, John P. (See Lintner, Robbins, and Wels.)						
Welser, Orville T., assignor to S. Lubin, Philadelphia, Pa. Life-motion-picture-projecting machine	857,697	June 25	4391	927	128	2908
Weisenthanner, Alfred L., New York, N. Y. Receptacle-closure	857,698	June 25	4392	927	128	2909
Welch, John R., Alexandria, Ind. Vehicle-wheel	857,219	June 18	3459	730	128	2642
Welfle, Joseph, Hamler, Ohio. Bridge construction	857,505	June 18	4005	852	128	2779
Wells, Homer D. (See Jacobs, Charles C., assignor.) (Reissue.)						
Wells, Raymond L., Attleboro, Mass. Display novelty	858,313	June 25	5608	1200	128	3215
Wells, Robert S., assignor to American Harrow Company, Detroit, Mich. Drive mechanism for distributing-wagons	857,131	June 18	3290	694	128	2600
Welsh, Pierre V. W., New York, N. Y. Camera-stand	855,825	June 4	742	153	128	1882
Welton, Park E., assignor to E. J. Caulfield, Akron, Ohio. Clutch	855,915	June 4	924	191	128	1927
Welty, Jacob, Ashland, Ohio. Device for assisting the threading of needles	856,827	June 11	2708	560	128	2414
Wendling, Joseph G., Cheboygan, Mich. Lifting device for clothes-drying reels	858,126	June 25	5278	1121	128	3132
Wennstrom, John, Suffern, N. Y. Jeweled bearing for electrical and other instruments	856,007	June 4	1084	225	128	1968
Wentworth, John F., Washington, D. C. Locomotive-engine	855,682	June 4	455	96	128	1812
Werner, Emil, assignor of one-half to A. S. Garman, Philadelphia, Pa. T-square	855,916	June 4	926	192	128	1926
Werner, Emil, assignor of one-half to A. S. Garman, Philadelphia, Pa. Drawing-board	856,751	June 11	2580	530	128	2383
Werner, Frederick B., David City, Nebr. Wire-stretcher	858,240	June 25	5487	1170	128	3186
Werner, Harry C., Wheeling, W. Va. Nut-lock	858,045	June 25	5111	1082	128	3089
Werner, Harry C., Wheeling, W. Va. Lock for set-screws	858,241	June 25	5488	1171	128	3186
Wertheim, Ludwig, assignor to Perlman & Hirschfeld, New York, N. Y. Fabric	857,968	June 25	4952	1046	128	3040
Wesp, Christian, Buffalo, N. Y. Vehicle-spring	856,501	June 11	2093	430	128	2259
West, Earl C., and A. F. Wolther, Brownton, Minn. Device for transporting ships	857,264	June 18	3543	750	128	2663
West, Eli M. (See Shilling, Edward C., assignor.)						
West, William. (See Pabst and West.)						
Westendarp, Henry O., Saugus, Mass., assignor to General Electric Company. Vaporizer for explosive-engines	858,046	June 25	5112	1082–3	128	3089
Wester, Nestor. (See Gabrielson, Otto W., assignor.)						
Westerberg, Alfred E. (See Westerberg, Carl W., assignor.)						
Westerberg, Carl W., assignor of one-half to A. E. Westerberg, De Kalb, Ill. Four-way gate-hinge	856,008	June 4	1085	225	128	1968
Western Clock Manufacturing Company. (See Hawthorne, William S., assignor.)						
Western Electric Company. (See Beck, William O., assignor.)						
Western Electric Company. (See Bell, Oro A., assignor.)						
Western Electric Company. (See Duenkel, Felix, assignor.)						
Western Electric Company. (See Grace and Snyder, assignors.)						
Western Electric Company. (See Hibbard, Harry P., assignor.)						
Western Engineering Company. (See Hahn, Howard H., assignor.)						
Westervelt, Edmund C., South Bend, Ind. Paper-bag machine	858,047	June 25	5123	1083–4	128	3092
Westinghouse Air Brake Company. (See Turner and Blackall, assignors.)						
Westinghouse Air Brake Company. (See Turner and Clark, assignors.)						
Westinghouse Electric & Manufacturing Company. (See Cooper, William, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Follows, George H., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Laird and Todd, assignors.)						
Westinghouse Electric & Manufacturing Company. (See Lamme, Benjamin G., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Leblanc, Maurice, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Reich, William J., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Rucker, Benjamin P., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Siegfried, Robert, assignor.)						
Westinghouse Electric & Manufacturing Company. (See Storer, Simon B., assignor.)						
Westinghouse Electric & Manufacturing Company. (See Wilbur, Samuel P., assignor.)						
Westinghouse Machine Company. (See Green, Jonathan S., assignor.)						
Westlake, Albert, New York, N. Y. Bottle-stopper	855,917	June 4	928	192	128	1928
Weston, Edwin J., Jr., Oakland, assignor of one-half to J. C. Hawver, Auburn, Cal. Knob attachment for covers	857,428	June 18	3849	817	128	2739
Weszelinovitz, Joseph R., Chicago, Ill. Dynamo-electric machine	857,132	June 18	3292	694–5	128	2600
Wetherbee, Herbert E., assignor of six-twentieths to W. Rattle, one-eighth to J. F. Leitch, and seven-fortieths to C. W. Merrell, Cleveland, Ohio. Separating or classifying ores	856,611	June 11	2321	477	128	2316
Wetherbee, Herbert E., assignor of six-twentieths to W. Rattle, one-eighth to J. F. Leitch, and seven-fortieths to C. W. Merrell, Cleveland, Ohio. Means for separating or classifying ores	856,612	June 11	2323	478	128	2316
Wetherhold, Oscar B. (See Robinson, Frank W., assignor.)						
Wetherill, James P., Chester, Pa. Amusement device	857,851	June 25	4892	995	128	2983
Wheaton, John E., Geneseo, Ill. Harrow	856,009	June 4	1087	225–6	128	1969
Wheeler, Charles H. H. (See McCoy and Wheeler.)						
Wheeler, George L., assignor of one-half to C. H. Carter, St. Louis, Mo. Safety-elevator	857,699	June 25	4394	927	128	2909
Whidbourne, Harry. (See Micklewood and Whidbourne.)						
Whipp Brothers & Tod. (See Perkin, William H., Jr., assignor.)						
Whipple, Clayton T., Glens Falls, N. Y. Oil-reservoir for lamps	856,502	June 11	2094	430	128	2259
Whitaker, Lewis E., Sussex, N. J. Weeder and hoe	856,547	June 4	205	40	128	1749
White, Charles, Baltimore, Md. Erasing appliance for use in type-writing	857,700	June 25	4395	928	128	2909
White, Charles W., Waco, Tex. Mattress-making machine	855,737	June 4	576	118	128	1844
White, Frederick I., Reading, Mass. Organ-pipe	857,969	June 25	4953	1046	128	3040
White, Morris C., Los Angeles, Cal., and O. C. Duryea, Brooklyn, N. Y., assignors to National Gas Drill Company. Clutch means for intermittently rotating a reciprocating part	855,683	June 4	459	97	128	1813
White, Raleigh P., assignor of one-half to W. Pratt, Jr., Kansas City, Mo. Husking-machine	856,931	June 11	2894	606	128	2458
White, Ripley J. (See Bigelow, Claude, assignor.)						
White, Robert S., Jr., Osceola, Okla. Ter. Air-pipe coupling	856,119	June 4	1270	267	128	2013
White Sewing Machine Company. (See Grothe, Walter, assignor.)						
White, Victor O., Memphis, Mo. Carpet-stretcher	857,777	June 25	4546	960	128	2947
White, W. O., *et al.* (See Anderson, William, assignor.)						
Whitely, Arthur E. (See Dahl and Whitely.)						
Whitman, Ralph M., Providence, R. I. Apparatus for the manufacture of elastic tires	858,048	June 26	5126	1084	128	3093

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Whitmarsh, Charles E., assignor to E. S. Ives, New York, and T. J. Ryan, Brooklyn, N. Y. Machine for trimming paper	857,123	June 18	2297	695	128	2602
Whitworth, John, *et al.* (See Rittman, Christian A., assignor.)						
Whyland, Frank V., and C. P. Hollister, Pittsfield, Mass. Regulatable power-transmission device	855,918	June 4	920	192	128	1928
Wiard, George, assignor to Wiard Plow Company, Batavia, N. Y. Plow	857,252	June 25	4694	995	128	2983
Wiard, John B., Lynn, Mass., assignor to General Electric Company. Means for cooling electric motors	856,379	June 11	1867	365	128	2203
Wiard Plow Company. (See Wiard, George, assignor.)						
Wickes, Clarence S., Camden, N. J., assignor to Victor Talking Machine Company. Apparatus for removing labels from records for talking-machines	856,223	June 11	1722	358	128	2164
Wickes, Clarence S., Camden, N. J., assignor to Victor Talking Machine Company. Removing labels from records for talking-machines	856,613	June 11	2327	478	128	2318
Wicking, Frank E., Pueblo, Colo. Clasp for necktie-fasteners	857,701	June 25	4397	928	128	2909
Wicksteed, Charles, Kettering, England. Controlling mechanism for speed-gears	856,380	June 11	1869	365–6	128	2203
Wiegmann, Gustav, and C. Dörr, Berlin, Germany. Kiln	857,429	June 18	3850	817–18	128	2739
Wieland, George A., Duluth, Minn. Breakwater	857,806	June 18	4007	853	128	2779
Wiese, Henry J., Rochester, Minn. Band-cutter and feeder for threshing-machines	858,127	June 25	5279	1121	128	3132
Wikander, Ragnar, Westerås, Sweden. Electropneumatic braking device for railway-cars	856,010	June 4	1080	226	128	1969
Wilbur, Samuel P., Wilkinsburg, Pa., assignor to Westinghouse Electric & Manufacturing Company. Electrode for arc-lamps	855,738	June 4	578	118	128	1844
Wilcox, Elijah A., New York, N. Y. Display-cabinet	857,265	June 18	3544	751	128	2664
Wilcox, Elmer A., Chicago, Ill. Gasket	857,134	June 18	3300	696	128	2602
Wilcox, Gavin R. M., Newburgh, N. Y. Flexible joint	855,730	June 4	579	118	128	1845
Wilde, Daniel, Washington, Iowa. Shoveling-board	858,242	June 25	5489	1171	128	3186
Wilde, Daniel, Washington, Iowa. Door opener and closer	858,243	June 25	5490	1171	128	3187
Wilde, Daniel, Washington, Iowa. Door-fastener	858,244	June 25	5492	1172	128	3187
Wilde, Daniel, Washington, Iowa. Sash-fastener	858,245	June 25	5493	1172	128	3188
Will & Baumer Company. (See Baumer, Francis, assignor.)						
Willems, Frans F., Delanggoe, Java. Bagasse-furnace	856,011	June 4	1094	227	128	1970
William H. Brodie Company. (See Sponsel, Charles W., assignor.)						
William Sellers & Company. (See Kneass, Strickland L., assignor.)						
Williams, Charles, Chicago, Ill., assignor of three-fourths to W. H. Cowles and one-eighth to J. F. Young, Spokane, Wash. Multicolor-press	856,120	June 4	1272	268–9	128	2014
Williams, Charles, Chicago, Ill., assignor of three-fourths to W. H. Cowles and one-eighth to J. F. Young, Spokane, Wash. Ink-feeding mechanism	856,121	June 4	1280	269–70	128	2016
Williams, Charles, Chicago, Ill., assignor of three-fourths to W. H. Cowles and one-eighth to J. F. Young, Spokane, Wash. Paper-feeding mechanism	856,122	June 4	1287	270–1	128	2017
Williams, Charles, Chicago, Ill., assignor of three-fourths to W. H. Cowles and one-eighth to J. F. Young, Spokane, Wash. Proof-press	856,123	June 4	1292	271–2	128	2019
Williams, Charles H., Milton, Mass. Photometer	855,548	June 4	206	40	128	1749
Williams, Edgar H., Indianapolis, Ind. Match-holder	855,489	June 4	90	19	128	1717
Williams, Francis A., assignor of one-fourth to C. S. Adams, Jacksonville, Fla. File	855,826	June 4	744	154	128	1883
Williams, Gilbert F., Washington, D. C. Ventilator	857,863	June 25	4695	996	128	2983
Williams, Henry J., Spokane, Wash. Brick-kiln	857,702	June 25	4398	928–9	128	2910
Williams, Maurice R. (See Humphrey and Williams.)						
Williams, Milton F., assignor to Williams Patent Crusher & Pulverizer Company, St. Louis, Mo. Crusher and pulverizer. (Reissue)	12,659	June 4	1442	304	128	2056
Williams Patent Crusher & Pulverizer Company. (See Williams, Milton F., assignor.) (Reissue.)						
Williams, Robert I., Struthers, and E. F. Seacrist, Girard, Ohio. Clothes-line prop	856,904	June 11	3019	635	128	2490
Williamson, Charles S., assignor of one-half to Heyl & Patterson Incorporated, Pittsburg, Pa. Coal-handling bridge	858,314	June 25	5609	1200–1	128	3215
Williamson, George F., New York, N. Y. Cue-rest	855,684	June 4	461	97	128	1813
Willing, George T. H., assignor of one-half to S. J. Windsor, Dames Quarter, Md. Cardholder	858,315	June 25	5612	1201	128	3216
Willmann, Joseph, Rome, N. Y. Float	857,703	June 25	4400	929	128	2910
Willoughby, Alfred B., Philadelphia, Pa. Shaking-grate	857,135	June 18	3301	696	128	2602
Willoughby, Alfred B., Philadelphia, Pa. Shaking-grate	857,136	June 18	3303	696	128	2603
Willson, Edward T., Plainfield, N. J. Counter	855,827	June 4	745	154	128	1883
Wilson, Albert D. (See Wilson, Frederick D. and A. D.)						
Wilson, Alexander R., Spokane, Wash. Saw-swage	856,361	June 11	1872	386	128	2204
Wilson, Asbury G., Wilkinsburg, assignor to Union Switch and Signal Company, Swissvale, Pa. Railway switch-operating and signaling system	856,234	June 11	1725	358	128	2165
Wilson, Charles F., Brooklyn, N. Y. Trolley-wheel	856,503	June 11	2096	431	128	2250
Wilson, Frederick D. and A. D., Ottumwa, Iowa. Corn-harvester	856,538	June 11	2710	560–1	128	2415
Wilson, Herbert W., Springfield, S. D. Sleeping-bag	857,507	June 18	4008	853	128	2779
Wilson, James L. (See Hitchcock and Wilson.)						
Wilson, James S. (See MacDonald, William H., assignor.)						
Wilson, John A., Morehead, Kans. Buckle	856,239	June 11	2713	561	128	2415
Window Glass Machine Company. (See Lubbers, John H., assignor.)						
Windsor, S. J. (See Willing, George T. H., assignor.)						
Wineland, John F. (See Mitchell and Wineland.)						
Winfield, Edward F., assignor to J. Baum, trustee, Los Angeles, Cal. Electric railway-switch	855,601	June 4	301	62	128	1772
Winkler, Joseph M. (See Fraser, George, assignor.)						
Winkley, Erastus E. (See Paine and Winkley.)						
Winslow, John H., *et al.* (See Heath, Noble, assignor.)						
Winter, Frederick W., San Francisco, Cal., assignor of three-fourths to G. Behning, New York, N. Y., R. G. Green and D. C. Spence, San Francisco, Cal. Piano-player	856,236	June 11	1729	359	128	2165
Winter, William G., assignor to Emerson Electric Manufacturing Company, St. Louis, Mo. Binding-post	857,137	June 18	3304	696	128	2603
Wirt, Reuben D., Philadelphia, Pa. Hose-rack	856,238	June 11	1735	360	128	2166
Wise, Melvin J., and J. L. Rhea, Bloomington, Ill. Addressing-machine	857,704	June 25	4401	929–30	128	2911
Wissigel, Frederick G., Indianapolis, Ind., assignor to United States Construction and Utilization Company, Rochester, N. Y. Evaporator and extractor for garbage reduction	857,373	June 18	3750	798	128	2715
Withers, William T., Evansville, Ind. Load-binding device	856,367	June 11	1737	360	128	2167
Witherspoon, C. A., trustee. (See Hannold, Ed J., assignor.)						
Witt, Otto, Kaafjord, Finmarken, Norway. Dressing ores	856,124	June 4	1286	272	128	2020
Wittkowsky, Carl, Berlin, Germany. Waterproof uniting pieces of wood	856,870	June 4	533	172	128	1904
Wittstein, Charles T., Newark, N. J. Jeweler's tag	857,778	June 25	4647	980	128	2947
Witsil, Charles J., New York, N. Y. Mattress	856,782	June 11	2083	480	128	2363
Wm. B. Scaife & Sons Company. (See Groth, John C. W., assignor.)						
Wm. Powell Co. (See Powell, James, assignor.) (Reissue.)						
Wöbber, Paul, Cuxhaven, Germany. Regulating resistance for electric currents	857,138	June 18	3305	697	128	2603
Woerner, Robert, Mannheim, Germany. Vegetable-chipper	858,128	June 25	5280	1121	128	3132
Wolcott, Newton A., assignor to Packard Electric Company, Warren, Ohio. Means of testing insulated wires	856,012	June 4	1086	227	128	1970

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wolf, Andrew. (See Jasper, William, assignor.)						
Wolff, Adrian F. (See Goss and Wolff.)						
Wolff Truck Frame Company. (See Harrington, Clement G., assignor.)						
Wolters, Richard, Düsseldorf, Germany. Keyboard telegraph-transmitter	856,504	June 11	2098	431	128	2269
Wolther, Albert F. (See West and Wolther.)						
Wood, Herbert J., Mount Clemens, Mich. Toy	855,919	June 4	931	192	128	1929
Woodburn, Lewis W., Charleston, Ill. Latch-knob door-lock	857,705	June 25	4404	930	128	2911
Woodbury, Manley E., Bowling Green, Ohio. Concrete tie	856,126	June 4	1298	272	128	2020
Woodman, Edward F., Boston, Mass. Thermostatic apparatus	856,328	June 11	1738	361	128	2167
Woods, Charles A., Lynn, Mass. Leather-shaving machine	856,382	June 11	1874	387	128	2205
Woods, Edward D. Syracuse, assignor to H. A. Slack, Waterloo, W. A. Hyle, Syracuse, E. A. Paul, New York, and C. Ecker, Syracuse, N. Y. Vehicle-wheel	856,329	June 11	1742	361	128	2168
Woods, Edwin S. (See McCracken and Woods.)						
Woods, John L. (See McCracken and Woods, assignors.)						
Woods, Marshall E., Woodville, Mass. Cover-ring	857,139	June 18	3306	697	128	2604
Woods Motor Vehicle Company. (See Newman, Frederick J., assignor.)						
Woods, Stephen, White Plains, N. Y. Locket, &c	857,140	June 18	3308	697	128	2604
Woodward, Edgar B., St. Louis, Mo. Printing-press mechanism	857,508	June 18	4009	853	128	2780
Woodward, Oscar, New York, assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	857,706	June 25	4405	930–1	128	2912
Woody, William H., Chambersburg, Pa., F. P. Canby and P. Tennant, Hagerstown, Md. Angle-cock	857,915	June 25	4823	1022	128	3018
Woolcott, James K., Alcester, S. D. Draft-equalizer	857,854	June 25	4697	996	128	2963
Woolley, Leonidas G., assignor to J. C. Riley, Lima, Ohio. Device for permitting the automatic operation of fire-alarm boxes	857,707	June 25	4408	931	128	2913
Woolley, Leonidas G., assignor to J. C. Riley, Lima, Ohio. Circuit-operating device	857,708	June 25	4409	931	128	2913
Wootan, Spencer T., Paducah, Ky. Shingling-bracket	856,932	June 11	2896	607	128	2458
Worssam, Henry J., assignor to G. J. Worssam & Son, London, England. Apparatus for heating or boiling brewers' wort or the like	857,779	June 25	4549	960–1	128	2948
Worthington, Charles W., Rushville, Ill. Adjustable scale-rack	858,316	June 25	5613	1202	128	3216
Wriggins, Charles, Irvington, assignor to Long & Koch, Newark, N. J. Manufacturing joints of bracelets	857,373	June 18	3751	794	128	2715
Wright, Edwin C., Newport, Ky., assignor to Allis-Chalmers Company and Bullock Electric Manufacturing Company. Direct-current dynamo-electric machine	858,246	June 25	5494	1172	128	3188
Wright, George F., deceased, (H. E. Wright, administratrix,) and G. M. Wright, Worcester, Mass. Machine for covering bundles of wire	857,141	June 18	3309	697–8	128	2604
Wright, George M. (See Wright, George F. and G. M.)						
Wright, Harriet E., administratrix. (See Wright, George F.)						
Wright, James C., assignor of one-half to J. C. Rawlings, Colorado Springs, Colo. Automatic shut-off for faucets	856,667	June 11	2425	500	128	2342
Wright, James E. (See O'Conner and Wright.)						
Wright, James M., Johannesburg, Transvaal. Apparatus for cleaning wire ropes	856,614	June 11	2330	478–9	128	2318
Wright, Walter S., *et al.* (See Heath, Noble, assignor.)						
Wurmb, Theodore H., and R. Baumann, St. Louis, Mo. Thermostatic spring	857,709	June 25	4411	931	128	2913
Wüst-Kunz, Caspar, Seebach, near Zurich, Switzerland. Friction-clutch	857,970	June 25	4955	1047	128	3050
Wyckenhöfer, Julius, Dortmund, Germany. Roller-mill	855,602	June 4	304	62	128	1773
Wyckoff, Seamans & Benedict. (See Woodward, Oscar, assignor.)						
Wysong, Ansel S., assignor of one-half to E. A. Twist, Meade, Kans. Traction-engine	857,509	June 18	4010	853–4	128	2780
Yarnell, Harold A., assignor to Pacific Wireless Telegraph Company, Los Angeles, Cal. Electrical interrupter and rectifier	856,933	June 11	2897	607	128	2458
Yates, William C., Schenectady, N. Y., assignor to General Electric Company. Starting-rheostat	857,142	June 18	3312	698	128	2605
Yeiser, Luther A., Philadelphia, Pa. Garment-hook	856,330	June 11	1744	361	128	2168
Yochum, Theodore, Columbus, Ohio. Mail-bag catching and delivering device	855,685	June 4	463	97–8	128	1814
Young, Albert E., Christchurch, and E. G. Kerr, Timaru, New Zealand. Machine for issuing checks or tickets	857,266	June 18	3545	751	128	2664
Young, Daniel H., assignor to S. R. Young, Manchester, Iowa. Whiffletree-clip	856,668	June 11	2427	500	128	2342
Young, George B. and J. H., El Paso, Tex. Corn-popper	858,317	June 25	5615	1202	128	3217
Young, George B. and J. H., El Paso, Tex. Corn-popper	858,318	June 25	5617	1203	128	3217
Young, Herbert N. (See Hughes and Young.)						
Young, John F., *et al.* (See Williams, Charles, assignor.)						
Young, Joseph H. (See Young, George B. and J. H.)						
Young, Nathaniel, Portsmouth, N. H. Explosive-engine governor	855,490	June 4	92	19	128	1718
Young, Samuel R. (See Young, Daniel H., assignor.)						
Youngquist, Carl F. and C. G., San Francisco, Cal. Pole-climbing shoe	857,430	June 18	3853	816	128	2740
Youngquist, Carl G. (See Youngquist, Carl F. and C. G.)						
Zagelmeyer, Frank, Bay City, Mich. Filling mechanism for brickmaking plants	857,143	June 18	3314	699	128	2605
Zanto, Emil H., Dartford, Wis. Wrench	857,220	June 18	3463	730	128	2643
Zanzig, Charles F., Milwaukee, Wis. Sewing-machine shuttle	856,830	June 11	2715	562	128	2416
Zaring, Leander B., *et al.* (See Okey, George B., assignor.)						
Zeigler, George E., Economy, Pa. Overshoe-retainer	856,505	June 11	2099	431	128	2260
Zeiss, Firm of Carl. (See Dönitz, Emil, assignor.)						
Zeppelin, Ferdinand v., Berlin, Germany. Signal-indicating device for locomotives	855,920	June 4	932	193–4	128	1929
Ziegler, Frederick J., New York, N. Y. Mechanical movement	858,040	June 25	5129	1065	128	3093
Ziegler, Frederick J., New York, N. Y. Speed-changing mechanism for automobiles	858,050	June 25	5130	1065	128	3094
Zimmerman, Bernard H., Utica, N. Y., assignor, by mesne assignments, to Union Special Machine Company, Chicago, Ill. Producing sewed fabrics	857,510	June 18	4011	854	128	2780
Zink, Charles H., *et al.* (See Lang, Adolph, assignor.)						
Zinter, Gustav, Buffalo, N. Y. Coaster-brake	857,855	June 25	4698	996–7	128	2964

ALPHABETICAL LIST OF INVENTIONS

FOR WHICH

PATENTS WERE ISSUED DURING THE MONTH OF JUNE, 1907.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Accounting device. Credit-	M. E. Gibson	855,767	June 4	628	128	128	1856
Acid-concentrating apparatus. Sulfuric-	A. Gaillard	856,048	June 4	1151	243	128	1984
Acid from formates. Producing concentrated formic.	E. Franke	857,046	June 18	3126	.....	128	2557
Acid. Manufacturing dialkylbarbituric	M. Conrad	856,622	June 11	2345	.....	128	2322
Acid. Methylene citryl salicylic	R. Berendes and J. Callsen	858,142	June 25	5314	.....	128	3141
Acid. Salts of methylene citryl salicylic	R. Berendes and J. Callsen	858,143	June 25	5315	.....	128	3141
Adding and subtracting machine	J. C. Epeneter	856,236	June 11	1520	320–2	128	2111
Adding-machine	A. R. Jennings	856,157	June 4	1363	286–8	128	2037
Adding-machine	L. S. Munger	857,889	June 25	4748	1008–10	128	2995
Adding-machine attachment	A. Pentecost	856,905	June 11	2850	595–6	128	2447
Addition. Apparatus for	G. Nahlik	856,360	June 11	1835	377	128	2194
Addressing-machine	M. J. Wise and J. L. Rhea	857,704	June 25	4401	929–30	128	2911
Adjustable stand	H. and A. J. Buckland	856,679	June 11	2448	503	128	2348
Adjusting-box	G. W. and E. E. Edwards	857,042	June 18	3120	658	128	2555
Adjusting device	H. G. Beede	856,567	June 11	2228	458	128	2291
Advertising device	R. B. Powers	857,754	June 25	4506	950	128	2937
Aerial vehicles and other structures. Connection device for the frames of	A. G. Bell and H. P. McNeil	856,838	June 11	2727	565	128	2418
Aerial vessel	L. D. Merrick	856,895	June 11	2827	590–1	128	2443
Aerial vessels. Sustaining device for	I. Gruber	855,945	June 4	972	202	128	1939
Agitator	L. M. Stern	857,663	June 25	4356	921	128	2898
Agricultural implement	W. J. Orr	855,902	June 4	900	187	128	1921
Agricultural machine	T. J. Thorp	855,596	June 4	287	58–60	128	1769
Air-brake	O. T. Beatty	857,010	June 18	3053	643	128	2537
Air-brake-locking device	V. C. Orange and F. M. Bowers	855,863	June 4	818	170–1	128	1900
Air-brake system	L. Tucker	858,121	June 25	5271	1119	128	3130
Air-brake system	L. Tucker and J. A. Shunk	858,122	June 25	5273	1119	128	3131
Air-compressor	L. B. Cousans	855,697	June 4	484	101	128	1819
Air cooling and humidifying apparatus	J. D. Minto and J. Kelly	855,719	June 4	524	110	128	1829
Air-ship	W. Hull	856,876	June 11	2794	582–3	128	2434
Air-signal, air-brake, and steam coupling. Automatic	H. C. Priebe	857,362	June 18	3726	787	128	2709
Alarm: *See* Burglar-alarm. Fire and burglar alarm. Fire-alarm.							
Alarm device	G. E. Rideout	857,906	June 25	4800	1018	128	3009
Alarm-lock	O. Miller and P. Kunzinger	855,409	June 4	51	12	128	1707
Alloy. Aluminium	A. Chambaud	856,302	June 11	1896	.....	128	2210
Alloy and producing it	F. M. Becket	858 327	June 25	5630	.....	128	3221
Alloys. Heat treatments of steel	J. Churchward	855,756	June 4	606	125	128	1852
Alloys. Production of calcium	F. von Kügelgen and G. O. Seward.	856,475	June 11	2053	422	128	2248
Alternator. Self-exciting	L. J. Le Pontois	855,713	June 4	510	106	128	1825
Ambulatory wheel	W. T. Jones	856,259	June 11	1574	330	128	2126
Amusement apparatus	A. S. Fitch	857,338	June 18	3678	778	128	2699
Amusement apparatus	A. J. Dayton	857,605	June 25	4209	889	128	2860
Amusement apparatus	J. H. and H. S. Porter	857,903	June 25	4787	1016–17	128	3006
Amusement device	J. P. Wetherill	857,851	June 25	4692	995	128	2963
Anchor	W. McBride	857,094	June 18	3233	680	128	2584
Anchor	J. E. Johannessen	857,851	June 25	4736	1006	128	2993
Anchor-compartment	S. A. Fraser and M. Jackson	856,239	June 11	1540	322	128	2117
Anchor for air-ships	D. Thomas	856,003	June 4	1078	224	128	1966
Anchor. Land-	F. R. Parker	857,751	June 25	4495	948–9	128	2934
Anesthetics. Apparatus for administering	F. V. Brooking	855,931	June 4	950	197	128	1933
Animal-trap	J. M. Kellogg	856,883	June 11	2810	585–6	128	2439
Animal-trap	C. F. Lamp	856,889	June 11	2818	587–8	128	2441
Animal-trap	R. E. Brown	857,325	June 18	3653	774	128	2691
Animal-trap	M. J. Hill	857,879	June 25	4732	1005	128	2992
Animal-trap	J. J. Nance	857,892	June 25	4762	1011	128	3000
Animals from stables. Means for releasing and leading	A. T. Ruthven	856,727	June 11	2535	521–2	128	2370
Anode	A. J. Deloye	858,160	June 25	5342	1136	128	3147
Arch-support	D. Livignano	856,712	June 11	2509	516	128	2363
Armature-testing apparatus	V. Patton	855,016	June 25	5068	1070	128	3075
Ash and garbage receptacle. Combined	J. Kolouch	856,264	June 11	1582	332	128	2127
Ash-separator	H. M. Coats	857,722	June 25	4430	907	128	2921
Aspirator	J. Boekel	857,920	June 25	4829	1024	128	3010
Assembling apparatus	N. Marshall	857,005	June 11	3042	641	128	2467
Atomization apparatus	W. L. Root	856,301	June 11	1977	348	128	2188
Automatic switch	G. Matthews	856,892	June 11	2822	588–9	128	2442
Automobile and car motor	M. Casin	857 980	June 26	4974	1051–2	128	3054

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Automobile and other vehicle	A. C. Heath	855,776	June 4	645	132	128	1860
Automobile driving-gear	R. S. McIntyre	858,202	June 25	5413	1153–4	128	3166
Automobile driving mechanism	F. J. Newman	856,496	June 11	2071	426	128	2252
Automobile-frame	E. Sanchis	858,108	June 25	5247	1113–14	128	3125
Automobile-horn	I. E. Stump, C. Hollman, and G. E. Nicholas.	856,001	June 4	1074	223	128	1965
Automobile shock-reducer	W. Grothe	856,053	June 4	1160	245	128	1986
Automobile speed-changing mechanism	F. J. Ziegler	858,050	June 25	5130	1065	128	3094
Automobile-stop. Automatic	C. O. Lambert	855,711	June 4	506	105	128	1824
Automobile-wheel	J. R. Barker	856,757	June 11	2560	531	128	2385
Automobiles. Chain-driving-gear case for	F. Charron	855,878	June 4	845	175	128	1907
Automobiles; &c. Gear for	K. Schnaitmann	857,114	June 18	3260	686	128	2591
Awning	J. C. Knabeschuh	855,579	June 4	259	51	128	1761
Awning	T. H. Rees	855,668	June 4	424	88	128	1803
Axes. Pivoted nail-claw for	W. L. Marble	855,859	June 4	812	169	128	1899
Axle-box dust-guard	R. Purdie	855,666	June 4	421	88	128	1802
Axle-spindle-turning machine	J. Johnson	857,242	June 18	3496	738–9	128	2651
Bag: *See* Sleeping-bag.							
Bag-lock	L. B. Prahar	855,974	June 4	1034	214	128	1955
Bag-machine	J. L. Lowe	858,005	June 25	5033	1063–5	128	3069
Bagasse-furnace	F. F. Willems	856,011	June 4	1094	227	128	1970
Bait-hooks, jiggers, and like angling devices. Attachment for	J. W. Hayward	856,867	June 11	2780	579	128	2430
Baking-pan	T. Boyd	857,228	June 18	3472	733	128	2646
Baking-powder and making the same	O. Best, C. S. Ash, and E. Samson.	856,672	June 11	2438	.....	128	2346
Baking-powder and making the same	O. Best, C. S. Ash, and E. Samson.	856,673	June 11	2439	.....	128	2346
Baling-press	E. Rhodovi	855,609	June 4	425	88–9	128	1803
Baling-press	E. May	857,086	June 18	3216	677	128	2580
Ball-bearing wheel	F. J. and H. J. Hansen	856,634	June 11	2366	487	128	2327
Ball-covers, &c. Seam for	D. M. Montgomery	857,294	June 18	3603	763	128	2679
Ball-feeding mechanism	W. C. Gilmore	857,921	June 25	5003	1056–7	128	3062
Bandage receptacle. Antiseptic	O. C. Schulz	857,680	June 25	4342	918	128	2896
Banjo-support	F. B. Piper	856,804	June 11	2672	551	128	2405
Bar: *See* Concrete-reinforcing bar. Grate-bar.							
Barrel chiming and crozing machine	C. J. Alley	856,561	June 11	2218	456	128	2289
Basin-fixture	G. W. Gano	857,989	June 25	4991	1055	128	3058
Basins and the like. Attachment for wash-	J. Treager	858,234	June 25	5478	1168	128	3183
Basket-machine	B. S. Noe	856,901	June 11	2843	594	128	2446
Bath: *See* Pickling-bath.							
Bathing-chair	G. N. Moore	856,279	June 11	1623	338	128	2139
Battery: *See* Medical battery. Primary battery.							
Battery	B. B. Downs	855,880	June 4	847	176	128	1908
Battery	F. A. Decker	857,606	June 25	4210	890	128	2861
Battery can or receptacle. Storage	T. A. Edison	857,041	June 18	3119	658	128	2555
Battery plates. Making storage	W. L. Silvey	855,991	June 4	1059	220	128	1961
Bearing	J. C. Cromwell	856,228	June 11	1508	317	128	2108
Bearing. Ball	H. Barthel	856,209	June 11	1467	309	128	2099
Bearing. Ball	W. Nice, Jr	856,599	June 11	2286	470	128	2307
Bearing. Engine	W. B. Mason	858,087	June 25	5205	1103–4	128	3114
Bearing for electrical and other instruments. Jewel-ed	J. Wennstrom	856,007	June 4	1084	225	128	1968
Bearing for water-meters	E. E. Gamon	856,245	June 11	1556	326	128	2121
Bearing. Roller	J. A. Perkins	856,291	June 11	1650	343	128	2145
Bed-bottom fabric. Wire	H. Richardson and A. L. Senesac	856,298	June 11	1671	347	128	2151
Bed-bottom. Spring	C. D. Bronyette	857,324	June 18	3650	773	128	2691
Bed-lounge	O. B. Starkweather	857,315	June 18	3639	770	128	2688
Bed-spring. Tilting	A. Lawrence	857,353	June 18	3709	784	128	2705
Bed-springs with metal. Machine for covering wooden rails for	C. H. Gangelhoff and M. Jordan.	857,799	June 25	4593	973	128	2958
Bedclothes-clamp	A. Grandjean	856,052	June 4	1158	244	128	1986
Bedstead	F. Krupp	857,407	June 18	3808	806	128	2729
Bedstead corner-fastening	C. Vallone	857,850	June 25	4690	995	128	2982
Bedstead-lock	E. H. Burrage	858,259	June 25	5516	1177	128	3193
Bee-smoker	F. Danzenbaker	856,133	June 4	1315	275	128	2025
Bear-cooler. Triple-pipe	W. Griesser	856,140	June 4	1327	277–8	128	2026
Bear cooling or heating apparatus	E. A. Appell	856,015	June 4	1100	228	128	1972
Bear-service apparatus	W. F. Stark	857,843	June 25	4679	993	128	2981
Beet-pulling machine	E. A. Smith	856,817	June 11	2694	556	128	2411
Beet-thinner	J. A. Long	857,815	June 25	4620	981–2	128	2968
Bell	P. C. Arnold	856,995	June 11	3020	635	128	2491
Bell. Electric	M. Plato	855,729	June 4	551	114	128	1837
Bell-hammer	C. E. Gierding	856,701	June 4	491	102	128	1820
Belt, apron, canvas, or conveyer tightener	G. E. Clarke	856,620	June 11	2340	481	128	2321
Belt-shifting mechanism	W. T. Stanfield	857,314	June 18	3637	770	128	2688
Belts. Tension-regulating means for	F. D. Mercer	855,809	June 4	893	184	128	1920
Belting. Steel metallic	U. S. Balch	856,565	June 11	2225	458	128	2291
Bench: *See* Greenhouse-bench.							
Bench-back-attaching bracket	A. J. Schoenecke	855,817	June 4	725	150	128	1873
Bicycles and motor-cycles. Attachment for	T. W. Rasoux	855,979	June 4	1044	216	128	1956
Bicycles and the like. Locking apparatus to prevent theft and unauthorized use of	T. B. Janssen	855,854	June 4	805	168	128	1898
Bin: *See* Flour-bin. Grocery-bin.							
Binder for loose-leaf ledgers	H. R. Moore	857,250	June 18	3509	742	128	2655
Binder. Loose-leaf	J. L. McMillan	857,252	June 18	3511	742	128	2655
Binder. Loose-leaf	J. L. McMillan	857,253	June 18	3514	743	128	2656
Binder. Loose-leaf	J. L. McMillan	857,254	June 18	3516	743	128	2656
Binder. Temporary	J. H. Parkes	856,800	June 11	2665	549	128	2409
Binder. Temporary	F. R. Baker	857,377	June 18	3737	795	128	2717
Binding-post	W. G. Winter	857,137	June 18	3304	698	128	2603
Biscuits liquor. Apparatus for making	N. Heath	855,195	June 4	1433	303	128	2064
Bit: *See* Stone-cutting bit.							
Bit	J. C. Dunks	855,574	June 11	2242	483	128	2326

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Blank-feeding mechanism	C. Dancel	856,771	June 11	2615	538	128	2381
Blast-furnace, trap for furnace-top construction	S. E. Hitt and G. M. Black	858,182	June 25	5394	1146	128	3158
Blind-fastener	J. Bradley	857,023	June 18	3065	651	128	2547
Blind or shade. Venetian	W. B. Hughes	857,066	June 18	3170	667	128	2571
Block: *See* Building-block. Memorandum-block. Cutting-block.							
Block-machine	H. G. Grisier	857,995	June 25	5012	1057	128	3064
Block-signal system	E. F. Bliss	856,440	June 11	1990	410	128	2233
Block-signal system	L. A. Hawkins	856,455	June 11	2032	418	128	2243
Block-signal system	L. A. Hawkins	856,456	June 11	2034	418	128	2244
Block-signal system	L. A. Hawkins	856,457	June 11	2037	418	128	2244
Block-signal system	L. A. Hawkins	856,583	June 11	2261	465	128	2300
Block-signal system	C. C. Anthony	856,670	June 11	2428	501	128	2343
Block system	C. C. and J. Harper	855,571	June 4	236	47	128	1756
Blocks. Manufacture of	I. Lucas	858,192	June 25	5398	1150	128	3162
Blotter. Ink	K. Gosseweiler	857,236	June 18	3488	737	128	2650
Blotter or pad	L. S. Houghton	857,462	June 18	3908	831	128	2754
Blow-gun	J. Schultz	856,513	June 11	2588	555	128	2409
Blower. Pressure	A. Mathis	856,171	June 4	1389	293	128	2043
Blower. Turbine-driven	A. C. E. Rateau	855,809	June 4	703	143	128	1873
Board: *See* Compo-board. Ironing-board. Counting-board. Shoveling-board. Drawing-board.							
Boat for ice-breaking and other purposes	C. Stangebye	857,766	June 25	4525	955	128	2942
Boat-lashing device	H. Berg	856,439	June 11	1988	410	128	2232
Boats. Life-saving apparatus for submarine	O. A. C. Oehmler	857,193	June 18	3420	720–1	128	2632
Boats. Life-saving device for	J. Husser	855,890	June 4	867	179	128	1913
Boats. Means for recovering submarine	E. Oswald	856,096	June 4	1229	259	128	2003
Boats. Modeling for speed	J. F. Twigg	856,745	June 11	2570	528	128	2380
Bobbin-clutching device for spindles	H. E. Hughes	857,556	June 18	4102	870	128	2804
Boiler: *See* Steam-boiler. Water-tube boiler. Superheater-boiler.							
Boiler	H. Del Mar	855,446	June 4	12	3	128	1698
Boiler-cleaner	L. M. Pettit	858,304	June 25	5591	1196	128	3211
Boiler-cover	M. Kamenstein	857,350	June 18	3704	783	128	2704
Boiler-flue	J. H. Davenport	856,516	June 11	2122	436	128	2265
Boiler-flue cleaner	W. Eichelberger and D. E. Hibner.	855,563	June 4	226	44	128	1754
Boiler furnace. Steam	P. R. Kime	855,642	June 4	377	78	128	1790
Boiler-leveling device	F. I. Cass	858,332	June 25	5637	1206–7	128	3222
Boiler-setting	C. B. Risley	858,214	June 25	5440	1161	128	3173
Boiler-support	C. H. Foster	855,453	June 4	26	6	128	1701
Boiler-tube cleaner	W. S. Elliott	856,627	June 11	2353	484	128	2324
Boiler-tube cleaner	W. S. Elliott	856,628	June 11	2353	484	128	2324
Boilers. Apparatus for blowing off, washing, and recharging	W. L. Miller	858,198	June 25	5406	1152	128	3164
Boilers. Scummer and blow-off for steam	J. B. Barnes. (Reissue)	12,663	June 25	5736	1223	128	3243
Boilers. Soot-cleaner for	W. Eichelberger, D. E. Hibner, and M. J. Bacon.	858,333	June 25	5639	1207	128	3223
Bolt: *See* Ratchet-bolt. Stay-bolt. Shaking-bolt.							
Bolt	H. H. Mudge	857,295	June 18	3604	763	128	2679
Bolt cutter. Stay	J. W. Faessler	858,271	June 25	5535	1183	128	3197
Book-backs. Forming	A. J. Kroencke	857,003	June 11	3039	640	128	2490
Book. Balance	W. E. Prudhomme	857,904	June 25	4790	1017–18	128	3006
Book-carrier	F. Gottschalk	857,050	June 18	3137	661	128	2562
Book. Loose-leaf	H. I. Seddon	855,988	June 4	1055	219	128	1960
Book or pad. Manifolding	A. F. Staples	855,997	June 4	1068	222	128	1964
Book or pamphlet	J. A. Ward	856,748	June 11	2576	529	128	2382
Bookbinder. Adjustable	M. Z. Kirk	856,894	June 4	875	181	128	1914
Bookbinder's-leaf-applying machine	L. W. Daniels	855,621	June 4	340	70	128	1781
Bookcases. Alining device for sectional	C. J. Lundstrom	856,970	June 11	2970	622	128	2478
Bookcases. Adjustable support for sectional	F. W. Tobey	857,318	June 18	3644	772	128	2689
Boot and shoe. Waterproof	H. F. Karth	857,072	June 18	3196	671	128	2574
Boots and shoes and leggings, &c. Fastening for	W. M. Malone	856,714	June 11	2512	516	128	2364
Boring-tool	J. H. Johnson	858,293	June 25	5568	1191	128	3206
Bosom stretcher and holder	J. Konsel	855,780	June 4	667	137	128	1865
Bottle	T. Taylor	856,002	June 4	1076	223	128	1966
Bottle	G. E. Nolan	856,543	June 11	2174	448	128	2278
Bottle	D. J. Higginbotham	857,460	June 18	3906	830	128	2753
Bottle and jar stopper or closure	F. A. Bird	856,840	June 11	2729	566	128	2419
Bottle. Antirefillable	H. Campbell	857,596	June 25	4187	886	128	2855
Bottle-cap	E. Goltstein	858,174	June 25	5368	1142	128	3154
Bottle-closure	V. J. G. Freund	856,342	June 11	1764	367	128	2174
Bottle-filling apparatus	J. C. A. Rieske	857,674	June 25	4327	915	128	2891
Bottle-holder	J. Van Hall	856,114	June 4	1264	266	128	2012
Bottle-holder	A. J. and E. A. Suhm	856,431	June 11	1976	407	128	2229
Bottle-machines. Plunger for	R. Johns	856,067	June 4	1130	249–50	128	1991
Bottle. Mucilage	L. H. Smith	856,496	June 11	2096	429	128	2257
Bottle. Mucilage	C. E. Barrett	857,975	June 25	4963	1049	128	3052
Bottle. Non-refillable	M. A. Brown	855,990	June 4	474	99	128	1817
Bottle. Non-refillable	J. D. Mitchill	855,800	June 4	684	140–1	128	1889
Bottle. Non-refillable	F. W. Johnson	856,406	June 11	1928	407	128	2217
Bottle. Non-refillable	E. C. Shilling	856,735	June 11	2551	524	128	2375
Bottle. Non-refillable	I. I. Kremer	856,785	June 11	2639	543	128	2397
Bottle. Non-refillable	G. Fraser	857,168	June 18	3367	710	128	2618
Bottle. Non-refillable	L. S. Fenwick	857,231	June 18	3477	734	128	2647
Bottle. Non-refillable	W. L. Schultz	857,308	June 18	3739	791	128	2712
Bottle. Non-refillable	B. A. Chew	858,261	June 25	5519	1178	128	3193
Bottle-stopper	A. Westlake	855,917	June 4	928	192	128	1926
Bottle-stopper	G. Kirkegaard	856,472	June 11	2046	420	128	2247
Bottle-stopper, electrical fitting, and the like	A. Waitho	857,696	June 25	4357	925–6	128	2907
Bottle stopper. Non-refillable	G. B. Okey	856,902	June 11	2845	594	128	2446
Bottle-washer	H. C. Vogel	855,912	June 4	919	190	128	1925
Bottles, jars, and other receptacles. Closure for	J. V. Hull	856,782	June 4	657	134	128	1863
Bottling-machine	C. W. Elliott	856,135	June 4	1230	276	128	2026

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Bowl	O. S. Atterholt	858,252	June 25	5504	1175	128	3190
Bowling-alley pin-setting apparatus	E. E. Heath	857,939	June 25	4863	1029	128	3025
Bowling-pin-setting apparatus	J. M. Stokes	858,229	June 25	5468	1166–7	128	3181
Box:							
See Adjusting-box.	Outlet-box.						
Branch box.	Powder-box.						
Cigar-moistening box.	Stuffing-box.						
Junction-box.	Switch-box.						
Lunch-box.	Talking-machine sound-box.						
Mail-box.	Watch-movement box.						
Match-box.	Work-box.						
Miter-box.							
Nesting and brooding box.							
Box	S. Bachmann	855,746	June 4	591	122	128	1848
Box	F. H. G. Morse	856,281	June 11	1626	338	128	2139
Box-covering machines. Cutting attachment for	M. D. Knowlton	858,078	June 25	5183	1098–9	128	3107
Box-fastener	W. Tisch	857,217	June 18	3456	729	128	2642
Box-opening device	J. E. Lee	856,964	June 11	2959	620	128	2475
Boxes from pasteboard. Dies for forming	J. Godfrey	858,172	June 25	5365	1141	128	3153
Boxes from pasteboard. Making	J. Godfrey	858,173	June 25	5367	1141	128	3154
Brace:							
See Car-brace.	Fence-post brace.						
Coaster-brace.							
Brace and stretcher. Combined	W. Johnson	855,641	June 4	376	78	128	1790
Bracelet-joints. Manufacturing	C. Wriggins	857,373	June 18	3751	794	128	2715
Bracket:							
See Curtain-supporting bracket.	Shelf-bracket.						
	Shingling-bracket.						
Braid-packet	C. L. Meyers	857,293	June 18	3602	762	128	2679
Braiding-machine	R. C. Rahm	856,985	June 11	3002	631	128	2485
Braiding-machine carrier	F. Duenkel	856,946	June 11	2919	612	128	2463
Brake:							
See Air-brake.	Rail-brake.						
Coaster-brake.	Railway-brake.						
Compound brake.	Railway-vehicle brake.						
Electric brake.	Truck-brake.						
Elevator-brake.	Vehicle-brake.						
Fluid-pressure brake.	Wagon-brake.						
Power-brake.							
Brake and buffer	F. Möller	857,651	June 25	4289	906	128	2882
Brake construction	V. Lamb	856,266	June 11	1588	333	128	2128
Brake head and shoe	C. P. Smith	856,186	June 4	1417	300	128	2049
Brake mechanism	G. S. Blake	857,150	June 18	3328	701	128	2606
Brake mechanism. Ratchet	J. M. Bosenbury	855,876	June 4	840	174	128	1906
Brake-shoe	J. J. Tatum	856,188	June 4	1419	300	128	2050
Brake-shoe	J. D. Gallagher	858,067	June 25	5165	1093–4	128	3103
Braking mechanism	J. E. Scheper	858,308	June 25	5598	1197	128	3213
Branch box	A. F. Hills	858,288	June 25	5561	1189	128	3204
Bread, meat, and vegetable cutting machine	C. J. Vann	857,913	June 25	4818	1021	128	3013
Breakwater	G. A. Wieland	857,506	June 18	4007	850	128	2779
Brewers' wort or the like. Apparatus for heating or boiling	H. J. Worssam	857,779	June 25	4549	960–1	128	2948
Brewing material	T. B. Wagner	855,599	June 4	298	.....	128	1772
Brick and tile cutting machines. Wire attachment for	W. R. Cunningham	857,603	June 25	4203	888	128	2859
Brick-kiln	H. J. Williams	857,702	June 25	4398	928–9	128	2910
Brick-molding machine	T. C. Holt	857,624	June 25	4245	896–7	128	2871
Brickmaking-machine	E. L. Martin	855,716	June 4	515	108–9	128	1827
Brickmaking-machine	F. P. Rosback	857,364	June 18	3729	788–91	128	2710
Brickmaking plants. Filling mechanism for	F. Zagelmeyer	857,143	June 18	3314	699	128	2605
Bridge construction	J. Welfle	857,505	June 18	4005	852	128	2779
Brooder	D. K. Groff	856,696	June 11	2476	509	128	2354
Broom-shield	B. F. Gasque	857,615	June 25	4227	894	128	2866
Brush	J. F. Mumford	856,284	June 11	1638	340	128	2142
Brush	F. M. Aufsesser	856,834	June 11	2720	563	128	2417
Brush and mop holder. Combined	G. A. Fraser	856,238	June 11	1539	322	128	2117
Brush attachment. Horse-	C. I. Bush	857,268	June 18	3550	752	128	2665
Brush-block-feeding appliance	M. O. Rehfuss and E. F. Buch	855,811	June 4	710	146–7	128	1875
Brush drilling and tufting machine	M. O. Rehfuss and E. F. Buch	855,810	June 4	704	144–6	128	1874
Brush for bottle-washing machines	P. Boch	856,191	June 4	1427	302	128	2051
Brush for cleaning horses	J. F. Scanlan. (Reissue)	12,662	June 18	4137	876	128	2810
Brush. Fountain-	E. S. Current	855,758	June 4	612	126	128	1852
Brush. Fountain glue-	A. D. Hyman	856,641	June 11	2376	488–9	128	2330
Brush-handle socket	A. J. Warren	855,600	June 4	299	62	128	1772
Brush-holder	W. O. Cutter	856,515	June 11	2121	436	128	2265
Brush. Rotary	B. Kern, Jr.	857,525	June 18	4038	860	128	2788
Brush. Water-color	J. W. Hawkins	857,239	June 18	3493	738	128	2651
Bucket	N. M. Heller	857,622	June 25	4241	896	128	2869
Bucket. Dredge-	I. B. Hammond	857,396	June 18	3792	804	128	2725
Bucket. Self-dumping	B. A. Baus	856,211	June 11	1469	310	128	2099
Buckle	E. N. Humphrey	855,637	June 4	369	76	128	1788
Buckle	J. J. Buchanan	856,678	June 11	2447	503	128	2348
Buckle	J. A. Wilson	856,829	June 11	2713	561	128	2415
Buckle	J. G. McNabb	857,297	June 18	3608	763	128	2680
Buckle	G. E. Rawson	858,104	June 25	5241	1111	128	3123
Buckle. Cross-line	H. A. Bowyer	857,864	June 25	4712	1000	128	2988
Buckle. Harness-	R. B. Centers	857,872	June 25	4724	1003	128	2990
Buckle-sleeve	D. A. Huffman	855,450	June 4	36	8	128	1704
Buckle-strap. Reinforcing	A. S. Blowers	855,750	June 4	599	123	128	1850
Buffing-roll	P. Bacigalupo	855,922	June 4	939	194	128	1930
Buffing-roll	M. Prevost	856,801	June 11	2295	471	128	2310
Buggy and the like. Baby-	M. Weinstein	857,698	June 25	4388	926	128	2907
Buggy-top supporter	A. M. Walter	855,980	June 4	453	95	128	1812
Buggy-tops. Joint for folding	H. H. Robinson	855,984	June 4	521	171	128	1902
Building-block. Composite	J. Muir	856,176	June 4	1306	294–5	128	2045
Building-block. Interlocking	A. B. Nichols	856,657	June 4	402	84	128	1797
Building-block machine	W. J. Armbruster	856,283	June 11	1877	387–8	128	2205
Building construction	D. G. Hadley	855,704	June 4	494	103	128	1821
Building construction	J. A. Stranaky and H. Riley	856,000	June 4	1073	223	128	1965
Building construction	E. McClure	857,321	June 25	4636	963	128	2969

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Building. High	J. Gernaert	858,170	June 25	5362	1140	128	3153
Burglar-alarm	K. E. Hartmann	856,953	June 11	2930	615	128	2496
Burglar-alarm. Electric	B. J. Cizkovsky	856,132	June 4	1314	275	128	2025
Burglar-alarm. Wireless	F. Keller	857,351	June 18	3704	783	128	2704
Burglar-trap	O. W. Gabrielson	857,456	June 18	3900	829	128	2752
Burial-crypt	W. I. Hood	858,070	June 25	5170	1095	128	3104
Burner:							
See Fluid and oil burner.	Lamp-burner.						
Gas-burner.	Liquid-fuel burner.						
Hydrocarbon-burner.	Oil-burner.						
Incandescent burner.	Pyrographic burner.						
Busts. Device for fastening heads to	E. T. Palmenberg	858,099	June 25	5233	1109	128	3121
Butter, oils, lard, and fats. Apparatus for renovating and refining	C. C. Martin and W. D. Jones	856,355	June 11	1821	376	128	2191
Butter-oils. Pneumatic agitating-tank for	C. C. Martin and W. D. Jones	856,354	June 11	1818	375	128	2190
Butter. Renovating and refining	C. C. Martin and W. D. Jones	856,353	June 11	1814	375	128	2190
Button	O. L. Henerlau	855,575	June 4	246	49	128	1758
Button. Collar or cuff	T. H. Sparks	856,819	June 11	2697	557	128	2412
Button. Emergency-	U. S. Alz	857,917	June 25	4825	1023	128	3015
Button-turning machinery	S. O. McMaster	855,901	June 4	897	186	128	1921
Buttons. Tool for placing shanked	A. H. Cushman	857,385	June 18	3772	798	128	2721
Buttonhole-cutting machine	S. Lewis	858,190	June 25	5396	1149	128	3161
Buttonhole-stitching machine	E. B. Allen	857,145	June 18	3318	699–700	128	2606
Buttonhole-stitching machines. Needle-bar mechanism for	E. B. Allen	856,617	June 11	2335	480	128	2319
Cabinet	O. R. Hunt	856,155	June 4	1359	284–5	128	2036
Cabinet. Machine-bearing	T. Kundtz and J. Rehor	857,181	June 18	3394	716–17	128	2626
Cabinet. Medicine-	O. Jaeger	856,587	June 11	2260	466	128	2302
Cabinet. Rotary stand	A. H. Case	856,764	June 11	2601	534	128	2388
Cabinet. Thread-	C. E. Dove	856,945	June 11	2918	612	128	2463
Cable-hanger	C. L. Pelree, Jr.	856,099	June 4	1234	260	128	2004
Cable-roller	W. Callahan	856,335	June 11	1755	364	128	2171
Cables into conduits. Apparatus for feeding	E. J. Hutchins	855,952	June 4	980	204	128	1941
Cage	D. W. Jones	855,784	June 4	660	135	128	1863
Calcium carbid. Producing	E. F. Price	855,476	June 4	66	14	128	1711
Calcium carbid. Producing	E. F. Price	856,477	June 4	68	15	128	1712
Calcium hydrid. Producing	P. Askenasy and L. Storkem	857,146	June 18	3322	.....	128	2607
Calculating-machine	L. G. Julihn	856,349	June 11	1784	371–4	128	2178
Calling device. Automatic	W. O. Beck	856,386	June 11	1886	389	128	2207
Calorimeter. Steam-	L. M. Ellison	857,984	June 25	4982	1053	128	3057
Cam	B. M. W. Hanson	855,773	June 4	640	131	128	1859
Camera focusing-screen	F. A. Brownell	856,618	June 11	2337	480–1	128	2320
Camera. Photographic	L. Borsum	858,147	June 25	5319	1130–1	128	3142
Camera-stand	P. V. W. Welsh	855,825	June 4	742	153	128	1882
Can:							
See Battery-can.	Oil-can.						
Can-nozzle. Safety	W. H. McNutt	855,525	June 4	156	31	128	1734
Can-opener	F. G. Aschbrenner	857,009	June 18	3052	643	128	2537
Can-opener	R. T. Stevenson	857,212	June 18	3449	728	128	2640
Can-opener	H. J. Cassard	857,871	June 25	4722	1003	128	2990
Cans. Making sheet-metal preserving	J. G. Hodgson	857,736	June 25	4466	943	128	2927
Cans. Testing filled and closed	E. S. Eno	857,388	June 18	3780	801	128	2723
Canning apparatus	J. K. Pharr	856,909	June 11	2859	597–8	128	2450
Candies. Dipping-frame for coating	P. Panoulias	855,804	June 4	693	142	128	1871
Candy-making machine	W. T. Hudson, J. R. Parks, and W. H. Coursey	856,959	June 11	2941	618	128	2469
Candy-pulling machine	C. Thibodeau	857,770	June 25	4535	957	128	2944
Candy-spinning machine. Controlling an electric	A. D. Robinson	856,424	June 11	1965	404–5	128	2226
Cap	M. L. Glass	857,000	June 11	3035	639	128	2495
Car	S. Otis	858,013	June 25	5051	1068–9	128	3073
Car brace. Freight-	H. Heard and E. D. Treanor	858,283	June 25	5553	1187	128	3202
Car. Combination metal and wood	E. I. Dodds	855,839	June 4	774	160–1	128	1890
Car construction	E. I. Dodds	855,838	June 4	771	159–60	128	1889
Car-controlling device. Motor-	H. L. Hooke	855,780	June 4	650	133–4	128	1861
Car-coupling	E. F. Pendleton	856,489	June 11	2075	427	128	2254
Car-coupling	W. F. Kleed, Jr.	856,530	June 11	2148	442	128	2271
Car-door	R. J. Neville	857,360	June 18	3723	786	128	2709
Car-door-operating mechanism. Dump-	J. R. Groves	857,521	June 18	4030	858	128	2785
Car-door-operating mechanism. Gondola-	E. I. Dodds	855,837	June 4	767	158–9	128	1888
Car draft-rigging. Freight-	H. C. Stickel	855,998	June 4	1070	222	128	1964
Car-fender	I. H. Caliga	855,558	June 4	220	43	128	1752
Car-fender	S. Concannon	855,938	June 4	961	199–200	128	1936
Car-fender	E. Sherwood	858,225	June 25	5459	1165	128	3179
Car grain-door	W. C. N. Smith and E. Roadifer	856,663	June 11	2420	499	128	2340
Car grain-door	J. Edman	856,775	June 11	2628	540	128	2394
Car. Juvenile hand-	S. D. and H. T. Latty	857,945	June 25	4882	1032	128	3030
Car. Motor-	W. D. Hawk	855,572	June 4	239	48	128	1756
Car. Pressed-steel	W. G. Wagenhals	856,435	June 11	1982	408	128	2231
Car. Railway dumping-	E. I. Dodds	855,840	June 4	776	161–3	128	1891
Car-replacer	W. F. Brann	856,192	June 4	1429	302	128	2052
Car-replacer	J. M. Bowman	857,437	June 18	3864	821	128	2742
Car-replacer	G. H. Sargent. (Reissue)	12,667	June 25	5747	1224–5	128	3257
Car-seat	F. H. Henry	858,178	June 25	5374	1143	128	3155
Car. Sleeping-	T. O. Abbott	858,130	June 25	5283	1122	128	3133
Car-stop. Automatic	J. W. Reed	857,205	June 18	3440	725–6	128	2637
Car. Tank-	J. M. Ames	857,571	June 25	4144	877–8	128	2843
Car-ventilator	G. L. Archer	856,934	June 11	2899	607	128	2458
Car-ventilator	H. Van Ness	858,123	June 25	5274	1120	128	3131
Car-ventilator	E. N. Dillman	858,268	June 25	5531	1182	128	3196
Car-wheel	T. S. Blair, Jr.	856,675	June 11	2443	502	128	2347
Car-wheel	T. S. Blair, Jr.	856,677	June 11	2447	502	128	2347
Car-window	E. S. Bucknam	855,933	June 4	953	197–8	128	1984
Car-window cleaner	T. J. Short	856,428	June 11	1973	406	128	2228
Cars and the like. Safety guard or fender for tramway-	G. Hauff	856,253	June 11	1567	329	128	2124
Cars, &c. Driving-gear for motor-	L. Iversen	856,703	June 11	2486	511	128	2357
Cars. Electropneumatic braking device for railway-	R. Wilhander	856,010	June 4	1090	226	128	1969
Cars. Load-releasing mechanism for logging-	L. W. Brown and A. W. Chappelle	857,026	June 18	3090	652	128	2548
Carburetor	F. E. Hemabray	855,574	June 4	244	49	128	1733
Carburetor	L. B. Gaylor	855,784	June 4	623	127	128	1864

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Carburetor	W. H. C. Higgins, Jr.	856,638	June 11	2372	488	128	2329
Carburetor	T. McCormick and A. Miller	856,654	June 11	2401	494	128	2335
Carburetor	A. J. Way	857,120	June 18	3289	693–4	128	2689
Carburetor	C. T. Gaither	857,275	June 18	3562	754	128	2668
Carburetor for hydrocarbon-engines	T. Huber	856,988	June 11	2940	617–18	128	2466
Card-grinding machine	J. F. Lehman	856,072	June 4	1186	252	128	1993
Card-holder	G. T. H. Willing	858,315	June 25	5612	1201	128	3216
Cards. Playing-	H. C. Ward	855,681	June 4	454	96	128	1812
Carding-engine. Traveling-flat	W. Batten and W. Hayes	857,713	June 25	4418	933	128	2915
Carding-machine	S. Cordingley	856,031	June 4	1126	236	128	1979
Carpenter's tool	W. T. Bubb	855,834	June 4	760	156	128	1886
Carpet-beater	R. J. Green	856,130	June 4	1326	277	128	2028
Carpet-stretcher	V O. White	857,777	June 25	4546	960	128	2947
Carriage. Collapsible baby-	G. A. Svanberg	857,420	June 18	3833	813	128	2735
Carriage-curtain fastener	A. E. Bernhardt	857,018	June 18	3067	648	128	2541
Carriage-feed mechanism	F. Neudorff	856,656	June 11	2406	495	128	2337
Carriage. Folding	A. J. Adams	857,971	June 25	4956	1047	128	3060
Carriage storm protection	M. D. Stocking	856,376	June 11	1861	382–3	128	2201
Carrier: *See* Book-carrier. Egg-carrier. Braiding-machine carrier. Package-carrier. Trace-carrier. Cash and parcel carrier.							
Cart and hog-chute. Combined	B. F. Cleveland	857,029	June 18	3094	653	128	2549
Carton-filling machine	R. Sunderman	858,116	June 25	5259	1117	128	3127
Carton for nutmegs and the like	J. B. Fallon, Jr.	857,336	June 18	3676	777	128	2698
Cartons. Manufacture of moisture-proof	H. G. Eckstein	856,853	June 11	2755	573	128	2425
Cartridge	G. E. Loeble	855,958	June 4	992	207	128	1944
Cartridge	H. Maxim. (Reissue)	12,660	June 11	3046	642	128	2498
Case: *See* Gear-case. Ticket-case. Thermometer-case.							
Cash and parcel carrier	J. L. Baldwin	856,189	June 4	1421	301	128	2060
Cash-recorder	A. F. Staples	856,374	June 11	1856	381–2	128	2200
Cash-register and attachment	H. T. Watson	858,227	June 25	5483	1169	128	3185
Cash-registering till	J. A. Prestwich	856,294	June 11	1880	344–5	128	2147
Casing-head	H. Auchu	858,321	June 25	5621	1205	128	3218
Casket-handle	J. Waddell	855,544	June 4	193	38–9	128	1745
Caster	J. E. Norwood	857,080	June 25	4306	909	128	2886
Caster. Furniture-	J. M. Collins	857,982	June 25	4980	1052	128	3056
Casting apparatus	H. H. Doehler	856,772	June 11	2616	539	128	2201
Casting apparatus	H. H. Doehler	856,773	June 11	2622	539	128	2393
Casting metal sheets. Apparatus for	J. F. Miller	857,885	June 25	4742	1007	128	2994
Castings. Mold for making steel	C. Hagstrom	855,251	June 11	1565	328	128	2123
Catamenial appliance	W. D. Berry	857,019	June 18	3068	648	128	2541
Caustic-pencil holder	J. J. Requa	856,206	June 11	1609	346	128	2150
Ceiling construction	L. L. Sagendorph	855,816	June 4	723	150	128	1878
Cellulose. Manufacture of threads, films, or other forms of	M. Fremery, E. Bronnert, and J. Urban.	856,857	June 11	2761	.....	128	2426
Cellulose. Nitrating	A. Voigt	855,869	June 4	831	.....	128	1904
Cement. Apparatus for and method of molding hollow objects from	J. M. Boyle	857,584	June 26	4167	883	128	2850
Cement. Apparatus for molding hollow objects from	J. M. Boyle	857,582	June 25	4164	882	128	2849
Cement-block machine	T. D. and C. W. P. Brock	857,977	June 25	4998	1050–1	128	3053
Cement-block mold	C. E. Stokoe	857,214	June 18	3453	728	128	2641
Cement-block-molding apparatus	J. B. Talbot	855,822	June 4	737	152	128	1881
Cement bricks, blocks, and the like. Machine for molding	H. J. Hurd	857,737	June 25	4470	944	128	2928
Cement composition and making the same	A. Thoma	856,866	June 4	827	.....	128	1903
Cement. Molding hollow objects from	J. M. Boyle	857,581	June 25	4163	882	128	2849
Cement objects. Core for molding hollow	J. M. Boyle	857,583	June 25	4166	882	128	2849
Cement or concrete construction. Armored	G. Ajello	856,013	June 4	1097	227	128	1971
Cement or concrete construction. Armored	G. Ajello	856,615	June 11	2332	479	128	2319
Centering construction	C. H. Scammell	856,371	June 11	1852	381	128	2199
Centrifugal machine	B. Ljungström	855,580	June 4	260	52	128	1761
Centrifugal machine	T. H. Miller	855,718	June 4	522	109–10	128	1828
Chain	J. Kingston	856,350	June 11	1810	375	128	2189
Chain	R. W. Dull	856,398	June 11	1912	393	128	2214
Chain	W. T. James	856,528	June 11	2143	440–1	128	2270
Chain	W. T. James	856,529	June 11	2146	441–2	128	2271
Chain	H. T. Currie	857,449	June 18	3884	825	128	2746
Chain-snap	P. J. Scanlon	856,606	June 11	2310	475	128	2313
Chain snap-hook. Watch-	E. L. Robinson	856,912	June 11	2670	600	128	2452
Chain. Weldless	S. K. von Ecseghy	856,947	June 11	2921	612	128	2464
Chain wrench	H. J. Kahne	856,589	June 11	2271	467	128	2203
Chair: *See* Bathing-chair. Folding chair. Dental chair. Toilet-chair.							
Chair	J. E. Hanger	856,068	June 4	1167	246	128	1988
Chair fan attachment	J. F. A. Probst	857,680	June 25	4317	912	128	2889
Chair fan attachment. Rocking-	J. E. Gilbert	856,347	June 11	1858	326–7	128	2121
Chair-seat frames. Corner-brace for	W. P. Heberger	855,777	June 4	646	132	128	1800
Chair-seat. Reversible	R. N. B. Petersen	858,309	June 25	5629	1186–9	128	3171
Chairs, tables, and the like. Machine for leveling	A. Lyon	858,299	June 25	5582	1193	128	3209
Change apparatus	B. F. Beasley	858,263	June 25	5505	1175	128	3190
Channeling-machine	W. Prellwitz	857,960	June 25	4926	1041–2	128	3040
Channeling-machines. Roller-guide for	W. Prellwitz	857,961	June 25	4928	1042	128	3041
Chart-exhibitor	A. W. Howell	855,696	June 4	396	75–6	128	1787
Check or ticket issuing machine	A. E. Young and E. G. Kerr	857,206	June 18	3545	751	128	2664
Cheek-protector	J. M. Griffin	857,418	June 25	4263	895	128	2838
Cheese-cutter	G. F. Kriesel	856,474	June 11	2061	421–2	128	2249
Cheese-cutter	W. G. Templeton	856,499	June 11	2080	430	128	2248
Cheese-cutter	J. W. Calmer	856,514	June 11	2113	435	128	2264
Cheese-cutter	A. K. Gillespie	856,980	June 11	2926	613	128	2465
Cheese-cutter	W. G. Templeton	857,498	June 18	3903	830	128	2776
Cheese-cutter. Computing	T. C. Brashott	856,269	June 11	1891	390	128	2209
Cheese-cutter. Computing	J. A. Shutz and M. L. Kirkman	857,040	June 25	4870	991	128	2978
Chemical reductions and producing metals and alloys. Effecting	F. M. Beakst	858,239	June 25	5533	.....	128	3221
Chimney-top cowl	J. W. Kayser	856,710	June 4	805	105	128	1824

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Chlorination-barrel	W. J. Armbruster	856,384	June 11	1881	388	128	2206
Chopper: *See* Cotton-chopper.							
Chuck	J. A. Leland	857,947	June 25	4886	1083	128	3052
Chuck. Drill-	F. G. H. Heynau	856,899	June 11	2480	510	128	2355
Chuck. Drill and like clamping	J. Albrecht	856,520	June 4	750	154	128	1884
Chuck. Lathe-	H. A. Hillenbrand	855,456	June 4	31	7	128	1702
Chuck. Rock-drill	C. A. Hultquist	856,877	June 11	2797	583	128	2435
Churn	J. Smith	856,187	June 4	1418	300	128	2060
Churn	W. L. Clifton	856,844	June 11	2738	568	128	2420
Churn and butter-worker. Combined	M. F. Stadtmuller	857,119	June 18	3267	688	128	2593
Churn and butter-worker. Combined	O. Christensen and C. P. Sölbeck	858,060	June 25	5151	1091	128	3100
Churn-operating means. Vibrating-	W. P. Coleman	857,923	June 25	4834	1025	128	3017
Cigar and tobacco molstener	E. L. Buxbaum	855,615	June 4	331	68	128	1779
Cigar-boxes. Device for preventing the fraudulent refilling of	T. M. Losle, Jr.	856,481	June 11	2062	424	128	2251
Cigar bunching and wrapping machine	J. A. Bach	856,201	June 11	1456	307	128	2094
Cigar-holder	B. N. Phillippi	858,349	June 25	5686	1216	128	3240
Cigar-holding attachment	W. C. Oliver	856,362	June 11	1838	377	128	2194
Cigar-moistening box	W. Tisch	857,218	June 18	3458	729	128	2642
Cigarette	J. Cavargna	856,030	June 4	1125	235	128	1979
Cigarette-machine pasting apparatus	G. Tickner, Jr.	856,823	June 11	2702	558	128	2413
Circuit-breaker	B. P. Rucker	856,425	June 11	1967	405	128	2226
Circuit-breaker. Automatic time	W. N. Martin, A. J. Thomas, and E. F. L. Russell.	858,301	June 25	5585	1194	128	3210
Circuit-controller	E. S. Maede and J. H. Hawkins	858,197	June 25	5406	1151	128	3163
Circuit-operating device	L. G. Woolley	857,708	June 25	4409	931	128	2913
Cistern-mold	W. B. Dorward	856,852	June 11	2754	572	128	2424
Clamp: *See* Bedclothes-clamp. Pail-clamp. Colter-clamp. Railway-track clamp. Hitching-strap clamp. Ratchet-clamp. Hydraulic clamp. Wire-clamp.							
Clamp	H. D. Shear and U. S. Rhodabarger.	855,989	June 4	1057	219	128	1961
Clamp or grip	H. Petersen	858,018	June 25	5061	1071	128	3075
Clasp: *See* Garment-supporter clasp. Necktie-fastener clasp.							
Clasp	A. Rosenthal	857,488	June 18	3969	843	128	2769
Clasp-pin	G. E. Burns	857,867	June 25	4716	1001	128	2988
Clay products. Drying-car for	W. R. Cunningham	857,270	June 18	3553	753	128	2666
Cleaner: *See* Boiler-flue cleaner. Eraser-cleaner. Boiler-tube cleaner. Pipe-cleaner. Car-window cleaner. Pot-cleaner. Cuspidor-cleaner. Window-cleaner.							
Cleaning device	L. O. Howell	857,627	June 25	4251	898	128	2872
Cleaning implement	H. G. Lykken	856,168	June 4	1385	292	128	2042
Clevis. Plow-	M. C. Adkins	855,740	June 4	581	119	128	1845
Clip: *See* Paper-clip. Tire-clip. Pen and pencil clip. Whiffletree-clip.							
Clock. Repeating alarm-	W. S. Hawthorne	855,775	June 4	644	132	128	1859
Clock. Watchman's	R. Vogelmann	857,502	June 18	4001	852	128	2778
Clod-fender adjuster	T. F. and L. C. McCarty	857,095	June 18	3234	680	128	2584
Closet attachment	F. M. Jacob	856,468	June 11	2041	419	128	2246
Closure	F. H. Palmer	856,903	June 11	2847	594	128	2447
Cloth, &c. Apparatus for doubling	J. Fish	855,881	June 4	848	176	128	1908
Cloth-steaming apparatus	E. Senkbeil	858,032	June 25	5082	1076	128	3080
Cloth. Treating	S. Hermann	855,708	June 4	502	105	128	1823
Clothes-drier	J. S. Bougher	857,714	June 25	4421	934	128	2916
Clothes-drying reels. Lifting device for	J. G. Wendling	858,126	June 25	5278	1121	128	3132
Clothes-hanger	M. Crane	857,602	June 25	4202	888	128	2858
Clothes-line prop	R. I. Williams and E. F. Seacrist	856,994	June 11	3019	635	128	2490
Clothes-line reel	C. D. Dittman	856,684	June 11	2455	505	128	2350
Clothes-press and wardrobe	J. L. Gideon	855,628	June 4	352	72	128	1784
Clover-hullers. Stone and grit separator for	C. M. Follett	855,625	June 4	349	71	128	1783
Clutch	W. R. McKeen, Jr.	855,524	June 4	155	30–1	128	1734
Clutch	C. W. Sponsel	855,867	June 4	824	172	128	1903
Clutch	P. E. Welton	855,915	June 4	924	191	128	1927
Clutch	W. H. MacDonald	856,971	June 11	2971	622	128	2479
Clutch device for automobiles	C. E. Carpenter	855,501	June 4	114	23	128	1723
Clutch for automobiles and other purposes	M. H. Cormack	857,032	June 18	3098	654	128	2550
Clutch. Friction-	C. C. Jacobs. (Reissue)	12,657	June 4	1438	303	128	2055
Clutch. Friction-	C. J. Gadd	856,692	June 11	2466	507	128	2352
Clutch. Friction-	C. Wüst-Kunz	857,970	June 25	4955	1047	128	3060
Clutch means for intermittently rotating a reciprocating part.	M. C. White and O. C. Duryea	855,683	June 4	459	97	128	1813
Clutch mechanism	W. J. Hagman	857,393	June 18	3786	802	128	2724
Coal-handling apparatus	W. F. Klemp	858,076	June 25	5180	1097–8	128	3107
Coal-handling bridge	C. S. Williamson	858,314	June 25	5609	1200–1	128	3215
Coal-tipples. Screen-scraper for	W. E. Thoenen	858,312	June 25	5606	1199-1200	128	3214
Coaster brace and beam. Sheet-metal	W. Schwene	856,919	June 11	2877	602	128	2454
Coaster-brake	A. Larsen	856,532	June 11	2152	443	128	2272
Coaster-brake	G. Zinter	857,855	June 25	4698	996–7	128	2984
Coat-hook	J. Patterson	855,586	June 4	273	55	128	1765
Coating pipes and other articles. Apparatus for	E. A. Custer and R. A. Pitman	856,996	June 11	3022	635–7	128	2491
Cock. Angle-	W. H. Woody, F. P. Canby, and P. Tennant.	857,915	June 25	4823	1022	128	3015
Cock. Gage-	A. Fredrikson	856,047	June 4	1150	243	128	1993
Cock. Gage-	W. H. Kriner	857,534	June 25	4262	900	128	2876
Cock-index	H. Mueller	857,967	June 25	4913	1038	128	3057
Cock. Self-locking safety-	W. F. Pabst and W. West	857,194	June 18	3424	721	128	2633
Coffee-making device	C. S. Rogers	857,676	June 25	4332	916	128	2903
Coffee-pot	A. H. Stebbins	857,944	June 26	4981	998	128	3060
Coffee-urn	D. O. Dowe	855,842	June 4	782	164	128	1892
Coin separating, counting, and packaging machine	C. F. Hess	857,172	June 18	3377	712	128	2621
Coin separating or assorting machine	W. W. Broga	857,788	June 25	4559	984–6	128	2989
Coin tray and till	B. F. Brewster	858,331	June 25	5635	1208	128	3238

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Coke-working apparatus	G. F. Myers	856,980	June 11	2991	627–9	128	2483
Collar	D. J. Kelly	856,089	June 4	1184	250	128	1992
Collar. Horse-	J. F. Mott	856,649	June 11	2386	492	128	2332
Collar. Horse-	S. H. Crum	857,034	June 18	3102	655	128	2551
Collar. Horse-	C. W. Campbell	857,594	June 25	4181	885	128	2854
Collar-pad	C. W. Campbell	857,595	June 25	4183	885	128	2854
Collar-pin and necktie-fastener	G. A. Beidler	857,919	June 25	4828	1024	128	3016
Collars, cuffs, and the like. Creasing and folding machine for	H. Gerhardt	856,696	June 11	2471	508–9	128	2353
Color combinations in rooms. Exhibiting device to show harmonious	W. Church	856,222	June 11	1497	315	128	2105
Colors. Manufacture of antimony	L. Brunet	857,978	June 25	4971	.....	128	3054
Colter-clamp. Adjustable	J. H. and R. L. Allin	856,200	June 11	1454	306–7	128	2094
Comb: *See* Currycomb.							
Comb with adjustable ornaments. Lady's	A. Savastano	857,113	June 18	3259	685	128	2591
Combs. Machine for manufacturing celluloid	P. Durando	857,387	June 18	3776	798–801	128	2722
Combination-lock	A. W. Hoag	856,700	June 11	2481	510	128	2355
Combustion-engine	J. H. and J. W. Bense	856,760	June 11	2595	532	128	2386
Combustion generating apparatus. Continuous-	E. P. Noyes	855,726	June 4	537	113	128	1832
Combustion-regulating apparatus	T. D. Pilcher	858,019	June 25	5061	1071	128	3076
Communion or eucharistic device	H. C. Allen	858,051	June 25	5132	1085	128	3094
Commutator-brush	R. Siegfried	856,429	June 11	1974	406	128	2228
Commutator-grinder	E. S. Bryant and H. J. Bery	855,877	June 4	843	174–5	128	1907
Commutator truing and dressing tool	C. H. Frick	857,931	June 25	4849	1026	128	3021
Compass-handle-adjusting device	O. G. Mayer	857,185	June 18	3403	718	128	2628
Compasses	G. Schoenner	855,592	June 4	283	57	128	1768
Compo-board and producing same	J. E. Lappen	855,792	June 4	672	138	128	1866
Composing, type-casting, and other machines. Record strip or controller for	W. Bancroft	857,974	June 25	4961	1049	128	3061
Composition of matter	F. A. Lobert	858,084	June 25	5202	.....	128	3113
Compost and cotton-seed distributer	W. B. Dukes and J. M. Dekle	857,518	June 18	4025	857	128	2784
Compound brake	J. Dillon	857,549	June 18	4088	868	128	2801
Compound brake	J. Dillon	857,550	June 18	4091	868	128	2802
Compound brake	J. Dillon	857,551	June 18	4094	868	128	2802
Compound engine	W. E. Symons	857,316	June 18	3640	770–1	128	2688
Computing device	C. W. Draper	856,573	June 11	2246	461–2	128	2296
Concrete beams and girders. Construction of reinforcing-steel for reinforced	G. Aus	857,973	June 25	4960	1049	128	3051
Concrete-block mold	J. R. Courter	857,159	June 18	3344	706	128	2612
Concrete blocks and artificial stone. Mold for making	W. A. Benton	856,213	June 11	1473	311	128	2100
Concrete building-blocks and artificial stone. Machine for molding	R. Edmondson	856,340	June 11	1761	366–7	128	2173
Concrete construction	W. S. Shourds	858,227	June 25	5465	1166	128	3180
Concrete construction. Reinforced	C. P. Walter	857,775	June 25	4543	959	128	2946
Concrete forms. Apparatus for raising	R. H. Folwell and W. R. Sinks	855,452	June 4	24	5	128	1701
Concrete gutter	M. F. Howley	856,702	June 11	2485	511	128	2356
Concrete-mixing machine	G. M. Pence	858,017	June 25	5059	1070	128	3075
Concrete. Reinforcement for	W. W. Conard	858,153	June 25	5328	1133	128	3144
Concrete-reinforcing bar	A. V. Reyburn, Jr.	857,671	June 25	4320	913	128	2889
Concrete sidewalk	D. G. MacDonald	856,409	June 11	1935	398	128	2218
Concrete silos. Mold for making solid	W. H. Limberg	857,474	June 18	3937	837	128	2761
Concrete steel suspension-arch	E. J. Schauwecker	855,986	June 4	1053	218	128	1959
Concrete tie	M. E. Woodbury	856,125	June 4	1298	272	128	2020
Condenser	F. C. Roberts	857,675	June 25	4329	915	128	2892
Condenser apparatus	I. S. Davis	858,265	June 25	5526	1180	128	3195
Conduit	G. Russell	855,965	June 4	1051	218	128	1959
Confectionery-machine	A. S. Jacolucci	857,179	June 18	3391	716	128	2625
Confections. Machine for immersing the cores or centers of	L. N. Hartog	857,401	June 18	3798	805–6	128	2727
Contact-chamber	W. C. Ferguson	857,389	June 18	3780	801	128	2723
Conveyer	W. T. James	856,527	June 11	2141	439–40	128	2269
Conveyer	A. H. Dahl and A. E. Whitely	856,682	June 11	2451	504–5	128	2349
Conveyer. Belt	E. G. Thomas	857,771	June 25	4537	958	128	2945
Conveyer. Belt	E. G. Thomas	857,772	June 25	4539	958	128	2945
Conveyer idler. Belt-	F. F. Waechter	857,370	June 18	3746	793	128	2714
Conveyer. Traveling	I. H. Venn	857,125	June 18	3280	691–2	128	259.
Conveyers, &c. Carrying-roll for belt	R. W. Dull	857,610	June 25	4220	892	128	2864
Conveying apparatus	B. C. and S. Crandall	857,924	June 25	4836	1025	128	3018
Conveying system	A. C. McCord	857,096	June 18	3235	680	128	2584
Cooking apparatus. Heating device for camp	K. Hofmann	857,053	June 18	3167	666	128	2570
Cooking apparatus. Steam	B. J. Hendriks	857,523	June 18	4035	859	128	2786
Cooking utensil	M. C. Bacon and M. Baldridge	856,509	June 11	2104	432	128	2261
Cooking utensil	J. Behringer	856,671	June 11	2437	501	128	2345
Cooking utensil	S. Fine	857,167	June 18	3366	710	128	2618
Cooking-utensil holder and sad-iron heater. Combined	M. B. Bassett	856,935	June 11	2901	608	128	2459
Cooler: *See* Beer-cooler. Water-cooler.							
Coop or crate	O. J. La Bauve	855,790	June 4	668	137	128	1866
Copies. Producing multiple and backed	F. G. J. Post	858,023	June 25	5067	1073	128	3077
Corer. Fruit and vegetable	J. Baker	857,512	June 18	4014	855	128	2781
Cork-extractor	R. B. Gilchrist	857,992	June 25	4996	1055–6	128	3060
Corn. Apparatus for heading Kafir	T. H. Sparks	855,819	June 4	728	150–1	128	1879
Corn-drill	W. Kirn	855,787	June 4	665	136	128	1866
Corn hanger. Seed-	C. D. Snyder	856,818	June 11	2695	556	128	2411
Corn-husking machine	W. B. Metcalf	857,565	June 18	4126	874–5	128	2808
Corn-popper	O. B. and J. H. Young	858,317	June 25	5515	1202	128	3217
Corn-popper	O. B. and J. H. Young	858,318	June 25	5517	1203	128	3217
Corn-silking machine	I. S. Merrell	856,894	June 11	2825	589	128	2443
Corset	E. B. Adams	858,319	June 25	5518	1203	128	3218
Cotton-chopper	S. Stallings	856,995	June 4	1065	221	128	1963
Cotton chopper and cultivator. Combined	W. B. Hindman	858,634	June 4	363	75	128	1787
Cotton chopper and cultivator. Combined	R. H. Furnell	858,977	June 4	1040	215–16	128	1956
Cotton-chopping and corn-hoeing machine. Combined	J. Jackson	855,639	June 4	371	77	128	1789
Cotton compress or baling machine. Portable	J. W. Phillips	856,803	June 11	2669	550–1	128	2404
Cotton-picker	J. B. Nell	856,178	June 4	1209	286	128	2045
Cotton-separator	W. A. Patterson	856,421	June 11	1959	402–3	128	2224

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Counter	E. T. Willson	855,527	June 4	745	154	128	1883
Countersinking and counterboring attachment. Combined	J. H. Henry	857,344	June 18	3691	780	128	2702
Counting-board	A. D. Dunn	856,041	June 4	1140	239	128	1982
Coupling: *See* Car-coupling. Railway-vehicle coupling. Hose-coupling. Pipe-coupling. Rope-and-bucket coupling. Pump-rod coupling. Railway and other vehicle coupling. Shaft-coupling. Thill-coupling.							
Coupling	O. A. Morris	856,795	June 11	2658	547–8	128	2401
Cover. Receptacle-	T. D. McCall	857,746	June 25	4485	946	128	2932
Cover-ring	M. E. Woods	857,139	June 18	3306	697	128	2604
Cradle. Self-rocking	L. C. Hantske	856,580	June 11	2256	464	128	2299
Crane. Overhead traveling	E. E. Brosius	857,025	June 18	3089	652	128	2547
Crane. Vertical charging-	C. L. Taylor	858,038	June 25	5092	1078–9	128	3063
Crater. Fruit-	C. C. Teague	856,993	June 11	3017	635	128	2490
Cream-separator. Centrifugal	E. A. Forsberg	857,273	June 18	3559	753	128	2668
Creosote and product thereof. Treating	A. G. Meyer	856,975	June 11	2984	.....	128	2481
Crop-thinner	A. B. Downs	856,665	June 11	2456	505	128	2350
Cross-arm for towers	L. W. Noyes	857,101	June 18	3242	682	128	2587
Cross-tie	J. S. Schaeffer	857,907	June 25	4901	1019	128	3009
Crossing-gate. Automatic	R. D. Page	855,660	June 4	411	86	128	1799
Crusher: *See* Rock-crusher.							
Crusher and pulverizer	M. F. Williams. (Reissue)	12,659	June 4	1442	304	128	2056
Crushing and grinding mill	T. L. and T. J. Sturtevant	857,121	June 18	3271	689	128	2594
Crushing and grinding mill. Vertical	T. L. and T. J. Sturtevant	856,311	June 11	1699	352–3	128	2158
Crushing-rolls for ore, rock, and other material	T. C. Walker, Jr.	856,559	June 11	2212	455	128	2288
Cue-rest	G. F. Williamson	855,684	June 4	461	97	128	1813
Cuff-holder	L. L. Mallard	858,300	June 25	5584	1193	128	3210
Culinary utensil	J. H. Collins	856,446	June 11	2003	412	128	2236
Culinary utensil	J. J. Leykauf and A. Barth	857,812	June 25	4622	979	128	2967
Cultivator	F. E. Davis	857,162	June 18	3351	707–8	128	2614
Cultivator	H. E. Kline	857,352	June 18	3707	783	128	2705
Cultivator-foot	C. L. Ferriott	856,237	June 11	1537	322	128	2116
Cultivator harrow attachment. Corn-	C. J. Kirkeberg	856,471	June 11	2044	420	128	2247
Cultivator-shovels. Adjustable clamp for	J. W. St. John	855,487	June 4	89	19	128	1717
Cup: *See* Drinking-cup. Grease-cup.							
Cupola-charging mechanism	S. S. Knight	858,004	June 25	5030	1063	128	3069
Curling-iron. Electric	I. Allen and G. Hanlon	857,569	June 25	4141	877	128	2843
Current generator. Constant-	C. P. Steinmetz	855,484	June 4	83	17–18	128	1716
Current generator. Constant-	C. P. Steinmetz	855,485	June 4	85	18	128	1716
Current machine. Alternating-	R. D. Mershon	857,953	June 25	4900	1035–6	128	3035
Current motor. Alternating-	B. G. Lamme	856,477	June 11	2056	423	128	2249
Current. Redressing and regulating device to transform a single-phase into a continuous	L. R. Auvert and A. F. E. Ferrand.	857,267	June 18	3547	752	128	2665
Currents. Apparatus for generating high-frequency alternating	M. Leblanc	857,561	June 18	4114	872–3	128	2806
Currents. Apparatus for transforming continuous	M. Leblanc	857,080	June 18	3200	673	128	2577
Currents. Generating high-frequency alternating	M. Leblanc	857,560	June 18	4107	872	128	2806
Currycomb	R. F. Lawson	857,472	June 18	3934	836	128	2760
Curtain-fixture	C. L. Hopkins	855,781	June 4	655	134	128	1862
Curtain-fixture	P. A. Houghtaling	856,874	June 11	2792	581	128	2433
Curtain-fixture	G. F. Livesay	857,743	June 25	4483	946	128	2931
Curtain-pole	J. A. Powell	857,829	June 25	4647	986	128	2972
Curtain raiser and controller	E. Harris	856,144	June 4	1335	279–80	128	2030
Curtain-rod and making it. Extensible	C. H. Thurston	856,316	June 11	1707	354	128	2160
Curtain-rod ornament	T. Newell	857,658	June 25	4303	908	128	2885
Curtain-roller	H. F. Evans	856,454	June 11	2015	414	128	2239
Curtain-stretcher	H. E. Southworth	856,908	June 4	910	189	128	1923
Curtain-stretcher	F. G. Hoffheins and F. S. Stanfield	857,623	June 25	4242	896	128	2870
Curtain support. Side-	W. B. Pearson	855,970	June 4	1025	213	128	1953
Curtain-supporting bracket	E. O. Bulman	856,391	June 11	1895	390	128	2299
Curtain-suspension device	T. Ludwig	856,076	June 4	1195	253	128	1995
Cuspidor	F. W. Kendall	857,470	June 18	3930	836	128	2759
Cuspidor-cleaner	O. Kerouse	856,160	June 4	1372	289	128	2039
Cuspidor cleaner and lifter	H. H. Jackson	857,178	June 18	3390	715	128	2625
Cut-off. Automatic	H. Price	855,808	June 4	701	143	128	1873
Cut-off. Water-	G. Henkel	857,171	June 18	3373	711	128	2620
Cutter: *See* Bolt-cutter. Ice-cutter. Cheese-cutter. Pipe-cutter. Dredge-cutter. Threshing-machine band-cutter. Gasket-cutter. Hair-pin cutter. Weed-cutter.							
Cutting and folding machine	R. C. Seymour	856,991	June 11	3014	633–4	128	2489
Cutting and mixing mill	H. U. Prindle	856,295	June 11	1666	345–6	128	2149
Cutting-block	G. E. Daniels	855,940	June 4	966	200	128	1937
Cutting-tool	S. V. Huber	857,284	June 18	3582	738	128	2674
Cutting-tool	W. D. Allen and G. A. Johnson	857,710	June 25	4412	932	128	2914
Damper-controller. Automatic	E. F. Miller	857,648	June 25	4285	905	128	2881
Damper mechanism	H. A. Starr	856,107	June 4	1247	262	128	2007
Delivery mechanism	O. L. Raabe and G. F. Read	857,962	June 25	4930	1042–4	128	3042
Dental-articulator attachment	M. H. Knapp	856,884	June 11	2813	586	128	2489
Dental chair	L. L. Mallard	858,193	June 25	5399	1150	128	3162
Dental fillings, inlays, and crowns. Manufacturing fusible	J. N. Crouse	856,034	June 4	1130	237	128	1980
Dental-plate swage	G. E. Freeborn	857,339	June 18	3682	778	128	2700
Dental tray	J. A. Henning	857,240	June 18	3404	738	128	2651
Dentimeter	J. Bode	855,575	June 4	830	174	128	1906
Derailing-switch	M. H. Mahar	856,274	June 11	1617	336	128	2137
Derricks. Boom-point for	R. F. Bennett	856,212	June 11	1471	310–11	128	2099
Desk	J. L. Rhodes	857,110	June 18	3254	684	128	2690
Dethroning	C. E. Acker	855,491	June 4	94	.....	128	1716
Dial-holder	O. Ohlson	856,052	June 4	1222	255	128	2002
Dial-rim	F. B. Cunningham	857,516	June 18	4022	846	128	2783
Die-stock. Adjustable	B. Borden	855,762	June 4	609	123–4	128	1950

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Digger: *See* Post-hole digger. Potato-digger.							
Dipper-mounting	A. L. Becker	857,577	June 25	4157	890	128	2847
Directory. Telephone-	G. C. Odor	857,662	June 25	4309	910	128	2887
Dish-washer	T. E. Jones	855,785	June 4	662	135	128	1864
Dish-washing machine	J. A. Hamelback	855,570	June 4	235	46–7	128	1756
Disinfection. Process of	F. Durst	855,942	June 4	966	201	128	1938
Disk meter	E. E. Gamon	856,244	June 11	1552	325–6	128	2120
Display-cabinet	E. A. Wilcox	857,265	June 18	3544	751	128	2664
Display-holder	F. Prutton	857,108	June 18	3252	684	128	2590
Display-holder for rugs	E. Brown	857,716	June 25	4424	934	128	2916
Display novelty	R. L. Wells	858,313	June 25	5606	1200	128	3215
Display-rack	A. C. La May	855,462	June 4	40	9–10	128	1705
Display-rack	F. P. Sawyer	856,809	June 11	2679	553	128	2407
Display rack. Seed-	L. L. Morse	855,862	June 4	816	170	128	1900
Display-stand	H. E. Smith	857,763	June 25	4520	954	128	2940
Distilling apparatus	M. Llodra	858,346	June 25	5680	1213–14	128	3238
Ditching-machine	L. H. Erickson	855,507	June 4	124	25	128	1725
Dock. Floating dry-	E. Gunnell	857,723	June 25	4461	942	128	2926
Dolly. Jam-	J. Weimer	856,750	June 11	2579	530	128	2382
Door	A. Ritter	856,369	June 11	1849	390	128	2198
Door-check	M. L. Harris	856,865	June 11	2777	578	128	2429
Door-check	J. A. Reed	857,486	June 18	3966	842	128	2768
Door-fastener	A. L. Bergsten	855,498	June 4	112	22	128	1722
Door-fastener	M. D. Merring	855,961	June 4	999	209	128	1946
Door-fastener	D. Wilde	858,244	June 25	5492	1172	128	3187
Door fastener. Sliding-	R. Campbell	857,922	June 25	4832	1024	128	3017
Door-hanger	A. J. Ricker	856,299	June 11	1673	347	128	2151
Door-hanger	W. McDonald	856,796	June 11	2660	548	128	2402
Door-hanger	L. A. Hoerr	857,174	June 18	3384	714	128	2623
Door hanger and track. Combined	C. L. Bundy	855,691	June 4	476	99	128	1817
Door-lock	A. J. Berger	856,214	June 11	1474	311	128	2100
Door lock. Corridor-	H. G. Voight	857,126	June 18	3283	692	128	2588
Door-lock. Latch-knob	L. W. Woodburn	857,705	June 25	4404	930	128	2911
Door locks and latches. Adjustable frame for	J. Hope, Jr.	857,347	June 18	3695	781–2	128	2703
Door opener and closer	D. Wilde	858,243	June 25	5490	1171	128	3187
Door-operating apparatus	P. R. Forman	857,232	June 18	3479	734–5	128	2647
Door or gate opening and closing device	R. B. Browne	858,147	June 25	5322	1131–2	128	3143
Door. Revolving	C. H. Roeckner	858,028	June 25	5075	1074–5	128	3079
Door-securer	J. R. Hall	855,509	June 4	234	46	128	1755
Doors and other objects. Roller-support for movable	D. E. Hunter	857,557	June 18	4102	870	128	2805
Doors. Combined hanger and track for edgewise-movable	D. Schuyler and H. Laughlin, Jr.	856,607	June 11	2311	475–6	128	2314
Dough-molding machine	C. A. Thomson	856,555	June 11	2203	453–4	128	2285
Draft and buffing apparatus	S. P. Bush	857,327	June 18	3655	774	128	2692
Draft attachment for vehicles. Yielding	S. L. McReynolds	855,724	June 4	535	112	128	1831
Draft device	D. W. Stapp	857,211	June 18	3448	728	128	2639
Draft-equalizer	J. K. Woolcott	857,854	June 25	4997	996	128	2963
Draft-forcing device	J. P. Johnson	855,460	June 4	37	8	128	1704
Drawers	E. Lanouette	856,268	June 11	1595	333	128	2130
Drawing and other rolls. Machine for raising flutes on	G. A. Bates	857,576	June 25	4155	880	128	2846
Drawing-board	E. Werner	856,751	June 11	2580	530	128	2383
Drawing-board	G. S. Manuel	858,194	June 25	5401	1151	128	3163
Drawing instrument	C. A. Terry	855,734	June 4	571	117	128	1842
Drawing kit	L. Forsyth	858,274	June 25	5539	1184	128	3198
Dredge-moving apparatus	W. H. Silver and C. A. Bunyan	858,033	June 25	5083	1076–7	128	3080
Dredger-cutter	J. F. Ollrich	856,487	June 11	2073	426	128	2253
Dredger-cutter	J. F. Ollrich	856,544	June 11	2175	448	128	2279
Dress-shield	A. E. Jackson	855,638	June 4	371	77	128	1788
Dress-shield	V. G. Alexander	858,249	June 25	5501	1174	128	3189
Dressing implement. Rotary	C. E. Campbell	856,680	June 11	2450	503	128	2348
Drier: *See* Clothes-drier. Mechanical drier.							
Driers. Apparatus for maintaining uniform pressure in	W. B. Mason	858,089	June 25	5212	1104	128	3116
Driers. Cylinder for mechanical	W. M. Cummer	856,770	June 11	2613	537	128	2391
Drying apparatus	E. C. Horst	855,853	June 4	802	168	128	1897
Drying-furnace	J. Caygill	858,260	June 25	5517	1177–8	128	3193
Drill: *See* Corn-drill. Rock-drill. Pneumatic drill.							
Drill-bit holder	U. S. Booth	857,151	June 18	3329	702	128	2609
Drill-feed	E. F. Smith	858,113	June 25	5256	1116	128	3126
Drill-press	O. L. Dosch	855,841	June 4	780	163–4	128	1892
Drill press. Multiple-	W. C. Toon	857,090	June 25	4372	924	128	2902
Drill-press stop mechanism	S. C. Schauese	857,207	June 18	3442	726	128	2638
Drill-press. Suspended	J. H. and J. H. Birch	857,020	June 18	3099	649	128	2542
Drill-support. Adjustable	A. Mohrbacher	857,529	June 18	4044	851	128	2789
Drilling device	L. K. Moore and G. J. Costello	856,792	June 11	2653	546	128	2400
Drilling-machine	D. E. Krause	856,473	June 11	2048	421	128	2247
Drilling-machine	J. S. Surbaugh	858,311	June 25	5604	1199	128	3214
Drilling-machine. Automatic	L. E. Rice	857,538	June 18	4068	864	128	2797
Drinking-cup and filter. Combined	R. O. Stebbins	855,820	June 4	729	151	128	1880
Driving and reversing gear	R. J. Brooks	856,763	June 11	2600	533–4	128	2388
Driving mechanism	M. B. Church and K. Knudsen	856,943	June 11	2912	610–11	128	2461
Drop-light fixtures. Heat-conductor for	A. W. Reiser	856,308	June 11	1848	379	128	2197
Dropping device	W. Dean	856,518	June 11	2127	437	128	2286
Dumping platform and elevator. Combined	E. W. Harmon	857,936	June 25	4857	1028	128	3023
Duplicator. Rotary	M. J. D. Carter	856,444	June 11	1999	411	128	2236
Dust on streets, roads, and the like. Manufacturing means from wood-tar for preventing	S. Mattar and R. Funcke	855,950	June 4	813	.....	128	1900
Dust-pan	D. W. Snider	856,740	June 11	2560	526	128	2377
Dye for lakes and making same. Monoazo	O. Ernst and G. Guilbransson	858,095	June 25	5161	.....	128	3102
Dye. Gallocyanin	W. Lommel	856,537	June 11	2157	.....	128	2373
Dye of the anthraquinone series and making same	R. H. Scholl	856,511	June 11	2054	.....	128	2408
Dyeing and bleaching machines. Return-liquor system for	R. P. Smith and G. E. Drum	856,922	June 11	2881	603	128	2455
Dyeing apparatus	L. Destrée	856,134	June 4	1317	278–6	128	2035

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Dyeing, bleaching, and sizing cotton warps. Apparatus for	J. Hartley	858,068	June 25	5166	1094	128	3103
Dynamo speed-governor	E. B. Jacobson	858,002	June 25	5027	1062	128	3066
Ear ornaments. Attachment for holding	C. H. Patten	857,105	June 18	3249	683	128	2689
Easel	R. T. Anthony	855,743	June 4	584	120	128	1846
Easel and plate-holder. Combined	S. McMichael	856,797	June 11	2661	548	128	2402
Egg-carrier	C. H. Cronk	855,939	June 4	964	200	128	1937
Elastic wheel	G. Perruchon	856,100	June 4	1236	260	128	2004
Electric brake	E. Franke	857,720	June 25	4453	940	128	2924
Electric cables. Terminal-box for	S. P. Grace and R. A. L. Snyder	857,341	June 18	3685	779	128	2700
Electric-circuit controller	M. Schuppe	858,222	June 25	5453	1164	128	3177
Electric controller	R. V. Sill	856,737	June 11	2554	524	128	2375
Electric-current generator. Alternating-	W. Hallock	857,304	June 18	3788	802–3	128	2725
Electric currents. Regulating resistance for	P. Wöbber	857,138	June 18	3306	697	128	2603
Electric distribution systems. Ground and fault detector for	P. Torchio and T. W. Varley	857,262	June 18	3537	748–9	128	2662
Electric fixture. High-tension	A. S. Marten	856,275	June 11	1618	336–7	128	2137
Electric fixture. Pendent	W. L. Bradshaw	857,024	June 18	3086	651	128	2547
Electric furnace	A. C. Higgins	856,061	June 4	1170	247	128	1988
Electric furnace and process	P. L. T. Héroult. (Reissue)	12,658	June 4	1440	304	128	2056
Electric heater	J. S. Reynolds	856,807	June 11	2677	552	128	2406
Electric heater	E. Thomson	857,122	June 18	3275	690	128	2596
Electric heater	J. A. Reardon	857,485	June 18	3963	841	128	2768
Electric-light-regulating attachment	C. Smith	857,311	June 18	3633	769	128	2687
Electric-light switch	H. R. Coffey	857,384	June 18	3771	798	128	2721
Electric machine. Direct-current dynamo-	E. C. Wright	858,246	June 25	5494	1172	128	3188
Electric machine. Dynamo-	C. A. Mudge	856,414	June 11	1944	399	128	2221
Electric machine. Dynamo-	J. R. Weszelinovits	857,132	June 18	3292	694–5	128	2600
Electric machine. Dynamo-	B. T. McCormick	858,097	June 25	5229	1108–9	128	3120
Electric machine or electric motor. Dynamo-	R. Lundell	857,184	June 18	3400	717	128	2627
Electric machines. Ventilating dynamo-	H. G. Reist	856,423	June 11	1963	404	128	2225
Electric masts. Support for crown or antenna wires for	A. E. Brown	857,152	June 18	3330	702–3	128	2600
Electric meter	A. J. Martin	856,412	June 11	1940	398	128	2220
Electric-motor controller	W. D. Pomeroy	855,972	June 4	1029	213	128	1954
Electric-motor-cooling means	J. B. Wiard	856,379	June 11	1867	385	128	2203
Electric-motor governor	A. F. Pieper	855,805	June 4	697	142	128	1872
Electric motor. Reciprocating	R. P. Irving	855,513	June 4	133	27	128	1727
Electric-motor starter	W. C. Mayo and J. Houlehan	856,540	June 11	2167	446–7	128	2276
Electric motors and similar devices. Controller for	H. W. Leonard	855,897	June 4	880	182–3	128	1915
Electric motors. Centrifugal switch for	K. Tornberg	856,433	June 11	1978	407	128	2230
Electric regulating device	J. F. McElroy	855,723	June 4	532	112	128	1831
Electric-resistance furnace	E. F. Price	855,480	June 4	74	15	128	1714
Electric signal	G. Langlumé	856,071	June 4	1187	251	128	1993
Electric signal	R. Pfeil	856,179	June 4	1402	297	128	2046
Electric snap-switch	W. S. Mayer	857,087	June 18	3217	677	128	2580
Electric sparking plug	C. E. Reed, Jr	856,602	June 11	2296	472	128	2311
Electric sparks. Apparatus for producing	W. Marshall	858,196	June 25	5404	1151	128	3163
Electric switch	W. S. Mayer	857,186	June 18	3404	718	128	2628
Electric-vehicle control system	W. Cooper	856,448	June 11	2006	413	128	2237
Electric wiring. Floor-box for	H. Krantz	856,165	June 4	1379	290	128	2041
Electrical apparatus. Winding for	M. Barcus	856,566	June 11	2226	458	128	2291
Electrical contact-joint	R. H. Wappler	856,321	June 11	1718	357	128	2163
Electrical controller	G. Laird and J. P. Todd	856,476	June 11	2054	422–3	128	2249
Electrical controller for steam plants, &c	J. A. Olson	856,417	June 11	1953	401	128	2223
Electrical cut-out	P. T. McNally	856,085	June 4	1209	256	128	1998
Electrical-distribution system	S. B. Storer	856,430	June 11	1975	406	128	2229
Electrical heater and expansion coil	M. H. Shoenberg	856,736	June 11	2553	524	128	2375
Electrical interrupter and rectifier	H. A. Yarnell	856,933	June 11	2897	607	128	2458
Electrical safety device	R. Apt	855,440	June 4	3	1	128	1695
Electrical switch	J. P. Appleby	855,494	June 4	98	20	128	1719
Electrochemical apparatus	F. A. Decker	857,607	June 25	4213	890	128	2962
Electrode for arc-lamps	S. P. Wilbur	858,738	June 4	578	118	128	1844
Electrode. Storage-battery	T. A. Edison	857,929	June 25	4846	.....	128	3020
Electrodes. Cooling-jacket for electric-furnace	F. M. Becket	855,441	June 4	4	1	128	1696
Electrolytic cell	A. O. Tate	857,909	June 25	4804	1019	128	3010
Electrolytic tank	J. F. Miller	856,277	June 11	1620	337	128	2138
Electrolytic work. Lining tanks for	J. F. Miller	857,886	June 25	4743	1007	128	2994
Electromagnetic waves. Radiating	P. C. Hewitt	856,180	June 4	1350	283	128	2034
Electromedical appliance	D. R. Overman	857,664	June 25	4312	911	128	2887
Electroplating apparatus	D. F. Broderick	858,059	June 25	5149	1090	128	3099
Elevator: *See* Grain-elevator. Safety-elevator. Hydraulic elevator. Water-elevator.							
Elevator	C. A. Lindstrom	855,957	June 4	990	206–7	128	1944
Elevator alarm-bell	A. C. Sisson	857,368	June 18	3743	792	128	2713
Elevator-brake	M. Fullenlove	856,576	June 11	2252	463	128	2298
Elevator-engine	L. M. Van Slyke	855,543	June 4	191	38	128	1744
Elevator guide-shoe	H. Donohoe	857,725	June 25	4444	939	128	2922
Elevator safety device	B. Lahn	855,546	June 4	385	80	128	1793
Elevator safety device	R. E. Ackley	858,247	June 25	5496	1172–3	128	3188
Elevator-shaft doors. Chain-attaching bracket for	J. Rashkin	857,109	June 18	3253	684	128	2690
Embroidery-stand	L. Tobriner	856,824	June 11	2704	558	128	2413
End-gate	A. G. Quinn	857,302	June 18	3619	766	128	2683
Engine: *See* Carding-engine. Hot-air engine. Combustion-engine. Internal-combustion engine. Compound engine. Elevator-engine. Locomotive-engine. Explosion-engine. Rotary engine. Explosive-engine. Steam or air engine. Fluid-pressure engine. Steering-engine. Gas-engine. Traction-engine. Gas and gasolene engine. Triple-expansion engine. Gas, oil, and like engine.							
Engine	W. Robertson	856,808	June 11	2678	553	128	2407
Engine	F. Hennebüble	857,802	June 25	4603	978–6	128	2982
Engine	J. M. Stadel	857,842	June 25	4676	992	128	2979
Engine-bearing	W. B. Mason	856,170	June 4	1287	293	128	2043

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Engine cooling device	E. B. Harshbarger	857,620	June 25	4237	895	128	2868
Engine or motor muffler	W. A. Webster	855,913	June 4	920	191	128	1926
Engine-reversing mechanism. Gas-	W. A. Hansen	858,281	June 25	5550	1186	128	3201
Engine spark-producing mechanism. Explosive-	L. D. Stamps	855,996	June 4	1066	221–2	128	1963
Engine-starter	C. J. Coleman	857,509	June 25	4191	887	128	2856
Engine-starting mechanism. Hydrocarbon-	J. Staub	855,909	June 4	912	189	128	1924
Engine vaporizer. Explosive-	H. O. Westendarp	858,046	June 25	5112	1082–3	128	3089
Engine vaporizer. Gas-	J. V. Rice, Jr.	857,111	June 18	3256	685	128	2590
Engines. Beating-roll for paper-pulp or other	H. Bennett	858,256	June 25	5511	1176	128	3192
Engines. Circuit-breaker for gas-	F. B. Packwood	857,196	June 18	3429	723	128	2634
Engines. Safety device for starting explosive-	E. R. Bathrick	855,610	June 4	321	66	128	1777
Envelop	E. F. Brown	856,390	June 11	1894	390	128	2209
Equalizer. Five-horse	E. O. Doak	856,193	June 4	1430	302	128	2053
Eraser-cleaner	A. Larson	856,643	June 11	2379	489	128	2331
Escapement	O. Ohlson	856,091	June 4	1218	258	128	2001
Evaporating apparatus	S. G. Lewis	856,478	June 11	2058	423	128	2250
Evaporator	F. Kleinschmidt	856,262	June 11	1579	331	128	2127
Evaporator	S. G. Lewis	856,479	June 11	2059	424	128	2250
Excavating apparatus	W. Heffron	858,099	June 25	5168	1094–5	128	3104
Excavating-dipper	G. W. King	856,707	June 11	2497	512–13	128	2360
Excavating-machine	F. J. Lewis	856,965	June 11	2960	620	128	2475
Excavator	W. R. Martin	857,817	June 25	4631	982	128	2968
Excavator and levee-builder. Combined trench-	C. C. Jacobs	856,404	June 11	1922	395–6	128	2216
Exercising apparatus	J. J. Cooper	857,447	June 18	3881	824–5	128	2746
Exhaust devices. Suction-mouthpiece for	F. Hecker	855,888	June 4	863	178	128	1912
Exhibitor. Merchandise-	S. Goldberg	857,391	June 18	3783	802	128	2724
Expansion-tube	O. S. Pedersen	858,100	June 25	5234	1110	128	3121
Explosion-engine	H. N. Bickerton, H. W. Bradley, and D. Clerk.	855,442	June 4	5	2	128	1696
Explosive	F. E. W. Bowen	857,580	June 25	4162	.....	128	2848
Explosive-engine	C. E. Maud	856,647	June 11	2384	491	128	2332
Explosive-engine	L. Iversen	858,071	June 25	5171	1096	128	3104
Explosives of reduced freezing-point. Manufacturing nitroglycerin	O. E. W. Stöhrer	855,595	June 4	287	.....	128	1768
Extractor: *See* Cork-extractor. Nail-extractor.							
Eye-guard. Flexible	H. M. Tileston	857,689	June 25	4370	923	128	2902
Eyeglasses	L. L. Mincer	855,961	June 4	814	169–70	128	1900
Eyeglasses	E. B. Meyrowitz	856,080	June 4	1200	354	128	1996
Eyeglasses	E. F. McKee and E. Oftedahl	856,897	June 11	2836	592	128	2445
Eyeglasses or spectacles. Mounting for	P. Moews	857,650	June 25	4288	906	128	2882
Eyelet-varnishing machine	I. W. Giles and C. W. Tobey	858,339	June 25	5667	1210–11	128	3235
Eyescope	H. D. Reese	858,213	June 25	5438	1160–1	128	3173
Fabric: *See* Bed-bottom fabric. Woven fabric.							
Fabric	L. Wertheim	857,968	June 25	4952	1046	128	3049
Fabrics. Apparatus for applying fluids to	C. F. Kübler	856,885	June 11	2814	586	128	2440
Fabrics. Applying small quantities of fluids on	C. F. Kübler	856,886	June 11	2815	586	128	2440
Fabrics. Device for restoring nap to	G. B. Dexter	857,038	June 18	3109	656	128	2553
Fabrics. Machine for cutting ribbed	F. W. Robinson	857,540	June 18	4073	865	128	2798
Fan	C. T. Finkbeiner	856,690	June 11	2463	506	128	2352
Fans. Oscillating device for motor-driven	H. S. Brown	857,787	June 25	4569	966	128	2953
Fanning-mill	M. D. Collis	856,226	June 11	1505	317	128	2107
Fare-indicator	C. Mascart	856,891	June 11	2821	588	128	2442
Farm-rack. Combination	H. M. Morrill and F. A. Randall	858,347	June 25	5693	1215	128	3238
Fascine. Cellulated	D. Neale	855,585	June 4	271	55	128	1765
Fastener	P. H. Long	856,480	June 11	2061	424	128	2250
Fastener	L. J. Franklin	858,275	June 25	5540	1184	128	3198
Fastener. Metallic	G. W. McGill	857,749	June 25	4490	947	128	2933
Faucet. Beer-	F. E. Brueckner	856,230	June 11	1494	315	128	2104
Faucets. Automatic shut-off for	J. C. Wright	856,667	June 11	2425	500	128	2342
Feed-hopper. Poultry	H. A. Nourse	855,526	June 4	158	31	128	1734
Feed mechanism for steam-boilers. Chemical and water-	R. H. Fetta	856,948	June 11	2922	612	128	2464
Feed receptacle or bag	C. H. Avey	856,756	June 11	2587	531	128	2384
Feed-trough	G. D. Koehler	856,164	June 4	1378	290	128	2040
Feed-trough. Automatic	C. W. Griswold	855,568	June 4	232	46	128	1755
Feed-trough for poultry	C. E. Baese	856,564	June 11	2224	457	128	2291
Feed-water heater	R. C. Stevens	855,486	June 4	86	18	128	1717
Feed-water heater	W. Griesser	856,141	June 4	1330	278	128	2028
Feeder. Automatic stock-	F. B. Platt	857,827	June 25	4546	985	128	2972
Feeder. Boiler-	J. F. Senter	856,548	June 11	2182	449–50	128	2280
Feeding mechanism	F. G. Jahn	856,346	June 11	1777	370–1	128	2177
Feeding mechanism	F. G. Jahn	856,347	June 11	1781	371	128	2178
Felly and tire. Auxiliary	C. Buckland	856,027	June 4	1120	233	128	1977
Felly for vehicle-wheels	W. S. Plummer	857,200	June 18	3433	724	128	2635
Felly. Wheel-	H. Pataud	858,015	June 25	5055	1069–70	128	3074
Fence-post	J. S. Grassfield	856,138	June 4	1325	277	128	2027
Fence-post	W. M. Ruggles	857,835	June 25	4659	989	128	2975
Fence-post	G. H. Kaufman	858,345	June 25	5679	1213	128	3238
Fence-post brace	A. H. Fetzer	855,624	June 4	348	71	128	1783
Fence-post or telephone-pole	J. R. Roach	856,726	June 11	2533	520	128	2370
Fence-posts. Machine for forming metallic	P. J. Harrah	856,864	June 11	2775	577–8	128	2429
Fence-posts. Reinforcement for cement	E. R. Stowell	855,999	June 4	1072	223	128	1965
Fence tie. Wire-	W. M. Dillon	856,339	June 11	1760	366	128	2173
Fence-tool	J. L. Albin	855,549	June 4	208	40	128	1749
Fence. Wire	W. M. Dillon	856,039	June 4	1137	239	128	1981
Fences. Concrete post and adjustable fastener for wire	A. J. Taylor	858,231	June 25	5471	1167	128	3182
Fender: *See* Car-fender. Grain-fender.							
Fertilizer-distributer. Hand	W. S. Morgan	856,485	June 11	2069	425	128	2252
Fertilizer-spreader	W. S. Hayden	856,147	June 4	1343	281–2	128	2032
Fiber-cleaning machine	J. Garcia	858,337	June 25	5649	1209	128	3226
Fiber-cleaning machine	J. Garcia	858,338	June 25	5652	1210	128	3226
Fiber, &c. Machine for decorticating Manila	C. E. Dailey	857,386	June 18	3775	798	128	2722
Fiber-treating apparatus. Textile-	R. G. Campbell	856,029	June 4	1122	233–5	128	1978
Fifth-wheel	H. B. Knight and G. M. Cogswell	855,964	June 4	964	205	128	1941
Fifth-wheel	J. A. Grasberger	857,062	June 18	3141	661	128	2663
File	F. A. Williams	855,336	June 4	744	154	128	1883
File	D. Johnson	856,881	June 11	2807	585	128	2438

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File	H. Getaz	858,171	June 25	5363	1140–1	128	3153
File-cabinet	D. F. Greenawalt	856,862	June 11	2772	576–7	128	2428
File for papers	E. Stebbings	858,115	June 25	5258	1116	128	3126
File, temporary binder, loose-leaf book, and the like	J. Walker, Jr.	857,371	June 18	3747	793	128	2714
Filing-cabinet	F. W. Tobey	856,113	June 4	1262	265	128	2011
Filter	E. and F. O. Bendix	856,332	June 11	1748	362	128	2169
Filter	A. L. Anderson	856,832	June 11	2717	562	128	2416
Filter	A. D. De Land	857,450	June 18	3885	825–6	128	2747
Filter	W. T. Janney and G. H. Dern	857,467	June 18	3920	834	128	2756
Filter	J. Conversy	858,154	June 25	5329	1134	128	3145
Filter	C. W. Merrill	856,496	June 11	2280	469–70	128	2306
Filter-container. Pressure-	L. G. Woolley	857,707	June 25	4408	931	128	2913
Fire-alarm boxes. Device for permitting the automatic operation of	I. Kitsee	856,162	June 4	1374	289	128	2040
Fire-alarm circuit	I. M. Simons	856,921	June 11	2880	603	128	2454
Fire-alarm. Electric	B. Staub	856,924	June 11	2884	604	128	2456
Fire and burglar alarm	R. Barth	857,513	June 18	4016	855	128	2781
Fire-escape	G. J. Pitts	858,210	June 25	5431	1150	128	3171
Fire-escape	D. N. E. Campbell	857,440	June 18	3868	822	128	2743
Fire-escape ladder. Portable window	H. M. Gillett	856,050	June 4	1154	244	128	1985
Fire-extinguisher	A. G. Laurent	857,544	June 18	4079	866	128	2799
Fire-extinguisher. Chemical	R. Graf	857,553	June 18	4097	869	128	2803
Fire-extinguishers. Protecting device for chemical	H. P. Vogel	858,188	June 25	5393	1149	128	3160
Fire-extinguishing apparatus. Hand	J. J. Murphy	855,488	June 4	90	19	128	1717
Fire-lighter	G. H. and W. B. Parkin	856,286	June 11	1643	340	128	2143
Firearm	W. S. Jackson	857,895	June 25	4773	1014	128	3002
Firearms. Single-trigger mechanism for	C. Collins	858,292	June 25	5567	1190–1	128	3206
Fireplace	W. S. Hindman and P. H. Anthony.	855,694	June 4	479	100	128	1818
Fireproof building construction	H. T. Higinbotham	857,524	June 18	4036	859	128	2787
Fireproof-construction mold	W. H. Perkin, Jr.	858,287	June 25	5560	1189	128	3204
Fireproof door or shutter	J. M. Meredith, Jr.	856,906	June 11	2855	.....	128	2449
Fireproofing textile materials	J. D. Kreisser	857,884	June 25	4741	1007	128	2994
Fish scaling and slitting machine	T. C. J. Andersen	857,883	June 25	4739	1007	128	2993
Fishing-bait. Artificial-minnow	J. G. Redford	855,830	June 4	751	155	128	1884
Fixture-support. Adjustable	G. R. M. Wilcox	857,670	June 25	4319	912	128	2889
Flat-iron-heating oven	W. A. O'Brien	855,739	June 4	579	118	128	1845
Flexible joint	J. Willmann	855,659	June 4	408	85	128	1799
Float	G. Kraus	857,703	June 25	4400	929	128	2910
Float	W. H. Tracy	857,076	June 18	3190	671	128	2575
Flour-bin	L. B. Bullington	855,735	June 4	573	117	128	1843
Flue-plugging device	W. V. Turner and R. H. Blackall	856,334	June 11	1754	364	128	2171
Fluid and oil burner	W. V. Turner and F. L. Clark	857,911	June 25	4811	1020	128	3011
Fluid-pressure brake	J. F. Mitchell	857,912	June 25	4813	1020	128	3012
Fluid-pressure brake	G. Dalén	855,799	June 4	681	139–40	128	1868
Fluid-pressure engine	H. Hubbell	855,620	June 4	339	66	128	1781
Fluid-pressure-regulating device	G. T. Haan	857,177	June 18	3388	715	128	2624
Flush switch	L. Brugel and O. Passmann	856,055	June 4	1162	273	128	2022
Fly-trap	R. Lewitz	856,128	June 4	1305	252–3	128	1994
Fly-trap	W. Phillips	856,073	June 4	1189	598	128	2450
Flying-machine	F. E. Felts	856,910	June 11	2861	709	128	2618
Flying-machine	W. Gymer	857,166	June 18	3363	632	128	1857
Folding chair	M. T. Bedford	855,770	June 4	632	129	128	1905
Folding chair	P. H. Deis	855,872	June 4	835	173	128	3147
Folding rack for poultry, &c	F. H. L. Clarke	858,159	June 25	5340	1135	128	2745
Food product and making the same	J. Bouma	857,445	June 18	3876	.....	128	1932
Food product. Manufacturing a sugarless	T. H. Mapp	855,928	June 4	946	.....	128	3210
Forage-treating apparatus	C. M. Allen	858,302	June 25	5587	1194–5	128	2319
Forehearth	W. Hazzard	856,616	June 11	2334	479	128	2327
Fork: *See* Hay-fork. Loom weft-fork.	L. L. Pratt	856,635	June 11	2367	487	128	2406
Fork	V. R. Runyon	856,806	June 11	2676	552	128	2452
Form. Bosom-	A. L. Travlos	856,914	June 11	2871	601	128	1967
Form. Garment-	F. Eckart	856,004	June 4	1079	224	128	2110
Frame: *See* Automobile-frame. Spinning-frame. Log-loader frame. Window-frame. Picture-frame.	V. G. Apple	856,234	June 11	1518	319	128	2290
Freezing apparatus	M. Chila	856,563	June 11	2223	457	128	1908
Friction device	O. E. Lindfors	855,879	June 4	846	175	128	2761
Frog	C. D. Monte	857,475	June 18	3939	837	128	3118
Fruit-picker	J. J. Shedlock	858,094	June 25	5221	1107	128	2734
Fruits and vegetables. Apparatus for removing the skins of	B. H. Reed	857,417	June 18	3827	811	128	2005
Fuel. Apparatus for making artificial	H. W. Jordan	856,101	June 4	1237	.....	128	2675
Fuel. Artificial	W. Eichelberger	857,287	June 18	3589	.....	128	3224
Fuel briquets. Preparing		858,334	June 25	5641	1207		
Fuel-economizer soot-cleaner							
Furnace: *See* Bagasse-furnace. Gas-generator furnace. Boiler-furnace. Heating-furnace. Drying-furnace. Hot-air furnace. Electric furnace. Smelting-furnace. Electric-resistance furnace. Smoke-consuming furnace.							
Furnace	A. W. and F. W. Machlet	857,292	June 18	3600	762	128	2678
Furnace	J. F. Giroux	857,617	June 25	4229	894	128	2866
Furnace	C. E. Garner	858,169	June 25	5360	1139	128	3152
Furnace	J. M. Heverly	858,286	June 25	5558	1189	128	3203
Furnace and fire-box arch	M. E. Baldwin	855,495	June 4	100	20	128	1720
Furnace-charging apparatus. Blast-	C. H. Sample	857,259	June 18	3525	745	128	2659
Furnace construction	F. E. Stinchfield	857,685	June 25	4360	922	128	2900
Furnace draft device	J. T. Mazey	857,354	June 18	3711	784	128	2705
Furnace fire-pot	W. A. Hohenadel and W. Kline	857,906	June 25	4612	977	128	2963
Furnace-stoker	H. A. MacClyment	855,581	June 4	262	52–3	128	1763
Furnace-top	C. H. Clark	857,158	June 18	3341	705	128	2611
Furnaces. Device for feeding air to locomotive and other	J. Milton	856,541	June 11	2171	447	128	2277
Furnaces. Heating-bar for electric	A. L. Brougham	857,261	June 18	3763	797	128	2718

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Furniture and piano polishing composition	J. R. Fitzgerald	856,451	June 4	23	.....	128	1701
Furniture. Combination	M. Margolin and A. Karron	856,520	June 4	145	29	128	1732
Furniture. Knockdown	W. R. Dean	856,088	June 4	1133	236	128	1980
Fuse. Inclosed	R. C. Cole	856,303	June 11	1807	301	128	2210
Fuse. Safety	W. J. Phelps	856,392	June 11	1655	343	128	2146
Gage:							
See Micrometer-gage. Mortar-gage. Plaiting-gage. Pressure-gage. Shingling-gage. Water-gage. Work-gage.							
Gage	G. W. McLaughlin	855,984	June 4	1003	210	128	1947
Gage-wheel	A. W. Howell	858,300	June 25	5565	1190	128	3205
Game	F. M. Greer	855,455	June 4	30	7	128	1702
Game	D. C. Pingrey	855,726	June 4	550	114	128	1837
Game apparatus	J. W. Wallace	856,118	June 4	1266	267	128	2013
Game apparatus	D. G. Black	856,216	June 11	1476	312–14	128	2100
Game apparatus	W. S. Haynes	857,878	June 25	4730	1004–5	128	2991
Game-counter	G. B. Risley	856,027	June 25	5074	1074	128	3079
Game device	F. W. Moseley	857,411	June 18	3816	809	128	2731
Garbage reduction. Evaporator and extractor for	F. G. Wiesigod	857,372	June 18	3750	793	128	2715
Garden implement	C. S. Stevens	857,564	June 25	4359	921	128	2900
Garment-hanger	C. Clift	856,337	June 11	1758	365	128	2172
Garment-hanger	E. Mayer	857,645	June 25	4282	904	128	2980
Garment-holder	S. Levy	855,956	June 4	968	206	128	1943
Garment-hook	L. A. Yetser	856,330	June 11	1744	361	128	2168
Garment. Storm-	I. V. Benoit	857,578	June 25	4158	880–1	128	2847
Garment-supporter	E. A. Raymond and W. Jensen	855,529	June 4	161	32	128	1735
Garment-supporter	C. B. Goldsmith	856,240	June 11	1562	327–8	128	2122
Garment-supporter	R. Gorton	856,324	June 11	2135	438	128	2268
Garment-supporter clasp	B. E. G. Noble	855,802	June 4	890	141	128	1871
Garments. Necking	G. Scott	857,402	June 18	3975	845	128	2771
Gas and gasolene engine	P. Furst	857,455	June 18	3899	829	128	2752
Gas apparatus. Water-	J. M. Rusby	857,760	June 25	4516	953	128	2940
Gas-burner	B. F. Jackson	856,781	June 11	2635	542	128	2306
Gas-burner igniting and extinguishing device	O. S. Lied	856,534	June 11	2154	444	128	2272
Gas-burner. Inverted incandescent	A. S. Francis	857,233	June 18	3482	735–6	128	2648
Gas burner. Natural-	H. M. Lepe	855,189	June 25	5394	1149	128	3161
Gas-burner safety device	A. A. Churchill	856,936	June 4	958	199	128	1935
Gas-burners. Automatic shut-off for	E. Tavastila	856,742	June 11	2564	527	128	2370
Gas-engine	B. F. Stewart	857,120	June 18	3270	688–9	128	2594
Gas-engine. Two-cycle	F. von Handorff	858,280	June 25	5547	1186	128	3200
Gas-generating apparatus. Acetylene-	A. C. Einstein	855,843	June 4	784	164	138	1893
Gas-generator	I. N. Enright	855,609	June 4	488	102	128	1820
Gas generator. Acetylene-	P. O. Hays	856,148	June 4	1344	282	128	2033
Gas-generator furnace	L. Bemelmans	855,749	June 4	598	123	128	1849
Gas-jets and their extinction after a predetermined time. Apparatus for automatic lighting of	F. Testor	857,215	June 18	3454	729	128	2641
Gas-lighter attachment	W. Roche	855,531	June 4	163	33	128	1736
Gas-mantles. Producing self-lighting	F. W. Mayer	855,798	June 4	680	.....	128	1868
Gas, oil, and like engine	C. B. Redrup	857,536	June 18	4064	864	128	2796
Gas-producer	A. de Gálocsy, L. de Bánó, and J. Terény.	855,845	June 4	787	165	128	1893
Gas-producer	A. de Gálocsy, L. de Bánó, and J. Terény.	856,137	June 4	1324	277	128	2027
Gas-washer	G. Saaler	856,731	June 11	2542	523	128	2372
Gas washing and cooling apparatus	H. L. Doherty	855,448	June 4	17	4	128	1699
Gases. Apparatus for treating noxious	A. C. Day	858,062	June 25	5156	1092	128	3101
Gases or of gas and air for illuminating purposes. Apparatus for producing mixtures of	H. L. Karger	855,953	June 4	982	204–5	128	1941
Gases. Purifying	G. Saaler	856,732	June 11	2546	523	128	2373
Gasket	E. A. Wilcox	857,134	June 18	3300	696	128	2602
Gasket-cutter	G. T. Miller	857,647	June 25	4284	905	128	2881
Gate:							
See Crossing-gate. End-gate.							
Gate	J. M. Higbe	855,948	June 4	976	203	128	1940
Gate	E. J. A. Rice	855,980	June 4	1045	217	128	1958
Gate	F. S. Rogers	856,370	June 11	1851	380	128	2198
Gate	J. F. McNeill	857,099	June 18	3240	681	128	2586
Gate	C. E. Rife	857,534	June 25	4656	988–9	128	2975
Gate	C. J. Van Valkenburg	856,042	June 25	5099	1080	128	3085
Gate	A. J. Benton	857,783	June 25	4554	963	128	2949
Gate	W. J. Reich	856,422	June 11	1982	404	128	2225
Gate	J. R. Parant	857,102	June 18	3243	682	128	2587
Gate	H. E. and E. G. Eberhardt	858,164	June 25	5352	1137–8	128	3150
Gate for motor-vehicles. Change-speed	G. Cornilleau and A. Sainte-Beuve.	857,082	June 18	3101	654	128	2551
Gear. Machine for making worm and spiral	W. K. Liggett	856,061	June 25	5188	1100–1	128	3109
Gear. Reversing-	F. G. Gies	856,462	June 11	2028	417	128	2242
Gear-tooth. Antifriction	E. T. Alber	857,144	June 18	3317	699	128	2606
Gear. Variable-speed	S. T. Lewis	856,987	June 11	2966	621	128	2477
Gear. Variable-speed-transmission	P. F. Foley	858,336	June 25	5647	1200	128	2225
Gears. Controlling mechanism for speed-	C. Wickstead	856,360	June 11	1899	385–6	128	2208
Gearing	J. Schroeder	856,512	June 11	2088	854–5	128	2400
Gearing	F. Pilain	857,261	June 18	3726	787	128	2709
Gearing. Changeable-speed	A. L. Muren	857,988	June 25	4914	1038	128	3057
Gearing. Friction-	A. O. Carman	856,300	June 4	113	23	128	1732
Gearing. Speed-changing	P. A. Bradsvold	858,058	June 25	5146	1089	128	3098
Gearing. Spiral	C. A. Janson	856,405	June 11	1937	406	128	2217
Gearing. Worm-	A. T. Collier	855,957	June 4	980	199	128	1936
Generating and carbureting apparatus	D. Millior	856,092	June 25	5216	1105–6	128	3117
Generator:							
See Current-generator. Electric-current gas-generator. Gas-generator. Steam-generator.							
Generators. Load-equalizer for	S. D. Sprong	856,741	June 11	2542	526–7	128	2378
Girdle. Bust-	N. Dunlap	858,322	June 11	1516	319	128	2110
Glass and similar articles in place. Device for holding	C. C. Roth	855,813	June 4	717	148	128	1877
Glass. Feed-out device for molten	J. H. Lubbers	858,068	June 25	5202	1108	128	3112
Glass holder. Locking-	F. B. La May	858,069	June 25	5187	1100	128	3108

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Glass-making machine. Wire-	A. Shuman	856,661	June 11	2415	497	128	2339
Glass-melting pot. Continuous	C. J. Crites and J. H. Breese	856,449	June 11	2010	413	128	2238
Glass-mold	D. D. Hughey	856,154	June 4	1357	284	128	2036
Glass pressing and blowing machine	G. W. Henning and A. W. Beeson	857,803	June 25	4805	976–7	128	2962
Glass-severing machine	N. Marshall	856,973	June 11	2076	634	128	2480
Glass structure	S. I. Feinberg	857,230	June 18	3475	732–4	128	2647
Glove-sustainer	L. L. Brown	855,833	June 4	758	156	128	1895
Go-cart	F. W. Dobe	856,850	June 11	2749	571	128	2423
Gold-washer	B. G. Jayne	855,640	June 4	373	77	128	1789
Governor	C. Andrews and T. Jackson	858,320	June 25	5619	1203–4	128	3216
Governor. Engine-	S. S. Hall	856,056	June 4	1163	245–6	128	1967
Governor. Explosive-engine	N. Young	855,490	June 4	92	19	128	1718
Governor for armature-shafts, &c. Speed-	E. B. Jacobson	856,961	June 11	2952	619	128	2473
Grab	A. G. Monks	856,413	June 11	1942	399	128	2220
Grain-bag holder	W. R. Mosher	857,820	June 25	4634	983	128	2969
Grain-bin ventilator	J. Feehery	856,457	June 11	2018	415	128	2240
Grain-bin ventilator, grain-sampler, and weevil-exterminator	J. N. McNees	857,098	June 18	3239	681	128	2586
Grain-binders. Back-wing support for	C. Maul	857,950	June 25	4891	1034	128	3033
Grain-cleaning apparatus	J. B. Holgate and C. Clough	857,065	June 18	3169	667	128	2571
Grain-conveyer	J. Feehery	856,456	June 11	2017	415	128	2240
Grain elevator and dump	J. Peterson	856,545	June 11	2176	448–9	128	2278
Grain-fender	G. A. Dean and S. E. Hall	857,874	June 25	4726	1003	128	2990
Grain-grader	G. H. Rich	855,981	June 4	1047	217	128	1959
Grain-sampler	H. M. Gray	855,849	June 4	794	166	128	1895
Grain-separator	J. Feehery	856,455	June 11	2016	415	128	2239
Grain-separator	W. Koester	858,294	June 25	5570	1191–2	128	3206
Grapple	A. Landry	856,708	June 11	2498	513	128	2360
Grate	H. A. Smith	855,538	June 04	176	36	128	1739
Grate	M. Margolin and A. Karron	855,795	June 4	676	138	128	1867
Grate	F. Kost	856,590	June 11	2272	467	128	2303
Grate-bar	H. Truesdell	855,823	June 4	739	153	128	1881
Grate. Shaking-	A. B. Willoughby	857,135	June 18	3301	696	128	2602
Grate. Shaking-	A. B. Willoughby	857,136	June 18	3303	696	128	2603
Grate shaking mechanism	F. N. Dillon	856,397	June 11	1911	393	128	2213
Grate system. Traveling-	J. E. Bell	857,012	June 18	3057	644	128	2538
Grating	F. E. Canda	856,130	June 4	1310	274	128	2023
Grating	F. E. Canda	856,131	June 4	1312	274	128	2024
Grease-cup	F. G. Hunter	855,889	June 4	864	179	128	1912
Grease-cup	J. Powell. (Reissue)	12,666	June 25	5745	1224	128	32256
Grease-cups. Device for filling	H. S. Erd	858,167	June 25	5358	1139	128	3152
Greenhouse-bench	R. O. King	858,187	June 25	5391	1148	128	3160
Grinder	J. N. and N. J. Lisk	856,167	June 4	1383	292	128	2042
Grinder. Face-mill	G. W. Smith	856,662	June 11	2418	498	128	2340
Grinding-machine	H. B. Nichols	856,721	June 11	2522	518–19	128	2366
Grinding-mill	M. Schreck	856,918	June 11	2876	602	128	2453
Grinding-mill	A. M. Dellinger	858,267	June 25	5530	1182	128	3196
Grip-cord adjuster. Automatic	O. Pedersen	856,722	June 11	2527	519	128	2368
Grocery-bin	D. H. Malone	856,646	June 11	2383	490	128	2331
Guano-distributer	R. W. Starling	855,593	June 4	284	57	128	1768
Guard	H. P. Scofield	856,814	June 11	2689	555	128	2410
Gun and carriage. Naval landing	R. P. Stout and F. G. Hughes	856,376	June 11	1863	383–4	128	2201
Gun-fire. Instrument for measuring and correcting errors of	J. L. Latimer	858,297	June 25	5579	1192	128	3208
Gun-sight	H. M. Cremer	857,160	June 18	3347	707	128	2613
Gun-stock	F. Balson	856,016	June 4	1101	229	128	1972
Gun-stock	W. S. Alves	856,507	June 11	2102	432	128	2260
Guns. Feed mechanism for automatic magazine-	H. Lehmann	857,244	June 18	3500	739–40	128	2652
Guns. Fluid-recoil brake for	H. Motz and E. Müller	856,174	June 4	1394	294	128	2044
Hair-pin cutter	W. H. Goodale and A. L. Preston	856,577	June 11	2253	463	128	2298
Hair-retaining device	M. L. Bagley	857,222	June 18	3465	731	128	2644
Halter and twitch. Convertible	C. McClintock	856,415	June 11	1946	399–400	128	2221
Hammer	S. S. Stuhag	856,822	June 11	2700	557	128	2412
Hammer	W. H. Parker, Jr	857,104	June 18	3248	683	128	2589
Hammer. Claw-	O. E. Palmer	856,097	June 4	1231	259	128	2004
Hammer. Drop-	C. Prött	855,976	June 4	1039	215	128	1956
Hammer. Pneumatic	J. C. McCaveny	858,200	June 25	5409	1152	128	3165
Hammer. Power-	O. B. Reynolds	855,730	June 4	552	114–15	128	1837
Hammock-support	W. H. Morehouse	857,819	June 25	4633	983	128	2969
Handhold-forming machine	A. J. Colvin, C. G. Hockett, and J. W. Fitzpatrick.	856,767	June 11	2605	535–6	128	2389
Handle:							
See Casket-handle. Knife-handle. Tool-handle.							
Handling material. Device for	T. B. Rice, Jr	857,673	June 25	4324	914	128	2891
Hanger:							
See Cable-hanger. Clothes-hanger. Corn-hanger. Door-hanger. Garment-hanger. Shaft-hanger. Skirt-hanger.							
Hanger	R. W. Beaton	858,140	June 25	5311	1129	128	3140
Harmonic horn	R. J. Smith	857,765	June 25	4524	955	128	2942
Harmonica	M. J. Reidy	856,491	June 11	2078	427	128	2255
Harness	W. H. Sneed	858,114	June 25	5257	1116	128	3128
Harness attachment	N. C. Sikes	856,495	June 11	2085	429	128	2256
Harness attachment	B. A. Adams	857,916	June 25	4824	1022	128	3015
Harness-hook	C. A. Leonard	855,454	June 4	43	10	128	1705
Harness-hook	J. H. Hittle	857,241	June 18	3495	738	128	2651
Harrow	J. E. Wheaton	856,009	June 4	1067	225–6	128	1999
Harrow	J. E. Arnold	857,711	June 25	4413	932	128	2914
Harrow and cultivator	S. G. Calaway	856,028	June 4	1121	233	128	1976
Harrow attachment	K. Schaal	856,916	June 11	2874	601	128	2453
Harrow riding attachment	C. S. Sharp	856,305	June 11	1686	349–50	128	2155
Harvester. Corn-	F. D. and A. D. Wilson	856,828	June 11	2710	560–1	128	2415
Harvester-needle	S. Smith	855,530	June 4	178	37	128	1739
Harvester. Sugar-cane	J. D. Ehrich and F. F. Escoffier	857,451	June 18	3886	826–8	128	2747
Harvester (trimmer). Cane-	J. D. Cooper	858,061	June 25	5153	1091	128	3100
Harvesters and similar machines. Cutting mechanism for	H. H. Kryger	855,645	June 4	363	80	128	1792
Harvesting and threshing machine. Pea and bean	E. and B. Tharp, Jr	856,920	June 11	2891	606–8	128	2457

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Harvesting machine. Beet-	G. F. Conner	856,394	June 11	1899	391-2	128	2211
Harvesting-threshers. Combined cutting-knife and distributer for	W. Maloney	855,519	June 4	147	29	128	1731
Hasp	J. C. Griffin	855,566	June 4	231	45	128	1755
Hat	A. Mayer	857,644	June 25	4281	904	128	2880
Hat and coat rack	R. Rose and P. Brady	855,732	June 4	568	117	128	1842
Hat. Collapsible	E. Behringer	857,434	June 18	3861	820	128	2741
Hat-fastener	B. Mulcahy	855,722	June 4	531	112	128	1830
Hat-fastener	F. C. Kavanagh	856,705	June 11	2491	512	128	2358
Hat-fastener	E. Habbema-Horak	857,392	June 18	3784	802	128	2724
Hat-fastener	W. B. Foster	858,168	June 25	5358	1139	128	3152
Hat-frame machine	L. Weaver, Jr.	857,776	June 25	4544	959	128	2947
Hat-guard	L. Rosenbaum	857,258	June 18	3524	745	128	2658
Hat or cap	W. Gaskell and T. Vale	857,514	June 25	4226	893	128	2865
Hat-pin	J. Thomas	858,118	June 25	5265	1118	128	3129
Hat-pin	W. J. Kittel	857,406	June 18	3807	807	128	2729
Hat-pins and the like. Head for	L. Flicker	856,458	June 11	2619	416	128	2240
Hat setting, shaping, and renovating device	J. M. Boyd	857,379	June 18	3759	796	128	2717
Hay-fork. Horse	A. Arter	856,833	June 11	2719	563	128	2417
Hay-loader	J. Dain	857,604	June 25	4206	889	128	2859
Hay-press	D. F. Anderson	857,374	June 18	3751	794	128	2716
Hay-rake	G. W. Bacon	855,686	June 4	465	98	128	1814
Hay-rake. Horse	A. H. Brown	856,025	June 4	1116	232	128	1977
Head-rest	N. Breakenridge	857,323	June 18	3649	773	128	2690
Head-rest. Sanitary	A. Miesse	857,249	June 18	3507	741	128	2654
Headlight	W. Schönieber	857,115	June 18	3262	687	128	2592
Heat-conductor	I. S. Barnett	855,687	June 4	467	98	128	1815
Heat-radiating ring							
Heater: *See* Electric heater. Torpedo-heater. Feed-water heater. Water-heater. Sad-iron heater. Smoothing-iron heater.							
Heater	T. G. Palmer	855,904	June 4	903	187	128	1922
Heater	H. F. Langenhop	855,955	June 4	986	205-6	128	1943
Heating apparatus	J. Heizmann	857,060	June 18	3162	665	128	2569
Heating apparatus	F. A. Delph	857,796	June 25	4588	971	128	2958
Heating appliance. Domestic and industrial	C. J. Roux	858,105	June 25	5242	1111-12	128	3124
Heating-furnace	J. Hughes	857,285	June 18	3584	758-9	128	2674
Hedge-trimmer	H. W. Sykes	856,312	June 11	1701	353	128	2159
Hedge-trimmer	G. O. Hoppe	856,871	June 11	2787	580	128	2432
Heel and toe stiffener for boots and shoes	W. P. Thoré	856,930	June 11	2803	606	128	2458
Heel. Spring-	A. F. Luzzi	857,816	June 25	4630	982	128	2968
Helically-riffled pipe	J. D. Isaacs and J. B. Speed	857,464	June 18	3911	832	128	2755
Hides and skins. Machine for splitting raw	J. W. Deckert	856,395	June 11	1903	392	128	2212
Hinge	M. A. Tieck	856,112	June 4	1261	265	128	2011
Hinge	S. Farmer	856,856	June 11	2760	573	128	2426
Hinge	H. E. Hoke	857,175	June 18	3385	714	128	2624
Hinge	B. R. Douglass	858,360	June 25	5532	1182	128	3197
Hinge for window-screens	C. W. Westerberg	856,008	June 4	1085	225	128	1968
Hinge. Four-way gate-	O. A. Bell	856,937	June 11	2803	608	128	2459
Hinge. Locking-	L. H. Needham	857,190	June 18	3414	720	128	2631
Hinge-plate for tilting posts	L. C. Skinner and E. Myers	855,675	June 4	441	92	128	1808
Hitching-strap clamp	R. A. Mansfee	856,803	June 11	2824	589	128	2442
Hog handling and scalding device	D. Arthur	857,972	June 25	4958	1048	128	3061
Hoisting-machine	W. F. Buch	857,382	June 18	3766	797	128	2719
Hoisting-mechanism safety appliance	M. H. Hart	857,998	June 25	5022	1060	128	3067
Holder	K. Gossweiler	857,235	June 18	3487	737	128	2649
Hollow articles. Means for drawing	J. H. Gault	857,616	June 25	4228	894	128	2866
Hollow vessels. Forming seamless metallic							
Hook: *See* Coat-hook. Sap-cup hook. Garment-hook. Snap-hook. Harness-hook.							
Hook eye. Garment-	C. W. Stevens, Jr.	857,369	June 18	3744	792	128	2714
Hooks and eyes. Carrier-plate for	J. W. Granger	857,731	June 25	4459	942	128	2926
Hoop-nailing machine. Barrel-	E. F. Beggler	857,515	June 18	4019	856	128	2782
Hop-picker	E. C. Horst and J. Ehrhorn	857,461	June 18	3906	830-1	128	2754
Horizontal light	A. G. Kaufman	856,406	June 11	1933	397	128	2218
Horn-support	V. H. Rapke	855,978	June 4	1043	216	128	1957
Horse-boot	J. Fennell	858,272	June 25	5537	1183	128	3198
Horse-boot	J. Fennell	858,273	June 25	5538	1183	128	3198
Horse-boot	G. A. Waters	857,128	June 18	3287	693	128	2599
Horse-detacher	A. McLean	857,189	June 18	3413	719	128	2631
Horse-releaser	T. R. Kiley	856,261	June 11	1578	331	128	2127
Horseshoe	G. P. De Launey	856,848	June 11	2744	570	128	2422
Horseshoe	J. E. Grosjean	857,584	June 18	4098	860	128	2903
Horseshoe	A. Smith	855,534	June 4	171	35	128	1738
Horseshoe-calk	W. Merrick	855,717	June 4	520	109	128	1828
Horseshoe-calk	A. Smith	855,535	June 4	172	35	128	1738
Horseshoe-machine	J. N. Doss	855,505	June 4	121	25	128	1724
Horseshoe-nail clencher	A. Smith	855,533	June 4	167	33-4	128	1737
Horseshoes. Apparatus for rolling billets in the manufacture of machine-made							
Hose-coupling	F. J. Hannold	856,401	June 11	1918	394	128	2215
Hose. Flexible metallic	W. Schuls	856,427	June 11	1971	405-6	128	2228
Hose-rack	R. D. Wirt	856,326	June 11	1735	360	128	2165
Hose-supporter	H. B. Moses	857,251	June 18	3510	742	128	2655
Hot-air engine	O. Ringbom	856,102	June 4	1238	261	128	2005
Hot-air furnace	J. P. Kolls	856,263	June 11	1581	332	128	2127
Hub	J. C. Redemer	857,204	June 18	3439	725	128	2637
Hub for vehicles. Pneumatic	G. Middleton	857,082	June 18	3231	679	128	2583
Hub. Shock-absorbing	C. C. Griggs and J. C. Jensen	856,525	June 11	2136	439	128	2268
Husking-machine	R. P. White	856,931	June 11	2804	606	128	2458
Hydraulic clamp	A. P. McLarty	856,416	June 11	1947	400-1	128	2222
Hydraulic elevator	R. H. Beebe and I. R. Concoff	856,759	June 11	2693	532	128	2396
Hydraulic motor	G. B. French	856,868	June 11	2762	574	128	2426
Hydraulic motor	W. R. Tuttle	857,801	June 18	4000	851	128	2778
Hydraulic transmission device	W. C. Schwarz	858,109	June 25	5249	1114	128	3125
Hydrocarbon-burner	D. D. Walker	858,747	June 11	2574	520	128	2381
Hydrocarbon-burner	T. Muehleisen	857,653	June 25	4391	906	128	2882
Hydrocarbon-burner	B. F. Jackson	857,808	June 25	4614	978	128	2964
Hydrocarbon-burner system	W. Van der Heyden	857,426	June 18	3845		128	2758
Hydrocarbons. Emulsioning and solidification of							

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Hygrometer for regulating humidifying and heating systems.	S. W. Cramer	856,944	June 11	2916	611	128	2463
Ice-cream freezer	W. M. Milburn	856,648	June 11	2386	491	128	2332
Ice-creeper	O. A. Norlund	856,089	June 4	1215	257	128	2000
Ice-cutter. Steam	H. P. Josewski	856,348	June 11	1783	371	128	2178
Ice-cutting machine	D. A. Dorsey and A. R. Mitchell	856,040	June 4	1138	239	128	1982
Ice-producing apparatus	D. D. and P. J. Sprague	857,841	June 25	4674	991-2	128	2979
Illusion apparatus	F. J. Hafner	856,951	June 11	2927	614	128	2465
Incandescent burner for liquid hydrocarbons	R. E. Walther	855,824	June 4	741	153	128	1882
Incandescent mantle. Self-lighting	G. Gotty	856,578	June 11	2254	463	128	2298
Incubator	H. W. Axford	855,871	June 4	834	173	128	1905
Incubator	M. Fanders	856,043	June 4	1142	240	128	1982
Index. Card-	J. E. Ralph	857,202	June 18	3435	725	128	2636
Index or directory	H. S. Harde	858,340	June 25	5668	1211	128	3235
Indicator: *See* Fare-indicator. Musical-chord indicator. Lock-indicator. Maximum-demand indicator. Station-indicator.							
Indicator	W. A. Banister and D. M. Lake	857,857	June 25	4703	998	128	2985
Indigo and making same. Tetrabromo derivative of	G. Engi	856,776	June 11	2630	.....	128	2305
Indigo and making same. Tribromo derivative of	G. Engi	856,687	June 11	2459	.....	128	2351
Induction-coil	M. W. Brinkmann	857,866	June 25	4714	1000-1	128	2988
Induction-coils. Contact-breaker for	F. B. Griffin	857,458	June 18	3904	830	128	2753
Infant-protector	T. D. Avara	855,551	June 4	210	41	128	1750
Ingot-mold	F. McMahon	855,655	June 4	399	84	128	1796
Injector	S. L. Kneass	857,882	June 25	4737	1006	128	2993
Injector. Hypodermic	D. S. Reese	858,025	June 25	5069	1073	128	3077
Ink-feeding mechanism	C. Williams	856,121	June 4	1280	269-70	128	2016
Ink pigments. Production of printing-	P. Fireman	857,044	June 18	3123	659	128	2556
Ink-well	H. Mallck	856,077	June 4	1196	254	128	1995
Innersole for shoes	J. Belanger	856,387	June 11	1889	389	128	2208
Insulated wires. Means of testing	N. A. Wolcott	856,012	June 4	1095	227	128	1970
Insulating covering or sheathing for contact-rail conductors.	W. H. Baker	856,385	June 11	1884	388	128	2207
Insulating-stud and making the same	E. W. Mix	855,471	June 4	56	13	128	1708
Insulator	C. L. Peirce, Jr.	856,488	June 11	2074	427	128	2254
Insulator	C. L. Peirce, Jr.	856,801	June 11	2667	550	128	2404
Internal-combustion engine	A. R. Bellamy	855,611	June 4	325	66	128	1777
Internal-combustion engine	E. H. Micklewood and H. Whidbourne.	856,790	June 11	2648	545	128	2399
Internal-combustion engine	W. Morey, Jr.	857,410	June 18	3814	809	128	2731
Internal-combustion engine	A. B. Goodspeed	857,730	June 25	4454	940-1	128	2924
Intrenching-tool	G. F. Elliott	856,575	June 11	2249	462-3	128	2296
Iron: *See* Curling-iron. Sad-iron. Marcel-waving iron.							
Iron and residues. Treating detinned	C. E. Acker	856,753	June 11	2583	.....	128	2383
Iron. Bending cast-	B. S. Cowles	857,983	June 25	4981	1053	128	3057
Iron or steel. Treating	F. M. Becket	858,326	June 25	5628	.....	128	3221
Iron oxids. Reducing	H. W. Lash	856,351	June 11	1812	.....	128	2189
Ironing apparatus	J. W. Pharroh	856,802	June 11	2668	550	128	2404
Ironing-board	W. Pickford and E. Derr	856,490	June 11	2077	427	128	2254
Ironing-board	W. J. Kelly and P. J. Germain	856,962	June 11	2956	619-20	128	2474
Ironing-table	W. C. Love	856,890	June 11	2820	588	128	2441
Ironing-table	W. H. Tichborne	857,422	June 18	3840	815	128	2737
Jack: *See* Lifting-jack. Pump-jack.							
Jail-cell	J. B. Smith	858,309	June 25	5601	1198	128	3213
Jar or bottle closure	A. M. Craig	855,503	June 4	117	24	128	1723
Jars, bottles, and like receptacles. Closure for	M. D. Converse	855,665	June 4	480	100	128	1819
Jars, cans, bottles, &c. Cover or cap for	W. H. Dodge	856,230	June 11	1512	318	128	2109
Jewel-mounting	A. A. Boismaure	858,057	June 25	5145	1089	128	3098
Joint: *See* Electrical contact-joint. Rail and other like joint. Flexible joint. Railway-rail joint. Pipe-joint. Stove-pipe joint. Rail-joint.							
Joint	A. Farkas and J. Kieffer	856,777	June 11	2631	540	128	2305
Jointing-machine	P. J. Joecken	857,071	June 18	3183	670	128	2574
Journal-bearing	J. W. Packer	855,903	June 4	902	187	128	1922
Journal-bearing and making same	D. H. Stewart	857,845	June 25	4683	993	128	2981
Journal-box	P. J. Harrigan	856,059	June 4	1168	246	128	1988
Journal-box	S. H. Campbell	857,597	June 25	4188	886	128	2855
Journal-box. Adjustable	F. E. Buxton	857,788	June 25	4571	967	128	2954
Journal-box and lid	C. G. Hawley	855,947	June 4	974	203	128	1939
Journal-box cover	H. H. Kryger	857,243	June 18	3498	739	128	2652
Journal-box lid	J. S. Patten	858,206	June 25	5428	1158	128	3170
Junction-box	E. T. Greenfield	857,053	June 18	3142	662	128	2563
Kettle. Cooking-	W. Carey	857,329	June 18	3660	775	128	2693
Kettle-lid	H. T. Dunstone	856,453	June 11	2015	414	128	2220
Key or wedge. Tool-head-attaching	C. H. Booth	857,863	June 25	4711	1000	128	2987
Key-ring	J. V. Reid	855,530	June 4	162	33	128	1735
Keyboard-transmitter	J. C. Kunkle	856,265	June 11	1584	332	128	2128
Kiln: *See* Brick-kiln.							
Kiln	G. Wiegmann and C. Dörr	857,420	June 18	3850	817-18	128	2739
Kinematograph projection apparatus. Arrangement for the centering of the images in	E. A. Ivatts	857,089	June 18	3177	668	128	2572
Knee-pad	W. R., S. R., and W. H. Chambers.	857,719	June 25	4428	935	128	2917
Knee-protector	I. D. Larsen	858,296	June 25	5578	1192	128	3208
Knife: *See* Shearing-knife.							
Knife-handle	C. D. Harrington	857,400	June 18	3796	805	128	2727
Knitting-machine	G. H. Gilbert	856,920	June 11	2786	574-5	128	2437
Knitting-machine. Circular independent-needle	C. A. Bantmyers	857,536	June 25	4662	989-90	128	2976
Knob attachment for covers	E. J. Weston, Jr.	857,428	June 18	3849	817	128	2739

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Kodak-film	J. B. Ketchum	856,783	June 11	2637	542	128	2396
Labeling-machine	F. X. Malecsay	855,715	June 4	513	107-8	128	1826
Lace holder. Shoe-	E. Cullen and G. Sjolander	857,448	June 18	3883	825	128	2746
Lacing-hook-setting machine. Automatic	W. P. Bartel and S. E. Taft	855,497	June 4	103	21-2	128	1720
Lacing the uppers of shoes. Machine for	J. S. Paine and E. E. Winkley	855,969	June 4	1017	211-12	128	1961
Ladder. Collapsible step-	J. S. Hobbs	856,956	June 11	2935	616	128	2467
Ladder. Combination-	C. G. Davis	856,450	June 11	2011	413	128	2236
Ladder. Extension-	J. R. Davis	856,883	June 11	2454	505	128	2340
Ladder. Extension-	B. Hughes and H. N. Young	856,875	June 11	2793	582	128	2434
Ladder. Extension-	F. A. Bobbitt	857,785	June 25	4557	964	128	2949
Ladder. Metal step-	R. H. Fetta	857,453	June 18	3895	828	128	2751
Ladder. Step-	W. F. Stevens	856,108	June 4	1249	263	128	2007
Ladder. Step-	P. F. Wagner	856,116	June 4	1267	266	128	2012
Ladder. Truck-	T. Haines	855,771	June 4	635	130	128	1857
Ladle	M. H. Treadwell	856,744	June 11	2568	528	128	2379
Lamp	O. S. Atterholt	858,251	June 25	5503	1175	128	3190
Lamp. Alcohol-	C. Halstead	856,142	June 4	1333	279	128	2030
Lamp and air-carbureting apparatus therefor. Safety-	F. W. Suter and C. Wayman	857,769	June 25	4531	956-7	128	2943
Lamp-base-making machine	N. Marshall	856,972	June 11	2972	623	128	2479
Lamp-base-making machine	N. Marshall	856,974	June 11	2981	625	128	2480
Lamp-burner	W. A. Blauvelt	856,021	June 4	1111	231	128	1976
Lamp-burner	E. S. McLean	856,350	June 11	1833	376	128	2194
Lamp cap. Incubator-	J. T. Molloy	855,523	June 4	152	30	128	1733
Lamp. Carbureting-	G. H. Holgate	857,064	June 18	3167	666-7	128	2570
Lamp fitting. Electric-	J. Dugdill	857,928	June 25	4845	1026	128	3020
Lamp. Gas-	A. H. and H. R. Humphrey	856,960	June 11	2940	619	128	2471
Lamp-protector	G. A. Russell	857,541	June 18	4076	865	128	2799
Lamp regulator. Electric-	E. Johnson	857,404	June 18	3805	807	128	2728
Lamp-shade	F. Baumer	856,190	June 4	1425	301	128	2061
Lamp socket. Electric-	J. Amon	856,755	June 11	2585	531	128	2384
Lamps. Adjustable support for signal-	A. H. Handlan, Jr	857,397	June 18	3793	804	128	2726
Lamps. Automatic gas-feed for vacuum-tube	D. M. Moore	856,483	June 11	2065	425	128	2252
Lamps. Globe-closure for electric-arc	E. Bonnet	855,926	June 4	945	195	128	1932
Lamps. Machine for basing incandescent	W. R. Burrows	856,129	June 4	1306	273-4	128	2022
Lamps. Oil-reservoir for	C. T. Whipple	856,502	June 11	2094	430	128	2259
Landside	A. A. Hughes	856,153	June 4	1356	284	128	2035
Lantern. Signal-	G. Eklund	856,854	June 11	2757	573	128	2425
Lantern. Tubular	A. T. Bishop	855,443	June 4	7	2	128	1666
Lantern. Tubular	A. T. Bishop and J. L. McCann	855,612	June 4	226	67	128	1778
Last	F. J. Shainsey, Sr	857,117	June 18	3264	687	128	2592
Last	E. A. Eastman	857,553	June 18	4096	869	128	2803
Latch	J. W. Pettijohn	855,662	June 4	415	87	128	1800
Latch	F. W. Merriweather	858,091	June 25	5215	1105	128	3116
Latch. Door-	C. B. Baumgartner	856,936	June 11	2902	608	128	2459
Latch. Gate-	E. F. Campbell	857,028	June 18	3093	653	128	2549
Latch mechanism. Secret-	H. G. Voight	856,558	June 11	2211	454	128	2288
Lath-boards. Machine for making	H. R. Karstens	857,738	June 25	4473	944	128	2929
Lath. Plaster-	F. W. Farrington and S. B. Burchard.	857,611	June 25	4221	893	128	2864
Lathe	F. J. Barnett	858,358	June 25	5729	1220-2	128	3251
Lathes. Tail-stock for wood-turning	O. Larson	855,858	June 4	811	169	128	1899
Laundry-marking machine	T. L. Taylor	857,421	June 18	3835	813-14	128	2736
Laundry-marking machine	T. L. Taylor	857,497	June 18	3985	847-8	128	2774
Laundry registering device	T. O. Branch	857,590	June 25	4176	884	128	2853
Lavatory	H. Price	857,006	June 11	3044	641	128	2497
Lawn-rake	R. H. Haven and F. Rockwell	856,464	June 11	2031	418	128	2243
Lawn-trimming machine	J. P. Cady	856,940	June 11	2906	609	128	2460
Leather. Hardening	D. Bryan	857,153	June 18	3334		128	2610
Leather-rolling machine	G. A. Schieren	856,810	June 11	2632	554	128	2408
Leather-shaving machine	C. A. Woods	856,382	June 11	1874	387	128	2205
Leather-splitting machine	A. F. Hertig	855,576	June 4	248	49	128	1758
Ledger. Loose-leaf indexed	J. F. Gloe	856,861	June 11	2769	576	128	2428
Legging	M. Rosenwasser	857,963	June 25	4936	1044	128	3043
Lens-grinding machine	F. M. Clark	857,791	June 25	4577	968-9	128	2955
Letter-sheet. Separable double	M. A. Howe	858,001	June 25	5025	1062	128	3067
Leuco derivative from gallocyanin	W. Lommel	856,536	June 11	2156		128	2273
Level and plumb. Combined	W. A. Gibson	857,991	June 25	4995	1055	128	3059
Level and triangle. Combination hand-	W. Thorburn	857,687	June 25	4364	923	128	2901
Level and triangle. Hand-	W. Thorburn	857,688	June 25	4366	923	128	2901
Level. Plumb-	F. M. McLeroy	857,891	June 25	4761	1010	128	2999
Lever. Hand-	H. M. Dodd	856,451	June 11	2012	414	128	2239
Life-lines. Means for projecting and anchoring	A. Meyer and F. N. Rogers	858,009	June 25	5044	1066	128	3072
Lifter: *See* Plate-lifter. Transom-lifter.							
Lifting apparatus	L. R. Shelden	855,990	June 4	1058	220	128	1961
Lifting-jack	C. W. Booth and C. Gaspar	857,225	June 18	3467	732	128	2645
Light: *See* Horizontal light.							
Lightning-arrester	G. L. Foote	857,045	June 18	3124	659	128	2556
Lightning-arrester	J. V. E. Titus	857,849	June 25	4689	994	128	2982
Linotype-machine	R. M. Bedell	858,141	June 25	5312	1129	128	3141
Liquid-distributing apparatus	H. Barber	855,496	June 4	101	21	128	1720
Liquid-fuel burner	E. D. Schmucker	858,220	June 25	5451	1163	128	3176
Liquid-fuel-burning apparatus	F. E. Nelson	857,657	June 25	4301	908	128	2885
Liquid-holding receptacle. Metal	A. P. Crabb	856,513	June 11	2117	435	128	2264
Liquid selling and delivering apparatus. Automatic	L. O. T. Thompson	857,545	June 18	4062	866-7	128	2800
Liquid-separator. Centrifugal	M. Decker and C. H. Shaw	857,794	June 25	4584	970-1	128	2957
Liquid weighing or measuring machine	F. O. Hague	857,996	June 25	5014	1058	128	3064
Liquids and gases. Automatic flow-regulator for	J. H. Gregory, W. W. Jackson, and F. N. Connet.	857,343	June 18	3680	780	128	2701
Liquids. Apparatus for electrochemically and mechanically purifying	G. L. Nelburg	856,361	June 11	1836	377	128	2194
Liquids by compressed air. Method and apparatus for raising	R. Stirling	857,706	June 25	4528	955-6	128	2942
Liquids. Electrolytic process of purifying	J. T. Harris	857,277	June 18	3568	755	128	2670
Liquids electrolytically. Apparatus for treating	A. O. Tate	857,910	June 25	4807	1019-20	128	3011
Load-binding device	W. T. Withers	856,327	June 11	1737	360	128	2167
Loading apparatus	E. Rosenvall	858,218	June 25	5447	1162-3	128	3175

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Lock: *See* Alarm-lock. Safe-lock. Bag-lock. Screw-lock. Bedstead-lock. Shutter-fastener lock. Combination-lock. Switch-lock. Door-lock. System-lock. Nut-lock.							
Lock	H. P. Townsend and W. R. Corbin.	856,556	June 11	2207	454	128	2286
Lock	C. P. Nixholm	857,192	June 18	3418	720	128	2632
Lock	C. Callicchio	857,439	June 18	3866	822	128	2743
Lock and latch. Combined	W. L. Fraser	856,046	June 4	1147	242-3	128	1953
Lock and latch mechanism	H. G. Voight	855,679	June 4	449	94	128	1810
Lock-center	W. R. Corbin	857,031	June 18	3097	654	128	2550
Lock-indicator	A. B. Carlisle	856,843	June 11	2736	568	128	2420
Locket, &c	S. Woods	857,140	June 18	3308	697	128	2604
Locomotive. Electromagnetic	J. L. Potter	858,211	June 25	5432	1159-60	128	3171
Locomotive-engine	J. F. Wentworth	855,682	June 4	455	96	128	1812
Locomotives. Signal-indicating device for	F. v. Zeppelin	855,920	June 4	932	193-4	128	1929
Log-loader	J. R. McGiffert	857,188	June 18	3410	719	128	2630
Log-loader	J. R. McGiffert	857,654	June 25	4293	907	128	2883
Log-loader frame	J. R. McGiffert	857,655	June 25	4296	907	128	2884
Loom	E. H. Ryon	855,815	June 4	721	149	128	1877
Loom harness-motion	C. H. Atkins	858,136	June 25	5298	1126	128	3137
Loom. Jacquard	S. Smith	858,035	June 25	5087	1077	128	3082
Loom. Kindergarten-	J. C. Tyndall	856,319	June 11	1716	356	128	2162
Loom. Kindergarten-	J. C. Tyndall	856,320	June 11	1717	357	128	2163
Loom picker-stick check	J. B. Bernier	855,873	June 4	836	173	128	1905
Loom-shuttle	A. J. Jackson	855,514	June 4	136	27	128	1728
Loom-shuttle	J. Lacroix and J. V. Cunniff	855,791	June 4	670	137	128	1866
Loom-shuttle	J. L. Poalk	857,107	June 18	3251	683	128	2589
Loom-shuttle and bobbin-tensioning means therefor	C. H. Atkins	858,137	June 25	5301	1126-7	128	3137
Loom warp-let-off mechanism	C. H. Atkins	858,138	June 25	5303	1127-8	128	3138
Loom warp stop-motion. Wire-weaving-	C. H. Atkins	858,139	June 25	5306	1128	128	3139
Loom weft fork and slide	F. D. Chesborough	858,151	June 25	5327	1133	128	3144
Looms. Binder for	F. B. Stone	856,310	June 11	1697	352	128	2158
Looms. Cloth-take-up mechanism for	C. H. Atkins	858,052	June 25	5133	1065-6	128	3095
Looms. Drawing-hook for warp-threads in weaving-	K. Mattausch	855,521	June 4	151	30	128	1733
Looms. Heddle for weaving-	J. Grob	857,732	June 25	4460	942	128	2926
Looms. warping-machines, and the like. Lease-rod for	T. A. B. Carver	857,442	June 18	3872	822	128	2744
Looms when weaving. Humidifier for moistening the warp-threads of	T. F. Smith	856,923	June 11	2883	603-4	128	2455
Loop-and-stud connection	J. H. Pilkington	857,901	June 25	4784	1016	128	3005
Looping-machines. Needle-arm for	R. W. Gormly	855,847	June 4	791	165	128	1894
Loose materials. Apparatus for reclaiming	E. H. Messiter	858,008	June 25	5040	1065-6	128	3071
Louver	H. W. Waldmire	856,117	June 4	1268	267	128	2012
Lubricating device	F. Meisel	855,467	June 4	49	11	128	1707
Lubricating system	F. L. Hawkins	856,954	June 11	2932	615-16	128	2466
Lubricating valves. Means for	J. A. Hicks	857,280	June 18	3576	756	128	2672
Lubricator: *See* Multiple-feed lubricator.							
Lubricator	L. D. Pickett	856,659	June 11	2411	496-7	128	2338
Lubricators. Automatic drainage attachment for	J. C. Hubbard	856,151	June 4	1352	283	128	2034
Lubricators. Automatic drainage attachment for	J. C. Hubbard	856,152	June 4	1354	283	128	2035
Lunch-box. Folding	M. A. Gilman	858,278	June 25	5544	1185	128	3199
Lungs. Device for developing the	G. M. Thomson	856,432	June 11	1977	407	128	2229
Mail-bag catching and delivering device	T. Yochum	855,685	June 4	463	97-8	128	1814
Mail-bag catching and delivering mechanism	J. T. Jones	856,407	June 11	1930	397	128	2217
Mail-box	H. Geddes	857,234	June 18	3486	736	128	2649
Mail-marking machine	F. G. Jahn	856,345	June 11	1770	368-70	128	2176
Mail-matter. Pick-up table for	G. A. Gasman and J. T. Lynch	857,960	June 25	4992	1055	128	3059
Mail-receiver	N. K. Bowman	857,022	June 18	3083	651	128	2547
Malting and pneumatic drying apparatus. Pneumatic	F. H. C. Mey	857,954	June 25	4904	1036-7	128	3036
Malting process	H. Heuser	856,637	June 11	2370	487	128	2329
Manicure implement	W. J. Carroll	857,790	June 25	4575	968	128	2955
Manifolding device	J. E. Norman	857,100	June 18	3241	682	128	2586
Manifolding mechanism	H. D. Bolton	856,333	June 11	1740	362-4	128	2170
Manure and straw gatherer	A. Dahlin	855,445	June 4	10	3	128	1697
Manure-spreader	G. G. Griswold	856,632	June 11	2361	486	128	2326
Marble-snapping device	W. L. Hoffman	855,949	June 4	977	203	128	1940
Marble-working machine	J. R. Pelree	857,808	June 25	4780	1015	128	3003
Marcel-waving iron	A. W. Kahle and L. Rensman	855,709	June 4	504	105	128	1824
Marine wooden structures. Method and apparatus for protecting	T. N. Prudden	856,588	June 4	276	56	128	1766
Massage apparatus	F. Schmidt	857,761	June 25	4517	953	128	2940
Match-box	A. G. Slater	855,993	June 4	1063	220	128	1962
Match-box. Pocket	M. Gabasio	857,274	June 18	3561	754	128	2668
Match-holder	F. H. Williams	855,489	June 4	90	19	128	1717
Match-making machine	H. Beeg	857,861	June 25	4709	999	128	2987
Mattress	J. R. Valentine	856,746	June 11	2573	529	128	2381
Mattress	C. J. Witzel	856,752	June 11	2582	530	128	2383
Mattress	E. D. H. Lambotte	857,078	June 18	3193	672	128	2576
Mattress-making machine	C. W. White	855,737	June 4	576	118	128	1844
Mattress-stuffing machine	S. A. Coffman	856,445	June 11	2000	411-12	128	2226
Mattresses. Bed-riser for woven-wire	J. M. and F. Holland	856,701	June 11	2483	511	128	2356
Maximum-demand indicator	F. H. Bowman	856,441	June 11	1993	410	128	2224
Measuring and mixing machine	A. Lanquist	857,742	June 25	4479	945	128	2931
Measuring apparatus. Construction of	M. Gehre	855,846	June 4	789	165	128	1894
Measuring apparatus. Liquid-	E. O. Linton	857,083	June 18	3211	675-6	128	2679
Measuring electrical resistances. Apparatus for	S. Evershed	858,235	June 25	5445	1208	128	3225
Measuring instrument	H. Roost	855,955	June 4	822	171	128	1902
Measuring instrument	F. B. Stimpson	856,820	June 11	2608	557	128	2412
Measuring standing timber. Device for	J. C. Dalrymple	855,759	June 4	613	126	128	1852
Measuring-tool	W. Thain	857,542	June 18	4077	866	128	2799
Meat-tenderer	J. W. Hurley	857,506	June 18	4134	876	128	2809
Meat-treating apparatus	J. Cunning	855,618	June 4	335	69	128	1780
Mechanical drier	W. M. Cummer	857,161	June 18	3349	707	128	2613

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Mechanical movement	J. Y. Porter	855,973	June 4	1032	214	128	1955
Mechanical movement	A. Lindsay and J. Meinert	857,408	June 18	3810	808	128	2730
Mechanical movement	F. H. Richards	857,832	June 25	4652	987–8	128	2973
Mechanical movement	F. J. Ziegler	858,049	June 25	5129	1085	128	3093
Medical appliance	A. C. Heath	855,573	June 4	243	48	128	1757
Medical battery	C. W. Taylor	858,117	June 25	5262	1117	128	3127
Medicine from carrots. Obtaining	E. F. Bolt	857,224	June 18	3467	.....	128	2645
Medicine-receptacle	F. J. Russell	855,984	June 4	1050	218	128	1959
Memorandum-block	H. Birnbach	856,841	June 11	2731	566	128	2419
Metal-bending machine	H. M. Smith	857,764	June 25	4521	954	128	2941
Metal-fusing apparatus	A. E. Menne	857,247	June 18	3505	741	128	2654
Metal. Rocker-press for shaping	C. A. and C. F. Murdock	858,096	June 25	5225	1107–8	128	3119
Metal-sheet wrapper	H. E. Marks	857,744	June 25	4484	946	128	2932
Metal-splicing device. Expanded-	A. W. Rush	857,307	June 18	3626	767	128	2685
Metal-working machines. Speed-box for	E. J. Hannum	857,399	June 18	3795	804–5	128	2726
Metals and other materials. Testing the hardness and density of	W. I. Ballentine	855,923	June 4	940	195	128	1931
Metals. Apparatus for electrolytic deposition of	H. C. Harrison and J. Day	858,341	June 25	5670	1211–12	128	3236
Metals. Electrolytically refining	A. G. Betts	857,378	June 18	3758	796	128	2717
Meter: *See* Disk meter. Electric meter.							
Meter	A. H. McAlpine	855,473	June 4	59	13	128	1709
Meter	W. J. Mowbray	856,011	June 25	5046	1067	128	3073
Micrometer-gage	G. Kohlhaas	857,810	June 25	4617	978	128	2965
Microphone	N. H. Holland	855,458	June 4	34	8	128	1703
Milk or cream storage and cooling vat	Z. S. Lawrence	857,473	June 18	3935	837	128	2760
Mill: *See* Crushing and grinding mill. Cutting and mixing mill. Fanning-mill. Grinding-mill. Pulverizing or grinding mill. Roller-mill. Rolling-mill. Windmill.							
Milling-machine cutter-head	F. D. Smith	856,306	June 11	1689	350	128	2155
Minerals. Separating	A. F. Kirschner	855,895	June 4	877	182	128	1915
Miner's cage	W. Massing	856,276	June 11	1620	337	128	2137
Mines. Safety mechanism for hoisting or hauling apparatus for	R. Jensen	857,286	June 18	3585	759	128	2674
Mining drill-post. Coal-	P. Rommes	858,217	June 25	5445	1162	128	3174
Mirror. Hand-	J. Komorous, Jr.	858,079	June 25	5187	1099	128	3108
Mirror. Illuminating-	A. D. Southam and H. C. Hides	856,497	June 11	2087	429	128	2257
Mirror-support	F. N. Coffman	858,152	June 25	5328	1133	128	3144
Miter-box	M. J. Goodale	857,520	June 18	4028	858	128	2785
Miter-box and cramp. Combined	H. Hill and J. Blain	857,345	June 18	3692	780–1	128	2702
Mitering-machine	W. Battensby	856,210	June 11	1468	310	128	2099
Mitering machine. Segment-	H. J. Buckel	856,842	June 11	2732	567	128	2419
Mixing apparatus	F. W. Kapheim	856,469	June 11	2042	419	128	2246
Mixing device	J. C. W. Greth	855,631	June 4	359	74	128	1786
Mold: *See* Cement-block mold. Cistern-mold. Concrete-block mold. Fireproof-construction mold. Glass-mold. Ingot-mold. Plastic-material mold. Portable mold. Shingle-mold. Stone-mold. Type-mold. Type-machine mold. Wall-mold.							
Molding-machine	H. E. Hodgson and J. Hartley	857,173	June 18	3381	713–14	128	2622
Molding-machine	F. W. Hall	857,997	June 25	5017	1058–60	128	3055
Monoline-machine	J. McNamara	856,898	June 11	2837	592	128	2445
Monolithic hollow objects. Apparatus for and method of continuously making	J. M. Boyle	857,588	June 25	4173	884	128	2851
Monolithic hollow objects. Apparatus for continuously making	J. M. Boyle	857,587	June 25	4171	883	128	2851
Monolithic hollow objects. Means and method for continuously making tube-lined	J. M. Boyle	857,589	June 25	4175	884	128	2852
Monolithic objects. Apparatus for continuously making	J. M. Boyle	857,586	June 25	4170	883	128	2850
Mop-wringer	H. Colby	856,225	June 11	1503	316	128	2107
Mop-wringer	J. D. Carter	858,150	June 25	5326	1132	128	3144
Mop-wringing machine	M. A. Elliott	856,235	June 11	1519	320	128	2111
Mortar-gage	G. S. Ormsby	856,363	June 11	1839	377	128	2195
Motion-transmitting apparatus	C. B. King	857,002	June 11	3038	639–40	128	2406
Motor: *See* Current-motor. Electric motor. Explosive-motor. Hydraulic motor. Rotary motor. Semirotary motor. Spray-motor. Washing-machine motor. Water-motor.							
Motor apparatus. Spring-	C. B. Elliott, J. T. Loggins, and W. B. Straughan.	855,506	June 4	122	25	128	1724
Motor control	H. B. Emerson	856,623	June 4	345	71	128	1782
Motor control	F. Eichberg	857,165	June 18	3361	709	128	2617
Motor-control apparatus	G. W. Euker	857,797	June 25	4590	972	128	2958
Motor-controlling apparatus. Automatic	F. W. Newell	857,191	June 18	3415	720	128	2631
Motor-controlling device	C. Mittelstrass and A. Frank	855,470	June 4	54	12	128	1708
Motor-speed-controlling mechanism. Explosive-	J. A. Miller	855,582	June 4	263	53–4	128	1762
Motors and other vehicles. Means for prevention of skidding or side-slipping of	H. Turner	857,774	June 25	4541	959	128	2946
Motors. Fuel-feeding device for internal-combustion	H. J. and T. E. Podlesák	858,022	June 25	5064	1072	128	3076
Motors. Means for automatically timing the spark for producing ignition in explosion-	A. E. Brillié	857,715	June 25	4423	934	128	2916
Motors or the like. Apparatus for automatically starting explosive-	L. A. C. Letombe	857,639	June 25	4272	902	128	2877
Mouth-prop	R. L. Magoon	856,262	June 11	1813	375	128	2189
Mower	W. W. and H. H. Hare	856,997	June 11	2477	510	128	2364
Mower. Lawn-	C. G. Oman	855,527	June 4	189	33	128	1735
Mower. Lawn-	L. Pederson	855,857	June 4	275	55–6	128	1765
Mowing-machine	J. W. Latimer	856,209	June 11	1596	334	128	2131
Muff-bed	H. Fischer	856,691	June 11	2485	507	128	2382
Multicolor-press	C. Williams	856,120	June 4	1272	268–9	128	2014

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Multiple-feed lubricator	C. A. Anderson and E. A. Erickson.	857,221	June 18	3463	730–1	128	2644
Multi-conductor	A. F. and W. Shore	857,367	June 18	3742	791	128	2713
Music-chart	W. J. Morris	856,358	June 11	1830	376	128	2192
Music-leaf turner	F. P. Parker	856,420	June 11	1958	402	128	2224
Music-leaf turner	J. O'Connor	858,204	June 25	5420	1155	128	3168
Music-rest. Portable	M. Waldteufel	857,504	June 18	4004	852	128	2775
Music-roll fastener	M. R. Hageter	855,851	June 4	800	167	128	1896
Music-sheets, &c. Clip for turning over	O. Blobel	855,874	June 4	838	173	128	1905
Musical-chord indicator	C. A. Miller	857,955	June 25	4908	1037	128	3036
Musical instrument	A. T. Bond	856,939	June 11	2905	609	128	2460
Musical-instrument playing attachment	F. L. Marshall	855,465	June 4	44	10–11	128	1706
Musical instrument. Pneumatic self-playing	L. B. Doman	856,774	June 11	2626	539	128	2394
Musical instrument. Self-playing	H. M. Salyer	857,261	June 18	3529	746–8	128	2660
Musical instruments. Action for stringed	L. F. Boyd	857,380	June 18	3761	796	128	2718
Musical instruments. Tracker-box for mechanical	W. F. Cooper	856,769	June 11	2606	536–7	128	2390
Muzzle	M. Laramie	855,856	June 4	809	168	128	1898
Nail-clipper	M. Prochaska	855,665	June 4	420	87	128	1802
Nail-extractor	H. H. Mattocks	855,522	June 4	151	30	128	1733
Nailing or riveting machine	J. M., J., A. J., and S. A. Gimson	855,454	June 4	27	6–7	128	1702
Navigation	P. L. T. Héroult	855,510	June 4	128	26	128	1726
Neck and chest protector	N. Neuman	856,720	June 11	2521	518	128	2368
Necktie device	C. I. Hoople	857,402	June 18	3802	806	128	2728
Necktie-fastener clasp	E. E. Wicking	857,701	June 25	4397	928	128	2909
Needle-holder	L. C. McNeal	857,824	June 25	4640	984	128	2970
Needle-threading device	J. Welty	856,827	June 11	2708	560	128	2414
Nest. Hen's	S. C. Stevens	857,213	June 18	3451	728	128	2640
Nesting and brooding box	J. W. Bradford	857,921	June 25	4831	1024	128	3016
Newspaper-handling apparatus	G. W. Frick	856,460	June 11	2021	416–17	128	2241
Newspaper-holder	J. J. Dettwyler	857,608	June 25	4215	891	128	2862
Nickel contained in basic nickel precipitates. Recovering the	H. H. Dow, W. S. Gates, and A. E. Schaefer.	857,927	June 25	4840	1025	128	3019
Nipple attachment for points	E. Skelton	855,992	June 4	1061	220	128	1962
Nose-guard	W. H. Reisner	857,758	June 25	4513	952	128	2939
Nozzle	H. B. Sherman	856,816	June 11	2692	556	128	2410
Numbering and dating machine	E. G. Bates	857,976	June 25	4964	1049–50	128	3052
Numbering-machine. Hand	H. P. Hamburg	857,934	June 25	4854	1027	128	3022
Nurling cylinders. Apparatus for	E. J. O'Brien	855,658	June 4	404	85	128	1798
Nut. Axle-	W. L. Pounds	855,664	June 4	419	87	128	1801
Nut-lock	F. E. Hutson and R. H. Neal	855,512	June 4	132	27	128	1727
Nut-lock	G. W. Darling	855,698	June 4	487	101	128	1820
Nut-lock	F. W. French	855,700	June 4	489	102	128	1820
Nut-lock	P. R. Hinkle	855,779	June 4	649	133	128	1861
Nut-lock	C. C. Halgren	855,946	June 4	973	202	128	1939
Nut-lock	J. O. Broadfoot	856,219	June 11	1493	314	128	2104
Nut-lock	F. D. Parsons	856,658	June 11	2409	496	128	2338
Nut-lock	W. W. Laughlin	856,710	June 11	2508	515	128	2363
Nut-lock	H. Miller	856,976	June 11	2985	625	128	2481
Nut-lock	S. Barber	857,223	June 18	3466	731	128	2644
Nut-lock	T. Booth	857,227	June 18	3471	732	128	2646
Nut-lock	D. B. Hanlon	857,398	June 18	3794	804	128	2726
Nut-lock	C. Kemmerer	857,405	June 18	3806	807	128	2729
Nut-lock	A. H. Knopf	857,526	June 18	4041	860	128	2789
Nut-lock	W. Atkins	857,573	June 25	4151	879	128	2845
Nut-lock	J. B. Purl	857,755	June 25	4507	951	128	2938
Nut-lock	R. D. Baker	857,782	June 25	4553	963	128	2949
Nut-lock	J. J. Potter	857,828	June 25	4646	986	128	2972
Nut-lock	H. C. Werner	858,045	June 25	5111	1062	128	3089
Nut-lock	A. J. Logan	858,191	June 25	5397	1149	128	3162
Nut. Lock-	C. Rystrom	856,728	June 11	2538	522	128	2371
Nut. Lock-	C. Rystrom	856,729	June 11	2539	522	128	2371
Nut. Lock-	A. W. Carlson	857,869	June 25	4718	1002	128	2989
Nut-ring	E. E. Gamon	856,246	June 11	1557	326	128	2121
Oil-burner	L. A. Blubaugh	855,688	June 4	469	99	128	1815
Oil-burner	G. Larsen	855,857	June 4	810	169	128	1899
Oil-burner	C. W. Phelps	856,547	June 11	2179	449	128	2279
Oil-burner	A. J. O'Brien	856,798	June 11	2663	549	128	2403
Oil-burner	E. L. Stream and W. J. Gibbens	857,496	June 18	3983	847	128	2773
Oil-burner. Air-carbureting	W. N. Best	856,674	June 11	2441	501	128	2346
Oil-cake trimmer	J. Dion and J. D. Belanger	855,836	June 4	764	157–8	128	1887
Oil-can	W. E. Harmon and T. B. Goodpasture.	857,056	June 18	3145	662	128	2564
Oil-can	A. F. Demory	857,517	June 18	4024	857	128	2783
Oil-distributing ring	G. H. Follows	856,459	June 11	2020	416	128	2241
Oils and fats. Bleaching	H. A. Metz and P. S. Clarkson	856,357	June 11	1829	.....	128	2192
Oiler. Mechanical	C. R. Radcliffe	856,180	June 4	1406	297	128	2047
Oiler. Mechanical	C. R. Radcliffe	856,181	June 4	1409	297	128	2048
Oiling device. Saw-	H. Schuring	856,734	June 11	2550	524	128	2374
Optical apparatus	G. Heddon	856,778	June 11	2632	541	128	2395
Ordnance. Breech-operating mechanism for	S. N. McClean	856,653	June 11	2397	493–4	128	2334
Ore-distributer	P. Argall	855,744	June 4	586	120–1	128	1846
Ore-distributer. Radial	P. Argall	855,745	June 4	589	121	128	1847
Ore-slimer	P. H. Craven	858,262	June 25	5520	1178–9	128	3194
Ores. Dressing	O. Witt	856,124	June 4	1296	272	128	2020
Ores. Means for separating or classifying	H. E. Wetherbee	856,612	June 11	2323	478	128	2216
Ores. Separating or classifying	H. E. Wetherbee	856,611	June 11	2321	477	128	2216
Organ-pipe	F. I. White	857,909	June 25	4953	1046	128	3049
Ornaments. Machine for inserting	T. L. Sherman	857,839	June 25	4669	991	128	2978
Outlet-box	S. E. Huntting	856,640	June 11	2375	488	128	2330
Oven. Baker's	C. W. Heller	858,000	June 25	5025	1061	128	3067
Oven-door	F. J. Albrecht	858,132	June 25	5287	1123	128	3134
Oven grate. Baker's	J. A. Stackhouse	857,210	June 18	3447	727	128	2639
Oven. Rotary baking-	F. R. Barnheisel	858,053	June 25	5136	1086–8	128	3098
Ovens. Combined bearing and steam-feeding mechanism for rotary bake-	F. R. Barnheisel	858,323	June 25	5625	1205	128	3219
Ovens. Heat-regulator for	J. P. Farmer	857,452	June 18	3894	828	128	2780
Overshoe	S. Schwarzschild	858,081	June 25	5081	1076	128	3080
Overshoe-retainer	G. E. Zeigler	856,505	June 11	2099	431	128	2289
Package	C. P. Mitchell	856,173	June 4	1302	288	128	2044
Package. Banana-	W. Bell	857,435	June 18	3861	820	128	2742

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Package-carrier	J. W. Clark	857,720	June 25	4429	935–6	128	2917
Package for implements	A. W. Stephens	857,767	June 25	4527	955	128	2942
Package. Label-	C. F. Fehrenbach	856,689	June 11	2462	508	128	2351
Packing	W. E. Sanders	856,805	June 11	2309	475	128	2313
Packing. Metallic	G. D. Rollins	856,103	June 4	1240	261	128	2066
Packing. Metallic	E. M. Cook	857,030	June 18	3096	653	128	2550
Packing. Metallic	H. Thompson	858,119	June 25	5206	1118	128	3129
Packing. Piston-	R. R. Spears	856,992	June 11	3016	635	128	2489
Packing. Piston-rod	G. Rothenbucher	856,308	June 11	1684	349	128	2154
Packing. Rod-	W. Sudekum	858,087	June 25	5090	1078	128	3083
Pad: *See* Collar-pad. Knee-pad.							
Padlock. Permutation-	H. Handler	857,935	June 25	4855	1027	128	3022
Padlock. Seal-	F. Abrams	856,197	June 11	1447	305	128	2093
Pail-clamp	J. P. Stenstrom	855,540	June 4	178	37	128	1739
Pail. Collapsible	J. L. Morrison	855,963	June 4	1001	210	128	1946
Pail. Milk-	T. J. Hopkins	856,585	June 11	2267	466	128	2302
Painting. Making a design	E. D. Roberts, Jr	855,812	June 4	716	148	128	1876
Pan: *See* Baking-pan. Dust-pan.							
Paper and other materials. Machinery for cutting and folding	E. H. Cottrell	856,571	June 11	2240	460	128	2295
Paper-bag machine	E. C. Westervelt	858,047	June 25	5123	1063–4	128	3092
Paper-bag-manufacturing device	T. Hugo	857,087	June 18	3173	668	128	2572
Paper boxes. Making	E. H. Taylor	858,233	June 25	5477	1168	128	3183
Paper-clip	C. Spiro	857,418	June 18	3829	812	128	2734
Paper-coating machine	M. Cantine	858,149	June 25	5325	1132	128	3144
Paper-fastener. Metallic	G. W. McGill	857,748	June 25	4468	947	128	2933
Paper-feeding mechanism	C. Williams	856,122	June 4	1287	270–1	128	2017
Paper-hanger's tool	W. U. Colthar	857,600	June 25	4198	886	128	2857
Paper-marbling machine	J. W. Newbery	855,474	June 4	61	13–14	128	1710
Paper-marbling machine	J. W. Newbery, J. M. Reed, and M. T. Kuhlkin.	858,203	June 25	5416	1154–5	128	3166
Paper-slitting machine	J. L. Perkins and J. O. Stanley	856,984	June 11	3000	630	128	2485
Paper-trimming machine	C. E. Whitmarsh	857,133	June 18	3297	695	128	2602
Paper vessels. Press for forming internal grooves in	A. R. Tiffany	857,123	June 18	3277	690	128	2596
Parasol-top	W. H. Perkins	857,665	June 25	4313	911	128	2888
Paring machine. Fruit-	D. F. Hunt	858,344	June 25	5677	1213	128	3227
Partition. Folding	T. R. Boone	856,217	June 11	1490	314	128	2103
Partition-section. Interchangeable	A. Adams	856,198	June 11	1448	305–6	128	2093
Paste-applying machine	A. D. Clingman	856,224	June 11	1501	316	128	2106
Pasting-machine	J. H. Trismen	857,423	June 18	3841	815	128	2737
Pavement and making the same	W. J. Sinek and R. S. Blome	856,105	June 4	1243	262	128	2066
Pawl-and-ratchet mechanism	D. C. Prescott	856,365	June 11	1843	378	128	2196
Pea-separating machine	I. S. Merrell	856,356	June 11	1827	376	128	2192
Pea-shelling machine	A. S. Adam	858,248	June 25	5499	1174	128	3189
Peat-collecting machines. Tubular conveyer for	W. A. Milne	855,651	June 4	304	82	128	1796
Peat, &c., into blocks or cakes. Machine for forming and compressing	M. C. Sharpneck	858,352	June 25	5090	1216–17	128	3241
Peat-machine	M. C. Sharpneck	858,353	June 25	5695	1217	128	3241
Peat-machine	M. C. Sharpneck	858,354	June 25	5704	1217	128	3244
Pebble-mill lining	M. F. Abbé	858,129	June 25	5282	1122	128	3133
Peeling machine. Vegetable-	H. Robinson	855,481	June 4	76	16	128	1714
Peeling of fruits and vegetables	C. D. Monte	858,095	June 25	5223	1107	128	3118
Pen and pencil clip	J. H. Pilkington	858,020	June 25	5062	1071	128	3076
Pen. Drawing-	W. B. Phillips	858,350	June 25	5687	1216	128	3240
Pen. Fountain-	M. W. Moore	856,082	June 4	1204	255	128	1996
Pens, &c. Box for	G. F. Chandler	856,941	June 11	2908	610	128	2460
Pencil-sharpener	F. E. V. Baines	857,574	June 25	4152	879	128	2845
Perforator. Loose-leaf	L. M. Morden	857,888	June 25	4746	1008	128	2995
Phonograph	J. W. Aylsworth and F. L. Dyer	855,604	June 4	307	63	128	1773
Phonograph	N. C. Durand and E. L. Aiken	855,622	June 4	343	70	128	1782
Phonograph attachment	W. G. Horton	856,873	June 11	2790	581	128	2433
Phonograph-blanks. Making	C. L. Holm	858,184	June 25	5387	1147	128	3159
Phonograph-horn support	J. W. Aylsworth	855,557	June 4	219	42	128	1752
Phonograph recorder and reproducer	L. P. Halladay	857,169	June 18	3370	710	128	2619
Phonograph-records. Making duplicate	E. L. Aiken	855,828	June 4	748	154	128	1883
Phonograph-records. Making duplicate	J. W. Aylsworth	855,553	June 4	212	41	128	1750
Phonograph-records. Making duplicate	J. W. Aylsworth	855,554	June 4	214	42	128	1751
Phonograph-records. Making duplicate	J. W. Aylsworth	855,605	June 4	309	63	128	1774
Phonograph-reproducer	L. Devineau	856,038	June 4	1136	238	128	1961
Phonographic records. Composition for	J. W. Aylsworth	855,552	June 4	211	41	128	1750
Photographs with any desired background. Production of	F. J. Dischner	858,162	June 25	5350	1137	128	3150
Photographic-film holder	A. Schalek	855,591	June 4	283	57	128	1768
Photographic focal-plane shutter	L. Borsum	858,146	June 25	5321	1131	128	3142
Photographic-printing machine	H. H. McIntire	856,716	June 11	2514	517	128	2364
Photographic-printing machine	W. T. Mead	857,952	June 25	4897	1035	128	3034
Photographic shutter	E. W. Parker	856,600	June 11	2287	471	128	2307
Photographic shutter	W. T. and C. C. Barber	856,836	June 11	2722	564	128	2417
Photometer	C. H. Williams	855,548	June 4	206	40	128	1749
Photometer	T. Torda	857,124	June 18	3278	691	128	2596
Piano-actions. Hammer-supporting flange for	R. J. Murray	857,350	June 18	3722	786	128	2708
Piano. Automatic	R. A. Rodesch	855,671	June 4	428	89–90	128	1804
Piano. Automatic	R. A. Rodesch	855,672	June 4	435	90	128	1807
Piano. Automatic	H. M. Salyer	857,260	June 18	3527	746	128	2659
Piano-keyboard	W. D. Reaves	856,723	June 11	2526	520	128	2368
Piano-pedal	L. W. Norcross	857,209	June 18	3610	764	128	2661
Piano-pedal	O. Lestina	857,538	June 25	4272	902	128	2877
Piano pedal. Self-playing grand-	J. W. Darley, Jr	858,283	June 25	5522	1179–80	128	3194
Piano-player	F. W. Winter	856,325	June 11	1729	359	128	2165
Piano-player	R. Morgan	856,794	June 11	2656	546–7	128	2401
Pick having detachable points	A. Thompson	856,677	June 4	445	93	128	1810
Picker: *See* Cotton-picker. Hop-picker. Fruit-picker. Stone-picker.							
Picker-stick check	N. Vaillancourt	857,424	June 18	3844	815	128	2738
Pickling-bath	C. E. Laverty	858,644	June 11	2380	.....	128	2331
Picture and making same. Colored	H. C. J. Deeks	856,519	June 11	2129	437	128	2286
Picture-frame	E. Christian	855,936	June 4	967	199	128	1935

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Picture-projecting machine. Life-motion-	O. T. Weiser	857,697	June 25	4391	927	128	2906
Pie-machine	F. Deuerling	857,609	June 25	4215	891–2	128	2883
Pigs' feet. Machine for splitting	J. Cunning	857,332	June 18	3670	776	128	2696
Pile-cutting machines. Rotary cutter-shaft for	T. Morton	857,356	June 18	3717	785	128	2707
Pin: *See* Clasp-pin. Rolling-pin. Collar-pin. Safety-pin. Hat-pin.							
Pipe: *See* Helically-riffled pipe. Smoking-pipe. Organ-pipe. Tobacco-pipe. Sewer-pipe.							
Pipe and conduit supports. Fastener for	R. W. Beaton	855,924	June 4	942	195	128	1931
Pipe-bending machine	P. J. Connors	856,847	June 11	2742	569–70	128	2421
Pipe-cleaner. Expansible	L. O. Howell	856,063	June 4	1176	248	128	1990
Pipe connection	H. Mueller	857,956	June 25	4911	1037	128	3037
Pipe coupling. Air-	R. S. White, Jr	856,119	June 4	1270	267	128	2013
Pipe-couplings. Clamping-ring for	J. Clark	858,360	June 25	5734	1222	128	3253
Pipe-couplings. Gasket for	T. Feudergast	857,106	June 18	3250	683	128	2589
Pipe-cutter	C. Wahnsiedler	857,904	June 25	4386	925	128	2907
Pipe-joint	J. P. Putnam	857,905	June 25	4793	1018	128	3007
Pipe-joints. Means for caliking	P. E. Snow	856,106	June 4	1246	262	128	2006
Pipe-wrench	G. Nicholson	857,825	June 25	4643	984	128	2971
Pipes, &c. Magnetic drawing apparatus for	G. Baehr and H. B. Lynch	857,856	June 25	4701	997–8	128	2985
Pipes. Strainer-support for water-	W. S. Foster	857,519	June 18	4026	857	128	2784
Pivot connection	F. H. Richards	857,831	June 25	4650	987	128	2973
Placket-closer	J. L. Brassington	855,689	June 4	473	99	128	1817
Placket closer. Dress-	A. W. Shank	856,373	June 11	1855	381	128	2200
Plaiting-gage	P. Schoen	857,208	June 18	3444	727	128	2636
Planer. Floor-	C. T. Leimbach	857,946	June 25	4884	1032–3	128	3031
Planer or jointer guard	J. M. Jones	856,588	June 11	2270	467	128	2303
Planes. Gage attachment for	N. N. Beasley	857,514	June 18	4017	855	128	2782
Planter	M. E. Fidler and H. Lingenfelter	857,798	June 25	4591	972	128	2958
Planter and fertilizer-distributer. Seed-	C. E. Littlefield	856,789	June 11	2645	544–5	128	2398
Planter. Corn-	R. S. Carr	857,789	June 25	4573	968	128	2954
Planter. Cotton and corn	F. H. Goodnight and J. F. Duffin	855,883	June 4	852	177	128	1909
Planter. Potato-	J. R. Steitz	856,309	June 11	1696	352	128	2157
Planter. Seed-	F. G. Green	855,630	June 4	357	73–4	128	1785
Planting-machine	B. C. McCoy	858,201	June 25	5410	1152–3	128	3165
Plastic-material mold	E. H. McClintock	856,982	June 11	2995	630	128	2484
Plastics. Gravity tamping and molding machine for	A. J. Taylor and J. H. McClure	858,232	June 25	5473	1167–8	128	3182
Plate-lifter	A. E. Phillips	857,899	June 25	4782	1015	128	3004
Platen-releasing device	W. Ruger, Jr	855,532	June 4	165	33	128	1736
Plow	J. Rivara	857,487	June 18	3967	842–3	128	2769
Plow	G. Wiard	857,852	June 25	4694	995	128	2963
Plow	S. V. Weeks	857,967	June 25	4942	1045–6	128	3045
Plow and seeder	F. Thürrid	855,678	June 4	446	93–4	128	1810
Plow. Ditching-	E. W. Moody	855,720	June 4	526	110–11	128	1829
Plow-heel	T. H. Hilley	857,804	June 25	4610	977	128	2963
Plow riding attachment	E. Waibaum	857,503	June 18	4003	852	128	2778
Plow. Straddle or gang	R. C. Henderson	857,061	June 18	3163	665–6	128	2569
Plow. Virgin-ground	J. H. Tripp	857,319	June 18	3645	772	128	2689
Plow. Wheeled	A. B. Frenier	856,240	June 11	1541	323	128	2117
Plows. Harrow attachment for	J. L. Crisler	856,033	June 4	1128	236–7	128	1979
Plug and receptacle. Fused	J. C. Hatzel and E. L. Morley	857,735	June 25	4465	943	128	2927
Plug. Flush attachment-	H. Hubbell	857,176	June 18	3387	715	128	2624
Pneumatic drill	P. H. Murphy	856,083	June 4	1205	255	128	1997
Pneumatic drill	A. C. Murphy	856,285	June 11	1639	340	128	2142
Pneumatic drill	P. H. Murphy	856,651	June 11	2391	492–3	128	2333
Pneumatic transmission system	J. J. Stoetzel	856,109	June 4	1250	263	128	2008
Pneumatic-tube systems. Hand-hole for	W. V. Hart and F. J. Novak	856,145	June 4	1338	280	128	2031
Pole-arm. Wrought-metal	M. E. Harrison	857,938	June 25	4961	1028–9	128	3024
Polishing-machine	E. Krüger	855,644	June 4	380	79	128	1791
Polishing-machine	D. F. Arburn	856,331	June 11	1746	361–2	128	2169
Pool-table	H. L. Haskell	857,057	June 18	3147	663	128	2565
Portable mold	W. L. Hart	856,866	June 11	2778	578–9	128	2430
Post: *See* Binding-post. Fence-post.							
Post-driver	C. Bandimere	858,322	June 25	5623	1205	128	3219
Post-hole digger	R. T. Jenney	856,066	June 4	1178	249	128	1991
Posts. Pattern for ornamental	K. Nelson	857,255	June 18	3518	743	128	2657
Pot: *See* Coffee-pot. Type-metal melting-pot. Furnace fire-pot. Glass-melting pot.							
Pot-cleaner	E. C. Lewis	857,527	June 18	4043	860	128	2789
Potato-digger	G. N. Holland	855,457	June 4	32	7–8	128	1703
Potato-digger. Hand	F. R. Lancaster	857,182	June 18	3397	717	128	2627
Potential-regulator	J. H. Duncan	855,450	June 4	21	5	128	1700
Pounder-washer	R. Hayes	857,567	June 18	4133	875	128	2809
Powder box. Tooth-	W. H. Perkins	857,414	June 18	3821	810	128	2733
Powder-compacting device for druggists	O. Ware	856,006	June 4	1082	225	128	1967
Powder-manufacturing apparatus. Smokeless-	G. W. Gentieu	856,859	June 11	2764	574	128	2426
Power: *See* Ratchet-power.							
Power-brake. Mechanical	L. Pfingst	857,752	June 25	4499	949	128	2935
Power mechanism	E. C. Hodges	856,258	June 11	1573	330	128	2125
Power-shovel	R. Belden	856,018	June 4	1103	229–30	128	1973
Power-transmission device. Regulatable	F.V. Whyland and C. P. Hollister	855,918	June 4	929	192	128	1928
Power-transmission mechanism	F. Sedivy	857,493	June 18	3977	845	128	2771
Power-transmitter	F. Müller	856,283	June 11	1629	339	128	2140
Power-transmitting mechanism	C. B. Hatfield	855,774	June 4	642	131	128	1859
Power-transmitting mechanism. Variable-speed	R. Cole	856,846	June 11	2740	568	128	2421
Preserving apparatus	W. G. Holden	857,346	June 18	3694	781	128	2703
Press: *See* Baling-press. Printing-press. Clothes-press. Proof-press. Drill-press. Screw-press. Hay-press. Web-press. Multicolor-press.							
Press releasing mechanism Bundling-	C. F. Anderson	857 918	June 25	4827	1023	128	3015

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Pressure. Apparatus for maintaining uniform	W. B. Mason	858,088	June 25	5209	1104	128	3115
Pressure-gage	J. R. Goehring	857,049	June 18	3135	660	128	2561
Pressure-regulator	J. A. Schultz, Jr.	856,989	June 11	3009	632–3	128	2488
Primary battery	C. E. Hite	857,880	June 25	4734	1006	128	2992
Printers' chases and forms. Auxiliary support for	J. F. Horn	857,807	June 25	4613	978	128	2964
Printing apparatus for checks, drafts, &c	G. W. Heene	855,707	June 4	500	104	128	1822
Printing device	J. S. Duncan	856,452	June 11	2014	414	128	2239
Printing device	J. S. Duncan	857,039	June 18	3110	657	128	2553
Printing-films. Inking	B. Day	858,158	June 25	5335	1135	128	3146
Printing in colors	J. A. H. Hatt	855,705	June 4	496		128	1822
Printing-machine. Rotary	E. Mertens	856,079	June 4	1199	254	128	1996
Printing or like machines. Paper-feeding machine for	F. W. Vickery	857,426	June 18	3846	816–17	128	2738
Printing-plate and preparing the same	M. A. McKee	857,531	June 18	4048	861–2	128	2791
Printing-press	H. F. Bechman	855,748	June 4	595	122	128	1848
Printing-press	H. F. Bechman	856,126	June 4	1300	272–3	128	2021
Printing-press	G. R. Cornwall	857,331	June 18	3663	775–6	128	2694
Printing-press	W. M. Clark	857,721	June 25	4431	936	128	2918
Printing press. Flat-bed web	H. F. Bechman	856,758	June 11	2590	532	128	2385
Printing-press mechanism	E. B. Woodward	857,508	June 18	4009	853	128	2780
Printing-presses. Offset-web-feed mechanism for	G. H. Pierce	857,753	June 25	4501	949–50	128	2936
Projectile	A. M. Mazer	855,466	June 4	46	11	128	1706
Projectile. Anchor-	E. Mingus	856,791	June 11	2651	546	128	2400
Proof-press	C. Williams	856,123	June 4	1292	271–2	128	2019
Propeller. Boat-	C. A. Moline	858,010	June 25	5044	1067	128	3072
Propeller. Marine	O. D. Robinson and R. L. Bennett.	858,215	June 25	5441	1161	128	3174
Propeller. Sectional	E. Humphrey and M. R. Williams.	856,586	June 11	2268	466	128	2302
Propeller-wheel	H. J. Perkins. (Reissue)	12,665	June 25	5742	1223–4	128	3255
Propelling and steering mechanism for air-ships	A. H. Malloy	857,949	June 25	4889	1033–4	128	3032
Propelling and steering vessels. Means for	A. L. Crosby	856,338	June 11	1759	365–6	128	2172
Propelling boats. Means for	W. G. Busse	857,868	June 25	4717	1001–2	128	2989
Propulsion. Marine	Y. Wadagaki	856,115	June 4	1265	266	128	2012
Pruning implement	D. W. and D. A. Watson	857,129	June 18	3288	693	128	2590
Puller: *See* Spike-puller. Tack and nail puller. Staple-puller.							
Pulley	G. Richards	857,304	June 18	3621	766	128	2683
Pulley	G. Richards	857,306	June 18	3624	767	128	2684
Pulley. Belt-	G. Richards	857,303	June 18	3620	766	128	2683
Pulley. Belt-	G. Richards	857,305	June 18	3622	767	128	2684
Pulley casing or housing	C. A. Brinley	857,548	June 18	4087	867	128	2801
Pulverizer, lister, and marker. Soil	J. W. Dalrymple	857,036	June 18	3105	655	128	2552
Pulverizing and grinding mills. Air-separator for	J. W. Fuller, Jr.	857,988	June 25	4989	1054	128	3058
Pulverizing or grinding mill	J. W. Fuller, Jr.	857,972	June 25	4850	1027	128	3021
Pump	W. F. Jacobs	855,783	June 4	658	134	128	1863
Pump	J. Bergstrom and C. A. Wahleen	856,215	June 11	1475	312	128	2100
Pump	F. Linthicum	856,271	June 11	1600	335	128	2132
Pump	H. Cline	856,845	June 11	2739	568	128	2421
Pump	J. P. Lavigne	857,004	June 11	3041	640	128	2496
Pump. Air-	G. H. Schuh and T. W. Hinton	856,372	June 11	1854	381	128	2199
Pump. Air-	F. E. Ten Eyck	858,039	June 25	5094	1079	128	3084
Pump-jack	O. O. Furru	855,626	June 4	350	72	128	1783
Pump. Oil-can	P. H. Corns	856,624	June 11	2348	483	128	2323
Pump-piston	J. W. Mallonee	855,647	June 4	386	80	128	1793
Pump-rod coupling	C. H. Nichols	857,659	June 25	4304	909	128	2885
Pump. Self-measuring oil-	J. B. Davis	855,504	June 4	118	24	128	1724
Pumps. Speed-regulator for	W. W. Satterthwaite	857,490	June 18	3971	844	128	2770
Pumping apparatus	G. J. Murdock	857,477	June 18	3946	838	128	2763
Pumping machinery	C. L. Heisler	856,636	June 11	2367	487	128	2328
Punching and shearing machine	R. Gerlach	855,765	June 4	624	128	128	1855
Punching-machine	W. Fehr	856,066	June 25	5161	1093	128	3102
Punching machine. Metal-	E. W. Summers	855,821	June 4	734	151–2	128	1880
Punching machine. Metal-	E. W. Summers	856,110	June 4	1253	263–4	128	2009
Puzzle	F. H. Lehman	856,196	June 4	1436	303	128	2055
Puzzle	R. W. Kemp, Jr.	858,074	June 25	5178	1097	128	3106
Puzzle. Railway-	H. G. Webster	856,749	June 11	2577	529	128	2382
Pyrographic burner	J. Hetherington	855,577	June 4	250	50	128	1759
Race. Live-animal	F. C. Roberts and H. J. Titus	855,670	June 4	426	89	128	1804
Rack: *See* Display-rack. Hat and coat rack. Farm-rack. Hose-rack. Folding rack. Scale-rack.							
Rack	C. F. Hoffman	856,584	June 11	2266	465	128	2301
Rack or holder	A. Lee	856,593	June 11	2275	468	128	2304
Radiating-circuit. Aerial	P. C. Hewitt	856,149	June 4	1348	283	128	2033
Radiator for heating apparatus	W. J. and W. J. Burroughes, Jr.	855,692	June 4	476	100	128	1818
Radiators. Manufacturing	F. Briscoe and J. M. Angulah	856,258	June 25	5514	1177	128	3192
Rail and other like joint	C. A. A. Chenu	857,229	June 18	3474	733	128	2646
Rail-bond	J. J. Brennan	856,127	June 4	1303	273	128	2022
Rail-bond punch	W. R. Condon	856,621	June 11	2343	482	128	2322
Rail-brake. Emergency clamp	E. S. Petterson and B. F. Newsome.	856,907	June 11	2856	596–7	128	2449
Rail-fastening	A. W. Avery	856,835	June 11	2721	563	128	2417
Rail-fastening device	A. Flamache and J. Gernaert	857,987	June 25	4987	1054	128	3058
Rail-joint	S. G. Weir	856,914	June 4	923	191	128	1927
Rail-joint	C. L. McVoy	856,086	June 4	1211	256	128	1999
Rail-joint	C. L. McVoy	856,087	June 4	1212	256	128	1999
Rail-joint	J. R. Norris	856,090	June 4	1216	257	128	2000
Rail-joint	S. W. Bowser	856,443	June 11	1999	411	128	2235
Rail-joint	J. D. Jones	856,882	June 11	2808	585	128	2438
Rail-joint	G. J. Becker	857,800	June 25	4708		128	2987
Rail-joint and anticreeping device	F. M. Volk	858,235	June 25	5479	1108	128	3133
Rail. Permanent way	H. W. Perry	857,199	June 18	3432	724	128	2635
Rail-tie	L. L. Cowen	856,032	June 4	1127	236	128	1979
Rail-tie	C. W. Israel	857,098	June 18	3175	668	128	2572
Rail. Track-	H. Laughlin, Jr., and D. Schuyler.	856,892	June 11	2273	468	128	2304
Railway and other vehicle coupling	J. Melland-Smith	855,649	June 4	389	81	128	1794
Railway block-signal system	H. G. Comstock	857,446	June 18	3877	823–4	128	2745
Railway-brake	C. Furman	856,491	June 11	2027	417	128	2242
Railway-brake	H. A. Coleman	857,792	June 25	4581	969	128	2966
Railway cattle-guard	H. B. Myers	857,093	June 18	3282	689	128	2584

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Railway conduit. Electric-	J. S. Alexander	855,492	June 4	95	20	128	1719
Railway-frog	R. E. Einstein	857,930	June 25	4847	1026	128	3021
Railway-rail	A. King	857,748	June 25	4478	945	128	2930
Railway-rail and rail-base plate. Combined	F. E. Abbott	857,781	June 25	4552	962	128	2948
Railway-rail fastening	R. G. Musgrove	855,472	June 4	58	13	128	1709
Railway-rail holder	F. B. Byers	855,755	June 4	607	125	128	1851
Railway-rail joint	S. A. Neuhard	855,725	June 4	536	113	128	1831
Railway-rails. Bridge and gage plate for	F. E. Abbott	857,780	June 25	4550	961–2	128	2948
Railway semaphore-signal	H. M. Abernethy	856,506	June 11	2100	431–2	128	2260
Railway-signal	C. C. Phillips	855,971	June 4	1027	213	128	1954
Railway-signal. Automatic	R. E. Dial	856,849	June 11	2745	570–1	128	2422
Railway signaling device. Electrical	E. L. Orcutt	856,094	June 4	1224	259	128	2003
Railway signaling system	F. M. Black	857,021	June 18	3071	649–51	128	2542
Railway-switch	J. M. Powell	856,805	June 11	2673	551–2	128	2405
Railway-switch. Automatic	O. L. Lance	856,787	June 11	2642	543–4	128	2397
Railway-switch. Automatic	J. G. Ryan	858,219	June 25	5449	1163	128	3176
Railway-switch. Electric	E. F. Winfield	855,601	June 4	301	62	128	1772
Railway switch-operating and signaling system	A. G. Wilson	856,324	June 11	1725	358	128	2165
Railway switching system	W. Macomber	856,273	June 11	1604	336	128	2133
Railway systems. Automatic contact mechanism for electric-	F. Hedley, J. S. Doyle, and H. Wallerstedt.	857,059	June 18	3156	664–5	128	2567
Railway systems. Automatic interlocking contact mechanism for electric-	F. Hedley, J. S. Doyle, and H. Wallerstedt.	857,058	June 18	3150	663–4	128	2566
Railway-tie	H. E. Matthews	855,960	June 4	998	209	128	1945
Railway-tie	A. S. Reavis	857,363	June 18	3728	788	128	2710
Railway-tie. Metallic	J. L. Gourley	857,051	June 18	3140	661	128	2563
Railway-tie. Metallic	P. M. Canty and H. W. Schoenfelt	857,328	June 18	3657	774	128	2693
Railway-tie. Metallic	D. P. McQueen	857,656	June 25	4299	908	128	2885
Railway-tie. Metallic	S. McElfatrick	857,479	June 18	3951	840	128	2765
Railway-track clamp	J. H. F. Shulze	858,110	June 25	5251	1114	128	3125
Railway-track construction	W. L. Clement	856,766	June 11	2604	535	128	2389
Railway-track equipment	W. H. Walden	858,124	June 25	5276	1120	128	3131
Railway-track fastener	C. C. W. Simpson	856,738	June 11	2555	525	128	2376
Railway-vehicle brake	R. B. Parsons	856,098	June 4	1232	260	128	2004
Railway-vehicle coupling. Automatic	L. M. Orosz	856,418	June 11	1956	402	128	2223
Railway-vehicle coupling. Automatic	W. F. Kemper	856,782	June 11	2636	542	128	2396
Railways. Third-rail cover for electric							
Rake: *See* Hay-rake. Sweep-rake. Lawn-rake.							
Range flue construction	A. C. Terrell	856,313	June 11	1702	353	128	2159
Ratchet-bolt	L. Heffner	856,868	June 11	2782	579	128	2431
Ratchet-clamp	F. E. Walden	856,436	June 11	1985	409	128	2231
Ratchet-power	J. H. Harden	856,143	June 4	1334	279	128	2030
Ratchet-wrench	J. L. Schad	858,030	June 25	5080	1075	128	3080
Razor	T. C. Durham	855,561	June 4	224	44	128	1753
Razor	J. Green	857,342	June 18	3687	780	128	2701
Razor-blade holder	T. F. Curley	858,155	June 25	5331	1134	128	3145
Razor-blade holder. Safety-	M. D. Fletcher	857,390	June 18	3782	801	128	2723
Razor. Safety-	L. H. Cobb	855,560	June 4	223	43	128	1753
Razor. Safety-	C. Ballreich	855,608	June 4	317	65	128	1776
Razor. Safety-	R. Martin	856,078	June 4	1197	254	128	1995
Razor. Safety-	J. J. Meehan	856,172	June 4	1390	293	128	2044
Razor. Safety-	D. E. Goe	856,343	June 11	1765	367	128	2174
Razor. Safety-	P. Beltrame and P. Falchi	856,438	June 11	1987	409	128	2232
Razor. Safety-	W. J. Moore	856,793	June 11	2654	546	128	2401
Razor strop and case. Combined	J. L. Reed	858,307	June 25	5307	1197	128	3212
Reamer	B. M. Nuzum	857,661	June 25	4307	909	128	2886
Reamers. Apparatus for restoring worn-out	R. S. Fetter	857,877	June 25	4729	1004	128	2991
Reaper platform-folding device	C. A. A. Rand	856,986	June 11	3004	631	128	2486
Receptacle-closure	A. L. Weissenthanner	857,698	June 25	4392	927	128	2909
Receptacle-opener	F. H. G. Morse	856,280	June 11	1624	338	128	2139
Recorder: *See* Cash-recorder. Time-recorder. Phonograph-recorder.							
Reel: *See* Clothes-line reel. Wire-cloth reel. Wire-reel.							
Refrigerating apparatus	F. A. Rider	855,983	June 4	1049	217–18	128	1959
Refrigerating-car	F. J. Gilroy	855,768	June 4	629	128–9	128	1856
Refrigerator	C. H. Mitchell and J. F. Wineland	855,962	June 4	1000	209	128	1946
Refrigerator	M. J. Bunnell	856,568	June 11	2220	459	128	2292
Refrigerator	R. E. Miller	857,887	June 25	4745	1008	128	2994
Refrigerator and filter. Combined	J. Y. Arnot	856,508	June 11	2103	432	128	2261
Refrigerator and water-cooler. Combined	E. Keene	857,944	June 25	4881	1032	128	3020
Register: *See* Cash-register. Wall-register. Tap-register.							
Register	C. Schillinger	857,309	June 18	3628	768	128	2685
Registering mechanism. Coin-operated	A. D. Grover and E. E. Barber	855,850	June 4	797	166–7	128	1806
Regulator: *See* Lamp-regulator. Temperature-regulator. Potential-regulator. Pressure-regulator.							
Rein-holder	G. Stockhill	856,554	June 11	2202	453	128	2285
Rein-holder	C. S. Chaffee	857,573	June 25	4725	1003	128	2990
Relay. Electric	I. Kitsee	856,163	June 4	1376	290	128	2040
Replanter attachment	L. Gudgell	856,433	June 11	2263	486	128	2227
Resetting mechanism. Auxiliary	W. Langrill	856,267	June 11	1591	333	128	2120
Retort-charging machine	L. W. Kirk	857,074	June 18	3188	671	128	2575
Retort-cover. Automatic	J. J. Barr	857,148	June 18	3325	701	128	2608
Retort. Extracting-	J. G. Gardner	856,049	June 4	1153	243	128	1984
Revetment for shores or banks. Anchor-	D. Neale	855,584	June 4	266	54	128	1768
Revolver-jacket. Extensible	J. Adrianson	855,420	June 4	1	1	128	1695
Revolvers. Hinge-joint for	J. C. E. Leach	855,793	June 4	673	138	128	1867
Revolving table	J. W. Hull	855,951	June 4	979	204	128	1941
Rheostat. Starting-	W. C. Yates	857,142	June 18	3312	696	128	2605
Rheostats. Slowing device for	W. B. Mason	855,797	June 4	678	139	128	1868
Ribbon-holder	E. S. Gray	855,848	June 4	793	166	128	1806
Rifle attachment	P. M. Mayville	855,648	June 4	388	80	128	1792
Rifle. Magazine-	B. W. Punches	855,589	June 4	277	56	128	1768
Rifle. Magazine-	J. Lauber	855,806	June 4	879	182	128	1915

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Rifle or shotgun	E. O. Johnson	857,468	June 18	3922	834–5	128	2757
Ring: *See* Cover-ring. Heat-radiating ring. Key-ring. Nut-ring. Oil-distributing ring. Set-ring. Spinning-ring.							
Roach-trap	A. G. Day	858,157	June 25	5334	1135	128	3146
Road-bed equipment	J. D. Kneedler	855,643	June 4	378	79	128	1791
Roadway for vehicles	Z. T. Sweeney	856,928	June 11	2890	605	128	2457
Rock-crusher	E. A. Hoff	857,940	June 25	4908	1029	128	3026
Rock-drill	J. B. Marshall	858,195	June 25	5402	1151	128	3163
Rod: *See* Curtain-rod.							
Roller: *See* Cable-roller. Curtain-roller.							
Roller-mill	J. Wüstenhöfer	855,602	June 4	304	62	128	1773
Rolling-mill	E. R. Fellows and A. Hubbard	856,044	June 4	1143	240–2	128	1983
Rolling-mill feed-table	S. V. Huber	857,282	June 18	3578	756–7	128	2673
Rolling-mill feed-table	S. V. Huber	857,283	June 18	3581	757–8	128	2673
Rolling-mill practice	T. S. Blair, Jr	856,676	June 11	2444	502	128	2347
Rolling-pin	C. L. Sanford	857,308	June 18	3626	768	128	2685
Roofing. Ready-made	G. D. Crabbs and W. H. Pendery	855,757	June 4	611	125	128	1852
Roofs. Gutter and valley-trough for	H. Cooper	857,601	June 25	4201	888	128	2858
Rope and bucket coupling	W. F. Smith	856,308	June 11	1696	352	128	2157
Rope-holder	C. H. Herbert	856,256	June 11	1571	330	128	2125
Rope-thimble	G. C. Brown	857,717	June 25	4425	935	128	2916
Rotary engine	O. O. and O. Goserud, Jr	855,629	June 4	353	73	128	1784
Rotary engine	E. T. Haun	855,852	June 4	801	167	128	1896
Rotary engine	M. Schmidt	855,906	June 4	906	188	128	1923
Rotary engine	B. A. Slade	856,789	June 11	2557	525–6	128	2377
Rotary engine	T. Keenan	857,558	June 18	4104	871	128	2805
Rotary engine	W. C. Kelly	858,073	June 25	5175	1096–7	128	3105
Rotary engine	M. Bey	858,144	June 25	5316	1129–30	128	3141
Rotary meter	P. Polltowski	855,663	June 4	417	87	128	1801
Rotary motor	J. Ripberger	855,590	June 4	281	57	128	1767
Rotary motor	E. Towlson	856,317	June 11	1708	355	128	2161
Rotary motor	F. L. Gregory	856,631	June 11	2359	485–6	128	2326
Ruler. Blackboard	M. C. Benedict	858,254	June 25	5507	1176	128	3191
Sad-iron	G. M. Urie	856,825	June 11	2705	559	128	2414
Sad-iron heater	A. M. Clarke	856,223	June 11	1498	316	128	2105
Saddletree	J. Bevan	858,055	June 25	5143	1088	128	3097
Safe attachment	C. W. Burkhead	855,499	June 4	112	23	128	1722
Safe-door	W. C. Hattersley	855,706	June 4	499	104	128	1822
Safe-lock	E. A. Siegfreid	858,111	June 25	5252	1115	128	3125
Safety-elevator	G. L. Wheeler	857,999	June 25	4394	927	128	2909
Safety-pin	W. Strayer	856,821	June 11	2700	557	128	2412
Sale-machine for bread and butter. Automatic	E. W. Lindgren	855,516	June 4	139	28	128	1729
Salt and pepper shaker. Combination	H. W. Jackson	856,064	June 4	1176	249	128	1990
Salt. Making	A. E. McClain	856,597	June 11	2283	470	128	2306
Sap-collecting apron and receptacle. Sheet-metal	E. R. Philip	858,305	June 25	5593	1196	128	3211
Sap-cup hook	T. A. McGregor	857,823	June 25	4638	984	128	2970
Sap-receiving apron and receptacle	C. Stollberg and E. R. Philip	857,847	June 25	4686	994	128	2981
Sap-receiving receptacle and apron	F. Rudolphi	857,964	June 25	4938	1044	128	3044
Sap receptacle or vessel. Sheet-metal	C. Stollberg	857,846	June 25	4685	994	128	2981
Sash-fastener	A. O. Baker	857,322	June 18	3647	773	128	2690
Sash-fastener	D. Wilde	858,245	June 25	5493	1172	128	3188
Sash-operating device. Window	P. Knöchel	855,788	June 4	666	136	128	1865
Sash-operating device. Window	C. Brown	857,592	June 25	4178	885	128	2853
Sash-weight	J. R. N. Curtin	856,035	June 4	1132	237	128	1980
Sash. Window	E. J. Orr	856,419	June 11	1957	402	128	2224
Satchel	M. Duplessis	856,042	June 4	1141	240	128	1982
Saw and drill. Combined jig	V. E. Royle	855,814	June 4	718	148–9	128	1877
Saw-filing machine	O. Schmachtenberger	855,573	June 4	436	90–2	128	1807
Saw-guide	O. F. Giffin	858,277	June 25	5543	1185	128	3199
Saw guide. Band	J. J. Callahan	858,148	June 25	5323	1132	128	3143
Saw-set	W. H. Clendenon	855,616	June 4	332	68	128	1779
Saw-set	J. Falz	856,522	June 11	2132	438	128	2267
Saw-swage	A. R. Wilson	856,381	June 11	1872	386	128	2204
Saw-swage	J. Hanchett	858,175	June 25	5369	1142	128	3154
Saw-tool	W. Bryson	857,438	June 18	3865	821	128	2742
Sawing machine. Stump	R. Webb	856,826	June 11	2707	559–60	128	2414
Sawmill set-works	A. C. Osborn	857,663	June 25	4310	910	128	2887
Scaffold-support	E. McCoy and C. H. H. Wheeler	856,084	June 4	1206	255	128	1997
Scale	W. Bussehmann	855,754	June 4	606	125	128	1851
Scale	F. P. Dunn	856,908	June 11	3031	638	128	2494
Scale	M. M. Schwartz	857,416	June 18	3825	811	128	2734
Scale and producing iron sulfate. Electrolytically removing	C. J. Reed	855,667	June 4	422	.....	128	1802
Scale-lever	J. B. Paige	858,014	June 25	5054	1069	128	3074
Scale-rack. Adjustable	C. W. Worthington	858,316	June 25	5613	1202	128	3216
Scale. Railway-track	W. N. Gilbert	856,248	June 11	1560	327	128	2122
Scarfing-machine	C. F. Stackpole	857,682	June 25	4350	920	128	2897
Scissors. Pocket-tool	F. W. Klever	858,003	June 25	5030	1062	128	3068
Scraper	T. Booth	857,226	June 18	3469	732	128	2645
Scraper	J. E. Culver	857,269	June 18	3552	752	128	2666
Screen: *See* Well-screen. Window-screen.							
Screen	J. A. Grant	855,769	June 4	631	129	128	1856
Screen	A. Bufe	856,221	June 11	1496	315	128	2105
Screens. Rotary-die machine for making slotted	T. C. Walker, Jr	856,580	June 11	2215	456	128	2289
Screw-eye driver	H. C. Rhoads	855,905	June 4	905	188	128	1922
Screw lock. Set	H. C. Werner	858,241	June 25	5488	1171	128	3186
Screw-machine	G. H. Newton	857,898	June 25	4765	1011–13	128	3000
Screw-press for molding tablets	H. Endemann	857,043	June 18	3121	658	128	2656
Screw-wrench	W. H. Litzenberger and L. A. Tornquist	855,714	June 4	512	108	128	1826
Seal. Bottle	A. G. Kaufman	856,188	June 4	1368	288	128	2038
Seal. Bottle	E. D. Schmitt	856,204	June 11	1685	249	128	2154
Seal. Bottle	K. C. Gillette	856,400	June 11	1916	404	128	2214
Seal. Metallic envelop	A. Schorno	857,908	June 25	4803	1019	128	3000
Seals. Applying bottle	E. D. Schmitt	856,917	June 11	3675	602	128	2453

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Sealing device. Bottle	F. W. Hall	857,619	June 25	4234	895	128	2868
Sealing metal receptacles for food. Device for hermetically	G. Farquhar and R. North	856,688	June 11	2460	506	128	2351
Seam for uniting materials	J. C. Ivory	857,465	June 18	3912	832	128	2755
Seaming machine. Pipe	W. F. Norman	857,750	June 25	4492	948	128	2933
Seat: *See* Car-seat. Chair-seat.							
Seat-spring	C. M. Haeske	857,054	June 18	3144	662	128	2564
Seats. Adjustable back for cushion	T. J. McNamara, Jr. and G. Krummen.	855,656	June 4	401	84	128	1797
Seed-distributer	F. R. Packham	857,195	June 18	3425	721–2	128	2634
Seed-separator	W. Meyer	857,248	June 18	3506	741	128	2654
Seed. Treatment of cotton	I. Kitsee	856,075	June 25	5178	1097	128	3106
Semaphore. Electric	E. L. Orcutt	856,095	June 4	1227	259	128	2003
Semirotary motor	J. E. Rempe	856,182	June 4	1410	298	128	2048
Separator: *See* Ash-separator. Cotton-separator. Cream-separator. Grain-separator. Liquid-separator. Seed-separator. Water and gas separator.							
Separator	J. F. Senter	856,551	June 11	2193	452	128	2282
Set-ring	G. H. Best	857,862	June 25	4710	999	128	2987
Sewed fabrics. Producing	B. H. Zimmerman	857,510	June 18	4011	854	128	2780
Sewer-pipe	J. M. Phelan	858,102	June 25	5237	1110	128	3122
Sewing-machine	W. Jasper	857,070	June 18	3179	668–9	128	2573
Sewing-machine	W. T. Lintner, W. C. Robbins, and J. P. Weis.	857,082	June 18	3209	674–5	128	2579
Sewing-machine	C. McNeil and C. L. Sturtevant	857,532	June 18	4059	862–3	128	2794
Sewing-machine attachment	E. D. Harris	858,176	June 25	5371	1142	128	3154
Sewing-machine bearing	W. S. Reser	857,537	June 18	4066	864	128	2796
Sewing-machine. Blindstitch	D. Flanagan	856,990	June 11	3034	638	128	2495
Sewing machine. Buttonhole	E. B. Allen and W. E. Goodyear	856,014	June 4	1098	228	128	1971
Sewing machine. Buttonhole	E. B. Allen	858,133	June 25	5290	1124	128	3134
Sewing machine. Carpet	E. B. Allen	858,134	June 25	5293	1125	128	3135
Sewing-machine for circular hemming	A. Laubscher	856,166	June 4	1380	290–1	128	2041
Sewing-machine for producing scalloped tucks	A. H. De Voe	858,161	June 25	5343	1136	128	3148
Sewing-machine. Hemstitch	J. C. O'Reilly	858,098	June 25	5231	1109	128	3120
Sewing-machine presser-foot	E. T. Allan	857,431	June 18	3856	819	128	2740
Sewing-machine shuttle	C. F. Zanzig	856,830	June 11	2715	562	128	2416
Sewing-machine shuttle and feeder driving mechanism	H. Köhler	856,531	June 11	2149	442–3	128	2271
Sewing-machine stitch-forming device	R. L. Lyons	856,645	June 11	2381	490	128	2331
Sewing-machine trimmer	J. D. Schoonmaker	857,491	June 18	3973	844–5	128	2771
Sewing-machines. Oil-guard for	A. Heller and J. Roman	856,779	June 11	2633	541	128	2395
Sewing-machines. Rotary take-up for	J. Diehl	856,572	June 11	2243	460–1	128	2295
Shade-cutting device	F. W. Hubbard and T. A. Morton	856,403	June 11	1920	395	128	2215
Shade fixture. Window	D. Rosenberg and J. B. Hartnett	856,302	June 11	1682	349	128	2154
Shade pull. Window	C. A. Schelf	856,987	June 11	3007	631	128	2487
Shade-roller mounting	J. J. Bloomer	858,056	June 25	5143	1089	128	3098
Shade-roller support	A. Dupont	856,521	June 11	2131	438	128	2267
Shaft-coupling	J. W. Albert	856,199	June 11	1452	306	128	2093
Shaft-hanger	J. A. Manahan	857,528	June 18	4044	861	128	2789
Shaft-oscillator	C. E. Lord and W. F. Bouché	856,538	June 11	2158	444–5	128	2273
Shafting-straightening machine	R. M. Correy	856,625	June 11	2350	483	128	2323
Shaking-bolt	W. B. Howard	857,942	June 25	4877	1031	128	3029
Shaking-machine	J. M. Camp and W. Ahlen	856,619	June 11	2338	481	128	2320
Shapers or planers. Work-holder for	M. and H. E. Morton	855,583	June 4	265	54	128	1763
Sharpener. Cutter-head-knife	H. B. Ross	856,726	June 11	2534	521	128	2370
Sheaf-loading machine	J. Graham	856,051	June 4	1155	244	128	1965
Shearing-knife	W. E. Nagle	856,719	June 11	2520	518	128	2366
Shearing-machine	R. Gerlach	855,766	June 4	626	128	128	1855
Shears	A. N. Eastman	858,359	June 25	5733	1222	128	3252
Sheet fastener. Loose	F. P. Harris	857,238	June 18	3491	737	128	2650
Sheet-metal receptacle	L. F. Betts	855,925	June 4	943	195	128	1931
Shelf-bracket	H. T. Sorrell	855,994	June 4	1064	221	128	1963
Shelf-bracket. Self-locking	H. Thomas	857,543	June 18	4078	866	128	2799
Shelf or rack	G. E. Dean	857,724	June 25	4442	938	128	2921
Shelf. Window	R. B. Smart	858,112	June 25	5255	1116	128	3126
Shelves. Anti-lost-motion device for pull-out	L. Day	857,271	June 18	3555	753	128	2666
Shingle. Earthenware	F. Orlikowski and L. H. Koehnle	855,475	June 4	65	14	128	1711
Shingle-mold	J. C. Herring	855,633	June 4	362	75	128	1786
Shingling-bracket	S. T. Wootan	856,932	June 11	2896	607	128	2458
Shingling-gage for hatchets	C. Vollmer	856,434	June 11	1981	407	128	2230
Ships. Device for transporting	E. C. West and A. F. Wolther	857,264	June 18	3543	750	128	2663
Ships. Safety-float for	R. Held	856,402	June 11	1920	394	128	2215
Ships with coal or the like. Appliance for loading	W. Bisset	857,784	June 25	4556	963–4	128	2940
Shirt	P. Kraemer	856,591	June 11	2273	467	128	2303
Shoe	E. Hayes	857,999	June 25	5024	1061	128	3067
Shoe cleaning and blackening device	C. C. Griner	856,863	June 11	2774	577	128	2429
Shoe-dauber	R. E. Saffold	856,733	June 11	2549	523	128	2374
Shoe-dauber	W. W. Peyton	856,908	June 11	2858	597	128	2449
Shoe-fitting appliance	C. W. Schell	857,837	June 25	4666	990	128	2977
Shoe. Pole-climbing	C. F. and C. G. Youngquist	857,430	June 18	3853	818	128	2740
Shoe tree or stretcher. Adjustable	J. S. Hansen	857,055	June 18	3144	662	128	2564
Shoes. Making	E. Bayard	855,831	June 4	752	155	128	1884
Shot. Making	T. E. Reddy	857,756	June 25	4508	951	128	2938
Shovel: *See* Power-shovel.							
Shoveling-board	D. Wilde	858,242	June 25	5489	1171	128	3186
Shut-off. Automatic	J. G. Hall	858,279	June 25	5546	1186	128	3200
Shutter-fastener lock	B. Albertson	856,669	June 11	2427	500	128	2342
Shutter-operating device. Window	H. N. Lowenthal	856,969	June 11	2969	622	128	2478
Shuttle. Weaving	C. C. Howland	855,511	June 4	130	27	128	1727
Sign	H. L. Beach	855,747	June 4	594	122	128	1848
Sign	G. L. Crabb	856,227	June 11	1506	317	128	2108
Sign. Metal	M. Mayer	857,646	June 25	4283	904	128	2880
Signal: *See* Air-signal. Electric signal. Railway-signal. Railway semaphore-signal. Track-spreading signal.							
Signal	H. W. Eden	858,064	June 25	5159	1093	128	3102

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Signal-light apparatus	G. Dalén	857,035	June 18	3103	656	128	2551
Signaling device. Electric	E. L. Orcutt	855,966	June 4	1005	211	128	1947
Signaling device. Electric	E. L. Orcutt	855,967	June 4	1010	211	128	1949
Signaling device. Electric	E. L. Orcutt	855,968	June 4	1013	211	128	1950
Signaling mechanism	W. A. Pearce	856,290	June 11	1649	342	128	2144
Signaling system	G. H Bowen	856,511	June 11	2109	433–4	128	2262
Signaling system. Electric	E. L. Orcutt and R. Sheldon	855,727	June 4	546	113	128	1835
Signaling system for alternating currents	L. H. Thullen	858,120	June 25	5268	1118	128	3129
Siphon. Plural alternating	S. W. Miller	857,355	June 18	3712	784–5	128	2706
Skate	B. A. Cure	857,925	June 25	4837	1025	128	3018
Skimmer	J. F. Irby	858,291	June 25	5596	1190	128	3205
Skirt-hanger	J. C. Liberty	858,298	June 25	5581	1193	128	3209
Skirt. Lady's	J. Greenwald	855,885	June 4	856	177	128	1910
Skirt-supporter, placket-closer, and waist-holder. Combined	R. S. Valentine	858,041	June 25	5098	1080	128	3085
Skittle	M. Pieper	855,806	June 4	699	142	128	1872
Sleeping-bag	H. W. Wilson	857,507	June 18	4008	853	128	2779
Sleigh-runner	H. J. Schneider and H. Tietz	856,988	June 11	3008	632	128	2487
Slicer. Meat-	F. P. Burkhardt	857,155	June 18	3336	704	128	2610
Slitting-machine	A. Allen	855,742	June 4	583	119–20	128	1846
Smelting-furnace	E. Bosshardt	855,927	June 4	945	196	128	1932
Smelting refractory ores and producing ferro-alloys	E. F. Price	855,478	June 4	70	15	128	1712
Smelting refractory ores and producing ferro-alloys	E. F. Price	855,479	June 4	72	15	128	1713
Smoke and cinder conductor	H. L. Larisey	857,471	June 18	3933	836	128	2759
Smoke-consuming furnace	F. Fisher	856,341	June 11	1763	367	128	2174
Smoke-consuming furnace	T. Murrin	858,012	June 25	5050	1068	128	3073
Smoke in stoves and furnaces. Apparatus for consuming	C. J. Roux	858,106	June 25	5244	1112	128	3124
Smoking-pipe	R. G. Fling	856,045	June 4	1146	242	128	1983
Smoothing-iron heater	A. Du Brau	855,760	June 4	615	126	128	1853
Snake, &c. Artificial	J. N. Brown	857,593	June 25	4180	885	128	2854
Snap-hook	G. M. Hubbard	857,403	June 18	3804	807	128	2728
Snow and ice. Means for keeping switch and signal apparatus free from	F. G. Shaw	856,184	June 4	1413	296–9	128	2049
Snow. Machine for traveling on	A. J. Gold	855,882	June 4	852	176	128	1909
Snow-plow	P. Hannagan	855,898	June 4	857	178	128	1910
Soap. Manufacture of	P. Krebitz	858,295	June 25	5575	.....	128	3207
Soap. Tag-rest for	L. C. Allen	857,570	June 25	4142	877	128	2843
Sod trimming and marking device	W. Foster	855,844	June 4	785	165	128	1893
Soldering caps on cans. Machine for	H. F. Harfst and R. B. Prater	857,801	June 25	4599	974–5	128	2960
Soldering-iron holder and heater	C. Sommer	858,036	June 25	5089	1077	128	3083
Soldering machine. Can-	E. F. Hartlove	856,668	June 11	2479	510	128	2355
Sound-producing device	W. C. Smith	857,209	June 18	3445	737	128	2639
Sound-record. Duplicate	J. W. Aylsworth	855,556	June 4	218	42	128	1752
Sound-records. Making duplicate	J. W. Aylsworth	855,555	June 4	215	42	128	1751
Sound-records. Making duplicate	J. W. Aylsworth	855,606	June 4	312	64	128	1775
Sounds. Means for recording	W. L. Stilwell	856,553	June 11	2200	452	128	2284
Soup-straining apparatus	C. Latsch	856,963	June 11	2957	620	128	2474
Spark and soot arrester	R. Wagenschieffer	857,693	June 25	4385	925	128	2906
Sparking plug	W. B. Hayden	858,282	June 25	5551	1187	128	3201
Spectacles, motor-goggles, and the like	F. G. Shaw	857,838	June 25	4668	990	128	2977
Speed and power-transmitting device. Variable-	T. Scheffler	857,679	June 25	4339	917–18	128	2895
Speed-changing device	R. C. Ogburn	857,300	June 18	3611	764–5	128	2681
Speed-changing device	R. K. Le Blond and W. F. Groene	857,562	June 18	4121	873	128	2807
Speed-changing mechanism	E. A. Muller	857,357	June 18	3719	785	128	2708
Speed-changing mechanism	G. D. Munsing	857,476	June 18	3943	838	128	2762
Speed-changing mechanism	C. J. Reed	858,024	June 25	5068	1073	128	3077
Speed-regulating mechanism	G. F. Leiger	857,636	June 25	4266	901–2	128	2876
Speed-regulating mechanism	G. F. Leiger	857,637	June 25	4269	902	128	2877
Speed transmission. Variable-	R. E. Lincoln	857,081	June 18	3206	674	128	2578
Speed varying and reversing mechanism	L. and R. Bleitz	855,613	June 4	328	67	128	1778
Speedometer	J. K. Stewart	855,676	June 4	442	92	128	1809
Spike-puller	T. C. Gatti	855,564	June 4	229	45	128	1754
Spindle: *See* Wheel-spindle.							
Spinning and twisting rings. Ring-holder for	G. L. Pierce	857,535	June 18	4063	863	128	2796
Spinning-frame	J. Appleby	855,921	June 4	935	194	128	1930
Spinning or twisting apparatus. Rotary-ring	J. T. Meats and G. E. Chandler	857,088	June 18	3220	677	128	2581
Spoke. Metal wheel-	C. Heart	857,001	June 11	3037	639	128	2496
Spoon	F. B. Comins	856,768	June 11	2608	536	128	2390
Spot-setting machine	S. W. Reynolds	856,730	June 11	2539	522	128	2371
Spray motor. Steam-	J. Loftus	856,968	June 11	2967	621–2	128	2478
Spray-nozzle. Atomizing	A. Franchetti	857,566	June 18	4131	875	128	2809
Sprayer for hose-nozzles	J. A. Carlson	855,444	June 4	9	3	128	1697
Spring: *See* Bed-spring. Thermostatic spring. Seat-spring. Vehicle-spring.							
Spring-cushion work	M. A. Phelps	857,666	June 25	4313	911	128	2888
Spring-jack-mounting plate	H. P. Hibbard	856,955	June 11	2934	616	128	2467
Spring-wheel for motor-cars and other vehicles	L. and J. Jackson	856,890	June 11	2802	584–5	128	2436
Square. Combination-	A. B. Schlageter	855,987	June 4	1054	219	128	1960
Square. T-	E. Werner	855,916	June 4	926	192	128	1928
Stacker	W. W. Miller	855,650	June 4	391	82	128	1794
Stacker. Hay-	R. S. and G. D. Lewis	856,966	June 11	2962	621	128	2476
Stacker. Pneumatic straw-	T. N. Sellers	856,609	June 11	2316	476	128	2315
Stairway	F. B. Modjeski	858,199	June 25	5408	1152	128	3164
Stake-pocket and shaft-bearing. Combined	R. E. Frame	855,943	June 4	969	201	128	1938
Stamp	J. P. O'Conner and J. E. Wright	856,799	June 11	2664	549	128	2403
Stamp-affixing machine	G. O. Thompson	857,499	June 18	3995	850–1	128	2777
Stamp. Elapsed-time	B. F. Merritt	855,900	June 4	895	185–6	128	1920
Stamp. Hand-	A. J. Sauerbier	856,915	June 11	2873	601	128	2453
Stamp or label affixing machine	T. C. Hook	857,625	June 25	4247	897	128	2871
Stand: *See* Adjustable stand. Embroidery-stand. Camera-stand. Switch-stand. Display-stand. Trolley-stand.							
Staple-puller	H. Breiding	858,257	June 25	5513	1176	128	3192
Star-finder	J. T. Rogers and W. H. Ridings	856,912	June 11	2868	599–600	128	2451
Station-indicator	H. L. Keeler	857,630	June 25	4255	898–9	128	2873
Stay-bolt. Flexible	T. H. Mooney	856,977	June 11	2986	626	128	2481

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Steam-boiler	E. E. Carr	855,934	June 4	955	198	128	1934
Steam-boiler	W. Robertson	857,206	June 18	3442	726	128	2637
Steam-boiler. Oil-burning	T. W. Heintzelman and J. G. Camp.	857,170	June 18	3371	710–11	128	2620
Steam-generator	M. Connor	857,723	June 25	4439	937–8	128	2921
Steam or air engine. Oscillating	C. Dawe	856,517	June 11	2123	436–7	128	2266
Steel. Apparatus for treating molten	F. S. Adams	855,603	June 4	306	63	128	1773
Steel dies. Producing	G. F. Diez	857,926	June 25	4838	.....	128	3019
Steel-tired wheel	I. E. McCracken and E. S. Woods	856,506	June 11	2284	470	128	2307
Steel with low carbon. High-manganese	R. A. Hadfield	856,250	June 11	1564	.....	128	2123
Steering-check	H. Lemp	855,463	June 4	41	10	128	1705
Steering-engine	F. D. Patten	855,207	June 25	5427	1157–8	128	3170
Steering-gear	E. Huber	858,186	June 25	5390	1148	128	3160
Stereoscope	H. E. Richmond	857,539	June 18	4071	865	128	2797
Stick-feeder	W. H. Waldron	857,427	June 18	3848	817	128	2738
Stick-feeder	W. H. Waldron	858,125	June 25	5277	1120	128	3132
Stocking	F. W. Lum	858,006	June 25	5038	1065	128	3070
Stoker. Traveling-grate	J. E. Bell	857,011	June 18	3055	644	128	2535
Stone-cutting bit	C. N. Johnson	858,072	June 25	5174	1096	128	3105
Stone-dressing machine	W. H. Van Sickel	857,692	June 25	4383	924	128	2905
Stone mold. Artificial-	F. Nelson	857,413	June 18	3820	810	128	2733
Stone-picker	G. L. Holliday and I. S. Hawks	856,780	June 11	2633	541	128	2395
Stopper: *See* Bottle-stopper.							
Stove	L. Miller	857,649	June 25	4286	905	128	2881
Stove. Cooking-	V. M. Braschi	856,023	June 4	1114	231–2	128	1976
Stove. Cooking-	F. Harper	856,681	June 11	2258	464	128	2299
Stove. Electric cooking-	D. C. Smith	855,536	June 4	174	35	128	1738
Stove. Electrically-heated	F. Gutjahr	856,054	June 4	1161	245	128	1986
Stove. Gas-	E. Quack	856,366	June 11	1844	378–9	128	2106
Stove. Heating-	W. Heuermann	858,285	June 25	5556	1188	128	3203
Stove-leg fastening	L. J. Grinberg	855,567	June 4	232	45	128	1755
Stove or range base	M. F. Allen	856,754	June 11	2584	530	128	2394
Stove. Regenerative hot-blast	F. C. Roberts	856,300	June 11	1675	347–8	128	2152
Stoves. Chimney-valve for hot-blast	W. F. Rust	856,603	June 11	2298	472	128	2311
Stoves. Valve-guard for gas-	T. Haley	856,057	June 4	1165	246	128	1987
Stovepipe-holder	A. E. Gowin and B. F. Brown	855,703	June 4	493	102	128	1821
Stovepipe-joint	W. S. Bickel	856,839	June 11	2728	566	128	2419
Stovepipe-thimble and flue-stopper	D. Harding	857,522	June 18	4034	859	128	2786
Strap: *See* Buckle-strap.							
Street-sweeping machine	G. Pum	857,415	June 18	3822	810	128	2733
Stretcher, couch, hammock, or chair. Portable	H. J. Thomson	856,315	June 11	1705	354	128	2160
Strip-serving device	S. Elliott	856,136	June 4	1321	276	128	2026
Strut with toggle action. Adjustable	G. Keller	856,159	June 4	1370	288–9	128	2039
Stud	P. Dosch	857,875	June 25	4727	1004	128	2991
Stud. Snap-fastener	H. Kerngood	857,559	June 18	4105	871	128	2805
Stuffing-box	J. Halterman	857,395	June 18	3790	803	128	2725
Sulfate crystals. Recovering	F. H. Daniels, A. F. Backlin, and H. K. Swinscoe.	857,793	June 25	4582	969–70	128	2957
Superheater-boiler	J. E. Bell	857,013	June 18	3059	645	128	2538
Superheater-boiler	J. E. Bell	857,014	June 18	3060	646	128	2539
Superheater-boiler	J. E. Bell	857,015	June 18	3063	647	128	2540
Surgical needle	T. C. Edwards	856,695	June 11	2458	506	128	2350
Surveying instrument. Borr-hole-	K. W. O. Schweder	856,990	June 11	3011	633	128	2488
Suspenders. Right and left hand distinguishing	C. K. Colvin	855,502	June 4	116	23	128	1723
Sweep-rake	F. Nelson	857,412	June 18	3817	809	128	2732
Swing	E. B. App	855,493	June 4	97	20	128	1719
Swing	F. F. McCaulley	857,653	June 25	4292	906	128	2882
Swing. Adjustable	C. F. Bean	857,432	June 18	3857	819	128	2741
Switch: *See* Automatic switch. Flush switch. Derailing-switch. Railway-switch. Electric switch. Tank-switch. Electric-light switch. Time-switch. Electric snap-switch. Tramway-switch. Electrical switch.							
Switch	C. E. Frye	858,276	June 25	5541	1184	128	3199
Switch	A. C. Higginbotham	858,342	June 25	5673	1212	128	3226
Switch and semaphore mechanism	J. J. Gard	856,823	June 11	2134	438	128	2267
Switch-box. Electric	W. R. Atkinson	855,550	June 4	209	40	128	1749
Switch-lock	W. Anderson	856,437	June 11	1986	409	128	2232
Switch-operating device	L. Z. Preston	857,201	June 18	3434	724	128	2636
Switch-stand	F. M. Foster	855,763	June 4	619	127	128	1854
Switch-stand	W. Carter	856,336	June 11	1757	364–5	128	2172
Switch-stand	M. W. Long and J. M. Hoffer	857,289	June 18	3593	760–1	128	2676
Switch-stand	M. W. Long	857,290	June 18	3596	761	128	2677
Switch-stand	M. W. Long	857,291	June 18	3598	762	128	2678
Switch-stand. Automatic	G. M. Howe	856,062	June 4	1172	247–8	128	1989
Switching device	A. M. Haubrich	857,621	June 25	4238	895	128	2890
Switchboard support. Electric-	C. F. Warner	856,666	June 11	2424	499	128	2341
Syringe. Fountain hypodermic	C. W. Kennerly and B. E. Stockwell.	857,730	June 25	4474	944	128	2930
Syringe-nozzle	H. F. Ong	856,093	June 4	1223	258	128	2003
Syrup-dispensing apparatus	F. H. Lippincott	857,814	June 25	4626	981	128	2967
System-lock	H. P. Townsend	857,091	June 25	4373	924	128	2902
Table: *See* Ironing-table. Revolving table. Pool-table. Rolling-mill feed-table.							
Table	H. H. Levy	856,788	June 11	2644	544	128	2398
Table and rack for clothing. Combination	W. H. Lowe	856,595	June 11	2278	469	128	2305
Table for kitchens. Combination-	T. Druzbach	858,163	June 25	5361	1137	128	3180
Tables. Fastening device for	C. Hepp	856,255	June 11	1570	329	128	2124
Tablet. Writing-	J. B. LePeek	855,965	June 4	1004	210	128	1947
Tachometer	W. L. Bryant	857,979	June 25	4972	1051	128	3054
Tack and nail puller	R. R. Smith	856,024	June 25	5085	1077	128	3082
Tacker. Hand-	A. W. Eaton	856,399	June 11	1914	393	128	2214
Tag	C. C. Blake	856,388	June 11	1890	389	128	2208
Tag and seal. Combined	J. A. Daugherty	858,264	June 25	5525	1180	128	3195
Tag. Jeweler's	C. T. Wittstein	857,778	June 25	4547	960	128	2947

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Tag. Marking or pin	L. N. Bishop and L. Mapes	858,330	June 25	5633	1206	128	3221
Tag. Shipping	W. N. Bragg	856,218	June 11	1492	314	128	2104
Tail-holder	A. B. Allen	858,250	June 25	5502	1175	128	3190
Talking-machine	H. Sheble	855,674	June 4	440	92	128	1808
Talking-machine	J. H. Elfering	855,761	June 4	616	127	128	1853
Talking-machine	E. R. Johnson	856,704	June 11	2489	511	128	2358
Talking-machine	D. Kline	858,077	June 25	5182	1098	128	3107
Talking-machine diaphragm	T. A. Edison	855,562	June 4	225	44	128	1753
Talking-machine records. Removing labels from	C. S. Wickes	856,613	June 11	2327	478	128	2318
Talking-machine sound-box	L. P. Valiquet	855,736	June 4	574	118	128	1843
Talking-machine sound-box	M. A. Possons	857,483	June 18	3958	841	128	2766
Talking-machines. Apparatus for removing labels from records for	C. S. Wickes	856,323	June 11	1722	358	128	2164
Tan-vats. Apparatus for mixing liquor in	G. Place	858,103	June 25	5238	1110–11	128	3123
Tank: *See* Electrolytic tank. Water-tank.							
Tank-switch. Electric	J. T. Anderson	858,135	June 25	5296	1125	128	3136
Tap-grinding machine	O. M. Mowat	856,978	June 11	2987	626	128	2482
Tap-holder	D. Kihlgren	857,632	June 25	4258	899–900	128	2874
Tap register. Beer	N. Horon	856,872	June 11	2788	581	128	2432
Tapping-machine	I. C. Shaw	855,907	June 4	908	188–9	128	1923
Tapping-machines. By-pass and waste for	H. Mueller	856,650	June 11	2390	492	128	2333
Tape-line anchor	C. J. Beller	856,938	June 11	2904	608	128	2460
Target-throwing trap	E. W. and A. J. Reynolds	858,026	June 25	5070	1073–4	128	3078
Teaching and learning arithmetic. Apparatus for	J. Juhász	856,068	June 4	1182	250	128	1992
Telegraph apparatus	V. C. Balding	856,837	June 11	2725	565	128	2417
Telegraph-line. Duplexing	I. Kitsee. (Reissue)	12,664	June 25	5738	1223	128	3254
Telegraph-repeater	W. Rogers	858,216	June 25	5443	1162	128	3174
Telegraph-transmitter. Keyboard	R. Wolters	856,504	June 11	2098	431	128	2259
Telegraphy. Receiving apparatus for wireless	L. Arnson	857,375	June 18	3753	794–5	128	2716
Telephone apparatus	W. Kaisling	856,260	June 11	1576	331	128	2126
Telephone-exchange. Automatic	N. E. Norstrom	857,959	June 25	4915	1038–41	128	3038
Telephone-exchange system	H. G. Webster	855,545	June 4	195	39	128	1745
Telephone-exchange system	H. G. Webster	855,546	June 4	202	39	128	1748
Telephone-index	S. A. Kitchener	856,161	June 4	1373	289	128	2040
Telephone-lineman's grab-seat	C. Randall	857,203	June 18	3438	725	128	2637
Telephone lock-out device	R. C. M. Hastings and T. Matheny	856,146	June 4	1339	280–1	128	2031
Telephone-receiver	K. M. Turner	855,911	June 4	917	190	128	1925
Telephone-switch. Automatic	C. M. Thompson	857,966	June 25	4940	1045	128	3044
Telephone system	F. B. Cook and J. G. Nolen	856,570	June 11	2233	459	128	2293
Telephone system	L. B. Niemann	857,480	June 18	3952	840	128	2765
Telephone. Wireless	F. J. McCarty	857,530	June 18	4046	861	128	2790
Telephones. Memorandum-tablet for	H. H. Myers	856,177	June 4	1398	295–6	128	2045
Telephony. Multiplex	M. Leblanc	857,079	June 18	3195	672	128	2576
Telescope. Gun-sight	E. Dönitz	856,520	June 11	2130	437	128	2267
Temperature-regulator	F. B. Kemmler	857,073	June 18	3187	671	128	2575
Tennis-net	J. C. Chapin	857,598	June 25	4190	886	128	2855
Test materials, principally for compression. Machine to	A. Gagarine	857,613	June 25	4224	893	128	2865
Testing-tube	C. Wagner	857,127	June 18	3296	692	128	2598
Thawing-point	J. H. Lamley	856,786	June 11	2640	543	128	2397
Theatrical and similar purposes. Appliance for	J. F. Sullivan	855,910	June 4	913	190	128	1924
Thermometer-case. Antiseptic	C. W. Kennerly and B. E. Stockwell.	857,631	June 25	4257	899	128	2874
Thermostat	J. L. Nix	857,298	June 18	3609	764	128	2680
Thermostatic apparatus	E. F. Woodman	856,328	June 11	1738	361	128	2167
Thermostatic spring	T. H. Wurmb and R. Baumann	857,709	June 25	4411	931	128	2913
Thill-coupling	R. Eccles	856,233	June 11	1517	319	128	2110
Thill-coupling	G. H. Hutton	856,879	June 11	2801	584	128	2436
Thill-coupling	J. M. Bryant	857,154	June 18	3334	704	128	2610
Thill-coupling	J. F. Galvin	857,340	June 18	3684	779	128	2700
Thill-coupling	H. H. Welgart	858,239	June 25	5486	1170	128	3185
Thread fastenings. Machine for forming knotted	C. M. Horton	857,941	June 25	4870	1030–1	128	3028
Thread-guide	I. E. Palmer	855,803	June 4	691	141	128	1871
Threads. Manufacture of silk-like	R. Linkmeyer	857,640	June 25	4275	.....	128	2878
Threshing-machine	G. Laczay, C. Fohn, and C. Ekker	856,461	June 4	38	9	128	1704
Threshing-machine	A. T. Bakkem	857,147	June 18	3322	700–1	128	2607
Threshing-machine band-cutter and feeder	H. J. Wiese	858,127	June 25	5279	1121	128	3132
Ticket-case	H. J. Müller	855,653	June 4	396	83	128	1795
Ticket or tag. Pin	J. C. Edwards	857,727	June 25	4448	939	128	2923
Ticket or tag. Pin	A. Kimball	857,740	June 25	4476	945	128	2930
Ticket. Transfer	L. T. Peck	856,904	June 11	2848	594	128	2447
Tickets, checks, &c. Holder for	M. Macdonald	856,410	June 11	1936	398	128	2219
Tie: *See* Concrete tie. Rail-tie. Cross-tie. Railway-tie. Fence-tie.							
Tie-plate	W. L. De Remer	856,396	June 11	1909	393	128	2213
Tie-plate and rail-fastener	J. J. Davis	855,941	June 4	957	201	128	1937
Tile	O. M. Du Brau	856,231	June 11	1514	319	128	2109
Tile. Drain	H. Mori	855,662	June 4	396	83	128	1795
Tile-molding machine	J. I. McLimans	858,303	June 25	5559	1196	128	3210
Tile. Sheet-metal	S. H. Calkins	857,718	June 25	4426	935	128	2917
Time-detector. Watchman's	G. B. Fessenden	857,986	June 25	4984	1053	128	3057
Time-recorder	D. A. Stowell	857,419	June 18	3530	812	128	2735
Time-switch	A. Tresselt	858,040	June 25	5096	1079	128	3084
Timing device	H. H. McIntire	856,717	June 11	2517	517	128	2265
Tire	F. Mesinger	857,745	June 25	4485	946	128	2982
Tire. Automobile	F. D. G. Cook	856,447	June 11	2004	412	128	2237
Tire. Automobile	C. F. Obrecht	856,657	June 11	2409	496	128	2338
Tire. Automobile	G. M. Ewins	857,796	June 26	4589	972	128	2958
Tire clip. Pneumatic	E. C. Shaw	856,404	June 11	2083	428	128	2256
Tire for wheels. Spring	A. R. Hubbard	856,957	June 11	2937	617	128	2468
Tire-guard	C. R. Saunders and A. B. Breitweg.	857,365	June 18	3737	791	128	2712
Tire. Pneumatic	W. K. Smith	855,818	June 4	726	150	128	1879
Tire. Pneumatic	J. H. Green	855,884	June 4	854	177	128	1909
Tire. Pneumatic	A. J. Jackson	855,985	June 4	1177	249	128	1960
Tire. Pneumatic	J. O. Thomson	856,743	June 11	2647	528	128	2379
Tire. Pneumatic	M. V. Rush	858,039	June 25	5079	1078	128	3080

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Tire. Sectional pneumatic	C. P. Mains	856,411	June 11	1939	398	128	2220
Tire structure	P. G. Gosford	857,933	June 25	4852	1027	128	3022
Tire. Vehicle	J. B. Dumais	857,876	June 25	4728	1004	128	2991
Tire. Vehicle	T. F. Hamilton	856,526	June 11	2139	439	128	2268
Tire. Vehicle-wheel	J. C. Cole	855,693	June 4	477	100	128	1818
Tire-vulcanizing apparatus	T. Midgley	855,468	June 4	50	12	128	1707
Tire. Wheel	R. M. Whitman	858,048	June 25	5128	1084	128	3093
Tires. Apparatus for the manufacture of elastic	W. Hogben	857,281	June 18	3577	756	128	2673
Tires. Ball-bearing tube for	T. H. B. Gayner	855,627	June 4	351	72	128	1784
Tires for wheels. Air-tube for pneumatic	W. R. Smith	857,495	June 18	3981	846–7	128	2773
Tires. Machine for filling fabric for	G. and A. Durio and G. Martina	857,726	June 25	4446	939	128	2922
Tires. Making leather	J. J. P. Le Grand	855,712	June 4	509	106	128	1825
Tires. Protective cover for pneumatic or elastic	P. Hondius	858,289	June 25	5564	.....	128	3205
Tobacco by means of natural or artificial aromatic substances. Impregnating	P. A. Kenna	855,803	June 4	874	181	128	1914
Tobacco-pipe	L. Van Gale	856,500	June 11	2091	430	128	2538
Toilet article	F. C. Weber	857,914	June 25	4821	1021–2	128	3014
Toilet-chair. Folding	A. K. Lovell	856,482	June 11	2063	424–5	128	2251
Toilet device	H. Emerson	858,270	June 25	5533	1182	128	3197
Toilet-receptacle	R. Cederstrom	856,681	June 11	2451	504	128	2348
Tongs	G. H. Hill	856,257	June 11	1572	330	128	2125
Tongue-depressor	F. D. Lees	858,711	June 11	2509	515	128	2363
Tongue-scraper	J. W. Platt	855,807	June 4	700	143	128	1873
Tongue-truck for agricultural implements	J. L. Hecht	857,278	June 18	3572	755	128	2671
Tongue. Vehicle	E. E. Straw	856,927	June 11	2988	606	128	2456
Tonsillotome	L. Labreck	857,077	June 18	3192	672	128	2576
Tool	H. J. Aichele	858,131	June 25	5285	1122	128	3134
Tool cap. Magazine	J. A. Hendrickson	857,459	June 18	3905	830	128	2753
Tool. Combination	J. T. Slaughter	858,228	June 25	5487	1166	128	3181
Tool. Combination	J. L. Osgood	857,894	June 25	4772	1014	128	3001
Tool-handle	F. S. Graham	856,194	June 4	1431	302	128	2053
Tool handle. Pneumatic	W. L. Clark	857,981	June 25	4978	1052	128	3056
Tool-holder for machine-tools	E. A. Muller	857,358	June 18	3721	786	128	2708
Tool-holding device	G. Ulett	857,320	June 18	3646	772	128	2690
Tool. Household	H. R. Prindle	855,975	June 4	1036	214	128	1955
Tool. Pneumatic	W. H. Keller	856,706	June 11	2492	512	128	2358
Tool. Pneumatic	H. J. Kimman	855,515	June 4	137	28	128	1729
Tool. Reciprocating	G. C. Davison	858,266	June 25	5527	1180–1	128	3195
Torpedo. Automobile	G. C. Davison	858,156	June 25	5332	1134	128	3145
Torpedo-heater	A. H. Handlan, Jr.	855,772	June 4	639	131	128	1858
Torpedo-placer for railways	H. J. Wood	855,919	June 4	931	192	128	1929
Toy	F. J. McCormack	857,097	June 18	3238	681	128	2586
Toy	M. Perez	857,198	June 18	3431	723	128	2635
Toy	J. R. Patterson	857,481	June 18	3954	840	128	2765
Toy	W. F. Schoenhut	858,221	June 25	5452	1163	128	3177
Toy	F. K. T. Meinecke	858,090	June 25	5214	1105	128	3116
Toy animal	M. Armstrong and A. A. Coup	857,008	June 18	3051	643	128	2537
Toy. Explosive	R. I. Hepburn	856,060	June 4	1169	247	128	1988
Toy fireplace	T. A. Bramberry	857,865	June 25	4713	1000	128	2988
Toy. Sand-mill	M. A. Glen	855,944	June 4	971	202	128	1939
Toy. Transformable	O. B. Hitchcock and J. L. Wilson	856,639	June 11	2374	488	128	2330
Trace-carrier	S. B. Field	857,986	June 25	4986	1053	128	3058
Trace-fastener	J. E. Martin	857,085	June 18	3215	676	128	2580
Trace-shield	F. B. Shaw and J. M. Eberle	855,733	June 4	569	117	128	1842
Track-alining apparatus	L. H. Bowman	856,442	June 11	1997	411	128	2235
Track-fastening device	C. I. Amey	857,572	June 25	4145	878–9	128	2844
Track lifting, leveling, ballasting, and tamping machine	G. Nugent	856,983	June 11	2997	630	128	2484
Track-sander	A. A. Churchill	856,765	June 11	2602	534	128	2388
Track-sanding device	S. A. Piper	858,021	June 25	5063	1071	128	3076
Track-sanding device	I. M. Bond	857,436	June 18	3862	821	128	2742
Track-spreading signal	L. Y. Keibler	857,180	June 18	3393	716	128	2625
Traction-engine	A. S. Wysong	857,509	June 18	4010	853–4	128	2780
Traction-engine	W. T. Long	857,641	June 25	4275	903	128	2878
Train-order delivering and receiving apparatus	W. D. Edmonds	858,165	June 25	5354	1138	128	3151
Trammel for animals	J. R. Peacock	857,533	June 18	4060	863	128	2795
Tramway and other points and the like. Means or device for operating	J. R. Peacock	857,534	June 18	4062	863	128	2795
Tramway and other points and the like. Means or device for operating	M. C. Matthews	856,715	June 11	2513	516	128	2364
Tramway-switch	J. D. Hilliard	857,062	June 18	3165	666	128	2570
Transformer. Electrical	M. Munzner	856,979	June 11	2988	627	128	2482
Transit	S. Lippert	856,272	June 11	1602	335	128	2132
Transmission mechanism	H. Osborne	856,288	June 11	1644	341	128	2143
Transom-lifter							
Trap: *See* Animal-trap. Roach-trap. Fly-trap. Target-throwing trap.							
Trap	K. R. Marks	858,007	June 25	5039	1065	128	3071
Trap	L. H. Pleins	858,306	June 25	5594	1196–7	128	3212
Tray	J. Greenhouse	855,565	June 4	230	46	128	1755
Tree: *See* Shoe-tree. Ventilating-tree. Truss-braced tree.							
Trimmer: *See* Hedge-trimmer. Sewing-machine trimmer. Oil-cake trimmer.							
Triple-expansion engine	W. S. Lycan	855,959	June 4	994	207–8	128	1944
Tripod	O. W. Steindorf	856,610	June 11	2318	477	128	2315
Trolley-catcher	W. S. Roath	857,112	June 18	3258	685	128	2691
Trolley-catcher	R. Shields	858,355	June 25	5707	1218	128	3245
Trolley-finder	F. G. Weber	858,238	June 25	5485	1170	128	3185
Trolley for electric railways	H. Bennett	858,255	June 25	5509	1176	128	3191
Trolley-guard	G. L. Matheney	857,643	June 25	4280	904	128	2879
Trolley-harp	A. D. Brittain	857,591	June 25	4177	884	128	2863
Trolley-pole controller	A. L. Prentiss	856,293	June 11	1657	344	128	2146
Trolley-pole for conducting electric current to vehicles	R. and J. Lindsay	856,535	June 11	2155	444	128	2273
Trolley-retriever	C. I. Earll	857,040	June 18	3112	657–8	128	2859
Trolley-stand	E. L. Fixler	857,812	June 25	4222	893	128	2984
Trolley-wheel	C. F. Wilson	856 508	June 11	2096	431	128	2230

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Trough: *See* Feed-trough.							
Trousers	J. Ruppel	858,107	June 25	5246	1113	128	3124
Trousers-stretcher	I. B. Macomber	855,794	June 4	674	138	128	1867
Trousers-stretcher	L. S. Plummer	857,902	June 25	4785	1016	128	3005
Truck	W. A. Curtis	855,619	June 4	338	60	128	1781
Truck	L. Kuykendall	856,887	June 11	2815	587	128	2440
Truck. Boiler-	W. T. Fiers and B. F. Tigner	857,454	June 18	3807	828	128	2751
Truck-brake	E. H. Slaybaugh	857,118	June 18	3266	667	128	2593
Truck. Brick-	G. Barney	857,859	June 25	4706	999	128	2986
Truck. Car-	W. E. Symons	856,111	June 4	1254	284–5	128	2000
Truck. Car-	C. G. Harrington	857,937	June 25	4859	1028	128	3023
Truck. Conveyer-	A. Marvin	857,409	June 18	3813	808–10	128	2730
Truck. Expressman's	F. W. Clayton	855,835	June 4	761	157	128	1886
Truck or tank	O. K. Harry	858,177	June 25	5374	1142–3	128	3155
Truck. Railway-	J. M. Rohlfing	856,492	June 11	2080	428	128	2255
Truck. Railway-car	H. H. Drew	856,626	June 11	2352	484	128	2324
Truck. Self-propelled vehicle-	R. Fuller	856,242	June 11	1548	324–5	128	2119
Trunk	R. L. Turman	857,500	June 18	3999	851	128	2778
Trunk-leg attachment	J. H. McNamara	856,718	June 11	2519	518	128	2366
Trunk-rope fastener	E. W. Carroll and F. S. Baird	857,441	June 18	3870	822	128	2743
Trunk-strap fastener	H. J. Patterson	857,197	June 18	3430	723	128	2634
Trunk. Wardrobe-	A. D. Seaman	857,116	June 18	3263	687	128	2592
Truss-braced tree	B. F. Pinson, Jr	855,528	June 4	160	32	128	1735
Tube: *See* Expansion-tube. Testing-tube.							
Tube-emptying device. Collapsible-	A. H. W. Weber	857,547	June 18	4066	867	128	2801
Tube expanding and beading tool	W. McCormick	856,896	June 11	2834	591	128	2444
Tube-making machine	F. Schafer	857,678	June 25	4335	916–17	128	2894
Tube-manufacturing apparatus	S. V. Huber	857,348	June 18	3697	782	128	2704
Tubes. Apparatus for forming tapering	J. Gribben	856,694	June 11	2470	508	128	2353
Tubes during exhaustion. Means for preventing self-sealing of fluid-distended flexible	J. M. Boyle	857,585	June 25	4169	883	128	2850
Tug-holder	O. A. Rice	856,297	June 11	1670	346	128	2151
Tuning instrument	C. P. Dolan	857,334	June 18	3673	777	128	2697
Tuning-slide for horns and like instruments	H. B. Jay	856,642	June 11	2378	489	128	2331
Turbine	A. J. Cooper	856,623	June 11	2346	482	128	2322
Turbine	J. Gersant and G. J. J. Legrand	857,048	June 18	3128	660	128	2857
Turbine	C. A. Parsons	858,206	June 25	5426	1157	128	3169
Turbine blade and vane	J. S. Green	856,630	June 11	2357	485	128	2326
Turbine. Elastic-fluid	F. Samuelson	856,426	June 11	1970	405	128	2226
Turbine nozzle-partition and nozzle	C. A. Backstrom	856,308	June 11	1466	309	128	2098
Turbine nozzle-partition and running-wheel	C. A. Backstrom	856,305	June 11	1463	308	128	2097
Turbine. Reversible	J. Molas	857,090	June 18	3223	678	128	2582
Turbine running-wheel	C. A. Backstrom	856,303	June 11	1461	308	128	2097
Turbine running-wheel	C. A. Backstrom	856,307	June 11	1465	309	128	2098
Turbine. Steam-	A. H. Smith	857,965	June 25	4939	1044	128	3044
Turbine. Steam-	C. A. Parsons	858,205	June 25	5424	1156–7	128	3169
Turpentine-cup or sap-receptacle. Sheet-metal	E. R. Philip and J. Kohke	857,900	June 25	4783	1015	128	3004
Type-casting machines. Pump mechanism for	F. H. Brown, J. E. Hanrahan and G. A. Boyden.	856,026	June 4	1118	233	128	1977
Type-machine mold	J. S. Bancroft	857,712	June 25	4415	932–3	128	2914
Type-machines and the like. Gas-governor for	C. W. Seaward	856,815	June 11	2690	555	128	2410
Type-metal melting-pot	H. P. Bechman	857,433	June 18	3859	820	128	2741
Type-mold	E. A. Eschinger	857,728	June 25	4449	940	128	2923
Type-ribbon spool or holder. Sheet-metal	G. F. Miller	857,818	June 25	4632	982	128	2969
Type-writer	J. Völker	856,377	June 11	1865	384	128	2202
Type-writer	G. H. Smith	858,356	June 25	5710	1218–20	128	3246
Type-writer and adder. Automatic key-connecting means for a combined	P. H. Turley	856,318	June 11	1709	355–6	128	2161
Type-writer carriages. Auxiliary stop for	W. R. Fox	856,629	June 11	2355	485	128	2325
Type-writer shifting mechanism	C. C. Chrisman	856,942	June 11	2909	610	128	2461
Type-writers. Paper and envelop feeding attachment for	S. D. Ruth	857,677	June 25	4333	916	128	2893
Type-writing. Erasing appliance for use in	C. White	857,700	June 25	4395	928	128	2909
Type-writing machine	B. C. Stickney	855,541	June 4	180	37–8	128	1740
Type-writing machine	F. I. Van Anden	855,542	June 4	190	38	128	1744
Type-writing machine	A. T. Brown	855,832	June 4	756	156	128	1885
Type-writing machine	W. F. Helmond	856,254	June 11	1509	329	128	2124
Type-writing machine	H. J. Halle	856,344	June 11	1767	368	128	2175
Type-writing machine	E. F. Kunath	857,288	June 18	3500	700	128	2675
Type-writing machine	E. F. Kunath	857,635	June 25	4263	901	128	2875
Type-writing machine	O. Woodward	857,706	June 25	4405	930–1	128	2912
Type-writing machine tabulating device	E. Lecoultre	858,082	June 25	5192	1101–2	128	3110
Type-writing machine tabulating device	E. Lecoultre	858,083	June 25	5199	1102	128	3112
Type-writing machines. Inking-ribbon for	M. H. Chapin	855,559	June 4	222	43	128	1753
Type-writing machines. Paper clamp or guide for front-strike	W. R. Fox	855,509	June 4	126	26	128	1726
Typograph	W. I. Ludlow	856,539	June 11	2160	445–6	128	2274
Typographic machine	F. H. Richards	855,731	June 4	556	115–16	128	1838
Umbrella	D. Celenza and M. Rosen	857,157	June 18	3340	705	128	2611
Umbrella. Folding	G. Heuer	858,181	June 25	5383	1146	128	3158
Umbrella. Folding	A. V. Ranson	858,212	June 25	5436	1160	128	3172
Umbrella-mender	F. Seiter	856,664	June 11	2421	499	128	2341
Uncoupling device	A. J. Barsley	858,324	June 25	5626	1205–6	128	3220
Urn	F. D. Goddard	855,702	June 4	492	102	128	1821
Vacuum-tubes. Automatic gas-feed for	D. M. Moore	856,464	June 11	2067	425	128	2252
Valve	D. Lippy and A. Nicodemus	855,517	June 4	141	28	128	1730
Valve	J. and W. H. Wambsgans	856,005	June 4	1080	224	128	1967
Valve	H. C. King	856,470	June 11	2043	419–20	128	2246
Valve	B. F. Siegrist	856,552	June 11	2196	452	128	2283
Valve	F. B. McMillin and M. F. Morrissey.	856,655	June 11	2403	494–5	128	2336
Valve	A. D. McWhorter	856,899	June 11	2839	592–3	128	2445
Valve	H. S. Roberts	856,911	June 11	2865	599	128	2451
Valve	H. S. Rankin	857,484	June 18	3862	841	128	2767
Valve	D. Hinderliter	857,805	June 25	4610	977	128	2963
Valve	G. J. Thomas	857,848	June 25	4687	994	128	2981
Valve	J. H. Delany	858,083	June 25	5157	1092	128	3101
Valve. Automatic exhaust relief-	C. A. Backstrom	856,302	June 11	1459	308	128	2097

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Valve. Dry-pipe	J. C. Meloon	857,187	June 18	3407	718	128	2639
Valve. Dry-pipe	J. R. Hamilton	857,276	June 18	3566	754	128	2669
Valve. Flushing	C. A. Parks	857,896	June 25	4778	1014	128	3003
Valve for air-brake systems. Feed-	G. Wagner	856,665	June 11	2423	499	128	2341
Valve for drain-cock plugs. Float-	W. E. Bryant	855,932	June 4	952	197	128	1934
Valve for engines. Cut-off	W. Goodwin	857,457	June 18	3803	829	128	2752
Valve for explosive-engines	G. W. Irwin	857,463	June 18	3809	831	128	2754
Valve for locomotives. Safety-	R. Anderson	856,562	June 11	2220	457	128	2289
Valve. Gas-	D. M. Moore	855,801	June 4	688	141	128	1870
Valve. Gas-	A. L. Hammarberg	856,252	June 11	1566	328	128	2123
Valve. Gas-engine	B. C. Skinner	857,762	June 25	4518	953–4	128	2940
Valve. Gate-	F. C. Pfeil	856,546	June 11	2177	449	128	2278
Valve-gear	J. McDonald	855,654	June 4	397	83	128	1795
Valve-gear	J. Kolstram	856,784	June 11	2638	542	128	2306
Valve-gear	J. C. Bird	857,579	June 25	4159	881–2	128	2847
Valve-gear. Engine	A. L. Dorsey	856,851	June 11	2751	571–2	128	2424
Valve-gear for explosion-engines	J. V. Rice, Jr	857,672	June 25	4322	913–14	128	2890
Valve gearing and motion for locomotives	R. Lindner	857,813	June 25	4623	979–80	128	2967
Valve. Globe, angle, and check	T. Waltz	857,321	June 18	3646	773	128	2690
Valve mechanism	A. C. Culver	855,617	June 4	333	68	128	1779
Valve mechanism	F. Harper	856,582	June 11	2260	465	128	2300
Valve mechanism for engines	L. D. Lovekin	856,594	June 11	2277	468–9	128	2304
Valve mechanism for explosive-engines. Exhaust-	G. M. Beard	857,149	June 18	3327	701	128	2608
Valve mechanism for tanks and reservoirs	J. F. Senter	856,550	June 11	2190	451	128	2281
Valve-operating mechanism	J. F. Senter	856,549	June 11	2185	450–1	128	2280
Valve-operating mechanism for internal-combustion engines	G. Green	857,994	June 25	5011	1057	128	3064
Valve. Reducing-	W. B. Mason	855,796	June 4	677	139	128	1868
Valve. Reversing-	P. H. Murphy	856,652	June 11	2395	493	128	2334
Valve. Single-piece spring	M. A. Thiel	856,314	June 11	1703	354	128	2159
Valve. Steam-feed	A. D. Catlin	856,569	June 11	2231	459	128	2292
Valve. Turbine nozzle-	C. A. Backstrom	856,304	June 11	1462	308	128	2097
Valve. Turbine nozzle-	C. A. Backstrom	856,306	June 11	1464	309	128	2098
Valve. Union-coupling check-	L. M. Patterson	857,897	June 25	4779	1015	128	3003
Valves and cocks. Means for hydraulically operating	W. J. McCarroll	856,981	June 11	2993	630	128	2484
Valves. Means for operating pneumatic	W. Lintern. (Reissue)	12,661	June 18	4135	876	128	2809
Valves of motive-power engines. Means for operating the	R. Kendal	855,892	June 4	870	180–1	128	1914
Vanadium and its alloys. Producing	F. M. Becket	858,325	June 25	5627	.....	128	3220
Vanadium sulfid. Reducing	F. M. Becket	858,328	June 25	5631	.....	128	3221
Vat: *See* Milk or cream storage or cooling vat.							
Vault. Burial-	T. B. Malone	857,245	June 18	3503	740	128	2653
Vault-protecting device. Safe-	E. V. Lorig and U. G. Graham	856,075	June 4	1193	253	128	1994
Vegetable-chipper	R. Woerner	858,128	June 25	5280	1121	128	3132
Vegetable fibers. Preparing	H. R. Bonny	855,751	June 4	601	123	128	1850
Vegetable matter. Protecting	A. Koy	857,075	June 18	3189	.....	128	2575
Vegetable washing and peeling machine	F. Delpire	856,037	June 4	1135	238	128	1981
Vehicle	S. R. Estep	855,508	June 4	125	25–6	128	1725
Vehicle. Ammunition-	W. Mayer	857,246	June 18	3504	740	128	2653
Vehicle brake. Motor-	G. Enrico	857,272	June 18	3550	753	128	2667
Vehicle. Electrically-propelled	R. Thayer	857,696	June 25	4362	922	128	2900
Vehicle. Motor-	T. J. Thorp	855,597	June 4	293	60–1	128	1770
Vehicle. Motor-	L. C. Lull	857,084	June 18	3214	676	128	2579
Vehicle mud-guard	W. T. McCauley	857,747	June 25	4487	947	128	2933
Vehicle propelling and steering mechanism	J. A. Sherry	858,224	June 25	5458	1164–5	128	3178
Vehicle-reach	G. J. McCoy	857,822	June 25	4637	984	128	2970
Vehicle. Road-	H. E. Kline	857,533	June 25	4260	900	128	2874
Vehicle running-gear	F. R. Owens	858,348	June 25	5685	1215	128	3240
Vehicle-spring	C. Wesp	856,501	June 11	2093	430	128	2259
Vehicle-spring	F. E. Pratt	857,256	June 18	3519	744	128	2657
Vehicle-spring	C. Burgess, Jr	857,383	June 18	3768	797	128	2720
Vehicle-spring. Pneumatic	G. W. Bell	856,510	June 11	2106	433	128	2261
Vehicle steering-gear. Motor-	W. E. Slater	857,494	June 18	3979	846	128	2772
Vehicle-wheel	T. Midgley	856,081	June 4	1202	255	128	1996
Vehicle-wheel	J. B. Hunter	856,156	June 4	1361	285	128	2037
Vehicle-wheel	E. D. Woods	856,329	June 11	1742	361	128	2168
Vehicle-wheel	C. A. Rittman	856,367	June 11	1846	379	128	2196
Vehicle-wheel	J. R. Welch	857,219	June 18	3459	730	128	2642
Vehicle-wheel	F. J. Conant	857,330	June 18	3661	775	128	2694
Vehicle-wheel	F. Ephraim	857,335	June 18	3676	777	128	2695
Vehicle-wheel	D. Ward	857,546	June 18	4085	867	128	2900
Vehicle-wheel	R. Jones	857,629	June 25	4253	898	128	2873
Vehicle wheel and axle	J. F. Murray	857,296	June 18	3906	783	128	2680
Vehicles. Automatic safety stop device for electric	J. T. McIntosh	857,890	June 25	4755	1010	128	2997
Velocipede. Nautical	J. H. Mitchell	858,093	June 25	5220	1106	128	3117
Vending apparatus. Post-stamp-	M. Sielaff	856,104	June 4	1241	261–2	128	2005
Vending-machine	W. Mooney	856,278	June 11	1622	337	128	2138
Vending-machine	C. E. Davison	857,037	June 18	3106	655–6	128	2552
Vending-machine	P. A. Robichon	857,257	June 18	3521	744	128	2658
Vending-machine. Coin-operated	C. Bigelow	856,019	June 4	1105	230	128	1974
Ventilating-tree	J. S. Hansen	857,734	June 25	4463	943	128	2927
Ventilator: *See* Car-ventilator. Grain-bin ventilator.							
Ventilator	A. Baggaley	855,607	June 4	315	65	128	1775
Ventilator	J. A. Hickey	855,778	June 4	647	133	128	1860
Ventilator	W. Bigelow	856,020	June 4	1109	231	128	1975
Ventilator	J. P. Bowes	856,762	June 11	2598	533	128	2367
Ventilator	E. Stevick	856,926	June 11	2887	605	128	2456
Ventilator	J. Lorenz	857,642	June 25	4278	903	128	2879
Ventilator	G. F. Williams	857,853	June 25	4695	996	128	2963
Ventilator	A. Holtzheuer	858,185	June 25	5369	1147	128	3160
Vermin-exterminator	R. W. Townsend	856,557	June 11	2210	454	128	2287
Vessel	J. McArdle	857,478	June 18	3948	838–9	128	2764
Vessels. Lines for	T. R. Timby	857,317	June 18	3643	771–2	128	2689
Vessels. Loading-barge for	F. V. Hetzel	858,180	June 25	5381	1145	128	3157
Vibrator	A. J. Stecker	855,594	June 4	285	56	128	1768
Vibrator	H. M. Scipio	856,920	June 11	2878	602	128	2454
Vibrator. Mechanical	E. P. Ward and A. H. Herron	856,378	June 11	1866	384	128	2202

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Violin. Composition of matter for improving the tone of a	L. Lawrence	856,533	June 11	2153	.....	128	2272
Violin. Electric self-playing	H. K. Sandell	856,604	June 11	2299	472–5	128	2312
Vise	F. M. De Tray	855,447	June 4	13	4	128	1696
Vise	C. Markmann	857,007	June 11	3045	642	128	2407
Vise attachment	R. J. Lockhart	856,074	June 4	1192	253	128	1994
Vise attachment	J. E. Watkins	858,043	June 25	5101	1080	128	3085
Voting-machine	W. M. Cutter and W. A. Sutfin	856,997	June 11	3027	637	128	2402
Voting-machine	F. Kelper	857,469	June 18	3925	835–6	128	2757
Voting-machine	O. E. Seibel	857,681	June 25	4344	918–19	128	2896
Voting-machine	A. J. Gillespie	857,800	June 25	4596	973–4	128	2960
Voting-machine key-locking mechanism	W. J. Lauterer	857,811	June 25	4620	979	128	2966
Vulcanizing apparatus. Portable self-contained	H. H. Frost	856,241	June 11	1546	324	128	2118
Wagon-brake. Automatic	C. Garver	856,693	June 11	2467	507	128	2352
Wagon. Dumping	E. K. Emig	855,762	June 4	618	127	128	1854
Wagon. Dumping	F. Aldrich	856,831	June 11	2716	562	128	2416
Wagon. Dumping	W. J. Judd	857,943	June 25	4879	1031	128	3029
Wagon. Express	J. A. Sherry	858,223	June 25	5455	1164	128	3177
Wagon-reach	J. L. Hecht	857,279	June 18	3574	756	128	2671
Wagon running-gear	A. D. Brooner	856,024	June 4	1116	232	128	1976
Wagons. Crate-body for	J. O. Moore and J. I. Johnson	855,721	June 4	529	111	128	1830
Wagons. Drive mechanism for distributing	R. S. Wells	857,131	June 18	3290	694	128	2600
Wall construction. Building	T. Jonas	857,628	June 25	4252	898	128	2873
Wall-mold	H. H. Hahn	856,952	June 11	2929	614–15	128	2466
Wall or levee. Restraining	G. R. Tuttle	855,596	June 4	297	61	128	1771
Wall-register	H. Symonds	858,230	June 25	5470	1167	128	3181
Washer: *See* Bottle-washer. Dish-washer. Gas-washer. Gold-washer. Pounder-washer.							
Washing-machine	P. Cunneen	856,229	June 11	1510	318	128	2108
Washing-machine	G. D. Burton	857,027	June 18	3092	652	128	2548
Washing-machine	W. C. Fawkes	857,337	June 18	3677	777–8	128	2698
Washing-machine motor	L. C. Lewis	856,270	June 11	1599	334	128	2132
Washboilers. Auxiliary bottom for	N. Kenjora	857,809	June 25	4616	978	128	2965
Watch	A. A. O. Seeler	856,608	June 11	2315	476	128	2314
Watch	W. E. Porter	857,667	June 25	4315	912	128	2888
Watch	W. E. Porter	857,668	June 25	4316	912	128	2888
Watch and clock lever-escapement	E. H. Horn	855,950	June 4	978	204	128	1940
Watch balance-staff	F. C. Smith	857,312	June 18	3634	769	128	2687
Watch-guard	L. L. Tirrell	857,216	June 18	3455	729	128	2641
Watch-holder	A. W. Funk	856,243	June 11	1551	325	128	2120
Watch-movement box	J. H. Goss and A. F. Wolff	856,463	June 11	2029	417	128	2242
Watch-movements. Means for attaching dials to	F. R. Cunningham	857,333	June 18	3672	776	128	2697
Watch winding and setting mechanism	H. Sandoz	856,183	June 4	1411	298	128	2048
Water and gas separator	A. T. Newman	856,088	June 4	1213	257	128	1999
Water. Apparatus for feeding lime to	F. B. Leopold and C. A. Brown	857,563	June 18	4123	873–4	128	2807
Water by means of compressed air. Apparatus for elevating	A. M. Lockett	855,518	June 4	143	29	128	1730
Water-circulating means	R. W. Nichols	856,900	June 11	2842	593	128	2446
Water-closet attachment	M. Bradford	855,614	June 4	330	67	128	1779
Water-closet bowls and the like. Flushing device for	L. W. Eggleston	858,166	June 25	5355	1138	128	3151
Water-closet flush-valve device	J. Kelly	855,786	June 4	664	135–6	128	1864
Water-closets. Valve-support for outdoor	W. U. Griffiths	856,579	June 11	2255	484	128	2298
Water-conveyance	W. M. and L. E. Meacham	857,961	June 25	4893	1034	128	3033
Water-cooler	G. P. Petropulas	858,101	June 25	5235	1110	128	3122
Water-elevator. Current-operated	A. N. Jones	855,855	June 4	807	168	128	1898
Water. Feeding lime to	F. B. Leopold and C. A. Brown	857,564	June 18	4125	874	128	2808
Water-gage	F. W. Leidecker	857,183	June 18	3398	717	128	2627
Water-heater	B. Haytie	857,555	June 18	4100	870	128	2804
Water-heater. Instantaneous electric	H. N. Roche and F. F. Breese	858,351	June 25	5688	1216	128	3240
Water-motor	A. Lang	856,709	June 11	2500	513–15	128	2360
Water-motor	J. P. and H. P. Shevlin	858,226	June 25	5462	1165–6	128	3179
Water-purification apparatus	A. Holle	858,183	June 25	5385	1146	128	3159
Water-tank	G. T. Horton	857,626	June 25	4249	897	128	2872
Water-tube boiler	K. Park	855,661	June 4	414	86	128	1800
Water-tube boiler	G. Sinclair	856,185	June 4	1415	299	128	2049
Water-tube boiler	J. E. Bell	857,016	June 18	3064	647	128	2540
Water-tube boiler	J. E. Bell	857,017	June 18	3065	648	128	2541
Water-wheel	A. H. Perry	857,482	June 18	3955	841	128	2766
Water-wheel. Floating tidal	J. Tibbitts and A. W. Turner	857,773	June 25	4540	958	128	2946
Water-wheel. Turbine	A. Giesler	856,949	June 11	2923	613	128	2464
Waterproofing compound	R. Falter	856,855	June 11	2759	.....	128	2426
Weapon. Hand	K. Gehrer	857,047	June 18	3127	659–60	128	2557
Weather-strip	H. E. Kenny	856,070	June 4	1184	251	128	1992
Web-folding machine	H. M. Barber	857,575	June 25	4153	879–80	128	2945
Web-folding machine	H. E. Leonard	857,948	June 25	4888	1033	128	3032
Web or apron. Means for guiding a moving	E. L. Savage	855,462	June 4	78	17	128	1715
Web-press. Flat-bed	H. F. Bechman	858,054	June 25	5141	1088	128	3097
Weed-cutter	T. Ricketts	857,533	June 25	4557	988	128	2975
Weeder and hoe	L. E. Whitaker	855,547	June 4	205	40	128	1749
Weighing and assorting apparatus	H. Richardson	856,724	June 11	2530	520	128	2369
Weighing apparatus	A. Harrington	855,887	June 4	962	178	128	1911
Weighing device. Automatic	P. Edtbauer	857,164	June 18	3355	708–9	128	2616
Weighing-machine	G. Cassady	857,870	June 25	4720	1002	128	2989
Weighing-machine. Automatic	G. Hoepner	855,578	June 4	251	50–1	128	1759
Weighing-machine. Automatic	O. C. Patton	857,301	June 18	3614	765	128	2682
Well-screen	G. W. Stancliff	857,313	June 18	3636	770	128	2687
Welt-slitting machine	A. G. Brewer	855,753	June 4	605	124	128	1851
Wheel: *See* Ambulatory wheel. Automobile-wheel. Ball-bearing wheel. Car-wheel. Elastic wheel. Fifth-wheel. Gage-wheel. Propeller-wheel. Spring-wheel. Steel-tired wheel. Trolley-wheel. Turbine running-wheel. Vehicle-wheel. Water-wheel.							
Wheel	J. W. Barnes, Jr.	857,858	June 25	4704	998	128	2986

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Wheel for cycles, motor-cars, carriages, and other vehicles.	J. N. B. Moore	857,091	June 18	3228	679	128	2583
Wheel-rim	F. K. Rand and W. R. Hines	857,830	June 25	4648	986	128	2972
Wheel spindle and axle	T. J. Lindsay	855,898	June 4	891	183–4	128	1919
Wheels. Pneumatic cushion for vehicle	H. E. Bradley	853,929	June 4	947	196	128	1933
Whiffletree	H. Sellon	857,310	June 18	3632	769	128	2686
Whiffletree-clip	D. H. Young	856,668	June 11	2427	500	128	2342
Whip	F. H. Audley	857,511	June 18	4013	854	128	2781
Wind in the vertical plane. Apparatus for automatically recording the direction of the	E. A. Sperber	858,310	June 25	5603	1198	128	3213
Winding and measuring device	S. E. Parrish	856,289	June 11	1647	341–2	128	2144
Winding-machine	J. E. and J. Broadbent	855,930	June 4	949	196–7	128	1933
Windlass attachment	E. R. Buckwalter	857,326	June 18	3654	774	128	2692
Windmill	C. D. Plympton	856,364	June 11	1841	378	128	2195
Windmill	J. Axelstrom	857,376	June 18	3755	795	128	2717
Windmill stroke-adjuster	F. S. Laflin	856,868	June 11	2816	587	128	2441
Window	W. H. Barriere	855,609	June 4	319	65	128	1776
Window	C. Walchner	858,236	June 25	5480	1160	128	3184
Window-cleaner	C. C. McCracken	856,287	June 11	1643	341	128	2143
Window-cleaning device	H. E. Walter	857,263	June 18	3540	749–50	128	2663
Window frame and sash	W. H. Barry	856,017	June 4	1102	229	128	1973
Window-frame for flexible curtains	F. J. Newman	856,542	June 11	2173	447	128	2277
Window. Reversible	H. J. Oliver	857,836	June 25	4644	985	128	2972
Window-screen	C. W. Rodecker	857,759	June 25	4514	952	128	2930
Window-sill. Metallic	W. Corbett	855,696	June 4	483	101	128	1819
Window-swinging device	G. H. Parker	857,103	June 18	3245	682	128	2588
Wines and spirits and sterilizing liquids. Ameliorating	V. Dorn	855,449	June 4	20	5	128	1700
Wire cables. Splicing	F. Seperak	856,498	June 11	2082	428	128	2255
Wire-clamp	J. Bowers	856,512	June 11	2116	434	128	2264
Wire-cloth reel	K. Mehaffey	857,089	June 18	3222	677	128	2581
Wire. Machine for covering bundles of	G. F. and G. M. Wright	857,141	June 18	3309	697–8	128	2604
Wire-reel	M. J. Welrich	856,322	June 11	1720	357–8	128	2163
Wire-rope-cleaning apparatus	J. M. Wright	856,614	June 11	2330	478–9	128	2318
Wire-spring fabric	A. G. Cameron	857,156	June 18	3339	704	128	2611
Wire-stretcher	R. B. Hartin	855,632	June 4	360	74	128	1786
Wire-stretcher	D. R. Clark	857,444	June 18	3874	822	128	2744
Wire-stretcher	F. B. Werner	858,240	June 25	5487	1170	128	3186
Wire stretcher and splicer	J. Sanders	857,489	June 18	3970	843	128	2770
Wire-uncoiling device	J. D. Bourne	856,761	June 11	2597	533	128	2387
Wire-working machine	J. G. Smith	856,307	June 11	1690	350–1	128	2156
Wire-working tool	J. J. Albert	855,741	June 4	582	119	128	1845
Wires or other cores with fibrous material. Apparatus used in covering	F. Hutchins	856,878	June 11	2798	583–4	128	2435
Wood. Waterproof uniting pieces of	C. Wittkowsky	855,870	June 4	832	172	128	1904
Woodworking-machine	J. Reid	857,757	June 25	4509	951–2	128	2938
Work-box	F. T. Howe	855,635	June 4	364	75	128	1787
Work-gage	F. M., R. W., and H. W. Chapman	857,443	June 18	3873	823	128	2744
Work-holder	A. E. Booth	856,022	June 4	1112	231	128	1976
Woven fabric	W. M. Stevenson	856,925	June 11	2886	604	128	2456
Wrapping-machine	J. N. Jacobsen	857,466	June 18	3914	832–3	128	2755
Wrapping-machine	G. T. Warwick	858,044	June 25	5102	1081–2	128	3085
Wrecking appliance	E. Lovley	856,713	June 11	2510	516	128	2364
Wrench: *See* Chain wrench. Pipe-wrench. Ratchet-wrench. Screw-wrench.							
Wrench	H. W. Simms	855,483	June 4	81	17	128	1716
Wrench	E. F. Smith	855,537	June 4	175	35–6	128	1738
Wrench	J. A. Scott	855,866	June 4	823	172	128	1902
Wrench	D. P. Kahle	855,891	June 4	868	180	128	1913
Wrench	F. C. Magenheimer	856,169	June 4	1386	292	128	2042
Wrench	G. H. Tatge	856,498	June 11	2089	429	128	2258
Wrench	F. H. Schall and M. Plunkett	856,660	June 11	2414	497	128	2330
Wrench	E. H. Derby	857,163	June 18	3355	708	128	2616
Wrench	E. H. Zanto	857,220	June 18	3463	730	128	2642
Wrench	O. M. Hansford	857,237	June 18	3489	737	128	2650
Wrench	G. A. McIntire	858,357	June 25	5724	1220	128	3250
Wrench and can-opener. Combination	W. A. Rich	855,962	June 4	1048	217	128	1959
Wringer: *See* Mop-wringer.							
Wrist-protector	M. Moss	856,282	June 11	1628	338	128	2140
Writing-machine	E. B. Hess	856,869	June 11	2783	579–80	128	2431
Writing-machine	E. B. Hess	856,870	June 11	2785	580	128	2432
Writing-machine	E. B. Hess	858,179	June 25	5377	1144	128	3156
Writing-machine	E. B. Hess	858,284	June 25	5554	1187–8	128	3202
Writing-machine	E. B. Hess	858,343	June 25	5674	1212	128	3237
Yarn-steaming tray	W. E. Lyford	858,086	June 25	5204	1103	128	3114

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